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SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

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311	E-92	GRAVITY BELT THICKENERS - POWER PLAN
312	E-93	OLD INFLUENT PUMP STATION - LIGHTING PLANS
313	E-94	GUARDHOUSE MOTORIZED GATE - ELECTRICAL PLAN
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315	E-96	NORTH PLANT CHLORINE CONTACT CHAMBER - DEMOLITION PLAN & EQ POND STRUCTURE PLAN
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318	E-99	PANEL SCHEDULES-1
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INSTRUMENTATION

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338	I-10	P&ID - NORTH 2 PLANT AERATION TANKS
339	I-11	P&ID - NORTH PLANT CLARIFIERS - AND NORTH 2 RATE OF FLOW CONTROLLER
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REFERENCE DRAWINGS

EASTERN SUBREGIONAL WWTP - PHASE II

A-1	SLUDGE DEWATERING BLDG. - PLANS & DETAILS
A-2	SLUDGE DEWATERING BLDG. - ELEVATIONS & DETAILS
A-3	SLUDGE DEWATERING BLDG. - DETAILS
M-11	SLUDGE DEWATERING - PLAN & SECTIONS

EASTERN WATER RECLAMATION FACILITY - CENTRIFUGE DEWATERING BUILDING IMPROVEMENTS

D-640-101	BELT FILTER PRESS DEWATERING BUILDING - DEMOLITION PLAN MECHANICAL PROCESS
D-640-301	BELT FILTER PRESS DEWATERING BUILDING - DEMOLITION SECTIONS MECHANICAL PROCESS

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

GENERAL LEGEND

- SURFACED STREET, ROAD OR DRIVE
- SURFACED STREET, ROAD OR DRIVE WITH CURBS
- NON-SURFACED STREET, ROAD OR DRIVE
- CONCRETE WALK
- CB — CATCH BASIN
- MANHOLE
- DRAINAGE COURSE OR FLOW LINE
- 326 — EXISTING GROUND CONTOUR
- 326 — FINISH GRADE CONTOUR
- BANK OR SLOPE LINES
- #3 OR T.H.#3 B3 — TEST HOLE AND NUMBER
- SURVEY LINE WITH PI, PT, OR POT
- CONCRETE ENCASEMENT-PLAN
- CONCRETE REACTION BLOCKING AT BEND, PLUG OR TEE
- DRAINS OR CULVERTS
- TUNNEL CASING - PLAN
- SMALLER THAN 24" / 24" AND LARGER — EXISTING GENERAL LAYOUT YARD PIPING
- SMALLER THAN 24" / 24" AND LARGER — NEW
- NEW WATER LINE OR SEWER IN PROFILE
- NON-CONNECTING PIPING
- CE/L — CONSTRUCTION EASEMENT LINE
- E/L — EASEMENT LINE
- R/W — RIGHT-OF-WAY LINE
- PL — PROPERTY LINE
- PE/L — PERMANENT EASEMENT LINE
- TE/L — TEMPORARY EASEMENT LINE
- UE/L — UTILITY EASEMENT LINE
- S/L — SURVEY LINE / SECTION LINE
- W — WATER LINE
- G — GAS LINE
- T — TELEPHONE (UNDERGROUND)
- E — ELECTRICAL (UNDERGROUND)
- P — T — POWER OR TELEPHONE LINES (OVERHEAD)
- (G) (W) — WATER OR GAS VALVE
- (WM) (GM) — WATER OR GAS METER
- TELEPHONE OR POWER POLE WITH GUY ANCHOR
- FIRE HYDRANT
- Y — YARD HYDRANT
- STREET LIGHT POLE
- TRAFFIC SIGNAL
- TRAFFIC SIGN
- S — STOPSIGN
- HEDGE, BRUSH, SHRUBS, WOODS
- 10" — DECIDUOUS TREE AND TRUNK DIAMETER
- 4" — CONIFEROUS TREE AND TRUNK DIAMETER
- SWAMP

- BUILDINGS, STRUCTURES
- STRUCTURES UNDERGROUND
- FUTURE BUILDINGS, STRUCTURES
- CLOTHES LINE
- SWING SET
- FENCE
- FENCE, WOOD
- RAILROAD, EACH TRACK
- CENTERLINE
- 1 / AC45 — SECTION NUMBER OR DETAIL LETTER; DRAWING NUMBER ON WHICH SECTION OR DETAIL APPEARS; OR WHERE SECTION IS CUT OR DETAIL IS NOTED
- 1 / A045 — DOOR, WINDOW AND LOUVER SCHEDULE REFERENCE; WALL ELEVATION
- D — ABBREVIATION
- 4 — SCHEDULE NUMBER
- F102 — ROOM NUMBER; AREA DESIGNATION
- PV 10 — EQUIPMENT OR VALVE IDENTIFICATION CODE; EQUIPMENT NUMBER
- PV-10 — EQUIPMENT OR VALVE IDENTIFICATION CODE; EQUIPMENT NUMBER
- EQUIP CALLOUT — EQUIPMENT REPRESENTATION WITH CALLOUT

DEMOLITION LEGEND

- EXISTING STRUCTURES, PIPING, CONDUIT ETC... TO BE REMOVED OR DEMOLISHED
- EXISTING ABANDONED PIPE
- EXISTING PIPE TO BE ABANDONED
- EXISTING PIPE TO BE DEMOLISHED

MATERIALS LEGEND

- ASPHALT PAVEMENT
- EARTH OR GRADE
- GRANULAR FILL (CRUSHED ROCK OR GRAVEL)
- ROCK
- NEW CONCRETE
- EXISTING CONCRETE, PRECAST OR PRESTRESSED CONCRETE
- BRICK, FACE
- BRICK, COMMON
- CONCRETE MASONRY UNITS (CMU)
- CUT STONE OR SAND FILL, GROUT, MORTAR, AND PLASTER
- WOOD, SHEATHING, PANELING, DECKING, ETC.
- WOOD, STUDS, BEAMS, JOISTS, ETC.
- RIPRAP
- CHECKERED PLATE
- STEEL (FOR 1"SCALE & LARGER)
- STEEL OR ALUMINUM (FOR 3/4" SCALE & SMALLER)
- BAR GRATING (LINES IN DIRECTION OF SPAN)
- ALUMINUM
- INSULATION (BATT)
- INSULATION (RIGID)

PIPING SYSTEMS

- NEW PIPING
- UNDERGROUND PIPING
- EXISTING PIPING
- FUTURE PIPING
- A — AIR (COMPRESSED)
- ALUM — ALUMINUM SULFATE - (ALUM)
- CRW — CHEMICAL RESISTANT ACID WASTE
- CRV — CHEMICAL RESISTANT ACID WASTE VENT
- CW — COLD WATER (POTABLE)
- CWR — CHILLED WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CDWR — CONDENSER WATER RETURN
- CDWS — CONDENSER WATER SUPPLY
- CW — WATER, COLD
- DW — DISTILLED WATER
- EXISTING ABANDONED PIPE
- F — FIRE PROTECTION WATER SYSTEM
- FOR — FUEL OIL RETURN
- FOS — FUEL OIL SUPPLY
- FOV — FUEL OIL VENT
- G — GAS, NATURAL
- NaOCl — SODIUM HYPOCHLORITE
- HWR — HEATING SYSTEM WATER RETURN
- HWS — HEATING SYSTEM WATER SUPPLY
- HW — WATER, POTABLE HOT
- HWC — HOT WATER CIRCULATING
- NPW — WATER, NON-POTABLE
- NPHW — WATER, NON-POTABLE HOT
- OF — OVERFLOW

EXISTING PIPING SYSTEMS

- PRW — PLANT REUSE WATER
- PG — LP GAS (PROPANE)
- PIPE TO BE ABANDONED
- POLY — POLYMER SOLUTION
- RF — REFRIGERANT
- ST — STORM DRAIN
- TW — TEMPERED WATER
- PD — SUMP PUMP DISCHARGE
- SAN — SANITARY SEWER
- V — VENT
- PD — SUMP PUMP DISCHARGE
- SAN — SANITARY SEWER
- V — VENT
- VAC — VACUUM
- W — WATER

ALP	W/I SLUDGE BASINS
ALP	TO SLUDGE BASINS
AHP	AIR HIGH PRESSURE
CLS	CHLORINE SOLUTION
CLGV	CHLORINE GAS (VACUUM)
DR-1	DRAIN
DR-2	DRAIN
DR-3	DRAIN
FE	FILTER EFFLUENT
GR	GRIT SLURRY
ML	MIXED LIQUOR
OA	ODOROUS AIR
PS	POLYMER SOLUTION
W1-2	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
REJ	FILTER REJECT
RS	RAW SEWAGE
SA-1	SAMPLE
SA-2	SAMPLE
SC	SCUM
SE	SECONDARY EFFLUENT
SL	SLUDGE
SS	SANITARY SEWER
STS	STORM SEWER
WAS	WASTE ACTIVATED SLUDGE
W2-1	PLANT REUSE
W2-2	PLANT REUSE
W2-3	PLANT REUSE
FM	FORCE MAIN

PIPING ACCESSORIES LEGEND

- BLIND FLANGE
- CAP OR PLUG
- CO — CLEANOUT
- CROSS
- DIAPHRAGM SEAL
- ELBOW
- ELBOW DOWN
- ELBOW TURNING UP
- SIZE — HOSE CONNECTION
- Q — QUICK COUPLING
- REDUCER
- RUPTURE DISK
- TEE
- TEE LINE DOWN
- TEE LINE UP
- WYE
- WYE STRAINER
- WYE STRAINER WITH BLOWOFF
- DRAIN OR BELL-UP
- CALIBRATING COLUMN
- TRAP
- UNION
- WALL SLEEVE
- AT — AUTOMATIC DRAIN TRAP
- DT — DRIP TRAP
- S S — DUPLEX STRAINER
- EXPANSION COMPENSATOR
- F — INLINE FILTER
- FLEXIBLE HOSE OR TUBING
- FLEXIBLE CONNECTOR
- HOSE REEL
- INJECTOR, EDUCTOR, BLENDER
- ORIFICE PLATE
- PIPE GUIDE
- S — SEDIMENT TRAP
- S — STRAINER
- SUCTION DIFFUSER
- PIPE DIFFUSER
- SURGE CHAMBER
- VENT - SCREENED
- VENT
- P — PRESSURE GAUGE W/SNUBBER
- SIGHT FLOW INDICATOR
- T — TEMPERATURE INDICATOR
- THERMOMETER
- ELECTROMAGNETIC/ULTRASONIC FLOWMETER
- PITOT TUBE
- ROTAMETER
- TURBINE OR PROPELLOR FLOWMETER
- M — SET STOP METER
- VENTURI
- FM — FLOW METER

VALVE LEGEND

- PINCH VALVE
- PLUG VALVE, ECCENTRIC
- PLUG VALVE, NON-ECCENTRIC
- BUTTERFLY VALVE
- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- CHECK VALVE
- 3 WAY VALVE
- 4 WAY VALVE
- ANGLE VALVE
- CHLORINE INSTITUTE VALVE
- DIAPHRAGM VALVE
- THROTTLING VALVE
- FLAME ARRESTER OR CHECK
- BACKWATER VALVE
- INLINE PRESSURE RELIEF VALVE
- PRESSURE REGULATING VALVE
- PRESSURE SUSTAINING OR MAINTAINING VALVE
- VACUUM BREAKER
- THERMAL SHUTOFF VALVE
- EXPLOSION RELIEF VALVE
- HOSE FAUCET
- HOSE FAUCET W/VACUUM BREAKER
- HOSE VALVE W/HOSE NIPPLE
- BACKFLOW PREVENTER
- SAFETY RELIEF VALVE
- V — VACUUM RELIEF CHECK VALVE
- PRESSURE VACUUM RELIEF VALVE

MISCELLANEOUS EQUIPMENT

- STATIC MIXER
- VERTICAL MIXER
- SIGHT GLASS
- CHANNEL DIFFUSER
- COMPRESSOR OR BLOWER
- GRIT CLASSIFIER
- PIPE ANCHOR
- PUMP
- SCREENINGS COMPACTOR
- SLUICE GATE
- SLIDE GATE
- STOP PLATE
- BAR SCREEN
- EXPANSION TANK
- FLUME
- WEIR

ACTUATOR LEGEND

- M — ELECTRIC
- FLOAT
- DIAPHRAGM
- P/O — AIR/OIL TANDEM
- S — SOLENOID
- A — AIR

NOTE :
SYMBOLS ON THIS SHEET WHICH ARE TO BE SHOWN AS EXISTING SHALL BE DELINEATED AS SCREENED
THOSE SYMBOLS WHICH ARE TO BE SHOWN AS NEW SHALL BE DELINEATED AS SOLID (HEAVY)

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK.	APP
7/2015	BID ISSUE				

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL
SYMBOLS AND DESIGNATION LEGENDS

DESIGNED: NEQ
DETAILED: AJM
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015
ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

G-2
SHEET
3 OF 364

FD180761
D180761

A	ACID, AMBER INDICATING LIGHT,AMP
AB	ANCHOR BOLT
ABS	ACID BATH SINK
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONER, (ING)
ACP	ASBESTOS CEMENT PIPE
ACST	ACOUSTIC, (AL
AD	ACCESS DOOR, AREA DRAIN, AIR DAMPER, ANODE
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE, ADJACENT
ADMIN	ADMINISTRATION
AF	AIR FLOW
AFF	ABOVE FINISH FLOOR
AH	AHEAD
AHP	AIR HIGH PRESSURE
AHU	AIR HANDLING UNIT
AL	ACTIVE LEAF
ALT	ALTERNATE, (IVE)
ALUM	ALUMINUM
AM	AMMETER
AMP	AMPERE
ANOD	ANODIZED
AP	ACCESS PANEL
APPR	APPROACH
APPROX	APPROXIMATE, (LY)
AR	ALARM RELAY
ARCH	ARCHITECTURAL
AS	AMMETER SWITCH
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVS	AUTOMATIC VALVE STATION
AWG	AMERICAN WIRE GAGE
B	BEAM
B TO B	BACK TO BACK
BA	BEARING AREA
BAL	BALANCE
BAT	BATTERY
BC	BEGIN CURVE
BD	BOARD
BEJ	BRICK EXPANSION JOINT
BF	BLIND FLANGE
BHP	BRAKE HORSEPOWER
BITUM	BITUMINOUS
BKR	BREAKER
BLDG	BUILDING
BLK	BLOCK
BM	BENCHMARK
BOF	BOTTOM OF FOOTING
BOT	BOTTOM
BP	BACK PRESSURE
BPMK NO	BASEPLATE MARK NUMBER
BRG	BEARING
BRK	BRICK
BS	BOTH SIDES
B&S	BELL AND SPIGOT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT-HOUR
BU	BELL-UP
BUR	BUILT UP ROOFING
BVC	BEGIN VERTICAL CURVE
C	COUNTER
C TO C	CENTER TO CENTER
CB	CATCH BASIN
CD	CEILING DIFFUSER
CE	CLARIFIED EFFLUENT
C/EJ	CONTRACTION/EXPANSION JOINT
CFM	CUBIC FEET PER MINUTE
C&G	CURB AND GUTTER
CHKD	CHECKERED
CI	CAST IRON
CIMH	CAST IRON MANHOLE
CIMHS	CAST IRON MANHOLE STEPS
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJT	CONTROL JOINT
CKT	CIRCUIT
CL	CLASS
C/L	CENTERLINE
CLG	CEILING
CLGV	CHLORINE GAS (VACUUM)
CLO	CLOSET
CLR	CLEAR, (ANCE)
CLS	CHLORINE SOLUTION
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT, COMPANY
COD	CHEMICAL OXYGEN DEMAND
COL	COLUMN
COMB	COMBINATION
COMB SWR	COMBINED SEWER
COMP	COMPRESSOR, (ED)
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION, CONTROL
CONTR	CONTRACTOR
COR	CORNER
CORR	CORRIDOR, CORRUGATED
CP	CONTROL PANEL
CPLG	COUPLING
CPT	CONTROL POWER TRANSFORMER
CRS	COURSES, (ING)
CS	CONTROL SWITCH, CONTROL STATION, CUP SINK
CSK	COUNTERSUNK, (INK)
CT	CERAMIC TILE, CYCLE TIMER
CT	CURRENT TRANSFORMER
CTR(S)	CENTER(S)
CU	CUBIC
CU YD	CUBIC YARD
CW	COLD WATER

D	DOOR
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOOR HEIGHT
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DISP	DISPENSER
DIST	DISTRIBUTION
DIV	DIVISION
DJ	DISMANTLING JOINT
DL	DEAD LOAD
DM	DAMPER MOTOR
DMJ	DOUBLE MECHANICAL JOINT
DN	DOWN
DO	DOOR OPENING, DISSOLVED OXYGEN
DPDT	DOUBLE POLE DOUBLE THROW
DR	DRAIN
DS	DOWNSPOUT
DT	DISTRIBUTION TRANSFORMER
DV	DRAIN VALVE
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
E	EAST, ELECTRICAL
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	END CURVE
ECC	ECCENTRIC
ECC RED	ECCENTRIC REDUCER
EEW	EMERGENCY EYEWASH
EF	EACH FACE
EFF	EFFLUENT
EJ	EXPANSION JOINT
EL	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC, (AL)
ELEV	ELEVATOR
EMER	EMERGENCY
ENC	ENCASEMENT
ENCL	ENCLOSURE
ENT	ENTRANCE
EOL	END OF LINE
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EW	EMERGENCY EYEWASH
EWEF	EACH WAY EACH FACE
EXCH	EXCHANGER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
EXP JT	EXPANSION JOINT
EXT	EXTENSION, EXTERIOR, EXTERNAL
F	FAN
F TO F	FACE TO FACE
FB	FACE BRICK
FC	FLEXIBLE CONNECTION, FLOW CONTROL
FCA	FLANGED COUPLING ADAPTER
FD	FLOOR DRAIN
FDN	FOUNDATION
FDPR	FIRE DAMPER
FE	FILTER EFFLUENT, FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FH	FLAT HEAD, FIRE HYDRANT
FHMS	FLAT HEAD MACHINE SCREW
FIG	FIGURE
FIN	FINISH
FIN GR	FINISH GRADE
FL	FLOOR, FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE, FLASHING
FM	FLOW METER, FORCE MAIN
FO	FUEL OIL
FOB	FLAT ON BOTTOM
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOT	FLAT ON TOP
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FAR SIDE, FLOOR SLEEVE, FLOAT SWITCH
FT	FOOT
FTG	FOOTING
FURN	FURNISH, FURNISHED
FV	FLAP VALVE
FWD	FORWARD
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC/MS	GAS CHROMATOGRAPH/MASS SPECTROMETER
GEN	GENERAL, GENERATOR
GM	GAS METER
GPM	GALLONS PER MINUTE
GR	GRADE
GRIT	GRIT SLURRY
GWB	GYPSUM WALLBOARD
GYP	GYPSUM
H	HIGH, HOUR, HYDROGEN
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HE	HEAT EXCHANGER
HEX	HEXAGONAL
HF	HOSE FAUCET
HGT	HEIGHT
HH	HANDHOLE
HLS	HIGH LEVEL SWITCH
HMC	HARNESSED MECHANICAL COUPLING
HMD	HOLLOW METAL DOOR
HMJ	HARNESSED MECHANICAL JOINT
HORIZ	HORIZONTAL
HR	HOUR, PLANE BAR
HP	HORSEPOWER
HS	HIGH STRENGTH
HV	HOSE VALVE
HVAC	HEATING,VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HWY	HIGHWAY
HYDRO	HYDROPNEUMATIC

I	INDICATOR
ID	INSIDE DIAMETER
IF	INSIDE FACE
I/I	CURRENT TO CURRENT BOOSTER
IN	INCHES
INC	INCORPORATED
INCL	INCLUDING
INCR	INCREASE
INST	INSTRUMENT, (ATION)
INSUL	INSULATE, (ED), (ING)
INT	INTERIOR, INTERNAL
INV	INVERT
IPS	IRON PIPE SIZE
IR	INTERNAL RECYCLE
JAN	JANITOR
JB	JUNCTION BOX
JF	JOINT FILLER
JT	JOINT
K	KIPS
KIT	KITCHEN
KO	KNOCK OUT
KS	KITCHEN SINK
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
L	LOUVER
LAB	LABORATORY
LAM	LAMINATE(D)
LAT	LEAVING AIR TEMPERATURE
LAT	LATERAL
LAV	LAVATORY
LB(S)	POUNDS
LG	LENGTH, LONG
LH	LEFT HAND
LIN	LINEAL, LINEAR
LL	LIVE LOAD
LO	LOUVER OPENING
LS	LEVEL SWITCH
LT	LEFT, LAB TABLE
MA	MILLIAMPERE
MACH	MACHINE
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MECHANICAL COUPLING
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MED	MEDIUM
MET	METAL
MEZ	MEZZANINE
MFM	MAGNETIC FLOWMETER
MFR(S)	MANUFACTURER(S)
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MJRG	MECHANICAL JOINT RETAINER GLAND
MJTR	MECHANICAL JOINT WITH TIE ROD
ML/MXL	MIXED LIQUOR
MO	MASONRY OPENING, MOTOR OPERATED
MP	METERING PUMP
MRD	METAL ROOF DECK
MS	MACHINE SCREW
MSL	MEAN SEA LEVEL
MTD	MOUNTED
MTL	MATERIAL
MTR	MOTOR
N	NORTH
N1	NORTH 1
N2	NORTH 2
N/A	NOT APPLICABLE
NBC	NAIL IN BOTTLE CAP
NC	NORMALLY CLOSED
NEUT	NEUTRAL
NF	NEAR FACE
N.O.	NORMALLY OPEN
NO.(S)	NUMBER(S)
NOM	NOMINAL
NORM	NORMAL
NPT	NATIONAL PIPE THREAD
NPW	NONPOTABLE WATER
NS	NEAR SIDE
NTS	NOT TO SCALE
OA	ODOROUS AIR
OC	ON CENTER, ODOR CONTROL
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE, OVERFLOW
OH	OVERHEAD
OL	OVERLOAD
OPER	OPERATING
OPNG	OPENING
OPP	OPPOSITE
OSL	OUTSTANDING LEG
OZ	OUNCE
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCP	PIER CUTOFF POINT
PD	PLAN DIMENSION
PE	PLAIN END
PG	PRESSURE GAUGE
PH	PIPE HANGER, PENTHOUSE
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION ON VERTICAL CURVE
PL	PLATE
PLYWD	PLYWOOD
PNL(S)	PANEL(S)
POLY	POLYMER
POT	POINT ON TANGENT
PP	POWER POLE
PR	PAIR
PROJ	PROJECTION
PRS	PRESSURE REDUCING STATION
PRV	POWER ROOF VENTILATOR
PS	PIPE SUPPORT, POLYMER SOLUTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE, POINT ON VERTICAL CURVE
PVCP	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
PW	POTABLE WATER

R	RADIUS, RISER
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RCHEP	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE
RD	ROOF DRAIN, ROAD
RDL	ROOF DRAIN LEADER
RE	REUSE
RECEP	RECEPTION
RECIRC	RECIRCULATING
RECP	RECEPTACLE
RED	REDUCER, REDUCING
REG	REGULATOR, REGULATING
REF	REFERENCE
REFR	REFRIGERATION, REFRIGERATOR
REINF	REINFORCING
REJ	FILTER REJECT
REM	REMOVABLE
REQD	REQUIRED
RET	RETURN
REV	REVISION, REVISED, REVERSED
RFG	ROOFING
RG	RETAINER GLAND
RH	ROOF HOOD, RIGHT HAND, ROUND HEAD, RED HEAD
RHMS	ROUND HEAD MACHINE SCREW
RHWS	ROUND HEAD WOOD SCREW
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RAW SLUDGE, RAW SEWAGE, ROLLED STEEL
RT	RIGHT
R/W	RIGHT OF WAY
RW	RECLAIMED WATER
S	SOUTH, SPEAKER
SA	SAMPLE
SC	SCUM
SCHED	SCHEDULE
SD	STORM DRAIN, SOAP DISH
SE	SECONDARY EFFLUENT
SEC	SECOND
SECT	SECTION
SER SK	SERVICE SINK
SG	SLUICE GATE, SUPPLY GRILLE
SH	SHEET
SHR	SHOWER
SHD	SHOWER DOOR
SI	SECONDARY INFLUENT
SIM	SIMILAR
SKL	SKYLIGHT
SL	SLUDGE
SM	SHEET METAL
SP	SUMP PUMP
SPA	SPACING, SPACES
SPEC(S)	SPECIFICATION(S)
SPLY	SUPPLY
SQ	SQUARE
SR	SUPPLY REGISTER
SS	STAINLESS STEEL, SANITARY SEWER
SSK	SERVICE SINK
SST	STAINLESS STEEL
ST	SELF TAPPING
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRM	STORM SEWER
STRUC	STRUCTURAL
SUP	SUPPLY
SUSP	SUSPENDED
SV	SHUTOFF VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SWS	SEAL WATER SOLENOID
SYM	SYMMETRICAL
SYS	SYSTEM
T	THERMOSTAT, TREAD, TOTALIZER
T	TRANSFORMER, TELEPHONE, TOP
TAN	TANGENT
TB	TERMINAL BOX
T&B	TOP AND BOTTOM
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCHMARK
TC	TOWEL CABINET, TOP OF CURB
TC	TERMINAL CABINET
TEL	TELESCOPING
TEMP	TEMPERATURE, TEMPORARY
TERM	TERMINAL
T&G	TONGUE & GROOVE
TH	TEST HOLE
THK	THICK, THICKNESS
THR	THRESHOLD
TI	TOTALIZING INDICATOR, TEMPERATURE INDICATOR
TIR	TOTALIZING INDICATING RECORDER
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TP	TWISTED PAIR COUPLE, TOWEL PIN
TRANS	TRANSFORMER, TRANSMITTER, TRANSFER
TS	TEMPERATURE SWITCH
TV	TELEVISION
TYP	TYPICAL
UDM	ULTRASONIC DENSITY METER
UGND	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UR	URINAL
USGS	UNITED STATES GEOLOGICAL SURVEY

V	VALVE, VOLT, VENT
VAC	VACUUM
VAT	VINYL ASBESTOS TILE
VBF	VALVE, AWWA BUTTERFLY
VBI	VALVE, INDUSTRIAL BUTTERFLY
VBL	VALVE, BALL
VBM	VALVE, BALL MISCELLANEOUS
VC	VERTICAL CURVE, VICTAULIC COUPLING
VCD	VERTICAL CONTROL DAMPER
VCK	VALVE, CHECK
VCN	VALVE, CONE
VCP	VITRIFIED CLAY PIPE
VG	VALVE, GATE
VGD	VALVE, DOUBLE DISC GATE
VGL	VALVE, GLOBE
VERT	VERTICAL
VF	VACUUM FILTER
VIB	VIBRATION
VKG	VALVE, KNIFE GATE
VM	VOLT METER
VNR	VENEER
VPC	VALVE, PRESSURE REGULATING
VPG	VALVE, PLUG
VPL	VALVE, ECCENTRIC PLUG
VPM	VALVE, PLUG MODULATING
VPR	VALVE, PRESSURE REDUCING
VSP	VALVE, PRESSURE RELIEF
VSPV	VALVE, PRESSURE/VACUUM RELIEF
VSV	VALVE, VACUUM RELIEF
VV	VENT VALVE
VVB	VACUUM BREAKER
W	WEST, WIDE, WINDOW, WATT, WATER
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WB	WALLBOARD
WC	WATER CLOSET
WD	WOOD, WIDTH
WF	WALL FITTING
WH	WALL HYDRANT
WL	WATER LEVEL
WM	WATER METER, WATTMETER
WO	WINDOW OPENING
W/O	WITHOUT
WOM	WOMEN
WP	WATERPROOF, WORKING POINT
WR	WASTE RECEPTACLE
WS	WATERSTOP
WT	WEIGHT
WW	WETWELL
WWF	WELDED WIRE FABRIC
x	BY,TIMES
YH	YARD HYDRANT
&	AND
@	AT
<	DEFLECTION ANGLE
#	NUMBER
%	PER CENT

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

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USER: VAN16643
XREF1: BORDER.dwg
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DWG VER: 1002

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL ABBREVIATIONS

DESIGNED: NEQ
DETAILED: AJM
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015

ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

G-3
SHEET
4 OF 364

FD180761
D180761

GENERAL NOTES FOR DRAWINGS

1. HORIZONTAL CONTROL: COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE NAD83(90) AND TIED INTO THE ORANGE COUNTY HORIZONTAL CONTROL NETWORK. REFERENCE MONUMENTS; NW CORNER OF SECTION 32, TOWNSHIP 23S, RANGE 29 EAST. (CCR #072486), N 1/4 CORNER OF SECTION 31, TOWNSHIP 23S, RANGE 29 EAST. (CCR #072484), W 1/4 CORNER OF SECTION 32, TOWNSHIP 23 SOUTH, RANGE 29 EAST. (CCR #072489).

2. VERTICAL CONTROL: ELEVATIONS ARE BASED ON THE ORANGE COUNTY BENCH MARK #L1019020, ELEVATION = 90.41 (NAVD88), BEING A BRASS DISK IN CURB ON THE SOUTH SIDE OF SAND LAKE ROAD AT THE WEST ENTRANCE TO ORANGE COUNTY'S SOUTH WATER RECLAMATION FACILITY, AND ORANGE COUNTY BENCH MARK #L1019015, ELEVATION = 96.65 (NAVD88), BEING A SQUARE CUT ON THE EAST SIDE OF CONCRETE STRUCTURE FOR AN AIR RELEASE VALVE 1,110' SOUTH OF SAND LAKE ROAD.

3. THE PROJECTED 100 YEAR FLOOD ELEVATION IS 87.6, NAVD88.

4. EXISTING UTILITIES AND STRUCTURES (UNDERGROUND, SURFACE, OR OVERHEAD) ARE INDICATED ONLY TO THE EXTENT THAT SUCH INFORMATION WAS KNOWN, OR MADE AVAILABLE TO, OR DISCOVERED BY THE ENGINEER IN PREPARING THE DRAWINGS. THE LOCATIONS, CONFIGURATIONS, AND ELEVATIONS OF SUBSURFACE FACILITIES AND UTILITIES ARE APPROXIMATE, AND NOT ALL UTILITIES AND FACILITIES MAY BE INDICATED. OVERHEAD UTILITIES ARE NOT INDICATED IN ARCHITECTURAL ELEVATIONS, PROFILE OR SECTION DRAWINGS. THE ENGINEERING INVESTIGATIONS, LOCATION, AND DESIGNATION OF SUBSURFACE UTILITIES INDICATED IN THESE CONTRACT DOCUMENTS HAS BEEN PERFORMED TO QUALITY LEVEL C IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRINCIPLES AND PRACTICES AS OUTLINED IN ASCE STANDARD AND GUIDELINE BULLETIN CI/ASCE 38-02 UNLESS OTHERWISE DESIGNATED. WHERE SUCH ACTIVITIES HAVE BEEN TO A HIGHER LEVEL OF QUALITY, THE HIGHER QUALITY LEVEL FOR THE AFFECTED AREAS IS INDICATED IN THE CONTRACT DOCUMENTS.

5. "SCREENED" (LIGHT) DELINEATION INDICATED ON THE DRAWINGS DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM EXISTING CONSTRUCTION DRAWINGS AND DATA, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING OF CONSTRUCTION. 'BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

6. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY PRECISE LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STRUCTURES, WHETHER INDICATED ON THE DRAWINGS OR NOT, IN THE FIELD IN ADVANCE OF EXCAVATING, BY CONTACTING ALL UTILITIES AND OTHER AGENCIES, AND BY PROSPECTING. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, DEMOLITION, RECONSTRUCTION, AND RECONNECTION OF EXISTING FACILITIES AS REQUIRED TO COMPLETE THE WORK. IF REQUIRED AFTER FIELD VERIFICATION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE ANY NECESSARY MODIFICATIONS TO PROPOSED NEW WORK.

7. BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED NEW WORK.

8. CONTRACTOR SHALL COMPLY WITH THE GOVERNING AGENCY NPDES CONSTRUCTION REQUIREMENTS, AND SHALL PROVIDE APPROPRIATE MITIGATION MEASURES OR PROTECTION AND RESTORATION AT ALL LOCATIONS AS REQUIRED BY THEIR OPERATIONS, AND AS DIRECTED BY ENGINEER. SPECIAL CONSTRUCTION REQUIREMENTS, TEMPORARY PROTECTIVE FENCING OR BARRICADES, SHEETING, SHORING, EROSION PROTECTION, AND SURFACE RESTORATION AT CERTAIN LOCATIONS ARE INDICATED ON THE DRAWINGS TO BRING CONTRACTOR'S ATTENTION TO SENSITIVE AREAS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS. PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF FLORIDA.

10. THE EXISTING TOPOGRAPHICAL FEATURES SHOWN ON THE DRAWINGS WERE OBTAINED FROM GROUND SURVEY AND REPRESENT CONDITIONS AS THEY EXIST AS OF OCTOBER 2013. AS PART OF THE BID PROCESS, AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXAMINE THE SITE OF THE PROPOSED WORK AND MAKE ALL NECESSARY INVESTIGATIONS TO THOROUGHLY DEFINE ALL DIFFICULTIES INVOLVED IN THE COMPLETION OF ALL WORK REQUIRED PURSUANT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

11. THE LOCATION OF TEST HOLES INDICATED ON THE DRAWINGS IS APPROXIMATE. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR ACTUAL TEST HOLE LOCATIONS AND THE FINDINGS OF THE GEOTECHNICAL INVESTIGATIONS.

12. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING TREES, SHRUBS, AND PLANTS UNLESS OTHERWISE NOTED.

13. CONTRACTOR SHALL INSTALL ALL PIPELINES, PAVING, WALKWAYS, AND CURB AND GUTTER AT A UNIFORM GRADE BETWEEN ELEVATIONS DEPICTED ON THE DRAWINGS.

14. FOR ALL SITE GRADING, SMOOTH PARABOLIC TRANSITIONS SHALL BE MADE BETWEEN CHANGES IN SLOPE. PARABOLIC ROUNDING SHALL APPLY TO ALL CUT AND FILL SECTIONS.

15. FINISHED GRADE ELEVATION AT THE BUILDING FACE, WHERE NOT ADJACENT TO PAVEMENT, SHALL BE APPROXIMATELY 6 INCHES BELOW FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED. FINISHED GRADE ELEVATION ADJACENT TO BASINS SHALL BE APPROXIMATE AS INDICATED BY CONTOURS, OR AS REQUIRED TO MEET STAIR LANDINGS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE, ELEVATIONS AND ALIGNMENT TO PROVIDE FOR FUTURE CONNECTIONS.

16. THE CONTRACTOR'S OPERATIONS SHALL CONFORM TO THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS PERTAINING TO EXCAVATION AND TRENCHING. WHEN TRENCH EXCAVATION EXCEEDS FIVE (5) FEET IN DEPTH, PERFORM THE FOLLOWING:
    A. CONTRACTOR SHALL CONFORM TO OSHA STANDARD 29CFR SECTION 1926.650 WHICH IS INCORPORATED IN FLORIDA STATE 90-96.
    B. CONTRACTOR SHALL PROVIDE WRITTEN ASSURANCE OF COMPLIANCE WITH THIS LAW.
    C. THE TRENCH SAFETY SYSTEM IS TO BE SUBMITTED BY THE CONTRACTOR.

17. RESTRAINED JOINTS SHALL BE PROVIDED FOR ALL PIPING JOINTS.

18. THE DRAWINGS INDICATE TYPES OF PIPE SUPPORT SYSTEMS AT VARIOUS LOCATIONS. HOWEVER, ALL PIPE SUPPORTS, HANGERS, BRACKETS, INSERTS OR BRACES ARE NOT SHOWN. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND PROVIDE A COMPLETE SUPPORT SYSTEM AS REQUIRED.

19. THE TERM "PROPOSED" AS INDICATED ON THE DRAWINGS MEANS THE ITEM IS DESIGNED OR PLANNED TO BE PROVIDED BY OWNER OR OTHERS SEPARATE FROM THIS CONTRACT. THE TERM "FUTURE" AS INDICATED ON THE DRAWINGS REFERS TO THE ENGINEER'S INTERPRETATION OF THE ITEM FOR THE FUTURE, BASED ON AVAILABLE INFORMATION.

20. MAINTAIN ACCESS AND OPERATION OF EXISTING PROCESS FACILITIES CONTINUOUSLY THROUGHOUT THE CONSTRUCTION ACTIVITIES OR UNTIL NEW FACILITIES HAVE BEEN ACCEPTED. INDIVIDUAL PROCESS FACILITIES CAN BE TAKEN OUT OF SERVICE FOR LIMITED PERIODS OF TIME TO FACILITATE CONSTRUCTION AS SPECIFIED IN THE CONTRACT DOCUMENTS.

21. THE DRAWINGS DEPICT THE APPROXIMATE LOCATIONS, ELEVATIONS AND DIMENSIONS AS SHOWN ON THE PLANS OF EXISTING UTILITIES AND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INCLUDE IN THE BID TO VERIFY ALL UTILITY LOCATIONS, ELEVATIONS AND DIMENSIONS BY UTILIZING EXPLORATORY INVESTIGATION AND EXCAVATIONS. VERIFICATION OF EXISTING UTILITY LOCATION SHALL BE CONDUCTED SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO ALLOW RESOLUTION OF CONFLICTS IN A TIMELY MANNER. IF A POTENTIAL CONFLICT IS LOCATED, OR AN EXISTING UTILITY OR STRUCTURE LOCATED IN A DIFFERENT LOCATION THAN IS ILLUSTRATED HEREIN, THE CONTRACTOR IS TO NOTIFY THE RESIDENT PROJECT REPRESENTATIVE IMMEDIATELY. AT A MINIMUM, THE FOLLOWING INFORMATION SHALL BE PROVIDED BY THE CONTRACTOR TO THE RESIDENT PROJECT REPRESENTATIVE; A DIMENSIONED ILLUSTRATION NOTING LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE. CONTRACTOR SHALL PROVIDE FITTINGS, ADAPTERS, SOLID SLEEVE CLOSURES, AND HARNESSED MECHANICAL COUPLING; ROTATE FITTINGS; DEFLECT JOINTS; AND MODIFY EXISTING PIPING AS APPLICABLE AND AS REQUIRED TO MAKE CONNECTIONS, INCLUDING ADJUSTMENTS FOR ANY OFFSETS IN CENTERLINE ELEVATIONS BETWEEN PIPELINES. CONTRACTOR SHALL PROVIDE TEMPORARY PLUG WITH FACTORY OUTLET SIZED AS REQUIRED FOR CONTRACTOR'S TESTING AND DISINFECTION WORK BEFORE MAKING CONNECTION, WHEN APPLICABLE. CONTRACTOR SHALL COORDINATE MAKING EACH CONNECTION WITH THE OWNER.

22. RESTORE ALL PROPERTY AND INFRASTRUCTURE, INCLUDING UTILITIES DISTURBED BY CONSTRUCTION OPERATIONS TO THE CONDITIONS WHICH EXISTED PRIOR TO CONSTRUCTION OR BETTER. THE COST OF SUCH RESTORATION SHALL BE INCLUDED IN THE BID. ANY DAMAGE TO EXISTING PROPERTY, UTILITIES, STRUCTURES AND/OR SERVICES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE IN A MANNER AS DIRECTED BY THE ENGINEER AND OWNER. REMOVE AND REPLACE ALL PIPE, CONDUIT AND CULVERTS DAMAGED DURING CONSTRUCTION, AT NO EXPENSE TO THE OWNER. CONTRACTOR SHALL REMOVE AND REPLACE, OR TEMPORARILY RELOCATE, STORM SEWERS, CULVERTS AND OTHER UTILITIES AS REQUIRED DURING THE INSTALLATION OF PIPE. CONTRACTOR SHALL PROVIDE A TEMPORARY MEANS OF CONVEYING STORMWATER. WHERE TEMPORARY SUPPORT OF UTILITIES IS REQUIRED, THE CONTRACTOR SHALL PAY ALL ASSOCIATED COSTS AND COORDINATE WITH THE OWNER AND ENGINEER.

23. FILTER FABRIC ENCAPSULATION IS REQUIRED IF GRADED GRAVEL OR CRUSHED ROCK IS USED AS FILL OR EMBEDMENT MATERIAL.

24. ALL BURIED PIPING SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS. A MINIMUM COVER OF 36 INCHES SHALL BE MAINTAINED ON ALL BURIED PIPING, WHERE IT IS NOT OTHERWISE SPECIFIED ON PLANS OR INDICATED BY THE ENGINEER. ALL DIRECTION CHANGES IN THE PIPE BOTH HORIZONTAL AND VERTICAL SHALL BE BY JOINT DEFLECTION UNLESS OTHERWISE NOTED OR INDICATED BY THE ENGINEER. JOINT DEFLECTION SHALL NOT EXCEED 50% OF MANUFACTURER'S RECOMMENDED DEFLECTION FOR DUCTILE IRON AND STEEL PIPE. NO DEFLECTION SHALL BE ALLOWED FOR PVC PIPE.

25. CONSTRUCTION AREA WILL BE CLEANED UP DAILY. ALL EXCAVATIONS WILL BE BACKFILLED BY END OF DAY, OR WITH PERMISSION FROM THE RESIDENT PROJECT REPRESENTATIVE, MAY LEFT OPEN WITH PROPER SAFETY PRECAUTIONS. CONTRACTOR SHALL HANDLE ALL SPILLS, DRAINING PIPES OR TIE-IN CONNECTIONS. CONTRACTOR WILL HAVE TANKER TRUCKS AND LINE EXCAVATIONS WITH POLY LINER IN ORDER TO HANDLE SPILLS AND TO CAPTURE AND DISPOSE OF FLUIDS ENCOUNTERED.

26. AREAS OF CONGESTION MAY REQUIRE HAND EXCAVATION.

27. CONTRACTOR IS SOLELY RESPONSIBLE TO LOCATE ALL UNDERGROUND UTILITIES WITH GROUND PENETRATING RADAR, AND SHALL NOT RELY ON COUNTY AND/OR SUNSHINE STATE ONE CALL OF FLORIDA.

28. SOD ALL DISTURBED AREAS, NO SEEDING ALLOWED.

FLOW STREAM IDENTIFICATION

ABBREVIATIONS	DESCRIPTION	MATERIAL	PIPE SIZE (INCHES)	SPEC SECTION	INTERIOR LINING	WORKING PRESSURE (PSIG)	TEST PRESSURE (PSIG) (1)	TEST FLUID	BURIED COATING SYSTEM
AIR	AIR LINE PIPING	SST	1" AND UP	15064	N/A		SECT 15020	SECT 15020	N/A
CAKE	CAKE	STEEL	8"	15065	N/A		450	NPW	N/A
CE	CLARIFIED EFFLUENT	DIP	4" AND UP	15240	CEMENT MORTAR LINED	75	100	NPW	SECT 15240
DIG	DIGESTED SLUDGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	N/A
DRN	DRAINAGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED	G	SECT 02530	NPW	SECT 15240
		PVC	3" AND LESS	15290	N/A	G	SECT 02530	NPW	N/A
		SST	1" AND UP	15064	N/A	G	SECT 02530	NPW	N/A
EQ	EQUALIZATION	DIP	4" AND UP	15240	CEMENT MORTAR LINED	75	100	NPW	SECT 15240
FE	FILTER EFFLUENT	DIP	4" AND UP	15240	CEMENT MORTAR LINED	10	100	NPW	SECT 15240
FO	FUEL OIL PIPING	CS	1" AND UP	15065	N/A		SECT 15020	SECT 15020	N/A
GRT	GRIT	DIGL	4" AND UP	15242	GLASS LINED	35	100	NPW	N/A
IR	INTERNAL RECYCLE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240
ML/MXL	MIXED LIQUOR	DIP	4" AND UP	15240	CERAMIC EPOXY LINED	15	100	NPW	SECT 15240
POL	POLYMER	PVC	1.5"	15064	N/A		100	NPW	N/A
PW	POTABLE WATER	DIP	4" AND UP	15240	CEMENT MORTAR LINED	90	100	PW	SECT 15240
		PVC	3" AND LESS	15290	N/A	90	100	PW	N/A
RAS	RETURN ACTIVATED SLUDGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED	25	100	NPW	SECT 15240
REJ	FILTER REJECT	DIP	4" AND UP	15240	CEMENT MORTAR LINED		100	NPW	SECT 15240
RW	RECLAIMED WATER SYSTEM	DIP	4" AND UP	15240	CEMENT MORTAR LINED		100	NPW	SECT 15240
		PVC	3" AND LESS	15290	N/A		100	NPW	N/A
		SST	3" AND LESS	15064	N/A		100	NPW	N/A
SI	SECONDARY INFLUENT	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240
SEW	SEWAGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240
SC	SCUM	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240
STS	STORM SEWER	RCP/ERCP	4" AND UP	02615	N/A	G	SECT 02530	NPW	N/A
TW	TREATED WATER	DIP	4" AND UP	15240	CEMENT MORTAR LINED		100	NPW	SECT 15240
TWAS	THICKENED WASTE ACTIVATED SLUDGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240
WAS	WASTE ACTIVATED SLUDGE	DIP	4" AND UP	15240	CERAMIC EPOXY LINED		100	NPW	SECT 15240

FLOW STREAM IDENTIFICATION NOTES

1. TEST PIPING IN ACCORDANCE WITH SPECIFICATION SECTION 15144 UNLESS OTHERWISE NOTED.
2. LABEL PIPING IN ACCORDANCE WITH SPECIFICATION SECTION 09940.
3. DISINFECT PIPING IN ACCORDANCE WITH SPECIFICATION SECTION 15141.
4. WHEN CONNECTING FLANGES OR THREADS OF DISSIMILAR METALS, USE FLANGE OR UNION INSULATION KITS AS SPECIFIED IN SECTION 15122 AND DETAIL B/MD-3.
5. MINIMUM COVER FOR PIPING SHALL BE 3 FEET, UNLESS NOTED OTHERWISE.
6. ALL PIPING IS TO HAVE A CONSTANT SLOPE BETWEEN THE INVERT OR CENTERLINE POINT SHOWN ON THE DRAWINGS.
7. ALL PIPING JOINTS ARE TO BE MECHANICALLY RESTRAINED.
8. COORDINATE CONNECTION AND ELEVATIONS AT STRUCTURES WITH PROCESS, MECHANICAL AND PLUMBING DRAWINGS.
9. PROVIDE MINIMUM SEPARATION OF PIPING AS IDENTIFIED IN THE GENERAL NOTES.
10. DO NOT COAT STAINLESS STEEL PIPE AND FITTINGS.
11. COLOR OF COATING TO BE IN ACCORDANCE WITH SPECIFICATION SECTION 09940.
12. WORKING PRESSURE "G" INDICATES GRAVITY.
13. WORKING PRESSURE "A" INDICATES ATMOSPHERIC.
14. INTERIOR, EXTERIOR AND SUBMERGED COATING SYSTEMS PER SPECIFICATION SECTION 09940 UNLESS OTHERWISE NOTED.

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL
NOTES AND FLOW STREAM IDENTIFICATION

DESIGNED: NEQ
DETAILED: AJM
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DATE: JANUARY 2015
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BRAD W VANLANDINGHAM
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44795

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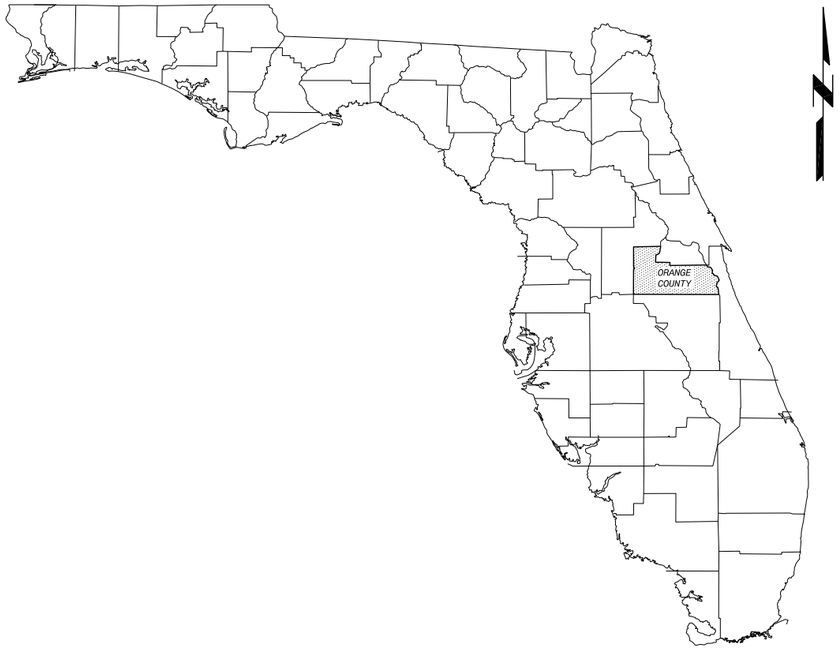
G-4
SHEET
5 OF 364

FD180761
D180761



STATE OF FLORIDA
NO SCALE

SOUTH WATER RECLAMATION FACILITY
4760 WEST SAND LAKE ROAD, 32819

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

CYGNET ID: 50.3010 - General Drawings
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XREF2: Location map.JPG
XREF3:
XREF4:
XREF5:

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL
SITE LOCATION MAPS

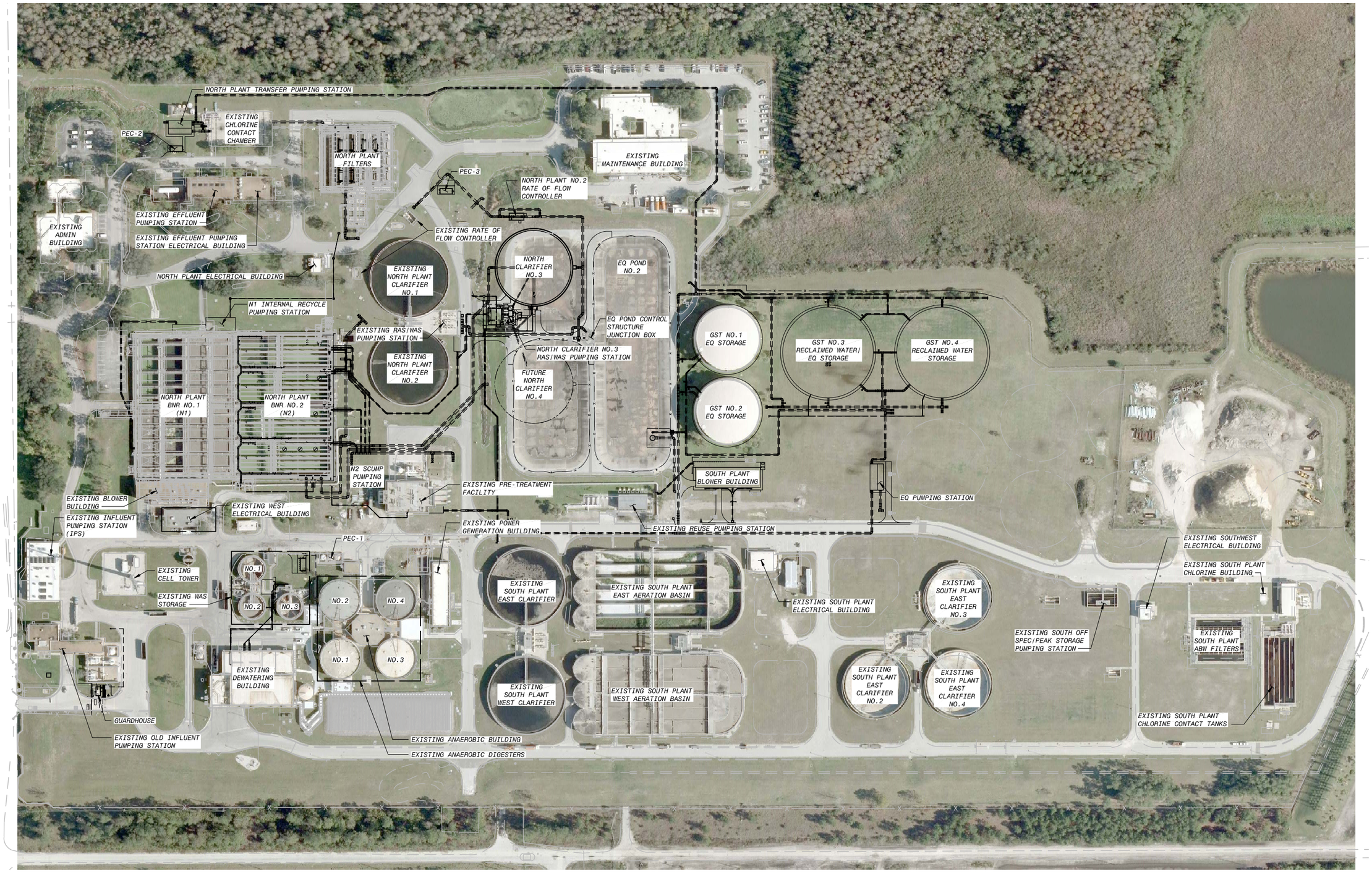
DESIGNED: NEQ
DETAILED: AJM
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015
ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

G-5
SHEET
6 OF 364

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1"
THEN DRAWING IS NOT TO FULL SCALE

FD180761
D180761



NO SCALE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

CYGNET ID: 50.3010 - General Drawings
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PLOTTED: VAN16643, 3/24/2014 1:44:
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XREF2: XR_SWRF.dwg
XREF3: XE-SITE QUADS.dwg
XREF4:
XREF5:
DWG VER: 1003

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS

GENERAL OVERALL SITE PLAN

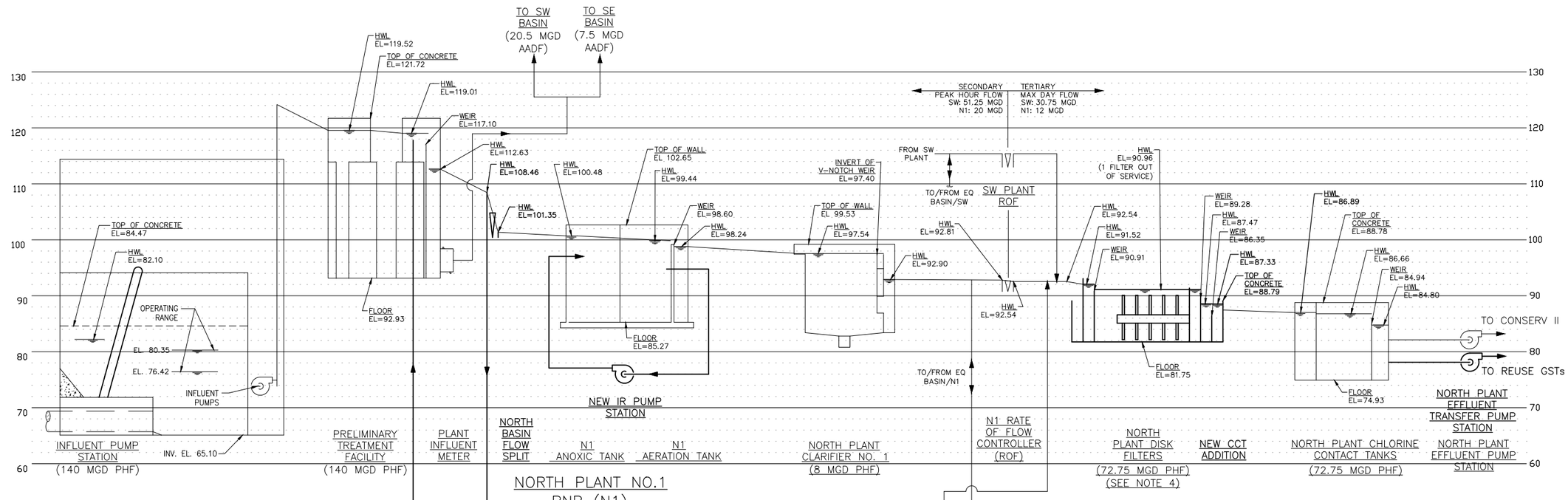
DESIGNED: NEQ
DETAILED: VVV
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015

ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.: 44795

PROJECT NO.
180761

G-6
SHEET
7 OF 364

FD180761
D180761



NOTES:

1. ATTENUATED FLOW AFTER ROF BASED ON MDF PEAKING FACTOR OF 1.5.
2. ELEVATIONS IN THE HYDRAULIC PROFILE BASED ON NAVD 88 SURVEY.
3. ELEVATIONS SHOWN WITHIN THE DISCIPLINARY DRAWINGS BASED ON ELEVATIONS SHOWN IN THE RECORD DRAWINGS.
4. SEVEN (7) EXISTING DISK FILTERS, SEVEN (7) PHASE V DISK FILTERS, ONE (1) RELOCATED DISK FILTER.

N1:	8.0x1.5	=	12.0	MGD
N2:	20.0x1.5	=	30.0	MGD
SW:	20.5x1.5	=	30.75	MGD
TOTAL:			72.75	MGD

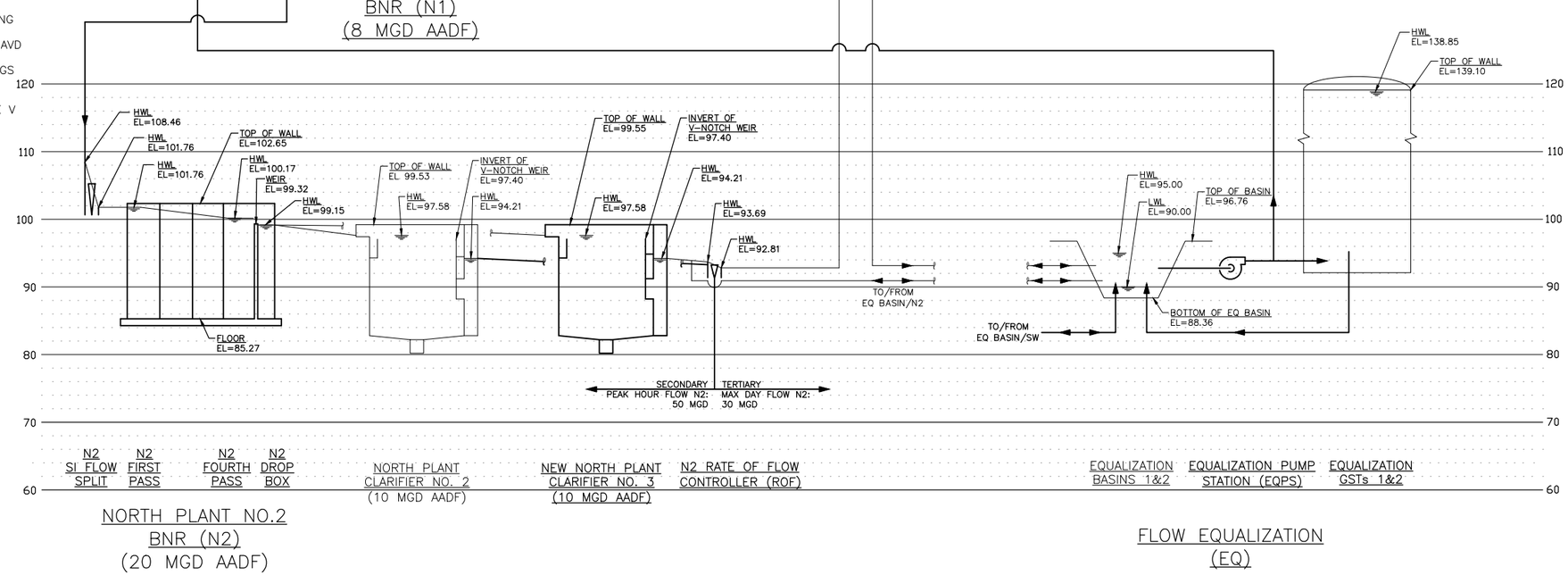
N1		N2	
AADF =	8.0 MGD	AADF =	20.0 MGD
PHF =	20.0 MGD	PHF =	50.0 MGD
IR =	32.0 MGD	IR =	27.0 MGD
RAS =	10.0 MGD	RAS =	24.0 MGD

SWRF PH V PEAKING FACTORS
PHF = 2.5
MDF = 1.5
MMF = 1.2

LEGEND

EXISTING FACILITIES

PHASE V



DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

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MF: SAVED: FREQ8341, 8/15/2013 9:55:25 AM
PLOTTED:
USER: FREQ8341 DWG VER:

AECOM
AECOM TECHNICAL SERVICES, INC. 150 NORTH ORANGE AVENUE, SUITE 200 ORLANDO, FLORIDA 32801 PHONE 407.843.6262
CERTIFICATE OF AUTHORIZATION NO. CB-8153

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

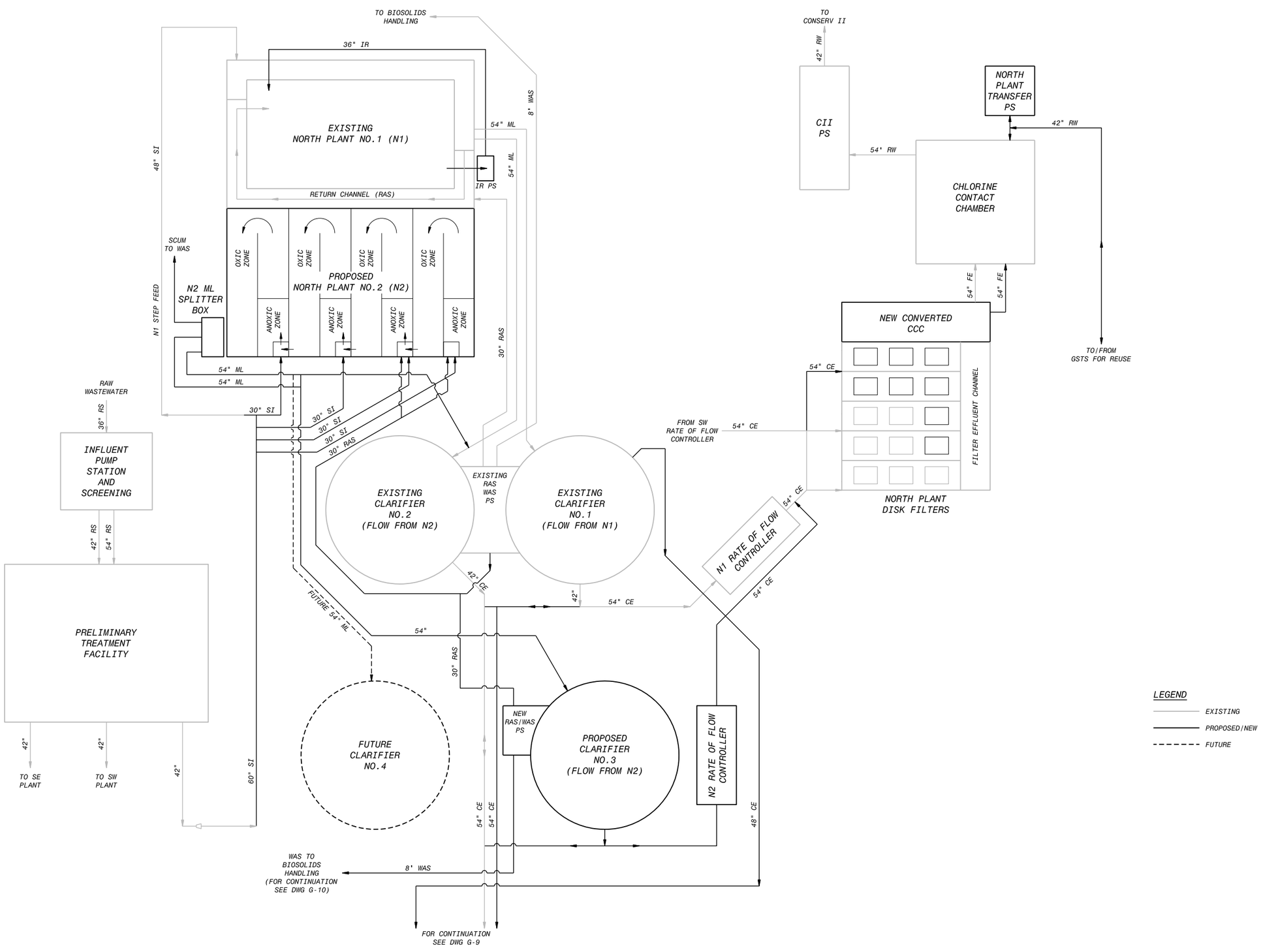
HYDRAULIC PROFILE

DESIGNED: DB
DETAILED: DB
CHECKED: CE/DA
APPROVED: WDM
DATE: JANUARY 2015
ENGINEER OF RECORD: WILLIAM D. MARSHALL, PE
FLORIDA LICENSE NO.: 66282

PROJECT NO. 180761

G-7
SHEET 8 OF 364

D180761



NO.	BY	CK	APP

DATE	REVISIONS AND RECORD OF ISSUE
7/2015	BID ISSUE

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WF:G-08.dwg
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PLOTTED: VAN16643, 3/12/2014 1:39:
USER: VAN16643
DWG VER:1002

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS

GENERAL
NORTH PLANT LIQUID PROCESS SCHEMATIC

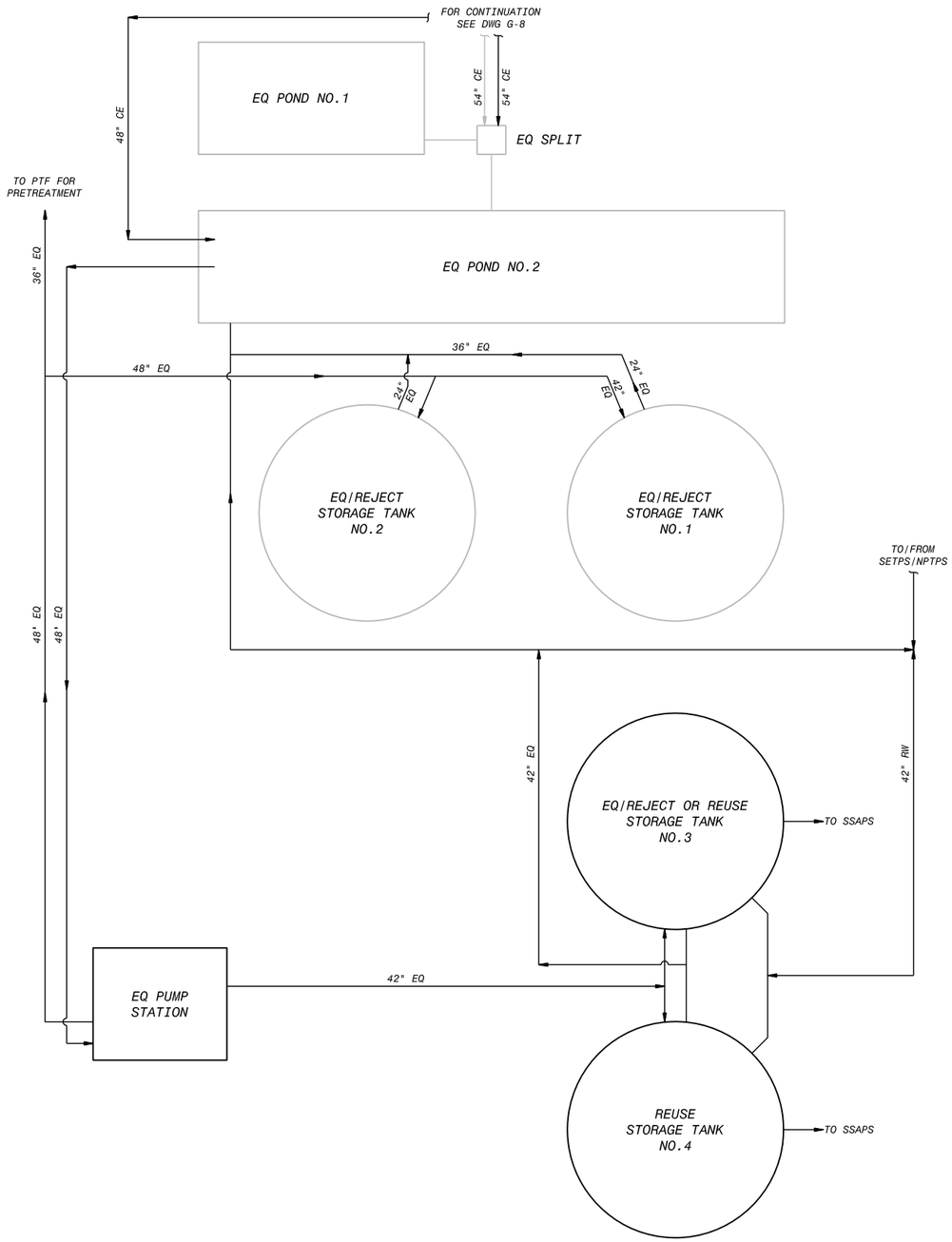
DESIGNED: NEQ
DETAILED: AJM
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015

ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

G-8
SHEET
9 OF 364

FD180761
D180761



LEGEND

EXISTING

PROPOSED/NEW

FUTURE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

CYGNET ID: 50.3010 - General Drawings
WF:G-09.dwg
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PLOTTED: VAN16943, 6/18/2014 11:10
USER: VAN16943
VREF1: BORDER.dwg
VREF2:
VREF3:
VREF4:
VREF5:
DWG VER: 1002

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL
NORTH PLANT LIQUID
PROCESS SCHEMATIC

DESIGNED:	NEQ
DETAILED:	VVV
CHECKED:	FCG
APPROVED:	KMB
DATE:	JANUARY 2015

ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

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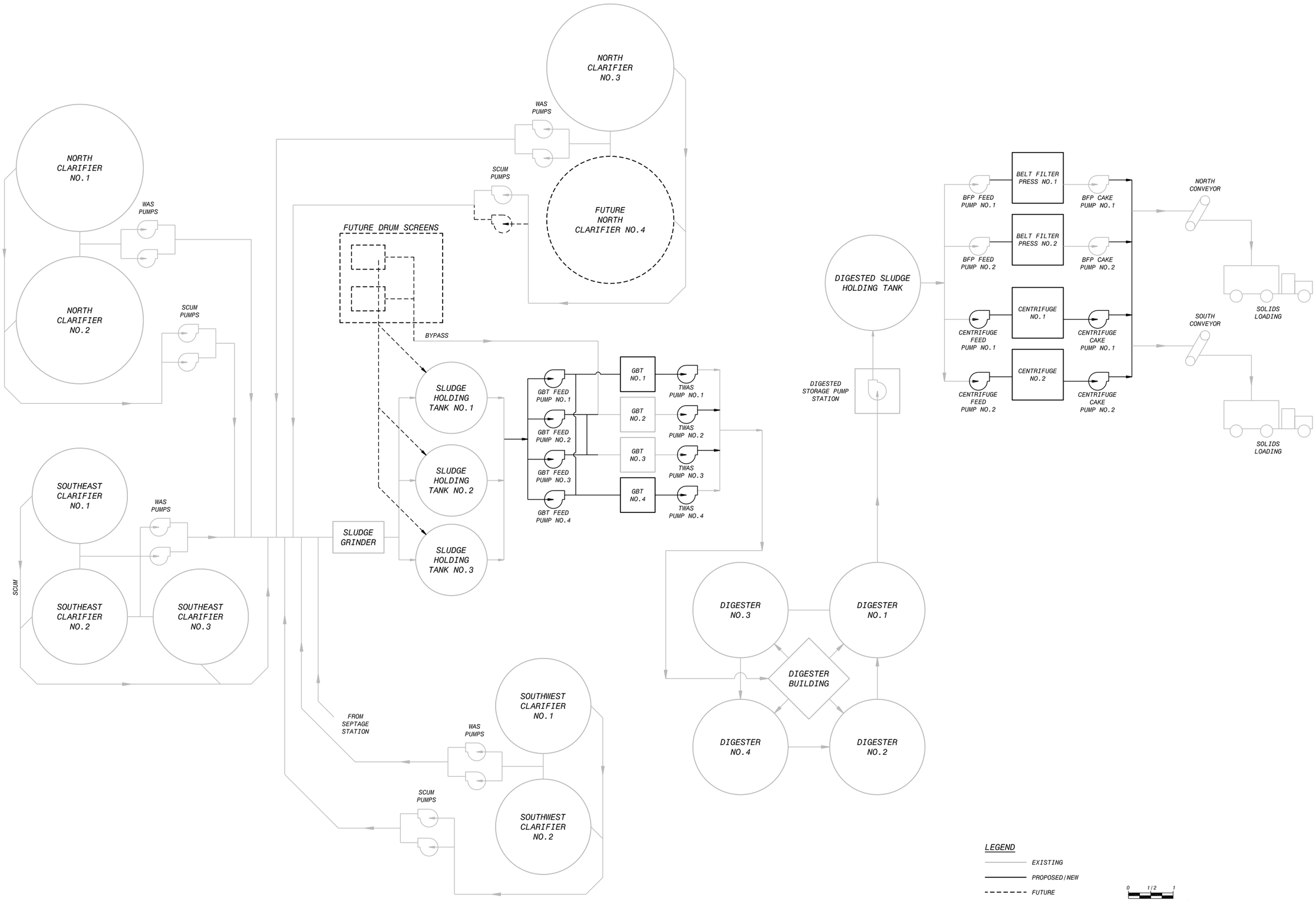
SHEET
10 OF 364

FD180761
D180761



DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/2015	BID ISSUE				

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WF: G-10.dwg
XREF2:
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XREF3:
PLOTTED: VAN16643, 6/18/2014 9:33:
XREF4:
USER: VAN16643
DWG VER: 1002
XREF5:

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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

GENERAL
SOLIDS SYSTEM
PROCESS SCHEMATIC

DESIGNED: NEQ
DETAILED: VVV
CHECKED: FCG
APPROVED: KMB
DATE: JANUARY 2015

ENGINEER OF RECORD:
BRAD W VANLANDINGHAM
FLORIDA LICENSE NO.:
44795

PROJECT NO.
180761

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SHEET
11 OF 364

FD180761
D180761