DATE		REVISION
11-26-2024	1	60% REVIEW SET
11-26-2024	2	F.D.E.P. PERMIT SUBMITTAL
02-27-2025	3	F.D.E.P. STORMWATER SUBMITTAL
03-31-2025	4	LAKE COUNTY DRIVEWAY PERMIT
04-07-2025	5	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-2025	6	BID SET
	7	

CONSTRUCTION PLANS FOR

TOWN OF HOWEY-IN-THE-HILLS WATER TREATMENT PLANT No. 3

DESCRIPTION: (PER OFFICIAL RECORDS BOOK 6068, PAGE 2222)

A PORTION OF GOVERNMENT LOT 8, LYING NORTH OF HIGHWAY 48 AND WESTERLY OF HIGHWAY 19, ALL LYING IN SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

AS A POINT OF REFERENCE COMMENCE AT SOUTHWEST CORNER OF THE SOUTHWEST 1/4 OF SECTION 23, TOWNSHIP 20 SOUTH, RANGE 25 EAST, LAKE COUNTY, FLORIDA AND PROCEED N 00°53'14" E, ALONG THE WEST BOUNDARY OF THE SOUTHWEST 1/4 OF SAID SECTION 23, A DISTANCE OF 1171.08 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 SAID POINT LYING ON A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 5679.58 FEET AND A CHORD BEARING AND DISTANCE OF S 69°35'43" E, A DISTANCE OF 1186.12 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1188.29 FEET; THENCE S 75°35'20" E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 1460.31 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF S 72°35'58" E, A DISTANCE OF 223.25 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE RIGHT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 223.33 FEET TO THE POINT OF BEGINNING; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE, N 15°36'39" E, A DISTANCE OF 52.62 FEET; THENCE N 75°08'12" E, A DISTANCE OF 258.80 FEET; THENCE N 75°51'45" E, A DISTANCE OF 298.35 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 133.42 FEET AND A CHORD BEARING AND DISTANCE OF N 62°15'27" E, A DISTANCE OF 62.77 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT, A DISTANCE OF 63.36 FEET; THENCE S 41°20'52" E, A DISTANCE OF 270.88 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF STATE ROAD 19; THENCE S 75°06'54" W, ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 531.94 FEET TO A POINT ON THE AFOREMENTIONED NORTHERLY RIGHT OF WAY LINE OF COUNTY ROAD 48 AND A POINT ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 2341.83 FEET AND A CHORD BEARING AND DISTANCE OF N 66°12'04" W, A DISTANCE OF 299.49 FEET; THENCE ALONG THE ARC OF SAID CURVE TO THE LEFT AND ALONG SAID NORTHERLY RIGHT OF WAY LINE, A DISTANCE OF 299.69 FEET TO THE POINT OF BEGINNING.

GRAHAM WELLS
MAYOR
SEAT 4

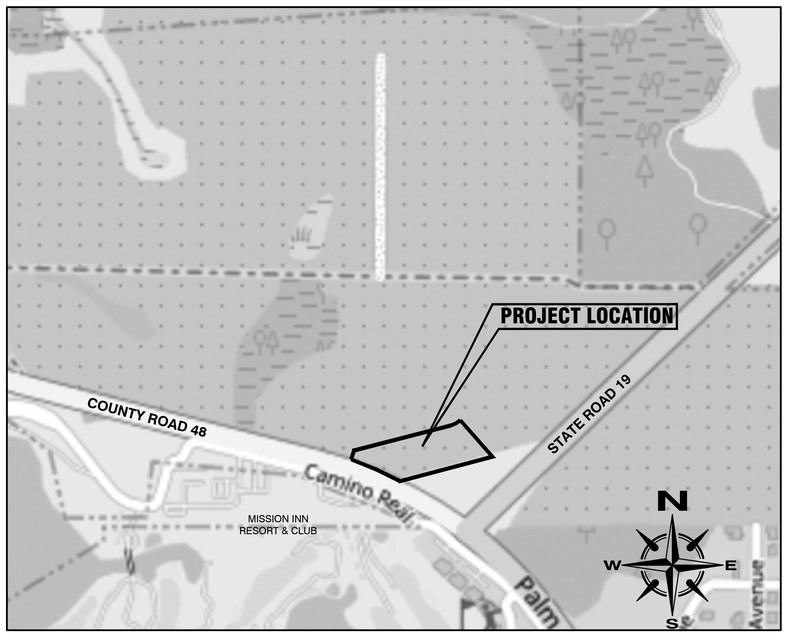
TIM EVERLINE
MAYOR PRO-TEMPORE
SEAT 5

DR. RENEÉ LANNAMAN
COUNCILOR, SEAT 1

JON ARNOLD
COUNCILOR, SEAT 2

DAVID MILES
COUNCILOR, SEAT 3

MORGAN CATES
PUBLIC SERVICES DIRECTOR



SECTION 23 TOWNSHIP 20 SOUTH; RANGE 25 EAST
LAKE COUNTY, FLORIDA
VERTICAL DATUM - NAVD 1988

VICINITY MAP
1" = 2000'

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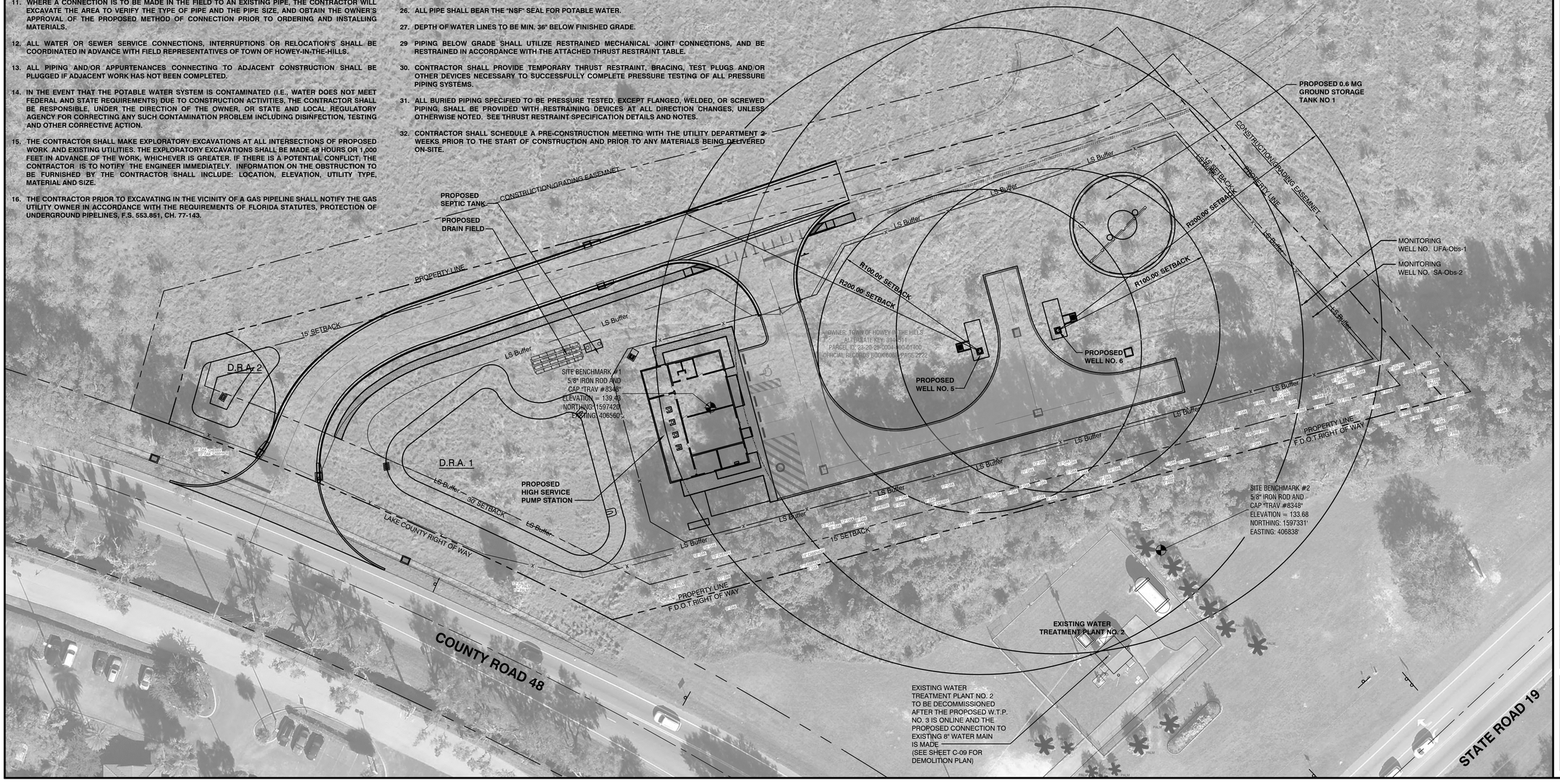
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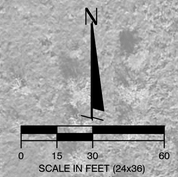
halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

JUNE 30, 2025 - BID SET

GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO LAKE COUNTY, F.D.E.P. AND THE TOWN OF HOWEY-IN-THE-HILLS STANDARDS.
2. THE CONTRACTOR SHALL ENSURE ALL NECESSARY PERMITS ARE IN HAND BEFORE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING ALL REQUIREMENTS OF REGULATORY AGENCY PERMITS IN REGARD TO CONSTRUCTION ACTIVITIES AND CONDITIONS STATED THEREIN.
3. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, ALL ITEMS NOTED TO BE REMOVED SHALL REMAIN THE PROPERTY OF TOWN OF HOWEY-IN-THE-HILLS (OWNER). ALL ITEMS REMOVED SHALL BE STORED BY THE CONTRACTOR ON-SITE AS DIRECTED BY THE OWNER OR ENGINEER.
4. LIMITS OF CONSTRUCTION FOR THIS PROJECT SHALL BE THE AREA SHOWN WITHIN THE PROPERTY BOUNDS. IF PERMITTED BY THE OWNER, SPOIL AREAS SHALL BE AS INDICATED ON THE DRAWINGS. CONSTRUCTION STORAGE AREAS FOR THE CONTRACTOR ARE AS DESIGNATED ON THE SITE PLAN.
5. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES SHOWN AND NOT SHOWN PRIOR TO ANY CONSTRUCTION. ANY CONFLICTS OR DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
6. NO DEVIATIONS FROM THESE PLANS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
7. THE CONTRACTOR SHALL REPLACE ALL PAVING, SODDING, STABILIZED EARTH, LANDSCAPING, DRIVEWAYS, SIDEWALKS, IRRIGATION SYSTEMS, UNDERGROUND PIPING, ETC., DISTURBED OR DAMAGED BY THE CONSTRUCTION. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL OR AS DIRECTED BY THE ENGINEER.
8. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE, ELEVATIONS AND ALIGNMENT FOR PROPOSED CONNECTIONS AS SHOWN ON THE DRAWINGS.
9. UTILITY SEPARATION SHALL BE AS REQUIRED IN CHAPTER 62-555.314 F.A.C.
10. WHERE MINIMUM SEPARATIONS BETWEEN UTILITIES IS REQUIRED, THE DISTANCE MEASURED IS FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
11. WHERE A CONNECTION IS TO BE MADE IN THE FIELD TO AN EXISTING PIPE, THE CONTRACTOR WILL EXCAVATE THE AREA TO VERIFY THE TYPE OF PIPE AND THE PIPE SIZE, AND OBTAIN THE OWNER'S APPROVAL OF THE PROPOSED METHOD OF CONNECTION PRIOR TO ORDERING AND INSTALLING MATERIALS.
12. ALL WATER OR SEWER SERVICE CONNECTIONS, INTERRUPTIONS OR RELOCATION'S SHALL BE COORDINATED IN ADVANCE WITH FIELD REPRESENTATIVES OF TOWN OF HOWEY-IN-THE-HILLS.
13. ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETED.
14. IN THE EVENT THAT THE POTABLE WATER SYSTEM IS CONTAMINATED (I.E., WATER DOES NOT MEET FEDERAL AND STATE REQUIREMENTS) DUE TO CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE, UNDER THE DIRECTION OF THE OWNER, OR STATE AND LOCAL REGULATORY AGENCY FOR CORRECTING ANY SUCH CONTAMINATION PROBLEM INCLUDING DISINFECTION, TESTING AND OTHER CORRECTIVE ACTION.
15. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE 48 HOURS OR 1,000 FEET IN ADVANCE OF THE WORK, WHICHEVER IS GREATER. IF THERE IS A POTENTIAL CONFLICT, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY. INFORMATION ON THE OBSTRUCTION TO BE FURNISHED BY THE CONTRACTOR SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.
16. THE CONTRACTOR PRIOR TO EXCAVATING IN THE VICINITY OF A GAS PIPELINE SHALL NOTIFY THE GAS UTILITY OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF FLORIDA STATUTES, PROTECTION OF UNDERGROUND PIPELINES, F.S. 553.851, CH. 77-143.
17. THE SHOWN LOCATIONS OF RIGHTS-OF-WAY AND UTILITIES ARE APPROXIMATE. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO EXACTLY LOCATE ALL RIGHTS-OF-WAY AND UTILITY LINES IN THE CONSTRUCTION AREA PRIOR TO EXCAVATION. ANY DAMAGE TO ANY EXISTING UTILITY, STRUCTURE OR SERVICE SHALL BE REPAIRED, AT THE CONTRACTOR'S EXPENSE, IN A MANNER APPROVED BY THE RESPECTIVE UTILITY OWNER.
18. REMOVAL OF TREES GREATER THAN 4-INCH BASAL DIAMETER SHALL BE ONLY AS DIRECTED BY THE OWNER/ENGINEER. CONTRACTOR SHALL LIMIT TO A MINIMUM THE AMOUNT OF TREE REMOVAL, CLEARING AND GRUBBING REQUIRED BY TRIMMING TREES WHEREVER POSSIBLE.
19. CONTRACTOR SHALL NOTIFY AND COORDINATE WITH AFFECTED PROPERTY OWNERS AND OWNER/ENGINEER ONE WEEK IN ADVANCE OF TREE CLEARING AND GRUBBING. ALL DEBRIS FROM TREE CLEARING AND GRUBBING SHALL BE REMOVED.
20. ALL EXISTING PROPERTY, FENCING, DRIVEWAYS, PIPING, SIDEWALKS, SIGNS AND OTHER ITEMS SHALL BE RESTORED TO ORIGINAL LINE AND GRADE UNLESS APPROVED BY THE ENGINEER. ACCESS TO ADJOINING PROPERTY ALONG THE PROPOSED ROUTE SHALL BE MAINTAINED AT ALL TIMES.
21. ENGINEER OF RECORD REVIEWED SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL WATER/SEWER/ RECLAIMED AND STORMWATER SYSTEMS TO BE DEDICATED TO TOWN OF HOWEY-IN-THE-HILLS.
22. EARTHWORK, PAVEMENT AND CONCRETE CONSTRUCTION NOT SPECIFICALLY ADDRESSED BY THE HOWEY-IN-THE-HILLS, SHALL BE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT. HTTP://WWW.DOT.STATE.FL.US/SPECIFICATIONSOFFICE/LOCALARCHIVES.HTM.
23. COPIES OF ALL MATERIALS AND COMPACTION TESTING PER THE LATEST EDITION FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION MUST BE PROVIDED PRIOR TO CLOSEOUT.
24. CONTRACTOR SHALL PROVIDE AN EMERGENCY CONTACT NUMBER LIST FOR KEY SITE PERSONNEL.
25. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARD C652/C653 (G.S.T.), C654 (WELLS) AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
26. ALL PIPE SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
27. DEPTH OF WATER LINES TO BE MIN. 36" BELOW FINISHED GRADE.
29. PIPING BELOW GRADE SHALL UTILIZE RESTRAINED MECHANICAL JOINT CONNECTIONS, AND BE RESTRAINED IN ACCORDANCE WITH THE ATTACHED THRUST RESTRAINT TABLE.
30. CONTRACTOR SHALL PROVIDE TEMPORARY THRUST RESTRAINT, BRACING, TEST PLUGS AND/OR OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE PRESSURE TESTING OF ALL PRESSURE PIPING SYSTEMS.
31. ALL BURIED PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED, OR SCREWED PIPING, SHALL BE PROVIDED WITH RESTRAINING DEVICES AT ALL DIRECTION CHANGES, UNLESS OTHERWISE NOTED. SEE THRUST RESTRAINT SPECIFICATION DETAILS AND NOTES.
32. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE UTILITY DEPARTMENT 2 WEEKS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO ANY MATERIALS BEING DELIVERED ON-SITE.





LEGEND:

PROPOSED

DATE		REVISION
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
03-31-25	5	LAKE COUNTY DRIVEWAY PERMIT
04-07-25	6	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
05-23-25	7	F.D.O.T. GENERAL PERMIT (W.T.P. 2 DEMOLITION)
05-23-25	8	F.D.O.T. UTILITY PERMIT (WATER MAIN)
06-30-25	9	BID SET

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

AERIAL SITE PLAN

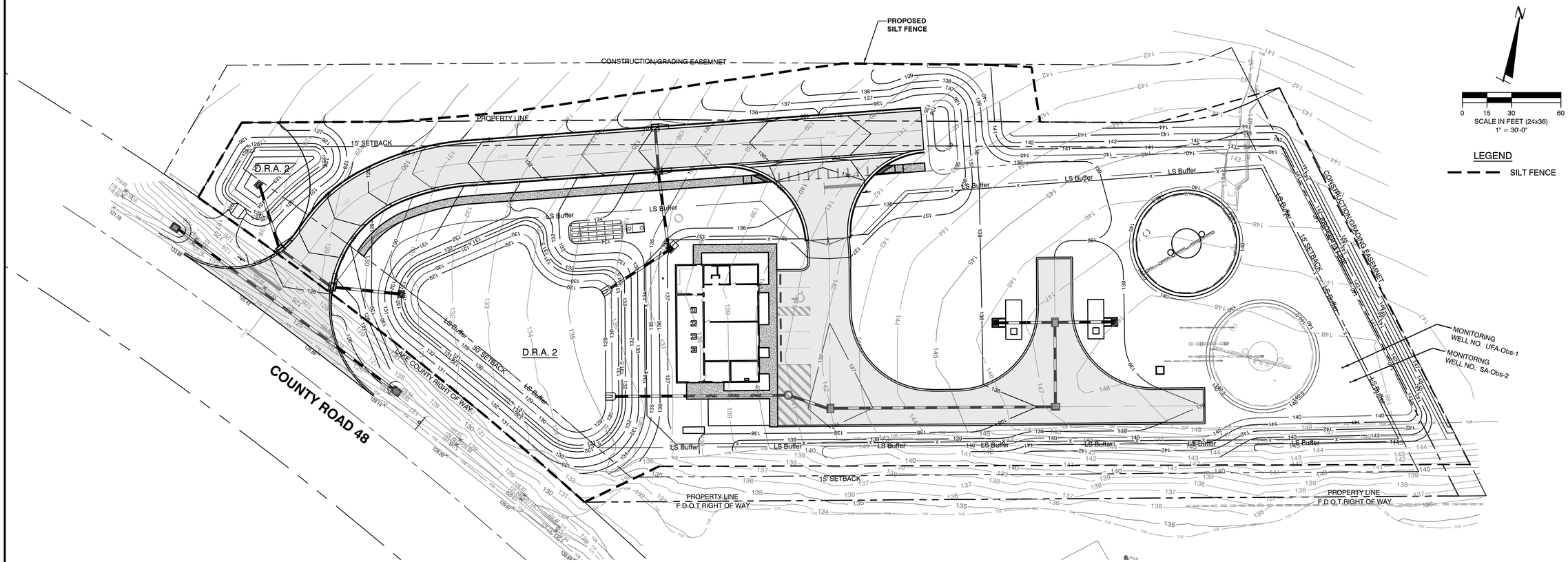
Beautiful HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-01

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



SITE AND EROSION AND SEDIMENT CONTROL

SCALE: 1" = 30'-0"

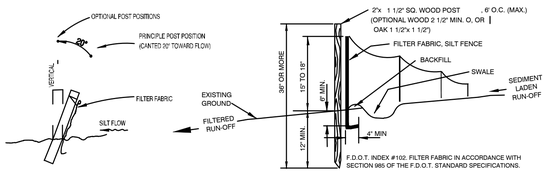
THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT. EROSION AND SEDIMENT CONTROLS

A. EROSION CONTROL DURING CONSTRUCTION

1. **TEMPORARY EROSION CONTROL STRUCTURES SHALL BE UTILIZED DURING CONSTRUCTION AT AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURES MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD OR COMPACTED AS DETERMINED BY THE CONTRACTOR.**
2. **TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.**
3. **PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICABLE TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.**
4. **STORM WATER MANAGEMENT AREAS, STORM SEWER SYSTEM AND CONTROL STRUCTURES SHALL BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACES WITHIN THE AREA TO BE SERVED BY THOSE FACILITIES. TO PREVENT REDUCTION IN STORAGE VOLUME AND PERCOLATION RATE, ALL ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE STORM WATER FACILITIES PRIOR TO FINAL GRADING, STABILIZATION AND GRASSING.**
5. **EROSION CONTROL STRUCTURES, SUCH AS SILT FENCE AND BERMS, SHALL BE INSTALLED AROUND INLETS AND IN SWALES TO TRAP ERODED MATERIAL, PREVENT SEDIMENTATION IN DOWN STREAM AREAS AND KEEP RUNOFF VELOCITIES LOW.**
6. **THE CONTRACTOR SHALL MINIMIZE THE EXTENT OF AREA EXPOSED AT ANY ONE TIME AND THE DURATION OF EXPOSURE.**
7. **STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS NO MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN ANY PORTION OF THE SITE THAT HAS CEASED.**
8. **THE CONTRACTOR WILL INSTALL A PERMANENT PROTECTIVE VEGETATIVE COVER FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES DISTURBED BY CONSTRUCTION. THIS PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN (14) DAYS AFTER FINAL GRADING OF THE EFFECTED LAND SURFACES. A PERMANENT VEGETATIVE COVER MUST BE ESTABLISHED WITHIN SIXTY (60) DAYS AFTER PLANTING OR INSTALLATION.**
9. **EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.**
10. **PLACEMENT OF BARRIERS OR NECESSARY REPAIRS TO BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.**
11. **MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCK PILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATER COURSE BY RUNOFF OR HIGH WATER.**
12. **ANY ACCUMULATED SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.**
13. **TO PROVIDE DUST CONTROL, A CONTRACTOR SHALL PROVIDE A WATER TRUCK OR IRRIGATION SYSTEM AS NEEDED, TO MAINTAIN SOIL MOISTURE.**
14. **IF SITE SPECIFIC CONDITIONS REQUIRE ADDITIONAL MEASURES DURING ANY PHASE OF CONSTRUCTION OR OPERATION TO PREVENT EROSION OR CONTROL SEDIMENT, BEYOND THOSE SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST IMPLEMENT ADDITIONAL BEST MANAGEMENT PRACTICES AS NECESSARY, IN ACCORDANCE WITH THE SPECIFICATION IN SECTION 6 OF THE FLORIDA LANDRMEVELOPMENT MANUAL: A GUIDE TO LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988).**

A. PERMANENT STABILIZATION WHERE CONSTRUCTION IS COMPLETE, PERMANENT VEGETATION SHALL BE INSTALLED AS SPECIFIED ON THE CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATION DOCUMENTS. PERMANENT VEGETATION WILL INCLUDE SOD OR SEED AND MULCH. STORM WATER MANAGEMENT SYSTEM THE STORMWATER RETENTION PONDS SHALL BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACES WITHIN THE DRAINAGE AREA SERVED BY THIS FACILITY. ALL ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE RETENTION POND PRIOR TO FINAL GRADING, STABILIZING AND GRASSING. OTHER CONTROLS

B. OFFSITE VEHICLE TRACKING PAVED STREETS ADJACENT TO THE CONSTRUCTION SITE ENTRANCE WILL BE SWEPT AS NEEDED TO PREVENT EXCESS MUD, DIRT OR ROCK FROM LEAVING THE CONSTRUCTION SITE. ALL DUMP TRUCKS HAULING MATERIAL TO AND FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARP. TEMPORARY STABILIZED OR ROCK CONSTRUCTION ENTRANCE MAY BE REQUIRED TO REMOVE EXCESS DIRT AND MUD FROM TIRES BEFORE CONSTRUCTION VEHICLES ENTER ADJACENT PAVED STREETS. TIMING OF SEDIMENT AND EROSION CONTROL MEASURES A SILT FENCE SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. A RETENTION PONDS AND THE STORM WATER CONVEYANCE SYSTEM SHALL BE CONSTRUCTED PRIOR TO THE PLACEMENT OF ANY IMPERVIOUS AREA. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 14-DAYS SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN ANY AREA, THAT AREA WILL BE STABILIZED WITH PERMANENT SEED AND MULCH OR SOD. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WITHIN ANY CATCH BASIN, STORM PIPES OR RETENTION PONDS WILL BE REMOVED.



SECTION

NOTE:
CONTRACTOR TO DESILT ALL PIPES PRIOR TO COMPLETION OF CONSTRUCTION OF PROJECT.

NOTE : THE CONTRACTOR SHALL APPLY FOR AND OBTAIN NPDES PERMIT FROM THE FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION (FDEP).

TEMPORARY CONSTRUCTION ENTRANCE

1. THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. A GEOTEXTILE SHOULD BE LAID DOWN TO IMPROVE STABILITY AND SIMPLIFY MAINTENANCE. THE GRAVEL SHELL THEN BE PLACED OVER THE GEOTEXTILE TO THE SPECIFIED DIMENSIONS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF MUD ONTO PUBLIC ROADS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND. ALL MATERIALS SPILLED, DROPPED, OR TRACKED FROM VEHICLES ONTO ROADWAYS MUST BE REMOVED IMMEDIATELY. LOOK FOR SIGNS OF TRUCKS AND TRAILERED EQUIPMENT "CUTTING CORNERS" WHERE THE GRAVEL MEETS THE ROADWAY. SWEEP THE PAVED ROAD DAILY FOR SEDIMENTS AND STONES.

SITE DATA

EXISTING FLUM ..... VMU
PROPOSED FLUM ..... VMU
EXISTING ZONING ..... PUD
PROPOSED USE ..... WATER TREATMENT PLANT
MAXIMUM BUILDING HEIGHT 1
PARCEL ID 23202500040000l400
SETBACKS ..... 30' TO STATE ROAD 48 R.O.W.
15' TO PROPERTY OWNED BY F.D.O.T
15' TO PROPERTY OWNED BY OTHERS
LANDSCAPE BUFFERS ..... 30' TO STATE ROAD 48 R.O.W.
33' TO PROPERTY OWNED BY F.D.O.T
15' TO EAST PROPERTY OWNED BY OTHERS
VARIES FROM 30' TO 61' TO NORTH PROPERTY OWNED BY OTHERS

LIMITS OF CONSTRUCTION ..... 3.23 ACRES OR 140,576 SF

WETLANDS/CONSERVATION ..... 0.00 SF

TOTAL IMPERVIOUS AREA ..... 40,991 SF (29% ISR) (PRESENT AND FUTURE)

TOTAL IMPERVIOUS AREA ..... 0 SF (0% ISR) (PRESENT)
PROPOSED IMPERVIOUS STRUCTURE AND BUILDING AREA ..... 10,898 SF (INCLUDES CONC. PADS & WALKS)
PROPOSED PAVEMENT ..... 26,776 SF

TOTAL IMPERVIOUS AREA ..... 37,673 SF (26.8% ISR) (PROPOSED)

REMAINING FUTURE IMPERVIOUS ..... 3,318 SF

TOTAL OPEN SPACE ..... 120,903 SF (73.2%) (PROPOSED)

TOTAL OPEN SPACE ..... 99,585 SF (71%) (FUTURE)

PARKING REQUIRED ..... 1 PER 1,000 SF = 2 SPACES A MANNED FACILITY

PARKING PROVIDED ..... 4 PAVED, 1 HC PAVED

PROJECTED # OF EMPLOYEES 2

WATER ..... HOWEY-IN-THE-HILLS
SEWER ..... ON-SITE (SEPTIC)
WASTE MANAGEMENT ..... GFL ENVIRONMENTAL
FIRE PROTECTION ..... PROPOSED FIRE HYDRANT

THIS SITE IS LOCATED IN FLOOD ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) ACCORDING TO THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 12069C0485E, EFFECTIVE DATE 12-15-2012.

DATE		REVISION
****	1	60% REVIEW SET
02-27-25	2	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	3	90% REVIEW SET
04-07-25	4	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-25	5	BID SET
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3
SITE AND EROSION CONTROL PLAN

HOWEY-IN-THE-HILLS
Beautiful

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-02

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

PROPOSED 30' WIDE (2) 15 DOUBLE SWING GATE

PROPOSED CHAIN LINK FENCE

FUTURE RETAINING WALL (BY OTHERS)

PROPOSED 'F' TYPE CURB

PROPOSED ASPHALT DRIVE

PROPOSED SEPTIC TANK

PROPOSED DRAIN FIELD

CONSTRUCTION/GRADING EASEMNET

N75°51'45"E 398.35'

276.61'

PROPOSED 5' SIDEWALK (TYP.)

PROPOSED RAMP (TYP.)

N75°08'12"E 258.80' PROPERTY LINE

15' SETBACK

LS Buffer

PROPOSED HANDICAP PARKING STRIPING AND SIGNS

D.R.A. 2

D.R.A. 1

PROPOSED HIGH SERVICE PUMP STATION

PROPOSED 0.6 MG GROUND STORAGE TANK NO 1

FUTURE 0.6 MG GROUND STORAGE TANK NO. 2

CONSTRUCTION/GRADING EASEMNET

S41°20'55"E 210.68'

MONITORING WELL NO. UFA-Obs-1

MONITORING WELL NO. SA-Obs-2

PROPERTY LINE

PROPOSED WELL NO. 5

PROPOSED WELL NO. 6

PROPERTY LINE F.D.O.T RIGHT OF WAY

EXISTING TREES TO BE REMOVED

PROPOSED HEADER CURB

S75°08'54"W 531.94'

EXISTING UTILITY POLE AND OHU TO BE RERELOCATED

R=2341.83
L=299.69'
Δ=7°19'57"
CH=299.49'
CB=N66°12'04"W

EXISTING TREE TO BE REMOVED

EXISTING FENCE TO BE REMOVED

LAKE COUNTY RIGHT OF WAY

COUNTY ROAD 48

EXISTING WATER TREATMENT PLANT NO. 2

EXISTING WATER TREATMENT PLANT NO. 2 TO BE DECOMMISSIONED AFTER THE PROPOSED W.T.P. NO. 3 IS ONLINE AND THE PROPOSED CONNECTION TO EXISTING 8" WATER MAIN IS MADE (SEE SHEET C-09 FOR DEMOLITION PLAN)

STATE ROAD 19

R=133.41 L=63.36'
Δ=27°12'39"
CH=62.77'
CB=N62°15'27"E

TREE REMOVAL SCHEDULE	
DIAMETER	TREE TYPE
14"	PALM
6"	OAK
7"	OAK
9"	OAK
10"	OAK
11"	OAK
17"	OAK
29"	OAK

LEGEND:

PROPOSED

FUTURE

N

0 15 30 60

SCALE IN FEET (24x36)
1" = 30'-0"

DATE		REVISION
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
03-31-25	5	LAKE COUNTY DRIVEWAY PERMIT
04-07-25	6	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

GEOMETRY PLAN

Beautiful HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	OCTOBER 17, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-03

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

CONSTRUCTION/GRADING EASEMNET

PROPERTY LINE

D.R.A. 2
T.O.B. ELEV. 126.00
BOTTOM ELEV. 123.00
SEASONAL HIGH EL. 121.00 (PERCHED)
GROUNDWATER El. 80.00 +/-

PROPOSED ASPHALT DRIVE

PROPOSED SEPTIC TANK

PROPOSED DRAIN FIELD

PROPOSED "F" TYPE CURB

D-1 TYPE "5" INLET
GRATE = 133.90
INV. = 128.59

D-2 TYPE "5" INLET
GRATE = 133.90
INV. = 129.47

24 L.F. 18" RCP STORM DRAIN @ 0.5%

D-9 TYPE "C" INLET
POP OFF
GRATE = 123.00
INV. = 118.50

45 L.F. 18" RCP STORM DRAIN @ 4.25%

D-8 TYPE "S" INLET
GRATE = 126.30
INV. = 119.50

D-15 TYPE "C" INLET
GRATE = 127.00
INV. = 122.00

5' WIDE OVERFLOW WEIR @ EL. 125.50

D-7 TYPE "5" INLET
GRATE = 126.00
INV. = 120.84

40 L.F. 18" RCP STORM DRAIN @ 4.00%

D-6 TYPE "C" INLET
DRA NO. 1 OVERFLOW
GRATE = 131.50
INV. = 122.44

386 L.F. 18" RCP STORM DRAIN @ 3.0%

D-4 MITERED END SECTION
INV. = 129.00

D.R.A. 1
T.O.B. ELEV. 132.00
BOTTOM ELEV. 129.00
SEASONAL HIGH EL. 125.01 (PERCHED)
GROUNDWATER El. 80.00 +/-

D-14 MITERED END SECTION
INV. = 129.00

LAKE COUNTY RIGHT OF WAY

D-16 TYPE "C" INLET
GRATE = 121.60
INV. = 117.00

COUNTY ROAD 48

15 L.F. 18" RCP STORM DRAIN @ 0.5%

48 L.F. 18" RCP STORM DRAIN @ 0.5%

D-3 TYPE "C" INLET
TANK DRAIN-AIR GAP
GRATE = 137.50
INV. = 129.24

PROPOSED 5' SIDEWALK

PROPOSED RAMP (TYP.)

LS Buffer

PROPOSED HANDICAP PARKING STRIPING AND SIGNS

PROPOSED HEADER CURB

PROPOSED HIGH SERVICE PUMP STATION

F.F. 137.64

PROPOSED CHAIN LINK FENCE

PROPOSED 30' WIDE (2) 15 DOUBLE SWING GATE

MANHOLE D-13
GRATE = 137.25
INV. = 129.55

TYPE "V" INLET D-12
GRATE = 136.74
INV. = 129.67

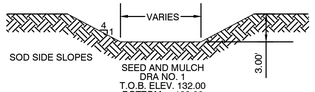
109 L.F. 18" RCP STORM DRAIN @ 0.5%

24 L.F. 18" RCP STORM DRAIN @ 0.5%

134 L.F. 18" RCP STORM DRAIN @ 2.51%

PROPERTY LINE
F.D.O.T. RIGHT OF WAY

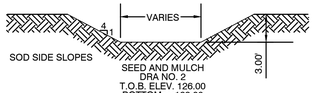
MATCHLINE A-A (SEE SHEET C-05)



DRA NO. 1 SECTION

N.T.S.

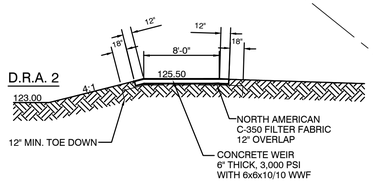
NOTE:
IN-SITU, UNDISTURBED SOILS
SIDE SLOPE AND BOTTOM



DRA NO. 2 SECTION

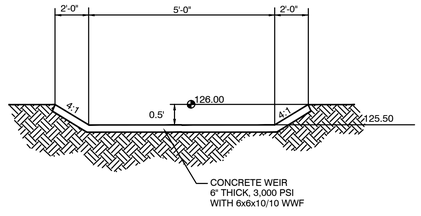
N.T.S.

NOTE:
IN-SITU, UNDISTURBED SOILS
SIDE SLOPE AND BOTTOM



CONCRETE WEIR SECTION

N.T.S.



TYPICAL WEIR SECTION

N.T.S.

0 7.5 15 30
SCALE IN FEET (24x36)
1" = 15'-0"

LEGEND:
PROPOSED
FUTURE

DATE		REVISION
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
03-31-25	5	LAKE COUNTY DRIVEWAY PERMIT
04-07-25	6	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3
PAVING AND GRADING PLAN

HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-04

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

PROPOSED ASPHALT DRIVE

PROPOSED "F" TYPE CURB

CONSTRUCTION/GRADING EASEMNET

PROPERTY LINE

PROPOSED 5' SIDEWALK

PROPOSED RAMP

PROPOSED CHAIN LINK FENCE

FUTURE RETAINING WALL (BY OTHERS)

LS Buffer

PROPOSED ASPHALT DRIVE

PROPOSED HEADER CURB

PROPOSED 0.6 MG GROUND STORAGE TANK NO 1

F.F. 139.50

FUTURE 0.6 MG GROUND STORAGE TANK NO. 2

D-10 TYPE "V" INLET GRATE = 138.61 INV. = 133.51

D-17 TYPE "C" INLET WELL BLOW OFF GRATE = 138.35 INV. = 133.85

34 L.F. 18" RCP STORM DRAIN @ 1.0%

D-18 TYPE "C" INLET WELL BLOW OFF GRATE = 139.00 INV. = 133.85

34 L.F. 18" RCP STORM DRAIN @ 1.0%

PROPOSED WELL NO. 5

PROPOSED WELL NO. 6

48 L.F. 18" RCP STORM DRAIN @ 1.0%

134 L.F. 18" RCP STORM DRAIN @ 2.51%

D-11 TYPE "V" INLET GRATE = 138.11 INV. = 133.03

MONITORING WELL NO. UFA-Obs-1

MONITORING WELL NO. SA-Obs-2

CONSTRUCTION/GRADING EASEMNET

PROPERTY LINE

PROPERTY LINE F.D.O.T.RIGHT OF WAY

MATCHLINE A-A (SEE SHEET C-04)

PALM

LEGEND:

PROPOSED

FUTURE

SCALE IN FEET (24x36)
1" = 15'-0"

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
04-07-25	5	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-25	6	BID SET
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

PAVING AND GRADING PLAN

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
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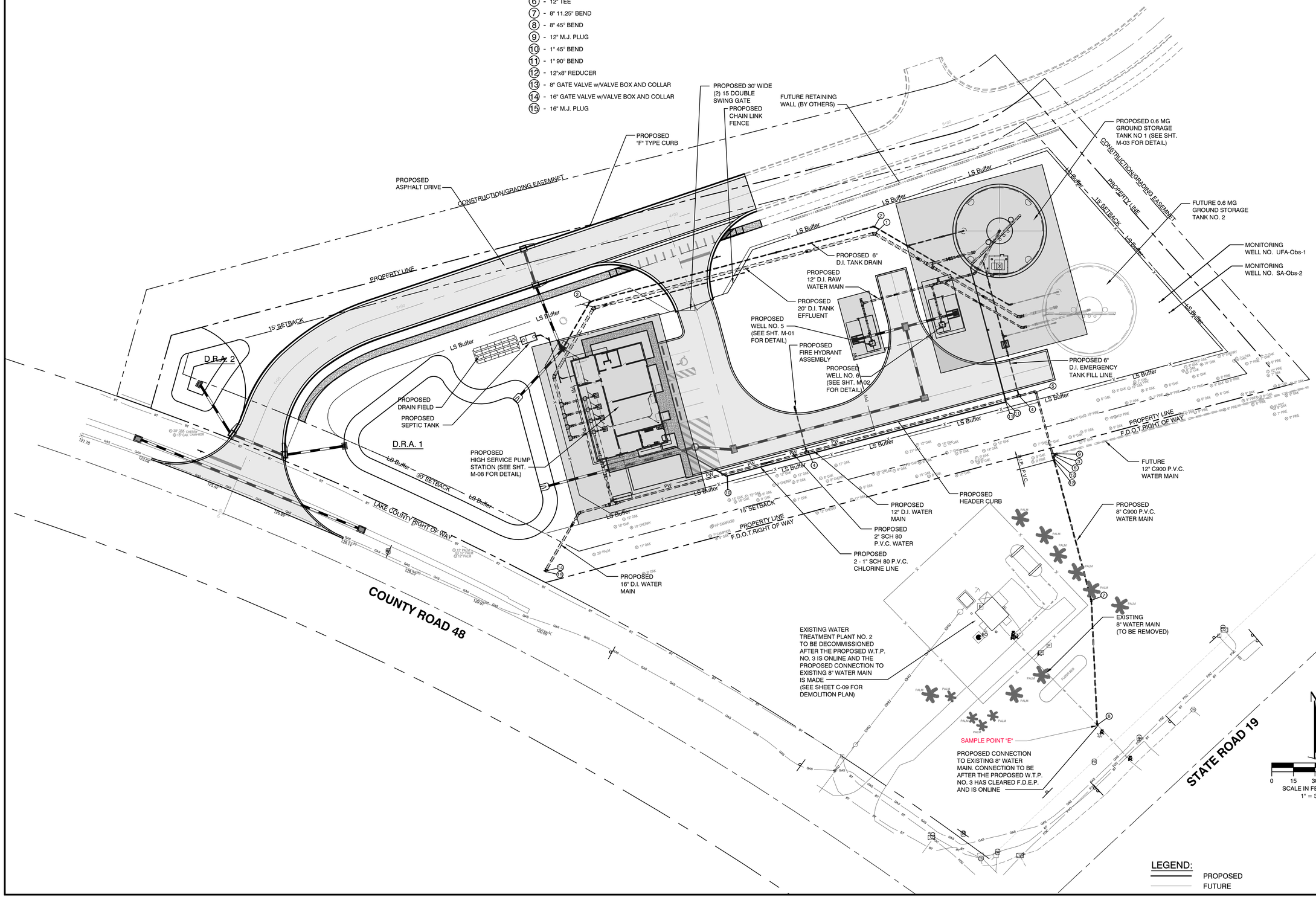
DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-05

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

FITTINGS

1. 20° 45° Bend
2. 6" 45° Bend
3. 12" GATE VALVE w/VALVE BOX AND COLLAR
4. 12"x6" TEE
5. 12" 90° BEND
6. 12" TEE
7. 8" 11.25° BEND
8. 8" 45° BEND
9. 12" M.J. PLUG
10. 1" 45° BEND
11. 1" 90° BEND
12. 12"x8" REDUCER
13. 8" GATE VALVE w/VALVE BOX AND COLLAR
14. 16" GATE VALVE w/VALVE BOX AND COLLAR
15. 16" M.J. PLUG



DATE		REVISION
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
04-07-25	5	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
05-23-25	6	F.D.O.T. UTILITY PERMIT (WATER MAIN)
06-30-25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

YARD PIPING PLAN

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-06

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

D-9 TYPE "C" INLET
POP OFF
GRATE = 123.00
INV. = 118.50

CONSTRUCTION/GRADING EASEMENT

PROPERTY LINE

15' SETBACK

D.R.A. 2
T.O.B. ELEV. 126.00
BOTTOM ELEV. 123.00
(100 YEAR FLOOD ELEV. = 07)

356 L.F. 18" RCP STORM DRAIN @ 3.0%

5' WIDE OVERFLOW
WEIR @ EL. 125.50

D-8 TYPE "S" INLET
GRATE = 126.30
INV. = 119.50

43 L.F. 18" RCP STORM DRAIN @ 3.0%

PROPOSED
STOP STRIP

PROPOSED
STOP SIGN

D-15 TYPE "C" INLET
GRATE = 127.00
INV. = 122.00

123.68

TO MATCH
EXISTING E.O.P.

TO MATCH
EXISTING E.O.P.

366 L.F. 18" RCP STORM DRAIN @ 3.0%

125.42

TO MATCH
EXISTING E.O.P.

TO MATCH
EXISTING E.O.P.

COUNTY ROAD 48 EOP

TO MATCH
EXISTING E.O.P.

COUNTY ROAD 48

0+00

1+00

126.89

TO MATCH
EXISTING E.O.P.

PROPOSED
ASPHALT DRIVE

PROPOSED
"F" TYPE CURB

PROPOSED 5'
SIDEWALK

LS Buffer

30' SETBACK

D.R.A. 1
T.O.B. ELEV. 132.00
BOTTOM ELEV. 129.00
(100 YEAR FLOOD ELEV. = 07)

TYPE "C" INLET D-6
DRA NO. 1 OVERFLOW
GRATE = 131.50
INV. = 222.44

40 L.F. 18" RCP STORM DRAIN @ 4.0%

TYPE "S" INLET D-7
GRATE = 126.00
INV. = 120.84

LAKE COUNTY RIGHT OF WAY

PROPOSED
HEADER CURB
12" WIDE x 12" DEEP

D-16 TYPE "C" INLET
GRATE = 121.60
INV. = 117.00

TO MATCH
EXISTING E.O.P.

128.14

N

0 3 6 12
SCALE IN FEET (24x36)
1" = 6'-0"

LEGEND:
EXISTING
PROPOSED

DATE		REVISION
03-18-25	1	90% REVIEW SET
03-31-25	2	LAKE COUNTY DRIVEWAY PERMIT
06-30-25	3	BID SET
	4	
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

C.R. 48 & ACCESS DRIVE
INTERSECTION GRADING PLAN

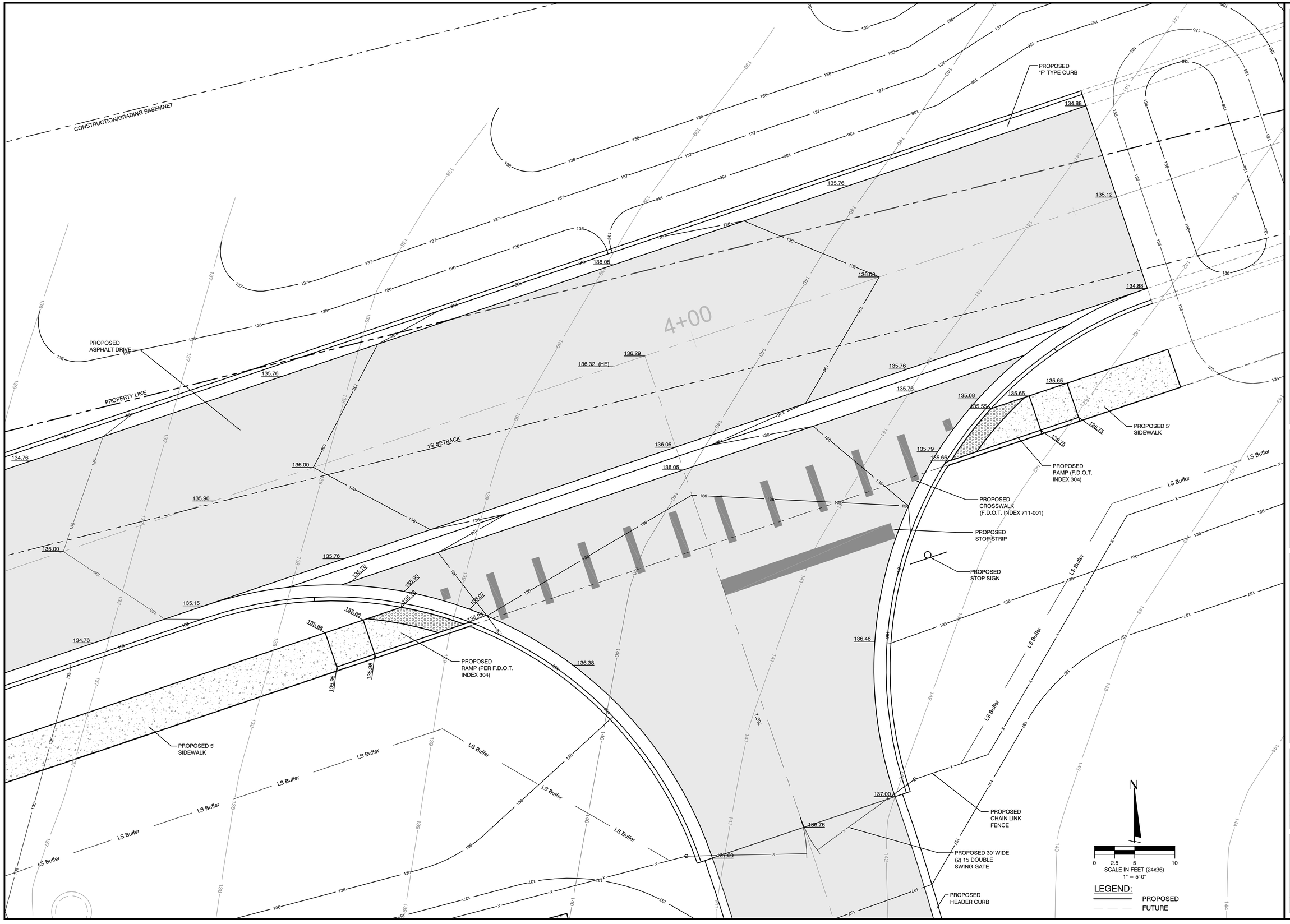
HOWEY-IN-THE-HILLS

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Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-07

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



DATE	REVISION
03-18-25	1 90% REVIEW SET
06-30-25	2 BID SET
	3
	4
	5
	6
	7
	8

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

W.T.P. ENTRANCE
INTERSECTION GRADING PLAN

HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-08

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

PROPERTY LINE
F.D.O.T. RIGHT OF WAY

SITE BENCHMARK #2
5/8" IRON ROD AND
CAP "TRAV #8348"
ELEVATION = 133.68
NORTHING: 1597331'
EASTING: 406838'

CHAIN LINK FENCE
TO BE REMOVED

GATE VALVE, FITTINGS
AND PIPE TO BE REMOVED

STORAGE TANK TO BE CONVEYED
TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA



EXISTING
8" WATER MAIN
TO BE REMOVED



COMPRESSOR TO BE CONVEYED
TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA

FUEL TANK TO BE CONVEYED
TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA





GENERATOR TO BE CONVEYED
TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA

CL2 SCALES AND REGULATORS TO BE
CONVEYED TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA

GATE VALVE, FITTINGS
AND PIPE TO BE REMOVED

WTP NO. 2 BUILDING
TO BE DEMOLISHED

EXISTING WELL TO BE ABANDONED
IN ACCORDANCE WITH CHAPTER 40D-3.531,
FAC BY A LICENSED WELL CONTRACTOR
FOLLOWING ABANDONMENT, CASING SHALL
BE CUT OFF 10' BELOW GROUND SURFACE.

CONTRACTOR SHALL COORDINATE
WITH THE POWER UTILITY COMPANY
FOR THE DISCONNECT. CONTRACTOR
THEN SHALL REMOVE ON SITE POWER
POLES AND OVERHEAD UTILITIES.

CONTRACTOR SHALL
REMOVE ASPHALT DRIVE
TO THE EDGE OF PAVEMENT
OF COUNTY ROAD 48

FLOOR BED

PROPOSED
8" C900 P.V.C.
WATER MAIN

PROPOSED
8" C900 P.V.C.
WATER MAIN
CONNECTION POINT)

EXISTING
8" WATER MAIN
TO BE REMOVED

EXISTING WELL TO BE ABANDONED
IN ACCORDANCE WITH CHAPTER 40D-3.531,
FAC BY A LICENSED WELL CONTRACTOR
FOLLOWING ABANDONMENT, CASING SHALL
BE CUT OFF 10' BELOW GROUND SURFACE.





FLOW METER, VALVES, FITTINGS
AND PIPE TO BE REMOVED

CHECK VALVES, FITTINGS
AND PIPE TO BE REMOVED

WELL MOTOR AND PUMP TO BE CONVEYED
TO THE CITY FOR STORAGE AT
W.T.P. NO. 3, THE CITY WILL DESIGNATE
THE STORAGE AREA

EXISTING
8" WATER MAIN
(TO REMIAN IN SERVICE)

COUNTY ROAD 48

COUNTY ROAD 48 EOP

STATE ROAD 19

DEMOLITION CONSTRUCTION NOTES

1. ALL ELECTRICAL EQUIPMENT AND PANELS ARE TO BE MOVED
2. ALL PALM TREES WITH ROOT BALLS ARE TO BE CONVEYED TO THE CITY AND LANDSCAPE TO BE REMOVED
3. FINAL SITE SHALL HAVE ALL IMPROVEMENTS REMOVED AND ENTIRE SITE SHALL BE SODDED WITH BAHIA SOD.
4. CONTRACTOR SHALL DISPOSE ALL ITEMS TO BE DISPOSED IN ACCORDANCE WITH THE TOWN OF HOWEY-IN-THE-HILLS, LAKE COUNTY AND STATE OF FLORIDA REGULATIONS

LEGEND

- EXISTING TO REMOVE OR DEMOLISHED
- EXISTING TO REMAIN
- PROPOSED (FROM WTP NO.3)

N

0 6 12 24
SCALE IN FEET (24x36)
1" = 12'-0"

DATE	REVISION	
03-18-25	1	90% REVIEW SET
05-23-25	2	F.D.O.T. GENERAL PERMIT (W.T.P. 2 DEMOLITION)
06-30-25	3	BID SET
	4	
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

W.T.P. No. 2 AND WELL No. 3 DEMOLITION PLAN

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET C-09

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

General Water Notes

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE 'NSF' SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 6.00' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL SLEEVES UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
7. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
8. ALL HYDROSTATIC TEST SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
9. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(b)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
10. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL, COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE, WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (d) 62-555.320 (3) (b), AND 62-555.320 (21) (c), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES, AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

All water main pope, including fittings shall be color coded or marked using blue as a predominate color to differentiate drinking water from reclaimed or other water. Under-ground plastic pipe shall be solid-wall blue pipe, shall have a co-extruded blue external skin, or shall be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90° intervals around the pipe, and will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Aboveground pipe as drinking water treatment plants shall be color coded and labeled in accordance with subsection 62-555.320(10),F.A.C., and all other aboveground pipe shall be painted blue or shall be color coded or marked like underground pipe.

Utility Construction Notes (DEP)

62-555.314 Location of Public Water System Mains:
For the purpose of this section, the phrase "Water Mains" shall mean Mains, including treatment Plant process piping, conveying either raw, partially treated, or finished drinking water. Fire Hydrant leads; and service lines that are under the control of a Public Water System and that have an inside diameter of three (3") inches or greater.

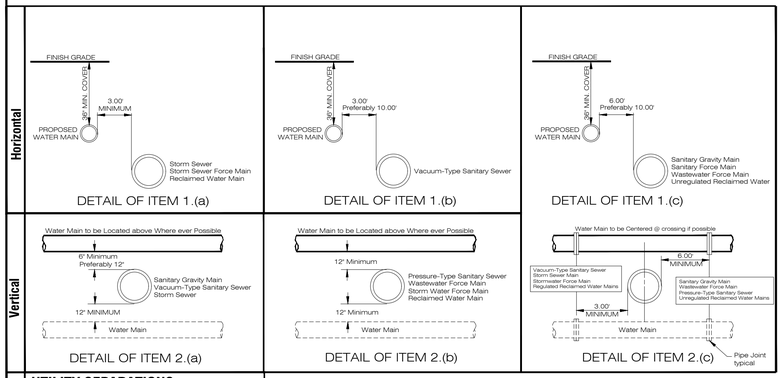
(1) Horizontal Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Storm water Force Mains, Reclaimed Water Pipelines, and On-site Sewage Treatment and Disposal Systems:
(a) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (3) Three Feet between the outside of the WATER MAIN and the outside of any existing or proposed Storm Sewer, Storm water Force Main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(b) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (3) three feet, and preferably (10) Ten Feet, between the outside of the WATER MAIN and the outside of any existing or proposed vacuum-type Sanitary Sewer.
(c) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (6) Six Feet, and preferably (10) Ten Feet, between the outside of the WATER MAIN and the outside of any existing or proposed Gravity- or Pressure-type Sanitary Sewer, Wastewater Force Main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610 F.A.C. The Minimum Horizontal Separation distance between WATER MAINS and Gravity-type Sanitary Sewers shall be reduced to (3) Three Feet where the BOTTOM of the WATER MAIN is laid at least (6) Six Inches above the Top of the Sewer.
(d) New or relocated, underground WATER MAINS shall be laid to provide a horizontal distance of at least (10) Ten Feet between the outside of the WATER MAIN and all parts of any existing or proposed "On site Sewage Treatment and Disposal System" as defined in Section 381.0065(2). F.S. and Rule 64E-6.002. F.A.C.

(2) Vertical Separation Between Underground WATER MAINS and Sanitary or Storm Sewers, Wastewater or Storm water Force Mains, and Reclaimed Water Pipelines:
(a) New or relocated underground WATER MAINS crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the WATER MAIN is at least (6) Six inches, and preferably 12 inches below or the outside of the other pipeline. However, it is preferable to lay the WATER MAIN "ABOVE" the other pipeline.
(b) New or relocated, Underground WATER MAINS crossing any existing or proposed pressure-type sanitary sewer, wastewater or stormwater Force Main, or Pipeline conveying reclaimed water shall be laid so the outside of the WATER MAIN is at least (12) inches ABOVE or BELOW the Outside of the other pipeline. However, it is preferable to lay the WATER MAIN above the other pipeline.
(c) At the Utility crossings described in paragraphs (a) & (b) Above, one full length of Water Main Pipe shall be centered above or below the other pipeline so the WATER MAIN Joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all WATER MAIN Joints are at least (3) Three feet from all joints in Vacuum-type Sanitary Sewers, Storm Sewers, Stormwater Force Mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least (6) Six Feet from all Joints in Gravity- or Pressure-type Sanitary Sewers, Wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

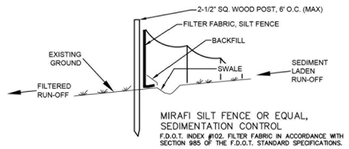
(3) Separation Between WATER MAINS and Sanitary or Storm Sewer Manholes:
(a) No WATER MAIN shall pass thru, or come into contact with any part of a Sanitary Manhole or a Storm Sewer Manhole.

(4) Separation Between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems. New or relocated Fire Hydrants with underground Drains shall be located so that the drains are at least (3) Three Feet from any existing or proposed storm sewer, Stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; at least (3) Three Feet, and preferably (10) Ten Feet, from any existing or proposed gravity- or Pressure-type Sanitary Sewer, Wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and at least (10) Ten Feet from any existing or proposed "on-site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S. and Rule 64E-6.002, F.A.C.

(5) Exceptions/Mitigation:
Adherence to the above Constraints and Separations in Items 1 through 4 shall be Complied to, "WITHOUT EXCEPTION". If for some reason where it is not technically feasible or Economically Sensible that Items 1 through 4 cannot be complied with, Contractor will Stop Work and Notify the Engineer of record for the appropriate solution, which will be submitted to "The Department of Environmental Protection" for APPROVAL, prior to work commencement.



UTILITY SEPARATIONS



MIRAFI SILT FENCE OR EQUAL, SEDIMENTATION CONTROL
F.D.O.T. INDEX #102, FILTER FABRIC IN ACCORDANCE WITH SECTION 985 OF THE F.D.O.T. STANDARD SPECIFICATIONS.

NOTES:
1. TEMPORARY EROSION CONTROL STRUCTURE TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY ENGINEER OR AREAS ON-SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL STRUCTURE MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY CONTRACTOR.
2. CONSTRUCT STORMWATER SYSTEMS BEFORE ANY BUILDING OR ROAD CONSTRUCTION IS STARTED.
   a.) PROTECT SYSTEM FROM SILTING AND DEBRIS BY METHODS PROVIDED IN DETAILS.
   b.) PROTECT SWALE BOTTOM FROM SEALING BY EXCAVATING ALL SILT DEPOSITS DURING CONSTRUCTION. THIS SHALL BE DONE BEFORE SOD & SEEDING & MULCHING IS FINISHED

THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.

NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATERCOURSE BY RUNOFF OR HIGH WATER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

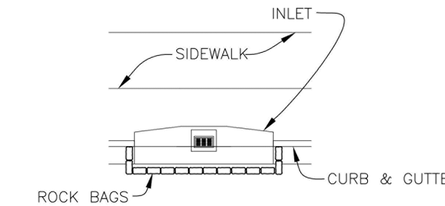
EROSION & SEDIMENT CONTROL (N.T.S.)

Howey—in—the—Hills
Standard Details
DATE: FEB 2022
DETAIL G-1

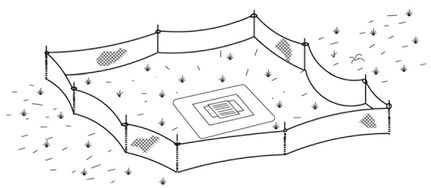
DATE:	REVISION	
11.26.24	60% REVIEW SET	1
12.02.24	F.D.E.P. PERMIT SUBMITTAL	2
02.27.25	F.D.E.P. STORMWATER SUBMITTAL	3
03.18.25	90% REVIEW SET	4
03.31.25	LAKE COUNTY DRIVEWAY PERMIT	5
04.07.25	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03.07.25	6
05.23.25	F.D.O.T. UTILITY PERMIT (WATER MAIN)	7
06.30.25	BID SET	8

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

HOWEY-IN-THE- HILLS DETAILS



CURB INLET

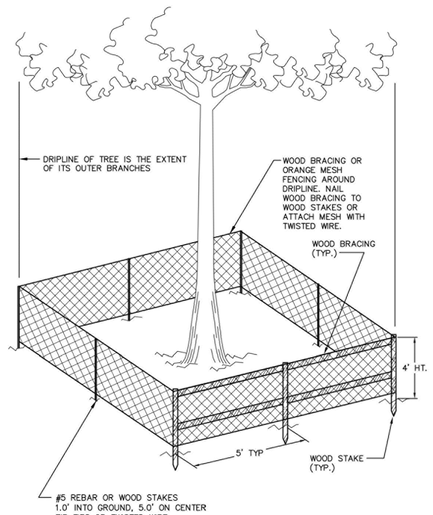


TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

ALTERNATE DESIGNS MAY BE PROPOSED BY ENGINEER

INLET PROTECTION (N.T.S.)

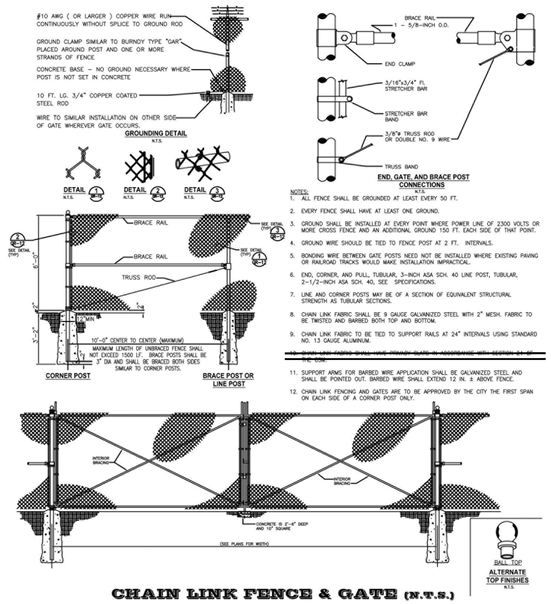
Howey—in—the—Hills
Standard Details
DATE: FEB 2022
DETAIL G-3



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

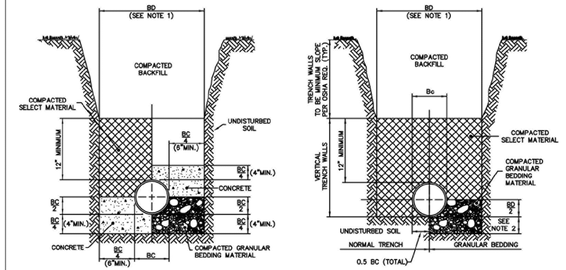
TREE PROTECTION (N.T.S.)

Howey—in—the—Hills
Standard Details
DATE: FEB 2022
DETAIL G-4



CHAIN LINK FENCE & GATE (N.T.S.)

Howey—in—the—Hills
Standard Details
DATE: FEB 2022
DETAIL G-6



NOTES: FOR BEDDING AND TRENCHING

1. DIMENSION BC = PIPE O.D.
   DIMENSION BD = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. (AASHTO T-180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE – 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180). FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL – 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180)

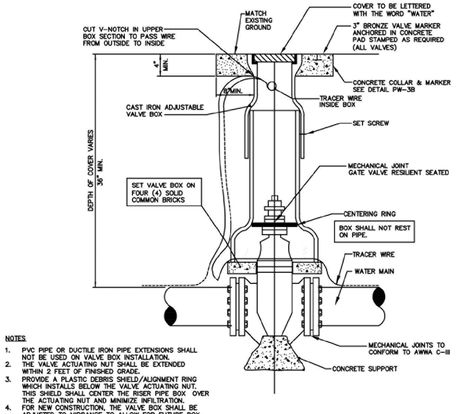
TRENCHING AND BEDDING
NOT TO SCALE

Howey—in—the—Hills
Standard Details
DATE: FEB 2022
DETAIL PW-2

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-
SHEET CD-01	

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

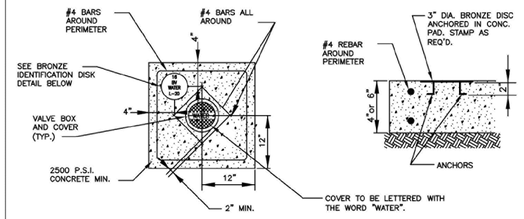


NOTES:

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

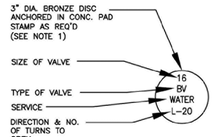
GATE VALVE AND BOX

NOT TO SCALE



NOTE:

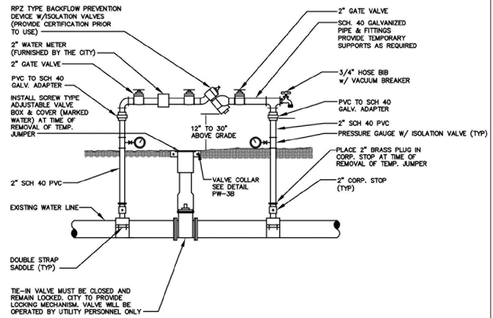
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.



BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE



TEMPORARY JUMPER CONNECTION

NOT TO SCALE

NOTE: LOCATION TO BE DETERMINED AT TIME OF PRECONSTRUCTION CONFERENCE W/ CITY.

TEMPORARY JUMPER CONNECTION NOTES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAILS TO BE USED FOR FILLING ANY WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C561, LATEST EDITION.
3. FLUSHING OF 10" DIAMETER AND LARGE WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE, IN THE PRESENCE OF THE UTILITY DIRECTOR OR HIS DESIGNEE. THE UTILITY DEPARTMENT WILL NOTIFIED IN WRITING 48 HOURS PRIOR TO THE FLUSHING OF SAID MAINS.

   THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

   A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.

      - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.
      - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
      - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT, THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 psi.
      - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALE IS ALWAYS GRATER THAN 10 psi.

   C. THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE CITY UNTIL FLUSHING BEGINS.

   D. THE TIE-IN VALVE SHALL BE OPENED ONLY A FEW TURNS FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE CITY AND OBSERVED BY THE ENGINEER.

   E. AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE CITY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE RPZ BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACKFLOW PREVENTION TECHNICIAN.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE CITY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-3A
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-3B
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-6A
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-6B

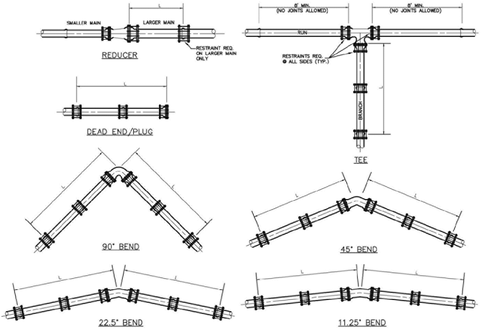


TABLE OF THRUST RESTRAINT LENGTHS

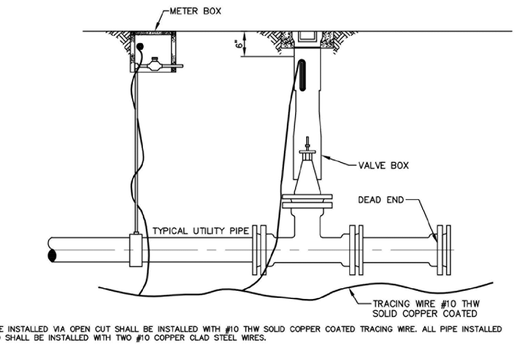
PIPE SIZE (inches)	90° BEND		45° BEND		22.5° BEND		11.25° BEND		TEES		DEAD END or PLUG		REDUCER		
	PVC DI (L)	DUCTILE IRON (L)	PVC DI (L)	DUCTILE IRON (L)	PVC DI (L)	DUCTILE IRON (L)	PVC DI (L)	DUCTILE IRON (L)	PVC DI (L)	DUCTILE IRON (L)	PVC DI (L)	DUCTILE IRON (L)	PIPE SIZES	PVC DI (L)	DUCTILE IRON (L)
4	20'	16'	8'	7'	4'	3'	2'	2'	15'	10'	45'	29'	6"x4"	33'	21'
6	28'	22'	12'	9'	6'	4'	3'	2'	33'	21'	63'	40'	8"x6"	34'	22'
8	36'	29'	15'	12'	7'	6'	4'	3'	52'	33'	82'	52'	10"x8"	33'	21'
10	43'	34'	18'	14'	9'	7'	4'	3'	68'	43'	98'	63'	12"x10"	34'	22'
12	50'	40'	21'	17'	10'	8'	5'	4'	84'	54'	116'	74'	16"x12"	63'	40'
16	63'	51'	26'	21'	13'	10'	6'	5'	116'	74'	146'	94'	18"x16"	33'	21'
18	70'	56'	29'	23'	14'	11'	7'	6'	131'	83'	163'	103'	20"x18"	33'	21'
20	75'	61'	31'	25'	15'	12'	7'	6'	145'	92'	178'	113'	20"x20"	62'	39'
24	86'	70'	36'	29'	17'	14'	9'	7'	173'	110'	207'	133'			

THRUST RESTRAINT DESIGN NOTES

1. RESTRAINT JOINTS, FITTINGS, & VALVE REQUIREMENTS CALCULATED BY THE THRUST RESTRAINT DESIGN PROGRAM PROVIDED BY EBBA IRON SALES, INC.
2. DATA BASED ON MAX. PRESSURE OF 150 p.s.i., THE UNIFIED SOILS CLASSIFICATION SYSTEM (SOIL TYPE SP), THE PIPE BEDDED IN NATIVE SOIL w/ A MINIMUM OF 2.5" COMPACTED FILL OVER THE PIPE, AND USING A SAFETY FACTOR OF 1.5 FOR THE DATA.
3. ALL FITTINGS & VALVES SHALL HAVE RESTRAINED WITH "MEGA-LUG" RESTRAINTS, & ALL BELL & SPIGOT JOINTS TO BE RESTRAINED WITH A RESTRAINING HARNESS WITHIN THE REQUIRED LENGTH OF RESTRAINED PIPE (L).

THRUST RESTRAINT

NOT TO SCALE



ALL PIPE INSTALLED VIA OPEN CUT SHALL BE INSTALLED WITH #10 THW SOLID COPPER COATED TRACING WIRE. ALL PIPE INSTALLED VIA HDD SHALL BE INSTALLED WITH TWO #10 COPPER CLAD STEEL WIRES.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT, LOCATE WIRE BOX, OR OTHER APPLICABLE STRUCTURE.

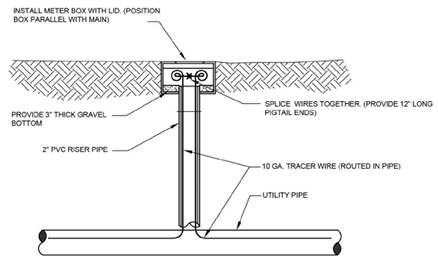
COLOR CODING:

POTABLE WATER SYSTEM: BLUE
REUSE WATER SYSTEM: PANTONE PURPLE
SANITARY SEWER, FORCE MAINS AND LOW PRESSURE SEWER SYSTEMS: GREEN

1. FOR LOW PRESSURE SEWER, POTABLE WATER AND REUSE WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY OF TAVARES APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.
6. UTILITY TRACING WIRE SHALL BE IN ACCORDANCE WITH CITY CSM AND PER CITY'S APPROVED MANUFACTURER LIST.

UTILITY PIPE LOCATION MATERIAL – WIRE

NOT TO SCALE

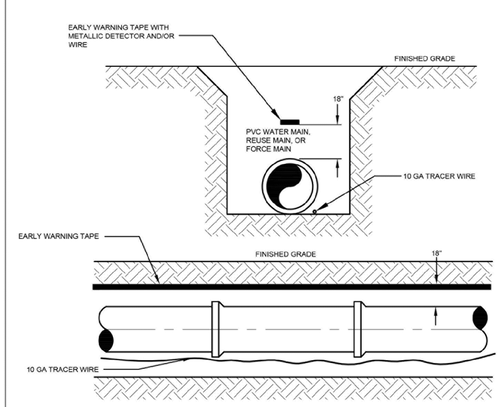


TRACER WIRE BOX UTILIZING METER BOX

NOTES:

1. TRACER WIRE STATION BOX TO BE INSTALLED WHERE THE WIRE CANNOT BE BROUGHT TO GRADE IN A VALVE BOX WITHIN THE MANDATORY 500 FOOT INTERVAL OR WHERE A SPLICE MUST BE MADE ON THE TRACER WIRING. NO UNDERGROUND SPLICES.
2. BOXES SHALL NOT BE LOCATED IN ROADWAYS OR DRIVEWAYS.
3. BOX AND LID PER DETAIL PW-19.
4. TRAFFIC RATED LID (STANDARD-NON BOLT DOWN)
5. LID COLOR SHALL BE PRE-MANUFACTURED OR PAINTED TO MATCH SERVICE (BLUE= POTABLE WATER, GREEN=WASTEWATER, PANTONE PURPLE=RECLAIMED WATER)

TRACER WIRE BOX



NOTES:

1. ALL MAINS INSTALLED BY OPEN CUT SHALL HAVE AN "EARLY WARNING" PROTECTION TAPE AND WIRE INSTALLED CONTINUOUSLY ALONG THE ALIGNMENT. THE PROTECTION TAPE SHALL BE PER THE CITY'S APPROVED MANUFACTURER LIST. TAPE SHALL BE INSTALLED DURING BACKFILLING 18" ABOVE THE PIPE AND SHALL BE CONTINUOUSLY MARKED FOR THE TYPE OF PIPE (EXAMPLE: CAUTION, WATER MAIN BURIED BELOW"). THE TAPE SHALL HAVE A METALLIC DETECTABLE STRIP INCLUDED AND COLOR CODED AS FOLLOWS:
   BLUE - POTABLE WATER
   GREEN - SANITARY FORCE MAIN, GRAVITY SEWER, LOW PRESSURE MAIN
   PANTONE PURPLE - RECLAIMED WATER
   RED - DEDICATED FIRE LINE
2. ALL PVC MAINS SHALL BE A SOLID COLOR AS DESCRIBED ABOVE.
   ALL DUCTILE IRON MAINS SHALL BE WRAPPED WITH COLOR CODED BAGS.
   ALL POTABLE WATER PIPE SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSF) SEAL OF APPROVAL.

UTILITY PIPE LOCATION MATERIAL – TAPE

NOT TO SCALE

Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-7
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-8
Howey-in-the-Hills NOT TO SCALE Standard Details	DATE: FEB 2022	DETAIL PW-9
Howey-in-the-Hills Standard Details	DATE: FEB 2022	DETAIL PW-10

DATE		REVISION
11.26.24	1	60% REVIEW SET
12.02.24	2	F.D.E.P. PERMIT SUBMITTAL
02.27.25	3	F.D.E.P. STORMWATER SUBMITTAL
03.18.25	4	90% REVIEW SET
04.07.25	5	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03.07.25
05.23.25	6	F.D.O.T. UTILITY PERMIT (WATER MAIN)
06.30.25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

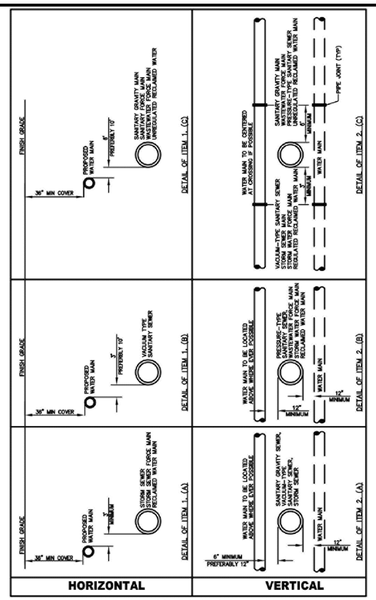
HOWEY-IN-THE- HILLS DETAILS

halff
Office: 352.343.8481
Fax: 352.343.8495
902 North Sinclair Ave.
Tavares, Florida 32778
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET CD-02

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



UTILITY SEPARATION

NOT TO SCALE

GENERAL WATER NOTES

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, DR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON.
7. ALL CASINGS UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
8. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE NEW WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
9. ALL HYDROSTATIC TESTS SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
10. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(B)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
11. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE. WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (D), 62-555.320 (3) (B), AND 62-555.320 (21) (C), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE: FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.) (FAC 62/CELL 555.320(21)(B)3)]

UNLESS DESCRIBED IN THE CITY CSM ELSEWHERE, ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH **CHAPTER 62-555.314, F.A.C.**, AND ANY UPDATES TO THE F.A.C., AND IN CONFORMANCE WITH ALL SEPARATION REQUIREMENTS AS FOUND THEREIN.

62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

GENERAL WATER NOTES

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES). BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A. THROUGH D. BELOW. - 361
   - A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
   - B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
   - C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
   - D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

GENERAL WATER NOTES

(5) EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:

(A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
1. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-555.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE;
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
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05-23-25	6	F.D.O.T. UTILITY PERMIT (WATER MAIN)
06-30-25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

HOWEY-IN-THE- HILLS DETAILS

Howey-in-the-Hills Standard Details — DETAIL PW-11A — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL PW-11C — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL PW-11D — DATE: FEB 2022

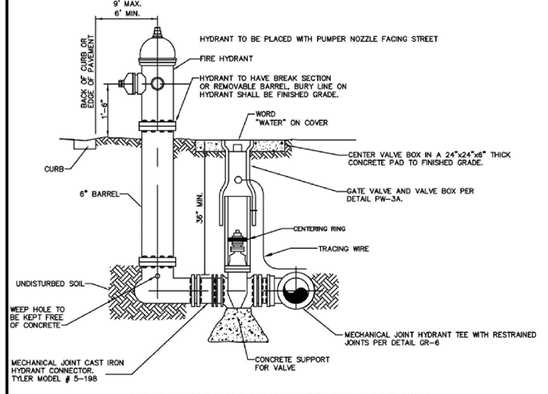
Howey-in-the-Hills Standard Details — DETAIL PW-11E — DATE: FEB 2022

PAINTING

1. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL RED PAINT TO HYDRANT BARREL.
2. APPLY TWO COATS OF OSHA SAFETY INDUSTRIAL ENAMEL PAINT TO THE BONNET AND NOZZLE CAPS. THE UTILITY DEPARTMENT INSPECTOR WILL DETERMINE THE COLOR TO PAINT THE HYDRANT BONNET AND NOZZLE CAPS BY FLOW TESTING HYDRANT.
   - BLUE 1500 GPM OR MORE (SHERWIN WILLIAMS @SW6066)
   - GREEN 1000 GPM TO 1499 GPM (SHERWIN WILLIAMS @B54614)
   - ORANGE 500 GPM TO 999 GPM (SHERWIN WILLIAMS @B54E39)
   - RED 499 GPM OR LESS (SHERWIN WILLIAMS @B54638)
   - RED HYDRANT BARREL (SHERWIN WILLIAMS @B54R38)

SPECIFICATIONS

1. AWWA SPECIFICATIONS C-502
2. TWO 2-1/2" HOSE NOZZLE DISCHARGE
3. ONE 4-1/2" PUMPER NOZZLE DISCHARGE
4. ONE 1-1/2" OPERATING NUT, LEFT
5. ALL HYDRANTS SHALL BE EQUIPPED WITH FITTINGS TO ALLOW FOR ELEVATION ADJUSTMENTS.
6. 5¼" MAIN VALVE OPENING
7. RESTRAINED JOINTS OR ALL THREADED ROD REQUIRED TO SECURE PIPE, RISER AND VALVE IN THE FIRE HYDRANT ASSEMBLY TO THE MAIN



FIRE HYDRANT WITH VALVE

NOT TO SCALE

(STANDARD FIRE HYDRANT ASSEMBLY)

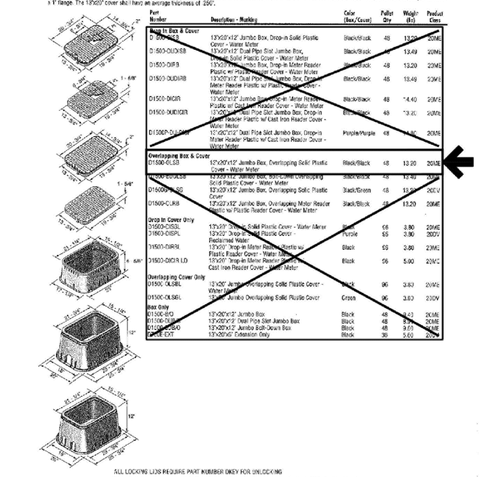
NDS METER BOXES

STANDARD COMMERCIAL GRADE

NDS D1500 Meter Boxes

Specifications: NDS 13"x20" meter boxes and covers are injection molded of structural foam recycled polyolefin material with a melt index between 10-12. Silicoring and UV stabilizers are added, along with processing lubricants as is required.
The 13"x20" body shall be tapered and have a minimum wall thickness of .25". The body shall have a double wall at the top cover seat area with a minimum thickness of .187". The cover and ring shall have 30 structural support ribs on the underside of the seat, each with a minimum thickness of .156". The bottom of the body shall have a 1" flange. The 13"x20" cover shall have an average thickness of .235".

Part Number	Description / Marking	Color (Body/Cover)	Pallet Qty	Weight (lbs)	Product Class
Drop-In Box & Cover					
D1500CL	13"x20"x12" Jumbo Box, Drop-In Solid Plastic Cover - Water Meter	Black/Black	48	13.20	20WE
D-1500-DUOXSB	13"x20"x12" Dual Pipe Slot Jumbo Box, Drop-In Solid Plastic Cover - Water Meter	Black/Black	48	13.49	20WE
D1500-DJPB	13"x20"x12" Jumbo Box, Drop-In Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Black/Black	48	13.20	20WE
D1500-DUOXRB	13"x20"x12" Dual Pipe Slot Jumbo Box, Drop-In Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Black/Black	48	13.49	20WE
D1500-DXCR	13"x20"x12" Jumbo Box, Drop-In Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Black/Black	48	14.40	20WE
D1500-DUOXSR	13"x20"x12" Dual Pipe Slot Jumbo Box, Drop-In Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Black/Black	48	13.20	20WE
D1500P-DUOXSR	13"x20"x12" Dual Pipe Slot Jumbo Box, Drop-In Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Purple/Purple	48	13.20	20WE
Overlapping Box & Cover					
D1500-OLSB	13"x20"x12" Jumbo Box, Overlapping Solid Plastic Cover - Water Meter	Black/Black	48	13.20	20WE
D1500-OLSBB	13"x20"x12" Jumbo Box, Non-Curb Overlapping Solid Plastic Cover - Water Meter	Black/Black	48	13.40	20WE
D1500-OLSG	13"x20"x12" Jumbo Box, Overlapping Solid Plastic Cover	Black/Green	48	13.20	20WE
D1500-OJRB	13"x20"x12" Jumbo Box, Overlapping Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Black/Black	48	13.20	20WE
Drop-In Cover Only					
D1500-DJSSL	13"x20" Drop-In Solid Plastic Cover - Water Meter	Purple	66	3.80	20WE
D1500-DJSPL	13"x20" Drop-In Solid Plastic Cover - Reclaimed Water	Purple	66	3.80	20DV
D1500-DJRPL	13"x20" Drop-In Meter Reader Plastic w/ Plastic Reader Cover - Water Meter	Black	66	3.80	20WE
D1500-DXCR LID	13"x20" Drop-In Meter Reader Plastic w/ Cast Iron Reader Cover - Water Meter	Black	66	5.90	20WE
Overlapping Cover Only					
D1500_OLSBL	13"x20" Jumbo Overlapping Solid Plastic Cover - Water Meter	Black	96	3.80	20WE
D1500-OLSBL	13"x20" Jumbo Overlapping Solid Plastic Cover	Green	96	3.80	20DV
Base Only					
D1100-DTO	13"x20"x12" Jumbo Box	Black	48	9.21	20WE
D1100-DUOXSB	13"x20"x12" Dual Pipe Slot Jumbo Box	Black	48	9.01	20WE
D1100-DBSO	13"x20"x12" Jumbo Bolt-Down Box	Black	48	9.01	20WE
D1500 EXT	13"x20"x5" Extension Only	Black	30	5.60	20WE



ALL LOCKING LIDS REQUIRE PENTA NUMBER KEY FOR UNLOCKING

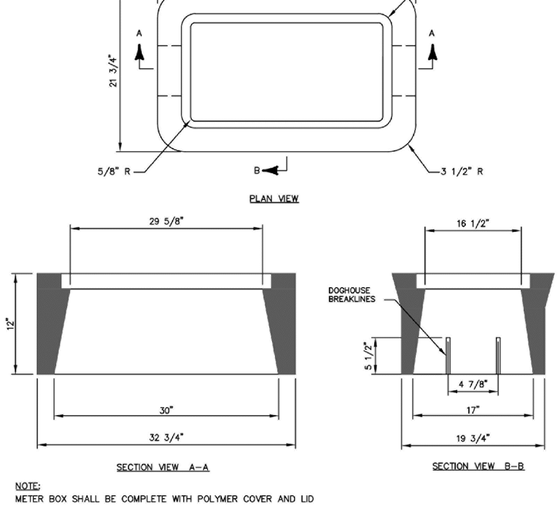
Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

For customer service, please send your fax to: 1-800-726-1998 or call 1-800-726-1994.

NDS

JUMBO PLASTIC METER BOX

NOT TO SCALE

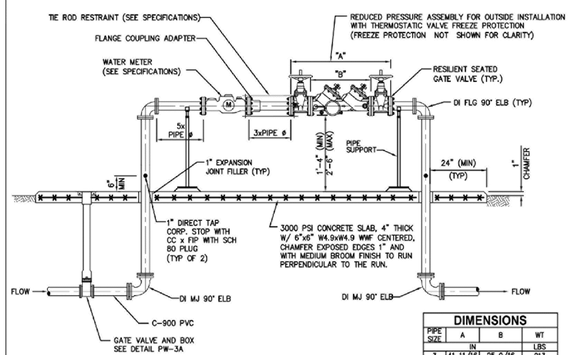


NOTE:

METER BOX SHALL BE COMPLETE WITH POLYMER COVER AND LID

JUMBO POLYMER METER BOX

NOT TO SCALE



DIMENSIONS			
PIPE SIZE	A	B	WT
	IN		LBS
3	41 11/16	25 9/16	213
4	50 7/16	32 5/16	360
6	59 11/16	38 9/16	601
8	69 3/16	46 1/16	892
10	84 3/16	58 1/16	1593

NOTES:
1. ALL ABOVE GROUND PIPE TO BE PAINTED WITH 2 COATS OF APPROVED BLUE PAINT.

REDUCED PRESSURE BACKFLOW PREVENTER W/ WATER METER DETAIL

NOT TO SCALE

Howey-in-the-Hills Standard Details — DETAIL PW-18 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL PW-20 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL PW-22 — DATE: FEB 2022

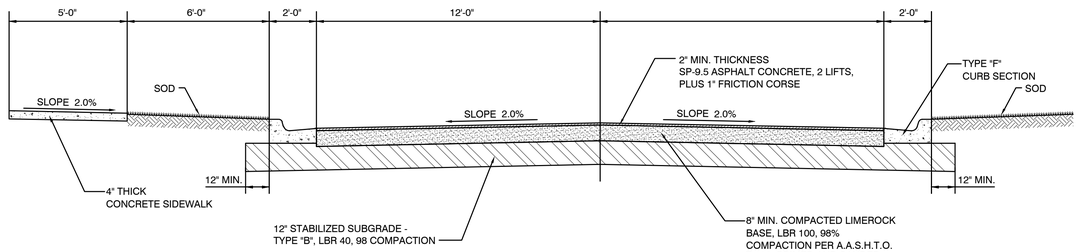
Howey-in-the-Hills Standard Details — DETAIL PW-23 — DATE: FEB 2022

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

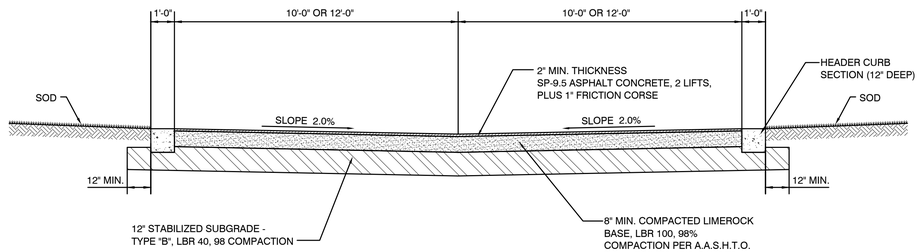
DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET CD-03

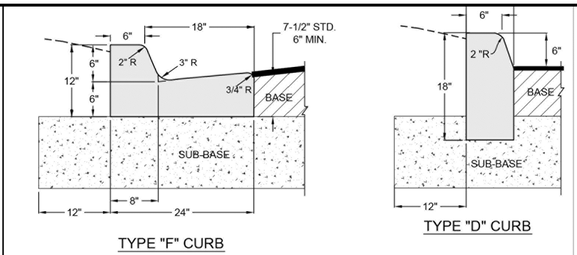
TROY E. MITCHELL, PE
REGISTERED ENG. 60190



DRIVE SECTION
NOT TO SCALE

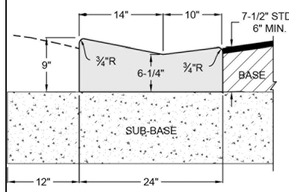


INVERTED CROWN DRIVE SECTION
NOT TO SCALE



TYPE "F" CURB

TYPE "D" CURB

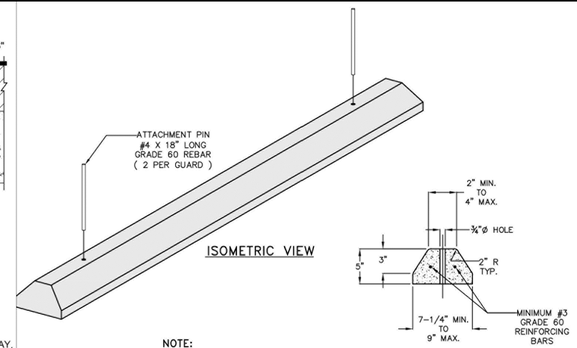


DROP CURB (MIAMI TYPE)

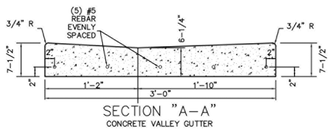
NOTES:

1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3,000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 300' CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.

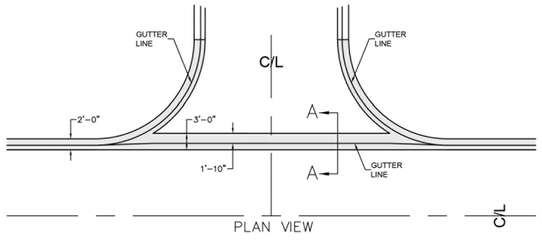
CONCRETE CURB (1) (N.T.S.)



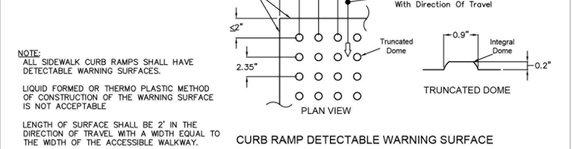
CONCRETE WHEEL STOP (N.T.S.)



SECTION "A-A"
CONCRETE VALLEY GUTTER



CONCRETE VALLEY GUTTER (N.T.S.)

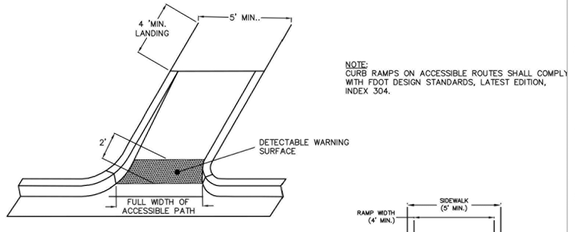


NOTE:
ALL SIDEWALK CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACES.

LIQUID FORMED OR THERMO PLASTIC METHOD OF CONSTRUCTION OF THE WARNING SURFACE IS NOT ACCEPTABLE

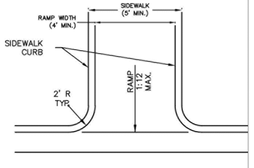
LENGTH OF SURFACE SHALL BE 2' IN THE DIRECTION OF TRAVEL WITH A WIDTH EQUAL TO THE WIDTH OF THE ACCESSIBLE WALKWAY.

CURB RAMP DETECTABLE WARNING SURFACE

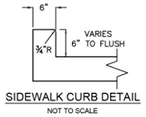


PICTORAL VIEW
CURB RAMP TYPE CR-E
FDOT INDEX 304

NOTE:
CURB RAMPS ON ACCESSIBLE ROUTES SHALL COMPLY WITH FDOT DESIGN STANDARDS, LATEST EDITION, INDEX 304.



PLAN VIEW
CURB RAMP TYPE CR-E
FDOT INDEX 304



SIDEWALK CURB DETAIL
NOT TO SCALE

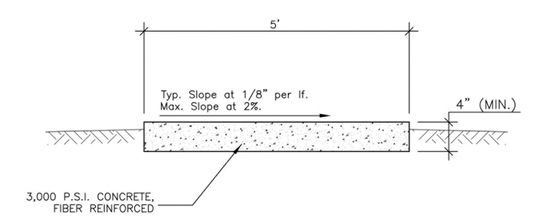
SIDEWALK CURB RAMP (N.T.S.)

CURB RAMP – GENERAL NOTES

ALL REFERENCES TO FDOT AND ADA STANDARDS SHALL MEAN THE LATEST EDITION

1. Public sidewalk curb ramps shall be constructed in the public right of way at locations that will provide continuous unobstructed pedestrian circulation paths to pedestrian areas, elements and facilities in the public right of way and to accessible pedestrian routes on adjacent sites. Curbed facilities with sidewalks and those without sidewalks are to have curb ramps constructed at all street intersections and at turnouts that have curbed returns. Partial curb returns shall extend to the limit prescribed by FDOT Index No. 515 to accommodate curb ramps. Ramps constructed at locations without sidewalks shall have a 5' x 5' landing constructed at the top of each ramp.
2. The location of curb ramps shall be as shown in the plans, but shall conform to F.D.O.T. standard details. All ramps, landings and curbs shall be constructed with minimum 3000 psi, Class A concrete and shall have minimum thickness of 6 inches. All concrete for pedestrian areas shall have a medium broom finish and standard color, unless specifically required by the plans.
3. Curb ramp running slopes at unrestrained sites shall not be steeper than 1 : 12 and cross slope shall not be steeper than 2%. Transition slopes shall not be steeper than 1 : 12. When altering existing pedestrian facilities where existing site development precludes the accommodation of a ramp slope of 1 : 12, a running slope between 1 : 12 and 1 : 10 is permitted for a rise of 6" maximum and a running slope of between 1 : 10 and 1 : 8 is permitted for a rise of 3" maximum.
4. If a curb ramp is located where pedestrians must walk across the ramp, then the walk shall have transitions with a maximum longitudinal slope of 1 : 12. and a 2% cross-slope. Ramps with curb returns may be used to provide guidance, avoid an obstacle, or when R/W limitations prohibit flares. Improvements for directional guidance are required whenever necessary to guide or re-direct the pedestrian towards the receiving ramp.
5. All curb ramps shall have detectable warning surfaces that extend the full width of the ramp and 24" from the back of curb in the direction of travel. Detectable warning surfaces shall be constructed in conformance with A.D.A. Standards For Accessible Design, A.D.A. Accessibility Guidelines, Section 4.29.2, Transition slopes are not to have detectable warnings. Dome pattern shall be in-line with direction of travel.
6. The color requirement for detectable warnings is to provide a dark-on-light visual contrast between the detectable warning surface and the adjacent walking surface. Where adjacent walking surfaces are dark colored and/or constructed with materials other than standard Class I Portland Cement Concrete in accordance with the Standard Specifications, the Contractor must provide a detectable warning surface color that provides the necessary contrast, with the adjacent concrete. The standard color is dark red brick or yellow colored detectable warning tile with standard concrete unless otherwise noted.
7. Where a curb ramp is constructed within existing curb, curb and gutter or sidewalk, the existing concrete shall be removed to the nearest joint beyond the transition slope so that no remaining section of concrete is less than 5' long. The existing sidewalk shall be removed to the nearest joint beyond the transition slope, if the ramp must extend into the sidewalk.
8. Expansion joints shall be placed at all perimeter edges abutting concrete, but no joints shall be made in the ramp itself.

SIDEWALK CURB RAMP GENERAL NOTES



SIDEWALK (N.T.S.)

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
02-27-25	3	F.D.E.P. STORMWATER SUBMITTAL
03-18-25	4	90% REVIEW SET
03-31-25	5	LAKE COUNTY DRIVEWAY PERMIT
04-07-25	6	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03-07-25
06-30-25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

HOWEY-IN-THE- HILLS DETAILS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET CD-04

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

Howey-in-the-Hills Standard Details — DETAIL R-11 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL R-12 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL R-13 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL R-15 — DATE: FEB 2022

Howey-in-the-Hills Standard Details — DETAIL R-15A — DATE: FEB 2022

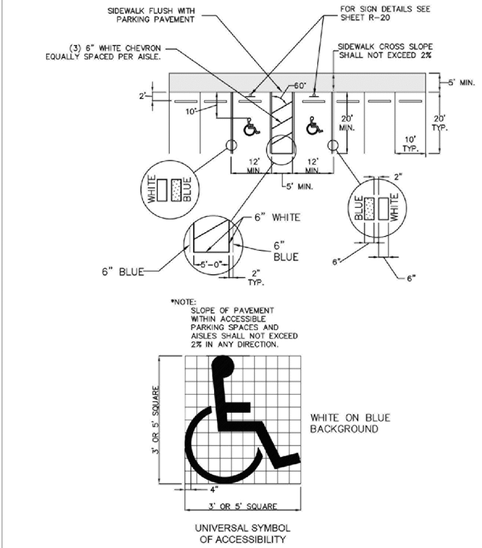
Howey-in-the-Hills Standard Details — DETAIL R-16 — DATE: FEB 2022

SIDEWALK CONSTRUCTION- GENERAL NOTES

1. SIDEWALKS, BIKE PATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3,000 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS.
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE PAVEMENT REMAINS WITHIN THE RIGHT-OF-WAY, OR ADJACENT EASEMENT DEDICATED FOR SIDEWALK USE, IS NOT DIMINISHED IN WIDTH, AND REMAINS AT LEAST 3 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND. UNDER NO CIRCUMSTANCES WILL THE SIDEWALK EXCEED ADA MAXIMUM GRADES.
4. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 120 FEET IN SIDEWALKS AND BIKE PATHS. JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.
5. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE, OR SAW-CUT WITHIN 24 HOURS OF PLACEMENT, TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5 FEET, WHICHEVER IS GREATEST.
6. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
7. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THEN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP. WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
8. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB.
10. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED, UNLESS APPROVED BY THE CITY ENGINEER.
11. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACK-FILLED, RE-GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.
12. THE CITY MAY REQUIRE ADDITIONAL JOINTS AROUND UTILITY STRUCTURES LOCATED WITHIN THE SIDEWALK.

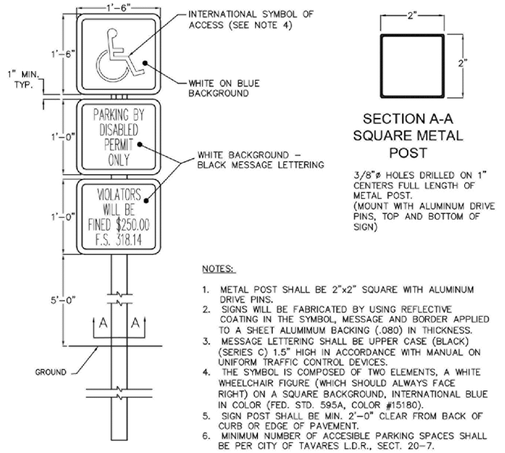
SIDEWALK - GENERAL NOTES

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL R-16A



ACCESSIBLE PARKING (N.T.S.)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL R-18



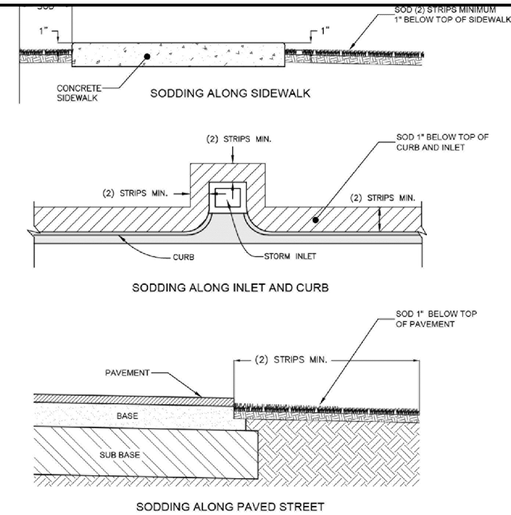
NOTES:

1. METAL POST SHALL BE 2"x2" SQUARE WITH ALUMINUM DRIVE PINS.
2. SIGNS WILL BE FABRICATED BY USING REFLECTIVE COATING IN THE SYMBOL, MESSAGE AND BORDER APPLIED TO A SHEET ALUMIMUM BACKING (.080) IN THICKNESS.
3. MESSAGE LETTERING SHALL BE UPPER CASE (BLACK) (SERIES C) 1.5" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEELCHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595A, COLOR #15180).
5. SIGN POST SHALL BE MIN. 2'-0" CLEAR FROM BACK OF CURB OR EDGE OF PAVEMENT.
6. MINIMUM NUMBER OF ACCESIBLE PARKING SPACES SHALL BE PER CITY OF TAVARES L.D.R., SECT. 20-7.

SIGN DETAIL

ACCESSIBLE PARKING SIGN (N.T.S.)

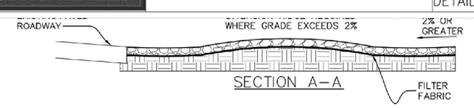
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL R-19

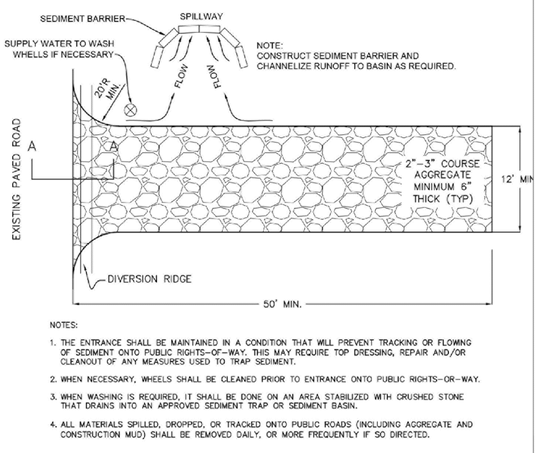


NOTE:
ANY EXISTING SODDED AREAS THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESODDED WITH LIKE SOD AND RESTORED TO ITS ORIGINAL STATE.

SOD PLANTING (N.T.S.)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL R-22



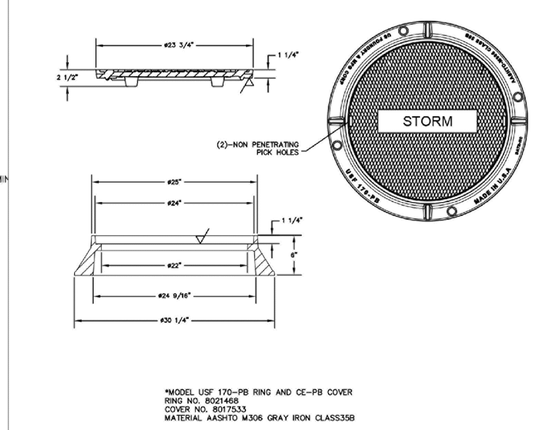


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OR-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED.

TEMPORARY CONSTRUCTION ENTRANCE (N.T.S.)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL R-23



*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 802146B
COVER NO. 8017533
MATERIAL AASHTO M306 GRAY IRON CLASS35B

STORMWATER MANHOLE COVER
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL SW-1

DATE	REVISION	
11.26.24	1	60% REVIEW SET
12.02.24	2	F.D.E.P. PERMIT SUBMITTAL
02.27.25	3	F.D.E.P. STORMWATER SUBMITTAL
03.18.25	4	90% REVIEW SET
03.31.25	5	LAKE COUNTY DRIVEWAY PERMIT
04.07.25	6	F.D.E.P. STORMWATER REVISION PER R.A.I. COMMENTS 03.07.25
06.30.25	7	BID SET
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

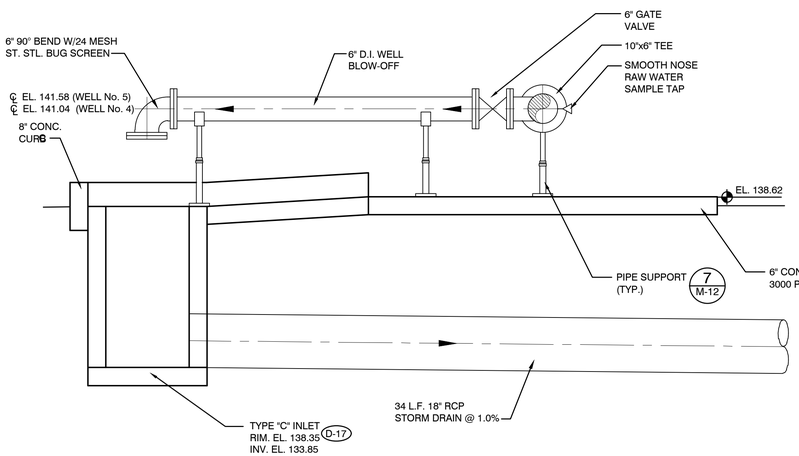
HOWEY-IN-THE- HILLS DETAILS

halff
Office: 352.343.8481
Fax: 352.343.8495
902 North Sinclair Ave.
Tavares, Florida 32778
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

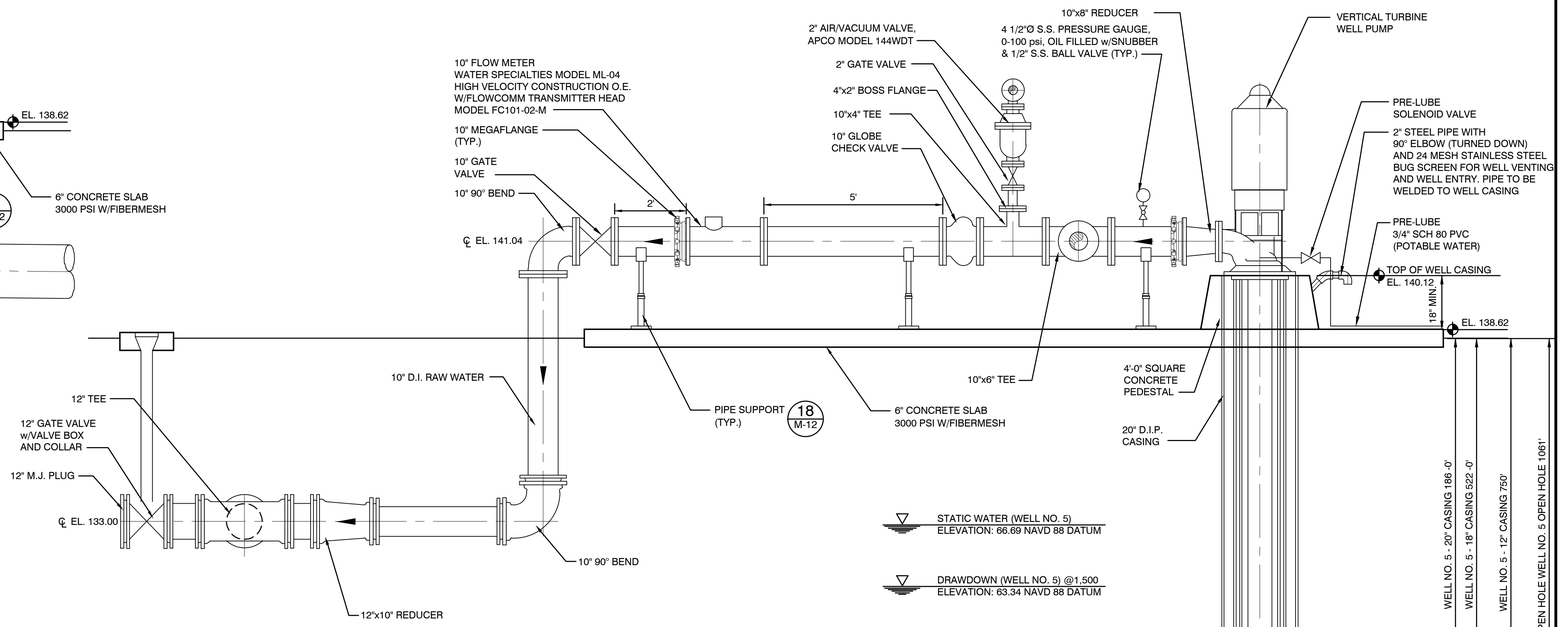
SHEET CD-05

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



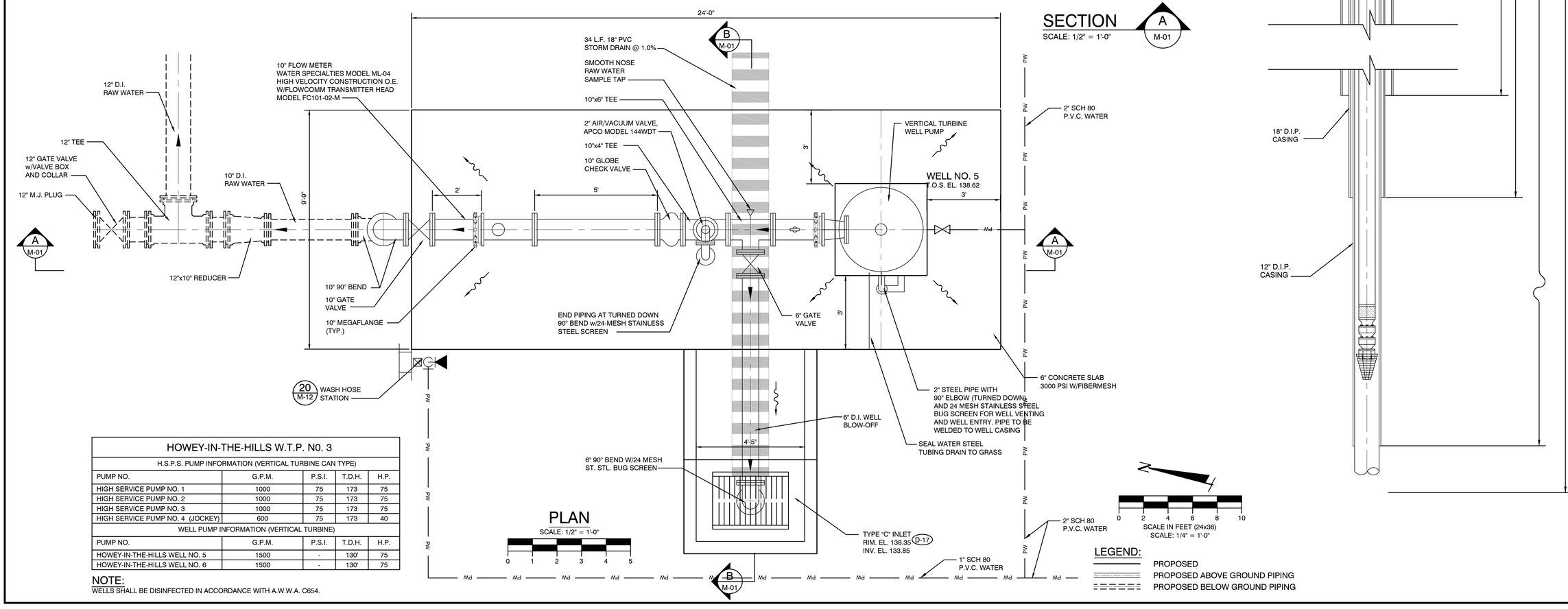
SECTION B / M-01

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



SECTION A / M-01

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



PLAN

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

0 1 2 3 4 5

SCALE IN FEET (24x36)
SCALE: 1/4" = 1'-0"

0 2 4 6 8 10

HOWEY-IN-THE-HILLS W.T.P. N0. 3

H.S.P.S. PUMP INFORMATION (VERTICAL TURBINE CAN TYPE)

PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HIGH SERVICE PUMP NO. 1	1000	75	173	75
HIGH SERVICE PUMP NO. 2	1000	75	173	75
HIGH SERVICE PUMP NO. 3	1000	75	173	75
HIGH SERVICE PUMP NO. 4 (JOCKEY)	600	75	173	40

WELL PUMP INFORMATION (VERTICAL TURBINE)

PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HOWEY-IN-THE-HILLS WELL NO. 5	1500	-	130'	75
HOWEY-IN-THE-HILLS WELL NO. 6	1500	-	130'	75

NOTE:
WELLS SHALL BE DISINFECTED IN ACCORDANCE WITH A.W.W.A. C654.

LEGEND:

- PROPOSED
- PROPOSED ABOVE GROUND PIPING
- PROPOSED BELOW GROUND PIPING

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

WELL NO. 5
PLAN VIEW AND SECTIONS

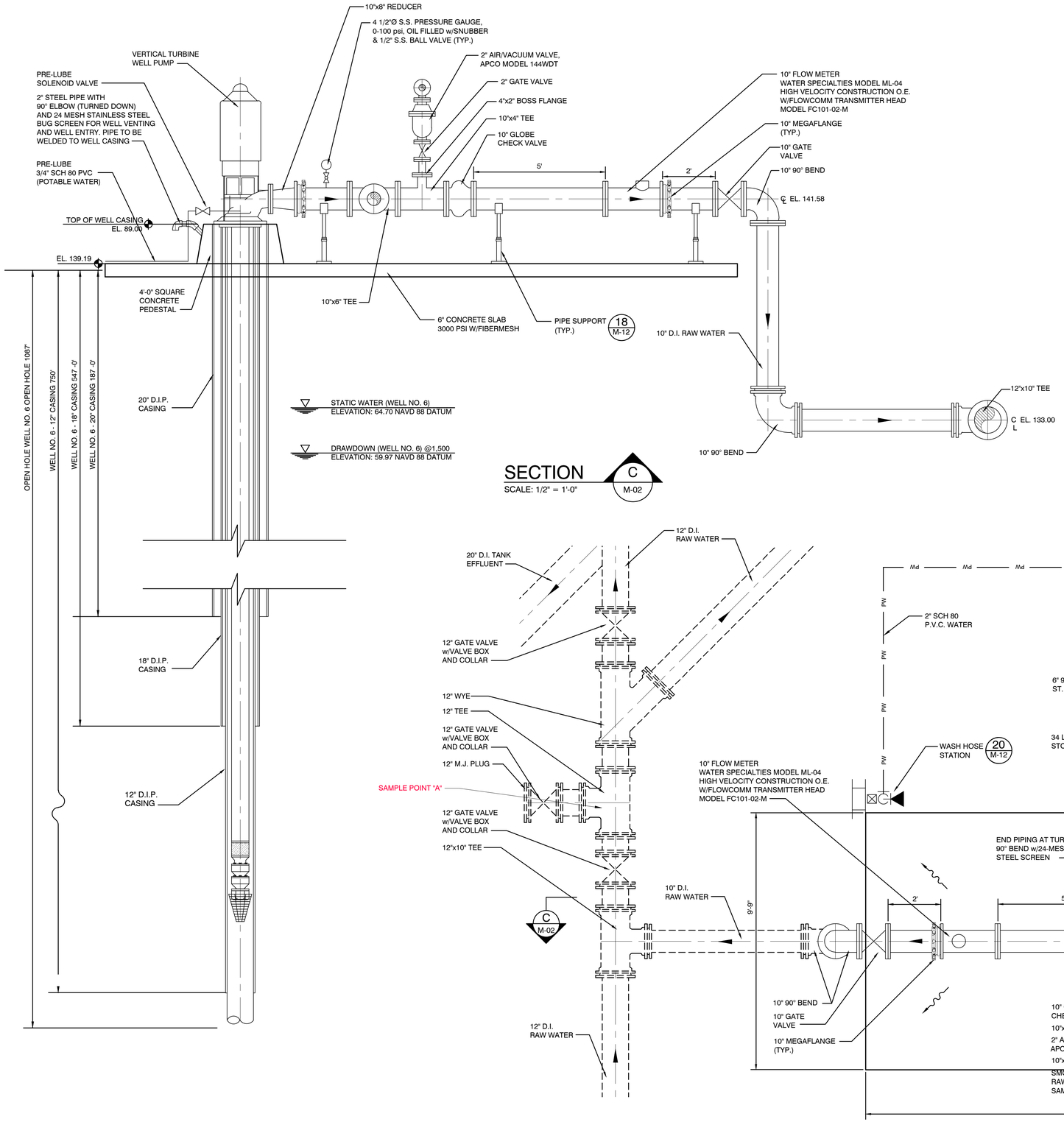
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-01

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



SECTION

C M-02

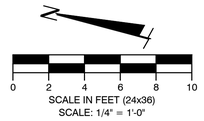
SCALE: 1/2" = 1'-0"

PLAN

B M-01

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

0 1 2 3 4 5



LEGEND:

- PROPOSED
- PROPOSED ABOVE GROUND PIPING
- PROPOSED BELOW GROUND PIPING

HOWEY-IN-THE-HILLS W.T.P. N0. 3				
H.S.P.S. PUMP INFORMATION (VERTICAL TURBINE CAN TYPE)				
PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HIGH SERVICE PUMP NO. 1	1000	75	173	75
HIGH SERVICE PUMP NO. 2	1000	75	173	75
HIGH SERVICE PUMP NO. 3	1000	75	173	75
HIGH SERVICE PUMP NO. 4 (JOCKEY)	600	75	173	00
WELL PUMP INFORMATION (VERTICAL TURBINE)				
PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HOWEY-IN-THE-HILLS WELL NO. 5	1500	-	130'	75
HOWEY-IN-THE-HILLS WELL NO. 6	1500	-	130'	75

NOTE:
WELLS SHALL BE DISINFECTED IN ACCORDANCE WITH A.W.W.A. C654.

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

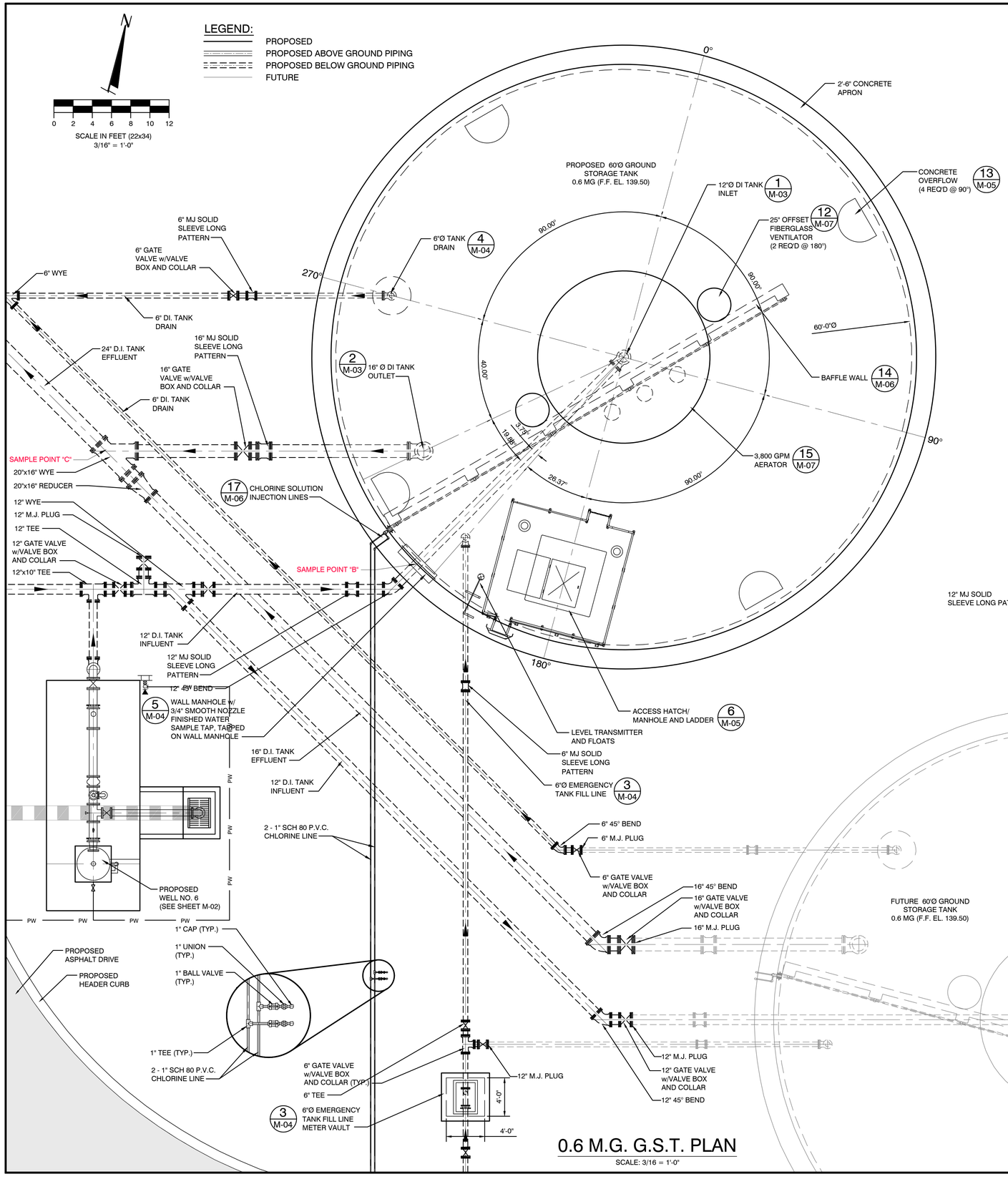
WELL NO. 6
PLAN VIEW AND SECTIONS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

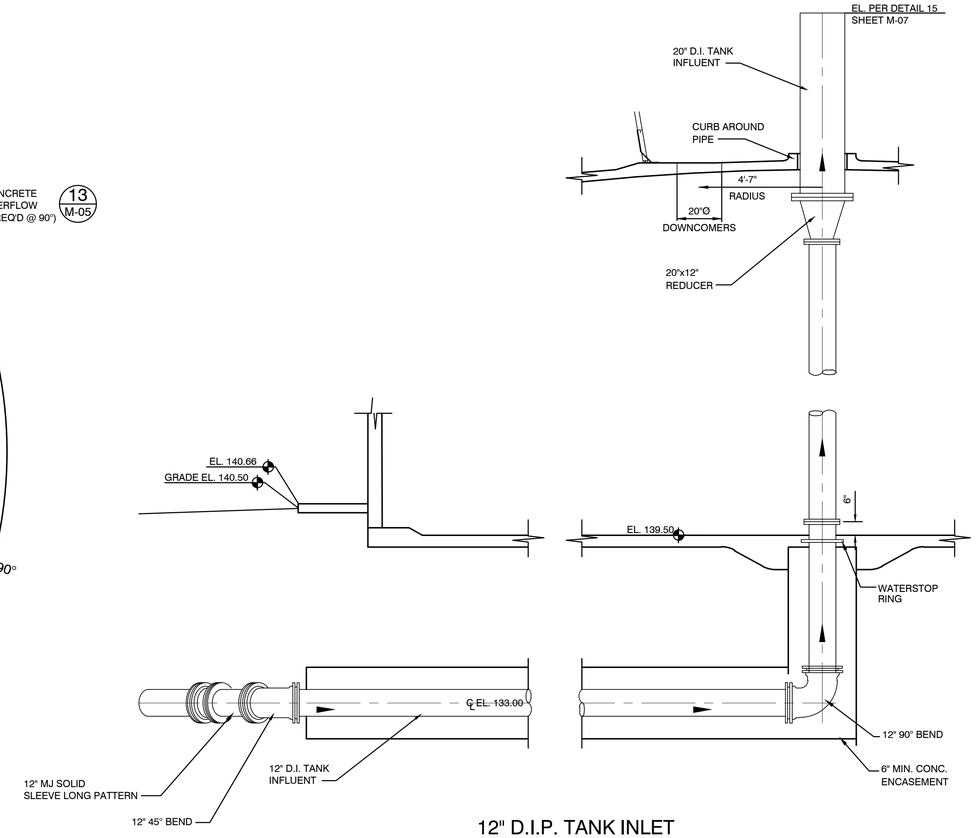
SHEET M-02

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



0.6 M.G. G.S.T. PLAN

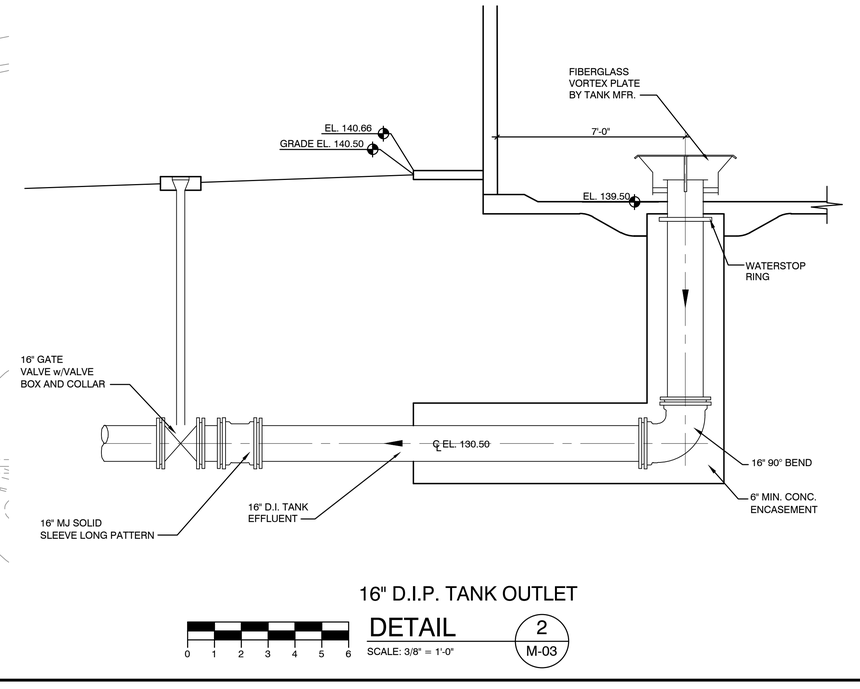
SCALE: 3/16" = 1'-0"



12" D.I.P. TANK INLET

DETAIL 1 M-03

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



16" D.I.P. TANK OUTLET

DETAIL 2 M-03

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

REVISION	DATE
1 60% REVIEW SET	11-26-24
2 F.D.E.P. PERMIT SUBMITTAL	12-02-24
3 90% REVIEW SET	03-18-25
4 BID SET	06-30-25
5	
6	
7	
8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK PLAN VIEW AND SECTIONS

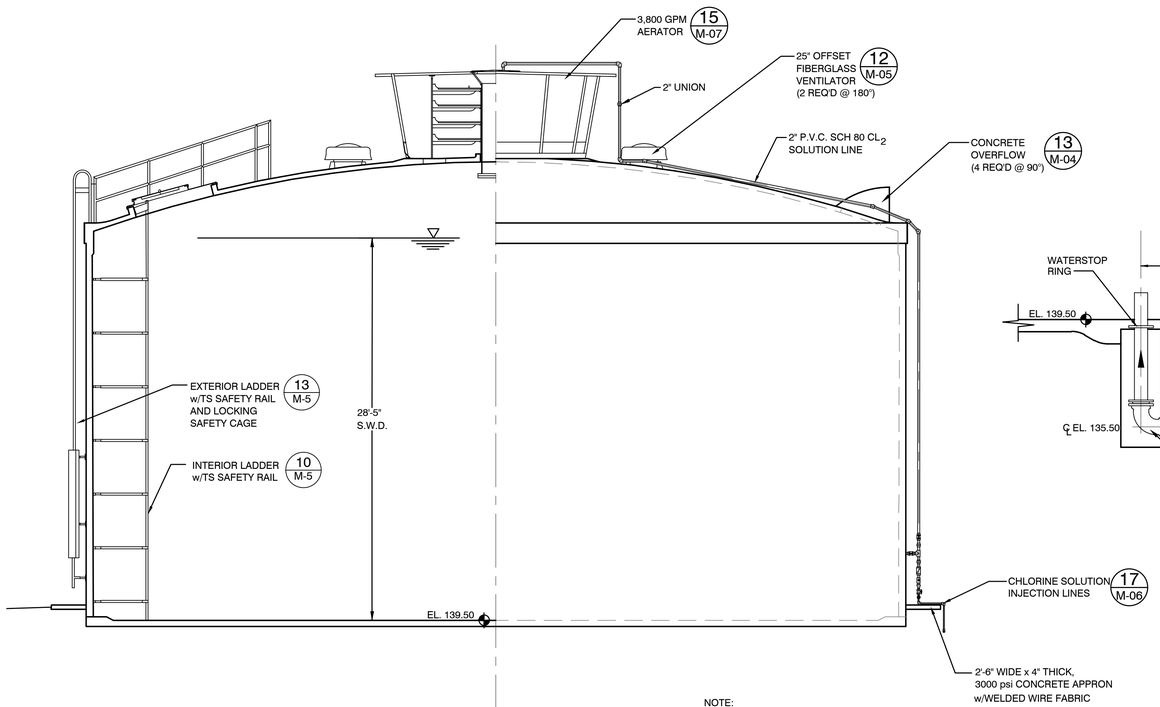
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-03

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

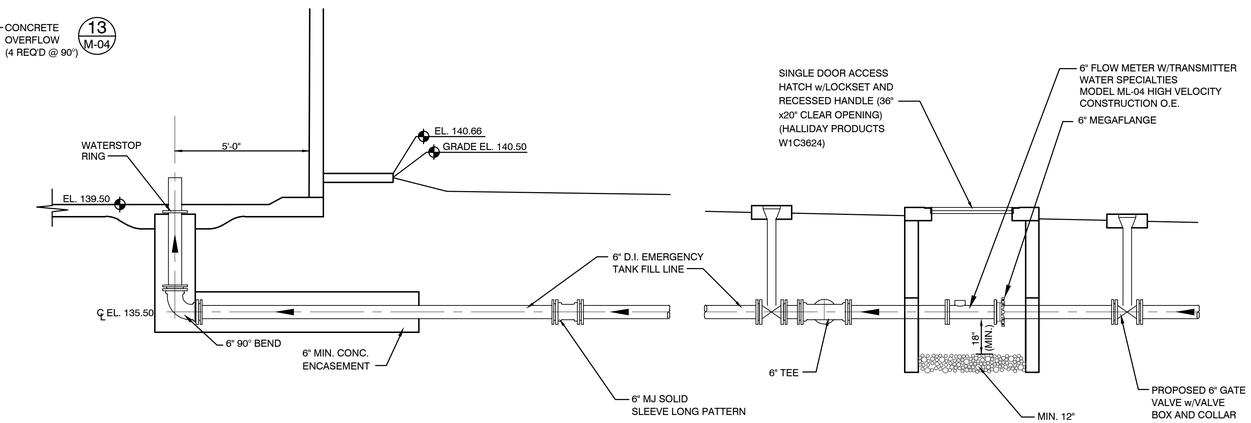


SECTION - ELEVATION

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

0 5 10 15 20 25

NOTE:
CHLORINE LINE PIPE SUPPORT AND BRACKET LOCATIONS PER GROUND STORAGE TANL MANUFACTURES RECOMMENDATIONS.

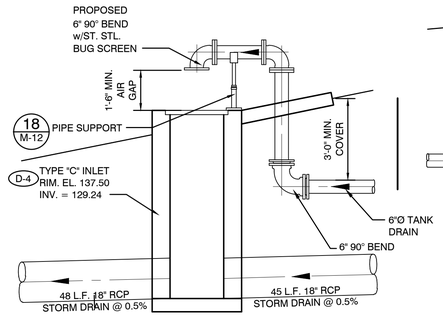


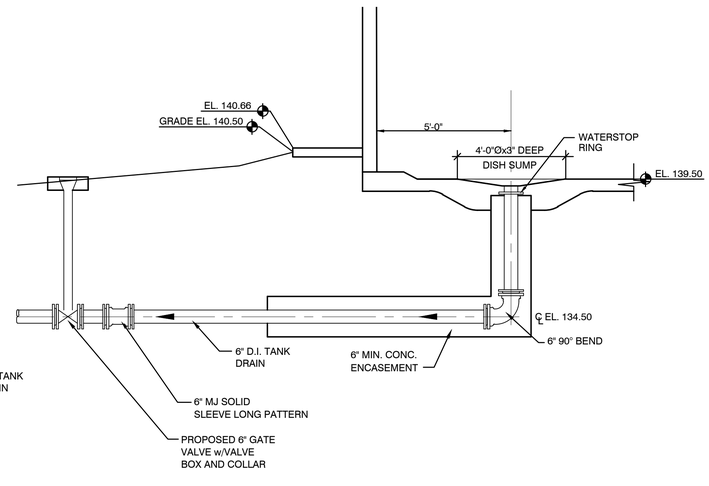
6"Ø EMERGENCY TANK FILL LINE AND METER VAULT

DETAIL 3 M-03

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

0 1 2 3 4 5 6



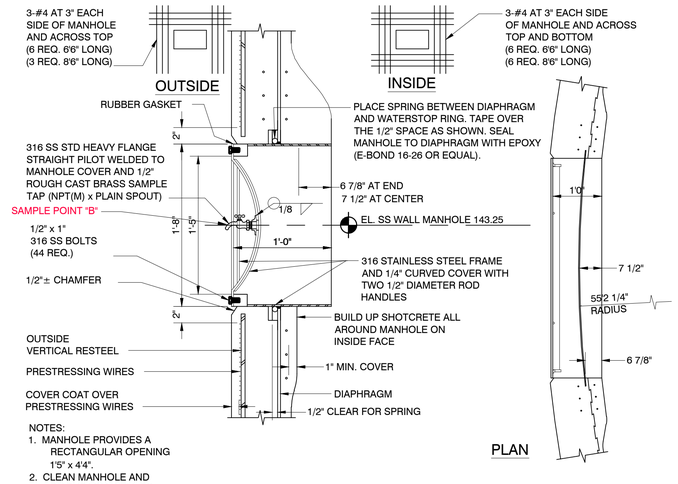


6" D.I.P. TANK DRAIN/AIR GAP

DETAIL 4 M-03

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

0 1 2 3 4 5 6



MANWAY AND SAMPLE TAP

DETAIL 5 M-03

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

0 1 2 3 4 5 6

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
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	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK
ELEVATION, SECTIONS AND DETAILS

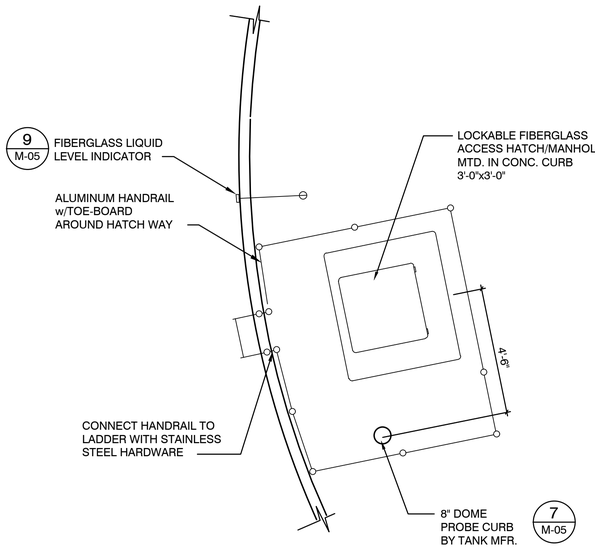
HOWEY-IN-THE-HILLS
Beautiful

halff
902 North Sinclair Ave.
Tavares, Florida 32778
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
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JOB NO.:	055783.001
FILE NAME:	-

SHEET M-04

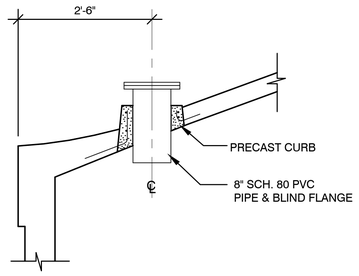
TROY E. MITCHELL, PE
REGISTERED ENG. 60190



ACCESS HATCH/MANHOLE

DETAIL 6 / M-03

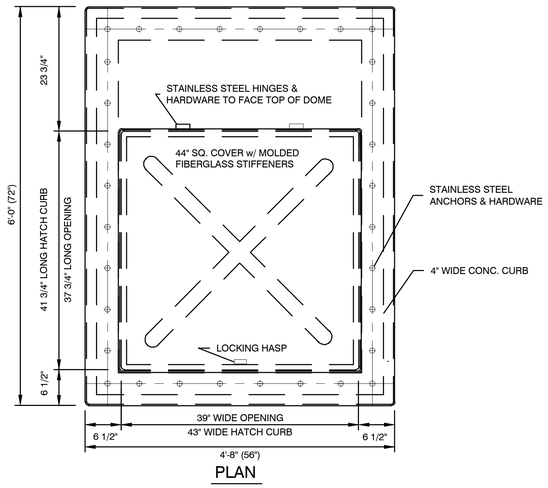
N.T.S.



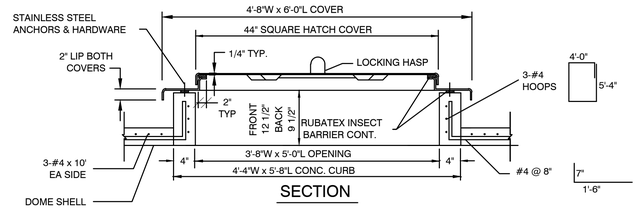
8" DOME PROBE CURB

DETAIL 7 / M-05

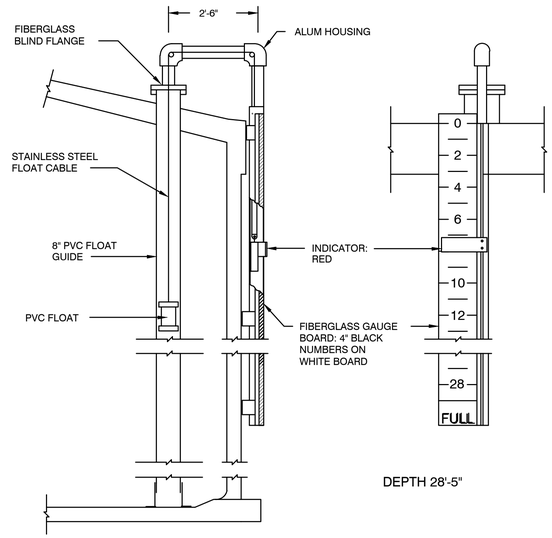
N.T.S.



PLAN



SECTION



DEPTH 28'-5"

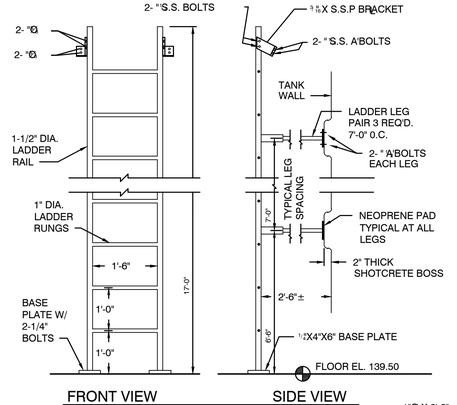
SIDE VIEW FRONT VIEW

LIQUID LEVEL INDICATOR

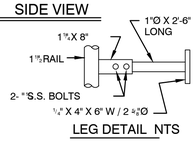
DETAIL 9 / M-05

N.T.S.

DIMENSION SCHEDULE			
A	14'-0"	D	12'-6"
B	2'-4"	E	5'-0"
C	2'-6"		



FRONT VIEW SIDE VIEW



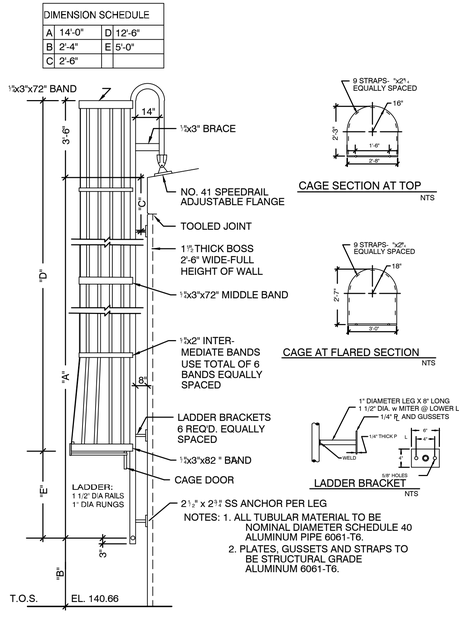
LEG DETAIL NTS

NOTES:
1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6.
2. PLATES AND GUSSETS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.

ALUMINUM INTERIOR LADDER

DETAIL 10 / M-04

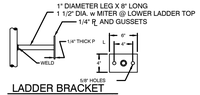
N.T.S.



NOTES: 1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6.
2. PLATES, GUSSETS AND STRAPS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.

CAGE SECTION AT TOP NTS

CAGE AT FLARED SECTION NTS

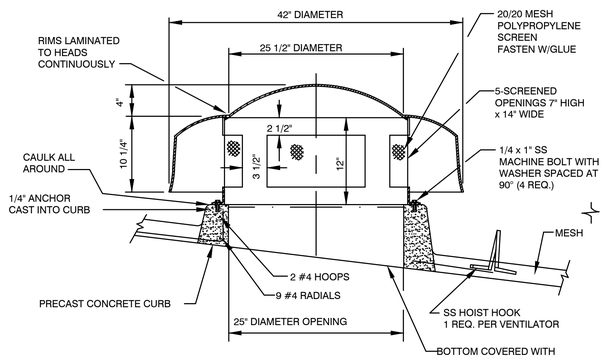


LADDER BRACKET NTS

EXTERIOR ALUMINUM LADDER w/SAFETY CAGE

DETAIL 11 / M-04

N.T.S.



25" FIBERGLASS VENTILATOR

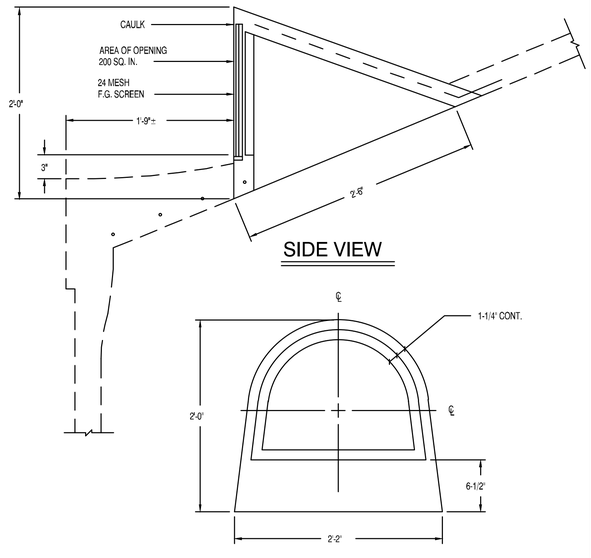
DETAIL 12 / M-03

N.T.S.

FIBERGLASS HATCH/MANHOLE COVER

DETAIL 8 / M-05

N.T.S.



SIDE VIEW

FRONT VIEW PRECAST CONCRETE OVERFLOW

DETAIL 13 / M-03

N.T.S.

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK
DETAILS

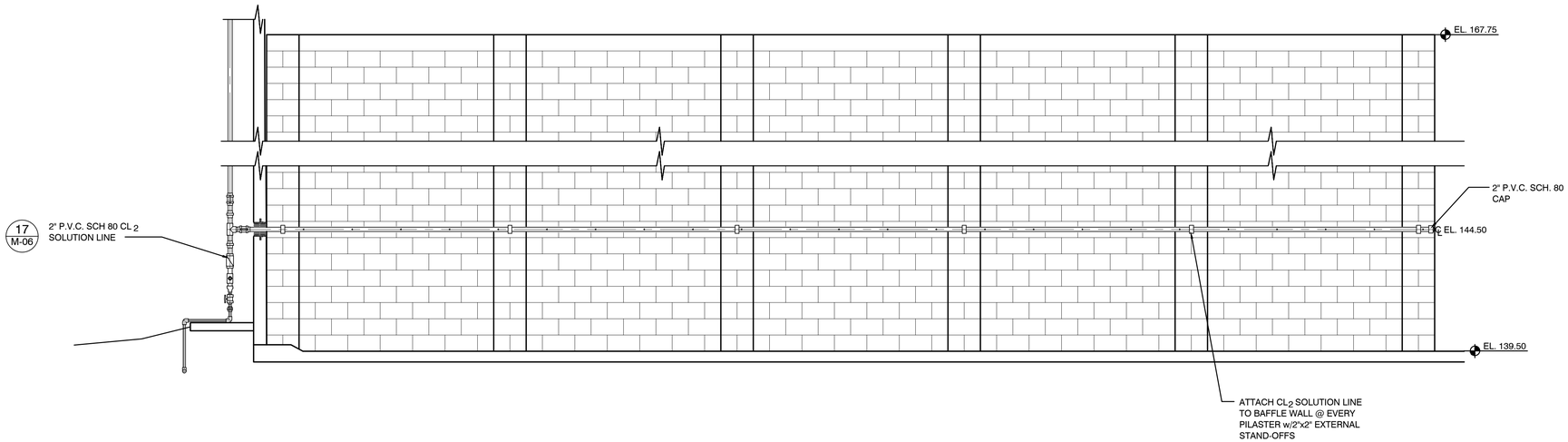
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
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DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
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CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-05

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

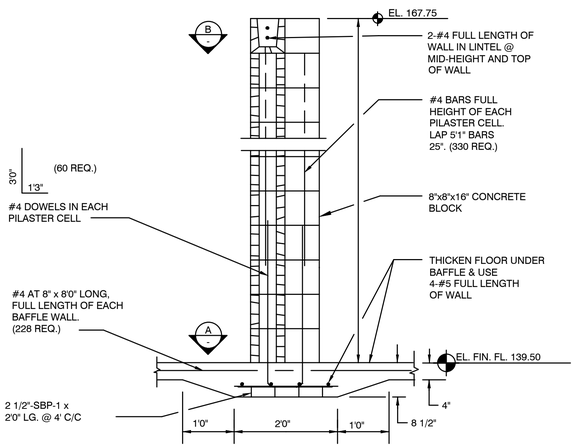


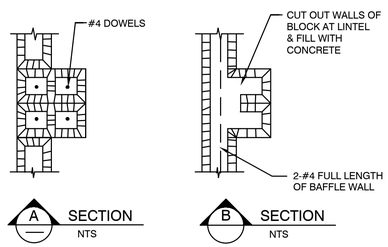
BAFFLE WALL

DETAIL 14 / M-03

SCALE: 3/8" = 1'

0 1 2 3 4 5 6

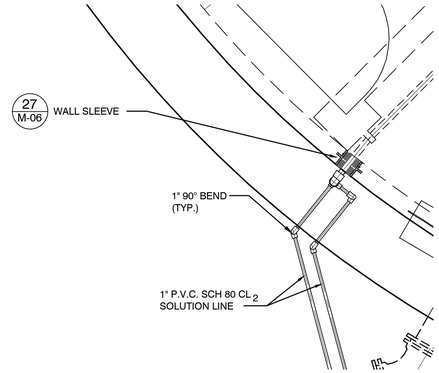




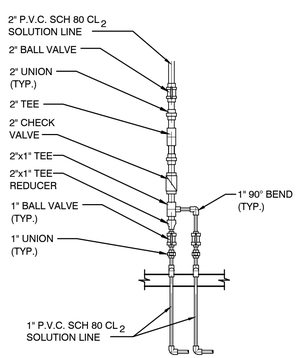
BAFFLE WALL

DETAIL 14 / M-06

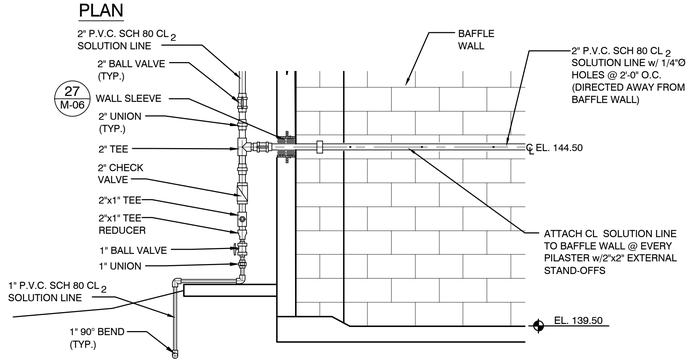
NOT TO SCALE



PLAN



SECTION



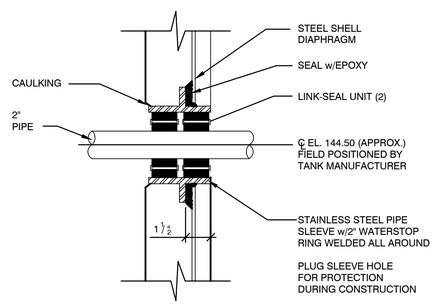
SECTION

CHLORINE INJECTION SOLUTION LINES

DETAIL 17 / M-03

NOT TO SCALE

NOTE:
CHLORINE LINE PIPE SUPPORT AND BRACKET LOCATIONS PER GROUND STORAGE TANL MANUFACTURES RECOMMENDATIONS.



WALL SLEEVE FOR
CHLORINE SOLUTION

DETAIL 27 / M-06

NOT TO SCALE

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK
BAFFLE WALL DETAILS AND
CHLORINE INJECTION BOX DETAIL

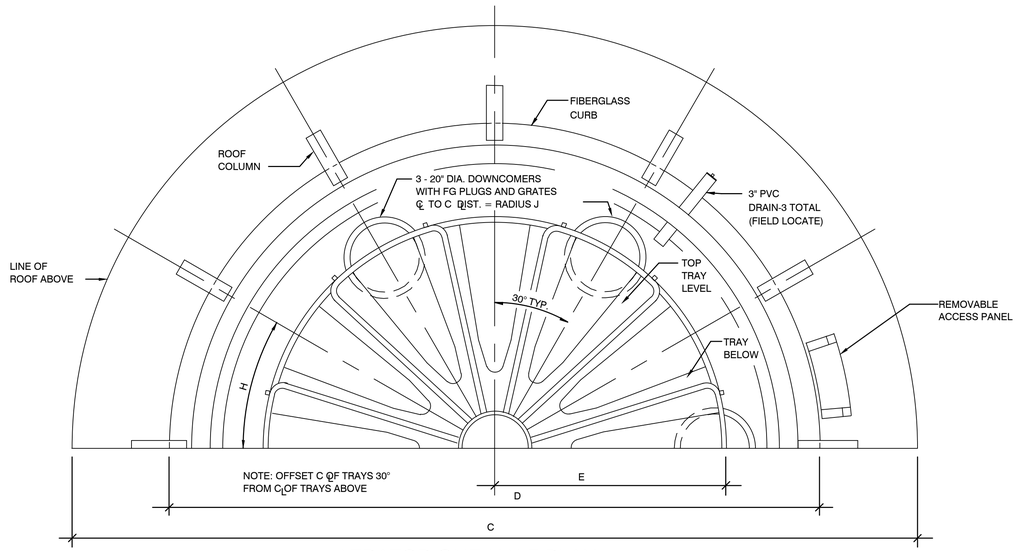
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

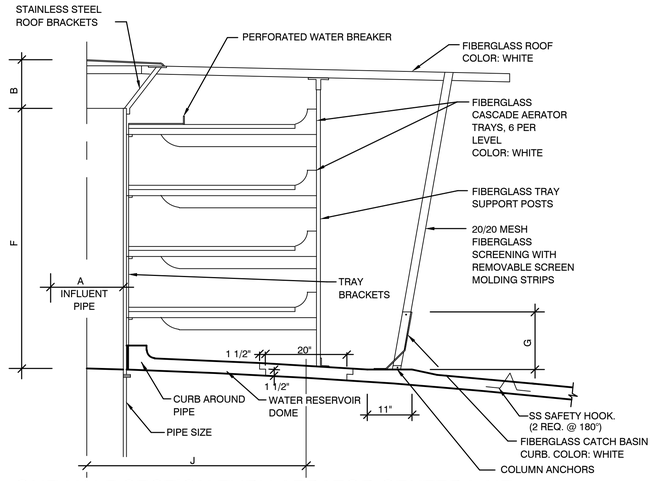
DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
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CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-06

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



AERATOR ONE-HALF PLAN



ONE-HALF SECTION THRU AERATOR CENTER LINE

FLOW CAPACITY AND DIMENSION TABLE											
FLOW CAPACITY GPM	TOTAL WEIR LENGTH	A PIPE SIZE AT AERATOR	B CLEARANCE	C ROOF DIAMETER	D CURB DIAMETER	E TRAY RADIUS	F PIPE HEIGHT	G CURB HEIGHT	H POST SPACE	I TOTAL TRAYS (LEVELS)	J DOWN-COMERS RADIUS
650	47'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	6 (1)	4'7"
1,300	94'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	12 (2)	4'7"
1,900	141'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	18 (3)	4'7"
2,600	188'0"	18"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	24 (4)	4'7"
* 3,800	276'0"	20"	1'6"	28'0"	23'4"	9'0"	5'4"	1'6"	15°	18 (3)	9'7"
5,000	368'0"	24"	1'6"	28'0"	23'4"	9'0"	5'4"	1'6"	15°	24 (4)	9'7"
6,400	460'0"	24"	1'6"	28'0"	23'4"	9'0"	7'2"	1'6"	15°	30 (5)	9'7"

CASCADE TRAY NATURAL DRAFT AERATORS

ALL FIBERGLASS CONSTRUCTION WITH STAINLESS STEEL HARDWARE

3,800 GPM AERATOR

DETAIL 15
N.T.S. 4 & 5

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK
PLAN VIEW AND SECTIONS

HOWEY-IN-THE-HILLS
Beautiful

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

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CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-07

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

PROPOSED ASPHALT PARKING

PROPOSED HEADER CURB

PROPOSED CONCRETE WHEEL STOP (TYP.)

OFFICE

LOBBY

BATHROOM

SHOWERS

5' WIDE CONCRETE SIDEWALK

ELECTRICAL ROOM
(SEE SHEET ELECTRICAL DRAWINGS)

EMERGENCY EYE WASH & SHOWER 16 M-10

2 - 1" SCH 80 P.V.C. CHLORINE LINE

CHLORINE ROOM
(SEE SHEET M-10)

STORMWATER MANHOLE D-13
RIM. EL. 137.25
INV. EL. 128.99

1" SCH 80 P.V.C. CHLORINE LINE

EMERGENCY GENERATOR

5' WIDE CONCRETE SIDEWALK

2" SCH 80 PVC WATER

3" SCH 80 PVC WATER

STORAGE AND MAINTENANCE ROOM

4" SCH. 40 P.V.C. DRAIN LINE (TYP.) @1.0% SLOPE

116 L.F. 18" RCP STORM DRAIN @ 2.56%

D M-09

E M-09

21 M-12 EQUIPMENT DRAIN (TYP.)

LAB

G M-09

HIGH SERVICE PUMP (TYP.)

9'-2"

8'

8'

8'

5'-9"

H.S.P. NO. 1

H.S.P. NO. 2

H.S.P. NO. 3

H.S.P. NO. 4 JOCKEY PUMP

PUMP ROOM

10"FLEX COUPLING (TYP.)

8" MEGAFLANGE (TYP.)

10"x8" ECCENTRIC REDUCER (TYP.)

10" CHECK VALVE (TYP.)

10" GATE VALVE (TYP.)

20"x10" TEE (TYP.)

6" FLEX COUPLING

6" MEGAFLANGE

6" CHECK VALVE

10"x6" ECCENTRIC REDUCER

F M-09

6" D.I. TANK DRAIN

14" SCH 40 PVC DRAIN @ 1.0%

6"Ø TANK DRAIN/ AIR GAP 3 M-4

TYPE "C" INLET GRATE = 137.55 INV. = 129.24 D-4

481 L.F. 18" RCP STORM DRAIN @ 0.5%

20" 45° BEND

20" D.I. TANK EFFLUENT

CHAIN LINK FENCE

12" GATE VALVE w/VALVE BOX AND COLLAR (TYP.)

20" M.J. PLUG

20"x12" TEE (TYP.) (℄ EL. 130.50)

D M-11

E M-09

4" SCH. 40 P.V.C. DRAIN LINE (TYP.) @1.0% SLOPE

20"x12" ECCENTRIC REDUCER (TYP.)

12" GATE VALVE (TYP.)

12" MAG METER

12" MEGAFLANGE

3/4" SERVICE SADDLE

WASH HOSE STATION (TYP.) 20 M-12

3" SCH 80 PVC WATER

3/4" SMOOTH NOZZLE FINISHED WATER SAMPLE TAP

SAMPLE POINT "D"

27 M-12 3" REDUCED PRESSURE BACKFLOW PREVENTER w/WATER METER

POST CHLORINATION INJECTION POINT 22 M-11

1" SERVICE SADDLE

C.O. 23 M-12

F M-09

3" SERVICE SADDLE

20" 45° BEND (TURNED UP)

20" 45° BEND (TURNED DOWN)

3" AIR/VACUUM VALVE, APCO MODEL 146WDT

12" D.I. WATER MAIN

20"x12" REDUCER

20" TEE

20"x16" REDUCER

16" D.I. WATER MAIN

0 2 4 6 8 10

SCALE IN FEET (24x36)
SCALE: 1/4" = 1'-0"

PLAN

LEGEND:

PROPOSED

PROPOSED ABOVE GROUND PIPING

PROPOSED BELOW GROUND PIPING

HOWEY-IN-THE-HILLS W.T.P. NO. 3

H.S.P.S. PUMP INFORMATION (VERTICAL TURBINE CAN TYPE)

PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HIGH SERVICE PUMP NO. 1	1000	75	173	75
HIGH SERVICE PUMP NO. 2	1000	75	173	75
HIGH SERVICE PUMP NO. 3	1000	75	173	75
HIGH SERVICE PUMP NO. 4 (JOCKEY)	600	75	173	40

WELL PUMP INFORMATION (VERTICAL TURBINE)

PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HOWEY-IN-THE-HILLS WELL NO. 5	1500	-	130'	75
HOWEY-IN-THE-HILLS WELL NO. 6	1500	-	130'	75

NOTE:
WELLS SHALL BE DISINFECTED IN ACCORDANCE WITH A.W.W.A. C654.

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP STATION
PLAN VIEW

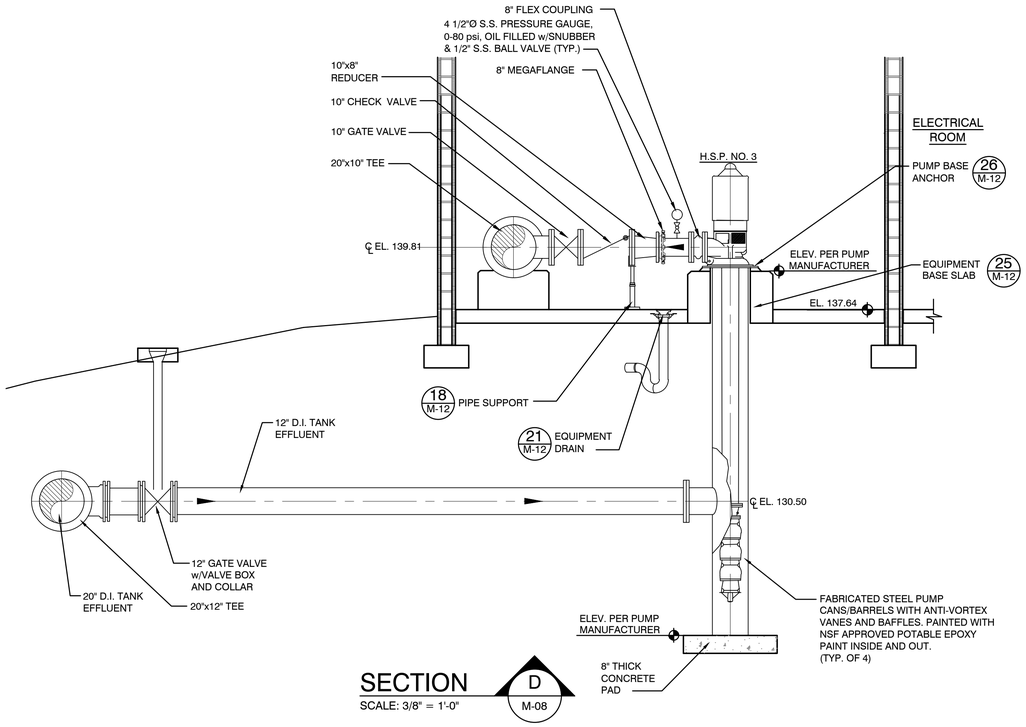
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

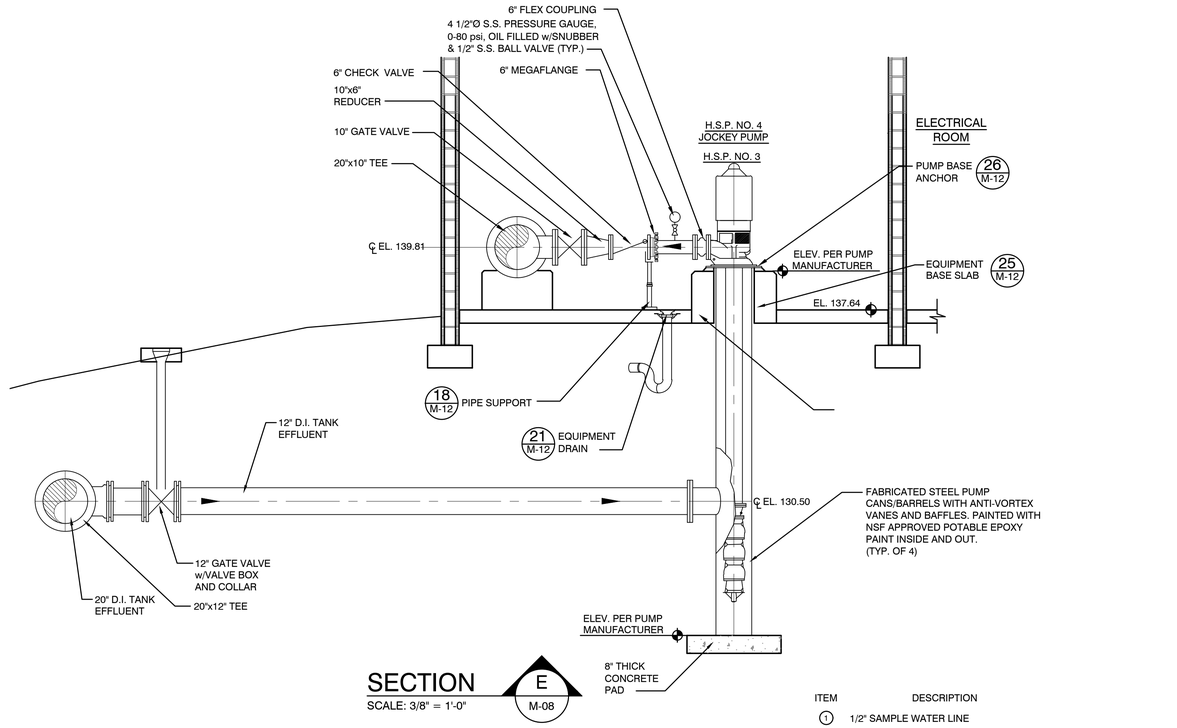
DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-08

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

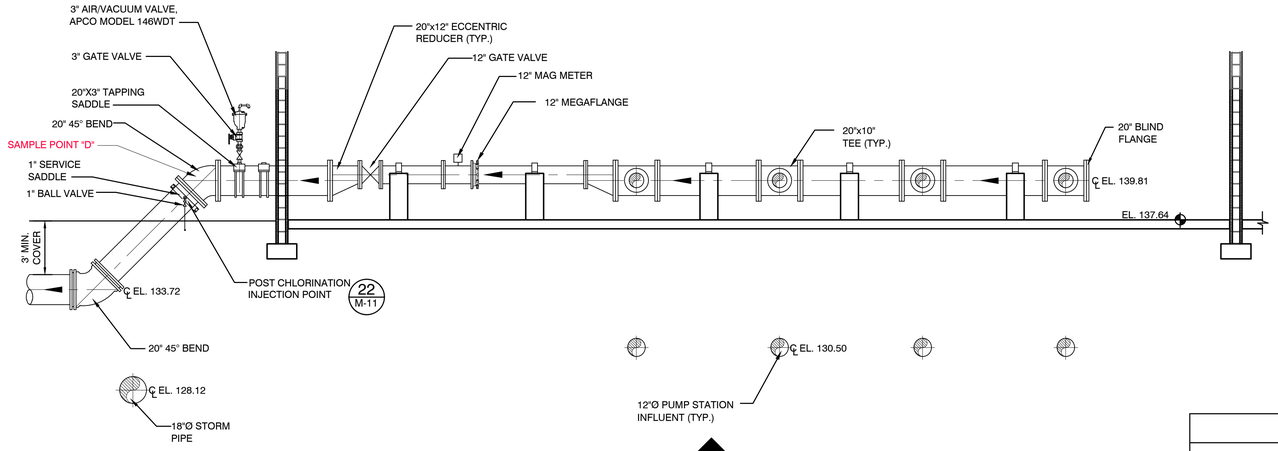


SECTION D M-08
SCALE: 3/8" = 1'-0"



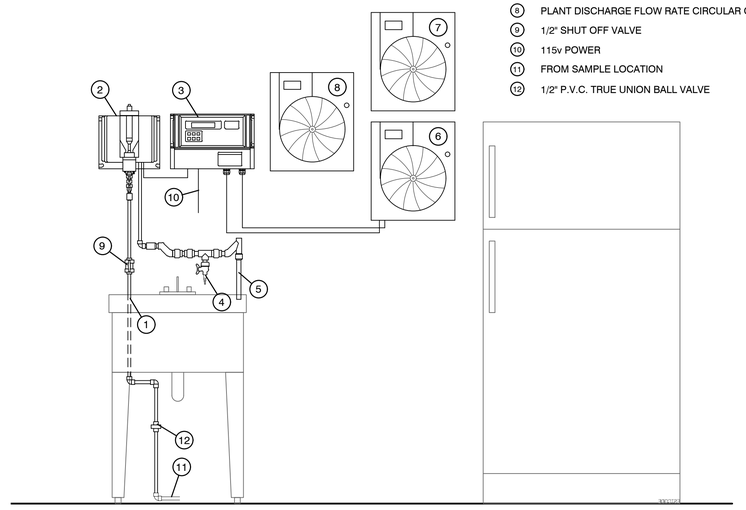
SECTION E M-08
SCALE: 3/8" = 1'-0"

ITEM	DESCRIPTION
1	1/2" SAMPLE WATER LINE
2	CHLORINE/PH MEASURING CELL
3	WALLACE & TIERNAN DEPOLOX 3 PLUS ANALYZER WITH PLUG-IN MODULES FOR CHLORINE AND PH
4	SAMPLE VALVE
5	DRAIN LINE
6	CHLORINE/PH RESIDUAL CIRCULAR CHART RECORDER (2 PEN)
7	SYSTEM PRESSURE CIRCULAR CHART RECORDER (PSI)
8	PLANT DISCHARGE FLOW RATE CIRCULAR CHART RECORDER (GPM)
9	1/2" SHUT OFF VALVE
10	115v POWER
11	FROM SAMPLE LOCATION
12	1/2" P.V.C. TRUE UNION BALL VALVE



SECTION F M-08
SCALE: 1/4" = 1'-0"

0 2 4 6 8 10



SECTION G M-08
SCALE: 1" = 1'-0"

HOWEY-IN-THE-HILLS W.T.P. N0. 3				
H.S.P.S. PUMP INFORMATION (VERTICAL TURBINE CAN TYPE)				
PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HIGH SERVICE PUMP NO. 1	1000	75	173	75
HIGH SERVICE PUMP NO. 2	1000	75	173	75
HIGH SERVICE PUMP NO. 3	1000	75	173	75
HIGH SERVICE PUMP NO. 4 (JOCKEY)	600	75	173	40
WELL PUMP INFORMATION (VERTICAL TURBINE)				
PUMP NO.	G.P.M.	P.S.I.	T.D.H.	H.P.
HOWEY-IN-THE-HILLS WELL NO. 5	1500	-	130'	75
HOWEY-IN-THE-HILLS WELL NO. 6	1500	-	130'	75

LEGEND:
- PROPOSED
- PROPOSED ABOVE GROUND PIPING
- PROPOSED BELOW GROUND PIPING

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP STATION SECTIONS

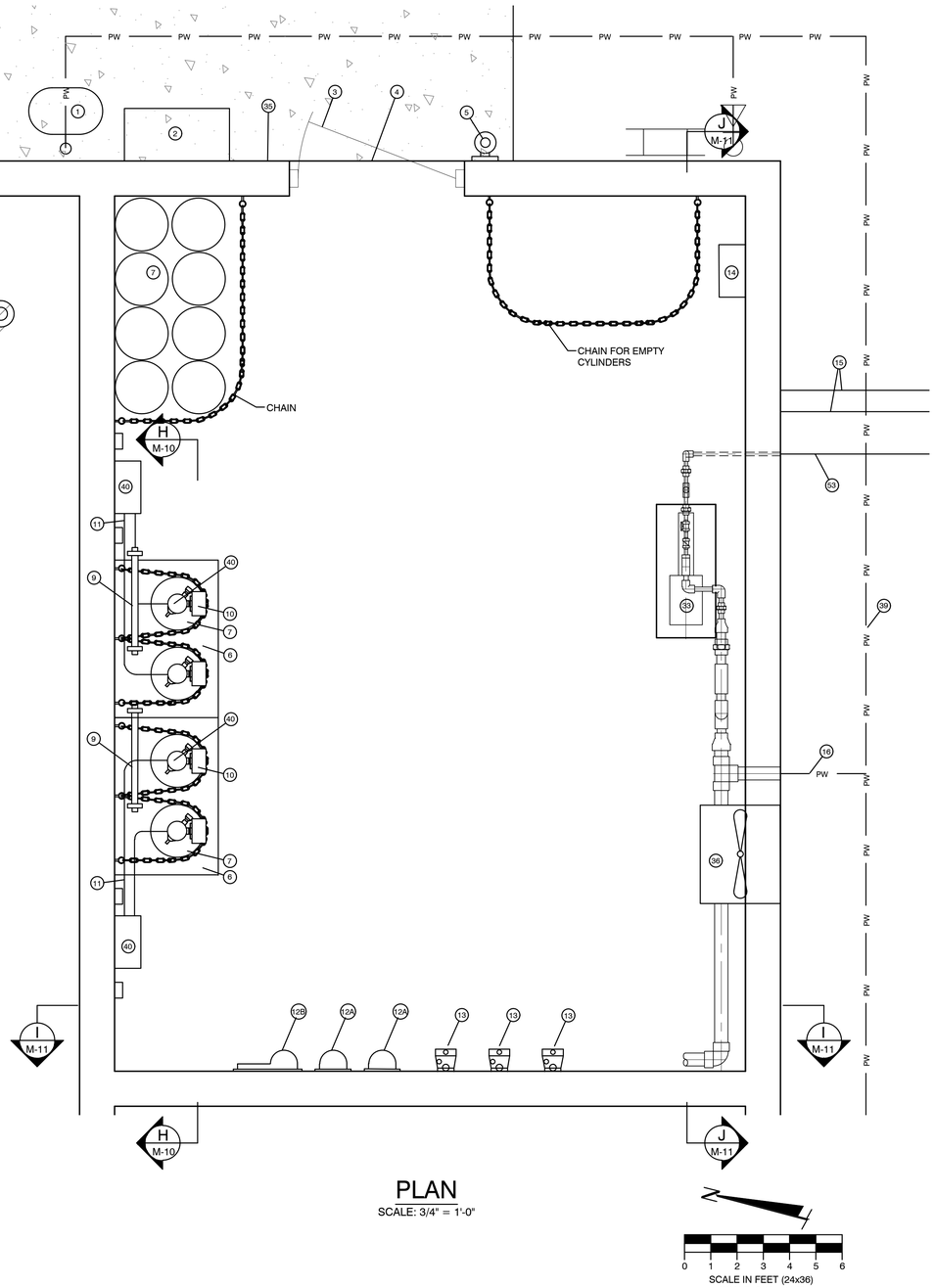
HOWEY-IN-THE-HILLS
Beautiful

halff
Office: 352.343.8481
Fax: 352.343.8495
902 North Sinclair Ave.
Tavares, Florida 32778
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
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JOB NO.:	055783.001
FILE NAME:	-

SHEET M-09

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



PLAN

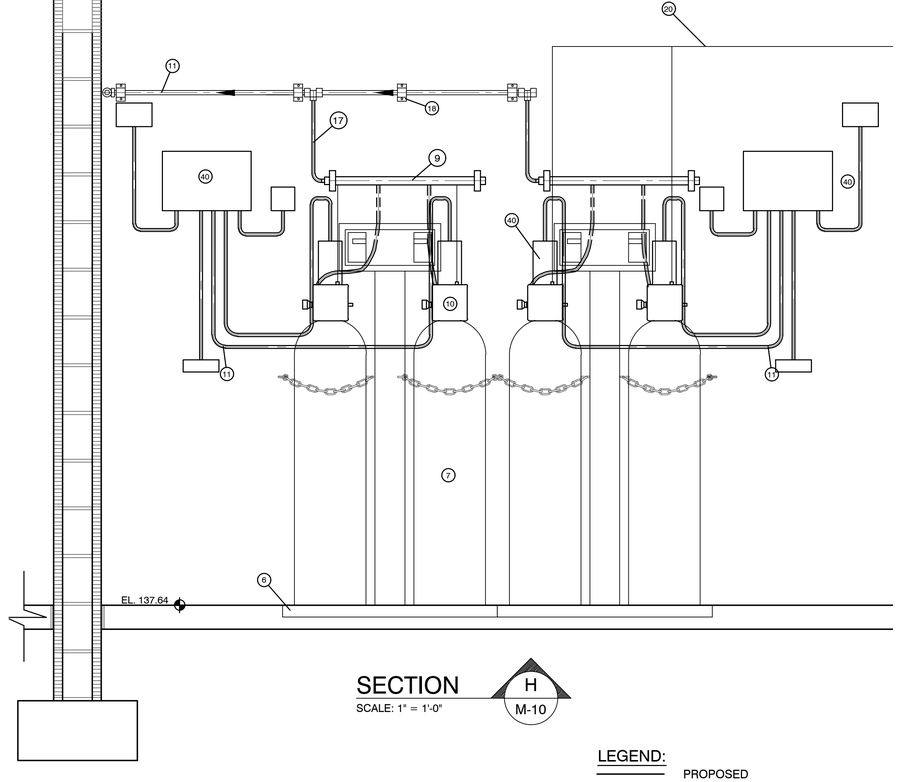
SCALE: 3/4" = 1'-0"

ITEM	DESCRIPTION
1	EMERGENCY EYE WASH AND SHOWER STATION (17 / M-10)
2	AIR PACK, GLOVES, FACE SHIELD AND FITTED WRENCH INSIDE ENCLOSURE
3	3'x7" DOOR w/WINDOW AND WARNING SIGN
4	1'-0"x3'-0" LOUVER ABOVE DOOR
5	ALARM LIGHT AND HORN
6	TWO CYLINDER SCALE (WALLACE & TIERNAN SERIES 55-340) w/CYLINDER CHAINS
7	150 lb. CHLORINE CYLINDER
8	0-150 psi PRESSURE GAUGE
9	MANIFOLD
10	AUTOSWITCH REGULATOR (2105)
11	3/4" P.V.C. SCHEDULE 80 VACUUM GAS LINE
12A	5" ROTAMETER CONTROL VALVE (WALLACE & TIERNAN S10K)
12B	AUTOMATIC CHLORINATOR (WALLACE & TIERNAN S10K)
13	1" FIXED THROAT INJECTOR
14	CHLORINE LEAK DETECTOR (ACUTEC 35)
15	1" P.V.C. SCHEDULE 80 CHLORINE SOLUTION SUPPLY LINE (TO GROUND STORAGE TANK)
16	3" POTABLE WATER SUPPLY LINE
17	1/2" FLEXIBLE LINE
18	STAINLESS STEEL PIPE HANGER
19	3/4" P.V.C. SCHEDULE 80 PIPE FITTING
20	3/8" P.V.C. SCHEDULE 80 VENT LINE w/SCREEN
21	1" P.V.C. SCHEDULE 80 PIPE FITTING
22	3" P.V.C. SCHEDULE 80 PIPE FITTING
23	LOSS OF CAPABILITY WARNING PANEL
24	HIGH AND LOW VACUUM SWITCH (AAA 3380)
25	1/2" P.V.C. TRUE UNION BALL VALVE

ITEM	DESCRIPTION
26	1" P.V.C. TRUE UNION BALL VALVE
27	1" SOLENOID VALVE (ASCO)
28	SOLENOID BY-PASS LOOP
29	1" UNION
30	0-150 psi PRESSURE GAUGE w/DIAPHRAGM PROTECTOR
31	3" "Y" STRAINER
32	TO EXTERIOR ALARM LIGHT AND HORN
33	BOOSTER PUMP
34	3/4" POTABLE WATER SUPPLY LINE
35	EXTERIOR SWITCH FOR INTERIOR LIGHTS AND EXHAUST FAN
36	EXHAUST FAN
37	8'-0"x4'-0"x3/4", 8'-0"x4'-0"x3/4" AND 8'-0"x2'-0"x3/4 MARINE PLYWOOD PANEL - PAINTED
38	ALUMINUM SHIELD COVERING 3" WATER SUPPLY LINE AND 3" CL SOLUTION LINES
39	2" POTABLE WATER SUPPLY LINE
40	HALOGEN EMERGENCY SHUT-OFF
41	1" P.V.C. TRUE UNION BALL VALVE
42	1" PVC UNION
43	1" IPEX PISTON CHECK VALVE
44	-
45	-
46	2"x1" PVC REDUCER
47	2" PVC UNION
48	2" "Y" STRAINER
49	2" P.V.C. SCHEDULE 80 PIPE FITTING
50	3"x2" PVC REDUCER
52	2" P.V.C. TRUE UNION BALL VALVE
53	1" P.V.C. SCHEDULE 80 CHLORINE SOLUTION SUPPLY LINE (POST CHLORINATION)

NOTES:

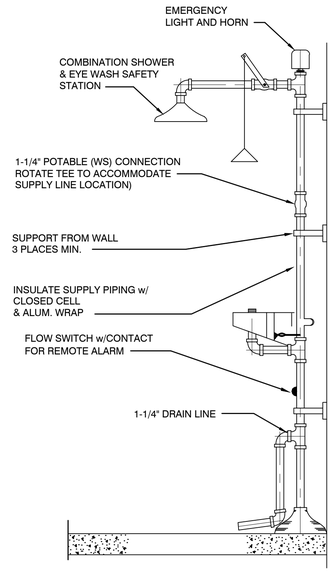
1. ALL CHLORINE PIPING SHALL BE LABELED w/ IDENTIFICATION TAGS AND FLOW DIRECTION ARROWS.
2. ALL CHLORINE PIPING SHALL BE PAINTED SAFETY YELLOW.



SECTION

SCALE: 1" = 1'-0"

H M-10



EMERGENCY EYE WASH AND SHOWER

DETAIL

N.T.S.

16 / M-10

LEGEND:

- PROPOSED
- PROPOSED ABOVE GROUND PIPING
- PROPOSED BELOW GROUND PIPING

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

CHLORINE ROOM PLAN AND DETAIL

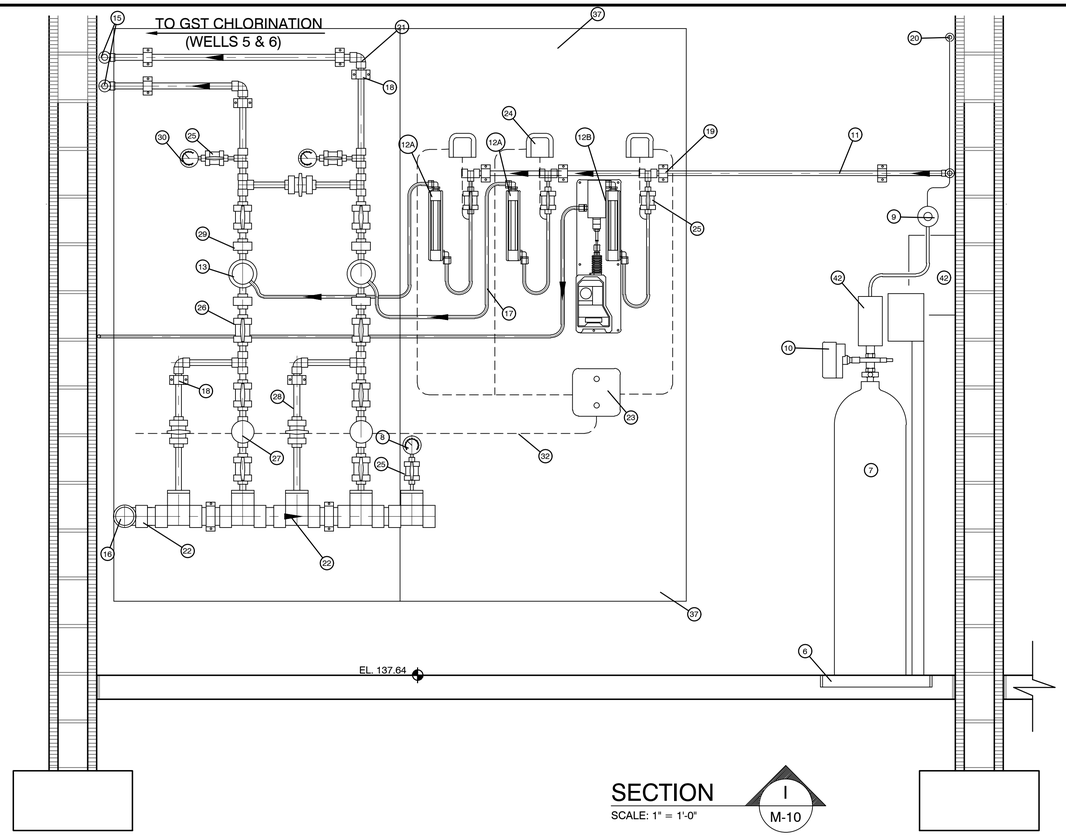
HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-10

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



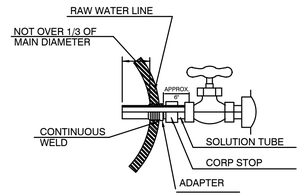
SECTION I M-10
SCALE: 1" = 1'-0"

ITEM	DESCRIPTION
1	EMERGENCY EYE WASH AND SHOWER STATION (17 M-10)
2	AIR PACK, GLOVES, FACE SHIELD AND FITTED WRENCH INSIDE ENCLOSURE
3	3'x7' DOOR w/WINDOW AND WARNING SIGN
4	1'-0"x3'-0" LOUVER ABOVE DOOR
5	ALARM LIGHT AND HORN
6	TWO CYLINDER SCALE (WALLACE & TIERNAN SERIES 55-340) w/CYLINDER CHAINS
7	150 lb. CHLORINE CYLINDER
8	0-150 psi PRESSURE GAUGE
9	MAINFOLD
10	AUTOSWITCH REGULATOR (2105)
11	3/4" P.V.C. SCHEDULE 80 VACUUM GAS LINE
12A	5" ROTAMETER CONTROL VALVE (WALLACE & TIERNAN S10K)
12B	AUTOMATIC CHLORINATOR (WALLACE & TIERNAN S10K)
13	1" FIXED THROAT INJECTOR
14	CHLORINE LEAK DETECTOR (ACUTEC 35)
15	1" P.V.C. SCHEDULE 80 CHLORINE SOLUTION SUPPLY LINE (TO GROUND STORAGE TANK)
16	3" POTABLE WATER SUPPLY LINE
17	1/2" FLEXIBLE LINE
18	STAINLESS STEEL PIPE HANGER
19	3/4" P.V.C. SCHEDULE 80 PIPE FITTING
20	3/8" P.V.C. SCHEDULE 80 VENT LINE w/SCREEN
21	1" P.V.C. SCHEDULE 80 PIPE FITTING
22	3" P.V.C. SCHEDULE 80 PIPE FITTING
23	LOSS OF CAPABILITY WARNING PANEL
24	HIGH AND LOW VACUUM SWITCH (AAA 3380)
25	1/2" P.V.C. TRUE UNION BALL VALVE

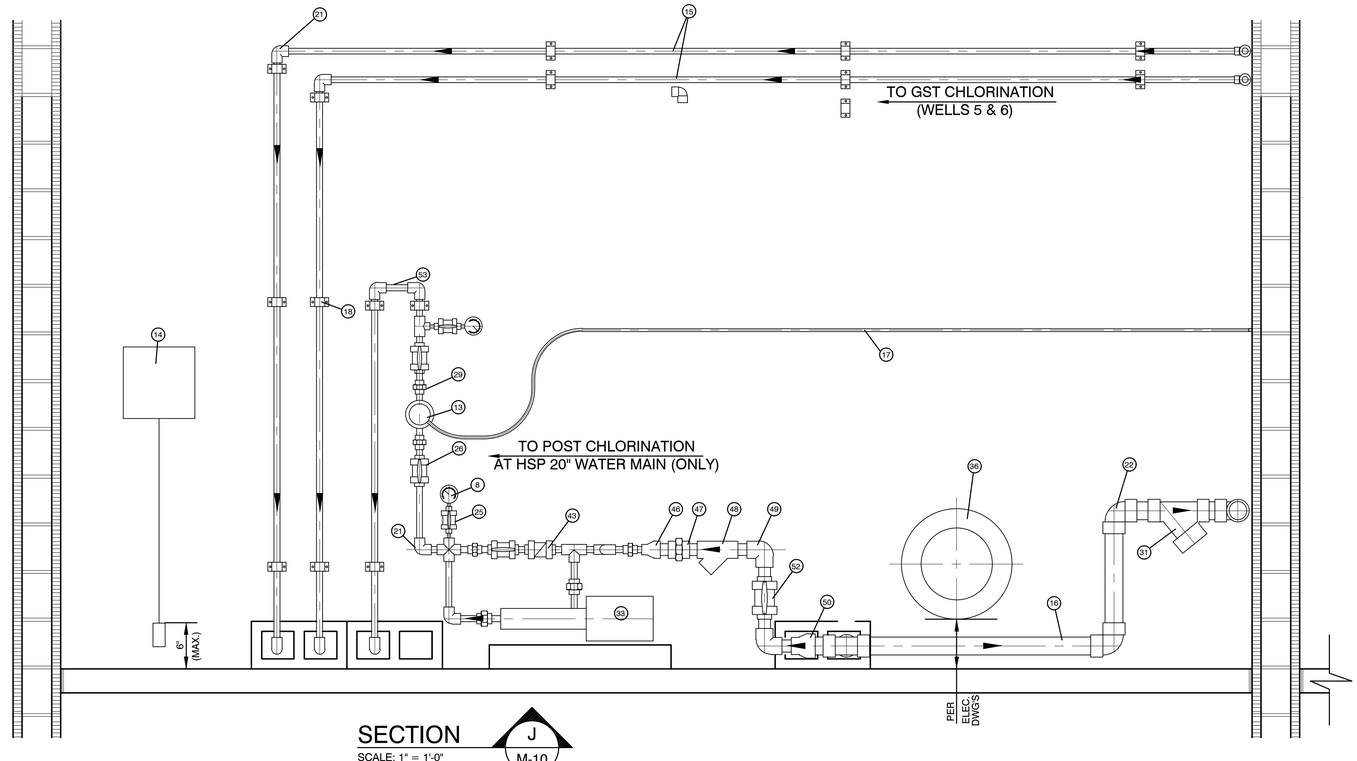
ITEM	DESCRIPTION
26	1" P.V.C. TRUE UNION BALL VALVE
27	1" SOLENOID VALVE (ASCO)
28	SOLENOID BY-PASS LOOP
29	1" UNION
30	0-150 psi PRESSURE GAUGE w/DIAPHRAGM PROTECTOR
31	3" "Y" STRAINER
32	TO EXTERIOR ALARM LIGHT AND HORN
33	BOOSTER PUMP
34	3/4" POTABLE WATER SUPPLY LINE
35	EXTERIOR SWITCH FOR INTERIOR LIGHTS AND EXHAUST FAN
36	EXHAUST FAN
37	8'-0"x4'-0"x3/4", 8'-0"x4'-0"x3/4" AND 8'-0"x2'-0"x3/4 MARINE PLYWOOD PANEL - PAINTED
38	ALUMINUM SHIELD COVERING 3" WATER SUPPLY LINE AND 3" CL SOLUTION LINES
39	2" POTABLE WATER SUPPLY LINE
40	HALOGEN EMERGENCY SHUT-OFF
41	1" P.V.C. TRUE UNION BALL VALVE
42	1" PVC UNION
43	1" IPEX PISTON CHECK VALVE
44	-
45	-
46	2"x1" PVC REDUCER
47	2" PVC UNION
48	2" "Y" STRAINER
49	2" P.V.C. SCHEDULE 80 PIPE FITTING
50	3"x2" PVC REDUCER
52	2" P.V.C. TRUE UNION BALL VALVE
53	1" P.V.C. SCHEDULE 80 CHLORINE SOLUTION SUPPLY LINE (POST CHLORINATION)

NOTES:

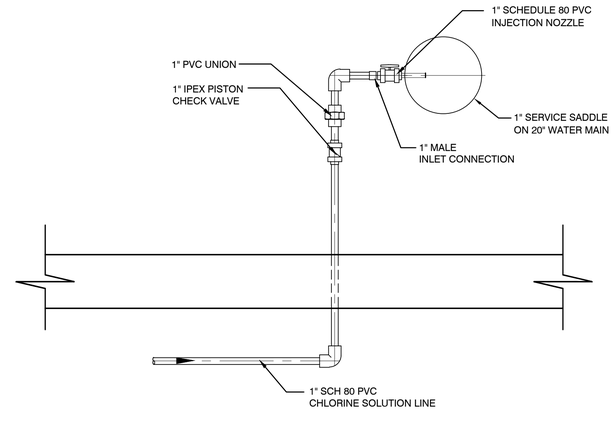
1. ALL CHLORINE PIPING SHALL BE LABELED w/ IDENTIFICATION TAGS AND FLOW DIRECTION ARROWS.
2. ALL CHLORINE PIPING SHALL BE PAINTED SAFETY YELLOW.



CHLORINE INJECTOR NOZZLE CONNECTION WELD DETAIL
SCALE: 3/4" = 1'-0"



SECTION J M-10
SCALE: 1" = 1'-0"



POST CHLORINATION INJECTION POINT

DETAIL 22 M-08
N.T.S.

0 1 2

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

CHLORINE ROOM SECTIONS

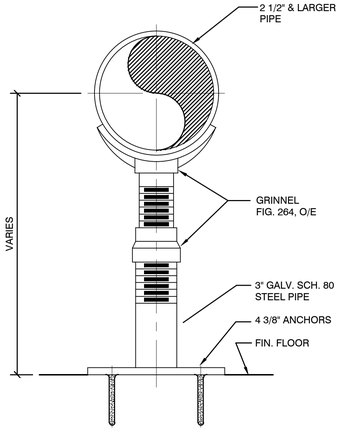
HOWEY-IN-THE-HILLS Beautiful

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

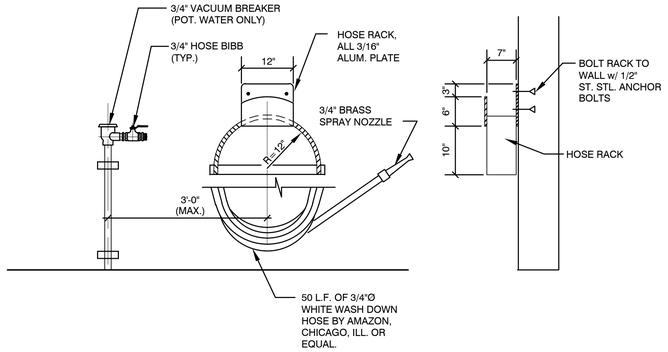
SHEET M-11

TROY E. MITCHELL, PE
REGISTERED ENG. 60190



BASE TYPE
PIPE SUPPORT

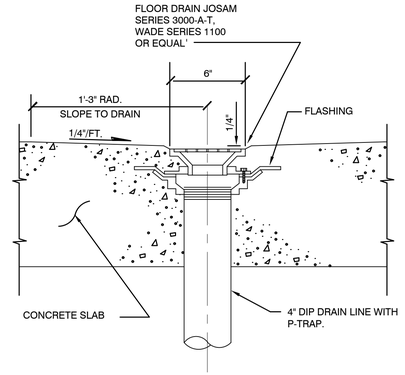
DETAIL 18
N.T.S. -



FRONT PROFILE

WASH HOSE STATION

DETAIL 20
N.T.S. -

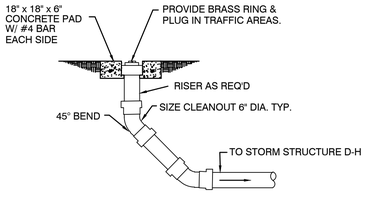


NOTES

1. P. TRAP IS NOT REQUIRED FOR DRAINS LOCATED ON CONC. PADS OR BLDGS. NOT ENCLOSED ON ALL SIDES.

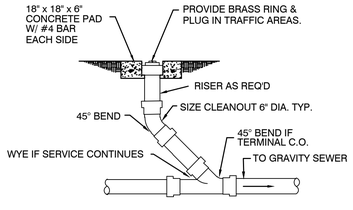
EQUIPMENT DRAIN

DETAIL 21
N.T.S. -



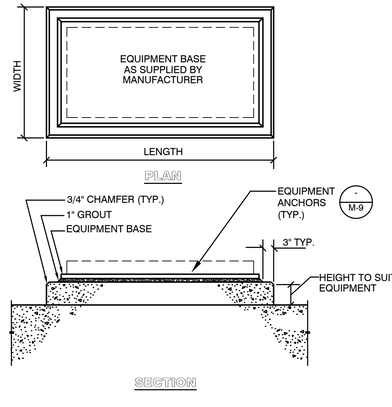
EQIP. DRAIN LINE CLEANOUT

DETAIL 23
N.T.S. -



SANITARY CLEANOUT

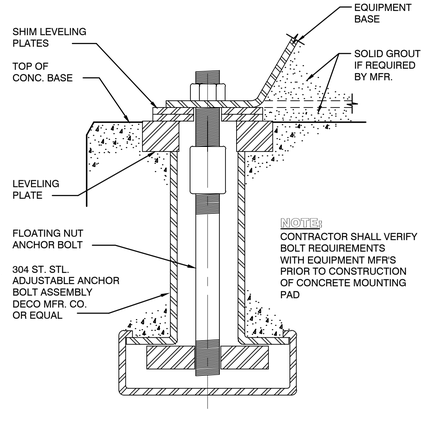
DETAIL 24
N.T.S. -



SECTION

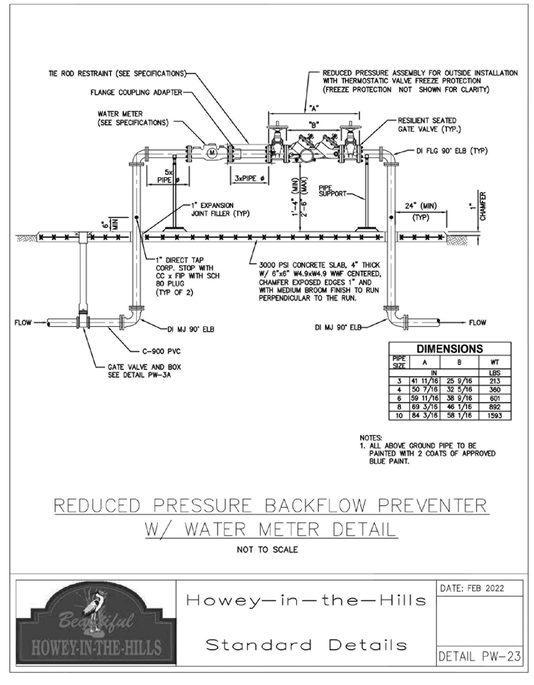
EQUIPMENT BASE SLAB

DETAIL 25
N.T.S. -



EQUIPMENT ANCHOR

DETAIL 26
N.T.S. -



DIMENSIONS			
PIPE SIZE	A	B	WT
	IN		LBS
3	41 11/16	25 9/16	213
4	50 7/16	32 5/16	360
6	59 11/16	38 9/16	601
8	69 3/16	46 1/16	892
10	84 3/16	56 1/16	1593

NOTES:
1. ALL ABOVE GROUND PIPE TO BE PAINTED WITH 2 COATS OF APPROVED BLUE PAINT.

REDUCED PRESSURE BACKFLOW PREVENTER W/ WATER METER DETAIL

NOT TO SCALE

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-23

DETAIL 27
N.T.S. -

DATE	REVISION	
11-26-24	1	60% REVIEW SET
12-02-24	2	F.D.E.P. PERMIT SUBMITTAL
03-18-25	3	90% REVIEW SET
06-30-25	4	BID SET
	5	
	6	
	7	
	8	

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

MECHANICAL DETAILS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	NOVEMBER 19, 2024
DESIGNED BY:	TEM
DRAWN BY:	-
CHECKED BY:	TEM
JOB NO.:	055783.001
FILE NAME:	-

SHEET M-12

TROY E. MITCHELL, PE
REGISTERED ENG. 60190

LANDSCAPE REQUIREMENTS

7.02.02 NON-RESIDENTIAL BUFFERS
1 CANOPY TREE, 2 UNDERSTORY TREES,
30 LF OF SHRUBS AND GROUND COVER PER 50 LF

NORTH BUFFER: 311 LF

REQUIRED CANOPY TREES: 6
PROVIDED CANOPY TREES: 6

REQUIRED UNDERSTORY TREES: 12
PROVIDED UNDERSTORY TREES: 8

3 PALMS PER 1 UNDERSTORY TREE: 5
PROVIDED PALMS TREES: 15

REQUIRED SHRUBS: 186.6 LF
PROVIDED SHRUBS: 186.6 LF

REQUIRED GROUNDCOVER: 186.6 LF
PROVIDED GROUNDCOVER: 186.6 LF

EAST BUFFER: 234 LF

REQUIRED CANOPY TREES: 5
PROVIDED CANOPY TREES: 4
EXISTING CANOPY TREE: 1

REQUIRED UNDERSTORY TREES: 9
PROVIDED UNDERSTORY TREES: 9

REQUIRED SHRUBS: 140.4 LF
PROVIDED SHRUBS: 140.4 LF

REQUIRED GROUNDCOVER: 140.4 LF
PROVIDED GROUNDCOVER: 140.4 LF

SOUTH BUFFER: 487 LF

REQUIRED CANOPY TREES: 10
EXISTING CANOPY TREES: 10

REQUIRED UNDERSTORY TREES: 19
PROVIDED UNDERSTORY TREES: 19

REQUIRED SHRUBS: 292.2 LF
PROVIDED SHRUBS: 292.2 LF

REQUIRED GROUNDCOVER: 292.2 LF
PROVIDED GROUNDCOVER: 292.2 LF

WEST BUFFER: 255 LF

REQUIRED CANOPY TREES: 5
PROVIDED CANOPY TREES: 5

REQUIRED UNDERSTORY TREES: 10
PROVIDED UNDERSTORY TREES: 10

REQUIRED SHRUBS: 153 LF
PROVIDED SHRUBS: 153 LF

REQUIRED GROUNDCOVER: 153 LF
PROVIDED GROUNDCOVER: 153 LF

TREE MITIGATION
(7.12.04 - Tree removal and replacement.)

PROTECTED TREES
(1" = 1" DBH REPLACEMENT INCHES)

DBH REMOVED (INCHES)	SPECIES	QTY		REPLACEMENT INCHES REQUIRED
6	OAK	1	6	6
7	OAK	1	7	7
9	OAK	1	9	9
10	OAK	3	30	30
11	OAK	1	11	11
29	OAK	1	29	29
TOTAL REPLACEMENT INCHES REQUIRED:				92
REPLACEMENT INCHES PROVIDED ON SITE:				176

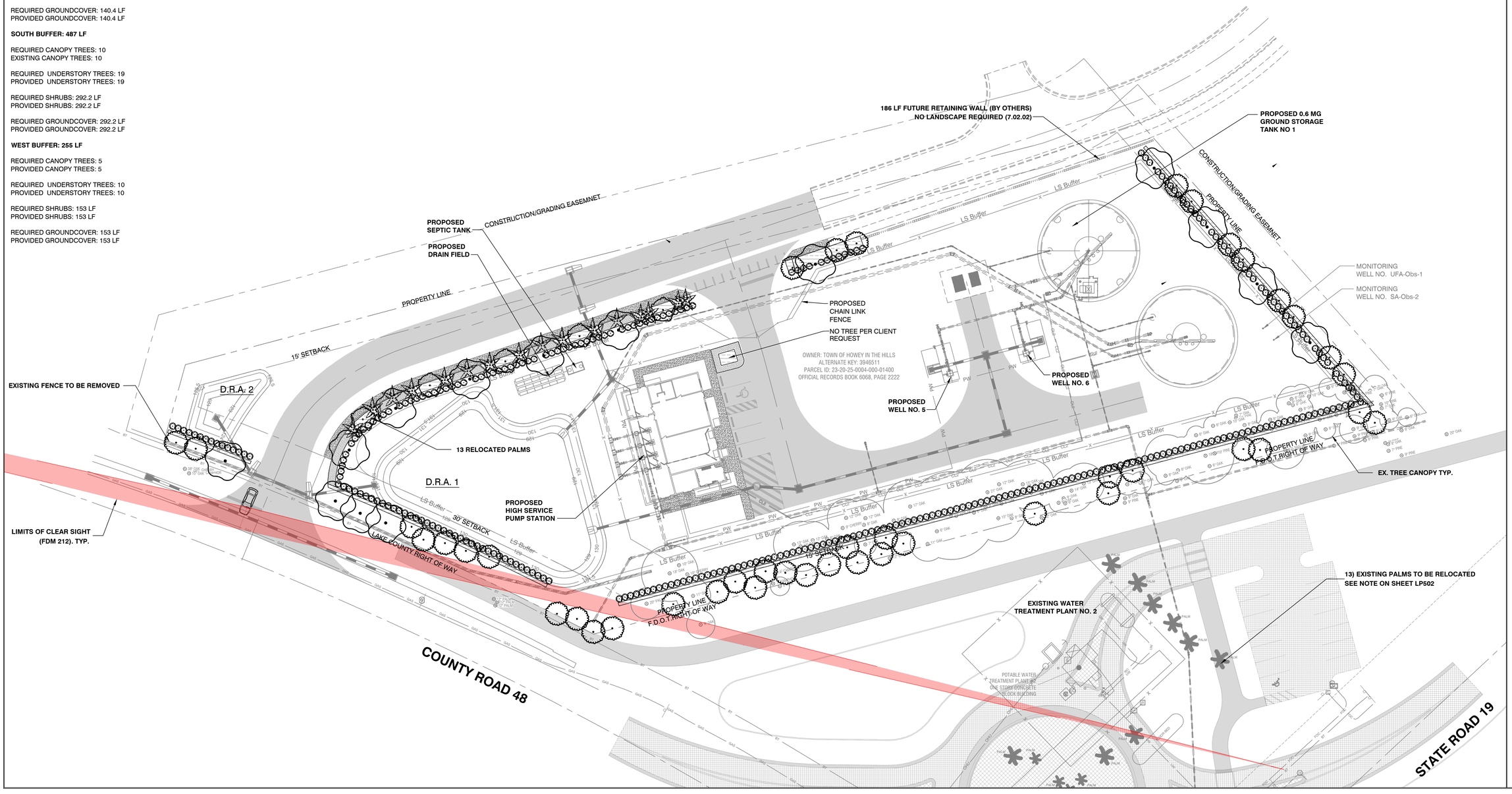
14 RED MAPLE X 4" DBH = 56"
5 DAHOON HOLLY X 2 1/2" DBH =12.5"
43 CRAPE MYRTLE X 3" DBH =107.5"

TOTAL DEFICIT:		0

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	REMARKS
TREES				
	ACE RBR	14	ACER RUBRUM / RED MAPLE	MIN, 10' HT X 7'-8' SPD, 4" DBH, FLORIDA #1, NATIVE, SPACING AS SHOWN
	ILE CAS	5	ILEX CASSINE / DAHOON HOLLY	MIN, 8' HT X 2'-3' SPD, 2 1/2" DBH, FLORIDA #1, NATIVE, SPACING AS SHOWN
	LAG WHI	43	LAGERSTROEMIA INDICA X FAURIEL 'NATCHEZ' / NATCHEZ CRAPE MYRTLE	MIN, 8' HT X 2'-3' SPD, 2 1/2" DBH, MULTI-TRUNK, FLORIDA #1, NON NATIVE, SPACING AS SHOWN
	SAB SAB	16	SABAL PALMETTO / CABBAGE PALMETTO	REGENERATED ROOTS, SMOOTH, STRAIGHT TRUNK, 14' CT, SEE PLANS
SHRUBS				
	MUH CAP	300	MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	24" HT X 24" SPD, FULL CLUMP
GROUND COVERS				
	ARC GLA	336	ARACHIS GLABRATA 'EC0TURF' / PERENNIAL PEANUT	12" HT X 12" SPD, 18" O.C, FULL TO POT
	LIR MUS	1,427	LIRIOPE MUSCARI "EMERALD GODDESS" / LIRIOPE	12" HT X 12" SPD, 18" O.C., FULL CLUMP

N
0 15 30 60
SCALE IN FEET (24x36)
1" = 30'-0"



DATE	REVISION

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

LANDSCAPE PLAN

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	3/26/25
DESIGNED BY:	JX
DRAWN BY:	--
CHECKED BY:	LMD
JOB NO.:	55783.001
FILE NAME:	-

LP101

LAURA M DUPLAIN, PLA
REGISTERED PLA #6667408

CONSTRUCTION/GRADING EASEMNET

PROPOSED CHAIN LINK FENCE

(2) LAG WHI
(15) MUH CAP
(52) LIR MUS
(1) ACE RBR

EXISTING FENCE TO BE REMOVED

PROPERTY LINE

(68) LIR MUS
(62) MUH CAP
(40) ARC GLA
(67) LIR MUS

PROPOSED ASPHALT DRIVE

(5) ACE RBR
(46) ARC GLA
(16) SAB SAB
(5) ILE CAS
(84) LIR MUS

(17) LIR MUS
(1) LAG WHI
(1) MUH CAP

PROPOSED 5' SIDEWALK

PROPOSED DRAIN FIELD

PROPOSED SEPTIC TANK

PROPOSED CHAIN LINK FENCE

(87) ARC GLA
(36) LIR MUS

(42) ARC GLA
(57) LIR MUS
(77) ARC GLA
(39) MUH CAP
(3) ACE RBR
(143) LIR MUS
(5) LAG WHI

(44) ARC GLA
(68) LIR MUS

LIMITS OF CLEAR SIGHT (FDM 212). TYP.

PROPOSED HIGH SERVICE PUMP STATION

(4) LAG WHI

PROPERTY LINE
F.D.O.T RIGHT OF WAY

(152) LIR MUS
(41) MUH CAP
(10) LAG WHI

EX. TREE CANOPY TYP.

0 7.5 15 30
SCALE IN FEET (24x36)
1" = 15'-0"

MATCHLINE A-A (SEE SHEET LP103)

DATE	REVISION

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

LANDSCAPE PLAN

halff
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JOB NO.:	55783.001
FILE NAME:	-

LP102

LAURA M DUPLAIN, PLA
REGISTERED PLA #6667408

MATCHLINE A-A (SEE SHEET LP102)

PROPOSED ASPHALT DRIVE

CONSTRUCTION/GRADING EASEMNET

186 LF FUTURE RETAINING WALL (BY OTHERS)
NO LANDSCAPE REQUIRED (7.02.02)

PROPERTY LINE

(171) LIR MUS
(11) MUH CAP
(1) ACE RBR
(2) LAG WHI

LS Buffer

PROPOSED 5' SIDEWALK

FUTURE RETAINING WALL (BY OTHERS)

PROPOSED CHAIN LINK FENCE

PROPOSED 0.6 MG GROUND STORAGE TANK NO 1

PROPOSED ASPHALT DRIVE

PROPOSED HEADER CURB

PW

CL2

PROPOSED WELL NO. 5

PROPOSED WELL NO. 6

FUTURE 0.6 MG GROUND STORAGE TANK NO. 2

(201) LIR MUS
(4) ACE RBR
(9) LAG WHI
(50) MUH CAP

CONSTRUCTION/GRADING EASEMNET

PROPERTY LINE

MONITORING WELL NO. UFA-Obs-1

MONITORING WELL NO. SA-Obs-2

PROPERTY LINE
F.D.O.T RIGHT OF WAY

(308) LIR MUS
(81) MUH CAP
(10) LAG WHI

EX. TREE CANOPY TYP.

PALM

0 7.5 15 30
SCALE IN FEET (24x36)
1" = 15'-0"

DATE	REVISION

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA
WATER TREATMENT PLANT No. 3

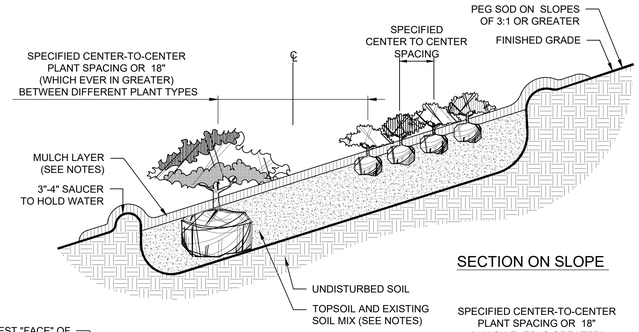
LANDSCAPE PLAN

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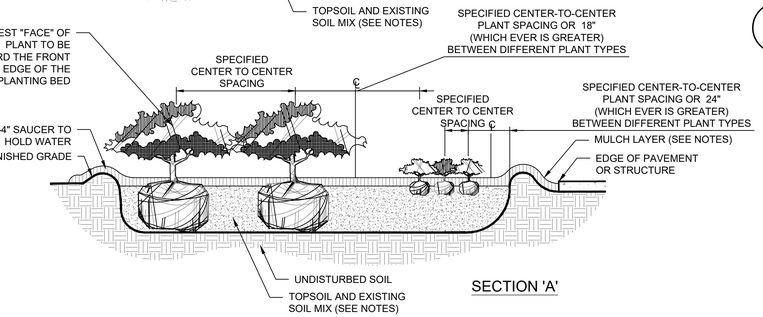
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FILE NAME:	-

LP103

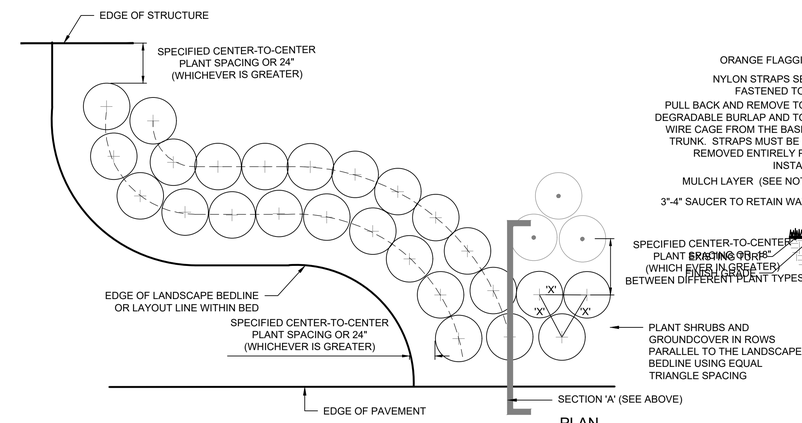
LAURA M DUPLAIN, PLA
REGISTERED PLA #6667408



SECTION ON SLOPE



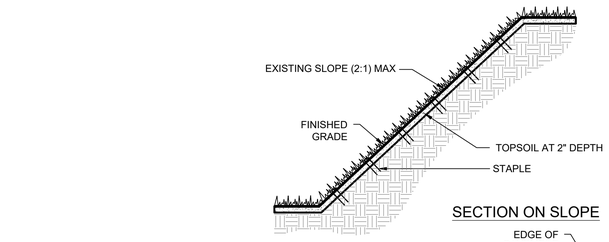
SECTION 'A'



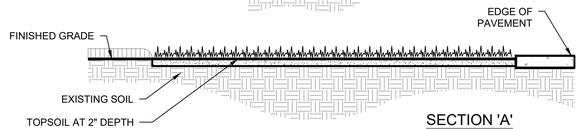
PLAN

1 TYPICAL SHRUB AND GROUNDSCOVER INSTALLATION

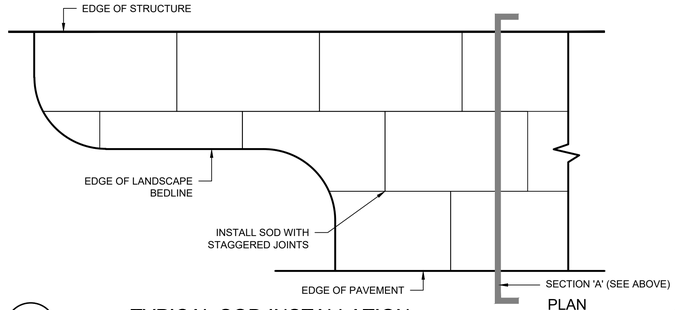
SCALE: NTS



SECTION ON SLOPE



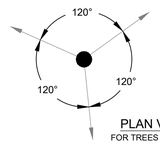
SECTION 'A'



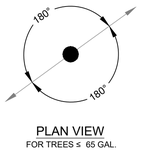
PLAN

2 TYPICAL SOD INSTALLATION

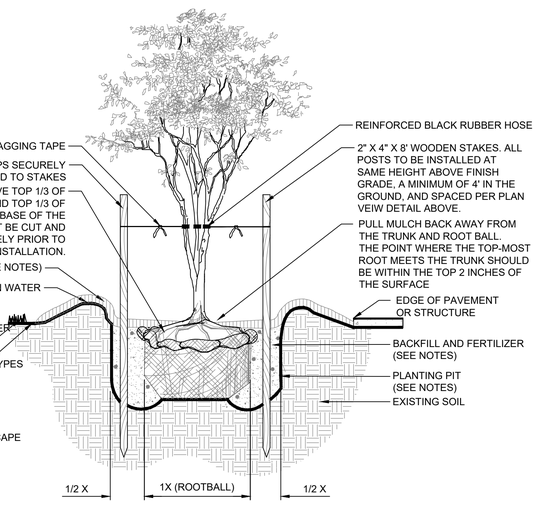
SCALE: NTS



PLAN VIEW
FOR TREES > 65 GAL.



PLAN VIEW
FOR TREES ≤ 65 GAL.

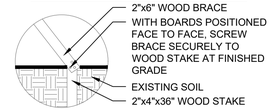


4 TYPICAL TREE INSTALLATION

SCALE: NTS

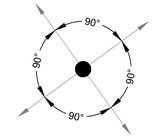


WOOD BATTEN DETAIL FOR PALMS

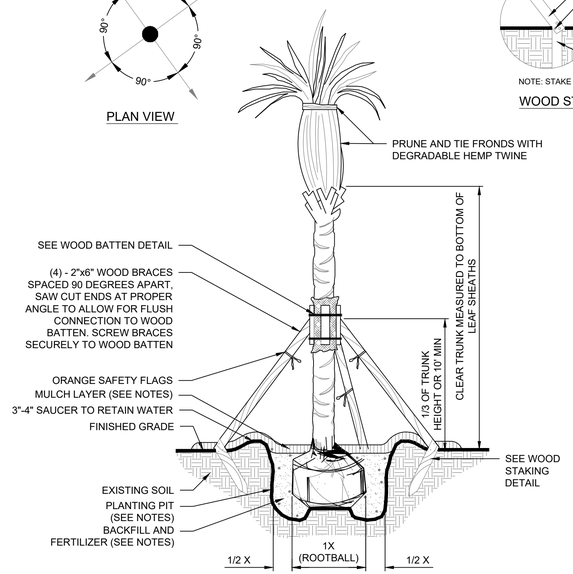


NOTE: STAKE INTO FIRM, EXISTING SOIL

WOOD STAKING DETAIL FOR PALMS

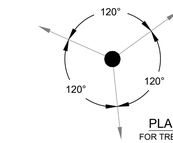


PLAN VIEW

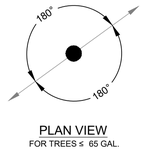


3 TYPICAL PALM INSTALLATION

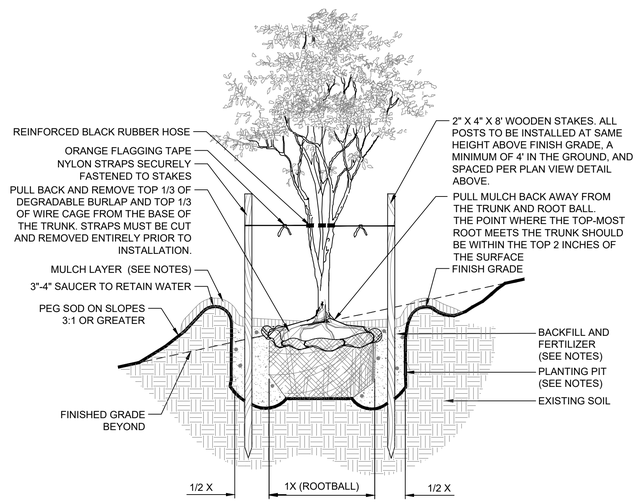
SCALE: NTS



PLAN VIEW
FOR TREES > 65 GAL.



PLAN VIEW
FOR TREES ≤ 65 GAL.



5 TYPICAL TREE ON SLOPE INSTALLATION

SCALE: NTS

DATE	REVISION

TOWN OF HOWEY-IN-THE-HILLS , FLORIDA

WATER TREATMENT PLANT No. 3

LANDSCAPE DETAILS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	3/26/25
DESIGNED BY:	--
DRAWN BY:	JX
CHECKED BY:	LMD
JOB NO.:	55783.001
FILE NAME:	

LP501

LAURA M DUPLAIN, PLA
REGISTERED PLA #6667408

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

GENERAL NOTES

1. CONSTRUCTION SHALL COMPLY WITH ALL CITY, STATE, AND FEDERAL CODES & STANDARDS.
2. CONTRACTOR SHALL VISIT THE SITE, INVESTIGATE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING THE PROJECT.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO ANY FURTHER CONSTRUCTION.
4. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE SPECIFICATIONS FOR THE PROJECT.
5. DIMENSIONS LESS THAN 2'-0" MAY BE SHOWN IN INCHES, I.E. 22" = 1'-10".
6. ALL ANGLED CONDITIONS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
7. THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL COMPLETE, INCLUDING CONNECTIONS, UNLESS OTHERWISE SPECIFIED.
8. ALL ITEMS OUTSIDE THE PROJECT BOUNDARIES SHALL BE PROTECTED SO AS TO INSURE THAT THEY WILL REMAIN INTACT DURING CONSTRUCTION. ALL ITEMS OUTSIDE THE PROJECT BOUNDARIES WHICH ARE DISTURBED, DAMAGED, OR SOILED DUE TO THE ACTS OF THE CONTRACTOR OR SUBCONTRACTORS, SHALL BE CLEANED, REPAIRED OR REPLACED TO THEIR PREVIOUS CONDITION AS DETERMINED BY THE ARCHITECT.
9. THE CONTRACTOR SHALL MAINTAIN FIRE ACCESS AND EGRESS AT ALL TIMES.
10. ALL FIRE SPRINKLER HEADS, SMOKE DETECTORS, OR OTHER CEILING MOUNTED EQUIPMENT SHALL BE MOUNTED IN THE CENTER OF ACOUSTICAL CEILING TILES.
11. IT IS THE INTENT OF THESE DRAWINGS AND DOCUMENTS TO PROVIDE ALL ITEMS REQUIRED FOR COMPLETE SYSTEMS WHETHER SHOWN OR NOT. CONTRACTOR SHALL PROVIDE ALL ESCUTHEON PLATES, FINISH PLATES, TRIM PIECES, ETC. AS REQUIRED TO PROVIDE A COMPLETE AND FINISHED WORK AS DETERMINED BY THE ARCHITECT.
12. ALL WOOD USED IN CONTACT WITH CONCRETE OR MASONRY SHALL BE TREATED. FASTENERS FOR TREATED WOOD (NAILS, BOLTS, HARDWARE, ETC.) SHALL BE GALVANIZED.
13. ALL INTERIOR PARTITIONS ARE 5/8" GYPSUM BOARD, TAPED AND PAINT TEXTURED WITH ORANGE PEEL FINISH UNLESS OTHERWISE NOTED.
14. PARTITIONS SHALL BE LOCATED TO ALIGN WITH FURRING ON ALL MASONRY WALL CONDITIONS.
15. THE TERM 'WORK' MEANS THE CONSTRUCTION REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING ALL LABOR NECESSARY TO PRODUCE SUCH CONSTRUCTION, AND ALL MATERIALS AND EQUIPMENT INCORPORATED OR TO BE INCORPORATED THEREIN.
16. ALL WORK MENTIONED OR INDICATED IN THE CONTRACT DOCUMENTS SHALL BE PERFORMED BY THE CONTRACTOR AS PART OF THIS CONTRACT UNLESS IT IS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS THAT SUCH WORK IS TO BE DONE BY OTHERS. SHOULD THE DRAWINGS OR THE SPECIFICATIONS DISAGREE IN THEMSELVES OR WITH EACH OTHER, THE CONTRACTOR SHALL PROVIDE THE BETTER QUALITY OR GREATER QUANTITY OF WORK UNLESS OTHERWISE DIRECTED BY WRITTEN ADDENDUM TO THE CONTRACT.
17. IN THE EVENT OF ANY CONFLICT AMONG THE CONTRACT DOCUMENTS, THE DOCUMENTS SHALL BE CONSTRUED ACCORDING TO THE FOLLOWING PRIORITES:
    - HIGHEST PRIORITY: MODIFICATIONS
    - SECOND PRIORITY: AGREEMENT
    - THIRD PRIORITY: ADDENDA - LATER DATE TO TAKE PRECEDENCE
    - FOURTH PRIORITY: SUPPLEMENTARY GENERAL CONDITIONS
    - FIFTH PRIORITY: GENERAL CONDITIONS
    - SIXTH PRIORITY: SPECIFICATIONS
    - SEVENTH PRIORITY: DRAWINGS
18. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL REFER TO ALL OF THE DRAWINGS, INCLUDING THOSE SHOWING PRIMARILY THE WORK OF THE MECHANICAL, ELECTRICAL, AND OTHER SPECIALIZED TRADES, AND TO ALL OF THE SECTIONS OF THE SPECIFICATIONS, AND SHALL PERFORM ALL WORK REASONABLY INFERABLE THEREFROM AS BEING NECESSARY TO PRODUCE THE INDICATED RESULTS.\
19. THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC ONLY, AND ARE NOT INTENDED TO SHOW THE ALIGNMENT, PHYSICAL LOCATIONS OR CONFIGURATIONS OF SUCH WORK, UNLESS NOTED OTHERWISE. WORK SHALL BE INSTALLED WITHOUT ADDITIONAL COST TO THE OWNER TO CLEAR ALL OBSTRUCTIONS, PERMIT PROPER CLEARANCES FOR THE WORK OF OTHER TRADES, ADN PRESENT AND ORDERLY APPEARANCE WHERE EXPOSED.
20. WHERE THE WORK IS TO FIT WITH EXISTING CONDITIONS OR WORK TO BE PERFORMED BY OTHERS, THE CONTRACTOR SHALL FULLY AND COMPLETELY JOIN THE WORK WITH SUCH CONDITIONS OR WORK, UNLESS OTHERWISE SPECIFIED.
21. IN ALL CASES IN WHICH A MANUFACTURER'S NAME, TRADE NAME OR OTHER PROPRIETARY DESIGNATION IS USED IN CONECTION WITH MATERIALS OR ARTICLES TO BE FURNISHED UNDER THIS CONTRACT, WHETHER OR NOT THE PHRASE 'OR EQUAL' IS USED AFTER SUCH NAME, THE CONTRACTOR SHALL FURNISH THE PRODUCT OF THE NAMED MANUFACTURER(S) WITHOUT SUBSTITUTION, UNLESS WRITTEN REQUEST FOR SUCH SUBSTITUTION HAS BEEN SUBMITTED BY THE CONTRACTOR AND APPROVED IN WRITING BY THE ARCHITECT.
22. WHERE NO EXPLICIT QUALITY OR STANDARDS FOR MATERIALS OR WORKMANSHIP ARE ESTABLISHED FOR WORK, SUCH WORK IS TO BE OF GOOD QUALITY FOR THE INTENDED USE AND CONSISTENT WITH THE QUALITY OF THE SURROUNDING WORK AND THE CONSTRUCTION OF THE PROJECT GENERALLY.
23. THE ARCHITECT AND/OR ENGINEER OF THIS CONTRACT SET OF DOCUMENTS WILL NOT ACCEPT RESPONSIBLITY AS TO ANY UNAUTHORIZED CHANGES OR DEVIATIONS TO THIS PROJECT THAT DIFFER FROM THE PLANS AND SPECIFICATIONS WITHOUT FINAL WRITTEN APPROVAL FROM THE ARCHITECT OR ENGINEER, AS TO SUCH ACTION.

LIST OF CODES & STANDARDS

FBC 2023 8TH ED.	FLORIDA BUILDING CODE
FBC 2023 8TH ED.	FLORIDA EXISTING BUILDING CODE
FPC 2023 8TH ED.	FLORIDA PLUMBING CODE
FMC 2023 8TH ED.	FLORIDA MECHANICAL CODE
FBC 2023 8TH ED.	FLORIDA ENERGY CONSERVATION CODE
FBC 2023 8TH ED.	FLORIDA ACCESSIBILITY CODE
FFPC 8TH ED.	FLORIDA FIRE PREVENTION CODE
NFPA-70-2020	NATIONAL ELECTRICAL CODE

PROJECT / CODE DATA

CONSTRUCTION

A. BUILDING AREA TABULATION:
TOTAL BUILDING AREA: **3,660 SF**

B. CONSTRUCTION TYPE: **TYPE V-B**
C. OCCUPANCY CLASSIFICATION: A3 - ASSEMBLY

D. OCCUPANCY LOAD CALCULATION (FBC TABLE 1004.5); (SEE SHEET A3.2)

E. MAXIMUM ALLOWABLE AREA (FBC TABLE 506.2): = 6,000 SF
ACTUAL **= 3,660 SF**

F. MAXIMUM ALLOWABLE HEIGHT (FBC TABLE 504.3 & 504.4): =40'-0" - (1 STORY)
ACTUAL **=28'-5 3/4" - (1 STORY)**

G. NUMBER OF EXITS REQUIRED (FBC TABLE 1006.3.2); =TWO (2)
H. NUMBER OF EXITS PROVIDED =SIX (6) PROVIDED

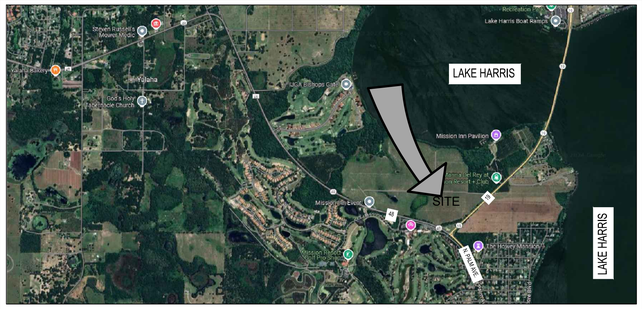
I. MAX. EXIT ACCESS TRAVEL DISTANCE (FBC TABLE 1017.2); =200'-0"
J. MAX. COMMON PATH OF EGRESS TRAVEL (FBC TABLE 1006.2.1); =75'-0"

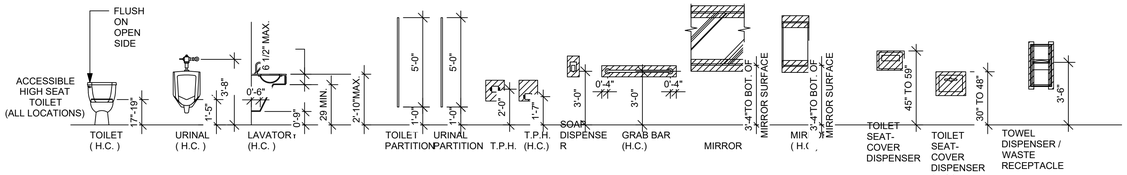
K. MAX. DEAD END CORRIDOR LENGTH (FBC 1020.4): =20'-0" (NON PROVIDED)

L. FIRE RESISTANCE RATING REQUIREMENTS (FBC TABLE 601 & FBC 705.4)

PARTY AND FIRE WALLS:	0 HR
STRUCTURAL FRAME:	0 HR
BEARING WALLS - INTERIOR	0 HR
BEARING WALLS - EXTERIOR	0 HR
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HR
NONBEARING WALLS & PARTITIONS (EXTERIOR)	0 HR
FLOOR CONSTRUCTION	0 HR
ROOF CONSTRUCTION	0 HR

VICINITY MAP


LAKE HARRIS
SITE
LAKE HARRIS
Lake Harris Boat Ramp
Mission Inn Pavilion
Mission Inn Resort & Club
Mission Inn Golf Course
Mission Inn Golf & Tennis
Howey Mission I
Howey Mission II
Howey Mission III
Mission Inn Golf Course
Mission Inn Golf & Tennis
Mission Inn Golf & Tennis
Mission Inn Golf & Tennis

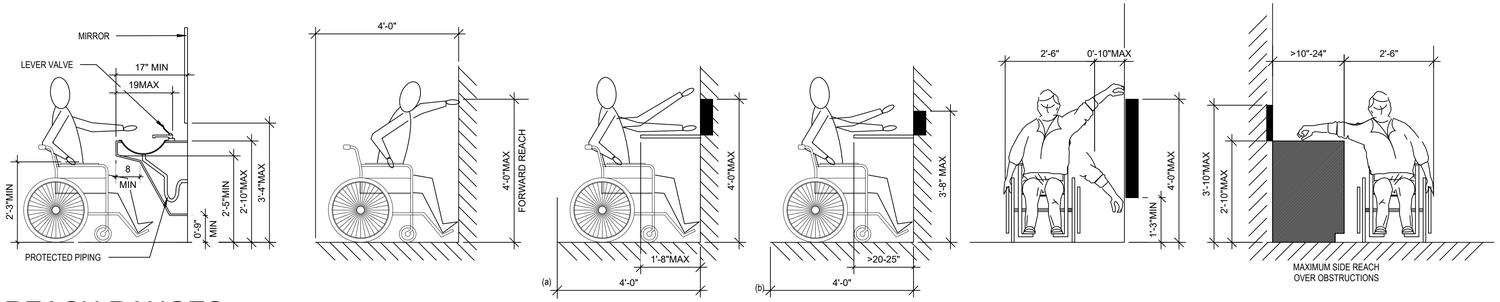


NOTES:

1. HORIZONTAL BLOCKING DIMENSIONS ARE MINIMUM.
2. BLOCKING TO BE FRAMED.
3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL BLOCKING REQUIREMENTS NOT SHOWN.

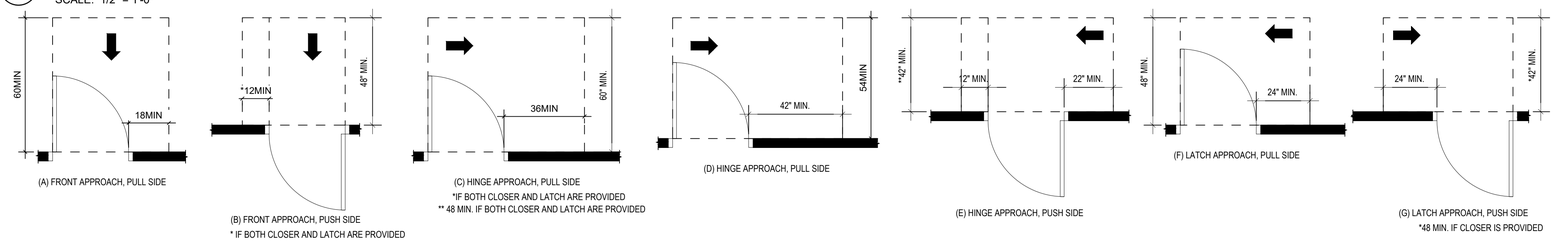
1 A1.2 COMMON AREA RESTROOM ELEVATIONS

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



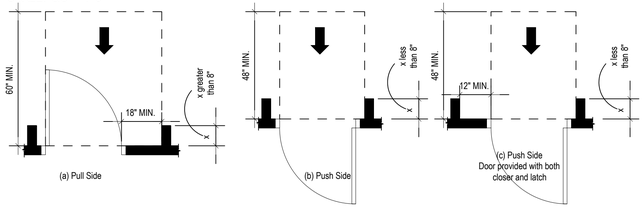
3 A1.2 REACH RANGES

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



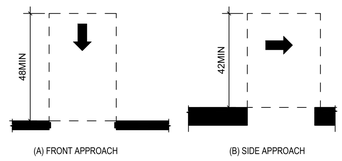
5 A1.2 MANEUVERING CLEARANCES AT SWING DOORS

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



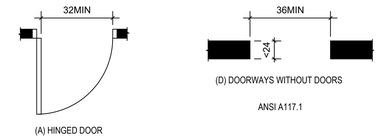
7 A1.2 MANEUVERING CLEARANCES AT RECESSED DOORS

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



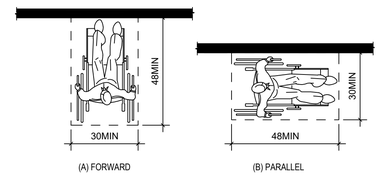
8 A1.2 CLEARANCES AT OPENINGS

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



9 A1.2 DOORWAY CLEAR WIDTHS

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



10 A1.2 CLEAR FLOOR SPACE

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

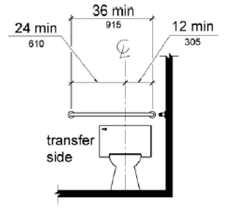


Figure 604.5.2
Rear Wall Grab Bar at Water Closets

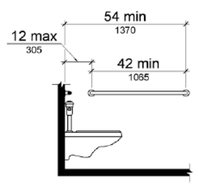


Figure 604.5.1
Side Wall Grab Bar at Water Closets

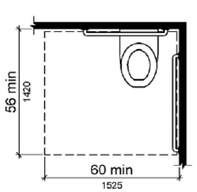
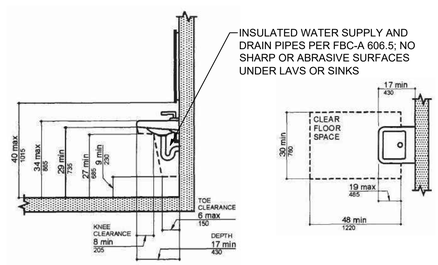


Figure 604.3.1
Size of Clearance at Water Closets

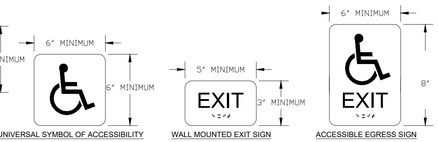
11 A1.2 WATER CLOSET CLEARANCES

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



12 A1.2 LAVATORY CLEARANCES

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



TOILET ROOM WALL MOUNTED SIGN | UNIVERSAL SYMBOL OF ACCESSIBILITY | WALL MOUNTED EXIT SIGN | ACCESSIBLE EGRESS SIGN

ACCESSIBILITY SIGNAGE NOTES:

CHARACTER PROPORTION:
LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO BETWEEN 3:5 AND 1:1 AND A STROKE-WIDTH-TO-HEIGHT RATIO BETWEEN 1:5 AND 1:10.

RAISED AND BRAILLE CHARACTERS AND PICTORIAL SYMBOL SIGNS (PICTOGRAMS):
LETTERS AND NUMERIC SHALL BE RAISED 1/32 IN., UPPER CASE, SANS SERIF OR SIMPLE SERIF TYPE AND SHALL BE ACCOMPANIED WITH GRADE BRAILLE. RAISED CHARACTERS SHALL BE AT LEAST 5/8" (16 MM) HIGH, BUT NO HIGHER THAN 2 IN. (50 MM). PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE 6 IN. (152 MM) MINIMUM OF HEIGHT.

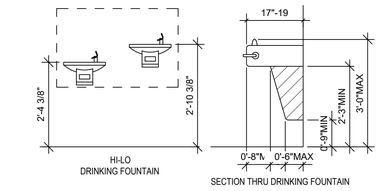
FINISH AND CONTRAST:
THE CHARACTERS AND BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE, OR OTHER NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.

MOUNTING LOCATION AND HEIGHT:
WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST, ADJACENT WALL. MOUNTING LOCATION OF SUCH SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3 IN. (76 MM) OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR. MOUNTING HEIGHT SHALL BE 60 IN. (1525 MM) ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN.

SYMBOLS OF ACCESSIBILITY:
FACILITIES AND ELEMENTS REQUIRED TO BE IDENTIFIED AS ACCESSIBLE BY SECTION 4.1 OF THE A.D.A.A.G SHALL USE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

13 A1.2 ACCESSIBILITY SIGNAGE DETAILS

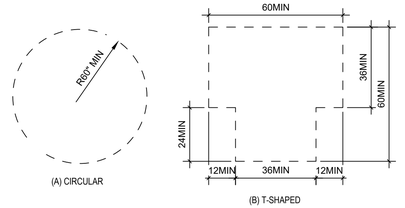
NOT TO SCALE



(a) SPOUT HEIGHT AND KNEE CLEARANCE

2 A1.2 DRINKING FOUNTAIN CLEARANCES

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



4 A1.2 TURNING SPACE CLEARANCE

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

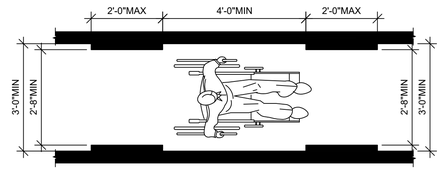


FIG. 403.5
Clear Width of an Accessible Route

6 A1.2 CLEAR SPACE OF AN ACCESSIBLE ROUTE

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

POWELL STUDIO ARCHITECTURE
ARCHITECTURE | INTERIOR DESIGN
713 W. MONTROSE STREET ● CLERMONT, FLORIDA 34711
PH: (352) 874-2340 ● FAX: (877) 680-7183
www.powellstudioarch.com
AA # 26002236

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OWNER:

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

REVISIONS:

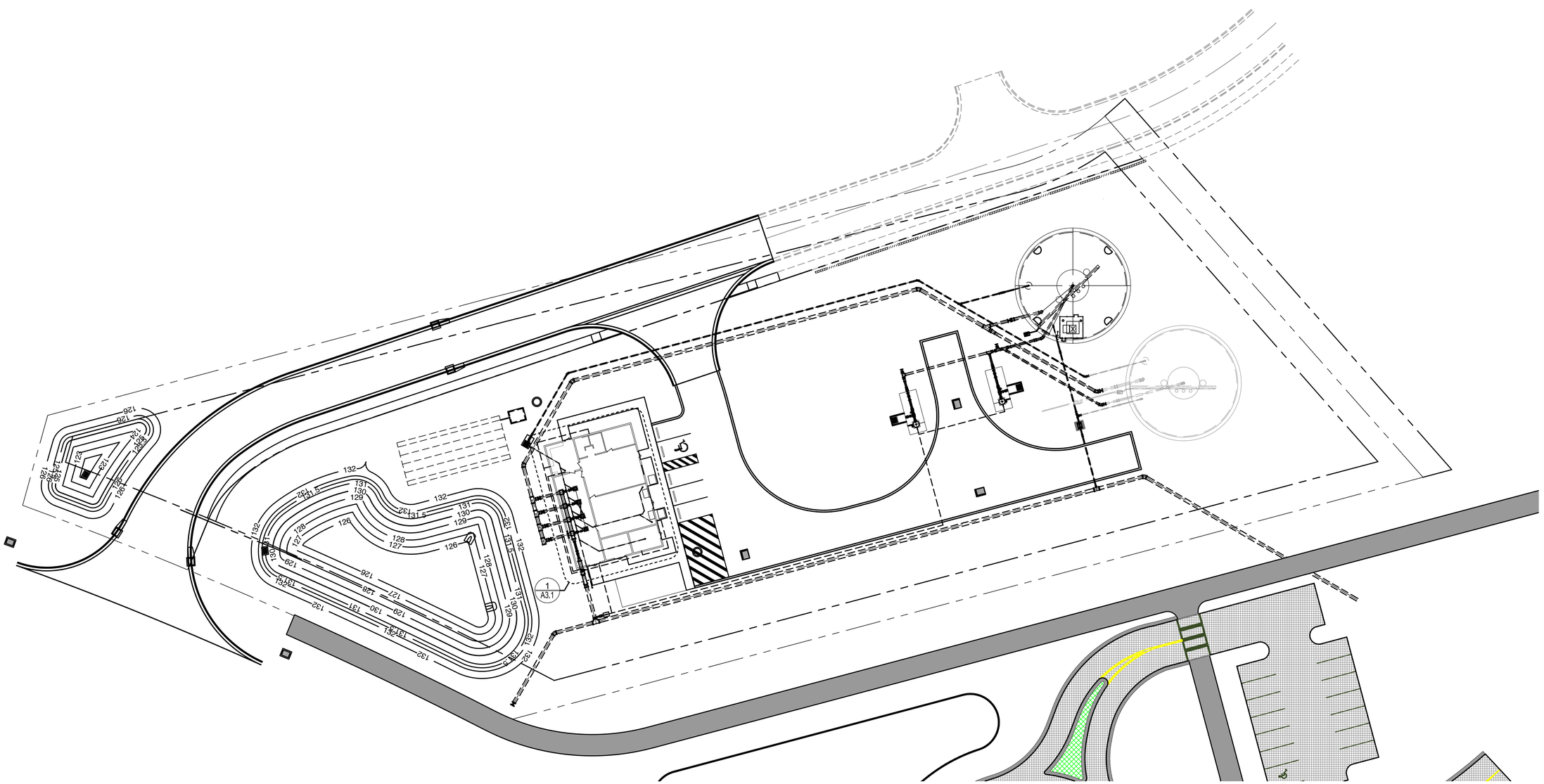
MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

TYPICAL ADA STANDARDS

A1.2

Xref .\PSA 2022-53000 FB.dwg



1 A2.1 ARCHITECTURAL SITE PLAN
NTS

NORTH

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

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ARCHITECTURE I INTERIOR DESIGN
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OWNER:

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

REVISIONS:

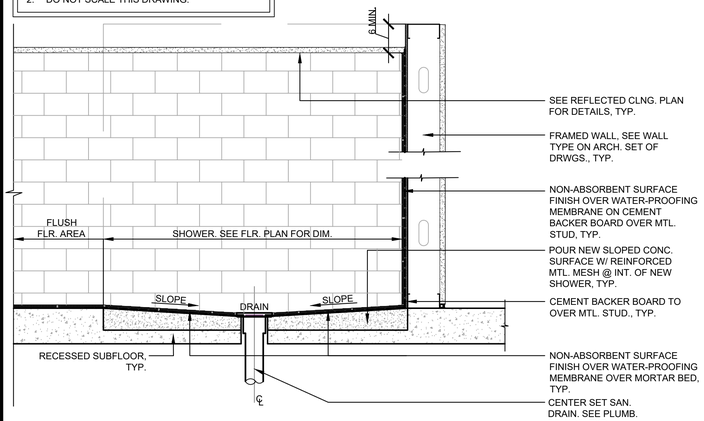
MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

ARCHITECTURAL SITE PLAN

A2.1

NOTE:
1. PLEASE COORDINATE ALL DIMENSION AS NECESSARY.
2. DO NOT SCALE THIS DRAWING.



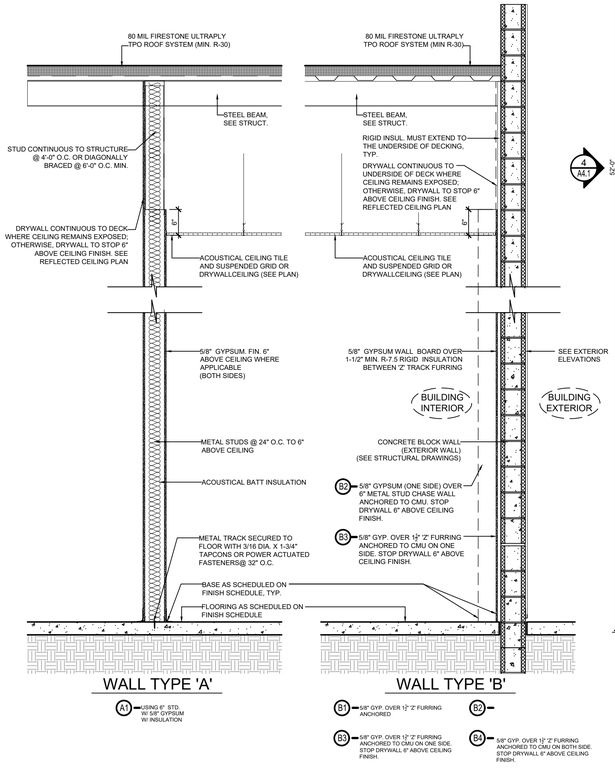
3 A3.1 ROLL-IN SHOWER DETAIL
SCALE: NTS

FLOOR PLAN SYMBOL LEGEND:

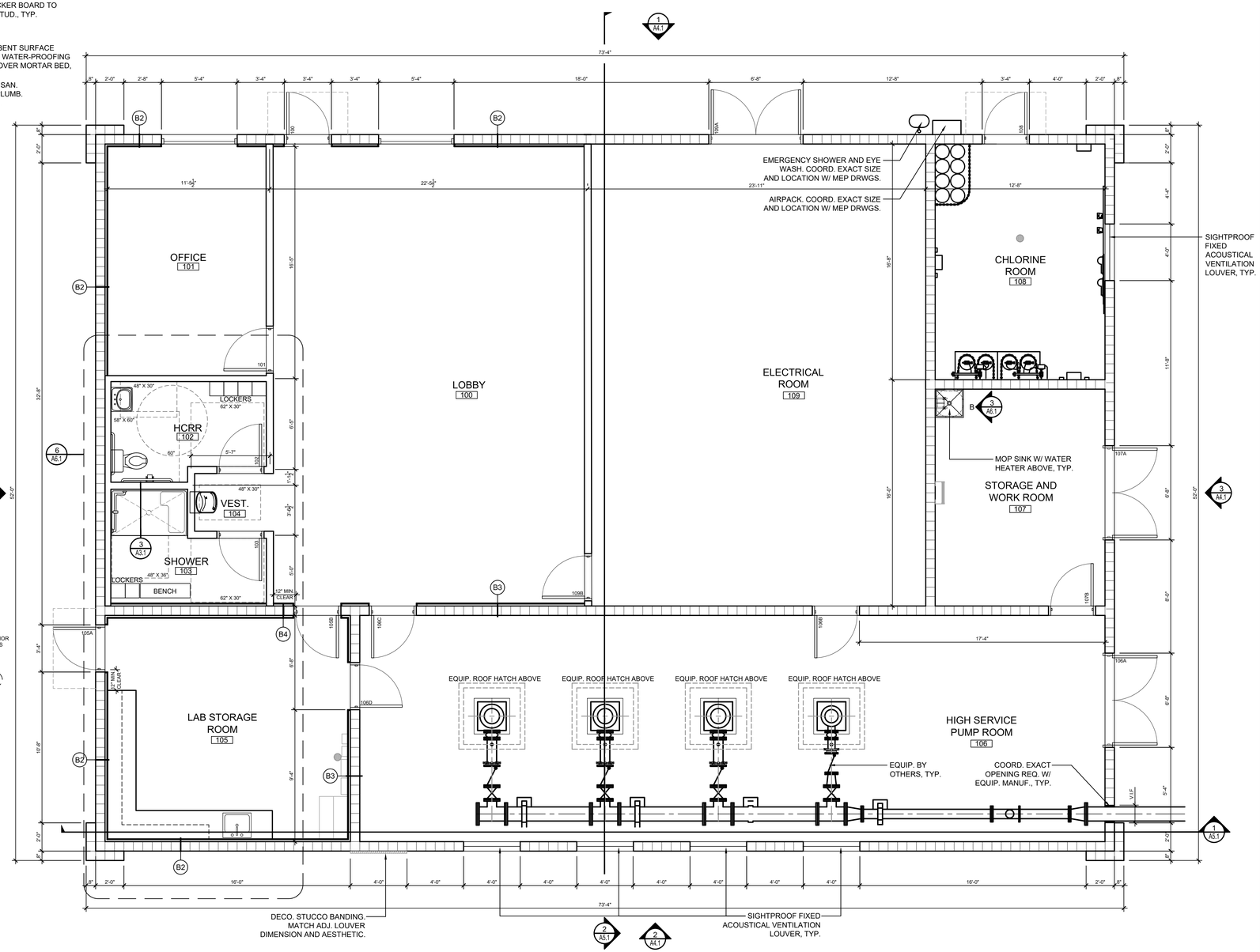
- NEW INTERIOR PARTITION
- ONE HOUR FIRE RATED WALL
- TWO HOUR FIRE RATED WALL
- X# INTERIOR WALL TYPE TAG
- FE. FIRE EXTINGUISHER - WALL MOUNTED
- LEVEL THRESHOLD TRANSITION (1/2" MAX.)

FLOOR PLAN GENERAL NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL NEW 10LB ABC FIRE EXTINGUISHERS AND COORDINATE PLACEMENTS WITH FIRE MARSHALL. INSTALL QUANTITY AS REQUIRED SO AS NOT TO EXCEED 75' OF TRAVEL TO AN EXTINGUISHER.
2. CONSTRUCTION SHALL COMPLY WITH ALL CITY, STATE, AND FEDERAL CODES & STANDARDS.
3. DO NOT SCALE THE DRAWINGS. CONSULT ARCHITECT WITH ANY DIMENSIONAL DISCREPANCIES.
4. THERE ARE NO EXTERIOR SIGNS AS PART OF THIS SCOPE OF WORK. EXTERIOR SIGNAGE WILL BE PERMITTED BY FUTURE TENANT.
5. ALL INTERIOR WALLS SHALL BE DESIGNATED A1 UNLESS OTHERWISE NOTES. SEE WALL TYPE DETAILS ON SHEET A3.1.
6. THE GENERAL CONTRACTOR SHALL VERIFY ALL INTERIOR SUITE FINISHES AND FIXTURES WITH OWNER / ARCHITECT.



2 A3.1 WALL TYPES
1/2" = 1'-0"



1 A3.1 FLOOR PLAN
1/4" = 1'-0"

NORTH

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OWNER:

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

FLOOR PLAN

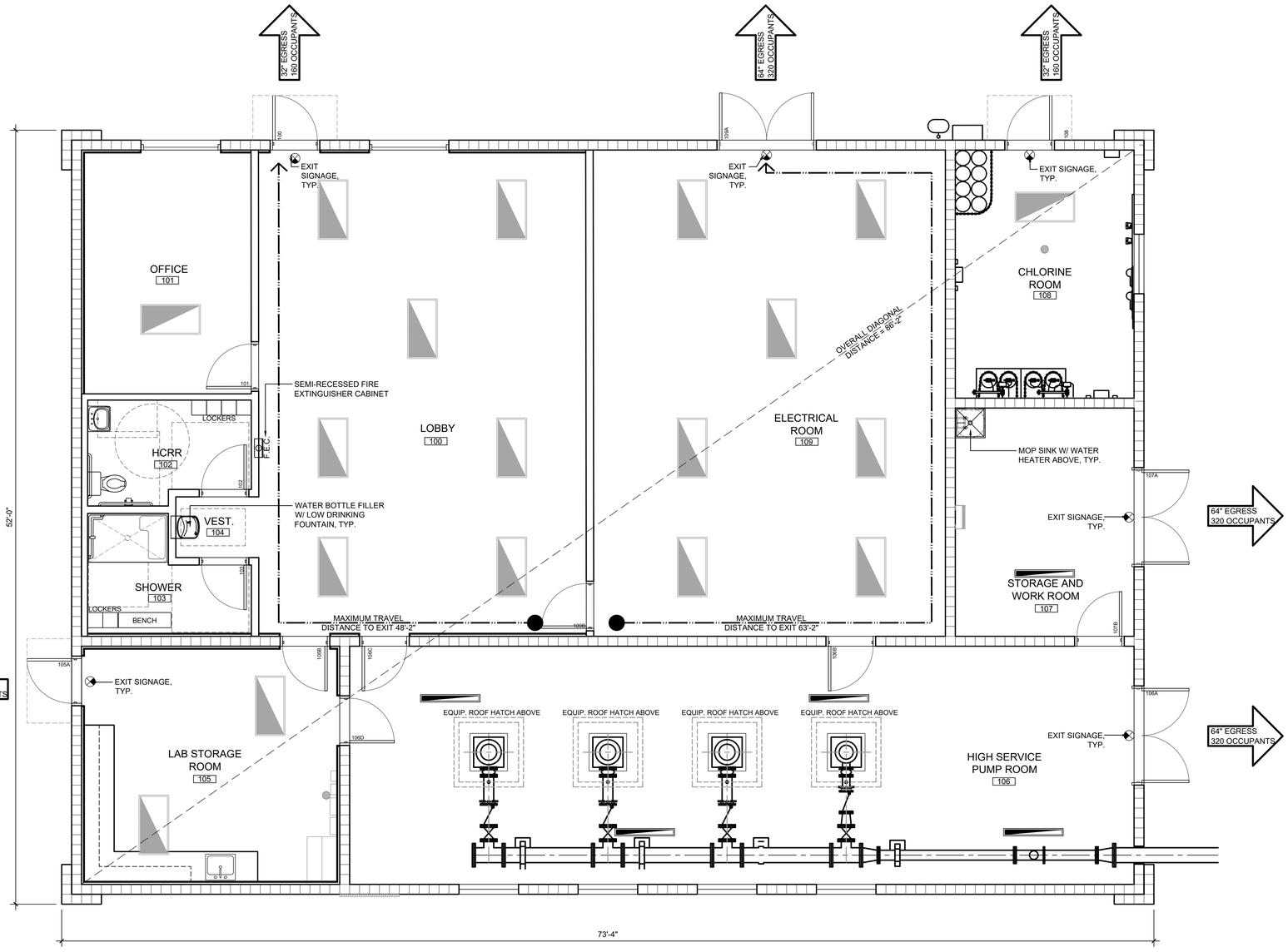
A3.1

A LIFE SAFETY PLAN IS INTENDED FOR CODE COMPLIANCE CONFIRMATION ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.

NOTE: G.C. TO COORDINATE TYPE AND LOCATION OF ALL FIRE EXTINGUISHERS WITH FIRE MARSHALL PRIOR TO INSTALLATION. FIRE EXTINGUISHERS TO BE AVAILABLE WITHIN 75'-0" TRAVEL DISTANCE FROM ANY POINT. FIRE EXTINGUISHERS SHALL BE INSTALLED SO THAT THE TOP OF THE FIRE EXTINGUISHER IS NO MORE THAN 5'-0" A.F.F. THE CABINET HANDLE SHALL BE MOUNTED NO HIGHER THAN 48" A.F.F. PER MANUFACTURER'S GUIDELINES. SEE FIRE EXTINGUISHER DETAILS ON SHEET A7.3.

OCCUPANT LOAD CALCULATION TABLE

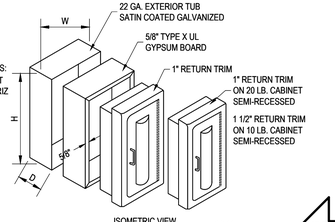
ROOM #	ROOM NAME	USE / FUNCTION OF SPACE (PER NFPA 101 CH. 7.3.1.2 & FBC 1004.1.2)	OCCUPANT LOAD FACTOR 1 OCCUP./ 'X' SQ. FT.	AREA (GSF / NSF)	OCCUP. LOAD (NO. OF PERSONS)	REMARKS
	FIRST FLOOR:					
100	LOBBY	BUSINESS	1 OCC. / 150 GSF.	718 SF	5 PERSONS	
101	OFFICE	BUSINESS	1 OCC. / 150 GSF.	190 SF	2 PERSONS	
105	LAB STORAGE ROOM	STORAGE	1 OCC. / 300 GSF.	277 SF	1 PERSON	
106	HIGH SERVICE PUMP ROOM	UTILITY	1 OCC. / 300 GSF.	842 SF	3 PERSONS	
107	STORAGE & WORK ROOM	STORAGE	1 OCC. / 300 GSF.	184 SF	1 PERSON	
108	CHLORINE ROOM	STORAGE	1 OCC. / 300 GSF.	200 SF	1 PERSON	
109	ELECTRICAL ROOM	STORAGE	1 OCC. / 300 GSF.	772 SF	3 PERSONS	
	TOTAL OCCUPANT LOAD:				16 PERSONS	



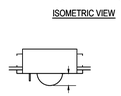
Strike First Corporation of America

STRIKE FIRST CORPORATION OF AMERICA
1330 PROGRESS DRIVE
FRONT ROYAL, VIRGINIA, 22630
TOLL FREE: 1-800-255-5515
PHONE: (540) 636-4444
FAX: (540) 636-4455
www.strikefirstusa.com

STEP 1:
☑SELECT EXTINGUISHER SIZE:
◉ 10 LBS
☐ 20 LBS
STEP 2:
☑SELECT CABINET STYLE:
☐ SURFACE MOUNTED
◉ SEMI-RECESSED
☐ FULLY RECESSED
STEP 3:
☑SELECT DOOR STYLE:
◉ BUBBLE ONLY
STEP 4:
☑SELECT DESIRED SERIES:
◉ BUBBLE CABINET
STEP 5:
☑SELECT CABINET TYPE:
◉ SAFEGUARD FIRE RATED
STEP 6:
☑SELECT FINISH OPTIONS:
☐ STAINLESS STEEL FRONT
☐ FULL STAINLESS STEEL
◉ ALUMINUM FRONT
☐ FULL ALUMINUM
☐ RED COATED
STEP 7:
☑SELECT HANDLE OPTIONS:
☐ SAFETY BREAK LOCK
☐ ALUM. DIE CAST RED FIRE HANDLE
◉ ADA HANDLE
STEP 8:
☑SELECT GLAZING OPTIONS:
◉ BUBBLE ONLY
STEP 9:
☑SELECT LETTERING OPTIONS:
◉ DECAL "FIRE EXT" LRG VERT
☐ DECAL "FIRE EXT." LRG HORIZ

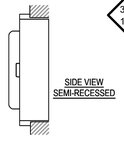


ISOMETRIC VIEW



TOP VIEW SEMI-RECESSED

1 3/4" EXTENSION FOR 10 LB.
2 3/4" EXTENSION FOR 20LB.



SIDE VIEW SEMI-RECESSED

✓	MOD. #	INTERIOR TUB SIZE W	H	D	OVERALL OUTSIDE TRIM W	H	ROUGH OPENING W	H	D	SAFEGUARD TRIM STYLE	SAFEGUARD ROUGH OPENING W	H	D	SAFEGUARD TRIM STYLE	ACCOM. EXT SIZE LBS.
	SURFACE MOUNTED														
	10-BC	10 1/2"	24"	4 1/2"	11"	24 1/2"	-	-	-	-	-	-	-	-	10
	SEMI-RECESSED														
◉	11-BC	10 1/2"	24"	4 1/2"	14 1/2"	28"	10 3/4"	24 1/4"	3"	1 1/2"	12 1/4"	25 3/4"	3 3/4"	1 1/2"	10
	21-BC	14"	30"	4 3/4"	18 1/2"	34"	14 3/4"	30 1/4"	4 1/4"	1"	16 1/4"	31 3/4"	5"	1"	20
	FULLY-RECESSED														
	12-BC	10 1/2"	24"	4 1/2"	14 1/2"	28"	10 3/4"	24 1/4"	4 1/2"	1/4"	12 1/4"	25 3/4"	5 1/4"	1/4"	10

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 2736-025.

2 / A3.2 FIRE EXTINGUISHER DETAIL
NTS

1 / A3.2 LIFE SAFETY PLAN
1/4" = 1'-0"

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OWNER:

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WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING
HOWEY-IN-THE-HILLS, FLORIDA

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

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LIFE SAFETY PLAN

A3.2

REFLECTED CEILING PLAN GENERAL NOTES:

1. SEE DIMENSIONED FLOOR PLAN FOR INTERIOR DIMENSIONS AS WELL AS DIMENSIONAL TOLERANCES.
2. ALL ITEMS INSTALLED WITHIN CEILING TILES SHALL BE CENTERED WITHIN THE TILE THE ITEM IS INSTALLED, INCLUDING BUT NOT LIMITED TO, INCANDESCENT LIGHTING, SMOKE DETECTORS, MOTION SENSORS, ETC.

REFLECTED CEILING PLAN SYMBOL LEGEND:

- EXISTING ONE (1) HOUR RATED FIRE PARTITION
- EXIT LIGHT
- ACCENT FLOOD LIGHTING
- 2'X4' FLOURESCENT LIGHT FIXTURE
- EMERGENCY 2'X4' FLOURESCENT LIGHT FIXTURE
- RECESSED TROFFER LED FIXTURE
- NEW 1X4 FLOURESCENT LIGHT FIXTURE
- EXISTING 1X4 FLOURESCENT LIGHTING
- HVAC SUPPLY
- HVAC RETURN
- EMERGENCY AND EXIT LIGHT COMBINATION
- EMERGENCY LIGHT (WALL MOUNTED)
- WALL MOUNTED VANITY LIGHT
- SUSPENDED STRIP LIGHTING
- FLUORESCENT WALL MOUNTED FIXTURE
- EMERGENCY FLUORESCENT WALL MOUNTED FIXTURE
- EXTERIOR WALL SCONCE
- EXTERIOR LIGHTING

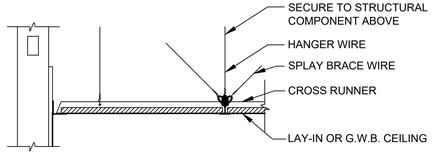
REFLECTED CEILING PLAN KEY:

1. 24"X48" ACOUSTICAL CEILING TILE @ 12'-0" AFF
2. 24"X48" ACOUSTICAL CEILING TILE @ 10'-0" AFF
3. DRYWALL CEILING @ 10'-0" AFF
4. EXPOSED CEILING

TABLE NO. 1

MINIMUM SIZE OF THE BRACING MEMBER FOR CEILING

WALL HEIGHT	MAXIMUM SPACING OF THE BRACE	
	6'-0"	8'-0"
UP TO 10'	12 GA WIRE	12 GA WIRE
12'	10 GA WIRE	10 GA WIRE *
14'	10 GA WIRE	25 GA STUD
16'	10 GA WIRE	25 GA STUD



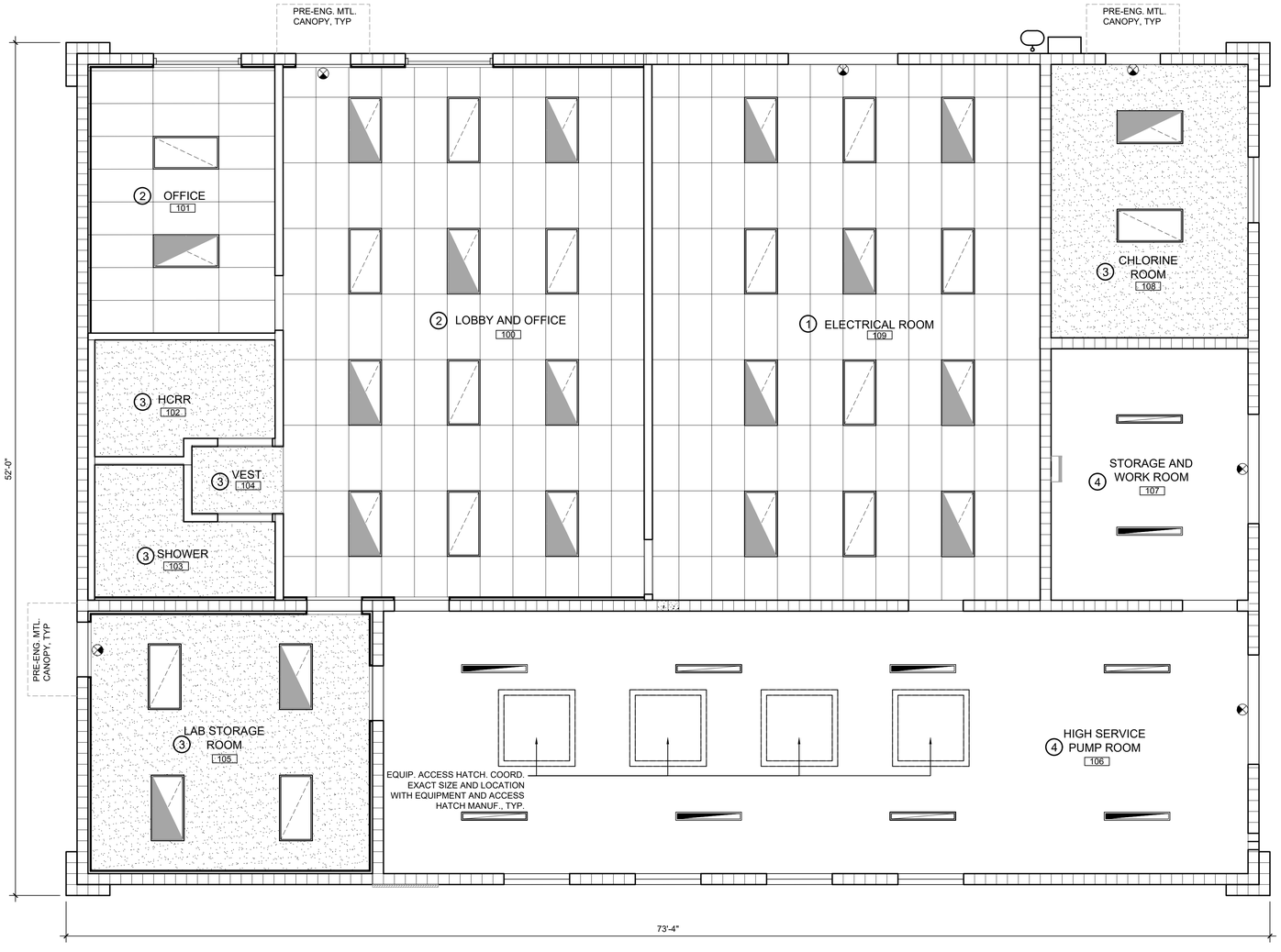
HANGER WIRE	ALLOW. TENSION
12 GAUGE	170#
11 GAUGE	225#
10 GAUGE	300#

LATERAL FORCE BRACING NOT TO EXCEED 12'-0" O.C. IN EITHER DIRECTION WITH THE FIRST POINT WITHIN 4' FROM EACH WALL.

CONTINUE HORIZONTAL STRUT TO PREVENT SPREADING OF RUNNERS. LOCKING CLIP TO FASTEN CROSS RUNNER TO MAIN RUNNER.

CEILING SYSTEM HANGER WIRES AND BRACE WIRES MUST CONNECT TO STRUCTURAL COMPONENTS ONLY: STEEL JOIST AND GIRDER BOTTOM CHORDS, OR BEAM AND CHANNEL BOTTOM FLANGES SUPPORT AND BRACING WIRES ARE NOT ALLOWED TO BE CONNECTED TO: PIPING OR CONDUITS, JOIST BRACING, ROOF DECK, HVAC DUCTWORK.

2 A3.3 ACOUSTIC CEILING TILE / GRID DETAIL
NTS



1 A3.2 REFLECTED CEILING PLAN
1/4" = 1'-0"

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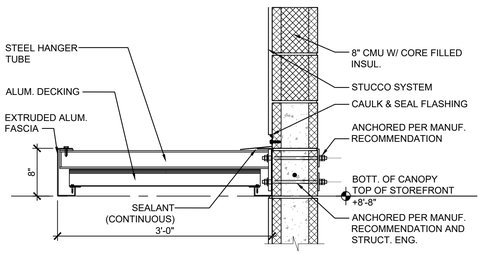
REVISIONS:

MARK	DATE	DESCRIPTION

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REFLECTED CEILING PLAN

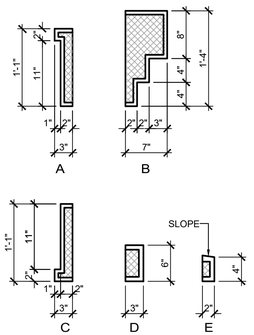
A3.3



BASIS OF DESIGN: MAPES CANTILEVER ALUMINUM AWNING

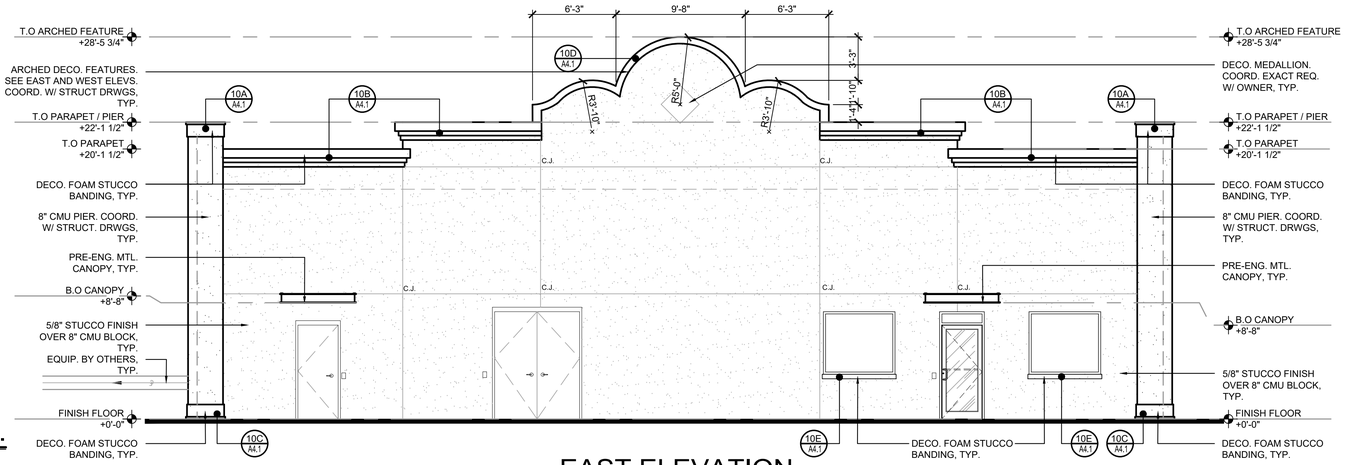
9 / A4.1 PRE-ENG. MTL. CANOPY DTL.

SCALE: 1" = 1'-0"



10 / A4.1 STUCCO BANDING DTL.

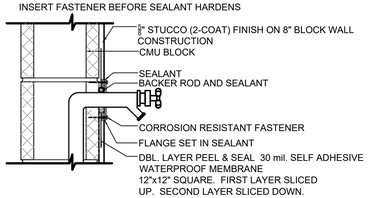
SCALE: 1" = 1'-0"



1 / A4.1 EAST ELEVATION

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

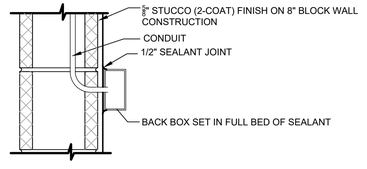
NOTE: PRE-DRILL ATTACHMENT HOLES AND FILL WITH SEALANT PRIOR TO INSERTING FASTENER. INSERT FASTENER BEFORE SEALANT HARDENS



7 / A4.1 HOSE BIBB DETAIL

3" = 1'-0"

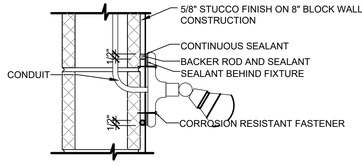
NOTE: COMPLETELY SEAL THE CONDUIT PENETRATION OF THE STUCCO WALL SYSTEM PRIOR TO INSTALLATION OF THE ELECTRICAL BOX.



8 / A4.1 CONDUIT BOX DETAIL

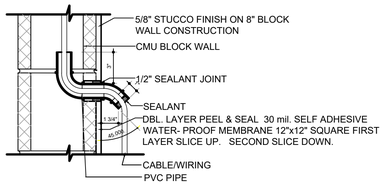
3" = 1'-0"

NOTE: COMPLETELY SEAL THE CONDUIT PENETRATION OF THE STUCCO WALL SYSTEM PRIOR TO INSTALLATION OF THE ELECTRICAL BOX.



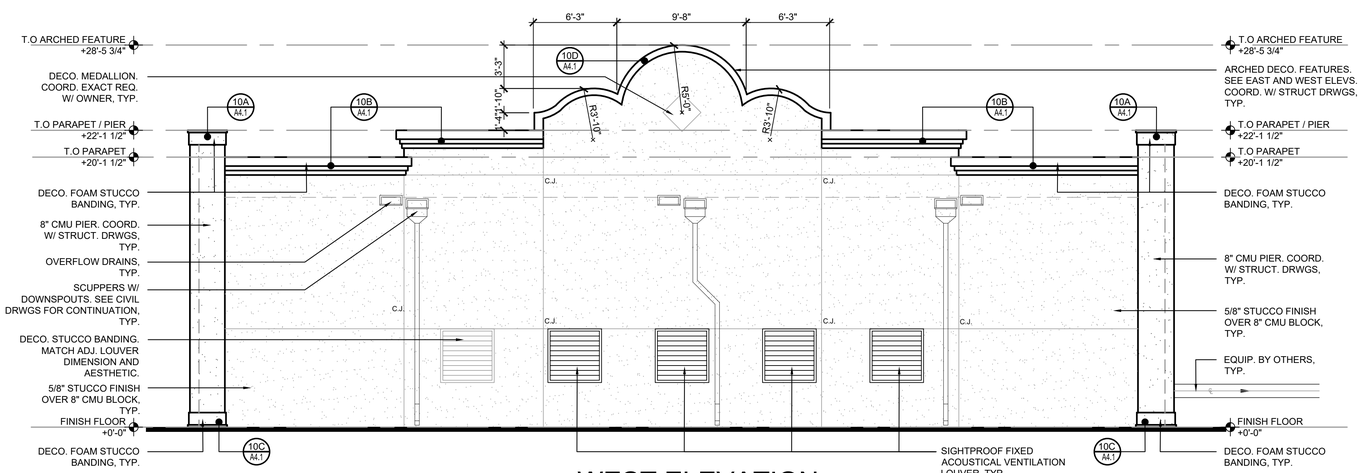
5 / A4.1 LIGHTING DETAIL

3" = 1'-0"



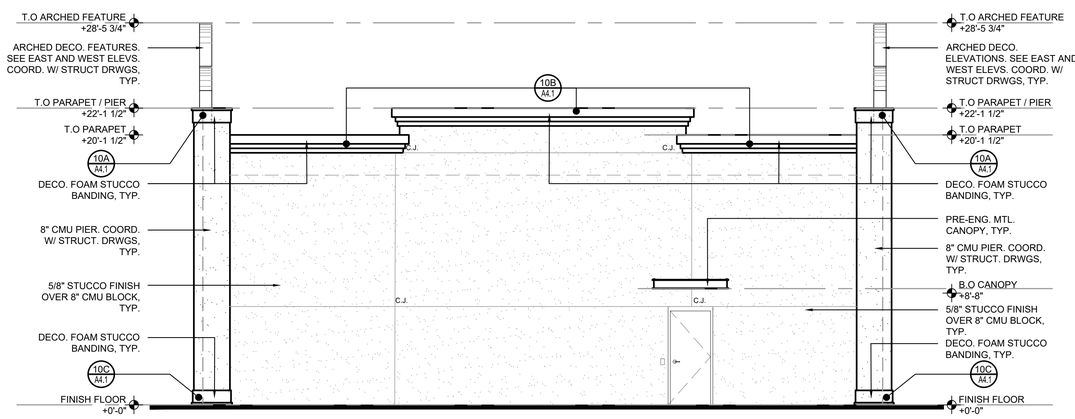
6 / A4.1 CONDUIT DETAIL

3" = 1'-0"



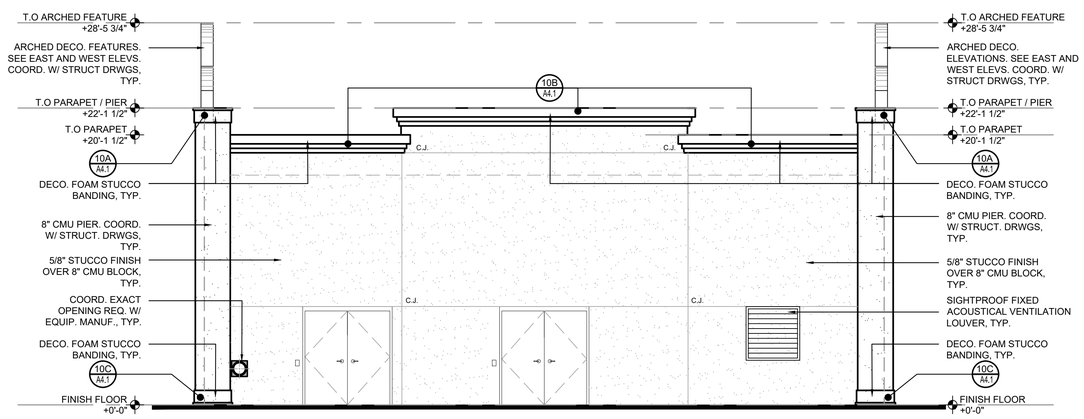
2 / A4.1 WEST ELEVATION

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



4 / A4.1 NORTH ELEVATION

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



3 / A4.1 SOUTH ELEVATION

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

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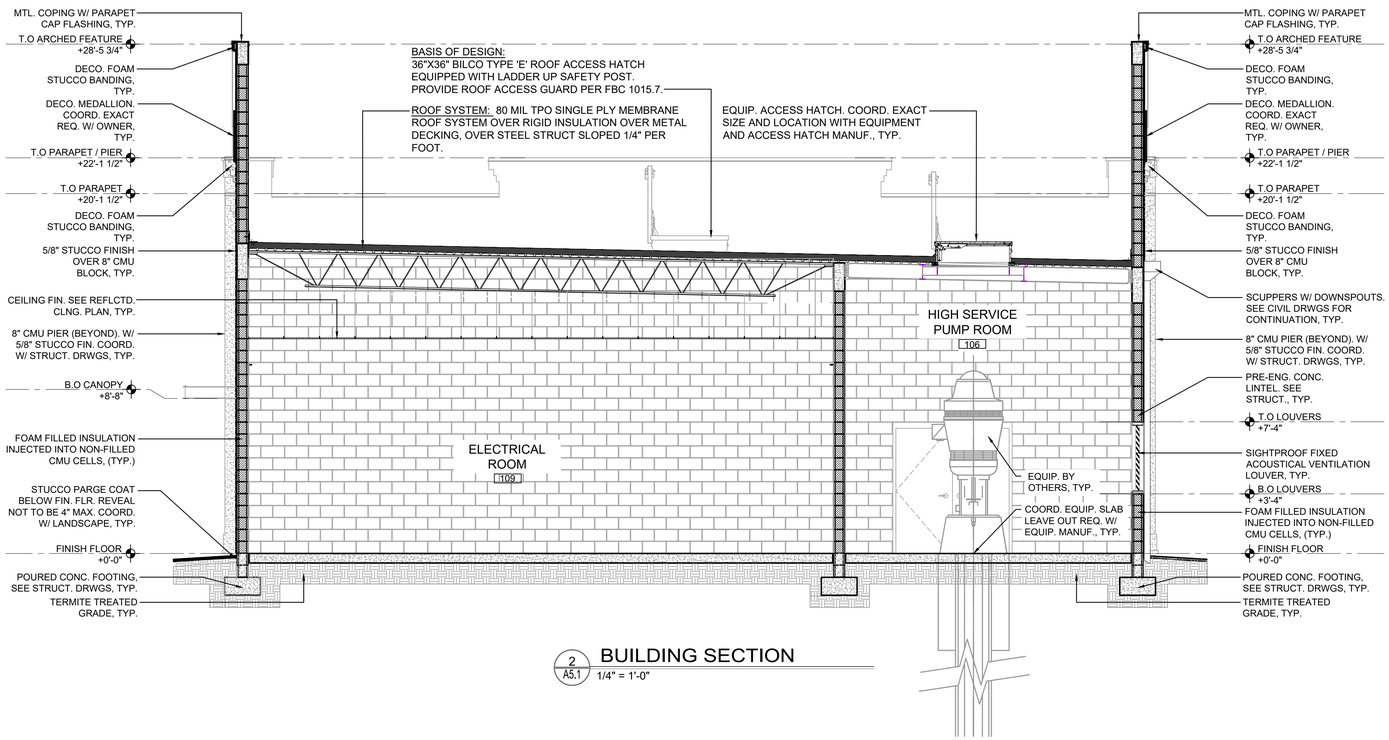
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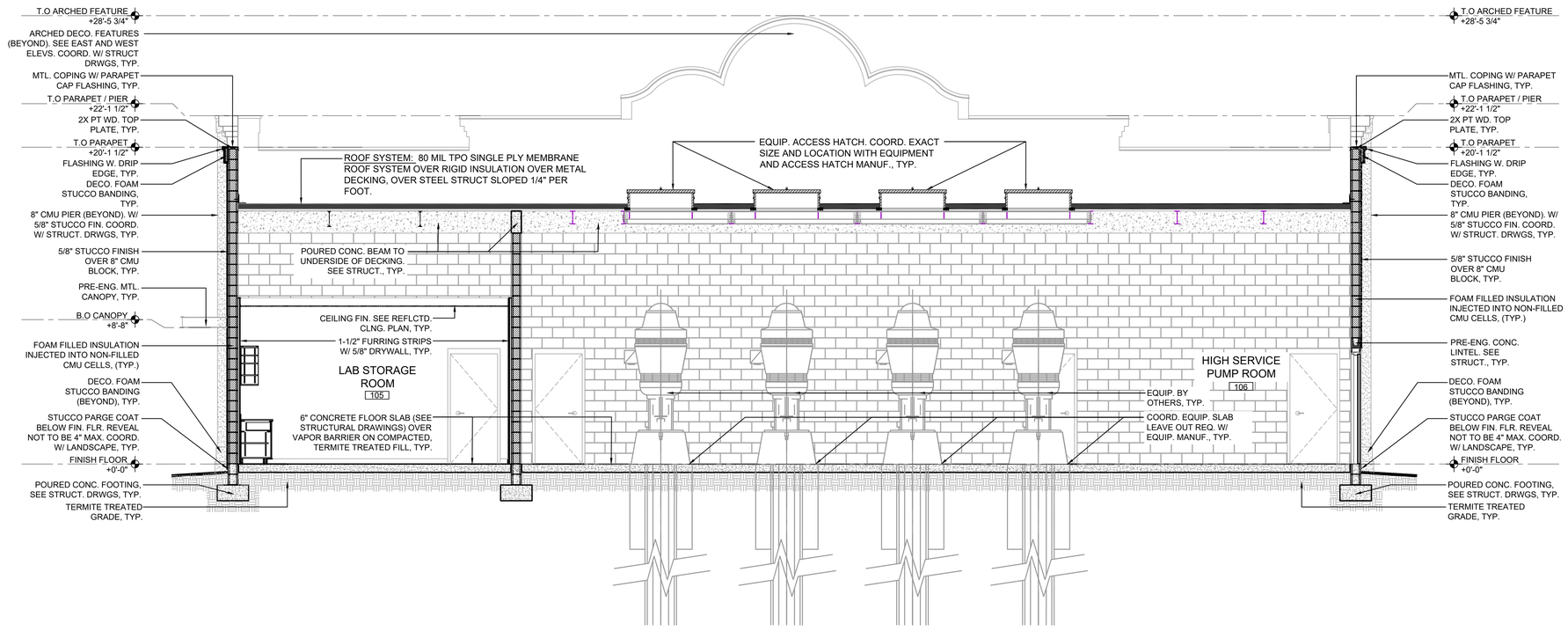
ISSUE DATE: JUNE 30, 2025

ELEVATION

A4.1



2 A5.1 BUILDING SECTION
1/4" = 1'-0"



1 A5.1 BUILDING SECTION
1/4" = 1'-0"

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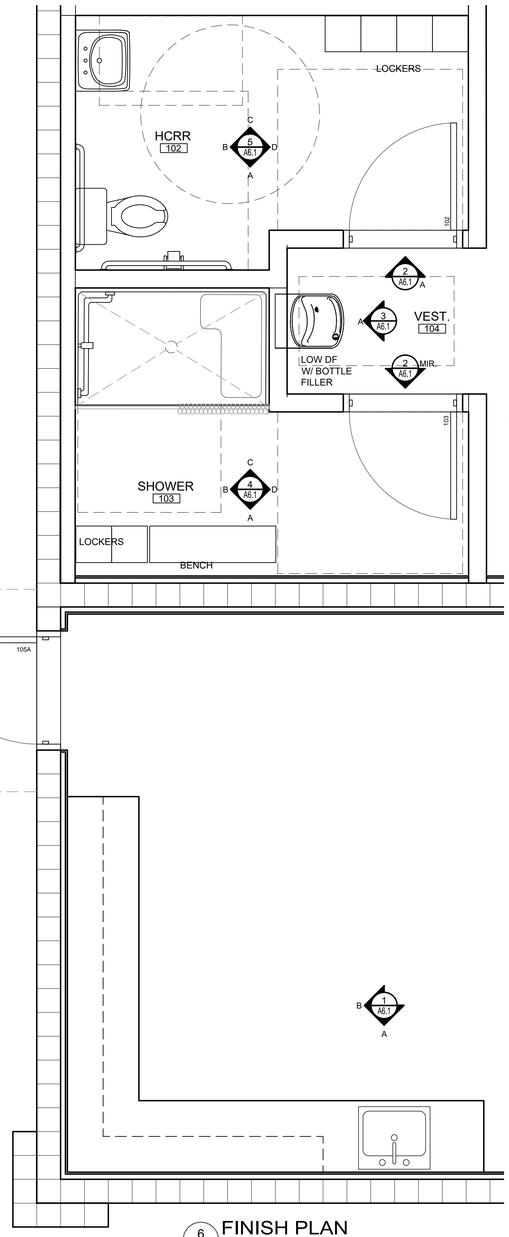
REVISIONS:

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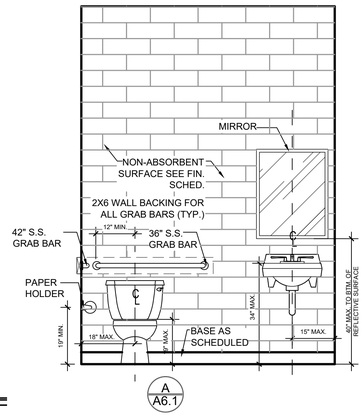
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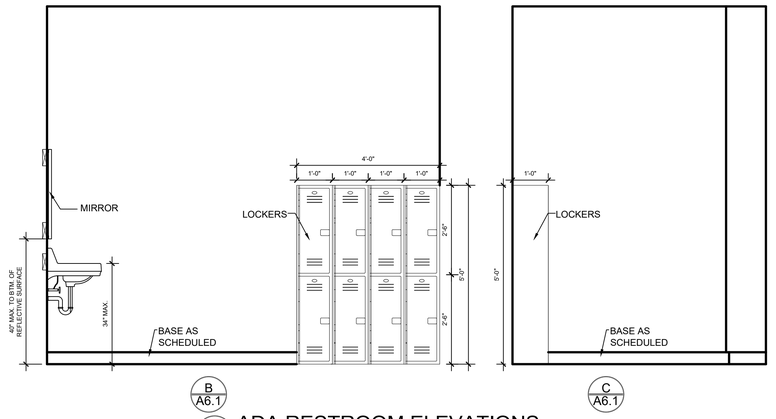
BUILDING SECTIONS & DETAILS

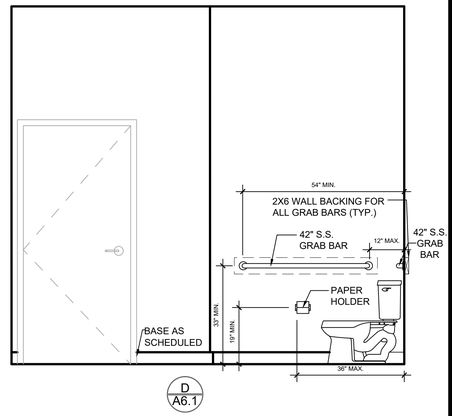
A5.1



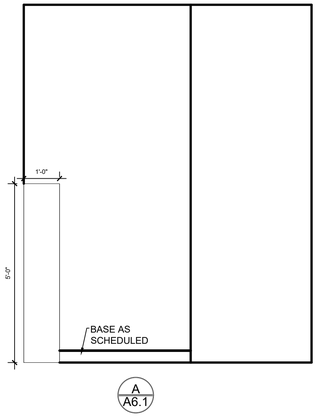
6 A6.1 FINISH PLAN
1/2" = 1'-0"

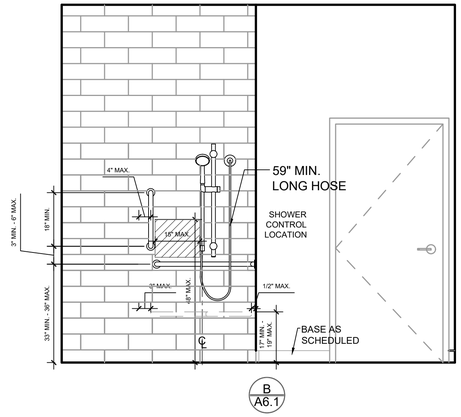


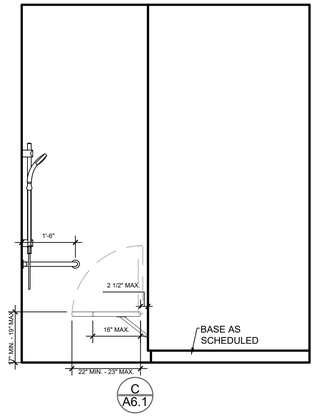


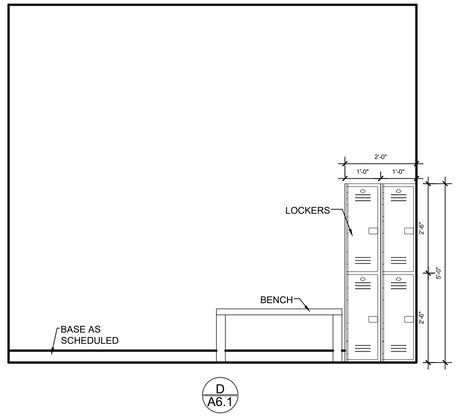


5 A6.1 ADA RESTROOM ELEVATIONS
1/2" = 1'-0"

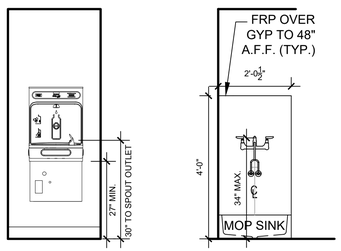








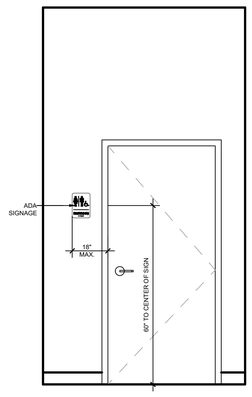
4 A6.1 ADA SHOWER ELEVATIONS
1/2" = 1'-0"



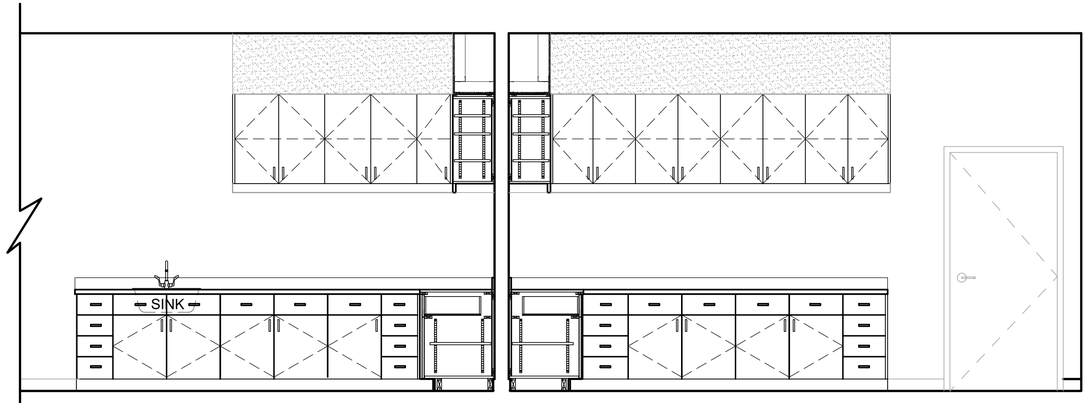
Ⓐ INTERIOR ELEVATION

Ⓑ INTERIOR ELEVATION

3 A6.1 EQUIPMENT ELEV.
3/8" = 1'-0"



2 A6.1 BATHROOM/SHOWER DOOR ELEVATIONS
1/2" = 1'-0"



1 A6.1 LAB STORAGE ELEVATIONS
1/2" = 1'-0"

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JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

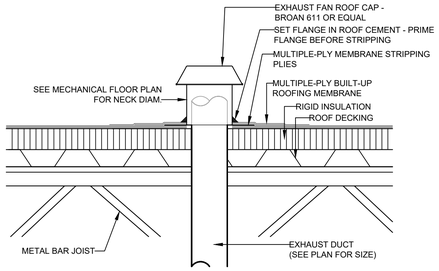
REVISIONS:

MARK	DATE	DESCRIPTION

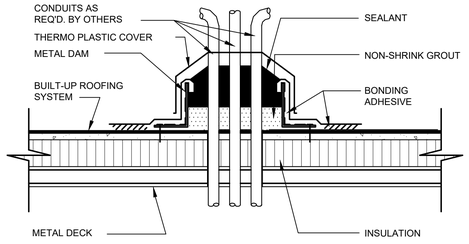
ISSUE DATE: JUNE 30, 2025

INTERIOR ELEVATIONS

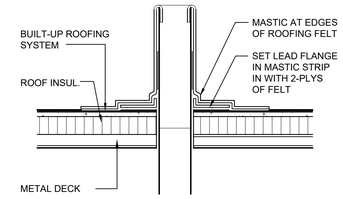
A6.1



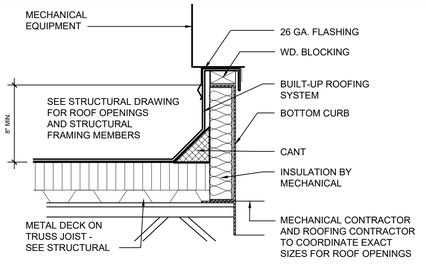
4 A7.1 VENT STACK DTL.
1" = 1'-0"



5 A7.1 TYPICAL PITCH PAN DTL.
1 1/2" = 1'-0"



6 A7.1 ROOF PENETRATION DETAIL
1 1/2" = 1'-0"

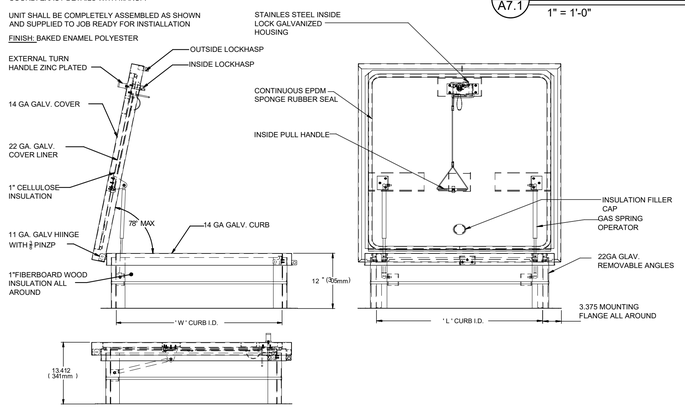


7 A7.1 EQUIPMENT CURB DTL.
1 1/2" = 1'-0"

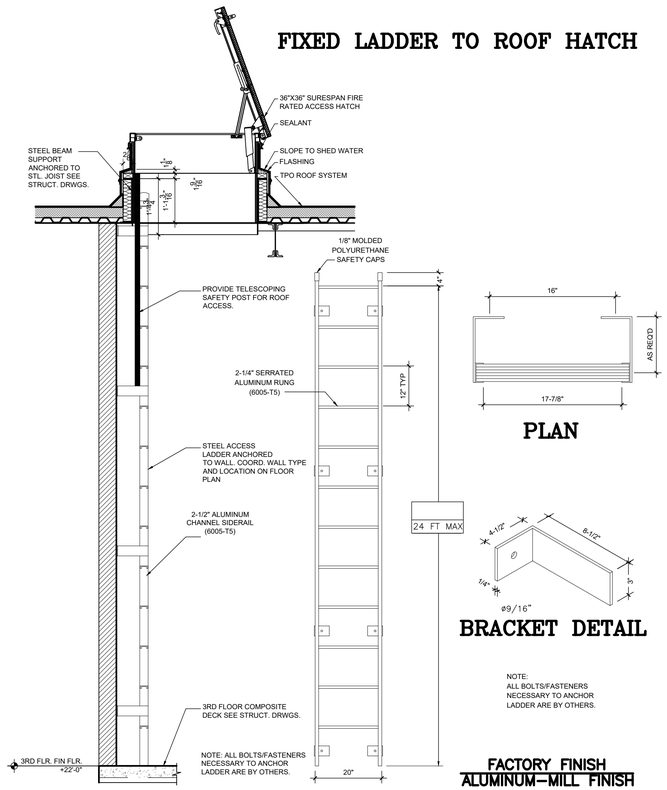
ASSEMBLY NOTE:
BASIS OF DESIGN: SRHTB/FR/914.914
COORD. EXACT DETAILS WITH MANUF.

UNIT SHALL BE COMPLETELY ASSEMBLED AS SHOWN AND SUPPLIED TO JOB READY FOR INSTIALLATION

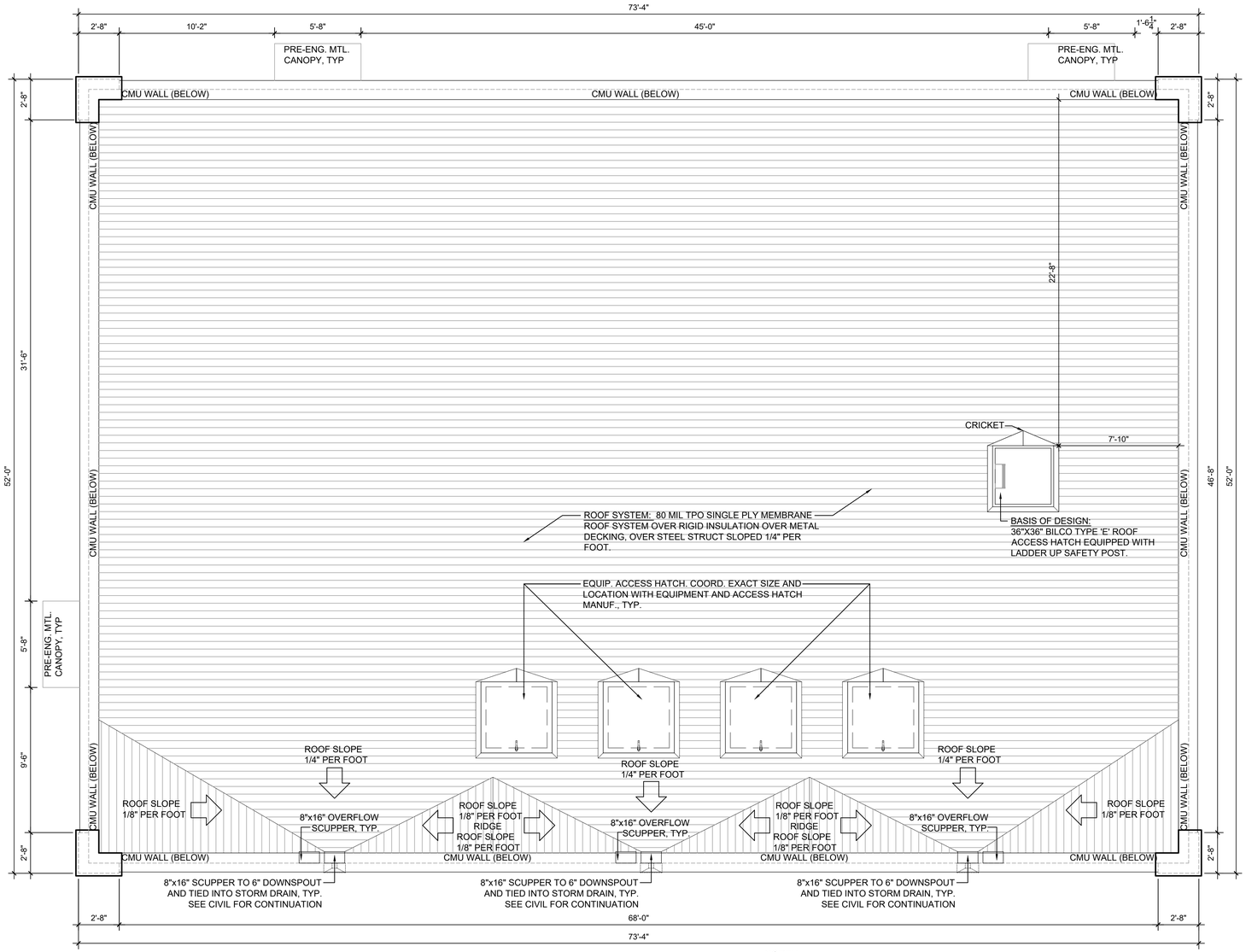
FINISH: BAKED ENAMEL POLYESTER



3 A7.1 TYP. ROOF ACCESS HATCH DETAIL
N.T.S.



2 A7.1 TYP. VERTICAL LADDER TO HATCH DET.
N.T.S.



1 A7.1 ROOF PLAN
1/4" = 1'-0"

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HOWEY-IN-THE-HILLS, FLORIDA

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PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

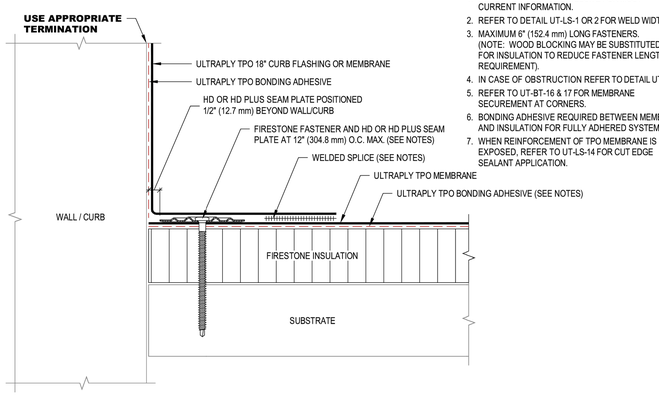
REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

ROOF PLAN

A7.1



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO DETAIL UT-LS-1 OR 2 FOR WELD WIDTH.
3. MAXIMUM 6" (152.4 mm) LONG FASTENERS. (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENT).
4. IN CASE OF OBSTRUCTION REFER TO DETAIL UT-BT-5.
5. REFER TO UT-BT-16 & 17 FOR MEMBRANE SECUREMENT AT CORNERS.
6. BONDING ADHESIVE REQUIRED BETWEEN MEMBRANE AND INSULATION FOR FULLY ADHERED SYSTEMS.
7. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.

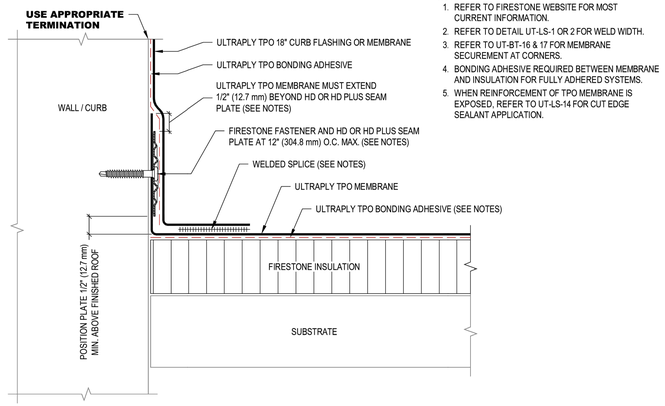
MAXIMUM WARRANTY: **20 YEARS**

BASE TIE-IN WITH HD SEAM PLATES FASTENED TO DECK

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-BT-1



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO DETAIL UT-LS-1 OR 2 FOR WELD WIDTH.
3. REFER TO UT-BT-16 & 17 FOR MEMBRANE SECUREMENT AT CORNERS.
4. BONDING ADHESIVE REQUIRED BETWEEN MEMBRANE AND INSULATION FOR FULLY ADHERED SYSTEMS.
5. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.

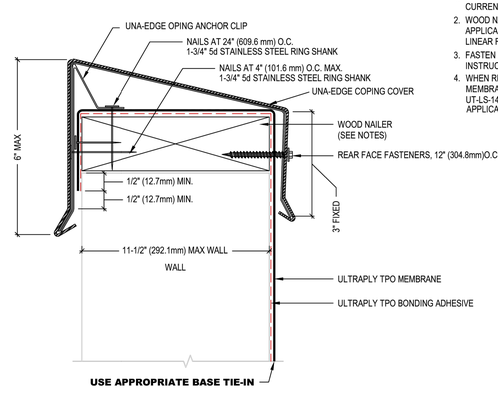
MAXIMUM WARRANTY: **20 YEARS**

BASE TIE-IN WITH HD SEAM PLATES FASTENED TO WALL / CURB

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-BT-2



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION.
3. FASTEN COPING CLEAT AS PER SUPPLIED INSTRUCTIONS AND FASTENERS.
4. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.

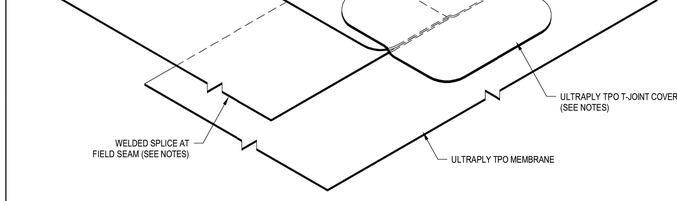
MAXIMUM WARRANTY: **20 YEARS**

TERMINATION AT TOP OF WALL WITH UNA-EDGE COPING

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 12/1/2007 | NOT TO SCALE

DETAIL NO. UT-T-12A



NOTES:
1. REFER TO FIRESTONE WEB SITE FOR MOST CURRENT INFORMATION.
2. REFER TO DETAIL UT-LS-1,2,3 FOR WELD WIDTH.
3. T-JOINT COVER REQUIRED FOR .060 GAUGE MEMBRANE ONLY.
4. ULTRAPLY TPO FLASHING (UNSUPPORTED) (4"x4" MIN. WITH ROUNDED CORNERS) MAY BE USED IN LIEU OF T-JOINT COVER.
5. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.

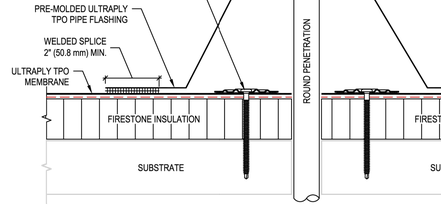
MAXIMUM WARRANTY: **20 YEARS**

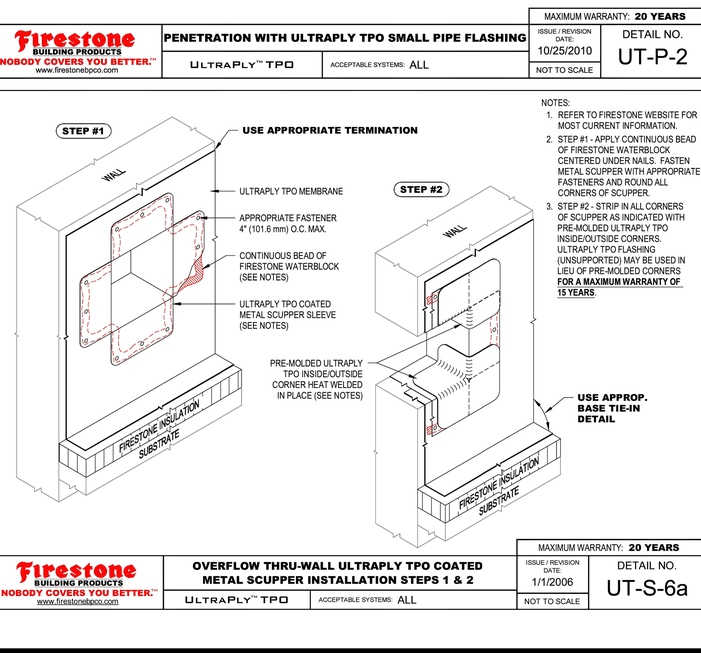
LAP SPLICE WITH HEADLAP OVER FIELD SEAM USING T-JOINT COVER

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-LS-8





NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REMOVE ALL EXISTING FLASHINGS, LEADS, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY.
4. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING).
5. APPLY GP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING.
6. SMALL PRE-MOLDED PIPE FLASHING FITS 1" (25.4 mm) - 3-1/2" (88.9 mm) PENETRATION SIZES.
7. DO NOT USE WHEN SERVICE LINE TEMP. EXCEEDS 160°F. REFER TO UT-P-6 & 7.
8. FIRESTONE FASTENER AND HD SEAM PLATE REQUIRED FOR MAS ONLY. IF FASTENER CANNOT BE INSTALLED AS ILLUSTRATED, REFER TO DETAILS UT-P-15 & 16.

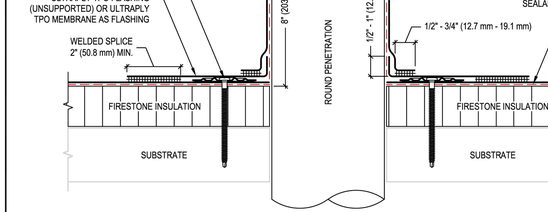
MAXIMUM WARRANTY: **20 YEARS**

PENETRATION WITH ULTRAPLY TPO SMALL PIPE FLASHING

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 10/25/2010 | NOT TO SCALE

DETAIL NO. UT-P-2



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REMOVE ALL EXISTING FLASHINGS, LEADS, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PIPE MUST BE ANCHORED TO ENSURE STABILITY.
4. NO WRINKLES OR FOLDS UNDER CLAMPING RING.
5. DO NOT USE WHEN SERVICE LINE TEMP. EXCEEDS 160°F. REFER TO UT-P-6 & 7.
6. BONDING ADHESIVE REQUIRED BETWEEN MEMBRANE AND INSULATION FOR FULLY ADHERED SYSTEMS.
7. FIRESTONE FASTENER AND HD SEAM PLATE REQUIRED FOR MAS ONLY. IF FASTENER CANNOT BE INSTALLED AS ILLUSTRATED, REFER TO DETAILS UT-P-15 & 16.
8. WHEN REINFORCEMENT OF TPO MEMBRANE IS EXPOSED, REFER TO UT-LS-14 FOR CUT EDGE SEALANT APPLICATION.

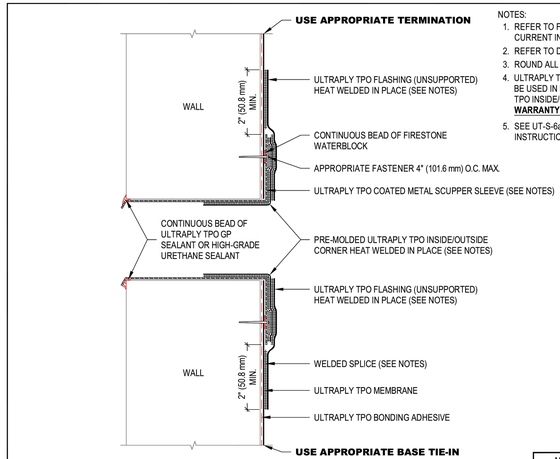
MAXIMUM WARRANTY: **20 YEARS**

PENETRATION WITH ULTRAPLY TPO FLASHING (UNSUPPORTED)

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 10/25/2010 | NOT TO SCALE

DETAIL NO. UT-P-4



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO DETAIL UT-LS-2 FOR WELD WIDTH.
3. ROUND ALL SHEET METAL FLANGE CORNERS.
4. ULTRAPLY TPO FLASHING (UNSUPPORTED) MAY BE USED IN LIEU OF PRE-MOLDED ULTRAPLY TPO INSIDE/OUTSIDE CORNER **FOR A MAXIMUM WARRANTY OF 15 YEARS**.
5. SEE UT-S-6a & b FOR DETAILED INSTALLATION INSTRUCTIONS.

MAXIMUM WARRANTY: **20 YEARS**

OVERFLOW THRU-WALL ULTRAPLY TPO COATED METAL SCUPPER

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-S-6

NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. STEP #1 - APPLY CONTINUOUS BEAD OF FIRESTONE WATERBLOCK CENTERED UNDER NAILS. FASTEN METAL SCUPPER WITH APPROPRIATE FASTENERS AND ROUND ALL CORNERS OF SCUPPER.
3. STEP #2 - STRIP IN ALL CORNERS OF SCUPPER AS INDICATED WITH PRE-MOLDED ULTRAPLY TPO INSIDE/OUTSIDE CORNERS. ULTRAPLY TPO FLASHING (UNSUPPORTED) MAY BE USED IN LIEU OF PRE-MOLDED CORNERS **FOR A MAXIMUM WARRANTY OF 15 YEARS**.

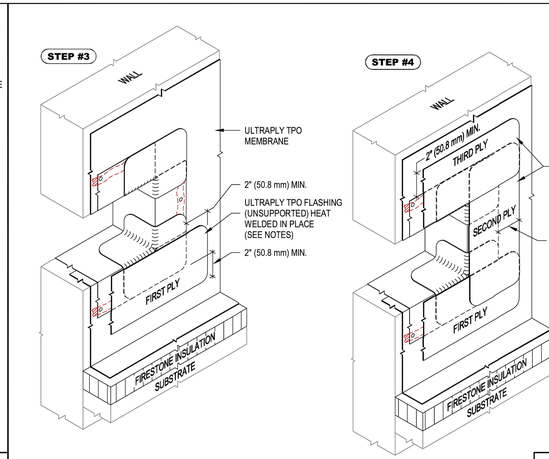
MAXIMUM WARRANTY: **20 YEARS**

OVERFLOW THRU-WALL ULTRAPLY TPO COATED METAL SCUPPER INSTALLATION STEPS 1 & 2

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-S-6a



NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. STEP #3 - STRIP IN BOTTOM EDGE OF SCUPPER AS INDICATED WITH ULTRAPLY TPO FLASHING (UNSUPPORTED).
3. STEP #4 - STRIP IN SIDE EDGES AND TOP EDGES OF SCUPPER AS INDICATED WITH ULTRAPLY TPO FLASHING (UNSUPPORTED).

MAXIMUM WARRANTY: **20 YEARS**

OVERFLOW THRU-WALL ULTRAPLY TPO COATED METAL SCUPPER INSTALLATION STEPS 3 & 4

ULTRAPLY™ TPO | ACCEPTABLE SYSTEMS: ALL

ISSUE / REVISION DATE: 1/1/2006 | NOT TO SCALE

DETAIL NO. UT-S-6b

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www.powellstudioarch.com
AA# 26002236

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WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

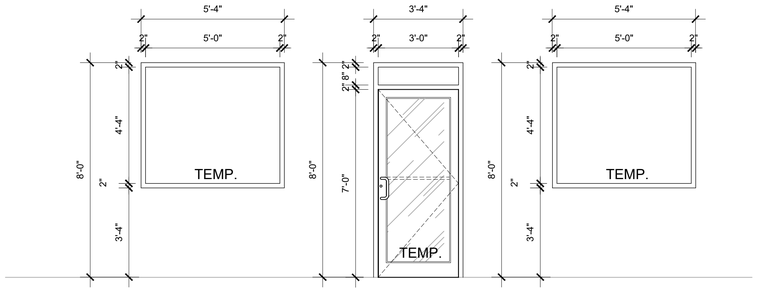
REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

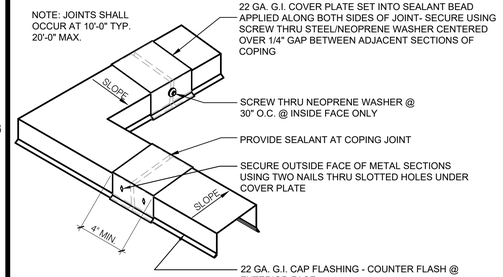
ROOF DETAILS

A7.2



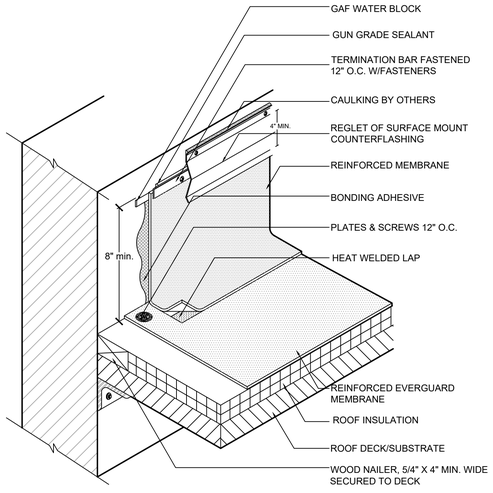
9 / A8.1 STOREFRONT DETAILS

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



8 / A8.1 TYPICAL PARAPET FLASHING

SCALE: 1" = 1'-0"



7 / A8.1 DETAIL - TPO

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

ROOM FINISH SCHEDULE

RM. #	ROOM NAME	FLOOR				BASE				WALLS					CEILING				REMARKS
		SEALED & POLISHED CONCRETE	CONCRETE	TITLE	NONE	VINYL	CERAMIC TILE	EXPOSED CMU		GWB / PRIMED AND PAINTED	TILE	FRP TO UNDERSIDE OF DECK			EXPOSED	GWB / PRIMED AND PAINTED	ACOUSTIC CEILING TILE		
100	LOBBY	●				●				●							●		
101	OFFICE	●				●				●							●		
102	HCRR				●			●		●	●					●			FULL TILE WET WALL
103	SHOWER				●			●		●	●					●			FULL TILE WET WALL
104	VESTIBULE	●					●			●						●			
105	LAB STORAGE ROOM	●					●			●						●			
106	HIGH SERVICE PUMP ROOM		●			●			●					●					
107	STORAGE & WORK ROOM	●				●				●						●			
108	CHLORINE		●			●			●				●			●			
109	ELECTRICAL ROOM		●			●				●							●		

FINISH NOTES:

GENERAL FINISH NOTES:

PER NFPA 101 14.3.3.2, INTERIOR WALL AND FINISH MATERIALS SHALL BE AS FOLLOWS:

1. ALL INTERIOR WALL AND CEILING FINISH MATERIALS IN EXIT ACCESS CORRIDORS AND ACCESSES TO EXITS SHALL BE MINIMUM CLASS A, HAVING A FLAME SPREAD RATING OF BETWEEN 0 AND 25, AND A SMOKE DEVELOPED INDEX OF 0-450, AS DETERMINED BY ASTM E84.

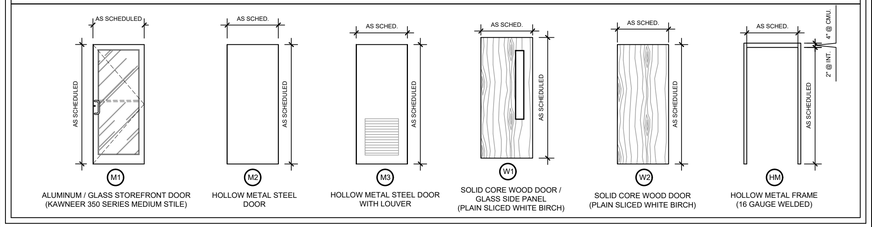
2. IN ALL OTHER AREAS, INTERIOR WALL AND CEILING FINISH MATERIALS SHALL BE MINIMUM CLASS B, HAVING A FLAME SPREAD RATING OF BETWEEN 26 AND 75, AND SMOKE DEVELOPED INDEX OF 0-450, AS DETERMINED BY ASTM E84.

3. INTERIOR FLOOR FINISH IN EXITS AND EXIT ACCESS CORRIDORS SHALL NOT BE LESS THAN CLASS II., IN ALL OTHER AREAS, CLASS I.
   a. CLASS I INTERIOR FLOOR FINISH SHALL BE CHARACTERIZED BY A CRITICAL RADIANT FLUX NOT LESS THAN 0.45 W/cm2, AS DETERMINED BY NFPA 253 OR ASTM E648.
   b. CLASS II INTERIOR FLOOR FINISH SHALL BE CHARACTERIZED BY A CRITICAL RADIANT FLUX NOT LESS THAN 0.22 W/cm2 BUT LESS THAN 0.45 W/cm2, AS DETERMINED BY NFPA 253 OR ASTM E648.

DOOR SCHEDULE

RM. #	DOOR	FRAME	TYPE	FIRE RATING	HARDWARE SET	REMARKS
100	3'-0" x 7'-0" x 2"	AL	M1	N/A	A	EXTERIOR - STOREFRONT DOOR
101	3'-0" x 7'-0" x 1-3/4"	HM	W1	N/A	D	
102	3'-0" x 7'-0" x 1-3/4"	HM	W2	N/A	C	
103	3'-0" x 7'-0" x 1-3/4"	HM	W2	N/A	C	
105A	3'-0" x 7'-0" x 1-3/4"	HM	M2	N/A	B	EXTERIOR
105B	3'-0" x 7'-0" x 1-3/4"	HM	W2	N/A	E	
106A	(2) 3'-0" x 7'-0" x 1-3/4"	HM	M2	N/A	B	EXTERIOR - DOUBLE DOORS
106B	3'-0" x 7'-0" x 1-3/4"	HM	M3	N/A	E	
106C	3'-0" x 7'-0" x 1-3/4"	HM	M3	N/A	E	
106D	3'-0" x 7'-0" x 1-3/4"	HM	M3	N/A	E	
107A	(2) 3'-0" x 7'-0" x 1-3/4"	HM	M2	N/A	B	EXTERIOR - DOUBLE DOORS
107B	3'-0" x 7'-0" x 1-3/4"	HM	M3	N/A	E	
108	3'-0" x 7'-0" x 1-3/4"	HM	M2	N/A	B	EXTERIOR - ELIMINATE CLOSER
109A	(2) 3'-0" x 8'-0" x 1-3/4"	HM	M2	N/A	B	EXTERIOR - DOUBLE DOORS
109B	3'-0" x 7'-0" x 1-3/4"	HM	W2	N/A	E	

DOOR TYPES & FRAMES



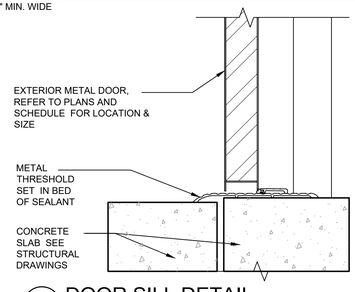
DOOR HARDWARE SCHEDULE

SET	ITEM	MANUFACTURER & MODEL NO.	FINISH / REMARKS
FRONT ENTRY HARDWARE SET 'A'	(1-1/2) PAIR BUTT HINGES (1) LOCKING CYLINDER (1) EXIT DEVICE (1) WEATHER STRIP (1) CLOSER (3) SILENCERS (1) OVERHEAD RAIN DRIP	STANLEY F179, NRP FULL MORTISE STANDARD WEIGHT PLAIN BEARING 4-1/2" X 4-1/2" 5 KNUCKLE HINGE ADAMS RITE MS-1850 DEADLOCK WITH CYLINDER KEYED TO MASTER KEY SYSTEM SARGENT 80 SERIES, OR EQUAL BOTTOM DOOR SWEEP LCN 1260 SERIES CLOSER / HOLD OPEN PEMKO OVERHEAD RAIN DRIP #346, 4" LONGER THAN DOOR WIDTH	
EXTERIOR SIDE HARDWARE SET 'B'	(1-1/2) PAIR BUTT HINGES (1) LOCKING CYLINDER (1) EXIT DEVICE (1) CLOSER (3) SILENCERS (1) OVERHEAD RAIN DRIP (1) KICKPLATE (1) WEATHER STRIPPING	STANLEY F179, NRP FULL MORTISE STANDARD WEIGHT PLAIN BEARING 4-1/2" X 4-1/2" 5 KNUCKLE HINGE ADAMS RITE MS-1850 DEADLOCK WITH CYLINDER KEYED TO MASTER KEY SYSTEM SARGENT 80 SERIES, OR EQUAL LCN 1260 SERIES CLOSER / HOLD OPEN PEMKO OVERHEAD CLOSER / HOLD OPEN BOTTOM DOOR SWEEP	
PRIVACY HARDWARE SET 'C'	(1-1/2) PAIR 4-1/2X4-1/2 BUTT HINGES (1) PRIVACY LATCHSET (1) CLOSER (1) WALL STOP (3) SILENCERS KICKPLATES	3 EA. BUTTS - STANLEY FBB 191 (32D) 4.5 x 4.5 BEST 73KC-0-L-15D-53-626 YALE 3000 SERIES, OR EQUAL, PARALLEL ARM MOUNTED IVES 407 (32D), OR EQUAL	
OFFICE HARDWARE SET 'D'	(1-1/2) PAIR 4-1/2 X 4-1/2 BUTT HINGES (1) OFFICE LATCHSET (1) CLOSER (1) WALL STOP (3) SILENCERS	3 EA. BUTTS - STANLEY FBB 191 (32D) 4.5 x 4.5 YALE 3000 SERIES, OR EQUAL, PARALLEL ARM MOUNTED IVES 407 (32D), OR EQUAL	
STORAGE HARDWARE SET 'E'	(1-1/2) PAIR 4-1/2 X 4-1/2 BUTT HINGES (1) STORAGE LATCHSET (1) CLOSER (1) WALL STOP (3) SILENCERS	3 EA. BUTTS - STANLEY FBB 191 (32D) 4.5 x 4.5 YALE 3000 SERIES, OR EQUAL, PARALLEL ARM MOUNTED IVES 407 (32D), OR EQUAL	

NOTES:
1. VERIFY PROPER DOOR FUNCTIONALITY AND HARDWARE PRIOR TO ORDERING. CONTRACTOR TO VERIFY ACCESS CONTROL REQUIREMENTS WITH OWNER.
2. CONTRACTOR TO REVIEW AND CONFIRM HARDWARE SETS WITH OWNER AND ARCHITECT PRIOR TO ORDERING.
3. ALL INTERIOR DOORS SHALL BE PROVIDED WITH LEVER HANDLE LATCH SETS COMPLIANT WITH FBC ACCESSIBILITY 309 & 404.2.7
4. ALL LEVER HANDLE LATCH SETS SHALL BE COMPLIANT WITH F.A.B.C. 309 & 404.2.7

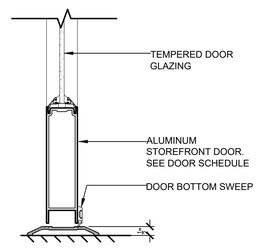
PRE-ENGINEERED ALUMINUM AWNING NOTES:

1. AWNING AND ALL ASSOCIATED FRAMEWORK MEMBERS TO BE DESIGNED AND CERTIFIED BY A REGISTERED ENGINEER IN THE STATE OF FLORIDA AND SHALL MEET OR EXCEED ALL APPLICABLE CODES AND REGULATIONS.
2. G.C. TO COORDINATE WITH AWNING FABRICATOR SO AS TO PROVIDE ALL NECESSARY FRT BLOCKING AND / OR ALL GROUTED SOLID MASONRY CELLS IN ORDER TO PROVIDE PROPER AWNING FASTENING.
3. SUBMIT SHOP DRAWINGS OF AWNING DESIGN DETAILS FOR ARCHITECT / OWNER APPROVAL.
4. PRE-ENGINEERED ALUMINUM AWNING SPECIFIED: MAPES SUPER LUMIDECK, OR EQUAL
5. MATERIALS: EXTRUDED ALUMINUM
6. COLORS: BLACK, TO MATCH STOREFRONT AND RAILINGS



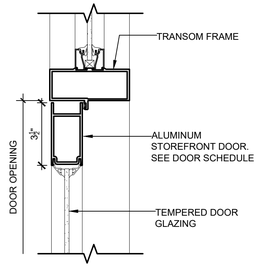
6 / A8.1 DOOR SILL DETAIL

SCALE: 3" = 1'-0"



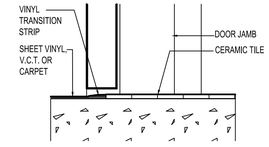
5 / A8.1 STOREFRONT THRESHOLD

SCALE: 3" = 1'-0"



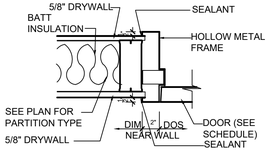
4 / A8.1 STOREFRONT HEAD

SCALE: 3" = 1'-0"



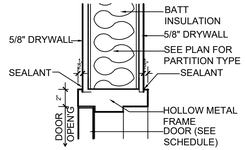
3 / A8.1 INT. DOOR THRESHOLD

3" = 1'-0"



2 / A8.1 INT. DOOR JAMB

3" = 1'-0"



1 / A8.1 INT. DOOR HEAD

3" = 1'-0"

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OWNER:

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

PROFESSIONAL SEAL:

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: JUNE 30, 2025

SCHEDULES & DETAILS

A8.1

STRUCTURAL NOTES

CONTRACTOR NOTE:

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. GUTHERMAN STRUCTURAL, INC, IS NOT RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION OR FOR RELATED SAFETY PRECAUTIONS AND PROGRAMS.

CODES AND STANDARDS

1. WIND LOADS AS PER:

   A. FLORIDA BUILDING CODE 8TH EDITION (2023) WITH AN ULTIMATE DESIGN WIND SPEED OF 132 MPH, EXPOSURE C, NOMINAL DESIGN WIND SPEED OF 102 MPH, +/-0.18 INTERNAL PRESSURE COEFFICIENT, AND BUILDING RISK CATEGORY II.

2. SEISMIC SITE CLASS = E
   SEISMIC DESIGN CATEGORY = A
   GROUND SNOW LOAD, Pg = 0 PSF
   FLOOD ZONE = X
   RAIN INTENSITY = 4.5 INCHES PER HOUR (100 YEAR)

3. THE PROJECT WAS DESIGNED IN ACCORDANCE WITH THE:

   A. FLORIDA BUILDING CODE 8TH EDITION (2023).
   B. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318/ 2019 EDITION),
   C. SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, (AMERICAN INSTITUTE OF STEEL CONSTRUCTION) AISC 2017 EDITION (ASD).
   D. BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 402, 602/2016 EDITION),
   E. LIGHT GAUGE STUD FRAMING SHALL COMPLY WITH ASTM STANDARDS AND HAVE BEEN DESIGNED IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE'S SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, AISI S-100-16.
   J. ASCE 7- 22.

4. ARCHITECTURAL AND MECHANICAL DRAWINGS:

   A. THE STRUCTURAL DRAWINGS ARE PART OF THE CONTRACT DOCUMENTS AND DO NOT BY THEMSELVES PROVIDE ALL THE INFORMATION REQUIRED TO PROPERLY COMPLETE THE PROJECT STRUCTURE. THE GENERAL CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE THE INFORMATION CONTAINED IN THESE DRAWINGS WITH THE STRUCTURAL DRAWINGS TO PROPERLY CONSTRUCT THE PROJECT.

   B. REFER TO ARCHITECTURAL, MECHANICAL OR ELECTRICAL DRAWINGS FOR ADDITIONAL OPENINGS, DEPRESSIONS, FINISHES, INSERTS, BOLTS SETTINGS, DRAINS, REGLETS, ETC.

   C. BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS TO PROPERLY SIZE OR FIT THE WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED BY THE OWNER RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT.

   D. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH ANY WORK.

   E. ALL STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS LISTED ONLY AS COMPLETED STRUCTURES. THE GENERAL CONTRACTOR SHALL FULLY BRACE AND OTHERWISE PROTECT WORK IN PROGRESS UNTIL THE STRUCTURES ARE COMPLETED. THE GENERAL CONTRACTOR SHALL ALSO INSURE THAT ITS OPERATIONS AND PROCEDURES PROVIDE NO LOADING GREATER THAN THE DESIGN LOADS LISTED ON ANY MEMBER.

5. SECTIONS AND DETAILS:

   ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE SHOWN.

6. MATERIALS AND ASSEMBLY TEST AS FOLLOWS:

   A. EXTERIOR WINDOWS, SLIDING AND PATIO GLASS DOORS SHALL BE TESTED BY AN APPROVED INDEPENDENT TESTING LABORATORY, AND SHALL BE LABELED WITH AN APPROVED LABEL IDENTIFYING THE MANUFACTURER, PERFORMANCE CHARACTERISTICS AND APPROVED PRODUCT CERTIFICATION AGENCY, TESTING LABORATORY, EVALUATION ENTITY OR FLORIDA STATE WIDE PRODUCT APPROVAL NUMBER.

   B. EXTERIOR DOOR ASSEMBLIES SHALL BE TESTED FOR STRUCTURAL INTEGRITY IN ACCORDANCE WITH ASTM E330 AT A LOAD OF 1.5 TIMES THE REQUIRED DESIGN PRESSURE LOAD. THE LOAD SHALL BE SUSTAINED FOR 10 SECONDS WITH NO PERMANENT DEFORMATION OF ANY MAIN FRAME OR PANEL MEMBER IN EXCESS OF 0.4 PERCENT OF ITS SPAN AFTER THE LOAD IS REMOVED. HVHZ SHALL COMPLY WITH TAS 202. AFTER EACH SPECIFIED LOADING, THERE SHALL BE NO GLASS BREAKAGE, PERMANENT DAMAGE TO FASTENERS, HARDWARE PARTS, OR ANY OTHER DAMAGE, WHICH CAUSES THE DOOR TO BE INOPERABLE.

   C. SECTIONAL GARAGE DOORS SHALL BE TESTED FOR DETERMINATION OF STRUCTURAL PERFORMANCE UNDER UNIFORM STATIC AIR PRESSURE DIFFERENCE IN ACCORDANCE WITH ANSI/DASMA 115 OR TAS 201,202 AND 203.

   D. CUSTOM (ONE OF A KIND) EXTERIOR DOOR ASSEMBLIES SHALL BE TESTED BY AN APPROVED TESTING LABORATORY OR BE ENGINEERED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES.

   E. WINDOW AND DOOR ASSEMBLIES SHALL BE ANCHORED IN ACCORDANCE WITH THE PUBLISHED MANUFACTURER'S RECOMMENDATIONS TO ACHIEVE THE DESIGN PRESSURE SPECIFIED. SUBSTITUTE ANCHORING SYSTEM USED FOR SUBSTRATES NOT SPECIFIED BY THE FENSTRATION MANUFACTURER SHALL PROVIDE EQUAL OR GREATER ANCHORING PERFORMANCE AS DEMONSTRATED BY ACCEPTED ENGINEERING PRACTICE.

SPECIALTY ENGINEERED PRODUCTS

1. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PROPER SUBMISSION OF SPECIALTY ENGINEERED SHOP DRAWINGS WHICH SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THE SPECIALTY ENGINEERED SHOP DRAWINGS ARE SUBMITTED IN A TIMELY MANNER SO AS TO ALLOW REVIEWS AND RESUBMISSIONS AS REQUIRED. ALL SPECIALTY ENGINEERED PRODUCTS SHALL BE DESIGNED FOR THE APPROPRIATE GRAVITY LOADS AND WIND LOADS INCLUDING UPLIFT AND LATERAL LOADS. INTERIOR SPECIALTY PRODUCTS SHALL BE DESIGNED FOR LATERAL LOADS TO ASSURE STABILITY. SPECIALTY ENGINEERED PRODUCTS SHALL BE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

   A. LIGHT GAUGE METAL, INCLUDING BUT NOT LIMITED TO, SOFFITS, CLADDING, CEILINGS, ETC.

   B. MISCELLANEOUS METALS INCLUDING STEEL STAIRS, MECHANICAL EQUIPMENT SUPPORTS, FRAMES THAT SUPPORT MACHINES, PIPES OR OTHER STRUCTURAL METAL USED FOR SUPPORT OF MECHANICAL SYSTEMS.

   C. MISCELLANEOUS HANGERS, CHANDELIERS, CABINETS, METAL FRAMES, LADDERS, RIGGING, HANGING WALLS, RAILINGS, GLAZING FRAMES, CLADDING SUCH AS STONE, PRECAST, ALUMINUM, METAL PANELS, CABLE BARRIER SYSTEMS, ETC. OR ANY OTHER MISCELLANEOUS PRODUCT REQUIRED BY ANY OF THE CONSTRUCTION DOCUMENTS.

   D. IN ADDITION TO THE LOADS SHOWN IN THE DESIGN LOAD SCHEDULE, THE SPECIALTY ENGINEER SHALL DESIGN FOR THE WEIGHT OF ALL MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND FIXTURES, AS WELL AS CHANDELIER FIXTURES, BAR CABINETS, AND ART WORK / MOBILES.

GENERAL CONTRACTOR TO INCLUDE IN THEIR BID THE COST OF THE ABOVE NOTED SPECIALTY ENGINEERING.

FOUNDATION

1. ALL SITE PREPARATION AND EXCAVATION WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE REPORT ON SOILS AND FOUNDATION INVESTIGATION PREPARED BY A PROFESSIONAL GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

2. BOTTOM OF FOOTINGS ASSUMED TO BEAR ON SOIL CAPABLE OF SAFELY SUPPORTING 2000 PSF.

3. SOILS SUPPORTING ALL FOOTINGS MUST BE INSPECTED AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE COMMENCING WORK. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SPECIFIED SOIL BEARING PRESSURE.

4. TOP OF ALL SPREAD FOOTINGS SHALL BE 1'-4" BELOW TOP OF SLAB TYP. MAKE ADJUSTMENTS AS NEEDED SO TOP OF ALL EXTERIOR FOOTINGS SHALL BE MINIMUM 12-INCHES BELOW EXTERIOR FINISH GRADE.

5. ALL MONOLITHIC EDGE FOOTINGS SHALL BEAR A MINIMUM 1'-0" BELOW EXTERIOR GRADE TYP. MAKE ADJUSTMENTS AS NEEDED.

6. EXCAVATION & BACKFILL:

   A. ALL EXCAVATION SHALL BE KEPT DRY. EXCAVATE TO DEPTHS AND DIMENSIONS INDICATED. TAKE EVERY PRECAUTION TO GUARD AGAINST ANY MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES, UTILITIES, PIPING, ETC.

   B. PROVIDE ANY BRACING OR SHORING NECESSARY TO AVOID SETTLEMENT OR DISPLACEMENT OF EXISTING FOUNDATION OR STRUCTURES.

7. CENTERLINE OF FOOTINGS: SHALL COINCIDE WITH CENTERLINE OF COLUMNS UNLESS OTHERWISE NOTED ON DRAWINGS.

8. DIMENSIONS: ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE VERIFIED AND COORDINATED WITH THE ARCHITECTURAL DRAWINGS BY THE CONTRACTOR BEFORE PROCEEDING WITH THE CONSTRUCTION. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER IN WRITING BEFORE PROCEEDING WITH ANY WORK.

CONCRETE

1. CONCRETE ELEMENTS TO HAVE THE FOLLOWING STRENGTHS:

   A. FOUNDATIONS 3000 PSI
   B. SLAB-ON-GRADE 3000 PSI
   C. COLUMNS 4000 PSI
   D. WALLS 4000 PSI
   E. BEAMS 4000 PSI
   F. MASONRY GROUT 3000 PSI
   G. NON-SHRINK GROUT 5000 PSI

   ALL OTHER CONCRETE TO BE 4000 PSI UNLESS NOTED OTHERWISE.

2. ALL CONCRETE SHALL BE READY MIX AND MEET THE FOLLOWING REQUIREMENTS:
   A. SLUMPS SHALL BE 4-INCHES MINIMUM AND 6-INCHES MAXIMUM.
   B. CONCRETE SHALL HAVE 3 PERCENT AIR ENTRAINMENT.
   C. ALL CONCRETE TO HAVE MAXIMUM WATER/CEMENT RATIO OF 0.55.
   D. JOBSITE WATER SHALL NOT BE ADDED.
   E. CEMENT SHALL CONFORM WITH ASTM C150 TYPE 1, SLAG, ASTM C989 SHALL BE LIMITED TO 50% (BY WEIGHT OF CEMENTITIOUS MATERIAL AND FLY ASH, ASTM C618, CLASS F, SHALL BE LIMITED TO 25% (BY WEIGHT) OF CEMENTITIOUS MATERIAL.

3. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI BUILDING CODE (ACI 318/ 2019 EDITION), THE ACI DETAILING MANUAL (ACI 315R-2018), AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301/2020).

4. SUBMIT ALL REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL PRIOR TO ANY FABRICATION.

5. CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS REQUIRED BY ACI SPECIFICATIONS.

6. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A 1064, UNLESS OTHERWISE SPECIFIED. PLACE FABRIC 2" CLEAR FROM TOP OF THE SLAB IN SLAB ON GRADE AND SUPPORT ON SLAB BOLSTERS SPACED AT 3'-0" O.C.

7. LAP ALL BARS WITH CLASS B TENSION LAP SPLICE UNLESS OTHERWISE NOTED ON DRAWINGS. LAP ALL WWF A MINIMUM OF 12 INCHES (UNLESS OTHERWISE NOTED).

8. REINFORCING BARS:

   A. ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A 615 GRADE 60.

   B. AT CORNERS OF CONCRETE WALLS, BEAMS AND CONTINUOUS WALL FOOTINGS, PROVIDE (1-#5 OR MATCHING) HORIZONTAL BARS X 5'-0" BENT BAR FOR EACH HORIZONTAL BAR SCHEDULED AT EACH FACE.

   C. WHERE COLUMNS ARE AN INTEGRAL PART OF CONCRETE WALLS, WALL REINFORCEMENT SHALL BE CONTINUOUS THRU THE COLUMNS.

   D. ALL HOOKS SHOWN IN REINFORCEMENT SHALL BE ACI RECOMMENDED HOOKS UNLESS OTHERWISE NOTED.

MASONRY

1. MASONRY UNITS SHALL BE LOAD BEARING ASTM C90, NORMAL WEIGHT LAID IN A FULL BED OF MORTAR IN RUNNING BOND.

2. THE COMPRESSIVE STRENGTH OF MASONRY (F'M) SHALL BE 2,000 PSI AS CALCULATED IN ACCORDANCE WITH ASTM C-140.

3. ALL MORTAR SHALL BE IN ACCORDANCE WITH ASTM SPECIFICATION C270 HAVING A MINIMUM COMPRESSIVE STRENGTH OF (S) 1,800 PSI OR (M) 2,500 PSI

4. GROUT SHALL BE A HIGH SLUMP MIX IN ACCORDANCE WITH ASTM SPECIFICATION C476, HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

5. ALL CONCRETE MASONRY BEARING AND SHEAR WALLS SHALL BE INSPECTED BY A CERTIFIED INSPECTION COMPANY AND CONSTRUCTED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENT FOR MASONRY STRUCTURES TMS602/ACI530.1/ASCE 6.

6. PROVIDE 8" X 8" MASONRY BEAM WITH 1 #5 CONT. AT EVERY WINDOW SILL. EXTEND BEAM 8" BEYOND EDGE OF OPENING.

7. ALL VERTICAL REINFORCING SHALL BE HOOKED AT TOP AND BOTTOM AT ALL VERTICAL REINFORCED CELL RUNS. THIS INCLUDES IN BEAMS AND LINTELS OVER OPENINGS.

8. THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL BRACING FOR ALL MASONRY WALLS AS REQUIRED TO ENSURE STABILITY DURING CONSTRUCTION.

9. PROVIDE HOT DIPPED GALVANIZED LADDER TYPE HORIZONTAL JOINT REINFORCEMENT (9 GA.) AT 16" ON CENTER VERTICAL IN ALL MASONRY WALLS. PROVIDE DOVE TAIL SLOT ANCHORS AT CONCRETE COLUMNS. LAP ALL WIRE 6" MIN. TYP.
   ALL JOINT REINFORCEMENT, WALL TIES, ANCHORS AND INSERTS SHALL BE HOT DIP GALVANIZED.

10. PROVIDE CONTROL JOINTS IN MASONRY WALLS AT A SPACING OF 25' + O.C. AND ALIGN WITH ARCHITECTURAL CONTROL JOINTS.

11. THE GENERAL CONTRACTOR SHALL PROVIDE CMU LEDGERS AT ALL FOUNDATIONS WHICH RECEIVE STONE OR BRICK VENEERS, AS NEEDED TO ACCOMODATE THE WIDTH OF VENEERS SPECIFIED BY THE ARCHITECT, ATTACHMENT TO THE MAIN STRUCTURAL SHALL BE #5 DOWELS INTO THE FOOTING AT 72" O.C. OR CORRUGATED MASONRY TIES AT 16" O.C. HORIZONTAL AND VERTICAL.

12. MASONRY BOND BEAMS: GENERAL CONTRACTOR SHALL PROVIDE AND INCLUDE IN THEIR BID A MINIMUM 8x16 MASONRY BOND BEAM HAVING (1) #5 CONTINUOUS BAR TOP AND BOTTOM AT ALL DECK BEARING LOCATIONS (ROOF)
    BOND BEAMS SHALL BE STEPPED AS NEEDED WITH SLOPED ROOF ANGLE ATTACHEMENT LOCATIONS. AND BOND BEAMS SHALL BE STEPPED BELOW BEAM BEARING POCKET LOCATIONS TYP.

13. MINIMUM LAP SPLICES FOR REINFORCED MASONRY (40 BAR DIA. MIN.):

BAR SIZE				
#4	#5	#6	#7	
20"	25"	30"	35"	

    A. LAP SPLICES SHALL OCCUR DIRECTLY ABOVE FOOTINGS AND SLABS. NO SPLICES ARE ALLOWED AT MID-HEIGHT OF WALL.

    B. LAP SPLICES THAT OCCUR AT CANTILEVERED WALLS SUCH AS; PARAPETS, RETAINING WALLS, ETC. SHALL HAVE LAP SPLICE LENGTHS INCREASED BY 50%.

14. MASONRY LINTELS:

    A. A PRECAST CONCRETE LINTEL BY PRE-CAST MANUF, SHALL BE PROVIDED OVER ALL MASONRY WALL OPENINGS. THE LINTEL SHALL BE FULLY GROUTED.
    B. LINTELS TO HAVE 4" MINIMUM BEARING AT EACH END.
    C. SHORE PRECAST LINTEL PER MANUFACTURE'S INSTRUCTIONS.

STEEL

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE, STRUCTURAL STEEL SHALL CONFORM TO:

   A. WIDE FLANGE BEAMS-ASTM A992 (50 KSI)
   B. MISCELLANEOUS STEEL SHAPES-ASTM A36 (36 KSI) (ANGLES, CHANNELS, PLATES, BARS ETC.)
   C. SQUARE OR RECTANGULAR HSS-ASTM A500 GRADE B (46 KSI)
   D. ROUND HSS-ASTM A500, GRADE B (46 KSI)
   E. STEEL PIPE-ASTM A53 (35 KSI)
   F. BOLTS-A325 OR A490
   G. ANCHOR BOLTS-ASTM F1554 (36 KSI)
   H. NUTS-ASTSM A563
   I. WASHERS-ASTM F436
   J. HEADED STUDS-ASTM A108
   K. ALL STEEL TO HAVE A SHOP COAT OF RUST INHIBITIVE PAINT.
   L. DELETE PAINT ON ALL STEEL TO RECEIVE SPRAYED ON FIREPROOFING OR CONCRETE ENCASEMENT.
   M. ANY STEEL EXPOSED TO THE ELEMENTS SHALL BE DOUBLE HOT-DIPPED GALVANIZED

2. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED, AS DESCRIBED IN "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" (AWS D1.1), TO PERFORM THE TYPE OF WORK REQUIRED.

3. ALL CONNECTIONS SHALL BE BOLTED WITH 3/4" DIAMETER, A-325 HIGH STRENGTH BOLTS OR WELDED (UNLESS SHOWN OTHERWISE ON THE DRAWINGS).

   A. FULL DEPTH DOUBLE CLIP ANGLE CONNECTIONS ARE TO BE USED ON ALL GIRDER AND BEAM CONNECTIONS TO COLUMNS. BOLTS TO BE AT 3-INCH O/C VERTICAL.

   B. ALL CONNECTIONS TO HOLLOW STRUCTURAL SECTION (HSS) COLUMNS ARE TO BE THRU-PLATE UNLESS NOTED OTHERWISE.

4. ALL ALUMINUM AND STEEL MEMBERS TO BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND CORROSIVE EFFECTS.

5. ALL STEEL WELDING RODS SHALL BE E70XX ELECTRODES.

6. SUBMIT ALL STEEL SHOP DRAWINGS FOR APPROVAL PRIOR TO ANY FABRICATION.

7. EQUIPMENT SUPPORTS:

   PROVIDE ALL SUPPORTING STEEL NOT INDICATED ON PLAN AS REQUIRED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT AND MATERIALS, INCLUDING ANGLES, CHANNELS, BEAMS, HANGERS, ETC. DO NOT SUPPORT EQUIPMENT OR PIPING FROM METAL DECKING.

JOISTS

1. ALL JOISTS SHALL HAVE A SHOP COAT OF RUST INHIBITIVE NON BITUMINOUS PAINT.

2. JOIST FABRICATOR SHALL HAVE A SPECIALTY ENGINEER REGISTERED IN THE STATE OF FLORIDA SIGN AND SEAL ALL STEEL JOIST SHOP DRAWINGS. THESE SHOP DRAWINGS SHALL CONTAIN A STATEMENT CERTIFYING THAT THE STEEL JOISTS CAN SAFELY RESIST THE WIND UPLIFT FORCES AS NOTED.

3. STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE FOR ALL JOISTS AND JOIST GIRDERS.
   MANUFACTURER SHALL BE A MEMBER OF THE STEEL JOIST INSTITUTE. PROVIDE BRIDGING IN ACCORDANCE WITH SJI STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

DECK

1. STEEL ROOF DECK SHALL BE:

   A. 1-1/2", 20 GA, TYPE B METAL DECK GALVANIZED AS SHOWN ON ROOF PLAN AS MANUFACTURED BY VULCRAFT/NUCOR OR APPROVED EQUAL. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE. ROOF DECK MUST COMPLY WITH STEEL DECK INSTITUTE STANDARDS. ALL ROOF DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.

2. ALL ROOF DECK TO BE DESIGNED, MANUFACTURED, AND INSTALLED IN ACCORDANCE WITH LATEST FACTORY MUTUAL STANDARDS.

3. IN AREAS OF WARPED ROOF DECK, SELF DRILLING SCREWS ARE TO BE USED ON CONNECTIONS OF STEEL ROOF DECK TO STRUCTURAL STEEL SUPPORTS. SCREW SIZES TO COMPLY WITH MANUFACTURER'S AND FACTORY MUTUAL REQUIREMENTS. ATTACH DECK TO ALL SUPPORTING ROOF JOISTS.

4. 1-1/2" METAL ROOF DECK IS TO BE ATTACHED TO STRUCTURAL STEEL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS (MINIMUM OF 4 WELDS PER SHEET PER JOIST). SIDE JOINTS SHALL BE FASTENED TOGETHER WITH #10 SELF DRILLING SCREWS AT MID SPAN BETWEEN SUPPORTS (MINIMUM OF 3 PER SPAN), UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

SHOP DRAWINGS

1. THE SHOP DRAWINGS SHALL BE SUBMITTED IN COMPLETE PACKAGES FOR THE FOLLOWING:

   A. CONCRETE MIX DESIGNS
   B. CONCRETE REINFORCING STEEL AND WELDED WIRE FABRIC
   C. CONCRETE MASONRY UNIT SUBMITTALS AND OTHER MASONRY ACCESSORIES
   D. STRUCTURAL STEEL
   E. STEEL JOISTS AND JOIST GIRDERS
   F. STEEL DECK
   G. PRE-ENGINEERED ALUMINUM CANOPIES OR AWNINGS

2. PRE-ENGINEERED ITEMS ARE DEFFERED SUBMITTALS. EACH SHALL BE SUBMITTED SIGNED AND SEALED BY A SPECIALTY ENGINEER REGISTERED IN THE STATE OF FLORIDA. SUBMITTALS SHALL BE REVIEWED AND APPROVED BY THE EOR AND AOR, THEN SENT TO THE BUILDING DEPARTMENT FOR FINAL REVIEW AND APPROVAL.

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LIC. # 28863

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

JOHN GUTHERMAN JR. LICENSE No. 60880 STATE OF FLORIDA PROFESSIONAL ENGINEER

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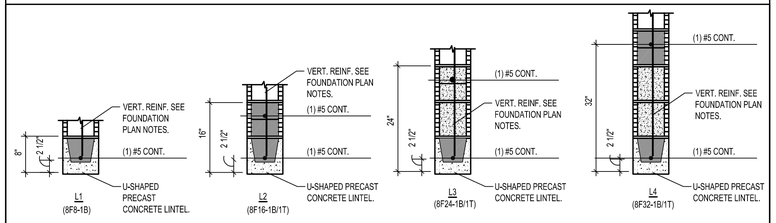
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STRUCTURAL NOTES

8" MASONRY PRECAST LINTEL SCHEDULE



NOTES:

1. 8" PRECAST LINTELS BY CASTCRETE CORPORATION OR APPROVED EQUAL.
2. SHORE PRECAST LINTEL PER MANUFACTURER RECOMMENDATIONS.
3. SEE THE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
4. PROVIDE 4" MINIMUM BEARING EACH END.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
WF-1	2'-0" X 12" X CONT.	(3) #5 CONT. BOTTOM AND #5 @ 14" O.C. TRANSV. BOTTOM
F65	6'-6" X 6"-6" X 16"	(7) #5 E.W. BOTTOM

DESIGN LOAD SCHEDULE

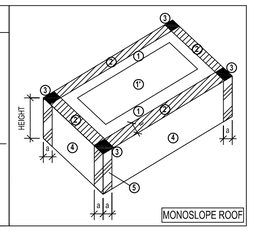
(ALL LOADS SHOWN ARE IN POUNDS PER SQ. FT.)

COMPONENT	AREA: ROOF	SLAB ON GRADE			
SYSTEM	10				
CEILING & MECH'L	15				
MISC.	5				
RAIN LOAD	25				
TOTAL DEAD LOAD	30				
TOTAL LIVE LOAD	20	100			
TOTAL LOAD	55	100			
USE 5PSF DEAD LOAD FOR NET UPLIFT CALCULATIONS.					

WIND PRESSURES (PSF) COMPONENTS AND CLADDING (VASD)

1. + INDICATES WIND PRESSURE
   - INDICATES WIND SUCTION
2. WALL DISTANCE A = ***5.2 FT*** *(COMPONENTS & CLADDING)*
3. FOR EFFECTIVE WIND AREAS BETWEEN THOSE GIVEN ABOVE THE LOAD MAY BEINTERPOLATED, OTHERWISE USE THE LOAD ASSOCIATED WITH THE LOWER EFFECTIVE WIND AREA.
4. N/A INDICATES NOT APPLICABLE

ROOF AREA				EFFECTIVE WIND AREA (SQ. FT.)	WALL AREA	
①	①	②	③		④	⑤
+9.6/-20.9	+9.6/-33.2	+20.0/-44.9	+20.0/-44.9	10	+20.9/-22.7	+20.9/-27.9
				20	+20.0/-21.7	+20.0/-26.0
				50	+18.8/-20.5	+18.8/-23.6
				100	+17.8/-19.6	+17.8/-21.7

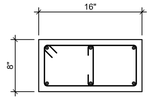


STEEL COLUMN SCHEDULE

MARK	SIZE	BASE PL	A.B.	EMBED
SC1	HSS 6 x 6 x 1/4"	12x12x1"	(4) 3/4"Ø	12"

BEAM SCHEDULE

MARK	SIZE BxH (inches)	REINFORCING			STIRRUPS
		BOTT	TOP	INT	TIES SPACING
BB1	8x8	(1) #5	-	-	MASONRY BOND BEAM
BB2	8x16	(1) #5	(1) #5		MASONRY BOND BEAM
CB-1	8x16	(2) #6	(2) #5	-	#3 @ 6" O.C.
RB-1	8x16 MIN.	(2) #5	(2) #5	-	#3 @ 6" O.C.
TB-1	8x16	(2) #5	(2) #5	-	#3 @ 12" O.C.



C1
(6) #5 VERTICAL
W/ #3 @ 8" O.C. TIES

CONCRETE COLUMN SCHEDULE

MASONRY WALL/COLUMN SCHEDULE

MARK	THICKNESS	REINFORCING
MW1	8" CMU	#5 @ 48" O.C.
MW2	8" CMU	#6 @ 24" O.C.

MASONRY WALL NOTES:

1. WALL SEGMENTS SHALL BE REINFORCED WITH 9 GA. GALVANIZED LATERAL REINFORCING @ 16" O.C. HORIZ. EXTEND REINFORCING 6" INTO POURED ELEMENTS AND AROUND ENCASED STEEL.
2. ADJACENT TO ANY EXTERIOR/INTERIOR 8" WALL OPENING, PLACE (1) #5 VERTICAL (ONE PER CELL) IN CELL GROUTED SOLID, FULL HEIGHT, U.N.O.
3. ALL MASONRY REINFORCED CELLS SHALL BE FILLED WITH 3000 PSI GROUT MIX.

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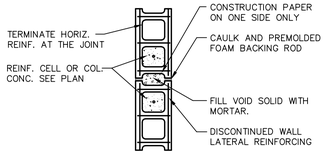
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STRUCTURAL SCHEDULES



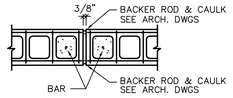
PLAN VIEW

NOTES :

1.– SAW CUT BOND BEAMS, TIE BEAMS 1" DEEP TO CONTINUE WALL CONTROL JOINT TO TOP OF WALL.

2.– CONTROL JOINT SPACING IS NOT TO EXCEED 25'–0"o.c. IN WALLS WITH MORE THAN 25'–0" OF UNINTERRUPTED MASONRY. REFER TO DWG'S. FOR ADDITIONAL SPECIFIED LOCATIONS AS NOTED THUS (WCJ).

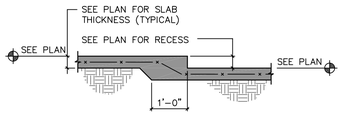
3.– CONTINUE ALL BOND BEAMS, TIE BEAMS REINF. THROUGH THE JOINT.



ALTERNATE METHOD

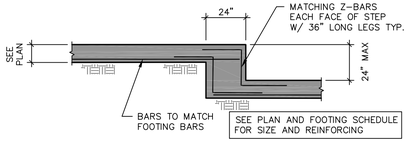
CMU WALL CONTROL JOINT (WCJ) DETAIL

N.T.S.



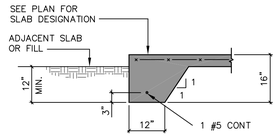
TYPICAL SLAB RECESS

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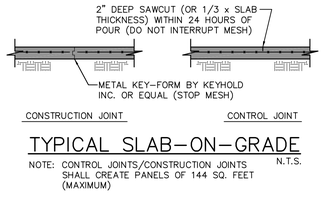
TYPICAL STEP FOOTING DETAIL

N.T.S.



THICKENED EDGE (T.E.)

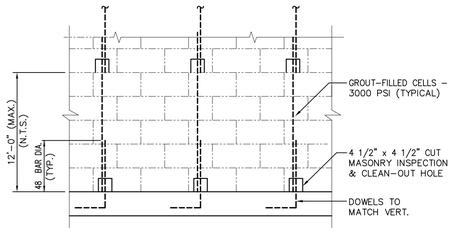
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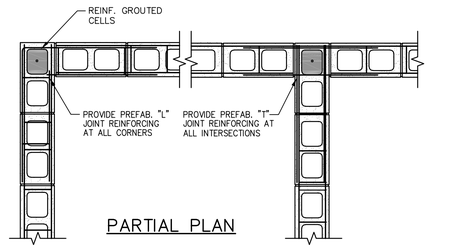
TYPICAL SLAB–ON–GRADE

NOTE: CONTROL JOINTS/CONSTRUCTION JOINTS SHALL CREATE PANELS OF 144 SQ. FEET (MAXIMUM)

N.T.S.



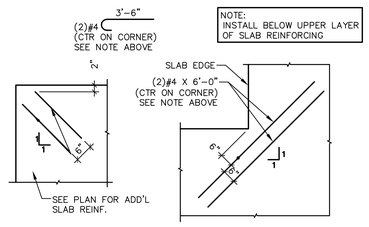
TYPICAL MASONRY FILLED CELL DETAIL



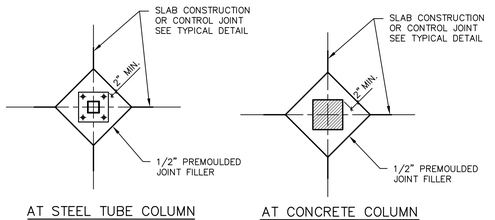
PARTIAL PLAN

TYPICAL CMU WALL DETAILS

N.T.S.

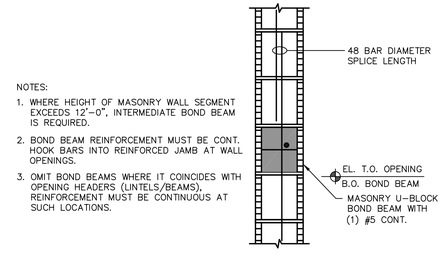


TYP. SLAB CORNER REINF.



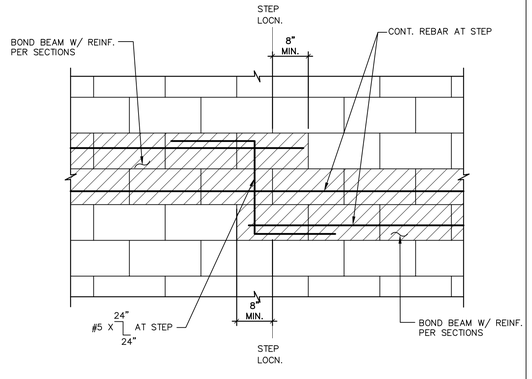
TYPICAL ISOLATION JOINTS AT COLUMNS

N.T.S.

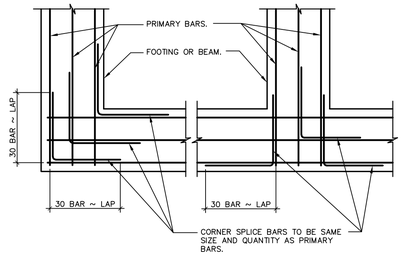


TYPICAL BOND BEAM DETAIL

N.T.S.



BOND BEAM STEP DETAIL



TYPICAL INTERSECTION OF CORNER BARS AT WALLS, BEAMS, AND FOOTINGS

SCALE: N.T.S.

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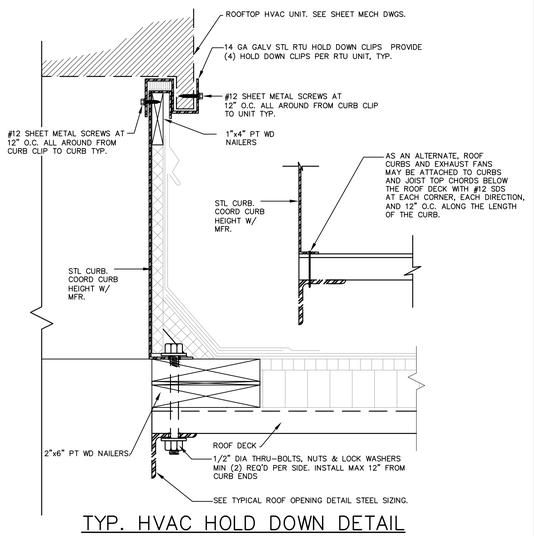
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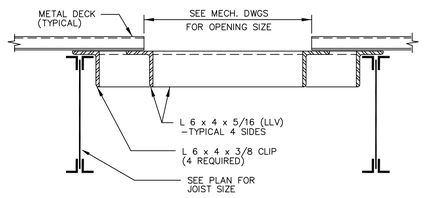
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S0.3
TYPICAL DETAILS



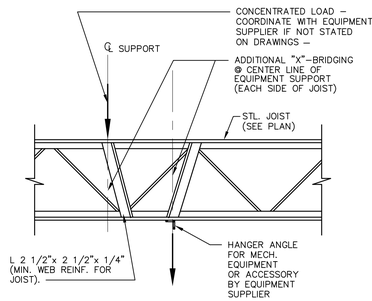
TYP. HVAC HOLD DOWN DETAIL

N.T.S.



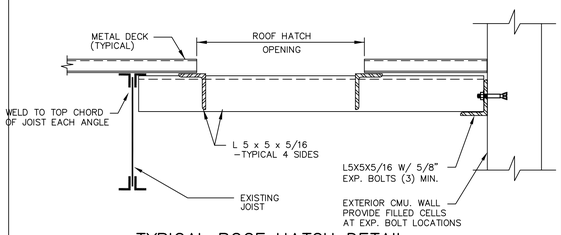
1. PROVIDE AT PERIMETER OF ALL ROOFTOP MECHANICAL UNITS AND OPENINGS AS REQUIRED.
2. SEE MECH. DWGS FOR OPENING SIZE & LOCATION.
3. PROVIDE L 3 x 3 x 5/16 AT ROOF SUMPS AND EXHAUST FANS

TYPICAL ROOF OPENING DETAIL

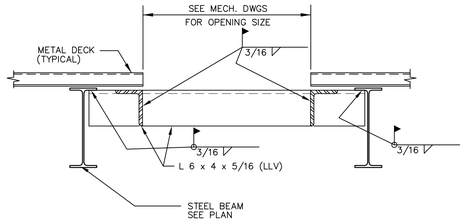


TYPICAL JOIST REINFORCING AT CONCENTRATED LOAD

N.T.S.



TYPICAL ROOF HATCH DETAIL



1. PROVIDE AT PERIMETER OF ALL ROOFTOP MECHANICAL UNITS AND OPENINGS AS REQUIRED.
2. SEE MECH. DWGS FOR OPENING SIZE & LOCATION.

TYPICAL ROOF OPENING DETAIL FOR STEEL BEAM ROOF

SECTION 1 / S0.4

3/4" = 1'-0"

CONCRETE COVER SCHEDULE	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 OR LARGER	2"
#5 OR SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS (#11 AND SMALLER)	3/4"
BEAMS, COLUMNS (PRIMARY REINF., TIES, STIRRUPS, SPIRALS)	1 1/2"
CONCRETE FOR COASTAL EXPOSURES EXPOSED TO WEATHER:	
WALL & SLABS	2"
OTHER MEMBERS	2 1/2"

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130 CROWN OAK CENTRE DRIVE
LONGWOOD, FL 32750
P: 407.951.8065
LIC. # 28863

OWNER / PROJECT:

JUNE 30, 2025 - 100% BID SET - NOT FOR CONSTRUCTION

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

JOHN GUTHERMAN JR. LICENSE No. 60880 STATE OF FLORIDA PROFESSIONAL ENGINEER

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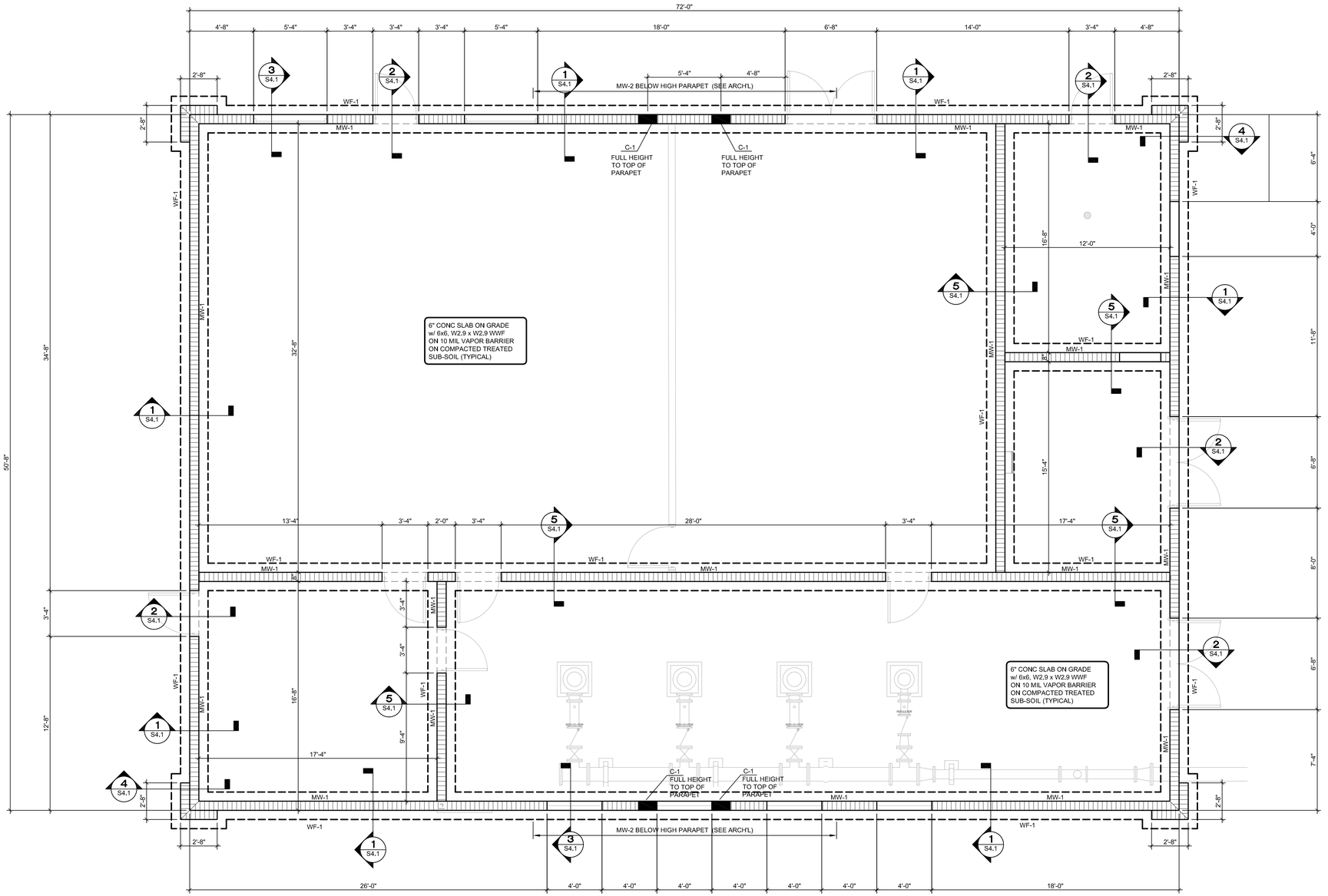
REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: OCTOBER 10, 2024

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JG

S0.4
TYPICAL DETAILS



FOUNDATION NOTES:

1. ELEV. ±0'-0" IS REFERENCE ONLY. SEE CIVIL FOR TRUE NAVD ELEVATION.
2. VERIFY SLOPES & STEPS WITH ARCH'L PRIOR TO CONSTRUCTION. SEE TYPICAL DETAIL SHEET.
3. TOP OF EXTERIOR WALL SPREAD FOOTING ELEVATIONS = -1'-4" BELOW TOP OF SLAB TYPICAL U.N.O.,
4. G.C. TO PROVIDE SLAB ON GRADE CONTROL JOINTS (C.J.) FOR ALL SLAB AT 12'-0" O.C. MAX. TYPICAL
5. TE INDICATES THICKENED EDGE SEE TYPICAL DETAIL SHEET.
6. F## INDICATES CONCRETE FOOTING. SEE SCHEDULE FOR SIZE, EXTENTS & REINFORCING.
7. MW# INDICATES CONCRETE MASONRY WALL, SEE SCHEDULE FOR SIZE & REINFORCING.
8. C# INDICATES CONCRETE COLUMN. SEE SCHEDULE FOR SIZE, EXTENTS, & REINFORCING.
9. ▭ DENOTES 8" CMU WALL, SEE SCHEDULE FOR REINFORCING. U.N.O. ON PLAN.
10. PROVIDE WALL CONTROL JOINTS. SEE TYPICAL DETAIL SHEET.
11. SEE ARCH FOR DIMENSIONS NOT SHOWN.
12. PROVIDE MW2 ABOVE ALL OPENINGS U.N.O. ON PLAN.
13. PROVIDE MW4 FOR WALL OVER OPENINGS.

1 S3.1 **FOUNDATION PLAN**

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

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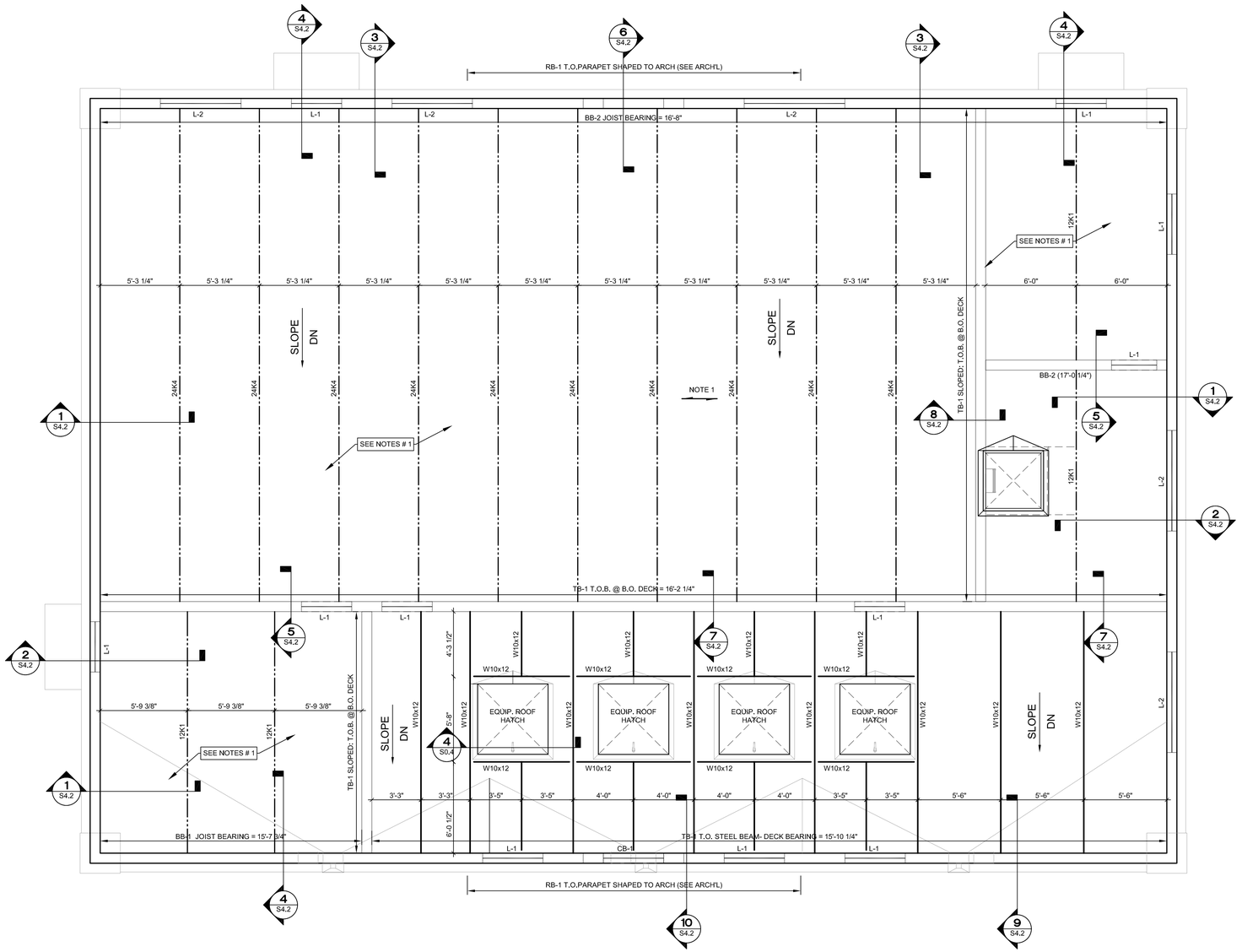
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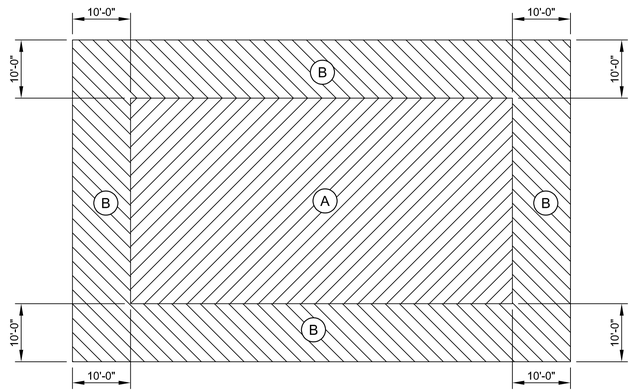
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S3.1
FOUNDATION PLAN





TYPICAL ROOF DECK CONNECTION SCHEDULE		
MARK	ATTACHMENT	
	DECK TO SUPPORT CONNECTION	SIDELAP CONNECTIONS
A	5/8" DIA. PUDDLE WELD AT 12" O.C. (36/4 PATTERN)	(4) #10 SCREW PER SPAN
B	5/8" DIA. PUDDLE WELD AT 6" O.C. (36/7 PATTERN)	(4) #10 SCREW PER SPAN

NOTES:

1. ALL PUDDLE WELDS TO BE 5/8"Ø FUSION TYPE (UNO).
2. WELDS TO BE MADE FOLLOWING AWS D1.3 SPECIFICATIONS BY QUALIFIED WELDING OPERATORS.
3. ALL DECK END LAPS TO BE A MINIMUM OF 2".
4. SEE SECTIONS & DETAILS FOR ADDITIONAL WELDS REQUIRED
5. HILTI X-ENP-19 DECK PINS MAY BE USED IN LIEU OF 5/8" PUDDLE WELDS AT THE SAME SPACING.

ROOF FRAMING NOTES:

1. ALL METAL ROOF DECK SHALL BE 1.5" TYPE B 20GA TYPICAL SEE SCHEDULE & NOTES ON THIS SHEET FOR ATTACHMENT.
2. L# INDICATES PRECAST LINTEL, SEE SCHEDULE FOR SIZE & REINFORCING.
3. BB# INDICATES MASONRY BOND BEAM, SEE SCHEDULE FOR SIZE & REINFORCING.
4. PROVIDE A 8X8 MASONRY BOND BEAM (BB1) WITH (1) #5 CONTINUOUS AT THE TOP OF ALL WALLS. PROVIDE AN 8X16 MASONRY BOND BEAM AT ALL JOIST & DECK BEARING LOCATIONS WITH (1) #5 CONTINUOUS TOP & BOTTOM, TYPICAL
5. VERIFY ALL TOP OF MASONRY WALL ELEVATIONS WITH ARCH DRAWINGS PRIOR TO FABRICATION & CONSTRUCTION, TYPICAL
6. VERIFY ALL BOTTOM OF BEAM/LINTEL ELEVATIONS WITH ARCH DRAWINGS PRIOR TO FABRICATION & CONSTRUCTION, TYPICAL
7. PROVIDE A CONTINUOUS BB1 AT 10'-8" TYPICAL.
8. REFER TO ARCH'L/ MECH'L DRAWINGS FOR ROOF TOP EQUIPMENT SIZE & LOCATION, TYPICAL
9. STEP BB2 AS REQUIRED TO MATCH DECK ATTACHMENT ALONG MASONRY WALL.
10. SEE ARCH. FOR DIMENSIONS NOT SHOWN, TYPICAL
11. THE G.C. SHALL VERIFY WEIGHT & LOCATION OF ALL MECH'L EQUIPMENT TO BE SUPPORTED BY ROOF STRUCTURE WITH MECH'L & EQUIPMENT SUPPLIER PRIOR TO FABRICATION & CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT & ENGINEER.
12. JOIST MANUFACTURER NOTE: ENGINEER HAS DESIGNED THE JOISTS FOR THE LOADS SHOWN.

1 S3.2 ROOF FRAMING PLAN

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

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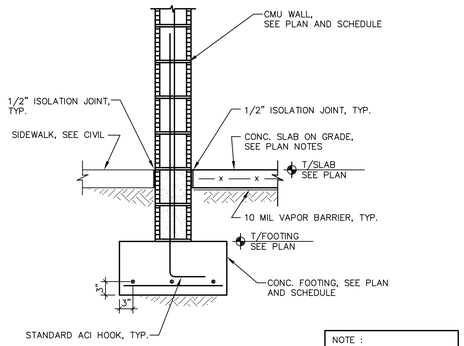
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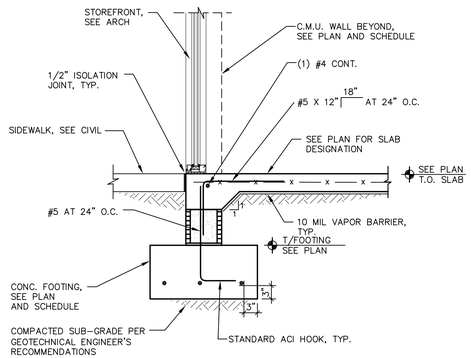
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S3.2
ROOF FRAMING PLAN



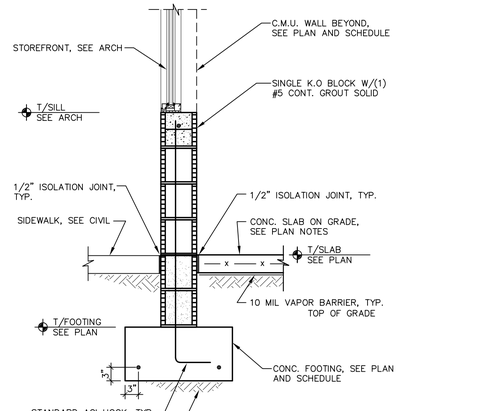
NOTE :
FILL ALL BLOCK CELLS WITH 3000 P.S.I. CONCRETE BELOW GRADE

SECTION 1 S4.1
3/4" = 1'-0"



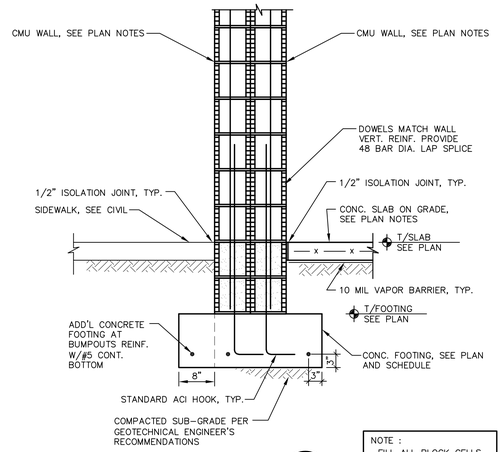
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SECTION 2 S4.1
3/4" = 1'-0"



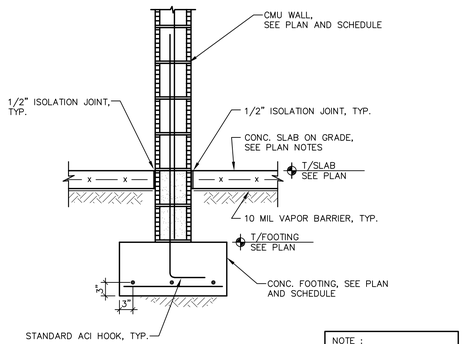
NOTE :
FILL ALL BLOCK CELLS WITH 3000 P.S.I. CONCRETE BELOW GRADE

SECTION 3 S4.1
3/4" = 1'-0"



NOTE :
FILL ALL BLOCK CELLS WITH 3000 P.S.I. CONCRETE BELOW GRADE

SECTION 4 S4.1
3/4" = 1'-0"



NOTE :
FILL ALL BLOCK CELLS WITH 3000 P.S.I. CONCRETE BELOW GRADE

SECTION 5 S4.1
3/4" = 1'-0"

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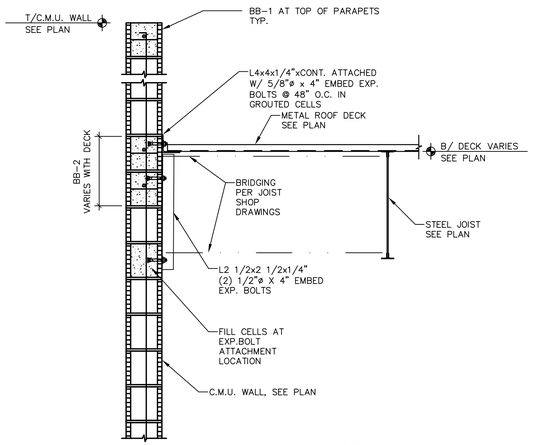
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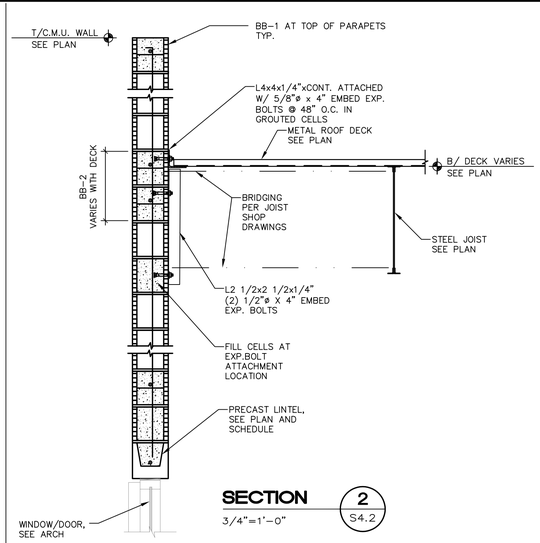
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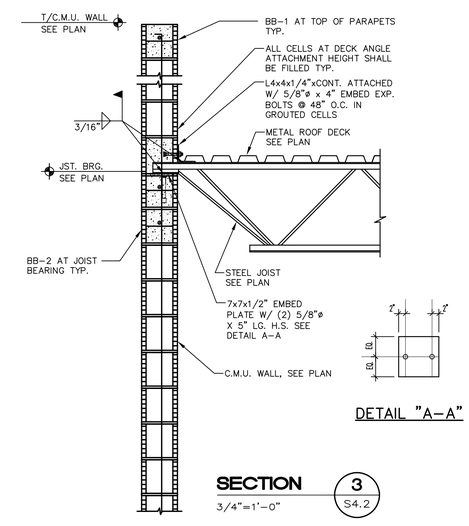
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STRUCTURAL SECTIONS

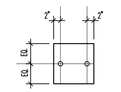


SECTION 1 S4.2
3/4"=1'-0"



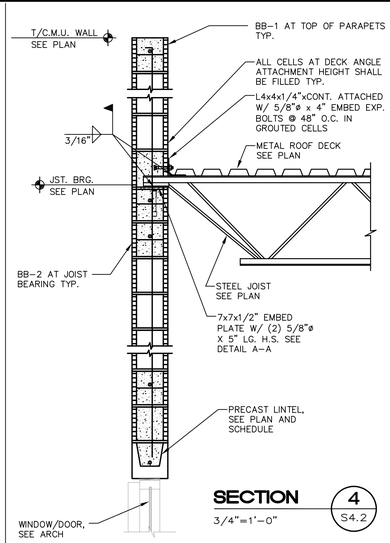
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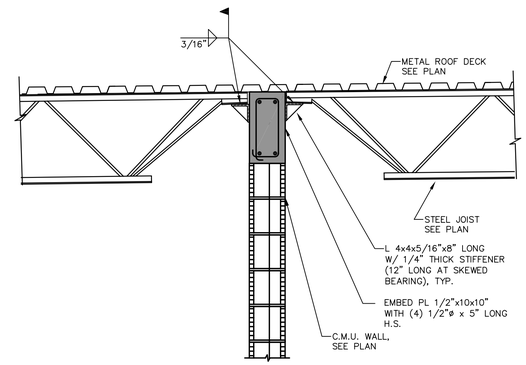


DETAIL "A-A"

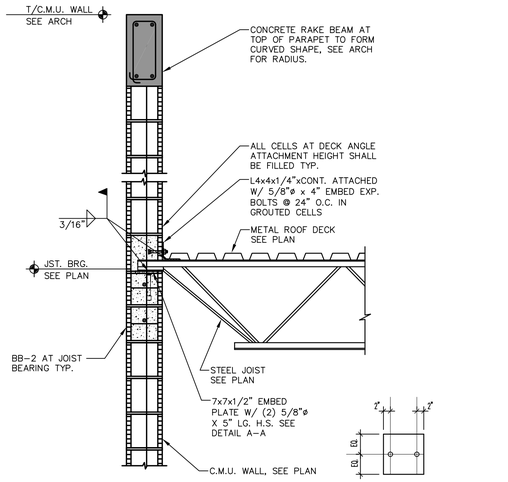
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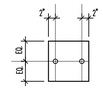


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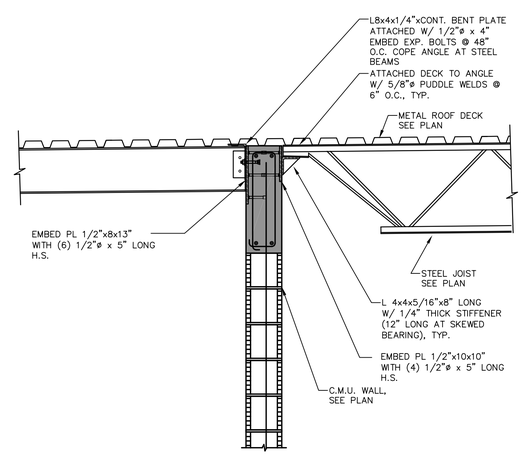
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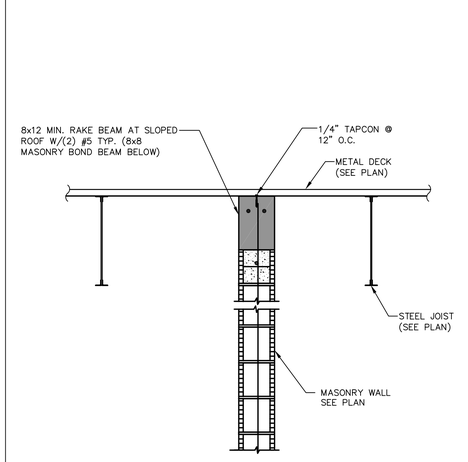


DETAIL "A-A"

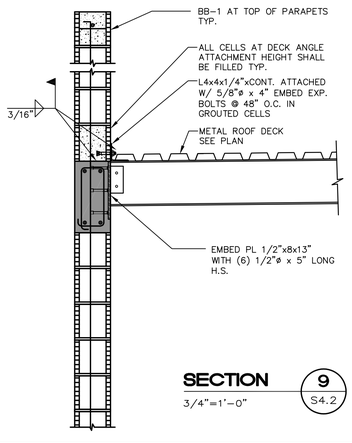
SECTION 6 S4.2
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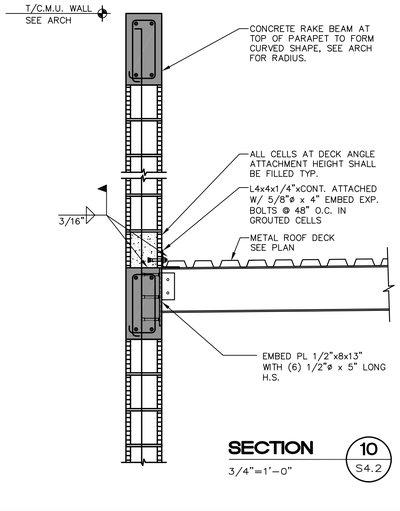
SECTION 7 S4.2
3/4"=1'-0"



SECTION 8 S4.2
3/4"=1'-0"



SECTION 9 S4.2
3/4"=1'-0"



SECTION 10 S4.2
3/4"=1'-0"

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JOHN GUTHERMAN JR. LICENSE No. 60880 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: OCTOBER 10, 2024

PSA 2020-31
RED
JG

S4.2
STRUCTURAL SECTIONS

ELECTRICAL SYMBOLS LEGEND (REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOT ALL SYMBOLS ARE NECESSARILY USED IN THIS PROJECT)

LIGHTING (SEE LIGHTING FIXTURE SCHEDULE)

- 2'X 2' LIGHT FIXTURE
- EMERGENCY 2' x 2' LIGHT FIXTURE WITH INTEGRAL EMERGENCY BACKUP
- 2'X 4' LIGHT FIXTURE
- EMERGENCY 2' x 4' LIGHT FIXTURE WITH INTEGRAL EMERGENCY BACKUP
- 1'X 4' LIGHT FIXTURE
- EMERGENCY 1'X 4' LIGHT FIXTURE WITH INTEGRAL EMERGENCY BACKUP
- LIGHT FIXTURE - WALL MOUNTED
- EMERGENCY LIGHT FIXTURE - WALL MOUNTED WITH INTEGRAL EMERGENCY BACKUP
- STRIP LIGHT
- EMERGENCY STRIP LIGHT WITH INTEGRAL EMERGENCY BACKUP
- DOWNLIGHT LIGHT FIXTURE
- EMERGENCY DOWNLIGHT LIGHT FIXTURE WITH INTEGRAL EMERGENCY BACKUP
- LIGHT FIXTURE - WALL MOUNTED
- EMERGENCY LIGHT FIXTURE - WALL MOUNTED WITH INTEGRAL EMERGENCY BACKUP
- WALL WASH / ACCENT FIXTURE - CEILING MOUNTED
- EXIT SIGN - SINGLE FACE ARROW INDICATES DIRECTION - CEILING MOUNTED-WITH INTEGRAL EMERGENCY BACKUP
- EXIT SIGN - SINGLE FACE - ARROW INDICATES DIRECTION - WALL MOUNTED - WITH INTEGRAL EMERGENCY BACKUP
- EXIT SIGN - DOUBLE FACE - ARROW INDICATES DIRECTION - CEILING MOUNTED - WITH INTEGRAL EMERGENCY BACKUP
- EMERGENCY LIGHT WITH INTEGRAL EMERGENCY BACKUP - DUAL HEAD
- DECORATIVE PENDANT
- LIGHT TRACK - CEILING MOUNTED

SWITCHES

- S — SINGLE POLE SWITCH - TOGGLE TYPE - MOUNT AT 48" AFF
  - (3) 3 WAY
  - (4) 4 WAY
  - (2) DOUBLE POLE
  - (P) WITH PILOT LIGHT INDICATION
  - (K) KEY OPERATED
  - (D) DIMMER OPERATED
  - (M) MOTOR RATED SWITCH - 1 POLE OR 2 POLE 30 AMP WITH INTEGRAL THERMAL OVERLOADS
  - (OS) WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
- OS* — CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, "*" INDICATES FIXTURES IN SENSOR'S ZONE OF CONTROL.
- DS* — CEILING MOUNTED DAYLIGHT SENSOR, "*" INDICATES FIXTURES IN SENSOR'S ZONE OF CONTROL. SENSOR TO AUTO-DIM FIXTURES WITHIN BUILDING CODE PERSCRIBED DAYLIGHT ZONE.

SERVICE AND DISTRIBUTION

- BRANCH CIRCUIT PANELBOARD, 120/208V, SURFACE MOUNTED, UNLESS OTHERWISE NOTED
- 3 30 * — FUSED DISCONNECT SWITCH
  - (3) NUMBER OF POLES
  - (30) AMPERAGE SIZE
  - (*) FUSE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
  - (NF) NON FUSED
  - (WP) OUTDOOR RATED AS SPECIFIED ON DRAWINGS

  NEMA 1 RATED INDOORS, NEMA 3R RATED OUTDOORS UNLESS OTHERWISE NOTED.
- 3 30 * — COMBINATION STARTER/DISCONNECT SWITCH
  - (3) NUMBER OF POLES
  - (30) AMPERAGE SIZE
  - (*) FUSE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
  - (NF) NON FUSED
  - (WP) OUTDOOR RATED AS SPECIFIED ON DRAWINGS

  NEMA 1 RATED INDOORS, NEMA 3R RATED OUTDOORS UNLESS OTHERWISE NOTED.
- UTILITY TRANSFORMER
- T — DRY TYPE TRANSFORMER
- SPD — SURGE PROTECTION DEVICE
- GB — GROUND BAR
- VFD — VARIABLE FREQUENCY DRIVE

DATA/COMM

- DATA/COMM OUTLET WITH FLUSH MOUNTED 4" SQUARE SINGLE GANG JUNCTION BOX. MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED. PROVIDE BLANK STAINLESS STEEL COVER PLATE. EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING, OR AS NOTED; INSTALL PULL WIRE.
  - (WH) WALL MOUNTED
  - (AC) 6" ABOVE COUNTER BACK SPLASH
  - (TV) TV - REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT
- D — DATA/COMM OUTLET FLUSH MOUNTED IN FLOOR
- TV — TELEVISION OUTLET - MOUNT 18 " ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED
- TELEPHONE TERMINAL BOARD
- CR — CARD READER - MOUNT 48" AFF, UNLESS OTHERWISE NOTED

POWER

- DUPLEX RECEPTACLE - MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED
  - (WP) WEATHERPROOF
  - (H) HORIZONTALLY MOUNTED
  - (C) CEILING MOUNTED
- DOUBLE DUPLEX RECEPTACLE - MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED
- "GFI" DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT
- WP — "GFI" DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER - MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED
- "GFI" DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING - MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED
- "GFI" DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT
- DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT AT 18" AFF, UNLESS OTHERWISE NOTED
- DUPLEX RECEPTACLE, COUNTER HEIGHT
- DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT
- DUPLEX RECEPTACLE , COMMUNICATIONS AND DATA OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX. BOX TO HAVE A LISTED DIVIDER BETWEEN LINE VOLTAGE AND LOW VOLTAGE CONNECTIONS.
- DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX
- DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX
- 50/30 — SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATING AS INDICATED
- (J)F — CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)
- (J) — WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)
- (J)C — CEILING MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)
- EF — MOTOR
  - (EF) EXHAUST FAN
  - (AHU) AIR HANDLING UNIT
- PC — PHOTO CELL
- LC-* — LIGHTING CONTACTOR - * DENOTES CONTACTOR NUMBER
- TC — TIME CLOCK
- METER SOCKET
- WP — ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE "D" CLASS#900 1-K15 W/ CLASS 9001-K25 STAINLESS STEEL COVER PLATE. ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" AFF. WITHIN WEATHERPROOF KNOX BOX HOUSING
- TS — SPRINKLER TAMPER SWITCH CONNECTION
- FS — SPRINKLER WATERFLOW SWITCH CONNECTION
- PIV — POST INDICATOR VALVE
- FSD — FIRE/SMOKE OR SMOKE DAMPER FIRE ALARM CONNECTION. PROVIDE FIRE ALARM SYSTEM ADDRESSABLE SMOKE DETECTOR WITHIN 60" OF DAMPER LOCATION. PROVIDE 120V/20A POWER CONNECTION TO EACH DAMPER. SMOKE DETECTOR SHALL HAVE ADDRESSABLE RELAY BASE OR CONTROL MODULE TO ACTIVATE DAMPER SHOWN ON DRAWINGS. REFER TO MECHANICAL DRAWINGS FOR EXACT DAMPER LOCATIONS.

FIRE ALARM

- F — MANUAL PULL STATION - MOUNT AT 48" AFF
- F — COMBINATION AUDIBLE/VISUAL SIGNALING UNIT- SPEAKER/FLASHING "FIRE" LIGHT WALL - MOUNTED 96" AFF UNLESS OTHERWISE NOTED. 75 CANDELA UNLESS NOTED OTHERWISE
  - (WP) WEATHER PROOF
  - (A) AUDIBLE ONLY.
- F C — COMBINATION AUDIBLE/VISUAL SIGNALING UNIT CEILING MOUNTED- SPEAKER/FLASHING "FIRE" LIGHT 75 CANDELA UNLESS NOTED OTHERWISE
  - (WP) WEATHER PROOF
  - (A) AUDIBLE ONLY.
- F — VISUAL SIGNALING UNIT, WALL MOUNTED- FLASHING "FIRE" LIGHT ONLY (NO AUDIO DEVICE) 75 CANDELA, UNLESS NOTED OTHERWISE.
- F C — VISUAL SIGNALING UNIT, CEILING MOUNTED - FLASHING "FIRE" LIGHT ONLY (NO AUDIO DEVICE) 75 CANDELA, UNLESS NOTED OTHERWISE
- S — FIRE ALARM SYSTEM, RESIDENTIAL UNIT MINI-HORN LOW FREQUENCY SOUNDER (520HZ) - MOUNT AT 96" AFF TO TOP OF SOUNDER
- R/S — PHOTOELECTRIC DUCT SMOKE DETECTOR, R=RETURN / S=SUPPLY
- R — FIRE ALARM SHUTDOWN OR CONTROL RELAY
- RTI — DUCT DETECTOR REMOTE TROUBLE INDICATOR - MOUNT ADJACENT TO UNIT
- H 2 — FIRE ALARM HEAT DETECTOR. (2) INDICATES TO PROVIDE DUAL CONVERTIBLE CONTACTS
- 2 — CEILING OR WALL MOUNTED SMOKE DETECTOR. SMOKE DETECTOR SHALL BE TIED TO MAIN FIRE ALARM SYSTEM.
  - (2) PROVIDE DUAL CONTACT.
  - (CO) CARBON MONOXIDE DETECTOR.
  - (LF) LOW-FREQUENCY SOUNDER BASE WITH INTEGRAL BATTERY BACK UP.
- DH — DOOR HOLDER
- "FACP" — FIRE ALARM CONTROL PANEL - FLUSH MOUNTED
- FAJB — FIRE ALARM JUNCTION BOX
- FAAP — REMOTE FIRE ALARM ANNUNCIATOR PANEL - FLUSH MOUNTED
- TS — SPRINKLER TAMPER SWITCH CONNECTION
- WL — "DO NOT USE" ELEVATOR WARNING LIGHT. BY ELEVATOR CONTRACTOR
- FATC — FIRE ALARM TERMINAL CABINET, FLUSHED MOUNTED

FLORIDA ADMINISTRATIVE CODE ARTICLE 61G15.32.008(4)a-o

61G15-32.008(4) - TO ENSURE MINIMUM DESIGN QUALITY OF FIRE ALARM AND DETECTION SYSTEMS ENGINEERING DOCUMENTS, SAID DOCUMENTS SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION WHEN APPLICABLE:

(a) SYMBOL LEGEND IS FOUND ON SHEET E0.1 AND SYSTEM RISER IS FOUND ON SHEET E4.2

(b) LOCATIONS FOR INITIATION AND NOTIFICATION DEVICES AND CONNECTIONS ARE FOUND ON FLOOR PLAN SHEET E2.1

(c) STROBE INTENSITY AND SPEAKER OUTPUT RATINGS ARE FOUND IN THE SYMBOL LEGEND ON SHEET E

(d) CIRCUITS SHALL BE CLASS B TYPE, AS PER SPECIFICATIONS ON SHEET E0.2

(e) IDENTIFICATION OF FUNCTIONS REQUIRED BY THE ALARM AND CONTROL SYSTEMS IS FOUND ON SHEET E4.2

(f) FIRE ALARM SHALL BE ADDRESSABLE AND ZONING IS INDICATED IN SPECIFICATIONS ON SHEET E0.2

(g) SURGE PROTECTION DEVICES ARE FOUND ON ELECTRICAL RISER ON SHEET E4.2

(h) DEVICES THAT ARE SUBJECT TO ENVIRONMENTAL FACTORS AND REQUIREMENTS FOR PROTECTION ARE FOUND ON FLOOR PLAN SHEET E2.1

(i) SITE PLAN AND ANY FIRE ALARM DEVICES REQUIRED OUTSIDE: NOT APPLICABLE

(j) SMOKE DETECTION DEVICES TO MITIGATE OBSTRUCTIONS: NOT APPLICABLE

(k) SMOKE DETECTION DEVICES TO MITIGATE DETECTION PROBLEMS WHERE SMOKE STRATIFICATION IS ANITICPATED: NOT APPLICABLE

(l) DESIGN GUIDES AND STANDARDS USED FOR PERFORMANCE BASED FIRE ALARM SYSTEM ARE FOUND ON SHEET E4.2

(m) INDICATION OF GENERAL EVACUATION SIGNAL OR A ZONED EVACUATION FOR ALL HIGH-RISE BUILDINGS OR MULTI-TENANTED PROPERTIES: NOT APPLICABLE

(n) WIRING REQUIRMENTS AND BURIAL DEPTH FOR UNDERGROUND, WET LOCATIONS AND CAMPUS STYLE WIRING: NOT APPLICABLE

(o) REQUIREMENTS FOR OPERATIONS AND MAINTENANCE PROCEDURES, MANUALS, SYSTEM DOCUMENTATION, AND OWNER INSTRUCTIONS ARE INDICATED IN ON SHEET E0.1

GENERAL NOTE

1. THIS PROJECT IS IN COMPLIANCE WITH 2023 FBC-ENERGY CONSERVATION C405.6.3 AND 2020 NEC 210.19 WITH REGARDS TO VOLTAGE DROP (5%).
2. THE ELECTRICAL DESIGN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2020 NATIONAL ELECTRICAL CODE, 2023 FLORIDA BUILDING CODE.
3. REFER TO ELECTRICAL PROJECT SPECIFICATIONS FOR ADDITIONAL ELECTRICAL REQUIREMENTS TO THESE DRAWINGS.
4. CONTRACTOR SHALL PROVIDE A COMPLETE ROOF MOUNTED LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE FACILITY PER THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

O&M / AS-BUILTS NOTES

1. RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE FURNISHED TO OWNERS REP. WITHIN 30 DAYS OF THE DATE OF SYSTEM ACCEPTANCE BY THE BUILDING OWNER. THESE INCLUDE:
   - A. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM.
   - B. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.
2. PROVIDE OPERATIONS AND MAINTENANCE MANUAL TO BUILDING OWNER AT TIME OF COMPLETION. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   - A. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
   - B. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
   - C. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY

ABBREVIATIONS

A	-	AMPERES	ELEC	-	ELECTRICAL	IWH	-	INSTANTANEOUS WATER HEATER	NIC	-	NOT IN CONTRACT
A/C	-	AIR CONDITIONING	EM	-	EMERGENCY	I.G.	-	ISOLATED GROUND	NL	-	NIGHT LIGHT
AC	-	ALTERNATING CURRENT	EF	-	EXHAUST FAN	J	-	JUNCTION	O.C.	-	ON CENTER
ADA	-	AMERICANS WITH DISABILITIES ACT	EPO	-	EMERGENCY POWER OFF	KAIC	-	(THOUSAND) AMPERE INTERRUPTING CAPACITY	P	-	POLE
AFF	-	ABOVE FINISHED FLOOR	EV	-	ELECTRIC VEHICLE	KCMIL	-	THOUSAND CIRCULAR MILLS	PNL	-	PANELBOARD
AFG	-	ABOVE FINISHED GRADE	EWC	-	ELECTRIC WATER COOLER	KVA	-	KILOVOLT-AMPERES	PVC	-	POLYVINYL CHLORIDE
AHU	-	AIR HANDLING UNIT	EX	-	EXISTING	KW	-	KILOWATT	RGS	-	RIGID GALVANIZED STEEL
ATS	-	AUTOMATIC TRANSFER SWITCH	EXT	-	EXTENSION	LTG	-	LIGHTING	RM	-	ROOM
AWG	-	AMERICAN WIRE GAUGE	FA	-	FIRE ALARM	LTS	-	LIGHTING	SPEC	-	SPECIFICATION
BFG	-	BELOW FINISHED GROUND	FACP	-	FIRE ALARM CONTROL PANEL	MCB	-	MAIN CIRCUIT BREAKER	SPD	-	SURGE PROTECTION DEVICE
C	-	CONDUIT	FBC	-	FLORIDA BUILDING CODE	MH	-	MOUNTING HEIGHT	SS	-	STAINLESS STEEL
COND	-	CONDUIT	GACP	-	GENERATOR ANNUNICATOR CONTROL PANEL	MLO	-	MAIN LUG ONLY	SWBD	-	SWITCHBOARD
CH	-	COUNTER HEIGHT	G	-	GROUND	N	-	NEUTRAL	TYP	-	TYPICAL
CONC	-	CONCRETE	GND	-	GROUND	NA	-	NOT APPLICABLE	UON	-	UNLESS OTHERWISE NOTED
CU	-	COPPER	GFI	-	GROUND FAULT INTERRUPTER	NEC	-	NATIONAL ELECTRICAL CODE	UNV	-	UNIVERSAL
DISC	-	DISCONNECT	GRC	-	GALVANIZED RIGID CONDUIT	NEMA	-	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	V	-	VOLTS
DBL	-	DOUBLE	HVAC	-	HEATING, VENTILATING, AND AIR CONDITIONING	NFPA	-	NATIONAL FIRE PROTECTION ASSOCIATION	W	-	WIRE
ECB	-	ENCLOSED CIRCUIT BREAKER	IAW	-	IN ACCORDANCE WITH	NF	-	NON-FUSED	WP	-	WEATHERPROOF

IE - ELECTRICAL SHEET LIST

Sheet Number	Sheet Name	Project Issue Date	Project Status	Current Revision	Current Revision Date	Current Revision Description	Sheet Discipline
E0.1	ELECTRICAL LEGEND, NOTES & ABBREVIATIONS	06-30-2025	Bid Set				ELECTRICAL
E0.2	ELECTRICAL SPECIFICATIONS	06-30-2025	Bid Set				ELECTRICAL
E0.3	ELECTRICAL SCHEDULES	06-30-2025	Bid Set				ELECTRICAL
E2.1	FLOOR PLAN - POWER & FIRE ALARM	06-30-2025	Bid Set				ELECTRICAL
E3.1	FLOOR PLAN - LIGHTING	06-30-2025	Bid Set				ELECTRICAL
E3.2	ROOF PLAN - ELECTRICAL	06-30-2025	Bid Set				ELECTRICAL
E4.1	ELECTRICAL SINGLE LINE DIAGRAM	06-30-2025	Bid Set				ELECTRICAL
E4.2	ELECTRICAL RISER DIAGRAMS & PANEL SCHEDULES	06-30-2025	Bid Set				ELECTRICAL
E6.1	ELECTRICAL DETAILS	06-30-2025	Bid Set				ELECTRICAL

Grand total: 9

DATE: 6/30/2025 11:09:07 AM

Bid Set

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DRAWN BY: ALDL CHECKED/APPROVED BY: JBH

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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

ISSUE DATE: FEBRUARY 24, 2025

ELECTRICAL LEGEND, NOTES & ABBREVIATIONS

E0.1

I. GENERAL REQUIREMENTS -DIVISION 26 ELECTRICAL:

A. PERFORM ALL WORK IN COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE FLORIDA BUILDING CODE W/ LOCAL AMENDMENTS; NFPA 70 (NATIONAL ELECTRIC CODE) AND NFPA 101 (LIFE SAFETY CODE), ADA ANSI A117.1, AND FEDERAL FAIR HOUSING ACT (42 U.S.C. 3601), INSTALL AND CONNECT PER AND THE REGULATIONS OF THE LOCAL UTILITY TELEPHONE, CABLE TELEVISION AND POWER UTILITY COMPANIES. OBTAIN AND PAY FOR ANY AND ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES OF INSPECTIONS AND APPROVAL, AND THE LIKE, AND DELIVER SUCH CERTIFICATES TO THE OWNER.

B. THE CONTRACTOR SHALL FURNISH, PERFORM, OR OTHERWISE PROVIDE ALL LABOR (INCLUDING, BUT NOT LIMITED TO, ALL PLANNING, PURCHASING, PAINTING, TRANSPORTING, RIGGING, HOISTING, STORING, INSTALLING, TESTING, CHASING, CHANNELING, CUTTING, TRENCHING, EXCAVATING AND BACKFILLING), COORDINATION, FIELD VERIFICATION, EQUIPMENT INSTALLATION, SUPPORT, AND SAFETY, SUPPLIES, AND MATERIALS NECESSARY FOR THE CORRECT INSTALLATION OF COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS (AS DESCRIBED OR IMPLIED BY THESE SPECIFICATIONS AND THE APPLICABLE DRAWINGS).

C. ALL DRAWINGS AND SPECIFICATIONS ON THE PROJECT ARE COMPLEMENTARY, EACH TO ALL OTHER SETS, AND THEY SHALL BE USED IN COMBINATION FOR THE EXECUTION OF THIS WORK. DIVISION 26 WORK SHOWN ON ANY ONE SET OF DRAWINGS, INCLUDING ALL ARCHITECTURAL DRAWINGS, MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR GENERAL WORK AND EQUIPMENT, AND DIVISION 26 WORK CALLED FOR UNDER ANY SECTION OF THE PROJECT SPECIFICATIONS, SHALL BE CONSIDERED AS INCLUDED IN THIS WORK UNLESS SPECIFICALLY EXCLUDED OR SHOWN IN SOME OTHER BRANCH OF THE WORK. THIS SHALL INCLUDE ROUGHING-IN FOR CONNECTIONS AND EQUIPMENT AS CALLED FOR OR INFERRED. THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND SPECIFICATIONS FOR THE PROJECT AND SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL DIVISION 26 WORK.

D. THE CONTRACTOR SHALL CAREFULLY CHECK THE DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES AND DIVISIONS BEFORE INSTALLING ANY OF HIS WORK. HE SHALL IN ALL CASES CONSIDER THE WORK OF ALL OTHER TRADES, AND SHALL COORDINATE HIS WORK WITH THEM SO THAT THE BEST ARRANGEMENTS OF ALL EQUIPMENT, PIPING, CONDUIT, DUCTS, ROUGH-IN, ETC., CAN BE OBTAINED.

E. LOCATIONS DESIGNATED FOR OUTLETS, SWITCHES, DEVICES, EQUIPMENT, ETC., ARE APPROXIMATE AND FINAL LOCATIONS SHALL BE VERIFIED IN THE FIELD AND CHECKED WITH ARCHITECTURAL AND ID DRAWINGS. CONTRACTOR SHALL LOCATE ALL DEVICES UP TO 5 FEET IN ANY DIRECTION AS DIRECTED BY OWNER AND PROJECT MANAGER, WHEN INSTRUCTIONS OR NOTES ARE INSUFFICIENT TO CONVEY THE INTENT OF THE DESIGN, CONSULT THE OWNER PRIOR TO BIDDING AND INSTALLATION.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND COORDINATING THE LOCATIONS OF DEVICES TO BE USED AND COORDINATING THE FINAL LOCATIONS OF ELECTRICAL EQUIPMENT WITH MILLWORK, SINKS, BENCHES, COUNTERS AND SHELVING PRIOR TO BIDDING AND INSTALLATION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER.

G. DIVISION 26 CONTRACTOR SHALL HAVE HAD EXPERIENCE OF AT LEAST THE SAME SIZE AND SCOPE AS THIS PROJECT, ON AT LEAST TWO OTHER PROJECTS WITHIN THE LAST FIVE YEARS IN ORDER TO BE QUALIFIED TO BID THIS PROJECT.

H. CONTRACTOR SHALL AND DOES HEREBY WARRANT ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS TO BE FREE FROM DEFECTS AND TO FUNCTION OR OPERATE SATISFACTORILY FOR ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK, AND THAT ANY ITEMS NOT MEETING THIS REQUIREMENT WILL BE MADE GOOD BY HIM WITHOUT COST TO OWNER, PROVIDED SUCH DEFECTS OR FAILURES ARE NOT DUE TO ABUSE, NEGLECT, OR LACK OF REASONABLE AND ORDINARY MAINTENANCE.

I. ALL WORK SHALL BE EXECUTED IN A WORKMANSHIP MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE UPON COMPLETION.

J. BALANCE LOAD AS EQUALLY AS PRACTICABLE ON ALL FEEDERS, BRANCH CIRCUITS AND PANEL BUSES.

K. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION, WHEREVER WORK IS TO BE PERFORMED IN FINISHED/OCCUPIED SPACES, TO PREVENT DAMAGE TO ADJACENT AREAS, EQUIPMENT, OR FURNISHINGS; TO PREVENT ACCIDENTAL INJURY TO BUILDING OCCUPANTS AND THE PUBLIC; TO PREVENT THE SPREADING OF DUST, DIRT, DEBRIS, AND MOISTURE FROM GETTING ON OR IN THE BUILDING OCCUPANT'S FURNISHINGS OR EQUIPMENT.

L. THE CONTRACTOR SHALL REPAIR, AT NO COST TO THE OWNER, ANY DAMAGE DONE BY HIMSELF OR HIS EMPLOYEES. HE SHALL ALSO BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED TO PROPERLY INSTALL HIS WORK. THIS SHALL ALSO INCLUDE THE PATCHING OF EXISTING ROADWAYS (PAVED OR IMPROVED), PARKING AREAS, SIDEWALKS, WALLS, STAIRS, MECHANICAL WORK, CURBS, GUTTERS, ETC., CUT TO INSTALL WORK PROVIDED BY THE CONTRACTOR. PATCH WORK SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THESE SPECIFICATIONS AND SHALL MATCH THE EXISTING FINISHES.

M. UPON COMPLETION OF WORK, THE ENTIRE WIRING SYSTEM SHALL BE TESTED, AND SHALL BE SHOWN TO BE IN PROPER WORKING CONDITION IN ACCORDANCE WITH INTENT OF SPECIFICATIONS AND DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL SYSTEMS READY FOR OPERATION AND TO HAVE AN ELECTRICIAN AVAILABLE TO OPERATE SAME IN ACCORDANCE WITH AND UNDER THE SUPERVISION OF THE INSPECTION REPRESENTATIVE OF THE ENGINEER. THE CONTRACTOR SHALL BE AVAILABLE TO ASSIST IN REMOVAL OF PANEL FRONTS, TO PERMIT INSPECTION AS REQUIRED. IN ACCORDANCE WITH DIVISION 1 AND THE CONDITIONS OF THE CONTRACT, THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE A COMPLETE RECORD SET OF CONSTRUCTION "AS-BUILTS" BLUELINE PRINTS WHICH SHALL BE CORRECTED DAILY, AND SHALL SHOW EVERY CHANGE FROM THE ORIGINAL CONTRACT DRAWINGS, INCLUDING ADDENDA AND CHANGE ORDERS IN ACCORDANCE WITH GENERAL REQUIREMENTS AND SPECIAL CONDITIONS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE, AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTORS TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE.

II. ELECTRICAL SCOPE:

A. FURNISHING AND INSTALLATION OF ELECTRIC LIGHTING SYSTEMS, POWER SYSTEMS, AND AUXILIARY SYSTEMS AS SHOWN OR HEREIN SPECIFIED.

B. CONNECTION OF ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTION, MENTIONED IN THIS DIVISION OR SHOWN ON DRAWINGS, WHETHER FURNISHED BY DIVISION 26 OR UNDER OTHER DIVISIONS, OR FURNISHED BY OWNER, INCLUDING FIRE PROTECTION AND FIRE SPRINKLER SYSTEMS.

C. FURNISHING AND INSTALLATION OF OUTLET BOXES, CONDUIT RACEWAYS, TERMINAL BOARDS, POWER AND GROUNDING FOR A COMPLETE TELEPHONE, TELEVISION AND DATA RACEWAY DISTRIBUTION SYSTEM. (TELEPHONE AND DATA HARDWARE, AS WELL AS SOFTWARE IS NOT INCLUDED.)

D. FURNISH AND INSTALL A COMPLETE LIGHTNING PROTECTION SYSTEM.

E. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR CONTACTING THE OFFICES OF ALL LOCAL AND/OR STATE AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT IN ORDER TO SCHEDULE ALL REQUIRED INSPECTIONS AND OBTAIN ALL NECESSARY PERMITS, ETC. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ALL SCHEDULED INSPECTIONS AT LEAST TWO WEEKS IN ADVANCE OF THE SCHEDULED DATE.

F. THE CONTRACTOR SHALL REPLACE ANY DEFECTIVE MATERIALS, EQUIPMENT, OR WORKMANSHIP WITHOUT COST TO THE OWNER WITHIN THE STIPULATED GUARANTEED PERIOD.

G. IT SHALL BE THE RESPONSIBILITY OF THE DIVISION 26 CONTRACTOR TO HAVE ALL SYSTEMS READY FOR OPERATION AND TO HAVE AN ELECTRICIAN AVAILABLE FOR ALL INSPECTIONS. THE CONTRACTOR SHALL PROVIDE PERSONNEL TO ASSIST IN REMOVAL OF PANEL FRONTS, ETC. TO PERMIT INSPECTION AS REQUIRED.

H. SUBMIT TO THE ARCHITECT/ENGINEER PROMPTLY AFTER AWARD OF CONTRACT AND PRIOR TO PURCHASING, SIX COPIES OF MANUFACTURER'S SHOP DRAWINGS IN ACCORDANCE WITH DIVISION 1, SUBMITTALS FOR THE FOLLOWING ITEMS. ALL SHOP DRAWINGS OF A SPECIFIC ITEM OR SYSTEM SHALL BE MADE IN ONE SUBMITTAL AND WITHIN TEN DAYS AFTER AWARD OF CONTRACT.

1. PANELBOARDS
2. LIGHTING FIXTURES
3. 120V SMOKE/CO2 DETECTORS
4. WIRING DEVICES
5. METER CENTERS
6. DISCONNECT SWITCHES
7. CONDUIT
8. CONDUCTORS
9. LOAD CENTERS
10. SPD

I. COMPLETED WIRING SYSTEMS SHALL BE FREE FROM SHORT CIRCUITS AND AFTER COMPLETION, PERFORM TESTS FOR INSULATION RESISTANCE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. ALL WIRING SYSTEMS SHALL BE COMPLETELY AND TOTALLY "SAFE" DURING CONSTRUCTION. ONLY QUALIFIED PERSONNEL SHALL HANDLE ELECTRICAL SYSTEMS.

J. THE ELECTRICAL CIRCUITS, COMPONENTS, AND CONTROLS FOR ALL EQUIPMENT ARE SELECTED AND SIZED, BASED ON THE EQUIPMENT SPECIFIED. IF SUBSTITUTIONS AND/OR EQUIVALENT EQUIPMENT ARE FURNISHED, IT SHALL BE THE RESPONSIBILITY OF ALL PARTIES CONCERNED, INVOLVED IN, AND FURNISHING THE SUBSTITUTE AND/OR EQUIVALENT EQUIPMENT TO VERIFY AND COMPARE THE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF THAT FURNISHED TO THAT SPECIFIED AND/OR SHOWN. IF GREATER CAPACITY OR MORE MATERIALS OR LABOR IS REQUIRED FOR THE ROUGH-IN, CIRCUITRY OR CONNECTIONS THAN FOR THE ITEM SPECIFIED AND PROVIDED FOR, THEN IT SHALL BE THE RESPONSIBILITY OF THE PARTIES INVOLVED IN PROVIDING THE SUBSTITUTE AND/OR EQUIVALENT ITEMS OF EQUIPMENT TO PROVIDE ALL COMPENSATION FOR ADDITIONAL CHARGES MADE FOR THE PROPER ROUGH-IN, CIRCUITRY AND CONNECTIONS FOR THE EQUIPMENT FURNISHED. NO ADDITIONAL CHARGES ABOVE THE BASE BID SHALL BE ALLOWED FOR SUCH REVISIONS. BEFORE ROUGH-IN OF CIRCUITRY OR CONNECTING TO EQUIPMENT, FURNISHED UNDER THIS DIVISION, ANY OTHER DIVISION, OR BY THE OWNER, THE CONTRACTOR SHALL VERIFY THE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED AND FOR THAT SPECIFIED AND SHOWN ON THE DRAWINGS AND PROVIDE FOR PROPER ROUGH-IN AND CONNECTION.

K. EXCAVATION FOR UNDERGROUND ELECTRICAL STRUCTURES: CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10', PLUS A SUFFICIENT DISTANCE TO PERMIT PLACING AND REMOVAL OF CONCRETE FORMWORK, INSTALLATION OF SERVICES, OTHER CONSTRUCTION, AND FOR INSPECTION.

L. TRENCHING: EXCAVATE TRENCHES FOR ELECTRICAL INSTALLATIONS AS FOLLOWS:

1. EXCAVATE TRENCHES TO THE UNIFORM WIDTH, SUFFICIENTLY WIDE TO PROVIDE AMPLE WORKING ROOM AND A MINIMUM OF 6" TO 9" CLEARANCE ON BOTH SIDES OF RACEWAYS AND EQUIPMENT.
2. EXCAVATE TRENCHES TO DEPTH INDICATED OR REQUIRED.
3. LIMIT THE LENGTH OF OPEN TRENCH TO THAT IN WHICH INSTALLATIONS CAN BE MADE AND THE TRENCH BACKFILLED WITHIN THE SAME DAY.
4. WHERE ROCK IS ENCOUNTERED, CARRY EXCAVATION BELOW REQUIRED ELEVATION AND BACKFILL WITH A LAYER OF CRUSHED STONE OR GRAVEL PRIOR TO INSTALLATION OF RACEWAYS AND EQUIPMENT. PROVIDE A MINIMUM OF 6" OF STONE OR GRAVEL CUSHION BETWEEN ROCK BEARING SURFACE AND ELECTRICAL INSTALLATIONS.

M. THE CONTRACTOR SHALL PROVIDE ALL INSERTS FOR THE SUPPORT OF DIVISION 26 EQUIPMENT TO BE PLACED IN CONCRETE OR THROUGH CONCRETE SLABS AS CONSTRUCTION PROGRESSES. HE SHALL PROVIDE ALL MISCELLANEOUS HANGING AND SUPPORTING HARDWARE. ALL ELECTRICAL WORK IS TO BE CONCEALED IN OR BUILT INTO GENERAL CONSTRUCTION SHALL BE PLACED AS CONSTRUCTION PROGRESSES. FAILURE OF THE CONTRACTOR TO COORDINATE WORK WITH OTHER TRADES AND THE PROJECT CONSTRUCTION PROGRESS SHALL MAKE HIM RESPONSIBLE FOR ALL COST OF CUTTING AND PATCHING, AS REQUIRED TO INSTALL WORK. NO STRUCTURAL MEMBER, MASONRY CONSTRUCTION OR FINISHED WORK SHALL BE CUT OR ALTERED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER. CONTRACTOR SHALL FIRE RATE ALL PENETRATIONS THROUGH ALL FIRE RATED SLABS OR WALLS PER THE INTENDED FIRE RATING.

N. THE CONTRACTOR SHALL SUPPLY AND SET INTO PLACE ALL WALL SLEEVES FOR CONDUITS AND CEILING INSERTS FOR HANGERS IN AREAS OF NEW CONSTRUCTION AS BUILDING CONSTRUCTION PROGRESSES. INSTALL EQUIPMENT NOTED TO BE CONCEALED IN WALLS BEFORE WALLS ARE CONSTRUCTED IN ORDER THAT WALLS MAY BE CONSTRUCTED AROUND CONDUITS, ENCLOSURES, ETC.

O. METALLIC MATERIALS SHALL BE PROTECTED AGAINST CORROSION. EQUIPMENT ENCLOSURES SHALL BE GIVEN RUST-INHIBITING TREATMENT AND STANDARD FINISH BY MANUFACTURER. ALUMINUM SHALL NOT BE USED ON CONTACT WITH EARTH, AND, WHERE CONNECTED TO DISSIMILAR METAL, SHALL BE PROTECTED BY SUITABLE FITTINGS AND TREATMENT. ALL FERROUS METALS SUCH AS ANCHORS, BOLTS, BRACES, BOXES, BODIES, CLAMPS, FITTINGS, GUARDS, NUTS, PINS, RODS, SHIMS, THIMBLES, WASHERS, AND MISCELLANEOUS PARTS, NOT OF STAINLESS STEEL OR NONFERROUS MATERIALS, SHALL BE HOT-DIPPED GALVANIZED.

P. ALL CONDUITS STUBBED OUT FOR FUTURE USE SHALL HAVE A PULL WIRE INSTALLED, A PLASTIC CAP INSTALLED AND BE IDENTIFIED AS TO THE CONDUIT ORIGIN.

Q. THE RESPONSIBILITY FOR ANY CUTTING OF CONSTRUCTION WHICH IS REQUIRED FOR THE INSTALLATION OF DIVISION 26 WORK, SHALL BE BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES AND THE OWNER BEFORE ANY CUTTING AND OBTAIN APPROVAL FROM THE ARCHITECT/ENGINEER PRIOR TO ANY CUTTING. ALL PATCHING AND FINISHING SHALL BE BY THE CONTRACTOR.

R. WHERE OPENINGS OR HOLES ARE CUT IN CONSTRUCTION AND THE CUTTING BREAKS ELECTRICAL CIRCUITRY OR CONTROL CIRCUITRY CONDUIT AND WIRING, THEN IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REROUTE THE CIRCUITRY CONDUIT AND REWIRING AND TO COMPLETE THE CIRCUITRY AS REQUIRED AND AS APPROVED BY THE ARCHITECT/ENGINEER. TEMPORARY COMPLETION SHALL BE PROVIDED WHERE NECESSARY BEFORE THE PERMANENT REROUTING AND COMPLETION WORK IS FINISHED.

S. ANY PENETRATIONS OF FIRE OR SMOKE RATED ASSEMBLIES MADE BY THIS CONTRACTOR IN VERTICAL OR HORIZONTAL CONSTRUCTION SHALL BE SEALED AND PROTECTED BY THIS CONTRACTOR IN ORDER TO MAINTAIN THE ESTABLISHED FIRE RATING WITH METHODS AS APPROVED BY THE AUTHORITY HAVING JURISDICTION AND U.L.

T. ALL ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS SHALL BE LOCATED AT OR ABOVE FLOOD ELEVATION OR GRADE ELEVATION, WHICH EVER IS HIGHER

III. IDENTIFICATION:

A. IDENTIFICATION NAMEPLATES SHALL BE LAMINATED PLASTIC, SECURED TO EQUIPMENT WITH TWO STAINLESS STEEL SCREWS.

B. EACH PANELBOARD AND METER CENTER SHALL BE EQUIPPED WITH A PERMANENT PLASTIC NAMEPLATE WITH 1/2" MINIMUM LETTERS, SECURELY FASTENED TO THE DEVICE.

C. EACH INDIVIDUALLY MOUNTED CIRCUIT BREAKER, SWITCH, MOTOR STARTER, RELAY PANEL, LIGHTING CONTACTOR, TRANSFORMER AND/OR ANY OTHER CONTROL OR PROTECTIVE DEVICE INCLUDING EQUIPMENT DISCONNECT SWITCHES SHALL BE EQUIPPED WITH A PERMANENT PLASTIC NAMEPLATE WITH 1/2" MINIMUM LETTERS.

D. PANELBOARDS SHALL HAVE TYPEWRITTEN DIRECTORIES. ALL CIRCUITS TO BE IDENTIFIED BY DEVICES SERVED AND ROOM NUMBERS (I.E., LIGHTING ROOM 216). HANDWRITTEN DIRECTORIES WILL NOT BE ALLOWED.

E. EACH JUNCTION BOX CABINET OR WIREWAY LARGER THAN 6" X 6" SHALL BE EQUIPPED WITH A PERMANENT PLASTIC NAMEPLATE WITH 1/2" MINIMUM LETTERS INDICATING THE SYSTEM ENCLOSED.

F. ALL SYSTEMS JUNCTION BOXES AND CONDUIT SHALL BE COLOR CODED INSIDE AND OUTSIDE OF THE BOX PRIOR TO THE INSTALLATION OF CONDUCTORS PER THE FOLLOWING:

1. CCTV SYSTEM: VIOLET
2. TELEPHONE DATA SYSTEM: BLUE

G. ENTIRE BOX INSIDE AND OUT, INCLUDING COVER, SHALL BE PAINTED PRIOR TO INSTALLING CONDUCTORS.

IV. WIRING DEVICES:

A. SWITCHES SHALL BE 20 AMP COMMERCIAL GRADE 125 VAC. IVORY IN COLOR WITH STAINLESS STEEL COVERPLATES FOR SHOP AREAS.

B. RECEPTACLES SHALL BE 20 AMP SPECIFICATION GRADE 125 VAC. IVORY IN COLOR WITH IVORY COVERPLATES FOR OFFICE AREAS.

C. RECEPTACLES SHALL B3 20AMP SPECIFICATION GRADE 125 VAC BLACK WITH BLACK COVERS IN ALL MILLWORK.

D. KEY LOCKABLE FLIP COVER TYPE COVERPLATES. SURGE SUPPRESSION TYPE OUTLETS IN MDFS AND IDFS SHALL BE HUBBELL #83625 (BLUE) OR EQUAL.

E. RECEPTACLES PROVIDED FOR ATTACHMENT OF CORD AND PLUG EQUIPMENT SHALL BE HEAVY DUTY, SPECIFICATION GRADE, NON-INTERCHANGEABLE, FLUSH MOUNTED TYPES OF THE PROPER NEMA CONFIGURATION TO SERVE THE EQUIPMENT. NEMA CONFIGURATIONS SHALL BE VERIFIED PRIOR TO INSTALLATION OF CIRCUIT CONDUCTORS. PROVIDE ALL FINAL FLEXIBLE. CONDUIT CONNECTIONS, TO GARBAGE DISPOSAL, DISHWASHER, RANGE, MICROWAVES AND HVAC EQUIPMENT.

F. ALL DEVICES SHALL HAVE PROPER PLATES, CARPET FLANGES, TRIMS, RINGS, ESCUTCHEONS, ETC., AS MANUFACTURED BY SAME MANUFACTURER AS DEVICES. ANY TELEPHONE OR OTHER OUTLET WHICH IS NOT EQUIPPED WITH A PLATE FURNISHED BY OTHERS SHALL HAVE ONE PROVIDED BY THIS CONTRACTOR.

G. MOUNTING HEIGHTS ARE APPROXIMATE. THE EXACT LOCATIONS AND MOUNTING HEIGHTS SHALL BE DETERMINED ON THE JOB AND PER ARCHITECTURAL DRAWINGS AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL TRADES TO INSURE CORRECT INSTALLATION, I.E., OVER COUNTERS IN OR ABOVE BACK-SPLASHES, IN BLOCK WALLS, TILE, AND OTHER SPECIFIC CONSTRUCTION FEATURES. LOCATION OF OUTLETS MOUNTED IN BUILT-INS, MILLWORK, AND CABINETRY SHALL BE VERIFIED. OUTLETS MOUNTED IN KICK OR TOE SPACES SHALL BE MOUNTED HORIZONTALLY. OUTLET BOXES SHALL BE MOUNTED TO PREVENT DEVICE PLATE FROM OVERLAPPING BACKSPLASH, TRIM, TILE, ETC. LOCATE SO DEVICE PLATE WILL LAY FLAT AGAINST SURFACE COMPLETELY AROUND THE PERIMETER OF PLATE.

H. OUTLETS, OTHER THAN THOSE COORDINATED WITH COUNTER TOPS, SHELVES, AND CABINETS, SHALL BE LOCATED WITH THE CENTER LINE OF OUTLET BOXES THE FOLLOWING DISTANCE ABOVE THE FINISHED FLOOR, UNLESS OTHERWISE INDICATED:

1. RECEPTACLES, GENERAL: 1'-6" AFF
2. TELEPHONE OUTLETS: 1'-6" AFF
3. SWITCHES, GENERAL: 4'-0" AFF

V. RACEWAYS

A. SHALL BE GALVANIZED OUTSIDE AND INSIDE BY HOT DIPPING. E.M.T. SHALL BE ELECTRO-GALVANIZED. CONDUITS SHALL BE AS MANUFACTURED BY REPUBLIC, PITTSBURGH STANDARD, WHEATLAND, TRIANGLE, ALLIED, OR YOUNGSTOWN.

B. SHALL BE STANDARD THREADED TYPE, GALVANIZED OUTSIDE AND INSIDE BY HOT DIPPING. THREADLESS AND CLAMP TYPE NOT ACCEPTABLE. SHALL BE AS MANUFACTURED BY RACO, EFCOR, OR APPLETON.

C. SHALL BE STEEL THREADED COMPRESSION TYPE. ALL COUPLINGS AND CONNECTORS SHALL BE EFCOR OR RACO. PRESSURE INDENTED TYPE CONNECTORS OR CAST METAL WILL NOT BE APPROVED FOR ANY LOCATION.

D. CONNECTORS SHALL HAVE PLASTIC INSULATED THROAT INSERTS.

E. THE USE OF METAL CLAD CABLE IS ACCEPTABLE IN LOCATIONS AS ACCEPTED BY THE NEC AND ALL LOCAL JURISDICTIONAL CODES.

F. STEEL METAL CLAD CABLE, TYPE MC, EMPLOYING CIRCUIT CONDUCTORS #12 SOLID TO #2 AWG, SOLID OR STRANDED COPPER WITH THHN INSULATION, AN INSULATED GREEN GROUNDING CONDUCTOR AND GALVANIZED STEEL INTERLOCKED ARMOR CLADDING. THE CABLES SHALL BE SUITABLE FOR USE IN CONCEALED DRY LOCATIONS AT TEMPERATURES NOT EXCEEDING 90° C ON AD CIRCUITS UP TO 600 VOLTS IN ACCORDANCE WITH N.E.C., ARTICLE 334. THE CABLE SHALL BE ONE AND TWO HOUR FIRE RATED PER ANSI/UL 1479 FOR USE CONCEALED IN WALL, CEILING AND FLOOR ASSEMBLIES.

G. FLEXIBLE METALLIC CONDUIT RACEWAYS MAY BE USED TO CONNECT HVAC UNITS LOCATED IN INTERIOR MECHANICAL AREAS. MINIMUM SIZE 3/4".

H. CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE EXCEPT THAT NO CONDUIT SHALL BE SMALLER THAN 3/4" UNLESS OTHERWISE NOTED. CONDUIT SHALL BE SIZED LARGER THAN REQUIRED ABOVE WHEN SO SHOWN ON THE DRAWINGS OR WHEN REQUIRED BY LOCAL CODE.

I. ANY CONDUIT STUBBED OUT FOR FUTURE SHALL BE CAPPED WITH A PLASTIC CAP AND MARKED WITH A 2" MINIMUM RED METAL TAG WHICH IDENTIFIES CONDUIT ORIGIN. CONDUITS STUBBED UP ABOVE GRADE OR ROOF SHALL BE TAGGED ON THE CONDUIT. CONDUIT STUBBED OUT BELOW GRADE SHALL BE TAGGED ON NEAREST BUILDING WALL, CURB, ETC., DIRECTLY OVER THE CONDUIT ALL EMPTY CONDUITS SHALL HAVE PULL WIRES.

J. THE USE OF NON-METALLIC SHEATHED CABLE (ROMEX) SHALL BE PERMISSIBLE FOR USE WITHIN RESIDENTIAL UNITS AS ACCEPTED BY THE AUTHORITY HAVING JURISDICTION AND INSTALLED PER THE MANUFACTURES RECOMMENDATIONS. PRIOR WRITTEN APPROVAL FROM THE AHJ IS MANDATORY AND MUST BE SUBMITTED WITH CONDUCTOR SHOP DRAWINGS.

VI. SCHEDULE 40 RIGID PVC:

A. CONDUIT SHALL BE COMPOSED OF POLYVINYLCHLORIDE (PVC) AND SHALL BE UL RATED TYPE 40 FOR USE WITH 90°C RATED CONDUCTORS. CONDUIT SHALL CONFORM TO NEMA STANDARDS AND APPLICABLE SECTIONS OF NEC.

B. INSTALLATION OF RIGID NON-METALLIC CONDUIT SHALL COMPLY WITH ARTICLE 347 OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND THESE SPECIFICATIONS.

C. PROVIDE A CONTINUOUS, INSULATED, GROUNDING CONDUCTOR IN EVERY RIGID, NON-METALLIC RACEWAY EVEN IF NOT SHOWN ON THE DRAWINGS. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO GROUND AT EACH END OF THE RACEWAY IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE (NFPA 70).

D. WHERE RIGID NON-METALLIC CONDUIT TRANSITIONS TO METALLIC CONDUIT, THE LOCATION OF THE TRANSITION SHALL BE UNDERGROUND. NO PVC CONDUIT SHALL BE RUN EXPOSED, OR ABOVE GRADE.

VII. WIRE AND CABLE 600 VOLT:

A. CONDUCTORS SHALL HAVE CURRENT CARRYING CAPACITIES AS PER NEC AND WITH 600 VOLT INSULATION, #12 AVERAGE MINIMUM FOR 20 AMP CIRCUITS. CONDUCTORS SHALL BE COPPER.

B. #12 AND #10 SHALL BE SOLID, TYPE THWN/THHN INSULATION.

C. #8 AND LARGER, AND ANY SIZE TO MOTORS SHALL BE STRANDED TYPE THHN.

D. SHALL BE MADE WITH T & B STA-KON WIRE JOINTS, PT SERIES, COMPLETE WITH INSULATING CAPS AND INSTALLED WITH WT161 TOOL OR WT2000 TOOL, IDEAL SUPER-NUTS (NOT WIRE IDEAL WING NUTS, OR BUCHANAN ELEC. PRODUCTS B CAP OR SERIES 2000 PRESSURE CONNECTORS COMPLETE WITH NYLON SNAP-ON INSULATORS AND INSTALLED WITH C24 PRESSURE TOOL.

E. ALL JOINTS AND SPLICES IN WIRE SHALL BE MADE WITH APPROVED SOLDERLESS CONNECTORS, AND COVERED SO THAT INSULATION IS OWNER APPROVED EQUAL TO CONDUCTOR INSULATION. SPLICES SHALL NOT BE PERMITTED IN CONTROL, SECURITY, FIRE ALARM, TELEVISION OR COMMUNICATIONS SYSTEMS, OR WHERE OTHERWISE NOTED. SPLICING OF WIRE OR CABLES WILL NOT BE ALLOWED BELOW GRADE, INCLUDING IN BOXES BELOW GRADE.

F. BOTH CONDUCTORS AND CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET.

G. IN INSTALLING THE MAIN ELECTRICAL SERVICE, ADDITIONAL SLACK CONDUCTOR SHALL BE PROVIDED AND TERMINATED AS REQUIRED BY ELECTRIC UTILITY FOR CONNECTION TO THEIR EQUIPMENT. FIELD COORDINATE WITH UTILITY PRIOR TO INSTALLING CONDUCTORS.

H. IN INSTALLING PARALLEL CONDUCTORS IT IS MANDATORY THAT ALL CONDUCTORS MAKING UP THE FEEDER BE EXACTLY THE SAME LENGTH, THE SAME SIZE AND THE SAME TYPE OF CONDUCTOR WITH THE SAME INSULATION. FURTHER, EACH GROUP OF CONDUCTORS MAKING UP A PHASE OR NEUTRAL MUST BE BONDED AT BOTH ENDS IN AN APPROVED MANNER.

I. CONDUCTOR SIZES INDICATED ON CIRCUIT HOMERUNS OR IN PANELBOARD SCHEDULES SHALL BE INSTALLED OVER THE ENTIRE LENGTH OF THE CIRCUIT UNLESS NOTED OTHERWISE ON THE DRAWINGS.

J. CONDUCTORS SHALL BE CONTINUOUS AND UNSPLICED WHERE INSTALLED IN CONDUIT. SPLICES SHALL OCCUR ONLY WITHIN WIRING TROUGHS, WIREWAYS, JUNCTION BOXES, OUTLET BOXES, OR EQUIPMENT ENCLOSURES WHERE SUFFICIENT ADDITIONAL ROOM IS PROVIDED FOR ALL SPLICES.

K. EACH BRANCH CIRCUIT AND FEEDER CONDUCTOR SHALL BE COLOR CODED. FOR CONDUCTOR SIZES THRU NO. 6 AWG, THE INSULATION SHALL BE OF THE COLOR AS INDICATED BELOW. COLOR CODE SHALL BE STRICTLY ADHERED TO. FOR CONDUCTOR SIZES NO. 4 AWG AND LARGER, COLOR CODED PHASE TAPE MAY BE APPLIED COMPLETELY AROUND THE CONDUCTOR INSULATION WITHIN 8" OF EACH END OF THE CONDUCTOR AND IN EACH PULL OR JUNCTION BOX OR WHENEVER CONDUCTORS ARE PHYSICALLY EXPOSED TO VIEW. GROUNDING CONDUCTORS AND GROUNDED CONDUCTORS SHALL HAVE INSULATION COLOR AS INDICATED FOR SIZES THROUGH #6 AWG.

120/208 V, 3PHASE,
PHASE A, COLOR: BLACK
PHASE B, COLOR: RED
PHASE C, COLOR: BLUE
NEUTRAL, COLOR: WHITE
GROUND, COLOR: GREEN

L. PRIOR AUTHORIZATION FROM THE ARCHITECT/ENGINEER IF CONDUCTORS ARE SUBSTITUTED TO ALUMINUM CONDUCTORS. CONDUCTORS MUST HAVE THE EQUIVALENT OR GREATER AMPACITY VALUE THAN THAT OF SPECIFIED COPPER, SHALL PHYSICALLY FIT BELOW THE CONNECTION LUG AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL LUGS SHALL BE RATED FOR COPPER AND ALUMINUM CONDUCTORS. CONDUCTORS SHALL BE INSTALLED UTILIZING "NO-LOX" ANTI-OXIDATION COMPOUND AND CONDUCTORS SHALL BE DESIGNATED AS "COMPACT ALUMINUM".

M. ALL WIRING SHALL BE AS PER NEC.

VIII. GROUNDING:

A. THIS SECTION DEALS WITH THE GROUNDING OF SERVICE EQUIPMENT, TRANSFORMERS, NON-CURRENT CARRYING CONDUCTIVE SURFACES OF EQUIPMENT, METAL BUILDING, STRUCTURES AND OTHER EQUIPMENT. MAXIMUM RESISTANCE SHALL NOT EXCEED 10 OHMS.

B. ALL GROUNDING CONNEC

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

MECHANICAL EQUIPMENT CONNECTION SCHEDULE NOTES

1. VERIFY DISCONNECT CIRCUIT BREAKER SIZE, FRAME SIZE, AND FUSE RATING/TYPE BASED ON DIVISION 22/23 SHOP DRAWINGS PRIOR TO BIDDING. ADJUST AS NECESSARY.
2. ALL EQUIPMENT RECEIVING CONTROL POWER ONLY ARE NOT SHOWN ON THIS SCHEDULE. REFER TO DIVISION 23 MECHANICAL SCHEDULES AND POWER PLANS FOR CIRUITING REQUIREMENTS.
3. INTERIOR UNIT IS POWERED BY OUTDOOR CONDENSING UNIT WITH 3#10 AWG IN 3/4"C
4. VARIABLE FREQUENCY DRIVE (VFD) IS FURNISHED BY DIVISION 23, INSTALLED ANY CONNECTED BY DIVISION 26. DISCONNECTING MEANS IS INTEGRAL TO VFD.

EQUIPMENT	AMPS	LOAD	VOLTAGE	NO. OF POLES	PANEL	CIRCUIT NUMBER	COMBINATION STARTER/DISCONNECT			FEEDER (COPPER CONDUCTORS U.O.N.)	CB RATING	NOTES
							FRAME RATING	FUSE RATING	NEMA RATING			
FCU-1	5 A	1.1 kVA	208 V	2	L2	8,10	30 A	15 A	1	2#12, 1#12 G., 1/2" C.	15 A	1
CU-1 / AC-1	13 A	2.7 kVA	208 V	2	L2	12,14	30 A / 20 A	20 A / *	3R / 1	2#12, 1#12 G., 1/2" C.	20 A	1, 3
CU-2 / AC-2	13 A	2.7 kVA	208 V	2	L2	16,18	30 A / 20 A	20 A / *	3R / 1	2#12, 1#12 G., 1/2" C.	20 A	1, 3
CU-3 / AC-3	6 A	1.2 kVA	208 V	2	L2	20,22	30 A / 20 A	15 A / *	3R / 1	2#12, 1#12 G., 1/2" C.	15 A	1, 3
HP-1	18 A	3.7 kVA	208 V	2	L2	24,26	30 A	25 A	3R	2#10, 1#10 G., 3/4" C.	25 A	1
EF-2	5 A	1.7 kVA	208 V	3	L2	39,41,43	30 A	20 A	3R	3#12, 1#12 G., 1/2" C.	20 A	1
EF-3	2 A	0.9 kVA	208 V	3	L2	45,47,49	30 A	20 A	3R	3#12, 1#12 G., 1/2" C.	20 A	1

LIGHTING FIXTURE SCHEDULE

LIGHTING FIXTURE SCHEDULE NOTES

1. PROVIDE ALL REQUIRED MOUNTING HARDWARE AND WIRING TO CONNECT LIGHTING FIXTURES AT HOLLOW CORE, POST TENSION SLAB, AND STRUCTURAL STEEL LOCATIONS INCLUDING BOXES, HANGER BARS, STRUCTURAL APPROVED FASTENERS AND UL APPROVED CONNECTORS.
2. PROVIDE ALL DEVICES, DRYWALL FLANGES, MOUNTING EQUIPMENT, CHAIN, STRAIN REFLIEFS, CLIPS, ESCUTCHEONS, PLATES AND STRUCTURAL SUPPORTS FOR THE INSTALLTION AND CONNECTION OF ALL LIGHTING FIXTURES.
3. COORDINATE THE ACTUAL TYPE OF LIGHTING FIXTURES WITH ARCHITECTURAL LIGHITNG SCHEDULES, INTERIOR DESIGN LIGHTING SCHEDULE/DRAWINGS AND OWNER LIGHTING FIXTURE STANDARD CRITERIA AS...
4. REFER TO ARCHITECTURAL REFLECTED CEILING LIGHTING PLAN FOR EXACT FINAL LOCATION OF LIGHTING FIXTURES.
5. COORDINATE THE ACTUAL TYPE OF CEILING FOR EACH FIXTURE WITH ARCHITECTURAL AND INTERIOR DRAWING'S REFLECTED CEILING PLANS AND PROVIDE FIXTURE TRIM AS REQUIRED.
6. ALL SITE, POOL DECK, AND PARKING GARAGE ALTERNATE FIXTURES SHALL BE SUBMITTED WITH PHOTOMETRIC STUDY TO BE REVIEWED AS PART OF THE SUBMITTAL PROCESS.

TYPE	MANUFACTURER & CATALOG NO.	DESCRIPTION	LAMPS	LOAD	VOLTS	REMARKS
A1	METALUX #24CZSCT3-UNV	2'x4' LED TROFFER, SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE, 80 CRI, RIBBED FROSTED ACRYLIC LENS, 0-10V DIMMING TO 10%, STEEL HOUSING, MATTE WHITE FINISH	LED	46.8 VA	120	AS APPROVED BY OWNER
A1E	METALUX #24CZSCT3-UNV-EL14W	SAME AS TYPE 'A1', EXCEPT WITH INTEGRAL BATTERY PACK	LED	46.8 VA	120	AS APPROVED BY OWNER
A2	ABB #LI1-8-1-K5-W-FG-P-G-U	44" HAZARDOUS LOCATION LINEAR, 9600 LUMENS, 5000K, 110 DEG DISTRIBUTION, FROSTED GLASS, PENDANT MOUNT, CORROSION RESISTANT ALUMINUM HOUSING, CLASS 1 DIVISION 2	LED	80.0 VA	120	AS APPROVED BY OWNER
B1	HALO #HC615D010 – HM60525840 - 61MDC	6" LED DOWNLIGHT, 1500 LUMENS, 0-10V DIMMING TO 1%, 80 CRI, 4000K, 64 DEG DISTRIBUTION, SPECULAR CLEAR FINISH, STEEL FRAME, DAMP LOCATION LISTED	LED	14.5 VA	120	AS APPROVED BY OWNER
S1	METALUX #4SNX-48SL-LN-UNV-L835-CD1-U	4' LED STRIP FIXTURE, 5015 LUMENS, 3500K, 80 CRI, 0-10V DIMMING TO 10%, NARROW SEMI-FROST LENS, STEEL HOUSING	LED	32.1 VA	120	AS APPROVED BY OWNER
S1E	METALUX #4SNX-48SL-LN-UNV-L835-CD1-EL14W-U	SAME AS TYPE 'S1', EXCEPT WITH INTEGRAL BATTERY PACK	LED	32.1 VA	120	AS APPROVED BY OWNER
W1	LUMARK #AXCS5A	EXTERIOR LED WALL PACK, 6348 LUMENS, 4000K, CARBON BRONZE FINISH, FULL CUTOFF LENS, ALUMINUM HOUSING, INTEGRAL EMERGENCY BATTERY PACK	LED	45.0 VA	120	AS APPROVED BY OWNER
X1	SURE-LITES #APX7RG	LED EXIT SIGN, RED/GREEN SELECTABLE, NICKEL CADMIUM BATTERY, WHITE THERMOPLASTIC HOUSING	LED	5.0 VA	120	AS APPROVED BY OWNER
X2	ABB #V12N-L10-03-GG-R	HAZARDOUS LOCATION COMBINATION EMERGENCY EXIT SIGN, (2) MR16 LED EMERGENCY LIGHTS, RED LETTERING, CLASS 1 DIVISION 2	LED	10.0 VA	120	AS APPROVED BY OWNER

Bid Set

DATE: 6/30/2025 11:09:18 AM

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OWNER:

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INGENUITY
ENGINEERS, INC.
"PROACTIVE ENGINEERING SOLUTIONS"
6275 HAZELTINE NATIONAL DR, ORLANDO, FLORIDA | 407.398.6007

OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

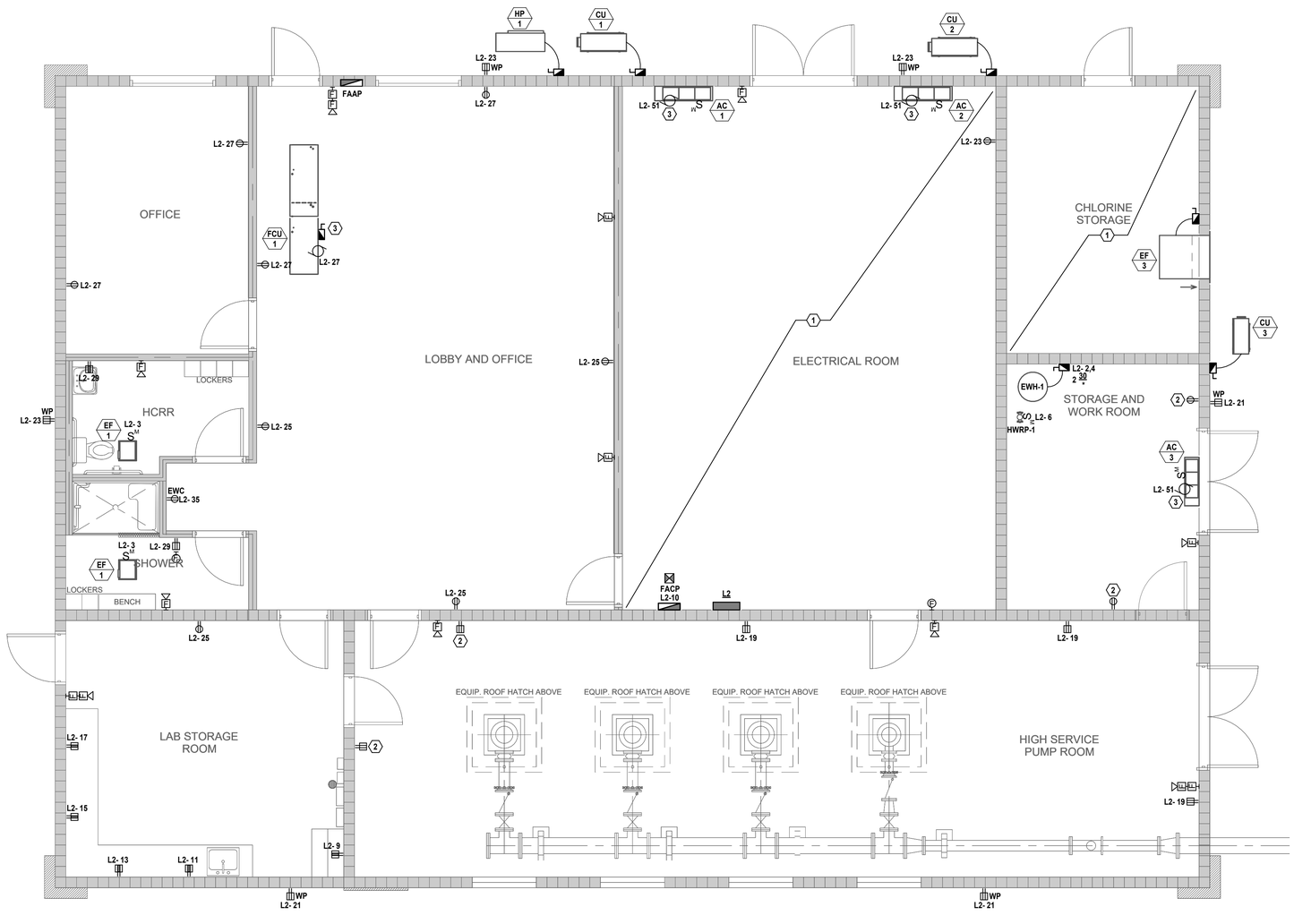
REVISIONS:

MARK	DATE	DISCRIPTION

ISSUE DATE: FEBRUARY 24, 2025

ELECTRICAL SCHEDULES

E0.3



1 / E2.1 FLOOR PLAN - POWER & FIRE ALARM
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO PACKAGE FROM BAILEY ENGINEERING CONSULTANTS FOR ADDITIONAL INFORMATION.
2. ALL EXTERIOR RECEPTACLES SHALL BE WEATHERPROOF RATED.
3. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE ON SHEET E0.3 FOR ADDITIONAL INFORMATION.
4. SEAL ALL FIRE WALLS, ROOF, AND FLOOR PENETRATIONS WITH UL LISTED FIRE SEALANT.
5. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND DIMENSIONS OF FIXTURES AND DEVICES.
6. CONTRACTOR SHALL COORDINATE MECHANICAL REQUIREMENTS WITH DIVISION 23 DRAWINGS AND SHOP DRAWINGS PRIOR TO ROUGH-IN.
7. FIRE ALARM DEVICES, WHERE REQUIRED SHALL BE INSTALLED IN COMPLIANCE WITH FLORIDA FIRE PREVENTION CODE 8TH EDITION AND NFPA

REFERENCE NOTES

1. REFER TO PACKAGE FROM BAILEY ENGINEERING CONSULTANTS FOR ELECTRICAL EQUIPMENT WITHIN ROOM.
2. RECEPTACLE TO BE CONNECTED TO PANEL L1. REFER TO PACKAGE FROM BAILEY ENGINEERING CONSULTANTS FOR ADDITIONAL INFORMATION.
3. PROVIDE POWER FOR CONDENSATE PUMP. COORDINATE EXACT LOCATION AND POWER CONNECTION REQUIREMENTS WITH DIVISION 23 DRAWINGS PRIOR TO ROUGH-IN.

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H.S.P.S BUILDING
HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

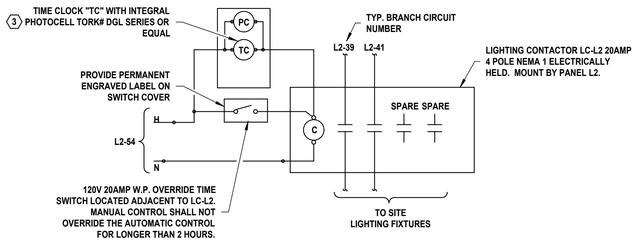
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FLOOR PLAN - POWER & FIRE ALARM

E2.1

Bid Set

DATE: 6/30/2025 11:11:21 AM



LIGHTING CONTACTOR 'LC-L2'

NTS



1 E3.1 FLOOR PLAN - LIGHTING
SCALE: 1/4" = 1'-0"

NORTH

GENERAL NOTES

1. REFER TO PACKAGE FROM BAILEY ENGINEERING CONSULTANTS FOR ADDITIONAL INFORMATION.
2. SEAL ALL FIRE WALLS, ROOF, AND FLOOR PENETRATIONS WITH UL LISTED FIRE SEALANT.
3. ALL EMERGENCY LIGHT, NIGHT LIGHTS (NL), AND EXIT LIGHTS SHALL BE CONNECTED AHEAD OF ANY SWITCHING, ARRANGEMENTS, ON THE SAME CIRCUIT AS GENERAL LIGHTING IN THE SAME AREA, PER NEC.
4. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND DIMENSIONS OF FIXTURES AND DEVICES.

REFERENCE NOTES

1. PILOT LIGHT FOR CONTROL OF LIGHTS WITHIN CHLORINE STORAGE ROOM.
2. EXTERIOR LIGHTING SHALL BE CONTROLLED BY AND ROUTED THROUGH LIGHTING CONTACTOR 'LC-L2'. REFER TO DETAIL ON THIS SHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE PHOTOCELL ON ROOF FACING NORTH.

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HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

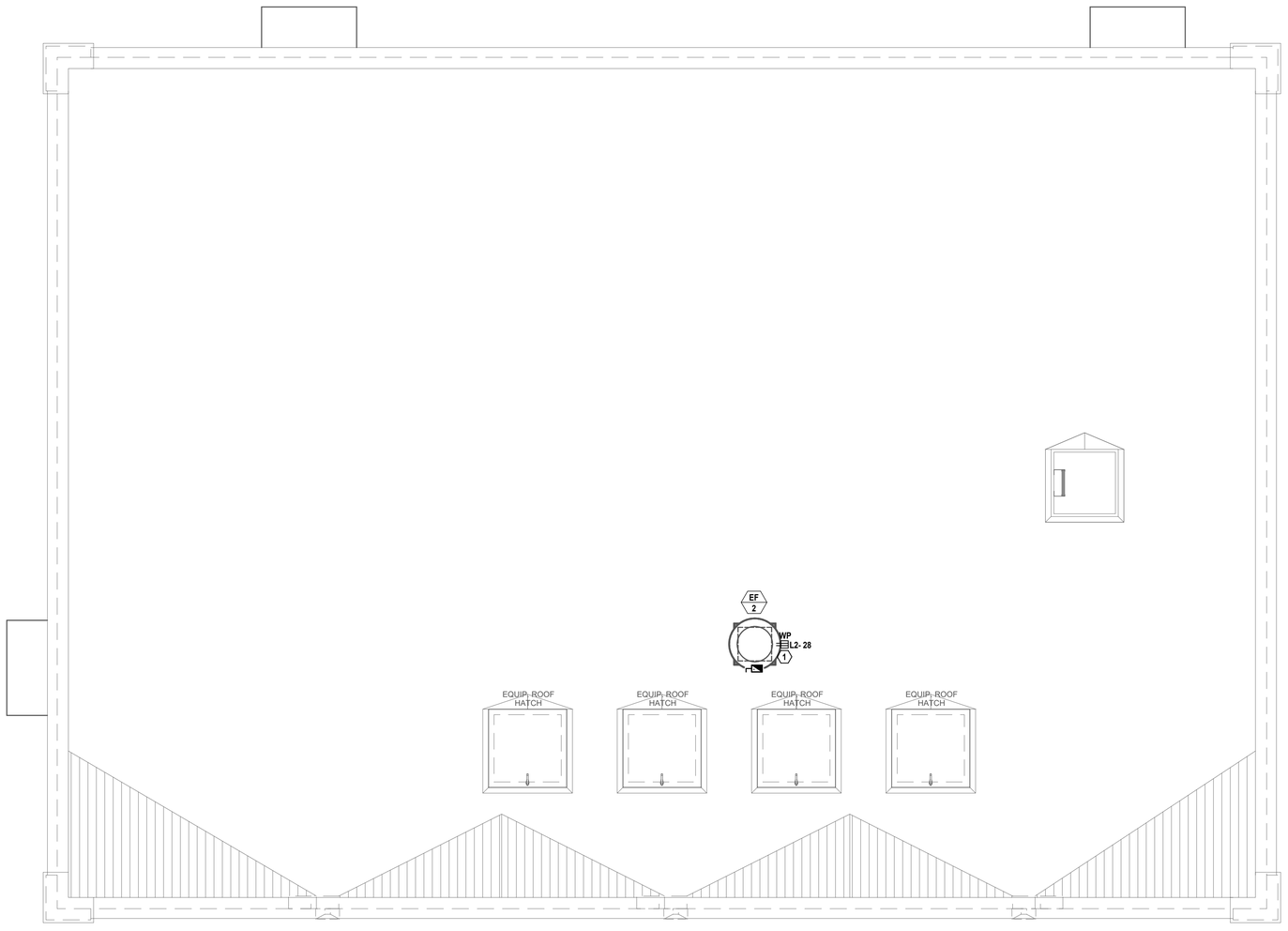
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FLOOR PLAN - LIGHTING

E3.1

Bid Set

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1 / E3.2 ROOF PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"

NORTH

GENERAL NOTES

1. REFER TO MECHANICAL EEQUIPMENT CONNECTION SCHEUDLE ON SHEET E0.3 FOR ADDITIONAL INFORMATION.
2. THIS PROJECT IS IN COMPLIANCE WITH 2023 FBC-ENERGY CONSERVATION C405.5.3 AND 2020 NEC 210.19 WITH REGARDS TO VOLTAGE DROP OF 5%.
3. SEAL ALL FIRE WALLS, ROOF, AND FLOOR PENETRATIONS WITH UL LISTED FIRE SEALANT.
4. CONTRACTOR SHALL COORDINATE MECHANICAL REQUIREMENTS WITH DIVISION 23 DRAWINGS AND SHOP DRAWINGS PRIOR TO ROUGH-IN.
5. ALL ELECTRICAL DISCONNECTS AND MOTOR SWITCHES TYPE NEMA 3R UNLESS OTHERWISE NOTED.

REFERENCE NOTES

(1) PROVIDE WP/WR/GFCI SERVICE RECEPTACLE MOUNTED TO HVAC EQUIPMENT IN ACCORDANCE WITH N.E.C. 210.63.

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HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

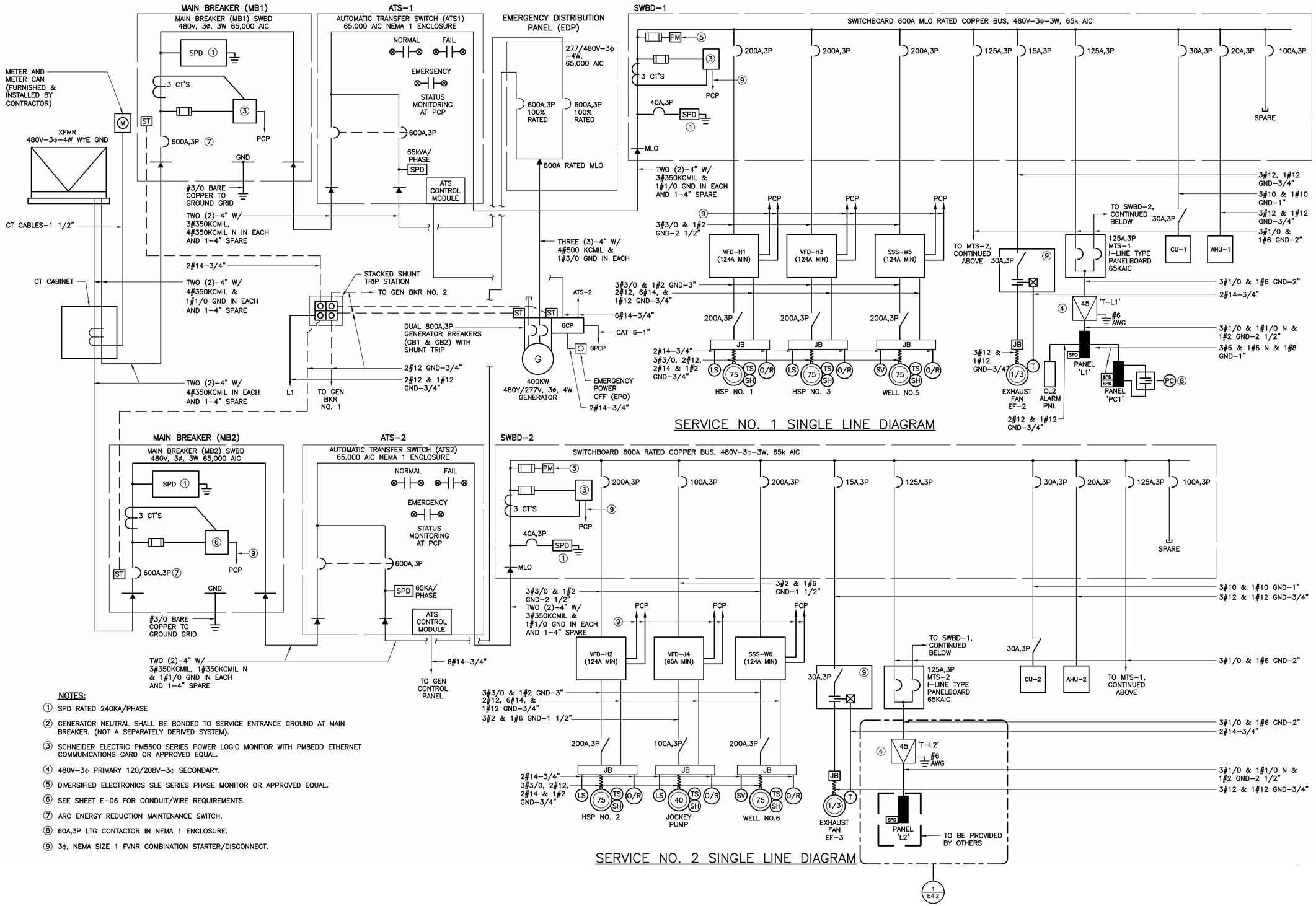
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ROOF PLAN - ELECTRICAL

E3.2

Bid Set

DATE: 6/30/2025 11:09:19 AM



NOTES:

1. SPD RATED 240KA/PHASE
2. GENERATOR NEUTRAL SHALL BE BONDED TO SERVICE ENTRANCE GROUND AT MAIN BREAKER. (NOT A SEPARATELY DERIVED SYSTEM).
3. SCHNEIDER ELECTRIC PM5500 SERIES POWER LOGIC MONITOR WITH PM8EDD ETHERNET COMMUNICATIONS CARD OR APPROVED EQUAL.
4. 480V–3ϕ PRIMARY 120/208V–3ϕ SECONDARY.
5. DIVERSIFIED ELECTRONICS SLE SERIES PHASE MONITOR OR APPROVED EQUAL.
6. SEE SHEET E–06 FOR CONDUIT/WIRE REQUIREMENTS.
7. ARC ENERGY REDUCTION MAINTENANCE SWITCH.
8. 60A,3P LTG CONTACTOR IN NEMA 1 ENCLOSURE.
9. 3ϕ, NEMA SIZE 1 FVNR COMBINATION STARTER/DISCONNECT.

SINGLE LINE DIAGRAM SHOWN FOR REFERENCE ONLY. REFER TO SET BY BAILEY ENGINEERING CONSULTANTS FOR ADDITIONAL INFORMATION.

1 E4.1 OVERALL SINGLE LINE DIAGRAM 12" = 1'-0"

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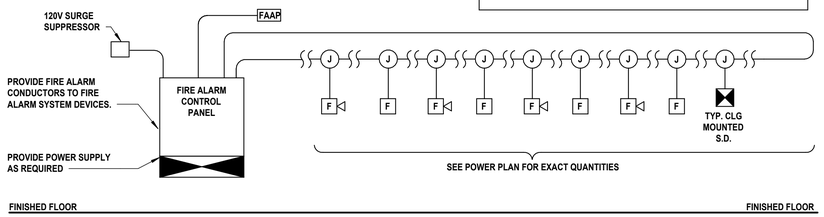
MARK	DATE	DISCRIPTION

ISSUE DATE: FEBRUARY 24, 2025

ELECTRICAL SINGLE LINE DIAGRAM

E4.1

FIRE ALARM SYSTEM NOTE:
FIRE ALARM SYSTEM RISER DIAGRAM IS DIAGRAMMATICAL AND IN ACCORDANCE WITH FLORIDA ADMINISTRATIVE CODE ARTICLE 61G15 DESIGN OF ALARM SYSTEMS. SEE POWER PLAN FOR EXACT QUANTITIES OF DEVICES. WIRING SHALL BE AS RECOMMENDED BY SYSTEMS MANUFACTURER AND PER NFPA 72. THE FIRE ALARM CONTRACTOR IS REQUIRED TO PROVIDE ENGINEERED FIRE ALARM DOCUMENTS PER THE FLORIDA ADMINISTRATIVE CODE 61G15.



FIRE ALARM SYSTEM SEQUENCE OF OPERATIONS (REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)

A. FIRE ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES:
1. MANUAL STATIONS.
2. HEAT DETECTORS.
3. SMOKE DETECTORS.
4. VERIFIED AUTOMATIC ALARM OPERATION OF SMOKE DETECTORS.
5. AUTOMATIC SPRINKLER SYSTEM WATER FLOW.

B. FIRE ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
1. ALARM NOTIFICATION APPLIANCES SHALL OPERATE CONTINUOUSLY
2. IDENTIFY ALARM AT THE FACP AND REMOTE ANNUNCIATORS.
3. TRANSMIT AN ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
4. SWITCH HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE ALARM MODE.
5. RECORD EVENTS IN THE SYSTEM MEMORY.

C. SUPERVISORY SIGNAL INITIATION SHALL BE BY OPERATION OF A FIRE-PROTECTION SYSTEM VALVE TAMPER.

D. SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES OR ACTIONS:
1. OPEN CIRCUITS, SHORTS AND GROUNDS OF WIRING FOR INITIATING DEVICE, SIGNALING LINE, AND NOTIFICATION-APPLIANCE CIRCUITS.
2. OPENING, TAMPERING, OR REMOVAL OF ALARM-INITIATING AND SUPERVISORY SIGNAL-INITIATING DEVICES.
3. LOSS OF PRIMARY POWER AT THE FACP.
4. GROUND OR A SINGLE BREAK IN FACP INTERNAL CIRCUITS.
5. ABNORMAL AC VOLTAGE AT THE FACP.
6. A BREAK IN STANDBY BATTERY CIRCUITRY.
7. FAILURE OF BATTERY CHARGING.
8. ABNORMAL POSITION OF ANY SWITCH AT THE FACP OR ANNUNCIATOR.

E. SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: RING TROUBLE BELL AND ANNUNCIATE AT THE FACPAND REMOTE ANNUNCIATORS. RECORD THE EVENT.

F. ACTUATION OF ALARM NOTIFICATION APPLIANCES, ANNUNCIATION, AND ELEVATOR RECALL ACTUATION OF SUPPRESSION SYSTEMS SHALL OCCUR WITHIN 10 SECONDS AFTER THE ACTIVATION OF AN INITIATING DEVICE.

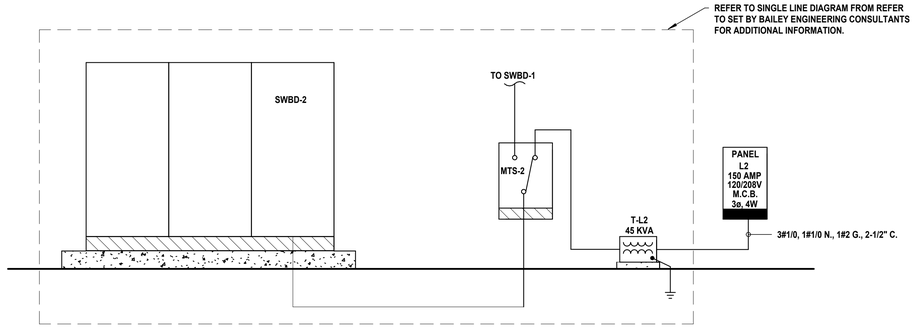
G. SMOKE-ALARM VERIFICATION:
1. INITIATE AUDIBLE AND VISIBLE INDICATION OF AN "ALARM VERIFICATION" SIGNAL AT THE FACP.
2. ACTIVATE A LISTED AND APPROVED "ALARM VERIFICATION" SEQUENCE AT THE FACP ANDNTHE DETECTOR.
3. RECORD EVENTS.
4. SOUND GENERAL ALARM IF THE ALARM IS VERIFIED.
5. CANCEL FACP INDICATION AND SYSTEM RESET IF THE ALARM IS NOT VERIFIED.

H. POWER SUPPLY FOR SUPERVISION EQUIPMENT: SUPPLY FOR AUDIBLE AND VISUAL EQUIPMENT FOR SUPERVISION OF THE AC POWER SHALL BE FROM A DEDICATED DC POWER SUPPLY, AND POWER FOR THE DC COMPONENT SHALL BE FROM THE AC SUPPLY.

I. ALARM SILENCING, TROUBLE, AND SUPERVISORY ALARM RESET: MANUAL RESET AT THE FACP AND REMOTE ANNUNCIATORS, AFTER INITIATING DEVICES ARE RESTORED TO NORMAL.
1. SILENCING-SWITCH OPERATION HALTS ALARM OPERATION OF NOTIFICATION APPLIANCES AND ACTIVATES AN "ALARM SILENCE" LIGHT. DISPLAY OF IDENTITY OF THE ALARM ZONE OR DEVICE IS RETAINED.
2. SUBSEQUENT ALARM SIGNALS FROM OTHER DEVICES OR ZONES REACTIVATE NOTIFICATION APPLIANCES UNTIL SILENCING SWITCH IS OPERATED AGAIN.
3. WHEN ALARM-INITIATING DEVICES RETURN TO NORMAL AND SYSTEM RESET SWITCH IS OPERATED, NOTIFICATION APPLIANCES OPERATE AGAIN UNTIL ALARM SILENCE SWITCH IS RESET.

J. DUCT SMOKE DETECTORS SHALL BE PROGRAMED AS A SUPERVISORY SIGNAL/FUNCTION IN ACCORDANCE WITH 9.6.3.2.2, NFPPA 101, 2012 ED. AS ADOPTED IN THE FFPC, 5TH ED.

2 / E4.2 FIRE ALARM RISER
12" = 1'-0"



1 / E4.2 SINGLE LINE DIAGRAM - ENLARGED
12" = 1'-0"

Name: L2

MAIN BREAKER: 150 AMPS
MAIN LUGS: ____ AMPS
K.A.I.C. : ____ AMPS
SURFACE MTD: X
FLUSH MTD: ____

3 **PHASE**
4 **WIRE**
X **208Y/120V**
____ **480Y/277V**
____ **240/120V**

Project Name:
Project Number:
Fed From:

CKT	LOAD NAME	TRIP	POLE...	WIRE SIZE	A		B		C		WIRE SIZE	POLE...	TRIP	LOAD NAME	CKT
1	LTG-ELEC. ROOM	20 A	1	2#12, 1#12 G., 1/2" C.	0.57	2.25					2#10, 1#10 G., 3/4" C.	2	30 A	EWH-1	2
3	LTG-LOB., OFF., RR,...	20 A	1	2#12, 1#12 G., 1/2" C.			0.92	2.25			--	--	--	--	4
5	LTG-CHLORINE STOR.	20 A	1	2#12, 1#12 G., 1/2" C.					0.17	0.00	2#12, 1#12 G., 1/2" C.	1	20 A	HWRP-1	6
7	LTG-STOR. PUMP RM	20 A	1	2#12, 1#12 G., 1/2" C.	0.33	0.54					2#12, 1#12 G., 1/2" C.	2	15 A	FCU-1	8
9	REC-LAB	20 A	1	2#12, 1#12 G., 1/2" C.			0.18	0.54			--	--	--	--	10
11	REC-LAB	20 A	1	2#12, 1#12 G., 1/2" C.					0.18	1.36	2#12, 1#12 G., 1/2" C.	2	20 A	CU-1 / AC-1	12
13	REC-LAB	20 A	1	2#12, 1#12 G., 1/2" C.	0.18	1.36					--	--	--	--	14
15	REC-LAB	20 A	1	2#12, 1#12 G., 1/2" C.			0.18	1.36			2#12, 1#12 G., 1/2" C.	2	20 A	CU-2 / AC-2	16
17	REC-LAB	20 A	1	2#12, 1#12 G., 1/2" C.					0.18	1.36	--	--	--	--	18
19	REC-PUMP RM	20 A	1	2#12, 1#12 G., 1/2" C.	0.54	0.58					2#12, 1#12 G., 1/2" C.	2	15 A	CU-3 / AC-3	20
21	REC-EXTERIOR	20 A	1	2#12, 1#12 G., 1/2" C.			0.54	0.58			--	--	--	--	22
23	REC-EXTERIOR, ELEC	20 A	1	2#12, 1#12 G., 1/2" C.					0.72	1.87	2#10, 1#10 G., 3/4" C.	2	25 A	HP-1	24
25	REC-LOBBY, LAB	20 A	1	2#12, 1#12 G., 1/2" C.	0.72	1.87					--	--	--	--	26
27	REC-LOBBY, OFFICE	20 A	1	2#12, 1#12 G., 1/2" C.			1.22	0.18			2#12, 1#12 G., 1/2" C.	1	20 A	REC-ROOF	28
29	REC-RR, SHOWER	20 A	1	2#12, 1#12 G., 1/2" C.					0.36	--	--	1	--	SPACE	30
31	LTG-EXTERIOR WEST	20 A	1	2#12, 1#12 G., 1/2" C.	0.18	--					--	1	--	SPACE	32
33	LTG-EXTERIOR EAST	20 A	1	2#12, 1#12 G., 1/2" C.			0.14	--			--	1	--	SPACE	34
35	* EWC-LOBBY	20 A	1	2#12, 1#12 G., 1/2" C.					0.18	--	--	1	--	SPACE	36
37	** FACP	20 A	1	2#12, 1#12 G., 1/2" C.	1.00	--					--	1	--	SPACE	38
39	EF-2	20 A	3	3#12, 1#12 G., 1/2" C.			0.58	--			--	1	--	SPACE	40
41	--	--	--	--					0.58	--	--	1	--	SPACE	42
43	--	--	--	--	0.58	--					--	1	--	SPACE	44
45	EF-3	20 A	3	3#12, 1#12 G., 1/2" C.			0.30	--			--	1	--	SPACE	46
47	--	--	--	--					0.30	--	--	1	--	SPACE	48
49	--	--	--	--	0.30	--					--	1	--	SPACE	50
51	CONDENSATE PUMP...	20 A	1	2#12, 1#12 G., 1/2" C.			1.50	--			--	1	--	SPACE	52
53	SPARE	20 A	1	--					0.00	0.00	2#12, 1#12 G., 1/2" C.	1	20 A	LC-L2	54
55	SPARE	20 A	1	--	0.00	0.00					3#10, 1#10 G., 3/4" C.	3	30 A	SPD	56
57	SPARE	20 A	1	--			0.00	0.00			--	--	--	--	58
59	SPARE	20 A	1	--					0.00	0.00	--	--	--	--	60
	Phase Connected Load:				11.0		10.5		7.3						

	CONN. LOAD...	DEMAND FACTOR	DEMAND LOAD...
HVAC	18.54 kVA	100.00%	18.54 kVA
Lighting	2.31 kVA	125.00%	2.88 kVA
Misc. Noncontinuous	0.00 kVA	0.00%	0.00 kVA
Motor	2.00 kVA	106.25%	2.13 kVA
Other	1.00 kVA	100.00%	1.00 kVA
Receptacle	4.86 kVA	100.00%	4.86 kVA

Total Connected Load: 28.7 kVA
Total Demand Load: 29.4 kVA
Demand Amps: 82 A

Notes:
* - PROVIDE GFCI TYPE BREAKER.
** - PROVIDE RED, LOCKABLE TYPE BREAKER.

DATE: 6/30/2025 11:09:16 AM

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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

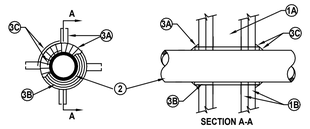
ISSUE DATE: FEBRUARY 24, 2025

ELECTRICAL RISER DIAGRAMS & PANEL SCHEDULES

E4.2

SYSTEM NO. WL2004

N.T.S.



1. WALL ASSEMBLY - THE 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

B. WALLBOARD, GYPSUM* - TWO LAYERS OF NOM 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 6-1/4 IN.

2. NONMETALLIC PIPE OR CONDUIT - ONE NONMETALLIC PIPE OR CONDUIT CENTERED IN FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES OR CONDUIT MAY BE USED IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS:

A. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 POLYVINYL CHLORIDE (PVC) PIPE.
B. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE ACRYLONITRILE BUTADIENE-STYRENE (ABS) PIPE.
C. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) FIRE RETARDANT POLYPROPYLENE (FRPP) PIPE.
D. NOM 4 IN. DIAM (OR SMALLER) RIGID NONMETALLIC CONDUIT FORMED OF PVC.
E. NOM 1 IN. DIAM (OR SMALLER) ELECTRICAL NONMETALLIC TUBING FORMED OF PVC.
F. NOM 2 IN. DIAM (OR SMALLER) SDR11 (OR HEAVIER) POLYBUTYLENE (PB) PIPE.
G. NOM 3 IN. DIAM (OR SMALLER) SDR13.5 (OR HEAVIER) CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE.

SEE RIGID NONMETALLIC CONDUIT (DZKT) AND ELECTRICAL NONMETALLIC TUBING (FKHU) CATEGORIES IN ELECTRICAL CONSTRUCTION MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS.

3. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY T RATINGS FOR THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE TYPE AND SIZE OF NONMETALLIC PIPE OR CONDUIT, AS TABULATED BELOW:

PIPE/ CONDUIT TYPE	NOM PIPE DIAM, IN.	ANNULAR SPACE, IN.	F RATING HR	T RATING HR
PB	1/2 TO 2	1/4-3/8	2	2
PVC, ABS	CPVC, 2-1/2 TO 3	1/2-5/8	2	2
PVC,ABS	3-1/2 TO 4	3/4-7/8	2	1-1/2
PP+	2-1/2 TO 3	1/2-5/8	2	3/4
PP+	3-1/2 TO 4	3/4-7/8	2	3/4

+MAT WRAP REQUIRED ON PIPE ON BOTH SIDES OF WALL.

THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

A. STEEL SLEEVE - NOM 8 IN. LONG CYLINDRICAL SLEEVE WITH NOM 7/8 IN. WIDE BY 1-3/4 IN. LONG ANCHOR TABS AND NOM 3/4 IN. LONG TABS TO RETAIN WRAP STRIP LAYER (ITEM B). SHEET OF PRECUT 0.016 THICK (30 GAUGE) GALV SHEET STEEL AVAILABLE FROM WRAP STRIP MANUFACTURER. AS AN ALTERNATE, CYLINDRICAL SLEEVE MAY BE FABRICATED FROM MIN 0.016 IN. THICK (NO. 30 GAUGE) GALV SHEET STEEL IN ACCORDANCE WITH INSTRUCTION SHEET SUPPLIED BY WRAP STRIP MANUFACTURER. SHEET STEEL FORMED INTO CYLINDRICAL SLEEVE WITH INSIDE DIAM OF STEEL SLEEVE AND DIAM OF THROUGH OPENING IN THE GYPSUM WALLBOARD LAYERS TO BE EQUAL TO OUTSIDE DIAM OF WRAP STRIP (ITEM B) LAYERS ON PIPE (-0, +1/8 IN.). CYLINDRICAL SLEEVE INSERTED IN ANNULAR SPACE AROUND NONMETALLIC PIPE, CENTERED IN WALL AND LOCKED IN POSITION BY BENDING THE ANCHOR TABS OUTWARD 90 DEG AGAINST THE INNER LAYER OF GYPSUM WALLBOARD WITHIN THE STUD CAVITY. AFTER INSTALLATION OF WRAP STRIP LAYERS (ITEM B), RETAINER TABS OF CYLINDRICAL SLEEVE BENT 90 DEG TOWARD PIPE ON BOTH SIDES OF WALL ASSEMBLY TO LOCK WRAP STRIP LAYERS IN POSITION.

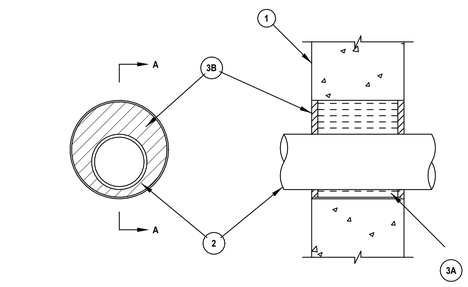
B. FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. NOM 2 IN. WIDE STRIPS TIGHTLY WRAPPED AROUND NONMETALLIC PIPE (FOIL SIDE EXPOSED) AND SLID INTO STEEL SLEEVE ON BOTH SIDES OF WALL ASSEMBLY. FOR NOM 1/2 IN. TO NOM 2 IN. DIAM NONMETALLIC PIPES, ONE LAYER OF WRAP STRIP IS REQUIRED. FOR NOM 2-1/2 IN. AND NOM 3 IN. DIAM NONMETALLIC PIPES, TWO LAYERS OF WRAP STRIP ARE REQUIRED. FOR NOM 3-1/2 IN. AND NOM 4. IN. DIAM NON METALLIC PIPES, THREE LAYERS OF WRAP STRIP ARE REQUIRED. EACH LAYER OF WRAP STRIP TO BE INSTALLED WITH BUTTED SEAM, WITH BUTTED SEAMS IN SUCCESSIVE LAYERS STAGGERED. WRAP STRIP LAYERS ON EACH SIDE OF WALL TO PROTRUDE 3/4 IN. FROM WALL SURFACE WITH THE EXPOSED EDGES ABUTTING THE RETAINER TABS OF THE STEEL SLEEVE. MINNESOTA MINING & MFG. CO. - TYPE FS-195

C. FILL, VOID OR CAVITY MATERIALS* - CAULK - GENEROUS BEAD OF CAULK APPLIED TO OUTER PERIMETER OF STEEL SLEEVE AT INTERFACE WITH WALL SURFACE AND TO PERIMETER OF NONMETALLIC PIPE AT ITS EGRESS FROM THE WRAP STRIP LAYERS APPROX 3/4 IN. FROM THE WALL SURFACE. MINNESOTA MINING & MFG. CO. - TYPES CP-25 S/L, CP-25 N/S, CP- 25 WB, CP-25 WB+

D. FILL, VOID OR CAVITY MATERIALS* - MAT WRAP - (NOT SHOWN) - FLEXIBLE SHEET MATERIAL, FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN ROLLS. WHEN REQUIRED (SEE TABLE), MIN 6 IN. WIDE STRIP OF MAT WRAPPED TIGHTLY AROUND CIRCUMFERENCE OF PIPE (FOIL FACE EXPOSED) AT ITS EGRESS FROM WRAP STRIP ON BOTH SIDES OF WALL. MAT WRAP OVERLAPPED MIN 1/2 IN. AT SEAM AND SECURED IN PLACE WITH STEEL WIRE TIES, OR EQUIVALENT, SPACED MAX 4 IN. OC. EDGE OF MAT ABUTTING WRAP STRIP TO BE SEALED WITH A MIN 1/4 IN. DIAM BEAD OF CAULK (ITEM C). MINNESOTA MINING & MFG. CO. - TYPE E-5A *BEARING THE UL CLASSIFICATION MARKING

PENETRATION DETAIL

NTS



1. WALL ASSEMBLY - MIN 5 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 8 IN.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN 3/4 IN. TO MAX 3-1/2 IN. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. CONDUIT - NOM 4 IN. DIAM (OR SMALLER) ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.

B. COPPER TUBING - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

C. COPPER PIPE - NOM 4 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. FIRESTOP SYSTEM - THE HOURLY F AND T RATING FOR THE FIRESTOP SYSTEMS ARE DEPENDENT UPON THE TYPE AND SIZE OF PIPE, ANNULAR SPACE, FILL MATERIAL THICKNESS AND FILL MATERIAL TYPE AS DESCRIBED IN THE TABLE BELOW. WHEN THE ANNULAR SPACE IN THE TABLE SHOWS A RANGE OF DISTANCES, THE PENETRATING ITEM MAY BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE FIRESTOP SYSTEMS SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL - MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. AS AN OPTION TO THE ABOVE, BACKER ROD AND/OR FOAMED PLASTIC BACKER MATERIAL MAY BE USED. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL - SEALANT* - APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL AS SHOWN IN THE TABLE BELOW:

Pipe Type	Min Fill Mtl Thkns In.	F Rating Hr.	T Rating Hr.
2A	1/4	2	1/4
2B	1/2	2	0

HILTI CONSTRUCTION CHEMICALS, DIV OF
HILTI INC — FS-One Sealant

*Bearing the UL Classification Mark

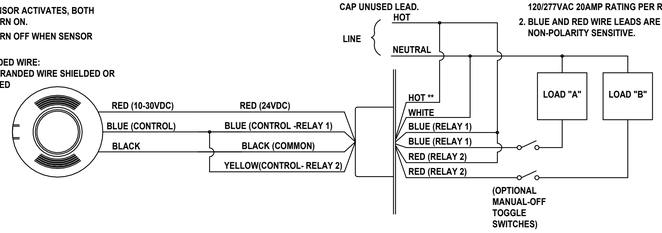
TYPICAL FIRE WALL PENETRATION DETAIL

NTS

AUTOMATIC MODE OPERATION:

1. WHEN SENSOR ACTIVATES, BOTH LOADS TURN ON.
2. LOADS TURN OFF WHEN SENSOR TIMES OUT.

RECOMMENDED WIRE:
18-3 AWG STRANDED WIRE SHIELDED OR NON/SHIELDED



NOTES

1. SPD20-MV-NO SWITCHPACK SHOWN. 120/277VAC 20AMP RATING PER RELAY.
2. BLUE AND RED WIRE LEADS ARE NON-POLARITY SENSITIVE.

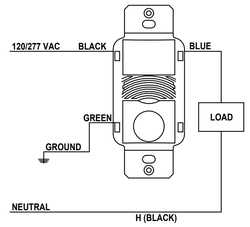
CEILING OCCUPANCY SENSOR DETAIL

ONW AND VNW MANUAL MODE

1. SWITCH IS REQUIRED TO TURN LOAD ON.
2. LOAD TURNS OFF WHEN SENSOR TIMES OUT OR WITH SWITCH.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOAD WILL NOT TURN ON.

ONW - AUTOMATIC MODE

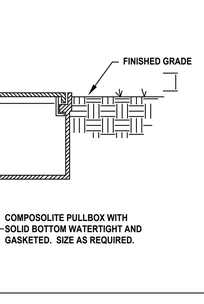
1. WHEN SENSOR ACTIVATES LOAD TURNS ON.
2. SWITCH CAN BE USED TO TURN LOAD ON OR OFF.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOAD WILL NOT TURN ON.



WALL MOUNT OCCUPANCY SENSOR DETAIL

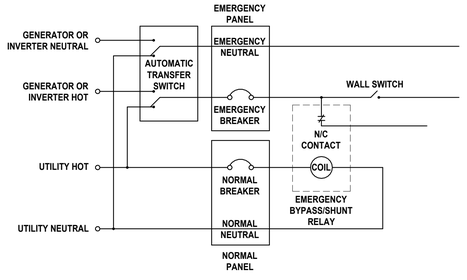
OCCUPANCY SENSORS

NTS



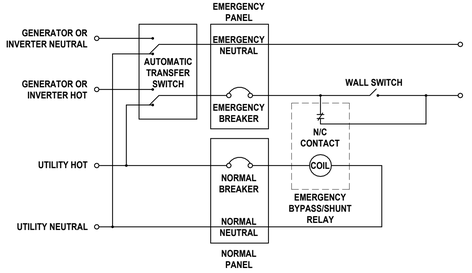
PULLBOX DETAIL

NTS



UL924 BYPASS SHUNT RELAY DETAIL

NTS



UL924 BYPASS SHUNT RELAY DETAIL

NTS

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WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Joseph B Harrill PE 73015

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

ISSUE DATE: FEBRUARY 24, 2025

ELECTRICAL DETAILS

E6.1

Bid Set

DATE: 6/30/2025 11:09:17 AM

MECHANICAL LEGEND

- SUPPLY DUCT UP SECTION (RECTANGULAR).
- RETURN DUCT UP SECTION (RECTANGULAR).
- EXHAUST DUCT UP SECTION (RECTANGULAR).
- SUPPLY DUCT DOWN SECTION (RECTANGULAR).
- RETURN DUCT DOWN SECTION (RECTANGULAR).
- EXHAUST DUCT DOWN SECTION (RECTANGULAR).
- SUPPLY DUCT UP SECTION (ROUND).
- SUPPLY DUCT DOWN SECTION (ROUND).
- ELBOW WITH TURNING VANES.
- FLEXIBLE DUCT CONNECTION.
- EXPOSED DOUBLE WALL INSULATED DUCTWORK.
- EXISTING DUCTWORK TO REMAIN.
- EXISTING DUCTWORK TO BE REMOVED.
- STACKED DUCTWORK.
- TEE (PLAN, UP, DOWN).
- ELBOW (PLAN, UP, DOWN).
- CWS — CONDENSER WATER SUPPLY PIPING.
- CWR — CONDENSER WATER RETURN PIPING.
- CHWS — CHILLED WATER SUPPLY PIPING.
- CHWS — CHILLED WATER RETURN PIPING.
- HWS — HEATING WATER SUPPLY PIPING.
- HWS — HEATING WATER RETURN PIPING.
- CD — CONDENSATE DRAIN PIPING.
- REF — REFRIGERANT PIPING.

- SUPPLY DIFFUSER. DIRECTION OF AIRFLOW INDICATED WITH ARROWS AND AIR DEVICE TAG.
- RETURN OR OUTDOOR AIR GRILLE.
- EXHAUST GRILLE.
- RD — RADIATION DAMPER INSTALLED IN AIR DEVICE.
- RD — RADIATION DAMPER INSTALLED IN DUCT.
- SIDEWALL TRANSFER GRILLE.
- SIDEWALL SUPPLY/RETURN/EXHAUST REGISTER.
- LINEAR SLOT DIFFUSER.
- A/B — RECTANGULAR DUCTWORK WITH TAKE-OFF, BALANCING DAMPER AND INSULATED FLEXIBLE ROUND DUCT. SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE. FIRST DIMENSION IS THAT OF SIDE SHOWN.
- CONICAL FITTING WITH DAMPER ON BRANCH CONNECTION TO RECTANGULAR MAIN (PROVIDE DAMPER IN LOW PRESSURE DUCTWORK ONLY).
- AØ — ROUND DUCTWORK.
- 45°, W, L=1/4W, MIN. 4" — RECTANGULAR BRANCH DUCT CONNECTION.
- MANUAL VOLUME DAMPER (VD).
- OPPOSED BLADE MANUAL VOLUME DAMPER (OBMVD).
- BACKDRAFT DAMPER (BDD).
- FD — FIRE DAMPER WITH ACCESS PANEL. SEE LIFE SAFETY PLANS FOR RATING REQUIREMENTS.
- SDMP — SMOKE DAMPER WITH ACCESS PANEL. SEE LIFE SAFETY PLANS FOR RATING REQUIREMENTS. DUCT SMOKE DETECTOR TO BE PLACED WITHIN 5'-0" OF DAMPER.
- FSD — COMBINATION FIRE/SMOKE DAMPER WITH ACCESS PANEL. SEE LIFE SAFETY PLANS FOR RATING REQUIREMENTS. DUCT SMOKE DETECTOR TO BE PLACED WITHIN 5'-0" OF DAMPER.
- M — MOTORIZED ACTUATOR.
- SD — DUCT MOUNTED SMOKE DETECTOR PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED IN DUCT BY MECHANICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR CONTROL REQUIREMENTS.

- A-100 — AIR DEVICE TAG. MARK-CFM
- OPENING IN WALL ABOVE CEILING.
- AHU 3 — EQUIPMENT TYPE / MARK — EQUIPMENT TAG.
- UC — 1" DOOR UNDER CUT. ARROW INDICATES DIRECTION OF FLOW.
- A / B — IDENTIFICATION TARGET. A = DETAIL NUMBER. B = SHEET NUMBER ON WHICH DETAIL IS LOCATED.
- CEILING MOUNTED EXHAUST FAN.
- SIDEWALL MOUNTED EXHAUST FAN.
- SIDEWALL FRESH AIR INTAKE LOUVER OR EXHAUST LOUVER.
- CONDENSER UNIT OR HEAT PUMP.
- (S) — WALL MOUNTED DDC TEMPERATURE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (T) — WALL MOUNTED THERMOSTAT MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (CO) — WALL MOUNTED CARBON MONOXIDE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (CO2) — WALL MOUNTED CARBON DIOXIDE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (H) — WALL MOUNTED DDC HUMIDITY SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (DP) — WALL MOUNTED DIFFERENTIAL PRESSURE SENSOR. MOUNT 4'-0" ABOVE FINISHED FLOOR.
- (N2) — WALL MOUNTED NITROGEN SENSOR. MOUNT 1'-0" BELOW CEILING.
- (X) — REFERENCE NOTES.
- INDICATES POINT OF CONNECTION BETWEEN NEW AND EXISTING.
- POINT OF DISCONNECT.

ABBREVIATIONS

ABV	-	ABOVE
ADJ	-	ADJUSTABLE
AFD	-	ADJUSTABLE FREQUENCY DRIVE
AFF	-	ABOVE FINISHED FLOOR
AFMS	-	AIR FLOW MONITORING STATION
AFUE	-	ANNUAL FUEL UTILIZATION EFFICIENCY
AC	-	AIR CONDITIONER
AHU	-	AIR HANDLING UNIT
BAS	-	BUILDING AUTOMATION SYSTEM
BDD	-	BACKDRAFT DAMPER
BI	-	BACKWARD INCLINE
BLDG	-	BUILDING
BHP	-	BRAKE HORSEPOWER
BTUH	-	BRITISH THERMAL UNIT PER HOUR
CD	-	CONDENSATE DRAIN
CFM	-	CUBIC FEET PER MINUTE
CH	-	CHILLER
CHW	-	CHILLED WATER
CHWP	-	CHILLED WATER PUMP
CHWR	-	CHILLED WATER RETURN
CHWS	-	CHILLED WATER SUPPLY
CLG	-	CEILING
COND	-	CONDENSATE
CONT	-	CONTINUOUS
CO	-	CARBON MONOXIDE
CO2	-	CARBON DIOXIDE
COP2	-	COEFFICIENT OF PERFORMANCE 2
CT	-	COOLING TOWER
CU	-	CONDENSING UNIT
CU-FT	-	CUBIC FEET
CW	-	CONDENSER WATER
CWP	-	CONDENSER WATER PUMP
CWR	-	CONDENSER WATER RETURN
CWS	-	CONDENSER WATER SUPPLY
DB	-	DRY BULB
DN	-	DOWN
DP	-	DEW POINT
DWGS	-	DRAWINGS
DX	-	DIRECT EXPANSION
EF	-	EXHAUST FAN
EFF	-	EFFICIENCY
EXH	-	EXHAUST
EA	-	EACH
EAT	-	ENTERING AIR TEMPERATURE
EER2	-	ENERGY EFFICIENCY RATIO 2
ELEC	-	ELECTRICAL
ENT	-	ENTERING
ESP	-	EXTERNAL STATIC PRESSURE
ETR	-	EXISTING TO REMAIN
EWT	-	ENTERING WATER TEMPERATURE
FC	-	FORWARD CURVED
FCU	-	FAN COIL UNIT
FD	-	FIRE DAMPER
FLA	-	FULL LOAD AMPA
FLEX	-	FLEXIBLE CONNECTOR OR DUCT
FPB	-	FAN POWERED BOX
FPM	-	FEET PER MINUTE
FSD	-	COMBINATION FIRE AND SMOKE DAMPER
FT-HD	-	FEET OF HEAD
°F	-	DEGREES FAHRENHEIT
GA	-	GAUGE
GAL	-	GALLON
GALV	-	GALVANIZED
GPM	-	GALLONS PER MINUTE
HGR	-	HOT GAS REHEAT
HP	-	HORSEPOWER / HEAT PUMP
HSPF2	-	HEATING SEASONAL PERFORMANCE FACTOR 2
HW	-	HOT WATER
HWR	-	HOT WATER RETURN
HWS	-	HOT WATER SUPPLY
HVAC	-	HEATING VENTILATION AND AIR CONDITIONING
HV	-	HEATING AND VENTILATING
HX	-	HEAT EXCHANGER

ABBREVIATIONS

IEER2	-	INTEGRATED ENERGY EFFICIENCY RATIO 2
IN-WG	-	INCHES WATER GAUGE
IN-WC	-	INCHES WATER COLUMN
KW	-	KILOWATTS
LAT	-	LEAVING AIR TEMPERATURE
LBS	-	POUNDS
LD	-	LINEAR DIFFUSER
LWT	-	LEAVING WATER TEMPERATURE
MAT	-	MIXED AIR TEMPERATURE
MAX	-	MAXIMUM
MBH	-	1000 X BTUH
MCA	-	MIN CIRCUIT AMPACITY
MIN	-	MINIMUM
MOCP	-	MAXIMUM OVER CURRENT PROTECTION
MVD	-	MOTORIZED VOLUME DAMPER
MZ	-	MULTI-ZONE
NC	-	NOISE CRITERIA
NEC	-	NATIONAL ELECTRICAL CODE
N.I.C.	-	NOT IN CONTRACT
N.F.C.	-	NOT FOR CONSTRUCTION
NO2	-	NITROGEN DIOXIDE
N.T.S.	-	NOT TO SCALE
OA	-	OUTSIDE AIR
OBMVD	-	OPPOSED BLADE MANUAL VOLUME DAMPER
PROP	-	PROPELLER
PD	-	PRESSURE DROP
PLUM	-	PLUMBING
PSIA	-	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	-	POUNDS PER SQUARE INCH GAUGE
QTY	-	QUANTITY
RA	-	RETURN AIR
RD	-	RADIATION DAMPER
REQ'D	-	REQUIRED
RH	-	RELATIVE HUMIDITY
RL	-	REFRIGERANT LIQUID
RLA	-	RUNNING LOAD AMPS
RLS	-	REFRIGERANT LINE SET
RPM	-	REVOLUTIONS PER MINUTE
RS	-	REFRIGERANT SUCTION
RTU	-	ROOFTOP UNIT
SA	-	SUPPLY AIR
SEER2	-	SEASONAL ENERGY EFFICIENCY RATIO 2
SF	-	SUPPLY FAN
SD	-	SMOKE DETECTOR
SDMP	-	SMOKE DAMPER
SQ-FT	-	SQUARE FOOT
SQ-IN	-	SQUARE INCH
SZ	-	SINGLE ZONE
TEMP	-	TEMPERATURE
TG	-	TRANSFER GRILLE
T'STAT	-	THERMOSTAT
TSP	-	TOTAL STATIC PRESSURE
TYP	-	TYPICAL
UC	-	UNDERCUT (DOOR)
UP	-	UPWARD
UV	-	ULTRAVIOLET LIGHT
VAV	-	VARIABLE AIR VOLUME
VD	-	MANUAL VOLUME DAMPER
VFD	-	VARIABLE FREQUENCY DRIVE
VFDC	-	VARIABLE FREQUENCY DRIVE CONTROLLER
V/PH	-	VOLTS AND PHASE
VRF	-	VARIBLE REFRIGERANT FLOW
VRV	-	VARIBLE REFRIGERANT VOLUME
VVT	-	VARIABLE VOLUME AND TEMPERATURE
W	-	WATTS
W/	-	WITH
W/O	-	WITHOUT
WB	-	WET BULB
WMS	-	WIRE MESH SCREEN
ZD	-	ZONE DAMPER

XBC	-	STATE'S BUILDING CODE
XMC	-	STATE'S MECHANICAL CODE
XPC	-	STATE'S PLUMBING CODE
XEC	-	STATE'S ENERGY CODE

X = STATE INITIAL(S) OR I FOR INTERNATIONAL

DUCTWORK SCHEDULE/ COMMERCIAL

SERVICE TYPE	LOCATION	MATERIAL	INSULATION R-VALUE	NOTES
SUPPLY	PLENUM	SHEET METAL	R-4.2	
	CONDITIONED SPACE	SHEET METAL	R-4.2	OTHER OPTIONS INCLUDE INTERNALLY LINED OR DOUBLE WALL.
	UNCONDITIONED SPACE	SHEET METAL	R-4.2	OTHER OPTIONS INCLUDE INTERNALLY LINED OR DOUBLE WALL.
RETURN	PLENUM	SHEET METAL	R-4.2	
	CONDITIONED SPACE	SHEET METAL	UNINSULATED	
	UNCONDITIONED SPACE	SHEET METAL	R-4.2	OTHER OPTIONS INCLUDE INTERNALLY LINED OR DOUBLE WALL.
EXHAUST AIR	ALL LOCATIONS	SHEET METAL	UNINSULATED	
OUTSIDE AIR	INTERIOR	SHEET METAL	INSULATED WITH MINIMUM 2" FIBERGLASS R-6	

IE - MECHANICAL SHEET LIST

Sheet Number	Sheet Name	Project Issue Date	Project Status	Current Revision	Current Revision Date	Current Revision Description	Sheet Discipline
M0.1	MECHANICAL LEGEND, NOTES & ABBREVIATIONS	06-30-2025	Bid Set				MECHANICAL
M0.2	MECHANICAL SPECIFICATIONS	06-30-2025	Bid Set				MECHANICAL
M0.3	MECHANICAL SCHEDULES	06-30-2025	Bid Set				MECHANICAL
M1.1	FLOOR PLAN - MECHANICAL	06-30-2025	Bid Set				MECHANICAL
M1.2	ROOF PLAN - MECHANICAL	06-30-2025	Bid Set				MECHANICAL
M2.1	MECHANICAL DETAILS	06-30-2025	Bid Set				MECHANICAL
M2.2	MECHANICAL DETAILS	06-30-2025	Bid Set				MECHANICAL

Grand total: 7

DATE: 6/30/2025 11:06:56 AM

Bid Set

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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: 02-24-2025

MECHANICAL LEGEND, NOTES & ABBREVIATIONS

M0.1

MECHANICAL SPECIFICATIONS

GENERAL:

THE GENERAL MECHANICAL SPECIFICATIONS APPLY TO THE WORK SPECIFIED IN THIS SECTION. PROVIDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT AND APPLIANCES REQUIRED FOR THE FABRICATION, INSTALLATION, AND/OR RENOVATION OF MECHANICAL SYSTEMS INCLUDING HEATING, VENTILATING, AIR CONDITIONING AND MISCELLANEOUS SYSTEMS AS INDICATED IN DESIGN DRAWINGS AND AS OUTLINED IN THESE SPECIFICATIONS.

SCOPE OF WORK:

FURNISH AND INSTALL COMPLETE AIR CONDITIONING SYSTEMS AS INDICATED ON THE DESIGN DRAWINGS AND AS OUTLINED WITHIN THESE SPECIFICATIONS. WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FABRICATION AND/OR INSTALLATION OF THE SCHEDULED AIR CONDITIONING UNITS, EXHAUST FANS, AIR DISTRIBUTION AND DUCTWORK.

CLEANING, TESTING AND ADJUSTING.
THE MECHANICAL CONTRACTOR, AT HIS EXPENSE, SHALL CLEAN, REPAIR, ADJUST, CHECK, BALANCE, AND PLACE IN SERVICE THE VARIOUS SYSTEMS HEREIN SPECIFIED WITH THEIR RESPECTIVE EQUIPMENT, ACCESSORIES AND PIPING. HE SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS REQUIRED TO PERFORM TESTS REQUIRED BY THESE SPECIFICATIONS AND BY THE GOVERNING AUTHORITIES.

NO WORK SHALL BE COVERED OR CONCEALED UNTIL PROPERLY INSPECTED AND TESTED.

TESTING:

ADJUST THE AIR CONDITIONING SYSTEMS, VENTILATING SYSTEMS, FANS, ETC., TO DELIVER NOT LESS THAN THE REQUIRED AIR QUANTITY WITH QUANTITIES IN EXCESS TO BE SUBJECT TO THE APPROVAL OF THE ENGINEER IF FOUND TO NOT HAVE OBJECTIONABLE EFFECTS SUCH AS NOISE, DRAFTS, OR MOTOR OVERLOAD.

THIS CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A TEST AND BALANCE REPORT TO THE ENGINEER AT TIME OF SUBSTANTIAL COMPLETION INSPECTION. THE REPORT SHALL BE PREPARED BY A CONTRACTOR CERTIFIED BY ASSOCIATED AIR BALANCE COUNCIL OR NATIONAL ENVIRONMENTAL BALANCING BUREAU.

THE TEST AND BALANCE REPORT SHALL BE TYPEWRITTEN AND CONTAIN THE FOLLOWING DATA:

1. DATE, TIME, WEATHER, WHEN TEST TAKEN.
2. AIR CAPACITIES AT EACH UNIT INCLUDING OUTSIDE AIR. (ENTERING AND LEAVING DB/WB)
3 . STATIC PRESSURE THROUGH UNITS AND UNIT COMPONENTS.
4. MOTOR OPERATING VOLTAGE AND AMPERAGE.
5. DRIVE TYPES, SIZES AND SPEED RANGE.
6. IDENTIFICATION OF ALL AIR TERMINAL DEVICES WITH DESIGN CFM AND ACTUAL CFM.

ADDITIONALLY, SYSTEMS DRAWING CLEARLY MARKED TO IDENTIFY LOCATION OF EQUIPMENT AND AIR DEVICES TESTED SHALL BE PROVIDED ALONG WITH THE WRITTEN TEST AND BALANCE REPORT.

MAINTENANCE MANUALS:

PROVIDE COMPLETE MAINTENANCE MANUALS IN PDF FORM ON ALL NEW EQUIPMENT. ORGANIZE OPERATING AND MAINTENANCE DATA INTO SUITABLE SETS OF MANAGEABLE SIZE. INCLUDE THE FOLLOWING TYPES OF INFORMATION. THE INFORMATION WILL BE TURNED OVER TO THE OWNER AT TIME OF SUBSTANTIAL COMPLETION:

- OPERATING AND MAINTENANCE INSTRUCTIONS
- SPARE PARTS LIST
- COPIES OF WARRANTIES
- WIRING DIAGRAMS
- INSPECTION REPORTS AND APPROVALS
- SHOP DRAWINGS AND PRODUCT DATA
- TEST AND BALANCE INFORMATION

TRAINING SERVICES:

THOROUGHLY INSTRUCT THE OWNER'S REPRESENTATIVE IN THE OPERATION OF ALL EQUIPMENT FURNISHED AND LOCATION OF ALL VALVES AND CONTROL DEVICES.

TRAIN BUILDING OWNER'S PERSONNEL DURING NORMAL WORKING HOURS ON STARTUP AND SHUTDOWN PROCEDURES, TROUBLESHOOTING PROCEDURES, SERVICING AND PREVENTATIVE MAINTENANCE SCHEDULE AND PROCEDURES. REVIEW WITH THE OWNER'S PERSONNEL, THE DATA CONTAINED IN THE OPERATING AND MAINTENANCE MANUALS. SCHEDULE TRAINING WITH OWNER, PROVIDE AT LEAST 7-DAYS PRIOR NOTICE TO ARCHITECT/ENGINEER.

HANGERS AND SUPPORTS:

PROVIDE ALL NECESSARY HANGER RODS, CLAMPS AND ATTACHMENTS TO PROPERLY INSTALL AND SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE.

PROVIDE ANY ANGLE IRON OR UNISTRUT AND SUSPENSION RODS REQUIRED TO INSTALL EQUIPMENT, PIPING AND DUCTWORK.

ALL SUPPORTS EXPOSED TO OUTDOORS SHALL BE CLEANED, PRIMED AND PAINTED TO PREVENT RUSTING. FINISH COLOR AS SELECTED BY OWNER.

THE USE OF BALING WIRE OR PERFORATED METAL STRAPPING IS NOT ACCEPTABLE FOR SUPPORTS.

WARRANTY/GUARANTEE:

THE CONTRACTOR SHALL WARRANTY/GUARANTEE AND MAINTAIN THE STABILITY OF WORK AND MATERIALS AND KEEP SAME IN PERFECT REPAIR AND CONDITION FOR THE PERIOD OF ONE (1) YEAR.

DEFECTS OF ANY KIND DUE TO FAULTY WORK OR MATERIALS APPEARING DURING THE ABOVE MENTIONED PERIOD MUST BE IMMEDIATELY MADE GOOD BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE ENTIRE SATISFACTION OF THE OWNER AND ARCHITECT AND ENGINEER, SUCH RECONSTRUCTION AND REPAIRS SHALL INCLUDE ALL DAMAGE TO THE FINISH OR FURNISHING OF THE BUILDING RESULTING FROM THE ORIGINAL DEFECT OR REPAIRS THERETO.

SUBSTITUTIONS:

EQUIPMENT AND DESIGN OF SYSTEMS INDICATED ON THE DRAWINGS AND WITHIN THESE SPECIFICATIONS SHALL BE CONSIDERED AS "STANDARD OF QUALITY". NO SUBSTITUTIONS SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER. ALL EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED, FREE OF DEFECTS, AS SHOWN ON THE DRAWINGS OR INDICATED IN SPECIFICATIONS.

DEVIATIONS FROM SPECIFIED EQUIPMENT AFFECTING ELECTRICAL REQUIREMENTS SHALL BE COORDINATED BETWEEN VENDOR, MECHANICAL CONTRACTOR, AND ELECTRICAL CONTRACTOR PRIOR TO SUBMITTING BIDS. FAILURE TO DO SO WILL NOT BE CAUSE FOR CHANGE OF BID AT A LATER TIME. IN ADDITION, THE MECHANICAL CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR ANY AND ALL CHANGES TO ENGINEERING PLANS REQUIRED BY AUTHORITY HAVING JURISDICTION.

APPLICABLE CODES/STANDARDS:

- 2023 FLORIDA BUILDING CODE (FBC)
- 2023 FLORIDA MECHANICAL CODE (FMC)
- 2023 FLORIDA PLUMBING CODE (FPC)
- 2023 FLORIDA ENERGY CODE (FEC)
- NFPA LATEST EDITION
- SMACNA DUCT CONSTRUCTION STANDARDS
- ASHRAE
- 2020 NATIONAL ELECTRIC CODE (NEC)

THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INSPECTIONS AND PAY ALL FEES.

SHOP DRAWINGS AND SUBMITTALS:

SUBMIT SHOP DRAWINGS AND MANUFACTURER'S DATA FOR ALL NEW EQUIPMENT FOR ENGINEER'S APPROVAL PRIOR TO PURCHASE AND/OR FABRICATION. SHOP DRAWINGS FOR EQUIPMENT REQUIRING ELECTRIC POWER OR CONTROL WIRING SHALL INCLUDE COMPLETE WIRING DIAGRAMS.

HVAC CONTRACTORS SHALL SUBMIT COMPLETE DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. SHOP DRAWINGS SHALL INCLUDE COORDINATION WITH GENERAL CONTRACTOR REGARDING EXACT OPENINGS REQUIRED IN EXTERIOR WALLS. THE DUCTWORK SHOP DRAWINGS WILL ONLY BE REVIEWED FOR COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS. DRAWINGS WILL NOT BE CHECKED FOR COORDINATION WITH OTHER TRADES OR BUILDINGS STRUCTURE. IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO COORDINATE AND VERIFY ROUTING AND EXACT LOCATION OF SYSTEM COMPONENTS.

SYSTEM IDENTIFICATION:

PROVIDE IDENTIFICATION LABELS ON OR NEAR EACH PIECE OF MAJOR EQUIPMENT AND EACH OPERATION DEVICE AND DISCONNECT. LABELS SHALL BE CONSTRUCTED OF ENGRAVED PLASTIC LAMINATE SIGN OR PLASTIC EQUIPMENT MARKER PERMANENTLY SECURED TO EQUIPMENT. LETTERING SHALL BE A MINIMUM OF 1/2 INCH HIGH FOR EQUIPMENT NAME AND 3/8 INCH HIGH FOR EQUIPMENT INFORMATION.

VALVES SHALL BE TAGGED USING PLASTIC LAMINATE TAGS SECURED WITH BRASS CHAINS INDICATING THE VALVE SIZE, SERVICE AND FUNCTION.

EXECUTION:

ALL LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC., INDICATED ON THE DRAWINGS IS DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE TO THE PLANS SUBJECT TO BUILDING CONSTRUCTION AND INTERFERENCES WITH OTHER TRADES, CONTRACTOR IS RESPONSIBLE FOR ANY FIELD MEASUREMENTS REQUIRED TO PROVIDE AN APPROVED AND FUNCTIONAL INSTALLATION.

COORDINATE WITH OTHER TRADES AND FIELD-VERIFY EXISTING CONDITIONS FOR EXACT LOCATION AND ROUTING OF SYSTEMS. PROVIDE OFFSETS, TRANSITIONS AND ADAPTORS AS REQUIRED.

NOT ALL COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION ARE SHOWN ON THESE DRAWINGS. REFER TO EQUIPMENT INSTALLATION INSTRUCTION, SCHEDULES AND APPLICABLE CODES FOR ADDITIONAL INFORMATION, INCLUDING REQUIRED CONNECTION LOCATIONS, TYPES AND SIZES.

PERFORM ALL WORK NECESSARY TO PREPARE THE STRUCTURE FOR THE INSTALLATION OF THE WORK. ALL HOLES, OPENINGS AND DAMAGED MATERIALS CREATED DURING CONSTRUCTION SHALL BE REPAIRED. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED SO AS TO BE WATER AND AIR TIGHT.

PIPING:

CONDENSATE DRAINS:
CONDENSATE PIPE TO BE TYPE L COPPER OR SCHEDULE 40 PVC. ROUTE AS INDICATED ON PLANS. UNITS 3 TONS AND SMALLER MAY DRAIN TO GRADE, ELSE COORDINATE WITH PLUMBER TO PROVIDE HUB DRAIN(S) IN MECHANICAL ROOM AND DRYWELL(S). HVAC CONTRACTOR TO PROVIDE P-TRAP AT UNIT SIZED FOR 2 GREATER THAN UNIT STATIC PRESSURE. PROVIDE CLEANOUT AT UNIT FOR SUSPENDED HORIZONTAL AIR HANDLERS. INSULATE CONDENSATE PIPE WITH 1/2" ARMAFLEX (OR EQUAL) INSULATION RATED FOR PLENUM APPLICATION. CONDENSATE DRAIN LINE SHALL BE NOT LESS THAN THE EQUIPMENT DRAIN LINE SIZE AND IN NO CASE LESS THAN 3/4" PIPE SIZE. DRAIN LINE SHALL SLOPE A MINIMUM OF 1/8" PER FOOT TOWARDS DRAIN.

REFRIGERANT PIPING:
PIPING SHALL BE FIELD FABRICATED ASTM B280 MUELLER STREAMLINE ACR OR READING HARD DRAWN FACTORY SEALED NITROGEN CHARGED SPECIAL REFRIGERATION DUTY COPPER TUBING. FITTINGS SHALL BE MUELLER OR NIBCO WROUGHT COPPER LONG RADIUS REFRIGERATION TYPE.

WORKMANSHIP ON THESE SYSTEMS MUST BE GOOD, AND CLEANLINESS OF PIPING SYSTEMS IS MANDATORY. WORK THAT DOES NOT MEET THESE CRITERIA SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER. THE ENGINEER SHALL DETERMINE WHETHER THE WORK MEETS THESE CRITERIA.

COVER ALL EXPOSED LIQUID LINES AND ALL SUCTION PIPING (INDOORS AND OUTDOORS), FITTINGS, VALVES, ETC., CONTINUOUS THROUGH SLEEVES, HANGERS, ETC., WITH 3/4" FR/ARMAFLEX. INSTALLATION SHALL BE CONDENSATION FREE AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. PAINT ALL INSULATION EXPOSED TO OUTDOORS WITH UV PROTECTIVE PAINT PER MANUFACTURERS RECOMMENDATIONS.

REFRIGERANT PIPING BELOW GRADE SHALL BE ROUTED THROUGH MINIMUM 4" DIAMETER PVC PIPE SLEEVES TO EACH CONDENSING UNIT. ALL UNDERGROUND REFRIGERANT PIPING SHALL BE CONTINUOUS SOFT DRAWN TUBING WITH NO UNDERGROUND JOINTS ALLOWED. REFRIGERANT PIPE SIZES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATION BASED ON LENGTH OF RUN BETWEEN CONDENSING UNITS AND AHU'S.

PIPING ROUTED ALONG BUILDING EXTERIOR WALL SHALL BE PROTECTED BY SHEET METAL HOUSING SECURELY ATTACHED TO WALL AT 8'-0" INTERVALS AND PAINTED TO MATCH BUILDING EXTERIOR.

TRAP OIL IN SUCTION LINE AT EVAPORATOR COIL. NO OTHER COIL TRAPS PERMITTED. PROVIDE SUCTION RISERS, CHECK VALVES, SOLENOID VALVES, OR OTHER DEVICES REQUIRED IN PIPING SYSTEM BY MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FURNISH ALL LABOR AND MATERIALS TO REPLACE REFRIGERANT LOST DURING THE ONE YEAR WARRANTY PERIOD.

PIPE HANGERS AND SUPPORTS:
PIPE HANGERS, WHERE NEEDED, SHALL BE GRINNEL #260 CLEVIS TYPE, 5'-0" ON CENTER, SECURELY ATTACHED TO BUILDING CONSTRUCTION. SPACE AT MIN. 5'-0" INTERVALS.

PIPE SUPPORT:
ATTACH LINES SECURELY ALONG PAD/FLOOR/EQUIPMENT/STRUCTURE TO PREVENT MOVEMENT. SUPPORT IN A MANNER THAT LINES DO NOT HANG FROM EVAPORATOR CONNECTIONS OR BLOCK ACCESS TO FILTERS, CONTROLS, ETC.

SUPPORT AT MIN. 8'-0" INTERVALS FOR VERTICAL PIPES, 5'-0" FOR SUSPENDED HORIZONTAL PIPING.

VIBRATION ISOLATION:

ALL BLOWER UNITS AND VIBRATING TYPE EQUIPMENT SHALL BE PROPERLY FITTED WITH MASON INDUSTRIES VIBRATION ISOLATION EQUIPMENT SIZED IN ACCORDANCE WITH EQUIPMENT WEIGHT AND DUTY.

PROVIDE FLEXIBLE CONNECTORS AT ALL SUPPLY AND RETURN CONNECTIONS TO AIR HANDLING EQUIPMENT CONSISTING OF HEAVY CANVAS OR NEOPRENE FABRIC WITH AIRTIGHT SEAMS AND CONNECTIONS TO THE EQUIPMENT.

AIR FILTERS:

FILTERS SHALL BE 1" FIBERGLASS MEDIA THROW AWAY TYPE IN A RIGID FRAME WITH A SUPPORTING MAZE ACROSS BOTH ENTERING AND LEAVING SURFACES. SUPPLY ONE COMPLETE SET OF FILTERS AFTER OWNER'S FINAL ACCEPTANCE. FARR 30/30 OR EQUAL.

DUCTWORK:

ALL DIMENSIONS ARE INSIDE NET FREE AREA.

MATERIALS: GALVANIZED STEEL (G-90) OF GAUGES CONFORMING TO THE LATEST EDITION OF SMACNA STANDARDS.

ALTERNATE PRICING: PROVIDE AN ALTERNATE PRICE TO USE MANSVILLE FR-800 (SUPERDUCT) IN LIEU OF SHEET METAL DUCT FOR LOW PRESSURE SUPPLY AND RETURN DUCTWORK. PROVIDE "R" VALUE OF THE INSULATION TO MATCH INSULATION VALUES LISTED FOR SHEET METAL DUCT. DUCTWORK SHALL BE LINED WITH ANTI MICROBIAL INSULATION. SEAL ALL JOINTS WITH GLASS FABRIC AND MASTIC.

GENERAL EXHAUST DUCTS SHALL BE GALVANIZED OR STAINLESS STEEL SHEET METAL.

ADJUSTABLE SPLITTERS AND DAMPERS SHALL BE INSTALLED IN EVERY SPLIT AND BRANCH DUCT AND SHALL BE PROVIDED WITH LOCKING QUADRANTS ON EXPOSED OR IN ACCESSIBLE AREAS OF THE DUCT FOR EASE OF OPERATION. ACCESS PANELS OR YOUNG REGULATORS SHALL BE PROVIDED WHERE DAMPERS ARE INSTALLED ABOVE HARD CEILINGS OR IN SOFFITS.

ELBOWS OR CHANGES IN DUCT DIRECTION GREATER THAN 45 DEGREES SHALL BE FITTED WITH AIR TURNS CONSISTING OF CURVED AIRFOIL BLADES OR VANES WHICH WILL PERMIT THE AIR TO MAKE ABRUPT TURNS WITHOUT APPRECIABLE TURBULENCE.

FLEXIBLE DUCTWORK SHALL BE ACOUSTICAL LOW PRESSURE TYPE WITH INTERIOR LINER, METAL HELIX, FIBERGLASS INSULATION WITH AN R-VALUE OF 6.0 OR GREATER, AND COPOLYMER SEAMLESS OUTSIDE SLEEVE. THE ENTIRE FLEXIBLE DUCT ASSEMBLY SHALL BE LISTED IN ACCORDANCE WITH UL-181 CLASS 1 AIR DUCT MATERIAL. THE MAXIMUM LENGTH OF ANY FLEX DUCT SHALL BE 7'-0". FLEXIBLE DUCTWORK SHALL MEET THE FLORIDA MODEL ENERGY EFFICIENCY CODE. ALL JOINTS AT CONNECTIONS TO DIFFUSERS AND DUCTWORK SHALL BE SEALED WITH GLASS FABRIC AND MASTIC.

INSTALL DUCTWORK INDICATED ON DRAWINGS, MAKING NECESSARY CHANGES IN CROSS-SECTIONS AND OFFSETS, WHETHER OR NOT SPECIFICALLY INDICATED.

ACCESS DOORS:

CONTRACTOR SHALL PROVIDE HINGED ACCESS DOORS FOR DAMPERS, VALVES, ETC. WHERE FLOORS, WALLS, AND CEILINGS MUST BE PENETRATED TO ACCESS MECHANICAL SYSTEMS. FINISH SHALL BE COORDINATED THROUGH ARCHITECT TO MATCH SURROUNDING FINISHES.

FURNISH IN DUCTWORK AS INDICATED AND WHEREVER NECESSARY FOR PROPER ACCESS TO ALL INSTRUMENTS, CONTROLS, FIRE DAMPERS, MOTORIZED DAMPERS AND EQUIPMENT FOR CONVENIENT INSPECTION, MAINTENANCE AND REPLACEMENT OF SAME. SIZE SHALL BE AMPLE FOR USAGE. OPENINGS SHALL BE REINFORCED ON ALL SIDES WITH MATERIAL OR DUCTWORK IN WHICH DOORS ARE INSTALLED.

HARDWARE - USE VENT LOK HARDWARE THROUGHOUT. ALL DOORS TO BE HINGED WITH BRASS PIN HINGES AND WITH QUICK OPENING LATCHES AS FOLLOWS:
1. REACH-IN DOORS TO BE 18" HIGH.
2. TWO #150 HINGES WITH ROOF FANS, RELIEF VENTS, AIR INTAKES, AND CURBS.

INSULATION:

SHALL BE AS MANUFACTURED BY CERTAINTEED, OWENS-CORNING, MANVILLE, PITTSBURGH CORNING, ARMSTRONG, OR APPROVED EQUAL. INSULATION SUNDRIES AND ADHESIVES SHALL BE AS MANUFACTURED BY BENJAMIN FOSTER, CHILDERS, VIMASCO, OR APPROVED EQUAL. ALL INSULATION SHALL BE SUITABLE FOR INSTALLATION IN A RETURN AIR PLENUM.

INSULATE ALL SHEETMETAL DUCTWORK EXCEPT EXHAUST DUCTWORK EXTERNALLY WITH MANVILLE R SERIES MICROLITE TYPE 75 OR 100 INSULATION OR APPROVED. INSULATION TO HAVE TYPE II FSK FACING AND UL FIRE HAZARD CLASSIFICATION OF FLAME SPREAD 25/SMOKE DEVELOPED 50/FUEL CONTRIBUTED 50. INSTALL INSULATION PER SMACNA, FLORIDA MODEL ENERGY EFFICIENCY CODE AND MANUFACTURER'S RECOMMENDATIONS. ALL INSULATION JOINTS SHALL BE SEALED WITH GLASS FABRIC AND MASTIC.

MINIMUM INSULATION REQUIREMENTS AS FOLLOWS:
- SUPPLY AND RETURN AIR UNCONDITIONED: 2" (R-8 MIN)
- OUTSIDE AIR: 2" (R-6 MIN)

PROVIDE ALL EXTERIOR INSULATION DUCTWORK OR PIPING EXPOSED TO THE OUTDOORS WITH A MINIMUM 0.8 MIL THICK ALUMINUM OR PVC JACKET.

CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ADEQUATE AND PROPER INSULATION AND MOISTURE-SEAL IN A MANNER THAT WILL PERMANENTLY PREVENT THE ACCUMULATION OF ANY OBJECTIONABLE MOISTURE ON THE EXTERIOR OF AIR CONDITIONING UNITS, REFRIGERANT PIPING, CONDENSATE DRAIN PIPING, AIR DUCTS OR OTHER PARTS OF THE SYSTEM. CONTRACTOR SHALL CORRECT THE CAUSE OF ANY CONDENSATION AND FULLY REPAIR, WITHOUT COST TO THE OWNER, ANY DAMAGES TO BUILDING SURFACES, FURNISHINGS OR EQUIPMENT CAUSED BY CONDENSATION FROM THIS SYSTEM, FOR THE FULL PERIOD OF GUARANTEE.

CONTROLS:

FACTORY MOUNTED CONTROL SHALL BE PROVIDED TO ACCOMPLISH THE SEQUENCE OF OPERATION. ALL INTERIOR CONTROLS SHALL BE FACTORY FURNISHED AND INSTALLED.

PROVIDE ALL 24 VOLT WIRING BETWEEN CONTROL DEVICES AS NECESSARY TO MAKE COMPLETE AND OPERATION SYSTEM. PROVIDE 110/24 VAC TRANSFORMERS AS REQUIRED. COORDINATE WITH DIVISION 26 FOR 120V POWER ROUGH-IN, CONTROL, POWER AND WIRING. 24 VOLT WIRING SHALL BE PLENUM RATED CABLE.

EQUIPMENT:

INSTALL DUCT SMOKE DETECTORS FURNISHED BY DIVISION 26 IN SUPPLY AIR DUCTS OF AIR HANDLING UNITS EXCEEDING 2000 CFM AND WHERE INDICATED ON DRAWINGS. DETECTOR TO SHUT DOWN WHEN ACTIVATED.

AIR CONDITIONING UNITS (DX SPLIT):
UNITS SHALL BE SPLIT SYSTEM AIR-TO-AIR ELECTRIC AIR CONDITIONING UNITS AND HEAT PUMPS AS SCHEDULED ON DRAWINGS. UNITS WITH INTEGRAL ELECTRIC RESISTANCE HEATERS SHALL HAVE A SINGLE-POINT ELECTRIC CONNECTION.

TOTAL COOLING CAPACITY OF THE UNITS SHALL BE AS SCHEDULED ON DRAWINGS. UNIT CABINET SHALL BE CONSTRUCTED OF GALVANIZED STEEL, BONDED AND COATED WITH BAKED ENAMEL. CABINET INSULATION SHALL COMPLY WITH FLORIDA ENERGY CODE.

FANS AND MOTORS - THE INDOOR AIR FANS SHALL BE OF THE FORWARD-CURVED CENTRIFUGAL CLASS 1 TYPE. MOTOR AND DRIVE TO PROVIDE HIGHER FAN OUTPUT WHEN JOB REQUIREMENTS EXCEED STANDARD FAN CAPACITY SHALL BE PROVIDED.

COOLING SYSTEM SHALL BE PROTECTED BY LOSS OF CHARGE PROTECTION, HIGH AND LOW PRESSURE SENSORS, COMPRESSOR MOTOR OVERLOADS, AND A TIMING DEVICE WHICH WILL PROHIBIT THE COMPRESSOR MOTOR FROM BEING SUBJECTED TO A STARTING CURRENT MORE THAN ONCE EVERY FIVE MINUTES.

HEAT PUMP/CONDENSING UNIT INSTALLATION:
PROVIDE CONCRETE PADS FOR GRADE MOUNTED CONDENSING UNITS. PADS SHALL BE A MINIMUM OF 4" THICK, 3,000 PSI CONCRETE, AND SHALL BE 4" LARGER ON EACH SIDE THAN THE FOOTPRINT OF THE CONDENSING UNIT. VERIFY UNIT DIMENSIONS WITH APPROVED SHOP DRAWINGS PRIOR TO FABRICATION OF PADS.

EXHAUST FANS:

FURNISH EXHAUST FANS WITH PERFORMANCE AND CAPACITIES AS LISTED ON THE DESIGN DRAWINGS.

ROOF EXHAUST FANS:
STANDARD TYPE ALUMINUM HOUSING. UNITS SHALL BE SERVICEABLE FROM THE ROOF. UNITS SHALL HAVE BIRD SCREEN, PRE-WIRED DISCONNECT, COUNTER-BALANCED BACKDRAFT DAMPER WITH FELT TIP BLADES, BALL BEARINGS LUBRICATED FOR LIFE, ADJUSTABLE BELT DRIVE OR DIRECT DRIVE, CENTRIFUGAL OR PROPELLER AS INDICATED. MOTOR AND DRIVE ASSEMBLY SHALL BE CUSHIONED ON VIBRATION ISOLATORS. MOTORS SHALL BE OUT OF AIR STREAM. FURNISH MOTORS 3/4 HP AND BELOW WITH INTERNAL THERMAL OVERLOAD PROTECTION. MOTORS ABOVE 3/4 HP SHALL BE FURNISHED WITHOUT INTERNAL OVERLOAD PROTECTION, AND SHALL BE FOR MOUNTING ON PRE-FABRICATED ROOF CURB. FANS SHALL BE RATED IN ACCORDANCE WITH AMCA.

IN-LINE FANS:
SUSPENDED FANS SHALL BE SUPPORTED FROM A TRAPEZE TYPE HANGER WITH SPRING MOUNTED VIBRATION ISOLATORS. ALUMINUM HOUSING OR STEEL PHOSPHATE IMPREGNATED AND PAINTED. DIRECT DRIVE OR BELT DRIVE AS SCHEDULED. FANS AND MOTORS SHALL HAVE BALL BEARINGS LUBRICATED FOR LIFE. MOTOR AND DRIVE SHALL BE ACCESSIBLE WITHOUT DISTURBING DUCTWORK. MOTOR SHALL BE OUT OF AIR STREAM. FURNISH WITH PRE-WIRED DISCONNECT SWITCH. FURNISH MOTORS 3/4 HP AND BELOW WITH INTERNAL THERMAL OVERLOAD PROTECTION, MOTORS ABOVE 3/4 HP SHALL BE FURNISHED WITHOUT INTERNAL OVERLOAD PROTECTION.

ROOF CURBS:
SIZE AS REQUIRED TO ACCOMMODATE EXHAUST FANS AND RELIEF VENTS. TO BE FURNISHED BY MANUFACTURER OF EQUIPMENT TO BE MOUNTED. ROOF CURBS SHALL MATCH ROOFING TYPE AND SLOPE.

COORDINATE WITH ARCHITECT TO LOCATE EXHAUST FANS, EXHAUST GRILLES, WALL OR ROOF CAPS A MINIMUM DISTANCE OF 10'-0" FROM ANY OPERABLE WINDOW, DOOR OR FRESH AIR INTAKE.

AIR DISTRIBUTION EQUIPMENT:

FURNISH SUPPLY AIR GRILLES AND RETURN AIR REGISTERS WITH OPPOSED BLADE BALANCING DAMPERS AS SCHEDULED ON THE DESIGN DRAWINGS.

GRILLES, REGISTERS, AND CEILING DIFFUSERS SHALL BE FURNISHED AS SCHEDULED ON THE DESIGN DRAWINGS AND SHALL BE ALL ALUMINUM CONSTRUCTION UNLESS NOTED OTHERWISE. AIR DISTRIBUTION SHALL NOT EXCEED NC-30 NOISE CRITERIA AS DEFINED IN THE LATEST ASHRAE GUIDE.

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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3
H.S.P.S BUILDING
HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

ISSUE DATE: 02-24-2025

MECHANICAL SPECIFICATIONS

M0.2

DX FAN COIL UNIT SCHEDULE

MARK	SERVICE	FAN				COOLING COIL					HEATING CAPACITY (MBH@ 47/17°F)	AUXILIARY ELECTRIC HEATER @208V	ELECTRICAL			UNIT INFORMATION					NOTES
		TOTAL AIR FLOW (CFM)	OUTSIDE AIR FLOW (CFM)	E.S.P. (IN.WG.)	DRIVE TYPE	HP	ENTERING AIR TEMP. (°F DB/WB)	LEAVING AIR TEMP. (°F DB/WB)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)			VOLTAGE/ PHASE	MCA	MOCP	DIMENSIONS (WxDxH)	OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER	NOMINAL TONS	
FCU-1	LOBBY	1260	160	0.5	DIRECT	3/4	80.0/67.0	55.0/53.0	36.00	27.00	28.8/18.0	-	208/1	6.5	15	21"x21"x53.43"	142	DAIKIN	DFVE36CP1300	3.00	1-5

NOTES:

1. PROVIDE COMPLETE WITH SINGLE POINT WIRING, 1" THICK CABINET FOIL FACED INSULATION, AND FUSED DISCONNECT.
2. CONTRACTOR INSTALL MANUFACTURER RECOMMENDED 7-DAY PROGRAMMABLE DIGITAL THERMOSTAT IN SPACE AS INDICATED ON PLANS.
3. SIZE REFRIGERANT PIPING BASED ON MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. PROVIDE WITH CONDENSATE PUMP CAPABLE OF PUMPING MIN. 20 GAL/HR, 20 FT HEAD, 120V.
5. EQUIPMENT TO BE COMPATIBLE WITH A2L REFRIGERANT.

HEAT PUMP CONDENSING UNIT SCHEDULE

MARK	LOCATION	NOMINAL COOLING (MBH)	COMPRESSOR		ELECTRICAL			UNIT INFORMATION				MINIMUM SEER2	HSPF-2	NOTES
			OUTDOOR DESIGN TEMP. (F°)	QTY.	VOLTAGE/ PHASE	MCA	MOCP	UNIT SIZE L x W x H	OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER			
HP-1	GRADE	30.0	95.0	1	208/1	22.4	25	13.75"X36.625"X27.375"	132	DAIKIN	DH6VSA3010	16.2	8.5	1-4

NOTES:

1. PROVIDE WITH ANTI-SHORT CYCLE RELAY.
2. SIZE REFRIGERANT PIPING AND PROVIDE ACCESSORIES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. USE ADDITIONAL INSTRUCTIONS FOR LONG LINE APPLICATIONS AS REQUIRED.
3. CONTRACTOR TO PROVIDE NAMEPLATE FOR EACH PIECE OF EQUIPMENT THAT UNIQUELY IDENTIFIES EACH LOCATION THAT IT SERVES.
4. PROVIDE COMPLETE WITH A2L REFRIGERANT, SCROLL COMPRESSOR, FIELD INSTALLED FILTER/DRIER, FRONT SEATING SERVICE VALVES, INTERNAL PRESSURE RELIEF VALVE, INTERNAL THERMAL OVERLOAD, HIGH PRESSURE CUTOUT SWITCH AND ANTI-SHORT CYCLE RELAY.

DUCTLESS COOLING ONLY SPLIT SYSTEM DX SCHEDULE

MARK		SERVES	MANUFACTURER	INDOOR UNIT							OUTDOOR UNIT							SYSTEM INFORMATION				PIPING INFORMATION		NOTES
MARK INDOOR	MARK OUTDOOR			AIRFLOW (CFM)	POWER SUPPLY (V/PH)	FAN MOTOR FLA	MCA	WEIGHT (LBS)	MODEL #	STYLE	COMPRESSOR TYPE	HEAT PUMP	POWER SUPPLY (V/PH)	MCA	MOCP (AMPS)	WEIGHT (LBS)	MODEL #	REFRIGERANT TYPE	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	SEER/SEER2	MAX PIPING LENGTH (FT)	MAX HEIGHT DIFFERENCE (FT)	
AC-1	CU-1	ELECTRICAL ROOM	DAIKIN	716	208/1	-	-	30.5	FTXC24AXVJU	WALL	SWING/INVERTER	N	208/1	16.34	20.0	101	RXC24AXVJU	R-32	24.2	24.0	-/18.0	99	33	1-6
AC-2	CU-2	ELECTRICAL ROOM	DAIKIN	716	208/1	-	-	30.5	FTXC24AXVJU	WALL	SWING/INVERTER	N	208/1	16.34	20.0	101	RXC24AXVJU	R-32	24.2	24.0	-/18.0	99	33	1-6
AC-3	HP-3	STORAGE AND WORK ROOM	DAIKIN	320	208/1	0.20	-	20.0	FTXC09AXVJU	WALL	SWING	Y	208/1	6.95	15.0	53	RXC09AXVJU	R-32	8.80	7.67	-/21.0	65	33	1-6

NOTES:

1. PROVIDE COMPLETE WITH SINGLE POINT WIRING, FUSED DISCONNECT, DIGITAL THERMOSTAT, SELF CHECK FUNCTIONING ON-BOARD DIAGNOSTICS, AND AUTOMATIC POWER OUT RESTART.
2. INDOOR UNIT POWERED BY OUTDOOR UNIT. PROVIDE WITH ALL REQUIRED CONNECTION WIRING, PIPING, AND APPURTENANCES.
3. PROVIDE WITH FACTORY HARD WIRED WALL MOUNTED REMOTE CONTROLLER.
4. CAPACITIES SHOWN ARE BASED ON 80/67-F AND 95-F AMBIENT.
5. SIZE REFRIGERANT PIPING BASED ON MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. PROVIDE COMPLETE WITH CONDENSATE PUMP.

* INDOOR UNIT POWERED FROM OUTDOOR UNIT.

EXHAUST FAN SCHEDULE

MARK	AREA SERVED	TYPE	CFM	DRIVE TYPE	E.S.P.	WATTS/HP	R.P.M.	VOLTS/PH	SONES	MANUFACTURER	MODEL NO.	NOTES
EF-1	SHOWER	CEILING	80	DIRECT	0.45	26.7 WATTS	---	120/1	0.9	BROAN	LP510RS	1,2
EF-2	PUMP ROOM	ROOF	2000	DIRECT	0.25	1 HP	589	208/3	5.9	GREENHECK	CUE-200-VG	3
EF-3	CHLORINE RM	WALL	650	DIRECT	0.10	1/4 HP	560	208/3	21	GREENHECK	BAER-24-02	3,4,5,6

NOTES:

1. PROVIDE COMPLETE WITH FUSED DISCONNECT SWITCH, DESIGNER GRILLE, FACTORY SOLID STATE SPEED CONTROLLER ACCESSIBLE THROUGH FACE OF GRILLE, FACTORY BACKDRAFT DAMPER, AND FACTORY HANGING VIBRATION ISOLATOR KIT.
2. SWITCH WITH ROOM LIGHT OR OCCUPANCY SENSOR AS APPLICABLE, REFER TO ELECTRICAL FLOOR PLANS.
3. FAN TO RUN CONTINUOUSLY.
4. FAN TO BE EXPLOSION PROOF AND SPARK RESISTANT.
5. MOUNT FAN PER CODE FOR CHLORINE VENTILATION REQUIREMENTS.
6. PROVIDE CAST ALUMINUM FAN.

AIR DEVICE SCHEDULE

MARK	DESCRIPTION	FACE SIZE	NECK	MATERIAL	BASIS OF DESIGN MANUFACTURER/MODEL #	DAMPER	NOTES
A	LOUVERED FACE 2 CONE ADJUSTABLE SUPPLY DIFFUSER	24"x24"	SEE TABLE BELOW	ALUMINUM	GREENHECK/METAL AIRE 5700A-AL	Y	1, 2, 3, 4
B	LOUVERED FACE 2 CONE ADJUSTABLE SUPPLY DIFFUSER	12"x12"	SEE TABLE BELOW	ALUMINUM	GREENHECK/METAL AIRE 5700A-AL	Y	1, 2, 3, 4
C	EGGCRATE RET./EXH. GRILLE (1/2"x1/2"x1/2")	24"x24"	22"X22"	ALUMINUM	GREENHECK/METAL AIRE CC-5	Y	1, 2, 4

NOTES:

1. COORDINATE COLOR AND SURFACE FINISHES WITH ARCHITECTURAL DRAWINGS.
2. PROVIDE RAPID MOUNT T-BAR FRAME FOR PLASTER AND SHEET ROCK CEILINGS.
3. SUPPLY COMPLETE WITH FACTORY INSTALLED 1/2" THICK FOIL BACKED INSULATION.
4. IN AREAS WITH INACCESSIBLE PLASTER AND SHEET ROCK CEILINGS PROVIDE VOLUME DAMPERS ACCESSIBLE FROM FACE OF DIFFUSER/GRILLE.

A-CFM

CFM RANGE	NECK SIZE
0 - 95	6"Ø
96 - 205	8"Ø
206 - 375	10"Ø
376 - 605	12"Ø
606 - 850	14"Ø

B-CFM

CFM RANGE	NECK SIZE
0 - 40	4"Ø
41 - 60	5"Ø
61 - 95	6"Ø
96 - 145	7"Ø
146 - 205	8"Ø

C-CFM

CFM RANGE	NECK SIZE
0 - 2500	22"X22"

LOUVER SCHEDULE

MARK	EQUIP./AREA SERVED	TYPE	CFM	SIZE (IN.)	E.S.P.	MANUF/MODEL	NOTES
L-1	PUMP ROOM	INTAKE	500	48x48	0.01	GREENHECK ESD-635DE	1-5
L-2	CHLORINE ROOM	INTAKE	500	36x36	0.01	GREENHECK ESD-635DE	1-5
L-3	FCU-1	INTAKE	500	16x12	0.01	GREENHECK ESD-635DE	1-4

NOTES:

1. PROVIDE COMPLETE WITH FLASHING FOR A WATER TIGHT INSTALLATION
2. LOUVER SHALL BE WIND DRIVEN RAIN TYPE AND HURRICANE RATED.
3. USE SPECIFIED LOUVER OR EQUIVALENT.
4. LOUVER TO BE PAINTED WITH FLUOROPOLYMER PAINT. SUBMIT PAINT TO ARCHITECT FOR APPROVAL.
5. PROVIDE WITH VCD-40 MANUAL DAMPER.

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H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

REVISIONS:

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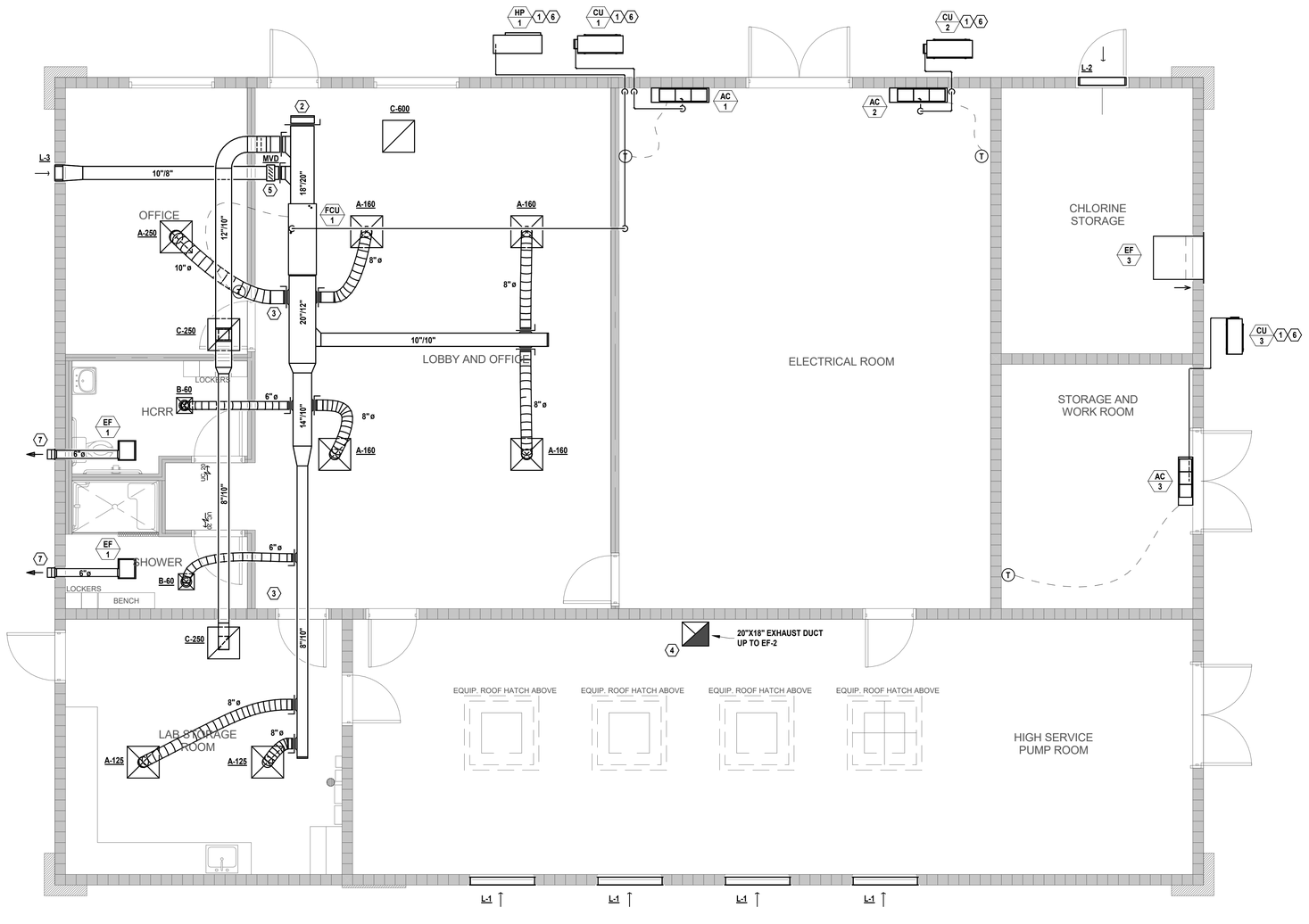
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MECHANICAL SCHEDULES

M0.3

GENERAL NOTE

1. PROVIDE WITH MANUFACTURE-REQUIRED REFRIDGERANT PIPE SIZING. REFER TO PLUMBING DRAWINGS FOR CONDENSATE DRAIN ROUTING AND SIZING.
2. COVER RETURN AIR DUCT OPENING WITH WIRE MESH SCREEN, OPEN TO ABOVE-CEILING PLENUM.
3. COVER EXHAUST DUCT INLET WITH WIRE MESH SCREEN; BOTTOM OF EXHAUST DUCT INLET AT 14 FT A.F.F.
4. CAP EXHAUST DUCT PENETRATION WITH WIRE MESH SCREEN 14 FT A.F.F.
5. FCU-1 OA DUCT TO BE BALANCED TO 160 CFM OF OA. MVD TO BE 24V AND ACTIVATED BY FCU.
6. CONDENSING UNITS TO BE INSTALLED ON HURRICANE RATED PADS.
7. MINIMUM 26 GAUGE SHEET METAL BATH/KITCHEN EXHAUST DUCT SIZED PER PLAN. TERMINATE WITH WALL CAP AND INTEGRAL BACKDRAFT DAMPER PER DETAIL. SEE DETAIL 6 ON SHEET M3.01 FOR MORE INFORMATION. PRIME COAT AND PAINT WALL CAP TO MATCH BUILDING COLOR.



1 M1.1 FLOOR PLAN - MECHANICAL
SCALE: 1/4" = 1'-0"

NORTH

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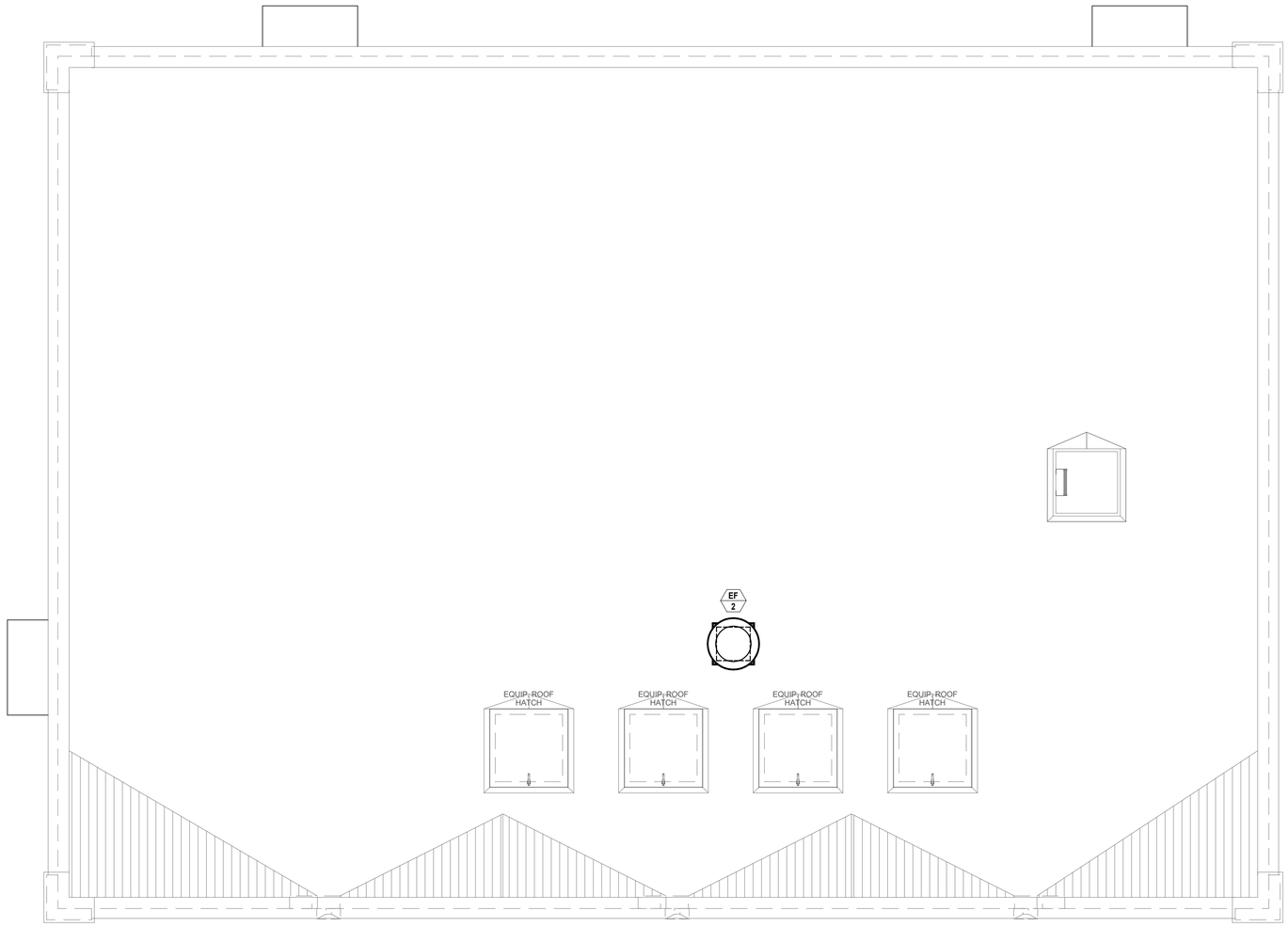
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FLOOR PLAN - MECHANICAL

M1.1



1 / M1.2 ROOF PLAN - MECHANICAL
SCALE: 1/4" = 1'-0"

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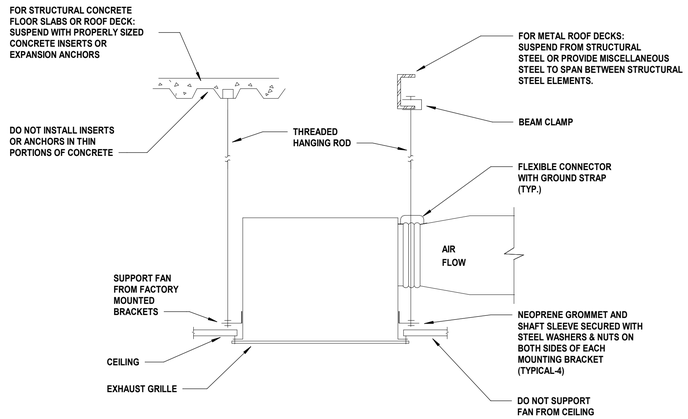
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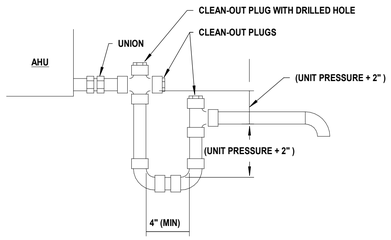
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ROOF PLAN - MECHANICAL

M1.2



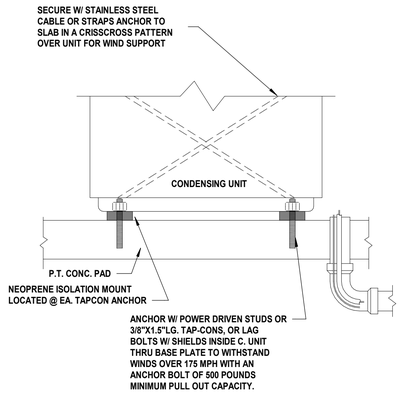
1 M2.1 CEILING MOUNTED EXHAUST FAN DETAIL
SCALE:NTS



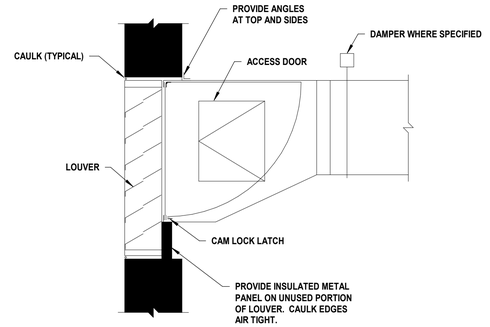
NOTES:

1. CONDENSATE DRAIN SHALL BE PIPED FULL SIZE OF UNIT CONNECTION.
2. CONDENSATE PANS SHALL BE INSTALLED WITH ADEQUATE PITCH TO ENSURE POSITIVE DRAINAGE OF ACCUMULATED CONDENSATE.

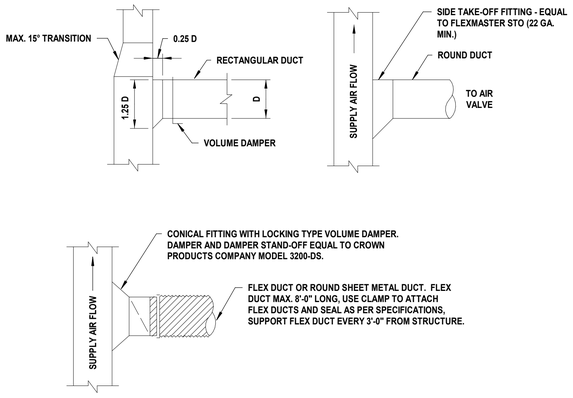
2 M2.1 CONDENSATE DRAIN CONNECTION DETAIL
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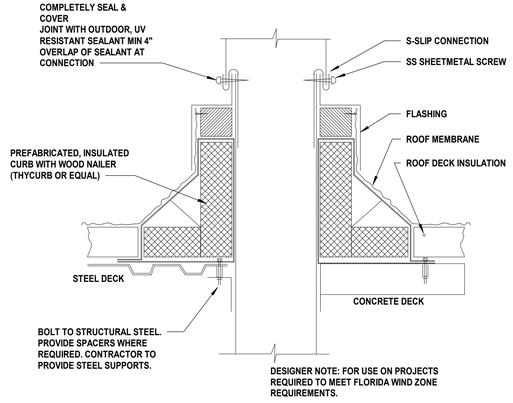
3 M2.1 CONDENSING UNIT AT PAD DETAIL
SCALE:NTS



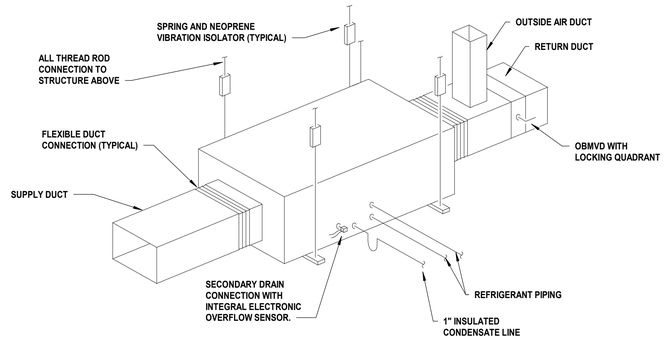
4 M2.1 DUCT CONNECTION TO LOUVER
SCALE:NTS



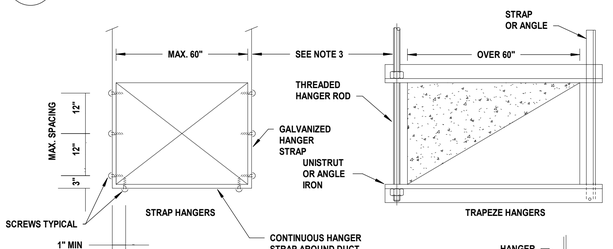
5 M2.1 DUCT CONNECTION DETAILS
SCALE:NTS



6 M2.1 DUCT PENETRATION THROUGH ROOF (WIND ZONE)
SCALE:NTS



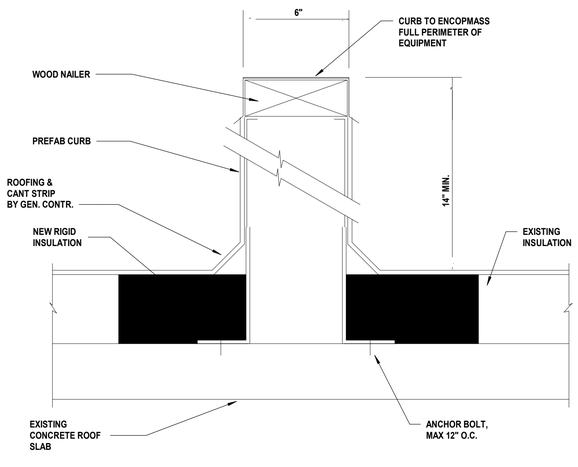
7 M2.1 HORIZONTAL DX FAN COIL UNIT DETAIL
SCALE:NTS



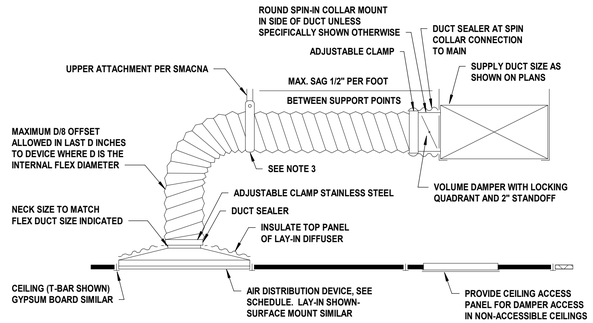
NOTES:

1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. REFER TO SMACNA FOR SPECIFIC RECOMMENDED HANGER TYPES NO TED.
4. MAXIMUM SPACING BETWEEN HANGER LOCATIONS SHALL BE 8'-0" PER PAIR. STRAPS SHALL BE MINIMUM 1 1/2" X 22 GAGE GALVANIZED STEEL.

8 M2.1 DUCT HANGER DETAIL
SCALE:NTS



9 M2.1 EQUIPMENT SUPPORT CURB DETAIL
SCALE:NTS



NOTES:

1. FLEXIBLE DUCTS SHALL BE ONE-PIECE AND SHALL NOT BE SPLICED TOGETHER.
2. EXTEND FLEXIBLE DUCT INSULATION TO DUCT/DIFFUSER PANEL INSULATION AND SEAL WITH MASTIC.
3. MINIMUM 1-1/2" WIDE 22 GAUGE GALVANIZED STRAP HANGER. INSTALL PER GUIDELINES SETFORTH NI CHAPTER 3 OF THE MOST CURRENT EDITION OF THE S.M.A.C.N.A. TECHNICAL MANUAL TITLED "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE".
4. FLEXIBLE AIR DUCT SHALL BE FULLY EXTENDED AND NOT COMPRESSED. ELBOW RADIUS SHALL BE NO LESS THAN R/D=1.0.

10 M2.1 FLEXIBLE DUCT INSTALLATION DETAIL
SCALE:NTS

POWELLSTUDIO
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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING
HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DESCRIPTION

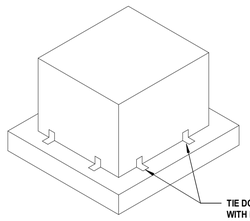
ISSUE DATE: 02-24-2025

MECHANICAL DETAILS

M2.1

Bid Set

DATE: 6/30/2025 11:07:05 AM

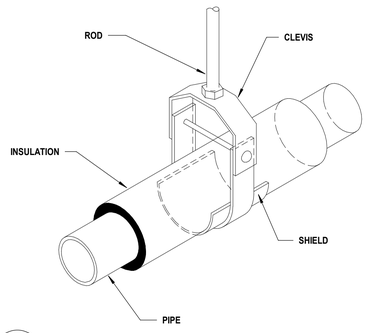


TIE DOWN EQUIPMENT ON ALL SIDES WITH MINIMUM #14 SCREWS AND GASKETED WASHERS. FOLLOW TABLE FOR QUANITITY OF SCREWS PER SIDE TO USE BASED ON LENGTH OF SIDE TO BE SECURED.

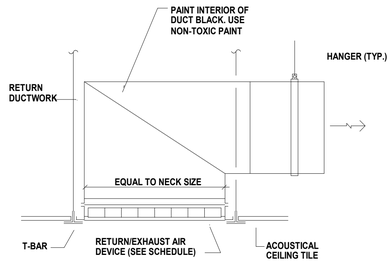
FASTENER QUANTITY TABLE

LENGTH OF SIDE	QUANTITY
LESS THAN 12"	1 PER SIDE
12" TO 24"	2 PER SIDE
24" TO 36"	3 PER SIDE

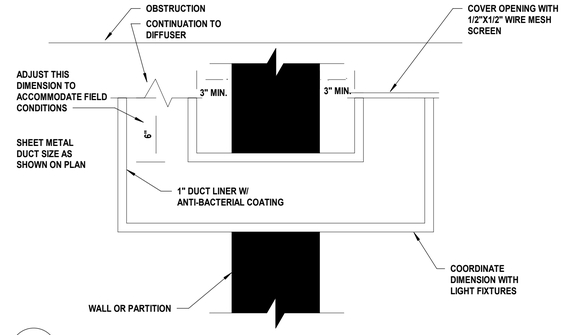
1 M2.2 GROUND MOUNTED EQUIPMENT TIE DOWN DETAIL
SCALE:NTS



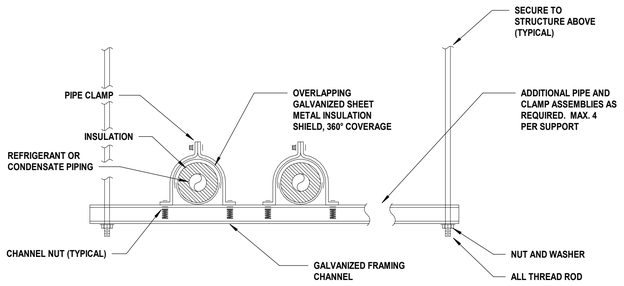
2 M2.2 PIPE SUPPORT DETAIL
SCALE:NTS



3 M2.2 RETURN AIR BOOT DETAIL
SCALE:NTS



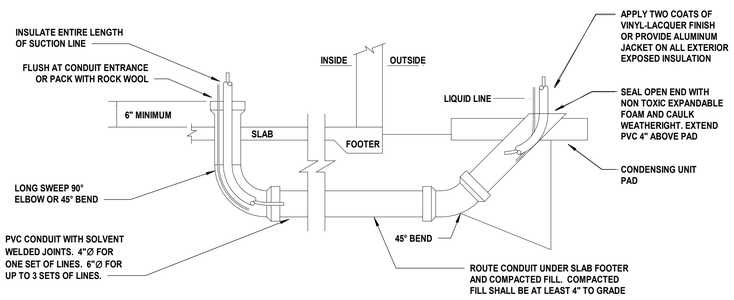
4 M2.2 TRANSFER DUCT DETAIL (PLAN VIEW)
SCALE:NTS



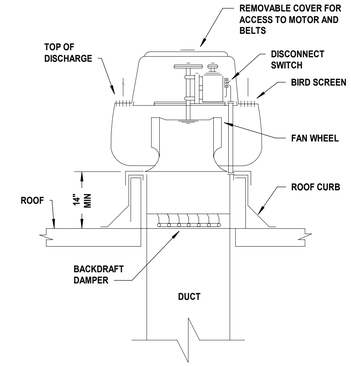
NOTE:

A. ALL STEEL PIPE SUPPORT MATERIALS AND HARDWARE SHALL BE GALVANIZED.
B. MAXIMUM 8 FEET SPACING BETWEEN SUPPORTS.

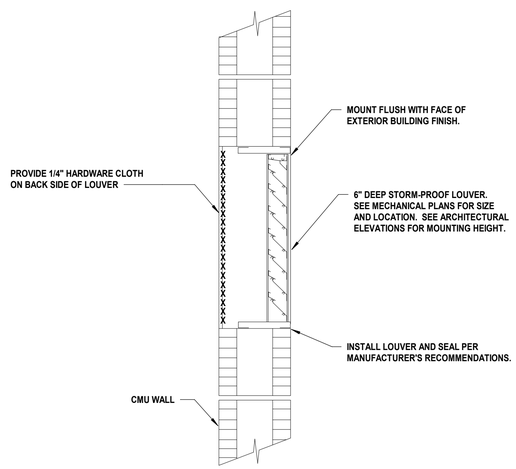
5 M2.2 PIPING SUPPORT DETAIL
SCALE:NTS



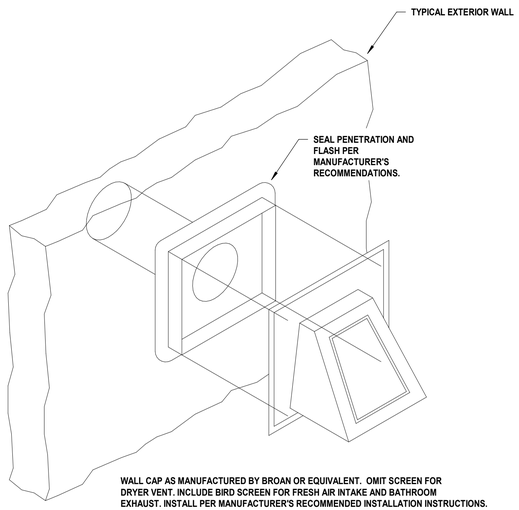
6 M2.2 UNDERGROUND REFRIGERANT LINES
SCALE:NTS



7 M2.2 UPBLAST EXHAUST FAN INSTALLATION DETAIL
SCALE:NTS



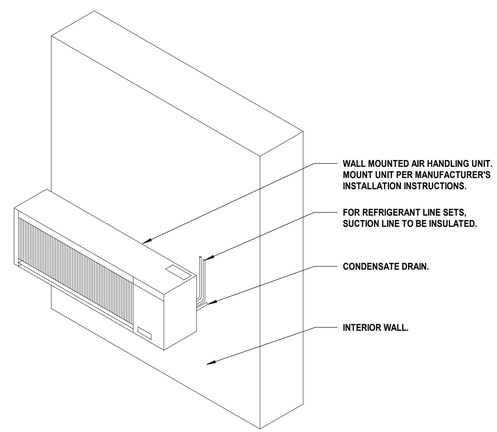
8 M2.2 WALL LOUVER INSTALLATION DETAIL
SCALE:NTS



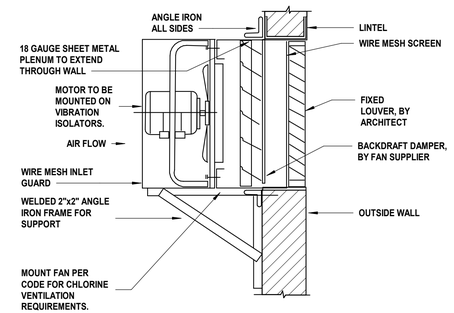
WALL CAP AS MANUFACTURED BY BROAN OR EQUIVALENT. OMIT SCREEN FOR DRYER VENT. INCLUDE BIRD SCREEN FOR FRESH AIR INTAKE AND BATHROOM EXHAUST. INSTALL PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS. USE MODEL NUMBER PER CONNECTION DUCT SIZE ON PLANS.

DUCT SIZE	MODEL#
3" OR 4"	885AL
6"	641
8"	643

9 M2.2 WALL CAP INSTALLATION DETAIL
SCALE:NTS



10 M2.2 WALL MOUNTED AIR CONDITIONING UNIT DETAIL
SCALE:NTS



11 M2.2 WALL MOUNTED FAN DETAIL (1)
SCALE: 12" = 1'-0"

DATE: 6/30/2025 11:06:55 AM

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MARK	DATE	DESCRIPTION

ISSUE DATE: 02-24-2025

MECHANICAL DETAILS

M2.2

PLUMBING SPECIFICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. GENERAL PROVISIONS SPECIFICALLY APPLICABLE TO DIVISION 22 & 23 SECTIONS, IN ADDITION TO DIVISION 1 - GENERAL REQUIREMENTS.

1.2 SCOPE

A. THE WORK SHALL INCLUDE THE PROVISIONS OF SYSTEMS, EQUIPMENT AND MATERIALS SPECIFIED IN THIS DIVISION AND AS CALLED FOR ON THE DRAWINGS. WORK SHALL ALSO INCLUDE SUPERVISION, OPERATION, METHODS AND LABOR FOR THE FABRICATION, START-UP AND TESTS FOR A COMPLETE OPERATIONAL PLUMBING INSTALLATION.

B. DRAWINGS FOR THE WORK ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO CONVEY THE SCOPE OF THE INSTALLATION AND TO INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE WORK. BECAUSE OF THE SCALE OF THE DRAWINGS, CERTAIN BASIC ITEMS SUCH AS PIPE FITTINGS, ACCESS PANELS, AND SLEEVES MAY NOT BE SHOWN. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE EQUIPMENT TO FIT THE SPACE PROVIDED. THE LOCATION AND SIZES FOR PIPE FITTINGS, METERS, GAUGES, ESCUTCHEONS, VALVES, SLEEVES, INSERTS, FIRE AND/OR SMOKE DAMPERS, AND OTHER BASIC ITEMS REQUIRED BY CODE AND OTHER SECTIONS SHALL BE COORDINATED AND INCLUDED FOR THE PROPER INSTALLATION OF THE WORK.

C. EQUIPMENT SPECIFICATIONS MAY NOT DEAL INDIVIDUALLY WITH MINUTE ITEMS REQUIRED SUCH AS COMPONENTS, PARTS, CONTROLS AND DEVICES WHICH MAY BE REQUIRED TO PRODUCE THE EQUIPMENT PERFORMANCE SPECIFIED OR AS REQUIRED TO MEET THE EQUIPMENT WARRANTIES. WHERE SUCH ITEMS ARE REQUIRED, THEY SHALL BE INCLUDED BY THE INSTALLER OF THE EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS WITH NO ADDITIONAL COST INCURRED.

D. WHERE NOTED ON THE DRAWINGS OR INDICATED IN OTHER SECTIONS OF THE SPECIFICATION, THE CONTRACTOR FOR THIS DIVISION SHALL INSTALL PLUMBING EQUIPMENT FURNISHED BY OTHERS, AND SHALL MAKE ALL FINAL CONNECTIONS. CONTRACTOR SHALL INSTALL EQUIPMENT AND SYSTEMS IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

E. COORDINATE WITH ALL TRADES IN SUBMITTAL OF SHOP DRAWINGS. TIGHT SPACE CONDITIONS SHALL BE DETAILED TO THE SATISFACTION OF ALL TRADES, SUBJECT TO THE REVIEW AND FINAL ACCEPTANCE OF THE ARCHITECT/ENGINEER. IN THE EVENT THAT THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES OR SO AS TO CAUSE ANY INTERFERENCE WITH THE WORK OF THE OTHER TRADES THIS CONTRACTOR SHALL MAKE ALL REQUIRED CHANGES TO CORRECT THE CONDITION AT NO ADDITIONAL COST TO THE PROJECT.

F. CONTRACTOR SHALL VERIFY ALL EQUIPMENT CONNECTION SIZES PRIOR TO INSTALLATION OF ANY SYSTEMS. THIS CONTRACTOR SHALL ADJUST PIPING SYSTEM SIZES AS REQUIRED TO MATCH EQUIPMENT CONNECTIONS. UTILIZE REDUCERS WHERE EQUIPMENT CONNECTIONS ARE SMALLER THAN PIPE SIZES INDICATED ON PLANS, NO PIPING SHALL BE DECREASED IN SIZE (IN THE DIRECTION OF FLOW).

G. EXAMINATION OF BIDDING DOCUMENTS:
1. EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS, SHALL MAKE WRITTEN REQUEST TO THE ENGINEER FOR INTERPRETATION OR CORRECTION OF ANY AMBIGUITY, INCONSISTENCY OR ERROR THEREIN. ANY INTERPRETATION OR CORRECTION WILL BE ISSUED AS AN ADDENDUM BY THE ENGINEER. ONLY A WRITTEN INTERPRETATION OR CORRECTION TO BID DOCUMENTS BY ADDENDUM SHALL BE BINDING. NO BIDDER SHALL RELY UPON ANY INTERPRETATION OR CORRECTION GIVEN BY ANY OTHER METHOD.

H. SUBSTITUTIONS:
1. EXCEPT AS PROVIDED BELOW, EACH BIDDER REPRESENTS THAT THEIR BID IS BASED UPON THE MATERIALS AND EQUIPMENT DESCRIBED IN THE BIDDING DOCUMENTS.
2. NO SUBSTITUTIONS FOR OTHER MATERIALS AND EQUIPMENT WILL BE CONSIDERED UNLESS WRITTEN REQUEST HAS BEEN SUBMITTED TO THE ENGINEER FOR APPROVAL AT LEAST TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. EACH SUCH REQUEST SHALL INCLUDE A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE, THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED, DRAWINGS, CUT SHEETS, PERFORMANCE AND TEST DATA OR INFORMATION NECESSARY FOR A COMPLETE EVALUATION.
3. IF THE ENGINEER APPROVES ANY PROPOSED SUBSTITUTION, SUCH APPROVAL WILL BE ISSUED AS AN ADDENDUM FORWARDED TO ALL PARTICIPATING BIDDERS.
4. IF ANY BIDDER IS UNABLE TO PROCURE WRITTEN APPROVAL OF ANY SUBSTITUTION FROM THE ENGINEER PRIOR TO THE OPENING OF BIDS, THEN THEIR BID SHALL BE BASED ON ITEMS AND SYSTEMS AS SPECIFIED IN BID DOCUMENTS.
5. SUBSTITUTIONS REQUESTED ON THE BID PROPOSAL FORM WHICH ARE PRIOR APPROVED BY THE ENGINEER WILL BE INCORPORATED INTO THE CONTRACT WITH THE SUCCESSFUL BIDDER.
6. REQUESTS FOR ANY SUBSTITUTIONS NOT SUBMITTED AND APPROVED IN ACCORDANCE WITH THE ABOVE INSTRUCTIONS WILL BE DENIED BY THE ENGINEER.

1.3 REGULATORY REQUIREMENTS

A. ALL INSTALLATIONS AND EQUIPMENT SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE STATUTES, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION.

1.4 CUTTING AND PATCHING

A. SUBMIT WRITTEN REQUEST IN ADVANCE OF CUTTING OR ALTERING ELEMENTS.

B. EMPLOY SKILLED AND EXPERIENCED INSTALLER TO PERFORM CUTTING AND PATCHING WHICH AFFECT:
1. INTEGRITY OF WEATHER PROOFING MATERIALS.
2. EFFICIENCY, MAINTENANCE, OR SAFETY OF ELEMENT.
3. VISUAL QUALITIES OF SIGHT.
4. WORK OF OWNER OR SEPARATE CONTRACTOR.

C. NO STRUCTURAL ELEMENTS SHALL BE CUT WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.

PART 2 PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

A. MANUFACTURERS:
1. B-LINE
2. MICHIGAN HANGER
3. PHD MANUFACTURING

2.2 HOT WATER PIPING INSULATION

A. MANUFACTURERS:
1. OWENS-CORNING
2. JOHNS-MANVILLE
3. KNAUF

B. ASTM C547, RIGID MOLDED NON-COMBUSTIBLE FIBERGLASS INSULATION. 'K' VALUE .024 @ 75 DEGREES F.

C. VAPOR BARRIER JACKET, KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINUM FILM. CLOSURE SYSTEM SHALL BE UL 181.

D. INSULATION THICKNESS 1-1/2"

2.3 SANITARY/GREASE SEWER PIPING, ABOVE AND BELOW GRADE:

A. PVC: ASTM D2665 SCHEDULE 40 PVC PIPING.
1. FITTINGS: ASTM D2665 SCHEDULE 40 PVC DWV FITTINGS.
2. JOINTS: ASTM D2564 SOLVENT CEMENT. JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2855.

B. CAST IRON: CISPI 301, SERVICE WEIGHT, NO HUB.
1. FITTINGS: CISPI 301 CAST IRON DWV.
2. JOINTS: CISPI 301 STAINLESS STEEL CLAMPS, MINIMUM 24 GA. WITH NEOPRENE GASKET, HUSKEY SERIES 4000 OR CLAMP-ALL ONLY.

2.4 WATER PIPING, ABOVE GRADE:

A. COPPER PIPING: ASTM B88 TYPE 'L' HARD DRAWN.
1. FITTINGS: ASME 16.18 CAST BRONZE OR ASME B16.22 WROUGHT COPPER OR BRONZE.
2. JOINTS: ASTM B32 SOLDER, ASTM 95-5 TA MINIMUM, FLUX ASTM B813. JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM B828.

B. CPVC PIPING & FITTINGS: ASTM D1784 PIPE COMPOUND CELL CLASS 24448.
1. JOINTS: ASTM F493 SOCKET TYPE WITH SOLVENT CEMENT ASTM F402 NSF INTERNATIONAL APPROVED MFG. COMPATIBLE.
2. FLOWGUARD GOLD CPVC PIPE AS MFG. BY NOVEON INC.

C. PVC PIPING & FITTINGS: ASTM D1785 FOR SERVICE PIPE, ASTM D2846 FOR DISTRIBUTION PIPE, AND ASTM D2464 FOR FITTINGS.

PART 3 INSTALLATION

A. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

C. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT.

D. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE.

E. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

F. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

G. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.

H. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. COORDINATE SIZE AND LOCATION OF ACCESS DOORS WITH APPROPRIATE ARCHITECTURAL SECTION.

I. ESTABLISH ELEVATIONS OF BURIED PIPING OUTSIDE THE BUILDING TO ENSURE PROPER SLOPE AND COVER.

J. ESTABLISH ELEVATIONS OF EXISTING BURIED PIPING FOR CONNECTION TO NEW WORK TO ENSURE PROPER SLOPE AND COVER.

K. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDING.

L. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT CLEANOUT FOR RODDING OF DRAINAGE SYSTEM.

M. INSTALL WATER HAMMER SHOCK ARRESTORS AT EACH FIXTURE OR BATTERY OF FIXTURES WHERE REQUIRED. ARRESTORS SHALL BE FACTORY FABRICATED. INSTALL ARRESTORS AND SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I. WH-201. ACCEPTABLE MANUFACTURERS ZURN, JOSAM, SIOUX CHIEF. PPP INC. FOR 1-11 FU'S PROVIDE PDI-A, FOR 12-32 FU'S PDI-B, 33-60 FU'S PDI-C, 61-113 FU'S PDI-D.

ABBREVIATIONS

A	AMPERES
ACS	AUTOMATIC CONTROL SYSTEM
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
APPROX	APPROXIMATELY
AP	ACCESS PANEL
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
AUX	AUXILIARY
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BWV	BACK WATER VALVE
CCP	CENTRAL CONTROL PANEL
CD	CONDENSATE DRAIN
CLG	CEILING
CO	CLEAN-OUT
COMB	COMBINATION
COMPR	COMPRESSOR
COND	CONDENSATE OR CONDENSER
CONT	CONTINUATION
CMU	CONCRETE MASONRY UNIT
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CW	COLD WATER (CITY)
D	DRAIN LINE
DW	DIRECT WASTE
EL	ELEVATION
EQ	EQUAL
EXST	EXISTING
EXP	EXPANSION
ESEW	EMERGENCY SHOWER/EYEWASH
°F	DEGREES FAHRENHEIT
ECO	EXTERIOR CLEANOUT
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FG	FINISHED GRADE
FIN FL	FINISHED FLOOR
FLA	FULL LOAD AMPERES
FM	FORCE MAIN
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GA	GAUGE
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HB	HOSE BIBB
H20	WATER
HD	HEAD
HORIZ	HORIZONTAL
HP	HORSEPOWER
HW	HOT WATER
HR	HOUR
HZ	FREQUENCY
IE	INVERT ELEVATION
ID	INSIDE DIAMETER
IN	INCH OR INCHES
INSUL	INSULATION
IPS	IRON PIPE SIZE
INV	INVERT ELEVATION
IW	INDIRECT WASTE
KW	KILOWATT
LB/HR	POUNDS PER HOUR
LBS	POUNDS
LIN FT	LINEAR FEET
MAX	MAXIMUM
MBH	THOUSANDS, BTUH
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OR	OIL RECOVERY
P	PRESSURE
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
PRESS	PRESSURE
PVC	POLYVINYL CHLORIDE
R	RISE
RD	ROOF DRAIN
REQ'D	REQUIRED
RL	RAIN LEADER
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE
SAN	SANITARY
SMH	STORM MANHOLE
SPEC	SPECIFICATION
SCW	SOFT COLD WATER
SF	SQUARE FEET
ST	STORM
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
V	VENT LINE
VLV	VALVE
VTR	VENT THRU ROOF
W	WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WCO	WALL CLEANOUT
WG	WATER GAUGE
WP	WORKING PRESSURE

PLUMBING LEGEND

CD	CONDENSATE DRAIN
CD	CONDENSATE DRAIN UNDERGROUND
CD	CONDENSATE DRAIN EXISTING
CW	COLD WATER SUPPLY
CW	COLD WATER SUPPLY EXISTING
CTY	CITY PRESSURE WATER
FM	FORCE MAIN
G	GAS
G	GAS UNDERGROUND
G	GAS EXISTING
GR	GREASE
GR	GREASE UNDERGROUND
OR	OIL RECOVERY
	GREASE EXISTING
HW	HOT WATER SUPPLY
HW	HOT WATER SUPPLY EXISTING
110°	110° HOT WATER SUPPLY
140°	140° HOT WATER SUPPLY
160°	160° HOT WATER SUPPLY
HWR	HOT WATER RETURN
HWR	HOT WATER RETURN EXISTING
SAN	SANITARY
SAN	SANITARY UNDERGROUND
SAN(E)	SANITARY EXISTING
ST	STORM
AW	ACID WASTE
ST	STORM UNDERGROUND
ST(E)	STORM EXISTING
V	VENT
V(E)	VENT EXISTING
SEC	SECONDARY STORM
SEC	SECONDARY STORM UNDERGROUND
SEC(E)	SECONDARY STORM EXISTING
AIR	DENTAL AIR
NO	NITROUS OXIDE
OX	OXYGEN
VAC	VACUUM
	DIRECTION OF FLOW IN PIPE
	PIPE UP
	PIPE DOWN
	BALL VALVE
	CHECK VALVE, HORIZONTAL SWING
	CAPPED LINE
	NEW POINT OF CONNECTION TO EXISTING
	POINT OF REMOVAL FOR DEMOLITION
	HOSE BIBB
	FLOOR DRAIN
	FLOOR SINK
	FLOOR CLEANOUT
	2-WAY EXTERIOR CLEANOUT
	WALL CLEANOUT
	SHOCK ABSORBER

IE - PLUMBING SHEET LIST

Sheet Number	Sheet Name	Project Issue Date	Project Status	Current Revision	Current Revision Date	Current Revision Description	Sheet Discipline
P0.1	PLUMBING LEGEND, NOTES & ABBREVIATIONS	06-30-2025	Bid Set				PLUMBING
P0.2	PLUMBING SCHEDULE	06-30-2025	Bid Set				PLUMBING
P3.1	FLOOR PLAN - PLUMBING	06-30-2025	Bid Set				PLUMBING
P4.1	PLUMBING RISER	06-30-2025	Bid Set				PLUMBING
P6.0	PLUMBING DETAILS	06-30-2025	Bid Set				PLUMBING

Grand total: 5

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OWNER / PROJECT:

WATER TREATMENT PLANT NO. 3

H.S.P.S BUILDING

HOWEY-IN-THE-HILLS, FLORIDA

PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

REVISIONS:

MARK	DATE	DISCRIPTION

ISSUE DATE: FEBRUARY 24, 2025

PLUMBING LEGEND, NOTES & ABBREVIATIONS

P0.1

Bid Set

DATE: 6/30/2025 9:36:07 AM

PLUMBING FIXTURE SCHEDULE

FIXTURE NO.	FIXTURE TYPE	WASTE CONN.	TRAP	VENT CONN.	C.W. CONN.	H.W. CONN.	MANUFACTURER / MODEL #	DESCRIPTION
WC-1	WATER CLOSET ADA TANK	3"	INTEG.	2"	1/2"	-	AMERICAN STANDARD 215AA004.020	CADET PRO 16 1/2" RIM HEIGHT, EVERCLEAN SURFACE, TANK TYPE, 1.6GPF, SIPHON JET, 12" ROUGH IN, FLOOR MOUNTED ELONGATED BOWL 5YR WARRANTY, BOLT CAPS. BRASSCRAFT ANGLE STOP SUPPLY & ESCUTCHEON. "BEMIS" SOLID PLASTIC, OPEN FRONT ELONGATED SEAT. FLUSH HANDLE TO BE ON OPEN SIDE OF TOILET CLEAR SPACE.
L-1	LAVATORY ADA 2 HANDLE FAUCET	1-1/2"	1-1/4"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD 0355012.020	LUCERNE 20X18 WALL HUNG, VITREOUS CHINA LAVATORY , INTEGRAL BACKSPLASH, AM STD 7075205.002 4" CENTERSET FAUCET, 2 METAL LEVER HANDLES. GRID STRAINER WITH TAILPIECE, C.P. BRASS P-TRAP WITH WALL ARM & ESCUTCHEONS. "BRASSCRAFT" ANGLE VALVE SUPPLY RISERS W/LOOSE KEY STOPS. INSULATE P-TRAP AND SUPPLIES WITH "TRUEBRO" INSULATION KIT. PROVIDE MANUFACTURER RECOMMENDED CARRIER.
S-1	SINK	2"	1-1/2"	1-1/2"	1/2"	1/2"	ELKAY LRAD172055SC	17"x20"x5-1/2" SINGLE BOWL DROP-IN SINK, 18 GAUGE TYPE 304SS, ELKAY SINGLE LEVER FAUCET LK406GN04T4SC. PROVIDE ANGLE STOPS, SUPPLIES & ESCUTCHEONS. LK500 DRAIN, P-TRAP, ANGLE VALVES W/LOOSE KEY STOPS, SUPPLIES & ESCUTCHEONS.
MS-1	MOP SINK	3"	3"	1-1/2"	3/4"	3/4"	FIAT MSB 2424	24"x24"x10" HIGH MOLDED STONE RECEPTOR, W/ FIAT #830-AA FAUCET MOUNTED IN WALL ABOVE FIXTURE. COMPLETE WITH VACUUM BREAKER, HOSE THREAD OUTLET & BUCKET HOOK, INTEGRAL STOPS AND MOUNTING BRACKET. PROVIDE COMBINATION STAINLESS STEEL DOME STRAINER AND LINT BASKET, 3"CAULKED OUTLET, CAULK WITH SILICONE SEALANT AS REQUIRED.
SH-1	SHOWER ADA ROLL-IN	2"	2"	1-1/2"	1/2"	1/2"	SPEAKMAN SM-3040-IS MAAX OPS-6036-RS	SPEAKMAN SM-3040-IS PRESSURE BALANCE VALVE WITH A SINGLE LEVER HANDLE, ANTI SCALD PRESSURE BALANCED VALVE WITH INTEGRAL DIVERTER ADJUSTABLE TEMPERATURE LIMIT STOPS, INDEPENDENT CENTER SLEEVE UP TO 1 IN. OF ROUGHING IN VARIATION, TEMPERATURE LIMIT STOPS AND CERAMIC TEMPERATURE REGULATING MODULE, METAL LEVER HANDLE FOR EASY OPERATION. INCLUDES A VS-1000-AF HAND SHOWER WITH SUPPLY ELL, VACUUM BREAKER & MOUNTING POST AND A VS-123 30 IN SLIDE BAR. CERTIFIED TO MEET ASSE 1016 AND ASME A112.18.1/CSA B125.1 STANDARDS. 62-1/2" x 38-1/4" AKER OPS-6036-RS ONE-PIECE ROLL-IN SHOWER, WITH GRAB BAR AND SEAT. REINFORCED TO FHA REQUIREMENTS.
EWC-1	ELECTRIC WATER COOLER DUAL LEVEL BOTTLE FILLER	2"	1-1/2"	1-1/2"	1/2"	-	ELKAY LZSTL8WSLP	ELKAY ENHANCED ezH2O BOTTLE FILLING STATION, & VERSATILE BI-LEVEL ADA COOLER, FILTERED 8 GPH LIGHT GRAY, 120V, 60 CYCLE, 1 PH. W/ OVERLOAD PROTECTION 1-1/2" P-TRAP STOP VALVE, CORD & PLUG. PROVIDE MANUFACTURER RECOMMENDED CARRIER.
FD-1	FLOOR DRAIN STANDARD ROUND	SEE PLAN	-	-	1/2"	-	WATTS FD100-SA-7	EPOXY-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND 5" TYPE "A" NICKEL BRONZE STRAINER, TRAP GUARD.
FCO	FINISHED FLOOR CLEANOUT	SEE PLAN	-	-	-	-	ZURN Z1400	"LEVEL-TROL" ADJUSTABLE FINISHED FLOOR CLEANOUT, DURA-COATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREADED PLUG, AND ROUND SCORIATED SECURED TOP. ADJUST TO FINISHED FLOOR (COORDINATE TOP FINISH WITH ARCHITECT).
ECO	EXTERIOR CLEANOUT	SEE PLAN	-	-	-	-	ZURN Z-1400-HD	HEAVY TRAFFIC AREA EXTERIOR CLEANOUT WITH ACCESS COVER AND TWO-WAY FITTING. SEE PLANS FOR PIPE SIZE CONNECTION.

ELECTRIC WATER HEATER SCHEDULE

UNIT #	LOCATION	GALLONS	WATTS NON-SIMULTANEOUS	FIRST HOUR RATE	VOLTAGE/ PHASE	DIMENSIONS	APPROX. SHIP WT.	MANUFACTURER		NOTES	ENERGY FACTOR
								MFG	MODEL #		
EWH-1	STORAGE	38	4.5	50	208V - 1	26" H x 33-1/2" D	118	A.O. SMITH	ENL-40	SEE BELOW	.89

NOTES:

1. PROVIDE WATER HEATER WITH PROPERLY SIZED EXPANSION TANK AND ALL GAUGES, HEAT TRAPS, THERMOSTATS, THERMO EXPANSION VALVE, TEMPERATURE AND PRESSURE RELIEF VALVE AND SHUT-OFF VALVES AS REQUIRED BY LOCAL CODES AND MFG'S RECOMMENDATIONS.

2. PROVIDE MINIMUM 2-INCH DEEP 24 GAUGE GALVANIZED SHEET METAL OR 60 MIL IMPACT-RESISTANT PLASTIC DRAIN PAN.

3. WATER HEATERS, AS SPECIFIED, COMPLY WITH FLORIDA BUILDING CODE. CONTRACTOR SHALL INSTALL PER MANUFACTURER'S SPECIFICATIONS.

RECIRCULATING PUMP SCHEDULE

UNIT #	TYPE	GPM	HEAD FT. H20	CONN. SIZE		MOTOR DATA				SELECTION BASED ON:		REMARKS
				INLET	OUTLET	WATTS	RPM	VOLT	PH.	MANUFACTURER	MODEL	
HWRP-1	IN-LINE	5	15	3/4"	3/4"	92	2940	120	1PH	BELL & GOSSETT	NBF-18S	PROVIDE AQUASTAT

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H.S.P.S BUILDING

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PROFESSIONAL SEAL:

Eric S Cepull PE 64750

PROJECT NO: PSA 2024-07.00

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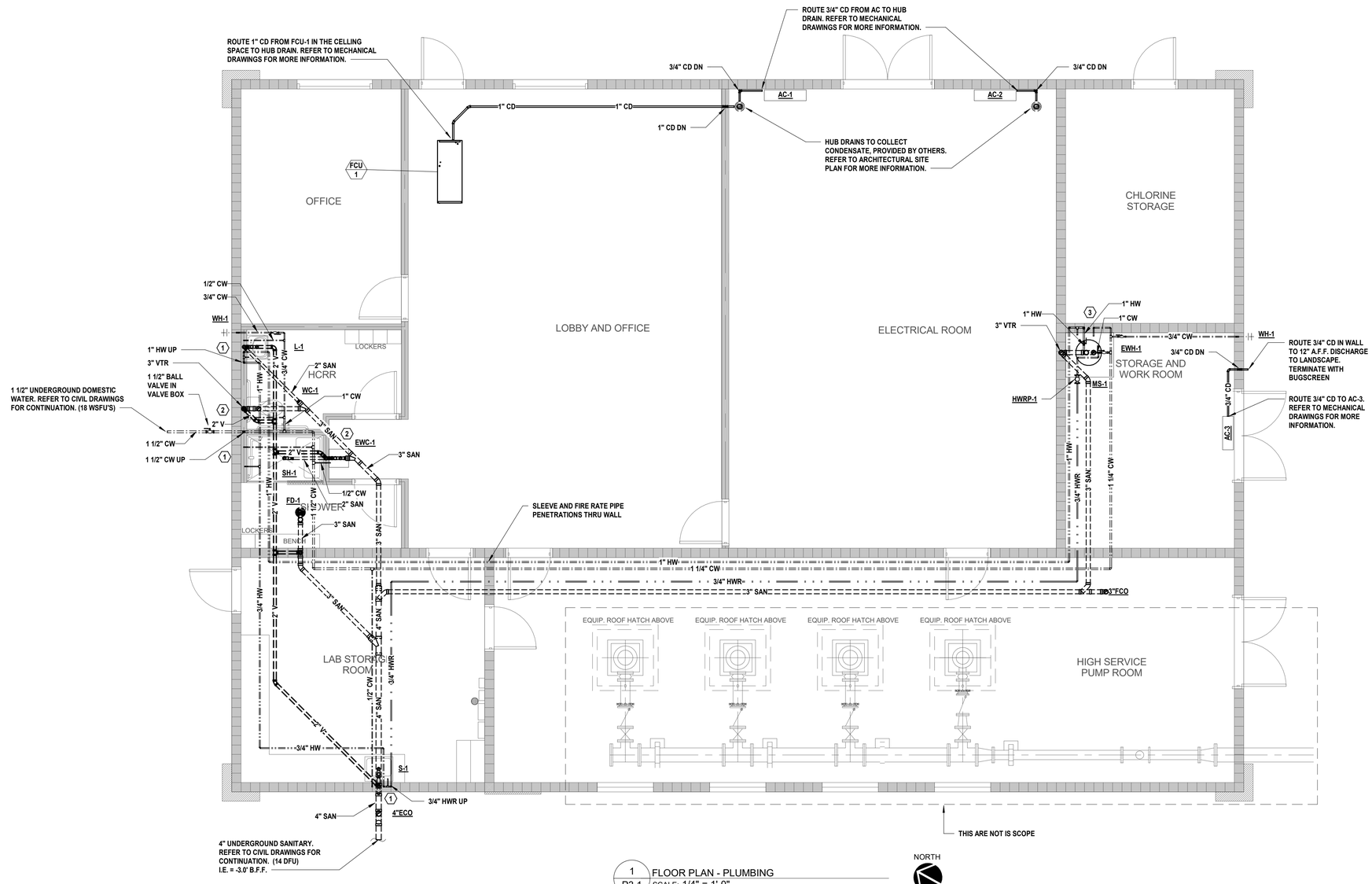
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PLUMBING SCHEDULE

P0.2

REFERENCE NOTES

1. 1/2" CW & HW DN TO FIXTURE.
2. 1/2" CW DN TO FIXTURE.
3. 3/4" CW & HW DN TO FIXTURE.



1 / P3.1 FLOOR PLAN - PLUMBING
SCALE: 1/4" = 1'-0"

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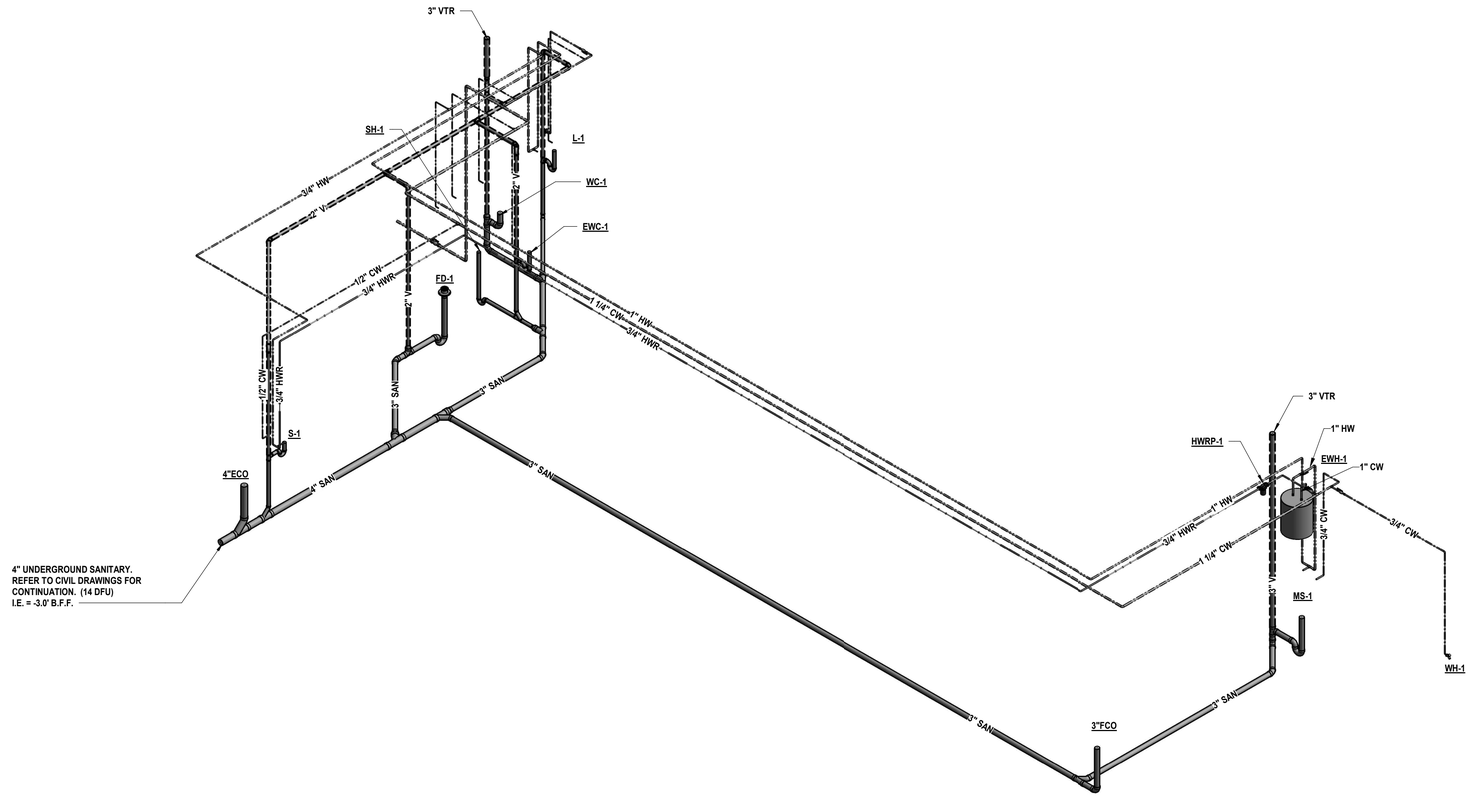
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FLOOR PLAN - PLUMBING

P3.1



1 / P4.1 PLUMBING RISER
SCALE: NTS

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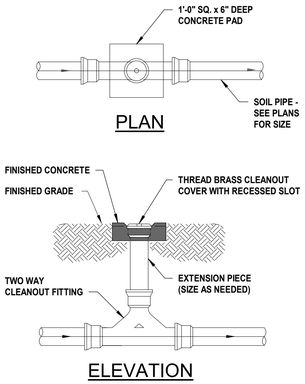
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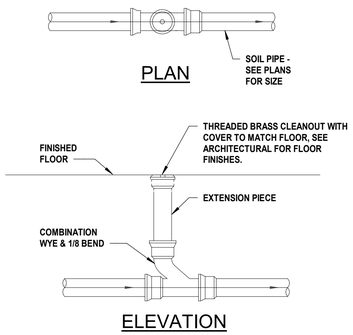
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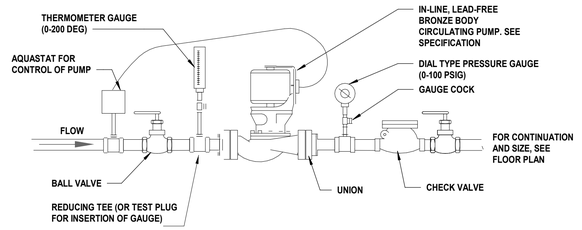
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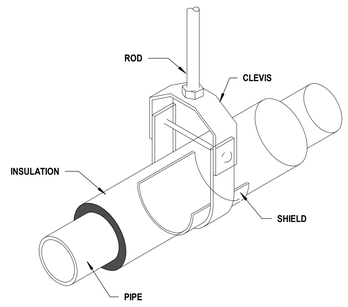
1 P6.0 EXTERIOR CLEANOUT DETAIL
SCALE: NTS



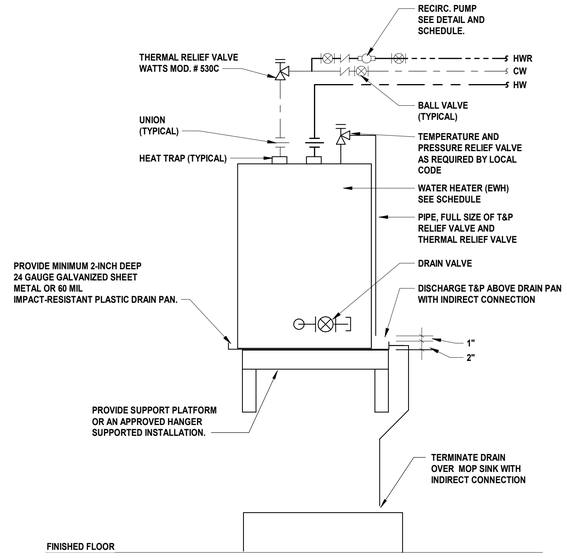
2 P6.0 FLOOR CLEANOUT DETAIL
SCALE: NTS



3 P6.0 HOT WATER RECIRCULATION PUMP DETAIL
SCALE: NTS



4 P6.0 PIPE SUPPORT DETAIL
SCALE: NTS



5 P6.0 LOWBOY ELECTRIC WATER HEATER WITH RECIRCULATING PUMP ABOVE MOP SINK DETAIL
SCALE: NTS

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PLUMBING DETAILS

P6.0

PLAN SYMBOLS

- CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING
- CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
- CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
- FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
- CONCRETE ENCASED DUCTBANK.
- WALL MOUNTED LED LIGHTING FIXTURE.
- LED LIGHTING FIXTURE, CEILING MOUNTED.
- EXTERIOR LED LUMINAIRE AND MOUNTING STANDARD.
- EXISTING EXTERIOR LIGHTING.
- EMERGENCY BATTERY PACK LIGHTING FIXTURE.
- (J) JUNCTION BOX SURFACE MOUNTED UNLESS INDICATED OTHERWISE.
- J JUNCTION BOX PER NEMA 4X 316 SSS, FLUSH MOUNTED UNLESS INDICATED OTHERWISE.
- JB MOTOR JUNCTION BOX, NEMA 4X 316 SS JUNCTION BOX, 12" X 12" X 6" MINIMUM SIZE ENLARGE IF REQUIRED PER N.E.C.
- FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.
- FLUSH OR SURFACE MOUNTED POWER PANELBOARD.
- DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.
- LIQUID FILLED TRANSFORMER, KVA RATING AS SHOWN
- FLUSH MOUNTED RECEPTACLE WITH USB OUTLET
- 20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
- 20A, 125V, 3W GFI DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 6" ABOVE FINISHED COUNTER AS REQUIRED (AFC)
- 20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED, 18" AFF.
- SURFACE MOUNTED GROUND FAULT DUPLEX WEATHERPROOF RECEPTACLE COVER RATED NEMA 4 WHILE IN USE, 20A, 125V, 3W – MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.
- 20A, 125, 3W DOUBLE DUPLEX RECEPTACLE IN FLUSH OUTLET BOX.
- FLUSH MOUNTED GROUND FAULT WEATHERPROOF DUPLEX RECEPTACLE 20A, 125V, 3W –MOUNTED 48" ABOVE FINISHED FLOOR.
- FLUSH MOUNTED GFI WP DUPLEX RECEPTACLE WITH COVER RATED NEMA 4 WHILE IN USE.
- NON–FUSED DISCONNECT RACK MOUNTED. NEMA 4X 316 SS UNLESS OTHERWISE NOTED
- OFF REMOTE/NON–FUSED DISCONNECT RACK MOUNTED WITH JUNCTION BOX MOUNTED BELOW OFF REMOTE. NEMA 4X 316 SS, UNLESS OTHERWISE NOTED.
- S SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).
- S_1 SINGLE POLE SWITCH, SURFACE MOUNTED.
- S_3 THREE–WAY SWITCH IN FLUSH OUTLET BOX.
- S_4 FOUR–WAY SWITCH IN FLUSH OUTLET BOX.
- S_M MOTOR DUTY, SINGLE PHASE DISCONNECT, NEMA 4X STAINLESS STEEL
- NON–FUSED DISCONNECT, 30A,3P NEMA 4X 316 SS UNLESS OTHERWISE INDICATED.
- (10) ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
- (F) FUSED DISCONNECT SWITCH(30/20: 30=SWITCH RATING, 20=FUSE RATING) 3 POLE–UNLESS NOTED OTHERWISE.
- (M) MOTORIZED VALVE
- COMBINATION MOTOR STARTER, DISCONNECT SWITCH
- STARTER
- VFD VARIABLE FREQUENCY DRIVE
- (T) THERMOSTAT
- (H) HUMIDITY CONTROLLER
- ELECTRIC HEATER
- FLUSH OUTLET BOX AND COVER PLATE SUITABLE FOR DATA DEVICE CONECTION 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
- DUPLEX ETHERNET CABLE CONNECTOR FOR HMI DATA, 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

PLAN SYMBOLS (CONTINUED)

- C CONTROL PULLBOX
- P POWER MANHOLE
- (FS) FLOW SWITCH
- (FE) FLOW ELEMENT
- (LE) LEVEL ELEMENT
- (LS) LIMIT SWITCH
- (PS) PRESSURE SWITCH
- (SV) SOLENOID VALVE
- (SF) SEAL FAIL
- (LLS) LIQUID LEVEL SWITCH
- (VS) VIBRATION SWITCH
- AIT ANALYSIS INDICATING TRANSMITTER
- FIT FLOW INDICATING TRANSMITTER
- LIT LEVEL INDICATING TRANSMITTER
- (TS) TEMPERATURE SWITCH
- (XS) TORQUE SWITCH
- (WE) WEIGHT INDICATOR
- (SH) SPACE HEATER
- (AE) ANALYTICAL ELEMENT
- (O/R) OFF REMOTE

SINGLE LINE DIAGRAM SYMBOLS

- COMBINATION MOTOR STARTER
- (ES) EMERGENCY STOP
- (GFCI) GROUND FAULT CIRCUIT INTERRUPTER
- FUSE
- CAPACITOR
- MOLDED CASE CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3P UNLESS OTHERWISE NOTED.
- MOTOR STARTER WITH HOA.
- (10) ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
- SERVICE OR EQUIPMENT GROUND.
- NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
- CROUSE HINDS EYSR FITTING w/CHICO SPEED SEAL COMPOUND
- CROUSE HINDS EYS FITTING w/ CHICO SPEED SEAL COMPOUND
- LIGHTING PANELBOARD
- POWER PANELBOARD.
- CURRENT TRANSFORMERS
- FPP FIBER PATCH PANEL
- JB NEMA 4X 316 STAINLESS STEEL JUNCTION BOX.
- ST SHUNT TRIP
- SPD SURGE PROTECTION DEVICE
- ALT ALTERNATOR

CONTROL DIAGRAM SYMBOLS

- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- LIMIT SWITCH, NORMALLY OPEN
- LIMIT SWITCH, NORMALLY CLOSED
- PRESSURE SWITCH, NORMALLY OPEN
- PRESSURE SWITCH, NORMALLY CLOSED
- FLOAT SWITCH, NORMALLY OPEN
- FLOAT SWITCH, NORMALLY CLOSED
- FLOW SWITCH, NORMALLY OPEN
- FLOW SWITCH, NORMALLY CLOSED
- TEMPERATURE SWITCH, NORMALLY OPEN
- TEMPERATURE SWITCH, NORMALLY CLOSED
- NORMALLY OPEN, TIMED TO CLOSE CONTACT
- NORMALLY CLOSED, TIMED TO OPEN CONTACT
- NORMALLY CLOSED, TIMED TO CLOSE CONTACT
- NORMALLY OPEN, TIMED TO OPEN CONTACT
- (LS) LIMIT SWITCH
- (FS) FLOW SWITCH
- (PS) PRESSURE SWITCH
- (SV) SOLENOID VALVE
- (LLS) LIQUID LEVEL SWITCH
- (VS) VIBRATION SWITCH
- (SD) SMOKE DETECTOR
- (AR) ALARM RELAY
- (AT) ALARM TIMER
- (CR) CONTROL RELAY
- (M) MOTOR STARTER
- (TR) TIMING RELAY
- (XS) TORQUE SWITCH
- (A) ALARM INDICATING LIGHT, RED
- (R) RUN INDICATING LIGHT, GREEN
- MOMENTARY CONTACT PUSHBUTTON
- MOMENTARY BREAK PUSHBUTTON OR RESET
- K KEYED SWITCH
- MAINTAINED CONTACT ON–OFF SWITCH
- START/STOP(S/S) CONTROL SWITCH MAINTAINED CONTACT
- THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH
- FUSE
- MOLDED CASE CIRCUIT BREAKER
- CONTROL POWER TRANSFORMER
- REMOTE TERMINAL BLOCK POINT
- ETC ELECTRONIC TIME CLOCK
- LC LIGHTING CONTACTOR

ABBREVIATIONS

A	AMPERES
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AHF	ACTIVE HARMONIC FILTER
AIC	AMPS INTERRUPTING CURRENT
BKR	BREAKER
BLDG	BUILDING
CAP	CHLORINE ALARM PANEL
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CU	CONDENSING UNIT
CT	CURRENT TRANSFORMER
DEF	DUKE ENERGY OF FLORIDA
EDP	EMERGENCY DISTRIBUTION PANEL
EF	EXHAUST FAN
EFF	EFFLUENT
ELEC	ELECTRICAL
EM	EMERGENCY
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
FPP	FIBER PATCH PANEL
FTC	FLOAT CABLE TERMINATION CABINET
FVNR	FULL VOLTAGE NON–REVERSING
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GIP	GENERATOR INTERFACE PANEL
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GST	GROUND STORAGE TANK
HOA	HAND–OFF–AUTOMATIC
HOR	HAND–OFF–REMOTE
HP	HORSEPOWER
HSP	HIGH SERVICE PUMP
HSPS	HIGH SERVICE PUMP STATION
JB	JUNCTION BOX
KVA	KILO VOLT–AMPERES
KW	KILOWATT
LCP	LOCAL CONTROL PANEL
LP	LOOP NUMBER
LTG	LIGHTING
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NEM	NETWORK ETHERNET MODULE
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
P	POLE
PCP	PROCESS CONTROL PANEL
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	PHASE MONITOR
RCP	REMOTE CONTROL PANEL
RTU	REMOTE TELEMETRY UNIT
SF	SUPPLY FAN
SH	SHIELDED
SS	STAINLESS STEEL
SSS	SOLID STATE STARTER
STR	STARTER
SW	SWITCH
SWBD	SWITCHBOARD
TC	TERMINATION CABINET
TYP	TYPICAL
UGE	UNDERGROUND ELETRIC
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
VAP	VACUUM ALARM PANEL
VFD	VARIABLE FREQUENCY DEVICE
W	WATT
W/	WITH
WP	WEATHERPROOF
WR	WEATHER RESISTANT
WTP	WATER TREATMENT PLANT
XFMR	TRANSFORMER
ø	PHASE

NOTES

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.
2. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2020 NATIONAL ELECTRICAL CODE, THE 2023 FLORIDA BUILDING CODE, AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
4. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING, UNLESS OTHERWISE NOTED.
5. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
6. ALL MATERIALS SHALL BE NEW AND SHALL BE "LISTED" WHERE APPLICABLE.
7. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.
8. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM DATE OF ACCEPTANCE.
9. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.
11. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/ TYPE WRITTEN DIRECTORIES (NEW & EXISTING).
12. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
13. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL DRAWINGS & THE APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
14. NON–SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES AND WORK. *SHADED AND SLANTED* TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES.
15. ALL CONTROL PANELS SHALL BE "LISTED".
16. ALL EMPTY CONDUITS SHALL BE INSTALLED WITH PULL STRING.

BID SET

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C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

ELECTRICAL NOTES, SYMBOLS, & ABBREVIATIONS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

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DRAWN BY:	SJL
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JOB NO.:	055783.001
FILE NAME:	-

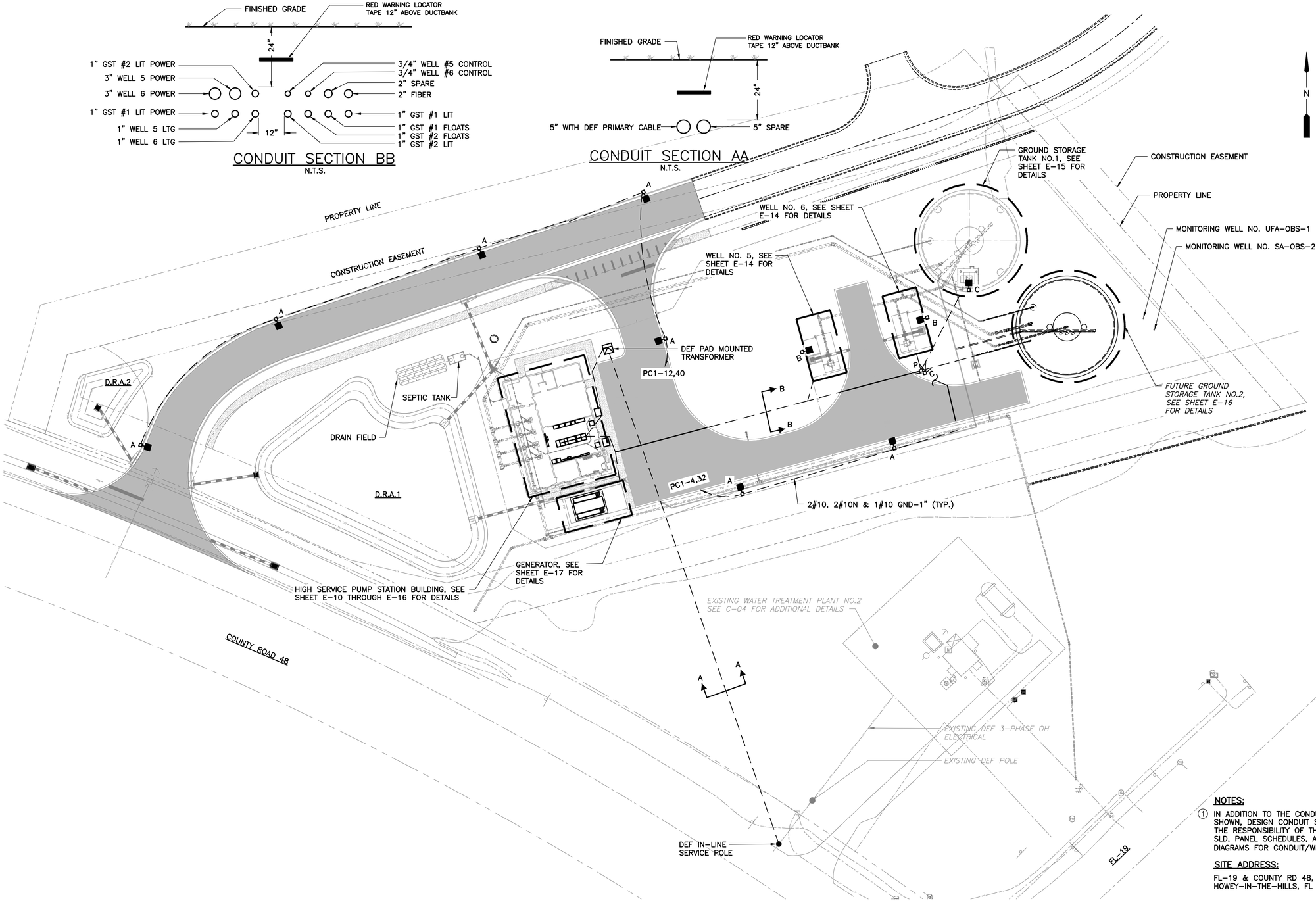
SHEET E-01

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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CONDUIT SECTION BB
N.T.S.

CONDUIT SECTION AA
N.T.S.



ELECTRICAL SITE PLAN
SCALE: 1"=30'-0"

30 15 0 30'

NOTES:

1. IN ADDITION TO THE CONDUIT SECTIONS SHOWN, DESIGN CONDUIT SECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEE SLD, PANEL SCHEDULES, AND CONTROL RISER DIAGRAMS FOR CONDUIT/WIRE REQUIREMENTS.

SITE ADDRESS:

FL-19 & COUNTY RD 48,
HOWEY-IN-THE-HILLS, FL 34737

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HOWEY-IN-THE-HILLS, FLORIDA
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ELECTRICAL SITE PLAN

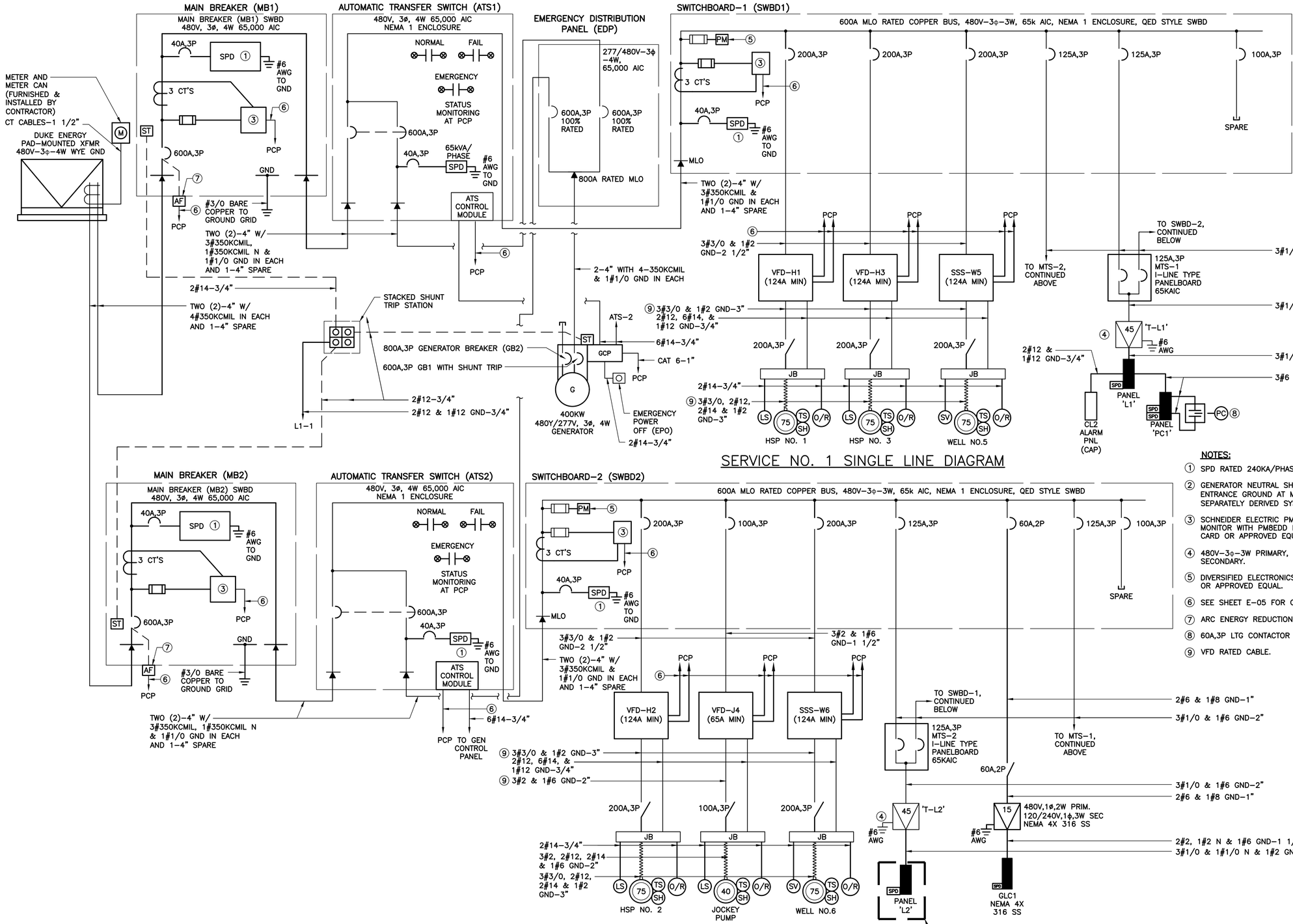
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SHEET E-02

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SERVICE NO. 1 SINGLE LINE DIAGRAM

SERVICE NO. 2 SINGLE LINE DIAGRAM

NOTES:

1. SPD RATED 240KA/PHASE
2. GENERATOR NEUTRAL SHALL BE BONDED TO SERVICE ENTRANCE GROUND AT MAIN BREAKER. (NOT A SEPARATELY DERIVED SYSTEM).
3. SCHNEIDER ELECTRIC PM5500 SERIES POWER LOGIC MONITOR WITH PM8EDD ETHERNET COMMUNICATIONS CARD OR APPROVED EQUAL.
4. 480V-3ϕ-3W PRIMARY, 120/208V-3ϕ-4W SECONDARY.
5. DIVERSIFIED ELECTRONICS SLE SERIES PHASE MONITOR OR APPROVED EQUAL.
6. SEE SHEET E-05 FOR CONDUIT/WIRE REQUIREMENTS.
7. ARC ENERGY REDUCTION MAINTENANCE SWITCH.
8. 60A,3P LTG CONTACTOR IN NEMA 1 ENCLOSURE.
9. VFD RATED CABLE.

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3
SINGLE LINE DIAGRAM

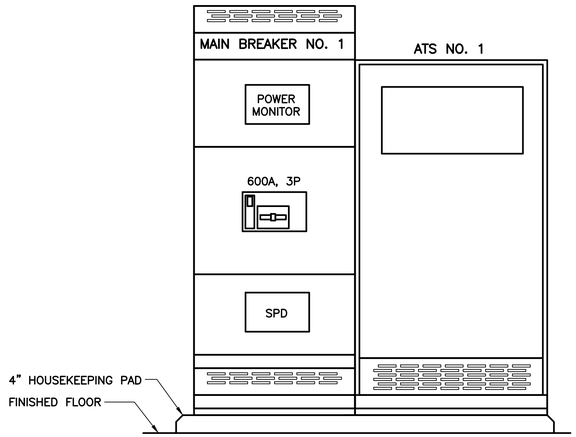
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SHEET E-03

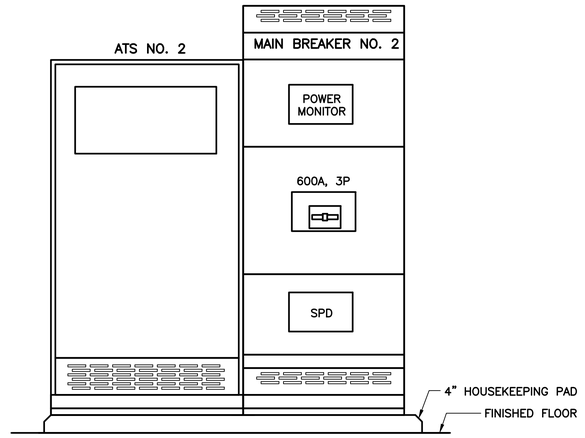
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SERVICE NO. 1 EQUIPMENT FRONT VIEW

N.T.S.



SERVICE NO. 2 EQUIPMENT FRONT VIEW

N.T.S.

SWBD1 LOAD TABULATION

480V, 3ø, 3W WYE

DESCRIPTION	LOAD		AMPACITY
①HSP NO. 1	1 @ 75	HP =	96.00 AMPS
①HSP NO. 3	1 @ 75	HP =	96.00 AMPS
①WELL NO. 5	1 @ 75	HP =	96.00 AMPS
45 KVA XFMR T-L1	1 @ 45	KVA =	54.00 AMPS
	CONNECTED LOAD	=	342.00 AMPS
②SERVICE ENTRANCE = 342.00 AMPS + (0.25)(96.00)		=	366.00 AMPS

NOTES:

① AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

SWBD2 LOAD TABULATION

480V, 3ø, 3W WYE

DESCRIPTION	LOAD		AMPACITY
①HSP NO. 2	1 @ 75	HP =	96.00 AMPS
①WELL NO. 6	1 @ 75	HP =	96.00 AMPS
①JOCKEY PUMP	1 @ 40	HP =	52.00 AMPS
45 KVA XFMR T-L2	1 @ 45	KVA =	54.00 AMPS
15 KVA XFMR T-GLC	1 @ 15	KVA =	18.00 AMPS
	CONNECTED LOAD	=	316.00 AMPS
②SERVICE ENTRANCE = 316.00 AMPS + (0.25)(96.00)		=	340.00 AMPS

NOTES:

① AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

LOAD TABULATIONS & EQUIPMENT FRONT VIEWS

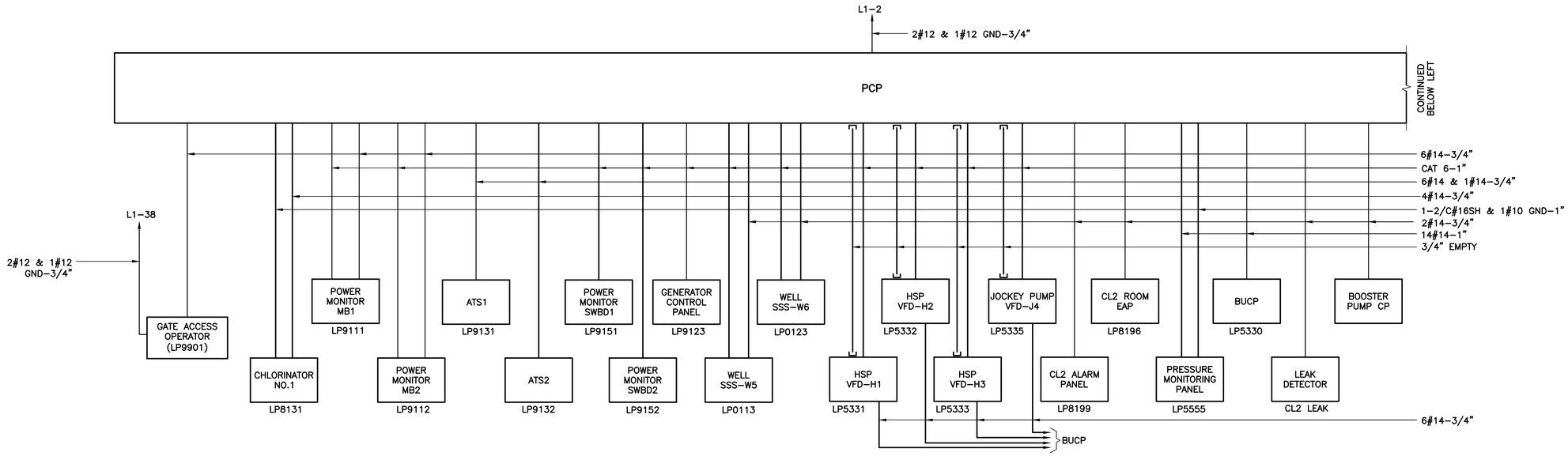
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SHEET E-04

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PCP CONTROL INTERFACE WIRING DIAGRAM

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3
CONTROL RISER DIAGRAM

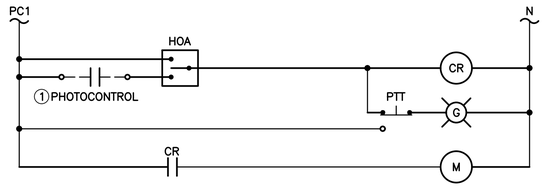
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SHEET E-05

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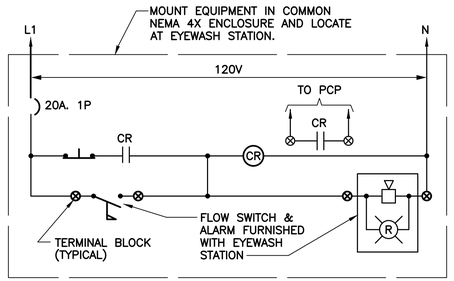


LIGHTING CONTACTOR DIAGRAM

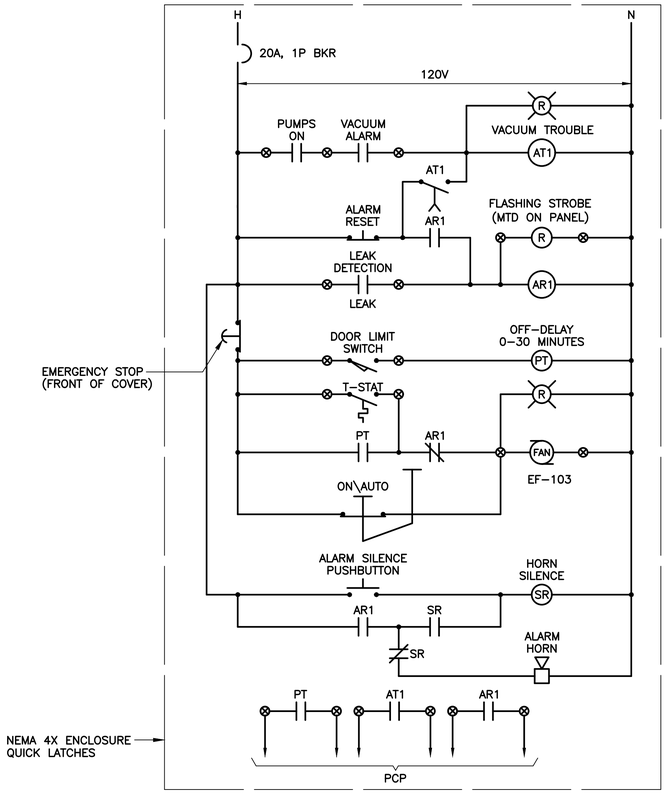
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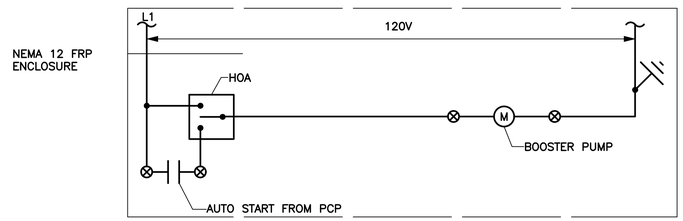
① CUSTOMER REMOTE DEVICE LOCAL CONTROL PANEL.



EYEWASH ALARM & RESET PANEL SCHEMATIC WIRING DIAGRAM (BY DIVISION 13 SYSTEM SUPPLIER)



CHLORINE ALARM PANEL ELEMENTARY WIRING DIAGRAM (BY DIVISION 13 SYSTEM SUPPLIER)



BOOSTER PUMP CP ELEMENTARY WIRING DIAGRAM (BY DIVISION 13 SYSTEM SUPPLIER)

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

CAP, BOOSTER PUMP, EAP & LIGHTING CONTACTOR DIAGRAMS

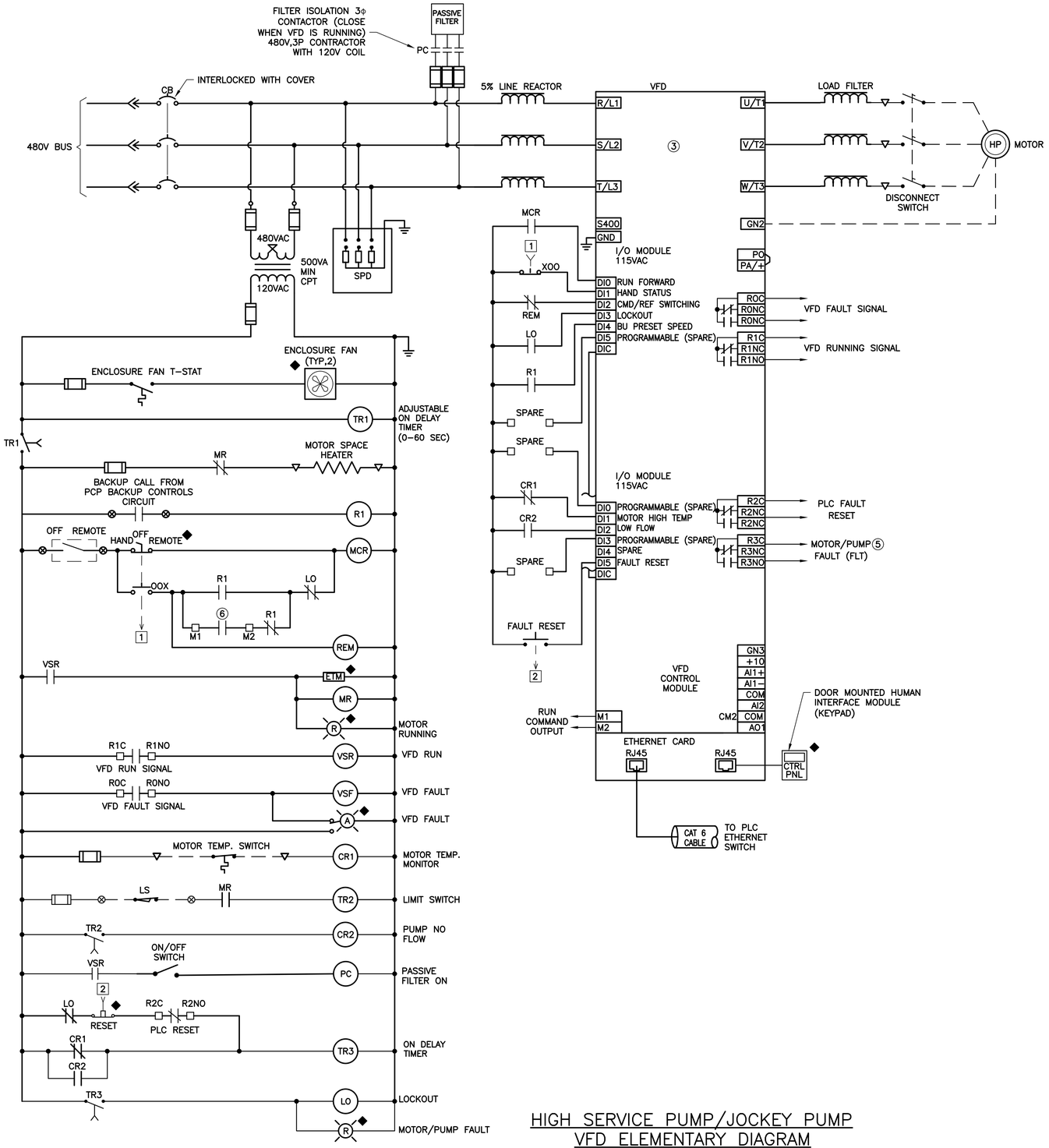
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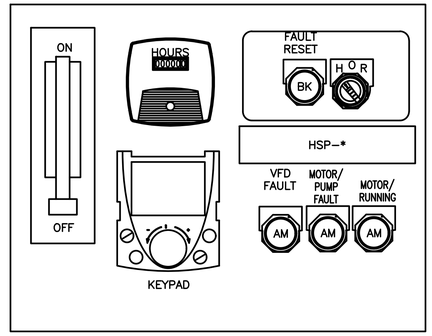
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HIGH SERVICE PUMP/JOCKEY PUMP
VFD ELEMENTARY DIAGRAM



VFD CONTROL PANEL FRONT VIEW

NOTES:

① ◆MOUNTED ON FRONT PANEL.

② KEY TO TERMINALS:
- ⊗FIELD CONNECTION
- □ FROM VFD
- ▽ MOTOR

③ PHASE LOSS IS INTERNAL TO THE VFD.

④ VFD PROGRAMMING SHALL INCLUDE, BUT SHALL NOT NECESSARILY BE LIMITED TO, THE FOLLOWING FUNCTIONS AND INTERLOCKS:

A. WITH THE HOR SWITCH IN THE "REMOTE" POSITION AND DRIVE RUNNING:

1. SPEED REFERENCE SHALL BE OBTAINED VIA ETHERNET COMMUNICATIONS.

B. WITH THE SWITCH IN THE "HAND" POSITION, DRIVE SHALL RUN AT THE PRESET MAXIMUM SPEED.

C. SHUT DOWN AND LOCK OUT DRIVE UPON MOTOR OVERLOAD AFTER AN OPERATOR ADJUSTABLE DELAY.

D. MANUAL RESET SHALL BE REQUIRED TO CLEAR ALL VFD FAULTS INCLUDING MOTOR OVERLOAD.

⑤ PROGRAM VFD TO GENERATE CONTACT CLOSURE WHEN MOTOR/PUMP FAULT COMMAND IS RECEIVED OVER ETHERNET COMMUNICATIONS.

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP/JOCKEY PUMP
VFD ELEMENTARY DIAGRAM

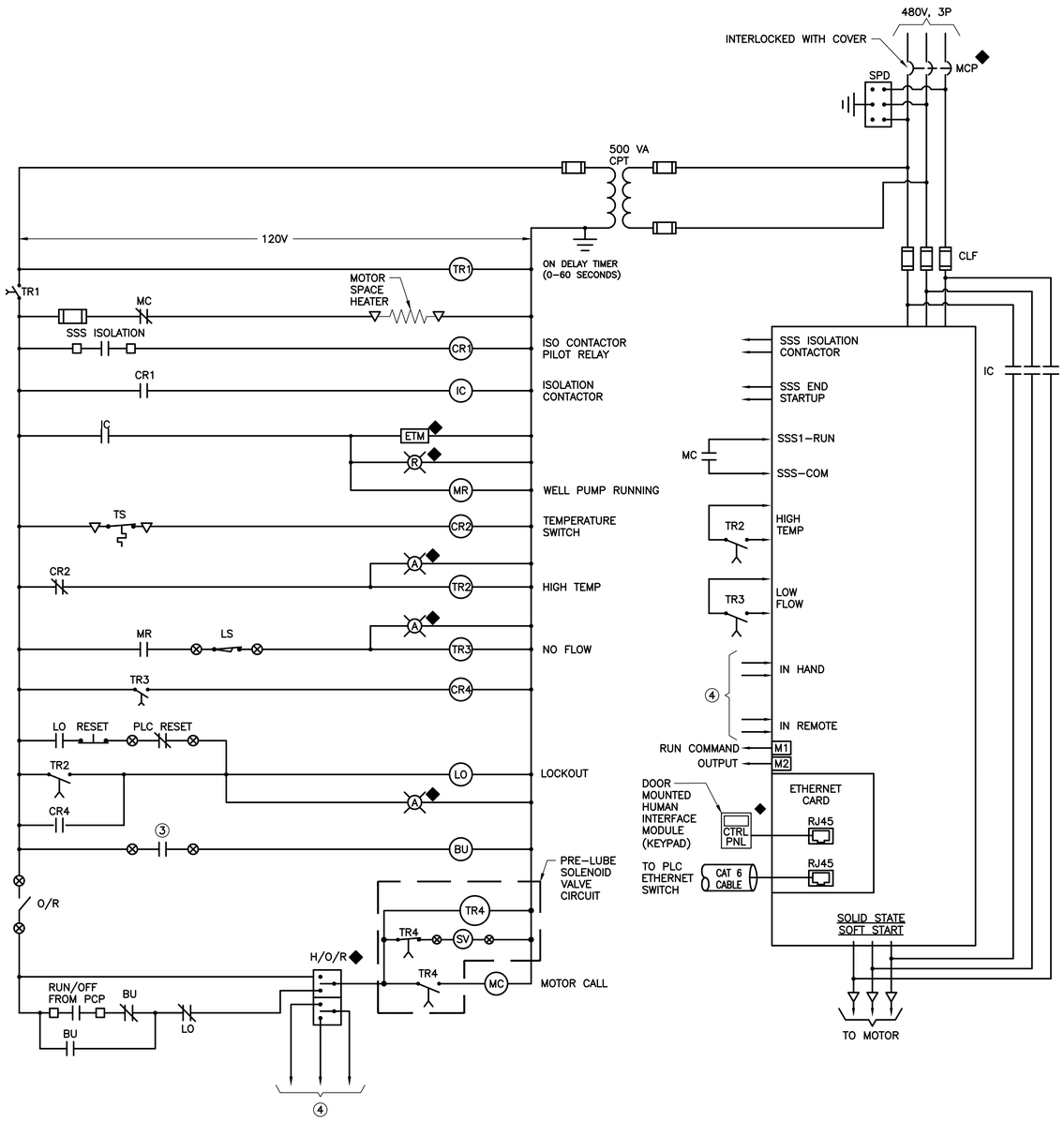
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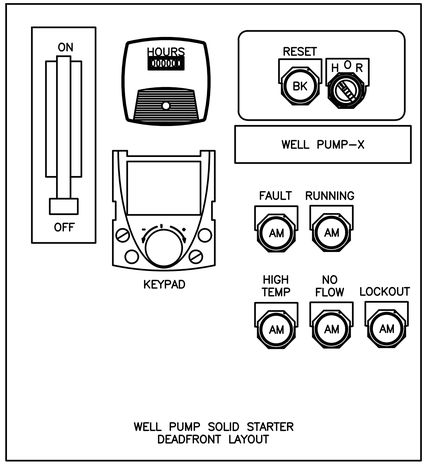
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SHEET E-07

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FRONT VIEW

NOTES:

1. ◆ MOUNTED ON FRONT PANEL.
2. KEY TO TERMINALS:
   - ⊗ REMOTE WIRING
   - ▽ MOTOR
   - □ FROM SSS
3. BACK UP CALL FROM PCP.
4. DI TO SSS.

WELL PUMP SOLID STATE STARTER ELEMENTARY DIAGRAM

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

SOLID STATE STARTER
ELEMENTARY DIAGRAMS

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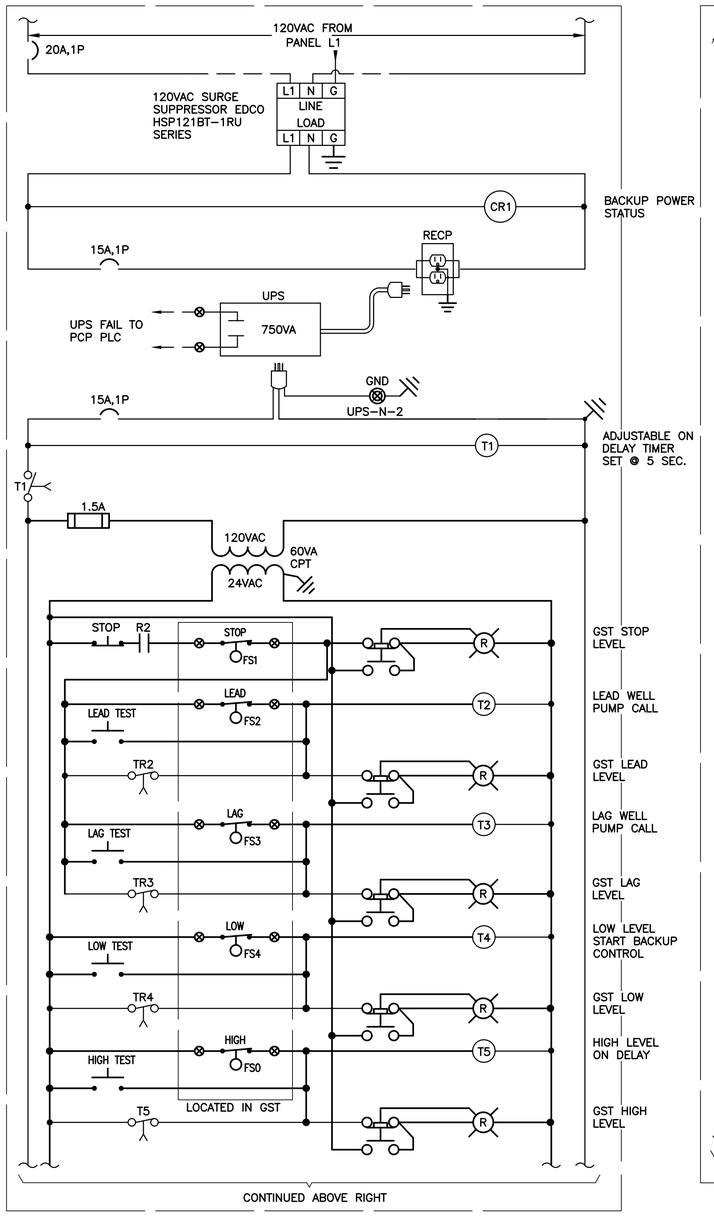
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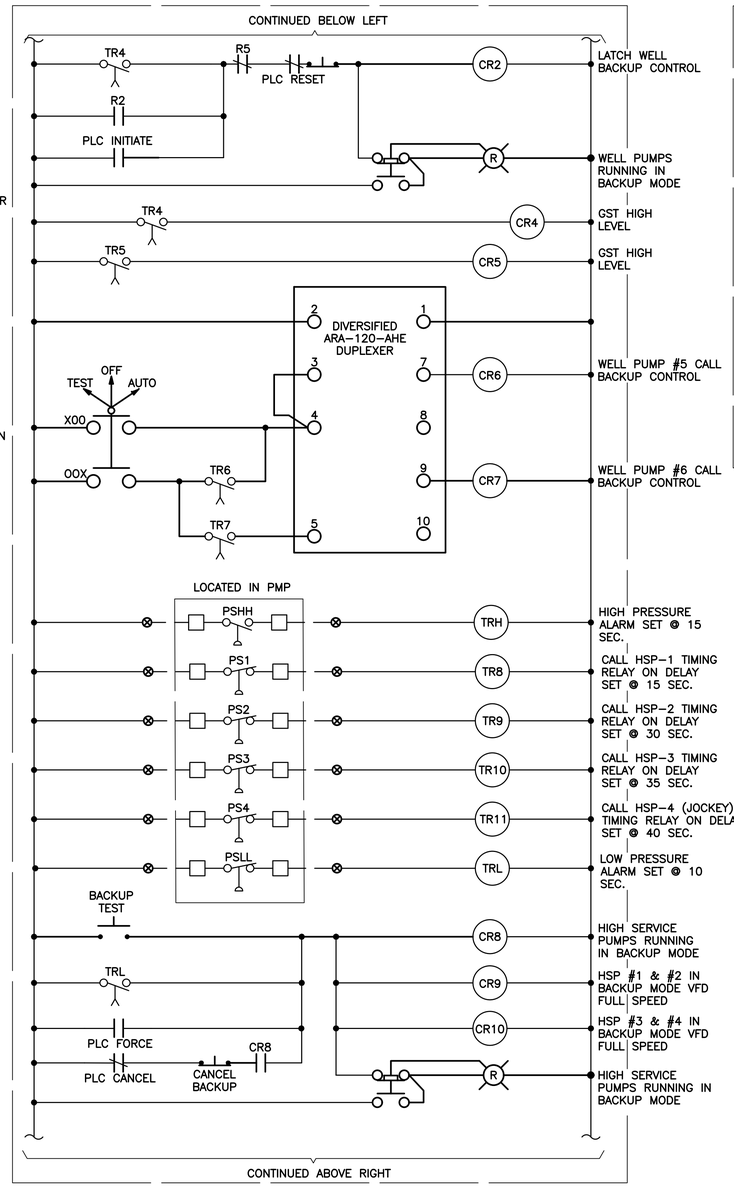
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Stephen E. Bailey, P.E.
Florida P.E. No. 42461

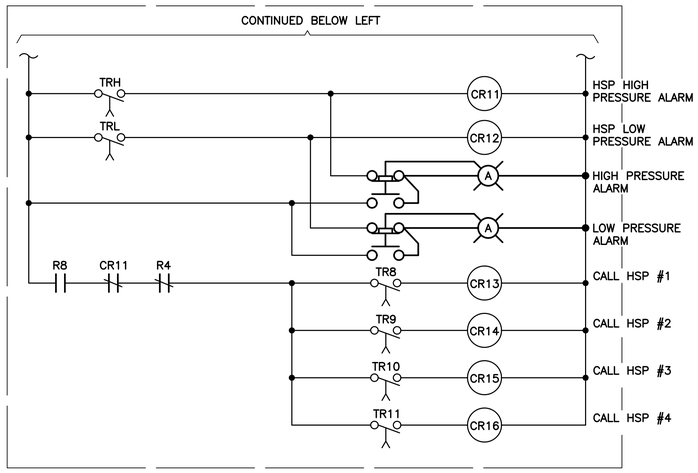
STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

BID SET

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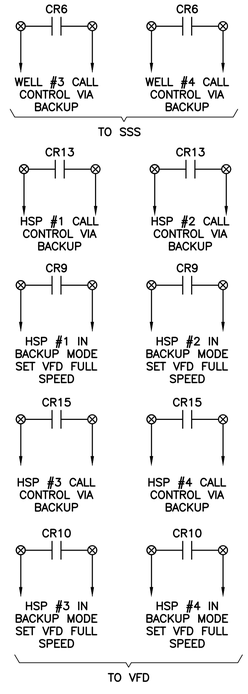


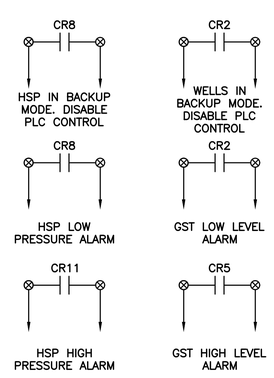




PMP

PRESSURE SWITCH SETTINGS (PSI) ②		
PRESSURE SWITCH DESIGNATION	CLOSE	OPEN
PSHH	85	80
PS1	45	65
PS2	40	60
PS3	35	58
PS4	30	55
PSLL	30	40





LEGEND

⊗ REMOTE TERMINAL BLOCK POINT.

NOTES:

① FOR ALL PUSH TO TEST SWITCHES (PTT).

② PRESSURE SWITCH SETTINGS TO BE CONFIRMED BY CONTRACTOR

BACK-UP CONTROL ELEMENTARY DIAGRAM LOCATED INTEGRAL TO PCP

DATE	REVISION
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HOWEY-IN-THE-HILLS, FLORIDA

WATER TREATMENT PLANT No. 3

BACKUP RELAY LOGIC

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

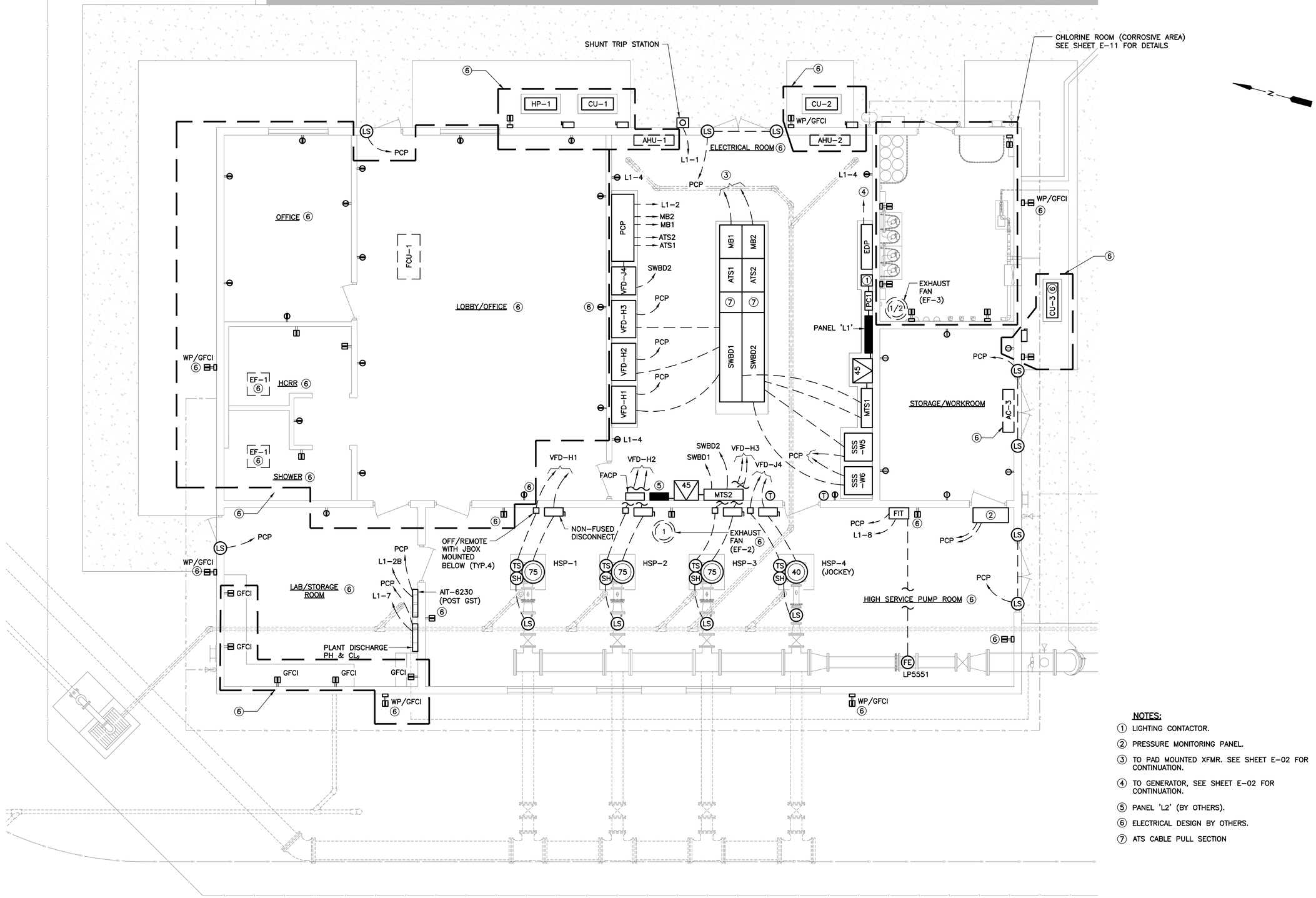
SHEET E-09

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

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STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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HIGH SERVICE PUMP STATION POWER PLAN

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

1 0 1 2 3 7'

NOTES:

1. LIGHTING CONTACTOR.
2. PRESSURE MONITORING PANEL.
3. TO PAD MOUNTED XFMR. SEE SHEET E-02 FOR CONTINUATION.
4. TO GENERATOR, SEE SHEET E-02 FOR CONTINUATION.
5. PANEL 'L2' (BY OTHERS).
6. ELECTRICAL DESIGN BY OTHERS.
7. ATS CABLE PULL SECTION

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REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP
STATION POWER PLAN

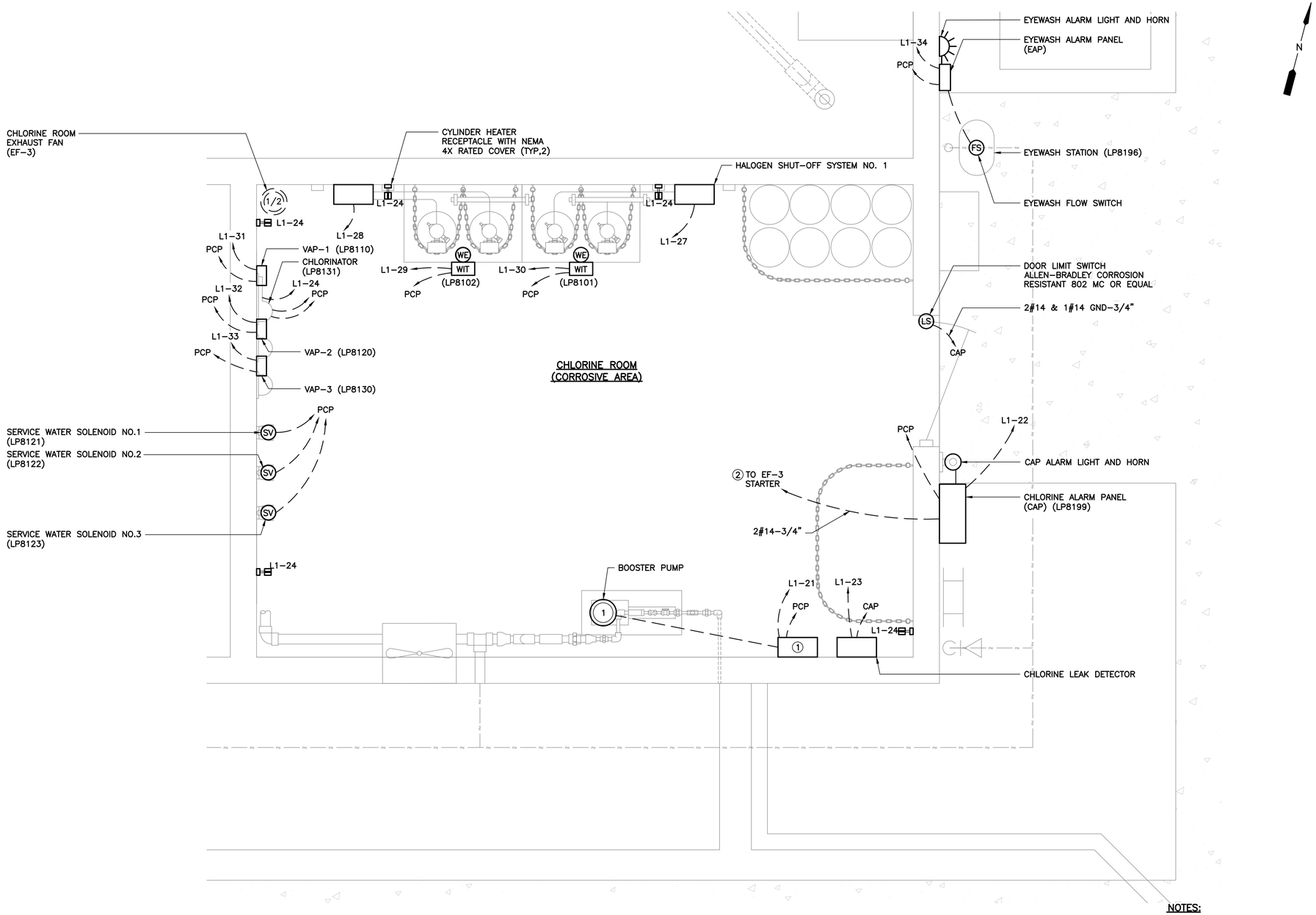
halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
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FILE NAME:	-

SHEET E-10

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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CHLORINE ROOM ELECTRICAL PLAN

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

6" 0 1 2'

NOTES:

1. BOOSTER PUMP CONTROL PANEL (NEMA 12 FRP ENCLOSURE).
2. LIGHTING DESIGN BY OTHERS

BID SET

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Florida P.E. No. 42461

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

CHLORINE ROOM ELECTRICAL PLAN

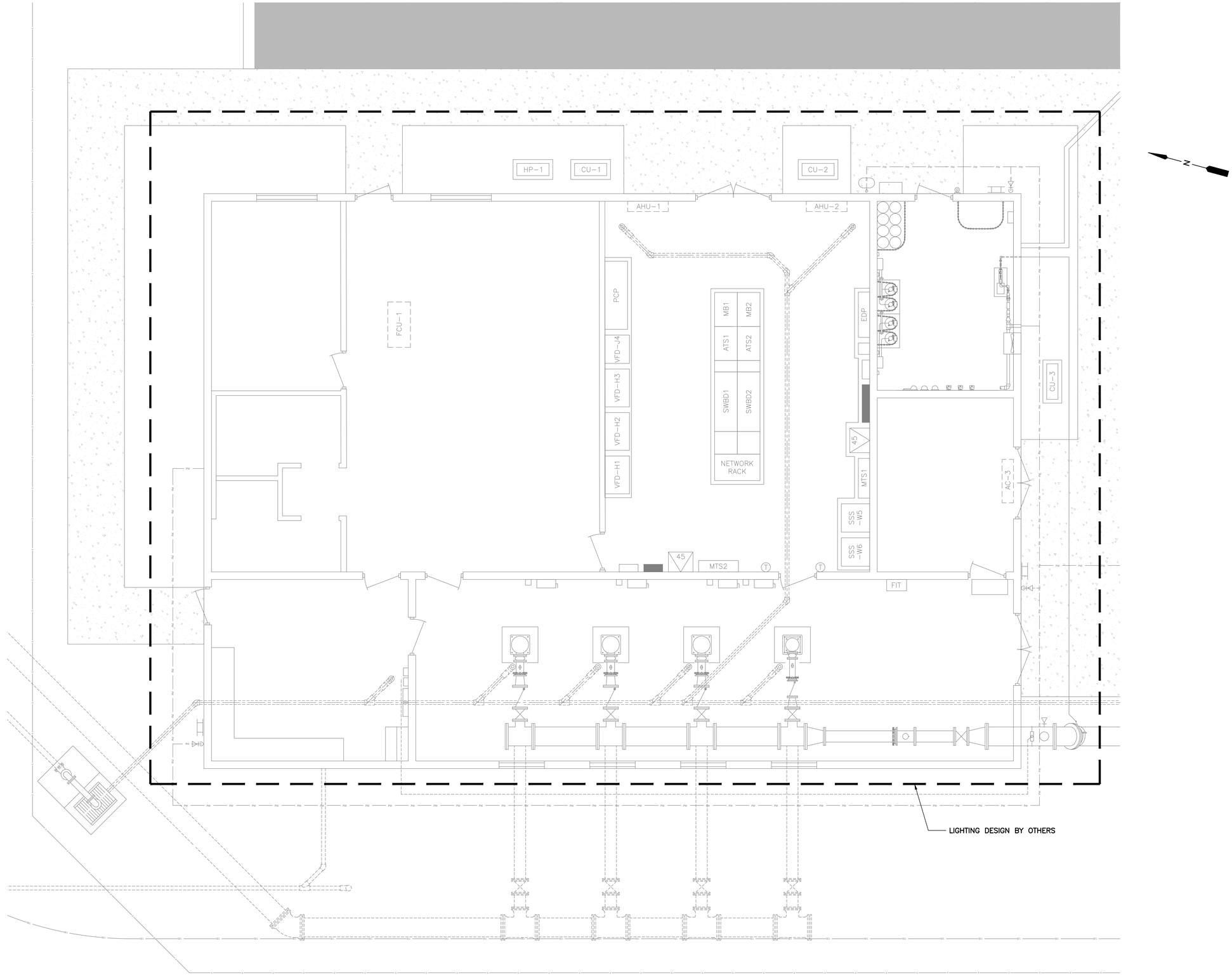
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
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FILE NAME:	-

SHEET E-11

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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HIGH SERVICE PUMP STATION LIGHTING PLAN

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

1 0 1 2 3 7'

BID SET

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C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

DATE	REVISION
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP
STATION LIGHTING PLAN

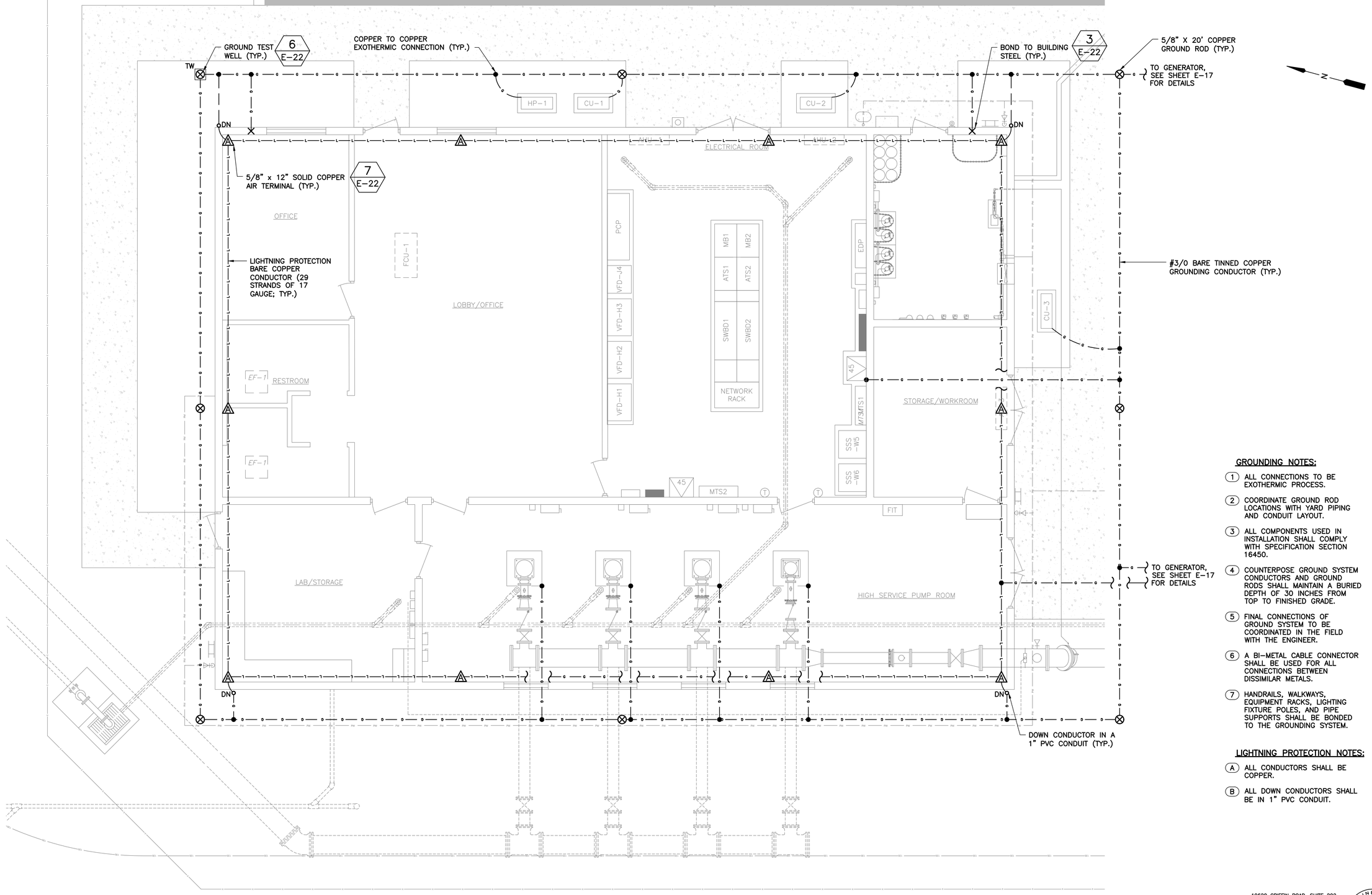
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Tavares, Florida 32778
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

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FILE NAME:	-

SHEET E-12

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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GROUNDING NOTES:

1. ALL CONNECTIONS TO BE EXOTHERMIC PROCESS.
2. COORDINATE GROUND ROD LOCATIONS WITH YARD PIPING AND CONDUIT LAYOUT.
3. ALL COMPONENTS USED IN INSTALLATION SHALL COMPLY WITH SPECIFICATION SECTION 16450.
4. COUNTERPOSE GROUND SYSTEM CONDUCTORS AND GROUND RODS SHALL MAINTAIN A BURIED DEPTH OF 30 INCHES FROM TOP TO FINISHED GRADE.
5. FINAL CONNECTIONS OF GROUND SYSTEM TO BE COORDINATED IN THE FIELD WITH THE ENGINEER.
6. A BI-METAL CABLE CONNECTOR SHALL BE USED FOR ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
7. HANDRAILS, WALKWAYS, EQUIPMENT RACKS, LIGHTING FIXTURE POLES, AND PIPE SUPPORTS SHALL BE BONDED TO THE GROUNDING SYSTEM.

LIGHTNING PROTECTION NOTES:

A. ALL CONDUCTORS SHALL BE COPPER.

B. ALL DOWN CONDUCTORS SHALL BE IN 1" PVC CONDUIT.

HIGH SERVICE PUMP STATION GROUNDING & LIGHTNING PROTECTION PLAN

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

1 0 1 2 3 7'

BID SET

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COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

HIGH SERVICE PUMP STATION
GROUNDING & LIGHTING
PROTECTION PLAN

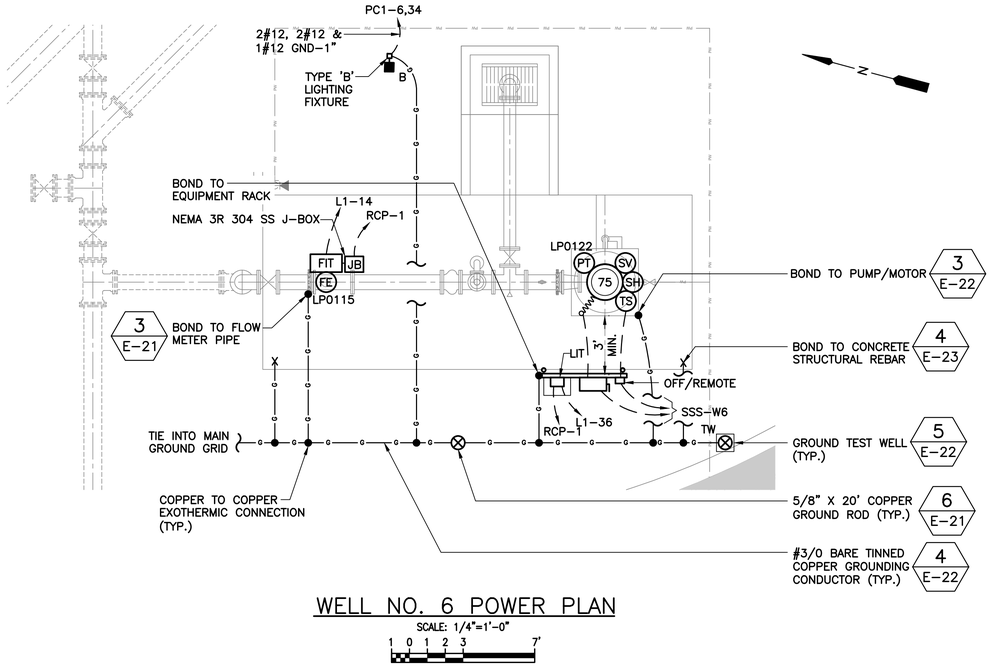
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902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33580

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DRAWN BY:	SJL
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JOB NO.:	055783.001
FILE NAME:	-

SHEET E-13

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

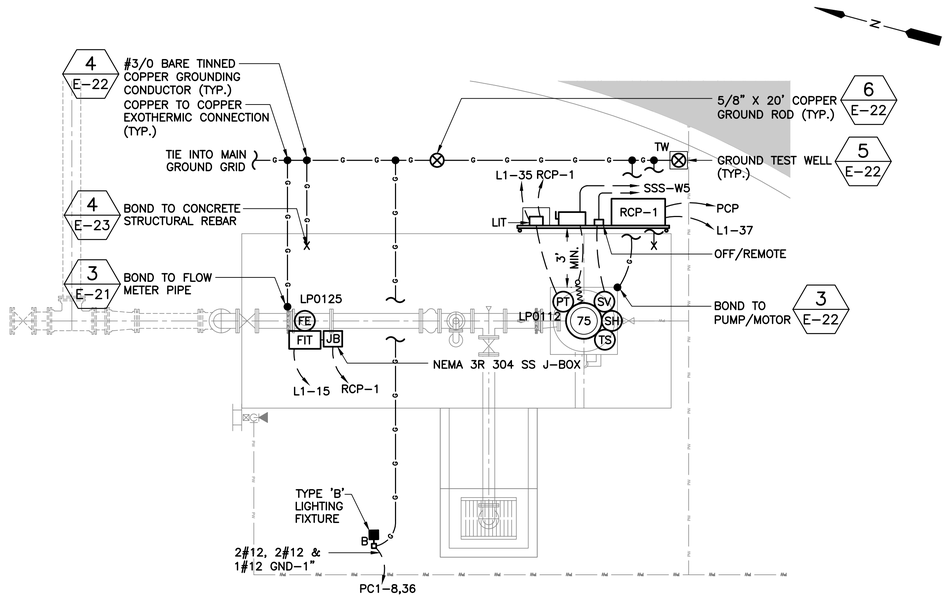
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WELL NO. 6 POWER PLAN

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

1 0 1 2 3 7'



WELL NO. 5 POWER PLAN

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

1 0 1 2 3 7'

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Florida P.E. No. 42461

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HOWEY-IN-THE-HILLS, FLORIDA

WATER TREATMENT PLANT No. 3

WELLS NO.5 & NO.6 POWER PLAN

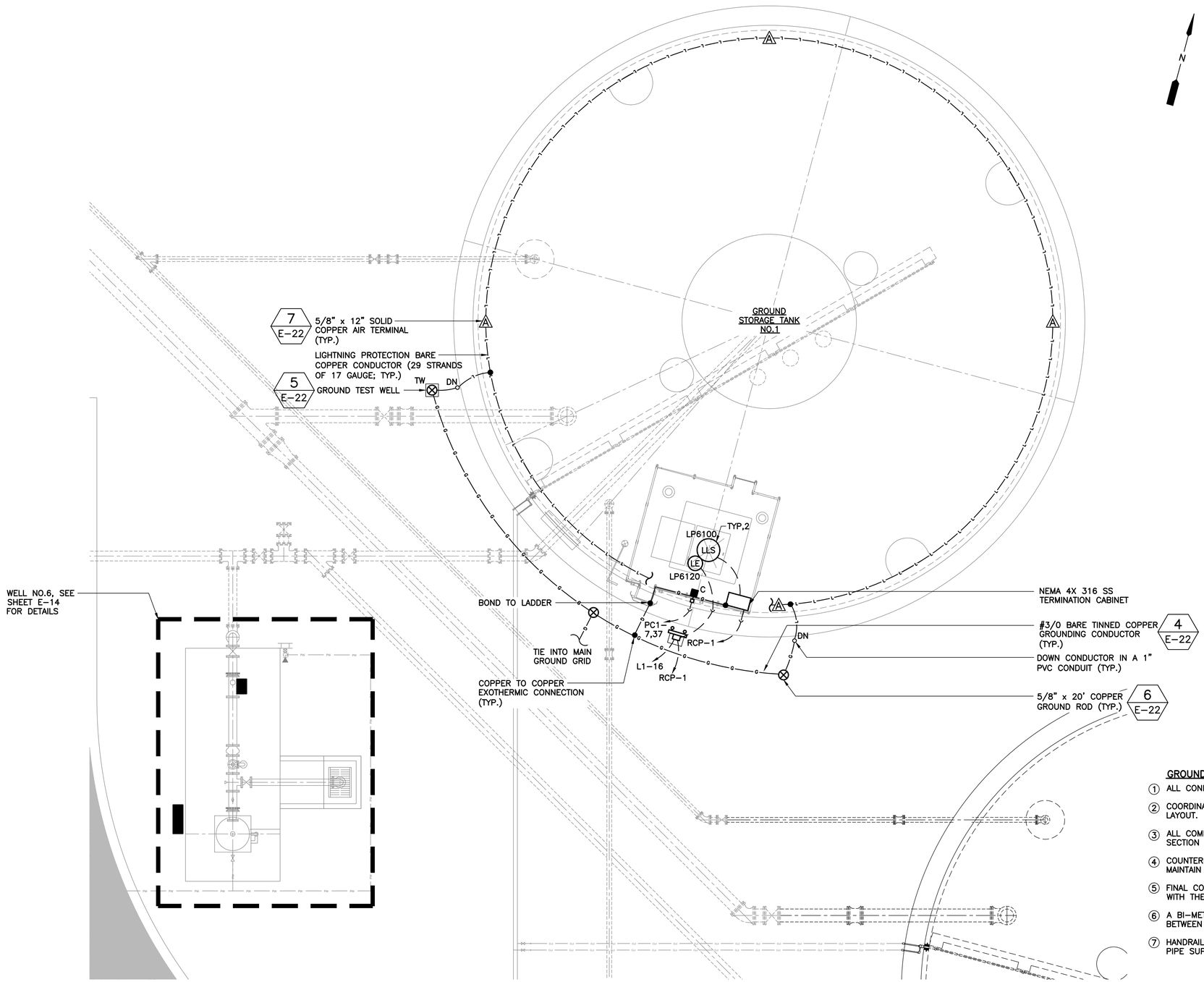
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Fax: 352.343.8495
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FILE NAME:	-

SHEET E-14

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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GROUND STORAGE TANK NO.1 ELECTRICAL GROUNDING & LIGHTING PLAN

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

6 4 2 0 5'

GROUNDING NOTES:

1. ALL CONNECTIONS TO BE EXOTHERMIC PROCESS.
2. COORDINATE GROUND ROD LOCATIONS WITH YARD PIPING AND CONDUIT LAYOUT.
3. ALL COMPONENTS USED IN INSTALLATION SHALL COMPLY WITH SPECIFICATION SECTION 16450.
4. COUNTERPOSE GROUND SYSTEM CONDUCTORS AND GROUND RODS SHALL MAINTAIN A BURIED DEPTH OF 30 INCHES FROM TOP TO FINISHED GRADE.
5. FINAL CONNECTIONS OF GROUND SYSTEM TO BE COORDINATED IN THE FIELD WITH THE ENGINEER.
6. A BI-METAL CABLE CONNECTOR SHALL BE USED FOR ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
7. HANDRAILS, WALKWAYS, EQUIPMENT RACKS, LIGHTING FIXTURE POLES, AND PIPE SUPPORTS SHALL BE BONDED TO THE GROUNDING SYSTEM.

BID SET

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COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK NO.1
POWER PLAN

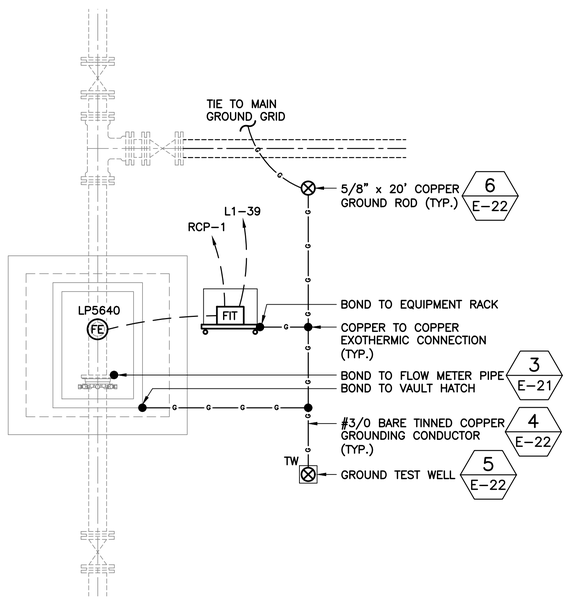
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902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33980

DATE:	JUNE 30, 2025
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DRAWN BY:	SJL
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JOB NO.:	055783.001
FILE NAME:	-

SHEET E-15

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

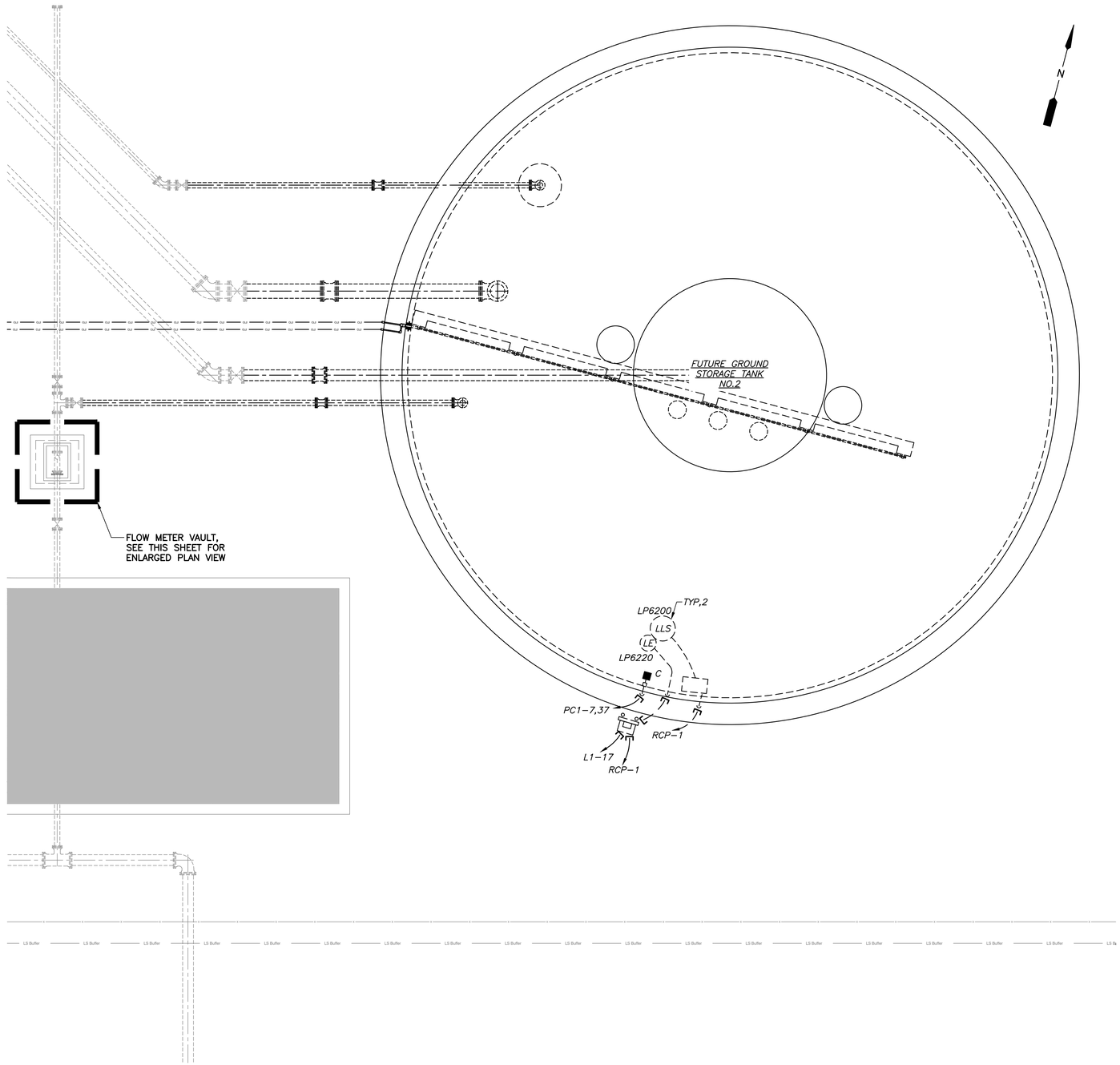
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FLOW METER VAULT ENLARGED PLAN

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

2' 1' 0 2'



FUTURE GROUND STORAGE TANK NO.2 ELECTRICAL PLAN

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

6 4 2 0 5'

DATE		REVISION
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HOWEY-IN-THE-HILLS, FLORIDA

WATER TREATMENT PLANT No. 3

GROUND STORAGE TANK
NO.2 & FLOW METER VAULT
ELECTRICAL PLANS

Beautiful HOWEY-IN-THE-HILLS

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Tavares, Florida 32778
Office: 352.343.8481
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Certificate of Authorization Number: 33380

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FILE NAME:	-

SHEET E-16

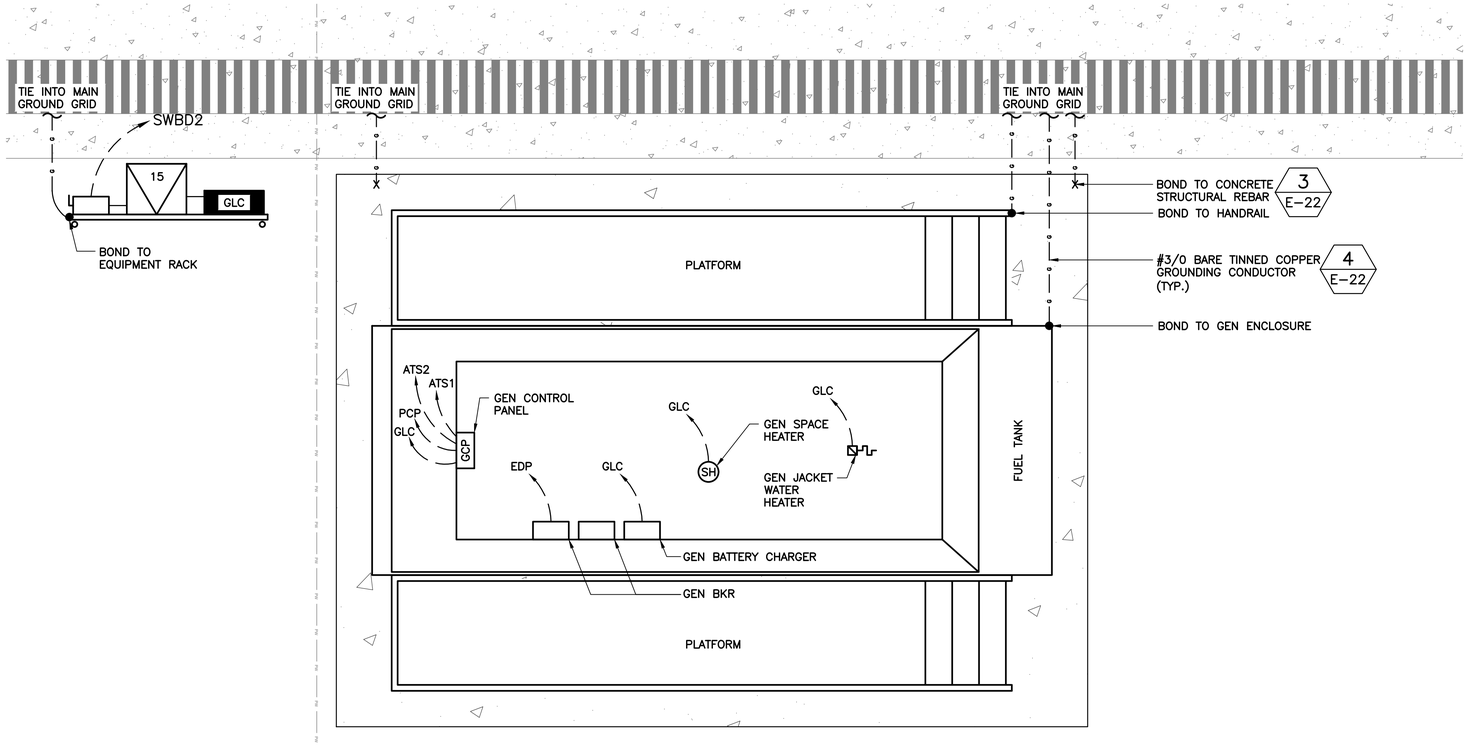
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PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
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BID SET

ENGINEERING BAILEY CONSULTANTS

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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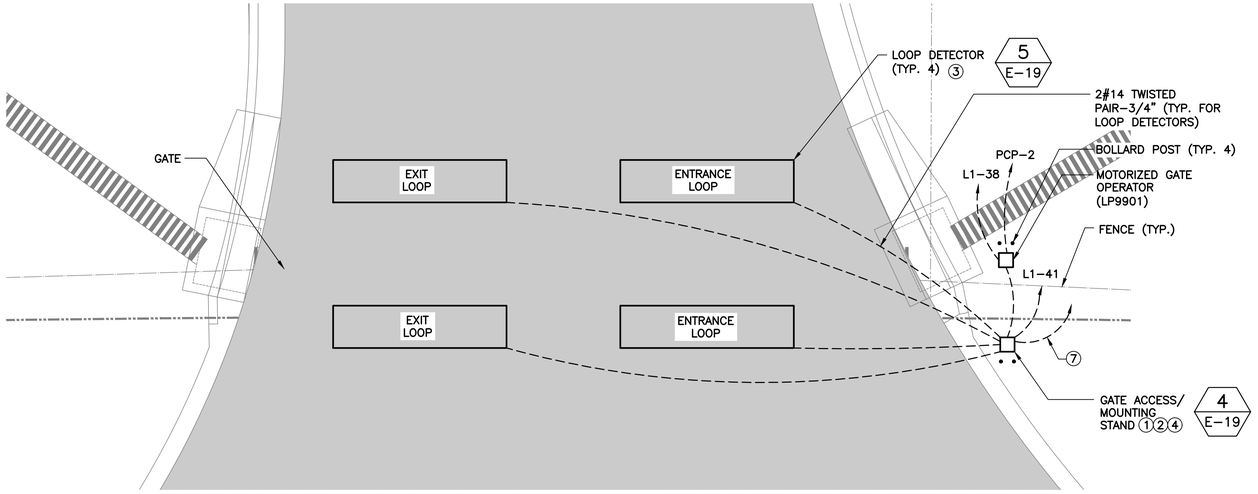
GENERATOR ELECTRICAL PLAN

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

2' 1' 0 2'

GATE OPERATOR/ACCESS NOTES:

1. PROVIDE AND INSTALL TWO (2) PROGRAMMABLE ACCESS CONTROL AND HANDS FREE ENTRY SYSTEMS. UNITS SHALL BE PROVIDED WITH 16 VOLT, 20VA UL LISTED POWER TRANSFORMER. SYSTEM SHALL BE PROGRAMMED TO ALLOW VISITORS TO DIAL TWO (2) ACCESS NUMBERS, ONE DURING OPERATION HOURS, ONE AFTER HOURS. SYSTEM SHALL ALSO ALLOW EMPLOYEES ACCESS THRU AN INDIVIDUAL PIN NUMBER (QTY≥500). DOORKING OR APPROVED EQUAL.
2. PROVIDE AND INSTALL OPERATOR MOUNTING STANCHON.
3. PROVIDE UNRESTRICTED DETECTOR AND LOOP DETECTOR. FURNISH AND INSTALL IN-GROUND LOOP WIRE SETS AND SEALER. FURNISH AND INSTALL TELEPHONE CONNECTION BETWEEN ACCESS SYSTEM AND OFFICE/LAB BUILDING MECH. ROOM 104 TELEPHONE BOARD.
4. GATE ACCESS SYSTEM. PROVIDE A NEMA 4X STAINLESS STEEL JUNCTION BOX AT THE BASE OF THE 4" PEDESTAL USED FOR GATE ACCESS SYSTEM WIRING.
5. PROVIDE RED WARNING/LOCATOR TAPE 12" ABOVE ALL UNDERGROUND CONDUIT.
6. REFER TO SHEET E-17 FOR ADDITIONAL CONDUIT AND WIRE WIRE REQUIREMENTS.
7. TWO (2)-PAIR TELEPHONE CABLES-3/4" TO TELEPHONE BACKBOARD IN OFFICE/LAB BUILDING.



PROPOSED GATE OPERATOR/ACCESS PLAN

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

1 0 1 2 3 7'

BID SET

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

GENERATOR GATE ACCESS
ELECTRICAL PLANS

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JOB NO.:	055783.001
FILE NAME:	-

SHEET E-17

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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PANEL: L1 | **BUS:** 225 AMP | **VOLT:** 120/208V,3ø,4W
LOCATION: ELECTRICAL BUILDING NO.1 (EB1) | **MAINS:** 150A,3P | **REMARKS:** PROVIDE SPD
MOUNTING: SURFACE | **POLES:** 84 | **A.I.C. SYMM:** 10,000

AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA A	BUS KVA B	BUS KVA C	BUS A B C	BUS KVA A	BUS KVA B	BUS KVA C	LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
20	1	12	12	3/4"	SHUNT TRIP	0.10			1 — 2	0.80			PCP	12	12	3/4"	1	20
20	1	12	12	3/4"	ELEC. RM. INT. LTG		0.72		3 — 4		0.54		ELECT RM. RECEPT.	12	12	3/4"	1	20
20	1	–	–	–	SPARE			–	5 — 6			–	SPARE	–	–	–	1	20
20	1	12	12	3/4"	AIT LP5558	0.10			7 — 8	0.10			FIT LP5551	12	12	3/4"	1	20
20	1	–	–	–	SPARE		–		9 — 10		0.90		BLDG. EXT. RECEPT 2	12	12	3/4"	1	20
20	1	12	12	3/4"	PCP UPS1			0.80	11 — 12			0.80	PCP UPS2	12	12	3/4"	1	20
20	1	12	12	3/4"	NETWORK RACK	0.72			13 — 14	0.10			FIT LP0115	12	12	3/4"	1	20
20	1	12	12	3/4"	FIT LP0125		0.10		15 — 16		0.10		LIT LP6120	12	12	3/4"	1	20
20	1	–	–	–	*LIT LP6220*			–	17 — 18			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			19 — 20	–			SPARE	–	–	–	1	20
20	1	12	12	3/4"	CL_2 BOOSTER PUMP CP		0.80		21 — 22		0.80		CHLORINE ALARM PNL	12	12	3/4"	1	20
20	1	12	12	3/4"	CHLORINE LEAK DETECT			0.10	23 — 24			0.90	CHLORINE RM RECEPT	12	12	3/4"	1	20
20	1	12	12	3/4"	CHLORINE CHART REC	0.10			25 — 26	0.10			CL_2 AIT	12	12	3/4"	1	20
20	1	12	12	3/4"	HALOGEN SHUTOFF 1		0.10		27 — 28		0.10		HALOGEN SHUT–OFF 2	12	12	3/4"	1	20
20	1	12	12	3/4"	WIT LP8102			0.10	29 — 30			0.10	WIT LP8101	12	12	3/4"	1	20
20	1	12	12	3/4"	VACUUM MONITOR 1	0.10			31 — 32	0.10			VACUUM MONITOR 2	12	12	3/4"	1	20
20	1	12	12	3/4"	VACUUM MONITOR 3		0.10		33 — 34		0.80		EAP LP8196	12	12	3/4"	1	20
20	1	12	12	3/4"	LIT LP0112			0.10	35 — 36			0.10	LIT LP0122	12	12	3/4"	1	20
20	1	12	12	3/4"	RCP–1	0.60			37 — 38	0.50			GATE OPERATOR	10	10	1"	1	30
20	1	12	12	3/4"	FIT LP5640		0.10		39 — 40		–		SPARE	–	–	–	1	20
30	1	10	10	1"	GATE ACCESS STAND			0.50	41 — 42			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			43 — 44	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		45 — 46		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	47 — 48			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			49 — 50	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		51 — 52		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	53 — 54			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			55 — 56	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		57 — 58		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	59 — 60			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			61 — 62	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		63 — 64		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	65 — 66			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			67 — 68	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		69 — 70		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	71 — 72			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			73 — 74	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		75 — 76		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	77 — 78			–	SPARE	–	–	–	1	20
60	3	6	8	1"	PC1	1.03			79 — 80	0.10			SPD	6	8	–	3	40
–	–	–	–	–	–		1.03		81 — 82		0.10		–	–	–	–	–	–
–	–	–	–	–	–			1.03	83 — 84			0.10	–	–	–	–	–	–
TOTAL (PHASE):						2.75	2.95	2.13		1.30	3.34	2.00	**NOTES:** –					
TOTAL KVA:									14.47									
TOTAL AMPS:									40.16									
TOTAL DEMAND AMPS:									40.16									

SCHNEIDER ELECTRIC XDSE SERIES OR APPROVED EQUAL — SPD

PANEL: PC1 | **BUS:** 100 AMP RATED | **VOLT:** 120/208V,3ø,4W
LOCATION: ELECTRICAL BUILDING NO.1 (EB1) | **MAINS:** 50A,3P MB (2 TOTAL) | **REMARKS:** PROVIDE SPD
MOUNTING: SURFACE | **POLES:** 42 | **A.I.C. SYMM:** 10,000

AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA A	BUS KVA B	BUS KVA C	BUS A B C	BUS KVA A	BUS KVA B	BUS KVA C	LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
PC1A													PC1A					
50	3	–	–	–	MB	–			1 — 2	0.10			PHOTOCELL	12	12	3/4"	1	20
–	–	–	–	–	–		–		3 — 4		0.72		SITE POLE RECEPT 1	10	10	1"	1	20
–	–	–	–	–	–			–	5 — 6			0.18	WELL NO. 6 POLE RECEPT	12	12	3/4"	1	20
20	1	12	12	3/4"	GST NO. 1 POLE RECEPT	0.18			7 — 8	0.18			WELL NO. 5 POLE RECEPT	12	12	3/4"	1	20
20	1	–	–	–	SPARE		–		9 — 10		0.18		GST NO. 2 POLE RECEPT	12	12	3/4"	1	20
20	1	–	–	–	SPARE			–	11 — 12			0.54	SITE POLE RECEPT 2	10	10	1"	1	20
20	1	–	–	–	SPARE	–			13 — 14	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		15 — 16		–		SPACE	–	–	–	–	–
20	1	–	–	–	SPARE			–	17 — 18			–	SPACE	–	–	–	–	–
20	1	–	–	–	SPARE	–			19 — 20	–			SPACE	–	–	–	–	–
20	1	–	–	–	SPARE		–		21 — 22		–		SPACE	–	–	–	–	–
20	1	–	–	–	SPARE			–	23 — 24			–	SPACE	–	–	–	–	–
20	1	–	–	–	SPACE	–			25 — 26	0.10			SPD	10	10	–	3	30
20	1	–	–	–	SPACE		–		27 — 28		0.10		–	–	–	–	–	–
20	1	–	–	–	SPACE			–	29 — 30			0.10	–	–	–	–	–	–
PC1B													PC1B					
50	3	–	–	–	MB	–			31 — 32	0.40			SITE POLE LTG	10	10	1"	1	20
–	–	–	–	–	–		–		33 — 34		0.10		WELL NO. 6 POLE LTG	12	12	3/4"	1	20
–	–	–	–	–	–			–	35 — 36			0.10	WELL NO. 5 POLE LTG	12	12	3/4"	1	20
20	1	12	12	3/4"	GST NO. 1 POLE LTG	0.10			37 — 38	0.18			GST NO. 2 POLE LTG	12	12	3/4"	1	20
20	1	–	–	–	BLDG. EXT. LTG		–		39 — 40		0.30		SITE POLE LTG 2	10	10	1"	1	20
20	1	–	–	–	SPARE			–	41 — 42			–	SPACE	–	–	–	–	–
20	1	–	–	–	SPARE	–			43 — 44	0.10			SPD	10	10	–	3	30
20	1	–	–	–	SPARE		–		45 — 46		0.10		–	–	–	–	–	–
20	1	–	–	–	SPARE			–	47 — 48			0.10	–	–	–	–	–	–
TOTAL (PHASE):						0.28	–	–		1.06	1.50	1.02	**NOTES:**					
TOTAL KVA:									3.86									
TOTAL AMPS:									10.71									
TOTAL DEMAND AMPS/(KVA):									10.71									

SPD — SCHNEIDER ELECTRIC XDSE SERIES OR APPROVED EQUAL — SPD

PANEL: GLC (GENERATOR LOAD CENTER) | **BUS:** 100 AMP | **VOLT:** 120/240V,1ø,3W
LOCATION: RACK MOUNTED | **MAINS:** 100 AMP MB | **REMARKS:** PROVIDE SPD
MOUNTING: SURFACE | **POLES:** 18 | **A.I.C. SYMM:** 10,000 AIC

AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA A	BUS KVA B	BUS A B	BUS KVA A	BUS KVA B	LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
60	2	6	8	1"	GEN JWH	4.80		1 — 2	0.10		GEN CP	12	12	3/4"	1	20
–	–	–	–	–	–		4.80	3 — 4		1.00	GEN BATTERY CHARGER	12	12	3/4"	1	20
20	1	12	12	3/4"	GEN ENCL FAN	1.00		5 — 6	0.50		GEN SPACE HEATER	12	12	3/4"	1	20
20	1	–	–	–	SPARE		–	7 — 8		1.00	GEN ENCL LTG	12	12	3/4"	1	20
20	1	–	–	–	SPARE	–		9 — 10	–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–	11 — 12		–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–		13 — 14	0.10		SPD	8	10	–	3	20
20	1	–	–	–	SPARE		–	15 — 16		0.10	–	–	–	–	–	–
20	1	–	–	–	SPARE	–		17 — 18	0.10		–	–	–	–	–	–
TOTAL (PHASE):						5.80	4.80		0.80	2.10	**NOTES:**					
TOTAL KVA:								13.50			① NEMA 3R SS					
TOTAL AMPS:								37.47								
TOTAL DEMAND AMPS:								37.47								

SCHNEIDER ELECTRIC XDSE SERIES RATED 100KA PER PHASE — SPD

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3
PANEL SCHEDULES

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET E-18

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

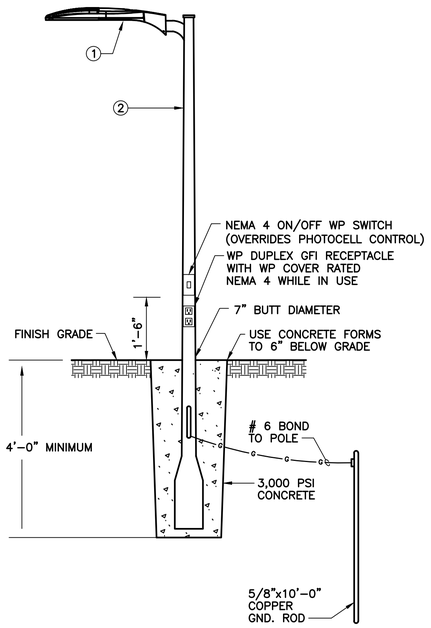
BID SET

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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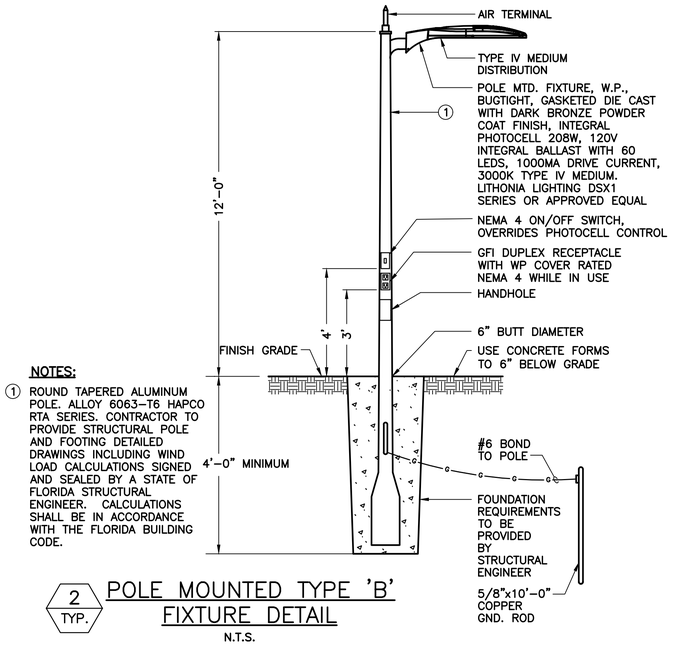
NOTES:

1. POLE MTD. LED LIGHTING FIXTURE. W.P., BUGTIGHT, GASKETED DIE CAST WITH DARK BRONZE POWDER COAT FINISH, 183W mVOLT INTEGRAL BALLAST WITH 40 LEDS, 1400MA DRIVE CURRENT 5000K COLOR TEMPERATURE. MANUFACTURED BY LITHONIA LIGHTING, D–SERIES SIZE D,. TYPE III MEDIUM DISTRIBUTION. 25' MOUNTING HEIGHT.
2. 30' ROUND TAPERED ALUMINUM POLE. ALLOY 6063–T6 HAPCO RTA SERIES. CONTRACTOR TO PROVIDE STRUCTURAL POLE AND FOOTING DETAILED DRAWINGS INCLUDING WIND LOAD CALCULATIONS SIGNED AND SEALED BY A STATE OF FLORIDA STRUCTURAL ENGINEER. CALCULATIONS SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.
3. DETAIL IS NOT INTENDED AS AN INSTALLATION DETAIL, CONTRACTOR TO CONFIRM INSTALLATION REQUIREMENTS BASED ON STRUCTURAL CALCULATIONS, SEE NOTE ABOVE.



1 TYP. TYPE 'A' POLE MOUNTED FIXTURE DETAIL

N.T.S.



NOTES:

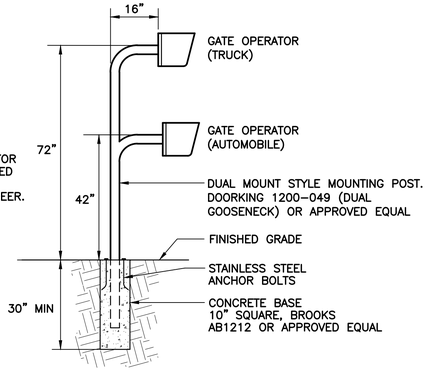
1. ROUND TAPERED ALUMINUM POLE. ALLOY 6063–T6 HAPCO RTA SERIES. CONTRACTOR TO PROVIDE STRUCTURAL POLE AND FOOTING DETAILED DRAWINGS INCLUDING WIND LOAD CALCULATIONS SIGNED AND SEALED BY A STATE OF FLORIDA STRUCTURAL ENGINEER. CALCULATIONS SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.

2 TYP. POLE MOUNTED TYPE 'B' FIXTURE DETAIL

N.T.S.

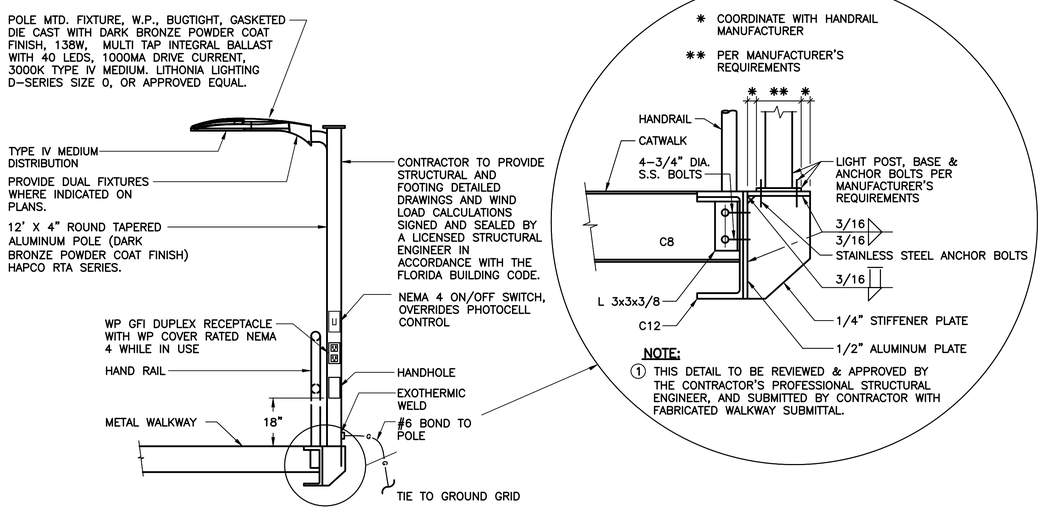
NOTES

1. CONTRACTOR TO SUBMIT STRUCTURAL CALCULATIONS FOR PEDESTAL, SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED STRUCTURAL ENGINEER.



4 TYP DUAL GATE OPERATOR STANCHION MOUNT DETAIL

N.T.S.

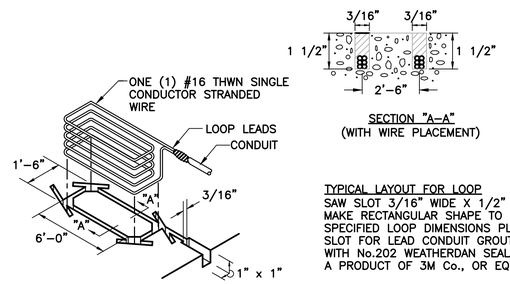


NOTE:

1. THIS DETAIL TO BE REVIEWED & APPROVED BY THE CONTRACTOR'S PROFESSIONAL STRUCTURAL ENGINEER, AND SUBMITTED BY CONTRACTOR WITH FABRICATED WALKWAY SUBMITTAL.

3 TYP. METAL WALKWAY POLE MTD. TYPE 'C' FIXTURE DETAIL

N.T.S.



SECTION "A–A" (WITH WIRE PLACEMENT)

LOOPS LEADS MUST BE IN CONDUIT BETWEEN LOOP AND AMPLIFIER, THEY MUST NOT SHARE CONDUIT WITH OTHER WIRING OR LEADS FROM OTHER LOOPS.

TYPICAL LAYOUT FOR LOOP
SAW SLOT 3/16" WIDE X 1/2" DEEP
MAKE RECTANGULAR SHAPE TO SPECIFIED LOOP DIMENSIONS PLUS SLOT FOR LEAD CONDUIT GROUT WITH No.202 WEATHERDAN SEALANT A PRODUCT OF 3M Co., OR EQUAL.

NOTES:
LOOP LEADS ARE LIMITED TO 100 FT.
LOOP TO HAVE 6 TURNS AS SHOWN.

CAUTION – CONTROL AND POWER RUNS TO BE 18" FROM DETECTOR LOOPS. LOOP LEADS TO HAVE (4) TWISTS PER FOOT.

5 TYP DETECTOR LOOP DETAIL

N.T.S.

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

LIGHTING DETAILS & SCHEDULE

Beautiful HOWEY-IN-THE-HILLS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET E-19

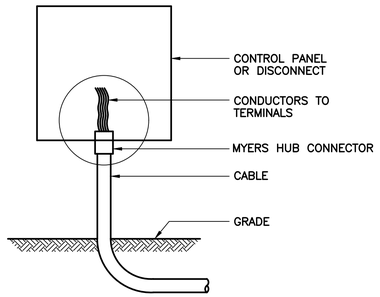
10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448–7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

BID SET

ENGINEERING BAILEY CONSULTING

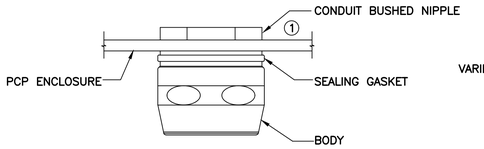
STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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1 TYP. **WATER TIGHT CONNECTION DETAIL**

N.T.S.

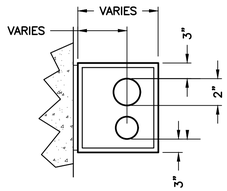


NOTES:

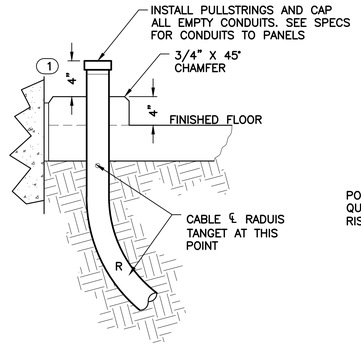
1. BOND PCP ENCLOSURE AND METALLIC CONDUIT TO GROUND BUS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2 TYP. **CONDUIT HUB CONNECTION DETAIL**

N.T.S.



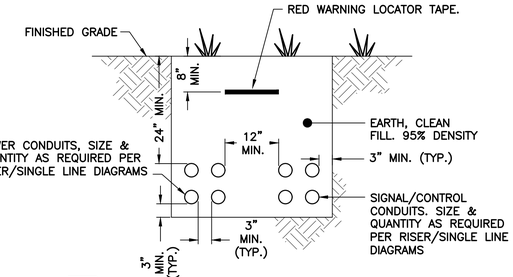
PLAN VIEW



SECTION

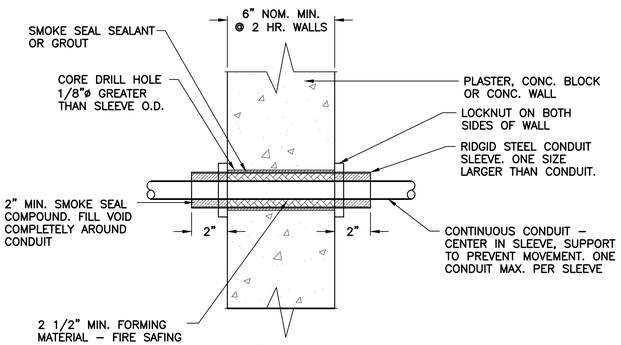
3 TYP. **TYPICAL CONDUIT THRU SLAB**

N.T.S.



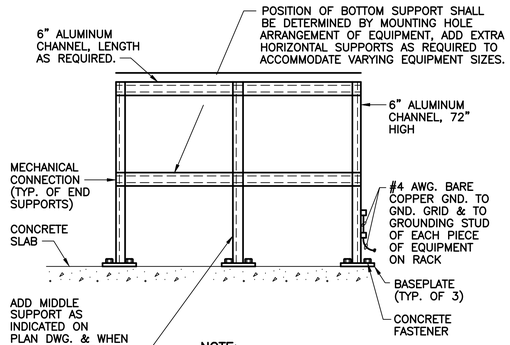
4 TYP. **TYPICAL DIRECT BURIED CONDUIT SECTION**

SCALE: N.T.S.



NOTE: THIS DETAIL USED IN BOTH 1 HR. AND 2 HR. PARTITIONS.

5 TYP. **CONDUIT SLEEVE DETAIL AT WALL**

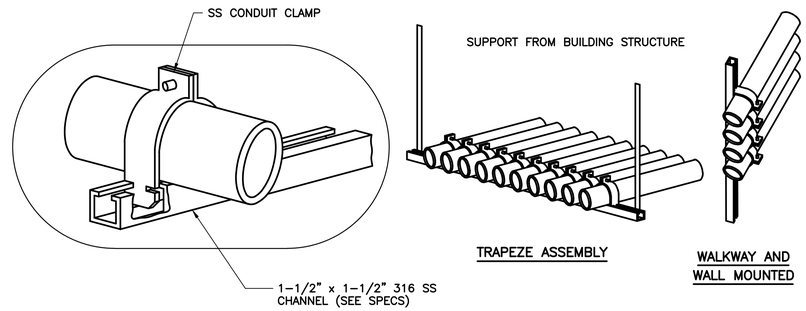


NOTE:

1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. RACK STRUCTURE TO BE CERTIFIED PER THE FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.

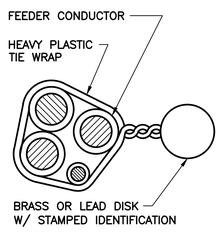
6 TYP. **EQUIPMENT RACK DETAIL**

N.T.S.



7 TYP. **CONDUIT PIPE STRAP MOUNTING DETAILS**

N.T.S.

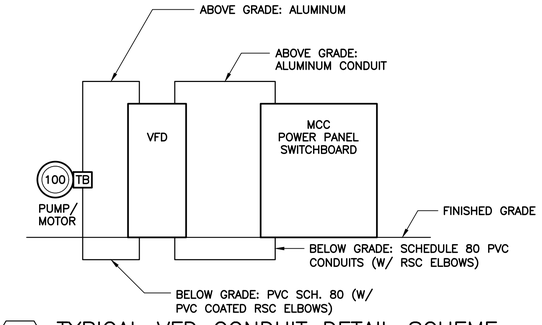


NOTES:

1. CONTRACTOR TO SUPPLY, FURNISH AND INSTALL "TRACKER" BALL DEVICE AT 100' INTERVALS, CHANGE OF DIRECTION AND ONE AT EACH END OF EVERY RUN.

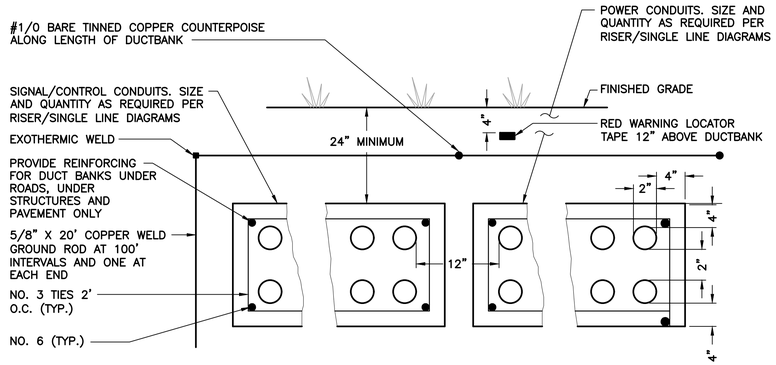
8 TYP. **U.G. CABLE TAG DETAIL**

N.T.S.



9 TYP. **TYPICAL VFD CONDUIT DETAIL SCHEME**

N.T.S.



10 TYP. **TYPICAL CONCRETE ENCASED DUCTBANK CONDUIT SECTION**

N.T.S.

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

BID SET

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA

WATER TREATMENT PLANT No. 3

ELECTRICAL DETAILS-1

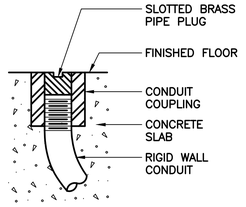
halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
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Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET E-20

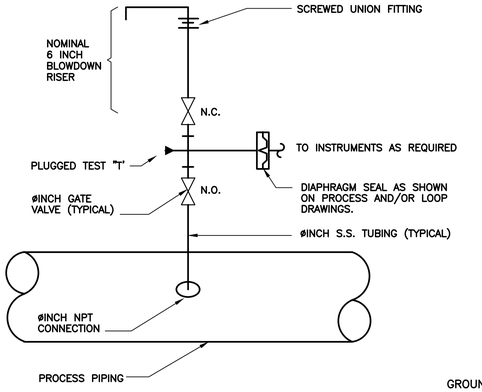
STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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1 TYP. DETAIL OF CONDUIT TERMINATION STUB OUT

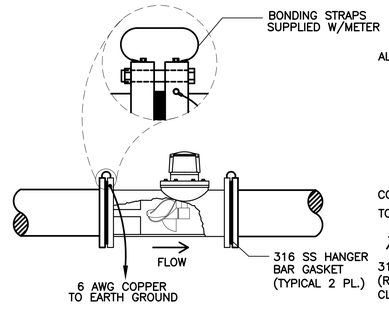
N.T.S.



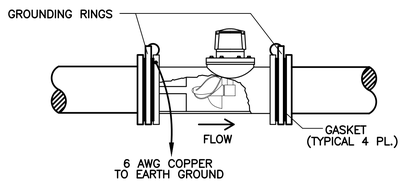
NOTES:
1. HORIZONTAL INSTALLATION SHOWN, VERTICAL INSTALLATION SIMILAR.
2. PROVIDE SUPPORT AS REQUIRED FOR A RIGID INSTALLATION
3. TAP CONNECTION FOR FLUID PIPING SHALL BE ON THE SIDE. TAP CONNECTION FOR AIR PIPING SHALL BE ON THE TOP.

2 TYP. TYPICAL PRESSURE TAP CONNECTION INSTALLATION

N.T.S.



CONDUCTIVE UNLINED PIPE

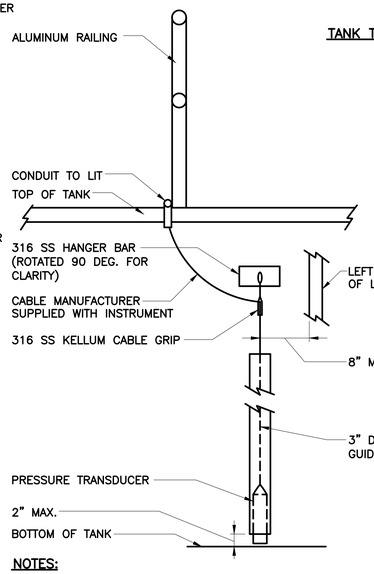


NON–CONDUCTIVE OR LINED PIPE

NOTES:
① GROUNDING RINGS NOT REQUIRED FOR SENSORS WITH GROUNDING ELECTRODES.
② GALVANICALLY PROTECTED PIPES REQUIRE SPECIAL CONSIDERATION (REFER TO MANUFACTURER RECOMMENDATIONS)

3 TYP. PROPELLER FLOW SENSOR DETAIL

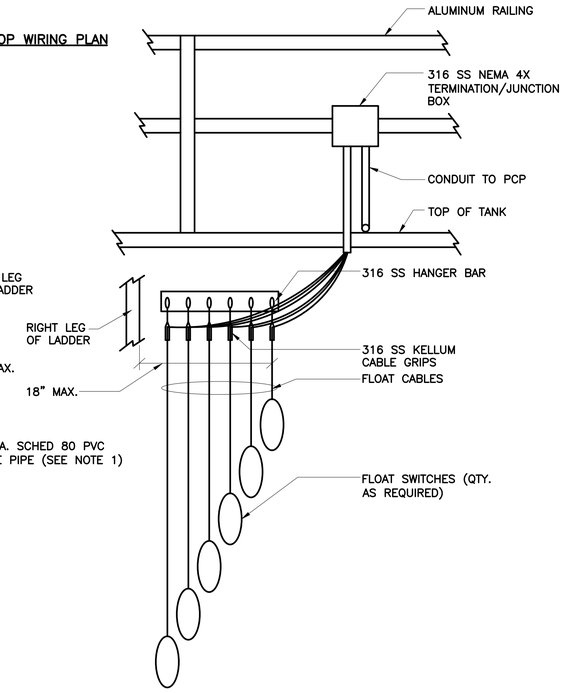
N.T.S.



NOTES:
① ATTACH GUIDE PIPE TO ALL LADDER SUPPORT BRACKETS WITH 316 SS BRACKETS AND MOUNTING HARDWARE

LEVEL TRANSDUCER INSTALLATION

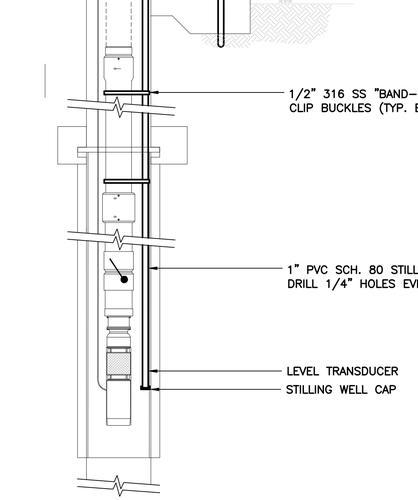
TANK TOP WIRING PLAN



FLOAT AND HATCH ACCESS INSTALLATION

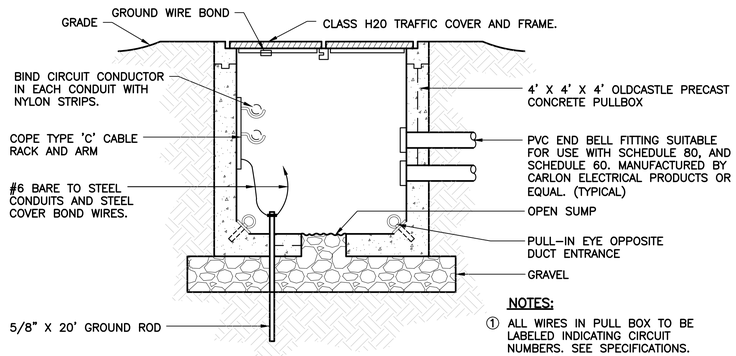
4 TYP. GROUND STORAGE TANK INSTRUMENT DETAILS

N.T.S.



5 TYP. WELLHEAD LEVEL TRANSDUCER MOUNTING DETAIL

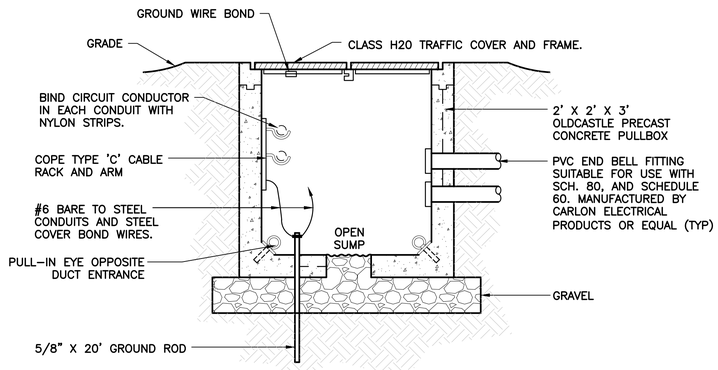
SCALE: N.T.S.



NOTES:
① ALL WIRES IN PULL BOX TO BE LABELED INDICATING CIRCUIT NUMBERS. SEE SPECIFICATIONS.
② DO NOT SPLICE CABLES IN PULL BOXES UNLESS OTHERWISE NOTED.
③ PATCH CONDUIT ENTRY WINDOW WITH CONCRETE.
④ BOND MANHOLE COVER TO SYSTEM GROUND. (TYP)

6 TYP. CONTROL PULL BOX DETAIL

N.T.S.



NOTES:
① ALL WIRES IN PULL BOX TO BE LABELED INDICATING CIRCUIT NUMBERS. SEE SPECIFICATIONS.
② DO NOT SPLICE CABLES IN PULL BOXES UNLESS OTHERWISE NOTED.
③ PATCH CONDUIT ENTRY WINDOW WITH CONCRETE.

7 TYP. CONTROL PULL BOX DETAIL

N.T.S.

DATE	REVISION
****	----

HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

ELECTRICAL DETAILS-2

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

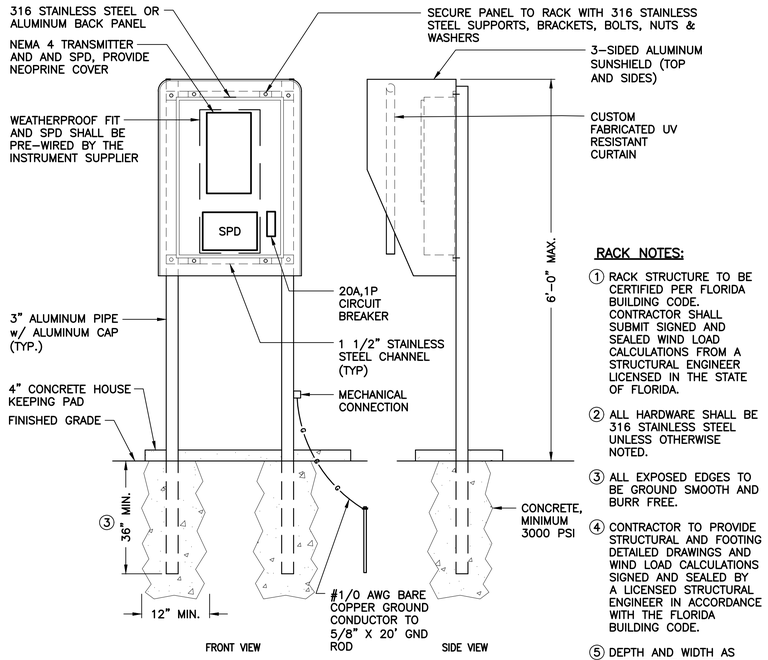
SHEET E-21

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

BID SET

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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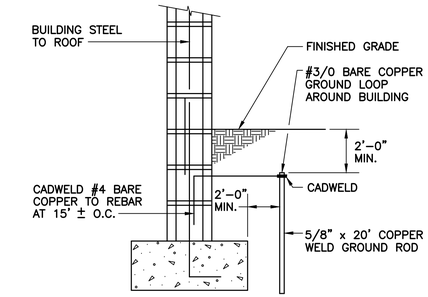


1 TYP. TRANSMITTER MOUNTING DETAIL

N.T.S.

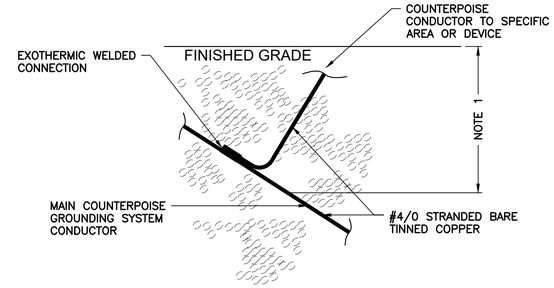
RACK NOTES:

1. RACK STRUCTURE TO BE CERTIFIED PER FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
3. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
4. CONTRACTOR TO PROVIDE STRUCTURAL AND FOOTING DETAILED DRAWINGS AND WIND LOAD CALCULATIONS SIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.
5. DEPTH AND WIDTH AS REQUIRED TO MEET STRUCTURAL CALCULATIONS.



2 TYP. BUILDING STRUCTURE BONDING

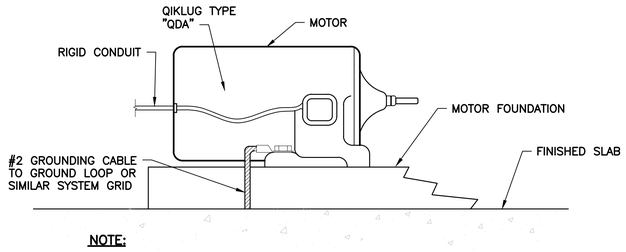
N.T.S.



1. UNDERGROUND INSTALLATION OF COUNTERPOISE SYSTEM SHALL BE BURIED AT A MINIMUM DEPTH OF 30 INCHES.
2. ALL COMPONENTS USED IN INSTALLATION WITHIN SHALL COMPLY WITH SPECIFICATION 16450.

4 TYP. COUNTERPOISE CONDUCTOR CONNECTION DETAIL

N.T.S.



NOTE:
THIS GROUND IS IN ADDITION TO THE GROUND FROM THE MAIN ELECTRICAL SERVICE.

3 TYP. EQUIPMENT GROUNDING DETAIL

N.T.S.

FLAT ROOF BASE

7 TYP. AIR TERMINAL DETAILS

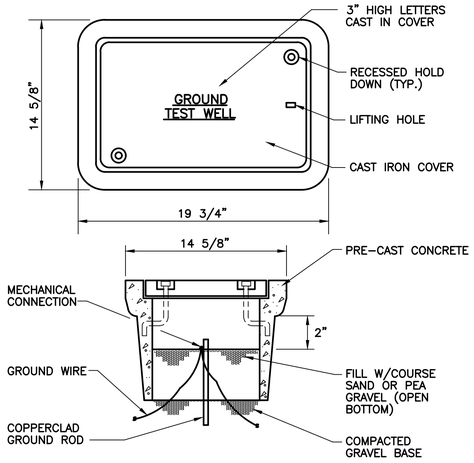
N.T.S.

LEGEND:

- ⚠ – 5/8" X 12" SOLID COPPER AIR TERMINAL WITH ADHESIVE BASE.
- ● – CADWELD
- ⊗ – 5/8" X 20'-0" (MIN) COPPER GROUND ROD

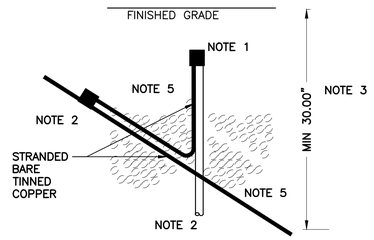
LIGHTNING PROTECTION INSTALLATION NOTES:

1. INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.I. CODE 175 (2023) AND NFPA (2023). INSTALLATION SHALL BE MADE BY OR UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER. COMPLETED INSTALLATION TO RECEIVE SYSTEM CERTIFICATION INCLUDING SUBMITTAL OF FORMS L.P.I. 175-A AND 175-B.
2. ALL MATERIALS SHALL BE UNDERWRITERS LABORATORIES APPROVED WITH "A" LABEL ON EACH AIR TERMINAL AND "B" LABEL AT 10'-0" ALONG ALL MAIN CONDUCTORS. COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL "C" AS PER U.L. CODE 96A.
3. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODES.
4. ALL CABLE TO CABLE, CABLE TO LUG & CABLE TO GROUND ROD CONNECTIONS SHALL BE MADE WITH CADWELD.



5 TYP. GROUND TEST WELL

N.T.S.



1. GROUND ROD TO COUNTERPOISE CONDUCTOR SHALL BE CONNECTED BY MEANS OF A EXOTHERMIC WELD. GROUND ROD SHALL BE 5/8 INCH IN DIAMETER AND 20 FOOT LENGTH MINIMUM.
2. COUNTERPOISE CONDUCTOR TO CONDUCTOR CONNECTION SHALL BE CONNECTED BY MEANS OF EXOTHERMIC WELD AND THE CONDUCTOR FROM COUNTERPOISE LENGTH TO GROUND ROD SHALL HAVE A MINIMUM OF 36 INCHES.
3. UNDERGROUND INSTALLATION OF COUNTERPOISE SYSTEM SHALL BE BURIED AT A MINIMUM DEPTH OF 30 INCHES.
4. ALL COMPONENTS USED IN INSTALLATION WITHIN SHALL COMPLY WITH SPECIFICATION 16450.
5. STRANDED BARE TINNED COPPER CONDUCTOR

6 TYP. COUNTERPOISE GROUND ROD CONNECTION DETAIL

N.T.S.

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COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

BID SET

NO.	REVISION	DATE
1	----	****
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

ELECTRICAL DETAILS-3

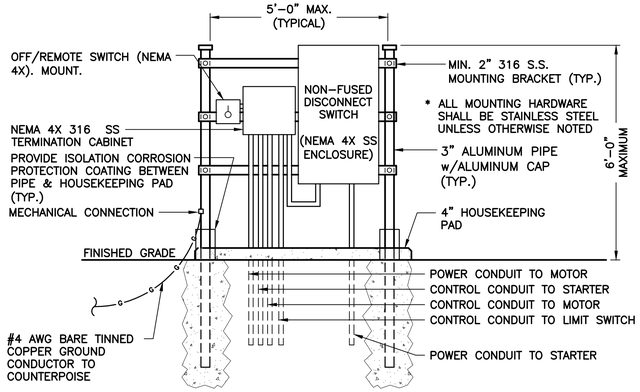
halff
Office: 352.343.8481
Fax: 352.343.8495
902 North Sinclair Ave.
Tavares, Florida 32778
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET E-22

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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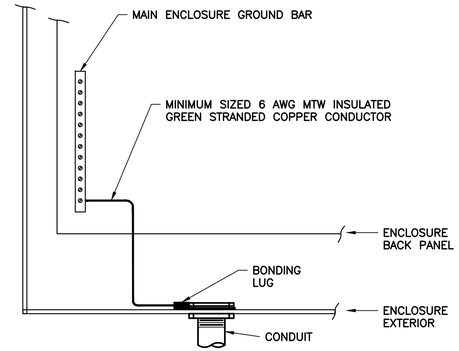


NOTES:

① RACK STRUCTURE TO BE CERTIFIED PER THE FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.

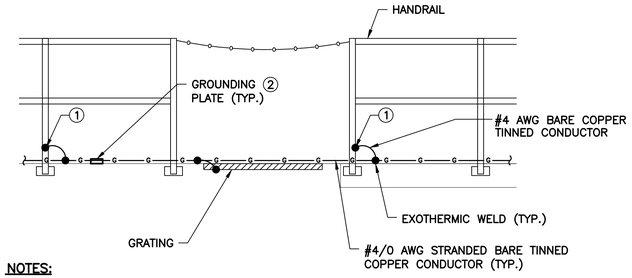
1 TYP. DISCONNECT/HOA EQUIPMENT RACK DETAIL

N.T.S.



2 TYP. CONTROL, JUNCTION AND INSTRUMENT PEDESTAL ENCLOSURES GROUNDING DETAIL

N.T.S.



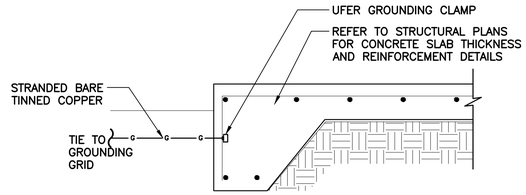
NOTES:

① #4 BARE COPPER TINNED CONDUCTOR TO COMPRESSION LUG MECHANICALLY CONNECTED TO RAIL, COAT CONNECTION BETWEEN LUG AND RAIL WITH CONDUCTIVE ANTI-CORROSION COMPOUND. NO ALUMINUM COMPONENTS ALLOWED. PROVIDE AN EXOTHERMIC WELD FROM #4 TO #4/0. NO MECHANICAL CONNECTION ALLOWED.

② ALL EXPOSED GROUND CONDUCTORS INSTALLED ALONG SURFACE OF HANDRAIL SHALL BE SECURED USING GROUNDING PLATE. SEE DETAIL THIS SHEET.

3 TYP. HANDRAIL/GRATING GROUNDING DETAIL

N.T.S.



4 TYP. CONCRETE SLAB GROUNDING DETAIL

N.T.S.

REVISION	DATE
1 ----	****
2	
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

ELECTRICAL DETAILS-4

halff
902 North Sinclair Ave.
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET E-23

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Stephen E. Bailey, P.E.
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STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

BID SET

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GENERAL INSTRUMENT OR FUNCTION SYMBOLS

- DISCRETE INSTRUMENT – FIELD MOUNTED
- DISCRETE INSTRUMENT – PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (1)
- DISCRETE INSTRUMENT – AUXILLARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (1)
- INSTRUMENTS SHARING COMMON HOUSING
- INSTRUMENT FURNISHED WITH SPECIFIC FIELD COMPONENT (E.G. PUMP, NLOWER, VALVE, CONVEYOR, ETC.)
- XXX — EXISTING EQUIPMENT
- XXX — FUTURE EQUIPMENT
- I — CONTROL INTERLOCK
- A — CONTROL SYSTEM I/O INTERFACE – ANALOG SIGNAL. TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.
- D — CONTROL SYSTEM I/O INTERFACE – DISCRETE SIGNAL. TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.
- PNEUMATIC SIGNAL
- DIAPHRAGM SEAL
- DISCRETE MODBUS TCP/IP ETHERNET COMMUNICATIONS
- ANALOG MODBUS TCP/IP ETHERNET COMMUNICATIONS
- FIBER COMMUNICATIONS

PROCESS DEVICE SYMBOLS

- REDUCER OR ENLARGER
- PRIMARY ELEMENT VENTURI TUBE
- PRIMARY ELEMENT MAGNETIC FLOWMETER
- PRIMARY ELEMENT ULTRASONIC DOPPLER FLOWMETER
- PRIMARY ELEMENT PARSCHALL FLUME
- PRIMARY ELEMENT ORIFICE PLATE
- PRIMARY ELEMENT WEIR FLOWMETER
- PRIMARY ELEMENT TURBINE OR PROPELLER TYPE METER
- PRIMARY ELEMENT PITOT TUBE
- PRIMARY ELEMENT ROTAMETER
- PRIMARY ELEMENT ULTRASONIC TRANSIT TIME METER
- PRIMARY ELEMENT ULTRASONIC DOPPLER METER
- PRIMARY ELEMENT ULTRASONIC FLOW OR LEVEL METER
- FLOAT SWITCH
- DRAIN
- CHEMICAL INJECTION POINT
- MIXER

PROCESS DEVICE SYMBOLS (CONTINUED)

- VALVE: GLOBE OR OTHER IN–LINE TYPE, UNLESS OTHERWISE INDICATED.
- BUTTERFLY VALVE
- CHECK VALVE WITH FLOW DIRECTION AS INDICATED
- PLUG VALVE
- BALL VALVE
- REGULATED SIDE — PRESSURE REGULATING VALVE – SELF CONTAINED
- FLOW CONTROL GATE OR GATE VALVE
- CENTRIFUGAL BLOWER
- POSITIVE DISPLACEMENT BLOWER
- CENTRIFUGAL PUMP
- SUBMERSIBLE PUMP
- DIAPHRAGM PUMP & MOTOR
- DISC FLOW OR PROGRESSIVE CAVITY PUMP
- VERTICAL PUMP
- MOTOR – MAY BE ELECTRIC, HYDRAULIC, OR PNEUMATIC. ARROW DENOTES VARIABLE SPEED.

FUNCTION SYMBOLS

- Σ SUMMING
- Σ/n AVERAGING
- △ SUBTRACTING
- √‾ EXACT SQUARE ROOT
- ÷ DIVIDE
- x MULTIPLY
- S INTEGRATE
- \+ BIAS POSITIVE
- – BIAS NEGATIVE
- f(x) NONLINEAR OR UNSPECIFIED FUNCTION
- > HIGH SELECT
- < LOW SELECT
- } HIGH LIMIT
- { LOW LIMIT
- */* SIGNAL TRANSDUCER OR CONVERTER (INPUT/OUTPUT)
  * DEFINED AS FOLLOWS:
    - E VOLTAGE
    - H HYDRAULIC
    - I CURRENT
    - PD PULSE DURATION
    - O ELECTROMAGNETIC, SONIC
    - P PNEUMATIC
    - PD PULSE DURATION
    - R RESISTANCE (ELECTRIC)

CHEMICAL ABBREVIATIONS:
(STANDARD CHEMICAL FORMULAS ARE USED)

ABBREVIATIONS

A	AUTOMATIC
C	COMPUTER OR CLOSE
H	HAND
L	LOCAL
M	MODULATE
O	OFF OR OPEN
R	REMOTE
S	START OR STOP

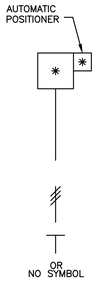
OTHER ABBREVIATIONS:

AI	ANALOG INPUT
AO	ANALOG OUTPUT
AS	AIR SUPPLY
COND	CONDUCTIVITY
CR	CHLORINE RESIDUAL
CTU	CENTRAL TELEMETRY UNIT
DCU	DISTRIBUTED CONTROL UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DISSOLVED OXYGEN OR DIGITAL OUTPUT
ES	ELECTRIC SUPPLY
FC	FAIL CLOSED
FLP	FAIL LAST POSITION
FO	FAIL OPEN
MC	MOTOR CONTROLLER
NC	NORMALLY CLOSED
pH	HYDROGEN ION CONCENTRATION
PLC	PROGRAMMABLE LOGIC CONTROLLER
PCP	PROCESS CONTROL PANEL
POLM	POLYMER
RCP	REMOTE CONTROL PANEL
RIO	REMOTE INPUT/OUTPUT
RTU	REMOTE TERMINAL UNIT
TURB	TURBIDITY
VIB	VIBRATION
VSD	VARIABLE SPEED DRIVE

GENERAL NOTES

1. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS & ABBREVIATIONS MAY NOT APPLY TO THIS SPECIFIC PROJECT.
2. THIS LEGEND APPLIES TO INSTRUMENTATION DIAGRAMS ONLY, & ITS SYMBOLS MAY NOT BE APPLICABLE TO NON–INSTRUMENTATION DRAWINGS.
3. THIS LEGEND SHEET & THE INSTRUMENTATION DIAGRAMS & I–DRAWINGS ARE GENERALLY BASED ON THE INSTRUMENT SOCIETY OF AMERICA'S STANDARDS FOR PRACTICES IN INSTRUMENTATION. SOME MODIFICATIONS, ADDITIONS, & ALTERATIONS MAY HAVE BEEN MADE TO ACCOMMODATE INDIVIDUAL PROJECT REQUIREMENTS.
4. SOME PROCESS ITEMS (SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC.) WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE INSTRUMENTATION SHEETS.
5. SEE ELECTRICAL SHEETS & SPECIFICATIONS FOR ADDITIONAL CONTROL & INTERLOCK REQUIREMENTS FOR EQUIPMENT NOT SHOWN OR NOT PROVIDED BY THE INSTRUMENTATION SUPPLIER.
6. SLANTED TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES. NON–SLANTED TEXT DENOTES NEW EQUIPMENT, STRUCTURES, & WORK. SLANTED TEXT (NOT SHADED) DENOTES FUTURE EQUIPMENT STRUCTURES & WORK.

VALVE ACTUATOR SYMBOLS



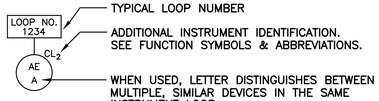
VALVE OR GATE ACTUATOR WITH DEFINED AS FOLLOWS:

- P: AIR CYLINDER
- S: SOLENOID
- P/O: AIR/OIL CYLINDER
- E: ELECTRIC MOTOR
- H: HYDRAULIC CYLINDER
- EH: ELECTROHYDRAULIC
- Z: MISCELLANEOUS

FOR PRESSURE RELIEF OR SAFETY VALVES ONLY

MANUALLY (HAND) OPERATED

TAG NUMBER & DESIGNATION EXAMPLE



INSTRUMENTATION IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		EMERGENCY	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		CLEANER	CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH OR OPEN
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW OR CLOSED
M	USER'S CHOICE	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RUN		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY, VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR TORQUE		WELL		
X	FAILURE	X AXIS			
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE, OR UNCLASSIFIED CONTROL ELEMENT	

BID SET

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448–7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

INSTRUMENTATION LEGEND, NOTES, AND ABBREVIATIONS

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET I-01

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

X:\Active Projects\VALFF\Howey in the Hills WTP No. 3\04_100P\Dwgs\I-01 LEGEND.dwg, 7/1/2025 2:32:41 PM, bweinberger

LOOP NO. 0113 (TYP. OF 2)

LOOP NO. 0112 (TYP. OF 2)

LOOP NO. 0115 (TYP. OF 2)

LOOP NO. 6100

LOOP NO. 6120

LOOP NO. 6200

LOOP NO. 6220

LOOP NO. 6230

D WELL 5 STARTER FAULT
D WELL 5 IN HAND
D WELL 5 IN REMOTE
D WELL 5 NO FLOW
D WELL 5 HIGH TEMP
D WELL 5 RUNNING
D WELL 5 CONTROL

A WELL 5 LEVEL
A WELL F FLOW

D STORAGE TANK NO. 1 LOW LEVEL
D STORAGE TANK NO. 1 HIGH LEVEL
A STORAGE TANK NO. 1 LEVEL

D STORAGE TANK NO. 2 LOW LEVEL
D STORAGE TANK NO. 2 HIGH LEVEL
A STORAGE TANK NO. 2 LEVEL

A ANALYZER FAULT
A GST TOTAL CHLORINE

PLC

ETHERNET/IP

ETHERNET/IP

PCP

RCP-1

TO BACKUP CONTROL PANEL, SEE SHEET I-03 FOR CONTINUATION

S/S

SSS-W5

TSH

M

S

PT

PG

ARV

LS

LIT

FIT

10"

FE

PRE-LUBE

SAMPLE TAP

WELL BLOW OFF

WELL NO. 5

LSL

LSH

LIT

AERATOR

GST-Cl_2

PT

600,000 GALLON GROUND STORAGE TANK

EMERGENCY FILL

AIT

Cl_2

AE

SAMPLE POINT "C"

STORMWATER POND

TO HIGH SERVICE PUMPS

A

I-03

LOOP NO. 0123

LOOP NO. 0122

LOOP NO. 0125

SSS-W6

WELL NO. 6

AERATOR

PRE-Cl_2

PRE-Cl_2

FUTURE 600,000 GALLONS GROUND STORAGE TANK

EMERGENCY FILL

WELLS

PROCESS & INSTRUMENTATION DIAGRAM – TREATMENT

DATE	REVISION
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HOWEY-IN-THE-HILLS, FLORIDA

WATER TREATMENT PLANT No. 3

PROCESS & INSTRUMENTATION DIAGRAM - TREATMENT

halff
902 North Sinclair Ave.
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Fax: 352.343.8495
Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
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JOB NO.:	055783.001
FILE NAME:	-

SHEET I-02

10620 GRIFFIN ROAD, SUITE 202
COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

BID SET

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LOOP NO. 5331 (TYP. OF 4)

PUMP 1 START COMMAND D
PUMP 1 HIGH TEMP D
PUMP 1 RUNNING D
PUMP 1 VFD FAULT D
PUMP 1 IN HAND D
PUMP 1 IN REMOTE D
PUMP 1 SPEED REFERENCE A
PUMP 1 SPEED CONTROL A

ETHERNET/IP

S/S
SET SPEED

VARIABLE FREQUENCY DRIVE

FROM GROUND STORAGE TANK
B
I-02

TSH (1)
M
FS

NO. 1
LOOP NO. 5332
VARIABLE FREQUENCY DRIVE
TSH (1)
M
FS

NO. 2
LOOP NO. 5333
VARIABLE FREQUENCY DRIVE
TSH (1)
M
FS

NO. 3
LOOP NO. 5334
VARIABLE FREQUENCY DRIVE
TSH (1)
M
FS

NO. 4
JOCKEY PUMP

HIGH SERVICE PUMPS

LOOP NO. 5330

BACKUP POWER AVAILABKLE D
HS PUMPS BACKUP FORCE D
HS PUMPS BACKUP RESET D
HS PUMPS IN BACKUP D

LOOP NO. 5555

PLANT DISCHARGE HIGH PRESSURE D
PLANT DISCHARGE LOW PRESSURE D
PLANT DISCHARGE PRESSURE A

LOOP NO. 5551

PLANT DISCHARGE FLOW A

LOOP NO. 5558

PLANT DISCHARGE-A pH A
PLANT DISCHARGE-B RESIDUAL A
ANALYZER FAULT D

LOOP NO. 5640

EMERGENCY FILL FLOW A

LOOP NO. 5650

PLC
PCP

H.S. PUMP BACKUP CONTROLS RELAY LOGIC (SEE SHEET E-09)

S/S
TO WELL SSS, SEE SHEET I-02 FOR CONTINUATION

PRESSURE MONITORING PANEL
PIT
PSLL
PSHH
PS1
PS2
PS3
PS4

AIT
pH
AE A
TOTAL Cl_2
AE B

POST-Cl_2

FIT
M
12"
FE
SAMPLE POINT "D"

3"
SERVICE WATER

FIRE HYDRANT

TO DISTRIBUTION SYSTEM

RCP-1

FQIT
6"
FE
METER VAULT

EMERGENCY FILL TO GST 1

EMERGENCY FILL TO FUTURE GST 2

NOTES:

(1) FURNISHED WITH PUMP UNDER DIVISION 11.

PROCESS & INSTRUMENTATION DIAGRAM – EFFLUENT

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COOPER CITY, FLORIDA 33328
PHONE: (954) 448-7930
C.O.A. NO. 6783
Stephen E. Bailey, P.E.
Florida P.E. No. 42461

BID SET

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

PROCESS & INSTRUMENTATION DIAGRAM - EFFLUENT

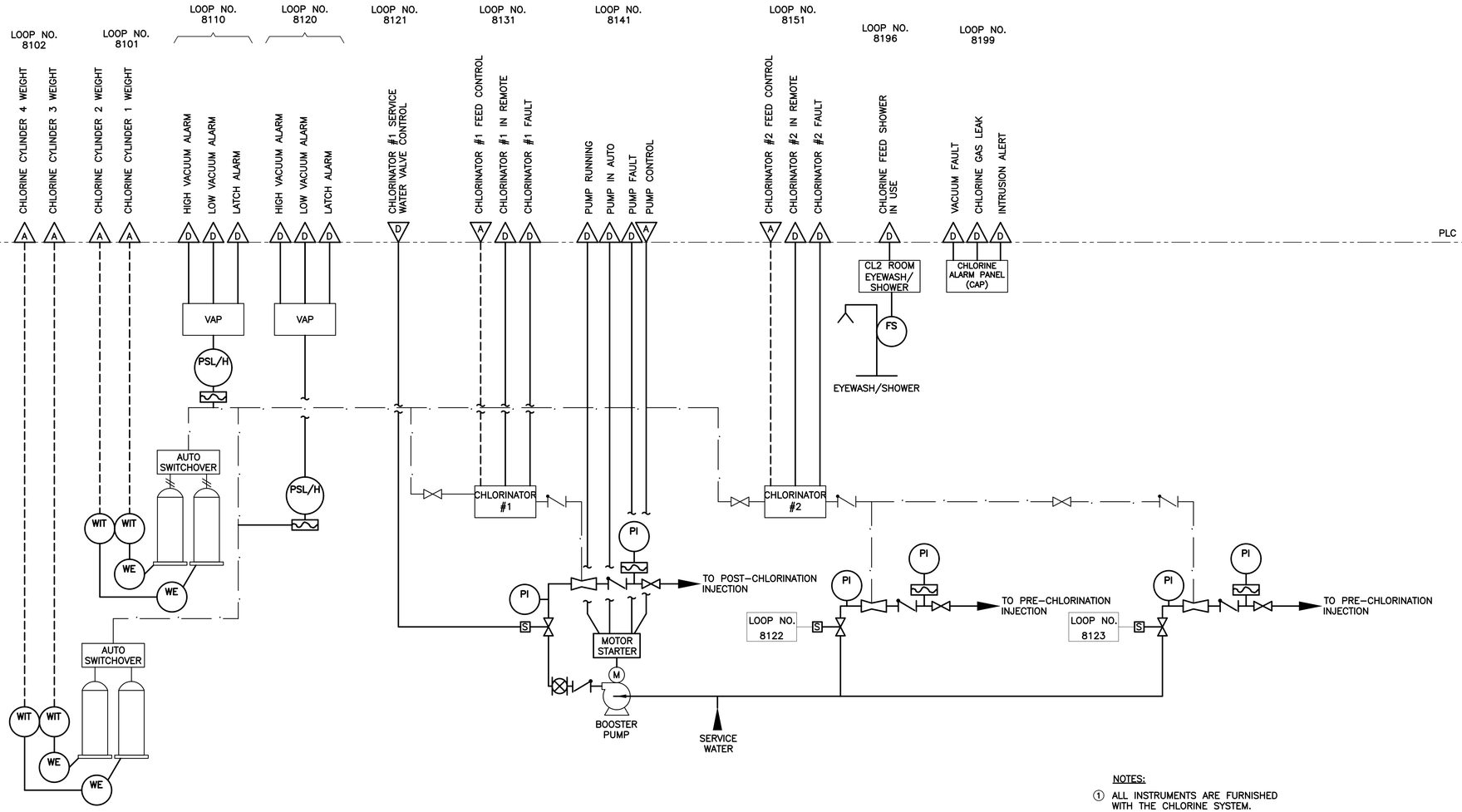
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Certificate of Authorization Number: 33380

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
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JOB NO.:	055783.001
FILE NAME:	-

SHEET I-03

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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NOTES:

1. ALL INSTRUMENTS ARE FURNISHED WITH THE CHLORINE SYSTEM.

CHLORINE SYSTEM

REVISION		
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3
PROCESS & INSTRUMENTATION DIAGRAM - CHEMICAL

halff
902 North Sinclair Ave.
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Office: 352.343.8481
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Certificate of Authorization Number: 33580

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

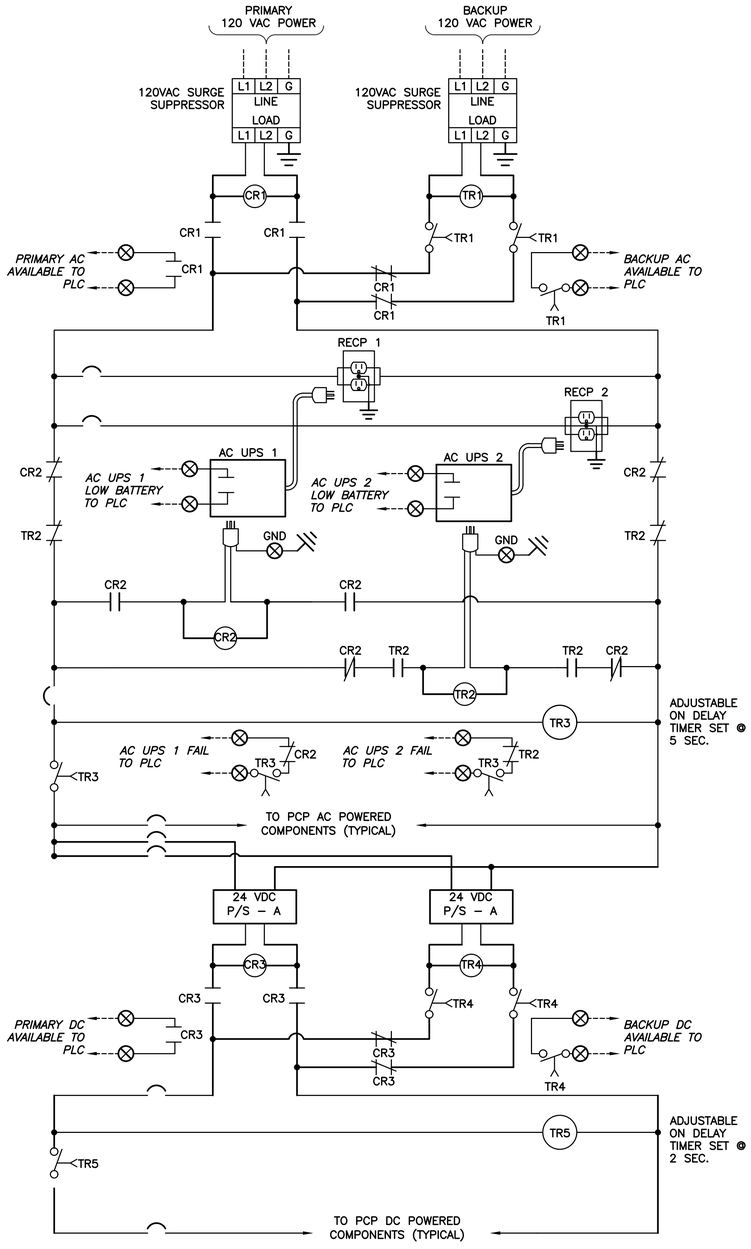
SHEET I-04

10620 GRIFFIN ROAD, SUITE 202
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PHONE: (954) 448-7930
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Stephen E. Bailey, P.E.
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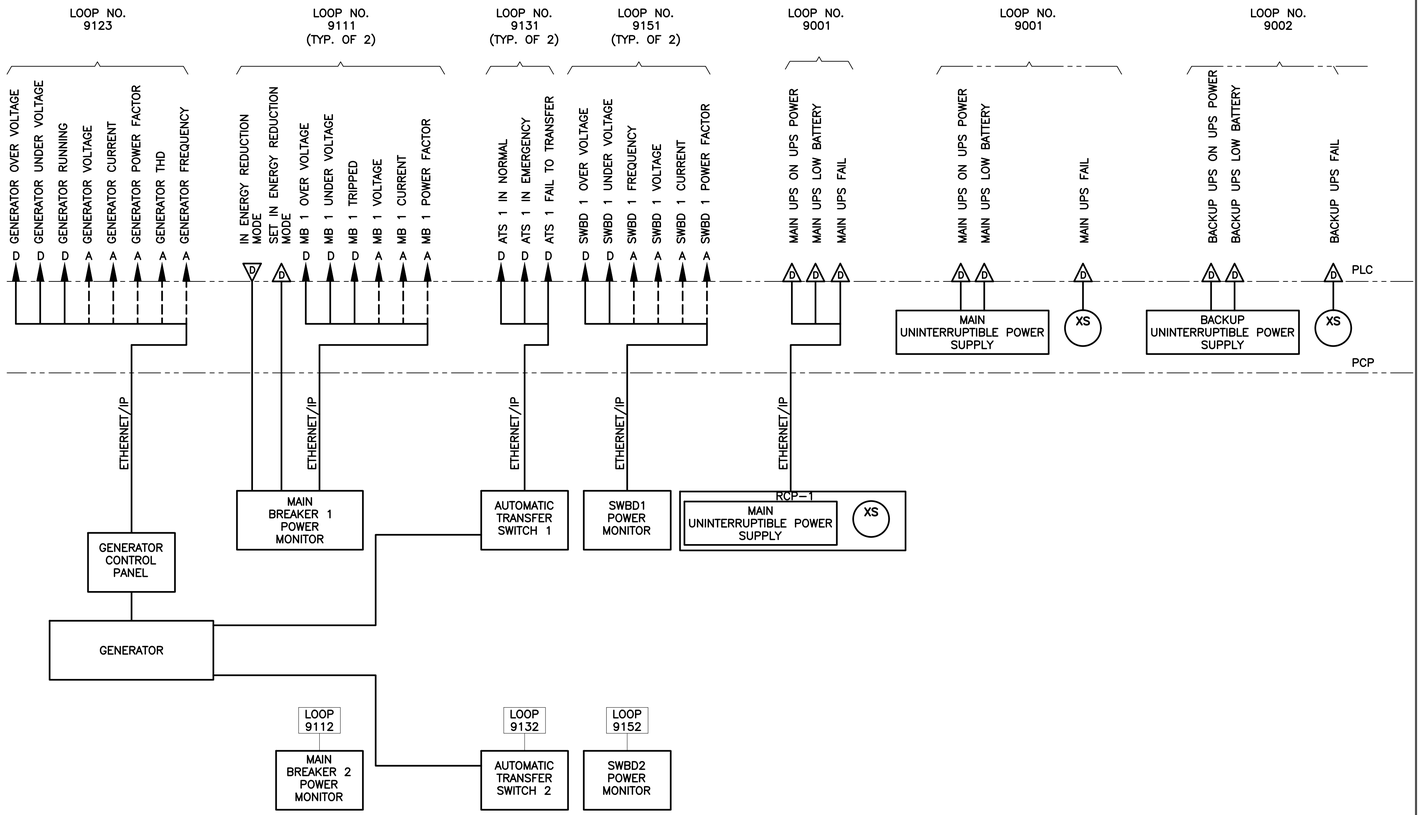
BID SET

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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UPS POWER ELEMENTARY DIAGRAM (TYPICAL FOR PCP/RCP)



POWER MONITORING

REVISION	DATE
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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3
PROCESS & INSTRUMENTATION DIAGRAM - POWER MANAGEMENT

halff
902 North Sinclair Ave.
Tavares, Florida 32778
Office: 352.343.8481
Fax: 352.343.8495
Certificate of Authorization Number: 33980

DATE:	JUNE 30, 2025
DESIGNED BY:	JPL
DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

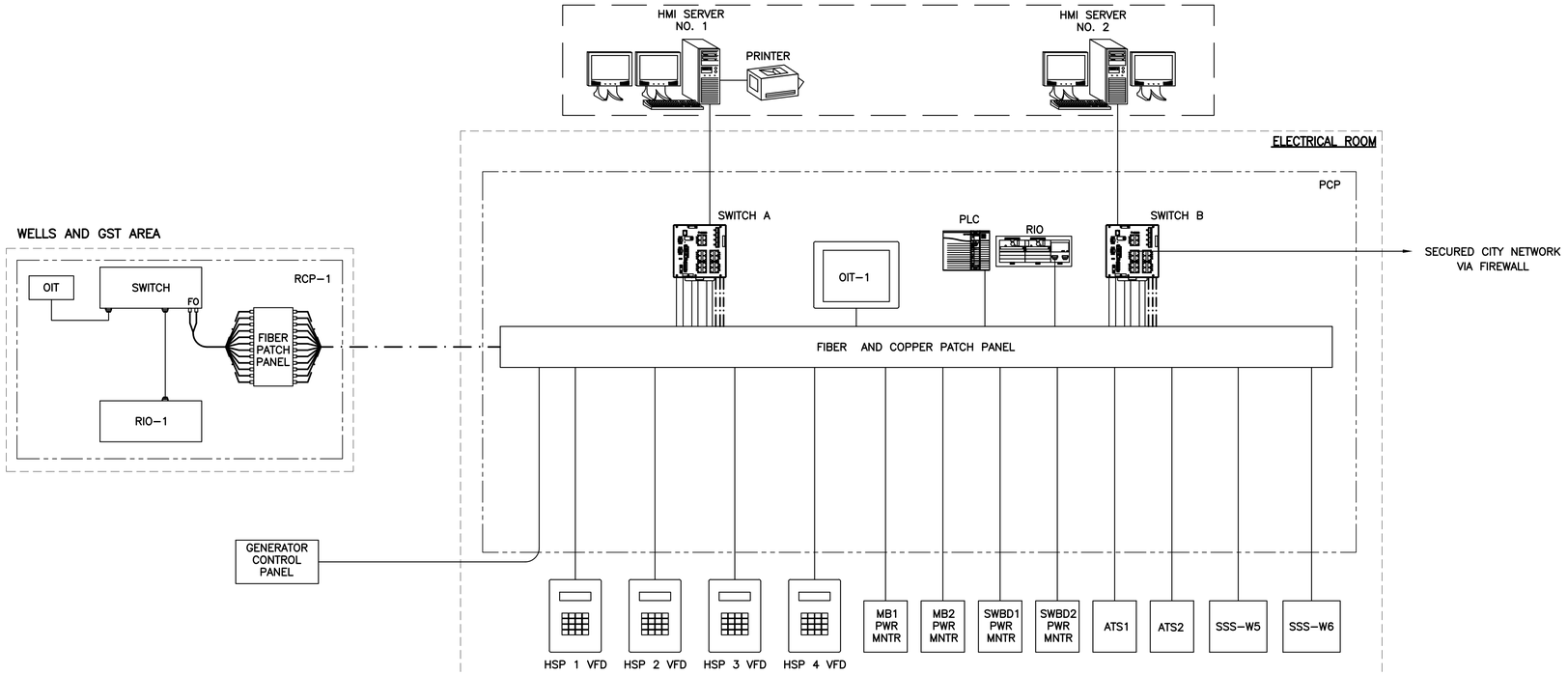
SHEET I-05

10620 GRIFFIN ROAD, SUITE 202
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Stephen E. Bailey, P.E.
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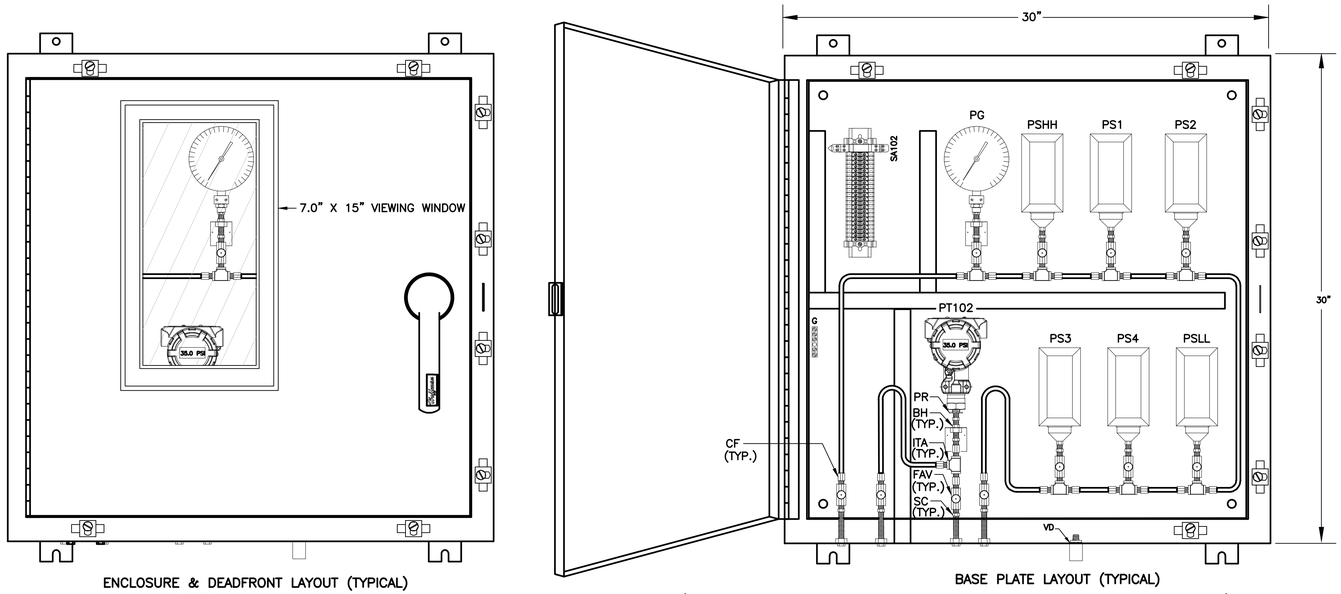
BID SET

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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PICS NETWORK SYSTEM BLOCK DIAGRAM



ENCLOSURE & DEADFRONT LAYOUT (TYPICAL)

BASE PLATE LAYOUT (TYPICAL)

1 TYP. PRESSURE MONITORING PANEL DETAIL (FURNISHED BY DIVISION 13 SYSTEM SUPPLIER)

BID SET

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HOWEY-IN-THE-HILLS, FLORIDA
WATER TREATMENT PLANT No. 3

PICS NETWORK SYSTEM BLOCK DIAGRAM

halff
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DATE:	JUNE 30, 2025
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DRAWN BY:	SJL
CHECKED BY:	SEB
JOB NO.:	055783.001
FILE NAME:	-

SHEET I-06

STEPHEN E. BAILEY, PE
REGISTERED ENG. 42461

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