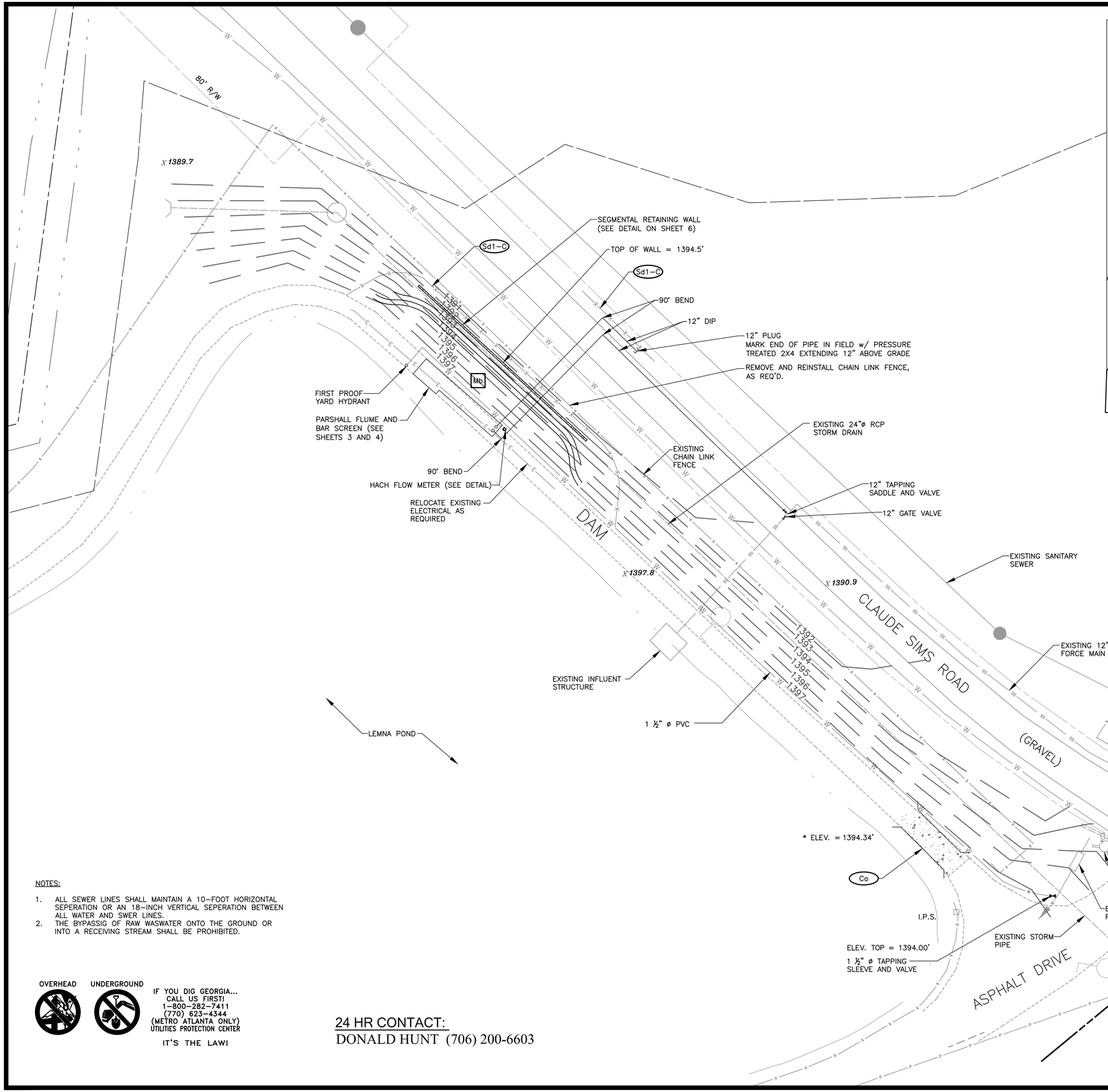
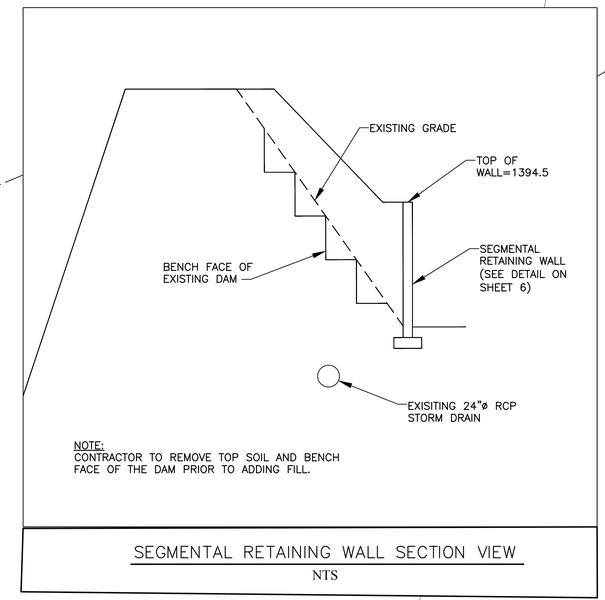




SEGMENTAL RETAINING WALL SECTION VIEW

NTS

NOTES:

1. ALL SEWER LINES SHALL MAINTAIN A 10-FOOT HORIZONTAL SEPERATION OR AN 18-INCH VERTICAL SEPERATION BETWEEN ALL WATER AND SWER LINES.
2. THE BYPASSIG OF RAW WASWATER ONTO THE GROUND OR INTO A RECEIVING STREAM SHALL BE PROHIBITED.

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER
IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA. 30060
Phone No. (770) 427-8123
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
INFLUENT FLUME AND BAR SCREEN

SITE PLAN

No.	Revisions	Date
1	PARSHALL FLUME LOCATION	12/5/07
2	EPD COMMENTS	4/21/08

Drawn: EED/AOM
Design: KFK/AOM
Checked: KFK/BAR
Project No: R2007-222
Scale: 1"=20'
Date: 12/6/07

Sheet No.
2 of 7

M:\Projects\Archive\2007\R2007-222\dwg\07-222-ParshallBase.dwg 01/21/2020 4:30pm mmbuguo

LEGEND

- CURB AND GUTTER (C&G)
- FENCE
- HANDRAIL
- STORM DRAIN LINE
- SS — SANITARY SEWER
- W — WATER LINE
- GAS — GAS LINE
- UGE — UNDERGROUND POWER LINE
- OVERHEAD POWER LINE
- COM — COMMUNICATION
- 100 — TOPOGRAPHIC CONTOUR
- PROPERTY LINE
- CATCH BASIN (DWCB)
- CATCH BASIN (SWCB)
- DROP INLET (DI)
- JB — JUNCTION BOX (JB)
- HEAD WALL (HW)
- CURB INLET (CI)
- FLARED END SECTION (FES)
- OCS — OUTLET CONTROL STRUCTURE
- YARD DRAIN INLET
- S — SS MANHOLE (MH)
- CLEAN OUT (CO)
- GT — GREASE TRAP (GT)
- IRRIGATION CONTROL VALVE
- FIRE HYDRANT (FH)
- WATER VALVE (WV)
- W — WATER METER (WM)
- FIRE DEPT. CONNECTION (FDC)
- WATER VALVE MARKER
- TX — TRANSFORMER BOX (TX)
- A/C — AIR CONDITIONER (AC)
- E — ELECTRIC METER (EM)
- P — ELECTRIC UTILITY
- LIGHT POLE (LP)
- POWER POLE WITH LIGHT
- POWER POLE (PP)
- UM — UTILITY MANHOLE (UM)
- SPOTLIGHT
- G — GAS METER (GM)
- GAS VALVE (GV)
- T — TELEPHONE PEDESTAL
- COM — COMMUNICATION BOX
- TRAFFIC SIGNAL
- BOLLARD (BO)
- MB — MAIL BOX
- SIGN
- CROSSWALK SIGNAL
- X 1000.00 — SPOT ELEVATION
- CONCRETE AREA
- OVERHANG AREA
- RIP-RAP AREA
- BRICK AREA
- TREELINE

GENERAL SITE NOTES

1. ALL CONCRETE MUST BE AT 28 DAYS COMPRESSIVE STRENGTH WITH A MAXIMUM SLUMP OF 4" UNLESS NOTED OTHERWISE. ALL EXPOSED CONCRETE TO HAVE A FINE BROOM FINISH.

2. ALL MATERIALS SHALL BE NEW UNLESS USED/SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER.

3. DIMENSIONS TO EDGE OF PAVEMENT AND FACE OF BUILDING UNLESS OTHERWISE NOTED.

4. NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC, SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.

5. ALL BUFFERS AND TREE SAVE AREAS SHALL BE CLEARLY IDENTIFIED BY FLAGGING AND/OR FENCING PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

6. ANY DISCREPANCY BETWEEN ANY CONTRACT DOCUMENTS SHALL BE REFERRED TO THE ENGINEER BY THE CONTRACTOR FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.

7. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING IMPROVEMENTS AT ALL LOCATIONS WHERE PROPOSED CONSTRUCTION WILL AFFECT OR WILL BE AFFECTED BY EXISTING IMPROVEMENTS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND BEFORE COMMENCEMENT OF CONSTRUCTION.

8. MAINTAIN SAFE WORKING CONDITIONS 24 HOURS PER DAY, 7 DAYS PER WEEK DURING ALL PHASES OF CONSTRUCTION.

9. SEE SHEETS 21 AND 22 FOR EROSION AND SEDIMENT CONTROL NOTES.

10. THIS PLAN SET WAS PREPARED WITHOUT THE BENEFIT OF A SOIL REPORT AND HAS BEEN PRODUCED ON MUTUALLY AGREED UPON ASSUMPTIONS.

CLEARING, GRUBBING AND ROUGH GRADING

A. PROTECTION

1. LOCATE, IDENTIFY, AND PROTECT UTILITIES INDICATED TO REMAIN, FROM DAMAGE.

2. PROTECT TREES, PLANT GROWTH, AND FEATURES DESIGNATED TO REMAIN, AS FINAL LANDSCAPING.

3. PROTECT BENCH MARKS, SURVEY CONTROL POINTS, AND EXISTING STRUCTURES FROM DAMAGE OR DISPLACEMENT.

B. CLEARING

1. CLEAR AREAS REQUIRED FOR ACCESS TO SITE AND EXECUTION OF WORK TO MINIMUM DEPTH OF 12 INCHES.

2. REMOVE TREES AND SHRUBS WITHIN LIMITS OF DISTURBANCE AREAS.

3. CLEAR UNDERGROWTH AND DEADWOOD, WITHOUT DISTURBING SUBSOIL.

C. REMOVAL

1. REMOVE DEBRIS, ROCK, AND EXTRACTED PLANT LIFE FROM SITE.

2. REMOVE PAVING, CURBS, RAILS, STEEL STRUCTURES, AND CONCRETE STRUCTURES AS INDICATED ON PLANS.

3. DO NOT BURN OR BURY MATERIALS ON SITE. LEAVE SITE IN CLEAN CONDITION.

D. TOPSOIL EXCAVATION

1. EXCAVATE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED, RELANDSCAPED, OR REGRADED, WITHOUT MIXING WITH FOREIGN MATERIALS FOR USE IN FINISH GRADING.

2. DO NOT EXCAVATE WET TOPSOIL.

3. STOCKPILE IN AREA DESIGNATED ON SITE TO DEPTH NOT EXCEEDING 8 FEET AND PROTECT FROM EROSION. STOCKPILE MATERIAL AND COVER UNTIL DISPOSAL.

4. REMOVE EXCESS TOPSOIL NOT INTENDED FOR REUSE, FROM SITE.

E. SUBSOIL EXCAVATION

1. EXCAVATE SUBSOIL FROM AREAS TO BE FURTHER EXCAVATED, RELANDSCAPED, OR REGRADED.

2. DO NOT EXCAVATE WET SUBSOIL OR EXCAVATE AND PROCESS WET MATERIAL TO OBTAIN OPTIMUM MOISTURE CONTENT.

3. WHEN EXCAVATING THROUGH ROOTS, PERFORM WORK BY HAND AND CUT ROOTS WITH SHARP AXE.

4. REMOVE EXCESS SUBSOIL NOT INTENDED FOR REUSE, FROM SITE.

5. CONTRACTOR TO MAINTAIN DRY CONDITIONS AND DEWATER WHEN NECESSARY.

6. PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.

F. FILLING

1. FILL AREAS TO CONTOURS AND ELEVATIONS WITH UNFROZEN MATERIALS.

2. PLACE FILL MATERIAL IN CONTINUOUS LAYERS AND COMPACT.

3. FILL TO BE PLACED DURING DRY CONDITIONS AND ACCORDING TO RECOMMENDATIONS OF THE SOIL INVESTIGATION REPORT.

G. TOLERANCES

1. TOP SURFACE OF SUBGRADE: PLUS OR MINUS 2/10 FOOT FROM REQUIRED ELEVATION.

H. FIELD QUALITY CONTROL

1. PERFORM LABORATORY MATERIAL TESTS IN ACCORDANCE WITH ASTM D698.

2. PERFORM IN PLACE COMPACTION TESTS IN ACCORDANCE WITH THE FOLLOWING:

A. DENSITY TESTS: ASTM D1556, ASTM D2167, OR ASTM D2922.

B. MOISTURE TESTS: ASTM D3017.

3. WHEN TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST.

4. FREQUENCY OF TESTS: EACH 200 LINEAR FOOT ALONG TRACK AT EACH 8" LIFT.

I. SCHEDULES

1. STRUCTURAL FILL:

A. FILL TO SUBGRADE ELEVATION. 8" THICK.

B. COMPACT UNIFORMLY TO MINIMUM 95 PERCENT OF MAXIMUM DENSITY MODIFIED PROCTOR.

2. SUBSOIL FILL:

A. FILL TO SUBGRADE ELEVATION. FULL DEPTH.

B. COMPACT UNIFORMLY TO MINIMUM 95 PERCENT OF MAXIMUM DENSITY MODIFIED PROCTOR.

3. TOPSOIL FILL:

A. FILL TO SUBGRADE ELEVATION. 6" THICK.

B. COMPACT UNIFORMLY TO MINIMUM 95 PERCENT OF MAXIMUM DENSITY MODIFIED PROCTOR.

J. STOCKPILING

1. STOCKPILE MATERIALS ON SITE AT LOCATIONS DESIGNATED BY ARCHITECT/ENGINEER.

2. STOCKPILE IN SUFFICIENT QUANTITIES TO MEET PROJECT SCHEDULE AND REQUIREMENTS.

3. SEPARATE DIFFERING MATERIALS WITH DIVIDERS OR STOCKPILE APART TO PREVENT MIXING.

4. STOCKPILE TOPSOIL 8 FEET HIGH MAXIMUM.

5. PREVENT INTERMIXING OF SOIL TYPES OR CONTAMINATION.

6. DIRECT SURFACE WATER AWAY FROM STOCKPILE SITE TO PREVENT EROSION OR DETERIORATION OF MATERIALS.

7. STOCKPILE HAZARDOUS MATERIALS ON IMPERVIOUS MATERIAL AND COVER TO PREVENT EROSION AND LEACHING, UNTIL DISPOSED OF.

K. STOCKPILE CLEANUP

1. REMOVE STOCKPILE, LEAVE AREA IN CLEAN AND NEAT CONDITION. GRADE SITE SURFACE TO PREVENT FREE STANDING SURFACE WATER.

L. EARTHWORK

1. APPROXIMATE (TO BE VERIFIED BY CONTRACTOR) OF UNADJUSTED CUT / FILL QUANTITIES ARE THE FOLLOWING:

TOTAL CUT = 75,372.9 CU. YDS

TOTAL FILL = 24,336.4 CU. YDS

NET CUT = 51,036.5 CU. YDS

GRADING NOTES

1. CONTRACTOR SHALL FURNISH & MAINTAIN ALL NECESSARY BARRICADES AROUND THE WORK & SHALL PROVIDE PROTECTION AGAINST WATER DAMAGE & SOIL EROSION.

2. ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL SILT BARRIER & SEDIMENT BASIN FACILITIES ARE CONSTRUCTED. ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED & FULLY OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING.

3. ALL SLOPES SHALL BE STABILIZED WITHIN 14 DAYS.

4. COMPACTION OF THE BACK FILL OF ALL TRENCHES SHALL BE COMPACTED TO 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D698). BACK FILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED AT OR NEAR OPTIMUM MOISTURE. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5. ALL FILL MATERIAL TO BE UTILIZED ON THE PROJECT SHALL BE FREE OF ORGANIC OR OTHERWISE DELETERIOUS MATERIALS AND COMPACTED TO MINIMUM DRY DENSITIES CORRESPONDING TO 95% OF MAXIMUM DRY DENSITY AS OBTAINED BY STANDARD PROCTOR, ASTM D698 AND AT LEAST 98% OF STANDARD PROCTOR WITHIN 1 FOOT BELOW PAVEMENT SUBGRADE. FILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 6 INCHES IN COMPACTED FILL THICKNESS.

6. MAXIMUM SLOPE OF EMBANKMENT SHALL BE 2.0 FEET HORIZONTAL TO 1.0 FOOT VERTICAL.

7. PROPOSED CONTOUR INTERVALS ARE AS LABELED. ALL PROPOSED CONTOURS ARE FINISHED GRADE.

8. THE CONTRACTOR WILL ENSURE THAT POSITIVE AND ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, REPLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR REGRADING AS REQUIRED BY THE ENGINEER, EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS IN AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.

9. EXCESS EARTH CUT MATERIAL, IF ANY, SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE APPROVED TO BE PLACED ON SITE BY THE OWNER.

10. THE CONTRACTOR SHALL PROVIDE ANY EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL TESTS. ALL ARRANGEMENTS AND SCHEDULING FOR THE TESTING SHALL BE CONTRACTOR'S RESPONSIBILITY.

11. SOILS TESTING AND ON-SITE INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER. THIS ENGINEER SHALL PROVIDE COPIES OF TEST REPORTS TO THE CONTRACTOR, THE OWNER AND THE OWNER'S REPRESENTATIVE AND SHALL PROMPTLY NOTIFY THE OWNER, HIS REPRESENTATIVE AND THE CONTRACTOR SHOULD WORK PERFORMED BY THE CONTRACTOR FAIL TO MEET THESE SPECIFICATIONS. GEOTECHNICAL SERVICES TO BE PAID FOR BY CONTRACTOR.

12. GEOTECHNICAL ENGINEER TO CONFIRM SUITABILITY OF PROPOSED CROSS SECTIONS OR PREPARE REVISED SECTION BASED ON SOIL CONDITIONS.

13. UNLESS OTHERWISE NOTED ALL SPOT ELEVATION ARE FINISHED GRADE AND LOCATED AT THE LOWEST POINT WHERE PAVEMENT MEETS THE SIDEWALK OR GUTTER EDGE.

14. ALL FINISHED SURFACE GRADES, PAVED OR OTHERWISE SHALL BE CONSTRUCTED TO HAVE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS OR OTHER STRUCTURES. DRAINAGE SHALL BE DIRECTED TO THE DRAINAGE STRUCTURES INDICATED IN THE PLANS WITH NO AREAS OF STANDING WATER ALLOWED. ANY DISCREPANCIES BETWEEN THE PLANS AND POSITIVE DRAINAGE SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION. THE ENGINEER SHALL NOT BE HELD LIABLE FOR ANY DELAYS OR CHANGES DUE TO DRAINAGE PROBLEMS NOTED AFTER CONSTRUCTION OF DRAINAGE FEATURES.

15. DEWATERING SHALL BE PROVIDED AND MAINTAINED BY CONTRACTOR AT ALL TIMES DURING CONSTRUCTION, AMPLE MEANS AND DEVICES WITH WHICH TO PROMPTLY REMOVE AND PROPERLY DISPOSE OF ALL WATER FROM ANY SOURCE ENTERING THE EXCAVATIONS OR OTHER PARTS OF THE WORK AREA.

SOIL DESCRIPTIONS

MAP UNIT SYMBOL	MAP UNIT NAME
Cac	CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con	CONGAREE AND STARR SOILS.
HIE	HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD	HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES.
HSC	HIWASSEE LOAM, 2 TO 10 PERCEN.
STA	STARR FINE SANDY LOAM.

DEMOLITION NOTES

A. PROTECTION:
1. EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO CLEARING OR OTHER LAND DISTURBING ACTIVITIES. SEE SHEETS 23 AND 24 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. PERFORM DEMOLITION SO AS TO PREVENT DAMAGE TO ADJACENT IMPROVEMENTS AND FACILITIES TO REMAIN.
3. PROTECT WALLS, FLOORS, AND OTHER NEW OR EXISTING WORK FROM DAMAGE DURING DEMOLITION OPERATIONS.
4. PROTECT EXISTING SITE APPURTENANCES AND LANDSCAPING TO REMAIN.
5. DAMAGES: WITHOUT COST TO THE OWNER AND WITHOUT DELAY, REPAIR ANY DAMAGES CAUSED TO FACILITIES TO REMAIN.

B. REMOVAL & DISPOSAL OF DEMOLISHED MATERIALS:
1. ALL DEMOLISHED OR REMOVED ITEMS AND MATERIALS SHALL BE CONSIDERED SCRAP EXCEPT FOR THOSE INDICATED TO REMAIN, THOSE INDICATED TO BE RELOCATED, AND THOSE INDICATED TO BE SALVAGED,
2. CONSTRUCTION OR ITEMS INDICATED TO REMAIN SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
3. PROMPTLY DISPOSE OF MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
4. TRANSPORT MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND LEGALLY DISPOSE OF OFF-SITE.
5. OFF-SITE DISPOSAL LOCATION SHALL NOT BE WITHIN ONE-HALF MILE OF ANY PORTION OF THE PROJECT SITE OR WITHIN SIGHT OF THE PROJECT SITE.
6. DO NOT BURN REMOVED MATERIALS ON PROJECT SITE.

C. POLLUTION CONTROLS:
1. CONTROL THE SPREAD OF DUST AND DIRT WITH PRACTICAL MEANS.
2. OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS.
3. DO NOT ALLOW WATER USAGE THAT RESULTS IN FREEZING OR FLOODING.
4. DO NOT ALLOW ADJACENT IMPROVEMENTS TO REMAIN TO BECOME SOILED BY DEMOLITION OPERATIONS.

D. CLEANING:
1. REMOVE TOOLS AND EQUIPMENT. DISPOSE OF SCRAP.
2. LEAVE EXTERIOR AREAS FREE OF DEBRIS.
3. CLEAN SOIL, SMUDGES, AND DUST FROM SURFACES TO REMAIN.
4. RETURN STRUCTURES AND SURFACES TO REMAIN TO CONDITION EXISTING PRIOR TO COMMENCEMENT OF DEMOLITION.

GEORGIA811 Utilities Protection Center, Inc. — Know what's below. Call before you dig. 1-800-282-7411

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER — MEG M. MBUGUA — JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

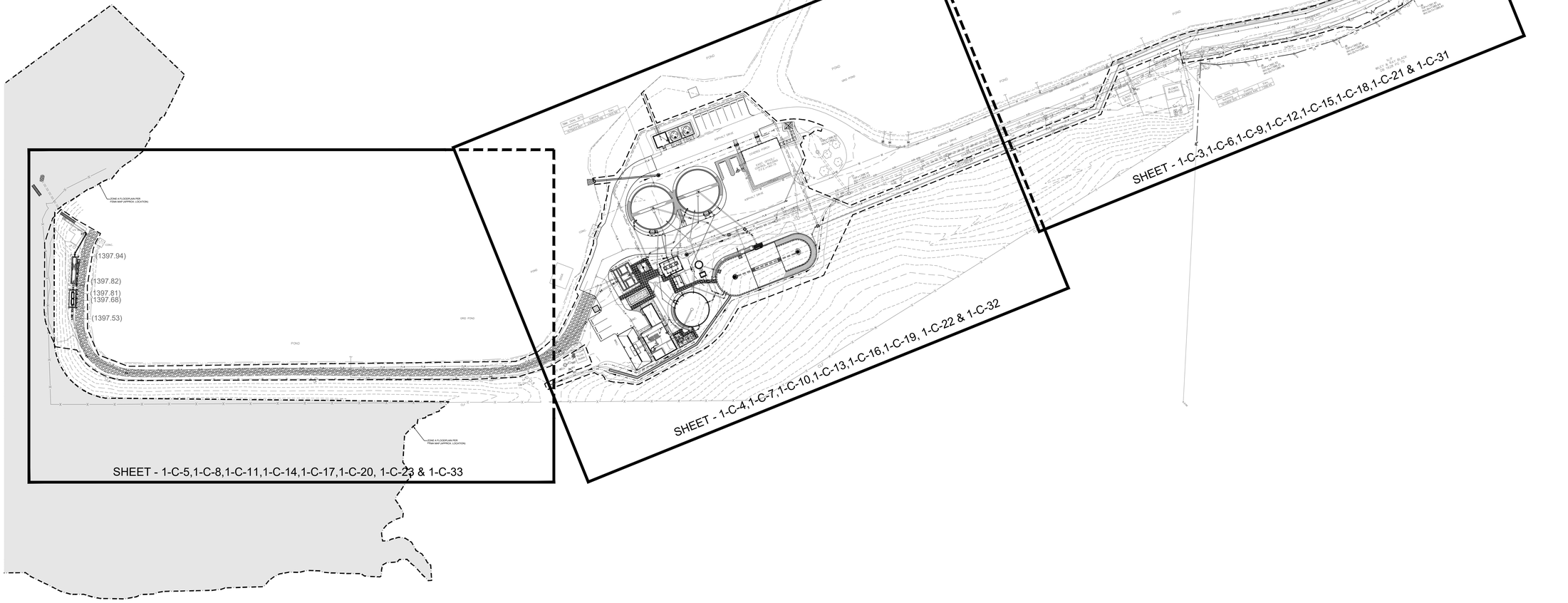
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

GENERAL NOTES AND LEGEND

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111-General Notes & Legend.dwg

Sheet No.
1-C-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-General Notes & Legend.dwg 08/01/2025 1:01pm aencarnacion



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER MEG M. MBUGUA NO. 039453 JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

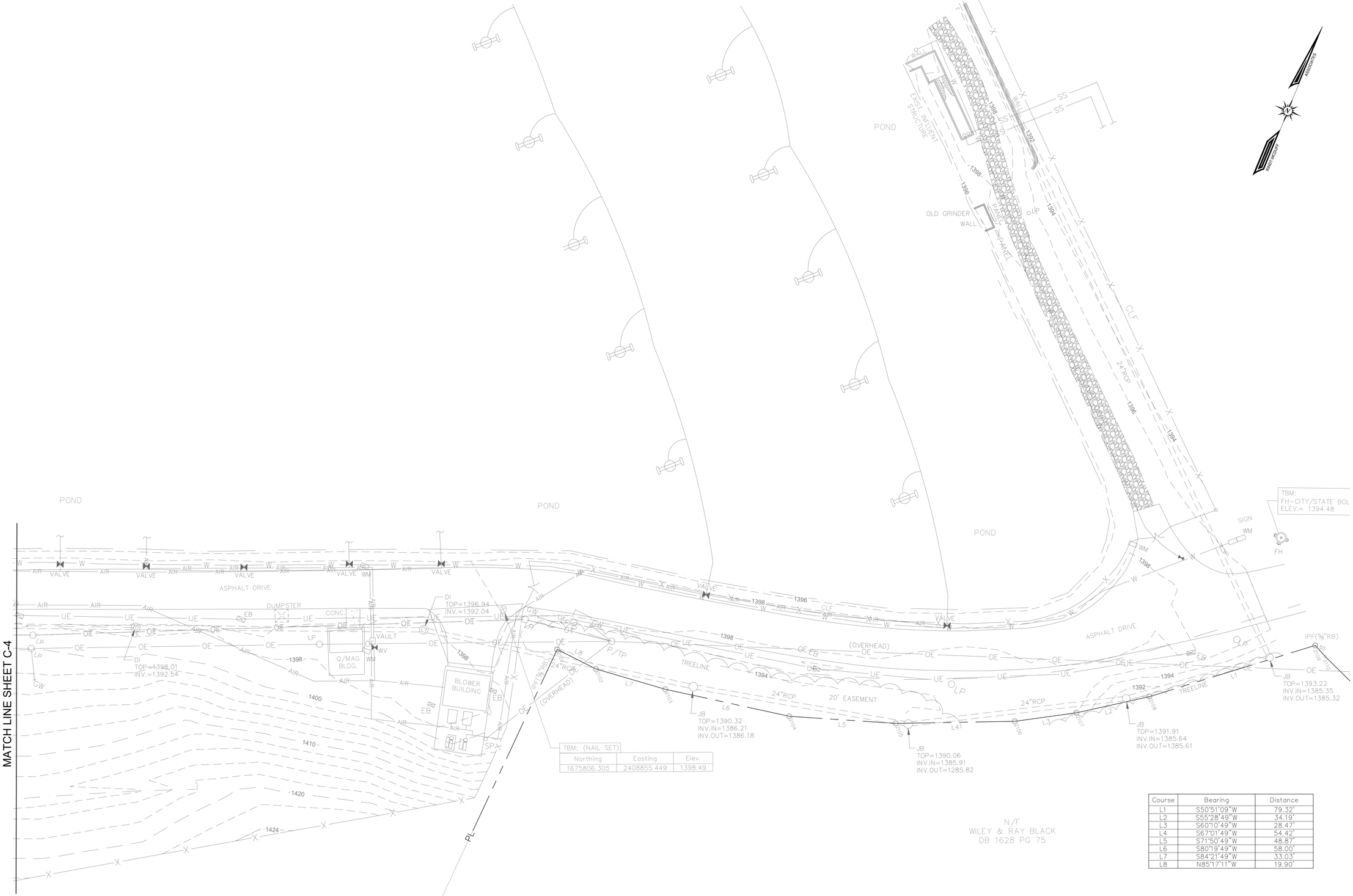
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

OVERALL SITE PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 60'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:02pm aencarnacion



TBM: (NAIL SET)

Northing	Easting	Elev.
1675806.305	2408855.449	1398.49

Course	Bearing	Distance
L1	S50°51'09"W	79.32'
L2	S55°28'49"W	34.19'
L3	S60°10'49"W	28.47'
L4	S67°01'49"W	54.42'
L5	S71°50'49"W	48.87'
L6	S80°19'49"W	58.00'
L7	S84°21'49"W	33.03'
L8	N85°17'11"W	19.90'

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING CONDITIONS PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:02pm aencarnacion

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99

POND
1398
1396
1398
1396
POND
GRID POND
1400
ASPHALT DRIVE
1400
1398
1396
COVERED PORCH
EXIST. OFFICE/
CONTROL BUILDING
F.F.E.=1401.15
SIDEWALK
SIDEWALK
W
W
WV
WV
TP
ASPHALT DRIVE
DI
TOP=1397.35
INV.=1393.93
DI
TOP=1396.92
INV.=1393.71
CONC.
POND
DOCK
GLR
VALVE
VALVE
VALVE
AIR
1398
INV.=1395.00
INV.=1398.11
1396
1398
1400
DI
TOP=1398.14
INV.=1393.23
DI
TOP=1398.45
INV.=1393.27
ASPHALT DRIVE
EB
EB
(OVERHEAD POWER/TELEPHONE)
DI
TOP=1398.05
INV.=1392.84
LP
GW
LP
LP
QT
QT
QT
QT
QW
LP
OE
OE
OE
OE
OE
OE
OE
OE
OE
OE
OE
OE
OE
OE
(OVERHEAD)
PDE
TOP=1397.81
INV.=1393.54
DRAIN
CONC.
WALL
WALL
CONC.
CONC.
VALVE
ALUM
BLDG.
WET WELL
WV
WM
WM
1400
1404
1406
1402
1410
1414
1410
1414
1420
1416
1420
1426
1424
1428
1430
1432
1434
1436
CLF
CLF
MATCH LINE SHEET C-5
MATCH LINE SHEET C-3
NORTH (GRID)
NORTH (TRUE)

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

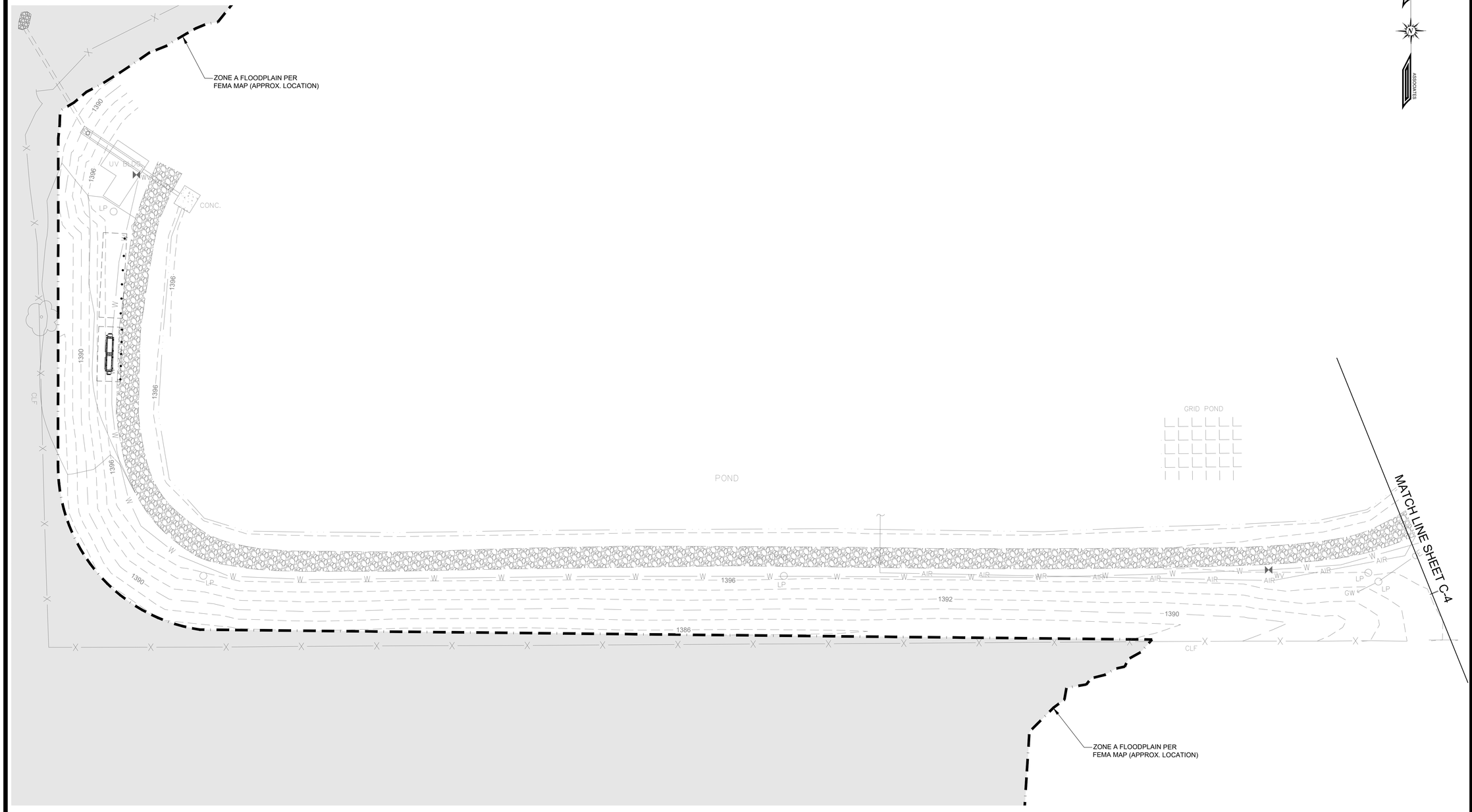
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING CONDITIONS PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-4

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:02pm aencarnacion



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.
1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING CONDITIONS PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-5

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:02pm aencarnacion

DEMOLITION NOTES

A. PROTECTION:
1. PERFORM DEMOLITION SO AS TO PREVENT DAMAGE TO ADJACENT IMPROVEMENTS AND FACILITIES TO REMAIN.
2. PROTECT NEW OR EXISTING WORK FROM DAMAGE DURING DEMOLITION OPERATIONS.
3. PROTECT EXISTING SITE APPURTENANCES AND LANDSCAPING TO REMAIN.
4. DAMAGES: WITHOUT COST TO THE OWNER AND WITHOUT DELAY, REPAIR ANY DAMAGES CAUSED TO FACILITIES TO REMAIN.
5. CONTRACTOR TO MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES.
6. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
7. CONTRACTOR TO MAINTAIN UTILITY SERVICE DURING CONSTRUCTION, WITH MINIMAL INTERRUPTION.
8. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB OR DRIVEWAYS DURING CONSTRUCTION.

B. REMOVAL & DISPOSAL OF DEMOLISHED MATERIALS:
1. ALL DEMOLISHED OR REMOVED ITEMS AND MATERIALS SHALL BE CONSIDERED SCRAP EXCEPT FOR THOSE INDICATED TO REMAIN, THOSE INDICATED TO BE REINSTALLED, THOSE INDICATED TO BE SALVAGED, AND HISTORICAL ITEMS.
2. CONSTRUCTION OR ITEMS INDICATED TO REMAIN SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
3. PROMPTLY DISPOSE OF MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
4. TRANSPORT MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND LEGALLY DISPOSE OF OFF-SITE.
5. OFF-SITE DISPOSAL LOCATION SHALL NOT BE WITHIN ONE-HALF MILE OF ANY PORTION OF THE PROJECT SITE OR WITHIN SIGHT OF THE PROJECT SITE.
6. DO NOT BURN REMOVED MATERIALS ON PROJECT SITE.

C. POLLUTION CONTROLS:
1. CONTROL THE SPREAD OF DUST AND DIRT WITH PRACTICAL MEANS.
2. OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS.
3. DO NOT ALLOW WATER USAGE THAT RESULTS IN FREEZING OR FLOODING.
4. DO NOT ALLOW ADJACENT IMPROVEMENTS TO REMAIN TO BECOME SOILED BY DEMOLITION OPERATIONS.

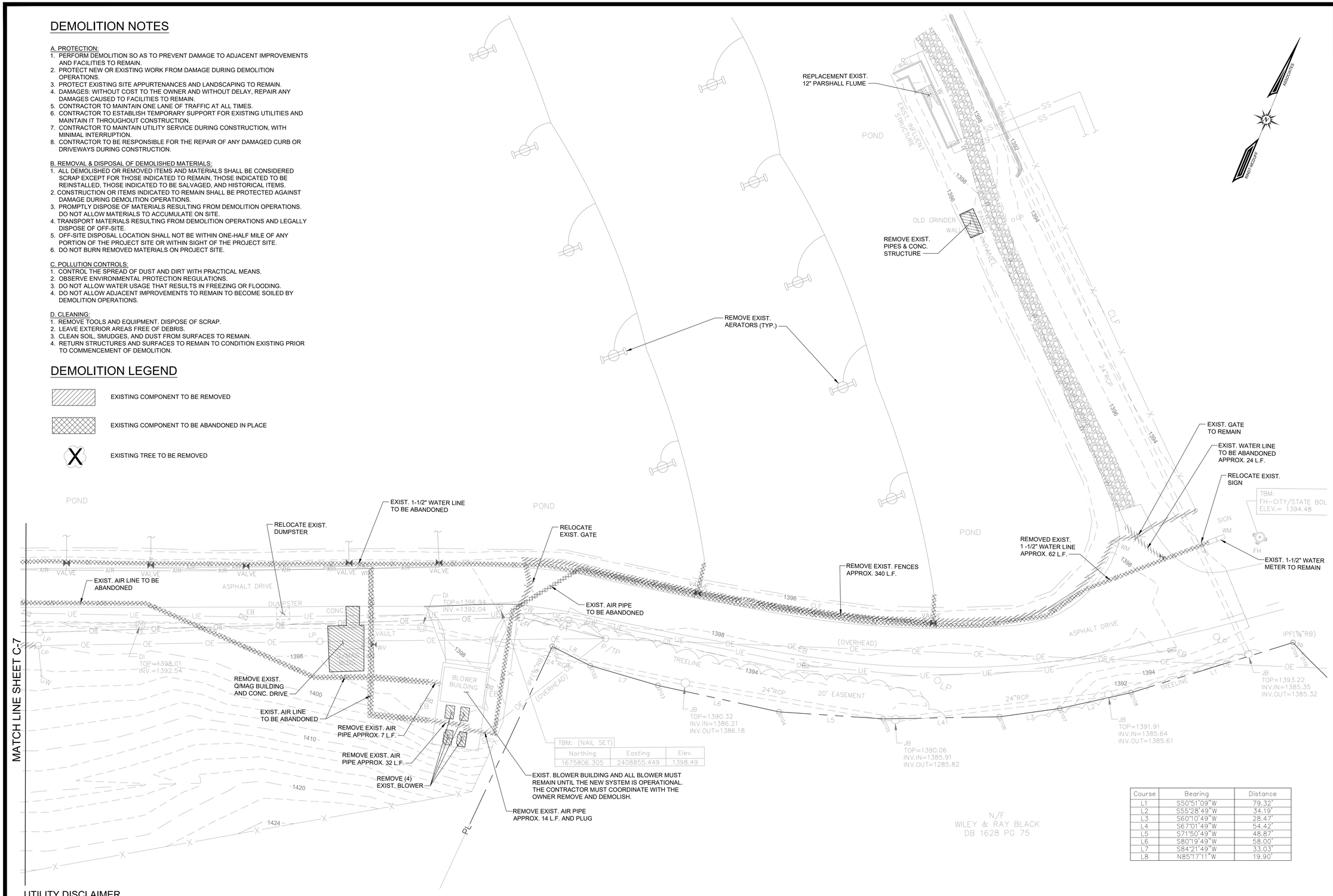
D. CLEANING:
1. REMOVE TOOLS AND EQUIPMENT. DISPOSE OF SCRAP.
2. LEAVE EXTERIOR AREAS FREE OF DEBRIS.
3. CLEAN SOIL, SMUDGES, AND DUST FROM SURFACES TO REMAIN.
4. RETURN STRUCTURES AND SURFACES TO REMAIN TO CONDITION EXISTING PRIOR TO COMMENCEMENT OF DEMOLITION.

DEMOLITION LEGEND

EXISTING COMPONENT TO BE REMOVED

EXISTING COMPONENT TO BE ABANDONED IN PLACE

EXISTING TREE TO BE REMOVED



Course	Bearing	Distance
L1	S50°51'09"W	79.32'
L2	S55°28'49"W	34.19'
L3	S60°10'49"W	28.47'
L4	S67°01'49"W	54.42'
L5	S71°50'49"W	48.87'
L6	S80°19'49"W	58.00'
L7	S84°21'49"W	33.03'
L8	N85°17'11"W	19.90'

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

PRINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEMOLITION PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-6

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:02pm aencarnacion

DEMOLITION LEGEND

EXISTING COMPONENT TO BE REMOVED

EXISTING COMPONENT TO BE ABANDONED IN PLACE

EXISTING TREE TO BE REMOVED

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99

DEMOLITION NOTES

A. PROTECTION:
1. PERFORM DEMOLITION SO AS TO PREVENT DAMAGE TO ADJACENT IMPROVEMENTS AND FACILITIES TO REMAIN.
2. PROTECT NEW OR EXISTING WORK FROM DAMAGE DURING DEMOLITION OPERATIONS.
3. PROTECT EXISTING SITE APPURTENANCES AND LANDSCAPING TO REMAIN.
4. DAMAGES: WITHOUT COST TO THE OWNER AND WITHOUT DELAY, REPAIR ANY DAMAGES CAUSED TO FACILITIES TO REMAIN.
5. CONTRACTOR TO MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES.
6. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
7. CONTRACTOR TO MAINTAIN UTILITY SERVICE DURING CONSTRUCTION, WITH MINIMAL INTERRUPTION.
8. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB OR DRIVEWAYS DURING CONSTRUCTION.

B. REMOVAL & DISPOSAL OF DEMOLISHED MATERIALS:
1. ALL DEMOLISHED OR REMOVED ITEMS AND MATERIALS SHALL BE CONSIDERED SCRAP EXCEPT FOR THOSE INDICATED TO REMAIN, THOSE INDICATED TO BE REINSTALLED, THOSE INDICATED TO BE SALVAGED, AND HISTORICAL ITEMS.
2. CONSTRUCTION OR ITEMS INDICATED TO REMAIN SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
3. PROMPTLY DISPOSE OF MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
4. TRANSPORT MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND LEGALLY DISPOSE OF OFF-SITE.
5. OFF-SITE DISPOSAL LOCATION SHALL NOT BE WITHIN ONE-HALF MILE OF ANY PORTION OF THE PROJECT SITE OR WITHIN SIGHT OF THE PROJECT SITE.
6. DO NOT BURN REMOVED MATERIALS ON PROJECT SITE.

C. POLLUTION CONTROLS:
1. CONTROL THE SPREAD OF DUST AND DIRT WITH PRACTICAL MEANS.
2. OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS.
3. DO NOT ALLOW WATER USAGE THAT RESULTS IN FREEZING OR FLOODING.
4. DO NOT ALLOW ADJACENT IMPROVEMENTS TO REMAIN TO BECOME SOILED BY DEMOLITION OPERATIONS.

D. CLEANING:
1. REMOVE TOOLS AND EQUIPMENT. DISPOSE OF SCRAP.
2. LEAVE EXTERIOR AREAS FREE OF DEBRIS.
3. CLEAN SOIL, SMUDGES, AND DUST FROM SURFACES TO REMAIN.
4. RETURN STRUCTURES AND SURFACES TO REMAIN TO CONDITION EXISTING PRIOR TO COMMENCEMENT OF DEMOLITION.

REMOVE EXIST. ASPHALT PAVEMENT PARTIAL AREA
REMOVE EXIST. INLET STRUCTURE
REMOVE EXIST. 24" RCP APPROX. 49'
EXIST. AIR LINE TO BE REMOVED (CONTRACTOR VERIFY LOCATION IN FIELD)
EXIST. WATER LINE TO REMAIN (CONTRACTOR VERIFY LOCATION IN FIELD)
EXIST. TELEPHONE POLE TO REMAIN
EXIST. 1-1/2" WATER LINE TO BE ABANDONED
EXIST. AIR LINE TO BE ABANDONED
EXIST. TELEPHONE LINE TO REMAIN
EXIST. AIR LINE TO BE ABANDONED (CONTRACTOR VERIFY LOCATION IN FIELD)
EXIST. AIR LINE TO BE REMOVED (CONTRACTOR VERIFY LOCATION IN FIELD)
EXIST. INLET STRUCTURE TO BE RELOCATED
REMOVE EXIST. 12" CMP APPROX. 48'
EXIST. 1 1/2" WATER LINE TO BE ABANDONED
RELOCATE EXIST. LIGHT POLES
EXIST. LIGHT POLE TO REMAIN
REMOVE EXIST. GRID POND
RELOCATE EXIST. POWER LINE
REMOVE EXIST. CONCRETE SLAB
RELOCATE EXIST. POWER LINE
EXIST. ALUM BLDG. TO REMAIN
REMOVE EXIST. RETAINING WALL
MATCH LINE SHEET C-8
MATCH LINE SHEET C-6

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEMOLITION PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-7

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:03pm aencarnacion

DEMOLITION NOTES

A. PROTECTION:
1. PERFORM DEMOLITION SO AS TO PREVENT DAMAGE TO ADJACENT IMPROVEMENTS AND FACILITIES TO REMAIN.
2. PROTECT NEW OR EXISTING WORK FROM DAMAGE DURING DEMOLITION OPERATIONS.
3. PROTECT EXISTING SITE APPURTENANCES AND LANDSCAPING TO REMAIN.
4. DAMAGES: WITHOUT COST TO THE OWNER AND WITHOUT DELAY, REPAIR ANY DAMAGES CAUSED TO FACILITIES TO REMAIN.
5. CONTRACTOR TO MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES.
6. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
7. CONTRACTOR TO MAINTAIN UTILITY SERVICE DURING CONSTRUCTION, WITH MINIMAL INTERRUPTION.
8. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB OR DRIVEWAYS DURING CONSTRUCTION.

B. REMOVAL & DISPOSAL OF DEMOLISHED MATERIALS:
1. ALL DEMOLISHED OR REMOVED ITEMS AND MATERIALS SHALL BE CONSIDERED SCRAP EXCEPT FOR THOSE INDICATED TO REMAIN, THOSE INDICATED TO BE REINSTALLED, THOSE INDICATED TO BE SALVAGED, AND HISTORICAL ITEMS.
2. CONSTRUCTION OR ITEMS INDICATED TO REMAIN SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
3. PROMPTLY DISPOSE OF MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
4. TRANSPORT MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND LEGALLY DISPOSE OF OFF-SITE.
5. OFF-SITE DISPOSAL LOCATION SHALL NOT BE WITHIN ONE-HALF MILE OF ANY PORTION OF THE PROJECT SITE OR WITHIN SIGHT OF THE PROJECT SITE.
6. DO NOT BURN REMOVED MATERIALS ON PROJECT SITE.

C. POLLUTION CONTROLS:
1. CONTROL THE SPREAD OF DUST AND DIRT WITH PRACTICAL MEANS.
2. OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS.
3. DO NOT ALLOW WATER USAGE THAT RESULTS IN FREEZING OR FLOODING.
4. DO NOT ALLOW ADJACENT IMPROVEMENTS TO REMAIN TO BECOME SOILED BY DEMOLITION OPERATIONS.

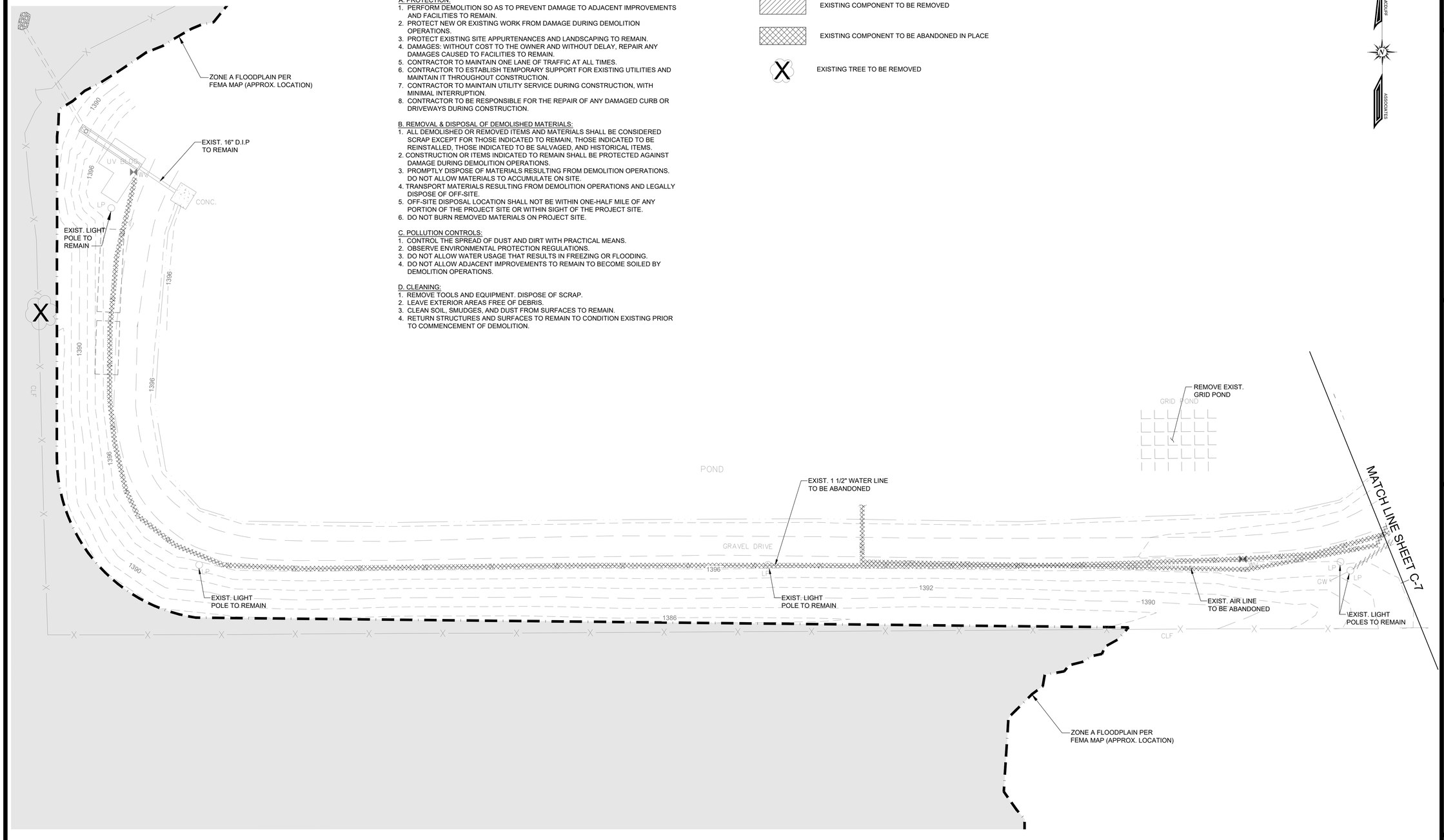
D. CLEANING:
1. REMOVE TOOLS AND EQUIPMENT. DISPOSE OF SCRAP.
2. LEAVE EXTERIOR AREAS FREE OF DEBRIS.
3. CLEAN SOIL, SMUDGES, AND DUST FROM SURFACES TO REMAIN.
4. RETURN STRUCTURES AND SURFACES TO REMAIN TO CONDITION EXISTING PRIOR TO COMMENCEMENT OF DEMOLITION.

DEMOLITION LEGEND

EXISTING COMPONENT TO BE REMOVED

EXISTING COMPONENT TO BE ABANDONED IN PLACE

EXISTING TREE TO BE REMOVED



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NORTH

ASSOCIATES

GEORGIA REGISTERED Meg M. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

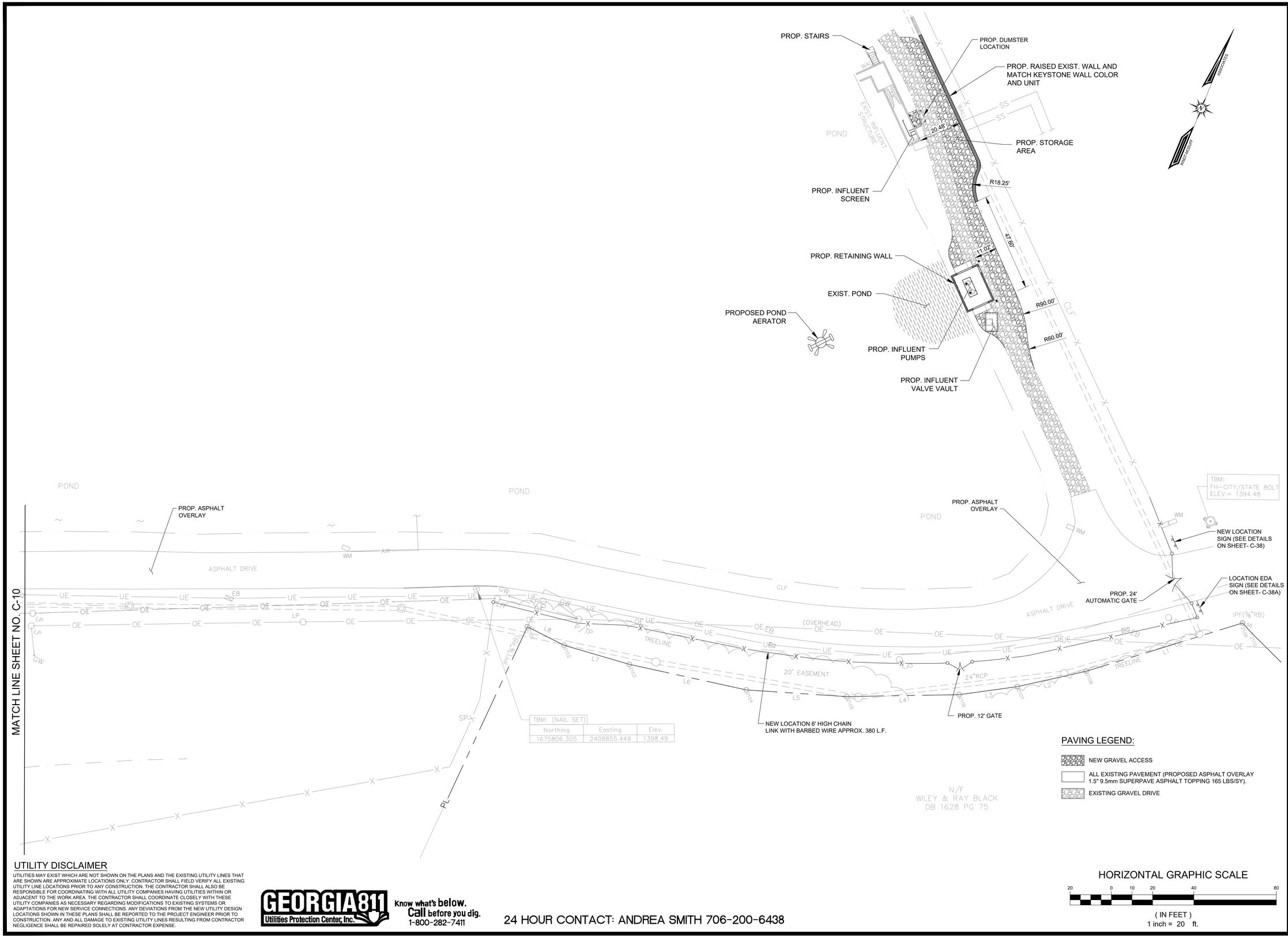
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEMOLITION PLAN

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	1" = 20'
Date:	JULY 2022
R2019-111-Design.dwg	

Sheet No.
1-C-8

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:03pm aencarnacion



GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SITE LAYOUT PLAN

Drawn: AE
Design: AE
Checked: MM
Project No. R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-9

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

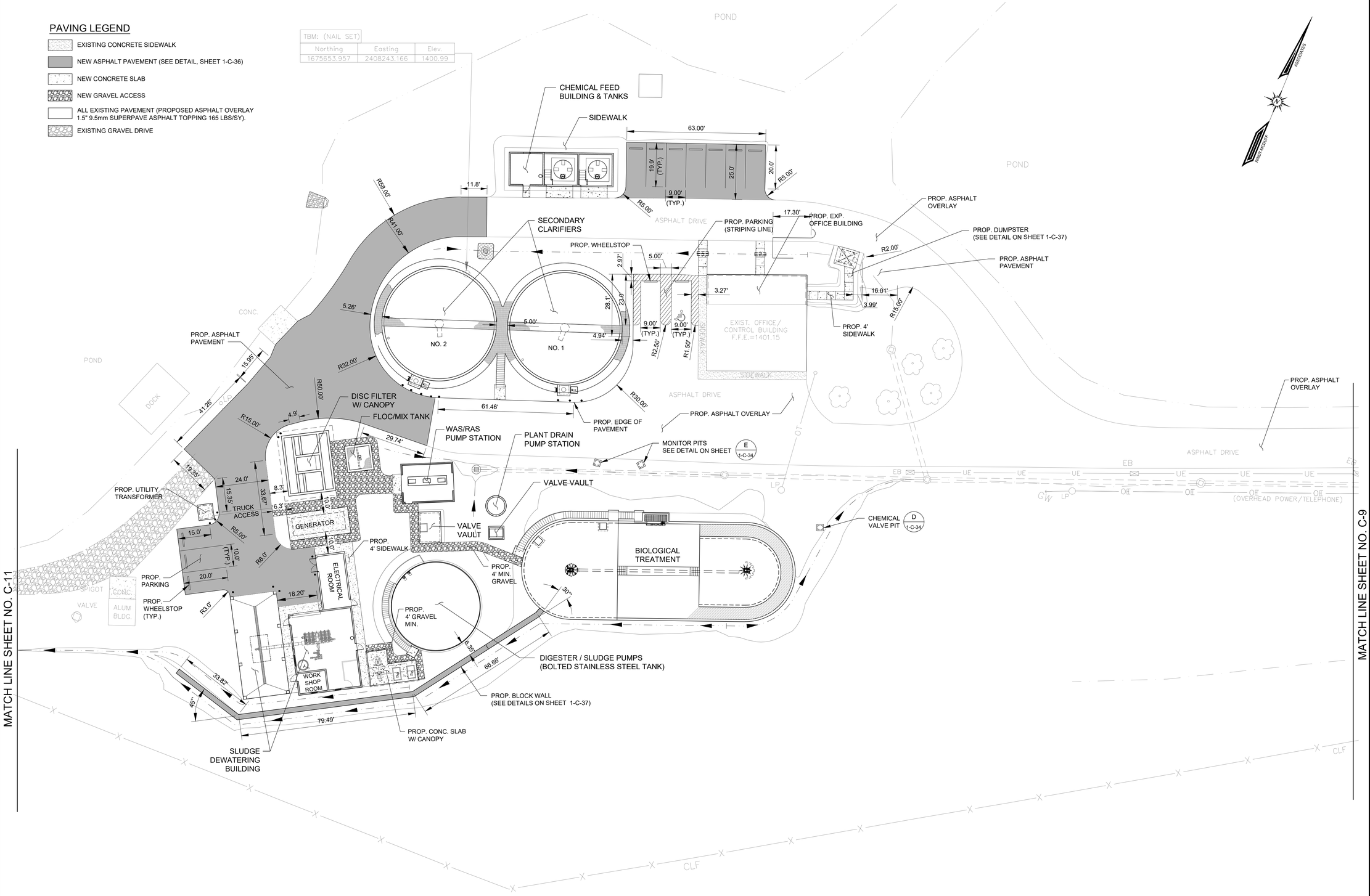
24 HOUR CONTACT: ANDREA SMITH 706-200-6438

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:03pm aencarnacion

PAVING LEGEND

- EXISTING CONCRETE SIDEWALK
- NEW ASPHALT PAVEMENT (SEE DETAIL, SHEET 1-C-36)
- NEW CONCRETE SLAB
- NEW GRAVEL ACCESS
- ALL EXISTING PAVEMENT (PROPOSED ASPHALT OVERLAY 1.5" 9.5mm SUPERPAVE ASPHALT TOPPING 165 LBS/SY).
- EXISTING GRAVEL DRIVE

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA 811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RIDGE & ASSOCIATES ENGINEERING + ENVIRONMENTAL

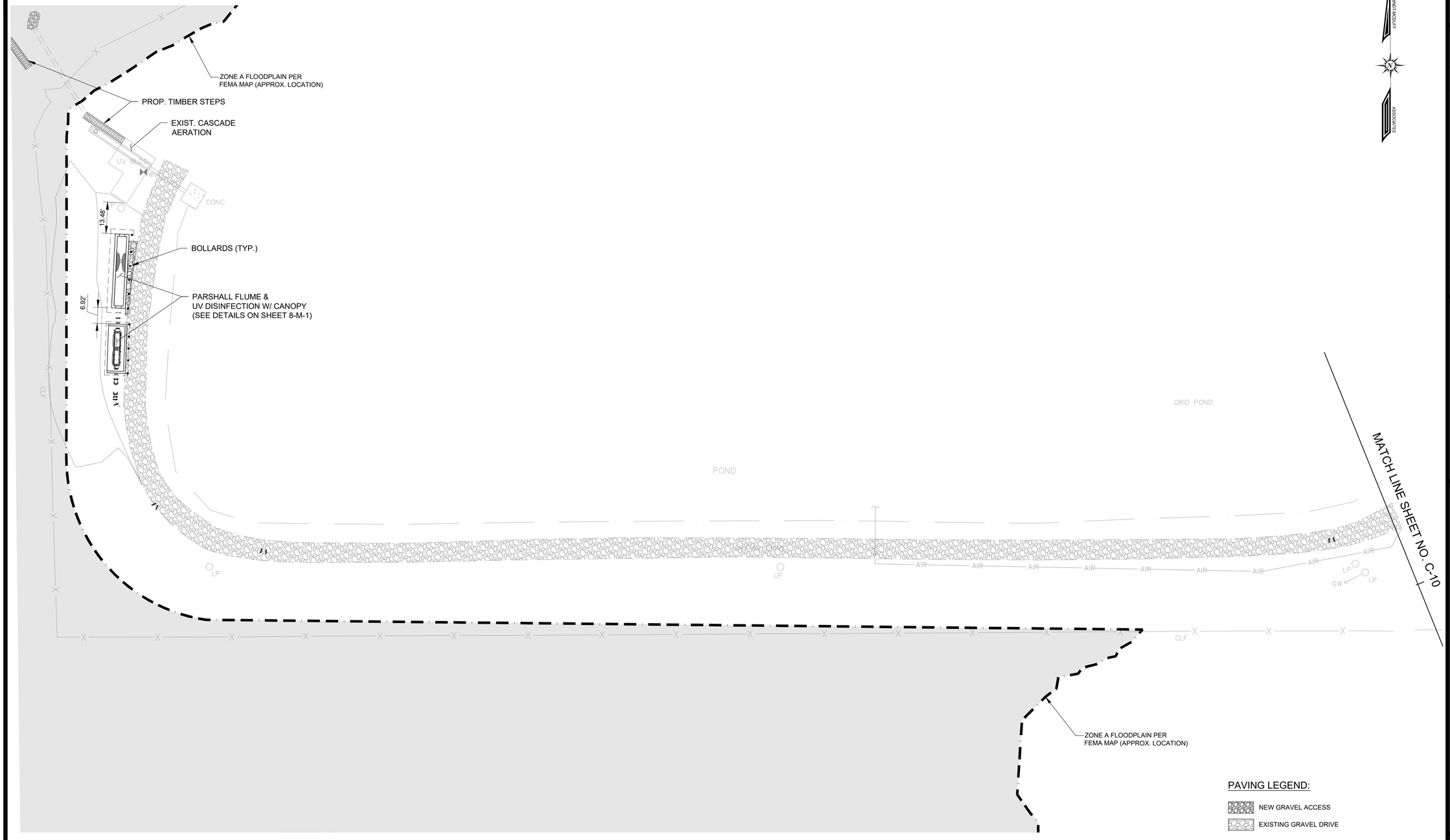
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SITE LAYOUT PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-10

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:04pm aencarnacion



PAVING LEGEND:

- NEW GRAVEL ACCESS
- EXISTING GRAVEL DRIVE

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT-MCDUFF & ASSOCIATES
ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

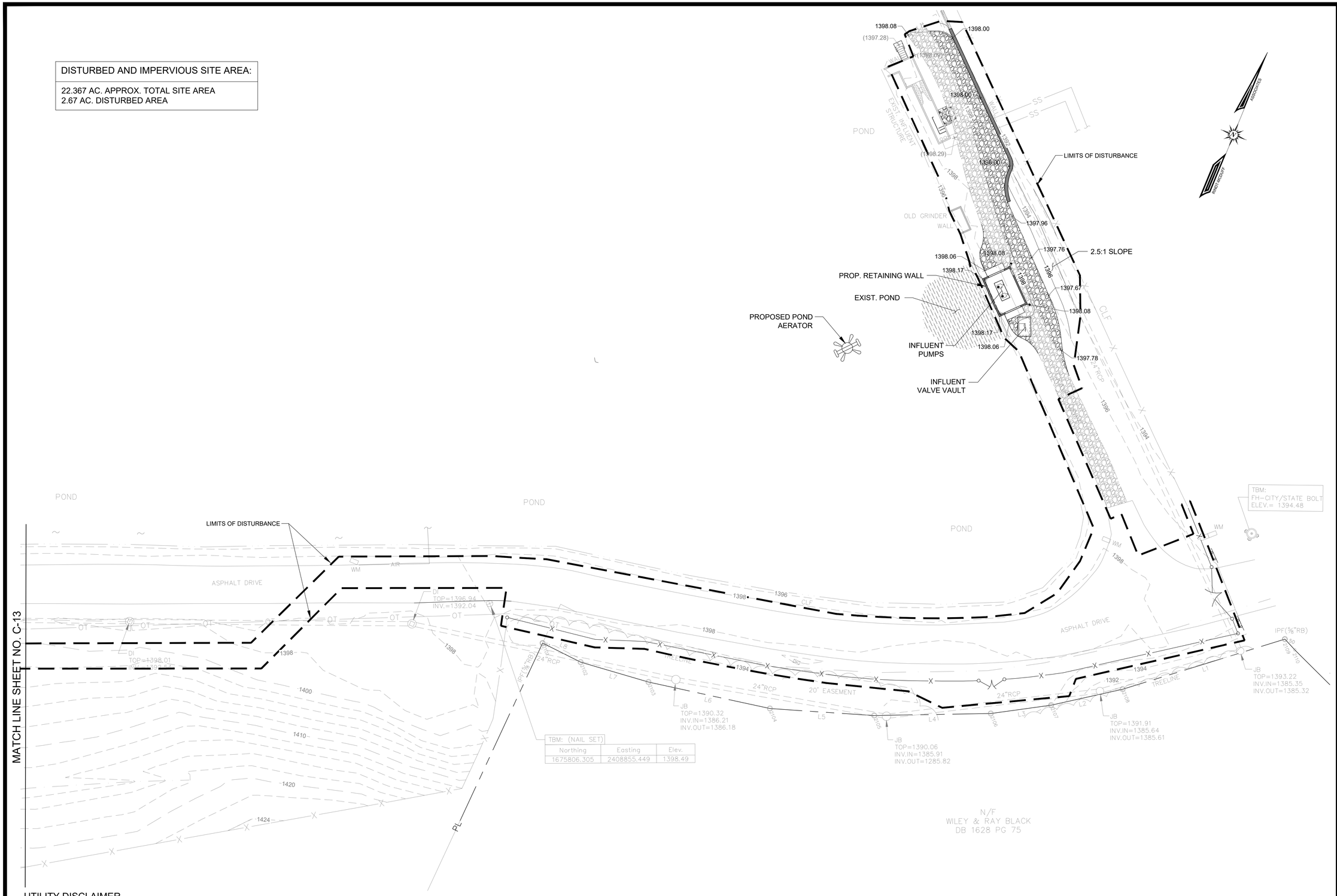
SITE LAYOUT PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-11

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:04pm aencarnacion

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA 2.67 AC. DISTURBED AREA



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINKER ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

GRADING & DRAINAGE PLAN

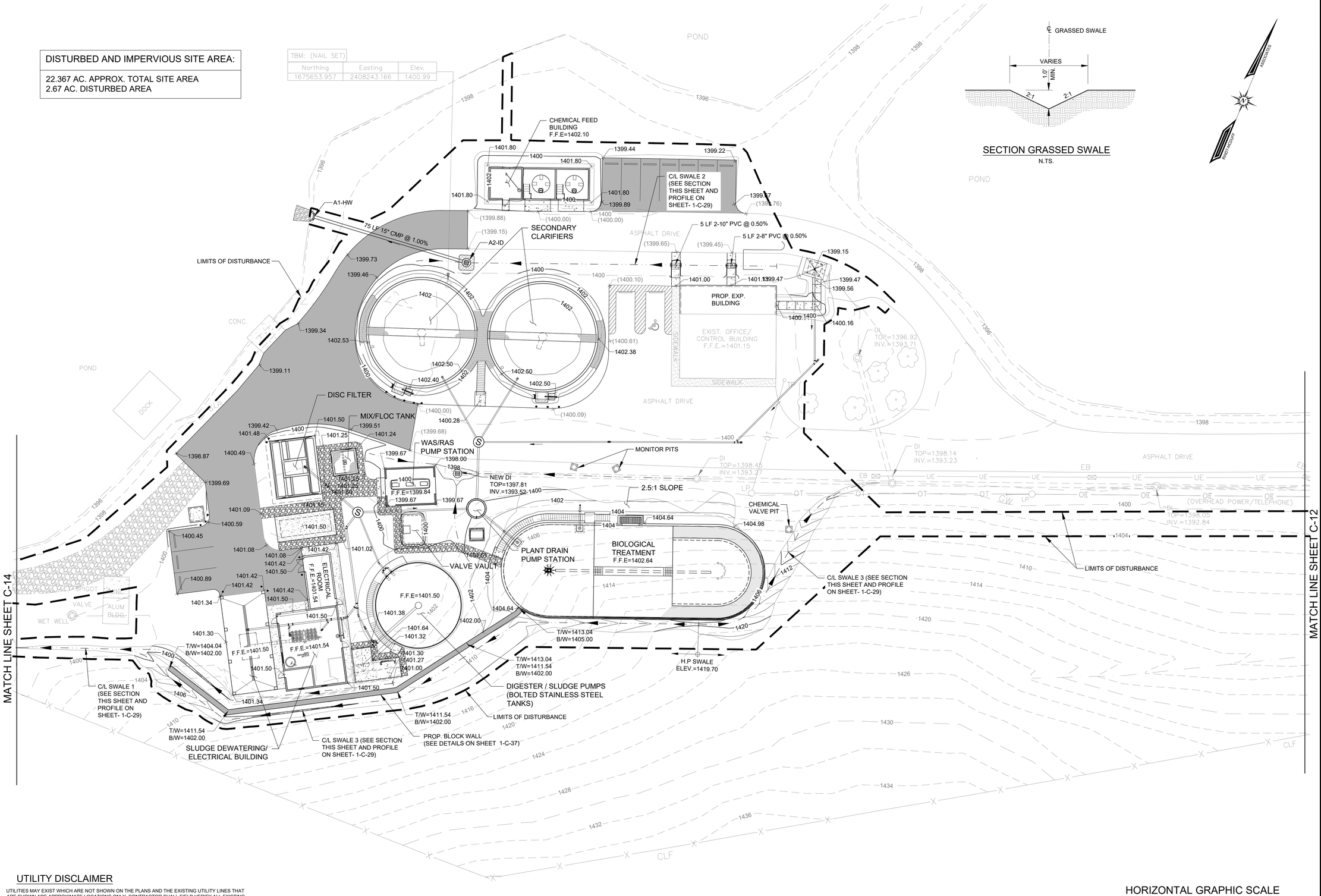
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-12

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:04pm aencarnacion

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA 2.67 AC. DISTURBED AREA

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99



SECTION GRASSED SWALE
N.T.S.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RIZZO ASSOCIATES ENGINEERING + ENVIRONMENTAL

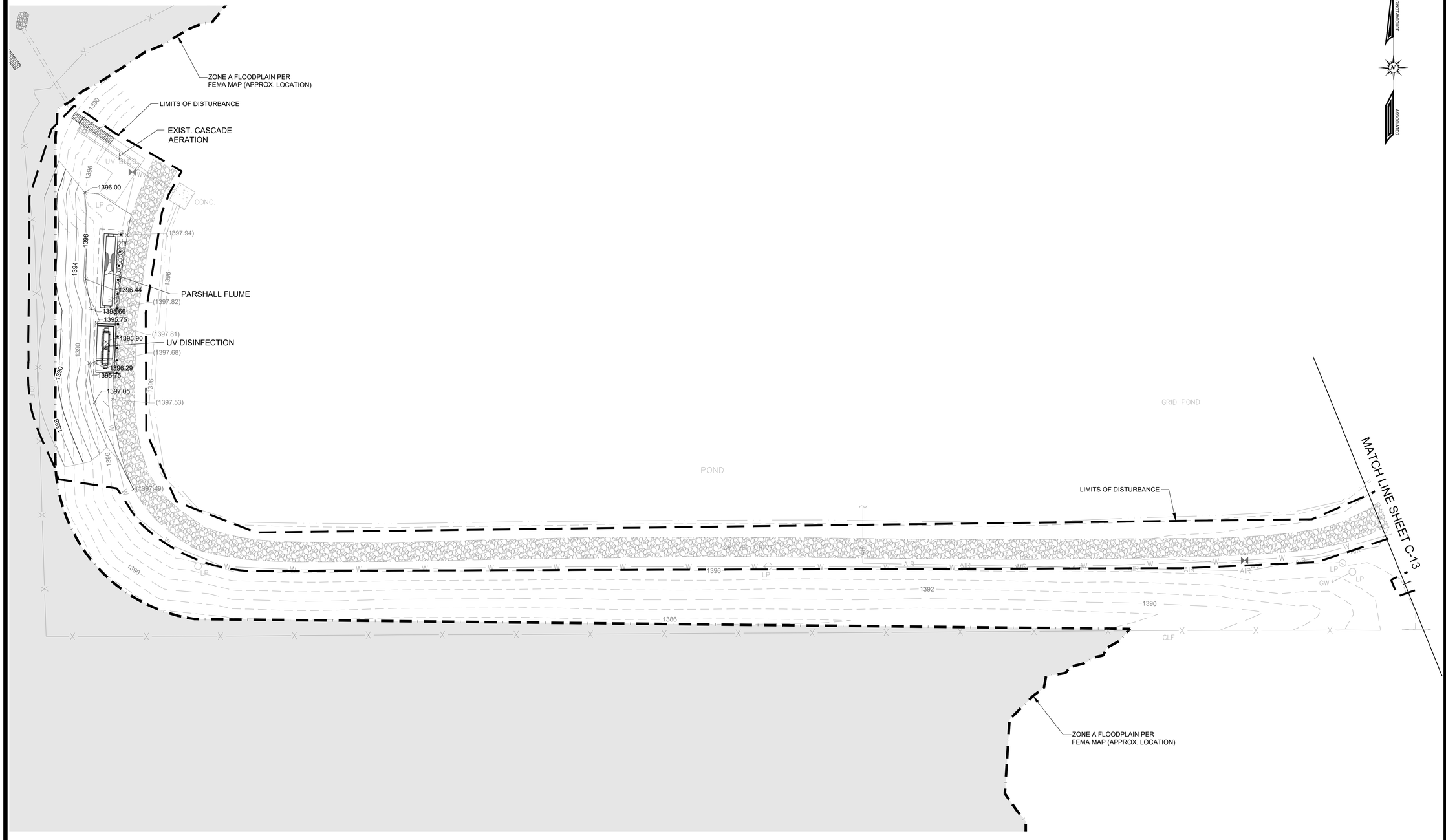
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

GRADING & DRAINAGE PLAN

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	1" = 20'
Date:	JULY 2022
R2019-111-Design.dwg	

Sheet No.
1-C-13

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:05pm aencarnacion



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.
1-800-282-7411

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA 2.67 AC. DISTURBED AREA

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER
NO. 039453
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENVIRONMENTAL ENGINEERING + ENVIRONMENTAL ASSOCIATES

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

GRADING & DRAINAGE PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-14

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:05pm aericarnacion

EROSION CONTROL LEGEND

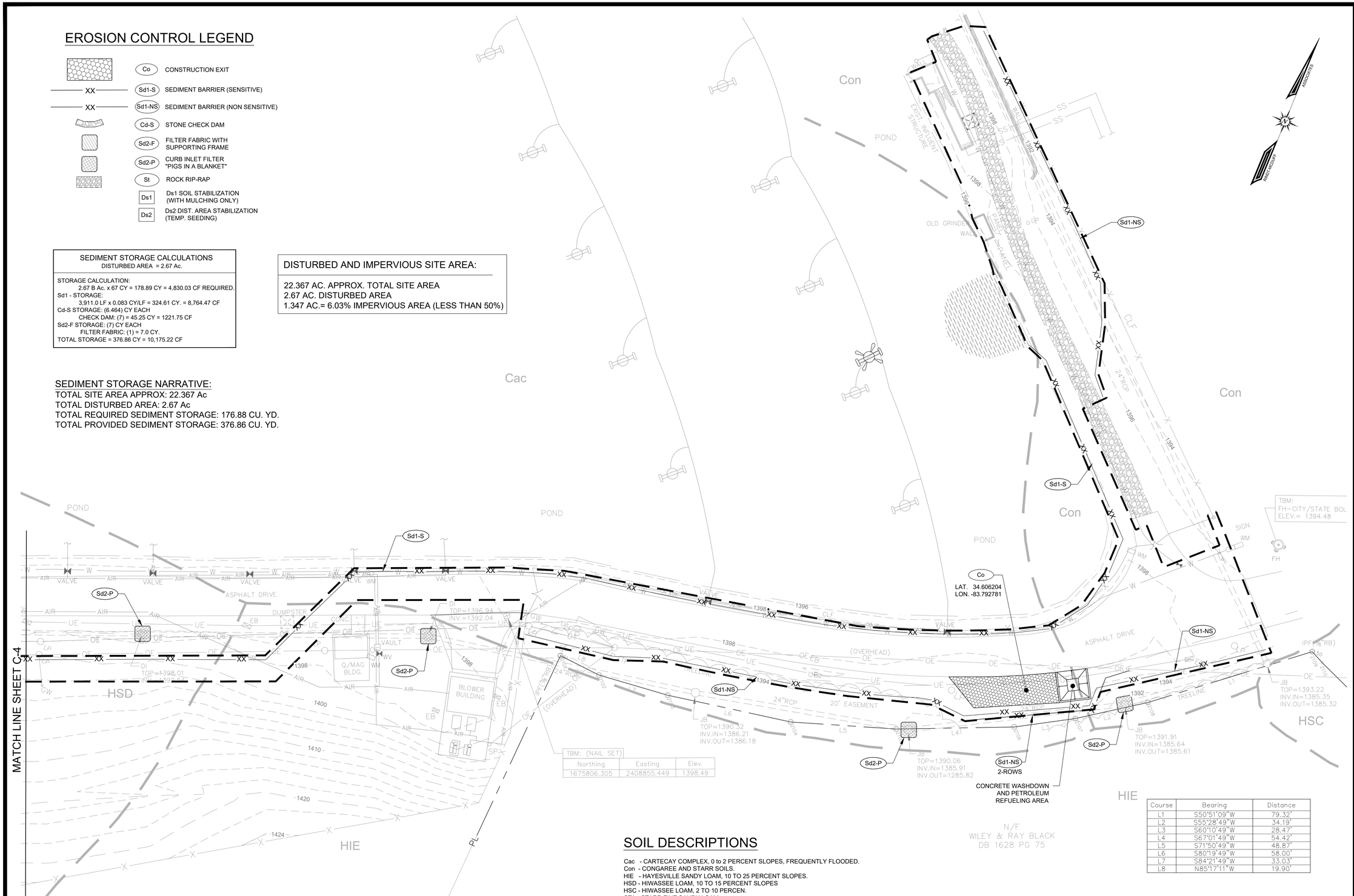
	Co	CONSTRUCTION EXIT
XX	Sd1-S	SEDIMENT BARRIER (SENSITIVE)
XX	Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
	Cd-S	STONE CHECK DAM
	Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
	Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
	St	ROCK RIP-RAP
	Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
	Ds2	Ds2 DIST. AREA STABILIZATION (TEMP. SEEDING)

SEDIMENT STORAGE CALCULATIONS
DISTURBED AREA = 2.67 Ac.

STORAGE CALCULATION:
2.67 B Ac. x 67 CY = 178.89 CY = 4,830.03 CF REQUIRED.
Sd1 - STORAGE:
3,911.0 LF x 0.083 CY/LF = 324.61 CY. = 8,764.47 CF
Cd-S STORAGE: (6.464) CY EACH
CHECK DAM: (7) = 45.25 CY = 1221.75 CF
Sd2-F STORAGE: (7) CY EACH
FILTER FABRIC: (1) = 7.0 CY.
TOTAL STORAGE = 376.86 CY = 10,175.22 CF

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA
2.67 AC. DISTURBED AREA
1.347 AC.= 6.03% IMPERVIOUS AREA (LESS THAN 50%)

SEDIMENT STORAGE NARRATIVE:
TOTAL SITE AREA APPROX: 22.367 Ac
TOTAL DISTURBED AREA: 2.67 Ac
TOTAL REQUIRED SEDIMENT STORAGE: 176.88 CU. YD.
TOTAL PROVIDED SEDIMENT STORAGE: 376.86 CU. YD.



Course	Bearing	Distance
L1	S50°51'09"W	79.32'
L2	S55°28'49"W	34.19'
L3	S60°10'49"W	28.47'
L4	S67°01'49"W	54.42'
L5	S71°50'49"W	48.87'
L6	S80°19'49"W	58.00'
L7	S84°21'49"W	33.03'
L8	N85°17'11"W	19.90'

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED MATTHEW C. MBUGUA NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL
CLEARING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-15

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:05pm aencamacion

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA 2.670 AC. DISTURBED AREA 1.347 AC.= 6.03% IMPERVIOUS AREA (LESS THAN 50%)

SEDIMENT STORAGE CALCULATIONS
DISTURBED AREA = 2.67 Ac.

STORAGE CALCULATION:
2.67 B Ac. x 67 CY = 178.89 CY = 4,830.03 CF REQUIRED.
Sd1 - STORAGE:
3,911.0 LF x 0.083 CY/LF = 324.61 CY. = 8,764.47 CF
Cd-S STORAGE: (6.464) CY EACH
CHECK DAM: (7) = 45.25 CY = 1221.75 CF
Sd2-F STORAGE: (7) CY EACH
FILTER FABRIC: (1) = 7.0 CY.
TOTAL STORAGE = 376.86 CY = 10,175.22 CF

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99

EROSION CONTROL LEGEND

	Co	CONSTRUCTION EXIT
XX	Sd1-S	SEDIMENT BARRIER (SENSITIVE)
XX	Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
	Cd-S	STONE CHECK DAM
	Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
	Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
	St	ROCK RIP-RAP
	Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
	Ds2	Ds2 DIST. AREA STABILIZATION (TEMP. SEEDING)

SEDIMENT STORAGE NARRATIVE:

TOTAL SITE AREA APPROX: 22.367 Ac
TOTAL DISTURBED AREA: 2.67 Ac
TOTAL REQUIRED SEDIMENT STORAGE: 178.89 CU. YD.
TOTAL PROVIDED SEDIMENT STORAGE: 376.86 CU. YD.

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
EROSION & SEDIMENT CONTROL CLEARING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-16

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:05pm aencarnacion

EROSION CONTROL LEGEND

Co	CONSTRUCTION EXIT
Sd1-S	SEDIMENT BARRIER (SENSITIVE)
Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
Cd-S	STONE CHECK DAM
Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
St	ROCK RIP-RAP
Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
Ds2	Ds2 DIST. AREA STABILIZATION (TEMP. SEEDING)

DISTURBED AND IMPERVIOUS SITE AREA:

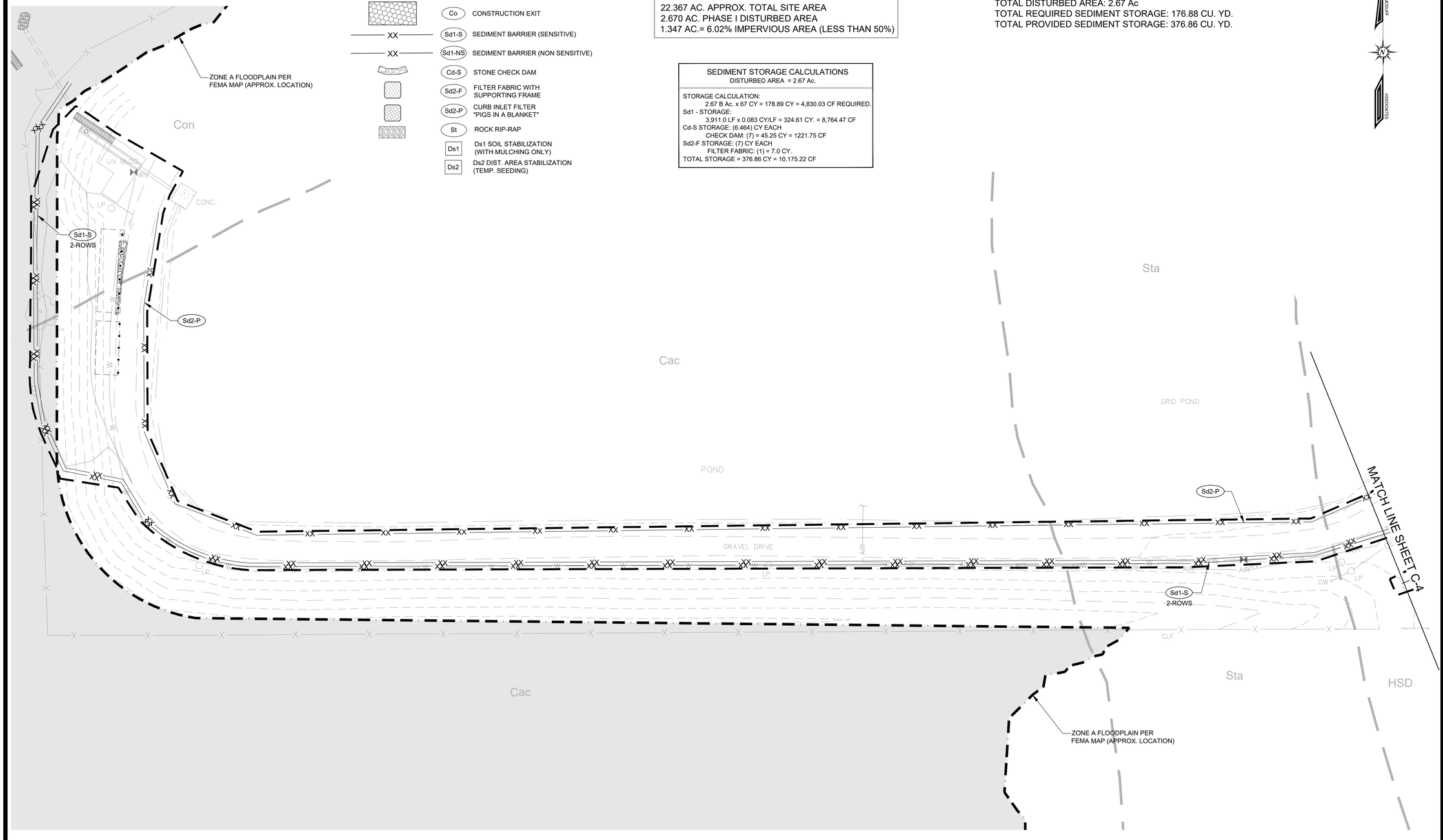
22.367 AC. APPROX. TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

SEDIMENT STORAGE CALCULATIONS
DISTURBED AREA = 2.67 Ac.

STORAGE CALCULATION:
2.67 B Ac. x 67 CY = 178.89 CY = 4,830.03 CF REQUIRED.
Sd1 - STORAGE:
3,911.0 LF x 0.083 CY/LF = 324.61 CY. = 8,764.47 CF
Cd-S STORAGE: (6.464) CY EACH
CHECK DAM: (7) = 45.25 CY = 1221.75 CF
Sd2-F STORAGE: (7) CY EACH
FILTER FABRIC: (1) = 7.0 CY.
TOTAL STORAGE = 376.86 CY = 10,175.22 CF

SEDIMENT STORAGE NARRATIVE:

TOTAL SITE AREA APPROX: 22.367 Ac
TOTAL DISTURBED AREA: 2.67 Ac
TOTAL REQUIRED SEDIMENT STORAGE: 176.88 CU. YD.
TOTAL PROVIDED SEDIMENT STORAGE: 376.86 CU. YD.



SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NORTH
NORTH
ASSOCIATES

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON CONSULTANTS, INC. ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL
CLEARING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-17

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:06pm aencarnacion

EROSION CONTROL LEGEND

	Co	CONSTRUCTION EXIT
XX	Sd1-S	SEDIMENT BARRIER (SENSITIVE)
XX	Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
	Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
	St	ROCK RIP-RAP
	Cd-S	STONE CHECK DAM
	Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
	Su	SURFACE ROUGHENING (ALL SLOPES <10')
	Du	DUST CONTROL ON DISTURBED AREAS
	Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
	Ds2	Ds2 SOIL STABILIZATION (TEMP. SEEDING)

SEDIMENT STORAGE NARRATIVE:

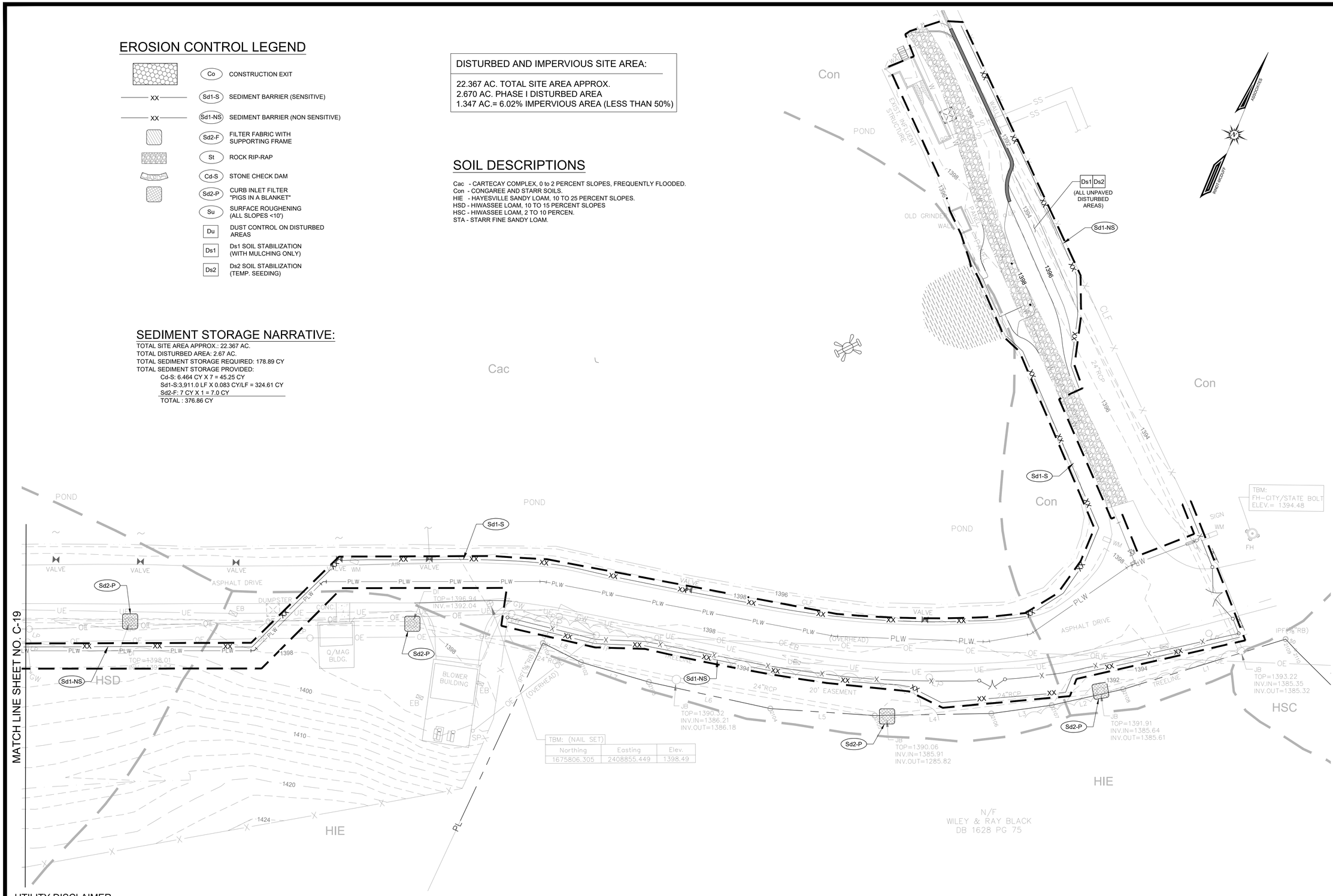
TOTAL SITE AREA APPROX.: 22.367 AC.
TOTAL DISTURBED AREA: 2.67 AC.
TOTAL SEDIMENT STORAGE REQUIRED: 178.89 CY
TOTAL SEDIMENT STORAGE PROVIDED:
Cd-S: 6.464 CY X 7 = 45.25 CY
Sd1-S:3,911.0 LF X 0.083 CY/LF = 324.61 CY
Sd2-F: 7 CY X 1 = 7.0 CY
TOTAL : 376.86 CY

DISTURBED AND IMPERVIOUS SITE AREA:

22.367 AC. TOTAL SITE AREA APPROX.
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.
1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL PLAN
GRADING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-18

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:06pm aencarnacion

SEDIMENT STORAGE NARRATIVE:

TOTAL SITE AREA APPROX.: 22.367 AC.
TOTAL DISTURBED AREA: 2.67 AC.
TOTAL SEDIMENT STORAGE REQUIRED: 178.89 CY
TOTAL SEDIMENT STORAGE PROVIDED:
Cd-S: 6.464 CY X 7 = 45.25 CY
Sd1-S:3,911.0 LF X 0.083 CY/LF = 324.61 CY
Sd2-F: 7 CY X 1 = 7.0 CY
TOTAL : 376.86 CY

DISTURBED AND IMPERVIOUS SITE AREA:

22.367 AC. APPROX. TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99

EROSION CONTROL LEGEND

Co	CONSTRUCTION EXIT
Sd1-S	SEDIMENT BARRIER (SENSITIVE)
Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
St	ROCK RIP-RAP
Cd-S	STONE CHECK DAM
Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
Su	SURFACE ROUGHENING (ALL SLOPES <10')
Du	DUST CONTROL ON DISTURBED AREAS
Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
Ds2	Ds2 SOIL STABILIZATION (TEMP. SEEDING)

ASSOCIATING
1
RIGHT-WRONG

St CALCULATIONS
Q25 = 2.33 CFS
V25 = 3.73 FT/S
La = 9'
W1= 3.75'
W2= 10.25'
d(50) = 0.5"

Ds1 Ds2 (ALL UNPAVED DISTURBED AREAS)

Sd1-S · Sd2-F · Cd-S · Du · Sd2-P · Su · Sd1-NS · 6" CO-1 · 6" CO-2 · 6" CO-3 · 6" DR-1 · MH-1 · MH-2

HSC · HSD · Cac · POND · GRID POND · ASPHALT DRIVE · CONC. · SIDE WALK · COVERED PORCH · EXIST. OFFICE/ CONTROL BUILDING F.F.E.=1401.15 · DOCK · WET WELL · VALVE · ALUM BLDG. · DI TOP=1396.92 INV.=1391.21 · DI TOP=1398.14 INV.=1393.23 · DI TOP=1398.16 INV.=1393.2 · (OVERHEAD POWER/TELEPHONE)

MATCH LINE SHEET C-20

MATCH LINE SHEET C-18

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.
1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON CONSULTANTS, INC. ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL PLAN
GRADING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-19

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:06pm aencarnacion

EROSION CONTROL LEGEND

Co	CONSTRUCTION EXIT
Sd1-S	SEDIMENT BARRIER (SENSITIVE)
Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
Sd2-F	FILTER FABRIC WITH SUPPORTING FRAME
St	ROCK RIP-RAP
Cd-S	STONE CHECK DAM
Sd2-P	CURB INLET FILTER "PIGS IN A BLANKET"
Su	SURFACE ROUGHENING (ALL SLOPES <10')
Du	DUST CONTROL ON DISTURBED AREAS
Ds1	Ds1 SOIL STABILIZATION (WITH MULCHING ONLY)
Ds2	Ds2 SOIL STABILIZATION (TEMP. SEEDING)

DISTURBED AND IMPERVIOUS SITE AREA:

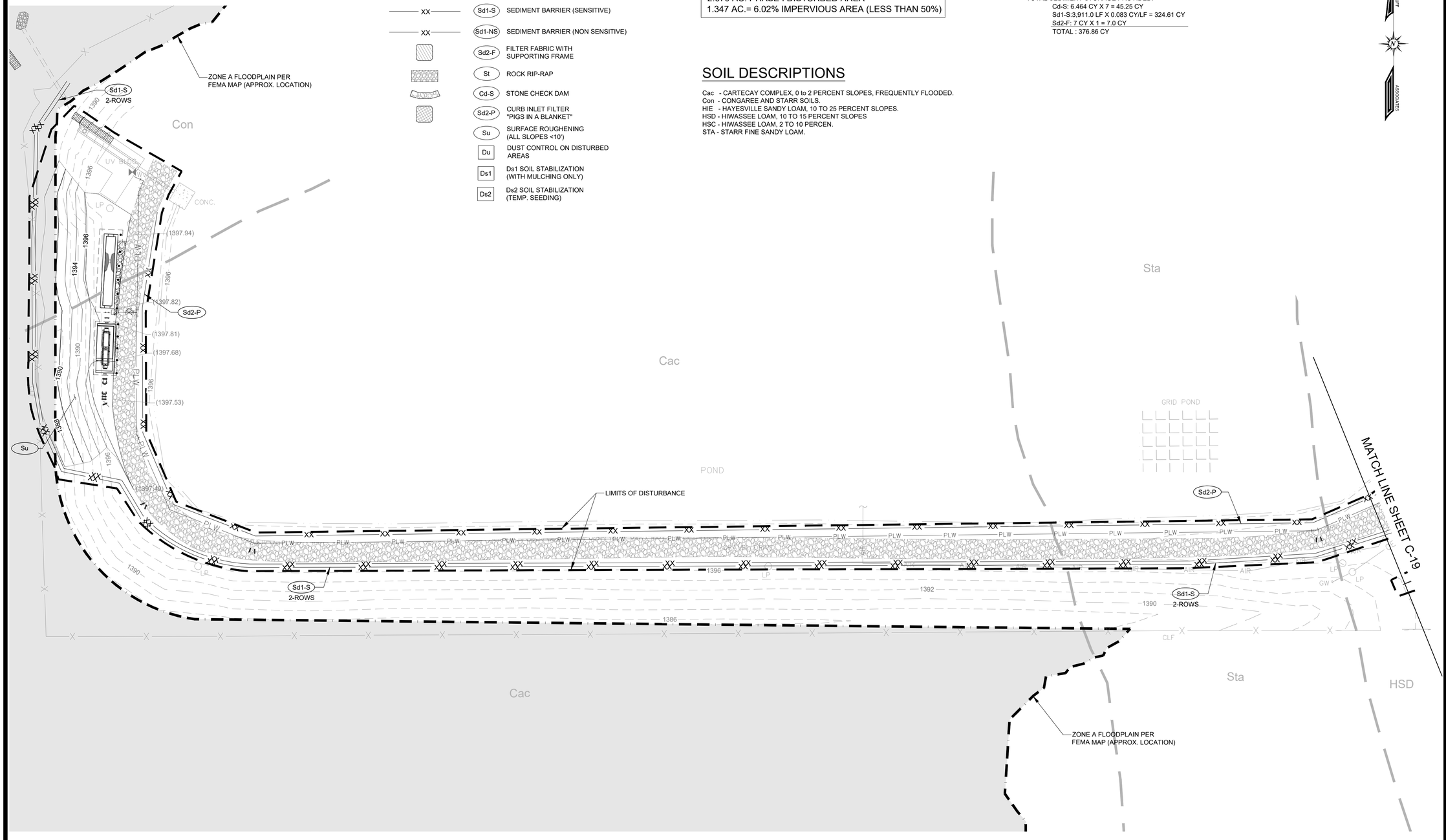
22.367 AC. APPROX.TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

SEDIMENT STORAGE NARRATIVE:

TOTAL SITE AREA APPROX.: 22.367 AC.
TOTAL DISTURBED AREA: 2.67 AC.
TOTAL SEDIMENT STORAGE REQUIRED: 178.89 CY
TOTAL SEDIMENT STORAGE PROVIDED:
Cd-S: 6.464 CY X 7 = 45.25 CY
Sd1-S:3,911.0 LF X 0.083 CY/LF = 324.61 CY
Sd2-F: 7 CY X 1 = 7.0 CY
TOTAL : 376.86 CY

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
EROSION & SEDIMENT CONTROL PLAN GRADING PHASE

Drawn: AE
Design: AE
Checked: MM
Project No. R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-20

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:06pm aencarnacion

EROSION CONTROL LEGEND

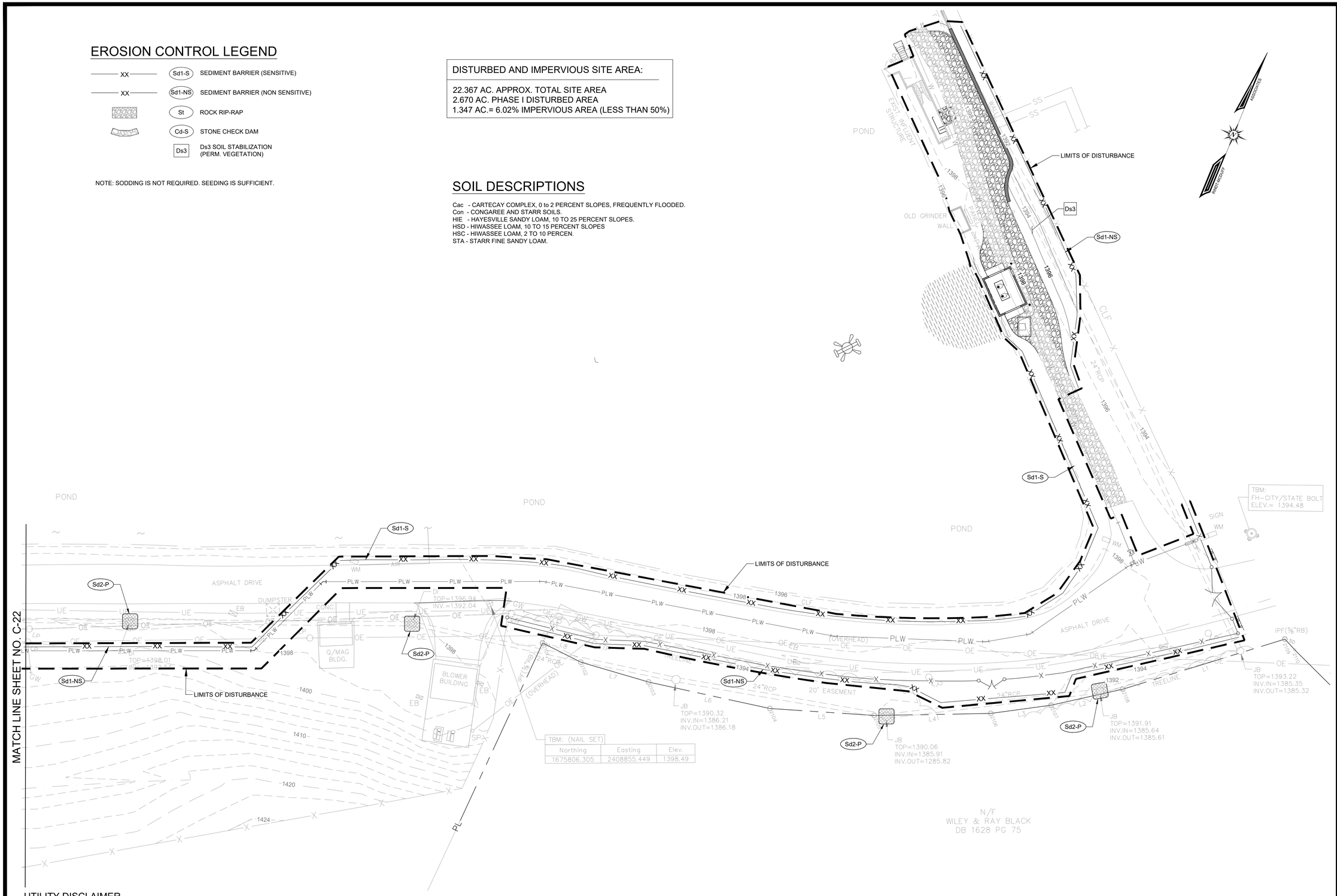
XX	Sd1-S	SEDIMENT BARRIER (SENSITIVE)
XX	Sd1-NS	SEDIMENT BARRIER (NON SENSITIVE)
	St	ROCK RIP-RAP
	Cd-S	STONE CHECK DAM
	Ds3	Ds3 SOIL STABILIZATION (PERM. VEGETATION)

NOTE: SODDING IS NOT REQUIRED. SEEDING IS SUFFICIENT.

DISTURBED AND IMPERVIOUS SITE AREA:
22.367 AC. APPROX. TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED MATTHEW C. MOORE NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL PLAN
FINAL PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-21

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:07pm aencarnacion

DISTURBED AND IMPERVIOUS SITE AREA:

22.367 AC. APPROX. TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99

SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

EROSION CONTROL LEGEND

- XX — Sd1-S — SEDIMENT BARRIER
- XX — Sd1-NS — SEDIMENT BARRIER
- St — ROCK RIP-RAP
- Cd-S — STONE CHECK DAM
- Ds3 — Ds3 SOIL STABILIZATION (PERM. VEGETATION)

NOTE: SODDING IS NOT REQUIRED. SEEDING IS SUFFICIENT.

St CALCULATIONS
Q25 = 2.33 CFS
V25 = 3.73 FT/S
La = 9'
W1= 3.75'
W2= 10.25'
d(50) = 0.5"

75 LF 15" CMP @ 1.00%
5 LF 2-10" PVC @ 0.50%
5 LF 2-8" PVC @ 0.50%
6" DR-1
6" CO-1
6" CO-2
6" CO-3
MH-1
MH-2
NEW DI
TOP=1397.81
INV.=1393.52
DI
TOP=1396.92
INV.=1393.71
DI
TOP=1398.14
INV.=1393.23
DI
TOP=1398.14
INV.=1392.84
LIMITS OF DISTURBANCE
EXIST. OFFICE/ CONTROL BUILDING F.F.E.=1401.15
COVERED PORCH
ASPHALT DRIVE
SIDEWALK
CONC.
POND
GRID POND
DOCK
WET WELL
VALVE
ALUM BLDG.
(OVERHEAD POWER/TELEPHONE)
MATCH LINE SHEET C-23
MATCH LINE SHEET C-21

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

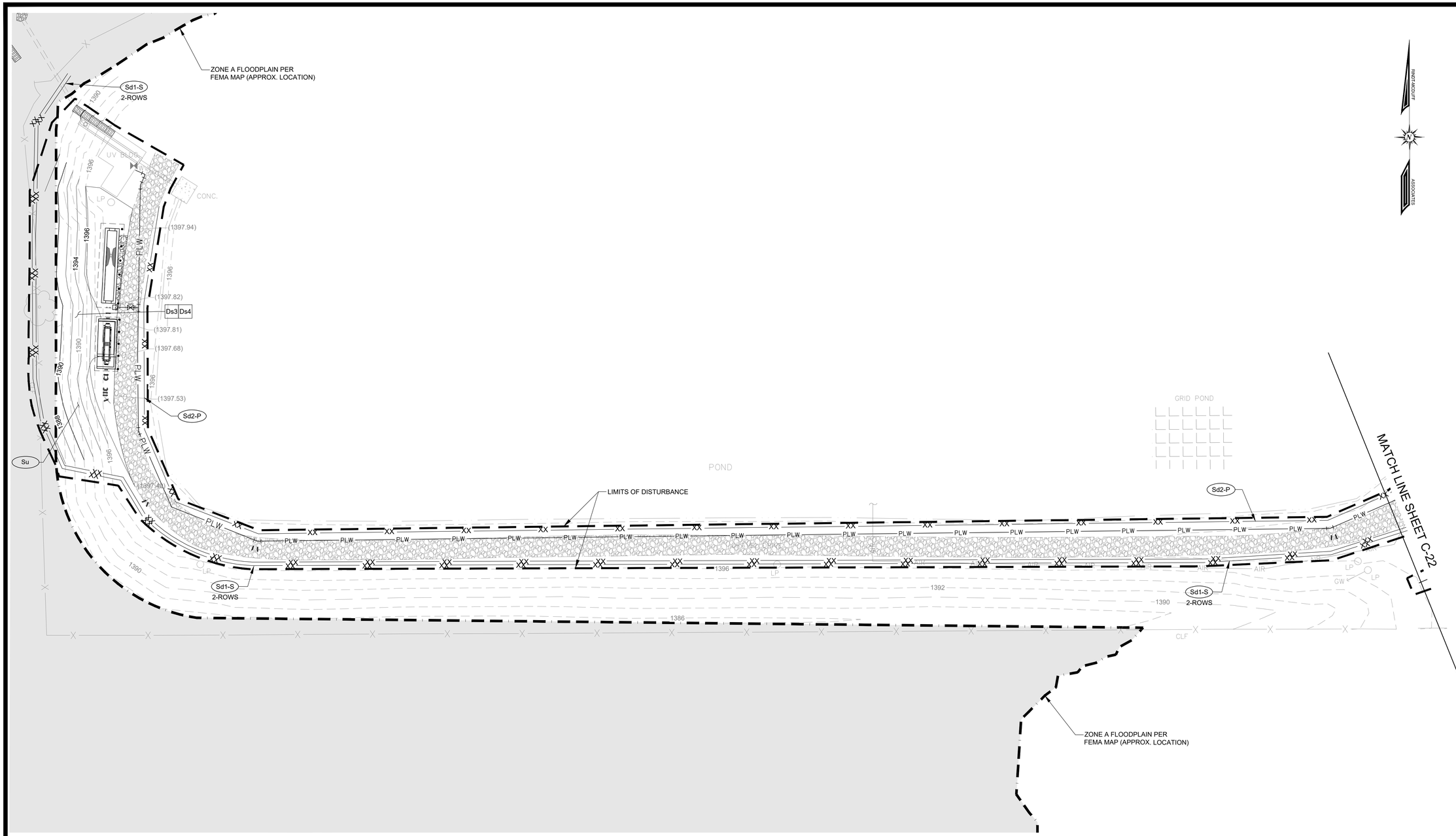
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIME CONTROL PLAN
FINAL PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-22

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:07pm aencarnacion



SOIL DESCRIPTIONS

Cac - CARTECAY COMPLEX, 0 to 2 PERCENT SLOPES, FREQUENTLY FLOODED.
Con - CONGAREE AND STARR SOILS.
HIE - HAYESVILLE SANDY LOAM, 10 TO 25 PERCENT SLOPES.
HSD - HIWASSEE LOAM, 10 TO 15 PERCENT SLOPES
HSC - HIWASSEE LOAM, 2 TO 10 PERCEN.
STA - STARR FINE SANDY LOAM.

EROSION CONTROL LEGEND

- XX — Sd1-S — SEDIMENT BARRIER
- XX — Sd1-NS — SEDIMENT BARRIER
- St — ROCK RIP-RAP
- Cd-S — STONE CHECK DAM
- Ds3 — Ds3 SOIL STABILIZATION (PERM. VEGETATION)

NOTE: SODDING IS NOT REQUIRED. SEEDING IS SUFFICIENT.

DISTURBED AND IMPERVIOUS SITE AREA:

22.367 AC. APPROX. TOTAL SITE AREA
2.670 AC. PHASE I DISTURBED AREA
1.347 AC.= 6.02% IMPERVIOUS AREA (LESS THAN 50%)

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA 811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL PLAN
FINAL PHASE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-23

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:08pm aencarnacion

SITE DESCRIPTION

A. THE DEVELOPMENT SHALL CONSIST OF THE CONSTRUCTION OF WASTEWATER TREATMENT PLANT UPGRADES LOCATED IN LAND LOT 12 OF THE 1ST DISTRICT, IN THE CITY OF CLEVELAND, WHITE COUNTY, GEORGIA.
B. THE ORDER OF MAJOR LAND DISTURBING ACTIVITIES IS INDICATED IN THE ACTIVITY SCHEDULE LOCATED ON THIS SHEET.
C. THE TOTAL SITE IS APPROX. 22.367 ACRES AND 2.67 ACRES OF THE TOTAL IS ESTIMATED TO BE DISTURBED BY EXCAVATION, GRADING OR OTHER ACTIVITIES.
D. 100 YEAR PRE-EXISTING RUNOFF = 16.97 CFS
100 YEAR POST-DEVELOPED RUNOFF = 17.71 CFS
E. DETAILED MAPPING INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES, AREA OF SOIL DISTURBANCE, AREAS TO REMAIN UNDISTURBED AND THE LOCATION OF MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS, LOCATION OF AREAS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR, ANY SURFACE WATERS (INCLUDING WETLANDS) AND LOCATIONS WHERE STORM WATER IS TO BE DISCHARGED ARE SHOWN ON ON THE GRADING AND DRAINAGE SHEET OF THESE PLANS.
F. THE RECEIVING WATER(S) IS THE TESNATEE CREEK. THE EXTENT OF WETLAND ACREAGE AT THE SITE = 0.0 ACRES. 0.12 ACRES OF THE SITE IS LOCATED IN THE 100 YEAR FLOODPLAIN.
G. THE CONSTRUCTION EXIT SHALL BE LOCATED AT THE EASTERN QUADRANT OF THE SITE ALONG A GRAVEL ROADWAY LEADING TO GA U.S. 41. THE GPS COORDINATE LOCATION = LAT. 34.606204, LON.-83.792781
H. PRE-DEVELOPED CN = 35
POST-DEVELOPED CN = 95
I. ALL REQUIREMENTS IN THE TIER 2 TMDL IMPLEMENTATION PLAN - REVISION 1 FOR TESNATEE CREEK DATED DECEMBER 31, 2004 HAVE BEEN ADDRESSED FOR THIS SITE. THERE ARE NO ADDITIONAL REQUIREMENTS TO BE MET.

CONTROLS

EROSION AND SEDIMENT CONTROLS:
STABILIZATION MEASURES: ALL DISTURBED AREAS SHALL BE STABILIZED PER THE EROSION CONTROL NOTES INDICATED ON SHEETS CONTAINED WITHIN THIS PLAN SET. ALL TEMPORARY AND PERMANENT MULCHING, FERTILIZING AND SEEDING TO COMPLY WITH THE SCHEDULES SHOWN ON SHEET THIS SHEET AND THE EROSION CONTROL DETAIL SHEET. A RECORD OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED SHALL BE KEPT BY THE CONSTRUCTION SUPERINTENDENT RESPONSIBLE FOR THE OVERALL DEVELOPMENT OF THE SITE.

STRUCTURAL PRACTICES: LOCATION OF ALL PLANNED STRUCTURAL CONTROLS ARE SHOWN ON THE THREE PHASES OF ES&PC PLANS CONTAINED WITHIN THIS PLAN SET. ADDITIONAL STRUCTURAL CONTROLS MAY BE REQUIRED THAT ARE NOT SHOWN AND SHOULD BE UTILIZED WHENEVER APPROPRIATE. ALL STRUCTURAL CONTROLS SHALL BE INSTALLED PER THE REFERENCED GSWCC MANUAL AND PER THE DETAILS SHOWN WITHIN THIS PLAN SET.

SEDIMENT BASINS: SEDIMENT BASIN(S) ARE SHOWN ON THE PHASE I AND PHASE II SHEETS OF THE ES&PC PLANS CONTAINED WITHIN THIS PLAN SET. BASIN DETAILS ARE SHOWN ON THE DETAIL SHEETS WITHIN THIS PLAN SET.

STORM WATER MANAGEMENT:
DETENTION FACILITIES ARE SHOWN ON THE GRADING AND DRAINAGE PLAN SHEET WITHIN THIS PLAN SET AND ANALYZED IN THE HYDROLOGY STUDY. DRAINAGE IS PROVIDED AND ROUTED FOR AT LEAST A MINIMUM 25 YEAR STORM FREQUENCY.

NON-STORM WATER DISCHARGES

ALL NON-STORM WATER DISCHARGES WILL BE ROUTED THROUGH ON SITE BMPs AND THE STORM WATER MANAGEMENT SYSTEM WHERE POSSIBLE. THESE DISCHARGES INCLUDE FLUSHING OF WATER AND FIRE LINES, IRRIGATION WATER, GROUND WATER DEWATERING OF PITS OR DEPRESSIONS WITHIN THE CONSTRUCTION SITE AND RINSE OFF WATER OF NON-TOXIC MATERIALS.

OTHER CONTROLS

NO WASTE WILL BE DISPOSED OF INTO STORM WATER OR WATERS OF THE STATE. EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

WASTE MATERIALS

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUESTED BY LOCAL REGULATIONS, NO CONSTRUCTION WASTE WILL BE BURIED ONSITE.

HAZARDOUS WASTES

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF THE MANNER SPECIFIED BY LOCAL, STATE AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCT. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE SUPERINTENDENT, WHO WILL ALSO BE MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE, EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING. PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THE ESPCP AND WILL TRAIN ALL PERSONAL IN THE PROPER CLEAN UP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIAL OF HAZARDOUS WASTE WILL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCUR, THE STORMWATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION EXIT HAS BEEN PROVIDED TO HELP REDUCE TRACKING OF SEDIMENT. SEE EROSION CONTROL PLANS AND DETAIL FOR CONSTRUCTION EXIT LOCATION AND CONSTRUCTION DETAILS. ANY PAVED STREET ADJACENT TO THE SITE CONSTRUCTION EXIT WILL BE COVERED WITH A TARPAULIN OR A WASH DOWN STATION UTILIZED AS APPROPRIATE FOR THE LEVEL OF SEDIMENT PRESENT.

24 HOUR CONTACT:
ANDREA SMITH
706-200-6438

SANITARY WASTES

A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL PROVIDED FOR EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BE LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO THE STORM WATER DISCHARGES IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM TO CONTRIBUTING THE STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE ES&PC PLAN PHASE II SHEET WITHIN THIS PLAN SET BY THE CONTRACTOR ONCE THE LOCATION HAS BEEN DETERMINED.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE FOLLOWING MATERIALS ARE EXPECTED ONSITE DURING CONSTRUCTION: CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, TAR, METAL BUILDING MATERIALS, LUMBER, SHEET ROCK, FLOOR COVERINGS, ELECTRICAL WIRE AND FIXTURES, PAINTS/STAINS/FINISHING TREATMENTS, POINTS, POINTS SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, CLEANING SOLVENTS, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, PLASTIC AND METAL PIPES.

SPILL PREVENTION

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISK OF SPILLS AND SUBSEQUENT DISCHARGE INTO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

1. QUANTITIES OF PRODUCTS STORED ONSITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.
2. PRODUCTS AND MATERIALS WILL BE STORED IN THE NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER LABELS LEGIBLE AND VISIBLE.
4. PRODUCT MIXING AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.

PRODUCT SPECIFIC PRACTICES

PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BE LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT AND MATERIALS USED WITH THESE PRODUCTS WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING - CLEANSING PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURES' SPECIFICATIONS OR ABOVE THE GUIDELINES SET. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.AT A MINIMUM, BUILDING MATERIALS AND PRODUCTS ON SITE SHALL BE ADEQUATELY COVERED WITH TARPAULIN TYPE PLASTIC MATERIAL TO PROVIDE PROTECTION. ALTERNATE METHODS OF COVERING/PROTECTION MAY BE APPROVED BY THE ENGINEER.

SPILL CLEANUP AND CONTROL PRACTICES

1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
4. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
5. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN IN SURFACE WATER). THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITH IN 24 HOURS AT 1-800-424-8802.
6. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
7. FOR SPILLS LESS THEN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.
8. WASHOUT OF CONCRETE DRUMS ON SITE IS PROHIBITED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1,320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A COUNTERMEASURES PLAN PREPARED BY LICENSED PROFESSIONAL.

COMPLIANCE WITH FEDERAL/STATE/LOCAL REGULATIONS

THE CONTRACTOR WILL OBTAIN COPIES OF ANY AND ALL LOCAL AND STATE REGULATIONS THAT ARE APPLICABLE TO STORM WATER MANAGEMENT, EROSION CONTROL, AND POLLUTION MINIMIZATION AT THIS JOB SITE AND WILL COMPLY FULLY WITH SUCH REGULATIONS. THE CONTRACTOR WILL SUBMIT WRITTEN EVIDENCE OF SUCH COMPLIANCE IF REQUESTED BY THE OWNER OR ANY AGENT OF A REGULATORY BODY. THE CONTRACTOR WILL COMPLY WITH ALL CONDITIONS OF ANY AND ALL LOCAL, STATE, AND FEDERAL AGENCIES WHICH HAVE GOVERNING AUTHORITY; INCLUDING THE CONDITIONS RELATED TO MAINTAINING THE ESPCP AND EVIDENCE OF COMPLIANCE WITH ESPCP AT THE JOB SITE ALLOWING REGULATORY PERSONNEL ACCESS TO THE JOB SITE AND TO RECORDS IN ORDER TO DETERMINE COMPLIANCE.

INSPECTIONS

A. PERMITTEE REQUIREMENTS.
(1) EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
(2) MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
(3) CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
(4) CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
(5) BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
(6) A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

MAINTENANCE

THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION, AND SEDIMENT CONTROL MEASURES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SITE PLAN.

REPORTING

(1) THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

(2) ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

A. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
B. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
C. THE DATE(S) ANALYSES WERE PERFORMED;
D. THE TIME(S) ANALYSES WERE INITIATED;
E. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
F. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
G. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
H. RESULTS WHICH EXCEED 1,000 NTU SHALL BE REPORTED AS "EXCEEDS 1,000 NTU;" AND
I. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

(3) ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

SAMPLING REQUIREMENTS

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS PARAGRAPH SHALL NOT APPLY TO ANY LAND DISTURBANCE ASSOCIATED WITH THE CONSTRUCTION OF SINGLE-FAMILY HOMES WHICH ARE NOT PART OF A SUBDIVISION OR PLANNED COMMON DEVELOPMENT UNLESS FIVE (5) ACRES OR MORE WILL BE DISTURBED. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

A. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1). A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORMWATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORMWATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2). A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3). WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4). ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

B. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

(1). SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.

(2). SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

(3). LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

(4). MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

(5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

C. SAMPLING POINTS. (1). FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORMWATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:

(A). THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORMWATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

(B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST ST

EROSION CONTROL PHASING NOTES

CLEARING PHASE

PRIOR TO THE LAND DISTURBING CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE AREA SITE DEVELOPMENT INSPECTOR.

THE CONTRACTOR SHALL OBSERVE THE PROJECT SEQUENCE SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO INSURE THAT LAND STRIPPED OF ITS NATURAL COVER IS EXPOSED ONLY IN SMALL QUANTITIES.

THE OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.

NO STAGING AREAS, MATERIAL STORAGE, CONCRETE WASH OUT AREAS, OR DEBRIS BURN AND BURIAL HOLES SHALL BE LOCATED WITHIN 500 FEET OF DESIGNATED TREE PROTECTION AREAS.

A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE AT ALL TIMES.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.

PRIOR TO COMMENCING LAND DISTURBING ACTIVITY, THE LIMITS OF LAND DISTURBANCE AND ALL STREAM BUFFERS SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.

PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY TO OR EXIT FROM THE SITE OR ONTO ANY PUBLIC ROADWAY.

THE FOLLOWING INITIAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY:

THE CONSTRUCTION EXIT, CONSISTING OF A MINIMUM PAD SIZE OF 20 FEET BY 50 FEET WITH A MINIMUM OF 6" THICK STONE, SHALL BE PLACED AS SHOWN ON THE PLAN. THE STONE SIZE SHOULD CONSIST OF COURSE AGGREGATE BETWEEN 1-½" & 3-½" IN DIAMETER AND OVERLAID ON A GEOTEXTILE UNDERLINER. THE GEOTEXTILE UNDERLINER SHALL MEET THE REQUIREMENTS OF AASHTO M288-96, SECTION 7.3 SEPARATION REQUIREMENTS.

TYPE "C" SILT FENCE SHOULD BE INSTALLED AT THE PERIMETER OF THE DISTURBED AREA AS SHOWN ON THE PLAN. THE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE MANUAL FOR EROSION CONTROL IN GEORGIA., TABLE 6-20.2. THE SILT FENCE SHOULD BE KEPT ERECT AT ALL TIMES AND REPAIRED WHEN REQUESTED BY THE SITE INSPECTOR OR THE PROJECT DESIGN PROFESSIONAL OF RECORD. SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES ½ HEIGHT OF THE BARRIER. THE PERIMETER SILT FENCE SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.

INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL EXISTING STORM STRUCTURES AS SHOWN ON THE PLAN. SEE SEPARATE DETAILS FOR SPECIFICS ON TYPE OF INLET PROTECTION SPECIFIED.

TREE PROTECTION FENCING SHOULD BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE ACTIVITY AND MAINTAINED UNTIL FINAL LANDSCAPE IS INSTALLED. THE TREE PROTECTION FENCING SHOULD BE INSPECTED DAILY. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.

AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES, THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT DESIGN PROFESSIONAL. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT DESIGN PROFESSIONAL APPROVED THE INSTALLATION OF SAID EROSION CONTROL MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE SITE INSPECTION.

AFTER APPROVAL OF THE INITIAL EROSION CONTROL INSTALLATION, THE CONTRACTOR MAY PROCEED WITH CLEARING AND GRUBBING ACTIVITIES. AS CLEARING PERMITS THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SEDIMENT PONDS AND DIVERSION DIKES AS SHOWN ON THE CLEARING PHASE PLAN TO CONTROL EROSION AND STORM WATER RUN OFF.

THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION CONTROL PLANS WILL INSPECT THE INSTALLATION OF BMPs WITHIN SEVEN DAYS AFTER INITIAL CONSTRUCTION ACTIVITY BEGINS.

THE CONTRACTOR CAN UTILIZE CLEARED TREES AS BARRIER BRUSH SEDIMENT CONTROL IN AREAS SHOWN ON THE PLAN WHERE INITIAL GRADING ACTIVITIES WILL NOT OCCUR.

NO BURN OR BURY PITS SHALL BE PERMITTED ON THE CONSTRUCTION SITE WITHOUT WRITTEN PERMISSION BY THE OWNER AND/OR THE ENGINEER OF RECORD.

ADDITIONAL SILT BARRIERS MUST BE PLACED AS SHOWN ON THE PLAN AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL TAKE PLACE UNTIL SILT BARRIER INSTALLATION AND SEDIMENT PONDS ARE CONSTRUCTED AS SHOWN ON THE CLEARING PHASE EROSION CONTROL PLAN.

ALL SILT FENCE MUST MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE FOR THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, LATEST EDITION.

ALL ITEMS IN THIS SECTION OF THE SPECIFICATIONS SHALL MEET THE REQUIREMENTS SET FORTH IN SECTION 161, 162, 163, AND 164 OF THE GEORGIA DOT STANDARD SPECIFICATIONS, FOR ROADS AND BRIDGES.

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE.

ALL DISTURBED AREAS LEFT MULCHED AFTER 30 DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION.

24 HOUR CONTACT:
ANDREA SMITH
706-200-6438

GRADING PHASE

THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE PRELIMINARY GRADING PHASE OF CONSTRUCTION:

DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL COVER IS EXPOSED ONLY IN SMALL QUANTITIES AND THEREFORE LIMITED DURATIONS, BEFORE PERMANENT EROSION PROTECTION IS ESTABLISHED.

EARTHWORK OPERATIONS IN THE VICINITY OF STREAM BUFFERS SHALL BE CAREFULLY CONTROLLED TO AVOID DUMPING OR SLOUGHING INTO THE BUFFER AREAS.

EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER THE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DESIGN PROFESSIONAL IMMEDIATELY.

AFTER PRELIMINARY GRADING ACTIVITIES, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SEDIMENT BASINS AND DIVERSION DIKES AS SHOWN ON THE PLAN. THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT PONDS UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SEDIMENT SHALL BE CLEANED OUT OF THE PONDS WHEN IT REACHES ½ DEPTH OF THE BASIN. SEE SEPARATE DETAILS FOR ADDITIONAL INFORMATION.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES WHILE ROADWAY FRONTAGE IMPROVEMENTS ARE BEING MADE.

TYPE Sd1-S SILT FENCE SHOULD BE INSTALLED AT THE TOE OF ALL FILL SLOPES 10 FEET OR GREATER IN HEIGHT. THE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE MANUAL FOR EROSION CONTROL IN GEORGIA., TABLE 6-20.2. THE SILT FENCE SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED ON THE SLOPE. SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES ½ HEIGHT OF THE BARRIER. ADDITIONALLY, DIVERSION DIKES SHALL BE CONSTRUCTED ALONG THE TOP OF ALL SAID FILL SLOPES WITH THE USE OF TEMPORARY DOWN DRAINS TO CONTROL STORM WATER RUN OFF AS SHOWN ON THE PLANS. SEE SEPARATE DETAILS TO ADDITIONAL INFORMATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING BARRIERS AT THE TOE OF SLOPES UNDER CONSTRUCTION. THESE BARRIERS SHALL BE AS SHOWN IN THE PLANS. THESE BARRIERS MAY BE RELOCATED AND REUSED AFTER PERMANENT SLOPE STABILIZATION BECOMES FULLY ESTABLISHED. AS THEY ARE RELOCATED, ANY DEFECTIVE MATERIALS IN THE BARRIER SHALL BE REPLACED. IN ADDITION, ALL DEBRIS AND SILT AT THE PREVIOUS LOCATED SHALL BE REMOVED.

CUT AND FILL SLOPES SHALL NOT EXCEED "2H:1V"

TYPE Sd1-S SILT FENCE SHALL BE PLACED AT THE TOE OF ALL DIRT STOCK PILE AREAS.

INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED AT ALL STORM STRUCTURES AS THEY ARE CONSTRUCTED. SEE PLANS AND DETAILS FOR INFORMATION ON THE TYPE OF INLET PROTECTION FOR EACH TYPE OF INLET STRUCTURE.

STORM DRAIN OUTLET PROTECTION SHALL BE PLACED AT ALL OUTLET HEADWALLS AS SOON AS THE HEADWALL IS CONSTRUCTED.

FINAL PHASE

THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE FINAL EROSION CONTROL PHASE OF CONSTRUCTION:

SEDIMENT SHALL NOT BE WASHED INTO INLETS. IT SHALL BE REMOVED FROM THE SEDIMENT TRAPS AND DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLETS AGAIN.

THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT PONDS UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SEDIMENT SHALL BE CLEANED OUT OF THE PONDS WHEN IT REACHES ½ DEPTH OF THE BASIN.

AFTER CURBING, GRADED AGGREGATE BASE, AND PAVEMENT HAS BEEN INSTALLED, ALL INLET STRUCTURE SEDIMENT TRAPS ON SINGLE AND DOUBLE WING CATCH BASINS ALONG WITH ANY CURB INLETS SHALL BE REMOVED AND REPLACED WITH CURB FILTER INLET PROTECTION.

ALL ROADWAY AND PARKING SHOULDERS SHOULD BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED BEHIND CURBS.

EROSION CONTROL AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND-DISTURBING ACTIVITIES.

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDED OR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

ANY DISTURBED ARE LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OF TEMPORARY SEEDING.

GENERAL NOTES

STONE CHECK DAMS SHALL BE INSTALLED IN AREAS OF CONCENTRATED FLOWS AS SHOWN ON THE PLAN.

ALL DRAINAGE SWALES SHALL BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED.

ALL GRADED AREAS SHALL BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED.

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE.

SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.

THE CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION IN WHICH WILL PREVENT TRACK OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1-3" OF STONE, AS CONDITIONS DEMAND. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.

CONTRACTOR SHALL INSPECT CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION SEDIMENT CONTROL MEASURE SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AS DIRECTED BY THE ON SITE INSPECTOR OR THE CIVIL ENGINEER.

FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE THE JOB UNTIL SUCH MEASURES ARE CORRECTED BACK TO THE APPROVED OR MODIFIED EROSION CONTROL PLANS.

THE SITE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES INCLUDING REPLACING OR REPAIRING ANY DAMAGED DEVICES DUE TO ANY CONSTRUCTION ACTIVITY BY OTHERS.

ALL DISTURBED AREAS LEFT MULCHED AFTER 30 DAYS SHALL BE STABILIZED WITH TEMPORARY GRASSING. NO ACTIVITIES SHALL BE CONDUCTED WITHIN THE EXPANDED 25 OR 50-FOOT STREAM BUFFER ALONG THE BANKS OF ALL STATE WATERS.

ANY AMENDMENT TO THE EROSION PLANS WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

AFTER CONSTRUCTION, EROSION AND SEDIMENTATION WILL BE MANAGED BY ONGOING STABILIZATION OF THE PROPERTY BY CONTINUING PROPER MAINTENANCE OF ALL NEW PAVED AREAS, GRASSING, LANDSCAPING AND ANY NEW BUILDINGS OR STRUCTURES.

MINIMIZING WIND EROSION AND CONTROLLING DUST WILL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS: COVERING 30% OR MORE OF THE SOIL SURFACE WITH NON-ERODIBLE MATERIAL, ROUGHENING THE SOIL TO PRODUCE RIDGES PERPENDICULAR TO THE PREVAILING WINDS, FREQUENT WATERING OF EXCAVATION AND FILL AREAS, AND/OR PROVIDING GRAVEL OR PAVING AT ENTRANCE/EXIT DRIVES.

TEMPORARY SEDIMENT STORAGE WILL BE CONSTRUCTED TO ACCOMMODATE 67 CUBIC YARDS OF STORAGE PER ACRE DRAINED.

WASHOUT OF CONCRETE DRUM PROHIBITED ON SITE.

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

NO BUFFER ENCROACHMENT REQUIRED.

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

NO BUFFER VARIANCE IS REQUIRED.

MISCELLANEOUS NPDES CHECKLIST NOTES

THE IMPAIRED STREAM, OOTHKALOOGA CREEK, IS LOCATED WITHIN 1 LINEAR MILE OF SITE. BMP MEASURES FOLLOWING APPENDIX 1 HAVE BEEN ADDRESSED.

MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED INCLUDE SOIL STABILIZATION, RIP RAP, CHECK DAMS, SWALES.

CERTIFICATIONS

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DESIGN PROFESSIONAL NO LATER THAN 48 HOURS PRIOR TO THE INSTALLATION OF INITIAL SEDIMENT STORAGE AND PERIMETER CONTROL BMPS.

THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN, EXCEPT WHEN THE PRIMARY PERMITTEE HAS REQUESTED IN WRITING AND EPD HAS AGREED TO AN ALTERNATE DESIGN PROFESSIONAL, TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.

DATE OF INSPECTION _____

I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.

MEG MBUGUA
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000069299

INSPECTIONS REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN:

THESE DISCREPANCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

DESIGN PROFESSIONAL'S CERTIFICATION

"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA," (MANUAL), PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION."

WETLAND CERTIFICATION: THE DESIGN PROFESSIONAL, WHOSE SEAL APPEARS HEREON, CERTIFIES THE FOLLOWING: 1) THE NATIONAL WETLAND INVENTORY MAPS HAVE BEEN CONSULTED; AND, 2) THE APPROPRIATE PLAN SHEET [DOES] / DOES NOT INDICATE AREAS OF UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTIONAL WETLANDS AS SHOWN ON THE MAPS; AND, 3) IF WETLANDS ARE INDICATED, THE LAND OWNER OR DEVELOPER HAS BEEN ADVISED THAT LAND DISTURBANCE OF PROTECTED WETLANDS SHALL NOT OCCUR UNLESS THE APPROPRIATE FEDERAL WETLANDS ALTERATION ("SECTION 404") PERMIT HAS BEEN OBTAINED.

"I CERTIFY UNDER THE PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONAL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE.

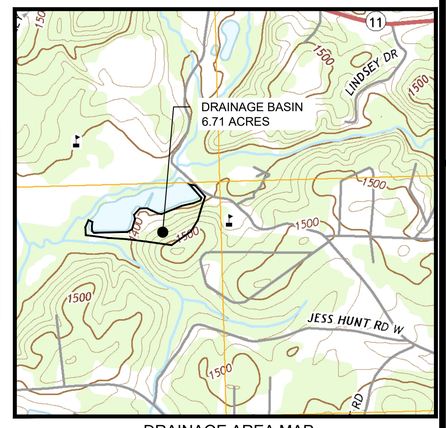
I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

07-31-2025
MEG MBUGUA
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000069299

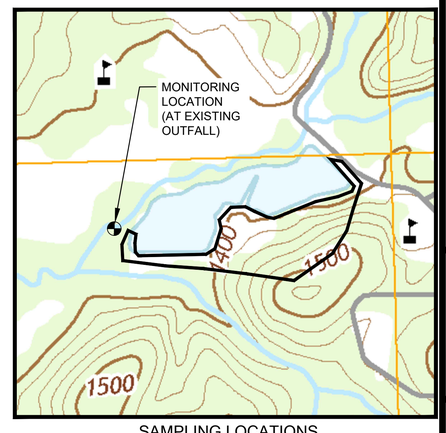
APPROXIMATE ACTIVITY SCHEDULE

THERE SHALL BE NO MORE THAN 14 DAYS BETWEEN INITIAL DISTURBANCE AND TEMPORARY VEGETATION

DESCRIPTION	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
SEDIMENT-CONTROL TREE PROTECTION	■	■	■	■	■	■	■	■	■	■	■	■
CLEARING AND GRUBBING PHASE	■	■										
GRADING PHASE	■	■										
TEMPORARY GRASSING AND MULCHING	■	■	■	■	■	■	■	■	■	■		
UTILITY INSTALLATION			■	■	■	■	■					
BUILDING CONSTRUCTION			■	■	■	■	■					
FINAL PAVING							■	■	■	■	■	■
MAINT. OF EROSION CONTROL DEVICES	■	■	■	■	■	■	■	■	■	■	■	■
FINAL LANDSCAPING								■	■	■		
DISPOSITION OF SEDIMENT DEVICES											■	■



DRAINAGE AREA MAP
SCALE: 1" = 1000'



SAMPLING LOCATIONS
SCALE: 1" = 500'

APPENDIX 'B' RATIONALE
State of Georgia
Department of Natural Resources
Environmental Protection Division

APPENDIX B

Nephelometric Turbidity Unit (NTU) TABLES

Cold Water (Trout Stream)

Surface Water Drainage Area, square miles

		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
	1.00-10	25	50	75	150	300	500	500	500
	10.01-25	25	25	50	75	150	200	500	500
Site Size,	25.01-50	25	25	25	50	75	100	300	500
acres	50.01-100	20	25	25	35	59	75	150	300
	100.01+	20	20	25	25	25	50	60	100

Warm Water (Supporting Warm Water Fisheries)

Surface Water Drainage Area, square miles

		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
	1.00-10	75	150	200	400	750	750	750	750
	10.01-25	50	100	100	200	300	500	750	750
Site Size,	25.01-50	50	50	100	100	200	300	750	750
acres	50.01-100	50	50	50	100	100	150	300	600
	100.01+	50	50	50	50	50	100	200	100

Site Size: 22.367 acres
Surface Water Drainage Area: 83.5 square miles
NTU value used: 100

GEORGIA REGISTERED
MEG M. MBUGUA
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL
NOTES AND CERTIFICATIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-npdes-GAR 100001-2014.dwg

Sheet No.
1-C-25

\\Buildata01\mal Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-npdes-GAR 100001-2014.dwg 08/01/2025 3:52pm apavluscenco

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS GAR100001

SWCD:_____

Project Name: CITY OF CLEVELAND **Address:** 85 SOUTH MAIN STREET

Local Issuing Authority: CITY OF CLEVELAND, GA 30528 **Date on Plans:** JULY 15, 2022

Name & Email of person filling out checklist: MEG M. MBUGUA - meg@rindt-mcduff.com

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N		
C-26	Y	1	The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed. **Permit IV.D.1. pg 27**
C-25	Y	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed. The Level II certification must be issued to the Design Professional, **after completion of a GSWCC approved course**, and whose signature and seal are on the Plan.
N/A	N/A	3	Limits of disturbance shall be **less than** 50 acres at any one time without prior written authorization from the GAEPD District Office. If GAEPD approves the request to disturb 50 acres or more at any one time, the Plan must include the GAEPD approval letter and completed Appendix 1 of this checklist with at least 4 of the chosen BMPs. * A copy of the written approval by GAEPD must be attached to the Plan for the Plan to be reviewed. **Permit IV.D.3. pg 28**
C-16-26	Y	4	The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
COVER	Y	5	Provide the name, address, email address, and phone number of Primary Permittee.
C-1&25	Y	6	Note total and disturbed acreages of the project or phase under construction.
C-15&24	Y	7	Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
ALL	Y	8	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
C-1	Y	9	Descriptions of the nature of construction activity and existing site conditions.
COVER	Y	10	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
C-24	Y	11	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
C-25	Y	12	Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 20** of the permit.
C-25	Y	13	Design professional's certification statement and signature that the Permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 20** of the permit. *
C-25	Y	14	Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect **and certify** the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation." *
C-25	Y	15	Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
N/A	N/A	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
		17	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
C-24	Y	18	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
C-25	Y	19	Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
C-25	Y	20	Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
C-25	Y	21	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
C-26	Y	22	Any construction activity which discharges storm water into a Biota Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as any portion of a Biota Impaired Stream Segment, must comply with **Part III.C.** of the permit. Include the completed Appendix 1 of this checklist with at least 4 of the chosen BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
N/A	N/A	23	If a TMDL Implementation Plan for sediment has been finalized for the Biota Impaired Stream Segment (identified in Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
C-24	Y	24	BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Include statement that washout of the drum at the construction site is prohibited. *
C-24	Y	25	Provide BMPs for the remediation of all petroleum spills and leaks.
C-24	Y	26	Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
N/A	N/A	27	Description of practices to provide cover for building materials and building products on site. *
C-24	Y	28	Description of the practices that will be used to reduce the pollutants in storm water discharges. *
C-25	Y	29	Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, grading, infrastructure, temporary and final stabilization).
C-24	Y	30	Provide complete requirements of Inspections and record keeping by the Primary Permittee. *
C-24	Y	31	Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
C-24	Y	32	Provide complete details for Retention of Records as per **Part IV.F.** of the permit. *
C-25	Y	33	Description of analytical methods to be used to collect and analyze the samples from each location. *
C-25	Y	34	Appendix B rationale for NTU values at all outfall sampling points where applicable. *
C-25	Y	35	Delineate all sampling locations on **all phases of** the Plan, and perennial and intermittent streams and other water bodies into which storm water is discharged. *
C-15-24	Y	36	A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial sediment storage requirements and initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all BMPs into a single phase plan. *
C-2, 23, 30-32	Y	37	Graphic scale and North arrow.
C-15-23	Y	38	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2% Rolling 2 - 8% Steep 8% +	0.5 or 1 1 or 2 2, 5 or 10

N/A	N/A	39	Use of Alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.
N/A	N/A	40	Use of Alternative BMP for application to the Equivalent BMP List. Refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
N/A	N/A	41	Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State Waters and any additional buffers as required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
N/A	N/A	42	Delineation of all State Waters and wetlands located on or within 200 feet of the project site.
SEE REPORT	Y	43	Delineation and acreage of contributing drainage basins on the project site.
SEE REPORT	Y	44	Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *
SEE REPORT	Y	45	Estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed. **For solar farm projects, post-construction impervious area shall be calculated as 70% of total solar panel square footage.**
C-19&22	Y	46	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate at all storm water discharge points.
SEE REPORT	Y	47	Soil series for the project site and their delineation.
C-15-23	Y	48	The limits of disturbance for each phase of construction.
C-15-23	Y	49	Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, Permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
C-27&28	Y	50	Location of Best Management Practices that are consistent with, and no less stringent than, the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual Chapter 6, with legend.
C-27&28	Y	51	Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
C-27	Y	52	Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

*** If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.**

Effective January 1, 2025

24 HOUR CONTACT:
ANDREA SMITH
706-200-6438

07-31-2025
MEG MBUGUA
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000069299

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT-MCDUFF ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION & SEDIMENT CONTROL CHECKLIST

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-npdes-GAR 100001-2014.dwg

Sheet No.
1-C-26

\\Budata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-npdes-GAR 100001-2014.dwg 08/01/2025 3:48pm apavliuscenco

FOR TEMPORARY PROTECTION OF CRITICAL AREAS WITHOUT SEEDING. THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHICH MAY BE SUBJECTED TO EROSION FOR 6 MONTHS OR LESS, WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT WHICH CAN BE STABILIZED WITH A MULCH COVER.

MATERIALS	INSTALLATION
DRY STRAW OR HAY	DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVERAGE
WOOD WASTE (CHIPS SAWDUST OR BARK)	DEPTH OF 2 TO 3 INCHES
EROSION CONTROL MATTING OR NETTING	APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS
CUTBACK ASPHALT (SLOW CURING)	1200 GALLONS PER ACRE, OR 1/3 GALLON PER SQUARE YARD
POLYETHYLENE FILM	SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION

07-31-2025

MEG MBUGUA
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION # 0000069299

DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)

Ds1

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)

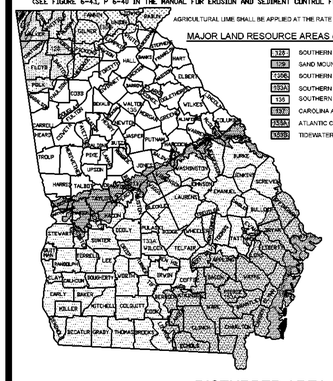
PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS 1/

SPECIES	BROADCAST RATES 2/ – PLS 3/ PER ACRE	BROADCAST RATES 2/ – PLS 3/ PER 1000 SF.	RESOURCE AREA 4/	PLANTING DATES J F M A M J J A S O N D	REMARKS
BARLEY (Hordeum vulgare) ALONE	3 bu. (144 LBS.)	3.3 LBS.	M-L P C		14,000 SEED PER POUND. WINTERHARDY. USE ON PRODUCTIVE SOILS.
IN MIXTURES	1/2 bu. (24 LBS.)	0.6 LBS.			
LESPEDEZA, ANNUAL (Lespedeza striata) ALONE	40 LBS.	0.9 LBS.	M-L P C		200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULANT E.
IN MIXTURES	10 LBS.	0.2 LBS.			
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE	4 LBS.	.01 LBS.	M-L P C		1,200,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA
IN MIXTURES	2 LBS.	0.05 LBS.			
MILLET, BROWNTOP (Panicum fasciculatum) ALONE	40 LBS.	0.9 LBS.	M-L P C		537,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
IN MIXTURES	10 LBS.	0.2 LBS.			
MILLET, PEARL (Panicum glaucum) ALONE	50 LBS.	1.1 LBS.	M-L P C		88,000 SEED PER POUND. QUICK, DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
OATS (Avena sativa) ALONE	4bu. (128 LBS.)	2.9 LBS.	M-L P C		13,600 SEED PER POUND. USE ON PRODUCTIVE SOILS. NOT AS WINTERHARDY AS RYE OR BARLEY.
IN MIXTURES	1 bu. (32 LBS.)	0.7 LBS.			
RYE (Secale cereale) ALONE	3 bu (168 LBS.)	3.9 LBS.	M-L P C		18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTERHARDY.
IN MIXTURES	1/2 bu. (28 LBS.)	0.6 LBS.			
RYEGRASS, ANNUAL (Lolium temulentum) ALONE	40 LBS.	0.9 LBS.	M-L P C		227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.
SUDAN GRASS (Sorghum sudanese) ALONE	60 LBS.	1.4 LBS.	M-L P C		255,000 SEED PER POUND. GOOD ON DROUGHT SITES. NOT RECOMMENDED FOR MIXTURES.
TRITICALE (X-Triticosecale) ALONE	3 bu. (144 LBS.)	3.3 LBS.	C		USE ON LOWER PART OF SOUTHERN COASTAL PLAIN AND IN ATLANTIC COASTAL FLATWOODS ONLY.
IN MIXTURES	1/2 bu. (24 LBS.)	0.6 LBS.			
WHEAT (Triticum aestivum) ALONE	2 bu. (120 LBS.)	4.1 LBS.	M-L P C		15,000 SEED PER POUND.
IN MIXTURES	1/2 bu. (30 LBS.)	0.7 LBS.			

1/ TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2/ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3/ PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4/ M-L REPRESENTS TO MOUNTAIN, BLUE RIDGE, AND RIDGES AND VALLEYS MLRA'S
P REPRESENTS THE SOUTHERN PIEDMONT MLRA
C REPRESENTS THE SOUTHERN COASTAL PLAIN, SAND HILLS, BLACK LANDS, AND ATLANTIC COAST FLATWOODS MLRAs
CSEE FIGURE 6-4.1, P 6-40 IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL FOR GEORGIA)

AGRICULTURAL LIME SHALL BE APPLIED AT THE RATE DETERMINED BY SOIL PH TEST

MAJOR LAND RESOURCE AREAS (MLRA) OF GEORGIA



DISTURBED AREA STABILIZATION (TMP. SEEDING)

Ds2

MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-27.2

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ – 30
Cool season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ – –
Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	– – –
Pine seedlings	First	20-10-5	one 21-gram pellet per seedling placed in the closing hole	–
Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	– –
Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

MULCHING RATES:
1. DRY STRAW: 2 TONS PER ACRE.
2. DRY HAY: 2-1/2 TONS PER ACRE.
3. FOR HYDRAULIC SEEDING USE WOOD CELLULOSE MULCH OR WOOD PULP FIBER AT THE RATE OF 500 POUNDS PER ACRE.

LIME SHALL BE APPLIED AT THE RATE OF 1-2 TONS PER ACRE UNLESS SOIL PH INDICATES OTHERWISE.

FERTILIZER AND MULCHING REQUIREMENTS

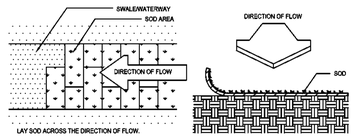
SPECIES	BROADCAST RATES 1/ – PLS 2/ PER ACRE	BROADCAST RATES 1/ – PLS 2/ PER 1000 S.F.	RESOURCE AREA 3/	PLANTING DATES J F M A M J J A S O N D	REMARKS
BAHIA, PENSACOLA (Paspalum notatum) ALONE OR W/ TEMPORARY COVER	60 LBS.	1.4 LBS.	P		
WITH OTHER PERENNIALS	30 LBS.	0.7 LBS.	C		
BAHIA, WILMINGTON (Paspalum notatum)					
ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	60 LBS. 30 LBS.	1.4 LBS. 0.7 LBS.	M-L P		
BERMUDA, COMMON (Cynodon dactylon) HULLED SEED ALONE OR W/ OTHER PERENNIALS	10 LBS. 6 LBS.	0.2 LBS. 0.1 LBS.	P C		
BERMUDA, COMMON (Cynodon dactylon) UNHULLED SEED W/ TEMP. COVER WITH OTHER PERENNIALS	10 LBS. 6 LBS.	0.2 LBS. 0.1 LBS.	P C		PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA SPRIGS (Cynodon dactylon) COASTAL, COMMON, MIDLAND, OR TIFT 44	40 CF. 0.9 CF. OR SOD PLUGS 3' x 3'		M-L P C		A CUBIC FEOOT CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1625 CUBIC FEET OR APPROXIMATELY 800 SPRIGS.
COASTAL, COMMON, OR TIFT 44 TIFT 78			C		PLANT WITH WINTER ANNUALS PLANT WITH TALL. RESCUE SOUTHERN COSTAL. PLAIN ONLY
CENTIPEDE (Eremochloa ophiuroides)	BLOCK SOD ONLY		P C		BROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE IN CONCENTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. VINTERKILL AS FAR NORTH AS ATHENS ARE ATLANTA.
CROWNVETECH (Coronilla varia)			M-L P		169,800 SEED PER POUND. DENSE GROWTH. ATTRACTIVE ROSE, PINK, AND WHITE BLOSSOMS GROW TO LATE SUMMER. USE WITH TALL FESCUE OR 15 LBS. OF PEL INOCULATE SEED WITH + INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD.
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LBS.			
FESCUE, TALL (Festuca arundinacea) ALONE W/ OTHER PERENNIALS	50 LBS. 30 LBS.	1.1 LBS. 0.7 LBS.	M-L P		227,000 SEED PER POUND. USE ALONE ONLY IN BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH CROWNVETCH, LESPEDEZA, OR BIRDSFOOT TREFOIL. USE FOR LOW MAINTENANCE USE AREAS OR ATHLETIC FIELDS.
KUDZU (Pueraria thunbergiana) PLANTS OR CROWNS	3' - 7' APART		ALL		RAPID AND VIGOROUS GROWTH. EXCELLENT IN GULLY EROSION CONTROL. WILL CLIMB. GOOD LIVESTOCK FORAGE.
LESPEDEZA, SERICEA (Lespedeza cuneata) SCARIFIED	60 LBS.	1.4 LBS.	M-L P C		200,000 SEED PER POUND. WINTER HARDY. LOW MAINTENANCE. MIX WITH VIRGINIA LOVEGRASS, COMMON BERMUDA, BAHSA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT EN ROADBANKS. INOCULATE SEED W/ EL INOCULANT.
UNSCARIFIED	75 LBS.	1.7 LBS.	M-L P C		
SEED-BEARING HAY	3 TONS	130 LBS.	M-L P C		CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA Anaro Virgata (Lespedeza virgata) or Korean (Lespedeza cuneata (Dumont) G. Don) SCARIFIED	50 LBS.	1.4 LBS.	M-L P C		300,000 SEED PER POUND. HEIGHT OF GROWTH IS 10 TO 24 INCHES. ADVANTAGES IN URBAN AREAS. SPREADING TYPE GROWTH. NEW GROWTH HAS BRONZE COLORATION. MIX W/ VIRGINIA LOVEGRASS, COMMON BERMUDA, BAHSA, TALL FESCUE, OR WINTER ANNUALS. DO NOT MIX W/ SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS. INOCULATE SEED W/ EL INOCULANT.
UNSCARIFIED	75 LBS.	1.7 LBS.	M-L P C		
LESPEDEZA, SHRUB (Lespedeza bicolor) or (Lespedeza thunbergii) PLANTS	3' x 3'		M-L P C		
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE W/ OTHER PERENNIALS	4 LBS. 2 LBS.	0.1 LBS. 0.05 LBS.	M-L P C		
MAIDENCANE (Panicum hemitomon) SPRIGS WITH OTHER PERENNIALS	8' x 3' SPACING		ALL		FOR VERY WET SITES. MAY CLOG CHANNELS. BIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVER BANKS AND SHORELINES.
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 LBS.	0.5 LBS.	P C		GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.
REED CANARY GRASS (Phalaris arundinacea) ALONE WITH OTHER PERENNIALS	50 LBS. 30 LBS.	1.1 LBS. 0.7 LBS.	M-L P		GROWS SIMILAR TO TALL FESCUE.
SUNFLOWER, "AZTEC" MAXIMILLIAN (Helianthus maximilliani)	10 LBS.	0.2 LBS.	M-L P C		

DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)

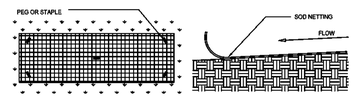
Ds3

SODDED WATERWAYS

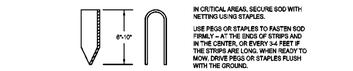
SOD DIRECTIONS



NETTING DIRECTIONS



PEG DETAIL



SOD MAINTENANCE AND INSTALLATION

SOD LAYOUT AND PREPARATION



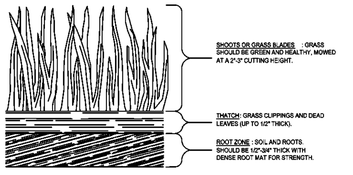
DIRECTIONS FOR INITIAL MAINTENANCE

Step 1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL

Step 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

Step 3. MOW WHEN THE SOD IS ESTABLISHED – IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

APPEARANCE OF GOOD SOD



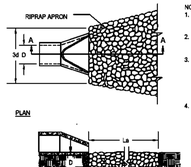
DISTURBED AREA STABILIZATION (WITH SODDING)

Ds4

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-6.1 AND 6-6.2

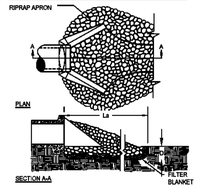
RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

PIPE OUTLET TO WELL DEFINED CHANNEL



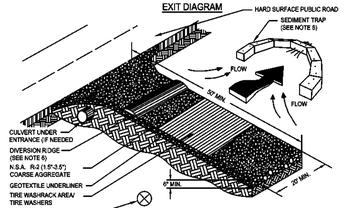
STORM DRAIN OUTLET PROTECTION

St

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-34.3

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%..
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC R/GHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

CONSTRUCTION EXIT

Co

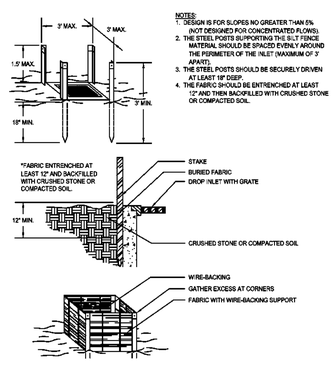
2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-14.1

SILT FENCE TYPE NON-SENSITIVE

Sd1-NS

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-27.1

STEEL FRAME AND SILT FENCE INSTALLATION

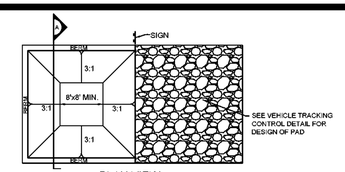


NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5%. (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

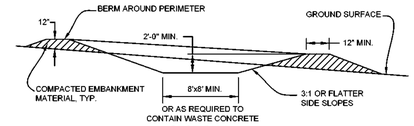
FILTER FABRIC WITH SUPPPORTING FRAME

Sd2-F

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-28.1



PLAN VIEW



SECTION A

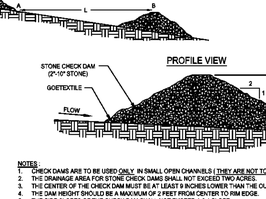
CONCRETE WASHOUT AREA INSTALLATION NOTES
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES
1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

NOTE: WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED

CONCRETE WASHDOWN AREA

SIDE VIEW



FRONT VIEW

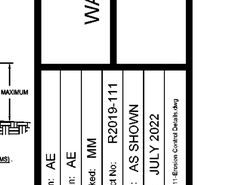
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

SILT FENCE-TYPE SENSITIVE

Sd1-S

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-27.2

SIDE VIEW



FRONT VIEW

NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

NOTES:
1. CFS IN THE CHANNEL/DITCH THAT THE CHECK DAM IS BEING USED IN: 1.742 CFS.
2. ABOVE 2.0 CFS: YES NO X
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS: N/A

CROSS SECTION

SPACING BETWEEN CHECK DAMS

A = THE TOE OF THE UPSTREAM CHECK DAM.
B = TOP OF THE DOWNSTREAM CHECK DAM.
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

PROFILE VIEW

NOTES:
1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS) .
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
5. THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
6. GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-06, SECTION 7.3, TABLE 3).

STONE CHECK DAM

Cd-S

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-12.1 AND 6-12.2

GEORGIA REGISTERED Professional NO. 039453 ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENVIRONMENTAL ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION CONTROL DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111 Erosion Control Details.dwg

Sheet No.
1-C-27

\\Buildata01\mwl Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Erosion Control Details.dwg 08/01/2025 3:47pm apavluscenco

FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES

GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
SC	SILTATION CURTAIN			A sediment barrier of synthetic filter fabric (geotextile) supported by floats and/or weights and anchored to minimize movement.
CW	CHANNEL WITH VEGETATION			Waterway, waterway or swallowing an open channel lined with existing (brown, or dirt).
CE	CONSTRUCTION EXIT			A temporary access road, stabilized with stone, which is used by construction traffic to access a paved road or other stable surface from a construction site to provide a place for removing mud from the tires of vehicles prior to leaving public streets.
CB	CONSTRUCTION BMP			A temporary construction practice or combination of practices designed to control erosion and sedimentation during construction activities. Examples include silt fence, sediment basins, and other practices intended to trap sediment on-site.
SD	STORM DRAINAGE			A temporary channel constructed to convey flow around a construction site and prevent runoff from entering the work area.
SW	SWALE			A small channel, often flexible lined, either as a natural depression or manmade, designed to carry runoff from a small drainage area (usually less than 10 acres).
TD	TEMPORARY DIVERSION			A flexible channel or impervious barrier of various materials (such as plastic sheeting or asphalt) installed across or at the top of a disturbed slope to intercept runoff water and direct it to a stable outlet.
DD	DIVERSION DIKE			A temporary ridge of compacted soil placed across or at the top of a disturbed slope to intercept runoff water and direct it to a stable outlet.
SL	SILT FENCE			A temporary, woven, woven, synthetic fabric barrier designed to trap sediment by ponding runoff and allowing sediment to settle out. The principle fence is distinguished from other barriers by the use of a supporting wire fence to which the fabric is attached.
CK	CHECK DAM			A small, temporary, stone dam constructed across a drainage ditch, swale, or area of concentrated flow to reduce the velocity of concentrated flow and thereby reduce erosion and scour in the channel.
SF	SEDIMENT TRAP			A temporary sediment basin formed by excavation and/or embankment to detain sediment-laden runoff from small disturbed areas long enough to allow most of the sediment to settle out.
SB	SEDIMENT BASIN			A temporary basin formed by excavation and/or embankment to detain sediment-laden runoff from disturbed areas long enough to allow most of the sediment to settle out.
SP	SURFACE ROUGHENING			A temporary roughening of the soil surface with horizontal grooves, furrows, or steps that run across the slope.
SS	SURFACE STABILIZATION			Any practice that protects the soil surface from erosion.
SO	SPOIL/BORROW AREA			A designated area where soil is stockpiled temporarily or permanently.
SR	STREAM BUFFER			A vegetated area next to a stream that helps protect the stream from sediment, nutrients, and other pollutants.
TP	TEMPORARY PIPE			A temporary pipe installed to convey water across or under a construction site without causing erosion.
TS	TEMPORARY STREAM CROSSING			A temporary structure constructed to allow construction equipment to cross a flowing stream.
WW	WATER WELL			A hole drilled into the ground to reach a water supply.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
PS	PERMANENT SEEDING		PS	Mixtures of adapted plant species, cultivated or native, used to provide permanent vegetative cover on disturbed areas.
CT	CONTOUR TILLAGE		CT	Planting vegetation on terrace that are disturbed, artificially constructed, or re-excavated.
DST	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		DST	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce adequate seeding cover.
DS1	DISTURBED AREA STABILIZATION (WITH MULCHING)		DS1	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
DS2	DISTURBED AREA STABILIZATION (WITH VEGETATIVE COVER)		DS2	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
DS3	DISTURBED AREA STABILIZATION (WITH SODDING)		DS3	A permanent vegetative cover using sods on highly erodible or critically eroded lands.
SOC	SOIL COVERING OF CUTS/FILLS		SOC	Controlling surface and air movement of dust on construction sites, roadways and haul roads.
SOD	SODDING		SOD	Sodded or turfed areas using live sod.
SOL	SOIL COVERING OF LANDSCAPED AREAS		SOL	Sodded or turfed areas using live sod.
CSC	CONSTRUCTION SPECIFICATIONS FOR TOPSOILING		CSC	The use of locally available native plant materials for temporary or permanent stabilization of disturbed areas. It may not meet all requirements listed below, or practices, or a combination of these.
CSS	CONSTRUCTION SPECIFICATIONS FOR SURFACE ROUGHENING		CSS	A protective covering used to prevent erosion and assist the establishment of vegetation on steep slopes, drains, ditches, or channels.
TM	TEMPORARY MULCHING		TM	Materials used to shelter mass of hay, build for seeding to retain moisture and keep down.

Sw0402 (Amended) 08/10

GEORGIA UNIFORM CODING SYSTEM

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)

PERMANENT METHODS:

PERMANENT VEGETATION - REFER TO Ds3 (DISTURBED AREA STABILIZATION WITH PERMANENT VEGETATION)

TOPSOILING - COVERING THE SURFACE WITH A LESS EROSIVE SOIL MATERIAL

STONE - SURFACE WITH CRUSHED STONE OR COARSE GRAVEL (SEE Cr - CONSTRUCTION ROAD STABILIZATION)

TEMPORARY METHODS:

MULCHES - REFER TO Ds1 (DISTURBED AREA STABILIZATION).

VEGETATIVE COVER - REFER TO Ds2 (DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING).

SPRAY ON ADHESIVES - USE ON MINERAL SOILS. KEEP TRAFFIC OFF THESE AREAS. NOT EFFECTIVE ON MUCK SOILS.

TILLAGE - ROUGHEN AND BRING CLODS TO THE SURFACE BY USE OF CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART.

IRRIGATION - SITE SPRINKLED WITH WATER UNTIL WET. REPEAT AS NEEDED.

BARRIERS - FENCES, HAY BALES, AND CRATE WALLS PLACED AT INTERVALS 15 TIMES THEIR HEIGHT AND PERPENDICULAR TO AIR CURRENTS.

CALCIUM CHLORIDE - APPLY TO KEEP SURFACE WET. REPEAT AS NEEDED.

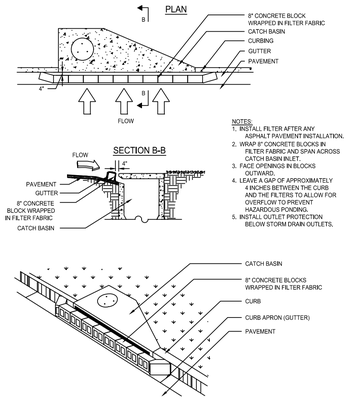


N.T.S.

Du

DUST5 CONTROL ON DISTURBED AREAS

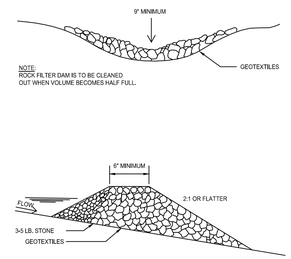
2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)



Sd2-P

CURB INLET FILTER "PIGS IN A BLANKET"

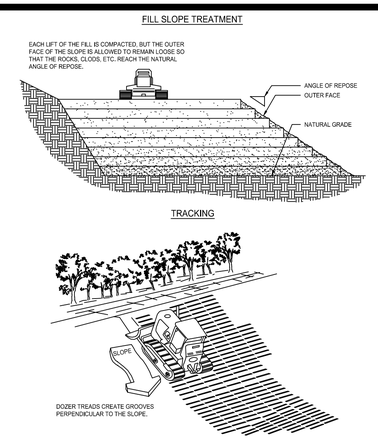
2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-28.6



Rd

ROCK FILTER DAM

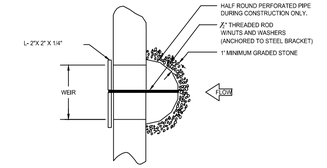
2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-24.1



Su

SURFACE ROUGHENING

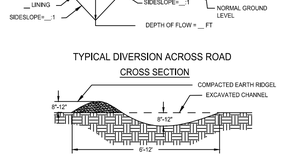
2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-35.2



PERFORATED HALF-ROUND PIPE WITH STONE FILTER

Rt-P

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-26.1



Di

DIVERSION

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-17.1, Figure 6-17.2, AND TABLE 6-17.1

07-31-2025

MEG MBUGUA
GSWCC LEVEL II DESIGN PROFESSIONAL

CERTIFICATION # 0000069299

GEORGIA REGISTERED Mbugua NO. 0394453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

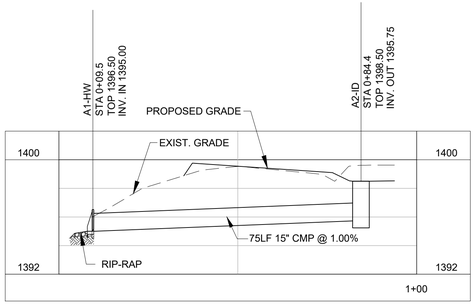
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EROSION CONTROL DETAILS

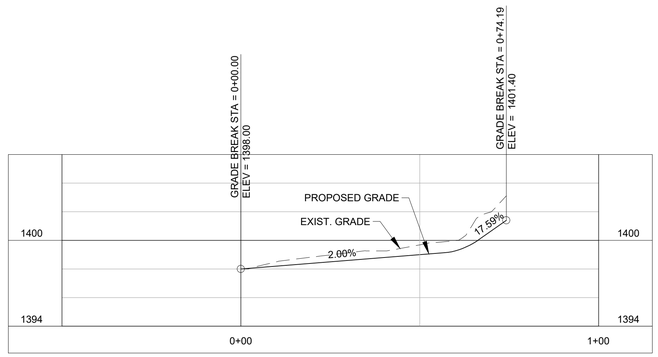
Drawn: AE
Design: AE
Checked: MM
Project No.: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111-Erosion Control Details.dwg

Sheet No.
1-C-28

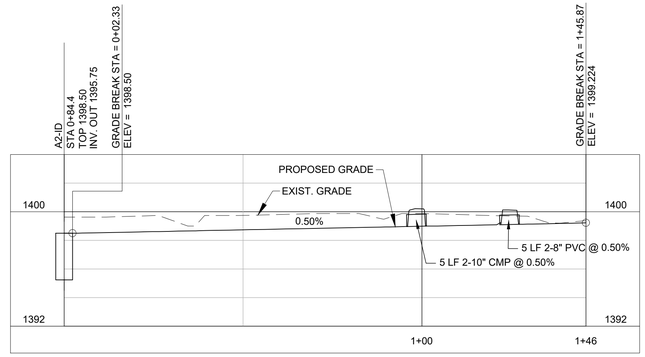
\\Budata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Erosion Control Details.dwg 08/01/2025 3:46pm apavlusenco



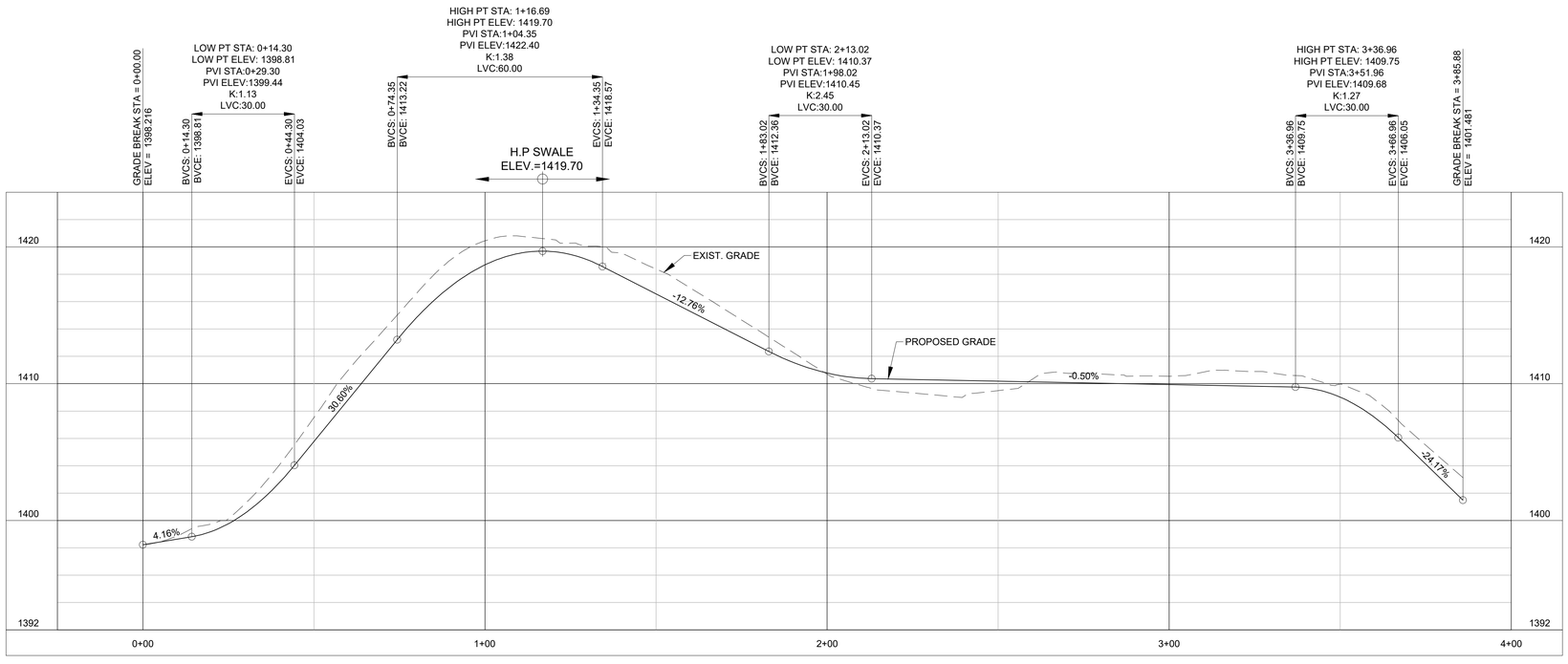
PROFILE ST-A
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE SWALE -1
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE SWALE-2
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE SWALE-3
SCALE: HORIZ.1"=20'
VERT. 1"=5'

VERTICAL GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

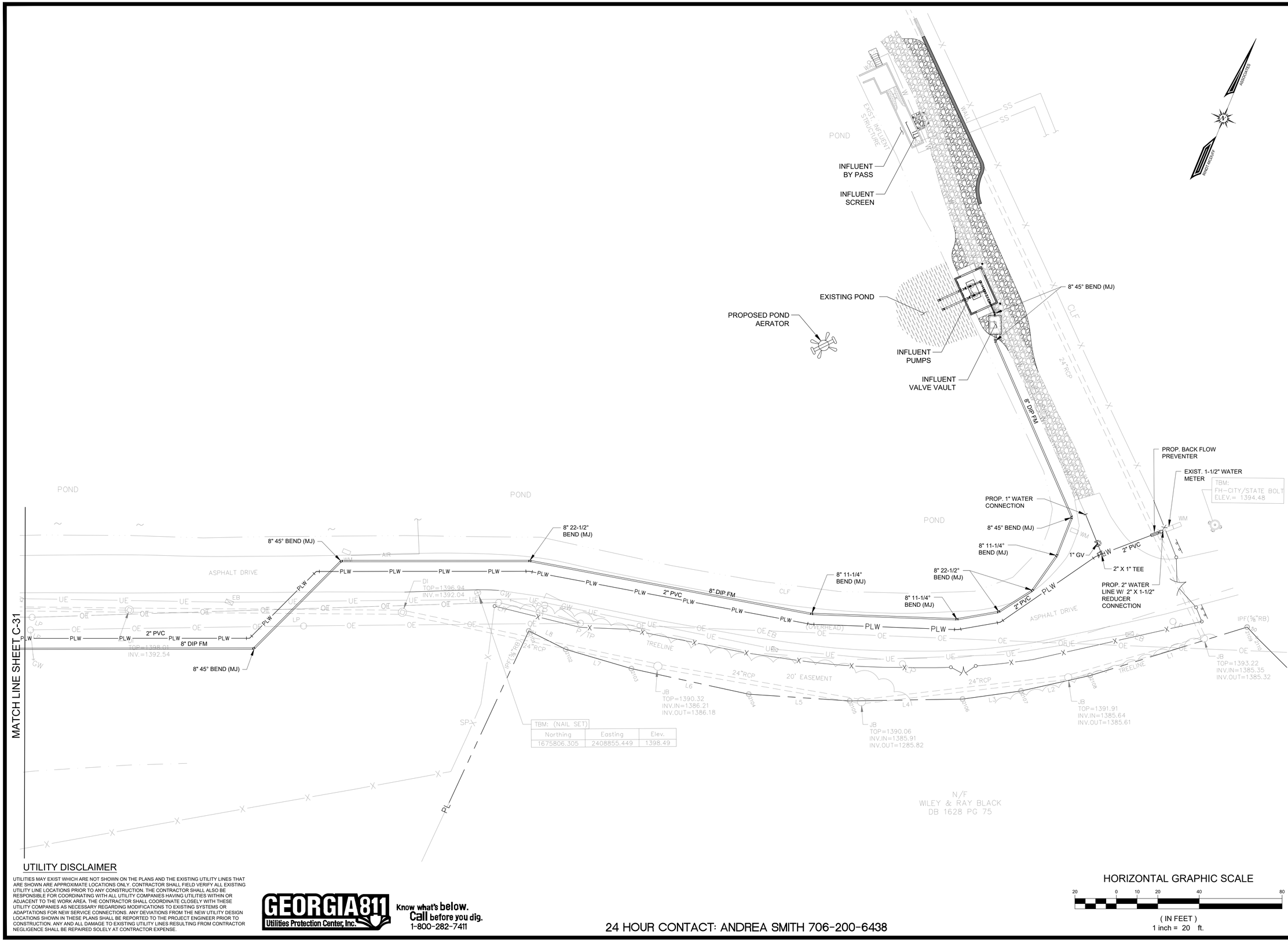
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STORM SEWER PROFILE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-29

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:20pm aencarnacion



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT-MCCURDY ASSOCIATES

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

YARD PIPING PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-30

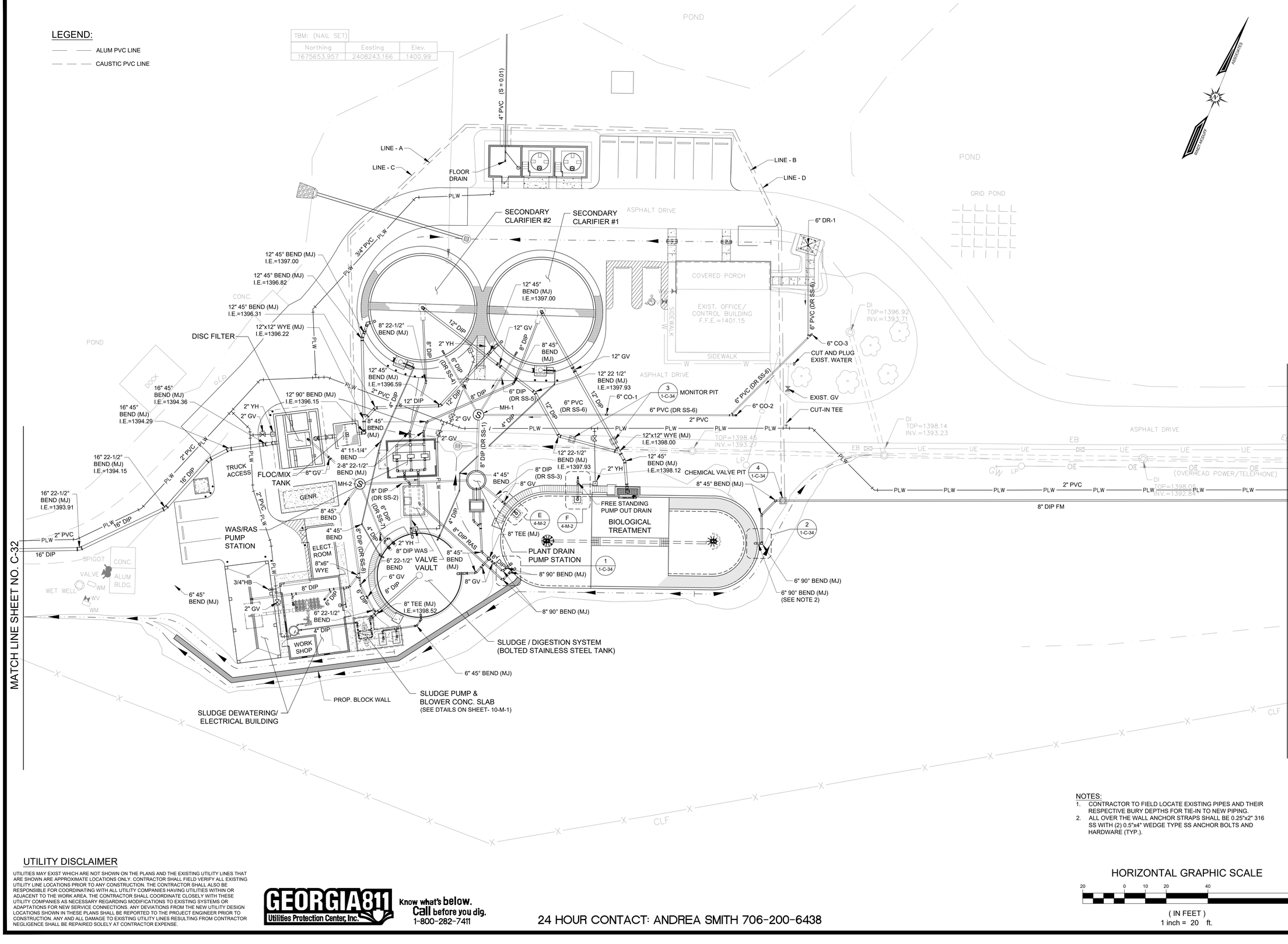
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:20pm aencarnacion

LEGEND:

ALUM PVC LINE

CAUSTIC PVC LINE

TBM: (NAIL SET)		
Northing	Easting	Elev.
1675653.957	2408243.166	1400.99



NOTES:

1. CONTRACTOR TO FIELD LOCATE EXISTING PIPES AND THEIR RESPECTIVE BURY DEPTHS FOR TIE-IN TO NEW PIPING.
2. ALL OVER THE WALL ANCHOR STRAPS SHALL BE 0.25"x2" 316 SS WITH (2) 0.5"x4" WEDGE TYPE SS ANCHOR BOLTS AND HARDWARE (TYP.).

HORIZONTAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

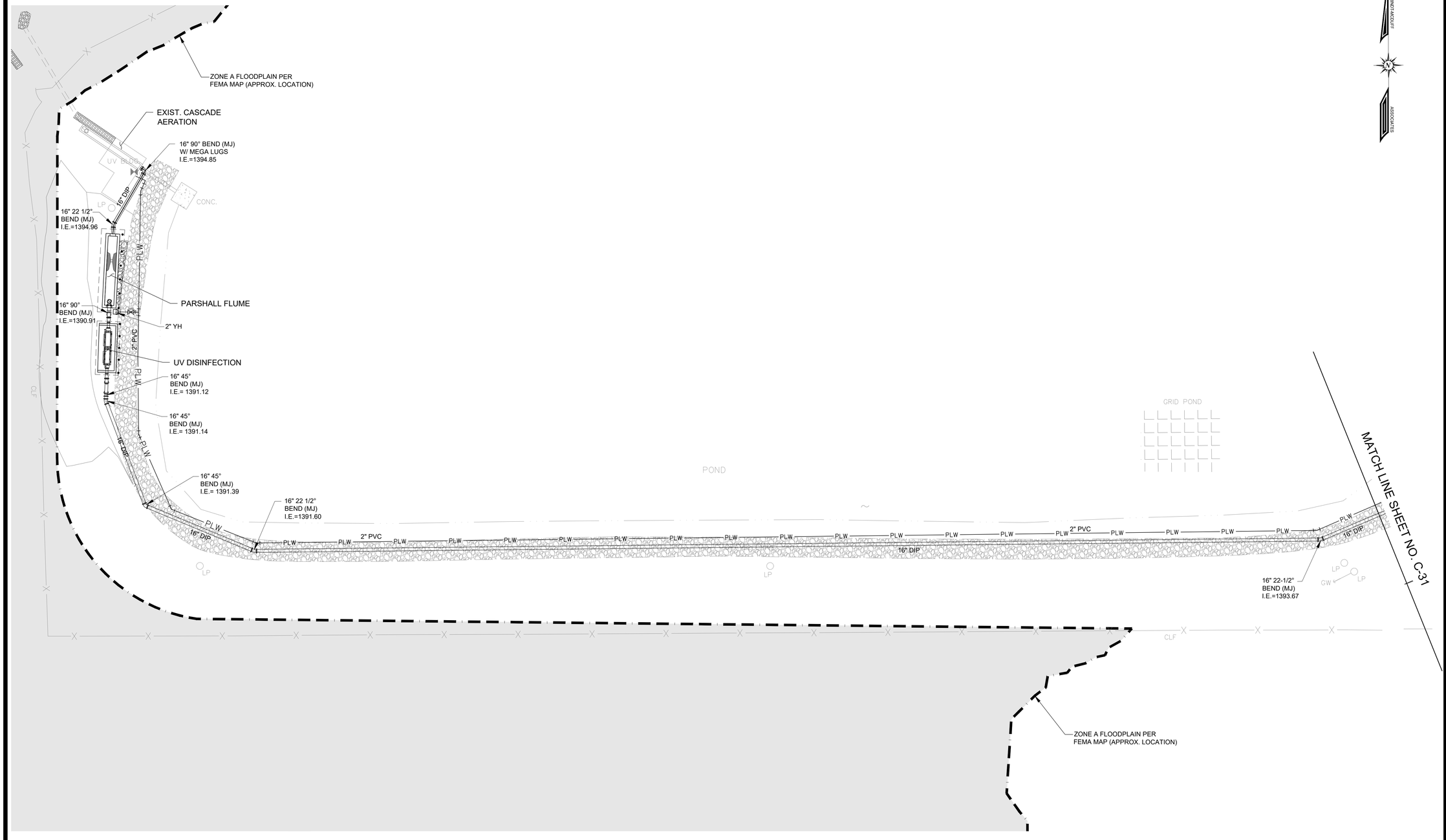
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

YARD PIPING PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-31

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:20pm aencarnacion



UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER MEG M. MBUGUA NO. 039453 JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT-MCDUFF & ASSOCIATES
RINDT ENGINEERING + ENVIRONMENTAL

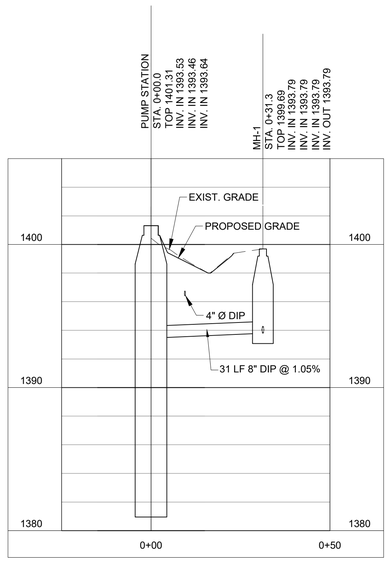
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

YARD PIPING PLAN

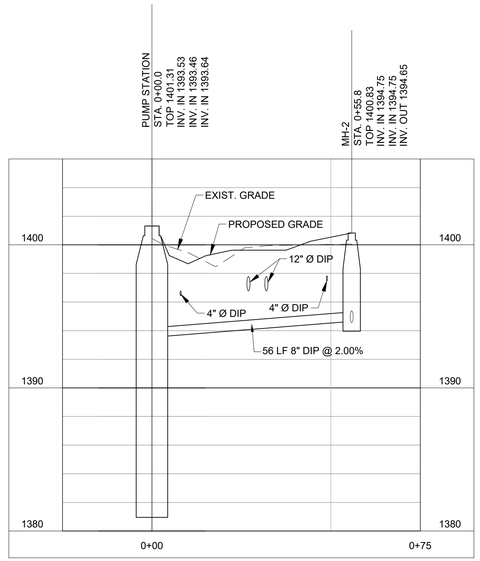
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-32

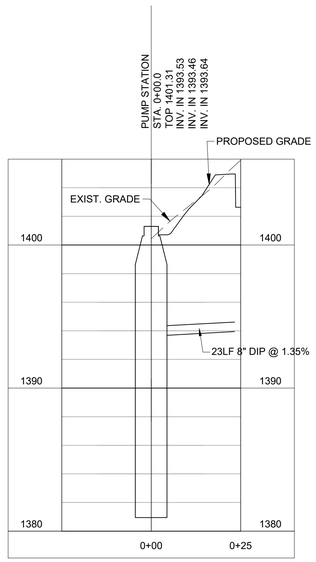
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:21pm aencarnacion



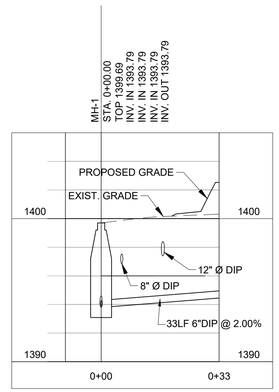
PROFILE DR SS-1
SCALE: HORIZ.1"=20'
VERT. 1"=5'



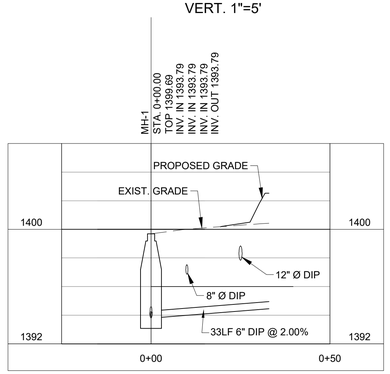
PROFILE DR SS-2
SCALE: HORIZ.1"=20'
VERT. 1"=5'



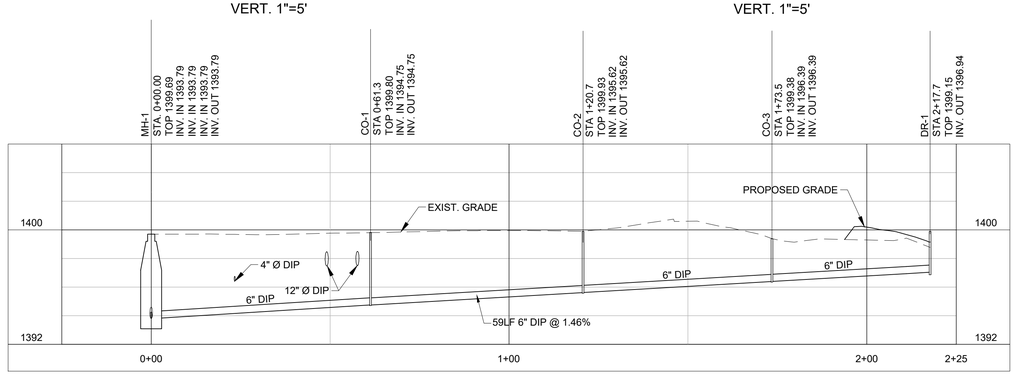
PROFILE DR SS-3
SCALE: HORIZ.1"=20'
VERT. 1"=5'



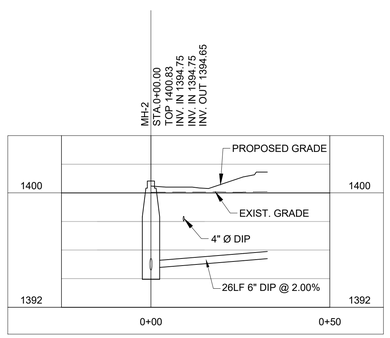
PROFILE DR SS-4
SCALE: HORIZ.1"=20'
VERT. 1"=5'



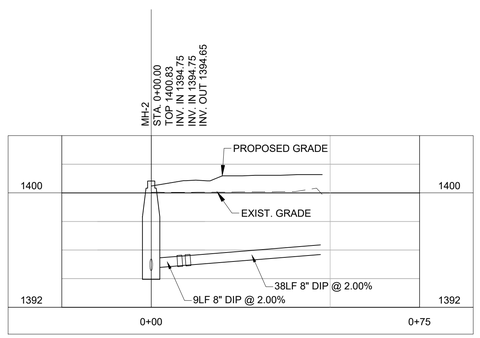
PROFILE DR SS-5
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE DR SS-6
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE DR SS-7
SCALE: HORIZ.1"=20'
VERT. 1"=5'



PROFILE DR SS-8
SCALE: HORIZ.1"=20'
VERT. 1"=5'

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

HORIZONTAL GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

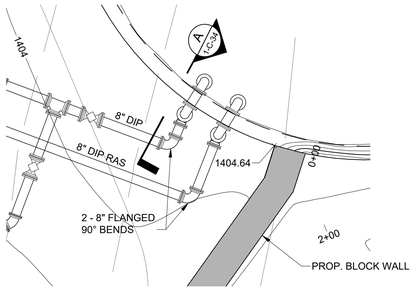
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

YARD PIPING PROFILES

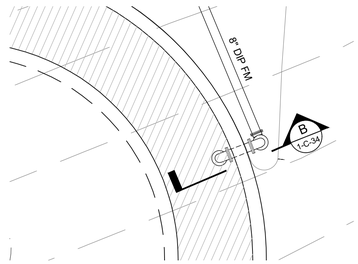
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
R2019-111-Design.dwg

Sheet No.
1-C-33

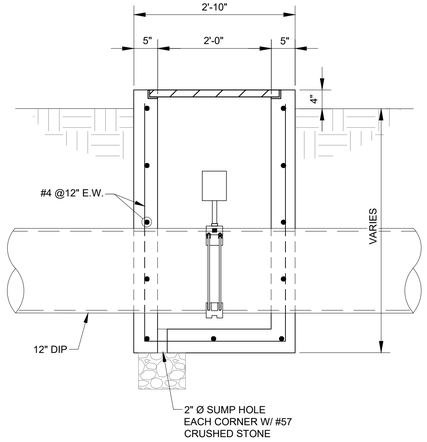
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:21pm aencamacion



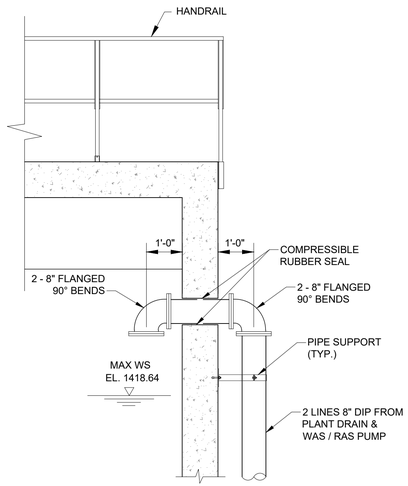
1 1-C-34 DETAIL N.T.S.



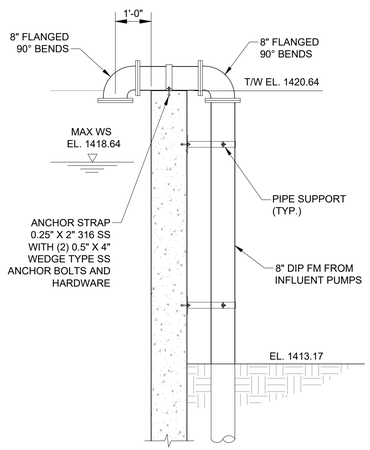
2 1-C-34 DETAIL N.T.S.



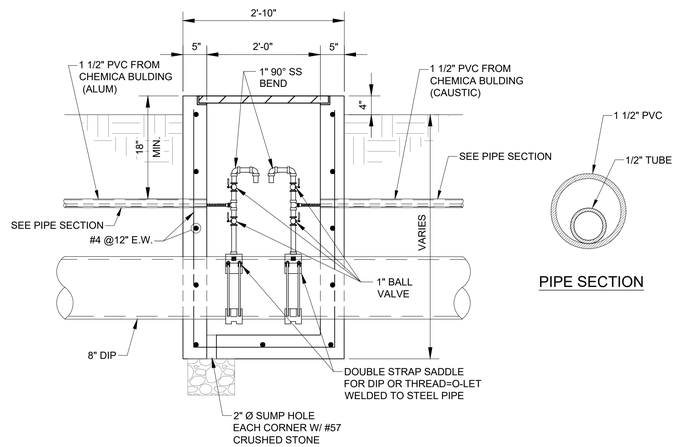
3 1-C-34 MONITOR PIT N.T.S.



A 1-C-34 SECTION N.T.S.



B 1-C-34 SECTION N.T.S.



4 1-C-34 CHEMICAL VALVE PIT N.T.S.

PIPE SECTION

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS AND THE EXISTING UTILITY LINES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THESE UTILITY COMPANIES AS NECESSARY REGARDING MODIFICATIONS TO EXISTING SYSTEMS OR ADAPTATIONS FOR NEW SERVICE CONNECTIONS. ANY DEVIATIONS FROM THE NEW UTILITY DESIGN LOCATIONS SHOWN IN THESE PLANS SHALL BE REPORTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGE TO EXISTING UTILITY LINES RESULTING FROM CONTRACTOR NEGLIGENCE SHALL BE REPAIRED SOLELY AT CONTRACTOR EXPENSE.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

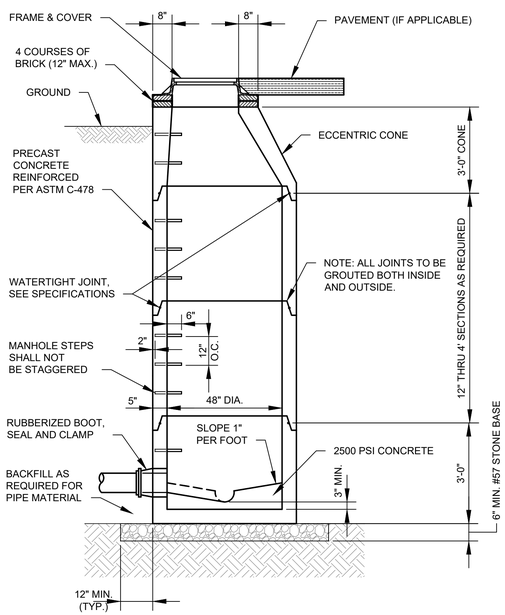
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

YARD PIPING CONNECTION DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111-Design.dwg

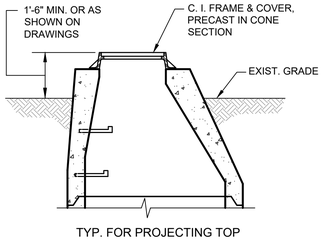
Sheet No.
1-C-34

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111-Design.dwg 08/01/2025 1:21pm aencamacion



STANDARD MANHOLE

N.T.S.



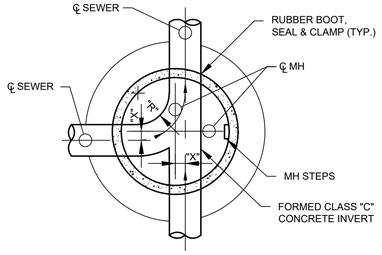
TYP. FOR PROJECTING TOP

TOP SECTION

NTS

FRAME AND COVER INSTALLATION NOTES:

1. COVER TO BE SET FLUSH WITH PAVEMENT AND SHALL MATCH SLOPE OF STREET.
2. ADJUSTMENT OF FRAME AND COVER TO GRADE SHALL BE ACOMPLISHED WITH A PRECAST CONCRETE LEVELING RING OR HDPE (LADTECH, INC. OR EQUAL) ADJUSTING RING. IN NO CASE SHALL VERTICAL ADJUSTMENT EXCEED 14-INCHES.
3. FRAME SHALL BE IN CEMENT MORTAR BED (1-1/2" THICKNESS).
4. FRAME SHALL BE PRECAST IN CONE SECTION OF ALL MANHOLES NOT LOCATED IN PAVED AREAS.



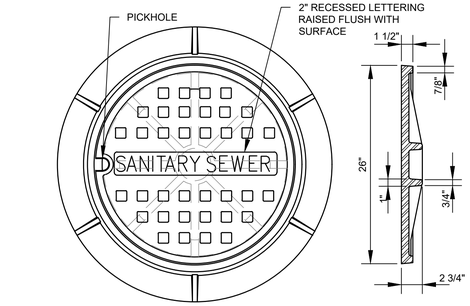
PLAN VIEW OF MANHOLE

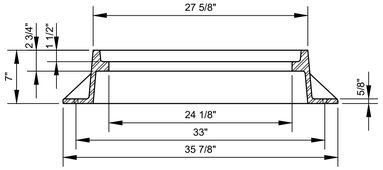
NOTE: TABLES ARE TO BE GENTLY SLOPED AND TROWELED FROM MANHOLE WALL TO INVERT WALL HEIGHT AND CONSTRUCTED OF AGGREGATE-MIX CEMENT WITH SMOOTH VENEER FINISH.

STANDARD PRECAST MANHOLES SCHEDULE OF GOVERNING DIMENSIONS				
PIPE SIZE	ANGLE	M.H. DIAMETER	"R"	"X"
8" THRU 12"	0° To 90°	4'	1'-0"	0"
15"	0° To 60°	4'	1'-3"	0"
15"	60° To 90°	4'	1'-3'	6"
18"	0° To 60°	4'	1'-6"	0"
18"	60° To 90°	4'	1'-4"	8"
21"	0° To 60°	4'	1'-9"	0"
21"	60° To 90°	5'	1'-9"	9"
24"	0° To 60°	4'	2'-0"	0"
24"	60° To 90°	5'	1'-6"	9"
27"	0° To 60°	5'	2'-3"	0"
27"	60° To 90°	6'	2'-0"	1'-0"
30"	0° To 60°	5'	2'-6"	0"
30"	60° To 90°	6'	1'-9"	8"
36"	0° To 90°	PRE-BED PIPE M.H. BASE & ELBOW UNIT		

STANDARD MANHOLE SCHEDULE

N.T.S.

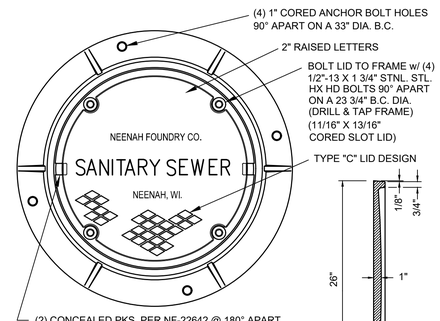


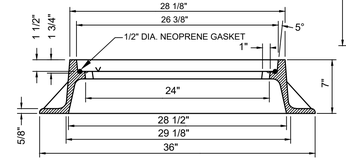


NEENAH MODEL R-1642 OR APPROVED EQUAL,
MATERIAL: CAST GRAY IRON ASTM A48, CLASS 35B
FINISH UNPAINTED WEIGHT 382 LBS. PER SET

STANDARD MANHOLE FRAME AND COVER

N.T.S.

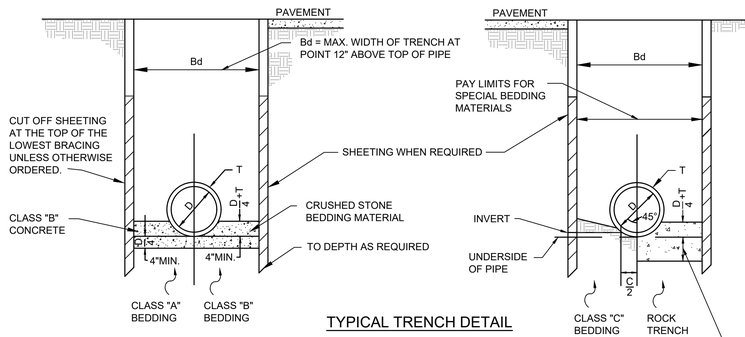




COMPONENT NO.'S: FRAME; 1370-0002, LID; 1916FT07-7
MATERIAL: CAST GRAY IRON ASTM A48, CLASS 35B
FINISH UNPAINTED
WEIGHT 330 LBS. PER SET

STANDARD MANHOLE BOLT DOWN F&C

N.T.S.



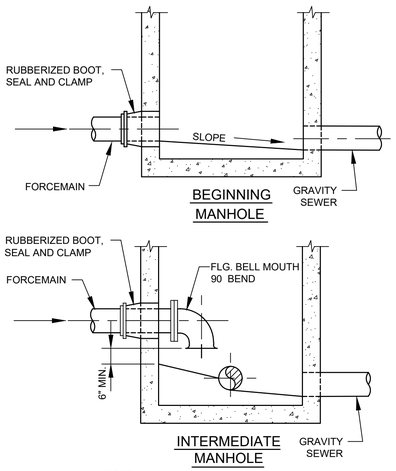
TYPICAL TRENCH DETAIL

NOTE: MUST BE IN COMPLIANCE W/OSHA REGULATIONS
SEE SPECIFICATIONS FOR COMPACTION REQUIREMENTS

				A.S.T.M. C76-					A.S.T.M. - 3034 DR35				
DUCTILE IRON PIPE				REINF. CONCRETE PIPE					P.V.C. PIPE				
D IN	T IN	Bd FT		T IN	★ CRADLE	T IN	Bd FT		C IN	★ CRADLE	T IN	Bd FT	
6	0.38	2.00		0.41	0.034						0.18	2.52	
8	0.42	2.09		0.53	0.036						0.24	2.70	
10	0.48	2.26		0.65	0.043						0.30	2.88	
12	0.52	2.43		0.78	0.049	2	2.67		0.95	0.060	0.36	3.04	
15						2-1/4	3.00		1.15	0.073	0.437	3.28	
18	0.73	2.96		1.15	0.072	2-1/2	3.25		1.35	0.088			
21						2-3/4	3.54		1.55	0.109			
24	0.85	3.48		1.52	0.108	3	3.83		1.75	0.131			
27						3	4.08		1.95	0.153			
30	0.99	4.00		1.88	0.149	3-1/2	4.42		2.20	0.184			
33						3-3/4	4.75		2.40	0.215			
36	1.19	4.50		2.27	0.199	4	5.67		2.60	0.288			
42	1.32	5.00		2.63	0.253	4-1/2	6.25		3.00	0.360			
48	1.44	5.50		3.00	0.314	5	6.83		3.50	0.440			
54						5-1/2	7.42		3.70	0.540			
60						6	8.00		4.25	0.630			
66						6-1/2	8.58		4.65	0.740			
72						7	9.17		5.07	0.860			

PIPE BEDDING DETAIL

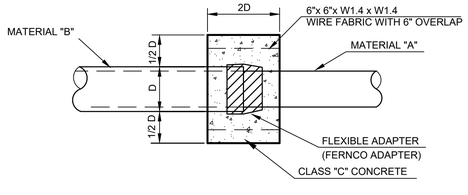
N.T.S.



NOTE:
1.) EXISTING MANHOLES SHALL BE CORED FOR FORCE MAIN INSTALLATION.
2.) EXISTING TABLES SHALL BE MODIFIED AS REQUIRED

FORCEMAIN TIE-IN

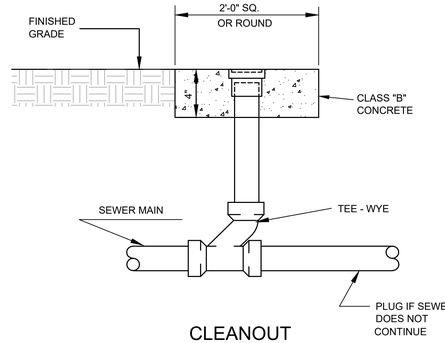
N.T.S.



NOTE:
THE USE OF A 5 MIL. POLYETHYLENE WRAP (2 LAYERS 12" WIDE) WILL GENERALLY BE PERMITTED ONLY WHEN FERNCO ADAPTER IS NOT AVAILABLE FOR CONNECTIONS INVOLVING LARGE DIAMETER PIPES.

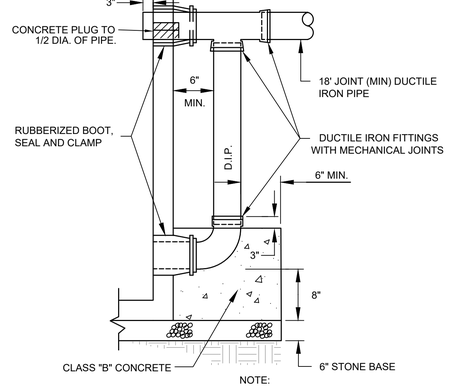
TRANSITION COLLAR DETAIL

N.T.S.



CLEANOUT

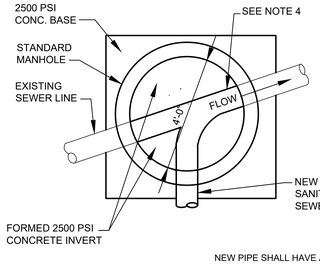
N.T.S.

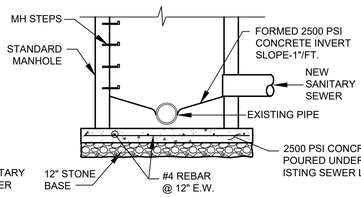


NOTE:
1) FOR 15" PIPE OR SMALLER.
2) NO INSIDE DROPS ALLOWED

OUTSIDE DROP MANHOLE

N.T.S.



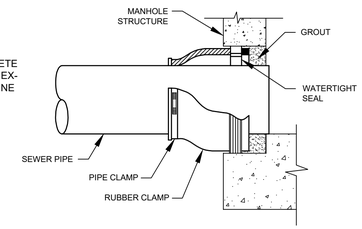


NEW PIPE SHALL HAVE A MINIMUM 8"DROP INTO MANHOLE WHENEVER POSSIBLE

NOTES:
1. OPENINGS BETWEEN EXISTING PIPE AND NEWLY INSTALLED DOGHOUSE MH SHALL BE SEALED WITH NON-SHRINK HYDRAULIC CEMENT.
2. TABLES ARE TO BE GENTLY SLOPED AND TROWELED SMOOTH FROM MANHOLE WALL TO INVERT WALL HEIGHT AND CONSTRUCTED OF AGGREGATE-MIX CEMENT WITH SMOOTH VENEER FINISH.
3. PROVIDE PRECAST MANHOLE RISER COMPLETE WITH UPSIDE DOWN U-SHAPED OPENINGS TO SUIT EXISTING LINES & STD. PRECAST OPENINGS TO SUIT PROPOSED LINES.
4. CUT AND REMOVE THE TOP HALF OF THE EXISTING PIPE AFTER THE INVERT AND SHELF HAVE BEEN FORMED, AND THE MANHOLE HAS BEEN FULLY TESTED IN ACCORDANCE WITH THE SPECIFICATIONS.

DOGHOUSE MANHOLE

N.T.S.



RUBBER BOOT DETAIL

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MSG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

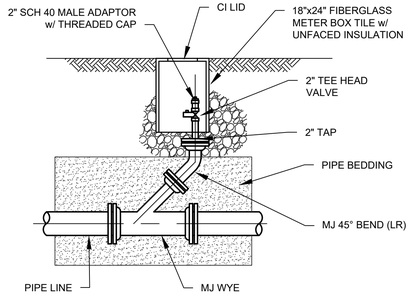
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONSTRUCTION DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Construction Details.dwg

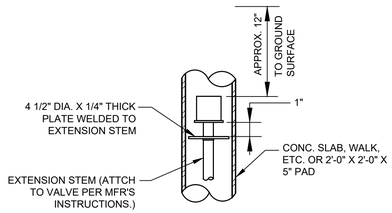
Sheet No.
1-C-35

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111- Construction Details.dwg 08/01/2025 1:22pm aencarnacion

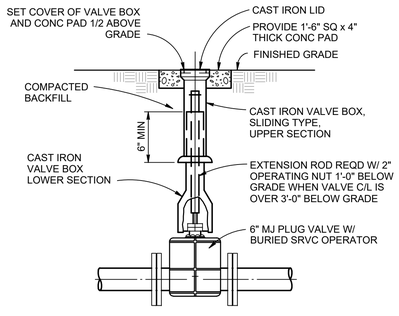


NOTE:
AT END OF A LINE (2) MJ 45° BENDS (LR) CAN BE USED.

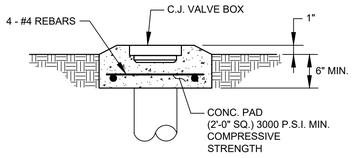
IN-LINE FLUSHING CONNECTION
N.T.S.



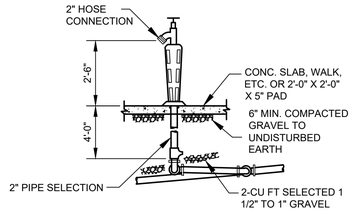
EXTENSION STEM DETAIL
N.T.S.



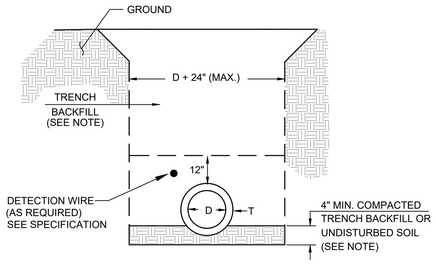
BURIED SERVICE PLUG VALVE
N.T.S.



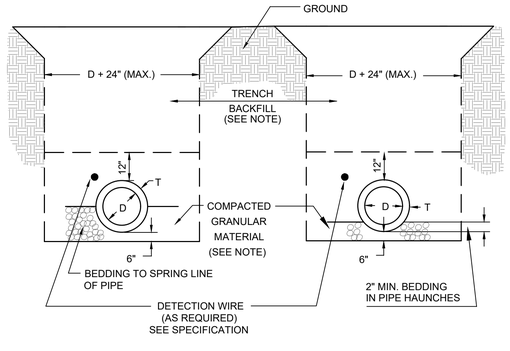
VALVE BOX PAD DETAIL
N.T.S.



NON FREEZE YARD HYDRANT
N.T.S.



CLASS "D" BEDDING

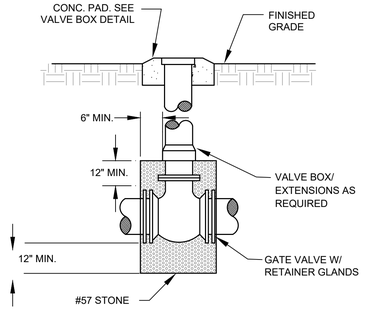


CLASS "B" BEDDING
PVC PIPING FOR GRAVITY SEWERS

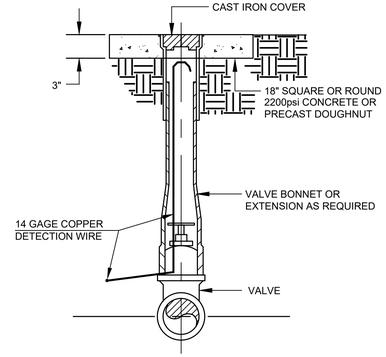
CLASS "C" BEDDING

NOTE:
SEE SPECIFICATIONS (EARTHWORK FOR UTILITIES) FOR BEDDING METHODS
AND BEDDING MATERIALS.

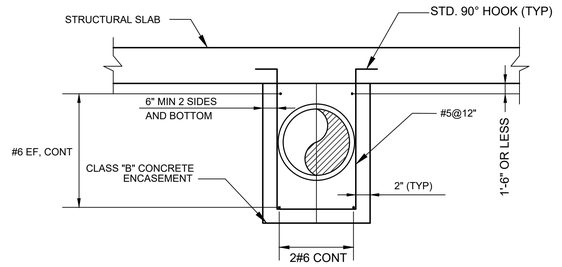
BEDDING DETAIL
N.T.S.



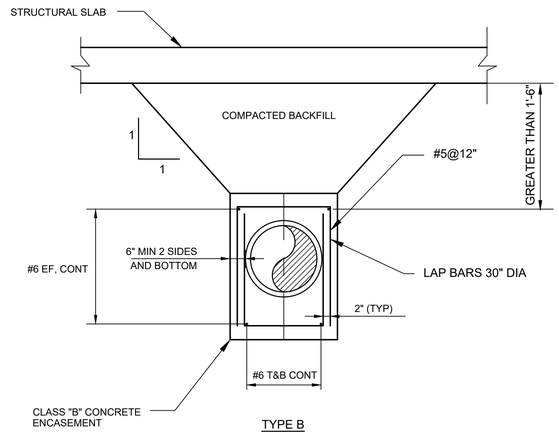
GATE VALVE INSTALLATION DETAIL
N.T.S.



VALVE BOX
N.T.S.



TYPE A



TYPE B

NOTES FOR TYPE B:
1. COMPACT ENTIRE TRENCH WIDTH OVER PIPE ENCASEMENT.
2. COMPACT ZONE AS INDICATED OVER PIPE ENCASEMENT FOR ALL OTHER EXCAVATIONS AND FILLS.

PIPE ENCASEMENT (METAL OR REINFORCED CONCRETE)
N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

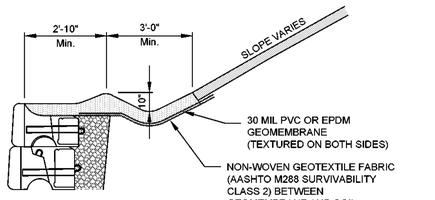
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CIVIL MISCELLANEOUS DETAILS

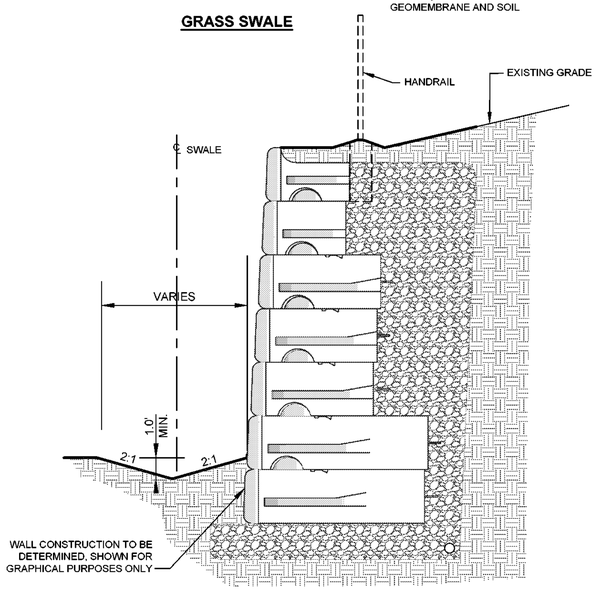
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Construction Details.dwg

Sheet No.
1-C-36

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111- Construction Details.dwg 08/01/2025 1:22pm aencarnacion



GRASS SWALE

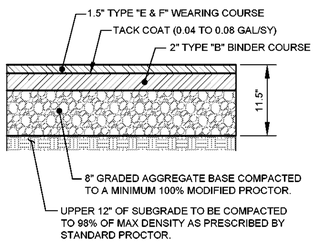


SWALE SECTIONS ADJACENT TO RETAINING WALL

N.T.S.

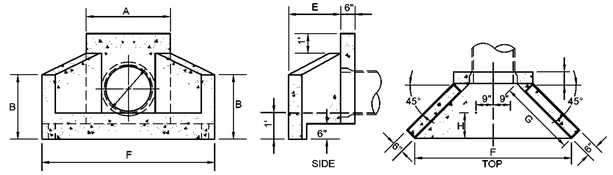
RETAINING WALL NOTES:

1. FINAL PROFESSIONAL ENGINEER STAMPED CONSTRUCTION DRAWINGS MUST BE PROVIDED AND PAID FOR BY CONTRACTOR.
2. GEOTECHNICAL ENGINEER SHALL PREPARE SOIL ANALYSIS AND DESCRIPTION REPORT PRIOR TO WALL DESIGN. CONTRACTOR SHALL COORDINATE BETWEEN GEOTECHNICAL ENGINEER AND WALL DESIGNER TO PROVIDE ALL INFORMATION REQUIRED WITHIN THE REPORT TO WALL DESIGNER. CONTRACTOR SHALL PAY FOR ALL TESTING AND REPORTS.
3. GEOTECHNICAL ENGINEER / MATERIAL TESTING LABORATORY SHALL VERIFY SOIL BEARING CAPACITY PRIOR TO PLACEMENT OF BASE STONE. CONTRACTOR SHALL PAY FOR ALL TESTING AND REPORTS.
4. INDIVIDUAL TESTS AND REPORTS ARE REQUIRED FOR EACH WALL LOCATION.
5. RETAINING WALL TO BE PERMITTED SEPARATELY.



STANDARD DUTY ASPHALT PAVEMENT SECTION

N.T.S.



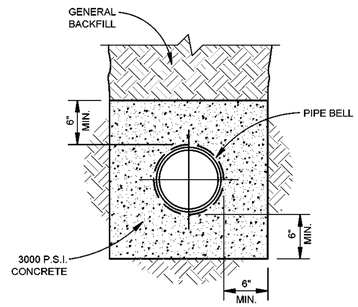
VARIABLE DIMENSIONS (CONCRETE PIPE)										
INSIDE DIA. PIPE	AREA PIPE OPENING	A	B	C	D	E	F	G	H	BASE AREA
18"	1.76	3'-2"	2'-3"	3'-2"	1'-9"	1'-4"	4'-5"	1'-10 1/2"	0'-11 3/4"	7.34
21"	2.40	3'-5"	2'-5"	3'-5"	2'-10"	1'-5"	4'-10"	2'-0"	1'-0 1/4"	9.90
24"	3.14	3'-8"	2'-7"	3'-8"	2'-3"	1'-7"	5'-5"	2'-3"	1'-1 1/4"	9.90
30"	4.91	4'-2"	2'-11"	4'-2"	2'-9"	1'-11"	6'-7"	2'-8 1/2"	1'-3 1/4"	13.50
36"	1.07	4'-8"	3'-3"	4'-8"	3'-3"	2'-3"	7'-9"	3'-2 1/4"	1'-5 1/2"	17.65
42"	9.62	5'-2"	3'-7"	5'-2"	3'-9"	2'-7"	8'-1"	3'-7 1/2"	1'-7 1/2"	28.60
48"	12.58	5'-8"	4'-0"	5'-8"	4'-3"	3'-0"	10'-3"	4'-3"	1'-10 1/4"	28.60
54"	16.00	6'-10"	*	5'-8"	*	*	*	4'-6 1/2"	*	*
60"	19.60	7'-4"	*	6'-0"	*	*	*	5'-1/2"	*	*

NOTES
SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR. ALL CONCRETE SHALL BE 4000 PSI AND REINFORCING STEEL SHALL BE 1/2@ OF INTERMEDIATE GRADE. PLACE REINFORCING WITH 2" MIN. CLEARANCE AND CHAMFER ALL EXPOSED CONCRETE EDGES 3/4".

* CONFORM TO GA. D.O.T. STANDARD 1001-B

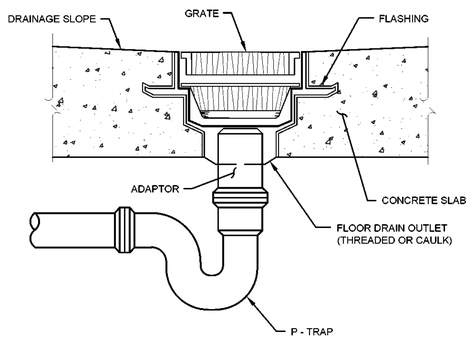
STANDARD HEADWALL

N.T.S



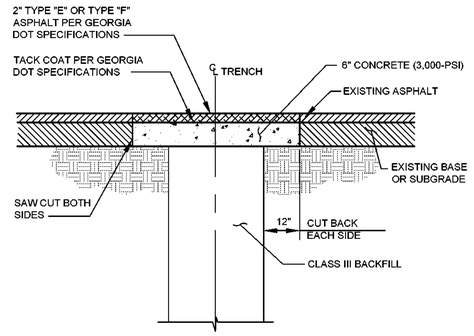
CONCRETE ENCASEMENT

N.T.S.



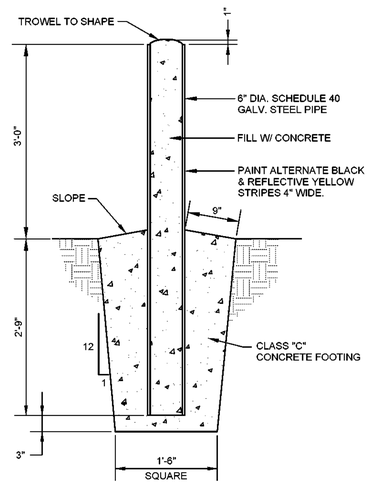
FLOOR DRAIN DETAIL

NTS



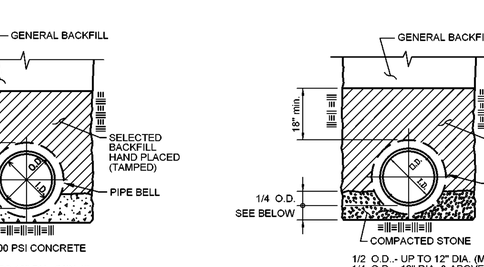
ROADWAY PAVEMENT CUT REPAIR

N.T.S.



CONCRETE BOLLARD DETAIL

N.T.S.



1/2 O.D. - UP TO 12" DIA. (MIN.4")
1/4 O.D. - 12" DIA. & ABOVE (MIN.6")
(MAX. 12")

CLASS "A" BEDDING

STORM PIPELINE BEDDING

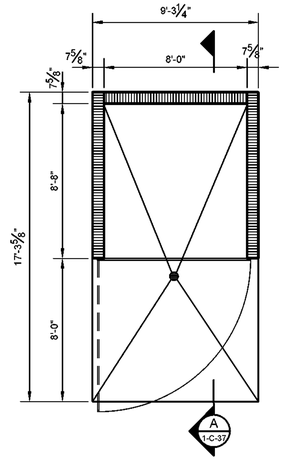
N.T.S.

1/2 O.D. - UP TO 12" DIA. (MIN.4")
1/4 O.D. - 12" DIA. & ABOVE (MIN.6")
(MAX. 12")

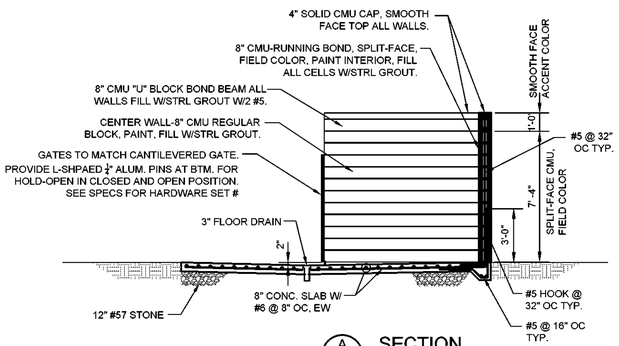
CLASS "C" BEDDING

STORM PIPELINE BEDDING

N.T.S.



PLAN



NOTE: COLOR SELECTED BY OWNER

DUMPSTER ENCLOSURE DETAILS

N.T.S.

GEORGIA REGISTERED
Jeffrey
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT
ENGINEERING + ENVIRONMENTAL

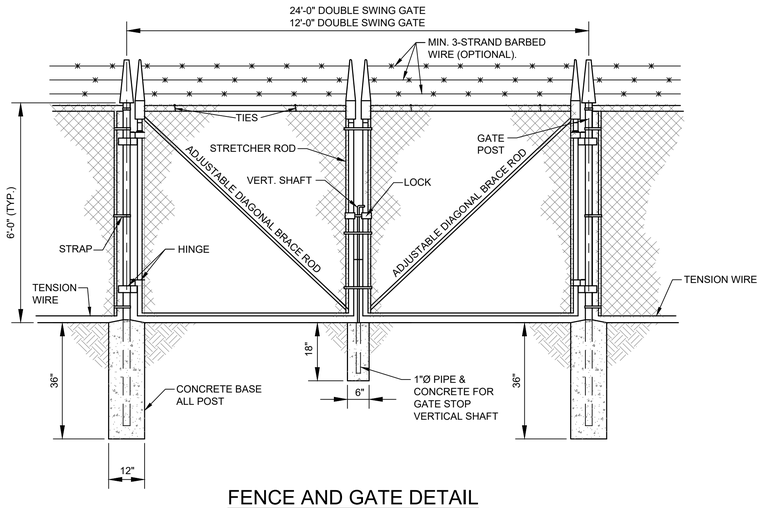
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CIVIL MISCELLANEOUS DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111 Construction Details.dwg

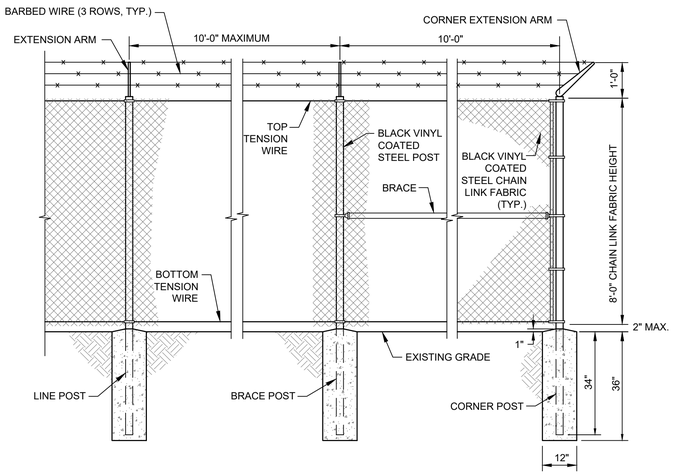
Sheet No.
1-C-37

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111- Construction Details.dwg 08/01/2025 1:22pm aencarnacion



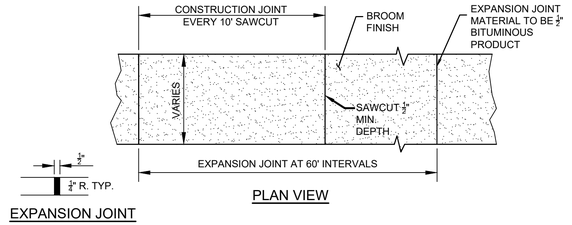
FENCE AND GATE DETAIL

N.T.S



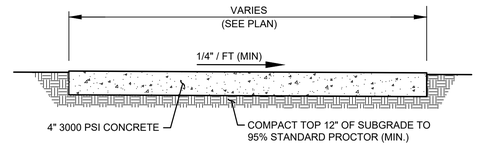
CHAIN LINK FENCE DETAIL

N.T.S



EXPANSION JOINT

PLAN VIEW



SECTION

CONCRETE SIDEWALK

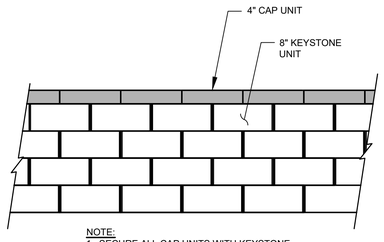
N.T.S.

NOTES:

1 - ACCESS RAMPS ARE TO BE PLACED AT ALL DRIVES, INTERSECTIONS, AND AT ALL CURB ENCROACHMENTS.
SEE GEORGIA DOT STANDARD 9031W.

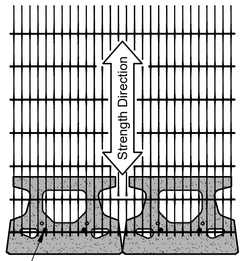
2 - WHERE UTILITY STRUCTURES CONFLICT, WHERE SIDEWALK GEOMETRY VARIES AT SKEWED INTERSECTIONS OR IN OTHER SPECIAL CASES, THE SIDEWALK/RAMP MAY BE MODIFIED BY THE DESIGNER, PROVIDED THE WIDTH REMAINS CONSISTENT AND NO PART OF THE RAMP IS STEEPER THAN 12:1.

3 - 1/2" EXPANSION MATERIAL SHALL BE PLACED WHERE SIDEWALK TIES INTO A STRUCTURE OR TERMINATES AT CURB, RAMPS OR DRIVEWAYS OR AT 60' MIN.



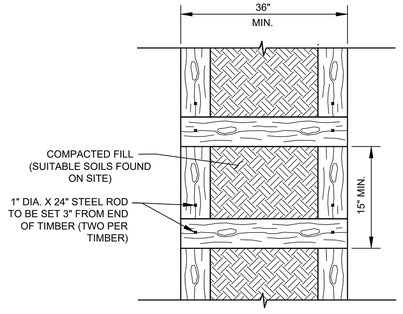
NOTE:
1. SECURE ALL CAP UNITS WITH KEYSTONE KAPSEAL OR EQUAL.

TOP OF WALL STEPS



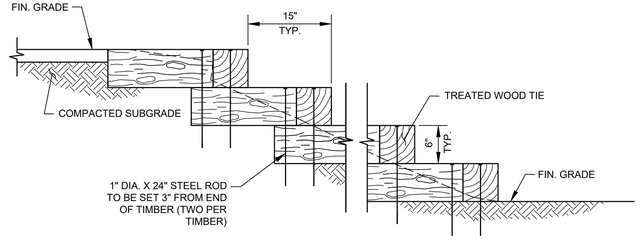
GEOGRID IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED OVER THE FIBERGLASS PINS. PLACE NEXT UNIT. PULL GRID TAUGHT AND BACKFILL. STAKE AS REQUIRED.

GRID & PIN CONNECTION



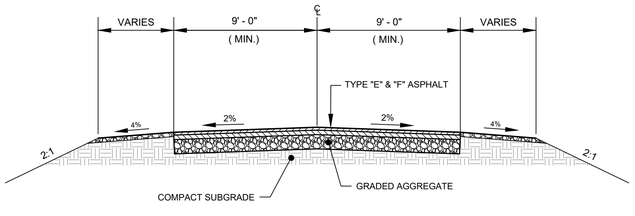
TIMBER STEPS PLAN VIEW

N.T.S.



TIMBER STEPS DETAILS

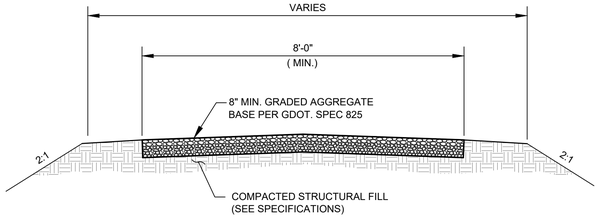
N.T.S.



NOTE: FOR ASPHALT LAYERS SEE DETAIL ON SHEET - 1-C-7.

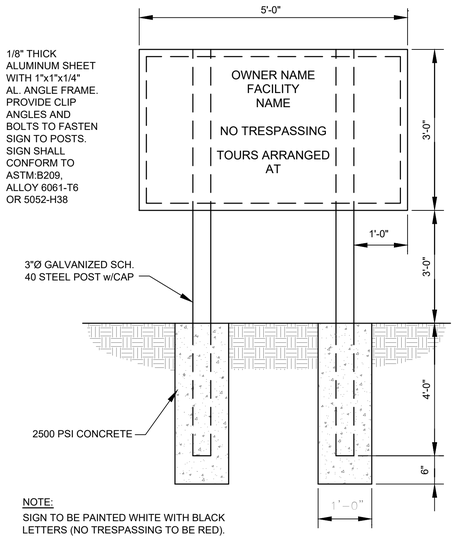
PAVED ACCESS ROAD

N.T.S.



GRAVEL ACCESS DRIVEWAY SECTION

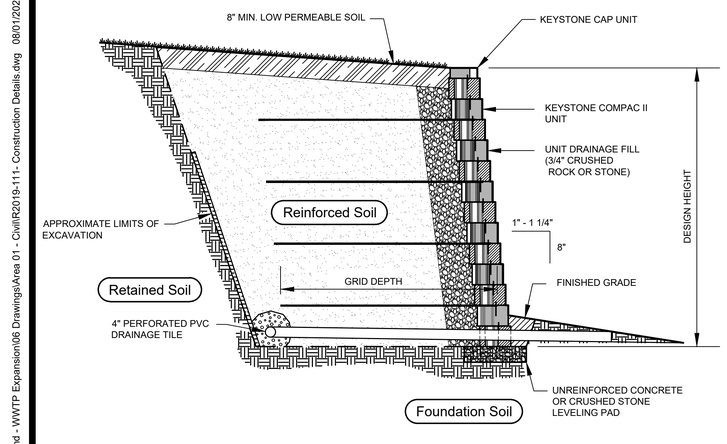
N.T.S.



NOTE:
SIGN TO BE PAINTED WHITE WITH BLACK LETTERS (NO TRESPASSING TO BE RED).

FACILITY IDENTIFICATION SIGN

N.T.S.



TYPICAL REINFORCED WALL SECTION

NOTES:

1. WHEN SITE CONDITIONS REQUIRE, WRAP DRAINAGE TILE IN 3/4" AGGREGATE AND FILTER FABRIC WITH DRAINAGE COMPOSITE OR AGGREGATE BACK DRAIN SYSTEM, AS DIRECTED BY GEOTECHNICAL ENGINEER.
2. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2,000 PSI± UNREINFORCED CONCRETE
3. THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.
4. CURVES INSTALLATION, CHECK WITH MANUFACTURE SPECIFICATIONS ON CORRECT DIRECTION OF ORIENTATION FOR GEOGRID TO OBTAIN PROPER STRENGTH.

KEYSTONE WALL DETAILS

NOT TO SCALE

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

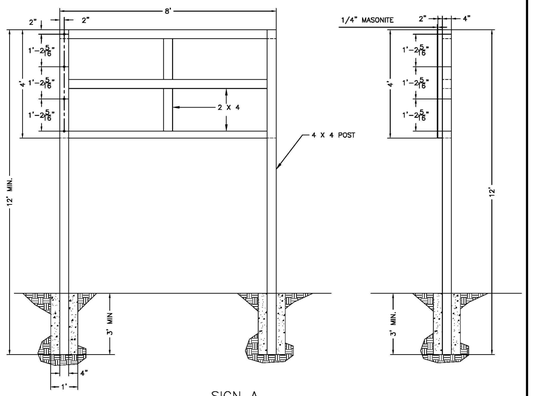
CIVIL MISCELLANEOUS DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No.: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Construction Details.dwg

Sheet No.
1-C-38

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111- Construction Details.dwg 08/01/2025 1:22pm aencarnacion

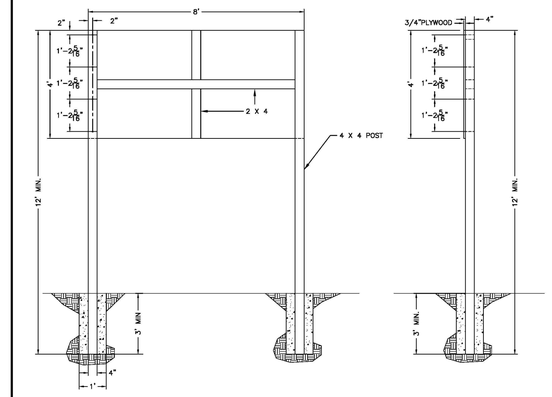
OMB Number: 0610-0096
Expiration Date: 01/31/2025



SIGN A
MASONITE SIGN
SCALE: 3/8" = 1'

PROJECT – SIGN A
ECONOMIC DEVELOPMENT ADMINISTRATION

OMB Number: 0610-0096
Expiration Date: 01/31/2025



SIGN B
PLYWOOD SIGN
SCALE: 3/8" = 1'

PROJECT – SIGN B
ECONOMIC DEVELOPMENT ADMINISTRATION

Back

OMB Number: 0610-0096
Expiration Date: 01/31/2025

EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a project sign according to the specifications set forth below:

EDA SITE SIGN SPECIFICATIONS

Size: 4' x 8' x ¾"

Materials: Exterior grade/MDO plywood (APA rating A-B)

Supports: 4" x 4" x 12' posts with 2" x 4" cross branching

Erection: Posts shall be set a minimum of three feet deep in concrete footings that are at least 12" in diameter.

Paint: Outdoor enamel

Colors: Jet Black, Blue (PMS300), and Gold (PMS7406). Specifically, on white background the following will be placed:

The U. S. Department of Commerce seal in blue, black, and gold;

"EDA" in blue;

"U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION" in black;

"In partnership with" in blue;

(Actual name of the) "EDA Grant Recipient" in black;

Lettering: Specific fonts are named below; positioning will be as shown on the attached illustration.

"U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION" use Bank Gothic Medium - BANK GOTHIC MED

"In partnership with" use Univers™ 55 Oblique - *Univers 55*

(Name of) "EDA Grant Recipient" use Univers™ Extra Black 85 **Univers 85**

Project signs will not be erected on public highway rights-of-way. If any possibility exists for obstruction to traffic line of sight, the location and height of the sign will be coordinated with the agency responsible for highway or street safety in the area.

The EDA Regional Director may permit modifications to these specifications if they conflict with state law or local ordinances.





GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EDA SITE SIGN DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Construction Details.dwg

Sheet No.
1-C-38A

\\Buldata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 01 - Civil\R2019-111- Construction Details.dwg 08/01/2025 3:56pm apaviuscenco

SCHEMATIC DIAGRAM SYMBOLS:

CONDUCTORS CONNECTED

CONDUCTORS NOT CONNECTED

CONNECTION POINT

XX — TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED.

MCPXXX–XX / XXA — MAGNETIC–ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING

CBXXX–XX / XXA — CIRCUIT BREAKER, THERMAL–MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING

FUXXX–XX / [XXA] — FUSE WITH SIZE AND OPTIONAL IDENTIFICATION.

DSXXX–XX / XXXA — DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP, 600V RATED MINIMUM UNLESS OTHERWISE NOTED.

FUXXX–XX / [XXA] — FUSE DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP, 600V MINIMUM UNLESS OTHERWISE NOTED.

M–XXX / XX — MOTOR (HP AS SHOWN, PHASES AS REQUIRED)

MSR–XXX / XX XX — MOTOR STARTER COIL

OL–XXX — THERMAL MOTOR OVERLOAD

M–XXX — MOTOR CONTACT

LSXXX–XX / LSXXX–XX — LIMIT SWITCH NORMALLY CLOSED AND NORMALLY OPEN

PSXXX–XX / PSXXX–XX — PRESSURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN

TSXXX–XX / TSXXX–XX — TEMPERATURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN

FSXXX–XX / FSXXX–XX — FLOW SWITCH NORMALLY CLOSED AND NORMALLY OPEN

FLTXXX–XX / FLTXXX–XX — LEVEL SWITCH NORMALLY CLOSED AND NORMALLY OPEN

PRSXXX–XX / PRSXXX–XX — PROXIMITY SWITCH NORMALLY CLOSED AND NORMALLY OPEN

PCSXXX–XX / PCSXXX–XX — PULLCORD SWITCH NORMALLY CLOSED AND NORMALLY OPEN

SVXXX–XX — SOLENOID VALVE

PBXXX–XX / PBXXX–XX — MOMENTARY PUSHBUTTON NORMALLY CLOSED AND NORMALLY OPEN

SSXXX–XX / OX SSXXX–XX / OX — SELECTOR SWITCH NORMALLY CLOSED AND NORMALLY OPEN

TRXXX–XX / 0–30 SEC TRXXX–XX / 0–30 SEC — TIME DELAY SWITCH NORMALLY CLOSED AND NORMALLY OPEN

LTXXX–XX / X — PILOT LIGHT X = LENS COLOR
A = AMBER
B = BLUE
G = GREEN
R = RED
W = WHITE

CRXXX–XX — CONTROL RELAY

CRXXX–XX / CRXXX–XX — CONTROL RELAY CONTACT NORMALLY CLOSED AND NORMALLY OPEN

ALXXX–XX — ALARM LIGHT

AHXXX–XX — ALARM HORN

H1 H2 / TFR–XXX / X1 X2 — CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.

C.T. CTXXX–XX — CURRENT TRANSFORMER. PRIMARY/SECONDARY TURNS RATIO AS SHOWN.

XZXXX–XX — MOTOR SPACE HEATER

ONE LINE DIAGRAM SYMBOLS:

CB–xxx / xxA–T / xxA–F — LOW VOLTAGE POWER CIRCUIT BREAKER, DRAW–OUT TYPE, FRAME AND TRIP ID SHOWN

CB–xxx / xxA–T / xxA–F — MOLDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN

LIGHTNING ARRESTOR AND GROUND

DS–XXX — DISCONNECT OR ISOLATING SWITCH:
CONTINUOUS RATING SHOWN

MCP–XXX — MAGNETIC–ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING

FS–XXX — FUSED SWITCH:
FUSE AND SWITCH CONTINUOUS RATINGS SHOWN

TFR–XXX — POWER TRANSFORMER:
PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN

XS — CURRENT TRANSFORMER:
RATIO SHOWN (3 INDICATES NO. OF CT'S)
METER SWITCH, xS:
AS – AMMETER SWITCH
VS – VOLTMETER SWITCH
FS – FREQUENCY SWITCH

PT — POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS

METER — METER:
A – AMMETER
W – WATTMETER
KWH – WATT–HOUR METER
F – FREQUENCY METER
VAR – VAR METER
V – VOLTMETER

FVNR SIZE 1 — FULL VOLTAGE, NON–REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED

FVR SIZE X — FULL VOLTAGE, REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED

VFD–xxx / xxHP — VARIABLE FREQUENCY DRIVE,
NEMA SIZE INDICATED

RVSS–xxx / xxHP — REDUCED VOLTAGE SOLID STATE DRIVE (SOFT START),
NEMA SIZE INDICATED

xx HP / M–xxx — MOTOR
(HP AS SHOWN, PHASES AS REQUIRED)

GENERATOR RECEPTACLE

N E / MTS–XXX — MANUAL TRANSFER SWITCH

xx / P–XXX–X / x/c #xx / 1/c #xx GND IN x" C. — CABLE TAG:
P – POWER CABLE
C – CONTROL CABLE
S – SHIELDED SIGNAL CABLE

CIRCUIT AND RACEWAY SYMBOLS:

RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED.
(UNLESS OTHERWISE NOTED)

RACEWAY OR WIRING SYSTEM BELOW FLOOR LEVEL, ABOVE CEILING, HIDDEN, OR EXISTING CABLE/CONDUIT.
(UNLESS OTHERWISE NOTED)

SCHEMATIC DIAGRAM FIELD WIRING.
(UNLESS OTHERWISE NOTED)

ONE LINE DIAGRAM EQUIPMENT ENCLOSURE.
(UNLESS OTHERWISE NOTED)

G — GROUNDING CONDUCTOR (CONCEALED), #4/0 AWG BARE COPPER

GG GG — GROUNDING CONDUCTOR (EXPOSED), #4/0 AWG INSULATED COPPER

PBD A–1,3,5 — HOME RUN – SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION
EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5

GENERAL ABBREVIATIONS:

AR	ALARM RELAY
AS	AMMETER SELECTOR SWITCH
A, AMP	AMP(S), AMPERE(S)
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AIC	AMPS INTERRUPTING CAPACITY, SYMM.
AL	ALUMINUM
AT	AMPERE TRIP
AF	AMPERE FRAME
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER CONDUCTOR
BKR	BREAKER
C	CONDUCTOR/CONTACTOR
CB	CIRCUIT BREAKER
CJB	CIRCUIT JUNCTION BOX
CKT	CIRCUIT
CLG	CEILING
CR	CONTROL RELAY
CND	CONDUIT
CONC	CONCRETE
CS	CONTROL SWITCH
CONT	CONTROL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
D	DIAMETER
DB	DUCT BANK
DC	DIRECT CURRENT
DET	DETAIL
DIAG	DIAGRAM
DPSH	DIFFERENTIAL PRESSURE SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
ENCL	ENCLOSURE/ENCLOSED
EP	EXPLOSION PROOF EQUIP.
EX, E	EXISTING
FCP	FURNISHED WITH EQUIPMENT PANEL
FDR	FEEDER
FLA	FULL LOAD AMPS
FPP	FIBER OPTIC DISTRIBUTION PANEL
FS	FLOW SWITCH
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE NON–REVERSING
FVR	FULL VOLTAGE REVERSING
GALV	GALVANIZED
GEN	GENERATOR
GFR	GROUND FAULT RELAY
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
H	HIGH
HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HS	HAND STATION (SWITCH)
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
HOA	HAND/OFF/AUTO
HOR	HAND/OFF/REVERSE
HMH	HIGH VOLTAGE MANHOLE
ID	INSIDE DIAMETER
IMC	INDIVIDUAL MOTOR CONTROLLER
INTLK	INTERLOCK
INST	INSTANTANEOUS
INSTR	INSTRUMENT
I/O	INPUT–OUTPUT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT–AMPERE
KVAR	KILOVOLT–AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT–HOUR
KAIC	KILO AMPERE INTERRUPTING CURRENT
L–O–R	LOCAL–OFF–REMOTE
L	LONG
LC	LIGHTING CONTACTOR
LCP	LOCAL CONTROL PANEL
LP	LIGHTING PANEL
LOS	LOCK–OUT STOP
LSIG	LONG, SHORT, INSTANTANEOUS TRIP SETTING AND GROUND FAULT PROTECTION
LSL	LEVEL SWITCH LOW
LSO	LIMIT SWITCH OPEN
LSC	LIMIT SWITCH CLOSED
LTG	LIGHTING
LV	LOW VOLTAGE
LSH	LEVEL SWITCH HIGH
M	MOTOR CONTACTOR
mA	MILLIAMPERE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL/MOTOR CIRCUIT PROTECTOR
MECH	MECHANICAL
MFR	MANUFACTURE(R)
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
mM	MILLIMETER
mV	MILLIVOLT
MCM	MILLI CIRCULAR MILLS
MOP	MOTOR OPERATOR PANEL
MPR	MOTOR PROTECTION RELAY
MCB	MAIN CIRCUIT BREAKER
MTR	MOTOR
MVS	MEDIUM VOLTAGE STARTER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEUT,N	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NP	NAMEPLATE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OL's	OVERLOADS
OT	OIL TIGHT
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON, PULLBOX
PE	PHOTO ELECTRIC CELL
PF	POWER FACTOR
PH	PHASE
PJB	POWER JUNCTION BOX
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PP	POWER PANEL
PR	PAIR
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QSH	SHEAR PIN LIMIT SWITCH
RCPT	RECEPTACLE
RCT	REACTOR
REF	REFERENCE REQ'D REQUIRED
RMS	ROOT MEAN SQUARE
RTD	RESISTANCE TEMPERATURE DETECTOR
SCH	SCHEDULE
SE	SPEED SENSOR
SEC	SECONDARY
SEL	SELECTOR
SER	SERVICE ENTRANCE RATED
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPHTR	MOTOR SPACE HEATER
SPKR	SPEAKER
S.S.	STAINLESS STEEL
SSL	SPEED SWITCH
STP	SHIELDED TWISTED PAIR
SUB	SUBSTATION
SW	SWITCH
SYMM	SYMMETRICAL
SYS	SYSTEM
SV	SOLENOID OPERATED VALVE
SPB	SIGNAL PULL BOX
SPD	SURGE PROTECTION DEVICE
TB	TERMINAL BOX
TEL	TELEPHONE
TEMP	TEMPERATURE
TFR	TRANSFORMER
TH	THERMOSTAT
TJB	TERMINAL JUNCTION BOX
TSH	TEMPERATURE SWITCH HIGH
TV	TELEVISION
TYP	TYPICAL
TR	TIMING RELAY
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VSH	VIBRATION SWITCH
W	WATT, WIRE, WIDE
W/	WITH
W/O	WITHOUT
WE	WEIGHT LOAD CELL
WIT	WEIGHT INDICATING TRANSMITTER
WP	WEATHERPROOF
XL	WARNING HORN/LIGHT
XT	ANEMOMETER
ZS	POSITION (LIMIT) SWITCH
ZSO	POSITION (LIMIT) SWITCH OPEN
ZSC	POSITION (LIMIT) SWITCH CLOSED
ZT	POSITION TRANSMITTER

GROUNDING SYMBOLS:

GROUND ROD, 3/4" x 10'–0", COPPERCLAD (UNLESS OTHERWISE NOTED)

GROUND ROD AND WELL

COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT

EXOTHERMIC TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT

GENERAL NOTES:

1. SCOPE:
   A. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, LIGHT FIXTURES, PANELS, SWITCHES, RECEPTACLES, DISCONNECTS, STARTERS, AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.
   B. OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.
   C. ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER AND SAFE OPERATION OR OTHERWISE REQUIRED BY CODE, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE PROVIDEED AND INSTALLED WITHOUT ADDITIONAL CHARGE.
   D. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, NFPA 820, ANY OTHER LOCALLY ADOPTED CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO PURCHASING.
3. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATED THE INSTALLATION ACCORDINGLY. THE EQUIPMENT WIRING SHALL INCLUDE ALL NECESSARY CABLES AND CONDUIT REQUIRED FOR THE PROPER AND SAFE EQUIPMENT OPERATION.
4. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND DISTANCES IN THE FIELD. IN CASE OF DISCREPANCY, CONTRACTOR SHALL INCLUDE A MORE EXPENSIVE OPTION.
5. ALL MATERIALS SELECTION SHALL BE AS PER THE SCHEDULE SHOWN ON DWG. 006–E–100, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PLAN DRAWING SYMBOLS:

M — MOTOR CONNECTION

MOTOR STARTER,
INDIVIDUAL –– NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

COMBINATION MOTOR STARTER/DISCONNECT
INDIVIDUAL –– NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

DISCONNECT SWITCH. DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED. MOUNT AT 4'–8" TO CENTER OF DISCONNECT.

FUSED DISCONNECT, NON–FUSED.
PROVISION FOR CLASS R FUSES.

FIELD INSTRUMENT CONNECTION

START/STOP HAND STATION MOUNTED TO HANDRAIL
(NEMA 4X UNLESS OTHERWISE NOTED)

$X — 120V, 20A, 1P TOGGLE SWITCH
[BLANK] = 1P TOGGLE SWITCH
2 = 2P TOGGLE SWITCH
3 = 3P TOGGLE SWITCH
D = SLIDE DIMMER
M = MOTOR RATED
S = TOGGLE WITH OCCUPANCY SENSOR

DUPLEX 120V RECEPTACLE, 120V, 20A, 1P.
MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.

GFCI DUPLEX 120V RECEPTACLE, 120V, 20A, 1P.
MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.

QUADRAPLEX 120V RECEPTACLE, 120V, 20A, 1P.
MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.

TELEPHONE BOX. MOUNT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.

JB — JUNCTION BOX

60A, 480V, 3PH RECEPTACLE WITH INTERLOCKED 60A
(NEMA 4X FUSED DISCONNECT SWITCH UNLESS OTHERWISE NOTED)

2X4 PHONE/DATA J–BOX w/BLANK COVER. 1/2" CONDUIT THRU FLOOR (NOTE: DATA BOXES @ BASE CAB. 44" AFF)

GEORGIA REGISTERED No. 20513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL LEGEND AND NOTES

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
1-E-0

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

ELECTRICAL EQUIPMENT MATERIALS RATING										
NO.	EQUIPMENT	INSTALLATION AREA AND DESIGN CRITERIA								
		INDOOR NON–PROCESS; EXPOSED INSTALLATION (ELECTRICAL & CONTROL ROOMS, OFFICES, LAB, UNDER RAISED FLOORS, ETC.) ENVIRONMENT: NON–CORROSIVE; DRY	INDOOR NON–PROCESS, CONCEALED INSTALLATION (AREAS WITH RECESSED CEILING AND STUD WALLS) ENVIRONMENT: NON–CORROSIVE; DRY	INDOOR PROCESS (PIPING GALLERY, PUMPS ROOM, ETC.) ENVIRONMENT: CORROSIVE; DAMP	OUTDOOR CHEMICALS STORAGE AREA ENVIRONMENT: CORROSIVE; WET	OUTDOOR GENERAL AREAS ENVIRONMENT: CORROSIVE; WET	BELOW GRADE VAULTS (METERING VAULT, VALVE VAULT, ETC.) ENVIRONMENT: CORROSIVE; WET	CLASS 1, DIVISION 1, GROUP D HAZARDOUS AREA ENVIRONMENT: CORROSIVE; WET	CLASS 1, DIVISION 2, GROUP D HAZARDOUS AREA ENVIRONMENT: CORROSIVE; WET	UNDERGROUND AND DIRECT BURIED ENVIRONMENT: CORROSIVE; WET
1	RIGID CONDUITS	RMC – ALUMINUM	NO CONDUIT REQUIRED, USE METAL CLAD CABLE (MC)	RMC – ALUMINUM	PVC COATED ALUMINUM	RMC – ALUMINUM	RMC – ALUMINUM	RMC – ALUMINUM	RMC – ALUMINUM	DIRECT BURIED – PVC 40; CONCRETE ENCASED – PVC 40.
2	FLEXIBLE CONDUITS	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)	NO CONDUIT REQUIRED, USE METAL CLAD CABLE (MC)	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)	EXPLOSIONPROOF FLEXIBLE COUPLING	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC), RATED FOR CLASSIFIED AREA	N/A
3	CABLE TRAYS	LADDER TYPE – ALUMINUM	N/A	LADDER TYPE – ALUMINUM	FIBERGLASS REINFORCED PLASTIC	LADDER TYPE – ALUMINUM	LADDER TYPE – ALUMINUM	LADDER TYPE – ALUMINUM – ONLY WHEN USED WITH CABLE TYPES PERMITTED PER NEC ARTICLE 500	LADDER TYPE – ALUMINUM – ONLY WHEN USED WITH CABLE TYPES PERMITTED PER NEC ARTICLE 500	N/A
4	JUNCTION BOXES	STEEL – NEMA 1	STEEL – NEMA 1	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 304 SS	NEMA 7	NEMA 4X, TYPE 304 SS (WHEN NO SWITCHING CONTACTS OR ARCING DEVICES ARE IN THE JUNCTION BOX), OTHERWISE, USE NEMA 7	POLYMER CONCRETE
5	PULL BOXES	STEEL – NEMA 1	STEEL – NEMA 1	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 304 SS	NEMA 7	NEMA 4X, TYPE 304 SS (WHEN NO SWITCHING CONTACTS OR ARCING DEVICES ARE IN THE JUNCTION BOX), OTHERWISE, USE NEMA 7	POLYMER CONCRETE
6	EQUIPMENT RACKS/SUPPORTS/HARDWARE	ALUMINUM	ALUMINUM	ALUMINUM	STAINLESS STEEL 316	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	STAINLESS STEEL 304
7	FASTENERS	ALUMINUM	ALUMINUM	ALUMINUM	STAINLESS STEEL 316	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	STAINLESS STEEL 304
8	SWITCHGEAR	NEMA 1	N/A	N/A	N/A	NEMA 3R	N/A	N/A	N/A	N/A
9	SWITCHBOARD	NEMA 1	N/A	N/A	N/A	NEMA 3R	N/A	N/A	N/A	N/A
10	MOTOR CONTROL CENTER	NEMA 1	N/A	N/A	N/A	NEMA 3R	N/A	N/A	N/A	N/A
11	PANELBOARDS	NEMA 1	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	N/A	N/A	N/A	N/A
12	DRY TYPE TRANSFORMERS	NEMA 2	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	N/A	N/A	N/A	N/A
13	DISCONNECT SWITCHES	NEMA 1	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 304 SS	NEMA 7	NEMA 7	N/A
14	MOTOR STARTERS	NEMA 1	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 304 SS	NEMA 7	NEMA 7	N/A
15	CONTACTORS	NEMA 1	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 304 SS	NEMA 7	NEMA 7	N/A
16	CONTROL PANELS	NEMA 1	N/A	NEMA 4X, TYPE 304 SS	NEMA 4X, TYPE 316 SS	NEMA 4X, TYPE 304 SS	N/A	NEMA 7	NEMA 7	N/A
17	MOTOR HOUSING MINIMUM PROTECTION RATING	ODP	ODP	TEFC	TEFC	TEFC	TEFC	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	TEFC, RATED FOR CLASSIFIED AREA	N/A
18	INSTRUMENTATION MINIMUM PROTECTION RATING	NEMA 1	NEMA 1	NEMA 4X	NEMA 4X	NEMA 4X	NEMA 4X	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA OR USED WITH INTRINSICALLY SAFE BARRIERS	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA OR USED WITH INTRINSICALLY SAFE BARRIERS	NEMA 6P
19	VALVE ACTUATORS	N/A	N/A	NEMA 4	NEMA 4	NEMA 4	NEMA 6P	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	N/A
20	WIRING DEVICE BOXES	DIE–CAST ALUMINUM; WEATHERPROOF	DIE–CAST ALUMINUM; WEATHERPROOF	DIE–CAST ALUMINUM; WEATHERPROOF	ALUMINUM, PVC COATED; WEATHERPROOF	DIE–CAST ALUMINUM; WEATHERPROOF	DIE–CAST ALUMINUM; WEATHERPROOF	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	N/A
21	DEVICES COVER PLATES	STAINLESS STEEL; NON–WEATHERPROOF (WITH GASKET)	STAINLESS STEEL; NON–WEATHERPROOF (WITH GASKET)	DIE–CAST ALUMINUM; WEATHERPROOF (WITH GASKET)	ALUMINUM, PVC COATED; WEATHERPROOF (WITH GASKET)	DIE–CAST ALUMINUM; WEATHERPROOF (WITH GASKET)	DIE–CAST ALUMINUM; WEATHERPROOF (WITH GASKET)	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	N/A
22	OUTLET BOX HOODS	N/A	N/A	ALUMINUM; WEATHERPROOF (WHILE–IN–USE COVER) (WITH GASKET)	PLASTIC; WEATHERPROOF (WHILE–IN–USE COVER) (WITH GASKET)	ALUMINUM; WEATHERPROOF (WHILE–IN–USE COVER) (WITH GASKET)	ALUMINUM; WEATHERPROOF (WHILE–IN–USE COVER) (WITH GASKET)	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	EXPLOSION PROOF, RATED FOR CLASSIFIED AREA	N/A

CABLE TYPES REQUIREMENTS						
	MATERIAL	SERVICE ENTRANCE	VFD MOTOR FEEDERS	POWER	CONTROL	SIGNAL
CABLE TYPES	COPPER, UNLESS NOTED OTHERWISE	XHHW, 600V	SHIELDED VFD CABLES, 1000V	THWN–2, 600V	THWN–2, 600V	SHIELDED TWISTED TYPE, 600V

NOTES:

1. POWER CABLES REQUIREMENTS:
   1.1. MINIMUM ALLOWED WIRE GAUGE: #12 AWG.
   1.2. MAXIMUM ALLOWED WIRE GAUGE: 600KCMIL.
   1.3. MAXIMUM MULTICONDUCTOR CABLES SIZE: #1 AWG.
   1.4. MAXIMUM SOLID CORE CABLES SIZE: #10 AWG.
2. CONTROL CABLES REQUIREMENTS:
   2.1. CABLES CONSTRUCTION TYPE: SINGLE CONDUCTOR.
   2.2. MINIMUM ALLOWED WIRE GAUGE: #14 AWG.
3. SIGNAL CABLES REQUIREMENTS:
   3.1. CABLES CONSTRUCTION TYPE: MULTICONDUCTOR CONDUCTOR WITH OVERALL SHIELD AND DRAIN WIRE.
   3.2. MINIMUM ALLOWED WIRE GAUGE: #16 AWG.
   3.3. MAXIMUM NUMBER OF PAIRS/TRIADS IN MULTI–PAIR/TRID CABLE: 2.

INSTALLATION REQUIREMENTS:

GENERAL:

1. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE UL LISTED.
2. ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED OUTDOORS SHALL BE UV RESISTANT.
3. ALL ELECTRICAL EQUIPMENT AND MATERIALS OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND MODEL LINE.
4. ALL FREESTANDING EQUIPMENT SHALL BE INSTALLED ON 4" HOUSEKEEPING PAD, ELEVATED ABOVE THE SURROUNDING SURFACE.
5. ALL ELECTRICAL, INSTRUMENTATION AND CONTROL SYSTEM COMPONENTS LOCATIONS SHALL BE ADJUSTED TO PROVIDE NEC REQUIRED WORKING CLEARANCES.
6. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE CONCRETE PADS EXTENDING 4'–0" IN FRONT OF THE EQUIPMENT.
7. THE CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES, CABLES AND CONDUITS FOR ELECTRICAL EQUIPMENT AT NO ADDITIONAL COST BASED ON THE ACTUAL ACCEPTED SHOP DRAWINGS.
8. THE CONTRACTOR SHALL CONFIRM ELECTRICAL EQUIPMENT DIMENSIONS PRIOR TO RELEASING FOR FABRICATION LOCATED IN THE AREAS WITH LIMITED AVAILABLE SPACE TO ENSURE PROPER EQUIPMENT INSTALLATION PROVIDING NEC REQUIRED WORKING CLEARANCES.
9. FOR NEW CONSTRUCTION, INSTALLATION AND/OR DEMOLITION THAT INTERRUPTS ANY POWER, CONTROL OR SIGNAL WIRING TO EXISTING EQUIPMENT OR DEVICES THAT SHALL REMAIN IN OPERATION. CONTRACTOR SHALL INCLUDE ALL REQUIRED BREAKERS, CABLES/CONDUITS AND/OR ANY OTHER EQUIPMENT AS REQUIRED TO KEEP THE EXISTING SYSTEM FUNCTIONAL.
10. ALL MOTORS USED WITH VARIABLE FREQUENCY DRIVES SHALL BE INVERTER DUTY RATED TYPE.
11. ALL OUTDOOR ENCLOSURES CABLES ENTRY POINTS SHALL BE IN THE BOTTOM OF THE ENCLOSURE. IN CASE OF INABILITY TO MAKE BOTTOM PENETRATION, SIDE CONNECTION WOULD BE ACCEPTABLE. ENCLOSURES TOP ENTRY ARE NOT ALLOWED.
12. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY HARDWARE FOR EQUIPMENT MOUNTING, INCLUDING, BUT NOT LIMITED TO, EQUIPMENT RACKS, SUPPORT CHANNELS, ANCHORS, FASTENERS, AND ANY OTHER REQUIRED COMPONENTS TO ENSURE A SECURE AND STABLE INSTALLATION.

POWER DISTRIBUTION AND CONDUITS INSTALLATION REQUIREMENTS:

1. ALL CONDUITS ENDS SHALL BE FREE OF METAL SHAVINGS AND BE PROVIDED WITH FITTINGS WITH INSULATED BUSHING.
2. ALL EXPOSED CONDUITS SHALL BE MINIMUM OF 3/4". ALL BURIED CONDUIT SHALL BE MINIMUM OF 1".
3. ALL UNDERGROUND CONDUITS SHALL HAVE RIGID STEEL ELBOWS.
4. ALL METAL CONDUITS SHALL BE PROTECTED WITH A BITUMINOUS COATING WHEN INSTALLED UNDERGROUND OR WHEN IN CONTACT WITH CONCRETE.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CABLES AND EQUIPMENT LUG SIZES. IN CASE THE CABLE IS OF A LARGER SIZE THAN THE EQUIPMENT LUG, CONTRACTOR SHALL PROVIDE THE REQUIRED CONNECTOR AT NO ADDITIONAL CHARGE TO OWNER.
6. THE CONTRACTOR SHALL PROVIDE PULL STRING AND PERMANENTLY ATTACHED IDENTIFICATION LABELS AT EACH CONDUIT END FOR ALL SPARE CONDUITS. EACH TAG SHALL INCLUDE CONDUIT NUMBER, SIZE AND DESTINATION POINT.
7. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PULL BOXES AND/OR CONDULETS TO MEET NEC ARTICLE 314 FOR CABLE PULLS.
8. ALL CABLES INSTALLED IN CABLE TRAYS SHALL BE TC RATED.
9. CONDUIT FITTING CONNECTION TYPES SHALL BE AS FOLLOWS:
   9.1. FOR RMC AND IMC CONDUITS – THREADED TYPE;
   9.2. FOR EMT CONDUITS – COMPRESSION TYPE.
10. RIGID CONDUIT CONNECTIONS TO ENCLOSURES SHALL BE MADE WITH MYERS HUBS.
11. ALL OPEN CONDUIT ENDS (INSIDE THE EQUIPMENT ENCLOSURES) SHALL BE PROTECTED FROM ELEMENTS PENETRATION TO THE INSIDE THE CONDUIT WITH DUCT SEAL.
12. EQUIPMENT ENCLOSURES THAT ARE NOT SUITABLE FOR RIGID OR FLEXIBLE CONDUIT CONNECTION, THE CONTRACTOR SHALL PROVIDE A CORD GRIP AT THE CONDUIT END TO PROTECT FROM ELEMENTS PENETRATION TO THE INSIDE THE CONDUIT.
13. THE CONTRACTOR SHALL INSTALL EXPANSION COUPLINGS AS REQUIRED TO PREVENT CONDUIT DAMAGE DUE TO LONGITUDAL MOVEMENT AND/OR THERMAL EXPANSION.
14. THE CONTRACTOR SHALL INSTALL DEFLECTION COUPLINGS FOR CONDUITS RUNS THAT ARE SUBJECT TO ANGULAR AND PARALLEL MISALIGNMENT.
15. THE CONTRACTOR SHALL INSTALL DRAIN FITTING IN VERTICAL CONDUIT RUNS AT LOW POINTS IN CONDUIT SYSTEM TO PREVENT ACCUMULATION OF CONDENSATE ABOVE SEAL–OFF FITTINGS.
16. THE CONTRACTOR SHALL INSTALL DRAIN FITTINGS AT LOW POINTS OF CONDUIT RUN TO DRAIN ACCUMULATED CONDENSATE AND TO PROVIDE VENTILATION TO MINIMIZE CONDENSATION.
17. FOR OVERHEAD SERVICES THE CONTRACTOR SHALL INSTALL WEATHERED FITTINGS AS REQUIRED, FOR SERVICE CABLE INSTALLATION THROUGH THE ROOF, USE SERVICE ENTRANCE MAST KITS.
18. THE CONTRACTOR SHALL INSTALL GROUNDING BUSHING AS REQUIRED BY NEC, AS WELL AS FOR THE FOLLOWING CONDITIONS:
   18.1. FOR METALLIC RACEWAYS CONTAINING SERVICE CONDUCTORS;
   18.2. FOR METALLIC RACEWAYS TERMINATED AT NON–METALLIC ENCLOSURES;
   18.3. FOR METALLIC RACEWAYS TERMINATED ON RING KNOKOUTS REMAINING AND THE CIRCUIT EXCEEDING 250V TO GROUND NOMINAL;
   18.4. FOR METALLIC RACEWAYS NOT TERMINATED AT ENCLOSURE.

INSTRUMENTATION AND CONTROLS:

1. ALL FIELD MOUNTED INDICATING TRANSMITTERS SHALL BE PROVIDED WITH SUN/RAIN HOOD.
2. ALL CONTROL CABINETS INSTALLED OUTDOORS HOUSING VFD's, SOFT STARTERS, OR PLC's SHALL BE EQUIPPED WITH SUN PROTECTION COVERS TO PREVENT DIRECT SUNLIGHT EXPOSURE.
3. ALL OUTDOOR CONTROL CABINETS WITH HMI SCREENS OR OTHER TYPES OF DISPLAYS SHALL BE EQUIPPED WITH PROTECTIVE COVERS TO SHIELD THE DISPLAYS FROM SUNLIGHT EXPOSURE AND PREVENT DETERIORATION.
4. ALL INSTRUMENT SHALL BE PROVIDED WITH STAINLESS STEEL TAGS ATTACHED USING STAINLESS STEEL TAGGING WIRE.

GROUNDING:

1. MAXIMUM DISTANCE BETWEEN DRIVEN GROUND RODS IS NOT TO EXCEED 50'–0" UNLESS OTHERWISE NOTED.
2. ALL GROUNDING CONDUCTORS TO BE BARE, STRANDED, SOFT DRAWN, COPPER, SIZED AS INDICATED ON THE DESIGN DRAWINGS.
3. MAIN RING GROUND WIRE TO BE MAXIMUM 3'–0" OUTSIDE FOUNDATIONS AND 2'–6" BELOW FINISH GRADE.
4. THE CONTRACTOR TO DETERMINE ACTUAL LOCATION OF ANY EQUIPMENT UTILIZING BONDS TO GROUNDING TAILS. CONTRACTOR TO LOCATE 1" PVC GROUNDING STUB–UPS IN ACCORDANCE WITH EQUIPMENT VENDOR INFORMATION OR DRAWING REQUIREMENTS.
5. FOR COMPRESSION APPLICATIONS, APPLY A COAT OF "NO–OXIDE" COMPOUND ONTO COPPER CABLE AND COMPRESSION CONNECTORS PRIOR TO CRIMPING CONNECTION OR USE PRE–FILLED CONNECTORS.
6. ALL GROUND CABLES STUBBING UP THROUGH CONCRETE SHALL STUB UP THRU PVC CONDUIT, SIZED PER PLAN DRAWINGS. PVC CONDUIT SHALL EXTEND A MINIMUM OF 6" ABOVE AND 6" BELOW THE CONCRETE.
7. PIGTAILS SHOULD BE INSTALLED THRU 1" PVC CONDUIT, 10'–0" LONG U.N.O.
8. EXOTHERMIC WELDS SHALL BE UTILIZED IN UNDERGROUND INSTALLATIONS ONLY. ALL SUCH WELDS SHALL BE INSPECTED BY THE SITE ENGINEER REPRESENTATIVE PRIOR TO COVER.
9. ALL ABOVE GROUND GROUNDING CONNECTIONS SHALL EMPLOY PROPERLY RATED COMPRESSION CONNECTORS.
10. THE MAIN GROUNDING RING CONDUCTOR SHALL BE RUN AS MECHANICALLY CONTINUOUS AS POSSIBLE WITH A MINIMUM OF CUTS AND SPLICES.

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK No. 29313

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MATERIAL RATING

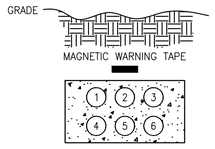
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-1

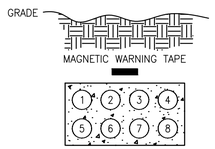
UNDERGROUND DUCTBANKS:



DB-1

1) 1" C. (480V POWER FROM PANELBOARD PP-H TO BAR SCREEN CONTROL PANEL LCP-100)
2) 1" C. (120V POWER FROM PANELBOARD LP-H TO INFLUENT HEADWORKS)
3) 1" C. (SIGNAL FROM REMOTE I/O PANEL RIO-H TO INFLUENT HEADWORKS)
4) 1.5" C. (CONTROLS FROM REMOTE I/O PANEL RIO-H TO INFLUENT HEADWORKS)
5) 1.5" C. (SPARE)
6) 1.5" C. (SPARE)

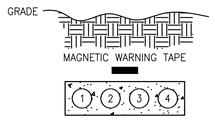
UNDERGROUND DUCTBANKS:



DB-2

1) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 1" C. (480V POWER FROM PANELBOARD PP-H TO ENTRANCE GATE)
4) 1" C. (120V POWER FROM PANELBOARD LP-H TO ENTRANCE GATE)
5) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-H)
6) 2" C. (SPARE)
7) 2" C. (SPARE)
8) 1" C. (SPARE)

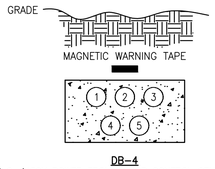
UNDERGROUND DUCTBANKS:



DB-3

1) 1" C. (480V POWER FROM PANELBOARD PP-H TO ENTRANCE GATE)
2) 1" C. (120V POWER FROM PANELBOARD LP-H TO ENTRANCE GATE)
3) 1" C. (SPARE)
4) 1" C. (SPARE)

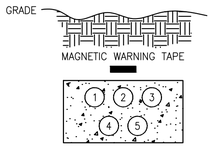
UNDERGROUND DUCTBANKS:



DB-4

1) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-H)
4) 2" C. (SPARE)
5) 2" C. (SPARE)

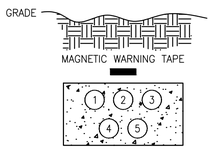
UNDERGROUND DUCTBANKS:



DB-5

1) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-H)
4) 2.5" C. (SPARE)
5) 2.5" C. (SPARE)

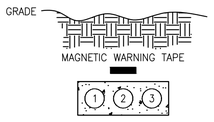
UNDERGROUND DUCTBANKS:



DB-6

1) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-H)
4) 2" C. (SPARE)
5) 2.5" C. (SPARE)

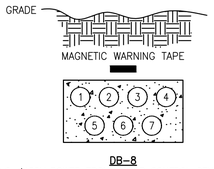
UNDERGROUND DUCTBANKS:



DB-7

1) 1" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIER METER VAULTS)
2) 1" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIER METER VAULTS)
3) 1" C. (SPARE)

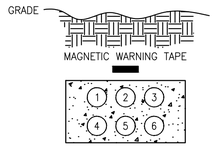
UNDERGROUND DUCTBANKS:



DB-8

1) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-H)
4) 1" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIER METER VAULTS)
5) 1" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIER METER VAULTS)
6) 2" C. (SPARE)
7) 2.5" C. (SPARE)

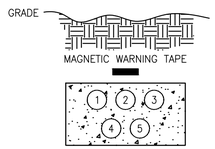
UNDERGROUND DUCTBANKS:



DB-9

1) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO BNR CONTROL PANEL LCP-300)
2) 1" C. (120V POWER FROM PANELBOARD LP-WW TO BIOLOGICAL TREATMENT)
3) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO BNR CONTROL PANEL LCP-300)
4) 1" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO BIOLOGICAL TREATMENT)
5) 2" C. (SPARE)
6) 2" C. (SPARE)

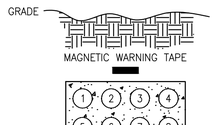
UNDERGROUND DUCTBANKS:



DB-10

1) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PLANT DRAIN PUMP STATION CONTROL PANEL LCP-800)
2) 1" C. (120V POWER FROM PANELBOARD LP-WW TO DRAIN PS)
3) 1.5" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO PLANT DRAIN PUMP STATION CONTROL PANEL LCP-800)
4) 1" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO PLANT DRAIN PUMP STATION CONTROL PANEL LCP-800)
5) 2" C. (SPARE)

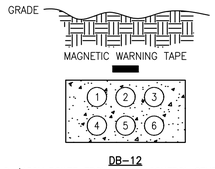
UNDERGROUND DUCTBANKS:



DB-11

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-401)
2) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-411)
3) 1.25" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIERS)
4) 2.5" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIERS)
5) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-402)
6) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-412)
7) 2" C. (SPARE)
8) 2" C. (SPARE)

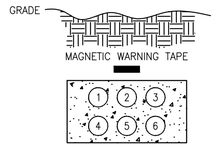
UNDERGROUND DUCTBANKS:



DB-12

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-401)
2) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-411)
3) 1" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIER 1)
4) 1.5" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIER 1)
5) 1.5" C. (SPARE)
6) 1.5" C. (SPARE)

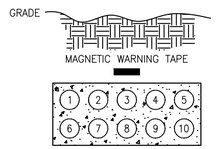
UNDERGROUND DUCTBANKS:



DB-13

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-402)
2) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-412)
3) 1" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIER 2)
4) 1.5" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIER 2)
5) 1.5" C. (SPARE)
6) 1.5" C. (SPARE)

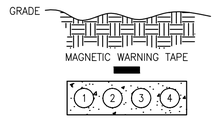
UNDERGROUND DUCTBANKS:



DB-14

1) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-C)
2) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO RIO-H, LCP-300, LCP-610, LCP-620, RIO-WAS/RAS, RIO-UV)
3) 1.5" C. (120V POWER FROM PANELBOARD LP-C TO CLARIFIER METER VAULTS, CLARIFIERS)
4) 3" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO CLARIFIER METER VAULTS, PLANT DRAIN , WAS VALVE VAULT, WAS/RAS, SLUDGE DIGESTION)
5) 3" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO BIOLOGICAL TREATMENT, PLANT DRAIN PUMP STATION CONTROL PANEL LCP-800, CLARIFIERS, GENERATOR GEN-1)
6) 1" C. (ETHERNET FROM MAIN SCADA CONTROL PANEL LCP-M TO MOTOR CONTROL CENTER MCC-WW)
7) 4" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO ELECTRICAL ROOM)
8) 2" C. (SPARE)
9) 2" C. (SPARE)
10) 3" C. (SPARE)

UNDERGROUND DUCTBANKS:



DB-15

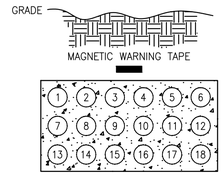
1) 1.5" C. (480V POWER FROM PANELBOARD PP-C TO PANELBOARD PP-CB)
2) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO REMOTE I/O PANEL RIO-L)
3) 2" C. (SPARE)
4) 2" C. (SPARE)

UNDERGROUND DUCTBANKS:

DB-18

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO EFFLUENT FILTER 1 CONTROL PANEL LCP-610)
2) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO EFFLUENT FILTER 2 CONTROL PANEL LCP-620)
3) 1.25" C. (120V POWER FROM PANELBOARD LP-WW TO EFFLUENT FILTER, FLOC/MIX)
4) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO EFFLUENT FILTER CONTROL PANEL LCP-610, LCP-620)
5) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO DS-501)
6) 1" C. (CONTROL FROM MOTOR CONTROL CENTER MCC-WW TO FLOC TANK MIXER M-501)
7) 2" C. (SPARE)
8) 2" C. (SPARE)

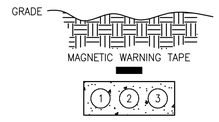
UNDERGROUND DUCTBANKS:



DB-16

1) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-C)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
3) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PANELBOARD PP-H)
4) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO BNR CONTROL PANEL LCP-300)
5) 1.25" C. (120V POWER FROM PANELBOARD LP-WW TO BIOLOGICAL TREATMENT, DRAIN PS)
6) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO PLANT DRAIN PUMP STATION CONTROL PANEL LCP-800)
7) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-401)
8) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-411)
9) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP-402)
10) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC-WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP-412)
11) 2" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO WAS VALVE VAULT, WAS/RAS, SLUDGE DIGESTION)
12) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP-M TO LCP-610, LCP-620, RIO-WAS/RAS, RIO-UV)
13) 1" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO GENERATOR GEN-1)
14) 1" C. (ETHERNET FROM MAIN SCADA CONTROL PANEL LCP-M TO MOTOR CONTROL CENTER MCC-WW)
15) 4" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP-M TO ELECTRICAL ROOM)
16) 2" C. (SPARE)
17) 2" C. (SPARE)
18) 2" C. (SPARE)

UNDERGROUND DUCTBANKS:



DB-17

1) 1" C. (120V POWER FROM PANELBOARD LP-WW TO WAS VALVE VAULT)
2) 1" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP-M TO WAS VALVE VAULT)
3) 1" C. (SPARE)

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

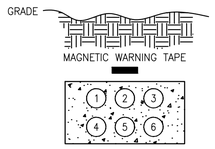
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DUCTBANKS SCHEDULE

Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

Sheet No.
1-E-2

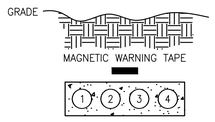
UNDERGROUND DUCTBANKS:



DB–19

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO EFFLUENT FILTER 1 CONTROL PANEL LCP–610)
2) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO EFFLUENT FILTER 2 CONTROL PANEL LCP–620)
3) 1" C. (120V POWER FROM PANELBOARD LP–WW TO EFFLUENT FILTER)
4) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP–M TO EFFLUENT FILTER CONTROL PANEL LCP–610, LCP–620)
5) 1" C. (SPARE)
6) 2" C. (SPARE)

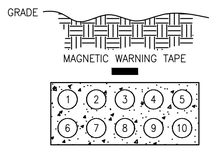
UNDERGROUND DUCTBANKS:



DB–20

1) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–501)
2) 1" C. (120V POWER FROM PANELBOARD LP–WW TO FLOC/MIX)
3) 1" C. (CONTROL FROM MOTOR CONTROL CENTER MCC–WW TO FLOC TANK MIXER M–501)
4) 1" C. (SPARE)

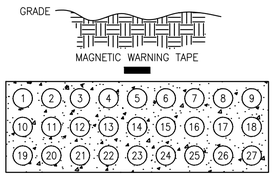
UNDERGROUND DUCTBANKS:



DB–21

1) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–901)
2) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–902)
3) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–903)
4) 2" C. (120V POWER FROM ELECTRICAL ROOM TO WAS/RAS)
5) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP–M TO REMOTE I/O PANEL RIO–WAS/RAS)
6) 2" C. (CONTROL FROM MOTOR CONTROL CENTER MCC–WW TO WAS/RAS PUMPS)
7) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO UH–9–1)
8) 2" C. (SPARE)
9) 2" C. (SPARE)
10) 2" C. (SPARE)

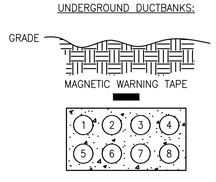
UNDERGROUND DUCTBANKS:



DB–22

1) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PANELBOARD PP–C)
2) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PANELBOARD PP–H)
3) 3" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PANELBOARD PP–H)
4) 2" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO BNR CONTROL PANEL LCP–300)
5) 2.5" C. (120V POWER FROM PANELBOARD LP–WW TO BIOLOGICAL TREATMENT, DRAIN PS, WAS VALVE VAULT, EFFLUENT FILTER, FLOC/MIX)
6) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PLANT DRAIN PUMP STATION CONTROL PANEL LCP–800)
7) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP–401)
8) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP–411)
9) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO SECONDARY CLARIFIER #1 CONTROL PANEL LCP–402)
10) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO SECONDARY CLARIFIER #1 SCUM PUMP CONTROL PANEL LCP–412)
11) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO EFFLUENT FILTER 1 CONTROL PANEL LCP–610)
12) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO EFFLUENT FILTER 2 CONTROL PANEL LCP–620)
13) 1" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–501)
14) 4" C. (CONTROL FROM MOTOR CONTROL CENTER MCC–WW TO FLOC TANK MIXER M–501, WAS/RAS PUMPS)
15) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–901)
16) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–902)
17) 1.25" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–903)
18) 2" C. (120V POWER FROM ELECTRICAL ROOM TO WAS/RAS)
19) 1" C. (SIGNAL FROM MAIN SCADA CONTROL PANEL LCP–M TO SLUDGE DIGESTION)
20) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP–M TO REMOTE I/O CONTROL PANEL RIO–UV)
21) 1" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP–M TO GENERATOR GEN–1)
22) 1" C. (ETHERNET FROM MAIN SCADA CONTROL PANEL LCP–M TO MOTOR CONTROL CENTER MCC–WW)
23) 4" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP–M TO ELECTRICAL ROOM)
24) 3" C. (SPARE)
25) 3" C. (SPARE)
26) 2" C. (SPARE)
27) 2" C. (SPARE)

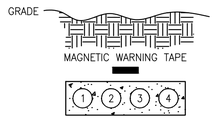
UNDERGROUND DUCTBANKS:



DB–23

1) 2.5" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–1001 (DIGESTER BLOWER 1))
2) 2.5" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO DS–1002 (DIGESTER BLOWER 1))
3) 1.25" C. (480V POWER LCP–1100 TO SLUDGE PUMP P–1121)
4) 1.25" C. (480V POWER LCP–1100 TO SLUDGE PUMP P–1122)
5) 2.5" C. (CONTROL FROM MOTOR CONTROL CENTER MCC–WW/LCP–M)
6) 2.5" C. (SIGNALS TO MAIN SCADA CONTROL PANEL LCP–M)
7) 2.5" C. (SPARE)
8) 2" C. (SPARE)

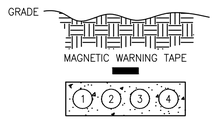
UNDERGROUND DUCTBANKS:



DB–24

1) 2.5" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PANELBOARD PP–UV)
2) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP–M TO REMOTE I/O CONTROL PANEL RIO–UV)
3) 2" C. (SPARE)
4) 2" C. (SPARE)

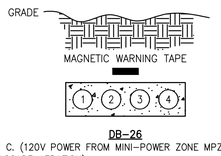
UNDERGROUND DUCTBANKS:



DB–25

1) 2.5" C. (480V POWER FROM MOTOR CONTROL CENTER MCC–WW TO PANELBOARD PP–UV)
2) 2" C. (FIBER FROM MAIN SCADA CONTROL PANEL LCP–M TO REMOTE I/O CONTROL PANEL RIO–UV)
3) 2" C. (SPARE)
4) 2" C. (SPARE)

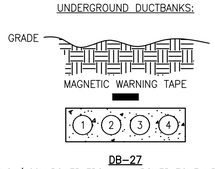
UNDERGROUND DUCTBANKS:



DB–26

1) 1" C. (120V POWER FROM MINI–POWER ZONE MPZ–UV TO CASCADE AERATION)
2) 1" C. (CONTROL FROM REMOTE I/O CONTROL PANEL RIO–UV TO CASCADE AERATION)
3) 1" C. (SIGNAL FROM REMOTE I/O CONTROL PANEL RIO–UV TO CASCADE AERATION)
4) 2" C. (SPARE)

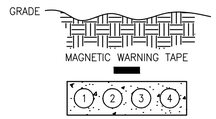
UNDERGROUND DUCTBANKS:



DB–27

1) 1" C. (120V POWER FROM MINI–POWER ZONE MPZ–UV TO CASCADE AERATION)
2) 1" C. (CONTROL FROM REMOTE I/O CONTROL PANEL RIO–UV TO CASCADE AERATION)
3) 1" C. (SIGNAL FROM REMOTE I/O CONTROL PANEL RIO–UV TO CASCADE AERATION)
4) 2" C. (SPARE)

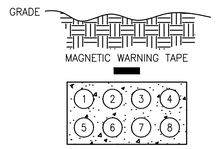
UNDERGROUND DUCTBANKS:



DB–28

1) 4" C. (480V POWER FROM TRANSFORMER (EMC) TO ATS–WW)
2) 4" C. (480V POWER FROM TRANSFORMER (EMC) TO ATS–WW)
3) 4" C. (480V POWER FROM TRANSFORMER (EMC) TO ATS–WW)
4) 4" C. (SPARE)

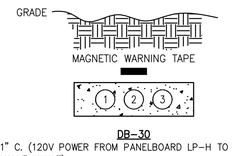
UNDERGROUND DUCTBANKS:



DB–29

1) 4" C. (480V POWER FROM GENERATOR GEN–1 TO ATS–WW)
2) 4" C. (480V POWER FROM GENERATOR GEN–1 TO ATS–WW)
3) 4" C. (480V POWER FROM GENERATOR GEN–1 TO ATS–WW)
4) 2" C. (208/120V AUX. POWER FROM LP–WW TO GENERATOR GEN–1)
5) 1" C. (CONTROL FROM MAIN SCADA CONTROL PANEL LCP–M TO GENERATOR GEN–1)
6) 1" C. (CONTROL FROM ATS–WW TO GENERATOR GEN–1)
7) 4" C. (SPARE)
8) 2" C. (SPARE)

UNDERGROUND DUCTBANKS:



DB–30

1) 1" C. (120V POWER FROM PANELBOARD LP–H TO INFLUENT VALVE VAULT)
2) 1" C. (SIGNAL FROM REMOTE I/O CONTROL PANEL RIO–H TO INFLUENT VALVE VAULT)
3) 1" C. (SPARE)

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DUCTBANKS SCHEDULE

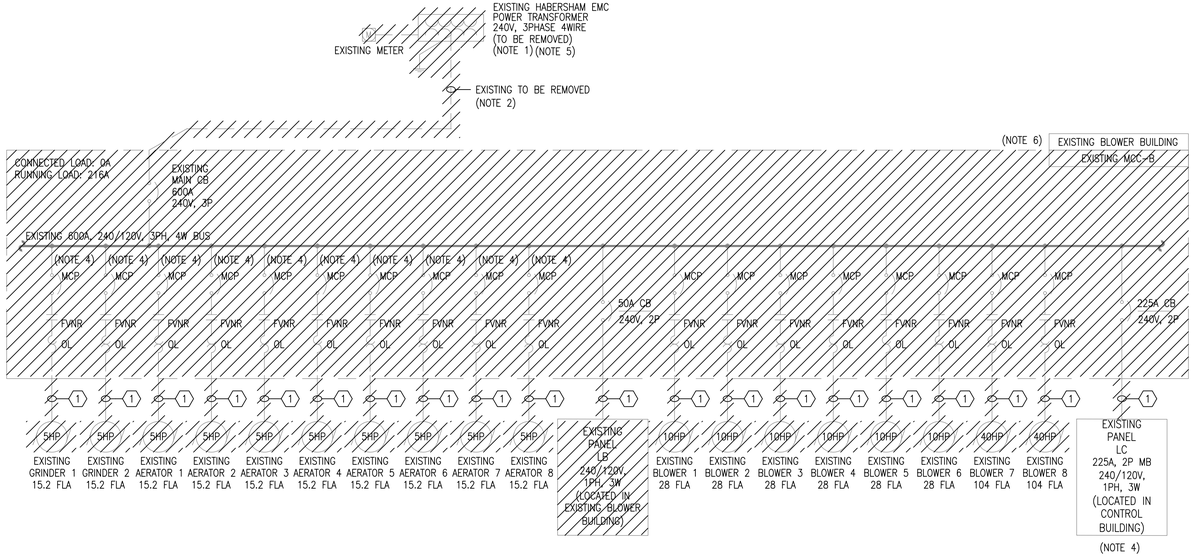
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-3

CABLE/CONDUIT SCHEDULE
(1) CABLE/CONDUIT TO BE REMOVED



NOTES:

1. CONTRACTOR SHALL COORDINATE ALL UTILITY UPGRADE WORK WITH HABERSHAM EMC (FORINFO@HABERSHAMEMC.COM, (706)-839-2114). CONTRACTOR IS RESPONSIBLE FOR PAYING ALL COSTS ASSOCIATED WITH BRINGING 480/277V, 3PH, 4W SERVICE TO THE SITE. CONTRACTOR SHALL PROVIDE AND INSTALL SERVICE CONDUCTORS TO THE NEW ATS-WW. COORDINATE THE CONSTRUCTION SEQUENCE TO MINIMIZE POWER OUTAGE. IF REQUIRED FOR PLANT OPERATION, CONTRACTOR SHALL PROVIDE TEMPORARY BACK-UP POWER.
2. THE CONTRACTOR SHALL REMOVE THE EXISTING SERVICE CABLES/CONDUITS TO THE MCC-B.
3. THE CONTRACTOR SHALL DEMOLISH EXISTING EQUIPMENT AS NOTED AND ALL ASSOCIATED INSTALLATION HARDWARE, CABLES AND CONDUITS. ALL DEMOLISHED ELECTRICAL MOTORS/EQUIPMENT/ETC, SHALL BE COORDINATED WITH THE OWNER FOR RE-USE OR DISPOSAL.
4. THIS EXISTING PANEL WILL BE CONNECTED TO NEW POWER SOURCE. SEE DWG. 1-E-5 FOR ONE LINE DIAGRAM.
5. THE EXISTING SERVICE CAN ONLY BE DISCONNECTED AFTER THE NEW 480V, 3PH SERVICE IS CONNECTED AND THE NEW PLANT IS UP AND RUNNING (AT THE END OF THE CONSTRUCTION PROJECT)

////// - EQUIPMENT TO BE DEMOLISHED (NOTE 3)

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

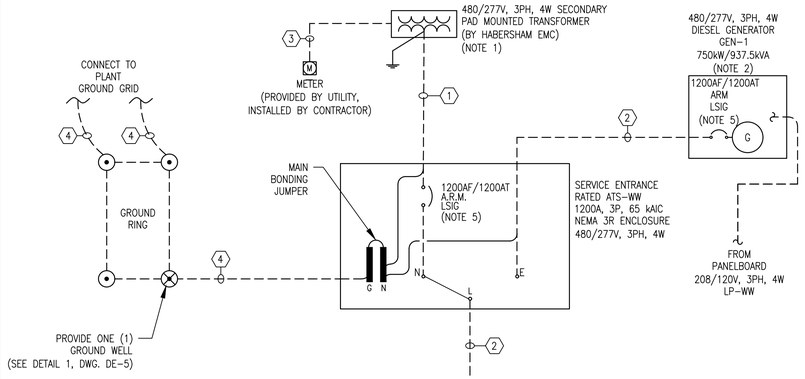
RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ONE LINE DEMOLITION

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

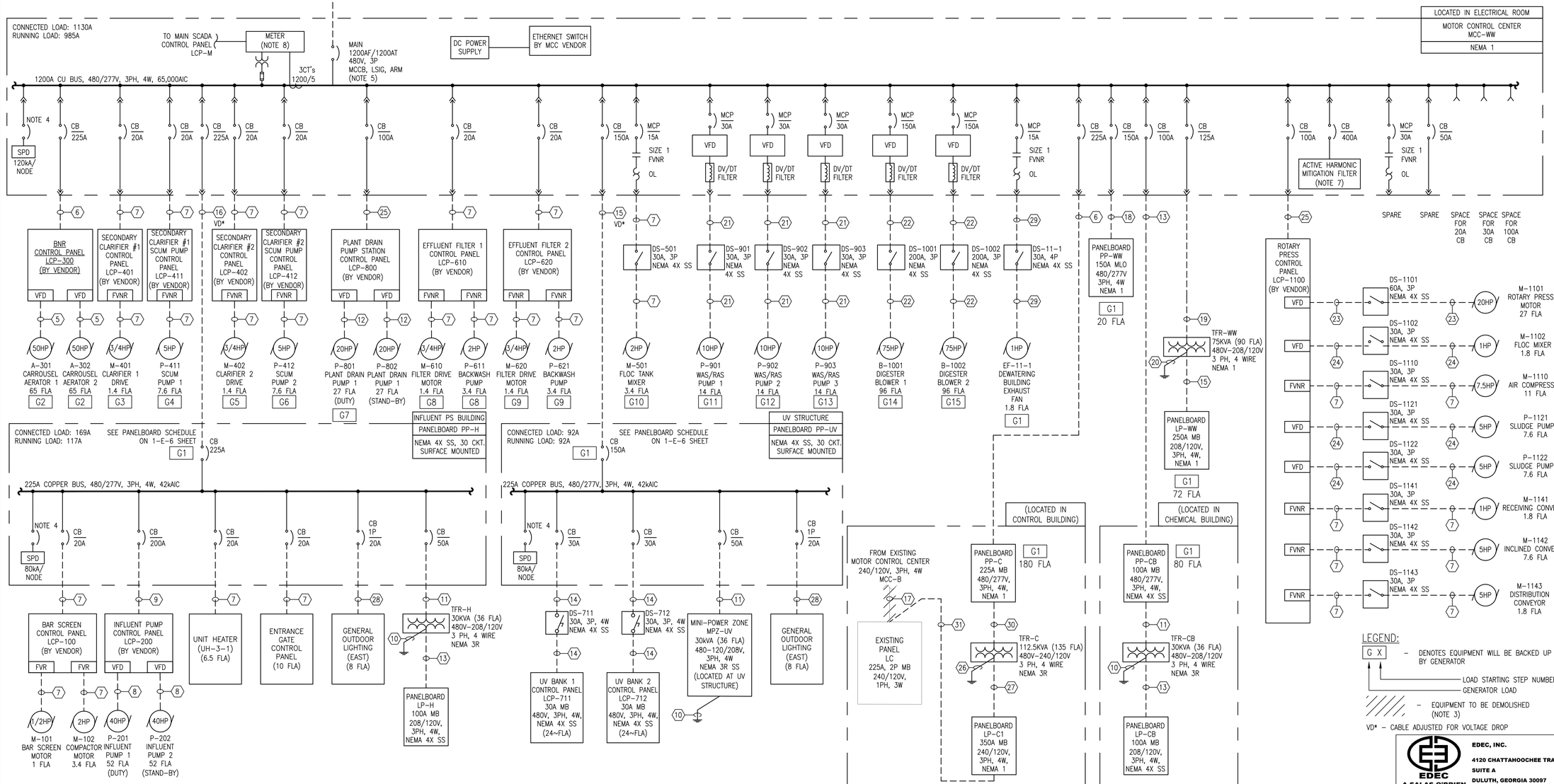
Sheet No.
1-E-4



CABLE/CONDUIT SCHEDULE	
(1) 3 RUNS OF 4 #600KCMIL IN 4" C. EACH	(16) 2 RUNS OF 4 #350 KCMIL & 1 #1 GND IN 3" C. EACH
(2) 3 RUNS OF 4 #600KCMIL & 1 #3/0 GND 4" C. EACH	(17) CABLE/CONDUIT TO BE REMOVED
(3) AS REQUIRED BY UTILITY COMPANY	(18) 4 #1/0 & 1 #6 GND IN 2" C.
(4) 1 #3/0 GND IN 1" C.	(19) 3 #1/0 & 1 #6 GND IN 1.5" C.
(5) 3 #3 & 1 #8 GND IN 2" C. (VFD SHIELDED)	(20) 1 #2 GND IN 1" C.
(6) 3 #4/0 & 1 #4 GND IN 2" C.	(21) 3 #10 & 1 #10 GND IN 1.25" C. (VFD SHIELDED)
(7) 3 #12 & 1 #12 GND IN 1" C.	(22) 3 #1/0 & 1 #4 GND IN 2.5"C. (VFD SHIELDED)
(8) 3 #4 & 1 #8 GND IN 2"C. (VFD SHIELDED)	(23) 3 #8 & 1 #10 GND IN 1.25" C. (VFD SHIELDED)
(9) 3 #3/0 & 1 #6 GND IN 2" C.	(24) 3 #12 & 1 #12 GND IN 1" C. (VFD SHIELDED)
(10) 1 #6 GND IN 1" C.	(25) 3 #1 & 1 #8 GND IN 1.25" C.
(11) 3 #6 & 1 #10 GND IN 1" C.	(26) 1 #1/0 GND IN 1" C.
(12) CABLE BY VENDOR IN 1" C.	(27) 4 #500 KCMIL & 1 #3 GND IN 4" C.
(13) 4 #1 & 1 #8 GND IN 1.5" C.	(28) 2 #12 & 1 #12 GND IN 1" C.
(14) 4 #10 & 1 #10 GND IN 1" C.	(29) 4 #12 & 1 #12 GND IN 1" C.
(15) 4 #250 KCMIL & 1 #4 GND IN 2.5" C.	(30) 3 #2/0 & 1 #6 GND IN 1.5" C.
	(31) 3 #250 KCMIL & 1 #4 GND IN 2" C.

NOTES:

1. CONTRACTOR SHALL COORDINATE ALL UTILITY UPGRADE WORK WITH HABERSHAM EMC (FORINFO@HABERSHAMEMC.COM, (706)-839-2114). CONTRACTOR IS RESPONSIBLE FOR PAYING ALL COSTS ASSOCIATED WITH BRINGING 480/277V, 3PH, 4W SERVICE TO THE SITE. CONTRACTOR SHALL PROVIDE AND INSTALL SERVICE CONDUCTORS TO THE NEW ATS-WW. COORDINATE THE CONSTRUCTION SEQUENCE TO MINIMIZE POWER OUTAGE. IF REQUIRED FOR PLANT OPERATION, CONTRACTOR SHALL PROVIDE TEMPORARY BACK-UP POWER.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL 750kW/937.5kVA 480/277V, 3 PHASE STANDBY DIESEL GENERATOR SET INCLUDING GENERATOR, GENERATOR CONTROL PANEL, MAIN CIRCUIT BREAKER (1200A, 100% RATED), 24-HOUR RATED DIESEL TANK, GENERATOR PAD, AND A NEMA 1 AUTOMATIC TRANSFER SWITCH (ATS). CONTRACTOR SHALL PROVIDE A LETTER OF GUARANTEE THAT THE SUBMITTED GENERATOR IS RATED TO BACK UP ALL LOADS AS SHOWN IN THIS DRAWING SET. THE GENERATOR CONTROL PANEL SHALL HAVE TWO (2) 120V, 10A RATED DRY CONTACTS GENERATOR RUNNING STATUS AND COMMON ALARM. ATS SHALL HAVE "NORMAL POWER OUTAGE" 10AMP, 120V RATED DRY CONTACT CLOSING UPON THE LOSS OF NORMAL POWER. SEE GENERATOR/ATS SPECIFICATION 16231 FOR ADDITIONAL DETAILS.
3. THE CONTRACTOR SHALL DEMOLISH EXISTING EQUIPMENT AS NOTED AND ALL ASSOCIATED INSTALLATION HARDWARE, CABLES AND CONDUITS. ALL DEMOLISHED ELECTRICAL MOTORS/EQUIPMENT/ETC, SHALL BE COORDINATED WITH THE OWNER FOR RE-USE OR DISPOSAL.
4. THE CIRCUIT BREAKER SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
5. ALL CIRCUIT BREAKERS 1200AF OR LARGER SHALL HAVE ARC REDUCTION MAINTENANCE (ARM) SWITCH TO REDUCE ARC FLASH PER NEC. 240.87.
6. ALL BREAKERS IN MCC-WW SHALL BE PAD LOCKABLE IN "OFF" POSITION.
7. MCC MANUFACTURER SHALL INCLUDE ACTIVE HARMONIC FILTER IN THE MCC LINE-UP TO REDUCE TOTAL HARMONIC DISTORTION TO THE LIMITS REQUIRED BY IEEE 519, SHALL PROVIDE CALCULATIONS FOR ACTIVE HARMONIC FILTER (AHF) SELECTION AND SHALL ADJUST AHF FEEDER BREAKER AND ASSOCIATED CABLES/CONDUITS AS REQUIRED.
8. THE MOTOR CONTROL CENTER SHALL BE PROVIDED WITH POWER METER CAPABLE OF MEASURING VOLTS, AMPS, KW AND POWER FACTOR. ALL METER PARAMETERS SHALL BE AVAILABLE FOR TRANSFERRING TO THE MAIN SCADA CONTROL PANEL LCP-M THROUGH INTEGRAL ETHERNET PORT. COORDINATE PORT REQUIREMENT WITH SCADA SYSTEM INTEGRATOR.



LEGEND:

G X – DENOTES EQUIPMENT WILL BE BACKED UP BY GENERATOR
LOAD STARTING STEP NUMBER
GENERATOR LOAD

– EQUIPMENT TO BE DEMOLISHED (NOTE 3)

VD* – CABLE ADJUSTED FOR VOLTAGE DROP

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685
EDEC
A SALAS O'BRIEN COMPANY

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 32513
ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ONE LINE DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
1-E-5

PANELBOARD PP-H (LOCATED OUTDOORS ON THE EXTERIOR WALL OF THE INFLUENT PS BUILDING)

VOLTAGE (L-N):	277V	ENCLOSURE TYPE:	NEMA 4X STAINLESS STEEL
VOLTAGE (L-L):	480V	MOUNTING:	SURFACE
PHASE, WIRES:	3 ϕ, 4 W	AIC RATING (A):	42,000 AIC
MINIMUM BUS CAPACITY (A):	225A CU	NOTES:	
MAIN O.C. DEVICE (A):	225A, 3P MAIN BREAKER		

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	PANELBOARD LP-H	50	3	36.0	4.4					3	20	BAR SCREEN CONTROL PANEL LCP-100	2
3	↓	↓	↓			36.0	4.4			↓	↓	↓	4
5	↓	↓	↓					36.0	4.4	↓	↓	↓	6
7	UNIT HEATER (UH-3-1)	20	3	6.5	104.0					3	200	INFLUENT PUMP STATION CP LCP-200	8
9	↓	↓	↓			6.5	104.0			↓	↓	↓	10
11	↓	↓	↓					6.5	104.0	↓	↓	↓	12
13	ENTRANCE GATE CONTROL PANEL	20	3	10.0	0.0					3	20	SPARE	14
15	↓	↓	↓			10.0	0.0			↓	↓	↓	16
17	↓	↓	↓					10.0	0.0	↓	↓	↓	18
19	GENERAL OUTDOOR LIGHTING (EAST)	20	1	8.0	0.0							SPACE	20
21	SAPCE					0.0	0.0					↓	22
23	SAPCE							0.0	0.0	↓	↓	↓	24
25	SPARE	20	3	0.0	0.0							SPACE	26
27	↓	↓	↓			0.0	0.0			↓	↓	↓	28
29	↓	↓	↓					0.0	0.0	↓	↓	↓	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 50A – #6AWG; 200A – #3/0AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				168.9		160.9		160.9					

1 PP-H – PANELBOARD SCHEDULE

PANELBOARD LP-H (LOCATED OUTDOORS ON THE EXTERIOR WALL OF THE INFLUENT PS BUILDING)

VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 4X STAINLESS STEEL
VOLTAGE (L-L):	208V	MOUNTING:	SURFACE
PHASE, WIRES:	3 ϕ, 4 W	AIC RATING (A):	25,000 AIC
MINIMUM BUS CAPACITY (A):	100A CU	NOTES:	
MAIN O.C. DEVICE (A):	100A, 3P MAIN BREAKER		

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	REMOTE I/O PANEL RIO-H	20	1	10.0	2.0					1	20	INFLUENT SAMPLER S-130	2
3	INFLUENT PS OUTDOOR RECEPTACLES	20	1			3.0	6.0			1	20	INFLUENT PS INDOOR RECEPTACLES	4
5	SPARE	20	1					0.0	1.0	1	20	LIGHTING CONTACTOR LC-H	6
7	INFLUENT PS INDOOR LIGHTING	20	1	4.0	3.0					1	20	HEADWORKS LIGHTING	8
9	INFLUENT PS OUTDOOR LIGHTING	20	1			3.0	4.0			1	20	HEADWORKS RECEPTACLES	10
11	SOLAR BEE M-220 (RECEPTACLE)	20	1					4.0	3.0	1	20	INFLUENT PS VALVE GV-201 ACTUATOR	12
13	ENTRANCE GATE RECEPTACLE	20	1	6.0	3.0					1	20	INFLUENT PS VALVE GV-202 ACTUATOR	14
15	SPARE	20	1			0.0	3.0			1	20	INFLUENT PS VALVE GV-221 ACTUATOR	16
17	SPARE	20	1					0.0	3.0	1	20	INFLUENT PS VALVE GV-222 ACTUATOR	18
19	INFLUENT VALVE VAULT FLOW TRANSMITTER (FIT-200)	20	1	1.0	3.0					1	20	INFLUENT PS VALVE GV-231 ACTUATOR	20
21	EXHAUST FAN (EF-3-1)	20	1			10.0	3.0			1	20	INFLUENT PS VALVE GV-232 ACTUATOR	22
23	SPARE	20	1					0.0	3.0	1	20	INFLUENT PS VALVE GV-233 ACTUATOR	24
25	SPARE	20	1	0.0	0.0					1	20	SPARE	26
27	SPACE					0.0	0.0			1	20	SPARE	28
29	SPACE							0.0	0.0			SPACE	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				32.0		32.0		14.0					

2 LP-H – PANELBOARD SCHEDULE

PANELBOARD PP-WW (LOCATED IN ELECTRICAL ROOM)

VOLTAGE (L-N):	277V	ENCLOSURE TYPE:	NEMA 1
VOLTAGE (L-L):	480V	MOUNTING:	SURFACE
PHASE, WIRES:	3 ϕ, 4 W	AIC RATING (A):	42,000 AIC
MINIMUM BUS CAPACITY (A):	150A CU	NOTES:	
MAIN O.C. DEVICE (A):	MAIN LUGS ONLY		

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	SPARE	20	3	0.0	0.0					3	30	SPARE	2
3	↓	↓	↓			0.0	0.0			↓	↓	↓	4
5	↓	↓	↓					0.0	0.0	↓	↓	↓	6
7	UNIT HEATER (UH-9-1)	20	3	6.5	0.0					3	30	SPARE	8
9	↓	↓	↓			6.5	0.0			↓	↓	↓	10
11	↓	↓	↓					6.5	0.0	↓	↓	↓	12
13	UNIT HEATER (UH-11-1)	20	3	6.5	0.0					3	20	SPARE	14
15	↓	↓	↓			6.5	0.0			↓	↓	↓	16
17	↓	↓	↓					6.5	0.0	↓	↓	↓	18
19	UNIT HEATER (UH-11-2)	20	3	6.5	0.0							SPACE	20
21	↓	↓	↓			6.5	0.0					↓	22
23	↓	↓	↓					6.5	0.0	↓	↓	↓	24
25	SPACE			0.0	0.0							SPACE	26
27	↓	↓	↓			0.0	0.0			↓	↓	↓	28
29	↓	↓	↓					0.0	0.0	↓	↓	↓	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				19.5		19.5		19.5					

3 PP-WW – PANELBOARD SCHEDULE

PANELBOARD LP-WW (LOCATED IN ELECTRICAL ROOM)

VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 1
VOLTAGE (L-L):	208V	MOUNTING:	SURFACE
PHASE, WIRES:	3 ϕ, 4 W	AIC RATING (A):	18,000 AIC
MINIMUM BUS CAPACITY (A):	250A CU	NOTES:	
MAIN O.C. DEVICE (A):	250A, 3P MAIN BREAKER		

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	ELECTRICAL ROOM RECEPTACLES	20	1	6.0	4.0					1	20	CARROUSEL BASIN LIGHTING	2
3	ELECTRICAL ROOM LIGHTING	20	1			2.0	1.0			1	20	LIGHTING CONTACTOR LC-CB	4
5	DEWATERING ROOM RECEPTACLES	20	1					8.0	6.0	1	20	CARROUSEL BASIN RECEPTACLES	6
7	DEWATERING ROOM LIGHTING	20	1	3.0	4.0					1	20	SLUDGE DIGESTION LIGHTING	8
9	OFFICE AND WORKSHOP RECEPTACLES	20	1			6.0	6.0			1	20	SLUDGE DIGESTION RECEPTACLES	10
11	OFFICE AND WORKSHOP LIGHTING	20	1					3.0	2.0	1	20	DO TRANSMITTER AIT-1001 (SLUDGE)	12
13	TRUCK LOADING AREA RECEPTACLES	20	1	6.0	2.0					1	20	RAS MAGNETIC FLOW METER TRANSMITTER FIT-931	14
15	TRUCK LOADING AREA LIGHTING	20	1			6.0	2.0			1	20	WAS MAGNETIC FLOW METER TRANSMITTER FIT-932	16
17	DEWATERING BUILDING OUTDOOR LIGHTING	20	1					8.0	2.0	1	20	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-901	18
19	LIGHTING CONTACTOR LC-DW (DEWATERING BUILDING)	20	1	1.0	2.0					1	20	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-902	20
21	REMOTE I/O CONTROL PANEL RIO-E	20	1			4.0	2.0			1	20	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-903	22
23	SPARE	20	1					0.0	3.0	1	20	WAS/RAS VALVE GV-911 ACTUATOR	24
25	EYEWASH ALARM HORN/LIGHT	20	1	2.0	3.0					1	20	WAS/RAS VALVE GV-912 ACTUATOR	26
27	POLYMER SYSTEM CONTROL PANEL (LCP-1130)	20	1			5.0	3.0			1	20	WAS/RAS VALVE GV-913 ACTUATOR	28
29	REMOTE I/O CONTROL PANEL RIO-WAS/RAS	20	1					4.0	3.0	1	20	WAS/RAS VALVE GV-931 ACTUATOR	30
31	EXHAUST FAN (EF-9-1)	20	1	10.0	3.0					1	20	WAS/RAS VALVE GV-932 ACTUATOR	32
33	EXHAUST FAN (EF-11-1)	20	1			10.0	3.0			1	20	WAS/RAS VALVE GV-933 ACTUATOR	34
35	WAS RAS OUTDOOR LIGHTING	20	1					2.0	3.0	1	20	WAS/RAS VALVE GV-941 ACTUATOR	36
37	WAS RAS INDOOR LIGHTING	20	1	3.0	3.0					1	20	WAS/RAS VALVE GV-942 ACTUATOR	38
39	SPACE					8.0	3.0			1	20	WAS/RAS VALVE GV-943 ACTUATOR	40
41	HEAT PUMP (HPOU-11-2)	40	2					28.0	3.0	1	20	WAS/RAS VALVE GV-944 ACTUATOR	42
43	↓	↓	↓	28.0	10.0					1	20	EFFLUENT WEIR GATE ELECTRIC ACTUATOR	44
45	HEAT PUMP (HPOU-11-1-1)	20	2			9.0	4.0			1	20	FLOC/MIX VAULT LIGHTING	46
47	↓	↓	↓					9.0	10.0	1	20	FLOC/MIX VAULT RECEPTACLES	48
49	HEAT PUMP (HPOU-11-1-2)	20	2	9.0	4.0					1	20	EFFLUENT FILTERS LIGHTING	50
51	↓	↓	↓			9.0	10.0			1	20	EFFLUENT FILTERS RECEPTACLES	52
53	SPACE							0.0	4.0	1	20	DRAIN PUMP STATION LIGHTING	54
55	GENERATOR AUXILIARY POWER	30	3	20.0	0.0					1	20	DRAIN PUMP STATION RECEPTACLES	56
57	↓	↓	↓			20.0	4.0			1	20	WAS VALVE VAULT LIGHTING	58
59	↓	↓	↓					20.0	10.0	1	20	WAS VALVE VAULT RECEPTACLES	60
61	BLOWER SPACE HEATER XZ-1001	20	1	3.0	0.0					1	20	SPARE	62
63	BLOWER SPACE HEATER XZ-1002	20	1			3.0	0.0			1	20	SPARE	64
65	SPACE							0.0	0.0	1	20	SPARE	66
67	SPACE			0.0	10.0					1	20	SPARE	68
69	SPACE					0.0	0.0					SPACE	70
71	SPACE							0.0	0.0			SPACE	72
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG; 40A – #8AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				136.0		120.0		128.0					

4 LP-WW- PANELBOARD SCHEDULE

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PANELBOARD SCHEDULES

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-6

PANELBOARD			PP-C		(LOCATED IN CONTROL BUILDING)
VOLTAGE (L-N):	277V		ENCLOSURE TYPE:		NEMA 1
VOLTAGE (L-L):	480V		MOUNTING:		SURFACE
PHASES, WIRES:	3 ϕ 4 W		AIC RATING (A):		42000
MINIMUM BUS CAPACITY (A):	225A		NOTES:		
MAIN O.C. DEVICE (A):	225A MB				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	PANELBOARDS LP-C1 AND LC VIA TFR-C	175	3	135.0	0.0					3	30	SPARE	2
3						135.0	0.0						4
5								135.0	0.0				6
7	GENERAL OUTDOOR LIGHTING (CENTER)	20	1	8.0	0.0					3	30	SPARE	8
9	SPACE					0.0	0.0						10
11	SPACE							0.0	0.0				12
13	SPARE	30	3	0.0	0.0					3	20	SPARE	14
15						0.0	0.0						16
17								0.0	0.0				18
19	SPACE			0.0	0.0							SPACE	20
21						0.0	0.0						22
23								0.0	0.0				24
25	SPACE			0.0	0.0							SPACE	26
27						0.0	0.0						28
29								0.0	0.0				30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 175A – #2/0 AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				143.0		135.0		135.0					

1 PP-C– PANELBOARD SCHEDULE

PANELBOARD			LP-C1		(LOCATED IN CONTROL BUILDING)
VOLTAGE (L-N):	120V		ENCLOSURE TYPE:		NEMA 1
VOLTAGE (L-L):	240V		MOUNTING:		SURFACE
PHASE, WIRES:	3 ϕ, 4 W		AIC RATING (A):		18,000 AIC
MINIMUM BUS CAPACITY (A):	350A CU		NOTES:		FED THROUGH PANELBOARD
MAIN O.C. DEVICE (A):	350A, 3P MAIN BREAKER				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	CLARIFIER #1 FLOW TRANSMITTER (FIT-401)	20	1	1.0	5.0			1	20	SCADA PC UPS	2
3	CLARIFIER #2 FLOW TRANSMITTER (FIT-402)	20	1			1.0	8.0	1	20	CONTROL BUILDING RECEPTACLES	4
5	CLARIFIER METER VAULTS RECEPTACLE	20	1	8.0	1.0			1	20	CONTROL BUILDING INDOOR LIGHTING	6
7	CLARIFIER METER VAULTS LIGHTING	20	1			2.0	3.0	1	20	CONTROL BUILDING OUTDOOR LIGHTING	8
9	SECONDARY CLARIFIERS RECEPTACLE	20	1	8.0	1.0			1	20	LIGHTING CONTACTOR LC-C	10
11	SECONDARY CLARIFIERS LIGHTING	20	1			2.0	8.0	1	20	MAIN SCADA CONTROL PANEL LCP-M	12
13	EXISTING PANELBOARD LC	50	2	30.0	68.0			2	80	HEAT PUMP (HPOU-12-1)	14
15						30.0	68.0				16
17	SPARE	20	1	0.0	2.0			1	20	EXHAUST FAN (EF-12-1)	18
19	SPARE	20	1			0.0	0.0	1	20	SPARE	20
21	SPACE			0.0	0.0			1	20	SPACE	22
23	SPACE					0.0	0.0			SPACE	24
25	SPACE			0.0	0.0					SPACE	26
27	SPACE					0.0	0.0			SPACE	28
29	SPACE			0.0	0.0					SPACE	30
31	SPACE					0.0	0.0			SPACE	32
33	SPACE			0.0	0.0					SPACE	34
35	SPACE					0.0	0.0			SPACE	36
37	SPACE			0.0	0.0					SPACE	38
39	SPACE					0.0	0.0			SPACE	40
41	SPACE			0.0	0.0					SPACE	42
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG; 40A – #8AWG; 50A – #6AWG; 60A – #4AWG; 80A – #3AWG				CONNECTED LOAD PHASE TOTALS (AMP)							
				124.0		122.0					

2 LP-C – PANELBOARD SCHEDULE

EXISTING PANELBOARD			LC		
VOLTAGE (L-N):	120V		ENCLOSURE TYPE:		NEMA 1
VOLTAGE (L-L):	240V		MOUNTING:		SURFACE
PHASE, WIRES:	1 ϕ, 3 W		AIC RATING (A):		18,000 AIC
MINIMUM BUS CAPACITY (A):	225A CU		NOTES:		
MAIN O.C. DEVICE (A):	225A, 2P MAIN BREAKER				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	LAB LTS.	20	1	1.0	0.0					SPACE	2
3	TELEPHONE B.B.	20	1			0.5	1.0	1	20	OFFICE LTS.	4
5	LAB RECPS.	30	1	1.0	1.0			1	20	REST RM. LTS	6
7	UV-1	20	1			1.0	0.8	1	20	WATER COOLER	8
9	UV-2	20	1	1.0	1.0			1	20	OFFICE RECPS.	10
11	LAB RECPS.	20	1			1.0	1.0	2	20	C BLDG O/S LTS	12
13	LAB RECPS.	20	1	1.7	1.0						14
15	C BLDG. RECPS.	20	1			1.0	0.0	2	20	SPARE	16
17	SPARE	20	2	0.0	0.0						18
19						0.0	0.0	2	20	SPARE	20
21	SPARE	20	1	0.0	0.0						22
23	SPARE	20	1			0.0	0.0	1	20	SPARE	24
25	WATER HTR.	30	2	2.2	1.0			1	20	RESTRM. RECPS.	26
27						2.2	0.0	2	20	SPARE	28
29	SPARE	20	2	0.0	0.0						30
31						0.0	0.0	2	20	SPARE	32
33	SPARE	20	2	0.0	0.0						34
35						0.0	0.0	2	20	SPARE	36
37	SPARE	20	1	0.0	0.0						38
39	SPARE	20	1			0.0	0.0			SPACE	40
41	SPARE	20	1	0.0	0.0					SPACE	42
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG; 40A – #8AWG; 50A – #6AWG; 60A – #4AWG				CONNECTED LOAD PHASE TOTALS (AMP)							
				10.9		8.5					

3 EXISTING PANELBOARD LC – PANELBOARD SCHEDULE

PANELBOARD			PP-CB		(LOCATED IN CHEMICAL FEED ROOM)
VOLTAGE (L-N):	277V		ENCLOSURE TYPE:		NEMA 4X STAINLESS STEEL
VOLTAGE (L-L):	480V		MOUNTING:		SURFACE
PHASE, WIRES:	3 ϕ, 4 W		AIC RATING (A):		42,000 AIC
MINIMUM BUS CAPACITY (A):	100A CU		NOTES:		
MAIN O.C. DEVICE (A):	100A, 3P MAIN BREAKER				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	UNIT HEATER (UH-13-1-1)	20	3	6.5	36.0					3	50	PANELBOARD LP-CB VIA TFR-CB	2
3						6.5	36.0						4
5								6.5	36.0				6
7	UNIT HEATER (UH-13-1-2)	20	3	6.5	0.0					3	40	SPARE	8
9						6.5	0.0						10
11								6.5	0.0				12
13	UNIT HEATER (UH-13-1-3)			6.5	0.0							SPACE	14
15						6.5	0.0					SPACE	16
17								6.5	0.0			SPACE	18
19	SPACE			0.0	0.0							SPACE	20
21	SPACE					0.0	0.0					SPACE	22
23	SPACE							0.0	0.0			SPACE	24
25	SPACE			0.0	0.0							SPACE	26
27	SPACE					0.0	0.0					SPACE	28
29	SPACE							0.0	0.0			SPACE	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 40A – #8AWG; 50A – #6AWG;				CONNECTED LOAD PHASE TOTALS (AMP)									
				55.5		55.5		55.5					

4 PP-CB – PANELBOARD SCHEDULE

PANELBOARD			LP-CB		(LOCATED IN CHEMICAL FEED ROOM)
VOLTAGE (L-N):	120V		ENCLOSURE TYPE:		NEMA 4X STAINLESS STEEL
VOLTAGE (L-L):	208V		MOUNTING:		SURFACE
PHASE, WIRES:	3 ϕ, 4 W		AIC RATING (A):		18,000 AIC
MINIMUM BUS CAPACITY (A):	100A CU		NOTES:		
MAIN O.C. DEVICE (A):	100A, 3P MAIN BREAKER				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	CAUSTIC LEVEL TRANSMITTER (LIT-1201)	20	1	1.0	3.0					1	20	EXHAUST FAN (EF-13-1-1)	2
3	ALUM LEVEL TRANSMITTER (LIT-1301)	20	1			1.0	3.0			1	20	EXHAUST FAN (EF-13-1-2)	4
5	REMOTE I/O PANEL RIO-L	20	1					4.0	3.0	1	20	EXHAUST FAN (EF-13-1-3)	6
7	PUMP CONTROLLER (LCP-1211)	20	1	2.0	6.0					1	20	CHEMICAL BUILDING RECEPTACLES	8
9	PUMP CONTROLLER (LCP-1212)	20	1			2.0	4.0			1	20	CHEMICAL BUILDING INDOOR LIGHTING	10
11	PUMP CONTROLLER (LCP-1311)	20	1					2.0	2.0	1	20	CHEMICAL BUILDING OUTDOOR LIGHTING	12
13	PUMP CONTROLLER (LCP-1312)	20	1	2.0	0.0					1	20	SPARE	14
15	EYEWASH ALARM HORN/LIGHT	20	1			2.0	0.0			1	20	SPARE	16
17	SPARE	20	1					0.0	0.0			SPACE	18
19	SPARE	20	1	0.0	0.0							SPACE	20
21	SPACE					0.0	0.0					SPACE	22
23	SPACE							0.0	0.0			SPACE	24
25	SPACE			0.0	0.0							SPACE	26
27	SPACE					0.0	0.0					SPACE	28
29	SPACE							0.0	0.0			SPACE	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				14.0		12.0		11.0					

5 LP-CB – PANELBOARD SCHEDULE

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PANELBOARD SCHEDULES

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-7

PANELBOARD				PP–UV					(LOCATED AT UV STRUCTURE)				
VOLTAGE (L–N):		277V					ENCLOSURE TYPE:		NEMA 4X STAINLESS STEEL		
VOLTAGE (L–L):		480V					MOUNTING:		SURFACE		
PHASE, WIRES:		3 ϕ, 4 W					AIC RATING (A):		42,000 AIC		
MINIMUM BUS CAPACITY (A):		225A CU					NOTES:				
MAIN O.C. DEVICE (A):		150A, 3P MAIN BREAKER									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C	POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	MINI–POWER ZONE 30KVA MPZ–UV	50	3	36.0	24.0				3	30	UV BANK 1 CONTROL PANEL LCP–711	2
3	↓	↓	↓			36.0	24.0		↓	↓	↓	4
5	↓	↓	↓					36.0	24.0	↓	↓	↓	6
7	GENERAL OUTDOOR LIGHTING (WEST)	20	1	8.0	24.0				3	30	UV BANK 2 CONTROL PANEL LCP–712	8
9	SPACE					0.0	24.0					10
11	SPACE							0.0	24.0			12
13	SPARE	20	3	0.0	0.0				3	20	SPARE	14
15	↓	↓	↓			0.0	0.0		↓	↓	↓	16
17	↓	↓	↓					0.0	0.0	↓	↓	↓	18
19	SPACE			0.0	0.0						SPACE	20
21	↓	↓	↓			0.0	0.0				↓	22
23	↓	↓	↓					0.0	0.0	↓	↓	↓	24
25	SPACE			0.0	0.0						SPACE	26
27	↓	↓	↓			0.0	0.0				↓	28
29	↓	↓	↓					0.0	0.0	↓	↓	↓	30
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG; 30A – #10AWG; 50A – #6AWG				CONNECTED LOAD PHASE TOTALS (AMP)									
				92.0		84.0		84.0					

1 PP–UV – PANELBOARD SCHEDULE

MINI–POWER ZONE				MPZ–UV					(LOCATED AT UV STRUCTURE)			
VOLTAGE (L–N):		120V					ENCLOSURE TYPE:		NEMA 3R STAINLESS STEEL		
VOLTAGE (L–L):		208V					MOUNTING:		SURFACE		
PHASE, WIRES:		3 ϕ, 4 W					AIC RATING (A):		25,000 AIC AT 480V		
MINIMUM BUS CAPACITY (A):		125A CU					NOTES:		THE MPZ SHALL BE EQUIPPED WITH 30kVA, 480–208/120V, 3PH, 4W TRANSFORMER		
MAIN O.C. DEVICE (A):		50A, 3P MB PRIM.; 100A, 3P MB SEC.									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP) A		B		C	POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	REMOTE I/O PANEL RIO–UV	20	1	4.0	4.0				1	20	UV CONTROL PANEL LCP–700	2
3	EFFLUENT SAMPLER S–750	20*	1			2.0	16.0		1	20	UV BANK 1 CONTROL PANEL LCP–711	4
5	ULTRASONIC FLOW TRANSMITTER FIT–730	20	1					2.0	16.0	1	20	UV BANK 2 CONTROL PANEL LCP–712	6
7	UV STRUCTURE LIGHTING	20	1	4.0	0.0				1	20	SPARE	8
9	UV STRUCTURE RECEPTACLES	20	1			8.0	0.0		1	20	SPARE	10
11	LIGHTING CONTACTOR (LC–UV)	20	1					2.0	0.0	1	20	SPARE	12
13	SPARE	20	1	0.0	0.0				1	20	SPARE	14
15	SPACE					0.0	0.0				SPACE	16
17	SPACE							0.0	0.0			SPACE	18
19	SPACE			0.0	0.0						SPACE	20
21	SPACE					0.0	0.0				SPACE	22
23	SPACE							0.0	0.0			SPACE	24
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS: 20A – #12AWG				CONNECTED LOAD PHASE TOTALS (AMP) 12.0		26.0		20.0	(*) – 30mA, EGFP CIRCUIT BREAKER			

2 MPZ–UV – PANELBOARD SCHEDULE

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PANELBOARD SCHEDULES

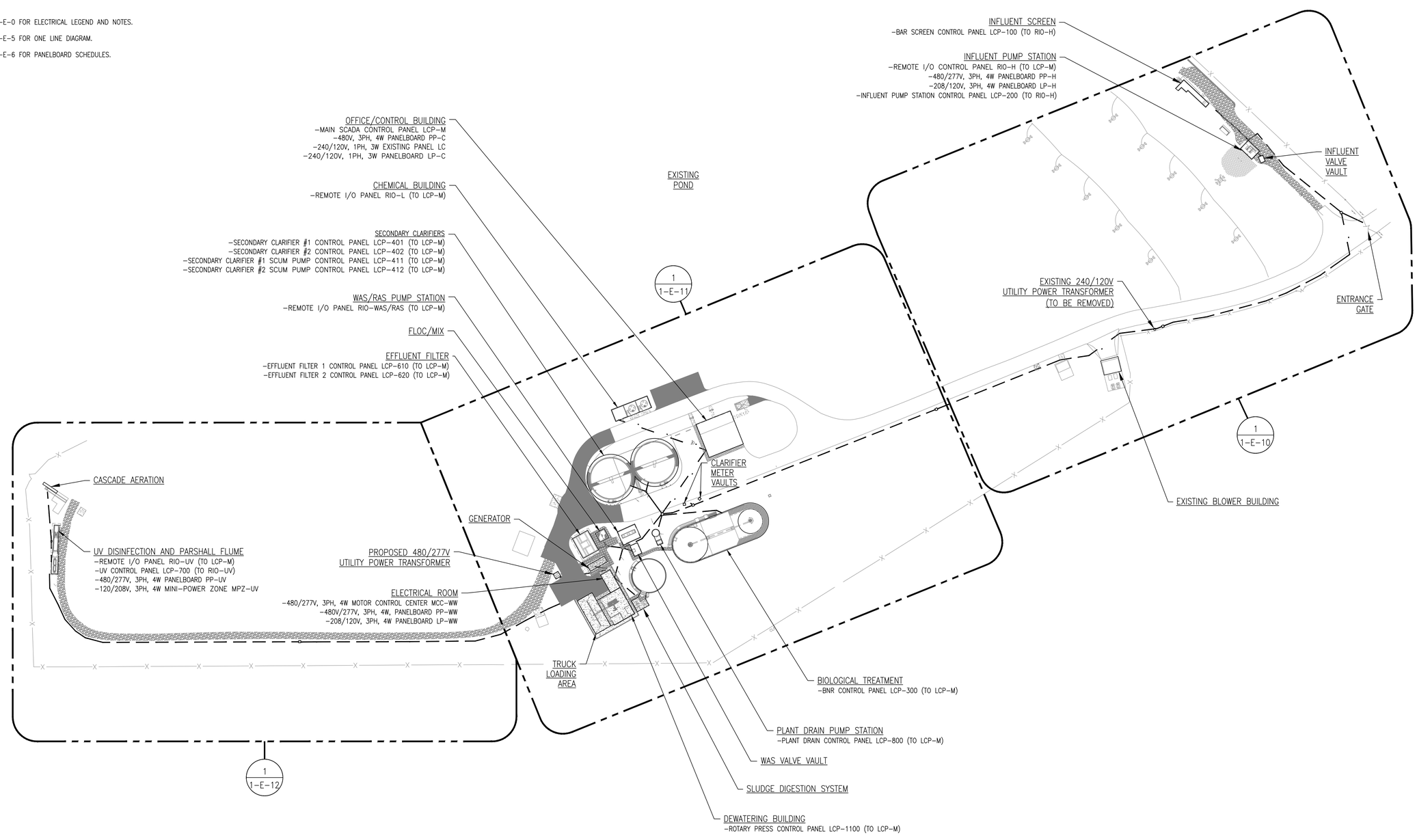
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-8

NOTES:

1. SEE DWG. 1-E-0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1-E-5 FOR ONE LINE DIAGRAM.
3. SEE DWG. 1-E-6 FOR PANELBOARD SCHEDULES.



1 OVERALL ELECTRICAL SITE PLAN
SCALE: 1" = 60'-0"

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ELECTRICAL HEAT TRACING FOR ALL EXPOSED PIPING 2" IN DIAMETER AND SMALLER. HEAT TRACING SYSTEM SHALL INCLUDE 120V, 20A CIRCUIT BREAKERS WITH 30MA GROUND FAULT EQUIPMENT PROTECTION (GFEP). CONTRACTOR SHALL ALSO FURNISH AND INSTALL ALL ASSOCIATED POWER AND CONTROL CABLES, CONDUITS, AND FITTINGS NECESSARY FOR A COMPLETE AND OPERABLE HEAT TRACING SYSTEM.

LEGEND:

- DIRECT BURIED UNDERGROUND DUCTBANK
- RC RC REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

OVERALL ELECTRICAL SITE PLAN

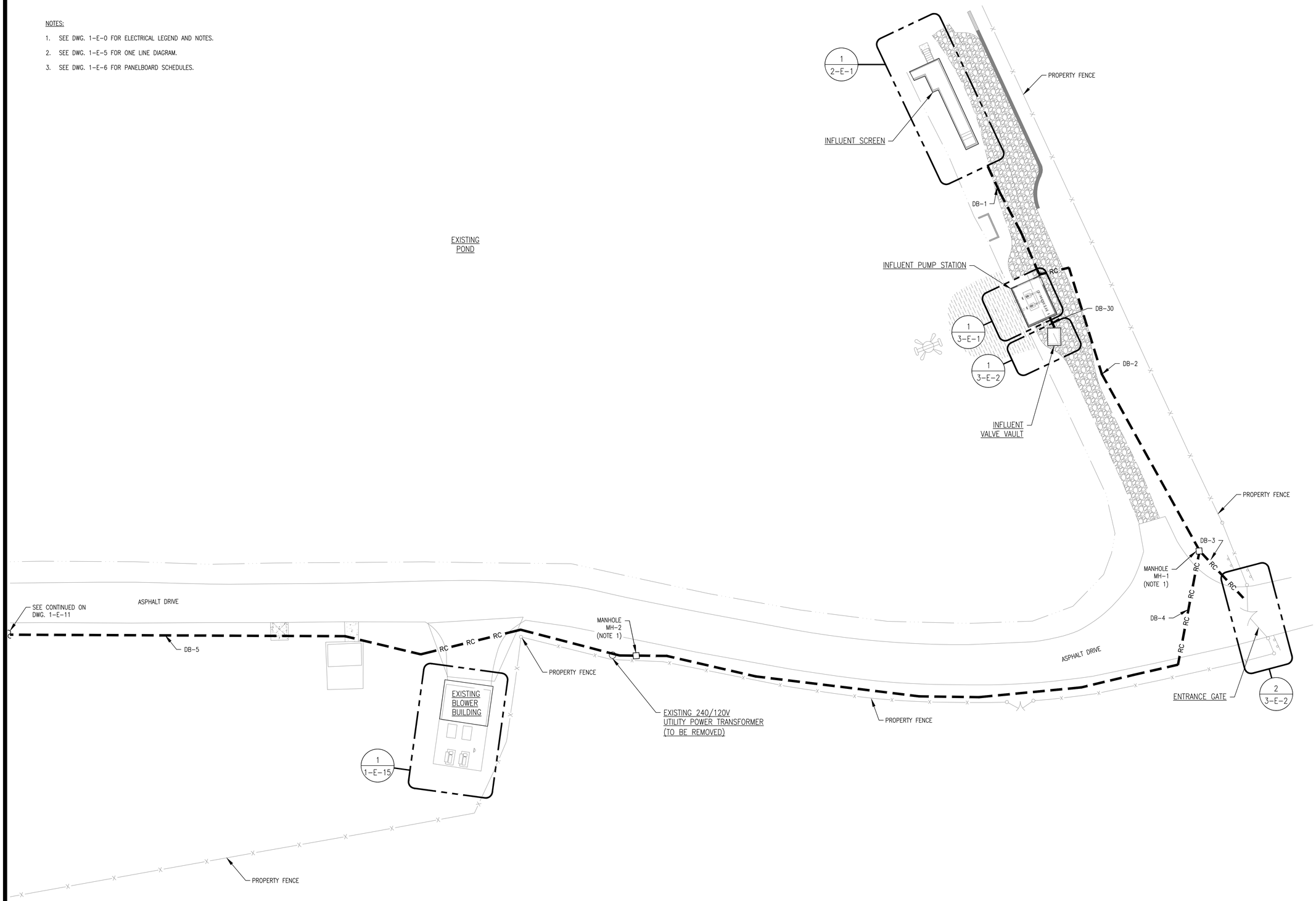
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-9

NOTES:

1. SEE DWG. 1-E-0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1-E-5 FOR ONE LINE DIAGRAM.
3. SEE DWG. 1-E-6 FOR PANELBOARD SCHEDULES.



1 PARTIAL ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK No. 29313

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

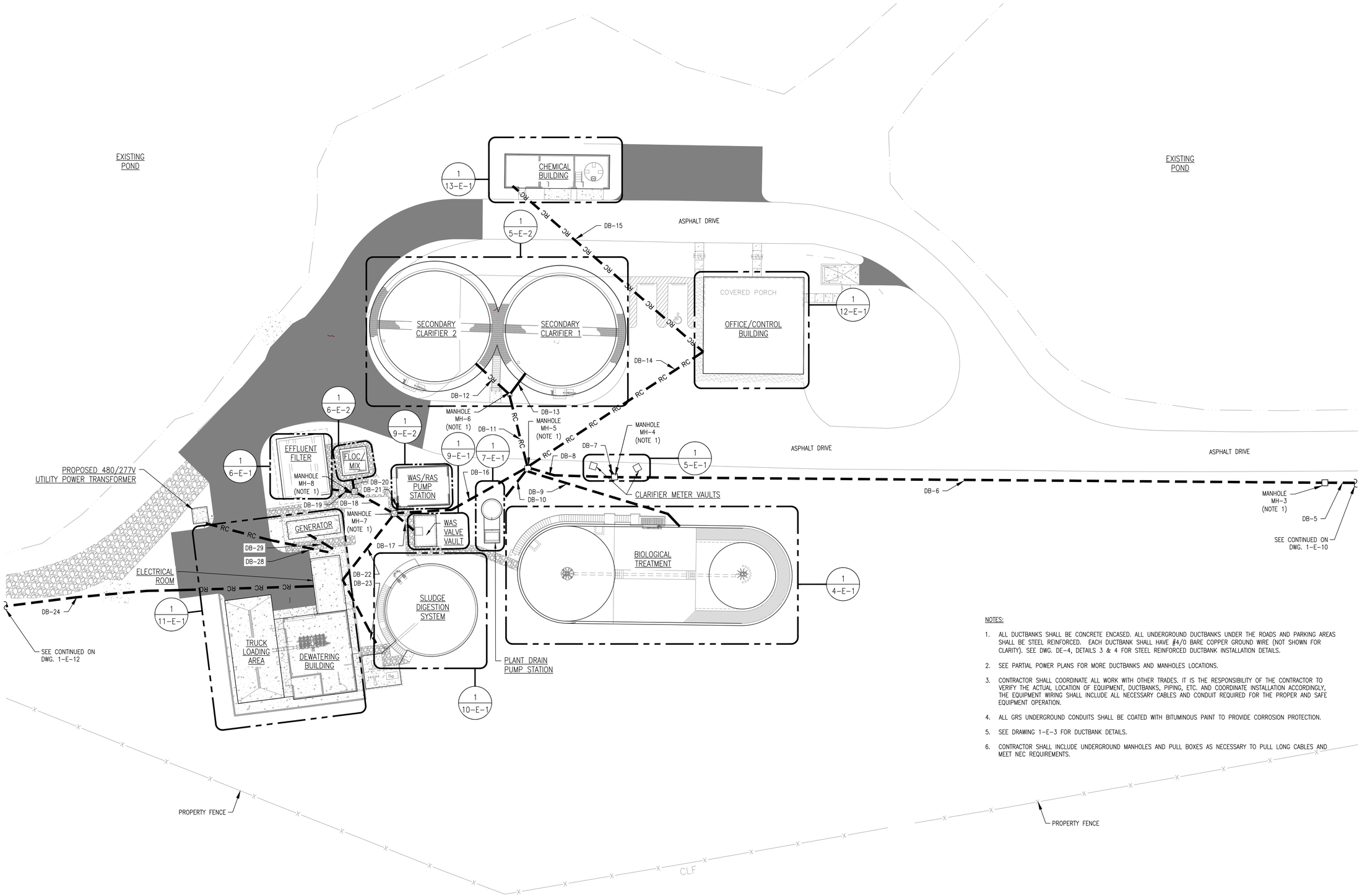
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PARTIAL ELECTRICAL SITE PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-10



NOTES:

1. ALL DUCTBANKS SHALL BE CONCRETE ENCASED. ALL UNDERGROUND DUCTBANKS UNDER THE ROADS AND PARKING AREAS SHALL BE STEEL REINFORCED. EACH DUCTBANK SHALL HAVE #4/0 BARE COPPER GROUND WIRE (NOT SHOWN FOR CLARITY). SEE DWG. DE-4, DETAILS 3 & 4 FOR STEEL REINFORCED DUCTBANK INSTALLATION DETAILS.
2. SEE PARTIAL POWER PLANS FOR MORE DUCTBANKS AND MANHOLES LOCATIONS.
3. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTBANKS, PIPING, ETC. AND COORDINATE INSTALLATION ACCORDINGLY, THE EQUIPMENT WIRING SHALL INCLUDE ALL NECESSARY CABLES AND CONDUIT REQUIRED FOR THE PROPER AND SAFE EQUIPMENT OPERATION.
4. ALL GRS UNDERGROUND CONDUITS SHALL BE COATED WITH BITUMINOUS PAINT TO PROVIDE CORROSION PROTECTION.
5. SEE DRAWING 1-E-3 FOR DUCTBANK DETAILS.
6. CONTRACTOR SHALL INCLUDE UNDERGROUND MANHOLES AND PULL BOXES AS NECESSARY TO PULL LONG CABLES AND MEET NEC REQUIREMENTS.

1 PARTIAL ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

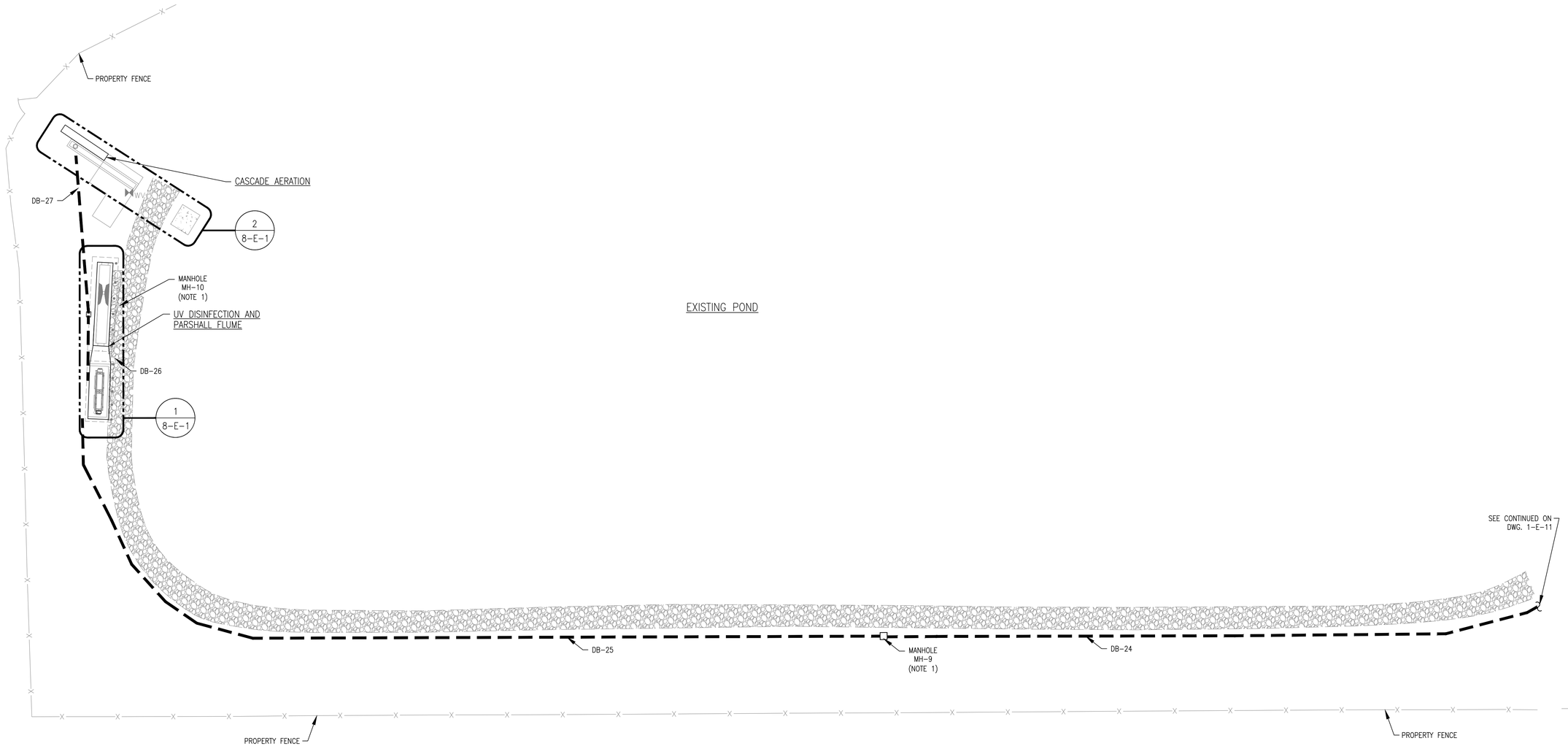
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PARTIAL ELECTRICAL SITE PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-11



1 PARTIAL ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PARTIAL ELECTRICAL SITE PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-12

LIGHTING/POLE SCHEDULE					
SYMBOL/TYPE	DESCRIPTION	INSTALLATION ENVIRONMENT	HAZARDOUS AREA	LAMP/VOLTAGE	MOUNTING
B1	EMERGENCY LIGHT/EXIT COMBO FIXTURE COLOR: WHITE ACCESSORIES: INTERNAL BATTERY BASIS OR DESIGN: BRAND: LITHONIA MODEL #: LHQM-LED-R-R0	INDOOR & OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY AND DAMP	N/A	LED 120-277V, 1PH 6WATTS	CEILING/ WALL/ SURFACE
J1	INDUSTRIAL ROUND HIGH BAY LIGHT FIXTURE FIXTURE COLOR: WHITE COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: FOR PENDANT INSTALLATION – HKMG, CS89, JHBLSCK84 BASIS OR DESIGN: BRAND: LITHONIA MODEL#:JHBL-12000LM-GL-WD-MVOLT-GZ10-40K-80CRI-DWHXD	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	N/A	LED 120V, 1PH 100WATTS	CEILING/ SURFACE/ PENDANT
J1H	INDUSTRIAL ROUND HIGH BAY LIGHT FIXTURE FIXTURE COLOR: WHITE COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: NONE BASIS OR DESIGN: BRAND: CROUSE-HINDS MODEL #:VMVL-13-G-R1-UNV1-UPLT	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	CL.1, DIV.2, GR. D CL.2, DIV.2, GR. F, G	N/A	WALL/ SURFACE
F1	INDUSTRIAL WALLPACK FIXTURE (ADJUSTABLE LIGHT OUTPUT) ENCLOSURE COLOR: DARK BRONZE COLOR TEMPERATURE: 4000K ACCESSORIES: NONE BASIS OR DESIGN: BRAND: LITHONIA MODEL #: #TWPLED-ALO-40K-T3M-MVOLT-DDBXD	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	N/A	LED 120/277V, 1PH 11-48WATTS	WALL/ SURFACE
IH1	STANCHION MOUNTED (25 DEG. ANGLED) LIGHT FIXTURE FIXTURE COLOR: GRAY COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: NONE BASIS OR DESIGN: BRAND: CROUSE-HINDS FIXTURE MODEL #: STANCHION MODEL #:	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	CL.1, DIV.2, GR. D CL.2, DIV.2, GR. F, G	LED 120/277V, 1PH 67WATTS	STANCHION
I1	STANCHION MOUNTED (25 DEG. ANGLED) LIGHT FIXTURE FIXTURE COLOR: GRAY COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: NONE BASIS OR DESIGN: BRAND: CROUSE-HINDS FIXTURE MODEL #: PVML 5 N J R3 UNV1 STANCHION MODEL #: JM5	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	N/A	LED 120-277V, 1PH 67WATTS	STANCHION
H	20FT, 4" DIA. SQUARE STRAIGHT ALUMINUM POLE WITH A SINGLE AREA LIGHT FIXTURE POLE COLOR: DARK BRONZE FIXTURE COLOR: DARK BRONZE COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: GLARE SHIELD LIGHTNING PROTECTION: AIR TERMINAL BASIS OR DESIGN: BRAND: LITHONIA FIXTURE MODEL #: DSX1LED-P4-40K-70CRI-T2M-MVOLT-SPA5-DDBXD GLARE SHIELD MODEL #: EGSR POLE MODEL #: SSA-20-5G-DM19AS-DDBXD	OUTDOOR; CORROSIVE & NON-CORROSIVE; WET	N/A	LED 120V, 1PH 125WATTS	POLE
D1	INDUSTRIAL STRIP LIGHT, 4FT ENCLOSURE COLOR: WHITE COLOR TEMPERATURE: 4000K ACCESSORIES: NONE BASIS OR DESIGN: BRAND: LITHONIA MODEL #: ZL1N-L48-SMR-5000LM-FST-MVOLT-40K-80CRI-WH	INDOOR; NON-CORROSIVE; DRY	N/A	LED 120/277V, 1PH 34WATTS	CEILING/ SURFACE
D2	INDUSTRIAL STRIP LIGHT, 4FT ENCLOSURE COLOR: WHITE COLOR TEMPERATURE: 4000K ACCESSORIES: NONE BASIS OR DESIGN: BRAND: LITHONIA MODEL #: FEM-L48-4000LM-IMACD-WD-MVOLT-40K-80CRI-WLFEND2	INDOOR; CORROSIVE & NON-CORROSIVE; DRY, DAMP AND WET	N/A	LED 120/277V, 1PH 24WATTS	CEILING/ SURFACE
E1	RECESSED CEILING 2' X 4' INDOOR LIGHT FIXTURE COLOR TEMPERATURE: 4000K ACCESSORIES: NONE BASIS OR DESIGN: BRAND: LITHONIA MODEL #: 2TL4-46L-RW-A19-D50-LP840-N100	INDOOR; NON-CORROSIVE; DRY	N/A	LED 120/277V, 1PH 50WATTS	CEILING/ RECESSED
WP L	30A, 125V, 1PH, 3W, 52 RECEPTACLE WITH WATERTIGHT LOCKING RING IN A WEATHERPROOF ENCLOSURE WITH A SELF-CLOSING CAP. BASIS OR DESIGN: BRAND:HUBBELL MODEL #: HBL303NM (OR APPROVED EQUAL). ACCESSORIES: BACK BOX FOR RECEPTACLES #FD BOX (OR APPROVED EQUAL).	INDOOR AND OUTDOOR; CORROSIVE & NON-CORROSIVE; DAMP AND WET	N/A	N/A	WALL/ SURFACE

NOTE:
DESIGN IS BASED ON THE EQUIPMENT SHOWN IN THE ABOVE SCHEDULE. LIGHTS AND POLE SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PER SCHEDULE. ANY SUBSTITUTIONS SHALL BE APPROVED BY ENGINEER PRIOR TO PURCHASE/INSTALLATION.

LIGHTING/POLE SCHEDULE					
SYMBOL/TYPE	DESCRIPTION	INSTALLATION ENVIRONMENT	HAZARDOUS AREA	LAMP/VOLTAGE	MOUNTING
H2	20FT, 4" DIA. SQUARE STRAIGHT ALUMINUM POLE WITH A SINGLE AREA LIGHT FIXTURE POLE COLOR: DARK BRONZE FIXTURE COLOR: DARK BRONZE COLOR TEMPERATURE: 4000K FIXTURE ACCESSORIES: NONE BASIS OR DESIGN: BRAND: LITHONIA FIXTURE MODEL #: DSX1LED-P4-40K-70CRI-T2M-MVOLT-SPA5-DDBXD POLE MODEL #: SSA-20-5G-DM19AS-DDBXD	OUTDOOR; CORROSIVE & NON-CORROSIVE; WET	N/A	LED 277V, 1PH 125WATTS	POLE
B2	FLOOD LIGHT FIXTURE COLOR TEMPERATURE: 3000K BASIS OR DESIGN: BRAND: CROUSE-HINDS MODEL #: FVMA-9-W-76-UNV1-M2	INDOOR CORROSIVE	N/A	LED 100-277V, 1PH	WALL

NOTE:
DESIGN IS BASED ON THE EQUIPMENT SHOWN IN THE ABOVE SCHEDULE. LIGHTS AND POLE SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PER SCHEDULE. ANY SUBSTITUTIONS SHALL BE APPROVED BY ENGINEER PRIOR TO PURCHASE/INSTALLATION.

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

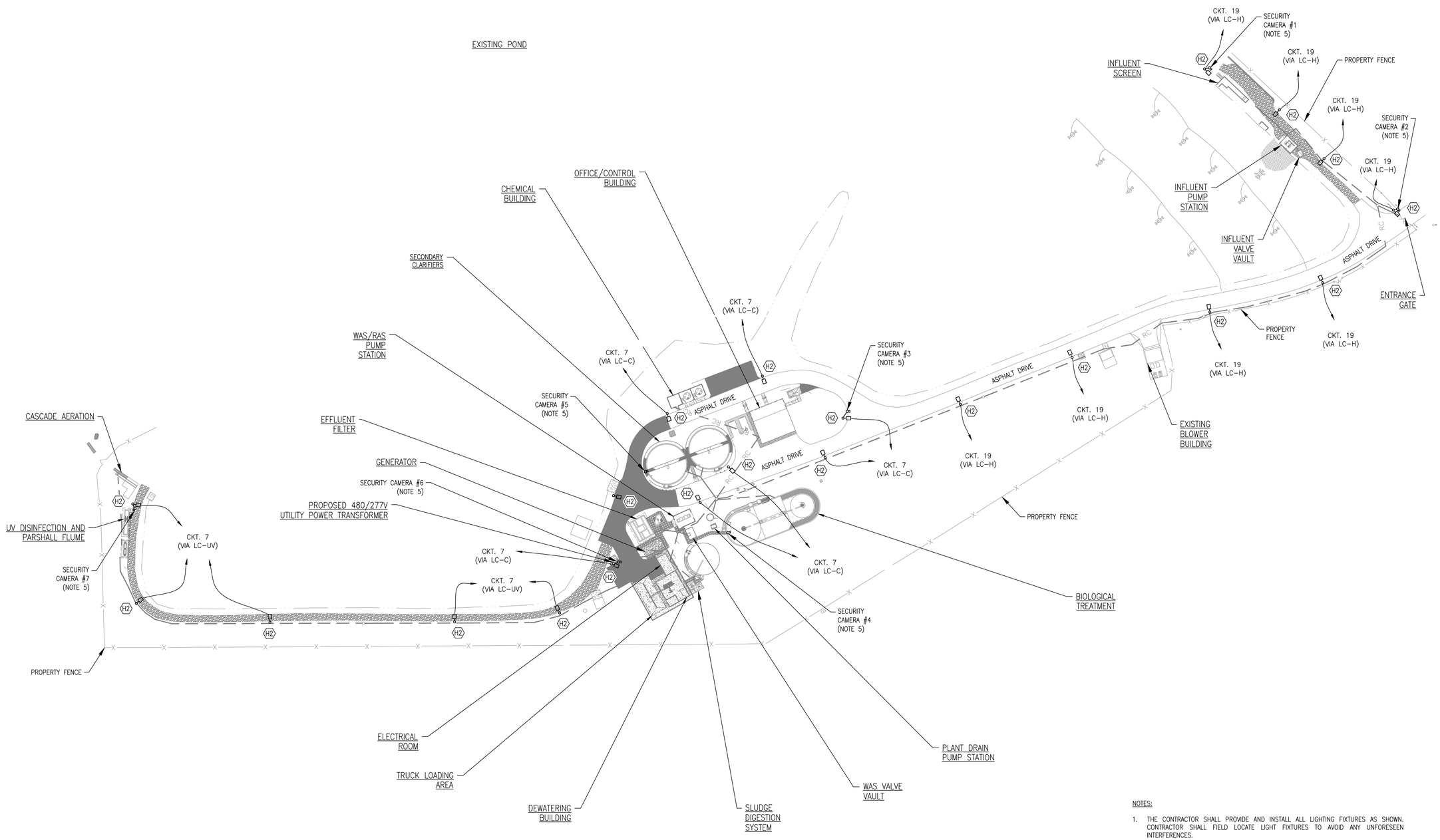
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

LIGHTING FIXTURES SCHEDULE

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
1-E-13



1 OVERALL LIGHTING AND CCTV CAMERAS PLAN

SCALE: 1" = 60'-0"

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. SEE DRAWINGS 1-E-6, 1-E-7 FOR PANELBOARD SCHEDULES.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A POE SECURITY CAMERA AT THE LOCATION SHOWN. THE CAMERA SHALL BE OUTDOOR-RATED, SUPPORT HD VIDEO, AND INCLUDE BUILT-IN INFRARED FOR LOW-LIGHT CONDITIONS. VIDEO SHALL BE TRANSMITTED TO THE PLANT SCADA. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY INSTALLATION HARDWARE, CABLES, AND CONDUITS.

LEGEND:

- DIRECT BURIED UNDERGROUND DUCTBANK
- REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RIZZO ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

OVERALL LIGHTING AND CCTV PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

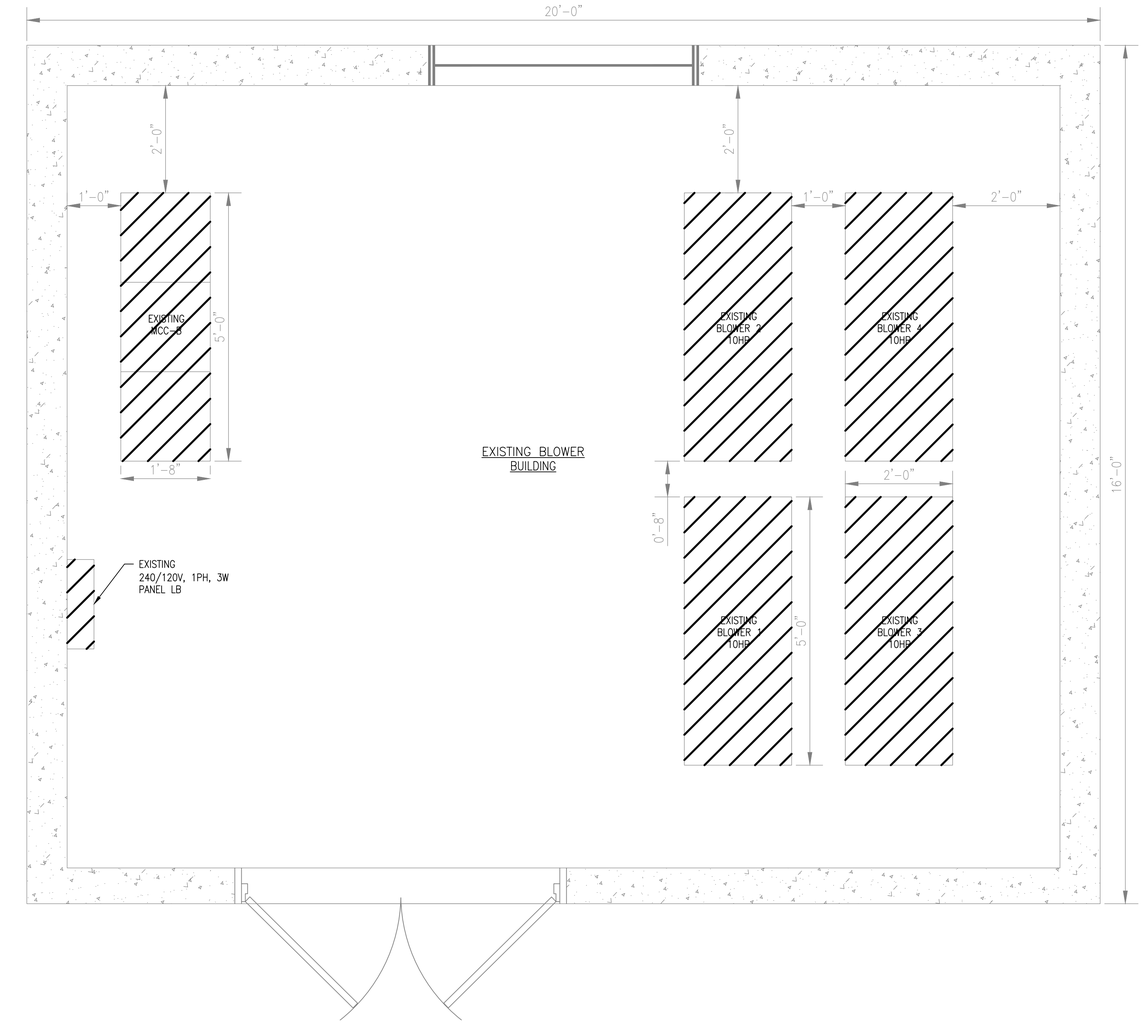
Sheet No.
1-E-14

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

NOTES:

1. THE CONTRACTOR SHALL DEMOLISH EXISTING EQUIPMENT AS NOTED AND ALL ASSOCIATED INSTALLATION HARDWARE, CABLES AND CONDUITS. ALL DEMOLISHED ELECTRICAL MOTORS/EQUIPMENT/ETC, SHALL BE COORDINATED WITH THE OWNER FOR RE-USE OR DISPOSAL.

2. THE EXISTING SERVICE CAN BE DISCONNECTED AFTER THE NEW 480V, 3PH SERVICE IS CONNECTED AND THE NEW PLANT IS UP AND RUNNING (AT THE END OF THE CONSTRUCTION PROJECT)



1 EXISTING BLOWER BLDG ELECTRICAL PLAN
SCALE: 3/4" = 1'

GRAPHIC SCALE

1.33 0 0.67 1.33 2.67 5.33

(IN FEET)
3/4 inch = 1 ft.

– EQUIPMENT TO BE DEMOLISHED (NOTE 1)

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

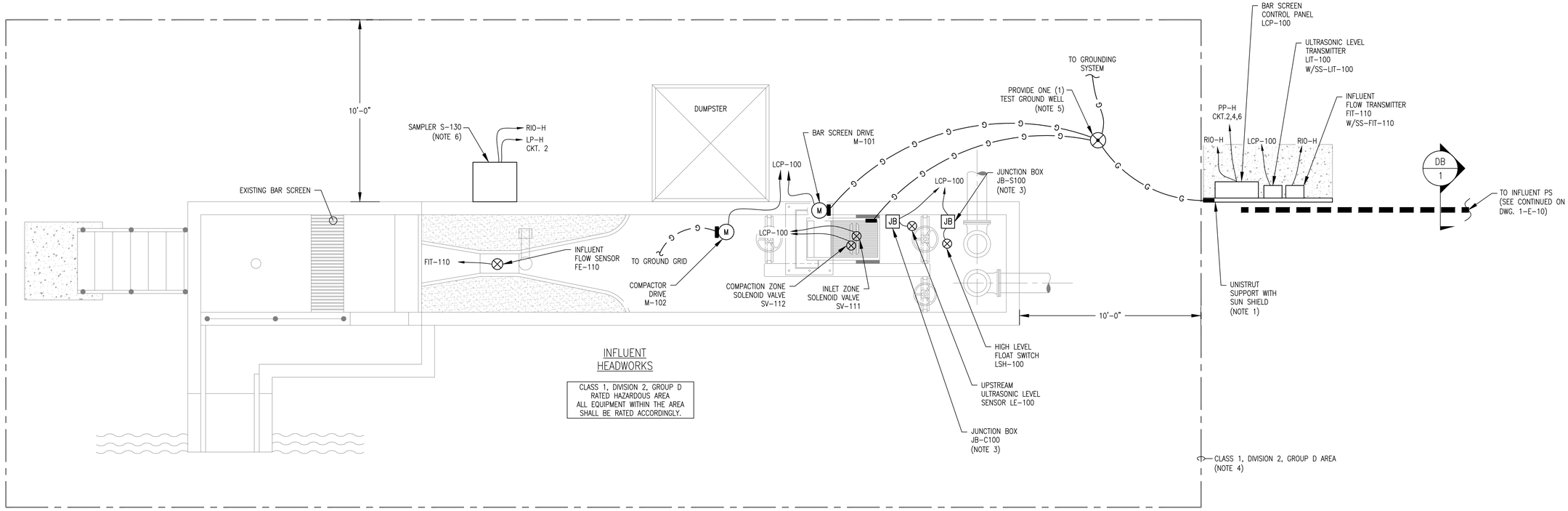
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING BLOWER BUILDING ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
1-E-15

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 INFLUENT HEADWORKS ELECTRICAL PLAN
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE

2.67 0 1.33 2.67 5.33 10.67

(IN FEET)
3/8 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT FOR INSTALLATION OF ELECTRICAL EQUIPMENT SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
2. ONLY MAJOR UNDERGROUND CONDUITS ARE SHOWN FOR CLARITY. THE CONTRACTOR SHALL COORDINATE ALL UNDERGROUND CONDUIT RUNS WITH OTHER UNDERGROUND UTILITIES. DUCTBANKS UNDER THE ROAD SHALL BE CONCRETE ENCASED. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X STAINLESS STEEL JUNCTION BOXES ADEQUATELY SIZED FOR ASSOCIATED CABLES AND CONDUITS.
4. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. ACCORDING TO NFPA 820, TABLE 5.2.2 ROW 2C:

   CLASS 1, DIVISION 2, GROUP D AREA:
   CLASSIFIED AREA EXTENDS WITHIN. INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 IN. ABOVE THE TOP OF THE TANK AND EXTENDING 18 IN. BEYOND THE EXTERIOR WALL; ENVELOPE 18 IN. ABOVE GRADE EXTENDING 10 FT HORIZONTALLY FROM THE EXTERIOR TANK WALLS.
5. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
6. THE CONTRACTOR SHALL INSTALL SAMPLER S-130 ON AN 18" HIGH PLATFORM TO AVOID THE CLASSIFIED AREA.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 32013
ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

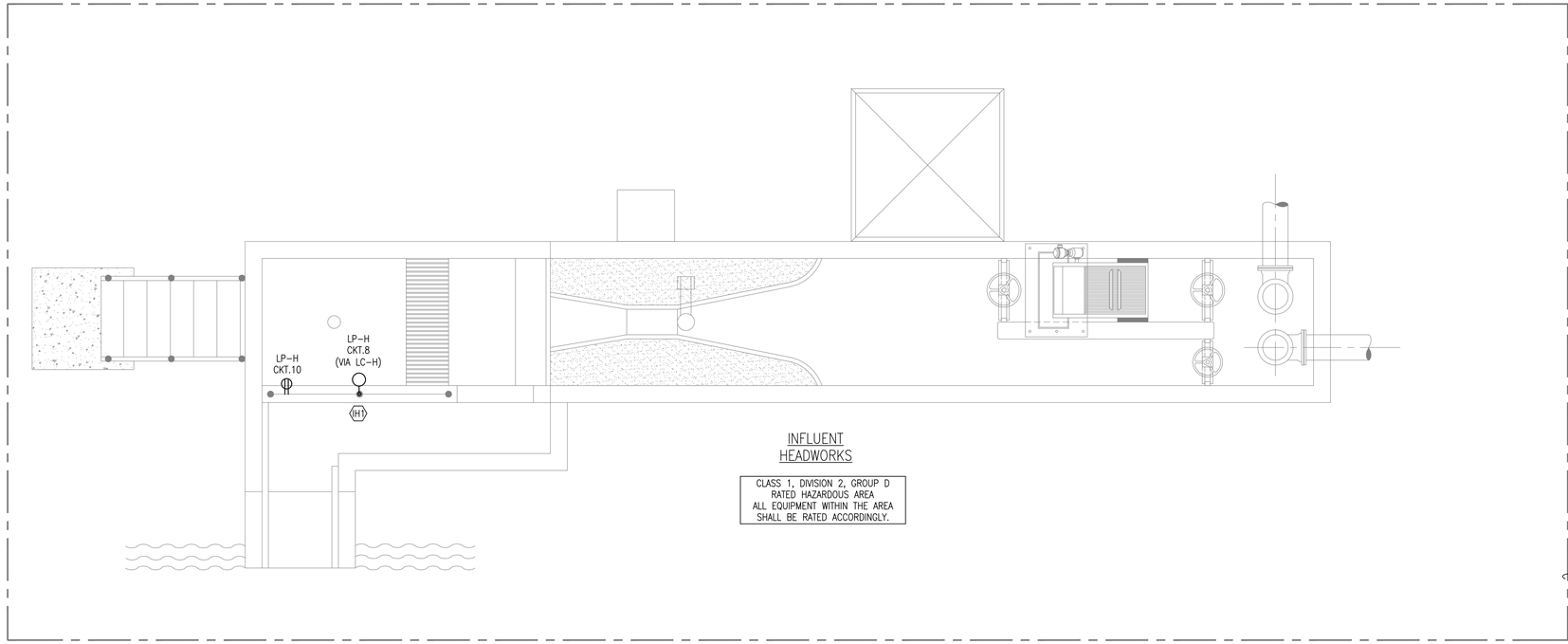
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT HEADWORKS
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
2-E-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 INFLUENT HEADWORKS RECEPTACLES AND LIGHTING PLAN
SCALE: 3/8" = 1'–0"

GRAPHIC SCALE

2.67 0 1.33 2.67 5.33 10.67

(IN FEET)
3/8 inch = 1 ft.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. ACCORDING TO NFPA 820, TABLE 5.2.2 ROW 2C:
3. CLASS 1, DIVISION 2, GROUP D AREA:
   – CLASSIFIED AREA EXTENDS WITHIN. INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 IN. ABOVE THE TOP OF THE TANK AND EXTENDING 18 IN. BEYOND THE EXTERIOR WALL; ENVELOPE 18 IN. ABOVE GRADE EXTENDING 10 FT HORIZONTALLY FROM THE EXTERIOR TANK WALLS.
4. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
5. SEE DRAWING 1–E–13 FOR LIGHTING FIXTURES SCHEDULE.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE–5 FOR INSTALLATION DETAILS.
7. MINI–POWER ZONE LP–H AND LIGHTING CONTACTOR LC–H ARE LOCATED ON THE EXTERIOR WALL OF THE INFLUENT PUMP STATION BUILDING. SEE DRAWING 3–E–4 FOR EXACT LOCATION.

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

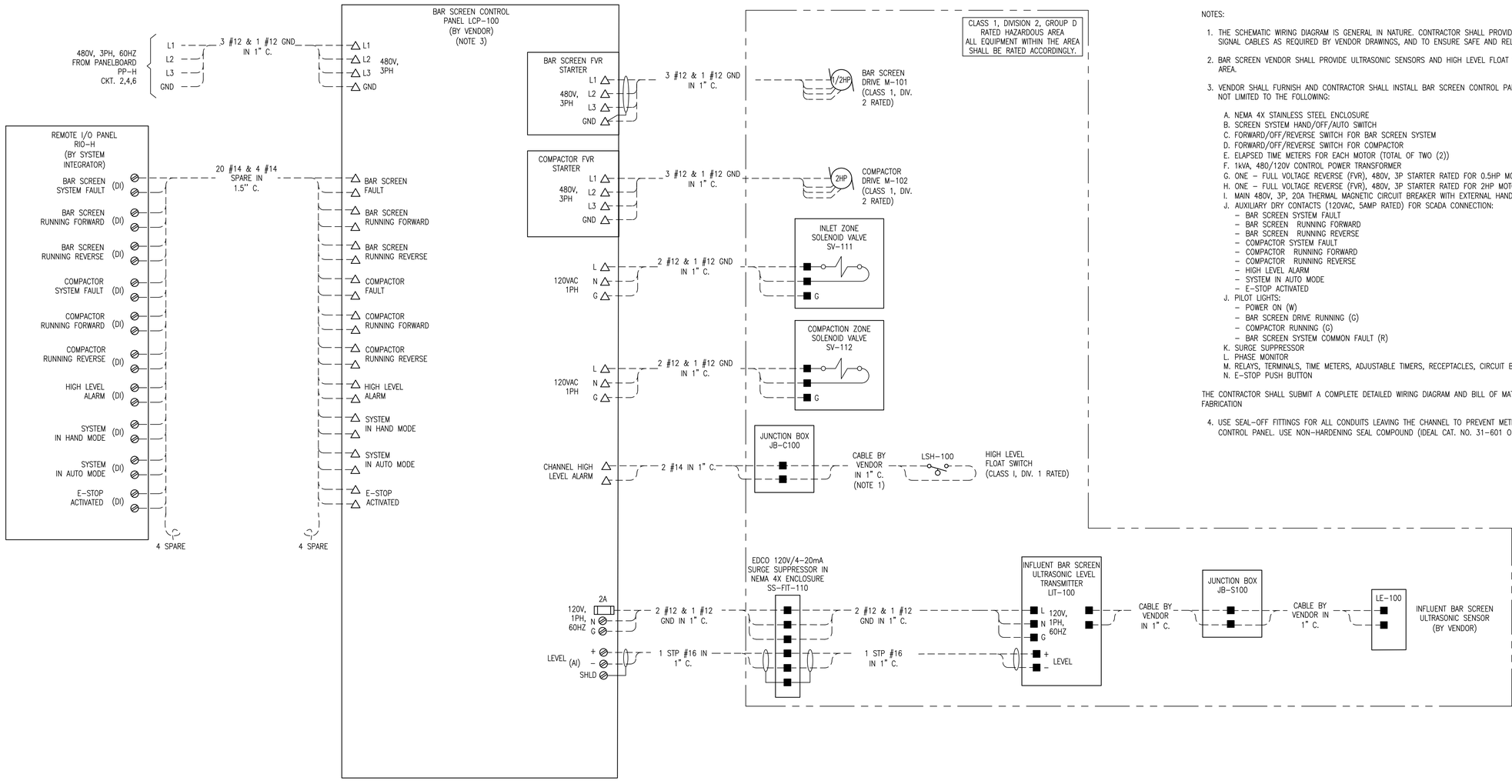
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT HEADWORKS
RECEPTACLES AND LIGHTING PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
2-E-2



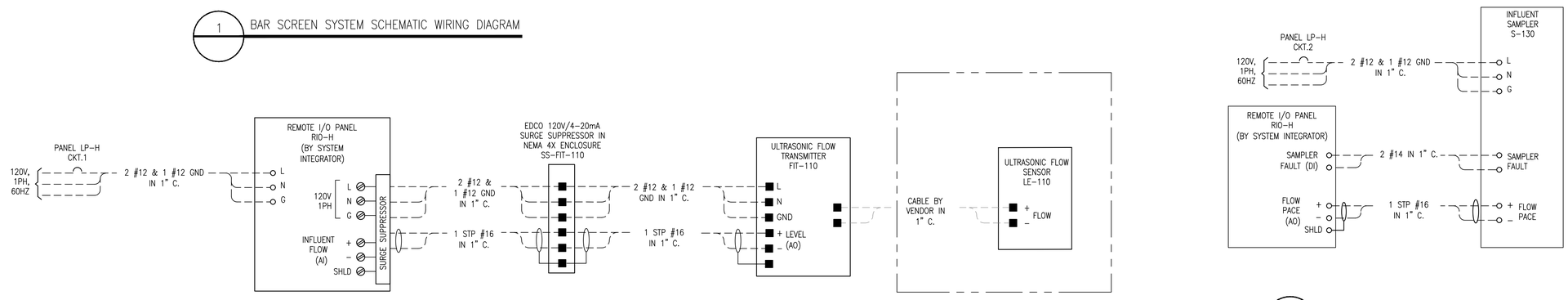
1 BAR SCREEN SYSTEM SCHEMATIC WIRING DIAGRAM

NOTES:

1. THE SCHEMATIC WIRING DIAGRAM IS GENERAL IN NATURE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER, CONTROL AND SIGNAL CABLES AS REQUIRED BY VENDOR DRAWINGS, AND TO ENSURE SAFE AND RELIABLE BAR SCREEN SYSTEM OPERATION.
2. BAR SCREEN VENDOR SHALL PROVIDE ULTRASONIC SENSORS AND HIGH LEVEL FLOAT SWITCH RATED FOR CLASS 1, DIVISION 2 AREA.
3. VENDOR SHALL FURNISH AND CONTRACTOR SHALL INSTALL BAR SCREEN CONTROL PANEL LCP-100. PANEL SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
   - A. NEMA 4X STAINLESS STEEL ENCLOSURE
   - B. SCREEN SYSTEM HAND/OFF/AUTO SWITCH
   - C. FORWARD/OFF/REVERSE SWITCH FOR BAR SCREEN SYSTEM
   - D. FORWARD/OFF/REVERSE SWITCH FOR COMPACTOR
   - E. ELAPSED TIME METERS FOR EACH MOTOR (TOTAL OF TWO (2))
   - F. 1kVA, 480/120V CONTROL POWER TRANSFORMER
   - G. ONE – FULL VOLTAGE REVERSE (FVR), 480V, 3P STARTER RATED FOR 0.5HP MOTOR (BAR SCREEN DRIVE)
   - H. ONE – FULL VOLTAGE REVERSE (FVR), 480V, 3P STARTER RATED FOR 2HP MOTOR (COMPACTOR)
   - I. MAIN 480V, 3P, 20A THERMAL MAGNETIC CIRCUIT BREAKER WITH EXTERNAL HANDLE
   - J. AUXILIARY DRY CONTACTS (120VAC, 5AMP RATED) FOR SCADA CONNECTION:
     - BAR SCREEN SYSTEM FAULT
     - BAR SCREEN RUNNING FORWARD
     - BAR SCREEN RUNNING REVERSE
     - COMPACTOR SYSTEM FAULT
     - COMPACTOR RUNNING FORWARD
     - COMPACTOR RUNNING REVERSE
     - HIGH LEVEL ALARM
     - SYSTEM IN AUTO MODE
     - E-STOP ACTIVATED
   - J. PILOT LIGHTS:
     - POWER ON (W)
     - BAR SCREEN DRIVE RUNNING (G)
     - COMPACTOR RUNNING (G)
     - BAR SCREEN SYSTEM COMMON FAULT (R)
   - K. SURGE SUPPRESSOR
   - L. PHASE MONITOR
   - M. RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES, CIRCUIT BREAKERS ETC. AS REQUIRED
   - N. E-STOP PUSH BUTTON

THE CONTRACTOR SHALL SUBMIT A COMPLETE DETAILED WIRING DIAGRAM AND BILL OF MATERIAL FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION

4. USE SEAL-OFF FITTINGS FOR ALL CONDUITS LEAVING THE CHANNEL TO PREVENT METHANE GAS AND MOISTURE ENTERING INTO CONTROL PANEL. USE NON-HARDENING SEAL COMPOUND (IDEAL CAT. NO. 31-601 OR APPROVED EQUAL).



3 EXISTING INFLUENT FLOW METER SCHEMATIC

2 INFLUENT SAMPLER S-130 SCHEMATIC

LEGEND:

△ – LOCAL CONTROL PANEL TERMINAL
⊘ – SCADA PANEL TERMINAL
■ – DEVICE TERMINAL

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK NO. 29133

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

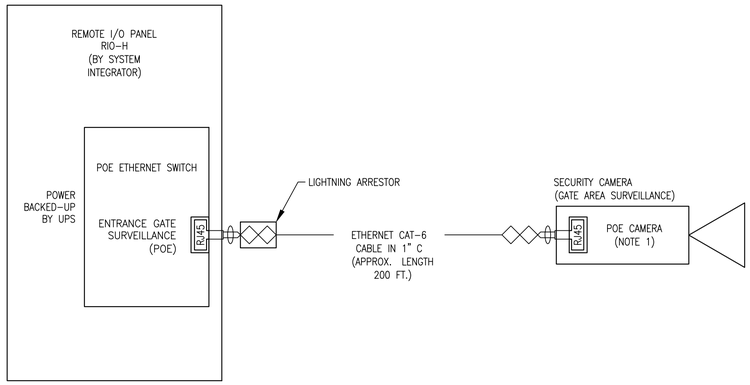
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT HEADWORKS
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
2-E-3

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. THE SYSTEM INTEGRATOR SHALL PROVIDE AND ELECTRICAL CONTRACTOR SHALL INSTALL A POE SECURITY CAMERA FOR LIVE VIDEO. THE CAMERA SHALL BE OUTDOOR-RATED, SUPPORT HD VIDEO, AND HAVE BUILT-IN INFRARED FOR LOW LIGHT.

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

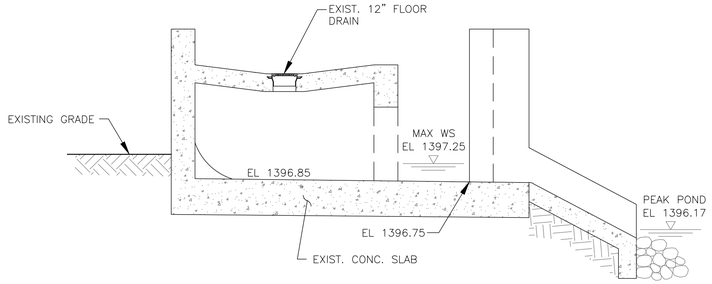
INFLUENT HEARWORKS
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

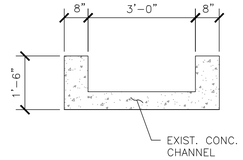
Sheet No.
2-E-4

EDEC
A SALAS O'BRIEN COMPANY

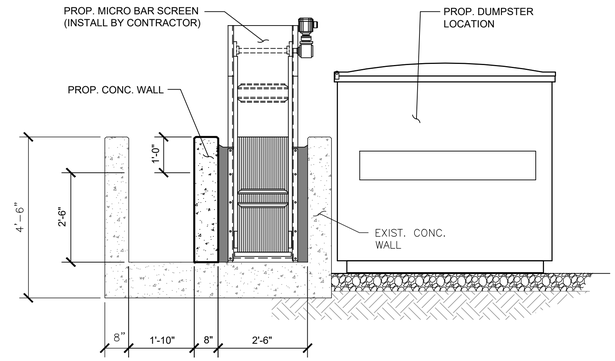
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



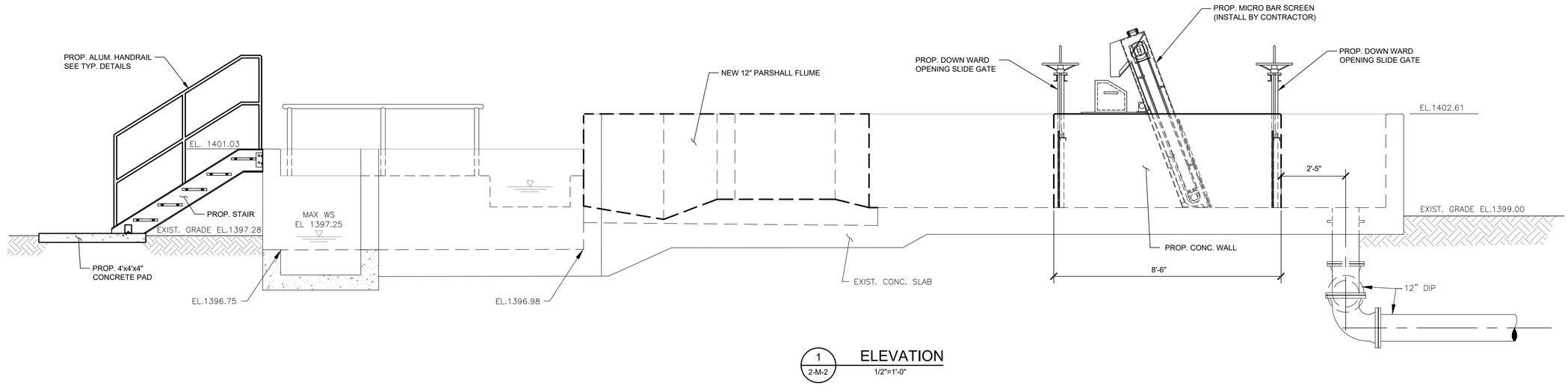
B 2-M-2 SECTION 1/2"=1'-0"



C 2-M-2 SECTION 1/2"=1'-0"



D 2-M-2 SECTION 1/2"=1'-0"



1 2-M-2 ELEVATION 1/2"=1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

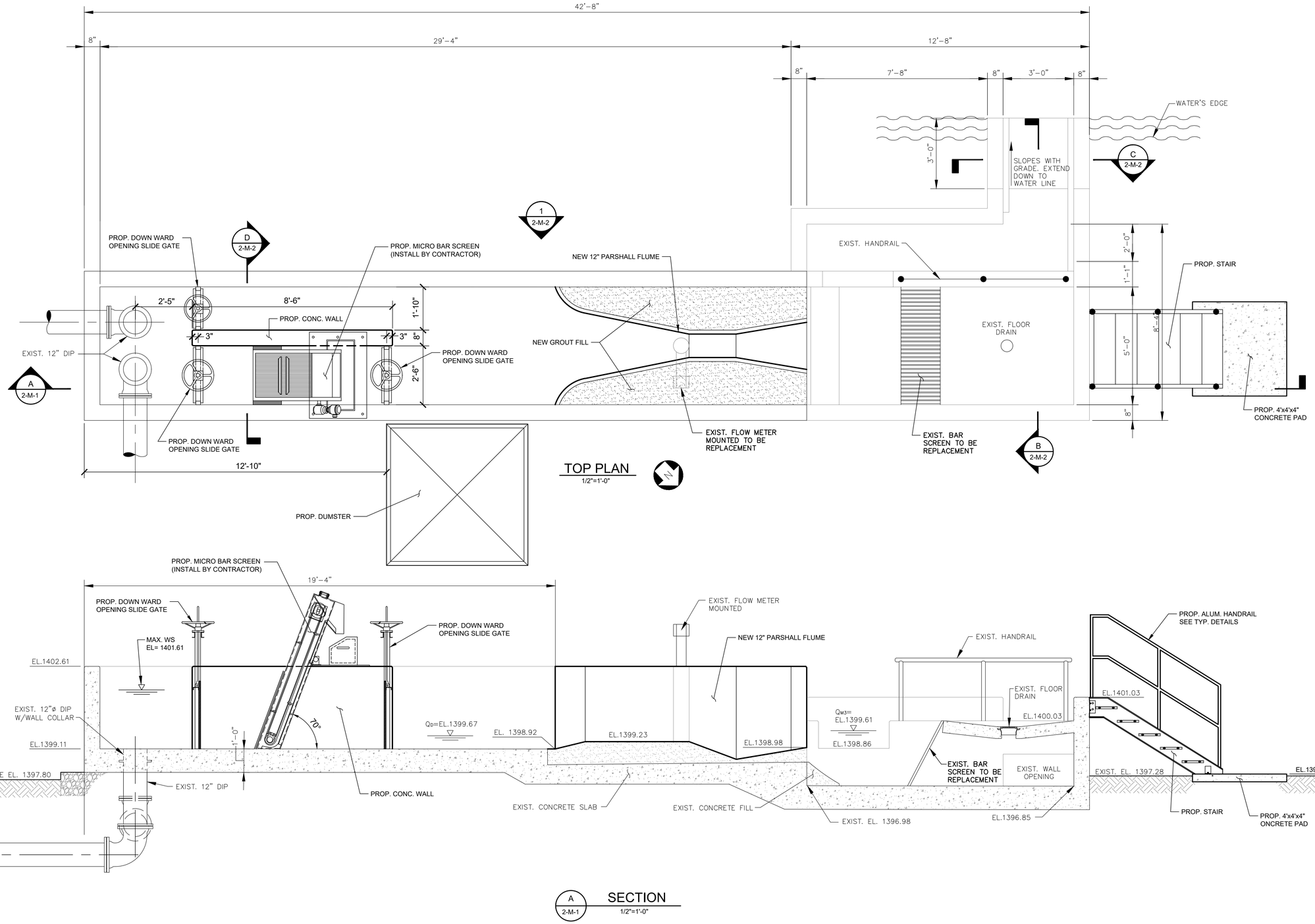
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING INFLUENT HEADWORKS
SECTION AND DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2-M-2 Ex-Headwork Section.dwg

Sheet No.
2-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 02 - Influent Headworks\2-M-2 Ex-Headwork Section.dwg 08/01/2025 1:24pm aencarnacion



GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

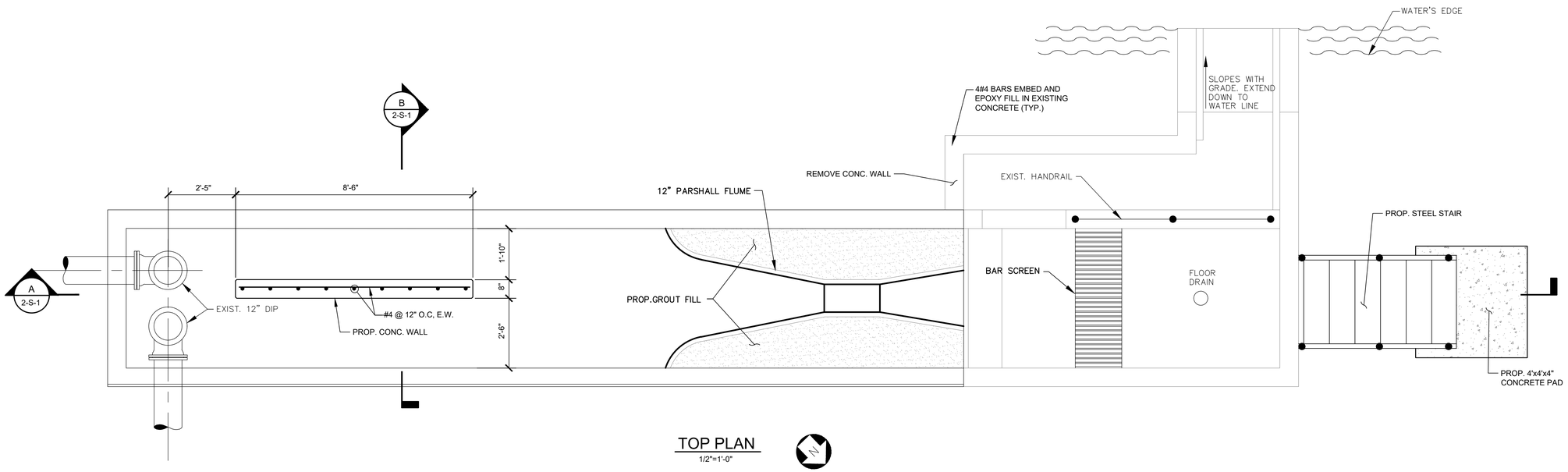
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT HEADWORKS PLAN AND SECTION

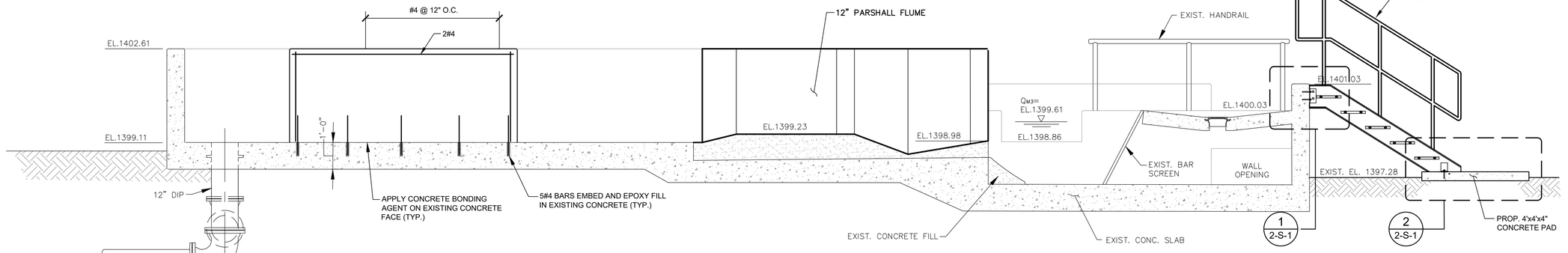
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2-M-1 Ex-Headwork Plan.dwg

Sheet No.
2-M-1

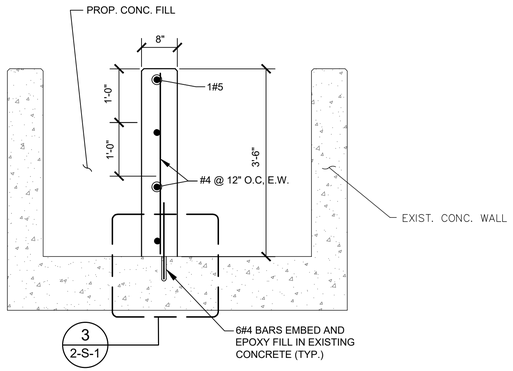
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 02 - Influent Headworks\2-M-1 Ex-Headwork Plan.dwg 08/01/2025 1:24pm aencarnacion



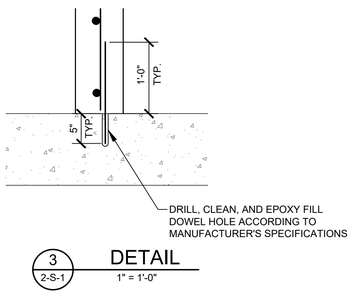
TOP PLAN
1/2"=1'-0"



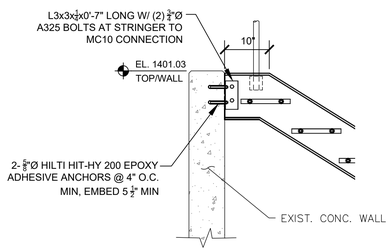
A SECTION
2-S-1 — 1/2"=1'-0"



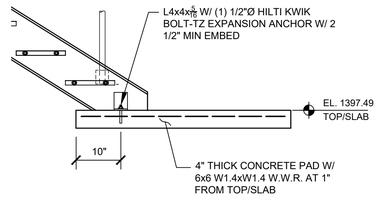
B SECTION
2-S-1 — 3/4"=1'-0"



3 DETAIL
2-S-1 — 1" = 1'-0"



1 DETAIL
2-S-1 — 3/4" = 1'-0"



2 DETAIL
2-S-1 — 3/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER — MEG M. MBUGUA — JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

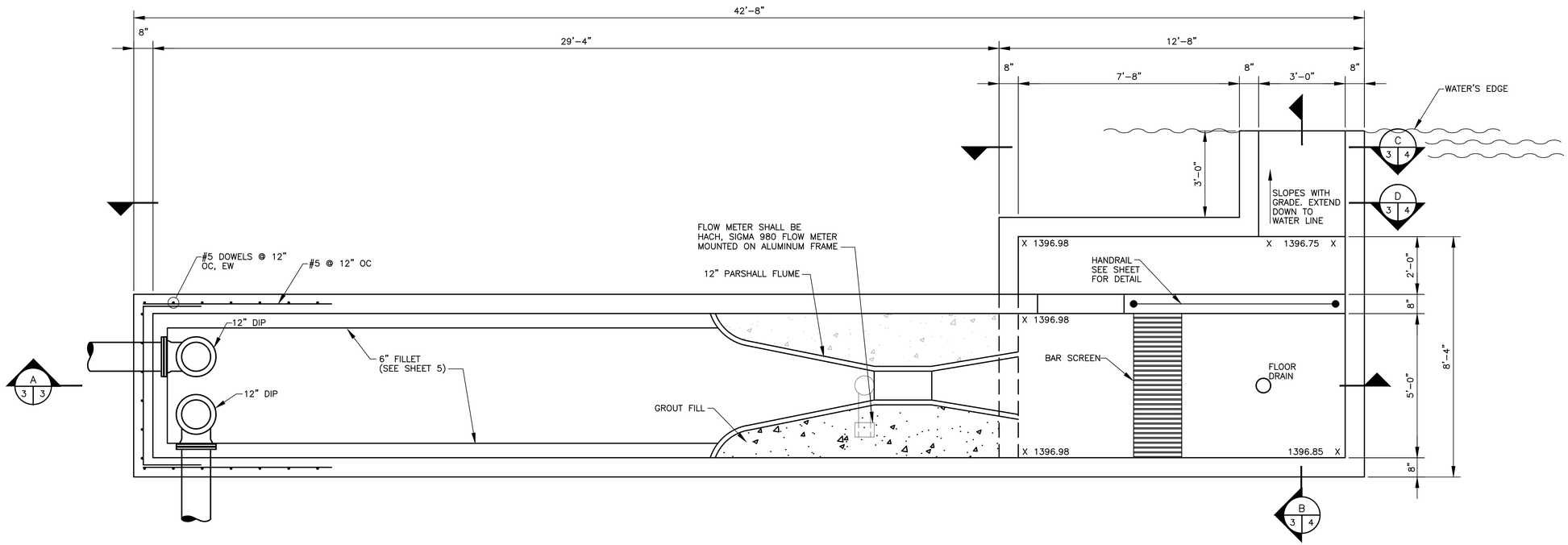
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT HEADWORKS PLAN AND SECTION

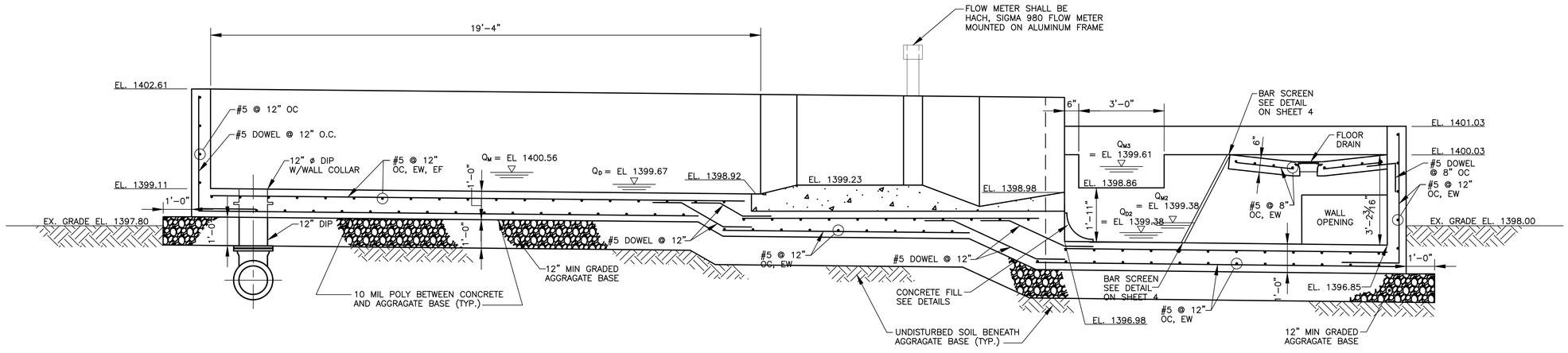
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2-S-1 Ex-Headwork Plan & Sections.dwg

Sheet No.
2-S-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 02 - Influent Headworks\2-S-1 Ex-Headwork Plan & Sections.dwg 08/01/2025 1:23pm aencarnacion



TOP PLAN
1/2"=1'-0"



DESIGN FLOW, Q_D = 0.75 MGD
MAX FLOW, Q_M = 4 MGD

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

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER
IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA. 30060
Phone No. (770) 427-8123
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
INFLUENT FLUME AND BAR SCREEN

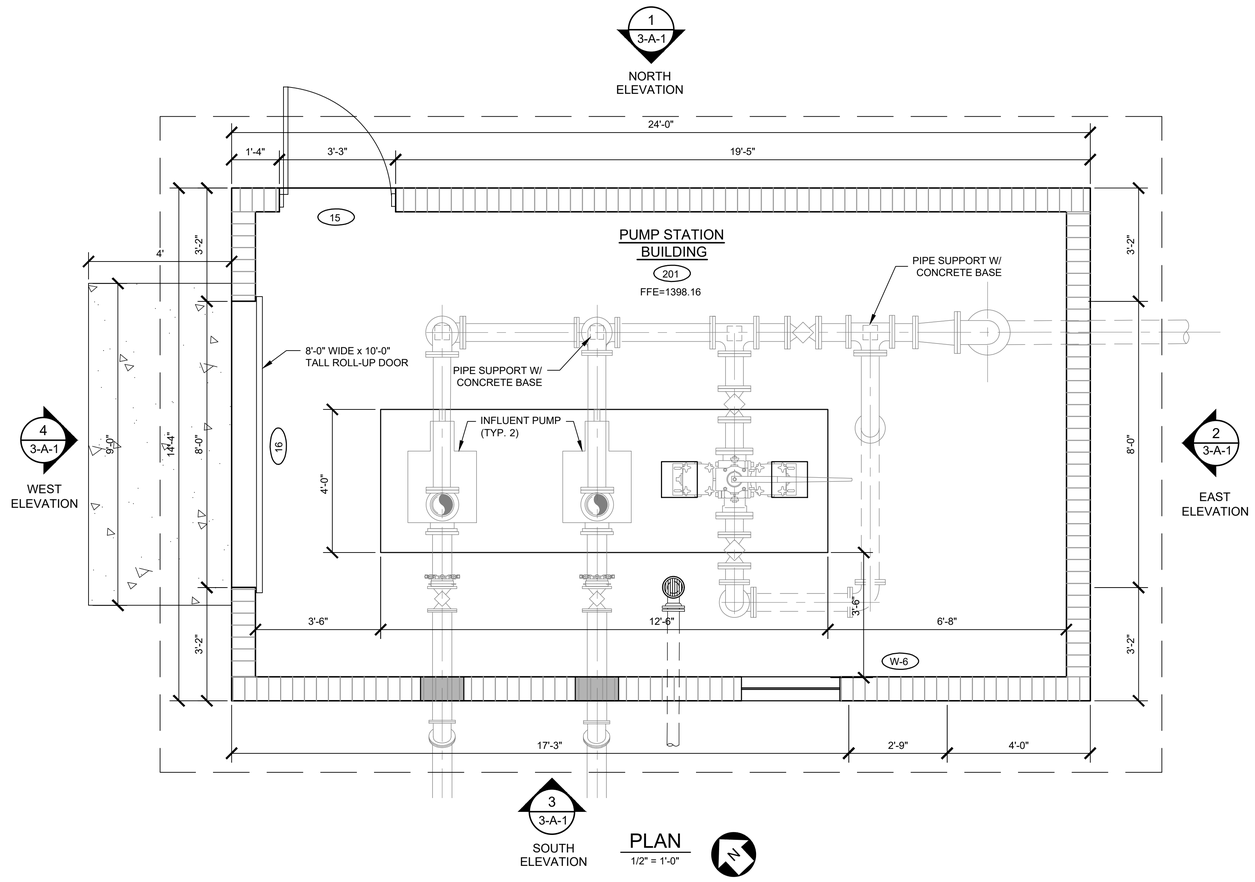
PARSHALL FLUME AND BAR SCREEN
PLAN VIEW AND SECTION VIEW

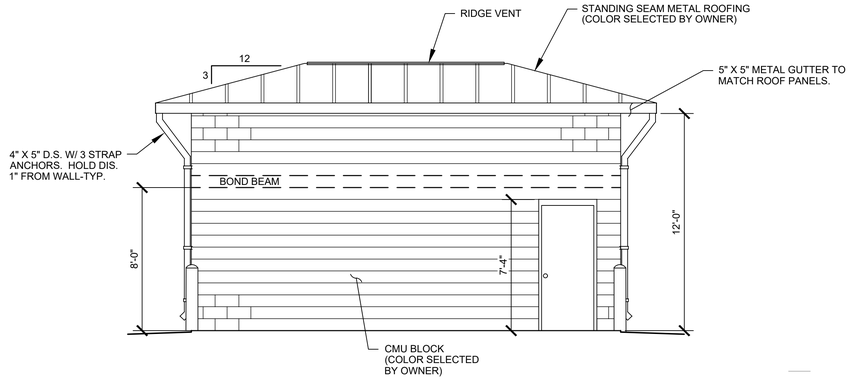
No.	Revisions	Date

Drawn: EED
Design: AOM
Checked: KFK/BAR
Project No: R2007-222
Scale: AS SHOWN
Date: 12/6/07

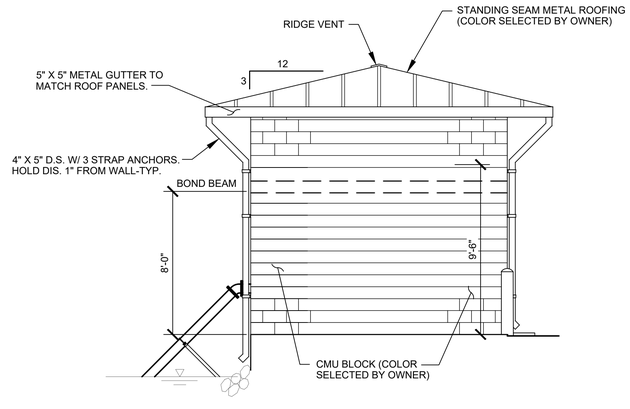
Sheet No.
3 of 7

M:\Projects\Archive\2007\R2007-222\dwg\07-222-ParshallPlan.dwg 01/21/2020 4:28pm mmbuguo

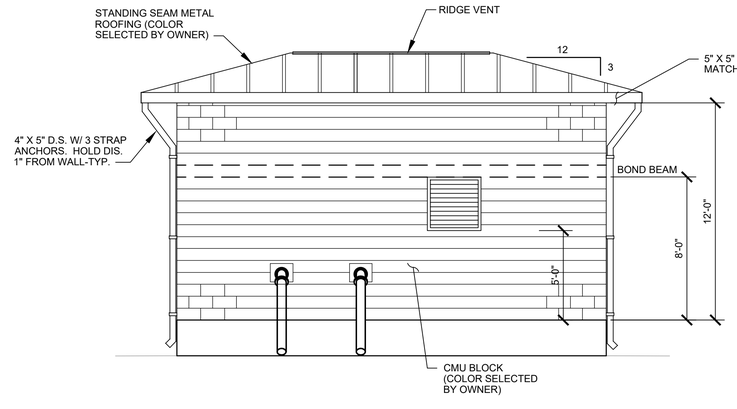




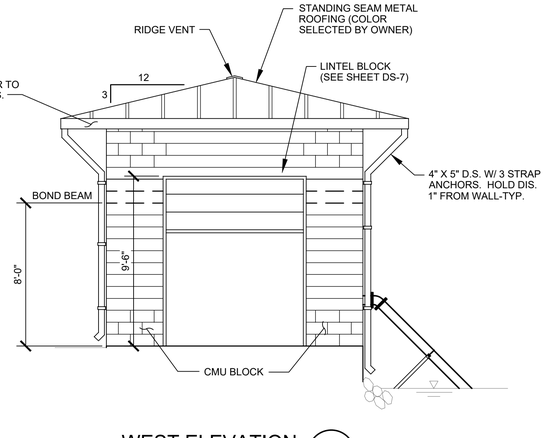
NORTH ELEVATION (1 / 3-A-1)
1/4" = 1'-0"



EAST ELEVATION (2 / 3-A-1)
1/4" = 1'-0"



SOUTH ELEVATION (3 / 3-A-1)
1/4" = 1'-0"



WEST ELEVATION (4 / 3-A-1)
1/4" = 1'-0"

GEORGIA REGISTERED PROFESSIONAL ENGINEER
NO. 039453
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

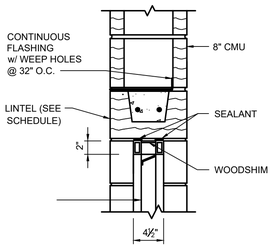
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMPS PLAN AND ELEVATIONS

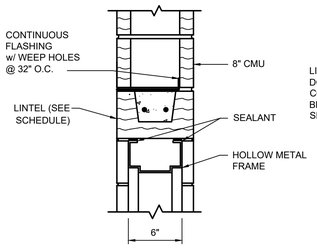
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
3A1-Influent Pump Station.dwg

Sheet No.
3-A-1

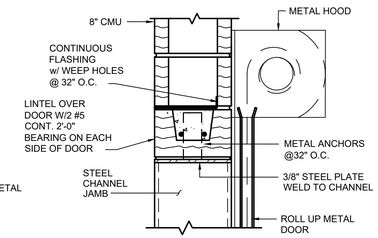
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 03 - Influent Pump Station\3-A1-Influent Pump Station.dwg 08/01/2025 1:25pm aencamacion



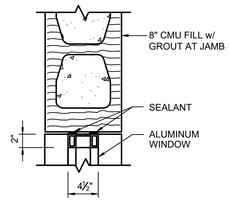
HEAD
(WINDOW)



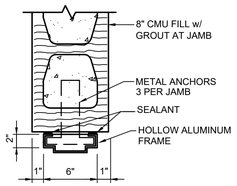
HEAD



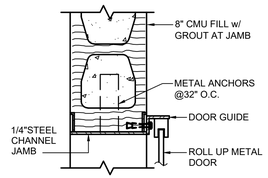
HEAD



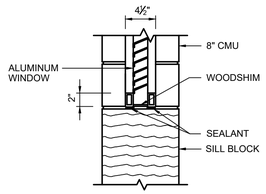
JAMB
(WINDOW)



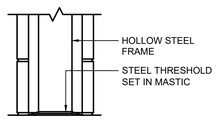
JAMB



JAMB

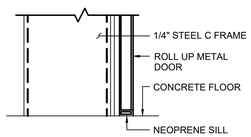


SILL
(WINDOW)



SILL

MAN DOOR

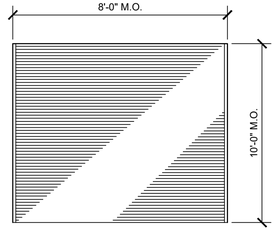
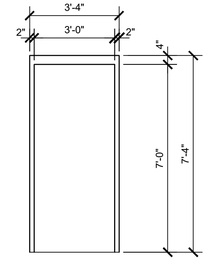
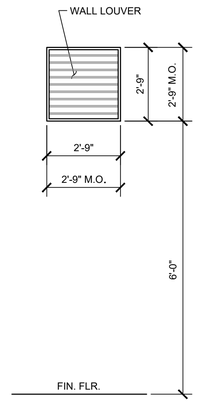


SILL

ROLL-UP DOOR

TYPICAL LOUVER DETAILS

TYPICAL DOOR DETAILS

ELEVATION	DOOR SCHEDULE		LOUVER SCHEDULE
			
MARK	16	15	W-6
SIZE	8'-0"x10'-0"		
TYPE	ROLL-UP INSULATED	INSULATED HOLLOW METAL	ALUMINUM
FRAME		2"x5 3/4" HOLLOW METAL	1 1/2"x 4" ALUMINUM
HEAD			
JAMB			
SILL			
HARDWARE SET			

GEORGIA REGISTERED Meg M. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

ENGINEERING + ENVIRONMENTAL

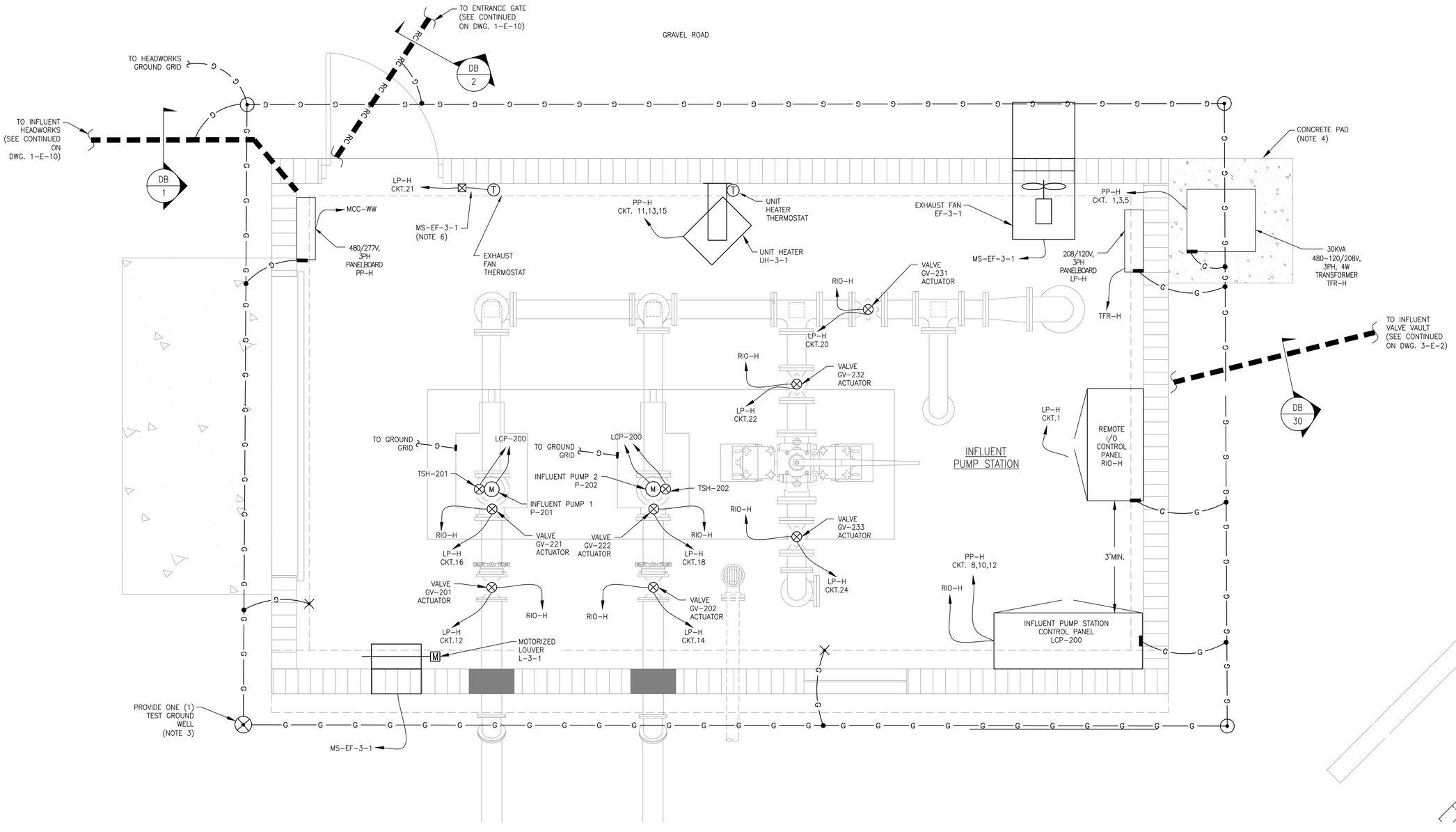
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMP STATIONS
SCHEDULE DOOR AND WINDOW DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
3-A1-1-Influent Pump Station.dwg

Sheet No.
3-A-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\006 Drawings\Area 03 - Influent Pump Station\3-M-1-Influent Pump Station.dwg 08/01/2025 1:25pm aencarnacion



1 INFLUENT PUMP STATION ELECTRICAL PLAN

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

GRAPHIC SCALE

1.33 0 0.67 1.33 2.67 5.33

(IN FEET)

3/4 inch = 1 ft.

NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL SMOKE DETECTOR MOUNTED ON THE ROOM CEILING WITH 120VAC, 2AMP RATED CONTACTS. PROVIDE POWER TO THE SMOKE DETECTORS AS REQUIRED. THE SMOKE DETECTOR SHALL BE GENTEX MODEL 8000 SERIES OR APPROVED EQUAL.
2. INFLUENT PUMP STATION BUILDING IS NON-CLASSIFIED AREA BASED ON NFPA 820, TABLE 4.2, ROW 18.
3. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
4. HE CONTRACTOR SHALL POUR THE CONCRETE PAD FOR THE ELECTRICAL EQUIPMENT BASED ON THE ACTUAL EQUIPMENT DIMENSIONS. THE PAD SHALL BE INSTALLED UNDER THE EQUIPMENT AND SHALL EXTEND 1' IN FRONT OF IT.
5. SEE DWG. H-2 FOR INFLUENT PUMP STATION BUILDING HVAC PLAN.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL A MANUAL MOTOR STARTER FOR THE FAN'S MOTOR HORSEPOWER. SEE DWG. 3-E-6 FOR THE MOTOR STARTER SCHEMATIC DIAGRAM. THE STARTER SHALL HAVE A NEMA 4X STAINLESS STEEL ENCLOSURE AND INCLUDE H-O-A SWITCH, AND 'RUNNING' INDICATING LIGHT. MOUNT THE MOTOR STARTER IN THE LOCATION SHOWN OR AS DIRECTED BY THE OWNER.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

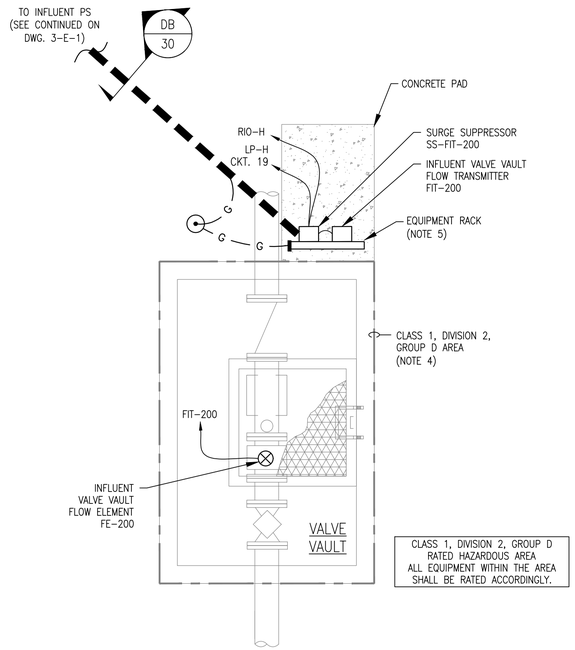
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMP STATION
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
3-E-1



1 INFLUENT VALVE VAULT ELECTRICAL PLAN

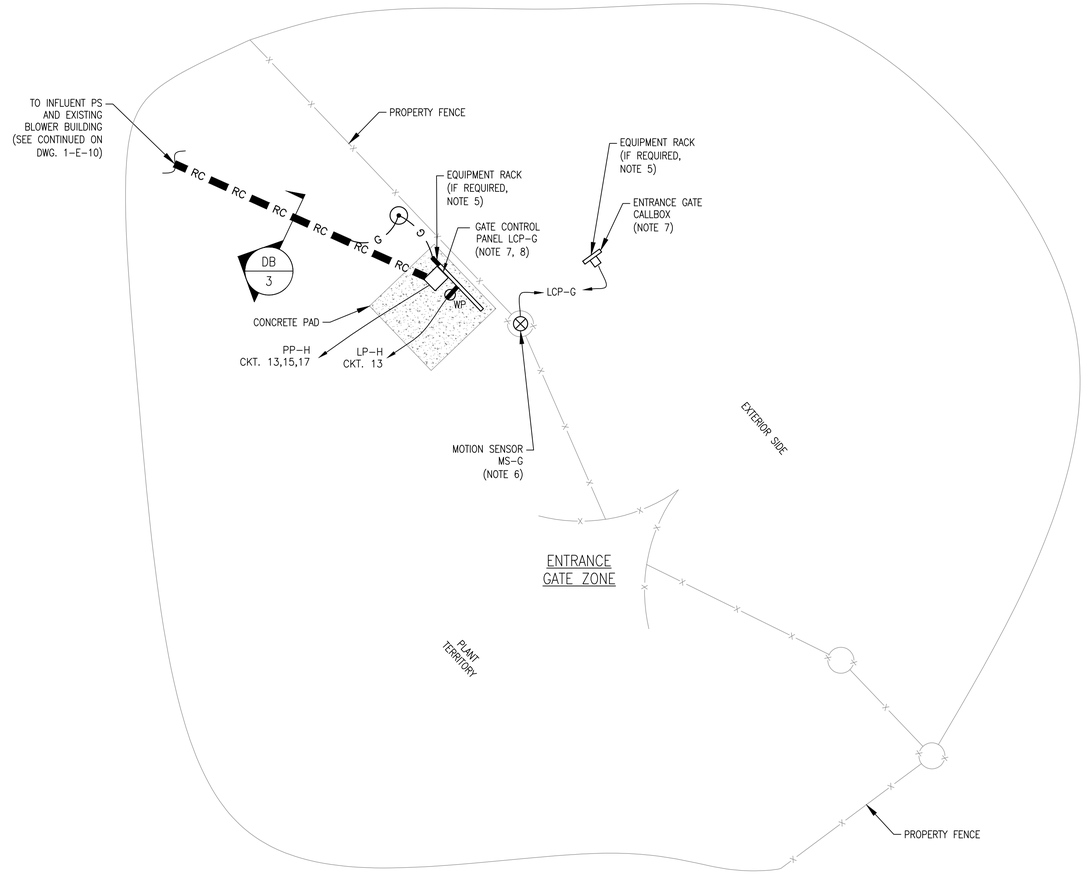
SCALE: 1/2" = 1'-0"

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.



1 ENTRANCE GATE ELECTRICAL PLAN

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

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1/4 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1-E-6 FOR PANELBOARD SCHEDULES.
3. ONLY MAJOR UNDERGROUND CONDUITS ARE SHOWN FOR CLARITY. THE CONTRACTOR SHALL COORDINATE ALL UNDERGROUND CONDUIT RUNS WITH OTHER UNDERGROUND UTILITIES. DUCTBANKS UNDER THE ROAD SHALL BE CONCRETE ENCASED. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
4. INFLUENT VALVE VAULT IS CLASS 2, DIVISION 2 BASED ON NFPA 820, TABLE 4.2, ROW 31.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL EQUIPMENT RACK SUPPORT AS SHOWN. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXACT LOCATION OF EQUIPMENT RACK TO PROVIDE ADEQUATE CLEARANCES FOR ALL EQUIPMENT. SEE DETAIL "2" ON DWG. DE-1 FOR INSTALLATION DETAILS.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE MOTORIZED GATE SYSTEM AT THE PLANT ACCESS ROAD ENTRANCE. FROM THE OUTSIDE, THE GATE SHALL BE OPENED USING A CODED CALLBOX. FROM THE PLANT SIDE, THE GATE SHALL AUTOMATICALLY OPEN WHEN A VEHICLE APPROACHES WITHIN ITS PROXIMITY. AT A MINIMUM, THE GATE SYSTEM SHALL INCLUDE THE FOLLOWING FEATURES:
   - CALLBOX
   - SELF-ADJUSTING, NO-MAINTENANCE MAGNETIC LIMITS
   - MOTION SENSOR
   - ANTI-TAILGATING FEATURE
   - GATE TRACKER REPORTING OUTPUT
   - MOTOR SIZED FOR THE SELECTED GATE
   - PORTS FOR PLUG-IN LOOP DETECTORS
   - FAIL-SAFE RELEASE
   - PROGRAMMING SWITCHES
   - BUILT-IN RESET SWITCH
   - BUILT-IN POWER ON/OFF SWITCH
   - 208V, THREE-PHASE POWER SUPPLY
   - COMPLIANT WITH UL 325 AND 991; UL OR ETL LISTED
7. THE CONTRACTOR SHALL ADJUST THE CALLBOX LOCATION AND MOUNTING HEIGHT IN THE FIELD TO ALLOW CONVENIENT USE FROM A CAR SEAT DURING DRIVE-THROUGH ACCESS.
8. THE CONTRACTOR SHALL ADJUST THE GATE FEEDER BREAKER SIZE AND PROVIDE ALL REQUIRED CABLES, CONDUITS, AND DEVICES FOR PROPER GATE OPERATION IN ACCORDANCE WITH THE VENDOR DOCUMENTATION. THE FINAL SCOPE OF WORK SHALL BE DETERMINED BY THE GATE EQUIPMENT SUPPLY PACKAGE.

LEGEND:

- – DIRECT BURIED UNDERGROUND DUCTBANK
- RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

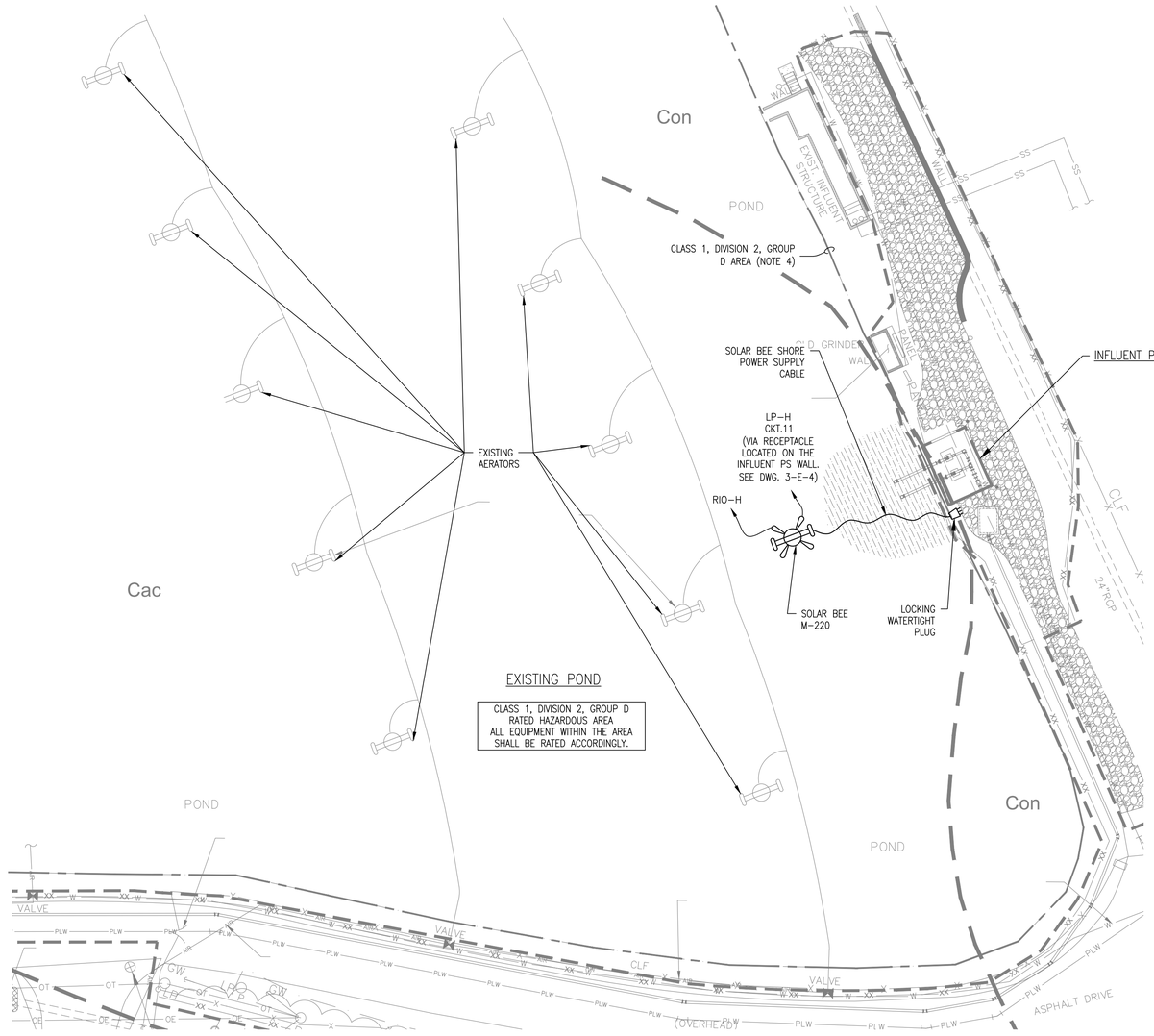
RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT VALVE VAULT AND ENTRANCE GATE ELECTRICAL PLAN

Drawn:	Design:	Checked:	Project No:	Scale:	Date:
GS	GS	AZ	R2019-111	AS SHOWN	JULY 2025

Sheet No.
3-E-2



1 EXISTING POND ELECTRICAL PLAN
SCALE: 1" = 20'–0"

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NOTES:

1. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. ACCORDING TO NFPA 820, TABLE 5.2.2 ROW 8:

   CLASS 1, DIVISION 2, GROUP D AREA:
   – THE CLASSIFIED AREA COMPRISES THE INTERIOR OF THE POND FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE POND WALLS; AN ENVELOPE 18" ABOVE THE TOP OF THE POND, EXTENDING 18" BEYOND THE EXTERIOR WALL; AND AN ENVELOPE 18" ABOVE GRADE, EXTENDING 10 FT HORIZONTALLY FROM THE EXTERIOR POND WALLS.

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

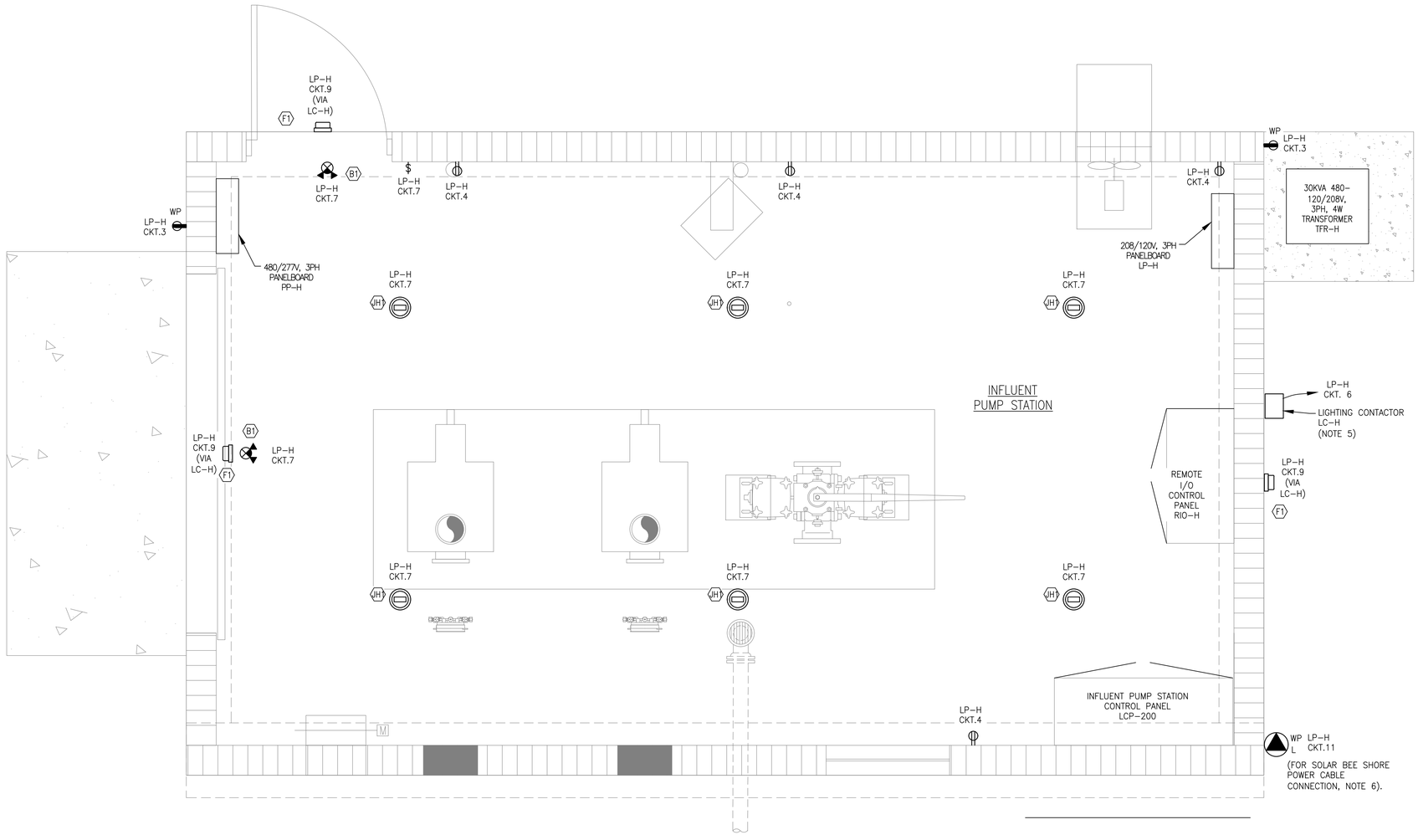
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING POND ELECTRICAL PLAN

Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

Sheet No.
3-E-3

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 INFLUENT PUMP STATION RECEPTACLES AND LIGHTING PLAN

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

GRAPHIC SCALE

1.33 0 0.67 1.33 2.67 5.33

(IN FEET)

3/4 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. THE CONTRACTOR SHALL LOCATE THE LIGHT FIXTURES IN THE FIELD TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL CONNECT ALL EMERGENCY LIGHTING FIXTURES AHEAD OF LOCAL LIGHT SWITCHES. EMERGENCY LIGHTING SHALL BE POWERED BY THE SAME CIRCUIT AS THE LOCAL LIGHTING.
4. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 3-E-6 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL 30A, 120V, 1PH, 3W, 2P SHIP-TO-SHORE LOCKING AND GROUND TYPE RECEPTACLE IN WATERTIGHT ENCLOSURE FOR SOLAR BEE FEED (SEE THE LIGHTING AND RECEPTACLES SCHEDULE ON DWG. 1-E-13 FOR DETAILS).

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

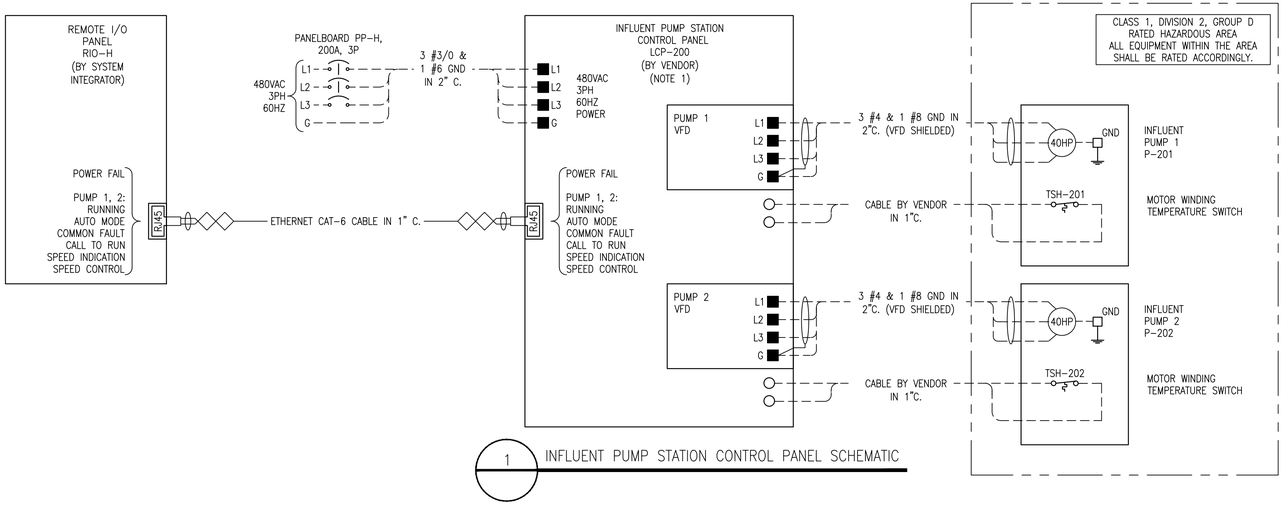
INFLUENT PUMP STATION
RECEPTACLES AND LIGHTING PLAN

Drawn:	GS
Design:	GS
Checked:	AZ
Project No.	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

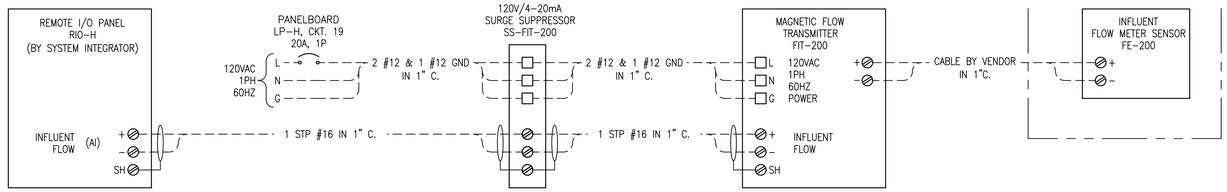
Sheet No.
3-E-4



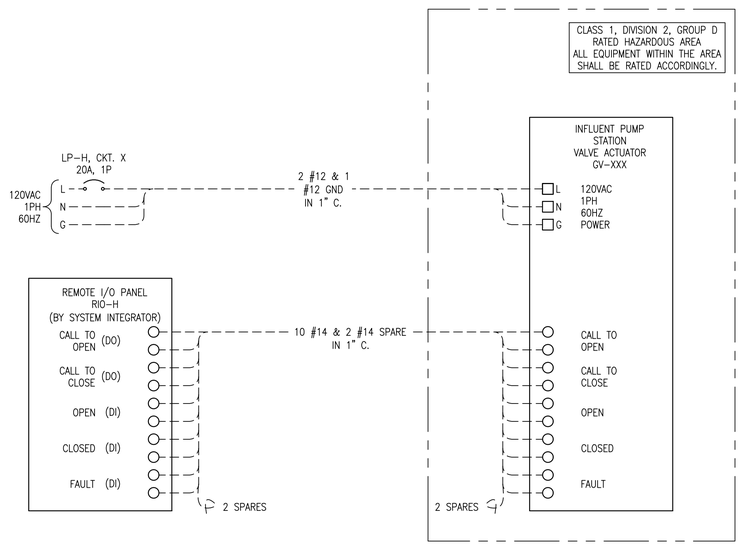
1 INFLUENT PUMP STATION CONTROL PANEL SCHEMATIC

NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL INFLUENT PS CONTROL PANEL WITH NEMA 12 ENCLOSURE WHICH INCLUDES, BUT NOT LIMITED TO THE FOLLOWING:
   - A. EACH PUMP SHALL HAVE AN H-O-A SWITCH, START-STOP PUSH BUTTONS, AND SPEED POTENTIOMETER. IN THE "HAND" POSITION, THE PUMP SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN "HAND" MODE, PUMP SPEED SHALL BE CHANGED BY ADJUSTING THE POTENTIOMETER. IN THE "OFF" POSITION, THE PUMP SHALL STOP. IN THE "AUTO" POSITION, THE PUMP SHALL START AND STOP BASED ON WATER LEVEL IN THE WET WELL AND PUMP SPEED SHALL SPEED UP AND DOWN BASED ON RISING AND FALLING WATER LEVEL IN THE WET WELL. PUMPS SHALL ALTERNATE AFTER EACH CYCLE.
   - B. ELAPSED TIME METERS FOR EACH PUMP
   - C. TWO (2) VFDs WITH MOTOR CIRCUIT PROTECTORS SIZED FOR 40HP PUMPS MOTORS. THE VENDOR SHALL INCLUDE FILTERS/REACTORS TO REDUCE TOTAL HARMONIC DISTORTION TO THE LIMITS REQUIRED BY IEEE519.
   - D. MAIN 200A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SYSTEM OPERATION.
   - E. ALLEN-BRADLEY COMPACTLOGIX PLC TO ACCOMODATE ALL THE I/O'S SHOWN ON SCHEMATIC WIRING DIAGRAMS PLUS 20% SPARES
   - F. 24VDC POWER SUPPLY
   - G. 1 kVA, 480/120V CONTROL POWER TRANSFORMER (SIZE AS NECESSARY TO ACCOMMODATE ALL 120V LOADS INCLUDING AIR CONDITIONER)
   - H. ETHERNET SWITCH WITH FIBER PORTS
   - I. AIR CONDITIONER SIZED TO PROVIDE COOLING INSIDE THE PANEL FOR THE PANEL INTERNAL TEMPERATURE NOT TO EXCEED 90F.
   - J. INTRINSICALLY SAFE BARRIERS FOR ALL CONTROL AND SIGNAL CABLES COMING FROM THE WETWELL
   - K. LIGHTNING ARRESTOR
   - L. ETHERNET SWITCH
   - M. TIME DELAY (0-10 SEC) BETWEEN PUMPS START IN BOTH "HAND" AND "AUTO" MODE
   - N. VFD SPEED CONTROL KEYPADS SHALL BE MOUNTED ON THE DOOR AND SHALL NOT REQUIRE OPENING THE PANEL FOR LOCAL SPEED CONTROL ADJUSTMENTS.
   - O. RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES ETC. AS REQUIRED
   - P. CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.
   - Q. EACH PUMP SHALL HAVE A RUN TIMER AND SPEED DISPLAY LOCATED ON THE PUMP CONTROL PANEL.
2. PUMP VENDOR SHALL PROVIDE SUBMERSIBLE PRESSURE TRANSDUCER AND FLOAT SWITCHES WITH CABLE LONG ENOUGH TO REACH PUMP CONTROL PANEL WITHOUT CABLE SPLICING AND EXTENSION.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR INFLUENT PUMP STATION COMPONENTS AS REQUIRED BY ACCEPTED VENDOR SHOP DRAWINGS.
4. SEE DRAWING I-100 FOR PLANT SCADA BLOCK DIAGRAM

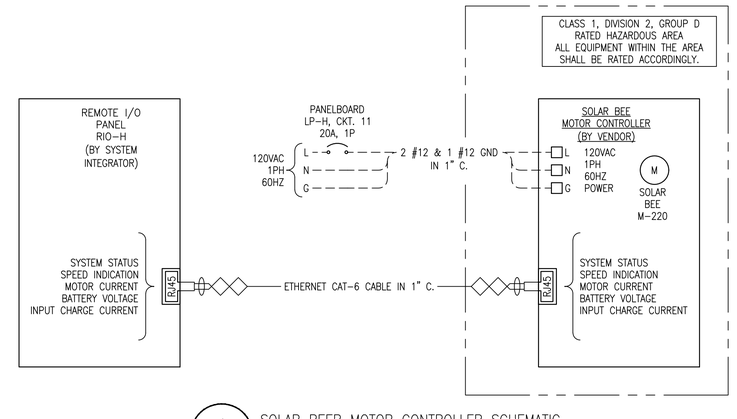


2 INFLUENT FLOW METER SCHEMATIC WIRING DIAGRAM



#	DESCRIPTION	INFLUENT PUMP STATION VALVE GV-XXX	PANELBOARD LP-H; CKT. X
1	INFLUENT PUMP STATION VALVE GV-201 ACTUATOR	GV-201	12
2	INFLUENT PUMP STATION VALVE GV-202 ACTUATOR	GV-202	14
3	INFLUENT PUMP STATION VALVE GV-221 ACTUATOR	GV-221	16
4	INFLUENT PUMP STATION VALVE GV-222 ACTUATOR	GV-222	18
5	INFLUENT PUMP STATION VALVE GV-231 ACTUATOR	GV-231	20
6	INFLUENT PUMP STATION VALVE GV-232 ACTUATOR	GV-232	22
7	INFLUENT PUMP STATION VALVE GV-233 ACTUATOR	GV-233	24

3 INFLUENT PUMP STATION VALVE ACTUATOR SCHEMATIC
TYPICAL OF 7



4 SOLAR BEER MOTOR CONTROLLER SCHEMATIC

LEGEND:

△ – LOCAL CONTROL PANEL TERMINAL
⊘ – SCADA PANEL TERMINAL
■ – DEVICE TERMINAL

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

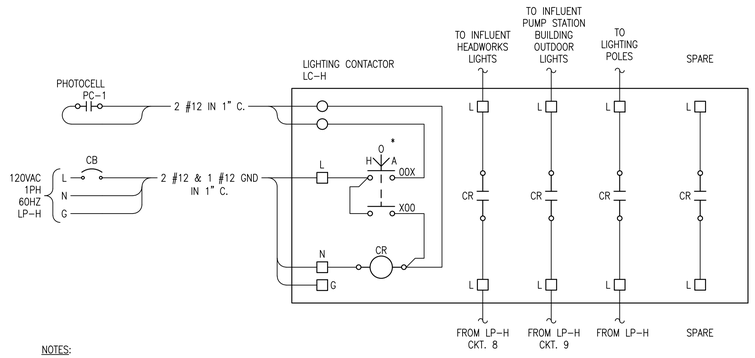
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMP STATION
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
3-E-5

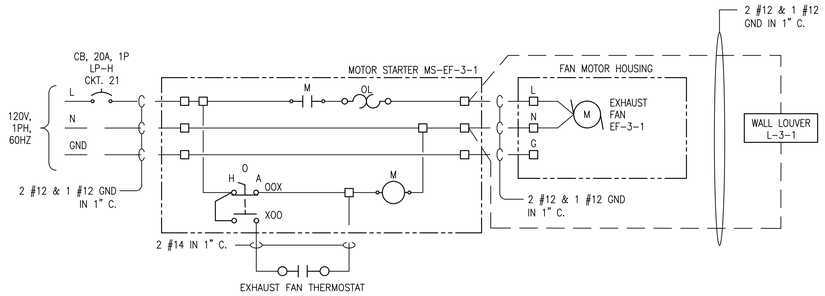
EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.
2. MECHANICALLY HELD HEAVY-DUTY 4 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.
4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

1 LIGHTING CONTACTOR LC-H – SCHEMATIC WIRING DIAGRAM



NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ENCLOSED MOTOR STARTER WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - A. CABINET SCCR SHALL BE 10kAIC MINIMUM.
   - B. FULL VOLTAGE NON-REVERSING (FVNR) IEC TYPE NON-COMBINATION MOTOR STARTER, RATED FOR 1/2HP MOTOR.
   - C. SELECTOR SWITCHES AND INDICATING LIGHTS:
     - C.1. HOA SWITCH.
     - C.2. RUNNING INDICATING LIGHT.
   - D. CABINET SHALL INCLUDE ALL NECESSARY COMPONENTS FOR EQUIPMENT SAFE AND RELIABLE OPERATION.
   - E. ENCLOSURE TYPE SHALL BE NEMA 4X.

THE CABINET SHALL BE MANUFACTURED BY EATON, SCHNEIDER ELECTRIC, ALLEN-BRADLEY, ABB, SIEMENS OR APPROVED EQUAL MANUFACTURER, THE CABINET SHALL BE UL LISTED AND LABELED. CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM AND BOM FOR THE CONTROL PANEL TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION.

2 EXHAUST FAN MOTOR STARTER SCHEMATIC WIRING DIAGRAM

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

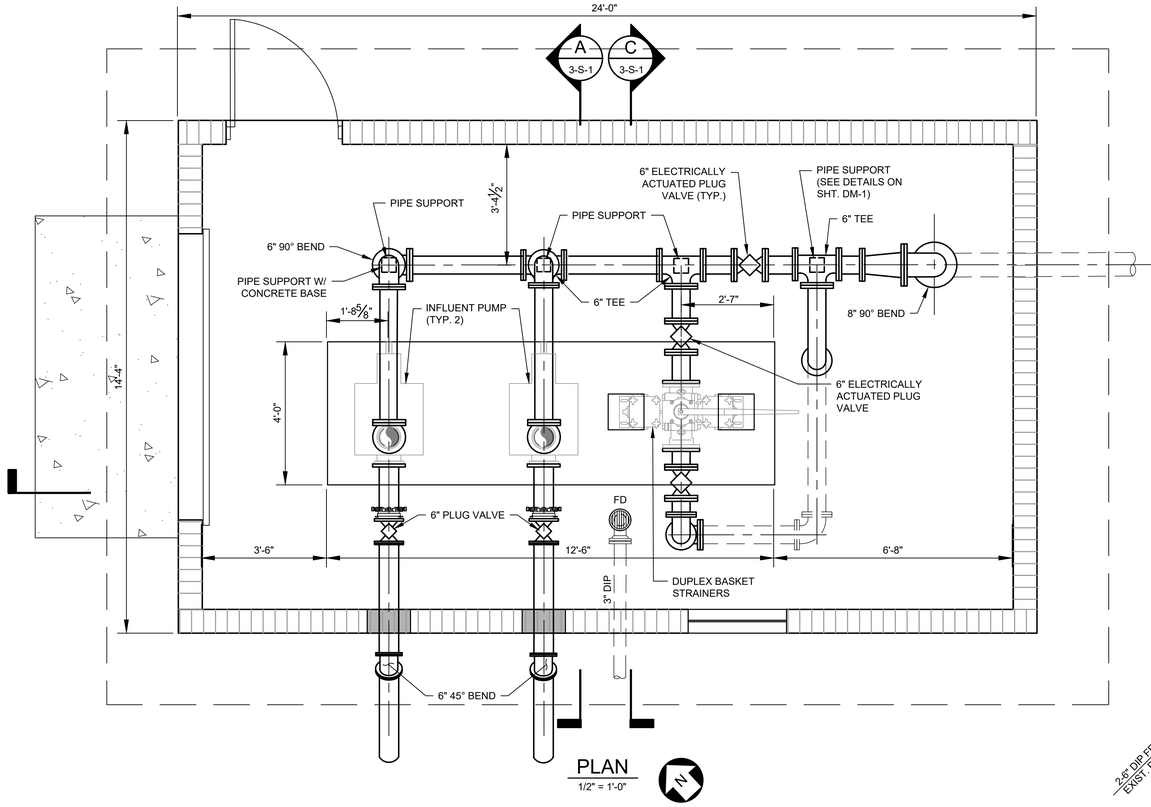
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

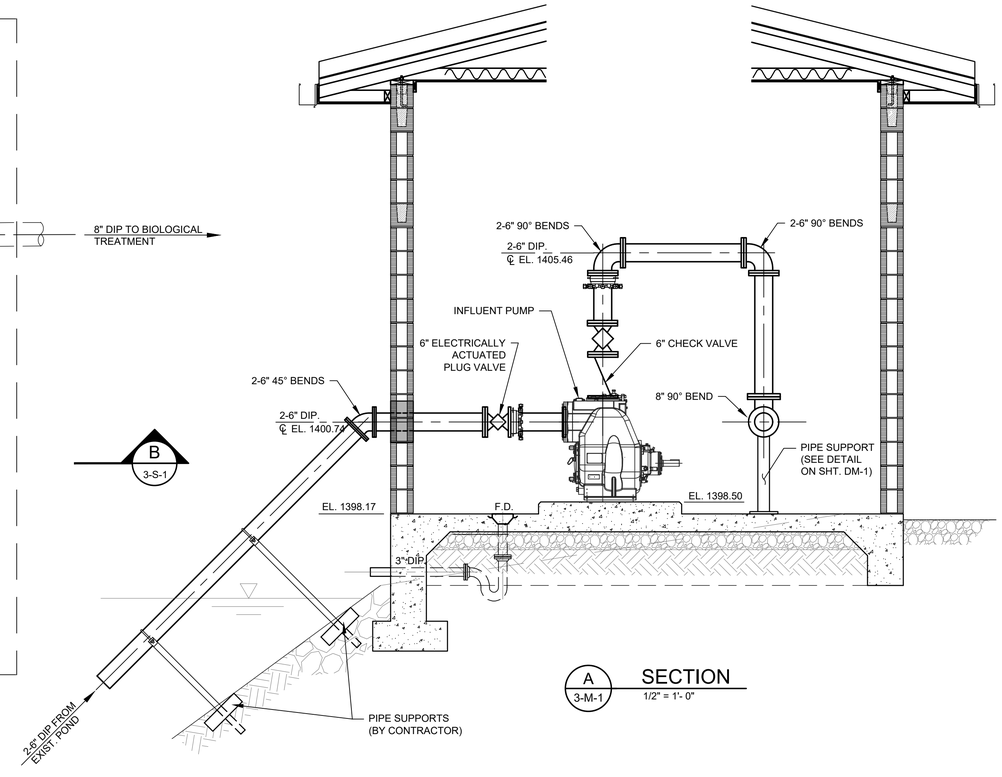
INFLUENT PUMP STATION
SCHEMATIC WIRING DIAGRAMS

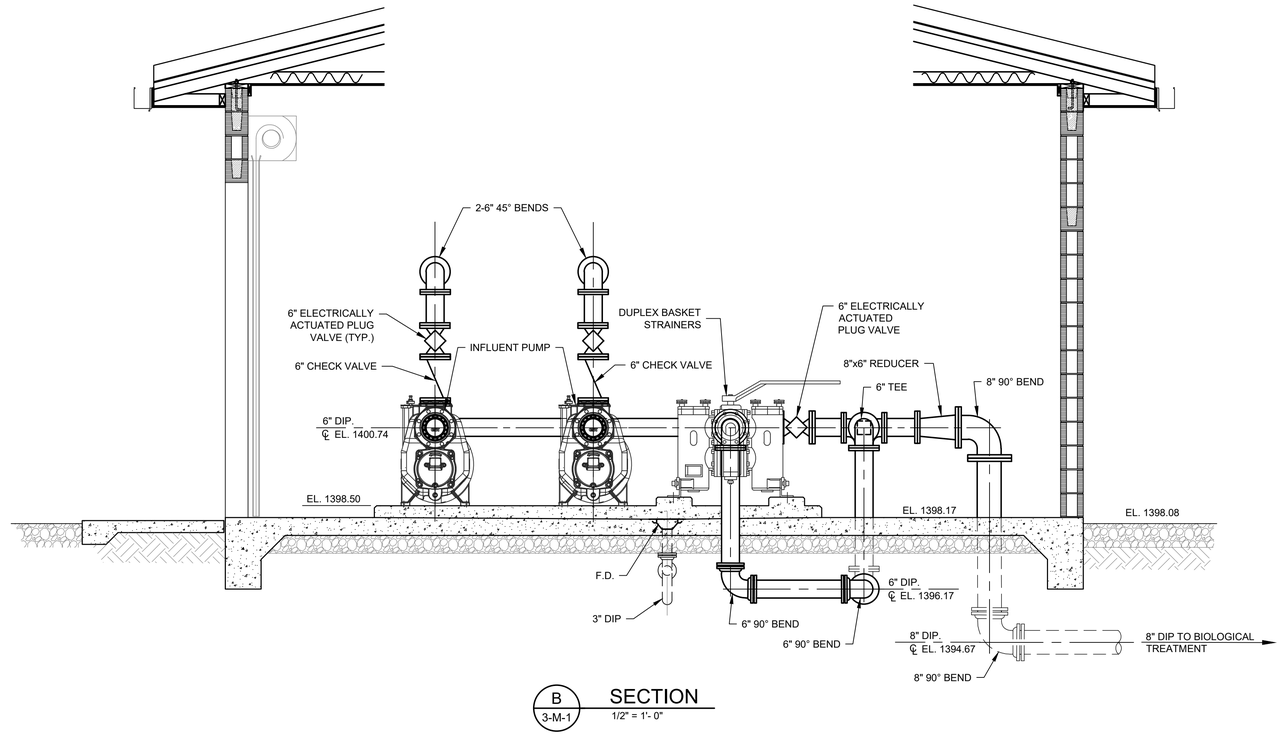
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

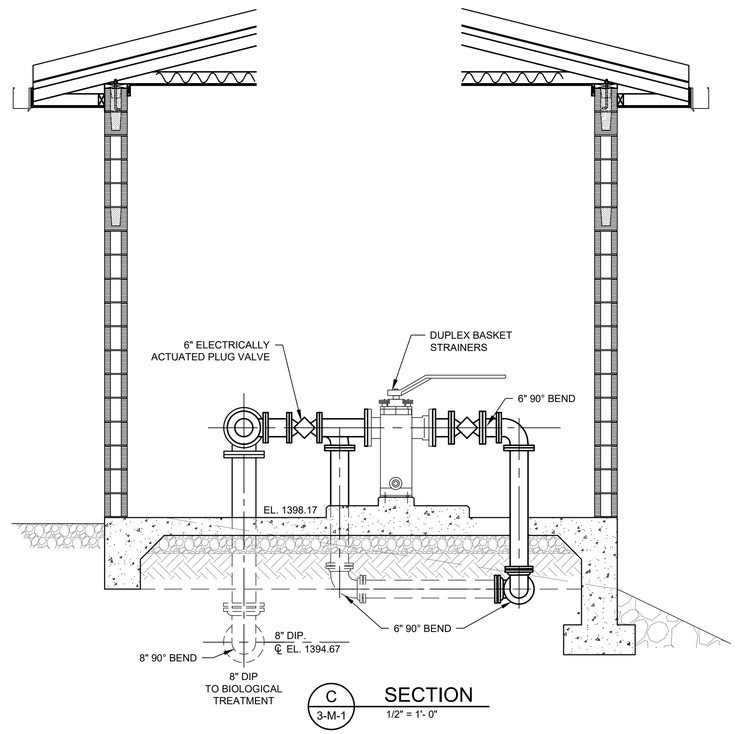
EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
3-E-6









GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

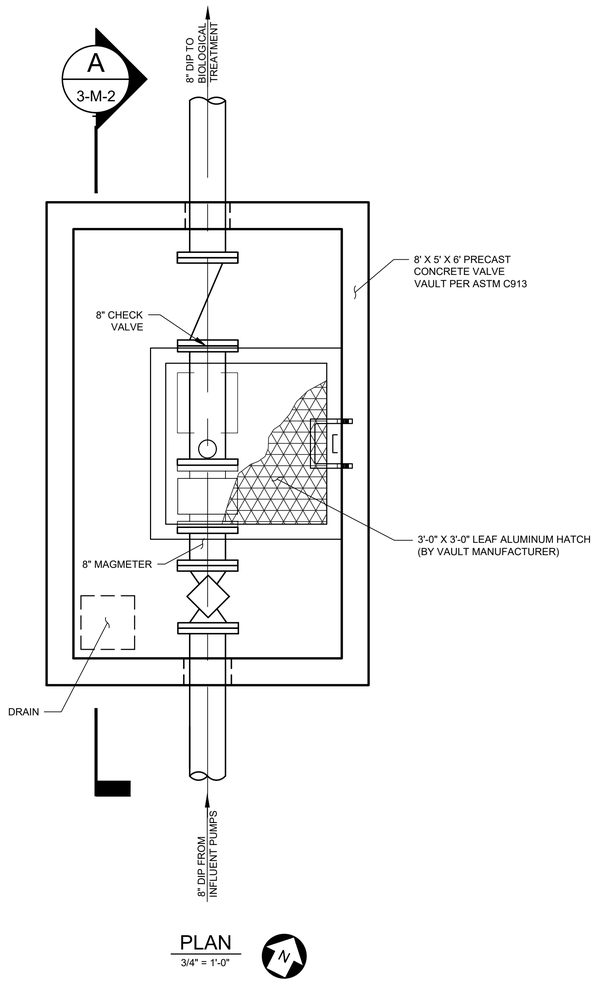
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMPS PLAN AND SECTION

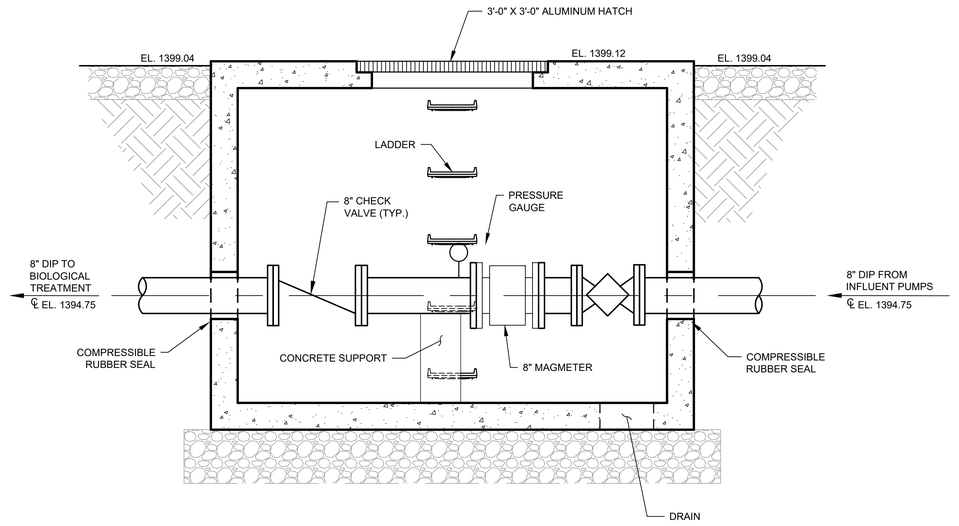
Drawn: AE
Design: AE
Checked: MM
Project No. R2019-111
Scale: 1/2" = 1'- 0"
Date: JULY 2022
3-M-1-Influent Pump Station.dwg

Sheet No.
3-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 03 - Influent Pump Station\3-M-1-Influent Pump Station.dwg 08/01/2025 1:27pm aencarnacion



PLAN
3/4" = 1'-0"



A
3-M-2
SECTION
3/4" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

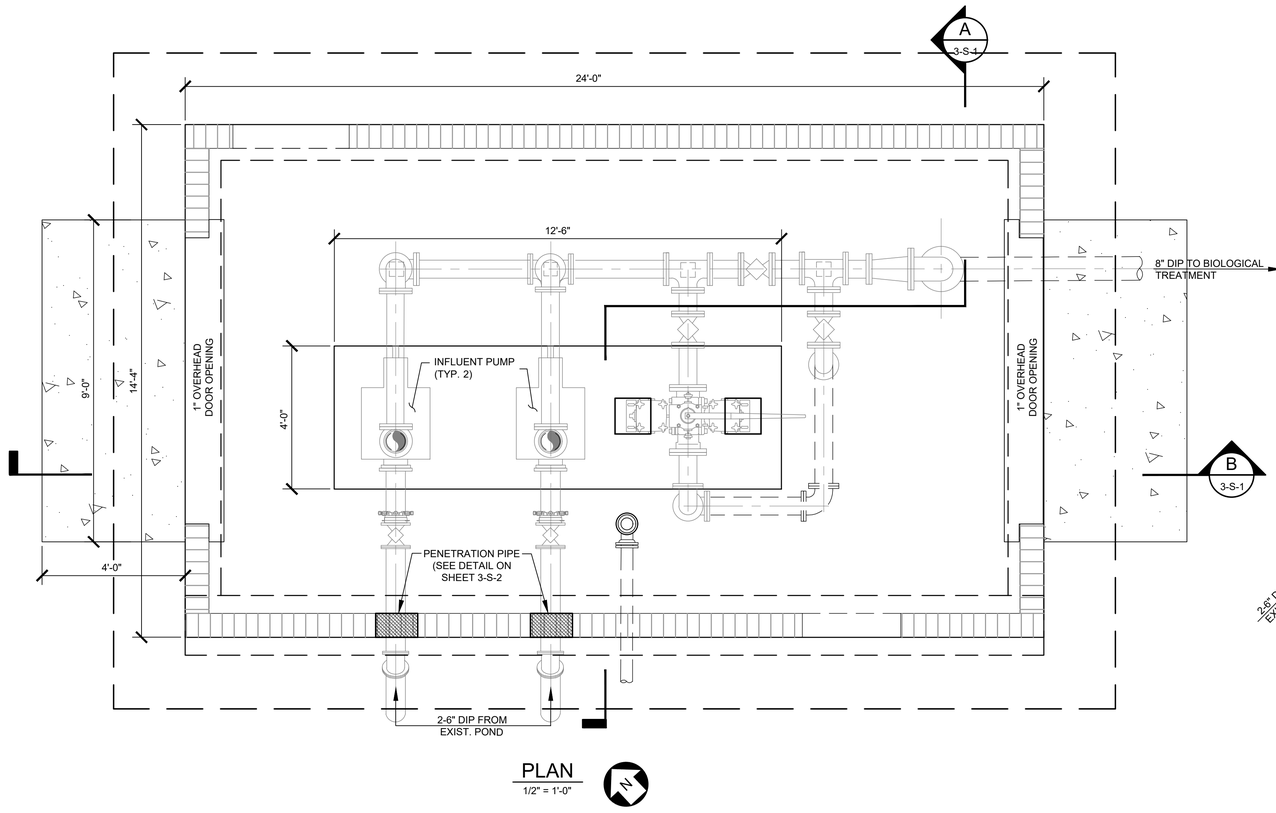
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT VALVE VALULT PLAN AND SECTION

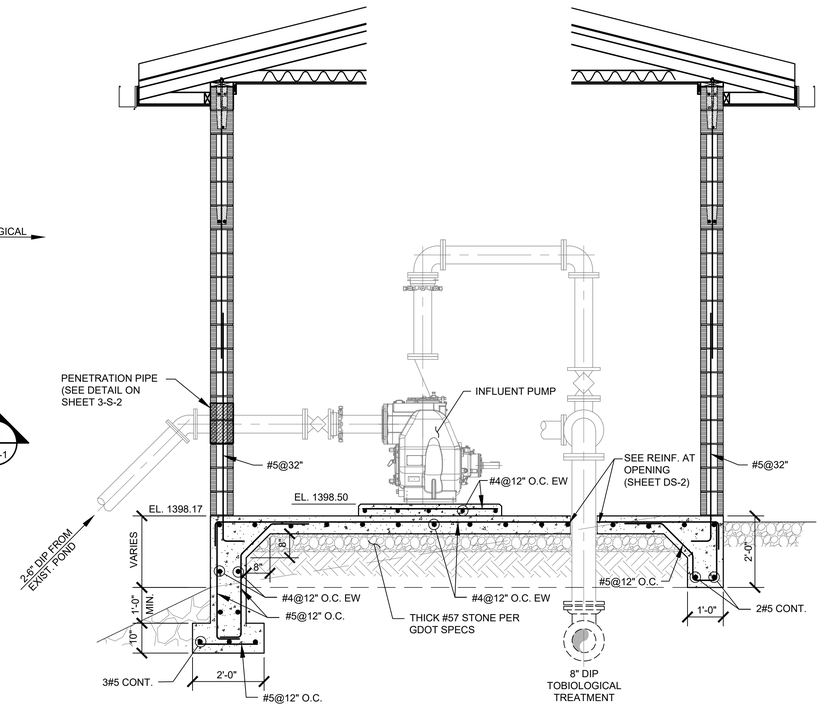
Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2022
	3-M-2-Influent Valve Vault.dwg

Sheet No.
3-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 03 - Influent Pump Station\3-M-2-Influent Valve Vault.dwg 08/01/2025 1:27pm aencarnacion

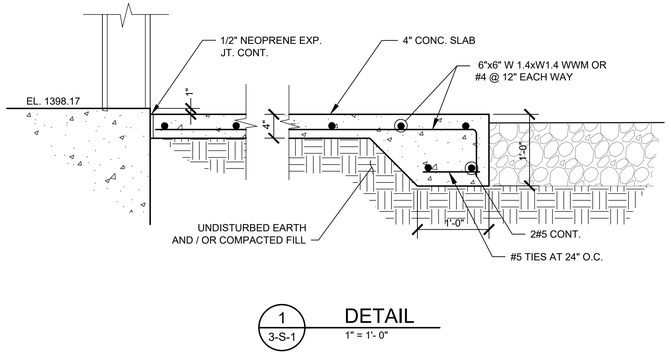


PLAN
1/2" = 1'-0"

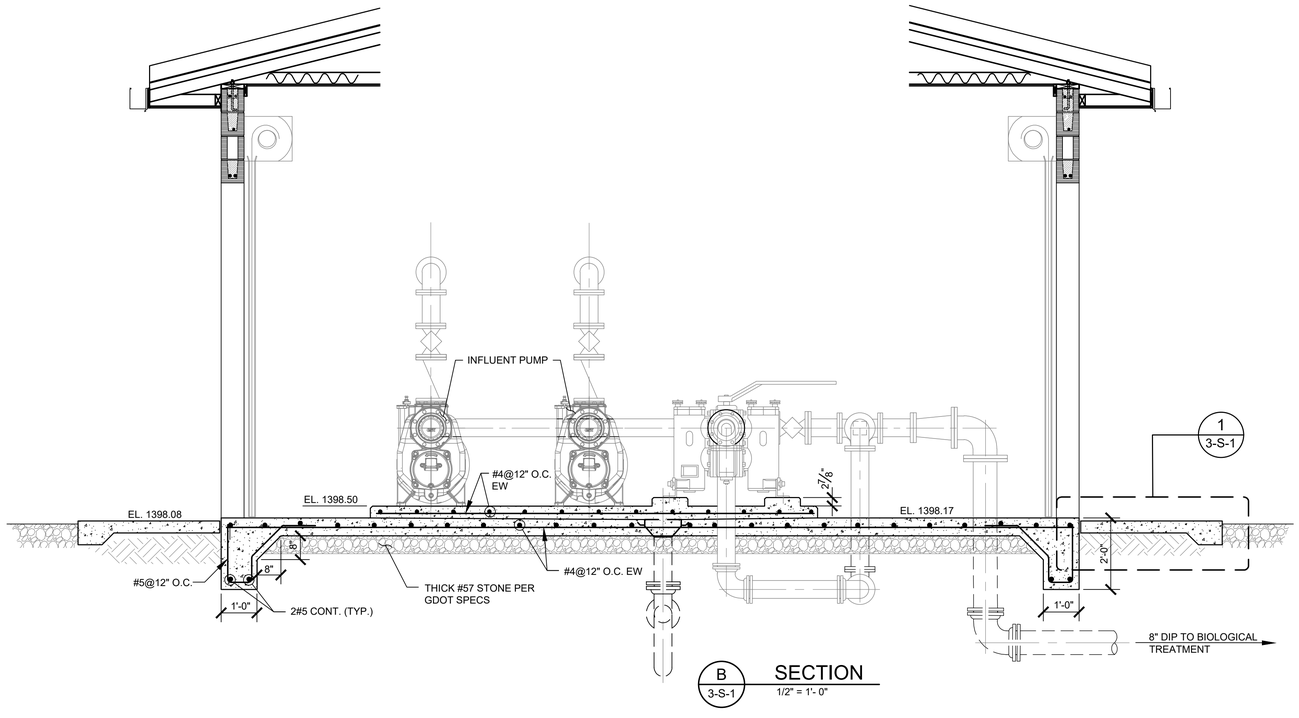


A
3-S-1
SECTION
1/2" = 1'- 0"

NOTE:
MASONRY CONTROL JOINTS AND HORIZONTAL REINFORCING, SEE STRUCTURAL DETAIL ON SHEET- DS-7.



1
3-S-1
DETAIL
1" = 1'- 0"



B
3-S-1
SECTION
1/2" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

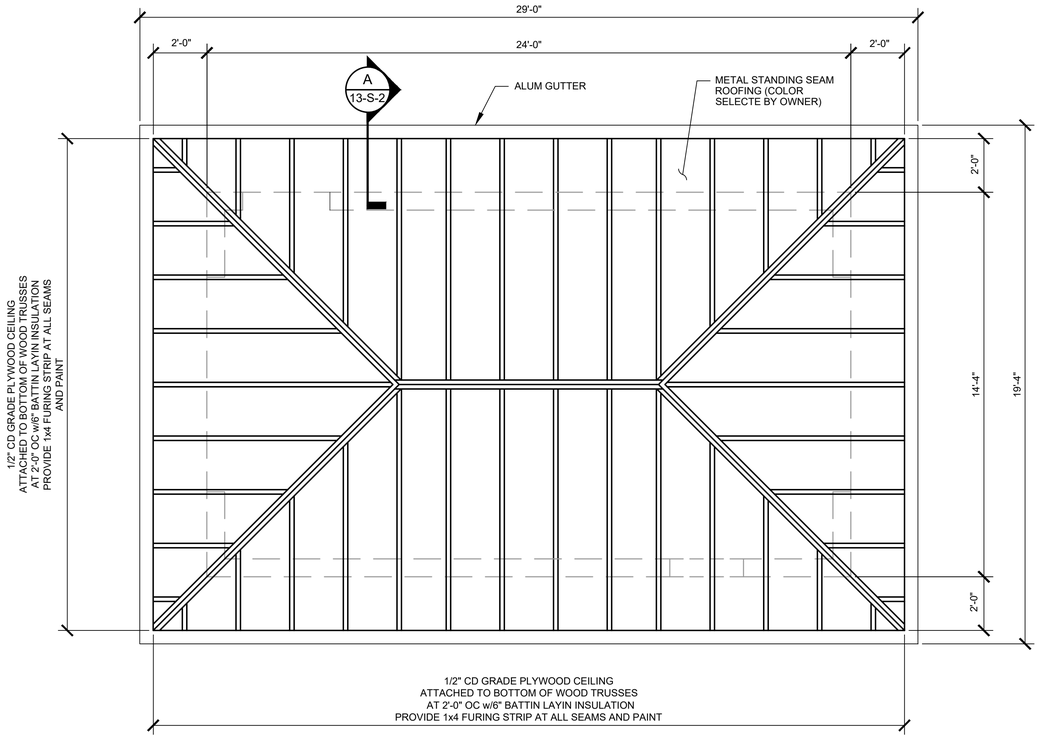
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMPS PLAN AND SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
3-S-1-Influent Pump Station.dwg

Sheet No.
3-S-1

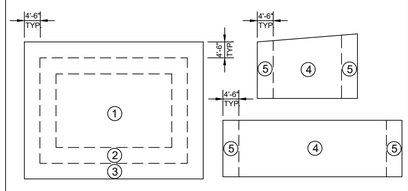
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 03 - Influent Pump Station\3-S-1-Influent Pump Station.dwg 08/01/2025 1:25pm aencarnacion



ROOF PLAN

3/8" = 1'-0"

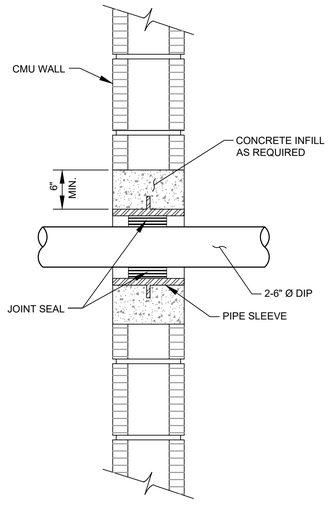
BLOWER AND CHLORINATION SYSTEM CANOPIES						
WIND DESIGN PRESSURES COMPONENTE CLADDING, PSF (LFRD)						
ROOF						
EFFECTIVE AREA (SF)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	20	-44	31	-67	40	-132
25	20	-44	31	-67	31	-67
50	20	-44	31	-67	31	-67
WALLS (WHERE OCCURS)						
EFFECTIVE AREA (SF)	ZONE 4 (FIELD)		ZONE 5 (CORNERS)			
	(+)	(-)	(+)	(-)		
<10	51	-56	51	-69		
50	46	-51	46	-58		
200	42	-46	42	-49		
>500	38	-43	38	-43		



WIND PRESSURE NOTES:

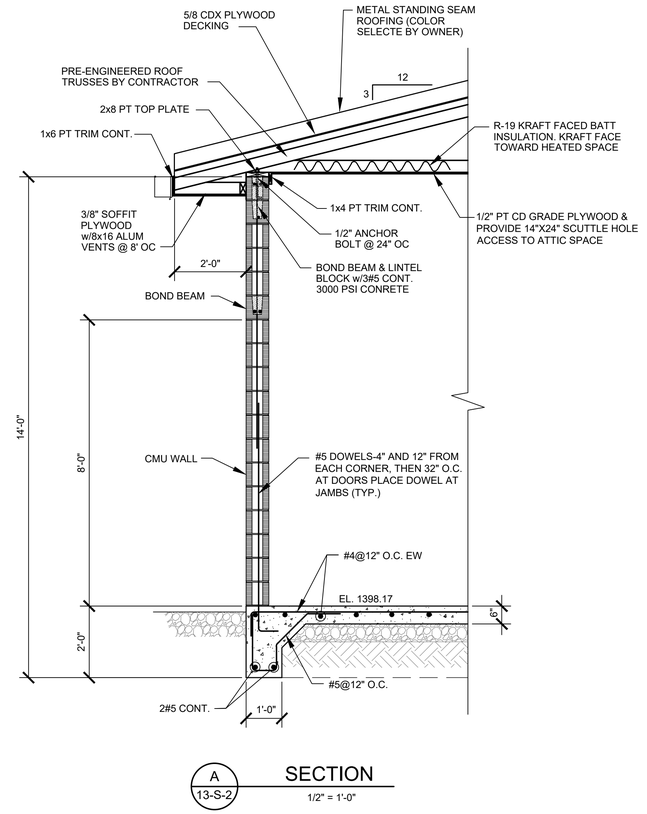
1. SEE "WIND DESIGN CRETERIA" NOTES ON G-10.
2. "a" - 4'-6", OH = OVERHANG ZONE PRESSURES.
3. DESIGN PRESSURES ARE PROVIDED AT ULTIMATE DESIGN WIND SPEEDS. TO CONVERT TO NOMINAL DESIGN WIND SPEEDS (ASD) MULTIPLE PRESSURES BY FACTOR OF 0.60.
4. THE EFFECTIVE AREA SHALL BE DETERMNED AS FOLLOWS UNLESS OTHERWISE NOTED:
   a. THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE THIRD THE SPAN LENGTH.
   b. THE AREA THAT IS TRIBUTARY TO AN INDIVIDUAL FASTENER.
5. NAGATIVE SIGN INDICATES PRESSURE ACTING OUTWARD FROM SURFACE.

ENCLOSURE CLASSIFICATION — OPEN (OBSTRUCTED)



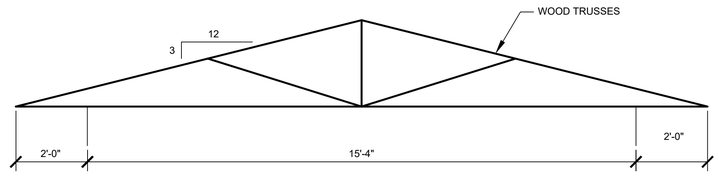
MASONRY PIPE PENETRATION DETAIL

N.T.S.



A 13-S-2 SECTION

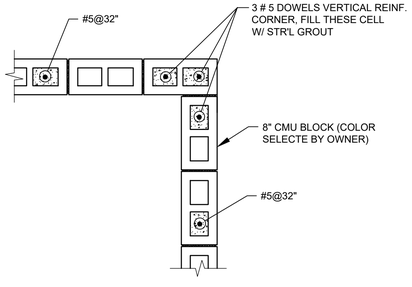
1/2" = 1'-0"



NOTE:
BOTTOM CHORD TO BE DESIGNED PROVIDED BY THE CONTRACTOR

TRUSS DETAIL

1/2" = 1'-0"



NOTE:
FOR HORIZONTAL REINFORCEMENT SEE DETAILS ON SHEET DS-7.

1 13-S-1 CORNER CONCRETE BLOCK

3/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

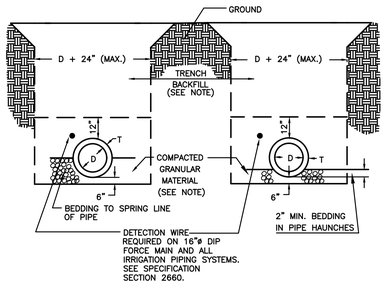
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMPS ROOF PLAN AND SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
3-S-1 Influent Pump Station.dwg

Sheet No.
3-S-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 03 - Influent Pump Station\3-S-1-Influent Pump Station.dwg 08/01/2025 1:26pm aencarnacion

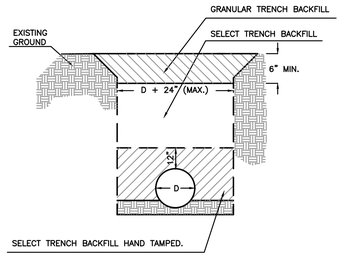


CLASS "B" BEDDING CLASS "C" BEDDING

NOTE:
SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR BEDDING METHODS AND BEDDING MATERIALS.
SEE STANDARD DETAILS PL46, PL47 AND PL48.

BEDDING DETAIL

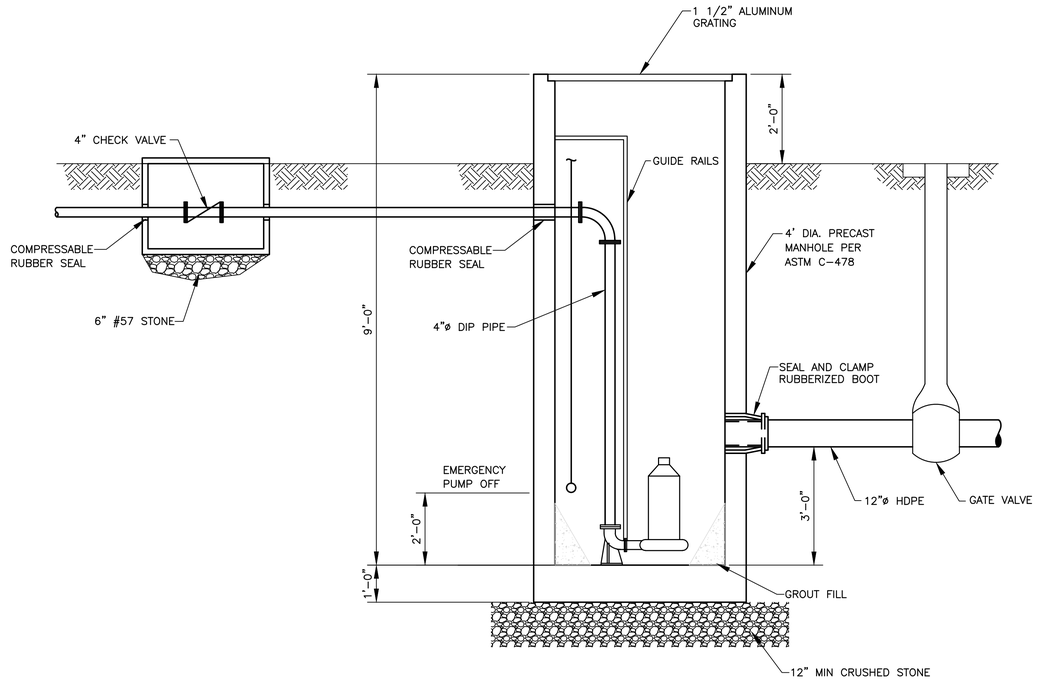
NTS



NOTES:
1. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR TRENCH BACKFILLING METHODS.
2. SEE SPECIFICATIONS SECTION 02200(EARTHWORK) FOR TRENCH BACKFILLING MATERIALS.
3. ALL BACKFILL FROM TOP OF BEDDING SHALL BE COMPACTED TO 95% OF MAX. DENSITY AT OPTIMUM MOISTURE CONTENT IN 8" LIFTS.
4. THIS DETAIL IS TO BE USED IN PAVEMENT AREAS.

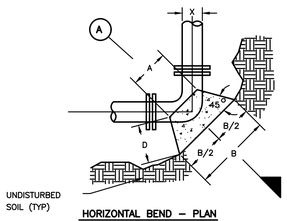
CLASS III BACKFILL

NTS

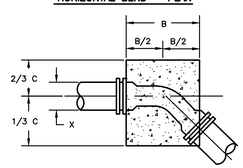


PUMP STATION

NTS



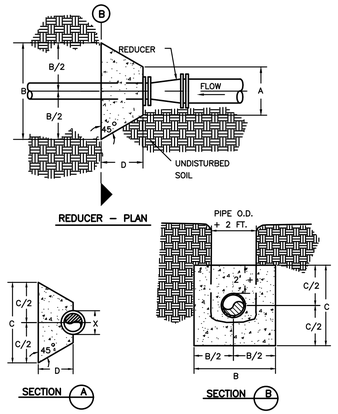
HORIZONTAL BEND – PLAN



VERTICAL BEND – ELEVATION

THRUST BLOCKING

NTS



THRUST BLOCKING

NTS

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
90 DEGREE BEND				
24"	2'-7"	7'-0"	7'-0"	4'-6"
20"	2'-1"	6'-0"	6'-0"	3'-9"
18"	1'-11"	5'-6"	5'-6"	3'-6"
16"	1'-9"	5'-0"	5'-0"	3'-3"
14"	1'-7"	4'-6"	4'-6"	2'-6"
12"	1'-4"	3'-6"	3'-6"	2'-3"
10"	1'-3"	3'-0"	3'-0"	2'-0"
8"	1'-0"	2'-6"	2'-6"	1'-9"
6"	0'-11"	1'-9"	1'-9"	1'-6"
4"	0'-9"	1'-3"	1'-3"	1'-3"
45 DEGREE BEND				
24"	2'-4"	5'-6"	5'-6"	3'-9"
20"	1'-11"	4'-6"	4'-6"	3'-0"
18"	1'-9"	4'-0"	4'-0"	2'-9"
16"	1'-7"	3'-6"	3'-6"	2'-3"
14"	1'-3"	3'-0"	3'-0"	2'-0"
12"	1'-1"	2'-6"	2'-6"	2'-0"
10"	1'-3"	2'-6"	2'-6"	1'-9"
8"	1'-0"	1'-9"	1'-9"	1'-3"
6"	0'-11"	1'-6"	1'-6"	1'-0"
4"	0'-9"	1'-0"	1'-0"	1'-0"

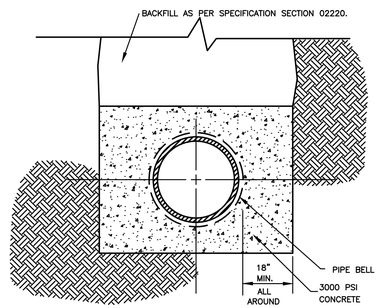
Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
11 1/4 DEGREE BEND				
24"	1'-9"	2'-9"	2'-9"	1'-0"
20"	1'-5"	2'-3"	2'-3"	1'-0"
18"	1'-4"	2'-0"	2'-0"	1'-0"
16"	1'-3"	1'-9"	1'-9"	1'-0"
14"	1'-2"	1'-6"	1'-6"	1'-0"
12"	1'-2"	1'-6"	1'-6"	1'-0"
10"	1'-0"	1'-3"	1'-3"	1'-0"
8"	0'-10"	1'-0"	1'-0"	1'-0"
6"	0'-9"	1'-0"	1'-0"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"
22 1/2 DEGREE BEND				
24"	2'-0"	3'-6"	3'-6"	2'-6"
20"	1'-8"	3'-0"	3'-0"	1'-9"
18"	1'-6"	2'-9"	2'-9"	1'-6"
16"	1'-5"	2'-6"	2'-6"	1'-3"
14"	1'-4"	2'-3"	2'-3"	1'-0"
12"	1'-2"	2'-0"	2'-0"	1'-0"
10"	1'-0"	1'-9"	1'-9"	1'-0"
8"	0'-10"	1'-6"	1'-6"	1'-0"
6"	0'-8"	1'-3"	1'-3"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
Unbalanced Tee & Plug				
24"	2'-10"	6'-0"	6'-0"	2'-9"
20"	2'-5"	5'-0"	5'-0"	2'-3"
18"	2'-3"	4'-6"	4'-6"	2'-0"
16"	2'-1"	4'-0"	4'-0"	1'-9"
14"	1'-11"	3'-6"	3'-6"	1'-6"
12"	1'-8"	3'-0"	3'-0"	1'-3"
10"	1'-6"	2'-6"	2'-6"	1'-0"
8"	1'-4"	2'-0"	2'-0"	1'-0"
6"	1'-2"	1'-6"	1'-6"	1'-0"
4"	1'-0"	1'-0"	1'-0"	1'-0"
Tee				
24"	2'-6"	6'-0"	6'-0"	3'-6"
20"	2'-4"	5'-0"	5'-0"	3'-0"
18"	1'-2"	4'-6"	4'-6"	2'-9"
16"	1'-6"	4'-0"	4'-0"	2'-6"
14"	1'-6"	3'-6"	3'-6"	2'-3"
12"	1'-3"	3'-0"	3'-0"	2'-0"
10"	1'-3"	2'-6"	2'-6"	1'-6"
8"	1'-0"	2'-0"	2'-0"	1'-6"
6"	0'-11"	1'-6"	1'-6"	1'-3"
4"	0'-10"	1'-0"	1'-0"	1'-0"

NOTES :
1. BLOCKING SHALL BE CLASS 'C' CONCRETE ; 'SACKCRETE' WILL NOT BE ALLOWED.
2. THE WATER LINE MUST BE LOWERED IN ORDER TO HAVE FIVE FEET (5') OF COVER AT THE BEND, TEE, REDUCER OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS MAY BE UTILIZED.
3. THE CONTRACTOR HAS THE OPTION TO USE RESTRAINED JOINTS IN LIEU OF OR IN ADDITION TO CONCRETE BLOCKING AS SPECIFIED IN SECTION 02660 OF THE SPECIFICATIONS.

THRUST BLOCKING

NTS



NOTE: FOR LENGTH OF CONCRETE CASING SEE PLAN AND PROFILES.

CONCRETE ENCASEMENT

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER
IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street - Marietta, GA. 30060
Phone No. (770) 427-8122
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
PHOSPHORUS REMOVAL SYSTEM

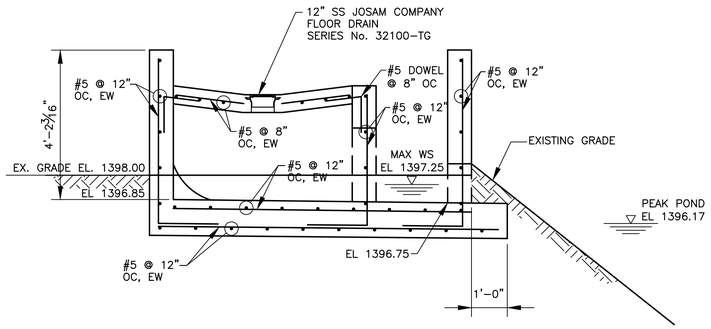
CONSTRUCTION DETAILS

No.	Revisions	Date
1	CUT PLANS APART	12/6/07
2	EPD COMMENTS	4/21/08

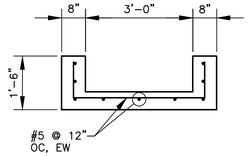
Drawn: EED
Design: KFK
Checked: BAR
Project No: R2007-222
Scale: AS SHOWN
Date: AUGUST 2007

Sheet No.
4 of 6

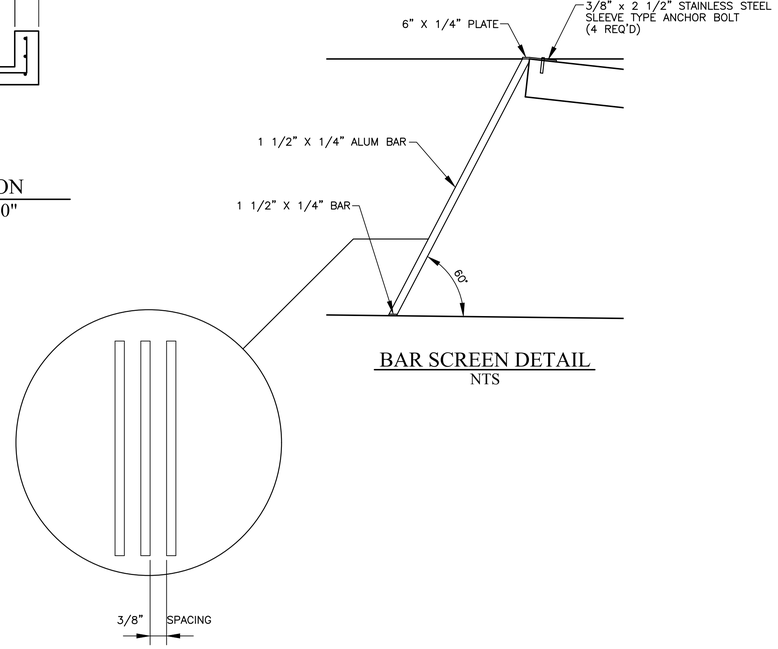
R:\2007\R2007-222\dwg\07-222-Details2 Phos.dwg 08/01/2025 5:19pm cwilson



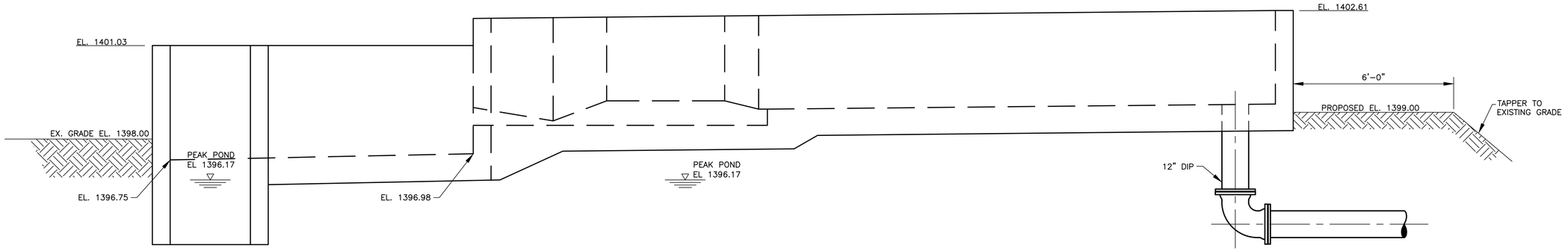
B
4 | 3
SECTION
1/2"=1'-0"



C
4 | 3
SECTION
1/2"=1'-0"



BAR SCREEN DETAIL
NTS



D
3 | 4
SECTION
1/2"=1'-0"

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER
IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED
NO. 10751 PROFESSIONAL
ENGINEER
BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA. 30060
Phone No. (770) 427-8123
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
INFLUENT FLUME AND BAR SCREEN

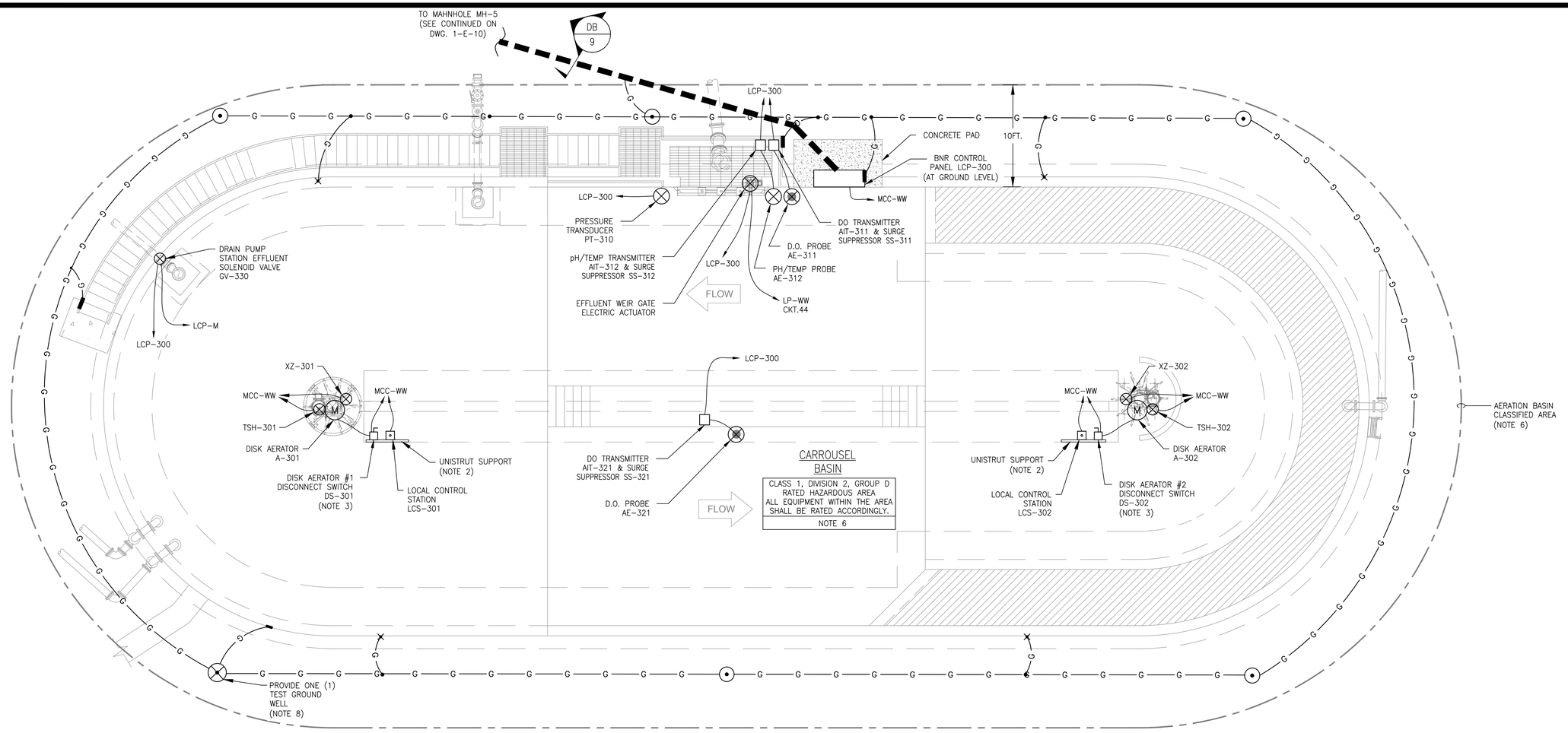
PARSHALL FLUME
SECTION AND DETAILS

No.	Revisions	Date

Drawn: EED
Design: AOM
Checked: KFK/BAR
Project No: R2007-222
Scale: AS SHOWN
Date: 12/6/07

Sheet No.
4 of 7

M:\Projects\Archive\2007\R2007-222\dwg\07-222-ParshallSec.dwg 01/21/2020 4:28pm rmbugua



1 BIOLOGICAL TREATMENT ELECTRICAL PLAN

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

GRAPHIC SCALE

5.33 0 2.67 5.33 10.67 21.33

(IN FEET)

3/16 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED IN THE FIELD.
3. CONTRACTOR SHALL PROVIDE AND INSTALL 480V, 4P, 100A, NON-FUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR AERATOR LOCAL MEANS OF DISCONNECT. CONTRACTOR SHALL ADJUST DISCONNECT LOCATION IN THE FIELD TO AVOID INTERFERENCES WITH OTHER UTILITIES AND TO PROVIDE THE REQUIRED WORKING CLEARANCE.
4. ALL NEW UNDERGROUND DUCTBANKS SHALL BE COORDINATED WITH THE EXISTING UTILITIES AND OTHER DISCIPLINES, AND ADJUSTED AS NECESSARY. INSTALL UNDERGROUND PULL BOXES AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT AS SHOWN. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXACT LOCATION OF UNISTRUT TO PROVIDE ADEQUATE CLEARANCES FOR ALL EQUIPMENT. SEE DETAIL "2" ON DWG. DE-1 FOR INSTALLATION DETAILS.
6. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. ACCORDING TO NFPA 820, TABLE 5.2.2 ROW 7C:

   CLASS 1, DIVISION 2, GROUP D AREA:

   - INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 M (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 M (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 M (18 IN.) ABOVE GRADE EXTENDING 3 M (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS. WHERE POSSIBLE, THE CONTRACTOR SHALL MOUNT THE ELECTRICAL EQUIPMENT MINIMUM 18" ABOVE THE CONCRETE TOP TO AVOID EXPLOSION PROOF RATING.
7. CONTRACTOR SHALL GROUND ALL METAL WALKWAYS, STAIRS AND METAL STRUCTURES.
8. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS. USE UNDERGROUND DUCTBANKS FOR ROUTING BARE COPPER GROUND CABLES BETWEEN THE PLANT AREAS.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

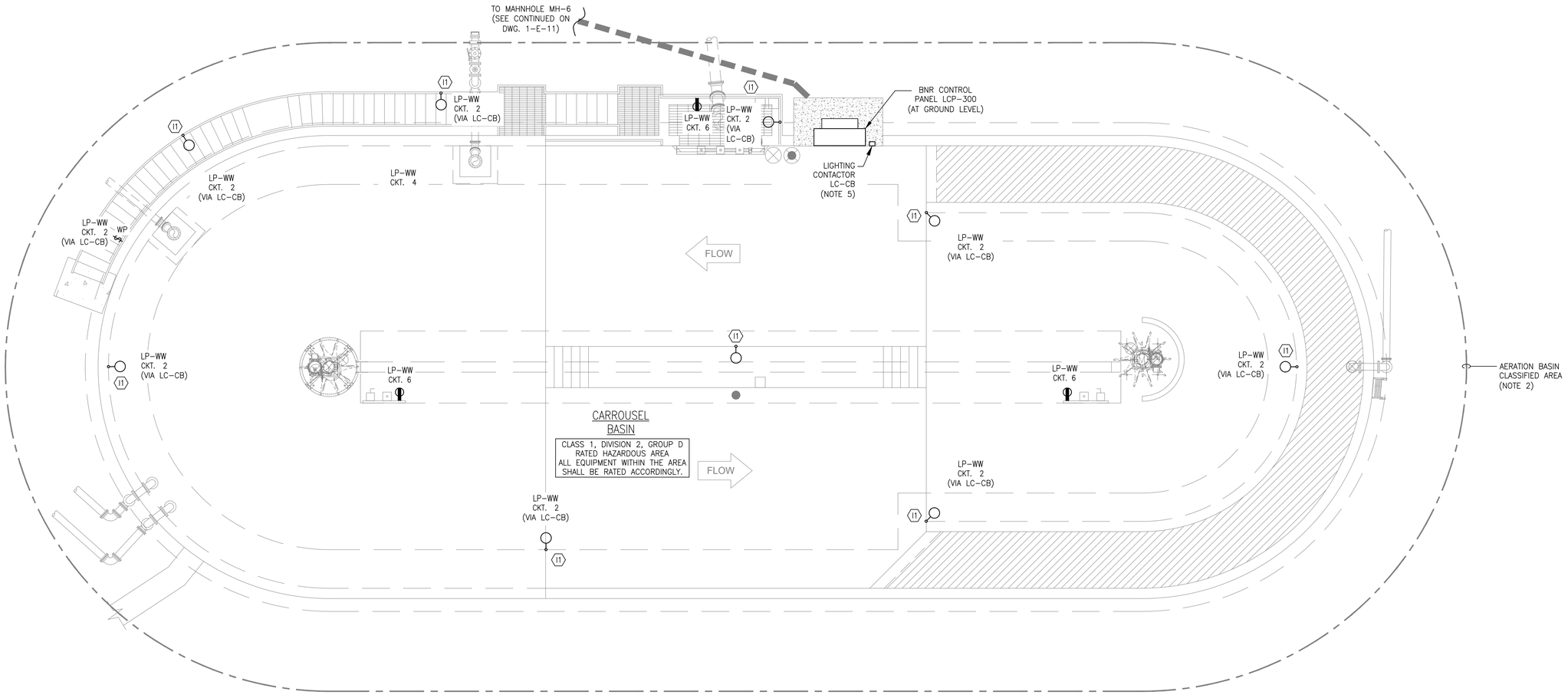
RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
4-E-1



1 BIOLOGICAL TREATMENT RECEPTACLES AND LIGHTING PLAN

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

GRAPHIC SCALE

5.33 0 2.67 5.33 10.67 21.33

(IN FEET)

3/16 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. ACCORDING TO NFPA 820, TABLE 5.2.2 ROW 7C:
   - CLASS 1, DIVISION 2, GROUP D AREA:
   - INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 M (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 M (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 M (18 IN.) ABOVE GRADE EXTENDING 3 M (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS
3. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
4. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 4-E-3 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.
6. PANELBOARD LP-WW IS LOCATED IN THE DEWATERING BUILDING. SEE DRAWING 11-E-1 FOR EXACT LOCATION.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

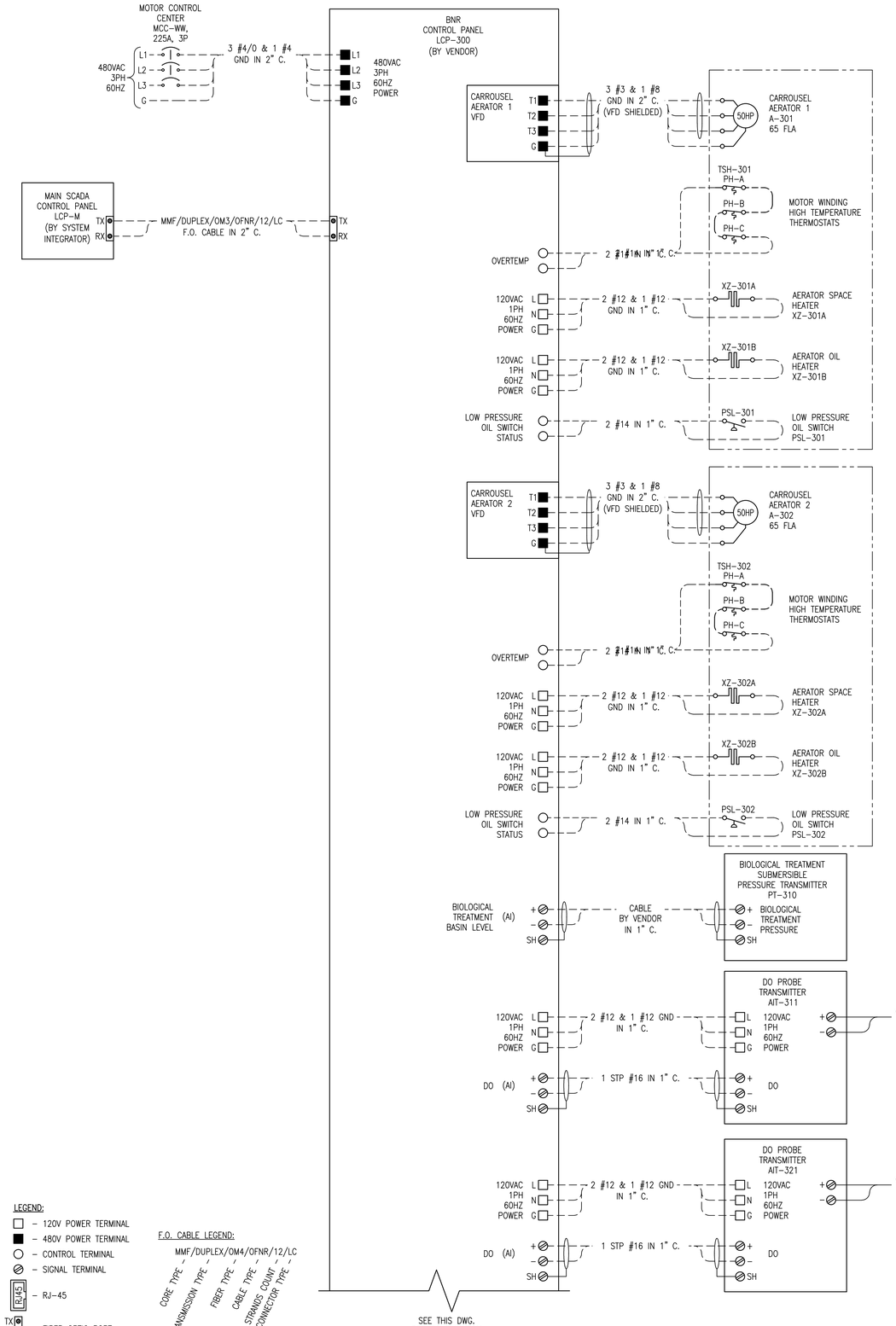
RINDT ENGINEERING + ENVIRONMENTAL

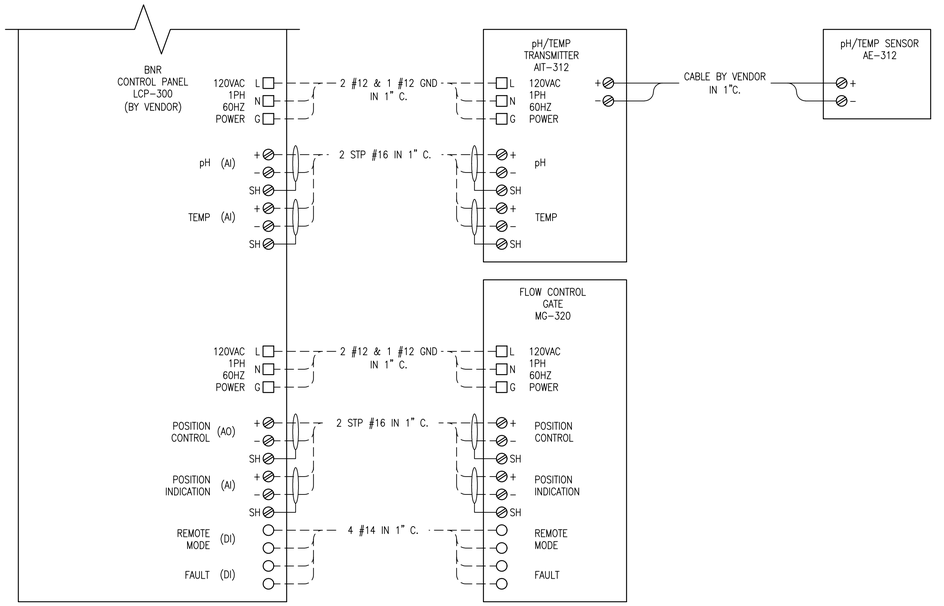
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT
RECEPTACLES AND LIGHTING PLAN

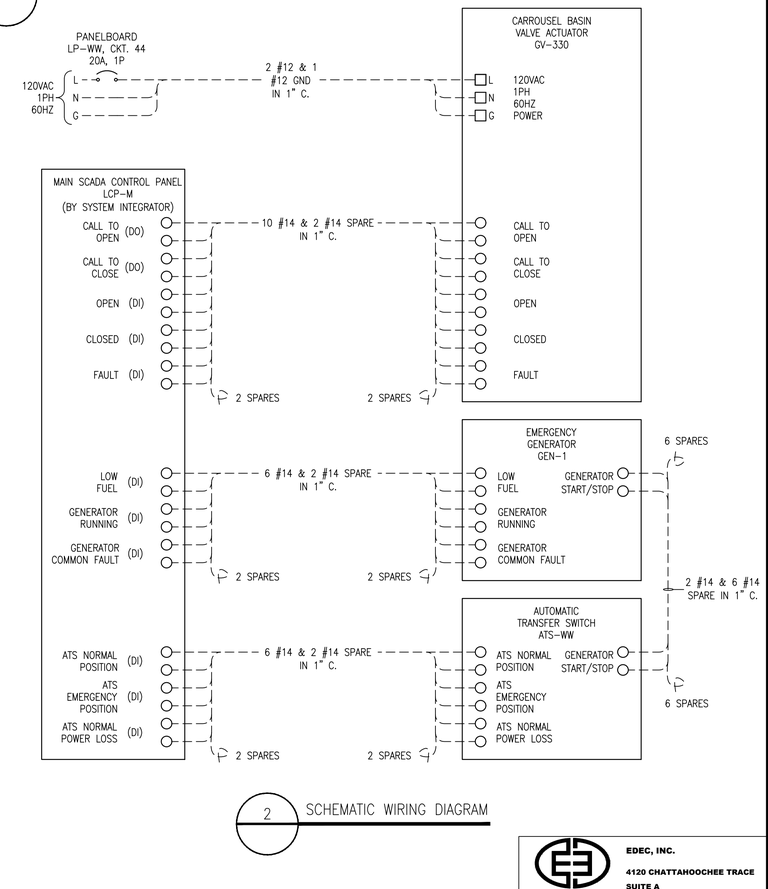
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
4-E-2





1 BNR CONTROL PANEL WIRING DIAGRAM



2 SCHEMATIC WIRING DIAGRAM

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

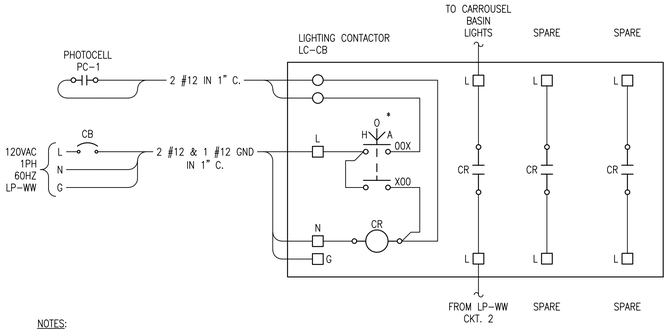
RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
4-E-3



NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.

2. MECHANICALLY HELD HEAVY-DUTY 3 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.

3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.

4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

1 LIGHTING CONTACTOR LC-CB – SCHEMATIC WIRING DIAGRAM

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

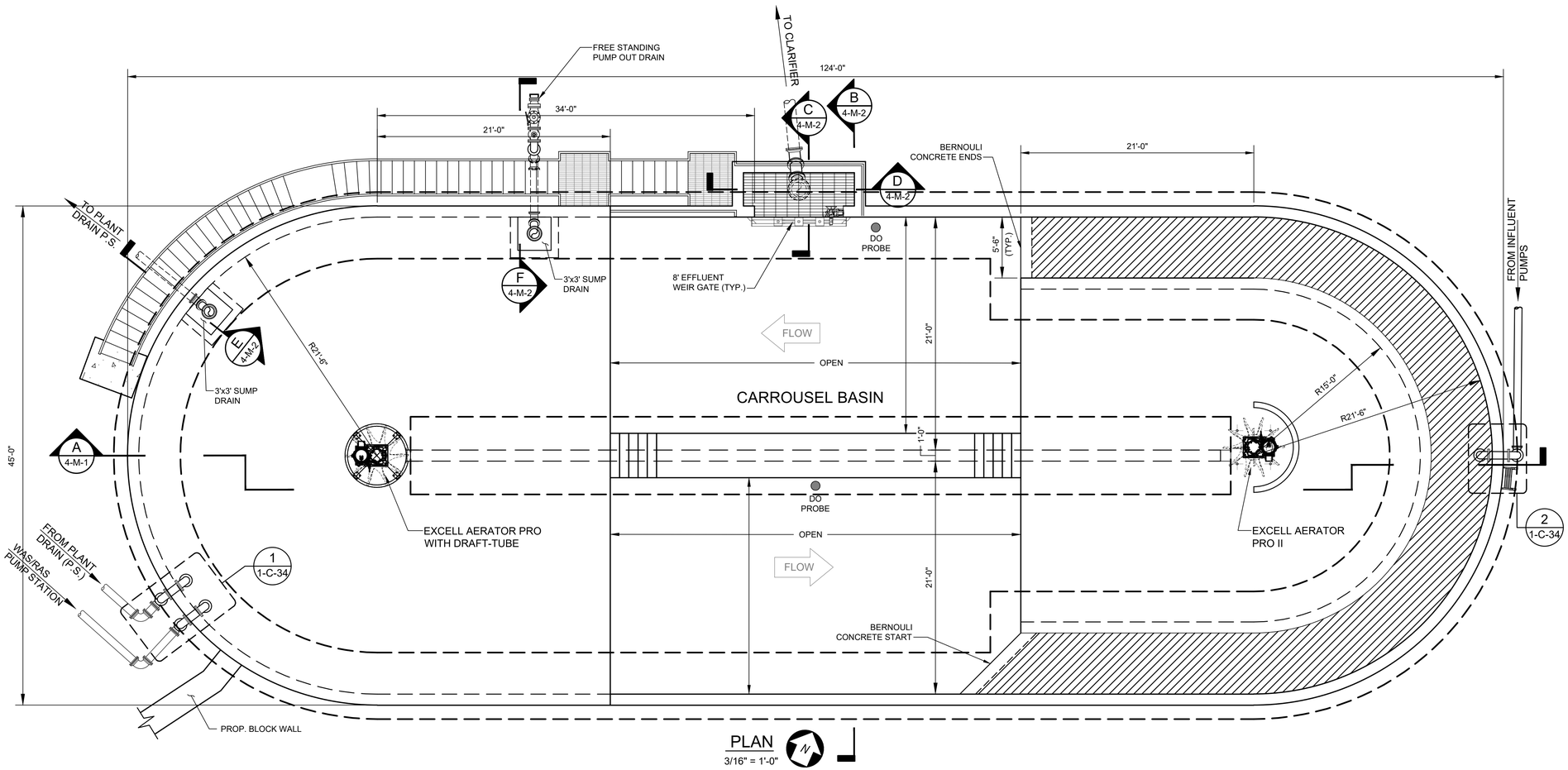
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT
SCHEMATIC WIRING DIAGRAMS

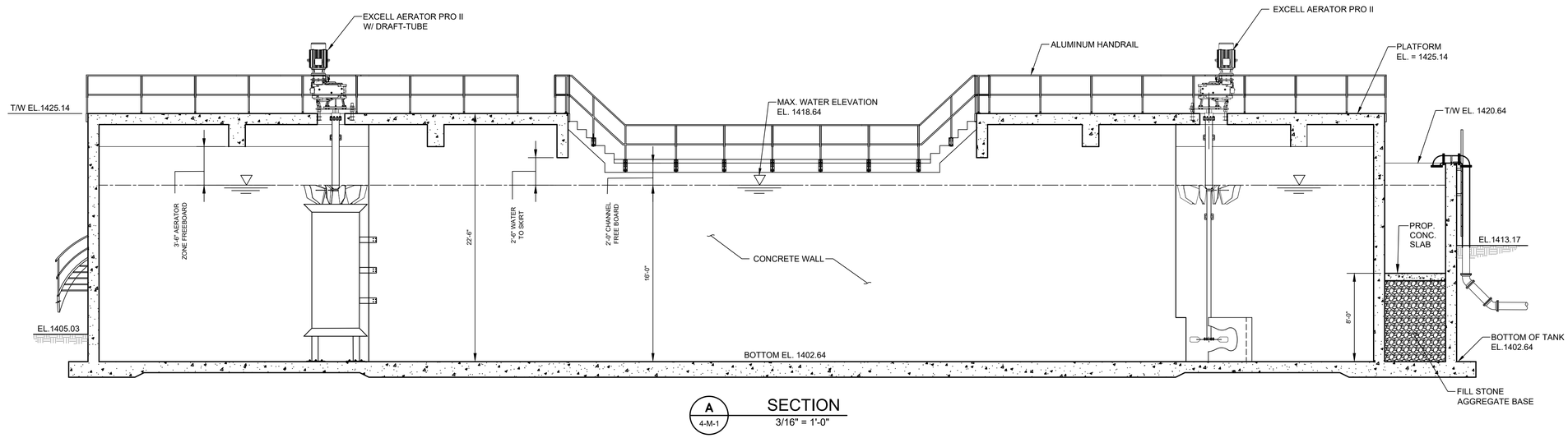
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
4-E-4

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



PLAN
3/16" = 1'-0"



A 4-M-1 SECTION
3/16" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

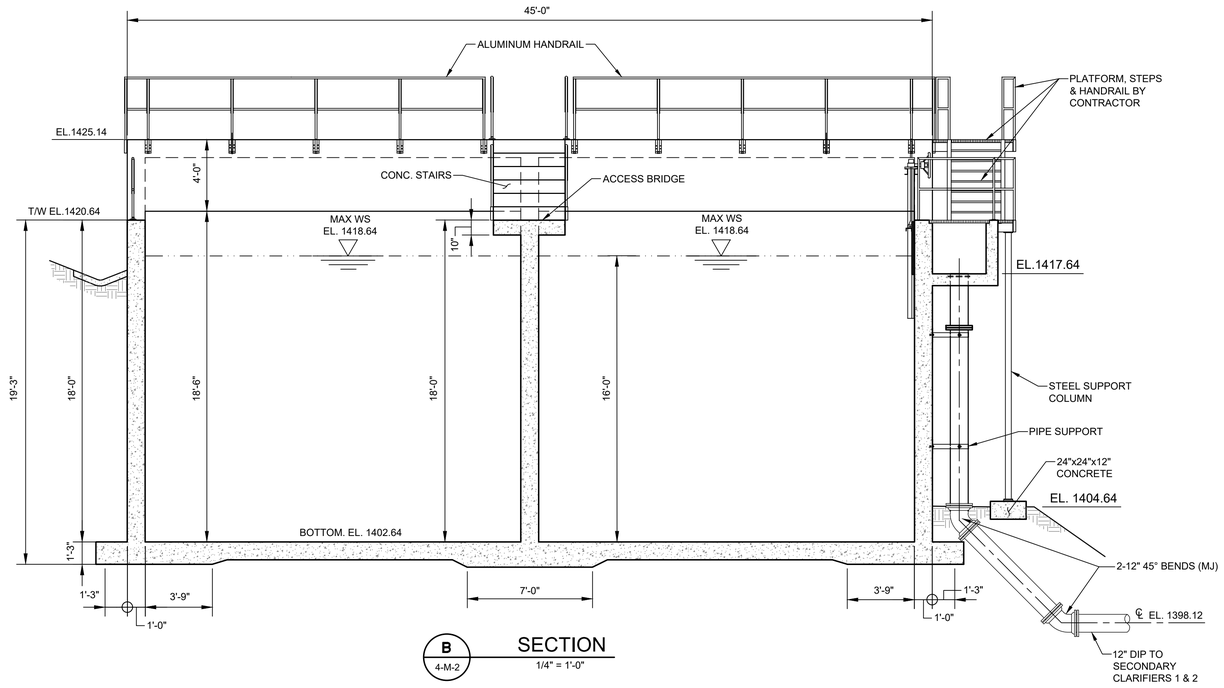
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT PLAN AND SECTION

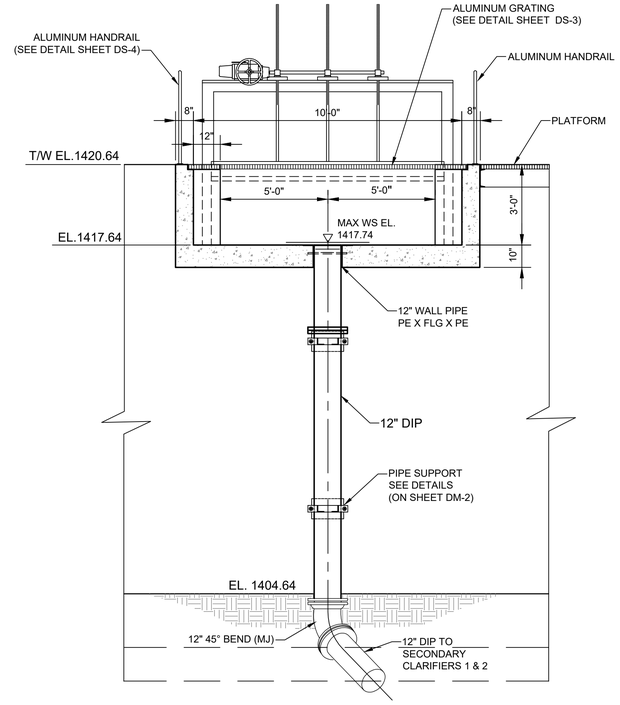
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
4-M1.dwg

Sheet No.
4-M-1

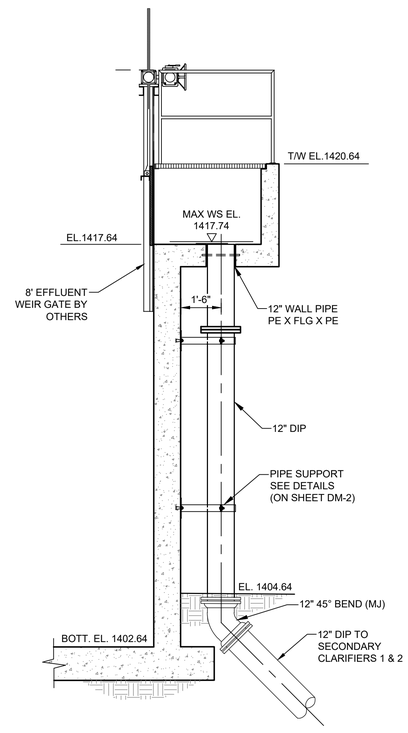
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 04 - Biological Treatment\4-M-1.dwg 08/01/2025 1:31pm aencarnacion



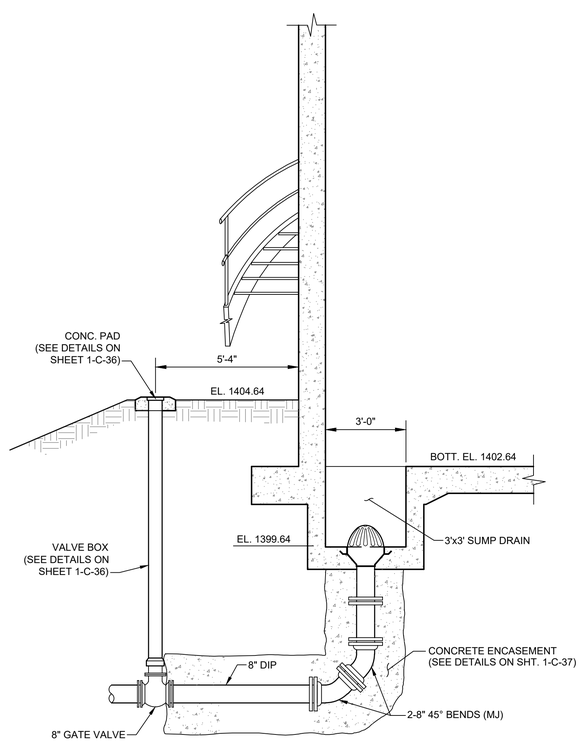
B 4-M-2 SECTION 1/4" = 1'-0"



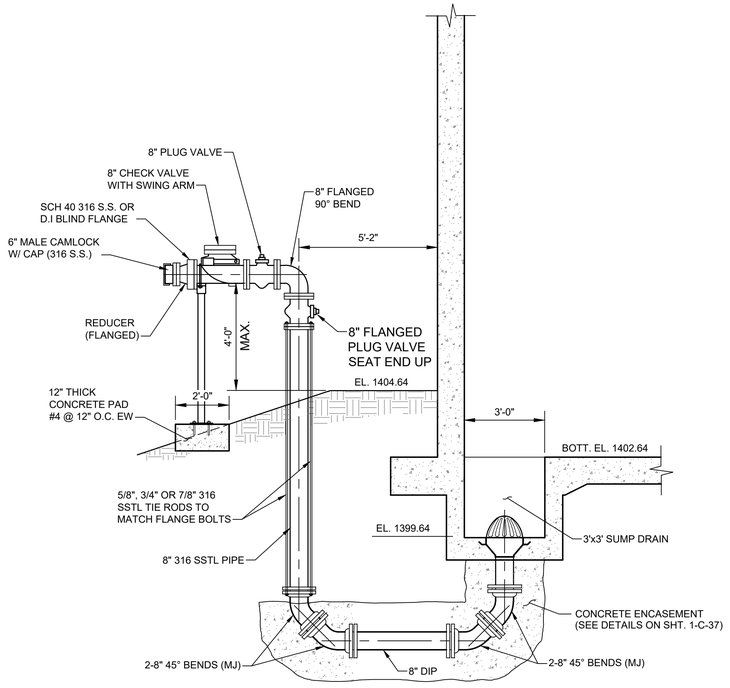
D 4-M-2 SECTION 3/8" = 1'-0"



C 4-M-2 SECTION 3/8" = 1'-0"



E 4-M-2 SECTION 3/8" = 1'-0"



F 4-M-2 SECTION 3/8" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

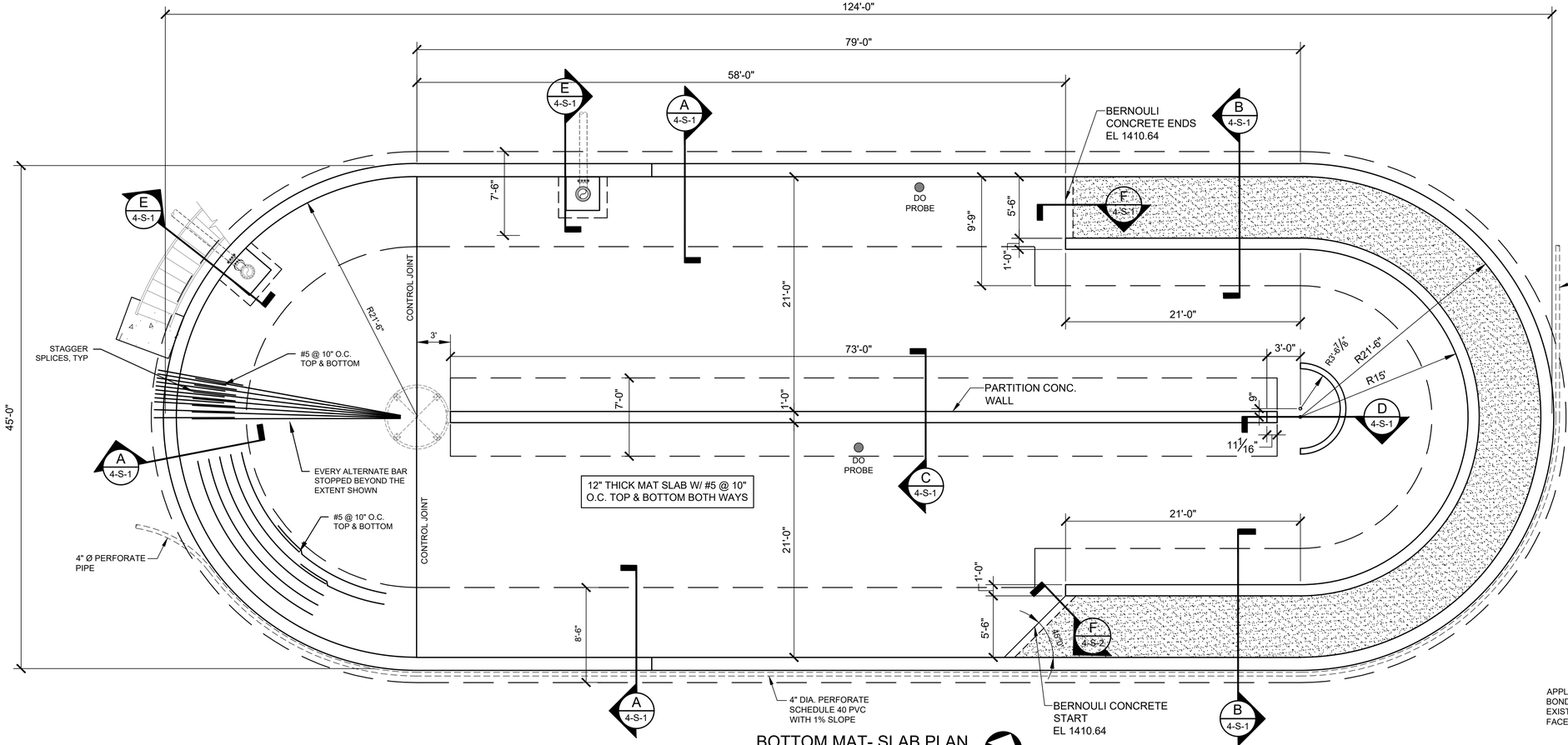
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
4-M-1.dwg

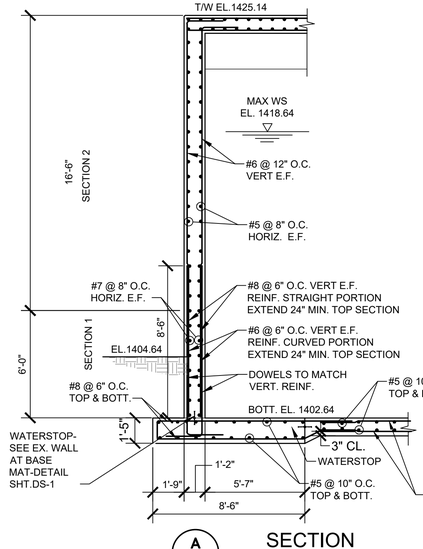
Sheet No.
4-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 04 - Biological Treatment\4-M-1.dwg 08/01/2025 1:31pm aencarnacion

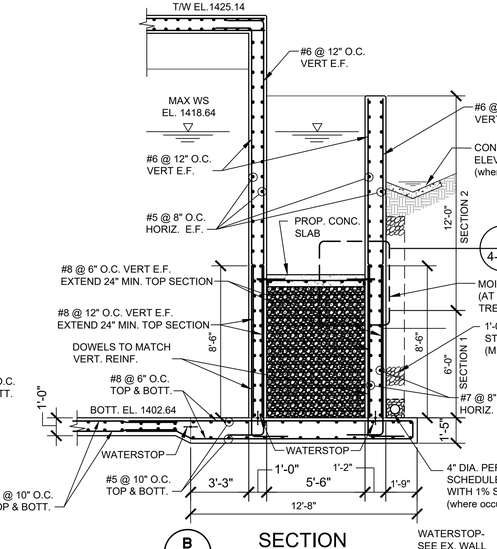


BOTTOM MAT- SLAB PLAN

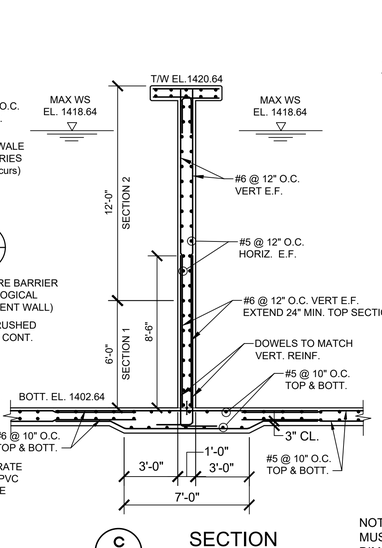
3/16" = 1'-0"



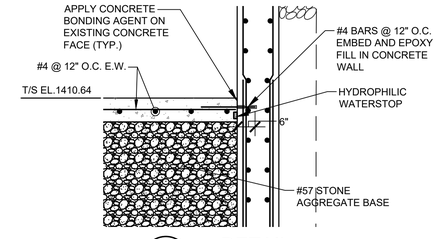
A 4-S-1 SECTION 1/4" = 1'-0"



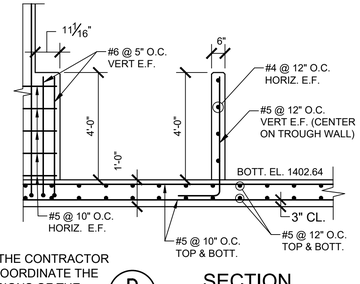
B 4-S-1 SECTION 1/4" = 1'-0"



C 4-S-1 SECTION 1/4" = 1'-0"

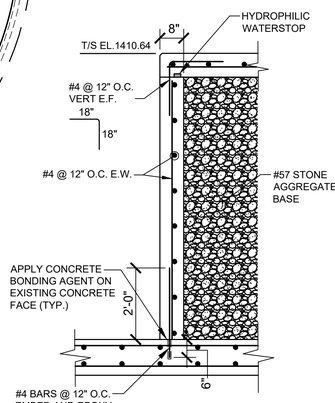


1 4-S-1 DETAIL 1/2" = 1'-0"

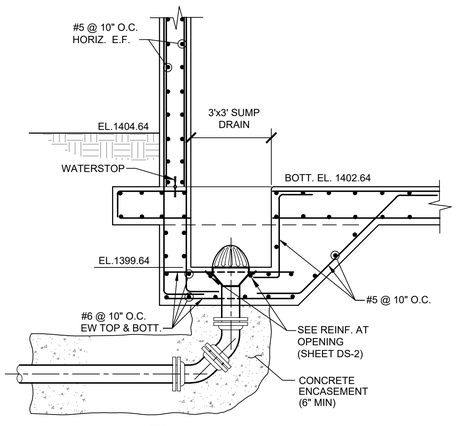


D 4-S-1 SECTION 3/8" = 1'-0"

NOTE: THE CONTRACTOR MUSTCOORDINATE THE DIMENSIONS OF THE LOWER WALL WITH THE MANUFACTURER.



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



E 4-S-1 SECTION 3/8" = 1'-0"

GEORGIA REGISTERED PROFESSIONAL NO. 039453 ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

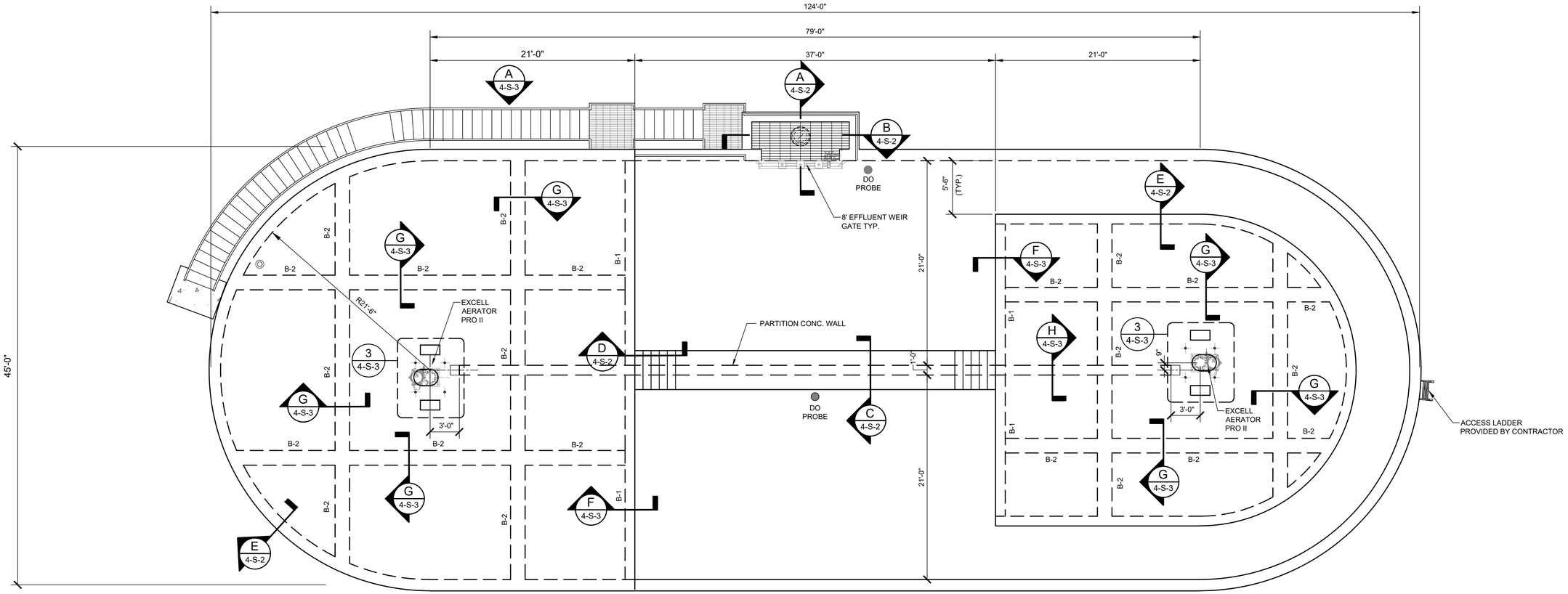
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BOLOGICAL TREATMENT
BOTTOM PLAN AND SECTIONS

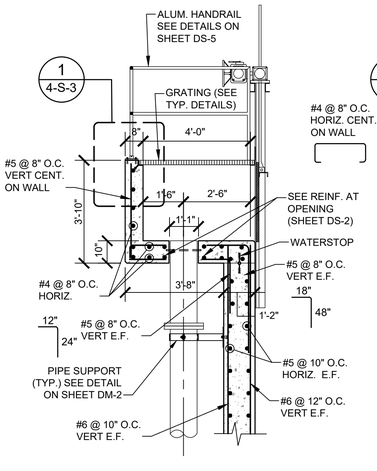
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
4-S-1.dwg

Sheet No.
4-S-1

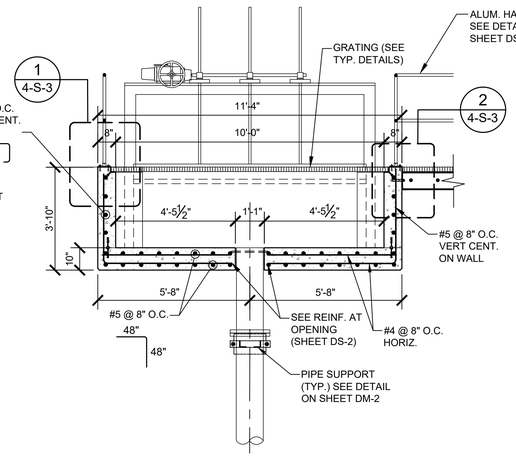
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 04 - Biological Treatment\4-S-1.dwg 08/01/2025 1:29pm aencarnacion



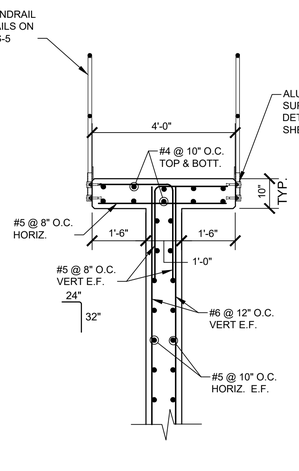
TOP MAT- SLAB PLAN
3/16" = 1'-0"



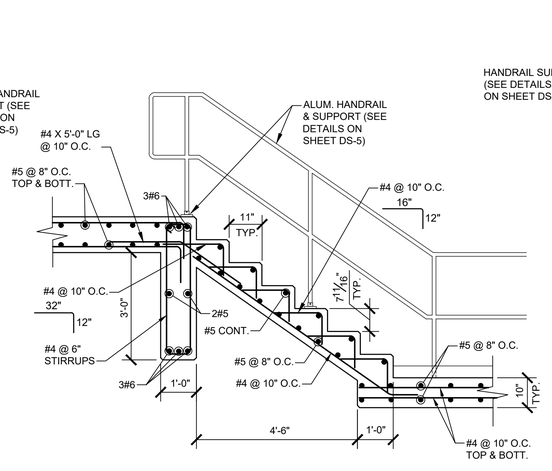
A 4-S-2 SECTION
3/8" = 1'-0"



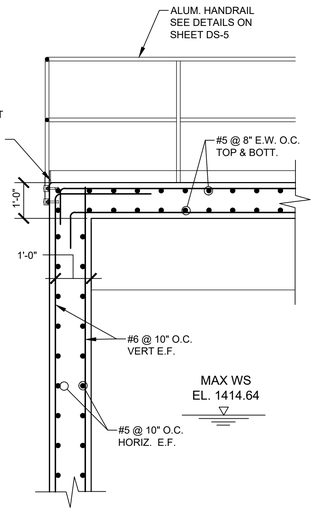
B 4-S-2 SECTION
3/8" = 1'-0"



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



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



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

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

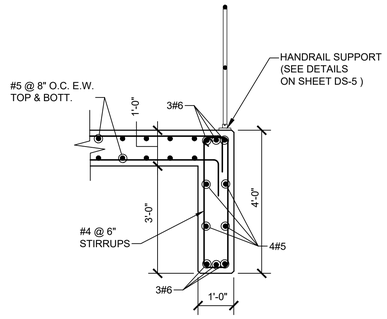
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT
TOP PLAN AND SECTIONS

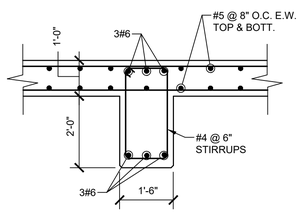
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
4-S-1.dwg

Sheet No.
4-S-2

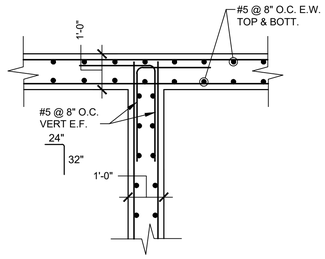
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 04 - Biological Treatment\4-S-1.dwg 08/01/2025 1:29pm aencarnacion



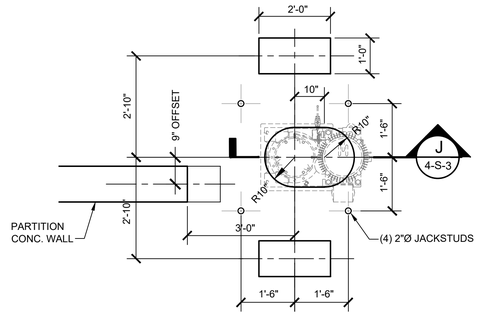
F 4-S-3 SECTION
1/2" = 1'-0"



G 4-S-3 SECTION
1/2" = 1'-0"

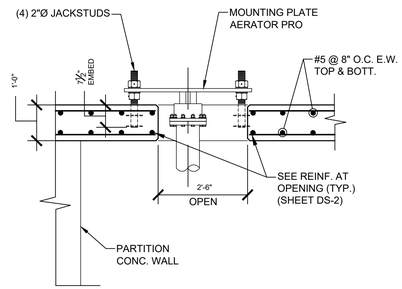


H 4-S-3 SECTION
1/2" = 1'-0"

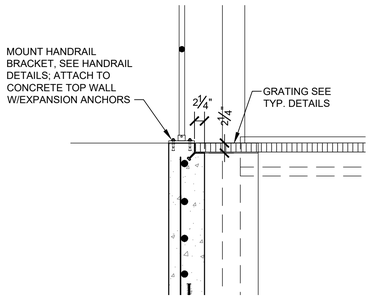


NOTE: THE CONTRACTOR MUST COORDINATE THE DIMENSIONS WITH THE MANUFACTURER.

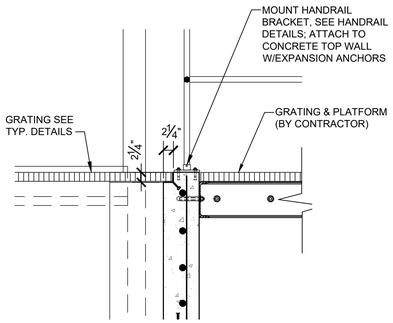
3 4-S-3 DETAIL
3/4" = 1'-0"



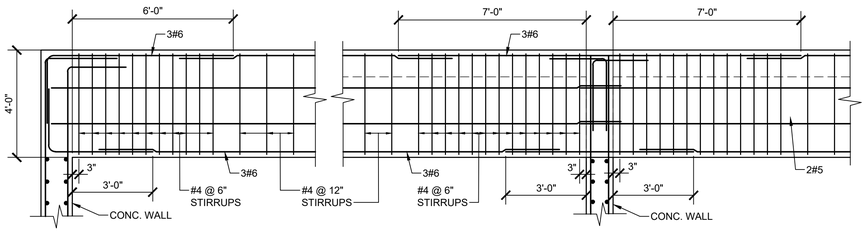
J 4-S-3 SECTION
1/2" = 1'-0"



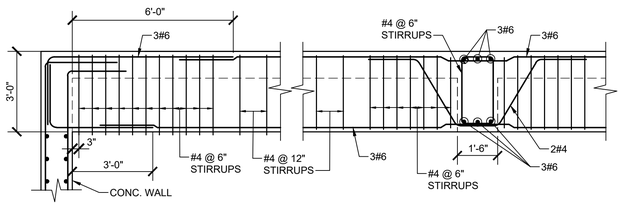
1 4-S-3 DETAIL
3/4" = 1'-0"



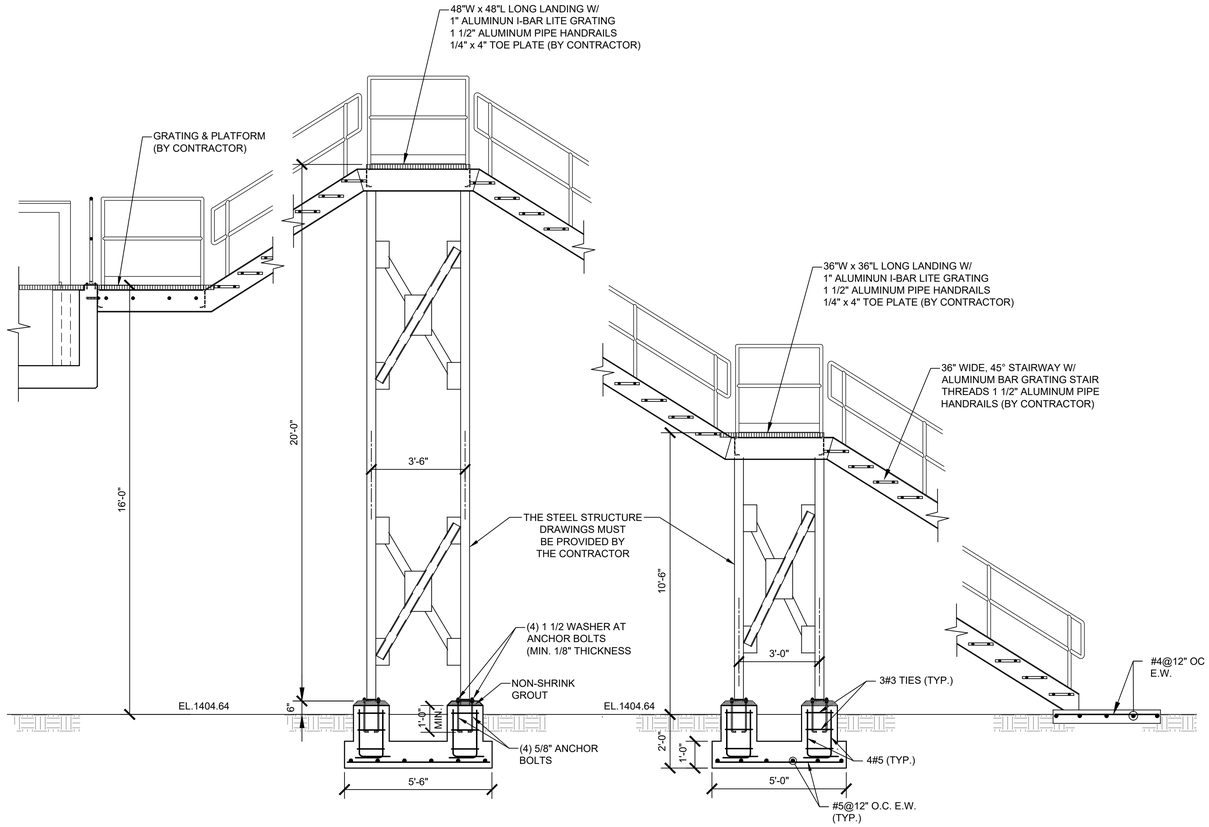
2 4-S-3 DETAIL
3/4" = 1'-0"



BEAM B-1 ELEVATION
3/8" = 1'-0"



BEAM B-2 ELEVATION
3/8" = 1'-0"



A 4-S-3 STAIR ELEVATION
3/8" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

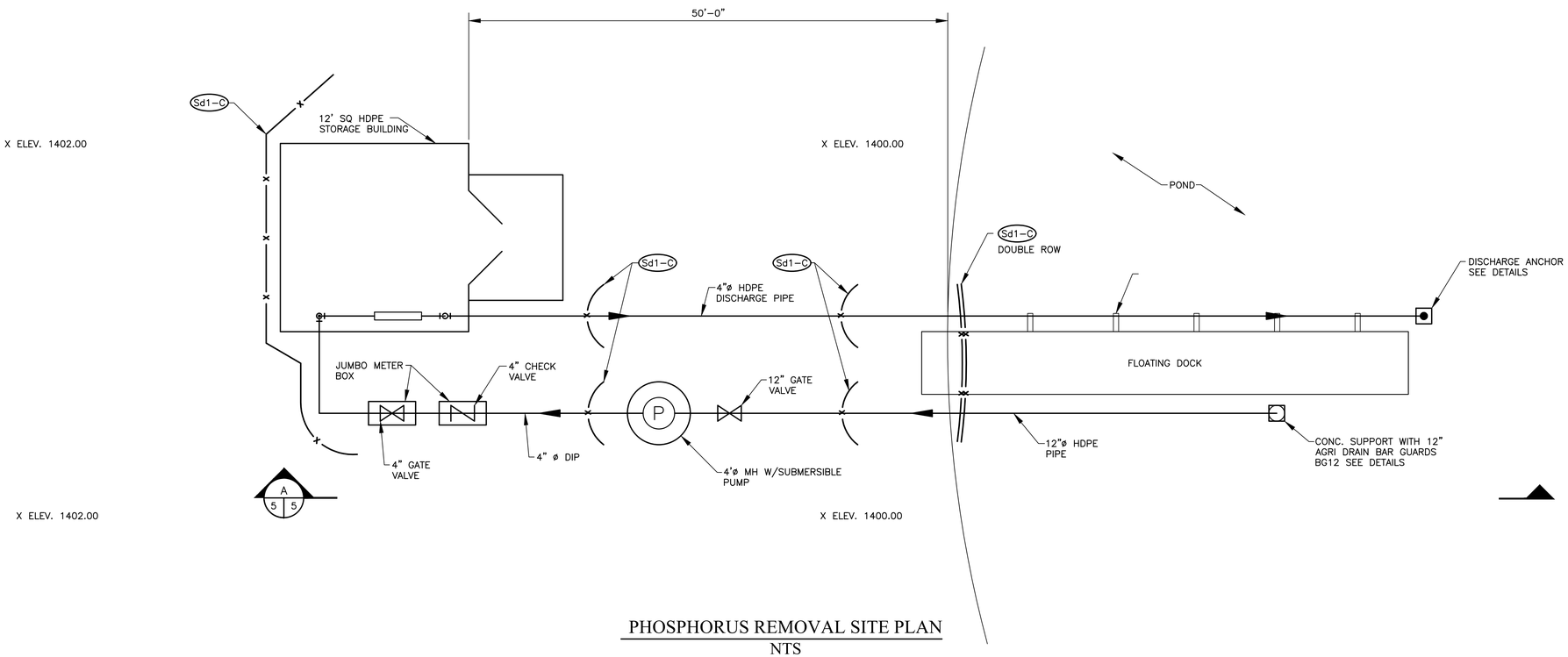
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

BIOLOGICAL TREATMENT
TOP SECTIONS AND ELEVATIONS

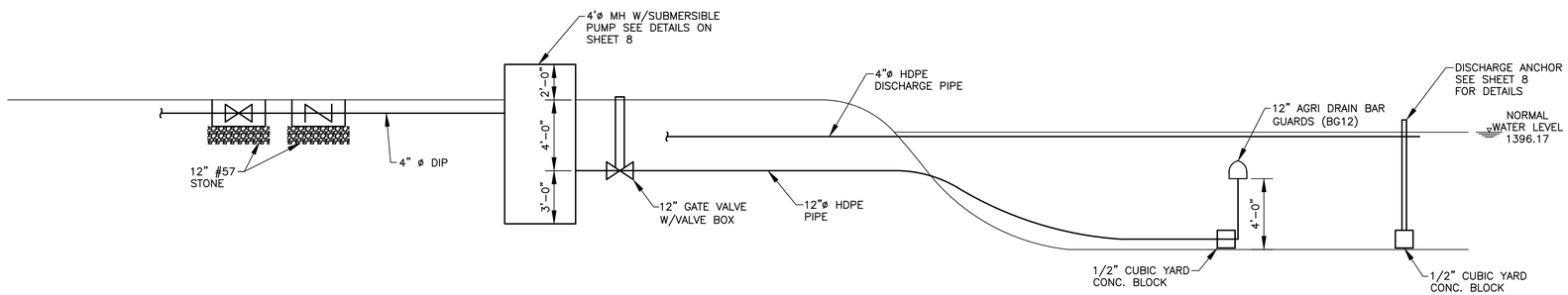
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
4-S-1.dwg

Sheet No.
4-S-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 04 - Biological Treatment\4-S-1.dwg 08/01/2025 1:30pm aericarnacion



PHOSPHORUS REMOVAL SITE PLAN
NTS



A
5 5 SECTION
1/4"=1'-0"

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER

IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 865-2111

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street - Marietta, GA. 30060
Phone No. (770) 427-8123
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
PHOSPHORUS REMOVAL SYSTEM

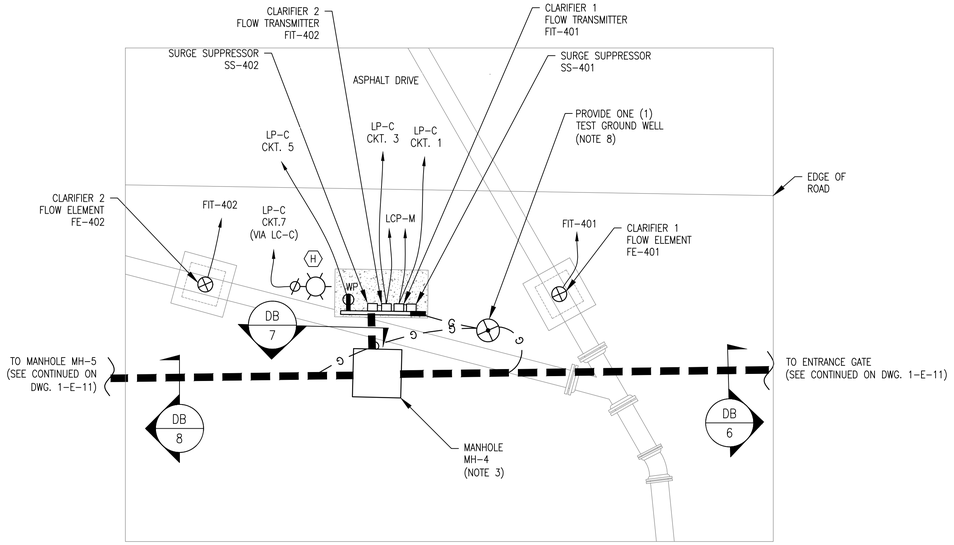
PHOSPHORUS REMOVAL
SITE PLAN

No.	Revisions	Date

Drawn: EED
Design: KFK
Checked: BAR
Project No: R2007-222
Scale: AS SHOWN
Date: AUGUST 2007

Sheet No.
5 of 6

R:\2007\R2007-222\dwg\07-222-PR-PLANANDSECTION.dwg 08/01/2025 5:19pm cwilson



1 CLARIFIER METER VAULTS ELECTRICAL PLAN

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

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1/4 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT FOR INSTALLATION OF ELECTRICAL EQUIPMENT SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL MANHOLE AS SHOWN ON PLAN. SEE DETAIL 1 ON DRAWING DE-3 FOR INSTALLATION DETAILS.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
5. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
6. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS.
8. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
9. PANELBOARD LP-C AND LIGHTING CONTACTOR LC-C ARE LOCATED AT THE CONTROL BUILDING. SEE DRAWING 12-E-2 FOR EXACT LOCATION.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

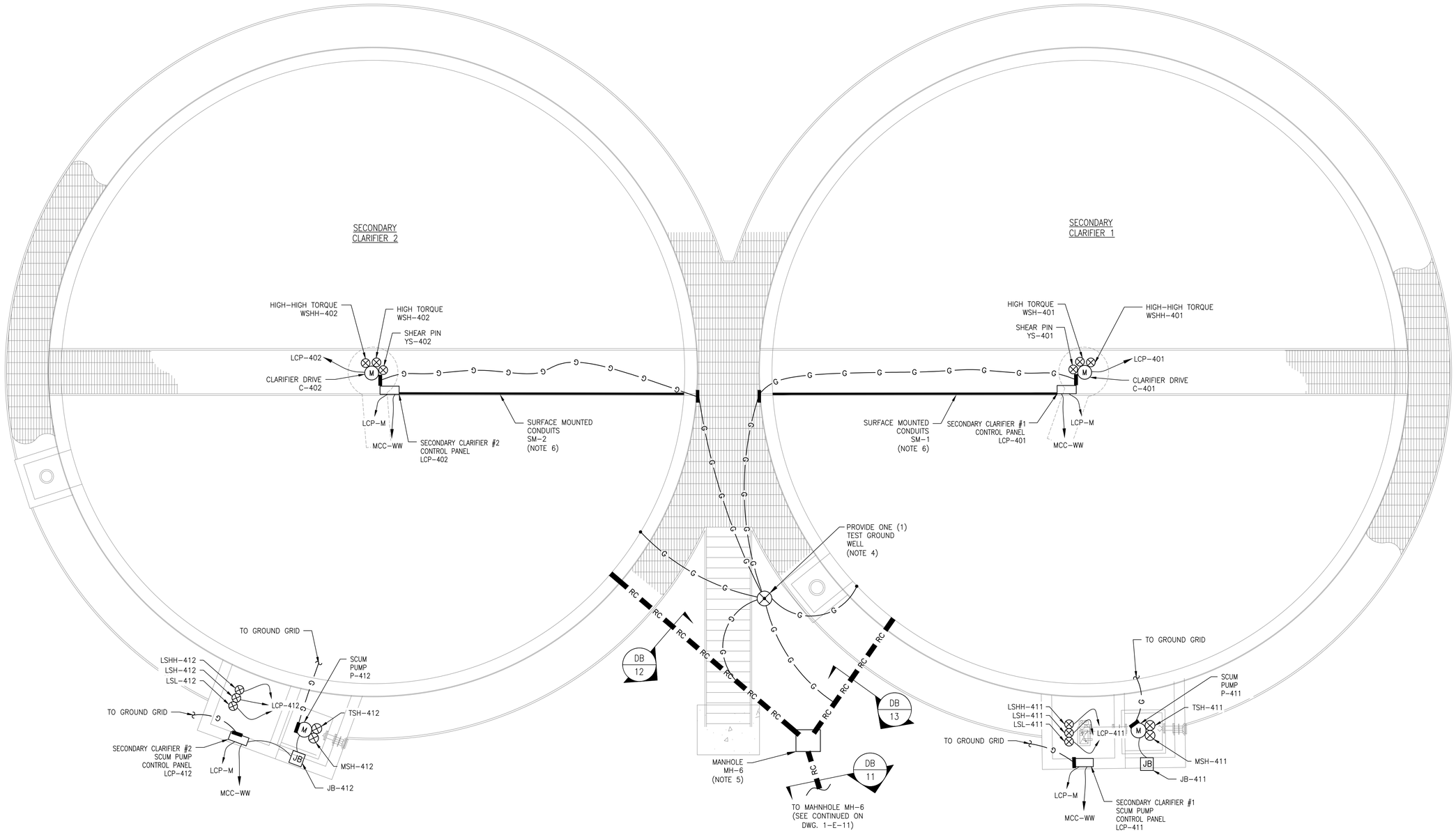
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CLARIFIER METER VAULTS
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
5-E-1



NOTES:

1. ALL UNDERGROUND DUCTBANKS UNDER THE ROADS AND PARKING AREAS SHALL BE STEEL REINFORCED. EACH DUCTBANK SHALL HAVE #4/0 BARE COPPER GROUND WIRE (NOT SHOWN FOR CLARITY).
2. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
3. CONTRACTOR SHALL VERIFY IN THE FIELD MOUNTING METHOD FOR DISCONNECT SWITCHES, INDICATING TRANSMITTERS, LOCAL CONTROL STATIONS, ETC. INSTALLATION. PROVIDE ALL REQUIRED HARDWARE FOR SECURE EQUIPMENT INSTALLATION.
4. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
5. CONTRACTOR SHALL CONNECT CLARIFIER AND STAIRS TO PLANT GROUND GRID.
6. CONTRACTOR SHALL PROVIDE AND INSTALL MANHOLE AS SHOWN. SEE DETAIL 1 ON DWG. DE-3 FOR INSTALLATION DETAILS.
7. CONTRACTOR SHALL FURNISH AND INSTALL CONDUITS/CABLES TO LCP-401 AND LCP-402, RECEPTACLE AND LIGHT. THE CONDUITS SHALL BE SURFACE MOUNTED ALONG THE OUTSIDE VERTICAL WALL OF THE CLARIFIER AND THEN BELOW GRATED WALKWAY.

1 SECONDARY CLARIFIERS ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1/4 inch = 1 ft.

LEGEND:

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

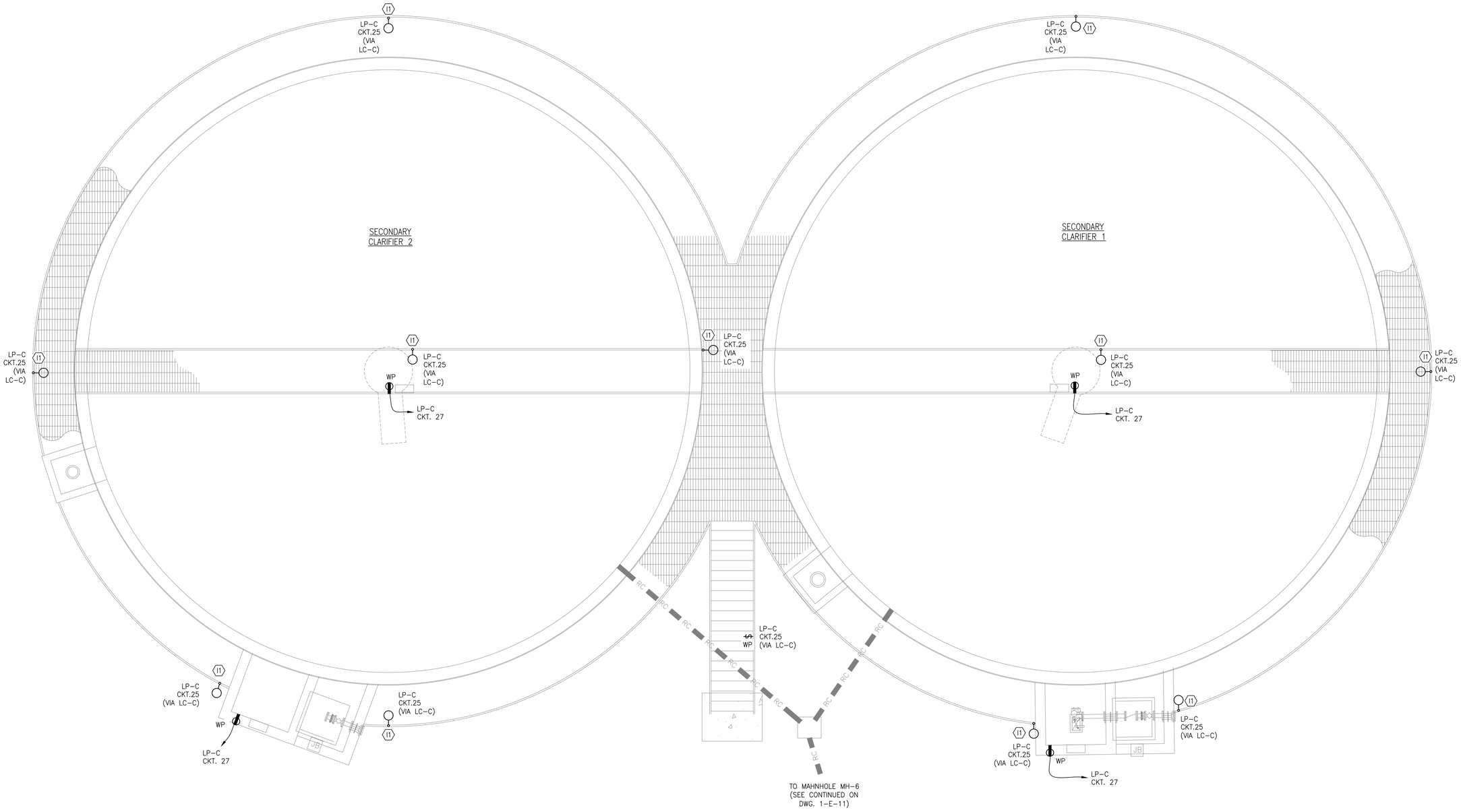
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIERS ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
5-E-2



1 SECONDARY CLARIFIERS RECEPTACLES AND LIGHTING PLAN

SCALE: 1/4" = 1'–0"

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1/4 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1–E–13 FOR LIGHTING FIXTURES SCHEDULE.
4. PANELBOARD LP–C AND LIGHTING CONTACTOR LC–C ARE LOCATED AT THE CONTROL BUILDING. SEE DRAWING 12–E–2 FOR EXACT LOCATION.

LEGEND:

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

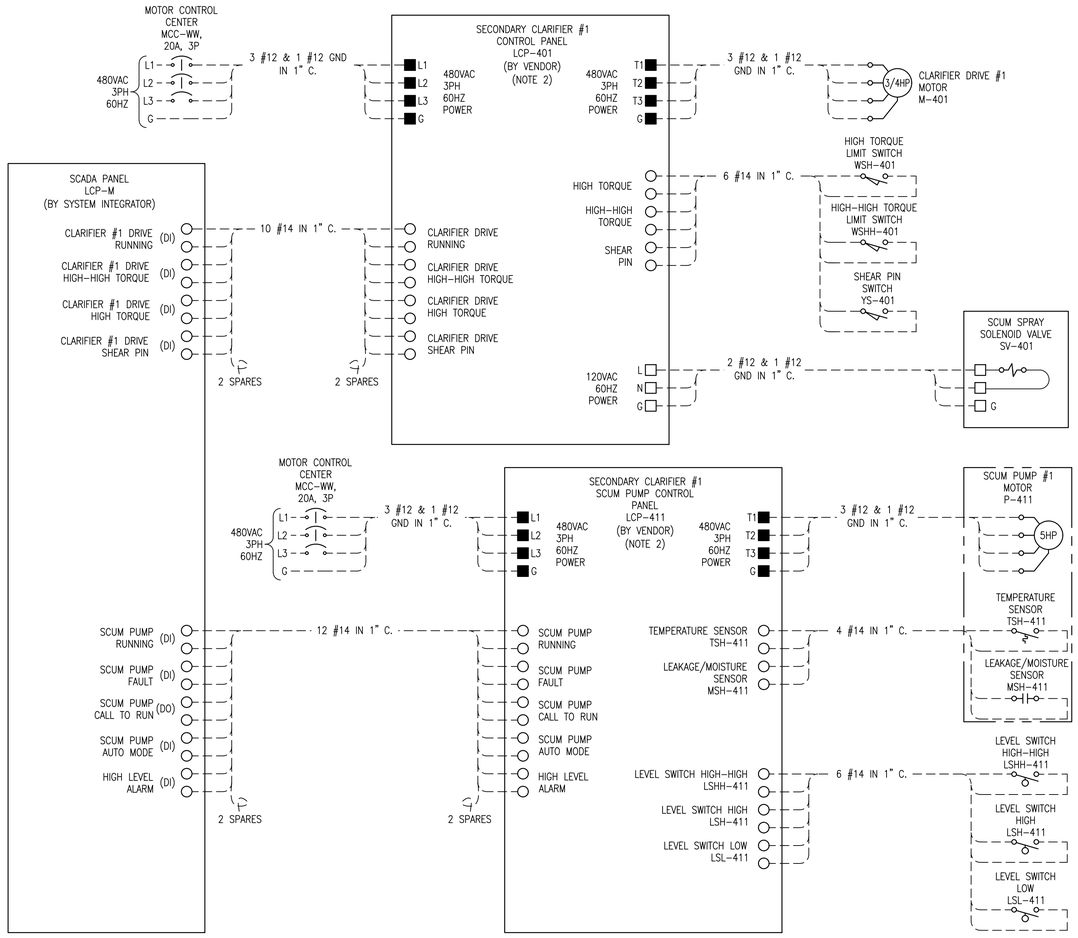
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIERS
RECEPTACLES AND LIGHTING PLAN

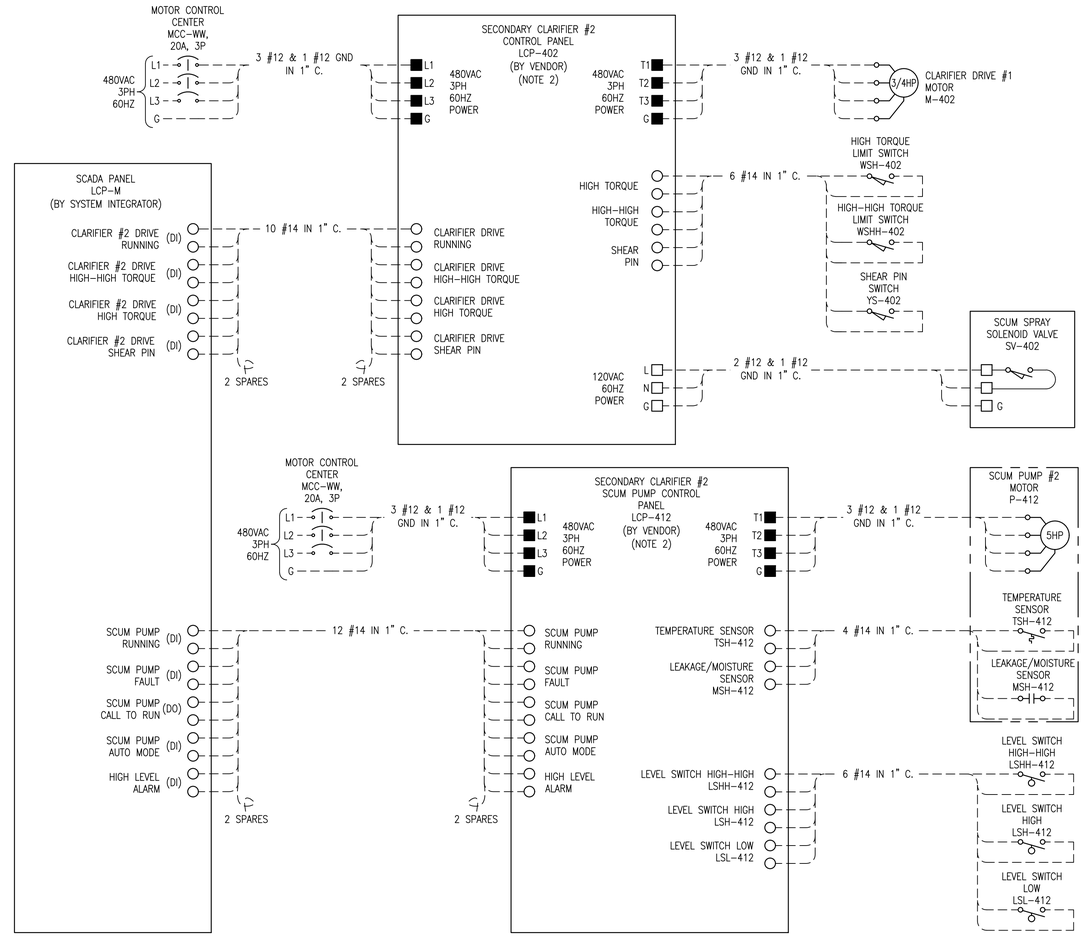
Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

Sheet No.
5-E-3

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 SECONDARY CLARIFIER #1 CONTROL PANEL SCHEMATIC



2 SECONDARY CLARIFIER #2 CONTROL PANEL SCHEMATIC

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR SECONDARY CLARIFIER #1 AND CLARIFIER #2 COMPONENTS AS REQUIRED BY ACCEPTED VENDOR SHOP DRAWINGS.

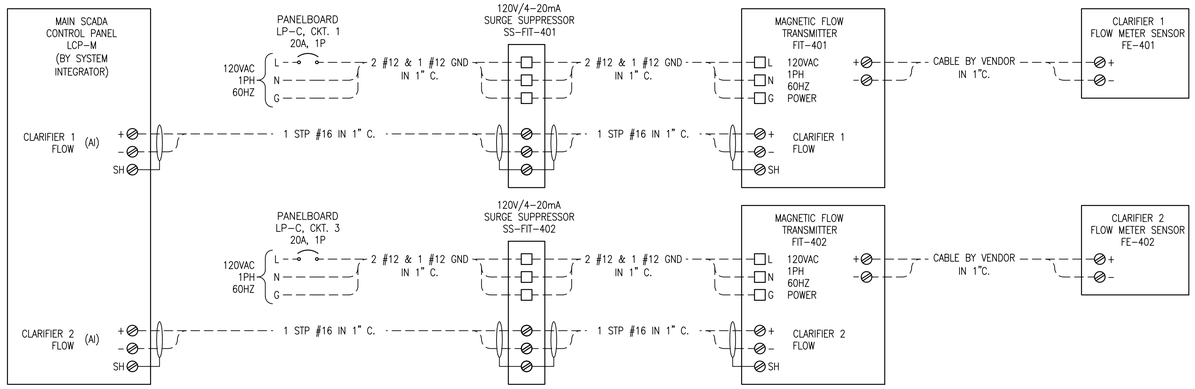
2. CONTRACTOR SHALL FURNISH AND INSTALL SECONDARY CLARIFIER CONTROL PANELS WITH NEMA 4X SS ENCLOSURE WHICH INCLUDES, BUT NOT LIMITED TO THE FOLLOWING:

   A. HOA SWITCHES, START/STOP PUSH BUTTONS FOR "HAND" MODE.
   B. ELAPSED TIME METERS
   C. TWO (2) FULL VOLTAGE NON-REVERSE (FVNR) STARTERS WITH MOTOR CIRCUIT PROTECTORS SIZED CLARIFIER DRIVE AND SCUM PUMP MOTORS.
   D. MAIN 20A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SYSTEM OPERATION.
   E. 2 kVA, 480/120V CONTROL POWER TRANSFORMER (SIZE AS NECESSARY TO ACCOMMODATE ALL 120V LOADS)
   F. AUXILIARY DRY CONTACTS (120VAC, 5 AMP RATED) (SEE DWG.I-4 FOR MORE DETAILS)
   G. LIGHTNING ARRESTOR
   H. STRIP HEATER, FAN AND THERMOSTAT
   I. RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES ETC. AS REQUIRED

CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL



3 CLARIFIER FLOW METER SCHEMATIC

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

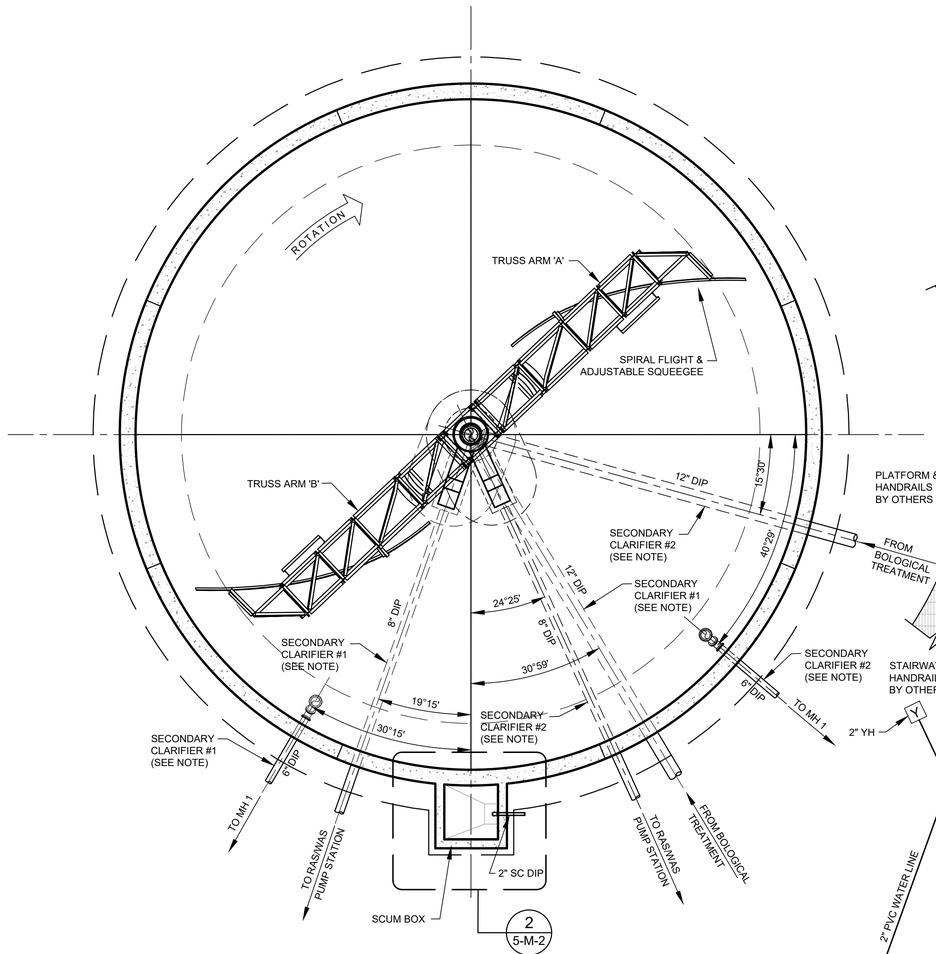
RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIERS
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

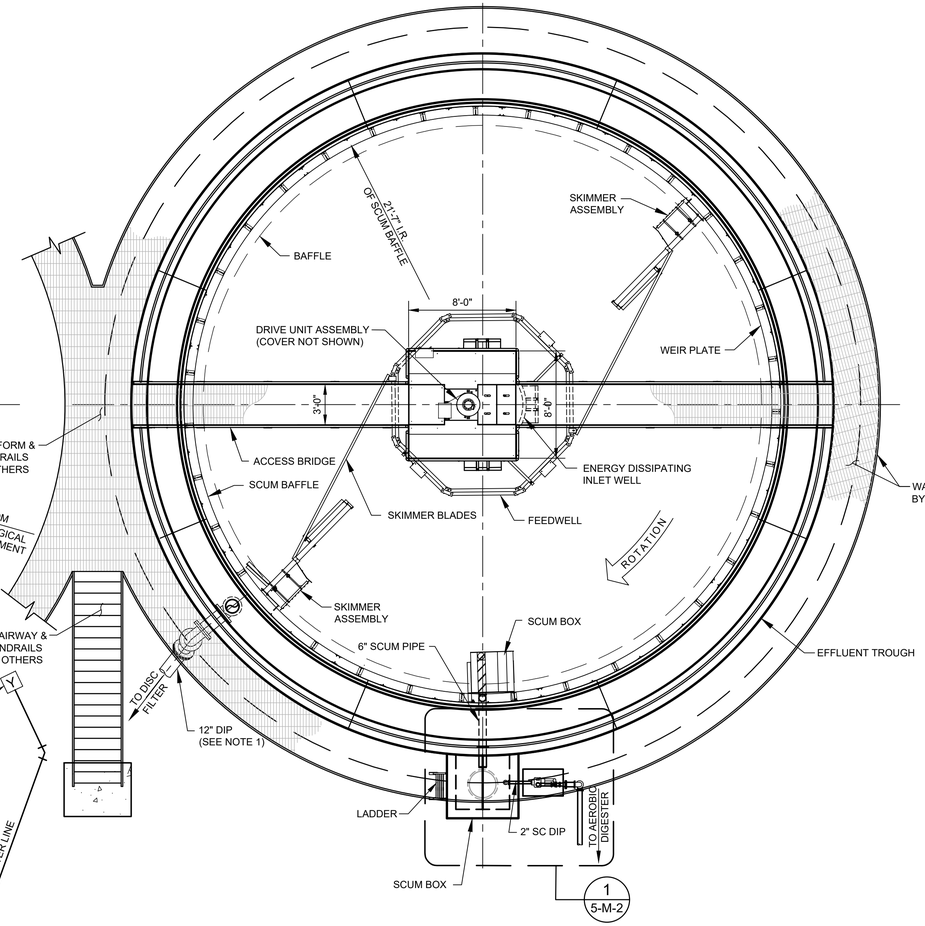
Sheet No.
5-E-4



(SECONDARY CLARIFIER # 1 & 2)

BOTTOM PLAN

3/16" = 1'-0"



(SECONDARY CLARIFIER # 1 & 2)

TOP PLAN

3/16" = 1'-0"

NOTES:

1. SEE YARD PIPING PLAN SHEET 1-C-31 FOR LOCATION OF SECONDARY CLARIFIER EFFLUENT PIPE LAYOUT.

HANDRAIL NOTE:
CONTRACTOR SHALL ELIMINATE HANDRAIL ON THE STRUCTURES WHERE THE TOP OF WALL IS GREATER THAN 3'-6" ABOVE FINISHED GRADE, EXCEPT WHERE ACCESS TO TOP OF STRUCTURE IS REQUIRED.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

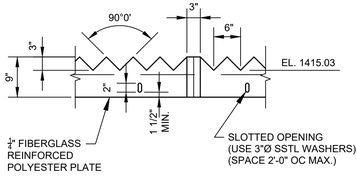
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECODARY CLARIFIER PLANS

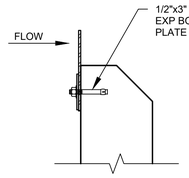
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
5-M-1.dwg

Sheet No.
5-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 05 - Secondary Clarifiers\5-M-1.dwg 08/01/2025 1:33pm aencarnacion

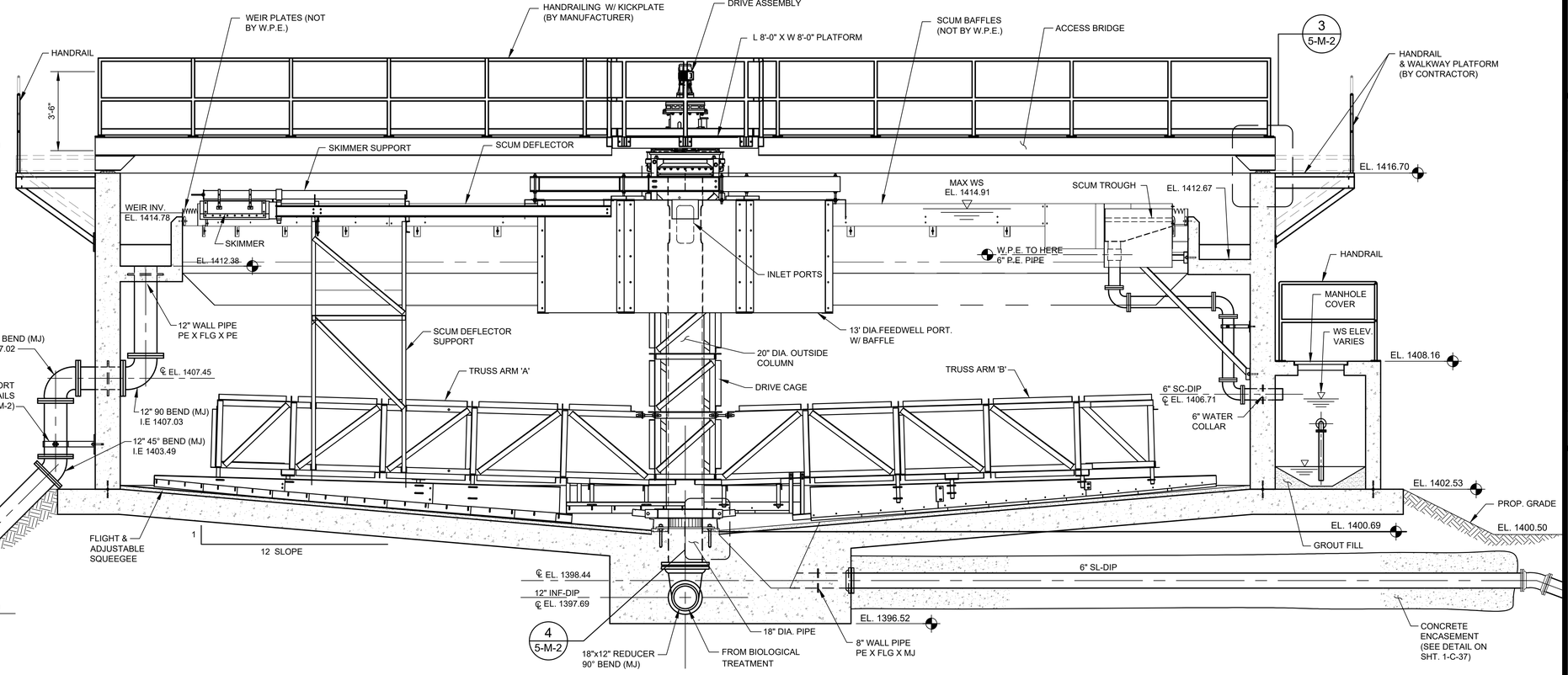


ELEVATION
1/4" = 1'-0"

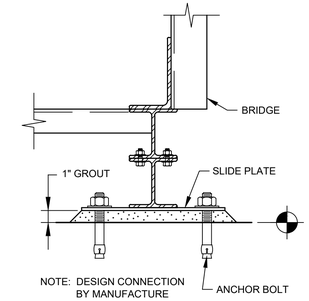


SECTION

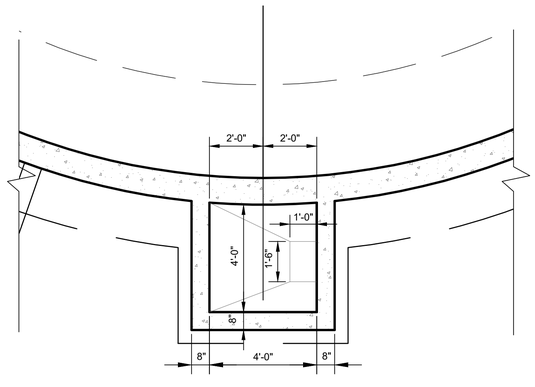
WEIR PLATE DETAIL
1 1/2" = 1'-0"



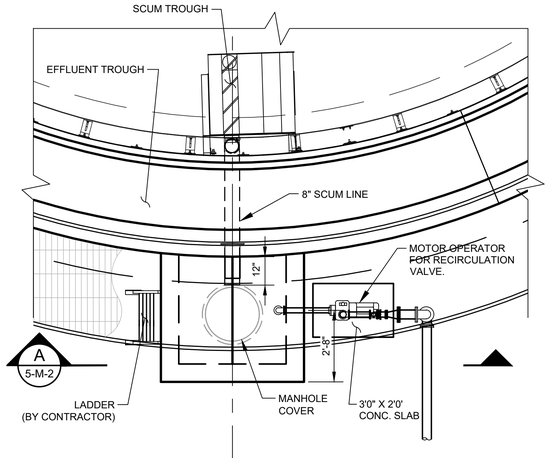
TYPICAL SECTION
3/8" = 1'-0"



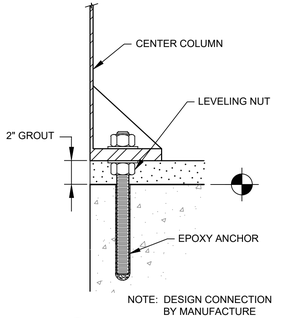
3 5-M-2 DETAIL N.T.S.



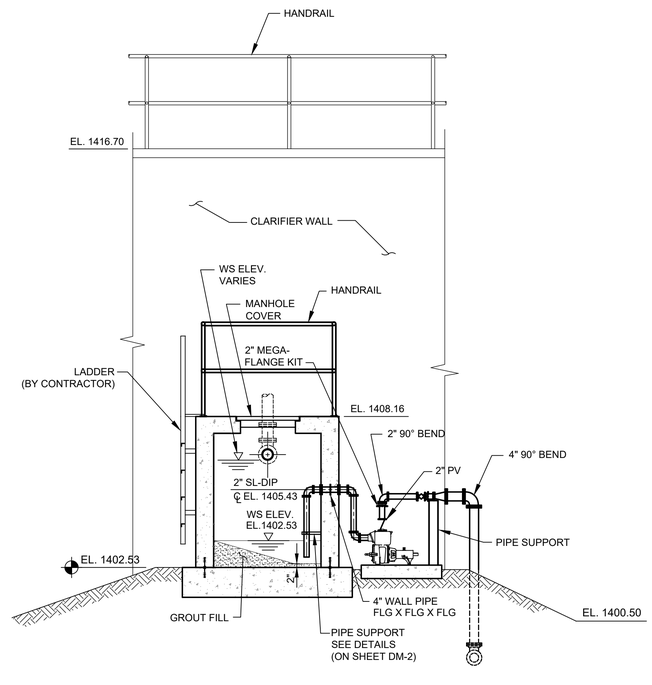
2 5-M-2 DETAIL 3/8" = 1'-0"



1 5-M-2 DETAIL 3/8" = 1'-0"



4 5-M-2 DETAIL N.T.S.



A 5-M-2 SECTION 3/8" = 1'- 0"

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 039453 JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

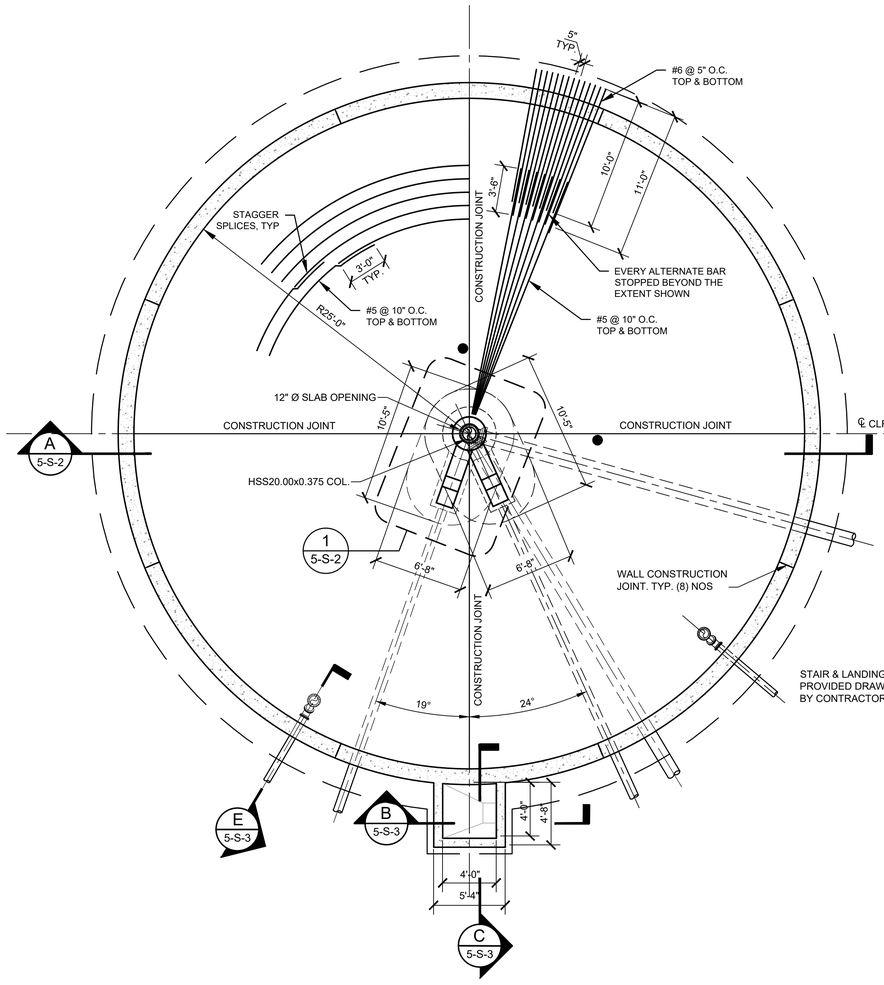
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIER SECTIONS

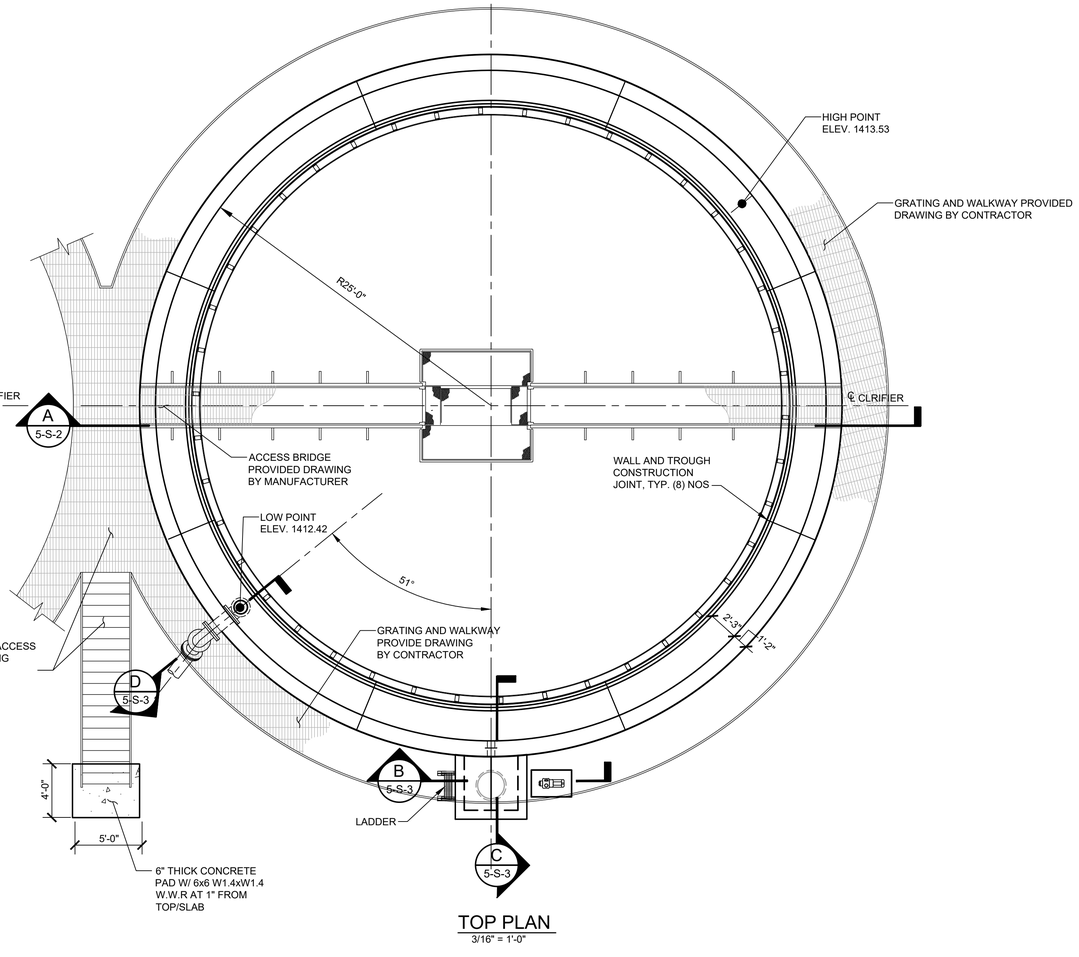
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
5-M-2.dwg

Sheet No.
5-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 05 - Secondary Clarifiers\5-M-2.dwg 08/01/2025 1:38pm aencarnacion



BOTTOM PLAN
3/16" = 1'-0"



TOP PLAN
3/16" = 1'-0"

HANDRAIL NOTE:
CONTRACTOR SHALL ELIMINATE HANDRAIL ON THE STRUCTURES WHERE THE TOP OF WALL IS GREATER THAN 3'-6" ABOVE FINISHED GRADE, EXCEPT WHERE ACCESS TO TOP OF STRUCTURE IS REQUIRED.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RIZZO ENGINEERING + ENVIRONMENTAL

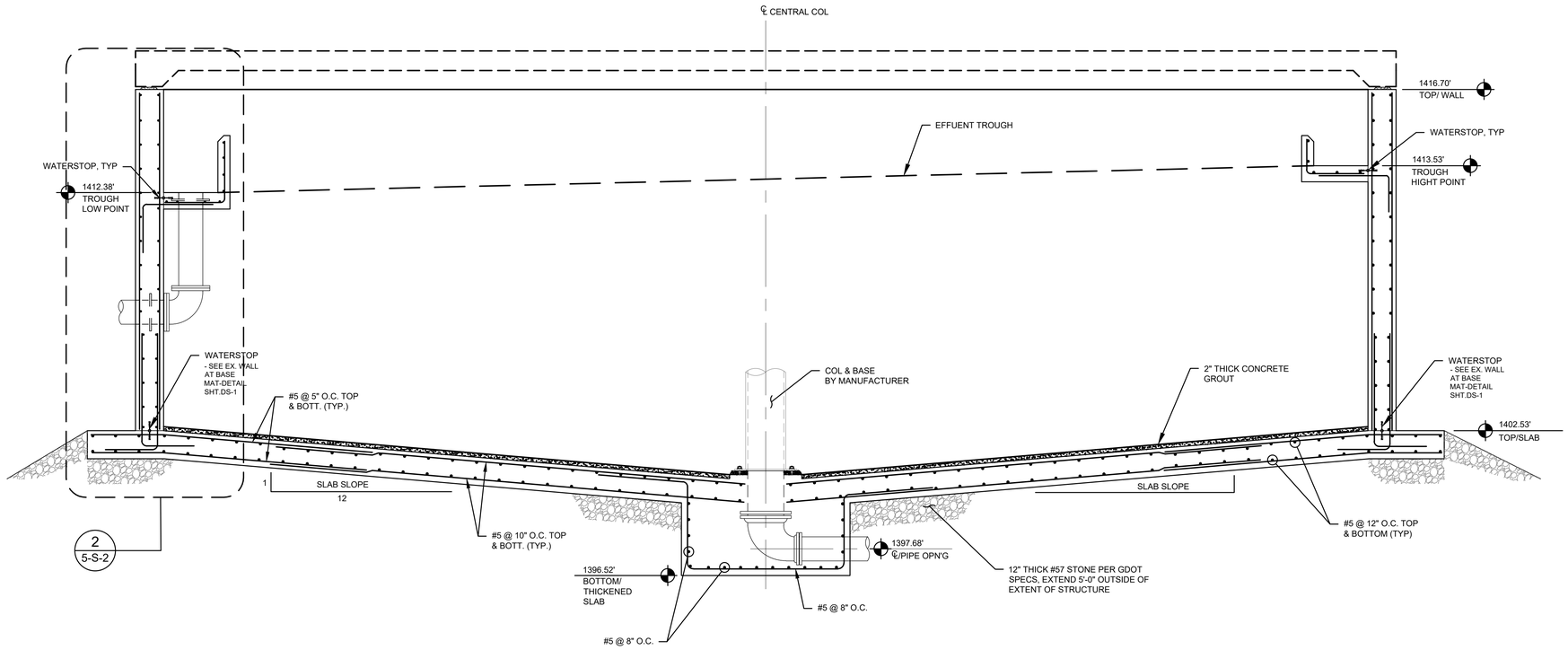
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIER BOTTOM PLAN

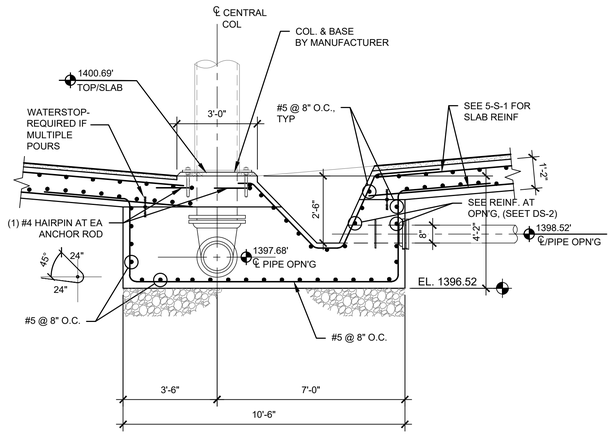
Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2022
	5-S-1.dwg

Sheet No.
5-S-1

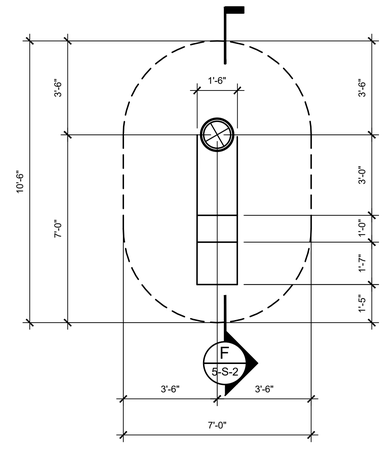
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 05 - Secondary Clarifiers\5-S-1.dwg 08/01/2025 1:31pm aencarnacion



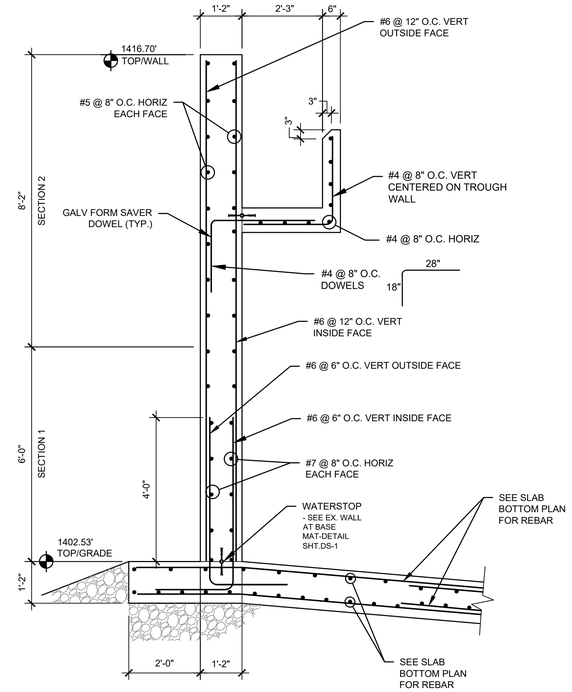
A 5-S-2 SECTION
3/8 = 1'-0"



F 5-S-2 SECTION
3/8 = 1'-0"



1 5-S-2 DETAIL
3/8 = 1'-0"



2 5-S-2 DETAIL
1/2 = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

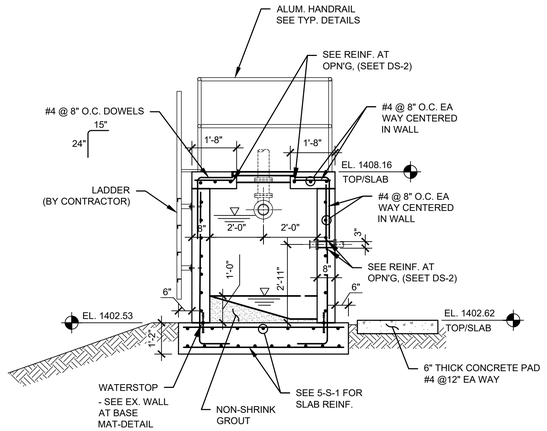
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIER SECTION & DETAIL

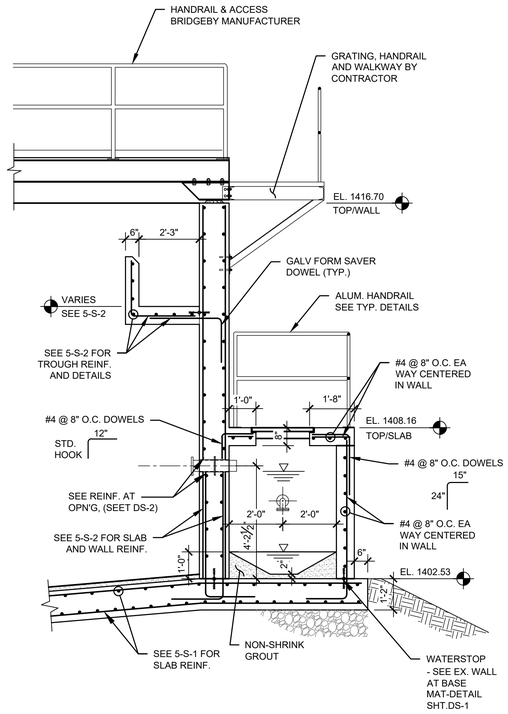
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
5-S-2.dwg

Sheet No.
5-S-2

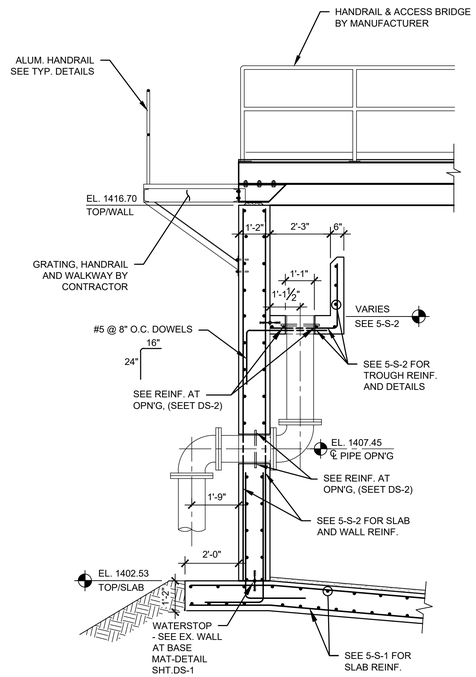
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 05 - Secondary Clarifiers\5-S-2.dwg 08/01/2025 1:32pm aencarnacion



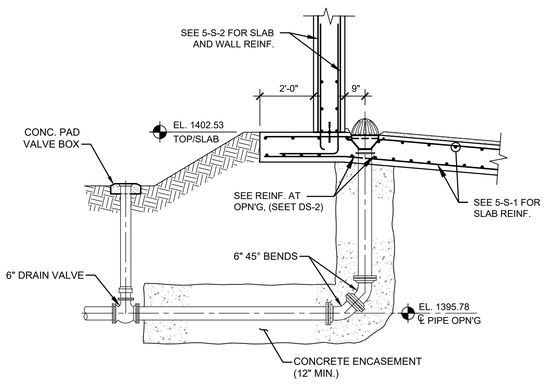
B 5-S-3 SECTION 1/2" = 1'-0"



C 5-S-3 SECTION 1/2" = 1'-0"



D 5-S-3 SECTION 1/2" = 1'-0"



E 5-S-3 SECTION 1/2" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

PRINCIPAL ENGINEERING + ENVIRONMENTAL

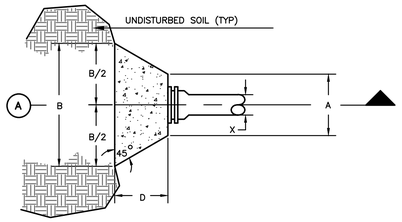
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SECONDARY CLARIFIER SECTIONS & DETAILS

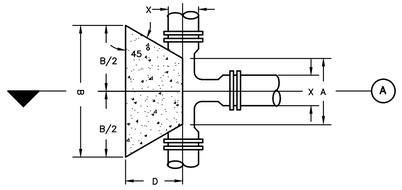
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
5-S-3.dwg

Sheet No.
5-S-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 05 - Secondary Clarifiers\5-S-3.dwg 08/01/2025 1:32pm aencarnacion



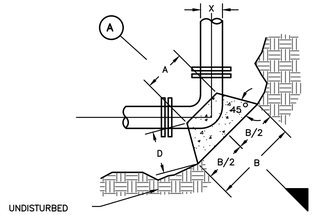
UNBALANCED TEE OR PLUG – PLAN



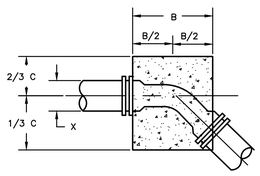
TEE – PLAN

THRUST BLOCKING

NTS



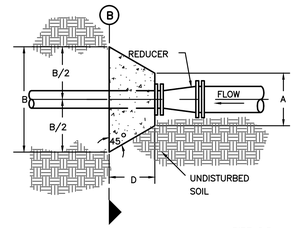
HORIZONTAL BEND – PLAN



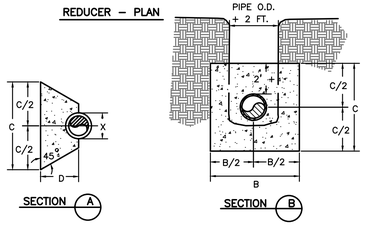
VERTICAL BEND – ELEVATION

THRUST BLOCKING

NTS



REDUCER – PLAN



THRUST BLOCKING

NTS

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
90 DEGREE BEND				
24"	2'-7"	7'-0"	7'-0"	4'-6"
20"	2'-1"	6'-0"	6'-0"	3'-9"
18"	1'-11"	5'-6"	5'-6"	3'-6"
16"	1'-9"	5'-0"	5'-0"	3'-3"
14"	1'-7"	4'-0"	4'-0"	2'-6"
12"	1'-4"	3'-6"	3'-6"	2'-3"
10"	1'-3"	3'-0"	3'-0"	2'-0"
8"	1'-0"	2'-6"	2'-6"	1'-9"
6"	0'-11"	1'-9"	1'-9"	1'-6"
4"	0'-9"	1'-3"	1'-3"	1'-3"
45 DEGREE BEND				
24"	2'-4"	5'-6"	5'-0"	3'-9"
20"	1'-11"	4'-6"	4'-0"	3'-0"
18"	1'-9"	4'-0"	4'-0"	2'-9"
16"	1'-7"	3'-6"	3'-6"	2'-3"
14"	1'-3"	3'-0"	3'-0"	2'-0"
12"	1'-3"	3'-0"	2'-6"	2'-0"
10"	1'-3"	2'-6"	2'-0"	1'-9"
8"	1'-0"	1'-9"	1'-9"	1'-3"
6"	0'-11"	1'-6"	1'-6"	1'-0"
4"	0'-9"	1'-0"	1'-0"	1'-0"

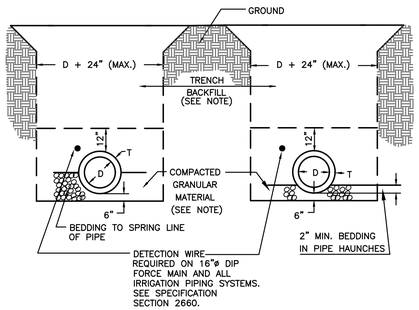
Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
11 1/4 DEGREE BEND				
24"	1'-9"	2'-9"	2'-9"	1'-0"
20"	1'-6"	2'-3"	2'-3"	1'-0"
18"	1'-4"	2'-0"	2'-0"	1'-0"
16"	1'-3"	1'-9"	1'-9"	1'-0"
14"	1'-2"	1'-6"	1'-6"	1'-0"
12"	1'-2"	1'-6"	1'-6"	1'-0"
10"	1'-0"	1'-3"	1'-3"	1'-0"
8"	0'-10"	1'-0"	1'-0"	1'-0"
6"	0'-9"	1'-0"	1'-0"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"
22 1/2 DEGREE BEND				
24"	2'-0"	3'-6"	3'-6"	2'-6"
20"	1'-8"	3'-0"	3'-0"	1'-9"
18"	1'-6"	2'-9"	2'-9"	1'-6"
16"	1'-5"	2'-6"	2'-6"	1'-3"
14"	1'-4"	2'-3"	2'-3"	1'-0"
12"	1'-2"	2'-0"	2'-0"	1'-0"
10"	1'-0"	1'-9"	1'-9"	1'-0"
8"	0'-10"	1'-6"	1'-6"	1'-0"
6"	0'-9"	1'-3"	1'-3"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
Unbalanced Tee & Plug				
24"	2'-10"	6'-0"	6'-0"	2'-9"
20"	2'-5"	5'-0"	5'-0"	2'-3"
18"	2'-3"	4'-6"	4'-6"	2'-0"
16"	2'-1"	4'-0"	4'-0"	1'-9"
14"	1'-11"	3'-6"	3'-6"	1'-6"
12"	1'-8"	3'-0"	3'-0"	1'-3"
10"	1'-6"	2'-6"	2'-6"	1'-0"
8"	1'-4"	2'-0"	2'-0"	1'-0"
6"	1'-2"	1'-6"	1'-6"	1'-0"
4"	1'-0"	1'-0"	1'-0"	1'-0"
Tee				
24"	2'-6"	6'-0"	6'-0"	3'-6"
20"	2'-4"	5'-0"	5'-0"	3'-0"
18"	1'-2"	4'-6"	4'-6"	2'-9"
16"	1'-0"	4'-0"	4'-0"	2'-6"
14"	1'-0"	3'-6"	3'-6"	2'-3"
12"	1'-3"	3'-0"	3'-0"	2'-0"
10"	1'-3"	2'-6"	2'-6"	1'-6"
8"	1'-0"	2'-0"	2'-0"	1'-6"
6"	0'-11"	1'-6"	1'-6"	1'-3"
4"	0'-10"	1'-0"	1'-0"	1'-0"

NOTES :
1. BLOCKING SHALL BE CLASS 'C' CONCRETE ; 'SACKCRETE' WILL NOT BE ALLOWED.
2. THE WATER LINE MUST BE LOWERED IN ORDER TO HAVE FIVE FEET (5') OF COVER AT THE BEND, TEE, REDUCER OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS MAY BE UTILIZED.
3. THE CONTRACTOR HAS THE OPTION TO USE RESTRAINED JOINTS IN LIEU OF OR IN ADDITION TO CONCRETE BLOCKING AS SPECIFIED IN SECTION 02660 OF THE SPECIFICATIONS.

THRUST BLOCKING

NTS

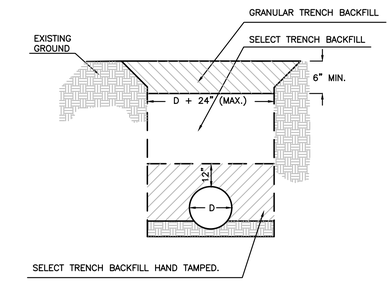


CLASS "B" BEDDING CLASS "C" BEDDING

NOTE:
SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR BEDDING METHODS AND BEDDING MATERIALS.
SEE STANDARD DETAILS PL46, PL47 AND PL48.

BEDDING DETAIL

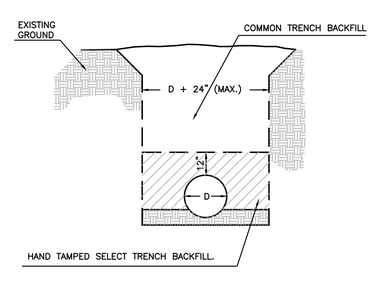
NTS



NOTES:
1. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR TRENCH BACKFILLING METHODS.
2. SEE SPECIFICATIONS SECTION 02200(EARTHWORK) FOR TRENCH BACKFILLING MATERIALS.
3. ALL BACKFILL FROM TOP OF BEDDING SHALL BE COMPACTED TO 95% OF MAX. DENSITY AT OPTIMUM MOISTURE CONTENT IN 8" LIFTS.
4. THIS DETAIL IS TO BE USED IN PAVEMENT AREAS.

CLASS III BACKFILL

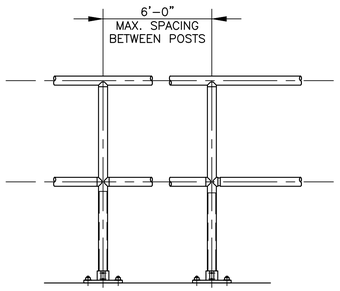
NTS



NOTES:
1. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR TRENCH BACKFILLING METHODS.
2. SEE SPECIFICATIONS SECTION 02200(EARTHWORK) FOR TRENCH BACKFILLING MATERIALS.
3. ALL BACKFILL FROM TOP OF BEDDING SHALL BE SUFFICIENTLY COMPACTED TO PREVENT FUTURE SETTLEMENT.

CLASS IV BACKFILL

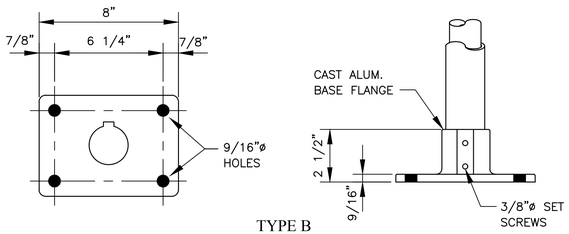
NTS



TYPE B

TYPICAL HANDRAIL

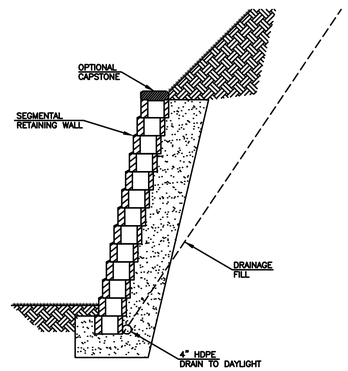
NTS



TYPE B

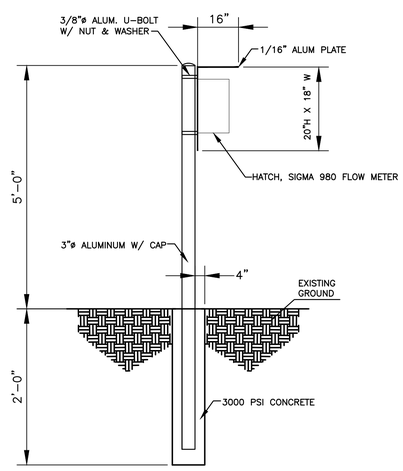
TWO RAIL HANDRAIL

NTS



SEGMENTAL RETAINING WALL SYSTEM

NTS



NOTES :
1. UNIT MAY BE MOUNTED ON HANDRAIL
2. ELECTRICAL POWER TO BE 2 AMP, 1ø, 110V FROM EXISTING INFLUENT STRUCTURE.
3. FLOW METER TO BE HACH SIGMA 980 W/ ULTRASONIC TRANSDUCER.

FLOW METER SUPPORT DETAIL

NTS

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1-800-282-7411
(770) 623-4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER

IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street - Marietta, GA. 30060
Phone No. (770) 427-8123
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
INFLUENT FLUME AND BAR SCREEN

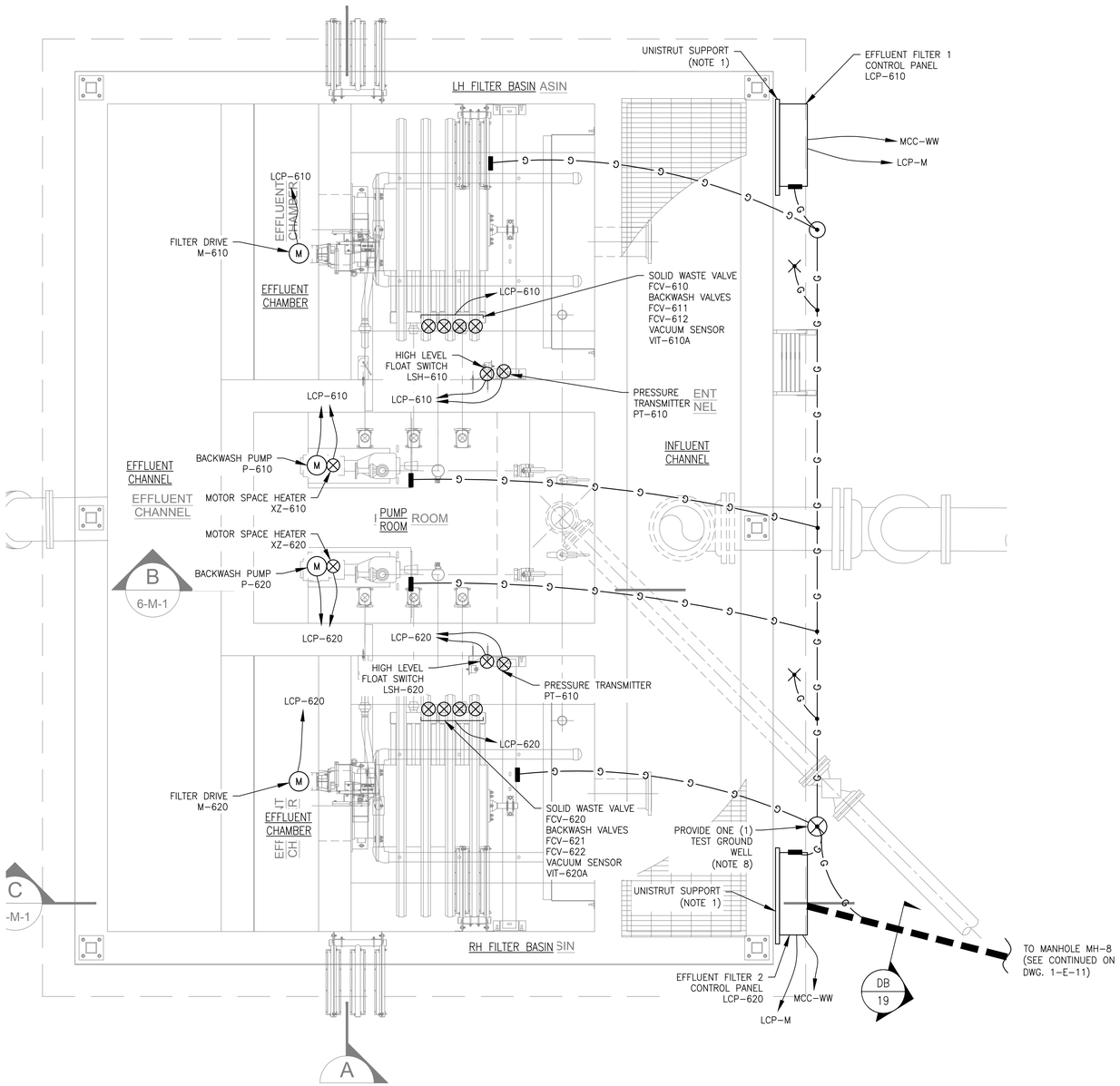
CONSTRUCTION DETAILS

No.	Revisions	Date

Drawn: EED
Design: KFK/AOM
Checked: KFK/BAR
Project No: R2007-222
Scale: NTS
Date: 12/6/07

Sheet No.
6 of 7

M:\Projects\Archive\2007\R2007-222\dwg\07-222-PartshallDetails2.dwg 01/21/2020 4:30pm mnbugua



1 EFFLUENT FILTER ELECTRICAL PLAN

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

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL A UNISTRUT SUPPORTS FOR MOUNTING EFFLUENT FILTERS 1 & 2 CONTROL PANELS. REFER TO DETAIL 2 ON DWG. DE-1 FOR INSTALLATION DETAILS.
2. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
3. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
4. CONTRACTOR SHALL GROUND ALL METAL STRUCTURES/SURFACES TO THE LOCAL GROUND GRIT.
5. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

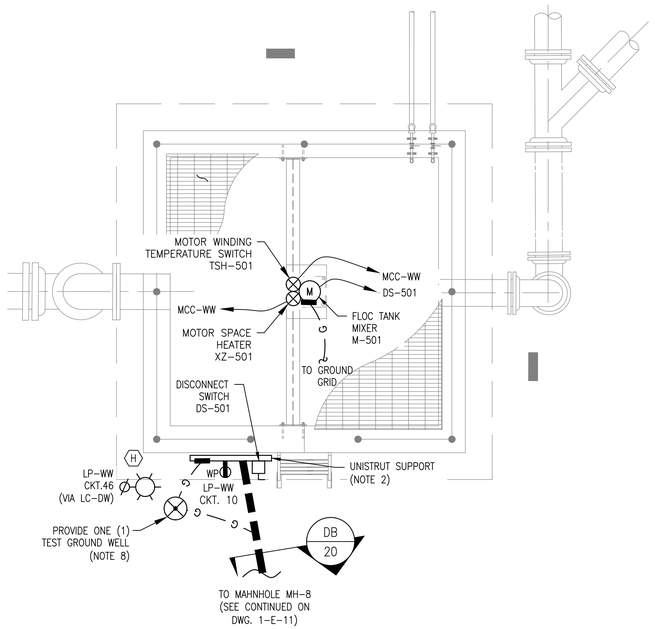
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFLUENT FILTERS
ELECTRICAL PLAN

Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
6-E-1



1 FLOC/MIX ELECTRICAL PLAN

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

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT FOR INSTALLATION OF ELECTRICAL EQUIPMENT SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL MANHOLE AS SHOWN ON PLAN. SEE DETAIL 1 ON DRAWING DE-3 FOR INSTALLATION DETAILS.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
5. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
6. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS.
8. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
9. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR HEAT TRACE POWER CABLES. CONTRACTOR SHALL COORDINATE THE EXACT HEAT TRACE JUNCTION BOX LOCATION IN THE FIELD. CONTRACTOR SHALL ADJUST FEEDER BREAKER ASSOCIATED CABLE AND CONDUIT BASED ON THE ACTUAL HEAT TRACE LOAD REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS,

LEGEND:

▬ ▬ ▬ ▬ – DIRECT BURIED UNDERGROUND DUCTBANK

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

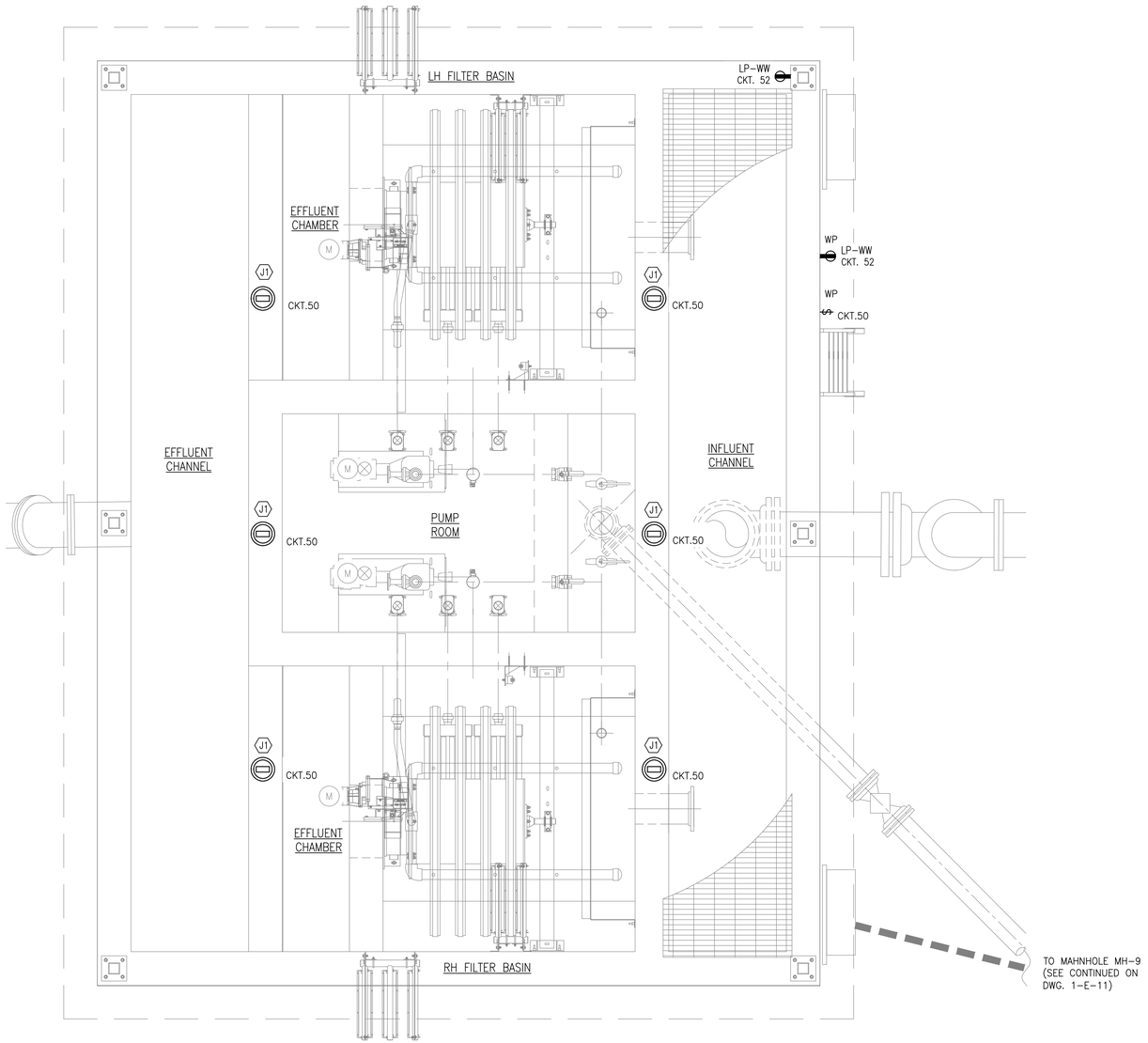
RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

FLOCCULATION TANK
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
6-E-2



1 EFFLUENT FILTER RECEPTACLES AND LIGHTING PLAN

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

GRAPHIC SCALE GRAPHIC SCALE

2 0 1 2 4 1 2 4 8

(IN FEET) 1/2 inch = 1 ft.

(IN FEET) 1/2 inch = 1 ft.

LEGEND:

– – – – – DIRECT BURIED UNDERGROUND DUCTBANK

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

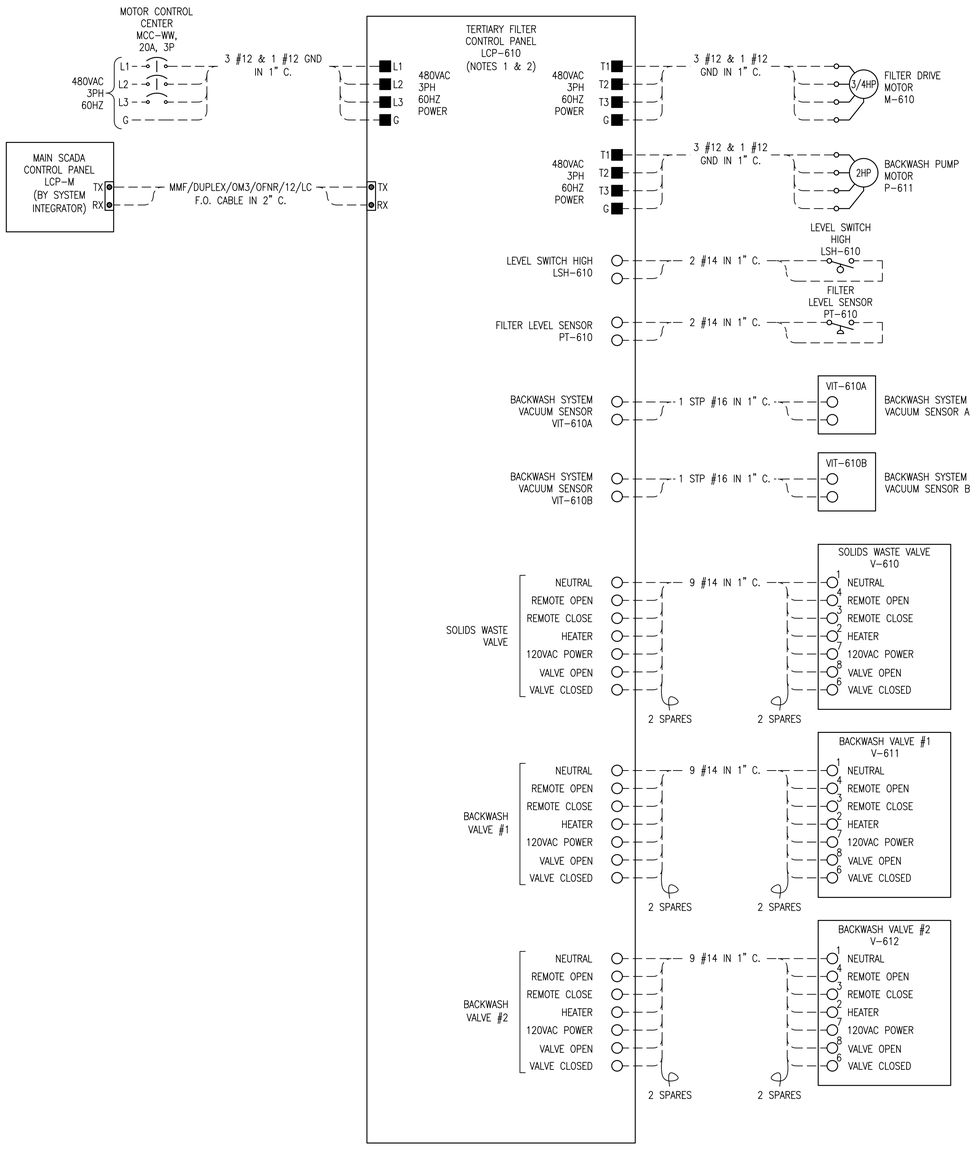
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFLUENT FILTER
RECEPTACLES AND LIGHTING PLAN

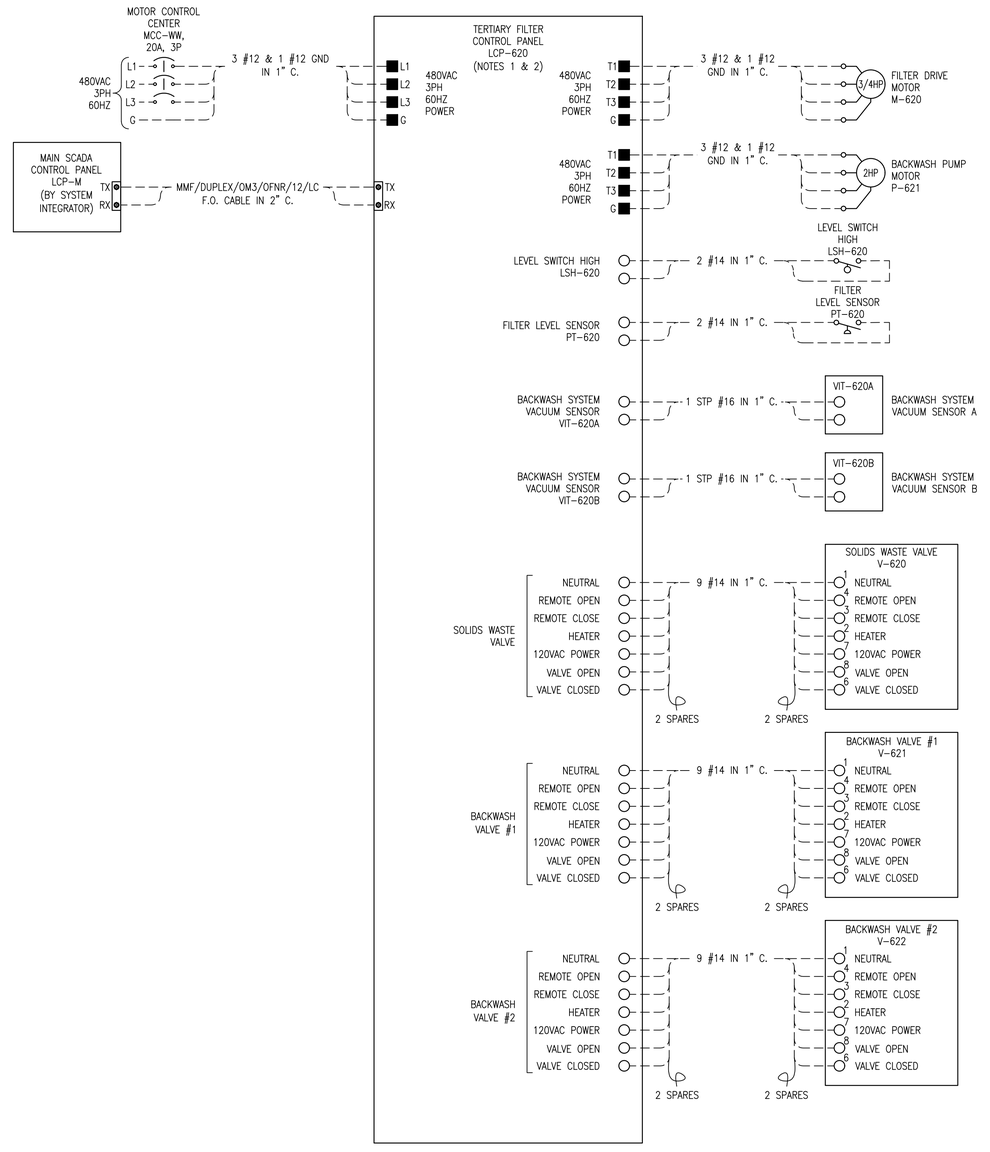
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
6-E-3



1 EFFLUENT FILTER 1 CONTROL PANEL LCP–610 SCHEMATIC



1 EFFLUENT FILTER 2 CONTROL PANEL LCP–620 SCHEMATIC

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL

NOTES:

1. SEE DRAWING I–100 FOR PLANT SCADA BLOCK DIAGRAM AND P&ID DRAWING I–6 FOR INTERFACE REQUIREMENTS.

2. CONTRACTOR SHALL FURNISH AND INSTALL EFFLUENT FILTER CONTROL PANELS WITH NEMA 4X SS ENCLOSURE WHICH INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
   - A. TWO (2) FULL VOLTAGE NON–REVERSE (FVNR) STARTERS WITH MOTOR CIRCUIT PROTECTORS SIZED FOR FILTER DRIVE AND FILTER BACKWASH PUMP MOTORS.
   - B. MAIN 20A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SYSTEM OPERATION.
   - C. 2 kVA, 480/120V CONTROL POWER TRANSFORMER (SIZE AS NECESSARY TO ACCOMMODATE ALL 120V LOADS)
   - D. ALLEN–BRADLEY COMPACTLOGIX PLC TO ACCOMMODATE ALL THE I/O'S SHOWN ON SCHEMATIC WIRING DIAGRAMS PLUS 20% SPARES
   - H. ETHERNET SWITCH WITH FIBER PORTS
   - I. LIGHTNING ARRESTOR
   - J. OPERATOR INTERFACE
   - K. 30.5MM PUSHBUTTONS AND SELECTOR SWITCHED MOUNTED ON THE FRONT OF CONTROL PANEL DOOR FOR MANUAL OPERATION OF THE FILTER
   - L. 30.5MM PILOT LIGHTS AND ILLUMINATED PUSHBUTTONS FOR INDICATION OF AN OPERATION STATUS
   - M. UNINTERRUPTIBLE POWER SUPPLY (UPS)
   - N. GFCI DUPLEX RECEPTACLE
   - O. 24VDC POWER SUPPLY
   - P. STRIP HEATER, FAN AND THERMOSTAT
   - Q. RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES ETC. AS REQUIRED

   CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR EFFLUENT FILTERS CONTROL PANELS COMPONENTS AS REQUIRED BY ACCEPTED VENDOR SHOP DRAWINGS

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

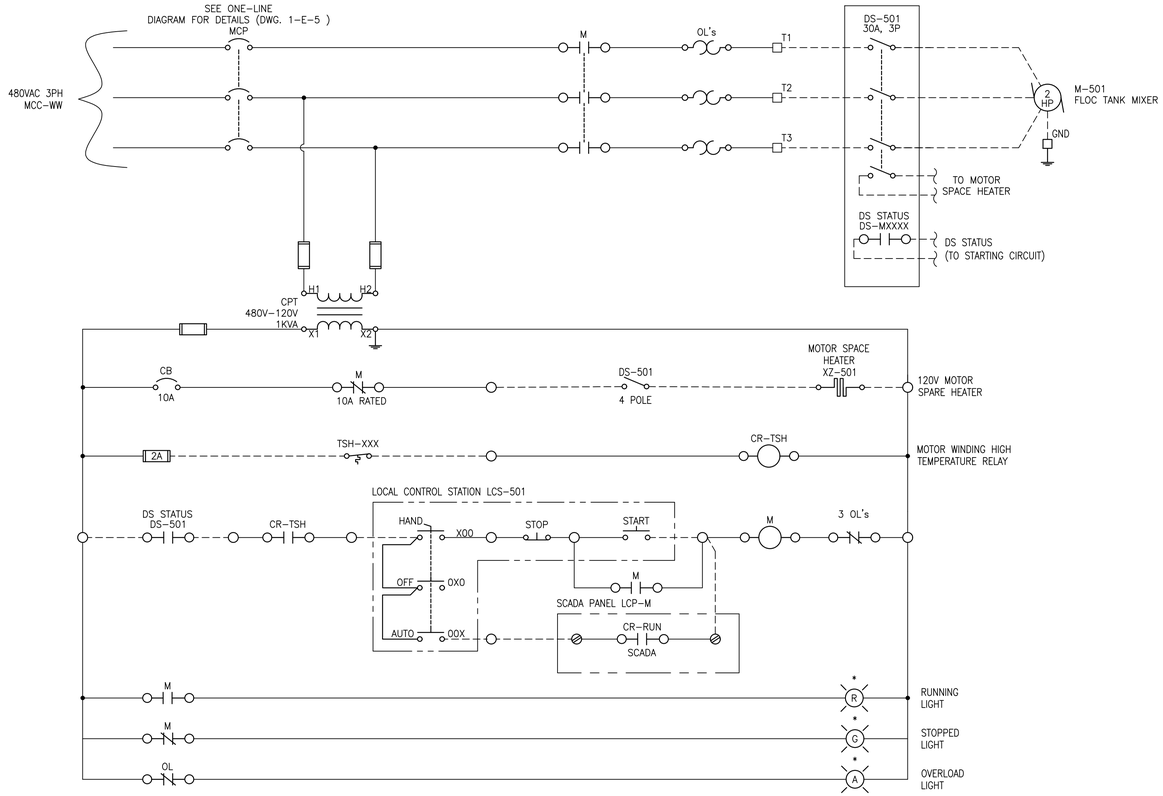
RINCON ENGINEERING • ENVIRONMENTAL

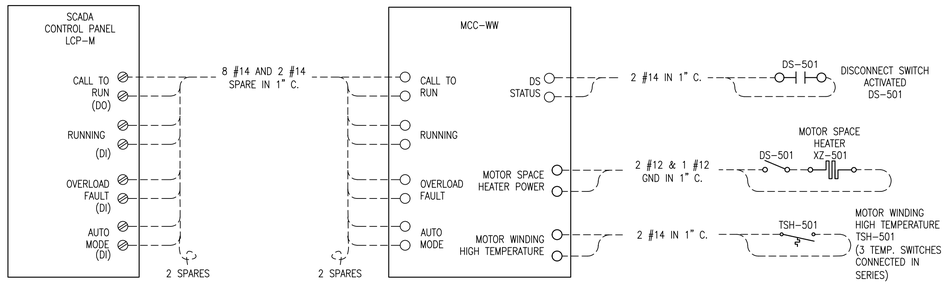
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFLUENT FILTER
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

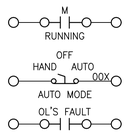
Sheet No.
6-E-4





2 FLOC TANK MIXER MOTOR STARTER CONTROL RISER DIAGRAM

AUXILIARY CONTACTS:



1 FLOC TANK MIXER MOTOR STARTER SCHEMATIC

LEGEND:

- □ – MCC POWER TERMINAL
- ○ – MCC CONTROL TERMINAL
- △ – LOCAL CONTROL PANEL TERMINAL
- ⊘ – SCADA PANEL TERMINAL
- ■ – DEVICE TERMINAL

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

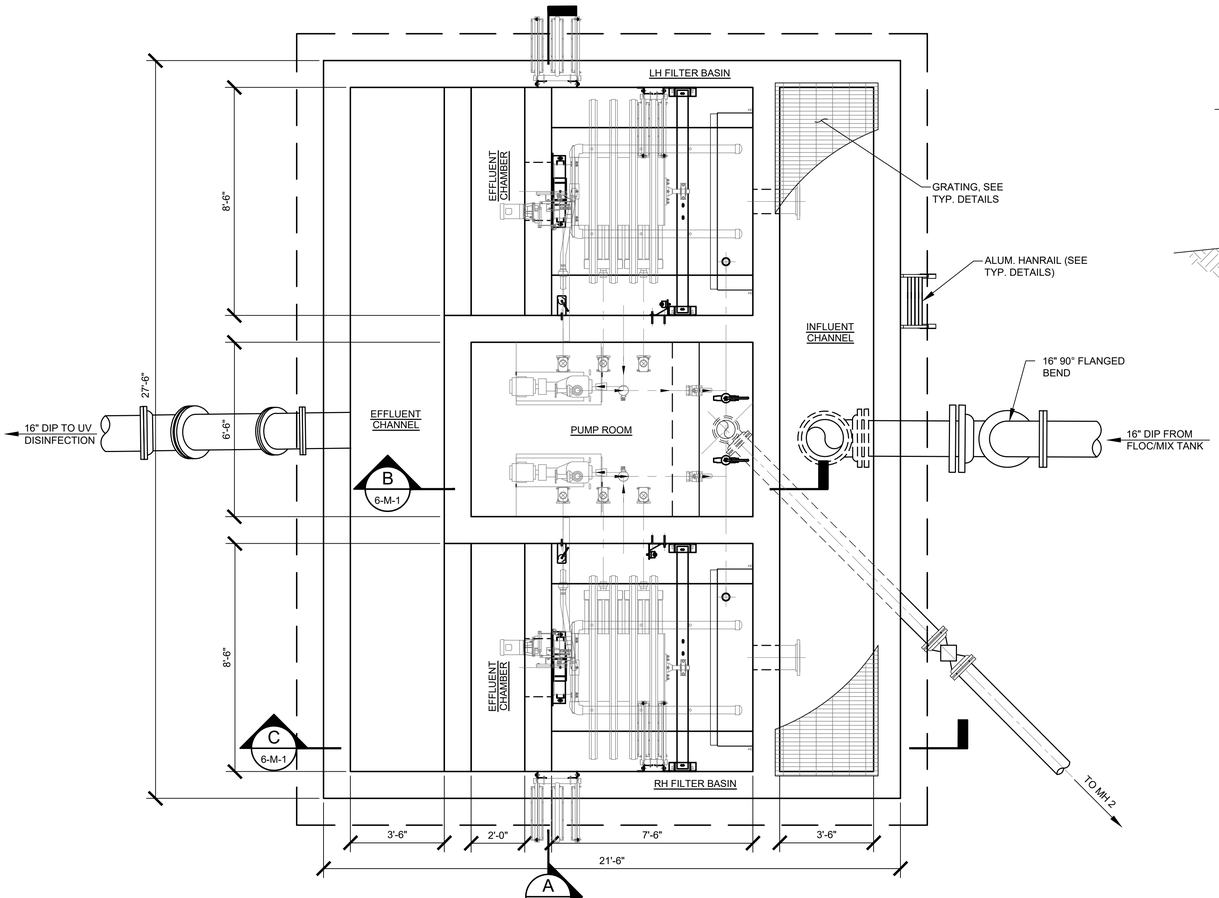
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

FLOCCULATION TANK
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

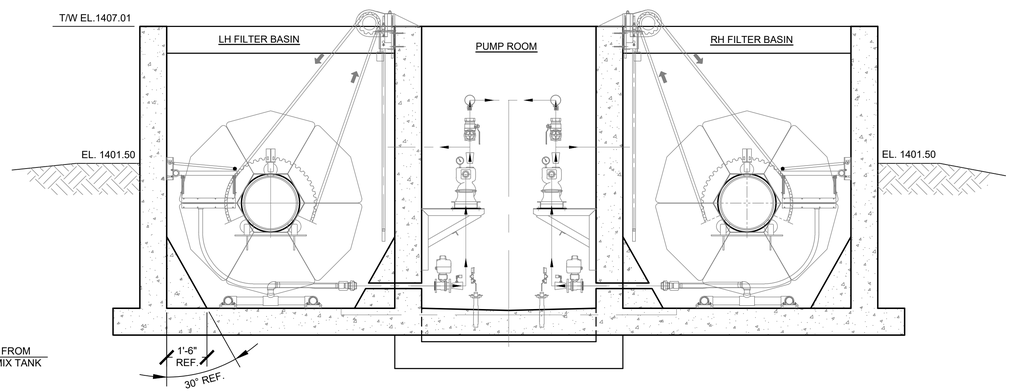
Sheet No.
6-E-5

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



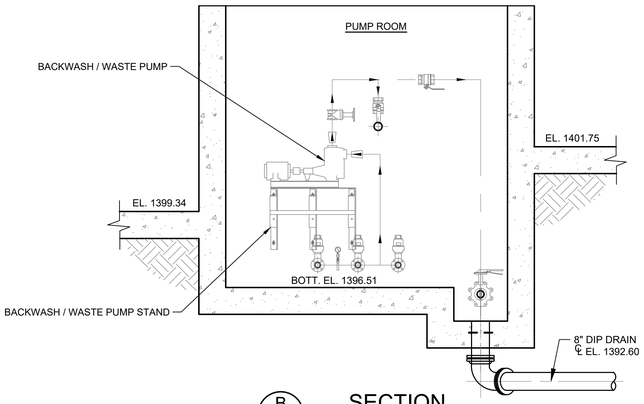
PLAN

3/8"=1'-0"



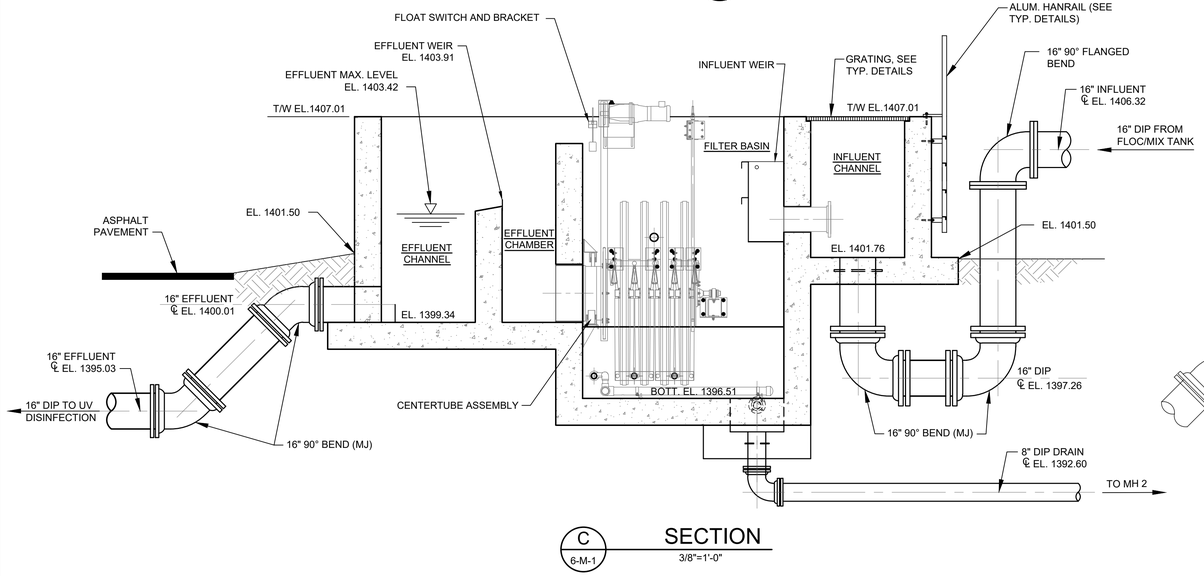
A 6-M-1 SECTION

3/8"=1'-0"



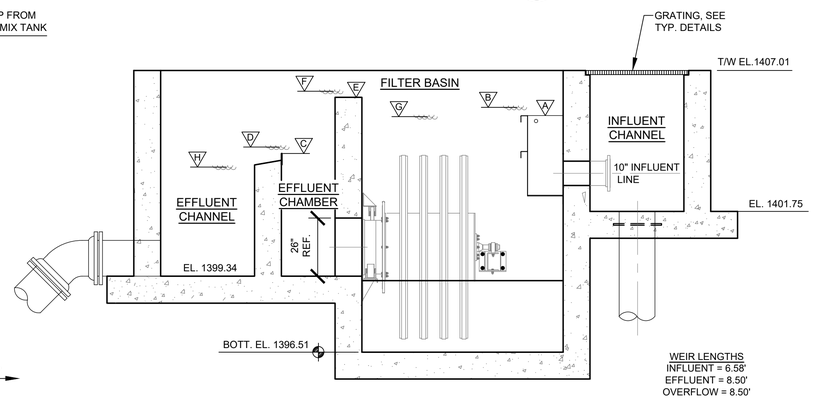
B 6-M-1 SECTION

3/8"=1'-0"



C 6-M-1 SECTION

3/8"=1'-0"



HYDRAULIC PROFILE

3/8"=1'-0"

ELEVATION

A	8.82'	INFLUENT WEIR ELEVATION
B	8.99'	NAPPE OVER INFLUENT WEIR AVERAGE FLOW
	9.09'	NAPPE OVER INFLUENT WEIR MAXIMUM FLOW
C	7.41'	EFFLUENT WEIR ELEVATION
D	7.55'	NAPPE OVER EFFLUENT WEIR AVERAGE FLOW
	7.63'	NAPPE OVER EFFLUENT WEIR MAXIMUM FLOW
E	9.50'	OVERFLOW WEIR ELEVATION
F	9.64'	NAPPE OVER OVERFLOW WEIR AVERAGE FLOW
	9.73'	NAPPE OVER OVERFLOW WEIR MAXIMUM FLOW
G	8.78'	BACKWASH START LEVEL
H	6.91'	MAXIMUM AVAILABLE LIQUID LEVEL FOR EFFLUENT CONVEYANCE

WEIR LENGTHS
INFLUENT = 6.58'
EFFLUENT = 8.50'
OVERFLOW = 8.50'

BASED UPON AVERAGE FLOW RATE OF 3.25 GPM PER SQUARE FOOT (1.0 MGD)
BASED UPON MAXIMUM FLOW RATE OF 6.5 GPM PER SQUARE FOOT (2.0 MGD)

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

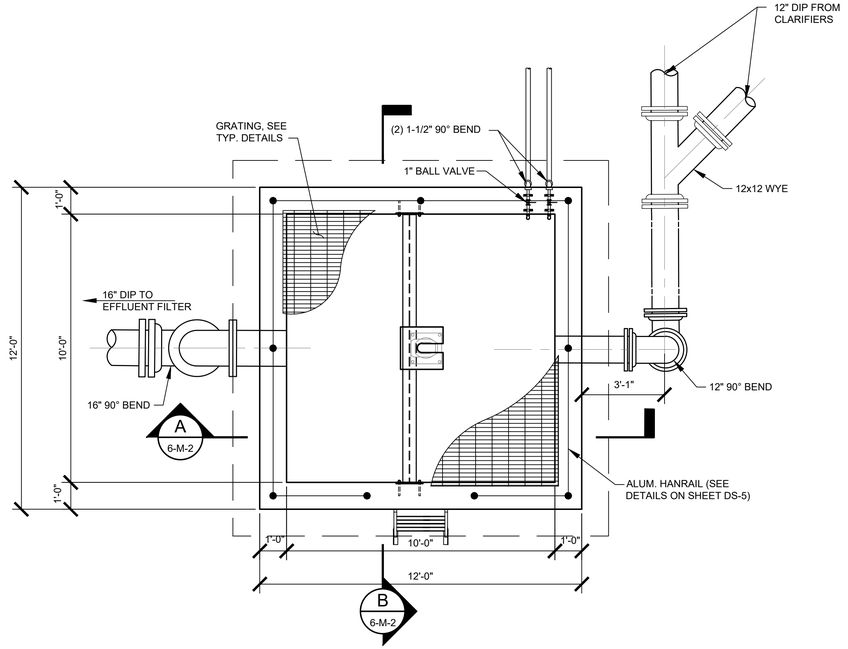
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFUENT FILTER PLAN AND SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
6-M-1-Filter Plan and Section.dwg

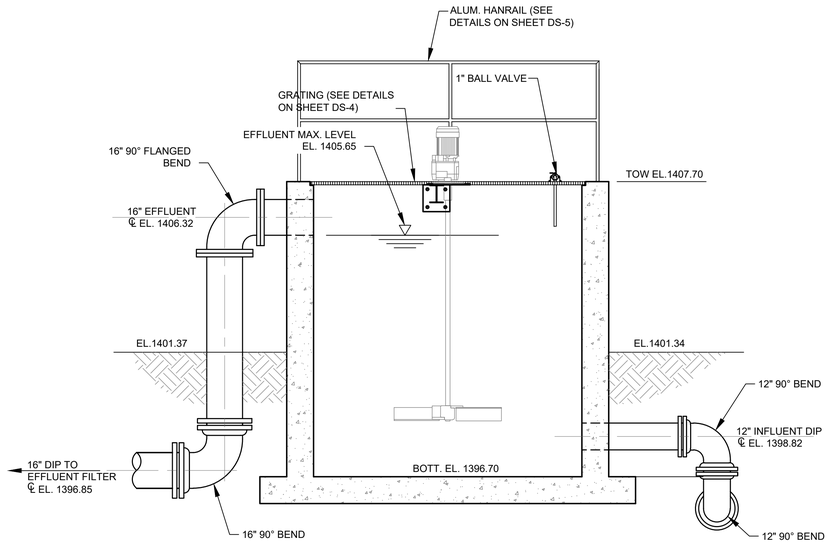
Sheet No.
6-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 06 - Effluent Filter\6-M-1-Filter Plan and Section.dwg 08/01/2025 1:42pm aencarnacion



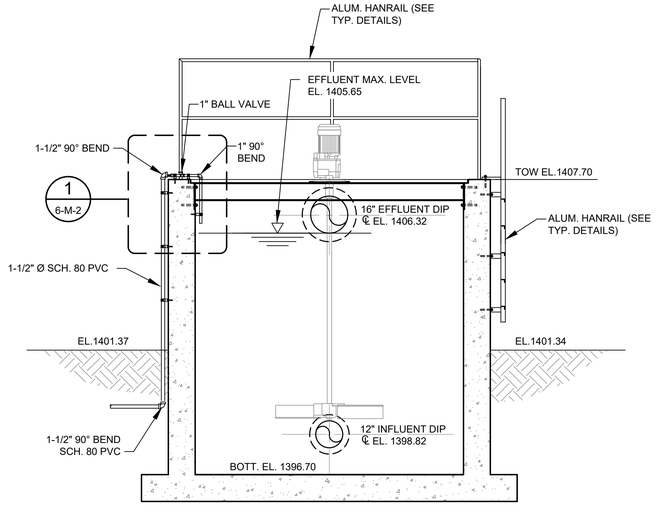
PLAN

3/8"=1'-0"



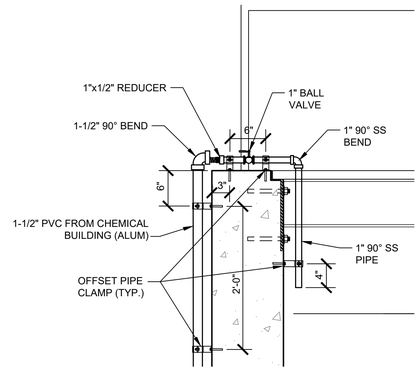
A
6-M-2
SECTION

3/8"=1'-0"



B
6-M-2
SECTION

3/8"=1'-0"



1
6-M-2
DETAIL

1" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

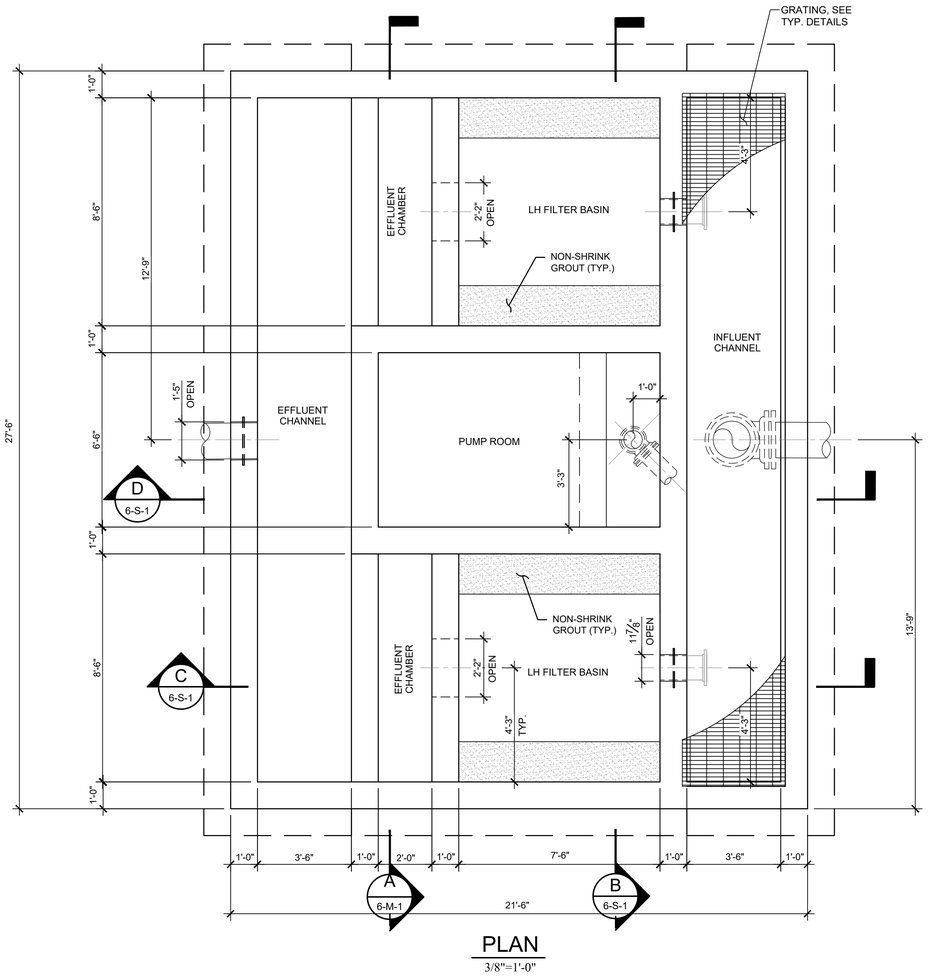
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

FLOC / MIX PLAN SECTIONS AND DETAIL

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
6-M-2-Floc-Mix Plan and Section.dwg

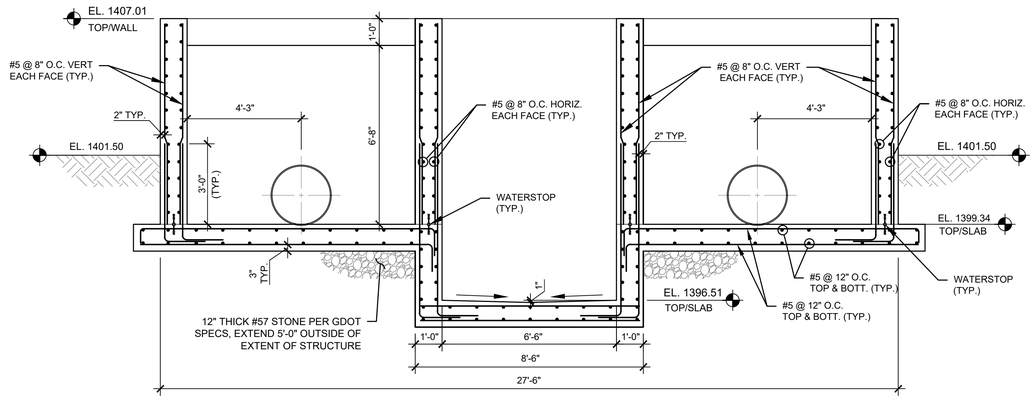
Sheet No.
6-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 06 - Effluent Filter\6-M-2-Floc-Mix Plan and Section.dwg 08/01/2025 1:41pm aencarnacion



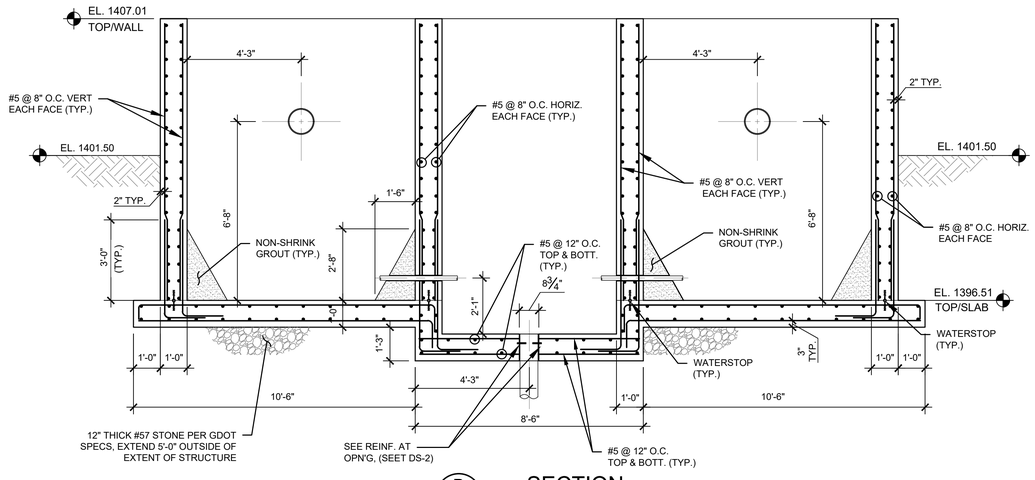
PLAN

3/8"=1'-0"



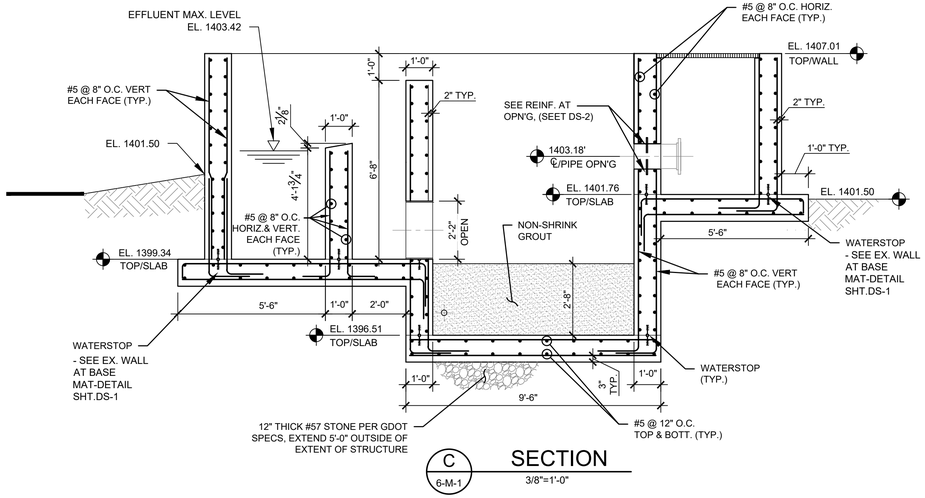
A 6-S-1 SECTION

3/8"=1'-0"



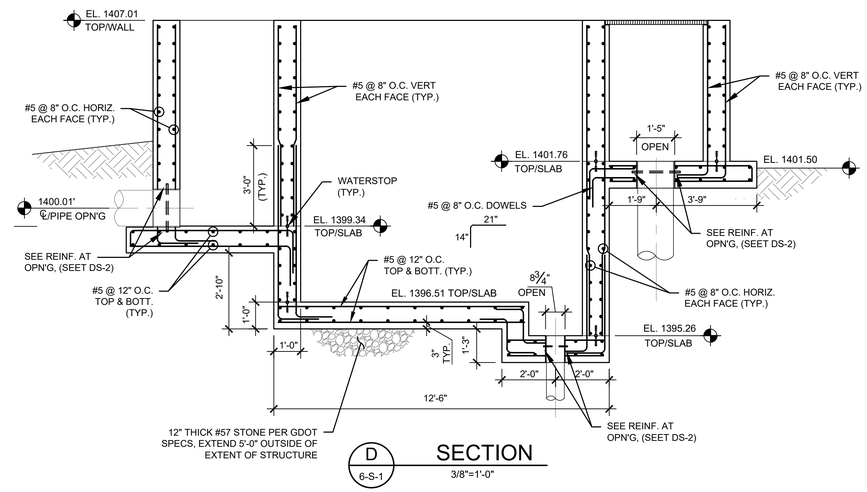
B 6-S-1 SECTION

3/8"=1'-0"



C 6-M-1 SECTION

3/8"=1'-0"



D 6-S-1 SECTION

3/8"=1'-0"

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

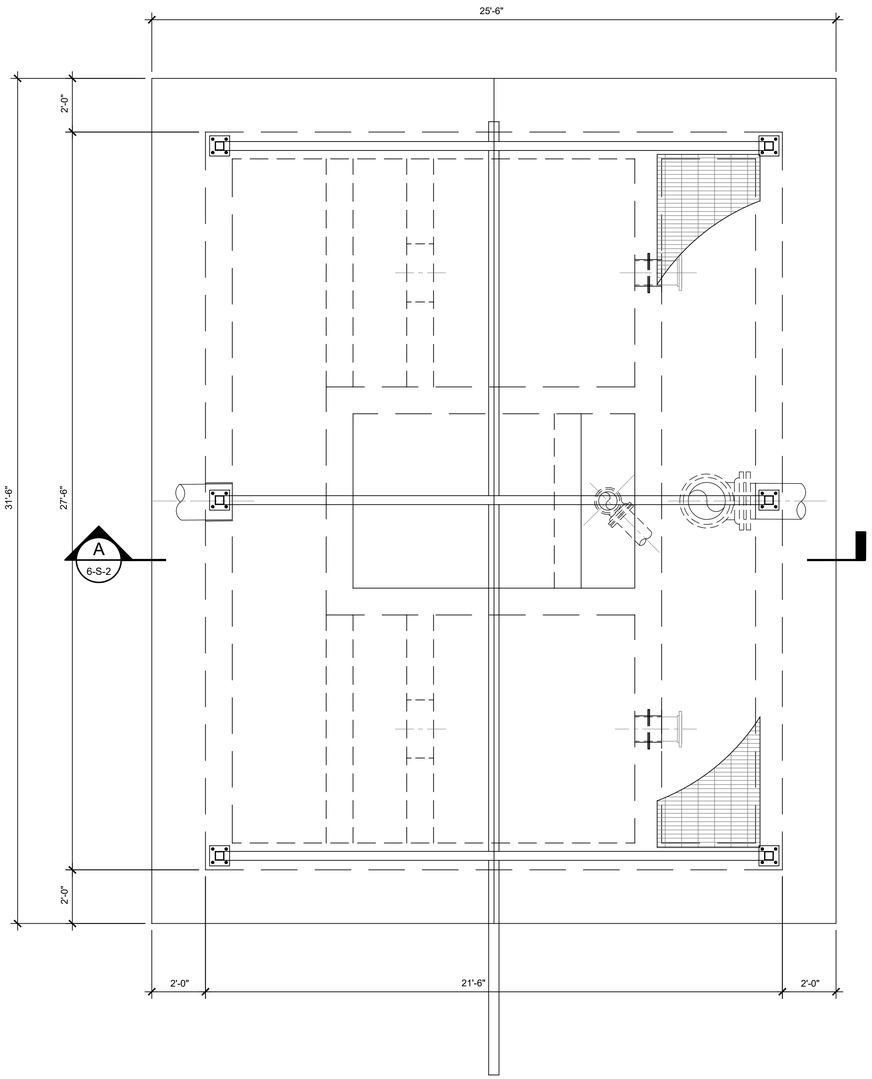
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFUENT FILTER PLAN AND SECTIONS

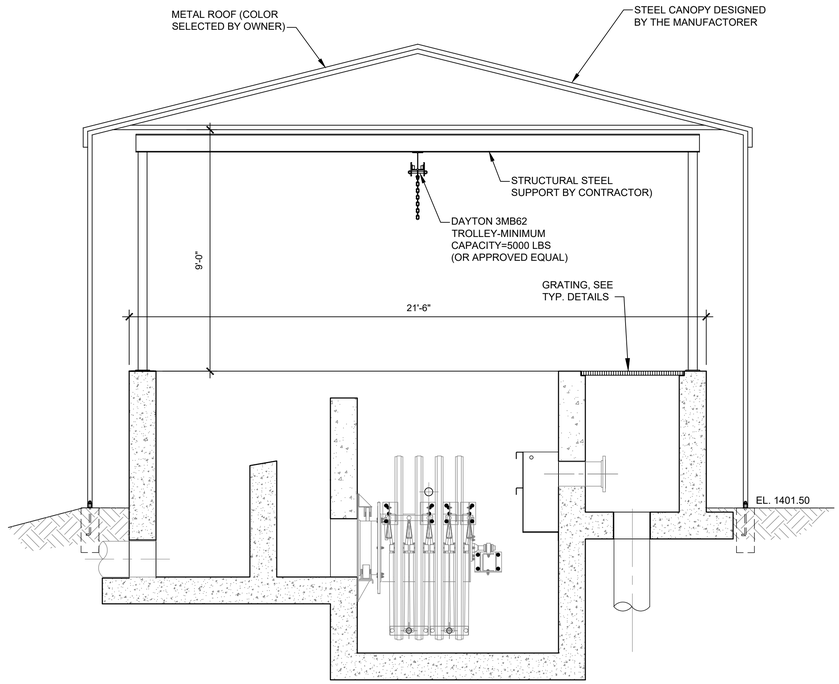
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
6-S-1&2-Filter Plan and Section.dwg

Sheet No.
6-S-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\05 Drawings\Area 06 - Effluent Filter\6-S-1&2-Filter Plan and Section.dwg 08/01/2025 1:39pm aericamacion



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



A
6-S-2
SECTION
1/2" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

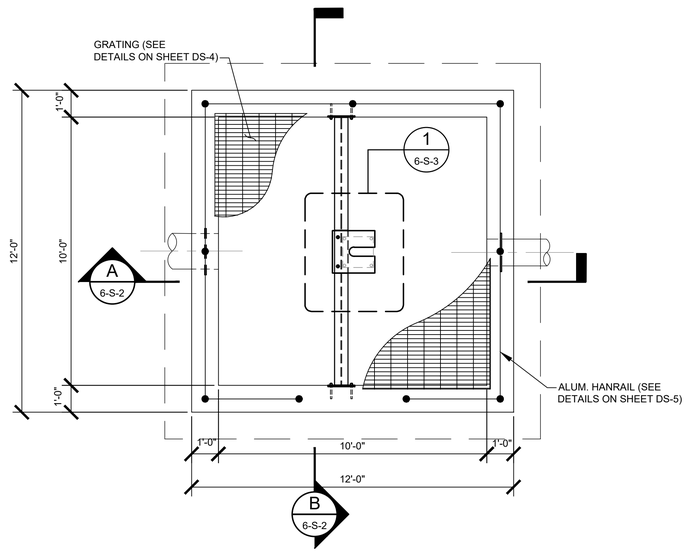
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EFFUENT FILTER ROOF PLAN AND SECTIONS

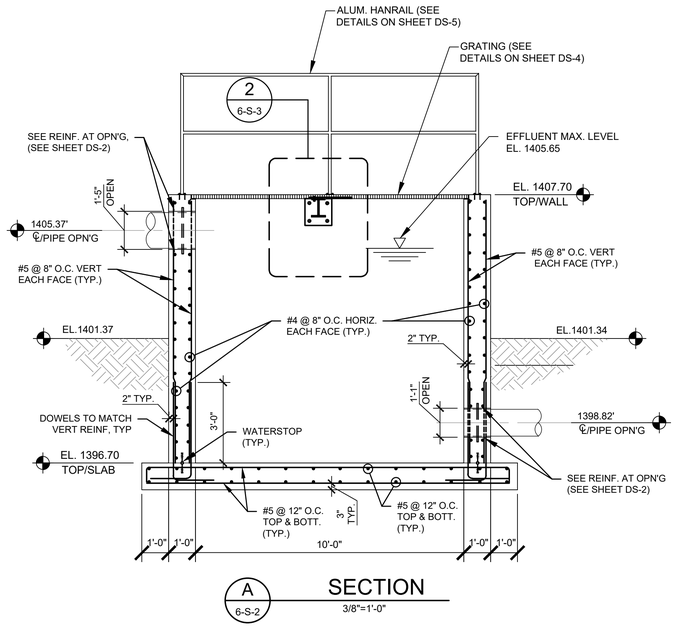
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
6-S-1&2-Filter Plan and Section.dwg

Sheet No.
6-S-2

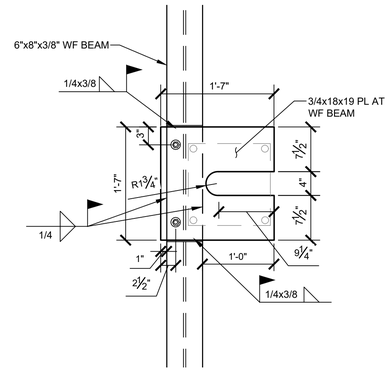
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 06 - Effluent Filter\6-S-1&2-Filter Plan and Section.dwg 08/01/2025 1:39pm aencarnacion



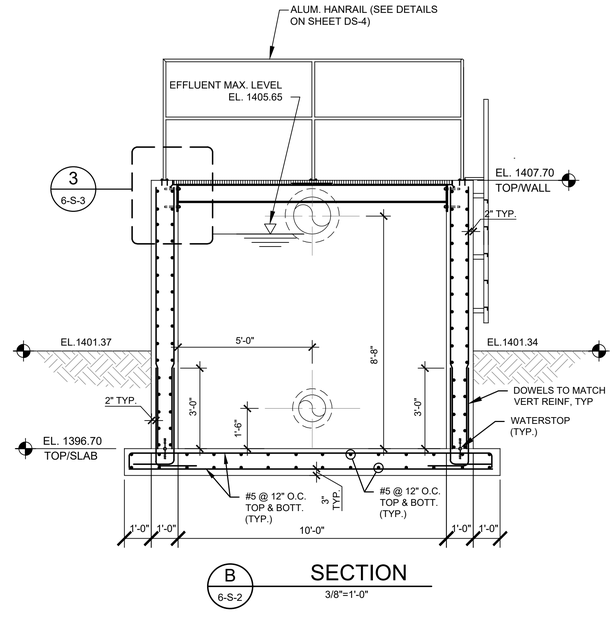
PLAN



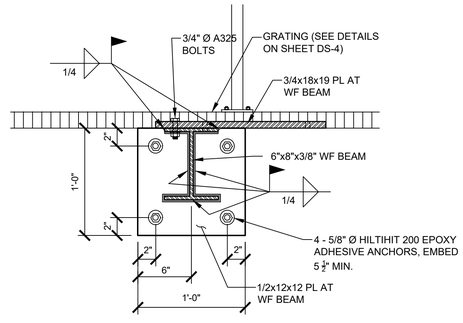
A 6-S-2 SECTION
3/8"=1'-0"



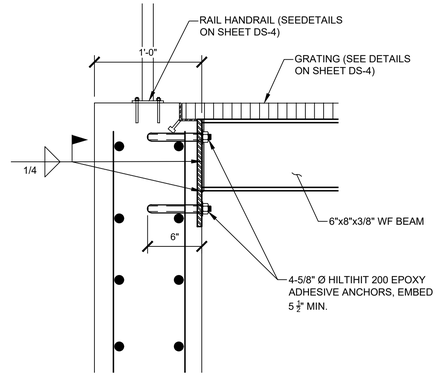
1 6-S-2 DETAIL
1" = 1'-0"



SECTION
3/8"=1'-0"



2 6-S-3 DETAIL
1" = 1'-0"



3 6-S-3 DETAIL
1" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
MEG M. MBUGUA
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

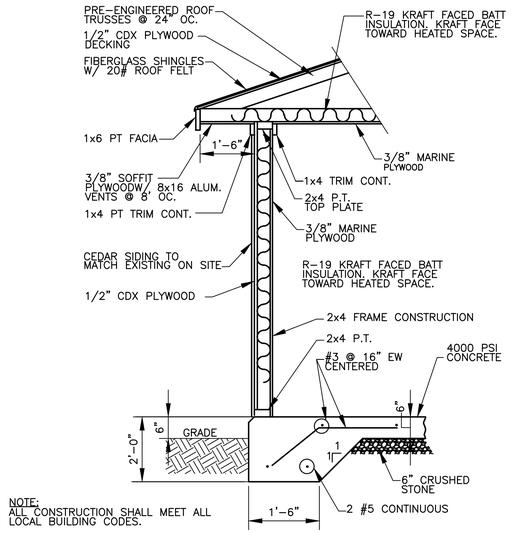
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

FLOC / MIX PLAN AND SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
6-S-3-Floc-Mix Plan and Section.dwg

Sheet No.
6-S-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 06 - Effluent Filter\6-S-3-Floc-Mix Plan and Section.dwg 08/01/2025 1:40pm aencarnacion

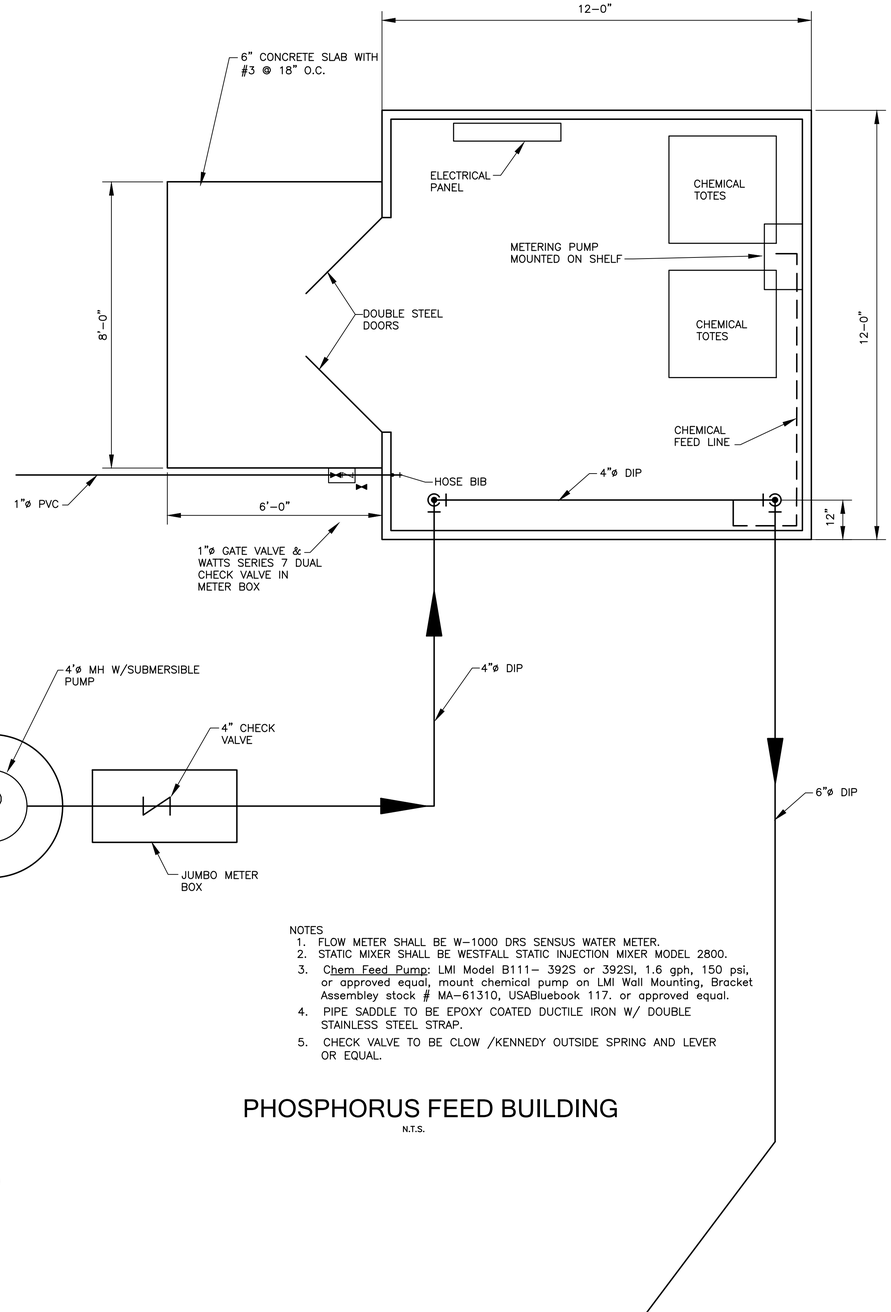


TYPICAL BUILDING SECTIONS

N.T.S.

GENERAL CONCRETE NOTES

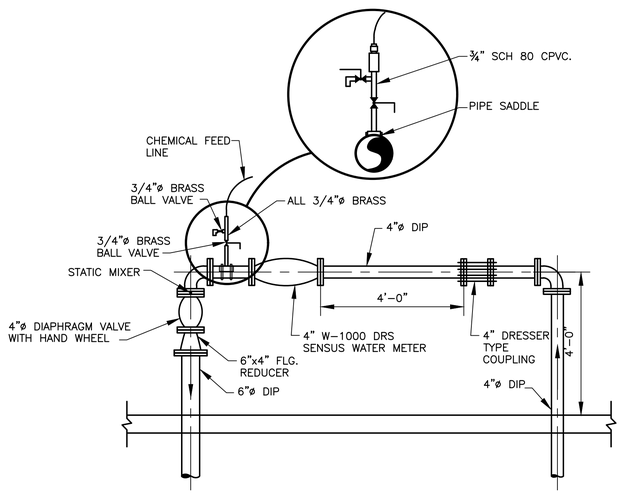
1. ALL CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE STANDARD 318–83.
2. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
3. ALL REINFORCING STEEL SHALL CONFORM TO THE ASTM–615, GRADE 60 UNLESS NOTED OTHERWISE.
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1" FOR SLABS, 1–1/2" FOR OTHER CONCRETE NOT EXPOSED TO WEATHER OR EARTH, 2" FOR CONCRETE EXPOSED TO WEATHER OR EARTH, AND 3" FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, UNLESS NOTED OTHERWISE.
5. UNLESS OTHERWISE NOTED, REINFORCING LAP SPLICES SHALL BE 24".
6. PRIOR TO PLACING CONCRETE, ALL REINFORCING STEEL SHALL BE FREE OF RUST, SCALE, OR ANY FOREIGN MATERIAL.
7. ALL EXPOSED CONCRETE, REFER TO ARCHITECTURAL, PLUMBING, PIPING, AND ELECTRICAL DRAWINGS FOR EMBEDDED ITEMS.
8. SPECIFIC NOTES ON A PLAN OR DETAIL, WHEN IN CONFLICT WITH THE ABOVE NOTES, SHALL HAVE PRIORITY FOR THAT DRAWING ONLY.
9. IN CASE OF SPECIAL CONDITIONS INDICATED ON DRAWINGS, THE DRAWINGS SHALL GOVERN OVER THE SPECIFICATIONS.
10. CONCRETE SLUMP SHALL BE 3".
11. ALL SLABS ON GROUND SHALL BE POURED ON 6" COMPACTED CRUSHED STONE OR SAND COVERED WITH A 6 MIL BLACK POLYETHYLENE VAPOR BARRIER.
12. ALL FOOTINGS SHALL REST ON UNDISTURBED SOIL OR COMPACTED GRANULATED MATERIAL. ALL SUB–GRADES SHALL HAVE A BEARING CAPACITY OF 3000 PSF. ALL DISTURBED MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR.
13. CONTRACTOR SHALL GIVE ENGINEER 48 HOURS NOTICE PRIOR TO POURING ANY CONCRETE. ALL REINFORCING SHALL BE INSPECTED BY THE ENGINEER PRIOR TO POURING CONCRETE.
14. FOOTING EXCAVATIONS UNDERCUT BELOW DESIRED LEVEL SHALL BE FILLED WITH CLASS "D" CONCRETE TO BOTTOM LEVEL OF FOOTING.
15. CHAMFER ALL EXPOSED OUTSIDE CORNERS OF ALL STRUCTURES (3/4" MIN). VERTICAL CORNERS ARE TO BE CHAMFERED TO 6" BELOW FINISHED GRADE.
16. ALL EMBEDDED STEEL, ANCHOR BOLTS AND PIPE SUPPORTS INSIDE PUMP STATION, SBR TANKS, OR DIGESTER TANK SHOULD BE 304 S.S. OF BETTER.



NOTES
1. FLOW METER SHALL BE W–1000 DRS SENSUS WATER METER.
2. STATIC MIXER SHALL BE WESTFALL STATIC INJECTION MIXER MODEL 2800.
3. Chem Feed Pump: LMI Model B111– 392S or 392SI, 1.6 gph, 150 psi, or approved equal, mount chemical pump on LMI Wall Mounting, Bracket Assembley stock # MA–61310, USABluebook 117. or approved equal.
4. PIPE SADDLE TO BE EPOXY COATED DUCTILE IRON W/ DOUBLE STAINLESS STEEL STRAP.
5. CHECK VALVE TO BE CLOW /KENNEDY OUTSIDE SPRING AND LEVER OR EQUAL.

PHOSPHORUS FEED BUILDING

N.T.S.



STATIC MIXER AND METER VIEW

SCALE: NTS

OVERHEAD UNDERGROUND

IF YOU DIG GEORGIA...
CALL US FIRST!
1–800–282–7411
(770) 623–4344
(METRO ATLANTA ONLY)
UTILITIES PROTECTION CENTER

IT'S THE LAW!

24 HR CONTACT:
DONALD HUNT (706) 200-6603

GEORGIA REGISTERED NO. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA. 30060
Phone No. (770) 427-8122
Fax. No. (770) 425-8930

RMA

CITY OF CLEVELAND, GEORGIA
PHOSPHORUS REMOVAL SYSTEM

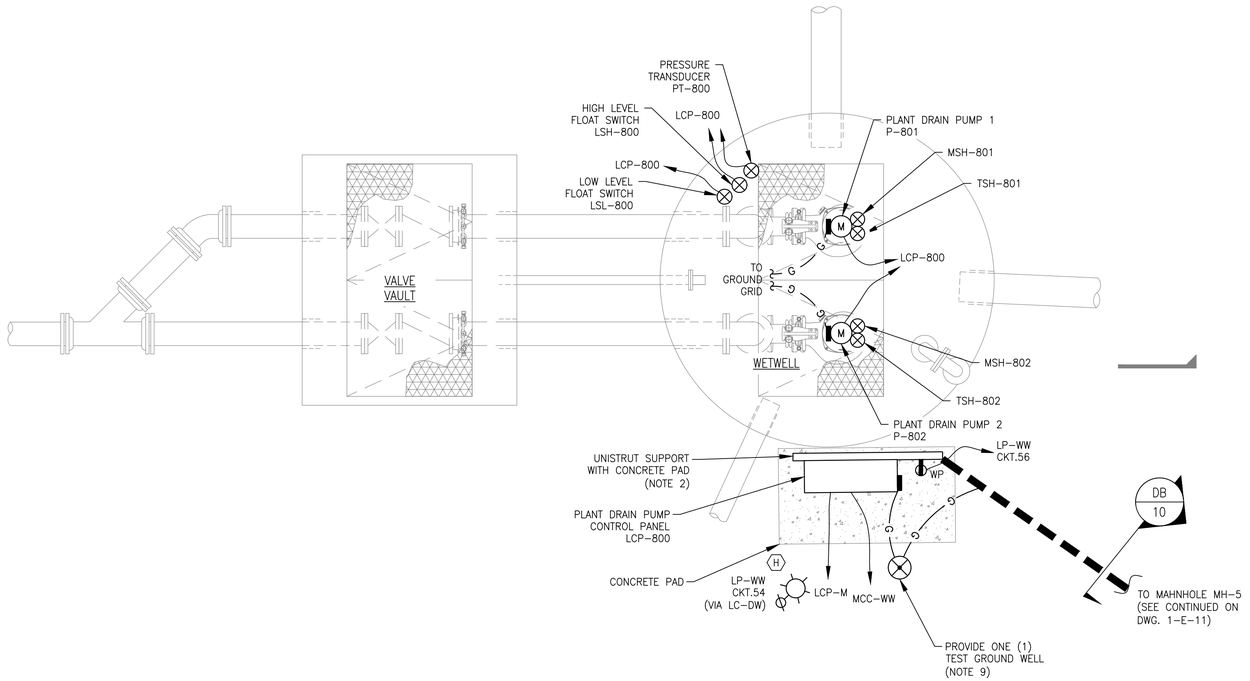
PHOSPHORUS FEED BUILDING
SECTIONS AND DETAILS

No.	Revisions	Date
1	CUT PLANS APART	12/6/07

Drawn: EED
Design: KFK
Checked: BAR
Project No: R2007-222
Scale: AS SHOWN
Date: AUGUST 2007

Sheet No.
3 of 6

R:\2007\R2007-222\dwg\07-222-PHOS-REMOVE.dwg 08/01/2025 5:18pm cwilson



1 PLANT DRAIN PS ELECTRICAL PLAN
SCALE: 1/2" = 1'-0"

GRAPHIC SCALE
2 0 1 2 4 8
(IN FEET)
1/2 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE CONCRETE PAD AND UNISTRUT FOR INSTALLATION OF PANEL LCP-800. EXTEND THE PAD FOR 4FT. IN FRONT OF THE ELECTRICAL EQUIPMENT. SEE DETAIL 2 ON DWG. DE-2 FOR TYPICAL INSTALLATION DETAILS.
3. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
4. CONTRACTOR SHALL INSTALL KELLUM GRIPS AT PUMP CONTROL PANEL LCP-800 FOR ALL CABLE/CONDUIT EXITING THE WETWELL. SEE INSTALLATION DETAIL "X" ON DRAWING DE-2.
5. SEE DETAIL 1 ON DRAWING 7-E-2 FOR PLANT DRAIN PUMP STATION CONTROL PANEL SCHEMATIC.
6. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
7. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
8. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS,
9. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

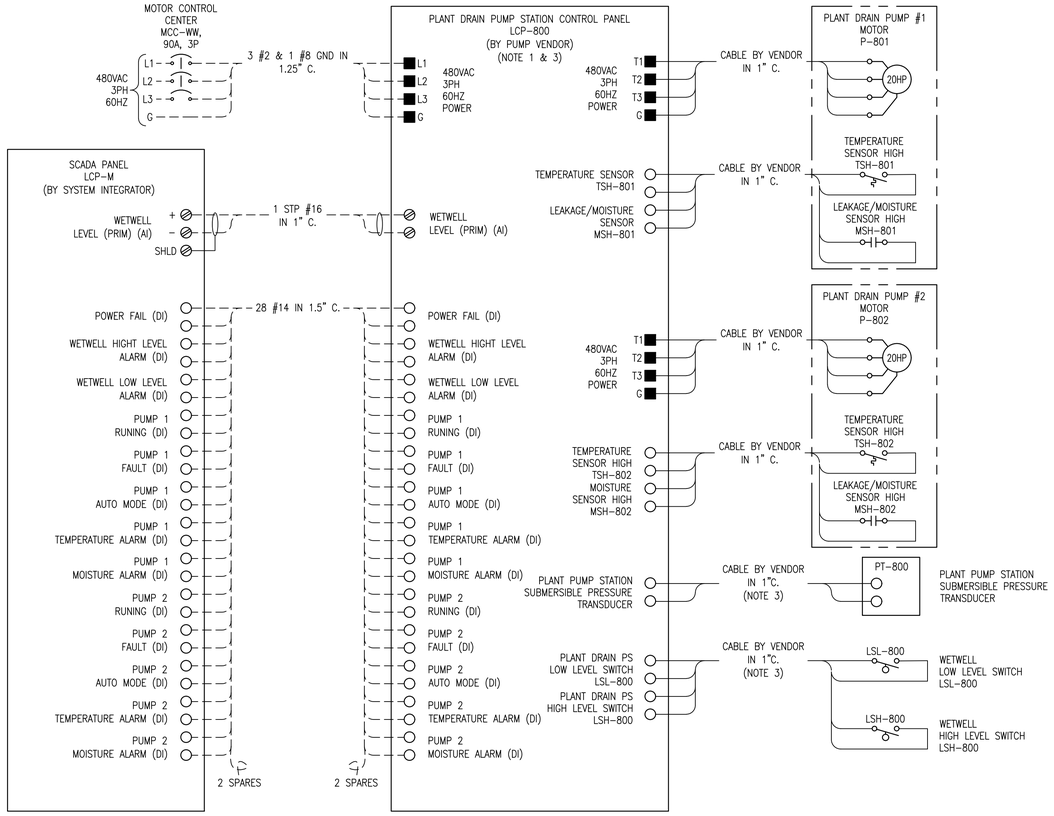
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PLANT DRAIN PUMP STATION
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
7-E-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 PLANT DRAIN PUMP STATION CONTROL PANEL SCHEMATIC

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR PLANT PUMP STATION COMPONENTS AS REQUIRED BY ACCEPTED VENDOR SHOP DRAWINGS.

2. CONTRACTOR SHALL FURNISH AND INSTALL PLANT PS CONTROL PANEL WITH NEMA 4X SS ENCLOSURE WHICH SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

   A. HOA SWITCHES (2), START/STOP PUSH BUTTONS (2 OF EACH) FOR "HAND" MODE.
   B. ELAPSED TIME METERS
   C. TWO (2) FULL VOLTAGE NON REVERSING MOTOR STARTERS WITH MOTOR CIRCUIT PROTECTORS SIZED FOR 15HP PUMPS MOTORS.
   D. MAIN 100A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SYSTEM OPERATION.
   E. DUPLEX PUMP CONTROLLER
   F. 24VDC POWER SUPPLY
   G. 1 kVA, 480/120V CONTROL POWER TRANSFORMER (SIZE AS NECESSARY TO ACCOMMODATE ALL 120V LOADS)
   H. TWO (2) 20A, 1P CURCUIT BREAKERS: 20A DUPLEX RECEPTACLE AND ONE (1) SPARE
   I. MOISTURE/TEMPERATURE PROTECTION RELAYS
   J. LIGHTNING ARRESTOR
   K. TIME DELAY (0-10 SEC) BETWEEN PUMPS START IN BOTH "HAND" AND "AUTO" MODE
   L. STRIP HEATER, FAN AND THERMOSTAT
   M. RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES ETC. AS REQUIRED

CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

3. PUMP VENDOR SHALL PROVIDE SUBMERSIBLE PRESSURE TRANSDUCER AND FLOAT SWITCHES WITH CABLE LONG ENOUGH TO REACH PUMP CONTROL PANEL WITHOUT CABLE SPLICING AND EXTENSION.

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

PRINT ENGINEERING • ENVIRONMENTAL

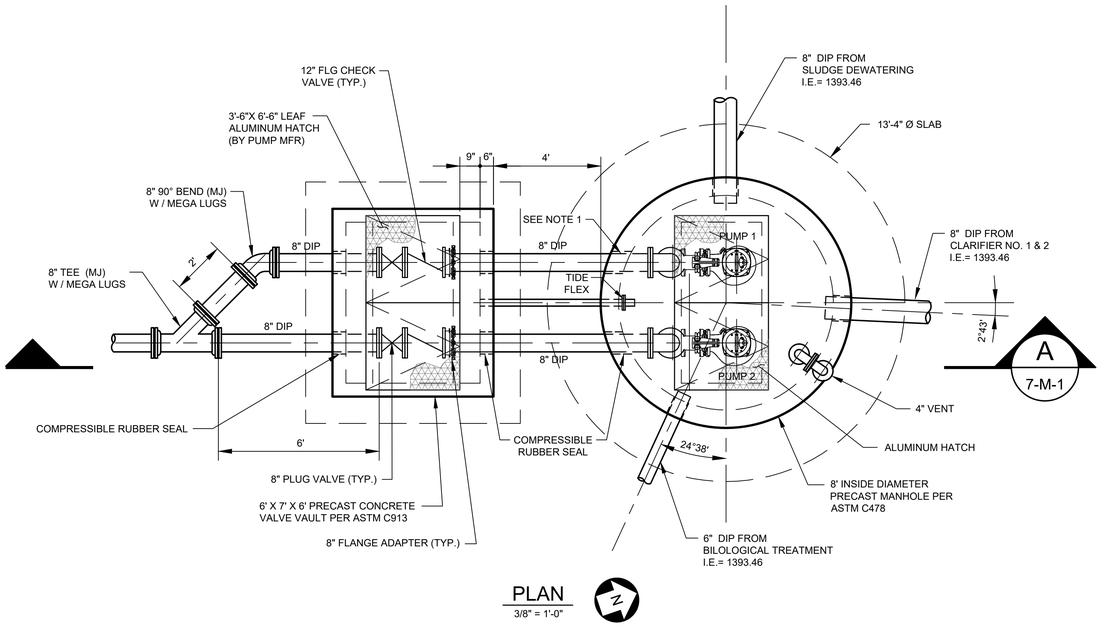
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PLANT DRAIN PUMP STATION
SCHEMATIC WIRING DIAGRAMS

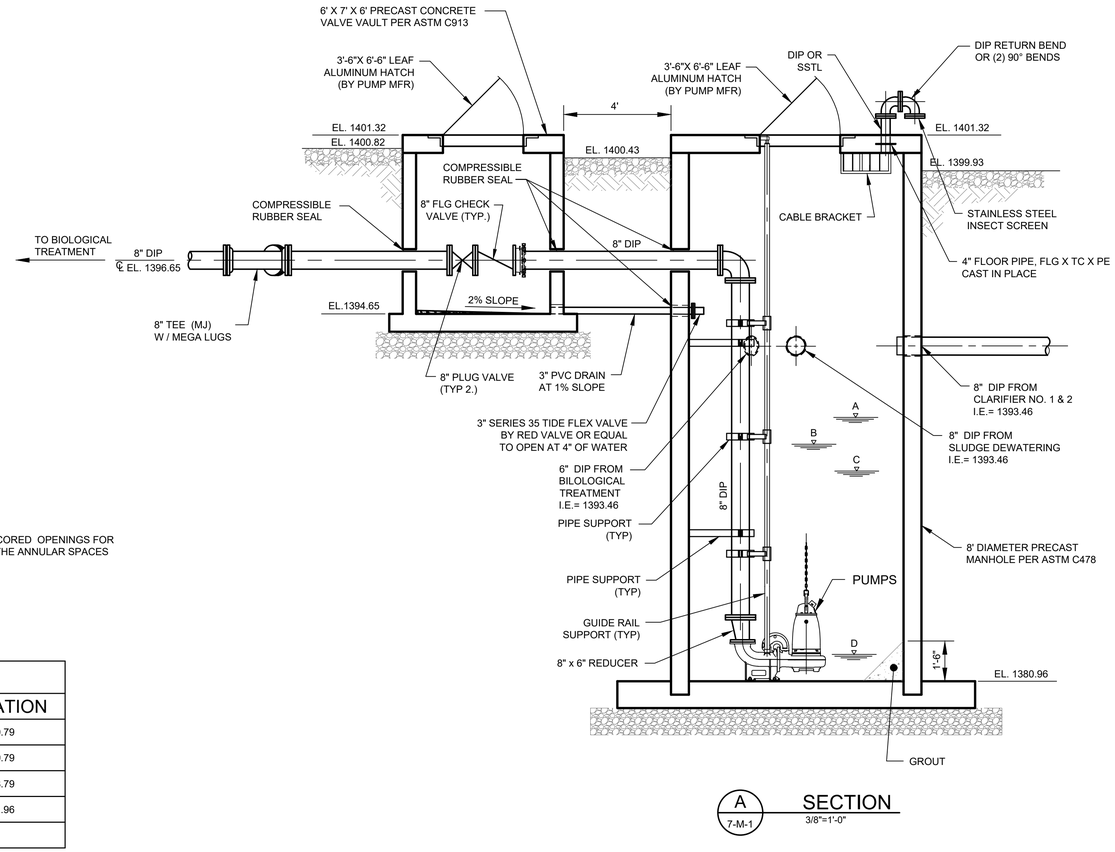
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
7-E-2

PUMP CHARACTERISTICS:
2,780 GPM @ 38' TDH



PLAN
3/8" = 1'-0"



A
7-M-1
SECTION
3/8"=1'-0"

NOTES:
1. THE WETWELL, VALVE VAULT AND METER VAULT TO HAVE CORED OPENINGS FOR ALL PIPE PENETRATIONS. ONCE THE PIPING IS INSTALLED THE ANNULAR SPACES WILL BE GROUTED.
2. PIPING IN THE VALVE AND METER VAULTS TO BE FLANGED

PUMP CONTROL		
LABEL	DESCRIPTION	ELEVATION
A	HIGH WATER ALARM	1390.79
B	LAG PUMP ON	1389.79
C	LEAD PUMP ON	1388.79
D	PUMPS OFF	1381.96

NOTE:
OPERATING LEVELS CAN BE CHANGED BY WWTP STAFF.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RIDGE ENGINEERING + ENVIRONMENTAL

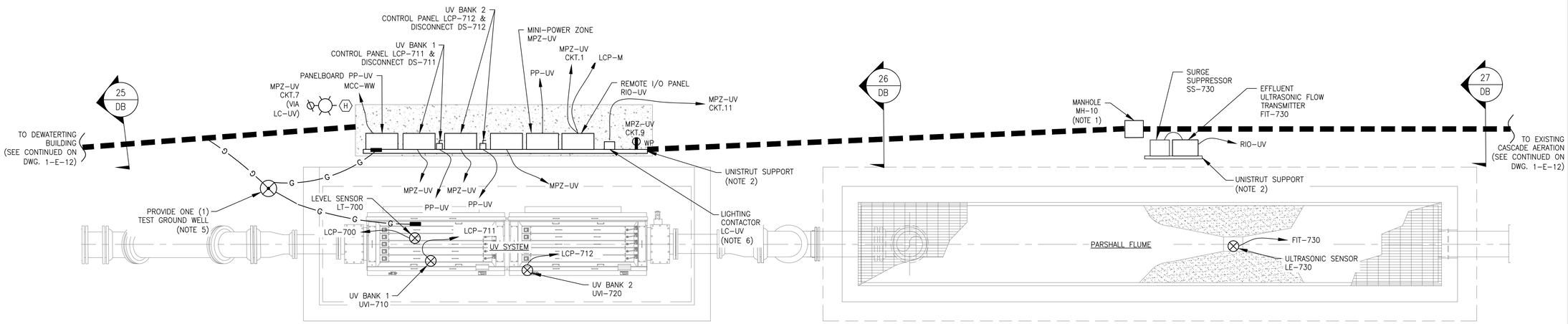
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PLANT DRAIN PUMP STATION PLAN

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
Z:\A1-Plant Drain Pump Station.dwg

Sheet No.
7-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 07 - Plant Drain Pump Station\7-M-1-Plant Drain Pump Station.dwg 08/01/2025 1:43pm aencarnacion



1 UV DISINFECTION AND PARSHALL FLUME ELECTRICAL PLAN

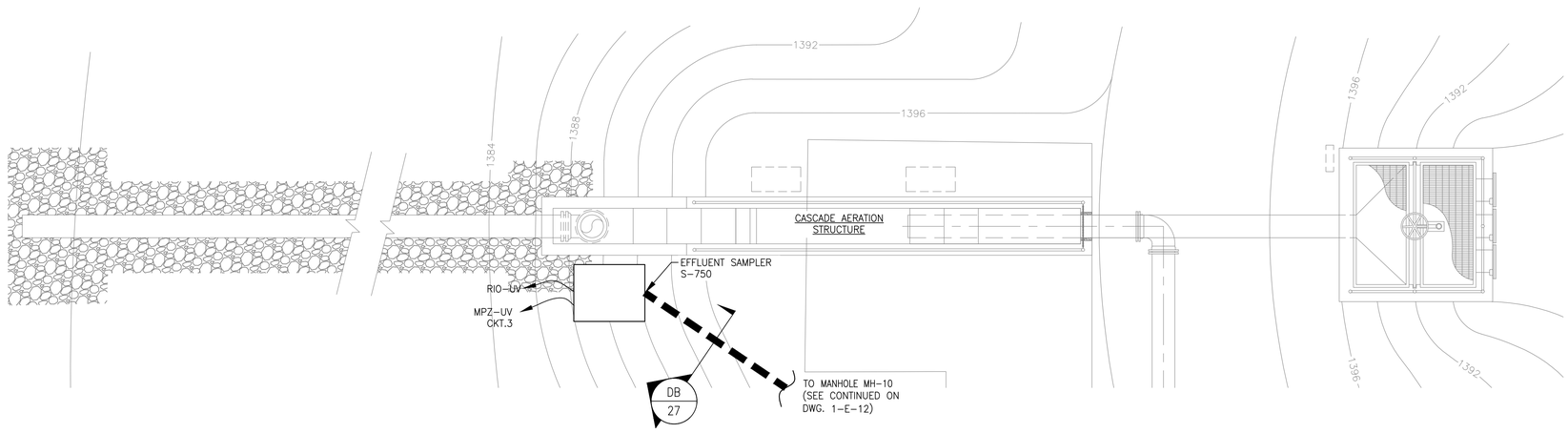
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE

2.67 0 1.33 2.67 5.33 10.67

(IN FEET)

3/8 inch = 1 ft.



2 EXISTING CASCADE AERATION ELECTRICAL PLAN

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

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1/4 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE 6" THICK CONCRETE PAD AND UNISTRUT FOR INSTALLATION OF ELECTRICAL PANELS. EXTEND THE PAD FOR 4FT. IN FRONT OF THE ELECTRICAL EQUIPMENT. SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
4. CONTRACTOR SHALL REFER TO ONE LINE DIAGRAM ON DWG. 1-E-5, PANELBOARD SCHEDULES ON DWG. 1-E-6 AND TO RESPECTIVE EQUIPMENT/INSTRUMENTATION SCHEMATIC DIAGRAMS FOR FURTHER DESIGN REQUIREMENTS.
5. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 8-E-2 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.
7. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
8. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

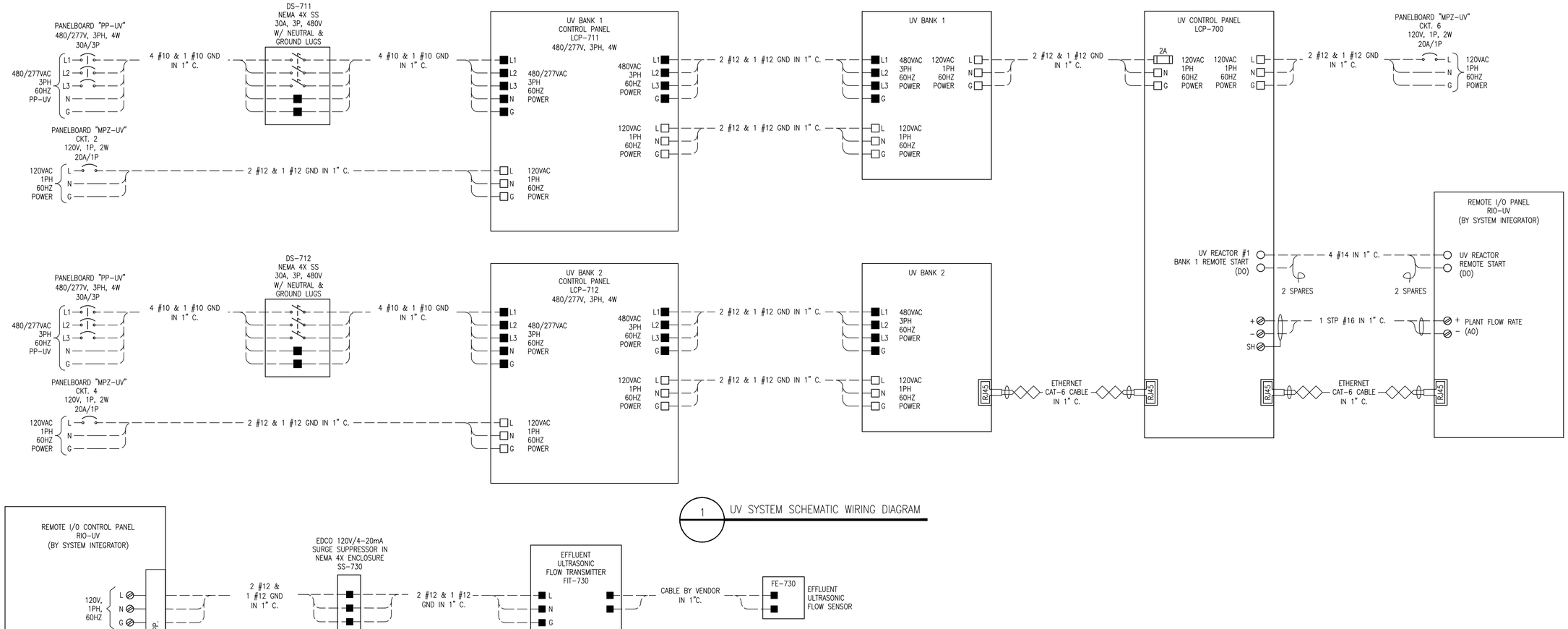
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

UV SYSTEM AND
EXISTING CASCADE AERATION
ELECTRICAL PLAN

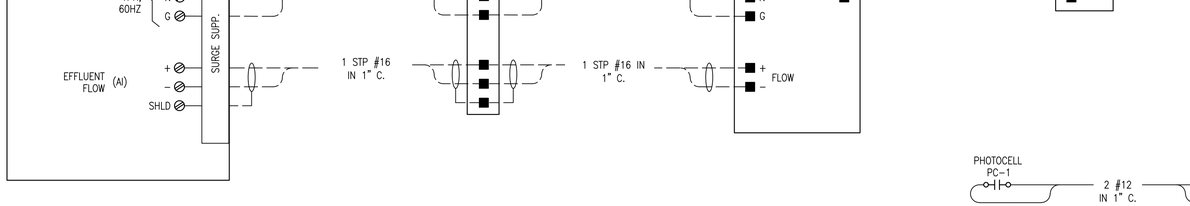
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
8-E-1

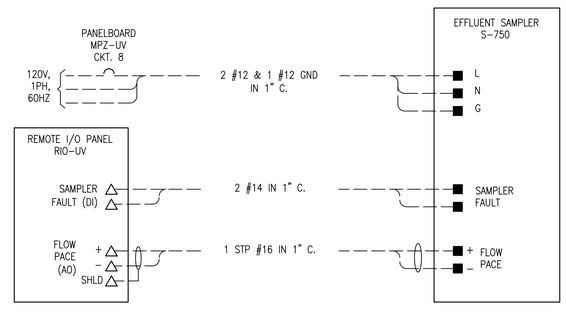
EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



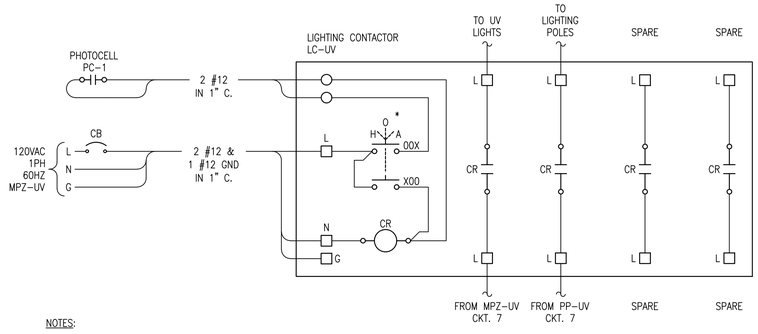
1 UV SYSTEM SCHEMATIC WIRING DIAGRAM



2 EFFLUENT FLOW METER SCHEMATIC



3 EFFLUENT SAMPLER SCHEMATIC



4 LIGHTING CONTACTOR LC-UV – SCHEMATIC WIRING DIAGRAM

NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.
2. MECHANICALLY HELD HEAVY-DUTY 4 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.
4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR UV SYSTEM COMPONENTS AS REQUIRED BY ACCEPTED VENDOR SHOP DRAWINGS.
2. SEE DRAWING I-X FOR PLANT SCADA BLOCK DIAGRAM AND P&ID DRAWING I-8 FOR INTERFACE REQUIREMENTS.

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

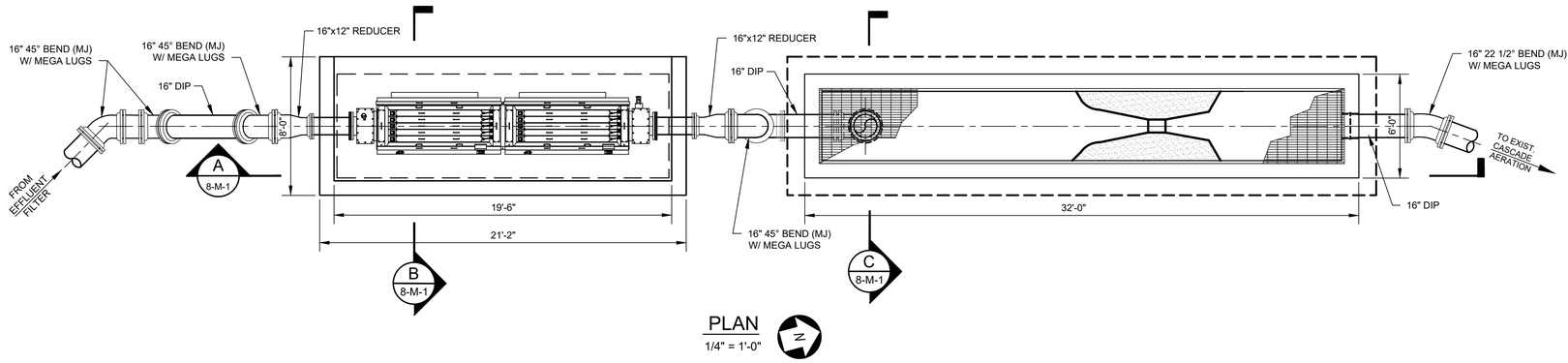
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

UV SYSTEM
EXISTING CASCADE AERATION
SCHAMTIC WIRING DIAGRAMS

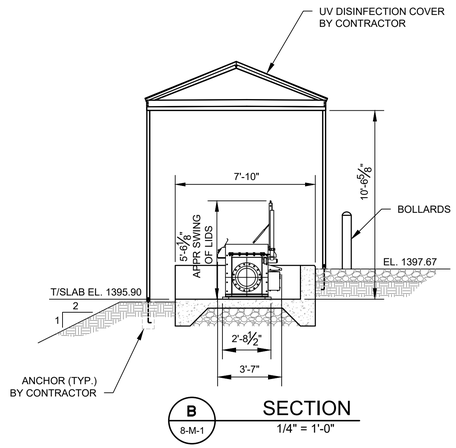
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
8-E-2

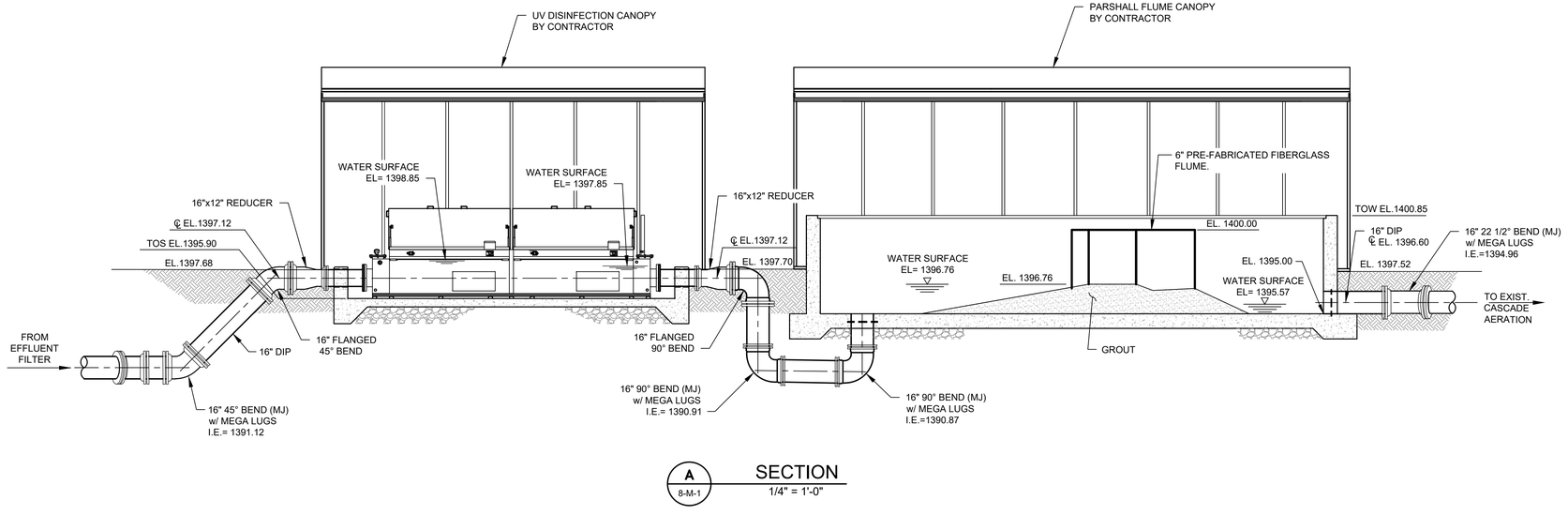
EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



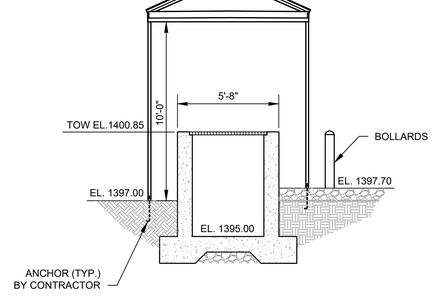
PLAN
1/4" = 1'-0"



SECTION
1/4" = 1'-0"



A
8-M-1
SECTION
1/4" = 1'-0"



C
8-M-1
SECTION
1/4" = 1'-0"

GEORGIA
REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON CONSULTANTS, INC.
ENGINEERING • ENVIRONMENTAL

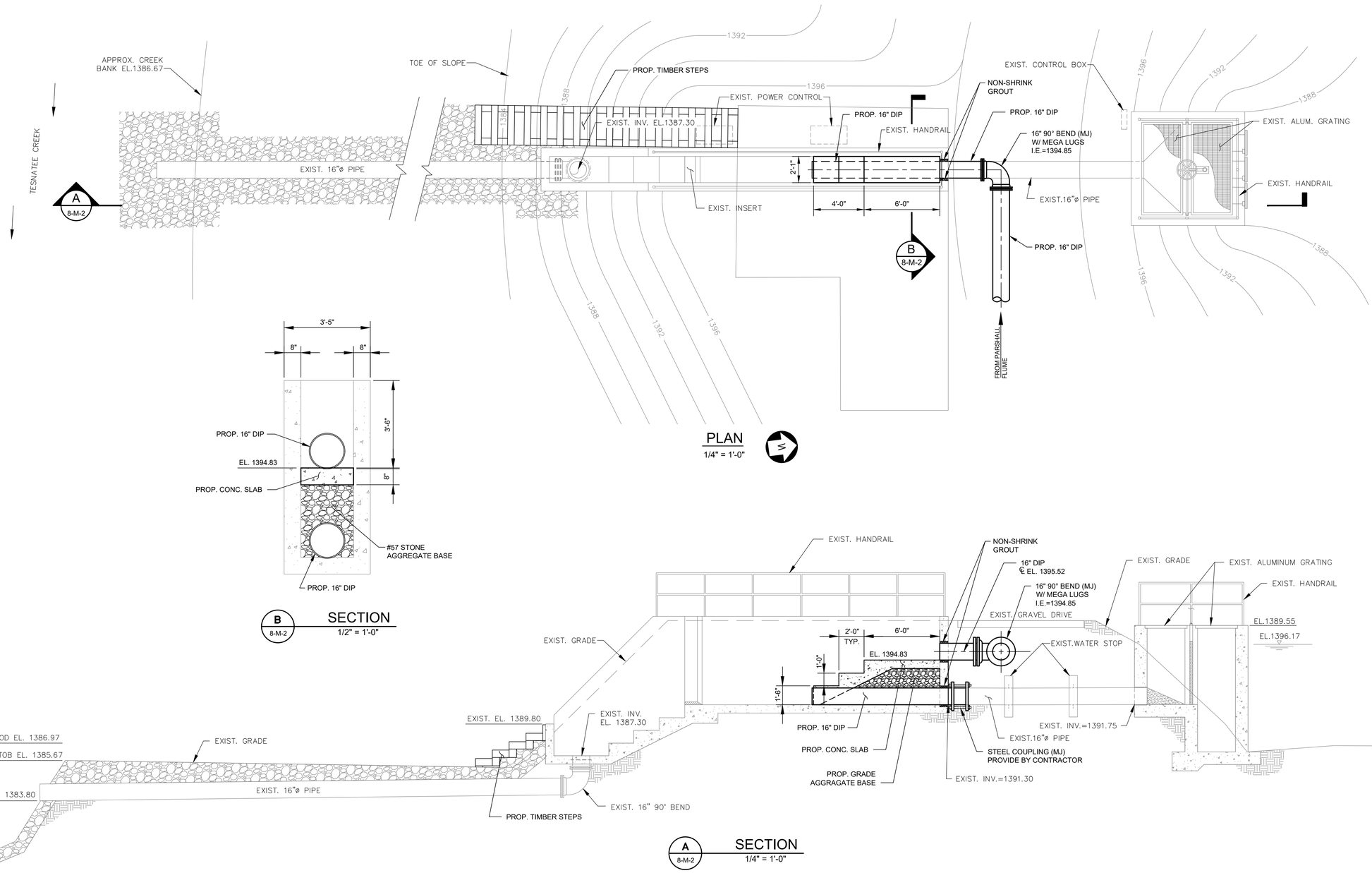
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

UV DISINFECTION & PARSHALL FLUME
PLAN AND SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
8-M-1 & 2.dwg

Sheet No.
8-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 08 - UV Disinfection\8-M-1 & 2.dwg 08/01/2025 1:46pm aencarnacion



PLAN
1/4" = 1'-0"

B 8-M-2 SECTION
1/2" = 1'-0"

A 8-M-2 SECTION
1/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

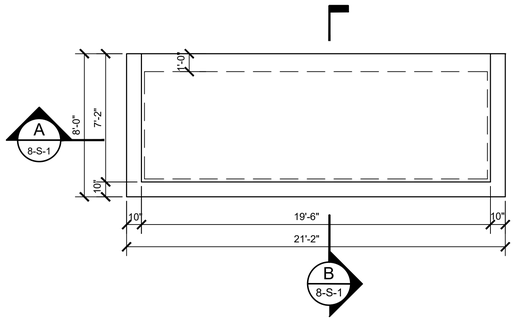
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

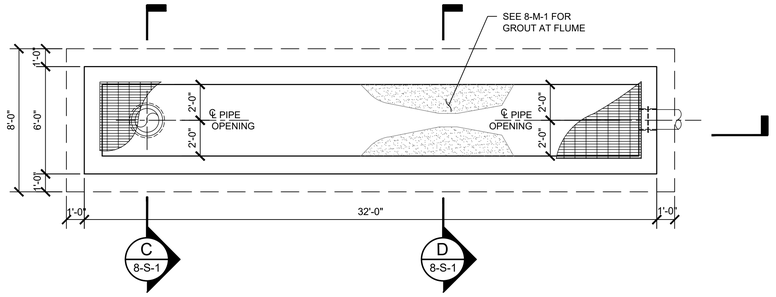
EXISTING CASCADE AERATION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
8-M1 & 2.dwg

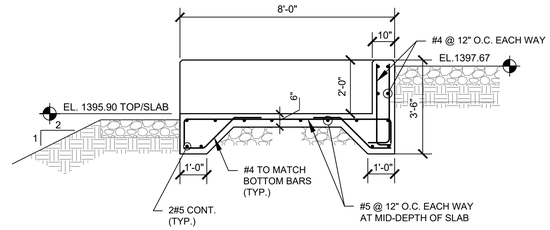
Sheet No.
8-M-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 08 - UV Disinfection\8-M-1 & 2.dwg 08/01/2025 1:46pm aericarnacion

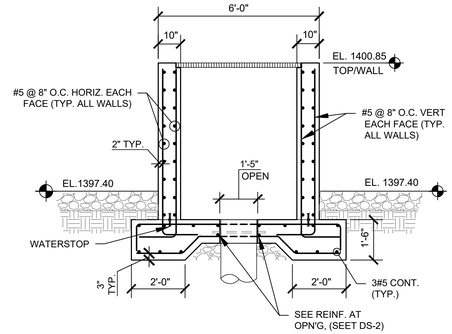




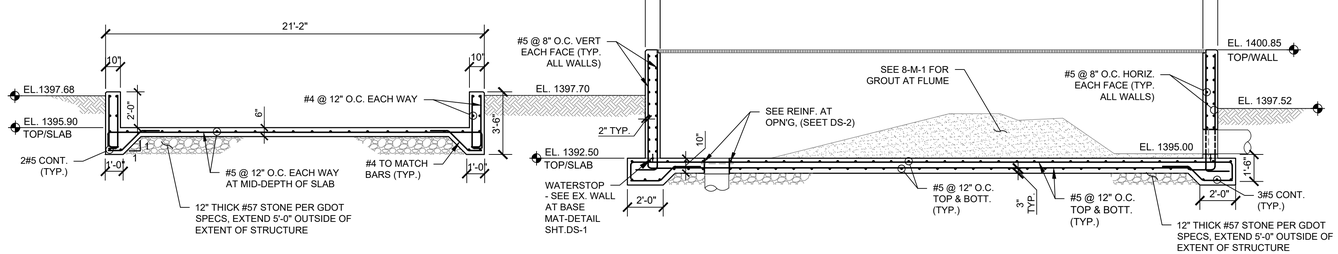
PLAN
1/4" = 1'-0"



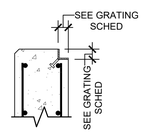
B
8-S-1
SECTION
3/8" = 1'-0"



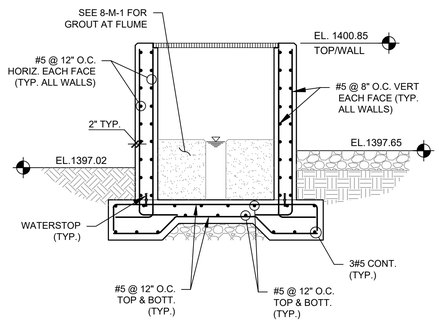
C
8-S-1
SECTION
3/8" = 1'-0"



A
8-S-1
SECTION
1/4" = 1'-0"



TYP AT GRATING TO
CONCRETE WALL



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

GEORGIA
REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON
ENGINEERING + ENVIRONMENTAL

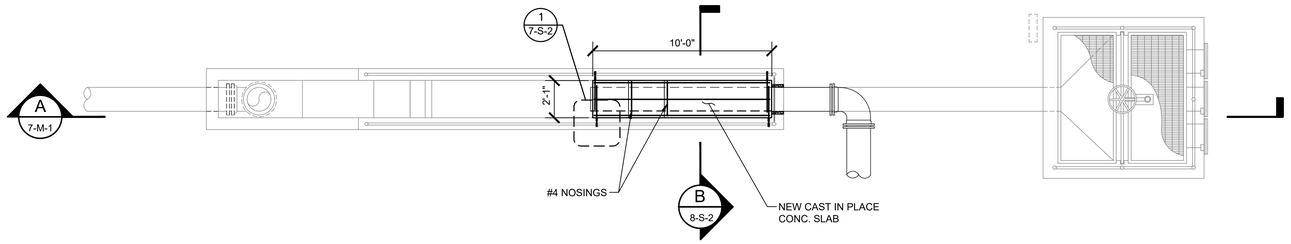
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

UV DISINFECTION & PARSHALL FLUME
PLAN AND SECTIONS

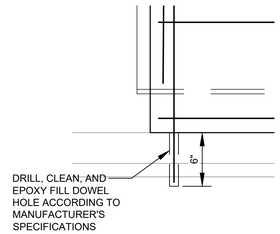
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
8-S-1 & 2.dwg

Sheet No.
8-S-1

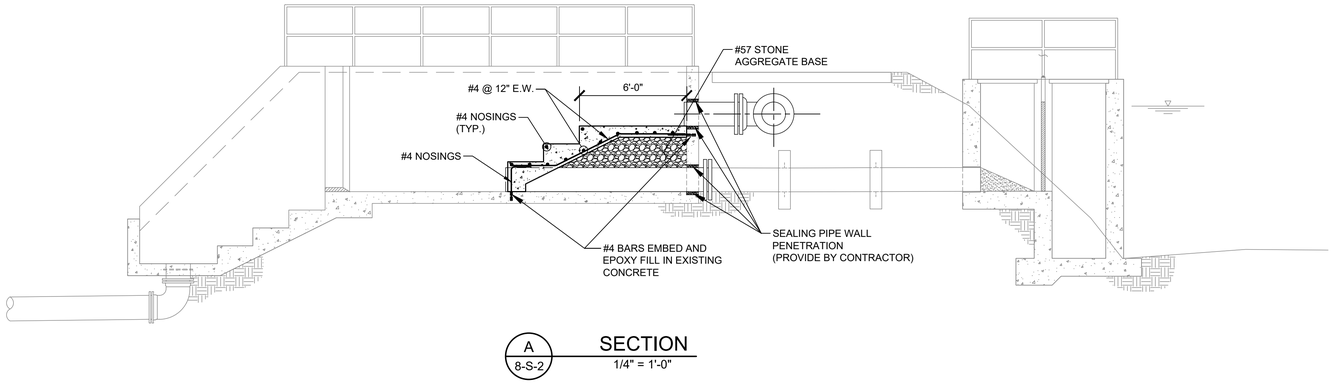
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 08 - UV Disinfection\8-S-1 & 2.dwg 08/01/2025 1:44pm aencamacion



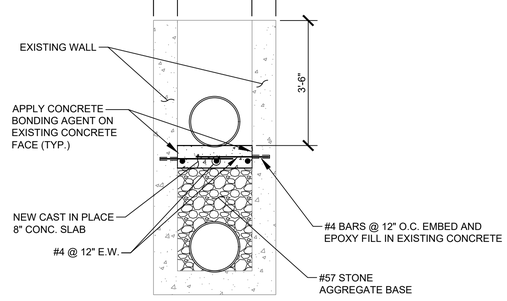
PLAN
1/4" = 1'-0"



1
8-S-2
DETAIL
1 1/2" = 1'-0"



A
8-S-2
SECTION
1/4" = 1'-0"



B
8-S-2
SECTION
1/2" = 1'-0"

GEORGIA
REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

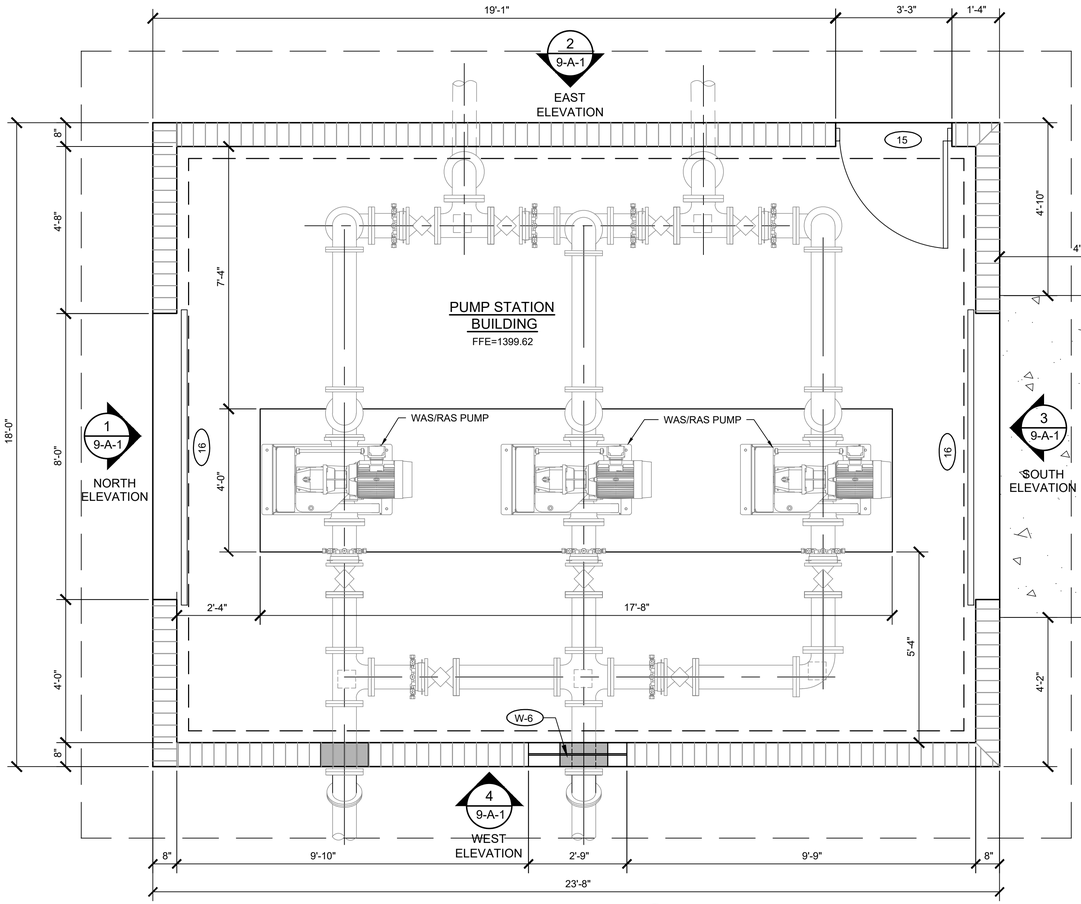
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING CASCADE AERATION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
8-S-1 & 2.dwg

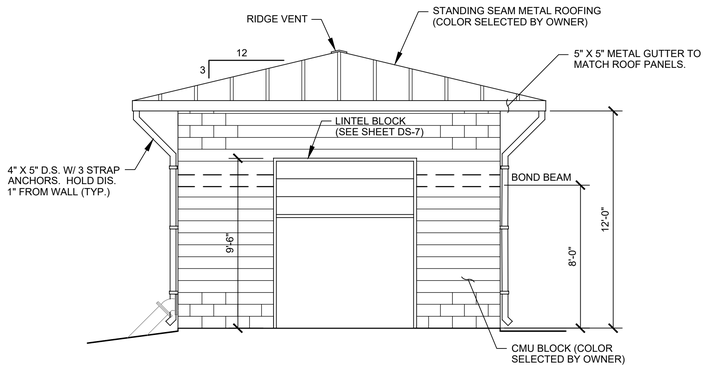
Sheet No.
8-S-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 08 - UV Disinfection\8-S-1 & 2.dwg 08/01/2025 1:44pm aencamacion



FLOOR PLAN

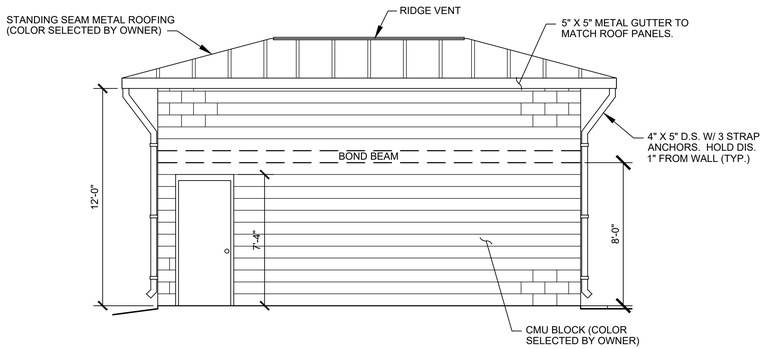
1/2" = 1'-0"



NORTH ELEVATION

1/4" = 1'-0"

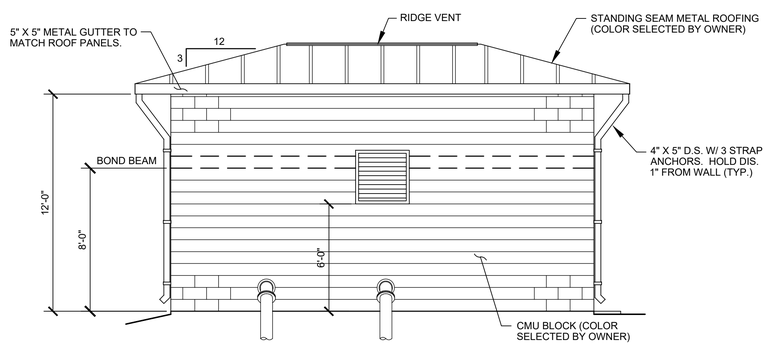
1 / 9-A-1



EAST ELEVATION

1/4" = 1'-0"

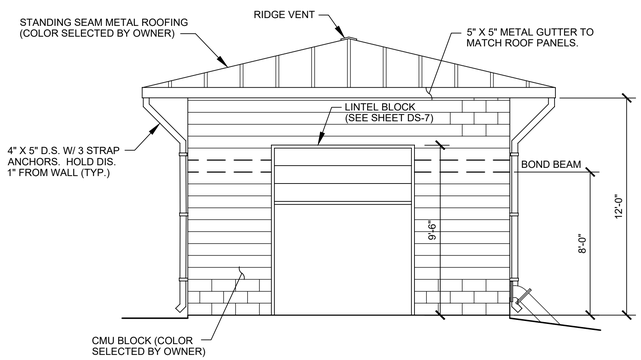
2 / 9-A-1



WEST ELEVATION

1/4" = 1'-0"

4 / 9-A-1



SOUTH ELEVATION

1/4" = 1'-0"

3 / 9-A-1

GEORGIA
REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON
ENGINEERING + ENVIRONMENTAL

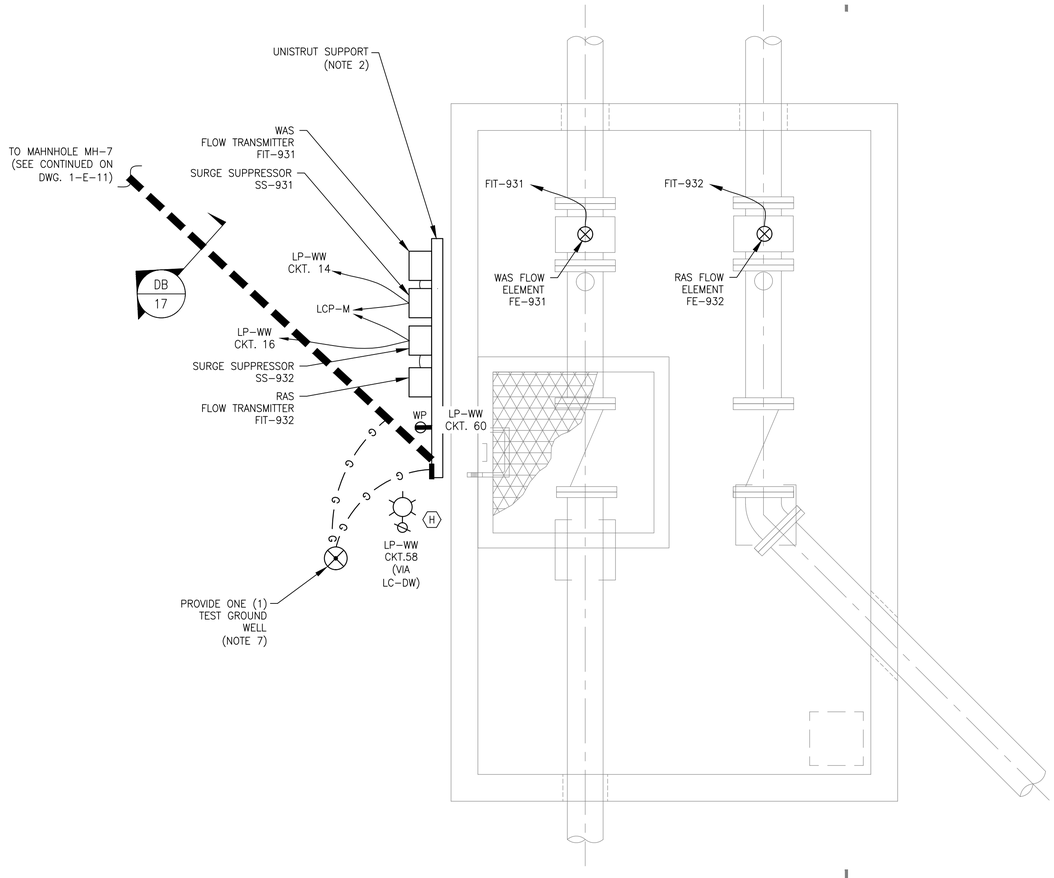
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION PLAN AND ELEVATIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
9-A1-WAS-RAS Pump Station.dwg

Sheet No.
9-A-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 09 - Was Ras Pump Station\9-A1-1-WAS-RAS Pump Station.dwg 08/01/2025 1:47pm aencarnacion



1 WAS/RAS VALVE VAULT ELECTRICAL PLAN
SCALE: 3/4" = 1'-0"

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT FOR INSTALLATION OF ELECTRICAL EQUIPMENT SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
4. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
5. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS,
7. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
8. PANELBOARD LP-WW AND LIGHTING CONTACTOR LC-DW ARE LOCATED IN THE DEWATERING BUILDING. SEE DRAWING 11-E-2 FOR EXACT LOCATION.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

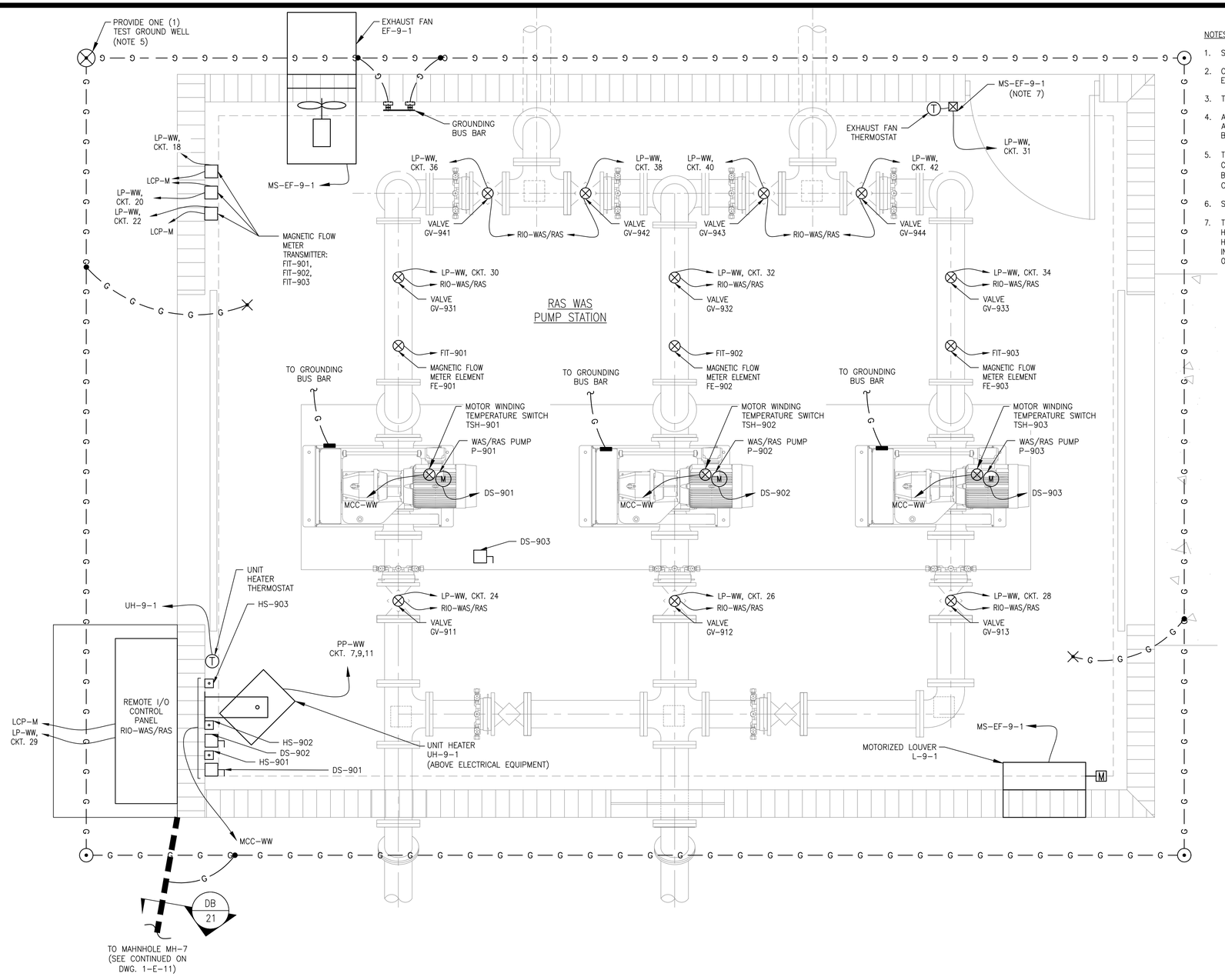
WAS/RAS VALVE VAULT
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
9-E-1

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT FOR INSTALLATION OF ELECTRICAL EQUIPMENT. SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
4. ALL NEW UNDERGROUND DUCTBANKS SHALL BE COORDINATED WITH THE EXISTING UTILITIES AND OTHER DISCIPLINES, AND ADJUSTED AS NECESSARY. INSTALL UNDERGROUND PULL BOXES AS REQUIRED.
5. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
6. SEE DWG. H-4 FOR WAS RAS PUMP STATION BUILDING HVAC PLAN.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL A MANUAL MOTOR STARTER FOR THE FAN'S MOTOR HORSEPOWER. SEE DWG. 9-E-5 FOR THE MOTOR STARTER SCHEMATIC DIAGRAM. THE STARTER SHALL HAVE A NEMA 4X STAINLESS STEEL ENCLOSURE AND INCLUDE H-O-A SWITCH, AND 'RUNNING' INDICATING LIGHT. MOUNT THE MOTOR STARTER IN THE LOCATION SHOWN OR AS DIRECTED BY THE OWNER.

1 WAS/RAS PUMP STATION ELECTRICAL PLAN
SCALE: 3/4" = 1'-0"

GRAPHIC SCALE

1.33 0 0.67 1.33 2.67 5.33

(IN FEET)
3/4 inch = 1 ft.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

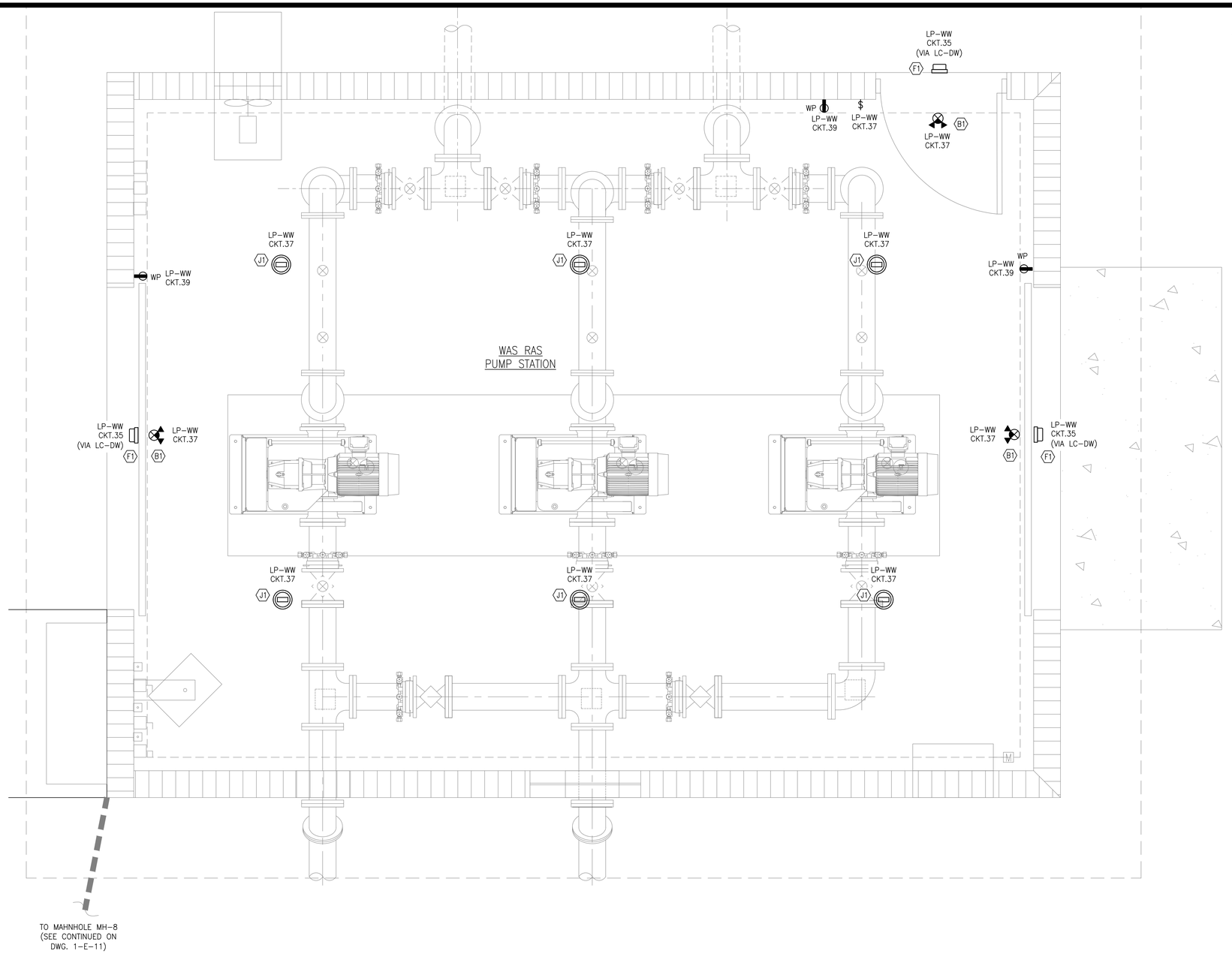
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
9-E-2



1 WAS/RAS PUMP STATION RECEPTACLES AND LIGHTING PLAN
SCALE: 3/4" = 1'-0"

GRAPHIC SCALE
1.33 0 0.67 1.33 2.67 5.33
(IN FEET)
3/4 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. PANELBOARD LP-WW AND LIGHTING CONTACTOR LC-DW ARE LOCATED IN THE DEWATERING BUILDING. SEE DRAWING 11-E-2 FOR EXACT LOCATION.

LEGEND:
– – – – DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

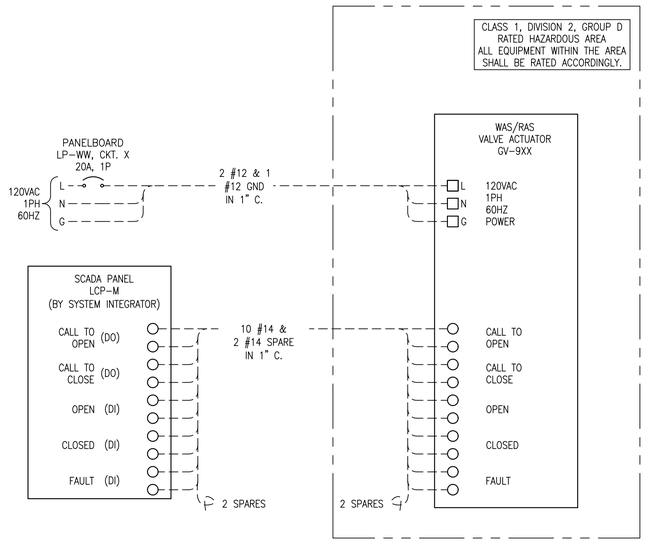
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION
RECEPTACLES AND LIGHTING PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

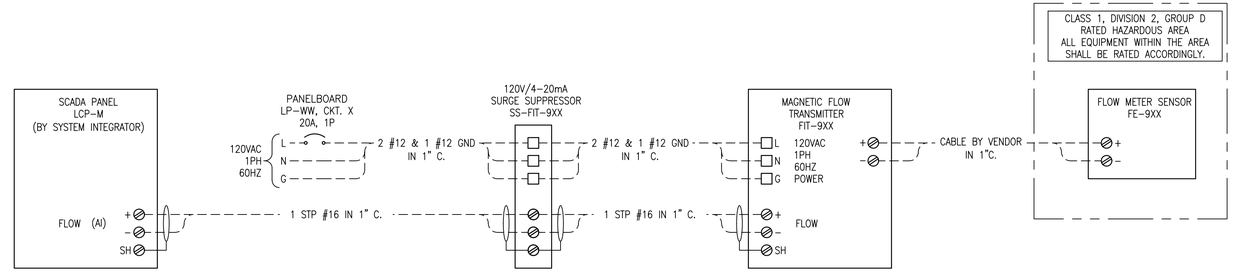
Sheet No.
9-E-3

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



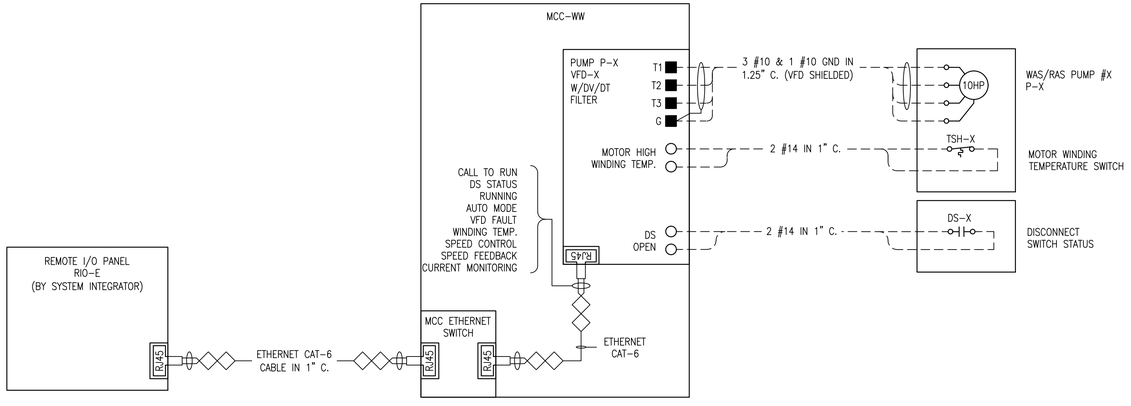
#	DESCRIPTION	WAS/RAS VALVE GV-9XX	PANELBOARD LP-WW; CKT. X
1	WAS/RAS VALVE GV-901 ACTUATOR	GV-911	24
2	WAS/RAS VALVE GV-912 ACTUATOR	GV-912	26
3	WAS/RAS VALVE GV-913 ACTUATOR	GV-913	28
4	WAS/RAS VALVE GV-931 ACTUATOR	GV-931	30
5	WAS/RAS VALVE GV-932 ACTUATOR	GV-932	32
6	WAS/RAS VALVE GV-933 ACTUATOR	GV-933	34
7	WAS/RAS VALVE GV-941 ACTUATOR	GV-941	36
8	WAS/RAS VALVE GV-942 ACTUATOR	GV-942	38
9	WAS/RAS VALVE GV-943 ACTUATOR	GV-943	40
10	WAS/RAS VALVE GV-944 ACTUATOR	GV-944	42

1 WAS/RAS VALVE ACTUATOR SCHEMATIC
TYPICAL OF 10



# X	DESCRIPTION	FIT-9XX	FE-9XX	SS-FIT-9XX	CKT. X
1	RAS MAGNETIC FLOW METER TRANSMITTER FIT-931	FIT-931	FE-931	SS-FIT-931	CKT. 14
2	WAS MAGNETIC FLOW METER TRANSMITTER FIT-932	FIT-932	FE-932	SS-FIT-932	CKT. 16
3	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-901	FIT-901	FE-901	SS-FIT-901	CKT. 18
4	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-902	FIT-902	FE-902	SS-FIT-902	CKT. 20
5	WAS/RAS MAGNETIC FLOW METER TRANSMITTER FIT-903	FIT-903	FE-903	SS-FIT-903	CKT. 22

2 MAGNETIC FLOW METER SCHEMATIC WIRING DIAGRAM
TYPICAL OF 5



3 WAS/RAS PUMPS INTERCONNECTIONS (TYP.FOR 3)
SCALE: N.T.S.

#X	DESCRIPTION	P-X	DS-X	VFD-X	TSH-X
#1	WAS/RAS PUMP #1	P-901	DS-901	VFD-901	TSH-901
#2	WAS/RAS PUMP #2	P-902	DS-902	VFD-902	TSH-902
#3	WAS/RAS PUMP #3	P-903	DS-903	VFD-903	TSH-903

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ⊠ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- ● – ANTENNA TERMINAL
- RJ45 – RJ-45
- TX / RX – FIBER OPTIC PORT

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

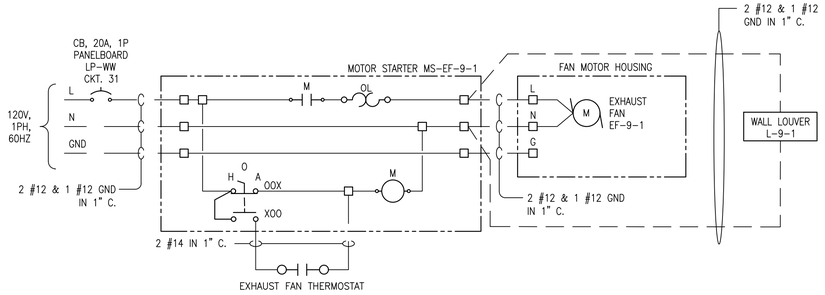
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION
SCHAMTIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
9-E-4



NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ENCLOSED MOTOR STARTER WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - A. CABINET SCCR SHALL BE 10kAIC MINIMUM.
   - B. FULL VOLTAGE NON-REVERSING (FVNR) IEC TYPE NON-COMBINATION MOTOR STARTER, RATED FOR 1/2HP MOTOR.
   - C. SELECTOR SWITCHES AND INDICATING LIGHTS:
     - C.1. HOA SWITCH.
     - C.2. RUNNING INDICATING LIGHT.
   - D. CABINET SHALL INCLUDE ALL NECESSARY COMPONENTS FOR EQUIPMENT SAFE AND RELIABLE OPERATION.
   - E. ENCLOSURE TYPE SHALL BE NEMA 4X.

THE CABINET SHALL BE MANUFACTURED BY EATON, SCHNEIDER ELECTRIC, ALLEN-BRADLEY, ABB, SIEMENS OR APPROVED EQUAL MANUFACTURER, THE CABINET SHALL BE UL LISTED AND LABELED. CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM AND BOM FOR THE CONTROL PANEL TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION.

1 EXHAUST FAN EF-9-1 MOTOR STARTER SCHEMATIC WIRING DIAGRAM

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

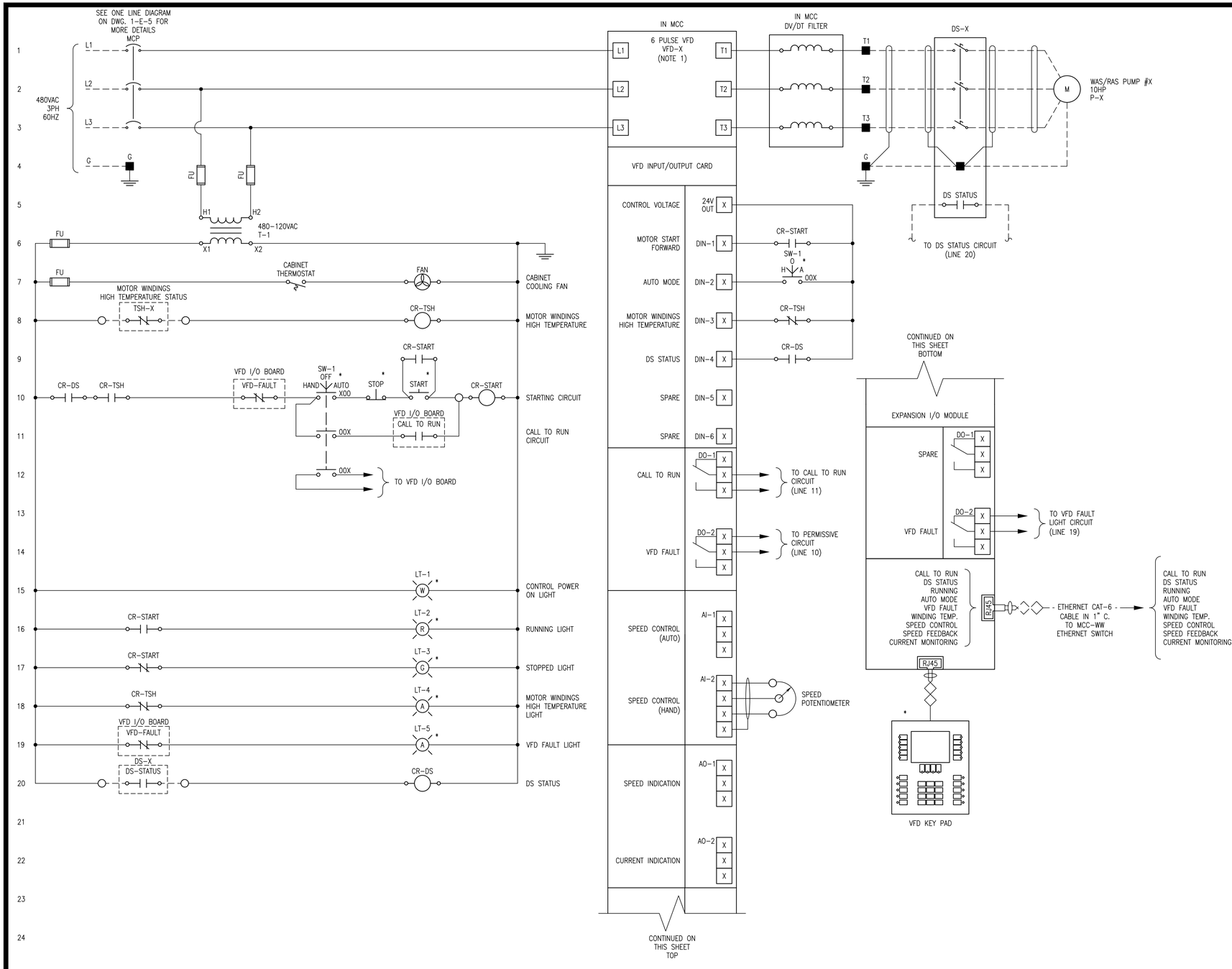
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
9-E-5

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 WAS/RAS PUMP VFD – SCHEMATIC WIRING DIAGRAM (TYP. FOR 3)

#X	DESCRIPTION	P-X	DS-X	VFD-X	TSH-X
#1	WAS/RAS PUMP #1	P-901	DS-901	VFD-901	TSH-901
#2	WAS/RAS PUMP #2	P-902	DS-902	VFD-902	TSH-902
#3	WAS/RAS PUMP #3	P-903	DS-903	VFD-903	TSH-903

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL WAS/RAS PUMP VFD MOUNTED IN MCC WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - A. CABINET SCCR SHALL BE 65kAIC MINIMUM.
   - B. MAIN DEVICE: THERMAL MAGNETIC CIRCUIT BREAKER 30A, 480V, 3P WITH LOCKABLE DISCONNECT HANDLE.
   - C. VARIABLE FREQUENCY DRIVE (VFD):
     - C.1. CONSTANT TORQUE DRIVE.
     - C.2. 6 PULSE DRIVE WITH MOTOR CIRCUIT PROTECTORS, RATED FOR 10HP MOTOR.
     - C.3. INCLUDE DV/DT FILTER.
   - D. 1kVA, 480-240/120V CONTROL POWER TRANSFORMER WITH PRIMARY AND SECONDARY CIRCUIT BREAKERS.
   - E. FAN & THERMOSTAT.
   - F. VFD KEY PAD MOUNTED ON THE FRONT DOOR;
   - G. SPEED POTENTIOMETER (FOR HAND MODE).
   - H. SELECTOR SWITCHES:
     - H.1. H-O-A SWITCH.
   - I. PUSH BUTTONS:
     - I.1. START;
     - I.2. STOP.
   - J. INDICATING LIGHTS FOR:
     - J.1. CONTROL POWER ON (WHITE);
     - J.2. PUMP RUNNING (RED);
     - J.3. PUMP STOPPED (GREEN);
     - J.4. VFD FAULT (AMBER);
     - J.5. WINDING TEMP. (AMBER).
   - K. MEANS OF I/O's COMMUNICATION:
     - K.1. COMMUNICATION LINKS: ETHERNET/IP (RJ-45).
   - U. HARDWIRED SAFETY INTERLOCKS SHALL INCLUDE:
     - U.1. DISCONNECT SWITCH STATUS;
     - U.2. WINDINGS OVERTEMP;
     - U.3. VFD FAULT;

   THE VFD SHALL BE MANUFACTURED BY MCC MANUFACTURER.
2. THE WIRING DIAGRAM IS CONCEPTUAL IN NATURE, THE CONTRACTOR SHALL ADJUST THE DIAGRAMS TO ALLOW PROPER EQUIPMENT OPERATION.

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ▨ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- ● – ANTENNA TERMINAL
- RJ45 – RJ-45
- TX / RX – FIBER OPTIC PORT
- * – MOUNTED ON VFD CABINET FRONT

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

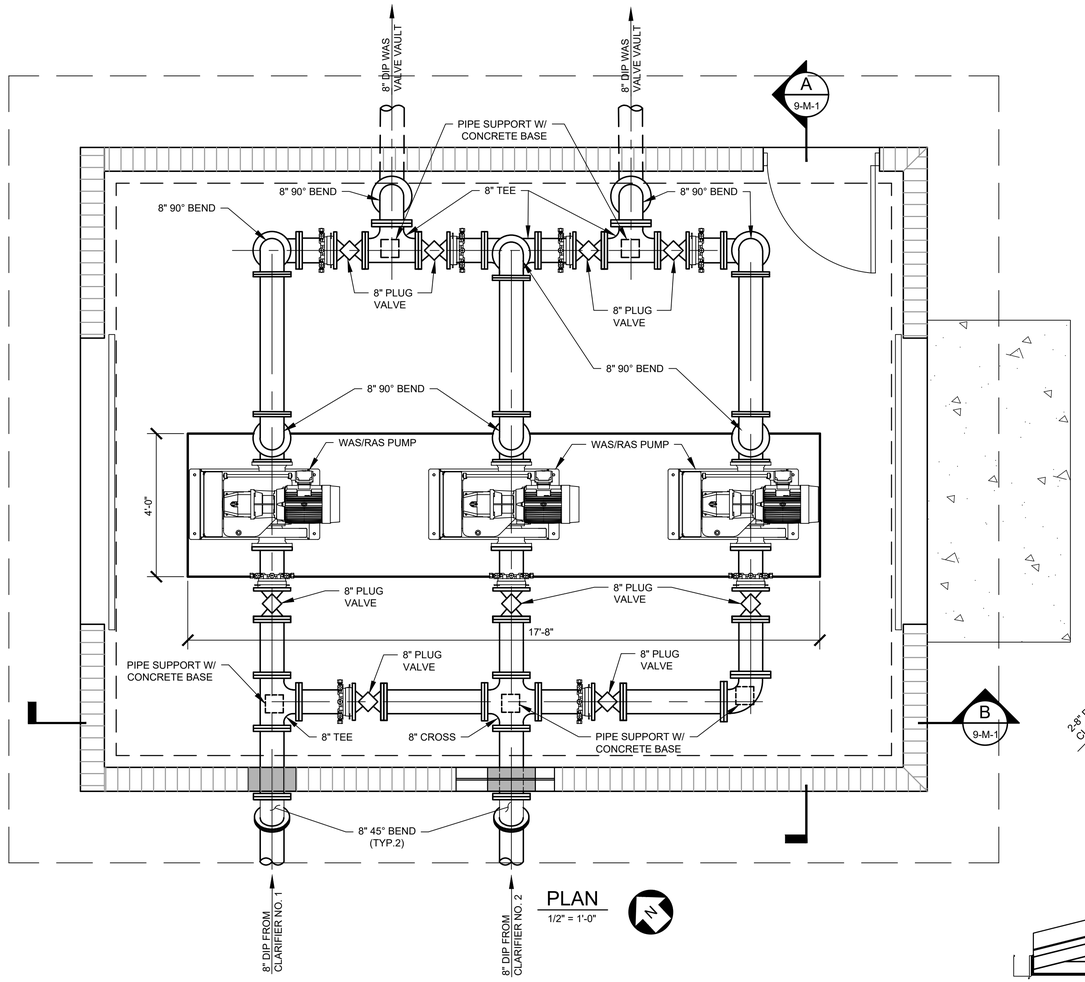
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMPS
SCHEMATIC WIRING DIAGRAMS

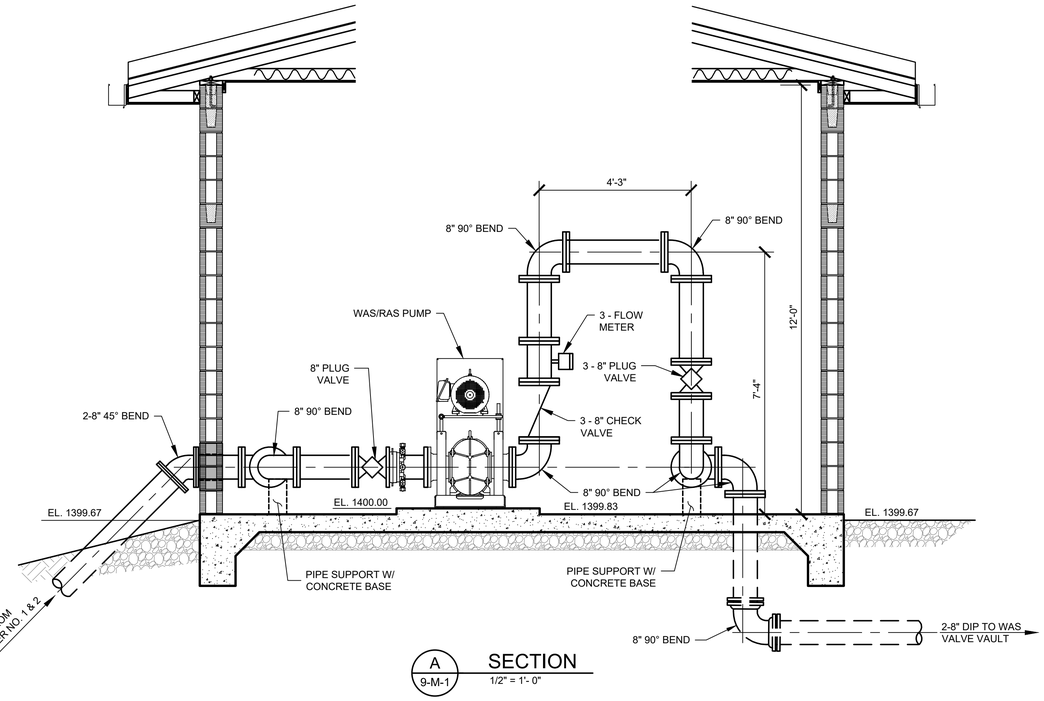
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

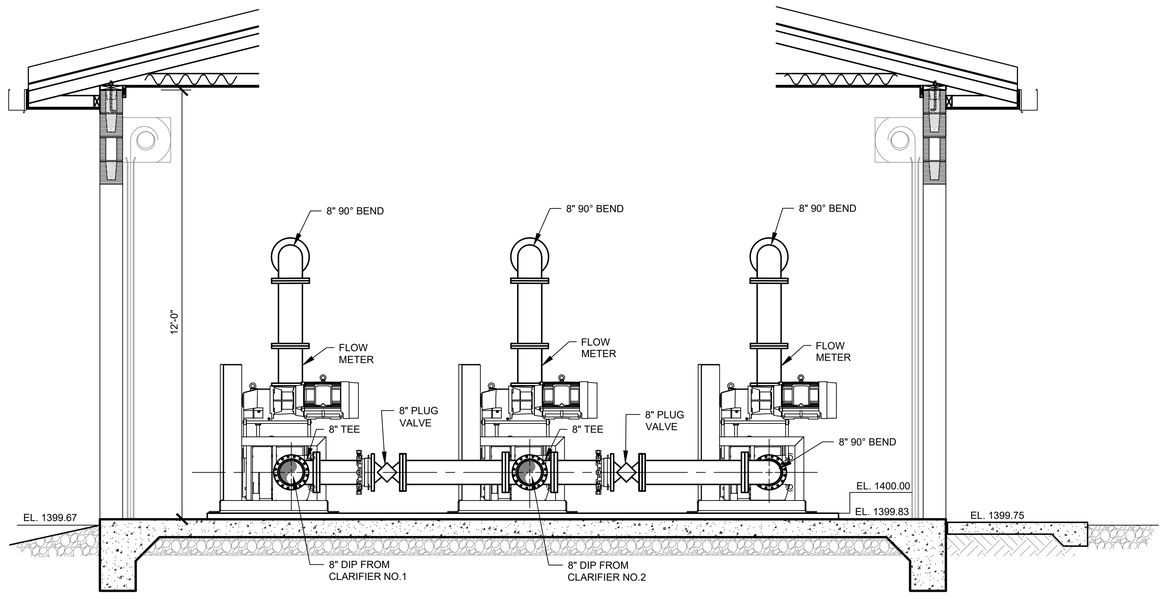
Sheet No.
9-E-6



PLAN
1/2" = 1'- 0"



A
9-M-1
SECTION
1/2" = 1'- 0"



B
9-M-1
SECTION
1/2" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

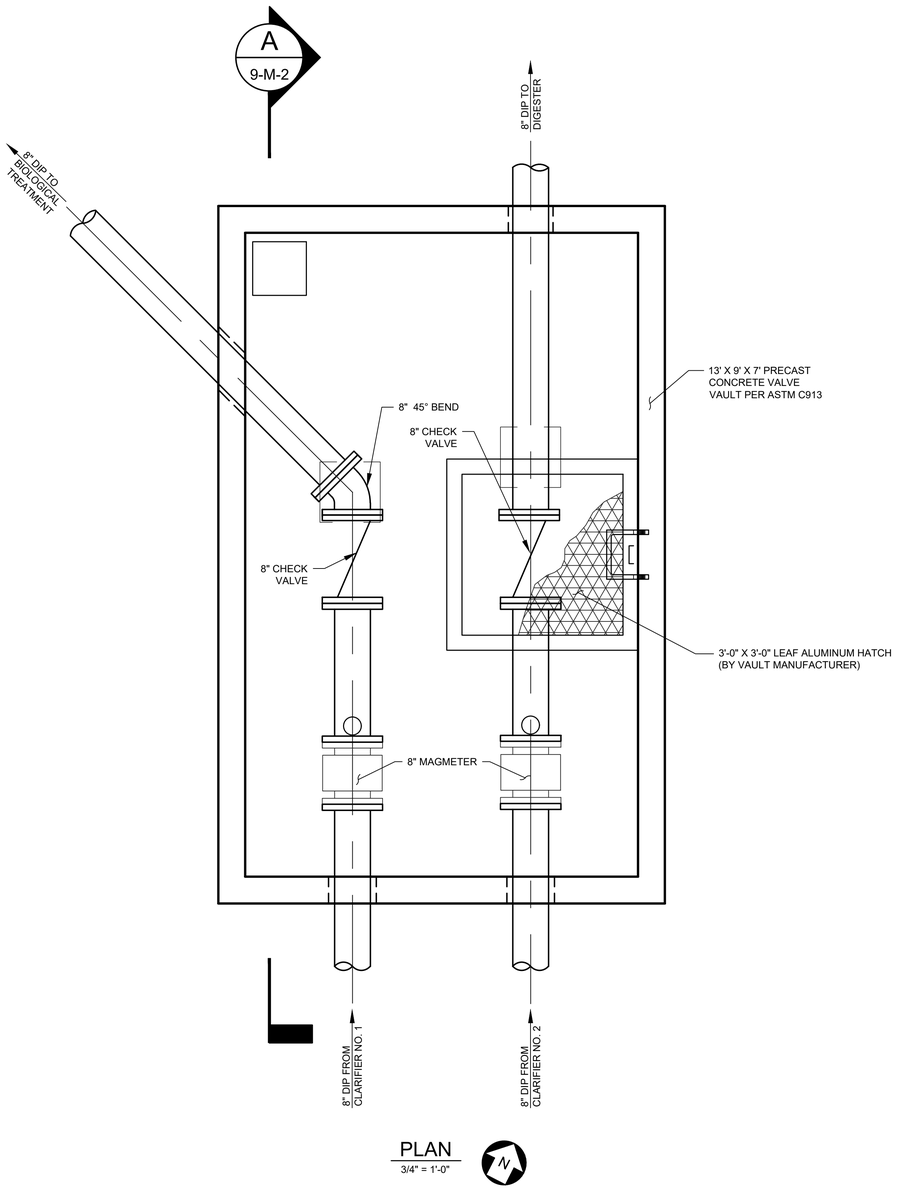
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION PLAN AND SECTION

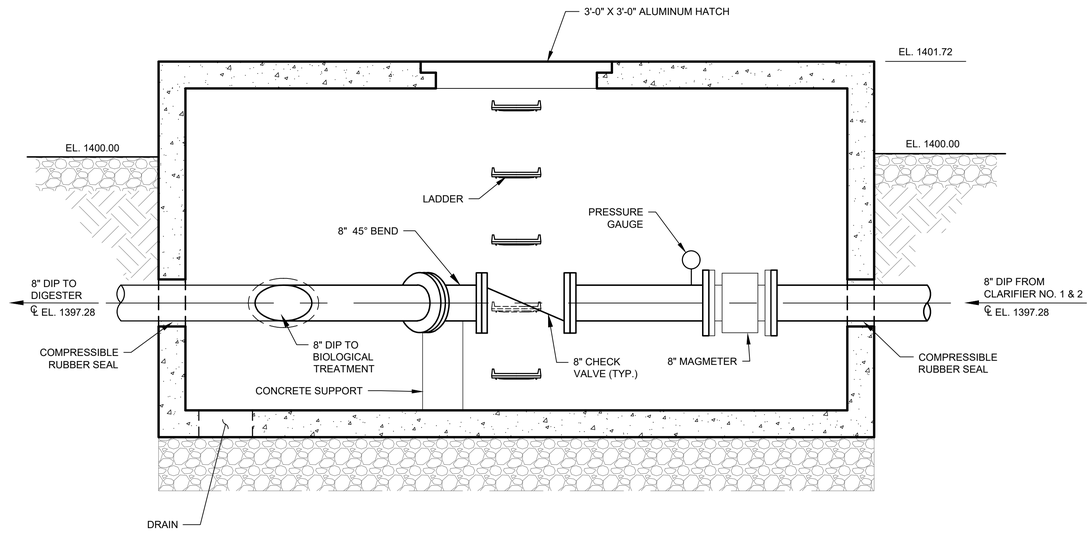
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
9-M-1-WAS-RAS Pump Station.dwg

Sheet No.
9-M-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 09 - Was Ras Pump Station\9-M-1-WAS-RAS Pump Station.dwg 08/01/2025 1:49pm aencarnacion



PLAN
3/4" = 1'-0"



A
9-M-2
SECTION
3/4" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

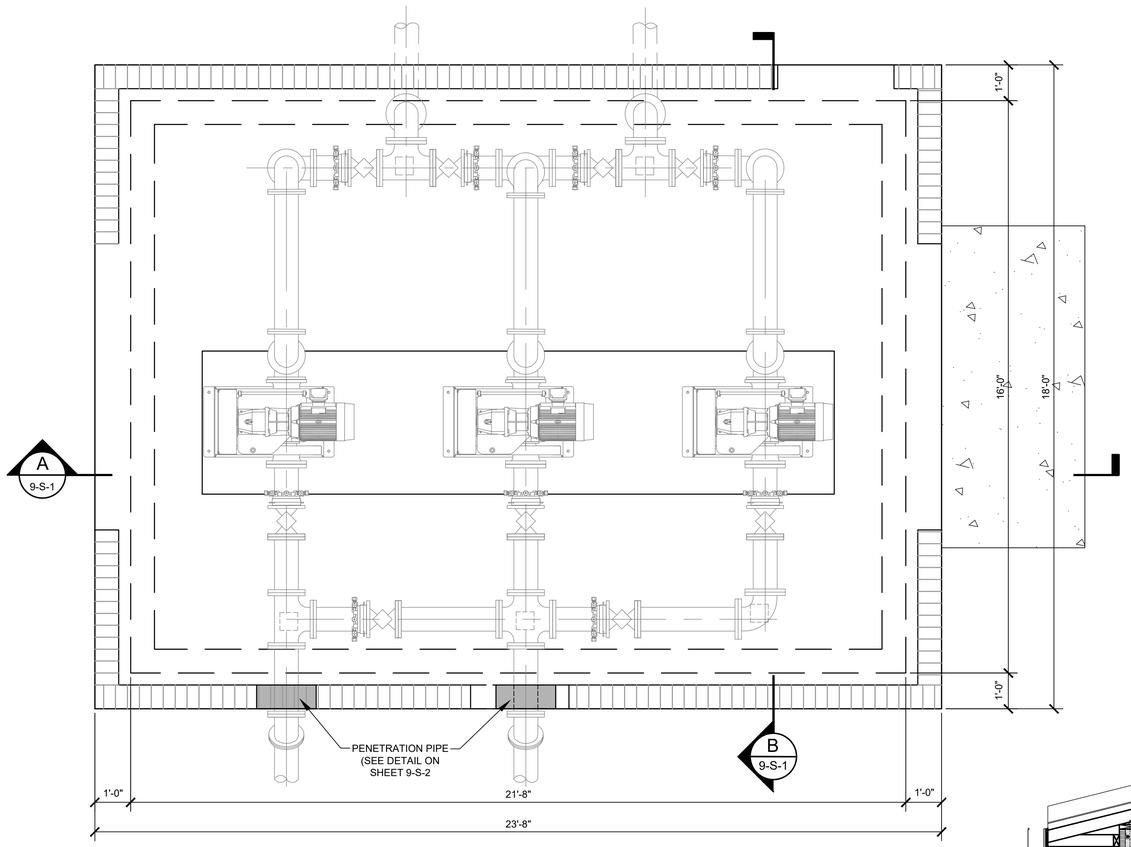
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS VALVE VALULT PLAN AND SECTION

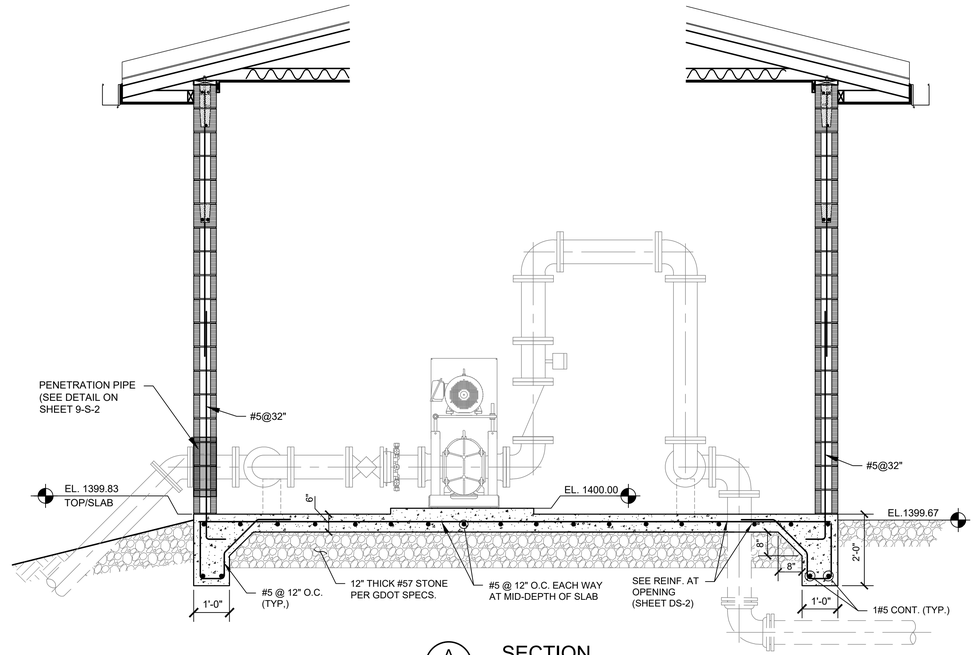
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
9-M-2-WAS Valve Vault.dwg

Sheet No.
9-M-2

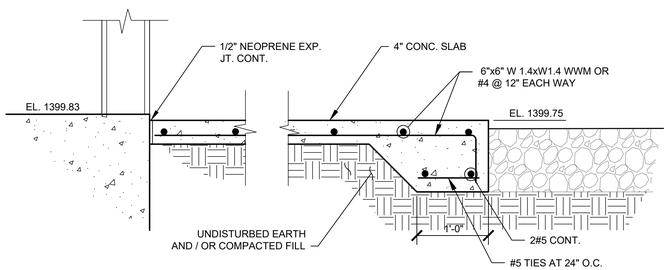
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 09 - Was Ras Pump Station\9-M-2-WAS Valve Vault.dwg 08/01/2025 1:49pm aencarnacion



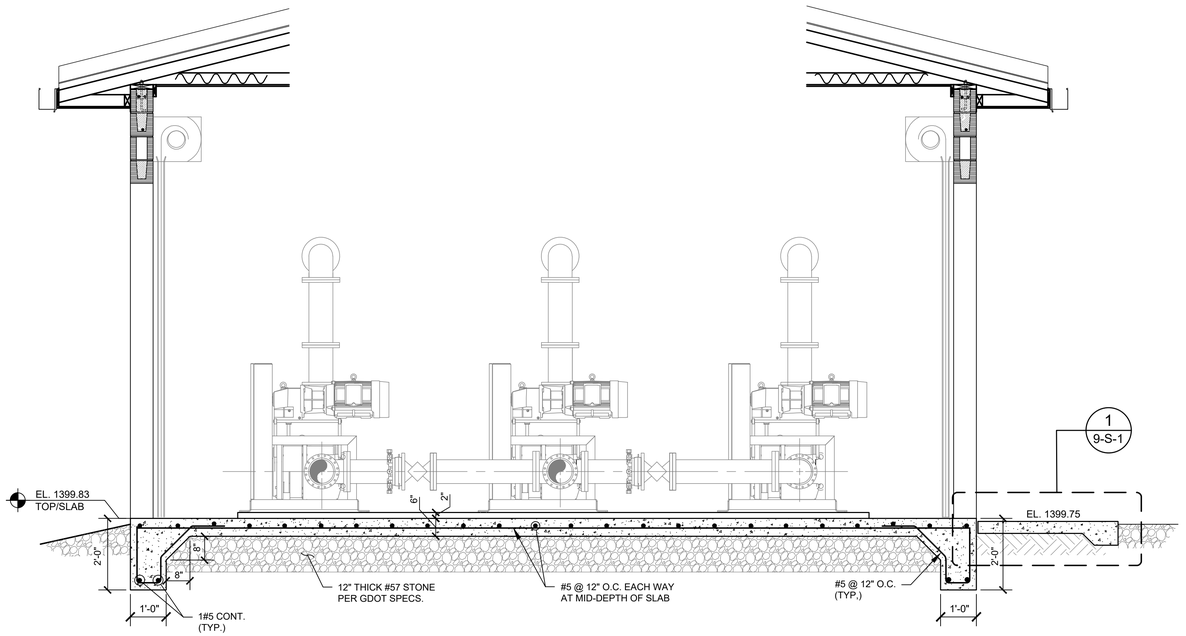
PLAN
1/2" = 1'-0"



A 9-S-1 SECTION
1/2" = 1'- 0"



1 9-S-1 DETAIL
1" = 1'- 0"



A 9-S-1 SECTION
1/2" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

ENGINEERING + ENVIRONMENTAL

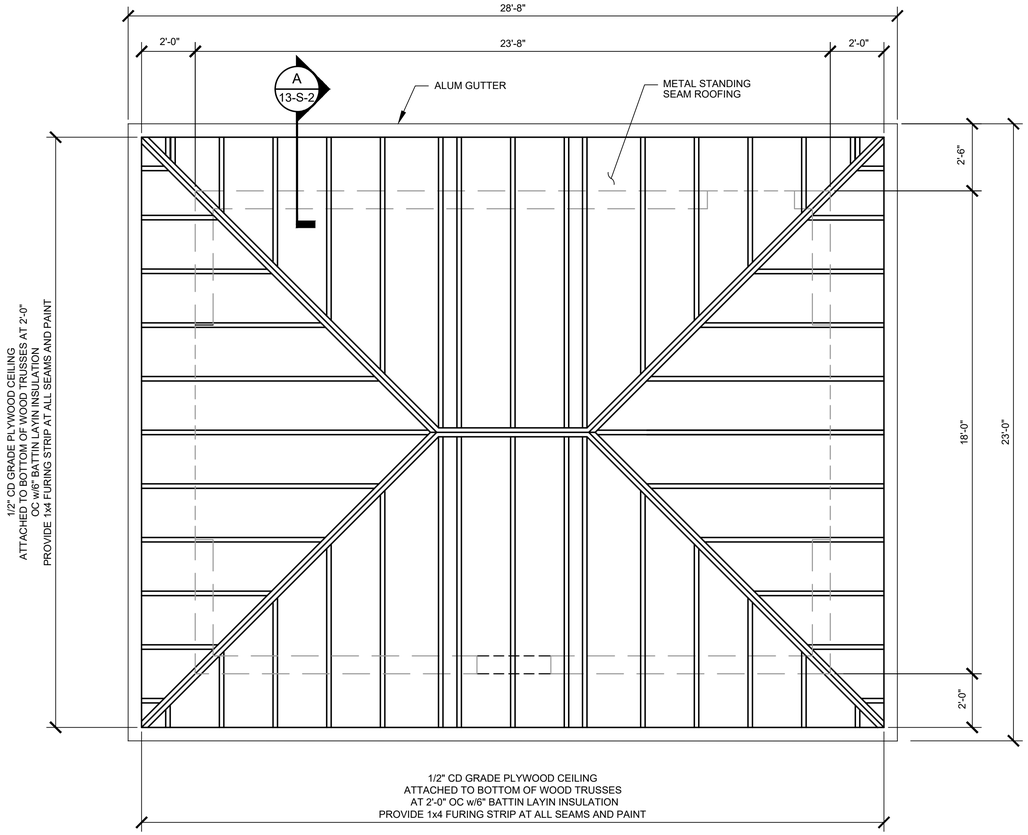
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS/RAS PUMP STATION PLAN AND SECTION

Drawn: AE
Design: AE
Checked: MM
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2022
9-S-1-WAS-RAS Pump Station.dwg

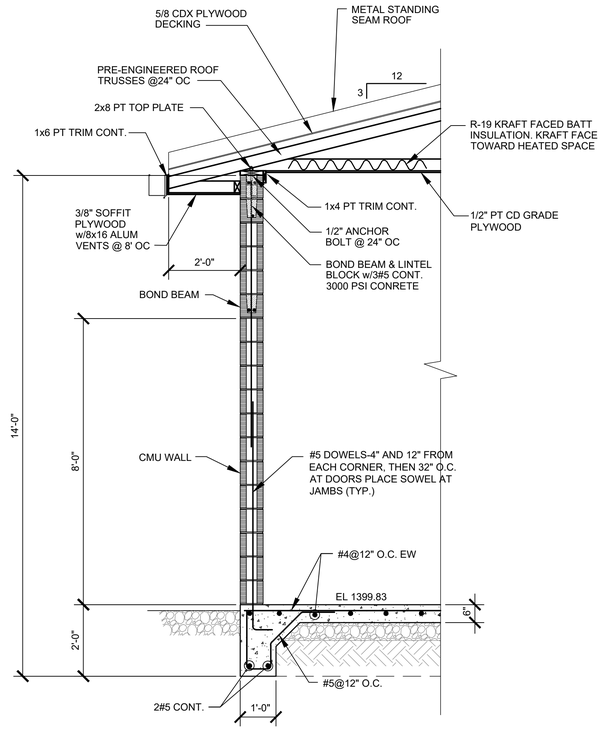
Sheet No.
9-S-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 09 - Was Ras Pump Station\9-S-1-WAS-RAS Pump Station.dwg 08/01/2025 1:48pm aencarnacion



ROOF PLAN

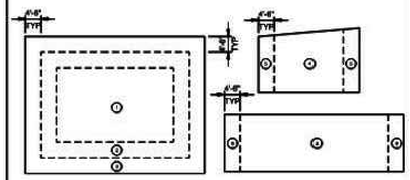
3/8" = 1'-0"



A 13-S-2 SECTION

1/2" = 1'-0"

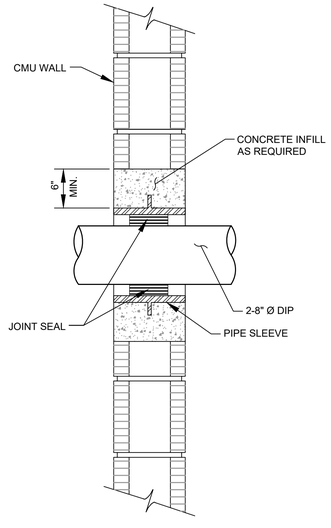
BLOWER AND CHLORINATION SYSTEM CANOPIES						
WIND DESIGN PRESSURES COMPONENTS CLADDING, PSF (LFRD)						
ROOF						
EFFECTIVE AREA (SF)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	29	-44	31	-67	40	-132
25	29	-44	31	-67	31	-67
50	29	-44	31	-67	31	-67
WALLS (WHERE OCCURS)						
EFFECTIVE AREA (SF)	ZONE 4 (FIELD)		ZONE 5 (CORNERS)			
	(+)	(-)	(+)	(-)		
<10	51	-56	51	-69		
50	46	-51	46	-58		
200	42	-46	42	-49		
>500	38	-43	38	-43		



WIND PRESSURE NOTES:

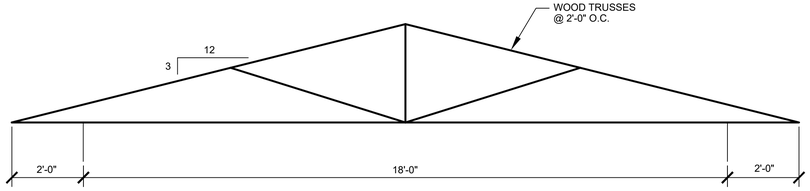
1. SEE "WIND DESIGN CRITERIA" NOTES ON S-1.0.
2. "e" = 4'-8" , OH = OVERHANG ZONE PRESSURES.
3. DESIGN PRESSURES ARE PROVIDED AT ULTIMATE DESIGN WIND SPEEDS. TO CONVERT TO NOMINAL DESIGN WIND SPEEDS (ASD) MULTIPLE PRESSURE BY A FACTOR OF 0.60.
4. THE EFFECTIVE AREA SHALL BE DETERMINED AS FOLLOWS UNLESS OTHERWISE NOTED:
   a. THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE THIRD THE SPAN LENGTH.
   b. THE AREA THAT IS TRIBUTARY TO AN INDIVIDUAL FASTENER.
4. NEGATIVE SIGN INDICATES PRESSURE ACTING OUTWARD FROM SURFACE.

ENCLOSURE CLASSIFICATION — OPEN (OBSTRUCTED)



MASONRY PIPE PENETRATION DETAIL

N.T.S.



NOTE:

BOTTOM CHORD TO BE DESIGNED PROVIDED BY THE CONTRACTOR

TRUSS DETAIL

1/2" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

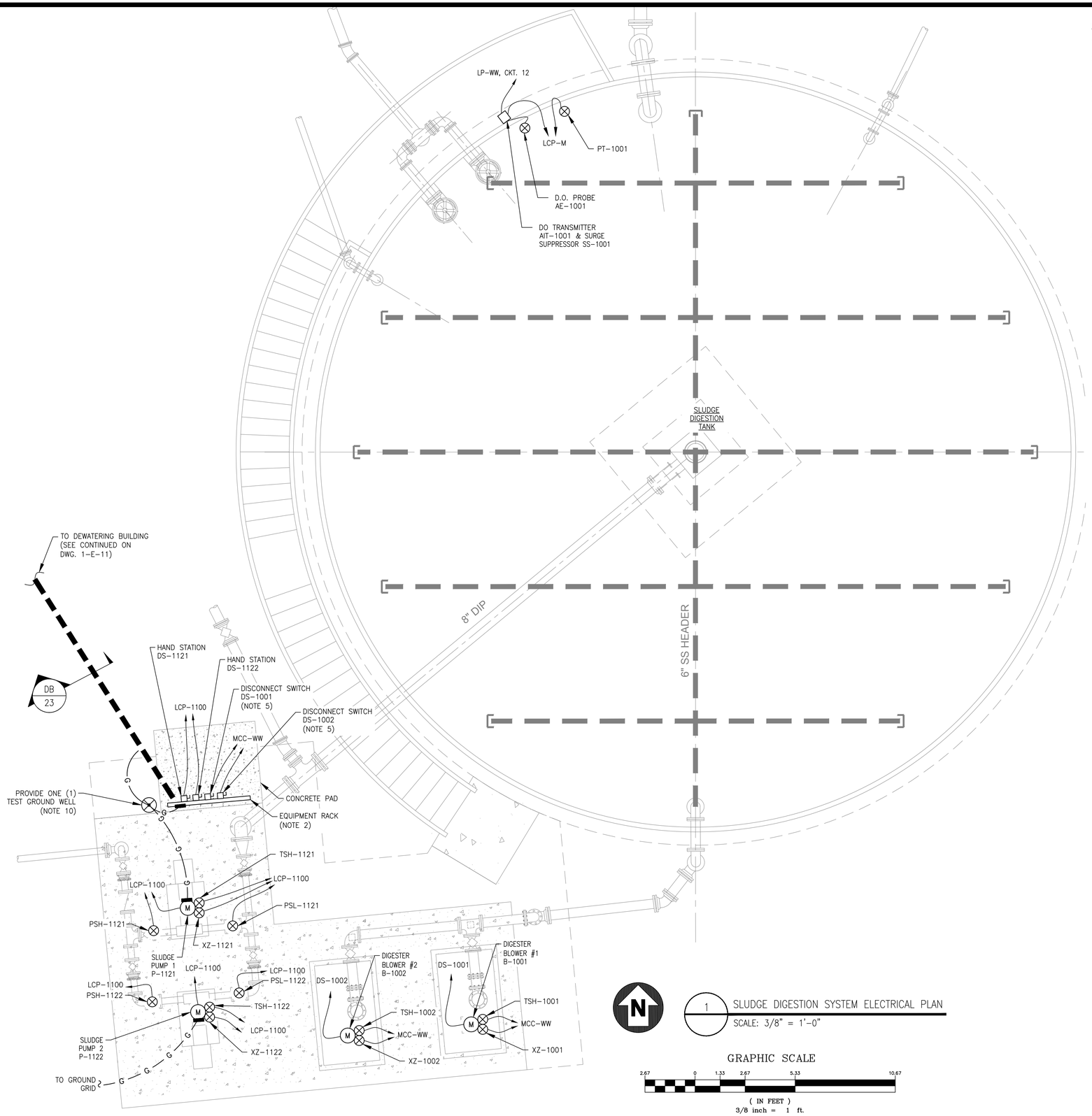
WAS/RAS PUMP STATION ROOF PLAN AND SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
S-S-1 WAS-RAS Pump Station.dwg

Sheet No.

9-S-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 09 - Was Ras Pump Station\9-S-1-WAS-RAS Pump Station.dwg 08/01/2025 1:48pm aencarnacion



1 SLUDGE DIGESTION SYSTEM ELECTRICAL PLAN

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

GRAPHIC SCALE

2.67 0 1.33 2.67 5.33 10.67

(IN FEET)

3/8 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT FOR INSTALLATION OF ELECTRICAL EQUIPMENT SEE DETAIL 2 ON DWG. DE-1 FOR TYPICAL INSTALLATION DETAILS.
3. THE EXACT DEVICE LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
4. CONTRACTOR SHALL GROUND ALL METAL STRUCTURS/SURFACES TO THE LOCAL GROUND ROD.
5. CONTRACTOR SHALL PROVIDE AND INSTALL 480V, 3P, 200A, NON-FUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR BLOWER MOTOR LOCAL MEANS OF DISCONNECT. CONTRACTOR SHALL ADJUST DISCONNECT LOCATION IN THE FIELD TO AVOID INTERFERENCES WITH OTHER UTILITIES AND TO PROVIDE THE REQUIRED WORKING CLEARANCE
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
7. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
8. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
9. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS.
10. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIAMETER X 10' LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

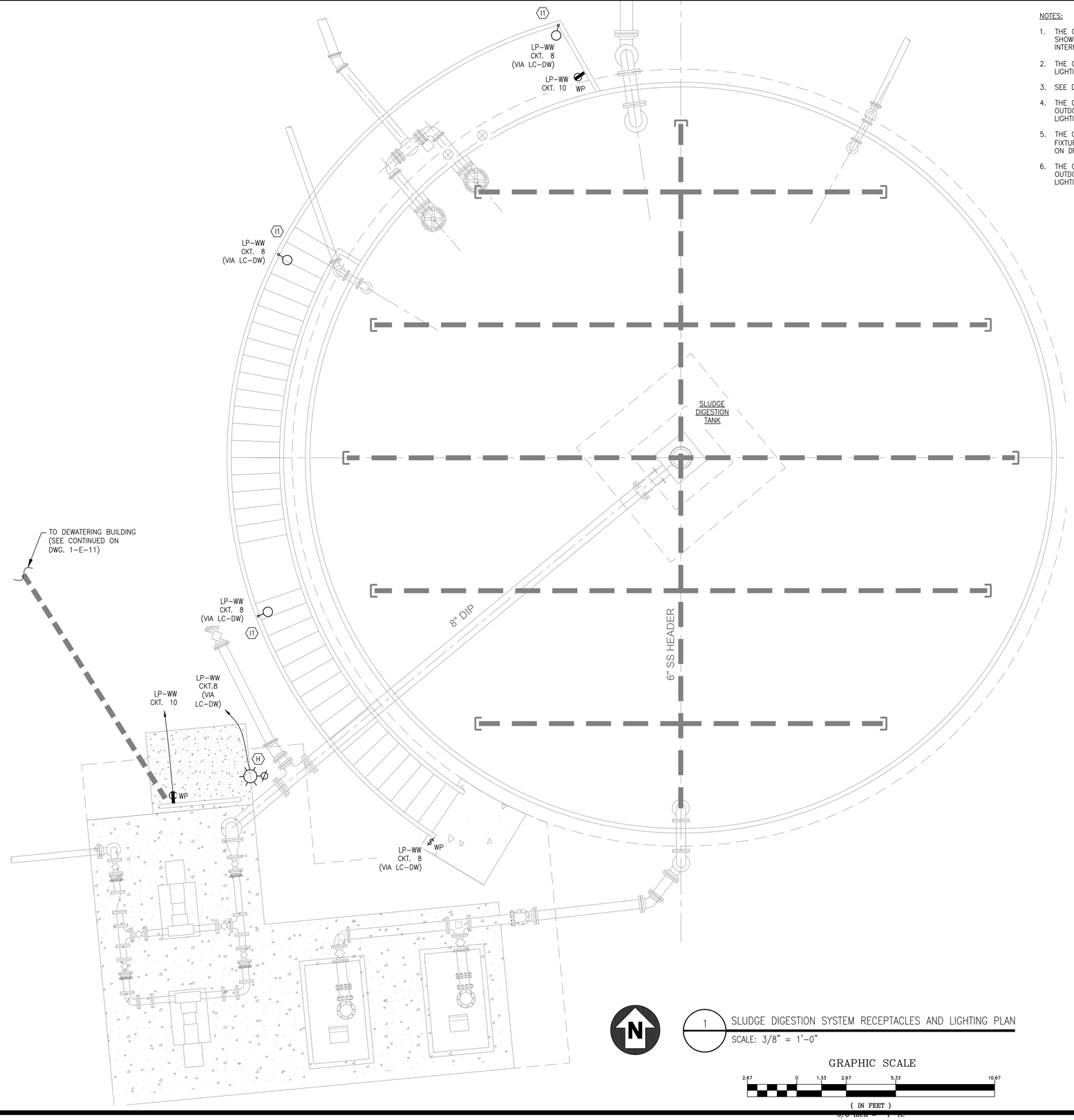
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DIGESTION SYSTEM ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
10-E-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 4-E-3 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW LIGHTING POLE WITH SECURITY LIGHTING FIXTURE. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION. SEE DETAIL "8" ON DRAWING DE-5 FOR INSTALLATION DETAILS.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 10-E-3 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.

LEGEND:

– – – – DIRECT BURIED UNDERGROUND DUCTBANK

1 SLUDGE DIGESTION SYSTEM RECEPTACLES AND LIGHTING PLAN
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE

2.67 0 1.33 2.67 5.33 10.67
(IN FEET)

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

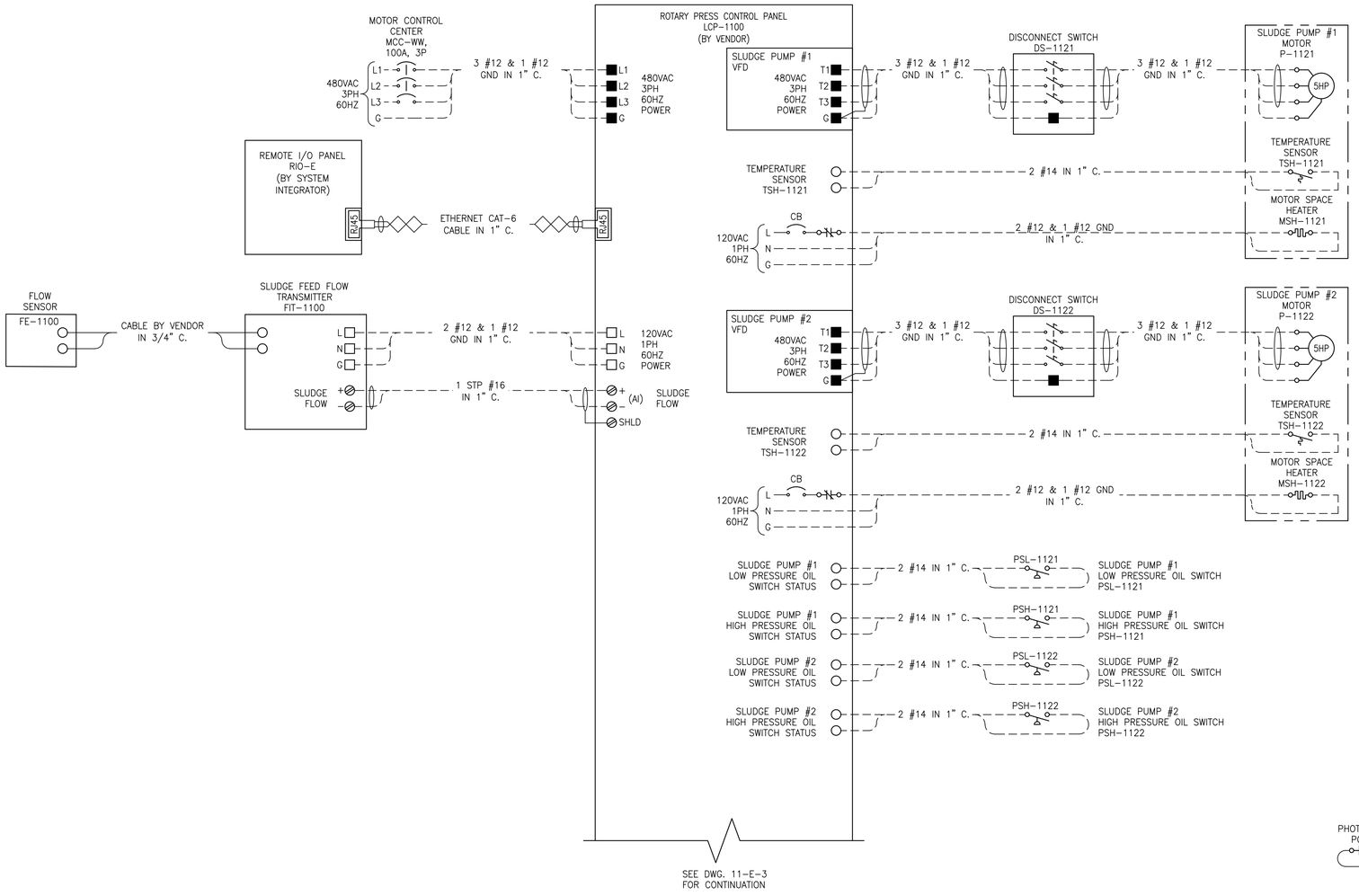
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DIGESTION SYSTEM
RECEPTACLES AND LIGHTING PLAN

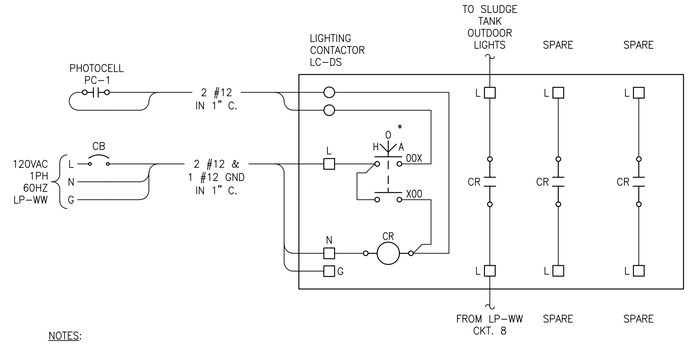
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
10-E-2



1 ROTARY PRESS CONTROL PANEL SCHEMATIC WIRING DIAGRAM



NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.
2. MECHANICALLY HELD HEAVY-DUTY 3 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.
4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

2 LIGHTING CONTACTOR LC-DS – SCHEMATIC WIRING DIAGRAM

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ⊠ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- RJ45 – RJ-45
- * – MOUNTED ON CABINET FRONT

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK NO. 32513

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

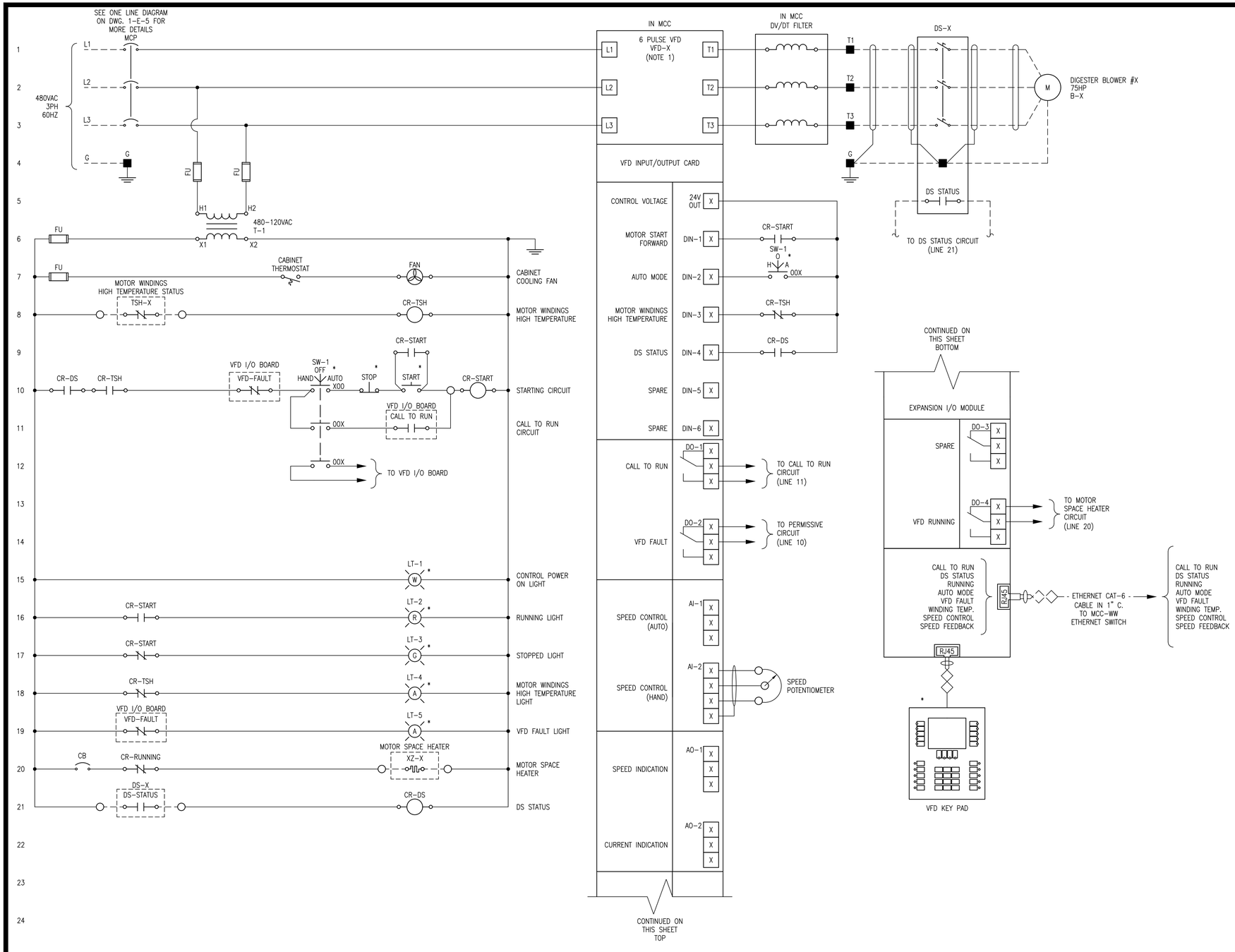
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DEWATERING SYSTEM
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
10-E-3



1 DIGESTER BLOWER PUMP VFD – SCHEMATIC WIRING DIAGRAM (TYP. FOR 2)

#X	DESCRIPTION	B-X	DS-X	VFD-X	TSH-X	XZ-X
#1	DIGESTER BLOWER #1	B-1001	DS-1001	VFD-1001	TSH-1001	XZ-1001
#2	DIGESTER BLOWER #2	B-1002	DS-1002	VFD-1002	TSH-1002	XZ-1002

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TWO DIGESTER BLOWER VFDS MOUNTED IN MCC WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - A. CABINET SCCR SHALL BE 65kAIC MINIMUM.
   - B. MAIN DEVICE: THERMAL MAGNETIC CIRCUIT BREAKER 150A, 480V, 3P WITH LOCKABLE DISCONNECT HANDLE.
   - C. VARIABLE FREQUENCY DRIVE (VFD):
     - C.1. CONSTANT TORQUE DRIVE.
     - C.2. 6 PULSE DRIVE WITH MOTOR CIRCUIT PROTECTORS, RATED FOR 75HP MOTOR.
     - C.3. INCLUDE DV/DT FILTER.
   - D. 1kVA, 480-240/120V CONTROL POWER TRANSFORMER WITH PRIMARY AND SECONDARY CIRCUIT BREAKERS.
   - E. FAN & THERMOSTAT.
   - F. VFD KEY PAD MOUNTED ON THE FRONT DOOR;
   - G. SPEED POTENTIOMETER (FOR HAND MODE).
   - H. SELECTOR SWITCHES:
     - H.1. H-O-A SWITCH.
   - I. PUSH BUTTONS:
     - I.1. START;
     - I.2. STOP.
   - J. INDICATING LIGHTS FOR:
     - J.1. CONTROL POWER ON (WHITE);
     - J.2. PUMP RUNNING (RED);
     - J.3. PUMP STOPPED (GREEN);
     - J.4. VFD FAULT (AMBER);
     - J.5. WINDING TEMP. (AMBER).
   - K. MEANS OF I/O's COMMUNICATION:
     - K.1. COMMUNICATION LINKS: ETHERNET/IP (RJ-45).
   - U. HARDWIRED SAFETY INTERLOCKS SHALL INCLUDE:
     - U.1. DISCONNECT SWITCH STATUS;
     - U.2. WINDINGS OVERTEMP;
     - U.3. VFD FAULT;

   THE VFD SHALL BE MANUFACTURED BY MCC MANUFACTURER.
2. THE WIRING DIAGRAM IS CONCEPTUAL IN NATURE, THE CONTRACTOR SHALL ADJUST THE DIAGRAMS TO ALLOW PROPER EQUIPMENT OPERATION.

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ▨ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- ● – ANTENNA TERMINAL
- RJ45 – RJ-45
- TX / RX – FIBER OPTIC PORT
- * – MOUNTED ON VFD CABINET FRONT

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
A	ISSUED FOR BID	GS	8/4/25

RJN ENGINEERING • ENVIRONMENTAL

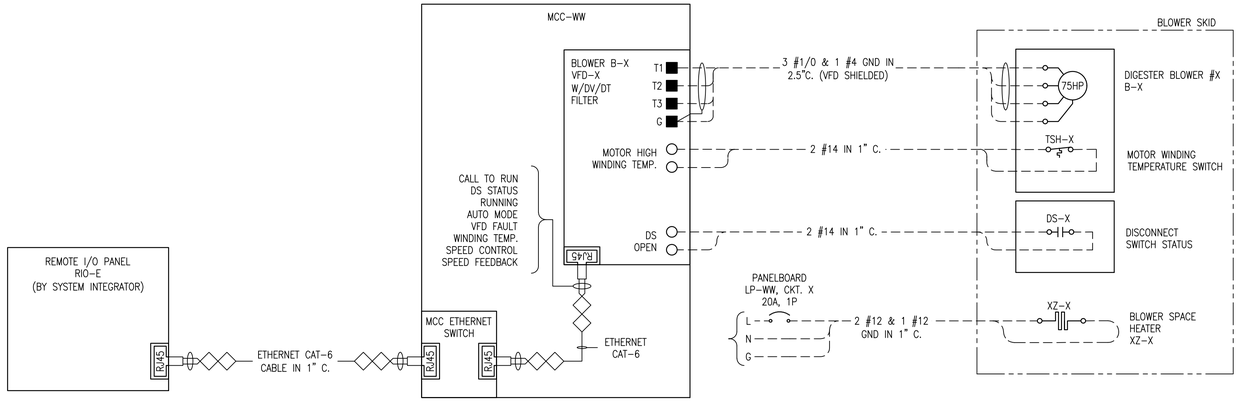
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DIGESTION SYSTEM
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
10-E-4

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 DIGESTER BLOWER VFDS INTERCONNECTIONS (TYP.FOR 2)

#X	DESCRIPTION	B-X	DS-X	VFD-X	TSH-X	XZ-X	LP-WW, CKT. X
#1	DIGESTER BLOWER #1	B-1001	DS-1001	VFD-1001	TSH-1001	XZ-1001	CKT. 61
#2	DIGESTER BLOWER #2	B-1002	DS-1002	VFD-1002	TSH-1002	XZ-1002	CKT. 63

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ▨ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- ● – ANTENNA TERMINAL
- RJ45 – RJ-45
- TX / RX – FIBER OPTIC PORT

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
A	ISSUED FOR BID	GS	8/4/25

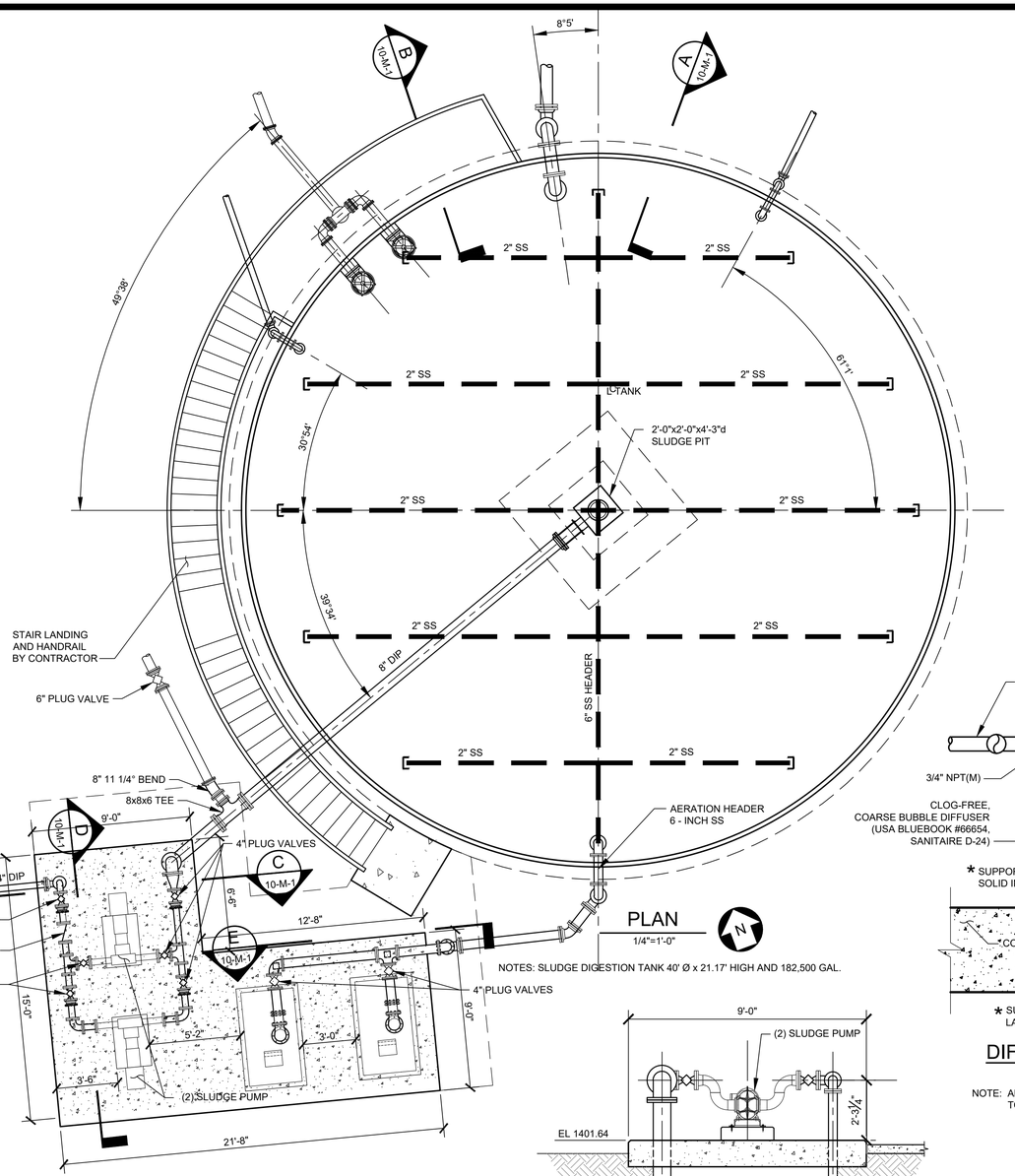
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DIGESTION SYSTEM
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

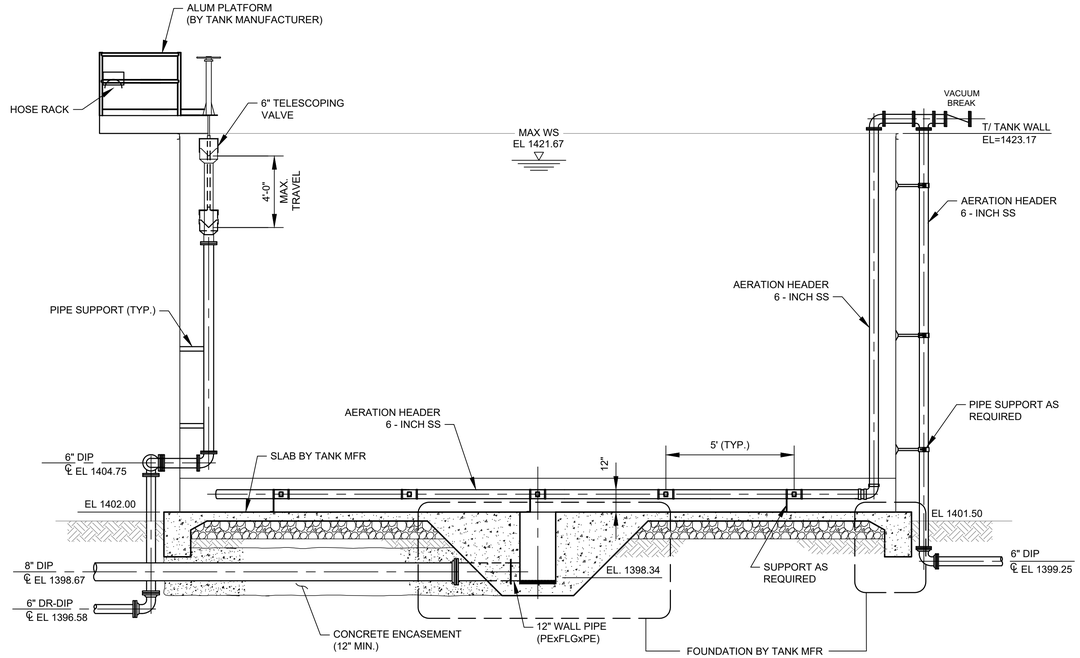
Sheet No.
10-E-5



PLAN

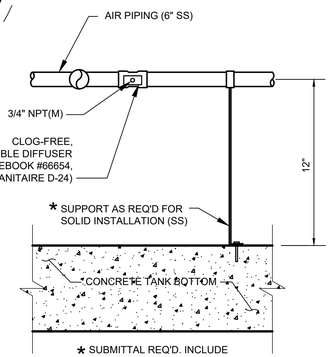
1/4"=1'-0"

NOTES: SLUDGE DIGESTION TANK 40' Ø x 21.17' HIGH AND 182,500 GAL.



SECTION

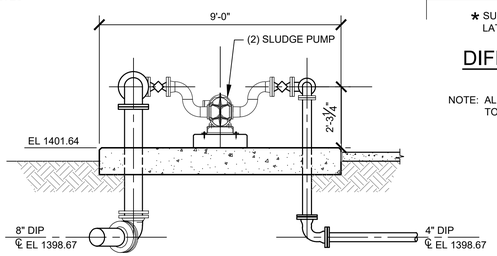
1/4"=1'-0"



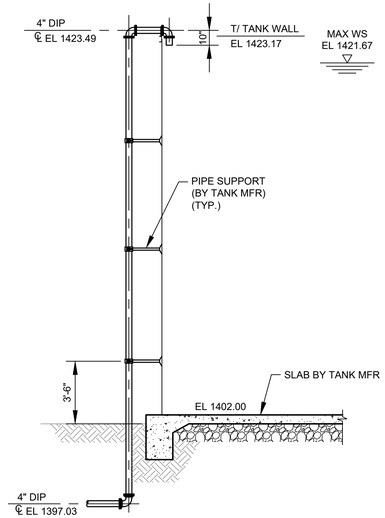
DIFFUSER DETAIL

N.T.S.

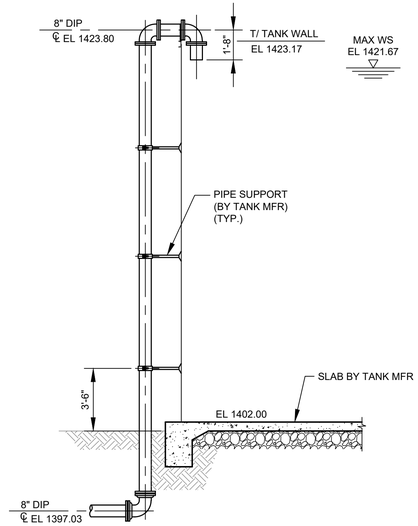
NOTE: ALL MATERIAL BELOW WATER LINE TO BE (SS)



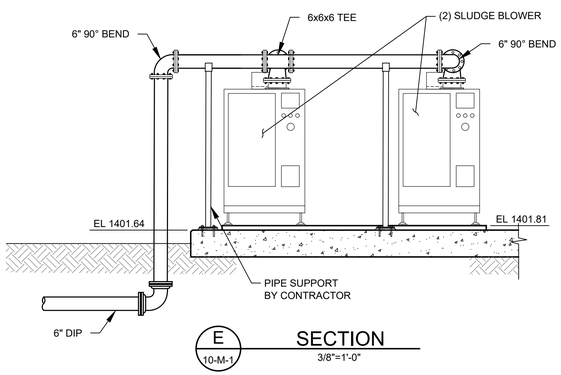
C 10-M-1 SECTION 3/8"=1'-0"



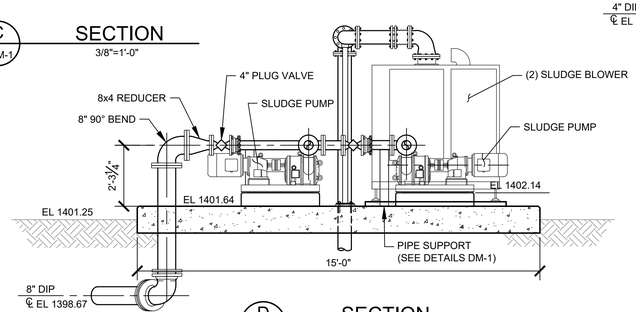
A 10-M-1 SECTION 1/4"=1'-0"



B 10-M-1 SECTION 1/4"=1'-0"



E 10-M-1 SECTION 3/8"=1'-0"



D 10-M-1 SECTION 3/8"=1'-0"

NOTES:

1. AERATION PIPING SHALL BE STAINLESS STEEL.
2. DIFFUSERS ARE SS COARSE BUBBLE, CLOG FREE, BY SANITAIRE MODEL D-24, OR APPROVED EQUAL.
3. DIFFUSERS ARE 25.6" LONG WITH 3/4" NPT(M) THREADS.
4. BOTTOM OF DIFFUSERS SHALL BE 12 INCHES FROM BOTTOM OF TANK.
5. THERE ARE 82 DIFFUSER HEADS FOR BIOREACTOR .
6. PIPING SUPPORTS AND ALL BOLTS, NUTS WASHERS, AND FITTINGS SHALL BE STAINLESS STEEL.
7. AERATION SYSTEM SHALL BE INSTALLED AS SHOWN ON SITE LAYOUT.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

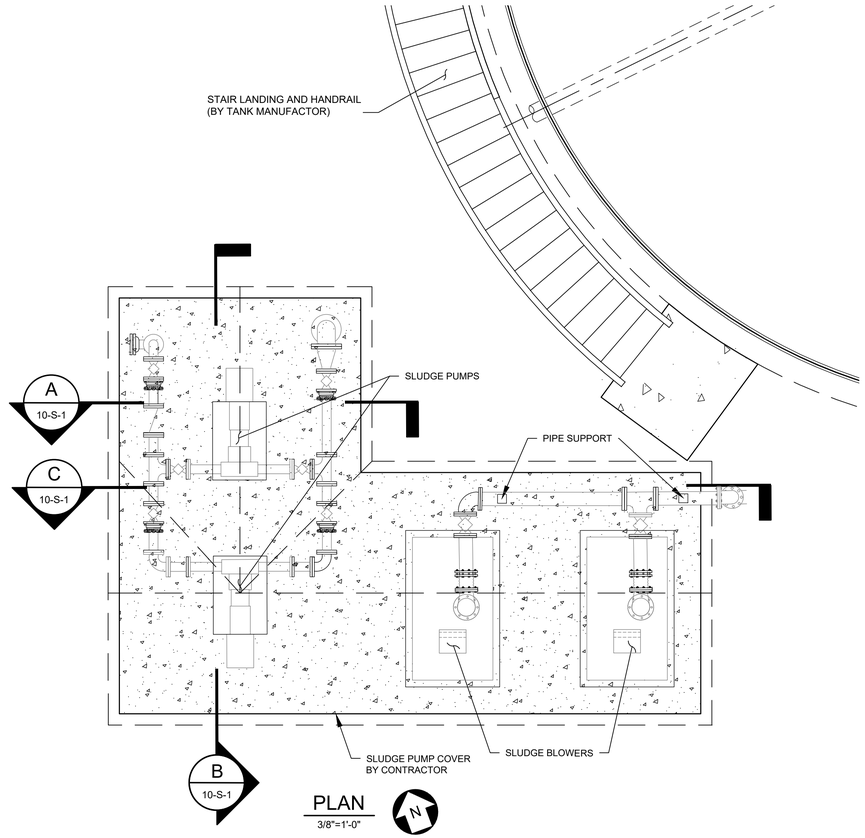
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE DIGESTION SYSTEM PLAN AND SECTIONS

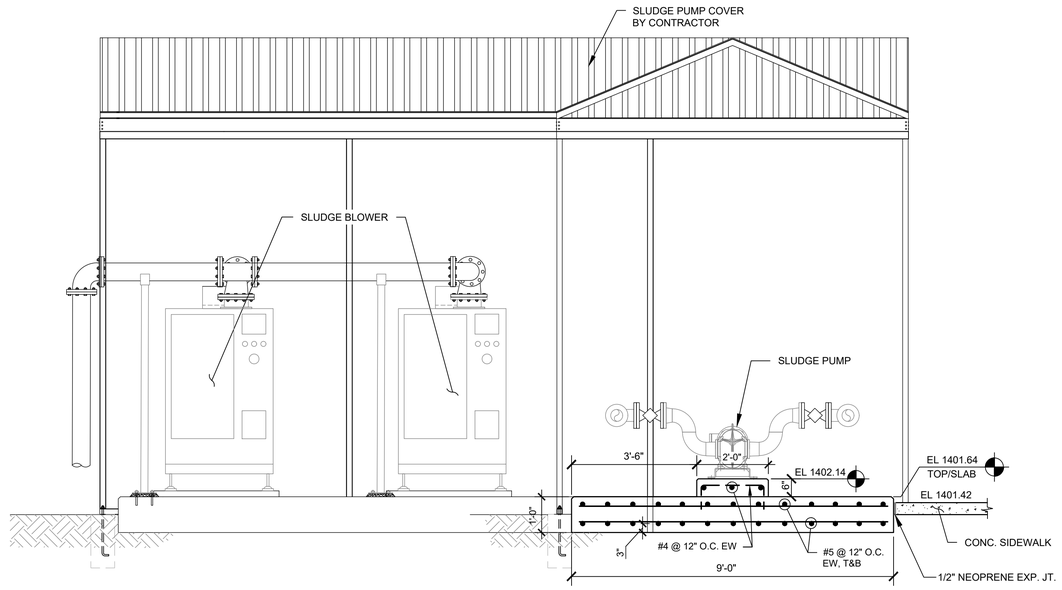
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1/4" = 1'-0"
Date: JULY 2022
10-M-1-SL Digestion Tank plan.dwg

Sheet No.
10-M-1

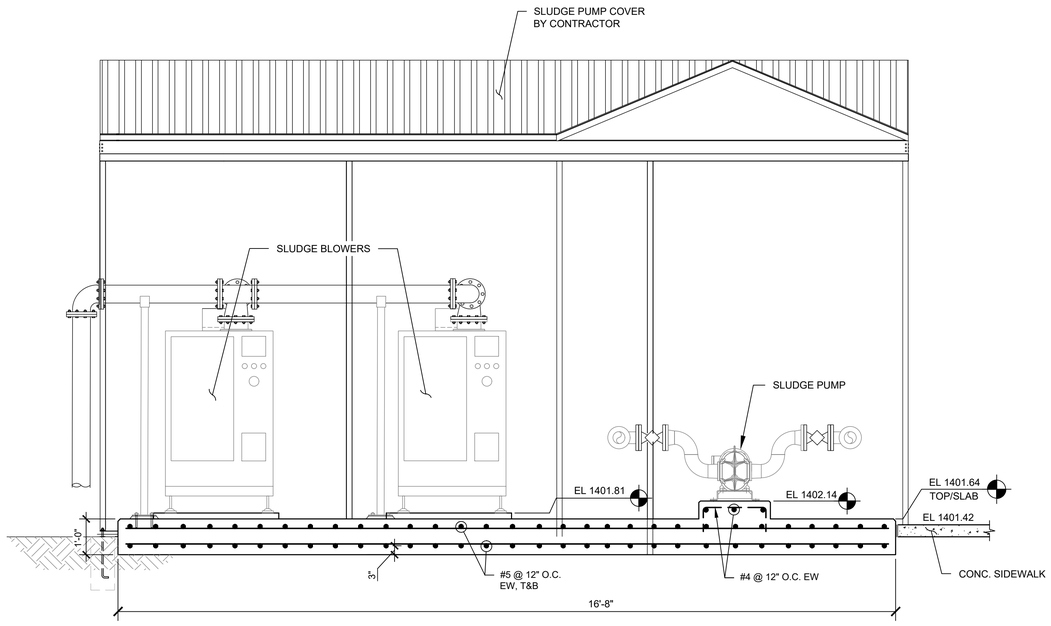
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 10 - Sludge Digestion\10-M-1-SL Digestion Tank plan.dwg 08/01/2025 1:50pm aencarnacion



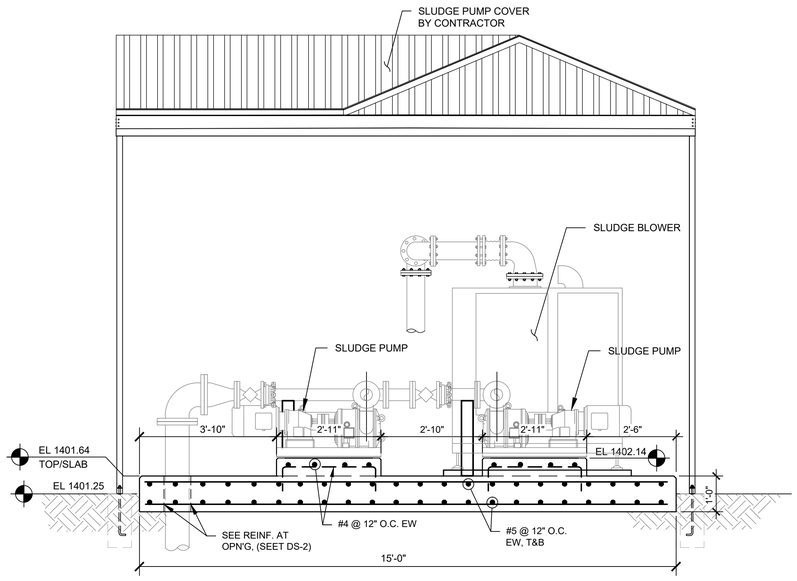
PLAN
3/8"=1'-0"



A 10-S-1 SECTION
1/2" = 1'-0"



C 10-S-1 SECTION
1/2" = 1'-0"



B 10-S-1 SECTION
1/2" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

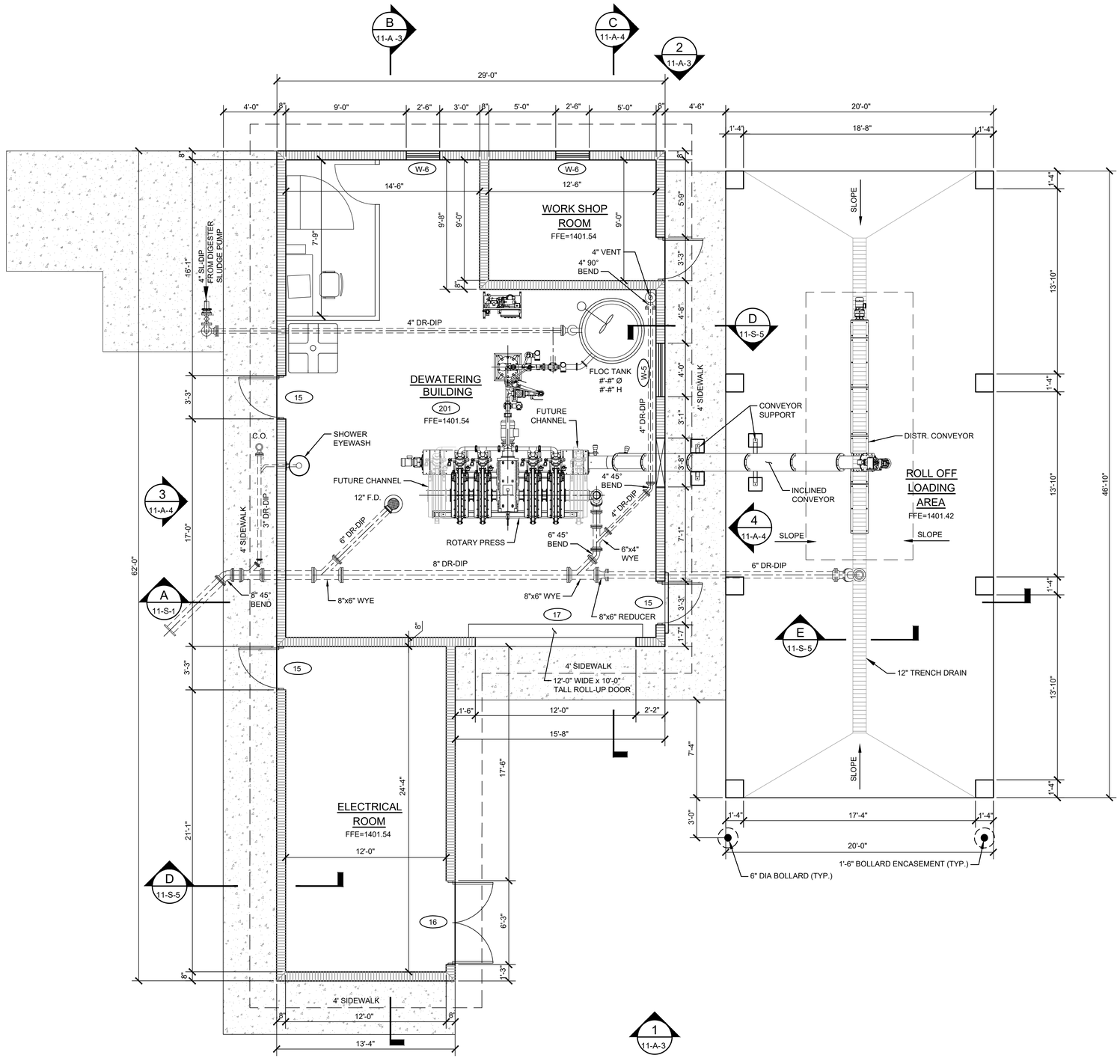
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SLUDGE PUMP SYSTEM PLAN AND SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1/4" = 1'- 0"
Date: JULY 2022
10-S-1-SL-Digestion Tank plan.dwg

Sheet No.
10-S-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\05 Drawings\Area 10 - Sludge Digestion\10-S-1-SL Digestion Tank plan.dwg 08/01/2025 1:50pm aencarnacion



PLAN
1/4" = 1'-0"

NOTE:
1. PROVIDE 12"x12" SIGN ABOVE HOSE BIBB STATION "POTABLE WATER".
2. PROVIDE 12"x12" SIGH ABOVE HOSE BIBB STATION "REUSE WATER".
3. WATER PRESS TO BOOSTER PUMP TO BE 55-65 PSI.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

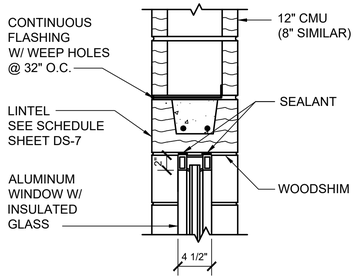
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING FLOOR PLAN

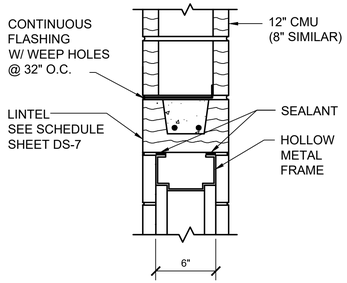
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
11-A-1-Building Plan.dwg

Sheet No.
11-A-1

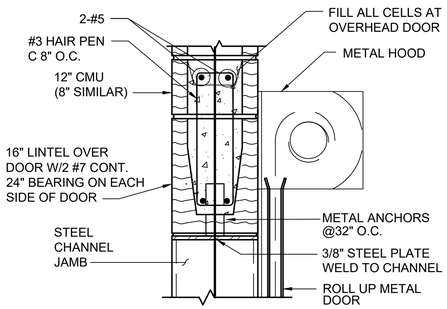
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-A-1-Building Plan.dwg 08/01/2025 1:51pm aencarnacion



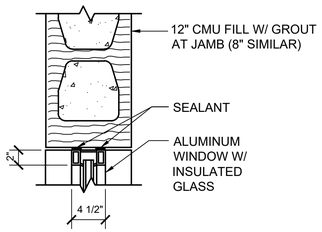
HEAD
(WINDOW)



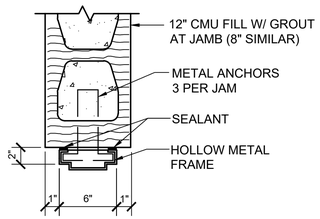
HEAD



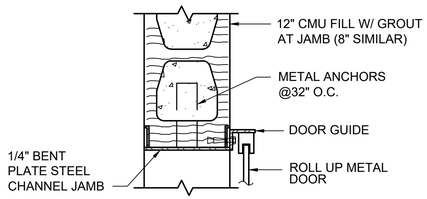
HEAD



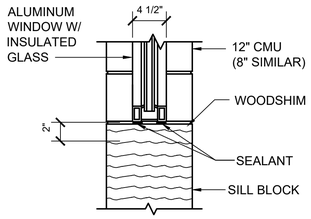
JAMB
(WINDOW)



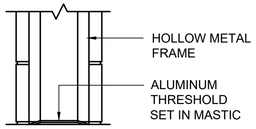
JAMB



JAMB

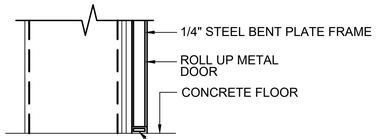


SILL
(WINDOW)



SILL

MAN DOOR

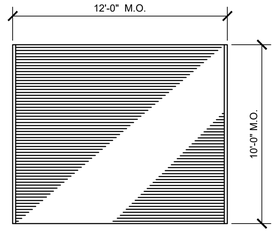
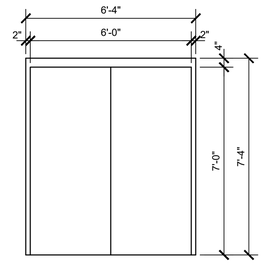
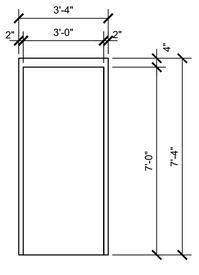
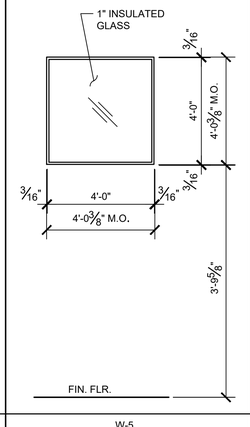
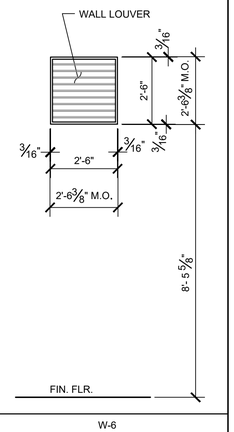


SILL

ROLL-UP DOOR

TYPICAL WINDOW DETAILS

TYPICAL DOOR DETAILS

ELEVATION	DOOR SCHEDULE				
					
MARK	17	16	15	W-5	W-6
SIZE	12'-0"x10'-0"	3'-0" X 7'-0" X 1-3/4"			
TYPE	ROLL-UP INSULATED	S.C. WD. BIRCH VEN.	INSULATED HOLLOW METAL	HOLLOW METAL / GLASS	ALUMINUM
FRAME		2" X 5-3/4" HOL. MET.	2"x5 3/4" HOLLOW METAL	2"x5 3/4" HOLLOW METAL	1 1/2"x 4" ALUMINUM
HEAD					
JAMB					
SILL					
HARDWARE SET					

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

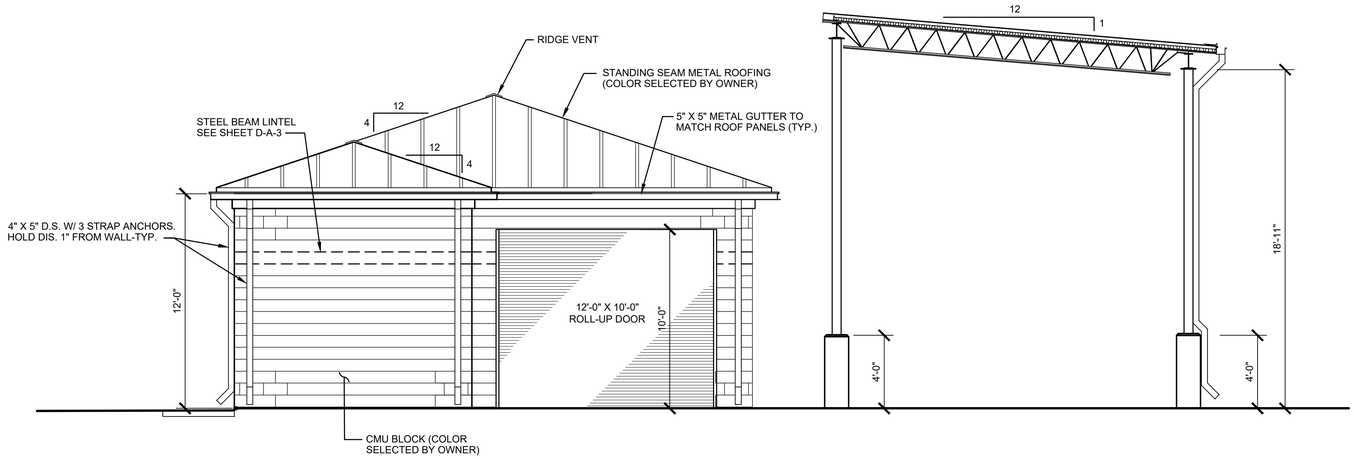
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

TYPICAL DOOR AND WINDOW DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
11-A-2 Typical Door & Wind.dwg

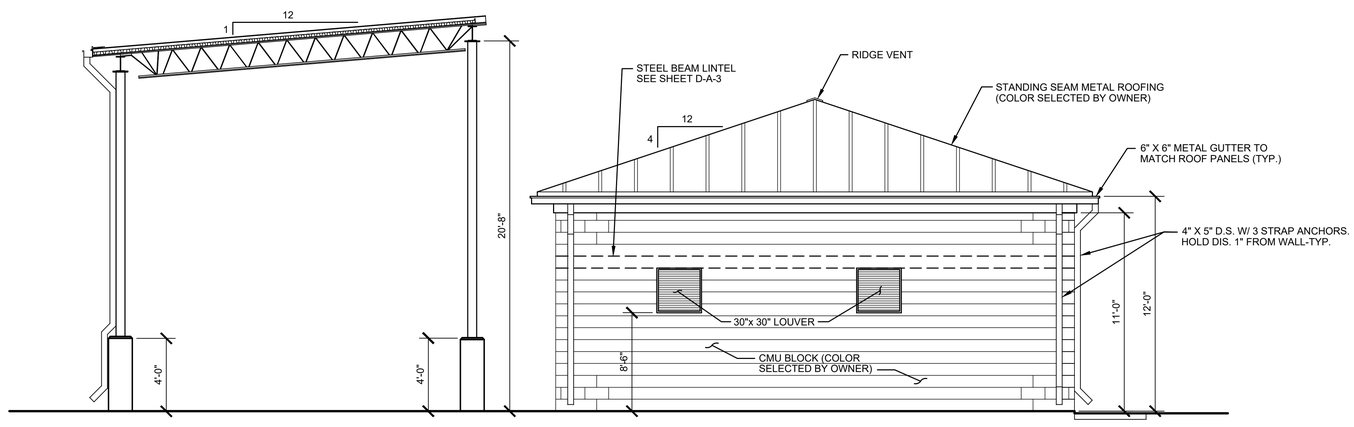
Sheet No.
11-A-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-A-2-Typical Door & Wind.dwg 08/01/2025 1:51pm aencarnacion



1 / 11-A-3 FRONT ELEVATION

1/4" = 1'-0"



2 / 11-A-3 BACK ELEVATION

1/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

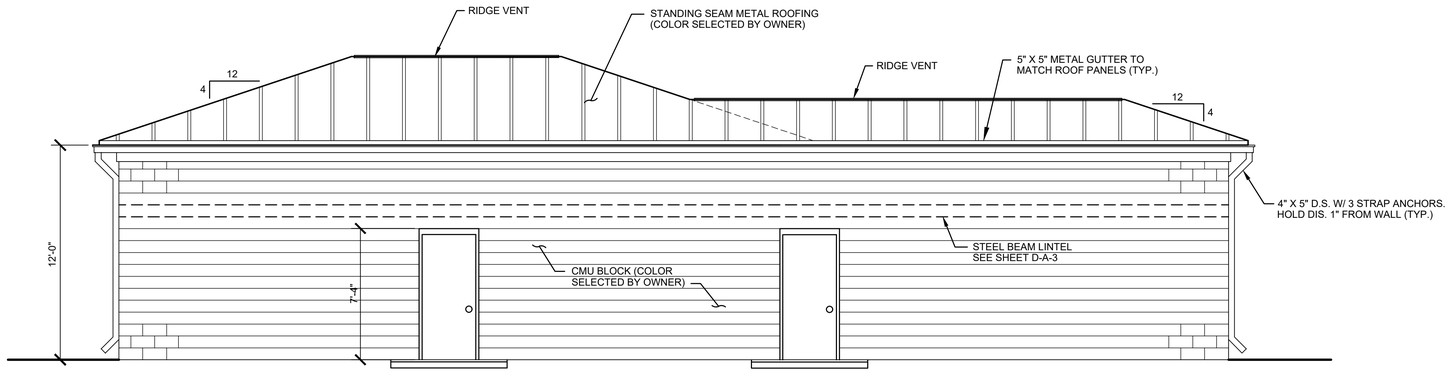
DEWATERING BUILDING ELEVATIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1/4" = 1'- 0"
Date: JULY 2022
11-A-3 Building Elevations.dwg

Sheet No.

11-A-3

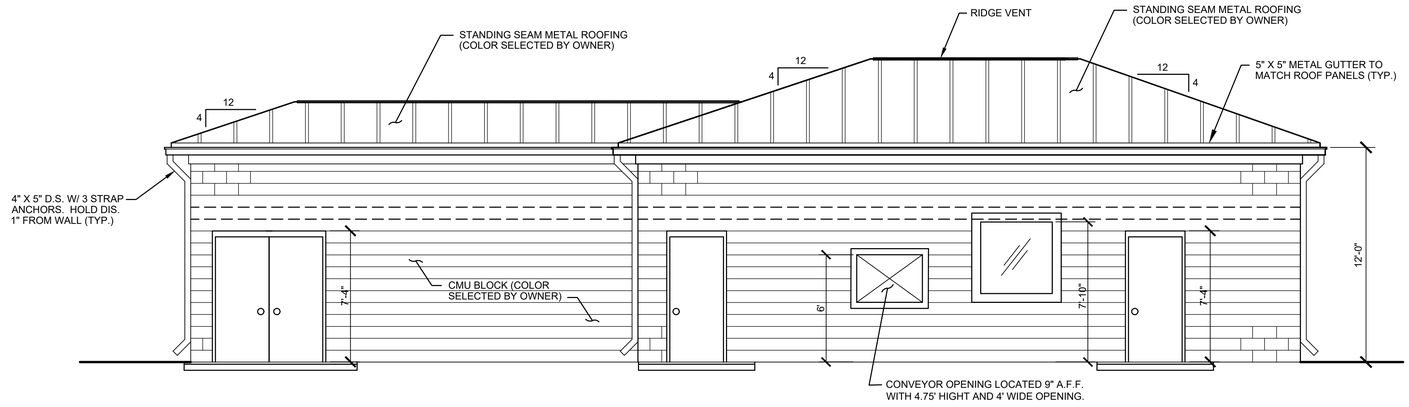
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-A-3-Bulding Elevations.dwg 08/01/2025 1:52pm aencarnacion



3
11-A-4

EAST ELEVATION

1/4" = 1'-0"



4
11-A-4

WEST ELEVATION

1/4" = 1'-0"

GEORGIA REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

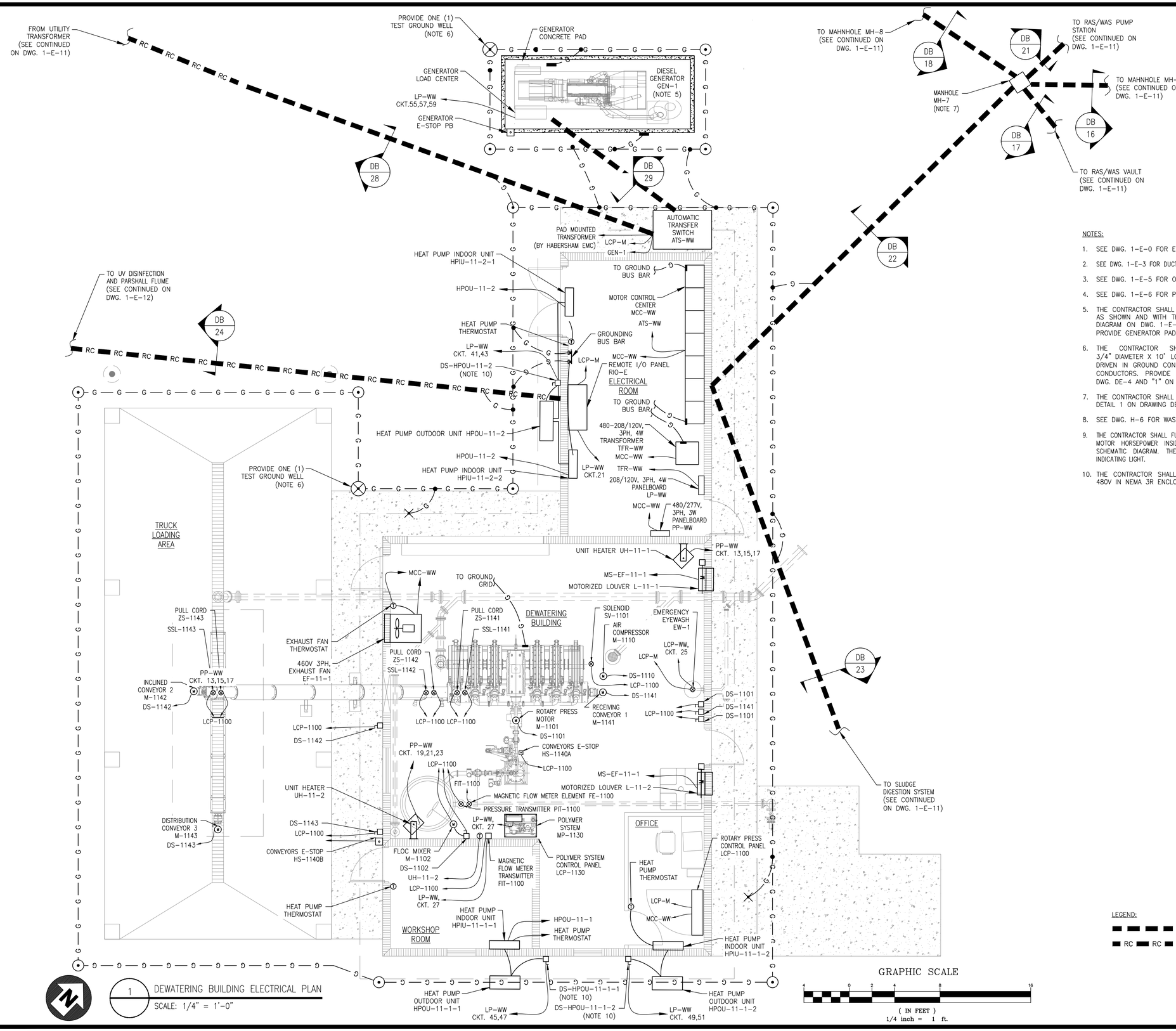
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING
ELEVATIONS AND SCHEDULES

Drawn: AE
Design: AE
Checked: MM
Project No.: R2019-111
Scale: 1/4" = 1'- 0"
Date: JULY 2022
11-A-4 Building Elevations2.dwg

Sheet No.
11-A-4

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-A-4-Building Elevations2.dwg 08/01/2025 1:53pm aencarnacion



1 DEWATERING BUILDING ELECTRICAL PLAN

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

NOTES:

1. SEE DWG. 1-E-0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1-E-3 FOR DUCTBANKS SECTIONS.
3. SEE DWG. 1-E-5 FOR ONE LINE DIAGRAM.
4. SEE DWG. 1-E-6 FOR PANELBOARD SCHEDULES.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL STAND-BY GENERATOR IN LOCATION AS SHOWN AND WITH THE REQUIRED WORKING CLEARANCES. REFER TO ONE LINE DIAGRAM ON DWG. 1-E-5 FOR FURTHER REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE GENERATOR PAD AS PER DETAIL "3" ON DWG. DE-4.
6. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIAMETER X 10' LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL MANHOLE AS SHOWN ON PLAN. SEE DETAIL 1 ON DRAWING DE-3 FOR INSTALLATION DETAILS.
8. SEE DWG. H-6 FOR WAS RAS PUMP STATION BUILDING HVAC PLAN.
9. THE CONTRACTOR SHALL FURNISH AND INSTALL A MANUAL MOTOR STARTER FOR THE FAN'S MOTOR HORSEPOWER INSIDE MCC-WW. SEE DWG. 11-E-3 FOR THE MOTOR STARTER SCHEMATIC DIAGRAM. THE STARTER SHALL INCLUDE H-O-A SWITCH, AND 'RUNNING' INDICATING LIGHT.
10. THE CONTRACTOR SHALL PROVIDE AND INSTALL DISCONNECT SWITCH – 30A, 2P, 480V IN NEMA 3R ENCLOSURE.

LEGEND:

– DIRECT BURIED UNDERGROUND DUCTBANK

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING ELECTRICAL PLAN

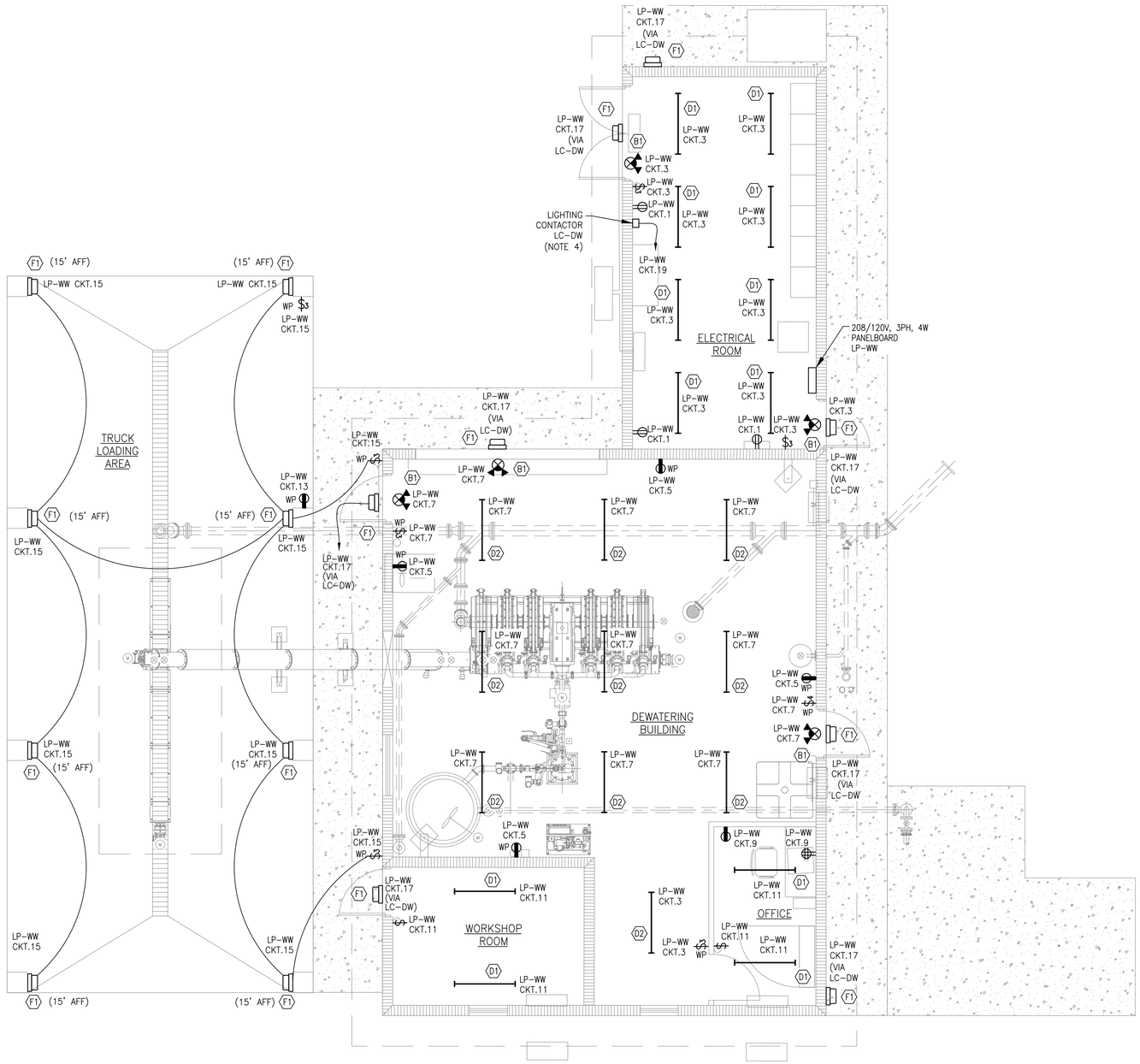
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
11-E-1

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 11-E-3 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.



1 DEWATERING BUILDING RECEPTACLES AND LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1/4 inch = 1 ft.

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

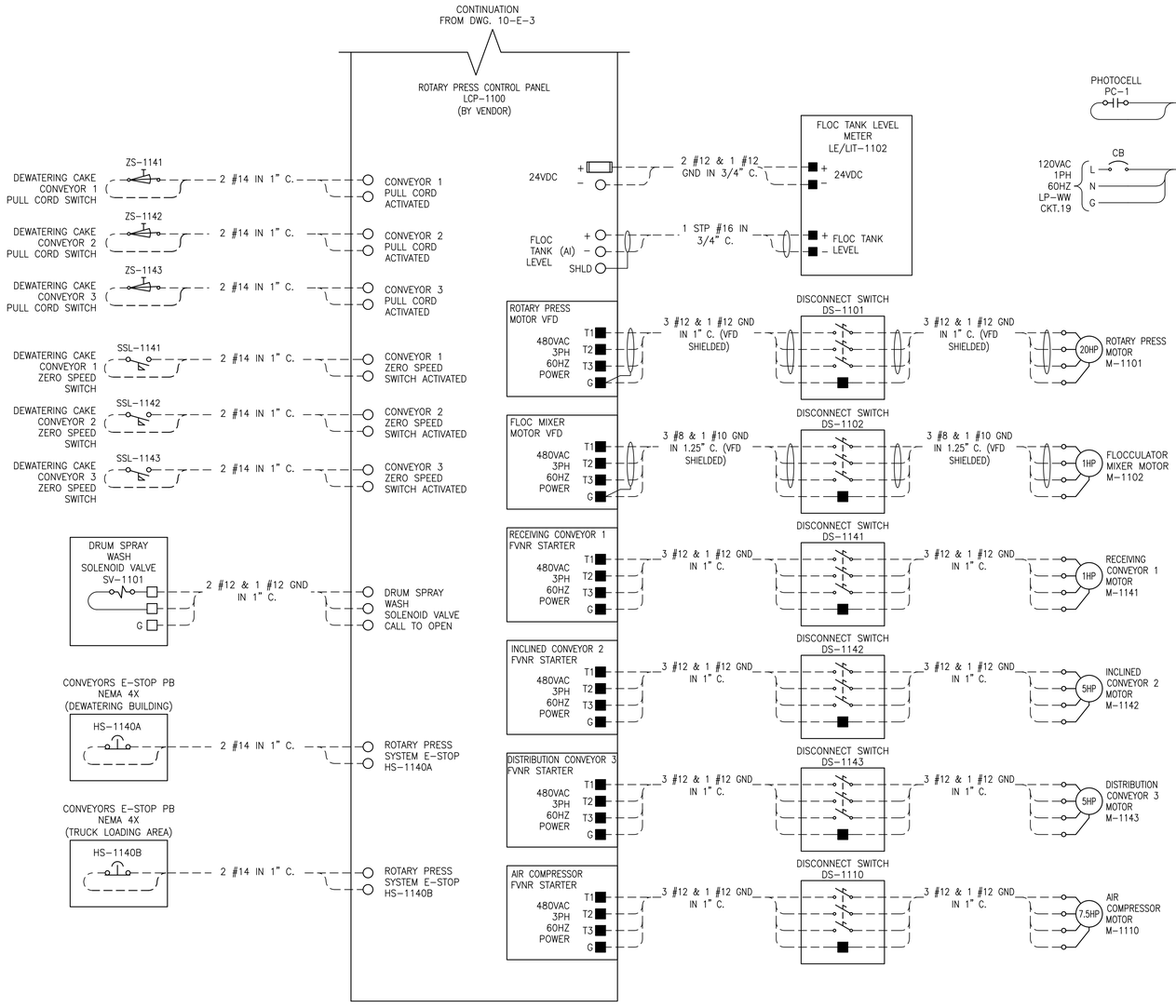
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING
RECEPTACLES AND LIGHTING PLAN

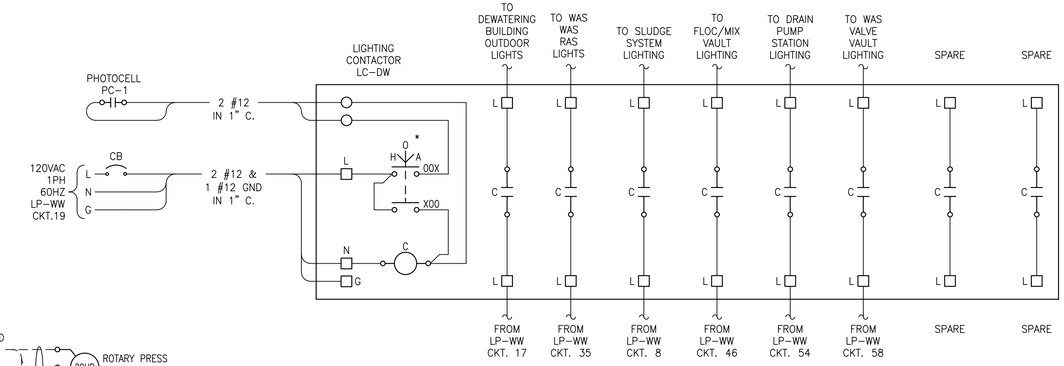
Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
11-E-2



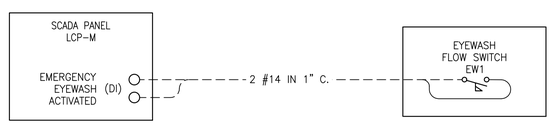
1 ROTARY PRESS CONTROL PANEL SCHEMATIC WIRING DIAGRAM



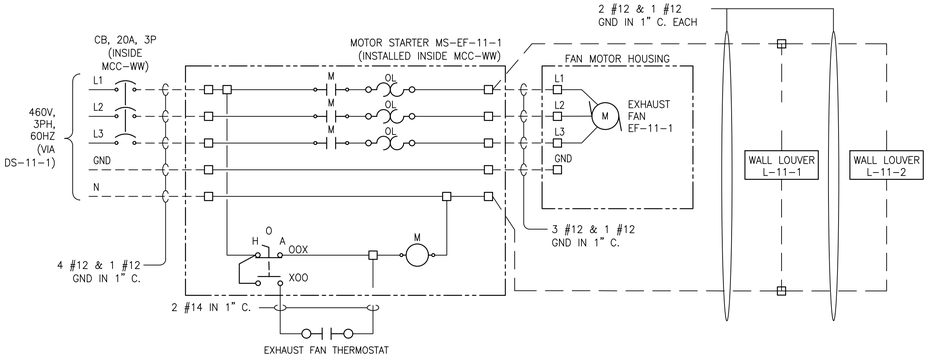
NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.
2. MECHANICALLY HELD HEAVY-DUTY 8 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.
4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

3 LIGHTING CONTACTOR LC-DW – SCHEMATIC WIRING DIAGRAM



2 EYEWASH FLOW SWITH SCHEMATIC WIRING DIAGRAM



NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL INSIDE MCC-WW A MOTOR STARTER WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   A. STARTER SCCR SHALL BE 10kAIC MINIMUM.
   B. FULL VOLTAGE NON-REVERSING (FVNR) IEC TYPE NON-COMBINATION MOTOR STARTER, RATED FOR 1HP MOTOR.
   C. SELECTOR SWITCHES AND INDICATING LIGHTS:
      C.1. HOA SWITCH.
      C.2. RUNNING INDICATING LIGHT.
   D. CABINET SHALL INCLUDE ALL NECESSARY COMPONENTS FOR EQUIPMENT SAFE AND RELIABLE OPERATION.
   E. STARTER TYPE SHALL BE NEMA 1.

4 EXHAUST FAN MOTOR STARTER SCHEMATIC WIRING DIAGRAM

LEGEND:
- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ▨ – MV POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL

GEORGIA REGISTERED No. 29513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

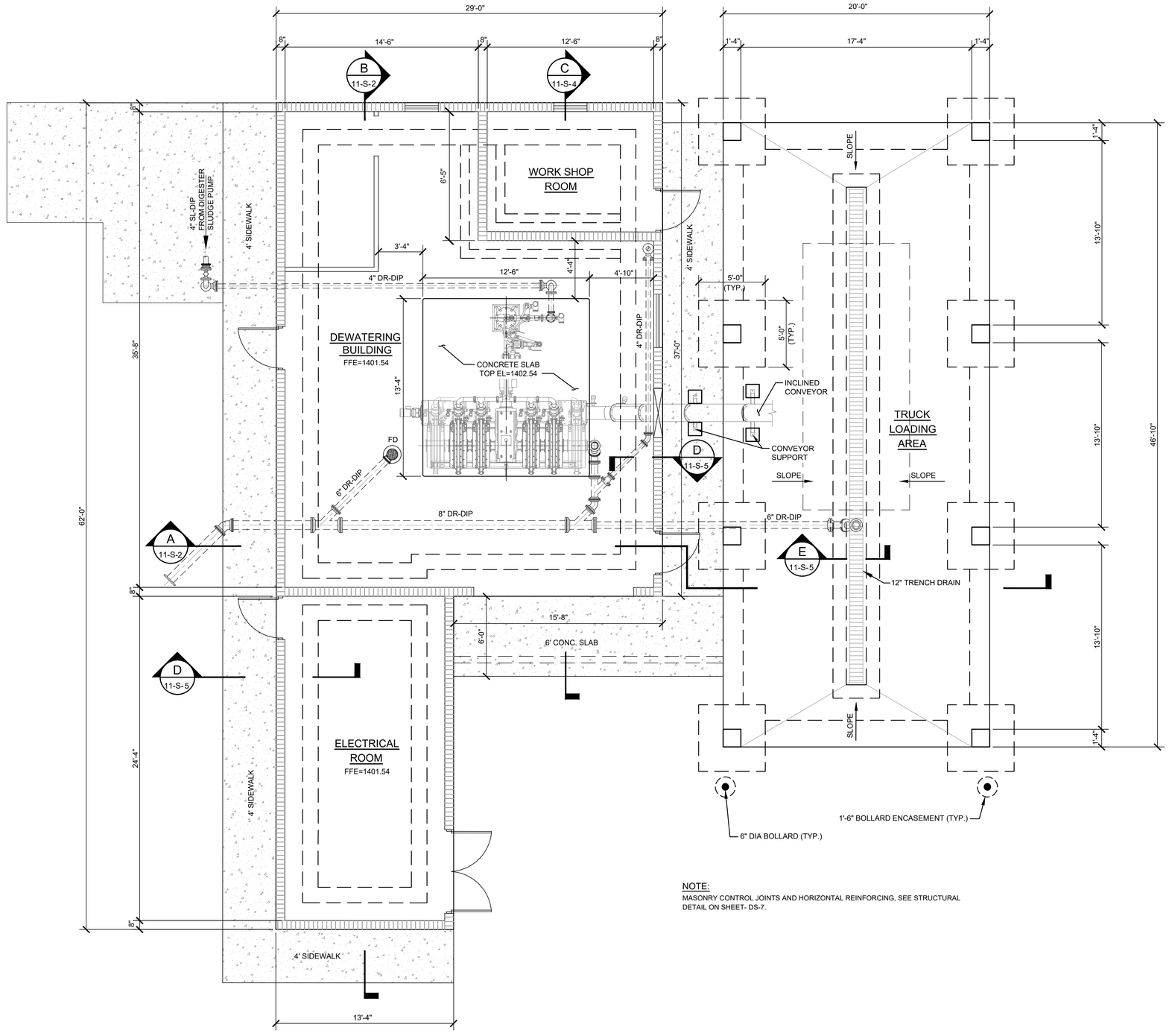
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
11-E-3

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTE:
MASONRY CONTROL JOINTS AND HORIZONTAL REINFORCING, SEE STRUCTURAL DETAIL ON SHEET- DS-7.

PLAN
3/8" = 1'-0"

NOTE:
1. PROVIDE 12"x12" SIGN ABOVE HOSE BIBB STATION "POTABLE WATER".
2. PROVIDE 12"x12" SIGH ABOVE HOSE BIBB STATION "REUSE WATER".
3. WATER PRESS TO BOOSTER PUMP TO BE 55-65 PSI.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

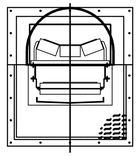
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING FOUNDATION PLAN

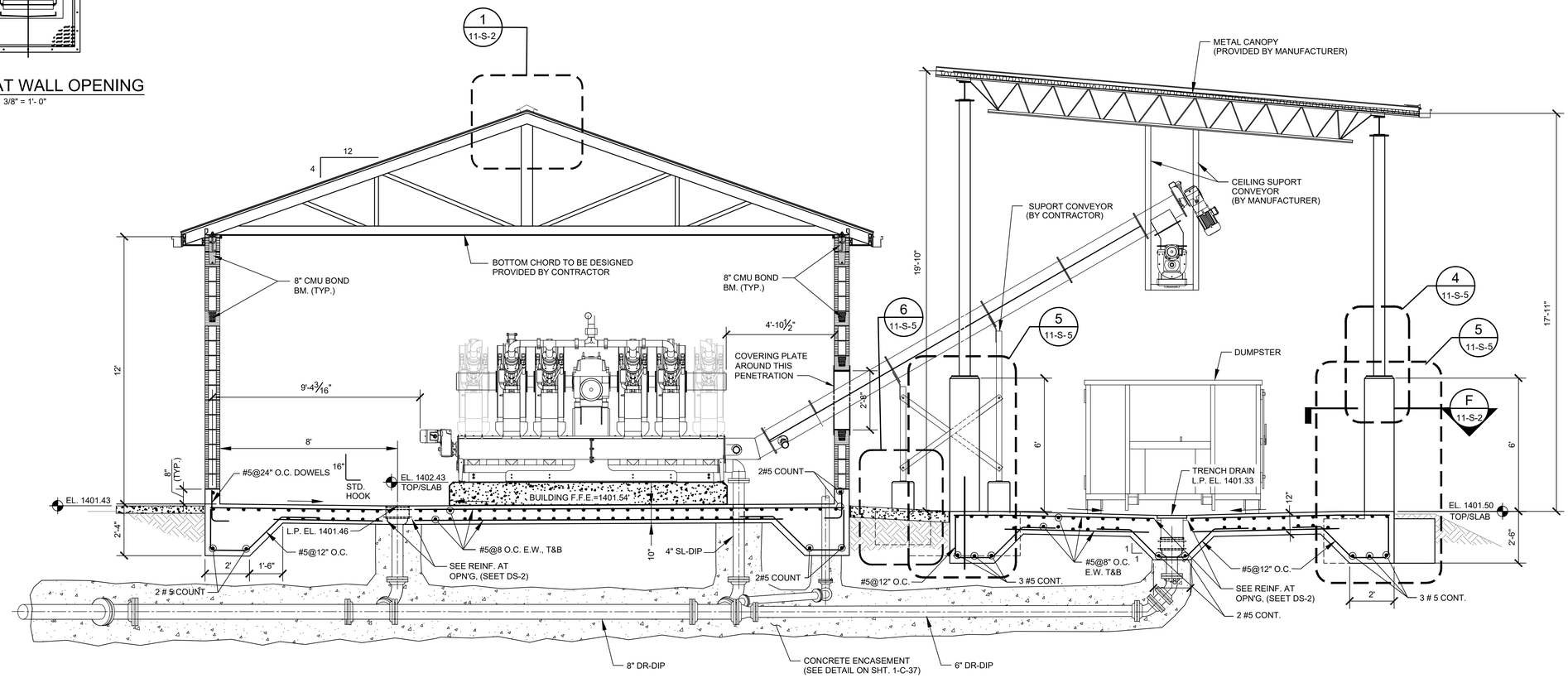
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: 1" = 20'
Date: JULY 2022
11-S-1-Building Foundation Plan.dwg

Sheet No.
11-S-1

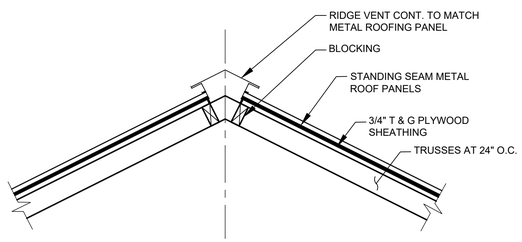
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-1-Building Foundation Plan.dwg 08/01/2025 1:55pm aencarnacion



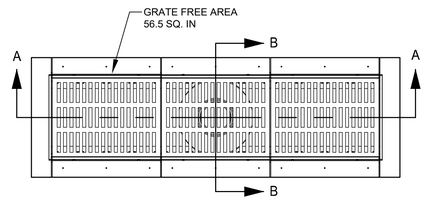
SECTION AT WALL OPENING
3/8" = 1'- 0"



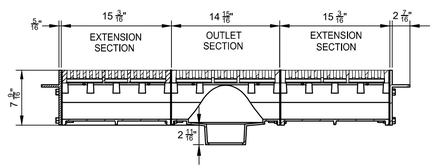
A 11-S-2 SECTION
3/8" = 1'- 0"



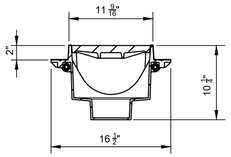
1 11-S-2 DETAIL
1" = 1'-0"



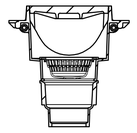
PLAN



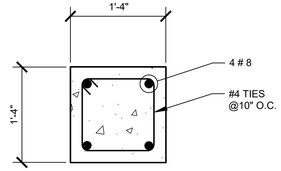
SECTION A-A



SECTION B-B



SEDIMENT BUCKET
CAST IRON OPTION SHOWN



F 11-S-2 SECTION
1" = 1'-0"

TRENCH DRAIN 12" WIDE, RECTANGULAR
N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

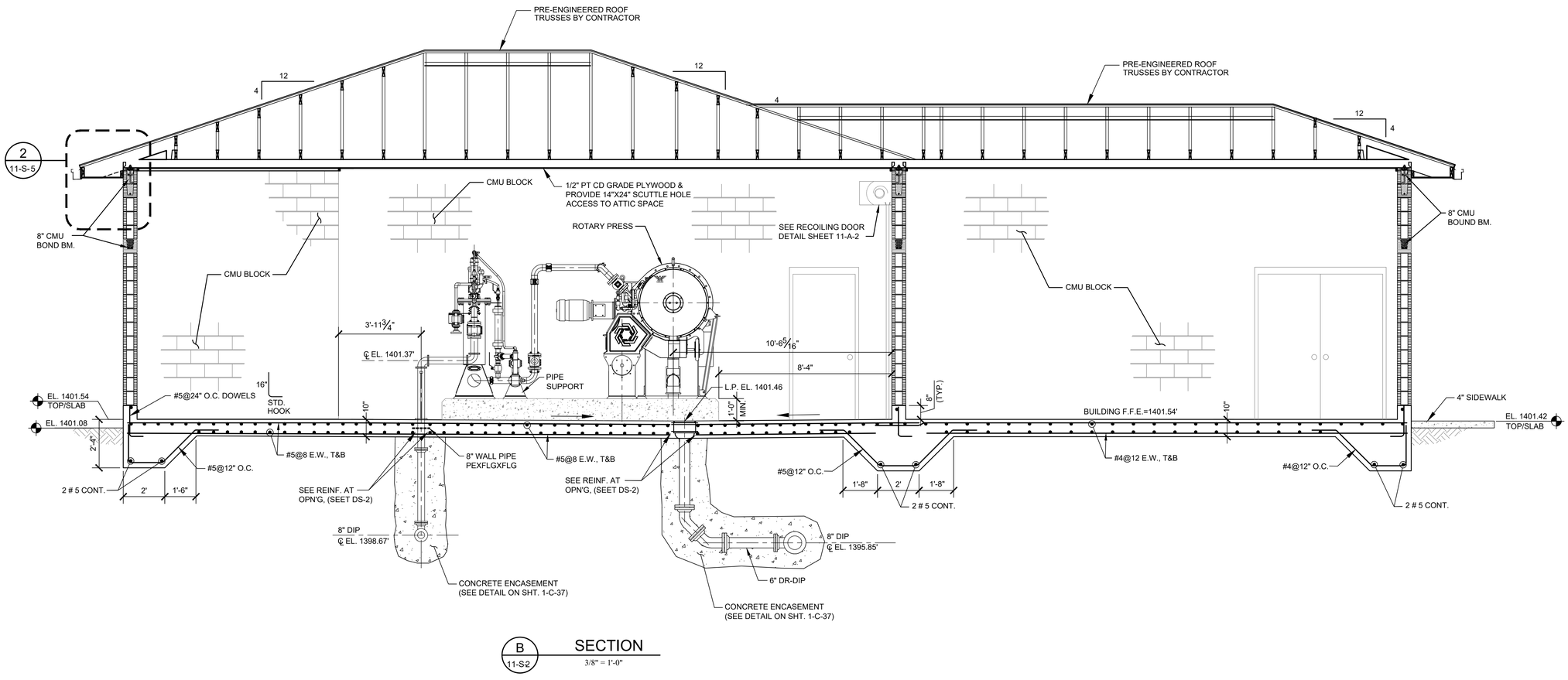
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
1-S-2 Building Section.dwg

Sheet No.
11-S-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-2-Building Section.dwg 08/01/2025 1:56pm aencarnacion



B
11-S2

SECTION

3/8" = 1'-0"

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

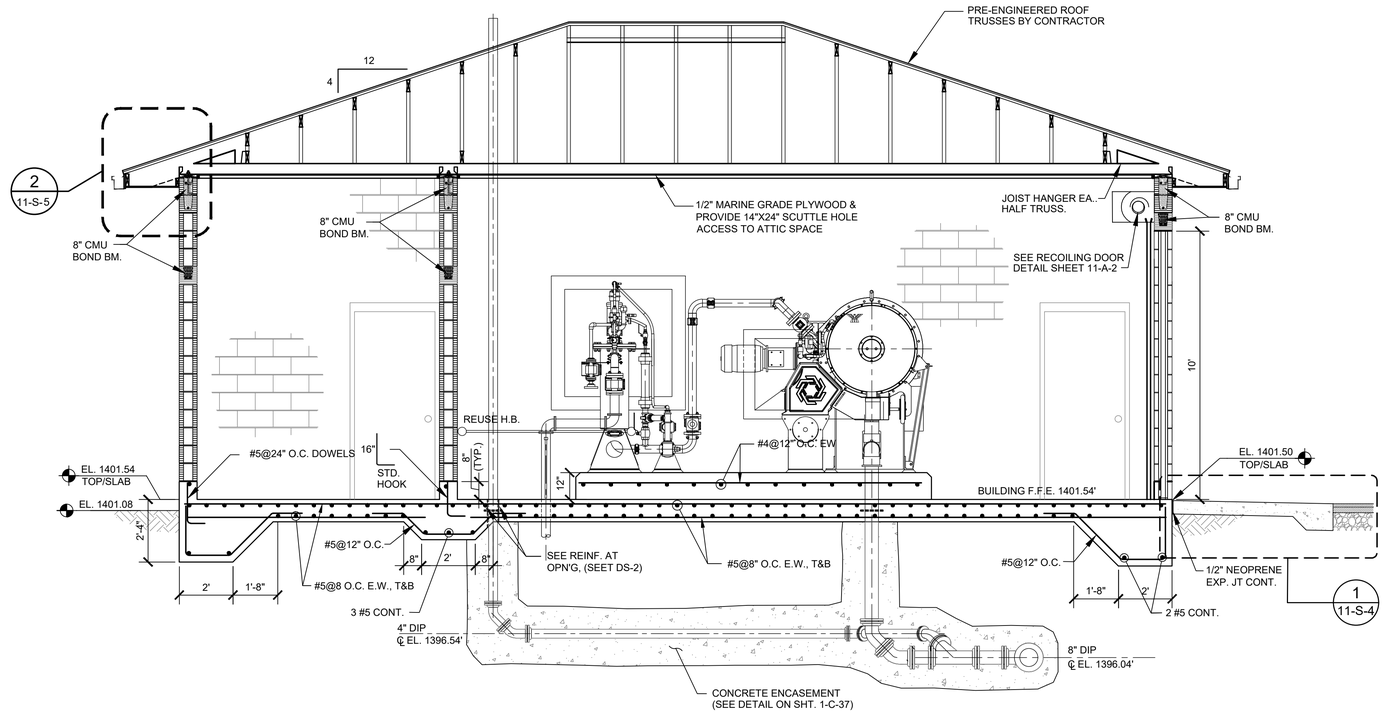
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING SECTION

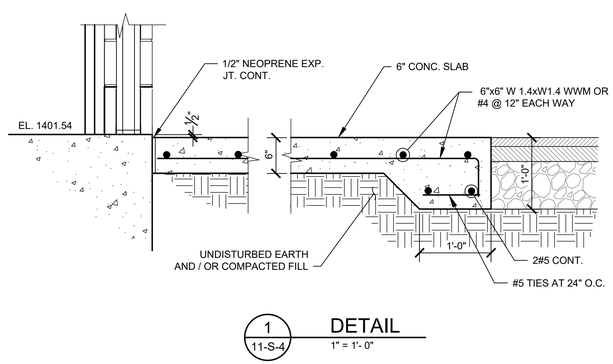
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
11-S-3-Building Section.dwg

Sheet No.
11-S-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-3-Building Section.dwg 08/01/2025 1:57pm aencarnacion



C 11-S-4 **SECTION**
3/8" = 1'-0"



1 11-S-4 **DETAIL**
1" = 1'- 0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

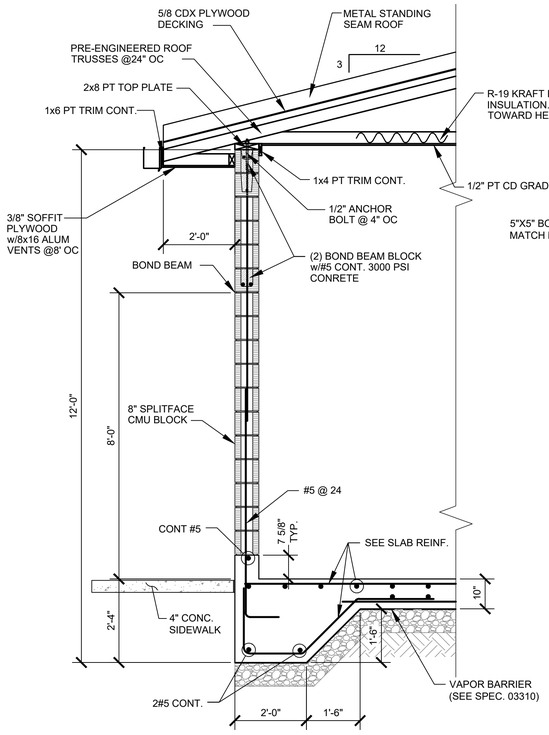
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
11-S-4-Building Section.dwg

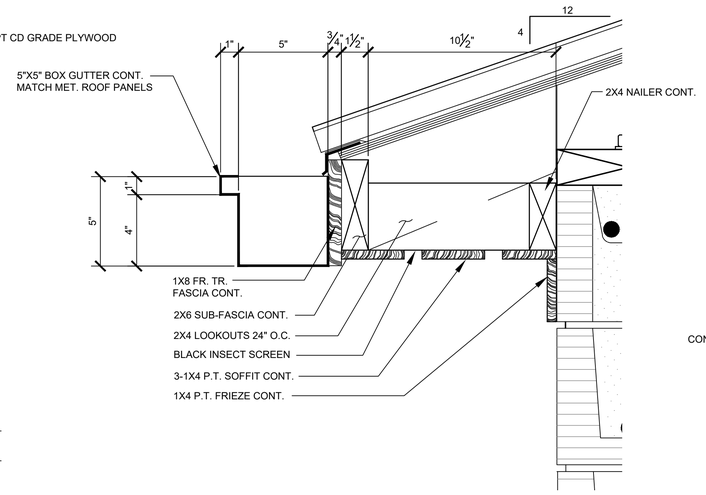
Sheet No.
11-S-4

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-4-Building Section.dwg 08/01/2025 1:58pm aencarnacion

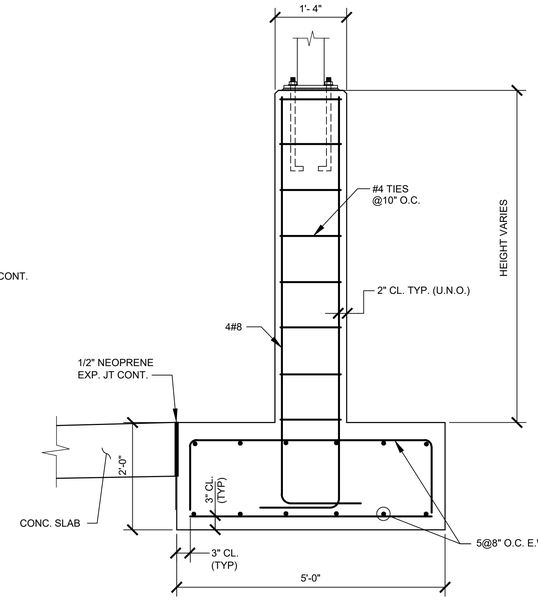


NOTE:
VERTICAL BLOCK REINFORCING TO BE PLACED EVERY OTHER COURSE.

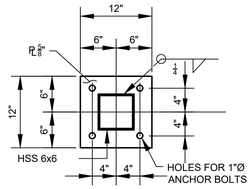
D / 11-S-5 SECTION
1/2" = 1'-0"



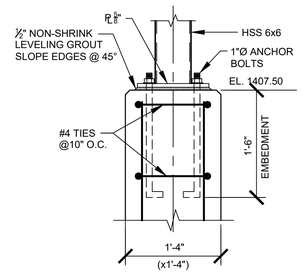
2 / 11-S-5 DETAIL-TYPICAL CORNICE
3" = 1'-0"



5 / 11-S-5 DETAIL
1"=1'-0"

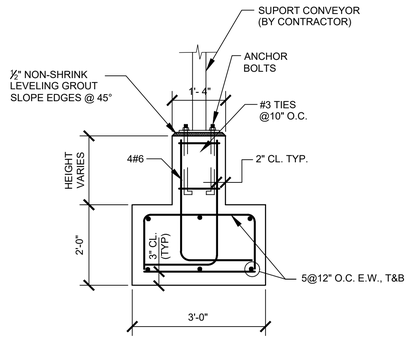


PLAN

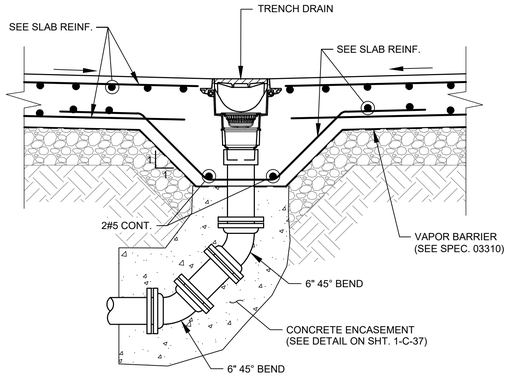


ELEVATION

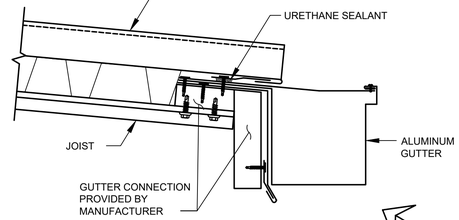
4 / 11-S-5 DETAIL
1" = 1'-0"

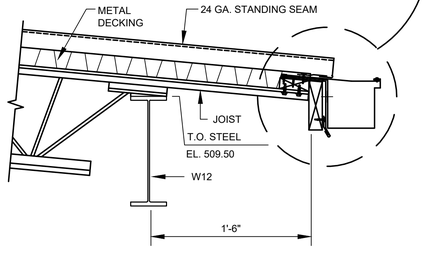


6 / 11-S-5 DETAIL
1"=1'-0"

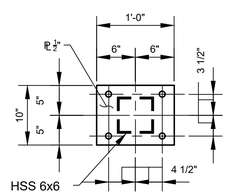


E / 11-S-5 SECTION
1/2" = 1'-0"

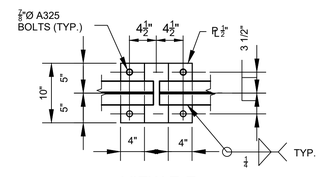




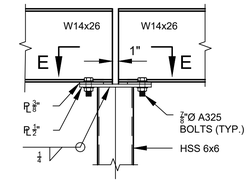
G / 11-S-5 SECTION
1" = 1'-0"



PLAN



VIEW E-E



ELEVATION

H / 11-S-5 SECTION
1" = 1'-0"

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER
JULY 31, 2025
MEG M. MBUGUA

RINT ENGINEERING + ENVIRONMENTAL

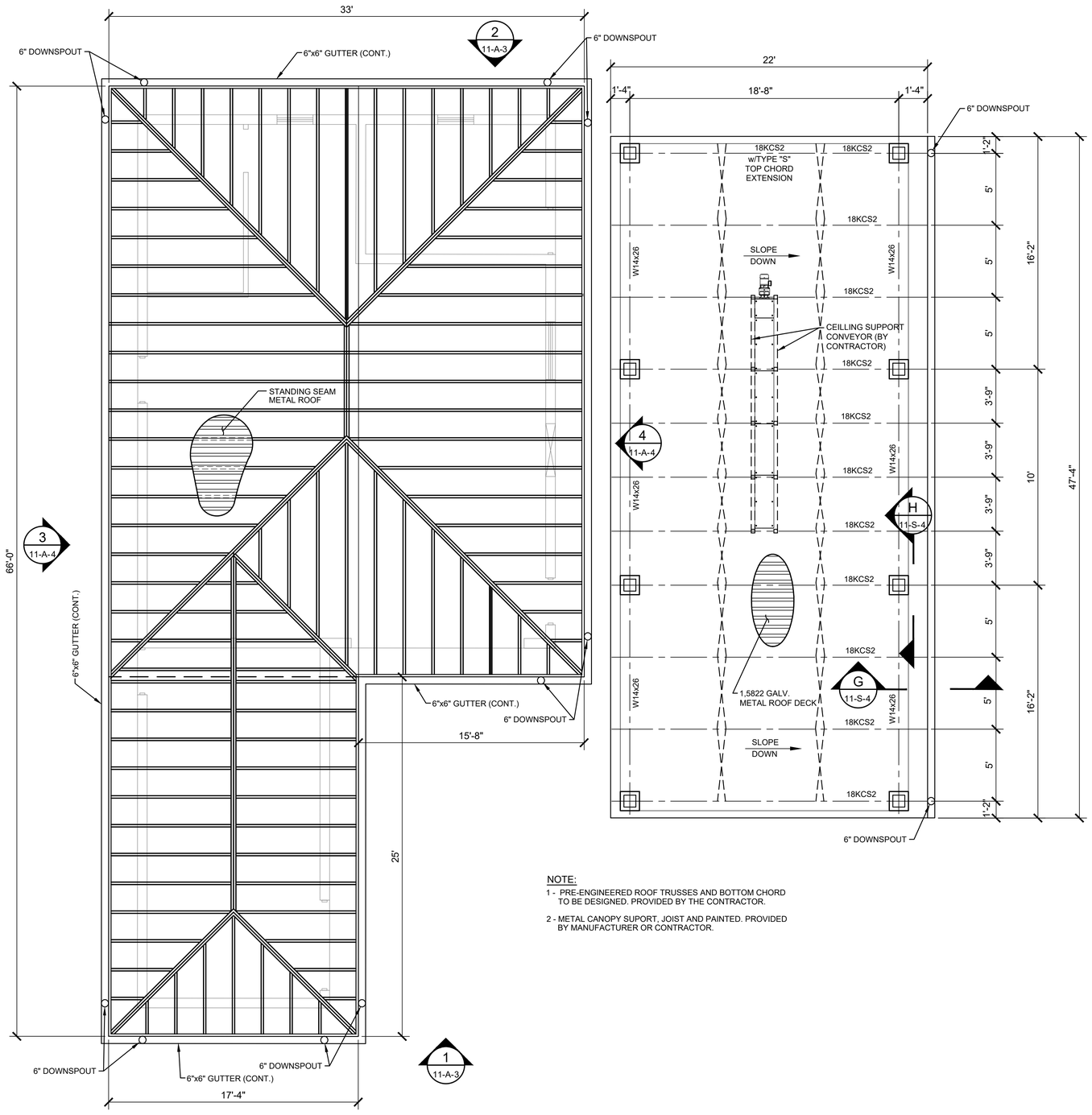
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING
STRUCTURAL SECTIONS AND DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
11-S-5 Building Sections and Details.dwg

Sheet No.
11-S-5

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-5 Building Sections and Details.dwg 08/01/2025 1:59pm aencarnacion



NOTE:

1 - PRE-ENGINEERED ROOF TRUSSES AND BOTTOM CHORD TO BE DESIGNED. PROVIDED BY THE CONTRACTOR.

2 - METAL CANOPY SUPORT, JOIST AND PAINTED. PROVIDED BY MANUFACTURER OR CONTRACTOR.

PLAN
1/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

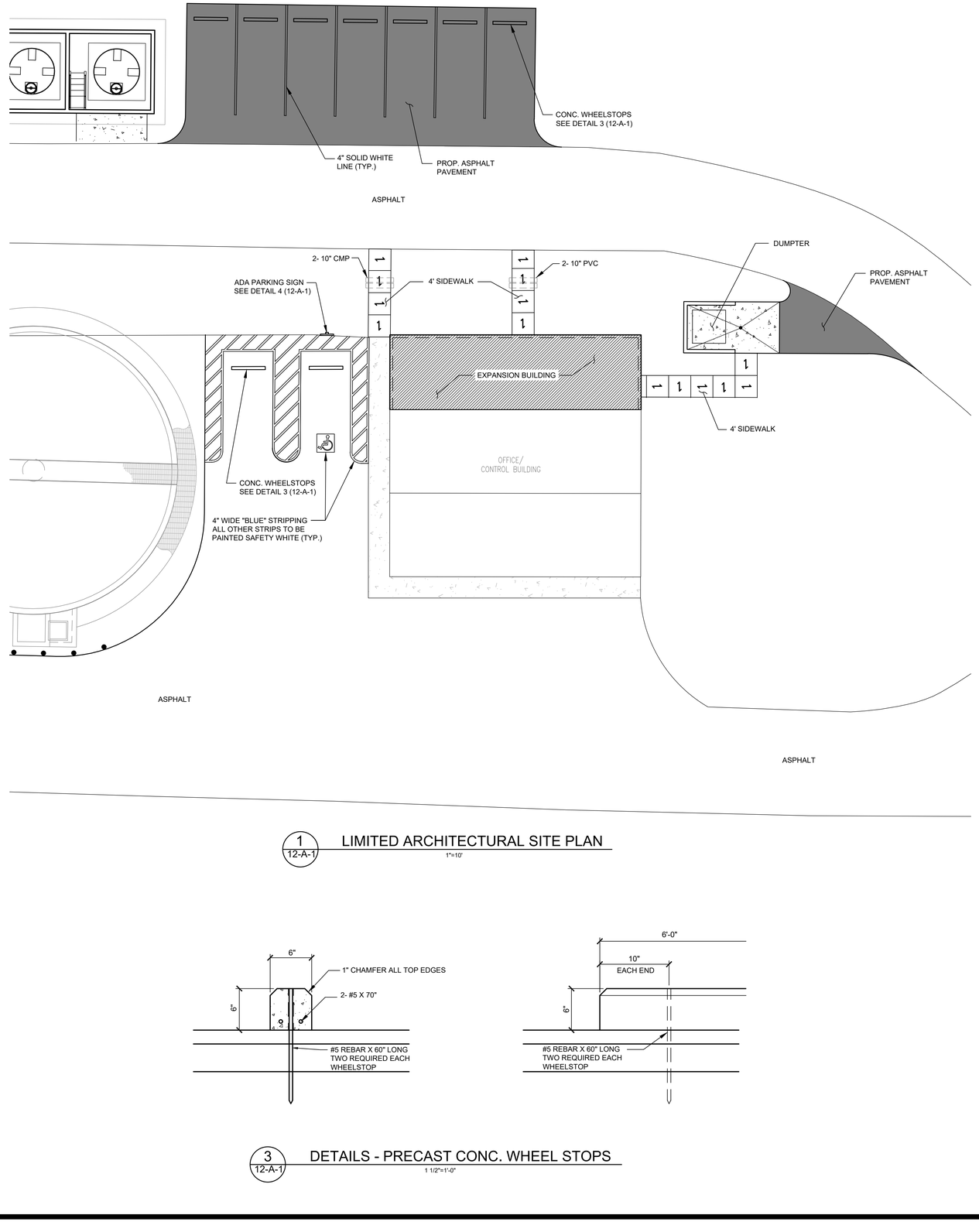
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING ROOF PLAN

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	3/8" = 1'-0"
Date:	JULY 2022
	11-S-6 Building Roof Plan.dwg

Sheet No.
11-S-6

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 11 - Dewatering and Electrical Building\11-S-6-Building Roof Plan.dwg 08/01/2025 2:00pm aencarnacion



1 12-A-1 LIMITED ARCHITECTURAL SITE PLAN

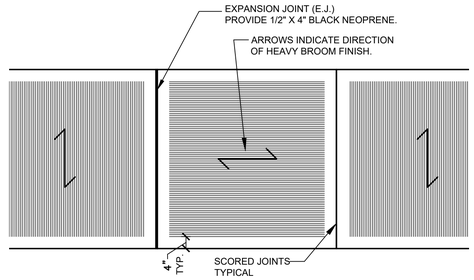
1"=10'

3 12-A-1 DETAILS - PRECAST CONC. WHEEL STOPS

1 1/2"=1'-0"

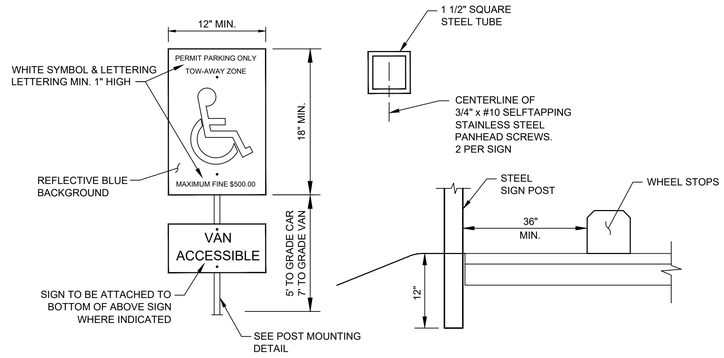
LIST OF DRAWINGS

	ARCHITECTURAL
12-A-1	CONTROL BUILDING SITE PLAN AND DETAILS
12-A-2	CONTROL BUILDING FLOOR PLAN
12-A-3	CONTROL BUILDING OPENING SCHEDULE AND DETAILS
12-A-4	CONTROL BUILDING REFLECTED CEILING PLAN
12-A-5	CONTROL BUILDING EXTERIOR ELEVATIONS
12-A-6	CONTROL BUILDING INTERIOR ELEVATIONS AND DETAILS
12-A-7	CONTROL BUILDING LABORATORY CASEWORK ELEVATIONS
12-A-8	CONTROL BUILDING WALL SECTIONS
12-A-9	CONTROL BUILDING WALL SECTIONS
12-A-10	CONTROL BUILDING WALL SECTIONS
	STRUCTURAL
12-S-1	CONTROL BUILDING FOUNDATION PLAN AND DETAILS
12-S-2	CONTROL BUILDING ROOF FRAMING PLAN AND DETAILS



2 12-A-1 DETAIL

1/2"=1'-0"



4 12-A-1 DETAILS - ADA PARKING SIGN

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

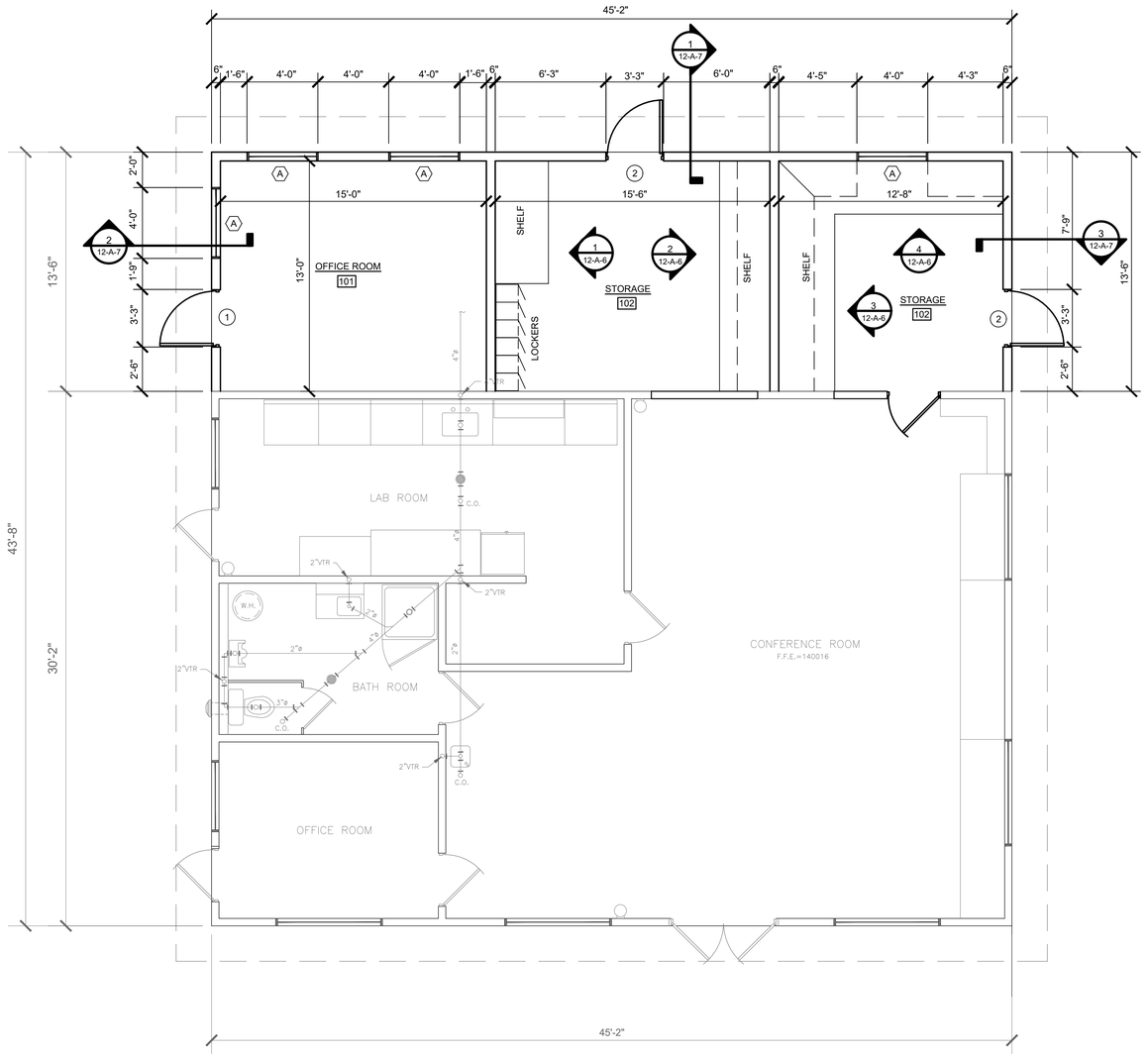
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING SITE PLAN AND DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 OF 7.dwg

Sheet No.
12-A-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 OF 7.dwg 08/01/2025 2:00pm aencarnacion



1 / 12-A-2 FLOOR PLAN

1/4"=1'-0"

REPLACEMENT NOTES

REPLACE FLOORING. THE CONTRACTOR COORDINATE WITH THE OWNER THE NEW FLOORING, COLOR AND DESIGN.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING FLOOR PLAN

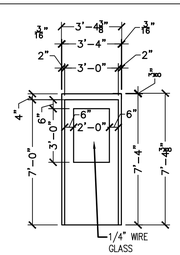
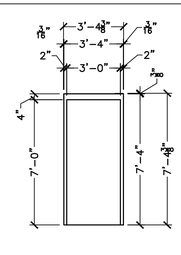
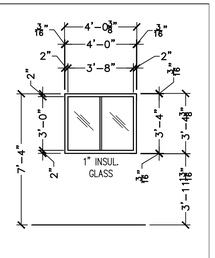
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 OF 7.dwg

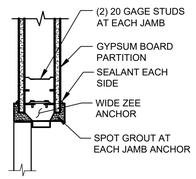
Sheet No.
12-A-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 OF 7.dwg 08/01/2025 2:00pm aencarnacion

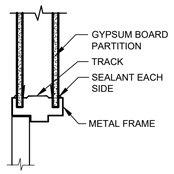
ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM	FLOOR				WALL				BASE				WAINSCOT				CEILING				CEILING HEIGHT	REMARKS	ROOM NUMBER
		1 STAINED CONC. SEALED	2 CONC. SEALED	3 CER. TILE THINSET	4	5 DWD-PAINTED DENS GLASS W/ FIN. COAT EFS	6	7	8	9 4" HIGH PAINTED MTL.	10	11 CER. TILE COVE	12	13 CER. TILE THINSET	14	15	16	17 2' X 2' LAY-IN ACOUSTIC TILES	18	19 NONE	20			
101	VESTIBULE	1				5	6			9								17				8'-1"		101
102	CONFERENCE/BREAKROOM	1				5	6			9								17				9'-10"		102
103	JAN./MECH'L/ELECT'L		2			5					10								18			9'-10"		103
104	CORRIDOR	1				5				9								17				9'-10"		104
105	TOILET-MEN	1		3		5				9		11		13				17				8'-1"		105
106	TOILET-WOMEN	1		3		5				9		11		13				17				8'-1"		106
107	LOCKERS	1				5				9								17				9'-10"		107
108	CONTROL ROOM	1				5				9								17				9'-10"		108
109	LABORATORY	1				5				9								17				9'-10"		109
110	LABORATORY	1				5				9								17				9'-10"		110
																						9'-10"		

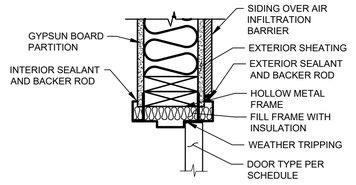
ELEVATION			
			
MARK	6, 7, 11, 12	8, 9, 10	A
SIZE	3'-0" X 7'-0" X 1-3/4"	3'-0" X 7'-0" X 1-3/4"	4'-0" X 3'-4"
TYPE	S.C. WD. BIRCH VEN.	S.C. WD. BIRCH VEN.	
FRAME	2" X 5-3/4" HOL. MET.	2" X 5-3/4" HOL. MET.	2" X 4-1/2" ANOD. ALUM.
DETAIL HEAD	4/A-2	4/A-2	7/A-2
DETAIL JAMB	5/A-2	5/A-2	8/A-2
DETAIL SILL	–	–	9/A-2
HRDW SET			



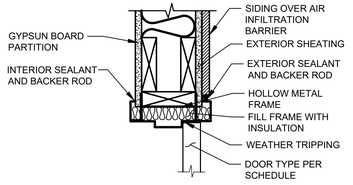
1 12-A-3 DETAIL-JAMB
1 1/2"=1'-0"



2 12-A-3 DETAIL-HEAD
1 1/2"=1'-0"



3 12-A-3 DETAIL-JAMB
1 1/2"=1'-0"



4 12-A-3 DETAIL-HEAD
1 1/2"=1'-0"

GEORGIA REGISTERED Mitchell Co. NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

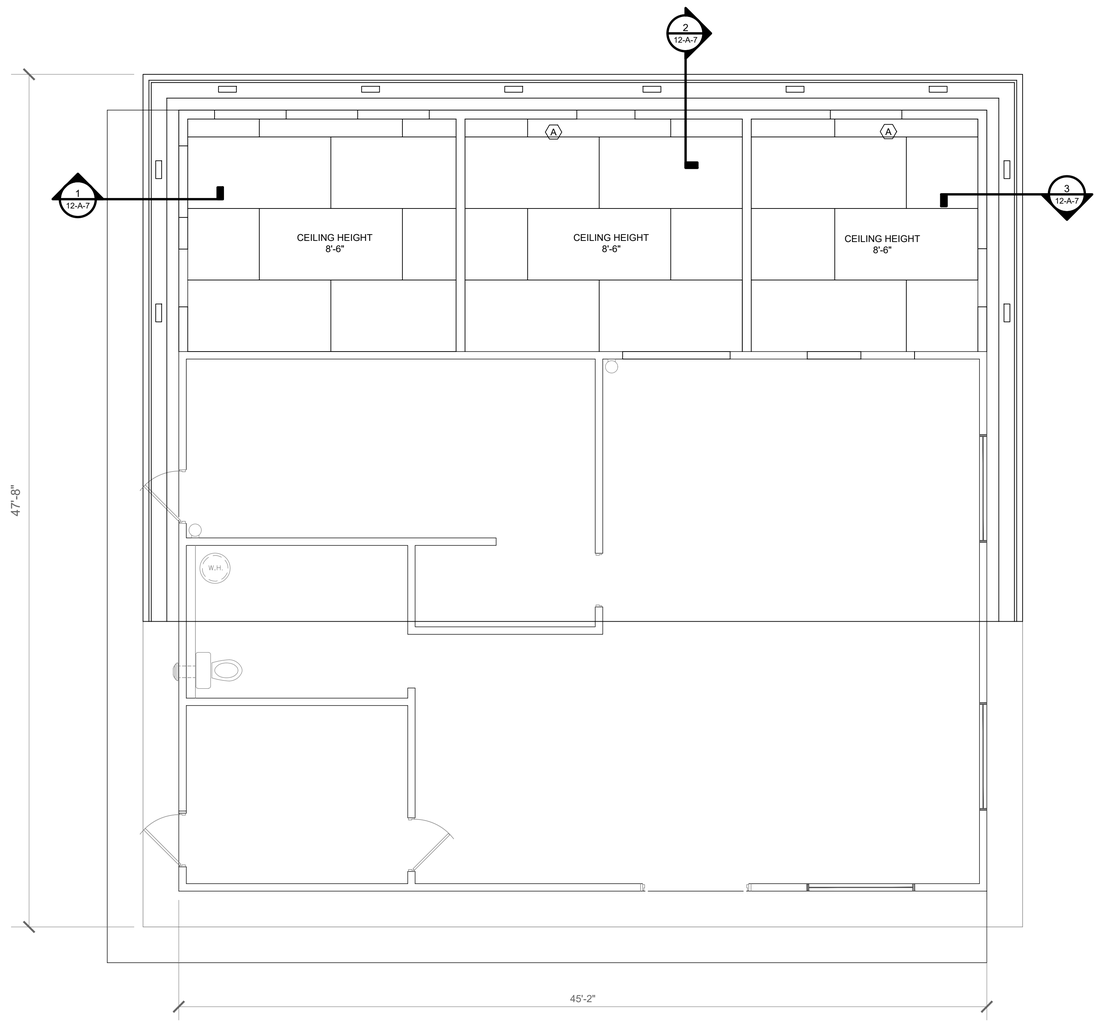
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
OPENING SCHEDULE AND DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 OF 7.dwg

Sheet No.
12-A-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 OF 7.dwg 08/01/2025 2:00pm aencarnacion



1 / 12-A-4 REFLECTED CEILING PLAN
1/4"=1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

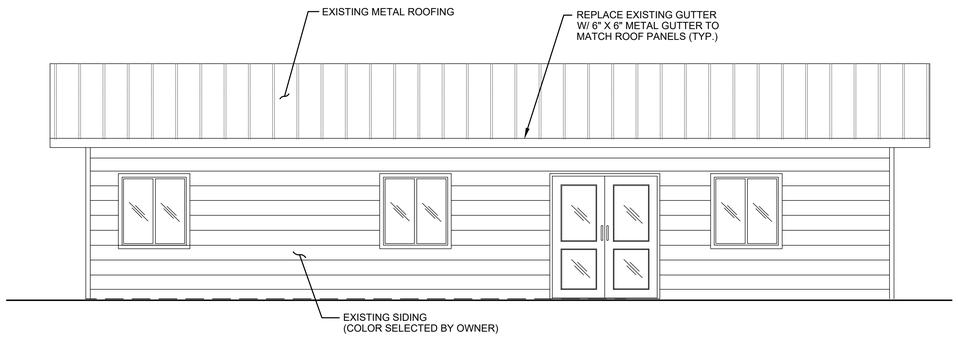
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
REFLECTED CEILING PLAN

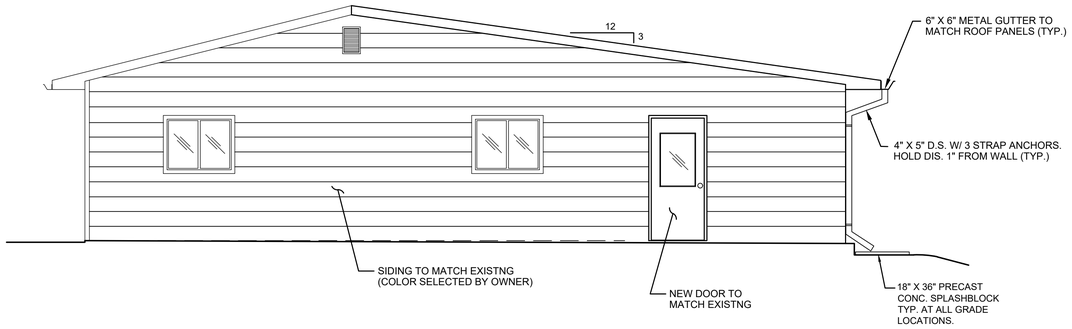
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 OF 7.dwg

Sheet No.
12-A-4

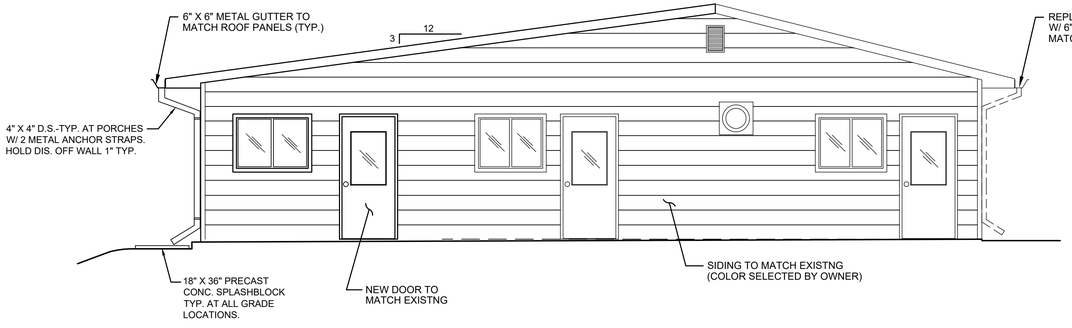
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 OF 7.dwg 08/01/2025 2:00pm aencarnacion



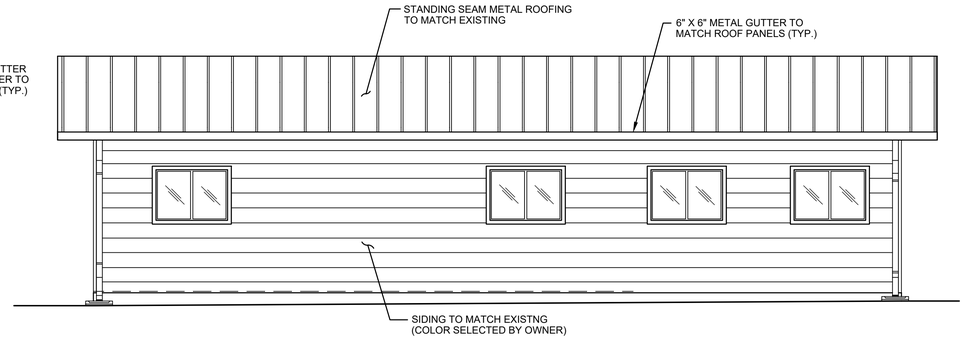
1 12-A-5 FRONT ELEVATION
1/4"=1'-0"



3 12-A-5 LEFT SIDE ELEVATION
1/4"=1'-0"



2 12-A-5 RIGHT SIDE ELEVATION
1/4"=1'-0"



4 12-A-5 REAR ELEVATION
1/4"=1'-0"

REPLACEMENT NOTES

REPLACE ALL WINDOWS, SLIDING GLASS DOOR IN THE EXISTING BUILDING.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

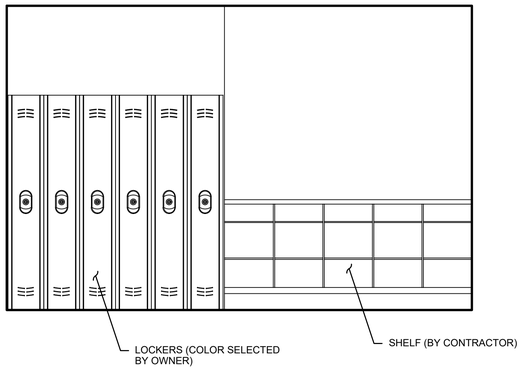
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
EXTERIOR ELEVATIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 Of 7.dwg

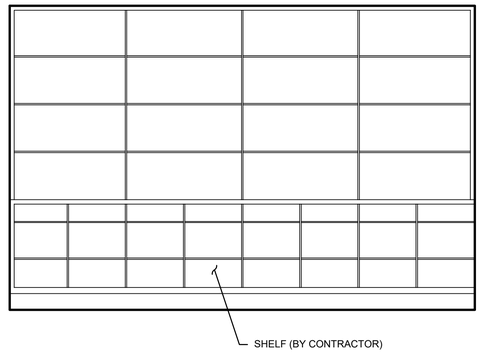
Sheet No.
12-A-5

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 Of 7.dwg 08/01/2025 2:00pm aencarnacion



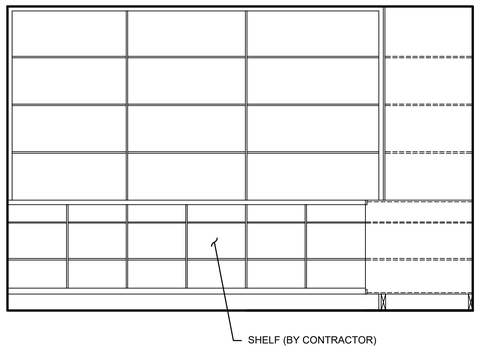
1 / 12-A-6 ELEVATION - STORAGE - 102

1/2"=1'-0"



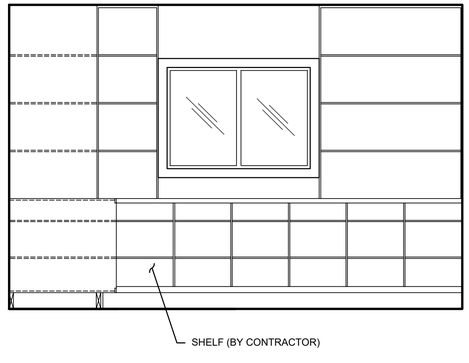
2 / 12-A-6 ELEVATION - STORAGE - 102

3/4" = 1'-0"



3 / 12-A-6 ELEVATION - STORAGE - 103

1/2"=1'-0"



4 / 12-A-6 ELEVATION - STORAGE - 103

3/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

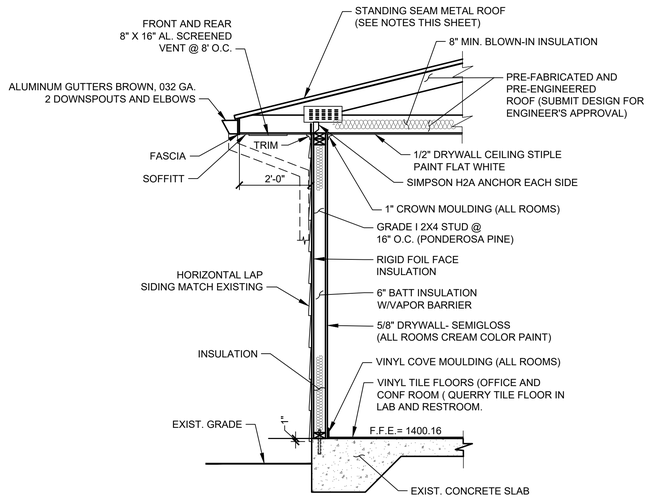
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
INTERIOR ELEVATIONS AND DETAILS

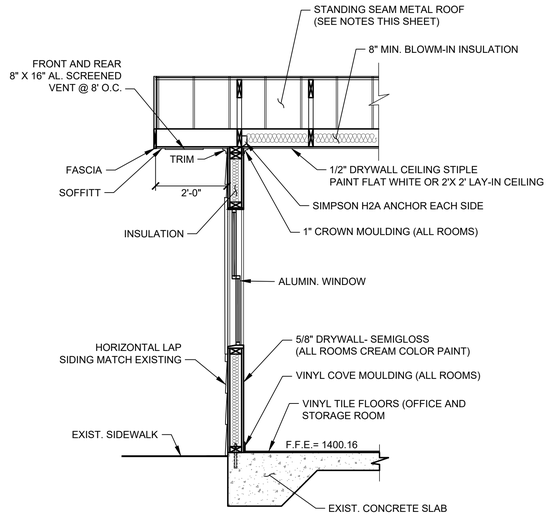
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-1 Of 7.dwg

Sheet No.
12-A-6

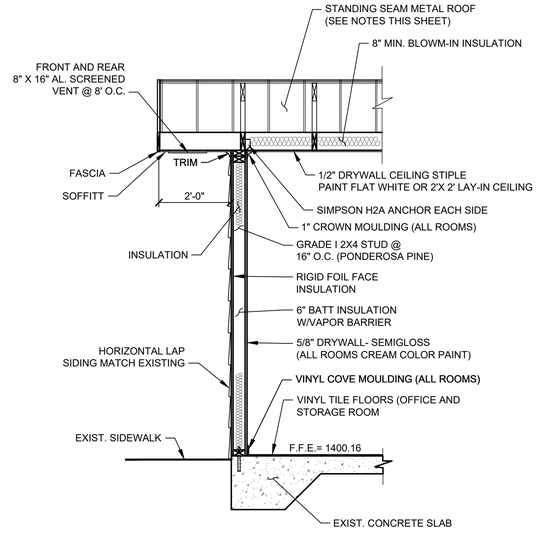
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-A-1 Of 7.dwg 08/01/2025 2:01pm aencarnacion



1 / 12-A-7 TYPICAL WALL SECTION
3/4"=1'-0"



2 / 12-A-7 TYPICAL WALL SECTION
3/4"=1'-0"



3 / 12-A-7 TYPICAL WALL SECTION
3/4"=1'-0"

NOTES:

1. UN-FINISHED SPLIT FACE CONCRETE BLOCK, COLOR SELECTED BY OWNER.
2. STANDING SEAM METAL ROOF TO BE STRIATED OR V-RIBBED 24 GAUGE STEEL MATCH TO EXISTING, COLOR SELECTED BY OWNER. INSTALLED AS RECOMMENDED BY MANUFACTURER. NO FASTENERS SHALL BE EXPOSED.
3. VINYL VENT WITH INSECT SCREEN, COLOR SELECTED BY OWNER .

GEORGIA REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

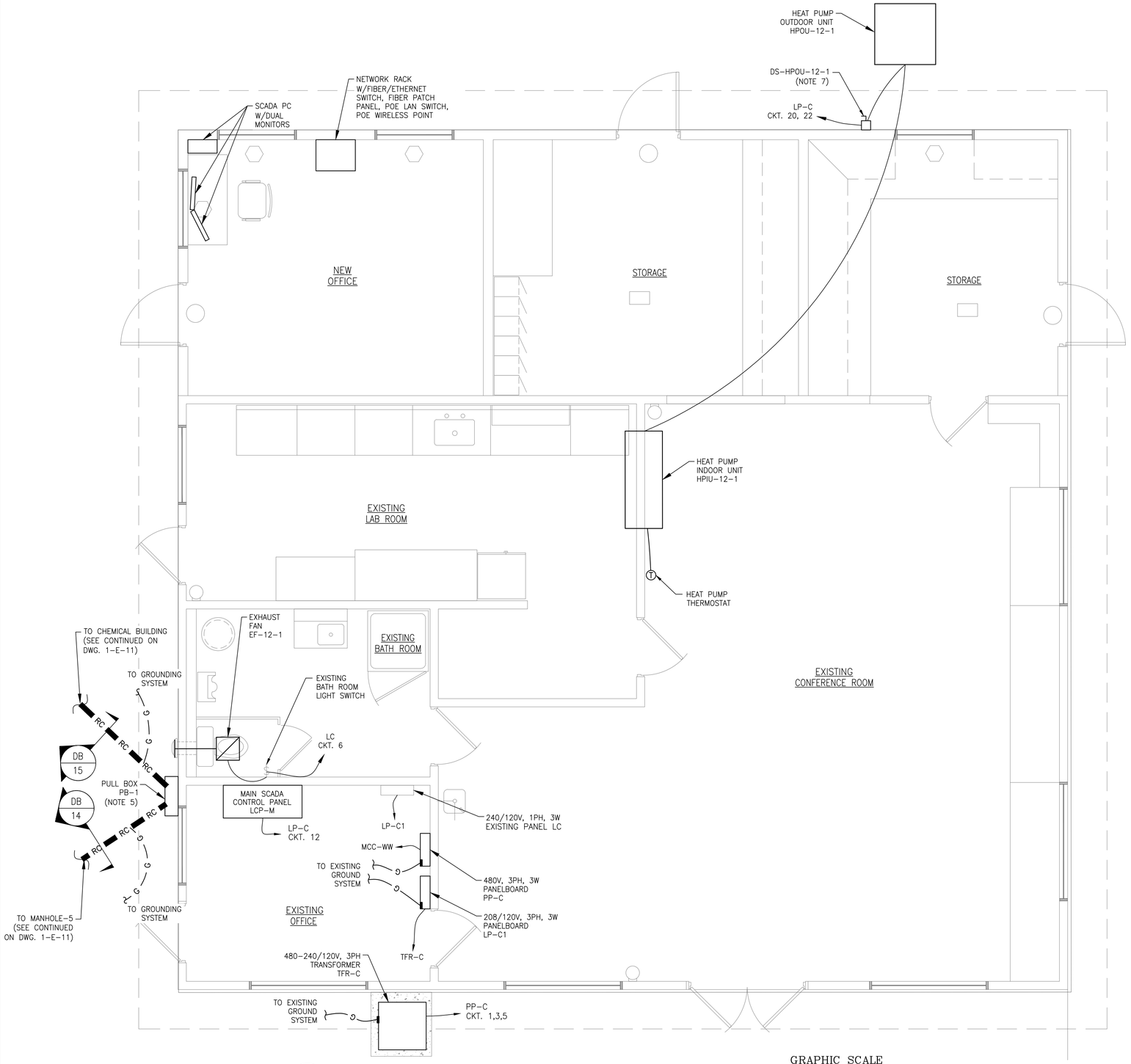
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING WALL SECTIONS (1 OF 2)

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-A-7.DGN 7.dwg

Sheet No.
12-A-7

Z:\Projects\2019\R2019-111-Cleveland - WWTP Expansion\WP\Expansion\Area 12 - Control Building\dwg\12-A-7.dgn 31/07/2025 2:16:16pm aencarnacion



NOTES:

1. SEE DWG. 1–E–0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1–E–3 FOR DUCTBANKS SECTIONS.
3. SEE DWG. 1–E–5 FOR ONE LINE DIAGRAM.
4. SEE DWG. 1–E–6 FOR PANELBOARD SCHEDULES.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEMA 4X STAINLESS STEEL PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CABLES AND CONDUITS.
6. SEE DWG. H–10 FOR INFLUENT PUMP STATION BUILDING HVAC PLAN.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL DISCONNECT SWITCH – 30A, 2P, 480V IN NEMA 3R ENCLOSURE.

1 CONTROL BUILDING ELECTRICAL PLAN
SCALE: 1/2" = 1'

GRAPHIC SCALE
2.67 0 1.33 2.67 5.33 10.67
(IN FEET)
3/8 inch = 1 ft.

LEGEND:

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

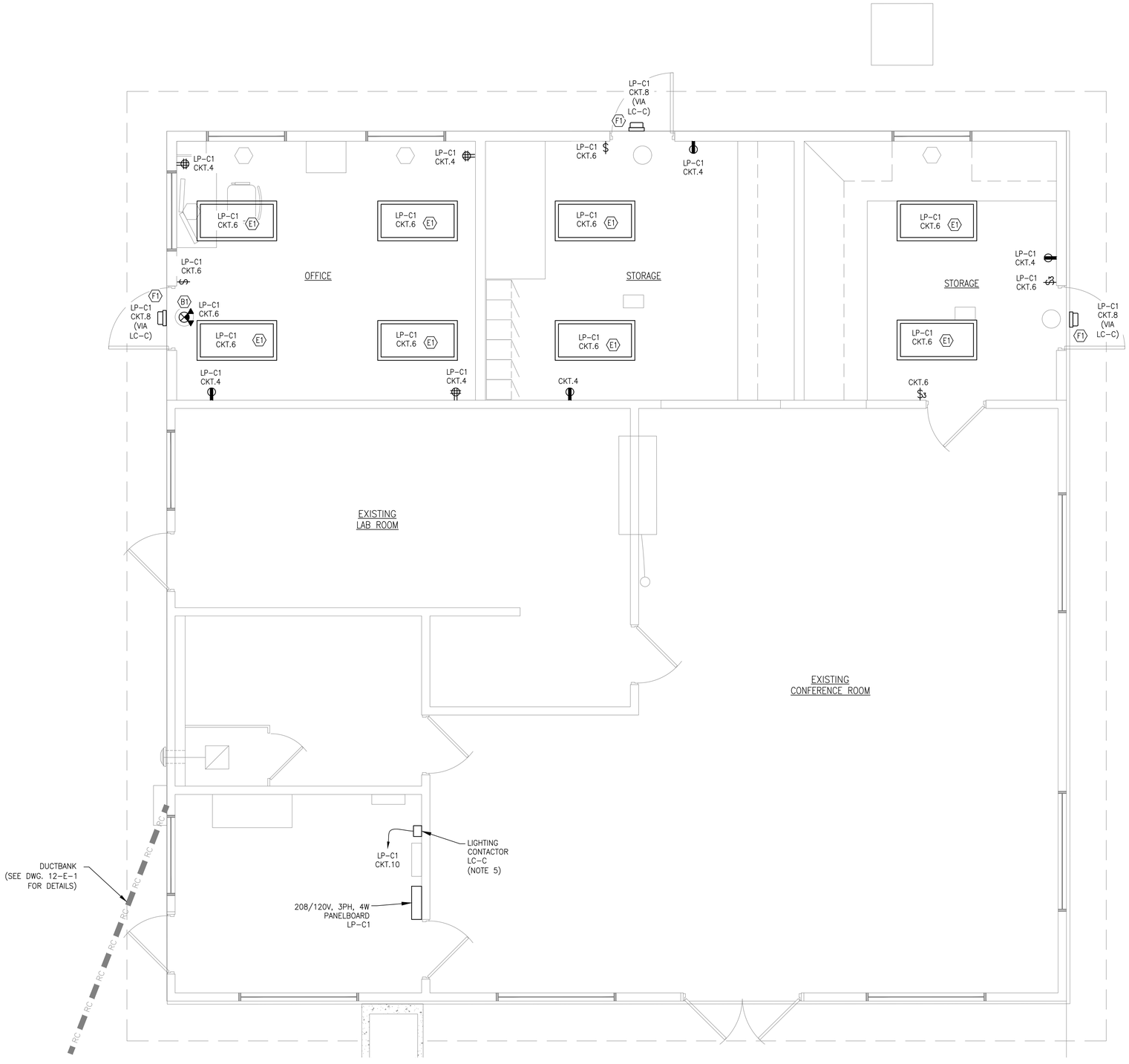
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
12-E-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 CONTROL BUILDING RECEPTACLES AND LIGHTING PLAN
SCALE: 1/2" = 1'

GRAPHIC SCALE
2.67 0 1.33 2.67 5.33 10.67
(IN FEET)
3/8 inch = 1 ft.

LEGEND:

RC RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING ON DWG. 12-E-3 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

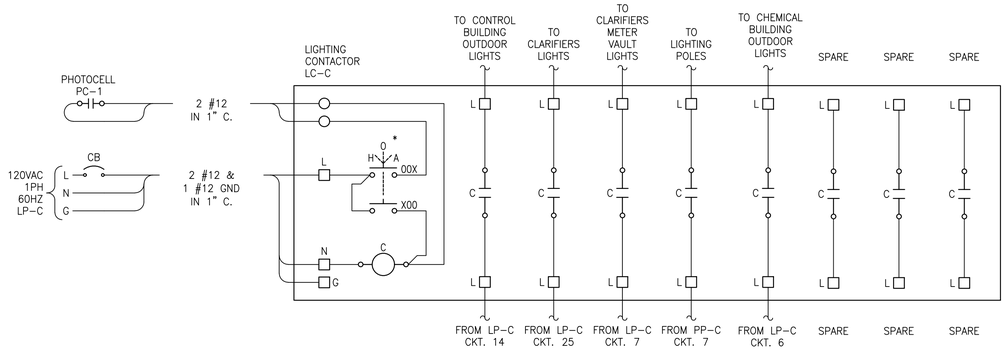
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
RECEPTACLES AND LIGHTING PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
12-E-2

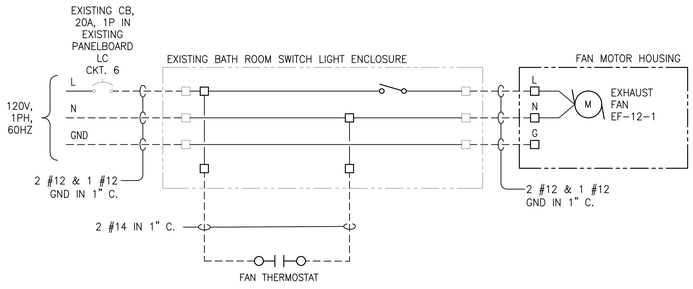
EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. "PC" – PHOTOCELL, 120V. LOCATE ON TOP OF INFLUENT PUMP STATION BUILDING. PHOTOCELL SHALL INCLUDE 120V RATED CONTACT FOR CONNECTION TO LIGHTING CONTACTOR. PROVIDE PHOTOCELL COVER TO PREVENT NUISANCE ACTIVATION FROM SITE LIGHTING.
2. MECHANICALLY HELD HEAVY-DUTY 8 POLES, 20A RATED LIGHTING CONTACTOR WITH 120V COIL VOLTAGE (EATON CLASS ECCO3 OR ACCEPTED EQUAL). TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. THE CONTRACTOR SHALL INSTALL LIGHTING CONTACTOR IN NEMA 4X, TYPE 304 STAINLESS STEEL CABINET.
4. THE CONTRACTOR SHALL USE #12 AWG POWER CONDUCTORS FOR LIGHTING POWER WIRING UNLESS OTHERWISE SPECIFIED ON THE LIGHTING PLANS, WHERE UPSIZED CONDUCTORS ARE REQUIRED TO MITIGATE VOLTAGE DROP.

1 LIGHTING CONTACTOR LC-C – SCHEMATIC WIRING DIAGRAM



NOTES:

1. THE CONTRACTOR SHALL SHALL INTERLOCK BATH ROOM EXHAUST FAN WITH BATH ROOM LIGHT CIRCUIT AS SHOWN.

2 EXHAUST FAN MOTOR STARTER SCHEMATIC WIRING DIAGRAM

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

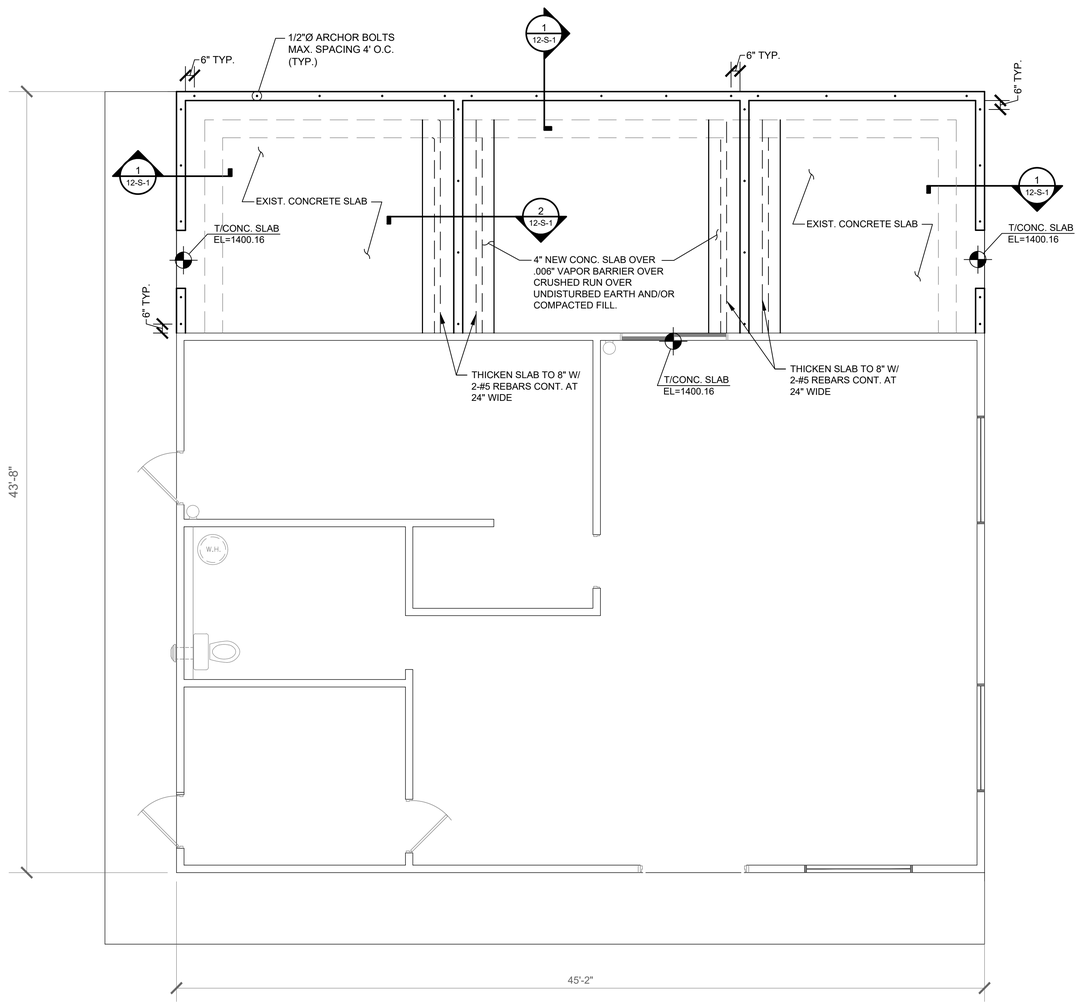
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
SCHEMATIC WIRING DIAGRAM

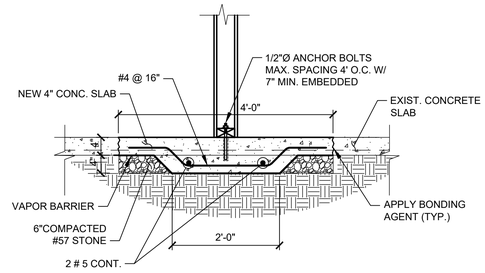
Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

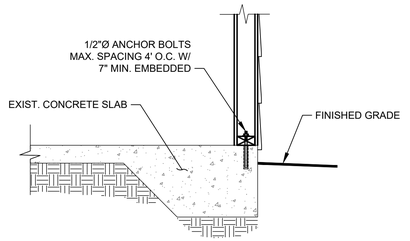
Sheet No.
12-E-3



1 12-S-1 FOUNDATION PLAN
1/4"=1'-0"



2 12-S-1 SECTION - THICKENED SLAB
3/4"=1'-0"



1 12-S-1 SECTION - PORCH SLAB EDGE
3/4"=1'-0"

NOTE: CONCRETE SLAB MIN. 3,000 PSI

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

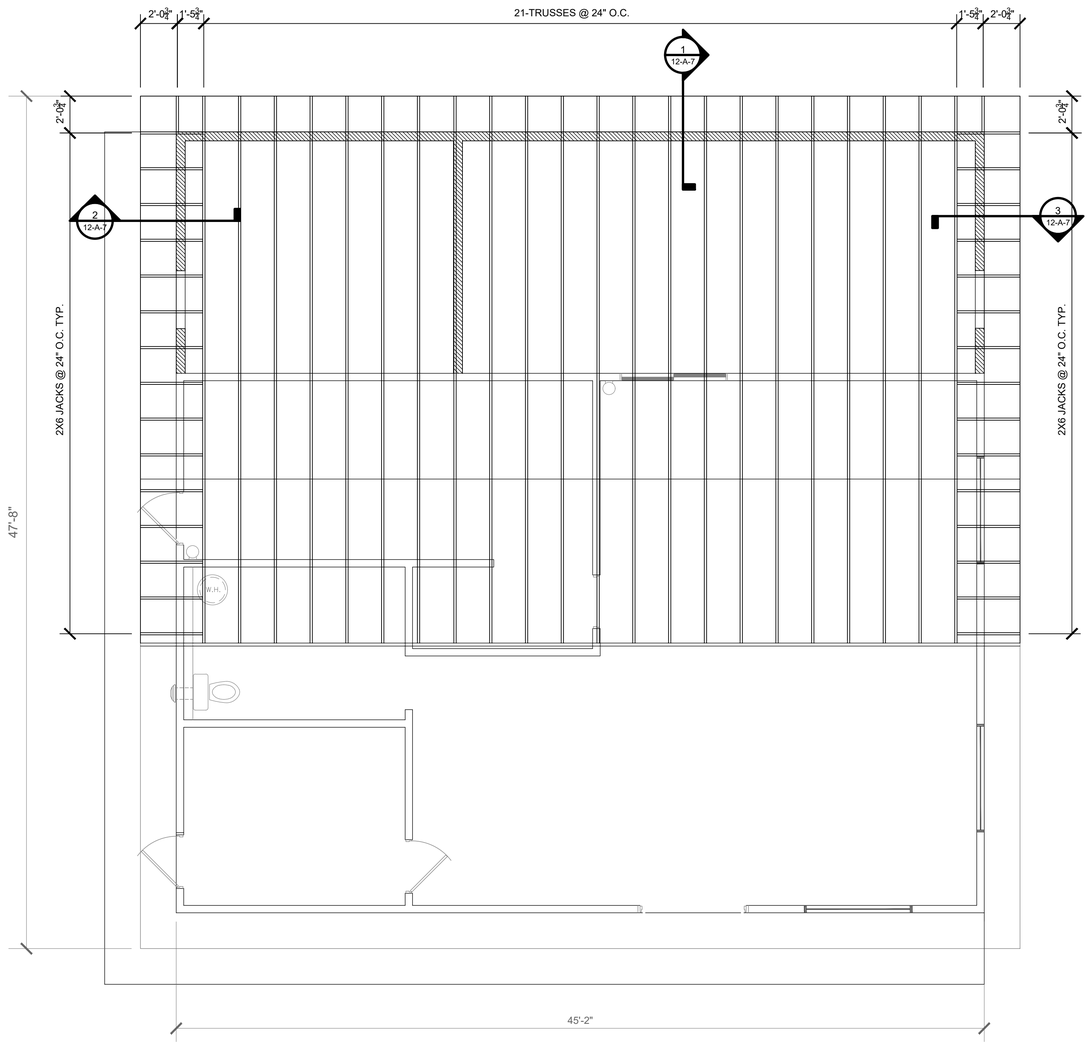
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING
FOUNDATION PLAN AND DETAILS

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2022
	12-S-1 OF 12-S-2.dwg

Sheet No.
12-S-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-S-1 OF 12-S-2.dwg 08/01/2025 2:02pm aencarnacion



1 12-S-2 ROOF FRAMING PLAN
1/4"=1'-0"

NOTE:

1 - THE ROOF TRUSSES PROVIDED BY THE CONTRACTOR. (SUBMIT DESIGN FOR ENGINEER'S APPROVAL)

2 - THE CONTRACTOR MUST VERIFY THAT THE EXISTING RAFTERS OR TRUSSES ARE IN THE SAME DIRECTION AS THOSE PROPOSED AND ABLE TO SUPPORT THE ADDITIONAL LOAD.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

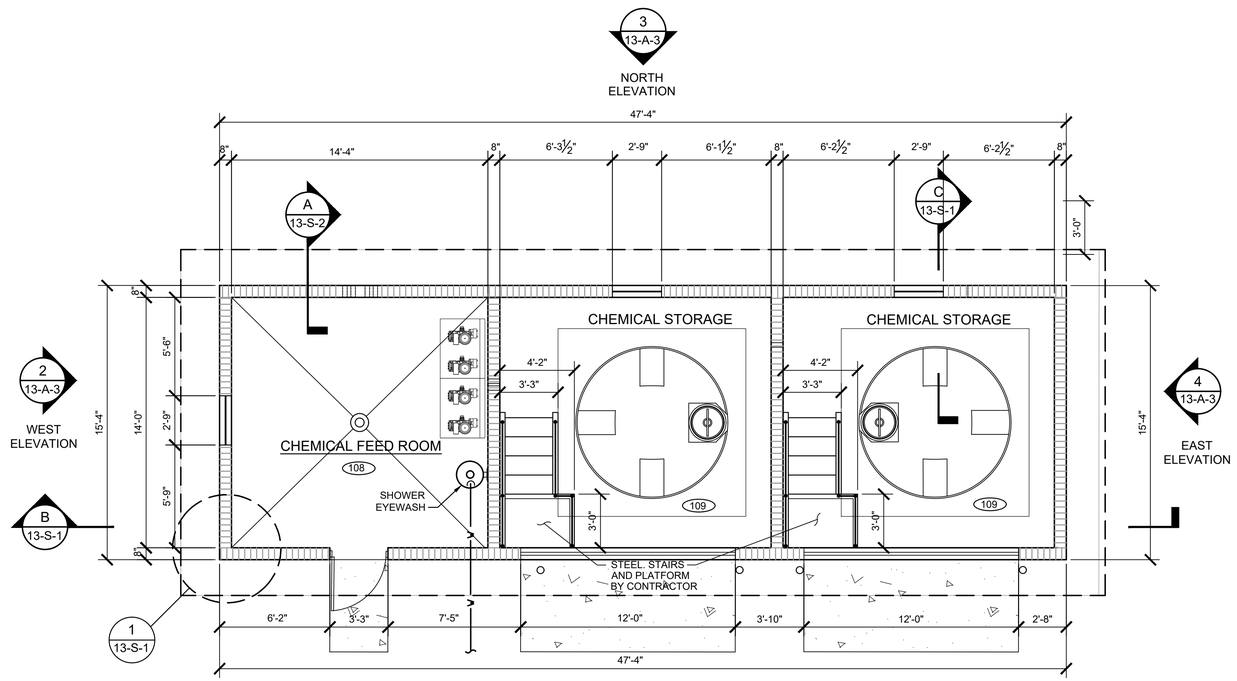
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CONTROL BUILDING ROOF
FRAMING PLAN AND DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
12-S-1 OF 12-S-2.dwg

Sheet No.
12-S-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 12 - Control Building\12-S-1 OF 12-S-2.dwg 08/01/2025 2:02pm aencarnacion



FLOOR PLAN

1/4" = 1'-0"

NOTES:

UN-FINISHED SPLIT FACE CONCRETE BLOCK, COLOR SELECTED BY OWNER.
FOR REFERENCE SEE SPECIFICATION FOR THE CHEMICAL BUILDING PAINTING: 09 90 00 PAINTING.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

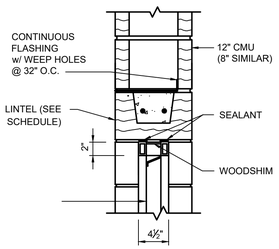
CHEMICAL BUILDING FLOOR PLAN

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2022

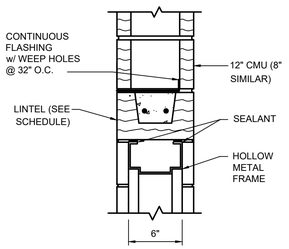
13-A-1 to 13-M-2-Chemical Building.dwg

Sheet No.
13-A-1

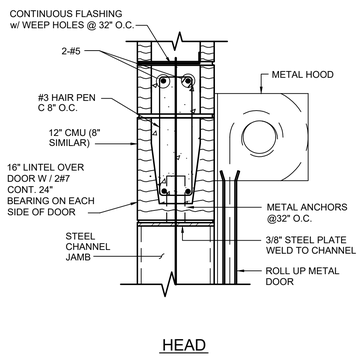
\\Buldata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:02pm apavlusenco



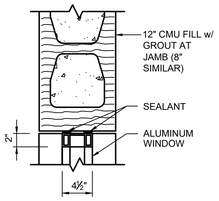
HEAD
(WINDOW)



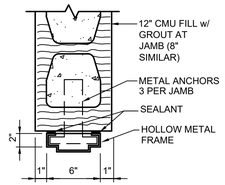
HEAD



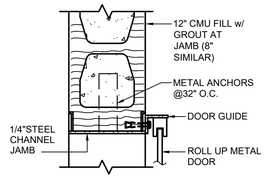
HEAD



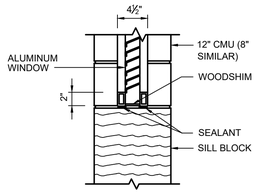
JAMB
(WINDOW)



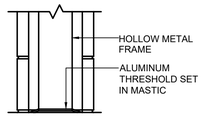
JAMB



JAMB

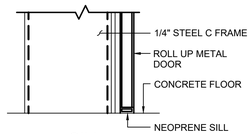


SILL
(WINDOW)



SILL

MAN DOOR



SILL

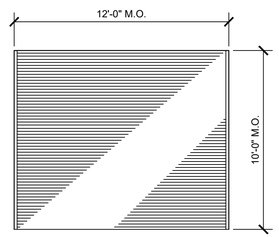
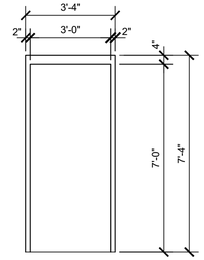
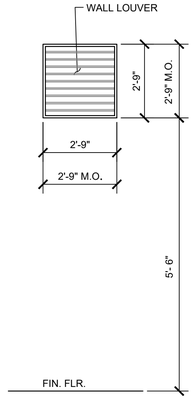
ROLL-UP DOOR

TYPICAL WINDOW DETAILS

N.T.S.

TYPICAL DOOR DETAILS

N.T.S.

	DOOR SCHEDULE		LOUVER SCHEDULE
ELEVATION			
MARK	16	15	W-6
SIZE	12'-0"x10'-0"		
TYPE	ROLL-UP INSULATED	INSULATED HOLLOW METAL	ALUMINUM
FRAME		2"x5 3/4" HOLLOW METAL	1 1/2"x 4" ALUMINUM
HEAD			
JAMB			
SILL			
HARDWARE SET			

GEORGIA REGISTERED
MSG M. MBUGUA
NO. 039453
PROFESSIONAL ENGINEER
JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

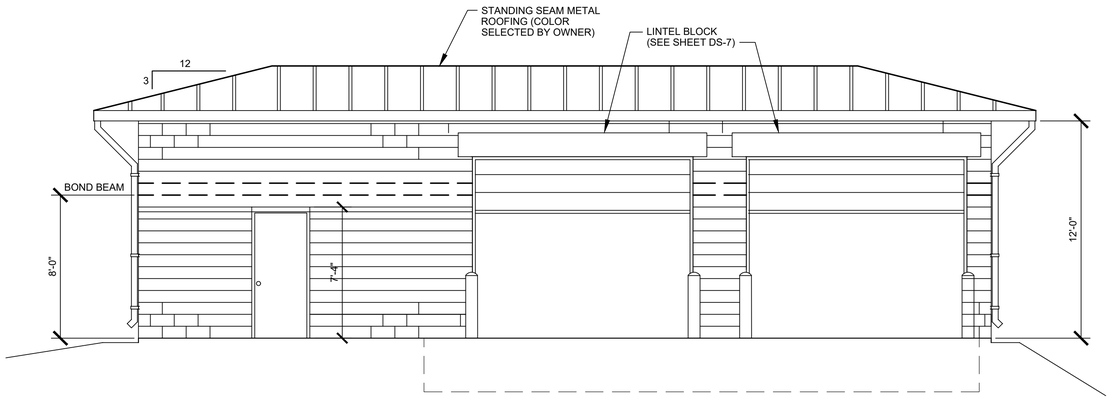
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

TYPICAL DOOR AND WINDOW DETAILS

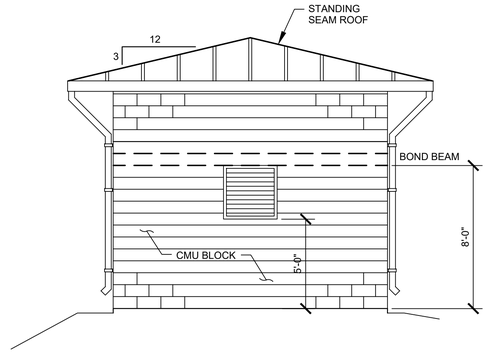
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
13-A-1 to 13-M-2-Chemical Building.dwg

Sheet No.
13-A-2

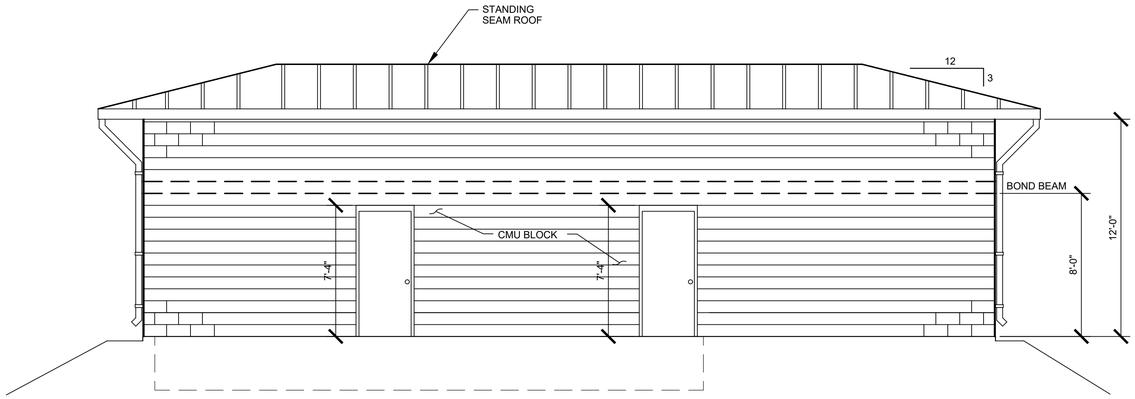
\\Buldata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:02pm apavlusenco



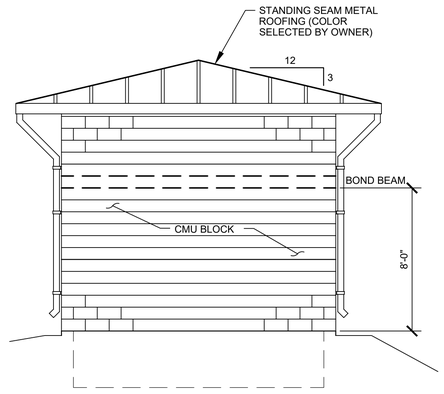
SOUTH ELEVATION (1 / 13-A-3)
1/4" = 1'-0"



WEST ELEVATION (2 / 13-A-3)
1/4" = 1'-0"



NORTH ELEVATION (3 / 13-A-3)
1/4" = 1'-0"



EAST ELEVATION (4 / 13-A-3)
1/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

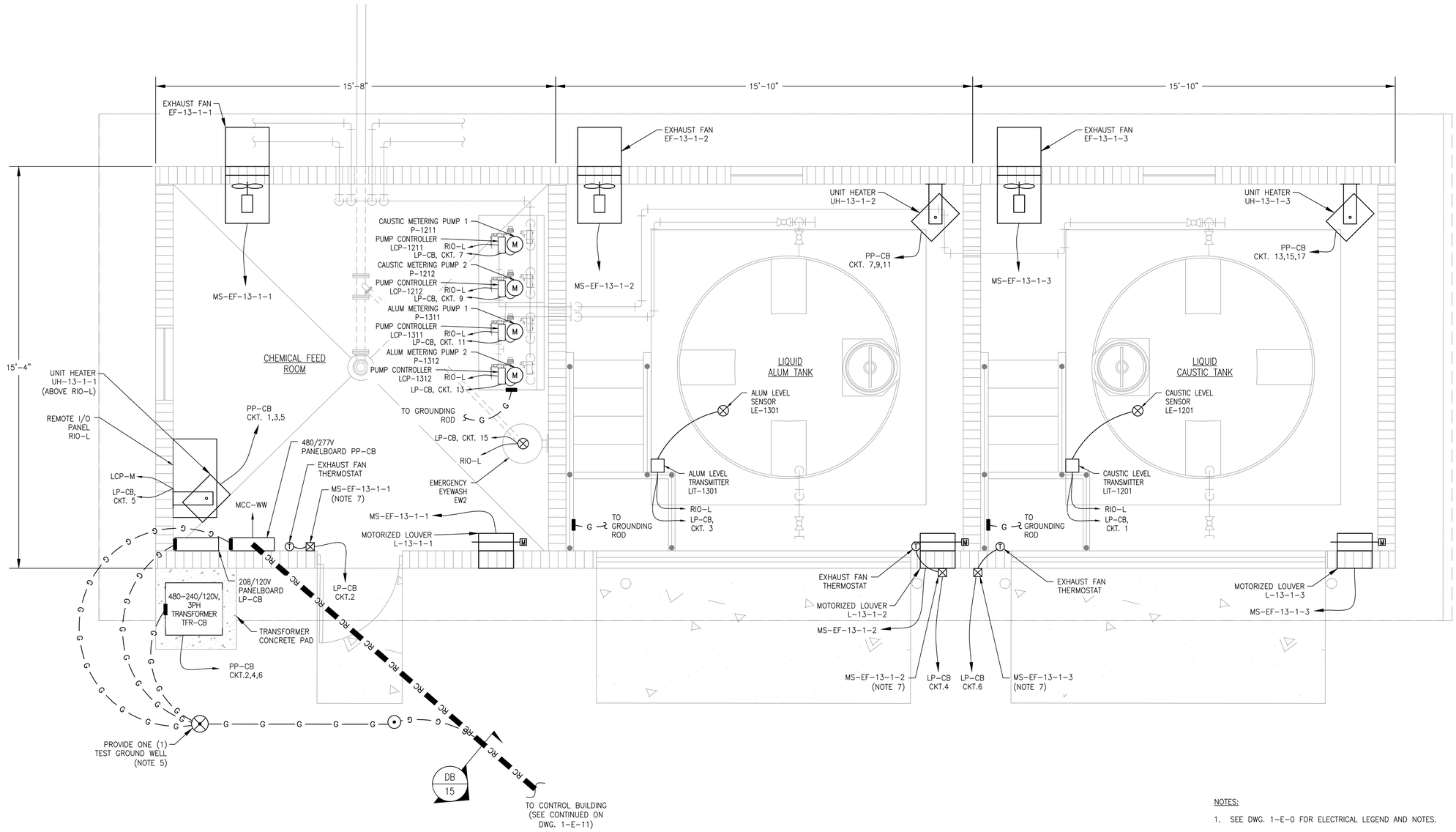
CHEMICAL BUILDING ELEVATIONS

Drawn:	AE
Design:	AE
Checked:	MM
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2022

13-A-1 to 13-M-2-Chemical Building.dwg

Sheet No.
13-A-3

I:\Buildata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:02pm apavlusicenco



1 CHEMICAL BUILDING ELECTRICAL PLAN

SCALE: 1/2" = 1'

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

NOTES:

1. SEE DWG. 1-E-0 FOR ELECTRICAL LEGEND AND NOTES.
2. SEE DWG. 1-E-2 AND 1-E-3 FOR DUCTBANKS SECTIONS.
3. SEE DWG. 1-E-5 FOR ONE LINE DIAGRAM.
4. SEE DWG. 1-E-6 FOR PANELBOARD SCHEDULES.
5. THE CONTRACTOR SHALL PROVIDE A GROUND GRID CONSISTING OF 3/4" DIA. X 10'-0" LONG COPPER CLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #1 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "4" ON DWG. DE-4 AND "1" ON DWG. DE-5 FOR GROUND WELL INSTALLATION DETAILS.
6. SEE DWG. H-10 FOR INFLUENT PUMP STATION BUILDING HVAC PLAN.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL A MANUAL MOTOR STARTER FOR THE FAN'S MOTOR HORSEPOWER. SEE DWG. 13-E-4 FOR THE MOTOR STARTER SCHEMATIC DIAGRAM. THE STARTER SHALL HAVE A NEMA 4X STAINLESS STEEL ENCLOSURE AND INCLUDE H-O-A SWITCH, AND 'RUNNING' INDICATING LIGHT. MOUNT THE MOTOR STARTER IN THE LOCATION SHOWN OR AS DIRECTED BY THE OWNER.

LEGEND:

RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

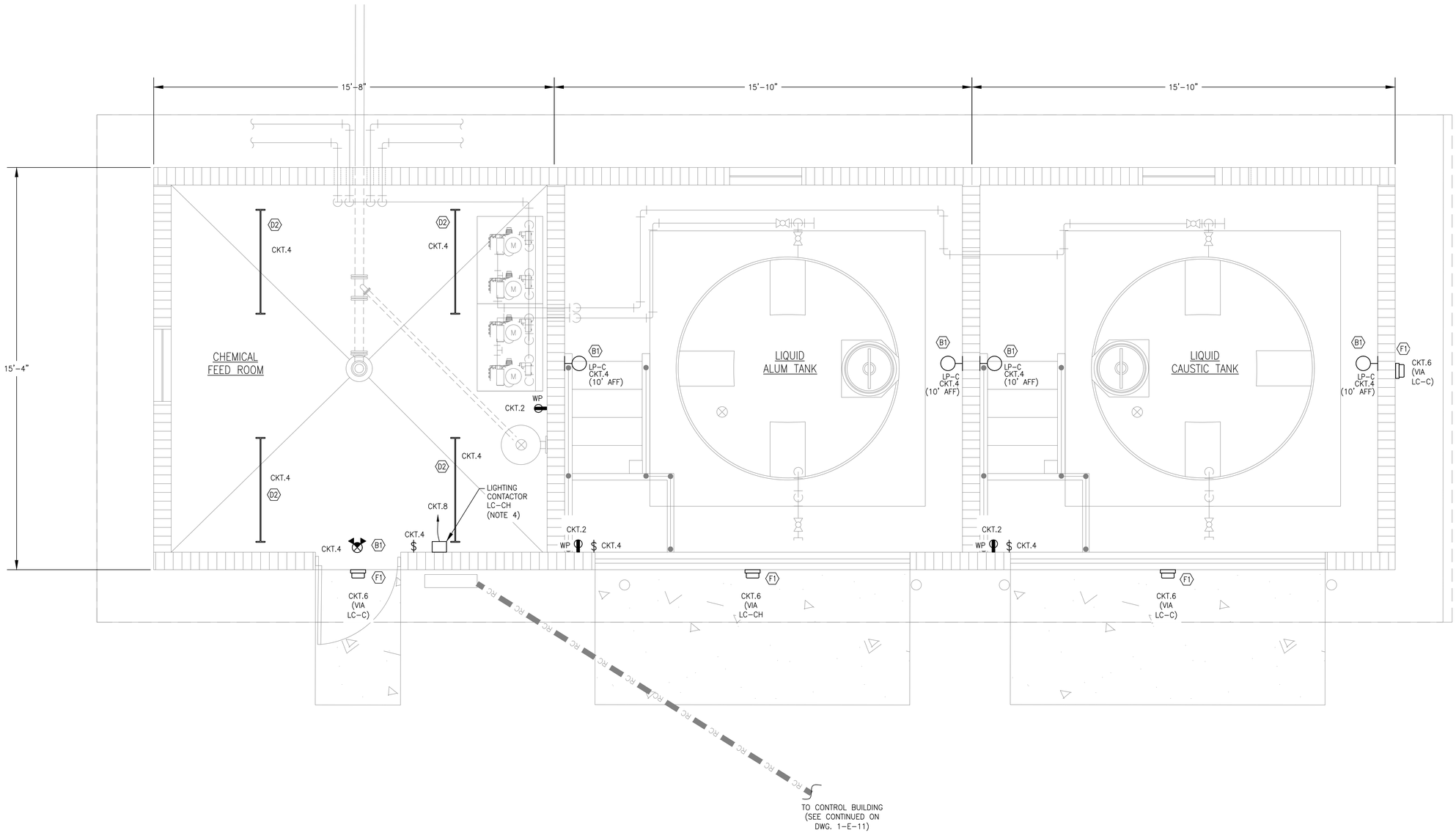
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING ELECTRICAL PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
13-E-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 CHEMICAL BUILDING RECEPTACLES AND LIGHTING PLAN

SCALE: 1/2" = 1'

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL LIGHTING FIXTURES AND RECEPTACLES AS SHOWN. CONTRACTOR SHALL FIELD LOCATE LIGHT FIXTURES TO AVOID ANY UNFORESEEN INTERFERENCES.
2. THE CONTRACTOR SHALL PROVIDE A COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR ALL LIGHTING UNLESS OTHERWISE NOTED.
3. SEE DRAWING 1-E-13 FOR LIGHTING FIXTURES SCHEDULE.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL A LIGHTING CONTACTOR WITH A PHOTOCELL FOR OUTDOOR LIGHTING FIXTURES COMMUTATION CONTROL. SEE DRAWING 13-E-4 FOR THE PHOTOCELL LIGHTING CONTROL SCHEMATIC DIAGRAM.

LEGEND:

RC RC RC – REINFORCED CONCRETE ENCASED UNDERGROUND DUCTBANK

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

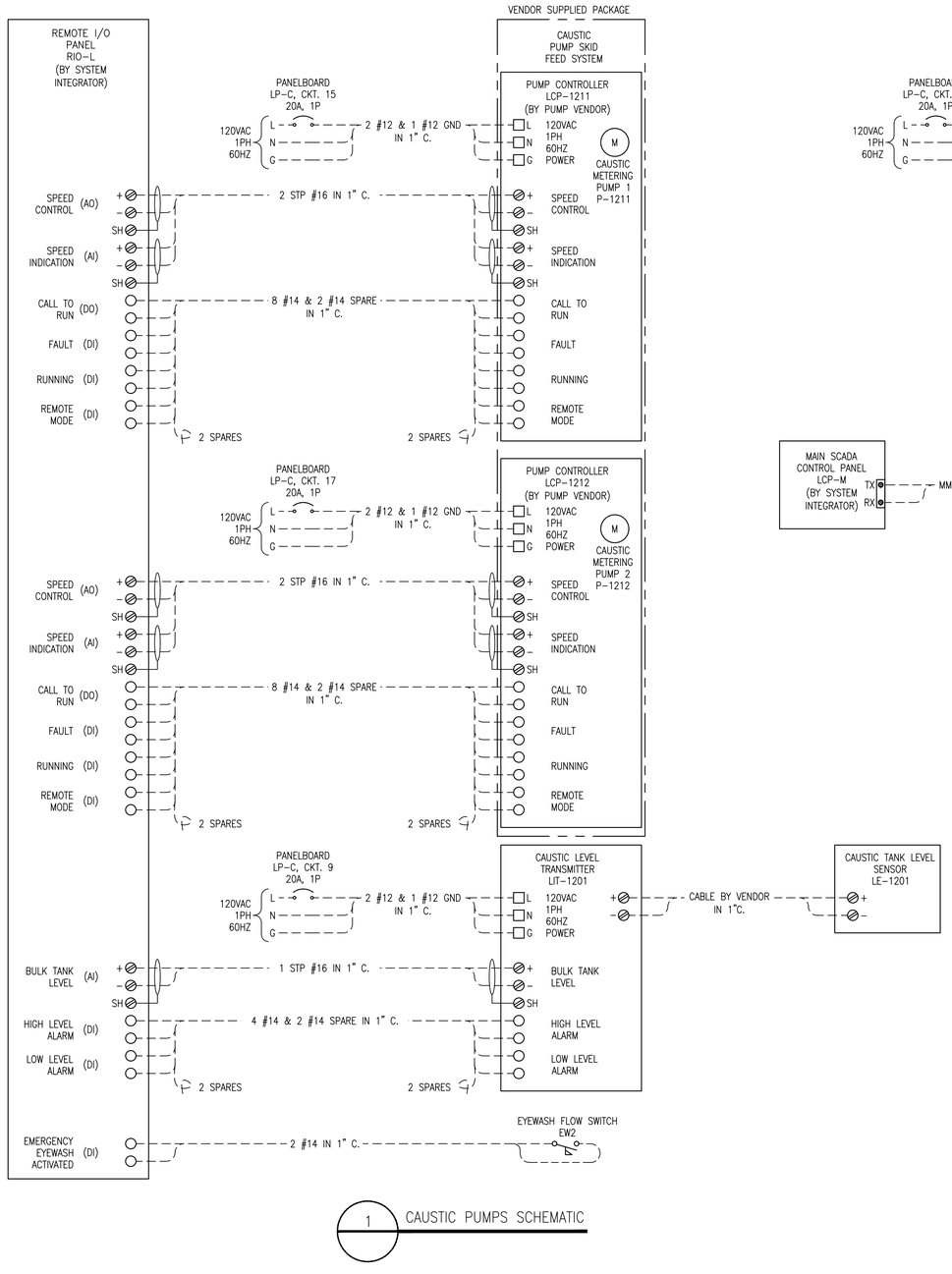
CHEMICAL BUILDING
RECEPTACLES AND LIGHTING PLAN

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

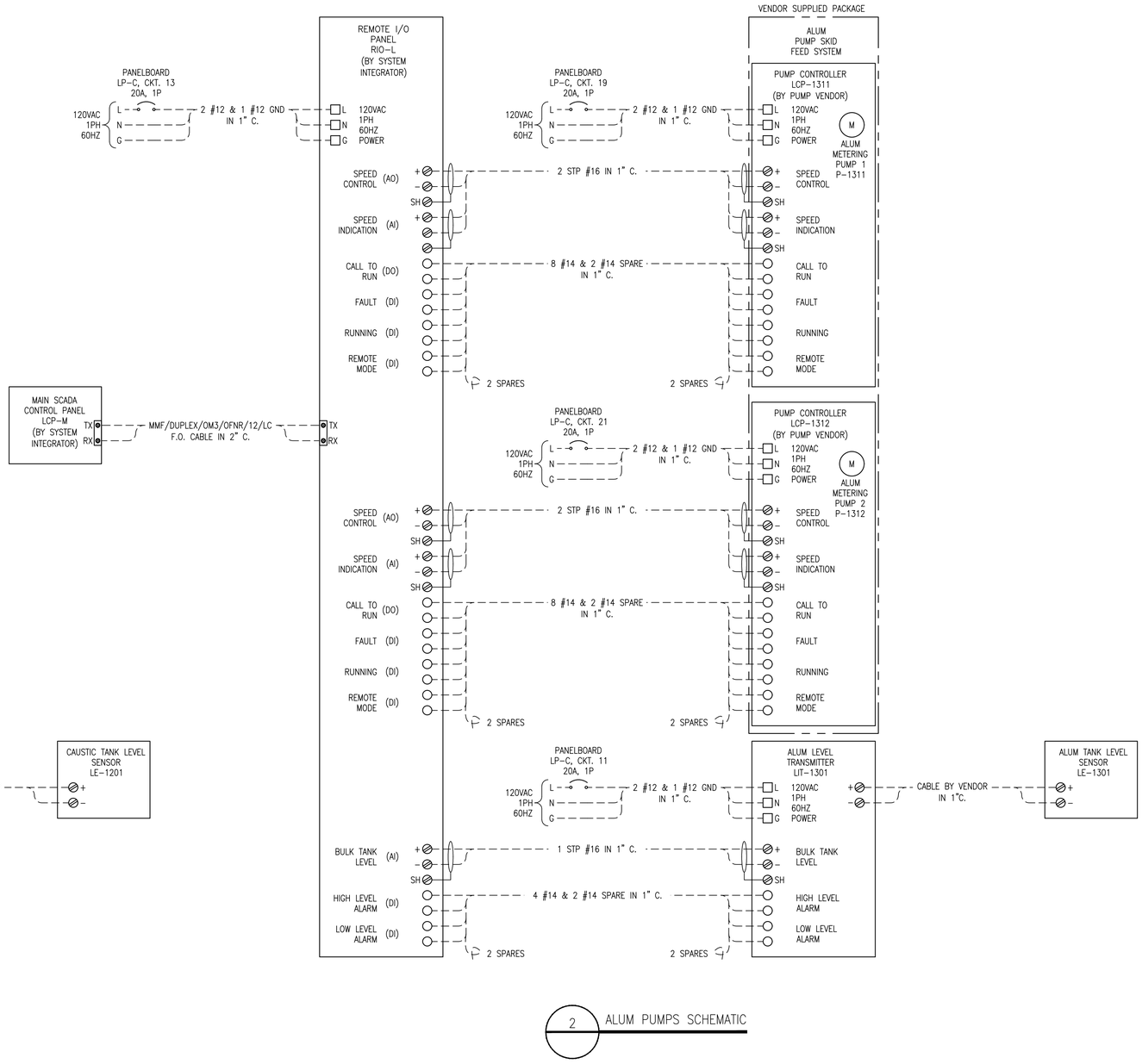
EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
13-E-2



1 CAUSTIC PUMPS SCHEMATIC



2 ALUM PUMPS SCHEMATIC

LEGEND:

- □ – 120V POWER TERMINAL
- ■ – 480V POWER TERMINAL
- ○ – CONTROL TERMINAL
- ⊘ – SIGNAL TERMINAL
- RJ45 – RJ-45
- TX / RX – FIBER OPTIC PORT

F.O. CABLE LEGEND:

MMF/DUPLEX/OM4/OFNR/12/LC

CORE TYPE / TRANSMISSION TYPE / FIBER TYPE / CABLE TYPE / STRANDS COUNT / CONNECTOR TYPE

GEORGIA REGISTERED No. 29313 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

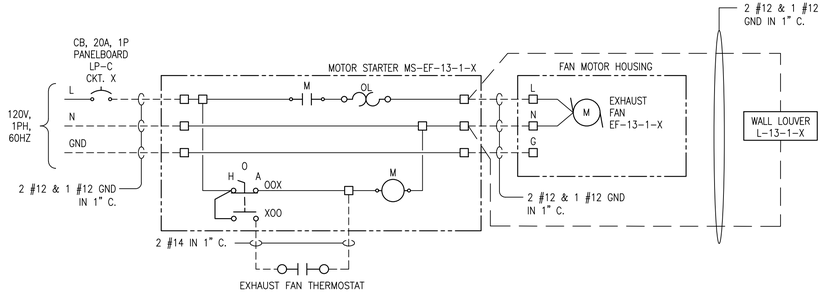
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING
SCHEMATIC WIRING DIAGRAMS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
13-E-3



NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ENCLOSED MOTOR STARTER WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - A. CABINET SCCR SHALL BE 10kAIC MINIMUM.
   - B. FULL VOLTAGE NON-REVERSING (FVNR) IEC TYPE NON-COMBINATION MOTOR STARTER, RATED FOR 1/2HP MOTOR.
   - C. SELECTOR SWITCHES AND INDICATING LIGHTS:
     - C.1. HOA SWITCH.
     - C.2. RUNNING INDICATING LIGHT.
   - D. CABINET SHALL INCLUDE ALL NECESSARY COMPONENTS FOR EQUIPMENT SAFE AND RELIABLE OPERATION.
   - E. ENCLOSURE TYPE SHALL BE NEMA 4X.

THE CABINET SHALL BE MANUFACTURED BY EATON, SCHNEIDER ELECTRIC, ALLEN-BRADLEY, ABB, SIEMENS OR APPROVED EQUAL MANUFACTURER, THE CABINET SHALL BE UL LISTED AND LABELED. CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM AND BOM FOR THE CONTROL PANEL TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION.

#	EF-13-1-X	DESCRIPTION	HP	PANELBOARD	CKT.X	MS-EF-13-1-X
1	EF-13-1-1	CHEMICAL FEED ROOM	1/4	LP-CB	CKT.2	MS-EF-13-1-1
2	EF-13-1-2	LIQUID ALUM TANK	1/4	LP-CB	CKT.4	MS-EF-13-1-2
3	EF-13-1-3	LIQUID CAUSTIC TANK	1/4	LP-CB	CKT.6	MS-EF-13-1-3

1 EXHAUST FAN MOTOR STARTER SCHEMATIC WIRING DIAGRAM

TYP. FOR 3

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

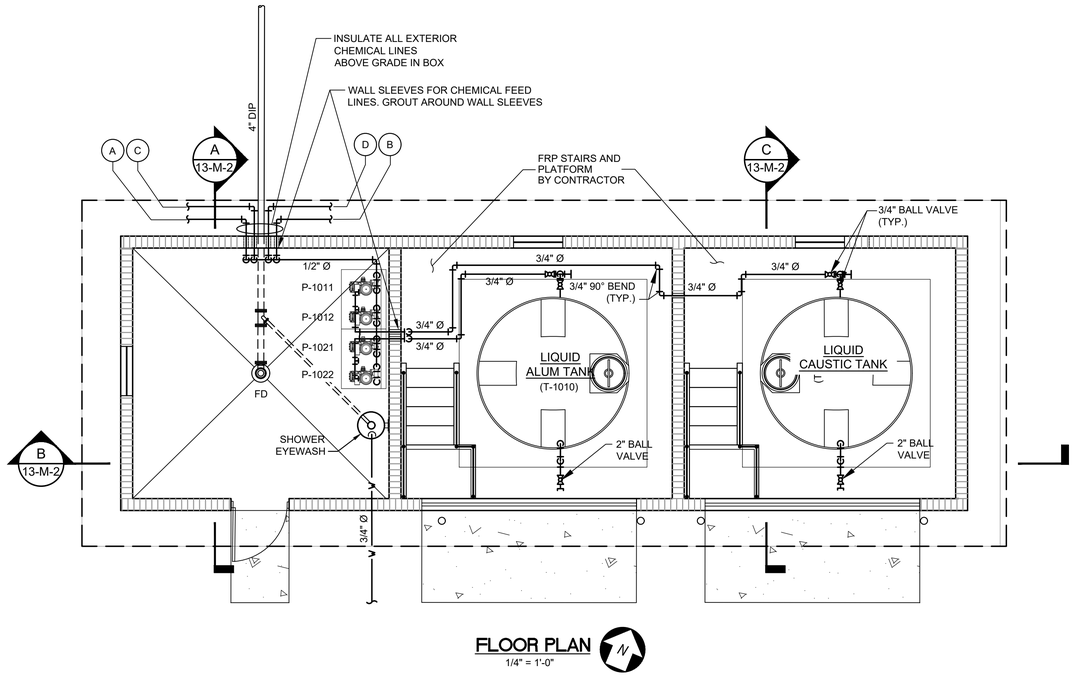
RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING
SCHEMATIC WIRING DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

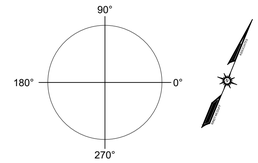
Sheet No.
13-E-4



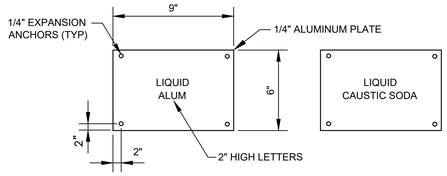
FLOOR PLAN
1/4" = 1'-0"

CHEMICAL LINES SCHEDULE				
LINE NUMBER	SIZE	SERVICE TYPE	FROM	TO
A	1/2"	CAUSTIC SODA (50%)	P-1011	BIOLOGICAL TREATMENT
B	1/2"	ALUM CHLORIDE (12%)	P-1012	MIX/FLOC TANK
C	1/2"	CAUSTIC SODA (50%)	P-1021	BIOLOGICAL TREATMENT
D	1/2"	ALUM CHLORIDE (12%)	P-1022	MIX/FLOC TANK

* NOTE: STATIC MIXER IS LOCATED NEXT TO THE FEB TANK.



TANK LAYOUT
NTS



NAME PLATE DETAIL
NTS

LIQUID CAUSTIC SODA				
	TANK CONNECTION	SIZE	LOCATION	ABOVE TANK BOTTOM
1	FILL	2"	270°	TOP
2	MANWAY	18"	90°	TOP
3	LEVEL INDICATOR	4"	45°	TOP
4	VENT	3"	CENTER	TOP
5	OVERFLOW	4"	135°	10'-0"±
6	OUTLET/DRAIN	2"	0°	0'-3"

LIQUID CAUSTIC SODA		
	TANK ATTRIBUTES	VALUE
1	DIAMETER	8'-4"
2	HEIGHT	8'-4"
3	TOTAL CAPACITY	~3,396 GAL

LIQUID ALUM CHLORIDE				
	TANK CONNECTION	SIZE	LOCATION	ABOVE TANK BOTTOM
1	FILL	2"	270°	TOP
2	MANWAY	18"	90°	TOP
3	LEVEL INDICATOR	4"	45°	TOP
4	VENT	3"	CENTER	TOP
5	OVERFLOW	4"	135°	10'-6"±
6	OUTLET/DRAIN	2"	0°	0'-3"

LIQUID ALUM CHLORIDE		
	TANK ATTRIBUTES	VALUE
1	DIAMETER	8'-4"
2	HEIGHT	8'-4"
3	TOTAL CAPACITY	~3,396 GAL

NOTES:

1. ALL PVC PIPING SHALL BE SCH 80 PVC.
2. ALL PIPING SHALL BE PAINTED AND LABELED IN ACCORDANCE WITH SPECIFICATIONS SECTION 09900 AND 15003.
3. ALL PIPING SHALL INCLUDE A FLOW ARROW PAINTED ON TO INDICATE MATERIAL AND DIRECTION OF FLOW.
4. ALL PVC VALVES SHALL BE TRUE UNION TYPE UNLESS OTHERWISE NOTED.
5. PROVIDE PIPE SUPPORTS TO WATER AND CHEMICAL PIPING. PROVIDE ALL NECESSARY SUPPORTS CONNECTORS AND HARDWARE AS REQUIRED. PVC PIPING SHALL NOT SAG.
6. PIPING LEGEND TO INDICATE LABEL AND COLOR IN THE SPECIFICATIONS SECTION 09900 AND 15003.
7. PROVIDE JOSAM SERIES 32330 FLOOR DRAIN w/6" BOTTOM OUTLET. DRAIN SHALL HAVE 12 5/8" DIAMETER TRACTOR TOP, LOOSE FIT.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

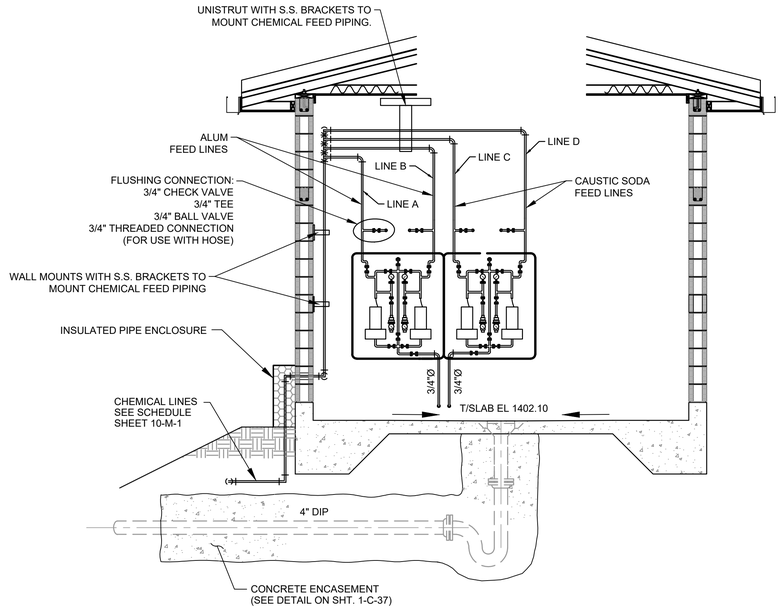
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING FLOOR PLAN

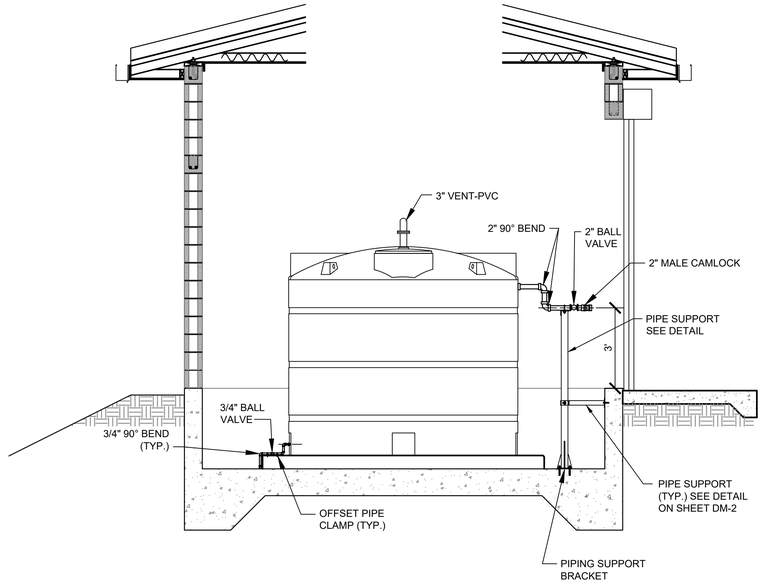
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
13-A-1 to 13-M-2-Chemical Building.dwg

Sheet No.
13-M-1

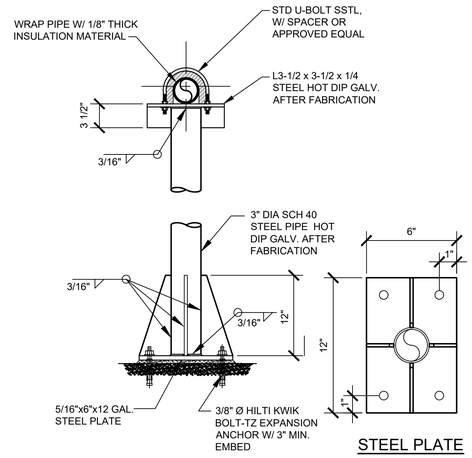
\\Buildata01\rmal\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:04pm apaviuscenco



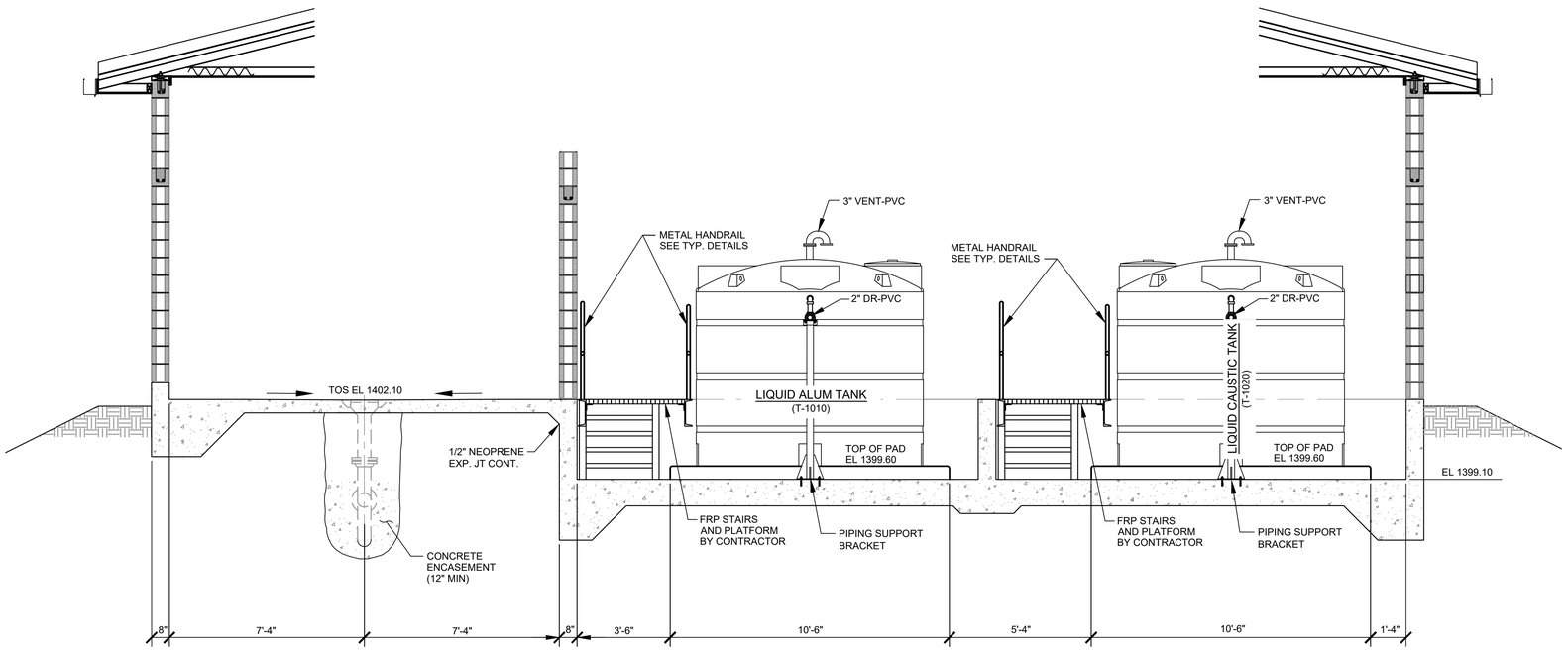
A 13-A-2 SECTION
3/8" = 1'-0"



B 13-A-2 SECTION
3/8" = 1'-0"



PIPE SUPPORT
N.T.S.



B 13-A-2 SECTION
3/8" = 1'-0"

GEORGIA REGISTERED Matthew K. Mbugua NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

ENGINEERING + ENVIRONMENTAL

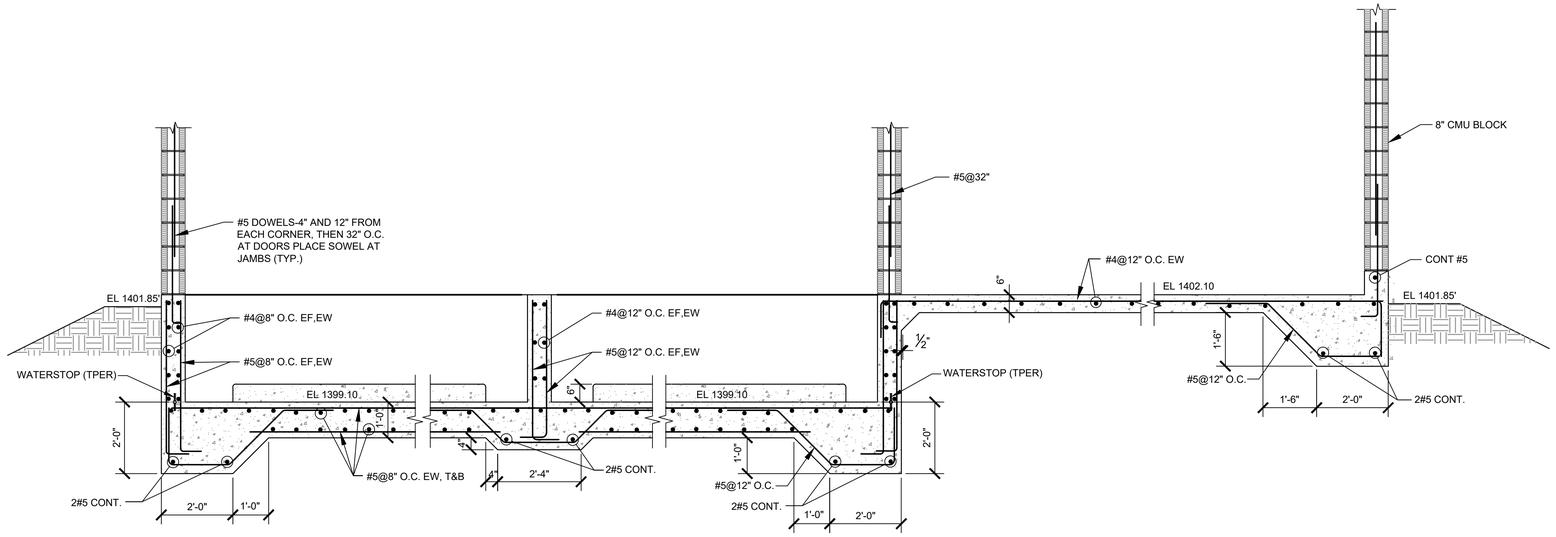
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING SECTONS

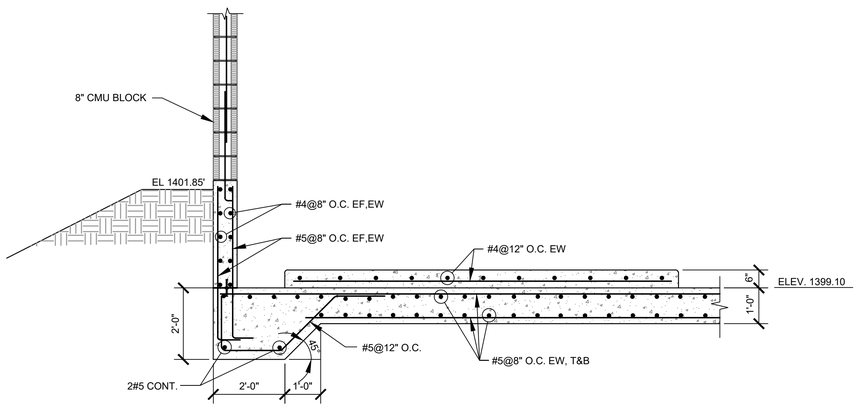
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
13-A-1 to 13-M-2-Chemical Building.dwg

Sheet No.
13-M-2

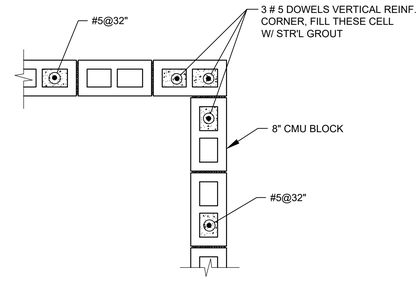
\\Buildata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:04pm apaviuscenco



B
13-S-1
SECTION
1/2" = 1'-0"



C
13-S-1
SECTION
1/2" = 1'-0"



NOTE:
FOR HORIZONTAL REINFORCEMENT SEE DETAILS ON SHEET DS-7.

1
13-S-1
CORNER CONCRETE BLOCK
3/4" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

ENGINEERING + ENVIRONMENTAL

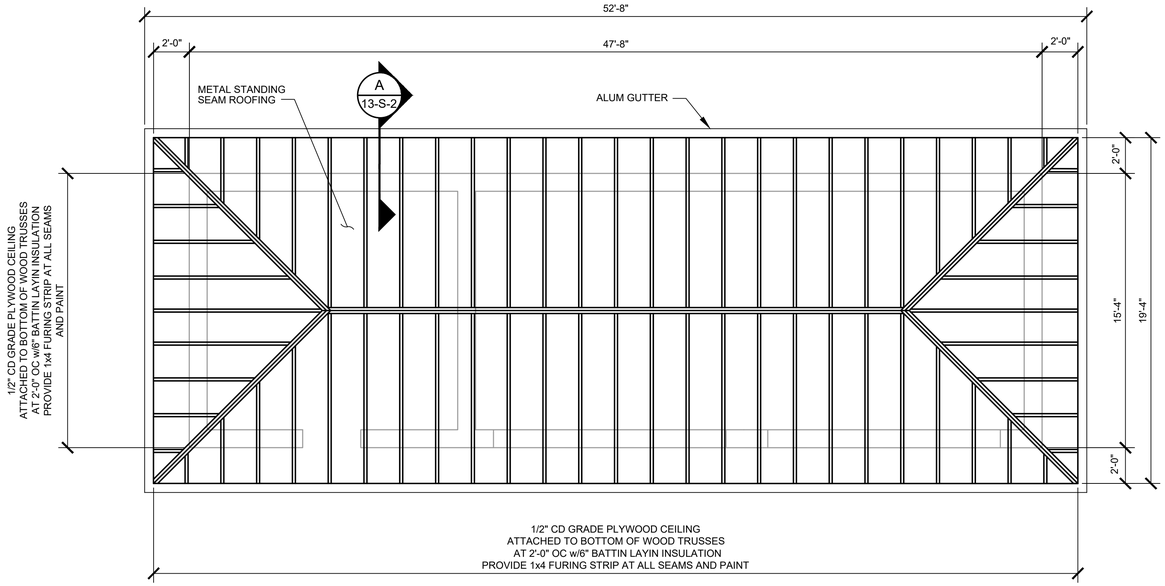
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING STUCTURAL SECTIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
13-A-1 to 13-M-2-Chemical Building.dwg

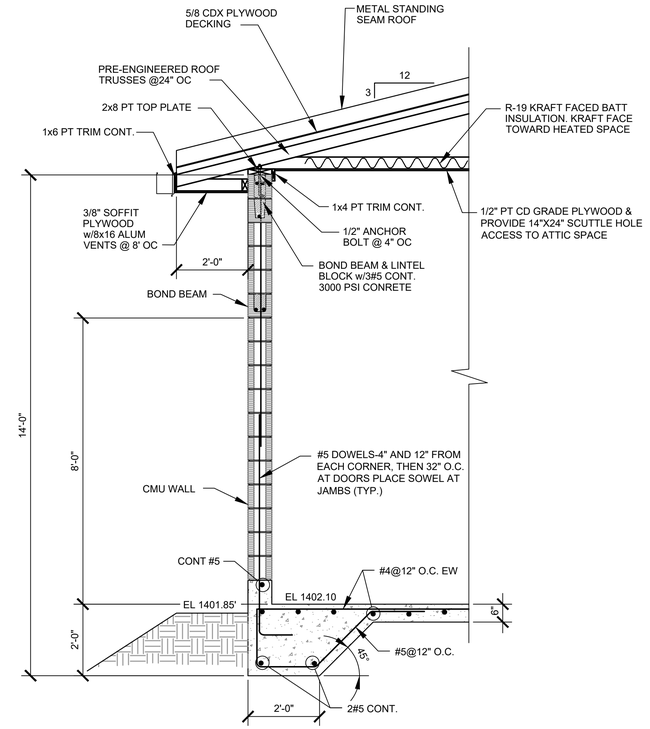
Sheet No.
13-S-1

\\Buildata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:03pm apavluscenco



ROOF PLAN

1/4" = 1'-0"

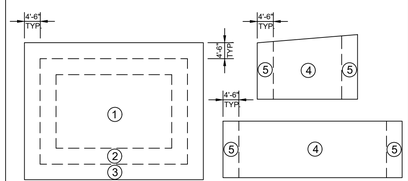


NOTE:
VERTICAL BLOCK REINFORCING TO BE PLACED EVERY OTHER COURSE.

A
13-S-2
SECTION

1/2" = 1'-0"

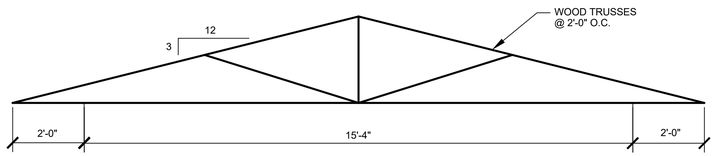
BLOWER AND CHLORINATION SYSTEM CANOPIES						
WIND DESIGN PRESSURES COMPONENTE CLADDING, PSF (LFRD)						
ROOF						
EFFECTIVE AREA (SF)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	20	-44	31	-67	40	-132
25	20	-44	31	-67	31	-67
50	20	-44	31	-67	31	-67
WALLS (WHERE OCCURS)						
EFFECTIVE AREA (SF)	ZONE 4 (FIELD)		ZONE 5 (CORNERS)			
	(+)	(-)	(+)	(-)		
<10	51	-56	51	-69		
50	46	-51	46	-58		
200	42	-46	42	-49		
>500	38	-43	38	-43		



WIND PRESSURE NOTES:

1. SEE "WIND DESIGN CRETERIA" NOTES ON G-10.
2. "a" - 4'-6", OH = OVERHANG ZONE PRESSURES.
3. DESIGN PRESSURES ARE PROVIDED AT ULTIMATE DESIGN WIND SPEEDS. TO CONVERT TO NOMINAL DESIGN WIND SPEEDS (ASD) MULTIPLE PRESSURES BY FACTOR OF 0.60.
4. THE EFFECTIVE AREA SHALL BE DETERMNED AS FOLLOWS UNLESS OTHERWISE NOTED:
   a. THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE THIRD THE SPAN LENGTH.
   b. THE AREA THAT IS TRIBUTARY TO AN INDIVIDUAL FASTENER.
5. NAGATIVE SIGN INDICATES PRESSURE ACTING OUTWARD FROM SURFACE.

ENCLOSURE CLASSIFICATION — OPEN (OBSTRUCTED)



NOTE:
BOTTOM CHORD TO BE DESIGNED FOR A 1 KIP LOAD AT ANY POINT.

TRUSS DETAIL

1/2" = 1'-0"

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL BUILDING ROOF PLAN AND SECTION

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
13-A-1 to 13-M-2 Chemical Building.dwg

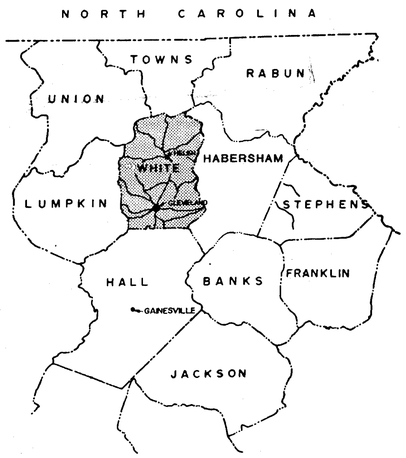
Sheet No.
13-S-2

\\Buldata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 13 - Chemical Building\13-A-1 to 13-M-2-Chemical Building.dwg 08/01/2025 4:04pm apavluscenco

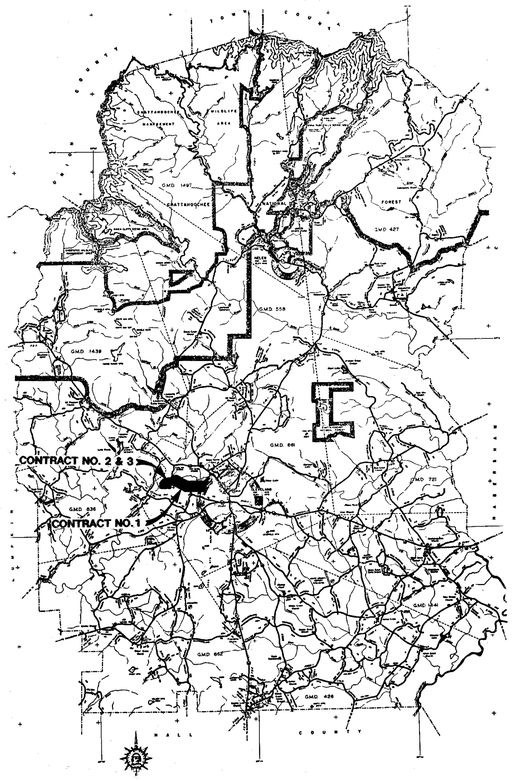
CITY OF CLEVELAND

SEWERAGE SYSTEM IMPROVEMENTS

CONTRACT NO. 1: PUMP STATION MODIFICATIONS, SANITARY SEWER AND FORCE MAIN INSTALLATION
CONTRACT NO. 2 & 3: AQUACULTURE TREATMENT SYSTEM / LEMNA PROCESS



LOCATION MAP



CITY OF CLEVELAND

DONALD STANLEY — MAYOR

COUNCIL MEMBERS

COLEMAN ALLEN	ED HEAD
JOHN PALMOUR	EDWARD YOUNG

DONALD HUNT, PUBLIC WORKS SUPERINTENDANT

TITLE	CONTRACT NO.	SHEET NO.
COVER SHEET	1, 2, & 3	1
GENERAL PLAN	1, 2, & 3	2
GRAVITY SEWER 1 OF 2	1	3
GRAVITY SEWER 2 OF 2	1	4
FORCE MAIN	1	5
FORCE MAIN TIE-IN/DETAILS	1	6
SITE PLAN	2 & 3	7
GRADING PLAN	2 & 3	8
CROSS-SECTIONS 1 OF 2	2 & 3	9
CROSS-SECTIONS 2 OF 2	2 & 3	10
PIPING PLAN	2 & 3	11
LEMNA BARRIER PLAN	2 & 3	12
HARVESTER RAMP,	2 & 3	13
SHELTER AND DOCK	-	-
PLANT EFFLUENT STRUCTURES	2 & 3	14
CONTROL BUILDING	2 & 3	15
MCC/BLOWER BUILDING	2 & 3	16
ELECTRICAL DETAILS	3	17
ELECTRICAL DETAILS	2 & 3	18
STORM DRAIN PROFILES AN DETAILS	2 & 3	19
STANDARD DETAILS 1 OF 2	1, 2, & 3	20
STANDARD DETAILS 2 OF 2	1, 2, & 3	21

Prepared By:

RMA

Rindt-McDuff Associates, Inc.

334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

Brian A. Rindt

BRIAN A. RINDT, PE.

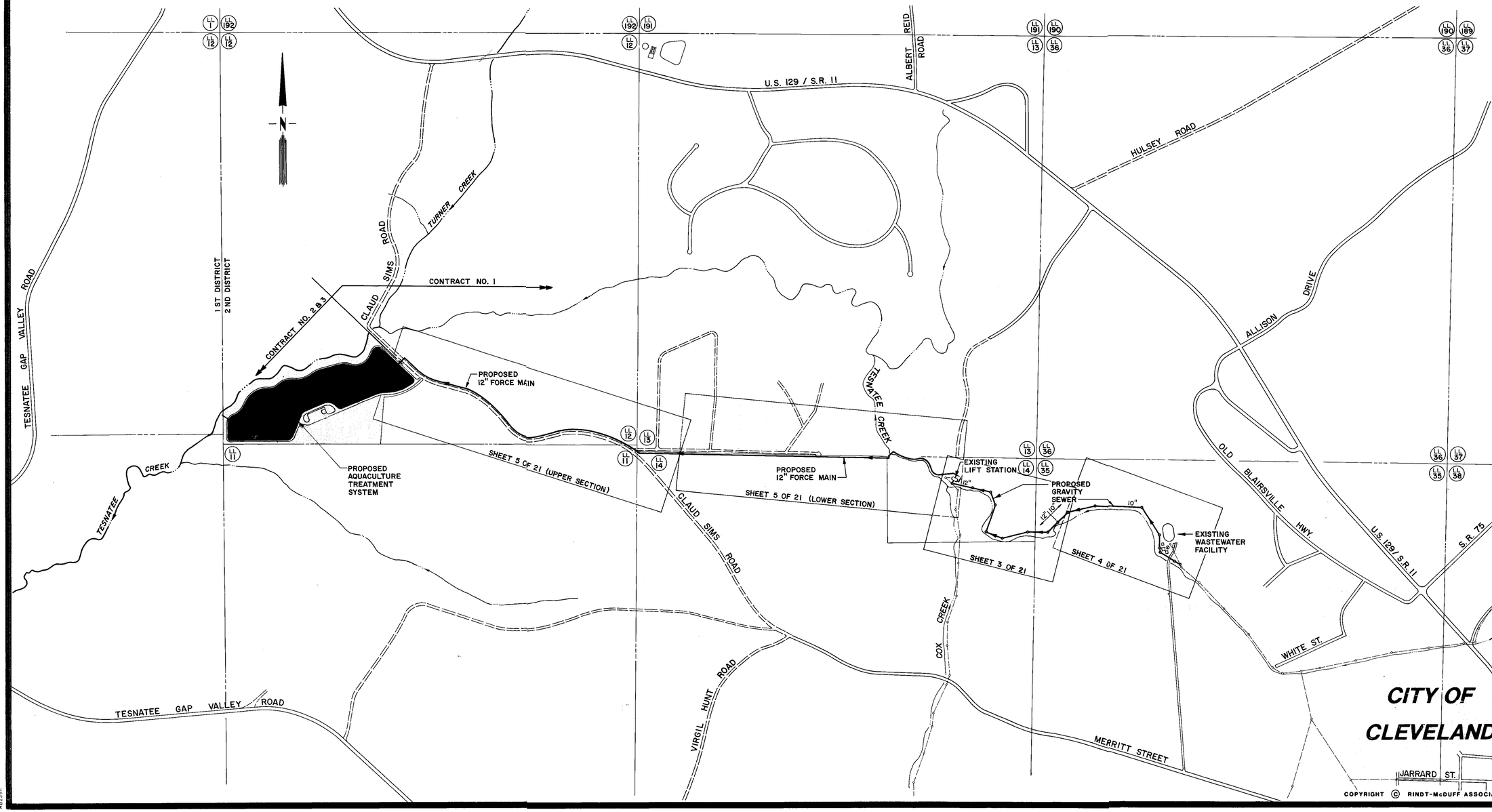
SEPTEMBER 1990

DATE

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

LEGEND

- PAVED ROAD
- DIRT OR GRAVEL ROAD
- EASEMENT
- CREEK
- POWER POLE
- POWER LINE
- PROPOSED SANITARY SEWER
- PROPOSED FORCE MAIN
- EXISTING SANITARY SEWER
- REFERENCE POINT
- LAND LOT LINE
- WOODS LINE
- EROSION CONTROL



COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

GENERAL PLAN

No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: TJD
Design: RCB
Checked: BAR
Project No.: 89-181
Scale: APPROX. 1"=400'
Date: SEPT. 1990

Sheet No.
2 of 21

ATLANTA BLUE PRINT, ATLANTA

AB2309

No.	Revisions	Date
1	EPD COMMENTS	2-91

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
Fax No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

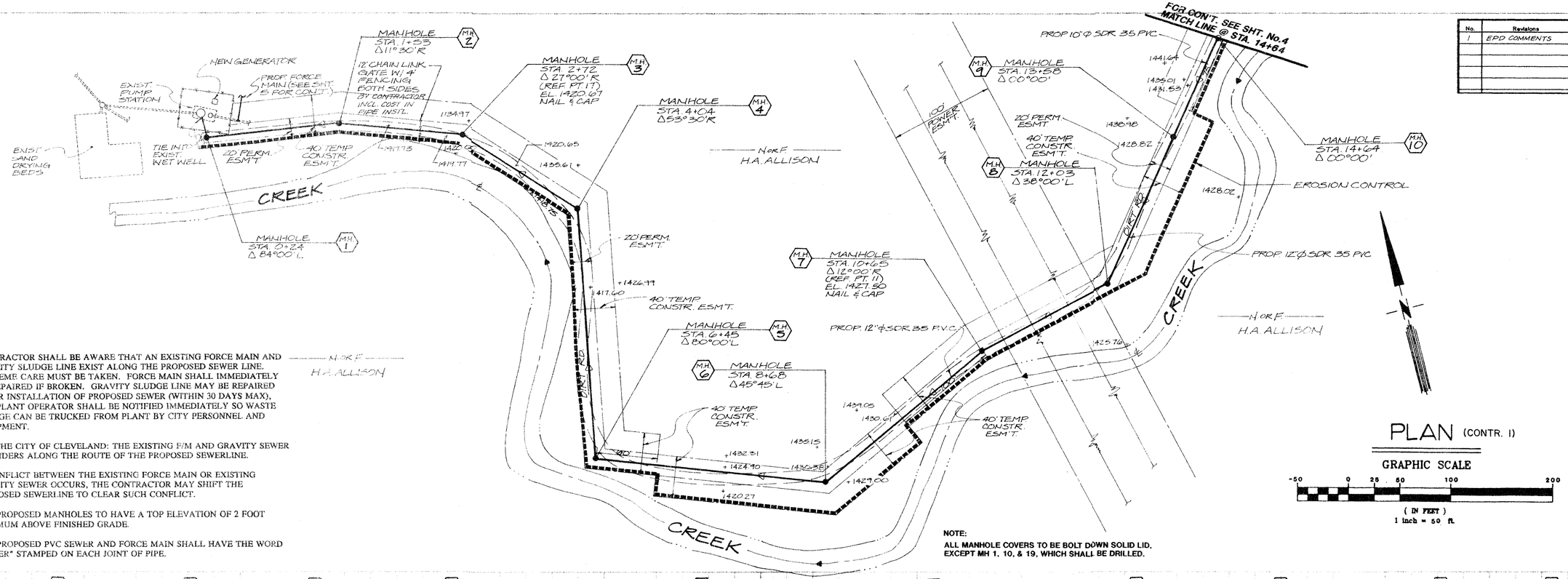
PLAN AND PROFILES

Drawn: DP
Design: SAH
Checked: BAR
Date: 9/22/90
Scale: NOTED
Project: 89-181

Sheet 3 of 21

NOTE:

1. CONTRACTOR SHALL BE AWARE THAT AN EXISTING FORCE MAIN AND GRAVITY SLUDGE LINE EXIST ALONG THE PROPOSED SEWER LINE. EXTREME CARE MUST BE TAKEN. FORCE MAIN SHALL IMMEDIATELY BE REPAIRED IF BROKEN. GRAVITY SLUDGE LINE MAY BE REPAIRED AFTER INSTALLATION OF PROPOSED SEWER (WITHIN 30 DAYS MAX), BUT PLANT OPERATOR SHALL BE NOTIFIED IMMEDIATELY SO WASTE SLUDGE CAN BE TRUCKED FROM PLANT BY CITY PERSONNEL AND EQUIPMENT.
2. PER THE CITY OF CLEVELAND: THE EXISTING F/M AND GRAVITY SEWER MEANDERS ALONG THE ROUTE OF THE PROPOSED SEWERLINE.
3. IF CONFLICT BETWEEN THE EXISTING FORCE MAIN OR EXISTING GRAVITY SEWER OCCURS, THE CONTRACTOR MAY SHIFT THE PROPOSED SEWERLINE TO CLEAR SUCH CONFLICT.
4. ALL PROPOSED MANHOLES TO HAVE A TOP ELEVATION OF 2 FOOT MINIMUM ABOVE FINISHED GRADE.
5. THE PROPOSED PVC SEWER AND FORCE MAIN SHALL HAVE THE WORD "SEWER" STAMPED ON EACH JOINT OF PIPE.



PLAN (CONTR. I)

GRAPHIC SCALE

-50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
ALL MANHOLE COVERS TO BE BOLT DOWN SOLID LID, EXCEPT MH 1, 10, & 19, WHICH SHALL BE DRILLED.

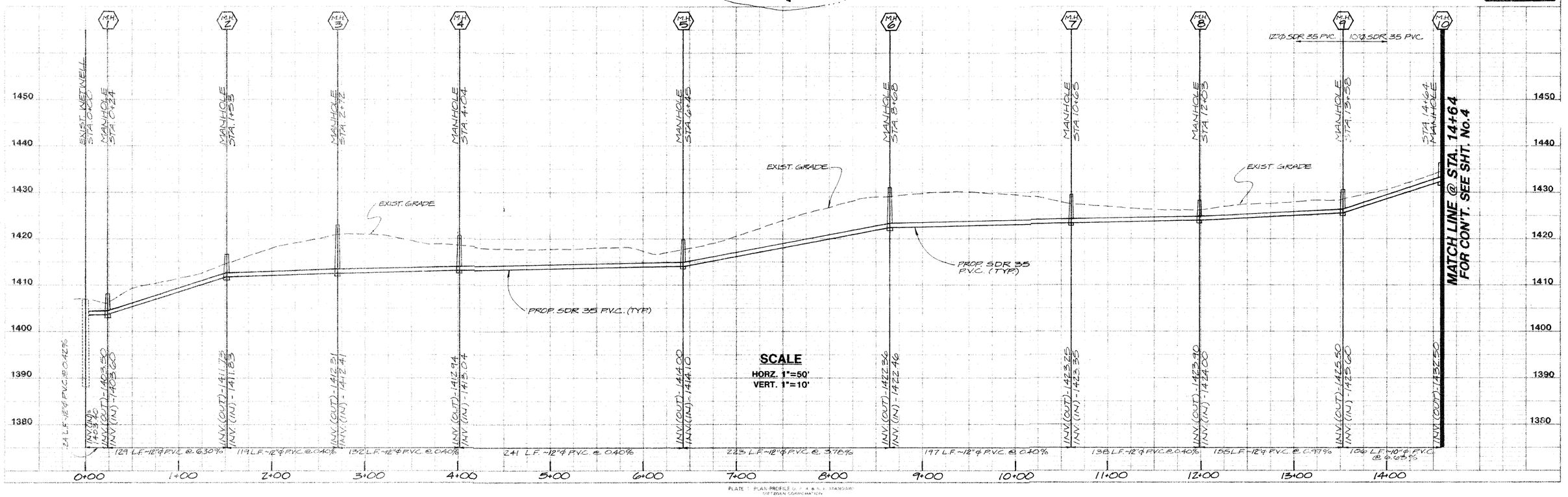
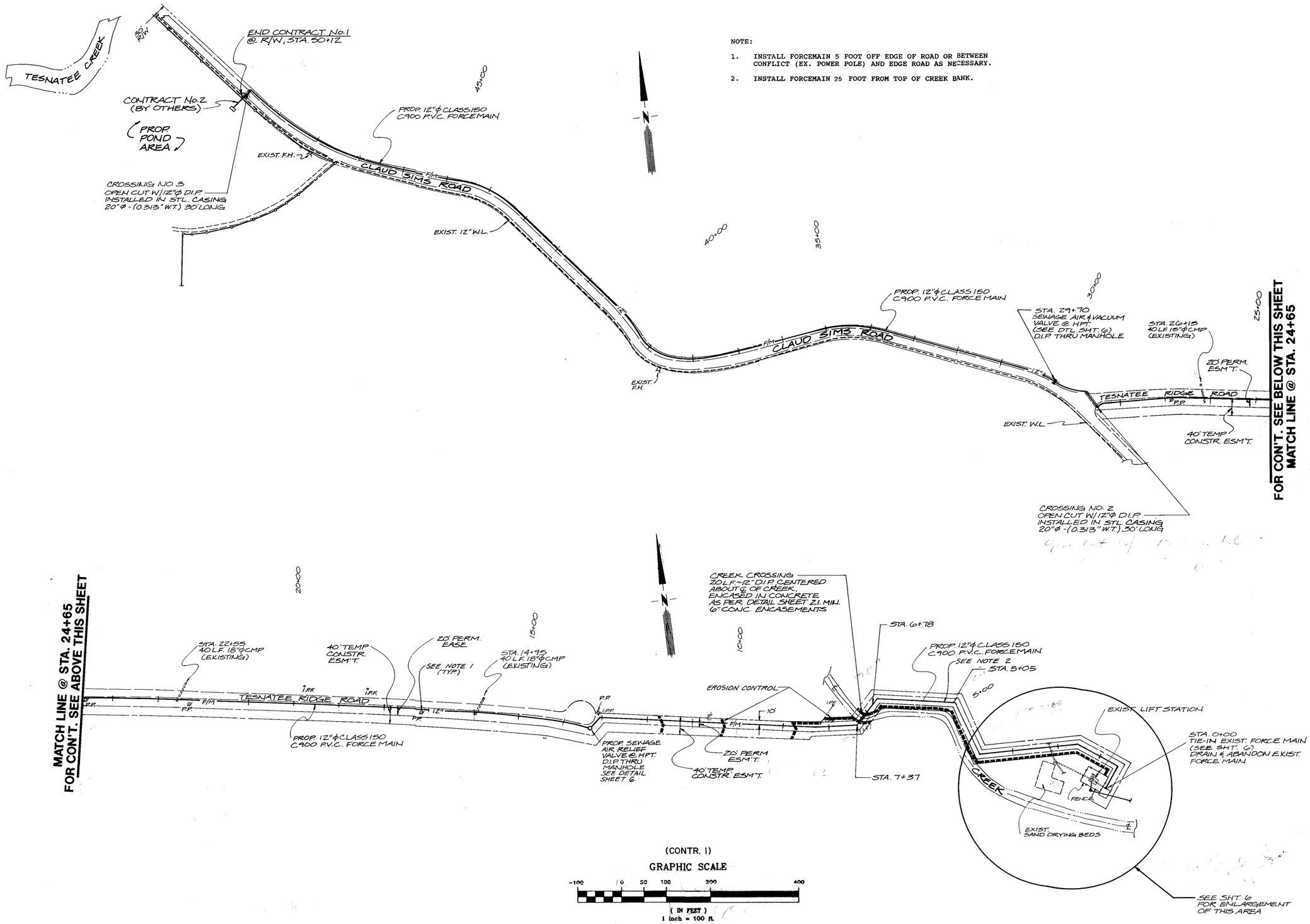


PLATE 1 PLAN PROFILE (U.S. & G.S. STANDARD DIETZGEN CORPORATION PRINTED IN U.S.A.)

NOTE:

1. INSTALL FORCEMAIN 5 FOOT OFF EDGE OF ROAD OR BETWEEN CONFLICT (EX. POWER POLE) AND EDGE ROAD AS NECESSARY.
2. INSTALL FORCEMAIN 25 FOOT FROM TOP OF CREEK BANK.



(CONTR. 1)

GRAPHIC SCALE

-100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

FORCE MAIN PLAN

No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: DP
Design: SAN
Checked: BMR
Project No.: 89-131
Scale: 1"=100'
Date: 9/23/90

Sheet No. 5

5 of 21

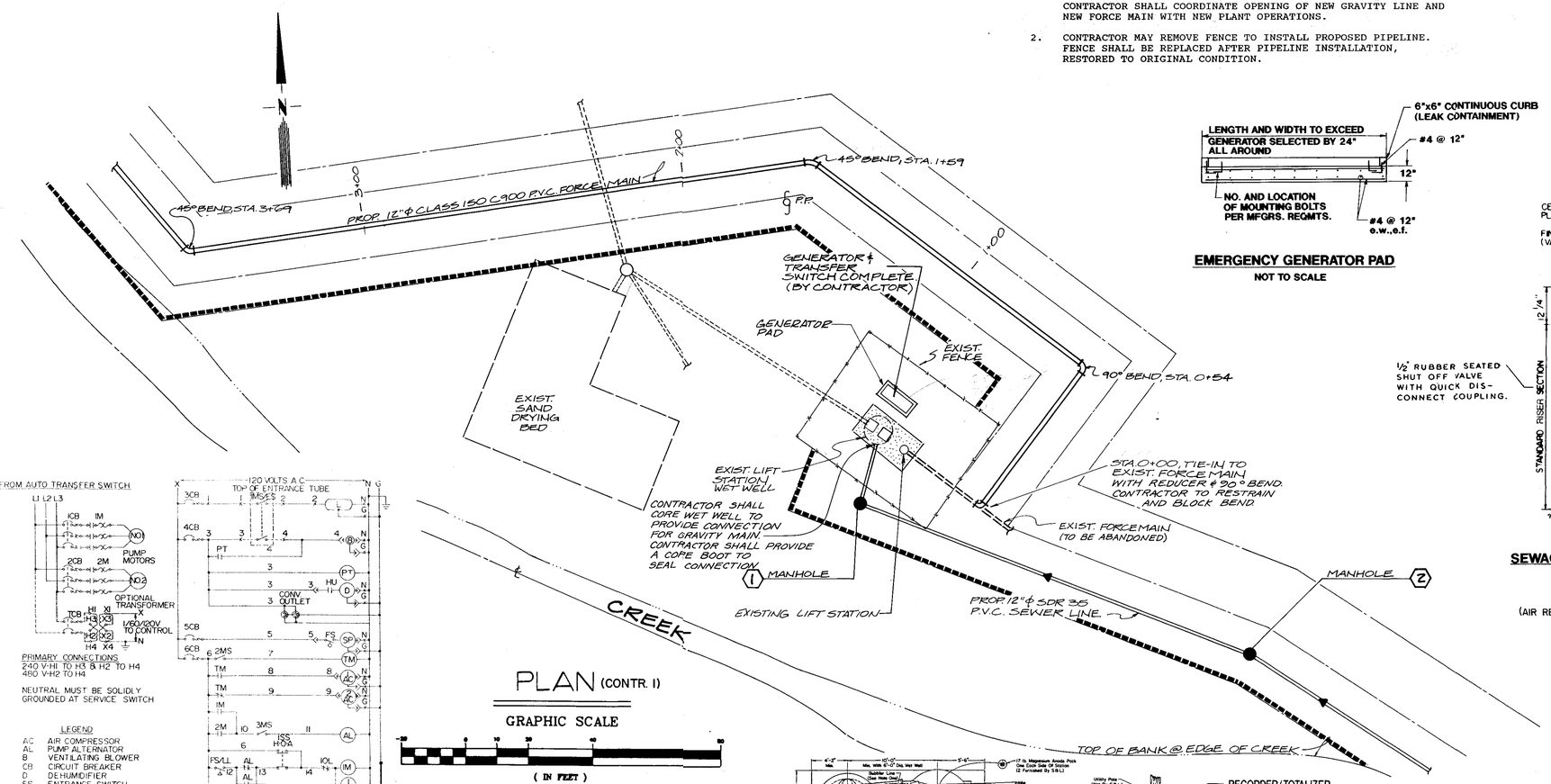
ATLANTA BLUE PRINT ATLANTA

AB2098

NOTE:

1. CONTRACTOR SHALL DRAIN EXISTING FORCE MAIN LINE BACK TO WET WELL, CUT EXISTING LINE, INSTALL 90° BEND AND BLOCKING. CONTRACTOR SHALL COORDINATE OPENING OF NEW GRAVITY LINE AND NEW FORCE MAIN WITH NEW PLANT OPERATIONS.

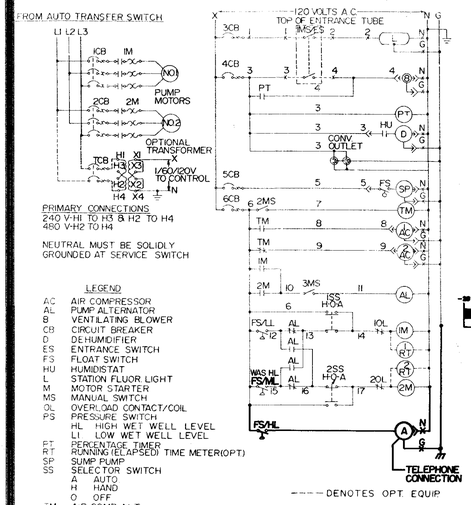
2. CONTRACTOR MAY REMOVE FENCE TO INSTALL PROPOSED PIPELINE. FENCE SHALL BE REPLACED AFTER PIPELINE INSTALLATION, RESTORED TO ORIGINAL CONDITION.



PLAN (CONTR. I)

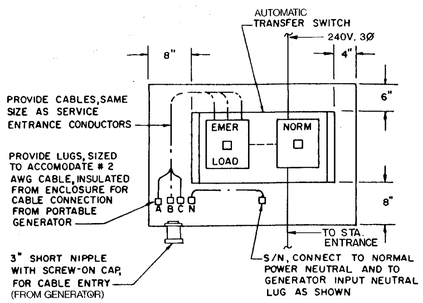
GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.



LEGEND

AC	AIR COMPRESSOR
AL	PUMP ALTERNATOR
B	VENTILATING BLOWER
CB	CIRCUIT BREAKER
D	DEHUMIDIFIER
ES	ENTRANCE SWITCH
FS	FLOAT SWITCH
HU	HUMIDISTAT
L	STATION FLUOR. LIGHT
M	MOTOR STARTER
MS	MANUAL SWITCH
OL	OVERLOAD CONTACT/COIL
PS	PRESSURE SWITCH
	HL HIGH WET WELL LEVEL
	LL LOW WET WELL LEVEL
PT	PERCENTAGE TIMER
RT	RUNNING (ELAPSED) TIME METER(OPT)
SP	SUMP PUMP
SS	SELECTOR SWITCH
	A AUTO
	H HAND
	O OFF
TM	AIR COMP ALT
A	ALARM
T/R	TOTALIZER / RECORDER



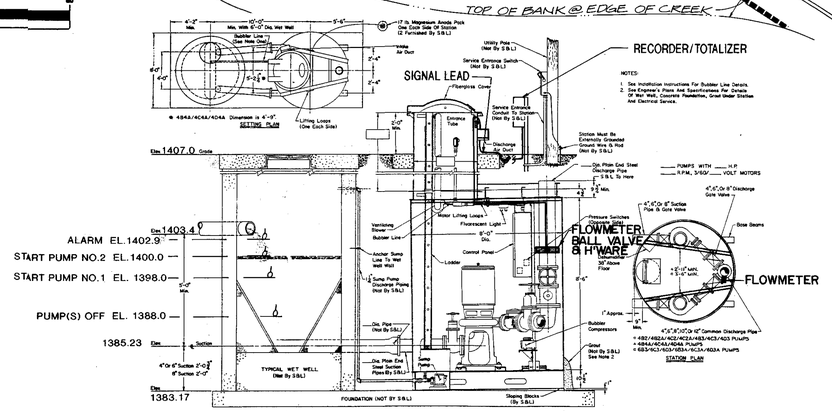
NOTE: ENCLOSURE SHOWN WITHOUT COVER, FOR CLARITY

TRANSFER SWITCH ENCLOSURE

NOT TO SCALE

(BY CONTRACTOR)

(MOUNT ON GENERATOR PAD WITH 2 SEPERATE CHANNELS)



LIFT STATION MODIFICATIONS

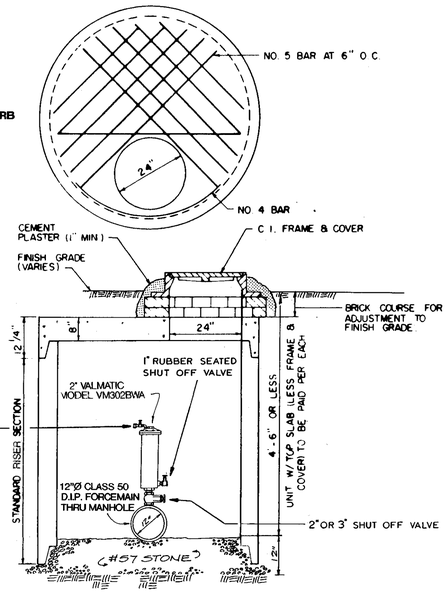
CONTRACTOR TO INSTALL ADDITIONAL FLOAT AND CONNECT FLOAT SWITCH TO CONTROL PANEL CIRCUITRY. THE LIFT STATION SHALL BE WIRED FOR OPERATION AS FOLLOWS:

A. THE LIFT STATION SHALL BE MODIFIED TO OPERATE ON A LEAD/LAG BASIS. THE SECOND PUMP SHALL PUMP IF THE LEVEL RISES 2 FEET OR GREATER ABOVE THE FIRST PUMP STARTING LEVEL. THE TWO PUMPS SHOULD THEN OPERATE TOGETHER. ONE FLOAT SHOULD SHUT BOTH PUMPS OFF ADD NEW FLOAT FOR ALARM WHICH IS EXISTING TELEPHONE WIRE CONNECTED. CONTRACTOR SHALL REPLACE REPEATER UNIT AND WIRING TO RESTORE PHONE - LINK CONNECTION.

B. CONTRACTOR SHALL FURNISH AND INSTALL A MARSH-MCBIRNEY MODEL 280 (OR EQUAL) PIPE CLAMP FLOW METER ON THE VERTICAL DISCHARGE PIPE (6"). A 4-20 MA SIGNAL FROM THE FLOW METER TO A DIGITAL RECORDER/TOTALIZER WITH A 24 HOUR SEVEN DAY CIRCULAR CHART SHALL BE FURNISHED. POWER SHALL BE FROM EXISTING OUTLET (FURNISH COMPATIBLE PLUG ON TOTALIZER/RECORDER). METER SHALL READ 0 TO 1400 GPM WITH A MAX 1% ± ERROR. FLOW METER SHALL BE INSTALLED IN VERTICAL DISCHARGE PIPE. CONTRACTOR SHALL MOUNT DIGITAL TOTALIZER/RECORDER IN A NEMA 3R CABINET WITH SPACE HEATER ON GALV. STEEL POST ADJACENT TO POWER POLE.

EMERGENCY GENERATOR PAD

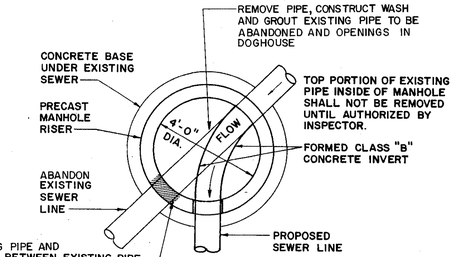
NOT TO SCALE



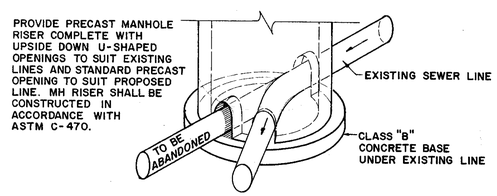
SEWAGE AIR AND VACUUM VALVE IN MANHOLE

NOT TO SCALE

(AIR RELIEF VALVE INSTALLATION TYPICAL)



PLAN



TYPICAL DOGHOUSE MANHOLE

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA
Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

FORCE MAIN TIE-IN / DETAILS

No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: DP
Design: SAH
Checked: BRL
Project No.: 89-181
Scale: NOTED
Date: 9/22/90

Sheet No. 6

6 of 21

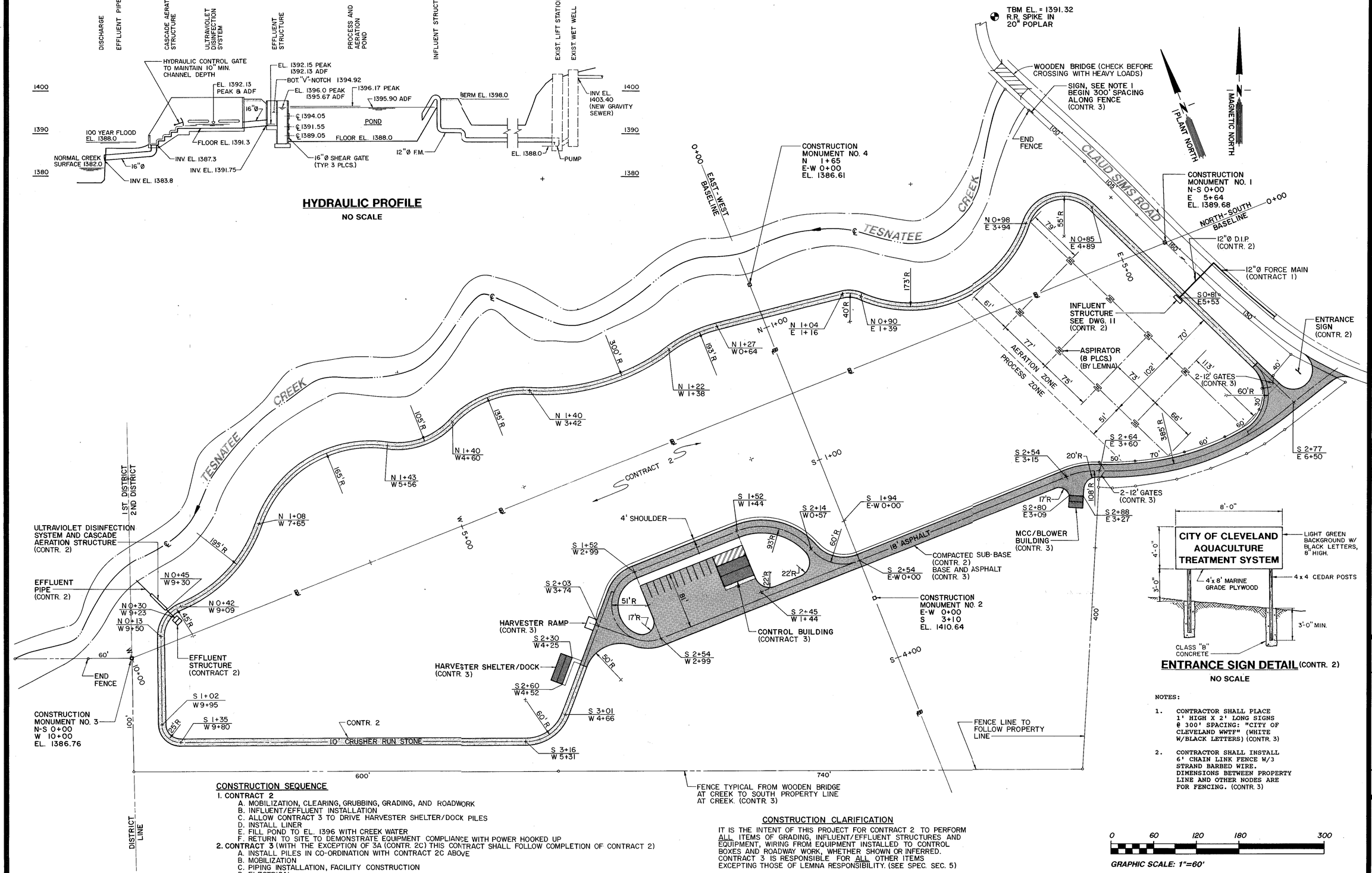
COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

ATLANTA BLUE PRINT ATLANTA

AB2396

HYDRAULIC PROFILE

NO SCALE



ENTRANCE SIGN DETAIL (CONTR. 2)

NO SCALE

NOTES:

1. CONTRACTOR SHALL PLACE 1' HIGH X 2' LONG SIGNS @ 300' SPACING: "CITY OF CLEVELAND WWTF" (WHITE W/BLACK LETTERS) (CONTR. 3)
2. CONTRACTOR SHALL INSTALL 6' CHAIN LINK FENCE W/3 STRAND BARBED WIRE. DIMENSIONS BETWEEN PROPERTY LINE AND OTHER NODES ARE FOR FENCING. (CONTR. 3)

CONSTRUCTION SEQUENCE

1. CONTRACT 2
   - A. MOBILIZATION, CLEARING, GRUBBING, GRADING, AND ROADWORK
   - B. INFLUENT/EFFLUENT INSTALLATION
   - C. ALLOW CONTRACT 3 TO DRIVE HARVESTER SHELTER/DOCK PILES
   - D. INSTALL LINER
   - E. FILL POND TO EL. 1396 WITH CREEK WATER
   - F. RETURN TO SITE TO DEMONSTRATE EQUIPMENT COMPLIANCE WITH POWER HOOKED UP
2. CONTRACT 3 (WITH THE EXCEPTION OF 3A (CONTR. 2C) THIS CONTRACT SHALL FOLLOW COMPLETION OF CONTRACT 2)
   - A. INSTALL PILES IN CO-ORDINATION WITH CONTRACT 2C ABOVE
   - B. MOBILIZATION
   - C. PIPING INSTALLATION, FACILITY CONSTRUCTION
   - D. ELECTRICAL
   - E. ROADWAY CONSTRUCTION, LANDSCAPING AND FINAL CLEANUP

CONSTRUCTION CLARIFICATION

IT IS THE INTENT OF THIS PROJECT FOR CONTRACT 2 TO PERFORM ALL ITEMS OF GRADING, INFLUENT/EFFLUENT STRUCTURES AND EQUIPMENT, WIRING FROM EQUIPMENT INSTALLED TO CONTROL BOXES AND ROADWAY WORK, WHETHER SHOWN OR INFERRED. CONTRACT 3 IS RESPONSIBLE FOR ALL OTHER ITEMS EXCEPTING THOSE OF LEMNA RESPONSIBILITY. (SEE SPEC. SEC. 5)

0 60 120 180 300

GRAPHIC SCALE: 1"=60'

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA
Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

SITE PLAN

No.	Revisions	Date
1	EPD COMMENTS	4-91

Drawn: TJD
Design: RCB
Checked: BAR
Project No.: 89-181
Scale: 1"=60'
Date: JAN. 1991

Sheet No. 7 of 21

ATLANTA BLUE PRINT ATLANTA

452396

NOTES:

1. THE AREA NOTED UP TO THE 1460 CONTOUR IS BORROW AREA, AND SHALL BE GRADED AS SHOWN. IF ALL AVAILABLE QUANTITY OF BORROW IS NOT REQUIRED, THEN 2:1 SLOPE UP FROM LIMIT REQUIRED SHALL BE HELD. AREA WEST OF AREA NOTED SHALL BE GRADED AS SHOWN IN EITHER CASE. UNUSABLE EXCAVATED DIRT MAY BE WASTED BACK TO THE BORROW AREA AND GRADED TO A 3:1 SLOPE, WHEN DRIED. (THE CLAY CONTAINED IN THE BORROW AREA (SEE LOGS OF BORINGS) SHALL BE STOCKPILED SEPARATELY TO BE USED AS THE POND LINER.)

2. CONSTRUCTION LIMITS
   - A. 25' OFF CREEK BANKS
   - B. CLAUD SIMS ROAD R/W
   - C. PROPERTY LINES
   - D. 1460 CONTOUR

3. ASPHALT
   CRUSHER-RUNSTONE

4. THE CONTRACTOR SHALL COMPLETE ALL EXCAVATION AND FILL TO THE LINES AND GRADES SHOWN ON THE PLANS.

5. SOILS WHICH HAVE BEEN EXCAVATED, SPREAD AND DRIED TO A MOISTURE CONTENT ACCEPTABLE TO THE GEOTECHNICAL ENGINEER, MAY BE USED TO CONSTRUCT BERMS AND POND SUB-FLOOR. IF APPROVED BY THE GEOTECHNICAL ENGINEER, UNSUITABLE SOILS MAY BE BLENDED WITH SUITABLE SOILS AND USED FOR BERM AND SUB-FLOOR CONSTRUCTION.

6. ALL PIPING AND CONDUIT LAID ON THE INSIDE OF THE BERM, SHALL BE LAID AT ELEV. 1396.5 (6-INCHES ABOVE MAX. WL). CONTRACTOR SHALL MAINTAIN DEWATERING EQUIPMENT WHILE FILLING LAGOON WITH CREEK WATER. CONTRACTOR SHALL COORDINATE FILLING OF LAGOON WITH LEMNA EQUIPMENT INSTALLATION. LAGOON SHALL NOT BE FILLED UNTIL ACCEPTABLE COMPACTION/SOILS TESTS ARE COMPLETE.

7. THE OUTSIDE OF THE POND BERM AND ALL SLOPES 3:1 OR GREATER SHALL BE GRASSED PER SECTION 2.8 OF THE SPECIFICATIONS, AS WELL AS, OVERSEEDED AT THE PROPER TIME OF YEAR (PER SPECIFICATIONS) WITH 5 LB./ACRE OF WEEPING LOVE GRASS (ADDITIONAL TO THAT REQUIRED BY SPECIFICATIONS).

8. CONTRACTOR SHALL UNDERCUT (OR FILL) FOR POND SUB-FLOOR, TO ELEVATION 1386.5. THOSE LOCATIONS WHICH SHOW GROUNDWATER OR "PUMP" SHALL BE DEWATERED. POND BOTTOM SHALL THEN BE "PROOF" ROLLED. DO NOT USE "SHEEPSFOOT" OR VIBRATORY COMPACTOR. ACCEPTABLE SOIL SHALL THEN BE PROOF ROLLED UNTIL A STABLE ELEVATION OF 1386.5 IS OBTAINED. CONTRACTOR SHALL THEN PROVIDE 18-INCHES OF ACCEPTABLE CLAY MATERIAL AND "SHEEPSFOOT" OR "VIBRATORY" ROLLED IN SIX TO EIGHT INCH LIFTS UNTIL FINAL ELEVATION OF 1388 IS REACHED. THE CONTRACTOR SHALL THEN PROCEED WITH CONSTRUCTION OF STRUCTURES, AND THE BERMS, WITH MUCH THE SAME OPERATIONS CRITERIA AS IS NEEDED TO COMPLETE THE POND FLOOR. LEVEE AND LINER SHALL BE "SHEEPSFOOT" OR "VIBRATORY" COMPACTED. ONCE COMPLETED AND APPROVED, FILLING OF THE POND WITH CREEK WATER AND CURTAILING OF DEWATERING MAY BE DONE. (SEE NOTE 12)

9. EXCESS APPROVED SOILS FROM THE POND FLOOR, WHEN PROPERLY DRIED, MAY BE USED IN POND SUB FLOOR AND BERM CONSTRUCTION WHERE CLAY MATERIAL IS NOT REQUIRED.

   CLAY MATERIAL SHALL HAVE A PERMEABILITY OF LESS THAN 10^{-6} CM/SEC. AND SHALL BE TESTED BY THE GEOTECH FIRM TO ENSURE COMPLIANCE.

   THE SOILS REPORT REQUIREMENTS, ITEM 2-9, MAY BE MODIFIED BY THE GEOTECHNICAL FIRM IN THE FIELD BASED ON THE ACTUAL CONDITIONS FOUND.

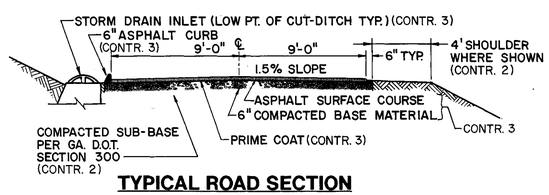
10. CONTRACTOR SHALL SURROUND ALL STORM DRAIN INLETS WITH STAKED HAYBALES, DURING CONSTRUCTION, TO MINIMIZE SILT CARRY-OFF.

11. THE SLOPED AREA IN FRONT OF AND TO THE SIDES OF THE CONTROL BUILDING AND PARKING LOT SHALL BE BROUGHT TO FINAL GRADE WITH 6" OF TOPSOIL PER ITEM 2.8, PARA. 8.03 OF THE SPECIFICATIONS.

12. THE POND SHALL HAVE AN ALLOWABLE LEAKAGE OF NO MORE THAN 1/8" PER DAY. UNTIL THIS IS ACHIEVED, NO WASTEWATER MAY BE DISCHARGED INTO POND.

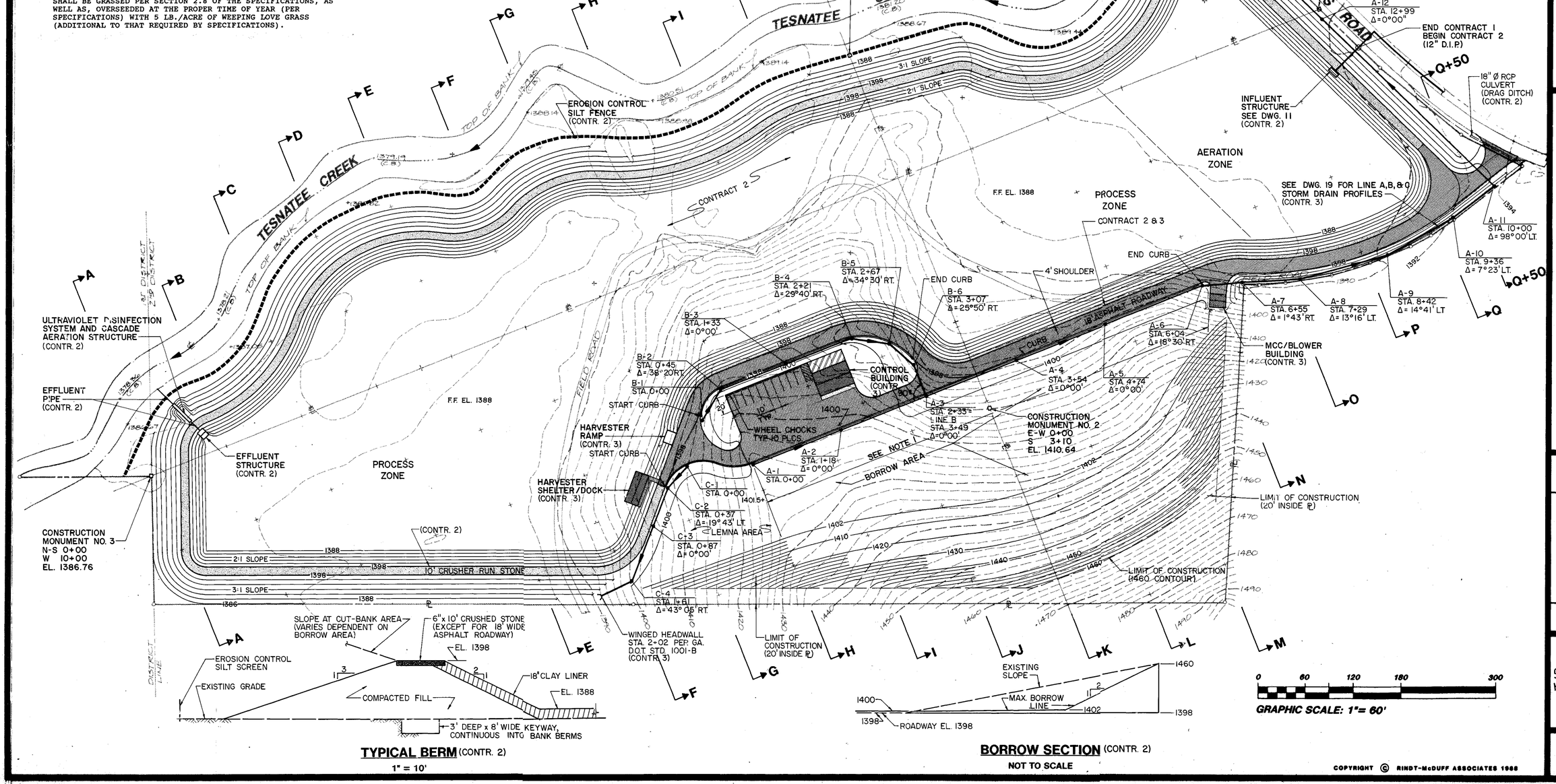
NOTES:

1. AGGREGATE BASE SHALL BE IN ACCORDANCE WITH GA. DOT SECT. 310
2. PRIME COAT SHALL BE IN ACCORDANCE WITH GA. DOT SECT. 412
3. TYPE "E" ASPHALT SHALL BE IN ACCORDANCE WITH GA. DOT SECT. 400 (110 LBS./SQ.YD./INCH)
4. SURFACE COURSE - 2" TYPE "E" ASPHALT.



TYPICAL ROAD SECTION

NOT TO SCALE



TYPICAL BERM (CONTR. 2)

1" = 10'

BORROW SECTION (CONTR. 2)

NOT TO SCALE

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

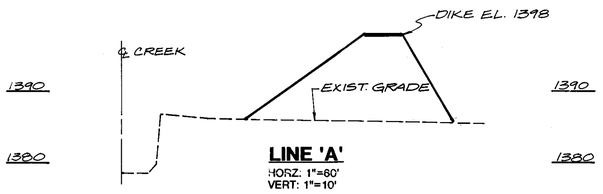
GRADING PLAN

No.	Revisions	Date
1	EPD COMMENTS	2-91

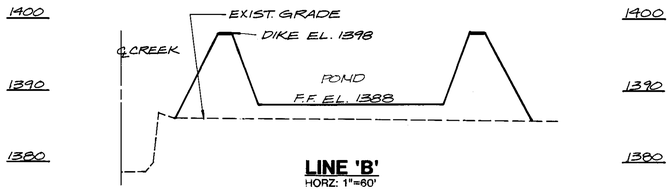
Drawn: TJD
Design: RCB
Checked: JAR
Project No.: 89-181
Scale: 1"=60'
Date: JAN. 1991

Sheet No.
8 of 21

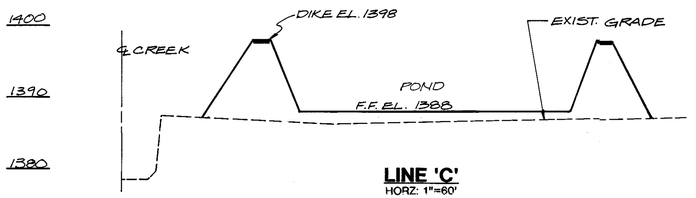
No.	Revisions	Date
1	REVISED GRADING PLAN	2-91



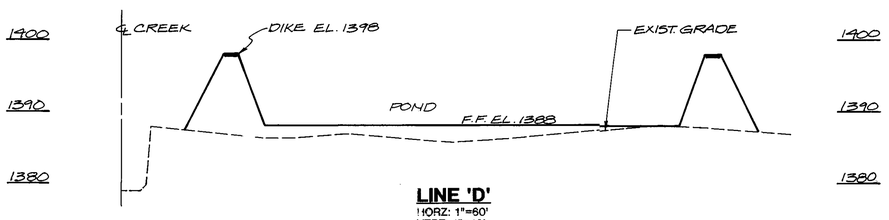
LINE 'A'
HORZ: 1"=60'
VERT: 1"=10'



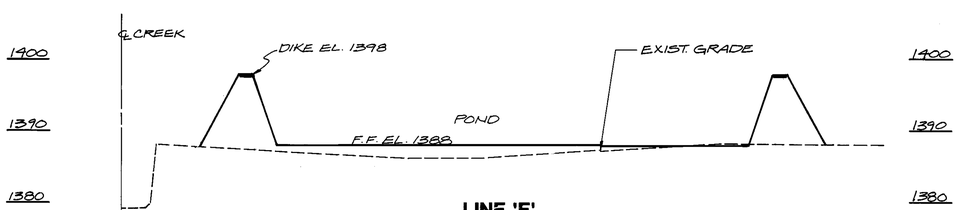
LINE 'B'
HORZ: 1"=60'
VERT: 1"=10'



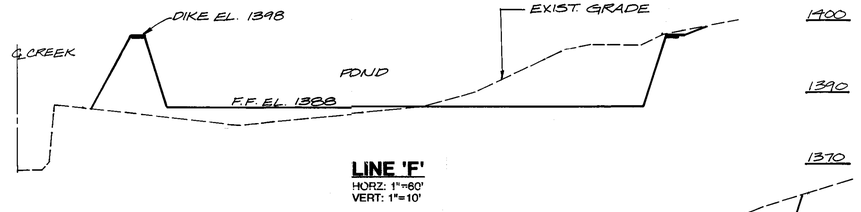
LINE 'C'
HORZ: 1"=60'
VERT: 1"=10'



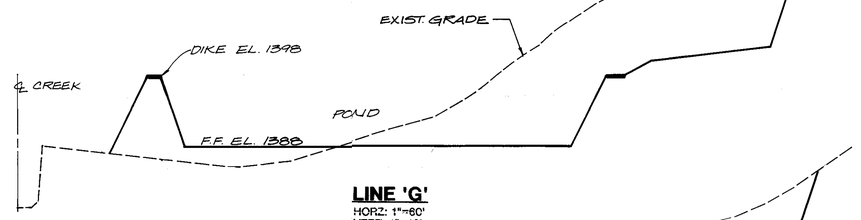
LINE 'D'
HORZ: 1"=60'
VERT: 1"=10'



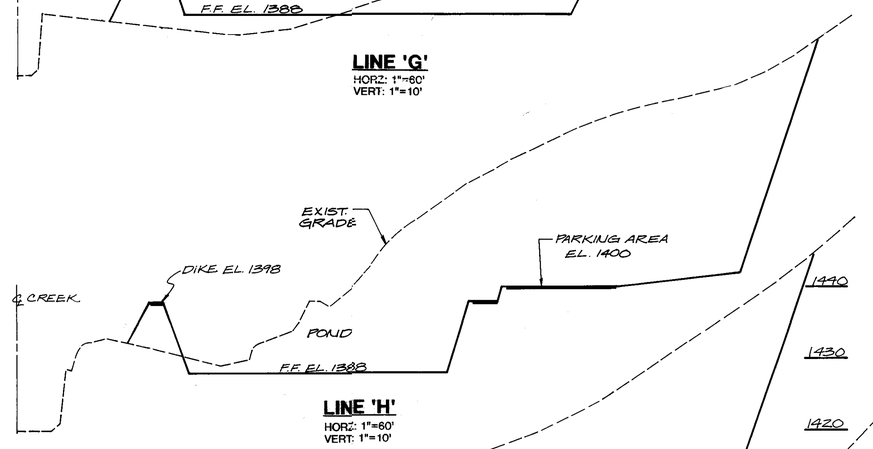
LINE 'E'
HORZ: 1"=60'
VERT: 1"=10'



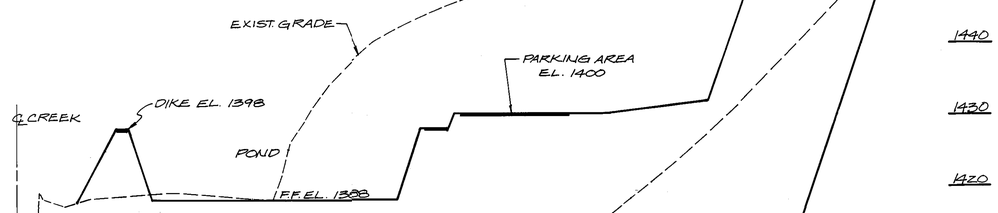
LINE 'F'
HORZ: 1"=60'
VERT: 1"=10'



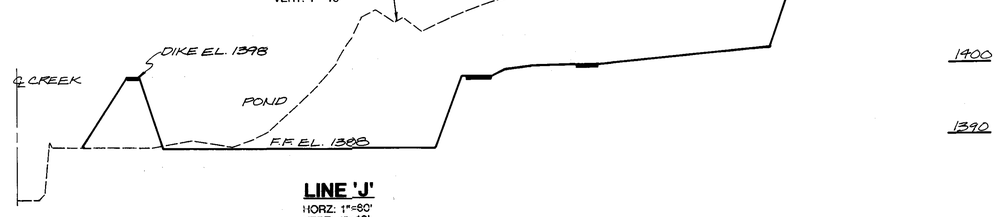
LINE 'G'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'H'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'I'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'J'
HORZ: 1"=60'
VERT: 1"=10'

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
Fax No. 404/425-8930

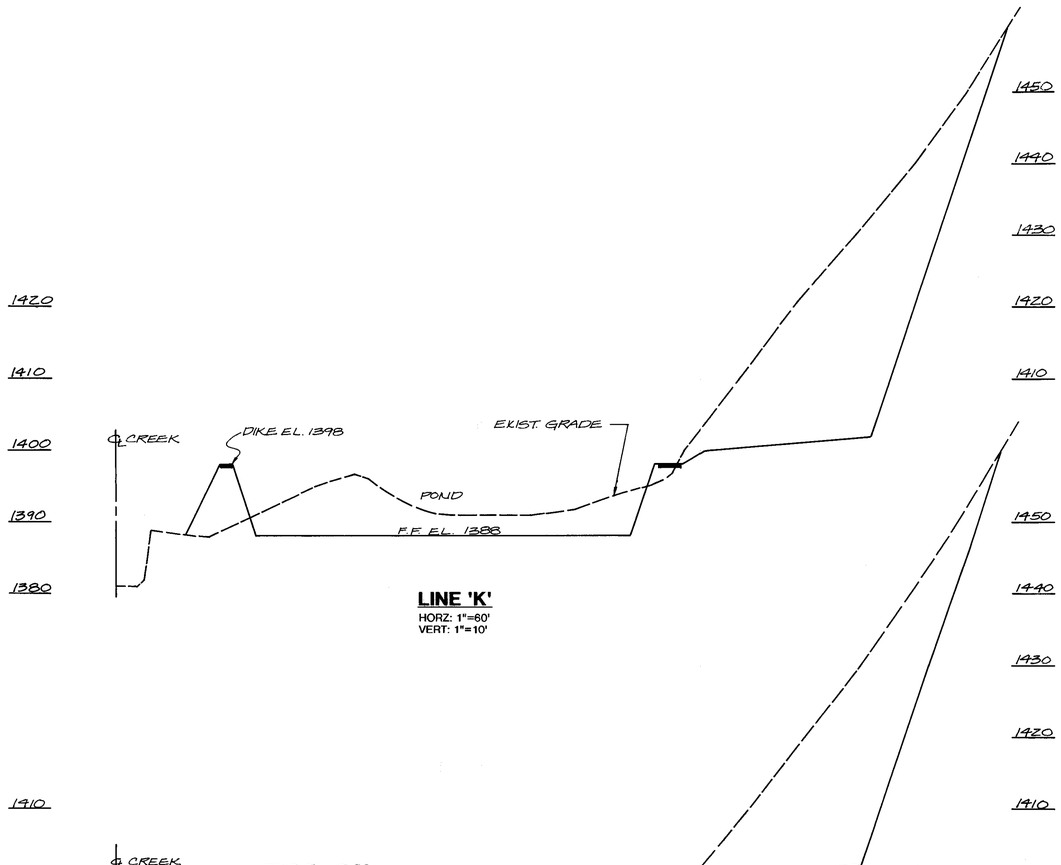
CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

CROSS-SECTIONS

Drawn JRC
Design KCS
Checked BAR
Date SEPT. 1990
Scale H.: 1"=60'
V.: 1"=10'
Project 89181

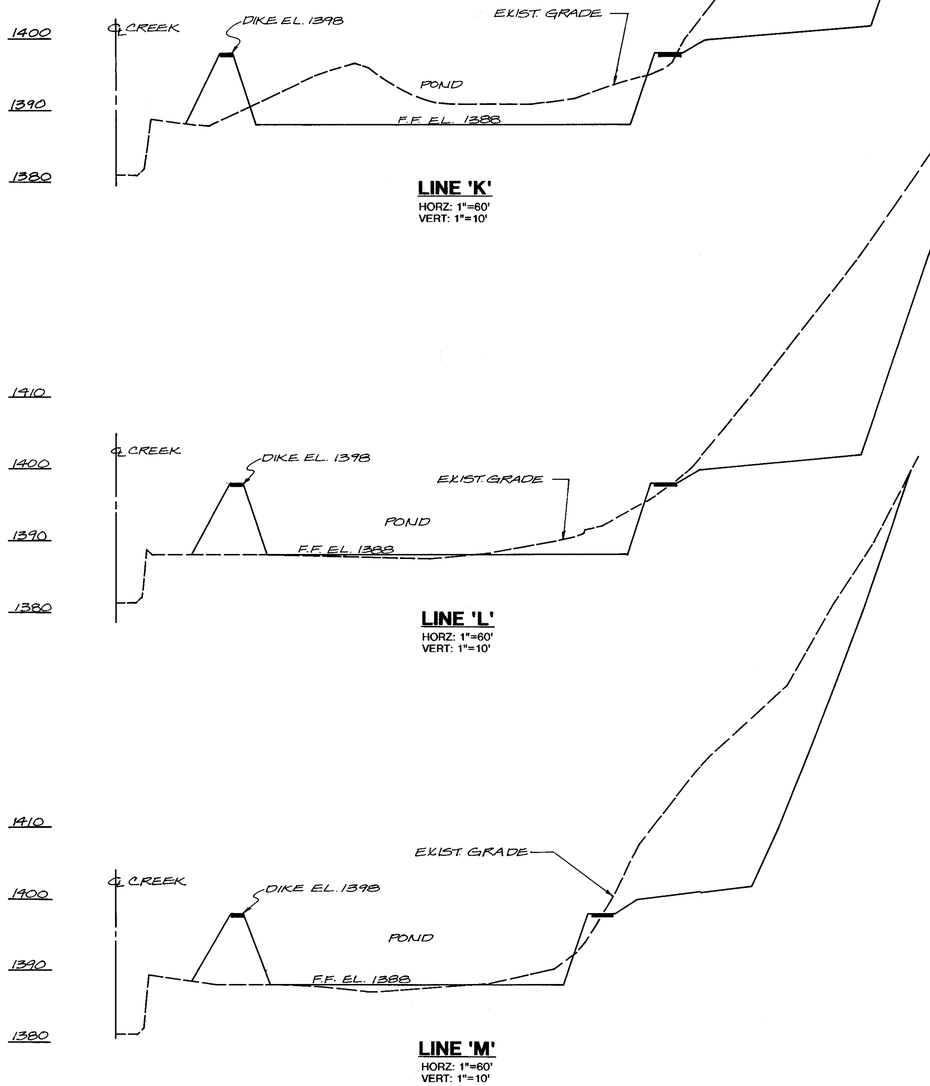
Sheet 9 of 21

(CONTRACT 2)

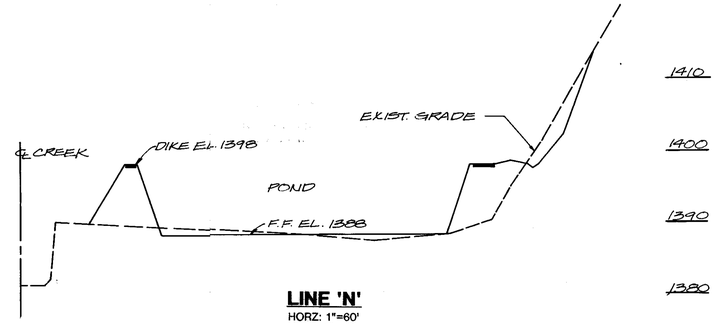


LINE 'K'
HORZ: 1"=60'
VERT: 1"=10'

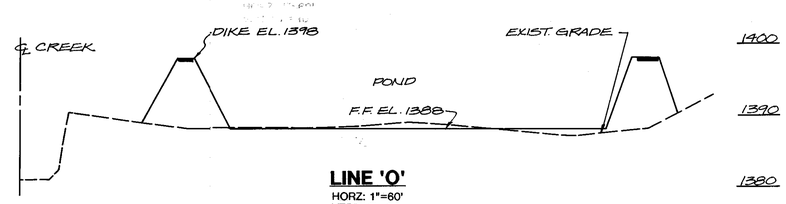
LINE 'L'
HORZ: 1"=60'
VERT: 1"=10'



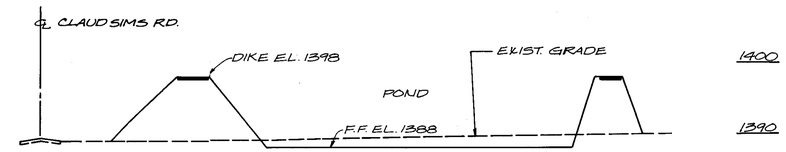
LINE 'M'
HORZ: 1"=60'
VERT: 1"=10'



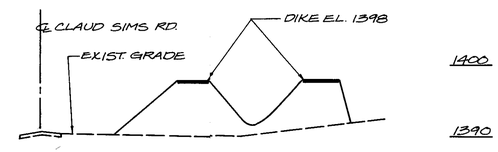
LINE 'N'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'O'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'P'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'Q'
HORZ: 1"=60'
VERT: 1"=10'



LINE 'Q+50'
HORZ: 1"=60'
VERT: 1"=10'

(CONTRACT 2)

No.	Revisions	Date
1	REVISED GRADING PLAN	2-91

GEORGIA REGISTERED No. 10731 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
Fax No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

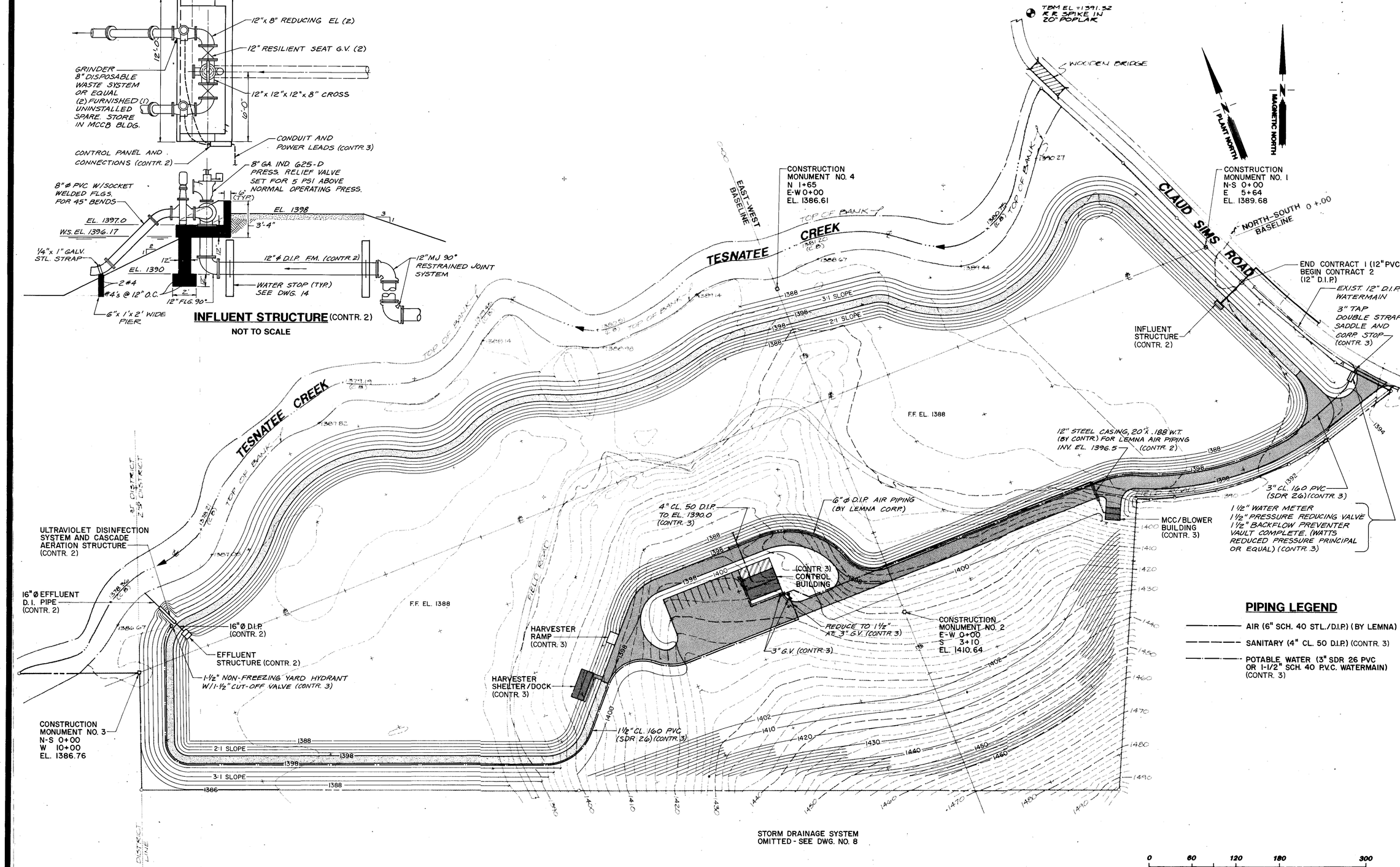
CROSS-SECTIONS

Drawn: JRC/CJD
Design: RCE
Checked:
Date: SEPT. 1990
Scale: H: 1"=60' V: 1"=10'
Project: 87-181

Sheet 10 of 21

INFLUENT STRUCTURE (CONTR. 2)

NOT TO SCALE



PIPING LEGEND

- AIR (6" SCH. 40 STL./D.I.P.) (BY LEMNA)
- SANITARY (4" CL. 50 D.I.P.) (CONTR. 3)
- POTABLE WATER (3" SDR 26 PVC OR 1-1/2" SCH. 40 P.V.C. WATERMAIN) (CONTR. 3)

STORM DRAINAGE SYSTEM OMITTED - SEE DWG. NO. 8

0 60 120 180 300

GRAPHIC SCALE: 1"= 60'

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA
Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

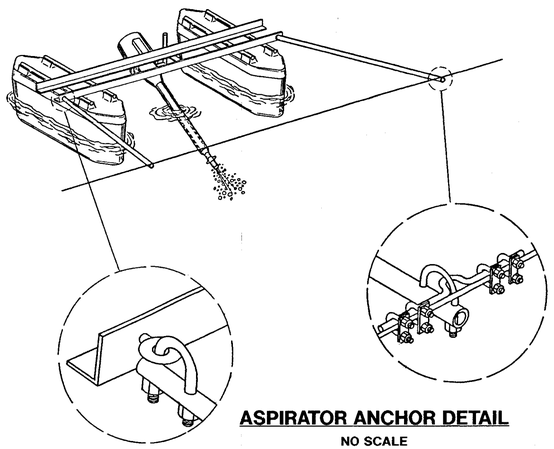
CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

PIPING PLAN

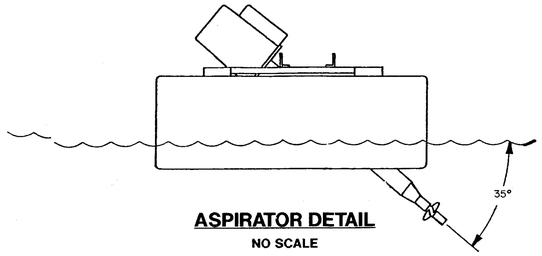
No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: TJD
Design: JRCB
Checked: BAR
Project No.: 89-181
Scale: 1"=60'
Date: JAN. 1991

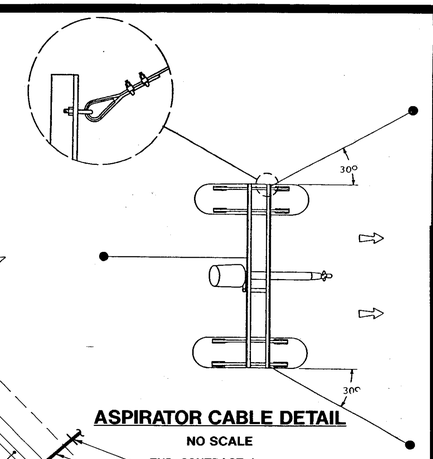
Sheet No.
11 of 21



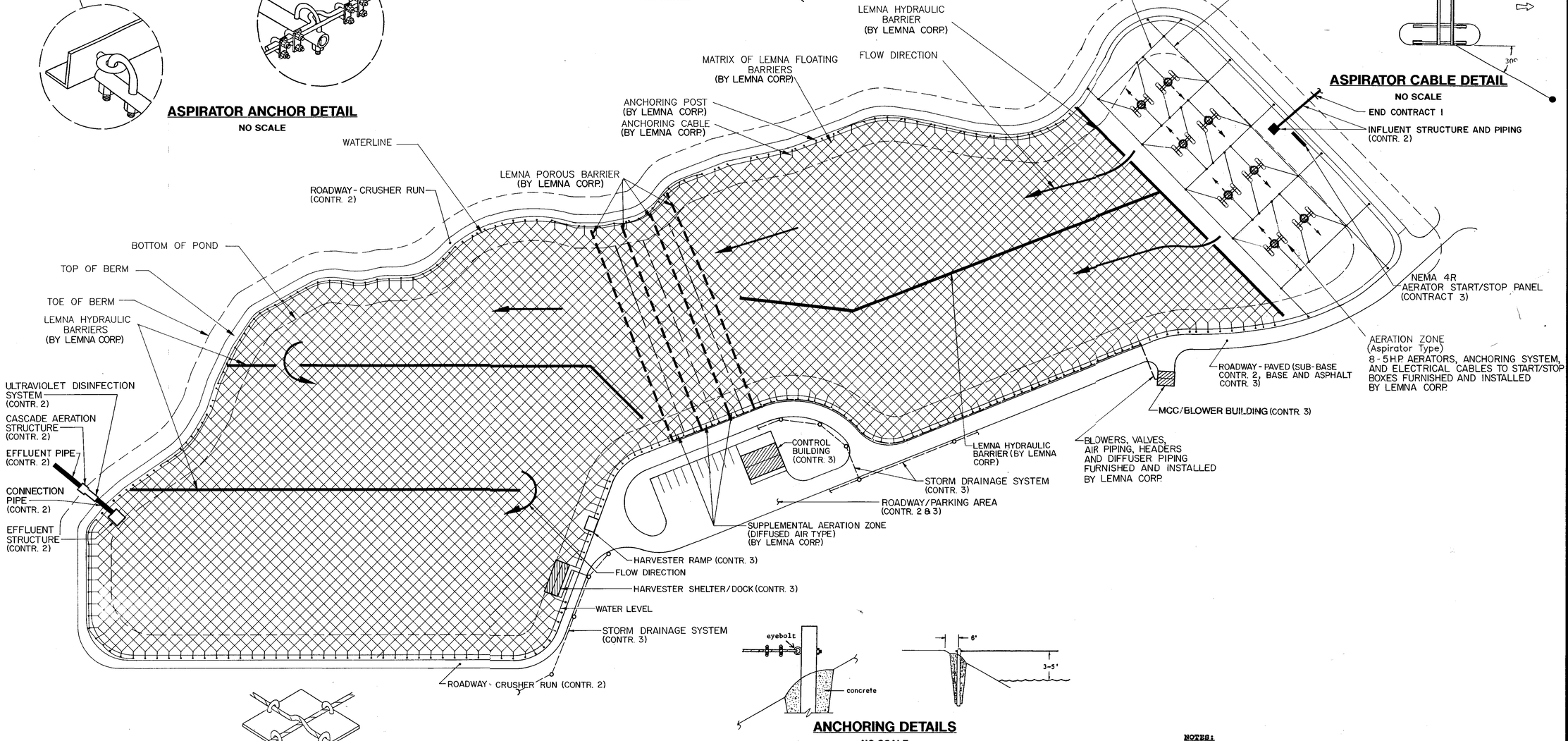
ASPIRATOR ANCHOR DETAIL
NO SCALE



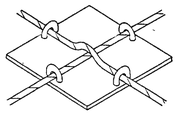
ASPIRATOR DETAIL
NO SCALE

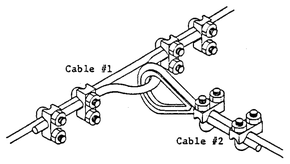


ASPIRATOR CABLE DETAIL
NO SCALE



ANCHORING DETAILS
NO SCALE





CABLE TIE DETAILS
NO SCALE

LEMNA POND BARRIER SYSTEM
FOR
CITY OF CLEVELAND
GEORGIA

NOTES:

1. LEMNA HYDRAULIC AND FLOATING BARRIERS SHALL BE POST AND CABLE SUPPORTED. POSTS SHALL BE 6-INCH SCH. 80 GALV. STEEL SET IN 12-INCHES MIN. OF CONCRETE A MINIMUM OF 4-FEET DEEP. (SUPPLIED AND INSTALLED BY LEMNA.)
2. ASPIRATION TYPE AERATORS (8) SHALL BE ANCHORED PER MANUFACTURERS SPECIFICATIONS FOR TYPE AND SIZE FLOATING AERATORS SPECIFIED. (AERATORS AND ANCHORING SYSTEM SUPPLIED AND INSTALLED BY LEMNA. ELECTRICAL CABLES FROM CONTROL PANELS TO UNITS ALSO SUPPLIED AND INSTALLED BY LEMNA.)
3. DIFFUSED AIR PIPING, AIR PIPING HEADER AND VALVES TO BE SUPPLIED AND INSTALLED BY LEMNA.

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

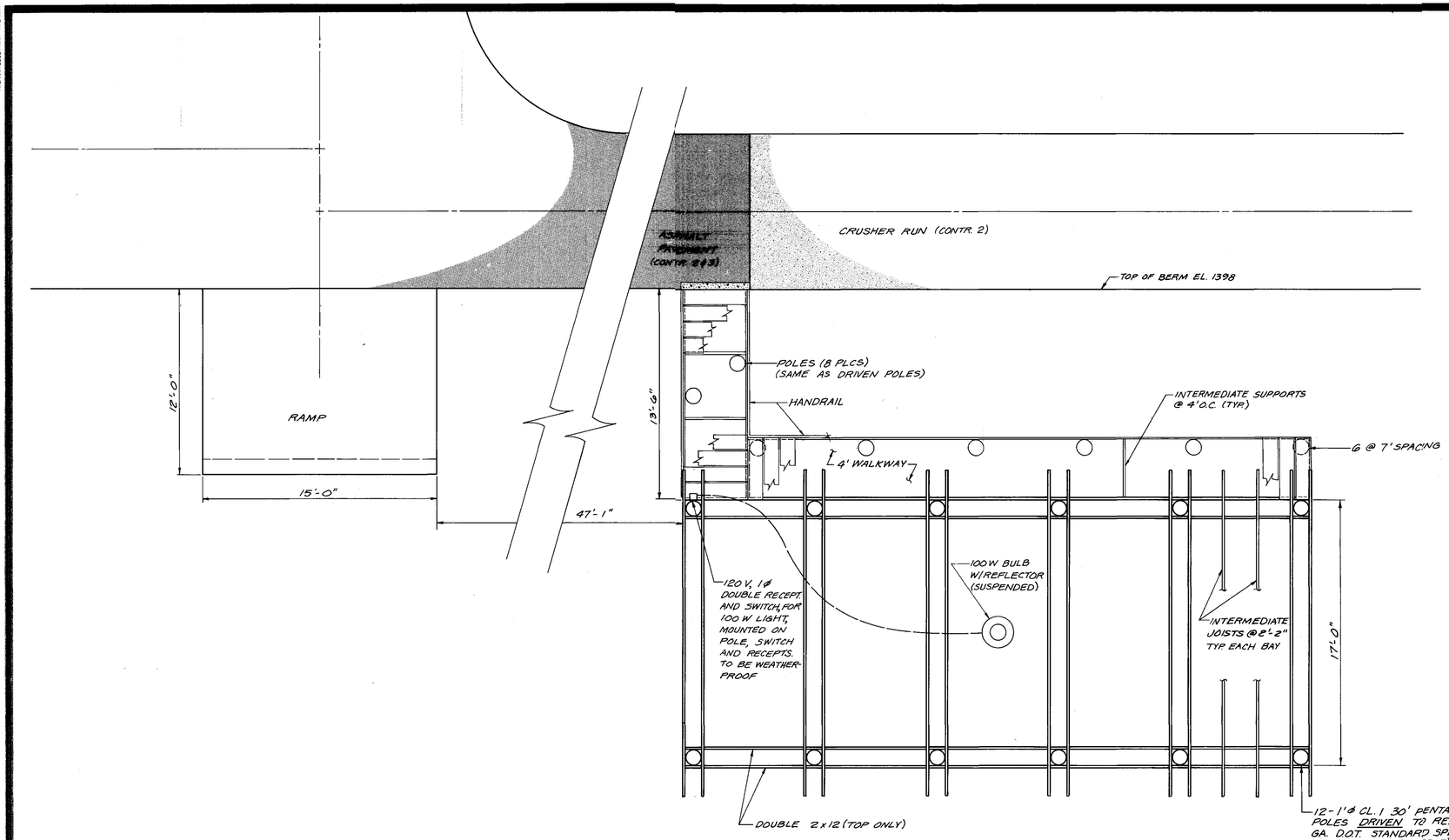
CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

EQUIPMENT AND
LEMNA POND BARRIER PLAN

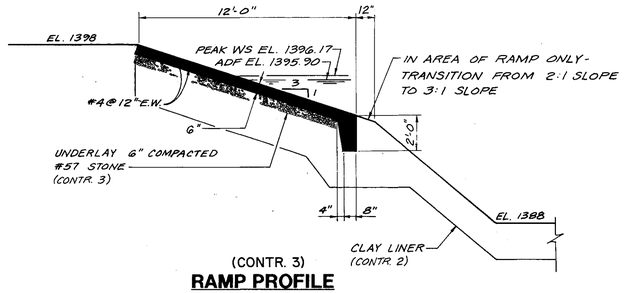
No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn LT
Design
Checked PMC
Project No. 89-181
Scale NO SCALE
Date SEPT. 1990

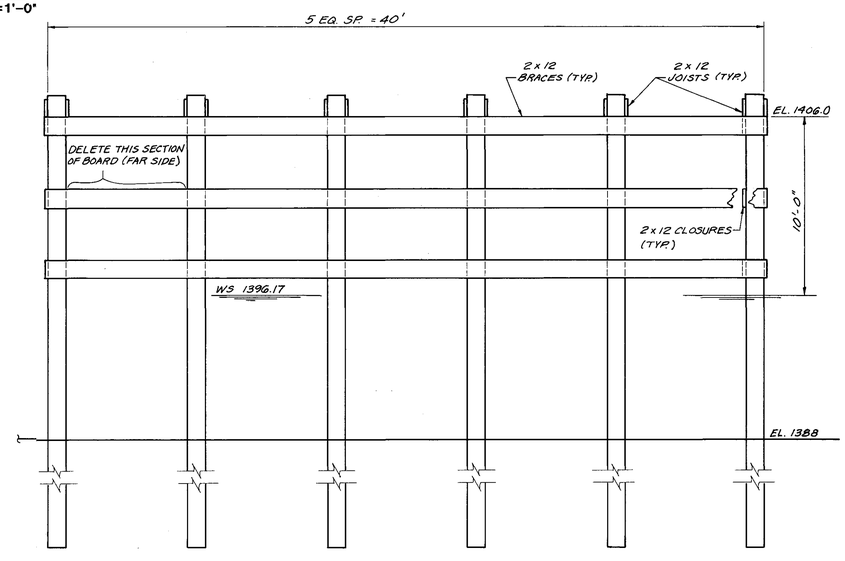
Sheet No
12 of 21



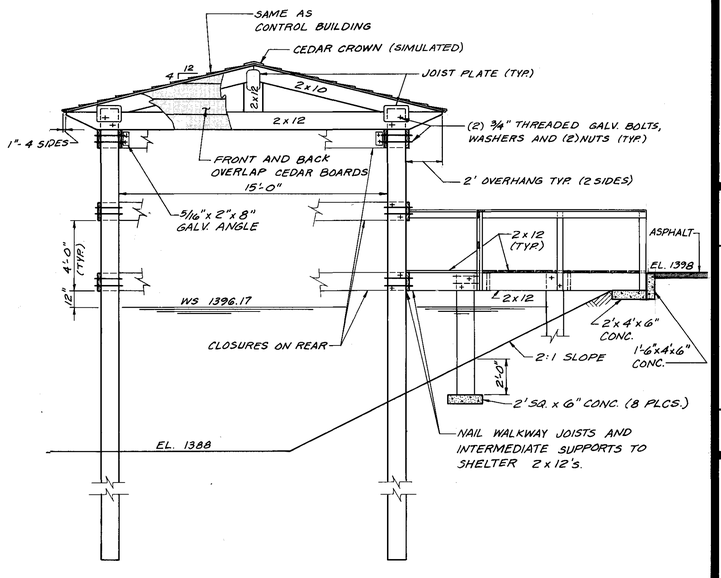
PLAN (CONTR. 3)
1/4"=1'-0"



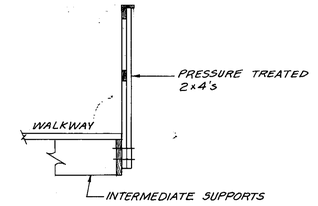
(CONTR. 3)
RAMP PROFILE
1/4"=1'-0"



SHELTER SIDE ELEVATION
1/4"=1'-0"



SHELTER END ELEVATION
1/4"=1'-0"



HANDRAIL DETAIL
NO SCALE

NOTES:
1. ALL WOOD TO BE GRADE 1 PRESSURE TREATED.
2. PLYWOOD TO BE 3/4" MARINE GRADE.
3. ALL BOLTS, NUTS, WASHERS AND NAILS TO BE GALVANIZED.

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

HARVESTER RAMP SHELTER AND DOCK

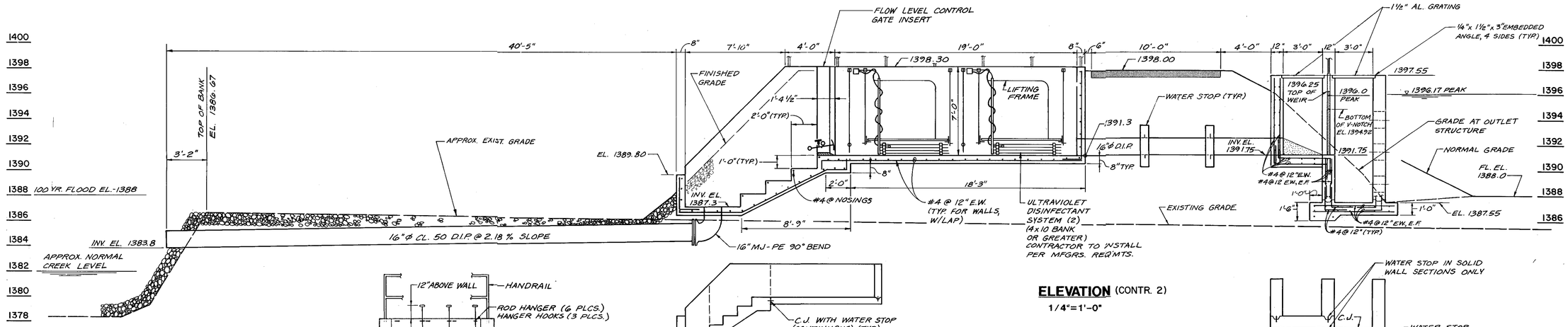
No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: TJO
Design: RCB
Checked: BAR
Project No.: 89-181
Scale: 1/4"= 1'-0"
Date: SEPT. 1990

Sheet No.
13 of 21

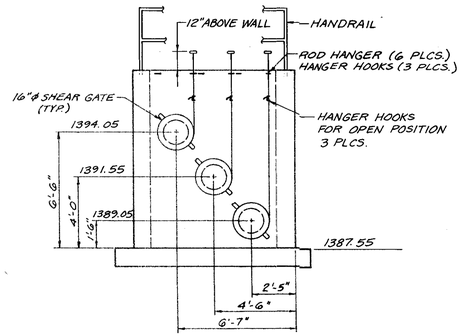
COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

ATLANTA BLUE PRINT ATLANTA
AB2394



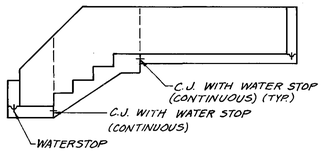
ELEVATION (CONTR. 2)

1/4"=1'-0"



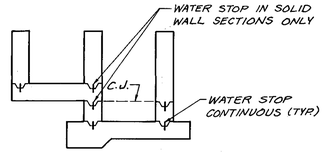
SHEAR GATE DETAIL (CONTR. 2)

1/4"=1'-0"



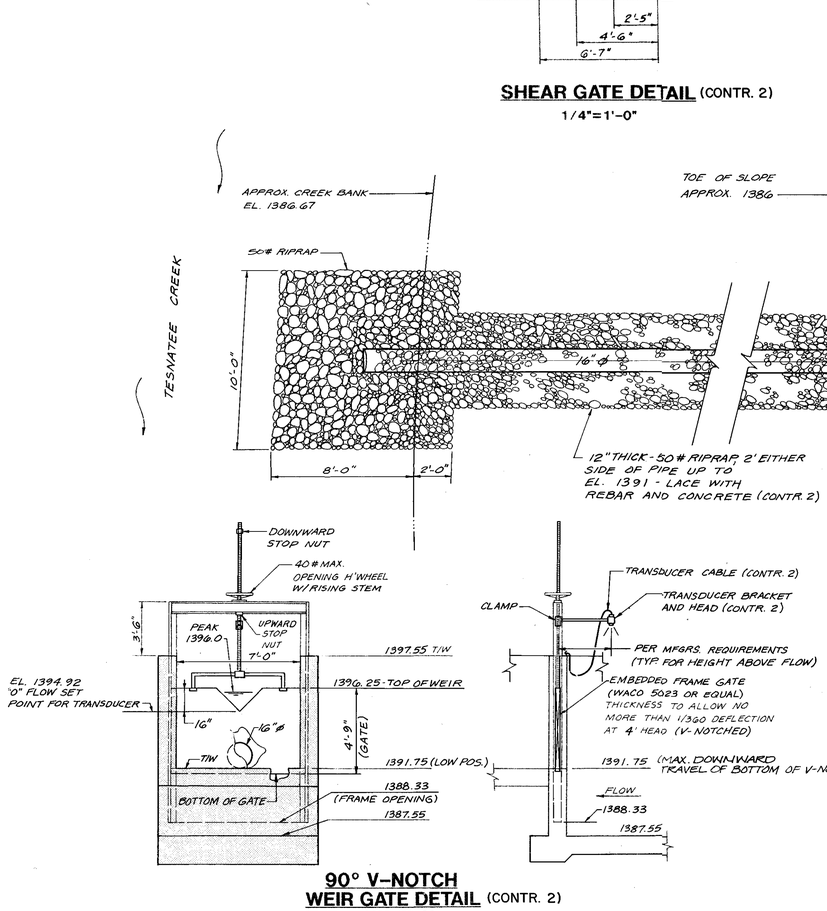
CONSTRUCTION JOINT DETAIL (CONTR. 2)

NOT TO SCALE



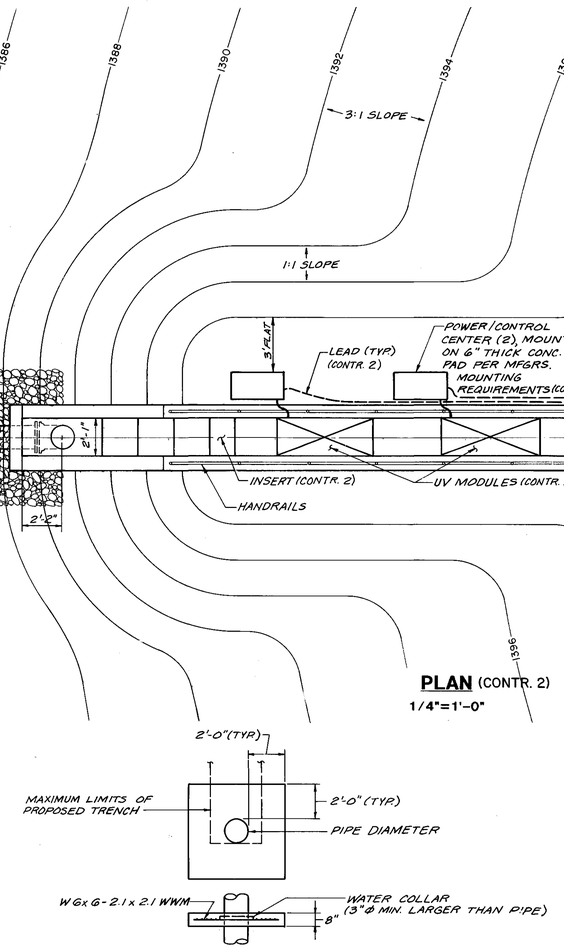
CONSTRUCTION JOINT DETAIL (CONTR. 2)

NOT TO SCALE



90° V-NOTCH WEIR GATE DETAIL (CONTR. 2)

1/4" = 1'-0"



PLAN (CONTR. 2)

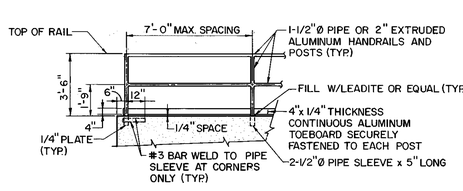
1/4"=1'-0"

NOTE:

1. A 4-20 MA ULTRA-SONIC FLOW TRANSDUCER, TRANSMITTER, DIGITAL RECORDER AND TOTALIZER, SHALL RECORD FLOWS OF 0-3 MGD AT ± 0.1% ACCURACY. TOTALIZER AND 24 HOUR-7 DAY, 12-INCH CIRCULAR CHART, RECORDER SHALL BE HOUSED IN A NEMA 4 ENCLOSURE, WITH SELF CONTAINED THERMOSTATCALLY CONTROLLED HEATER. FISHER - PORTER OR EQUAL. (CONTRACT 2)

WATER STOP DETAIL (CONTR. 2)

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



HANDRAIL DETAIL (CONTR. 2)

NOT TO SCALE

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

PLANT EFFLUENT STRUCTURES

No.	Revisions	Date
1	EPD COMMENTS	4-91

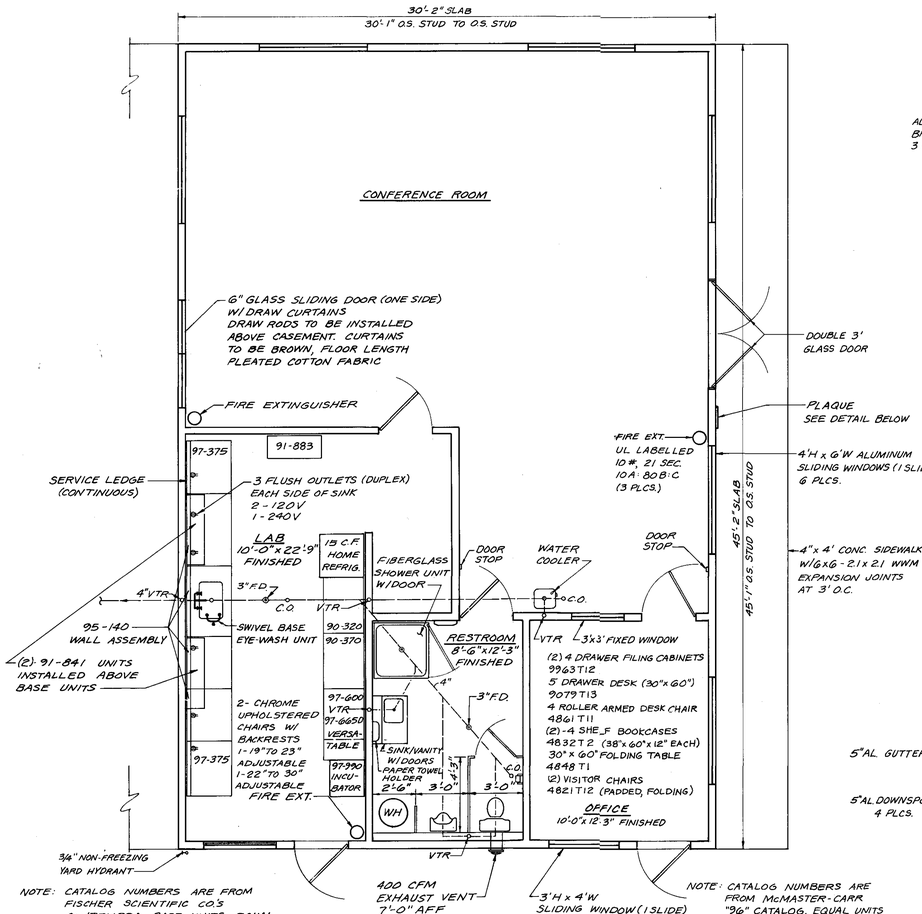
Drawn: TJD
Design: RCB
Checked: BMR
Project No.: 89-181
Scale: 1/4"=1'-0"
Date: SEPT. 1990

Sheet No.

14 of 21

ATLANTA BLUE PRINT ATLANTA

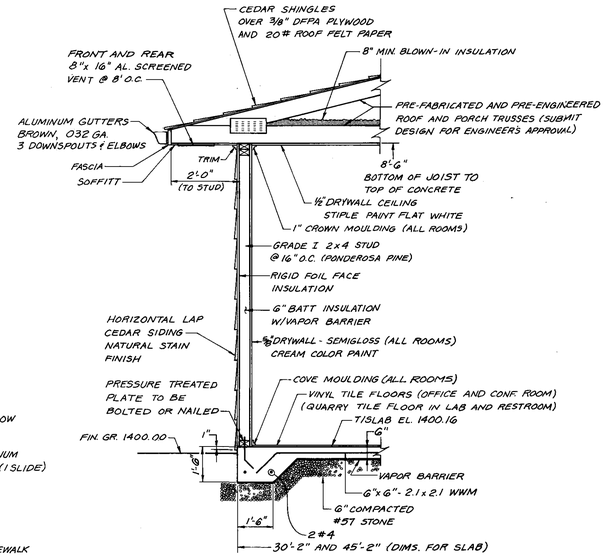
AB2395



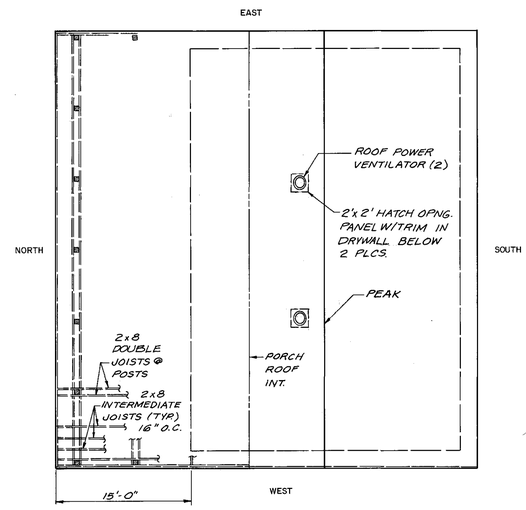
NOTE: CATALOG NUMBERS ARE FROM FISCHER SCIENTIFIC CO.'S CONTEMPRA BASE UNITS. EQUAL UNITS OF OAK OR FIBERGLASS WITH EPOXY TOPS ARE ACCEPTABLE. SEE SPECIFICATIONS FOR EQUIPMENT.

NOTE: CATALOG NUMBERS ARE FROM McMASTER-CARR "96" CATALOG. EQUAL UNITS OF OTHER MFGR. ARE ACCEPTABLE.

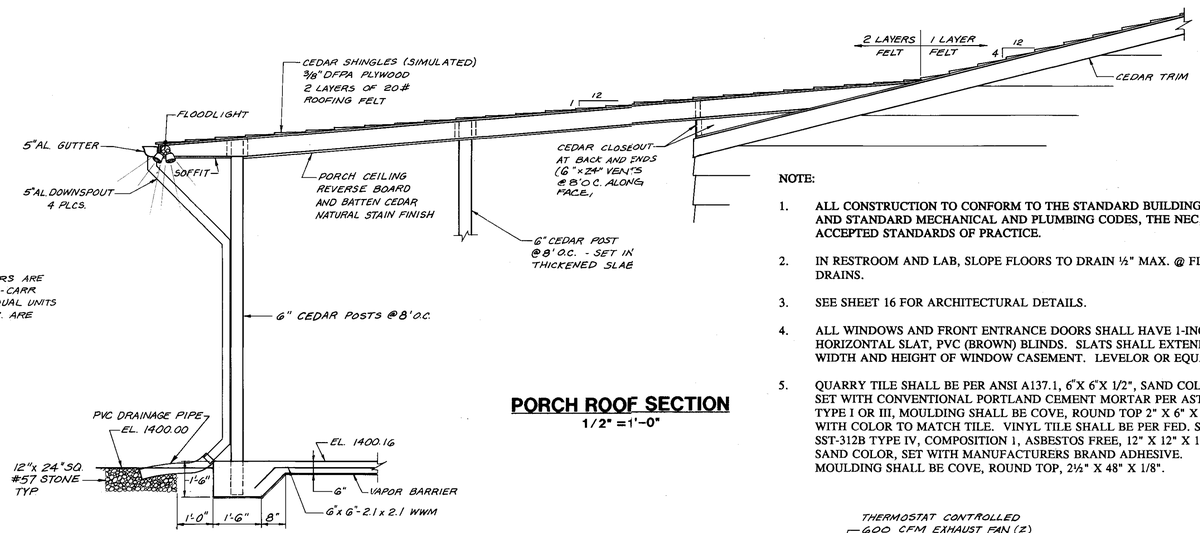
PLAN (CONTR. 3)
1/4"=1'-0"



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



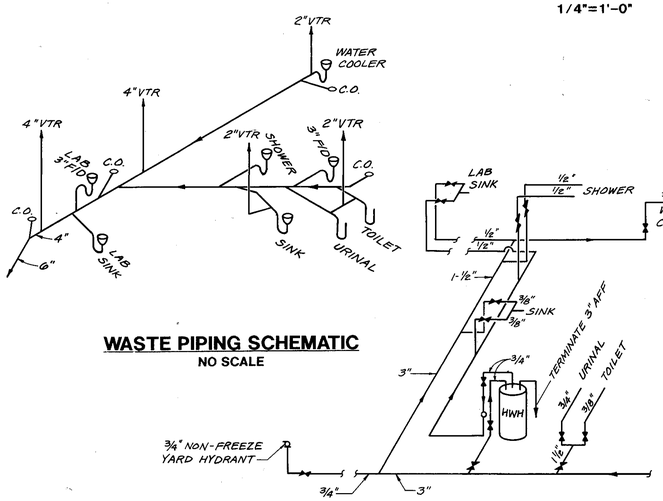
ROOF PLAN
1/8" = 1'-0"



PORCH ROOF SECTION
1/2" = 1'-0"

NOTE:

1. ALL CONSTRUCTION TO CONFORM TO THE STANDARD BUILDING CODE AND STANDARD MECHANICAL AND PLUMBING CODES, THE NEC, AND ACCEPTED STANDARDS OF PRACTICE.
2. IN RESTROOM AND LAB, SLOPE FLOORS TO DRAIN ¼" MAX. @ FLOOR DRAINS.
3. SEE SHEET 16 FOR ARCHITECTURAL DETAILS.
4. ALL WINDOWS AND FRONT ENTRANCE DOORS SHALL HAVE 1-INCH HORIZONTAL SLAT, PVC (BROWN) BLINDS. SLATS SHALL EXTEND FULL WIDTH AND HEIGHT OF WINDOW CASEMENT. LEVELOR OR EQUAL.
5. QUARRY TILE SHALL BE PER ANSI A137.1, 6"X 6"X 1/2", SAND COLORED, SET WITH CONVENTIONAL PORTLAND CEMENT MORTAR PER ASTM C150 TYPE I OR III, MOULDING SHALL BE COVE, ROUND TOP 2" X 6" X ½" WITH COLOR TO MATCH TILE. VINYL TILE SHALL BE PER FED. SPEC. SST-312B TYPE IV, COMPOSITION 1, ASBESTOS FREE, 12" X 12" X 1/8", SAND COLOR, SET WITH MANUFACTURERS BRAND ADHESIVE. MOULDING SHALL BE COVE, ROUND TOP, 2½" X 48" X 1/8".



WASTE PIPING SCHEMATIC
NO SCALE

POTABLE WATER PIPING SCHEMATIC
NO SCALE

ALL EXTERIOR VALVES TO HAVE VALVE BOXES AND COVERS, FLUSH WITH GRADE, CONCRETE OR ASPHALT.

PLAQUE NOTES:

DESCRIPTION: THE PLAQUE SHALL BE CAST BRONZE, 24 INCHES HIGH BY 30 INCHES WIDE. THE ENTIRE PLAQUE SHALL HAVE A SPRAY-ON ACRYLIC LACQUER FINISH.

DESIGN SELECTION: LETTER STYLE FOR THE PLAQUE SHALL BE HELVETICA. PLAQUE BORDER STYLE SHALL BE FLAT BAND OR SINGLE ⅛" WIDE. THE BACKGROUND SHALL BE "PEBBLE" TEXTURE.

FASTENERS: THE PLAQUE FASTENERS SHALL BE FOUR (4) EXPANDING ANCHORS AS RECOMMENDED BY PLAQUE MANUFACTURERS, WITH ROSETTE COVERS MATCHING PLAQUE MATERIAL.

CITY OF CLEVELAND
AQUACULTURE TREATMENT SYSTEM

DEDICATED

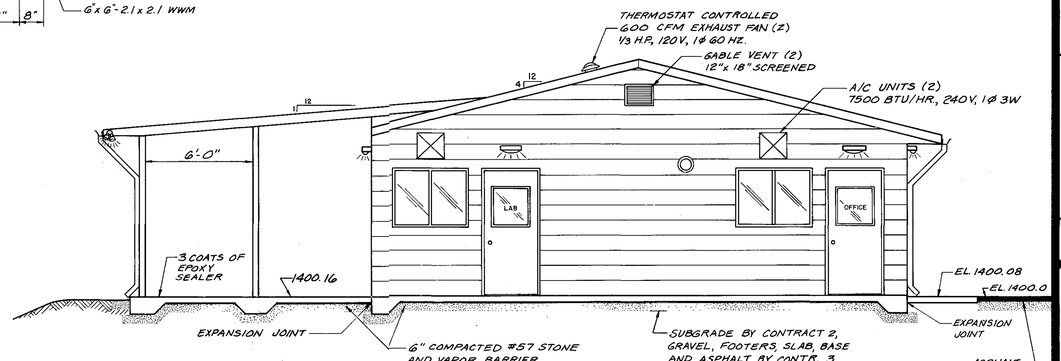
---DATE---

_____, MAYOR
CITY COUNCIL

CONTRACTOR(S) (CONTRACTORS' NAME,(S) CITY, AND STATE)

ENGINEER
RINDT-MCDUFF ASSOC.,INC.
MARIETTA, GEORGIA

PLAQUE DETAIL
NO SCALE



WEST ELEVATION
1/4"=1'-0"

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

CONTROL BUILDING

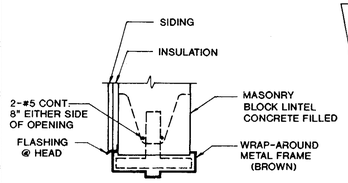
No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: TJD
Design: RDB
Checked: BMM
Project No.: 89-181
Scale: AS SHOWN
Date: SEPT. 1990

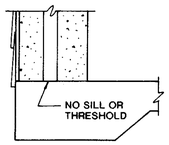
Sheet No.
15 of 21

ATLANTA BLUE PRINT ATLANTA

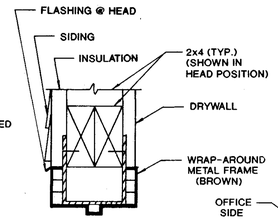
A82396



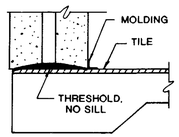
MASONRY WALL HEAD & JAMB



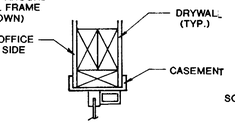
EXTERIOR DOORS MASONRY WALL



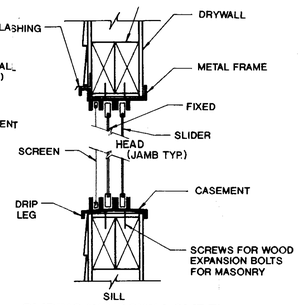
WOOD WALL HEAD & JAMB



THRESHOLD EXTERIOR DOORS WOOD WALL

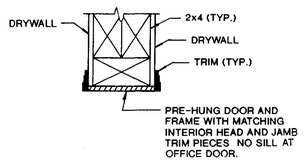


FIXED OFFICE WINDOW



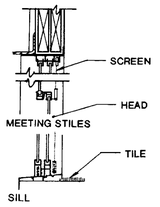
SLIDING WINDOW(1 SLIDE) WOOD WALL

(TYPICAL ARRANGEMENT FOR MCC BLDG. WITH MASONRY LINTEL BLOCK) & 2-#5 EXTENDED 8" EITHER SIDE OF OPENING

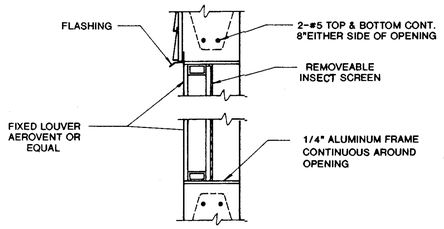


INTERIOR WOOD DOORS

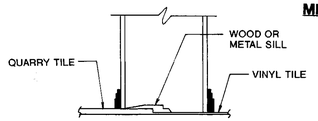
CONTROL BLDG. ENTRANCE, LAB & OFFICE EXTERIOR DOORS



METAL SLIDING DOOR

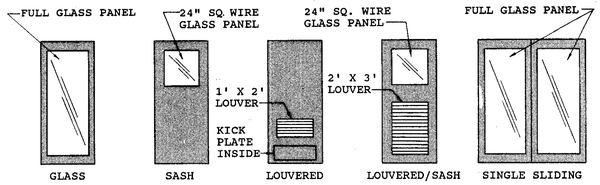


WALL LOUVER



LAB AND RESTROOM DOOR SILL

DOOR SCHEDULE

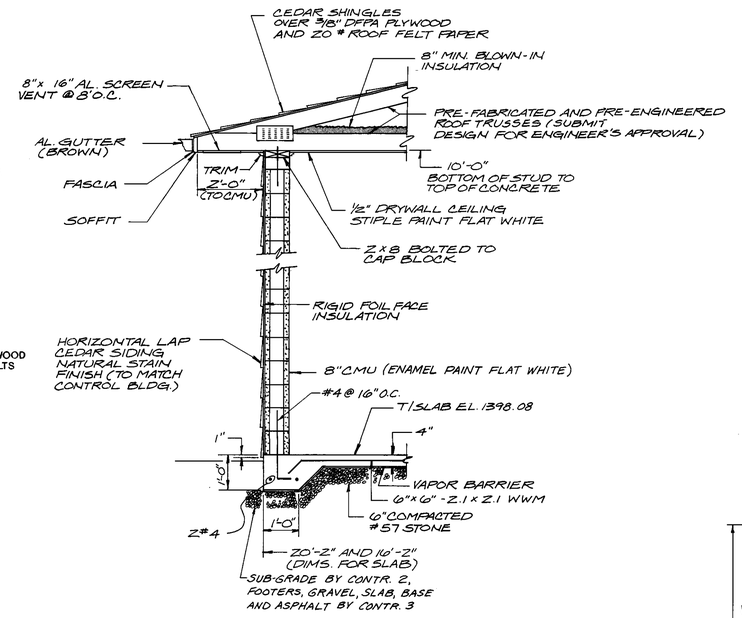


CONTROL BLDG. ENTRANCE:	(2)	3' X 7' GLASS, HOLLOW METAL, BROWN
LAB EXTERIOR:		3' X 7' SASH, HOLLOW METAL, BROWN
INTERIOR:		3' X 7' SASH, WOOD, STAINED
OFFICE EXTERIOR:		3' X 7' SASH, HOLLOW METAL, BROWN
INTERIOR:		3' X 7' SASH, WOOD, STAINED
RESTROOM:		3' X 7' LOUVERED, WOOD, STAINED
CONTROL BLDG. PATIO:	(2)	3' X 7' SINGLE SLIDING HOLLOW METAL, BROWN
MCC BLDG.:	(2)	3' X 7' LOUVERED SASH HOLLOW METAL, BROWN

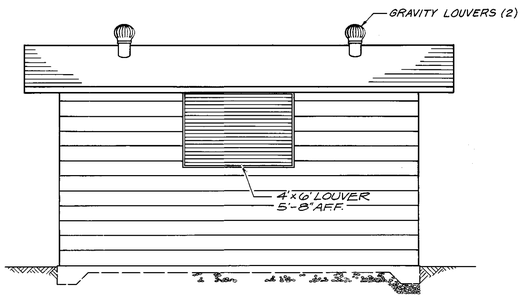
HARDWARE SCHEDULE

(ALL EXTERIOR DOORS AND FRAMES TO HAVE WEATHER STRIPPING AND NEOPRENE GASKETS AT SILLS OR FLOOR)

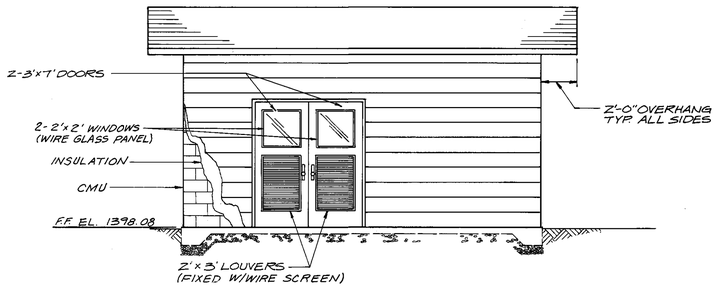
SINGLE HOLLOW METAL DOORS (LAB & OFFICE)	-	STANDARD METAL FRAME, FRAME HINGES KEY LOCK LOCKSETS WITH KNOBS, KICK PLATES INSIDE NORMAL PROJECTION CLOSERS, PARALLEL ARM
DOUBLE HOLLOW METAL DOORS (CONTROL & MCC BLDG. ENTR)	-	STANDARD METAL FRAME, FRAME HINGES PANIC HARDWARE W/EXTERNAL LOCK & DOOR PULL LATERAL LATCHING NORMAL PROJECTION CLOSERS, PARALLEL ARM
SLIDING METAL DOORS (CONTROL BLDG. PATIO)	-	LATCH AT DOOR CLOSURE FRAME
INTERIOR DOORS (LAB AND OFFICE)	-	STANDARD FRAME, FRAME HINGES DOOR KNOB LATCH SET, NON LOCKING
INTERIOR DOOR (RESTROOM)	-	STANDARD FRAME, FRAME HINGES DOOR PULL OUTSIDE, PUSH PLATE INSIDE



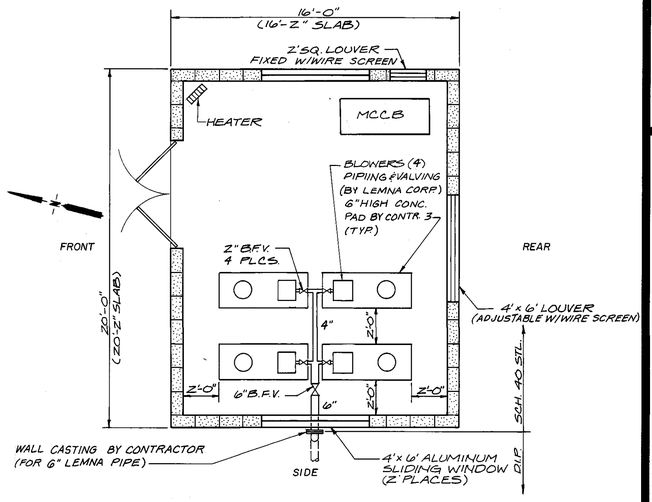
TYPICAL WALL SECTION
1/2"=1'-0"



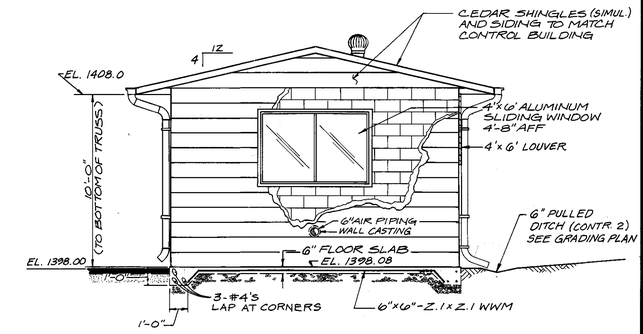
REAR ELEVATION
1/4"=1'-0"



FRONT ELEVATION
1/4"=1'-0"



MCC/BLOWER BUILDING (CONTR. 3)
PLAN
1/4"=1'-0"



SIDE ELEVATION
1/4"=1'-0"

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1982

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

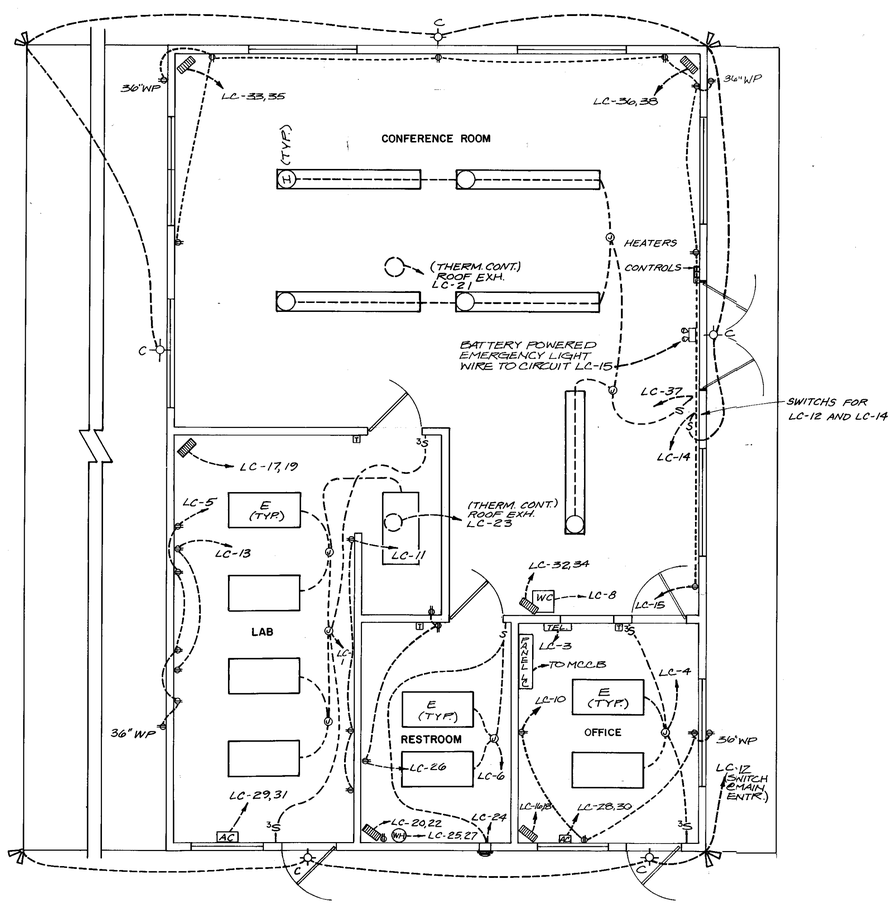
MCC/BLOWER BUILDING

No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: T-D/J-KC
Design: R.E.S.
Checked: BAM
Project No.: 87-181
Scale: 1/4"=1'-0"
Date: SEPT. 1990

Sheet No.
16 of 21

AS2396



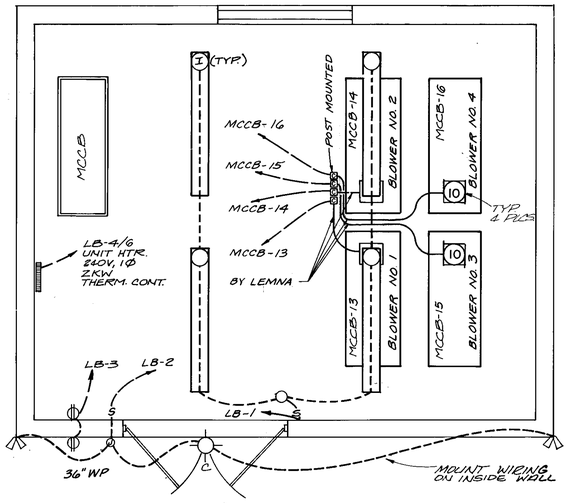
CONTROL BUILDING (CONTR. 3)

NOTE: THERMOSTAT CONTROLS FOR HEATERS TO BE MOUNTED ON WALL ADJACENT TO DOORWAYS. AIR CONDITIONERS TO HAVE SELF CONTAINED THERM. CONTROL

ELECTRICAL SYMBOLS

SEE SHEETS 17 AND 18

- DUPLEX RECEPTACLE 18"AFF (EXEPT THOSE IN LAB SERVICE LEDGE)
- 36"WP DUPLEX RECEPTACLE 36" AFG WEATHERPROOF
- WIRING IN CONDUIT, IN GROUND, BELOW FLOOR, ABOVE CEILING, OR IN WALL
- WIRING IN CONDUIT, EXPOSED
- —S— WALL MOUNTED SWITCH (3S = 3-WAY)
- J JUNCTION BOX (INTERIOR)
- C HEATER THERMOSTAT CONTROL
- HEATER
- MOTOR
- C ON - OFF CONTROL
- T THERMOSTAT CONTROL
- GROUND
- SR STARTER RELAY
- CT CURRENT TRANSFORMER
- CPT CURRENT POTENTIAL TRANSFORMER
- R RED "ON" OR "RUNNING" LIGHT
- OUTSIDE GLOBE LIGHTS
- FLUORESCENT CEILING MOUNTED LIGHTS
- B FLOOD LIGHTS
- HPS LIGHT MOUNTED ON POLE
- JB JUNCTION (PULL BOX) GROUND INSTALLED
- ON OFF PUSH - BUTTON STATION
- ON OFF SELECTOR SWITCH
- LC/B POWER SERVICE PANEL



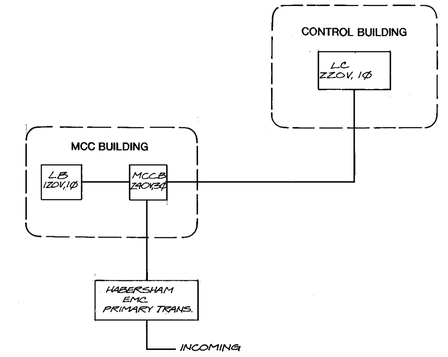
MCC BLOWER BUILDING

CONTRACTOR SHALL INSTALL ALL WIRING WITH THE EXCEPTION OF THE WIRING FROM THE BLOWER PUSH-BUTTON STATIONS TO THE BLOWERS WHICH WILL BE INSTALLED OVERHEAD BY LEMNA. (POST MOUNTED PUSH-BUTTON STATIONS BY CONTRACT 3)

MCCB

NOTES:

1. ALL UNIT HEATERS = SWIVEL BRACKET MOUNTED, 2KW, 240V, 1ϕ W/TERM. CONT.
2. LIGHTING:
   - B TWO 150W PAR-38 IN BELL HOLDERS ON CAST BOX AT HEIGHT NOTED BELL HOLDER.
   - C 200W INCANDESCENT VAPORTIGHT WALL MOUNTED FIXTURE WITH CAST GUARD AND GLOBE, MOUNTED AT 7' 0".
   - E 4 LAMP 40W RS FLUORESCENT LAYIN STATIC TROFFER, K12 PRISMATIC VERGIN ACRYLIC LENS, SHIFT AND LIFT DOOR, ETL, CBM BALLASTS.
   - I 2 LAMP BOOMA HO FLUORESCENT INDUSTRIAL PORCELAIN ENAMELED, 20% UP LIGHT.
   - 0A 250W HPS LONG AND NARROW BEAM SPREAD, DIECAST ALUMINUM HOUSING, PRISMATIC GLASS REFRACTOR, WITH PHOTOCONTROL ON 2' ARM ON 30' CLASS 5 PENTATREATED WOOD POLE, AND FIXTURE.
3. ALL WIRING SHALL CONFORM TO THE NEC, LATEST ED.
4. AC UNITS SHALL BE "THRU-WALL" UNITS, 240V, 1ϕ, 3W, 7500 BTU/HR. MIN. GALV. STL. SLEEVE, BAKED ON POLYESTER RESIN FINISH WITH OUTDOOR ALUMINUM GRILLE.



POWER SUPPLY/PANEL SCHEMATICS

PANEL SCHEDULE FOR PANEL LC LOCATION-CONTROL BLDG MOUNTING-FLUSH									
MAINS 225 AMP CB VOLT, PH, W-120/240, 1, 3 L2 = HIGH LEG									
CKT. NO.	TRIP/ POLES	DESCRIPTION OF LOADS	CONNECTED KVA PHASE A		CONNECTED KVA PHASE B		DESCRIPTION OF LOADS	TRIP/ POLES	CKT. NO.
1	20/1	LAB LTS.	1.0	1.0			SPACE		2
3	20/1	TELEPHONE B.B			.5	1.0	OFFICE LTS.	20/1	4
5	30/1	LAB RECPS.	1.0	1.0			REST RM. LTS	20/1	6
7	20/1	UV-1			1.0	.8	WATER COOLER	20/1	8
9	20/	UV-2	1.0	1.0			OFFICE RECPS.	20/1	10
11	20/1	LAB RECPS.			1.0	1.0	C BLDG O/S LTS	20/	12
13	20/1	LAB RECPS.	1.7	1.0			C BLDG O/S LTS	/2	14
15	20/1	C BLDG. RECPS			1.0	1.0	OFFICE	20/	16
17	20/	LAB	1.0	1.0			HTR.	/2	18
19	/2	HTR.			1.0	1.0	RESTRM.	20/	20
21	20/1	BLDG EX FAN 1	1.0	1.0			HTR.	/2	22
23	20/1	BLDG EX FAN 2			1.0	1.0	RESTRM. EX FAN	20/1	24
25	30/	WATER	2.2	1.0			RESTRM. RECPS.	20/1	26
27	/2	HTR.			2.2	2.0	OFFICE	20/	28
29	20/	LAB A/C	2.0	2.0			A/C	/2	30
31	/2	LAB A/C			2.0	1.0	MTG. RM.	20/	32
33	20/	MTG. RM	1.0	1.0			HTR-1	/2	34
35	/2	HTR-3			1.0	1.0	MTG. RM.	20/	36
37	20/1	SPARE	-	1.0			HTR-2	/2	38
39	20/1	SPARE			-	-	SPARE	20/1	40
41	20/1	SPARE	-	-			SPARE	20/1	42
			11.9	11.0	10.7	9.8			
SUM OF PHASES 22.9 20.5 HIGHEST LEG 22.9 KVA 190A									
DEMAND KVA = CONNECTED TIMES .75 17.2 KVA 143A									

MOTOR CONTROL CENTER SCHEDULE							
MCC-B LOCATION-MCC/BLOWER BUILDING							
MAINS - 600A VOLTAGE, PHASE, WIRE- 120Y 240, 3PH, 4W							
CKT.	DEVICE	DESCRIPTION	LEGEND	HP	AMP	KVA	DEM KVA
1	CB	20A 3P TN	AERATOR NO. 1	5	15	6.5	4.9
2	CB	20A 3P TN	AERATOR NO. 2	5	15	6.5	4.9
3	CB	20A 3P TN	AERATOR NO. 3	5	15	6.5	4.9
4	CB	20A 3P TN	AERATOR NO. 4	5	15	6.5	4.9
5	CB	20A 3P TN	AERATOR NO. 5	5	15	6.5	4.9
6	CB	20A 3P TN	AERATOR NO. 6	5	15	6.5	4.9
7	CB	20A 3P TN	AERATOR NO. 7	5	15	6.5	4.9
8	CB	20A 3P TN	AERATOR NO. 8	5	15	6.5	4.9
9	CB	20A 3P TN	GRINDER NO. 1	5	15	6.5	4.9
10	CB	20A 3P TN	GRINDER NO. 2	5	15	6.5	4.9
11	CB	50A 2P TN	PANEL LB		33	8.0	6.0
12	CB	225A 2P TN	PANEL LC		190	45.8	34.4
13	CB	40A 3P TN	BLOWER NO. 1	10	27	11.0	8.25
14	CB	40A 3P TN	BLOWER NO. 2	10	27	11.0	8.25
15	CB	40A 3P TN	BLOWER NO. 3	10	27	11.0	8.25
16	CB	40A 3P TN	BLOWER NO. 4	10	27	11.0	8.25
17	SPACE						
18	SPACE						
			TOTALS-		481	162.8	122.4
TOTAL CONNECTED KVA - 162.8 TOTAL CONNECTED AMP - 481.0 TOTAL DEMAND KVA - 122.1 TOTAL DEMAND AMP - 361 FURNISH SERVICE ENTRANCE CABLE							

PANEL SCHEDULE LB LOCATION-MCC BUILDING									
MAINS- VOLT, PH,W- 120, 1, 3 L2 = HIGH LEG									
CKT NO.	TRIP/ POLES	DISCRIPTION OF LOADS	CONNECTED KVA PHASE A		CONNECTED KVA PHASE B		DESCRIPTION OF LOADS	TRIP/ POLES	CKT NO.
1	20/1	INSIDE LIGHTS	1.0	1.0	-----	-----	OUTSIDE LIGHTS	20/1	2
3	20/1	RECEPTACLES	-----	-----	1.0	1.0	UNIT HEATER	20/	4
5	20/1	ROAD LIGHTS	1.0	1.0	-----	-----		/2	6
7	30/1	ROAD LIGHTS	-----	-----	2.0	-----	SPARE	20/1	8
9	20/1	SPARE			-----	-----	SPARE	20/1	10
			2.0	2.0	3.0	1.0			
SUM OF PHASES 4.0 4.0 4.0 KVA 33 A									
DEMAND KVA=CONNECTED KVA TIMES .75 3.0 KVA 25 A									

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

RMA Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
WASTEWATER TREATMENT FACILITY

ELECTRICAL DETAILS

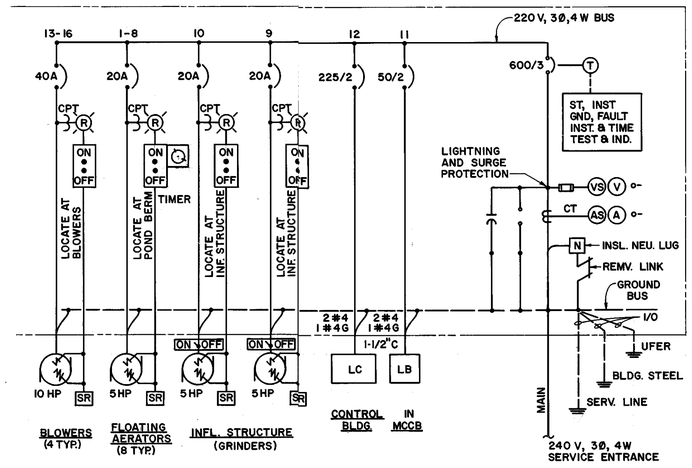
No.	Revisions	Date
1	EPD COMMENTS	2-91

Drawn: TJD/JRC
Design: RLB
Checked: BMC
Project No.: 89-181
Scale: AS SHOWN
Date: SEPT. 1990

Sheet No.
17 of 21

ATLANTA BLUE PRINT ATLANTA

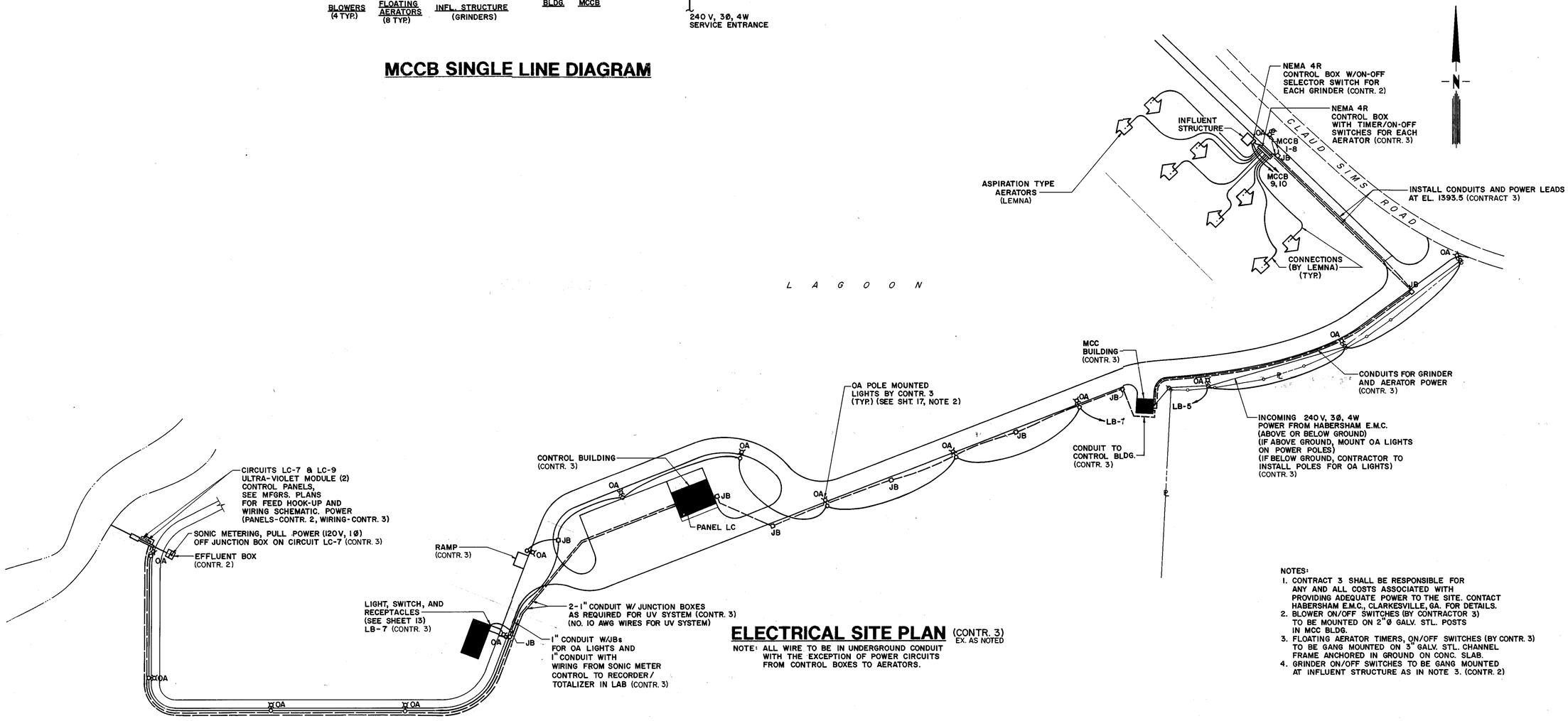
4B2396



MCCB SINGLE LINE DIAGRAM

CONTRACT SEPARATION

1. OUTSIDE CONTROL CABINETS, PANELS AND CONNECTING WIRING TO UNITS SUCH AS THE UV SYSTEM, SONIC METERING SYSTEM, AND GRINDER SYSTEM ARE THE RESPONSIBILITY OF CONTRACT 2. ALL OTHER ELECTRICAL (WITH THE EXCEPTION OF LEMNA RESPONSIBILITIES) IS THE RESPONSIBILITY OF CONTRACT 3.



ELECTRICAL SITE PLAN (CONTR. 3)

EX. AS NOTED

NOTE: ALL WIRE TO BE IN UNDERGROUND CONDUIT WITH THE EXCEPTION OF POWER CIRCUITS FROM CONTROL BOXES TO AERATORS.

NOTES:
1. CONTRACT 3 SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS ASSOCIATED WITH PROVIDING ADEQUATE POWER TO THE SITE. CONTACT HABERSHAM E.M.C., CLARKESVILLE, GA. FOR DETAILS.
2. BLOWER ON/OFF SWITCHES (BY CONTRACTOR 3) TO BE MOUNTED ON 2"Ø GALV. STL. POSTS IN MCC BLDG.
3. FLOATING AERATOR TIMERS, ON/OFF SWITCHES (BY CONTR. 3) TO BE GANG MOUNTED ON 3" GALV. STL. CHANNEL FRAME ANCHORED IN GROUND ON CONC. SLAB.
4. GRINDER ON/OFF SWITCHES TO BE GANG MOUNTED AT INFLUENT STRUCTURE AS IN NOTE 3. (CONTR. 2)

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

ELECTRICAL DETAILS

No.	Revisions	Date
1	EPD COMMENTS	2-91

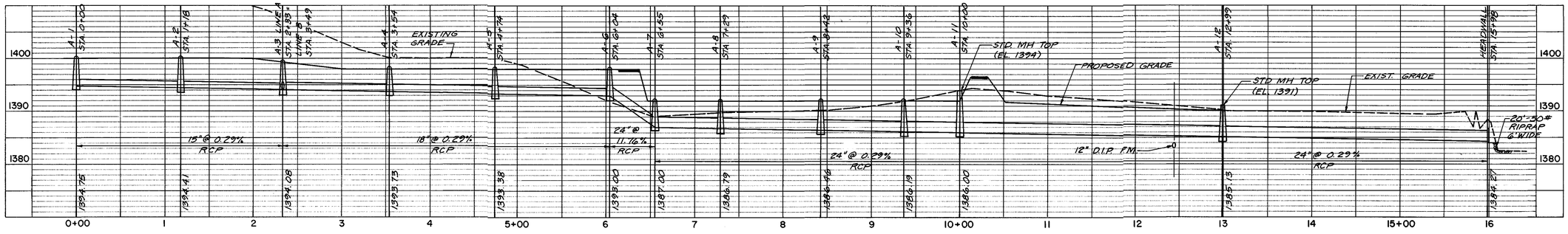
Drawn: TJD
Design: RCB
Checked: BAM
Project No.: 89-181
Scale: NO SCALE
Date: SEPT. 1990

Sheet No. 18 of 21

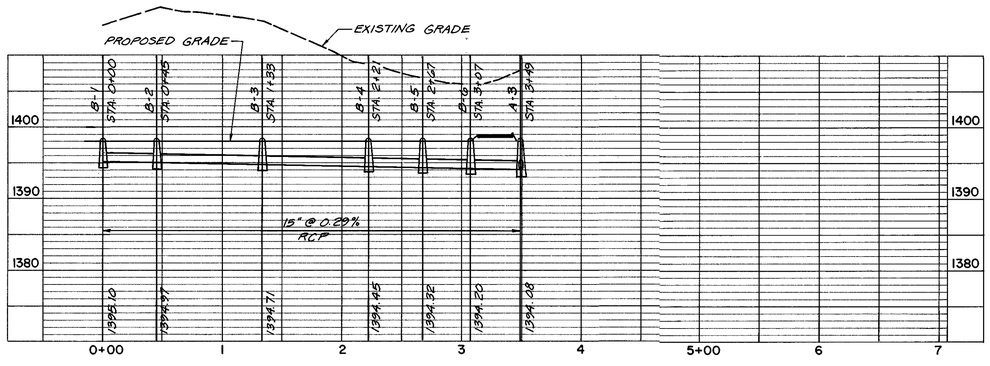
COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

ATLANTA-BLUE PRINT ATLANTA

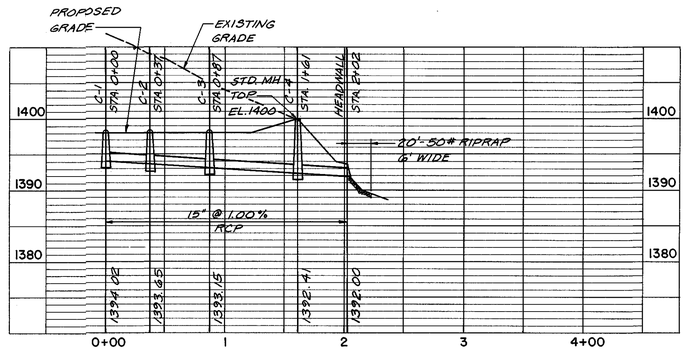
AB2286



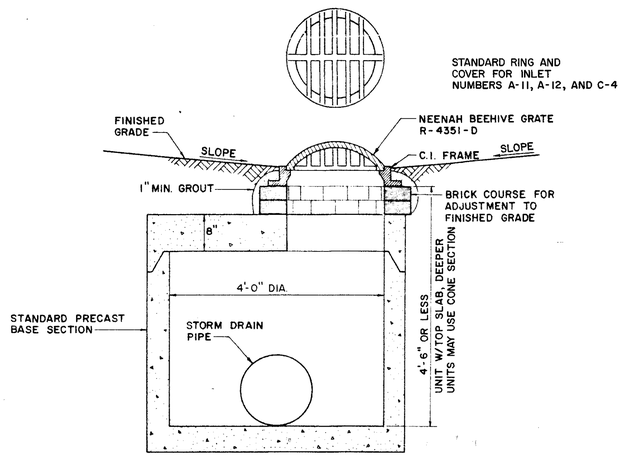
STORM DRAIN – LINE A (CONTR. 3)
1" – 10' VERTICAL
1" – 60' HORIZONTAL



STORM DRAIN – LINE B (CONTR. 3)
1" – 10' VERTICAL
1" – 60' HORIZONTAL



STORM DRAIN – LINE C (CONTR. 3)
1" – 10' VERTICAL
1" – 60' HORIZONTAL



STORM DRAIN INLET (CONTR. 3)
3/4" = 1'-0"

TYP. LINES A, B, & C

COPYRIGHT © RINDT-McDUFF ASSOCIATES 1988

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

STORM DRAIN PROFILES AND DETAILS

No.	Revisions	Date
1	EPD COMMENTS	2-91

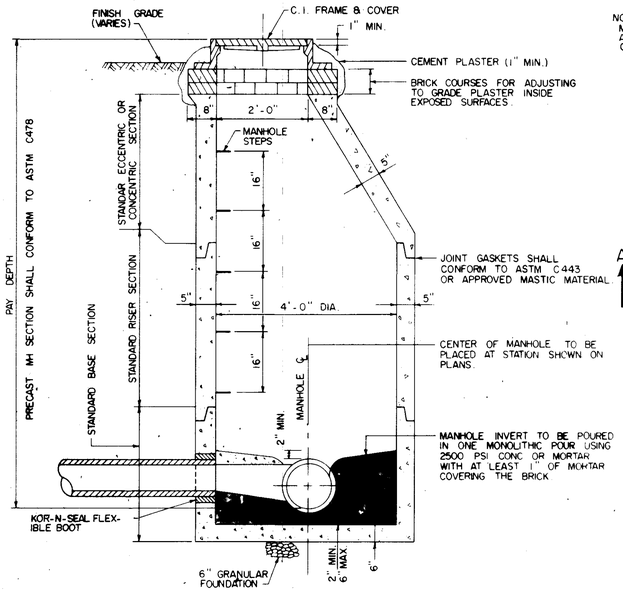
Drawn: TJD
Design: RCB
Checked: BAR
Project No.: 89-181
Scale: AS SHOWN
Date: JAN. 1991

Sheet No.
19 of 21

ATLANTA BLUE PRINT ATLANTA

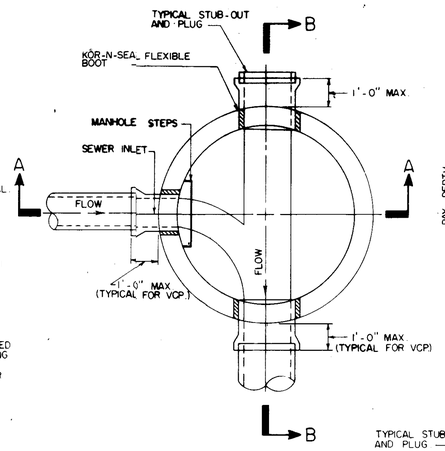
ABC39R

No.	Revisions	Date
1	EPD COMMENTS	2-91

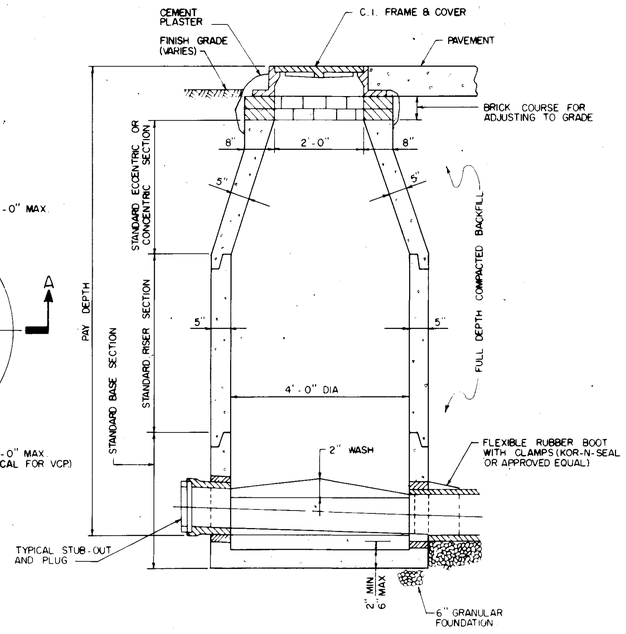


SECTION A-A

NOTE:
MANHOLE COVERS SHALL BE 18" ABOVE GRADE EXCEPT AS SPECIFIED ON PLAN.

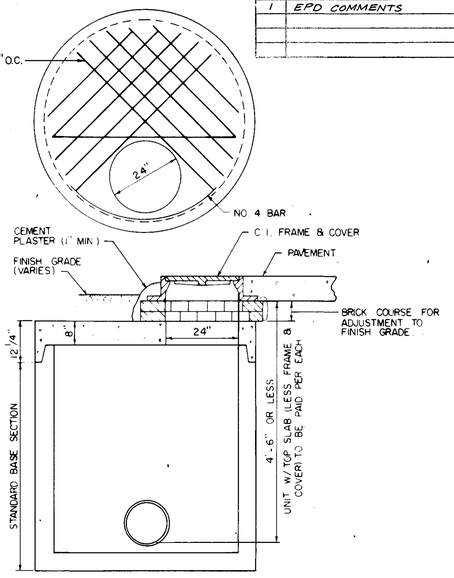


SECTIONAL PLAN

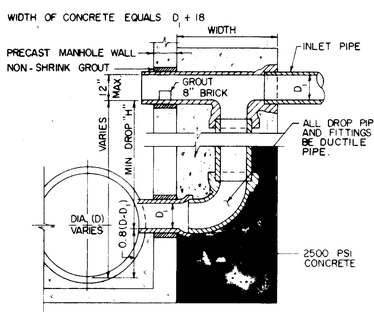


SECTION B-B

STANDARD PRECAST 4'-0" DIAMETER MANHOLE

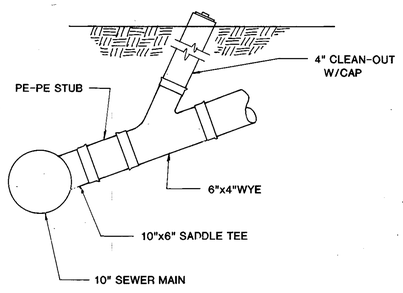


SHALLOW 4'-0" DIAMETER MANHOLE



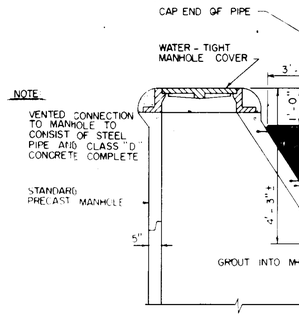
PIPE DIA	MIN. DROP "H"		
	PIPE MATERIAL		
	ESVCP	DIP	PVC
8"	1'-10"	2'-3 1/2"	1'-7 1/2"
10"	2'-1"	2'-8"	1'-11"
12	2'-4 1/2"	2'-11"	2'-3 1/4"

TYPICAL VERTICAL DROP INLET



SERVICE LINE TIE-IN & CLEAN-OUT

N.T.S.



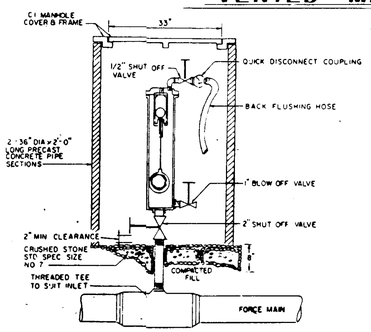
NOTE
VENTED CONNECTION TO MANHOLE TO CONSIST OF STEEL PIPE AND CLASS "D" CONCRETE COMPLETE

STANDARD PRECAST MANHOLE

5" OPEN LOOPED TIES DOWELLED INTO MH

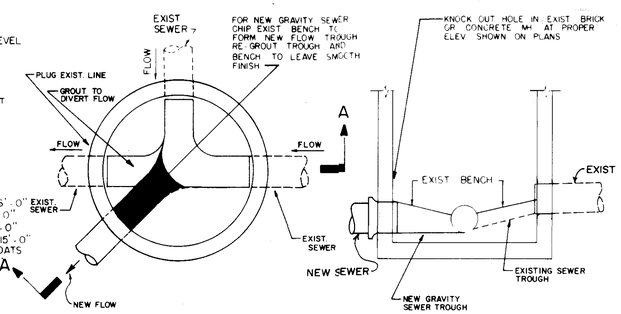
STEEL PIPE SCHEDULE 80
3" DIA FOR "H" = LESS THAN 6'-0"
4" DIA FOR "H" = 6'-0" TO 10'-0"
5" DIA FOR "H" = 10'-0" TO 15'-0"
6" DIA FOR "H" = MORE THAN 15'-0"
PIPE TO BE PAINTED WITH 2 COATS OF BITUMINOUS ENAMEL

VENTED MANHOLE DETAIL



AIR RELEASE VALVE

NTS

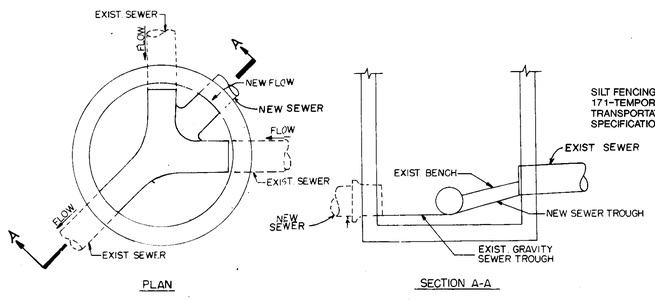


PLAN

SECTION A-A

CONNECTION TO EXISTING MH

(AT PUMP STATION)

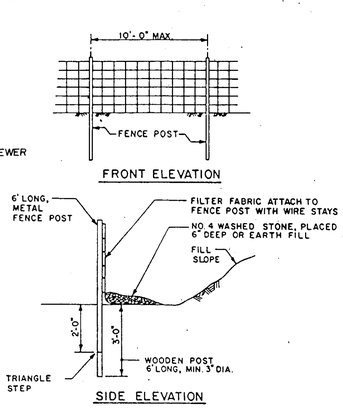


PLAN

SECTION A-A

CONNECTION TO EXISTING MH

(AT BOTTOM OF LINE)



TYPICAL SILT FENCE DETAIL (Sdl)

N.T.S.

SILT FENCING MUST MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE, OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, 1983 EDITION.

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930

CITY OF CLEVELAND
SEWERAGE SYSTEM IMPROVEMENTS

STANDARD DETAILS

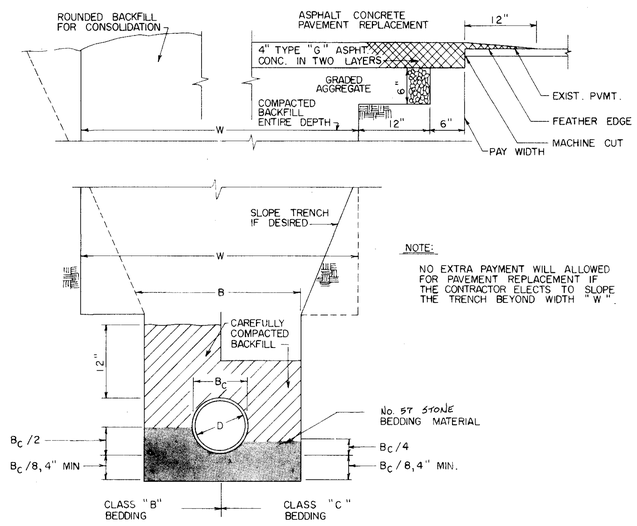
JRC
dsgnd RCB/SN
chkd: BAR
proj 89-181
scale: N.T.S.
date SEPT. 1990
sheet no
20 of 21

AF 22765

No.	Revisions	Date
1	EPD COMMENTS	2-91

GEORGIA REGISTERED No. 10751 PROFESSIONAL ENGINEER BRIAN A. RINDT

Rindt-McDuff Associates, Inc.
334 Cherokee Street • Marietta, GA 30060 • 404/427-8123
FAX No. 404/425-8930



NOTE:

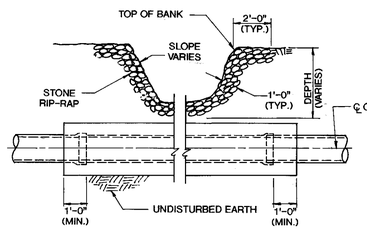
NO EXTRA PAYMENT WILL ALLOWED FOR PAVEMENT REPLACEMENT IF THE CONTRACTOR ELECTS TO SLOPE THE TRENCH BEYOND WIDTH "W".

TYPICAL SEWER TRENCH AND PAVEMENT REPLACEMENT

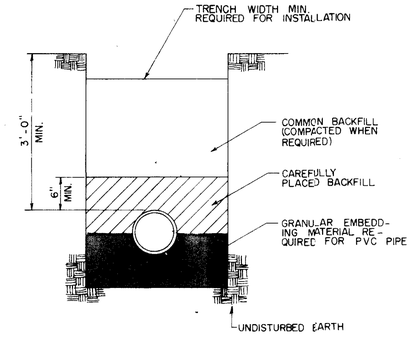
D IN.	DUCTILE IRON Bc IN.	DUCTILE IRON B IN.	DUCTILE IRON W FT.	VITRIF. CLAY Bc IN.	VITRIF. CLAY B IN.	VITRIF. CLAY W FT.	ASB. CEMENT Bc IN	ASB. CEMENT B IN	ASB. CEMENT W FT.	P.V.C. Bc IN.	P.V.C. B IN.	P.V.C. W FT.	A.B.S. Bc IN.	A.B.S. B IN.	A.B.S. W FT.
8	8.52	27	3.8	9.75	27	3.8	9.24	27	3.8	8.4	24	3.7	9.51	27	3.8
10	10.58	27	3.9	12.0	30	4.0	11.30	30	4.0	10.5	27	3.8	11.87	30	4.0
12	12.62	30	4.0	14.38	32	4.25	13.46	32	4.25	12.6	30	4.0	14.22	32	4.25
15	—	—		18.0	36	4.5	16.56	34	4.5	15.7	32	4.25	17.80	36	4.5
18	18.7	36	4.5	21.75	40	4.8	19.80	36	4.5	—	—		—	—	

NOTES

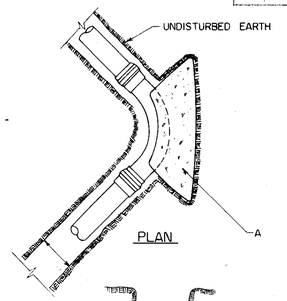
1 - "B" IS MAXIMUM WIDTH OF TRENCH AT POINT 12 INCHS ABOVE TOP OF PIPE.
2 - "W" IS WIDTH OF EXCAVATION ON PAYMENT LIMITS INCLUDED IN ROCK, PAVEMENT, AND PIPE ITEMS.
3 - SHAPED BOTTOM BEDDING SHALL NOT BE ALLOWED. GRANULAR MATERIAL SHALL BE USED.



CREEK CROSSING DETAIL
N.T.S.

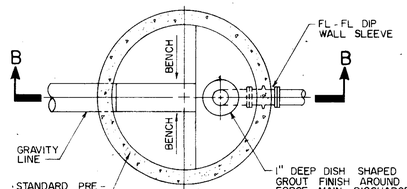


TYPICAL FORCE MAIN TRENCH

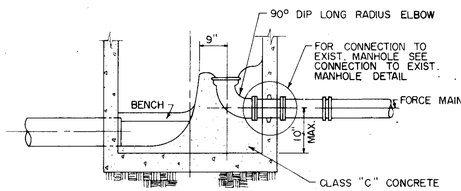


PIPE SIZE DIA. (IN.)	AREA OF SURFACE BEARING ON UNDISTURBED MATERIAL (SQ. FEET)
4	1.5
6	3
8	6
10	9
12	12
14	16

FORCE MAIN THRUST BLOCKS

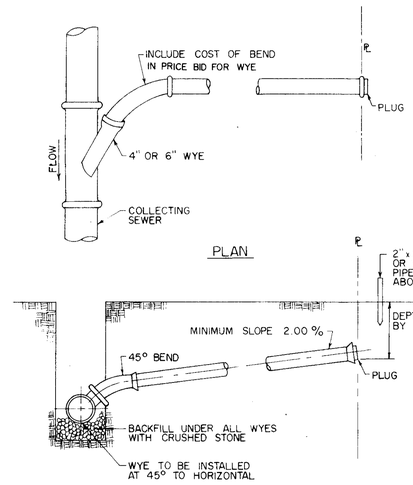


PLAN



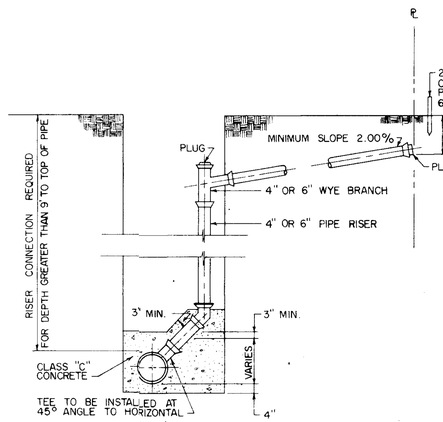
SECTION B-B

FORCE MAIN CONNECTION TO MANHOLE

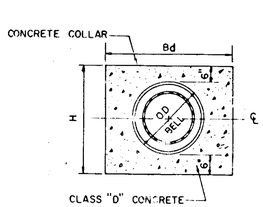


ELEVATION

TYPICAL SERVICE CONNECTION

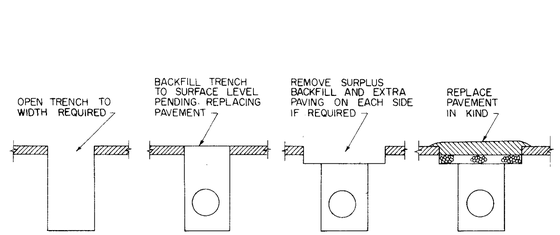


TYPICAL RISER FOR SERVICE CONNECTION

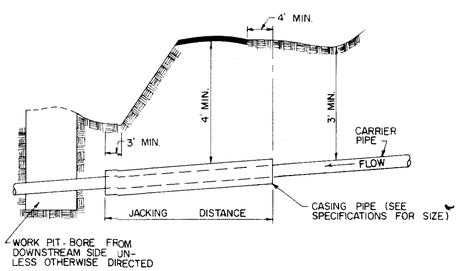


CONCRETE QUANTITIES						
DIMENSIONS		CONC. COLLAR			CONC. ENCASEMENT	
D IN.	Bd FT.	H FT.	L FT.	VOL. CONC C.Y.	H FT.	VOL. CONC CY/LF
8	2.15	2.00	2.00	0.29	1.81	0.13
10	2.33	2.17	2.00	0.33	2.00	0.15
12	2.53	2.42	2.00	0.38	2.20	0.17
15	2.83	2.75	2.00	0.47	2.50	0.20
18	3.25	3.34	2.00	0.62	2.92	0.25
21	3.54	3.59	2.00	0.71	3.21	0.28
24	3.83	4.00	2.00	0.82	3.50	0.32
30	4.42	4.67	2.00	1.07	4.08	0.40
36	5.67	5.34	2.00	1.56	4.67	0.59
42	6.25	6.00	2.00	1.85	5.08	0.70
48	6.83	6.67	2.00	2.17	5.83	0.80
54	7.42	6.92	2.00	2.35	6.42	0.91
60	8.00	7.42	2.00	2.67	7.00	1.03

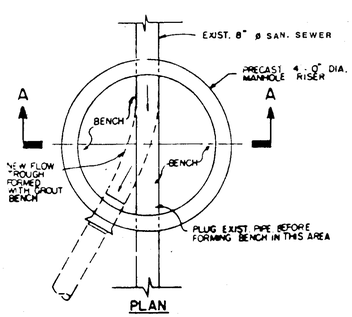
CONCRETE COLLAR



OPEN CUTTING PAVEMENT SEQUENCE

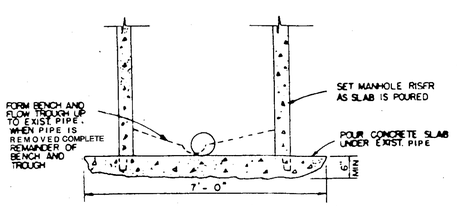


JACK & BORE HIGHWAY CROSSING



PLAN

RELOCATION PLAN FOR EXIST. PIPE IN MANHOLE
N.T.S.



SECTION A-A

CITY OF CLELAND
SEWERAGE SYSTEM IMPROVEMENTS

STANDARD DETAILS

drn:	JRC
dsgnd:	RCB ISN
chkd:	BAR
proj:	89-181
scale:	N.T.S.
date:	SEPT. 1990
sheet no.	21 of 21

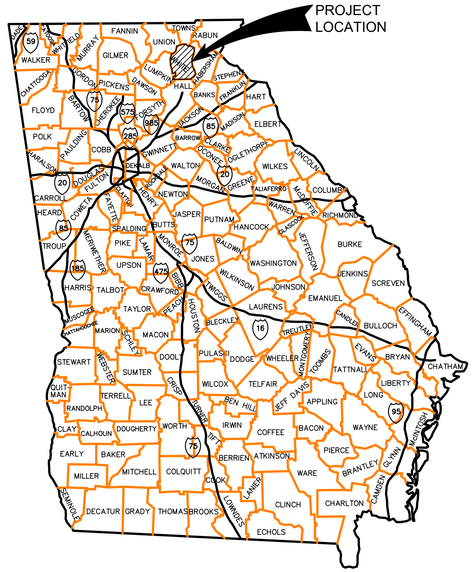
REPRO PRODUCTS

APPROVED PLANS MUST BE
ON THE JOB SITE AT ALL TIMES

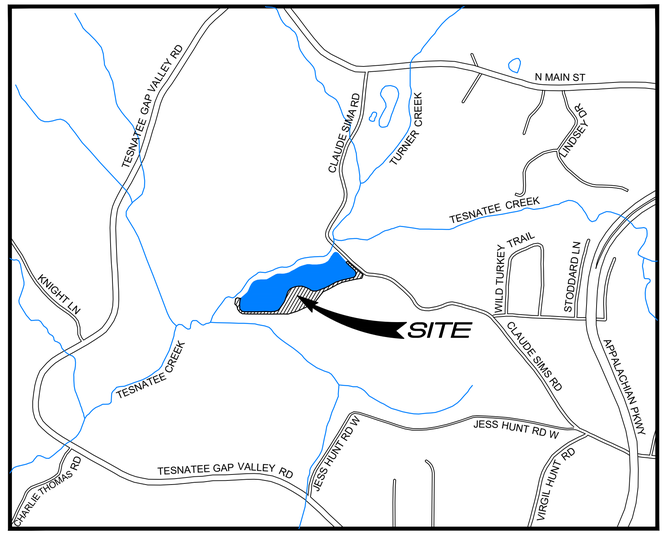
DESIGN DRAWINGS FOR:

CITY OF CLEVELAND, GEORGIA

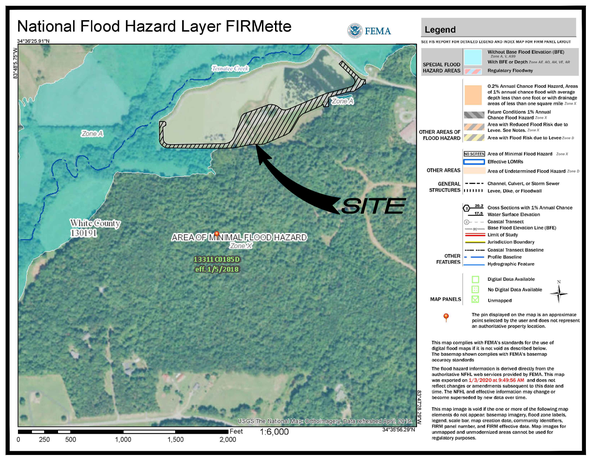
WASTEWATER TREATMENT PLANT EXPANSION



STATE MAP



SITE LOCATION MAP
N.T.S.



FEMA FLOODPLAIN MAP
N.T.S.

GEORGIA811
Utilities Protection Center, Inc.
Know what's below.
Call before you dig.
1-800-282-7411

JOSH TURNER, MAYOR

KEVIN HARRIS, CITY ADMINISTRATOR
TOM O'BRYANT, DIR. OF COMMUNITY AND ECONOMIC DEVELOPMENT

CITY COUNCIL

NAN BOWEN, WARD 1
ANNIE SUTTON, WARD 2
JEREMY McCLURE, WARD 3
CJ MCDONALD, WARD 4

CITY CLERK

LISA A. RITCHIE

24 HR CONTACT:

ANDREA SMITH
WASTERWATER MANAGER
706-200-6438

PRIMARY PERMITTEE ES&PC:
OWNER: CITY OF CLEVELAND

EDA AWARD NUMBER: ED24ATL0G0215
EPD APPROVAL SEPTEMBER 2024
EDA APPROVAL MAY 2025

RINDT
ENGINEERING + ENVIRONMENTAL
334 Cherokee Street - Marietta, Ga. 30060
Phone: (770) 427-8123
Fax: (770) 425-8930

RELEASED FOR BID - JULY 31, 2025

I CERTIFY THAT I HAVE BEEN IN RESPONSIBLE CHARGE OR THE DESIGN OF THIS PROJECT IN ACCORDANCE WITH THE RULES OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS. I FURTHER CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED IN ACCORDANCE WITH CURRENT STANDARD ENGINEERING PRACTICES AND ACCURATELY REFLECT THE DESIGN DEVELOPMENT REPORT (DDR) PREVIOUSLY REVIEWED AND CONCURRED IN BY EPD. I FURTHER CERTIFY THAT THE SYSTEM AS DESIGNED CAN REASONABLY BE EXPECTED TO CONSISTENTLY MEET ALL CURRENTLY APPLICABLE PERMIT LIMITS, CONDITIONS, AND REGULATORY REQUIREMENTS, PROVIDED THE FACILITY IS CONSTRUCTED AS DESIGNED AND PROPERLY OPERATED AND MAINTAINED.

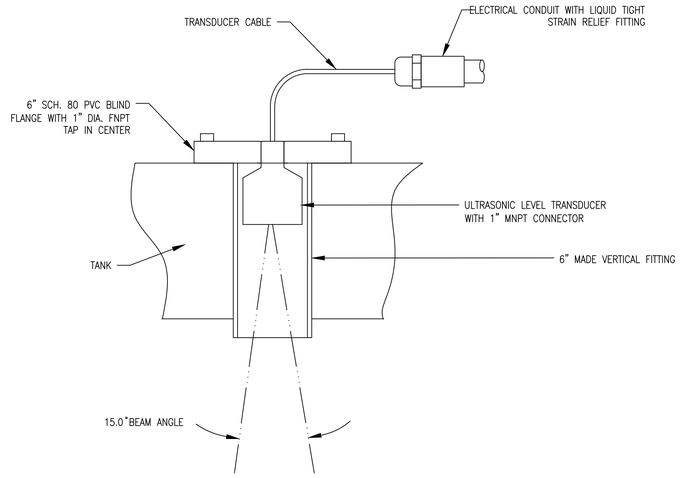
7-31-2025
DATE

MEG M. MBUGUA, P.E.
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION #0000069299

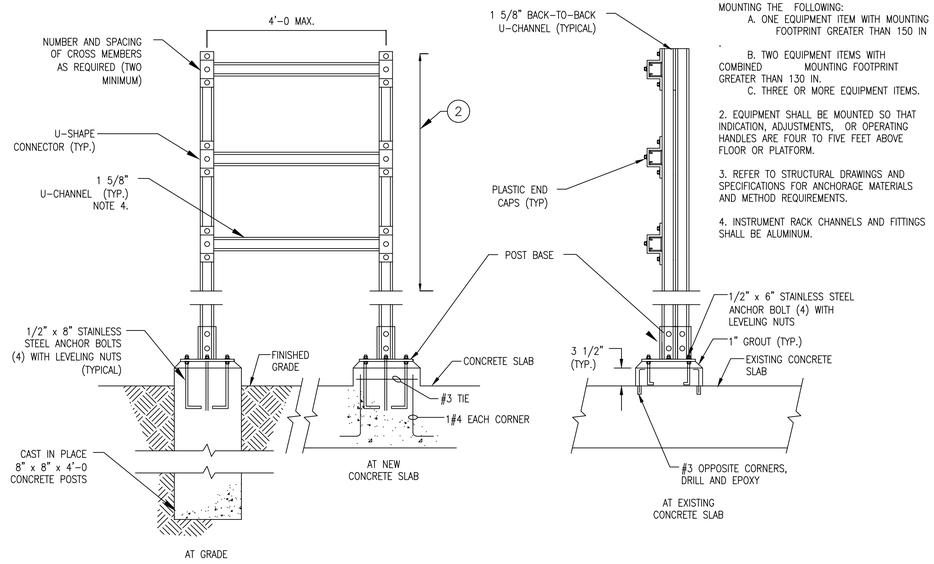
GEORGIA
REGISTERED
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

IF ARCHAEOLOGICAL MATERIALS ARE DISCOVERED DURING PROJECT ACTIVITIES, ALL GROUND DISTURBING ACTIVITIES WILL CEASE, AND THE GEORGIA HISTORIC PRESERVATION DIVISION AND EDA WILL BE CONTACTED TO DETERMINE IF THESE RESOURCES NEED TO BE ASSESSED BY A SECRETARY OF THE INTERIOR-QUALIFIED ARCHAEOLOGIST.

\\Buldata01\rma\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 3:43pm apavlusenco

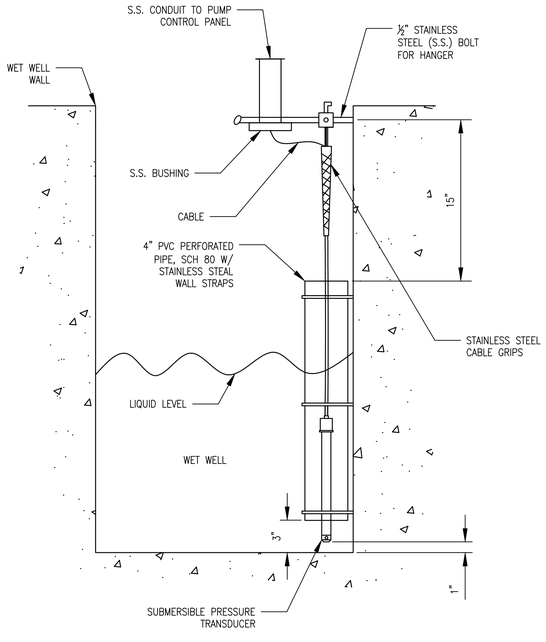


1 ULTRASONIC LEVEL SENSOR INSTALLATION DETAIL

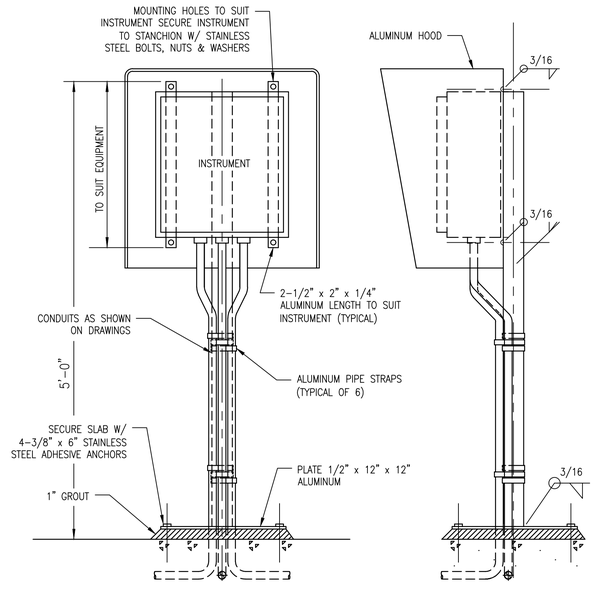


NOTES:
1. EQUIPMENT RACK SHALL BE UTILIZED FOR MOUNTING THE FOLLOWING:
   A. ONE EQUIPMENT ITEM WITH MOUNTING FOOTPRINT GREATER THAN 150 IN .
   B. TWO EQUIPMENT ITEMS WITH COMBINED MOUNTING FOOTPRINT GREATER THAN 130 IN.
   C. THREE OR MORE EQUIPMENT ITEMS.
2. EQUIPMENT SHALL BE MOUNTED SO THAT INDICATION, ADJUSTMENTS, OR OPERATING HANDLES ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.
3. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ANCHORAGE MATERIALS AND METHOD REQUIREMENTS.
4. INSTRUMENT RACK CHANNELS AND FITTINGS SHALL BE ALUMINUM.

2 TYPICAL UNI-STRUT INSTALLATION DETAL



3 SUBMERSIBLE PRESSURE TRANSDUCER INSTALLATION DETAIL



INSTRUMENT SUN SHIELD NOTES:

1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
2. PAINT ALL ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
3. ALL OUTDOOR MOUNTED INSTRUMENTS SHALL HAVE ALUMINUM HOODS AS SHOWN AND SHALL BE SIZED TO HOUSE BOTH INSTRUMENT AND ASSOCIATED SURGE SUPPRESSOR.

4 INSTRUMENT SUN SHIELD INSTALLATION DETAIL

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

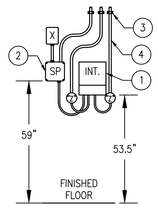
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL AND I&C
INSTALLATION DETAILS

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

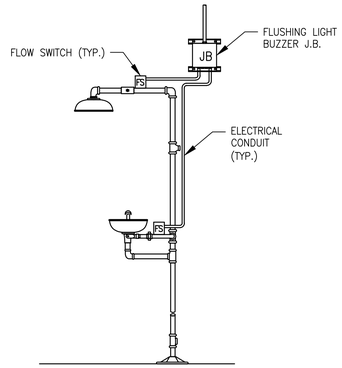
Sheet No.
DE-1



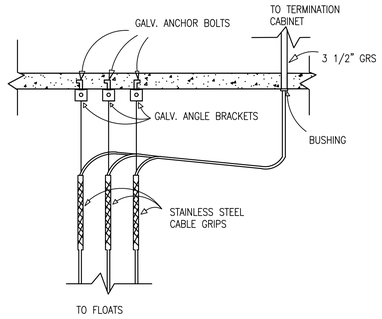
BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	FIELD INSTALLED INSTRUMENT PANEL	
2	1	SURGE PROTECTION	
3	A/R	UNISTRUT CLAMP (3/4")	
4	A/R	PVC COATED STEEL CONDUIT	

A/R=AS REQUIRED

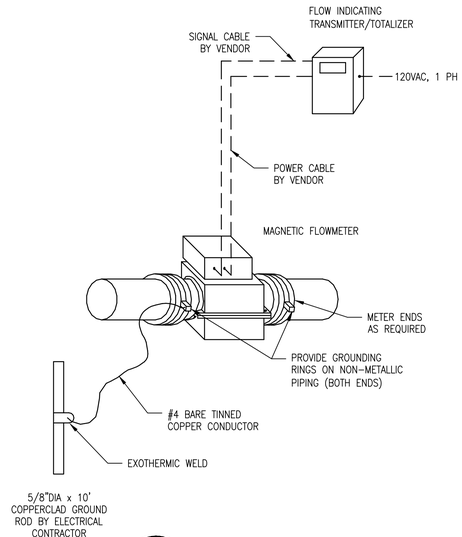
1 SURGE PROTECTION INSTALLATION DETAILS



2 EMERGENCY SHOWER AND EYEWASH INSTALLATION DETAIL



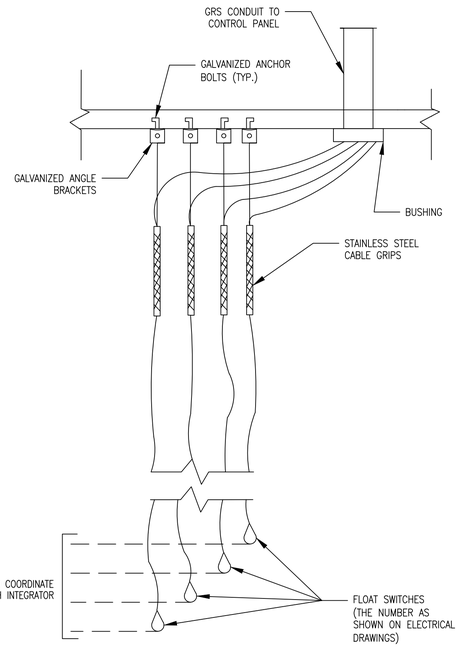
3 TYPICAL SUBMERSIBLE CABLE ANCHORS



4 MAGNETIC FLOW SENSOR INSTALLATION

NOTES:
1. POWER SUPPLY TO MAGNETIC METER PRIMARY DEVICE & TRANSMITTER TO BE FROM SAME SOURCE WITH RESPECT TO VOLTAGE, FREQUENCY AND PHASE

2. INSTALLATION OF METERS SHALL PROVIDE FOR 10 PIPE DIAMETERS UPSTREAM AND 5 PIPE DIAMETER DOWNSTREAM, WHERE POSSIBLE



5 FLOAT SWITCHES SUSPENSION DETAIL

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

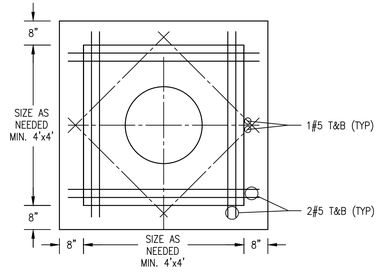
ELECTRICAL AND I&C
INSTALLATION DETAILS

EDEC
A SALAS O'BRIEN COMPANY

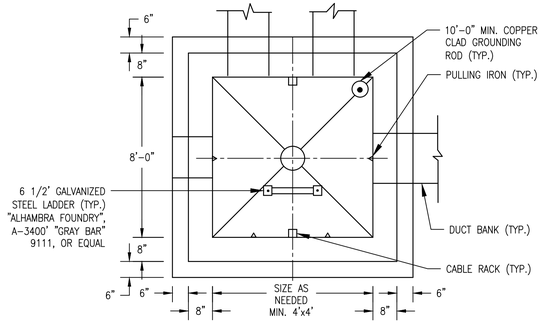
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

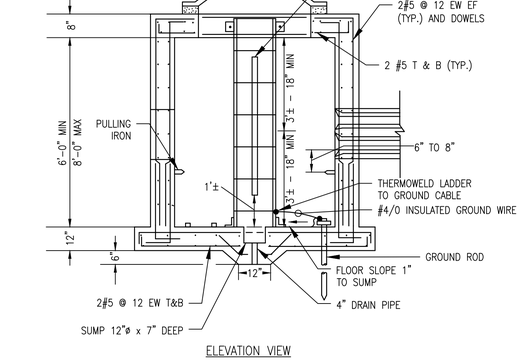
Sheet No.
DE-2



TOP PLAN



BOTTOM PLAN

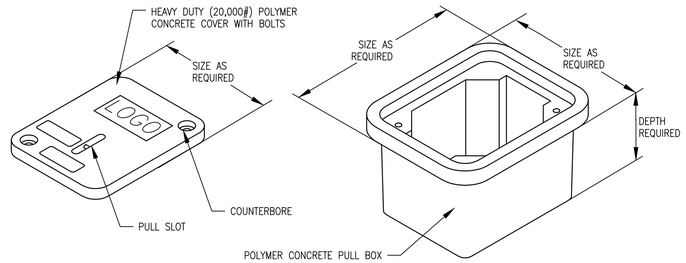


ELEVATION VIEW

MANHOLE NOTES:

1. ALL METAL PORTIONS OF THE MANHOLE SHALL BE BONDED TOGETHER PER NEW REQUIREMENT OF NEC 2011 ARTICLE 250.96(A), 250.4(A)(3) AND 314.30(D).

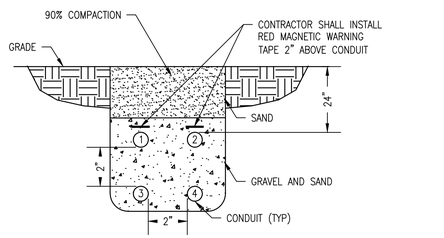
1 MANHOLE INSTALLATION DETAILS
TYPICAL



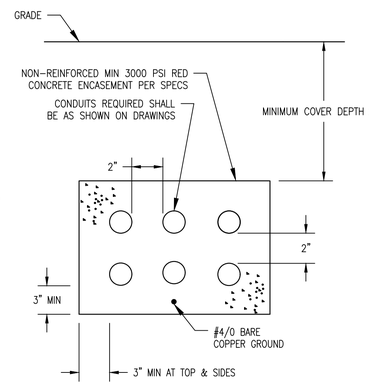
NOTES:

1. PULL BOX TO BE MADE WITH PRECAST POLYMER CONCRETE FIBERGLASS REINFORCED, STACKABLE WITH SELF-ALIGNING, REPLACEABLE EZ-NUT.
2. CONTRACTOR SHALL SIZE THE PULLBOXES BASED ON THE NUMBER OF CONDUITS. USE MANHOLES WHERE PULLBOX WIDTH/HEIGHT IS NOT SUFFICIENT TO ACCEPT ALL ENTERING/EXITING CONDUITS.

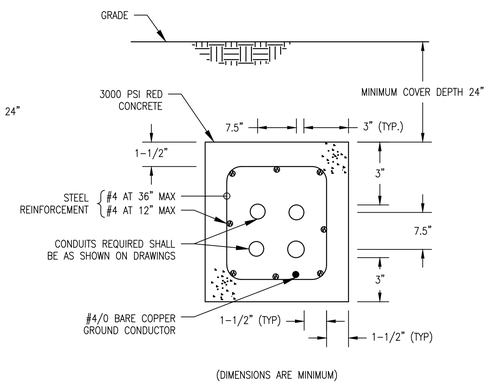
2 UNDERGROUND PULL BOX DETAIL



4 CONDUIT SECTION IN TRENCH INSTALLATION DETAIL



NON-REINFORCED DUCT BANK



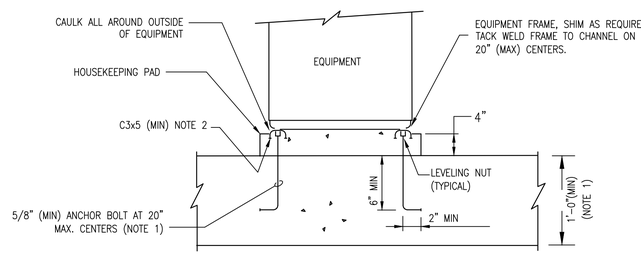
(DIMENSIONS ARE MINIMUM)

REINFORCED DUCT BANK

DUCT BANK NOTES:

1. ALL DUCT BANKS SHALL BE CONCRETE ENCASED. ALL DUCT BANKS CROSSING ROADS OR HEAVY TRAFFIC AREAS SHALL BE REINFORCED WITHIN 5 (FIVE) FEET OF TRAFFIC AREAS.
2. CONTRACTOR SHALL FIELD COORDINATE EXACT DUCT BANK ROUTING WITH PROCESS PIPING.

3 DUCT BANK INSTALLATION DETAILS



NOTES:
1. IF SLAB IS LESS THAN 12" THICK, ANCHOR BOLTS SHALL EXTEND THROUGH SLAB AND BE BACKED UP WITH 4" X 3/16" (MIN) SQUARE WASHERS.
2. CHANNELS SHALL BE LEVELED AT TIME CONCRETE IS CAST.

5 TYPICAL FLOOR MOUNTING
FOR MOTOR CONTROL CENTERS, CONTROL PANELS, SWITCHGEAR

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

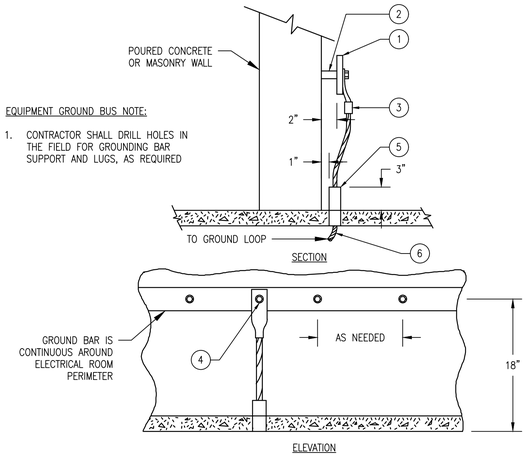
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL AND I&C
INSTALLATION DETAILS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

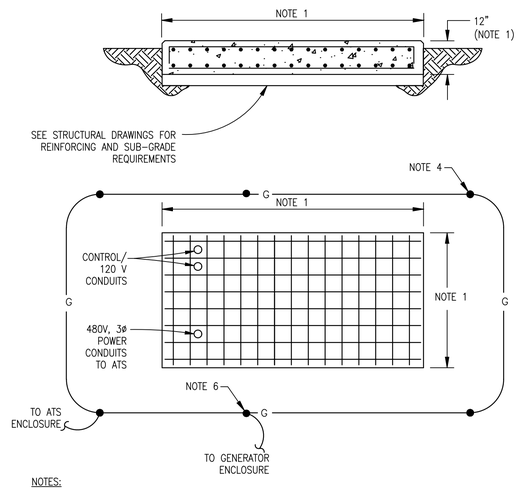
Sheet No.
DE-3



BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	1/4" X 3" HARD DRAWN COPPER BUS BAR – LENGTH AS REQUIRED	
2	A/R	1/2" HEX HEAD BOLT, LOCKWASHER AND PIPE SLEEVE	
3	1 EA.	COMPRESSION TYPE LUG	
4	A/R	1/2" HEX CAP SCREW, FLAT WASHER, LOCKWASHER & HEX NUT. ALL SILICON BRONZE	
5	1 EA.	1" DIAMETER SCH. 40 PVC CONDUIT WITH CONCRETE FILLED	
6	A/R	#4/0 AWG COPPER CONDUCTOR, INSULATED WHEN SPECIFIED	

A/R=AS REQUIRED

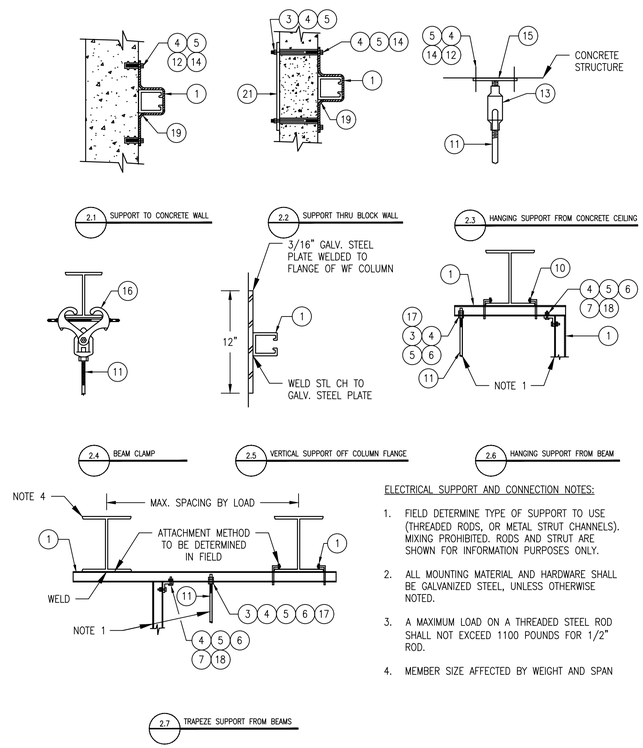
1 EQUIPMENT GROUND BUS INSTALLATION DETAILS



NOTES:

1. REVIEW DIMENSIONS OF GEN. SET, INCLUDING W.P. HOUSING, TO DETERMINE ACTUAL DIMENSIONS OF GEN. PAD. PAD SHALL BE INSTALLED AS RECOMMENDED BY THE GENERATOR MANUFACTURER.
2. PAD SHALL BE 1'-6" LARGER ON ALL SIDES THAN THE GENERATOR BASE AND ENCLOSURE.
3. VERIFY CONDUIT PENETRATIONS WITH GENERATOR MANUFACTURER.
4. PROVIDE FOUR (4) 10'X3/8" COPPER CLAD STEEL GROUND RODS AS SHOWN WITH #4 BARE COPPER GROUND WIRE AROUND THE GENERATOR PAD. CONNECT GROUND WIRE TO THE GENERATOR ENCLOSURE.
5. EXACT GENERATOR PAD SIZE SHALL BE DETERMINED BY THE GENERATOR MANUFACTURER'S SHOP DRAWING PRIOR TO INSTALLATION.
6. GENERATOR HOUSING SHALL BE GROUNDED, NOT THE NEUTRAL.

3 GENERATOR PAD AND GROUNDING DETAIL



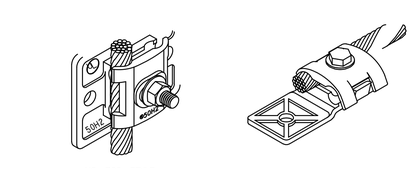
ELECTRICAL SUPPORT AND CONNECTION NOTES:

1. FIELD DETERMINE TYPE OF SUPPORT TO USE (THREADED RODS, OR METAL STRUT CHANNELS). MIXING PROHIBITED. RODS AND STRUT ARE SHOWN FOR INFORMATION PURPOSES ONLY.
2. ALL MOUNTING MATERIAL AND HARDWARE SHALL BE GALVANIZED STEEL, UNLESS OTHERWISE NOTED.
3. A MAXIMUM LOAD ON A THREADED STEEL ROD SHALL NOT EXCEED 1100 POUNDS FOR 1/2" ROD.
4. MEMBER SIZE AFFECTED BY WEIGHT AND SPAN

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	A/R	STRUT GALVANIZED STEEL CHANNEL 1-5/8" X 1-5/8"	
2	A/R	STRUT METAL FRAMING CHANNEL 1-5/8" X 3-1/4" (DOUBLE) IF REQ'D	
3	A/R	HEXAGON NUT	
4	A/R	FLAT WASHER OR CLEVIS WASHER	
5	A/R	LOCK WASHER	
6	A/R	SPRING NUT	
7	A/R	HEX HEAD CAP SCREW	
8	A/R	TRAY HOLD DOWN CLIP	
9	A/R	VERTICAL TRAY HANGER	
10	A/R	"U" BOLT BEAM CLAMP (ONE FOR EACH SIDE)	
11	A/R	THREADED ROD (SIZED TO SUIT CONDITIONS)	
12	A/R	CONCRETE INSERT (SIZED TO SUIT APPLICATION)	
13	A/R	THREADED ROD COUPLING	
14	A/R	GALVANIZED MACHINE BOLTS (LENGTH TO SUIT)	
15	A/R	NELSON TYPE STUD (SIZED TO SUIT)	
16	A/R	BEAM CLAMP	
17	A/R	FLANGE	
18	A/R	PLATE FITTING 90°	
19	A/R	U SHAPED STRUT FITTING	
20	A/R	SUPPORT ANGLE	
21	A/R	GALVANIZED FLAT STEEL PLATE-1/4" TH x 3" WIDE x LENGTH TO SUIT WITH TWO 9/16" DIA. HOLES	
22	A/R	ONE HOLE FLAT PLATE FITTING – FOR STRUT CHANNEL	

A/R=AS REQUIRED

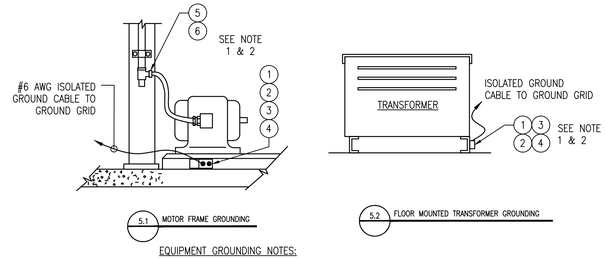
2 ELECTRICAL SUPPORT AND CONNECTION INSTALLATION DETAILS



NOTES:

1. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE CADWELD EXOTHERMIC TYPE.

4 TYPICAL BONDING LUGS AND PLATES



EQUIPMENT GROUNDING NOTES:

1. DRILL AND TAP (2) 3/8" U.N.C. HOLES IN EQUIPMENT OR USE NUT AND STAR WASHER ON INSIDE OF EQUIPMENT FRAME WHEN THICKNESS OF FRAME IS LESS THAN 3/8".
2. EQUIPMENT SURFACE MUST BE CLEANED TO BARE METAL AND CROUSE-HINDS TYPE STL CONDUCTING GREASE APPLIED PRIOR TO LUG ATTACHMENT

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	COMPRESSION LUG, 2 HOLE	
2	2	BOLT, HEX HD 3/8" UNC X 3/4" LONG	
3	2-4	WASHER STAR LOCK 3/8"	
4	0-2	NUT, HEX 3/8" UNC	
5	2	LIQUIDTIGHT CONNECTOR	
6	1	CONDENSATE DRAIN AND BREATHER	

5 EQUIPMENT GROUNDING INSTALLATION DETAILS

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 32513
ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

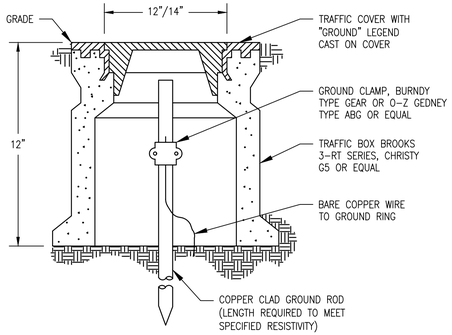
RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

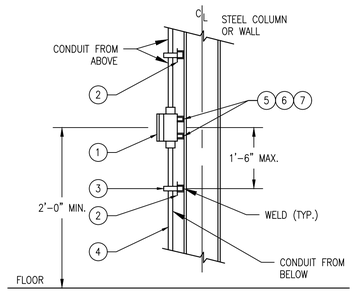
ELECTRICAL AND I&C INSTALLATION DETAILS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
DE-4



1 GROUND WELL INSTALLATION DETAIL



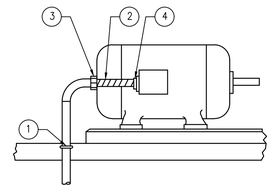
120V WATERTIGHT RECEPTACLE NOTE:

1. ALL FIELD WELDS TO BE 1/4" FILLET.

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
	1	20A, 120V, 3W, WEATHER-TIGHT DUPLEX RECEPTACLE, GROUNDING TYPE	
2	A/R	UNISTRUT P1000 (LENGTH A/R) OR EQUAL	
3	1	UNISTRUT CLAMP (3/4") OR EQUAL	
4	A/R	3/4" PVC COATED STEEL CONDUIT	
5	A/R	UNISTRUT P3300 (LENGTH A/R) OR EQUAL	
6	A/R	UNISTRUT SPRING NUTS	
7	A/R	BOLT & WASHER	

A/R=AS REQUIRED

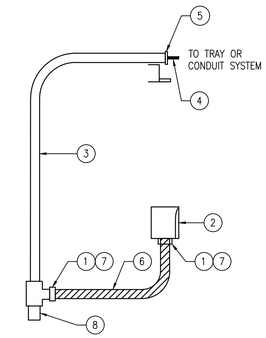
2 120V WATERTIGHT RECEPTACLE INSTALLATION DETAIL



BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	A/R	"U" CLAMP	
2	A/R	LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (6' MAX) (SUNLIGHT RESISTANT, PVC JACKETED)	
3	A/R	LIQUID-TIGHT COUPLING	
4	A/R	LIQUID-TIGHT CONNECTOR	

A/R=AS REQUIRED

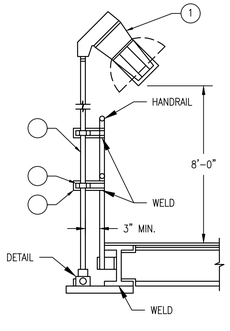
3 ELECTRIC MOTOR INSTALLATION DETAIL

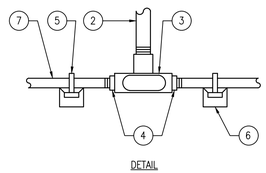


BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	A/R	WATERTIGHT FITTING	
2		DEVICE	
3	A/R	CONDUIT	
4	A/R	CONTROL CABLE TO TRAY	
5	A/R	INSULATED BUSHINGS	
6	A/R	LIQUIDTIGHT FLEXIBLE CONDUIT	
7	2	LIQUIDTIGHT CONNECTOR	
8	1	CONDENSATE DRAIN AND BREATHER	

A/R=AS REQUIRED

4 CONTINUOUS CONDUIT WITH FLEX AND DRAIN INSTALLATION DETAIL





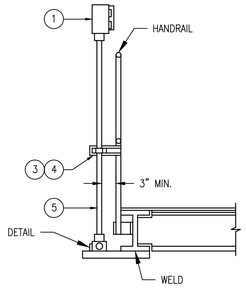
STANCHION FIXTURE NOTE:

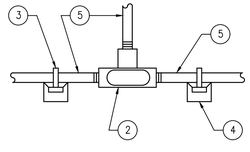
1. ALL FIELD WELDS TO BE 1/4" FILLET.

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	SEE LIGHTING FIXTURE SCHEDULE	
2	A/R	1 1/2" PVC COATED STEEL CONDUIT	
3	1	T-CONDULET 1 1/2" W/COVER & GASKET	
4	2	REDUCER 1 1/2" - 3/4"	
5	2	UNISTRUT CLAMP (3/4")	
6	A/R	UNISTRUT P1000 (LENGTH TO SUIT) OR EQUAL	
7	A/R	3/4" PVC COATED STEEL CONDUIT	
8	2	UNISTRUT CLAMP (1 1/2")	

A/R=AS REQUIRED

5 STANCHION FIXTURE INSTALLATION DETAILS





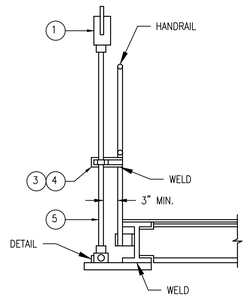
CONTROL STATION HANDRAIL NOTE:

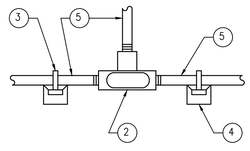
1. ALL FIELD WELDS TO BE 1/4" FILLET.

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	CONTROL STATION	
2	1	3/4" T-CONDULET W/COVER & GASKET	
3	3	UNISTRUT CLAMP (3/4")	
4	A/R	UNISTRUT P1000 (LENGTH A/R) OR EQUAL	
5	A/R	3/4" PVC COATED STEEL CONDUIT	

A/R=AS REQUIRED

6 CONTROL STATION HANDRAIL INSTALLATION DETAILS





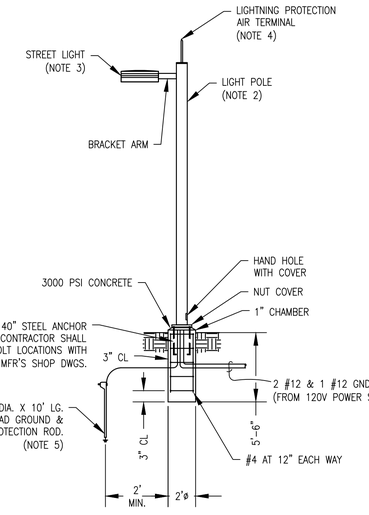
MOTOR DISCONNECT HANDRAIL NOTE:

1. ALL FIELD WELDS TO BE 1/4" FILLET.

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	DISCONNECT SWITCH	
2	1	3/4" T-CONDULET W/COVER & GASKET	
3	3	UNISTRUT CLAMP (3/4")	
4	A/R	UNISTRUT P1000 (LENGTH A/R) OR EQUAL	
5	A/R	3/4" PVC COATED STEEL CONDUIT	

A/R=AS REQUIRED

7 MOTOR DISCONNECT HANDRAIL INSTALLATION DETAILS



NOTES:

1. WIRING TO BE CONTINUOUS TO FIXTURE. NO SPLICING IN CONDUIT IS PERMITTED.
2. STREET LIGHT SHALL BE MOUNTED ON A SQUARE STRAIGHT ALUMINUM 15FT HIGH POLE LIGHT. POLE SHALL BE LITHONIA #SSA-20-5G-DM19AS-DDBXD WITH ALL THE REQUIRED ANCHORING AND MOUNTING ACCESSORIES.
3. STREET LIGHT ATTACHED TO THE TOP OF THE POLE SHALL BE A 102W LED LIGHTING FIXTURE LITHONIA #DSX1LED-P4-40K-70CRI-T2M-MVOLT-SPA5-DDBXD OR APPROVED EQUAL OR ALTERNATE ACCEPTABLE TO THE COUNTY.
4. #1/0 SOLID BARE COPPER GROUND ATTACHED TO POLE EVERY 2' WITH COPPER STAPLES. MOUNT 24" X 1/2" AIR TERMINAL AT TOP OF POLE TO EXTEND 20" ABOVE TOP OF POLE TO SERVE AS LIGHTNING PROTECTION. PROVIDE HEAVY DUTY VINYL UTILITY HALF-SHIELD OVER CABLE TO 10' ABOVE GRADE.
5. 3/4"X10' COPPER CLAD LIGHTNING PROTECTION & GROUND ROD WITH TOP 18" BELOW GRADE AT POLE. CADWELD LIGHTNING PROTECTION CABLE CONNECTIONS TO TOP OF ROD.

8 LIGHT POLE INSTALLATION DETAIL

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

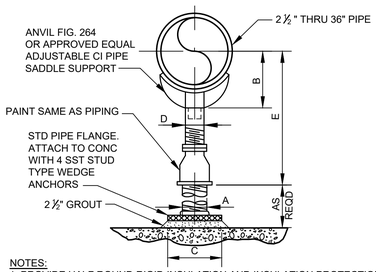
RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL AND I&C
INSTALLATION DETAILS

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

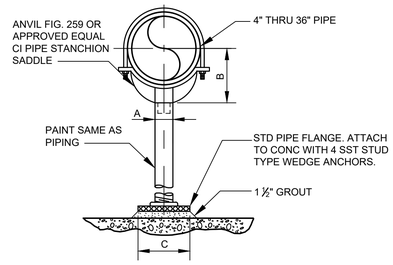
Sheet No.
DE-5



NOTES:
1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD, SIMILAR TO ANVIL FIGURE 167 OR APPROVED EQUAL, WHERE PIPING IS INSULATED.
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.

DIMENSION TABLE							
PIPE SIZE	A	B	C	D	E		WIDTH
					MIN	MAX	
2-1/2"	2-1/2"	3-1/2"	9"	1-1/2"	8"	13"	3"
3"	2-1/2"	3-3/4"	9"	1-1/2"	8-1/4"	13-1/4"	3"
3-1/2"	2-1/2"	4"	9"	1-1/2"	8-1/2"	13-1/2"	3"
4"	3"	4-1/4"	9"	2-1/2"	9-1/4"	14"	3 5/8"
5"	3"	4-7/8"	9"	2-1/2"	10"	14-3/4"	3 5/8"
6"	3"	5-1/2"	9"	2-1/2"	10-1/2"	15-1/4"	3 5/8"
8"	3"	6-7/8"	9"	2-1/2"	11-3/4"	16-1/2"	3 5/8"
10"	3"	8-1/2"	9"	2-1/2"	13-1/2"	18-1/4"	3 5/8"
12"	3"	9-15/16"	9"	2-1/2"	15"	19-3/4"	3 5/8"
14"	4"	10-15/16"	11"	3"	16-1/4"	20-3/4"	4 5/8"
16"	4"	12-3/8"	11"	3"	17-3/4"	22-1/4"	4 5/8"
18"	6"	13-7/8"	13-1/2"	3-1/2"	19-1/2"	24"	4 5/8"
20"	6"	15-3/8"	13-1/2"	3-1/2"	21"	25-1/2"	6 3/4"
24"	6"	17-15/16"	13-1/2"	4"	23-3/4"	28-1/4"	6 3/4"
30"	6"	21-5/16"	13-1/2"	4"	27"	31-1/2"	6 3/4"
36"	6"	24-1/2"	13-1/2"	4"	30-1/4"	34-3/4"	8 3/4"

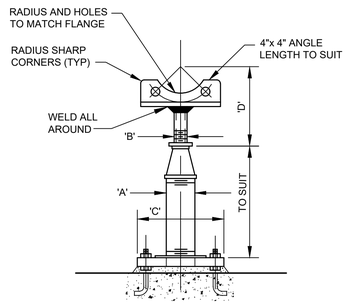
PIPE SUPPORT
N.T.S.



NOTES:
1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD, SIMILAR TO ANVIL FIGURE 167 OR APPROVED EQUAL, WHERE PIPING IS INSULATED.
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.

DIMENSION TABLE				
PIPE SIZE	A	B	C	WIDTH
4"	3"	4 3/16"	9"	3 5/8"
5"	3"	4 13/16"	9"	3 5/8"
6"	3"	5 7/16"	9"	3 5/8"
8"	3"	6 15/16"	9"	3 5/8"
10"	3"	8 7/16"	9"	3 5/8"
12"	3"	9 15/16"	9"	3 5/8"
14"	3"	10 1/2"	11"	6"
16"	3"	11 1/2"	11"	6"
18"	4"	13 1/2"	11"	6"
20"	4"	14 1/2"	13 1/2"	6"
24"	4"	17 1/2"	13 1/2"	6"
26"	4"	18 1/2"	13 1/2"	6"
30"	4"	20 5/8"	13 1/2"	6"
36"	8"	23 3/8"	16"	6"

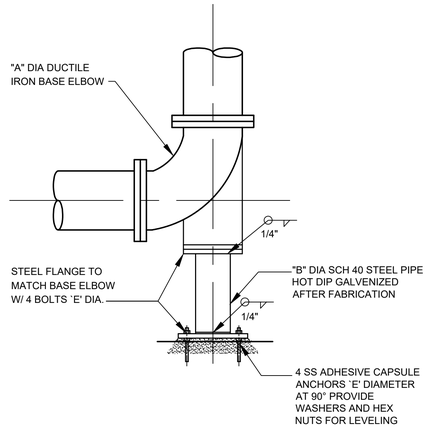
PIPE SUPPORT
N.T.S.



ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
10"	3"	2 1/2"	9"	14 5/8"	18 1/4"
12"	3"	2 1/2"	9"	15 5/8"	19 3/4"
14"	4"	3"	11"	18 5/8"	20 3/4"
16"	4"	3"	11"	19 7/8"	22 1/4"
18"	6"	3 1/2"	13 1/2"	21 1/4"	24"
20"	6"	3 1/2"	13 1/2"	23 1/4"	25 1/2"
24"	6"	4"	13 1/2"	26 1/2"	28 1/4"
30"	6"	4"	13 1/2"	29 5/8"	31 1/2"

NOTE: UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABICATED SUPPORT PIECE MAY BE UTILIZED, SHALL BE APPROVED BY THE ENGINEER.

PIPE SUPPORT
N.T.S.

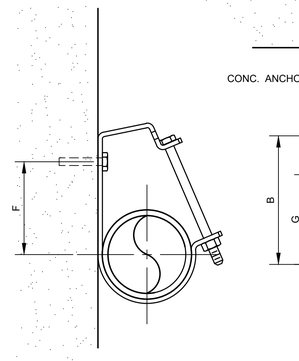


BASE BEND DETAIL
N.T.S.

ELBOW "A" DIA	DIMENSIONS IN INCHES			
	"B" DIA	"C" THICK	"D" SQ	"E" DIA
4"	2"	3/8"	6"	5/8"
6"	2-1/2"	3/8"	7"	5/8"
8"	4"	1/2"	9"	5/8"
10"	4"	1/2"	9"	5/8"
12"	6"	1/2"	11"	3/4"
14"	6"	1/2"	11"	3/4"
16"	6"	1/2"	11"	3/4"
18"	8"	1/2"	13-1/2"	3/4"
20"	8"	1/2"	13-1/2"	3/4"
24"	8"	1/2"	13-1/2"	3/4"
30"	10"	3/4"	16"	7/8"
36"	12"	3/4"	19"	7/8"
42"	16"	3/4"	23-1/2"	1"
48"	18"	3/4"	25"	1-1/8"

NOTES:
MATERIAL FINISH TO MATCH PIPE

BASE BEND DETAIL
NTS

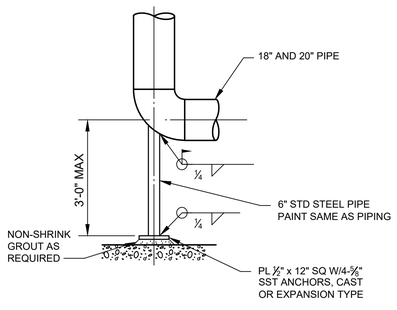


WALL MOUNTED

HANGING

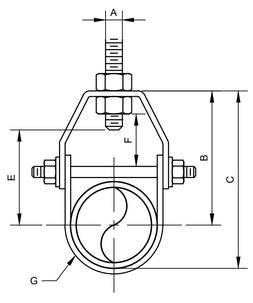
DIMENSION TABLE								
PIPE SIZE	A	B	C	D	E	F	G	H
1/2:	3/8"	2 5/8"	1/4"	1 3/4"	7/16"	1 1/2"	1 15/16"	1"
3/4"	3/8"	2 7/8"	1/4"	1 7/8"	7/16"	1 11/16"	2 1/8"	1"
1"	3/8"	2 15/16"	1/4"	1 15/16"	7/16"	1 13/16"	2 5/16"	1"
1 1/4"	3/8"	3 1/4"	1/4"	2"	7/16"	2 1/16"	2 5/8"	1"
1 1/2"	3/8"	3 9/16"	1/4"	2 3/16"	7/16"	2 7/16"	2 7/8"	1"
2"	3/8"	3 11/16"	1/4"	2 1/8"	7/16"	2 9/16"	3 1/16"	1"
2 1/2"	1/2"	4 7/16"	3/8"	2 7/16"	9/16"	3 3/16"	3 5/8"	1 1/4"
3"	1/2"	4 13/16"	3/8"	2 9/16"	9/16"	3 1/2"	4 1/16"	1 1/4"
4"	5/8"	6 1/8"	3/8"	3 3/16"	9/16"	4 5/8"	5 3/16"	1 1/4"
5"	5/8"	6 3/4"	3/8"	3 1/4"	9/16"	5 1/16"	5 3/4"	1 1/4"
6"	3/4"	7 3/4"	3/8"	3 9/16"	9/16"	5 13/16"	6 5/8"	1 1/4"

PIPE SUPPORT
N.T.S.



PIPE DIAMETER	SUPPORT DIAMETER	PLATE THICKNESS	ANCHOR BOLT DIAMETER
3"	2 1/2"	3/8"	3/8"
4" THRU 10"	3"	3/8"	1/2"
12" AND 14"	4"	3/8"	1/2"
16" AND 18"	6"	1/2"	5/8"

PIPE SUPPORT
N.T.S.



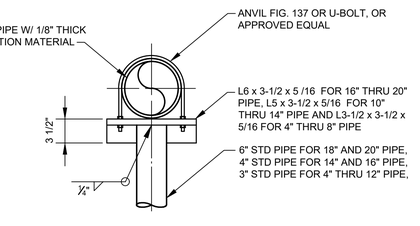
PIPE SIZE 3" TO 24"

STANDARD CLEVIS HANGERS ANVIL FIGURE 590
OR APPROVED EQUAL.

DIMENSION TABLE						
PIPE SIZE	A	B	C	E	F	G
3"	1/2"	5 1/16"	7 1/16"	4 3/16"	1 13/16"	1 1/4"
4"	5/8"	5 3/4"	8 3/16"	4 3/4"	1 15/16"	1 1/4"
6"	3/4"	7 1/8"	10 9/16"	5 15/16"	1 15/16"	1 1/2"
8"	3/4"	8 5/8"	13 3/16"	7 1/2"	2 1/4"	1 3/4"
10"	7/8"	10 1/8"	15 11/16"	8 3/4"	2 5/16"	1 3/4"
12"	7/8"	12 1/16"	18 11/16"	10 11/16"	2 7/8"	2"
14"	1"	13 1/4"	20 7/8"	11 5/16"	2 9/16"	2"
16"	1"	14 1/4"	22 15/16"	12 9/16"	2 7/16"	2 1/2"
18"	1"	16 7/8"	26 5/8"	15 3/16"	3 13/16"	2 1/2"
20"	1 1/4"	18 1/4"	29 1/16"	16 3/8"	3 13/16"	3"
24"	1 1/4"	20 5/16"	33 1/4"	18 3/8"	3 13/16"	3"

DUCTILE IRON PIPE

PIPE HANGER
N.T.S.



NOTE:
USE STANDARD AWWA RING FLANGE FOR BASE.

PIPE SUPPORT
N.T.S.

GEORGIA REGISTERED
Mbugua
NO. 039453
PROFESSIONAL
JULY 31, 2025
ENGINEER
MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

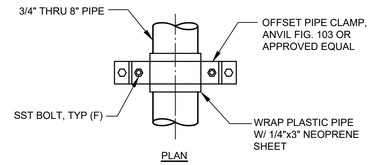
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MECHANICAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Mechanical Details.dwg

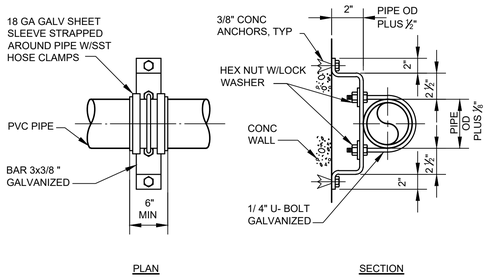
Sheet No.
DM-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Mechanical Details.dwg 08/01/2025 2:05pm aencarnacion

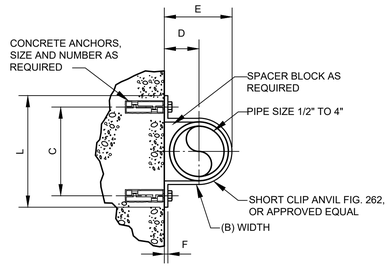


DIMENSION TABLE					
PIPE SIZE	W	B	D	BOLTØ F	WIDTH G
3/4"	8 3/4"	2 1/2"	7/16"	3/8"	1 1/4"
1"	9 1/4"	2 5/8"	7/16"	3/8"	1 1/4"
1 1/4"	9 3/4"	2 13/16"	7/16"	3/8"	1 1/4"
1 1/2"	10"	2 15/16"	7/16"	3/8"	1 1/4"
2"	11 1/4"	3 3/16"	9/16"	1/2"	1 1/4"
2 1/2"	11 3/4"	3 7/16"	9/16"	1/2"	1 1/4"
3"	12 7/8"	3 3/4"	9/16"	1/2"	1 1/4"
4"	13 7/8"	4 1/4"	9/16"	1/2"	1 1/2"
5"	15 5/8"	4 3/4"	1 1/16"	5/8"	2"
6"	16 3/4"	5 5/16"	1 1/16"	5/8"	2"
8"	18 3/4"	6 5/16"	1 1/16"	5/8"	2"

PIPE SUPPORT
N.T.S.



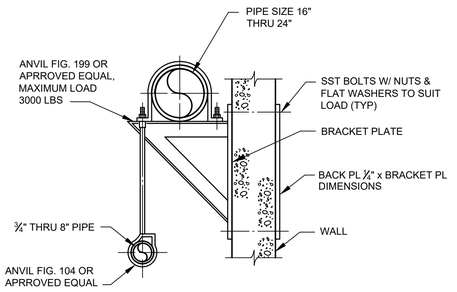
PIPE SUPPORT
N.T.S.



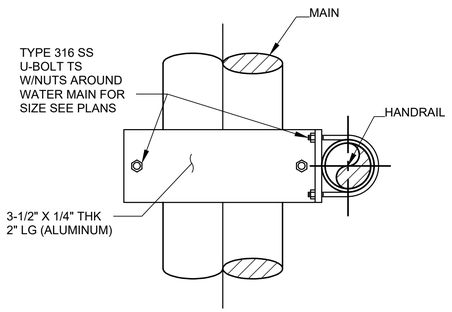
NOTE: FOR VERTICAL PIPES ONLY.

DIMENSION TABLE						
PIPE SIZE	L	B	C	D	E	F
1/2"	4"	1 1/4"	2 3/4"	1/2"	1 1/8"	1/8"
3/4"	4 3/8"	1 1/4"	3 1/8"	11/16"	1 7/16"	1/8"
1"	4 3/4"	1 1/4"	3 1/2"	11/16"	1 5/8"	1/8"
1 1/4"	5"	1 1/4"	3 3/4"	1 1/16"	2 1/8"	1/8"
1 1/2"	5 3/8"	1 1/4"	4 1/8"	1 3/8"	2 1/2"	1/8"
2"	6 3/8"	1 1/4"	5 1/8"	1 1/4"	2 3/4"	1/8"
2 1/2"	6 13/16"	1 1/2"	5 9/16"	1 3/4"	3 5/8"	1/4"
3"	7 5/16"	1 1/2"	6 1/16"	1 7/8"	4"	1/4"
3 1/2"	7 13/16"	1 1/2"	6 9/16"	2 3/16"	4 5/8"	1/4"
4"	8 3/8"	1 1/2"	7 1/8"	2 3/8"	5"	1/4"

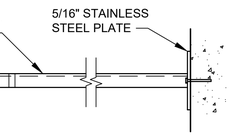
PIPE SUPPORT
N.T.S.

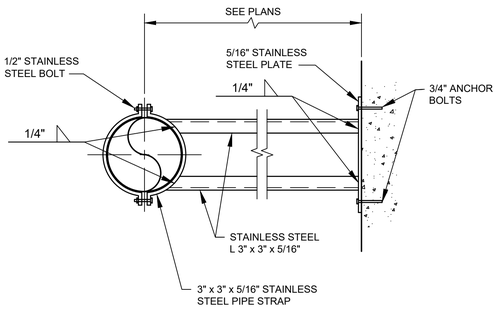


PIPE SUPPORT
N.T.S.



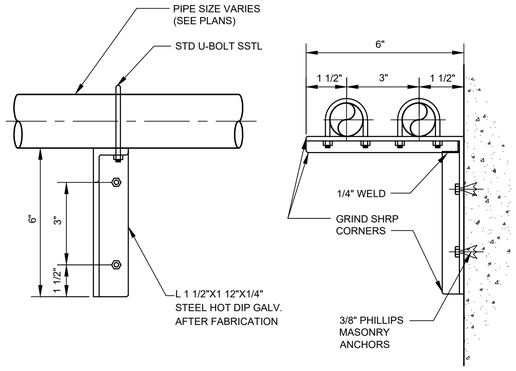
PIPE SUPPORT
NTS



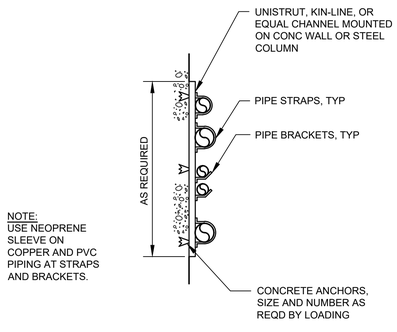


PIPE SUPPORT
N.T.S.

NOTE:
PIPE SUPPORT TO BE USED FOR LATERAL SUPPORT OF VERTICAL PIPE ONLY.



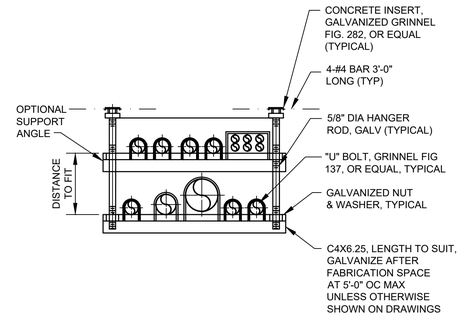
PIPE SUPPORT
N.T.S.



NOTE:
USE NEOPRENE SLEEVE ON COPPER AND PVC PIPING AT STRAPS AND BRACKETS.

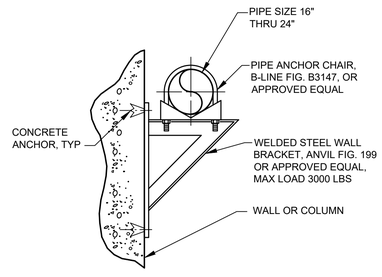
PIPE SIZES 1/2" THRU 4"

STACKED PIPE WALL SYSTEM
N.T.S.



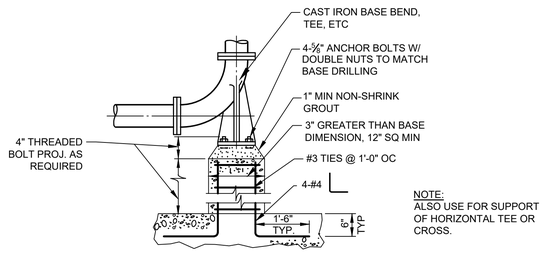
NOTES:
WHEN USED WITH PVC OR FIBERGLASS PIPE PROVIDE GALVANIZED STEEL SHIELD AROUND PIPE AT "U" BOLT, W/ LOOSE FIT, WRAP COPPER TUBES W/ 2" WIDE STRIP RUBBER FABRIC WHERE SUBMERGED OR LOCATED OVER WATER, STEEL SHIELDS, BRACKETS, `U' BOLTS, AND BOLTS ARE TO BE SS TYPE 316

PIPE HANGER
N.T.S.



NOTE:
HOT DIP GALVANIZE AFTER FABRICATION.

PIPE SUPPORT - HEAVY
N.T.S.



NOTES:
1. SPACE SUPPORTS TO SUIT LOAD.

2. ON STEEL COLUMNS SECURE SUPPORTS WITH GALVANIZED STEEL NUTS AND BOLTS AS REQUIRED.

PIPE SUPPORT
N.T.S.

NOTE:
ALSO USE FOR SUPPORT OF HORIZONTAL TEE OR CROSS.

BASE BEND DETAIL
N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

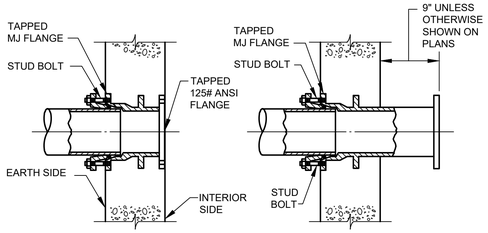
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MECHANICAL STANDARD DETAILS

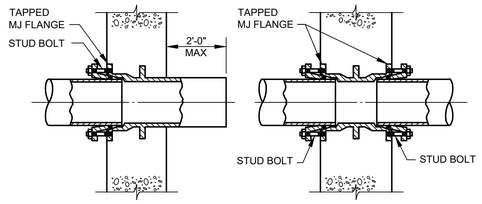
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111 - Mechanical Details.dwg

Sheet No.
DM-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Mechanical Details.dwg 08/01/2025 2:05pm aencarnacion



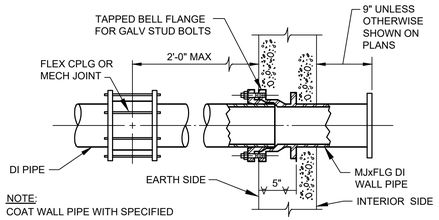
MJ X FLUSH FLG | MJ X FLG



MJ X PE | MJ X MJ

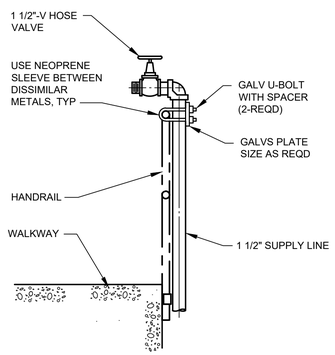
DUCTILE IRON WALL PIPES

N.T.S.



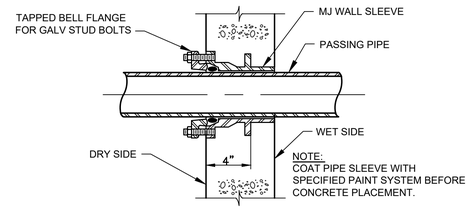
WALL PIPE

N.T.S.

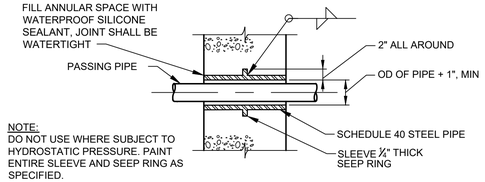


EXTERIOR HOSE VALVE

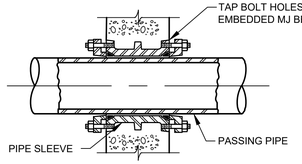
N.T.S.



TYPE 'A' PIPE SLEEVE



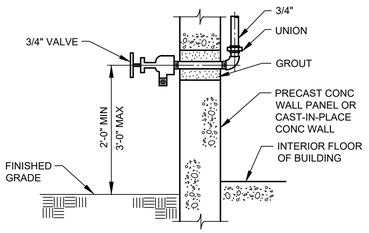
TYPE 'B' PIPE SLEEVE



TYPE 'C' PIPE SLEEVE MJ X MJ

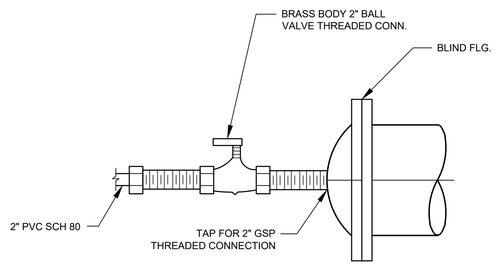
PIPE SLEEVES

N.T.S.



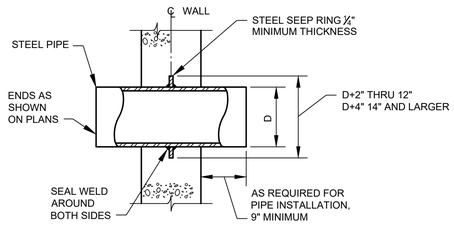
EXTERIOR WALL HOSE VALVE

N.T.S.



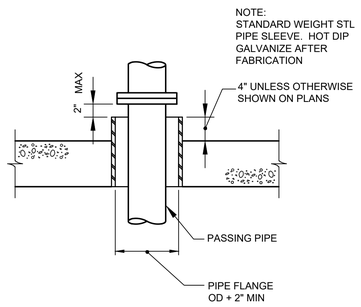
FLUSHING CONNECTION

N.T.S.



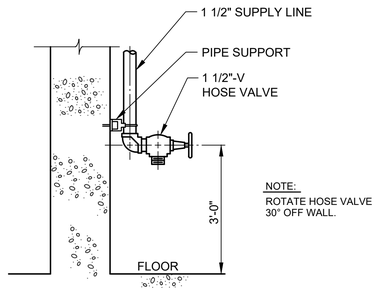
STEEL WALL PIPE

N.T.S.



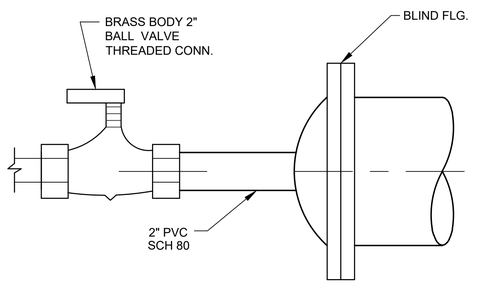
FLOOR SLEEVE

N.T.S.



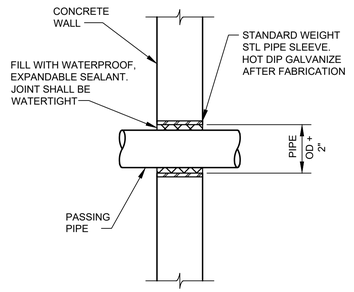
INTERIOR HOSE VALVE

N.T.S.



TYPICAL TAPPING CONNECTION

N.T.S.



NOTE: COAT WALL SLEEVE WITH SPECIFIED PAINT SYSTEM BEFORE CONCRETE PLACEMENT.

WALL SLEEVE

N.T.S.

GEORGIA REGISTERED No. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MECHANICAL STANDARD DETAILS

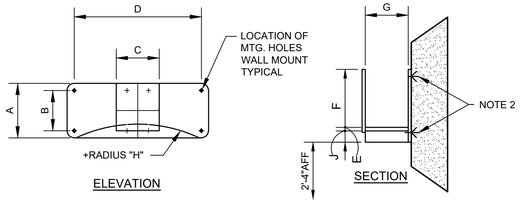
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Mechanical Details.dwg

Sheet No.
DM-3

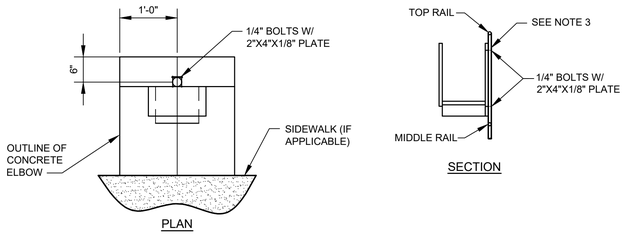
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Mechanical Details.dwg 08/01/2025 2:06pm aencarnacion

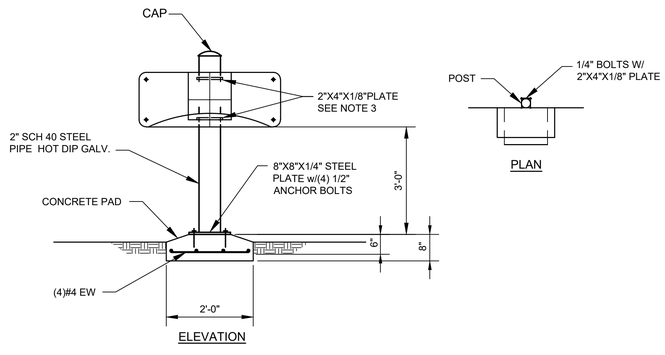
RACK TYPE	DIMIENSIONS IN INCHES								
	A	B	C	D	E	F	G	H	I
TYPE A-3/4" & 1" HOSE	10 1/2	9	9	18	3	6	7 1/2	9 3/4	1 1/2
TYPE AB-1 1/2" HOSE	14	12	12	24	4	8	10	13	2

NOTES:
1. HOSES RACKS SHALL BE FABRICATED FROM 3/16" 6061-T6 ALUMINUM ALLOY PLATE.
2. ATTACH TO CONCRETE WALL W/(4) 1/4" STAINLESS STEEL STUD TYPE WEDGE ANCHORS
3. ATTACH TO VERTICAL HANDRAIL OR INDIVIDUAL POST W/PLATES AND (4) 1/4" STAINLESS STEEL BOLTS. USE LOCK WASHERS UNDER NUTS.
4. ATTACH TO STEEL COLUMN W/(4) 1/4" ROUND HEADED BOLTS. ONE IN EACH CORNER. INSERT DOUBLE SPACER NUTS BETWEEN COLUMN AND HOSE RACK. USE LOCAL WASHERS UNDER NUTS.
5 PROVIDE HOSE RACK AT EACH YARD HYDRANT.



WALL MOUNTED

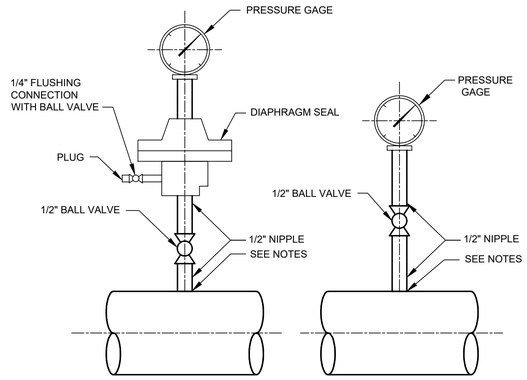




POST MOUNTED

HOSE RACK DETAIL

N.T.S.



NOTES:

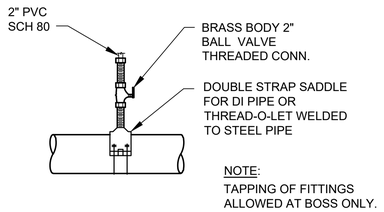
1. FOR STEEL GALV. AND PVC 2 1/2" AND SMALLER USE A BUSHING IN A TEE
2. FOR DUCTILE IRON, ALL SIZES, USE DIRECT PIPE TAP(1" MAX. TAP SIZE)
3. FOR FRP, ALL SIZES, USE PIPE SADDLE W/BUSHING.
4. FOR STEEL AND STAINLESS STEEL PIPES 3" AND LARGER, AND PRESSURE VESSELS, USE THREAD-O-LET
5. PROVIDE PRESSURE SENSOR W/GAGE OR SWITCH FOR POSITIVE DISPLACEMENT PUMP INSTALLATIONS.

PRESSURE GAUGE MOUNTING DETAIL

N.T.S.

CHEMICAL DIFFUSER

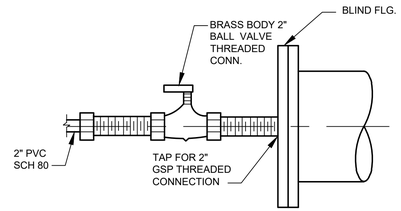
NTS



NOTE:
TAPPING OF FITTINGS ALLOWED AT BOSS ONLY.

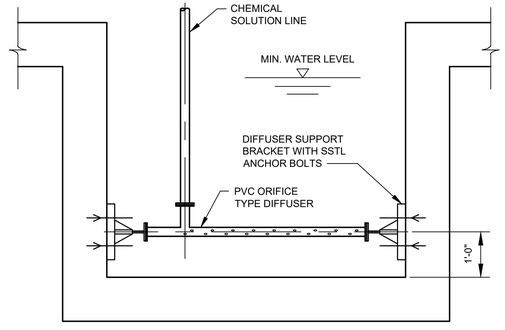
FLUSHING CONNECTION (TYPE 1)

N.T.S.



FLUSHING CONNECTION (TYPE 2)

N.T.S.



CHEMICAL DIFFUSER DETAIL

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

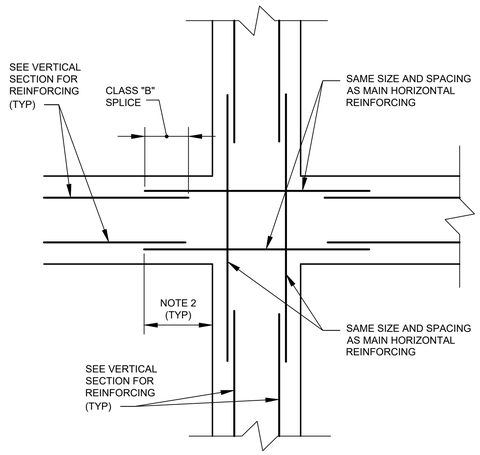
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MECHANICAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Mechanical Details.dwg

Sheet No.
DM-4

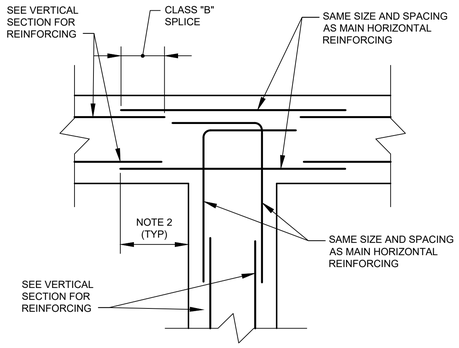
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Mechanical Details.dwg 08/01/2025 2:06pm aencarnacion



NOTES:
1. PROVIDE ALL CLASS "B" SPLICE
2. DISTANCE EQUAL TO CLASS "B" SPLICE

TYPICAL WALL INTERSECTION

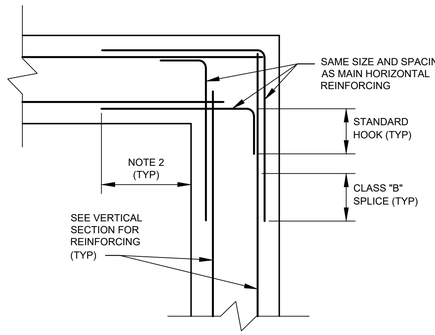
N.T.S.



NOTES:
1. PROVIDE ALL CLASS "B" SPLICE
2. DISTANCE EQUAL TO CLASS "B" SPLICE

TYPICAL WALL INTERSECTION

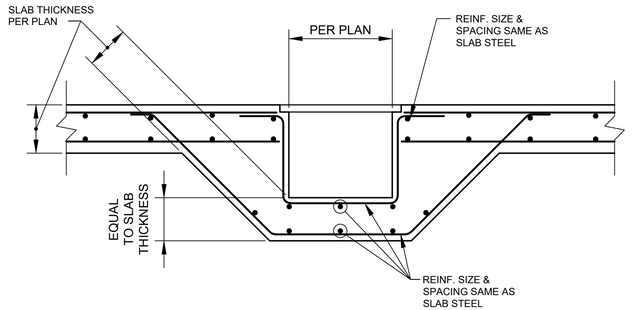
N.T.S.

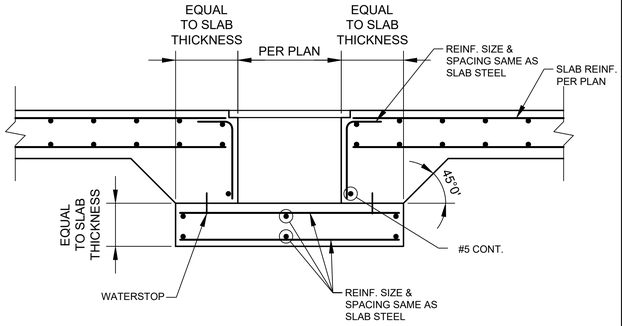


NOTES:
1. PROVIDE ALL CLASS "B" SPLICE
2. DISTANCE EQUAL TO CLASS "B" SPLICE

TYPICAL WALL CORNER

N.T.S.

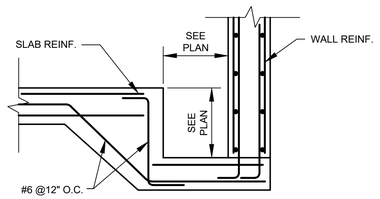




ALTERNATE LAYOUT

SECTION THRU SLAB TRENCH

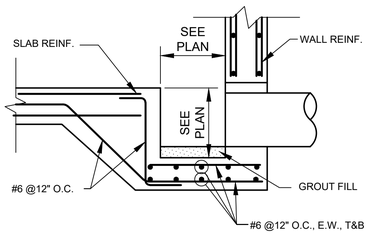
N.T.S.



COORDINATE SIZE OF SUMPS DETAILED W/PUMP SUPPLIERS.

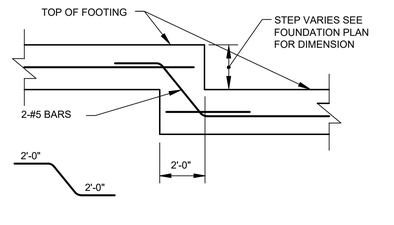
SUMP DETAIL

NTS



SUMP WITH OUTLET PIPE DETAIL

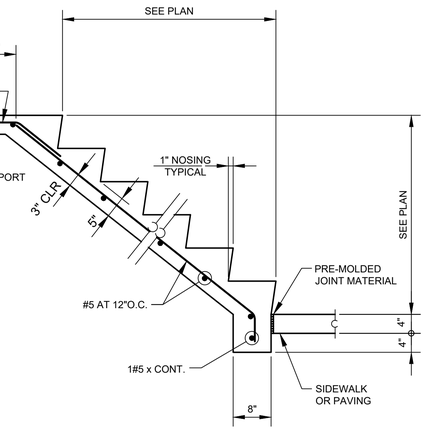
NTS



SEE FOUNDATION PLAN FOR LOCATION SYMBOL

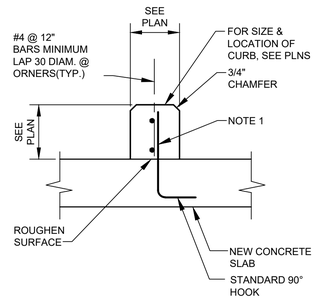
TYPICAL STEPPED FOOTING

NTS



TYP. STAIR ON GRADE DETAIL

N.T.S.

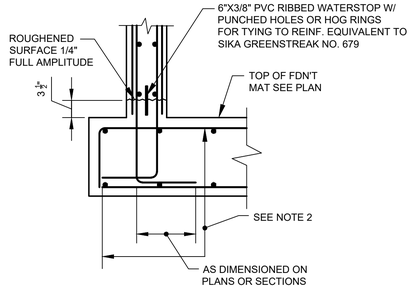


NOTE:

1. #4 @ 12 INCHES O.C. MAXIMUM SPACING OR AS SHOWN ON THE STRUCTURAL PLANS.

CONCRETE CONTAINMENT CURB (TYPE 1)

N.T.S.



NOTES:

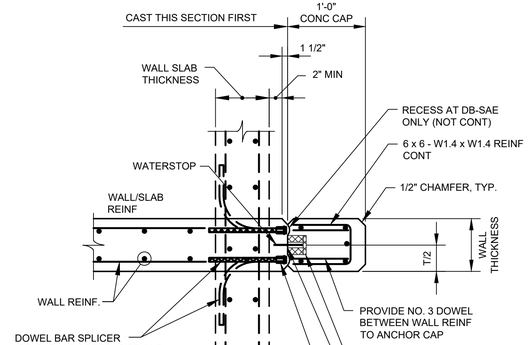
1. UNLESS OTHERWISE NOTED ON PLANS OR SECTION THE DOWEL SIZE AND SPACING SHALL MATCH THE VERTICAL WALL REINFORCEMENT.

2. DEVELOPMENT LENGTH (id) BUT NOT LESS THAN 30 BAR DIAMETERS AND NOT LESS THAN A STANDARD HOOK FOR BOTTOM HORIZONTAL LEG. IF NOT OBTANIBLE TURN BOTTOM HORIZONTAL LEG TO THE RIGHT.

3. CLASS "B" SPLICE BUT NOT LESS THAN 30 BAR DIAMETERS AND NOT LESS THAN A STANDARD HOOK FOR BOTTOM HORIZONTAL LEG. IF NOT OBTANIBLE THEN PROVIDE STANDARD HOOK ON DISCONTINUOUS END BARS.

EXTERIOR WALL AT BASE MAT

N.T.S.



NOTE:
FOR WALL WITH TWO CURTAINS OF REINFORCEMENT. WALLS WITH ONE CURTAIN OF REINFORCEMENT SIMILAR.

WALL / SLAB FUTURE EXPANSION

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

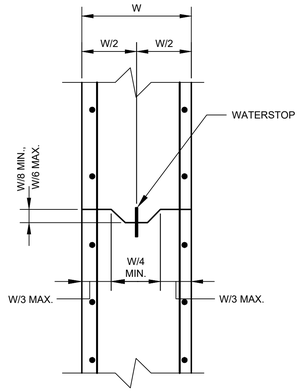
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

Sheet No.
DS-1

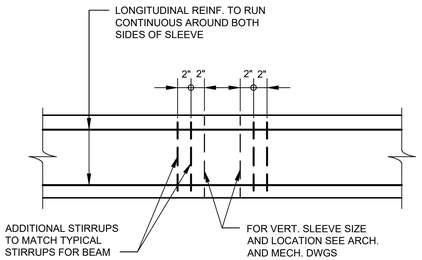
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion



W=WALL WIDTH

TYPICAL HORIZONTAL & VERTICAL CONSTRUCTION JOINT DETAIL

N.T.S.



NOTES:

1. NO ALUMINUM PIPE SHALL BE EMBEDDED IN CONCRETE.

2. VERTICAL SLEEVES MAY NOT BE GREATER IN OUT-SIDE DIAMETER THAN 1/3 OF THE BEAM WIDTH.

3. SLEEVES SHALL NOT BE PLACED CLOSER THAN 3 DIAMETERS OR WIDTHS ON CENTER.

4. STEEL SLEEVES SHALL NOT BE THINNER THAN STANDARD SCHEDULE 40 STEEL PIPE.

TYPICAL BEAM VERTICAL SLEEVE PENETRATION DETAIL

N.T.S.

CLEAR CONCRETE COVER FOR CAST-IN-PLACE CONCRETE OVER REINFORCEMENT (INCHES)

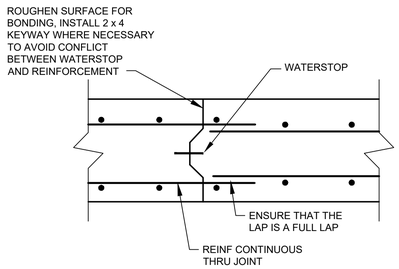
MEMBER	EXPOSURE CONDITIONS				
	AIR	WEATHER	AIR OVER LIQUID	EARTH OR STONE	LIQUIDS
FOOTINGS AND FOUNDATION MATS	2"	2"	-	2" * 3"	2"
PILE CAPS #	2"	2"	-	2"	2"
WALLS	2"	2"	2"	2"	2"
JOISTS, BEAM STIRUPPS AND COLUMN TIES	1 1/2"	2"	2"	2" * 3"	2"
FRAMED SLABS - EACH FACE	1 1/2"	2"	2"	2"△	2"
SLABS ON GROUND	-	2"	-	2"△	2"

* TOP FACE AND SIDES UNLESS EARTH FORMED BOTTOM FACE

△ BOTTOM COVER IS INDICATED ON DRAWINGS

COVER FOR CAST-IN-PLACE CONCRETE OVER REINFORCEMENT

N.T.S.

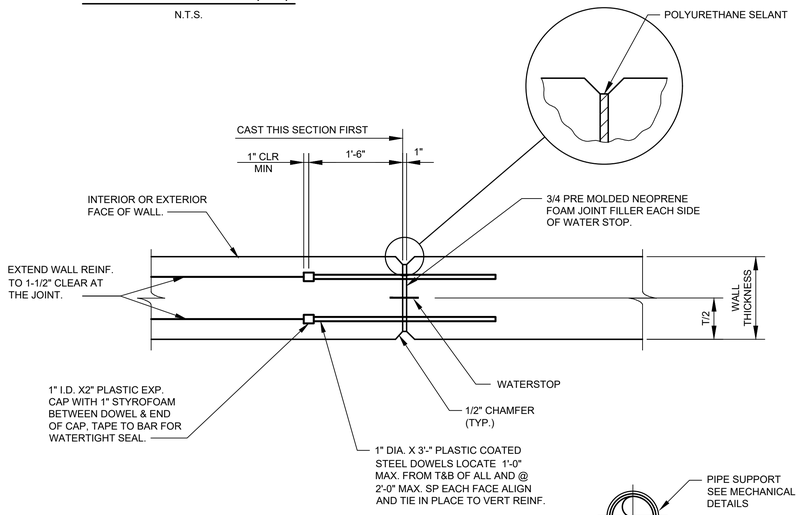


NOTES:

1. KEYWAY NOT RECOMMENDED WHERE LOAD TRANSFER IS REQUIRED (FOR SLAB).
2. IN AREAS SUBJECTED TO HARD-WHEELED TRAFFIC AND/OR HEAVY LOADING AND STEEL IS INTERRUPTED JOINTS WITH DOWELS ARE RECOMMENED.

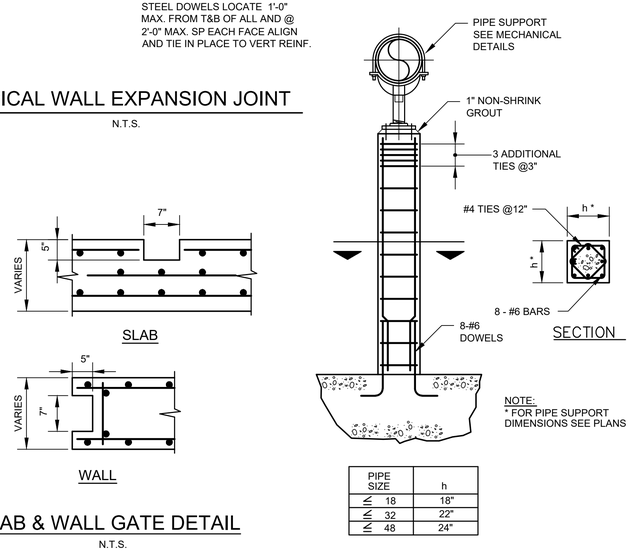
TYPICAL WALL OR SLAB CONSTRUCTION (CJ)

N.T.S.



TYPICAL WALL EXPANSION JOINT

N.T.S.



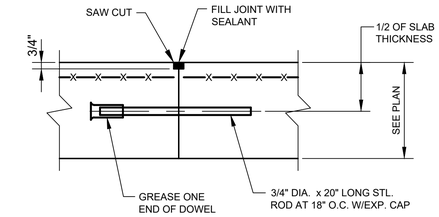
PIPE SIZE	h
≦ 18	18"
≦ 32	22"
≦ 48	24"

SLAB & WALL GATE DETAIL

N.T.S.

PIPE SUPPORT

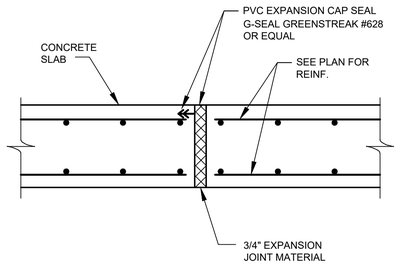
N.T.S.



* ALTERNATE TO SAW CUT - USE MIN. 24 GA. PREFORMED METAL KEY WITH REMOVEABLE CAP FOR SEALANT.

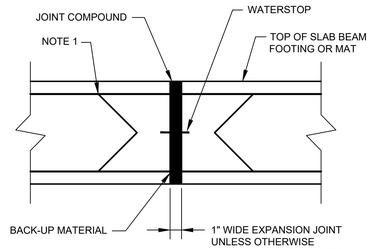
SLAB CONTROL DETAIL JOINT

N.T.S.



SLAB EXPANSION JOINT DETAIL

N.T.S.



NOTES:

1. SECURE ALL WATERSTOP EDGES BY TIE WIRE FROM LOOPS TO ADJACENT REINFORCEMENT EVERY 12" ALONG EACH EDGE BOTH SIDES

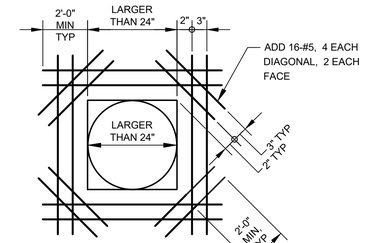
2. JOINT COMPOUND W X 1/2- INCH DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND.

3. JOINT COMPOUND TO BE CARRIED ONE-FOOT MINIMUM BELOW FINISH GRADE ON EARTH SIDE OF SLABS, BEAMS, FOOTINGS, AND MATS.

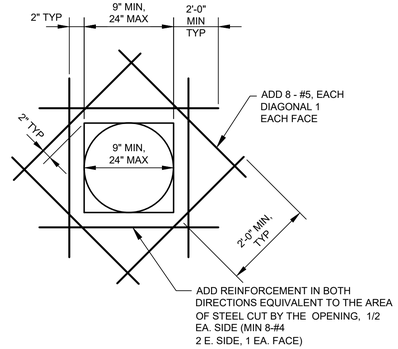
4. JOINT COMPOUND TO BE CARRIED VERTICALLY DOWN SIDES TO BOTTOM OF ELEVATED SLABS AND BEAMS WHICH ARE EXPOSED TO VIEW.

SECTION-EXPANSION JOINT WITH WATERSTOP FOR SLAB, FOOTINGS AND FOUNDATION MATS.

N.T.S.

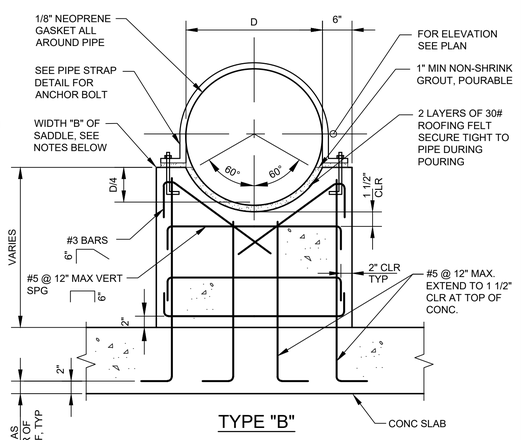


ADD REINFORCEMENT IN BOTH DIRECTIONS EQUIVALENT TO THE AREA OF STEEL CUT BY THE OPENING, 1/2 EA. SIDE (MIN. OF 16-#5, 4 EACH SIDE, 2 EACH FACE)



TYPICAL REINFORCEMENT AT OPENINGS

N.T.S.



TYPE "B"

D PIPE SIZE	B WIDTH
UP TO 24"	8"
30" TO 42"	10"
48" & LARGER	12"

NOTES:

FOR "B" = 10" OR THICKER, USE 2 LAYERS OF REINF, TURN HORIZ BARS 90° TO HOOK AROUND VERTS 1 1/2" CLR OF CONCRETE

CONCRETE PIPE SUPPORT

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

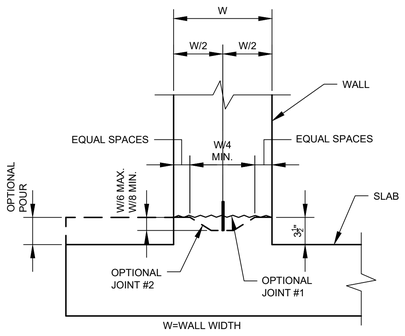
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111 - Structural Details.dwg

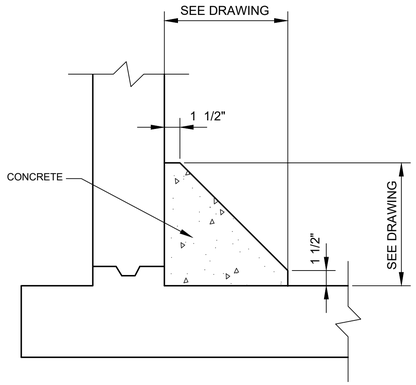
Sheet No.
DS-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion



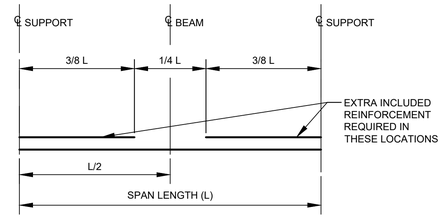
TYPICAL CONSTRUCTION JOINT DETAIL

N.T.S.

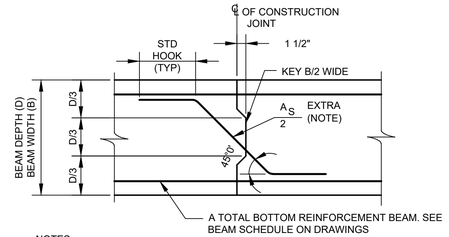


TYPICAL FILLET DETAIL

N.T.S.



PLAN VIEW



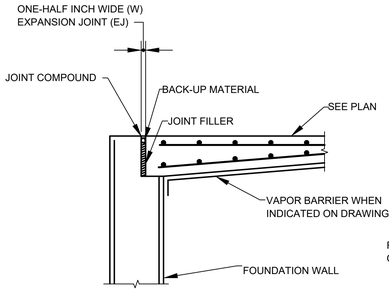
NOTES:

1. IF CONSTRUCTION INTERSECTS A BEAM OUTSIDE MIDDLE QUARTER OF ITS SPAN LENGTH, PROVIDE EXTRA INCLINED REINFORCEMENT WHICH HAS AN AREA NOT LESS THAN 50% OF TOTAL BOTTOM REINFORCEMENT IN BEAM.

2. TOP OF EXTRA INCLINED REINFORCEMENT SLOPED TOWARD NEAREST SUPPORT.

CONSTRUCTION JOINT IN BEAM

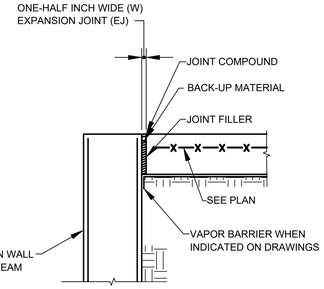
N.T.S.



NOTE:
JOINT COMPOUND W X W/2 DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND. MINIMUM JOINT COMPOUND DEPTH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

SECTION EXPANSION JOINT IN FLOOR SLAB ON GROUND AT DOORWAY

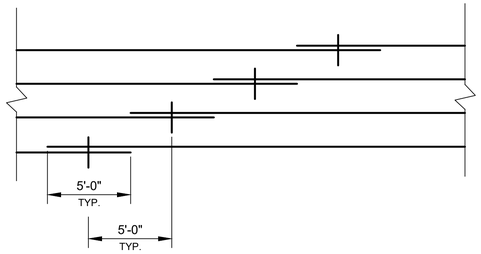
N.T.S.



NOTE:
JOINT COMPOUND W X W/2 DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND. MINIMUM JOINT COMPOUND DEPTH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

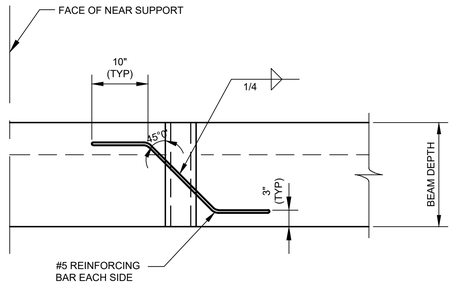
EXPANSION JOINT IN FLOOR SLAB ON GROUND AT FOUNDATION WALL OR GROUND BEAM

N.T.S.



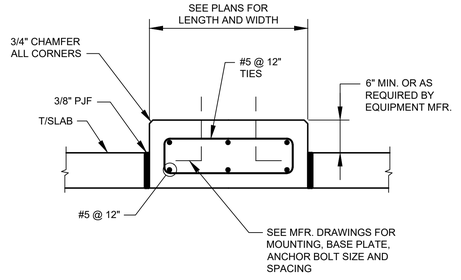
TYPICAL HORIZONTAL STEEL SPLICE DETAIL AT CIRCULAR TANKS

N.T.S.



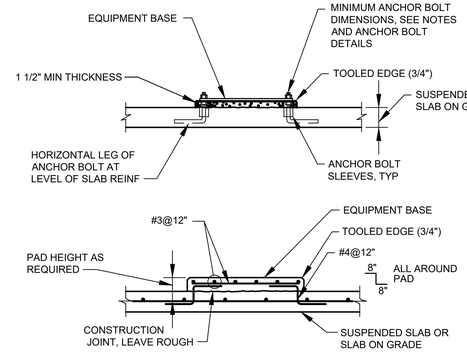
SLEEVE DETAIL FOR VERTICAL CONDUIT THROUGH BEAM

N.T.S.



TYPICAL BASE PAD ON GRADE

N.T.S.

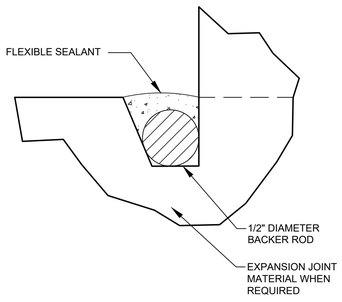


EQUIPMENT BASE NOTES

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE PAD IS BEING POURED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.

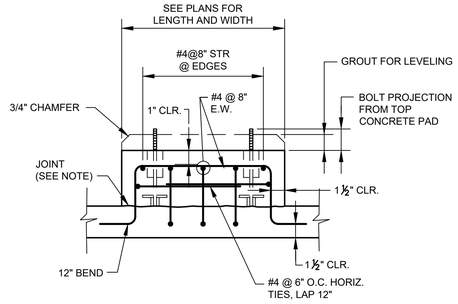
EQUIPMENT PADS

N.T.S.



JOINT SEALANT

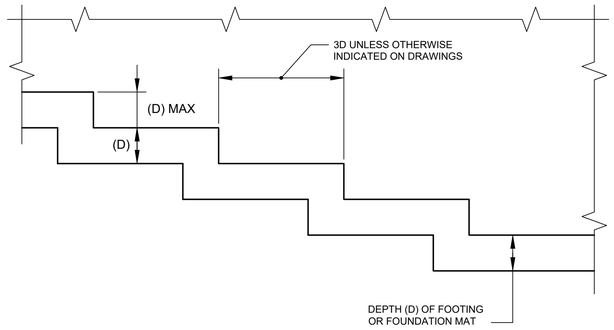
N.T.S.



NOTE: ROUGHEN TOP SURFACE BY BROOMING OFF LAITANCE BEFORE FINAL SET OF CONCRETE.

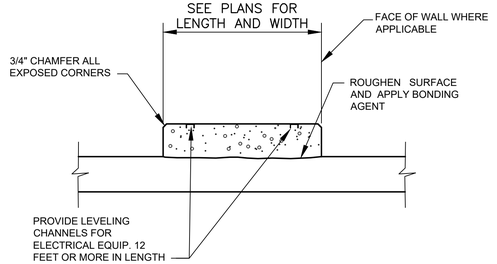
EQUIPMENT FOUNDATION ON ELEVATED SLAB

N.T.S.



ELEVATION- STEPPED WALL FOOTING OR FOUNDATION

N.T.S.



TYPICAL MCC PAD DETAIL

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

RINDT ENGINEERING + ENVIRONMENTAL

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

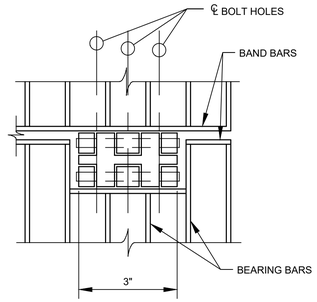
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

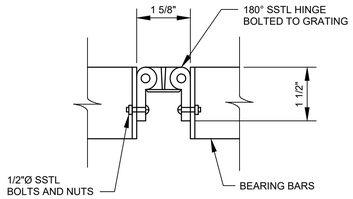
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

Sheet No.
DS-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion



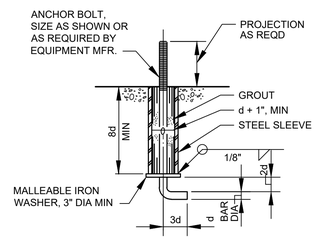
PLAN

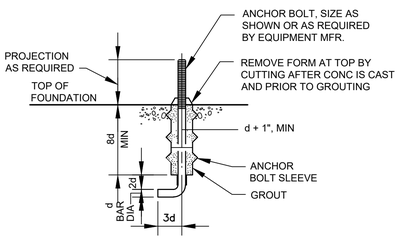


SECTION

ALUMINUM GRATING HINGE

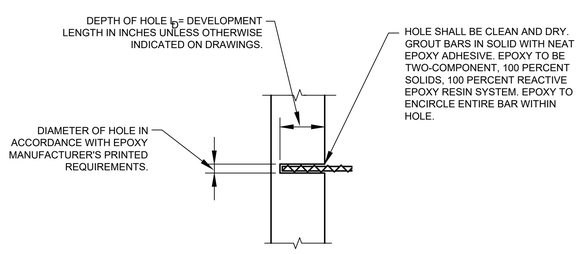
N.T.S.





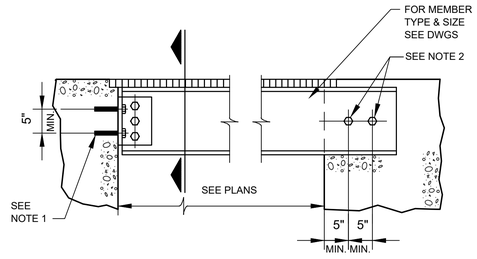
ANCHOR BOLTS

N.T.S.

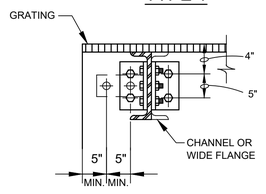


DOWEL DETAIL

N.T.S.



TYPE 1 TYPE 2

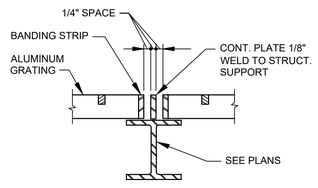


SECTION

NOTES:
1. 5/8" DIA CONCRETE ANCHORS (4 REQD)
2. 5/8" DIA CONCRETE ANCHORS (2 REQD)

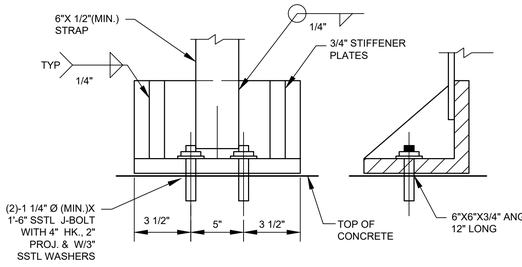
GRATING SUPPORT CONNECTION

NTS



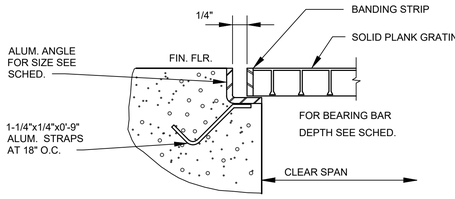
GRATING SUPPORT

N.T.S.



PIPE STRAP DETAIL

N.T.S.



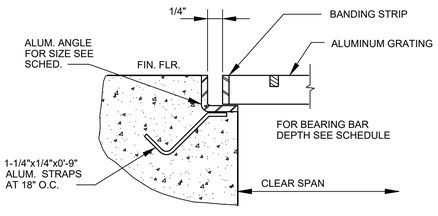
ALUMINUM SURFACES EMBEDDED IN OR IN CONTACT WITH CONC SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645.

CLEAR SPAN	BEARING BAR DEPTH	ANGLE SIZE
LESS THAN 3'-0"	1"	L 1-1/2x1-1/2x1/4
3'-0" TO 4'-0"	1-1/4"	L 1-3/4x1-3/4x1/4
4'-1" TO 5'-0"	1-1/2"	L 2x2x1/4
5'-1" TO 6'-0"	2"	L 2-1/2x2-1/2x1/2

MINIMUM LIVE LOAD - 150 PSF
ADDITIONAL SUPPORTS ARE REQUIRED FOR SPANS SHOWN OVER 6'-0".
CONTRACTOR/GRATING SUPPLIER SHALL ADD SUPPORT MEMBERS AS REQUIRED SUCH THAT NO SPAN IS GREATER THAN 6'-0".

ALUMINUM SOLID PLANK DETAIL

N.T.S.



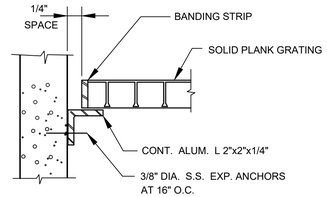
ALUMINUM SURFACES EMBEDDED IN OR IN CONTACT WITH CONC SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645.

CLEAR SPAN	BEARING BAR DEPTH	ANGLE SIZE
LESS THAN 3'-0"	1-1/4"	L 1-1/2x1-1/2x1/4
3'-0" TO 4'-0"	1-1/2"	L 1-3/4x1-3/4x1/4
4'-1" TO 5'-0"	1-3/4"	L 2x2x1/4
5'-1" TO 6'-0"	2"	L 2-1/2x2-1/2x1/2
6'-1" TO 7'-0"	2-1/2"	L 3x3x1/2

MINIMUM LIVE LOAD - 100 PSF

ALUMINUM GRATING DETAIL

N.T.S.



GRATING SUPPORT AT WALL

ALUMINUM SURFACES EMBEDDED IN OR IN CONTACT WITH CONC SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645.

CLEAR SPAN	BEARING BAR DEPTH	ANGLE SIZE
LESS THAN 3'-0"	1"	L 1-1/2x1-1/2x1/4
3'-0" TO 4'-0"	1-1/4"	L 1-3/4x1-3/4x1/4
4'-1" TO 5'-0"	1-1/2"	L 2x2x1/4
5'-1" TO 6'-0"	2"	L 2-1/2x2-1/2x1/2

MINIMUM LIVE LOAD - 150 PSF
ADDITIONAL SUPPORTS ARE REQUIRED FOR SPANS SHOWN OVER 6'-0".
CONTRACTOR/GRATING SUPPLIER SHALL ADD SUPPORT MEMBERS AS REQUIRED SUCH THAT NO SPAN IS GREATER THAN 6'-0".

ALUMINUM SOLID PLANK SCHEDULE

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

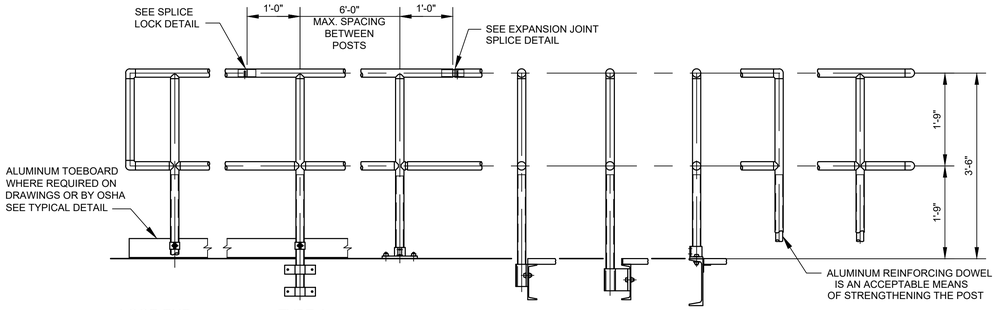
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

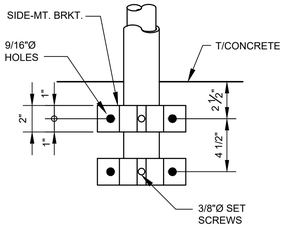
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

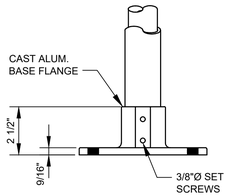
Sheet No.
DS-4

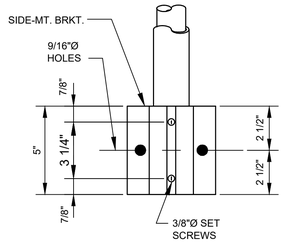
Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion

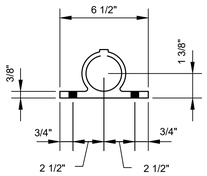


TYPICAL HANDRAIL

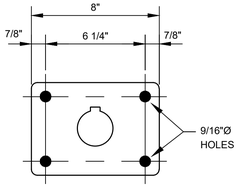




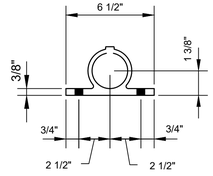




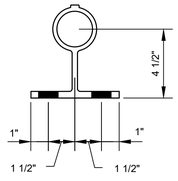
TYPE A



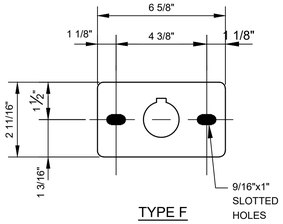
TYPE B



TYPE C



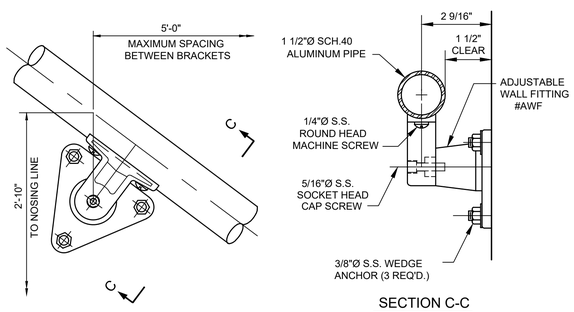
TYPE D



TYPE F

TWO RAIL HANDRAIL

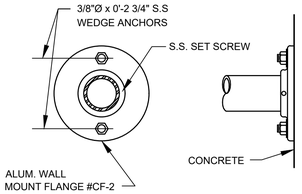
N.T.S.



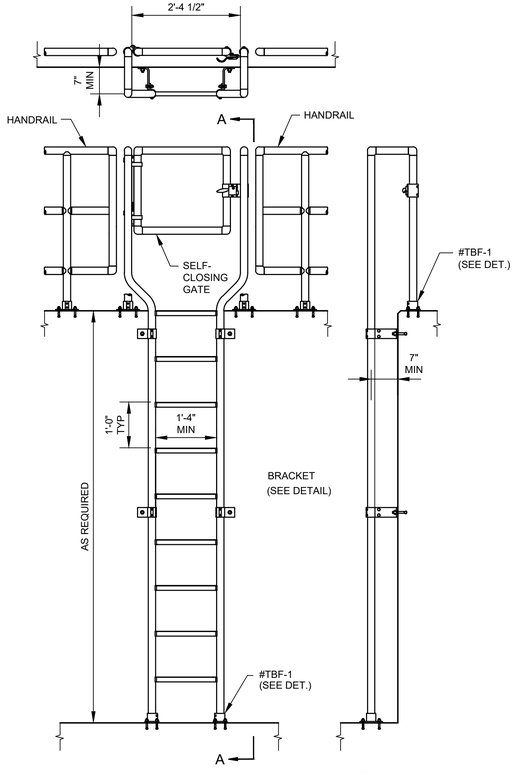
SECTION C-C

WALL RAIL ELEVATION

N.T.S.



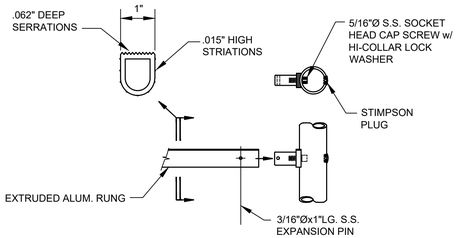
WALL FLANGE DETAIL



TYPICAL LADDER ELEVATION

TYPE A

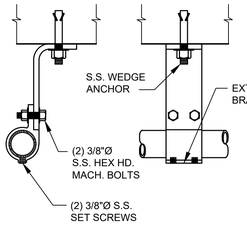
VIEW A-A

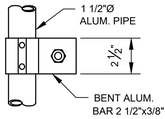


LADDER RUNG DETAIL

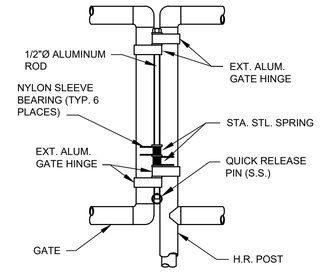
LADDER DETAIL

N.T.S.

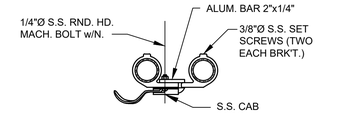


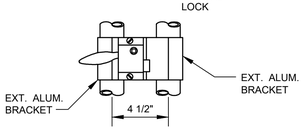


LADDER BRACKET DETAIL

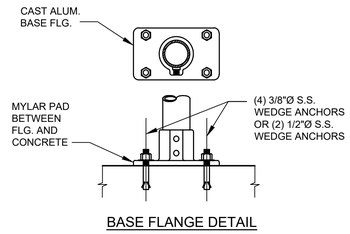


TYPICAL GATE HINGE





GATE LATCH DETAIL



BASE FLANGE DETAIL

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

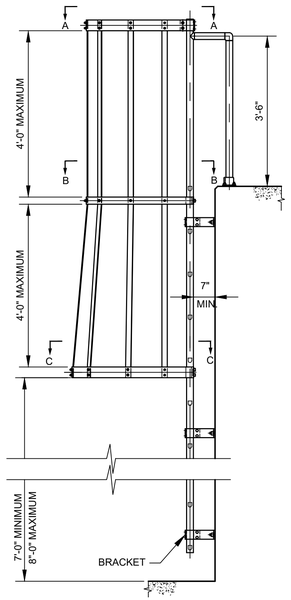
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

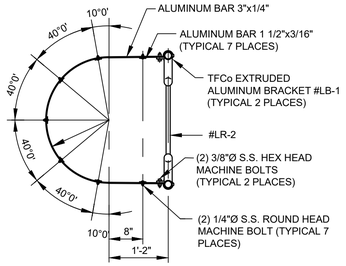
Sheet No.
DS-5

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion

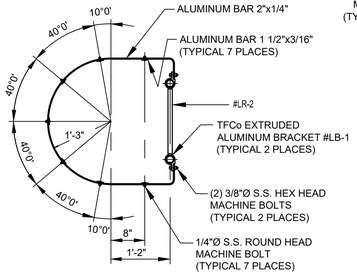


CAGED LADDER ELEVATION

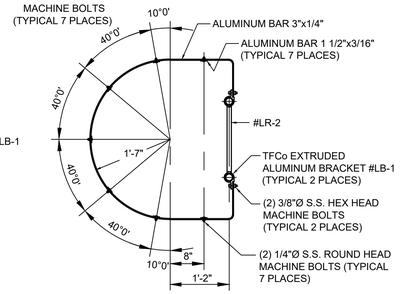
N.T.S.



VIEW A-A



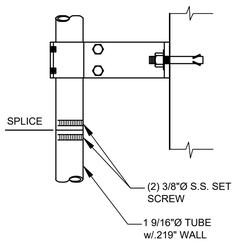
SECTION B-B



SECTION C-C

CAGE DETAIL

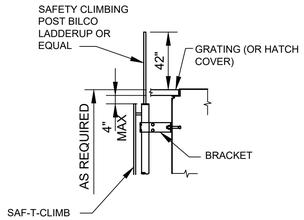
N.T.S.



SPLICE TO BE USED WHEN PIPE LENGTH EXCEEDS 24 FT. FOR ANODIZED PIPE, 30 FT. FOR MILL FINISH. LOCATE SPLICE BELOW SECOND SET OF BRKTS. FROM TOP RUNG.

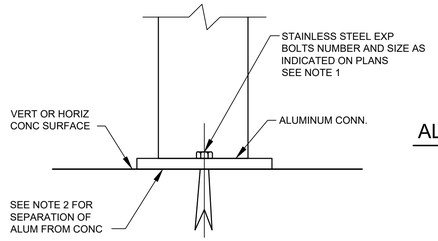
SPLICE DETAIL

N.T.S.



ALUMINUM RAIL, LADDER, RUNG CLAMPS, SLEEVE AND BELT DETAIL

N.T.S.



NOTES

1. STAINLESS STEEL EXP BOLTS SHALL BE THE WEDGE TYPE AND SHALL BE TYPE 316 STAINLESS WITH THE FOLLOWING REQUIREMENTS:

   *A. ½" Ø BOLTS SHALL BE MIN OF 4½" LONG, 2½" MIN EMBED INTO CONC TIGHTEN NUT TO A MIN TORQUE OF 45-65 FT-LBS.

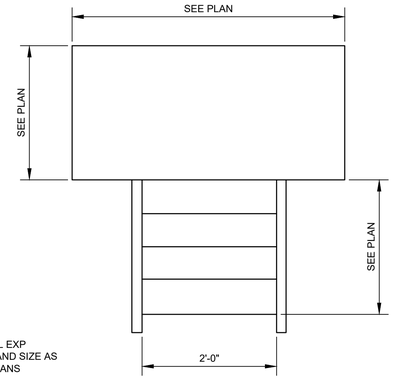
   *B. ¾" Ø BOLTS SHALL BE MIN OF 5½" LONG, 3½" MIN EMBED INTO CONC TIGHTEN NUT TO A MIN TORQUE OF 125-175 FT-LBS.

2. ALUMINUM SHALL BE NOT ALLOWED TO COME INTO DIRECT CONTACT WITH CONCRETE. COAT THE ALUMINUM SURFACE AS REQUIRED IN SPECIFICATION SECTION "PAINTING"

* VERIFY MIN BOLT EMBEDMENT INTO CONC AND INSTALLATION TORQUE W/BOLT MANUF TO PROVIDE FULL ALLOWABLE TENSION LOAD TO BE PLACED ON EXP BOLTS

ALUMINUM / CONCRETE CONNECTION

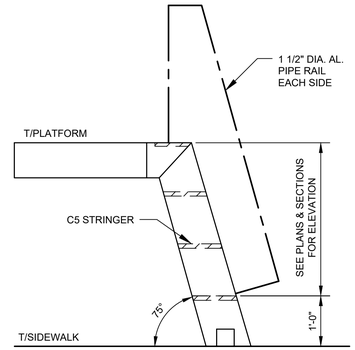
N.T.S.



PLAN

ALUMINUM SHIP LADDER DETAIL

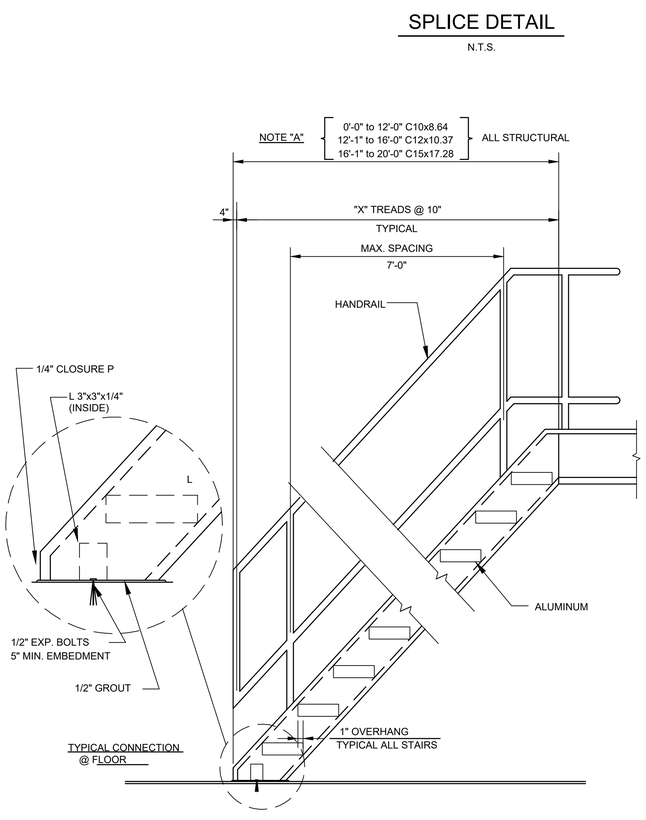
N.T.S.



SECTION

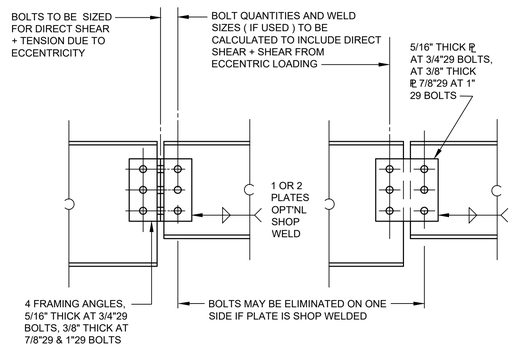
ALUMINUM SHIP LADDER DETAIL

N.T.S.



TYPICAL SINGLE FLIGHT ALUMINUM STAIR DETAIL

N.T.S.



CONNECTOR DESIGN TABLE	
BEAM SIZE	MIN. # OF BOLTS
W33 , W36, W27 , W30, W21 , W24, W14 TO W18, W12 OR LESS	6 ROWS DOUBLE SHEAR 5 ROWS DOUBLE SHEAR 4 ROWS DOUBLE SHEAR 3 ROWS DOUBLE SHEAR 2 ROWS DOUBLE SHEAR

NOTE:
THIS IS TO BE USED FOR MINIMUM QUANTITIES ONLY. MORE BOLTS MAY BE REQUIRED BY DESIGN CONDITIONS.

TYP. BEAM SHEAR SPLICE DETAIL

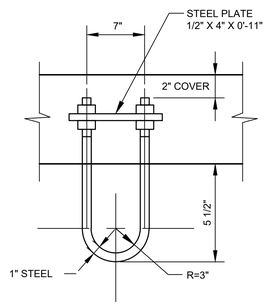
N.T.S.

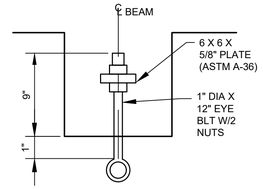
NOTES:

1. MAXIMUM LOAD= 1 TON
2. TO BE LOCATED WHERE SHOWN ON THE DRAWINGS.
3. STEEL SHALL BE A-36
4. ALL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM-A123 FOR PLATES AND ASTM-A153 FOR THREADED ITEMS.

NOTES:

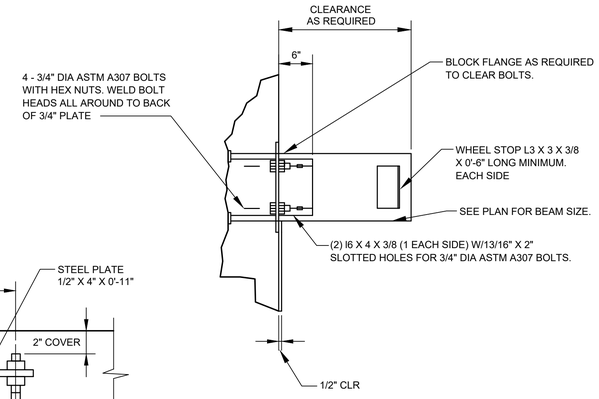
1. MAXIMUM LOAD= 5 TON
2. TO BE LOCATED WHERE SHOWN ON THE DRAWINGS.
3. STEEL SHALL BE A-36
4. EYE BOLT SHALL BE PROVIDED WITH A BOLT TYPE ANCHOR SHACKLE, BOTH ITEMS SHALL HAVE A SAFETY FACTOR OF 4.
5. ALL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM-123 FOR PLATES AND ASTM-A153 FOR THREADED ITEMS.



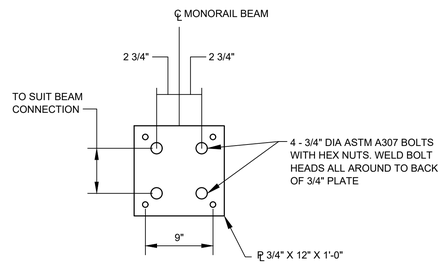


LIFTING LUGS DETAIL

N.T.S.



ELEVATION



SECTION

BRIDGE CRANE SUPPORT

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MSG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

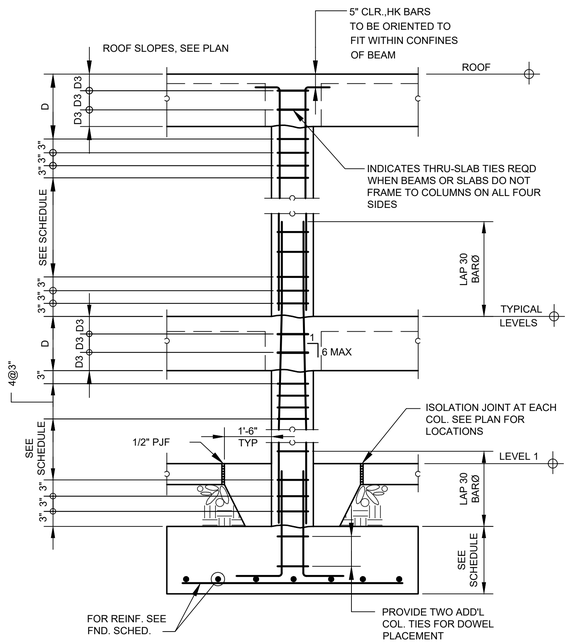
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

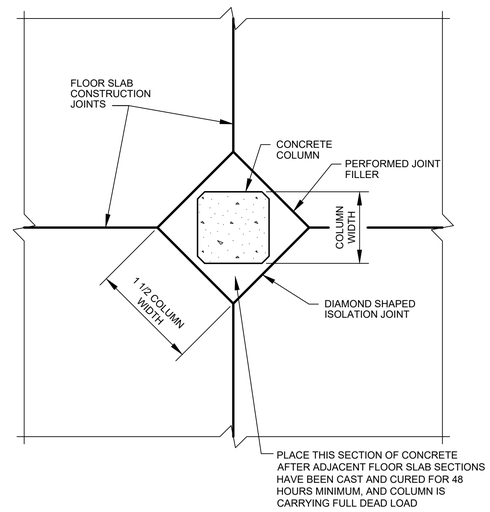
Sheet No.
DS-6

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aemcmacion



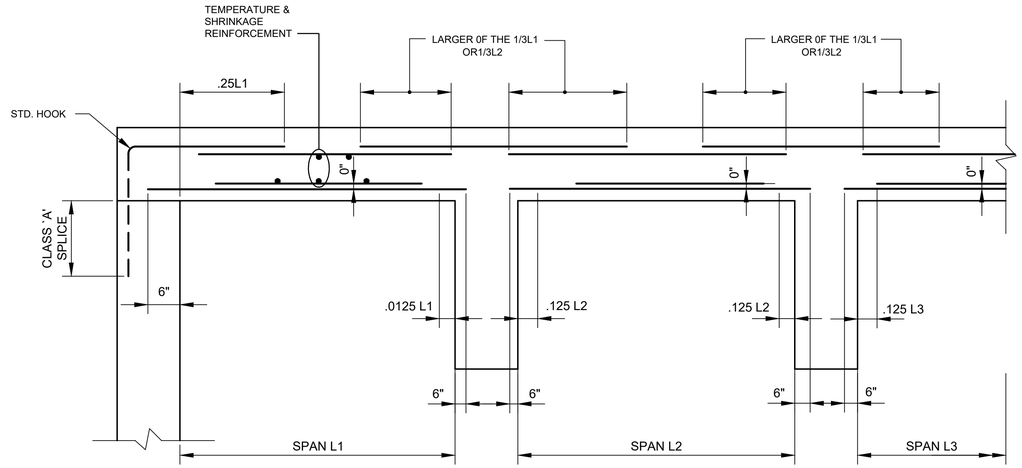
TYP. CONC. COL, AND FTG. DETAIL

N.T.S.



PLAN-CONSTRUCTION JOINTS IN FLOOR SLAB ON GROUND AT CONCRETE COLUMNS

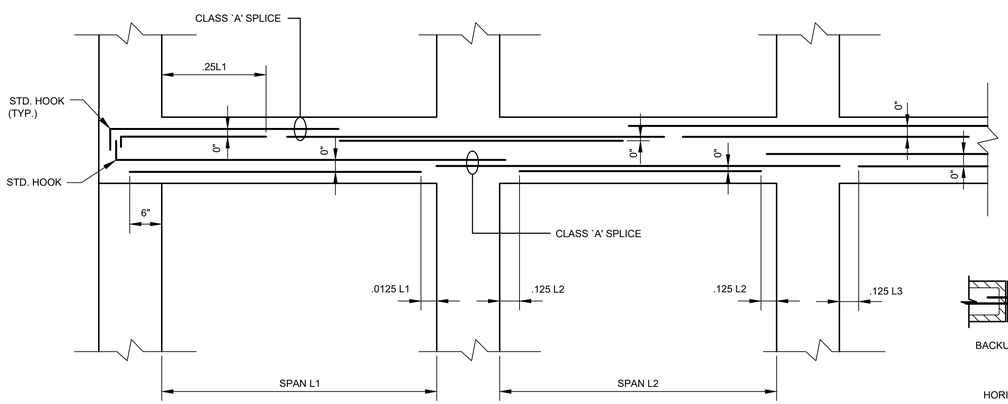
N.T.S.



NOTES:
1. DEVELOPMENT LENGTH NOT LESS THAN 40 BAR DIAMETERS.
2.PROVIDE TOP BARS MIDSPN WHEN INDICATED ON SLAB SCHEDULE,PLANS OR SECTIONS.

SLAB DETAIL

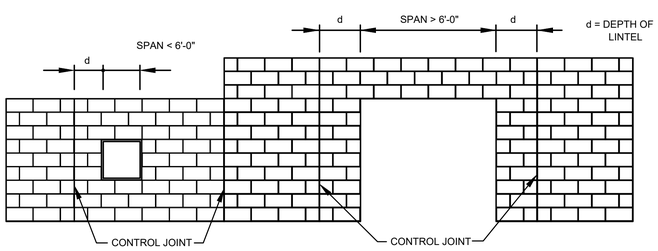
N.T.S.



NOTES:
1. CLASS A SPLICES ARE BASED ON LARGER SIZE BARS

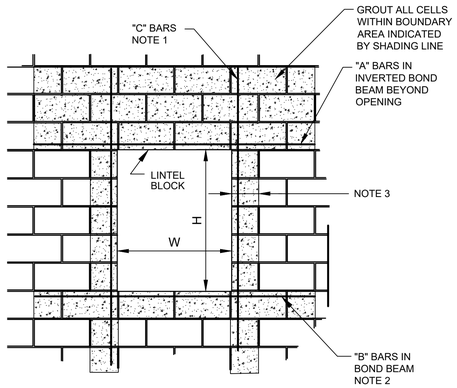
BEAM DETAIL

N.T.S.



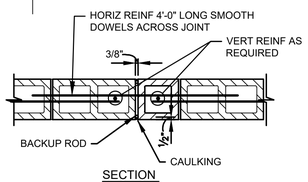
CMU CONTROL JOINT ELEVATION

N.T.S.



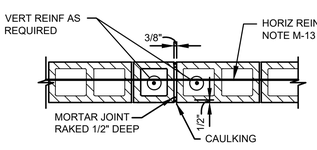
CMU OPENING REINFORCING

N.T.S.



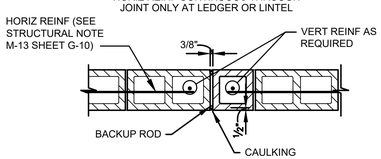
SECTION

HORIZ REINF DOWELLED CONTROL JOINT



SECTION

HORIZ REINF CONTINUOUS THROUGH JOINT ONLY AT LEDGER OR LINTEL

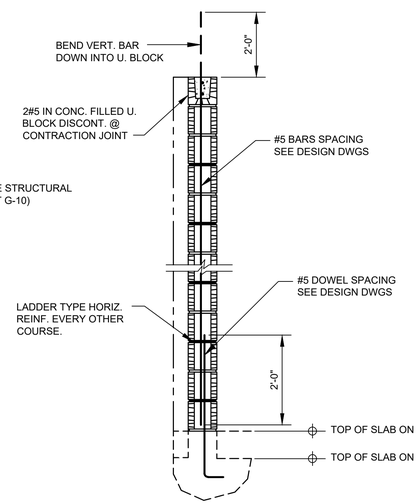


SECTION

HORIZ REINF DOES NOT CROSS JOINT

CMU CONTROL JOINT DETAIL

N.T.S.



HORIZONTAL REINFORCING

TYPICAL MASONRY WALL DETAIL

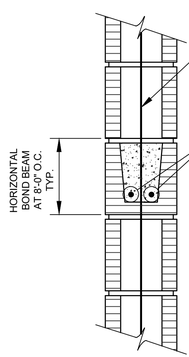
N.T.S.

W	"A" BARS		"B" BARS		"C" BARS		# CELLS TO GROUT NOTE 3	
	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU
≤2'-0"	1-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>2'-0" ≤6'-0"	2-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>6'-0" ≤8'-0"	2-#6	2-#6	2-#5	2-#6	2-#5	2-#5	TWO	TWO
>8'-0" ≤10'-0"	2-#7	2-#8	2-#6	2-#6	2-#5	2-#6	THREE	THREE
>10'-0"	SEE DRAWINGS							

NOTES:
1. EXTEND "C" BARS 2'-0" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
2. "A" AND "B" BARS SHALL EXTEND 2'-0" EACH SIDE OF THE OPENING.
3. GROUT TO END OF BARS SEE SCHEDULE FOR NUMBER OF CELLS TO GROUT ON EACH SIDE OF THE OPENING.
4. GROUT ALL CELLS OVER OPENING TO W/2 OR 2'-0" WHICH EVER IS GREATER UNLESS TO OF WALL IS REACHED FIRST.

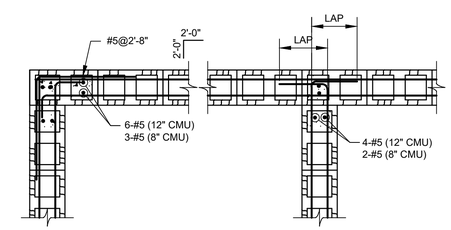
CMU OPENING REINF. SCHEDULE

N.T.S.



TYPICAL BOND BEAM DETAIL

N.T.S.



EXTERIOR CORNER INTERIOR CORNER

CMU REINFORCEMENT BOND BEAM DETAIL

N.T.S.

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL STANDARD DETAILS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
R2019-111- Structural Details.dwg

Sheet No.
DS-7

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - Standard Details\R2019-111- Structural Details.dwg 08/01/2025 2:04pm aencarnacion

GENERAL

	COVER
G-1	INDEX OF DRAWINGS (1 OF 2)
G-2	INDEX OF DRAWINGS (1 OF 2)
G-3	STANDARD ABBREVIATIONS
G-4	PROCESS FLOW DIAGRAM
G-5	SOLIDS HANDLING DIAGRAM
G-6	HYDRAULIC PROFILE
G-7	MASS BALANCE
G-8	GENERAL LEGEND
G-9	STRUCTURAL GENERAL NOTES
G-10	STRUCTURAL GENERAL NOTES
G-11	MECHANICAL PROCESS LEGEND AND GENERAL NOTES

AREA 1 - CIVIL

1-C-1	GENERAL NOTES AND LEGEND
1-C-2	OVERALL SITE PLAN
1-C-3	EXISTING CONDITIONS PLAN
1-C-4	EXISTING CONDITIONS PLAN
1-C-5	EXISTING CONDITIONS PLAN
1-C-6	DEMOLITION PLAN
1-C-7	DEMOLITION PLAN
1-C-8	DEMOLITION PLAN
1-C-9	SITE LAYOUT PLAN
1-C-10	SITE LAYOUT PLAN
1-C-11	SITE LAYOUT PLAN
1-C-12	GRADING & DRAINAGE PLAN
1-C-13	GRADING & DRAINAGE PLAN
1-C-14	GRADING & DRAINAGE PLAN
1-C-15	EROSION & SEDIMENT CONTROL PLAN-CLEARING PHASE
1-C-16	EROSION & SEDIMENT CONTROL PLAN-CLEARING PHASE
1-C-17	EROSION & SEDIMENT CONTROL PLAN-CLEARING PHASE
1-C-18	EROSION & SEDIMENT CONTROL PLAN-GRADING PHASE
1-C-19	EROSION & SEDIMENT CONTROL PLAN-GRADING PHASE
1-C-20	EROSION & SEDIMENT CONTROL PLAN-GRADING PHASE
1-C-21	EROSION & SEDIMENT CONTROL PLAN-FINAL PHASE
1-C-22	EROSION & SEDIMENT CONTROL PLAN-FINAL PHASE
1-C-23	EROSION & SEDIMENT CONTROL PLAN-FINAL PHASE
1-C-24	EROSION & SEDIMENT CONTROL NARRATIVE & CMP
1-C-25	EROSION & SEDIMENT CONTROL NOTES & CERTIFICATIONS
1-C-26	EROSION & SEDIMENT CONTROL CHECKLIST
1-C-27	EROSION & SEDIMENT CONTROL DETAILS
1-C-28	EROSION & SEDIMENT CONTROL DETAILS
1-C-29	STORM SEWER PROFILE
1-C-30	YARD PIPING PLAN
1-C-31	YARD PIPING PLAN
1-C-32	YARD PIPING PLAN
1-C-33	YARD PIPING PROFILES
1-C-34	YARD PIPING CONNECTION DETAILS
1-C-35	CONSTRUCTION DETAILS
1-C-36	CIVIL MISCELLANEOUS DETAILS (1 OF 4)
1-C-37	CIVIL MISCELLANEOUS DETAILS (2 OF 4)
1-C-38	CIVIL MISCELLANEOUS DETAILS (3 OF 4)
1-C-38A	CIVIL EDA SITE SIGN DETAILS (4 OF 4)
1-E-0	ELECTRICAL LEGEND AND NOTES
1-E-1	MATERIAL RATING
1-E-2	DUCTBANKS SCHEDULE
1-E-3	DUCTBANKS SCHEDULE
1-E-4	ONE LINE DEMOLITION
1-E-5	ONE LINE DIAGRAM
1-E-6	PANELBOARD SCHEDULES
1-E-7	PANELBOARD SCHEDULES
1-E-8	PANELBOARD SCHEDULES
1-E-9	OVERALL ELECTRICAL SITE PLAN
1-E-10	PARTIAL ELECTRICAL SITE PLAN
1-E-11	PARTIAL ELECTRICAL SITE PLAN
1-E-12	PARTIAL ELECTRICAL SITE PLAN
1-E-13	LIGHTING FIXTURES SCHEDULE
1-E-14	OVERALL LIGHTING AND CCTV PLAN
1-E-15	EXISTING BLOWER BUILDING ELECTRICAL PLAN

AREA 2 - INFLUENT HEADWORKS

STRUCTURAL

2-S-1	EXISTING INFLUENT HEADWORKS PLAN AND SECTION

MECHANICAL

2-M-1	EXISTING INFLUENT HEADWORKS PLAN AND SECTION
2-M-2	EXISTING INFLUENT HEADWORKS SECTION

ELECTRICAL

2-E-1	INFLUENT HEADWORKS ELECTRICAL PLAN
2-E-2	INFLUENT HEADWORKS RECEPTACLES AND LIGHTING PLAN
2-E-3	INFLUENT HEADWORKS SCHEMATIC WIRING DIAGRAM
2-E-4	INFLUENT HEADWORKS SCHEMATIC WIRING DIAGRAM

AREA 3 - INFLUENT PUMP STATION

ARCHITECTURAL

3-A-1	INFLUENT PUMP STATION BUILDING FLOOR PLAN AND ELEVATIONS
3-A-2	INFLUENT PUMP STATION SCHEDULE DOOR AND WINDOW DETAILS

STRUCTURAL

3-S-1	INFLUENT PUMP STATION PLAN AND SECTION
3-S-2	INFLUENT PUMP STATION ROOF PLAN AND SECTION

MECHANICAL

3-M-1	INFLUENT PUMP STATION PLAN AND SECTION
3-M-2	INFLUENT VALVE VAULT PLAN AND SECTION

ELECTRICAL

3-E-1	INFLUENT PUMP STATION ELECTRICAL PLAN
3-E-2	INFLUENT VALVE VAULT AND ENTRANCE GATE ELECTRICAL PLAN
3-E-3	EXISTING POND ELECTRICAL PLAN
3-E-4	INFLUENT PUMP STATION RECEPTACLES AND LIGHTING PLAN
3-E-5	INFLUENT PUMP STATION SCHEMATIC WIRING DIAGRAMS
3-E-6	INFLUENT PUMP STATION SCHEMATIC WIRING DIAGRAMS

AREA 4 - BIOLOGICAL TREATMENT

STRUCTURAL

4-S-1	BIOLOGICAL TREATMENT BOTTOM SLAB AND SECTIONS
4-S-2	BIOLOGICAL TREATMENT TOP SLAB, SECTIONS AND DETAILS
4-S-3	BIOLOGICAL TREATMENT TOP SLAB, SECTIONS AND ELEVATIONS

MECHANICAL

4-M-1	BIOLOGICAL TREATMENT PLAN AND SECTION
4-M-2	BIOLOGICAL TREATMENT SECTION

ELECTRICAL

4-E-1	BIOLOGICAL TREATMENT ELECTRICAL PLAN
4-E-2	BIOLOGICAL TREATMENT RECEPTACLES AND LIGHTING PLAN
4-E-3	BIOLOGICAL TREATMENT SCHEMATIC WIRING DIAGRAMS
4-E-4	BIOLOGICAL TREATMENT SCHEMATIC WIRING DIAGRAMS

AREA 5 - SECONDARY CLARIFIERS 1 & 2

STRUCTURAL

5-S-1	SECONDARY CLARIFIER PLANS
5-S-2	SECONDARY CLARIFIER SECTIONS AND DETAILS
5-S-3	SECONDARY CLARIFIER SECTIONS AND DETAILS

MECHANICAL

5-M-1	SECONDARY CLARIFIER PLANS
5-M-2	SECONDARY CLARIFIER SECTIONS

ELECTRICAL

5-E-1	CLARIFIER METER VAULTS ELECTRICAL PLAN
5-E-2	SECONDARY CLARIFIER ELECTRICAL PLAN
5-E-3	SECONDARY CLARIFIER RECEPTACLES AND LIGHTING PLAN
5-E-4	SECONDARY CLARIFIER SCHEMATIC WIRING DIAGRAMS

AREA 6 - EFFLUENT FILTER

STRUCTURAL

6-S-1	EFFLUENT FILTER PLAN AND SECTIONS
6-S-2	EFFLUENT FILTER ROOF PLAN, SECTIONS AND DETAILS
6-S-3	FLOC / MIX PLAN, SECTIONS AND DETAILS

MECHANICAL

6-M-1	EFFLUENT FILTER PLAN AND SECTION
6-M-2	FLOC / MIX PLAN, SECTIONS AND DETAILS

ELECTRICAL

6-E-1	EFFLUENT FILTER ELECTRICAL PLAN
6-E-2	FLOCCULATION TANK ELECTRICAL PLAN
6-E-3	EFFLUENT FILTER RECEPTACLES AND LIGHTING PLAN
6-E-4	EFFLUENT FILTER SCHEMATIC DIAGRAM
6-E-5	FLOCCULATION TANK SCHEMATIC WIRING DIAGRAMS

AREA 7 - PLANT DRAIN PUMP STATION

MECHANICAL

7-M-1	PLANT DRAIN PUMP STATION PLAN AND SECTIONS

ELECTRICAL

7-E-1	PLANT DRAIN PUMP STATION ELECTRICAL PLAN
7-E-2	PLANT DRAIN PUMP SCHEMATIC WIRING DIAGRAM

AREA 8 - UV DISNFECTION

STRUCTURAL

8-S-1	UV DISINFECTION AND PARSHALL FLUME PLAN AND SECTIONS
8-S-2	EXISTING CASCADE AERATION PLAN AND SECTIONS

MECHANICAL

8-M-1	UV DISINFECTION & PARSHALL FLUME PLAN AND SECTIONS
8-M-2	EXISTING CASCADE AERATION PLAN AND SECTIONS

ELECTRICAL

8-E-1	UV SYSTEM AND EXISTING CASCADE AERATION ELECTRICAL PLAN
8-E-2	UV SYSTEM AND EXISTING CASCADE AERATION SCHEMATIC WIRING DIAGRAMS

AREA 9 - WAS/RAS PUMP STATION

ARCHITECTURAL

9-A-1	INFLUENT PUMP STATION BUILDING FLOOR PLAN AND ELEVATIONS

STRUCTURAL

9-S-1	WAS/RAS PUMP STATION PLAN AND SECTION
9-S-2	WAS/RAS PUMP STATION ROOF PLAN AND SECTION

MECHANICAL

9-M-1	WAS/RAS PUMP STATION PLAN AND SECTION
9-M-2	WAS VALVE VAULT PLAN AND SECTION

ELECTRICAL

9-E-1	WAS/RAS VALVE VAULT ELECTRICAL PLAN
9-E-2	WAS/RAS PUMP STATION ELECTRICAL PLAN
9-E-3	WAS/RAS PUMP STATION RECEPTACLES AND LIGHTING PLAN
9-E-4	WAS/RAS PUMP STATION SCHAMTIC WIRING DIAGRAMS
9-E-5	WAS/RAS PUMP STATION SCHAMTIC WIRING DIAGRAMS
9-E-6	WAS/RAS PUMP STATION SCHAMTIC WIRING DIAGRAMS

AREA 10 - SLUDGE DIGESTION SYSTEM

STRUCTURAL

10-S-1	SLUDGE DIGESTION SYSTEM PLAN AND SECTIONS

MECHANICAL

10-M-1	SLUDGE DIGESTION SYSTEM PLAN AND SECTIONS

ELECTRICAL

10-E-1	SLUDGE DIGESTION SYSTEM ELECTRICAL PLAN
10-E-2	SLUDGE DIGESTION SYSTEM RECEPTACLES AND LIGHTING PLAN
10-E-3	SLUDGE DIGESTION SYSTEM SCHEMATIC WIRING DIAGRAMS
10-E-4	SLUDGE DIGESTION SYSTEM SCHEMATIC WIRING DIAGRAMS
10-E-5	SLUDGE DIGESTION SYSTEM SCHEMATIC WIRING DIAGRAMS

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INDEX OF DRAWINGS (1 OF 2)

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-1

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/06/2025 1:53pm aencarnacion

AREA 11 - DEWATERING AND ELECTRICAL BUILDING

ARCHITECTURAL

11-A-1	DEWATERING & ELECTRICAL BUILDING FLOOR PLAN
11-A-2	DEWATERING SCHEDULE DOOR & WINDOW DETAILS
11-A-3	DEWATERING & ELECTRICAL BUILDING EXTERIOR ELEVATIONS 1
11-A-4	DEWATERING & ELECTRICAL BUILDING EXTERIOR ELEVATIONS 2

STRUCTURAL

11-S-1	DEWATERING AND ELECTRICAL BUILDING FOUNDATION PLAN
11-S-2	DEWATERING AND ELECTRICAL BUILDING SECTION
11-S-3	DEWATERING AND ELECTRICAL BUILDING SECTION
11-S-4	DEWATERING AND ELECTRICAL BUILDING SECTION
11-S-5	DEWATERING AND ELECTRICAL BUILDING SECTION AND DETAILS
11-S-6	DEWATERING AND ELECTRICAL BUILDING ROOF FRAMING PLAN AND DETAILS

ELECTRICAL

11-E-1	DEWATERING BUILDING ELECTRICAL PLAN
11-E-2	DEWATERING BUILDING RECEPTACLES AND LIGHTING PLAN
11-E-3	DEWATERING BUILDING SCHEMATIC WIRING DIAGRAM

PLUMBING

11-P-1	DEWATERING AND ELECTRICAL BUILDING PLUMBING FLOOR PLAN - PLUMBING
11-P-2	DEWATERING AND ELECTRICAL BUILDING PLUMBING SCHEMATIC & SCHEDULES

HVAC

11-H-1	DEWATERING AND ELECTRICAL BUILDING FLOOR PLAN - HVAC
11-H-2	DEWATERING AND ELECTRICAL BUILDING - HVAC DETAILS
11-H-3	DEWATERING AND ELECTRICAL BUILDING - HVAC LEGEND AND GENERAL NOTES
11-H-4	DEWATERING AND ELECTRICAL BUILDING - HVAC SCHEDULES

AREA 12 - CONTROL BUILDING

ARCHITECTURAL

12-A-1	CONTROL BUILDING SITE PLAN AND DETAILS
12-A-2	CONTROL BUILDING FLOOR PLAN
12-A-3	CONTROL BUILDING SCHEDULE DOOR & WINDOW DETAILS
12-A-4	CONTROL BUILDING REFLECTED CEILING PLAN
12-A-5	CONTROL BUILDING EXTERIOR ELEVATIONS
12-A-6	CONTROL BUILDING INTERIOR ELEVATIONS AND DETAILS
12-A-7	CONTROL BUILDING WALL SECTIONS

STRUCTURAL

12-S-1	CONTROL BUILDING FOUNDATION PLAN AND DETAILS
12-S-2	CONTROL BUILDING ROOF FRAMING PLAN AND DETAILS

ELECTRICAL

12-E-1	CONTROL BUILDING ELECTRICAL PLAN
12-E-2	CONTROL BUILDING RECEPTACLES AND LIGHTING PLAN
12-E-3	CONTROL BUILDING SCHEMATIC WIRING DIAGRAM

PLUMBING

12-P-1	CONTROL BUILDING PLUMBING FLOOR PLAN, LEGEND AND SCHEDULE
12-P-2	CONTROL BUILDING PLUMBING SCHEMATIC ISOMETRIC & DETAILS

AREA 13 - CHEMICAL BUILDING

ARCHITECTURAL

13-A-1	CHEMICAL BUILDING FLOOR PLAN
13-A-2	CHEMICAL BUILDING SCHEDULE DOOR AND WINDOW DETAILS
13-A-3	CHEMICAL BUILDING EXTERIOR ELEVATIONS

STRUCTURAL

13-S-1	CHEMICAL BUILDING FOUNDATION PLAN AND DETAILS
13-S-2	CHEMICAL BUILDING ROOF FRAMING PLAN AND DETAILS

MECHANICAL

13-M-1	CHEMICAL BUILDING PLUMBING FLOOR PLAN, LEGEND AND SCHEDULE
13-M-2	CHEMICAL BUILDING SECTIONS & DETAILS

ELECTRICAL

13-E-1	CHEMICAL BUILDING ELECTRICAL PLAN
13-E-2	CHEMICAL BUILDING RECEPTACLES AND LIGHTING PLAN
13-E-3	CHEMICAL BUILDING SCHEMATIC WIRING DIAGRAMS
13-E-4	CHEMICAL BUILDING SCHEMATIC WIRING DIAGRAMS

STANDARD DETAILS

STRUCTURAL

DS-1	STRUCTURAL STANDARD DETAILS
DS-2	STRUCTURAL STANDARD DETAILS
DS-3	STRUCTURAL STANDARD DETAILS
DS-4	STRUCTURAL STANDARD DETAILS
DS-5	STRUCTURAL STANDARD DETAILS
DS-6	STRUCTURAL STANDARD DETAILS
DS-7	STRUCTURAL STANDARD DETAILS

MECHANICAL

DM-1	MECHANICAL STANDARD DETAILS
DM-2	MECHANICAL STANDARD DETAILS
DM-3	MECHANICAL STANDARD DETAILS
DM-4	MECHANICAL STANDARD DETAILS

PROCESS AND INSTRUMENTATION DIAGRAMS

I-0	PROCESS AND INSTRUMENTATION DIAGRAM LEGEND
I-1	PROCESS AND INSTRUMENTATION DIAGRAM INFLUENT HEADWORKS
I-2	PROCESS AND INSTRUMENTATION DIAGRAM INFLUENT PUMP STATION
I-3	PROCESS AND INSTRUMENTATION DIAGRAM BIOLOGICAL TREATMENT
I-4	PROCESS AND INSTRUMENTATION DIAGRAM SECONDARY CLARIFIERS
I-5	PROCESS AND INSTRUMENTATION DIAGRAM EFFLUENT FILTER
I-6	PROCESS AND INSTRUMENTATION DIAGRAM EFFLUENT FILTER DETAIL
I-7	PROCESS AND INSTRUMENTATION DIAGRAM UV DISINFECTION AND PARSHALL FLUME
I-8	PROCESS AND INSTRUMENTATION DIAGRAM PLANT DRAIN PUMP STATION
I-9	PROCESS AND INSTRUMENTATION DIAGRAM POST WAS / RAS PUMP STATION
I-10	PROCESS AND INSTRUMENTATION DIAGRAM SLUDGE DIGESTION SYSTEM
I-11	PROCESS AND INSTRUMENTATION DIAGRAM ROTARY PRESS SYSTEM
I-12	PROCESS AND INSTRUMENTATION DIAGRAM LIME FEED SYSTEM
I-13	PROCESS AND INSTRUMENTATION DIAGRAM ALUM SYSTEM

NETWORKS SYSTEM

I-100	SCADA SYSTEM BLOCK DIAGRAM

HVAC

H-1	HVAC NOTES SCHEDULES AND DETAILS
H-2	INFLUENT PUMP STATION BUILDING HVAC PLAN
H-3	INFLUENT PUMP STATION BUILDING HVAC SPECIFICATIONS
H-4	WAS RAS PUMP STATION BUILDING HVAC PLAN
H-5	WAS RAS PUMP STATION BUILDING HVAC SPECIFICATIONS
H-6	DEWATERING BUILDING AND ELECTRICAL ROOM HVAC PLAN
H-7	DEWATERING BUILDING AND ELECTRICAL ROOM HVAC SPECIFICATION
H-8	DEWATERING BUILDING AND ELECTRICAL ROOM HVAC SPECIFICATION
H-9	DEWATERING BUILDING AND ELECTRICAL ROOM HVAC SPECIFICATION
H-10	CONTROL BUILDING ADDITION HVAC PLAN
H-11	CHEMICAL FEED ROOM HVAC PLAN
H-12	CHEMICAL FEED ROOM HVAC SPECIFICATIONS

ELECTRICAL

DE-1	ELECTRICAL AND I&C INSTALLATION DETAILS
DE-2	ELECTRICAL AND I&C INSTALLATION DETAILS
DE-3	ELECTRICAL AND I&C INSTALLATION DETAILS
DE-4	ELECTRICAL AND I&C INSTALLATION DETAILS
DE-5	ELECTRICAL AND I&C INSTALLATION DETAILS

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INDEX OF DRAWINGS (2 OF 2)

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-2

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\006 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/06/2025 1:54pm aencarnacion

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ACST	ACOUSTIC
ADD	ADDITION
AA	AERATION AIR
AC	AIR COMPRESSOR
AO	AIR OUTLET
ALT	ALTERNATE
ALUM.	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AM STD	AMERICAN STANDARD
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
AB	ANCHOR BOLT
L	ANGLE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECT
ASPH	ASPHALT
ASSOC	ASSOCIATION
@	AT
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
B TO B	BACK TO BACK
BL	BASE LINE
B PL	BASE PLATE
BSMT	BASEMENT
BM	BEAM
BRNG	BEARING
BEL	BELOW
BET	BETWEEN
BEV	BEVEL
BIT	BITUMINOUS
BLK	BLOCK
BLKG	BLOCKING
BLR	BOILER
BT	BOLT
BOT	BOTTOM
BLVD	BOULEVARD
BRKT	BRACKET
BRK	BRICK
BLDG	BUILDING
BHD	BULKHEAD
CAL	CALIBRATE
CAP	CAPACITY
C.S.	CARBON STEEL
CI	CAST IRON
CB	CATCH BASIN
CLKG	CAULKING
CLG	CEILING
CTR	CENTER
℄	CENTER LINE
CENT	CENTRIFUGAL
CH	CHAIN
CHAM	CHAMFER
CHAN	CHANNEL
CHEM	CHEMICAL
CIR	CIRCLE
CKT	CIRCUIT
CO	CLEAN OUT
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT (CONCRETE BLOCK)
CONN	CONNECT
CONST	CONSTRUCTION
CONTR	CONTRACT
CONTRL	CONTROL
CON	CONVEYOR
COR	CORNER
CPL	COUPLING
COV	COVER
CFM	CUBIC FEET PER MINUTE
CULVT	CULVERT

DEG °	DEGREE
DEPT ( )	DEPARTMENT
DI	DROP INLET
DIA (Ø)	DIAMETER
DIM	DIMENSION
DISCH	DISCHARGE
DISC	DISCONNECT
DIST	DISTURBED
DBL	DOUBLE
DN	DOWN
DT	DRAIN TILE
DWG	DRAWING
DR	DRIVE
EA	EACH
E	EAST
ECC	ECCENTRIC
ELEC	ELECTRICAL
EL OR ELEV	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
EQ (=)	EQUALS
EQUIP	EQUIPMENT
EST	ESTIMATE
EXIST	EXISTING
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERIOR
X-HVY	EXTRA-HEAVY
X-STR	EXTRA-STRONG
FAB	FABRICATED
F TO F	FACE TO FACE
FS	FAR SIDE
FT (')	FEET
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FLD	FIELD
FIG	FIGURE
FIL	FILLET
FIN	FINISH(ED)
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FIX	FIXTURE
FLEX	FLEXIBLE
FLR	FLOOR
FD	FLOOR DRAIN
FTG	FOOTING
FND	FOUNDATION
GA	GAGE
GAL	GALLON
GPM	GALLONS PER MINUTE
GALV	GALVANIZE(D)
GI	GALVANIZED IRON
GS	GALVANIZED STEEL
GEN	GENERAL
GC	GENERAL CONTRACTOR
GENR	GENERATOR
GL	GLASS
GOVT	GOVERNMENT
GR	GRADE
GAC	GRANULAR ACTIVATED CARBON
GRTG	GRATING
GV	GATE VALVE
GVL	GRAVEL
GRND	GROUND
GT	GROUT
GYP	GYPSUM

HDW	HARDWARE
HDR	HEADER
HT/INS	HEAT TRACE AND INSULATE
HTR	HEATER
HT	HEIGHT
HP	HIGH POINT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HB	HOSE BIBB
HYD	HYDRAULIC
IN (")	INCH
INCL	INCLUDE
INC	INCORPORATED
IND	INDICATE
INFO	INFORMATION
ID	INSIDE DIAMETER
INSTL	INSTALL
INST	INSTRUMENT
INS	INSULATE
INT	INTERIOR
INTER	INTERMEDIATE
INV OR IE	INVERT ELEVATION
JT	JOINT
JCT	JUNCTION
K PL	KICK PLATE
KO	KNOCK OUT
LBL	LABEL
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE
LAT	LATERAL
LAV	LAVATORY
LFT	LEFT
LH	LEFT HAND
LVL	LEVEL
LT	LIGHT
LIN	LINEAR
LTL	LINTEL
LOC	LOCATE
LV	LOUVER
LP	LOW POINT
MACH	MACHINE
MH	MANHOLE
MAN	MANUAL
MFR	MANUFACTURER
MK	MARK
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MET	METAL
MGD	MILLION GALLONS PER DAY
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MO	MOTOR OPERATED
NAT	NATIONAL
NF	NEAR FACE
NS	NEAR SIDE
NOM	NOMINAL
N	NORTH
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO (#)	NUMBER

OC	ON CENTER
OPNG	OPENING
OPER	OPERATOR
OPP	OPPOSITE
OH	OPPOSITE HAND
OZ	OUNCE
O D	OUTSIDE DIAMETER
O T O	OUT TO OUT
OA	OVERALL
OH	OVERHEAD
PR	PAIR
PNL	PANEL
%	PERCENT
PL	PLATE
PT	POINT
PLY	POLYMER
PC	POLYMER CONCENTRATE
LB(#)	POUND
#/FT ^{3}(LBS/CU FT)	POUNDS PER CUBIC FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PM	PRE-MIX
PREFAB	PREFABRICATED
PRMLD	PREMOLDED
PG	PRESSURE GAUGE
PS	PUMP STATION
PRESS SW	PRESSURE SWITCH
PRIM	PRIMARY
PROPTY	PROPERTY
PROP	PROPOSED
Q.T.	QUARRY TILE
QT	QUART
R(RAD)	RADIUS
RAS	RETURN ACTIVATED SLUDGE
REC'D	RECEIVED
RED	REDUCER
REINF	REINFORCING
REQ'D	REQUIRED
RET	RETURN
REV	REVISION
RPM	REVOLUTION PER MINUTE
RT	RIGHT
R	RISER
RM	ROOM
SAMP	SAMPLER
SAN	SANITARY
SCH	SCHEDULE
SCRN	SCREEN
SEC	SECONDARY
SECT	SECTION
S.N.	SEE NOTE
SHT	SHEET
S	SOUTH
SPECS	SPECIFICATIONS
SQ	SQUARE
S.STL.	STAINLESS STEEL
STD	STANDARD
SP	STAND PIPE
STA	STATION
STL	STEEL
ST	STREET
STRUCT	STRUCTURAL
SUCT	SUCTION
SUPT	SUPPORT
SUSP	SUSPEND(ED)
SYM	SYMBOL
SYS	SYSTEM

TAN	TANGENT
TBM	TEMPORARY BENCH MARK
TEMP	TEMPERATURE
TENS	TENSION
THK	THICK
TOS	TOP OF SLAB
TOW	TOP OF WALL
BOW	BOTTOW OF WALL
TOP	TOP OF PIPE
TR	TREAD
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UV	ULTRAVIOLET
V	VALVE
VB	VALVE BOX
VAP PR	VAPOR PROOF
VAR	VARIABLE
VERT	VERTICAL
WAS	WASTE ACTIVATED SLUDGE
WL	WATER LINE
W PRF	WATER PROOF
WSJ	WATER STOP JOINT
WS EL	WATER SURFACE ELEVATION
WT	WEIGHT
W	WEST
W/	WITH
W/O	WITHOUT
WP	WORKING POINT
YH	YARD HYDRANT

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

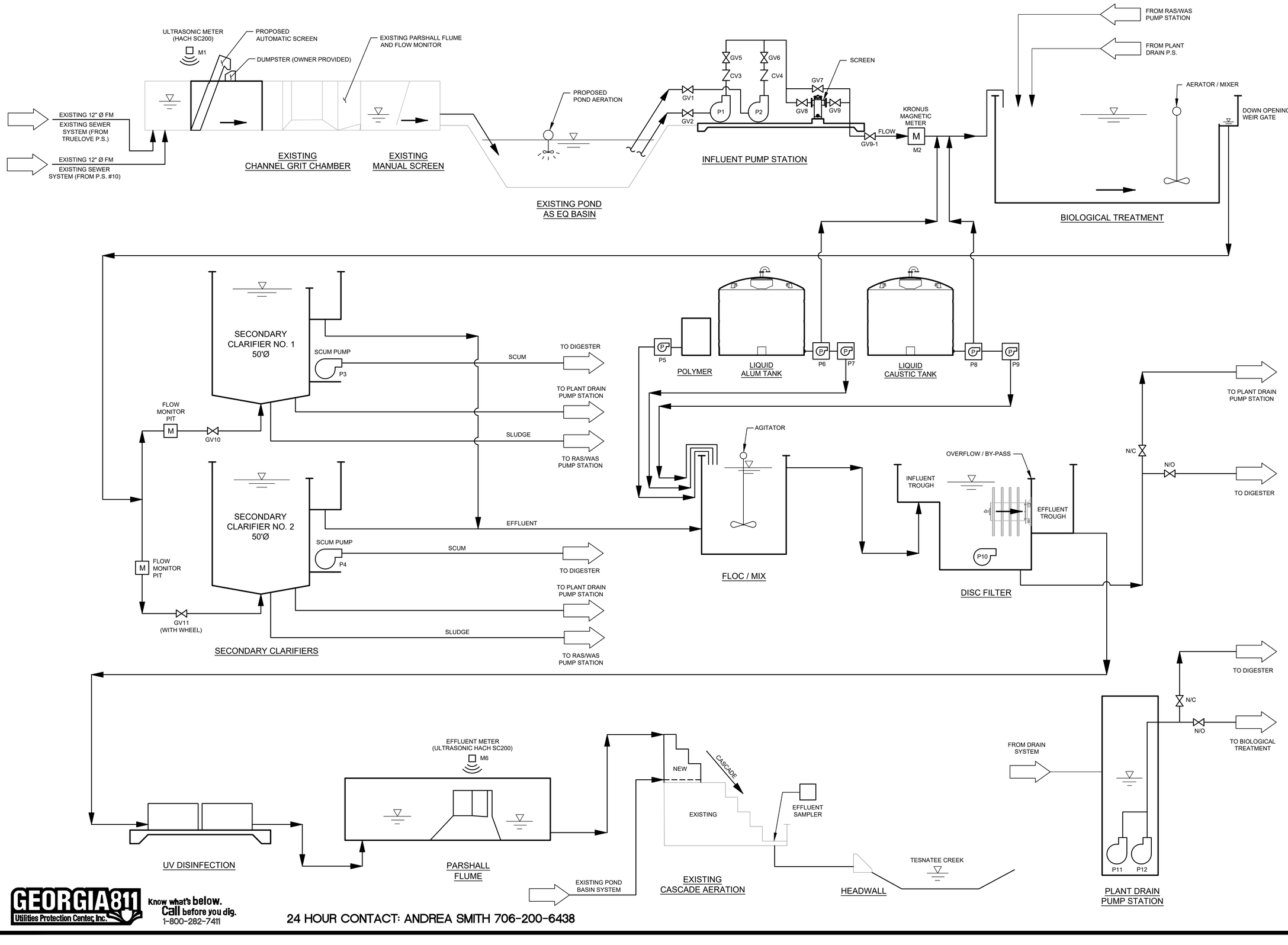
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STANDARD ABBREVIATIONS

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-3

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 12:59pm aencarnacion



GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS FLOW DIAGRAM

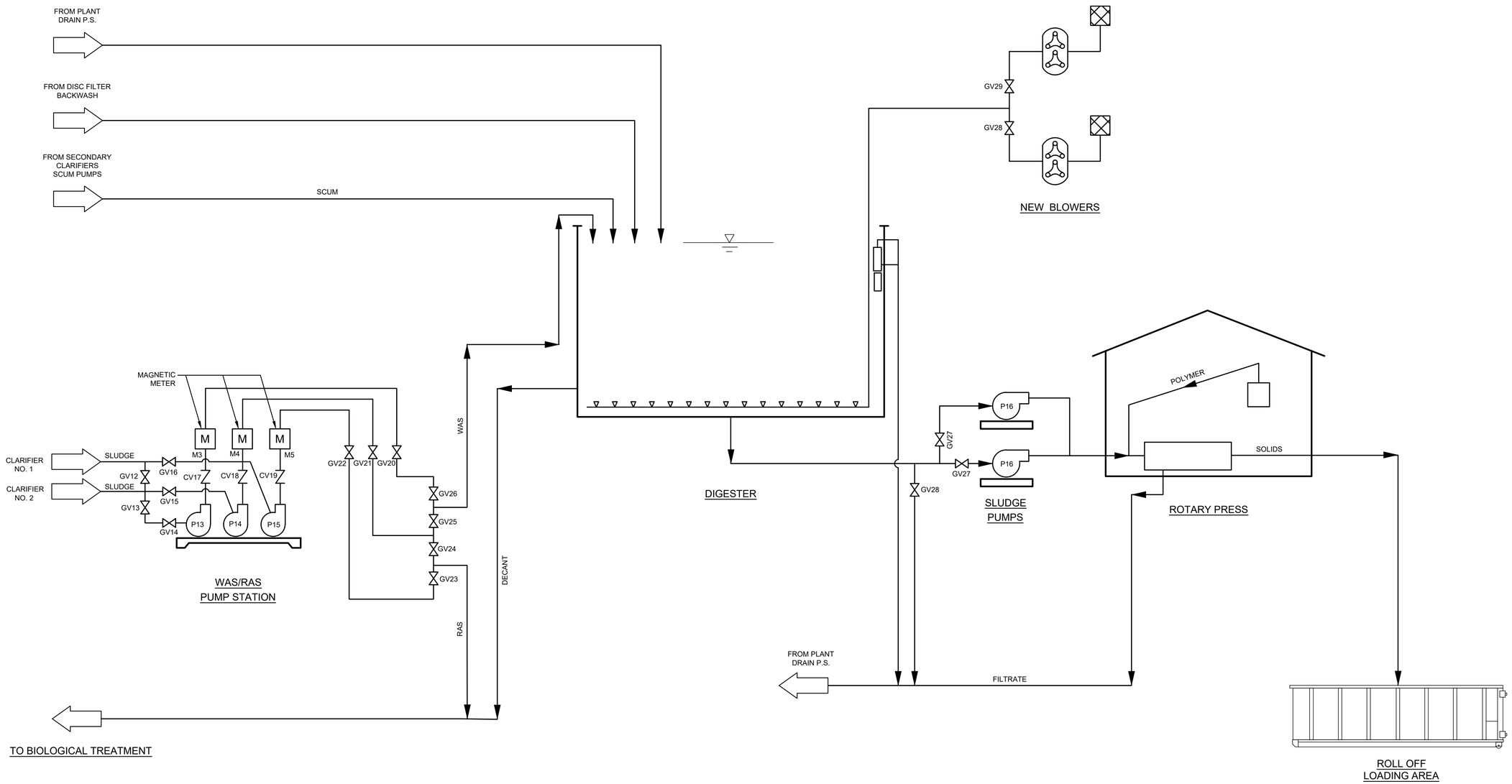
Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-4

GEORGIA 811 Utilities Protection Center, Inc.
Know what's below. Call before you dig. 1-800-282-7411

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

\\buildate01\mai\Projects\2019\R2019-111 Cleveland - WWTP Expansion\05 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 4:09pm aparlusconco



Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA 811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER JULY 31, 2025 MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

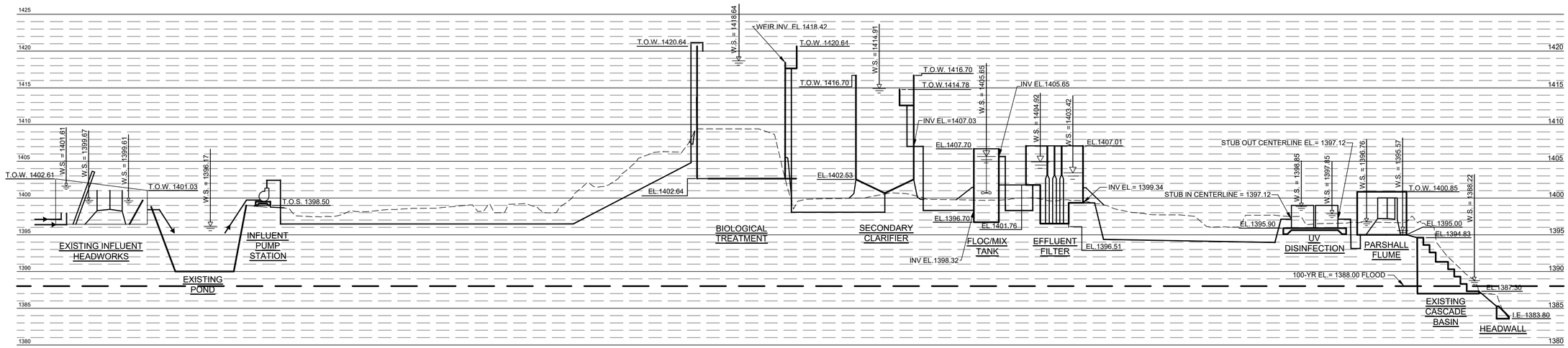
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

SOLIDS HANDLING DIAGRAM

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-5



24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

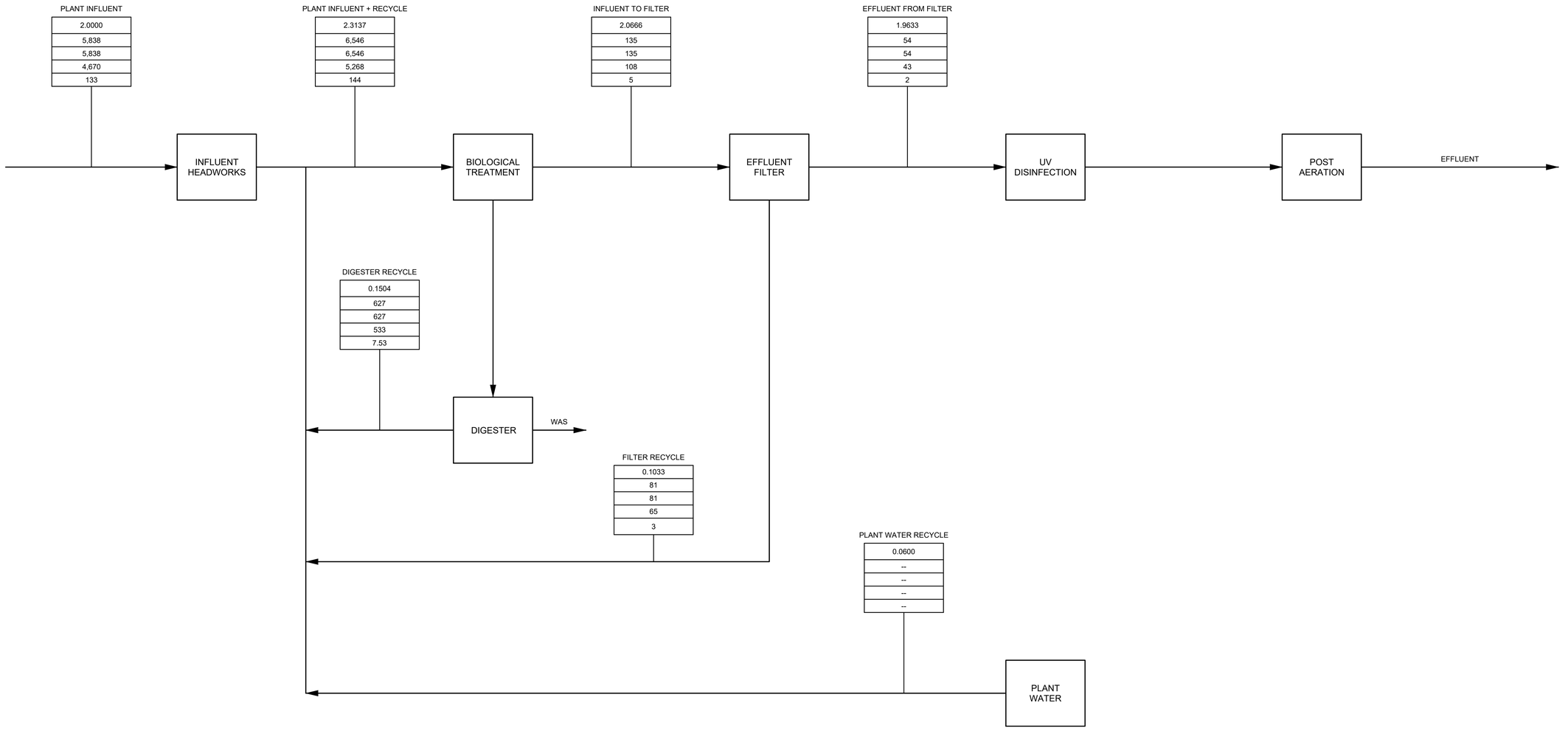
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

HYDRAULIC PROFILE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-6

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion



LEGEND

FLOW, MGD
BOD's, lbs/d
TSS, lbs/d
VSS, lbs/d
P, lbs/d

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MASS BALANCE

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

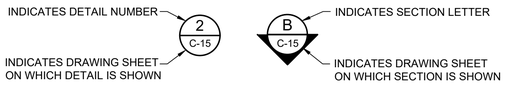
Sheet No.
G-7

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

GENERAL LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PAVEMENT EDGE	
	UNPAVED ROAD EDGE	
	CENTER LINE	
	GUARDRAIL	
X	FENCE LINE	X
	EASEMENTS	
	SINGLE TREE	
	BUILDING	
	RETAINING WALL	
(13)	# PARKING SPACES IN ROW (INC. H/C)	(12)
	TELEPHONE PEDESTAL	
	LIGHT POLE	
	POWER POLE	
	GUY WIRE	
	ELECTRICAL CABINET	
	ELEC. TRANSFORMER	
530	INDEX CONTOUR	530
528	INTERMEDIATE CONTOUR	528
x500.25	SPOT ELEVATION	x 500.25
	SLOPE DIRECTION	
	GAS COMPONENT	
	FIRE HYDRANT	
	WATER VALVE	
M	WATER METER	M
Y	YARD INLET	Y
	DROP INLET	
CO SS	CLEAN OUT	SS CO
S	MANHOLE	S
	STORM PIPE & HEADWALL	
	CATCH BASIN, 1 WING	
	CATCH BASIN, 2 WING	
	STORM DRAIN	
SS	SANITARY SEWER	SS
GAS GAS	GAS MAIN	GAS GAS
W	WATER LINE	PLW
FW FW	FIRE PROTECTION LINE	FW FW
UE	ELECTRICAL LINE	OHE OR UE
T	TELEPHONE LINE	OTC OR UTC
	DITCH LINE	
	TREE LINE	

DETAIL AND SECTION REFERENCES



24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED NO. 039453 PROFESSIONAL ENGINEER MEG M. MBUGUA JULY 31, 2025

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINCON ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

GENERAL LEGEND

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-8

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

STRUCTURAL NOTES

GENERAL:

G.1 ALL BUILDING DESIGN SHALL CONFORM TO GEORGIA STATE MINIMUM STANDARD CODE CITED IN THE OFFICIAL CODE OF GEORGIA ANNOTATED, CHAPTER 2, TITLE 8, SECTION 8-2-20(9)(B) AND DICTATED AS THE "THE 2012 STANDARD BUILDING CODE WITH AMENDMENTS" PER THE DEPARTMENT OF COMMUNITY AFFAIRS "IN THEIR DOCUMENT" GEORGIA STATE MINIMUM STANDARD BUILDING CODE.

G.2 DESIGN AND LOADS.
SEE STRUCTURAL FRAMING PLAN FOR LOADS.

G3. PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES AGAINST HYDRAULIC UPLIFT.

G.4 REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, OR SPECIFICATIONS FOR LOCATIONS AND DIMENSIONS OF ALL CHASES, CLOTS, INSERTS, CURBS, OPENINGS, SLEEVES, ANCHOR BOLTS, FLOOR PITCHES, ANGLE FRAMES, SLUICE GATE FRAMES, SLIDE GATE FRAMES, ROLLER GATE FRAMES, AND ALL OTHER PROJECT REQUIREMENTS NOT INDICATED ON STRUCTURAL DRAWINGS.

G.5 PROVIDE ALL OPENINGS REQUIRED FOR THE PURCHASED EQUIPMENT.

G.6 PROVIDE AND INSTALL ALL ANCHOR BOLTS, NUTS, AND WASHERS INDICATED OR SPECIFIED, AND NON-SHRINK, NONMETALLIC GROUT, CONCRETE PADS AND REINFORCING STEEL REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT. REFER TO THE CONCRETE PEDESTAL STANDARD DETAILS.

G.7 VERIFY AND COORDINATE DIMENSIONS OF STRUCTURAL ELEMENTS WITH THE PURCHASED EQUIPMENT BEFORE SETTING REINFORCEMENT, EMBEDDED ITEMS AND PLACING CONCRETE. ANCHOR BOLTS SHALL BE SIZED AND FURNISHED BY THE EQUIPMENT SUPPLIER UNLESS OTHERWISE INDICATED OR SPECIFIED.

G.8 PROVIDE WATERSTOPS IN CONSTRUCTION AND EXPANSION JOINTS BETWEEN DRY AREAS AND SOURCES OF LIQUID, INCLUDING THE GROUND. WATERSTOPS SHALL FORM A CONTINUOUS WATERTIGHT DIAPHRAGM TO PREVENT LEAKAGE.

G.9 TERMINATE VERTICAL WATERSTOPS THREE INCHES BELOW TOP OF CONCRETE WALLS IN OPEN TANKS AT THE UNDERSIDE OF ELEVATED FRAMED SLABS THAT ARE ABOVE MAXIMUM PROCESS LIQUID LEVELS AND ABOVE GRADE IN EXTERIOR FOUNDATION WALLS.

G.10 DIMENSIONS AND ELEVATIONS INDICATED ON EXISTING STRUCTURES HAVE BEEN OBTAINED FROM DRAWINGS OR FIELD SURVEYS. VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH ARE REQUIRED FOR FABRICATION AND INSTALLATION OF ADDITIONS TO EXISTING STRUCTURES WITH FIELD MEASUREMENTS.

G.11 WHERE A SECTION NOTE OR DETAIL IS SHOWN FOR ONE CONDITION IT SHALL APPLY AT ALL LIKE OR SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

G.12 A MINIMUM OF EXCAVATION SHALL BE DONE TO INSTALL THE WORK SHOWN BY THE DRAWINGS. AT NO TIME SHALL THE UNBRACED SIDES OF THE EXCAVATION BE STEEP ENOUGH TO ENDANGER THE WORKMEN. NO EXCAVATION SHALL BE CARRIED BELOW A LINE PROJECTED AT 30 DEGREES BELOW THE HORIZONTAL FROM THE BOTTOM EDGE OF ANY FOOTING. THE CONTRACTOR SHALL PLAN HIS WORK SO THAT AT NO TIME CAN WATER STAND IN EXCAVATIONS OR AGAINST WALLS.

G.13 THE STRUCTURAL SYSTEMS DEPICTED BY THESE DRAWINGS IS STRUCTURALLY STABLE ONLY IN ITS COMPLETED FORM. THEREFORE THE CONTRACTOR MUST BRACE ALL WORK TO RESIST GRAVITY, EARTH, WIND AND CONSTRUCTION LOADS DURING THE CONSTRUCTION PERIOD.

G.14 ALL TOPSOIL AND VEGETATION SHALL BE REMOVED FROM FILL AREA PRIOR TO INITIATION OF GRADING. AREAS TO RECEIVE FILL SHALL BE PROOFROLLED WITH A MINIMUM 10 TON LOADED TRUCK AND SOFT SPOTS SHALL BE UNDERCUT.

G.15 PROVIDE A MINIMUM OF 12" CRUSHED ROCK IN THE BOTTOM OF ALL STRUCTURE UNLESS NOTED OTHERWISE.

G.16 THE CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS BEFORE SUBMITAL FOR APPROVAL.

G.17 ALL WATER STOPS SHALL BE 6" AT ALL LOCATIONS SHOWN ON PLANS.

G.18 SMITH & LOVELESS IS PROVIDING THE VALVES ON THE GRIT WASHER:DRAIN, WASH WATER, AIR. THEY ARE NOT PROVIDING THE FLUSH VALVE ON THE SUCTION SIDE OF THE PUMP BUT ARE CONTROLLING IT. THIS CAN BE A 1.5" SOLENOID OR 1.5" BALL VALVE.

G.19 THE CONTROL BUILDING SOFFIT FINISH IS THE SAME AS FOR THE PORCH CEILING AND ARCHITRAVE, FINISH COAT OF EIFS. ALL COMPONENTS OF EIFS IS REQUIRED EXCEPT FOR THE STYROFOAM.

G.20 BOLTED CONNECTIONS WILL BE ALLOWED IN LIEU OF FIELD WELDING OF THE GRATING SUPPORT BEAMS WHERE SUBSTITUTION IS APPROVED IN WRITING BY THE GRATING SUPPLIER ENGINEER.

G.21 BOLTED CONNECTIONS WILL BE ALLOWED IN LIEU OF FIELD WELDING OF THE STAIR AND PLATFORM AS INDICATED ON SHEET 7-S-2 WHEN DESIGNED AND APPROVED BY WALKWAY SUPPLIER ENGINEER.

G.22 IT IS ACCEPTABLE TO USE FORM SAVERS FOR THE TROUGH CONSTRUCTION ON SHEET 5-S-3, SECTION A. USE 6" PVC WATER STOP, NOT HYDRAULIC WATER STOP.

FOUNDATION:

F.1 FOUNDATION DESIGNS ARE BASED UPON THE GROSS ALLOWABLE SOIL-BEARING CAPACITY AS INDICATED IN THE GEOTECHNICAL REPORT BY GEO-HYDRO DATED OCTOBER 2019.

F.2 PERCENT COMPACTION IS DEFINED AS THE RATIO OF THE FIELD DRY DENSITY, AS DETERMINED BY ASTM D-1556 TO THE MAXIMUM DRY DENSITY, DETERMINED BY ASTM-01557, METHOD C, MULTIPLIED BY 100.

F.3 COMPACT ALL BACKFILL UNDER FOUNDATION MATS, BASE SLABS, FOOTINGS, AND SLABS ON GRADE TO 95 PERCENT OF MAXIMUM DRY DENSITY MINIMUM, UNLESS OTHERWISE INDICATED OR SPECIFIED.

F.4 COMPACT ALL EMBANKMENTS AND BACKFILL NOT SUPPORTING STRUCTURES TO 80 PERCENT OF MAXIMUM DRY DENSITY, MINIMUM, UNLESS OTHERWISE INDICATED OR SPECIFIED.

F.5 DO NOT BACK FILL AGAINST CONCRETE WALLS UNTIL LATERAL SUPPORT IS PROVIDED BY FLOOR OR ROOF SLABS, AND SLABS AND WALLS HAVE REACHED THEIR 28-DAY DESIGN STRENGTH. DO NOT BACKFILL AGAINST CANTILEVER WALLS UNTIL THE CONCRETE HAS REACHED ITS 28-DAY DESIGN STRENGTH.

F.6 PROVIDE FOUNDATION PREPARATION AS INDICATED OR SPECIFIED. REFER TO THE FOUNDATION PREPARATION STANDARD DETAILS.

F.7 THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS DESCRIBED. THE DATA IS INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY OF THE SPECIFIC LOCATION AT THE PARTICULAR TIME THEY WERE MADE.

F.8 DO NOT PLACE FOUNDATION CONCRETE IN WATER OR ON FROZEN OR DISTURBED GROUND.

F.9 COMPACT THE BOTTOM SURFACE OF THE EXPOSED EXCAVATION WITH A VIBRATORY STEEL DRUM ROLLER TO ACHIEVE A NEAR SURFACE DENSITY OF AT LEAST 95 PERCENT.

F.10 CONFORM TO SPECIFIED REQUIREMENTS AND LIMITATIONS FOR ALL ROCK BLASTING.

CONCRETE:

C.1 CONFORM TO THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, LATEST EDITION AND TO THE ENVIRONMENTAL ENGINEERING CONCRETE STURCTURES REPORT BY ACI (350-20) COMMITTEE LATEST EDITION FOR CONCRETE WORK.

C.2 SEE SPEC SECTION 03310 FOR CONCRETE STRENGTH AND LOCATION.

C.3 AIR-ENTRAIN ALL CONCRETE.

C.4 USE WELDED WIRE FABRIC CONFORMING TO ASTM A185. LAP SPLICE AT LEAST TWO FULL MESHES, AND STAGGER SPLICES IS EITHER DIRECTION.

C.5 REINFORCE CONCRETE FILL AND TOPPING SLABS THAT ARE TWO INCHES OR MORE THICK WITH WELDED WIRE FABRIC SIZED IN CONFORMANCE WITH STANDARD DETAIL. TYPICAL W.W.F. FOR CONCRETE FILL AND TOPPING SLABS UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.6 PROVIDE CLASS B SPLICE FOR ALL CONTINUOUS REINFORCEMENT UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.7 IN ELEVATED SLABS AND BEAMS, LAP CONTINUOUS BOTTOM REINFORCEMENT AT SUPPORTS AND CONTINUOUS TOP REINFORCEMENT AT THE CENTER OF A SPAN UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.8 IN FOUNDATIONS MATS AND BASE SLABS, LAP CONTINUOUS BOTTOM REINFORCEMENT AT THE CENTER OF A SPAN AND CONTINUOUS TOP REINFORCEMENT AT SUPPORTS, UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.9 PROVIDE REINFORCEMENT BAR SUPPORTS, SPACERS, AND ACCESSORIES RECOMMENDED IN ACI SP-66, ACI DETAILING MANUAL. PROVIDE PLASTIC BOOTED ACCESSORIES, SUCH AS SLAB BOLSTERS, AND BEAM AND SLAB SHARES IN CONTACT WITH EXPOSED SURFACES, PROVIDE NUMBER 5 MINIMUM SUPPORT BARS.

C.10 PROVIDE NO.5 HORIZONTAL BARS AT NO MORE THAN 12-INCHES CENTERS ON EACH SIDE FOR CONCRETE BEAMS AND GIRDERS 30 INCHES AND DEEPER, UNLESS OTHERWISE NOTED.

C.11 SET AND MAINTAIN REINFORCEMENT AT THE CLEAR DISTANCES FROM THE SURFACE OF CONCRETE, AS INDICATED IN STANDARD DETAIL OR SPECIFICATIONS. CONCRETE COVER FOR CAST-IN-PLACE CONCRETE OVER THE REINFORCEMENT.

C.12 PROVIDE ADDITIONAL REINFORCEMENT ALONG EACH SIDE OF OPENINGS AS INDICATED IN STANDARD DETAILS, UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.13 SET AND TIE ALL REINFORCEMENT BEFORE PLACING CONCRETE, SETTING DOWELS, AND REINFORCEMENT INTO WET CONCRETE IS PROHIBITED.

C.14 SUBMIT ALL PROPOSED ADDITIONAL CONSTRUCTION AND EXPANSION JOINTS TO THE ENGINEER FOR HIS WRITTEN APPROVAL. DO NOT OMIT ANY CONSTRUCTION OR EXPANSION JOINTS UNLESS APPROVED IN WRITING BY THE ENGINEER.

C.15 CARRY ALL REINFORCING CONTINUOUS THROUGH CONSTRUCTION JOINTS AND PROVIDE DOWELS AS INDICATED IN STANDARD DETAILS.

C.16 LOCATE CONSTRUCTION JOINTS IN ELEVATED SLABS NEAR THE MIDDLE OF THE SPANS OF SLABS AND BEAMS UNLESS OTHERWISE INDICATED OR SPECIFIED. IF A BEAM INTERSECTS A GIRDER AT THESE LOCATION, OFFSET THE CONSTRUCTION JOINT IN THE GIRDER AT THIS LOCATION. OFFSET THE CONSTRUCTION JOINT IN THE GIRDER A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM AND PROVIDE INCLINED REINFORCEMENT IN CONFORMANCE WITH STANDARD DETAIL CONSTRUCTION JOINT IN BEAMS.

C.17 PROVIDE CONSTRUCTION AND EXPANSION JOINTS IN CONCRETE FILL AND TOPPING SLABS AT THE SAME LOCATION AS THE CONSTRUCTION AND EXPANSION JOINTS IN THE SUPPORTING CONCRETE,

C.18 FOUNDATION MATS, BASE SLABS, SLABS ON GRADE, WALLS AND ELEVATIONS SLABS MAY BE CAST IN ALTERNATE CONCRETE PLACEMENTS, ADJACENT CONCRETE SECTIONS MAY BE CAST 24 HOURS MINIMUM AFTER THE ABUTTED SECTION HAS BEEN PLACED.

C.19 DO NOT PLACE CONCRETE IN BEAMS, GIRDERS, OR SLABS UNTIL THE CONCRETE IN THE SUPPORTING COLUMNS OR WALLS HAS OBTAINED IT'S 28 DAY COMPRESSION STRENGTH.

C.20 PLACE ELEVATED SLABS AND BEAMS MONOLITHICALLY UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.21 PROVIDE 3/4-INCH CHAMFER ON ALL EXPOSED EDGES OF CONCRETE ELEMENTS, SUCH AS COLUMNS, PILASTERS, BEAMS, CURBS, AND EQUIPMENT PEDESTALS.

C.22 FINISH CONCRETE AS SPECIFIED IN SECTION 03300. THE TOP OF ALL TANK WELLS, FLOORS, ROOFS, CONCRETE FILL AND TOPPING SLABS MUST BE STEEL-TROWLED, UNLESS OTHERWISE INDICATED OR SPECIFIED. EXTERIOR CONCRETE PLATFORMS, STAIRS AND LOADING DOCKS MUST BE BROOM FINISHED.

C.23 FILL FLOOR POCKETS IN CRETE FOR GATE FRAMES WITH CONCRETE AFTER GATE INSTALLATION.

C.24 USE NONSHRINK, NONMETALLIC GROUT, AS SPECIFIED IN SECTION 03300 TO THICKNESS INDICATED OR SPECIFIED UNDER BASE AND BEARING PLATES.

C.25 FLOOR AND ROOF SLOPES ARE AN INTEGRAL PART OF STRUCTURAL SLABS SEPARATE CONCRETE FILL OR TOPPING SLABS ARE NOT PERMITTED UNLESS OTHERWISE INDICATED OR SPECIFIED.

C.26 FURNISH ALL CONCRETE MASONRY UNIT (CMU) WALL REINFORCEMENT TO THE MASONRY SUBCONTRACTOR FOR HIS INSTALLATION. REINFORCEMENT SIZE SPACING, LENGTH AND LOCATION INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. PROVIDE AND SET ALL REINFORCEMENT BAR DOWELS TO BE EMBEDDED INTO CONCRETE ELEMENTS AT TOP AND BOTTOM OF CMU WALLS AS INDICATED,

C.27 MAINTAIN BEAM SOFFITS AT CONSTANT ELEVATION BELOW THE SLAB LOW POINT INDICATED. THE SCHEDULED BEAM DEPTH IS MEASURED FROM THE SLAB LOWPOINT. THE ACTUAL DEPTH VARIES WITH THE SLAB SURFACE SLOPES. BEAM TOP REINFORCEMENT SHALL BE LEVEL BENEATH THE SLAB LOW POINT.

C.28 ALL CONCRETE STAIRS SPANNING 10'-0" OR MORE SHALL BE 9" THICK WITH #7 @ 6" E.W. BOTTOM WITH #4 NOSING BAR AND ALUMINUM STAIR NOSING. ALL CONCRETE STAIRS SPANNING LESS THAN 10'-0" SHALL BE 6' THICK WITH #5 @ 6" E.W. BOTTOM WITH #4 NOSING BAR AND ALUMINUM STAIR NOSING.

C.29 CONCRETE SHALL BE CLASS A, HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS UNLESS OTHERWISE NOTED.

C.30 REINFORCED STEEL SHALL CONFORM TO ASTM A615 SPECIFICATION FOR DEFORMED AND PLAIN BILLETT-STEEL BARS FOR CONCRETE REINFORCEMENT GRADE 60.

C.31 ALL REINFORCING BAR SPLICES AND LAPS SHALL CONFORM TO ACI 318 LATEST EDITION BUILDING CODE REQUIREMENTS FOR REINFORCING CONCRETE, CLASS B, UNLESS NOTED OTHERWISE, REFER TO THE "TABLE OF LAP SPLICES". ALL REQUIREMENTS FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH "THE CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.

C.32 THE MINIMUM CONCRETE COVER TO BE PROVIDED FOR CONCRETE REINFORCING SHALL BE IIN ACCORDANCE WITH SECTION 7.7 "CONCRETE PROTECTION FOR REINFORCEMENT' IN THE ACI 318 LATEST EDITION CODE. EXCEPT THAT MINIMUM TO BE PROVIDED FOR REINFORCEMENT IN CONCRETE IN CONTACT WITH WATER SHALL BE 2 INCHES.

C.33 CONCRETE ENCASEMENT IS REQUIRED FOR ALL PIPING BELOW STRUCTURES.

REINFORCING DETAILS:

R.1 THE REINFORCING FOR ALL CONCRETE WALLS AND SLABS, UNLESS OTHERWISE DETAILED, SHALL BE AS FOLLOWS:

WALL OR SLAB THICKNESS	REINF EACH WAY	LOCATION
6"	#4@12"	CENTERED
8"	#5@12"	CENTERED
10"	#5@12"	EACH FACE
12"	#5@12"	EACH FACE

PROVIDE LARGER SIZES AND MORE REINFORCING IN ALL SECTIONS OF CONCRETE WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.

R.2 CLEARANCE BARS FOR REINFORCEMENT BARS. UNLESS SHOWN OTHERWISE, SHALL BE:

-WHEN PLACED ON GROUND; 3" -INTERIOR DRY SURFACES
-EXPOSED TO WATER, WEATHER, SLABS: 3/4"
BACKFILL OR CONDENSATION: 2" BEAMS: 1 1/2"
#5 BAR OR SMALLER: 2" COLUMNS: 1 1/2"
#6 BAR OR LARGER: 2" WALLS: 1"

R.3 REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAIL. IN GENERAL, THE WALL CORNER REINFORCING SIZES AND SPACING SHALL BE CALLED OUT ON THE PLANS AND REFERENCED TO THESE DETAILS, AND THE TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE CORNER OR INTERSECTION HORIZONTAL REINFORCING.

R.4 ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN THE LATEST EDITION OF ACI 318.

R.5 ALL WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS, AS INDICATED ON SHEET DS-1.

R.6 VERTICAL WALL BARS SHALL BE LAPPED WITH DOWELS FROM BASE SLABS AND EXTENDED INTO THE TOP FACE OF FLOOR OR ROOF SLABS AND LAPPED WITH TOP SLAB REINFORCEMENT. PROVIDE A MINIMUM OF TWO FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS, AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN OR REQUIRED BY NOTES ABOVE.

R.7 UNLESS INDICATED OTHERWISE , CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES SHALL BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES SHALL BE LOCATED AT SUPPORTS. ALL REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

R.8 TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR, IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

R.9 CONTINUOUS WATERSTOP AS SPECIFIED, SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS IN WALLS AND SLABS OF WATER HOLDING BASINS AND CHANNELS, EXCEPT WHERE INDICATED OTHERWISE.

R.10 INCREASE LAP LENGTHS SHOWN ABOVE FOR TOP BARS BY 30% AND LAP LENGTHS FOR BOTTOM BARS BY 50% WHEN EPOXY COATED REINFORCING IS SPECIFIED FOR BARS.

R.11 PLACE HORIZONTAL WALL REINFORCING WITHIN 3" OF ALL CONSTRUCTION JOINTS AND WITHIN 3" OF TOP OF ALL WALLS.

R.12 PLACE REINFORCING WITHIN 3" OF ALL EXPANSION JOINTS, ENDS OF WALLS, SLABS, AND EDGES OF OPENINGS.

CONCERTE ANCHORS:

CA.1 CONCRETE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM E 488 STANDARD TEST METHODS FOR STRENGTH OF ANCHORS IN CONCRETE AND MASONRY ELEMENTS, ANCHORS SHALL BE INSTALLED TO DEVELOP THE MAXIMUM CAPACITY FOR THE EMBEDMENT, TYPE, AND ANCHOR SIZE WITH A MINIMUM SAFETY FACTOR OF FOUR. INSTALLATION TO CONFORM TO MANUFACTURER'S CURRENT PRINTED INSTRUCTIONS. ANCHORS SHALL HAVE STANDARD UNC THREADS, DO NOT USE ANCHORS WITH EXPANDED ENDS IN CONCRETE FOR DIRECT TENSION APPLICATIONS.

CA.2 PROVIDE STUD TYPE ANCHORS OF TYPE 316 STAINLESS STEEL UNLESS OTHERWISE INDICATED OR SPECIFIED. PROVIDE EACH ANCHOR WITH TYPE 316 STAINLESS STEEL NUT AND WASHER, STUD-TYPE ANCHORS SHALL BE.

A. KWIK-BOLT MADE BY HILTI FASTENING SYSTEMS, STANFORD, CONNECTICUT.

B. RAWL-STUD MADE BY THE RAWLPLUG COMPANY, NEW ROCHELLE, NEW YORK.

C. TRUBOLT WEDGE MADE BY ITW RAMJET/RED HEAD, WOODDALE, ILLINOIS.

CA.3 PROVIDE INTERNALLY THREADED-TYPE ANCHORS MADE OF HIGH STRENGTH STEEL WITH A RUST-RESISTANT COATING. PROVIDE EACH ANCHOR WITH A TYPE 316 STAINLESS STEEL BOLT, NUT, AND WASHER OF THE CORRECT SIZE AND LENGTH TO FULLY DEVELOP THE STRENGTH OF THE ANCHOR. ANCHOR MAY BE THE SELF-DRILLING OR DROP-IN TYPE. INTERNALLY ANCHORS SHALL BE:

A. HDI DROP-IN ANCHORS MADE BY HILTI FASTENING SYSTEMS, STAMFORD, CONNECTICUT.

B. MULTISET OR SELF-DRILLING ANCHORS MADE BY ITT PHILLIPS DRILL DIVISION. MICHIGAN CITY, INDIANA.

C. SELF-DRILLING SHIELD OR PLUG TYPE MADE BY START EXPANSION INDUSTRIES CORP., MOUNTAINVILLE, NEW YORK.

D. OR APPROVED EQUAL

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MBG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

PRINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL GENERAL NOTES (1 OF 2)

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-9

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

STRUCTURAL NOTES

REINFORCING UNIT MASONRY:

1. POSITION REINFORCEMENT ACCURATELY AT THE SPACING INDICATED. SUPPORT AND SECURE VERTICAL BARS AGAINST DISPLACEMENT. HORIZONTAL REINFORCEMENT MAY BE PLACED AS THE MASONRY WORK PROGRESSES. WHERE VERTICAL BARS ARE SHOWN IN CLOSE PROXIMITY PROVIDE A CLEAR DISTANCE BETWEEN BARS OF NOT LESS THAN THE NOMINAL BAR DIAMETER OR 1" (WHICHEVER IS GREATER).

2 PROVIDE NOT LESS THAN MINIMUM LAP INDICATED. AS REQUIRED BY GOVERNING CODE.

3 MAINTAIN VERTICAL CONTINUITY OF CORE OR CELL CAVITIES. WHICH ARE TO BE REINFORCED AND GROUTED. TO PROVIDE MINIMUM CLEAR DIMENSION INDICATED AND TO PROVIDED MINIMUM CLEARANCE AND GROUT COVERAGE FOR VERTICAL REINFORCEMENT BARS. KEEP CAVITIES FREE OF MORTAR.

4 WHERE HORIZONTAL REINFORCED BEAMS (BOND BEAMS OR LINTELS) ARE SHOWN. USE LINTEL UNITS OR MODIFY REGULAR UNITS TO ALLOW FOR PLACEMENT OF CONTINUOUS HORIZONTAL REINFORCEMENT BARS. PLACE SMALL MESH EXPANDED METAL LATH OR WIRE SCREENING IN MORTAR JOINTS UNDER METAL BOND BEAM COURSES OVER CORES OR CELLS OF NON-REINFORCED VERTICAL CELLS, OR PROVIDE UNITS WITH SOLID BOTTOMS.

5 DO NOT PLACE GROUT UNTIL ENTIRE HEIGHT OF MASONRY TO BE GROUTED HAS ATTAINED SUFFICIENT STRENGTH TO RESIST DISPLACEMENT OF MASONRY UNITS AND BREAKING OF MORTAR BOND. INSTALL SHORES AND BRACING BEFORE STARTING GROUTING OPERATIONS.

6 LIMIT GROUT POURS TO SECTIONS WHICH CAN BE COMPLETED IN ONE WORKING DAY WITH NOT MORE THAN ONE HOUR INTERRUPTION OF POURING OPERATION. PLACE GROUT IN LIFTS WHICH DO NOT EXCEED 5 FEET. ALLOW NOT LESS THAN 30 MINUTES, NOR MORE THAN ONE HOUR BETWEEN LIFTS OF A GIVEN POUR. VIBRATE EACH GROUT LIFT DURING POURING OPERATION.

7 WHEN MORE THAN ONE POUR IS REQUIRED TO COMPLETE A GIVEN SECTION OF MASONRY, EXTEND REINFORCEMENT BEYOND MASONRY AS REQUIRED FOR PLACING. POUR GROUT TO WITHIN 1-1/2" OF TOP COURSE OF FIRST POUR. AFTER GROUTED MASONRY IS CURED. LAY MASONRY UNITS AND PLACE REINFORCEMENT FOR SECOND POUR SECTION BEFORE GROUTING. REPEAT SEQUENCE IF MORE POURS ARE REQUIRED.

8 GROUT FOR UNIT MASONRY SHALL COMPLY WITH ASTM C476. USE GROUT OF CONSISTENCY AT TIME OF PLACEMENT WHICH WILL COMPLETELY FILL ALL SPACES INTENDED TO RECEIVE GROUT.

GENERAL MASONRY NOTES:

M.1 NET AREA COMPRESSIVE STRENGTH OF CMU IS 2500 PSI, MINIMUM.

M.2 FURNISH ALL CONCRETE MASONRY UNIT (CMU) WALL REINFORCEMENT TO THE MASONRY SUBCONTRACTOR FOR HIS INSTALLATION, REINFORCEMENT SIZE SPACING, LENGTH AND LOCATION INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS, PROVIDE AND SET ALL REINFORCING BAR DOWELS TO BE EMBEDDED INTO CONCRETE ELEMENTS AT TOP AND BOTTOM OF CMU WALLS AS INDICATED OR SPECIFIED.

M.3 CONCRETE BLOCKS SHALL BE HOLLOW LOAD BEARING UNITS CONFORMING TO ASTM C90, NORMAL WEIGHT, GRADE N- II AND SHALL HAVE A MINIMUM f'm OF 1900 PSI AT 28 DAYS. ALL BLOCKS SHALL HAVE TOW CORE CELLS (MAX.)

M.4 MORTAR SHALL BE PORTLAND CEMENT/ LIME TYPE S. MORTAR SHALL NOT BE AIR ENTRAINED. MORTAR SHALL CONFORM TO ASTM C270.

M.5 GROUT FILL SHALL CONFORM TO THE REQUIREMENTS OF ASTM C476 AND SHALL HAVE A MINIMUM f'g OF 3000 PSI AT AGE 28 DAYS. GROUT FILL SHALL HAVE A SLUMP OF 8" TO 10" AT TIME OF PLACEMENT.

M.6 GROUT FILL SHALL BE TESTED IN ACCORDANCE WITH ASTM C1019. EACH BATCH OF GROUT SHALL BE TESTED.

M.7 THREE TEST PRISMS SHALL BE MADE FOR EVERY 5000 SQ. FT. OF WALL AREA DURING CONSTRUCTION AND TESTED IN ACCORDANCE WITH ASTM C1314. THE MINIMUM REQUIRED PRISM STRENGTH (f'm) IS 1500 PSI. PRISMS SHALL BE FIELD CURED.

M.8 BED JOIST SHALL BE FULLY MORTARED. HEAD JOINTS OF LINTELS AND BEAMS SHALL BE PACKED SOLID WITH MORTAR. HEAD JOINTS SHALL BE CONSIDERED FULLY MORTARED WHEN MORTAR JOINTS IS A MINIMUM THICKNESS OF MASONRY FACE SHELL.

M.9 REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.

M.10 GROUT FILL AT VERTICAL REINFORCING.
- A. PROVIDE CLEAN-OUT HOLES AT THE BOTTOM OF THE CELLS TO BE GROUTED.
- B. MARK CELLS WITH DOWELS TO ASSURE THAT VERTICAL REINFORCING IS PLACED IN SAME CELL AS DOWEL.
- C. PLACE REINFORCING PRIOR TO GROUTING.
- D. POUR GROUT INTO CELL A MAXIMUM HEIGHT OF 5'-0".
- E. CONSOLIDATE GROUT BY VIBRATING 1 TO 2 SECONDS USING A LOW VELOCITY VIBRATOR WITH A 3/4" HEAD. DO NOT CONSOLIDATE BY RODDING WITH REINFORCING BARS.
- F. AFTER INITIAL WATER LOSS, RE-CONSOLIDATE GROUT WITH LOW VELOCITY VIBRATOR.
- G. REPEAT STEPS D THROUGH F AS REQUIRED TO FILL CELLS FULL HEIGHT OF THE GROUT POUR PLUS SPLICE LENGTH.
- H. THE TOP OF A GROUT POUR SHALL NOT BE LOCATED AT THE TOP OF A UNIT BUT WITHIN 1 1/2" OF THE BED JOINT.

M.11 LINTELS SHALL BE SHORED UNTIL THE GROUT FILL HAS ATTAINED ITS FULL 28 DAYS STRENGTH.

M.12 SHOP DRAWINGS FOR REINFORCING ARE REQUIRED. WALL REINFORCING SHALL BE SHOWN IN ELEVATION.

M.13 WALLS SHALL BE PROVIDED WITH TRUSS OR LADDER TYPE JOINT REINFORCING AT 16" O.C. SIDE AND CROSS RODS SHALL BE W1.7.

M.14 PROVIDE CONTROL JOINTS IN EXTERIOR MASONRY WALLS AT 24'-8" MAXIMUM. DO NOT PROVIDE CONTROL JOINTS IN INTERIOR MASONRY WALLS.

M.15 PROVIDE REINFORCING IN MASONRY WALLS ONLY AS SHOWN BY THE STRUCTURAL DRAWINGS.

M.16 REINFORCING BARS SHALL BE HELD IN POSITIONS SHOWN BY THE DRAWING.

CONCRETE BONDING AGENT:

CB.1 LIGHTLY BRUSH-HAMMER THE SURFACE OF EXISTING FORMED CONCRETE TO EXPOSE A FRESH CLEAN SURFACE.

CB.2 CLEAN THE SURFACE OF EXISTING CONCRETE OF ALL LOOSE AND FRACTURED MATERIAL.

CB.3 COAT SURFACE OS EXISTING CONCRETE TO BE JOINED TO NEW CONCRETE WITH A BONDING AGENT.

CB.4 PROTECT SURFACES TO RECEIVE A BONDING AGENT FROM MATERIAL, WHICH WOULD REDUCE ITS EFFECTIVENESS.

CONCRETE BONDING AGENT CONT.:

CB.5 STORE AND APPLY THE BONDING AGENT ACCORDING TO THE MANUFACTURER'S PRINTED INSTRUCTIONS.

CB.6 PLACE NEW CONCRETE AGAINST THE BONDING AGENT WITHIN THE TIME LIMIT SPECIFIED AS ITS WORKING LIFE.

CB.7 BONDING MATERIAL SHALL BE WELD-CRETE AS MANUFACTURED BY LARSEN PRODUCTS CORPORATION OF ROCKVILLE, MARYLAND, AND OR APPROVED EQUAL.

STRUCTURAL STEEL

S.1 STRUCTURAL STEEL TO CONFORM TO ASTM A 36 UNLESS OTHERWISE NOTED OR SPECIFIED.

S.2 WELDING TO CONFORM TO THE STRUCTURAL WELDING CODE, AWS D1.1.

S.3 USE E70XX EPOXY WELDING ELECTRODES.

S.4 FIELD WELDING OF STRUCTURAL MEMBERS IS N OT PERMITTED UNLESS SPECIFICALLY INDICATED.

S.5 SHOP CONNECTIONS SHALL BE BOLTED UNLESS WELDING IS INDICATED.

S.6 FIELD CONNECTIONS SHALL BE BOLTED UNLESS WELDING IS INDICATED.

S.7 PROVIDE 3/4" DIAMETER ASTM A 325N HIGH STRENGTH BOLTS FOR BOLTED CONNECTIONS. PROVIDE 13/16" DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE ONE HARDENED WASHER UNDER THE ELEMENT TURNED IN TIGHTENING. PROVIDE PLATE WASHERS IN BOTH OUTER PLIES WHEN OVERSIZED OR SLOTTED HOLES ARE INDICATED.

S.8 TIGHTEN HIGH STRENGTH BOLTS FOR SLIP-CRITICAL JOINTS OR CONNECTIONS SUBJECTED TO DIRECT TENSION IN CONFORMANCE WITH AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A 325 OR A 490 BOLTS. TENSION CONTROL BOLTING MAY NOT BE SUBSTITUTED FOR CALIBRATED WRENCH BOLTING WHEN USING HOT-DIP GALVANIZED BOLTS.

S.9 SIMPLY SUPPORTED BEAM-TO-COLUMN AND BEAM-TO-CONNECTIONS SHALL BE MADE WITH DOUBLE ANGLES IN CONFORMANCE WITH THE AISC MANUAL UNLESS OTHERWISE INDICATED.

S.10 FURNISH AND INSTALL ONE WASHER AND ONE HEAVY HEX NUT WITH ASTM A 36 ANCHOR BOLTS UNLESS OTHERWISE INDICATED.

S.11 DETAIL BRACING MEMBERS TO AVOID ECCENTRIC CONNECTIONS AND FOR DRAWING THE BRACING MEMBER TOGETHER.

S.12 PROVIDE TEMPORARY BRACING AND STAYS DURING STEEL ERECTION TO RESIST VERTICAL AND LATERAL LOADS UNTIL MEMBERS ARE PERMANENTLY FASTENED AND FLOORS AND ROODS COMPLETED

S.13 PROVIDE 1/16" MINIMUM CONTINUOUS FILLET SEAL WELDS FOR ALL WELDED CONNECTIONS TO MEMBERS HAVING TYPE S OR TYPE E SERVICE AND TO ALL WELDED CONNECTIONS THAT WILL BE GALVANIZED.

S.14 APPLY 1/8" THICK TROWEL GRADE BITUMINOUS MASTIC DAMPPROOFING TO STEELWORK TO BE ENCASED IN EXTERIOR MASONRY WALLS UNLESS DIRECT CONTACT SPRAY-ON OR TROWEL-ON FIREPROOFING IS INDICATED OR SPECIFIED.

S.15 PROVIDE 3/16" X 1" LONG FILLET WELD FOR ELECTRICAL CONTINUITY BETWEEN MEMBERS AT CONNECTIONS.

S.16 SHEAR STUDS TO CONFORM TO ASTM A 108. INSTALL IN ACCORDANCE WITH AWS D1.1.

S.17 PROVIDE 13/16" DIAMETER DRAIN HOLES THROUGH MEMBERS AT LOW POINTS OR AS INDICATED TO PREVENT ACCUMULATION OF WATER.

S.18 USE NON-SHRINK, NOM-METALLIC GROUT AS INDICATED AND SPECIFIED UNDER BASE AND BEARING PLATES.

ALUMINUM:

A.1 STRUCTURAL ALUMINUM TO CONFORM TO ALLOY 6061-T6. DETAIL AND FABRICATED IN CONFORMANCE WITH THE LATEST ASCE SPECIFICATIONS FOR STRUCTURES OF ALUMINUM.

A.2 FIELD WELDING OF STRUCTURAL MEMBERS IS NOT PERMITTED UNLESS SPECIFICALLY INDICATED.

A.3 SHOP CONNECTIONS MAY BE BOLTED OR WELDED UNLESS THE CONNECTION METHOD IS INDICATED.

A.4 PROVIDE 3/4" DIAMETER TYPE 316 STAINLESS STEEL BOLTS FOR BOLTED CONNECTIONS. PROVIDE 13/16" DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE PLATE WASHERS IN BOTH OUTER PLIES WHEN OVERSIZE OR SLOTTED HOLES ARE INDICATED.

A.5 SIMPLY SUPPORTED BEAM-TO-COLUMN AND BEAM-TO-BEAM CONNECTIONS SHALL BE MADE WITH DOUBLE ANGLES IN CONFORMANCE WITH THE AISC MANUAL UNLESS OTHERWISE INDICATED.

A.6 DETAIL BRACING MEMBERS TO AVOID ECCENTRIC CONNECTIONS AND FOR DRAWING THE BRACING MEMBERS TOGETHER.

A.7 PROVIDE TEMPORARY BRACING AND STAYS DURING STEEL ERECTION TO RESIST VERTICAL AND LATERAL LOADS UNTIL MEMBERS ARE PERMANENTLY FASTENED AND FLOORS AND ROOF'S COMPLETED.

A.8 PAINT ALUMINUM IN CONTACT WITH CONCRETE WITH ASPHALTIC PAINT IN CONFORMANCE WITH SPECIFICATIONS SECTION 05500 AND 09900.

A.9 PROVIDE DISSIMILAR METAL PROTECTION AT BOLT LOCATIONS AND OTHER LOCATIONS WHERE DISSIMILAR METALS ARE IN CONTACT. PROTECT WITH A MINIMUM 4-MIL DRY THICKNESS COAT OF ZINC CHROMATE PRIMER ON THE ALUMINUM SURFACES AND A MINIMUM 2-MIL DRY THICKNESS COAT OF ALL-METAL PRIMER FOLLOWED BY ONE COAT IF MINIMUM 3-MIL DRY THICKNESS ALUMINUM PAINT TO THE DISSIMILAR METAL.

A.10 USE NON-SHRINK, NON-METALLIC GROUT AS INDICATED AND SPECIFIED UNDER BASE AND BEARING PLATES.

DESIGN LOADS:

1. ROOF LIVE LOADS -20 PSF
2. FLOOR LIVE LOAD -150 PSF FOR STAIRS AND PLATFORM
3. GROUND SNOW LOAD Pg -5 PSF
4. WIND LOAD
   - REF. ASCE 7-10
   - BASIC WIND SPEED, V = 90 MPH
   - IMPORTANCE FACTOR = 1.0
   - EXPOSURE -C
5. EARTHQUAKE LOAD
   - GEOTECHNICAL -"C"
   - IMPORTANCE FACTOR, IE =1.25
   - SEISMIC USE GROUP = I
   - SEISMIC DESIGN CATEGORY ="C"
   - MAPPED SPECTRAL RESPONSE
     - SS = 0.254%g
     - S1 = 0.095%g
   - SPECTRAL RESPONSE COEFFICIENTS
     - SDS = 0.221%G
     - SD1 = 0.095%G
   - BASIC SEISMIC FORCE-RESISTING SYSTEM(S) BUILDING FRAME SYSTEM
   - SEISMIC RESPONSE COEFFICIENT(S) CS = 0.16
   - RESPONSE MODIFICATION FACTOR(S) R = 5
   - ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

ABBREVIATIONS

AB	ANCHOR BOLT
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BM	BEAM
BOTT	BOTTOM
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DEG	DEGREE
DET	DETAIL
DIA	DIAMETER
DIR	DIRECTION
DN	DOWN
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EL	ELEVATION
EW	EACH WAY
EJ	EXPANSION JOINT
EXIST	EXISTING
FD	FLOOR DRAIN
IF	INSIDE FACE
LG	LONG
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
MAX	MAXIMUM
MFR	MANUFACTURER
MECH	MECHANICAL
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
PC	PIECE
PCF	POUNDS PER CUBIC FEET
PJF	PREMOULDED JOINT FILLER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE FEET
PROJ	PROJECTION
SECT	SECTION
SPECS	SPECIFICATIONS
SQ	SQUARE
SSPC	STEEL STRUCTURES PAINTING COUNCIL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SYMM	SYMMETRICAL
T	TOP
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TR	THREADS
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WS	WATERSTOP
WWF	WELDED WIRE FABRIC

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MBG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7- 31 -2025

RINT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

STRUCTURAL GENERAL NOTES (2 OF 2)

Drawn: AE
Design: AE
Checked: MM
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-10

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

PIPE SERVICE

AL	ALUM
AR	AIR RELEASE
BP	BY-PASS
BWW	BACKWASH WATER
CA	COMPRESSED AIR
CL	SODIUM HYPOCHLORITE
CLGS	CHLORINE GAS
CLGV	CHLORINE GAS VACCUM
CLS	CHLORINE SOLUTION
CN	CENTRATE
CS	CHEMICAL SLUDGE
CW	COLD WATER
DG	DIGESTER GAS
DR	DRAIN
DS OR DSLD	DIGESTED SLUDGE
EFF	PLANT EFFLUENT
FI	FILTRATE
FM	FORCE MAIN
FP	FIRE PROTECTION
HW	HOT WATER
LS	LIME SLURRY
NG	NATURAL GAS
OF	OVERFLOW
PA	PLANT AIR
PAC	POLYALUMINUM CHLORIDE
PD	PROCESS DRAIN
PL	POLYMER
PLW	PLANT WATER
PS	PRIMARY SLUDGE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
SA	SULFURIC ACID
SAM	SAMPLE
SBS	SODIUM BISULFITE
SC	SCUM
NaOCL	SODIUM CHLORITE
SD	STORM DRAIN
SEAL	SEAL WATER
SH	SODIUM HYDROXIDE
SL OR SLD	SLUDGE
SMP	SUMP
SN	SUPERNATANT
SS	SANITARY SEWER
SW	SEAL WATER
TS	THICKENED SLUDGE
UD	UNDER DRAINS
UW	UTILITY WATER
V	VENT
WAS	WASTE ACTIVATED SLUDGE
WG	WASTE GAS
WW	WASH WATER

PIPE MATERIALS

BSP	BLACK STEEL PIPE
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PIPE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CSP	CARBON STEEL PIPE (SEAMLESS)
CU	COPPER
DIP	DUCTILE IRON PIPE
FRP	FIBERGLASS REINFORCED PLASTIC
GIP	GALVANIZED IRON PIPE
GSP	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHLENE ETHYLENE
IP	IRON PIPE
PB	POLYBUTYLENE
PCP	PRESTRESSED CONCRETE PRESSURE
PE	POLYETHYLENE
PP	POLYPROPYLENE
PVC/SCH 40	POLYVINYL CHLORIDE - SCH 40
PVC/SCH 80	POLYVINYL CHLORIDE - SCH 80
PVC/C900	POLYVINYL CHLORIDE - C900
RCP	REINFORCED CONCRETE PIPE
RH	RUBBER HOSE
SSTL	STAINLESS STEEL PIPE
STL	STEEL (FABRICATED)
VCP	VITRIFIED CLAY PIPE

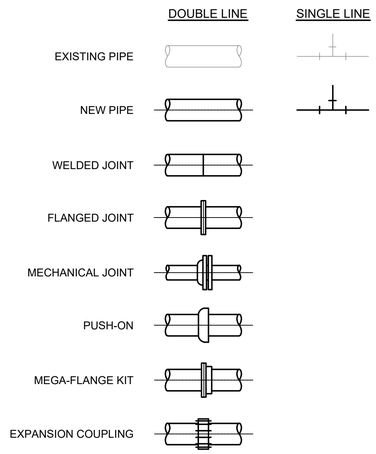
JOINT TYPES

CPL	COUPLING
FLG	FLANGE
MJ	MECHANICAL JOINT
PE	PLAIN END
PO	PUSH-ON
RJ	RESTRAINED JOINT
SW	SOLVENT WELD
SWT	SWEAT
NPT	THREADED

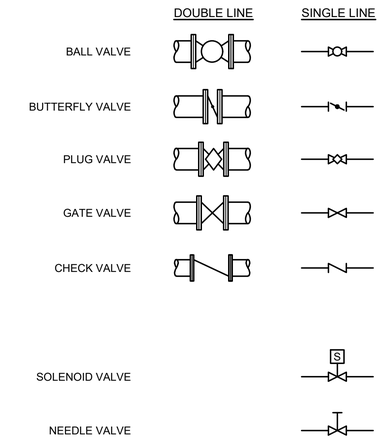
VALVE TYPES

BLV	BALL VALVE
BV	BUTTERFLY VALVE
CNV	CONE VALVE
CV	CHECK VALVE
DV	DIAPHRAGM VALVE
GV	GATE VALVE
GBV	GLOBE VALVE
KV	KNIFE VALVE
MOV	MOTOR OPERATED VALVE
MV	MUD VALVE
NV	NEEDLE VALVE
PHV	PINCH VALVE
PV	PLUG VALVE
PRV	PRESSURE REDUCING VALVE

PIPE SYMBOLS



VALVE SYMBOLS



PIPE LINE IDENTIFICATION

EXAMPLE:

12" AA - DIP

- DIP — MATERIAL
- AA — SERVICE
- 12" — NOMINAL PIPE DIAMETER

24 HOUR CONTACT: ANDREA SMITH 706-200-6438

GEORGIA811 Utilities Protection Center, Inc.

Know what's below. Call before you dig. 1-800-282-7411

GEORGIA REGISTERED Matthew C. Mbugua NO. 039453 PROFESSIONAL JULY 31, 2025 ENGINEER MEG M. MBUGUA

No.	Revisions	Initial	Date
1	RELEASED FOR BID	MM	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

MECHANICAL PROCESS LEGEND AND GENERAL NOTES

Drawn: AE
Design: AE
Checked: MM
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2022
2019-111 -Cover-Index-Diagram & Notes All.dwg

Sheet No.
G-11

Z:\Projects\2019\R2019-111 Cleveland - WWTP Expansion\06 Drawings\Area 00 - General\2019-111 -Cover-Index-Diagram & Notes All.dwg 08/01/2025 1:00pm aencarnacion

GENERAL REQUIREMENTS:

THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EWUIPMENT AND LABOR, AND THE PERFORMANCE OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION OF COMPLETE AND WORKING AIR CONDITIONING, HEATING AND VENTILIATION SYSTEM. CHECK FIELD CONDITIONS AND MAKE MEASUREMENTS BEFORE ORDERING MATERIALS.

MAINTENANCE MANUAL SHALL INCLUDE ALL AVAILABLE MANUFACTUREERS' OPERATION AND MAINTENANCE INSTRUCTIONS TOGETHER WITH THE RECORD DRAWINGS TO PROPERLY OPERATE AND MAINTAIN THE EQUIPMENT. THE MANUAL SHALL ALSO CONTAIN THE NAME, ADDRESS, AND PHONE NUMBER OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN ANY OF THE WORK SPECIFIED HEREIN.

THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS, PAY ALL LEGAL FEES AND CHARGES AND COPLY WITH ALL STATE AND MUNICIPAL BUILDING AND SAFETY LAWS, ORDIANCES AND REGULATIONS RELATING TO BUILDING AND PUBLIC HEALTH AND SAFETY. ALL WORK SHALL BE IN CONFORMANCE WITH GOVERNING CODES.

PROVIDE MECHANICAL EQUIPMENT HAVING MOTORS WITH MOTOR PROTECTORS. WIRING AND PROPER OPERATION OF MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRCTOR. ALL WIRING SHALL BE ROUTED IN CONDUIT OR PLENUM RATED WIRING.

THE SYSTEM SHALL HAVE A WARRANTY COVERING LABOR, MATERIALS AND EQUIPMENT FOR A PERIOD OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. REPLACE OR REPAIR ALL DEFECTIVE WORKMANSHIP, EQUIPMENT, AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

THE MECHANICAL CONTRACTOR SHALL COORDINATE THE EXACT DIFFUSER AND GRILLE LOCATIONS WITH THE ELECTRICAL CONTRACTOR AND ALL OTHER TRADES AND ALSO COORDINATE SPACE AVAILABILITY FOR DUCTWORK ABOVE RECESSED LIGHTING TO AVOID RELOCATING DUCTWORK AT THE MECHANICAL CONTRACTORS EXPENCE. ALL AIR DISTRIBUTION DEVICES IN LAY-IN CEILING SHALL BE INDEPENDANTLY SUPPORTED TO THE STRUCTURE WITH A MINIMUM OF (2) SUPPORT RODS OR WIRES IN COMPLIANCE WITH SECTION 2.3.1.3 OF NFPA 90A AND UNIFORM BUILDING CODE IF REQUIRED BY THE LOCAL CODE ATHORITY.

PROVIDE COMPLETE TESTING AND BALANCING OF AQLL MECHANICAL SYSTEMS IN ACCORDANCE WITH AABC OR NEBB LATEST STANDARD WITH REPORT.

CONDENSATE DRAIN PIPING SHALL BE PVC FOR ALL CONDENSATE DRAIN LINES WITH A MINIMUM SLOPE OF 1/8" PER FOOT FROM THE UNIT TO THE APPROVED PLUMBING CONNECTION. PROVIDE TRAPS AT UNITS AND INSTALL OVERFLOW DRAINS AS REQUIRE BY MECHANICAL CODE. TEST CONDENSATE PIPING TO HIGHEST POINT IN THE SYSTEM AND HOLD FOR FOUR HOURS. PROVIDE INSULATION ON ALL CONDENSATE PIPING INSIDE THE BUILDING.

DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA GUILDLINES AND LOCAL STANDARDS FOR THE INTENDED PURPOSE. RADIUS ELBOWS SHALL HAVE A MINIMUM CENTERLINE RADIUS OF 1.5 TIMES THE DUCT DIMENSION IN THE DIRECTION OF THE TURN, AND SQUARE ELBOWS SHALL HAVE SINGLE THICKNESS TURNING VANES. ALL JOINTS SHALL BE TAPED WITH GLASS CLOTH AND HARDCAST OR ADHESIVE (UL LISTED). ALL DUCT SIZES ARE TO THE INSIDE DIMENSIONS, INCREASE OUTSIDE DIMENSIONS AS NECESSARY.

ALL INSULATION ADHESIVE AND INSTALLATION SHALL COMPLY WITH NFPA 90A.

GRILLES AND REGISTERS SHALL BE OF THE TYPE AND FINISH AS INDICATED ON THE DRAWINGS, COMPLETE WITH OPPOSED BLADE DAMPERS EXTRACTORS AND STRAIGHTENING GRIDS AS REQUIRES.

AIR CONDITIONING CONTROLS SHALL BE BY THE EQUIPMENT MANUFACTURER, FOR USE WITH MULTI-ZONE HEAT PUMPS.

HVAC – GENERAL NOTES

1. ALL WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE 2019 (OR LATEST EDITION IN FORCE) INTERNATIONAL MECHANICAL CODE WITH GEORGIA AMENDMENTS, NFPA 90A, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
2. FIELD LOCATE EQUIPMENT AND ROUTE DUCTWORK AND CONDUIT, ETC. AS REQUIRED SO NOT TO OBSTRUCT OTHER EQUIPMENT OR ACCESS. COORDINATE ROUTING WITH ROOF STRUCTURE AND OVERHEAD CRANE SYSTEM.
3. IT SHALL BE UNDERSTOOD THAT THE DRAWINGS SHOW THE GENERAL ROUTING OF PIPES, DUCTS, ETC. AND THE APPROXIMATE LOCATION OF APPARATUS. CONTRACTOR TO FIELD VERIFY ALL FIELD DIMENSIONS AND INVESTIGATE EXISTING CONDITIONS PRIOR TO FABRICATING DUCTWORK OR PIPING AND LOCATING EQUIPMENT. PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE COORDINATED WITH EXIST. UTILITIES AND OBSTRUCTIONS. UTILITIES SHALL BE RELOCATED BY THE CONTRACTOR AS REQUIRED. COORDINATE ALL ROUTING WITH LIGHTING AND STRUCTURAL FEATURES. CONTRACTOR SHALL NOTE THAT THE DRAWINGS REPRESENT WORK TO BE INSTALLED BY A KNOWLEDGEABLE, LICENSED MECHANICAL CONTRACTOR FAMILIAR WITH THE TYPES OF SYSTEMS INDICATED AND DO NOT NECESSARILY SHOW ALL DETAILS FOR SYSTEM INSTALLATION.
4. ALL EQUIPMENT INSTALLED IN THE BUILDING SHALL BE CORROSION RESISTANT SUITABLE FOR CORROSIVE LOCATIONS. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL PLANS AND SHALL FURNISH EQUIPMENT WIRED FOR VOLTAGES AS REQUIRED. CONTRACTOR TO COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT.
5. COORDINATE THERMOSTAT LOCATIONS AS APPLICABLE WITH LIGHTS, CEILING GRID, ETC. AND ARCHITECTS REFLECTED CEILING PLAN.
6. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY LAYOUT DRAWINGS AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBER IS NOT PERMITTED.
7. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE OWNER WITH ONE (1) YEAR WARRANTY ON EQUIPMENT AND INSTALLATION.
9. CONTRACTOR SHALL TEST ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CERTIFY TO OWNER IN WRITING THAT ALL SYSTEMS ARE FULLY AND PROPERLY OPERATIONAL UPON COMPLETION OF WORK. CONTRACTOR SHALL PROVIDE THREE COPIES OF TEST AND BALANCE REPORT TO OWNER.
10. CONTRACTOR SHALL ENSURE THAT ADEQUATE CLEARANCE IS MAINTAINED IN FRONT OF ELECTRICAL PANELS AND AROUND ALL EQUIPMENT FOR MAINTENANCE.

FAN SCHEDULE

EF #-#	SERVICE	CFM	HP	RPM	S.P.	VOLTS/PH	REMARKS
3–1	INFLUENT PUMP STATION	850	1/2	1,448	0.59	120/1	1, 2, 3, 4, PROVIDE MOTOR OPERATED DAMPER, INTERLOCK WITH LOUVERS
9–1	WAS–RAS PUMP STATION	1,000	1/2	1,533	0.60	120/1	1, 2, 3, 4, PROVIDE MOTOR OPERATED DAMPER, INTERLOCK WITH LOUVERS
11–1	DEWATERING BUILDING	2,600	1.0	1,474	0.66	460/3	1, 2, 3, 4, PROVIDE MOTOR OPERATED DAMPER, INTERLOCK WITH LOUVERS
12–1	RESTROOM	110	24.2 W	960	1.375	120/1	5, INTERLOCK WITH LIGHTS
13–1	CHEMICAL FEED ROOM	600	1/4	1,638	0.59	120/1	1, 2, 3, 4, PROVIDE MOTOR OPERATED DAMPER, INTERLOCK WITH LOUVERS

1. EXHAUST FANS TO BE INTERNALLY AND EXTERNALLY COATED (INCLUDING WHEEL AND ALL SURFACES IN AIRSTREAM) SUITABLE FOR SEVERELY CORROSIVE ATMOSPHERES (CHLORINE, HYDROFLUOROSILICIC ACID, CAUSTIC, SODIUM HYPOCHLORITE AS WELL AS PHOSPHATE WHICH SHOULD NOT BE CORROSIVE). COATING TO BE FACTORY APPLIED POLYESTER COATING, GREENHECK HI–PRO POLYESTER OR APPROVED EQUAL.
2. PROVIDE WITH WALL MOUNTING FLANGE, 45 DEGREE WEATHER HOOD, MOTOR AND BELT GUARDS, ALL COATED AS INDICATED ABOVE. COORDINATE SQUARE WALL OPENING SIZE WITH BLOCK MASON / GENERAL CONTRACTOR.
3. FANS SHALL BE PROVIDED WITH CORROSION RESISTANT, NEMA 4X, WALL MOUNTED THERMOSTAT TO CONTROL FANS. THERMOSTAT SHALL BE 120V, SPDT IN NEMA 4X HOUSING, CHROMOLOX MODEL WCRT–100 OR EQUAL. THERMOSTAT SHALL ENERGIZE FANS UPON RISE IN TEMPERATURE ABOVE ADJUSTABLE SET POINT (80°F SET INITIALLY).
4. FANS SHALL BE CONTROLLED VIA ADJUSTABLE THERMOSTAT WITH WALL MOUNTED OVERRIDE SWITCH.
5. DUCT TO EXTERIOR WALL, FULL SIZE OF UNIT OPENING. TERMINATE WITH WALL CAP WITH INTERNAL BACKDRAFT DAMPER

LOUVERS

L #-#	TYPE	SIZE WIDTH	SIZE HEIGHT	FRAME	BLADES	DAMPER	BASIS OF DESIGN	REMARKS
3–1	STATIONARY	16	24"	MATCH WALL TYPE	DRAINABLE	YES, MOTORIZED	GREENHECK ESD–635	WALL LOUVER, SEE NOTES 1, 2, 3
9–1	STATIONARY	24	24"	MATCH WALL TYPE	DRAINABLE	YES, MOTORIZED	GREENHECK ESD–635	WALL LOUVER, SEE NOTES 1, 2, 3
11–1	STATIONARY	24	24"	MATCH WALL TYPE	DRAINABLE	YES, MOTORIZED	GREENHECK ESD–635	WALL LOUVER, SEE NOTES 1, 2, 3
13–1	STATIONARY	16	24"	MATCH WALL TYPE	DRAINABLE	YES, MOTORIZED	GREENHECK ESD–635	WALL LOUVER, SEE NOTES 1, 2, 3

1. LOUVERS SHALL BE EXTRUDED ALUMINUM WITH BIRDSCREEN AND MIN. .08" THICK FRAME AND BLADES. ENTIRE LOUVER SHALL BE KYNAR COATED. COLOR TO BE SELECTED BY OWNER / ARCHITECT.
2. LOUVER TO BE PROVIDED WITH 120V ELECTRIC MOTOR OPERATED DAMPER. DAMPER SHALL BE INTERLOCKED WITH RESPECTIVE FAN TO OPEN WHEN FAN IS ENERGIZED. DAMPERS SHALL BE FIBER–REINFORCED PLASTIC RESIN TYPE. DAMPER MOTOR/ACTUATOR SHALL BE INSTALLED IN A NEMA 4X ENCLOSURE SUITABLE FOR CORROSIVE ENVIRONMENTS. CASING SHALL BE EPOXY PAINTED.
3. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.

UNIT HEATER SCHEDULE

UH #-#	BASIS OF DESIGN	MODEL	CFM	FAN HP	HEATER INPUT	FUEL	VOLTS/PH	AREA SERVICE	REMARKS/ ACCESSORIES
3–1	BERKO	BWD05432	700	.388 AMPS	5.0 KW	ELECTRIC	480/3	INFLUENT PUMP STATION	1,2,3
9–1	BERKO	BWD05432	700	.388 AMPS	5.0 KW	ELECTRIC	480/3	WAS–RAS PUMP STATION	1,2,3
11–1	BERKO	BWD05432	700	.388 AMPS	5.0 KW	ELECTRIC	480/3	DEWATERING BUILDING	1,2,3
13–1	BERKO	BWD05432	700	.388 AMPS	5.0 KW	ELECTRIC	480/3	CHEMICAL FEED ROOM	1,2,3

1. PROVIDE WITH WALL MOUNTED THERMOSTAT, CONTACTOR, AND INTEGRAL FAN CONTROL POWER TRANSFORMER. ALL COMPONENTS SHALL BE HOUSED IN NEMA 4X ENCLOSURE SUITABLE FOR CORROSIVE ENVIRONMENTS. CASING SHALL BE EPOXY PAINTED.
2. PROVIDE WITH WALL OR CEILING MOUNTING BRACKETS. MOUNT AS HIGH AS POSSIBLE (7' MIN.) A.F.F.
3. PROVIDE WITH INTEGRAL NEMA 4X NON–FUSED DISCONNECT SWITCH.

HEAT PUMP INDOOR UNITS

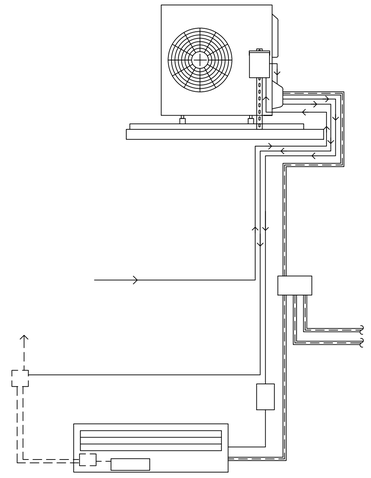
HPIU #-#	SUPPLY AIR CFM	MIN. O.A. CFM	COOLING TOTAL MBH	HEATING MBH	ELECTRICAL VOLTS	ELECTRICAL PHASE	BASIS OF DESIGN (OR EQUAL BY CARRIER, FRIGIDAIRE)	REMARKS
11–1	190	0	6.0	8.7	208	1	MITSUBISHI MSZ–FS06NA	
11–2	487	0	22.5	27.6	208	1	MITSUBISHI MSZ–GL24NA	
12–1	2,000	140	60.0	55.6	230	1	CARRIER FS5ANBC60L15	15 KW ELECTRIC HEAT

HEAT PUMP OUTDOOR UNITS

HPOU #-#	COOLING TOTAL MBH	HEATING MBH	ELECTRICAL VOLTS	ELECTRICAL PHASE	BASIS OF DESIGN (OR EQUAL)	REMARKS
11–1	6.0	8.7	208	1	MITSUBISHI MUZ–FS06NA	
11–2	48.0	50.0	208	1	MITSUBISHI MXZ–SM48NAM2	
12–1	60.0	55.6	230	1	CARRIER 27SCA560	

AIR DISTRIBUTION DEVICE

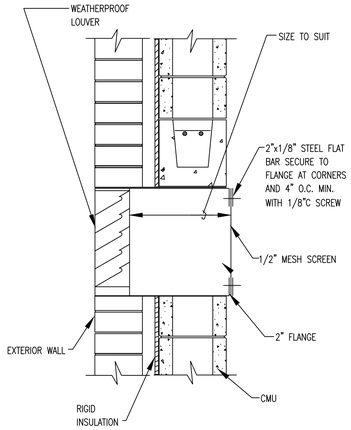
TAG CFM	TYPE	SIZE NECK	SIZE FACE	FRAME	THROW	DAMPER	REMARKS
A	DIFFUSER	8"ø	24"x24"	SURFACE	4–WAY	YES	TITUS TMS OR EQUAL
B	DIFFUSER	6"ø	12"x12"	SURFACE	4–WAY	YES	TITUS TMS OR EQUAL
C	RETURN	10"ø	12"x12"	SURFACE	--	NO	TITUS 50F OR EQUAL
D	RETURN	16"ø	24"x24"	SURFACE	--	NO	TITUS 50F OR EQUAL



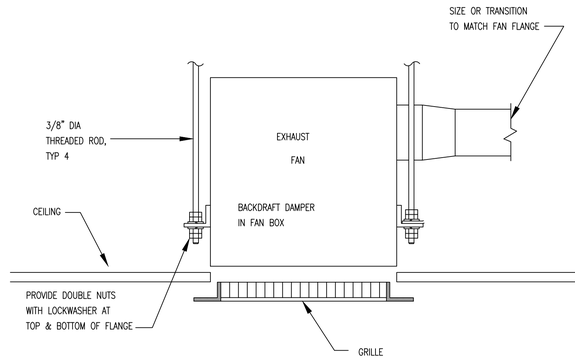
Notes:

1. REFER TO ASD–89 FOR PLATFORM CURB INSTALLATION AND ADDITIONAL INFORMATION.
2. SPLIT SYSTEM'S MANUFACTURERS AND MODELS VARY, REFERENCE MANUFACTURER'S INSTALLATION GUIDE FOR ADDITIONAL INFORMATION.

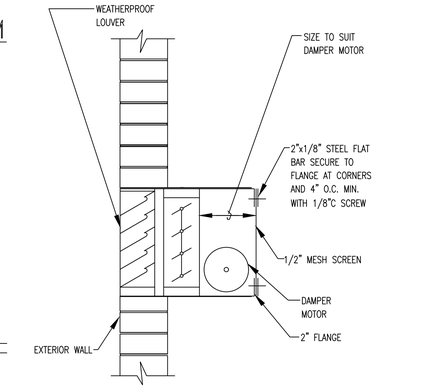
DUCTLESS SPLIT SYSTEM DIAGRAM



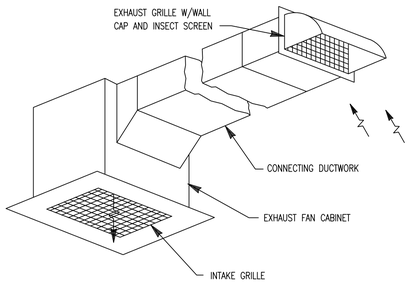
LOUVER MOUNTING DETAIL



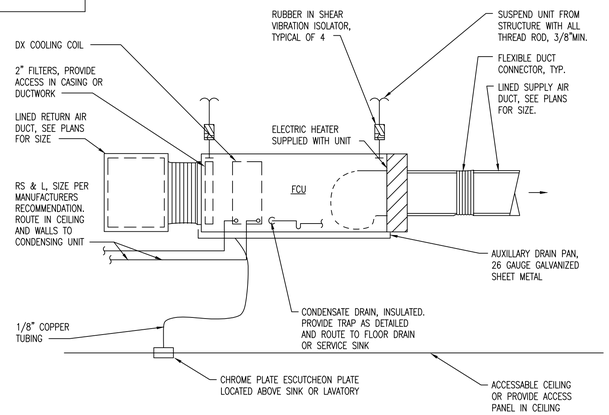
CEILING EXHAUST FAN



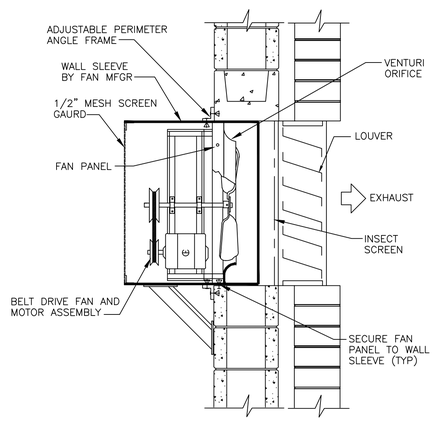
LOUVER MOUNTING DETAIL



CEILING EXHAUST FAN DETAIL



HORIZONTAL FAN COIL UNIT



WALL MOUNTED PROPELLER FAN DETAIL

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754 Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 20348 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

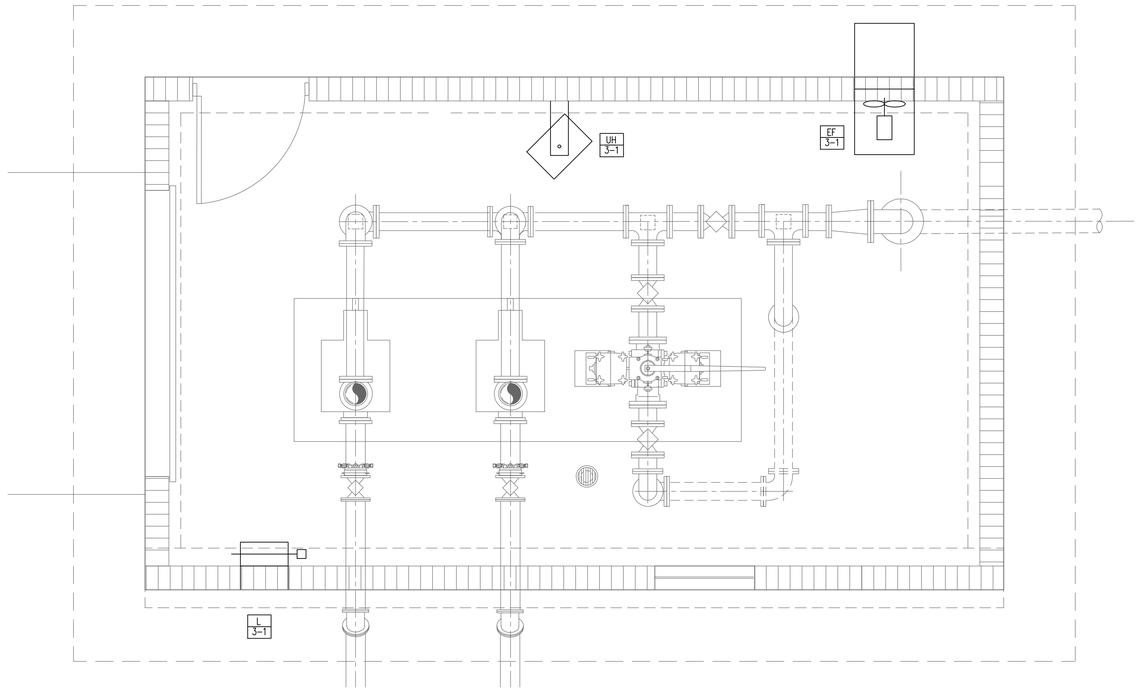
RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

HVAC NOTS SCHEDULES AND DETAILS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-1



1 INFLUENT PUMP STATION BUILDING HVAC PLAN
SCALE: 1/2" = 1'

GRAPHIC SCALE
2 0 1 2 4 8
(IN FEET)
1/2 inch = 1 ft.

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	CHWR	CHILLED WATER RETURN
	RETURN/EXHAUST AIR DUCT UP/DOWN	CHWS	CHILLED WATER SUPPLY
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	ES	EQUAL SPLIT
	RETURN OR EXHAUST GRILLE	FIL-*	FILTER
T	THERMOSTAT	F-*	FURNACE
P	PRESSURE SENSOR	GA	GAUGE
S	SMOKE DETECTER	OA	OUTSIDE AIR
	FIRE DAMPER	OE	OPEN ENDED DUCT
	FIRE/SMOKE DAMPER	SD	SPLITTER DAMPER
	PIPE TURNED DOWN	U/G	UNDERGROUND
	PIPE TURNED UP	UH-*	UNIT HEATER
	BRANCH PIPE OFF MAIN	VD	VOLUME DAMPER
CFM	CUBIC FEET PER MINUTE	A/C-*	AIR CONDITIONING SYSTEM
M	MOTOR OPERATOR	AFF	ABOVE FINISHED FLOOR
		AHU-*	AIR HANDLING UNIT

GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMP STATION BUILDING HVAC PLAN

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754 Since 1997 Cell Phone: (404) 403-2126
97 Lakeridge Drive Dallas, GA 30132 jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
H-2

GREENHECK
Building Value in Air.

EF 3-1

Job Name: SE1-14-440-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

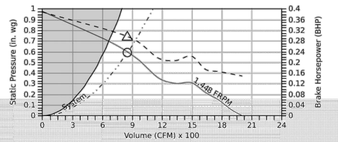
Model: SE1-14-440-VG

Sidewall Direct Drive Exhaust Fan

Standard Construction Features: Galvanized steel panel with fabricated galvanized steel drive frame (optional wall housing or wall collar). Propeller, aluminum. Direct driven motor in the airstream.

Fan Configuration	
Drive type	Direct

Performance	
Requested Volume (CFM)	850
Actual Volume (CFM)	850
Total External SP (in. wg)	0.59
Fan RPM	1,448
Operating Power (bhp)	0.29
Startup Power (bhp)	0.29
FEI	-
Air Stream Temp (F)	70
Start-up Temp (F)	70
Air Density (lbs/ft^3)	0.072
Elevation (ft)	1000
Static Efficiency (%)	27
Outlet Velocity (ft/min)	766



Fan curve
Brake horsepower curve
Operating Point SP
Operating Bhp point
Max system curve
System curve

Static Pressure Calculations	
External SP	0.5 in. wg
Backdraft Damper	0.04 in. wg
Wall Housing	0.03 in. wg
Weatherhood	0.02 in. wg
Total External SP	0.59 in. wg

Motor	
Size (hp)	1/2
V/C/P	115/60/1
NEC FLA (Amps)	6.6
Min Circuit Ampacity (MCA)	8.2
Max Overload Production (MOP)	15
Short Circuit Current Rating (SCCR)	5 kA

Sound

	Octave Bands (hz)								LwA	dBA	Sones
	62.5	125	250	500	1000	2000	4000	8000			
Inlet	88	72	70	66	67	61	55	64	72	60	12.5

amca WORLDWIDE CERTIFIED RATINGS SOUND AND AIR PERFORMANCE

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.The AMCA certified ratings seal applies to sound and air performance ratings only.Performance certified is for installation type A: Free inlet, free outlet.Power rating does not include transmission losses.Performance ratings do not include the effects of appurtenances.The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft).in a hemispherical free field calculated per ANSI/AMCA Standard 301.Values shown are for Installation Type A: free inlet hemispherical sone levels.dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal for Sound applies to inlet sone ratings only.

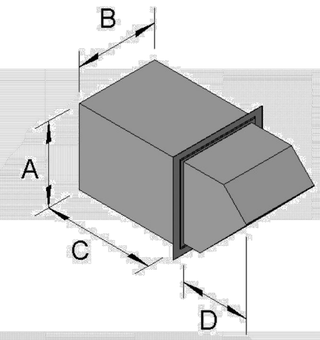
FLA - based on tables 150 or 148 of National Electric Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor; not accessories (damper actuator, field supplied VFD, etc.).
SCCR is a rating on components and assemblies representing the maximum level of short-circuit current that a component or assembly can withstand without causing a fire or shock hazard. A short circuit exceeding this rating can cause catastrophic and violent equipment, component and enclosure failure.

GREENHECK
Building Value in Air.

EF 3-1

Job Name: SE1-14-440-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

Dimensions and Weights		
Label	Value	Description
-	14	Impeller Diameter (in)
-	75	Weight w/o accessories (lbs)
A	20	Overall Height (in)
B	20	Overall Width (in)
C	26	Overall Length (in)
D	18	WTHD Length (in)
-	21.25	Wall Opening Width (in)
-	21.25	Wall Opening Height (in)



*All dimensions are in inches.

GREENHECK
Building Value in Air.

L 3-1

Job Name: ESD-635-16x24 Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

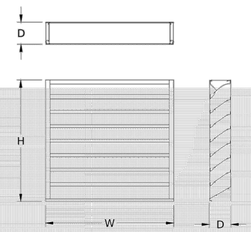
Model: ESD-635-16x24

6 in. Drainable Blade Louver

Certifications/special requirements: AMCA-500-L (Air), AMCA-500-L (Water)

Construction	
Material	Aluminum
Blade Type	All
Blade Orientation	Horizontal
Weight (lbs)	10

Dimensional	
Nominal Width (in)	16
Nominal Height (in)	24
Actual Width (in)	15.75
Actual Height (in)	23.75
Blade Depth (in)	6
Sections Wide	1
Sections High	1



Performance	
Application	Intake
Volume (CFM)	850
Pressure Drop (in. wg)	0.08
Free Area Velocity (ft/min)	749
Free Area (ft^2)	1.1
Air Density (lbs/ft^3)	0.075

*Louvers are tested to figure 5.5-6.5
*Sections wide x high are as configured with a base mill finish channel frame product and may vary depending on options selected.

amca WORLDWIDE CERTIFIED RATINGS WATER PENETRATION AND AIR PERFORMANCE

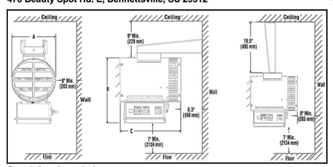
Greenheck Fan Corporation certifies that the louver shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

BERKO®
A Marley Engineered Products Brand
470 Beauty Spot Rd. E, Bennettsville, SC 29512

UH 3-1

SUBMITTAL SHEET
TYPE BWD
WASH-DOWN UNIT HEATERS

TYPE BWD - WASH-DOWN UNIT HEATERS



See unit dimensions on back page

CAPACITIES
2, 3, 5, 7.5, 10, 12.5, 15, 20 KW 120, 208, 240, 277, 480, 600°V 1Ø or 3Ø (Varies with Model)
25, 30, 39 KW 208, 240, 480V 3Ø only

*Only for 5-10kw

JOB NAME:
LOCATION:
ARCHITECT:
ENGINEER:
CONTRACTOR:
SUBMITTED BY:
DATE:

ITEM	QTY.	CATALOG NUMBER	TAG	KW	VOLTS	Ø	AMPS

ACCESSORIES AND CONTROLS

ITEM	QTY.	CAT. NO.	TAG	DESCRIPTION

SUBMITTED BY:	DATE	APPROVED BY:	DATE

ZSS-BWDUH (06-17) www.berkomep.com

BWD SERIES

BERKO®
A Marley Engineered Products Brand

UH 3-1

SELECTION CHART

MODEL NUMBER	KW	VOLTS	PHASE	OUTPUT BTU/HR	HEATER AMPS	MOTOR VOLTS	MOTOR PHASE	MOTOR AMPS	TEMP RISE	CFM	SHIP WEIGHT LBS (KG)
BWD02112	2	120	1	6,824	16.7	120	1	1.554	9	700	60 (27.2)
BWD02812	2	208	1	6,824	9.6	208	1	0.896	9	700	60 (27.2)
BWD02212	2	240	1	6,824	8.3	240	1	0.777	9	700	60 (27.2)
BWD03112	3	120	1	10,236	25.0	120	1	1.554	14	700	60 (27.2)
BWD03812	3	208	1	10,236	14.4	208	1	0.896	14	700	60 (27.2)
BWD03212	3	240	1	10,236	12.5	240	1	0.777	14	700	60 (27.2)
BWD03712	3	277	1	10,236	10.8	277	1	0.673	14	700	60 (27.2)
BWD03832	3	208	3	10,236	8.3	208	1	0.896	14	700	60 (27.2)
BWD03232	3	240	3	10,236	7.2	240	1	0.777	14	700	60 (27.2)
BWD03432	3	480	3	10,236	3.6	480	1	0.388	14	700	60 (27.2)
BWD05812	5	208	1	17,060	24.0	208	1	0.896	23	700	60 (27.2)
BWD05212	5	240	1	17,060	20.8	240	1	0.777	23	700	60 (27.2)
BWD05712	5	277	1	17,060	18.1	277	1	0.673	23	700	60 (27.2)
BWD05412	5	480	1	17,060	10.4	480	1	0.388	23	700	60 (27.2)
BWD05832	5	208	3	17,060	13.9	208	1	0.896	23	700	60 (27.2)
BWD05232	5	240	3	17,060	12.0	240	1	0.777	23	700	60 (27.2)
BWD05432	5	480	3	17,060	6.0	480	1	0.388	23	700	60 (27.2)
BWD07812	7.5	208	1	25,590	36.1	208	1	0.896	34	700	60 (27.2)
BWD07212	7.5	240	1	25,590	31.3	240	1	0.777	34	700	60 (27.2)
BWD07712	7.5	277	1	25,590	27.1	277	1	0.673	34	700	60 (27.2)
BWD07412	7.5	480	1	25,590	15.6	480	1	0.388	34	700	60 (27.2)
BWD07832	7.5	208	3	25,590	20.8	208	1	0.896	34	700	60 (27.2)
BWD07232	7.5	240	3	25,590	18.0	240	1	0.777	34	700	60 (27.2)
BWD07432	7.5	480	3	25,590	9.0	480	1	0.388	34	700	60 (27.2)
BWD07632	7.5	600	3	25,590	7.2	240	1	1.8	34	1450	75 (34)
BWD10212	10	240	1	34,120	41.7	240	1	0.777	22	1450	60 (27.2)
BWD10712	10	277	1	34,120	36.1	277	1	0.673	22	1450	60 (27.2)
BWD10412	10	480	1	34,120	20.8	480	1	0.388	22	1450	60 (27.2)
BWD10832	10	208	3	34,120	27.8	208	1	0.896	22	1450	60 (27.2)
BWD10232	10	240	3	34,120	24.1	240	1	0.777	22	1450	60 (27.2)
BWD10432	10	480	3	34,120	12.0	480	1	0.388	22	1450	60 (27.2)
BWD10632	10	600	3	34,120	9.6	240	1	1.8	33	2400	75 (34)
BWD12812	12.5	208	1	42,650	60.1	208	1	1.793	27	1450	60 (27.2)
BWD12212	12.5	240	1	42,650	52.1	240	1	1.554	27	1450	60 (27.2)
BWD12832	12.5	208	3	42,650	34.7	208	1	1.793	27	1450	60 (27.2)
BWD12232	12.5	240	3	42,650	30.1	240	1	1.554	27	1450	60 (27.2)
BWD12432	12.5	480	3	42,650	15.0	480	1	0.777	27	1450	60 (27.2)
BWD15812	15	208	1	51,180	72.1	208	1	1.793	20	2400	110 (49.9)
BWD15212	15	240	1	51,180	62.5	240	1	1.554	20	2400	110 (49.9)
BWD15412	15	480	1	51,180	31.3	480	1	0.777	20	2400	110 (49.9)
BWD15832	15	208	3	51,180	41.8	208	1	1.793	20	2400	110 (49.9)
BWD15232	15	240	3	51,180	36.1	240	1	1.554	20	2400	110 (49.9)
BWD15432	15	480	3	51,180	18.0	480	1	0.777	20	2400	110 (49.9)
BWD20412	20	480	1	68,240	41.7	480	1	0.777	26	2400	120 (54.4)
BWD20232	20	240	3	68,240	48.1	240	1	1.554	26	2400	120 (54.4)
BWD20432	20	480	3	68,240	24.1	480	1	0.777	26	2400	120 (54.4)
BWD25832	25	208	3	85,300	69.4	208	1	1.793	33	2400	120 (54.4)
BWD25232	25	240	3	85,300	60.1	240	1	1.554	33	2400	120 (54.4)
BWD25432	25	480	3	85,300	30.1	480	1	0.777	33	2400	120 (54.4)
BWD30832	30	208	3	102,360	83.3	208	1	1.793	39	2400	120 (54.4)
BWD30232	30	240	3	102,360	72.2	240	1	1.554	39	2400	120 (54.4)
BWD30432	30	480	3	102,360	36.1	480	1	0.777	39	2400	120 (54.4)
BWD39432	39	480	3	133,068	46.9	480	1	0.777	51	2400	120 (54.4)

All units other than standard models are non-returnable.

Factory Installed Accessories

CATALOG NUMBER	DESCRIPTION
T	Thermostat
L	Pilot Light
S	Mode/Selector Switch
D	Disconnect Switch
E	Monel Element*
M	Manual Reset
P	Epoxy Coating

* Monel elements are subject to longer lead times - contact factory for details.

kW	Dimensions Inches (mm)			
	A	B	C	D
2-10	13 (330)	19.5 (495)	18 (457)	19.5 (495)
12.5-39.0	20 (508)	31 (787)	27 (686)	24.2 (615)

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

Corrosion resistant unit heater(s) shall be supplied by Berko, A Marley Engineered Products Brand, Bennettsville, SC. The unit heater(s) shall be UL listed for corrosive areas and NEMA4X wash down requirements.

HEATING ELEMENTS: The heating elements shall be corrosion resistant 300 stainless steel sheathed with 316 stainless steel fins for maximum heat dissipation. The elements are to be attached to junction box with leak-resistant stainless steel fittings.

CONTROL CENTER: The controls are completely factory prewired and tested and enclosed in a NEMA4X molded fiberglass control enclosure mounted beneath the heater cabinet. The control center shall include contactors, automatic reset over-temperature protector, fan delay relay, motor contactor and fused transformer for 24V control circuit. Convenient terminal blocks are included for remote thermostat connection.

FAN AND MOTOR ASSEMBLY: The fan and motor assembly shall include a totally enclosed, permanently lubricated, ball bearing motor, epoxy coated for corrosion resistance. Motor rating shall be 1/4 hp up to 10KW. 1/2 hp for 208V and 3/4 hp for 240/480 for units above 10kw. The fan shall be aluminum with corrosion resistant coating, directly connected to the motor, and be dynamically balanced. An epoxy sealed thermal fan delay shall be provided to allow the fan to continue to operate after heating thermostat has been satisfied to maximize transfer of generated heat to space being heated. The fan and motor shall be protected by an adjustable louvered outlet grille to direct flow up or down, painted with one coat zinc chromate primer and two coats of corrosion resistant paint.

OVER-TEMPERATURE PROTECTION: Built in over temperature protection shall be provided by an automatic reset thermal cutout.

HEATER CASE: The heater case shall be constructed of heavy 16 gauge type 304 stainless steel for corrosion resistance and assembled with stainless steel hardware. A stainless steel combination wall and ceiling swivel type mounting bracket to be supplied with unit heater.

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 20249 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

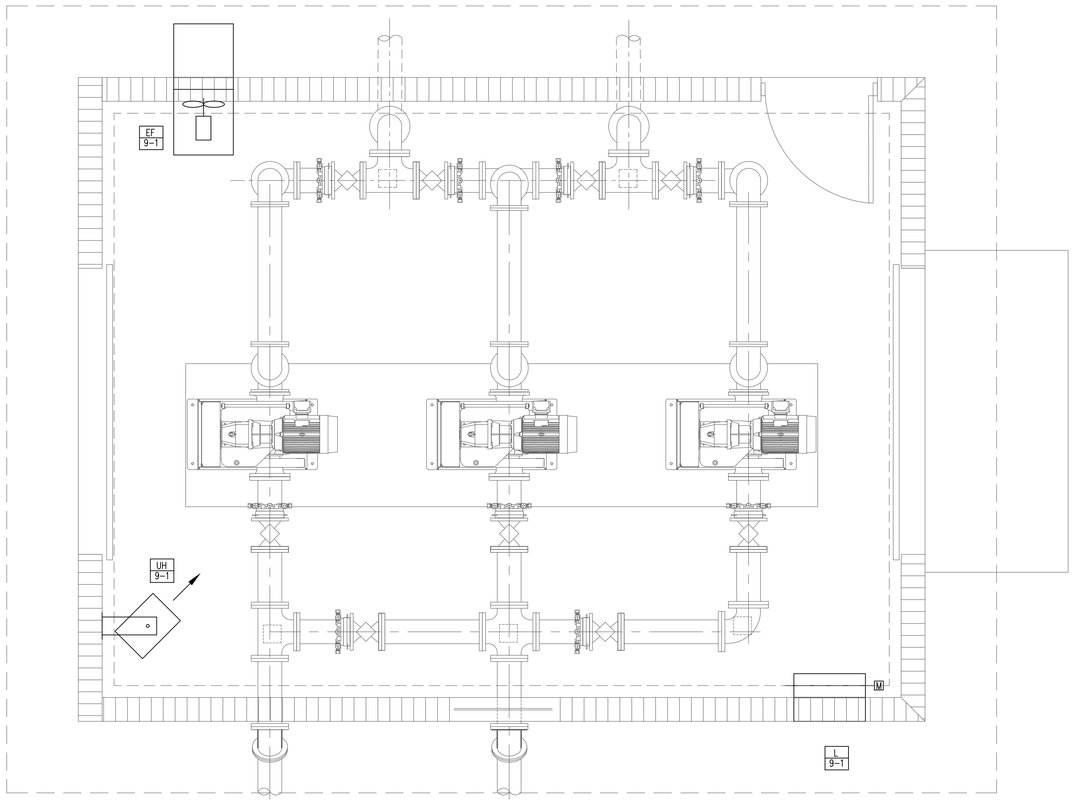
RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

INFLUENT PUMP STATION BUILDING
HVAC SPECIFICATIONS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-3



1 WAS RAS PUMP STATION BUILDING HVAC PLAN

SCALE: 1/2" = 1'

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	CHWR	CHILLED WATER RETURN
	RETURN/EXHAUST AIR DUCT UP/DOWN	CHWS	CHILLED WATER SUPPLY
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	ES	EQUAL SPLIT
	RETURN OR EXHAUST GRILLE	FIL-*	FILTER
T	THERMOSTAT	F-*	FURNACE
P	PRESSURE SENSOR	GA	GAUGE
	SMOKE DETECTER	OA	OUTSIDE AIR
	FIRE DAMPER	OE	OPEN ENDED DUCT
	FIRE/SMOKE DAMPER	SD	SPLITTER DAMPER
S	PIPE TURNED DOWN	U/G	UNDERGROUND
S	PIPE TURNED UP	UH-*	UNIT HEATER
S	BRANCH PIPE OFF MAIN	VD	VOLUME DAMPER
CFM	CUBIC FEET PER MINUTE	A/C-*	AIR CONDITIONING SYSTEM
M	MOTOR OPERATOR	AFF	ABOVE FINISHED FLOOR
		AHU-*	AIR HANDLING UNIT

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA
REGISTERED
No. 20049
PROFESSIONAL
ENGINEER
JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT
ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

WAS RAS PUMP STATION BUILDING HVAC PLAN

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-4

GREENHECK
Building Value in Air.

EF 9-1

Job Name: SE1-14-440-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

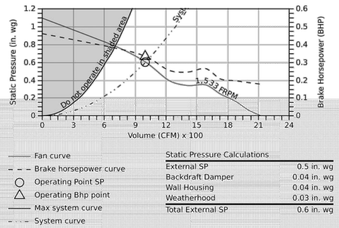
Model: SE1-14-440-VG

Sidewall Direct Drive Exhaust Fan

Standard Construction Features: Galvanized steel panel with fabricated galvanized steel drive frame (optional wall housing or wall collar). Propeller, aluminum. Direct driven motor in the airstream.

Fan Configuration	
Drive type	Direct

Performance	
Requested Volume (CFM)	1,000
Actual Volume (CFM)	1,000
Total External SP (in. wg)	0.6
Fan RPM	1,533
Operating Power (bhp)	0.33
Startup Power (bhp)	0.33
FEI	-
Air Stream Temp (F)	70
Start-up Temp (F)	70
Air Density (lbs/ft^3)	0.072
Elevation (ft)	1000
Static Efficiency (%)	28
Outlet Velocity (ft/min)	901



Fan curve
Brake horsepower curve
Operating Point SP
Operating Bhp point
Max system curve
System curve

Static Pressure Calculations	
External SP	0.5 in. wg
Backdraft Damper	0.04 in. wg
Wall Housing	0.04 in. wg
Weatherhood	0.03 in. wg
Total External SP	0.6 in. wg

Motor	
Size (hp)	1/2
V/C/P	115/60/1
NEC FLA (Amps)	6.6
Min Circuit Ampacity (MCA)	8.2
Max Overload Production (MOP)	15
Short Circuit Current Rating (SCCR)	5 kA

Sound

	Octave Bands (hz)								LwA	dBA	Sones
	62.5	125	250	500	1000	2000	4000	8000			
Inlet	89	72	70	67	69	62	60	65	73	62	13.5

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.The AMCA certified ratings seal applies to sound and air performance ratings only.Performance certified is for installation type A: Free inlet, free outlet.Power rating does not include transmission losses.Performance ratings do not include the effects of appurtenances.The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft).in a hemispherical free field calculated per ANSI/AMCA Standard 301.Values shown are for Installation Type A: free inlet hemispherical sone levels.dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal for Sound applies to inlet sone ratings only.

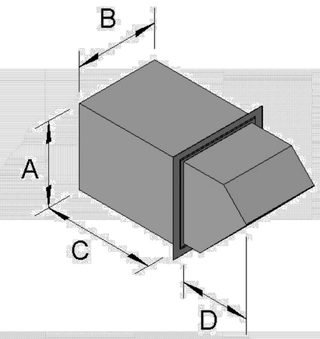
FLA - based on tables 150 or 148 of National Electric Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor; not accessories (damper actuator, field supplied VFD, etc.).
SCCR is a rating on components and assemblies representing the maximum level of short-circuit current that a component or assembly can withstand without causing a fire or shock hazard. A short circuit exceeding this rating can cause catastrophic and violent equipment, component and enclosure failure.

GREENHECK
Building Value in Air.

EF 9-1

Job Name: SE1-14-440-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

Dimensions and Weights		
Label	Value	Description
-	14	Impeller Diameter (in)
-	75	Weight w/o accessories (lbs)
A	20	Overall Height (in)
B	20	Overall Width (in)
C	26	Overall Length (in)
D	18	WTHD Length (in)
-	21.25	Wall Opening Width (in)
-	21.25	Wall Opening Height (in)



*All dimensions are in inches.

GREENHECK
Building Value in Air.

L 9-1

Job Name: ESD-202-24x24 Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

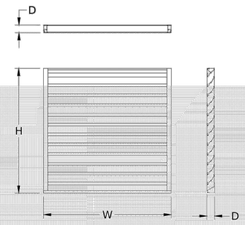
Model: ESD-202-24x24

2 in. Drainable Blade Louver

Certifications/special requirements: AMCA-500-L (Air), AMCA-500-L (Water)

Construction	
Material	Aluminum
Blade Type	All
Blade Orientation	Horizontal
Weight (lbs)	8

Dimensional	
Nominal Width (in)	24
Nominal Height (in)	24
Actual Width (in)	23.75
Actual Height (in)	23.75
Blade Depth (in)	2
Sections Wide	1
Sections High	1



Performance	
Application	Intake
Volume (CFM)	1,000
Pressure Drop (in. wg)	0.07
Free Area Velocity (ft/min)	755
Free Area (ft^2)	1.3
Air Density (lbs/ft^3)	0.075

*Louvers are tested to figure 5.5-6.5
*Sections wide x high are as configured with a base mill finish channel frame product and may vary depending on options selected.

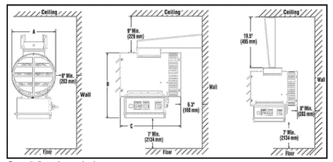
Greenheck Fan Corporation certifies that the louver shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

BERKO®
A Marley Engineered Products Brand
470 Beauty Spot Rd. E, Bennettsville, SC 29512

UH 9-1

SUBMITTAL SHEET
TYPE BWD
WASH-DOWN UNIT HEATERS

TYPE BWD - WASH-DOWN UNIT HEATERS



See unit dimensions on back page

CAPACITIES
2, 3, 5, 7.5, 10, 12.5, 15, 20 KW 120, 208, 240, 277, 480, 600*V 1Ø or 3Ø (Varies with Model)
25, 30, 39 KW 208, 240, 480V 3Ø only

*Only for 5-10kw

JOB NAME:
LOCATION:
ARCHITECT:
ENGINEER:
CONTRACTOR:
SUBMITTED BY:
DATE:

ITEM	QTY.	CATALOG NUMBER	TAG	KW	VOLTS	Ø	AMPS

ACCESSORIES AND CONTROLS

ITEM	QTY.	CAT. NO.	TAG	DESCRIPTION

SUBMITTED BY:	DATE	APPROVED BY:	DATE

ZSS-BWDUH (06-17) www.berkomep.com

BWD SERIES

BERKO®
A Marley Engineered Products Brand

UH 9-1

SELECTION CHART

MODEL NUMBER	KW	VOLTS	PHASE	OUTPUT BTU/HR	HEATER AMPS	MOTOR VOLTS	MOTOR PHASE	MOTOR AMPS	TEMP RISE	CFM	SHIP WEIGHT LBS (KG)
BWD02112	2	120	1	6,824	16.7	120	1	1.554	9	700	60 (27.2)
BWD02812	2	208	1	6,824	9.6	208	1	0.896	9	700	60 (27.2)
BWD02212	2	240	1	6,824	8.3	240	1	0.777	9	700	60 (27.2)
BWD03112	3	120	1	10,236	25.0	120	1	1.554	14	700	60 (27.2)
BWD03812	3	208	1	10,236	14.4	208	1	0.896	14	700	60 (27.2)
BWD03212	3	240	1	10,236	12.5	240	1	0.777	14	700	60 (27.2)
BWD03712	3	277	1	10,236	10.8	277	1	0.673	14	700	60 (27.2)
BWD03832	3	208	3	10,236	8.3	208	1	0.896	14	700	60 (27.2)
BWD03232	3	240	3	10,236	7.2	240	1	0.777	14	700	60 (27.2)
BWD03432	3	480	3	10,236	3.6	480	1	0.388	14	700	60 (27.2)
BWD05812	5	208	1	17,060	24.0	208	1	0.896	23	700	60 (27.2)
BWD05212	5	240	1	17,060	20.8	240	1	0.777	23	700	60 (27.2)
BWD05712	5	277	1	17,060	18.1	277	1	0.673	23	700	60 (27.2)
BWD05412	5	480	1	17,060	10.4	480	1	0.388	23	700	60 (27.2)
BWD05832	5	208	3	17,060	13.9	208	1	0.896	23	700	60 (27.2)
BWD05232	5	240	3	17,060	12.0	240	1	0.777	23	700	60 (27.2)
BWD05432	5	480	3	17,060	6.0	480	1	0.388	23	700	60 (27.2)
BWD07512	7.5	600	3	25,590	7.2	600	1	1.8	34	1450	75 (34)
BWD07812	7.5	208	1	25,590	36.1	208	1	0.896	34	700	60 (27.2)
BWD07212	7.5	240	1	25,590	31.3	240	1	0.777	34	700	60 (27.2)
BWD07712	7.5	277	1	25,590	27.1	277	1	0.673	34	700	60 (27.2)
BWD07412	7.5	480	1	25,590	15.6	480	1	0.388	34	700	60 (27.2)
BWD07832	7.5	208	3	25,590	20.8	208	1	0.896	34	700	60 (27.2)
BWD07232	7.5	240	3	25,590	18.0	240	1	0.777	34	700	60 (27.2)
BWD07432	7.5	480	3	25,590	9.0	480	1	0.388	34	700	60 (27.2)
BWD07632	7.5	600	3	25,590	7.2	240	1	1.8	34	1450	75 (34)
BWD10212	10	240	1	34,120	41.7	240	1	0.777	22	1450	60 (27.2)
BWD10712	10	277	1	34,120	36.1	277	1	0.673	22	1450	60 (27.2)
BWD10412	10	480	1	34,120	20.8	480	1	0.388	22	1450	60 (27.2)
BWD10832	10	208	3	34,120	27.8	208	1	0.896	22	1450	60 (27.2)
BWD10232	10	240	3	34,120	24.1	240	1	0.777	22	1450	60 (27.2)
BWD10432	10	480	3	34,120	12.0	480	1	0.388	22	1450	60 (27.2)
BWD10632	10	600	3	34,120	9.6	240	1	1.8	33	2400	75 (34)
BWD12812	12.5	208	1	42,650	60.1	208	1	1.793	27	1450	60 (27.2)
BWD12212	12.5	240	1	42,650	52.1	240	1	1.554	27	1450	60 (27.2)
BWD12832	12.5	208	3	42,650	34.7	208	1	1.793	27	1450	60 (27.2)
BWD12232	12.5	240	3	42,650	30.1	240	1	1.554	27	1450	60 (27.2)
BWD12432	12.5	480	3	42,650	15.0	480	1	0.777	27	1450	60 (27.2)
BWD15812	15	208	1	51,180	72.1	208	1	1.793	20	2400	110 (49.9)
BWD15212	15	240	1	51,180	62.5	240	1	1.554	20	2400	110 (49.9)
BWD15412	15	480	1	51,180	31.3	480	1	0.777	20	2400	110 (49.9)
BWD15832	15	208	3	51,180	41.8	208	1	1.793	20	2400	110 (49.9)
BWD15232	15	240	3	51,180	36.1	240	1	1.554	20	2400	110 (49.9)
BWD15432	15	480	3	51,180	18.0	480	1	0.777	20	2400	110 (49.9)
BWD20412	20	480	1	68,240	41.7	480	1	0.777	26	2400	120 (54.4)
BWD20232	20	240	3	68,240	48.1	240	1	1.554	26	2400	120 (54.4)
BWD20432	20	480	3	68,240	24.1	480	1	0.777	26	2400	120 (54.4)
BWD25832	25	208	3	85,300	69.4	208	1	1.793	33	2400	120 (54.4)
BWD25232	25	240	3	85,300	60.1	240	1	1.554	33	2400	120 (54.4)
BWD25432	25	480	3	85,300	30.1	480	1	0.777	33	2400	120 (54.4)
BWD30832	30	208	3	102,360	83.3	208	1	1.793	39	2400	120 (54.4)
BWD30232	30	240	3	102,360	72.2	240	1	1.554	39	2400	120 (54.4)
BWD30432	30	480	3	102,360	36.1	480	1	0.777	39	2400	120 (54.4)
BWD39432	39	480	3	133,068	46.9	480	1	0.777	51	2400	120 (54.4)

All units other than standard models are non-returnable.

Factory Installed Accessories

CATALOG NUMBER	DESCRIPTION
T	Thermostat
L	Pilot Light
S	Mode/Selector Switch
D	Disconnect Switch
E	Monel Element*
M	Manual Reset
P	Epoxy Coating

* Monel elements are subject to longer lead times - contact factory for details.

kW	Dimensions Inches (mm)			
	A	B	C	D
2-10	13 (330)	19.5 (495)	18 (457)	19.5 (495)
12.5-39.0	20 (508)	31 (787)	27 (686)	24.2 (615)

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

Corrosion resistant unit heater(s) shall be supplied by Berko, A Marley Engineered Products Brand, Bennettsville, SC. The unit heater(s) shall be UL listed for corrosive areas and NEMA4X wash down requirements.

HEATING ELEMENTS: The heating elements shall be corrosion resistant 300 stainless steel sheathed with 316 stainless steel fins for maximum heat dissipation. The elements are to be attached to junction box with leak-resistant stainless steel fittings.

CONTROL CENTER: The controls are completely factory prewired and tested and enclosed in a NEMA4X molded fiberglass control enclosure mounted beneath the heater cabinet. The control center shall include contactors, automatic reset over-temperature protector, fan delay relay, motor contactor and fused transformer for 24V control circuit. Convenient terminal blocks are included for remote thermostat connection.

FAN AND MOTOR ASSEMBLY: The fan and motor assembly shall include a totally enclosed, permanently lubricated, ball bearing motor, epoxy coated for corrosion resistance. Motor rating shall be 1/4 hp up to 10KW. 1/2 hp for 208V and 3/4 hp for 240/480 for units above 10kw. The fan shall be aluminum with corrosion resistant coating, directly connected to the motor, and be dynamically balanced. An epoxy sealed thermal fan delay shall be provided to allow the fan to continue to operate after heating thermostat has been satisfied to maximize transfer of generated heat to space being heated. The fan and motor shall be protected by an adjustable louvered outlet grille to direct flow up or down, painted with one coat zinc chromate primer and two coats of corrosion resistant paint.

OVER-TEMPERATURE PROTECTION: Built in over temperature protection shall be provided by an automatic reset thermal cutout.

HEATER CASE: The heater case shall be constructed of heavy 16 gauge type 304 stainless steel for corrosion resistance and assembled with stainless steel hardware. A stainless steel combination wall and ceiling swivel type mounting bracket to be supplied with unit heater.

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 20249 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

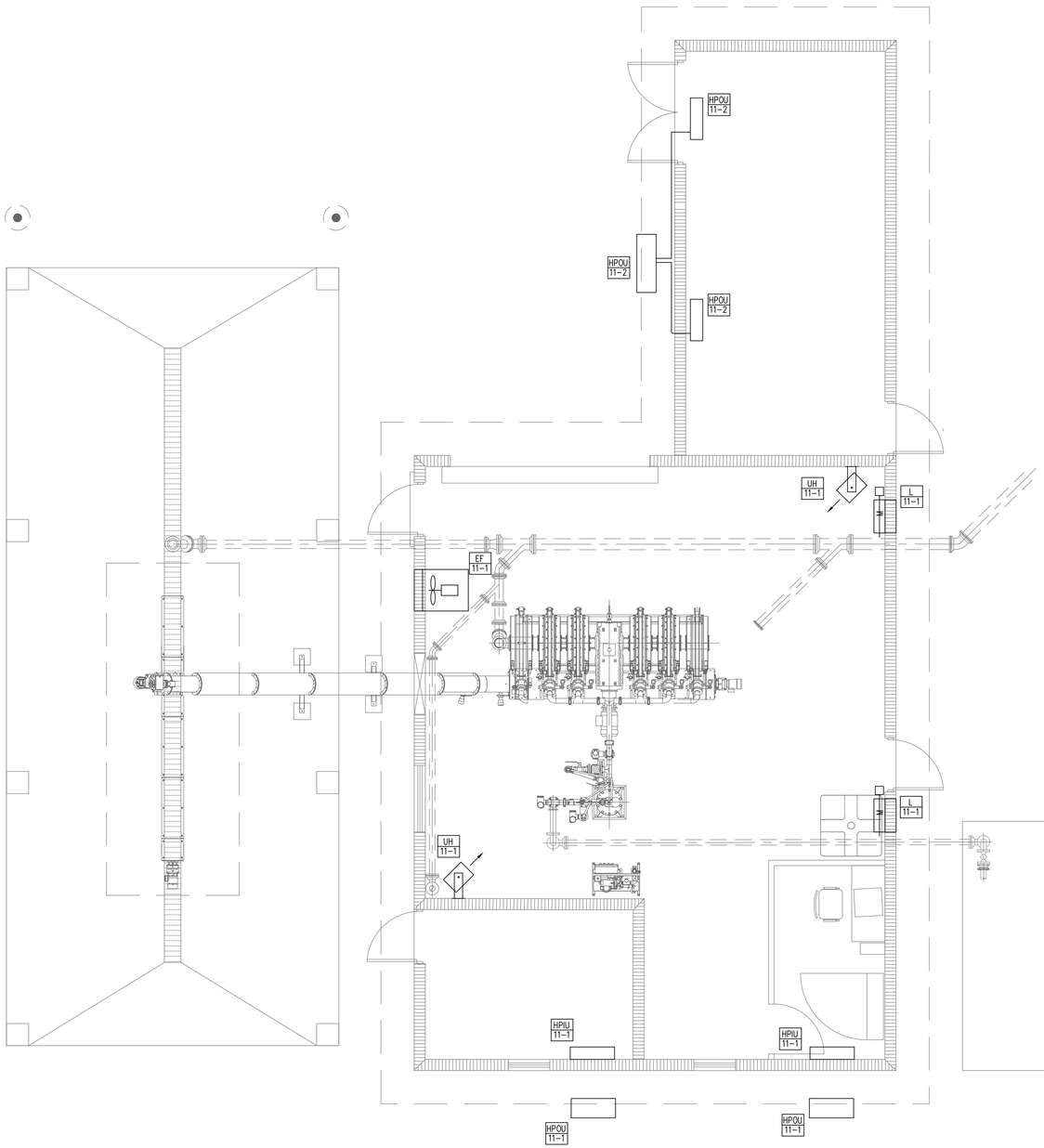
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
WAS RAS PUMP STATION BUILDING
HVAC SPECIFICATIONS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-5

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	CHWR	CHILLED WATER RETURN
	RETURN/EXHAUST AIR DUCT UP/DOWN	CHWS	CHILLED WATER SUPPLY
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	ES	EQUAL SPLIT
	RETURN OR EXHAUST GRILLE	FIL-*	FILTER
T	THERMOSTAT	F-*	FURNACE
P	PRESSURE SENSOR	GA	GAUGE
S	SMOKE DETECTER	OA	OUTSIDE AIR
	FIRE DAMPER	OE	OPEN ENDED DUCT
	FIRE/SMOKE DAMPER	SD	SPLITTER DAMPER
S	PIPE TURNED DOWN	U/G	UNDERGROUND
S	PIPE TURNED UP	UH-*	UNIT HEATER
S	BRANCH PIPE OFF MAIN	VD	VOLUME DAMPER
CFM	CUBIC FEET PER MINUTE	A/C-*	AIR CONDITIONING SYSTEM
M	MOTOR OPERATOR	AFF	ABOVE FINISHED FLOOR
		AHU-*	AIR HANDLING UNIT



1 DEWATERING BUILDING AND ELECTRICAL ROOM HVAC PLAN

SCALE: 1/4" = 1'

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1/4 inch = 1 ft.

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 20049 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
DEWATERING BUILDING AND ELECTRICAL ROOM HVAC PLAN

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-6

GREENHECK
Building Value in Air.

EF 11-1

Job Name: AER-20-02-0615-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

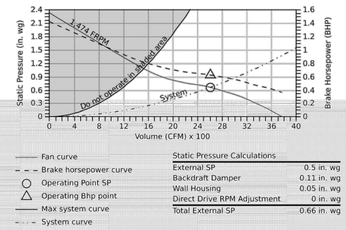
Model: AER-20-02-0615-VG

Sidewall Direct Drive Exhaust Fan

Standard Construction Features: Galvanized steel panel with fabricated galvanized steel drive frame (optional wall housing or wall collar). Propeller, fabricated steel (02) or cast aluminum (03). Direct driven motor in the airstream.

Fan Configuration	
Drive type	Direct

Performance	
Requested Volume (CFM)	2,600
Actual Volume (CFM)	2,600
Total External SP (in. wg)	0.66
Fan RPM	1,474
Operating Power (bhp)	0.62
Startup Power (bhp)	0.62
FEI	1.42
FEP Input Power (kw)	0.55
Air Stream Temp (F)	70
Start-up Temp (F)	70
Air Density (lbs/ft^3)	0.072
Elevation (ft)	1000
Static Efficiency (%)	43
Outlet Velocity (ft/min)	1,148



Fan curve
Brake horsepower curve
Operating Point SP
Operating Bhp point
Max system curve
System curve

Static Pressure Calculations	
External SP	0.5 in. wg
Backdraft Damper	0.11 in. wg
Wall Housing	0.05 in. wg
Direct Drive RPM Adjustment	0 in. wg
Total External SP	0.66 in. wg

Motor	
Size (hp)	1
V/C/P	460/60/3
NEC FLA (Amps)	1.8
Min Circuit Ampacity (MCA)	2.2
Max Overload Production (MOP)	15
Short Circuit Current Rating (SCCR)	5 kA

Sound

	Octave Bands (hz)								LwA	dBA	Sones
	62.5	125	250	500	1000	2000	4000	8000			
Inlet	82	84	85	80	79	76	70	63	84	72	21

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.The AMCA certified ratings seal applies to sound and air performance and FEI ratings only.Performance certified is for installation type A: Free inlet, free outlet.Power rating does not include transmission losses.Performance ratings do not include the effects of appurtenances.The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft).In a hemispherical free field calculated per ANSI/AMCA Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International *Standard 301.Values shown are for installation Type A: free inlet hemispherical sone levels.dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to LwA and inlet sone ratings only.

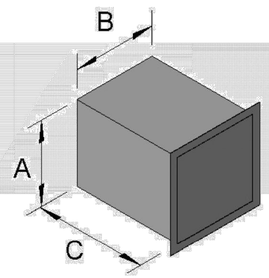
FLA - based on tables 150 or 148 of National Electric Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor; not accessories (damper actuator, field supplied VFD, etc.).
SCCR is a rating on components and assemblies representing the maximum level of short-circuit current that a component or assembly can withstand without causing a fire or shock hazard. A short circuit exceeding this rating can cause catastrophic and violent equipment, component and enclosure failure.

GREENHECK
Building Value in Air.

EF 11-1

Job Name: AER-20-02-0615-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

Dimensions and Weights		
Label	Value	Description
-	20.125	Impeller Diameter (in)
-	150	Weight w/o accessories (lbs)
A	30	Overall Height (in)
B	30	Overall Width (in)
C	33	Overall Length (in)
-	27.375	Wall Opening Width (in)
-	27.375	Wall Opening Height (in)



*All dimensions are in inches.

GREENHECK
Building Value in Air.

LL 11-1

Job Name: ESD-635-24x24 Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

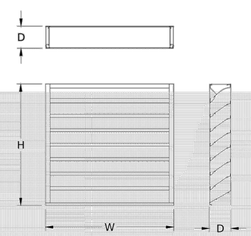
Model: ESD-635-24x24

6 in. Drainable Blade Louver

Certifications/special requirements: AMCA-500-L (Air), AMCA-500-L (Water)

Construction	
Material	Aluminum
Blade Type	All
Blade Orientation	Horizontal
Weight (lbs)	15

Dimensional	
Nominal Width (in)	24
Nominal Height (in)	24
Actual Width (in)	23.75
Actual Height (in)	23.75
Blade Depth (in)	6
Sections Wide	1
Sections High	1



Performance	
Application	Intake
Volume (CFM)	1,300
Pressure Drop (in. wg)	0.08
Free Area Velocity (ft/min)	714
Free Area (ft^2)	1.8
Air Density (lbs/ft^3)	0.075

*Louvers are tested to figure 5.5-6.5
*Sections wide x high are as configured with a base mill finish channel frame product and may vary depending on options selected.

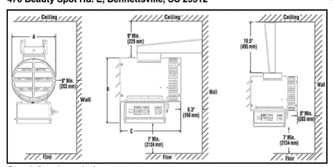
Greenheck Fan Corporation certifies that the louver shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

BERKO®
A Marley Engineered Products Brand
470 Beauty Spot Rd. E, Bennettsville, SC 29512

UH 11-1

SUBMITTAL SHEET
TYPE BWD
WASH-DOWN UNIT HEATERS

TYPE BWD - WASH-DOWN UNIT HEATERS



See unit dimensions on back page

CAPACITIES
2, 3, 5, 7.5, 10, 12.5, 15, 20 KW 120, 208, 240, 277, 480, 600°V 1Ø or 3Ø (Varies with Model)
25, 30, 39 KW 208, 240, 480V 3Ø only

*Only for 5-10kw

JOB NAME:
LOCATION:
ARCHITECT:
ENGINEER:
CONTRACTOR:
SUBMITTED BY:
DATE:

ITEM	QTY.	CATALOG NUMBER	TAG	KW	VOLTS	Ø	AMPS

ACCESSORIES AND CONTROLS

ITEM	QTY.	CAT. NO.	TAG	DESCRIPTION

SUBMITTED BY:	DATE	APPROVED BY:	DATE

ZSS-BWDUH (06-17) www.berkomep.com

BWD SERIES

BERKO®
A Marley Engineered Products Brand

UH 11-1

SELECTION CHART

MODEL NUMBER	KW	VOLTS	PHASE	OUTPUT BTU/HR	HEATER AMPS	MOTOR VOLTS	MOTOR PHASE	MOTOR AMPS	TEMP RISE	CFM	SHIP WEIGHT LBS (KG)
BWD02112	2	120	1	6,824	16.7	120	1	1.554	9	700	60 (27.2)
BWD02812	2	208	1	6,824	9.6	208	1	0.896	9	700	60 (27.2)
BWD02212	2	240	1	6,824	8.3	240	1	0.777	9	700	60 (27.2)
BWD03112	3	120	1	10,236	25.0	120	1	1.554	14	700	60 (27.2)
BWD03812	3	208	1	10,236	14.4	208	1	0.896	14	700	60 (27.2)
BWD03212	3	240	1	10,236	12.5	240	1	0.777	14	700	60 (27.2)
BWD03712	3	277	1	10,236	10.8	277	1	0.673	14	700	60 (27.2)
BWD03832	3	208	3	10,236	8.3	208	1	0.896	14	700	60 (27.2)
BWD03232	3	240	3	10,236	7.2	240	1	0.777	14	700	60 (27.2)
BWD03432	3	480	3	10,236	3.6	480	1	0.388	14	700	60 (27.2)
BWD05812	5	208	1	17,060	24.0	208	1	0.896	23	700	60 (27.2)
BWD05212	5	240	1	17,060	20.8	240	1	0.777	23	700	60 (27.2)
BWD05712	5	277	1	17,060	18.1	277	1	0.673	23	700	60 (27.2)
BWD05412	5	480	1	17,060	10.4	480	1	0.388	23	700	60 (27.2)
BWD05832	5	208	3	17,060	13.9	208	1	0.896	23	700	60 (27.2)
BWD05232	5	240	3	17,060	12.0	240	1	0.777	23	700	60 (27.2)
BWD05432	5	480	3	17,060	6.0	480	1	0.388	23	700	60 (27.2)
BWD07812	7.5	208	1	25,590	36.1	208	1	0.896	34	700	60 (27.2)
BWD07212	7.5	240	1	25,590	31.3	240	1	0.777	34	700	60 (27.2)
BWD07712	7.5	277	1	25,590	27.1	277	1	0.673	34	700	60 (27.2)
BWD07412	7.5	480	1	25,590	15.6	480	1	0.388	34	700	60 (27.2)
BWD07832	7.5	208	3	25,590	20.8	208	1	0.896	34	700	60 (27.2)
BWD07232	7.5	240	3	25,590	18.0	240	1	0.777	34	700	60 (27.2)
BWD07432	7.5	480	3	25,590	9.0	480	1	0.388	34	700	60 (27.2)
BWD07632	7.5	600	3	25,590	7.2	240	1	1.8	34	1450	75 (34)
BWD10212	10	240	1	34,120	41.7	240	1	0.777	22	1450	60 (27.2)
BWD10712	10	277	1	34,120	36.1	277	1	0.673	22	1450	60 (27.2)
BWD10412	10	480	1	34,120	20.8	480	1	0.388	22	1450	60 (27.2)
BWD10832	10	208	3	34,120	27.8	208	1	0.896	22	1450	60 (27.2)
BWD10232	10	240	3	34,120	24.1	240	1	0.777	22	1450	60 (27.2)
BWD10432	10	480	3	34,120	12.0	480	1	0.388	22	1450	60 (27.2)
BWD10632	10	600	3	34,120	9.6	240	1	1.8	33	2400	75 (34)
BWD12812	12.5	208	1	42,650	60.1	208	1	1.793	27	1450	60 (27.2)
BWD12212	12.5	240	1	42,650	52.1	240	1	1.554	27	1450	60 (27.2)
BWD12832	12.5	208	3	42,650	34.7	208	1	1.793	27	1450	60 (27.2)
BWD12232	12.5	240	3	42,650	30.1	240	1	1.554	27	1450	60 (27.2)
BWD12432	12.5	480	3	42,650	15.0	480	1	0.777	27	1450	60 (27.2)
BWD15812	15	208	1	51,180	72.1	208	1	1.793	20	2400	110 (49.9)
BWD15212	15	240	1	51,180	62.5	240	1	1.554	20	2400	110 (49.9)
BWD15412	15	480	1	51,180	31.3	480	1	0.777	20	2400	110 (49.9)
BWD15832	15	208	3	51,180	41.8	208	1	1.793	20	2400	110 (49.9)
BWD15232	15	240	3	51,180	36.1	240	1	1.554	20	2400	110 (49.9)
BWD15432	15	480	3	51,180	18.0	480	1	0.777	20	2400	110 (49.9)
BWD20412	20	480	1	68,240	41.7	480	1	0.777	26	2400	120 (54.4)
BWD20232	20	240	3	68,240	48.1	240	1	1.554	26	2400	120 (54.4)
BWD20432	20	480	3	68,240	24.1	480	1	0.777	26	2400	120 (54.4)
BWD25832	25	208	3	85,300	69.4	208	1	1.793	33	2400	120 (54.4)
BWD25232	25	240	3	85,300	60.1	240	1	1.554	33	2400	120 (54.4)
BWD25432	25	480	3	85,300	30.1	480	1	0.777	33	2400	120 (54.4)
BWD30832	30	208	3	102,360	83.3	208	1	1.793	39	2400	120 (54.4)
BWD30232	30	240	3	102,360	72.2	240	1	1.554	39	2400	120 (54.4)
BWD30432	30	480	3	102,360	36.1	480	1	0.777	39	2400	120 (54.4)
BWD39432	39	480	3	133,068	46.9	480	1	0.777	51	2400	120 (54.4)

All units other than standard models are non-returnable.

Factory Installed Accessories

CATALOG NUMBER	DESCRIPTION
T	Thermostat
L	Pilot Light
S	Mode/Selector Switch
D	Disconnect Switch
E	Monel Element*
M	Manual Reset
P	Epoxy Coating

* Monel elements are subject to longer lead times - contact factory for details.

kW	Dimensions Inches (mm)			
	A	B	C	D
2-10	13 (330)	19.5 (495)	18 (457)	19.5 (495)
12.5-39.0	20 (508)	31 (787)	27 (686)	24.2 (615)

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

Corrosion resistant unit heater(s) shall be supplied by Berko, A Marley Engineered Products Brand, Bennettsville, SC. The unit heater(s) shall be UL listed for corrosive areas and NEMA4X wash down requirements.

HEATING ELEMENTS: The heating elements shall be corrosion resistant 300 stainless steel sheathed with 316 stainless steel fins for maximum heat dissipation. The elements are to be attached to junction box with leak-resistant stainless steel fittings.

CONTROL CENTER: The controls are completely factory prewired and tested and enclosed in a NEMA4X molded fiberglass control enclosure mounted beneath the heater cabinet. The control center shall include contactors, automatic reset over-temperature protector, fan delay relay, motor contactor and fused transformer for 24V control circuit. Convenient terminal blocks are included for remote thermostat connection.

FAN AND MOTOR ASSEMBLY: The fan and motor assembly shall include a totally enclosed, permanently lubricated, ball bearing motor, epoxy coated for corrosion resistance. Motor rating shall be 1/4 hp up to 10KW. 1/2 hp for 208V and 3/4 hp for 240/480 for units above 10kw. The fan shall be aluminum with corrosion resistant coating, directly connected to the motor, and be dynamically balanced. An epoxy sealed thermal fan delay shall be provided to allow the fan to continue to operate after heating thermostat has been satisfied to maximize transfer of generated heat to space being heated. The fan and motor shall be protected by an adjustable louvered outlet grille to direct flow up or down, painted with one coat zinc chromate primer and two coats of corrosion resistant paint.

OVER-TEMPERATURE PROTECTION: Built in over temperature protection shall be provided by an automatic reset thermal cutout.

HEATER CASE: The heater case shall be constructed of heavy 16 gauge type 304 stainless steel for corrosion resistance and assembled with stainless steel hardware. A stainless steel combination wall and ceiling swivel type mounting bracket to be supplied with unit heater.

GEORGIA REGISTERED No. 20249 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
DEWATERING BUILDING AND ELECTRICAL ROOM HVAC SPECIFICATIONS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-7

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

MSZ-FS06NA & MUZ-FS06NA
6,000 BTU/H DELUXE WALL-MOUNTED INDOOR UNIT
6,000 BTU/H HYPER-HEATING OUTDOOR UNIT

MITSUBISHI ELECTRIC
CHANGES FOR THE BETTER

Job Name:
System Reference: Date:



Indoor Unit.....MSZ-FS06NA

Outdoor Unit.....MUZ-FS06NA

HPUU 11-1 HPOU 11-1

INDOOR UNIT FEATURES

- Slim wall-mounted indoor units provide zone comfort control
- Dual Barrier Coating applied to the heat exchanger, vanes and fan to prevent hydrophilic and hydrophobic dirt build-up
- Multiple fan speed options: Quiet, Low, Medium, High, Super-high, Auto
- 3D i-see Sensor[4] enables advance features:
  - Indirect or Direct Airflow for personalized comfort
  - Absence Detection for energy-saving mode
- Double Vane features:
  - Separates airflow to deliver air across a large area
  - Simultaneously deliver to air separate sections of a room
  - Generates more comfortable natural airflow pattern
- Multiple control options available:
  - Back-lit screen handheld remote controller (provided with unit)
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Triple-action Filtration: Nano Platinum Filter, Deodorizing Filter, & Electrostatic Anti-Allergy Enzyme Filter
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after Defrost Cycle
- Quiet operation

OUTDOOR UNIT FEATURES

- INVERTER-driven compressor and LEV provide high efficiency and comfort while using only the energy needed to maintain maximum performance
- H2i plus[TM] performance offers 100% heating capacity at -5° and 70% to 81% heating capacity at -13° F
- Blue Fin anti-corrosion treatment applied to the outdoor unit heat exchanger for increased coil protection and longer life

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

SPECIFICATIONS: MSZ-FS06NA & MUZ-FS06NA

HPUU 11-1 HPOU 11-1

Cooling at 95°F	Maximum Capacity	BTU/H	9,000
	Rated Capacity	BTU/H	6,000
	Minimum Capacity	BTU/H	1,700
	Maximum Power Input	W	560
	Rated Power Input	W	315
	Moisture Removal	Pints/h	0.2
	Sensible Heat Factor		0.96
Heating at 47°F[1]	Power Factor [208V / 230V]	%	79.0 / 83.0
	Maximum Capacity	BTU/H	14,000
	Rated Capacity	BTU/H	8,700
	Minimum Capacity	BTU/H	1,600
	Maximum Power Input	W	1,270
	Rated Power Input	W	545
	Power Factor [208V / 230V]	%	90.0 / 91.0
Heating at 17°F[1]	Maximum Capacity	BTU/H	12,840
	Rated Capacity	BTU/H	5,900
	Maximum Power Input	W	1,400
	Rated Power Input	W	395
	Maximum Capacity	BTU/H	10,500
Heating at 5°F[1]	Maximum Power Input	W	1,250
Heating at -5°F[1]	Maximum Capacity	BTU/H	8,700
Heating at -13°F[1]	Maximum Capacity	BTU/H	7,350
Efficiency	SEER2		32.2
	EER2[1]		19.0
	HSPF2 [IV]		11.9
	COP at 47°F[1]		4.68
	COP at 17°F at Maximum Capacity[1]		2.69
	COP at 5°F at Maximum Capacity[1]		2.46
	COP at -5°F at Maximum Capacity[1]		2.25
	COP at -13°F at Maximum Capacity[1]		1.93
	ENERGY STAR® Certified		Yes
Electrical	Voltage, Phase, Frequency		208/230, 1, 60
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208/230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating [SCCR]	kA	5
	Recommended Fuse/Breaker Size [Outdoor]	A	15
	Recommended Wire Size [Indoor - Outdoor]	AWG	14
	Power Supply		Indoor unit is powered by the outdoor unit
Indoor Unit	MCA	A	1.0
	Fan Motor Full Load Amperage	A	0.65
	Fan Motor Type		DC Motor
	Airflow Rate at Cooling, Dry	CFM	137–167–221–304–381
	Airflow Rate at Cooling, Wet	CFM	117–143–190–261–328
	Airflow Rate at Heating, Dry	CFM	145–167–235–325–437
	Sound Pressure Level [Cooling]	dB(A)	20–22–29–36–40
	Sound Pressure Level [Heating]	dB(A)	20–24–29–39–42
	Drain Pipe Size	in. [mm]	5/8 [15.9]
	Coating on Heat Exchanger		Dual Barrier Coating
	External Finish Color		Munsell 1.0Y 9.2/0.2
	Unit Dimensions	W x D x H: in. [mm]	30-7/16 x 9-3/16 x 12 (+1/16) [825 x 234 x 305 (+17)]
	Package Dimensions	W x D x H: in. [mm]	39 x 12-1/4 x 15-1/2 [990 x 310 x 400]
	Unit Weight	Lbs. [kg]	29 [13.5]
	Package Weight	Lbs. [kg]	34 [15.4]
Indoor Unit Operating Temperature Range	Cooling Intake Air Temp [Maximum / Minimum]**	°F	90 DB, 73 WB / 67 DB, 57 WB
	Heating Intake Air Temp [Maximum / Minimum]	°F	80 DB / 70 DB

NOTES:
AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)
*Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
*Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
*Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions
*Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 5 DB, 4 WB
*Heating at -5°F (Indoor // Outdoor) °F 70 DB, 60 WB // -5 DB, -6 WB
*Heating at -13°F (Indoor // Outdoor) °F 70 DB, 60 WB // -13 DB, -14 WB

*Indoor/Outdoor Unit Operating Temperature Range (Cooling Air Temp [Maximum / Minimum]):
• Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
• System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

SPECIFICATIONS: MSZ-FS06NA & MUZ-FS06NA

HPUU 11-1 HPOU 11-1

Outdoor Unit	MCA	A	10.0
	MOCP	A	15
	Fan Motor Full Load Amperage	A	0.5
	Fan Motor Output	W	55
	Airflow Rate [Cooling / Heating]	CFM	1141 / 1183
	Refrigerant Control		LEV
	Defrost Method		Reverse Cycle
	Coating on Heat Exchanger		Blue Fin Coating
	Sound Pressure Level, Cooling*	dB(A)	47
	Sound Pressure Level, Heating*	dB(A)	49
	Compressor Type		Twin Rotary
	Compressor Model		SNB092FQAMT
	Compressor Rated Load Amps	A	9.2
	Compressor Locked Rotor Amps	A	7.4
	Compressor Oil [Type // Charge]	oz.	FVS09 // 8.35
	External Finish Color		Munsell 3Y 7.8/1.1
	Base Pan Heater		Optional
	Unit Dimensions	W x D x H: in. [mm]	31-1/2 x 11-1/4 x 21-5/8 [800 x 285 x 550]
	Package Dimensions	W x D x H: in. [mm]	37 x 15 x 24-1/2 [940 x 380 x 630]
	Unit Weight	Lbs. [kg]	92 [37]
	Package Weight	Lbs. [kg]	89 [40]
Outdoor Unit Operating Temperature Range	Cooling Air Temp [Maximum / Minimum]*	°F	115 DB / 14 DB
	Cooling Thermal Lock-out / Re-start Temperatures**	°F	-4 / 0
	Heating Air Temp [Maximum / Minimum]	°F	75 DB, 65 WB / -13 DB, -14 WB
	Heating Thermal Lock-out / Re-start Temperatures**	°F	-18 / -14
Refrigerant	Type		R410A
	Pre-Charged Refrigerant Amount	Lbs. oz	2.0, 0.0
	Maximum Pre-Charged Piping Length	Ft. [m]	25.0 [7.5]
	Additional Refrigerant Charge Per Additional Piping Length	oz./Ft. [g/m]	0.2 [20]
Piping	Gas Pipe Size O.D. [Flared]	In.[mm]	3/8 [9.52]
	Liquid Pipe Size O.D. [Flared]	In.[mm]	1/4 [6.35]
	Maximum Piping Length	Ft. [m]	65 [20]
	Maximum Height Difference	Ft. [m]	40 [12]
	Maximum Number of Bends		10

NOTES:
AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)
*Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
*Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
*Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions
*Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 5 DB, 4 WB
*Heating at -5°F (Indoor // Outdoor) °F 70 DB, 60 WB // -5 DB, -6 WB
*Heating at -13°F (Indoor // Outdoor) °F 70 DB, 60 WB // -13 DB, -14 WB

*Indoor/Outdoor Unit Operating Temperature Range (Cooling Air Temp [Maximum / Minimum]):
• Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
• System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

INDOOR UNIT ACCESSORIES: MSZ-FS06NA

HPUU 11-1 HPOU 11-1

Control Interface	CN24 Relay Kit	☐ CN24RELAY-KIT-CM3
	IT Extender	☐ PAC-WHS01IT-E
	kumo station® for kumo cloud®	☐ PAC-WHS01HC-E
	Procon BACnet® and Modbus® Interface	☐ PAC-LKPRC001-CN-1
	System Control Interface	☐ MAC-334IF-E
	Thermostat Interface	☐ PAC-US644CN-1
	Thermostat Interface	☐ PAC-US445CN-1
	USNAP Adapter	☐ PAC-WHS01UP-E
	Wireless interface for kumo cloud®	☐ PAC-US9WHS003-WF-2
Remote Sensor	Wired Remote Sensor	☐ M21SAA307
	Wireless temperature and humidity sensor for kumo cloud®	☐ PAC-US9WHS003-TH-1
Wired Remote Controller	Deluxe Wired MA Remote Controller[2]	☐ PAR-40MAAU
	Simple Ductless Wired Remote Controller	☐ PAC-SD09SWC-1
	Simple MA Remote Controller[2]	☐ PAC-YT53CRAU-J
	Touch MA Controller[2]	☐ PAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	☐ MHK2
	Lockdown bracket for remote controller	☐ RCMKPYCB
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	☐ X87-721
	Blue Diamond (MicroBlue) Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	☐ X86-003
	Blue Diamond Alarm Extension Cable — 6.5 Ft.	☐ C13-102
	Blue Diamond Multi-Tank — collection tank for use with multiple pumps	☐ C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	☐ C13-103
	Drain Pan Level Sensor/Control	☐ SS510E
	Fascia Kit for MicroBlue Pump, mounts the MicroBlue and sensor directly beneath indoor unit	☐ T19-016
	Reflex Condensate Pump (100-240 VAC)	☐ CORE-8
	Reflex Condensate Pump (100-240 VAC) up to 120,000 BTU/H	☐ COMBI
	Sauermann Condensate Pump	☐ SI30-230
Disconnect Switch	(30A/600VAC) [fits 2" X 4" utility box] – Black	☐ TAZ-MS303
	(30A/600VAC) [fits 2" X 4" utility box] - White	☐ TAZ-MS303W
Filter	Electro Static Anti-allergy Enzyme Filter	☐ MAC-2330FT-E
	Platinum Deodorizing Filter	☐ MAC-3009FT-E
Lineset	10' x 1/4" x 10" / 3/8" Lineset (Twin-Tube Insulation)	☐ MLS1438121-10
	30' x 1/4" x 30" / 3/8" Lineset (Twin-Tube Insulation)	☐ MLS1438121-30
	50' x 1/4" x 50" / 3/8" Lineset (Twin-Tube Insulation)	☐ MLS1438121-50
	65' x 1/4" x 65" / 3/8" Lineset (Twin-Tube Insulation)	☐ MLS1438121-65

NOTES:
*Requires MAC-334IF-E
• M-Series EZ FIT® Recessed Ceiling Cassette, Floor-mount and Wall-mount
Allows indoor units to connect to an MA Controller:
Deluxe MA Remote Controller
Simple MA Controller
Touch MA Controller

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

OUTDOOR UNIT ACCESSORIES: MUZ-FS06NA

Control/Service Tool	M- & P-Series Maintenance Tool Cable Set	☐ M21EC0397
	USB/UART Conversion Cable (Required for all laptop connection)	☐ M21EC1397
Uram Socket	Uram Socket	☐ MAC-871DS
Hail Guards	Hail Guard	☐ HG-94
Mini-Split Wire	14 Gauge, 4 wire MiniSplit Cable—250 ft. roll	☐ S144-250
	14 Gauge, 4 wire MiniSplit Cable—50 ft. roll	☐ S144-50
	16 Gauge, 4 wire MiniSplit Cable—250 ft. roll	☐ S164-250
	16 Gauge, 4 wire MiniSplit Cable—50 ft. roll	☐ S164-50
Mounting Pad	Condensing Unit Mounting Pad 16" x 36" x 3"	☐ ULTRILITE1
	Outdoor Unit 3-1/4 inch Mounting Base (Pair) – Plastic	☐ DSD-400P
Optional Defrost Heater	Optional Defrost Heater	☐ MAC-640BH-U
Stand	18" Single Fan Stand	☐ QSMS1801M
	24" Single Fan Stand	☐ QSMS2401M
	Condenser Wall Bracket	☐ QSMS2020M-1
	Condenser Wall Bracket – Stainless Steel Finish	☐ QSMSSS
	Outdoor Unit Stand — 12" High	☐ QSMS1201M

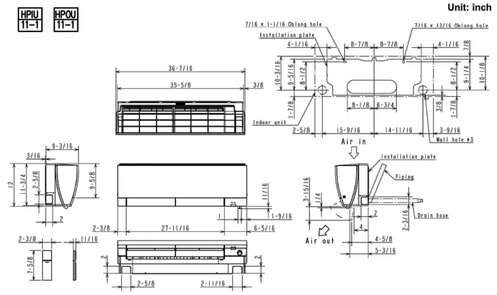
HPUU 11-1 HPOU 11-1

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

INDOOR UNIT DIMENSIONS: MSZ-FS06NA

HPUU 11-1 HPOU 11-1

Unit: inch



(06/09/12 KBTU/H)

Piping	Insulation	#1-7/16 O.D
	Liquid line	#1/4 19-11/16 (Flared connection #1/4)
	Gas line	#3/8 16-15/16 (Flared connection #3/8)
	Drain hose	Insulation #1-1/8 Connected part #5/8 O.D

(15/18 KBTU/H)

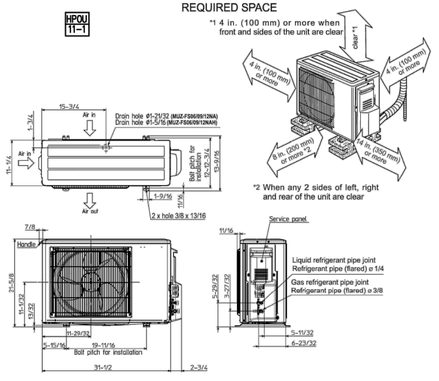
Piping	Insulation	#1-7/16 O.D
	Liquid line	#1/4 19-11/16 (Flared connection #1/4)
	Gas line	#3/8 16-15/16 (Flared connection #1/2)
	Drain hose	Insulation #1-1/8 Connected part #5/8 O.D

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

OUTDOOR UNIT DIMENSIONS: MUZ-FS06NA

Unit: inch

HPUU 11-1



1340 Satellite Boulevard Suwanee, GA 30024
Toll Free: 800-433-4822 www.mehvac.com

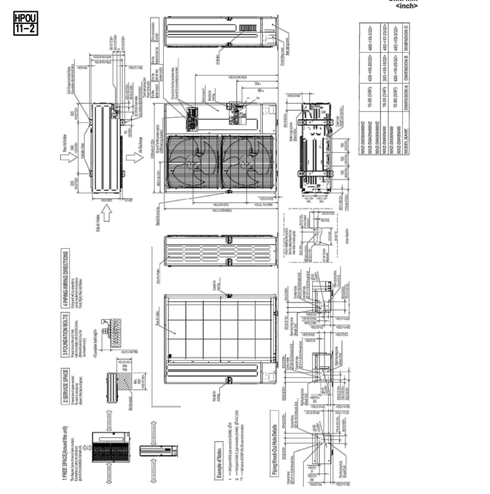
FORM# MSZ-FS06NA & MUZ-FS06NA - 202309

Specifications are subject to change without notice.
© 2023 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

OUTDOOR UNIT DIMENSIONS: MXZ-SM48NAM2

HPUU 11-2

Unit: mm
<inch>



1340 Satellite Boulevard Suwanee, GA 30024
Toll Free: 800-433-4822 www.mehvac.com

FORM# MXZ-SM48NAM2 - 202406

Specifications are subject to change without notice.
© 2024 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RIZZO ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING AND ELECTRICAL ROOM
HVAC SPECIFICATIONS

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-8

M-SERIES

SUBMITTAL DATA: MSZ-GL24NA
24,000 BTU/H WALL-MOUNTED INDOOR UNIT

MITSUBISHI ELECTRIC
HEATING & AIR CONDITIONING

Job Name:

System Reference: Date:

Indoor Unit: MSZ-GL24NA	Wireless Remote Controller
HPIU 11-2 	

GENERAL FEATURES

- Slim wall-mounted indoor units provide zone comfort control
- The outdoor unit powers the indoor unit, and should a power outage occur, the system is automatically restarted when power returns
- Multiple fan speed options: Quiet, Low, Medium, High, Super-high, Auto
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after Defrost Cycle
- Quiet operation
- Smart Set: recalls a preferred preset temperature setting at the touch of a button

Specifications are subject to change without notice. © 2022 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

SPECIFICATIONS: MSZ-GL24NA

Cooling Capacity[1,3]		BTUH	22,500
Heating Capacity[2,3]		BTUH	27,000
Electrical HPIU 11-2	Voltage, Phase, Frequency		208/230V, 1 phase, 60Hz
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating (SCCR)		5
MCA		A	1
Blower Motor Full Load Amperage		A	0.76
Blower Motor Output		W	56
Airflow Rate at Cooling, Dry		CFM	738-628-544-469-388
Airflow Rate at Cooling, Wet		CFM	661-562-487-420-347
Airflow Rate at Heating, Dry		CFM	738-628-544-469-388
Sound Pressure Level (Cooling)		dB(A)	53-49-45-41-34
Sound Pressure Level (Heating)		dB(A)	53-49-45-41-32
Drain Pipe Size		In. (mm)	5/8 (15.88)
Heat Exchanger Type			Plate fin coil
External Finish Color			Munsell 1.0Y 9.2/0.2
Unit Dimensions		W: In. (mm)	43-5/16 (1,100)
		D: In. (mm)	9-3/8 (238)
		H: In. (mm)	13-13/16 (325)
Package Dimensions		W: In. (mm)	45-1/2 (1,165)
		D: In. (mm)	12-3/4 (323)
		H: In. (mm)	16-1/2 (390)
Unit Weight		Lbs. (kg)	37 (17)
Package Weight		Lbs. (kg)	42 (19)
Refrigerant	Type		R410A
Piping	Gas Pipe Size O.D. (Flared)	In. (mm)	5/8 (15.88)
	Liquid Pipe Size O.D. (Flared)	In. (mm)	3/8 (9.52)

Notes:

Nominal Conditions	[1]Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	[2]Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB

[3]Capacity varies based on the number of indoor units operating and the model of the Multi-zone Outdoor Unit. For reference to connected capacity charts, please refer Multi-zone Outdoor Unit Operational Performance.

Specifications are subject to change without notice. © 2022 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

ACCESSORIES: MSZ-GL24NA

Anti-allergy Enzyme Filter	□ MAC-3316FT-E
kumo touch™ Rail,BMC™ Wireless Controller	□ MHK2
Deluxe MA Remote Controller[1]	□ PAR-40MAAU
Simple MA Controller[1]	□ PAC-YT53CRAU-J
Touch MA Controller[1]	□ PAR-CT01MAU-SB
Wireless Temperature and Humidity Sensor	□ PAC-USWHS003-TH-1
System Control Interface[2]	□ MAC-334IF-E
Wireless Interface 2	□ PAC-USWHS002-WIF-2
Thermostat Interface	□ PAC-US444CN-1
Thermostat Interface	□ PAC-US443CN-1
kumo station® for kumo cloud®	□ PAC-WHS01HC-E
USNAP Interface	□ PAC-WHS01UP-E
IT Extender	□ PAC-WHS01IE-E
BACnet® and MODBUS® Interface	□ PAC-UKPHC001-CN-1
Lockdown Bracket for Hand-held Remote Controllers	□ RCMKIT1CB
Blue Diamond Sensor Extension Cable — 15 Ft.	□ C1S-153
Blue Diamond Alarm Extension Cable — 6.5 Ft.	□ C1S-152
Blue Diamond MultiTank — collection tank for use with multiple pumps	□ C21-014
Blue Diamond Rubber Foot Pads	□ F10-010
Mini Condensate Pump—230 volt application	□ S030-230
MegaBlue Advanced Blue Diamond Condensate Pump w/ Reservoir & Sensor	□ X87-835 - 110 to 208V
MaxiBlue Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (115V) up to 48,000 BTUH[recommended]	□ X87-711 - 115V
Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	□ X87-721 - 208/230V
MicroBlue Blue Diamond Mini Condensate Pump (115V/208/230V) up to 18,000 BTUH	□ X85-603
Fascia Kit for MicroBlue Pump – mounts the MicroBlue and sensor directly beneath the indoor unit	□ T18-016
Reflex Condensate Pump (100-240 VAC) up to 120,000 BTUH	□ COMBI
Reflex Condensate Pump (100-240 VAC) up to 120,000 BTUH	□ GOBI-II
Drain Pan Level Sensor	□ SS610E
(30A/600VUL) [fits 2" X 4" utility box] - Black	□ TAZ-M6303
(30A/600VUL) [fits 2" X 4" utility box] - White	□ TAZ-M6303W
Flexible Mini-Split Drain Hose	□ DRX-19

[1] Requires MAC-334IF-E
[2] Allows indoor units to connect to an MA Controller

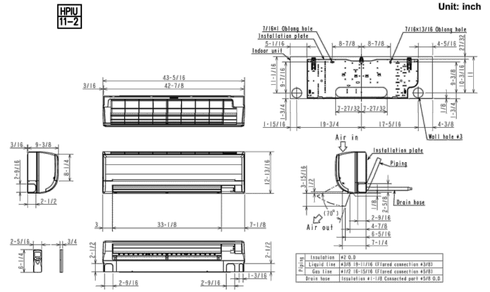
HPIU 11-2

Specifications are subject to change without notice. © 2022 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

DIMENSIONS: MSZ-GL24NA

HPIU 11-2

Unit: inch



1340 Satellite Boulevard, Suwanee, GA 30024
Toll Free: 800-433-4822 | www.mehvac.com

FORM# MSZ-GL24NA FOR MULTI-ZONE HEAT PUMP SYSTEMS - 202209

Specifications are subject to change without notice. © 2022 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

MXZ-SM48NAM2

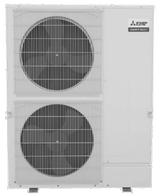
4-TON MULTI-ZONE INVERTER HEAT-PUMP SYSTEM

MITSUBISHI ELECTRIC
HEATING & AIR CONDITIONING

Job Name:

System Reference: Date:

HPOU 11-2



FEATURES

- Compatible with M- and P-Series and CITY MULTI® indoor units. Branch box required for connection with M- and P-Series
- Variable speed INVERTER-driven compressor
- Seacoast protection on heat exchanger and base panel (rated for 2,000 hrs in accordance with ASTM B117 testing)
- Thermal Differential 1°F (with PAC-MKA32/52BC only)
- Optional base pan heater
- Quiet outdoor unit operation, rated sound pressure as low as 51 dB(A)
- High pressure protection
- Compressor thermal protection
- Compressor overcurrent detection
- Fan motor overheating/voltage protection

ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.

Specifications are subject to change without notice. © 2024 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

SPECIFICATIONS: MXZ-SM48NAM2

Cooling[1] (Non-Ducted // Mix (Mid-static) // Ducted (Mid-static)	Mix (High-static) // Ducted (High-static))	Maximum Capacity	BTUH	48,000 // 48,000 // 48,000	48,000 // 48,000
		Rated Capacity	BTUH	48,000 // 48,000 // 48,000	48,000 // 48,000
		Minimum Capacity	BTUH	16,000 // 16,000 // 16,000	15,500 // 15,000
		Maximum Power Input	W	3,685 // 4,123 // 4,575	4,140 // 4,615
		Rated Power Input	W	3,685 // 4,123 // 4,575	4,140 // 4,615
		Power Factor (208V, 230V)	%	98.5, 98.5 // 98.5, 98.5 // 98.5, 98.5	98.5, 98.5 // 98.5, 98.5
Heating at 47°F[2] (Non-Ducted // Mix (Mid-static) // Ducted (Mid-static)	Mix (High-static) // Ducted (High-static))	Maximum Capacity	BTUH	50,000 // 50,000 // 50,000	50,000 // 50,000
		Rated Capacity	BTUH	50,000 // 50,000 // 50,000	50,000 // 50,000
		Minimum Capacity	BTUH	27,000 // 27,000 // 27,000	21,150 // 15,300
		Maximum Power Input	W	3,685 // 4,123 // 4,580	4,123 // 4,580
		Rated Power Input	W	3,685 // 4,123 // 4,580	4,123 // 4,580
		Power Factor (208V, 230V)	%	98.5, 98.5 // 98.5, 98.5 // 98.5, 98.5 // 98.5, 98.5	
Heating at 17°F[2] (Non-Ducted // Mix (Mid-static) // Ducted (Mid-static)	Mix (High-static) // Ducted (High-static))	Maximum Capacity	BTUH	45,000 // 45,000 // 43,000	45,000 // 43,000
		Rated Capacity	BTUH	31,400 // 33,200 // 35,000	32,400 // 33,400
		Maximum Power Input	W	5,045 // 5,388 // 5,730	5,363 // 5,680
		Rated Power Input	W	3,410 // 3,843 // 4,275	3,745 // 4,089
Heating at 5°F[3] (Non-Ducted // Mix (Mid-static) // Ducted (Mid-static)	Mix (High-static) // Ducted (High-static))	Maximum Capacity	BTUH	35,400 // 35,400 // 35,400	35,400 // 35,400
		Maximum Power Input	W	4,940 // 5,118 // 5,295	5,118 // 5,295
Efficiency (Non-Ducted // Mix (Mid-static) // Ducted (Mid-static)	Mix (High-static) // Ducted (High-static))	SEER2		23.0 // 19.5 // 16.0	19.85 // 14.7
		EER2		13.1 // 11.5 // 10.5	11.75 // 10.4
		HSPF2 (IV)		10.4 // 9.05 // 8.9	9.35 // 8.3
		COP at 47°F[2]		4.0 // 3.6 // 3.2	3.6 // 3.2
		COP at 17°F at Maximum Capacity[2]		2.5 // 2.35 // 2.2	2.36 // 2.22
		COP at 5°F at Maximum Capacity[3]		2.3 // 2.25 // 2.2	2.13 // 1.96
		ENERGY STAR® Certified		Yes // Yes // No // No	
Electrical HPOU 11-2		Electrical Power Requirements	Voltage, Phase, Frequency	208/230, 1, 60	
		Guaranteed Voltage Range	V AC	187-253	
		Voltage: Indoor - Outdoor, S1-S2	V AC	208/220	
		Voltage: Indoor - Outdoor, S2-S3	V DC	24	
		Short-circuit Current Rating (SCCR)	kA	5	
		Recommended Fuse/Breaker Size if Branch Box Powered by Outdoor Unit	A	40	
		Recommended Fuse/Breaker Size without Branch Box or Branch Box Powered Separate	A	30	
		Recommended Wire Size (Indoor - Outdoor) if Branch Box Powered by Outdoor Unit	AWG	8	
		Recommended Wire Size (Indoor - Outdoor) without Branch Box or Branch Box Powered Separate	AWG	10	
		MCA if Branch Box Powered by Outdoor Unit	A	42.0	
		MOCP if Branch Box Powered by Outdoor Unit	A	70	
		MCA without Branch Box or Branch Box Powered Separate	A	38	
		MOCP without Branch Box or Branch Box Powered Separate	A	64	
		Fan Motor Full Load Amperage	A	0.6+0.6	

NOTES:
AHRI Rated Conditions [1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
(Rated data is determined at a fixed compressor speed) [2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
[3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions [4]Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 6 DB, 4 WB

[1]Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.
[2] when 1 or more PLA-A EA7 connected
[3] Branch box should be placed within the level between the outdoor unit and indoor units
[4] 5°F DB - 115°F DB when optional wind baffles are installed
For actual capacity performance based on indoor unit type and number of indoor units connected, please refer to MXZ Operational Performance.
Although the maximum connectable capacity is 130%, the outdoor unit cannot provide more than 100% of the rated capacity. Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

Mid and high external static pressure tests conducted at 0.3 and 0.5 in.w.g. respectively, according to AHRI 210/240. The external static pressures utilized have no bearing on the capabilities of the indoor unit; please refer to the indoor unit manual to select the correct external static pressure setting for the application.

Specifications are subject to change without notice. © 2024 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

SPECIFICATIONS: MXZ-SM48NAM2

Outdoor unit HPOU 11-2	Airflow Rate (Cooling // Heating)	CFM	3,885 / 3,885
	Refrigerant Control		LEV
	Defrost Method		Reverse Cycle
	Heat Exchanger Type		Plate fin coil
	Heat Exchanger Coating		Blue Fin Coating
	Sound Pressure Level, Cooling[1]	dB(A)	61
	Sound Pressure Level, Heating[2]	dB(A)	64
	Compressor Type		Hermetic
	Compressor Model		AN333FNHMT
	Compressor Motor Output	kW	3.4
	Compressor Rated Load Amps	A	19
	Compressor Locked Rotor Amps	A	22.0
	Compressor Oil Type // Charge	oz.	FVC68 // 78
	Base Pan Heater		Optional (PAC-SJ20BH-E)
	Unit Dimensions	W: In. [mm]	41-11/32 [1,050]
		D: In. [mm]	13 [330]
		H: In. [mm]	52-11/16 [1,339]
	Package Dimensions	W: In. [mm]	43 [1,095]
		D: In. [mm]	18 [450]
		H: In. [mm]	57 [1,430]
	Unit Weight	Lbs.[kg]	271 [123]
	Package Weight	Lbs.[kg]	293 [134]
Outdoor unit operating temperature range	Cooling Intake Air Temp (Maximum / Minimum)[3]	°F/DB	115 / 5[4]
	Cooling Thermal Lock-out / Re-start Temperatures	°F/DB	N/A / N/A
	Heating Intake Air Temp (Maximum / Minimum)	°F/DB	59 / -13
	Heating Thermal Lock-out / Re-start Temperatures	°F/DB	-24 / -14
Refrigerant	Pre-Charged Refrigerant,Amount	Lbs. oz	10.0, 9.0
Indoor unit connection	Maximum Number of Connected IDU with Branch Box		8 (6)[5,6]
	Maximum Number of Connected IDU without Branch Box		12
	Minimum Connected Capacity with Branch Box		12,000
	Minimum Connected Capacity without Branch Box		24,000
	Maximum connected capacity		62,000
Piping	Liquid Pipe Size O.D. (Flared)	In.[mm]	3/8 [9.52]
	Gas Pipe Size O.D. (Flared)	In.[mm]	5/8 [15.88]
	Total Piping Length when using Branch Box	Ft. [m]	492 [150]
	Total Piping Length without Branch Box	Ft. [m]	984 [300]
	Maximum Height Difference[6], ODU above IDU	Ft. [m]	164 [50]
	Maximum Height Difference[6], ODU below IDU	Ft. [m]	131 [40]
	Maximum Height Difference[6], between branch boxes	Ft. [m]	49 [15]
	Maximum Height Difference between IDU and IDU without branch box	Ft. [m]	49 [15]
		Ft. [m]	49 [15]
	Maximum Piping Length between ODU and Branch Box	Ft. [m]	180 [55]
	Farthest Piping Length from ODU to IDU with Branch Box	Ft. [m]	262 [80]
	Farthest Piping Length from ODU to IDU without Branch Box	Ft. [m]	492 [150]
	Farthest Piping Length after Branch Box	Ft. [m]	82 [25]
	Total Piping Length between Branch Boxes and IDU	Ft. [m]	311 [95]
	Maximum Number of Bends for IDU		15

NOTES:
AHRI Rated Conditions [1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
(Rated data is determined at a fixed compressor speed) [2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
[3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions [4]Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 6 DB, 4 WB

[1]Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.
[2] when 1 or more PLA-A EA7 connected
[3] Branch box should be placed within the level between the outdoor unit and indoor units
[4] 5°F DB - 115°F DB when optional wind baffles are installed
For actual capacity performance based on indoor unit type and number of indoor units connected, please refer to MXZ Operational Performance.
Although the maximum connectable capacity is 130%, the outdoor unit cannot provide more than 100% of the rated capacity. Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

Mid and high external static pressure tests conducted at 0.3 and 0.5 in.w.g. respectively, according to AHRI 210/240. The external static pressures utilized have no bearing on the capabilities of the indoor unit; please refer to the indoor unit manual to select the correct external static pressure setting for the application.

Specifications are subject to change without notice. © 2024 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

OUTDOOR UNIT ACCESSORIES: MXZ-SM48NAM2

Air Deflector	Vertical Air Deflector	□ ADV-1
Air Outlet Guide	Air Outlet Guide (1 Piece)	□ PAC-SH96SG-E (two pieces are required)
Ball Valve HPOU 11-2	Refrigeration stan Valve – 1/2"	□ BV12FFSI2
	Refrigeration Ball Valve – 1/4"	□ BV14FFSI2
	Refrigeration Ball Valve – 3/8"	□ BV38FFSI2
	Refrigeration Ball Valve – 5/8"	□ BV58FFSI2
Branch Box	3 Port Branch Box	□ PAC-MKA32BC
	3 Port Branch Box	□ PAC-MKA33BC
	5 Port Branch Box	□ PAC-MKA52BC
	5 Port Branch Box	□ PAC-MKA53BC
	Branch Box Enclosure	□ BBE-1
Centralized Drain Pan	Central Drain Pan	□ PAC-SH97DP-E
Control Wire	M-Net Control Wire, 1,000' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	□ CW1625-1000
	M-Net Control Wire, 250' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	□ CW1625-250
Control/Service Tool	Maintenance Tool Interface	□ PAC-USCMS-MN-1
Distribution pipe	Brazed Connection	□ MSDD-50BR-E
	Flare Connection	□ MSDD-50AR-E
Drain Socket	Drain Socket	□ PAC-SG92DS-E
Hail Guards	Hail Guard	□ HG-A2
Mini-Split Wire	14 Gauge, 4 wire MiniSplit Cable—250 ft. roll	□ S144-250
	14 Gauge, 4 wire MiniSplit Cable—250 ft. roll	□ SW144-250
	14 Gauge, 4 wire MiniSplit Cable—50 ft. roll	□ S144-50
	14 Gauge, 4 wire MiniSplit Cable—50 ft. roll	□ SW144-50
	16 Gauge, 4 wire MiniSplit Cable—250 ft. roll	□ S164-250
	16 Gauge, 4 wire MiniSplit Cable—250 ft. roll	□ SW164-250
	16 Gauge, 4 wire MiniSplit Cable—50 ft. roll	□ S164-50
	16 Gauge, 4 wire MiniSplit Cable—50 ft. roll	□ SW164-50
Mounting Pad	Condensing Unit Mounting Pad: 24" x 42" x 3"	□ ULTRIUTE2
Optional Defrost Heater	Optional Defrost Heater	□ PAC-SJ20BH-E
Port Adaptor	Adaptor: 1/2" x 3/8"	□ MAC-A455JP-E
	Adaptor: 1/2" x 5/8"	□ MAC-A456JP-E
	Adaptor: 1/4" x 3/8"	□ PAC-493PI
	Adaptor: 3/8" x 1/2"	□ MAC-A454JP-E
	Adaptor: 3/8" x 5/8"	□ PAC-SG76RJ-E
Stand	18" Dual Fan Stand	□ QSMS1802M
	24" Dual Fan Stand	□ QSMS2402M
	Condenser Wall Bracket	□ QSWB2009M-1
	Condenser Wall Bracket – Stainless Steel Finish	□ QSWBSS
	Outdoor Unit 3-1/4 Inch Mounting Base (Pair) – Plastic	□ DSD-400P
	Outdoor Unit Stand — 12" High	□ QSMS1202M
Wind Baffle	Front Wind Baffle	□ WB-PA3 (two pieces are required)

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

GEORGIA REGISTERED No. 20249 PROFESSIONAL ENGINEER JAY BARTLEY COBB

RIZZO ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

DEWATERING BUILDING AND ELECTRICAL ROOM
HVAC SPECIFICATIONS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

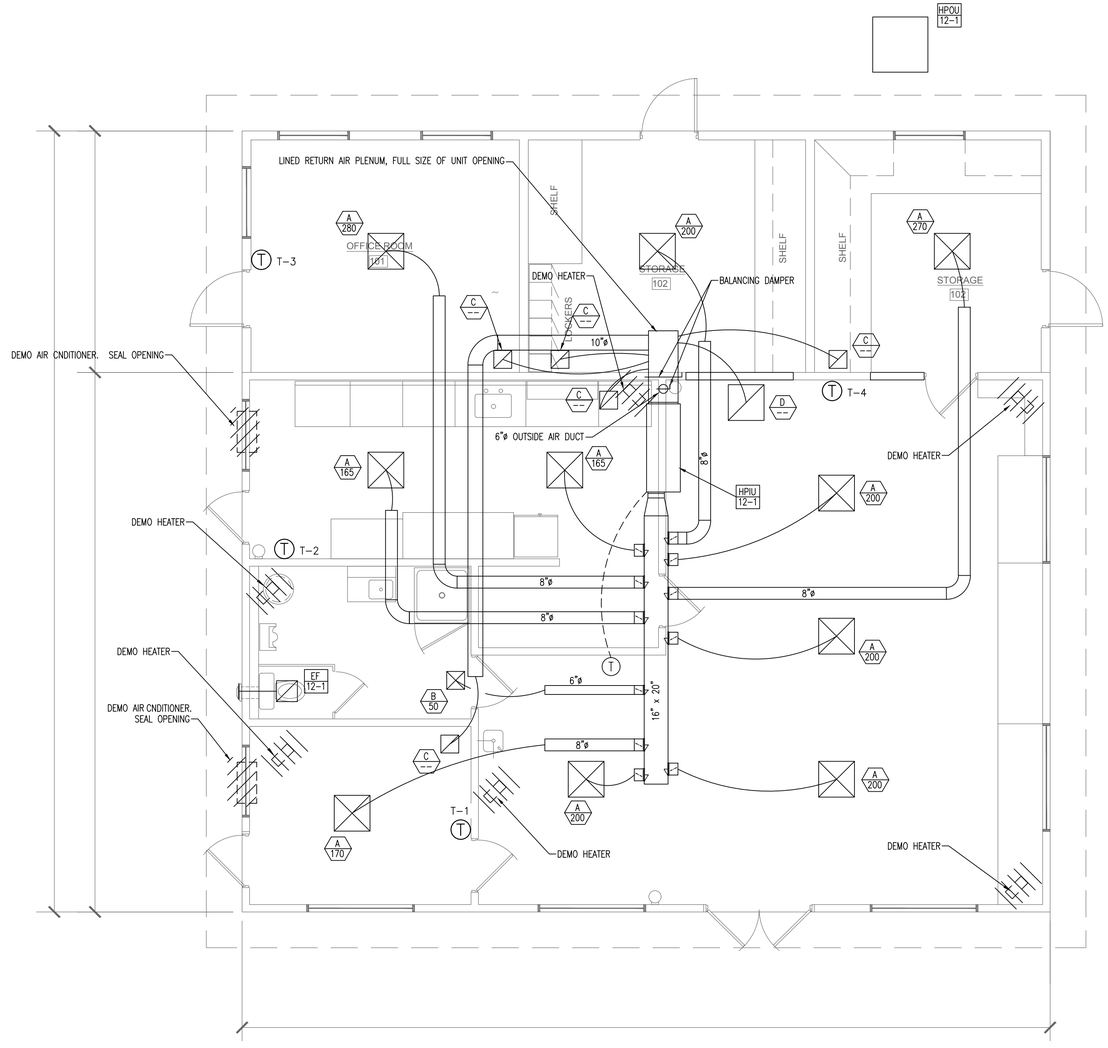
Sheet No.
H-9

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	CHWR	CHILLED WATER RETURN
	RETURN/EXHAUST AIR DUCT UP/DOWN	CHWS	CHILLED WATER SUPPLY
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	ES	EQUAL SPLIT
	RETURN OR EXHAUST GRILLE	FIL-*	FILTER
T	THERMOSTAT	F-*	FURNACE
P	PRESSURE SENSOR	GA	GAUGE
	SMOKE DETECTER	OA	OUTSIDE AIR
	FIRE DAMPER	OE	OPEN ENDED DUCT
	FIRE/SMOKE DAMPER	SD	SPLITTER DAMPER
S	PIPE TURNED DOWN	U/G	UNDERGROUND
S	PIPE TURNED UP	UH-*	UNIT HEATER
S	BRANCH PIPE OFF MAIN	VD	VOLUME DAMPER
CFM	CUBIC FEET PER MINUTE	A/C-*	AIR CONDITIONING SYSTEM
M	MOTOR OPERATOR	AFF	ABOVE FINISHED FLOOR
		AHU-*	AIR HANDLING UNIT



1 CONTROL BUILDING ADDITION HVAC PLAN
SCALE: 1/2" = 1'

GRAPHIC SCALE
2 0 1 2 4 8
(IN FEET)
1/2 inch = 1 ft.

NOTES:

1. PROVIDE FOUR (4) THERMOSTATS AND HAVE THEM AUTOMATICALLY ADJUST AIR TEMPERATURE IN THE ASSOCIATED ROOM. COORDINATE THE EXACT QUANTITY AND LOCATION IF THERMOSTATS WITH THE OWNER.
   T1 – EXISTING OFFICE;
   T2 – EXISTING LAB;
   T3 – NEW OFFICE;
   T4 – EXISTING CONFERENCE ROOM AND NEW STORAGE ROOMS.

GEORGIA REGISTERED No. 20048 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

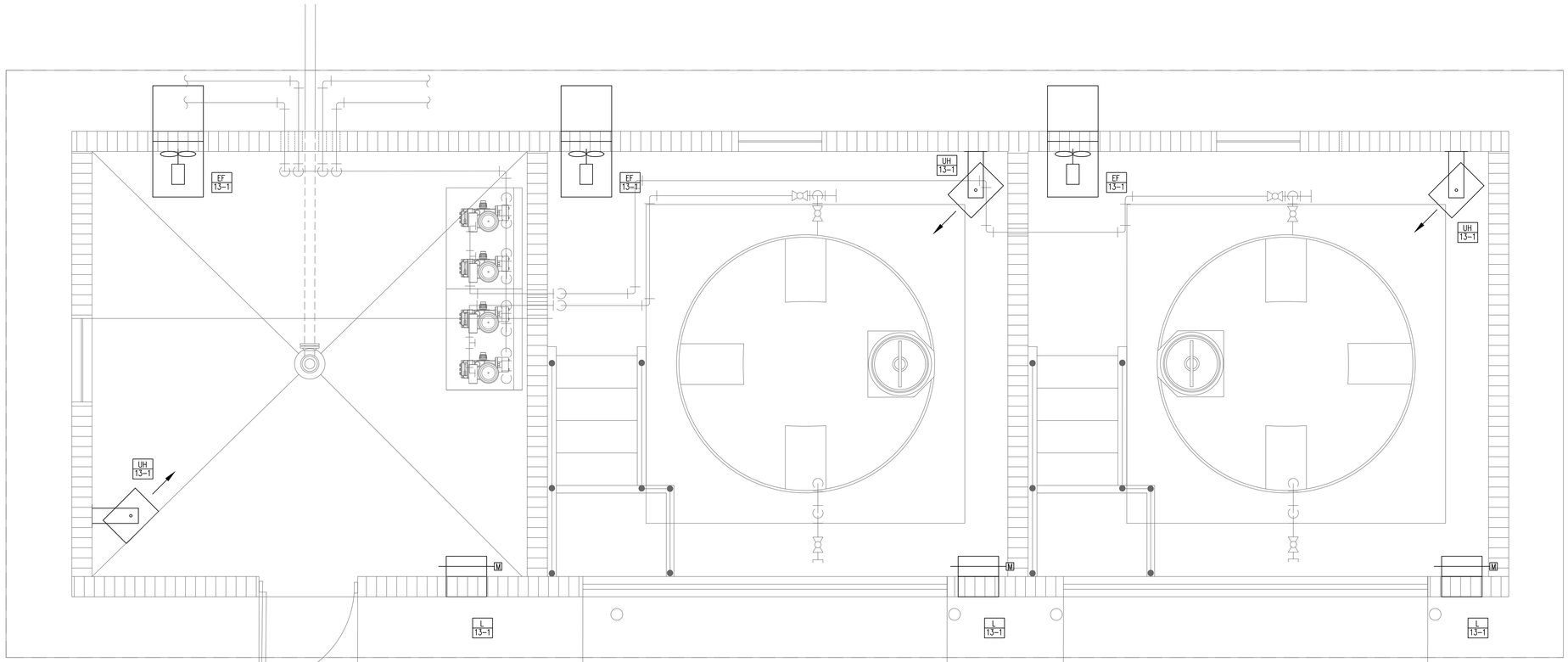
CONTROL BUILDING ADDITION HVAC PLAN

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-10

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



1 CHEMICAL FEED ROOM HVAC PLAN

SCALE: 1/2" = 1'

GRAPHIC SCALE

2 0 1 2 4 8

(IN FEET)

1/2 inch = 1 ft.

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	CHWR	CHILLED WATER RETURN
	RETURN/EXHAUST AIR DUCT UP/DOWN	CHWS	CHILLED WATER SUPPLY
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	ES	EQUAL SPLIT
	RETURN OR EXHAUST GRILLE	FIL-*	FILTER
T	THERMOSTAT	F-*	FURNACE
P	PRESSURE SENSOR	GA	GAUGE
S	SMOKE DETECTER	OA	OUTSIDE AIR
	FIRE DAMPER	OE	OPEN ENDED DUCT
	FIRE/SMOKE DAMPER	SD	SPLITTER DAMPER
S	PIPE TURNED DOWN	U/G	UNDERGROUND
S	PIPE TURNED UP	UH-*	UNIT HEATER
S	BRANCH PIPE OFF MAIN	VD	VOLUME DAMPER
CFM	CUBIC FEET PER MINUTE	A/C-*	AIR CONDITIONING SYSTEM
M	MOTOR OPERATOR	AFF	ABOVE FINISHED FLOOR
		AHU-*	AIR HANDLING UNIT

GEORGIA REGISTERED No. 20049 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL FEED ROOM HVAC PLAN

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-11

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GREENHECK
Building Value in Air.

EF 13-1

Job Name: SE1-12-432-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

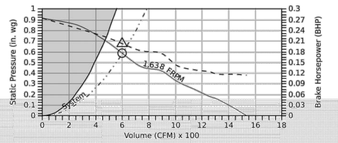
Model: SE1-12-432-VG

Sidewall Direct Drive Exhaust Fan

Standard Construction Features: Galvanized steel panel with fabricated galvanized steel drive frame (optional wall housing or wall collar). Propeller, aluminum. Direct driven motor in the airstream.

Fan Configuration	
Drive type	Direct

Performance	
Requested Volume (CFM)	600
Actual Volume (CFM)	600
Total External SP (in. wg)	0.59
Fan RPM	1,638
Operating Power (bhp)	0.2
Startup Power (bhp)	0.2
FEI	-
Air Stream Temp (F)	70
Start-up Temp (F)	70
Air Density (lbs/ft^3)	0.072
Elevation (ft)	1000
Static Efficiency (%)	27
Outlet Velocity (ft/min)	732



Fan curve
Brake horsepower curve
Operating Point SP
Operating Bhp point
Max system curve
System curve

Static Pressure Calculations	
External SP	0.5 in. wg
Backdraft Damper	0.04 in. wg
Wall Housing	0.02 in. wg
Weatherhood	0.02 in. wg
Total External SP	0.59 in. wg

Motor	
Size (hp)	1/4
V/C/P	115/60/1
NEC FLA (Amps)	3.8
Min Circuit Ampacity (MCA)	4.8
Max Overload Production (MOP)	15
Short Circuit Current Rating (SCCR)	5 kA

Sound

	Octave Bands (hz)								LwA	dBA	Sones
	62.5	125	250	500	1000	2000	4000	8000			
Inlet	89	93	79	75	72	66	62	61	80	69	20

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.The AMCA certified ratings seal applies to sound and air performance ratings only.Performance certified is for installation type A: Free inlet, free outlet.Power rating does not include transmission losses.Performance ratings do not include the effects of appurtenances.The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft).in a hemispherical free field calculated per ANSI/AMCA Standard 301.Values shown are for Installation Type A: free inlet hemispherical sone levels.dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal for Sound applies to inlet sone ratings only.

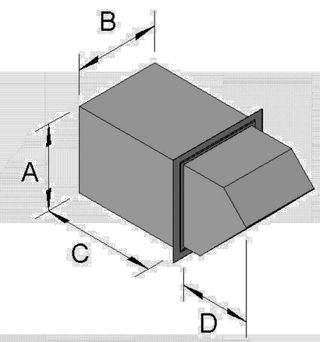
FLA - based on tables 150 or 148 of National Electric Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor; not accessories (damper actuator, field supplied VFD, etc.).
SCCR is a rating on components and assemblies representing the maximum level of short-circuit current that a component or assembly can withstand without causing a fire or shock hazard. A short circuit exceeding this rating can cause catastrophic and violent equipment, component and enclosure failure.

GREENHECK
Building Value in Air.

EF 13-1

Job Name: SE1-12-432-VG Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

Dimensions and Weights		
Label	Value	Description
-	12	Impeller Diameter (in)
-	61	Weight w/o accessories (lbs)
A	18	Overall Height (in)
B	18	Overall Width (in)
C	23	Overall Length (in)
D	16	WTHD Length (in)
-	19.25	Wall Opening Width (in)
-	19.25	Wall Opening Height (in)



*All dimensions are in inches.

GREENHECK
Building Value in Air.

13-1

Job Name: ESD-202-16x24 Cut Sheet
Tag: MK-1
Quantity: 1
Printed Date: July 17, 2025

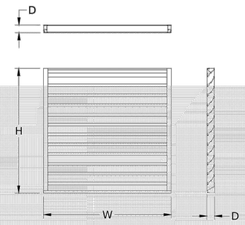
Model: ESD-202-16x24

2 in. Drainable Blade Louver

Certifications/special requirements: AMCA-500-L (Air), AMCA-500-L (Water)

Construction	
Material	Aluminum
Blade Type	All
Blade Orientation	Horizontal
Weight (lbs)	5

Dimensional	
Nominal Width (in)	16
Nominal Height (in)	24
Actual Width (in)	15.75
Actual Height (in)	23.75
Blade Depth (in)	2
Sections Wide	1
Sections High	1



Performance	
Application	Intake
Volume (CFM)	600
Pressure Drop (in. wg)	0.07
Free Area Velocity (ft/min)	726
Free Area (ft^2)	0.8
Air Density (lbs/ft^3)	0.075

*Louvers are tested to figure 5.5-6.5
*Sections wide x high are as configured with a base mill finish channel frame product and may vary depending on options selected.

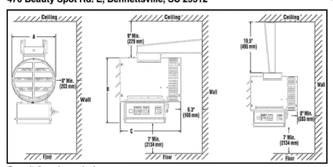
Greenheck Fan Corporation certifies that the louver shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

BERKO®
A Marley Engineered Products Brand
470 Beauty Spot Rd. E, Bennettsville, SC 29512

UH 13-1

SUBMITTAL SHEET
TYPE BWD
WASH-DOWN UNIT HEATERS

TYPE BWD - WASH-DOWN UNIT HEATERS



See unit dimensions on back page

CAPACITIES
2, 3, 5, 7.5, 10, 12.5, 15, 20 KW 120, 208, 240, 277, 480, 600^V 1Ø or 3Ø (Varies with Model)
25, 30, 39 KW 208, 240, 480V 3Ø only

*Only for 5-10kw

JOB NAME:
LOCATION:
ARCHITECT:
ENGINEER:
CONTRACTOR:
SUBMITTED BY:
DATE:

ITEM	QTY.	CATALOG NUMBER	TAG	KW	VOLTS	Ø	AMPS

ACCESSORIES AND CONTROLS

ITEM	QTY.	CAT. NO.	TAG	DESCRIPTION

SUBMITTED BY:	DATE	APPROVED BY:	DATE

ZSS-BWDUH (06-17) www.berkomep.com

BWD SERIES

BERKO®
A Marley Engineered Products Brand

UH 13-1

SELECTION CHART

MODEL NUMBER	KW	VOLTS	PHASE	OUTPUT BTU/HR	HEATER AMPS	MOTOR VOLTS	MOTOR PHASE	MOTOR AMPS	TEMP RISE	CFM	SHIP WEIGHT LBS (KG)
BWD02112	2	120	1	6,824	16.7	120	1	1.554	9	700	60 (27.2)
BWD02812	2	208	1	6,824	9.6	208	1	0.896	9	700	60 (27.2)
BWD02212	2	240	1	6,824	8.3	240	1	0.777	9	700	60 (27.2)
BWD03112	3	120	1	10,236	25.0	120	1	1.554	14	700	60 (27.2)
BWD03812	3	208	1	10,236	14.4	208	1	0.896	14	700	60 (27.2)
BWD03212	3	240	1	10,236	12.5	240	1	0.777	14	700	60 (27.2)
BWD03712	3	277	1	10,236	10.8	277	1	0.673	14	700	60 (27.2)
BWD03832	3	208	3	10,236	8.3	208	1	0.896	14	700	60 (27.2)
BWD03232	3	240	3	10,236	7.2	240	1	0.777	14	700	60 (27.2)
BWD03432	3	480	3	10,236	3.6	480	1	0.388	14	700	60 (27.2)
BWD05812	5	208	1	17,060	24.0	208	1	0.896	23	700	60 (27.2)
BWD05212	5	240	1	17,060	20.8	240	1	0.777	23	700	60 (27.2)
BWD05712	5	277	1	17,060	18.1	277	1	0.673	23	700	60 (27.2)
BWD05412	5	480	1	17,060	10.4	480	1	0.388	23	700	60 (27.2)
BWD05832	5	208	3	17,060	13.9	208	1	0.896	23	700	60 (27.2)
BWD05432	5	480	3	17,060	6.0	480	1	0.388	23	700	60 (27.2)
BWD07812	7.5	208	1	25,590	36.1	208	1	0.896	34	700	60 (27.2)
BWD07212	7.5	240	1	25,590	31.3	240	1	0.777	34	700	60 (27.2)
BWD07712	7.5	277	1	25,590	27.1	277	1	0.673	34	700	60 (27.2)
BWD07412	7.5	480	1	25,590	15.6	480	1	0.388	34	700	60 (27.2)
BWD07832	7.5	208	3	25,590	20.8	208	1	0.896	34	700	60 (27.2)
BWD07232	7.5	240	3	25,590	18.0	240	1	0.777	34	700	60 (27.2)
BWD07432	7.5	480	3	25,590	9.0	480	1	0.388	34	700	60 (27.2)
BWD07632	7.5	600	3	25,590	7.2	240	1	1.8	34	1450	75 (34)
BWD10212	10	240	1	34,120	41.7	240	1	0.777	22	1450	60 (27.2)
BWD10712	10	277	1	34,120	36.1	277	1	0.673	22	1450	60 (27.2)
BWD10412	10	480	1	34,120	20.8	480	1	0.388	22	1450	60 (27.2)
BWD10832	10	208	3	34,120	27.8	208	1	0.896	22	1450	60 (27.2)
BWD10232	10	240	3	34,120	24.1	240	1	0.777	22	1450	60 (27.2)
BWD10432	10	480	3	34,120	12.0	480	1	0.388	22	1450	60 (27.2)
BWD10632	10	600	3	34,120	9.6	240	1	1.8	33	2400	75 (34)
BWD12812	12.5	208	1	42,650	60.1	208	1	1.793	27	1450	60 (27.2)
BWD12212	12.5	240	1	42,650	52.1	240	1	1.554	27	1450	60 (27.2)
BWD12832	12.5	208	3	42,650	34.7	208	1	1.793	27	1450	60 (27.2)
BWD12232	12.5	240	3	42,650	30.1	240	1	1.554	27	1450	60 (27.2)
BWD12432	12.5	480	3	42,650	15.0	480	1	0.777	27	1450	60 (27.2)
BWD15812	15	208	1	51,180	72.1	208	1	1.793	20	2400	110 (49.9)
BWD15212	15	240	1	51,180	62.5	240	1	1.554	20	2400	110 (49.9)
BWD15412	15	480	1	51,180	31.3	480	1	0.777	20	2400	110 (49.9)
BWD15832	15	208	3	51,180	41.8	208	1	1.793	20	2400	110 (49.9)
BWD15232	15	240	3	51,180	36.1	240	1	1.554	20	2400	110 (49.9)
BWD15432	15	480	3	51,180	18.0	480	1	0.777	20	2400	110 (49.9)
BWD20412	20	480	1	68,240	41.7	480	1	0.777	26	2400	120 (54.4)
BWD20232	20	240	3	68,240	48.1	240	1	1.554	26	2400	120 (54.4)
BWD20432	20	480	3	68,240	24.1	480	1	0.777	26	2400	120 (54.4)
BWD25832	25	208	3	85,300	69.4	208	1	1.793	33	2400	120 (54.4)
BWD25232	25	240	3	85,300	60.1	240	1	1.554	33	2400	120 (54.4)
BWD25432	25	480	3	85,300	30.1	480	1	0.777	33	2400	120 (54.4)
BWD30832	30	208	3	102,360	83.3	208	1	1.793	39	2400	120 (54.4)
BWD30232	30	240	3	102,360	72.2	240	1	1.554	39	2400	120 (54.4)
BWD30432	30	480	3	102,360	36.1	480	1	0.777	39	2400	120 (54.4)
BWD39432	39	480	3	133,068	46.9	480	1	0.777	51	2400	120 (54.4)

All units other than standard models are non-returnable.

Factory Installed Accessories

CATALOG NUMBER	DESCRIPTION
T	Thermostat
L	Pilot Light
S	Mode/Selector Switch
D	Disconnect Switch
E	Monel Element*
M	Manual Reset
P	Epoxy Coating

* Monel elements are subject to longer lead times - contact factory for details.

kW	Dimensions Inches (mm)			
	A	B	C	D
2-10	13 (330)	19.5 (495)	18 (457)	19.5 (495)
12.5-39.0	20 (508)	31 (787)	27 (686)	24.2 (615)

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

Corrosion resistant unit heater(s) shall be supplied by Berko, A Marley Engineered Products Brand, Bennettsville, SC. The unit heater(s) shall be UL listed for corrosive areas and NEMA4X wash down requirements.

HEATING ELEMENTS: The heating elements shall be corrosion resistant 300 stainless steel sheathed with 316 stainless steel fins for maximum heat dissipation. The elements are to be attached to junction box with leak-resistant stainless steel fittings.

CONTROL CENTER: The controls are completely factory prewired and tested and enclosed in a NEMA4X molded fiberglass control enclosure mounted beneath the heater cabinet. The control center shall include contactors, automatic reset over-temperature protector, fan delay relay, motor contactor and fused transformer for 24V control circuit. Convenient terminal blocks are included for remote thermostat connection.

FAN AND MOTOR ASSEMBLY: The fan and motor assembly shall include a totally enclosed, permanently lubricated, ball bearing motor, epoxy coated for corrosion resistance. Motor rating shall be 1/4 hp up to 10KW. 1/2 hp for 208V and 3/4 hp for 240/480 for units above 10kw. The fan shall be aluminum with corrosion resistant coating, directly connected to the motor, and be dynamically balanced. An epoxy sealed thermal fan delay shall be provided to allow the fan to continue to operate after heating thermostat has been satisfied to maximize transfer of generated heat to space being heated. The fan and motor shall be protected by an adjustable louvered outlet grille to direct flow up or down, painted with one coat zinc chromate primer and two coats of corrosion resistant paint.

OVER-TEMPERATURE PROTECTION: Built in over temperature protection shall be provided by an automatic reset thermal cutout.

HEATER CASE: The heater case shall be constructed of heavy 16 gauge type 304 stainless steel for corrosion resistance and assembled with stainless steel hardware. A stainless steel combination wall and ceiling swivel type mounting bracket to be supplied with unit heater.

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 20249 PROFESSIONAL ENGINEER JAY BARTLEY COBB

No.	Revisions	Initial	Date
1	RELEASED FOR BID	JBC	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

CHEMICAL FEED ROOM HVAC SPECIFICATIONS

Drawn: JBC
Design: JBC
Checked: JBC
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
H-12

PIPING AND TUBING MATERIALS

ABS	–	ACRYLONTRILE BUTADIENE STYRENE TRUSS PIPE
ALM	–	ALUMINUM PIPE OR TUBING
ARP	–	ALUMINUM REINFORCED PLASTIC PIPE
BL	–	BLACK IRON PIPE
BPT	–	BRAIDED PLASTIC TUBING–PVC
CI	–	CAST IRON PIPE
CISP	–	CAST IRON SOIL PIPE
CMCP	–	CORRUGATED METAL CULVERT PIPE
CMH	–	CHEMICAL HOSE
CMP	–	CORRUGATED METAL PIPE
COP	–	COPPER PIPE
CPVC	–	CHLORINATED POLYVINYL CHLORIDE PIPE
CS	–	CARBON STEEL PIPE
DI	–	DUCTILE CAST IRON PIPE
ERP	–	EPOXY RESIN PIPE
FRP	–	FIBERGLASS REINFORCED PLASTIC PIPE
GS	–	GALVANIZED STEEL PIPE
HOSE	–	FLEXIBLE HOSE
HSI	–	HIGH SILICON IRON PIPE
KLS	–	PVDF LINED STEEL PIPE (KYNAR LINED TYPICAL)
KYN	–	PVDF (KYNAR TYPICAL)
MI	–	CARBON STEEL PIPE W/MALLEABLE IRON FITTINGS
NEO	–	NEOPRENE HOSE
NI	–	NICKEL ALLOY PIPE
NLS	–	NEOPRENE LINED STEEL PIPE
PEP	–	POLYETHYLENE PIPE
PETB	–	POLYETHYLENE TUBING
PLS	–	POLYPROPYLENE LINED STEEL PIPE
POP	–	POLYPROPYLENE PIPE
PRP	–	PHENOLIC RESIN PIPE
PVC	–	POLYVINYL CHLORIDE PIPE
PVC HOSE	–	POLYVINYL CHLORIDE HOSE
PVFD	–	POLYVINYLIDENE FLUORIDE PIPE
RBR	–	POTABLE WATER PW – RUBBER HOSE
RCCP	–	REINFORCED CONCRETE CULVERT PIPE
RCP	–	REINFORCED CONCRETE PIPE
SAR	–	SARAN TUBING
SLH	–	SLUDGE HOSE
SLS	–	SARAN LINED STEEL PIPE
SS	–	STAINLESS STEEL PIPE OR TUBING
TEF	–	TEFLON TUBING
TI	–	TITANIUM ALLOY PIPE
TLS	–	TEFLON LINED STEEL PIPE
TYB	–	TYGON TUBING–BRAIDED
TYG	–	TYGON TUBING–UNBRAIDED

ABBREVIATIONS

A TO C	–	AIR TO CLOSE
A TO O	–	AIR TO OPEN
AVG	–	AVERAGE
B/EL	–	BOTTOM ELEVATION
B	–	BLOWER
CC	–	CALIBRATION COLUMN
CL	–	CENTER LINE
CFM	–	CUBIC FEET PER MINUTE
CV	–	CONTROL VALVE
CW	–	CITY WATER (POTABLE)
DIA	–	DIAMETER
DWG	–	DRAWING
ED	–	EDUCTOR
EL	–	ELEVATION
F.C.	–	FAIL CLOSED
F.O.	–	FAIL OPEN
FRL	–	FILTER\REGULATOR LUBRICATOR
FTR	–	FAIL TO RESPOND OR FAIL TO RUN
GAL	–	GALLONS
GPD	–	GALLONS PER DAY
GPH	–	GALLONS PER HOUR
GPM	–	GALLONS PER MINUTE
HB	–	HOSE BIB
HG	–	INCHES OF MERCURY
HI	–	HIGH
HOA	–	HAND/OFF/AUTO
HP	–	HORSEPOWER
IA	–	INSTRUMENT AIR
ID	–	INSIDE DIAMETER
INV	–	INVERT
IQ	–	INJECTION QUILL ASSEMBLY
LO	–	LOW
M	–	MECHANICAL EQUIPMENT
MH	–	MANHOLE
MV	–	MODULATING VALVE
MW	–	MANWAY
N.C.	–	NORMALLY CLOSED
N.O.	–	NORMALLY OPEN
OAL	–	OVERALL LENGTH
O.D.	–	OUTSIDE DIAMETER
P	–	PUMP
PA	–	PLANT AIR
PD	–	PULSATION DAMPENER
PSIG	–	POUNDS PER SQUARE INCH – GAUGE
PW	–	PLANT WATER
RED	–	REDUCER
RPM	–	REVOLUTIONS PER MINUTE
SCFM	–	STANDARD CUBIC FEET PER MINUTE
SCH	–	SCHEDULE
SG	–	SPECIFIC GRAVITY
SP	–	SETPOINT
SSH	–	STRAIGHT SIDE HEIGHT
STD	–	STANDARD
STR	–	STRAINER
SW	–	SEAL WATER
SWD	–	SIDE WATER DEPTH
T/EL	–	TOP ELEVATION
TDH	–	TOTAL DYNAMIC HEAD(FT OF FLUID)
TK	–	TANK
TYP	–	TYPICAL
VAC	–	VACUUM
VSD	–	VARIABLE SPEED DRIVE
VTP	–	VERTICAL TURBINE PUMP
WC	–	WATER COLUMN
WD	–	WATER DEPTH
WL	–	WATER LEVEL
WV	–	WORKING VOLUME (DOES NOT – INCLUDE FREEBOARD OR HEEL)
WSF	–	WATER STORAGE FACILITY
WTP	–	WATER TREATMENT PLANT
( )	–	AVERAGE FLOW
[ ]	–	PEAK FLOW

PROCESS LINES

- PROCESS FLOW LINE
- DRAIN/WASTE LINE
- OVERFLOW LINE
- BLOWER AIR LINE
- BACKWASH LINE
- SAMPLE LINE
- CHEMICAL INJECTION POINT

INSTRUMENTATION LINES

- CAPILLARY TUBING
- ELECTRICAL
- HYDRAULIC
- PNEUMATIC
- DATA LINK

VALVE SYMBOLS

- ANGLE
- BALL
- BUTTERFLY
- CHECK
- DIAPHRAGM
- GATE
- GLOBE
- KNIFE
- NEEDLE
- PINCH
- PLUG
- PRESSURE REDUCING
- AIR RELIEF
- SQUEEZE
- THREE WAY
- FOUR WAY
- VACUUM BREAKER
- AIR RELEASE
- HOSE BIBB
- INTEGRAL BLOCK & BLEED
- RUPTURE DISK
- MUD VALVE
- BACKFLOW PREVENTER
- SURGE ANTICIPATOR VALVE
- SLIDE GATE

ACTUATORS

- CYLINDER
- DIAPHRAGM–SPRING
- ELECTRO HYDRAULIC
- ELECTRO PNEUMATIC
- SOLENOID
- POSITIONER * – TYPE
- MOTOR
- MODULATING VALVE ACTUATOR
- OPEN/CLOSE VALVE ACTUATOR

PIPING ACCESSORIES

- DIAPHRAGM SEAL
- DRESSER COUPLING
- EJECTOR/EDUCTOR
- EXPANSION JOINT
- FLANGED CONNECTION
- FLEXIBLE HOSE
- HOSE CONNECTION
- INSULATION
- INSULATED PIPE WITH ELECTRIC HEAT TRACE
- INSULATED PIPE WITH STEAM HEAT TRACE
- PIPE TO TUBING ADAPTER
- PULSATION DAMPENER
- QUICK DISCONNECT
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- SILENCER/MUFFLER
- SIGHT FLOW INDICATOR
- STRAINER
- UNION
- STEAM TRAP
- AIR FILTER
- AIR LUBRICATOR
- AIR REGULATOR
- COMB. AIR FILTER/ REGULATOR W/GAUGE
- FLOW ORIFICE
- SIGHT FLOW STRAINER
- SPECTACLE BLIND
- OPEN
- SPECTACLE BLIND
- CLOSE
- PIGTAIL SIPHON
- BASKET STRAINER
- COURSE BUBBLE AIR DIFFUSER
- FINE BUBBLE AIR DIFFUSER

PUMPS AND EQUIPMENT

- STATIC MIXER
- MECHANICAL FLOCCULATOR
- CENTRIFUGAL PUMP
- SAMPLE PUMP
- BLOWER
- PUMP, ROTARY LOBE
- PUMP, SUBMERSIBLE TURBINE
- HOSE PUMP
- VENDOR SUPPLIED CONTROL PANEL
- PUMP, DIAPHRAGM
- PUMP, GEAR
- PUMP, METERING
- PUMP, PROGRESSING CAVITY
- PUMP, VERTICAL TURBINE
- PUMP, SUBMERSIBLE
- VACUUM PUMP

INSTRUMENTATION AND RELATED ITEMS

- FLUME
- MAGNETIC FLOW METER
- ROTAMETER
- SONIC FLOW METER
- TURBINE FLOW METER
- VENTURI
- WEIR
- VORTEX SENSOR
- ANNUBAR
- ORIFICE PLATE
- POSITIVE DISPLACEMENT METER
- SAMPLE POINT
- LEVEL FLOAT SWITCH
- SUBMERSIBLE PRESSURE TRANSDUCER
- ULTRASONIC LEVEL SENSOR
- RADAR LEVEL SENSOR

ISA INSTRUMENT IDENTIFICATION TABLE

	FIRST LETTER		SUCCEEDING LETTERS	
	PROCESS VARIABLE	MODIFIER (IF NEEDED)	READOUT OR COMPUTER FUNCTION	MODIFIER (IF NEEDED)
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		CONTROL	
D	USER'S CHOICE	DIFFERENTIAL		
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)	
F	FLOW RATE	RATIO (FRACTION)		
G	USER'S CHOICE		GLASS, VIEWING DEVICE	
H	HAND			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE	CONTROL STATION	
L	LEVEL		LIGHT	LOW
M	USER'S CHOICE	MOMENTARY		MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)	
P	PRESSURE, VACUUM		POINT (TEST CONNECTION)	
Q	QUANTITY	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD	
S	SPEED, FREQUENCY	SAFETY	SWITCH	
T	TEMPERATURE		TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS		VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL	
X	UNCLASSIFIED	X–AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y–AXIS	RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z–AXIS	DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

LEGEND BASED ON ISA STANDARD S 5.1

INSTRUMENT SYMBOLS * INSTRUMENT PROVIDED BY EQUIPMENT VENDOR	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	*			
SHARED DISPLAY, SHARED CONTROL				
COMPUTER FUNCTION				
PROGRAMMABLE LOGIC CONTROL				

ELECTRICAL AND RELATED ITEMS

- S S – SELECTOR SWITCHES
- VFD – VARIABLE FREQUENCY DRIVE
- EM – EMERGENCY POWER
- I – INTERLOCK
- R / XX – PILOT LIGHT R – LENS COLOR XX – EQUIPMENT REFERENCE

I/O SIGNALS:

- E – ETHERNET (CAT6)
- DI – DISCRETE INPUT
- DO – DISCRETE OUTPUT
- AI – ANALOG INPUT
- AO – ANALOG OUTPUT

LINE NUMBER IDENTIFICATION

1"– PA– CS

- MATERIAL CLASS
- FLOW STREAM IDENTIFICATION
- LINE SIZE

EQUIPMENT / VALVE TAG

P – 6 – 15 – 1A – CONCENTRIC REDUCER

- EQUIPMENT NO. NUMBER DENOTES MULTIPLE DEVICES USED IN IDENTICAL DUPLICATE SYSTEMS. LETTER DISTINGUISHES MULTIPLE SIMILAR DEVICES IN THE SAME INSTRUMENT LOOP.
- LOOP NO.
- PROCESS I.D.
- EQUIPMENT / VALVE IDENTIFICATION

LINE CONTINUATIONS

INDICATES A LINE GOING TO OR COMING FROM BATTERY LIMITS (CONTRACT LIMITS)

PID–5 A/2 — INDICATES CONTINUATION OF LINE IS ON SHEET NUMBER 5 (SAME DRAWING NUMBER) IN ZONE A 2

SHT 5 — INDICATES CONTINUATION OF A SIGNAL IS ON SHEET NUMBER 5

INSTRUMENT TAG NUMBERS

- TIC 103 – INSTRUMENTATION IDENTIFICATION OR TAG NUMBER
- 103 – LOOP NUMBER
- TIC – FUNCTIONAL IDENTIFICATION

NOTE: HYPHENS ARE OPTIONAL AS SEPARATORS

NOTES:

1. P&IDs ARE GENERIC IN NATURE. FOR A COMPLETE LIST OF SCADA SIGNALS INTERFACE, SEE SCHEMATIC WIRING DIAGRAM DRAWINGS.
2. ALL OUTDOOR INSTRUMENTS SHALL BE INSTALLED WITH SUN/RAIN HOOD AS PER DETAIL "G" ON DWG. E–904.

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK NO. 29513

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

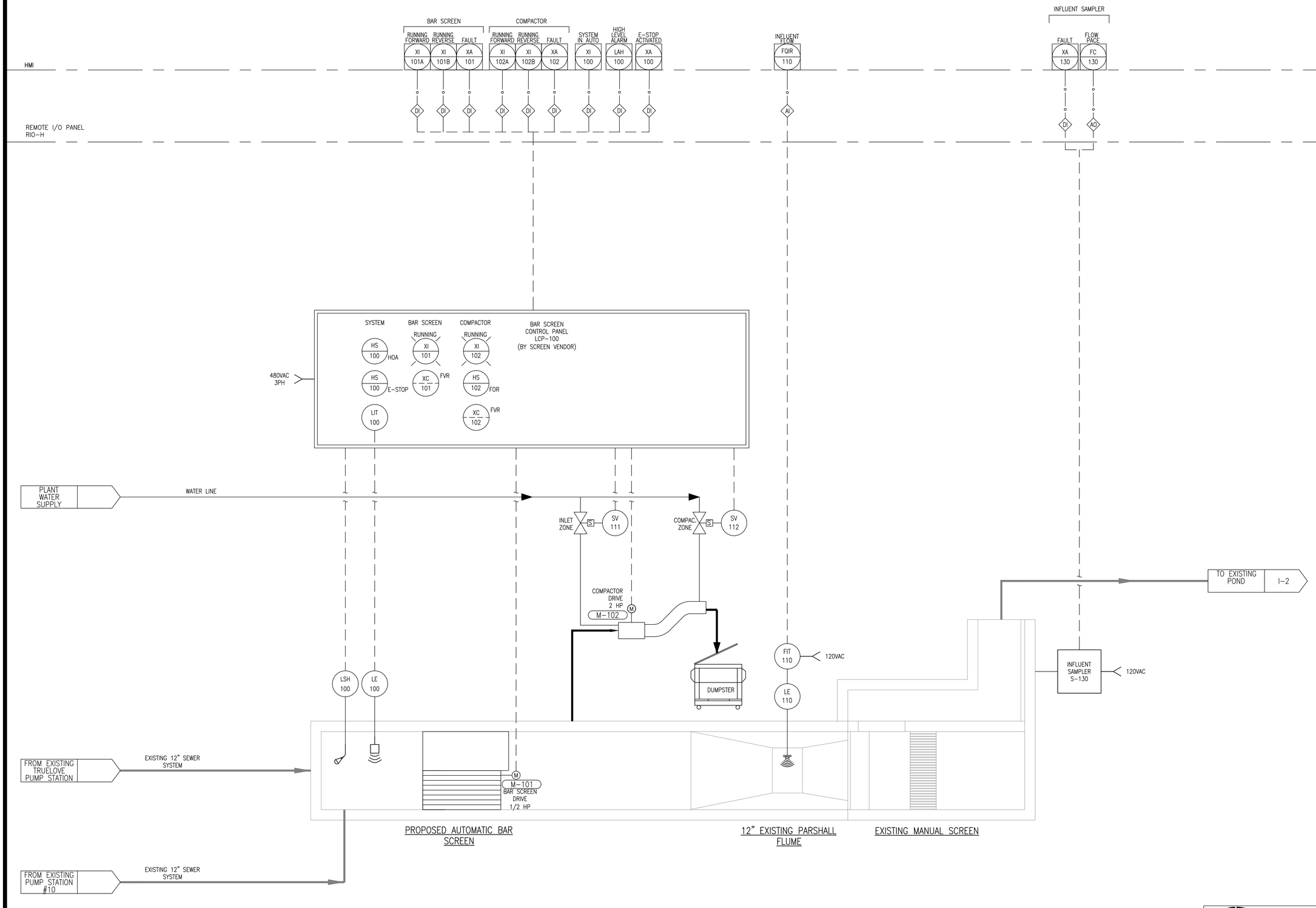
PRINT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
PROCESS AND INSTRUMENTATION DIAGRAM LEGEND

Drawn: GS | Design: GS | Checked: AZ | Project No: R2019-111 | Scale: AS SHOWN | Date: JULY 2025

Sheet No. I-0

EDEC A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING + ENVIRONMENTAL

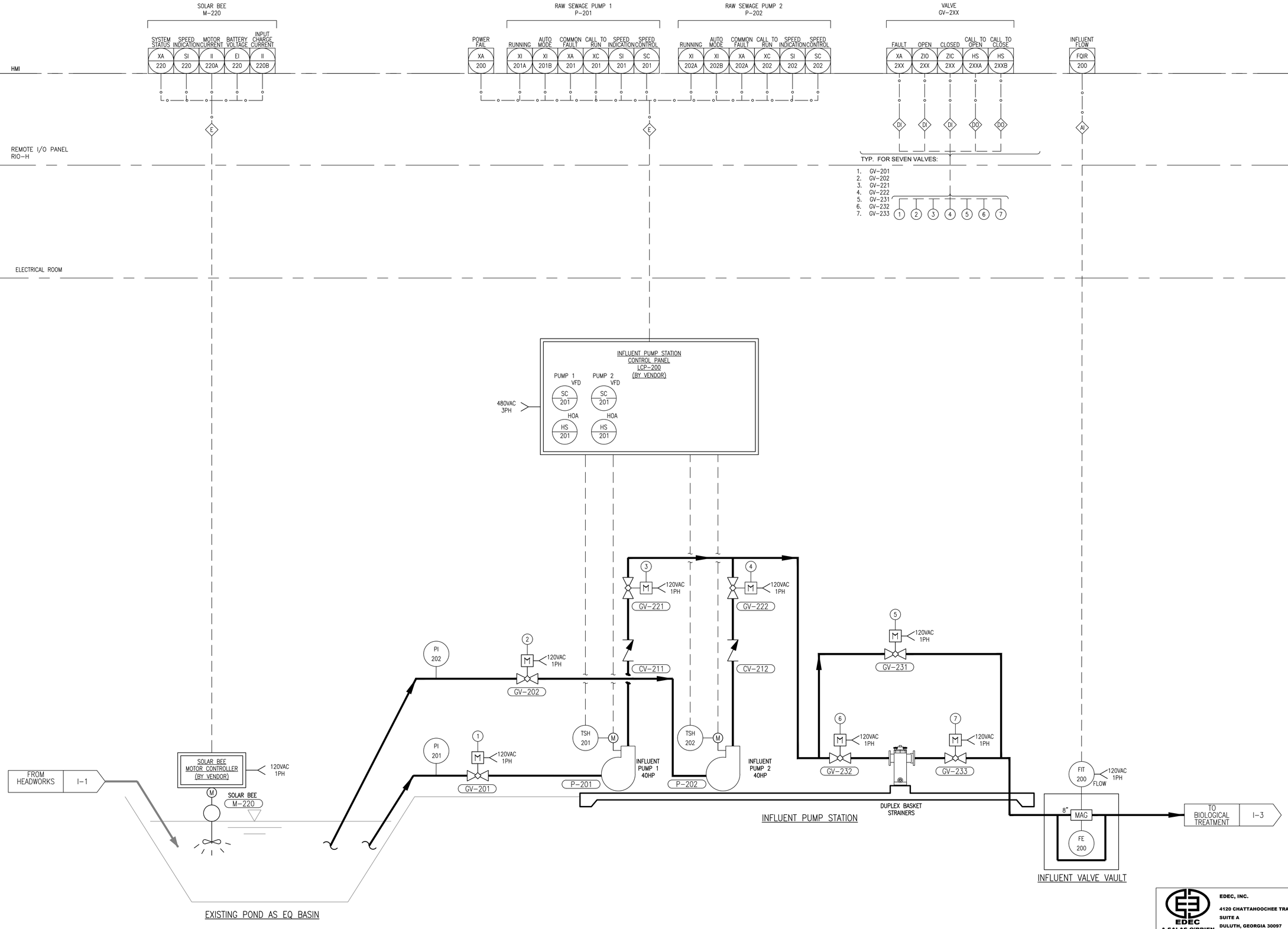
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
INFLUENT HEADWORKS

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
I-1

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

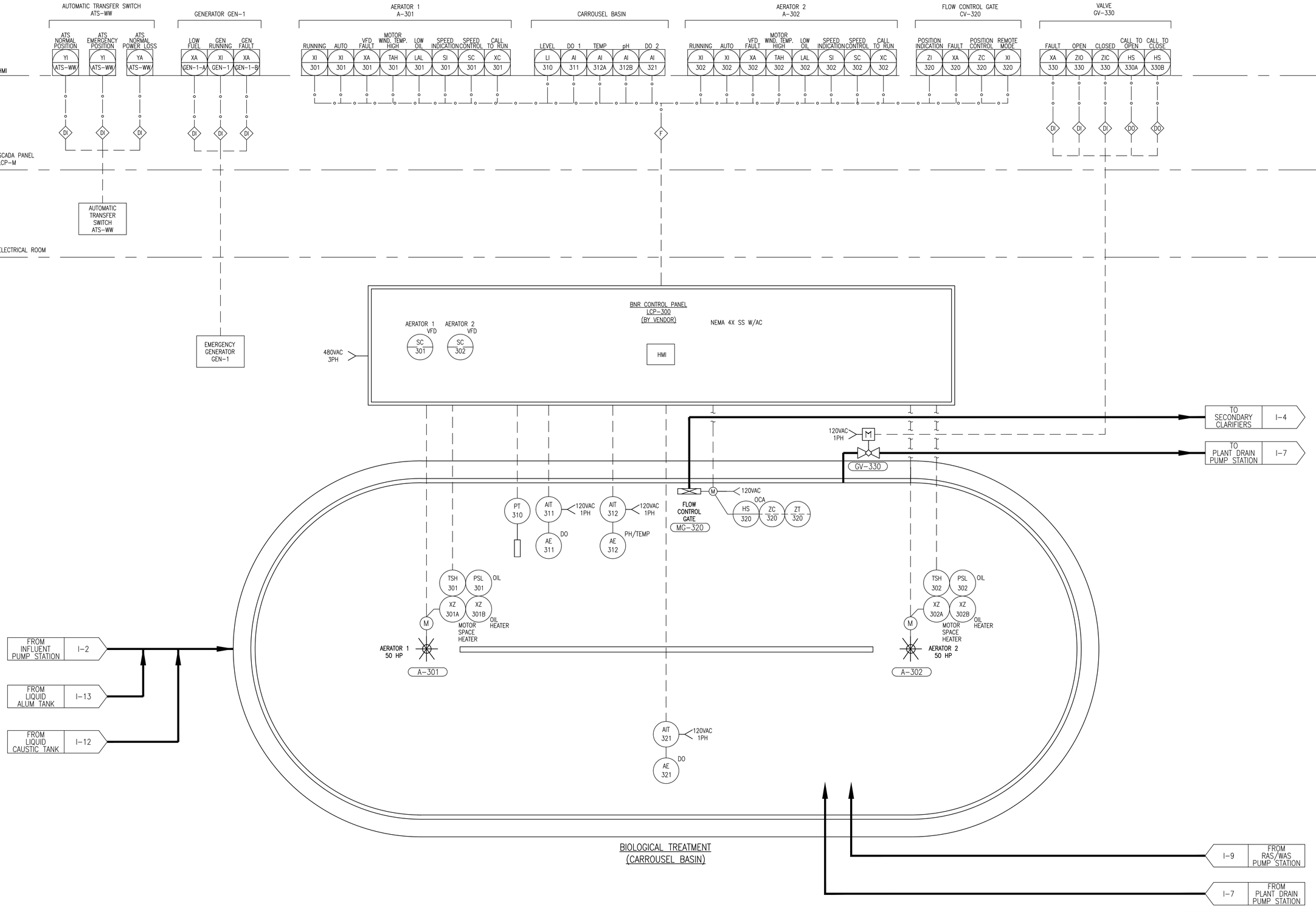
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
INFLUENT PUMP STATION

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
I-2

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 32513 ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

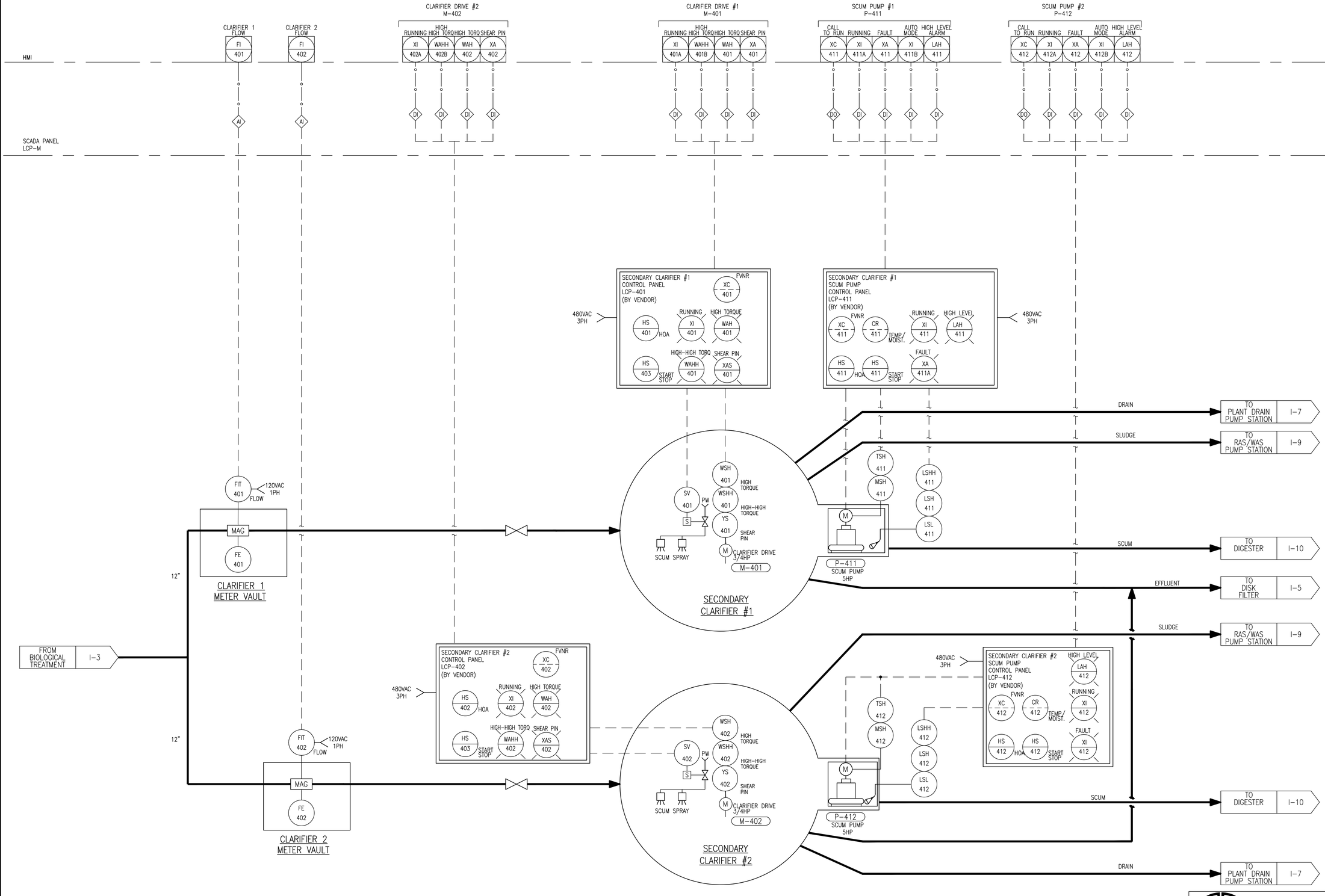
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
BIOLOGICAL TREATMENT

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-3



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

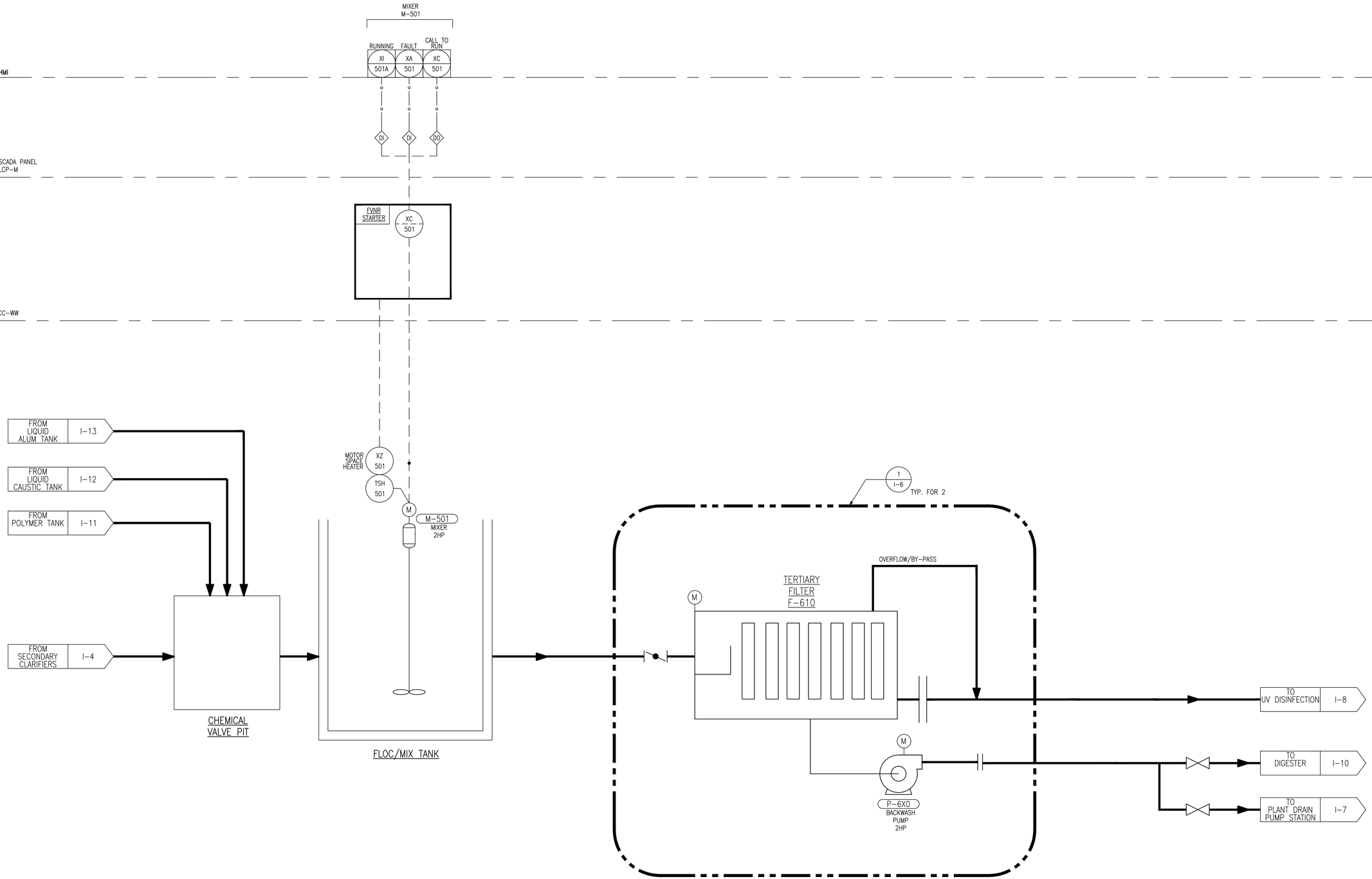
RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
PROCESS AND INSTRUMENTATION DIAGRAM SECONDARY CLARIFIERS

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-4



GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 32013
ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
EFFLUENT FILTER

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-5

HMI

FILTER PUMP
FILTER RUNNING XI 610
FILTER CALL TO RUN XC 610
FILTER FAULT XA 610
FILTER IN AUTO YI 610
FILTER LEVEL LI 610
LEVEL HIGH LAH 610
VACUUM SIDE A VI 610A
VACUUM SIDE B VI 610B
SOLIDS WASTE VALVE OPEN ZIO 610
SOLIDS WASTE VALVE CLOSED ZIC 610
BACKWASH VALVE #1 OPEN ZIO 611
BACKWASH VALVE #1 CLOSED ZIC 611
BACKWASH VALVE #2 OPEN ZIO 612
BACKWASH VALVE #2 CLOSED ZIC 612
BACKWASH PUMP RUNNING XI 610
BACKWASH PUMP FAULT XA 610
BACKWASH PUMP IN AUTO YI 610
BACKWASH PUMP CALL TO RUN XC 610

F ETHERNET OVER FIBER

SCADA PANEL
LCP-M

TERTIARY FILTER
F-610

OVERFLOW/BY-PASS

TERTIARY FILTER CONTROL PANEL
LCP-6X0
HMI
BACKWASH PUMP XC P-6X0
FILTER DRIVE XC P-6X0
480VAC 3PH

FROM FLOC/MIX TANK I-5

FILTER DRIVE MOTOR M-610 0.75HP

1 PT 610 LEVEL SENSOR

LSH 610 FLOAT SWITCH

VIT 610A VACUUM SENSOR

BACKWASH VALVE #2
BACKWASH VALVE #1
SOLIDS WASTE VALVE

120VAC
ZSC 610 ZSO 610 XZ 610 HS 610 HTR OAC
ZSC 611 ZSO 611 XZ 611 HS 611 HTR OAC
120VAC ZSC 612 ZSO 612 XZ 612 HS 612 HTR OAC

RECIRCULATION

MOTOR SPACE HEATER XZ 610
PI 610
P-610
P-6X0 BACKWASH PUMP 2HP

TO UV DISINFECTION I-8
TO DIGESTER I-10
TO PLANT DRAIN PUMP STATION I-7

1 / I-06 DISK CLOTH MEDIA FILTER

LEGEND:
TFX – EQUIPMENT/INSTRUMENT NUMBER
1 – FILTER #1
2 – FILTER #2

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

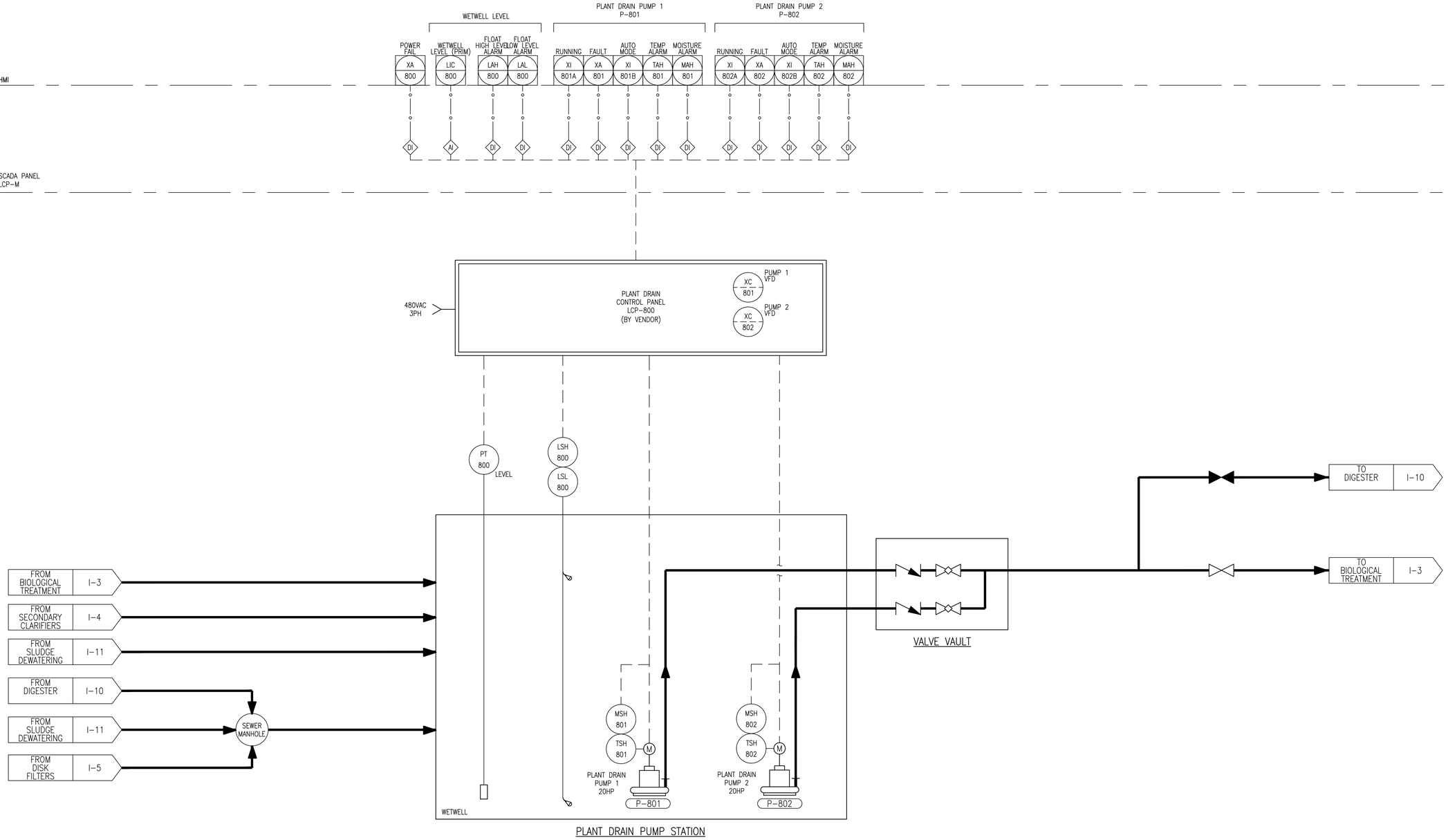
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
EFFLUENT FILTER DETAIL

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-6



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

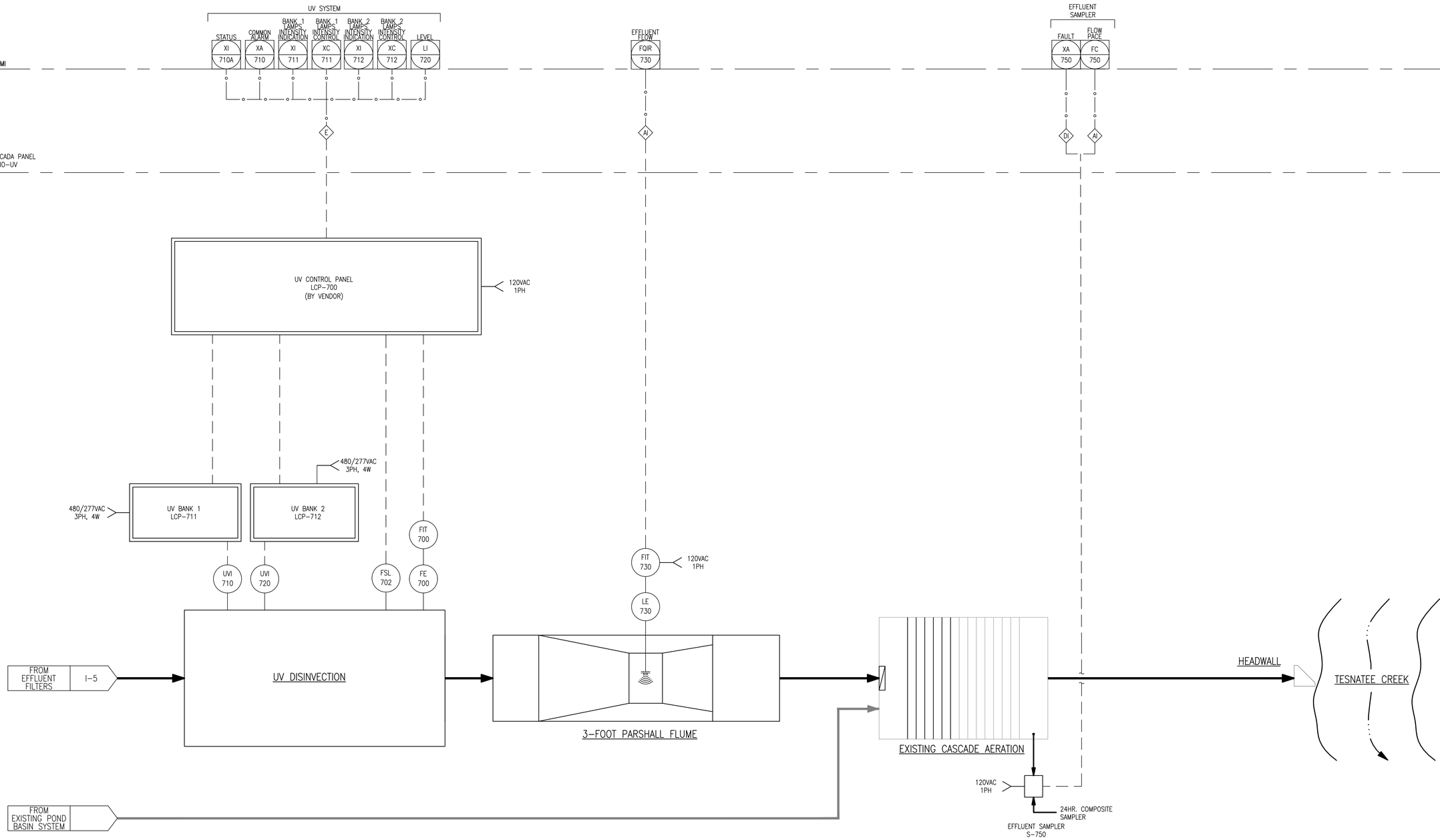
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
PLANT DRAIN PUMP STATION

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-7



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

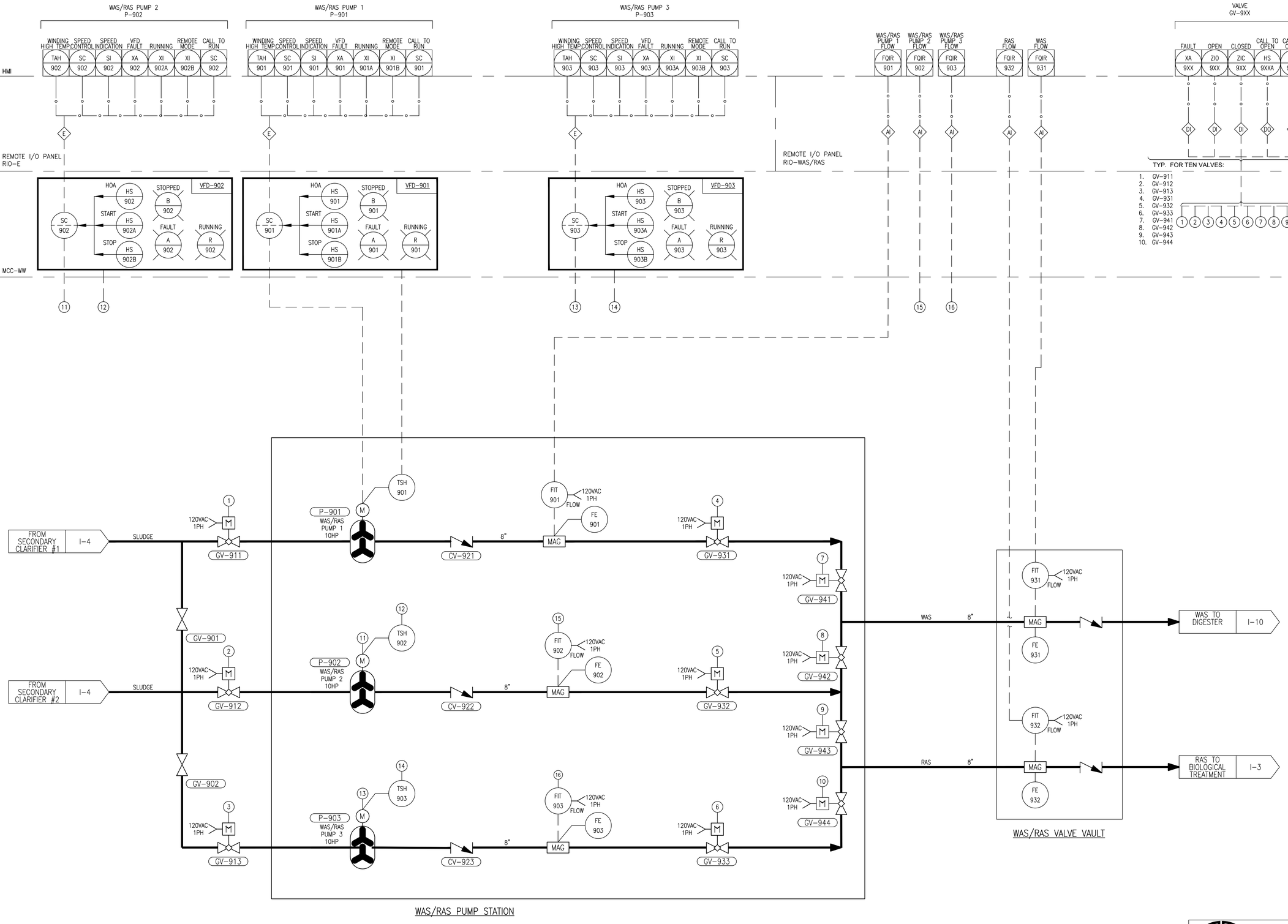
PROCESS AND INSTRUMENTATION DIAGRAM
UV DISINFECTION AND PARSHALL FLUME

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-8



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

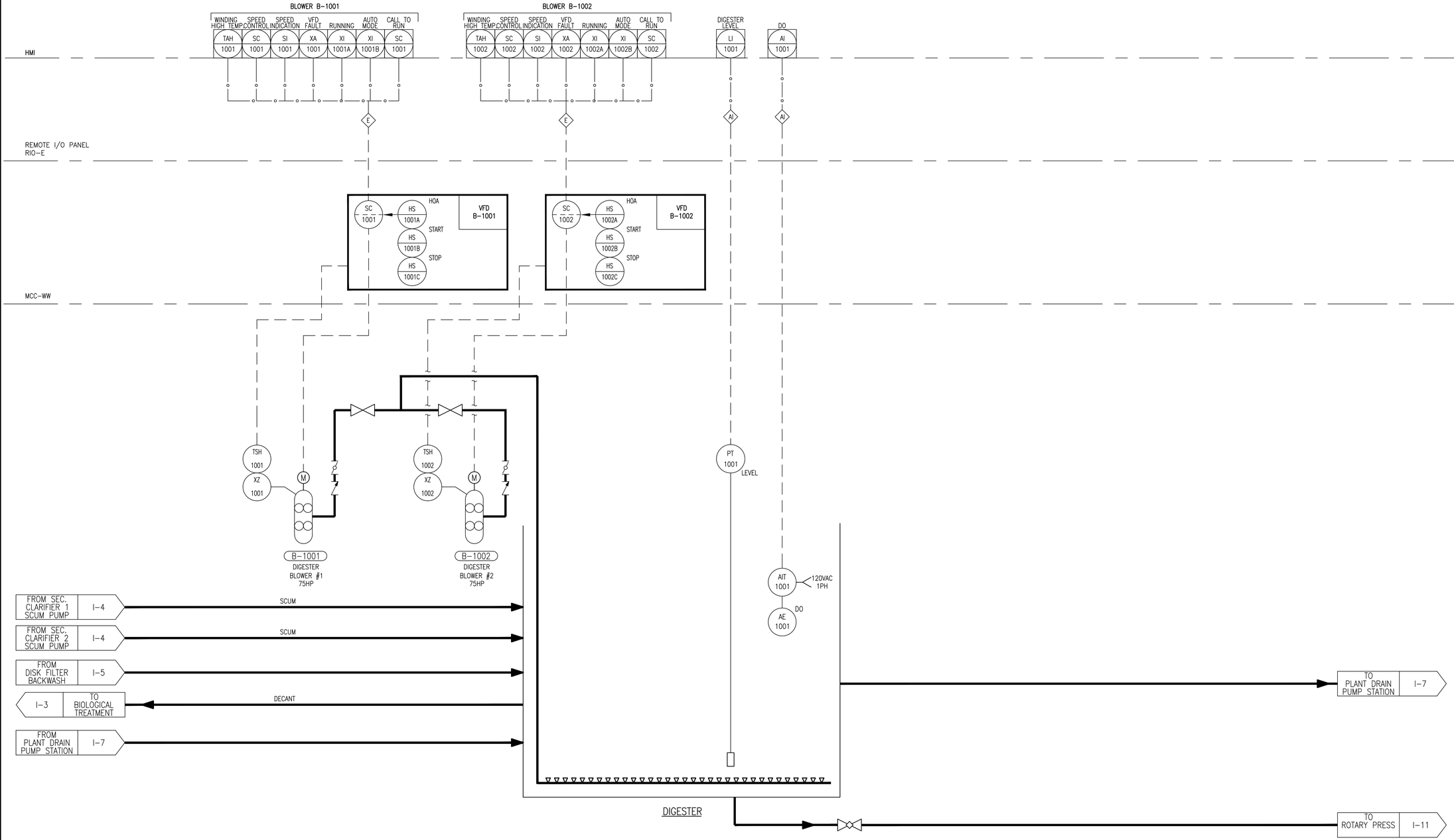
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
WAS/RAS PUMP STATION

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-9



GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINDT ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM SLUDGE DIGESTION SYSTEM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-10

POLYMER SYSTEM
ROTORY PRESS MOTOR M-1101
SLUDGE PUMP P-1121
SLUDGE PUMP P-1122
RECEIVING CONVEYOR M-1141
RECEIVING CONVEYOR M-1142
RECEIVING CONVEYOR M-1143
AIR COMPRESSOR

	ENABLE TO RUN	SYSTEM FAULT	E-STOP ACTIVATED	SLUDGE FLOW	RUNNING	FAULT	RUNNING	VFD FAULT	AUTO MODE	SPEED INDIC.	SPEED CONTROL	FLOC MIXER FAULT	RUNNING	VFD FAULT	SPEED INDIC.	SPEED CONTROL	RUNNING	VFD FAULT	SPEED INDIC.	SPEED CONTROL	RUNNING	FAULT	ZERO SPEED	PULL CORD	RUNNING	FAULT	ZERO SPEED	PULL CORD	RUNNING	FAULT	ZERO SPEED	PULL CORD	RUNNING	FAULT	EMERGENCY EYEWASH ACTIVATED
HMI	XC 1100	XA 1100A	XA 1100A	FQIR 1100	XI 1130A	XA 1130	XI 1101A	XA 1101	XI 1101B	SI 1101	SC 1101	XA 1102	XI 1121	XA 1121	SI 1121	SC 1121	XI 1122	XA 1122	SI 1122	SC 1122	XI 1141A	XA 1141	SAL 1141	XA 1141	XI 1142A	XA 1142	SAL 1142	XA 1142	XI 1143A	XA 1143	SAL 1143	XA 1143	XI 1110	XA 1110	FS EW1

REMOTE I/O PANEL
RIO-E

480VAC 3PH

ROTARY PRESS CONTROL PANEL
LCP-1100
(BY VENDOR)

SC 1121 VFD — SLUDGE PUMP 1
SC 1121 VFD — SLUDGE PUMP 2
XC 1141 FVNR — RECEIVING CONVEYOR
SC 1101 VFD — PRESS DRIVE
SC 1102 VFD — FLOCCULATOR DRIVE
XC 1142 FVNR — INCLINED CONVEYOR
XC 1143 FVNR — DISTRIBUTION CONVEYOR
HMI
POWER ON XI 1100
HS 1100 E-STOP
HS 1100 RESET

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

EMERGENCY EYEWASH IN USE
FSL EW1
POT

POLYMER SYSTEM MP-1130
POLYMER SYSTEM CONTROL PANEL LCP-1130
120VAC 1PH
PRV 1130
SV 1130
FI 1130
PI 1130
SERVICE WATER
CALIB. CYL.
2" DIXON CAM & GROOVE QUICK DISCONNECT POLYURETHANE
TOTE
PIT 1130A
PI 1130B
HOA
HS 1130A
P-1130
NEAT POLYMER ACTIVATION CHAMBER

SERVICE WATER

FIT 1100 FLOW — 120VAC 1PH
FE 1100
MAG
4"
PIT 1100
FLOC MIXER M-1102 1HP
FLOCCULATION TANK

FROM DIGESTER SLUDGE PUMP | I-10

HS 1121 LOR
TSH 1121
XZ 1121 MOTOR SPACE HEATER
PSL 1121
SLUDGE PUMP 1 5HP
PSH 1121
P-1121

HS 1122 LOR
TSH 1122
XZ 1122 MOTOR SPACE HEATER
PSL 1122
SLUDGE PUMP 2 5HP
PSH 1122
P-1122

BV-1104 BV-1103 BV-1102 BV-1101
CHANEL #4 CHANEL #3 CHANEL #2 CHANEL #1

ROTARY PRESS MOTOR 20HP
M-1101

ZSO 1101
ZSC 1101
SV 1101
AIR
EV

RECEIVING CONVEYOR 1 M-1141 1HP
PULL CORD ZS 1141
ZS 1142 PULL CORD
SSL 1141
SSL 1142
E-STOP HS 1140B
E-STOP HS 1140A
INCLINED CONVEYOR 2 M-1142 5HP
ZS 1143 PULL CORD
SSL 1143
DISTRIBUTION CONVEYOR 3 M-1143 1HP
ROLL OFF LOADING AREA
M-1110 AIR COMPRESSOR 7.5HP

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINT ENGINEERING • ENVIRONMENTAL

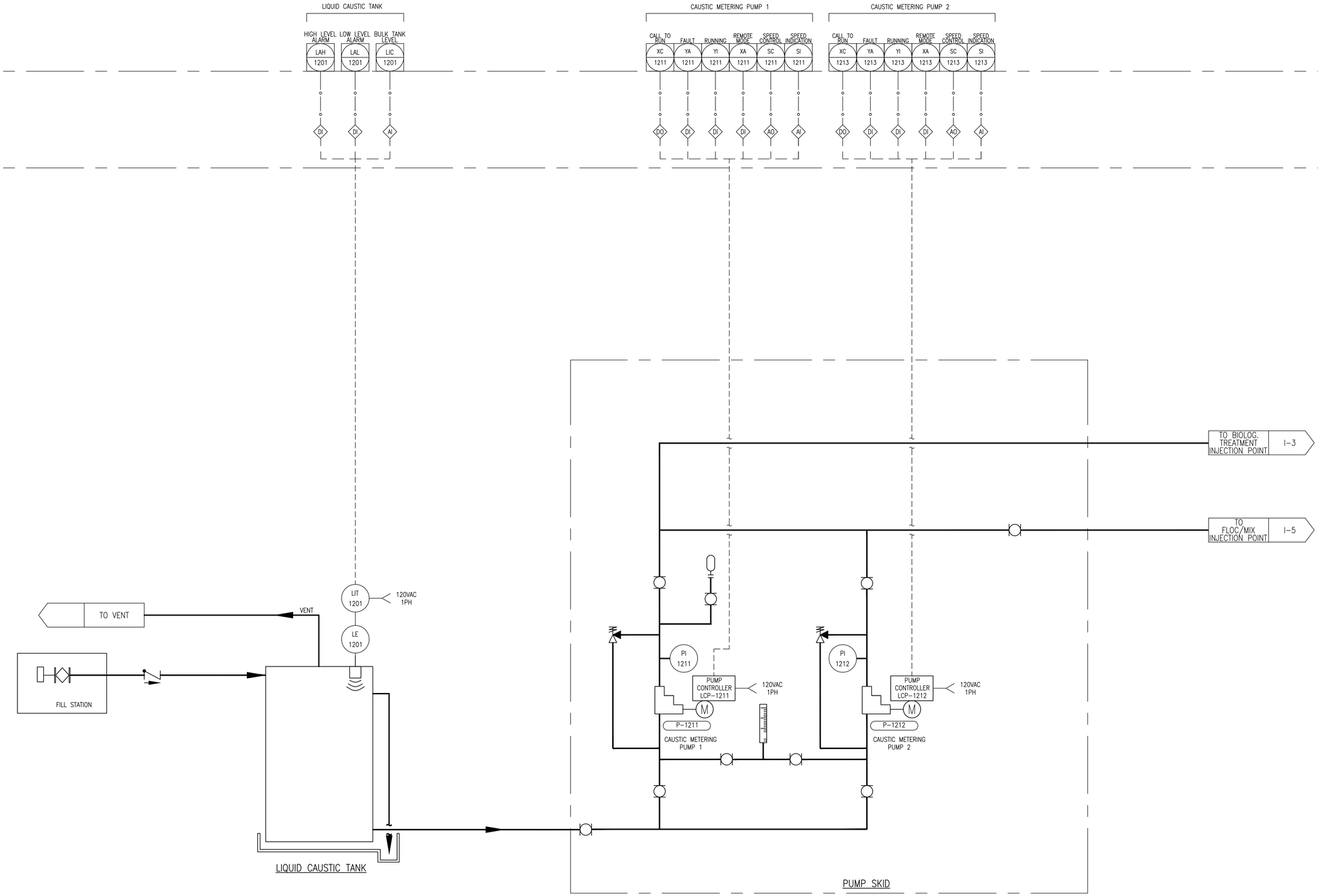
CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
ROTARY PRESS SYSTEM

Drawn: GS
Design: GS
Checked: AZ
Project No: R2019-111
Scale: AS SHOWN
Date: JULY 2025

Sheet No.
I-11

EDEC
A SALAS O'BRIEN COMPANY
EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



NOTES:

1. THE P&ID's ARE GENERIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL THE DETAILS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL THE CABLES AND CONDUITS AS PER APPROVED EQUIPMENT SHOP DRAWINGS.
2. ALL CHEMICAL FEED PUMPS SPEED SHALL BE FLOW PACED.
3. THE SYSTEM INTEGRATOR SHALL PROVIDE SPACE INSIDE SCADA CONTROL PANEL LCP-M TO ACCOMMODATE FUTURE I/Os AS SHOWN.
4. ALL INSTRUMENTS IN DIRECT CONTACT WITH CHEMICALS SHALL HAVE ENCLOSURES APROPRIATLY RATED.

GEORGIA REGISTERED No. 32013 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

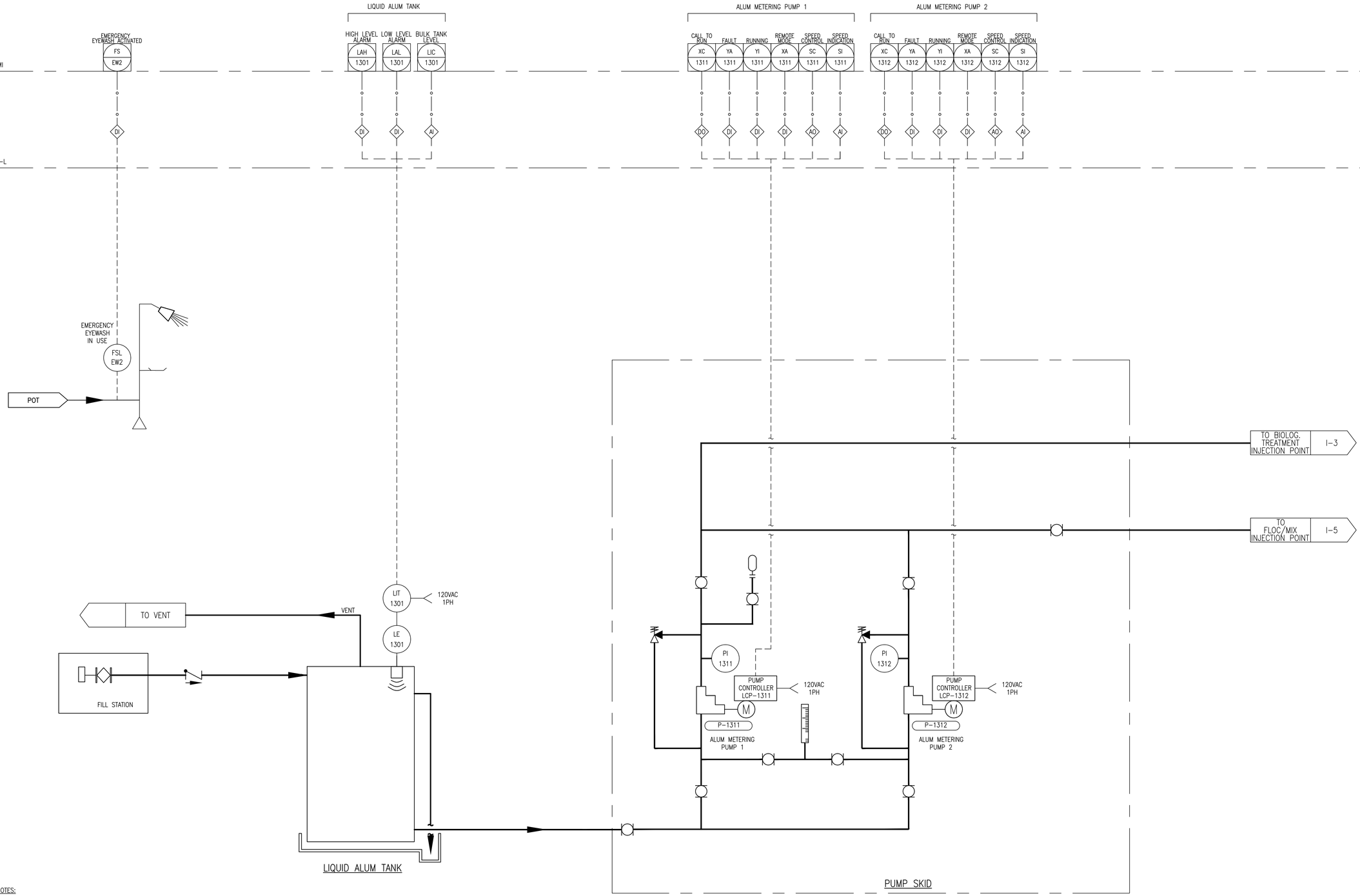
PROCESS AND INSTRUMENTATION DIAGRAM
LIME FEED SYSTEM

Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-12



NOTES:

1. THE P&ID's ARE GENERIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL THE DETAILS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL THE CABLES AND CONDUITS AS PER APPROVED EQUIPMENT SHOP DRAWINGS.
2. ALL CHEMICAL FEED PUMPS SPEED SHALL BE FLOW PACED.
3. THE SYSTEM INTEGRATOR SHALL PROVIDE SPACE INSIDE SCADA CONTROL PANEL LCP-M TO ACCOMMODATE FUTURE I/Os AS SHOWN.
4. ALL INSTRUMENTS IN DIRECT CONTACT WITH CHEMICALS SHALL HAVE ENCLOSURES APROPRIATLY RATED.

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

GEORGIA REGISTERED No. 32513 PROFESSIONAL ENGINEER ALEC ZAYCHIK

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

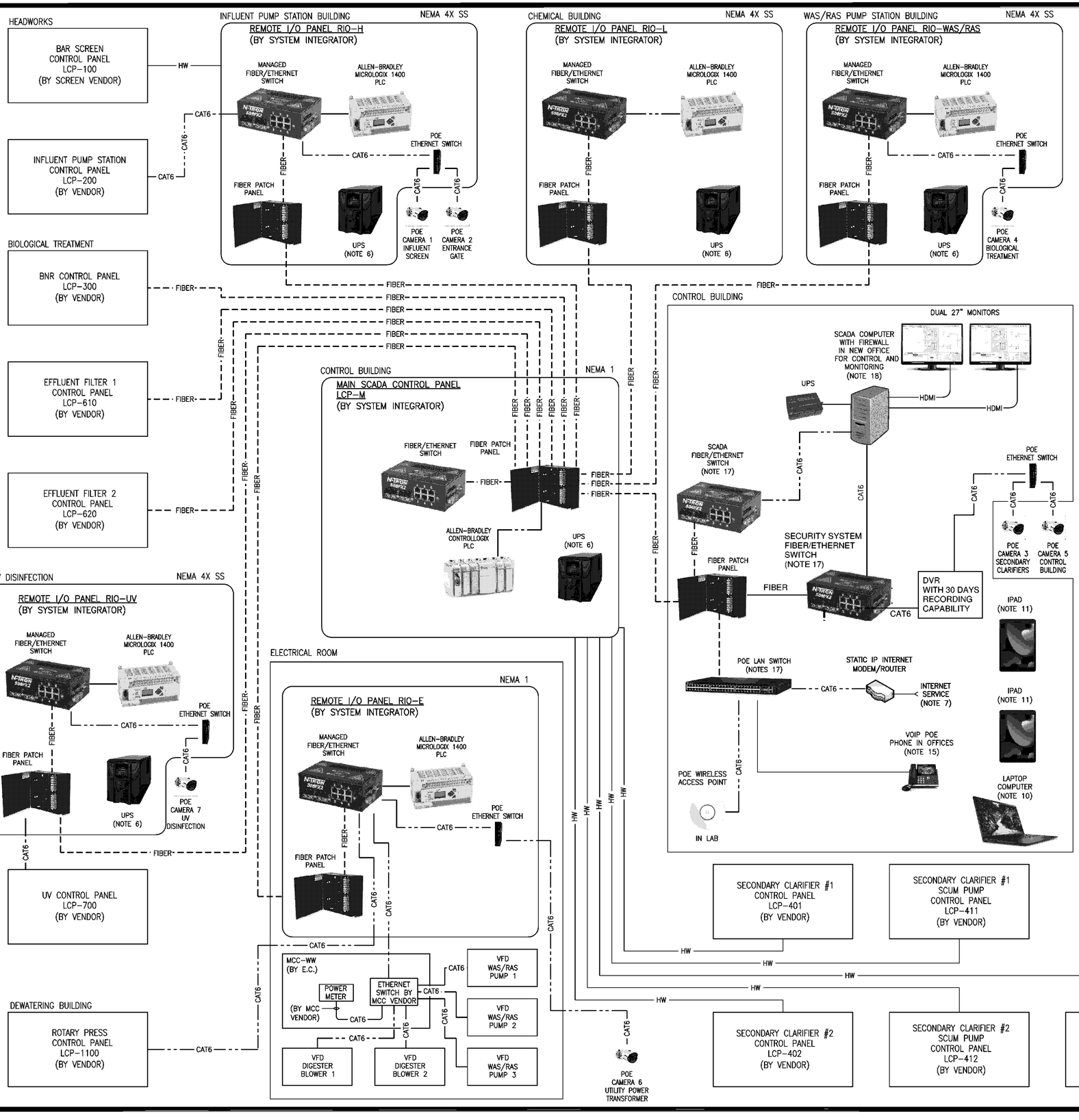
RINCON ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES

PROCESS AND INSTRUMENTATION DIAGRAM
ALUM SYSTEM

Drawn:	GS
Design:	GS
Checked:	AZ
Project No:	R2019-111
Scale:	AS SHOWN
Date:	JULY 2025

Sheet No.
I-13



NOTES:

1. PROVIDE AND INSTALL PLANT SCADA PANEL LCP-M IN NEMA 1 ENCLOSURE. PANEL SHALL INCLUDE AS A MINIMUM, THE FOLLOWING COMPONENTS:
   - ETHERNET SWITCH WITH FIBER PORTS
   - ALLEN-BRADLEY CONTROLLOGIX PLC TO ACCOMMODATE ALL THE REQUIRED I/O'S PLUS 20% SPARES.
   - 24VDC REDUNDANT POWER SUPPLY SYSTEM
   - SURGE SUPPRESSORS FOR ALL 4-20MA SIGNALS.
   - RELAYS, TERMINALS, RECEPTACLE ETC. AS REQUIRED
   - UPS FOR PLC, HMI, DC POWER SUPPLIES. UPS SHALL BE SIZED FOR A MINIMUM OF 30 MIN OF BACK-UP POWER.
   - FIBER OPTIC BREAK OUT PANEL
   - ANY OTHER COMPONENTS REQUIRED FOR SAFE AND RELIABLE SCADA SYSTEM OPERATION.

   SUBMIT THE LCP-M DETAILED WIRING DIAGRAMS AND BILL OF MATERIAL FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

   SUPPLY PLANT SCADA PANEL LCP-M, PROGRAMMING PLC, CREATING ASSOCIATED HMI SCREENS AT THE PLANT SCADA SERVER HMI SOFTWARE, FACTORY TESTING PANEL LCP-M AND PROVIDING TRAINING AND START-UP ASSISTANCE.
2. ALL FIBER OPTIC AND ETHERNET CABLES SHOWN SHALL BE PROVIDED BY CONTRACTOR. FIBER CABLES SHALL BE CORNING INDOOR/OUTDOOR, 62UM LOOSE TUBE, MULTIMODE, 12 ST MIN. OR ACCEPTED EQUAL.
3. ALL PLCs SHALL HAVE ETHERNET COMMUNICATION CAPABILITIES.
4. SCADA COMPUTER HMI SOFTWARE SHALL USE 3D GRAPHICS AND HAVE REMOTE ALARM CAPABILITIES THROUGH EMAIL, TEXT MASSAGING AND VOICE. THE HMI SOFTWARE SHALL BE VT SCADA.
5. UNINTERRUPTIBLE POWER SUPPLIES (UPS) SHALL BE PROVIDED IN EACH SCADA CONTROL PANEL. THE UPS SHALL BE A MINIMUM OF 1.8KVA AND SHALL BE SIZED TO BACK UP PLC POWER SUPPLY AND HMI FOR A MINIMUM OF 30 MINUTES.
6. INCLUDE ALL NECESSARY MEDIA CONVERTERS AND ASSOCIATED WIRING FOR COMMUNICATION BETWEEN PANELS AND SYSTEMS.
7. CONTRACTOR SHALL INCLUDE ALL COSTS ASSOCIATED WITH UPGRADING THE EXISTING 100MB FIBER NETWORK TO 1GB. THE INTERNET SERVICE PROVIDER IS TRAILWAVE.
8. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SCADA SYSTEM COMPONENTS, ASSOCIATED PROGRAMING AND START-UP SUPPORT. CONTRACTOR SHALL INCLUDE ALL THE REQUIRED HARDWARE, MEDIA CONVERTERS AND SOFTWARE FOR SAFE AND RELIABLE SCADA SYSTEM OPERATION. INCLUDE 3 DAYS HMI SOFTWARE TRAINING FOR THREE (3) SCADA OPERATORS.
9. COORDINATE LAN SWITCH LOCATIONS AND REQUIREMENTS WITH THE CITY'S IT DEPARTMENT.
10. CONTRACTOR SHALL PROVIDE A LAPTOP FOR PLANT OPERATOR USE. THE LAPTOP SHALL BE DELL VOSTRO 5630 (2025 MODEL) OR EQUIVALENT, WITH THE FOLLOWING MINIMUM 2025 SPECIFICATIONS:
    - CPU: INTEL CORE I7-155H (13TH GEN) OR NEWER
    - RAM: 32 GB DDR5 RAM, 4800 MHZ OR HIGHER
    - STORAGE: 512 GB NVME SSD
    - DISPLAY: 15.6" FHD (1920X1080), ANTI-GLARE, IPS
    - NETWORK: INTEGRATED WI-FI 6E + BLUETOOTH 5.3
    - PORTS: MINIMUM 2 USB-C, 2 USB-A, HDMI, RJ-45, AUDIO JACK
    - BATTERY: MINIMUM 4-CELL, 54WH WITH EXPRESSCHARGE
    - OS: WINDOWS 11 PRO (64-BIT), LATEST BUILD
    - SOFTWARE: LATEST MS OFFICE AND ADOBE ACROBAT
11. SYSTEM INTEGRATOR SHALL PROVIDE TWO (2) I-PADS WITH REMOTE ACCESS TO PLANT SCADA SYSTEM. INCLUDE ALL REQUIRED SOFTWARE FOR SCADA INTERFACE.
12. COORDINATE LAN SWITCH LOCATIONS AND REQUIREMENTS WITH THE CITY'S IT DEPARTMENT. COORDINATE THE NUMBER OF THE REQUIRED PORTS TO COVER ALL CONNECTION POINTS NEEDED. COORDINATE POE PORTS REQUIREMENTS WITH THE SELECTED EQUIPMENT. PROVIDE A LOCAL RECEPTACLE IF NEEDED NEXT TO THE FINAL APPROVED LOCATION OF THE NETWORK EQUIPMENT.
13. ALL NETWORK CABLES SHALL BE INSTALLED IN CONDUITS WHERE APPLICABLE, USE 3/4" MIN. CONDUITS FOR ALL CAT6 NETWORKS CABLES AND 2" MIN. FOR FIBER OPTIC CABLES.
14. CONTRACTOR SHALL INCLUDE ALL PROGRAMMING AND SETUP SCOPE FOR NETWORKS DEVICES, INCLUDE NETWORK CONFIGURATION TO PROVIDE SECURE CONNECTION TO THE PLANT NETWORK DEVICES.
15. VOIP PHONE SYSTEM SHALL BE BY RINGCENTRAL LATEST BUSINESS OFFERING OR APPROVED EQUAL. INCLUDE A MINIMUM OF 4 PHONES. COORDINATE THE EXACT PHONE OUTLETS LOCATIONS WITH THE OWNER.
16. ALL INTERNET NETWORK DEVICES (FIREWALL SWITCH, LOCAL NETWORK SWITCHES, ETC.) SHALL BE COMMERCIAL GRADE BY CISCO OR APPROVED EQUAL. ALL NETWORK CONNECTION POINTS SHALL SUPPORT AT LEAST 1GBPS DATA TRANSMISSION SPEED.
17. THE CONTRACTOR SHALL PROVIDE AND INSTALL A WALL MOUNTED NETWORK RACK TO HOUSE THE NETWORK DEVICES. ALL DEVICES SHALL BE RACK MOUNT TYPE.
18. MAIN SCADA COMPUTER SHALL INCLUDE WIN-911 OR EQUAL SOFTWARE FOR ALARM DIALING. THE COMPUTER SHALL INCLUDE AS A MINIMUM THE FOLLOWING FEATURES:
    - CPU: INTEL XEON W5-2445 (10C, 3.1-4.7GHZ) OR INTEL CORE I9-14900K
    - RAM: 64GB DDR5
    - STORAGE: 1TB NVME SSD (OS), 4TB HDD (DATA)
    - GRAPHICS: NVIDIA RTX A2000, 12GB, DUAL-MONITOR SUPPORT
    - NETWORK: DUAL-PORT (1GBE + OPTIONAL 10GBE)
    - UPS: APC SMART-UPS 1500VA
    - OS: WINDOWS 11 PRO (64-BIT), LATEST BUILD
    - SOFTWARE: LATEST MS OFFICE AND ADOBE ACROBAT
    - OTHER: USB KEYBOARD & MOUSE, EXTERNAL DVD-RW
    - SUPPORT: 3-YEAR PROSUPPORT & NBD ONSITE.
19. CONTRACTOR SHALL COORDINATE THE EQUIPMENT STARTING SEQUENCE AND DELAYS WITH THE SYSTEM INTEGRATOR AND EQUIPMENT SUPPLIERS (SUPPLYING PLC CONTROL PANELS) TO ENSURE PROPER LOAD STAGGERING DURING POWER OUTAGE AND GENERATOR OPERATION.
20. SYSTEM INTEGRATOR SHALL PROVIDE SECURITY CAMERA'S SYSTEM AS SHOWN ON THE DRAWINGS. CAMERAS SHALL BE CONTROLLED BY A RACK MOUNTED DVR IN THE NEW OFFICE ROOM, AND SHALL PROVIDE VIDEO RECORDING FOR UP TO ONE MONTH. INCLUDE ALL REQUIRED SOFTWARE FOR LOCAL AND REMOTE VIDEO ACCESS.
21. SCADA SYSTEM SHALL BE SUPPLIED BY ONE OF THE PREQUALIFIED AND PREAPPROVED SYSTEM INTEGRATORS: SOUTHERN FLOW OR MR SYSTEMS.

LEGEND:

- CAT6 — CAT6E INDUSTRIAL TYPE ETHERNET CABLE
- FIBER — MULTIMODE FIBER OPTIC CABLE (6 STRANDS)
- FIELD DEVICE AND INSTRUMENTS INPUT/OUTPUTS
- TELEPHONE CABLE
- HW — HARDWIRED I/OS

GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK No. 32513

No.	Revisions	Initial	Date
1	RELEASED FOR BID	GS	7-31-2025

RINCON CONSULTANTS, INC. ENGINEERING • ENVIRONMENTAL

CITY OF CLEVELAND
WASTEWATER TREATMENT PLANT UPGRADES
SCADA SYSTEM BLOCK DIAGRAM

Drawn: GS
Design: GS
Checked: AZ
Project No. R2019-111
Scale: AS SHOWN
Date: JULY 2025

EDEC
A SALAS O'BRIEN COMPANY

EDEC, INC.
4120 CHATTAHOOCHEE TRACE
SUITE A
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

Sheet No.
I-100