The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

MailTo:ContractAdministration@TampaGov.net

Please Let Us Know If You Plan To Bid

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP
MAY HAVE BEEN PRINTED
PRIOR TO ADVERTISING AND CANNOT
BE CONSIDERED AS BID DOCUMENTS

City of Tampa
Florida

Southwest Florida
Water Management District
WATERMATTERS.ORG · 1-800-423-1476

COOPERATIVE FUNDING RECEIVED FROM THE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

City of Tampa, FL

Volume 2 - Construction Drawings

Blue Sink MFL Pumping Station

151 W 115TH AVE. TAMPA, FL 33612

Issued For Bid - June 2014

GREELEY AND HANSEN

1715 NORTH WESTSHORE BLVD., STE. 464
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION NO. 37

MWH®

1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

David A. Socha, PE
State of Florida - License No 73821

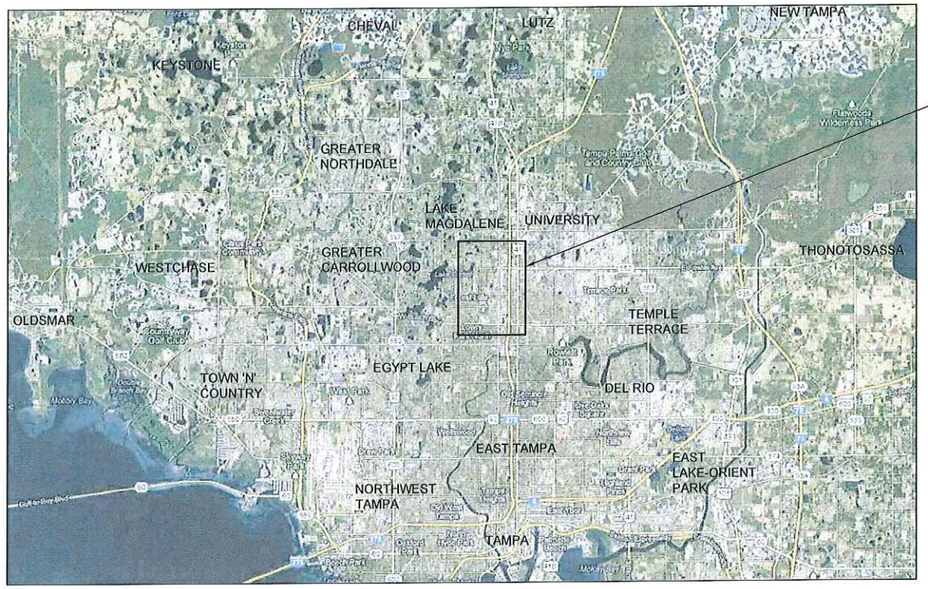
Charles M. Pekkala, PE
State of Florida - License No 37996

Thomas H. Powell, PE
State of Florida - License No 73510

Shana Wygonik, RA
State of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487

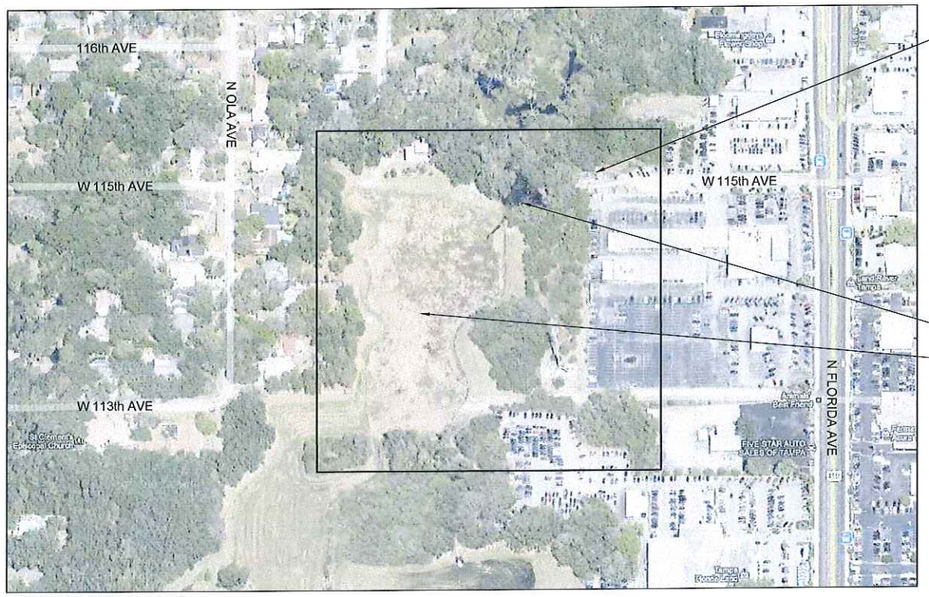
Craig P. Kaltenbach, PE
State of Florida - License No 63619

George Victor Smith, PE
State of Florida - License No 42990



COURTESY: GOOGLE MAPS

VICINITY MAP



COURTESY: GOOGLE MAPS

LOCATION MAP

DAVID A. SOCHA
LICENSE
No. 73821
STATE OF FLORIDA
PROFESSIONAL ENGINEER

David A. Socha, PE
Engineer
State of Florida - License No 73821
Date: ____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S WYGONIK
CHECKED D SOCHA

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL
LOCATION AND VICINITY MAP

SHEET
G-2
1011673

GENERAL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	G-1	COVER SHEET
X	X	X	G-2	LOCATION AND VICINITY MAP
X	X	X	G-3	LIST OF DRAWINGS
X	X	X	G-4	SYMBOLS - I
X	X	X	G-5	SYMBOLS - II
X	X	X	G-6	ABBREVIATIONS

CIVIL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GC-1	STANDARD NOTES AND SYMBOLS
X	X	X	GC-2	STANDARD DETAILS - I
X	X	X	GC-3	STANDARD DETAILS - II
X	X	X	GC-4	STANDARD DETAILS - III
X	X	X	GC-5	STANDARD DETAILS - IV
X	X	X	GC-6	STANDARD DETAILS - V
X	X		GC-7	DETAILS - I
X	X		GC-8	DETAILS - II
X	X		GC-9	DETAILS - III
X	X		GC-10	DETAILS - IV
X	X		GC-11	DETAILS - V
X			GC-12	DETAILS - VI
X	X	X	C-1	SITE AND YARD PIPING PLAN - I
X	X	X	C-2	SITE AND YARD PIPING PLAN - II
X	X		C-3	SITE AND YARD PIPING PLAN - III
X	X		C-4	SITE GRADING, PAVING AND FENCING PLAN
X	X		C-5	LANDSCAPING PLAN
X	X	X	DEC-1	PLAN - I
X	X	X	DEC-2	PLAN - II

INSTRUMENTATION AND CONTROL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GI-1	SYMBOLS AND ABBREVIATIONS - I
X	X	X	GI-2	SYMBOLS AND ABBREVIATIONS - II
X	X	X	GI-3	STANDARD DETAILS - I
X	X	X	I-1	NETWORK CONFIGURATION
X	X	X	I-2	PUMP STATION P&ID - I
X	X	X	I-3	PUMP STATION P&ID - II
X	X	X	I-4	PANEL DETAILS

ARCHITECTURAL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GA-1	NOTES AND BUILDING CODE SUMMARY
X	X	X	GA-2	DOOR & FINISH SCHEDULES & STANDARD DETAILS - I
X	X	X	GA-3	STANDARD DETAILS - II
X	X	X	A-1	FLOOR PLAN
X	X	X	A-2	ROOF PLAN
X	X	X	A-3	EXTERIOR ELEVATIONS - I
X	X	X	A-4	EXTERIOR ELEVATIONS - II
X	X	X	A-5	BUILDING SECTIONS
X	X		A-6	WALL SECTIONS
X	X	X	A-7	RENDERING

STRUCTURAL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GS-1	NOTES AND DESIGN CRITERIA
X	X	X	GS-2	STANDARD DETAILS - I
X	X	X	GS-3	STANDARD DETAILS - II
X	X	X	GS-4	STANDARD DETAILS - III
X	X	X	GS-5	STANDARD DETAILS - IV
X	X	X	GS-6	STANDARD DETAILS - V
X			GS-7	STANDARD DETAILS - VI
X	X	X	S-1	FOUNDATION PLAN
X	X	X	S-2	INTERMEDIATE PLAN
X	X	X	S-3	TOP PLAN
X	X	X	S-4	SECTION - I
X	X	X	S-5	SECTION - II
X	X	X	S-6	SECTION - III

MECHANICAL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GM-1	STANDARD DETAILS - I
X	X		GM-2	STANDARD DETAILS - II
X	X	X	M-1	PLANS
X	X	X	M-2	SECTIONS - I
X	X	X	M-3	SECTIONS AND DETAIL - II

HVAC

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GH-1	LEGEND, ABBREVIATION AND SYMBOLS
X	X	X	GH-2	EQUIPMENT SCHEDULES AND DETAILS
X	X	X	H-1	PLAN

PLUMBING

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GP-1	SYMBOLS, ABBREVIATIONS AND NOTES
X	X	X	GP-2	STANDARD DETAILS, SCHEDULES AND SPECIFICATIONS
X	X	X	P-1	PLAN
X	X		P-2	SECTIONS AND DETAILS

ELECTRICAL

FINAL 06/2014	CDD 10/2013	DD 06/2013		
X	X	X	GE-1	SYMBOLS - I
X	X	X	GE-2	SYMBOLS - II
X	X	X	GE-3	NOTES AND ABBREVIATIONS
X	X	X	GE-4	STANDARD DETAILS - I
X	X	X	GE-5	STANDARD DETAILS - II
X	X	X	GE-6	STANDARD DETAILS - III
X	X	X	E-1	SITE PLAN
X	X	X	E-2	SINGLE LINE DIAGRAM & MCC ELEVATION
X	X	X	E-3	PANEL AND LIGHTING SCHEDULES
X	X	X	E-4	SCHEMATIC DIAGRAMS - I
X	X		E-5	SCHEMATIC DIAGRAMS - II
X	X		E-6	SECURITY SYSTEM BLOCK DIAGRAM - I
X	X		E-7	RACK LAYOUT AND DOOR ELEVATION
X	X	X	E-8	POWER PLAN
X	X	X	E-9	LIGHTING AND RECEPTACLE PLAN
X	X	X	E-10	INSTRUMENTATION PLAN
X	X	X	E-11	LIGHTNING PROTECTION AND GROUNDING PLAN
X	X		E-12	SECURITY PLAN

DAVID A. SOCHA LICENSE No. 73821 STATE OF FLORIDA PROFESSIONAL ENGINEER

David A. Socha, PE
Engineer
State of Florida - License No 73821
Date: ____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S WYGONIK
CHECKED D SOCHA

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL
LIST OF DRAWINGS

SHEET
G-3
1011673

File: C:\pwworkdir\dms80340\TBSD_G03.dwg

GENERAL SYMBOLOGY

- NEW CONSTRUCTION
- EXISTING (SCREENED)
- FUTURE (PHANTOM)
- EXISTING TO BE REMOVED OR DEMOLISHED

MATERIAL SYMBOLOGY

- CONCRETE (PLAN AND SECTION)
- GROUT OR SAND (PLAN AND SECTION)
- BRICK (PLAN AND SECTION)
- CMU (PLAN AND SECTION)
- STEEL/METAL/FRP (SMALL SCALE SECTION)
- CHECKER PLATE OR SOLID FRP GRATING (PLAN)
- CHECKER PLATE (SECTION)
- GRATING (PLAN)
- GRATING OR SOLID FRP GRATING (SECTION)
- SAFETY GRATING (PLAN)
- SAFETY GRATING (SECTION)
- RAILING (PLAN)
- WOOD (PLAN OR ELEVATION)
- LUMBER/FRAMING - NOMINAL
- LUMBER - TRIMMED (BLOCKING OR SHIMS)
- GLULAM (SECTION) — OR
- GLULAM (ELEVATION)
- PLYWOOD (SMALL SCALE) — OR
- FINISHED GRADE
- GRAVEL/DRAINROCK/AGGREGATE BASE

VALVE AND GATE ACTUATORS

- DIAPHRAGM OPERATOR
- D = DIGITAL, E/H = ELECTROHYDRAULIC, P = PNEUMATIC, S = SOLENOID, T = TEMPERATURE
- HAND / MANUAL OPERATOR (ALSO SHOWN AS NO OPERATOR)
- MOTOR OPERATOR
- PISTON ACTUATOR
- PRESSURE BALANCED DIAPHRAGM ACTUATOR
- PRESSURE REGULATOR WITH EXTERIOR TAP
- PRESSURE REGULATOR (SELF CONTAINED)
- PRESSURE RELIEF OR SAFETY ACTUATOR
- WEIGHT BALANCED OPERATOR

VALVES

- 3 WAY MULTI-PORT VALVE
- 4 WAY MULTI-PORT VALVE
- AIR VACUUM, AIR RELEASE, OR AIR VACUUM AND AIR RELEASE ASSEMBLY
- ANGLE VALVE
- BACK-PRESSURE VALVE
- BACKFLOW PREVENTER VALVE
- BACKWATER VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- CHECK VALVE - ANGLE
- CHECK VALVE - BALL
- CHECK VALVE - SILENT
- CHECK VALVE - STOP
- CONE VALVE
- DIAPHRAGM VALVE
- FLAP VALVE
- GATE VALVE
- GLOBE VALVE
- HOSE BIBB VALVE FROM TOP, FRONT AND SIDE VIEW
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE - ECCENTRIC
- PLUG VALVE - LUBRICATED
- PRESSURE REGULATING VALVE — OR
- PRESSURE RELIEF VALVE
- SLEEVE VALVE
- TELESCOPING VALVE

GATES

- SLIDE GATE (CAST IRON, ALUMINUM OR STAINLESS STEEL)
- STOP GATE OR SHEAR GATE

PUMPS & COMPRESSORS

- AIR DRIVEN DIAPHRAGM PUMP
- HORIZONTAL ANSI END SUCTION PUMP
- CENTRIFUGAL PUMP
- CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP
- CHEMICAL METERING PUMP
- CIRCULATING PUMP
- DRUM PUMP
- GEAR PUMP OR ROTARY POSITIVE DISPLACEMENT BLOWER
- HORIZONTAL SPLIT CASED PUMP
- HOSE PUMP
- PISTON PUMP
- PROGRESSIVE CAVITY PUMP
- ROTARY LOBE PUMP
- SAMPLE PUMP
- SUBMERSIBLE PUMP
- SUBMERSIBLE TURBINE PUMP
- VERTICAL TURBINE PUMP
- PISTON DRIVEN COMPRESSOR
- COMPRESSOR

FLOW MEASUREMENT INSTRUMENTS

- DENSITY FLOWMETER (D M)
- DISPLACEMENT FLOWMETER
- FLOW ORIFICE
- FLOW ORIFACE WITH QUICK CHANGE FITTINGS
- FLOW TUBE
- FLOW TURBINE
- FLOW VANE
- FLUME

FLOW MEASUREMENT INSTRUMENTS (CONTINUED)

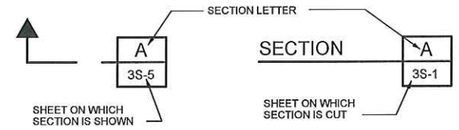
- MAGNETIC FLOWMETER (M M)
- PADDLE WHEEL METER
- PITOT TUBE METER (DOUBLE)
- PITOT TUBE METER (SINGLE)
- ROTAMETER / VARIABLE AREA FLOWMETER
- ULTRASONIC FLOWMETER
- VENTURI FLOWMETER
- VORTEX SHEDDING FLOWMETER
- WEIR METER

PIPING ENDS (SINGLE-LINE)

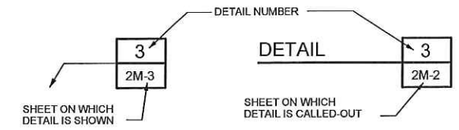
- BLIND FLANGE
- CAP - BREATHER
- CAP - SCREW / THREADED
- CAP - WELDED
- CAP - QUICK DISCONNECT
- EXPANSION JOINT
- FLANGED
- FLANGED COUPLING ADAPTER
- FLANGED COUPLING ADAPTER - RESTRAINED
- FLEXIBLE CONNECTION - BELLOWS TYPE — OR
- GROOVED END COUPLING
- MECHANICAL JOINT
- PIPE MATERIAL CHANGE
- PUSH-ON JOINT - BELL AND SPIGOT
- PUSH-ON JOINT - RESTRAINED
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- REMOVABLE SPOOL PIECE
- SLEEVE TYPE COUPLING
- SLEEVE TYPE COUPLING - RESTRAINED
- UNION
- WELDED

REFERENCE SYMBOLS

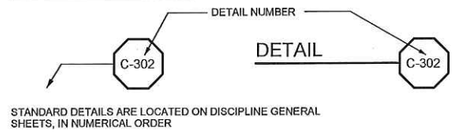
SECTION IDENTIFICATION



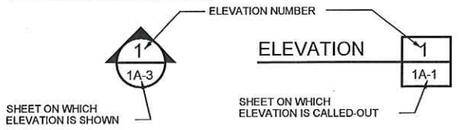
DETAIL IDENTIFICATION



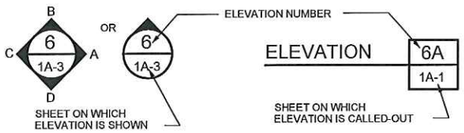
STANDARD DETAIL IDENTIFICATION



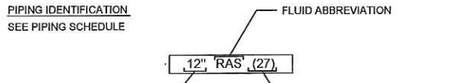
EXTERIOR ELEVATION IDENTIFICATION



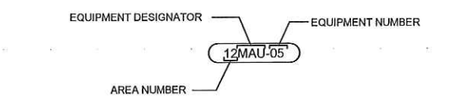
INTERIOR ELEVATION IDENTIFICATION



PIPING IDENTIFICATION
SEE PIPING SCHEDULE



EQUIPMENT IDENTIFICATION
SEE EQUIPMENT SCHEDULE/SPECIFICATIONS



MISCELLANEOUS

- 4-12 — ROOM NUMBER
- 2-16 — DOOR NUMBER
- 1-8 — WINDOW NUMBER
- 13 — ACCESSORY NUMBER
- 4 — WALL TYPE NUMBER
- 5 — SHEET KEY NOTES
- ### — COORDINATE POINT
- ROUND OR DIAMETER
- ANGLE
- ℄ — CENTERLINE

DISCIPLINE SPECIFIC SYMBOLS ARE SHOWN ON THE DISCIPLINE GENERAL DRAWINGS.

FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.

DAVID A. SOCHA LICENSE @ No. 73821 STATE OF FLORIDA PROFESSIONAL ENGINEER

David A. Socha, PE
Engineer
State of Florida - License No 73821
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S WYGONIK
CHECKED D SOCHA

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL SYMBOLS - I

SHEET G-4

1011673

File: C:\twworkdir\dms93340\TBSD_G04.dwg

PIPING ACCESSORIES

- ANNULAR SEAL
- ATMOSPHERIC VENT
- CHLORINE INJECTOR OR CHEMICAL EDUCTOR
- CONDENSATE TRAP
- DIAPHRAGM SEAL
- DRAIN
- EXPANSION CHAMBER WITH RUPTURE DISK
- FLAME ARRESTOR
- FLOOR CLEANOUT
- FLOOR DRAIN
- FLOW SIGHT GLASS
- FLOOR SINK
- HUB DRAIN
- INLINE MIXER
- PIPE SUPPORT (PLAN)
- PULSATION DAMPENER
- RUPTURE DISK
- STRAINER - BASKET TYPE
- STRAINER - DUPLEX BASKET TYPE
- STRAINER - WYE TYPE
- TRAP
- WALL CLEANOUT

WASTEWATER EQUIPMENT

- BELT FILTER PRESS
- CENTRIFUGE
- GRAVITY BELT THICKENER
- SHAFTED CONVEYOR
- SHAFTLESS CONVEYOR
- SLUDGE GRINDER

HVAC

- AIR CONDITIONING UNIT
- AIR FILTER
- AIR HANDLING UNIT
- AIR TURNING VANES IN DUCT
- CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- CEILING SUPPLY DIFFUSER (SIZE IN INCHES)
- DAMPER
- DAMPER - DEFLECTING TYPE
- DAMPER - FIRE DAMPER WITH ACCESS DOOR
- DAMPER - MANUAL VOLUME
- DAMPER - MOTORIZED
- DEHUMIDIFIER
- DUCT (FIRST DIMENSION, DUCT SIDE SHOWN; SECOND DIMENSION, DUCT SIDE NOT SHOWN)
- DUCT WITH ACOUSTICAL LINING
- DUCT SMOKE DETECTOR
- EVAPORATIVE COOLER
- EXHAUST OR RETURN AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- EXHAUST OR RETURN AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- FIRE EXTINGUISHER
- FIRE HOSE CABINET
- HEATER
- HVAC BOILER
- HVAC FAN
- HVAC LOUVER
- THERMOSTAT
- STEAM GENERATOR
- SUPPLY GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- SUPPLY OR OUTSIDE AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- UNIT HEATER
- WATER HEATER

MISCELLANEOUS

- AERATOR
- AFTER COOLER
- BLOWER
- BRIDGE CRANE
- CALIBRATION COLUMN
- CONTAINER SCALE
- DEMISTOR
- FILTER
- GAS BOTTLE
- HEAT EXCHANGER - PLATE TYPE
- HEAT EXCHANGER - STRAIGHT TYPE
- HEAT EXCHANGER - U TUBE
- HORN
- MISCELLANEOUS EQUIPMENT
- MIXER
- MOTOR SYMBOL
- PRESSURE GAUGE
- PRESSURE GAUGE WITH DIAPHRAGM SEAL
- PRESSURE SWITCH
- PRESSURE SWITCH WITH DIAPHRAGM SEAL
- PRESSURE VESSEL
- PIPE MATERIAL CHANGE
- RADIO ANTENNA
- REFRIGERATOR DRYER
- SAMPLE COOLER
- TANK WITH CONE SHAPED ROOF
- TANK WITH DOME ROOF
- TANK WITH FLOATING COVER
- TANK, VESSEL, OR BIN
- TEMPERING TANK
- WATER LEVEL

REV 040407

OTHER

DAVID A. SOCHA LICENSE No. 73821 STATE OF FLORIDA PROFESSIONAL ENGINEER

David A. Socha, PE
Engineer
State of Florida - License No 73821
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 ½ 1)

DESIGNED S WYGONIK
DRAWN S WYGONIK
CHECKED D SOCHA

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL
SYMBOLS - II

SHEET G-5

1011673

A	AIR / AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
ABS	ABSOLUTE TEMPERATURE
AC	ACTIVATED CARBON / ASPHALTIC CONCRETE / ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC / ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE / ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM / ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURTS	APPURTENANCES
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AV/AR	AIR VACUUM AND AIR RELEASE VALVE
AVE	AVENUE
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL AND SPIGOT
B/W	BACK OF WALL / BACK OF WALK
BC	BEGIN CURVE / BOLT CIRCLE / BETWEEN CENTERS / BACK OF CURVE
BCR	BEGIN CURB RETURN
BD	BOARD
BDRY	BOUNDARY
BF	BLIND FLANGE / BOTTOM OF FOOTING
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK / BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM / BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRK	BRICK / BREAK
BSMT	BASEMENT
BT	BOLT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
C	CENTIGRADE / CHANNEL / CEMENT
C&G	CURB AND GUTTER
CAB	CABINET / CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CATV	CABLE TELEVISION
CB	CATCH BASIN / CHALKBOARD / CURB
CC	CLOSED CIRCUIT TV / CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE / CUBIC FOOT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKERED
CI	CAST IRON
CIP	CAST IRON PIPE / CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CJ	CONSTRUCTION JOINT
CL	CHLORINE GAS / CHLORINATOR / CENTERLINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR / CLEARANCE
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS CABLE
COMP	COMPRESSOR
CONC	CONCRETE / CONCENTRIC
COND	CONDENSER / CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT / CONSTRUCTION
CONT	CONTINUED / CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
COTG	CLEANOUT TO GRADE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAUSTIC SODA / CAST STEEL
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CTR	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSUNK
CU	COPPER / CUBIC
CULV	CULVERT
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER
d	PENNY
DAD	DOUBLE ACTING DOOR
DAFT	DISSOLVED AIR FLOTATION THICKENER
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER / DIFFERENTIAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DISP	DISPENSER
DL	DEAD LOAD
DMH	DROP MANHOLE
DN	DOWN
DO	DISSOLVED OXYGEN / DITTO
DR	DOOR / DRAIN
DS	DRENCH SHOWER AND EYE WASH
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWY	DRIVEWAY
E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE / EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE / EDGE OF GUTTER / EXHAUST GRILLE
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRICAL / ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
EPT	ETHYLENE PROPYLENE
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY / EYE WASH
EX	EXISTING
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR / EXTENSION
EXTR	EXTRUDED
F	FAHRENHEIT / FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE / FABRICATION / FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR / FLOOR BEAM / FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEEDER
FE	FIRE EXTINGUISHER / FINAL EFFLUENT
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE / FAR FACE / FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT / FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FIX	FIXTURE
FL	FLOWLINE / FLOOR
FLEX	FLEXIBLE
FLG	FLANGE / FLOORING
FLGD	FLANGED
FLOCC	FLOCCULATOR / FLOCCULATION
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPROVED) / FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE / FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE / FAR SIDE / FLOOR SINK / FORGED STEEL
FT	FEET / FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FWD	FORWARD
G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUY ANCHOR
GB	GRADE BREAK
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GRADE / GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM
H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
Hg	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HIGH POINT / HORSE POWER / HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC / HYDRANT
I/O	INPUT/OUTPUT
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INFL	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INST	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION
JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT
k	KILO
K	KELVIN / KARAT
kg	KILOGRAM
km	KILOMETER
kV	KILOVOLT
KVA	KILOVOLT AMPERE
kW	KILOWATT
kWh	KILOWATT HOUR
L	LITER / LENGTH / ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LEV	LEVEL
LF	LINEAR FOOT
LG	LENGTH / LONG
LH	LAMP HOLE / LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT / LOW PRESSURE / LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT / LIGHT
LTS	LIME TREATED SOIL
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER
m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX / MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCR	MIDDLE OF CURB RETURN
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE / MAINTENANCE HOLE
MHT	MEAN HIGH TIDE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON / MILE
MICRON	1/1,000,000 METER
MIL	MILITARY / 1/1,000TH INCH
MIN	MINIMUM / MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED / MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MS	MOP SINK
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MTR	MOTOR
N	NORTH
NaOCL	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE / NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER / NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRCP	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
OBJ	OBJECT
OC	ON CENTER / OVER-CROSSING
OD	OUTSIDE DIAMETER / OVERALL DIMENSION
OE	OUTER EDGE
OF	OVERFLOW / OUTSIDE FACE
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVER HEAD
OHW	OVERHEAD WIRES
OPER	OPERATOR / OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWG	OIL. WATER. GAS
OZ	OUNCE
P	POLE / PAGE / PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE / PULL BOX
PC	POINT OF CURVATURE / PRIMARY CLARIFIER / PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	PLANT EFFLUENT / POLYETHYLENE / POLYELECTROLYTE POLYMER
PG	PRESSURE GAGE
pH	RECIPROCAL LOG OF HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT / POINT OF INTERSECTION
PK	PARKING
PL	PLATE / PROPERTY LINE / PLACE
PLAS	PLASTER / PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL
PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE / POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY / PAINT / PRESSURE
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER
QT	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANGLE / QUADRANT
R	RADIUS / RISER / RATE OF SLOPE
R&O	ROCK AND OIL
R/W	RIGHT OF WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECLAIMED ASPHALT PAVEMENT
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN / ROUND
RED	REDUCER / REDUCING
REF	REFERENCE / REFER / REFRIGERATOR
REG	REGULATING
REINF	REINFORCE / REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING / RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF / RAISED FOUNDATION / ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RSL	RAW SLUDGE
RT	RIGHT
RTP	REINFORCED THERMOSETTING PLASTIC
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
S	SOUTH / SCUM / SINK / SECOND / SLOPE /
S/O	SOUTH OF
SA	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SC	SPARE CHEMICAL / SECONDARY CLARIFIER
SCCP	STEEL CYLINDER CONCRETE PIPE
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN & VENT / SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO / STORM DRAIN
SEC	SECONDARY / SECTION
SER	SERIES
SETT	SETTING
SF	SQUARE FOOT
SH	SHOWER
SHELV	SHELVING
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	SLUDGE
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOLN	SOLUTION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPK	SPIKE
SQ	SQUARE
SS	STAINLESS STEEL / SANITARY SEWER / SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET / STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STR	STRAIGHT / STRUCTURAL
SU	STEAM LINE
SUCT	SUCTION
SV	SOLENOID VALVE
SW	SIDEWALK
SWD	SIDEWALK DRAIN
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL / SYMBOL
SYS	SYSTEM
T	THERMOSTAT / TREAD OF STAIR / TANGENT
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE / TEMPORARY
TF	TOP OF FOOTING
TH	TEST HOLE
THK	THICK / THICKNESS
THR	THRESHOLD
THR'D	THREADED
TK	TANK / TACK
TL	TRAVERSE LINE
TOC	TOP OF CONCRETE
TOE	THREAD ONE END
TOL	TOILET
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOPO	TOPOGRAPHIC
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE
TR	TRACT
TRANS	TRANSMITTER / TRANSITION /TRANSMISSION
TS	TRAFFIC SIGNAL
TSB	TOP SET BASE
TSC	TRAFFIC SIGNAL CONDUIT
TV	THERMOSTATIC VALVE / TELEVISION
TW	THERMOMETER WELL /TRAVELED WAY
TYP	TYPICAL
UB	UNION BONNET
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNID	UNIDENTIFIED
UNO	UNLESS NOTED OTHERWISE
UOI	UNLESS OTHERWISE INDICATED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
USA	UNDERGROUND SERVICE ALERT
USGS	UNITED STATES GEOLOGICAL SURVEY
UV	ULTRAVIOLET
UW	UTILITY WATER
V	VALVE / VERTICAL / VENT / VOLT / VOLUME
VAC	VACUUM
VAR	VARIES / VARIABLE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VSL	VERTICALLY SLOTTED
VTC	VENT TO CEILING
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
VWM	VERIFY WITH MANUFACTURE
W	WEST / WASTE / WIDTH / WIDE FLANGE / WATER
W/	WITH
W/O	WEST OF / WITHOUT
WC	WATER COLUMN / WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WOG	WATER, OIL, OR GAS
WP	WATERPROOFING / WORKING PRESSURE / WORK POINT
WPJ	WEAKEN PLANE JOINT
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWP	WATER WORKING PRESSURE
XCONN	CROSS CONNECTION
XS	EXTRA STRONG
XSEC	CROSS SECTION
XXS	DOUBLE EXTRA STRONG
YD	YARD
YR	YEAR
Z	ZERO / ZONE
ZN	ZINC
#	POUND
&	AND
@	AT

FOR ADDITIONAL ABBREVIATIONS SEE:

CIVIL - GENERAL CIVIL SHEETS
PIPING - PIPING SCHEDULE
ELECTRICAL - GENERAL ELECTRICAL SHEETS
INSTRUMENTATION - GENERAL INSTRUMENTATION SHEETS

OTHER ABBREVIATIONS CONFORM TO ANSI STANDARD ABBREVIATIONS Z32.2.3

DAVID A. SOCHA LICENSE No. 73821 STATE OF FLORIDA PROFESSIONAL ENGINEER

David A. Socha, PE
Engineer
State of Florida - License No 73821
Date: _____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S.WYGONIK
DRAWN S.WYGONIK
CHECKED D.SOCHA

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ABBREVIATIONS

SHEET G-6

1011673

User: slwygoni Plot Date: Tue 24-Jun-2014 - 06:15PM

File: C:\pwworkdir\dms80340\TBSD_G06.dwg

Plot Date: Thu 26-Jun-2014 - 10:33PM
User: ryahr

CIVIL GENERAL NOTES

1. DEVELOPMENT SUMMARY
   a. DESCRIPTION: THE BLUE SINK MFL PUMP STATION PROJECT CONSISTS OF CONSTRUCTING A NEW PUMPING STATION REQUIRED BY SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT RULE TO TRANSFER WATER FROM BLUE SINK TO THE HILLSBOROUGH RIVER FOR ENVIRONMENTAL ENHANCEMENT PURPOSES. THE PROJECT COMPONENTS INCLUDE NEW 2 MGD PUMPING STATION WITH ELECTRICAL ROOM, TWO 16-INCH SUCTION PIPES FROM THE SINK TO THE PUMPING STATION, ONE 16-INCH DISCHARGE PIPE FROM THE STATION TO A CONNECTION POINT WITH 16-INCH RAW WATER PIPING BY OTHERS, A 4-INCH FORCE MAIN FOR SUMP PUMP DISCHARGE AND A 1.5-INCH WATER SERVICE.
   b. OWNER: CITY OF TAMPA WATER DEPARTMENT
   c. PROPERTY ADDRESS: 151 W. 115TH AVE., TAMPA, FL
   d. ZONING: CI
   e. LEGAL DESCRIPTION: SEE SHEET DEC-2
   f. SPECIAL DISTRICTS: THE PROJECT IS NOT IN A SPECIAL/HISTORICAL DISTRICT.
   g. FLOODPLAIN: EL = 31.7 FEET NAVD 1988 (32.54 FEET NGVD 1929), ZONE AE, MAP NO. 12057C0212H.
   h. IMPERVIOUS SUMMARY OF PUMPING STATION SITE
   i. DEMOLITION OF ASPHALT ROAD: 1529.3ed SF
   ii. DEMOLITION OF BUILDING AND MASONRY WALL 1203.5 SF
   iii. NEW ASPHALT PARKING AND SIDEWALK: 1115 SF
   iv. NEW BUILDING: 1530.8 SF
   v. NEW A/C UNIT PADS 20 SF
   vi. SUMMARY NEW NET IMPERVIOUS AREA: -67 SF
2. STORMWATER REQUIREMENTS: THE NET IMPERVIOUS AREA FOR THE PUMPING STATION PROJECT IS 2654 SF. THIS AREA IS LESS THAN THE 3000 SF CITY OF TAMPA THRESHOLD. NO STORMWATER MANAGEMENT SYSTEM IS REQUIRED OR PROVIDED.
3. NOTIFY THE ENGINEER IF ACTUAL CONDITIONS VARY FROM THOSE SHOWN.
4. ALL WORK CONDUCTED ON THE PUBLIC PORTION OF WATER SYSTEM WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TAMPA WATER DEPARTMENT TECHNICAL MANUAL, LATEST EDITION. PERFORM 4-INCH FORCE MAIN WORK IN ACCORDANCE WITH THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS STANDARDS.
5. MAINTAIN, RELOCATE OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM WORK TO MAINTAIN THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENTS.
6. DIMENSIONS ARE TO THE FACE OF CURB, EDGE OF PAVEMENT, EDGE OF WALL AND CENTER OF YARD PIPE FITTINGS.
7. ELEVATIONS ARE GIVEN TO FINISHED GRADE UNLESS OTHERWISE NOTED.
8. SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
9. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE VARIOUS UTILITY COMPANIES BY CALLING THE SUNSHINE ONE CALL CENTER (1-800-432-4770) OR, IF NECESSARY, BY CONTACTING THE UTILITY COMPANIES DIRECTLY.
11. UTILITIES AND STRUCTURES NOT SHOWN ON THE PLANS TO BE REMOVED OR REPLACED SHALL BE PROTECTED IN PLACE AND UTILITY SERVICE SHALL BE MAINTAINED. WHERE TEMPORARY CONFLICTS OCCUR BETWEEN EXISTING UTILITIES AND THE NEW CONSTRUCTION, THE CONTRACTOR SHALL PROTECT IN PLACE OR RELOCATE THE UTILITIES AND MAINTAIN UTILITY SERVICE TO THE SATISFACTION OF THE UTILITY COMPANY. UTILITIES AND STRUCTURES SHOWN ON THE PLANS TO BE REMOVED AND REPLACED OR RELOCATED, SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE TECHNICAL SPECIFICATIONS.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE, TEMPORARY THRUST RESTRAINT AT BENDS AND TEES IN EXISTING WATER MAINS AND OTHER PRESSURIZED CONDUITS IN PROXIMITY TO HIS EXCAVATIONS AS REQUIRED TO PREVENT ANY DISLODGEMENT, SEPARATION OR LEAKAGE OF THESE FACILITIES.
13. WHERE SHOWN, PROVIDE 16-INCH DIAMETER PRESSURE CLASS 250 CEMENT MORTAR LINED DUCTILE IRON RAW WATER MAIN IN ACCORDANCE WITH AWWA C151. POLYETHYLENE ENCASE ALL PIPE AND FITTINGS IN ACCORDANCE WITH AWWA C104. FOR DUCTILE IRON PIPE, PROVIDE MAXIMUM UNRESTRAINED JOINT DEFLECTIONS ONE DEGREE LESS THAN THE PIPE MANUFACTURER'S RECOMMENDED MAXIMUM. FOR RESTRAINED JOINT DUCTILE IRON PIPE, DO NOT EXCEED THE MAXIMUM JOINT DEFLECTIONS RECOMMENDED BY THE PIPE MANUFACTURER.
14. WHERE SHOWN, PROVIDE 16" AND 18" HIGH DENSITY POLYETHYLENE (HDPE) DR 11 BUTT-FUSION WELDED PIPE AND FITTINGS MEETING AWWA C906.
15. ALL PIPE BEDDING SHALL BE CLASS C UNLESS OTHERWISE SHOWN, SPECIFIED OR REQUIRED.
16. THE CONTRACTOR SHALL INSTALL ALL PIPING, INCLUDING THE PROPOSED RAW WATER MAIN TO THE ELEVATIONS AND SLOPES SHOWN ON THE DRAWINGS. A MINIMUM COVER OF 36" SHALL BE MAINTAINED UNLESS SPECIFICALLY SHOWN OTHERWISE. THERE SHALL BE NO INTERMEDIATE HIGH POINTS OR LOW POINTS BETWEEN V.P.I.'S, EXCEPT THAT, IN NO CASE SHALL THE VERTICAL SEPARATION BETWEEN THE PROPOSED WATER MAIN AND CROSSING UNDER A SANITARY OR STORM SEWER BE LESS THAN 12 INCHES AND THE HORIZONTAL SEPARATION LESS THAN 6 FEET FROM SANITARY SEWER OR 3 FEET FROM STORM SEWER (FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SANITARY OR STORM SEWER). THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND CROSSING OVER A SANITARY OR STORM SEWER SHALL BE 6" OR GREATER. THE HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND SANITARY OR STORM SEWER CAN BE REDUCED TO 3 FEET (OUTSIDE OF WATER MAIN TO OUTSIDE OF SANITARY OR STORM SEWER) IF THE WATER MAIN IS LAID AT LEAST 6" HIGHER THAN THE SANITARY OR STORM SEWER. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND OBTAIN THE ELEVATIONS OF ALL UTILITIES IN AROUND AND CROSSING THE PROPOSED PIPELINE BY POTHOLING AND, WHERE THE REQUIRED SEPARATIONS CANNOT BE ACHIEVED, NOTIFY THE ENGINEER, WHO WILL DIRECT THE CONTRACTOR TO ADJUST EITHER THE VERTICAL OR HORIZONTAL ALIGNMENT AS NECESSARY. REGULATIONS ALLOW, AND THE ENGINEER MAY ALLOW, CERTAIN EXCEPTIONS TO THESE MINIMUM CLEARANCES AS DESCRIBED IN FLORIDA ADMINISTRATIVE CODE 62-555-314.

CIVIL GENERAL NOTES - CONTINUED

17. UNLESS OTHERWISE SHOWN, ALL FENCES DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW MATERIALS OF THE SAME TYPE AND HEIGHT, INCLUDING GATES.
18. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY SODDING. SEEDING AND MULCH SHALL ONLY BY UTILIZED IF DIRECTED BY THE ENGINEER.
19. DO NOT UNNECESSARILY REMOVE THE EXISTING VEGETATION AND ALTER EXISTING TOPOGRAPHY. PROVIDE ADEQUATE PROTECTION MEASURES (I.E., HAYBALES, BAFFLES, SODDING AND SANDBAGGING) AS SHOWN OR REQUIRED TO MINIMIZE EROSION AND DOWNSTREAM SEDIMENTATION CAUSED BY SURFACE WATER RUNOFF ON EXPOSED LAND SURFACES.
20. ALL TREES NOT SHOWN FOR DEMOLITION SHALL BE PROTECTED BY TREE BARRICADES. ERECT BARRICADES PRIOR TO ANY LAND ALTERATION ACTIVITIES. DURING CONSTRUCTION ACTIVITIES, DO NOT REMOVE VEGETATION BY GRUBBING, OR PLACE SOILS DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE THAT REMAINS ON SITE.
21. PROMPTLY AND ADEQUATELY STABILIZE ANY AREA SUBJECT TO EROSION AND VEGETATIVE MATERIAL BY SODDING, SEEDING, PLUGGING OR OR SPRIGGING. IF SLOPE IS GREATER THAN 5:1, SODDING WILL BE THE ONLY ACCEPTABLE FORM OF STABILIZATION. PERMANENT RESTORATION SHALL BE BY SODDING.
22. THE CONTRACTOR SHALL STOCKPILE AND MAINTAIN SURPLUS OF SUITABLE JOB EXCAVATED MATERIAL FOR BEDDING OR BACKFILL FOR THIS PROJECT. THE CONTRACTOR SHALL COVER ALL STOCKPILES WITH TARPS OR CAREFULLY SURROUND STOCKPILES WITH SILT FENCES, HAYBALES OR THE LIKE TO PREVENT SILTATION FROM RUNOFF.
23. THE CONTRACTOR SHALL DISPOSE OF ALL DEBRIS FROM CONSTRUCTION AT HIS OWN EXPENSE.

SURVEY AND CONTROL NOTES

1. FEATURES AND UTILITIES DEPICTED ON SURVEY ARE FROM VISIBLE EVIDENCE ONLY.
2. NO UNDERGROUND FOUNDATIONS OR FOOTERS WERE EXCAVATED OR LOCATED.
3. THE HORIZONTAL DATUM UTILIZED FOR THIS PROJECT IS NAD 1983 (2007) FLORIDA WEST ZONE, U.S. SURVEY FEET.
4. THE VERTICAL DATUM UTILIZED FOR THIS PROJECT IS NGVD 1929, U.S. SURVEY FEET. THE BENCHMARK UTILIZED WAS CITY OF TAMP BENCHMARK "HV-02 0199" WITH AN ELEVATION OF 30.90 FEET.
5. DATUM CONVERSION: NAVD 1988 = NGVD 1929 - 0.84 FEET.
6. NOT A BOUNDARY SURVEY.
7. THE SURVEY WAS CONDUCTED TO SHOW THE CONDITIONS WITHIN THE LIMITS OF THE PROJECT AREA. ALL OTHER IMPROVEMENTS ARE NOT DEPICTED.
8. ALL WATER ELEVATIONS SHOWN ON THE SURVEY REPRESENT DATA COLLECTED ON MARCH 6, 2012 AND ARE INDICATIVE ONLY OF THE CONDITIONS AT THAT TIME.
9. SUBAQUEOUS INFORMATION WAS COLLECTED ON MARCH 6, 2012 WITH THE SUPPORT OF VIKING DIVING SERVICES, INC.
10. REFER TO DRAWINGS DC-1 AND DC-2 FOR ADDITIONAL INFORMATION ON SURVEY, TEMPORARY BENCHMARKS AND THE LIKE.

DRAINAGE SYMBOLS

- - - - - - - - - - - - SILT FENCE

PIPING AND UTILITIES

UTILITIES (SINGLE LINE) SEE PIPE SCHEDULE FOR ADDITONAL PIPING INFO

—— G —— UTILITIES (SIZE WHERE NOTED)
—— G —— UNDERGROUND

RW	RAW WATER
PW	POTABLE WATER
IRRG	IRRIGATION LINE
SDR	STORM DRAIN
SS	SANITARY SEWER
TEL	TELEPHONE
COMM	COMMUNICATIONS LINE
FOC	FIBER OPTIC CABLE
CATV	CABLE TV
ELEC	POWER
UNID	UNIDENTIFIED
ABND	ABANDONED UTILITY
SPD	SUMP PUMP DISCHARGE

MH — MANHOLE (IN PLAN)
BURIED VALVES IN VALVE BOX GATE VALVE
ECCENTRIC PLUG VALVE

GEOTECHNICAL SYMBOLS

B-X — SOIL BORING LOCATION
MW — MONITORING WELL

GENERAL CIVIL SYMBOLS

NEW
EXISTING
FUTURE
EXISTING TO BE REMOVED OR DEMOLISHED
CENTERLINE
EARTH (IN SECTION)
COMPACTED EARTH (IN SECTION)
S=0.0123 — SLOPE ON PAVED SURFACE
3:1 — BERM SLOPE (HORZ TO VERT)

SURVEY LEGEND & ABBREVIATIONS

	SET 5/8" CAPPED IRON ROD
	SET P.K. NAIL & DISK
	FOUND IRON ROD OR PIPE
	FOUND P.K. NAIL & DISK
	FOUND "X" CUT
	FOUND RAILROAD SPIKE
P.S.M.	PROFESSIONAL SURVEYOR AND MAPPER
Id.	IDENTIFICATION
	TEMPORARY BENCHMARK
TBM	TEMPORARY BENCHMARK
MW	MONITORING WELL
SWFWMD	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
??	UNKNOWN DESTINATION
30.42	BACK OF CURB ELEVATION
38.60	EDGE OF PAVEMENT ELEVATION
	SPOT ELEVATION
	SPOT ELEVATION ON HARD SURFACE
(F)	FIELD MEASUREMENT
(D)	DEED REFERENCE
(P)	PLAT REFERENCE
DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
S-1	SANITARY MANHOLE
D-1	STORM MANHOLE
1	SUBAQUEOUS DATA (AS OBTAINED BY OTHERS)
CCR	FDEP CERTIFIED CORNER RECORD
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
1	TOP OF RUST STAIN (ALONG WALL BASED ON AN ELEVATION OF 23.92')
	ELECTRIC VAULT
	FIRE HYDRANT
	IRRIGATION CONTROL VALVE
	MITERED END SECTION
	LIGHT POLE
	SQUARE POST
	POWER POLE
	GUY WIRE
	SIGN
	UNKNOWN TREE
	PALM
	OAK
	TRAFFIC VAULT
W	WATER METER
CB	CATCH BASIN
	STORM MANHOLE
	SANITARY MANHOLE
	WATER VALVE
	ELECTRIC PULL BOX
	ROUND POST
—x—x—	FENCE
—E—E—	OVERHEAD UTILITY LINES
—SS—SS—	SANITARY LINE
	TREE LINE
—T—T—	GUARD RAIL
—UE—UE—	UNDERGROUND ELECTRIC
	21.7' CONTOUR
FFE	FINISHED FLOOR ELEVATION
WL	WATER LINE
	JURISDICTIONAL WETLAND LINE (BASED ON AN ELEVATION OF 23.92')

ROAD AND PAVING SYMBOLS

ASPHALT CEMENT PAVING
PERMEABLE PAVING

CONTROL SYMBOLS

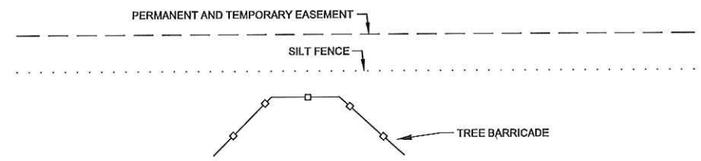
N XXXXXXX
E XXXXXXX — SITE COORDINATES
XXX.XX — FINISHED ELEVATION

STRUCTURES

FENCE (CHAINLINK)
FENCE (WOOD)
STRUCTURE
STRUCTURE (BELOW GRADE)
CB CB — CATCH BASIN

LEGEND

PIPELINE CONSTRUCTION



Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE
WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

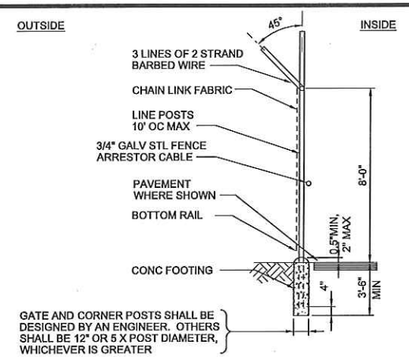
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD NOTES AND SYMBOLS

SHEET
GC-1
1011673

File: C:\pwwork\rlams60329\TBSD_GC01.dwg

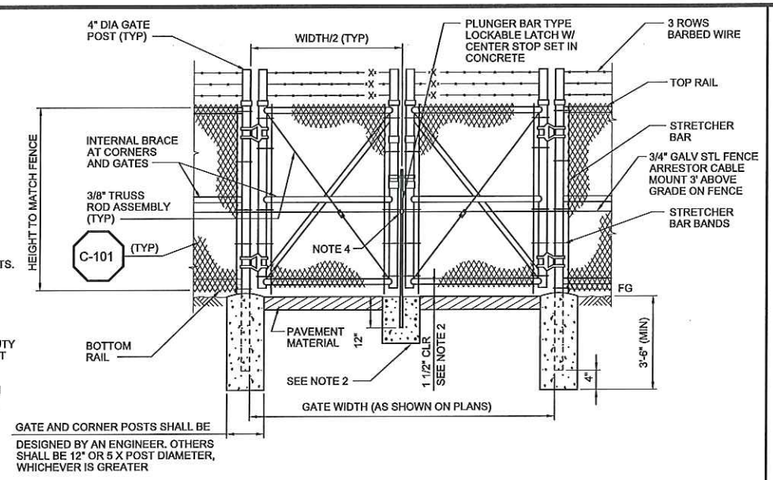


GATE AND CORNER POSTS SHALL BE DESIGNED BY AN ENGINEER. OTHERS SHALL BE 12" OR 5 X POST DIAMETER, WHICHEVER IS GREATER

NOTES:

1. SEE SPECIFICATIONS FOR FENCE MATERIAL, COATINGS, AND INSTALLATION REQUIREMENTS.
2. EXTENSION ARM MAY BE TURNED IN AT OPTION OF OWNER.
3. PROVIDE FENCE ARRESTOR CABLE ON EAST FENCE ONLY. ANCHOR TO CABLE ARRESTOR ANCHOR BLOCKS SHOWN ON STRUCTURAL DETAILS.

CHAIN LINK FENCE — C-101



NOTES:

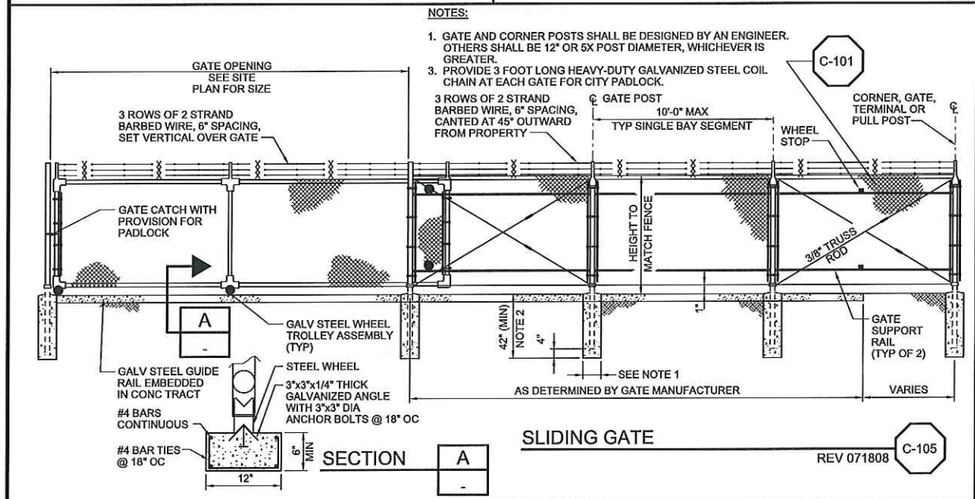
1. SEE SPECIFICATIONS FOR FENCE MATERIAL, COATINGS, AND INSTALLATION REQUIREMENTS.
2. 12" DIAMETER X 18" DEEP CONCRETE STOP W/ 20 GA STEEL PLUNGER SLEEVE, DIA = ROD OD +1/2".
3. PROVIDE 3 FOOT LONG HEAVY-DUTY GALVANIZED STEEL COIL CHAIN AT EACH GATE FOR CITY PADLOCK.
4. PROVIDE SWAGED THIMBLE EACH SIDE OF GATE AND FASTEN WITH 3/4"Ø GALV STEEL SHACKLE.

GATE AND CORNER POSTS SHALL BE DESIGNED BY AN ENGINEER. OTHERS SHALL BE 12" OR 5 X POST DIAMETER, WHICHEVER IS GREATER

DOUBLE LEAF GATE — C-102

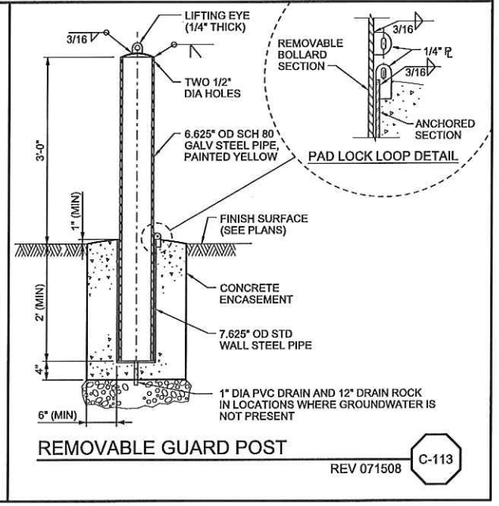
NOTES:

1. GATE AND CORNER POSTS SHALL BE DESIGNED BY AN ENGINEER. OTHERS SHALL BE 12" OR 5X POST DIAMETER, WHICHEVER IS GREATER.
3. PROVIDE 3 FOOT LONG HEAVY-DUTY GALVANIZED STEEL COIL CHAIN AT EACH GATE FOR CITY PADLOCK.



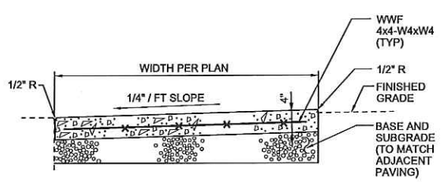
SLIDING GATE — C-105

REV 071808



REMOVABLE GUARD POST — C-113

REV 071508



NOTES:

1. EXPANSION JOINTS OF 1/2" PREMOLDED JOINT FILLER SHALL BE PLACED AT 24'-0" MAXIMUM SPACING, AND WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE.
2. SCORE LINES AT RIGHT ANGLES TO CENTERLINE SHALL BE MARKED AT 60" INTERVALS. ON WALKS EXCEEDING SIX FEET IN WIDTH, A CONTINUOUS SCORE LINE SHALL BE MARKED ON THE CENTERLINE.
3. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL FINISH REQUIREMENTS.

CONCRETE SIDEWALK — C-120

CHARLES M. PEKKALA LICENSE No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 7/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

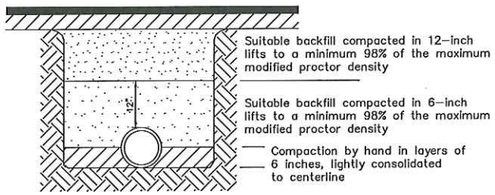
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD DETAILS - I

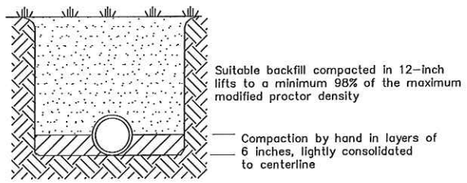
SHEET
GC-2
1011673



NOTES:

1. Type 2 trench is defined as a flat–bottom trench. Lightly consolidate backfill to centerline of pipe.
2. This standard shall be utilized in the absence of specific standards. The standard of the agency controlling the Right–of–Way shall govern unless otherwise directed by the Engineer.
3. Suitable backfill shall be defined as material free from cinders, ashes, refuse, clay, organic matter, boulders, rocks or stones, or other material that in the opinion of the Engineer is unsuitable.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	TRENCHING, BEDDING AND BACKFILL DETAIL FOR PAVED AREAS	2.01

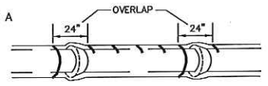


NOTES:

1. Type 2 trench is defined as a flat–bottom trench. Lightly consolidate backfill to centerline of pipe.
2. This standard shall be utilized in the absence of specific standards. The standard of the agency controlling the Right–of–Way shall govern unless otherwise directed by the Engineer.
3. Suitable backfill shall be defined as material free from cinders, ashes, refuse, clay, organic matter, boulders, rocks or stones, or other material that in the opinion of the Engineer is unsuitable.

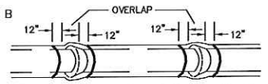
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	TRENCHING, BEDDING AND BACKFILL DETAIL FOR NON–PAVED AREAS	2.02

METHOD A



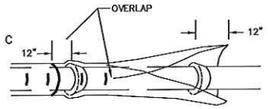
Polyethylene tube is cut into lengths approximately two feet longer than the pipe section and placed around it. After the pipe joint is assembled, the polyethylene tube is made to overlap the joint and the overlap secured in place. Since the tube is considerably larger than the barrel of pipe, it is made to fit snugly by folding over at the top and securing with tape every 24" along the pipe section.

METHOD B



Polyethylene tube is cut one foot shorter than the length of the pipe section. After placement of the pipe, it is folded and secured snugly overall. A three foot length of polyethylene tube placed over the end of the preceeding section is then pulled in place over the joint after assembly and secured.

METHOD C



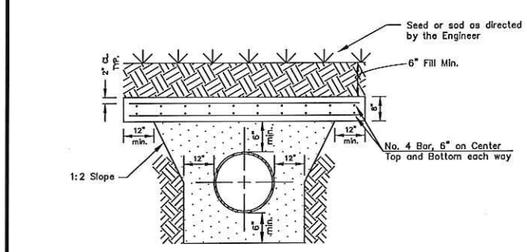
Polyethylene sheet is cut to a length two feet longer than the pipe section. The sheet is wrapped around the pipe so that it overlaps circumferentially over the top quadrant of the pipe, then secured. After joint assembly, the surplus length of polyethylene film is secured around the joint, providing an overlap of each joint. Tape at each joint and at 3' intervals in between.

NOTES: 1. Use blue polyethylene film and tape only.
2. Polyethylene film shall be a minimum of 8 mil. thickness.

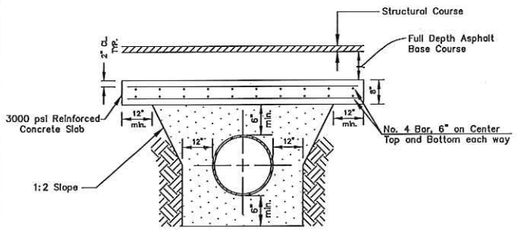
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	POLYETHYLENE ENCASEMENT INSTALLATION DETAIL	2.05

GENERAL SHEET NOTES:

1. DETAILS SHOWN ON THIS SHEET REPRESENT CITY OF TAMPA WATER DEPARTMENT STANDARD DETAILS. FOR CONSTRUCTION, OBTAIN AND REFER TO THE CITY OF TAMPA WATER DEPARTMENT'S CURRENT TECHNICAL STANDARDS MANUAL AND DETAILS.



GRASSED SECTION



ROADWAY SECTION

NOTES:
1. Structural course and base course requirement shall be established by the agency having jurisdiction.
2. Shock pads for mains too shallow for the above configuration shall be designed on a case–by–case basis.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	REINFORCED CONCRETE SHOCK PAD (FOR COVER LESS THAN 2.5')	2.06

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

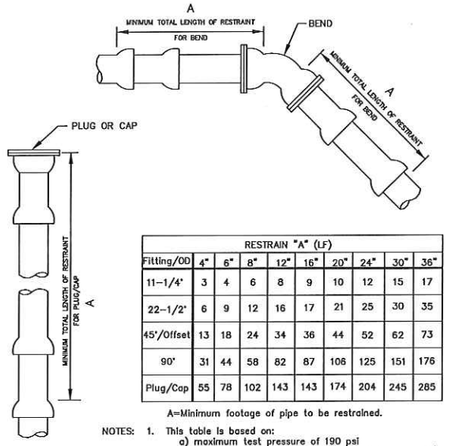
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD DETAILS - II

SHEET GC-3

1011673

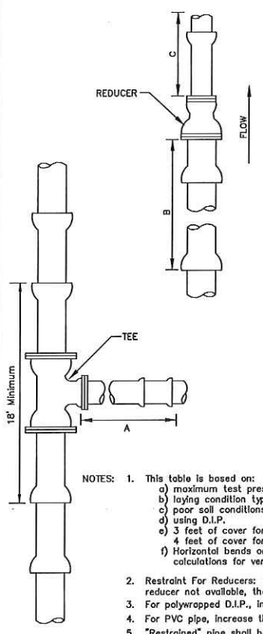


RESTRAIN "A" (LF)									
Fitting/OD	4"	6"	8"	12"	16"	20"	24"	30"	36"
11-1/4°	3	4	6	8	9	10	12	15	17
22-1/2°	6	9	12	16	17	21	25	30	35
45°/Offset	13	18	24	34	36	44	52	62	73
90°	31	44	58	82	87	106	125	151	176
Plug/Cap	55	78	102	143	143	174	204	245	285

A=Minimum footage of pipe to be restrained.

NOTES:
1. This table is based on:
   a) maximum test pressure of 190 psi
   b) laying condition type 2 (see Details 2.01 and 2.02)
   c) poor soil conditions
   d) using D.I.P.
   e) 3 feet of cover for 12" and smaller mains; 4 feet of cover for 16" and larger mains
   f) Horizontal bends only – Engineer to submit calculations for vertical restraints
2. For polywrapped D.I.P., increase the footage to restrain by 25%.
3. For PVC pipe, increase the footage to restrain by 20%.
4. "Restrained" pipe shall be Manufactured Restrained Joint pipe, push-on joint pipe restrained w/gasket-type "Gripper Restraints", or mechanical joint pipe restrained by Megalug (or approved equivalent).
5. Any additional fittings within the restrained section shall be restrained accordingly.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	RESTRAINED JOINT STANDARD FOR BENDS, PLUGS, AND CAPS	2.11

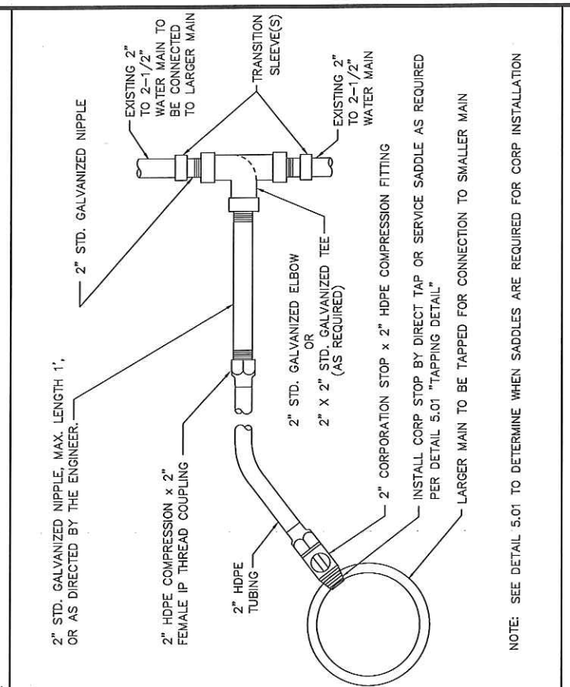


Fitting Size	Restrain (LF) Tee "A"	Reducer "B"	Unrestrained Straight Run (LF) Reducer "C"
4x4	25	*	*
6x4	11	40	59
6x6	48	*	*
8x4	A.T.	73	142
8x6	38	43	56
8x8	72	*	*
12x4	A.T.	124	364
12x6	19	104	208
12x8	57	76	115
12x12	114	*	*
16x6	A.T.	121	321
16x8	27	104	212
16x12	77	61	82
16x16	118	*	*
20x6	A.T.	156	527
20x8	14	144	359
20x12	68	109	186
20x16	111	61	77
20x20	149	*	*
24x6	A.T.	189	777
24x8	A.T.	179	560
24x12	59	150	313
24x16	104	111	172
24x20	144	61	74
24x24	179	*	*
30x6	A.T.	234	1227
30x8	A.T.	228	904
30x12	45	204	542
30x16	94	173	341
30x20	135	134	208
30x24	172	86	110
30x30	220	*	*
36x6	A.T.	278	1784
36x8	A.T.	269	1328
36x12	30	251	824
36x16	83	228	551
36x20	127	195	373
36x24	165	156	245
36x30	215	86	106
36x36	261	*	*

A.T.–Restraint required at Tee only.
*–not applicable

NOTES:
1. This table is based on:
   a) maximum test pressure of 190 psi
   b) laying condition type 2 (see Details 2.01 and 2.02)
   c) poor soil conditions
   d) using D.I.P.
   e) 3 feet of cover for 12" and smaller mains; 4 feet of cover for 16" and larger mains
   f) Horizontal bends only – Engineer to submit calculations for vertical restraints
2. Restraint For Reducers: If "C" straight run of pipe downstream of reducer not available, then restrain "B" upstream of reducer.
3. For polywrapped D.I.P., increase the footage to restrain by 25%.
4. For PVC pipe, increase the footage to restrain by 20%.
5. "Restrained" pipe shall be Manufactured Restrained Joint pipe, push-on joint pipe restrained w/gasket-type "Gripper Restraints", or mechanical joint pipe restrained by Megalug (or approved equivalent).
6. Any additional fittings within the restrained section shall be restrained accordingly.

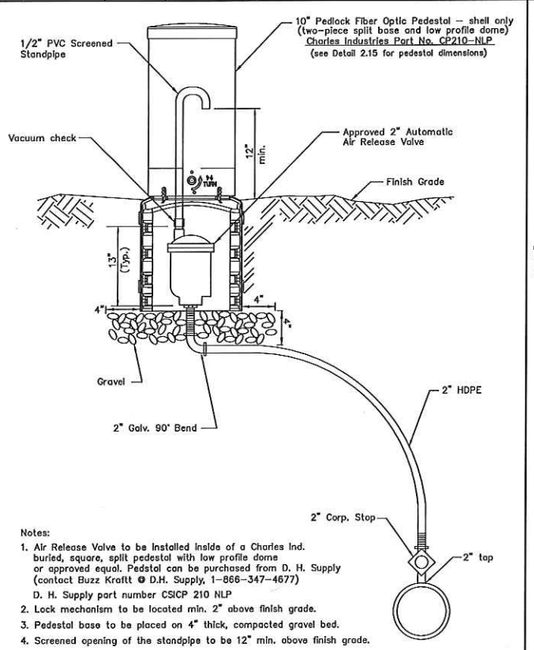
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	RESTRAINED JOINT STANDARD FOR TEES AND REDUCERS	2.12



TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	"TAPPED" CONNECTION FROM DI,CI, OR PVC PIPE TO <4" WATER MAINS	2.13

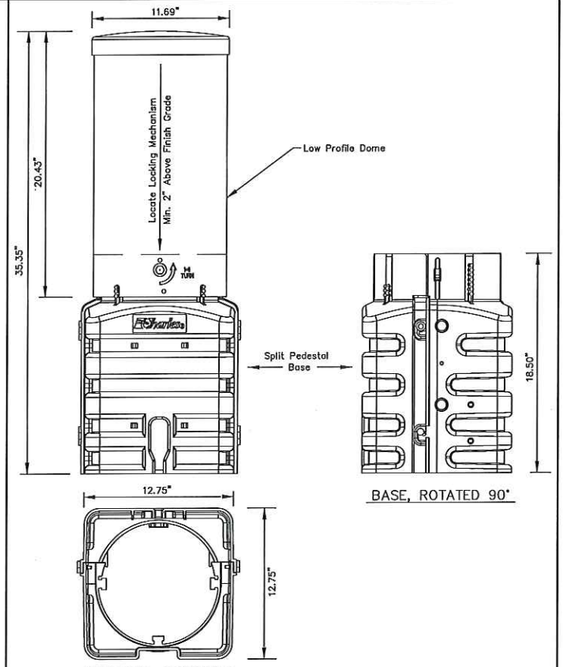
GENERAL SHEET NOTES:

1. DETAILS SHOWN ON THIS SHEET REPRESENT CITY OF TAMPA WATER DEPARTMENT STANDARD DETAILS. FOR CONSTRUCTION, OBTAIN AND REFER TO THE CITY OF TAMPA WATER DEPARTMENT'S CURRENT TECHNICAL STANDARDS MANUAL AND DETAILS.
2. FOR CITY DETAIL 2.14, PROVIDE A 2" COMBINATION AIR RELEASE AND VACUUM VALVE IN LIEU OF THE 2" AIR RELEASE VALVE SHOWN IN THE DETAIL.



Notes:
1. Air Release Valve to be installed inside of a Charles Ind. buried, square, split pedestal with low profile dome or approved equal. Pedstal can be purchased from D. H. Supply (contact Buzz Kraftt @ D.H. Supply, 1-866-347-4677)
   D. H. Supply part number CSICP 210 NLP
2. Lock mechanism to be located min. 2" above finish grade.
3. Pedestal base to be placed on 4" thick, compacted gravel bed.
4. Screened opening of the standpipe to be 12" min. above finish grade.

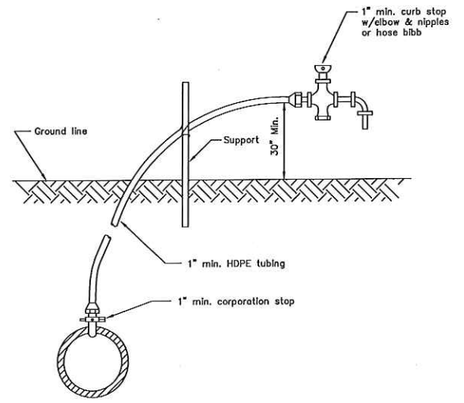
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	AUTOMATIC AIR RELEASE VALVE	2.14



BASE, ROTATED 90°

PEDESTAL ASSEMBLY

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	PEDESTAL FOR AUTOMATIC AIR RELEASE VALVE	2.15



Notes:
1. Water outlet shall be held up off the ground so as not to interfere with the sampling process.
2. Corporation stop to be removed and brass plug installed in tapped main after operation.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	TEMPORARY SAMPLE TAP INSTALLATION w/DI, CI, OR PVC PIPE	2.18

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

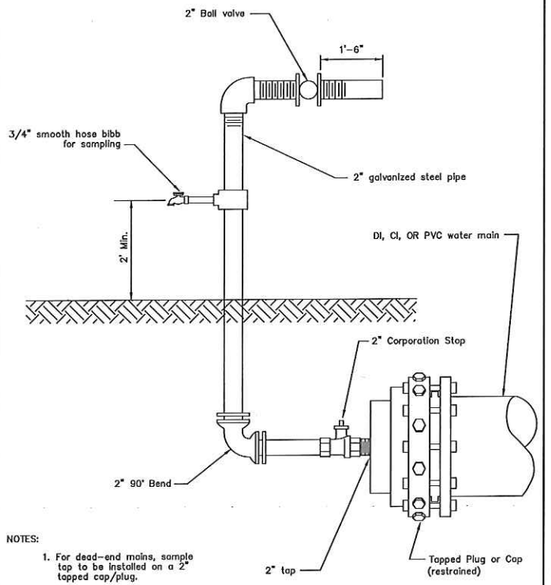
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD DETAILS - III

SHEET GC-4

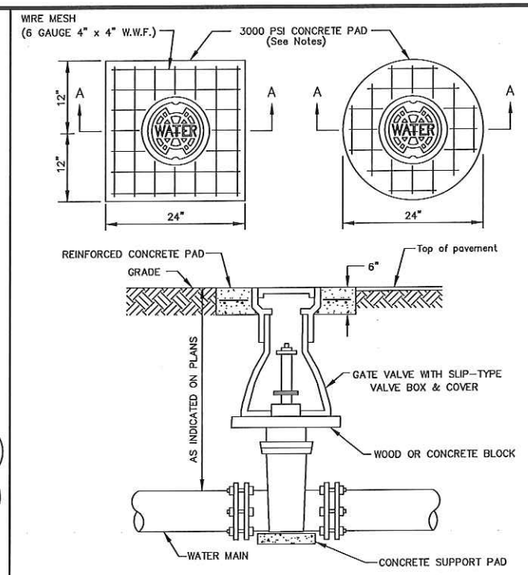
1011673



NOTES:

1. For dead-end mains, sample tap to be installed on a 2" tapped cap/plug.
2. Flushing/sampling arrangement to be removed after disinfection of main line.
3. After operation complete, install brass plug at corporation stop.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	TEMPORARY SAMPLE TAP INSTALLATION FOR END OF LINE W/DI, CI, OR PVC PIPE	2.19

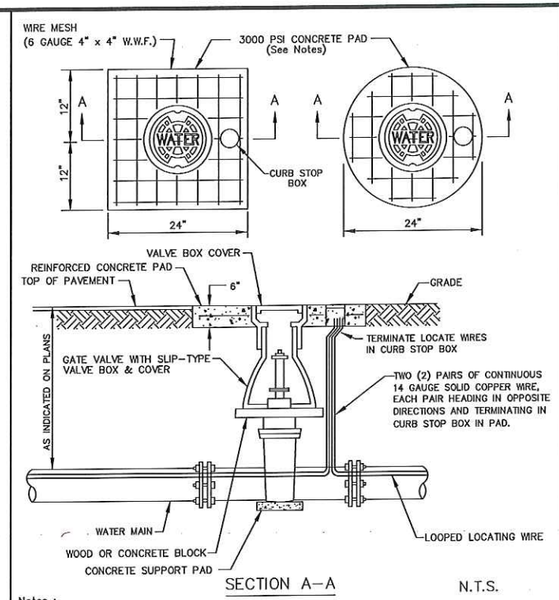


SECTION A–A N.T.S.

Notes :

1. Circular or square concrete pad required for all valve box installations.
2. Cast iron valve boxes shall be firmly supported and centered and plumb over the operating nut of the valve. Valve box cover shall be flush with the surface of the finished pavement, or grade or at such other level as may be directed by the Department.
3. "Blue" Water Valve locate markers required for all valve installations.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	VALVE INSTALLATION W/VALVE BOX & PAD FOR DI OR CI PIPE	3.01



SECTION A–A N.T.S.

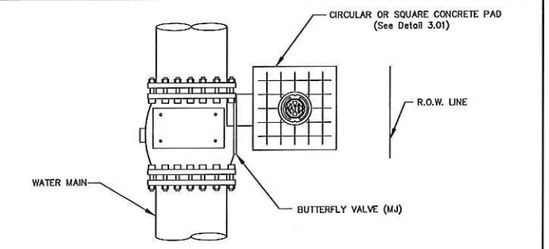
Notes :

1. Circular or square concrete pad required for all valve box installations.
2. Cast iron valve boxes shall be firmly supported and centered and plumb over the operating nut of the valve. Valve box cover shall be flush with the surface of finished pavement or grade or at such other level as may be directed by the Department.
3. "Blue" Water Valve locate markers required for all valve installations.

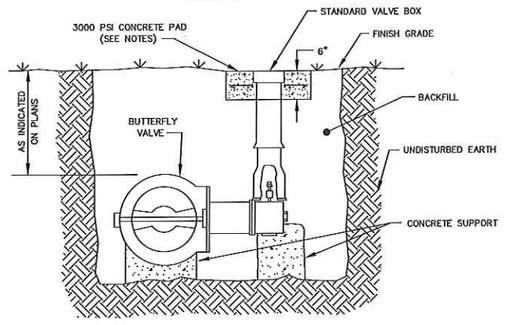
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	VALVE INSTALLATION W/VALVE BOX & PAD FOR PLASTIC PIPE	3.02

GENERAL SHEET NOTES:

1. DETAILS SHOWN ON THIS SHEET REPRESENT CITY OF TAMPA WATER DEPARTMENT STANDARD DETAILS. FOR CONSTRUCTION, OBTAIN AND REFER TO THE CITY OF TAMPA WATER DEPARTMENT'S CURRENT TECHNICAL STANDARDS MANUAL AND DETAILS.
2. FOR DETAILS 3.01, 3.02 AND 3.03 PROVIDE A 2" BRASS IDENTIFICATION TAG ADHERED TO VALVE HOUSEKEEPING PAD WITH STAINLESS SELF TAPPING SCREWS AND EPOXY. THE TAG SHALL IDENTIFY SERVICE TYPE, SIZE, RHC VS. LHC AND NUMBER OF TURNS.



PLAN

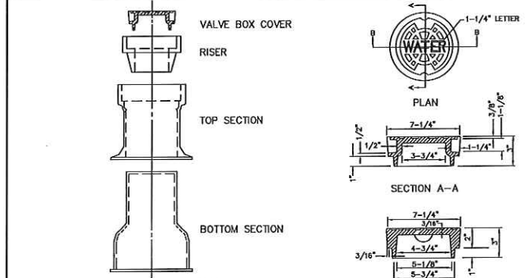


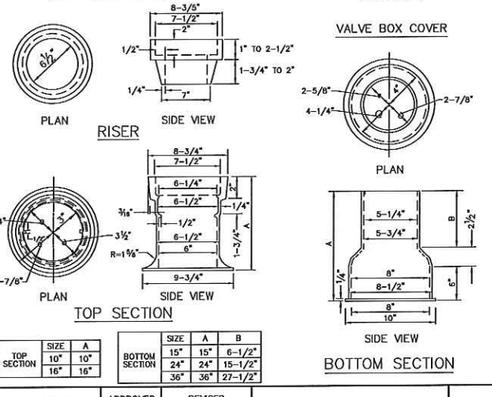
SECTION

Notes:

1. Circular or Square concrete pads for valve box and concrete supports as specified in detail above shall be furnished with all butterfly valve installations.
2. Orient valve so operator is located on the side of the pipe nearest the right-of-way line.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	BUTTERFLY VALVE INSTALLATION W/VALVE BOX & PAD	3.03

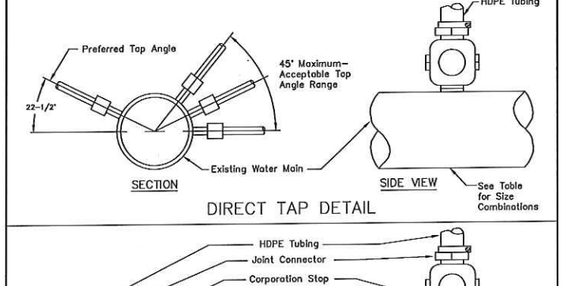




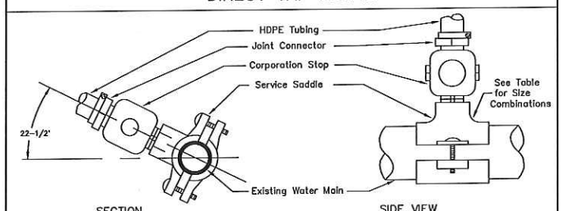
TOP SECTION	SIZE	A
	10"	10"
	16"	16"

BOTTOM SECTION	SIZE	A	B
	15"	15"	6-1/2"
	24"	24"	15-1/2"
	36"	36"	27-1/2"

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	VALVE BOX, SLIP-TYPE	3.04



DIRECT TAP DETAIL



SADDLE TAP DETAIL

PIPE	SIZE	CORPORATION TAP SIZE	
		1"	2"
DI/CI	12"	DT	DT
	8"	DT	SS
	6"	DT	SS
	4"	SS	SS
PVC	2",2-1/2"	SS	NA
	8" C-900	SS	SS
	6" C-900	SS	SS
	2"-SDR21	SS	NA
OTHER*	12"	SS	SS
	10"	SS	SS
	8"	SS	SS
	6"	SS	SS
	4"	SS	NA
	3"	SS	NA
	2",2-1/2"	SS	NA

LEGEND

DT– Direct Top Can be Allowed
SS– Service Saddle Is Required
NA– Not Allowed
*Asbestos Cement, Steel, Galvanized Iron Pipe, Non Std PVC, etc.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	TAPPING DETAIL FOR 3/4", 1", 1-1/2" & 2" W/DI, CI, OR PVC PIPE	5.01

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37995
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

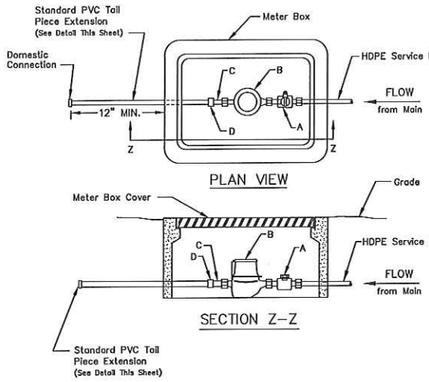
BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD DETAILS - IV

SHEET GC-5

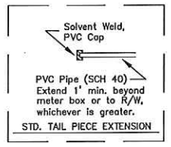
1011673

File: C:\pwwork\dirldms\6032\9\TBSD_GC05.dwg



METER INSTALLATION
–PARTS LIST–

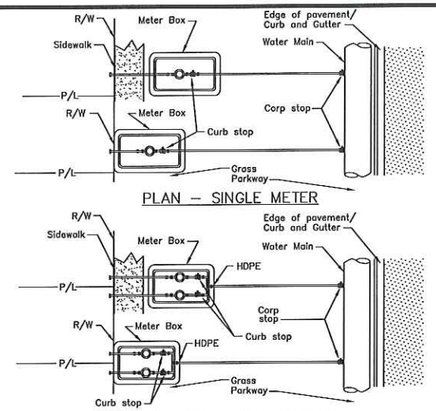
ITEM	DESCRIPTION
A	HDPE CJ X METER, SWIVEL NUT (CURB STOP)
B	METER
C	BRASS METER COUPLING
D	*PVC FIP X WELD COUPLING



* All PVC pipe and fittings shall be SCH 80 except for standard tail piece section which will be SCH 40.

NOTE: Parts list is for standard installation; actual parts required may vary as directed by the Engineer.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	SINGLE METER SET DETAIL 3/4", 1", 1-1/2", 2"	5.02



DO NOT INSTALL METER WITHIN SIDEWALK. WHEN SIDEWALK EXISTS, INSTALL METER ON STREET SIDE OF SIDEWALK OR WHERE DIRECTED BY ENGINEER.

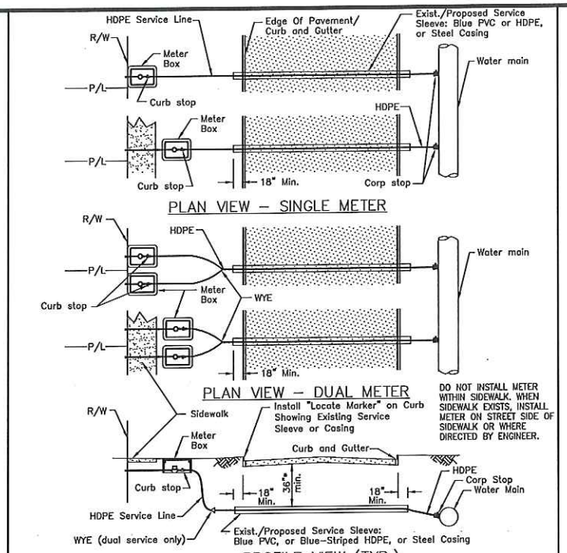
* Line size applicable for DDCVA

SINGLE METER SIZE (inches)	SERVICE LINE SIZE (inches) (0–15')
3/4	1
1	1
1–1/2	2
2*	2

DUAL METER SIZE (inches)	SERVICE LINE SIZE (inches) (0–15')
3/4	2
1	2
1–1/2	n/a
2	n/a

(Feet refer to distance from water main to meter)

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	SINGLE & DUAL METERED SERVICE – SHORT SIDE 3/4", 1", 1–1/2" AND 2"	5.04



DO NOT INSTALL METER WITHIN SIDEWALK. WHEN SIDEWALK EXISTS, INSTALL METER ON STREET SIDE OF SIDEWALK OR WHERE DIRECTED BY ENGINEER.

CASING SPECIFICATION:
1. If pushed–SCH 40 steel pipe (min.)
2. If layed in open trench–SCH 40 steel pipe or SCH 80 PVC solvent weld pipe.

*Or greater, if required by ROW controlling agency
**Line sizes applicable for 2" DDCV

SINGLE METER SIZE (inches)	SERVICE LINE SIZE (inches) (15'–80')	SERVICE LINE SIZE (inches) (80'–150')	CASING SIZE (inches)
3/4	1	2	2 – 4
1	2	2	4
1–1/2	2	2	4
2**	4" D.I.P.	4" D.I.P.	12

DUAL METER SIZE (inches)	SERVICE LINE SIZE (inches) (15'–80')	SERVICE LINE SIZE (inches) (80'–150')	CASING SIZE (inches)
3/4	2	2	4
1	2	4" D.I.P.	4 – 12
1–1/2	n/a	n/a	n/a
2	n/a	n/a	n/a

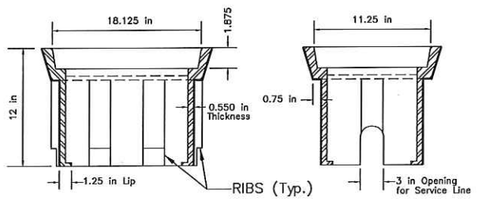
(Feet refer to distance from water main to meter)

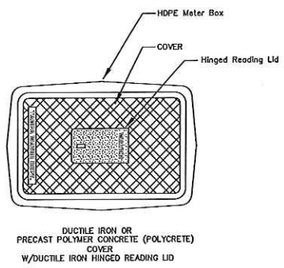
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	SINGLE & DUAL METERED SERVICE – LONG SIDE 3/4", 1", 1–1/2" AND 2"	5.05

GENERAL SHEET NOTES:

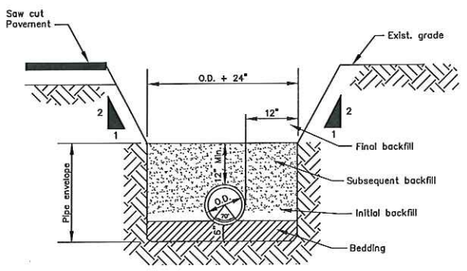
1. DETAILS SHOWN ON THIS SHEET REPRESENT CITY OF TAMPA WATER DEPARTMENT STANDARD DETAILS. FOR CONSTRUCTION, OBTAIN AND REFER TO THE CITY OF TAMPA WATER DEPARTMENT'S CURRENT TECHNICAL STANDARDS MANUAL AND DETAILS.

#37 HDPE METER BOX





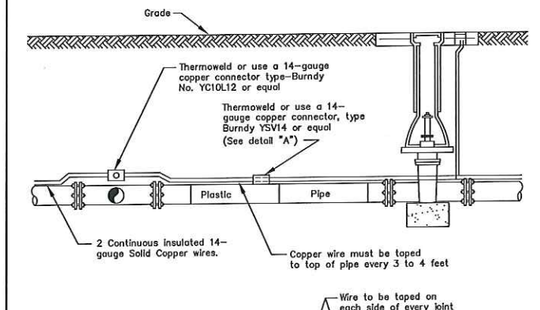
TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	3/4" OR 1" SINGLE SERVICE HDPE METER BOX	5.10



NOTES:

1. Pipe envelope bedding and backfill shall be compacted in 6" loose lifts.
2. Backfill above pipe envelope shall be compacted in 12" loose lifts maximum.
3. Backfill must be compacted to 95% modified proctor out of paved areas and 98% modified proctor in paved areas.

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	PIPE BEDDING AND TRENCH FOR PVC PIPE	7.01



NOTE:
All connections shall be sealed with a bituminous coating for corrosion protection

NTS

TAMPA WATER DEPARTMENT	APPROVED Jan. 2007	REVISED	DOUBLE COPPER TRACER WIRE ON PVC PIPE	7.02

CHARLES M. PEKKALA LICENSE No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/25/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

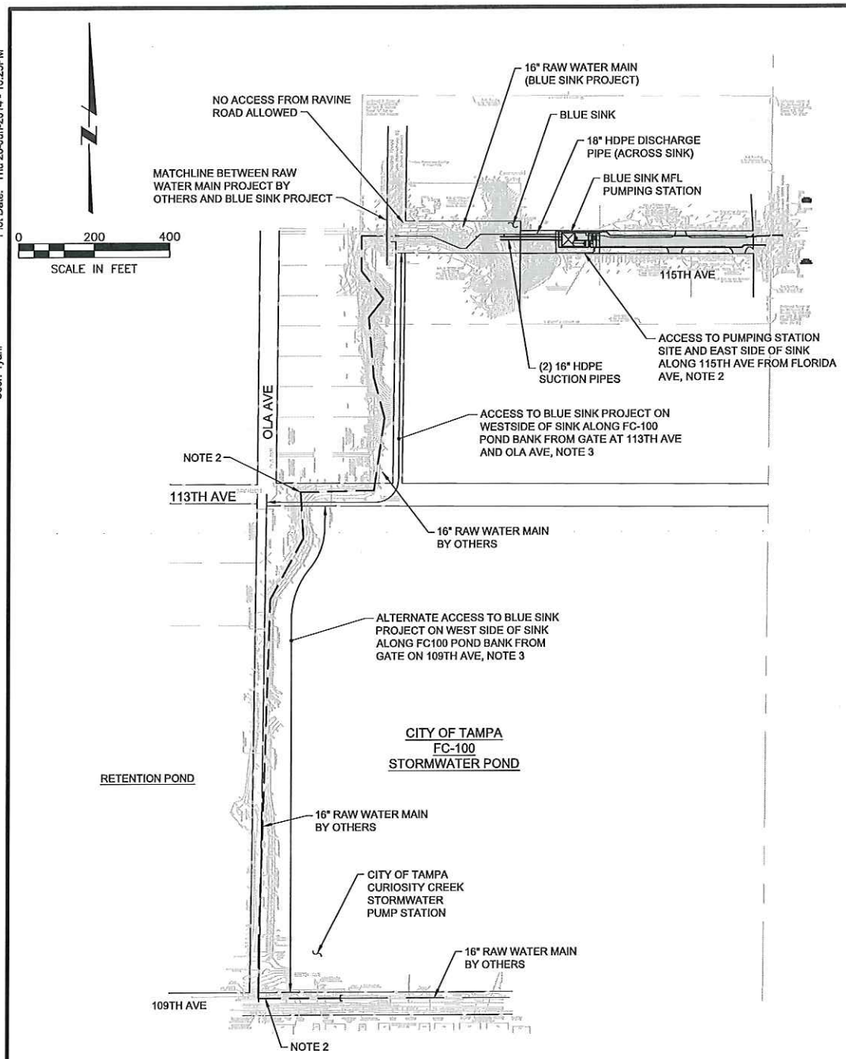
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
STANDARD DETAILS - V

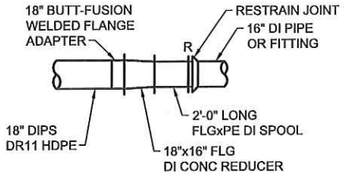
SHEET GC-6

1011673



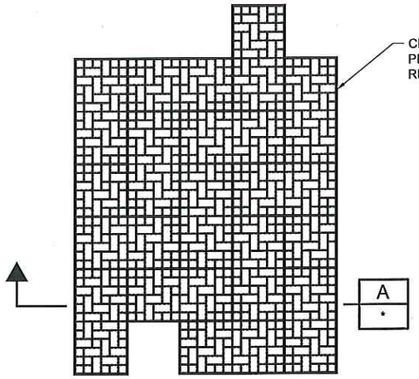
NOTES:
1. COORDINATE REQUIRED ACCESS WITH CONTRACT WORK BY OTHERS AND CITY OF TAMPA STORMWATER DIVISION OF PUBLIC WORKS DEPARTMENT.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE IF USED FOR ACCESS PER DETAIL 19 ON SHEET GC-10.
3. ACCESS ALONG WEST BANK OF STORMWATER POND HAS WETLANDS DELINEATIONS GENERALLY CORRESPONDING TO THE TOE OF SLOPE/POND INTERFACE. OBTAIN ENVIRONMENTAL PERMIT FROM CITY AND STAKE WETLAND LINE PRIOR TO USING THIS ACCESS. KEEP ACTIVITIES UPLAND OF THE WETLAND LINE.

SITE ACCESS AND COORDINATION WITH OTHERS | 1
SCALE: 1" = 200'-0"

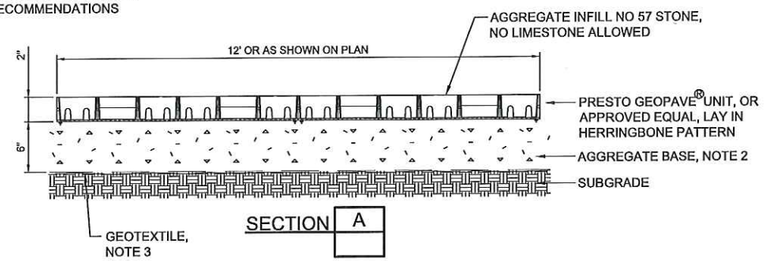


NOTES:
1. PROVIDE BACKER RING FOR 18" BUTT-FUSION WELDED FLANGE ADAPTER OF TYPE 316 STAINLESS STEEL.
2. PROVIDE TYPE 316 STAINLESS STEEL BOLTS AND NUTS FOR BURIED FLANGED PIPING.

CONNECTION DETAIL | 2
NO SCALE



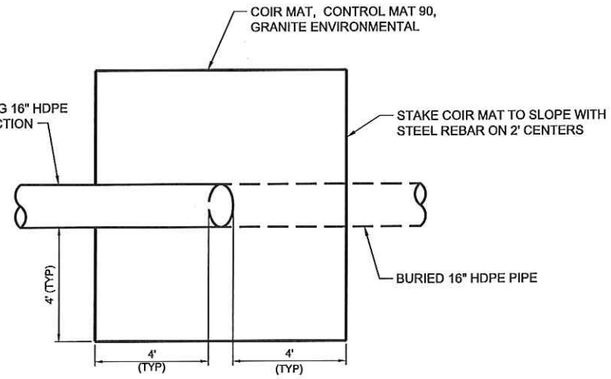
TYPICAL LAYOUT - HERRINGBONE PATTERN



SECTION A

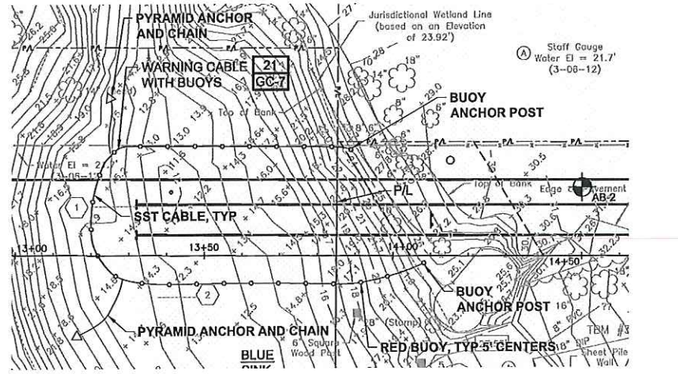
NOTES:
1. INSTALL PRESTO GEOPAVE, OR APPROVED EQUAL PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE NO. 57 STONE, NO LIMESTONE ALLOWED.
3. PROVIDE NON-WOVEN GEOTEXTILE OVER SAND SUBGRADE, MIRAFI 160N OR EQUAL MEETING AASHTO M288-06 CLASS 2. PROVIDE UNDER AGGREGATE BASE, INCLUDING SIDES. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

PERMEABLE DRIVE | 4
NO SCALE



PLAN

COIR MAT SLOPE STABILIZATION | 3
NO SCALE



NOTES:
1. PROVIDE A BUOY SUPPORTED WARNING CABLE AROUND THE FLOATING INTAKES. THE WARNING CABLE SHALL CONSIST OF STAINLESS STEEL CABLE; BUOYS; ANCHOR CHAINS AND ANCHORS IN THE SINK; AND ANCHOR POSTS.
2. ALL METALLIC COMPONENTS (CABLE, HARDWARE AND THE LIKE) SHALL BE TYPE 316 STAINLESS STEEL.
3. BUOYS SHALL BE 24-INCH DIAMETER BARRIER FLOAT EYE END BUOYS, ITEM #W2400AO BY WALSH MARINE, OR EQUAL. PROVIDE RED COLOR. EACH BUOY SHALL HAVE A 1/2-INCH DIAMETER ROD THROUGH THE BUOY, WITH 1/2-INCH BAIL SWIVELS AT EACH END. THE FLOAT SHALL BE MADE OF ROTATIONALLY MOLDED AND UV STABILIZED ULTRA STRONG HIGH DENSITY POLYETHYLENE PLASTIC (NO ABS PLASTIC ALLOWED) AND COMPLETELY FOAM FILLED. PROVIDE A BUOY MEETING US COAST GUARD REQUIREMENTS.
4. PROVIDE ONE BUOY EVERY FIVE FEET ALONG THE CABLE. CONNECT BUOYS WITH 3/8-INCH TYPE 316 STAINLESS STEEL BRAIDED CABLE CONNECTED WITH SWAGED OR U-BOLT FASTENERS. UTILIZE THIMBLES AT ALL CONNECTIONS. CONNECT EACH END OF THE CABLE WITH BUOYS TO A 4-INCH SQUARE BY 6-FOOT LONG PRE-CAST CONCRETE POST (THREE FOOT EMBEDMENT) LOCATED AT THE SHORE OF THE SINK AT ELEVATION 25.0. PROVIDE A 1/2-INCH STAINLESS STEEL EYE-BOLT WITH WASHERS AND NUT THROUGH THE POST AND CONNECT THE END OF THE CABLE TO THE EYE-BOLT.
5. PROVIDE TWO PYRAMID ANCHORS AND CHAINS MEETING THE REQUIREMENTS OF NOTE 1 ON DETAIL 5 OF DRAWING GC-8. ATTACH THE ANCHORS TO A BUOY WITH A STAINLESS STEEL SCREW PIN SHACKLE WITH WIRE TIE.
6. SPACE THE BUOYS AND ANCHORS SO THAT THE BUOYS SURROUND AND PROTECT THE FLOATING SUCTION PIPES.

WARNING BUOYS | 21
SCALE: 1" = 20'

Charles M. Pekkala, PE
Civil Engineer
State of Florida — License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN
WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

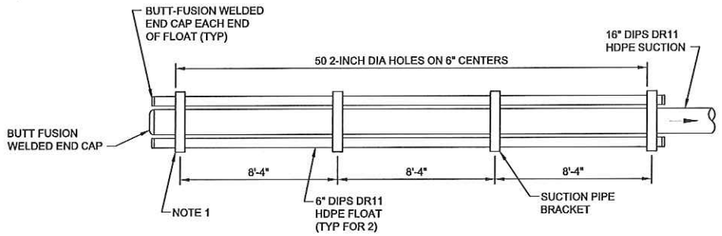
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
DETAILS - I

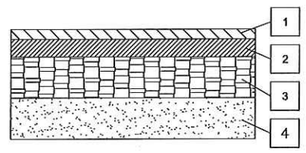
SHEET
GC-7
1011673

File: C:\pwworkd\dms60329\TBSD_GC07.dwg



NOTE:
1. PROVIDE 135# PYRAMID MOORING ANCHOR ON BOTTOM OF SINK. ATTACH ANCHOR TO END SUCTION PIPE BRACKET WITH 30 FEET OF 3/8" PROOF COIL CHAIN, 7600 POUND BREAKING STRENGTH, 1LB PER FOOT WEIGHT. ATTACH CHAIN TO ANCHOR AND SUCTION PIPE BRACKET WITH TYPE 316 STAINLESS STEEL SCREW PIN ANCHOR SHACKLE. PROVIDE GALVANIZED ANCHOR AND CHAIN.

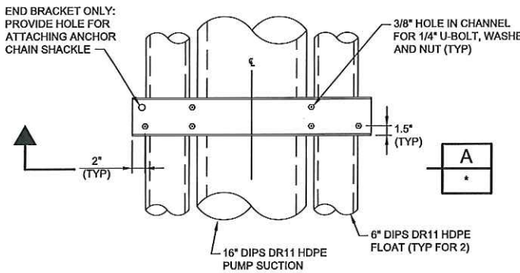
PLAN - SUCTION PIPE | 5
SCALE: 1/4" = 1'-0"



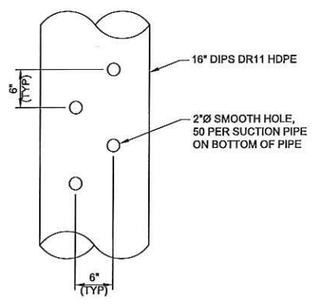
NOTES:
1. 1" MINIMUM THICKNESS, TYPE S-3 (FC-9.5) ASPHALTIC CONCRETE OVERLAY.
2. TYPE S-1 (SP-12.5) ASPHALTIC CONCRETE STRUCTURAL SURFACE COURSE 2" MIN. FINAL THICKNESS FOR FLORIDA AVE AND 1-1/4" MIN. FINAL THICKNESS FOR 115TH AVE. AN ADDITIONAL INCH OF THICKNESS IS REQUIRED FOR INITIAL PLACEMENT OF THE STRUCTURAL COURSE FOR FLORIDA AVE. THIS ADDITIONAL INCH SHALL BE MILLED BEFORE PLACEMENT OF FINAL OVERLAY.
3. LIMEROCK BASE, 12" MIN. THICKNESS FOR FLORIDA AVE AND 8" MIN. THICKNESS FOR 115TH AVE.
4. 12" STABILIZED SUB-BASE (MINIMUM LAB-40) COMPACTED TO AT LEAST 98 PERCENT MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557).

TYPICAL ASPHALTIC CONCRETE PAVING SECTION | 8
NO SCALE

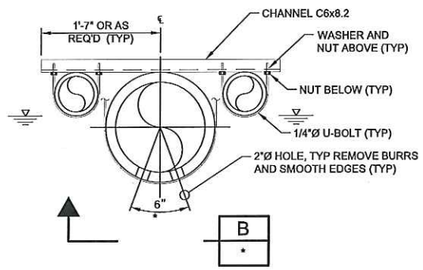
CHARLES M. PEKKALA LICENSE No. 37986 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/10/14



PLAN



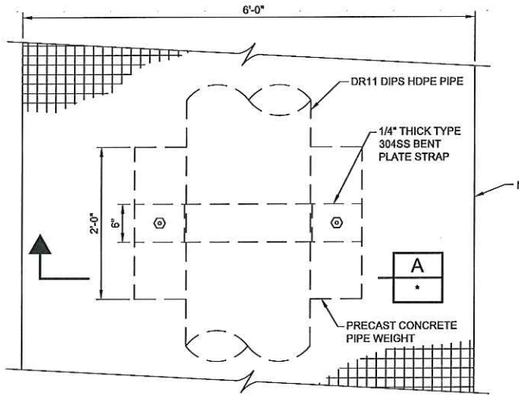
SECTION B



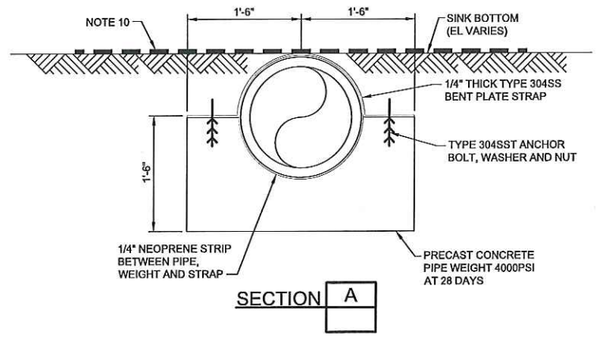
SECTION A

NOTES:
1. PROVIDE ALL METALLIC COMPONENTS OF TYPE 316 STAINLESS STEEL.

SUCTION PIPE BRACKET | 6
SCALE: 1" = 1'-0"



PLAN

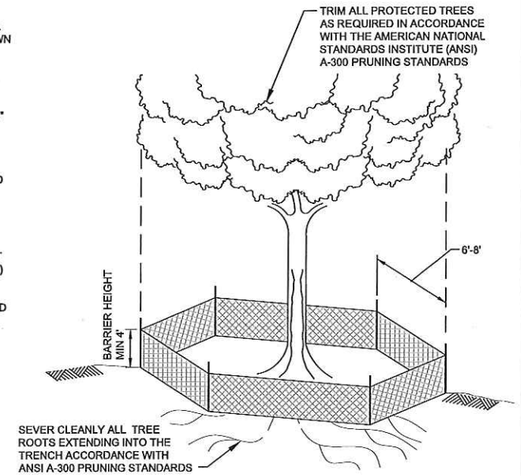


SECTION A

NOTES:
1. PROVIDE BOLT-ON CONCRETE RIVER WEIGHTS BY CENTURY GROUP, OR EQUAL. (800-527-5232)
2. WEIGHTS OF REINFORCED 4000PSI STRENGTH CONCRETE FROM MANUFACTURING FACILITIES CERTIFIED BY NPCA.
3. DESIGN OF WEIGHTS AND HARDWARE BY MANUFACTURER, FOR UPLIFT ASSUMING PIPE IS EMPTY WITH 1.2 SAFETY FACTOR. PROVIDE (20) 1000 POUND UNITS FOR 95 LF OF PIPE ON 4.75 FOOT SPACING.

PRECAST CONCRETE WEIGHTS | 7
SCALE: 1/2" = 1'-0"

NOTES:
1. PROTECTIVE BARRICADES SHALL BE INSTALLED AROUND ALL PROTECTED TREES AND GRAND TREES PRIOR TO ANY CONSTRUCTION ACTIVITIES.
   a. BARRICADES SHALL BE INSTALLED A MINIMUM TEN (10) FEET FROM A PROTECTED TREE OR AT THE DESIGNATED PROTECTIVE ROOT ZONE AS SHOWN ON THE APPROVED SITE PLAN.
   b. BARRICADES SHALL BE INSTALLED A MINIMUM TWENTY (20) FEET FROM A GRAND TREE OR AT THE DESIGNATED PROTECTIVE ROOT ZONE AS SHOWN ON THE APPROVED SITE PLAN.
2. MATERIALS USED FOR PROTECTIVE BARRICADES SHALL BE MADE OF WOOD, FENCING OR SOLID MATERIAL APPROVED BY THE PARKS AND RECREATION DEPARTMENT.
   a. VERTICAL MEMBERS SHALL BE MADE OF A MINIMUM OF 2X2 WOOD OR 5/8" STEEL REINFORCEMENT BAR.
   b. HORIZONTAL MEMBERS SHALL BE MADE OF A MINIMUM 1X2 WOOD OR SOLID FENCING MATERIAL.
3. VERTICAL MEMBERS SHALL BE NO LESS THAN THREE (3) FEET IN HEIGHT AND NO MORE THAN SIX (6) FEET APART. THE VERTICAL MEMBERS SHALL BE INSTALLED TO A DEPTH OF ONE (1) FOOT BELOW EXISTING GRADE.
4. HORIZONTAL MEMBERS CONSISTING OF WOOD SHALL BE NO LESS THAN THREE (3) FEET ABOVE EXISTING GRADE AND SECURELY ATTACHED TO THE VERTICAL MEMBERS. FENCING MATERIAL SHALL BE NO LESS THREE (3) FEET IN HEIGHT AND SECURELY ATTACHED TO THE VERTICAL MEMBERS AT ONE (1) FOOT INTERVALS.
5. NO CHANGES TO THE PREDEVELOPMENT CONDITIONS WITHIN THE APPROVED PROTECTIVE ROOT ZONE DURING THE CONSTRUCTION PROCESS.
6. PROTECTIVE BARRICADES MAY BE REMOVED ONLY TO PREPARE THE DEVELOPMENT SITE FOR FINAL LANDSCAPING ACTIVITIES. DURING THIS ACTIVITY ONLY NON-MECHANICAL TECHNIQUES MAY OCCUR WITHIN THE DESIGNATED PROTECTIVE ROOT ZONE.
7. NO PARKING OR STORING OF VEHICLES, EQUIPMENT OR MATERIALS IS ALLOWED WITHIN THE PROTECTIVE ROOT ZONE.
8. NO SITE CLEARING IS PERMITTED WITHIN THE PROTECTIVE ROOT ZONE.
9. OBTAIN PARKS AND RECREATION DEPARTMENT APPROVAL OF BARRICADES PRIOR TO SITE CLEARING.
10. PROVIDE CONTINUOUS COIRMAT (CONTROL MAT 90 BY GRANITE ENVIRONMENTAL OR EQUAL) OVER THE PIPE AT ELEVATIONS BELOW EL 28.0. STAKE MAT TO GROUND AND BOTTOM WITH STEEL REBAR.



TYPICAL TREE BARRICADE | 9
NO SCALE

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37986
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

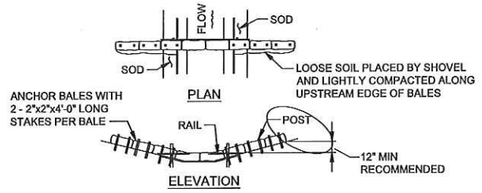
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

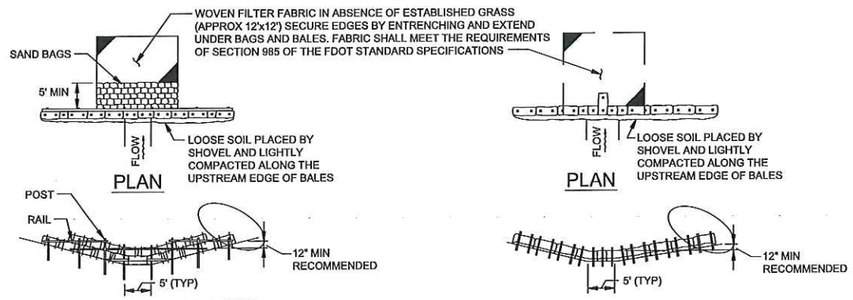
GENERAL CIVIL
DETAILS - II

SHEET
GC-8
1011673



SPACING: BALE BARRIERS FOR PAVED DITCHES SHOULD BE SPACED IN ACCORDANCE WITH CHART 1, SHEET 1 OF 3, INDEX NO 102

BARRIER FOR PAVED DITCH 10



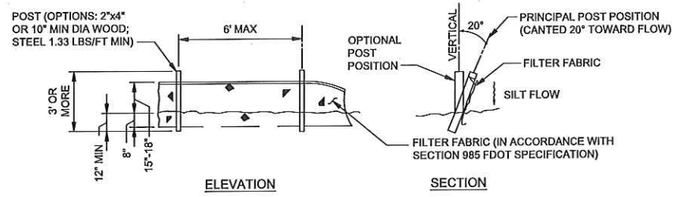
NOTE:
1. APPLICATION AND SPACING: THE USE OF TYPES 1 AND 2 BALE BARRIERS SHOULD BE LIMITED TO THE CONDITIONS OUTLINED IN CHART 1 ON THIS SHEET.

BARRIERS FOR UN-PAVED DITCHES 11

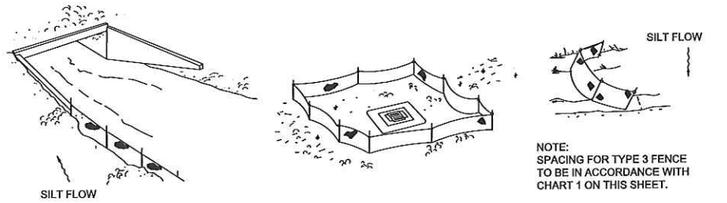
D_1=5' STD (SINGLE PANEL FOR DEPTHS 5' OR LESS).
D_2=5' STD (ADDITIONAL PANEL FOR DEPTHS > 5').
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

FLOATING TURBIDITY BARRIERS 12



TYPE 3 SILT FENCE



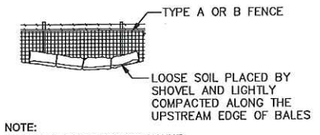
TYPE 3 SILT FENCE PROTECTION AROUND DITCH BOTTOM INLET

NOTES:
1. DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
2. TOE-IN BASE OF SILT FENCE INTO GROUND IN 4"x4" TRENCH, EXCEPT FOR SILT FENCES UNDER TREE CANOPIES, WHICH SHALL BE SET IN PLACE ONLY BY THE USE OF POSTS AT GRADE ELEVATION.

SILT FENCE APPLICATIONS

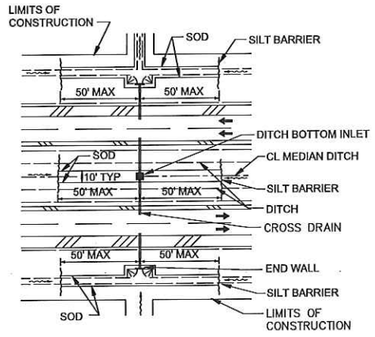
BALED HAY OR STRAW BARRIERS AND SILT FENCES 13

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES 14

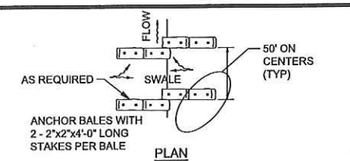


NOTE:
BALES ARE TO BE STAKED AT THE DIRECTION OF THE ENGINEER

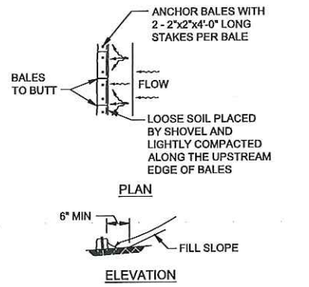
BALES BACKED BY FENCE 15



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES 16



TO BE USED AT SELECTED SITES WHERE THENATURAL GROUND SLOPES TOWARD THE TOE OF THE SLOPE



TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF THE SLOPE

BARRIERS FOR FILL SLOPES 17

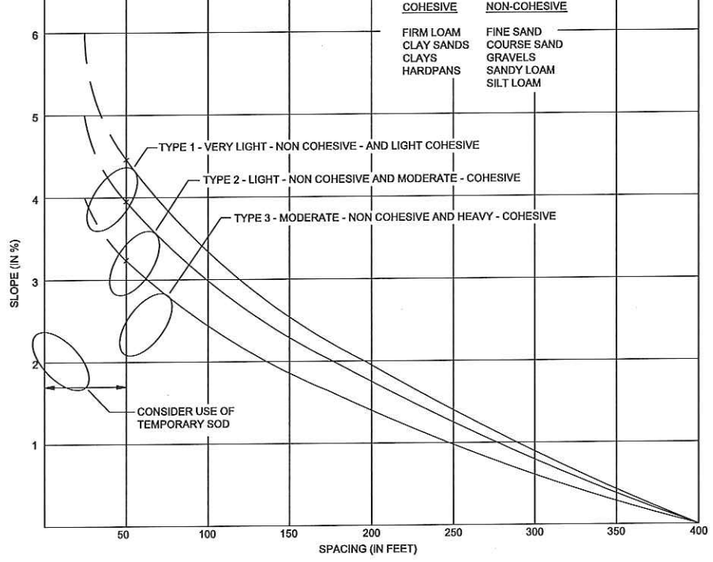


CHART 1

RECOMMENDED SPACING FOR TYPE 1 AND TYPE 2 HAY BALE BARRIERS AND TYPE 3 SILT FENCES 18

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 7/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

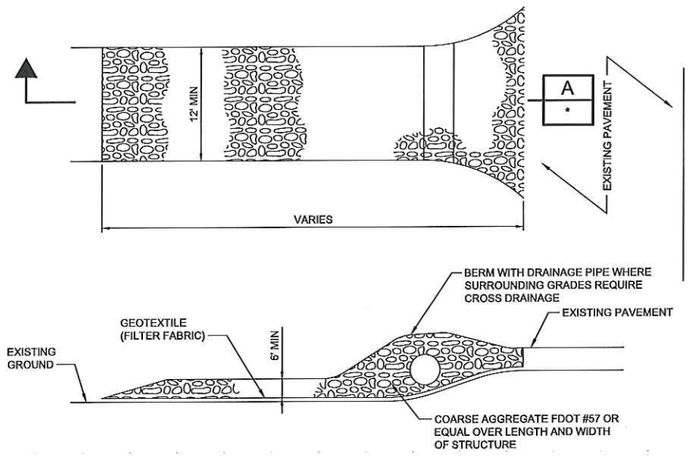
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL
DETAILS - III

SHEET
GC-9
1011673



SECTION A

GEOTEXTILE REQUIREMENTS

PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	200 lbs. (ASTM D4632)
ELONGATION FAILURE	50% (ASTMD 4632)
MULLEN BURST STRENGTH	320 lbs. (ASTM D3786)
PUNCTURE STRENGTH	80 lbs. (ASTM D4833)
AOS	SIZE 70-100* (US STD SIEVE) (ASTM D4751)
PERMEABILITY	1 x 10 $^{-2}$ cm/sec (ASTM D4491)
TRAPEZOIDAL TEAR	50 lbs. (ASTM D4533)
SEAM STRENGTH	180 lbs.
U.V. RESISTANCE (MIN ALLOWED)	80% 500 hrs

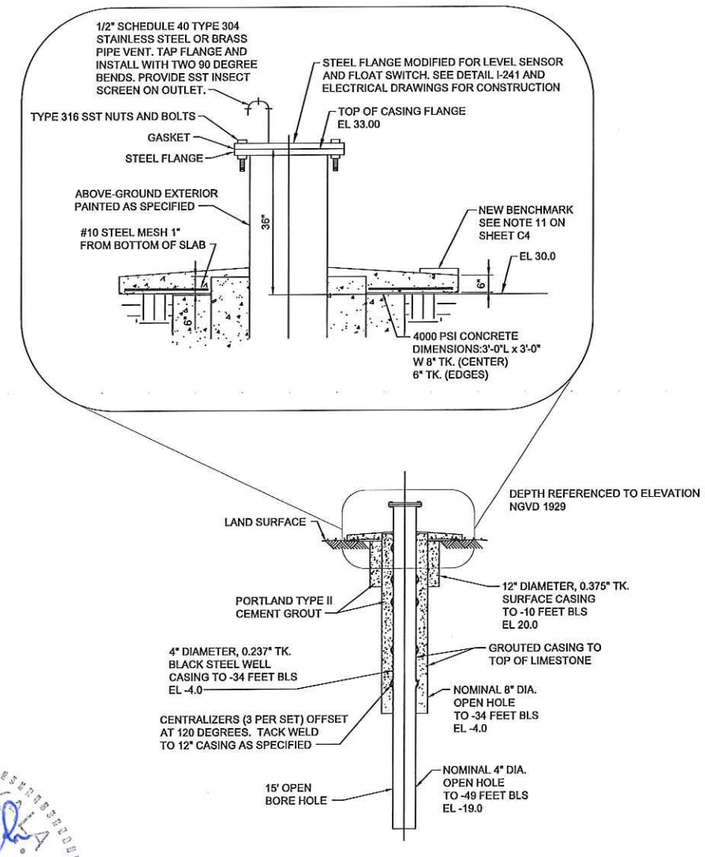
NOTE:
WOVEN MONOFILAMENT ONLY
MINIMUM ELONGATION 15%

*AOS DESIGN GUIDE:
SOIL WITH > 50% PASSING NO. 200 SIEVE. A.O.S. RANGE IS 100-140.
SOIL WITH > BUT <50% PASSING NO. 200 SIEVE. A.O.S. RANGE IS 70-100.
SOIL WITH <15% PASSING NO. 200 SIEVE. A.O.S. RANGE IS 40-70.

NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
   A. WHEREVER VEHICLES ARE LEAVING A CONSTRUCTION SITE AND ENTER ONTO A PUBLIC ROAD.
   B. AT ANY UNPAVED ENTRANCE/EXIT LOCATION WHERE THERE IS RISK OF TRANSPORTING MUD OR SEDIMENT ONTO PAVED ROADS.
   C. THE WIDTH SHALL BE AT LEAST 12 FEET OR AS WIDE AS THE ENTIRE WIDTH OF THE ACCESS.
   D. THE LENGTH SHALL BE A MINIMUM OF 50 FEET.
   E. FLARE THE ENTRANCE WHERE IT MEETS THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
   F. RUNOFF FROM A STABILIZED CONSTRUCTION ENTRANCE SHALL DRAIN TO A SEDIMENT TRAP OR SEDIMENT BASIN.
   G. DUST CONTROL SHALL BE PROVIDED.
2. CONSTRUCTION SPECIFICATIONS
   A. CLEAR ALL VEGETATION, ROOTS AND ALL OTHER OBSTRUCTIONS IN PREPARATION FOR GRADING.
   B. PRIOR TO PLACING GEOTEXTILE (FILTER FABRIC) MAKE SURE THAT THE ENTRANCE IS PROPERLY GRADED AND COMPACTED. SEE GEOTEXTILE REQUIREMENTS.
   C. TO REDUCE MAINTENANCE AND LOSS OF AGGREGATE PLACE GEOTEXTILE (FILTER FABRIC) OVER THE EXISTING GROUND BEFORE PLACING THE STONE FOR THE ENTRANCE.
   D. STONE SHALL BE PLACED TO A DEPTH OF 6 INCHES OR GREATER FOR THE ENTIRE WIDTH AND LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.
3. MAINTENANCE
   A. INSPECT ON A REGULAR BASIS AND AFTER THERE HAS BEEN A HIGH VOLUME OF TRAFFIC OR STORM EVENT.
   B. APPLY ADDITIONAL STONE PERIODICALLY AND WHEN REPAIR IS REQUIRED.
   C. IMMEDIATELY REMOVE SEDIMENTS OR ANY OTHER MATERIALS TRACKED ONTO THE PUBLIC ROADWAY.
   D. ENSURE THAT ASSOCIATED SEDIMENT CONTROL MEASURES ARE IN GOOD WORKING CONDITION.

STABILIZED CONSTRUCTION ENTRANCE DETAIL 19



BLS = BELOW LAND SURFACE

NOTES:
1. PROVIDE 4" STEEL CASED MONITORING WELL, WITH STEEL CASING INTO TOP OF LIMESTONE AND 15 FEET OF OPEN BOREHOLE BELOW BOTTOM OF CASING. ELEVATIONS AND LENGTHS SHOWN MAY VARY AT INSTALLATION LOCATION.
2. DRILLER TO DETERMINE IF SURFACE CASING IS REQUIRED BASED ON CONDITION.

GENERALIZED CONSTRUCTION DIAGRAM OF UPPER FLORIDIAN AQUIFER MONITOR WELL 20

CHARLES M. PEKKALA LICENSE NO. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida — License No 37996
Date: 7/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE
WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

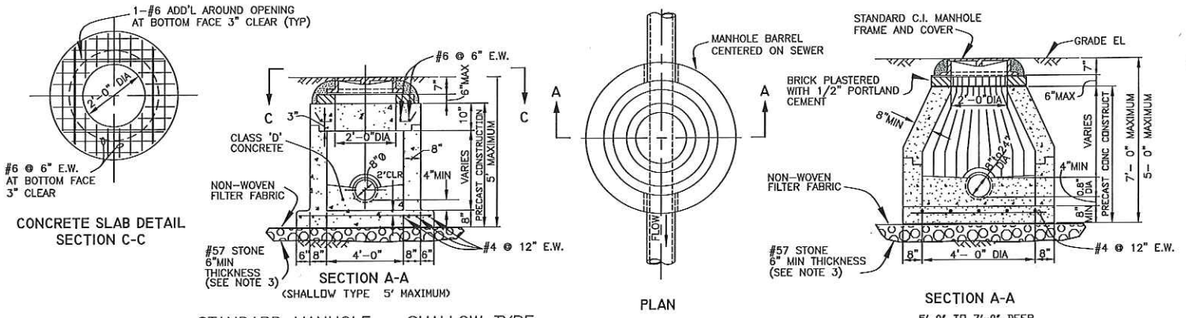
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL CIVIL DETAILS - IV

SHEET GC-10

1011673

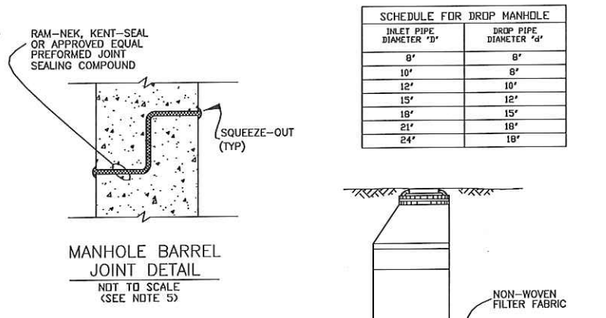


STANDARD MANHOLE – SHALLOW TYPE

FOR SEWERS 24" OR LESS IN DIAMETER

NOTES

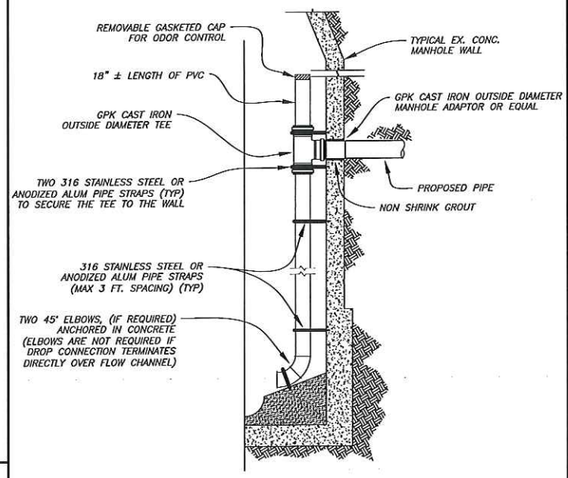
1. REINFORCING STEEL FOR ALL MANHOLES SHALL CONFORM TO ASTM-DES: C-48 AND PLACED AS DESCRIBED IN THE SPECIFICATIONS.
2. ALL PIPE STUBS FROM MANHOLES FOR FUTURE CONNECTIONS OR OTHER CONTRACT DIVISIONS SHALL BE PROVIDED WITH WATER TIGHT PLUGS PLACED FROM WITHIN THE MANHOLE.
3. SEE SPECIFICATIONS FOR MATERIALS REQUIREMENTS AND PLACEMENTS AND COMPACTION OF PIPE AND STRUCTURE BEDDING.
4. STANDARD SHALLOW-TYPE MANHOLES WITH DEPTHS BETWEEN A MAXIMUM OF 7'-0" AND A MINIMUM OF 5'-0" MUST HAVE A CONCRETE CONE FOR THE TOP SECTION.
5. ALL MANHOLE JOINTS MUST BE SEALED WITH AN ACCEPTABLE JOINT SEALING COMPOUND REGARDLESS OF WHETHER AN O-RING GASKET IN A PREFORMED GROOVE IS USED.
6. FILTER FABRIC SHALL BE NON-WOVEN FABRIC PER D.O.T. SPECIFICATION SECTIONS 514 AND 985 AND SHALL BE WRAPPED ENTIRELY AROUND THE #57 STONE.



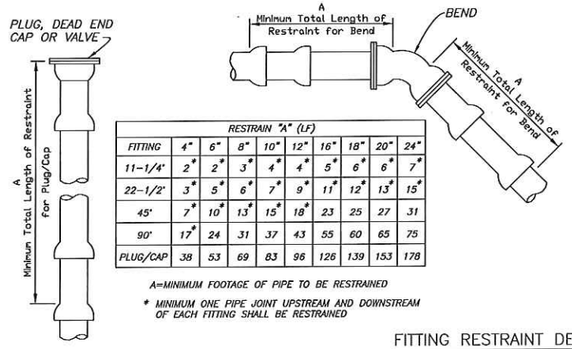
SCHEDULE FOR DROP MANHOLE	
INLET PIPE DIAMETER "D"	DROP PIPE DIAMETER "d"
8"	8"
10"	8"
12"	10"
15"	12"
18"	15"
21"	18"
24"	18"

GENERAL SHEET NOTES:

1. DETAILS SHOWN ON THIS SHEET REPRESENT CITY OF TAMPA DEPARTMENT OF SANITARY SEWER'S STANDARD DETAILS. FOR CONSTRUCTION, OBTAIN AND REFER TO THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWER'S CURRENT TECHNICAL STANDARDS MANUAL AND DETAILS.



HALF SECTION INSIDE DROP CONNECTION DETAILS
Not to Scale



RESTRAIN "A" (LF)									
FITTING	4"	6"	8"	10"	12"	16"	18"	20"	24"
11-1/4°	2*	2*	3*	4*	4*	5*	6*	6*	7*
22-1/2°	3*	5*	6*	7*	9*	11*	12*	13*	15*
45°	7*	10*	13*	15*	18*	23	25	27	31
90°	17*	24	31	37	43	55	60	65	75
PLUG/CAP	38	53	69	83	96	126	139	153	178

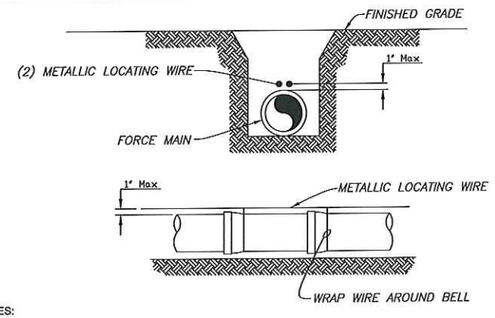
A=MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

* MINIMUM ONE PIPE JOINT UPSTREAM AND DOWNSTREAM OF EACH FITTING SHALL BE RESTRAINED

NOTES:

1. *This table is based on:*
   a) *Maximum test pressure of 100 psi*
   b) *Laying condition Class "C"*
   c) *Poor soil conditions*
   d) *Horizontal bends only (see note 2)*
   e) *Using PVC*
2. *Restrained lengths for vertical bends and tees are to be determined on a case by case basis, and specified on the design plans.*
3. *Restraining devices for PVC pipe shall be by Megalug or equal, meeting ASTM F1674.*
4. *Any additional fittings within the restrained section shall be restrained accordingly.*

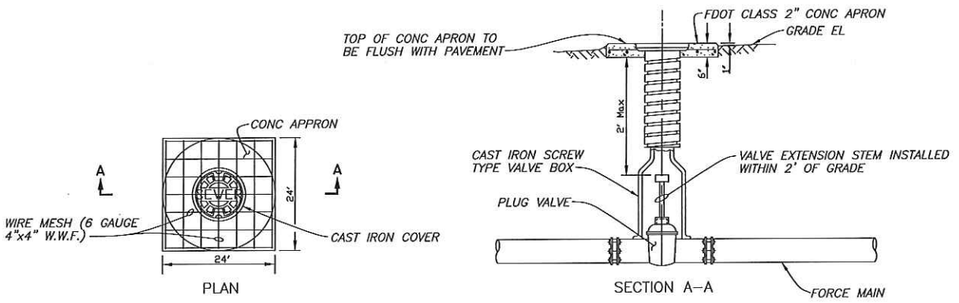
FITTING RESTRAINT DETAIL
(AWWA C900/C905 PVC PIPE)



NOTES:

1. Pipe shall require 2 green insulated metallic locating wires capable of detection by a cable locator and shall be buried directly above the centerline of the pipe. Use duct tape as necessary to hold wire directly on top of pipe.
2. Direct bury pipe shall have (2) 12 gauge insulated solid copper wires. Directional drilled pipe shall have (2) 8 gauge insulated solid copper wires or (2) 10 gauge insulated copper clad steel wires. For directional drilled HDPE pipe a 1" conduit may be pulled back with the locating wires to ease installation and to prevent the wires from breaking.
3. Wire insulation must be suitable for buried service. HDPE or HMWPE are acceptable insulation materials. Nylon insulation is not acceptable.
4. Wires must be spliced together with wire connectors suitable for buried service. Connectors shall be corrosion and moisture proof such as DBR Kit by 3M, Snakebite by Copperhead Industries or equal. Twisting the wires and sealing with electrical tape alone is not acceptable.
5. All tracer wires must pass a continuity test in presence of a City inspector. No pipe will be accepted by the City until a continuity test passes.
6. Locating wire shall terminate at the top of each valve box and air release valve. Wire shall be capable of extending 24" above top of box in such a manner so as not to interfere with valve operation.

PIPE LOCATING WIRE DETAIL
Not To Scale



VALVE BOX DETAIL
Not To Scale

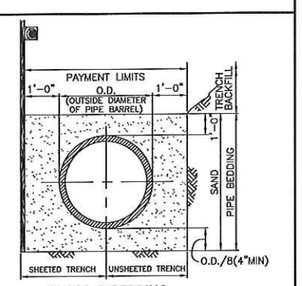
IMPORTANT - FOR EACH OPERABLE VALVE:

PROVIDE A BRASS IDENTIFICATION TAG EPOXIED TO THE CONCRETE APRON THAT IS A MINIMUM 2" IN DIAMETER AND 1/8-INCH THICK. THE TAG SHALL BE ENGRAVED WITH "SEWER", SIZE OF VALVE, TYPE OF VALVE, AND DIRECTION AND NUMBER OF TURNS TO OPEN.

FOR EXAMPLE, A 4-INCH PLUG VALVE ON A WASTEWATER FORCE MAIN THAT REQUIRES 1/4 TURNS TO THE LEFT(COUNTERCLOCKWISE) TO BE FULLY OPEN WOULD REQUIRE THE FOLLOWING ON AN IDENTIFICATION TAG:

SEWER
4" P.V.
1/4 T.O.L.

VALVE OPERATION DISK
Not To Scale



CLASS C BEDDING

CHARLES M. PEKKALA LICENSE No. 37696 STATE OF FLORIDA PROFESSIONAL ENGINEER
Charles M. Pekkala
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37696
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

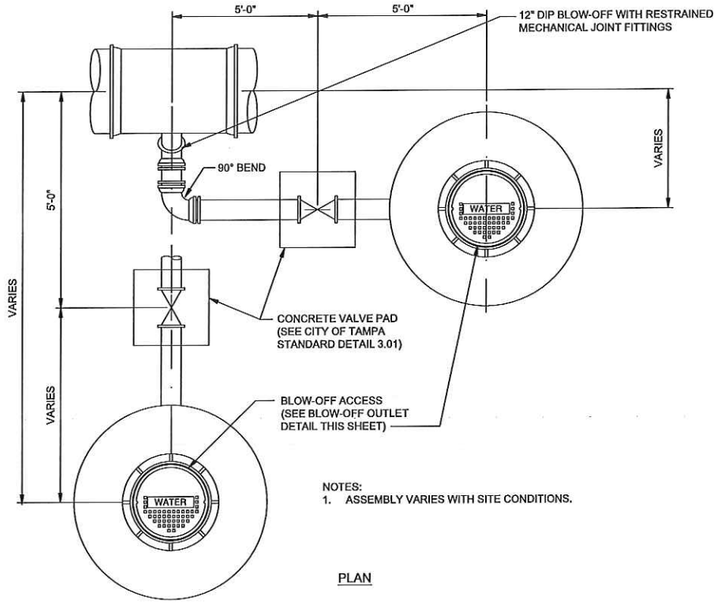
BLUE SINK MFL PUMPING STATION

GENERAL CIVIL DETAILS - V

SHEET: GC-11

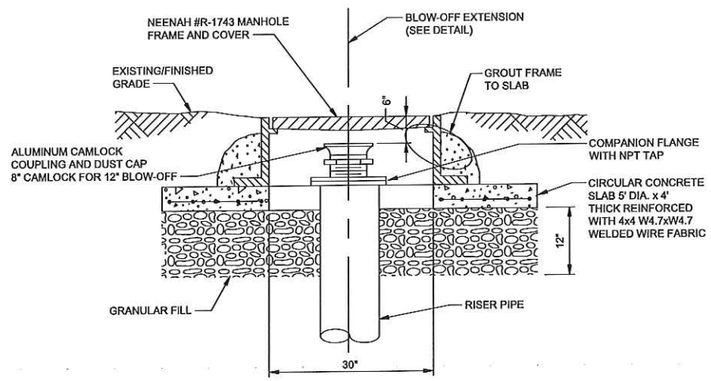
1011673

Plot Date: Thu 26-Jun-2014 - 10:11PM
User: ryahr
File: C:\pwworkdir\dms60329\TBSD_GC11.dwg



NOTES:
1. ASSEMBLY VARIES WITH SITE CONDITIONS.

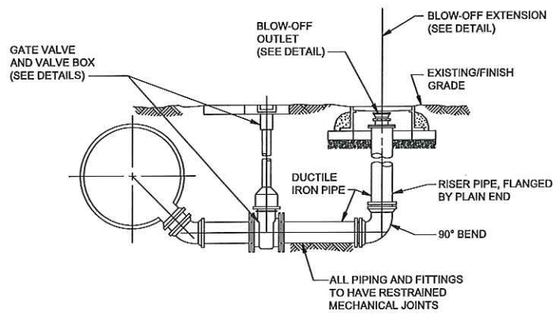
PLAN



NOTE:

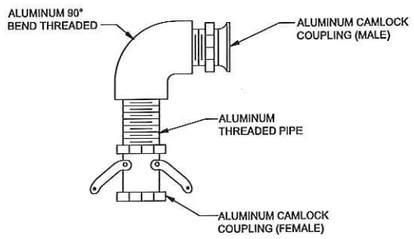
CONTRACTOR SHALL DRILL 1/8" DIA HOLE IN CENTER OF CAMLOCK DUST CAP.

BLOW-OFF OUTLET DETAIL



DIP PIPE WATER MAINS

BLOW-OFF ASSEMBLY DETAILS



NOTES:
1. CONTRACTOR SHALL FABRICATE AND SUPPLY ONE (1) BLOW-OFF EXTENSION.
2. CONTRACTOR SHALL SUPPLY ONE (1) 50' FLEXIBLE ROLL-UP DISCHARGE HOSE WITH ALUMINUM MALE AND FEMALE CAMLOCK COUPLING ENDS.

BLOW-OFF EXTENSION DETAIL

CHARLES M. PEKKALA LICENSE No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 7/28/2015

BLOW-OFF DETAIL 21

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

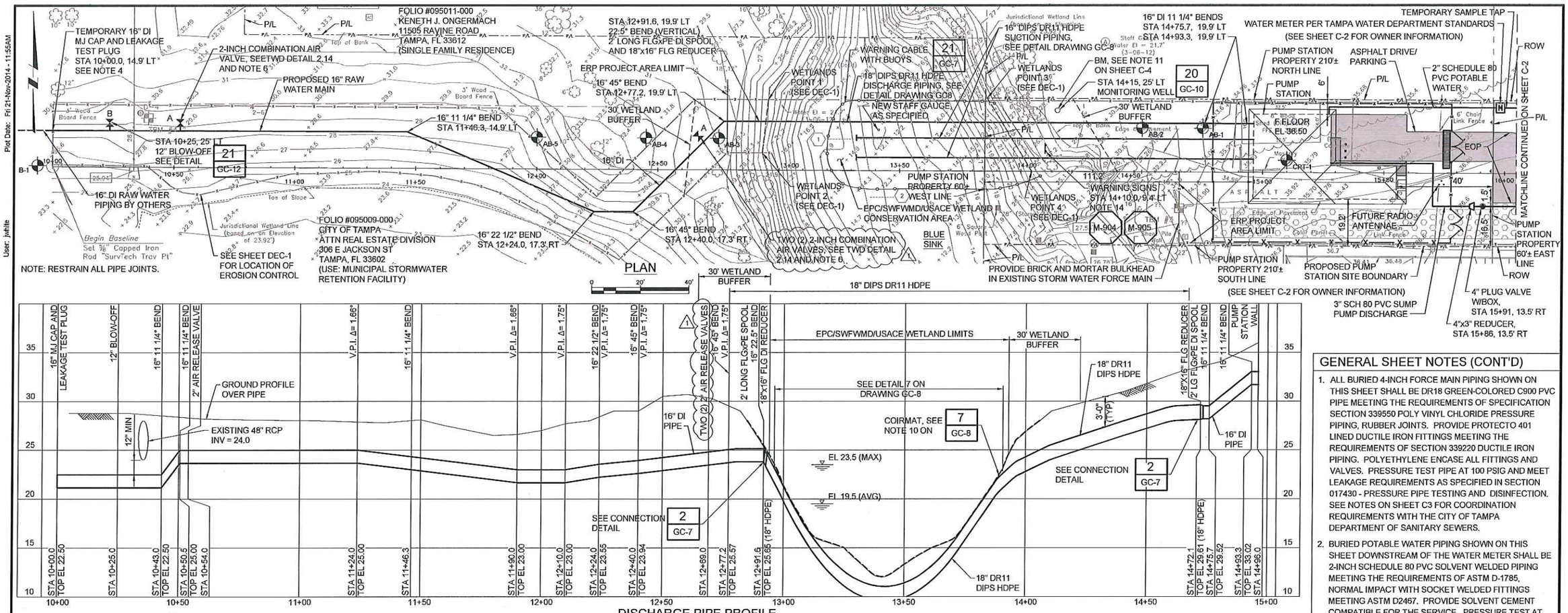
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

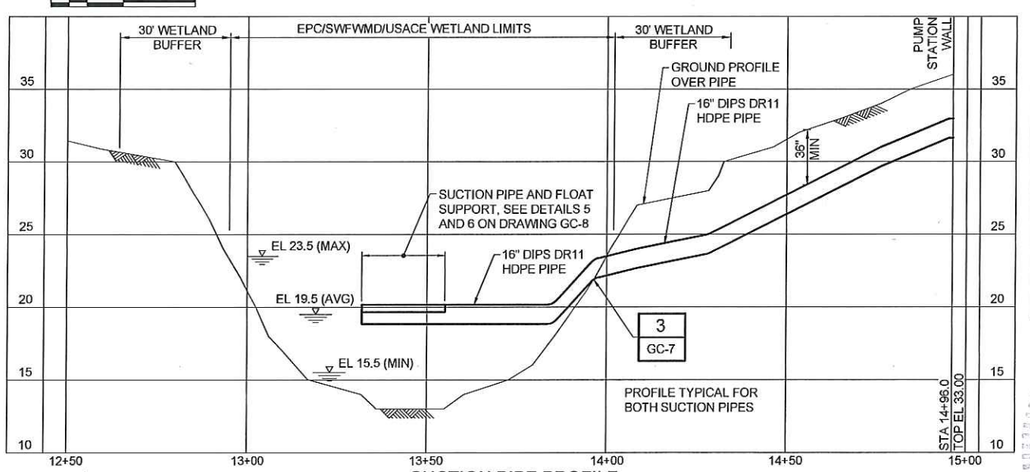
GENERAL CIVIL DETAILS - VI

SHEET GC-12

1011673



DISCHARGE PIPE PROFILE



SUCTION PIPE PROFILE

GENERAL SHEET NOTES

1. REFER TO SHEET DEC-1 FOR INSTALLATION OF EROSION CONTROL MEASURES AND TREE REMOVAL. LIMIT ALL ACTIVITIES TO AREAS DELINEATED BY SILT FENCE/CONSTRUCTION AREA.
2. ACCESS TO THE WEST SIDE OF BLUE SINK IS FROM THE CITY OF TAMPA FC-100 STORMWATER PROPERTY. SEE DETAIL "SITE ACCESS AND COORDINATION WITH OTHERS" ON DRAWING GC-7 FOR LOCATION OF ACCESS POINTS TO THIS SITE. SITE ACCESS FROM OR PARKING ON RAVINE ROAD IS NOT ALLOWED.
3. THERE WILL BE CONTRACT WORK BY OTHERS ALONG THE EMBANKMENT OF THE FC-100 STORMWATER POND. COORDINATE CONSTRUCTION ACTIVITIES TO MINIMIZE INTERFERENCE.
4. INSTALL MJ CAP AND LEAKAGE TEST PLUG. AFTER PIPE LINE BY OTHERS HAS BEEN PRESSURE TESTED AND ACCEPTED, PROVIDE MJ SLEEVE AND CONNECT THE PIPELINES.
5. THERE ARE STATE, FEDERAL AND COUNTY JURISDICTIONAL WETLANDS ON THESE PLANS. ALL GRADES SHALL BE RETURNED TO PRE-CONSTRUCTION CONFIGURATIONS.
6. PROVIDE 4'x4'x6" 4000PSI CONCRETE HOUSE KEEPING PAD CENTERED ON AIR RELEASE VALVE WITH 6 GA. 4"x4" WWF MID-DEPTH.
7. BURIED 16-INCH DIAMETER RAW WATER PIPING SHOWN ON THIS SHEET SHALL BE PRESSURE CLASS 350 DUCTILE IRON PIPING MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339220 - DUCTILE IRON PIPING. FLANGED DUCTILE IRON PIPE, WHERE SHOWN, SHALL BE SPECIAL THICKNESS CLASS 53 MEETING THE REQUIREMENTS OF SECTION 339220 - DUCTILE IRON PIPING. PRESSURE TEST PIPE AT 100 PSIG AND MEET LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
8. BURIED 16-INCH AND 18-INCH HIGH DENSITY POLYETHYLENE RAW WATER PIPING SHOWN ON THIS SHEET SHALL BE DR 11 DUCTILE IRON PIPE SIZE BUTT-FUSION WELDED MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339534 - LARGE POLYETHYLENE PRESSURE PIPING. PRESSURE TEST PIPE AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
9. BURIED SUMP PUMP DISCHARGE PIPING SHOWN ON THIS SHEET SHALL BE 3-INCH SCHEDULE 80 PVC SOLVENT WELDED PIPING MEETING THE REQUIREMENTS OF ASTM D-1785, NORMAL IMPACT WITH SOCKET WELDED FITTINGS MEETING ASTM D2467. PROVIDE SOLVENT CEMENT COMPATIBLE FOR THE SERVICE. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.

GENERAL SHEET NOTES (CONT'D)

1. ALL BURIED 4-INCH FORCE MAIN PIPING SHOWN ON THIS SHEET SHALL BE DR18 GREEN-COLORED C900 PVC PIPE MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339550 POLY VINYL CHLORIDE PRESSURE PIPING, RUBBER JOINTS. PROVIDE PROTECTO 401 LINED DUCTILE IRON FITTINGS MEETING THE REQUIREMENTS OF SECTION 339220 DUCTILE IRON PIPING. POLYETHYLENE ENCASE ALL FITTINGS AND VALVES. PRESSURE TEST PIPE AT 100 PSIG AND MEET LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION. SEE NOTES ON SHEET C3 FOR COORDINATION REQUIREMENTS WITH THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS.
2. BURIED POTABLE WATER PIPING SHOWN ON THIS SHEET DOWNSTREAM OF THE WATER METER SHALL BE 2-INCH SCHEDULE 80 PVC SOLVENT WELDED PIPING MEETING THE REQUIREMENTS OF ASTM D-1785, NORMAL IMPACT WITH SOCKET WELDED FITTINGS MEETING ASTM D2467. PROVIDE SOLVENT CEMENT COMPATIBLE FOR THE SERVICE. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AND DISINFECT AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
3. BURIED POTABLE WATER PIPING SHOWN ON THIS SHEET UPSTREAM OF THE WATER METER SHALL BE DR-9 CTS BLUE 2-INCH HIGH DENSITY POLYETHYLENE TUBING MEETING AWWA C-901 AND CITY OF TAMPA WATER DEPARTMENT STANDARDS. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AND DISINFECT AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
4. THE WATER METER AND AIR RELEASE VALVE PIPING SHOWN ON THIS SHEET SHALL MEET CITY OF TAMPA WATER DEPARTMENT MATERIALS STANDARDS AND DETAILS.
5. MOUNT EACH WARNING SIGN ON TWO 4"x4" SQUARE BY 8 FOOT LONG PRECAST CONCRETE POSTS. BURY POSTS 3 FEET IN GROUND.

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No. 37996
Date: 2/28/2015
11/21/14

REV	DATE	BY	DESCRIPTION
1	09/09/2014	CMP	ADDENDUM NO. 1

SCALE: H: 1"=20' V: 1"=5'

WARNING: 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

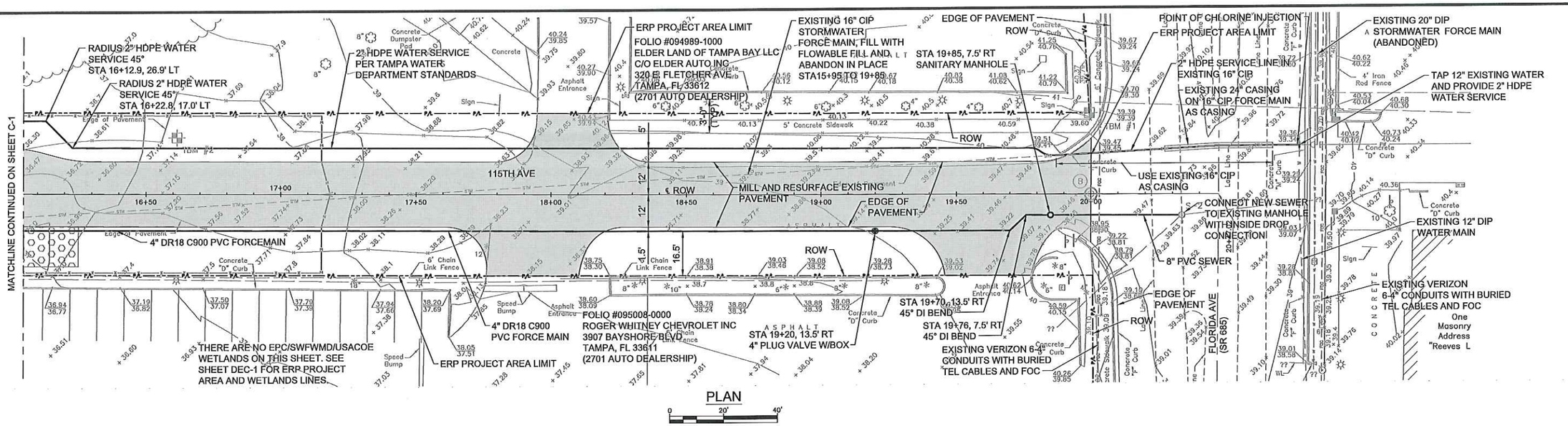
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

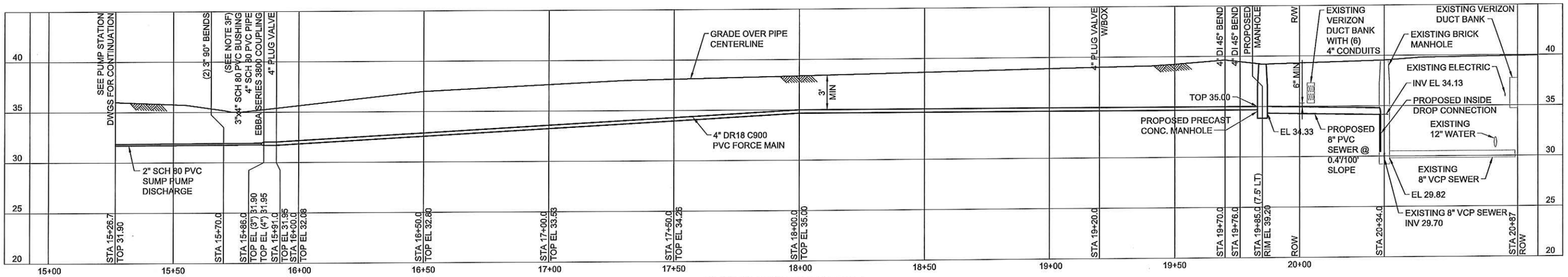
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION
CIVIL
SITE AND YARD PIPING PLAN - I

SHEET C-1
1011673

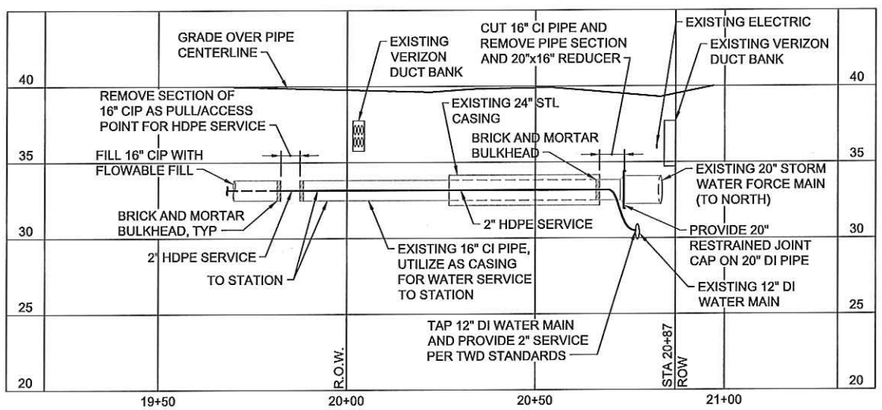
File: C:\pwworkdir\dms6032981TBSD_C01.dwg
Plot Date: Fri 21-Nov-2014 - 11:55AM
User: jwhite





4" DR18 C900 DISCHARGE FORCE MAIN PROFILE

0 5' 10'



WATER SERVICE CONNECTION PROFILE

0 5' 10'

GENERAL SHEET NOTES

1. SEE SHEET C-3 FOR NOTES PERTAINING TO THIS SHEET.

CHARLES M. PEKKALA LICENSE No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER

7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida — License No 37996
Date: 7/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: H: 1"=20' V: 1"=5'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

CIVIL
SITE AND YARD PIPING PLAN - II

SHEET C-2

1011673

Plot Date: Thu 26-Jun-2014 - 10:43PM
User: ryahr
File: C:\pwworkd\dms60329\TBSD_C02.dwg

CIVIL NOTES

1. REFER TO DRAWING DEC-2 FOR INSTALLATION OF EROSION CONTROL MEASURES AND FENCING.
2. ACCESS TO THE PUMPING STATION SITE AND EAST SIDE OF BLUE SINK IS ALONG 115TH AVENUE FROM FLORIDA AVENUE. SEE DETAIL "SITE ACCESS AND COORDINATION WITH OTHERS" SHOWN ON DRAWING GC-7 FOR LOCATION OF ACCESS POINTS TO THE SITE. A TEMPORARY CONSTRUCTION STAGING AND STORAGE AREA ON 115TH AVENUE IS IDENTIFIED ON THE PLAN. DO NOT BLOCK ACCESS TO THE CAR DEALERSHIPS LOCATED ON THE NORTH AND SOUTH SIDES OF 115TH AVENUE. IF ADDITIONAL STORAGE OR CONSTRUCTION PARKING IS REQUIRED, PROVIDE OFF SITE STORAGE AND PARKING AT ANOTHER LOCATION.
3. PROJECT INCLUDES CONSTRUCTION OF A 4-INCH FORCE MAIN, MANHOLE AND 8-INCH SANITARY SEWER IN THE RIGHT OF WAY. CONSTRUCTION OF THE FORCE MAIN, MANHOLE AND SEWER SHALL COMPLY WITH THE CURRENT MATERIALS AND CONSTRUCTION STANDARDS OF THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS (DSS). COMPLY WITH THE FOLLOWING:
   a. AT LEAST 3 WEEKS PRIOR TO ANY CONSTRUCTION, THE DEVELOPER'S REPRESENTATIVE SHALL CONTACT ALEX GONZALEZ OF THE WASTEWATER PLANNING DIVISION, 2545 N. GUY VERGER BLVD., TAMPA, FLORIDA 33605 (PHONE 813-274-1293), AND SUPPLY HIM WITH FURTHER CONSTRUCTION INFORMATION. THIS INFORMATION SHOULD INCLUDE ALL REQUIRED SHOP DRAWINGS, THE CONTRACTOR'S NAME, STARTING DATE, PROJECTED SCHEDULE, AND OTHER INFORMATION REQUIRED BY THE PLANNING DIVISION. THE PLANNING DIVISION OFFICE MUST ALSO BE CONTACTED BY TELEPHONE FIVE DAYS PRIOR TO THE ACTUAL START OF FIELD OPERATIONS IN ORDER TO ENSURE AVAILABILITY OF INSPECTION PERSONNEL. IT IS IMPERATIVE THAT YOUR CONTRACTOR BE FULLY INFORMED OF THE NOTIFICATION AND SUBMITTAL REQUIREMENTS. FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL DELAY THE APPROVAL AND ACCEPTANCE OF THE CONSTRUCTED FACILITIES AND THE RELEASE OF THE CERTIFICATE OF OCCUPANCY FOR THE PROJECT.
   b. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST ON ALL GRAVITY SEWERS AND A PRESSURE TEST ON ALL FORCE MAINS (AS APPLICABLE) IN ACCORDANCE TO THE CITY OF TAMPA'S WASTEWATER DEPARTMENT REGULATIONS. SAID TEST ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE CITY OF TAMPA WASTEWATER DEPARTMENT FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION TO ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.
   c. ONE OR MORE OF THE FOLLOWING CERTIFICATES/SHOP DRAWINGS, DEPENDING ON THE TYPE OF CONNECTION, WILL BE REQUIRED. THESE ITEMS MUST BE REVIEWED AND APPROVED BY THE COLLECTIONS DIVISION PRIOR TO STARTING CONSTRUCTION AND SHALL BE SUBMITTED IN ACCORDANCE WITH NOTE NO. A.
      i. DIP/PVC CERTIFICATE OF MANUFACTURE.
      ii. MANHOLE SHOP DRAWINGS AND STRENGTH REPORT.
      iii. FRAME AND COVER SHOP DRAWINGS.
      iv. FLEXIBLE COUPLING SHOP DRAWINGS.
      v. CASING PIPE CERTIFICATE.
      vi. JACKING PIT DETAIL.
      vii. CRUSHED STONE SUBMITTAL.
      viii. VALVE SHOP DRAWING.
      ix. MANHOLE DROP CONNECTION DETAIL.
   d. THE CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL THE FOLLOWING HAS BEEN COMPLETED:
      i. FINAL INSPECTION IN CONJUNCTION WITH DEPARTMENT PERSONNEL COMPLETED.
      ii. AS-BUILTS HAVE BEEN SUBMITTED AND ACCEPTED.
      iii. ALL NECESSARY TESTING COMPLETED AND CERTIFIED.
      iv. PAYMENT OF ALL CAPACITY FEES.
      v. ISSUANCE OF F.D.E.P. CERTIFICATION OF COMPLETION APPROVAL (IF APPLICABLE).
   e. FOR SUMP PUMP PIPING FROM SUMP PUMPS, SEE PLUMBING DRAWINGS FOR PORTION INSIDE BUILDING AND DRAWING C1 AND C2 FOR PORTION OUTSIDE OF BUILDING AND ON THE PUMPING STATION SITE. SUMP PUMP PIPING ORIGINATES FROM DUPLEX, 1.5-HP SUBMERSIBLE PUMPS. SEE DRAWING GP-2 FOR COPY OF PUMP CURVE.
   f. FOR SUMP PUMP PIPING INSIDE THE BUILDING AND ON THE PUMPING STATION SITE PROVIDE 3-INCH SCHEDULE 80 SOLVENT WELDED PVC. CONNECT THE 3-INCH SUMP PUMP DISCHARGE TO THE 4-INCH PVC FORCE MAIN ON THE PUMPING STATION SITE WITH A 3-INCH BY 4-INCH SCHEDULE 80 PVC BUSHING, SHORT LENGTH OF 4-INCH DIAMETER SCHEDULE 80 PVC PIPE AND AN EBBA IRON SERIES 3800 RESTRAINED COUPLING WITH TRANSITION GASKET FOR THE 4-INCH SCHEDULE 80 PIPE.
   g. PROVIDE 4-INCH C900 (DR 18) GREEN PVC FORCE MAIN FROM INSIDE THE PUMPING STATION SITE TO THE TERMINATION POINT AT THE SANITARY SEWER. ALL FORCE MAIN VALVES, FITTINGS AND BENDS SHALL HAVE RESTRAINED MECHANICAL JOINTS. RESTRAIN 4-INCH PIPE UPSTREAM AND DOWNSTREAM OF THE VALVES AND BENDS IN ACCORDANCE WITH DSS RESTRAINT TABLE DETAIL. RESTRAINING DEVICES SHALL BE EBBA IRON "MEGALUG" OR APPROVED EQUAL. CONSTRUCT THE PROPOSED FORCE MAIN ACCORDING TO THE STATIONS AND INVERT ELEVATIONS PROVIDED ON THE PLANS WITH NO INTERMEDIATE HIGH OR LOW POINTS BETWEEN VERTICAL POINTS OF INTERSECTION. PROVIDE A METALLIC LOCATING WIRE ON THE FORCE MAIN IN ACCORDANCE WITH CITY OF TAMPA'S PIPE LOCATING WIRE DETAIL. DO NOT DEFLECT THE PIPE JOINTS. BEND PIPE TO OBTAIN VERTICAL DEFLECTIONS SHOWN. PROVIDE A 4-INCH DUCTILE IRON PLUG VALVE INSIDE THE STATION SITE AND OUTSIDE THE RIGHT OF WAY OF FLORIDA AVENUE AS SHOWN ON DRAWING C-2.
   h. PROVIDE A NEW SANITARY MANHOLE IN THE RIGHT-OF-WAY OF 115TH AVE AND TERMINATE THE 4-INCH PVC FORCE MAIN IN THIS MANHOLE. CONNECT THE NEW PRE-CAST CONCRETE SANITARY MANHOLE TO THE EXISTING SANITARY BRICK MANHOLE IN FLORIDA AVE WITH 8-INCH PVC SANITARY SEWER, AND A NEW INSIDE DROP CONNECTION AT THE EXISTING BRICK MANHOLE. THE NEW PVC SEWER SHALL BE SDR26 C900 PIPE. NOTE THAT FLORIDA AVE IS A STATE ROAD. CONDUCT ALL WORK IN ACCORDANCE WITH THE FDOT PERMIT.
4. PROVIDE WATER SERVICE FROM THE EXISTING 12-INCH DUCTILE IRON WATER MAIN TO THE STATION SITE. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE TAMPA WATER DEPARTMENT CURRENT MATERIAL STANDARDS AND DETAILS. NOTE THAT FLORIDA AVE IS A STATE ROAD. CONDUCT ALL WORK IN ACCORDANCE WITH THE FDOT PERMIT.
   a. UTILIZE THE EXISTING 16-INCH CAST IRON STORMWATER FORCE MAIN LOCATED IN FLORIDA AVE AS A CASING FOR THE NEW 2-INCH HDPE WATER SERVICE. THE PORTION OF THE STORMWATER FORCE MAIN TO BE UTILIZED IS SHOWN ON C-2. THE REMAINDER OF THE EXISTING STORMWATER FORCE MAIN IN 115TH AVE OR THE STATION SITE SHALL BE FILLED WITH FLOWABLE FILL AND ABANDONED IN PLACE, OR DEMOLISHED, AS SHOWN ON SHEETS C-1 AND C-2.
   b. TAP THE 12-INCH WATER MAIN IN FLORIDA AVE AND PROVIDE A 2-INCH HDPE SERVICE FROM THE NEW TAPPED CONNECTION TO THE PROPOSED WATER METER, AT APPROXIMATE STATION 16+00.
   c. PROVIDE A NEW CITY OF TAMPA WATER METER AND BOX IN ACCORDANCE WITH TAMPA WATER DEPARTMENT STANDARDS. ARRANGE AND PAY ALL FEES ASSOCIATED WITH THE WATER SERVICE.
   d. WATER SERVICE FROM THE NEW METER TO THE PUMPING STATION SHALL BE SCHEDULE 80 SOLVENT WELDED PVC PIPE. REFER TO THE PLUMBING DRAWINGS FOR BACKFLOW PREVENTION AND PIPING WITHIN THE PUMP STATION BUILDING. REFER TO THE LANDSCAPING PLAN FOR CONNECTION TO THE PUMP STATION IRRIGATION SYSTEM AND BACKFLOW PREVENTION FOR THE IRRIGATION SYSTEM.
   e. TAP OF CITY WATER MAIN TO BE PERFORMED BY CITY WATER DEPARTMENT PERSONNEL ONLY.CONTRACTOR SHALL EXCAVATE, FURNISH, AND INSTALL APPROVED TAPPING SLEEVE AND TAPPING VALVE, AND CONDUCT PRESSURE TEST OF TAPPING SLEEVE (TEST TO BE WITNESSED BY CITY). CITY TO PERFORM ACTUAL TAP. CALL THE CITY'S CONSTRUCTION SERVICES DEPARTMENT AT 635-3432 TO SCHEDULE THE TAP.
   f. THE PUBLIC PORTION OF THE WATER MAIN MUST BE INSTALLED BY AN EXPERIENCED WATER MAIN CONTRACTOR. IF THE WATER MAIN CONTRACTOR HAS NOT BEEN PREVIOUSLY APPROVED BY THE CITY, IT WILL BE NECESSARY TO SUBMIT PROOF OF COMPETENCE TO PERFORM THE WORK.
   g. CONTACT THE CITY'S CONSTRUCTION SERVICES DEPARTMENT AT 635-3432 TO COORDINATE AND SCHEDULE A PRE-CONSTRUCTION MEETING TO REVIEW MATERIALS SUBMITTALS AND DISCUSS INSTALLATION TECHNIQUES AND PROCEDURES RELATED TO THE PUBLIC WATER FACILITIES. CONTACT SHOULD OCCUR A MINIMUM OF 10 WORKING DAYS PRIOR TO INTENDED START OF WORK.
   h. VALVES ON EXISTING PUBLIC WATER MAIN ARE TO BE OPERATED ONLY BY CITY PERSONNEL.
   i. ALL COMPONENTS OF THE PUBLIC WATER SYSTEM, INCLUDING FITTINGS, CONNECTIONS AND VALVES SHALL BE PROPERLY PRESSURE TESTED AND ACCEPTED BY THE OWNER'S ENGINEER. PRESSURE TESTS SHALL BE IN ACCORDANCE WITH WATER DEPARTMENT SPECIFICATIONS. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AND CITY INSPECTOR A MINIMUM 3 WORKING DAYS IN ADVANCE OF TEST.
   j. NO TREES SHALL BE PLANTED WITHIN 10 FEET OF INSTALLED AND EXISTING WATER MAINS.
5. REFER TO THE ELECTRICAL DRAWINGS FOR THE STATION ELECTRICAL SERVICE. ARRANGE AND PAY ALL FEES ASSOCIATED WITH THE TECO POLE-MOUNTED UTILITY TRANSFORMER AND ELECTRICAL SERVICE.
6. REFER TO SHEET C-4 FOR REPAVING OF 115TH AVE, PROVIDING THE STATION DRIVEWAY AND MILLING AND OVERLAY OF FLORIDA AVE ONCE WATER AND SEWER UTILITY SERVICES ARE INSTALLED AND PAVEMENT RESTORED.
7. ALL BURIED 4-INCH FORCE MAIN PIPING SHOWN ON THIS SHEET SHALL BE DR18 GREEN-COLORED C900 PVC PIPE MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339550 POLY VINYL CHLORIDE PRESSURE PIPING, RUBBER JOINTS. PROVIDE PROTECTO 401 LINED DUCTILE IRON FITTINGS MEETING THE REQUIREMENTS OF SECTION 339220 DUCTILE IRON PIPING. POLYETHYLENE ENCASE ALL FITTINGS AND VALVES. PRESSURE TEST PIPE AT 100 PSIG AND MEET LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION. SEE OTHER NOTES THIS SHEET FOR COORDINATION REQUIREMENTS WITH THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS.
8. BURIED POTABLE WATER PIPING SHOWN ON THIS SHEET UPSTREAM OF THE WATER METER SHALL BE DR-9 CTS BLUE 2-INCH HIGH DENSITY POLYETHYLENE TUBING MEETING AWWA C-901 AND CITY OF TAMPA WATER DEPARTMENT STANDARDS. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AND DISINFECT AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
9. 8-INCH GRAVITY SEWER SHOWN ON THIS SHEET SHALL BE SDR 26 GREEN PVC SEWER PIPE MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339540 SMALL POLY VINYL CHLORIDE NON PRESSURE PIPING, RUBBER JOINTS. TEST PIPE FOR LEAKAGE IN ACCORDANCE WITH CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS STANDARDS.
10. SERVICE CONNECTION TO THE EXISTING WATER MAIN, PIPE BEDDING, LOCATING TAPE OR WIRE AND OTHER APPURTENANT WORK FOR THE POTABLE WATER SERVICE AND RAW WATER MAINS SHALL CONFORM TO THE CITY OF TAMPA WATER DEPARTMENT MATERIALS STANDARDS AND DETAILS.
11. CONSTRUCTION OF THE FORCE MAIN, PIPE BEDDING, VALVES, LOCATING WIRE, MANHOLE, INSIDE DROP CONNECTION TO THE EXISTING MANHOLE AND OTHER APPURTENANT WORK FOR THE FORCE MAIN AND SEWER SHALL CONFORM TO THE CITY OF TAMPA DEPARTMENT OF SANITARY SEWERS MATERIALS STANDARDS AND DETAILS.

F.D.O.T. GENERAL NOTES: UTILITY PERMIT

1. THE FOLLOWING APPLIES TO WORK IN FLORIDA AVENUE (SR 685).
   a. CALL JAMES MEYER (FDOT) @ 813-612-3200 TO SCHEDULE A PRE-CONSTRUCTION MEETING.
   b. SUBMIT TO FDOT DOCUMENTATION OF SUCCESSFUL COMPLETION OF AN APPROVED WORK ZONE TRAFFIC CONTROL COURSE FOR INSTALLING AND/OR MAINTAINING THE APPROVED MAINTENANCE OF TRAFFIC PLAN. FURNISH DOCUMENTATION AT THE FDOT PRE-CONSTRUCTION MEETING OR BEFORE OCCUPYING THE STATE RIGHT OF WAY. ALL LANE CLOSURES MUST BE APPROVED IN ADVANCE BY FDOT.
   c. A COPY OF THE APPROVED PERMIT AND DRAWINGS MUST BE ON THE JOBSITE FOR WORK TO BEGIN IN THE FDOT RIGHT OF WAY.
   d. ANY SIDEWALK DISTURBED WILL BE REPLACED, BY SECTION, TO FDOT SPECIFICATIONS.
   e. ALL PORTIONS OF FDOT RIGHT OF WAY DISTURBED MUST BE SODDED.
   f. NEW SIDEWALK PERMITTED TO CITY OR COUNTY ONLY AND SHALL INCORPORATE HANDICAP RAMPS WHERE SIDEWALK INTERSECTS ROADS AND STREETS.
   g. IN ACCORDANCE WITH FLORIDA STATUTE 335.1825 (2), "THE PERMITTEE, HOWEVER, SHALL BEAR THE COST OF ALTERATION OF ANY CONNECTION WHICH IS REQUIRED BY THE DEPARTMENT DUE TO INCREASED OR ALTERED TRAFFIC FLOWS GENERATED BY CHANGES IN THE FACILITIES OR NATURE OF BUSINESS CONDUCTED AT THE LOCATION SPECIFIED IN THE PERMIT, IF THE DEPARTMENT ESTABLISHES THE NEED FOR SUCH ALTERATION."
   h. ALL CONSTRUCTION AND/OR MAINTENANCE IN THE FDOT R/W SHALL CONFORM TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE DEPARTMENT'S ROADWAY AND TRAFFIC DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
   i. IF CONSTRUCTION, RECONSTRUCTION, REPAIR OR MAINTENANCE ACTIVITY NECESSITATES THE CLOSING OF ONE OR MORE TRAVEL LANES OF ANY ROAD ON THE STATE PRIMARY, COUNTY ROAD OR CITY STREET SYSTEM, FOR A PERIOD OF TIME EXCEEDING TWO HOURS, THE PARTY PERFORMING SUCH WORK WILL BE RESPONSIBLE TO GIVE NOTICE TO THE APPROPRIATE LAW ENFORCEMENT AGENCY WHICH HAS JURISDICTION WHERE SUCH ROAD IS LOCATED PRIOR TO COMMENCING WORK ON THIS PROJECT PER FLORIDA STATUTE 335.15 AND 336.07.
   j. OPEN CUTTING OF ROADWAY FOR INSTALLATION OF UTILITY OR DRAINAGE FACILITIES WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM FDOT.
   k. NOTE THAT SIDEWALK SHALL BE CONSTRUCTED PER FDOT INDEX 304 AND 310. DETECTABLE WARNING STRIPS, A.K.A. TRUNCATED DOMES, FOR DISTRICT SEVEN CONSTRUCTION AND MAINTENANCE SHOULD BE EITHER INSET CERAMIC TILES OR THERMOPLASTIC DETECTABLE WARNING STRIPS. THESE WARNING SURFACES SHALL ONLY BE PROVIDED BY THE FOLLOWING VENDORS/MANUFACTURERS OR AS APPROVED BY THE ENGINEER.
   l. INLINE TRUNCATED DOME EZ TILE SUPPLIED BY PROFESSIONAL PAVEMENT PRODUCTS
   m. TOPMARK SUPPLIED BY FLINT TRADING
   n. VANGUARD TRUNCATED DOME SUPPLIED BY VANGUARD
   o. NOTE THAT DRIVEWAYS ARE TO BE CONSTRUCTED PER FDOT INDEX 515. THOUGH INDEX 515 ALLOWS A 2% SLOPE ACROSS SIDEWALKS, CURRENT ADA REQUIREMENTS ARE THAT 2% IS THE MAXIMUM ALLOWABLE SLOPE AS CONSTRUCTED. PLEASE DESIGN SIDEWALK SLOPE WITHIN FDOT RIGHT OF WAY AT 1.5% TO ALLOW CONSTRUCTION VARIANCES.
   p. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2013) (A.K.A. STANDARD SPECS).
   q. FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND OPERATIONS ON THE STATE HIGHWAY SYSTEM, JAN., 2013, (A.K.A. STANDARD INDEX) APPLY. COMPLIANCE WITH ALL APPLICABLE INDICES IS REQUIRED.
   r. FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY PLANS PREPARATION MANUAL, VOLUME 1, CHAPTERS 2 AND 25. (REVISED 2012).
2. COMPLY WITH FLORIDA DEPARTMENT OF TRANSPORTATION FLEXIBLE PAVEMENT DESIGN MANUAL FOR NEW CONSTRUCTION AND PAVEMENT REHABILITATION, JANUARY 2012.
3. ALL TRAFFIC STRIPES AND MARKINGS ARE TO BE LEAD FREE, NON SOLVENT BASED THERMOPLASTIC. THE PERMITTEE SHALL FURNISH THE DEPARTMENT WITH THE MANUFACTURER'S CERTIFICATION THAT THE THERMOPLASTIC IS "LEAD FREE".
4. LANE CLOSURE MAY NEED TO BE ALTERED DEPENDING ON THE AREA THE WORK IS TAKING PLACE.

CHARLES M. PEKKALA — LICENSE — No. 37996 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida — License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

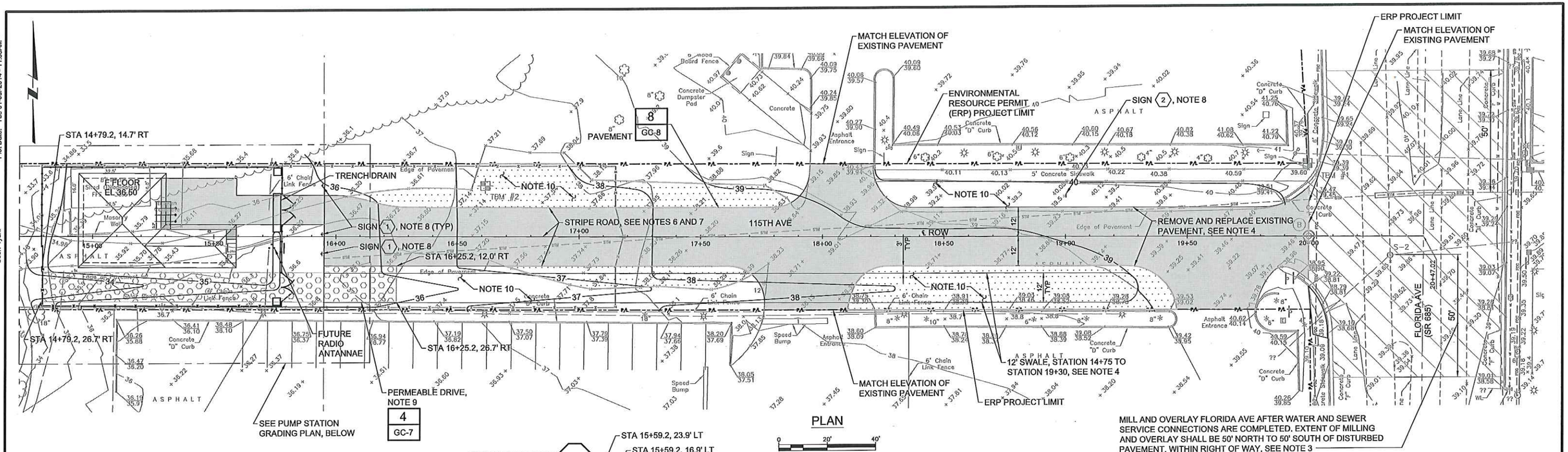
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

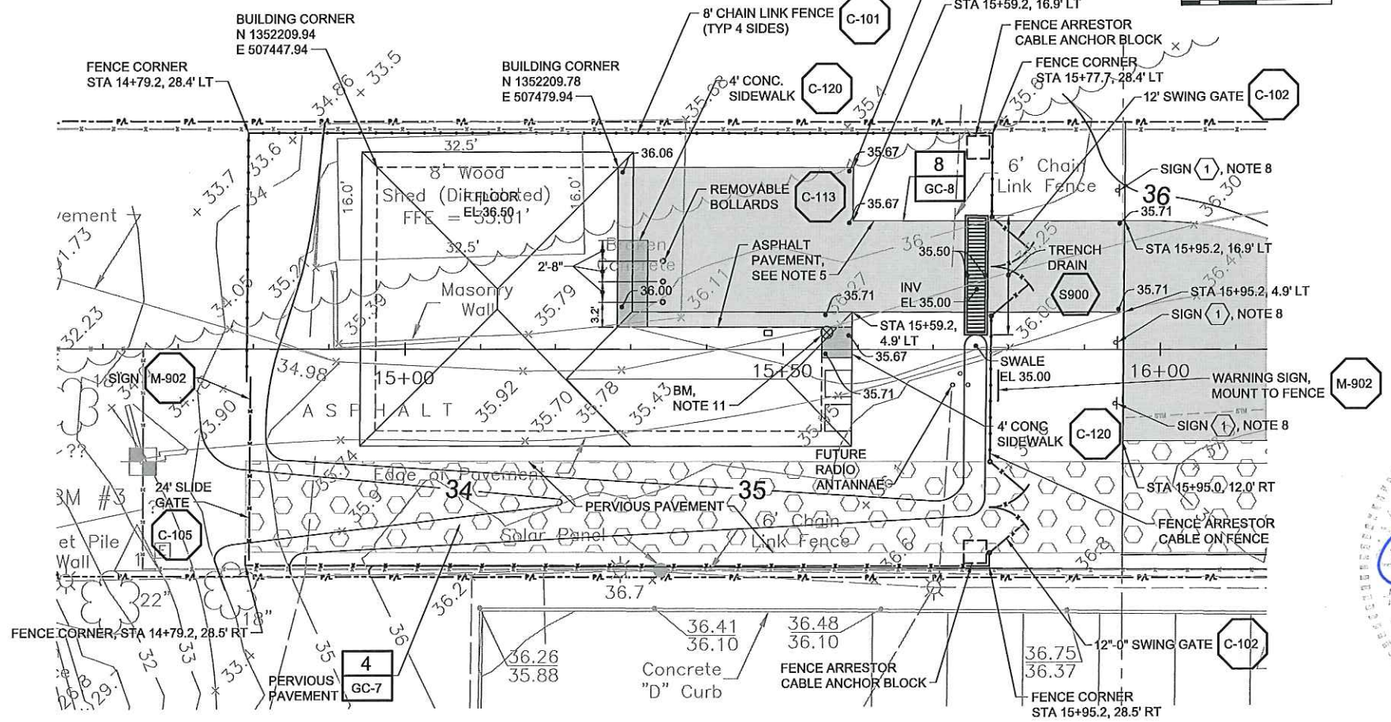
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

CIVIL
SITE AND YARD PIPING PLAN - III

SHEET C-3
1011673





PUMP STATION GRADING PLAN

0 10' 20'

SIGNAGE TABLE (115TH AVE)

MARK	SIGN	REQUIREMENTS
(1)	END OF ROAD DIAMOND MARKER SIGN, CASE II	FDOT INDEX 17349, CASE II WITH RED REFLECTORS ON 2"Ø x ⅛" ALUMINUM ROUND POST AND FDOT INDICE 11860 DRIVEN POST FOUNDATION
(2)	"DEAD END" DIAMOND MARKER SIGN WITH RECTANGULAR "300 FT" DISTANCE PANEL	FDOT INDEX 17349, WI4-1 ON 2"Ø x ⅛" ALUMINUM ROUND POST AND FDOT INDICE 11860 DRIVEN POST FOUNDATION. SET PER CASE V OF FDOT INDICE 17302

LEGEND

PROVIDE CLEAN FILL WHERE EXISTING PAVEMENT AND BASE IS DEMOLISHED OUTSIDE OF PAVEMENT LIMITS

GENERAL SHEET NOTES

1. REFER TO SHEETS DEC-1 AND DEC-2 FOR EROSION CONTROL AND TREE PROTECTION MEASURES TO BE MAINTAINED DURING CONSTRUCTION.
2. REFER TO SHEETS C-1 AND C-2 FOR CONSTRUCTION OF SITE UTILITIES AND PUMPING STATION.
3. CONSTRUCTION OF WATER AND SEWER SERVICE CONNECTIONS TO EXISTING WATER MAIN AND EXISTING SANITARY SEWER ARE SHOWN ON SHEET C-2. FLORIDA AVENUE IS A STATE ROAD, SEE FDOT GENERAL NOTES ON SHEET C-3 FOR REQUIREMENTS FOR WORKING IN SR 685. AFTER THE WATER AND SEWER SERVICES HAVE BEEN CONSTRUCTED AND ACCEPTED BY THE CITY AND THE ROAD REPAIRED AND ACCEPTED BY THE CITY AND FDOT, MILL THE EXISTING PAVEMENT 1-INCH AND RESURFACE THE MILLED AREA WITH 1-INCH MINIMUM OF TYPE S-3 (FC-9.5) IN ACCORDANCE WITH THE FDOT PERMIT AND CONTRACT REQUIREMENTS. RESTORE ALL LANE STRIPING, REFLECTORS AND OTHER EXISTING MARKINGS IN ACCORDANCE WITH FDOT REQUIREMENTS.
4. REBUILD 115TH AVENUE WITH NEW BASE AND PAVEMENT FROM THE WEST FLORIDA AVENUE RIGHT OF WAY TO THE PUMPING STATION SITE IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS. DISPOSE OF EXISTING PAVEMENT AND ANY BASE MATERIAL. GRADE ROAD TO MATCH EXISTING PAVEMENT IN FLORIDA AVENUE AND PRIVATE DRIVEWAYS IN 115TH AVENUE, TO NEW CONTOURS SHOWN ON THE PLAN, AND TO MAINTAIN EXISTING DRAINAGE AND GRADE. PROVIDE SWALE ON SOUTH SIDE OF 115TH AVENUE AS SHOWN ON THE PLAN.
5. PROVIDE NEW ASPHALT PAVEMENT IN THE STATION SITE MATCHING THE ROADWAY CONSTRUCTION OF 115TH AVENUE, PER DETAIL 8/GC-8.
6. PROVIDE WHITE EDGE OF ROAD STRIPING FOR NEW PAVING IN 115TH AVENUE ON NORTH AND SOUTH SIDE OF ROAD MEETING FDOT STANDARDS.
7. PROVIDE YELLOW SKIP LINE CENTER STRIPING AND BIDIRECTIONAL YELLOW REFLECTORS IN 115TH AVENUE MEETING FDOT STANDARDS.
8. PROVIDE NEW SIGNAGE FOR 115TH AVENUE PER TABLE SHOWN ON THIS SHEET.
9. CONSTRUCT NEW PERMEABLE DRIVE PER DETAIL SHOWN ON SHEET GC-7, MATCHING GRADING CONTOURS SHOWN ON THE PLAN.
10. SOD ALL DISTURBED AREAS IN THE 115TH AVENUE RIGHT OF WAY AFTER ROADWAY CONSTRUCTION IS COMPLETED. THE CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTAINING THE RIGHT OF WAY SODDING DURING THE WARRANTEE PERIOD FOR THE PROJECT. AT A MINIMUM, WATERING SHALL BE CONDUCTED FOLLOWING SCHEDULE: MONTH 1 = DAILY; MONTH 2 = THREE TIMES WEEKLY; MONTH 3-5 = WEEKLY. THE SPECIFIED FREQUENCY IS A MINIMUM. PROVIDE ADDITIONAL WATERING ON THE FREQUENCY NEEDED TO MAINTAIN THE SOD UNTIL IT IS VIABLE AND IS WELL ESTABLISHED.
11. PROVIDE NEW BENCHMARK IN ACCORDANCE WITH CITY OF TAMPA STANDARDS. PROVIDE 4-INCH DIAMETER BRONZE DISK SECURED WITH GLUE AND TAPCON. PROVIDE BENCHMARKS ON CONCRETE SIDEWALK AT ELECTRIC ROOM DOOR AND ON MONITORING WELL PAD.

CHARLES M. PEKKALA LICENSE 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: H: 1"=20' H: 1"=10'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

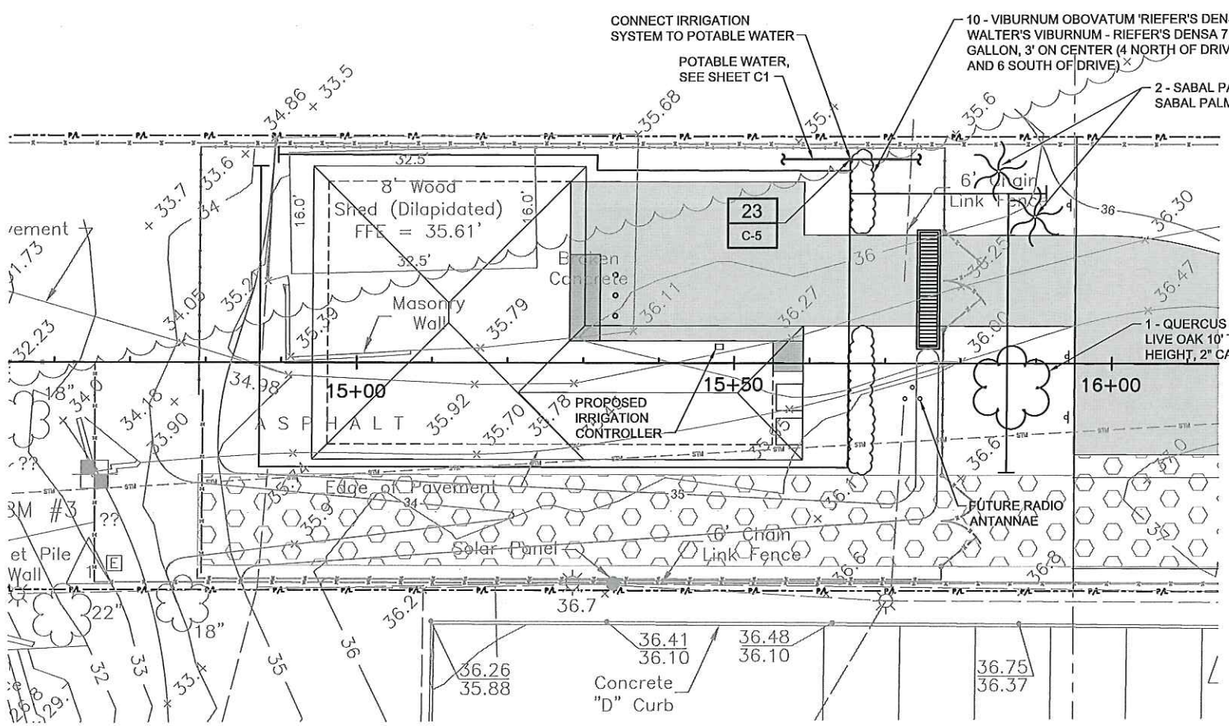
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

CIVIL
SITE GRADING, PAVING AND FENCING PLAN

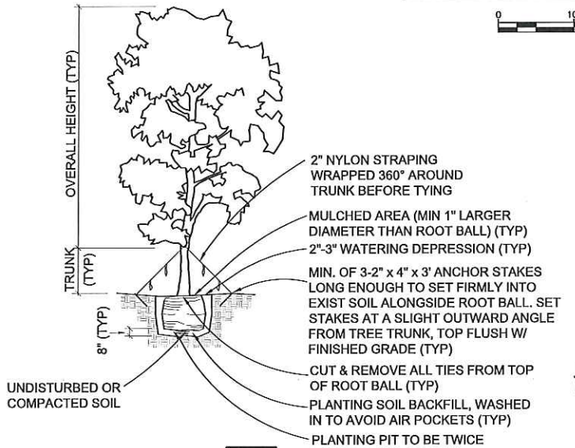
SHEET C-4

1011673



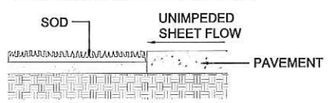
PUMP STATION LANDSCAPING PLAN

0 10' 20'

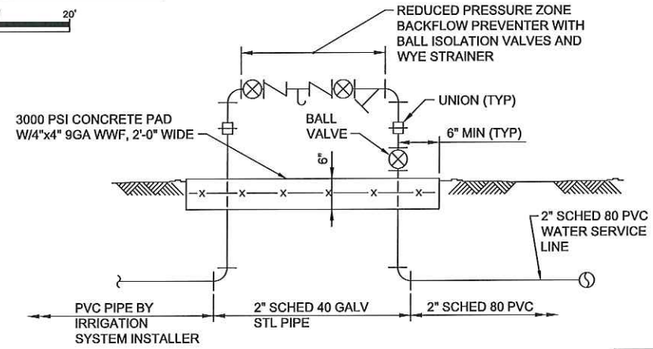


TREE DETAIL 21 / C-5
NO SCALE

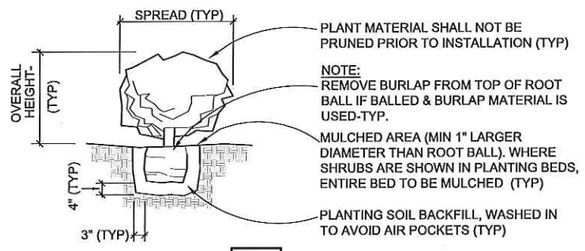
INSTALL SOD SO THAT MOWED LAWN WILL BE FLUSH WITH TOP OF PERMEABLE OR ASPHALT PAVEMENT.



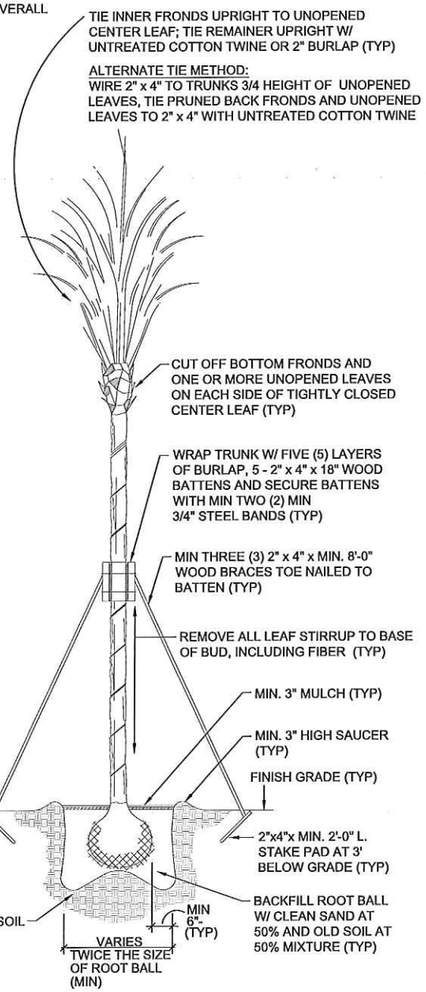
SOD INSTALLATION 22 / C-5
NO SCALE



IRRIGATION SYSTEM CONNECTION AND BACKFLOW PREVENTER 23 / C-5
NO SCALE



SHRUB DETAIL 24 / C-5
NO SCALE



NOTE:
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

PALM STAKING 25 / C-5
NO SCALE

GENERAL SHEET NOTES

1. CITY OF TAMPA PARKS AND RECREATION REQUIREMENTS:
   a. REFER TO TREE TABLES SHOWN ON THIS SHEET. PIPELINE CONSTRUCTION ON THE CITY OF TAMPA FC-100 STORMWATER POND PARCEL IS SHOWN ON SHEET C1. TREE PROTECTION IS SHOWN ON SHEET DEC-1. ONE TREE IS PROPOSED FOR REMOVAL UNDER THIS CONTRACT FROM THAT PARCEL AND NO TREE REPLACEMENT IS REQUIRED ON THAT PARCEL.
   b. PIPELINE CONSTRUCTION ON THE PUMPING STATION SITE IS SHOWN ON SHEET C1. TREE PROTECTION IS SHOWN ON SHEET DEC-1 AND DEC-2. FIVE TREES ARE PROPOSED FOR REMOVAL UNDER THIS CONTRACT ON THE PUMPING STATION SITE AND REPLACEMENT OF THREE TREES IS REQUIRED AND SHOWN ON THIS SHEET.
   c. REFER TO GREEN SPACE TABLE ON THIS SHEET FOR THE PUMPING STATION SITE FOR CITY OF TAMPA GREEN SPACE REQUIREMENTS. PUMPING STATION SITE IS 0.29 ACRES M.O.L.
   d. REFER TO DETAIL 9 ON SHEET GC-8 FOR PROVIDING TREE PROTECTION BARRICADES. THESE BARRICADES MUST BE INSTALLED PRIOR TO CONSTRUCTION AND INSPECTED AND APPROVED BY THE CITY OF TAMPA PARKS AND RECREATION DEPARTMENT PRIOR TO CONSTRUCTION.
   e. COORDINATE ALL LANDSCAPING EFFORTS WITH THE CITY OF TAMPA PARKS AND RECREATION DEPARTMENT.
2. PROVIDE THE NEW REPLACEMENT TREES AS SHOWN ON THIS PLAN AND PER DETAILS SHOWN ON THIS SHEET AND AS SPECIFIED IN SECTION 329300 "LANDSCAPING". SOD ALL DISTURBED AREAS ON THE PUMPING STATION SITE EXCEPT IMPERVIOUS AREAS AND THE PERMEABLE DRIVEWAY.
3. IRRIGATION SYSTEM:
   a. PROVIDE AN AUTOMATIC IRRIGATION SYSTEM FOR THE TREES, SHRUBS AND SODDING WITHIN THE PUMPING STATION SITE THAT MEETS ALL LOCAL AND STATE REGULATIONS AND THE REQUIREMENTS OF SPECIFICATION SECTION 338300 "LANDSCAPE IRRIGATION". IRRIGATE SOD WITH ROTARY AND/OR POP-UP SPRAY HEAD IRRIGATION, SHRUBS AND TREES BY BUBBLERS.
   b. PROVIDE COMPLETE DESIGN AND PERMITTING OF THE SYSTEM, INCLUDING DESIGN OF THE SYSTEM, PERMITTING AND PERMIT FEES, FURNISHING AND INSTALLING MATERIALS AND ALL WORK REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
   c. MINIMUM IRRIGATION PIPING SIZE AS REPRESENTED ON THIS SHEET SHALL BE 1 INCH DIAMETER.
   d. COORDINATE LOCATION OF ALL COMPONENTS, INCLUDING PROPOSED LOCATION OF IRRIGATION CONTROLLER SHOWN ON THE PLANS, PRIOR TO INSTALLATION AS SPECIFIED.
   e. PROVIDE AS-BUILT CONSTRUCTION RECORDS FOR ALL COMPONENTS, DOCUMENTING SIZE, CONFIGURATION, AND HORIZONTAL AND VERTICAL LOCATIONS.
   f. DESIGN IRRIGATION SYSTEM FOR MAXIMUM FLOW RATE OF 25 GPM AT A PRESSURE OF 30 PSIG AT THE CONNECTION POINT TO THE POTABLE WATER LINE.
4. THE CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTAINING THE LANDSCAPE MATERIALS DURING CONSTRUCTION AND THE WARRANTEE PERIOD FOR THE PROJECT.

GREEN SPACE PUMP STATION PARCEL

BUILDING	1,531 SF
PARKING/SIDEWALKS	1,115 SF
PERMEABLE PAVEMENT	192 SF
A/C CONDENSERS	20 SF
SUBTOTAL (NON GREEN)	2,858 SF
TOTAL PARCEL AREA	12,600 SF
GREEN SPACE	9,742 SF
PERCENTAGE GREEN SPACE	77 %

TREE TABLE PUMPING STATION PARCEL

TREES ON PARCEL BY DIAMETER	TOTAL # TREES	# TREES REMOVED	MULTIPLIER FOR DEBIT	TOTAL DEBITS	TREES PROVIDED TYPE	CREDITS	TOTAL #
5" TO 7"	5	5	0	0	2" CALIPER	1	1
8" TO 12"	2	2	1	2			
13" TO 19"	2	0	2	0			
20" TO 29"			4	0			
30" OR GREATER			IN. PER IN.	0			
ALL PALMS			1	0	PALM	2	2
TOTAL	9	7		2		3	3

NOTES: 1. SEE SHEET DEC-1 AND DEC-2 FOR TREE REMOVAL AND TREE PROTECTION.

TREE TABLE STORMWATER POND FC-100 PARCEL

TREES ON PARCEL BY DIAMETER (1)	TOTAL # TREES	# TREES REMOVED	MULTIPLIER FOR DEBIT	TOTAL DEBITS	TREES PROVIDED TYPE	CREDITS	TOTAL #
5" TO 7"	4	1	0	0	NONE		
8" TO 12"	11		1	0			
13" TO 19"	2		2	0			
20" TO 29"	0		4	0			
30" OR GREATER	2		IN. PER IN.	0			
ALL PALMS			1	0			
TOTAL	19	1		0		0	0

NOTES: 1. TREES ON PARCEL WITHIN 50 FEET OF PIPE CORRIDOR.
2. SEE SHEET DEC-1 AND DEC-2 FOR TREE REMOVAL AND TREE PROTECTION.

CHARLES M. PEKKALA LICENSED PROFESSIONAL ENGINEER STATE OF FLORIDA
Charles M. Pekkala 7/15/14

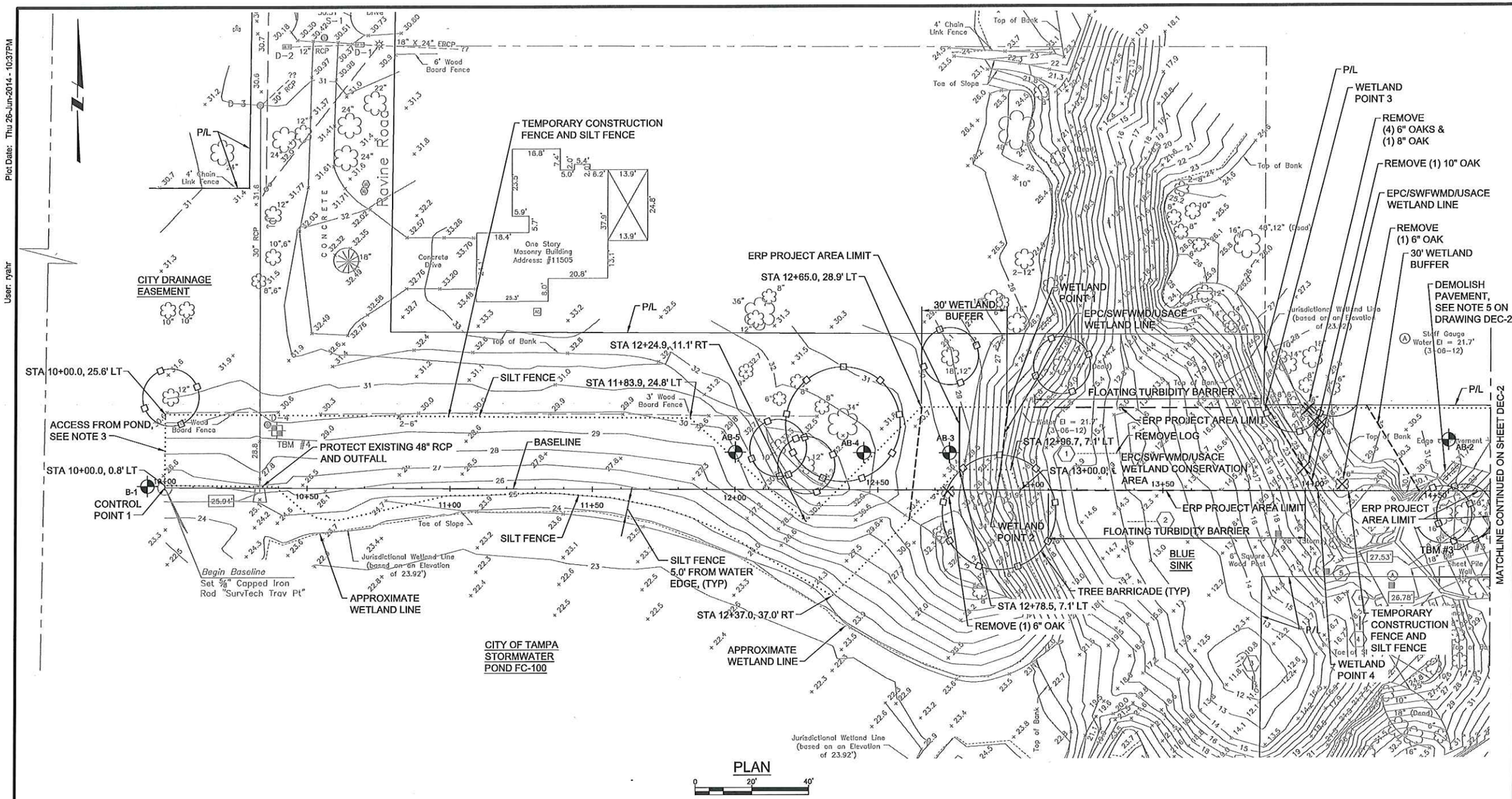
Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN
WARNING: 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON
ISSUED FOR BID - JUNE 2014
ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH® 1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602 CERTIFICATE OF AUTHORIZATION No. 6773
GREELEY AND HANSEN 1715 NORTH WESTSHORE BLVD TAMPA, FLORIDA 33607 CERTIFICATE OF AUTHORIZATION No. 37
CITY OF TAMPA, FLORIDA WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION
CIVIL LANDSCAPING PLAN
SHEET C-5
1011673



GENERAL SHEET NOTES

1. THIS SHEET SHOWS CONDITIONS AT THE TIME OF SURVEY. FEATURES AND UTILITIES DEPICTED ON SURVEY ARE FROM VISIBLE EVIDENCE ONLY.
2. THIS SHEET SHOWS EXISTING CONDITIONS, LOCATION OF EROSION AND TUBIDITY CONTROL MEASURES AND TREE REMOVAL. REFER TO DRAWING C-1 FOR CONSTRUCTION IN THIS AREA.
3. ACCESS TO THE WEST SIDE OF BLUE SINK IS FROM THE CITY OF TAMPA FC-100 STORMWATER PROPERTY. SEE DETAIL "SITE ACCESS AND COORDINATION WITH OTHERS" ON DRAWING GC-7 FOR LOCATION OF ACCESS POINTS TO THIS SITE. SITE ACCESS FROM OR PARKING ON RAVINE ROAD IS NOT ALLOWED.
4. DELINEATE CONSTRUCTION AREA ON WEST SIDE OF BLUE SINK WITH SUPER SILT FENCE AS SHOWN ON THE PLAN.
5. WHEN CONSTRUCTION WORK IS BEING CONDUCTED IN THE SINK, PROVIDE FLOATING TURBIDITY CURTAIN AS SHOWN. WHEN CONSTRUCTION ACTIVITIES ARE NOT BEING CONDUCTED IN THE SINK, PROTECT THE SINK FROM ANY RUNOFF WITH SUPER SILT FENCE.
6. ON THE EAST SIDE OF THE SINK, PROVIDE TEMPORARY CONSTRUCTION FENCE AND SUPER SILT FENCE AS SHOWN ON THE PLAN. PROVIDE CHAIN LINK TEMPORARY CONSTRUCTION FENCING WITH GREEN OPAQUE FABRIC TIED TO FENCING. PROVIDE ACCESS GATES AS REQUIRED FOR THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT TO THEIR WATER MEASUREMENT INSTRUMENTS.
7. REMOVE TREES SHOWN ON THE PLAN. PROTECT ALL OTHER TREES FROM DAMAGE.
8. LIMIT ALL ACTIVITIES TO WITHIN DESIGNATED CONSTRUCTION AREA.

SURVEY NOTES

1. TEMPORARY BENCHMARKS
   a. TBM#3: FOUND PK NAIL & DISC "SWFWMD" IN THE SOUTHWEST CORNER OF "L" SHAPED MASONRY WALL 30'+/- NORTHEAST OF SINK AREA. ELEVATION = 34.32'.
   b. TBM#4: NORTH RIM OF D-4 AT WEST END OF PROJECT AREA. ELEVATION = 30.30'.
2. CONTROL POINT 1:
   a. NORTHING 1352188.52
   b. EASTING 506951.66
   c. ELEVATION = 26.01 FEET
3. SANITARY STRUCTURE S-1
   a. TOP ELEVATION 30.56 FEET
   b. PIPE SIZE = PIPE INFORMATION COULD NOT BE OBTAINED.
   c. INVERT ELEVATION 30.56 FEET.
   d. DIRECTION = UNAVAILABLE
4. DRAINAGE STRUCTURE D-1
   a. TOP ELEVATION = 30.38 FEET
   b. PIPE WEST (MATERIAL = 12" RCP; INVERT ELEVATION = 28.23 FEET)
   c. PIPE EAST (MATERIAL = 14" X 23" ERCP, INVERT ELEVATION 26.43 FEET)
5. DRAINAGE STRUCTURE D-2
   a. TOP ELEVATION = 30.33 FEET
   b. PIPE EAST (MATERIAL = 12" RCP; INVERT ELEVATION 28.43 FEET)
6. DRAINAGE STRUCTURE D-3
   a. TOP ELEVATION 31.03 FEET
   b. PIPE SOUTH (MATERIAL = 30" RCP; INVERT ELEVATION = 24.43 FEET)
   c. PIPE NORTHEAST (MATERIAL = 30" RCP; INVERT ELEVATION = 24.43 FEET)
7. DRAINAGE STRUCTURE D-4
   a. TOP ELEVATION = 30.30 FEET
   b. PIPE INFORMATION COULD NOT BE OBTAINED. STRUCTURE WAS PARTIALLY FILLED WITH WATER AND PIPES WERE RECESSED.
   c. BOTTOM OF STRUCTURE ELEVATION = 24.01 FEET.

WETLAND SUMMARY TABLE

UPLAND AREA: 34,368.88 SF

WETLAND AREA: 2,878.25 SF

ENVIRONMENTAL RESOURCE PERMIT PROJECT AREA: 37247.13 SF

WETLAND POINTS	NORTHING	EASTING
1	1352217.18	507247.30
2	1352194.16	507244.76
3	1352216.50	507337.62
4	1352186.48	507356.17

WETLAND LINES	
1-2	21.93 LINEAR FEET
3-4	35.29 LINEAR FEET

WETLAND IMPACT
440 S.F.

SUBAQUEOUS DATA

PER SUBCONTRACTOR PERFORMING SUBAQUEOUS DATA COLLECTION:

"BOTTOM IS MUDDY WITH CLAY BOTTOM. SMALL/NATURAL DEBRIS THROUGHOUT. ENTIRE BOTTOM HAS NO MAJOR DIFFERENCES IN DEPTH AND IS CONSISTENT WITH ELEVATION TO CREATE A GRADUAL CHANGE IN DEPTH. NEAR CHANNEL, THE BOTTOM BECOMES DEEP MUD 3 TO 5 FEET DEEP. THERE IS LIMESTONE DEBRIS ON EDGE OF CHANNEL."

1. 25' LONG 8" LOG
2. 10' LONG 12" LOG
3. FENCE POST
4. FENCE POST
5. 4" X 4" WOOD PILE DRIVEN INTO GROUND; FOUND 2 LOCATED NEXT TO EACH OTHER THAT ALMOST REACH SURFACE; A FEW OTHERS FOUND ALONG SAME LINE BROKEN AT BOTTOM
6. CONCRETE ALONG SHEET PILE WALL HAS NO UNDERMINING OR PITTED DAMAGE; SLAB COMES OUT 3' TOWARDS POND (3' X 6')
7. FALLEN TREE & ROOT STRUCTURE; 30' DIAMETER (INCLUDES ROOT STRUCTURE & BRANCHES)

CHARLES M. PEKKALA LICENSE No. 37998 STATE OF FLORIDA PROFESSIONAL ENGINEER
Charles M Pekkala 7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37998
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: 1" = 20'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

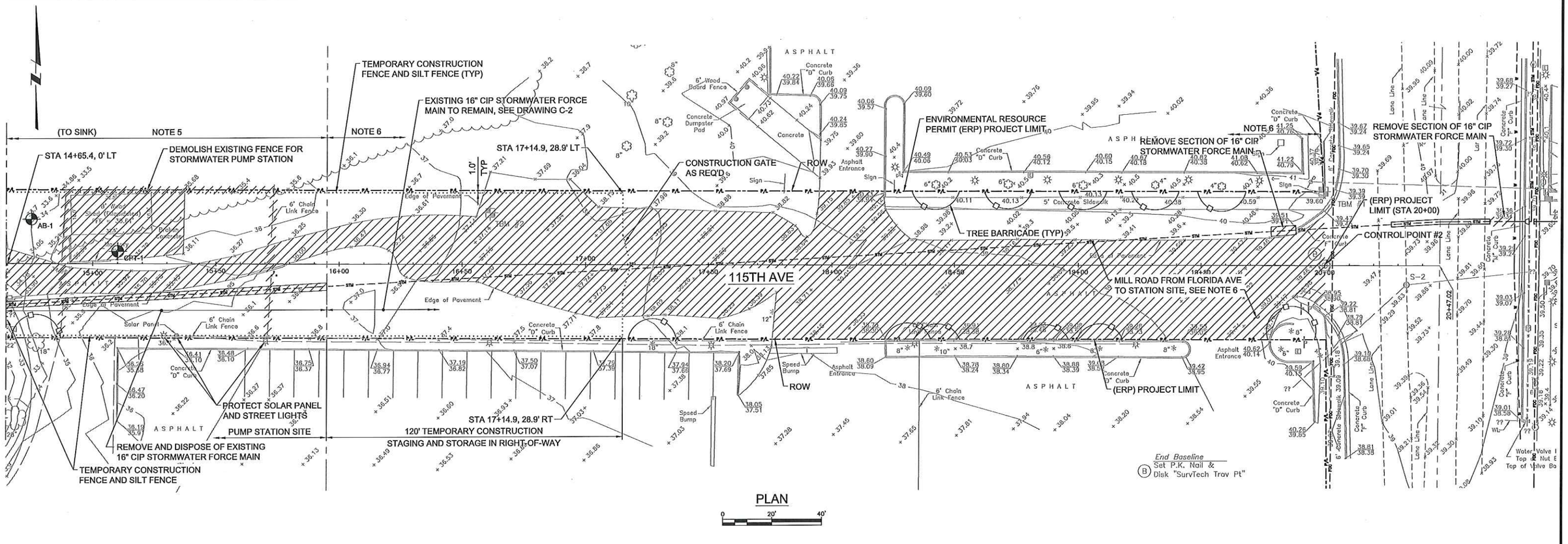
DEMOLITION AND EROSION CONTROL PLAN - I

SHEET: DEC-1

1011673

Plot Date: Thu 26-Jun-2014 - 10:37PM
User: ryahr
File: C:\pwworkdir\dms60329\TBSD_DEC01.dwg

MATCHLINE CONTINUED ON SHEET DEC-1



PLAN

0 20' 40'

GENERAL SHEET NOTES

1. THIS SHEET SHOWS CONDITIONS AT THE TIME OF SURVEY. FEATURES AND UTILITIES DEPICTED ON SURVEY ARE FROM VISIBLE EVIDENCE ONLY.
2. THIS SHEET SHOWS EXISTING CONDITIONS, LOCATION OF EROSION AND TURBIDITY CONTROL MEASURES AND DEMOLITION. REFER TO DRAWING C-2 FOR CONSTRUCTION IN THIS AREA.
3. ACCESS TO THE EAST SIDE OF BLUE SINK IS ALONG 115TH AVENUE FROM FLORIDA AVENUE. SEE DETAIL "SITE ACCESS AND COORDINATION WITH OTHERS" ON DRAWING GC-7 FOR LOCATION OF ACCESS POINTS TO THE SITE. A TEMPORARY CONSTRUCTION STAGING AND STORAGE AREA ON 115TH AVENUE IS IDENTIFIED ON THE PLAN. DO NOT BLOCK ACCESS TO THE CAR DEALERSHIPS LOCATED ON THE NORTH AND SOUTH SIDES OF 115TH AVENUE. IF ADDITIONAL STORAGE OR CONSTRUCTION PARKING IS REQUIRED, PROVIDE OFF SITE STORAGE AND PARKING AT ANOTHER LOCATION.
4. PROVIDE TEMPORARY CONSTRUCTION FENCE AND SUPER SILT FENCE AS SHOWN ON THE PLAN. PROVIDE CHAIN LINK TEMPORARY CONSTRUCTION FENCING WITH GREEN OPAQUE FABRIC TIED TO FENCING. PROVIDE ACCESS GATES AS REQUIRED FOR THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT TO THEIR WATER MEASUREMENT INSTRUMENTS.
5. IN THE DELINEATED AREA TO THE SINK, REMOVE ALL MANMADE FEATURES, INCLUDING STORAGE SHED, MASONRY WALL, BROKEN CONCRETE, FENCING, ASPHALT AND ROAD BASE AND THE LIKE THAT ARE ASSOCIATED WITH THE CITY OF TAMPA STORMWATER DIVISION OF THE PUBLIC WORKS DEPARTMENT STORMWATER PUMPING STATION. DO NOT DISTURB SHEET PILE WALL OR REVETMENTS AT THE SINK EMBANKMENT. SOME ITEMS MAY BE CURRENTLY DEMOLISHED SINCE SURVEY WAS CONDUCTED TO FACILITATE GEOTECHNICAL WORK. INSPECT SITE PRIOR TO BIDDING. DO NOT REMOVE FENCING OR FEATURES ON THE SOUTH SITE BOUNDARY THAT ARE PART OF THE CHEVROLET DEALERSHIP PARKING LOT FENCING, LIGHTING OR OWNED BY THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
6. OUTSIDE OF THE PUMP STATION SITE LIMITS, DEMOLISH EXISTING PAVING AND BASE WITHIN THE 115TH AVE RIGHT-OF-WAY. SEE SITE PAVING, GRADING AND FENCING PLAN FOR PROPOSED NEW PAVEMENT.
7. LIMIT ALL ACTIVITIES TO WITHIN DESIGNATED CONSTRUCTION AREA.

LEGAL DESCRIPTION BLUE SINK PUMP STATION

THE WEST 210 FEET OF THE NORTH 30 FEET OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 AND THE WEST 210 FEET OF THE SOUTH 30 FEET OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 13, TOWNSHIP 28 SOUTH, RANGE 18 EAST, HILLSBOROUGH COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF SECTION 13, TOWNSHIP 28 SOUTH, RANGE 18 EAST, THENCE COINCIDENT WITH THE EAST BOUNDARY OF THE NORTHWEST 1/4 OF SAID SECTION 13, S 00°29'57" W A DISTANCE OF 636.91 FEET TO A POINT COINCIDENT WITH THE EASTERLY EXTENSION OF THE NORTH RIGHT-OF-WAY BOUNDARY OF 115TH AVENUE; THENCE DEPARTING SAID EAST BOUNDARY, COINCIDENT WITH SAID EASTERLY EXTENSION AND COINCIDENT WITH THE NORTH RIGHT-OF-WAY BOUNDARY N 89°42'32" W A DISTANCE OF 451.96 FEET TO THE POINT OF BEGINNING; THENCE DEPARTING SAID NORTH RIGHT-OF-WAY BOUNDARY, S 00°30'15" W A DISTANCE OF 60.00 FEET TO A POINT COINCIDENT WITH THE SOUTH RIGHT-OF-WAY BOUNDARY OF 115TH AVENUE; THENCE N 89°42'32" W A DISTANCE OF 210.00 FEET; THENCE N 00°30'15" E A DISTANCE OF 60.00 FEET TO A POINT COINCIDENT WITH AFORESAID NORTH RIGHT-OF-WAY BOUNDARY OF 115TH AVENUE; THENCE S 89°42'32" E A DISTANCE OF 210.00 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 12600.09 SQUARE FEET, 0.289 ACRES, MORE OR LESS.

SURVEY NOTES

1. TEMPORARY BENCHMARKS
   a. TBM#1: FOUND PK NAIL & DISC ON BACK OF CONCRETE "D" CURB AT THE NORTHWEST INTERSECTION OF 115TH AVENUE AND NORTH FLORIDA AVENUE. ELEVATION = 40.38'.
   b. TBM#2: SET PK NAIL AND DISC 390 FEET =/- WEST OF THE INTERSECTION OF 115TH AVENUE AND NORTH FLORIDA AVENUE. ELEVATION = 37.33'.
2. CONTROL POINT 2:
   a. NORTHING 1352183.47
   b. EASTING 507951.65
   c. ELEVATION = 39.23 FEET
3. SANITARY STRUCTURE S-2
   a. TOP ELEVATION 39.53 FEET
   b. PIPE NORTH: 8" VCP, INV 29.70
   c. PIPE SOUTH: 8" VCP, INV 29.95
   d. PIPE EAST: 8" VCP, INV 29.82
   e. PIPE SOUTHWEST: 8" VCP, INV 29.82

CHARLES M. PEKKALA LICENSE NO. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida – License No 37996
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: 1" = 20'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN JWHITE
CHECKED JATKINSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

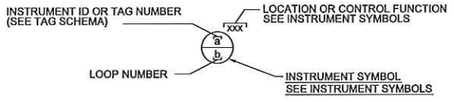
BLUE SINK MFL PUMPING STATION

DEMOLITION AND EROSION CONTROL PLAN - II

SHEET: DEC-2

1011673

INSTRUMENTATION CALL-OUT



INSTRUMENT SYMBOLS

	PRIMARY LOCATION (ACCESSIBLE) (1)	PRIMARY LOCATION (INACCESSIBLE) (2)	FIELD MOUNTED	AUXILIARY LOCATION (ACCESSIBLE) (1)	AUXILIARY LOCATION (INACCESSIBLE) (2)
INSTRUMENT	a/b *	a/b *	a/b *	a/b *	a/b *
SHARED DISPLAY SHARED CONTROL	a/b	a/b	a/b	a/b	a/b
COMPUTER FUNCTION	a/b *	a/b *	a/b *	a/b *	a/b *
PROGRAMMABLE LOGIC CONTROL	a/b *	a/b *	a/b *	a/b *	a/b *

(1) NORMALLY ACCESSIBLE TO OPERATOR

(2) NORMALLY INACCESSIBLE TO OPERATOR (BEHIND-THE-PANEL)

* LOCATION OR CONTROL FUNCTION - SEE BELOW

A INSTRUMENT IDENTIFICATION/TAG NUMBER (SEE TAG DESIGNATION FOR MORE INFO)

B INSTRUMENT LOOP NUMBER

SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS

I — RELAY INTERLOCK LOGIC - SEE SCHEMATICS OR SPECIFICATIONS FOR MORE INFORMATION

INDICATING LIGHT - FIELD MOUNTED, MAY BE LOCATED ON A CONTROL PANEL

INDICATING LIGHT - PANEL MOUNTED

CR — CONTROL RELAY

L/A-ON — LIGHTNING SURGE ARRESTOR

CONTROL FUNCTION DESIGNATIONS

XXX — DESIGNATIONS SUCH AS 100 (LOCAL CONTROL PANEL NO 100), 200 (LOCAL CONTROL PANEL NO 200), ETC., ARE USED WHEN NECESSARY TO SPECIFY INSTRUMENT OR FUNCTION LOCATION.

AHC	AUTO/HOLD/CLOSE
AM	AUTO/MANUAL
AS	AIR SUPPLY
DEV	DEVIATION
HML	HIGH/MID/LOW
HOA	HAND/OFF/AUTO
HOR	HAND/OFF/REMOTE
LOR	LOCAL/OFF/REMOTE
LOS	LOCKOUT STOP
LR	LOCAL/REMOTE
MOA	MANUAL/OFF/AUTO
OC	OPEN/CLOSE
OCA	OPEN/CLOSE/AUTO
OLH	OFF/LOW/HIGH
AO	AUTO/OFF
OSC	OPEN/STOP/CLOSE
PID	PROPORTIONAL/INTEGRAL/ DERIVATIVE
POT	POTENTIOMETER
RL	RAISE/LOWER
RSL	RAISE/STOP/LOWER
SD	SHUTDOWN
SEL	SELECT
SP	SET POINT
SR	START/RESET
SS	START/STOP
ST	START
STR	STOP/RESET

INSTRUMENT SYMBOLS - CONT

COMPUTING OR CONVERTING FUNCTIONS

COMPUTING

SUMMING	DERIVATIVE	EXPONENTIAL
ADDITION	AVERAGING	BIAS
SUBTRACTION	RATIO	HIGH LIMITING
MULTIPLYING	DIFFERENCE	LOW LIMITING
DIVIDING	HIGH SELECTING	LINEARIZER
SQ ROOT EXTRACTION	LOW SELECTING	
PROPORTIONAL	INTEGRAL	

CONVERTING

E	VOLTAGE	R	RESISTANCE (ELECT)	A	ANALOG
I	CURRENT	D	DIGITAL	B	BINARY
P	PNEUMATIC	O	ELECTROMAGNETIC, SONIC	H	HYDRAULIC

PLC / REMOTE I/O POINTS

ANALOG INPUT — DISCRETE INPUT — DATA SIGNAL INPUT*

ANALOG OUTPUT — DISCRETE OUTPUT — DATA SIGNAL OUTPUT*

* 2-WIRE NETWORK INTERFACE. SEE SPECIFICATION FOR MORE INFORMATION

INSTRUMENTATION LINE SYMBOLOGY

NEW WORK (UNSCREENED)

EXISTING (SCREENED)

EXISTING TO BE DEMOLISHED

FUTURE EQUIPMENT (LONG DASH, SHORT DASH)

INSTRUMENT LINES

MAIN PROCESS LINE

ELECTRIC (ELECTRONIC) SIGNAL

ETHERNET COMMUNICATION LINK

SOFTWARE DATA LINK

OTHER INSTRUMENTATION SYMBOLS AND SYMBOLOGY

24 VDC — POWER SUPPLY (SIZE AS NOTED)

AS — AIR SUPPLY

PRIMARY ELECTRICAL POWER (120V/60HZ UNLESS INDICATED OTHERWISE)

CABLE (MULTICONDUCTOR OR COAXIAL) FURNISHED WITH EQUIPMENT

(E) EXISTING EQUIPMENT

(F) FUTURE EQUIPMENT

(R) RELOCATED EQUIPMENT

TAG SCHEMA

TYPICAL TAG FORMAT
- TIC-01 — — INSTRUMENT TAG NUMBER
- TIC — — — FUNCTIONAL IDENTIFICATION
- T — — — — FIRST LETTER
- IC — — — SUCCEEDING LETTER(S)
- 001 — — LOOP NUMBER

RUN INDICATION SHALL BE RED, OFF INDICATION SHALL BE GREEN

	FIRST LETTER		SUCCEEDING LETTER(S)		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		ISOLATE	ISOLATOR	
O			ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VACUUM, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	INTRUSION	X AXIS			
Y	EVENT, STATE, OR PRESENCE	Y AXIS		COMPUTER, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

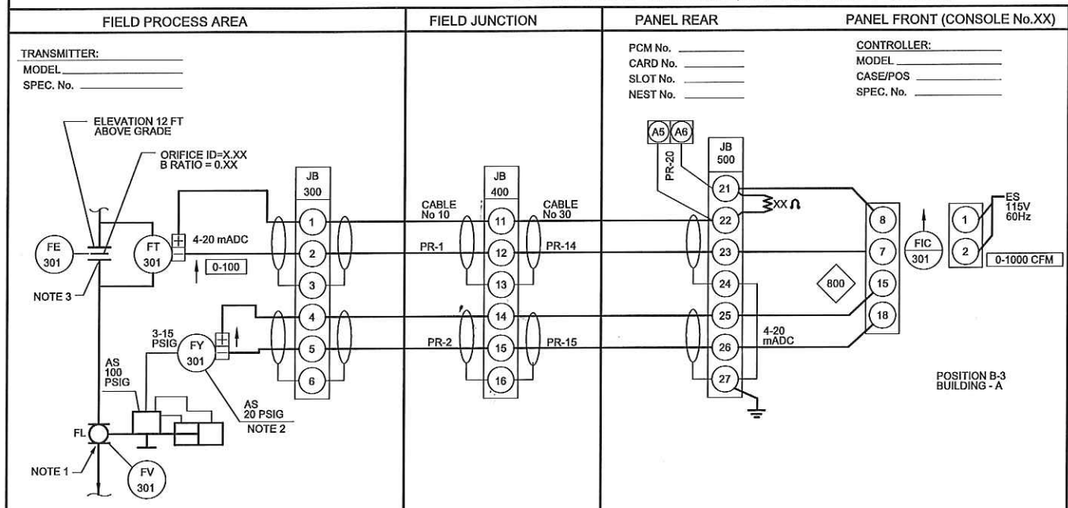
ABBREVIATIONS

FOC	FIBER OPTIC CABLE
FOR	FIBER OPTIC REPEATER
FOT	FIBER OPTIC TRANSCEIVER
HMI	HUMAN MACHINE INTERFACE
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OI	OPERATOR INTERFACE
PC	PERSONAL COMPUTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
RIO	REMOTE I/O
RVSS	REDUCED VOLTAGE SOLID-STATE STARTER
RTU	REMOTE TERMINAL UNIT
SW	SEAL WATER
TC	THERMOCOUPLE
TSP	TWISTED SHIELD PAIR
UPS	UNINTERRUPTABLE POWER SUPPLY
VCP	VENDOR SUPPLIED PANEL
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE

GENERAL INSTRUMENTATION NOTES

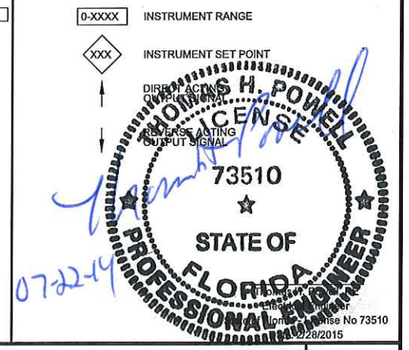
1. ADDITIONAL INSTRUMENTATION AND CONTROL SYMBOLS MAY BE USED AS REQUIRED. SYMBOLS AND NOMENCLATURE ARE BASED ON ISA STANDARD 5.1-INSTRUMENTATION SYMBOLS AND IDENTIFICATION.
2. SEE ELECTRICAL AND GENERAL SHEETS FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
3. SEE SPECIFICATION SECTION 409100 FOR COMPLETE DETAILS OF LOOP DRAWING SUBMITTAL REQUIREMENTS.
4. POWER SUPPLIES FOR INSTRUMENT LOOPS OR SYSTEMS SHALL BE FURNISHED BY THE INSTRUMENTATION SUPPLIER TO MEET THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IN EACH LOOP OR SYSTEM.
5. FIELD SWITCHES FOR ELECTRIC MOTOR OPERATION SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR. EXCEPTIONS ARE SWITCHES THAT ARE PART OF VENDOR PACKAGES.
6. VALVE ACTUATORS SHALL BE SUPPLIED WITH THE VALVE BY THE VALVE SUPPLIER, UNLESS OTHERWISE NOTED.

SAMPLE LOOP DIAGRAM (ISA EXPANDED FORMAT)



NOTES:

1. FV-301 FULLY OPEN AT 15 PSIG AND FULLY CLOSED AT 3 PSIG.
2. STAND MOUNT NEAR, BUT NOT ON THE CONTROL VALVE.
3. FE-301 REQUIRES 10 PIPE DIAMETERS UPSTREAM AND 5 PIPE DIAMETERS DOWNSTREAM OF STRAIGHT PIPE.
4. DETAIL SURGE ARRESTOR INSTALLATION AND GROUNDING AS APPLICABLE



REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

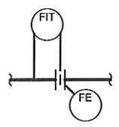
GENERAL INSTRUMENTATION & CONTROL SYMBOLS AND ABBREVIATIONS - I

SHEET GI-1

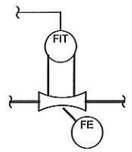
1011673

File: C:\pwworkdir\dms6034\TBSDGI01.dwg

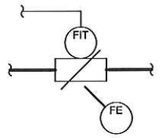
FLOW INSTRUMENTS



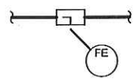
ORIFICE PLATE WITH VENA CONTRACTA, RADIUS, OR PIPE TAPS CONNECTED TO DIFFERENTIAL-PRESSURE -TYPE FLOW TRANSMITTER



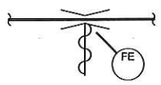
VENTURI TUBE WITH (DIFFERENTIAL PRESSURE) FLOW TRANSMITTER



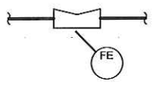
SONIC FLOWMETER (DOPPLER OR TRANSIT TIME)



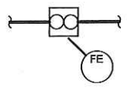
SINGLE PORT PITOT TUBE OR PITOT-VENTURI TUBE



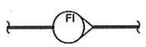
FLUME WITH ULTRASONIC FLOW TRANSMITTER



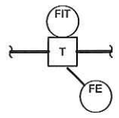
WEIR



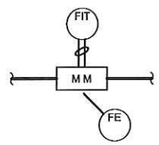
POSITIVE-DISPLACEMENT TYPE FLOW METER



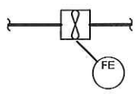
VARIABLE AREA FLOW INDICATOR (ROTA METER)



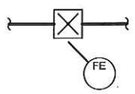
THERMAL MASS FLOW METER



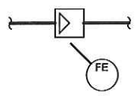
MAGNETIC FLOWMETER WITH REMOTE FLOW TRANSMITTER



TURBINE OR PROPELLER TYPE FLOW METER

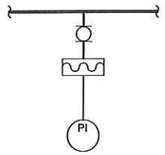


PADDLE WHEEL FLOW METER

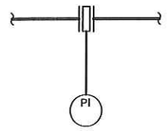


VORTEX FLOW METER

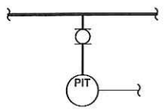
PRESSURE OR VACUUM INSTRUMENTS



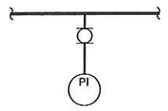
PROCESS LINE WITH DIAPHRAM SEAL WITH FILLED SYSTEM



PROCESS LINE WITH ANNULAR SEAL WITH FILLED SYSTEM

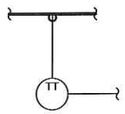


PRESSURE ELEMENT STRAIN-GAGE TYPE CONNECTED TO PRESSURE INDICATING TRANSMITTER

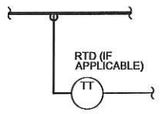


PRESSURE INDICATOR DIRECT - CONNECTED

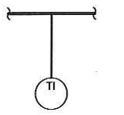
TEMPERATURE INSTRUMENTS



FILLED -SYSTEM TYPE TEMPERATURE TRANSMITTER WITH THERMOWELL

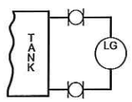


THERMOCOUPLE, RESISTANCE BULB (RTD) OR THERMISTOR (TH) TEMPERATURE TRANSMITTER WITH THERMOWELL

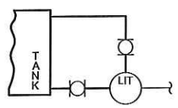


BIMETALLIC TYPE THERMOMETER, GLASS THERMOMETER, OR OTHER LOCAL UNCLASSIFIED TEMPERATURE INDICATOR

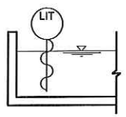
LEVEL INSTRUMENTS



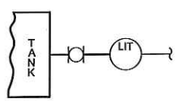
GAGE GLASS (EXTERNALLY CONNECTED)



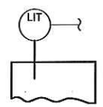
LEVEL TRANSMITTER, DIFFERENTIAL PRESSURE TYPE, (MOUNTED ON TANK)



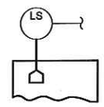
ULTRASONIC LEVEL TRANSMITTER



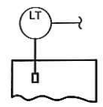
PRESSURE ACTUATED LEVEL TRANSMITTER



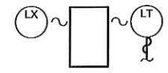
CAPACITANCE OR DIELECTRIC TYPE LEVEL TRANSMITTER



LEVEL SWITCH FLOAT ACTUATED TYPE

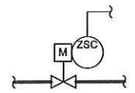


HYDROSTATIC TYPE LEVEL TRANSMITTER

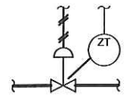


RADIOACTIVE OR SONIC TYPE LEVEL TRANSMITTER WITH INTEGRAL SENSOR

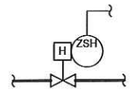
POSITION INSTRUMENTS



LIMIT SWITCH ON MOTORIZED VALVE INDICATING CLOSED POSITION

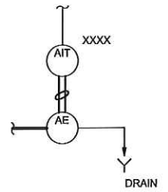


VALVE POSITION TRANSMITTER ON PNEUMATIC ACTUATED VALVE



LIMIT SWITCH ON HAND VALVE INDICATING HIGH POSITION

ANALYTICAL INSTRUMENTS



FLOW THROUGH ANALYZING ELEMENT WITH TRANSMITTER

ALK	ALKALINITY
CL_2	CHLORINE CONCENTRATION
COMB	COMBUSTIBLE GAS
CON	CONDUCTIVITY
DO	DISSOLVED OXYGEN
H_2S	HYDROGEN SULFIDE
LEL	LOWER EXPLOSIVE LIMIT
O_2	OXYGEN CONCENTRATION
O_3	OZONE
ORP	OXIDATION/REDUCTION POTENTIAL
PC	PARTICLE COUNTER
PH	HYDROGEN ION CONCENTRATION
SO_2	SULFUR DIOXIDE
TH	TOTAL HARDNESS
TURB	TURBIDITY
UV	ULTRA VIOLET

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

07-22-14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV 07052008

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

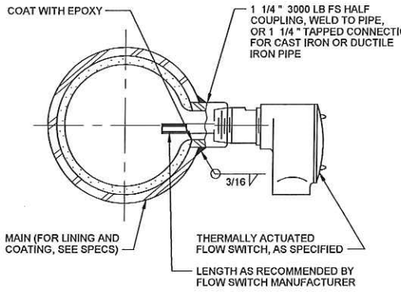
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL INSTRUMENTATION & CONTROL SYMBOLS AND ABBREVIATIONS - II

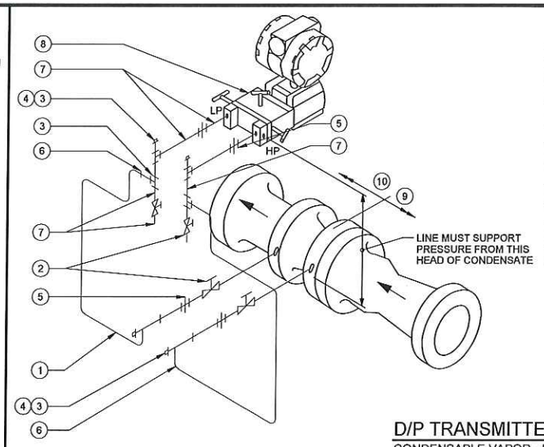
SHEET GI-2

1011673



FLOW SWITCH

REV 060908 — I-101



NO.	QTY	DESCRIPTION
1	*	1/2 " TUBING
2	4	1/2 " VALVE
3	8	1/2 " VALVE1/2" TEE AND PLUG
4	4	1/2 " PLUG
5	4	1/2 " UNION
6	4	ADAPTOR 1/2 " PIPE X 1/2 " TUBE
7	*	1/2 " PIPE
8	1	3 VALVE MANIFOLD 1/2 " NPT
9	20	MIN UPSTREAM STRAIGHT RUN (PIPE DIA)
10	5	MIN DOWNSTREAM STRAIGHT RUN (PIPE DIA)

* AS REQUIRED

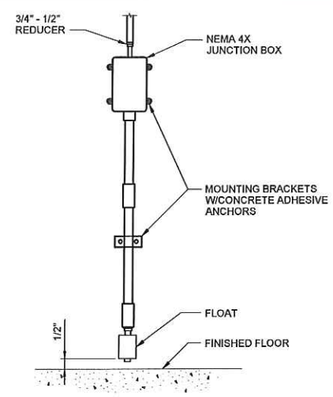
NOTES:

1. SLOPE ALL HORIZONTAL RUNS AT LEAST 1" PER 1'-0".
2. ALL TUBINGS AND VALVES SHALL BE 316 S.S.

D/P TRANSMITTER LIQUID AND GAS SERVICE

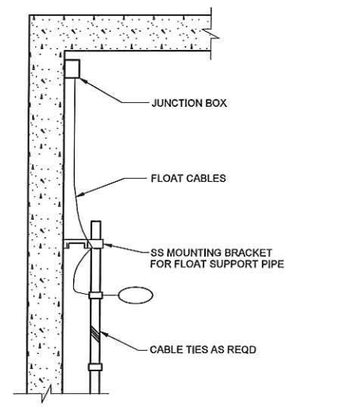
CONDENSABLE VAPOR - D/P ABOVE VENTURI

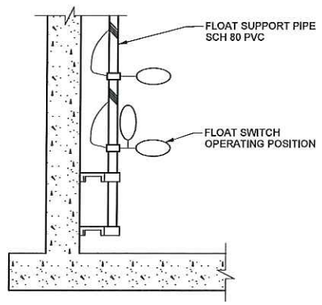
REV 060908 — I-116



FLOOD SWITCH

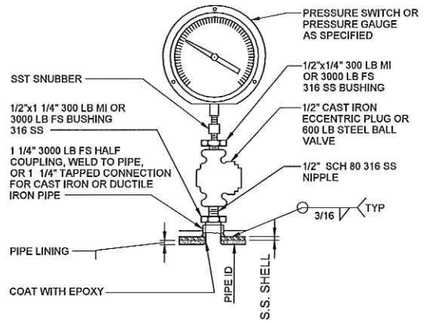
REV 061808 — I-200





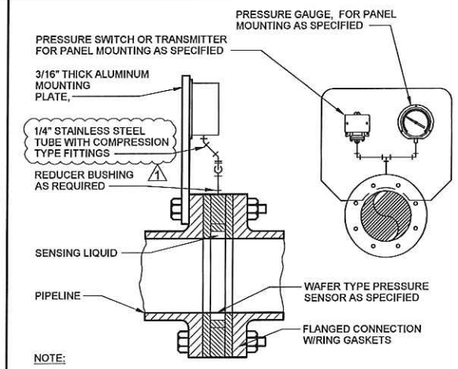
BALL FLOAT SWITCH

REV 061808 — I-207



PRESSURE GAUGE OR SWITCH

REV 061608 — I-301



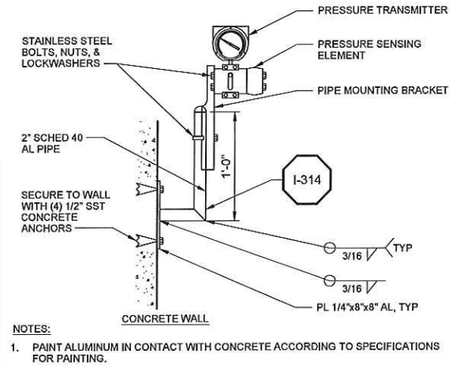
NOTE:

FOR CHEMICAL AND SOLIDS BEARING FLUID APPLICATIONS.

PRESSURE GAUGE, SWITCH,OR TRANSMITTER

WITH PRESSURE SENSOR

REV 061308 — I-311

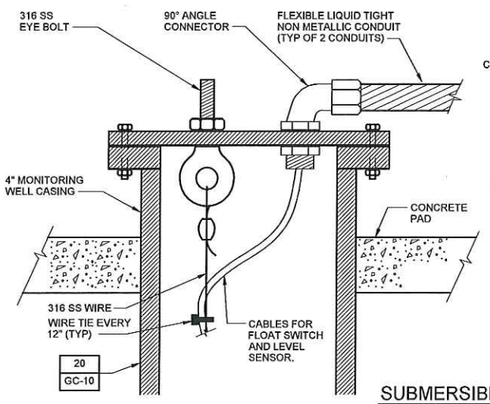


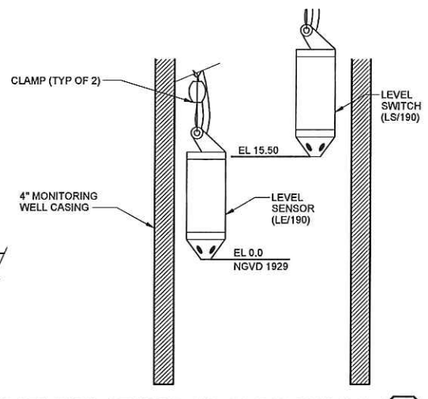
NOTES:

1. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
2. AL MOUNTING BRACKETS ARE TO BE INSTALLED APPROX. 4'-0" ABOVE FLOOR OR AS REQUIRED BY PROCESS.
3. WALL MOUNT SHOWN. SEE DETAIL I-314 FOR FLOOR MOUNTING.

PRESSURE AND PRESSURE DIFFERENTIAL TRANSMITTER

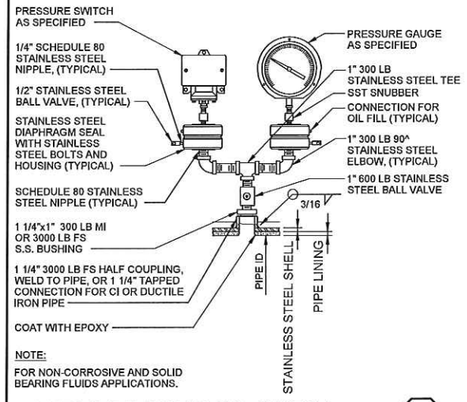
I-313





SUBMERSIBLE LEVEL SENSOR AND FLOAT SWITCH

I-900



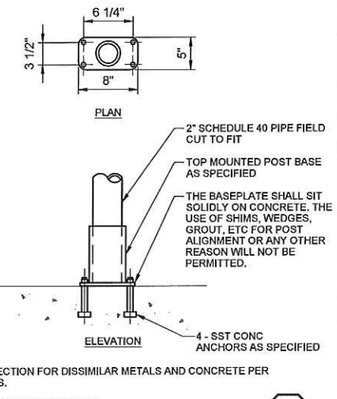
NOTE:

FOR NON-CORROSIVE AND SOLID BEARING FLUIDS APPLICATIONS.

PRESSURE GAUGE AND SWITCH

WITH DIAPHRAGM SEAL

I-901



NOTES:

1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE PER SPECIFICATIONS.

FLOOR MOUNT DETAIL

E-902

11/21/14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	9/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

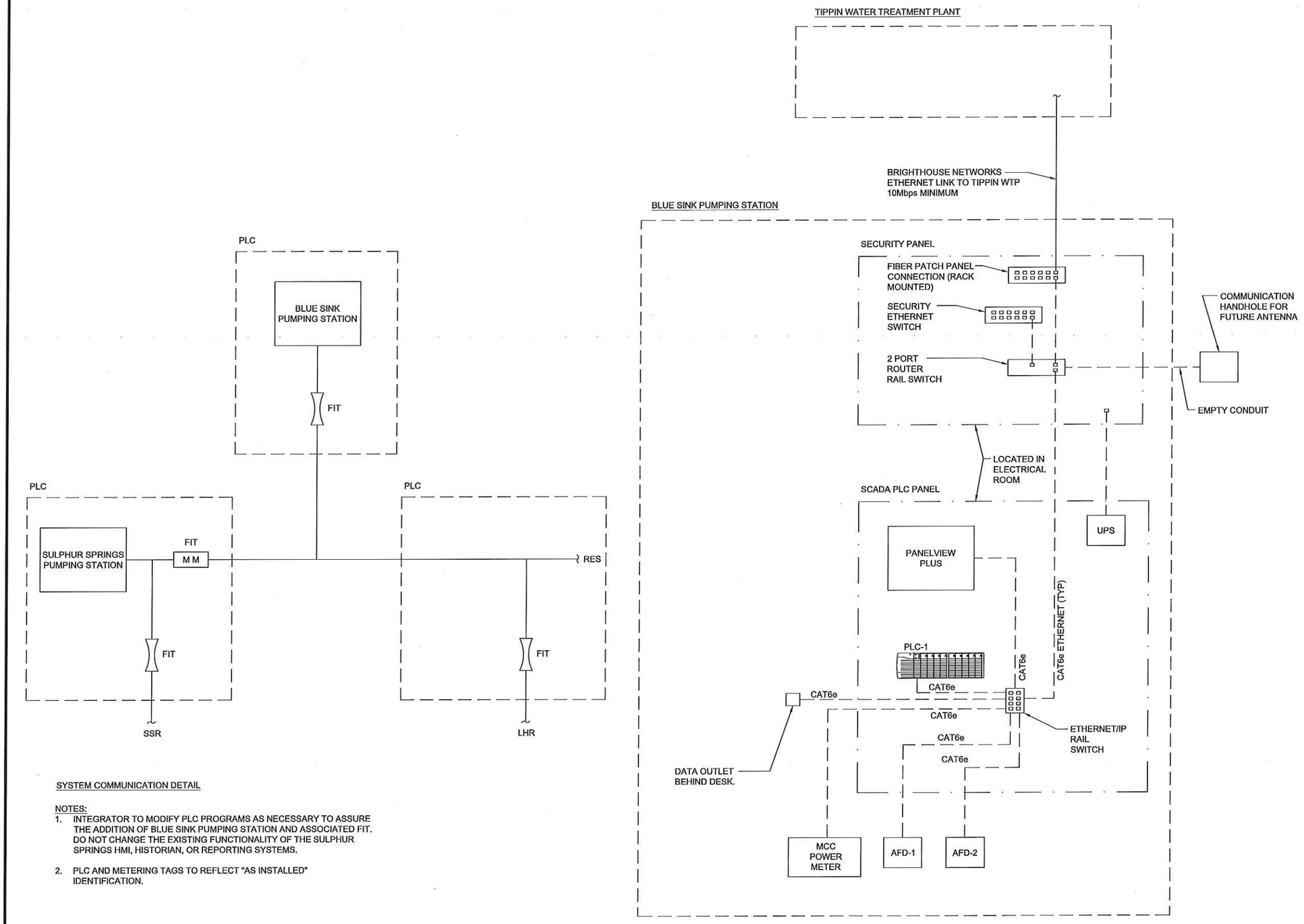
BLUE SINK MFL PUMPING STATION

GENERAL INSTRUMENTATION & CONTROL STANDARD DETAILS - I

SHEET: GI-3

1011673

File: C:\pwworkdir\dms60347\TBSDGI03-rev20140909.dwg



SYSTEM COMMUNICATION DETAIL

NOTES:
1. INTEGRATOR TO MODIFY PLC PROGRAMS AS NECESSARY TO ASSURE THE ADDITION OF BLUE SINK PUMPING STATION AND ASSOCIATED FIT. DO NOT CHANGE THE EXISTING FUNCTIONALITY OF THE SULPHUR SPRINGS HMI, HISTORIAN, OR REPORTING SYSTEMS.
2. PLC AND METERING TAGS TO REFLECT "AS INSTALLED" IDENTIFICATION.

GENERAL SHEET NOTES

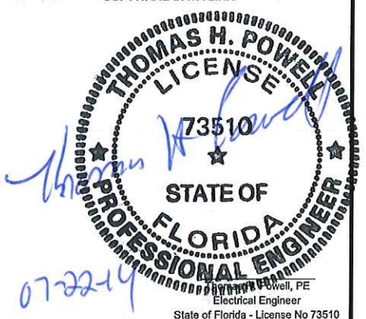
FIBER OPTIC CABLE

A. TYPE 62.5/125, MULTIMODE, BACKBONE FOR UNDERGROUND CONDUIT AND BUILDING RISER INSTALLATION:
   1. INDIVIDUAL FIBERS: 62.5 MICRONS.
   2. ASSEMBLY:
      a. NONMETALLIC, GEL-FREE, DRY WATER BLOCKED, LOOSE-TUBE FIBER CORE WITH DIELECTRIC STRENGTH MEMBER ENCLOSED BY NONMETALLIC CROSS-PLY SHEATH; REQUIRES BUFFER TUBING.
      b. CABLE: COMPLY WITH ICEA S_104_696.
   3. NEC/UL LISTING: OFNR.
   4. PROTECTIVE COVERING: FLAME AND UV-RESISTANT, THERMOPLASTIC JACKET WITH RIP-CORD.
   5. MINIMUM SHORT TERM PULL STRENGTH: 600 LBF.
   6. ALL COPPER WIRE BETWEEN THE MCC POWER METER, AFD-1 AND AFD-2 SHALL HAVE 600V RATED INSULATION AND BE SHIELDED. THE SHIELDING SHALL BE BONDED TO A RJ45 CONNECTOR ON ONE END ONLY.
   7. ALL COPPER ETHERNET CONNECTORS SHALL BE DATATUFF INDUSTRIAL ETHERNET RUGGEDIZED RJ45 T568B CAT6e SHIELDED BY BELDEN.
   8. PROVIDE FIBER EXPRESS BRILLIANCE LC CONNECTORS BY BELDEN FOR ALL FIBER CONNECTORS.
   9. SWITCH CONFIGURATION TO INCLUDE INDIVIDUAL NETWORKS FOR SCADA, SECURITY, AND TELECOMMUNICATIONS. COORDINATE IP ADDRESS AND PORT ASSIGNMENTS WITH OWNER.
   10. MANUFACTURERS AND PRODUCTS:
      a. BELDEN; LOOSE-TUBE CABLE.

NETWORK CABLE

A. ETHERNET
   1. PATCH CORDS 10' AND SHORTER SHALL HAVE FACTORY ASSEMBLED TERMINATIONS.

MAIN PROCESS LINE
ELECTRIC (ELECTRONIC) SIGNAL
ETHERNET COMMUNICATION LINK
SOFTWARE DATA LINK



07-22-14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TPOWELL
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

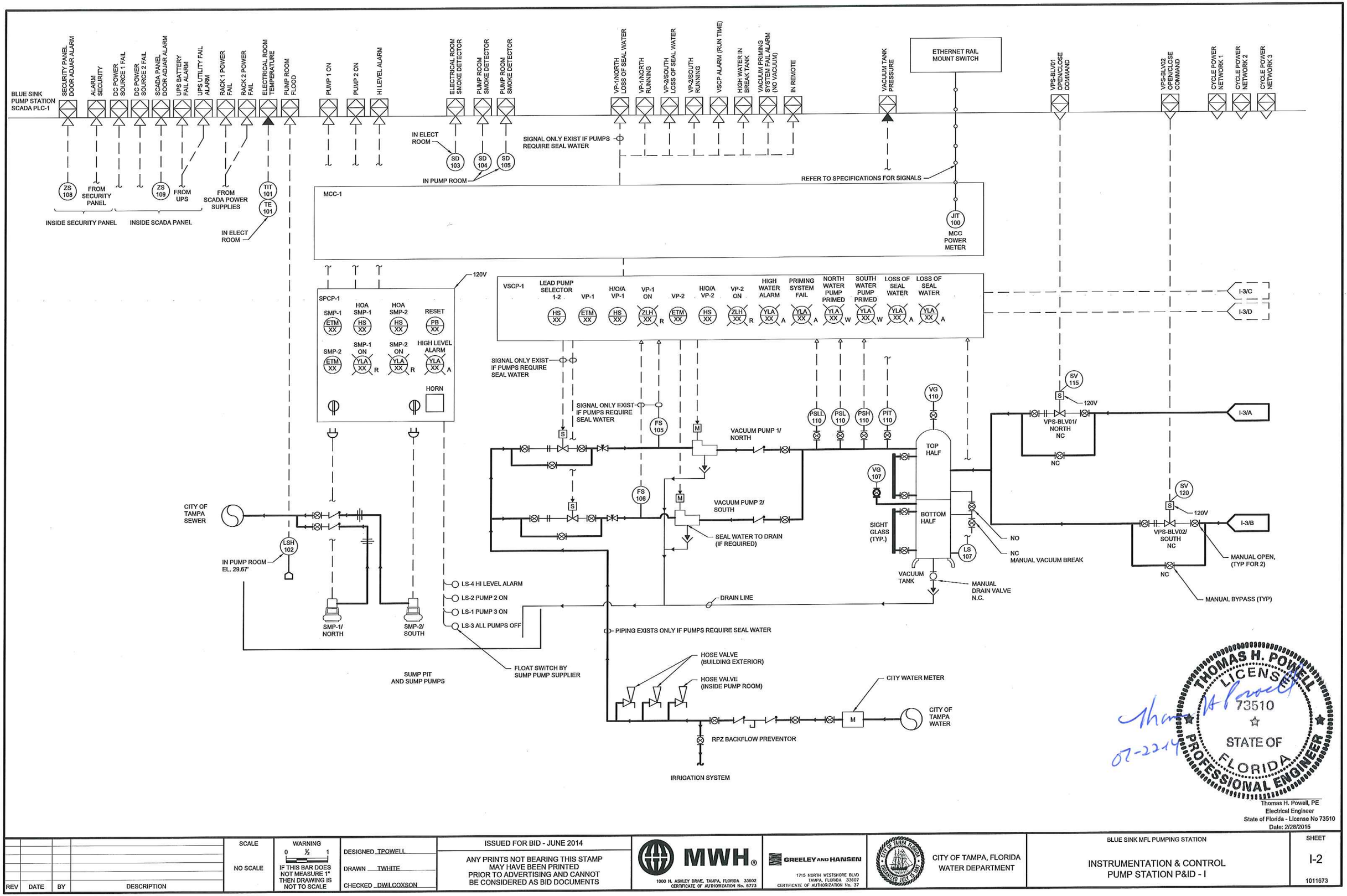
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

INSTRUMENTATION & CONTROL
NETWORK CONFIGURATION

SHEET I-1

1011673



THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell
07-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TPOWELL
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

INSTRUMENTATION & CONTROL
PUMP STATION P&ID - I

SHEET
I-2
1011673

Plot Date: Fri 21-Nov-2014 - 03:03PM

User: twhite

BLUE SINK PUMP STATION SCADA PLC-1

SPV-BLV-01 OPEN | SPV-BLV-01 REMOTE | SPV-BLV-01 OPEN | SPV-BLV-01 CLOSED | SPV-BLV-02 OPEN | SPV-BLV-02 REMOTE | SPV-BLV-02 OPEN | SPV-BLV-02 CLOSED | RWP-1/NORTH PRIMED | RWP-1/NORTH CONTROLLEDMODE PLC | RWP-1/NORTH RUN COMMAND | RWP-1/NORTH RUNNING | RWP-1/NORTH AFD FAILURE | RWP-1/NORTH PUMP FAILURE | RWP-1/NORTH SPEED COMMAND | RWP-1/NORTH SPEED | RWP-1/NORTH RESET | PRESSURE HIGH DISCHARGE ALARM | DISCHARGE VALVE OPENED | DISCHARGE VALVE CLOSED ALARM | CURRENT | VOLTAGE | REAL K | FREQUENCY | RELATIVE POWER | SINK LOW LEVEL | DISCHARGE PRESSURE | FLOW | SINK ELEVATION

ETHERNET CONNECTION AND SIGNALS TYPICAL FOR BOTH AFD-1 AND AFD-2.

480V

PUMP 1 / NORTH AFD-1

SUCTION VENT OPEN IL 140 R | SUCTION VENT CLOSED IL 140 G | ETM 140 | H/O/A HS 140 | RESET PB 140 | START PB 140 | STOP PB 140 | E-STOP PB 140 | SPEED SS 140 | PUMP PRIMED IL 140 W | AFD RUNNING IL 140 R | AFD FAIL IL 140 A | CONTROL POWER IL 140 W | AFD READY IL 140 W | DISCHARGE VALVE OPEN IL 140 R | DISCHARGE VALVE CLOSED IL 140 G | MOTOR SPACE HEATER ON IL 140 A | HIGH DISCHARGE PRESSURE ALARM IL 140 A | LOW SINK LEVEL IL 150 A

I-2/C

I-2/A

VACUUM PRIMING VALVE 1 — V1 — LS 131

OCS HMS 125 | LR HS 125 | ZHS 125 R | ZHL 125 G

ES HS 140 M

PG 140 | PSH 140 | FUTURE AIR BURST SYSTEM

H ZSH 140 | ZSL 140

PIT 175 | ARV/AVAR | TO SUMP PIT

N.C. | INTAKE VENT | M 120V | SPV-BLV01/ NORTH | N.O.

PG 139 | RAW WATER PUMP 1/ NORTH

LIT 190 | LE 190 | LS 191 | LS 190

MOUNT LE-190 TO THE TOP OF A STILL WELL. DROP LS-190 AND LS-191 DOWN SAME STILL WELL TO SPECIFIED DEPTH.

FIT 180 | FE 180

ARV/AVAR | TO SUMP PIT

RAW WATER DISCHARGE | TO HILLSBOROUGH RIVER AND RESERVOIR

480V

PUMP 1 / SOUTH AFD-2

SUCTION VENT OPEN IL 150 R | SUCTION VENT CLOSED IL 150 G | ETM 150 | H/O/A HS 150 | RESET PB 150 | START PB 150 | STOP PB 150 | E-STOP PB 150 | SPEED SS 150 | PUMP PRIMED IL 150 W | AFD RUNNING IL 150 R | AFD FAIL IL 150 A | CONTROL POWER IL 150 W | AFD READY IL 150 W | DISCHARGE VALVE OPEN IL 150 R | DISCHARGE VALVE CLOSED IL 150 G | MOTOR SPACE HEATER ON IL 150 A | HIGH DISCHARGE PRESSURE ALARM IL 150 A | LOW SINK LEVEL IL 150 A

I-2/D

I-2/B

CONTROLS INTEGRAL TO ACTUATOR (TYP 2)

VACUUM PRIMING VALVE 2 — V2 — LS 132

NEMA 4X STAINLESS STEEL STATION NEAR VALVE (TYP 2)

OCS HMS 125 | LR HS 125 | ZHS 125 R | ZHL 125 G

ES HS 150 M

PG 150 | PSH 150 | FUTURE AIR BURST SYSTEM

H ZSH 150 | ZSL 150

N.C. | INTAKE VENT | M 120V | SPV-BLV02/ SOUTH | N.O.

PG 149 | RAW WATER PUMP 2/ SOUTH

RAW WATER SUCTION FROM SINK

RAW WATER SUCTION FROM SINK

BLUE SINK

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

11-21-14

Thomas H. Powell, P.E.
Florida License
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	09/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TPOWELL
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

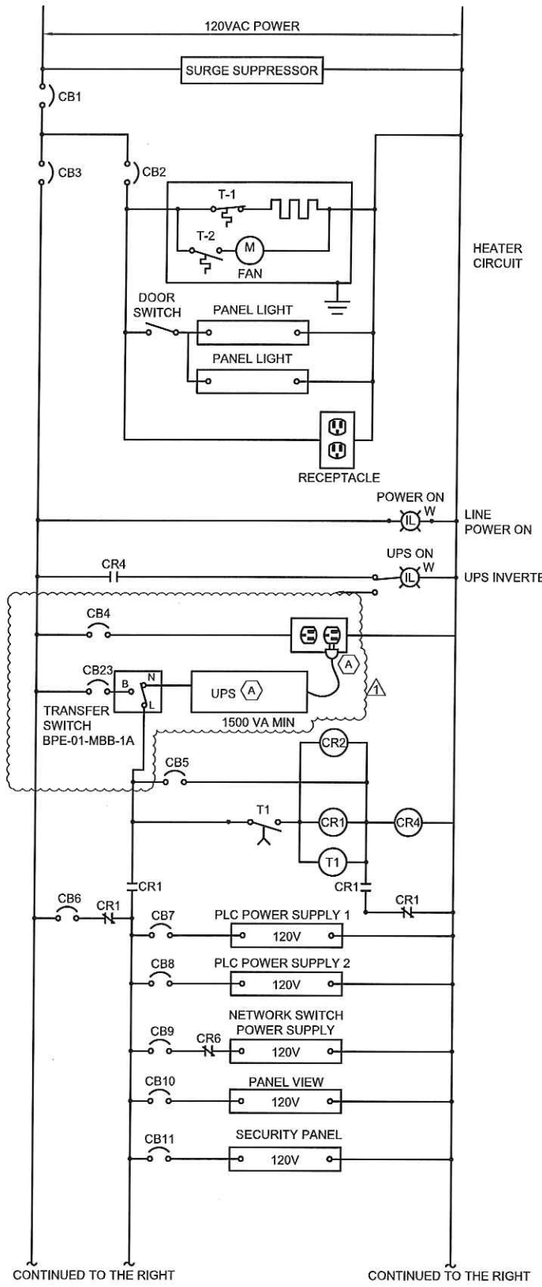
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

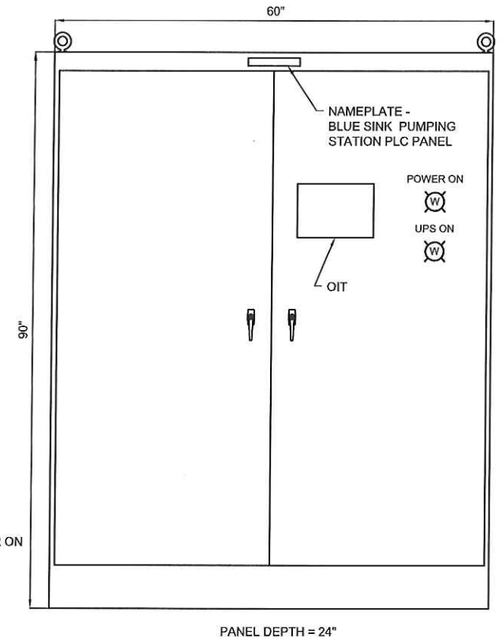
INSTRUMENTATION & CONTROL
PUMP STATION P&ID - II

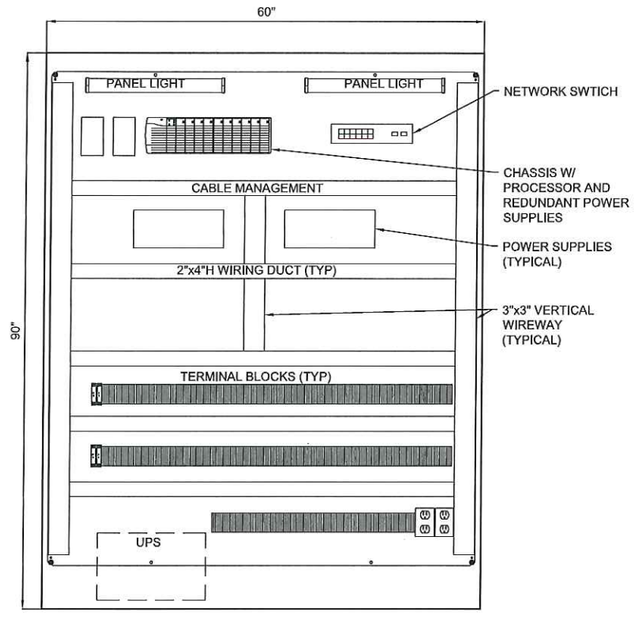
SHEET
I-3
1011673

File: C:\pwworkdir\dms60347\TBSD_I03-rev20140909.dwg

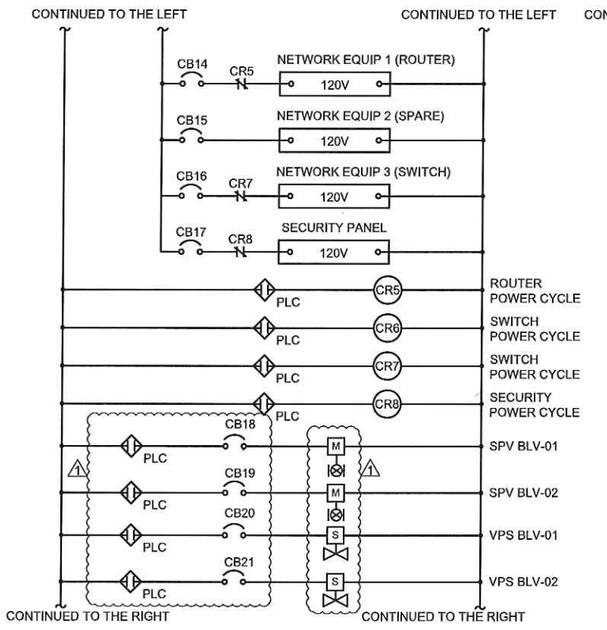


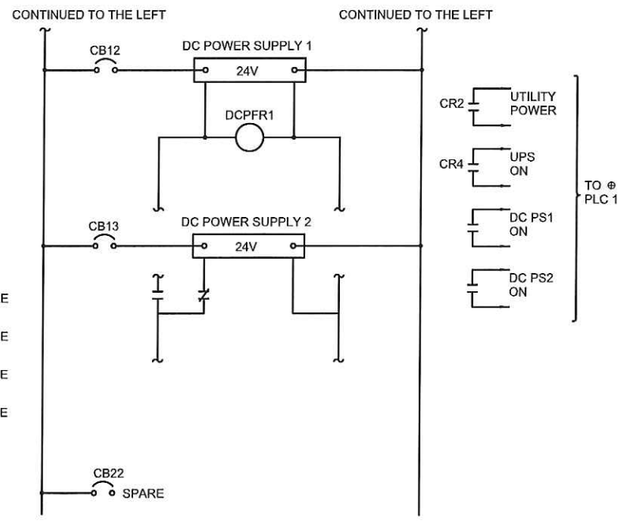
SCADA PLC PANEL
PARTIAL WIRING DIAGRAM





SCADA/PLC PANEL DETAIL
NOT TO SCALE





GENERAL SHEET NOTES

1. PROVIDE NEMA 12 STAINLESS STEEL PANEL
2. MINIMUM DIMENSIONS SHOWN.
3. DO NOT MOUNT ANYTHING ON THE TWO SIDE PANELS OR THE BACK OF THE PANEL DOOR (EXCEPT PANELVIEW). INCREASING COMPONENT DENSITY IN THIS MANNER TO REDUCE ENCLOSURE SIZE WILL NOT BE PERMITTED.
4. PROVIDE PARALLEL WIREWAYS.
5. LOCATE UPS ON SHELF OFF FLOOR. DO NOT OBSTRUCT PANEL COMPONENTS BEHIND.

⬡ SHEET KEYNOTES

A. FOR UPS MAINTENANCE UNPLUG LOAD FROM UPS AND PLUG IN OUTLET

Thomas H. Powell
11/21/14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	9/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DWILCOXSON

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

INSTRUMENTATION & CONTROL PANEL DETAILS

SHEET I-4

1011673

GENERAL SHEET NOTES

1. REFER TO G SHEETS FOR ABBREVIATIONS.
2. HEIGHT OF INTERIOR PARTITIONS ARE FROM FLOOR TO UNDERSIDE OF ROOF/FLOOR DECK. (UNLESS OTHERWISE INDICATED).
3. NOT ALL EQUIPMENT IS SHOWN FOR CLARITY. REFER TO APPROPRIATE DISCIPLINE DRAWINGS FOR SPECIFIC EQUIPMENT LAYOUT AND OTHER REQUIREMENTS.
4. PROFILE OF DOOR / WINDOW / LOUVER FRAMES MAY VARY DEPENDING ON MODEL SCHEDULED AND SPECIFIED. GLASS THICKNESS MAY ALSO VARY. SEE SCHEDULES AND SPECIFICATIONS.
5. SURFACE APPLIED WATER REPELLENT SHALL BE APPLIED ON EXTERIOR EXPOSED MASONRY.
6. SEE SPEC 099100 - PAINTING WHERE GENERAL NOTES REFER TO FIELD PAINTING.
7. ALL EXPOSED INTERIOR AND EXTERIOR STRUCTURAL STEEL, JOISTS, STEEL COLUMNS, SECONDARY FRAMING MEMBERS, METAL DECK, STEEL LINTELS, STEEL GUARDRAILS AND HANDRAILS, AND ASSOCIATED CONNECTIONS SHALL BE FIELD PAINTED. (UNLESS OTHERWISE INDICATED).
8. ALL INTERIOR CMU WALLS, AND CEILINGS SHALL BE PAINTED. SEE SPECIFICATIONS.
9. PUMP STATION BUILDING SHALL HAVE PRE-CONSTRUCTION PROTECTION AGAINST SUBTERRANEAN TERMITES AS ESTABLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. CERTIFICATE OF COMPLIANCE SHALL BE ISSUED TO THE BUILDING DEPARTMENT BY THE LICENSED PEST CONTROL COMPANY THAT CONTAINS THE FOLLOWING STATEMENT:

   'THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF THE SUBTERRANEAN TERMITES. TREATMENT IS IN ACCORDANCE WITH RULES AND LAWS ESTABLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.'

ACCESSIBILITY NOTES

HANDICAPPED ACCESSIBILITY:

THIS BUILDING IS EXEMPT FROM CHAPTER 2 OF THE 2012 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION BASED ON THE FOLLOWING STATEMENT, "SPACES FREQUENTED ONLY BY SERVICE PERSONNEL FOR MAINTENANCE, REPAIR, OR OCCASIONAL MONITORING OF EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR TO BE ON A ACCESSIBLE ROUTE. MACHINERY SPACES INCLUDE, BUT ARE NOT LIMITED TO..., MECHANICAL, ELECTRICAL OR COMMUNICATIONS EQUIPMENT ROOMS; PIPING OR EQUIPMENT CATWALKS; WATER OR SEWAGE TREATMENT PUMP ROOMS AND STATIONS; ELECTRIC SUBSTATIONS AND TRANSFORMER VAULTS; ETC (203.5 MACHINERY SPACES).

THIS BUILDING IS EXEMPT FROM AMERICANS WITH DISABILITIES ACT (ADA) BASED ON THE FOLLOWING STATEMENT, "GENERAL EXCEPTIONS MACHINERY SPACES: SPACES FREQUENTED ONLY BY PERSONNEL FOR MAINTAINENCE, REPAIR OR MONITORING OF EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR TO BE ON AN ACCESSIBLE ROUTE. MACHINERY SPACES INCLUDE, BUT ARE NOT LIMITED TO,..., MECHANICAL, ELECTRICAL OR COMMUNICATIONS EQUIPMENT ROOMS; PIPING OR EQUIPMENT CATWALKS; WATER OR SEWAGE TREATMENT PUMP ROOMS AND STATIONS; ELECTRICAL SUBSTATIONS AND TRANSFORMER VAULTS; AND HIGHWAY AND TUNNEL UTILITY FACILITIES." (2010 ADA STANDARDS FOR ACCESSIBLE DESIGN FOR TITLES II AND III FACILITIES: 2004 ADAAG, PART 203.5)

EXCEPT FOR REGULAR MONITORING AND MAINTENANCE OF EQUIPMENT, THIS BUILDING IS NOT INTENDED FOR HUMAN OCCUPANCY FOR EXTENDED PERIODS OF TIME. THIS BUILDING'S PRIMARY PURPOSE IS TO HOUSE PROCESSING EQUIPMENT FOR WATER CONVEYANCE.

SYMBOLS

100A — DOOR NUMBERS

100 — ROOM NUMBERS

FE — FIRE EXTINGUISHER

MATERIALS

GLASS (ELEVATION)

BATT OR LOOSE FILL INSULATION

RIGID INSULATION BOARD

CMU WALL

CONCRETE WALL

OPENINGS

DOOR, SWING

DOUBLE DOOR

WINDOW OR LOUVER (SEE ELEVATION)

BUILDING CODE SUMMARY

OWNER:	CITY OF TAMPA, FLORIDA	DATE:	MAY 2014
PROJECT NAME:	BLUE SINK AND TBC MFL DIVERSION	PROJECT NO:	1011673
PROJECT LOCATION:	TAMPA	ARCHITECT:	SHANA WYGONIK
AREA/BUILDING :	PUMP STATION	LICENSE NO:	AR96070

GOVERNING CODES

BUILDING CODE: 2010 FLORIDA BUILDING CODE (FBC)	ENERGY CODE:
FIRE CODE: 2010 FLORIDA FIRE CODE (FFC)	ELEVATOR CODE: N/A
ACCESIBLITIY CODE: 2012 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION	OTHER:

HAZARDOUS MATERIALS (1)

CHEMICAL	CAS NO	QUANTITY	NFPA 704 RATING				HAZARD PROPERTIES		OCCUPANCY GROUP WHEN MAX ALLOW QUANT EXCEEDS (2)	REMARKS
			HEALTH	FLAMMABILITY	REACTIVITY	SPECIAL	PHYSICAL	HEALTH		
NONE										

USE AND OCCUPANCY CLASSIFICATION/ALLOWABLE AREA AND HEIGHT (3)

OCCUPANCY GROUP AND DESCRIPTION	CONSTRUCTION TYPE	ALLOWABLE HEIGHT	ALLOWABLE AREA	AUTOMATIC SPRINKLER INCREASE	ACTUAL AREA	ACTUAL AREA/ ALLOWABLE AREA RATIO	AREA MODIFICATION FRONTAGE INCREASE
F2	IIB	55FT	23,000SF	NO	1412.44 SF	0.061	

OCCUPANCY SEPARATION (4)					FIRE RESISTANCE RATING OF STRUCTURAL ELEMENTS (6)(7)						
OCCUPANCIES	ASSEMBLY RATING	OPENING RATING	ACCESSORY USE (5)		STRUCTURAL FRAME	BEARING WALLS EXTERIOR	BEARING WALLS INTERIOR	FLOOR CONSTRUCTION	ROOF CONSTRUCTION	EXT WALLS BASED ON SEPARATION DISTANCE (7)	
			ROOM OR AREA	SEPARATION/ PROTECTION						SEPARATION DISTANCE	RATING

FIRE PROTECTION SYSTEMS (8)

FIRE EXTIGUISHERS: 75' MAX DISTANCE	AUTOMATIC FIRE PROTECTION SYSTEM:

MEANS OF EGRESS (9)

BUILDING NAME	FUNCTION OF SPACE	MAX FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD	COMMON PATH OF TRAVEL DISTANCE	EXITS REQ'D	EXITS PROVIDED	EXIT ACCESS TRAVEL DIST	CORRIDOR FIRE-RESIST RATING	STAIRWAYS FIRE-RESIST RATED	OPEN STAIRWAYS
PUMP STATION	INDUSTRIAL (100 GROSS)	14 SF	14	22 FT	1	1	55 FT	-	-	-

(1) HMEX: THE HAZARDOUS MATERIAL EXPERT ASSISTANT, VERSION 6 - FLUER, INC

(2) FBC TABLE 307.1 - MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS

(3) FBC CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION, IBC CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS, TABLE 503 - ALLOWABLE HEIGHT AND BUILDING AREAS

(4) FBC CHAPTER 5, TABLE 508.3.3 - REQUIRED SPEARATION OF OCCUPANCIES

(5) FBC CHAPTER 5, TABLE 508.2 - INCIDENTAL USE AREAS

(6) FBC CHAPTER 6 - TYPES OF CONSTRUCTION, TABLE 601 - FIRE-RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS

(7) FBC CHAPTER 6 - TYPES OF CONSTRUCTION, TABLE 602 - FIRE RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

(8) FBC CHAPTER 9 - FIRE PROTECTION SYSTEMS

(9) FBC CHAPTER 10 - MEANS OF EGRESS

7/17/14

Shana Wygonik, RA
Architect
State of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ARCHITECTURAL
NOTES AND BUILDING CODE SUMMARY

SHEET
GA-1
1011673

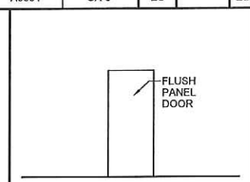
Plot Date: Tue 24-Jun-2014 - 06:17PM

User: slwygoni

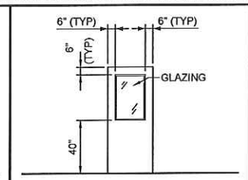
DOOR SCHEDULE

BLDG	DOOR NO	DOOR					FRAME						DETAILS					HDW SET (1)	FIRE RATING	REMARKS
		WIDTH	HEIGHT	TYPE	MATERIAL	FINISH(2)	WIDTH	HEIGHT	TYPE	THICK	MATERIAL	FINISH(2)	HEAD	TRANSOM	JAMB	THRESHOLD	DRAWING			
	100A	(2) 3'-10"	8'-6"	C	ALUM	ANODIZED	8'-0"	8'-8"	2	1 3/4"	ALUM	ANODIZED	A9002	-	A9003	A9004	GA-3	ED		ELECTRIFIED LOCK SETS AND INTEGRAL DOOR CONTACTS
	100B	3'-0"	8'-6"	B	ALUM	ANODIZED	3'-4"	8'-8"	1	1 3/4"	ALUM	ANODIZED	A9002	-	A9003	-	GA-3	IS		
	101	3'-0"	7'-10"	A	ALUM	ANODIZED	3'-4"	8'-0"	1	1 3/4"	ALUM	ANODIZED	A9002	-	A9003	A9004	GA-3	ES		ELECTRIFIED LOCK SETS AND INTEGRAL DOOR CONTACTS

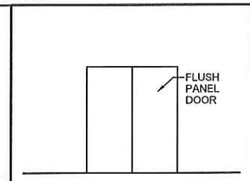
1. SEE SPECIFICATION 087100 DOOR HARDWARE FOR HARDWARE SET SCHEDULE UNLESS OTHERWISE NOTED.
2. SEE SPECIFICATION 084113 ALUMINUM DOORS AND FRAMES FOR FACTORY FINISH SYSTEM.



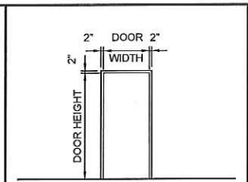
DOOR TYPE A



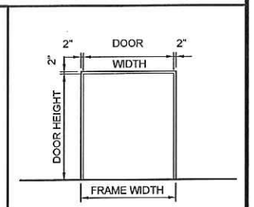
DOOR TYPE B



DOOR TYPE C



FRAME TYPE 1

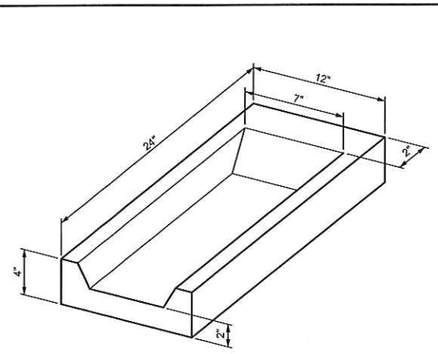


FRAME TYPE 2

ROOM FINISH SCHEDULE

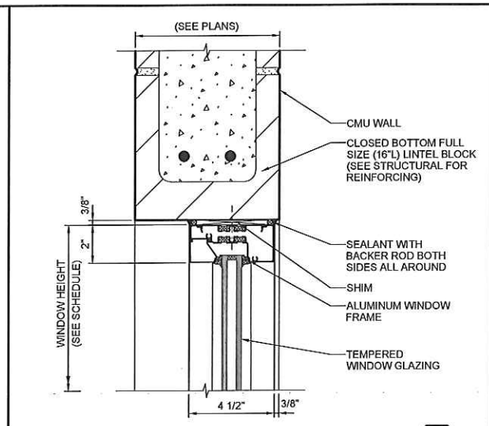
BLDG	ROOM NO	ROOM NAME	FLOOR	NORTH WALL						EAST WALL						SOUTH WALL						WEST WALL						CEILING/ INSIDE OF ROOF/ TRUSSES		REMARKS	ROOM NO
				MATERIAL	FINISH	FINISH SYSTEM	WAINSCOAT HT	WAINSCOAT MATERIAL	BASE	MATERIAL	FINISH	FINISH SYSTEM	WAINSCOAT HT	WAINSCOAT MATERIAL	BASE	MATERIAL	FINISH	FINISH SYSTEM	WAINSCOAT HT	WAINSCOAT MATERIAL	BASE	MATERIAL	FINISH	FINISH SYSTEM	WAINSCOAT HT	WAINSCOAT MATERIAL	BASE	HT	MATERIAL		
	100	PUMP ROOM	CONCRETE	CMU	PAINTED					CMU	PAINTED					CMU	PAINTED					CMU	PAINTED						PAINTED	SEE NOTES 2 AND 3	100
	101	ELECTRICAL ROOM	CONCRETE	CMU	PAINTED					CMU	PAINTED					CMU	PAINTED					CMU	PAINTED						PAINTED	SEE NOTE 3	101

1. SEE SPECIFICATION 099600 PROTECTIVE COATING FOR FINISH SYSTEM UNLESS OTHERWISE NOTED.
2. CONCRETE WALL BELOW CMU SHALL HAVE RUBBED CONCRETE FINISH.
3. PAINTED GYPSUM BOARD AT TOP OF CMU WALL BETWEEN PUMP ROOM.



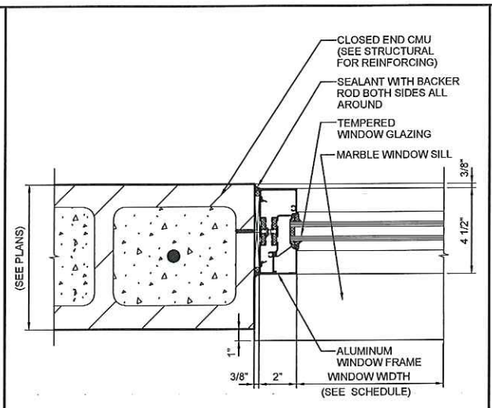
PRECAST CONCRETE SPLASH BLOCK — A7760

NO SCALE — REV 110112



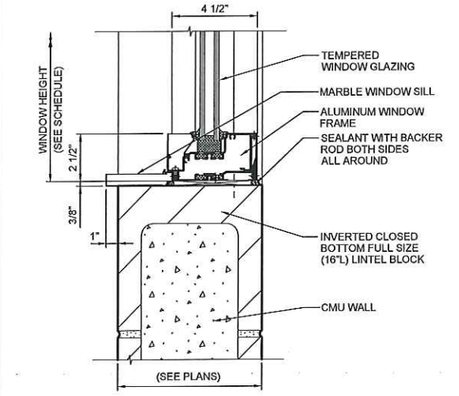
ALUM WINDOW HEAD AT CMU WALL — A8501

SCALE: 3"=1'-0"



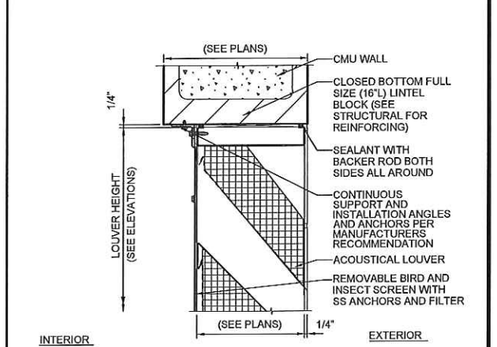
ALUM WINDOW JAMB AT CMU WALL — A8502

SCALE: 3"=1'-0"



ALUM WINDOW SILL AT CMU WALL — A8503

SCALE: 3"=1'-0"



ACOUSTICAL LOUVER HEAD AT CMU — A8904

SCALE: 3"=1'-0"

Shana Wygonik
7/14/14

Shana Wygonik, RA
Architect
State of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/14/14

File: C:\pwworkdir\dms503241\BSD_GA02.dwg

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

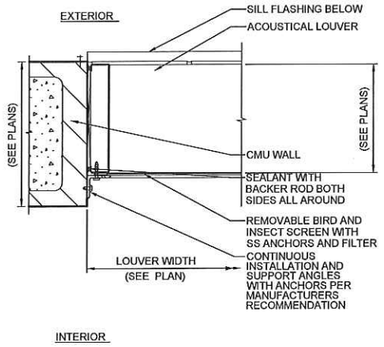
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ARCHITECTURAL
DOOR & FINISH SCHEDULES & STANDARD DETAILS - I

SHEET: GA-2

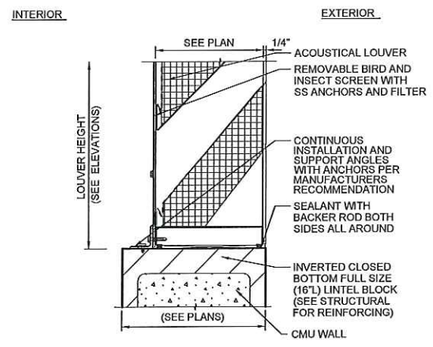
1011673



ACOUSTICAL LOUVER JAMB AT CMU

SCALE: 3"=1'-0"

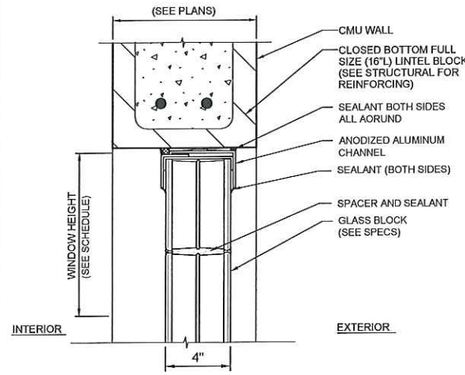
A8905



ACOUSTICAL LOUVER SILL AT CMU

SCALE: 3"=1'-0"

A8906

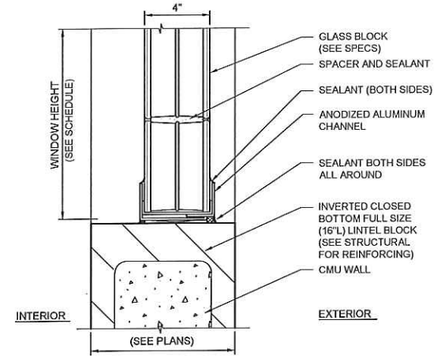


GLASS BLOCK WINDOW HEAD

SCALE: 3"=1'-0"

JAMB SIMILAR

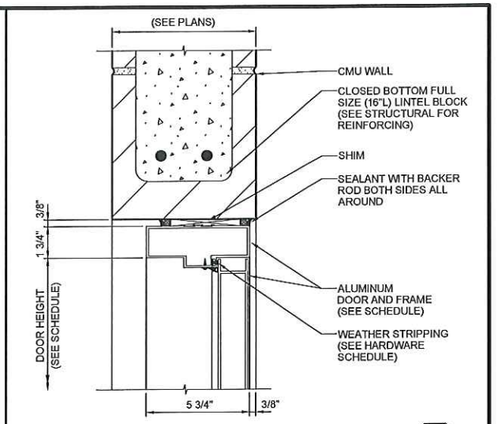
A9000



GLASS BLOCK WINDOW SILL

SCALE: 3"=1'-0"

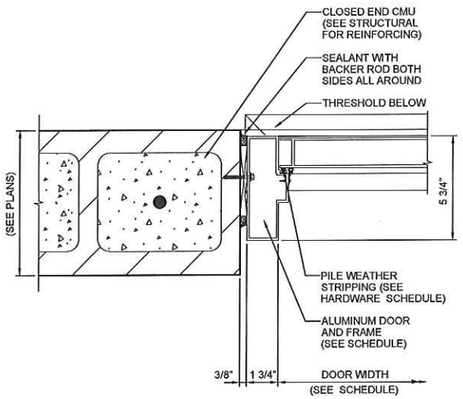
A9001



DOOR HEAD AT CMU WALL

SCALE: 3"=1'-0"

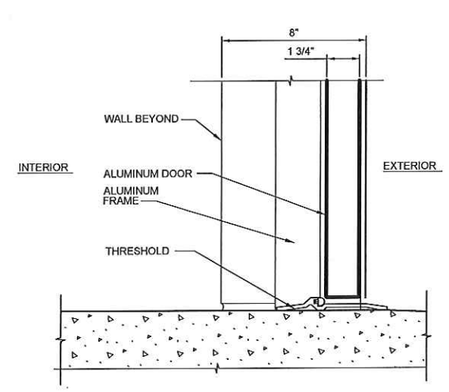
A9002



DOOR JAMB AT CMU WALL

SCALE: 3"=1'-0"

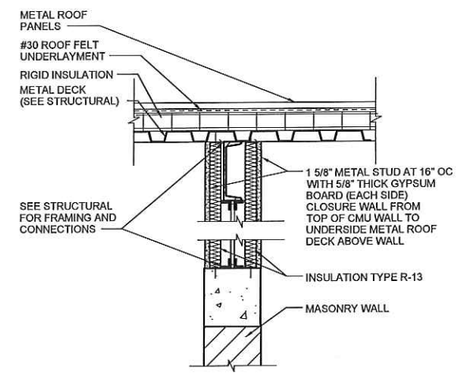
A9003



EXTERIOR THRESHOLD

NO SCALE

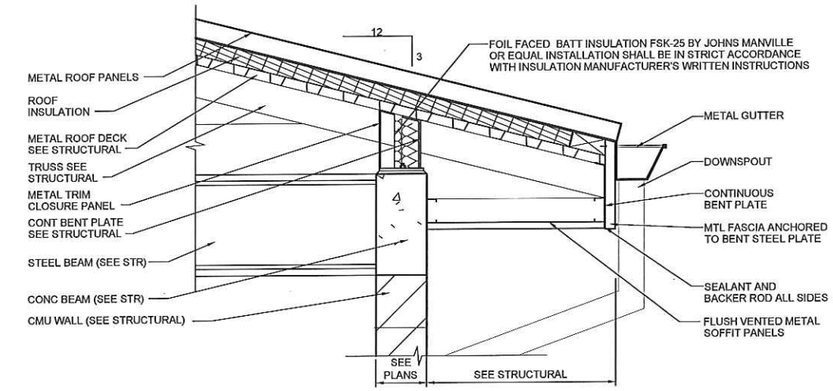
A9004



INTERIOR WALL TO ROOF

NO SCALE

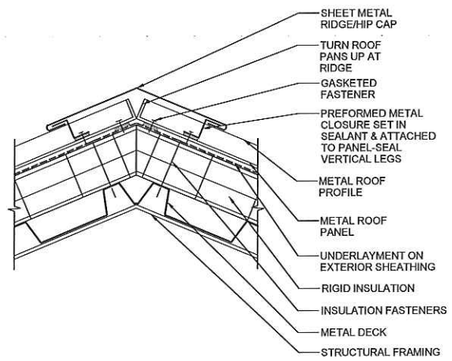
A-9005



ROOF EAVE/SOFFIT DETAIL AT CMU WALL

SCALE: 3"=1'-0"

A9006



ROOF RIDGE DETAIL

SCALE: 3"=1'-0"

A-9007

Shana Wygonik, FIA
Architect
State of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/1/2014

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

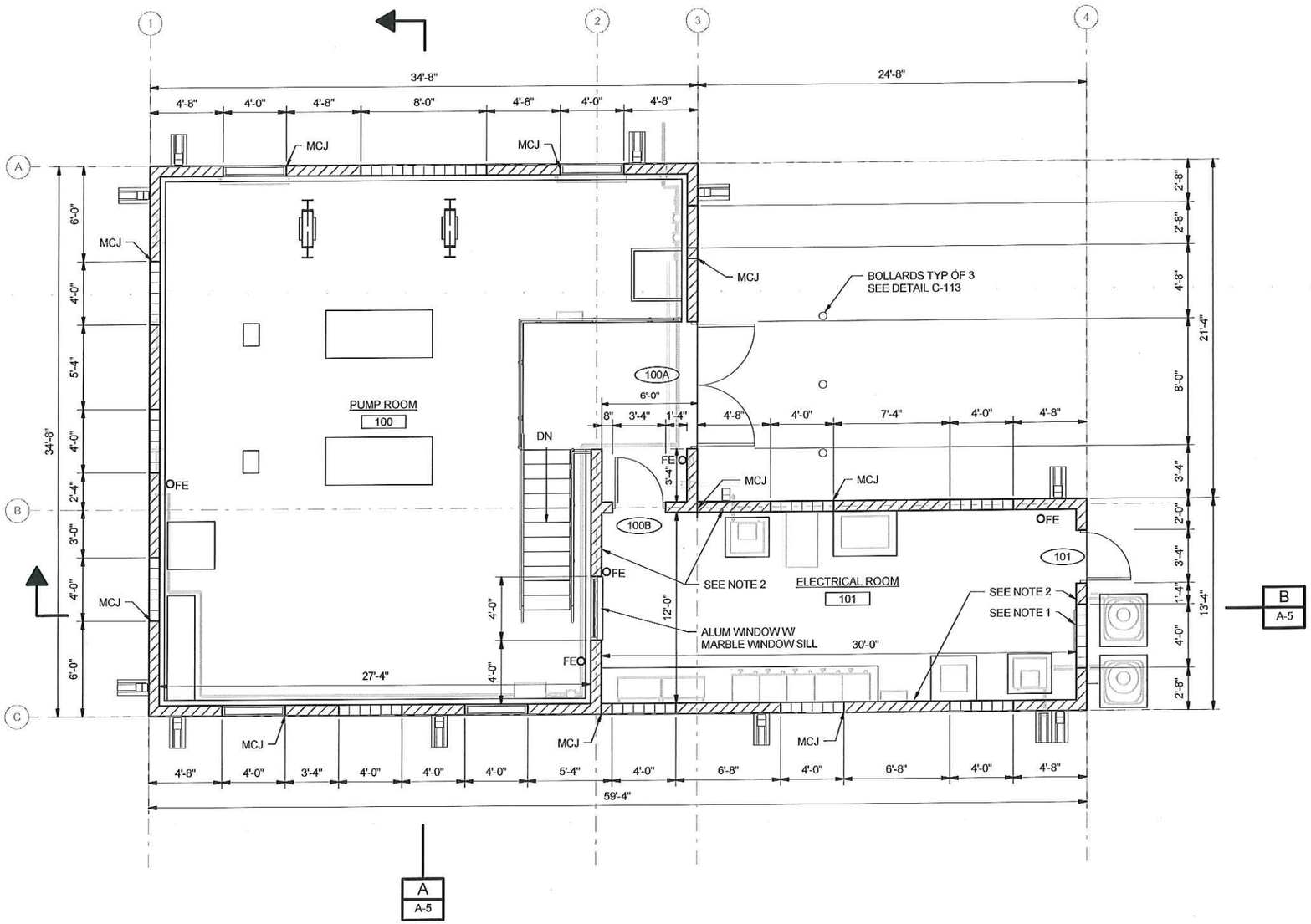
GENERAL ARCHITECTURAL STANDARD DETAILS - II

SHEET GA-3

1011673

GENERAL SHEET NOTES

1. BRONZE DEDICATION PLAQUE MOUNTED AT 5'-6" AFF TO THE BOTTOM OF THE PLAQUE . SEE SPECIFICATION 101400 FOR REQUIREMENTS.
2. FILL OPEN CELLS OF MASONRY WITH FOAMED-IN-PLACE INSULATION FOR ELECTRICAL ROOM WALLS.



DATE : 6/25/2014 1:04:57 AM

USER : S GUPTA

B:\dms60326\TBSD_MA_001.rvt

Shana Wygonik 7/17/14

Shana Wygonik, RA
Architect
State Of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date:

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

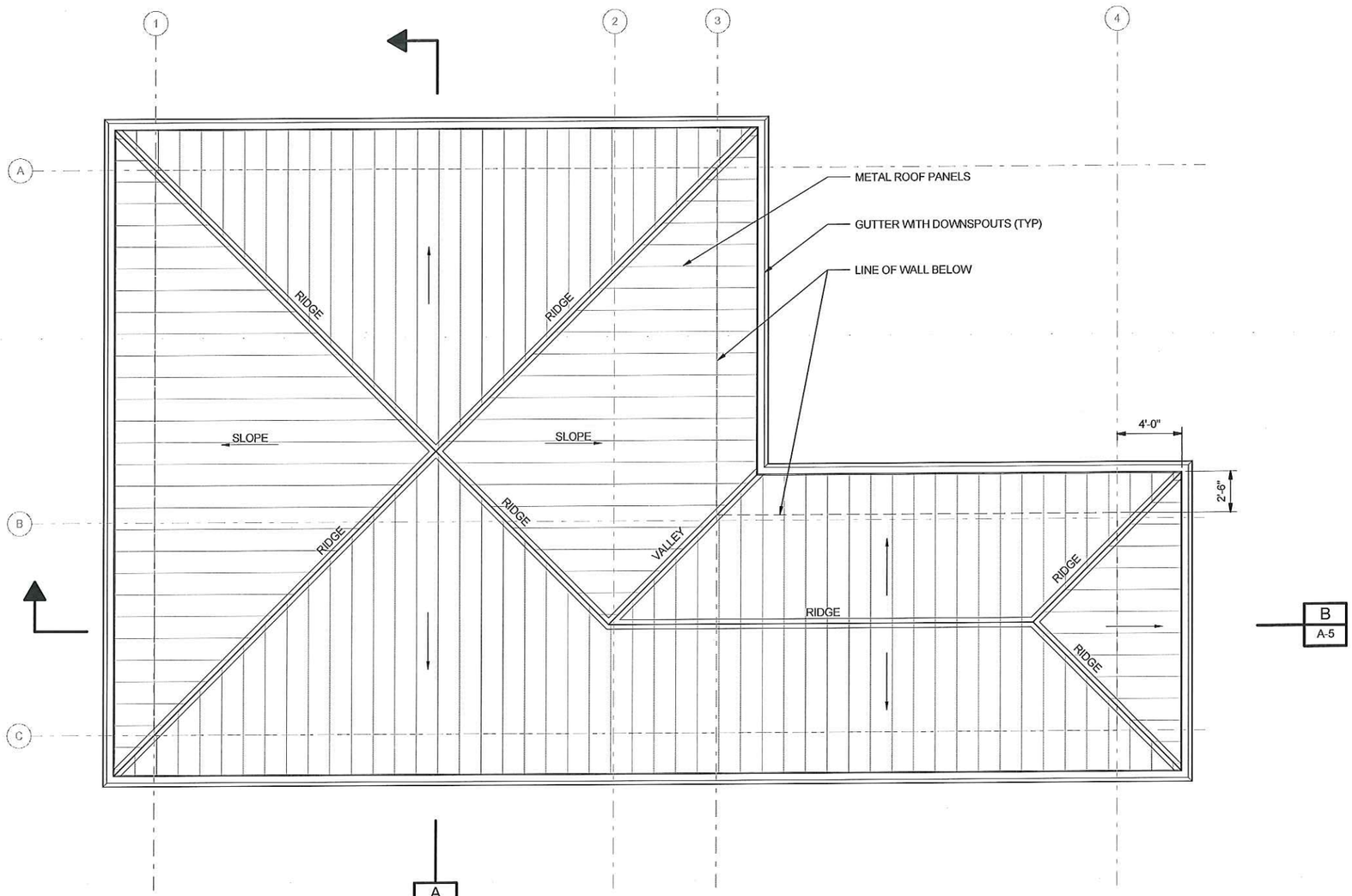
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ARCHITECTURAL
FLOOR PLAN

SHEET
A-1
1011673

NORTH
TRUE



Shana Wygonik, RA
Architect
State Of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/17/14

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

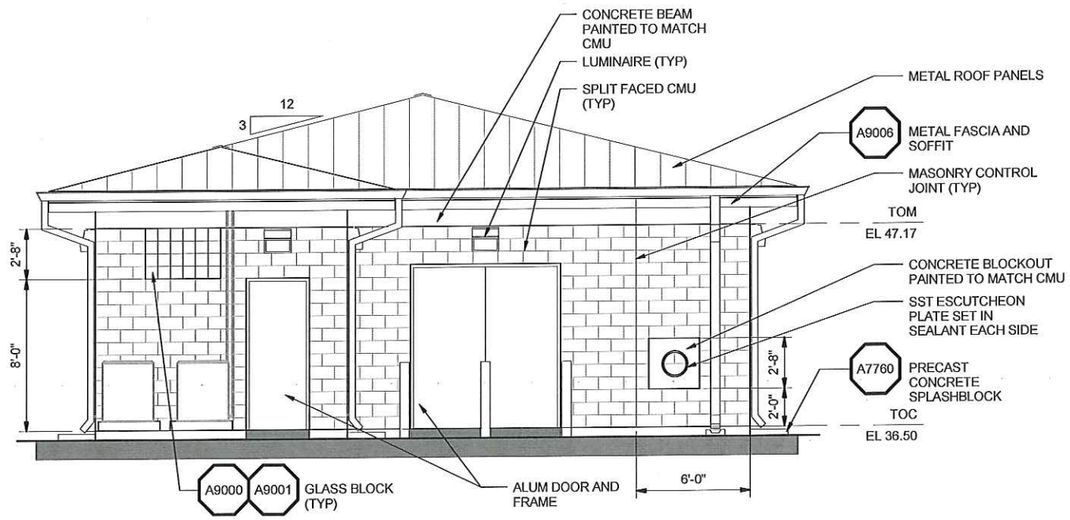
MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

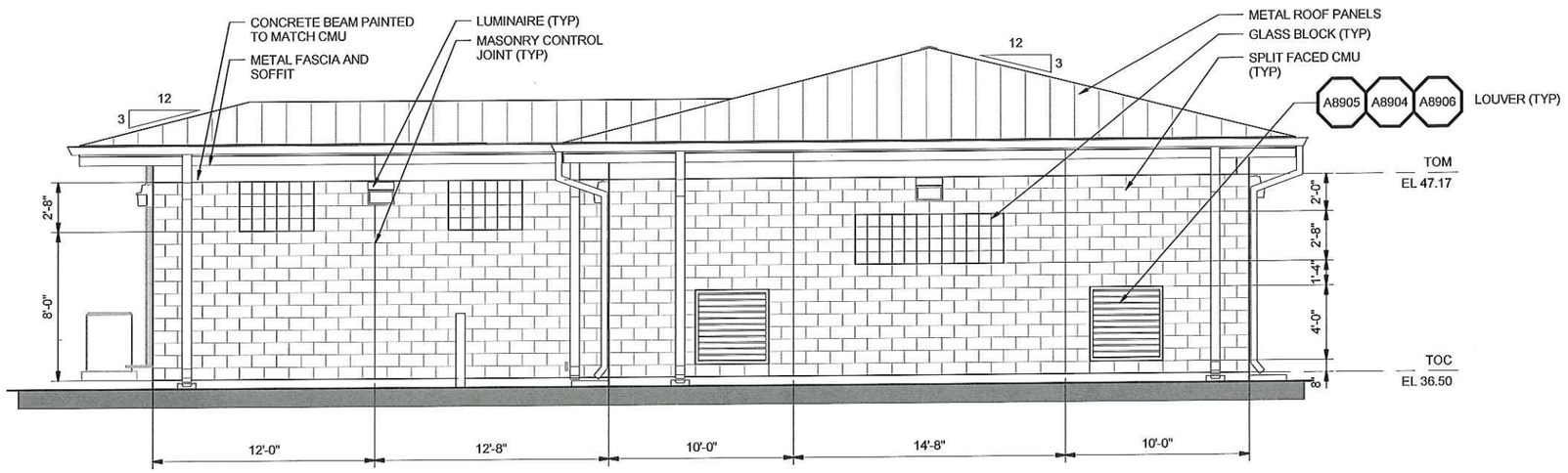
BLUE SINK MFL PUMPING STATION

ARCHITECTURAL
ROOF PLAN

SHEET
A-2
1011673



EAST ELEVATION



NORTH ELEVATION

Shana Wygonik 7/17/14

Shana Wygonik, RA
Architect
State Of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: _____

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

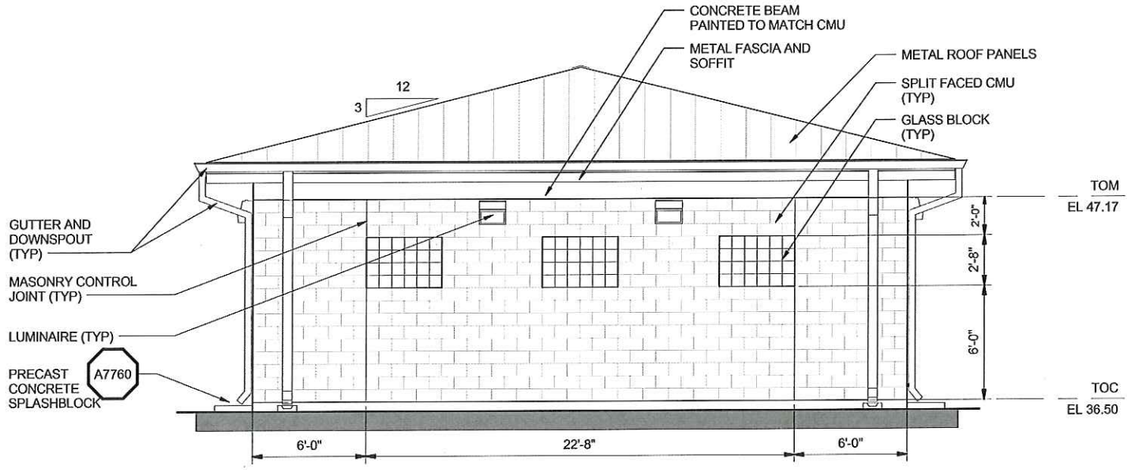
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

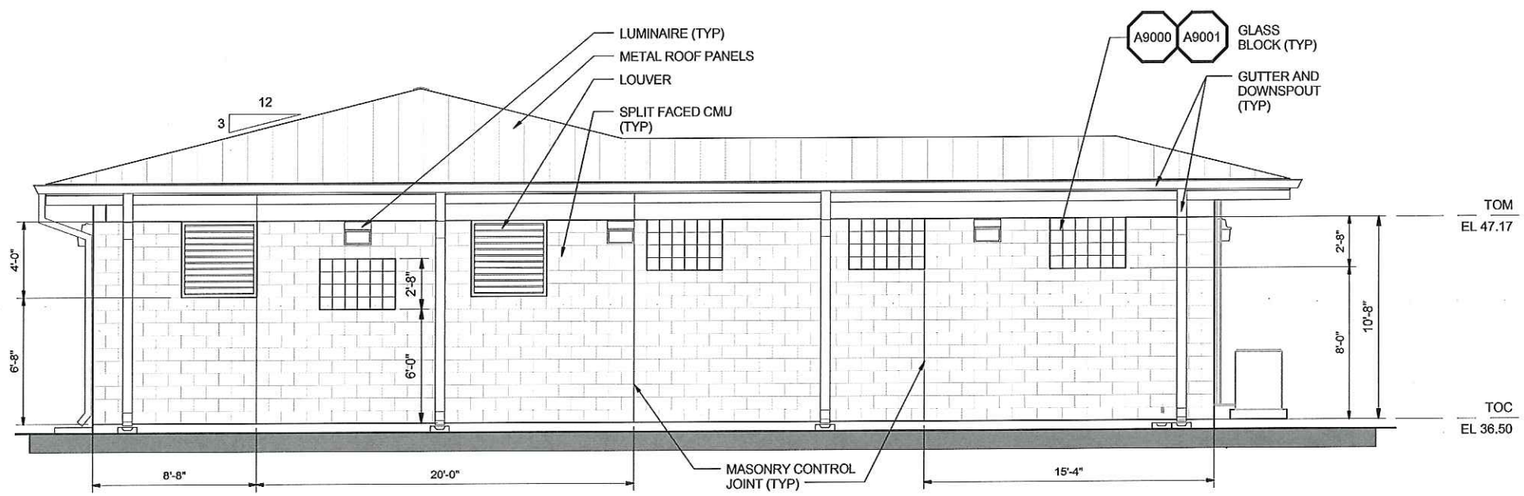
ARCHITECTURAL
EXTERIOR ELEVATIONS - I

SHEET A-3

1011673



WEST ELEVATION



SOUTH ELEVATION

Shana Wygonik 7/17/14

Shana Wygonik, RA
Architect
State Of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date:

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

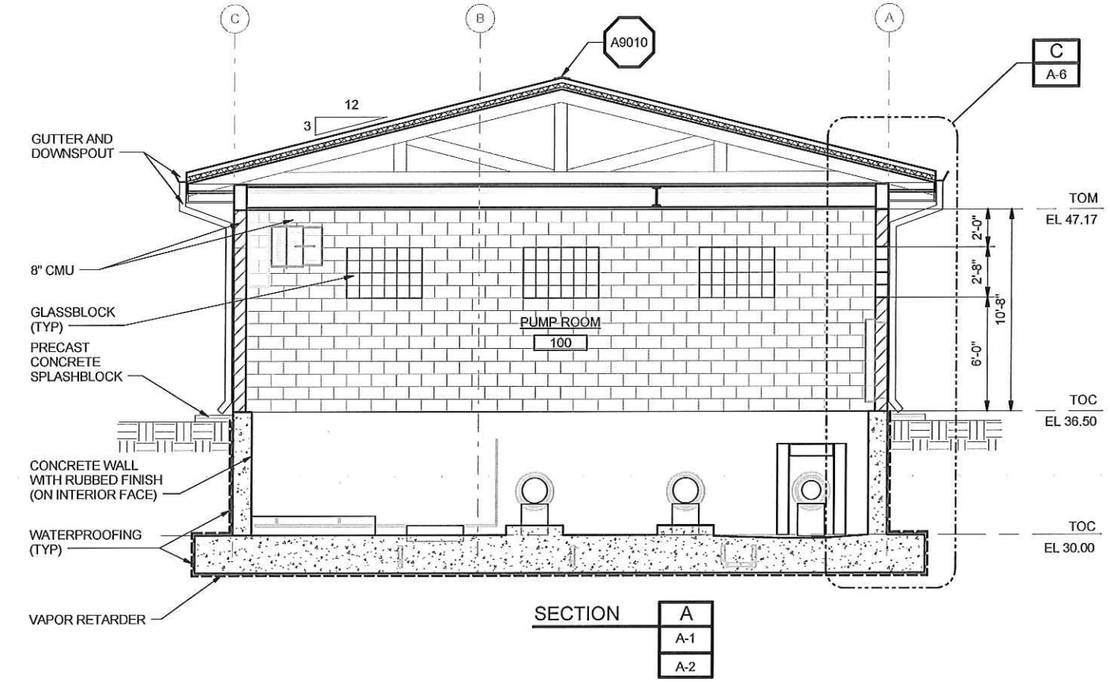
MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

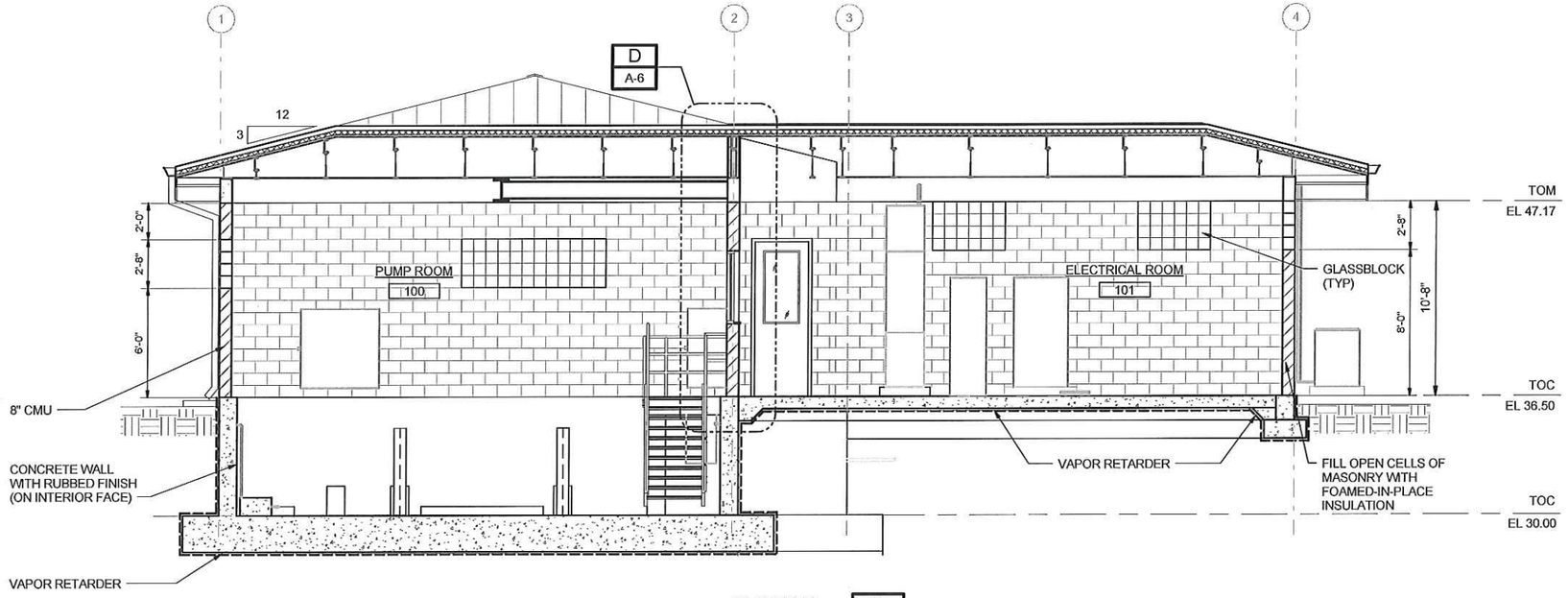
BLUE SINK MFL PUMPING STATION

ARCHITECTURAL
EXTERIOR ELEVATIONS-II

SHEET
A-4
1011673



SECTION A
A-1
A-2



SECTION B
A-1
A-2

Shana Wygonik, RA
Architect
State Of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/17/14

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

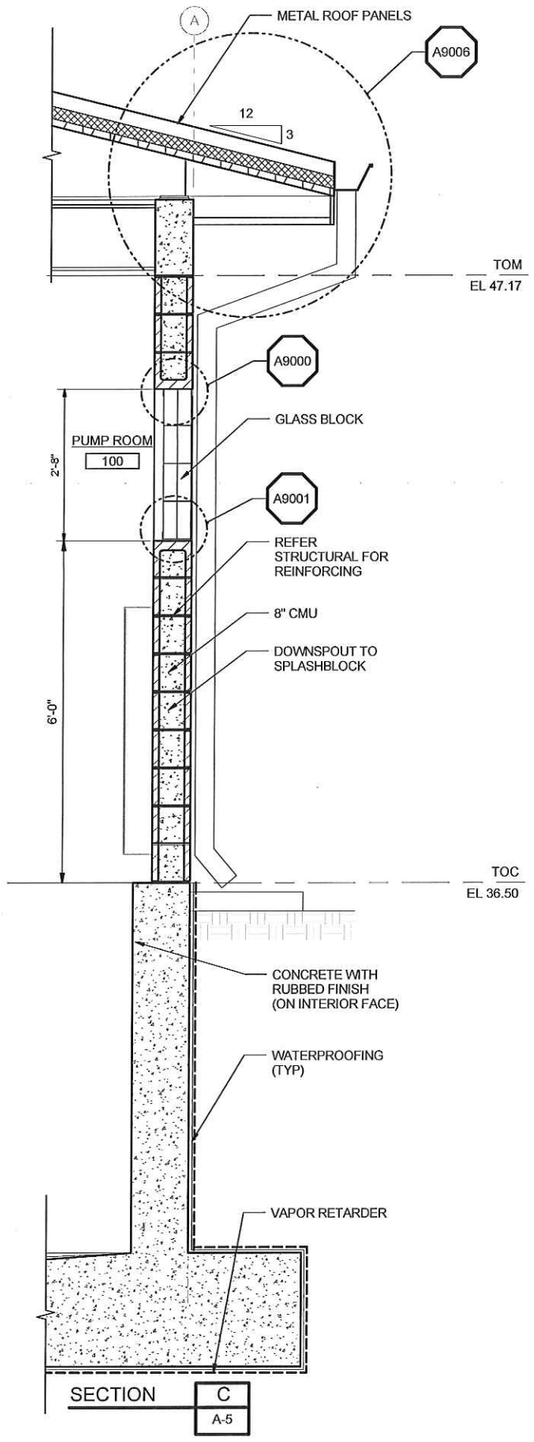
MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

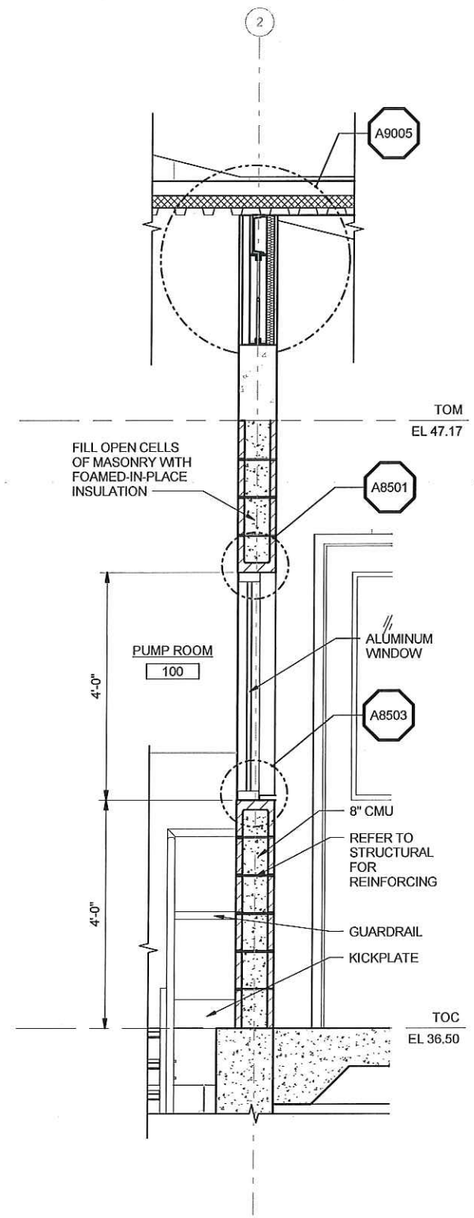
BLUE SINK MFL PUMPING STATION

ARCHITECTURAL
BUILDING SECTIONS

SHEET
A-5
1011673



SECTION C
A-5



SECTION D
A-5

Shana Wygonik, RA
Architect
State Of Florida License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/17/14

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED S WYGONIK
DRAWN S GUPTA
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ARCHITECTURAL
WALL SECTIONS

SHEET
A-6
1011673

Shana Wygonik, RA
Architect
State of Florida - License No AR96070
MWH FL Corp Arch License No AA26001487
Date: 7/7/14

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S WYGONIK
DRAWN S WYGONIK
CHECKED K HOSKINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ARCHITECTURAL RENDERING

SHEET A-7

1011673

GENERAL NOTES

GENERAL

THESE NOTES ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE.

STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE COORDINATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO ENSURE ACCURACY OF PLACEMENT.

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

STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH MECHANICAL, ELECTRICAL, ARCHITECTURAL, CIVIL DRAWINGS AND SHOP DRAWINGS PROVIDED BY MANUFACTURERS OF EQUIPMENT.

STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL, HYDROSTATIC, AND BACKFILL LOADS ON THE COMPLETED STRUCTURES. THE STRUCTURES HAVE NOT BEEN DESIGNED TO RESIST THESE LOADS WHILE ONLY PARTIALLY CONSTRUCTED. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED FROM ALL CONSTRUCTION LOADS BY BRACING AND BALANCING UNTIL ALL STRUCTURAL ELEMENTS ARE IN PLACE, AND ALL CONCRETE HAS REACHED THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH. OVERLOADING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.

UNLESS OTHERWISE SHOWN, ON ALL STRUCTURAL DRAWINGS THE FINISHED GRADE AROUND STRUCTURES IS SHOWN THUS ////////// INDICATING EITHER GROUND SURFACE, TOP OF CONCRETE SLAB, OR AC PAVEMENT. FOR DETAILS OF FINISH SURFACES SEE CIVIL AND ARCHITECTURAL DRAWINGS.

STRUCTURAL STEEL

STEEL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS AS CONTAINED IN THE 13TH EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.

STRUCTURAL WIDE FLANGE SHAPES SHALL BE STEEL MEETING ASTM A-992 SPECIFICATIONS.

OTHER SHAPES, BARS, PLATES AND SHEETS SHALL BE OF STEEL MEETING ASTM A-36 SPECIFICATIONS.

PIPE, PIPE COLUMNS, AND BOLLARDS SHALL BE OF STEEL MEETING ASTM A-53, TYPE E OR S, GRADE B STANDARD WEIGHT, UNO

HSS SHALL BE OF STEEL MEETING ASTM A-500 GRADE B.

STEEL JOISTS, BEAMS, AND GIRDERS SHALL NOT BE RELOCATED WITHOUT APPROVAL BY THE ENGINEER.

ALL WELDING SHALL BE BY THE SHIELDED ARC METHOD AND SHALL CONFORM TO AWS CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. QUALIFICATIONS OF WELDERS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR STANDARD QUALIFICATION PROCEDURE OF THE AWS.

BOLTS SHALL MEET ASTM A325 SPECIFICATIONS.
ANCHORS SHALL MEET ASTM F1554 SPECIFICATION.

CONCRETE (EXCEPT PRECAST CONCRETE)

UNLESS OTHERWISE NOTED OR SPECIFIED, ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF:

STRUCTURAL CONCRETE	4000 PSI
SITEWORK CONCRETE	3000 PSI
LEAN CONCRETE/UNREINFORCED CONCRETE FILL	2000 PSI

REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM A-615, "SPECIFICATIONS FOR DEFORMED AND PLAIN CARBON-STEEL BARS FOR CONCRETE REINFORCEMENT", GRADE 60.

COLUMN SPIRALS SHALL CONFORM TO ASTM A-615, SPECIFICATION FOR DEFORMED AND PLAIN CARBON-STEEL BARS FOR CONCRETE REINFORCEMENT, GRADE 60 OR ASTM A-82 "STEEL WIRE, PLAIN, FOR CONCRETE REINFORCEMENT.

ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS OTHERWISE INDICATED, SHALL BE IN ACCORDANCE WITH ACI-315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

TOLERANCES IN PLACING REINFORCEMENT SHALL BE:
+/- 3/8 INCH FOR MEMBERS WITH D </= 8 INCHES
+/- 1/2 INCH FOR MEMBERS WITH D > 8 INCHES

ALL CONSTRUCTION JOINTS, SHALL BE ROUGH AND THOROUGHLY CLEANED FOR BOND.

LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER. ALL CONSTRUCTION JOINTS LOCATED ON THE DRAWINGS OR REQUIRED FOR CONSTRUCTION, BUT NOT SHOWN ON THE DRAWINGS, SHALL HAVE A 6" FLATSTRIP WATERSTOP, IF IN CONTACT WITH WATER. IN ADDITION, JOINTS IN ALL SLABS COVERED WITH WATER, SHALL HAVE BOTH A 6" FLATSTRIP WATERSTOP AND A SEALANT GROOVE.

DOWELS, PIPE, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.

UNLESS OTHERWISE INDICATED, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:

A) IN SLABS #5 RISER BARS AT 36 INCHES OC MAXIMUM TO SUPPORT TOP REINFORCING BARS.

B) IN WALLS WITH 2 CURTAINS #3 U OR Z SHAPE SPACERS AT 6 FEET OC EACH WAY.

VERTICAL REINFORCEMENT FOR CONCRETE OR MASONRY SHALL BE SPLICED WITH DOWEL BARS OF THE SAME SIZE AND SPACING FROM THE FOUNDATION USING A STANDARD SPLICE LENGTH UNLESS INDICATED OTHERWISE.

SEALANT SHALL BE PLACED AT THE TOP OF ALL JOINTS RECEIVING EXPANSION JOINT FILLER. SEALANT DEPTH SHALL BE THE JOINT FILL THICKNESS OR 1/2", WHICHEVER IS LESS.

ALL GROUT SHALL BE NON-SHRINK GROUT, UNLESS INDICATED OTHERWISE.

UNLESS OTHERWISE SHOWN CONCRETE WALLS AND SLABS SHALL BE REINFORCED AS FOLLOWS: #4@12" EW , CENTER OF 6" SECTIONS; #5@12" EW, CENTER OF 8" SECTIONS; #4 @ 12" EW EF OF 10" SECTIONS; #5@12" EW EF OF 12" AND THICKER SECTIONS.

METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.

DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOVED INTO FRESHLY PLACED CONCRETE.

UNLESS OTHERWISE INDICATED ON THE DRAWINGS, LAPS OF REINFORCEMENT SHALL BE AS SHOWN ON DETAIL S-143.

REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE, A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.

ALL ITEMS EMBEDDED IN CONCRETE SHALL BE SPACED ON CENTER AT LEAST 4 TIMES THEIR OUTSIDE DIMENSION. THE OUTSIDE DIMENSION SHALL NOT EXCEED ONE THIRD OF THE MEMBER THICKNESS

ELECTRICAL CONDUIT EMBEDDED IN CONCRETE SHALL NOT BE SPACED CLOSER THAN 3 OUTSIDE DIAMETERS ON CENTER.

UNLESS OTHERWISE SHOWN ON THE DRAWINGS CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:

FOR CONCRETE PLACED AGAINST EARTH SEE CONSTRUCTION JOINT DETAILS FOR THIN SLABS-ON-GRADE. BOTTOM COVER MAY BE LESS THAN 3" IF SO INDICATED	3"
FOR SURFACES IN CONTACT WITH WATER OR WEATHER AND FORMED SURFACES IN CONTACT WITH EARTH	2"
FOR CONCRETE NOT EXPOSED TO WEATHER, OR IN CONTACT WITH WATER OR EARTH	1 1/2"
TOP BARS FOR FOUNDATION SLABS SUPPORTING WATERSTOPPED JOINTS	3"

UNLESS OTHERWISE NOTED, WALLS AND SLABS SHOWN WITH A SINGLE LAYER OF REINFORCEMENT SHALL HAVE THAT REINFORCEMENT CENTERED

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

ALL ITEMS EMBEDDED IN CONCRETE SHALL BE SPACED ON CENTER AT LEAST 4 TIMES THEIR OUTSIDE DIMENSION. THE OUTSIDE DIMENSION SHALL NOT EXCEED ONE THIRD OF THE MEMBER THICKNESS.

STRUCTURAL STANDARD DETAILS

DETAILS ON GS SHEETS ARE PART OF MWH'S STRUCTURAL STANDARD DETAILS.

THESE DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE INDICATED ON THE DRAWINGS.

DETAILS NOT PERTAINING TO THE PROJECT ARE MARKED THUS ▨

MASONRY

CONCRETE BLOCK MASONRY SHALL BE MEDIUM WEIGHT, HOLLOW UNITS CONFORMING TO ASTM C 90. SIZE OF UNITS, COLOR AND TEXTURE SHALL BE PER THE SPECIFICATIONS.

GROUT ALL CELLS CONTAINING REINFORCING OF CONCRETE BLOCK MASONRY UNLESS OTHERWISE NOTED ON DRAWINGS.

UNLESS OTHERWISE INDICATED, LAPS OF REINFORCEMENT IN CMU SHALL BE AS SHOWN ON DETAIL S-415.

MORTAR SHALL BE IN ACCORDANCE WITH ASTM C 270, TYPE S, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 1800 PSI.

GROUT SHALL BE IN ACCORDANCE WITH ASTM C 476 , AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.

SPECIAL INSPECTION SHALL BE PROVIDED PER THE SPECIFICATIONS FOR ALL MASONRY WORK

THE COMBINED MASONRY ASSEMBLAGE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE A MINIMUM OF f'm = 1500 PSI.

REINFORCEMENT SHALL BE TIED OR OTHERWISE SECURED IN POSITION PRIOR TO GROUTING.

ALL HORIZONTAL AND VERTICAL REINFORCEMENT SHALL BE CONTINUOUS OVER THE FULL EXTENT OF THE WALL WITH STANDARD SPLICES LOCATED AS NEEDED. WHERE IT IS NECESSARY TO INTERRUPT AN INDIVIDUAL BAR, AN EQUAL SIZED BAR SHALL BE LOCATED AS CLOSE AS POSSIBLE AND SHALL EXTEND A MINIMUM OF ONE SPLICE LENGTH BEYOND EACH SIDE OF THE INTERRUPTION.

LIGHT GAUGE METAL TRUSSES

THE CONTRACTOR SHALL SUPPLY REQUIRED EQUIPMENT WEIGHTS TO THE TRUSS MANUFACTURER.

HEADERS SHALL BE DESIGNED AND DETAILED BY TRUSS MANUFACTURER.

BRIDGING SHALL BE PROVIDED TO RESIST WIND UPLIFT INDICATED ON THE DRAWINGS.

TRUSSES HAVE NOT BEEN DESIGNED FOR CONCENTRATED EQUIPMENT LOADS. THE TRUSS MANUFACTURER SHALL COORDINATE WITH THE CONTRACTOR FOR REQUIRED EQUIPMENT LOADS. THE TRUSS MANUFACTURER IS RESPONSIBLE FOR VERIFYING THE TRUSSES ARE ADEQUATE FOR THE CONCENTRATED EQUIPMENT LOADS

ALUMINUM

ALUMINUM CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALUMINUM ASSOCIATION ASM 35 - SPECIFICATION FOR ALUMINUM SHEET METAL WORK IN BUILDING CONSTRUCTION. ALUMINUM SURFACES SHALL BE PREVENTED FROM COMING IN DIRECT CONTACT WITH CONCRETE OR WITH METALS NOT COMPATIBLE WITH ALUMINUM, USING METHODS DESCRIBED IN THE SPECIFICATIONS.

SPECIAL INSPECTION AND STRUCTURAL OBSERVATIONS:

SPECIAL INSPECTION SHALL BE PERFORMED PER THE REQUIREMENTS OF THE FLORIDA BUILDING CODE. SEE SPECIFICATION SECTION 01540 FOR SPECIAL INSPECTION REQUIREMENTS AND STRUCTURAL OBSERVATION.

METAL DECK AND ROOFS

THE CONTRACTOR SHALL COORDINATE THE LOCATION AND SIZES OF ROOF OPENINGS WITH THE MECHANICAL, HVAC, ELECTRICAL AND ARCHITECTURAL DRAWINGS.
UNLESS INDICATED OTHERWISE, SEE THE SPECIFICATIONS FOR THE WELDING REQUIREMENTS FOR METAL DECKING.

THE GALVANIZED STEEL ROOF DECK SHALL BE 1-1/2", 18 GAGE, TYPE B DECKING AND SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES PRIOR TO GALVANIZING:

FY=33KSI
MOMENT OF INERTIA (+) = 0.302 IN^4
SECTION MODULUS (+) = 0.322 IN^
SECTION MODULUS (-) = 0.335 IN^3

DESIGN CRITERIA

DESIGN IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE, EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.

GEOTECHNICAL INFORMATION:

FOR COMPLETE GEOTECHNICAL INFORMATION, SEE THE PROJECT GEOTECHNICAL REPORT PREPARED BY MC. SQUARED, INC. , DATED FEBRUARY 2013.

REFER TO EARTHWORK SPECIFICATIONS, DRAWING S-1, AND DRAWING S-2, FOR ALL EARTHWORK REQUIREMENTS AND SUBGRADE PREPARATION.

LATERAL SOIL PRESSURES

EARTH PRESSURE STATE	EARTH PRESSURE COEFFICIENT	EQUIVALENT FLUID DENSITY (PCF)		
		ABOVE WATER TABLE	BELOW WATER TABLE (NO HYDROSTATIC PRESSURE)	BELOW WATER TABLE (WITH HYDROSTATIC PRESSURE)
AT-REST (SOIL BACKFILL)	0.5	57	27	88
ACTIVE	0.3	35	16	78
PASSIVE	3.0	345	150	220

SOIL DESIGN PARAMETERS:

NET ALLOWABLE BEARING PRESSURE (PSF): 2500
MODULUS OF SUBGRADE REACTION (PCI) 150
DESIGN GROUNDWATER EL AT GRADE

STABILITY FACTORS OF SAFETY
SLIDING 1.5
SLIDING-SEISMIC 1.1
OVERTURNING 1.5
OVERTURNING-SEISMIC 1.25
UPLIFT (DL ONLY) 1.15

FLOOR LIVE LOADS:

WALKWAYS, PLATFORMS, STAIR FRAMING (PSF): 100
TOP SLABS (PSF): 100
STORAGE AREAS AND ELECTRICAL, PUMP ROOM (PSF): 250

SNOW LOADS:

EXEMPTED PER FBC

ROOF LIVE LOADS:

ROOF LIVE LOAD (PSF): 20
ROOF BOTTOM CHORD LIVE LOAD(PSF): 10

WIND LOADS:

ULTIMATE DESIGN WIND SPEED (3 SEC-MPH), Vult: 160
NOMINAL DESIGN WIND SPEED, Vasd: 124
RISK CATEGORY III
EXPOSURE C
ENCLOSURE CLASSIFICATION ENCLOSED

INTERNAL PRESSURE COEFFICIENT +/-0.18

COMPONENTS AND CLADDING:

ROOF (PSF)
ZONE 1 32.96/-52.34
ZONE 2 32.96/-91.11
ZONE 3 32.96/-134.72

WALL (PSF)
ZONE 4 57.19/-62.03
ZONE 5 57.19/-76.57

ROOF OVERHANG (PSF)
ZONE 2 -115.34
ZONE 3 -188.04

FLOOD LOADS:

ZONE AE FLOOD ELEVATION: 31.70
FINISHED FLOOR ELEVATION: 36.5

BUILDING IS NOT IN ZONE AE.
ZONE AE IS ADJACENT TO BUILDING AND INCLUDED FOR INFORMATION ONLY.

SPECIAL LOADS:

MONORAIL CAPACITY (TONS): 2.0
IMPACT FACTOR: 10%

CRAIG P. KALTENBACH LICENSE No 63619 P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER

Craig P. Kaltenbach, PE
Civil Engineer
State of Florida - License No 63619
Date: 07/15/14

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

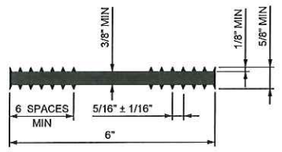
BLUE SINK MFL PUMPING STATION

GENERAL STRUCTURAL NOTES AND DESIGN CRITERIA

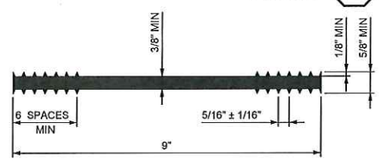
SHEET GS-1

1011673

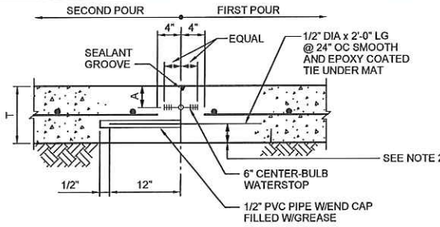
File: C:\pw\work\dms60359\TBSD_GS01.dwg



6" FLATSTRIP WATERSTOP — REV 032408 — S-105



9" FLATSTRIP WATERSTOP — REV 032408 — S-106



SINGLE MAT REINF - SLEEVE - TYPE JOINT
(TYP CONSTRUCTION JOINT UNLESS OTHERWISE NOTED)

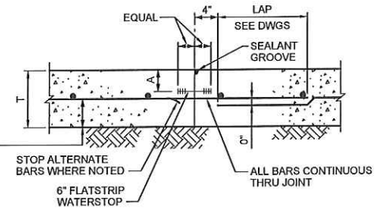
WITH WATERSTOP AND SEALANT GROOVE — S-110

NO WATERSTOP OR SEALANT GROOVE — S-111

T	A
6"	2"
7"	2 1/2"
8"	2 1/2"

NOTES:

1. WATERSTOPS AND SEALANT GROOVES TO BE PROVIDED IN ALL WATER RETAINING SLABS, SEE DRAWINGS, FOR OTHER LOCATIONS WHERE THEY MAY BE REQUIRED.

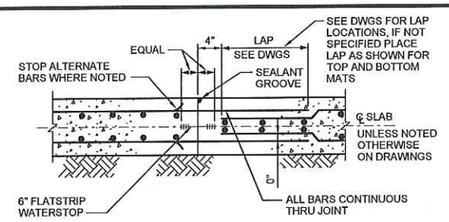


SINGLE MAT REINF - CONTINUOUS THRU JOINT
(ONLY WHEN SPECIFIED ON DRAWINGS)

WITH WATERSTOP AND SEALANT GROOVE — S-112

NO WATERSTOP OR SEALANT GROOVE — S-113

2. DIMENSIONS INDICATED ON DETAIL CONTROL MINIMUM COVER. FOR THIN SLABS, THE BOTTOM COVER MAY BE LESS THAN 3".
3. STAGGER SPLICES UNLESS NOTED OTHERWISE.

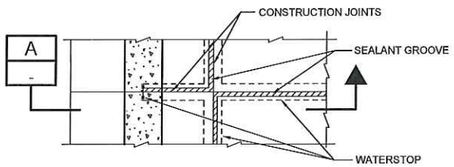


DOUBLE MAT REINF

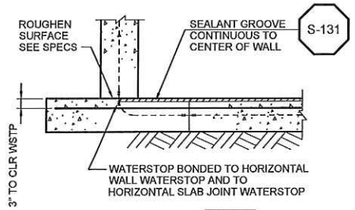
WITH WATERSTOP AND SEALANT GROOVE — S-114

NO WATERSTOP OR SEALANT GROOVE — S-115

SLAB-ON-GRADE CONSTRUCTION JOINTS — REV 032608



PLAN

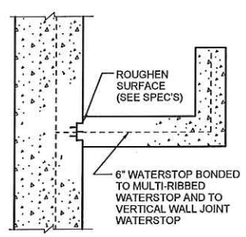


NOTES:

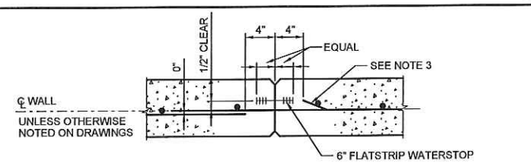
1. SEALANT GROOVE SHALL BE CONTINUED UNDER WALL & SEALANT SHALL BOND WITH WALL WATERSTOP IN ALL CASES WHERE SUCH WATERSTOP OCCURS.
2. SEALANT UNDER WALL SHALL BE IN PLACE PRIOR TO PLACEMENT OF CONCRETE FOR WALL.
3. CONSTRUCTION JOINTS PASSING THROUGH VARIOUS MEMBERS OF A WATER RETAINING STRUCTURE SHALL BE SEALED WITH WATERSTOPS BONDED TOGETHER, SO AS TO PROVIDE A CONTINUOUS WATERTIGHT JOINT.

SECTION A -

CONSTRUCTION JOINT WALL TO SLAB — REV 032708 — S-118



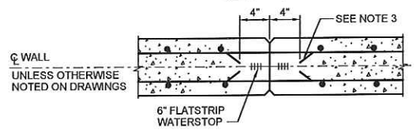
LAUNDER JOINT



SINGLE CURTAIN REINF

WITH WATERSTOP — S-121

NO WATERSTOP — S-122



DOUBLE CURTAIN REINF

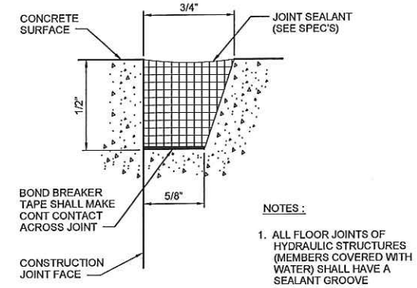
WITH WATERSTOP — S-123

NO WATERSTOP — S-124

NOTES:

1. WHERE WATERSTOP IS REQUIRED IN SINGLE CURTAIN WALL REINFORCEMENT, PLACE WATERSTOP ON WATER SIDE OF WALL.
2. UNLESS OTHERWISE NOTED 3/4" CHAMFERS SHALL BE OMITTED IN SURFACES TO RECEIVE ARCHITECTURAL TREATMENT.
3. UNLESS SPECIFICALLY NOTED OTHERWISE #5 AND LARGER BARS SHALL BE CONTINUOUS THRU JOINT. #4 AND SMALLER BARS SHALL STOP ALTERNATE BARS AT JOINT.
4. STAGGER SPLICES UNLESS NOTED OTHERWISE.

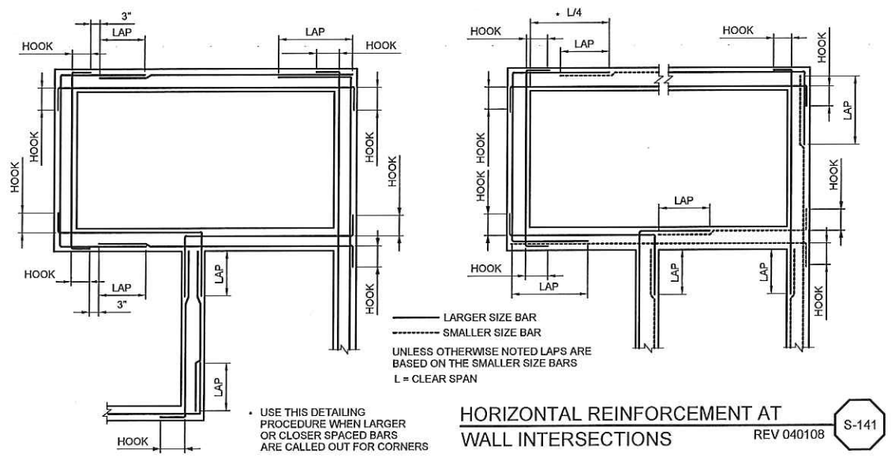
VERTICAL WALL CONSTRUCTION JOINT — REV 032708 — S-123 / S-124



NOTES :

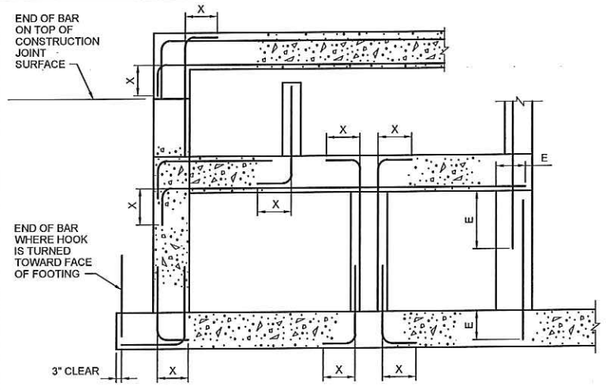
1. ALL FLOOR JOINTS OF HYDRAULIC STRUCTURES (MEMBERS COVERED WITH WATER) SHALL HAVE A SEALANT GROOVE
2. SANDBLASTING REQUIRED PRIOR TO APPLICATION OF PRIMER

SEALANT GROOVE — REV 032808 — S-131



* USE THIS DETAILING PROCEDURE WHEN LARGER OR CLOSER SPACED BARS ARE CALLED OUT FOR CORNERS

HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS — REV 040108 — S-141



SECTION

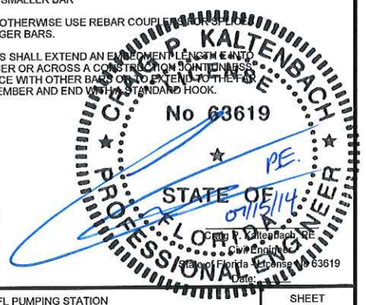
LENGTH (*)			
BAR SIZE	HOOK X	LAP	EMBEDMENT E
#3	6"	16" (21")	12" (16")
#4	8"	16" (21")	12" (16")
#5	10"	20" (26")	15" (20")
#6	12"	28" (37")	22" (28")
#7	14"	48" (62")	37" (48")
#8	16"	62" (81")	48" (62")
#9	19"	79" (102")	61" (79")
#10	22"	100" (130")	77" (100")
#11	24"	123" (160")	95" (123")

* USE LENGTH IN PARENTHESIS FOR WALL HORIZONTAL REBARS AND SLAB BARS WITH 12" OR MORE OF FRESH CONCRETE UNDERNEATH

NOTES:

1. USE LAP LENGTHS AS DETERMINED FROM THESE TABLES UNLESS SHOWN OTHERWISE.
2. THE TABLES SHOWN ARE FOR f'c=4000psi, fy=60,000psi, 1.5" MIN CONCRETE COVER AND 3" MIN BAR SPACING.
3. MULTIPLY THE LAP AND E SHOWN IN THESE TABLES BY 1.5 FOR EPOXY COATED REINFORCING.
4. WHEN BARS OF DIFFERENT SIZES ARE LAP SPLICED, LAP LENGTH SHALL BE THE LARGER OF:
   EMBEDMENT LENGTH OF LARGER BAR
   LAP LENGTH OF SMALLER BAR
5. UNLESS NOTED OTHERWISE USE REBAR COUPLERS FOR SPLICES OF #11 AND LARGER BARS.
6. ALL DOWEL BARS SHALL EXTEND AN EMBEDMENT LENGTH E INTO ANOTHER MEMBER OR ACROSS A CONSTRUCTION JOINT UNLESS SHOWN TO SPLICE WITH OTHER BARS OR TO EXTEND TO THE FAR FACE OF THE MEMBER AND END WITH A STANDARD HOOK.

STANDARD 90° BAR HOOKS, EMBEDMENT LENGTHS AND LAP LENGTHS — REV 040108 — S-143



Philip R. Kaltenbach, PE
Civil Engineer
Florida License # 63619

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

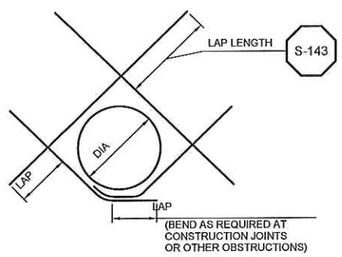
BLUE SINK MFL PUMPING STATION

GENERAL STRUCTURAL STANDARD DETAILS - I

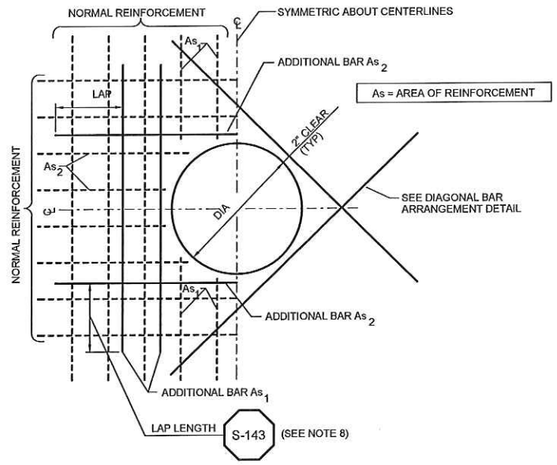
SHEET GS-2

1011673

File: C:\pwworkdir\dms50359\TBSD_GS02.dwg



DIAGONAL BAR ARRANGEMENT

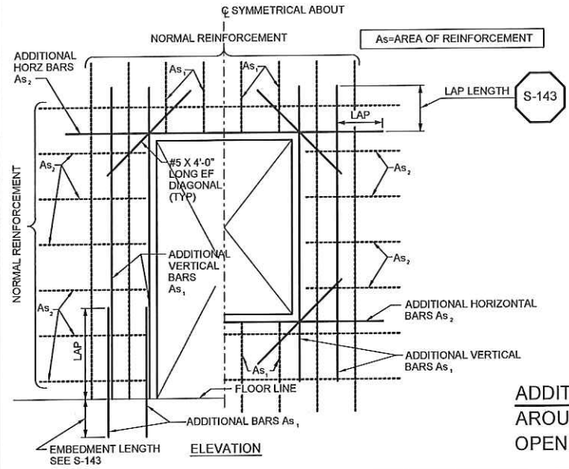


NOTES:

1. THIS DETAIL TO BE USED AT ALL CIRCULAR OPENINGS EXCEPT WHEN OTHER DETAILING IS INDICATED ON THE DRAWINGS.
2. CUT NORMAL REINFORCEMENT 2" CLEAR OF OPENING.
3. CUT NORMAL REINFORCEMENT AT OPENINGS:
   A. As_1 AND As_2 = 1/2 AREA OF TOTAL CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.
4. DIAGONAL AND ADDITIONAL BARS AS $_1$ AND AS $_2$ TO BE PLACED.
   A. AT CENTERLINE OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
   B. AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
5. UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT.
6. INCREASE SIZE OF ADDITIONAL BARS AS NEEDED TO FIT WITHIN A DISTANCE OF 2X WALL/ SLAB THICKNESS FROM OPENING, PROVIDE 2" MIN CLEAR BETWEEN BARS.
7. WHERE A SLAB OR INTERSECTING WALL CONNECTS WITHIN ONE WALL THICKNESS OF THE OPENING, ADDITIONAL BARS ON THAT SIDE OF THE OPENING MAY BE OMITTED.
8. WHEN THE LAP LENGTH OF THE ADDITIONAL BARS CANNOT BE ACHIEVED DUE TO AN ADJACENT WALL OR SLAB, ADDITIONAL CORNER BARS OR SLAB DOWELS, REPECTIVELY, MATCHING THE CUT BARS, ARE TO BE INCLUDED IN THE ADJACENT WALL OR SLAB TO LAP WITH THE ADDITIONAL BARS.

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS

REV 080513 — S-144



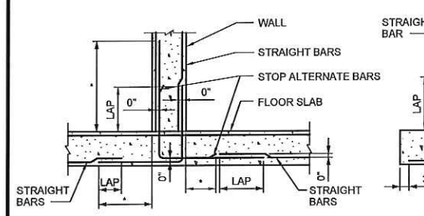
ELEVATION

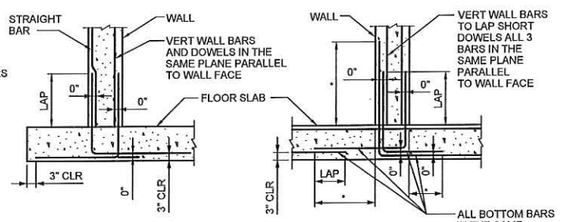
NOTES:

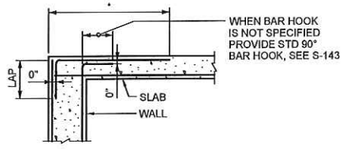
1. CUT NORMAL REINFORCEMENT AT OPENING:
   As_1 AND As_2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.
2. ADDITIONAL BARS As $_1$ AND As $_2$ TO BE PLACED:
   A) AT CENTERLINE OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
   B) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
3. INCREASE SIZE OF ADDITIONAL BARS AS NEEDED TO FIT WITHIN A DISTANCE OF 2 X WALL / SLAB THICKNESS FROM OPENING. PROVIDE 2" MIN CLEAR BETWEEN BARS.
4. THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS.
5. WHERE A SLAB OR INTERSECTING WALL CONNECTS WITHIN ONE WALL THICKNESS OF THE OPENINGS, ADDITIONAL BARS ON THAT SIDE MAY BE OMITTED.
6. THIS DETAIL APPLIES TO BELOW GRADE OPENINGS AND WHEN SPECIFICALLY REFERENCED. REFER TO DETAIL S-147 FOR ABOVE GRADE OPENINGS.

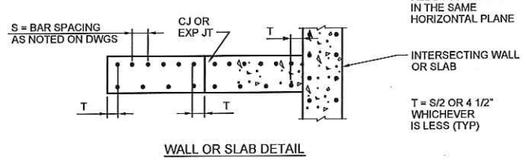
ADDITIONAL REINFORCEMENT AROUND RECTANGULAR OPENING

REV 040308 — S-148







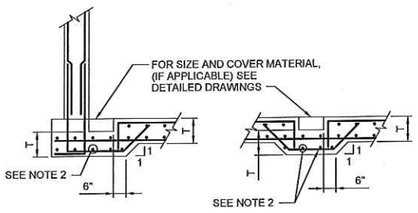


WALL OR SLAB DETAIL

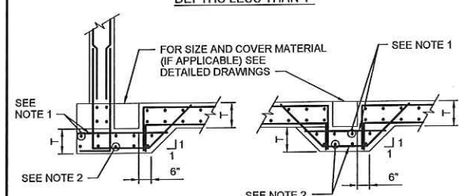
* SEE DRAWINGS

STANDARD FOR REINFORCING BAR DETAILING

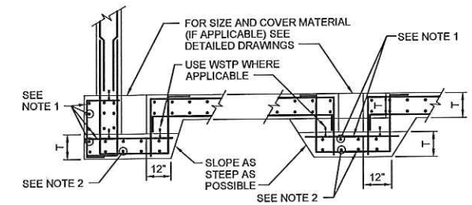
REV 051508 — S-149



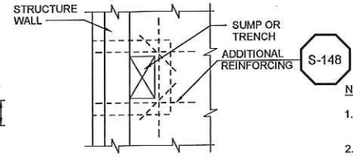
DEPTHS LESS THAN T



DEPTHS GREATER THAN T



FOR DEPTHS BETWEEN T AND 2T

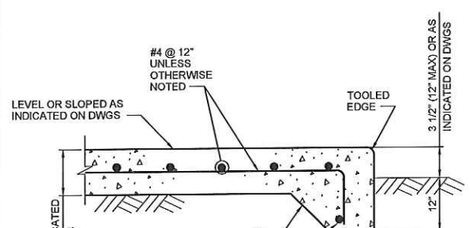


NOTES:

1. BAR SIZE SHALL MATCH SLAB TOP BAR SIZE
2. BAR SIZE SHALL MATCH SLAB BOTTOM BAR SIZE

REINFORCING AT SUMPS AND TRENCHES

REV 060908 — S-177

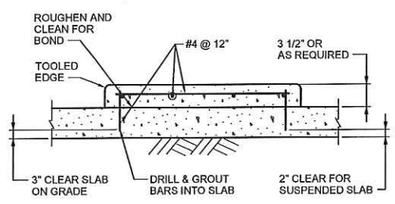


NOTE:

USE 2 MATS OF #5 @ 12" EW EF FOR SLABS 10" AND THICKER

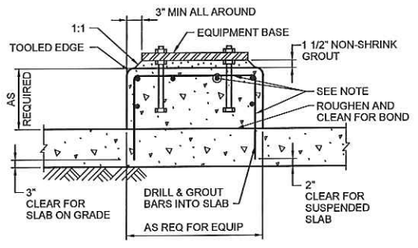
SLAB-ON-GRADE

S-190



HOUSEKEEPING PAD

REV 051408 — S-191

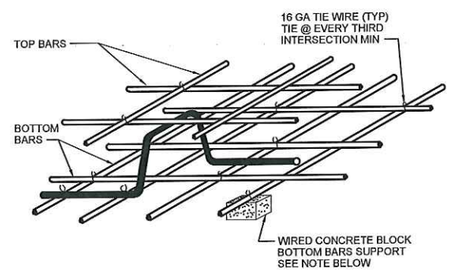


NOTE:

#5@12" OR AS REQUIRED TO DEVELOP ANCHOR BOLTS

EQUIPMENT BASE

S-192

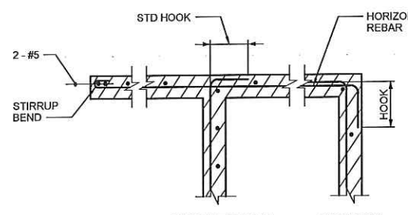


NOTE:

METAL BAR SUPPORTS, IF USED IN SLABS NOT ON GROUND, SHALL NOT MAKE CONTACT WITH FORMS

REINFORCEMENT SUPPORT

REV 061208 — S-204

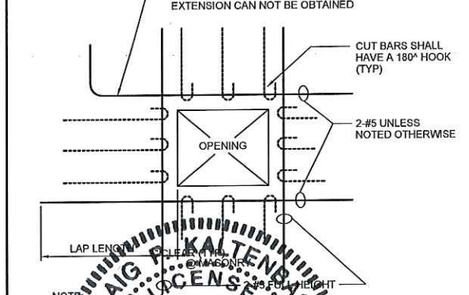


NOTES:

1. DEEP CUT BOND BEAM BLOCKS SHALL BE USED WHERE HORIZONTAL REINFORCING STEEL IS EMBEDDED, AND ABOVE ALL OPENINGS.
2. H-BLOCK BOND BEAMS MAY BE USED AT LOCATIONS OTHER THAN OPENINGS.
3. HOOKS SHALL BE TAKEN TO FAR FACE.

8" & 10" BLOCK WALL SECTIONS

REV 052208 — S-401



NOTE:

REINFORCING SHOWN IS IN ADDITION TO NORMAL REINFORCING AND SHALL BE PLACED WITH EACH LAYER OF BARS PROVIDED.

REINFORCEMENT AT MASONRY WALL OPENINGS

REV 052308 — S-410

BLUE SINK MFL FLUSHING STATION

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

GENERAL STRUCTURAL STANDARD DETAILS - II

SHEET
GS-3
1011673

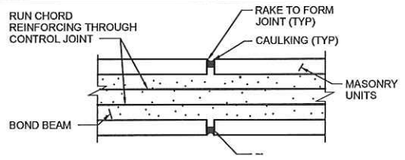
BAR SIZE	90° HOOK	ALLOWABLE HOOK EMBEDMENT LENGTH REDUCTION	8" CMU LAP & EMBEDMENT LENGTHS (CENTERED)	12" CMU LAP & EMBEDMENT LENGTHS (CENTERED)	12" CMU LAP & EMBEDMENT LENGTHS (EF) (NOTE 5)
#3	6"	4"	27"	27"	27"
#4	8"	6"	36"	36"	36"
#5	10"	8"	45"	45"	45"
#6	12"	9"	54"	54"	74"
#7	14"	11"	73"	63"	NR
#8	16"	13"	NR	72"	NR

NOTES:

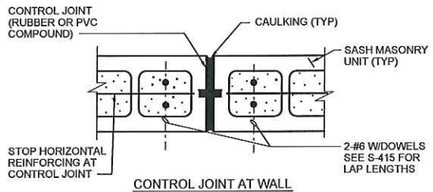
1. THE TABLES SHOWN ARE FOR FBC 2010 AND ACI 530-08 WITH f'm=1500 PSI AND fy=60,000 PSI.
2. USE HOOK, EMBEDMENT AND LAP SPLICE LENGTHS AS DETERMINED FROM THESE TABLES UNLESS INDICATED OTHERWISE.
3. WHEN BARS OF DIFFERENT SIZES ARE LAP SPLICED, LAP LENGTH SHALL BE THE LARGER OF THE EMBEDMENT LENGTH OF THE LARGER BAR, OR THE LAP LENGTH OF THE SMALLER BAR.
4. NR DENOTES "NOT RECOMMENDED", BECAUSE LAP LENGTHS ARE IMPRACTICAL.
5. HOOK EMBEDMENT LENGTH EQUALS EMBEDMENT LENGTH MINUS ALLOWABLE HOOK EMBEDMENT LENGTH REDUCTION.
6. MECHANICAL COUPLERS MAY BE SUBSTITUTED FOR LAP SPLICES FOR ANY BAR SIZE. SUBMIT TO ENGINEER FOR APPROVAL.

LAPS, HOOKS AND EMBEDMENTS — S-415

FOR 8", 12" CMU — REV 051408



CONTROL JOINT AT BOND BEAM



CONTROL JOINT AT WALL

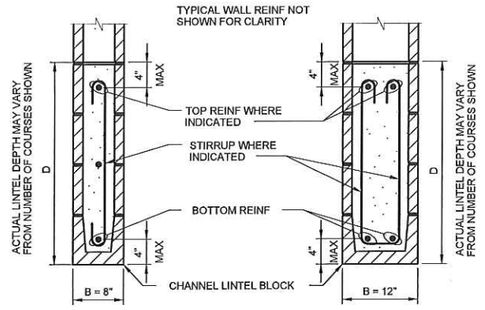
MASONRY CONTROL JOINTS — S-430

REV 052608

MARK / SPAN	B	D	BOTTOM REINF	MID REINF	TOP REINF	STIRRUPS	REMARKS
L1	0' TO 4'-0"	8"	16"	1 - #5	-	1 - #5	#3 @ 8"	—
L2	4'-0" TO 8'-0"	8"	24"	1 - #6	1 - #5	1 - #5	#3 @ 6"	—

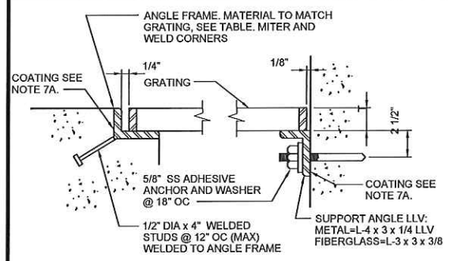
MASONRY LINTEL NOTES

1. PROVIDE 8" MIN BEARING AT EACH SIDE OF CLEAR SPAN, UNO. BEARING CELLS SHALL BE FULLY GROUTED FROM FOUNDATION TO LINTEL.
2. ALL REINFORCING SHALL BE CONTINUOUS AND EXTEND A FULL LAP LENGTH PAST THE OPENING. WHERE WALLS STOP SHORT OF THE FULL LAP LENGTH, THE REINFORCING BARS SHALL BE TERMINATED IN THE LAST CELL WITH A STANDARD HOOK.



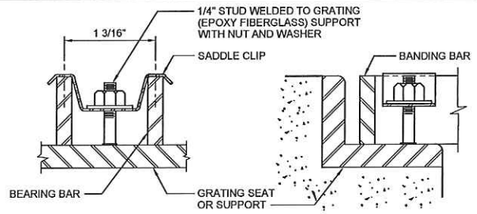
TYPICAL LINTEL DETAILS FOR 8" WALL — TYPICAL LINTEL DETAILS FOR 12" WALL

CMU LINTEL REINFORCING — S-460

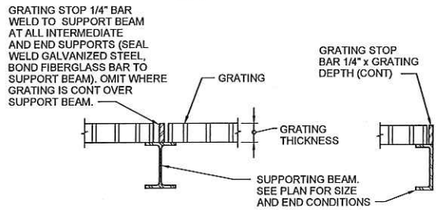


GRATING FRAME TABLE SIZED TO MATCH GRATING (FOR FIBERGLASS USE CONTINUOUS PULTRUDED FIBERGLASS SEAT & ANCHOR)			
GRATING DEPTH T	FRAME ANGLE (STEEL)	GRATING DEPTH T	FRAME ANGLE
1"	1 3/4 x 1 1/4 x 1/4 (1 1/4 X 1 1/4X 1/4)	2"	*2 1/2 x 2 1/2 x 1/2
1 1/4"	2 x 1 1/2 x 1/4 (1 1/2 x 1 1/2x 1/4)	2 1/4"	2 1/2 x 2 1/2 x 1/4
1 1/2"	1 3/4 x 1 3/4 x 1/4	2 1/2"	3 x 3 x 1/2
1 3/4"	2 x 2 x 1/4		

* OR USE 2 1/2 x 2 1/2 x 1/4 W/ 1/4" SHIM PLATE WELDED TO BOTTOM



GRATING CLIP DETAIL

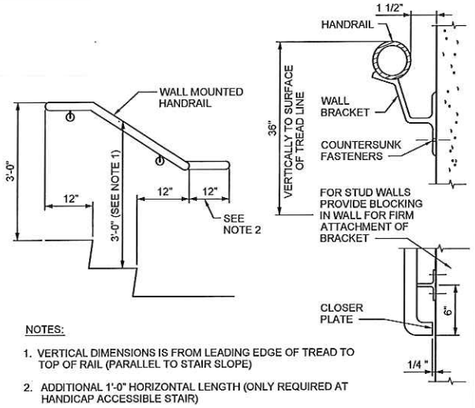


GRATING STOP DETAIL

NOTES:

1. UNLESS INDICATED OTHERWISE, ALL GRATING SHALL BE ALUMINUM.
2. GRATING DEPTH TO BE DETERMINED BY MANUFACTURER AND APPROVED BY ENGINEER (UNO).
3. ALL ENDS AND OPENINGS SHALL BE BANDED.
4. WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS.
5. METAL BEARING BARS SHALL BE DEPTH T x 3/16" @ 1 3/16" OC
   CROSS BARS SHALL BE @ 4" OC.
6. ALUMINUM GRATING OVER SUMP - PROVIDE A MINIMUM OF 4 CLIPS PER GRATING PANEL, APPROX 4" FROM PANEL CORNERS. MAXIMUM CLIP SPACING AT 36" OC.
7. MATERIALS:
   A. ALUMINUM GRATING - USE ALUMINUM ANGLE SUPPORTS AND STAINLESS STEEL BOLTS AND CLIPS. ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED PER THE PROTECTIVE COATING SPECIFICATIONS.

GRATING — S-501

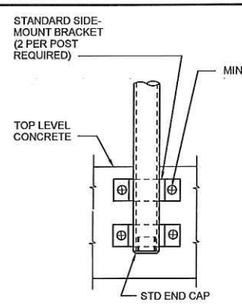


NOTES:

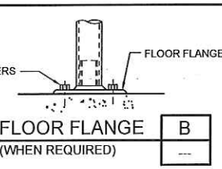
1. VERTICAL DIMENSIONS IS FROM LEADING EDGE OF TREAD TO TOP OF RAIL (PARALLEL TO STAIR SLOPE)
2. ADDITIONAL 1'-0" HORIZONTAL LENGTH (ONLY REQUIRED AT HANDICAP ACCESSIBLE STAIR)

STAIR HANDRAIL — S-510

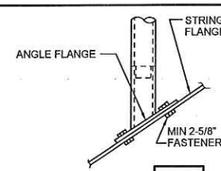
REV 060108



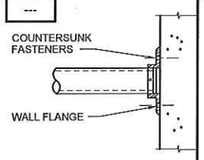
SIDE-MOUNTING BRACKET — A



FLOOR FLANGE (WHEN REQUIRED) — B



ANGLED FLANGE — C



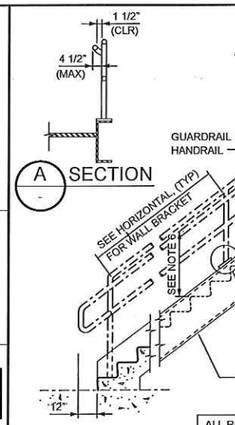
WALL FLANGE — D

NOTES:

1. IF FASTENING INTO CONCRETE, FASTENERS SHALL BE ADHESIVE ANCHORS.
2. ALL ANCHORS SHALL BE STAINLESS STEEL
3. CONTRACTOR REQUIRED TO DESIGN RAILING SYSTEM PER SPECIFICATIONS.

RAILING, GUARDRAIL AND HANDRAIL SUPPORT — S-512

REV 060108



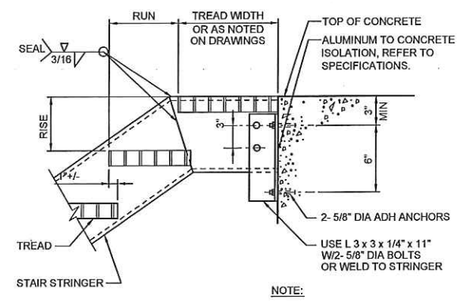
ALL RAILINGS TO HAVE A 4" KICKPLATE UNLESS MOUNTED ON A CURB

NOTES:

1. HANDRAIL SHALL BE ALUMINUM WITH MECHANICAL JOINT POSTS UNLESS INDICATED OTHERWISE.
2. POSTS AND RAILING SHALL BE 1 1/2" SCHEDULE 40 (MIN) PIPE.
3. WHERE ALUMINUM PIPE RAILING IS TO BE INSTALLED, PROVIDE EXPANSION JOINTS PER SPECIFICATIONS.
4. CONTRACTOR REQUIRED TO DESIGN RAILING SYSTEM PER SPECIFICATIONS.
5. DIMENSION IS FROM THE LEADING EDGE OF TREAD.
6. 2'-10" TO 3'-2" ABOVE STAIR TREAD NOSING.

TWO-RAIL RAILING — S-515

REV 121613



NOTE:

HANDRAIL NOT SHOWN

STAIR TOP CONNECTION TO CONCRETE — S-541

Craig P. Kaltenbach, PE
Civil Engineer
State of Florida - License No 63619
Date: 07/15/14

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

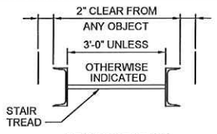
BLUE SINK MFL PUMPING STATION

GENERAL STRUCTURAL STANDARD DETAILS - III

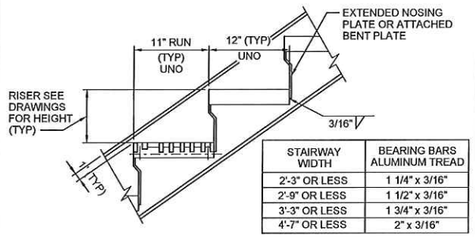
SHEET GS-4

1011673

NOTES:
1. UNLESS OTHERWISE INDICATED, STAIRS SHALL CONSIST OF ALUMINUM C10x6.136 STRINGERS AND SERRATED ALUM GRATING TREADS.
2. ALL BOLTS AND CONCRETE ANCHORS SHALL BE SS.
3. STAIR HANDRAIL NOT SHOWN FOR CLARITY.

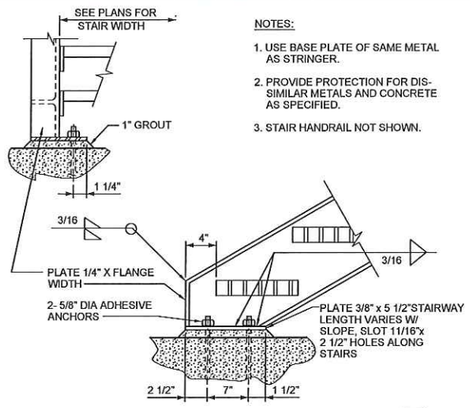


CROSS SECTION



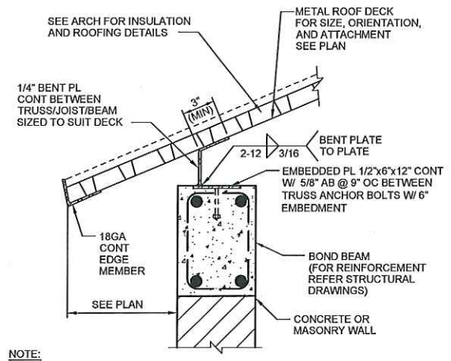
STAIRWAY WIDTH	BEARING BARS ALUMINUM TREAD
2'-3" OR LESS	1 1/4" x 3/16"
2'-9" OR LESS	1 1/2" x 3/16"
3'-3" OR LESS	1 3/4" x 3/16"
4'-7" OR LESS	2" x 3/16"

METAL STAIR
CLOSED RISERS — REV 052308 — S-543



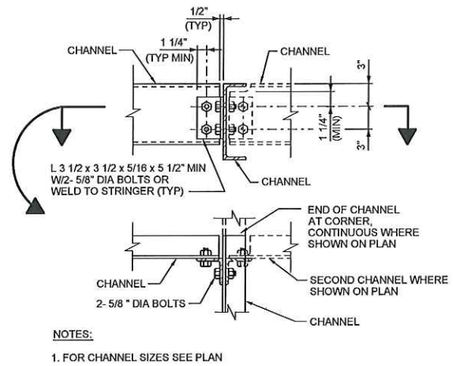
NOTES:
1. USE BASE PLATE OF SAME METAL AS STRINGER.
2. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE AS SPECIFIED.
3. STAIR HANDRAIL NOT SHOWN.

STAIR BOTTOM TO CONCRETE CONNECTION
REV 053008 — S-545



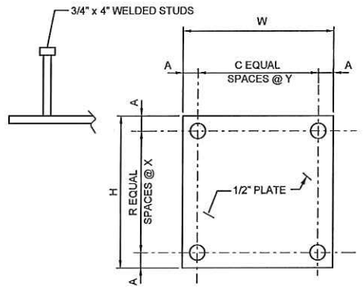
NOTE:
ARCHITECTURAL FASCIA NOT SHOW FOR CLARITY.

DECK CONNECTION
BETWEEN TRUSS/JOIST/BEAM — REV 110112 — S-557



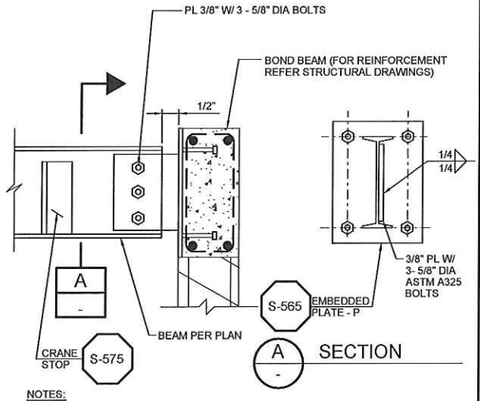
NOTES:
1. FOR CHANNEL SIZES SEE PLAN
2. COPE STRINGER MINIMUM AS NEEDED
3. STANDARD SIZE HOLES UNLESS NOTED OTHERWISE

BEAM TO BEAM CONNECTION
REV 052608 — S-564



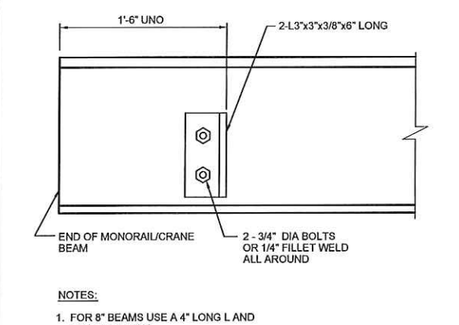
EMBEDDED PLATE SCHEDULE									
PLATE SIZE	H	W	A	R ROWS	X	C COLUMNS	Y	TOTAL # OF STUDS EA PLATE	MATERIAL
P	16"	15"	3"	2	8"	2	9"	2	A36

EMBEDDED PLATE
S-565



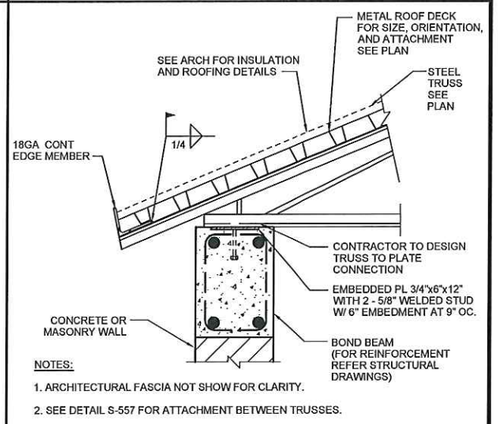
NOTES:
1. BEAM CENTER TO MATCH THE CENTER OF EMBEDDED PLATE.

MONORAIL BEAM SUPPORT AT END WALL
S-572



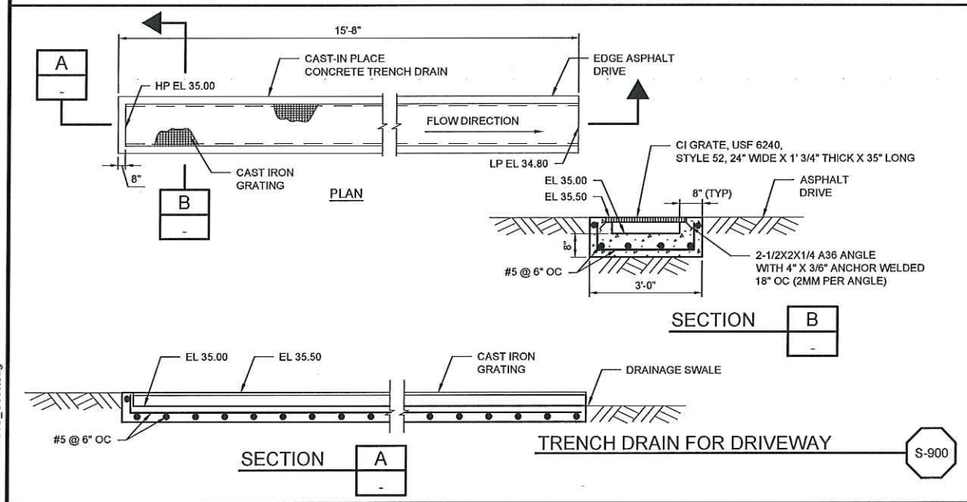
NOTES:
1. FOR 8" BEAMS USE A 4" LONG L AND WELD TO BEAM.
2. LOCATE STOP TO MATCH TROLLEY BUMPER LOCATION.

TROLLEY STOP
REV 110112 — S-575

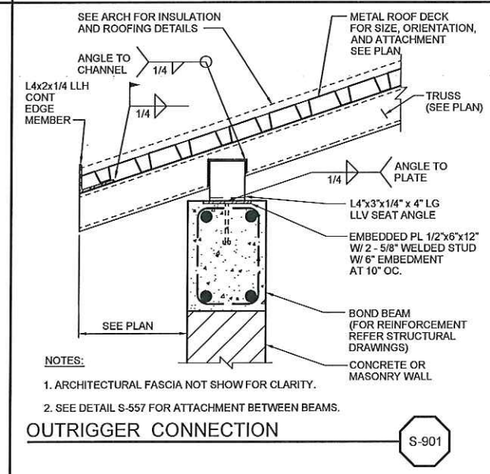


NOTES:
1. ARCHITECTURAL FASCIA NOT SHOW FOR CLARITY.
2. SEE DETAIL S-557 FOR ATTACHMENT BETWEEN TRUSSES.
3. REFER DETAIL S-902, FOR HIP JACK TRUSS CONNECTION PLATE AT CORNERS.

STEEL TRUSS CONNECTION
S-585

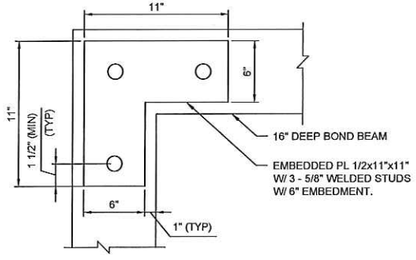


TRENCH DRAIN FOR DRIVEWAY
S-900



NOTES:
1. ARCHITECTURAL FASCIA NOT SHOW FOR CLARITY.
2. SEE DETAIL S-557 FOR ATTACHMENT BETWEEN BEAMS.

OUTRIGGER CONNECTION
S-901



CORNER PLATE
S-902

Craig P. Kaltenbach, PE
Civil Engineer
State of Florida - License No 63619
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

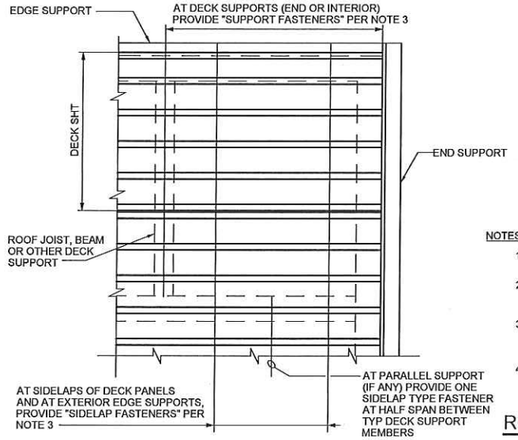
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

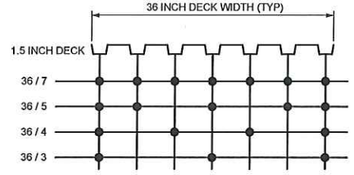
GENERAL STRUCTURAL
STANDARD DETAILS - IV

SHEET
GS-5
1011673

File: C:\pwworkdir\dms60359\TBSD_GS05.dwg



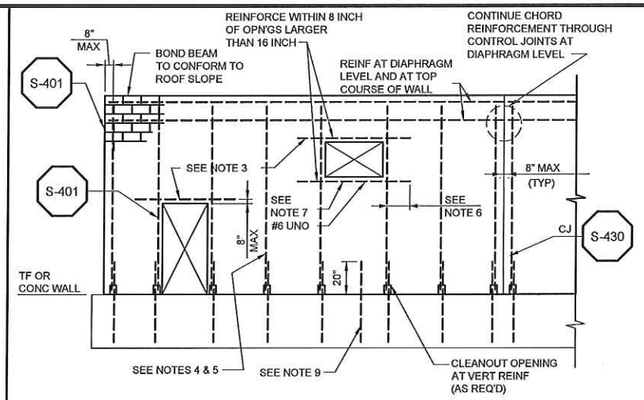
TYPICAL SUPPORT FASTENER LAYOUT:



NOTES:

1. WHERE POSSIBLE, FABRICATE DECK TO EXTEND CONTINUOUSLY OVER THREE SPANS MINIMUM
2. DECK FASTENER TYPES: (SEE SPECS)
   SIDE LAP FASTENERS: SEE DRAWINGS
   SUPPORT FASTENERS: SEE DRAWINGS
3. DECK FASTENER SPACING:
   SIDE LAPS: SEE DRAWINGS
   SUPPORTS: SEE DRAWINGS
4. DOTS INDICATE LOCATIONS FOR DECK FASTENERS / WELD.

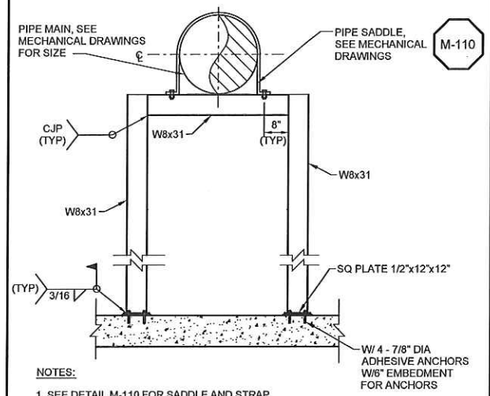
ROOF DECK FASTENING — S-909



NOTES:

1. LAP LENGTHS AND EMBEDMENTS SHALL COMPLY WITH S-415 UNO.
2. OPENING LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL PLANS, ELEVATIONS & DETAILS.
3. SEE LINTEL SCHEDULE FOR REINF OVER OPENINGS DETAIL S-460.
4. SEE PLANS AND SECTIONS FOR HORZ AND VERT REINF.
5. PROVIDE MATCHING DOWELS INTO FOUNDATION FOR ALL VERT REINF, UNO.
6. DIMENSION SHALL BE THE LARGER OF THE EMBED LENGTH PER S-415, 40, OR 24 INCH.
7. PROVIDE (1)-#6 AT 8 INCH WALL AND (2)-#6 FOR WALLS THICKER THAN 8 INCH.
8. ALL CELLS SHALL BE FILLED WITH GROUT.
9. PROVIDE #3 DOWELS CENTER IN ALL UNREINFORCED CELLS IN EXTERIOR WALLS.

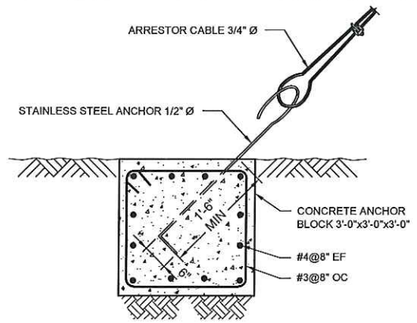
TYPICAL CMU WALL REINFORCING (UNO) — S-914



NOTES:

1. SEE DETAIL M-110 FOR SADDLE AND STRAP

FRAME TYPE PIPE SUPPORT — S-915



TYP DETAIL OF FENCE
ARRESTOR CABLE & ANCHOR — S-990

07/15/14

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER

Craig P. Kaltenbach, PE
Civil Engineer
State of Florida - License No 63619
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL STRUCTURAL
STANDARD DETAILS - V

SHEET: GS-6

1011673

File: C:\pwworkdir\dms60359\TBSD_GS06.dwg

ROOF ANGLE	DL (PSF)	GRAVITY LOADS		
		LIVE LOAD (PSF)	BOTTOM CHORD LIVE LOAD (PSF)	TOTAL LOAD (PSF)
0	25	20	10	55

NET PRESSURE (PSF) FOR LOAD CASE A (PERPENDICULAR TO RIDGE)

	BUILDING SURFACE								
ZONE	1	2	3	4	1E	2E	3E	4E
Pa	14.44	-42.16	-29.85	-26.85	26.36	-60.58	-39.06	-35.67
Pb	31.89	-24.72	-12.41	-9.40	43.81	-43.13	-21.61	-18.22

NET PRESSURE (PSF) FOR LOAD CASE B (PARALLEL TO RIDGE)

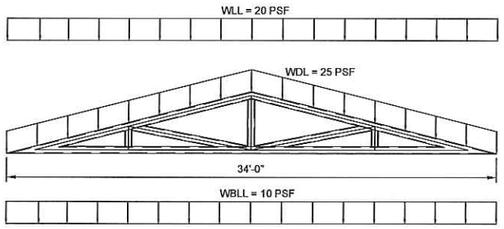
	BUILDING SURFACE											
ROOF ANGLE	1	2	3	4	5	6	1E	2E	3E	4E	5E	6E
0-90	-30.53	-42.16	-26.66	-30.53	10.66	-22.78	-31.99	-60.58	-34.41	-31.99	20.84	-29.56
	-13.09	-24.72	-9.21	-13.09	28.11	-5.33	-14.54	-43.13	-16.96	-14.54	38.29	-12.12

PRESSURE ON COMPONENT							
	WALLS		ROOF			ROOF OVERHANG	
ZONE	4	5	1	2	3	2	3
P	57.19	57.19	32.96	32.96	32.96	-	-
P	-62.03	-76.57	-52.34	-91.11	-134.72	-115.34	-188.04

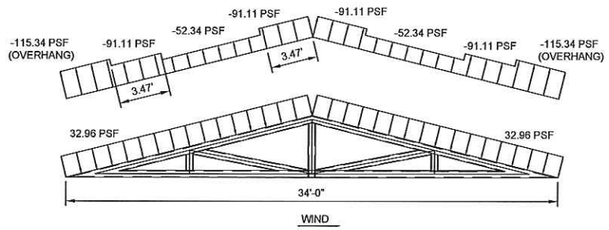
GENERAL NOTES

1. TRUSS SUPPLIER TO PROVIDE COMPLETE JOIST DRAWINGS AND CALCULATIONS DESIGNED BY REGISTERED ENGINEER IN THE STATE OF FLORIDA. JOIST DRAWINGS AND CALCULATIONS SHALL BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
2. SPAN LENGTHS GIVEN ARE DISTANCE BETWEEN CENTERLINES OF SUPPORT WALLS.
3. DEFINITIONS:

   WLL = DISTRIBUTED LIVE LOAD
   WDL = DISTRIBUTED DEAD LOAD
   WWL = DISTRIBUTED WIND LOAD
   WBLL= DISTRIBUTED BOTTOM CHORD LIVE LOAD
4. MECHANICAL AND ELECTRICAL EQUIPMENT LOADS ARE NOT SHOWN. CONTRACTOR SHALL VERIFY ALL THE SIZES, LOCATION, AND DETAILS OF THE MECHANICAL AND ELECTRICAL EQUIPMENT. SEE MECHANICAL AND ELECTRICAL DWGS, INCLUDING BUT NOT LIMITED TO CABLE TRAY, AIR HANDLERS, PIPE HANGARS AND CRANEWAY.
5. LOADS SHALL BE COMBINED IN ACCORDANCE WITH THE PROVISIONS OF THE 2010 FLORIDA BUILDING CODE.
6. DL AND LL ARE AT SERVICE LEVEL.
7. WIND LOADS ARE AT STRENGTH LEVEL.
8. WIND FORCES ARE IN EITHER DIRECTION.
9. LIVE LOAD DEFLECTION SHALL NOT EXCEED L/360.

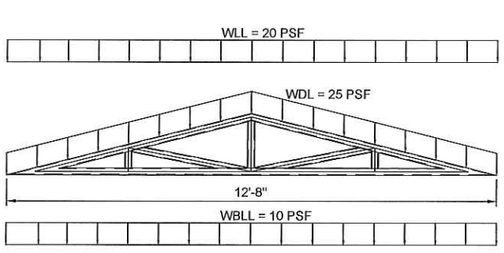


GRAVITY LOADS

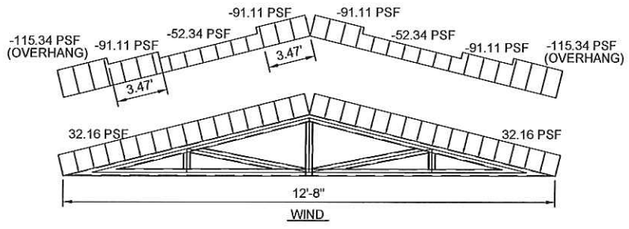


WIND LOADS (WWL)

LONG SPAN TRUSS

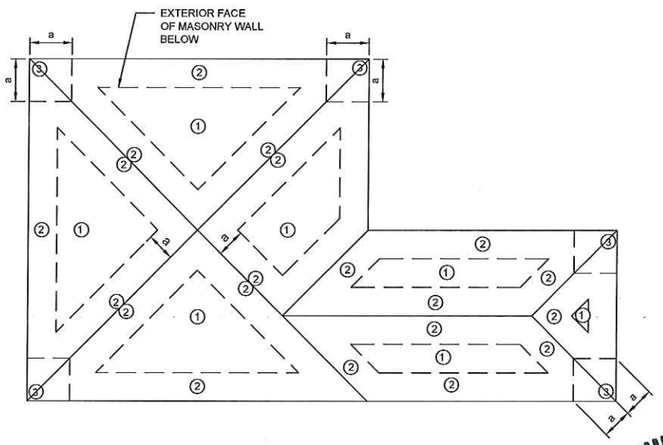


GRAVITY LOADS



WIND LOADS (WWL)

SHORT SPAN TRUSS



WIND FORCE DIAGRAM (ZONES)

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E.

07/15/14

Craig P. Kaltenbach, PE
Design Engineer
State of Florida - License No 63619
Date:_____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

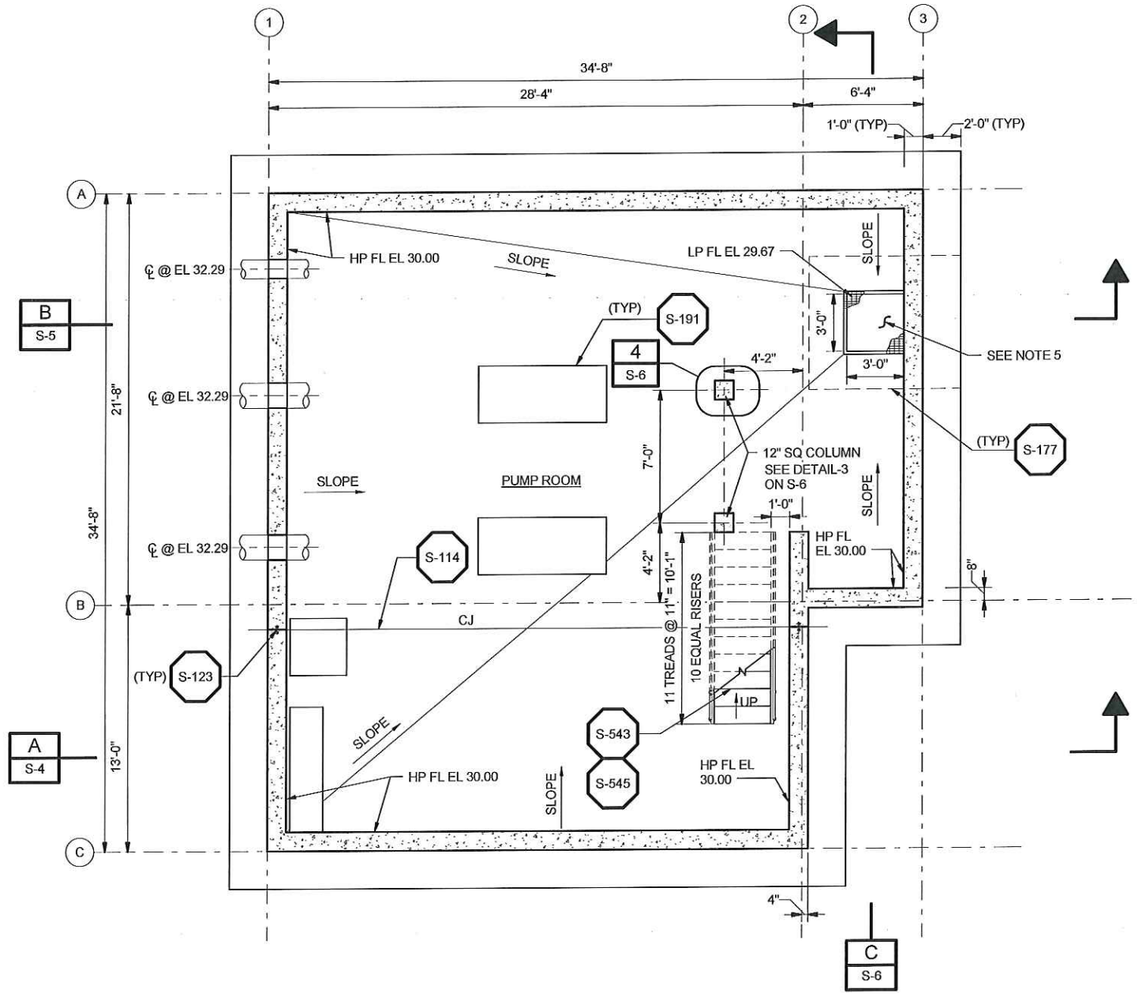
BLUE SINK MFL PUMPING STATION

GENERAL STRUCTURAL STANDARD DETAILS - VI

SHEET: GS-7

1011673

NORTH
PLANT



GENERAL SHEET NOTES

1. CONTRACTOR SHALL CONFIRM AND COORDINATE SIZE AND LOCATION OF EQUIPMENT AND PIPING WITH CIVIL AND MECHANICAL DRAWINGS.
2. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS, LOCATION OF PADS AND PENETRATIONS.
3. GRIDLINES SHOWN ARE TO THE OUTSIDE FACE OF EXTERIOR CMU WALLS AND THE CENTERLINE OF INTERIOR CMU WALLS UNO.
4. CONTRACTOR SHALL VERIFY AND COORDINATE EQUIPMENT PAD SIZES WITH EQUIPMENT SUPPLIERS.
5. PROVIDE ALUMINUM GRATING OVER SUMP. REFER DETAIL S-501.
6. SEE SPECIFICATION 313000 FOR OVER EXCAVATION AND BACKFILL REQUIREMENTS.

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER
07/15/14
Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date:

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

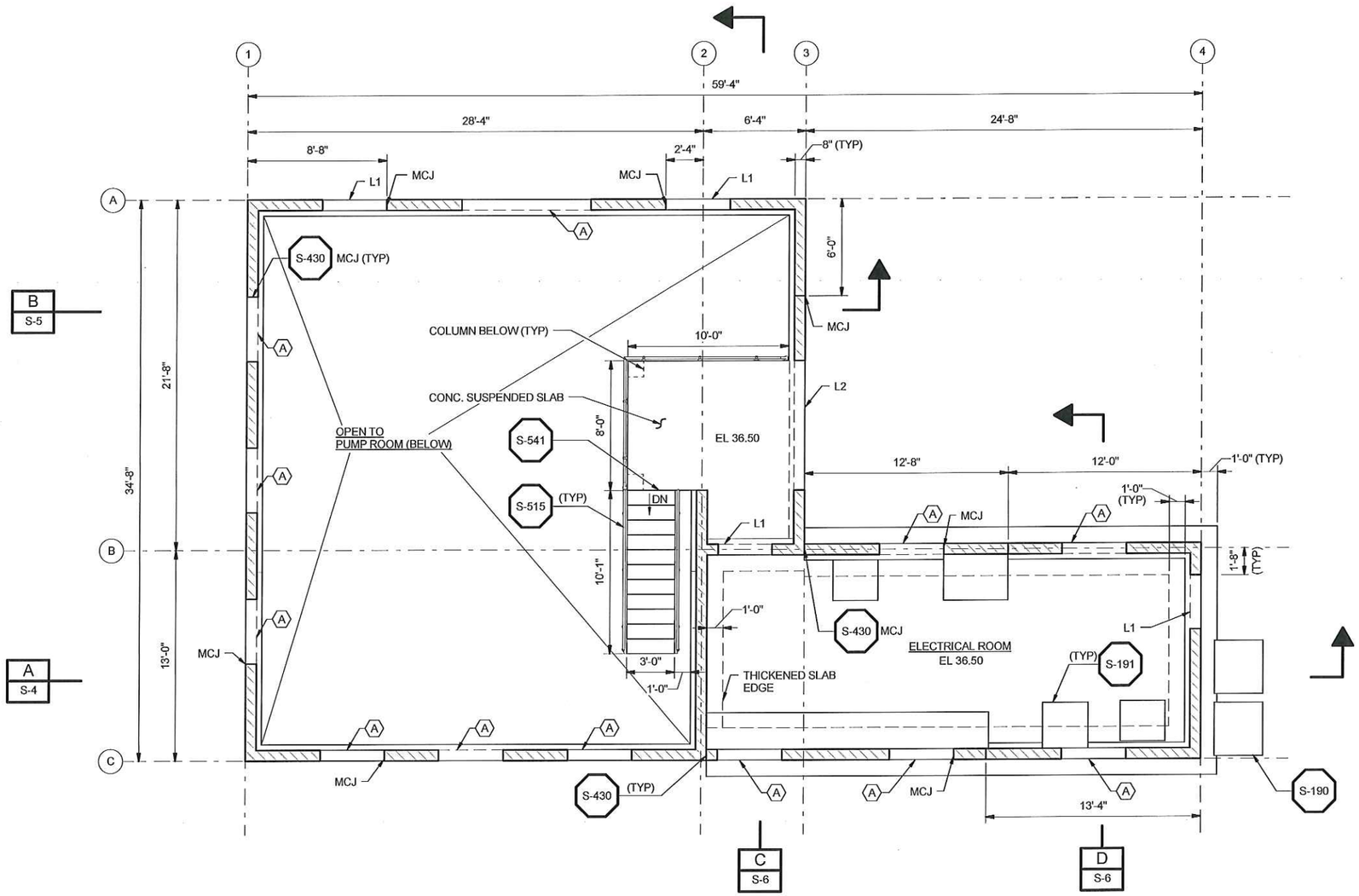
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

STRUCTURAL
FOUNDATION PLAN

SHEET
S-1
1011673

NORTH
PLANT

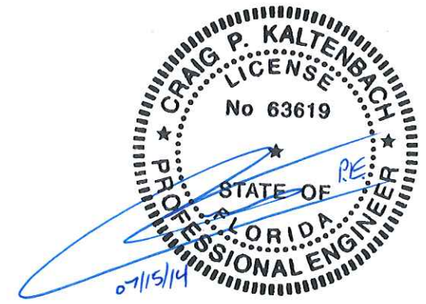


GENERAL SHEET NOTES

1. CONTRACTOR SHALL CONFIRM AND COORDINATE SIZE AND LOCATION OF EQUIPMENT AND PIPING WITH CIVIL AND MECHANICAL DRAWINGS.
2. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS, LOCATION OF PADS AND PENETRATIONS..
3. GRIDLINES SHOWN ARE TO THE OUTSIDE FACE OF EXTERIOR CMU WALLS AND THE CENTERLINE OF INTERIOR CMU WALLS UNO.
4. CONTRACTOR SHALL VERIFY AND COORDINATE EQUIPMENT PAD SIZES WITH EQUIPMENT SUPPLIERS.
5. L1 AND L2 DENOTES MASONRY LINTEL. REFER TO STANDARD DETAIL S-460.
6. SEE SPECIFICATION 313000 FOR OVER EXCAVATION AND BACKFILL REQUIREMENTS.

SHEET KEYNOTES

A. OPENINGS ABOVE



Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date: _____

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

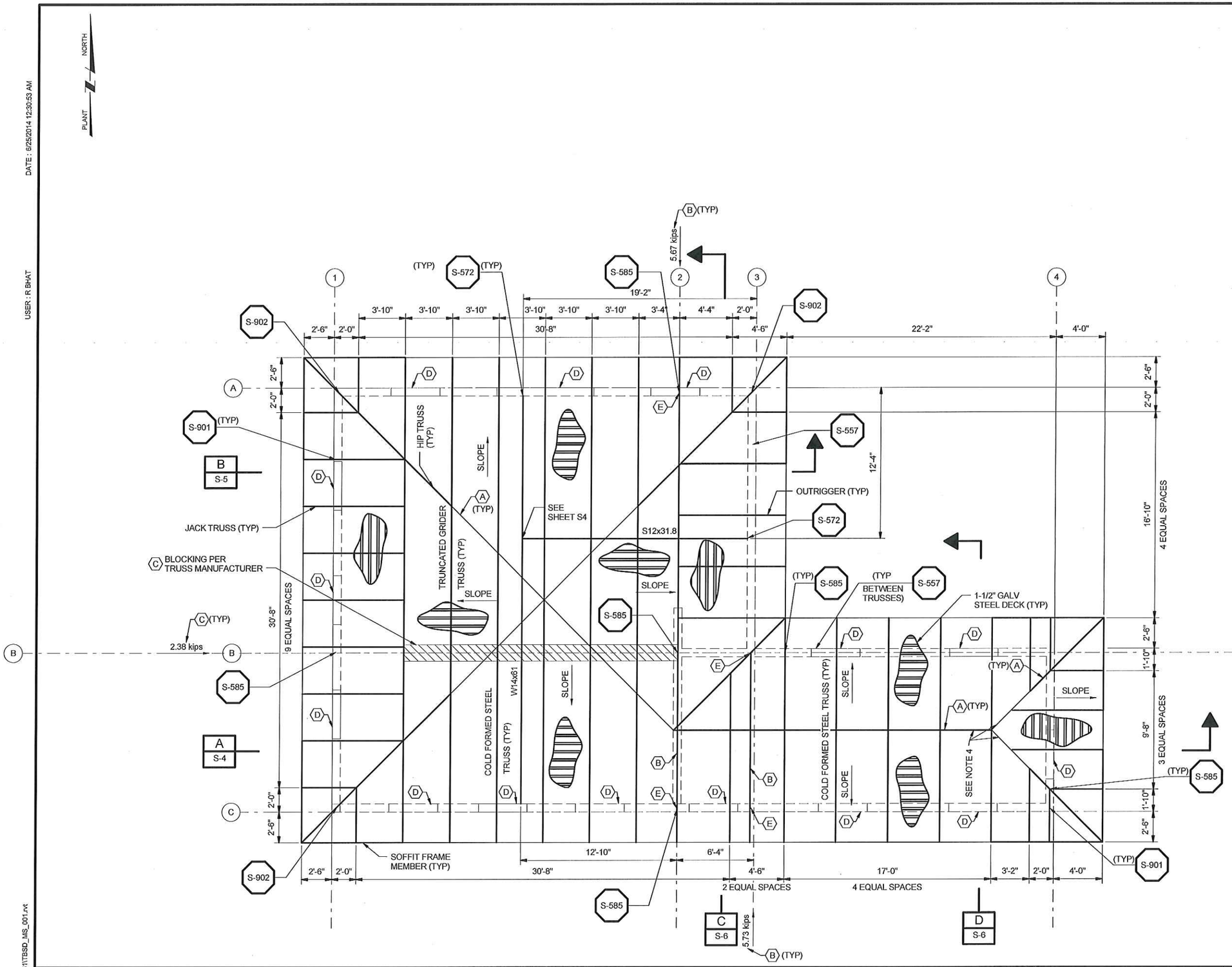
MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

STRUCTURAL
INTERMEDIATE PLAN

SHEET
S-2
1011673



GENERAL SHEET NOTES

1. THE TRUSS LAYOUT IS PRELIMINARY AND FINAL LAYOUT SHALL BE DETERMINED BY THE TRUSS MANUFACTURER. FINAL ACCEPTANCE OF THE LAYOUT IS SUBJECTED TO THE ENGINEER'S APPROVAL.
2. TRUSSES SHALL BE DESIGNED AND DETAILED BY THE TRUSS MANUFACTURER. THE CALCULATIONS AND DRAWINGS SHALL BE SUBMMITED TO THE ENGINEER FOR APPROVAL AND SIGNED AND STAMPED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.
3. THE GALVANIZED STEEL ROOF DECK SHALL BE 1-1/2", 18 GAGE, TYPE C DECKING AND SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES PRIOR TO GALVANIZING:
   FY=33KSI
   MOMENT OF INERTIA (+) = 0.302 IN^4
   SECTION MODULUS (+) = 0.322 IN^3
   SECTION MODULUS (-) = 0.335 IN^3
   DECKING SHALL BE ATTACHED AS FOLLOWS:
   36/5 PATTERN
   SUPPORT FASTENERS: PNEUTEK K64062 W36/7 PATTERN
   SIDE LAP FASTENERS: PNEUTEK K64062 @ 24" OC
   REFER DETAIL S-909 FOR FASTENERS SPACING PATTERN
   METAL DECK SHALL BE CONTINOUS OVER A MINIMUM OF 3 SPANS (WHEN POSSIBLE).
4. RIDGE LINE WITH 16 GA X 6" CONTINUOUS BENT CONNECTING PLATE (TYP) AT HIPS AND RIDGE.
5. SEE HVAC DRAWINGS FOR OPENING LOCATIONS NOT SHOWN.
6. GRIDLINES SHOWN ARE TO THE OUTSIDE FACE OF EXTERIOR CMU WALLS AND THE CENTERLINE OF INTERIOR CMU WALLS UNO.
7. REFER ARCHITECTURAL DRAWINGS FOR ROOF SLOPE.

SHEET KEYNOTES

A. RIDGE LINE WITH 16GAX6" CONTINUOUS BENT CONNECTING PLATE(TYP) AT HIPS AND RIDGE.

B. TRUSS MANUFACTURER SHALL DESIGN AND DETAIL, BOTTOM CHORD OF ROOF TRUSS AS DRAG MEMBER FOR THE SPECIFIED MINIMUM SHEAR FORCE.
THE SPECIFIED FORCE IS A STRENGTH LEVEL WIND LOAD IN ACCORDANCE WITH THE 2010 FBC/ASCE 7-10.

C. TRUSS MANUFACTURER SHALL DESIGN, DETAIL AND PLACE BLOCKING AT THE BOTTOM CHORD OF TRUSSES FOR THE SPECIFIED MINIMUM SHEAR FORCE. THE EXTENT OF BLOCKING IS PER PLAN. THE SPECIFIED FORCE IS A STRENGTH LEVEL WIND LOAD IN ACCORDANCE WITH THE 2010 FBC/ASCE 7-10.

D. OPENINGS BELOW.

E. PROVIDE 2-#6 HAIRPIN AND LAP WITH TIE.

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER
07/15/14

Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date: _____

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

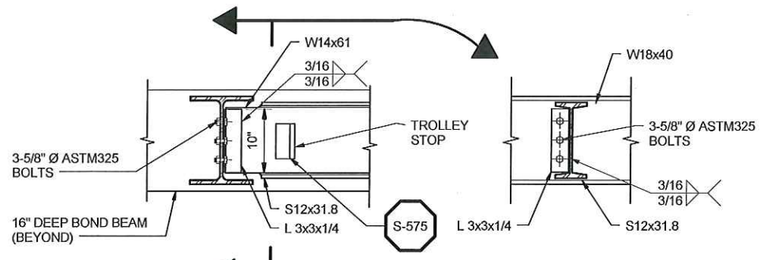
STRUCTURAL
TOP PLAN

SHEET S-3

1011673

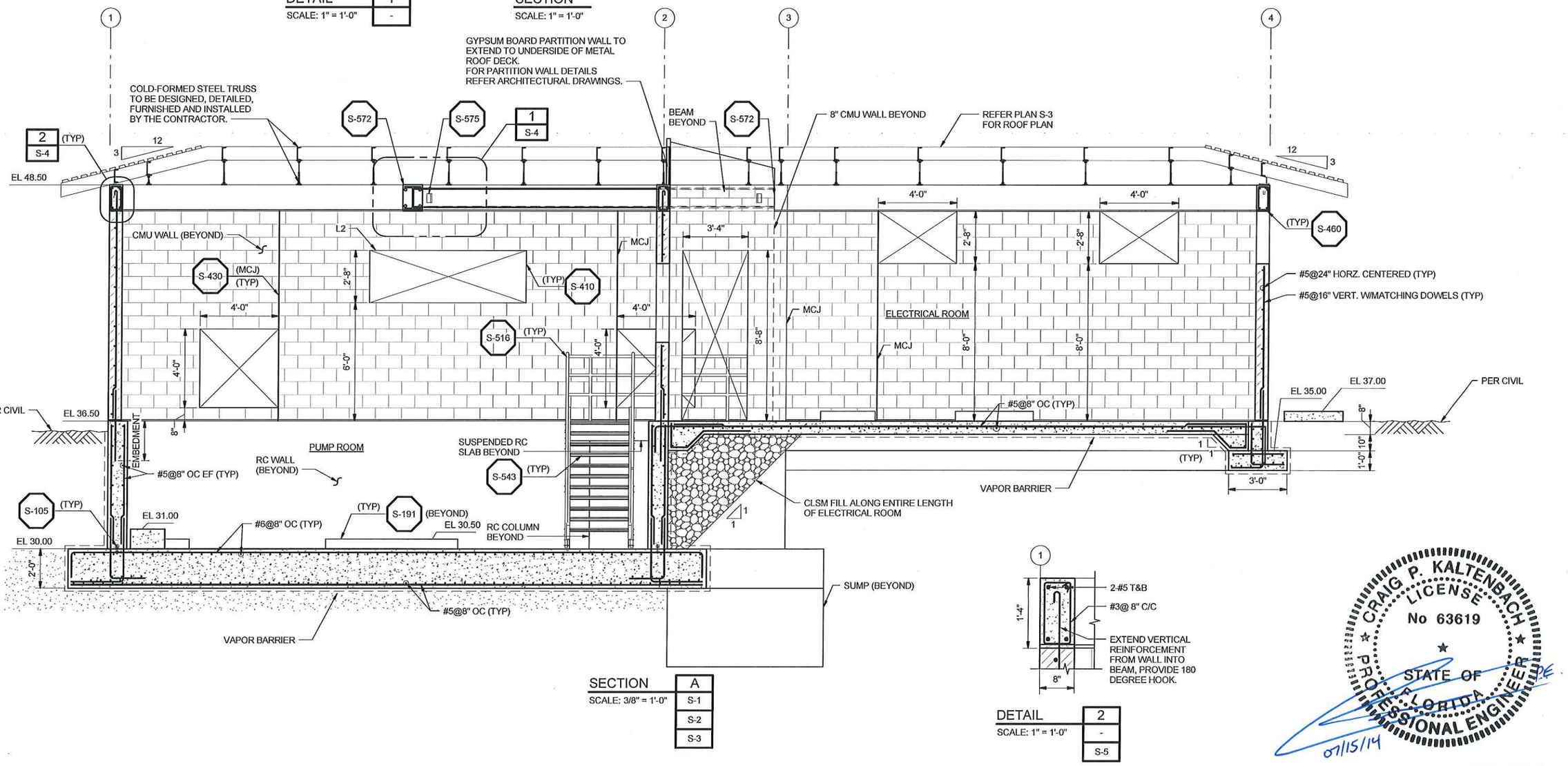
GENERAL SHEET NOTES

1. CONTRACTOR SHALL CONFIRM AND COORDINATE SIZE AND LOCATION OF EQUIPMENT AND PIPING WITH CIVIL AND MECHANICAL DRAWINGS.
2. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS AND PENETRATIONS.
3. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZES OF FLOOR DRAINS.
4. L1 AND L2 DENOTES MASONRY LINTEL. REFER TO STANDARD DETAIL S-460.
5. REFER DETAIL S-914 FOR TYPICAL CMU WALL REINFORCING.
6. COLD-FORMED STEEL TRUSS TO BE DESIGNED, DETAILED, FURNISHED AND INSTALLED BY THE CONTRACTOR.



DETAIL 1 — SCALE: 1" = 1'-0" — -

SECTION — SCALE: 1" = 1'-0"



SECTION — SCALE: 3/8" = 1'-0" — A — S-1, S-2, S-3

DETAIL 2 — SCALE: 1" = 1'-0" — - — S-5

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER P.E.
07/15/14

Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date:

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

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

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

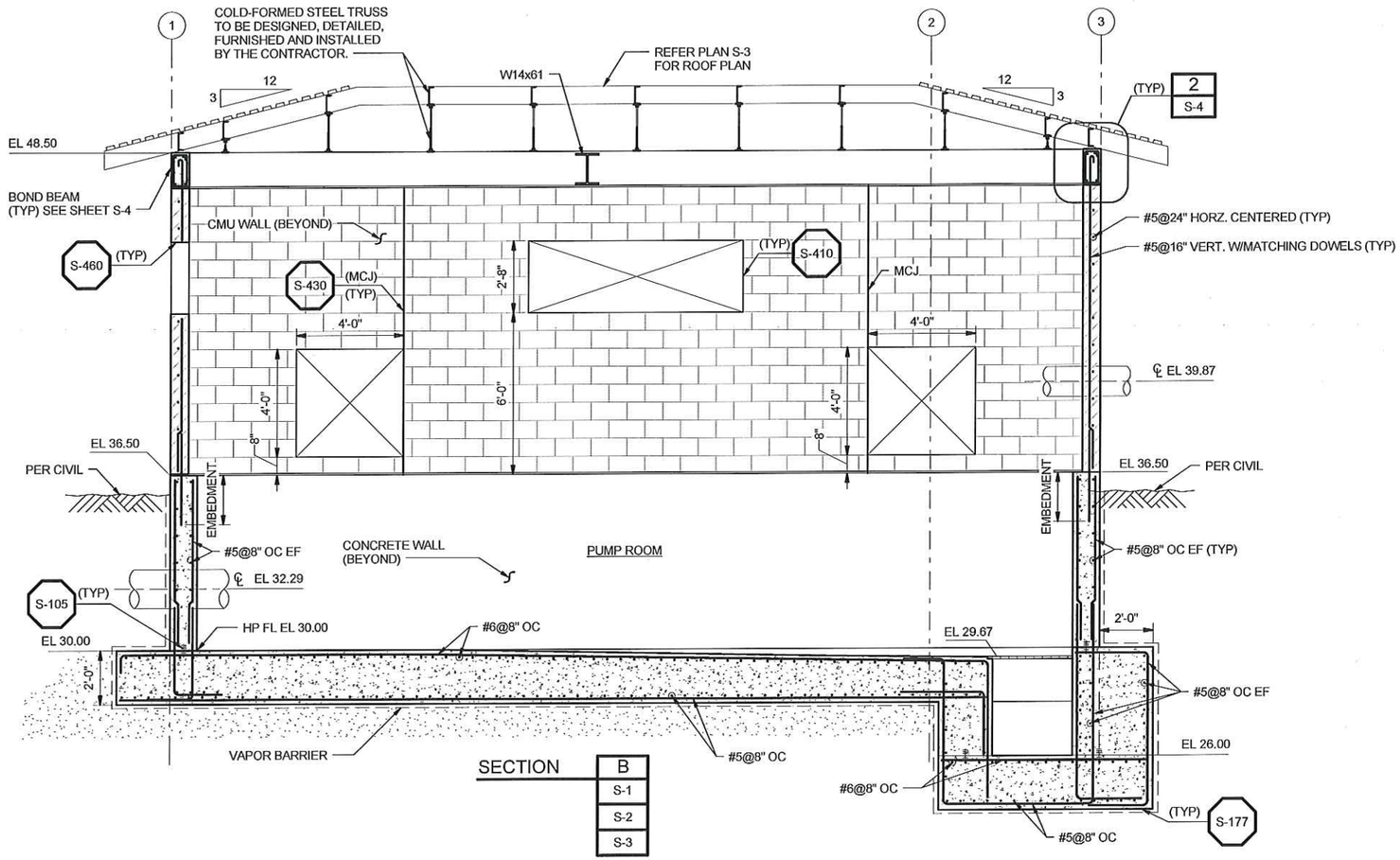
BLUE SINK MFL PUMPING STATION

STRUCTURAL
SECTION - I

SHEET
S-4
1011673

GENERAL SHEET NOTES

1. CONTRACTOR SHALL CONFIRM AND COORDINATE SIZE AND LOCATION OF EQUIPMENT AND PIPING WITH CIVIL AND MECHANICAL DRAWINGS.
2. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS AND PENETRATIONS.
3. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZES OF FLOOR DRAINS.
4. REFER DETAIL S-914 FOR TYPICAL CMU WALL REINFORCING.



CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER
07/15/14

Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date: _____

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

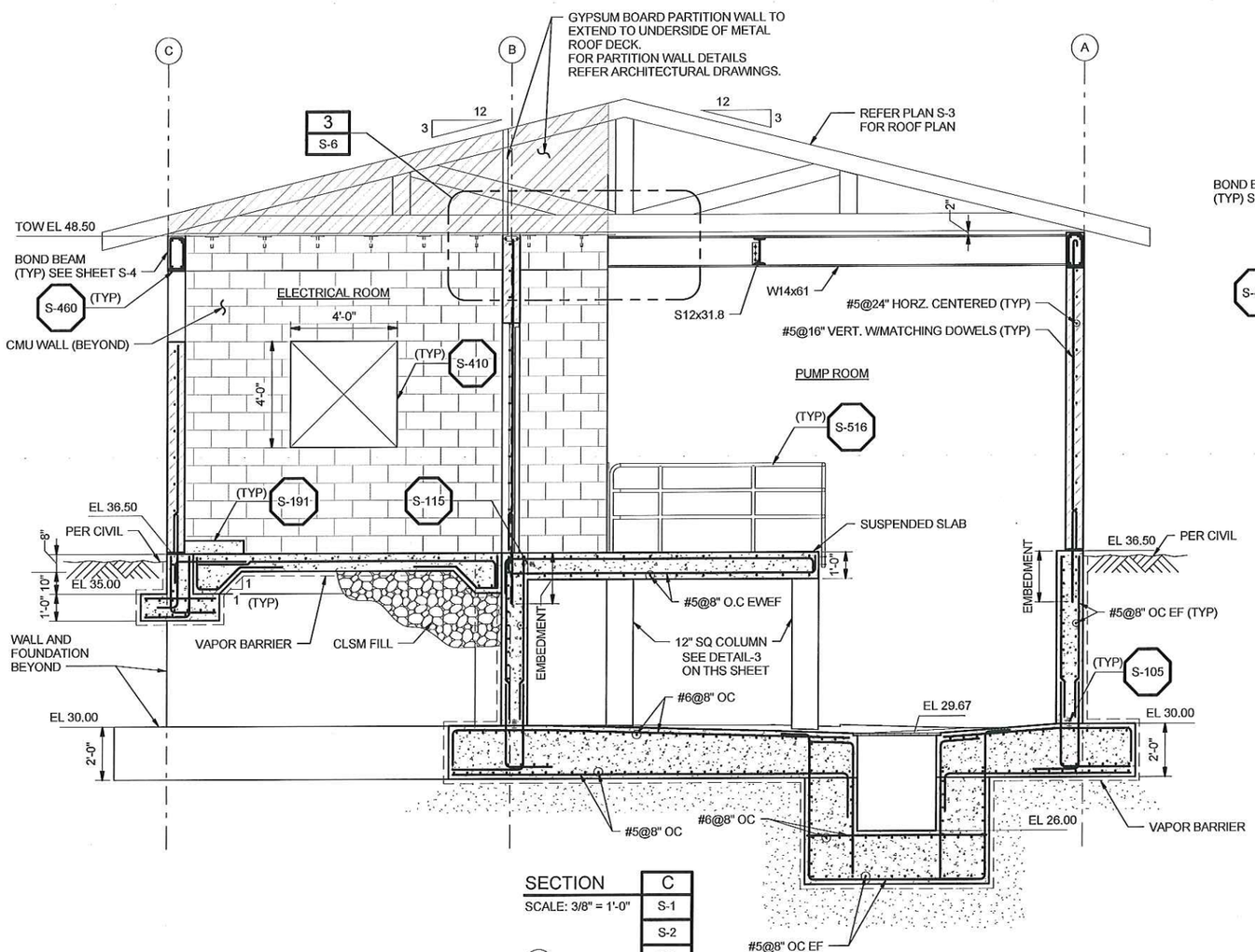
BLUE SINK MFL PUMPING STATION

STRUCTURAL
SECTION - II

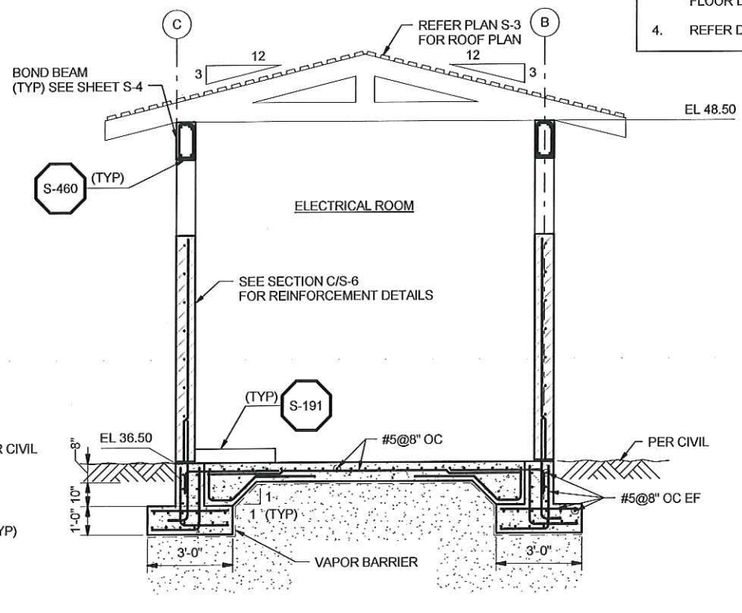
SHEET
S-5
1011673

GENERAL SHEET NOTES

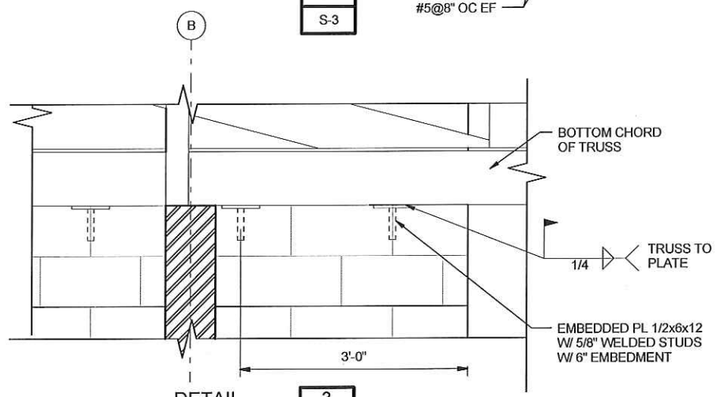
1. CONTRACTOR SHALL CONFIRM AND COORDINATE SIZE AND LOCATION OF EQUIPMENT AND PIPING WITH CIVIL AND MECHANICAL DRAWINGS.
2. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS AND PENETRATIONS.
3. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZES OF FLOOR DRAINS.
4. REFER DETAIL S-914 FOR TYPICAL CMU WALL REINFORCING.



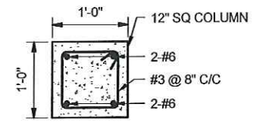
SECTION C
SCALE: 3/8" = 1'-0"
S-1
S-2
S-3



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



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



DETAIL 4
SCALE: 1" = 1'-0"
S-1

CRAIG P. KALTENBACH LICENSE No 63619 STATE OF FLORIDA PROFESSIONAL ENGINEER
07/15/14

Craig P. Kaltenbach, PE
Civil Engineer
State Of Florida - License No 63619
Date:

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN
WARNING: 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED T SHAIKH
DRAWN R BHAT
CHECKED J TEHANEY
ISSUED FOR BID - JUNE 2014
ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

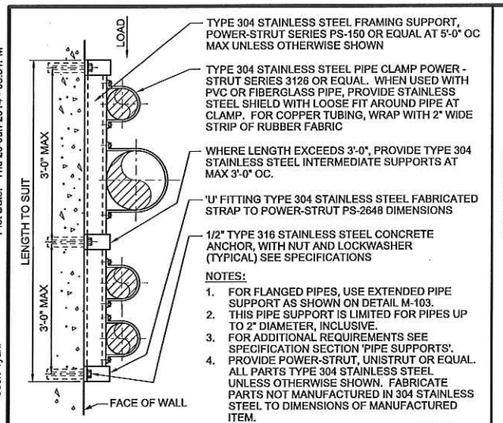
MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

STRUCTURAL
SECTION - III

SHEET
S-6
1011673



TYPE 304 STAINLESS STEEL FRAMING SUPPORT, POWER-STRUT SERIES PS-150 OR EQUAL AT 5'-0" OC MAX UNLESS OTHERWISE SHOWN

TYPE 304 STAINLESS STEEL PIPE CLAMP POWER-STRUT SERIES 3126 OR EQUAL. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STAINLESS STEEL SHIELD WITH LOOSE FIT AROUND PIPE AT CLAMP. FOR COPPER TUBING, WRAP WITH 2" WIDE STRIP OF RUBBER FABRIC

WHERE LENGTH EXCEEDS 3'-0", PROVIDE TYPE 304 STAINLESS STEEL INTERMEDIATE SUPPORTS AT MAX 3'-0" OC.

'U' FITTING TYPE 304 STAINLESS STEEL FABRICATED STRAP TO POWER-STRUT PS-2648 DIMENSIONS

1/2" TYPE 316 STAINLESS STEEL CONCRETE ANCHOR, WITH NUT AND LOCKWASHER (TYPICAL) SEE SPECIFICATIONS

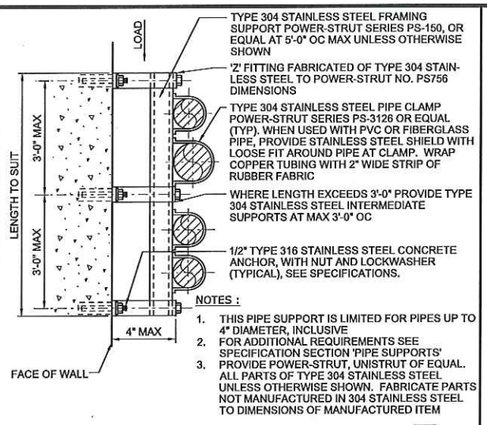
NOTES:

1. FOR FLANGED PIPES, USE EXTENDED PIPE SUPPORT AS SHOWN ON DETAIL M-103.
2. THIS PIPE SUPPORT IS LIMITED FOR PIPES UP TO 2" DIAMETER, INCLUSIVE.
3. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.
4. PROVIDE POWER-STRUT, UNISTRUT OR EQUAL. ALL PARTS TYPE 304 STAINLESS STEEL UNLESS OTHERWISE SHOWN. FABRICATE PARTS NOT MANUFACTURED IN 304 STAINLESS STEEL TO DIMENSIONS OF MANUFACTURED ITEM.

FLUSH MOUNTED PIPE SUPPORT

(FOR PIPE 4" DIAMETER AND SMALLER)

M-102



TYPE 304 STAINLESS STEEL FRAMING SUPPORT POWER-STRUT SERIES PS-150, OR EQUAL AT 5'-0" OC MAX UNLESS OTHERWISE SHOWN

'Z' FITTING FABRICATED OF TYPE 304 STAINLESS STEEL TO POWER-STRUT NO. PS756 DIMENSIONS

TYPE 304 STAINLESS STEEL PIPE CLAMP POWER-STRUT SERIES PS-3126 OR EQUAL (TYP). WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STAINLESS STEEL SHIELD WITH LOOSE FIT AROUND PIPE AT CLAMP. WRAP COPPER TUBING WITH 2" WIDE STRIP OF RUBBER FABRIC

WHERE LENGTH EXCEEDS 3'-0" PROVIDE TYPE 304 STAINLESS STEEL INTERMEDIATE SUPPORTS AT MAX 3'-0" OC

1/2" TYPE 316 STAINLESS STEEL CONCRETE ANCHOR, WITH NUT AND LOCKWASHER (TYPICAL), SEE SPECIFICATIONS.

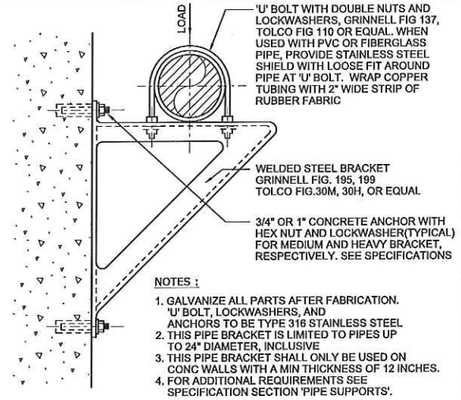
NOTES :

1. THIS PIPE SUPPORT IS LIMITED FOR PIPES UP TO 4" DIAMETER, INCLUSIVE
2. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'
3. PROVIDE POWER-STRUT, UNISTRUT OF EQUAL. ALL PARTS OF TYPE 304 STAINLESS STEEL UNLESS OTHERWISE SHOWN. FABRICATE PARTS NOT MANUFACTURED IN 304 STAINLESS STEEL TO DIMENSIONS OF MANUFACTURED ITEM

EXTENDED PIPE SUPPORT

(FOR PIPE 4" DIAMETER AND SMALLER)

M-103



'U' BOLT WITH DOUBLE NUTS AND LOCKWASHERS, GRINNELL FIG 137, TOLCO FIG 110 OR EQUAL. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STAINLESS STEEL SHIELD WITH LOOSE FIT AROUND PIPE AT 'U' BOLT. WRAP COPPER TUBING WITH 2" WIDE STRIP OF RUBBER FABRIC

WELDED STEEL BRACKET GRINNELL FIG. 195, 199 TOLCO FIG.30M, 30H, OR EQUAL

3/4" OR 1" CONCRETE ANCHOR WITH HEX NUT AND LOCKWASHER(TYPICAL) FOR MEDIUM AND HEAVY BRACKET, RESPECTIVELY. SEE SPECIFICATIONS

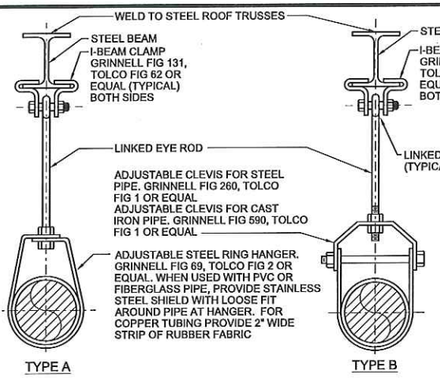
NOTES :

1. GALVANIZE ALL PARTS AFTER FABRICATION. 'U' BOLT, LOCKWASHERS, AND ANCHORS TO BE TYPE 316 STAINLESS STEEL
2. THIS PIPE BRACKET IS LIMITED TO PIPES UP TO 24" DIAMETER, INCLUSIVE
3. THIS PIPE BRACKET SHALL ONLY BE USED ON CONC WALLS WITH A MIN THICKNESS OF 12 INCHES.
4. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

PIPE BRACKET

(FOR PIPE 24" DIAMETER AND SMALLER)

M-104



PIPE HANGER RODS AND SUPPORT SPACING					
PIPE DIAMETER (INCHES)	ROD DIAMETER (INCHES)	MAX SUPPORT SPACING (FEET)		WEIGHT LIMIT (LBS)	
		STEEL PIPE	CI PIPE	TYPE A	TYPE B
1 & SMALLER	3/8	6	10	300	610
1 1/4 TO 2	3/8	10	10	300	610
2 1/2 TO 3 1/2	1/2	12	10	525	1130
4 TO 5	5/8	14	10	650	1430
6, 8	3/4	17	10	1000	1940
10, 12	7/8	18	---	---	3600
14, 16	1	20	---	---	3800

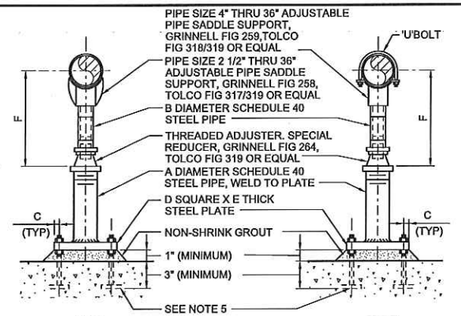
NOTES:

1. GALVANIZE ALL PARTS AFTER FABRICATION.
2. DESIGN IS FOR STATIC LOAD ONLY.
3. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

PIPE HANGER

(FOR PIPE 16" DIAMETER AND SMALLER)

M-107



NOTES:

1. FOR ADDITIONAL REQUIREMENTS SEE SPEC SECTION 'PIPE SUPPORT'.
2. GALVANIZE ALL PARTS AFTER FABRICATION.
3. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
4. THIS PIPE SUPPORT IS LIMITED TO PIPE FROM 2 1/2" DIAMETER TO 36" DIAMETER INCLUSIVE.
5. TYPE 316 STAINLESS STEEL ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER. PROVIDE BAR 4 x 1/2" x 4" WELDED TO BOLT (TYP OF 4) SEE SPECIFICATIONS.

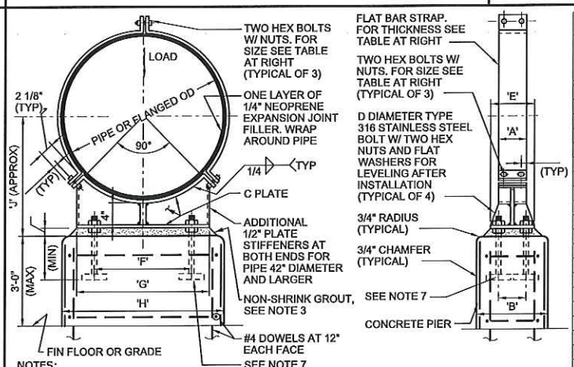
DIMENSIONS IN INCHES							
NOMINAL PIPE SIZE	A	B	C	D	E	F (APPROX) (MINIMUM)	F (APPROX) (MAXIMUM)
2 1/2	2	1 1/2	1	6	3/8	7	11 1/2
3	2	1 1/2	1	6	3/8	7 5/16	11 13/16
3 1/2	2	1 1/2	1	6	3/8	7 9/16	12 1/16
4	3	* 2 1/2 / 3	1 1/8	7 1/2	1/2	10 1/4	14 3/4
6	3	* 2 1/2 / 3	1 1/8	7 1/2	1/2	11 9/16	16 1/16
8	3	* 2 1/2 / 3	1 1/8	7 1/2	1/2	13 9/16	18 1/16
10	3	* 2 1/2 / 3	1 1/8	7 1/2	1/2	14 5/8	19 1/8
12	3	* 2 1/2 / 3	1 1/8	7 1/2	1/2	15 5/8	20 1/8
14	4	3	1 1/4	9	5/8	18 7/8	23 3/8
16	4	3	1 1/4	9	5/8	19 7/8	24 3/8
18	6	4	1 1/2	11	3/4	22 1/4	26 3/4
20	6	4	1 1/2	11	3/4	23 1/4	27 3/4
24	6	4	1 1/2	11	3/4	26 1/2	31
30	6	4	1 1/2	11	3/4	29 5/8	34 1/8
32	6	4	1 1/2	11	3/4	30 5/8	35 1/8
36	6	4	1 1/2	11	3/4	32 5/8	37 1/8

* SEE MANUFACTURER

ADJUSTABLE PIPE SUPPORT WITH OR WITHOUT 'U' BOLT

(FOR PIPE 36" DIAMETER AND SMALLER)

M-108



NOTES:

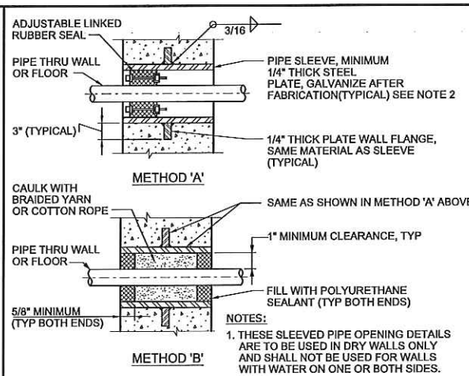
1. WHEN SUPPORTING PIPE AND FLANGE ALTERNATELY ON THE SAME LINE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION 'H' FOR FLANGE SUPPORT.
2. PIPE SUPPORTS SHALL BE LOCATED IN PLAN AT POINTS MARKED THUS: (X).
3. WHERE DIFFERENTIAL SETTLEMENT IS LIKELY TO OCCUR, OMIT GROUT AS DIRECTED BY THE ENGINEER.
4. GALVANIZE ALL PARTS AFTER FABRICATION.
5. WHERE DIRECTED BY THE STRUCTURAL ENGINEER, BOTTOM OF PIERS SHALL EXTEND BELOW BOTTOM OF SLAB.
6. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
7. TYPE 316 STAINLESS STEEL ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER. PROVIDE BAR 4x1/2x4" WELDED TO BOLT. (TYP OF 4) SEE SPECIFICATIONS.

DIMENSIONS IN INCHES																	
NOMINAL PIPE SIZE	A	B	C	D	E	STRAP BOLT	STRAP FLAT BAR	SUPPORTING PIPE F	PIPE G	PIPE H	PIPE J	FLANGE F	FLANGE G	FLANGE H	FLANGE J
6	4	12	3/8	5/8	6	1/2	1/4	4 1/2	6	12	10	6 1/2	11	16	13
8	4	12	3/8	5/8	6	1/2	1/4	5	8	13	11	7 1/2	13	18	14
10	4	12	3/8	5/8	6	1/2	1/4	6	9	15	12	9	15	20	15
12	4	12	3/8	5/8	6	1/2	1/4	7	11	17	13	10	17	22	16
14	4	12	3/8	5/8	6	1/2	1/4	8	12	17	14	11	18	23	17
16	4	12	3/8	5/8	6	1/2	1/4	9	13	19	15	12	20	26	18
18	4	12	3/8	5/8	6	1/2	1/4	10	14	20	16	13	21	26	19
20	5	12	3/8	5/8	6	5/8	3/8	10	15	21	17	15	23	28	21
22	5	12	3/8	5/8	6	5/8	3/8	12	18	24	18	16	25	30	22
24	5	12	3/8	5/8	6	5/8	3/8	13	19	24	19	16	26	32	23
26	5	12	3/8	3/4	6	5/8	3/8	14	21	27	20	18	28	34	24
30	5	12	3/8	3/4	6	5/8	3/8	16	23	28	22	20	31	36	26
34	5	15	3/8	3/4	6	5/8	3/8	18	26	32	24	22	35	41	29
36	6	15	3/8	3/4	6	3/4	3/8	19	27	32	25	24	36	42	30
42	6	18	3/8	1	8	3/4	3/8	21	31	36	28	27	41	47	33
48	6	18	3/8	1	8	3/4	3/8	24	36	42	31	30	46	52	37
54	6	18	3/8	1	8	3/4	3/8	28	40	46	34	34	50	56	40
60	6	18	3/8	1 1/8	8	3/4	3/8	32	45	52	37	36	56	62	44
66	6	18	1/2	1 1/8	8	3/4	3/8	33	49	56	40	40	61	68	47
72	6	18	1/2	1 1/8	8	3/4	3/8	36	53	60	43	44	65	72	50

PIPE SUPPORT WITH STRAP

(FOR PIPE 72" DIAMETER AND SMALLER)

M-110



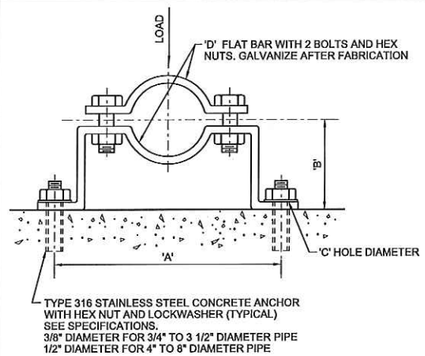
NOTES:

1. THESE SLEEVED PIPE OPENING DETAILS ARE TO BE USED IN DRY WALLS ONLY AND SHALL NOT BE USED FOR WALLS WITH WATER ON ONE OR BOTH SIDES.
2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS.

SLEEVED PIPE OPENING

REV 030408

M-111



DIMENSIONS IN INCHES					LOAD RATING LBS
PIPE DIAMETER	'A'	'B' SEE NOTE 3 BELOW	'C' HOLE DIAMETER	'D' FLAT BAR SIZE	
3/4	5 15/16	2 1/2	7/16	3/16x1 1/4	190
1	6 1/4	2 5/8	7/16	3/16x1 1/4	190
1 1/4	6 11/16	2 3/4	7/16	3/16x1 1/4	190
1 1/2	6 15/16	3	7/16	3/16x1 1/4	190
2	8 5/16	3 3/16	7/16	1/4x1 1/4	420
2 1/2	8 7/8	3 7/16	7/16	1/4x1 1/4	420
3	9 1/8	3 3/4	7/16	1/4x1 1/4	420
3 1/2	10 1/16	4	7/16	1/4x1 1/4	420
4	10 9/16	4 1/4	9/16	1/4x1 1/2	610
5	11 3/4	4 3/4	9/16	1/4x1 1/2	610
6	14 3/8	5 5/16	9/16	3/8x1 1/2	870
8	16 5/8	6 5/16	9/16	3/8x1 1/2	870

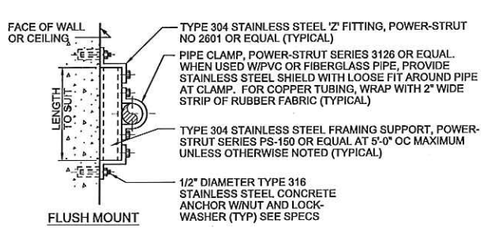
NOTES:

1. ANCHORS, NUTS AND LOCKWASHER TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STAINLESS STEEL SHIELD WITH LOOSE FIT AROUND PIPE AT CLAMP. WRAP COPPER TUBING WITH 2" WIDE STRIP OF RUBBER AT CLAMP.
3. FOR FLANGED PIPING, INCREASE 'B' DIMENSION AS REQUIRED.
4. PLACE SUPPORTS 5'-0" OC MAXIMUM.

PIPE CLAMP FOR INDIVIDUAL PIPES

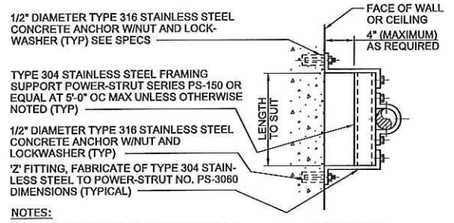
(FOR PIPE 8" DIAMETER AND SMALLER)

M-131



NOTES:

1. THIS PIPE SUPPORT IS LIMITED TO PIPES UP TO AND INCLUDING 6" DIAMETER.
2. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.
3. PROVIDE POWER-STRUT, UNISTRUT OR EQUAL. ALL PARTS OF TYPE 304 STAINLESS STEEL UNLESS OTHERWISE SHOWN. FABRICATE PARTS NOT MANUFACTURED IN 304 STAINLESS STEEL TO DIMENSIONS OF MANUFACTURED ITEM.



NOTES:

1. THIS PIPE SUPPORT IS LIMITED TO PIPES UP TO AND INCLUDING 6" DIAMETER
2. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.

PIPE SUPPORT FOR INDIVIDUAL PIPES

(FOR PIPE 6" DIAMETER AND SMALLER)

REV 032808

M-139

CHARLES M. PEKKALA LICENSED No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER

Charles M Pekkala 7/25/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No 37996
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN RYAHR
CHECKED MGRIBBINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

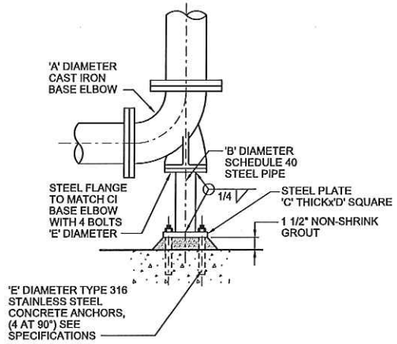
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL MECHANICAL
STANDARD DETAILS - I

SHEET
GM-1
1011673

Plot Date: Thu 26-Jun-2014 - 08:31PM
User: ryahr
File: R:\Blue Sink\AutoCAD\Mechanical\TBSD_GM01.dwg

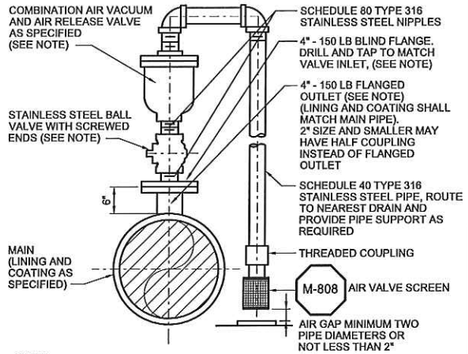


CAST IRON ELBOW

DIMENSIONS IN INCHES				
ELBOW 'A' DIAMETER	'B' DIAMETER	'C' THICK	'D' SQUARE	'E' DIAMETER
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

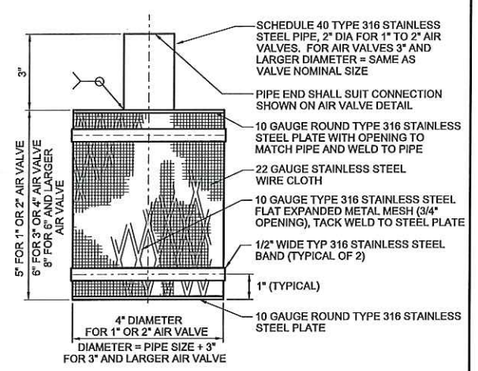
NOTES:
1. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION SECTION 'PIPE SUPPORTS'.
2. GALVANIZE ALL CARBON STEEL PARTS AFTER FABRICATION.

ELBOW SUPPORT
(FOR PIPE 48" DIAMETER AND SMALLER)
M-140

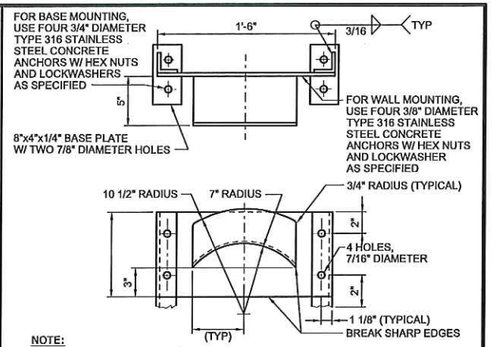


NOTE:
SEE PIPING CONFIGURATION ON PLANS FOR DUAL VALVES.

AIR-VACUUM AND AIR-RELEASE VALVE ASSEMBLY (3" AND SMALLER)
M-804

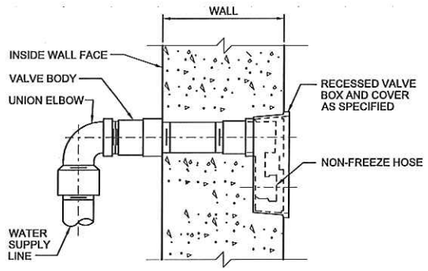


AIR VALVE SCREEN
M-808



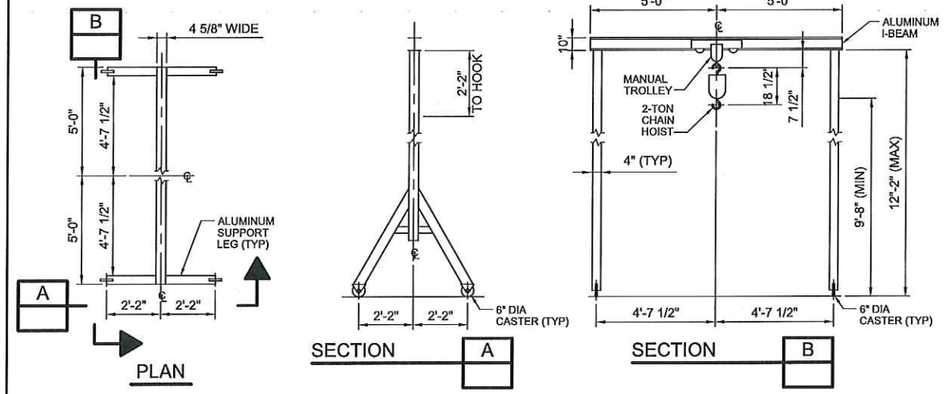
NOTE:
1. WHERE HOSE RACK IS FREE-STANDING, PROVIDE TWO STEEL ANGLES 2x2x1/4 W/BASE PLATES (OMIT BASE PLATES WHERE ANGLES CAN BE SET IN CONCRETE).
2. ALL WELDED CONSTRUCTION. 8 GAUGE STEEL SHEET GALVANIZED AFTER FABRICATION.

HOSE RACK
M-825

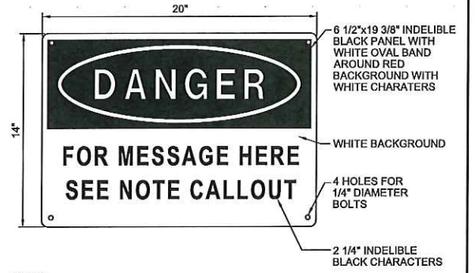


NOTE:
PROVIDE WARNING SIGN WHEN USED FOR NON-POTABLE WATER.

NON-FREEZE HOSE BIBB IN WALL
M-830



PORTABLE ALUMINUM GANTRY CRANE
M-900

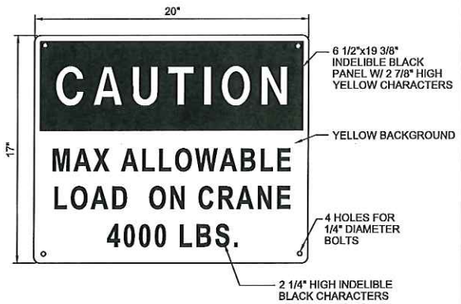


NOTE:
MATERIAL TO BE 0.040" ALUMINUM WITH BAKED ENAMEL FINISH OR EQUAL, STYLE AS SHOWN. SIGN TO BE ATTACHED IN CONSPICUOUS LOCATION AT ENTRY TO STRUCTURE.

WARNING SIGN
M-901

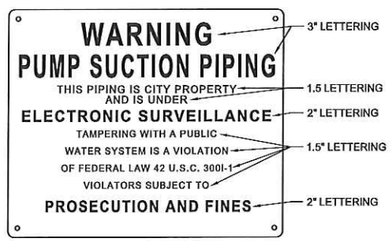
NOTES:
1. SIGN MATERIAL SHALL BE ANODIZED ALUMINUM PLATE WITH A THICKNESS OF .125 AND PRE-DRILLED 1/2" DIAMETER MOUNTING HOLES.
2. ALUMINUM PLATE SHALL BE 48" WIDE BY 36" TALL WITH RADIUSED CORNERS.
3. BACKGROUND SHALL BE A HIGH INTENSITY WHITE REFLECTIVE VINYL.
4. LETTERING SHALL BE CONSTRUCTED OF BLACK NON-REFLECTIVE VINYL.
5. A TRANSPARENT VINYL LAMINATE SHALL BE USED TO SEAL THE SURFACE.
6. SIGN WILL BE MOUNTED USING STAINLESS STEEL HARDWARE.

PUMPING STATION WARNING SIGN
M-902



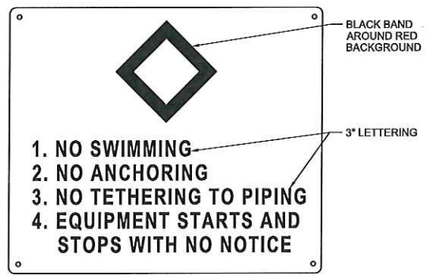
NOTE:
MATERIAL TO BE 0.040" ALUMINUM WITH BAKED ENAMEL FINISH OR EQUAL, STYLE AS SHOWN. SIGN TO BE ATTACHED IN CONSPICUOUS LOCATION AT ENTRY TO STRUCTURE.

CRANE WARNING SIGN
M-903



NOTES:
1. SIGN MATERIAL SHALL BE ANODIZED ALUMINUM PLATE WITH A THICKNESS OF .125 AND PRE-DRILLED 1/2" DIAMETER MOUNTING HOLES.
2. ALUMINUM PLATE SHALL BE 48" WIDE BY 36" TALL WITH RADIUSED CORNERS.
3. BACKGROUND SHALL BE A HIGH INTENSITY WHITE REFLECTIVE VINYL.
4. LETTERING SHALL BE CONSTRUCTED OF BLACK NON-REFLECTIVE VINYL.
5. A TRANSPARENT VINYL LAMINATE SHALL BE USED TO SEAL THE SURFACE.
6. MOUNT SIGN USING STAINLESS STEEL HARDWARE.

PIPING WARNING SIGN -1
M-904



NOTES:
1. SIGN MATERIAL SHALL BE ANODIZED ALUMINUM PLATE WITH A THICKNESS OF .125 AND PRE-DRILLED 1/2" DIAMETER MOUNTING HOLES.
2. ALUMINUM PLATE SHALL BE 48" WIDE BY 36" TALL WITH RADIUSED CORNERS.
3. BACKGROUND SHALL BE A HIGH INTENSITY WHITE REFLECTIVE VINYL.
4. LETTERING SHALL BE CONSTRUCTED OF BLACK NON-REFLECTIVE VINYL.
5. A TRANSPARENT VINYL LAMINATE SHALL BE USED TO SEAL THE SURFACE.
6. MOUNT SIGN USING STAINLESS STEEL HARDWARE.

PIPING WARNING SIGN - 2
M-905

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No 37996
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN RYAHR
CHECKED MGRIBBINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

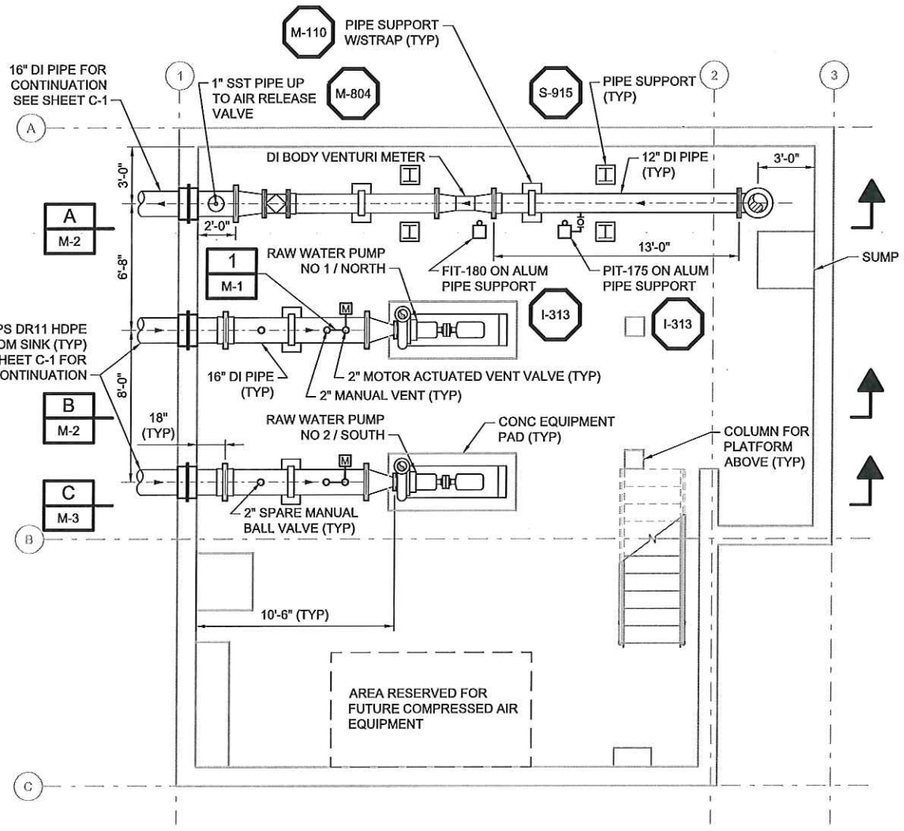
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

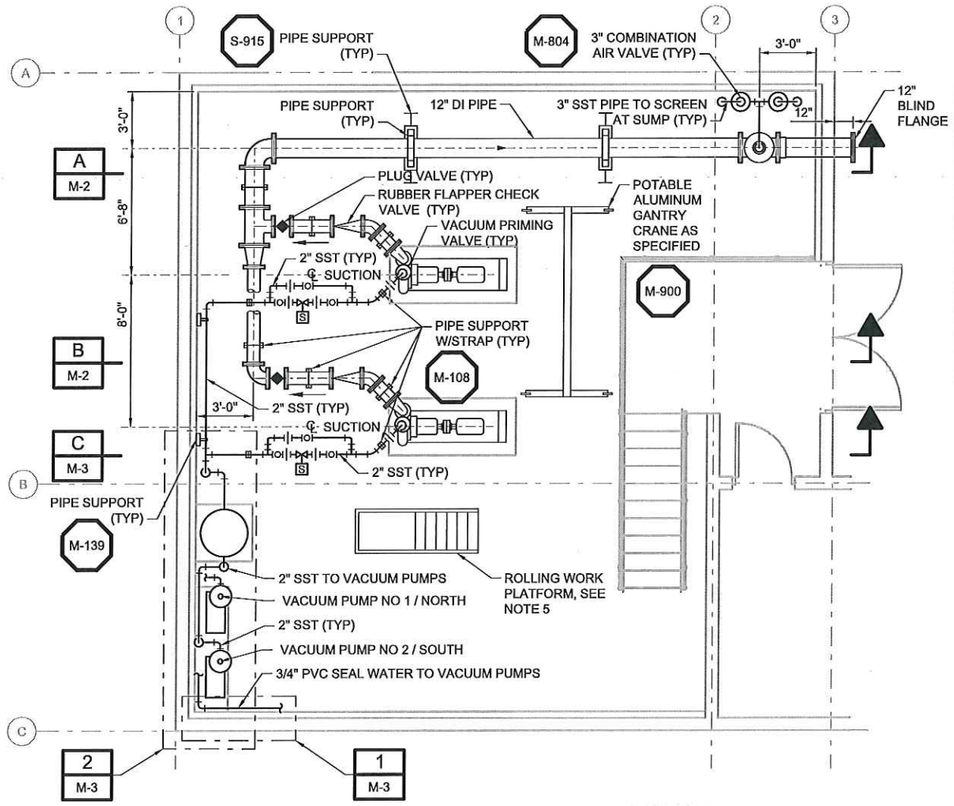
GENERAL MECHANICAL
STANDARD DETAILS - II

SHEET: GM-2
1011673

File: R:\Blue Sink\AutoCAD\Mechanical\TBSD_GM02.dwg



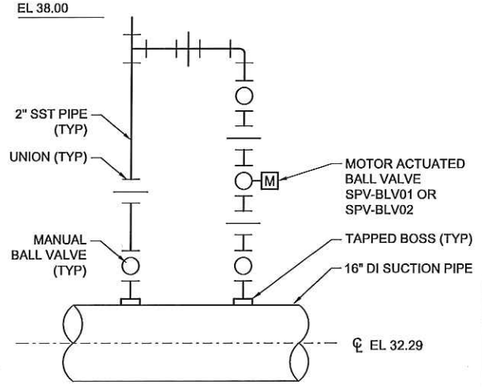
PLAN AT EL 33.50
SCALE: 1/4" = 1'-0"



PLAN AT EL 45.00
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

1. ABOVE-GRADE 4-INCH AND GREATER RAW WATER PIPING SHOWN ON THIS SHEET SHALL BE FLANGED DUCTILE IRON PIPE MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339220 - DUCTILE IRON PIPING. FLANGED DUCTILE IRON PIPE SHALL BE SPECIAL THICKNESS CLASS 53. PRESSURE TEST PIPE AT 100 PSIG AND MEET ZERO VISIBLE LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
2. ABOVE-GRADE RAW WATER PIPING SMALLER THAN 4-INCHES SHOWN ON THIS SHEET SHALL BE SCHEDULE 40S STAINLESS STEEL PIPE MEETING SPECIFICATION SECTION 431054 STAINLESS STEEL PIPE (ASTM 312). PRESSURE TEST PIPE AT 100 PSIG AND MEET ZERO VISIBLE LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
3. ABOVE-GRADE 16-INCH AND 18-INCH HIGH DENSITY POLYETHYLENE RAW WATER PIPING SHOWN ON THIS SHEET SHALL BE DR 11 DUCTILE IRON PIPE SIZE BUTT-FUSION WELDED MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 339534 - LARGE POLYETHYLENE PRESSURE PIPING. PRESSURE TEST PIPE AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
4. ABOVE-GRADE VACUUM SYSTEM PIPING SHOWN ON THIS SHEET SHALL BE SCHEDULE 40S TYPE 316 STAINLESS STEEL PIPE MEETING SPECIFICATION SECTION 431054 STAINLESS STEEL PIPE (ASTM A312). PRESSURE TEST VACUUM PIPE AT 15 INCHES MERCURY AND MEET ZERO LEAKAGE REQUIREMENTS.
5. PROVIDE STEEL ROLLING WORK PLATFORM WITH 24"X36" PLATFORM AND 60" WORKING HEIGHT. PROVIDE PLATFORM WITH 600 POUND LOAD CAPACITY. PROVIDE 36" HIGH HANDRAILS AND 96" OVERALL HEIGHT. PROVIDE GREY POWER COATED FINISH. MEET OSHA 1910.29 AND ANSI A14.7 STANDARDS. PROVIDE COTTERMAN #UNSPSC#30191502 (GRANGER #3FMG8) OR EQUAL.
6. INSTALL VACUUM PRIME PIPING AT OR BELOW EL 39.00 FOR GANTRY CRANE ACCESS. SEE SECTION C ON M-3.
7. PROVIDE ALL CAPS, PLUGS, BLIND FLANGES, SLEEVES, BULKHEADS, ETC. AS NEEDED FOR PRESSURE TESTING.



SCHEMATIC - SUCTION PIPING VENT
NO SCALE
1 / M-1

CHARLES M. PEKKALA LICENSE NO. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
Charles M Pekkala 5/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No 37996
Date:

REV	DATE	BY	DESCRIPTION

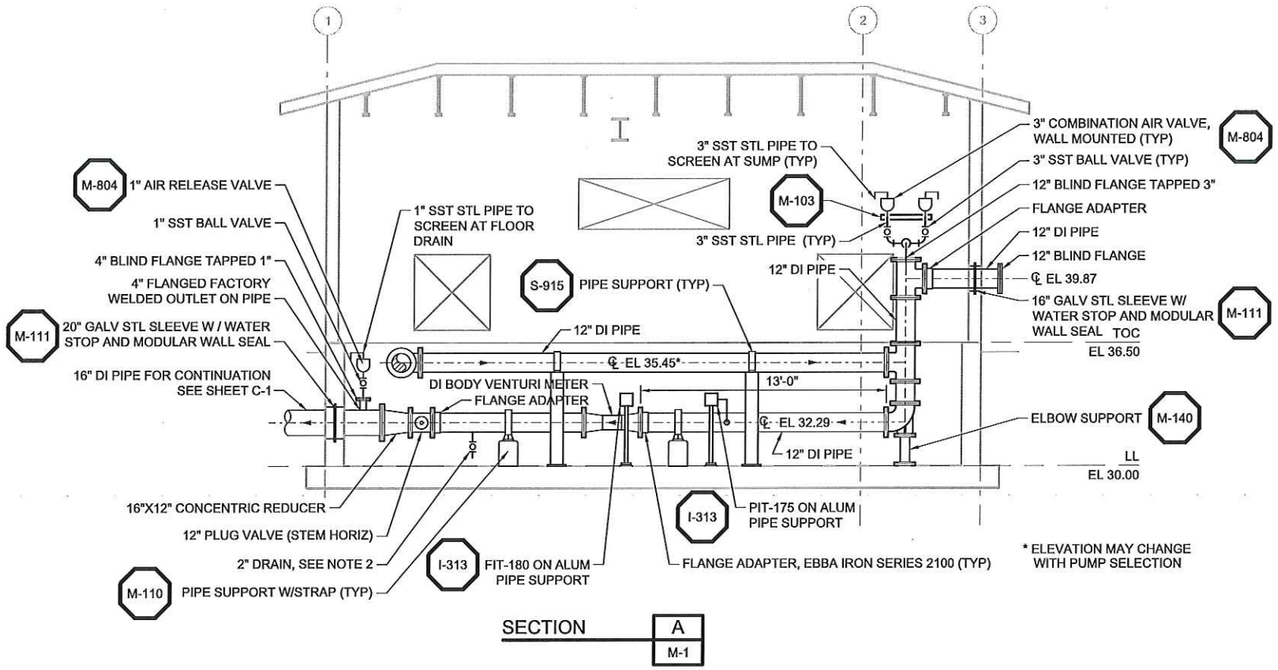
SCALE: AS SHOWN
WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0, ½, 1)
DESIGNED MPEKKALA
DRAWN RYAHR
CHECKED MGRIBBINS
ISSUED FOR BID - JUNE 2014
ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

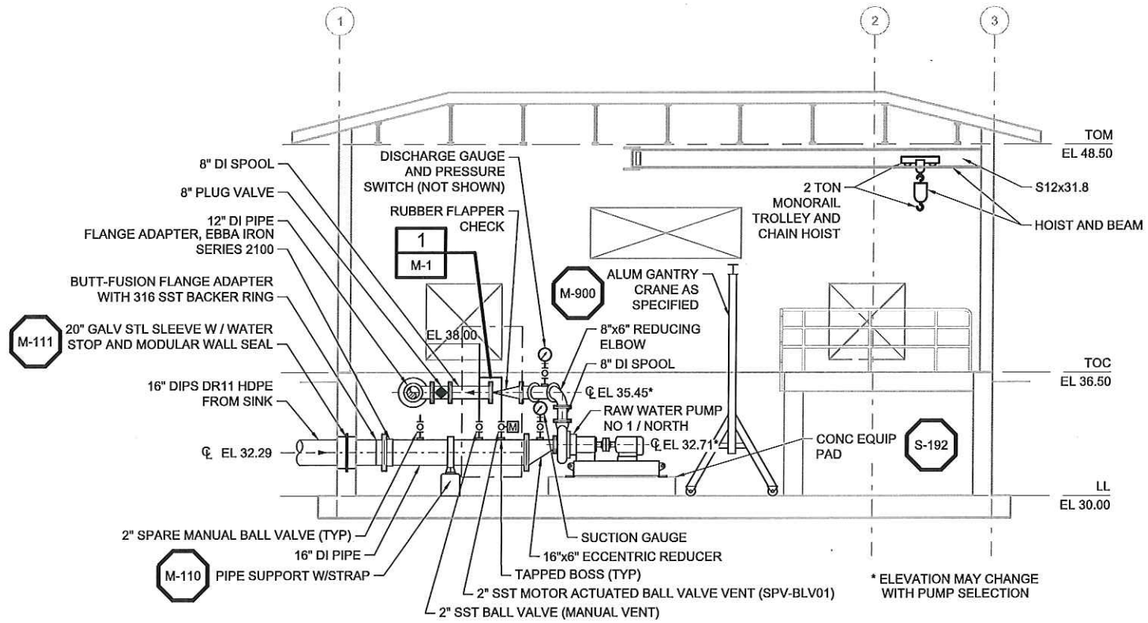
BLUE SINK MFL PUMPING STATION
MECHANICAL PLANS
SHEET M-1
1011673

GENERAL SHEET NOTES

1. SEE P&ID DRAWINGS FOR ADDITIONAL PIPING AND VALVING REQUIREMENTS.
2. PROVIDE 2" TAPPED BOSS ON D.I. PIPE AND 2" SCHEDULE 40 TYPE 316 STAINLESS STEEL DRAIN PIPE AND BALL VALVE.



SECTION A / M-1



SECTION B / M-1

CHARLES M. PEKKALA LICENSE No. 37996 STATE OF FLORIDA PROFESSIONAL ENGINEER
Charles M Pekkala 7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No 37996
Date:

REV	DATE	BY	DESCRIPTION

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

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED MPEKKALA
DRAWN RYAHR
CHECKED MGRIBBINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

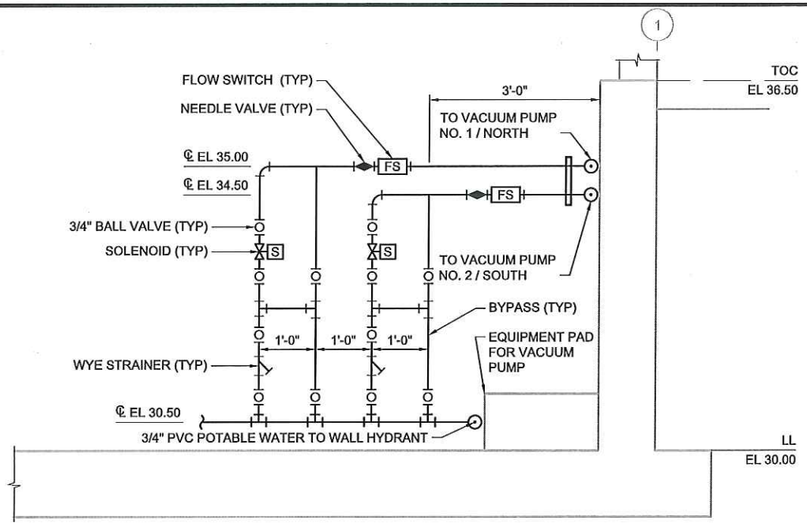
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

MECHANICAL
SECTIONS - I

SHEET
M-2

1011673

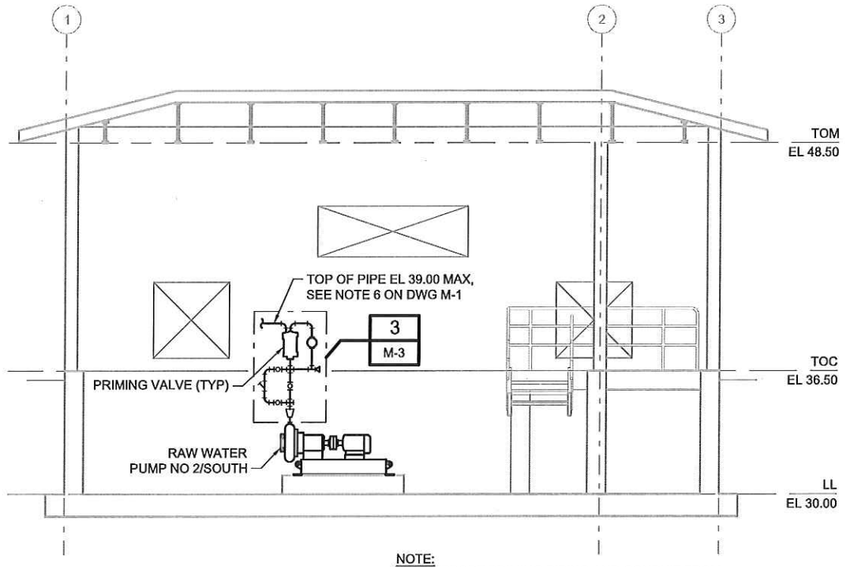


(ELEVATION FACING SOUTH)

NOTES:

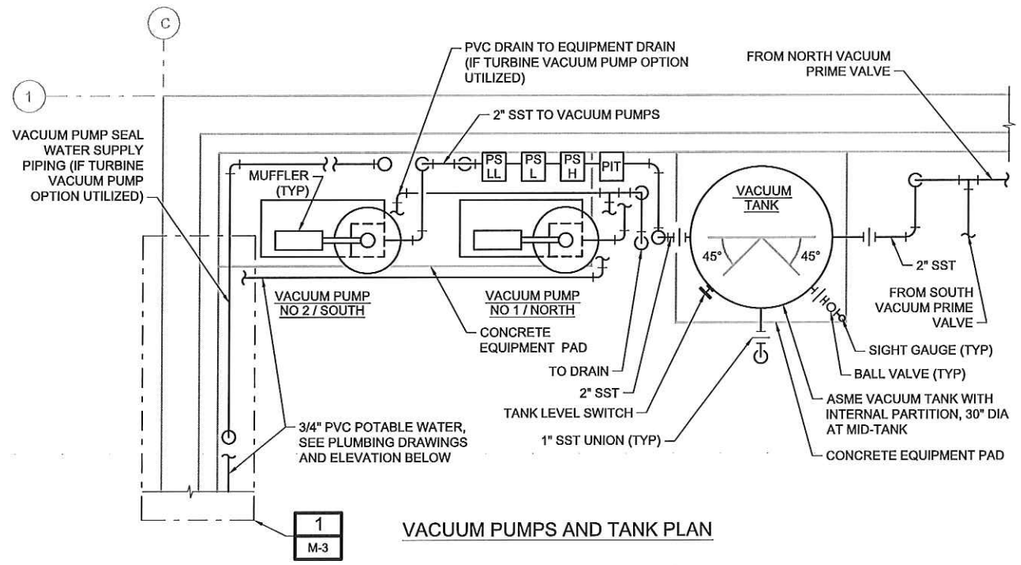
1. THIS DETAIL APPLIES ONLY IF THE VACUUM PUMPS SUPPLIED UNDER THIS CONTRACT REQUIRE SEAL WATER.
2. PROVIDE SEAL WATER PIPING OF SCHEDULE 80 SOLVENT WELDED PVC. PROVIDE NOMINAL 3/4-INCH DIAMTER PIPING. PROVIDE SOLVENT WELDED REDUCERS AND THREADED ADAPTERS WHERE REQUIRED FOR THE SOLENOID VALVE, NEEDLE VALVE OR FLOW SWITCH.
3. THE SOLENOID VALVE, FLOW SWITCH AND NEEDLE VALVE SHALL BE PROVIDED AS PART OF THE SCOPE OF SUPPLY FOR THE VACUUM PRIMING EQUIPMENT.
4. PROVIDE TRUE-UNION SOLVENT WELDED PVC BALL VALVES FOR ISOLATION VALVES.
5. PROVIDE MANUAL 3/4-INCH VENT ON THE SEAL WATER PIPING PRIOR TO THE VACUUM PUMPS. SEE SECTION 1 ON DRAWING M-3.

VACUUM PUMP SEAL WATER SUPPLY PIPING — 1 / M-3
SCALE: 3/4" = 1'-0"

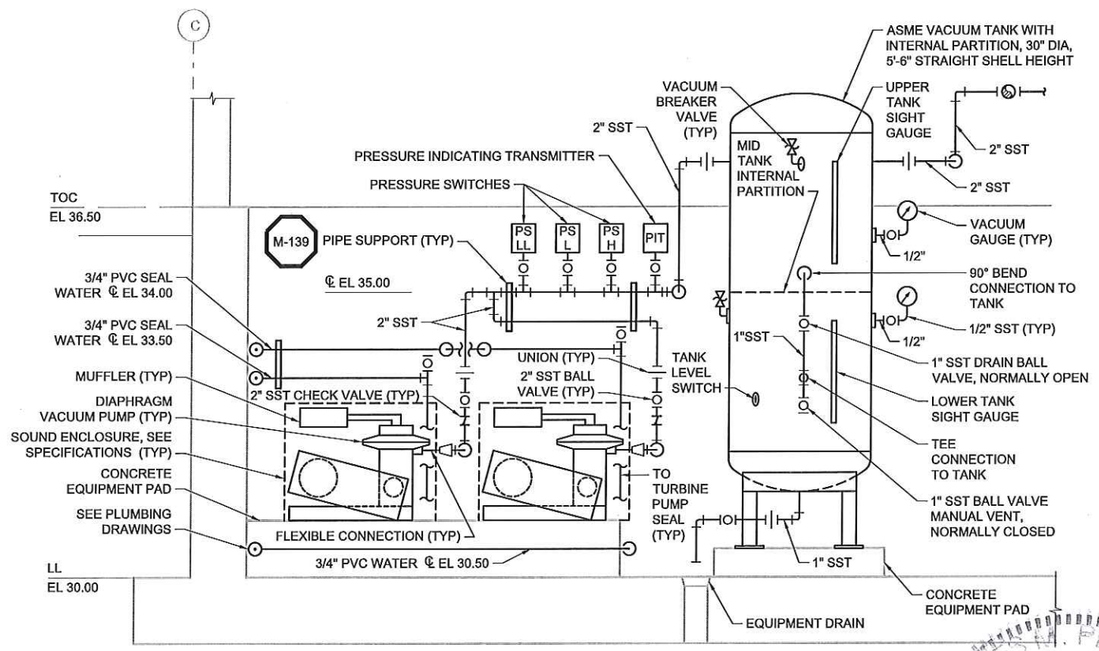


NOTE:
1. SUPPORT PRIMING PIPING AND CONDUIT FROM FLOOR TO PROVIDE PORTABLE GANTRY CRANE ACCESS TO EQUIPMENT

SECTION — C / M-1
SCALE: 1/4" = 1'-0"

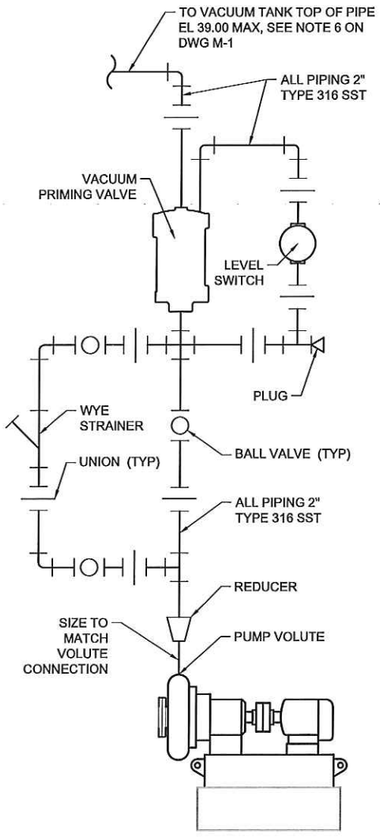


VACUUM PUMPS AND TANK PLAN



VACUUM PUMPS AND TANK ELEVATION

VACUUM PUMPING EQUIPMENT — 2 / M-1
SCALE: 3/4" = 1'-0"



SCHEMATIC - PUMP VACUUM PIPING — 3 / M-1 / M-3
NO SCALE

CHARLES M. PEKKALA LICENSE 37998 STATE OF FLORIDA PROFESSIONAL ENGINEER
Charles M. Pekkala
7/15/14

Charles M. Pekkala, PE
Civil Engineer
State of Florida - License No 37998
Date:

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN
WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED MPEKKALA
DRAWN RYAHR
CHECKED MGRIBBINS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

"BLUE SINK MFL PUMPING STATION

MECHANICAL
SECTIONS AND DETAIL - II

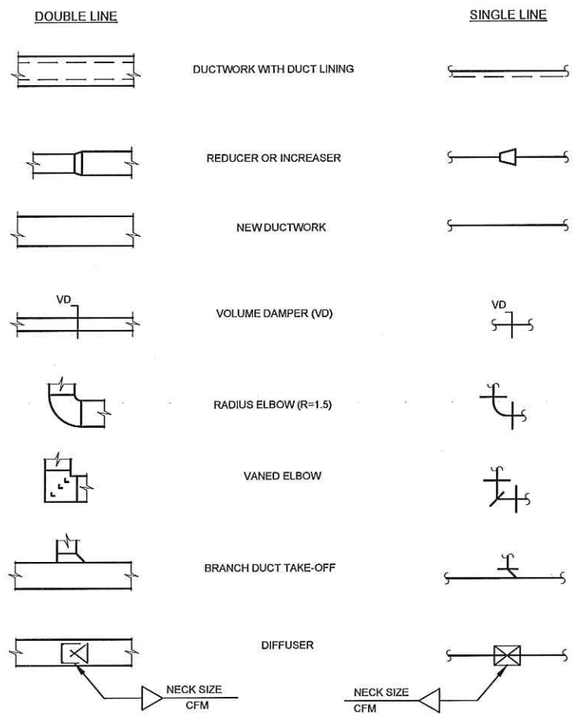
SHEET M-3
1011673

Plot Date: Thu 26-Jun-2014 - 08:43PM
User: ryahr
File: R:\Blue Sink\AutoCAD\Mechanical\TBSD_M03.dwg

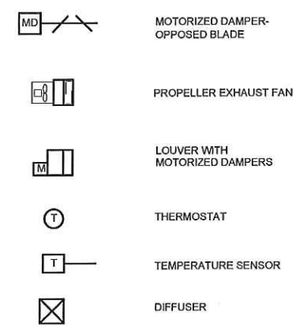
ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
ALT	ALTITUDE
BHP	BRAKE HORSE POWER
BDD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB
EUH	ELECTRIC UNIT HEATER
EER	ENERGY EFFICIENCY RATING
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
FD	FIRE DAMPER
FRP	FIBER-REINFORCED PLASTIC
HP	HORSE POWER
IH	INTAKE HOOD
KW	KILOWATT
LV	LOUVER
M / MOD	MOTOR OPERATED DAMPER
MTD	MOUNTED
MAU	MAKE-UP AIR HANDLING UNIT
MCA	MINIMUM CIRCUIT AMPACITY
MHP	MAXIMUM HORSE POWER
MBH	THOUSANDS OF BTU'S PER HOUR
NO	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD AMB	OUTDOOR AMBIENT TEMPERATURE
PW	POTABLE WATER
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RF	RETURN FAN
SA	SUPPLY AIR
SD	SMOKE DETECTOR
SEN	SENSIBLE HEAT
SF	SUPPLY FAN
S/S	STAINLESS STEEL
SEER	SEASONAL ENERGY EFFICIENCY RATING
TYP	TYPICAL
VTR	VENT THRU ROOF
WB	WET BULB
V/PH/Hz	VOLTS-PHASE-HARTZ
VD	VOLUME DAMPER

DUCTWORK SYMBOLS & LEGEND

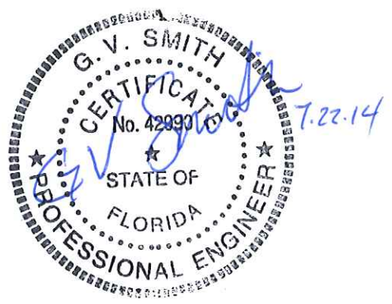


EQUIPMENT SYMBOLS



GENERAL HVAC NOTES

1. THIS IS A GENERAL LEGEND PROVIDED TO FACILITATE USE OF THE DRAWINGS. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR REQUIRED ITEMS.
2. * DENOTES DIMENSIONS TO BE DETERMINED AFTER APPROVAL OF EQUIPMENT.
3. THE HVAC CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
4. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE INTERNATIONAL MECHANICAL CODE, ALL LOCAL CODES AND ALL OTHER REGULATIONS GOVERNING THE WORK OF THIS NATURE.
5. BEFORE SUBMITTING ANY PROPOSAL, THE HVAC CONTRACTOR SHALL EXAMINE THE PROPOSED SITE AND SHALL DETERMINE THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE BECAUSE THE HVAC CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.
6. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER.
7. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH OWNER PERTAINING TO WORKING HOURS, REFUSE DISPOSAL, SECURITY, INTERRUPTIONS OF THE BUILDING UTILITIES AND/OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS AND AND OTHER ITEMS DEEMED TO MUTUAL INTEREST.
8. WORK SHALL INCLUDE, BUT NO NECESSARILY BE LIMITED TO PROVIDING ALL LABOR, MATERIALS, TOOLS, PERMITS, TESTS, INSPECTION FEES, TAXES, ETC. NECESSARY FOR , OR INCIDENTAL TO THE INSTALLATION OF HVAC WORK.
9. CONTRACTOR MUST REFER TO OTHER DISCIPLINE DRAWINGS TO VERIFY THE CLEARANCES PROVIDED FOR HVAC WORK. PROVIDE FITTINGS AND OFFSETS REQUIRED TO ACCOMMODATE ALL THESE CONDITIONS.
10. COORDINATE WITH ALL TRADES IS REQUIRED PRIOR TO ANY INSTALLATION.
11. HVAC CONTRACTOR SHALL COORDINATE DESIGN FOR ALL WALL AND FLOOR/SLAB PENETRATIONS.
12. HVAC CONTROLS: THE HVAC CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.
13. ELECTRICAL:THE HVAC CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR LOCATION OF POWER WIRING TO EACH HVAC UNIT.
14. PIPE SUPPORTS: ALL PIPES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAPS TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING SHALL BE SUPPORTED EVERY 4 FEET.
15. MISCELLANEOUS: THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL OF THE DETAILS FOR THE EQUIPMENT. THE HVAC CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT AND ENSURE THAT IT WILL FIT IN THE AVAILABLE SPACE.
16. TESTING AND BALANCING: THE HVAC SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER.
17. GUARANTEE:MATERIALS, EQUIPMENT, AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. DEFECTS THAT APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COMPRESSOR SHALL COME WITH MANUFACTURER'S STANDARD MIN. 5-YEAR WARRANTY OR AS PER MANUFACTURER.
18. LOUVER TAGS AND SCHEDULE IS SHOWN ON HVAC DRAWINGS FOR COORDINATION PURPOSE BETWEEN HVAC CONTRACTOR AND GENERAL CONTRACTOR. GENERAL CONTRACTOR TO COORDINATE WALL CONSTRUCTION, LOUVER INSTALLATION AND WALL OPENINGS. REFER TO SPECIFICATION NO 89100 FOR LOUVER INFORMATION.



George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:_____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL HVAC
LEGEND, ABBREVIATION AND SYMBOLS

SHEET
GH-1
1011673

AIR CONDITIONING UNITS (SPLIT SYSTEM) SCHEDULE

UNIT ID	LOCATION	AREA(S) SERVED	TYPE	TONS AT 95 DB OAT 80/67 DB/WB EAT	SUPPLY FAN TYPE DISCH	SUPPLY FAN CFM RPM	SUPPLY FAN EXT SP " H20	SUPPLY FAN MOTOR HP FLA	SUPPLY FAN MOTOR RPM	EVAPORATOR COIL EAT: DB/WB LAT: DB/WB	EVAPORATOR COIL MBH TONS	EVAPORATOR COIL COIL TYPE	ELECTRICAL V/PH/Hz	ELECTRICAL TOT FLA	FILTERS TYPE	FILTERS NO. SIZE AREA SF	MANUFACTURER MODEL NO	REMARKS/NOTES
AC-1	INSIDE ELECTICAL ROOM	ELECTICAL ROOM	INDOOR A/C UNIT	2.5	UPFLOW HORZ.	1030 --	.25	0.33 2.8	1050	80/67 58/56.7	30 2.5	DX R-410A	208/1/60	2.8	THROWAWAY 1" PLEATED	1 20x20x1	TRANE GAM5A0A30	FLOOR MOUNTED AC UNIT WITH RETURN & DISCHARGE PLENUM, WWIRE CONTROLLER, MIN SEER RATING 14.0, BYGOLD PoluAl XT COATING, FILTER: MERV 8 (FARR 30/30 OR EQUAL), SPD - 0.5" W.C DIRTY. PROVIDE LOW AMBIENT TEMPERATURE CONTROL PROTECTION.
AC-2	INSIDE ELECTICAL ROOM	ELECTICAL ROOM	INDOOR A/C UNIT	2.5	UPFLOW HORZ.	1030 --	.25	0.33 2.8	1050	80/67 58/56.7	30 2.5	DX R-410A	208/1/60	2.8	THROWAWAY 1" PLEATED	1 20x20x1	TRANE GAM5A0A30	FLOOR MOUNTED AC UNIT WITH RETURN & DISCHARGE PLENUM, WWIRE CONTROLLER, MIN SEER RATING 14.0, BYGOLD PoluAl XT COATING, FILTER: MERV 8 (FARR 30/30 OR EQUAL), SPD - 0.5" W.C DIRTY. PROVIDE LOW AMBIENT TEMPERATURE CONTROL PROTECTION.

EXHAUST AIR FANS SCHEDULE

UNIT ID	LOCATION	AREA(S) SERVED	TYPE	FAN TYPE	FAN CFM	FAN RPM	FAN EXT SP " H20	FAN MAX. dB	MOTOR BHP	MOTOR HP (W)	MOTOR RPM	MOTOR ELEC. V/PH/HZ	MOTOR TYPE DRIVE	MANUFACTURER MODEL NO	REMARKS/NOTES
				ROT. DISCH.	(HIGH) (LOW)	(HIGH) (LOW)									
EF-1 (WEST)	PUMP ROOM	PUMP ROOM	PROPELLER	PROP	1600	1695	0.5	65	0.35	1/2	1725	115/1/60	TEFC DIRECT	GREENHECK SE-14-426-VG	BACKDRAFT DAMPER SHORT WALL HOUSING W/OSHA GUARD EPOXY INDUSTRIAL COATING
EF-2 (EAST)	PUMP ROOM	PUMP ROOM	PROPELLER	PROP	1600	1695	0.5	65	0.35	1/2	1725	115/1/60	TEFC DIRECT	GREENHECK SE-14-426-VG	BACKDRAFT DAMPER SHORT WALL HOUSING W/OSHA GUARD EPOXY INDUSTRIAL COATING

AIR COOLED CONDENSING UNITS (SPLIT SYSTEM) SCHEDULE

UNIT ID	LOCATION	SYSTEM	MBH TONS	CONDENSER NO. FANS	CONDENSER CFM RPM	CONDENSER HP FLA EA	COMPRESSORS NO.	COMPRESSORS RLA LRA	COMPRESSORS CONTROL	COMPRESSORS REFR	ELECTRICAL V/PH/Hz	MANUFACTURER MODEL NO	REMARKS/NOTES
ACCU-1	OUTSIDE	ACU-1	30 2.5	1	-- 825	.125 0.40	1	3.7 28.0	DC-12-24V	R-410A	460/3/60	TRANE 4TTA3030	MOUNTED ON CONCRETE EQUIPMENT PAD, BYGOLD PoluAl XT COATING
ACCU-2	OUTSIDE	ACU-2	30 2.5	1	-- 825	.125 0.40	1	3.7 28.0	DC-12-24V	R-410A	460/3/60	TRANE 4TTA3030	MOUNTED ON CONCRETE EQUIPMENT PAD, BYGOLD PoluAl XT COATING

SPECIFICATION NOTES:

A. PROVIDE ALUMINUM DAMPERS CONSTRUCTED OF 6063 T5 EXTRUDED ALUMINUM. CONSTRUCT FRAMES OF 5-INCH WIDE, 1/8-INCH THICK EXTRUDED ALUMINUM WITH MOUNTING FLANGES, REINFORCED CORNERS AND FLEXIBLE ALUMINUM JAMB SEALS. SUPPLY BLADES OF DOUBLE WALL AIRFOIL TYPE EXTRUDED ALUMINUM WITH EXTRUDED REPLACEABLE BLADE SEALS LOCKED IN EXTRUDED BLADE SLOTS. FURNISH AXLES AND LINKAGE IN THE AIR STREAM OF 316 STAINLESS STEEL. (RUSKIN MODEL CD50.)

B. FURNISH ELECTRIC DAMPER OPERATORS WITH MOTORS AND OF THE TWO-POSITION TYPE AS REQUIRED. EQUIP TWO-POSITION OPERATORS WITH RETURN SPRINGS. PROVIDE DAMPER OPERATORS THAT REVERT TO THEIR INITIAL POSITION UPON POWER INTERRUPTION. SUPPLY DAMPER OPERATORS OF SUFFICIENT SIZE AND NUMBER TO OPERATE THEIR RESPECTIVE DAMPERS. FURNISH DAMPER OPERATORS WITH AND POWERED BY 120-VOLT AC POWER SOURCE. (BELIMO AIR CONTROLS MODEL NO. NFBUP-S OR APPROVED EQUAL)

C. PROVIDE AIR COOLED CONDENSER UNIT (OUTDOOR) OF THE MINIMUM SIZE, ELECTRIC CHARACTERISTICS, AND ARRANGEMENT AS SHOWN AND SCHEDULED. THE OUTDOOR UNIT SHALL BE EQUIPPED WITH CONTROL BOARD THAT INTERFACES WITH INDOOR UNIT TO PERFORM ALL NECESSARY OPERATION FUNCTIONS. THE CABINET SHALL BE CONSTRUCTED OF HEAVY GAUGE GALVANIZED STEEL PLATE, PAINTED WITH A WEATHER-RESISTANT POWDER PAINT, CORROSION AND WEATHERPROOF FOR CORROSION PROTECTION. THE CONDENSER COIL SHALL BE SPINE FIN, CONTINUOUSLY WRAPPED, ALL ALUMINUM WITH BRAZED JOINTS. THE COMPRESSOR SHALL BE TOTAL DIPPED HERMETIC MOTOR, WITH OVER TEMPERATURE AND PRESSURE PROTECTION, INCLUDE FEATURES: CENTRIFUGAL OIL PUMP AND LOW VIBRATION AND NOISE. PROVIDE COATING SUITABLE FOR SEACOAST ENVIRONMENT AS LISTED BELOW. (TRANE MODEL NO. 4TTA3 OR APPROVED EQUAL)

D. PROVIDE SPLIT TYPE AIR CONDITIONING UNIT (INDOOR) OF THE MINIMUM SIZE, AND AIR CAPACITIES, ELECTRIC CHARACTERISTICS AND ARRANGEMENT AS SHOWN AND SCHEDULED. THE INDOOR UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND TESTED. CONTAINED WITHIN THE UNIT SHALL BE ALL FACTORY WIRING & INTERNAL PIPING, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT SHALL BE CONTROLLED BY A REMOTE THERMOSTAT. THE CABINET SHALL BE OF DOUBLE WALL CONSTRUCTION WITH INSULATION. PROVIDE VERTICAL UPFLOW UNIT WITH INLET AND OUTLET PLENUM. THE FAN SHALL HAVE A HIGH PERFORMANCE, DRIVEN BY A SINGLE MOTOR, PERMANENTLY SEALED AND MAINTENANCE FREE. FILTER SHALL BE INCLUDED AS STANDARD LOW VELOCITY THROWAWAY TYPE. PROVIDE COATING SUITABLE FOR SEACOAST ENVIRONMENT AS LISTED BELOW. BLOWER UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED INCLUDING COIL, CONDENSATE DRAIN PAN, MOTOR, FILTERS AND CONTROLS. FOR RETURN AND SUPPLY PLENUMS, PROVIDE 1" THICK ACOUSTICAL LINING. (TRANE MODEL NO. 4AM5 OR APPROVED EQUAL)

E. PROVIDE ELECTRIC THERMOSTAT WITH MUTI-LANGUAGE LIQUID CRYSTAL DISPLAY (LCD). THERMOSTAT SHALL INCORPORATE CONTROLS AS FOLLOWS: ON/OFF, INCREASE/DECREASE SET TEMPERATURE; THE THERMOSTAT SHALL HAVE BUILT-IN TEMPERATURE SENSOR WITH RANGE OF 67°F TO 87°F (19°C TO 30°C). THE THERMOSTAT SHALL BE EQUIPPED WITH BUILT-IN WEEKLY TIMER WITH UP TO EIGHT PATTERN SETTINGS PER DAY. DISPLAY SHALL BE AS FOLLOWS: SET TEMPERATURE AND ROOM TEMPERATURE. FURNISH ELECTRIC THERMOSTATS WITH BIMETALLIC SENSING ELEMENTS AND CONCEALED ADJUSTABLE SET POINT. SUPPLY ELECTRIC THERMOSTATS WITH FIELD ADJUSTABLE SENSITIVITY AND WITH THERMOMETERS IN COVERS OF APPROVED STANDARD FINISH. EQUIP ELECTRIC MODULATING TYPE THERMOSTATS TO OPERATE ON THE BALANCED BRIDGE PRINCIPLE. (JOHNSON CONTROLS OR APPROVED EQUAL)

F. PROVIDE HEAVY DUTY ELECTRIC LINE VOLTAGE THERMOSTAT WITH ASSOCIATED SUBBASE FOR SYSTEM AND FAN SWITCHING, REMOVABLE SETPOINT KNOB WITH LOCKING COVER. (HONEYWELL MODEL T4051 OR APPROVED EQUAL)

G. PROVIDE GRAVITY BACK DRAFT DAMPERS AT EXHAUST FANS COMPRISED OF A HEAVY-GAUGE ALUMINUM FRAME WITH ALUMINUM INTERLINKED BLADES WITH NEOPRENE EDGE SEALS, AND LINKAGE. (RUSKIN MODEL NO. BD2A1 OR APPROVED EQUAL)

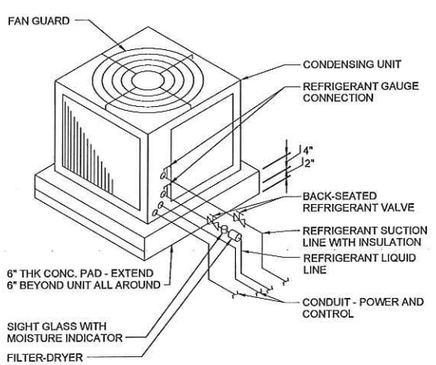
H. PROVIDE DIRECT DRIVEN PROPELLER FAN WHICH MEETS THE MINIMUM SIZE, CAPACITY AND ARRANGEMENT AS SCHEDULED. FAN MOTOR TO BE PERMANENTLY SEALED AND MAINTENANCE FREE. (GREENHECK MODEL NO. SE OR APPROVED EQUAL)

I. PROVIDE DUCTWORK AS FOLLOWS: GALVANIZED MATERIAL AND GALVANIZED SHEET STEEL OF LOCK-FORMING QUALITY, ASTM A 653, COATING DESIGNATION G 90 WITH MILL-PHOSPHATIZED FINISH FOR EXPOSED SURFACES OF DUCTS EXPOSED TO VIEW. UNLESS OTHERWISE SPECIFIED, PROVIDE DUCT REINFORCING AND DUCT ACCESSORIES CONSTRUCTED OF SAME MATERIAL AS DUCT. PROVIDE REINFORCING TO PREVENT SAGGING, FLEXING AND DRUMMING AND BUILD DUCTWORK TO BE AIRTIGHT AT THE FAN STATIC PRESSURE SCHEDULED. PROVIDE DUCT CURVES, BENDS, OFFSETS, TRANSITIONS AND TRANSFORMATION PIECES TO BE GRADUAL, TO MINIMIZE AIR TURBULENCE. CONSTRUCT DUCTWORK IN ACCORDANCE WITH REQUIREMENTS RECOMMENDED BY SMACNA AND ASHRAE.

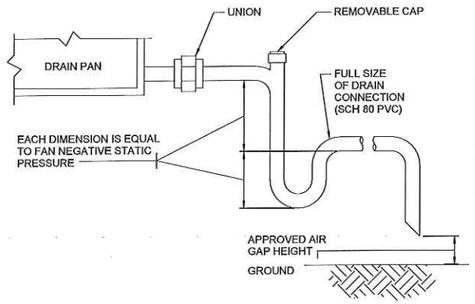
J. REFRIGERANT PIPING SHALL BE TYPE K COPPER TUBING THAT MEETS ASTM REQUIREMENTS. PROVIDE FITTINGS THAT MEET ASME REQUIREMENTS. PROVIDE MULTI-LINESET, SEMI-FLEXIBLE COPPER PIPING TO CONNECT OUTDOOR AND INDOOR UNITS, UL RECOGNIZED AT 700 PSI MWP, REFRIGERANT 410A. ENGINEERED AND TESTED, INSULATION TO MEET ASTM C-534 AND ASTM E-84 FIRE AND SMOKE RATING, CLOSED CELL ELEASTOMERIC FOAM (STREAMLINE, ARMAFLEX, OR APPROVED EQUAL).

K. PROVIDE EPOXY PAINT FINISH. WHERE AN EPOXY CORROSION-RESISTANT PAINT IS REQUIRED, THOROUGHLY CLEAN, PREPARE AND PROTECT AGAINST CORROSION ALL METAL PARTS OF UNIT WITH CONTINUOUS EPOXY COATINGS OF PRIMER AND FINISH TO OBTAIN A MINIMUM DRY FILM TOPCOAT THICKNESS OF 7 TO 10 MILS.

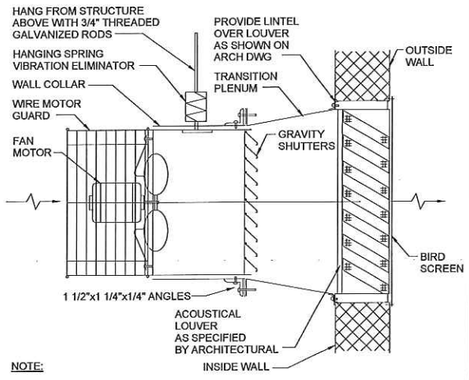
L. COATING FOR SEACOAST ENVIRONMENT: THE CONDENSER (AND/OR) EVAPORATOR COIL(S) SHALL BE COATED WITH BLYGOLD® POLUAL XT BY A CERTIFIED LICENSED APPLICATOR. THE COATING PRODUCT MANUFACTURER SHALL BE ABLE TO DOCUMENT A CLASS 5B RESULT ON A CROSS HATCH ADHESION TEST (ASTM D5339) AND THE SUCCESSFUL COMPLETION OF ACCELERATED PRODUCT TESTING FOR A MINIMUM 4000 HOURS IN BOTH SALT SPRAY (ASTM B117) AND ACID SALT SPRAY (ASTM G85) TESTS. THE COATING SERVICE PROVIDER SHALL ALSO BE ABLE TO OFFER A 3-YEAR CONDITIONAL WARRANTY FOR THE COATING APPLIED ON FINNED-TUBE COILS. BLYGOLD® POLUAL XT ALUMINUM-IMPREGNATED POLYURETHANE COIL COATING SHALL BE APPLIED ENSURING TOTAL PENETRATION AND COVERAGE WITHOUT BRIDGING OR SIGNIFICANTLY AFFECTING THE HEAT TRANSFER ABILITY OF THE COIL. THE TOTAL DRY FILM THICKNESS OF THE COATING SHALL BE 25 MICRONS (1 MIL). THE COATING SHALL PROVIDE INHERENT PROTECTION AGAINST ULTRAVIOLET RADIATION AND HAVE A DRY TEMPERATURE RESISTANCE FROM -4°F TO 302° F (-20°C TO 150°C).



AIR-COOLED CONDENSING UNIT (SLAB MOUNTED AT GRADE) REV 062309 — H-105

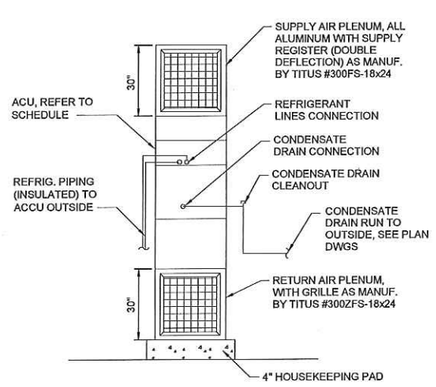


CONDENSATE DRAIN DETAIL — H-114

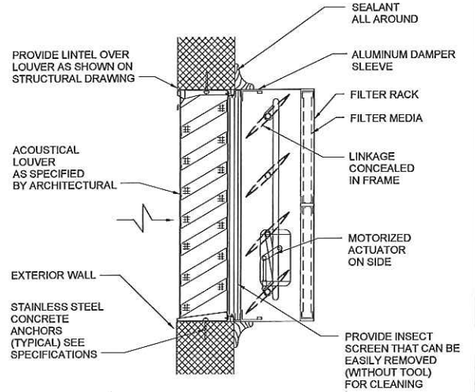


NOTE:
THE LOUVER SHALL BE SIZED AT MAXIMUM 0.15" WC PRESSURE DROP

SIDEWALL EXHAUST FAN (WITH LOUVER) — H-511



FREE-STANDING AIR HANDLER DETAIL — H-901



ACCOUSTICAL LOUVER (W/ MOTORIZED DAMPER) — H-902

LOUVER SCHEDULE

UNIT ID	SERVICE	LOCATION	LOUVER SIZE (INCHES)	MINIMUM FREE AREA (SQ FT)	REMARKS
LV-1	INTAKE	PUMP ROOM	48X48	4.0	SEE ARCHITECTURAL SPECIFICATION NO 89100
LV-2	INTAKE	PUMP ROOM	48X48	4.0	SEE ARCHITECTURAL SPECIFICATION NO 89100
LV-3	EXHAUST	PUMP ROOM	48X48	4.0	SEE ARCHITECTURAL SPECIFICATION NO 89100
LV-4	EXHAUST	PUMP ROOM	48X48	4.0	SEE ARCHITECTURAL SPECIFICATION NO 89100

G. V. SMITH CERTIFICATE No. 42990 STATE OF FLORIDA PROFESSIONAL ENGINEER
7.22.14

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date: _____

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH® 1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602 CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN 1715 NORTH WEST SHORE BLVD TAMPA, FLORIDA 33607 CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

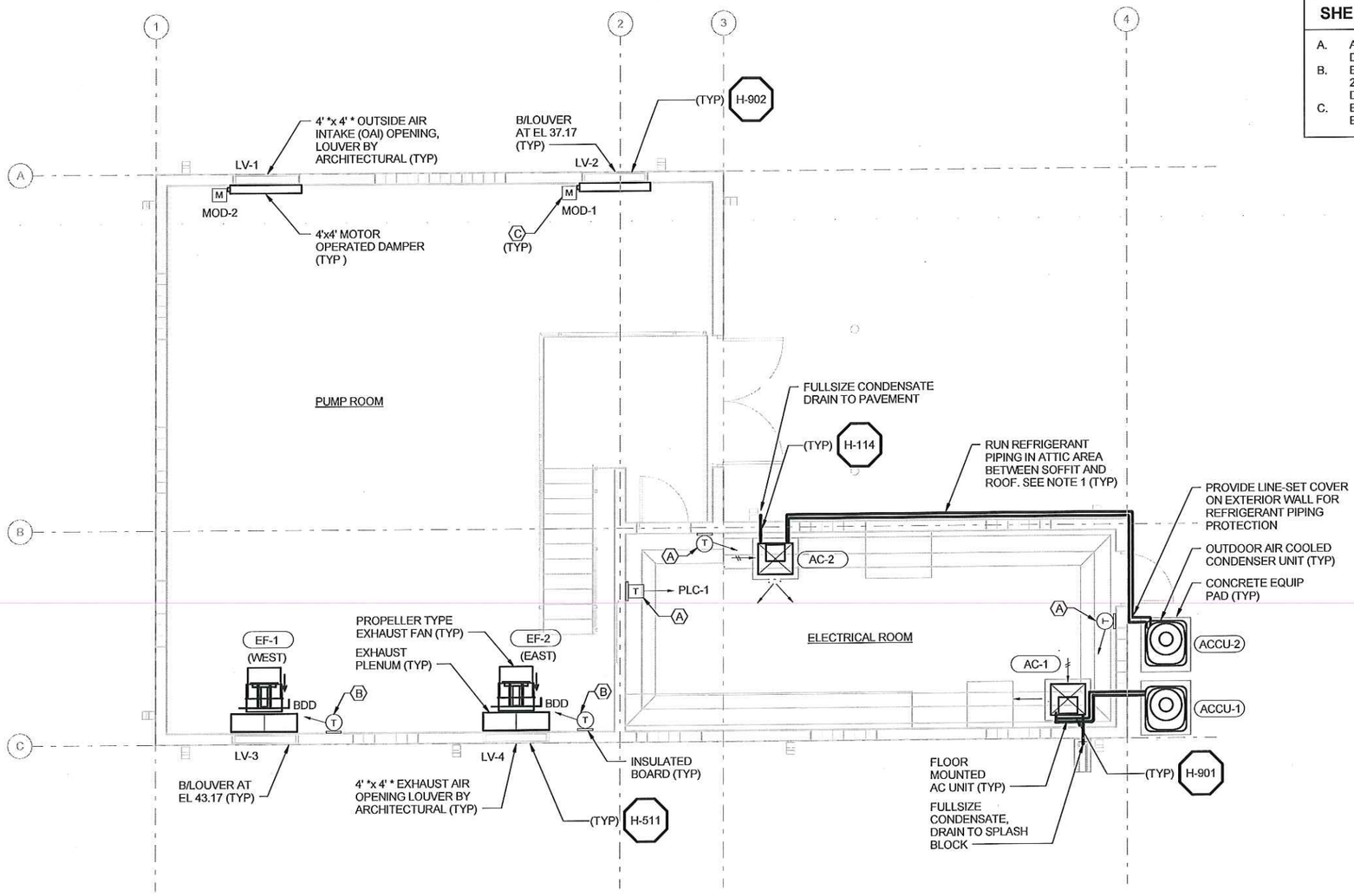
GENERAL HVAC EQUIPMENT SCHEDULES AND DETAILS

SHEET GH-2

1011673

DATE : 6/26/2014 9:20:21 AM
USER : GSATTAR
C:\Users\gsattar\Documents\TBSD_MH_001_central_gsattar.rvt

NORTH
PLANT



GENERAL SHEET NOTES

1. SIZE REFRIGERANT PIPE LINES PER MANUFACTURER REQUIREMENTS AND FOR OPTIMUM PERFORMANCE RATING. CONTRACTOR TO SUBMIT A REFRIGERANT PIPING DIAGRAM APPROVED BY THE SPLIT SYSTEM MANUFACTURER BEFORE PROCEEDING WITH WORK. (REFER TO SPECIFICATIONS NOTES FOR REFRIGERANT PIPING.
2. REFER TO DWG GH-2 FOR SPECIFICATION.
3. PROVIDE MANUFACTURER'S RECOMMENDED MOUNTING EQUIPMENT AND METHODS FOR INSTALLATION OF FLOOR MOUNTED AC UNITS.
4. FOR SEQUENCE OF OPERATION, REFER TO ELECTRICAL SCHEMATIC ON DRAWING E-4.
5. * DENOTES DIMENSIONS TO BE DETERMINED AFTER APPROVAL OF EQUIPMENT.

SHEET KEY NOTES

A. ACU SET-POINTS: LEAD/LAG ACU-1 = 78 DEGREE F AND ACU-2 = 80 DEGREE F. HIGH TEMPERATURE ALARM SET-POINT = 85 DEGREE F.
B. EXHAUST FAN SET-POINTS: LEAD/LAG EF-1 = 75 DEGREE F AND EF-2 = 80 DEGREE F. HIGH TEMPERATURE ALARM SET-POINT = 85 DEGREE F.
C. EF-1 AND EF-2 ARE INTERLOCKED WITH BOTH MOD-1 AND MOD-2. BOTH INTAKE DAMPER OPEN, WHEN ANY FAN IS ENERGIZED.

G. V. SMITH CERTIFICATE No. 42990 STATE OF FLORIDA PROFESSIONAL ENGINEER

7.22.14

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:_____

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

HVAC PLAN

SHEET H-1

1011673

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
CO	CLEANOUT
CFH	CUBIC FEET PER HOUR
CP	CIRCULATING PUMP
CL	CENTERLINE
DS	DRENCH SHOWER
ECS	ENGINE COOLING WATER SUPPLY
ECR	ENGINE COOLING WATER RETURN
ED	EQUIPMENT DRAIN
EL	ELEVATION
ES/EW	EMERGENCY SHOWER AND EYE WASH
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
FF	FINISHED FLOOR
FD	FLOOR DRAIN
FCO	FLOOR CLEAN OUT
FW	FIRE PROTECTION WATER
HB	HOSE BIBB
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LAV	LAVATORY
NG	NATURAL GAS
MSB	MOP SERVICE BASIN
PW	POTABLE WATER
RPBFP	REDUCED PRESSURE BACK FLOW PREVENTER
SD	SANITARY DRAIN
SH	SHOWER
SK	SINK
TMV	THERMOSTATIC MIXING VALVE
TW	TEMPERED WATER
TYP	TYPICAL
UR	URINAL
UW	UTILITY WATER
VTR	VENT THRU ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WHD	WALL HYDRANT

LEGEND

- POTABLE COLD WATER
- POTABLE HOT WATER
- POTABLE HOT CIRCULATION WATER
- G — NATURAL GAS
- FLOOR CLEANOUT
- WALL CLEANOUT
- BUTTERFLY VALVE
- GLOBE VALVE
- BALL VALVE
- BACKFLOW PREVENTER
- UNDERGROUND SANITARY
- ABOVEGROUND SANITARY
- VENT PIPING
- CHECK VALVE
- DOWN PIPE
- VALVE IN RISER
- FLOOR DRAIN

GENERAL PLUMBING NOTES

1. THIS IS A GENERAL LEGEND PROVIDED TO FACILITATE USE OF THE DRAWINGS. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR REQUIRED ITEMS.
2. * DENOTES DIMENSIONS TO BE DETERMINED AFTER APPROVAL OF EQUIPMENT.
3. FOR OTHER VALVES, EQUIPMENT AND PIPING SYMBOLS, SEE MECHANICAL PIPING SYMBOLS.
4. ALL PLUMBING WORK TO BE EXECUTED IN STRICT ACCORDANCE PER CURRENT PLUMBING CODES ACCEPTED BY THE CITY. THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL STANDARD PLUMBING CODE REGULATIONS AND LOCAL PLUMBING INSPECTOR.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE OWNER PERTAINING TO WORKING HOURS, REFUSE DISPOSAL, SECURITY, INTERRUPTIONS OF THE BUILDING UTILITIES AND/OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS AND ANY OTHER ITEMS DEEMED TO MUTUAL INTEREST.
6. WORK SHALL INCLUDE, BUT NOT NECESSARY BE LIMITED TO PROVIDING ALL LABOR, MATERIALS, TOOLS, PERMITS, TESTS, INSPECTION FEES, TAXES, ETC. NECESSARY FOR, OR INCIDENTAL TO THE INSTALLATION OF PLUMBING WORK.
7. CONTRACTOR MUST REFER TO OTHER DISCIPLINE DRAWINGS TO VERIFY THE CLEARANCES PROVIDED IN ALL CHASES, ATTIC, AND BASEMENT. PROVIDE FITTINGS AND OFFSETS REQUIRED TO ACCOMMODATE ALL THESE CONDITIONS.
8. PLUMBING CONTRACTOR SHALL COORDINATE AND PROVIDE ALL SLEEVES REQUIRED FOR WALL AND SLAB PENETRATIONS.
9. THE PIPING INDICATED ON THESE PLANS ARE DIAGRAMATIC. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. SUBCONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, TEES, ELBOWS, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
10. SUBCONTRACTOR SHALL COORDINATE ANY PLUMBING OR PIPING SYSTEM SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
11. ALL SANITARY WASTE PIPING SHOWN IS BELOW SLAB, BELOW FLOOR, OR WITHIN WALLS UNLESS OTHERWISE NOTED.
12. SUBCONTRACTOR SHALL COORDINATE AND PROVIDE ALL NECESSARY PIPING & PLUMBING FITTINGS, PIPING, MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE INSTALLATION OF ALL PLUMBING RELATED ITEMS.
13. THE SUBCONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDER SLAB PIPING WITH EXISTING STRUCTURAL FOUNDATIONS. UNDERGROUND UTILITY LOCATIONS SHALL BE VERIFIED PRIOR TO ANY WORK BEING PERFORMED. SUBCONTRACTOR SHALL REPAIR OR REPLACE ALL PIPING NOT IN PROPER WORKING ORDER OR DAMAGED DURING INSTALLATION OF THE NEW UNDERGROUND PIPING.
14. ALL PLUMBING & PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY THE LOCAL CODE REQUIREMENTS AND PER MANUFACTURER'S RECOMMENDATIONS.
15. ALL PIPING PENETRATIONS THROUGH THE WALL, OR FLOOR SHALL BE SEALED TO EQUAL THE RATING OF THE NEW, EXISTING WALL OR FLOOR.
16. THE PLUMBING SYSTEM SHALL BE TESTED AS REQUIRED BY LOCAL CODE OR BY THE REQUIREMENTS OF THE LOCAL PLUMBING INSPECTOR.
17. THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED PER LOCAL CODE & PER AUTHORITY HAVING JURISDICTION REQUIREMENTS.
18. ALL DRAINAGE PIPING TO SLOPE AT A MIN. OF 1/8" PER FT UNLESS OTHERS NOTED.
19. ALL UNDERGROUND PLAN PIPING TO BE EXTENDED 5'-0" AWAY FROM THE EXTERNAL WALL, FOR CONTINUATION OF UNDERGROUND PIPING SEE DRAWING C-2.
20. ALL PIPES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAPS TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING SHALL BE SUPPORTED EVERY 4 FEET.

REGISTERED G. V. SMITH CERTIFICATE No. 42990 STATE OF FLORIDA PROFESSIONAL ENGINEER

7.22.14

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

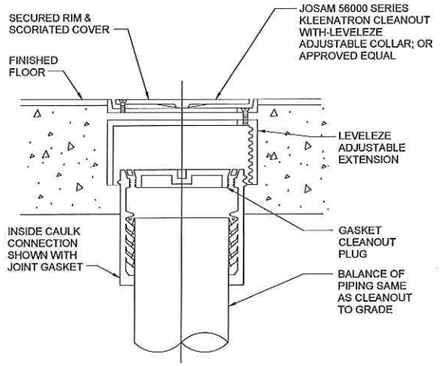
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

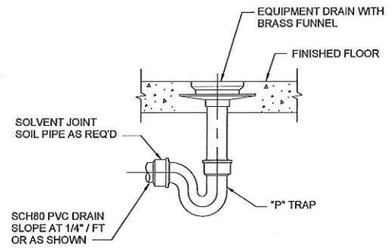
GENERAL PLUMBING
SYMBOLS, ABBREVIATIONS AND NOTES

SHEET: GP-1

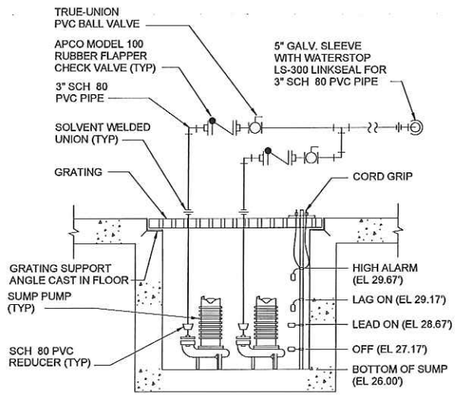
1011673



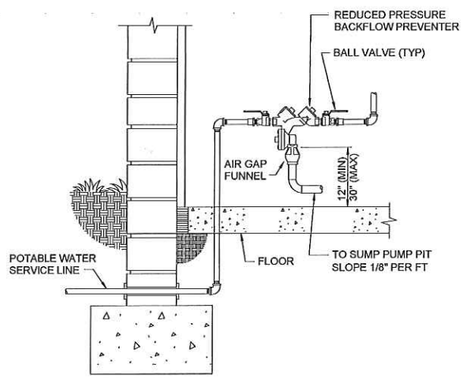
FLOOR CLEANOUT
(IN FINISHED FLOOR) REV 062309 P-310



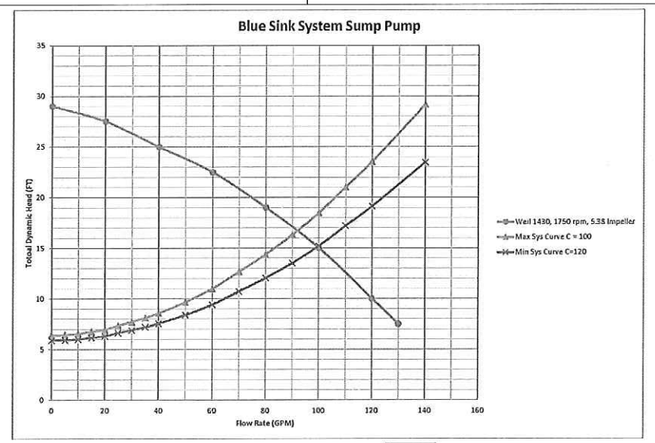
EQUIPMENT DRAIN (ED) P-901



DUPLEX SUMP PUMP DETAIL P-902



BACKFLOW PREVENTER DETAIL P-903



SUMP PUMP CURVE 1 -

SUMP PUMPS SCHEDULE

UNIT ID	LOCATION	AREA SERVED	SERVICE	TYPE	SINGLE OR DUPLEX	GPM, (EA)	HEAD 'H2O	MOTOR HP	MOTOR RPM	MOTOR CONTROL	MOTOR ELEC. V/PH/HZ	MANUFACTURER MODEL NO	REMARKS/NOTES
SMP-1 (NORTH)	PUMP ROOM	PUMP ROOM	AREA DRAINS	SUBMER-SIBLE	DUPLEX	92	16.5	3/4	1750	NON-MERCURY SWITCH	115/1/60	WEIL MODEL NO. 1413 5.38" IMPELLER	NON-CLOG EJECTOR TYPE PLUG TYPE
SMP-2 (SOUTH)	PUMP ROOM	PUMP ROOM	AREA DRAINS	SUBMER-SIBLE	DUPLEX	92	16.5	3/4	1750	NON-MERCURY SWITCH	115/1/60	WEIL MODEL NO. 1413 5.38" IMPELLER	NON-CLOG EJECTOR TYPE PLUG TYPE

PIPE SCHEDULE

SERVICE	SIZE	PIPE	PROTECTIVE COATING INT	PROTECTIVE COATING EXT	JOINTS	TEST PRESSURE (PSIG)	REMARKS
SUMP PUMP DISCHARGE (SPD)	ALL	PVC	--	--	SW	50	SCH 80
SANITARY (SAN) (UNDERGROUND)	ALL	PVC	--	--	SW	10	SCH 80
POTABLE WATER	ALL	PVC	--	--	SW	100	SCH 80

1. PIPE MATERIALS:
   - CI CAST-IRON
   - CPVC CHLORINATED POLYVINYL CHLORIDE
   - G GALVANIZED CARBON STEEL ASTM A53
   - PVC POLYVINYL CHLORIDE
2. JOINTS:
   - B BITUMINOUS
   - B&S BELL AND SPIGOT
   - F FLANGED
   - MJ MECHANICAL JOINT
   - SD SOLDERED
   - SW SOLVENT WELDED
   - T THREADED
   - W WELDED
3. COATINGS AND LININGS:
   - I INSULATED
   - P PAINTED
   - W WRAPPED
   - BC BITUMINOUS COATING (COLD)
   - PR SHOP PRIMED

SPECIFICATION NOTES:

EXTERIOR WALL HYDRANTS (WHD): WOODFORD MODEL MB-24 (OR EQUAL), STAINLESS STEEL 304 BOX WITH TEE KEY LOCK. PROVIDE WALL HYDRANTS OF SOLID-BRONZE WITH 3/4-INCH HOSE THREAD OUTLET, AND INTEGRAL ATMOSPHERIC VENT.

EQUIPMENT DRAIN: WADE, ZURN (OR EQUAL).

EQUIPMENT DRAIN SHALL BE A BRASS FLOOR DRAIN TWO-PIECE BODY MEDIUM DUTY GRATE WITH AN OVAL BRASS FUNNEL, DOUBLE DRAINAGE FLANGE, WEEPHOLES, ADJUSTABLE TOP, SEDIMENT BUCKET,

CLEANOUTS: JOSAM, JR SMITH, WADE, ZURN (OR EQUAL).

1. PROVIDE FLOOR CLEANOUTS IN UNFINISHED ROOMS WITH A SATIN FINISH BRASS TOP, AND SECURED HEAVY-DUTY BRASS COVER.
2. PROVIDE UNDERGROUND CLEANOUTS WITH A SATIN FINISH BRASS TOP.

CHECK VALVES - CLAPPER TYPE: APCO SERIES 100, 3" FLANGED C.I. RUBBER FLAPPER CHECK VALVE (OR EQUAL).

BALL VALVES: PROVIDE HEYWARD TRUE-UNION PVC BALL VALVE, SCH 80 HIGH IMPACT POLYPROPYLENE HANDLE, MIN PRESSURE RATED - 150 PSI EPDM WITH NSF CERTIFIED FOR POTABLE WATER USE.

DUPLEX SUBMERSIBLE PUMPS: PROVIDE EJECTOR TYPE DUPLEX SUBMERSIBLE PUMPS WITH STAINLESS STEEL SHAFT, DOUBLE MECHANICAL SEALS, FACTORY-LUBRICATED BALL BEARINGS, AND EXTRA HEAVY-DUTY WATERPROOF CASING OF CLOSE-GRAINED CAST IRON WITH INTEGRALLY CAST LEGS FOR SUPPORTING PUMP ON BOTTOM OF SUMP. PROVIDE CAST-IRON, NONCLOG IMPELLER CAPABLE OF PASSING MIN. 1/2-INCH SOLIDS. PROVIDE STAINLESS STEEL LIFTING CABLES CAPABLE OF LIFTING 2 TIMES THE WEIGHT OF SUMP (MIN 1/4" DIA) CONNECTING EACH SUMP PUMP TO A STAINLESS STEEL EYE BOLT ANCHORED IN WALL ABOVE THE SUMP PUMP GRATING. THE CABLE SHALL BE ATTACHED TO EACH SUMP SUMP WITH MARINE GRADE 316 SST SHACKLES.

PROVIDE HEAVY-DUTY WATERPROOF POWER CABLES RATED AT 600 VOLTS AND CONTROL CABLES RATED AT 600 VOLTS, WITH SUFFICIENT SLACK TO PERMIT PUMP REMOVAL FROM SUMP.

PROVIDE ALUMINUM GRATED COVER WITH TWO PUMP OPENINGS, DISCHARGE FLANGES, MOTOR CABLE PLATE, LEVEL CONTROL PLATE, AND HANDLE.

PROVIDE PRE-WIRED STAINLESS STEEL CONTROL PANEL FOR WALL MOUNTING WITH TOP OF CABINET 6 FEET ABOVE FLOOR. PANEL CONSISTS OF U.L. INC. APPROVED, SIDE-HINGED NEMA 4X, GASKETED, WEATHERPROOF ENCLOSURE CONTAINING FOLLOWING:

- 2 CIRCUIT BREAKER DISCONNECT SWITCHES WITH LOCKOUT HANDLES
- 2 MAGNETIC STARTERS WITH OVERLOAD PROTECTION
- 2 ON-OFF-AUTOMATIC SELECTOR SWITCHES FOR EACH PUMP
- 2 RED PUMP RUNNING LIGHTS
- 1 MANUAL RESET BUTTONS FOR SUMP HIGH LEVEL ALARM AND HORN
- 1 ALARM HORN AND AMBER ALARM LIGHT MOUNTED ON PANEL DOOR
- 1 NUMBERED AND WIRED TERMINAL STRIP WITH EXTRA TERMINALS WIRED FROM ALARM CONTACTS
- 2 ELAPSED TIME METER. 1 FOR EACH PUMP. CONTACTS FOR PUMP RUN STATUS, SEE DWG I-2.

MAGNETIC STARTERS: PROVIDE MAGNETIC STARTERS THAT MEET ELECTRICAL REQUIREMENTS,WITH NEMA 4X ENCLOSURE. SET FORTH IN ELECTRICAL DWGS AND SPECIFICATIONS, SEE SHEET E-5.

SPECIFICATION NOTES CONT:

BACKFLOW PREVENTER:

PROVIDE ASSE STANDARD, VACUUM BREAKERS, BACKFLOW PREVENTERS AND REDUCED PRESSURE ZONE BACKFLOW PREVENTERS, BRONZE BODY WITH THREADED ENDS, COMPLY WITH NSF 61, "DRINKING WATER SYSTEM COMPONENTS--HEALTH EFFECTS", SECTIONS 1 THROUGH 9, FOR POTABLE DOMESTIC WATER AND SERVICE WATER PLUMBING SPECIALTIES. VIKING, NIBCO, ZURN, WATTS OR APPROVED EQUAL

PIPE-APPLIED, ATMOSPHERIC-TYPE VACUUM BREAKERS: ASSE 1001, WITH FLOATING DISC AND ATMOSPHERIC VENT.

HOSE-CONNECTION VACUUM BREAKERS: ASSE 1011, NICKEL-PLATED, WITH NON-REMOVABLE AND MANUAL DRAIN FEATURES, AND ASME B1.20.7, GARDEN-HOSE THREADS ON OUTLET.

REDUCED-PRESSURE-ZONE BACKFLOW PREVENTERS: ASSE 1013, LEAD FREE, SUITABLE FOR CONTINUOUS PRESSURE APPLICATION. INCLUDE BALL VALVES ON INLET AND OUTLET, AND STRAINER ON INLET; TEST COCKS; AND PRESSURE-DIFFERENTIAL RELIEF VALVE WITH ASME A112.1.2 AIR-GAP FITTING LOCATED BETWEEN TWO POSITIVE-SEATING CHECK VALVES.

PROVIDE WATER HAMMER ARRESTERS: ASSE 1010 OR PDI-WH 201, METAL-BELLOWS TYPE WITH PRESSURIZED METAL CUSHIONING CHAMBER. JOSAM , J.R. SMITH, ZURN OR APPROVED EQUAL

HANGER AND SUPPORT:

ALL HANGERS AND SUPPORTS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF ASME B31.1, MSS SP-58, SP-59, SP-69 AND SP-90, EXCEPT AS MODIFIED HEREIN, AND BE OF STANDARD MANUFACTURE WHEREVER POSSIBLE, AND BEST SUITED FOR THE SERVICE REQUIRED. UNLESS OTHERWISE APPROVED, ALL HANGERS, SUPPORTS AND CONCRETE INSERTS SHALL BE LISTED WITH UNDERWRITERS' LABORATORY, INC. PIPE AND APPURTENANCES CONNECTED TO EQUIPMENT SHALL BE SUPPORTED IN A MANNER TO PREVENT ANY STRESS BEING IMPOSED ON THE EQUIPMENT. WHEN MANUFACTURERS HAVE INDICATED REQUIREMENTS THAT PIPING LOADS SHALL NOT BE TRANSMITTED TO THEIR EQUIPMENT, CERTIFICATION SHALL BE SUBMITTED STATING THAT REQUIREMENTS HAVE BEEN COMPLIED WITH. HANGERS OR SUPPORTS SHALL BE PROVIDED AT ALL LOCATIONS WHERE PIPING CHANGES DIRECTION. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR BY STAYS OR BRACES TO PREVENT RATTLING AND VIBRATION. CONTACT BETWEEN DISSIMILAR METALS SHALL BE PREVENTED BY USE OF STAINLESS STEEL PLATED, RUBBER OR VINYL COATED HANGERS OR SUPPORTS. WHERE HANGER OR SUPPORT SPACING DOES NOT CORRESPOND WITH JOIST OR RIB SPACING, STRUCTURAL STEEL CHANNELS SHALL BE ATTACHED TO JOISTS OR RIBS, AND THE PIPES SUSPENDED THERE FROM.PIPE SUPPORTS, HANGERS, BRACKETS, GUIDES, RESTRAINTS, RODS, BOLTS, NUTS AND ANCHORS SHALL BE TYPE 316 STAINLESS STEEL. CONCRETE INSERTS SHALL BE OF MALLEABLE IRON WITH GALVANIZED FINISH.

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL PLUMBING
STANDARD DETAILS, SCHEDULES AND SPECIFICATIONS

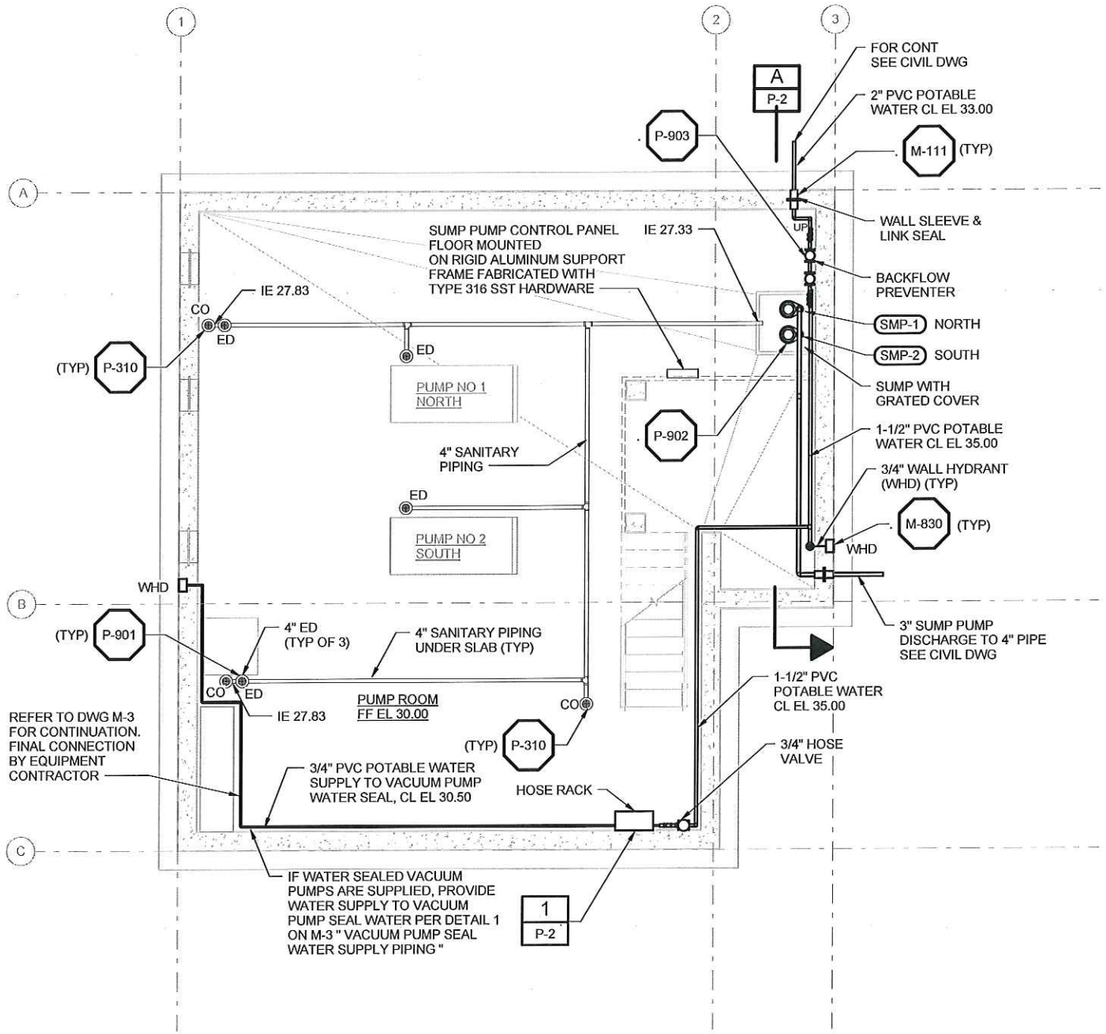
SHEET GP-2

1011673

NORTH
PLANT

GENERAL SHEET NOTES

1. ABOVE-GRADE SUMP PUMP DISCHARGE PIPING SHOWN ON THIS SHEET SHALL BE 3 INCH SCHEDULE 80 PVC SOLVENT WELDED PIPING MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 431061 PVC PRESSURE PIPE ASTM D-1785 WITH FLANGED OR SOCKET WELDED FITTINGS MEETING ASTM D2467. PROVIDE SOLVENT CEMENT COMPATIBLE FOR THE SERVICE. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE REQUIREMENTS AS SPECIFIED IN SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
2. ABOVE-GRADE POTABLE WATER PIPING SHOWN ON THIS SHEET SHALL BE 2-INCH SCHEDULE 80 PVC SOLVENT WELDED PIPING MEETING THE REQUIREMENTS OF SPECIFICATION SECTION 431061 PVC PRESSURE PIPE ASTM D-1785 WITH FLANGED OR SOCKET WELDED FITTINGS MEETING ASTM D2467. PROVIDE SOLVENT CEMENT COMPATIBLE FOR THE SERVICE. PRESSURE TEST AT 100 PSIG AND MEET ZERO LEAKAGE. DISINFECT IN ACCORDANCE WITH SECTION 017430 - PRESSURE PIPE TESTING AND DISINFECTION.
3. POTABLE WATER PIPING AND ACCESSORIES SHALL BE NSF CERTIFIED FOR POTABLE WATER USE.



G. V. SMITH
CERTIFICATE
No. 42990
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

7.22.14

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:

REV	DATE	BY	DESCRIPTION

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

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1600 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 8773

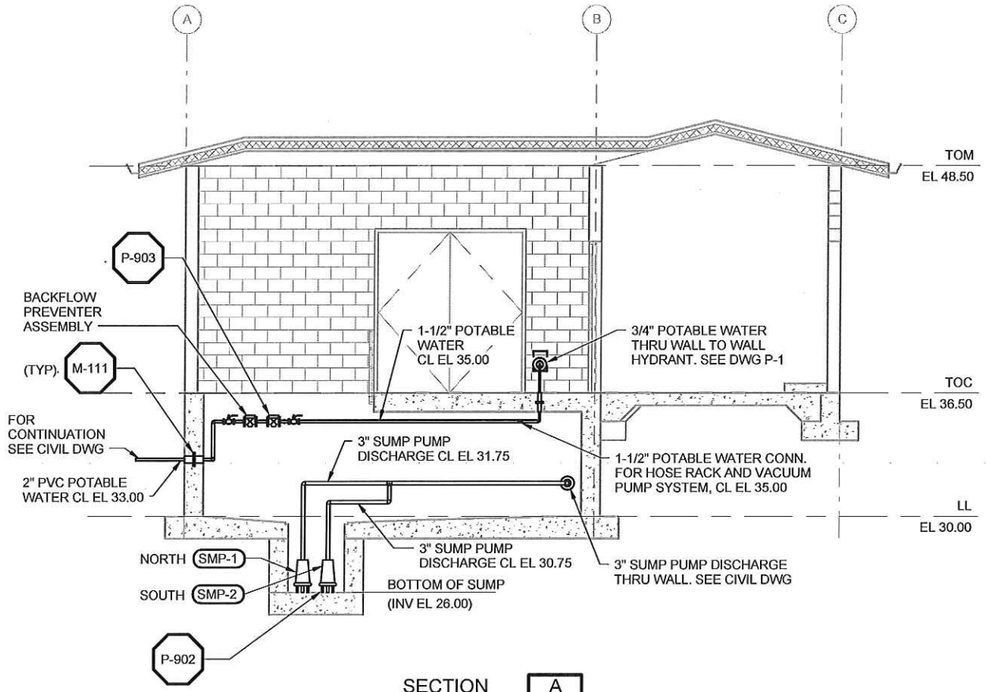
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

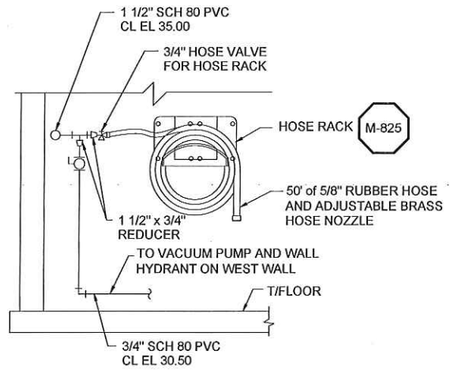
BLUE SINK MFL PUMPING STATION

PLUMBING
PLAN

SHEET
P-1
1011673



SECTION A
SCALE: 1/4" = 1'-0" P-1



1 HOSE CONNECTION DETAIL
P-1 NO SCALE

G. V. SMITH
CERTIFICATE
No. 42990
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
1.22.14

George Victor Smith, PE
Mechanical Engineer
State Of Florida - License No 42990
Date:

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

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

DESIGNED VSMITH
DRAWN GSATTAR
CHECKED SSAVVAS

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

PLUMBING
SECTIONS AND DETAILS

SHEET
P-2
1011673

SINGLE LINE DIAGRAM SYMBOLOGY

- MEDIUM VOLTAGE VACUUM DRAWOUT STARTER
- 52 — MEDIUM VOLTAGE DRAWOUT BREAKER
- THERMAL MAGNETIC CIRCUIT BREAKER — 100/20 — FRAME (AMPS) / TRIP (AMPS)
- MCP CIRCUIT BREAKER — 100/20 — CONTINUOUS AMPS / TRIP SETTING BASED ON MOTOR HORSEPOWER
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER — 100/20 — (L-S-I-G) L = LONG TIME, S = SHORT TIME, I = INSTANTANEOUS, G = GROUND FAULT
- X — 40/MCP — II * — COMBINATION NEMA RATED STARTER WITH MCP DISCONNECT AND CONTROL POWER TRANSFORMER
  - ROMAN NUMERAL = NEMA SIZE
  - X = LOCATION
  - * = STARTER TYPE
    - (BLANK) ----- FULL VOLTAGE NON-REVERSING
    - FVR ------- FULL VOLTAGE REVERSING
    - 2S2W ------- TWO SPEED TWO WINDING
    - 2S1W ------- TWO SPEED ONE WINDING
- X — AFD — VARIABLE FREQUENCY DRIVE, X = AMPERE RATING
- X — RVSS — REDUCED VOLTAGE SOLID STATE STARTER, X = AMPERE RATING
- X / Y — PACKAGED EQUIPMENT, X = EQUIPMENT SIZE, Y = TYPE (KW, KVA, OR HP AS INDICATED)
- K — KEY INTERLOCK
- GENERATOR, RATINGS AS INDICATED
- TRANSFER SWITCH (MANUAL OR AUTOMATIC), RATINGS AS INDICATED
- AS — AMMETER SWITCH
- VS — VOLTMETER SWITCH
- ES — EMERGENCY STOP

- X — METERING DEVICE, X = METER TYPE
  - WHM ----- WATT HOUR METER
  - WM ------ WATT METER
  - AM ------ AMMETER
  - VM ------ VOLTMETER
  - PFM ----- POWER FACTOR METER
- 480/120 — (3) — POTENTIAL TRANSFORMER, RATIO AND NUMBER OF PT'S AS INDICATED
- 100/5 — (3) — CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS INDICATED
- GROUND FAULT CURRENT TRANSFORMER, RATIO AS INDICATED
- 5A — FUSE, SIZE AS INDICATED
- X * — MOTOR, X = HORSEPOWER, * = FULL LOAD AMPS
- DELTA-WYE TRANSFORMER WITH SECONDARY KVA SIZE AND VOLTAGE RATIO AS INDICATED
- X AMPS, Y SECONDS — 51G — DELTA-WYE TRANSFORMER WITH RESISTANCE GROUNDED SECONDARY AND GROUND FAULT RELAYING, X - GROUNDING RESISTOR AMPS, Y - GROUNDING RESISTOR SECONDS
- FUSED CONTROL POWER TRANSFORMER
- MOV — ELECTRICAL MOTOR OPERATED VALVE, WITH INTEGRAL REVERSING STARTER
- 30A — DISCONNECT SWITCH, SIZE AS INDICATED
- 30A / 30A — FUSED DISCONNECT SWITCH, SIZE AS INDICATED
- CAPACITOR
- SPD — SURGE PROTECTIVE DEVICE
- SSM — SOLID STATE METERING DEVICE
- SSMP — SOLID STATE MOTOR PROTECTIVE DEVICE
- LIGHTNING ARRESTOR AND SURGE CAPACITOR
- * — (#) — ANSI RELAY DEVICE, (#) = QUANTITY, * = ANSI DEVICE
  - 25 ----- SYNCHRONISM CHECK RELAY
  - 27 ----- UNDERVOLTAGE
  - 27/47 -- UNDERVOLTAGE, PHASE SEQUENCE, UNBALANCED VOLTAGE
  - 32 ----- DIRECTIONAL POWER RELAY
  - 41 ----- FIELD CONTACTOR
  - 43 ----- SELECTOR SWITCH
  - 49 ----- HIGH OIL TEMPERATURE
  - 50/51 --- INSTANTANEOUS AND TIME OVERCURRENT
  - 50/51N -- INSTANTANEOUS AND TIME RESIDUALLY CONNECTED GROUND OVERCURRENT
  - 51G----- GROUND FAULT
  - 60 ----- VOLTAGE BALANCE
  - 62 ----- TIME DELAY
  - 63 ----- SUDDEN PRESSURE
  - 67 ----- AC DIRECTIONAL CURRENT RELAY
  - 71L----- LOW OIL LEVEL
  - 81 ----- FREQUENCY RELAY
  - 83 ----- CONTROL POWER TRANSFORMER
  - 86 ----- LOCKOUT
  - 87TL ---- TRANSFORMER DIFFERENTIAL
  - 87M ---- MOTOR DIFFERENTIAL

SCHEMATIC DIAGRAM SYMBOLOGY

- L O R — THREE - POSITION SELECTOR SWITCH
- L R — TWO - POSITION SELECTOR SWITCH
- THREE - POSITION SPRING RETURN-TO-CENTER MOMENTARY CONTACT SWITCH
- SINGLE POLE TOGGLE SWITCH
- VACUUM OR PRESSURE SWITCH CLOSE ON RISING PRESSURE
- VACUUM OR PRESSURE SWITCH OPEN ON RISING PRESSURE
- FLOAT LEVEL SWITCH CLOSE ON RISING LEVEL
- FLOAT LEVEL SWITCH OPEN ON RISING LEVEL
- NORMALLY OPEN
- NORMALLY CLOSED
- NORMALLY OPEN HELD CLOSED
- NORMALLY CLOSED HELD OPEN
- MAINTAINED POSITION
- TEMPERATURE SWITCH CLOSE ON RISING TEMPERATURE
- TEMPERATURE SWITCH OPEN ON RISING TEMPERATURE
- FLOW SWITCH CLOSE ON INCREASING FLOW
- FLOW SWITCH OPEN ON INCREASING FLOW
- TORQUE SWITCH OPEN ON INCREASING TORQUE
- 1 — LOCATION SYMBOL, LEGEND SHOWN ON SCHEMATIC DRAWINGS, ALL DEVICES ARE LOCATED IN THE MCC UNLESS INDICATED OTHERWISE
- DI — DIGITAL INPUT TO PLC/RTU/DCS
- DIGITAL OUTPUT FROM PLC/RTU/DCS NORMALLY OPEN
- DIGITAL OUTPUT FROM PLC/RTU/DCS NORMALLY CLOSED
- AI — ANALOG INPUT TO PLC/RTU/DCS 4-20 mA (UNLESS INDICATED OTHERWISE)
- AO — ANALOG OUTPUT FROM PLC/RTU/DCS 4-20 mA (UNLESS INDICATED OTHERWISE)
- SV — SOLENOID VALVE
- SOLENOID VALVE
- E-STOP PUSHBUTTON

- X — CONTROL RELAY OR COIL, X = DEVICE
  - CR ---- CONTROL RELAY
  - TD ---- TIME DELAY RELAY (TIMING RANGE AS INDICATED)
  - M ----- MOTOR STARTER
  - PC ---- PHOTOCELL
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- XXXX — NORMALLY OPEN CONTACT LINE REFERENCE
- XXXX — NORMALLY CLOSED CONTACT LINE REFERENCE

TIMED CONTACTS

CONTACT ACTION IS DELAYED AFTER COIL IS:

ENERGIZED

- TD1 — NORMALLY OPEN WITH TIME DELAY CLOSING
- TD1 — NORMALLY CLOSED WITH TIME DELAY OPENING

DE-ENERGIZED

- TD1 — NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING
- TD1 — NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING
- START — NORMALLY OPEN PUSHBUTTON
- STOP — NORMALLY CLOSED PUSHBUTTON
- OFF / ON — NO/NC MAINTAINED PUSHBUTTON
- X — PILOT LIGHT, X = LENS COLOR
  - R ------- RED
  - G ------- GREEN
  - A ------- AMBER
  - W ------ WHITE
- X — PILOT LIGHT (PUSH-TO-TEST), X = LENS COLOR (SEE ABOVE)
- HORN
- ETM — ELAPSED TIME METER
- HEATER
- GROUND CONNECTION
- CROSSING OF CONDUCTORS - NOT CONNECTED
- CROSSING OF CONDUCTORS - CONNECTED
- FUSE
- VOLTAGE SURGE SUPPRESSOR
- LCS — LOCAL CONTROL STATION
- ES — EMERGENCY STOP PUSHBUTTON
- PM — POWER METER
- JIT — POWER INDICATING TRANSMITER

THOMAS H. POWELL — LICENSE — 73510 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

07/28/14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE "1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL SYMBOLS - I

SHEET: GE-1

1011673

PLAN SYMBOLOGY

RECEPTACLES

- X-# — 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (WALL MOUNT)
  - X = PANELBOARD DESIGNATION
  - # = CIRCUIT DESIGNATION
  - * = TYPE
    - WP — WEATHERPROOF
    - XP — EXPLOSION PROOF
    - GFCI — GROUND FAULT CIRCUIT INTERRUPTER
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (FLOOR MOUNT)
- X — SINGLE SPECIAL PURPOSE RECEPTACLE, 240V 1 PHASE
  - X = AMPERAGE
- X — GENERATOR RECEPTACLE
  - X = AMPERAGE
- X — SPECIAL PURPOSE RECEPTACLE, 480 VAC
  - X = AMPERAGE
- TELEPHONE OUTLET - FLOOR TYPE
- TELEPHONE OUTLET - WALL TYPE
- COMPUTER/DATA OUTLET - FLOOR TYPE
- COMPUTER/DATA OUTLET - WALL TYPE

CONDUIT AND RACEWAY SYMBOLOGY

- EXPOSED OR CONCEALED CONDUIT
- CONDUIT RUN (UNDERGROUND OR IN CONCRETE)
- CONDUIT RUN (CHANGE IN ELEVATION)
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUITS GROUPED TOGETHER BUT SHOWN AS A SINGLE LINE FOR CLARITY
- CONDUIT FROM FLOOR ABOVE TO FLOOR BELOW
- CONDUIT CAPPED, OR SEALED
- HOMERUN TO EQUIPMENT INDICATED (3/4 " CONDUIT, 2 #12, 1 #12 GND UNLESS INDICATED OTHERWISE)
- X — RACEWAY BOX
  - X = BOX TYPE
    - MH — MANHOLE
    - HH — HANDHOLE
    - PB — PULLBOX
- J — JUNCTION BOX OR FITTING

MISCELLANEOUS ELECTRICAL SYMBOLOGY

- POWER PANEL
- DISCONNECT SWITCH
- M — MOTOR
- T — THERMOSTAT
- HORN
- COMBINATION STARTER

FIRE PROTECTION SYMBOLOGY

- F — FIRE ALARM HORN WITH STROBE
- A F — FIRE ALARM LOUDSPEAKER WITH AMPLIFIER
- FA — FIRE ALARM PULL STATION
- F — FIRE ALARM STROBE
- F — FIRE ALARM BELL WITH STROBE
- FS — FIRE SUPPRESSION SWITCH
- ER — END-OF-LINE TERMINATOR
- DETECTOR
  - X = TYPE
    - SD SMOKE DETECTOR
    - HD HEAT DETECTOR
    - CD COMBINATION DETECTOR

SECURITY & COMM SYSTEMS SYMBOLOGY

- * I — INTERCOM SPEAKER
  - * = TYPE (REFER TO SPECIFICATIONS)
- * I — INTERCOM SPEAKER WITH STROBE LIGHT
  - * = TYPE (REFER TO SPECIFICATIONS)
- I — INTERCOM WALL JACK
- HS I — INTERCOM HANDSET - WALL MOUNTED
- * VC — VIDEO CAMERA
  - * = TYPE
    - F FIXED
    - PTZ PAN-TILT-ZOOM
- * — SECURITY ACCESS DEVICE
  - * = TYPE
    - CR CARD READER
    - DC DOOR CONTACT
    - EL ELECTRIC LATCH
    - KS KEY SWITCH
    - MS MOTION SENSOR
    - PS DIGITAL KEY PAD

LIGHTING SYMBOLOGY

- X-#a — INCANDESCENT, HPS, OR MH LUMINAIRE
  - X = LIGHTING PANEL DESIGNATION
  - # = CIRCUIT NUMBER
  - a = SWITCH DESIGNATION
- UNSWITCHED LUMINAIRE (NIGHT LIGHT)
- WALL MOUNTED LUMINAIRE
- POLE, BRACKET, ARM, AND STREETLIGHT
- FLUORESCENT LUMINAIRE
- FLUORESCENT LUMINAIRE - UNSWITCHED
- EMERGENCY LUMINAIRE BATTERY OPERATED
- EXIT LIGHT, SHOWN WITH TWO ILLUMINATED SIDES, ARROWS INDICATE DIRECTION OF EXIT
- A / * — LUMINAIRE CALLOUT
  - A = LUMINAIRE TYPE
  - * = APPROXIMATE MOUNTING HEIGHT AFF
  - CLG = CEILING MOUNT
  - (SEE LUMINAIRE SCHEDULE FOR MORE DETAILS)
- $ * X-#a — LIGHT SWITCH
  - X = LIGHTING PANEL DESIGNATION
  - # = CIRCUIT DESIGNATION
  - a = SWITCH DESIGNATION
  - * = SWITCH TYPE
    - 3 — 3 WAY
    - 4 — 4 WAY
    - D — DIMMER
    - M — MANUAL MOTOR STARTER
- OS — OCCUPANCY SENSOR
- PC — PHOTOCELL
- LIGHTING PANEL

GROUNDING SYMBOLOGY

- GROUND ROD AND GROUND WELL
- GROUND ROD (3/4"x10'-0")
- GROUND CONNECTION - BOLTED TYPE
- GROUND CONNECTION - EXOTHERMIC TYPE
- BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID, SIZE AS NOTED
- EARTH GROUNDING

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

7-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN JWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL SYMBOLS - II

SHEET: GE-2

1011673

ELECTRICAL ABBREVIATIONS

A	AMPERE, AUTOMATIC
AC	ALTERNATING CURRENT
AF	CIRCUIT BREAKER FRAME SIZE
AM	AMMETER
ANN	ANNUNCIATOR
AS	ADJUSTABLE SPEED
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BC	BARE COPPER
BKR	BREAKER
C	CONDUIT, CLOSED
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
COM	COMMON
COMM	COMMUNICATIONS
COMP	COMPARTMENT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY, CARD READER
CT	CURRENT TRANSFORMER
DCS	DISTRIBUTED CONTROL SYSTEM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
E	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ETM	ELAPSED TIME METER
F	FREQUENCY, FUSE, FIXED
FDR	FEEDER
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FM	FREQUENCY METER
FO	FIBER OPTIC
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
H	HAND
HD	HEAT DETECTOR
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
HZ	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
IND	INDICATION
INST	INSTANTANEOUS
I/O	INPUT/OUTPUT
Isc	SHORT CIRCUIT CURRENT, AMPS
ISO	ISOLATION
J,JB	JUNCTION BOX
KA	KILO AMPERES
KAIC	KILO AMP INTERRUPTING CURRENT
KCMIL	KILO CIRCULAR MILS
KVA	KILOVOLT AMPERE
L	LOCAL
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LOC	LOCAL
LOR	LOCAL-OFF-REMOTE
LOS	LOCKOUT STOP PUSHBUTTON
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LS	LEVEL SWITCH
LTG	LIGHTING
LTS	LIGHTS
M	MOTOR CONTACTOR COIL
mA	MILLIAMPERE
MCP	MOTOR CIRCUIT PROTECTOR
MLO	MAIN LUGS ONLY
MOV	MOTOR OPERATED VALVE
MS	MANUAL MOTOR STARTER
MTS	MANUAL TRANSFER SWITCH
NEUT	NEUTRAL
NP	NAMEPLATE
O	OPEN, OFF
OL	OVERLOAD
PA	PUBLIC ADDRESS
PB	PUSHBUTTON, PULLBOX
PC	PHOTOCELL
PCM	PROCESS CONTROL MODULE
PF	POWER FACTOR
PFM	POWER FACTOR METER
PH	PHASE
PL	PILOT LIGHT
PNLBD	PANELBOARD
PP	POWER PANELBOARD
POS	POSITION
POT	POTENTIOMETER
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PTZ	PAN-TILT-ZOOM
PWR	POWER
R	REMOTE
RECPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCED VOLTAGE SOLID STATE
SEL SW	SELECTOR SWITCH
SEQ	SEQUENCE
SHLD	SHIELDED
SIG	SIGNAL
SP	SPARE
SP HTR	SPACE HEATER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SSM	SOLID STATE METER
SSMP	SOLID STATE MOTOR PROTECTOR
ST, SH	SHUNT TRIP
STR	STARTER
SSTU	SOLID STATE TRIP UNIT
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TACH	TACHOMETER
TB	TERMINAL BOX
TERM	TERMINAL
TM	REPEAT CYCLE TIMER
TD	TIME DELAY RELAY
TS	TEMPERATURE SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE, VOLTS
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VP	VAPOR PROOF
W	WATTS, WIRE
WM	WATT METER
WP	WEATHERPROOF
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF

GENERAL ELECTRICAL NOTES

1. ALL RACEWAYS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST APPROVED SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
3. REFER TO SPECIFICATIONS FOR REQUIREMENTS RELATED TO FLEXIBLE CONDUIT INSTALLATION
4. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT OR STRUCTURAL CONDITIONS. EXPOSED CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS. REFER TO SPECIFICATION SECTION 260533.
5. CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6 INCHES FROM THE CENTERLINE OF TERMINAL BOXES.
6. IN THE EVENT OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND THE ENGINEER SHALL APPROVE PROPOSED CHANGES BEFORE THEY ARE MADE.
7. ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INTERIOR OF EXTERIOR WALLS ABOVE GRADE OR IN OTHER LOCATIONS CONSIDERED DAMP OR WET SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4 INCH (MINIMUM) AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
8. LOCATION OF PULLBOXES AND HANDHOLES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PIPING AND SHALL BE 6 INCHES (MINIMUM) AWAY FROM MECHANICAL PIPING FLOW LINES.
9. ONLY MAJOR PULLBOXES AND HANDHOLES ARE SHOWN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL PULLBOXES AND HANDHOLES WHERE REQUIRED TO MAKE A WORKABLE INSTALLATION.
10. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS WHETHER OR NOT THEY ARE REFERENCED ON THE DRAWINGS.
11. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS TO PREVENT THERMAL DAMAGE. FOR LOCATIONS OF EXPANSION JOINTS, REFER TO THE STRUCTURAL DWGS.
12. LUMINAIRES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS, WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LUMINAIRE TO THE FINISHED FLOOR. THE APPROPRIATE MOUNTING BRACKETS AND HARDWARE SHALL BE SUPPLIED.
13. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE CENTERLINE OF THE TOP CIRCUIT BREAKER OPERATING HANDLE IN THE UPPERMOST POSITION TO THE FINISHED FLOOR SHALL NOT EXCEED 6'-7".
14. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
15. CONNECTIONS BETWEEN RIGID CONDUIT AND MOTOR TERMINAL BOXES OR SIMILAR EQUIPMENT SUBJECT TO VIBRATION SHALL BE NON-METALIC FLEXIBLE LIQUID-TIGHT CONDUIT.
16. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTION TO MOTORS AND OTHER EQUIPMENT.
17. CONDUITS FOR FUTURE EQUIPMENT OR EXTENSIONS SHALL BE TERMINATED AS SHOWN IN DETAIL OR AS SPECIFIED.
18. MCC AND SWITCHGEAR COMPARTMENT DESIGNATIONS SHALL BE AS FOLLOWS:
    A. BLANK/SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS.
    B. SPARE: CONTAINS A COMPLETE INSTALLED BREAKER OR STARTER AVAILABLE FOR FUTURE USE.
19. ALL MOTOR STARTER CONTROL POWER TRANSFORMERS SHALL BE SIZED TO PROVIDE SUFFICIENT VOLT-AMPERE CAPACITY FOR OPERATING ALL LOCAL AND REMOTE ELECTRICAL DEVICES ASSOCIATED WITH CONTROL OF THE MOTOR IN ADDITION TO THE STARTER COIL.
20. MOTOR CONTROL CENTERS AND ALL FREE STANDING PANELS SHALL BE SET ON CONCRETE HOUSEKEEPING PADS.
21. ALL RECEPTACLES OUTDOORS AND IN PUMP ROOM SHALL BE GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES WITH WEATHERPROOF COVERS.
22. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO VERIFY THE SCOPE OF WORK WITH FIELD CONDITIONS.
23. EQUIPMENT LOCKOUTS SHALL BE IN STRICT ACCORDANCE WITH OWNER'S REQUIREMENTS.
24. FOR LIGHTING AND RECEPTACLE SYSTEMS, ONLY CIRCUIT NUMBERS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUITS, WIRES, FITTINGS, JUNCTION BOXES AND ALL NECESSARY COMPONENTS SHOWN OR NOT SHOWN ON THE DRAWINGS, TO MAKE THE ELECTRICAL INSTALLATION COMPLETE AND OPERATIONAL. ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS INDICATED OTHERWISE. CIRCUIT LOADING SHALL BE AS INDICATED IN THE PANEL SCHEDULES. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL INCLUDE GROUND WIRE.

LIGHTNING PROTECTION NOTES

1. GENERAL
   A SYSTEM OF LIGHTNING PROTECTION SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF NFPA 780 LIGHTNING PROTECTION STANDARD AS ADOPTED BY THE NATIONAL FIRE PROTECTION ASSOCIATION. PROVIDE UL MASTER LABEL.
2. AIR TERMINALS
   AIR TERMINALS SHALL BE 1/2IN x 24IN SOLID COPPER AND SHALL EXTEND AT LEAST 18 INCHES ABOVE THE TOP OF THE TANK. AIR TERMINALS BASES SHALL BE CAST BRONZE WITH STAINLESS STEEL BOLT PRESSURE CABLE CONNECTIONS.
3. CONDUCTORS
   CONDUCTORS SHALL CONSIST OF U.L. LISTED 29 STRANDS OF 17 GAUGE COPPER WIRE WEIGHING 190 LBS. PER 1000 FEET AND INSTALLED IN ACCORDANCE WITH THE U.L. CODE. (CLASS 1)
4. GROUND TERMINALS
   ALL GROUNDING TERMINALS (RODS) SHALL BE NO LESS THAN 3/4 IN DIA AND 10 FT LONG, AND SHALL BE COPPER-CLAD STEEL OR SOLID COPPER. GROUND TERMINALS SHALL BE DRIVEN TO A MINIMUM DEPTH OF 10 FT. GROUNDING TERMINALS SHALL BE LOCATED AT THE BASE OF THE STRUCTURE AND GROUND CONNECTIONS SHALL BE MADE AROUND THE PERIMETER OF THE STRUCTURE AND IN NO CASE SHALL AVERAGE OVER 100 FT APART.
5. CABLE CONNECTORS
   ALL CABLE CONNECTORS SHALL BE CAST BRONZE WITH SCREW TYPE STAINLESS STEEL BOLTS AND NUTS. CONDUCTOR FASTENERS SHALL BE AN APPROVED TYPE OF NON-CORROSIVE METAL, HAVE AMPLE STRENGTH TO SUPPORT CONDUCTORS AND SHALL BE SPACED 3 FT ON CENTERS.
6. INTERCONNECTION OF METALS
   ALL METAL BODIES WITHIN 6 FT OF THE CONDUCTOR SHALL BE BONDED TO THE SYSTEM WITH APPROVED FITTINGS AND CONDUCTORS. CONNECTIONS BETWEEN DISSIMILAR METALS SHALL BE MADE WITH APPROVED BIMETALLIC CONNECTIONS. PRIMARY BONDS FOR CONDUCTING METAL BODIES SHALL BE BONDED WITH APPROPRIATE FITTINGS AND FULL SIZE CONDUCTORS, AND SHALL CONSIST OF, BUT NOT LIMITED TO THE FOLLOWING: LADDER AND RAIL SYSTEMS, TANK VENTS AND PIPING. ALUMINUM TO COPPER CONNECTIONS SHALL BE MADE WITH BIMETALLIC CONNECTORS.
7. COMMON GROUNDING
   ALUMINUM TO COPPER CONNECTIONS SHALL BE MADE WITH BIMETALLIC CONNECTORS. GROUNDS FOR ELECTRICAL AND TELEPHONE SERVICES, AND LIGHTNING GROUNDS SHALL BE TIED TOGETHER TO FORM A COMMON GROUND.
8. MATERIALS
   ALL LIGHTNING PROTECTION EQUIPMENT SHALL BE MANUFACTURED BY HEARY BROTHERS LIGHTNING PROTECTION CO., THOMPSON LIGHTNING PROTECTION CO., CAPITAL LIGHTNING PROTECTION CO., OR EQUAL.
9. LOCATION
   INSTALL LIGHTNING PROTECTION AT THE FOLLOWING FACILITIES:
   A. BLUE SINK PUMPING STATION

THOMAS H. POWELL LICENSED 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

7-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

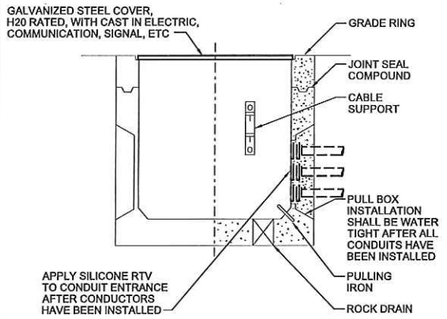
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL NOTES AND ABBREVIATIONS

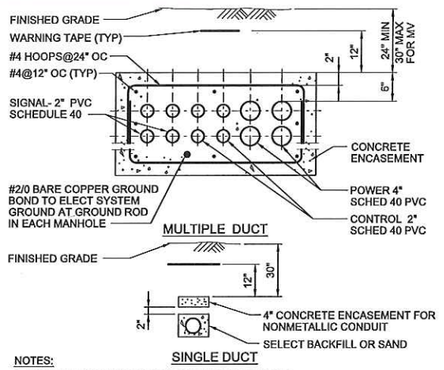
SHEET: GE-3

1011673



PRE-CAST HANDHOLE

REV 060109 — E-101

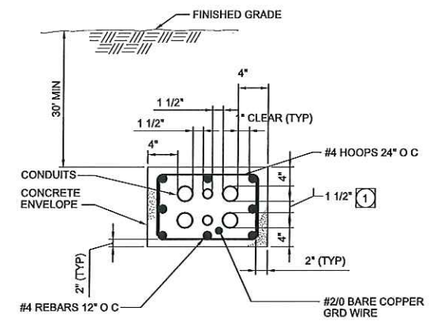


NOTES:

1. AT INTERSECTIONS WITH STRUCTURES HOOK #4'S INTO THE FOOTING OR WALL (TYP).
2. SEE DUCT BANK SECTIONS AND DETAILS FOR NUMBER AND ARRANGEMENT OF DUCTS.

TYPICAL DUCTBANK

REV 060109 — E-103



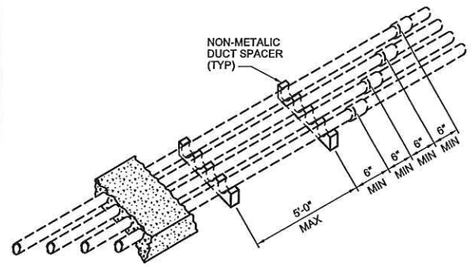
NOTES:

[1] 3" CLEAR BETWEEN POWER & TELEPHONE OR SIGNAL CONDUIT.

[2] TERMINATE GRD. WIRE ON SWITCHGEAR GRD. BUS.

DUCT BANK (CONTROL/SIGNAL)

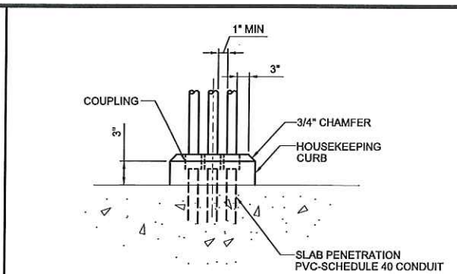
REV 060109 — E-104



TYPICAL DUCTBANK

JOINT/SUPPORT SPACING

REV 060109 — E-108



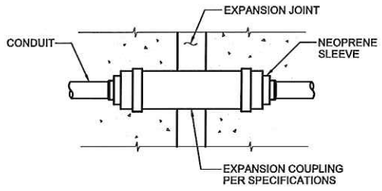
NOTE:

HOUSEKEEPING CURB REQUIRED AT ALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS.

CONCRETE HOUSEKEEPING CURB

NON-HAZARDOUS LOCATIONS

REV 060109 — E-203

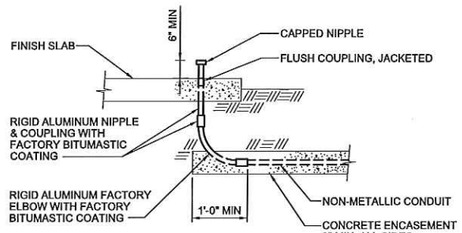


NOTE:

PROVIDE EXTERNAL BONDING JUMPER WITH METALLIC CONDUIT AND WHEN COUPLING HAS NO INTERNAL JUMPER.

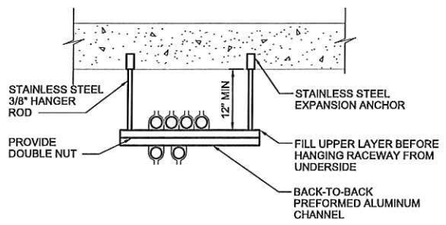
EXPANSION COUPLING

REV 060109 — E-204



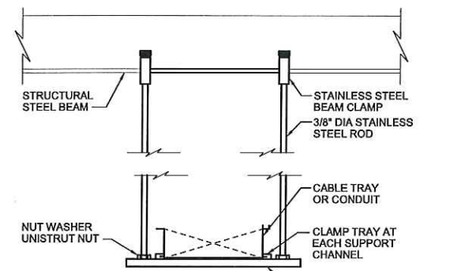
RISER FROM NON-METALLIC DUCT

REV 060109 — E-205



CONDUIT TRAPEZE

REV 060109 — E-207

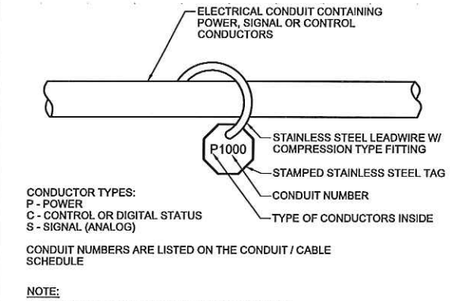


NOTE:

1. SPACING OF TRAY SUPPORTS SHALL BE NO MORE THAN MANUFACTURERS RECOMMENDATIONS AS SUBMITTED AND APPROVED BY ENGINEER.

TRAY OR CONDUIT HANGER

REV 060109 — E-208



CONDUCTOR TYPES:
P - POWER
C - CONTROL OR DIGITAL STATUS
S - SIGNAL (ANALOG)

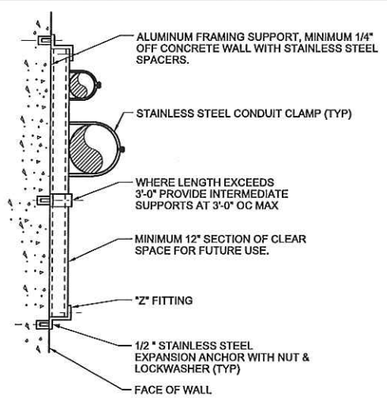
CONDUIT NUMBERS ARE LISTED ON THE CONDUIT / CABLE SCHEDULE

NOTE:

1. CONDUIT TAGS SHALL BE AFFIXED TO CONDUITS:
   A. AFTER ALL WORKING DRAWINGS ARE APPROVED AND ALL FIELD MODIFICATIONS HAVE BEEN MADE.
   B. BEFORE FINAL ACCEPTANCE TESTING HAS STARTED.

CONDUIT IDENTIFICATION TAG

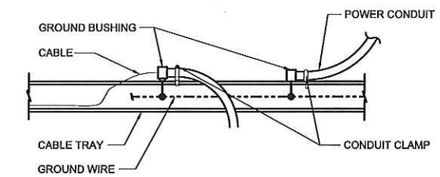
REV 060109 — E-210



CONDUIT SUPPORT

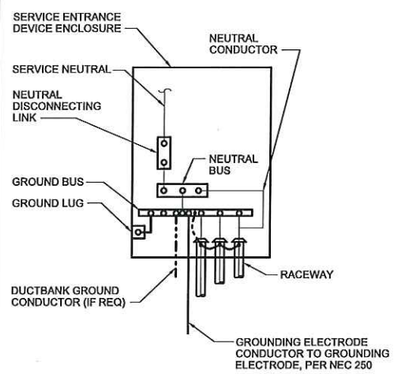
FLUSH MOUNT

REV 060109 — E-212



CABLE TRAY EXIT AND ENTRY

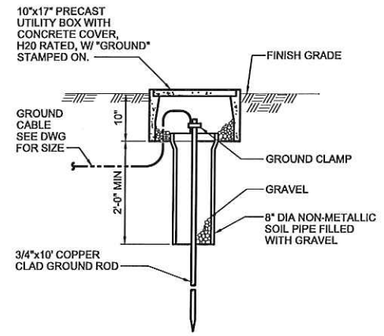
REV 060109 — E-215



SERVICE GROUNDING

NON-SEPARATELY DERIVED SOURCE

REV 060109 — E-300



GROUND ROD AND WELL

REV 060109 — E-303

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

07-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

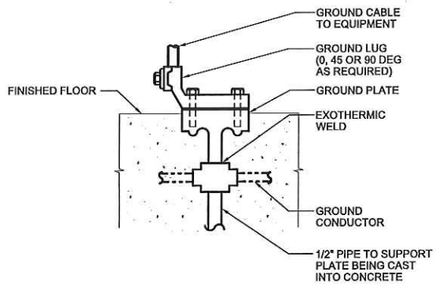
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL STANDARD DETAILS - I

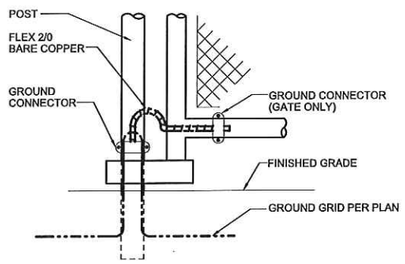
SHEET: GE-4

1011673

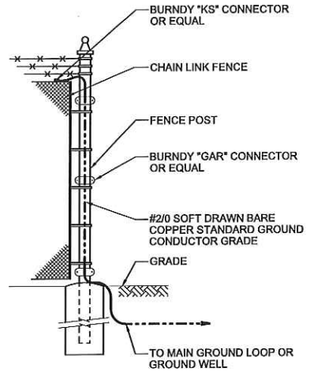


NOTE:
1. ALL BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE THE INSERT IS EMBEDDED.

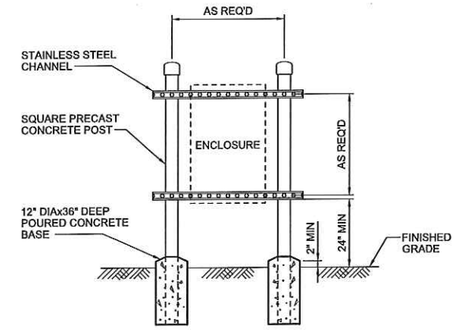
GROUNDING INSERT
REV 060109 — E-308



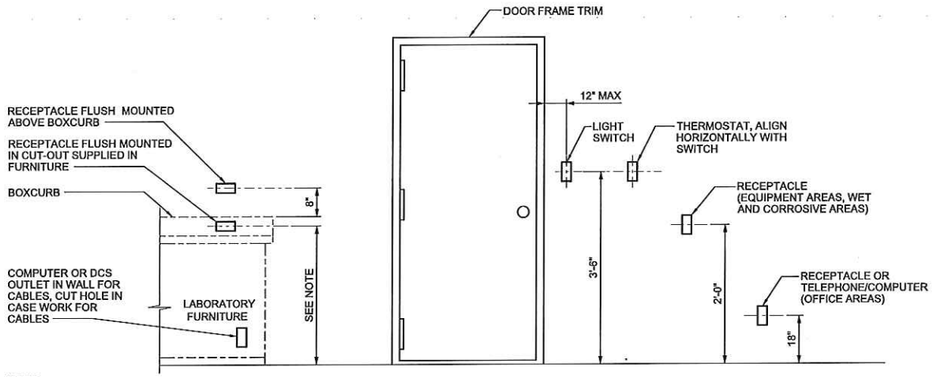
PERIMETER GROUND GRID TO FENCE
REV 060109 — E-315



FENCE GROUNDING
REV 060109 — E-316

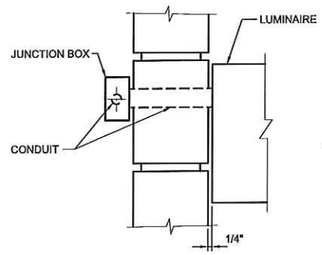


ELECTRIC UTILITY METERING MOUNTING DETAIL
REV 060109 — E-420



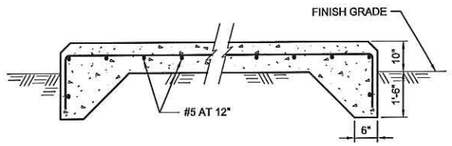
NOTE:
CONTRACTOR SHALL DETERMINE OUTLET BOX MOUNTING HEIGHT TO SUIT LABORATORY EQUIPMENT FURNISHED FOR INSTALLATION

OUTLET BOX MOUNTING
REV 060109 — E-450



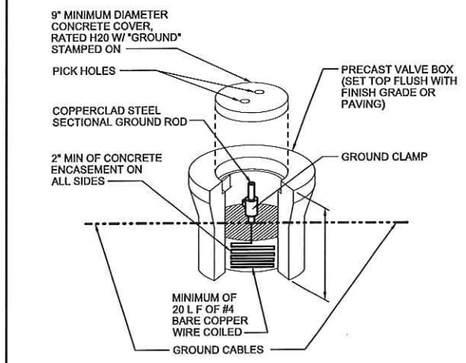
NOTES:
1. PROVIDE GASKET BETWEEN LUMINAIRE AND CONDUIT.
2. INSTALLATION SHALL BE WATERTIGHT.

WALL MOUNT LUMINAIRE
EXTERIOR WALL
REV 060109 — E-605

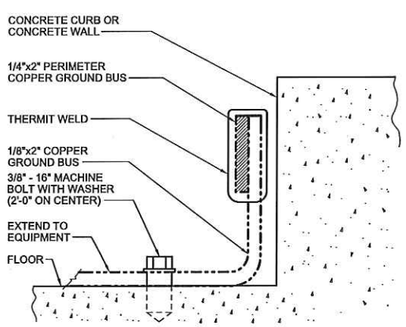


NOTES:
1. OVERALL PAD DIMENSIONS SHALL BE DETERMINED FROM ELECTRICAL DRAWING AND ADJUSTED AS REQ'D TO SUIT EQUIPMENT FURNISHED.
2. COORDINATE WITH STRUCTURAL DRAWINGS.

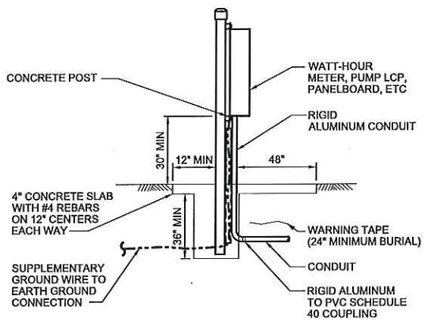
ELECTRICAL EQUIPMENT PAD
REV 060109 — E-617



GROUND ELECTRODE INSTALLATION
REV 060109 — ES-356

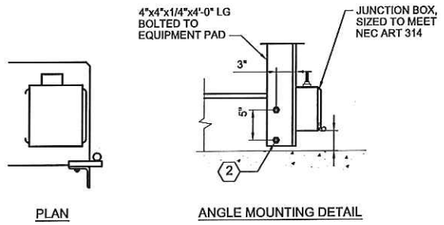


FLOOR- MOUNTED GROUND BUS TO EQUIPMENT
REV 060109 — ES-357

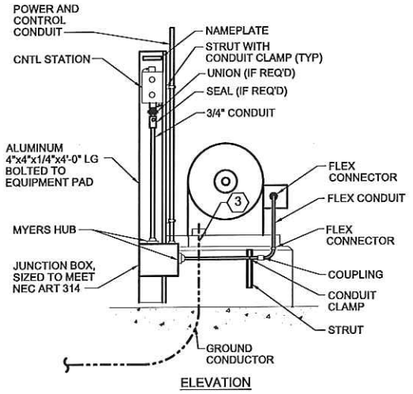


NOTES:
1. 3" STEEL MOUNTING POSTS MAY BE BOLTED TO SIDE OF VERTICAL CONCRETE WALL IF AVAILABLE.

PANEL MOUNTING DETAIL
ES-460

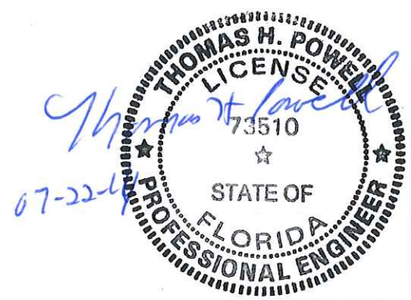


NOTES:
1. REFER TO CONDUIT SCHEDULE DRAWINGS FOR SEPARATE POWER AND CONTROL CONDUIT AS REQUIRED.
2. 3/4" GALVANIZED BOLTS IN SELF DRILLING CONCRETE ANCHORS (2 REQ'D)
3. CABLE LUG BOLTED TO FRAME OF MOTOR.



ELEVATION

MOTOR CONDUIT CONNECTION
ABOVE GRADE FEED
REV 060109 — ES-551



Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL STANDARD DETAILS - II

SHEET: GE-5

1011673

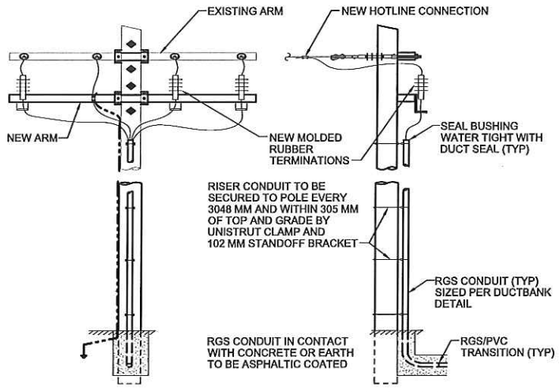


FIGURE A

DUCTBANK DETAIL (TYP)

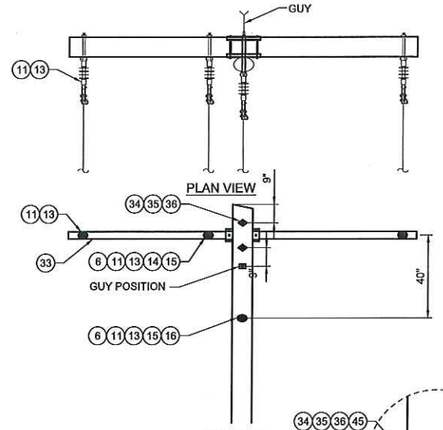
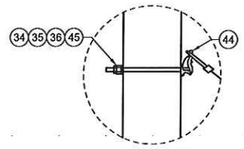
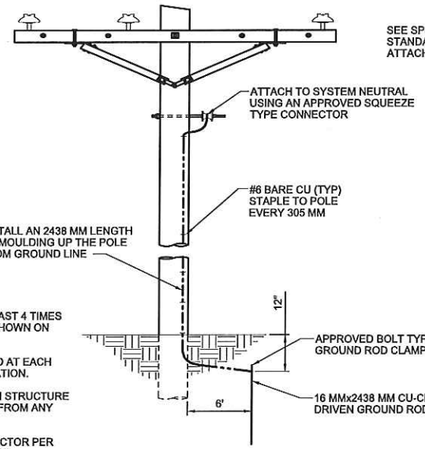


FIGURE A

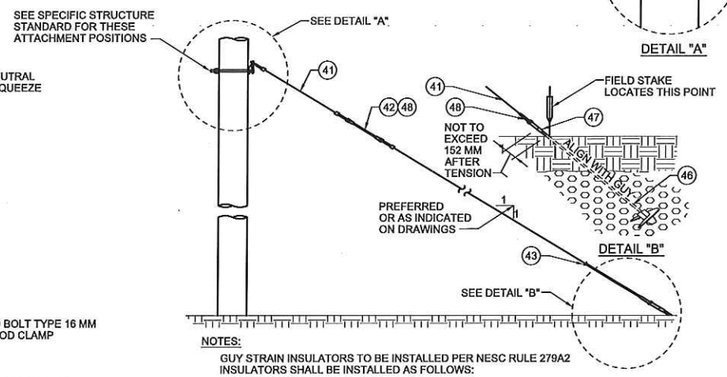


DETAIL "A"



NOTES:

1. GROUND NEUTRAL AT LEAST 4 TIMES PER KILOMETER OR AS SHOWN ON CONSTRUCTION PLANS.
2. GROUNDS ARE REQUIRED AT EACH TRANSFORMER INSTALLATION.
3. ROUTE GROUND WIRE ON STRUCTURE NO CLOSER THAN 51 MM FROM ANY METAL MOUNTING PART.
4. SIZE GROUNDING CONDUCTOR PER NESC RULE 93C (#6 CU MIN).
5. MULTIPLE RODS TO BE USED IF REQ'D TO SATISFY GROUND RESISTANCE REQUIREMENTS.



NOTES:

GUY STRAIN INSULATORS TO BE INSTALLED PER NESC RULE 279A2 INSULATORS SHALL BE INSTALLED AS FOLLOWS:

1. ALL INSULATORS SHALL BE LOCATED AT LEAST 2438 MM ABOVE GROUND.
2. WHEN HAZARD WOULD EXIST WITH ONE INSULATOR, TWO OR MORE GUY INSULATORS SHALL BE USED SO AS TO INCLUDE, SO FAR AS PRACTICAL, THE EXPOSED SECTION OF THE GUY BETWEEN THEM.
3. INSULATORS SHALL BE SO PLACED THAT IN CASE ANY GUY SAGS DOWN UPON ANOTHER, THE INSULATORS WILL NOT BECOME INEFFECTIVE.

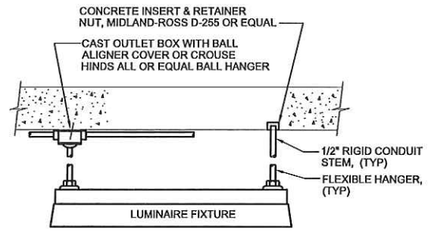
MATERIAL SCHEDULE

CALLOUT	PART NO	DESCRIPTION	QTY	MISC
6	AS REQUIRED	16 MM MF LOCKNUT	2 EA	
11	OHIO BRASS NO 401015-6215	POLYMER DEADEND INSULATOR	4 EA	
13	ANDERSON NO BDE-46-C OR BDE-60-C	DEADEND CLEVIS STRAIN CLAMP BRONZE TYPE BDE	4 EA	USE APPROPRIATE CLAMP FOR CONDUCTOR SIZE
14	AS REQUIRED	16 MM X LENGTH REQUIRED OVAL SHOULDER EYEBOLT	1 EA	
15	AS REQUIRED	76MM CURVED SQUARE WASHER WITH 17 MM HOLE	2 EA	
16	AS REQUIRED	16 MM X LENGTH REQUIRED OVAL SHOULDER EYEBOLT	1 EA	
33	HUGHES NO 3377-C9.5	3 WIRE DEADEND ARM BRACELESS ARM ASSEMBLY	1 EA	3048 MM LENGTH
34	AS REQUIRED	19 MM X LENGTH REQUIRED MACHINE BOLT	2 EA	
35	AS REQUIRED	19 MM MF LOCKNUT	2 EA	
36	AS REQUIRED	76 MM CURVED SQUARE WASHER WITH 22 MM HOLE	2 EA	

GUY MATERIAL SCHEDULE

CALLOUT	PART NO	DESCRIPTION	QTY	MISC
34	AS REQUIRED	19 MM X LENGTH REQUIRED MACHINE BOLT	2 EA	
35	AS REQUIRED	19 MM MF LOCKNUT	2 EA	
36	AS REQUIRED	76 MM CURVED SQUARE WASHER WITH 22 MM HOLE	2 EA	
41	AS REQUIRED	10 MM 7 STRAND EHS GUY STRAND	100FT	
42	HUGHES BROS NO CF693TT-18	FIBERGLASS GUY STRAIN INSULATORS 457 MM MIN LENGTH, 6804 KG	2 EA	USE ADDITIONAL INSULATORS AS REQUIRED
43	AS REQUIRED	GUY MARKER FULL ROUND	2 EA	YELLOW 2438 MM LENGTH
44	CONTINENTAL NO G-56X2	GUY HOOK WITH 18 MM HOLE	2 EA	6804 KG. MIN
45	AS REQUIRED	19 MM DOUBLE COIL SPRING LOCKWASHER	2 EA	
46	AS REQUIRED	POWER INSTALLED SCREW ANCHOR ASSEMBLY WITH 305 MM HELIX AND 25 MM ROD	2 EA	305 MM HELIX
47	AS REQUIRED	TWIN EYENUT FOR 25 MM DIAMETER POWER INSTALLED SCREW ANCHOR	2 EA	
48	AS REQUIRED	STRANDVISE FOR 10 MM 7 STRAND EHS REGULAR BAIL	8 EA	

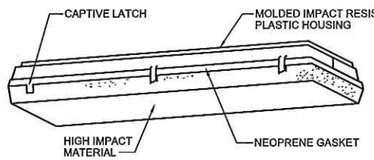
OHPL TRANSMISSION SECTIONS
REV 060109 ES-556



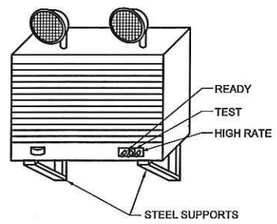
NOTES:

1. FLEXIBLE HANGERS NOT REQUIRED IF STEM LENGTH IS LESS THAN 12".

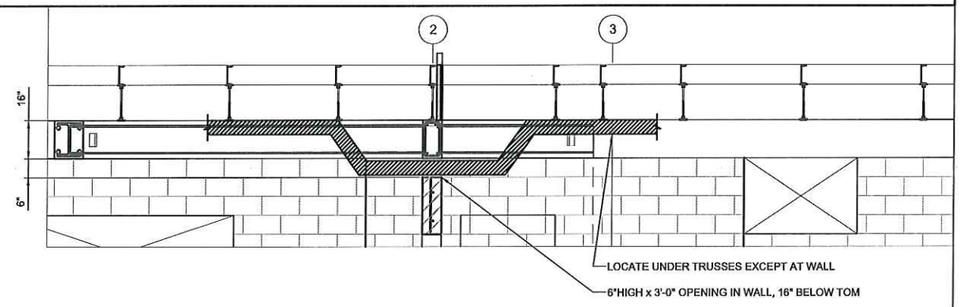
LUMINAIRE MOUNTING
(FOR EXPOSED CONDUIT SURFACE MOUNTED TO CONCRETE)
REV 060109 ES-654



CORROSIVE AREA LUMINAIRE
REV 060109 ES-660



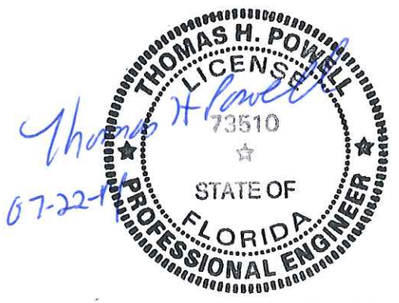
EMERGENCY LUMINAIRE
REV 060109 ES-661



NOTE:

1.COORDINATE WITH CABLE TRAY SHOP DRAWINGS.

CABLE TRAY ROOM TRANSITION DETAIL
NOT TO SCALE ES-900



Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

GENERAL ELECTRICAL STANDARD DETAILS - III

SHEET: GE-6

1011673

Plot Date: Fri 11-Jul-2014 - 02:17PM
User: ryahr

Ewanowski Spring

Blue Sink

BLUE SINK

LEVEL TRANSMITTER, LEVEL SWITCH AND HANDHOLE STA 14+15, SEE NOTE 2 — I-601

(3) 1" U/G CONDUITS — E-103 E-108

PUMPING STATION — E-315 E-316

CHAIN LINK FENCE

COMMUNICATIONS HANDHOLE — E-420

UTILITY METER COMPARTMENT BY TECO

UTILITY POLE W/ 3-167KVA XFMRS BY TECO

Folio #: 094989-1000
Elder Land of Tampa Bay LLC
c/o Elder Auto Inc
320 E Fletcher Ave
Tampa, FL 33612-3409

North Right-of-way Boundary of 115th Avenue

TBM #2

SUW Baseline, also being the Centerline of 115th Avenue

UW

TBM #1

West Right-of-way Boundary of Florida Avenue

East Boundary of the Northwest ¼ of Section 13-28S-18E

666.87'

S 00°29'57" W 2666.60' (F)

Florida Avenue

Public Right-of-way Width Varies

End Base

OP-2
20+00

South Right-of-way Boundary of 115th Avenue

Folio #: 095008-0000
Roger Whitley Chevrolett Inc
3907 Bayshore Blvd
Tampa, FL 33611-1615

115th Avenue
60' Public Right-of-way (D)
(Asphalt Pavement Width Varies)

West Right-of-way Boundary of Florida Avenue

East of the N Section

666.43' (F)

Sou the Sec per Fou Spik

South Boundary of the Northwest ¼ of Section 13-28S-18E

N 89°50'10" W 2665.05' (F)

GENERAL SHEET NOTES

1. SEE SHEET E-8 FOR ADDITIONAL DUCTBANK AND UNDERGROUND CONDUITS.
2. PROVIDE 120VAC TO LIT-190.

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell 07-22-14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

File: C:\pwworkdir\dms60335\TBSD_E01.dwg

REV	DATE	BY	DESCRIPTION

SCALE: 1"=30'

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

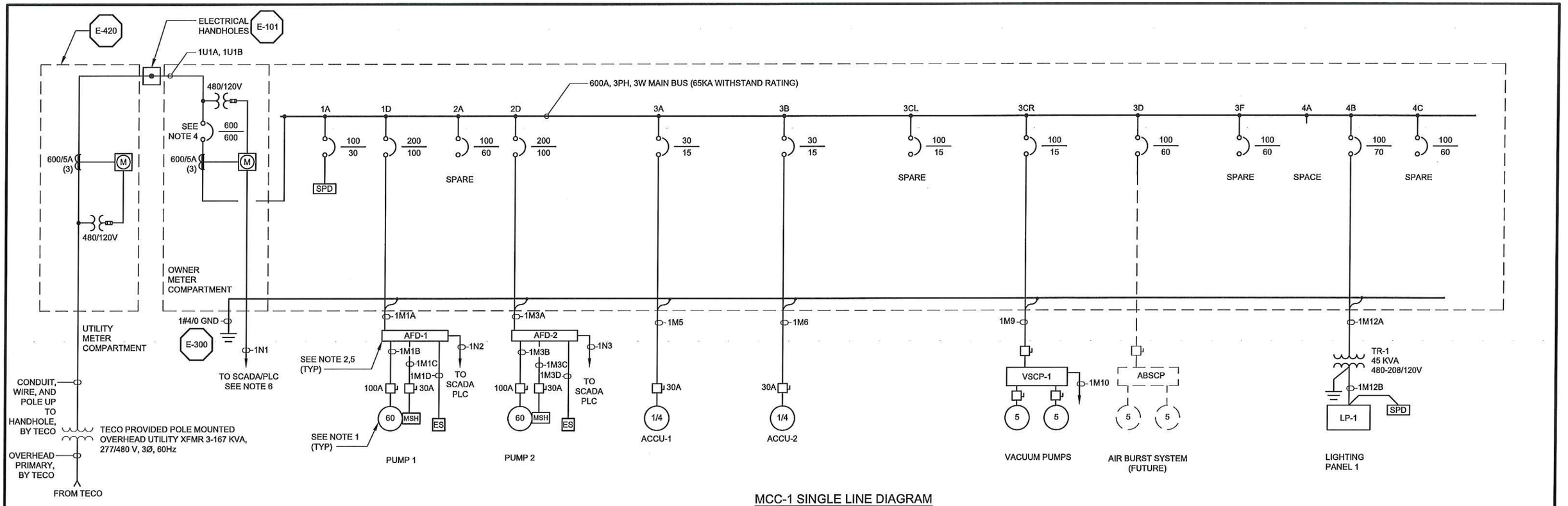
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

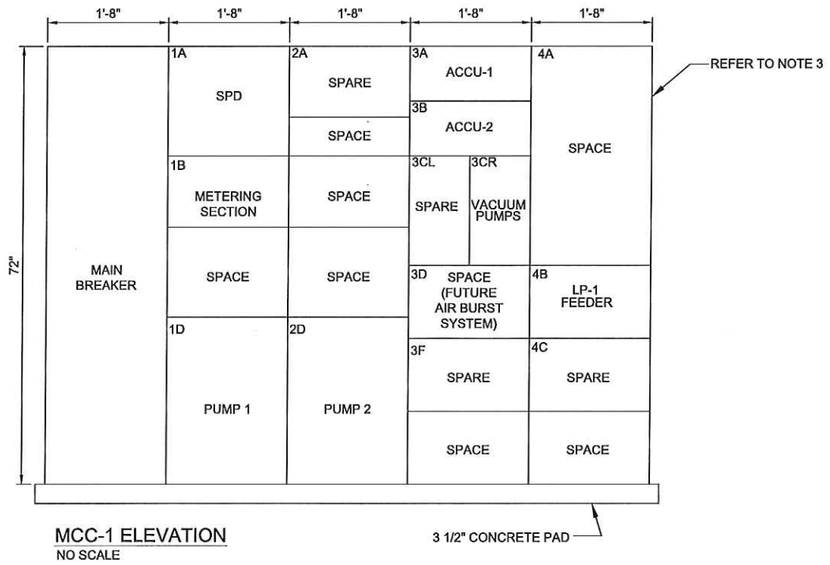
ELECTRICAL SITE PLAN

SHEET E-1

1011673



MCC-1 SINGLE LINE DIAGRAM
NO SCALE



MCC-1 ELEVATION
NO SCALE

VOLTAGE DROP										
CABLE NO	FROM	TO	DISTANCE	VOLTAGE	PHASE	CABLE SIZE	# OF SETS	LOAD	VOLTAGE DROP (V)	VOLTAGE DROP (%)
1U1A, 1U1B	UTILITY XFMR	MCC-1	70FT	480V	3Ø	#250 KCM	2	360A	1.2V	0.2%
1M1A	MCC-1	AFD-1	30FT	480V	3Ø	#2 AWG	1	80A	1.4V	0.3%
1M1B	AFD-1	PUMP 1	50FT	480V	3Ø	#2 AWG	1	80A	1.7V	0.4%
1M3A	MCC-1	AFD-2	40FT	480V	3Ø	#2 AWG	1	80A	1.4V	0.3%
1M3B	AFD-2	PUMP 2	60FT	480V	3Ø	#2 AWG	1	80A	1.7V	0.4%
1M5	MCC-1	ACCU-1	60FT	480V	3Ø	#12 AWG	1	4A	2.0V	0.4%
1M6A	MCC-1	EF-2	48FT	480V	3Ø	#12 AWG	1	4A	0.7V	0.1%
1M9A	MCC-1	VACUUM PUMP	57FT	480V	3Ø	#12 AWG	1	14A	2.7V	0.6%
1M12A	MCC-1	TR-1	66FT	480V	3Ø	#4 AWG	1	55A	1.9V	0.4%
1M12B	TR-1	LP-1	15FT	208V	3Ø	#1/0 AWG	1	125A	0.4V	0.2%

GENERAL SHEET NOTES

1. FULL LOAD CURRENT OF EACH 60HP MOTOR IS 77 AMPS.
2. SIZE EACH AFD ACCORDING TO FULL LOAD MOTOR CURRENT OF 77 AMPS.
3. TOP AND BOTTOM WIREWAYS ARE NOT SHOWN.
4. PROVIDE SERVICE RATED MAIN CB COMPARTMENT IN MCC-1 WITH SERVICE RATED MAIN DISCONNECT.
5. VFD TYPE SHIELDED CABLE.
6. DO NOT ROUTE SCADA WIRING THROUGH MCC.

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
SINGLE LINE DIAGRAM & MCC ELEVATION

SHEET
E-2

1011673

CABLE AND CONDUIT SCHEDULE

CONDUIT NUMBER	CONDUIT SIZE	CONDUCTOR QUANTITY & SIZE	INCLUDED SPARES	FROM	TO
INCOMING SERVICE					
1U1A	3"	4-250 KCMIL, 1#2G		UTILITY TRANSFORMER	MCC-1
1U1B	3"	4-250 KCMIL, 1#2G		UTILITY TRANSFORMER	MCC-1
MOTOR CONTROL CENTER NO 1					
1M1A	1 1/2"	3#2, 1#8G		MCC-1	AFD-1
1M1B	1 1/2"	3#2, 1#8G		AFD-1	PUMP 1 (VIA DISC. SW.)
1M1C	3/4"	3#12, 1#12G		AFD-1	PUMP 1 MOTOR SPACE HEATER
1M1D	3/4"	2#14, 1#12G		AFD-1	PUMP 1 EMERGENCY STOP
1M2		NOT USED			
1M3A	1 1/2"	3#2, 1#8G		MCC-1	AFD-2
1M3B	1 1/2"	3#2, 1#8G		AFD-2	PUMP 2 (VIA DISC. SW.)
1M3C	3/4"	3#12, 1#12G		AFD-2	PUMP 2 MOTOR SPACE HEATER
1M3D	3/4"	2#14, 1#12G		AFD-2	PUMP 2 EMERGENCY STOP
1M4		NOT USED			
1M5	3/4"	3#12, 1#12G		MCC-1	ACCU-1
1M6	3/4"	3#12, 1#12G		MCC-1	ACCU-2
1M7		NOT USED			
1M8		NOT USED			
1M9	3/4"	3#12, 1#12G		MCC-1	VACUUM PUMP CP (VIA DISC. SW.)
1M10	1"	20#14	6#14	MCC-1	VACUUM PUMP CONTROL PANEL
1M11		NOT USED			
1M12A	1 1/4"	3#4, 1#8G		MCC-1	TR-1 (PRIMARY)
1M12B	2"	4#1/0, 1#6G		TR-1 (SECONDARY)	DP-1
CONTROL					
1C1	3/4"	2#14		PLC/SCADA CABINET	TIT/TE - 101
1C2	3/4"	2#14		PLC/SCADA CABINET	LSH - 102
1C3	3/4"	2#14		PLC/SCADA CABINET	SD - 103
1C4	3/4"	2/C#16 SH		PLC/SCADA CABINET	PIT-110
1C5	3/4"	14#14	4#14	PLC/SCADA CABINET	VPS-BLV01
1C6	3/4"	14#14	4#14	PLC/SCADA CABINET	VPS-BLV02
1C7	3/4"	14#14	4#14	PLC/SCADA CABINET	SV-140
1C8	3/4"	14#14	4#14	PLC/SCADA CABINET	SV-150
1C9	3/4"	2/C#16 SH		PLC/SCADA CABINET	PIT-175
1C10	3/4"	2/C#16 SH		PLC/SCADA CABINET	FIT/FE - 180
1C11	3/4"	2/C#16 SH, 2#14		PLC/SCADA CABINET	LIT/LE - 190; LS - 190
1C12	3/4"	2#14, 2#12, 1#12G		PLC/SCADA CABINET	SECURITY PANEL
1C13	3/4"	2#14		PLC/SCADA CABINET	SD - 104
1C14	3/4"	2#14		PLC/SCADA CABINET	SD - 105
INSTRUMENTATION					
1N1	1"	(1) CAT 6		PLC/SCADA CABINET	MCC-1
1N2	3/4"	CAT 6		PLC/SCADA CABINET	AFD-1
1N3	3/4"	CAT 6		PLC/SCADA CABINET	AFD-2
1N4	3/4"	CAT 6		PLC/SCADA CABINET	SECURITY PANEL
1N5	3/4"	CAT 6		PLC/SCADA CABINET	SECURITY DESK

NOTE: ALL CABLES USED IN CABLE TRAY SHALL BE MULTI-CONDUCTOR TRAY RATED CABLE.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER OR EQUAL	CATALOG NUMBER	VOLTS	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	MOUNTING	DESCRIPTION
F1	METALUX	VT4432DRUNVGLER8WL	120V	4	32	F32T8/XL/SPX41/WM/ECO FLUOR	SUSPENDED	4'-0" FLUORESCENT FIXTURE WITH FIBERGLASS HOUSING T8 ELECTRONIC RAPID START BALLAST, AND ACRYLIC PRISMATIC REFRACTOR LENS, LISTED FOR WET LOCATIONS.
F2	GE LIGHTING EVOLVE	EWSW-O-A4-N-40-A-1-N-DKBZ	120V	1	50	LED	SURFACE WALL	LED WALL PACK FIXTURE UL LISTED FOR WET LOCATIONS, ALUMINUM REFLECTOR WITH DIE CAST ALUMINUM HOUSING
F3	METALUX	VT3332	120V	3	32	F32T8/XL/SPX41/WM/ECO FLUOR	CEILING	4'-0" FLUORESCENT FIXTURE WITH FIBERGLASS HOUSING T8 ELECTRONIC RAPID START BALLAST, AND ACRYLIC PRISMATIC REFRACTOR LENS.
EX1	SURE-LITES	CAX-717000-R	120V	1	7	LED	SURFACE WALL/CEILING	BATTERY POWERED EMERGENCY EXIT SIGN WITH DIE CAST ALUMINUM HOUSING, STENCILED BRUSHED ALUMINUM FACE PLATE WITH RED LETTERS, NICKEL CADMIUM MAINTENANCE FREE BATTERY, SOLID STATE INTEGRAL CHARGER AND TEST SWITCH.
EM1	SURE-LITES	UMB-7	120V	2	9W	6VDC 29-03 INCAND	SURFACE WALL	EMERGENCY LIGHTING BATTERY PACK WITH NEMA 4X INDUSTRIAL FIBERGLASS ENCLOSURE, 6VDC LEAD CALCIUM MAINTENANCE FREE BATTERY, SOLID STATE CHARGER, TEST PUSHBUTTON, POWER ON INDICATING LIGHT, INTEGRAL FIXTURE HEADS OF HIGH IMPACT THERMOPLASTIC AND CAPABLE OF PROVIDING EMERGENCY ILLUMINATION FOR 1-1/2 HOURS DURING LOSS OF NORMAL POWER AT 87 1/2% OF RATED DC VOLTAGE.

PANEL: LP-1
VOLTAGE: 120/208V, 3PH, 4W
LOCATION: Electrical Room

MAIN: 150AT/225AF
MOUNTING SURFACE
BUS: 225A
AIC = 10,000 AMPS

CIRCUIT USE	BREAKERS TRIP	BREAKERS POLE	LOAD (VA) A	LOAD (VA) B	LOAD (VA) C	CKT. #		LOAD (VA) A	LOAD (VA) B	LOAD (VA) C	BREAKERS TRIP	BREAKERS POLE	CIRCUIT USE
LIGHTING - ELECTRICAL ROOM	20	1	665			1	2	500			15	2	AC-2 ELECTRICAL ROOM
LIGHTING - PUMP ROOM	20	1		1582		3	4		500				
LIGHTING - PUMP ROOM	20	1			1563	5	6			500	15	2	AC-1 ELECTRICAL ROOM
LIGHTING - EXTERIOR	20	1	400			7	8	500					
GENERAL RECEPT - ELECTRICAL ROOM	20	1		900		9	10		1200		20	1	PUMP ROOM - EF1
GENERAL RECEPT - PUMP ROOM	20	1			900	11	12				20	1	SPARE
SCADA PANEL	20	1	1500			13	14	1200			20	1	PUMP ROOM - EF2
DEDICATED RECEPTACLE	20	1		1500		15	16				20	1	SPARE
OUTDOOR RECEPTACLES	20	1			600	17	18			1200	20	1	SUMP PUMP
DEDICATED RECEPTACLE	20	1	1500			19	20				20	1	LIT 190
SMOKE DETECTORS	20	1		200		21	22		1200		20	1	SUMP PUMP
SPD	20	1				23	24			200	20	1	IRRIGATION CONTROLLER
LIGHTING - ELECTRICAL ROOM	20	1	665			25	26	500			20	1	SVP-BLV 01, SVP-BLV 02
SPACE						27	28						SPACE
SPACE						29	30						SPACE
SPACE						31	32						SPACE
SPACE						33	34						SPACE
SPACE						35	36						SPACE
SPACE						37	38						SPACE
SPACE						39	40						SPACE
SPACE						41	42						SPACE
TOTALS			4730	4182	3063			2700	2950	1700			TOTALS

PHASE A:	7630 VA
PHASE B:	7132VA
PHASE C:	4763 VA
TOTAL CONNECTED VA	19525 VA
AMPS	54.23 A
1.25X AMPS	67.8 A

NOTES:

VOLTAGE DROP

PANEL	CIRCUIT	TO	DISTANCE	CABLE SIZE	LOAD	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LP-1	1	LIGHTING - ELECTRICAL ROOM	40 FT	#12 AWG	12A	1.9V	1.6%
LP-1	3	LIGHTING - PUMP ROOM	85 FT	#10 AWG	13A	4.4V	2.2%
LP-1	5	LIGHTING - PUMP ROOM	85 FT	#10 AWG	13A	4.4V	2.2%
LP-1	7	LIGHTING - EXTERIOR	87 FT	#12 AWG	4A	1.4V	1.1%
LP-1	9	GENERAL RECEPTACLES - ELEC RM	37 FT	#12 AWG	5A	0.7V	0.6%
LP-1	11	GENERAL RECEPTACLES - PUMP RM	85 FT	#12 AWG	5A	1.7V	1.4%
LP-1	13	SCADA	38 FT	#12 AWG	8A	1.2V	1.0%
LP-1	15	SECURITY PANEL	48 FT	#12 AWG	10A	1.9V	1.6%
LP-1	17	GENERAL RECEPTACLES - OUTDOOR	67 FT	#12 AWG	5A	1.3V	1.1%
LP-1	2,4	AC-1 ELECTRICAL ROOM	40 FT	#12 AWG	2.5A	1.0V	0.5%
LP-1	6,8	AC-2 ELECTRICAL ROOM	25 FT	#12 AWG	2.5A	0.6V	0.3%
MCC-1	3A	ACCU-1 ELECTRICAL ROOM	35 FT	#12 AWG	4A	1.0V	0.5%
MCC-1	3B	ACCU-2 ELECTRICAL ROOM	45 FT	#12 AWG	4A	1.3V	0.6%

11/21/14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	09/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

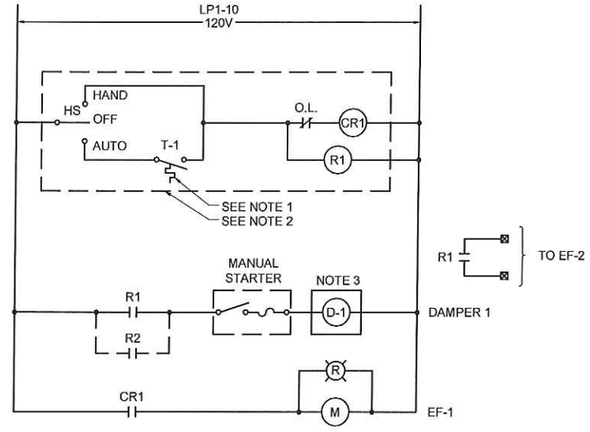
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

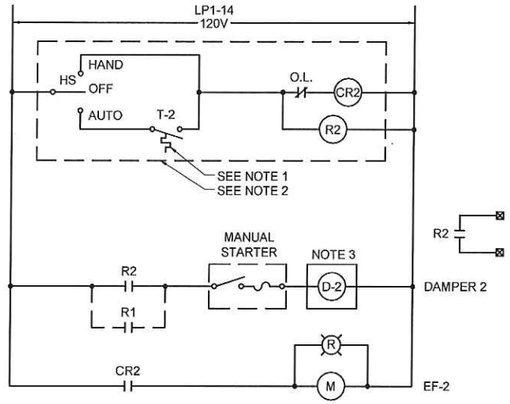
BLUE SINK MFL PUMPING STATION

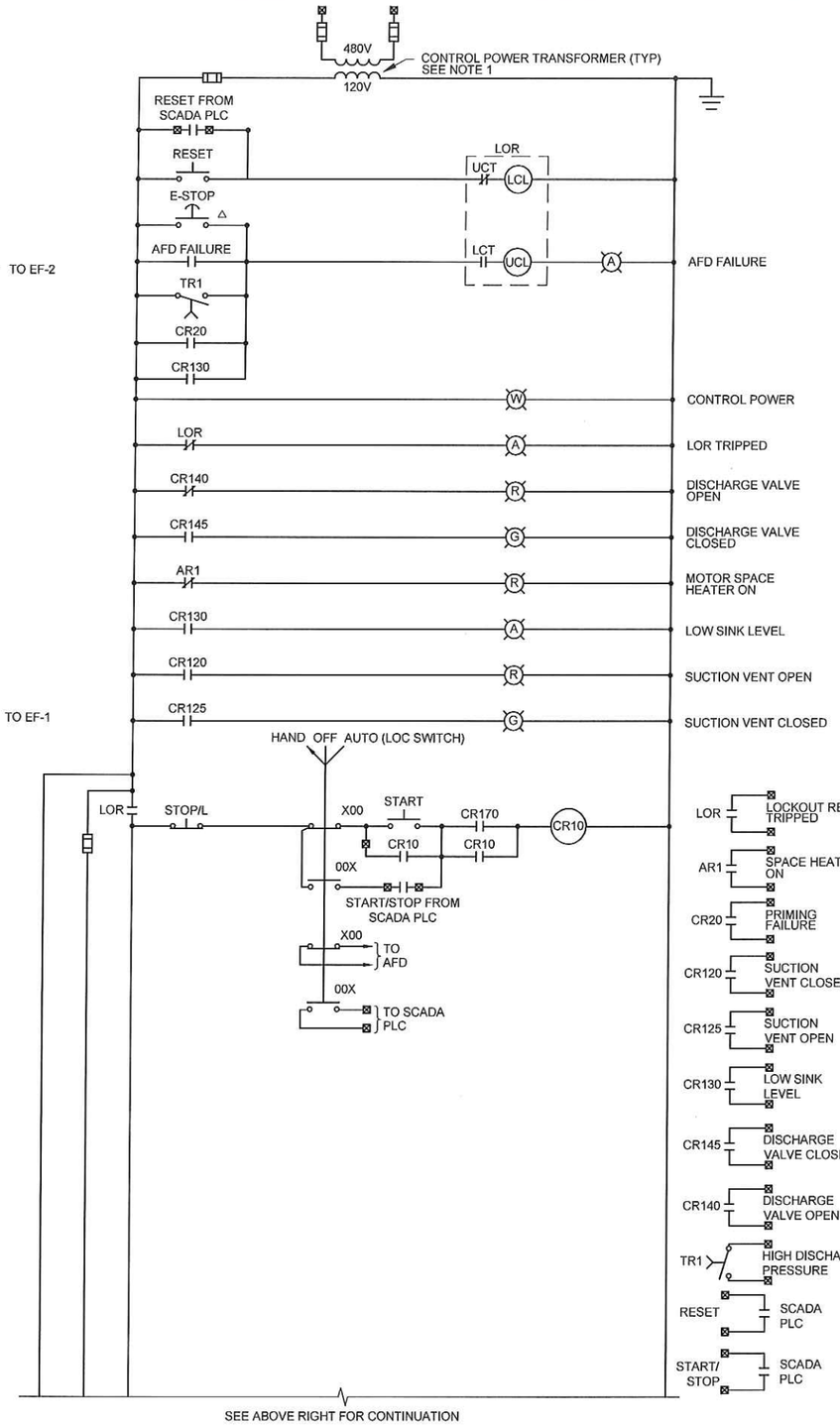
ELECTRICAL
PANEL AND LIGHTING SCHEDULES

SHEET E-3

1011673

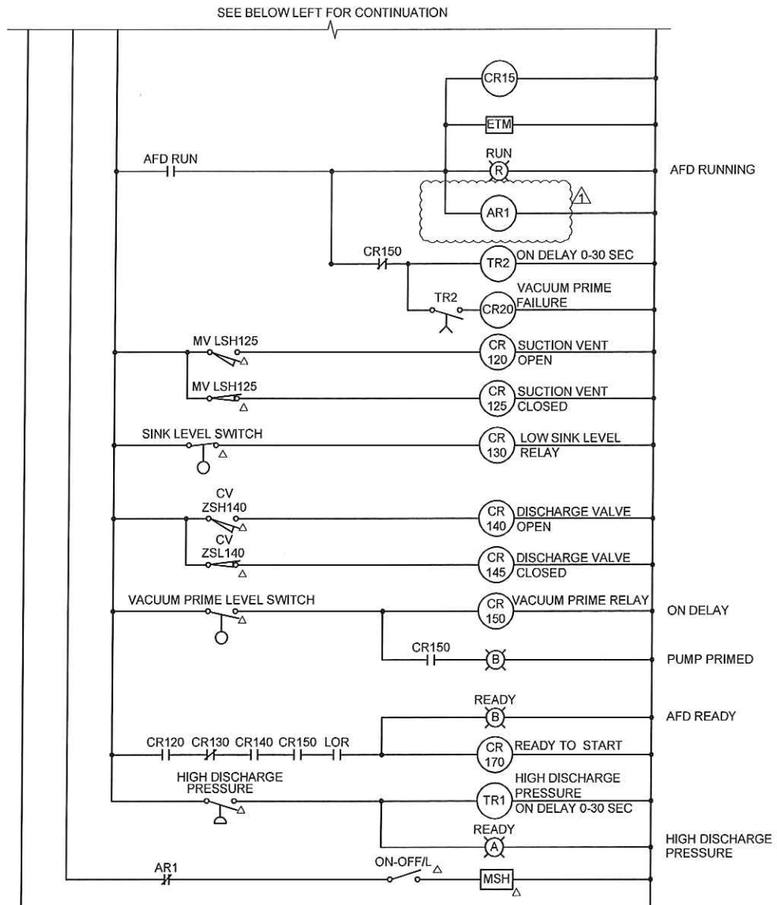


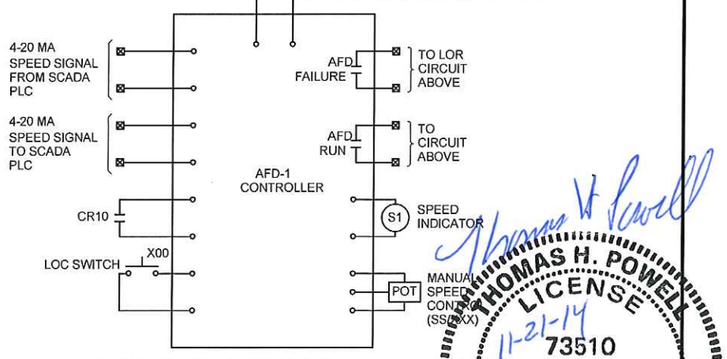




EXHAUST FAN AND DAMPER CONTROL DIAGRAM

NOTES:
1. LINE VOLTAGE COOLING THERMOSTAT, SHOWN AND SPECIFIED ON MECHANICAL DRAWINGS.
2. LOCAL CONTROL STATION AT EACH THERMOSTAT.
3. DAMPER ACTUATORS 120V, 1Ø, 150VA, SHOWN AND SPECIFIED ON MECHICAL DRAWINGS.





PUMP CONTROL DIAGRAM

PUMP 2 SIMILAR
ALL EQUIPMENT LOCATED IN AFD-1 EXCEPT AS NOTED BY SYMBOL △

NOTES:
1. PROVIDE CPT WITH 250VA RATING MINIMUM
2. STATUS AND CONTROL POINTS TRANSMITTED BY DATA LINK.

Thomas H. Powell
THOMAS H. POWELL LICENSE 11-21-14 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER
Thomas H. Powell, P.E.
Electrical Engineer
State of Florida License No. 73510
Date: 9/26/2014

REV	DATE	BY	DESCRIPTION
1	9/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE
WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

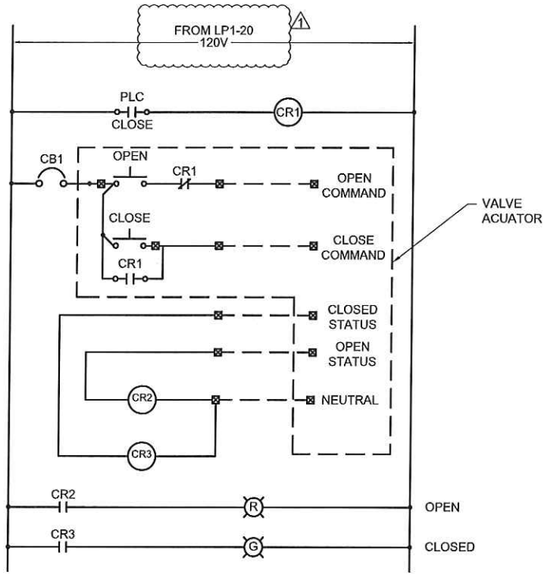
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
SCHEMATIC DIAGRAMS - I

SHEET E-4

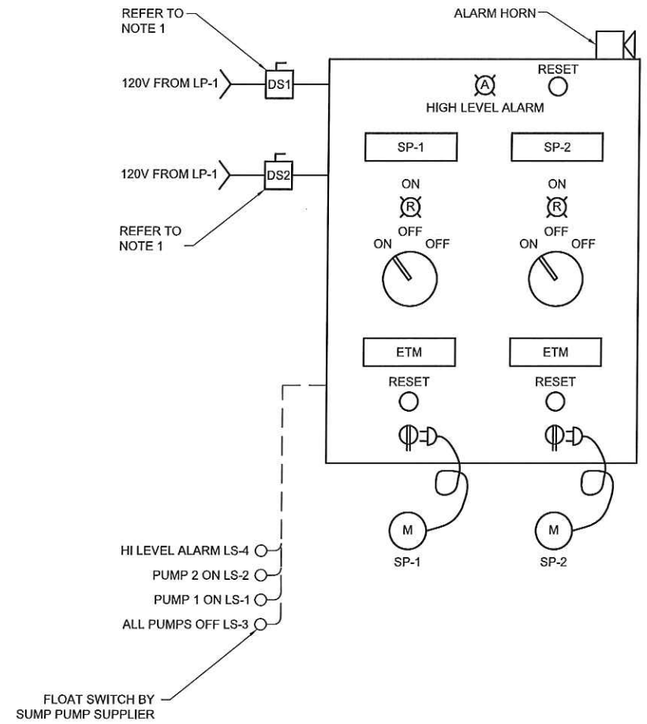
1011673

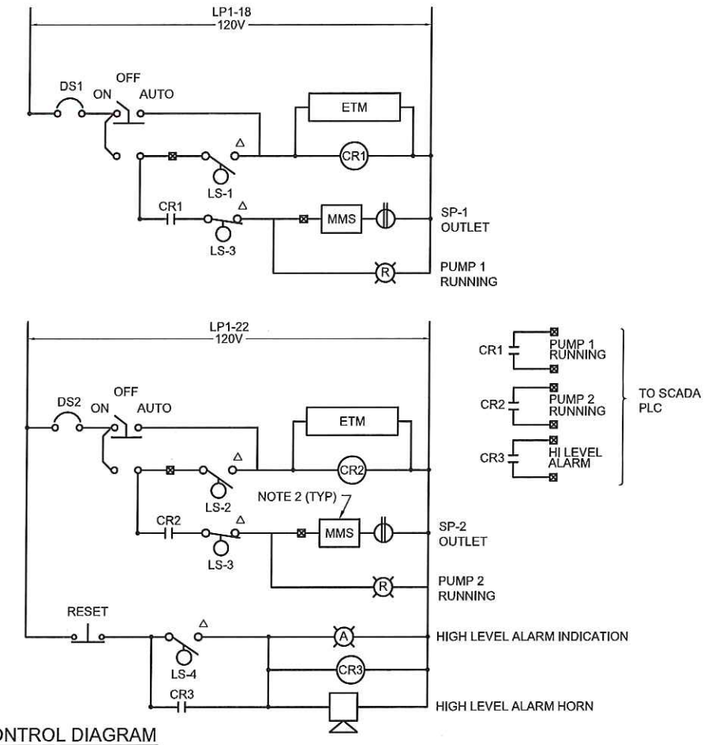


VALVE SPV-BLV01 CONTROL DIAGRAM

SIMILAR TO VALVES SPV-BLV02

NOTE:
1. CONNECT PER ACTUATOR MANUFACTURERS REQUIREMENTS.





SUMP PUMP (SPCP-1) CONTROL DIAGRAM

ALL EQUIPMENT LOCATED IN SPCP-1 EXCEPT AS NOTED WITH SYMBOL △

NOTE:
1. LOCKABLE DISCONNECT SWITCH LOCATED INSIDE PANEL.
2. MANUAL MOTOR STARTER WITH THERMAL RESET.
3. STAINLESS STEEL NEMA 4X ENCLOSURE.
4. SEE SHEET GP-2.

Thomas H. Powell
11-21-14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	09/09/2014	THP	ADDENDUM NO. 1

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

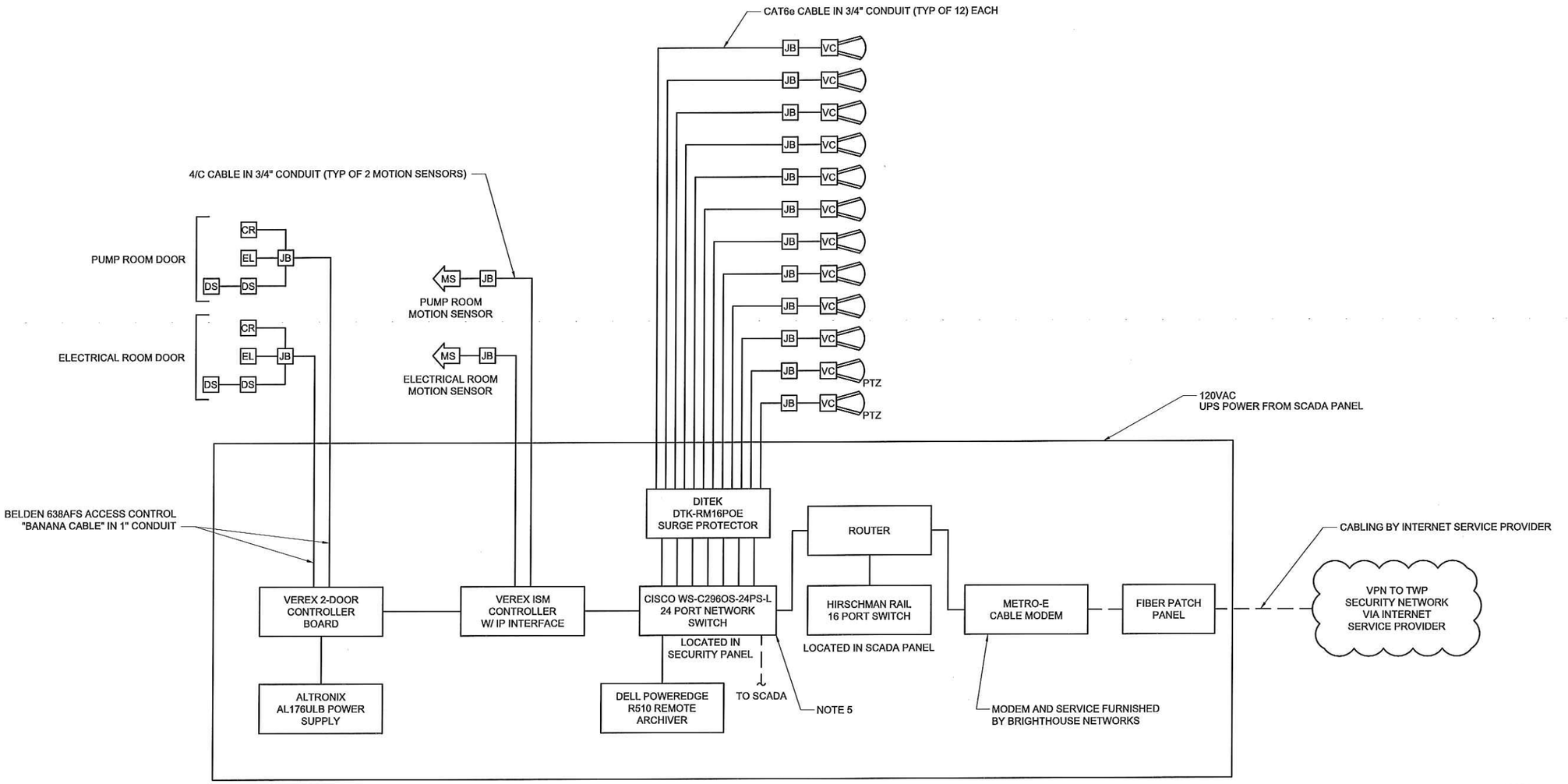
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
SCHEMATIC DIAGRAMS - II

SHEET E-5

1011673



ACS/CCTV RISER DIAGRAM

NOTES:

1. ALL DEVICES TO BE POWERED FROM UPS IN SCADA/PLC CABINET.
2. 120VAC INPUT POWER TO RACK FROM SCADA/PLC CABINET. REFER SHEET I-4 FOR PLC WIRING SCHEMATIC.
3. REFER TO SHEET E-7 FOR RACK LAYOUT DIAGRAM.
4. CONTRACTOR TO PROVIDE AN OMMCAST LICENSE UPGRADE OF AT LEAST 12 CAMERAS. EXISTING SPARE LICENSE "PORT/COUNT" SHALL NOT BE USED BY CONTRACTOR.
5. PORT 1-4 ACCESS CONTROL; PORT 5-20 FOR CAMERAS.
6. ALL SYSTEM CABLES SHALL BE IN CONDUIT AND NOT IN CABLE TRAY.

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

07-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

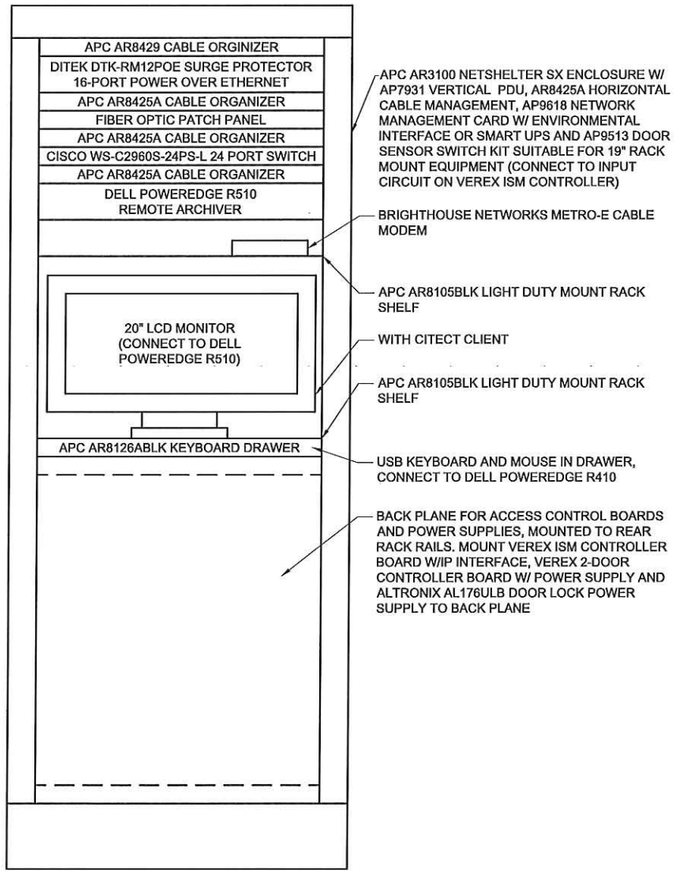
BLUE SINK MFL PUMPING STATION

ELECTRICAL
SECURITY SYSTEM BLOCK DIAGRAM - I

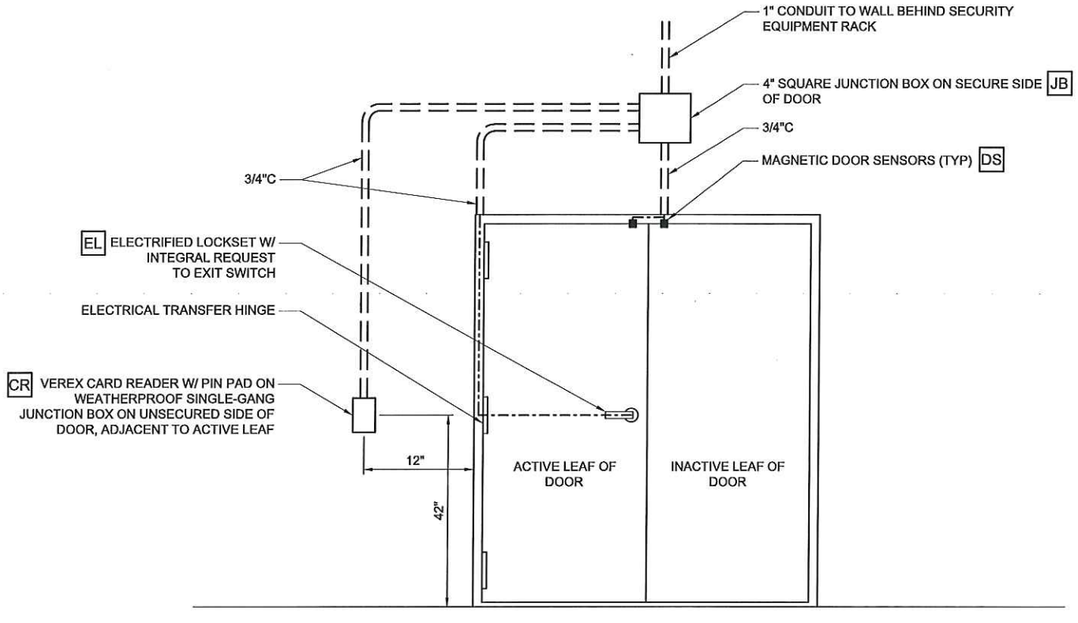
SHEET
E-6

1011673

RACK UNITS	HEIGHT INCHES
42	73.50
41	71.75
40	70.00
39	68.25
38	66.50
37	64.75
36	63.00
35	61.25
34	59.50
33	57.75
32	56.00
31	54.25
30	52.50
29	50.75
28	49.00
27	47.25
26	45.50
25	43.75
24	42.00
23	40.25
22	38.50
21	36.75
20	35.00
19	33.25
18	31.50
17	29.75
16	28.00
15	26.25
14	24.50
13	22.75
12	21.00
11	19.25
10	17.50
9	15.75
8	14.00
7	12.25
6	10.50
5	8.75
4	7.00
3	5.25
2	3.50
1	1.75



RACK ELEVATION DETAIL



ACCESS CONTROL DOOR ELEVATION

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

07-22-14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

SCALE: NO SCALE

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

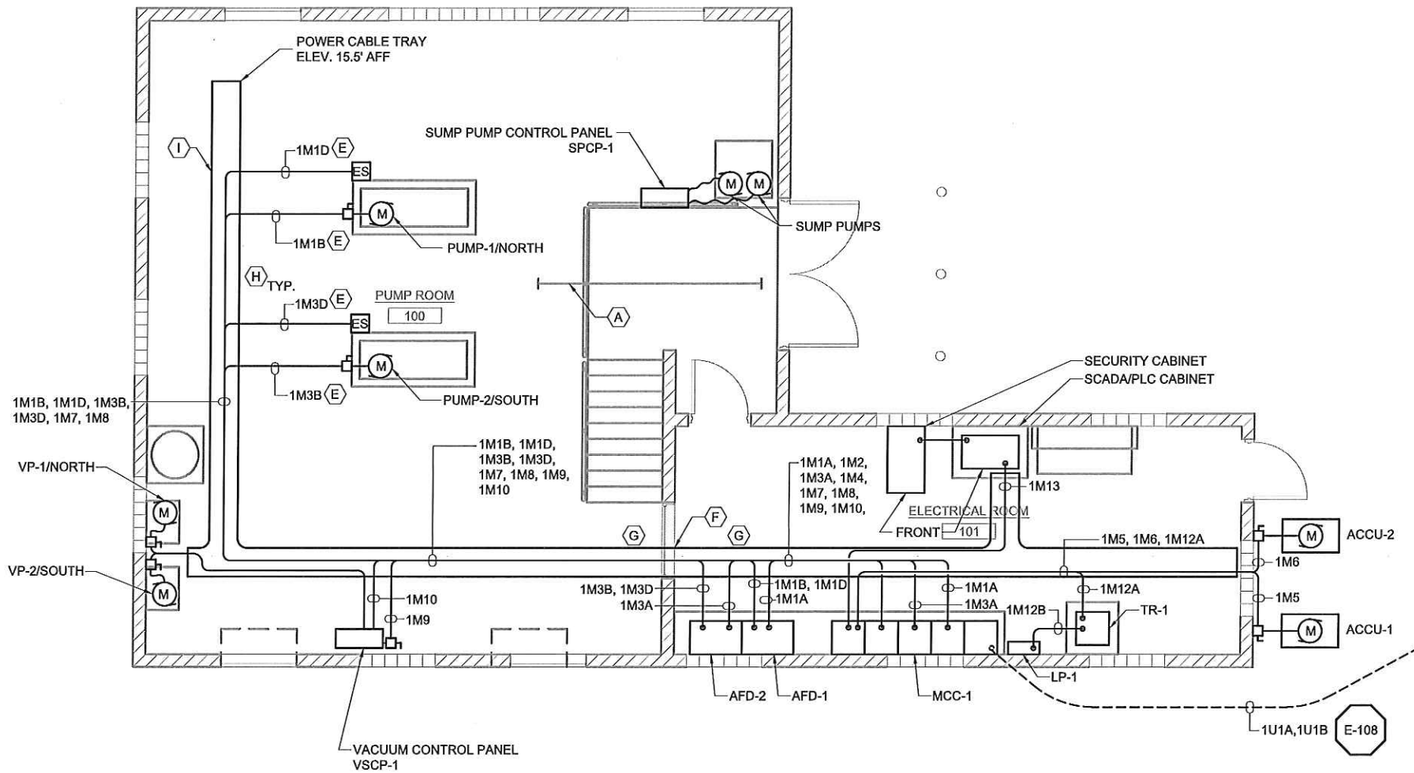
GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

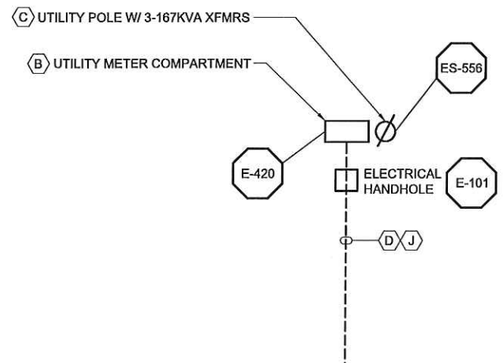
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
RACK LAYOUT AND DOOR ELEVATION

SHEET
E-7
1011673





GENERAL SHEET NOTES

1. REFER TO DRAWING E-3 ELECTRICAL SCHEDULES FOR CONDUIT AND WIRE DESIGNATIONS.
2. CONDUIT DESIGNATIONS ARE SHOWN TO IDENTIFY REQUIREMENTS INTO AND OUT OF CABLE TRAY.
3. PROVIDE MULTI -CONDUCTOR CABLE RATED CABLES FOR ALL CABLES IN TRAY.

SHEET KEYNOTES

A. ROUTE ALL CONDUITS ABOVE THE MONO RAIL.

B. PROVIDE TECO APPROVED METER HOUSING, PROVIDE CONDUIT FROM SUPPLY SIDE OF METER SOCKET TO HANDLHOLE SHOWN ON E-2. PROVIDE CABLE AND CONDUITS FROM LOAD SIDE OF METER SOCKET TO MCC. TECO PROVIDES 3-PHASE, 480V POWER METER. CENTER OF METER MUST BE BETWEEN 4-6" AND 5'-0" AFG FOR UTILITY READINGS.

C. PROVIDE CONCRETE ENCASED DUCT BANK AND CABLE AND CONDUITS FROM HANDHOLE TO MCC. TECO INSTALLS CABLE FROM LOAD SIDE OF OVERHEAD TRANSFORMERS TO METER SHOWN ON DRAWING E-2. COORDINATE INSTALLATION OF DUCT BANK WITH CIVIL.

D. AVOID WATER SERVICE LINE AND TRENCH DRAIN.

E. RUN CONDUIT WAIST HIGH (BY PROCESS PIPING) IN THIS AREA TO ALLOW GANTRY CRANE ACCESS OVER SUCTION & DISCHARGE PIPING.

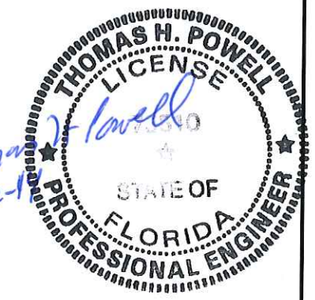
F. PROVIDE LEGRAND (OR EQUAL) WALL PENETRATION SLEEVE. FOLLOW TRAY MANUFACTURERS RECOMMENDATIONS. SEAL WITH ROXTEC.

G. PROVIDE CURVED TRANSITION TO ROUTE TRAY THRU STRUCTURAL OPENING.

H. CONDUITS FROM CABLE TRAY TO DEVICES AND EQUIPMENT MAY BE EMBEDDED IN SLAB (TYP)

I. LOCATE CABLE TRAY TO MAXIMIZE GANTRY CRANE ACCESS COORDINATE W/ LOW VOLTAGE TRAY.

J. 4-3" CONDUITS, 2 SPARE



Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

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

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

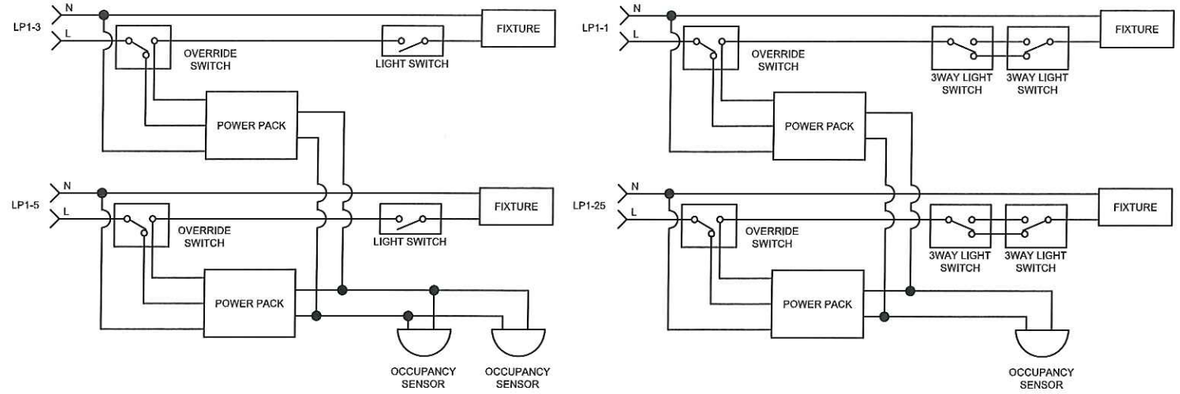
CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
POWER PLAN

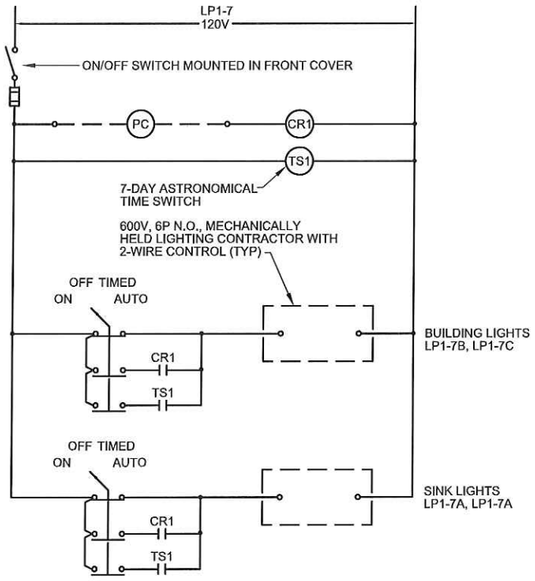
SHEET
E-8
1011673

File: C:\pwworkdir\dms60335\TBSD_E08.dwg



PUMP ROOM LIGHTING WIRING SCHEMATIC
NO SCALE

ELECTRICAL ROOM LIGHTING WIRING SCHEMATIC
NO SCALE



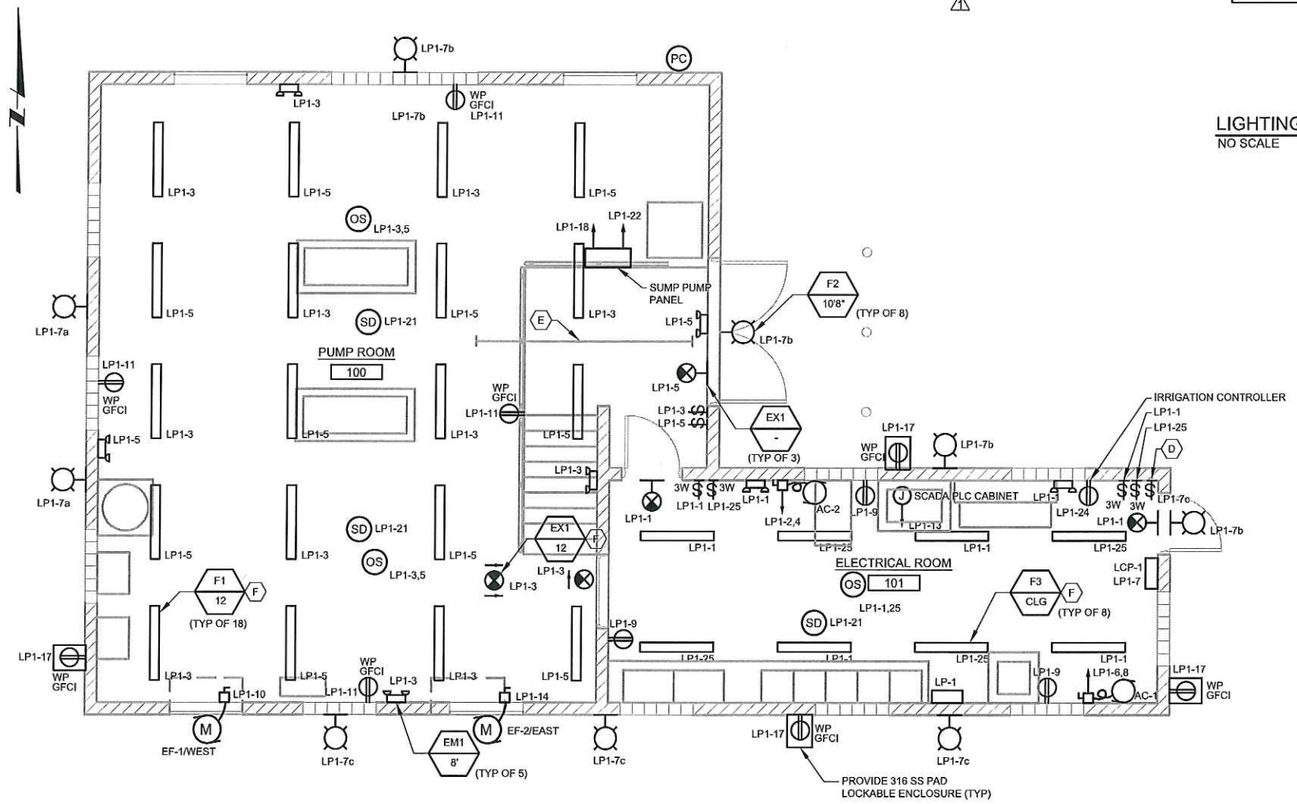
LIGHTING CONTACTOR PANEL LCP-1 WIRING SCHEMATIC
NO SCALE

GENERAL SHEET NOTES

1. REFER TO DRAWING E-3 ELECTRICAL SCHEDULES FOR PANEL AND LUMINAIRE SCHEDULES.
2. PROVIDE PENDANT STEMS FOR ALL CEILING MOUNTED FIXTURES AND DEVICES (LIGHTS, EXIT SIGNS, OCCUPANCY SENSORS, ETC.). ALL FIXTURES AND DEVICES SHALL BE MOUNTED SO THAT THEY ARE 12'6" AFF IN PUMP ROOM.
3. PLACE FIXTURES PER ARCHITECTURAL PLANS FOR LOCATION AND ELEVATION.

SHEET KEYNOTES

A. NOT USED.
B. PROVIDE LABEL ON BACKBOX THAT READS: "OUTDOOR SINK LIGHTING."
C. PROVIDE LABEL ON BACKBOX THAT READS: "OUTDOOR WALK WAY LIGHTING."
D. PROVIDE LABEL ON BACKBOX THAT READS: "OUTDOOR DRIVEWAY LIGHTING."
E. ROUTE ALL CONDUITS ABOVE THE MONO RAIL.
F. LOCATE FIXTURES TO AVOID INTERFERENCE WITH CABLE TRAYS.
G. LOCATE ALL SWITCHES IN LIKE LOCATIONS IN SAME GANG BOX. LABEL EACH SWITCH WITH ITS FUNCTION.



LIGHTING AND RECEPTACLE PLAN
SCALE: 1/4" = 1'-0"

Thomas H. Powell 11/21/14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION
1	09/09/2014	THP	ADDENDUM NO. 1

SCALE: AS SHOWN

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
LIGHTING AND RECEPTACLE PLAN

SHEET E-9
1011673

GENERAL SHEET NOTES

1. REFER TO DRAWING E-3 ELECTRICAL SCHEDULES FOR CONDUIT AND WIRE DESIGNATIONS.
2. CONDUIT DESIGNATIONS ARE SHOWN TO IDENTIFY REQUIREMENTS INTO AND OUT OF CABLE TRAY.
3. PROVIDE MULTI-CONDUCTOR TRAY RATED CABLES FOR ALL CABLES IN TRAY.

⬡ SHEET KEYNOTES

A. ROUTE ALL CONDUITS ABOVE THE MONO RAIL.

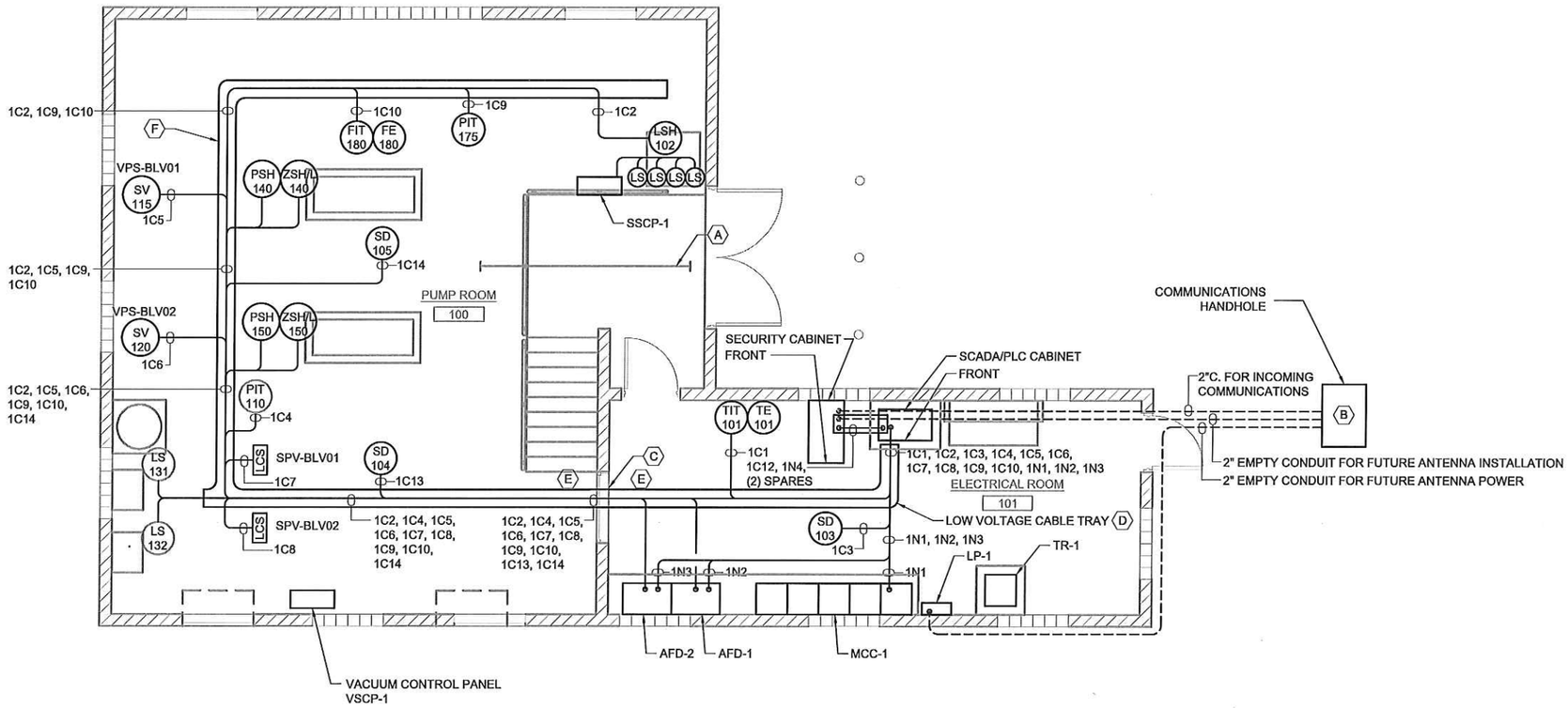
B. 30"x42" HANDHOLE FOR CONNECTION TO FUTURE ANTENNA.

C. PROVIDE LEGRAND (OR EQUAL) WALL PENETRATION SLEEVE. FOLLOW TRAY MANUFACTURERS RECOMMENDATIONS. SEAL OPENINGS WITH ROXTEC.

D. PROVIDE BARRIER IN CABLE TRAY.

E. PROVIDE CURVED TRANSITION SECTION FOR CABLE TRAY THRU WALL PENETRATION.

F. LOCATE CABLE TRAY TO MAXIMIZE GANTRY CRANE ACCESS. COORDINATE WITH POWER TRAY.



THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell
07-22-14

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

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

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

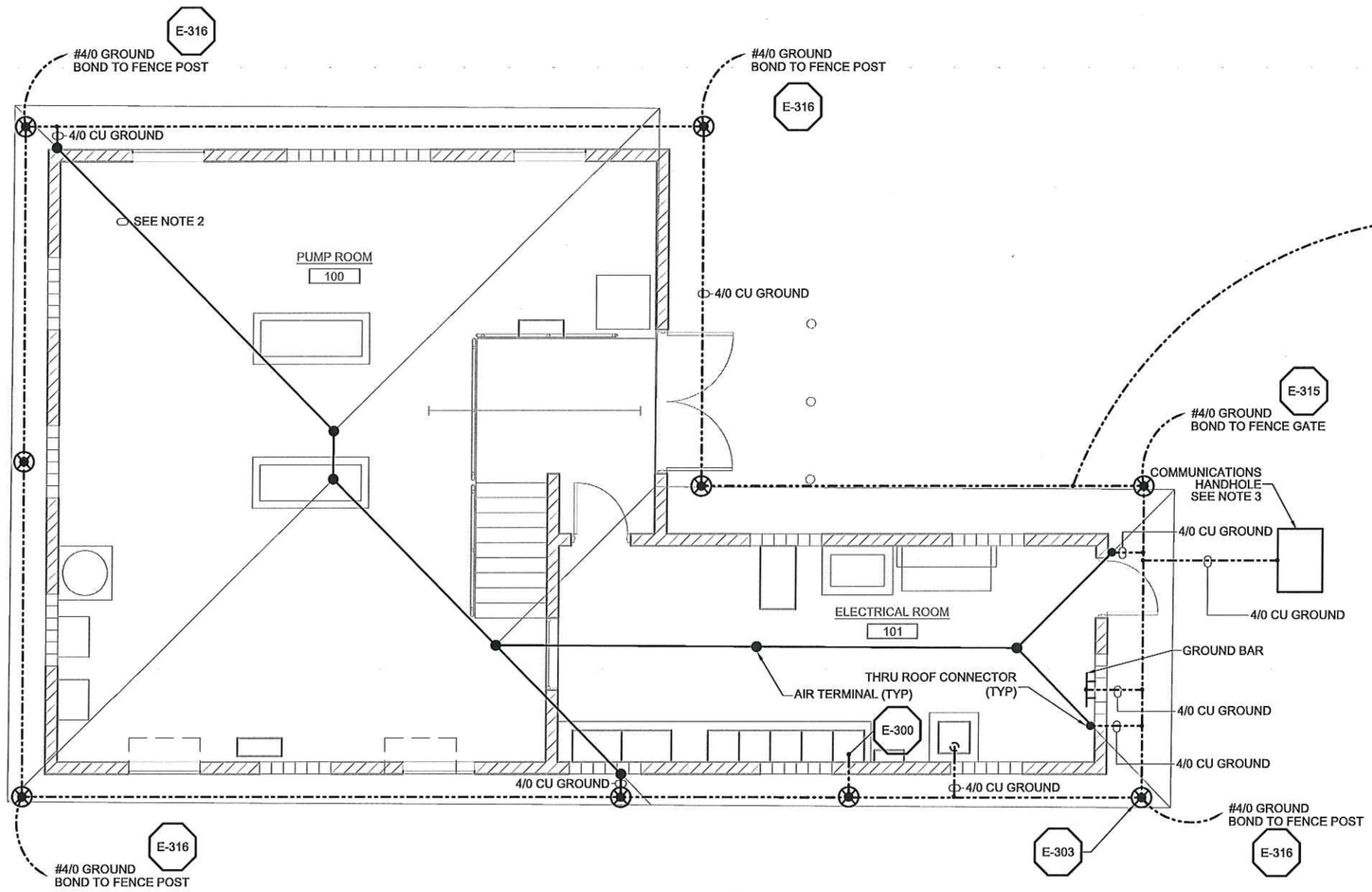
ELECTRICAL
INSTRUMENTATION PLAN

SHEET: E-10

1011673

GENERAL SHEET NOTES

1. REFER TO DRAWINGS GE-4, GE-5, AND GE-6 FOR ELECTRICAL DETAILS CALLED OUT ON THIS DRAWING.
2. LIGHTNING PROTECTION SHOWN ON ROOF. SEE ARCHITECTURAL DRAWINGS.
3. EXTEND GROUND CABLE TO HANDHOLE, COIL 10' EXCESS.



Thomas H. Powell
02-22-14

THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

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

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL
LIGHTNING PROTECTION AND GROUNDING PLAN

SHEET: E-11

1011673

CAMERA SCHEDULE

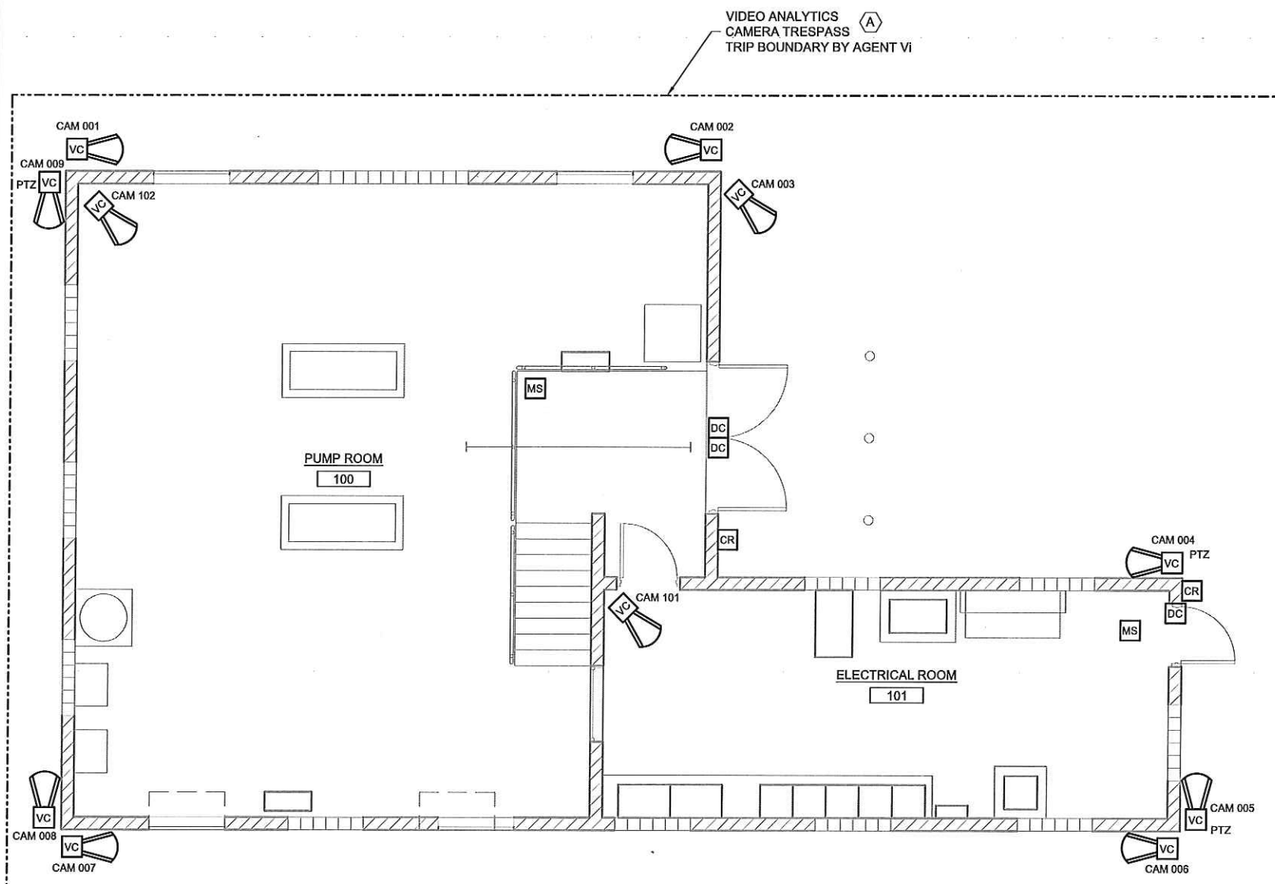
TAG ID	TYPE	ENVIRONMENT	MODEL	MOUNTING	MOUNTING HEIGHT (AFF)	ENCLOSURE
CAM 001	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 002	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 003	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 004	PTZ	OUTDOOR	AXIS Q6032	WALL	10'	ENVIRONMENTAL
CAM 005	PTZ	OUTDOOR	AXIS Q6032	WALL	10'	ENVIRONMENTAL
CAM 006	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 007	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 008	-	OUTDOOR	AXIS P3344VE	WALL	10'	ENVIRONMENTAL
CAM 009	PTZ	OUTDOOR	AXIS Q6032	WALL	10'	ENVIRONMENTAL
CAM 101	-	INDOOR	AXIS P3344VE	PENDANT/ CEILING	10'	ENVIRONMENTAL
CAM 102	-	INDOOR	AXIS P3344VE	PENDANT/ CEILING	10'	ENVIRONMENTAL

GENERAL SHEET NOTES

1. REFER TO DRAWINGS GE-4, GE-5, AND GE-6 FOR ELECTRICAL DETAILS CALLED OUT ON THIS DRAWING.
2. ALL CAMERAS TO BE DAY/NIGHT CAPABLE.
3. IR ILLUMINATORS SHALL BE MOUNTED BELOW 08 & 09 SUFFICIENT TO ILLUMINATE THE INTAKE PIPING.
4. ALL CAMERAS TO BE MINIMUM 1250x800 MP RESOLUTION.
5. CABLES FOR THIS SYSTEM SHALL BE RUN IN CONDUIT.

SHEET KEYNOTES

A. VIRTUAL TRIP LINE SHALL FOLLOW WITHIN FENCING LIMITS, AND INCLUDE ENTIRE SINK.



THOMAS H. POWELL LICENSE 73510 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas H Powell
07-22-15

Thomas H. Powell, PE
Electrical Engineer
State of Florida - License No 73510
Date: 2/28/2015

REV	DATE	BY	DESCRIPTION

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

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED TWHITE
DRAWN TWHITE
CHECKED DREED

ISSUED FOR BID - JUNE 2014

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS

MWH®
1000 N. ASHLEY DRIVE, TAMPA, FLORIDA 33602
CERTIFICATE OF AUTHORIZATION No. 6773

GREELEY AND HANSEN
1715 NORTH WESTSHORE BLVD
TAMPA, FLORIDA 33607
CERTIFICATE OF AUTHORIZATION No. 37

CITY OF TAMPA, FLORIDA
WATER DEPARTMENT

BLUE SINK MFL PUMPING STATION

ELECTRICAL SECURITY PLAN

SHEET E-12

1011673