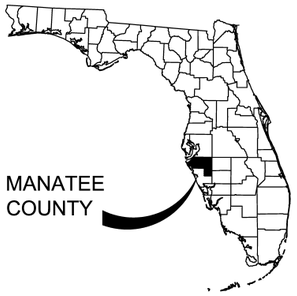
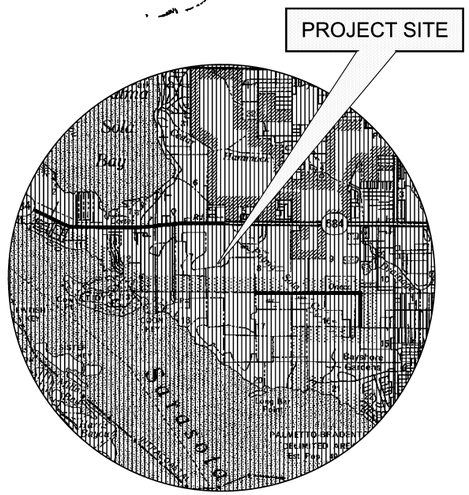
FILTER PIPING IMPROVEMENTS
AT THE SOUTHWEST WATER RECLAMATION FACILITY

MANATEE COUNTY PROJECT NO. 6077180

JULY 2010

BID SET





PROJECT MAP
N.T.S.

INDEX TO SHEETS	
Sheet Number	Sheet Title
GENERAL	
G–1	COVER SHEET
G–2	GENERAL NOTES
G–3	SYMBOLS AND ABBREVIATIONS
G–4	INFLUENT PIPING CONSTRUCTION PHASING PLAN
G–5	EFFLUENT PIPING CONSTRUCTION PHASING PLAN
CIVIL	
C–1	DEMOLITION PLAN
C–2	PROPOSED PLAN
C–3	SECTIONS
C–4	SECTIONS
C–5	GATE DETAILS
C–6	OVERHEAD CABLE TRAY SUPPORT DETAILS
C–7	CIVIL DETAILS
C–8	CIVIL DETAILS
C–9	EXISTING ELECTRICAL OVERALL SITE PLAN
C–9A	EXISTING ELECTRICAL OVERALL SITE PLAN
C–10	EXISTING ELECTRICAL CHLORINE CONTACT CHAMBER ENLARGED SITE PLAN
C–11	EXISTING ELECTRICAL ABW FILTERS ENLARGED SITE PLAN
C–12	EXISTING ELECTRICAL BUILDING
C–13	EXISTING CONDUIT & WIRE SCHEDULE (PAGE 1 OF 4)
C–14	EXISTING CONDUIT & WIRE SCHEDULE (PAGE 2 OF 4)
C–15	EXISTING CONDUIT & WIRE SCHEDULE (PAGE 3 OF 4)
C–16	EXISTING CONDUIT & WIRE SCHEDULE (PAGE 4 OF 4)
STRUCTURAL	
S–1	STRUCTURAL GENERAL NOTES
S–2	CHANNEL STRUCTURAL DETAILS
S–3	STRUCTURAL DETAILS
S–4	GRATING DETAILS
ELECTRICAL	
E–1	ELECTRICAL ABBREVIATIONS SYMBOLS LEGEND & NOTES
E–2	ELECTRICAL OVERALL SITE PLAN
E–3	ELECTRICAL CHLORINE CONTACT CHAMBER ENLARGED SITE PLAN
E–4	ELECTRICAL ABW FILTERS ENLARGED SITE PLAN
E–5	ELECTRICAL BUILDING
E–6	ELECTRICAL DETAILS

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

PROJECT STATUS
BID SET
JULY 2010

G–1

PLOTTED July 29, 2010 9:25 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\G-1 COVER SHEET.DWG

JULY 2010 – BID SET
FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY, MANATEE COUNTY PROJECT NO. 6077180

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

GENERAL NOTES

1. ELEVATIONS SHOWN ON THE PLANS REFERENCE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D. – 1929). HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983/1999 ADJUSTED STATE PLANE COORDINATE SYSTEM (SPCS).

2. LOCATION, ELEVATION, AND DIMENSIONS OF THE EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT TIME OF THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.

3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES. CALL SUNSHINE ONE CALL CENTER OF FLORIDA AT 1–800–432–4770 TO ARRANGE FIELD LOCATIONS. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.

4. THE CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.

5. OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH COUNTY STANDARDS OR AS DIRECTED BY THE ENGINEER.

6. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.

7. ANY DAMAGE TO STATE, COUNTY, OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATION EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE COUNTY PROJECT ENGINEER. PAYMENT SHALL NOT BE MADE FOR THIS WORK.

8. ANY U.S.C. AND G.S. MONUMENT WITHIN LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY. GEODETIC INFORMATION CENTER
   ATTN.: MARK MAINTENANCE CENTER
   ATTN.: N/CG–162
   6001 EXECUTIVE BLVD. ROCKVILLE,
   MARYLAND 20852 PH. (301)443–8319

9. THE CONTRACTOR(S) PERFORMING TRENCH EXCAVATION ON THIS CONTRACT, SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) TRENCH EXCAVATION SAFETY STANDARDS, 29 C.F.R., S.1926.650, SUBPART P, INCLUDING ALL SUBSEQUENT REVISIONS OR UPDATES TO THE STANDARDS AS ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY (DLES).

10. UNLESS OTHERWISE SPECIFIED IN THE PLANS, EXISTING SOD, DISTURBED BY CONSTRUCTION, SHALL BE REPLACED IN KIND (OR BETTER, AS APPROVED BY THE COUNTY'S PROJECT MANAGER.)

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXCESS MATERIAL AND THE PROPER DISPOSAL OF THE SAME.

12. CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY STREETS, STORM SEWERS, AND WATERWAYS. IF IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF–SITE EITHER BY NATURAL DRAINAGE OR VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES. THE MAINTENANCE OF EROSION CONTROL DEVICES AND THEIR COMPLETE REMOVAL ARE TO BE INCLUDED IN THE LUMP SUM BID PRICE.

13. THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOILS ARE STABILIZED.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA, FOR THE DURATION OF THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE WORK INVOLVED.

15. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THIS WORK PERFORMED IN THIS CONTRACT.

16. A MINIMUM OF 18 INCHES OF VERTICAL CLEARANCE SHALL BE PROVIDED FOR POTABLE WATER MAINS, RECLAIMED WATER MAINS, GRAVITY SANITARY SEWER MAINS, AND FORCEMAINS THAT CROSS ANY POTABLE WATER, RECLAIMED WATER, GRAVITY SEWER MAINS, FORCEMAINS, AND STORM SEWERS. THIS VERTICAL CLEARANCE MAY BE REDUCED AS FOLLOWS:

    A) THE VERTICAL CLEARANCE MAY BE REDUCED TO 6 INCHES IF THE POTABLE WATER MAIN OR THE RECLAIMED WATER MAIN IS DUCTILE IRON; OR

    B) THE VERTICAL CLEARANCE MAY BE REDUCED IF ONE OF THE MAINS IS ENCASED IN A WATERTIGHT CASING PIPE AS FOLLOWS:

        1) FOR RECLAIMED WATER MAINS OR SANITARY FORCEMAINS THAT ARE WITHIN A WATERTIGHT CASING PIPE, THE TOP OF THE CASING PIPE SHALL BE AT LEAST 3 INCHES BELOW THE BOTTOM OF THE POTABLE WATER MAIN, OR
        2) FOR SANITARY FORCEMAINS THAT ARE WITHIN A WATERTIGHT CASING PIPE, THE TOP OF THE CASING PIPE SHALL BE AT LEAST 3 INCHES BELOW THE BOTTOM OF THE RECLAIMED WATER MAIN.

17. A MINIMUM HORIZONTAL SEPARATION OF RECLAIMED WATER OR FORCEMAINS TO STORM SEWERS IS 5 FEET. A MINIMUM HORIZONTAL SEPARATION OF POTABLE WATER MAINS OR GRAVITY SANITARY SEWER MAINS TO STORM SEWERS IS 10 FEET. IF NOT FEASABLE, REFER TO CURRENT MANATEE COUNTY UTILITY STANDARDS SECTION 9.07, FOR ALLOWABLE EXCEPTIONS.

18. ALL PROPOSED MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.

19. THE CONTRACTOR IS TO "PROTECT IN PLACE" THE FACILITIES THAT ARE NOT TO BE RELOCATED AND/OR REMOVED, BUT ARE TO REMAIN IN PLACE.

20. THE CONTRACTOR IS TO ADJUST OR RELOCATE ALL THE FACILITIES THAT FALL IN CONFLICT IN ACCORDANCE WITH COUNTY STANDARDS.

21. THE CONTRACTOR SHALL PROVIDE DETAILED RECORD DRAWINGS, ANY AND ALL EXPENSES INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MISCELLANEOUS WORK AND CLEANUP. RED–LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APP SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS.

22. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.

23. THE CONTRACTOR SHALL HAVE A LICENSED ELECTRICIAN ON SITE DURING ALL EXCAVATION ACTIVITIES.

PLOTTED July 29, 2010 9:26 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\G-2 GENERAL NOTES.DWG

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM:	D. WILCOX
ENG:	R. AVALOS
DRW:	T. SONNENBERG
FILE SAVE DATE:	July 15, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GENERAL NOTES

PROJECT STATUS
BID SET
JULY 2010

G–2

PIPE AND FITTING SYMBOLS

DOUBLE LINE / SINGLE LINE

- 90° ELBOW
- 90° ELBOW ROTATED UP
- 90° ELBOW ROTATED DOWN
- TEE
- TEE ROTATED UP
- TEE ROTATED DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- HOSE BIBB & VALVE
- BALL VALVE
- BALL CHECK VALVE
- FLANGED JOINT
- MECHANICAL JOINT
- TO BE REMOVED
- GROUND WATER FLOW

DETAIL & SECTION DESIGNATION

SECTION DESIGNATION: LETTER / SHEET ON WHICH DETAIL IS DRAWN (e.g. A / C-4)

DETAIL DESIGNATION: NUMBER / DETAIL TITLE / SHEET ON WHICH SECTION IS CALLED OUT ("–" HERE INDICATES THAT SECTION IS DRAWN ON SEVERAL SHEETS)

1 / C-2 DETAIL — SCALE: NTS

A / C-4 SECTION — SCALE: NTS

LEGEND OF SYMBOLS

TYPICAL EXISTING SYMBOLS / TYPICAL PROPOSED SYMBOLS

- BP = BACKFLOW PREVENTER
- ● = BOLLARD or POST
- CA = BOX, CABLE TELEVISION
- EB = BOX, ELECTRIC UTILITY
- △ = BOX, ELECTRIC UTILITY (TRANSFORMER)
- TB = BOX, TELEPHONE
- = DECORATIVE LIGHT POLE
- = FIRE HYDRANT
- = FLAGPOLE
- = FLARED END SECTION
- = GRATE INLET
- = GROUND LIGHT
- = GUY ANCHOR
- = LIGHT POLE, CONCRETE
- = LIGHT POLE, METAL
- = LIGHT POLE, WOOD
- MB = MAILBOX
- E = MANHOLE, ELECTRIC
- G = MANHOLE, GREASE TRAP
- S = MANHOLE, SANITARY SEWER
- D = MANHOLE, STORM SEWER
- T = MANHOLE, TELEPHONE
- EM = METER, ELECTRIC
- GM = METER, GAS
- RM = METER, RECLAIMED WATER
- WM = METER, WATER
- = MITERED END SECTION
- MW = MONITORING WELL
- PS = PEDESTRIAN CROSSING SIGNAL
- = SANITARY CLEANOUT
- = SCHEDULE B-2 ITEM
- TR = TELEPHONE RISER
- = TRAFFIC SIGN
- TSB = TRAFFIC SIGNAL BOX
- TSP = TRAFFIC SIGNAL POLE

- CWS = UG CABLE TELEVISION WARNING SIGN
- EWS = UG ELECTRIC WARNING SIGN
- OWS = UG FIBER OPTIC WARNING SIGN
- FWS = UG FORCEMAIN WARNING SIGN
- GWS = UG GAS WARNING SIGN
- RWS = UG RECLAIMED WATER WARNING SIGN
- SWS = UG SANITARY SEWER WARNING SIGN
- TWS = UG TELEPHONE WARNING SIGN
- WWS = UG WATER WARNING SIGN
- = UTILITY POLE, CONCRETE
- = UTILITY POLE, METAL
- = UTILITY POLE, WOOD
- GV DOG = VALVE, GAS
- RV DOG = VALVE, RECLAIMED WATER
- SV DOG = VALVE, SANITARY
- WV DOG = VALVE, WATER
- W = WELL

- = CONCRETE
- = ASPHALT
- = CONCRETE PAVERS
- = BRICK

- + 25.25 = POINT OF ELEVATION
- 25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE

STORM CURB INLETS

- X—X—X— = CHAIN LINK FENCE
- = CHANNEL OUTLINE
- = CONTOUR
- OHC = OVERHEAD UTILITY
- = TOE OF SLOPE
- = TOP OF BANK
- = WOOD FENCE

- UGC = UG CABLE
- UGE = UG ELECTRIC
- UGFO = UG FIBER OPTIC
- GAS = UG GAS
- IRG = UG IRRIGATION
- RCW = UG RECLAIMED WATER
- SFM = UG SANITARY FORCEMAIN
- SAN = UG SANITARY SEWER
- STRM = UG STORM SEWER
- UGT = UG TELEPHONE
- WM = UG WATER MAIN

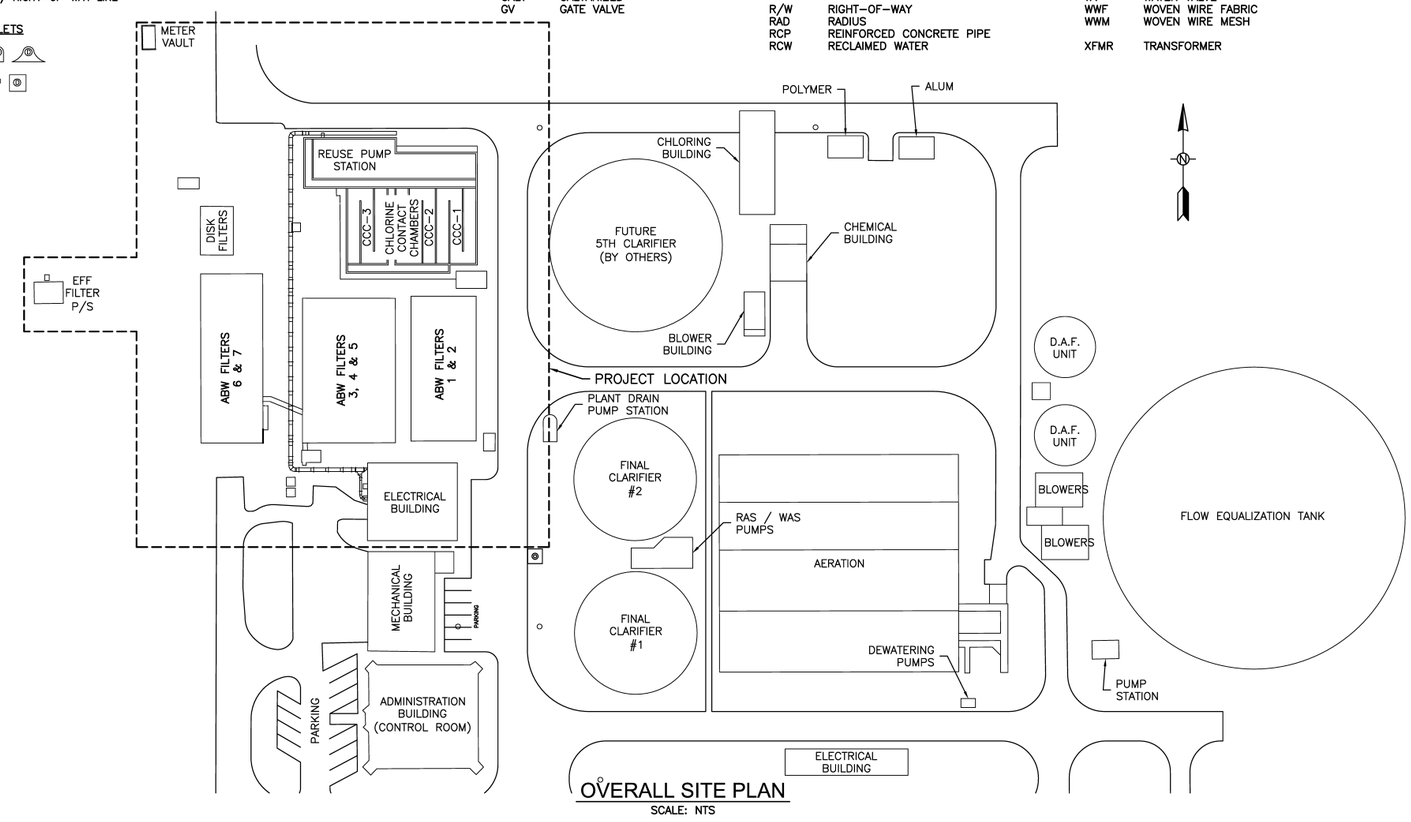
- = SILT FENCE
- = RIGHT-OF-WAY LINE
- = EASEMENT BOUNDARY
- = SECTION LINE

TREE LEGEND

- = BAY TREE
- = BOTTLE BRUSH TREE
- = CAMPHOR TREE
- = CEDAR
- = CHINABERRY TREE
- = CITRUS TREE
- = CYPRESS TREE
- = ELM TREE
- = EUCALYPTUS TREE
- = MAGNOLIA TREE
- = MAPLE TREE
- = MULBERRY TREE
- = OAK TREE
- = OTHER SPECIES
- = PALM TREE
- = PECAN TREE
- = PERSIMMON TREE
- = PINE TREE
- = SYCAMORE TREE
- = WAX MYRTLE TREE
- = WILLOW TREE

ABBREVIATIONS:

#	NUMBER
A/C	AIR CONDITIONER
ABW	AUTOMATIC BACKWASH
AC	ACRE / ASBESTOS CEMENT PIPE
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADPT	ADAPTER
ALUM	ALUMINUM
APPROX	APPROXIMATE (LY)
ARV	AIR RELEASE VALVE
ASPH	ASPHALT
ASR	AQUIFER STORAGE RECOVERY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BM	BENCHMARK
BV	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BOT	BOTTOM
BWF	BARBED WIRE FENCE
CATV	CABLE TV
CCC	CHLORINE CONTACT CHAMBER
CHKD	CHECKED
℄	CENTERLINE
CI	CAST IRON
CLR	CLEAR (ANCE)
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNITS
CO	CLEAN OUT
CONC	CONCRETE
COND	CONDUIT
CONST	CONSTRUCTION
CPLG	COUPLING
CTR	CENTER (ED)
CV	CHECK VALVE
D	DRAIN
DB	DEEP SOIL BORING
DEMO	DEMOLITION
DEPT	DEPARTMENT
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
E	EAST
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EFF	EFFLUENT
EL	ELEVATION
ELEC	ELECTRICAL
EOP	EDGE OF PAVEMENT
EQ	EQUAL (LY)
EQUIP	EQUIPMENT
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
ETC	ETCETERA
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH (ED)
FL	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PIPE
FT	FOOT OR FEET
GAL	GALLON
GALV	GALVANIZED
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HORZ	HORIZONTAL
HT	HEIGHT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
LF	LINEAR FEET
LT	LEFT
MATL	MATERIAL
MAX	MAXIMUM
MD	MEAN DEPTH
MECH	MECHANICAL
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
O/E	OR EQUAL
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END
P	PROPERTY LINE
PP	POWER POLE
PROP	PROPOSED
PS	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
PW	POTABLE WATER
R/W	RIGHT-OF-WAY
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RCW	RECLAIMED WATER
RED	REDUCER
REQ	REQUIRED
RMJ	RESTRAIN MECHANICAL JOINT
RR	RAILROAD
RT	RIGHT
RW	RAW WATER
S	SOUTH
SAN	SANITARY
SB	SOIL BORING
SCH	SCHEDULE
SF	SQUARE FOOT
SFM	SANITARY FORCE MAIN
SHC	SODIUM HYPOCHLORITE
SHT	SHEET
SHWT	SEASONAL HIGH WATER TABLE
SMH	SANITARY MANHOLE
SQR	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SW	SOLVENT WELD
SWLK	SIDEWALK
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TEL	TELEPHONE
THD	THREADED
THK	THICK (NESS)
TOB	TOP OF BANK
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
VERT	VERTICAL
W	WEST
W/	WITH
WM	WATERMAIN OR WATER METER
WV	WATER VALVE
WWF	WOVEN WIRE FABRIC
WWM	WOVEN WIRE MESH
XFMR	TRANSFORMER



OVERALL SITE PLAN
SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

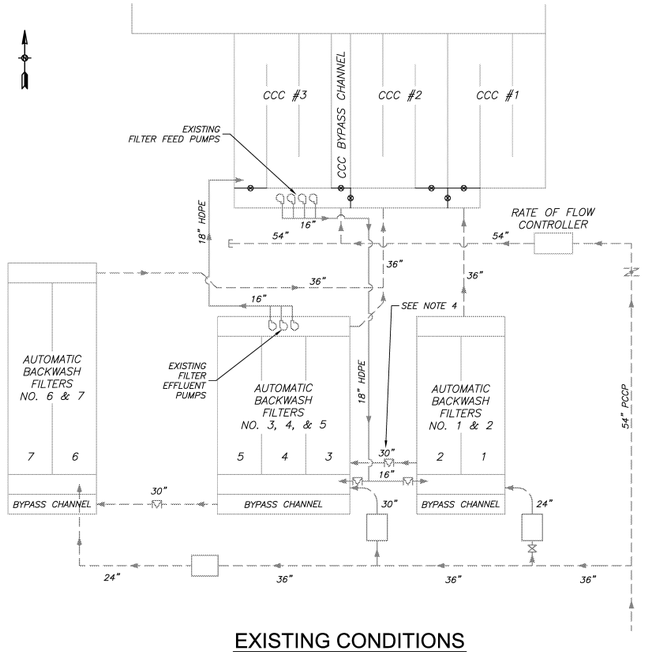
FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SYMBOLS AND ABBREVIATIONS

PROJECT STATUS
BID SET
JULY 2010

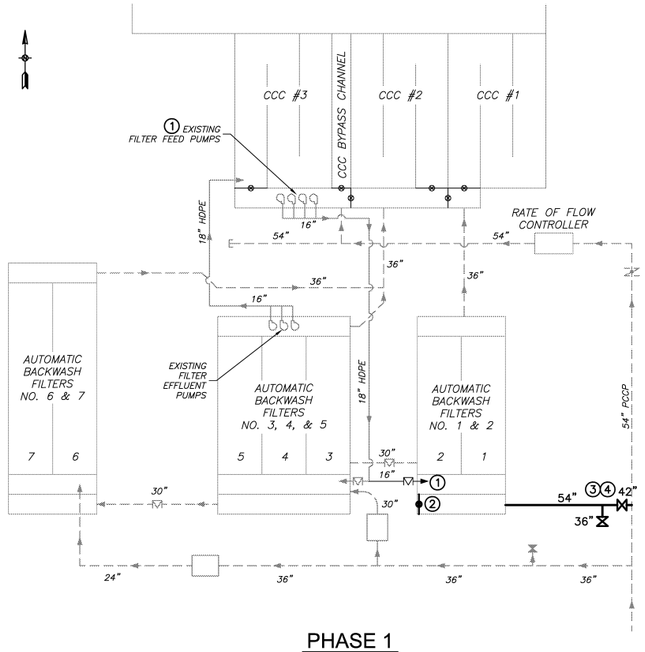
G-3

PLOTTED July 29, 2010 9:26 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER W#14\CADD\G-3 SYMBOLS AND ABBREVIATIONS.DWG



EXISTING CONDITIONS
SCALE: NTS

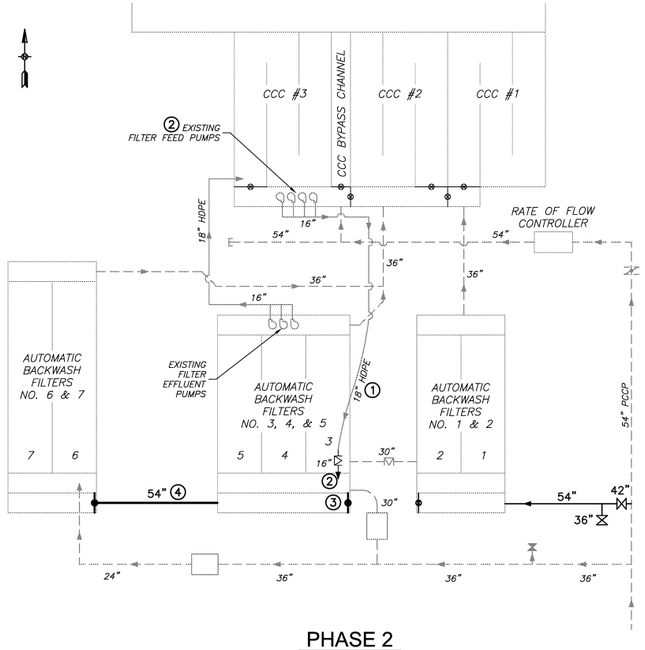
CONSTRUCTION PHASING NOTES
1. THE PHASING PLAN PRESENTED HEREIN IS A GUIDE TO SET FORTH THE MINIMUM CRITERIA FOR MAINTAINING PLANT OPERATIONS AND TREATMENT CAPACITY. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR PHASING AND SEQUENCING OF THE WORK AS REQUIRED TO COMPLETE THE PROJECT. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION PHASING PLAN FOR REVIEW & APPROVAL. THE CONSTRUCTION PHASING PLAN SHALL INCLUDE REROUTING OF EXISTING ELECTRICAL CONDUIT AND WIRING, INCLUDING TEMPORARY SERVICES AS DEFINED ON SHEETS C-9 THRU C-17.
2. THE PLANT FILTRATION SYSTEM MUST REMAIN IN SERVICE DURING THE PROJECT. INDIVIDUAL FILTERS CAN BE TAKEN OUT OF SERVICE AS DESCRIBED HEREIN. CONTRACTOR SHALL COORDINATE ALL SHUTDOWNS WITH PLANT PERSONNEL.
3. THE CONSTRUCTION PHASING DOES NOT INCLUDE REQUIRED DEMOLITION AND GROUT FILLING OF ABANDONED PIPES. REFER TO SHEET C-1, DEMOLITION PLAN.
4. FOR THE CONSTRUCTION PHASING PLANS, THE 30" INTERCONNECT BETWEEN FILTERS #1 & #2 AND FILTERS #3, #4, & #5 IS CLOSED. HOWEVER, THE INTERCONNECT CAN BE USED AS NEEDED DURING ANY OF THE PHASES.



PHASE 1
SCALE: NTS

PHASE 1
1. USE EXISTING FILTER FEED PUMPS TO PROVIDE INFLUENT TO FILTERS #1 & #2. (INFLUENT TO FILTERS #3, #4, #5, #6 & #7 FROM 54" PCCP GRAVITY FEED SYSTEM).
2. REMOVE WEST INFLUENT WALL AND INSTALL STOP GATE (CLOSED) IN FILTERS #1 & #2 BYPASS CHANNEL.
3. CONSTRUCT INFLUENT FILTER PIPING BETWEEN FILTERS #1 & #2 AND EXISTING 54" PCCP INFLUENT LINE. (CONNECTION TO EXISTING 36" FILTER INFLUENT LINE TO BE MADE IN PHASE 3.)
4. ACTIVATE NEW INFLUENT FILTER PIPING TO FILTERS #1 & #2.

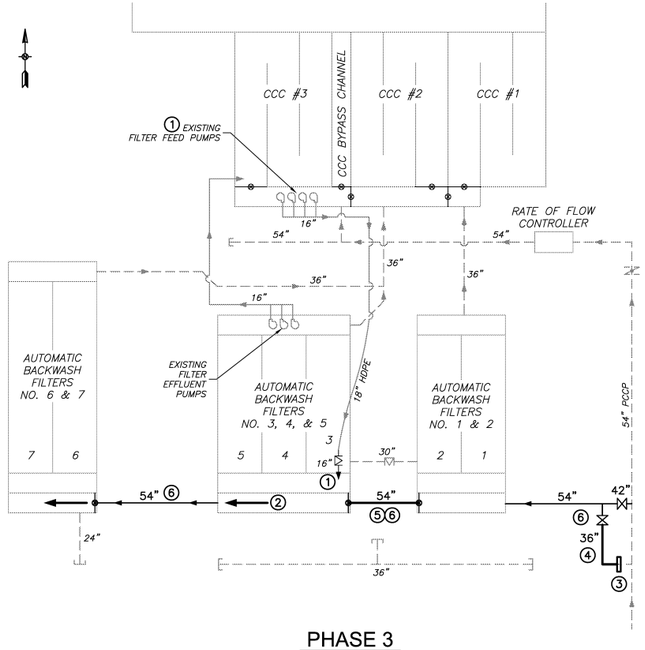
FILTER CAPACITY ONLINE = 68 MGD PHF



PHASE 2
SCALE: NTS

PHASE 2
1. RELOCATE 18" HDPE & 16" DI FILTER FEED LINES AT FILTERS #1 & #2 AND FILTERS #3, #4, & #5 TO FEED ONLY FILTERS #3, #4, & #5 TO ACCOMMODATE CONSTRUCTION OF THE 54" INFLUENT PIPE IN PHASE 3.
2. USE EXISTING FILTER FEED PUMPS TO PROVIDE INFLUENT TO FILTERS #3, #4, & #5. (INFLUENT TO FILTERS #1, #2, #6 & #7 FROM 54" PCCP GRAVITY FEED SYSTEM).
3. REMOVE EAST INFLUENT WALL AND INSTALL NEW STOP GATE IN FILTERS #3, #4, & #5.
4. CONSTRUCT 54" INFLUENT FILTER PIPING AND SLIDE GATE BETWEEN FILTERS #3, #4, & #5 AND FILTERS #6 & #7.

FILTER CAPACITY ONLINE = 68 MGD PHF



PHASE 3
SCALE: NTS

PHASE 3
1. CONTINUE TO USE EXISTING FILTER FEED PUMPS TO PROVIDE INFLUENT TO FILTERS #3, #4, & #5.
2. ALLOW PUMPED INFLUENT AT FILTERS #3, #4, & #5 TO GRAVITY FLOW TO FILTERS #6 & #7 THROUGH THE NEW 54" PIPE. (INFLUENT TO FILTERS #1 & #2 FROM 54" PCCP GRAVITY FEED SYSTEM).
3. INSTALL 36" LINE STOP IN EXISTING 36" FILTER INFLUENT LINE.
4. CONNECT EXISTING 36" FILTER INFLUENT LINE TO NEW 54" FILTER INFLUENT LINE.
5. WITH BOTH STOP GATES CLOSED, CONSTRUCT 54" INFLUENT FILTER PIPING BETWEEN FILTERS #1 & #2 AND FILTERS #3, #4, & #5.
6. ACTIVATE NEW GRAVITY FEED CHANNEL SYSTEM.
7. RECONSTRUCT 18" HDPE AND 16" DI FILTER FEED LINES TO ORIGINAL CONFIGURATION PRIOR TO COMPLETION OF PROJECT.

FILTER CAPACITY ONLINE = 68 MGD PHF

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

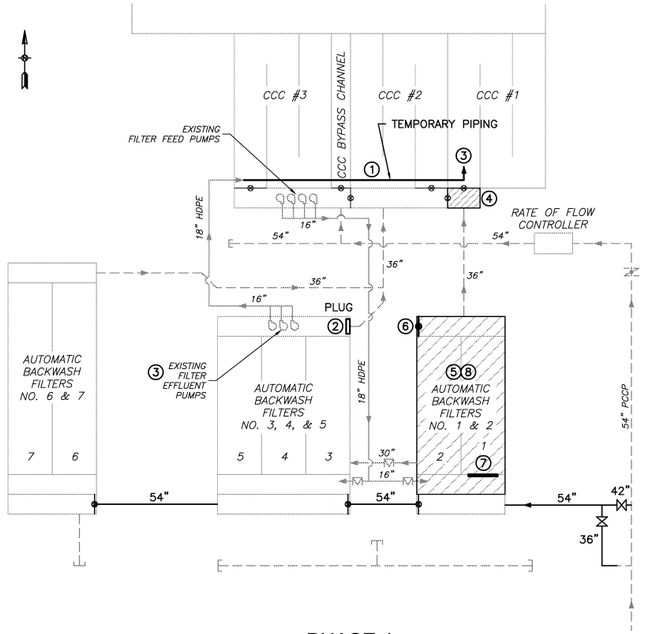
FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

INFLUENT PIPING CONSTRUCTION PHASING PLAN

PROJECT STATUS
BID SET
JULY 2010

G-4

PLOTTED July 29, 2010 9:26 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\G-4 INFLUENT PIPING CONSTRUCTION PHASING PLAN.DWG

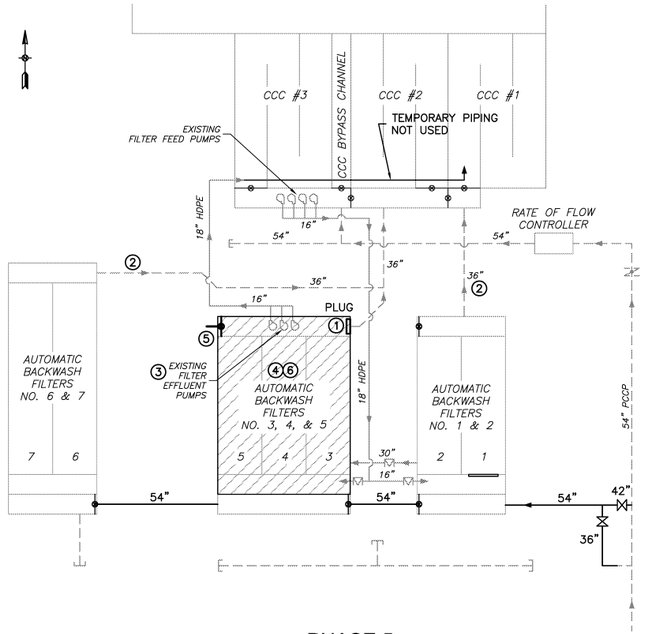


PHASE 4

SCALE: NTS

PHASE 4
1. EXTEND EXISTING FILTER EFFLUENT PUMPS PIPING TO FEED CCC #1 ONLY WITH PROVISIONS TO FEED CCC #2 ONLY IN PHASES 6 & 7.
2. INSTALL TEMPORARY PLUG IN FILTERS #3, #4, & #5 EFFLUENT LINE.
3. PUMP EFFLUENT FROM FILTERS #3, #4, & #5 TO CCC #1. GRAVITY FEED EFFLUENT FROM FILTERS #6 & #7 TO CCC #2.
4. ISOLATE CCC #1 INFLUENT CHANNEL USING EXISTING GATES.
5. DEACTIVATE FILTERS #1 & #2.
6. REMOVE WEST EFFLUENT WALL AND INSTALL SLIDE GATE (CLOSED) IN FILTERS #1 & #2.
7. CONSTRUCT CONCRETE WEIR WALL AND ACTUATED INFLUENT WEIR IN FILTER #1.
8. MODIFY EXISTING WEIRS AND ADD WEIR METERS IN FILTERS #1 & #2.
9. REACTIVATE FILTERS #1 & #2 AND CCC #1 INFLUENT CHANNEL.

FILTER CAPACITY ONLINE = 42.5 MGD PHF

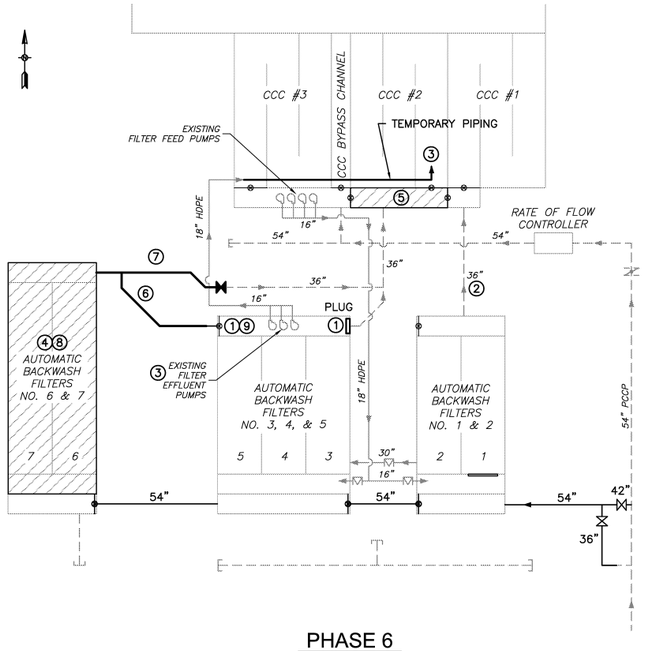


PHASE 5

SCALE: NTS

PHASE 5
1. MAINTAIN TEMPORARY PLUG IN FILTERS #3, #4, & #5 EFFLUENT LINE.
2. GRAVITY FEED EFFLUENT FROM FILTERS #1 & #2 AND #6 & #7 TO CCC.
3. DEACTIVATE FILTER EFFLUENT PUMPS.
4. DEACTIVATE FILTERS #3, #4, & #5.
5. REMOVE WEST EFFLUENT WALL IN FILTERS #3, #4, & #5 AND INSTALL 54" WALL PIPE AND SLIDE GATE (CLOSED).
6. MODIFY EXISTING WEIRS AND ADD WEIR METERS IN FILTERS #3, #4, & #5.

FILTER CAPACITY ONLINE = 45.5 MGD PHF

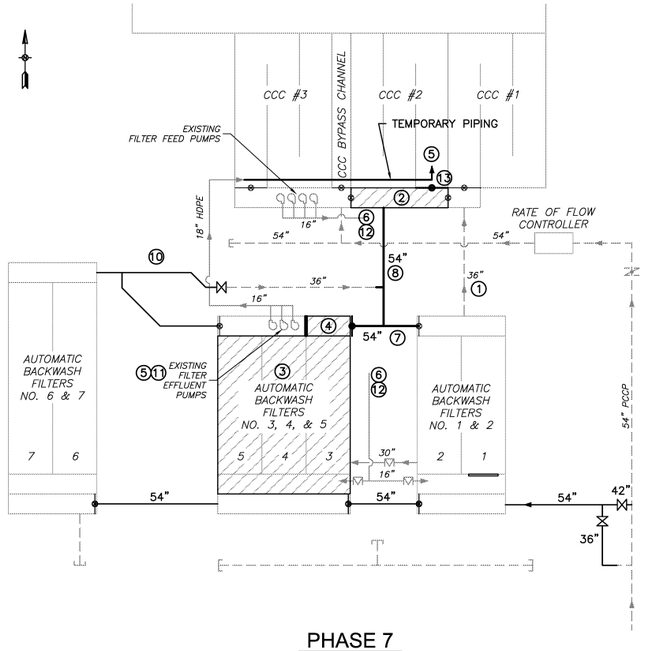


PHASE 6

SCALE: NTS

PHASE 6
1. MAINTAIN TEMPORARY PLUG IN FILTERS #3, #4, & #5 EAST EFFLUENT WALL. MAINTAIN SLIDE GATE CLOSED IN FILTERS #3, #4 AND #5 WEST EFFLUENT WALL.
2. MAINTAIN GRAVITY EFFLUENT FEED FROM FILTERS #1 & #2 TO CCC #1.
3. PUMP EFFLUENT FROM FILTERS #3, #4, & #5 TO CCC #2.
4. DEACTIVATE FILTERS #6 & #7.
5. ISOLATE CCC #2 INFLUENT CHANNEL USING EXISTING GATES.
6. CONSTRUCT 54" & 36" PIPING BETWEEN FILTERS #6 & #7 AND FILTERS #3, #4, & #5. CONNECT TO NEW WALL PIPE STUB AT FILTERS #3, #4, & #5.
7. CLOSE NEW 36" VALVE.
8. MODIFY EXISTING WEIRS AND ADD WEIR METERS IN FILTERS #6 & #7.
9. OPEN SLIDE GATE IN FILTERS #3, #4, & #5 WEST EFFLUENT WALL.

FILTER CAPACITY ONLINE = 48 MGD PHF



PHASE 7

SCALE: NTS

PHASE 7
1. MAINTAIN GRAVITY EFFLUENT FEED FROM FILTERS #1 & #2 TO CCC #1.
2. MAINTAIN ISOLATION OF CCC #2 INFLUENT CHANNEL.
3. DEACTIVATE FILTERS #3, #4, & #5.
4. ISOLATE FILTER #3 EFFLUENT CHANNEL USING TEMPORARY MEANS.
5. PUMP FILTERS #6 & #7 EFFLUENT FROM FILTERS #4 & #5 EFFLUENT CHANNEL TO CCC #2.
6. REMOVE PORTION OF 18" HDPE FILTER FEED LINE AS REQUIRED TO ACCOMMODATE CONSTRUCTION OF 54" EFFLUENT PIPING.
7. CONSTRUCT 54" EFFLUENT FILTER PIPING AND SLIDE GATE BETWEEN FILTERS #1 & #2 AND FILTERS #3, #4, & #5.
8. CONSTRUCT PIPING BETWEEN NEW 54" EFFLUENT FILTER PIPING AND CCC.
9. ACTIVATE NEW FILTER EFFLUENT GRAVITY SYSTEM.
10. OPEN NEW 36" VALVE.
11. DEACTIVATE EFFLUENT FEED PUMPS, REMOVE TEMPORARY PIPING, AND RETURN TO NORMAL OPERATION.
12. RECONSTRUCT 18" HDPE & 16" DI FILTER FEED LINE IN ORIGINAL LOCATION PRIOR TO COMPLETION OF PROJECTS.
13. INSTALL OWNER SUPPLIED SLIDE GATE AT CCC #2.

FILTER CAPACITY ONLINE = 45.5 MGD PHF

LEGEND

DEACTIVATED OR ISOLATED COMPONENT

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

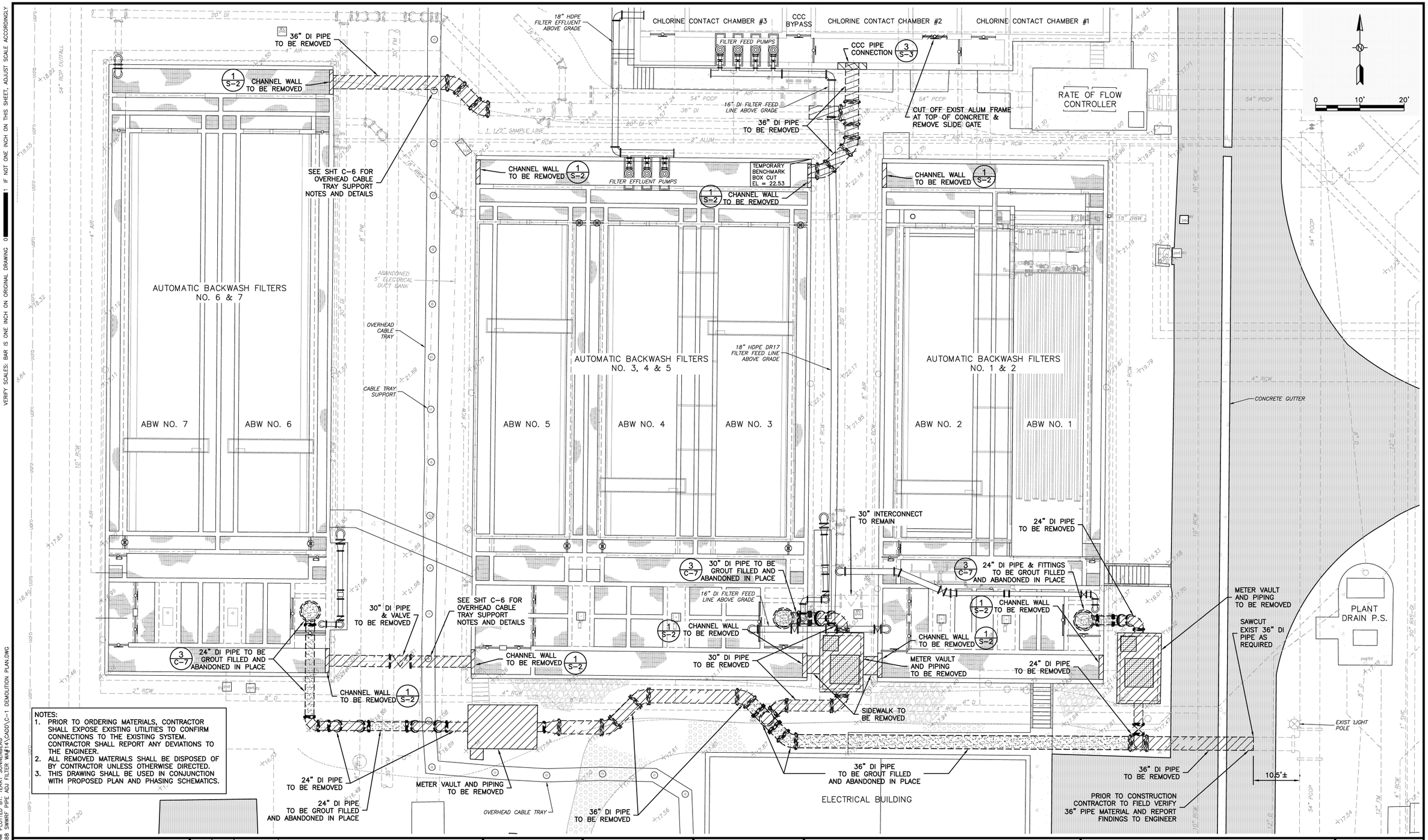
EFFLUENT PIPING CONSTRUCTION PHASING PLAN

PROJECT STATUS
BID SET
JULY 2010

G-5

PLOTTED July 29, 2010 9:27 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\G-5 EFFLUENT PIPING CONSTRUCTION PHASING PLAN.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



NOTES:
1. PRIOR TO ORDERING MATERIALS, CONTRACTOR SHALL EXPOSE EXISTING UTILITIES TO CONFIRM CONNECTIONS TO THE EXISTING SYSTEM. CONTRACTOR SHALL REPORT ANY DEVIATIONS TO THE ENGINEER.
2. ALL REMOVED MATERIALS SHALL BE DISPOSED OF BY CONTRACTOR UNLESS OTHERWISE DIRECTED.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH PROPOSED PLAN AND PHASING SCHEMATICS.

PLOTTED July 29, 2010 9:27 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WALL\CADD\C-1 DEMOLITION PLAN.DWG

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY

FOR

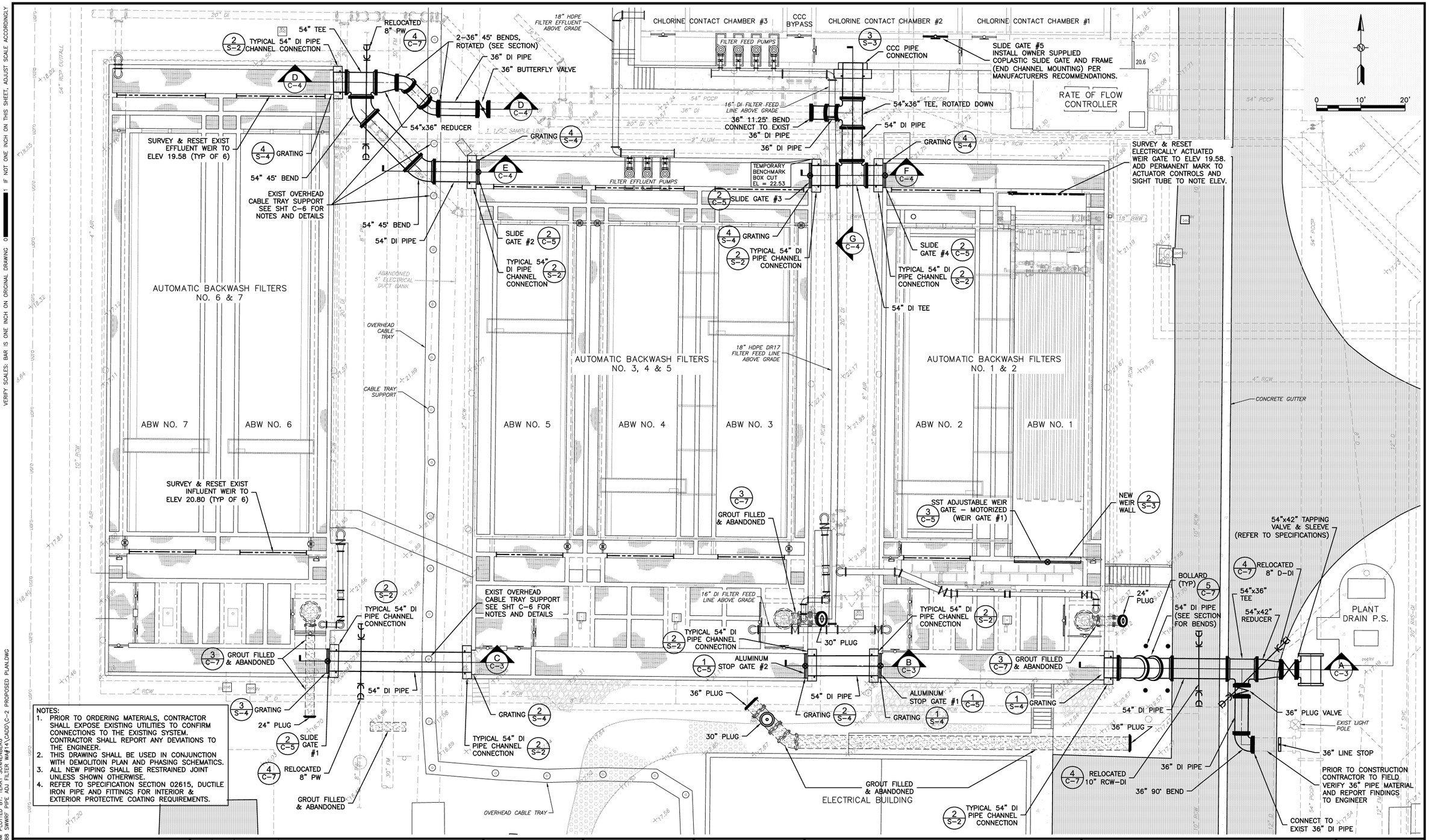
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

DEMOLITION PLAN

PROJECT STATUS
BID SET
JULY 2010

C-1

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



NOTES:
1. PRIOR TO ORDERING MATERIALS, CONTRACTOR SHALL EXPOSE EXISTING UTILITIES TO CONFIRM CONNECTIONS TO THE EXISTING SYSTEM. CONTRACTOR SHALL REPORT ANY DEVIATIONS TO THE ENGINEER.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DEMOLITOIN PLAN AND PHASING SCHEMATICS.
3. ALL NEW PIPING SHALL BE RESTRAINED JOINT UNLESS SHOWN OTHERWISE.
4. REFER TO SPECIFICATION SECTION 02615, DUCTILE IRON PIPE AND FITTINGS FOR INTERIOR & EXTERIOR PROTECTIVE COATING REQUIREMENTS.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY

FOR

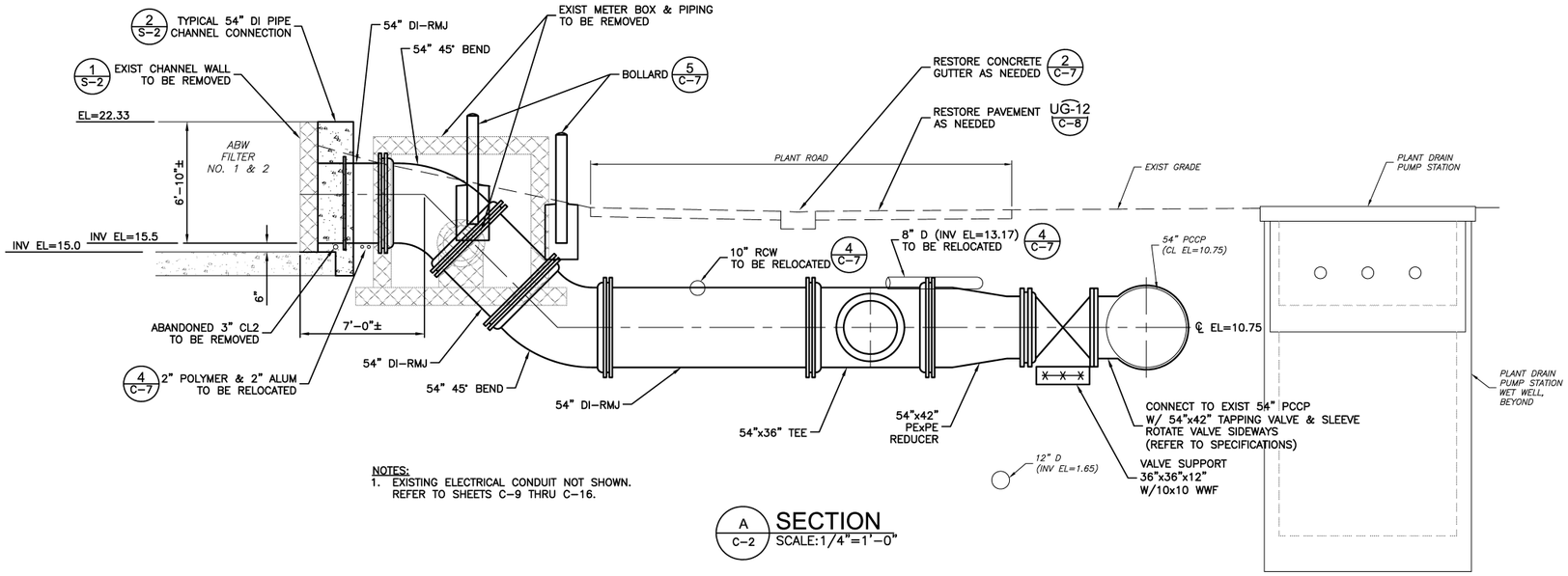
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED PLAN

PROJECT STATUS
BID SET
JULY 2010

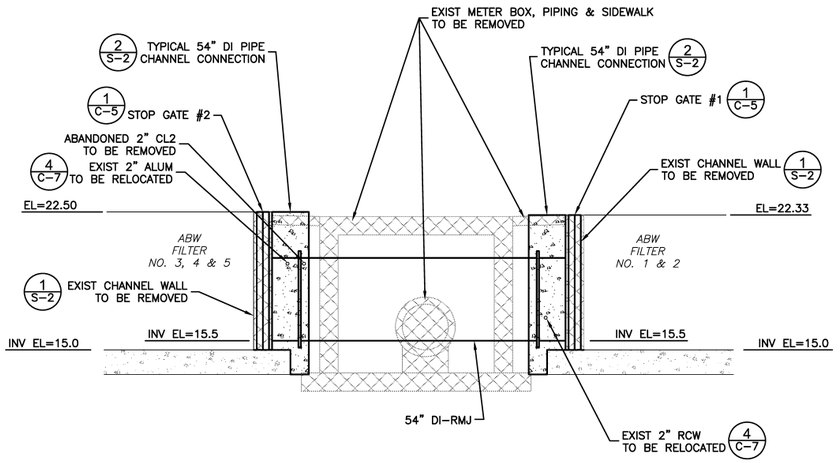
C-2

PLOTTED July 29, 2010 9:27 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER W4#14\CADD\C-2 PROPOSED PLAN.DWG



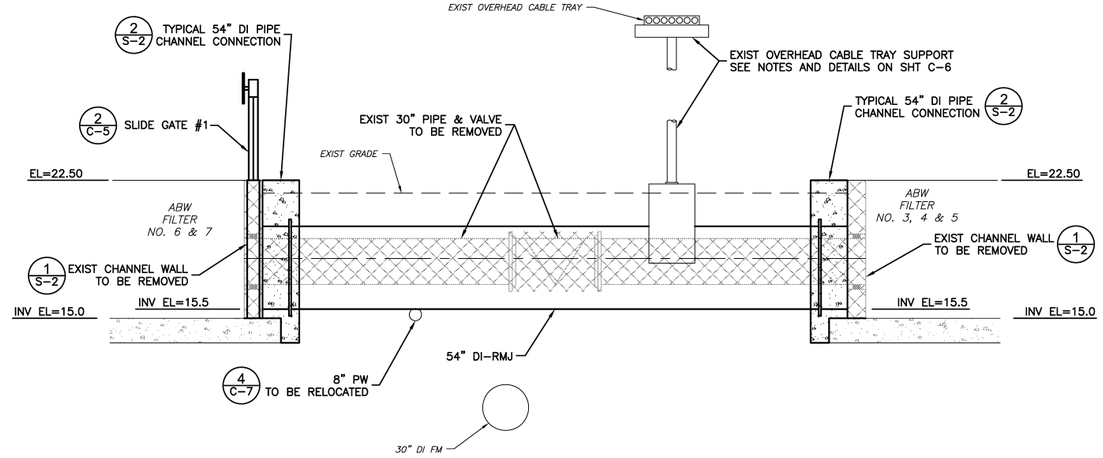
NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

A/C-2 SECTION
SCALE:1/4"=1'-0"



NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

B/C-2 SECTION
SCALE:1/4"=1'-0"



NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

C/C-2 SECTION
SCALE:1/4"=1'-0"

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY

FOR

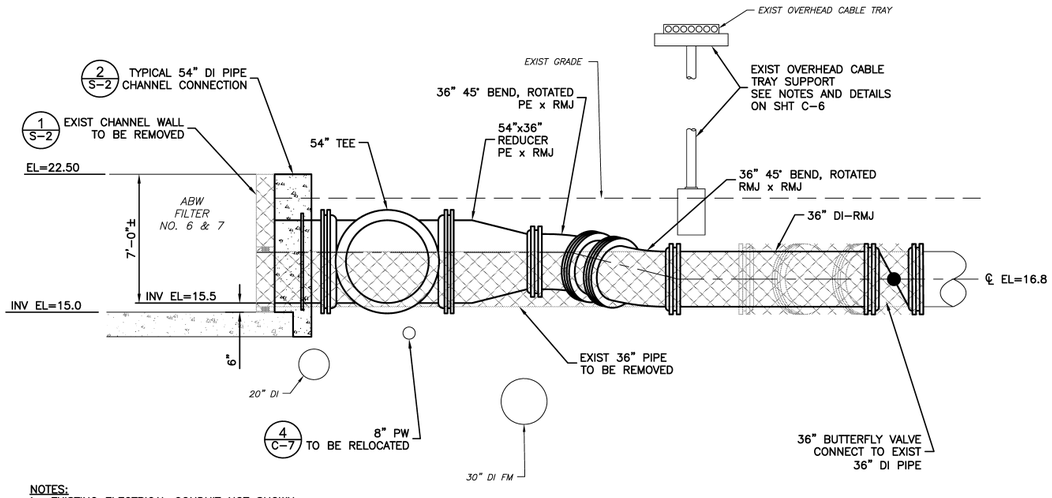
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SECTIONS

PROJECT STATUS
BID SET
JULY 2010

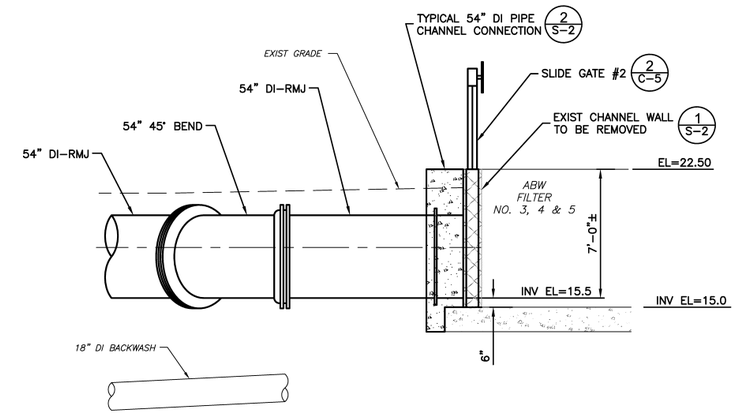
C-3

PLOTTED: July 29, 2010 9:28 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\C-3 SECTIONS.DWG



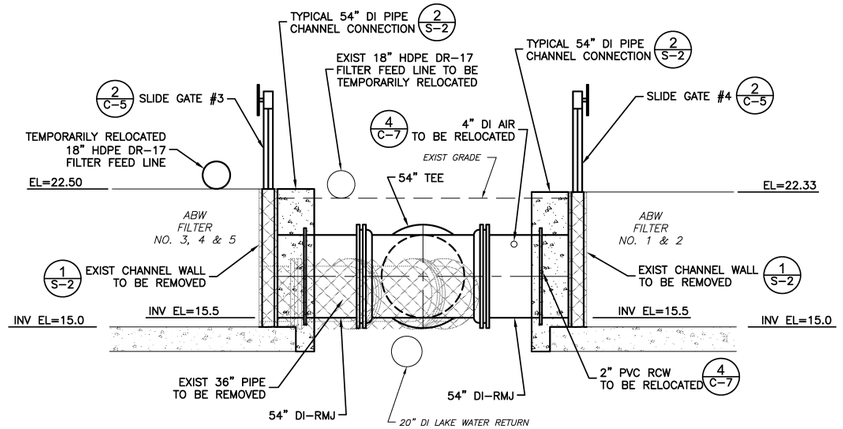
NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

D C-2 SECTION
SCALE: 1/4"=1'-0"



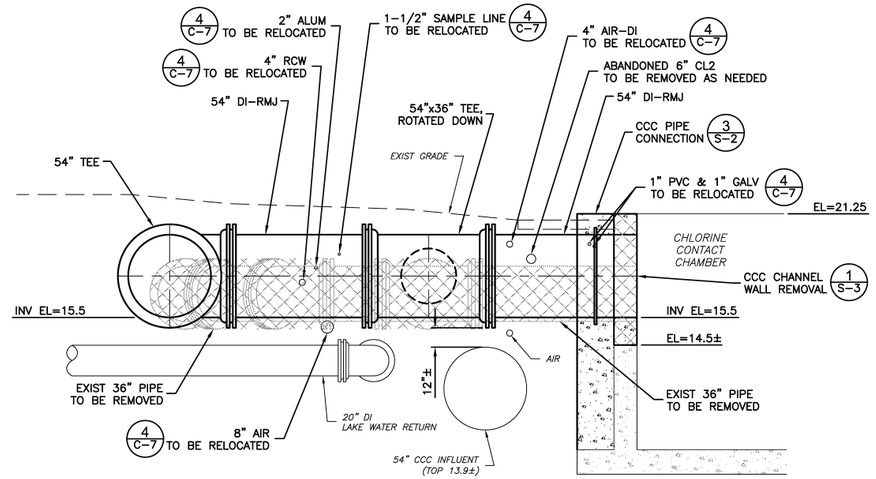
NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

E C-2 SECTION
SCALE: 1/4"=1'-0"



NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

F C-2 SECTION
SCALE: 1/4"=1'-0"



NOTES:
1. EXISTING ELECTRICAL CONDUIT NOT SHOWN. REFER TO SHEETS C-9 THRU C-16.

8" D-DI

G C-2 SECTION
SCALE: 1/4"=1'-0"

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED July 29, 2010 9:29 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\C-4 SECTIONS.DWG

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

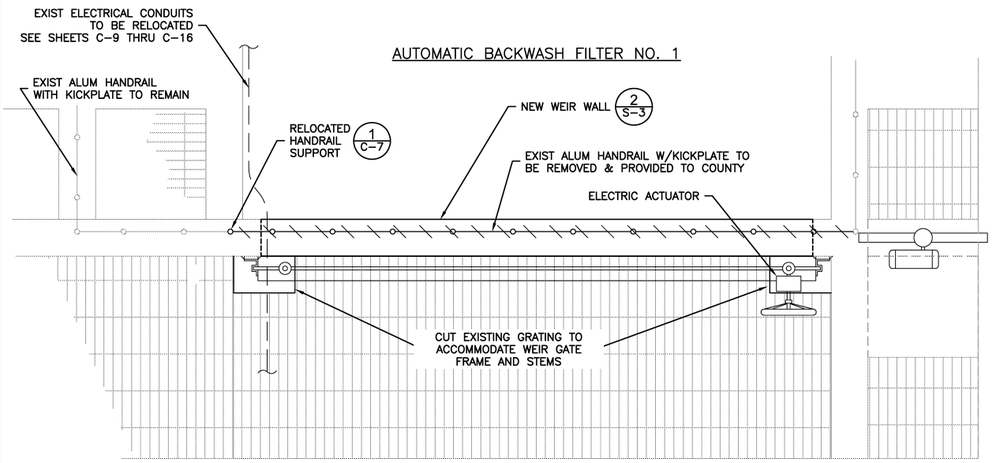
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

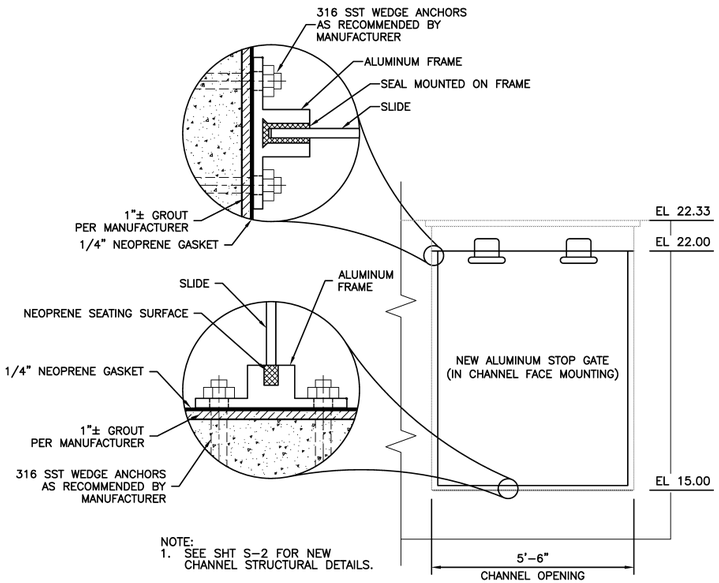
SECTIONS

PROJECT STATUS
BID SET
JULY 2010

C-4

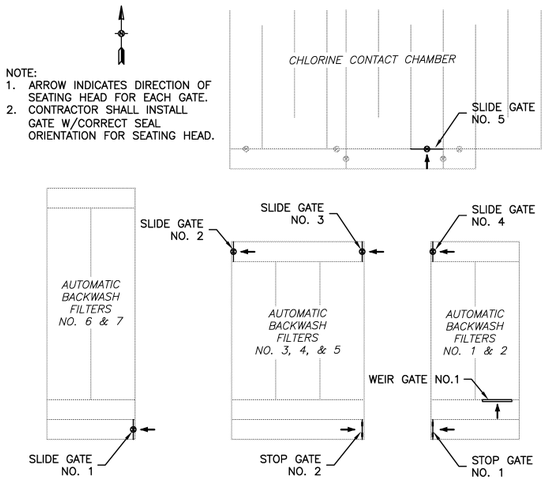


PLAN

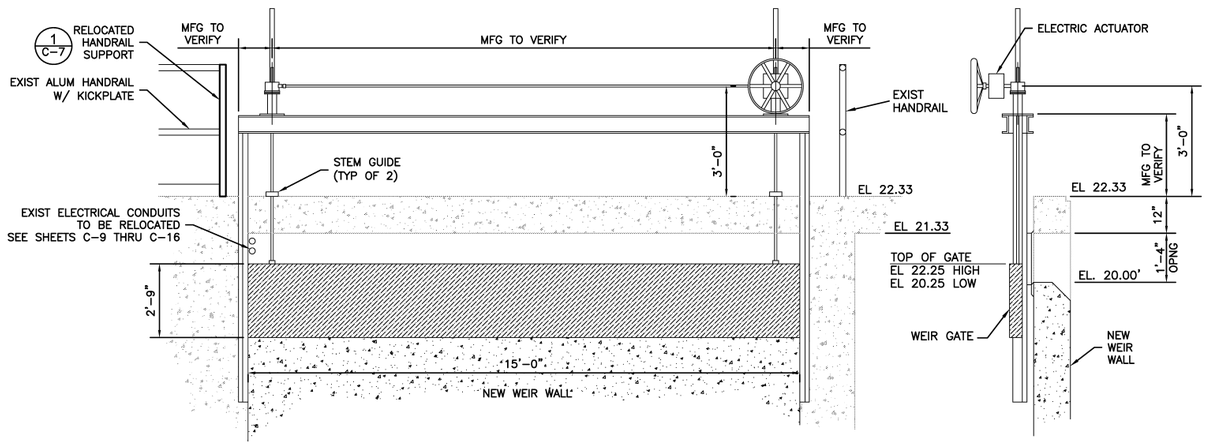


NOTE:
1. SEE SHT S-2 FOR NEW CHANNEL STRUCTURAL DETAILS.

ALUMINUM STOP GATE
1/– DETAIL
SCALE: 1/2"=1'-0"



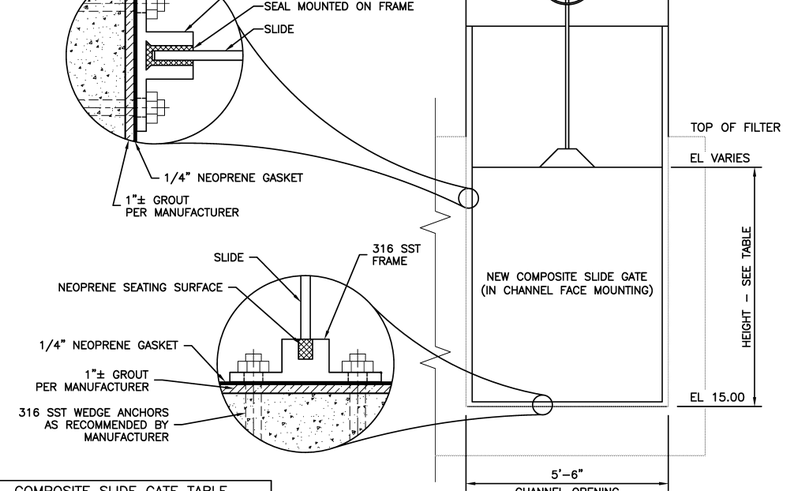
GATE SEATING HEAD DIRECTIONS
4/– DETAIL
SCALE: NTS



FRONT SIDE

NOTES:
1. WEIR GATE SHALL BE 304 SST.
2. WEIR GATE SHALL BE MOTORIZED. SEE ELECTRICAL DRAWINGS.
3. INSTALLATION OF WEIR GATE AND MOTOR SHALL BE PER MANUFACTURER'S RECOMENDATIONS.

SST ADJUSTABLE WEIR GATE – MOTORIZED
3/– DETAIL
SCALE: NTS



COMPOSITE SLIDE GATE TABLE		
GATE NUMBER	GATE HEIGHT	GATE ELEVATION
SLIDE GATE #1	7'-0"	22.00
SLIDE GATE #2	5'-0"	20.00
SLIDE GATE #3	5'-0"	20.00
SLIDE GATE #4	5'-0"	20.00

COMPOSITE SLIDE GATE
2/– DETAIL
SCALE: 1/2"=1'-0"

NOTE:
1. SEE SHT S-2 FOR NEW CHANNEL STRUCTURAL DETAILS.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: June 11, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

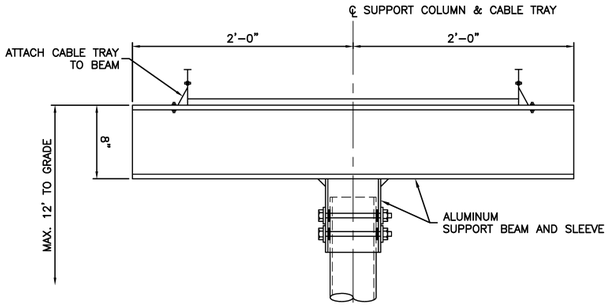
MANATEE COUNTY FLORIDA

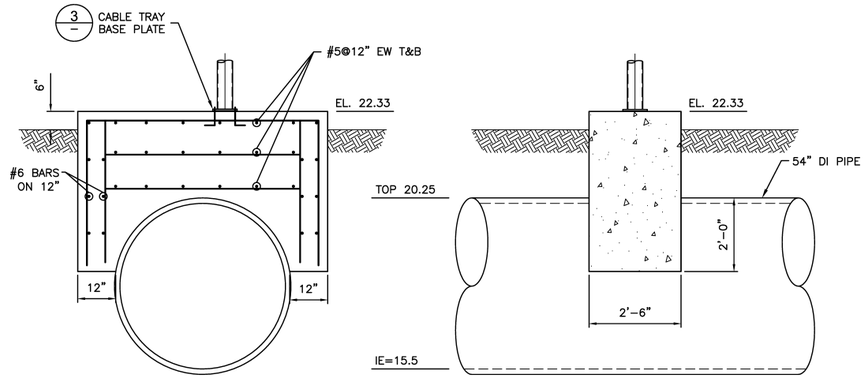
FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GATE DETAILS

PROJECT STATUS
BID SET
JULY 2010

C-5

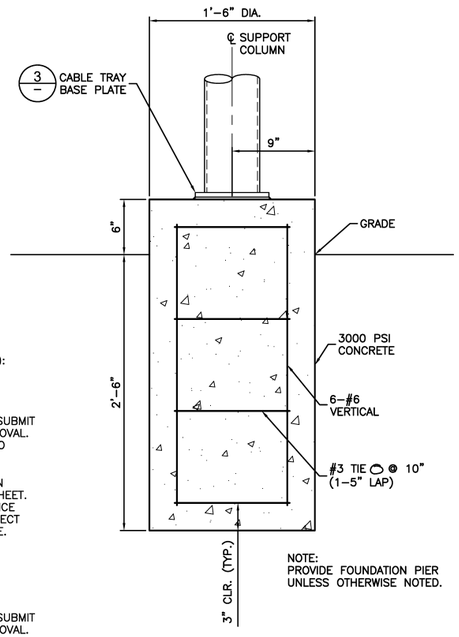




SECTION PLAN

REINSTALLATION OF OVERHEAD CABLE TRAY SUPPORT OVER 54" INFLUENT PIPING

2 / C-2 DETAIL
SCALE: NTS

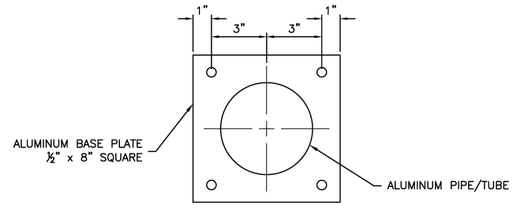


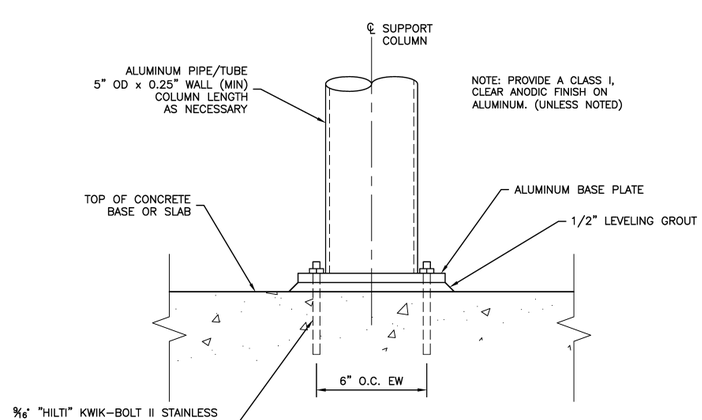
EXISTING CABLE TRAY SUPPORT PIER

1 / – DETAIL
SCALE: NTS

OVERHEAD CABLE TRAY SUPPORT NOTES:

1. INFLUENT CHANNEL (SEE DETAIL 2 ON THIS SHEET):
   - A. REMOVE EXISTING SUPPORT COLUMN IN CONFLICT WITH PROPOSED WORK.
   - B. CONTRACTOR TO TEMPORARILY SUPPORT CABLE TRAY DURING CONSTRUCTION – SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
   - C. EXISTING SUPPORT BEAM AND SLEEVE TO REMAIN.
   - D. AFTER CONSTRUCTION OF 54" FILTER INFLUENT PIPING, REINSTALL SUPPORT IN ACCORDANCE WITH DETAIL 2 ON THIS SHEET. ATTACH SUPPORT COLUMN IN ACCORDANCE WITH DETAIL 3 ON THIS SHEET. RECONNECT COLUMN TO SUPPORT BEAM AND SLEEVE.
2. EFFLUENT PIPING (SEE DETAIL 1 ON THIS SHEET):
   - A. REMOVE EXISTING SUPPORT COLUMN IN CONFLICT WITH PROPOSED WORK.
   - B. CONTRACTOR TO TEMPORARILY SUPPORT CABLE TRAY DURING CONSTRUCTION – SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
   - C. EXISTING SUPPORT BEAM AND SLEEVE TO REMAIN.
   - D. RECONSTRUCT COLUMN AND FOUNDATION PIER IN ACCORDANCE WITH DETAIL 1 ON THIS SHEET.





CABLE TRAY BASE PLATE

3 / – DETAIL
SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

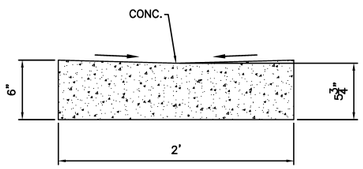
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

OVERHEAD CABLE TRAY SUPPORT DETAILS

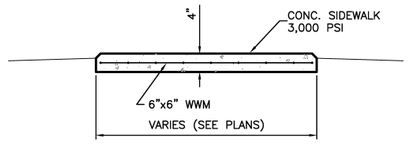
PROJECT STATUS
BID SET
JULY 2010

C-6

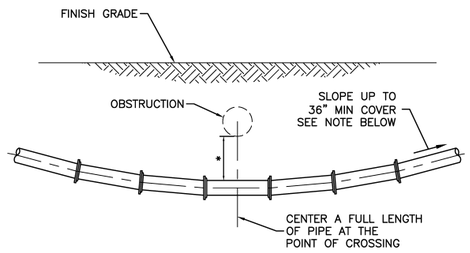


CONCRETE GUTTER
2 / – DETAIL
SCALE: NTS

NOTE:
SEE DETAIL UG-12 FOR ASPHALT PAVEMENT REPAIR ON SHEET C-8.

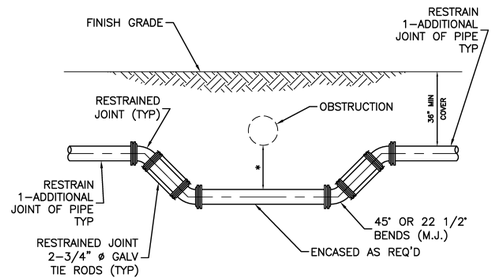


CONCRETE SIDEWALK
7 / – DETAIL
SCALE: NTS



STANDARD UTILITY CROSSING - DEFLECTION TYPE
NTS

1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHERE EVER POSSIBLE. ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
2. CONSTRUCT STANDARD CROSSING USING 75% OF MANUFACTURERS MAXIMUM JOINT DEFLECTION (MAX).
3. COAT TIE RODS WITH A COAL TAR ENAMEL AFTER ASSEMBLY. (2 COATS MIN).
4. TIE RODS MAY BE OMITTED WHEN OTHER APPROVED METHODS OF RESTRAINING ARE UTILIZED.
5. SUPPORT OBSTRUCTION AS REQUIRED.



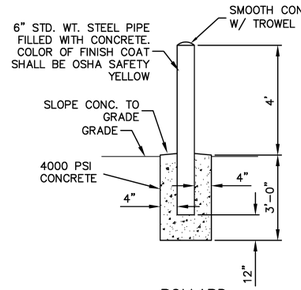
SPECIAL UTILITY CROSSING - FITTING TYPE
NTS

* 18" MIN CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS.
12" MIN CLEARANCE REQUIRED FOR OTHER TYPE UTILITIES CROSSINGS.
SEE WATER AND SEWER SEPARATION STATEMENT ON SHEET G-2.

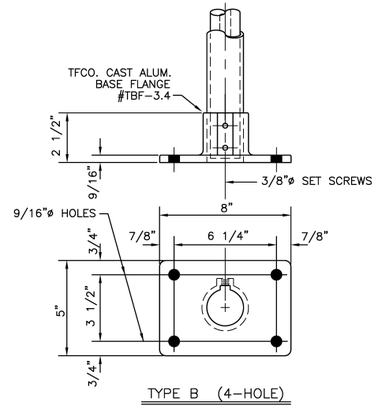
THE "FITTING TYPE" DETAIL SHOULD ONLY BE USED WHEN "DEFLECTION TYPE" DETAIL IS NOT POSSIBLE.

UTILITY RELOCATION
4 / – DETAIL
SCALE: NTS

BOLLARD COATING NOTES:
1. SURFACE PREP – SSPC-SP6 OR SP-3.
2. 1ST COAT – TNEMEC N69/OE AT 3-50 MILS DFT.
3. 2ND COAT – TNEMEC N69/OE AT 2-4 MILS DFT.
4. 3RD COAT – TNEMEC 73U/OE AT 2-3 MILS DFT.

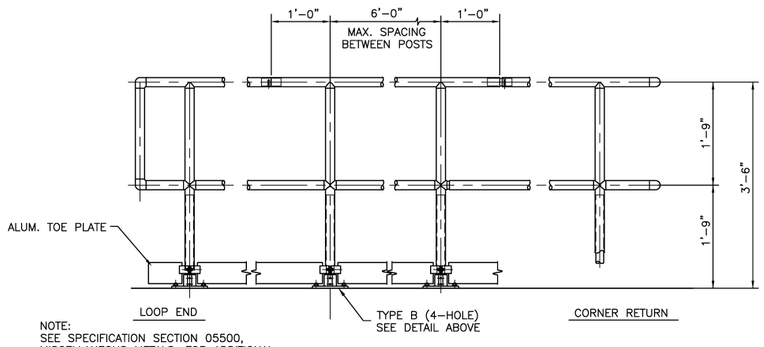


BOLLARD
5 / – DETAIL
SCALE: NTS



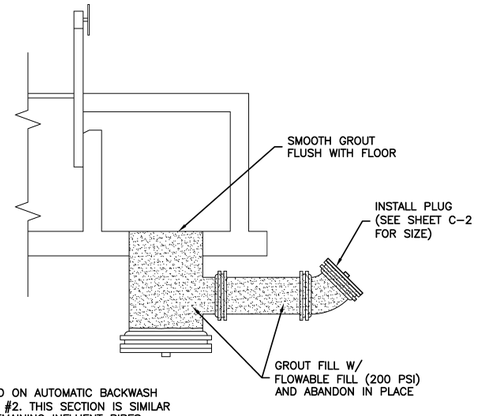
TYPE B (4-HOLE)

LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF H.R. RUN AND ON SIDE AWAY FROM WALKING SURFACE.



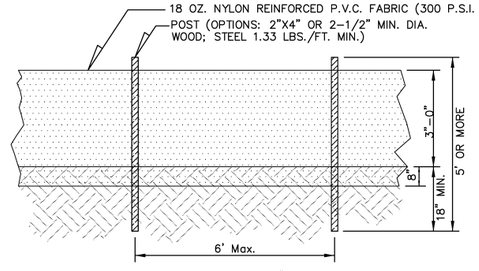
NOTE:
SEE SPECIFICATION SECTION 05500, MISCELLANEOUS METALS, FOR ADDITIONAL SPECIFICATIONS.

TYPICAL HANDRAIL
1 / C-5 DETAIL
SCALE: NTS



NOTES:
1. SECTION BASED ON AUTOMATIC BACKWASH FILTERS #1 & #2. THIS SECTION IS SIMILAR FOR THE 2 REMAINING INFLUENT PIPES.
2. SECTION HAS BEEN SIMPLIFIED FOR CLARITY.

TYPICAL INFLUENT PIPE ABANDONMENT
3 / – DETAIL
SCALE: NTS



NOTE: REFER TO LATEST EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS" INDEX NO. 103 FOR ADDITIONAL DETAILS AND SPECIFICATIONS.

NOTES:

1. CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES. THE DEVICE SHALL BE INSTALLED IN THE LOCATIONS ON THE DRAWINGS AND ANYWHERE ELSE THERE IS A POTENTIAL FOR EROSION AS SEDIMENT TO EXIT THE WORK AREA.
2. CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE WEEKLY DURING CONSTRUCTION AND AFTER HEAVY RAINS FOR DAMAGE. MAINTENANCE SHALL INCLUDE CLEANING BUILT-UP SEDIMENT BEHIND THE BARRIERS AND/OR REPLACING DAMAGED SECTIONS.
3. THE EROSION CONTROL DEVICE SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL A PERMANENT STAND OF GRASS (OR OTHER PERMANENT STABILIZATION) IS ESTABLISHED.
4. IN NO CASE SHOULD HAY BALES BE USED AS EROSION CONTROL.

EROSION/SEDIMENTATION CONTROL DEVICE
6 / – DETAIL
SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

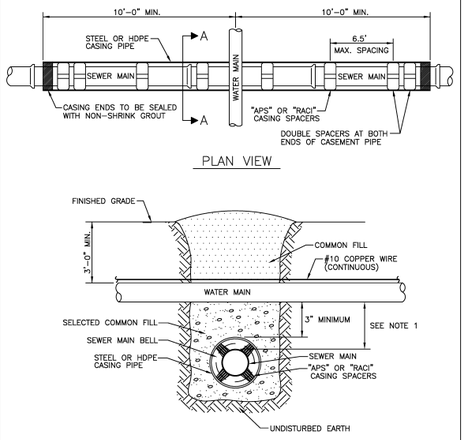
MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CIVIL DETAILS

PROJECT STATUS
BID SET
JULY 2010

C-7



NOTE:

1. WHERE CLEARANCE IS LESS THAN 18", SEWER MAIN SHALL BE ENCASED AS DETAILED. FOR VERTICAL CLEARANCE OF 18" OR GREATER NO CASEMENT IS REQUIRED.
2. NEW WATER MAIN AND SEWER MAIN PIPE SECTIONS ARE TO BE CENTERED AT THE CROSSING POINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO STANDARD DETAIL UG-3 FOR ADDITIONAL CASING AND SPACER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TYPICAL WATER & SEWER CROSSING	UG-2
CLB/KE	8/05			
JAA/JB	02/09	MARCH 17, 2009 DATE OF APPROVAL		

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE / LENGTH	REDUCERS SIZE / LENGTH	PLUGS	VALVES
24	90	38	18	X24 X20 X16 X12 X10 / 169 132 90 38 6	X20 X16 X12 X10 / 64 17 58	214	107
20	78	32	16	X20 X16 X12 X10 X8 / 141 101 53 24 1	X16 X12 X10 X8 / 65 15 149	184	92
16	66	27	13	X16 X12 X10 X8 / 111 67 41 12	X12 X10 X8 / 64 107 111	151	76
12	52	22	10	X12 X10 X8 X6 / 80 56 31 1	X10 X8 X6 / 58 62 86	118	59
10	44	18	9	X10 X8 X6 / 63 40 7	X8 X6 X4 / 33 61 81	100	50
8	37	15	7	X8 X6 X4 / 49 18 1	X6 X4 / 35 60	83	42
6	29	12	6	X6 X4 / 29 1	X4 / 33	63	32
4	21	8	4	X4 / 12		45	23

NOTES:

1.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

2.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

3.) ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.

4.) PIPE SIZES ARE GIVEN IN INCHES.

5.) RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.

6.) LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.

7.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.

8.) SEE RESTRAINED LENGTHS FOR PIPE STD. DETAIL UG-10.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		RESTRAINED LENGTHS FOR PVC PIPE	UG-8
CLB/KE	2/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE / LENGTH	REDUCERS SIZE / LENGTH	PLUGS	VALVES
36	142	59	28	X36 X30 X24 X20 X16 X12 / 393 318 232 165 84 1	X30 X24 X20 X16 / 137 247 309 359	453	227
30	124	51	25	X30 X24 X20 X16 X12 X10 / 331 252 189 115 23 1	X24 X20 X16 / 112 176	391	196
24	106	44	21	X24 X20 X16 X12 X10 X8 / 270 211 143 81 10 1	X20 X16 X12 / 98 178 241	327	164
20	92	38	18	X20 X16 X12 X10 X8 / 225 161 85 39 1	X16 X12 X10 / 98 176 227	280	140
16	77	32	15	X16 X12 X10 X8 X6 / 177 107 65 19 1	X12 X10 X8 / 98 163 169	231	116
12	61	25	12	X12 X10 X8 X6 / 127 89 50 1	X10 X8 X6 / 88 96 131	181	91
10	52	22	10	X10 X8 X6 / 101 64 11	X8 X6 / 91 94 125	153	77
8	44	18	9	X8 X6 X4 / 78 30 1	X6 X4 / 54 92	128	64
6	34	14	7	X6 X4 / 46 1	X4 / 50	98	49
4	24	10	5	X4 / 19		69	35

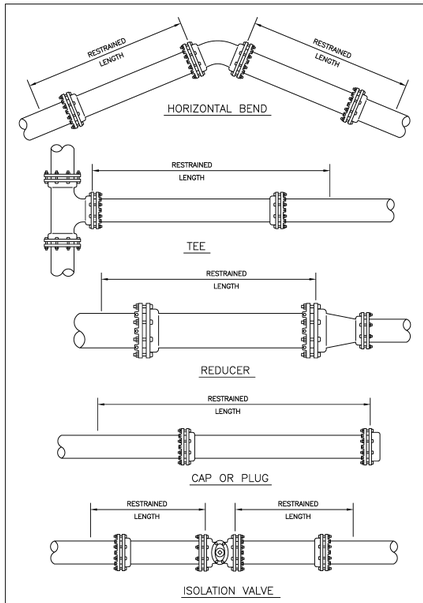
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE / LENGTH	REDUCERS SIZE / LENGTH	PLUGS	VALVES
36	100	42	20	X36 X30 X24 X20 X16 X12 / 163 132 98 68 35 1	X30 X24 X20 X16 / 57 103 128 149	188	94
30	88	37	18	X30 X24 X20 X16 X12 X10 / 138 104 78 48 10 1	X24 X20 X16 / 57 88 114	162	81
24	75	31	15	X24 X20 X16 X12 X10 X8 / 112 87 59 25 4 1	X20 X16 X12 / 40 74 100	135	68
20	65	27	13	X20 X16 X12 X10 X8 / 93 67 35 16 1	X16 X12 X10 / 41 73 94	116	58
16	54	22	11	X16 X12 X10 X8 X6 / 73 44 27 8 1	X12 X10 X8 / 41 88 70	96	48
12	43	18	8	X12 X10 X8 X6 / 53 37 21 1	X10 X8 X6 / 47 40 54	75	38
10	37	15	7	X10 X8 X6 / 42 26 5	X8 X6 X4 / 21 39 52	63	32
8	30	13	6	X8 X6 X4 / 32 12 1	X6 X4 / 22 38	53	27
6	24	10	5	X6 X4 / 19 1	X4 / 21	41	21
4	17	7	3	X4 / 8		29	15

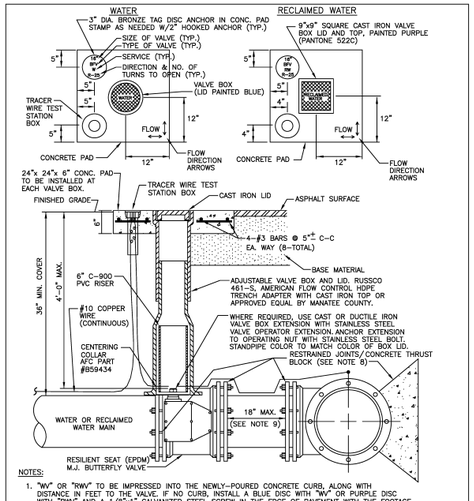
NOTE:

SEE "RESTRAINED LENGTHS FOR PVC PIPE" DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		RESTRAINED LENGTHS FOR DIP	UG-9
CLB/KE	8/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		RESTRAINED LENGTHS FOR PIPE	UG-10
CLB/KE	8/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		



NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. "FLOW" AND FLOW DIRECTION ARROWS TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. CONCRETE THRUST BLOCK IS ALSO REQUIRED UNLESS RESTRAINED JOINT LENGTH IS TREATED AS A PLUG SHOWN IN STANDARD DETAIL UG-8
9. SHOULD THERE BE AN OBSTACLE/CONFLICT IN INSTALLING THE VALVE, THE ENGINEER OF RECORD MAY PROPOSE A REVERSE TAP, ETC. AND SEPARATE APPROVAL SHALL BE OBTAINED FROM MANATEE COUNTY.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		BUTTERFLY VALVE, BOX, LID AND TAG	UW-3
CLB/KE	08/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

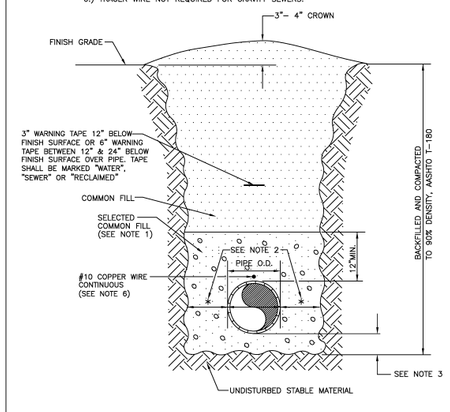
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND OVER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES FOR SELECTED COMMON FILL AND NOT TO EXCEED 12 INCHES FOR COMMON FILL. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

6.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
CLB/KE	02/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) ASPHALTIC CONCRETE FRICTION COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE. SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATIVE.

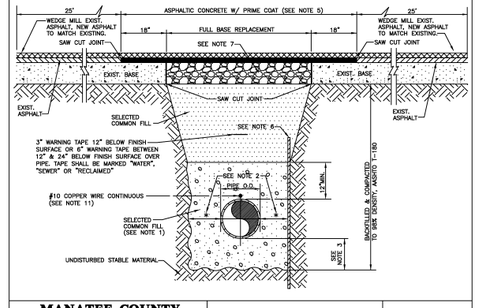
8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.

11.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

12.) NOTES 5.) THRU 11.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
CLB/KE	02/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		
JAA/JEA	02/09			

NOTES:

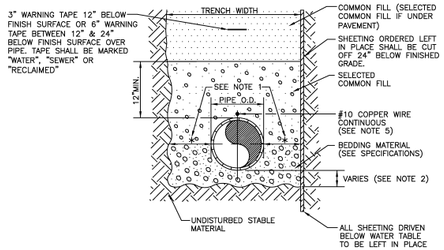
1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

4.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

5.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TRENCH WITH TYPE A-2 PIPE BEDDING	UG-15
CLB/KE	08/05			
JAA/JB	10/08	MARCH 17, 2009 DATE OF APPROVAL		
JAA/JEA	02/09			

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG

FILE SAVE DATE: March 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CIVIL DETAILS

PROJECT STATUS
BID SET
JULY 2010

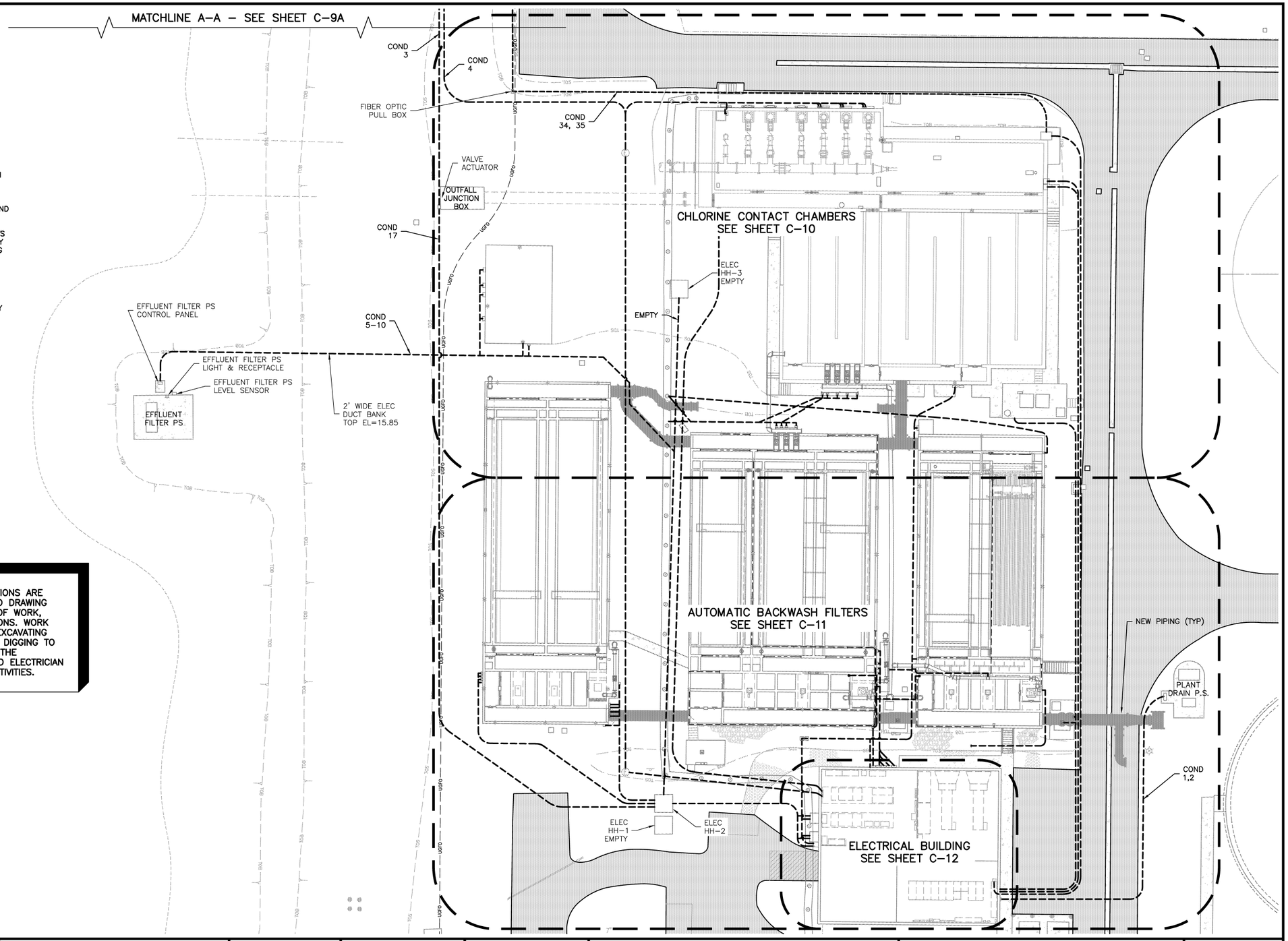
C-8

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

0 20' 40'

NOTES:
1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C-13 TO C-16) WITH EXISTING ELECTRICAL SITE PLANS (C-9 TO C-12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL EXPOSE AND VERIFY EXISTING CONDUIT AND WIRE. ANY DEVIATIONS SHALL BE REPORTED TO THE ENGINEER.
3. IN CONJUNCTION WITH OVERALL PHASING PLAN REFERENCED ON SHEETS G-4 & G-5, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE COUNTY AND ENGINEER FOR REVIEW AND APPPROVAL TO RELOCATE THE EXISTING WIRE AND CONDUIT AS SHOWN ON THE DRAWINGS, INCLUDING PROVISIONS FOR TEMPORARY SERVICE.
4. CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND SIGNALS TO ENSURE UNINTERRUPTED SERVICE.
5. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SHUT DOWNS WITH PLANT PERSONNEL.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS. PLUG CUT ENDS.

EXISTING ELECTRICAL RACEWAY LOCATIONS ARE SHOWN BASED ON AVAILABLE RECORD DRAWING INFORMATION. PRIOR TO THE START OF WORK, CONTRACTOR SHALL CONFIRM LOCATIONS. WORK SHALL BE PERFORMED WITH SMALL EXCAVATING EQUIPMENT AND WILL REQUIRE HAND DIGGING TO DETERMINE LOCATIONS AND DEPTHS. THE CONTRACTOR SHALL HAVE A LICENSED ELECTRICIAN ON-SITE DURING ALL EXCAVATION ACTIVITIES.



URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM:	D. WILCOX
ENG:	R. AVALOS
DRW:	T. SONNENBERG
FILE SAVE DATE:	July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING ELECTRICAL OVERALL SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

C-9

PLOTTED July 29, 2010 9:30 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\C-9 EXISTING ELECTRICAL OVERALL SITE PLAN.DWG

0 20' 40'

TEMPORARY BENCHMARK
NAIL IN POLE
EL = 17.11
N 1135227.53
E 453570.25

FUTURE RCW PIPE (BY OTHERS)

FIBER OPTIC PULL BOX

COND 34, 35

COND 4

SUMP PUMP CONTROL PANEL

COND 3

JB

URBAN REUSE FLOWMETER & URBAN REUSE PRESSURE

URBAN REUSE DISTRIBUTION METER VAULT

MATCHLINE A–A – SEE SHEET C–9

S.W.R.F. ACCESS ROAD (PRIVATE) (24' WIDE)

EXIST PIPING SHOWN FOR INFORMATIONAL PURPOSES ONLY (TYP)

FUTURE DRAINAGE POND AND PIPING (BY OTHERS)

COND 34

ASR WELL PUMP CONTROL PANEL

COND 34, 35

COND 35

SP–10 ASR WELL SCADA PANEL

ASR WELL

FUTURE RCW PIPE (BY OTHERS)

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING ELECTRICAL OVERALL SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

C–9A

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

0 10' 20'

COND 34,35
SEE SHEET C-9A
FOR CONTINUATION

ANY CONDUIT IN THIS AREA
NOT IDENTIFIED IS ROUTED VIA
THE OVERHEAD CABLE TRAYS

COND
27-33

PANEL LP

PANEL HP

PULL BOX

COND
4

COND
27

COND 34,35

JUNCTION BOX
ABOVE GRADE

COND 30,33

PUMP
#3

PUMP
#2

PUMP
#1

COND 28,31

DISCONNECT-
LIFT STATION

FLOAT SWITCHES
LSL, LSH

COND 29,32

SPEAKERS

COND
3

OUTFALL
JUNCTION BOX

FLOWMETER-
PONDS (IN CABLE TRAY)

FLOWMETER-
GOLF COURSE IRRIGATION

ELEC MH-1

EFFLUENT WETWELL AND REUSE PUMP STATION

FLOWMETER-
PLANT REUSE

LEVEL-
WETWELL

3-FLOWMETERS-CCC
IN CABLE TRAY

PRESSURE-
PLANT REUSE

COND
22,34,35

LIFT STATION CONTROL PANEL

ACTUATED VALVE

COND
4, 27-33

PULL
BOX

2-JUNCTION BOXES
ABOVE GRADE

COND
98

OVERHEAD
CABLE TRAY

CHLORINE
CONTACT
CHAMBER #3

CCC BYPASS

CHLORINE
CONTACT
CHAMBER #2

CHLORINE
CONTACT
CHAMBER #1

DISK FILTER
(DF-3)

ELEC HH-3
EMPTY

COND
24-26

NORTH LAKE PUMPS 1-3
REMOTE CONTROL PANEL

DISK
FILTERS

COND
17-21,23

DISK FILTER
(DF-2)

DISK FILTERS
LIGHTING & RECEPTICLES

ABANDONED
DUCTBANK

COND
11-13

DISK FILTER
(DF-1)

DISK FILTERS
FLOWMETER
(FIT-2)

TURBIDMETERS
#1 & #2 CCC
FOR FILTERED FLOW

COND
16

COND
14,15

COND
5-16

LIGHTS & RECEPTACLES

CONTROL PANEL
& FLOWMETER

COND
48,49,81 ON
CABLE TRAY

COND
43-46,49

FILTER FEED PUMPS
& CONTROL PANEL

COND
5-10

COND
48,49

COND
81

RATE OF FLOW
CONTROLLER

COND
50,51

EXHAUST
FAN

COND
39-46,48,49

NEW PIPING (TYP)

COND
47

DP-1

AUTOMATIC BACKWASH FILTERS
NO. 6 & 7

COND
53-57

COND
39-46 ON
CABLE TRAY

COND
39-42,48

FILTER EFFLUENT PUMPS
& CONTROL PANEL

PRESSURE
TRANSDUCERS

COND
81

COND
5-16

AUTOMATIC BACKWASH FILTERS
NO. 3, 4 & 5

LIMIT SWITCHES
HIGH LEVEL FLOAT

ABW #1
EFF WEIR
GATE

5' WIDE ELEC
DUCTBANK
TOP EL=16.70

COND
50-52

AUTOMATIC BACKWASH FILTERS
NO. 1 & 2

PLOTTED July 29, 2010 9:32 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER W#114\CADD\C-10 EXISTING ELECTRICAL CHLORINE CONTACT CHAMBER.DWG

URS

7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER
12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE:
July 15, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY

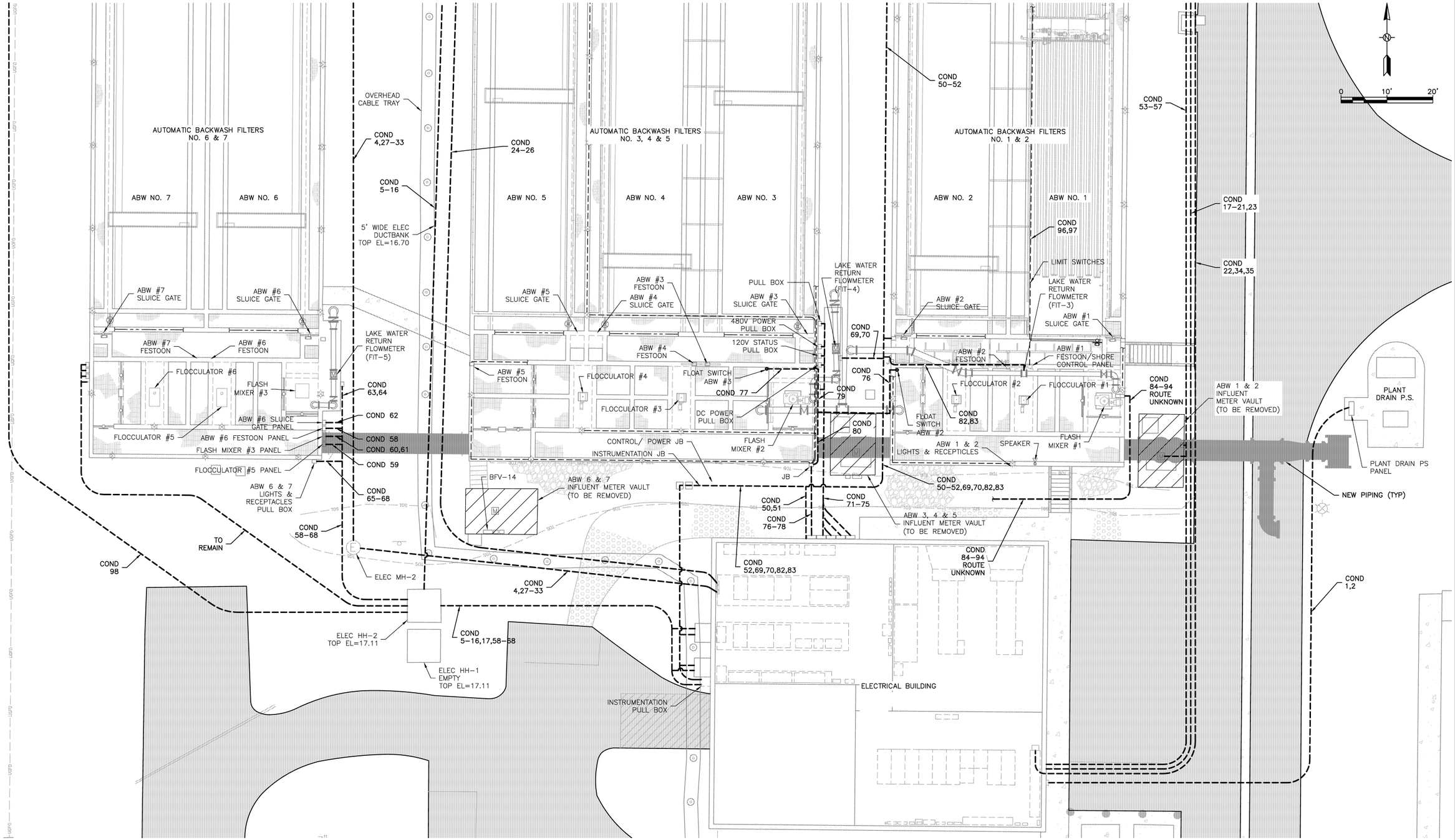
FOR

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING ELECTRICAL CHLORINE CONTACT CHAMBER ENLARGED SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

C-10



URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM:	D. WILCOX
ENG:	R. AVALOS
DRW:	T. SONNENBERG
FILE SAVE DATE:	July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

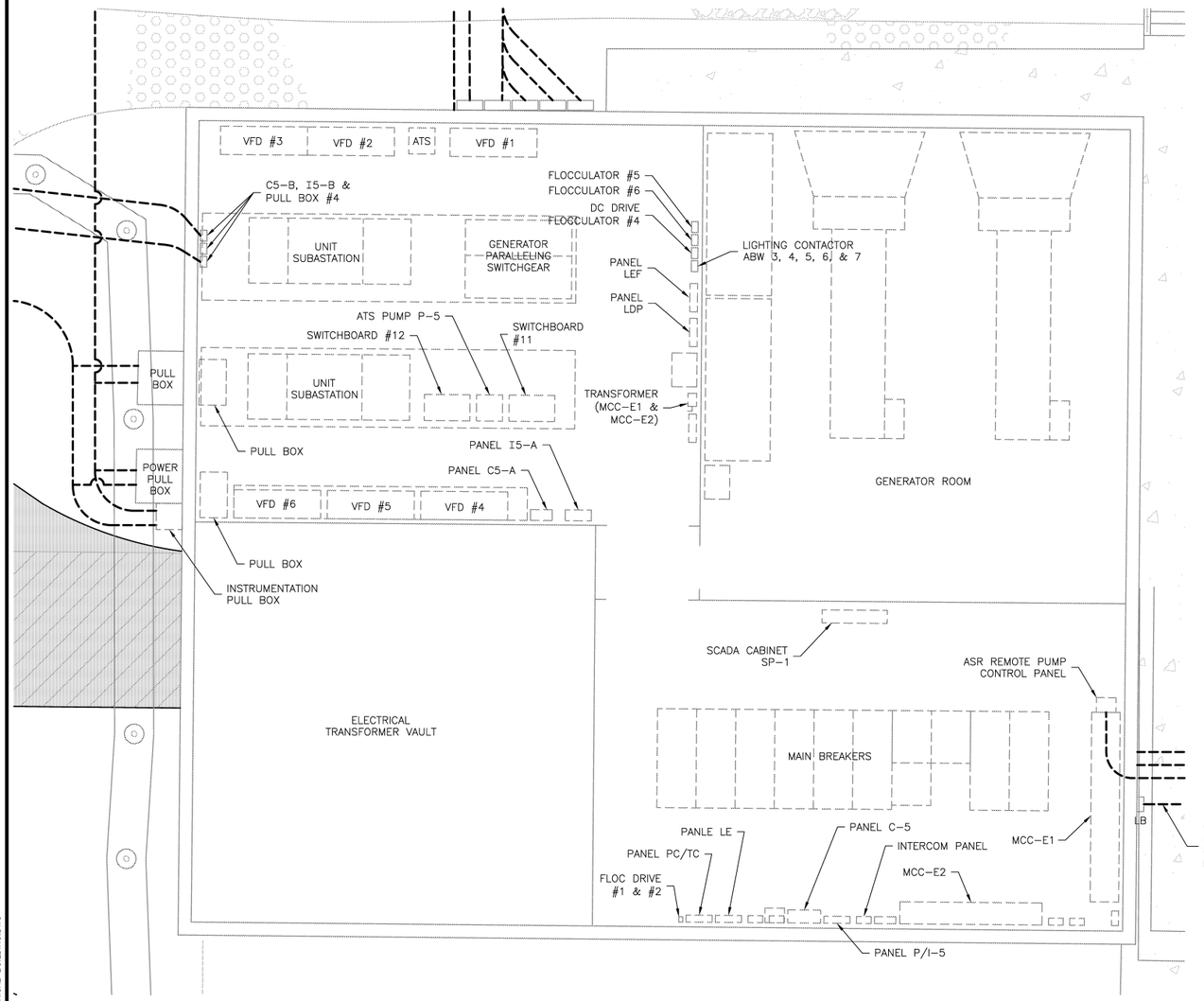
MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING ELECTRICAL ABW FILTERS ENLARGED SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

C–11



EXISTING ELECTRICAL BUILDING – ENLARGED PLAN

1 / – DETAIL
SCALE: 3/16"=1'-0"

SPACE		SPACE		SPACE	54" VALVE METER VAULT	SLUICE GATE #4	SPACE
ABW #6 SLUICE GATE	ABW #6 FES-TOON	PANEL P4 MAINT BLDG	SLUICE GATE #3	EF #7-1 (VFD ROOM ROOF FAN)			50HP SPRINKLER SUBMERSIBLE DEEP WELL INJECTION PUMP MOTOR EAST
CL-2 CONTACT BASIN DRAIN PUMP DP-1		5 HP UNFILTER SUBMERSIBLE CCC		FLASH MIXER #2	FLASH MIXER #1		
SLUICE GATE #5	ABW FILTER #1	ABW FILTER #4	ROOF A/C #1	REUSE PUMP #3	ELR & LDR RELAY COMP		
MAIN LUGS		MAIN LUGS			SPARE	SPARE	IRRIGATION PUMP #2
					SPACE		

EXISTING MCC-E1 FRONT VIEW

2 / – DETAIL
SCALE: NTS

SPARE S1		FLOC #3		EF #5-1 (GEN RM N)	STAR FILTER SUBMER PUMP 50HP LAKE RETURN	SPACE
ABW FILTER #3		ELR & LDR RELAY COMP		EFF #5-2 (GEN RM S)		EFFLUENT FILTER PS CONTROL PANEL (NORTH #4 @ LAKE)
PLANT DRAIN P.S.		SLUICE GATE #1	PANEL P4 MAINT BLDG	SPACE		
				ABW FILTER #5		FLASH MIXER #6 & #7
SLUICE GATE #2	ROOF AC #2	RATE OF FLOW #1	ABW FILTER #2	SLUICE GATE #7	BACK-FLOW VALVE BFV-14 (6 & 7)	
MAIN LUGS		MAIN LUGS		SPARE	ABW FILTER #7 FES-TOON	-----
				SPACE	IRRIGATION PUMP #1	-----

EXISTING MCC-E2 FRONT VIEW

3 / – DETAIL
SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 14, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING ELECTRICAL BUILDING

PROJECT STATUS
BID SET
JULY 2010

C-12

NOTES:

1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C-13 TO C-16) W/ EXISTING ELECTRICAL SITE PLANS (C-9 TO C-12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. EXISTING CONDUIT AND WIRE WERE DETERMINED FROM COUNTY RECORD DRAWINGS AND LIMITED FIELD INVESTIGATION.
3. TABLE ENTRIES REFLECT DESCRIPTIONS AND TERMINOLOGY USED IN EACH SET OF RECORD DRAWINGS.
4. ITEMS IDENTIFIED AS "ASSUMED" WERE NOT IDENTIFIED IN RECORD DRAWINGS. USE ASSUMED VALUES FOR BIDDING PURPOSES.
5. WHEN MATCHING EXISTING CONDUIT, MATCH SIZE ONLY. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80. ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS.
7. SPLICING OF CONDUCTORS IS NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
8. ALL SINGLE WIRE CONDUCTORS SHALL BE THHN, 600V. ALL CONDUCTORS SHALL BE COPPER STRANDED.
9. ALL ANALOG CABLE SHALL BE SHIELDED.
10. ALL CONDUIT SHALL CONTAIN EQUIPMENT GROUNDING CONDUCTOR.
11. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LATEST NATIONAL ELECTRIC CODE.

CONDUIT NO.	CONDUIT DIAM	CONDUIT MATL	FROM	TO	TYPE (Power, Discrete, Analog)	WIRE NO.	WIRE SIZE	ACTIVITY	NOTES
PLANT DRAIN PUMP STATION									
1	2"	PVC - ductbank	MCC-E2, Electrical Building	Plant Drain PS Panel	Power	1	3/C#4/0 600v power tray cable	Verify that ductbank is in conflict with proposed 54" DIP. Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
2	2"	PVC - ductbank	C5-A, Electrical Building	Plant Drain PS Panel	Discrete - Alarm	1	2/C#12 tray cable	Verify that ductbank is in conflict with proposed 54" DIP. Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
URBAN REUSE DISTRIBUTION METER VAULT									
3	1"	PVC	Outfall Junction Box Power	Sump Pump Control Panel	Power	3 1	#10 #10 GND	None.	Plant Personnel stated that 480V power for meter vault comes from Outfall Junction Box. Record Drawings show sump pump panel feeding Panel LV for lights and receptacles in meter vault.
4	1"	PVC Ductbank	I5-B, Electrical Building	Flowmeter, Urban Reuse Distribution (Rosemount Differential Pressure) Pressure, Urban Reuse Distribution (Rosemount Differential Pressure)	Analog - Flow - Analog - Pressure	2	2/C#16	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
EFFLUENT FILTER PUMP STATION (25 ACRE LAKE PS)									
5	3"	PVC - ductbank	MCC-E1, "Effluent Filter Pump Station Control Panel (North #4 @ Lake)", Electrical Building	Control Panel, Effluent Pump Station	Power	1	3/C#4/0 600v power tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	Power comes from the Electrical Building to the Effluent Filter PS Control Panel and then to the Remote Control Panel at the Disk Filters.
6	3"	PVC - ductbank	MCC-E1, "Effluent Filter Pump Station Control Panel (North #4 @ Lake)", Electrical Building	Control Panel, Effluent Pump Station	Power	1	3/C#4/0 600v power tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	Power comes from the Electrical Building to the Effluent Filter PS Control Panel and then to the Remote Control Panel at the Disk Filters.
7	2"	PVC - ductbank	C5-A, Electrical Building	Control Panel, Effluent Pump Station	Discrete	1	7/C#12 tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	2008 SCADA Record Drawings show 3 run signal inputs and 3 start/stop signal outputs.
8	2"	PVC - ductbank	Panel LEF, Electrical Building	LIT-1, Effluent Pump Station Level Sensor	Power	1	3/C#10 tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
9	2"	PVC - ductbank	P/I-5, Electrical Building	LIT-1, Effluent Pump Station Level Sensor	Analog - Level	1	1PR#16 instrument cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
10	2"	PVC - ductbank	Panel LEF, Electrical Building	Lights & Receptacles, Effluent Pump Station	Power	1	3/C#10 tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
DISK FILTERS (LAKE FILTERS)									
11	2"	PVC - ductbank	Panel LEF, Electrical Building	Disk Filter 1	Power	1	3/C#10 600v power tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
12	2"	PVC - ductbank	Panel LEF, Electrical Building	Disk Filter 2	Power	1	3/C#10 600v power tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
13	2"	PVC - ductbank	Panel LEF, Electrical Building	Disk Filter 2	Power	1	3/C#10 600v power tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
14	2"	PVC - ductbank	Panel LEF, Electrical Building	FIT-2, Disk Filter Flowmeter	Power	1	3/C#10 tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
15	2"	PVC - ductbank	P/I-5, Electrical Building	FIT-2, Disk Filter Flowmeter	Analog - Level	1	1PR#16 instrument cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
16	1"	PVC - ductbank	Panel LEF, Electrical Building	Lights & Receptacles, Disk Filters	Power	1	3/C#10 tray cable	Relocate from east side of Filters 6 & 7 to west side. Refer to Electrical Drawings.	
EFFLUENT WETWELL & REUSE PUMP STATION									
17	3/4" (assumed)	Galv Rigid Steel	Panel LE 36 or 38	Flowmeter - Plant Reuse (Eastech Badger Vantage 4600)	Power	2 1 (assumed)	#12 #12 GND (assumed)	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
18	3/4"	Galv Rigid Steel	P/I-5, Electrical Building	Flowmeter - Plant Reuse (Eastech Badger Vantage 4600)	Analog - Flow	1	2/C #16 SH	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
19	3/4"	Galv Rigid Steel	P/I-5, Electrical Building	Pressure - Plant Reuse	Analog - Pressure	1	2/C #16 SH	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
20	3/4" (assumed)	Galv Rigid Steel	Panel LE 21	Flowmeter - Golf Course Irrigation (Polysonics)	Power	2 1 (assumed)	#12 #12 GND (assumed)	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
21	3/4"	Galv Rigid Steel	P/I-5, Electrical Building	Flowmeter - Golf Course Irrigation (Polysonics)	Analog - Flow	1	2/C #16 SH	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
22	3/4" (assumed)	Galv Rigid Steel	MCC-E1, "5 HP Unfilter Submersible CCC", Electrical Building		Power	3 1 (assumed)	#10 #12 (assumed)	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
23	Unknown	Galv Rigid Steel	Intercom Panel, Electrical Building	Speaker	---	Unknown	Unknown	**DEMOLISH**	
24	3/4" (assumed)	Galv Rigid Steel	Panel LE-39	Level - Wet Well (Badger)	Power	2 1 (assumed)	#12 #12 GND (assumed)	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed through junction box on SE corner of Wet Well deck.
25	3/4"	Galv Rigid Steel	I-5, Electrical Building	Level - Wet Well (Badger)	Analog - Level	1	2/C #16 SH	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed through junction box on SE corner of Wet Well deck.
26	1"	Galv Rigid Steel	Panel PC/TC, Electrical Building	Lights & Receptacles	Power	3	#10	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed through junction box on SE corner of Wet Well deck.
27	1"	PVC Ductbank	C5-B, Electrical Building	Level Switch Low - Wet Well	Discrete	2	#14 (assumed)	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	
27	1"	PVC Ductbank	C5-B, Electrical Building	Level Switch High - Wet Well	Discrete	2	#14 (assumed)	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	
28	1"	RSC Ductbank	I5-A, Electrical Building	Pump Motor #1 - RTD	Analog - Temperature	3	3/C#16 T.S.	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to I5-A.
29	1"	RSC Ductbank	I5-A, Electrical Building	Pump Motor #2 - RTD	Analog - Temperature	3	3/C#16 T.S.	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to I5-A.
30	1"	RSC Ductbank	I5-A, Electrical Building	Pump Motor #3 - RTD	Analog - Temperature	3	3/C#16 T.S.	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to I5-A.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING CONDUIT & WIRE SCHEDULE (PAGE 1 OF 4)

PROJECT STATUS
BID SET
JULY 2010

C-13

NOTES:

1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C-13 TO C-16) W/ EXISTING ELECTRICAL SITE PLANS (C-9 TO C-12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. EXISTING CONDUIT AND WIRE WERE DETERMINED FROM COUNTY RECORD DRAWINGS AND LIMITED FIELD INVESTIGATION.
3. TABLE ENTRIES REFLECT DESCRIPTIONS AND TERMINOLOGY USED IN EACH SET OF RECORD DRAWINGS.
4. ITEMS IDENTIFIED AS "ASSUMED" WERE NOT IDENTIFIED IN RECORD DRAWINGS. USE ASSUMED VALUES FOR BIDDING PURPOSES.
5. WHEN MATCHING EXISTING CONDUIT, MATCH SIZE ONLY. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80. ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS.
7. SPLICING OF CONDUCTORS IS NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
8. ALL SINGLE WIRE CONDUCTORS SHALL BE THHN, 600V. ALL CONDUCTORS SHALL BE COPPER STRANDED.
9. ALL ANALOG CABLE SHALL BE SHIELDED.
10. ALL CONDUIT SHALL CONTAIN EQUIPMENT GROUNDING CONDUCTOR.
11. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LATEST NATIONAL ELECTRIC CODE.

CONDUIT NO.	CONDUIT DIAM	CONDUIT MATL	FROM	TO	TYPE (Power, Discrete, Analog)	WIRE NO.	WIRE SIZE	ACTIVITY	NOTES
31	1"	PVC Ductbank	Panel LEF, Electrical Building	Pump #1 & Motor Operated Valve #1	Power - Motor Heater	2	#12	Power Motor Heater from local panel "LP". Refer to Electrical Drawings.	Record Drawings, show wiring routed through VFD before routing to LEF
31	1"	PVC Ductbank	C5-A, Electrical Building	Pump #1 & Motor Operated Valve #1	Discrete	21 1	#14 #12 GND	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to C5-A. Discrete signals include: 2#14 (FS), 2#14 (disconnect switch intlk), 17#14 (valve status).
32	1"	PVC Ductbank	Panel LEF, Electrical Building	Pump #2 & Motor Operated Valve #2	Power - Motor Heater	2	#12	Power Motor Heater from local panel "LP". Refer to Electrical Drawings.	Record Drawings, show wiring routed through VFD before routing to LEF
32	1"	PVC Ductbank	C5-A, Electrical Building	Pump #2 & Motor Operated Valve #2	Discrete	21 1	#14 #12 GND	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to C5-A. Discrete signals include: 2#14 (FS), 2#14 (disconnect switch intlk), 17#14 (valve status).
33	1"	PVC Ductbank	Panel LEF, Electrical Building	Pump #3 & Motor Operated Valve #3	Power - Motor Heater	2	#12	Power Motor Heater from local panel "LP". Refer to Electrical Drawings.	Record Drawings, show wiring routed through VFD before routing to LEF
33	1"	PVC Ductbank	C5-A, Electrical Building	Pump #3 & Motor Operated Valve #3	Discrete	21 1	#14 #12 GND	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent and effluent channels. Refer to Electrical Drawings for Details.	Record Drawings, show wiring routed through VFD before routing to C5-A. Discrete signals include: 2#14 (FS), 2#14 (disconnect switch intlk), 17#14 (valve status).
---	---	---	P/I-5, Electrical Building	Flowmeter - Lake Return (Eastech Badger 2210) **In Overhead Cable Tray**	---	---	---	None.	In overhead cable tray. No relocation required. Provided for informational purposes only.
---	---	---	VFDs, Electrical Building	Effluent Pumps 1-6 **In Overhead Cable Tray**	---	---	---	None.	In overhead cable tray. No relocation required. Provided for informational purposes only.
---	---	---	P/I-5, Electrical Building	Flowmeter - CCC-1, CCC-2 & CCC-3 (Eastech Badger) **In Overhead Cable Tray**	---	---	---	None.	In overhead cable tray. No relocation required. Provided for informational purposes only.
ASR WELL									
34	2"	PVC Sch 80	ASR Remote Pump Control Panel & Panel LEF, Electrical Building	ASR Well Pump Control Panel, ASR Well	Discrete - Run, Fail, Off, S/S	10	12	Route conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details. Replace wiring from ASR Well Pump Control Panel to Remote Pump Control Panel in Electrical Building. Match existing wi	
35	2"	PVC Coated Galv Rigid Steel	Unknown Panel in Electrical Building. Eventually routed to Control Room in Administration Building.	SP-10 ASR Well SCADA Panel, ASR Well	Run, Fail, Level, Member Well Level, Injection Flow, Recovery Flow, Injection Pressure,	1	Fiber Optic	Route under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details. Provide new Fiber Optic (to match existing) from SP-10 ASR Well SCADA Panel at ASR Well to Control Room in Administration Buildi	
36	Conduit	Number	Not Used						
37	Conduit	Number	Not Used						
38	Conduit	Number	Not Used						
FILTER FEED PUMPS & FILTER EFFLUENT PUMPS									
39	1-1/4"	PVC Sch 80	Switchboard #12 - Utility #1, "Filter Bypass Pump 1"	FILTER EFFLUENT PUMP-1	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
40	1-1/4"	PVC Sch 80	Switchboard #11 -"Utility #2", "Filter Bypass Pump 2"	FILTER EFFLUENT PUMP-2	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
41	1-1/4"	PVC Sch 80	Switchboard #12 - Utility #1, "Filter Bypass Pump 3"	FILTER EFFLUENT PUMP-3	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
42	1-1/4"	PVC Sch 80	C-5, Control Panel, Electrical Building	FILTER EFFLUENT PUMP CONTROL PANEL	Controls	multi-conductor 15-#14 cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	Terminal box panel in the 4160v switchgear room of the electrical building south wall. There were existing wires from the terminal box back to operations.
43	1-1/4"	PVC Sch 80	Switchboard #12 - Utility #1, "CCC Bypass Pump 1"	FILTER FEED PUMP-1	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
44	1-1/4"	PVC Sch 80	Switchboard #11 - Utility #2, "CCC Bypass Pump 2"	FILTER FEED PUMP-2	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
45	1-1/4"	PVC Sch 80	Switchboard #12 - Utility #1, "CCC Bypass Pump 3"	FILTER FEED PUMP-3	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
46	1-1/4"	PVC Sch 80	Switchboard #11 - Utility #2, "CCC Bypass Pump 4"	FILTER FEED PUMP-4	Power	3 conductor #6 w/gmd cable tray rated 600v		Where descends from cable tray, temporarily relocate as necessary for excavation activities.	
47	3/4"	PVC Sch 80	Splits from 1-1/4" Conduit at Filter Effluent Pump Panels	FILTER FEED PUMP CONTROL	Controls	multi-conductor 15-#14 cable tray rated 600v		---	Splits from Conduit 4 at Filter Effluent Pumps Control Panel and runs to Filter Feed Pumps Control Panel
48	3/4" or 1"	PVC Sch 80	Panel LP, Reuse Pump Station	FILTER EFFLUENT PUMP CONTROL PANEL	120 V Power	3 conductor #12 w/gmd cable tray rated 600v		Temporarily reroute as necessary for excavation activities. Permanently reroute over new 54" DIP between Filters 3, 4, & 5 and Filters 6 & 7 effluent channels. Refer to Electrical Drawings for	
49	3/4" or 1"	PVC Sch 80	Panel LP, Reuse Pump Station	FILTER FEED PUMP CONTROL	120 V Power	3 conductor #12 w/gmd cable tray rated 600v		Temporarily reroute as necessary for excavation activities. Permanently reroute over new 54" DIP between Filters 3, 4, & 5 and Filters 6 & 7 effluent channels. Refer to Electrical Drawings for	
CHLORINE CONTACT CHAMBERS									
---	---	---	Panel in Chlorine Building	Turbidimeters #1 & #2 (at CCC for Filtered Flow)	Power	Unknown	Unknown	None.	Conduit route to Chlorine Building does not cross new pipe installation.
50	3/4" (assumed)	Unknown	Panel, Electrical Building (assumed)	Lighting & Receptacles (at Turbidimeters at CCC for Filtered Flow)	Power	2 1 (assumed)	#12 #12 (assumed)	Install new conduit and wire to match existing. Route over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
50	3/4" (assumed)	Unknown	C-5, Electrical Building	Turbidimeters #1 & #2 (at CCC for Filtered Flow)	Discrete - Fault x 2	4	#14 (assumed)	Install new conduit and wire to match existing. Route over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
51	3/4" (assumed)	Unknown	P/I-5, Electrical Building	Turbidimeters #1 & #2 (at CCC for Filtered Flow)	Analog - Turbidity	2	2/C #16 SH	Install new conduit and wire to match existing. Route over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent and effluent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
52	2"	PVC - ductbank	MCC-E1, "CL-2 Contact Basin Drain Pump DP-1", Electrical Building	DP-1 Drain Pump (at north end of Filter 2)	Power	3 1	#10 GND	Install new conduit and wire to match existing. Route over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent and effluent channels. Refer to Electrical Drawings for Details.	Conduit 21 is in a ductbank that also includes a 2" empty conduit.
RATE OF FLOW CONTROLLER									
53	3/4"	Galv Rigid Steel	MCC-E2, "Rate of Flow #1", Electrical Building	Control Panel (Modulating 30" Valve 480v 3p)	Power	3 1	#10 #10 GND	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
54	3/4"	Galv Rigid Steel	Panel LE-32, Electrical Building	Sump Pump & Float Switch	Power	2	#10	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
55	3/4"	Galv Rigid Steel	Panel LE-30, Electrical Building	Exhaust Fan	Power	2	#10	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
56	3/4" (assumed)	Galv Rigid Steel	Panel LE-34, Electrical Building	Lights & Receptacles	Power	2 1 (assumed)	#12 #12 (assumed)	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
57	3/4"	Galv Rigid Steel	I-5, Instrumentation Panel, Electrical Building	Control Panel	Analog - 0-100% Open (Output)	1	2/C#16 SH	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	
57	3/4"	Galv Rigid Steel	I-5, Instrumentation Panel, Electrical Building	Flowmeter	Analog - Flow	1	2/C#16 SH	Install new conduit and wire to match existing. Route new conduit under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Electrical Drawings for Details.	

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING CONDUIT & WIRE SCHEDULE (PAGE 2 OF 4)

PROJECT STATUS
BID SET
JULY 2010

C-14

NOTES:

1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C–13 TO C–16) W/ EXISTING ELECTRICAL SITE PLANS (C–9 TO C–12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. EXISTING CONDUIT AND WIRE WERE DETERMINED FROM COUNTY RECORD DRAWINGS AND LIMITED FIELD INVESTIGATION.
3. TABLE ENTRIES REFLECT DESCRIPTIONS AND TERMINOLOGY USED IN EACH SET OF RECORD DRAWINGS.
4. ITEMS IDENTIFIED AS "ASSUMED" WERE NOT IDENTIFIED IN RECORD DRAWINGS. USE ASSUMED VALUES FOR BIDDING PURPOSES.
5. WHEN MATCHING EXISTING CONDUIT, MATCH SIZE ONLY. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80. ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS.
7. SPLICING OF CONDUCTORS IS NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
8. ALL SINGLE WIRE CONDUCTORS SHALL BE THHN, 600V. ALL CONDUCTORS SHALL BE COPPER STRANDED.
9. ALL ANALOG CABLE SHALL BE SHIELDED.
10. ALL CONDUIT SHALL CONTAIN EQUIPMENT GROUNDING CONDUCTOR.
11. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LATEST NATIONAL ELECTRIC CODE.

CONDUIT NO.	CONDUIT DIAM	CONDUIT MATL	FROM	TO	TYPE (Power, Discrete, Analog)	WIRE NO.	WIRE SIZE	ACTIVITY	NOTES
AUTOMATIC BACKWASH FILTERS 6 & 7									
58	2"	PVC - ductbank	MCC-E1, "ABW #6 Festoon", Electrical Building	ABW #6 Junction Box for Festoon	Power Discrete - Run & Trouble for #6 & 7	1 each	3/C#6 600v power tray cable 7/C#14 tray cable	Relocate panel from east side of Filters 6 & 7 to west side, immediately north of existing panels. Install new conduit and wire to new panels, matching existing. Refer to electrical Drawings for Details. Route conduit on filter deck so as to minimize t	At Filters 6 & 7, conduits are in concrete filter walls.
59	2"	PVC - ductbank	Flocculator #5 Motor Starter, Electrical Building	Flocculator #5	Power	1	3/C#10 tray cable	Relocate panel from east side of Filters 6 & 7 to west side, immediately north of existing panels. Install new conduit and wire to new panels, matching existing. Refer to electrical Drawings for Details. Route conduit on filter deck so as to minimize t	At Filters 6 & 7, conduits are in concrete filter walls.
60	2"	PVC - ductbank	MCC-E2, "Flash Mixer #6 & #7", Electrical Building	Flash Mixer #3	Power	2	3/C#10 tray cable	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent channels. Move panel location immediately north to clear area for new slide gate. Refer to Electrical Drawin	At Filters 6 & 7, conduits are in concrete filter walls.
61	2"	PVC - ductbank	MCC-E2, Electrical Building	Flash Mixer #3, Motor Space Heater	Power	1	2C#12 tray cable	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent channels. Move panel location immediately north to clear area for new slide gate. Refer to Electrical Drawin	At Filters 6 & 7, conduits are in concrete filter walls.
62	2"	PVC - ductbank	MCC-E1, "ABW #6 Sluice Gate", Electrical Building	ABW #6 Sluice Gate	Power	1	3/C#10 tray cable	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent channels. Move panel location immediately north to clear area for new slide gate. Refer to Electrical Drawin	At Filters 6 & 7, conduits are in concrete filter walls.
63	2"	PVC - ductbank	Panel LEF, Electrical Building	FIT 5, Lake Water Return Flowmeter at Filters 6 & 7	Power	1	3/C#10 tray cable	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent channels. Refer to Electrical Drawings for Details.	
64	2"	PVC - ductbank	I5-A, Instrument Cable Terminal Box , Electrical Building	FIT 5, Lake Water Return Flowmeter at Filters 6 & 7	Analog - Flow	1	1PR#16 instrument cable	Install new conduit and wire to match existing. Route new conduit over new 54" pipe between Filters 3, 4 & 5 and Filters 6 & 7 influent channels. Refer to Electrical Drawings for Details.	
65	2"	PVC - ductbank (3/4" PVC in concrete basin walls)	Panel LEF-23, Electrical Building	North End, Lights & Receptacles	Power	1	3/C#10 tray cable	Conduit in SE corner of concrete wall will be removed for installation of new slide gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match existing wire an	At Filters 6 & 7, conduits are in concrete filter walls.
66	2"	PVC - ductbank (3/4" PVC in concrete basin walls)	Panel LEF-27, Electrical Building	East Side, Lights & Receptacles	Power	1	3/C#10 tray cable	Conduit in SE corner of concrete wall will be removed for installation of new slide gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match existing wire an	At Filters 6 & 7, conduits are in concrete filter walls.
67	2"	PVC - ductbank (3/4" PVC in concrete basin walls)	Panel LEF-25, Electrical Building	West Side, Lights & Receptacles	Power	1	3/C#10 tray cable	Conduit in SE corner of concrete wall will be removed for installation of new slide gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match existing wire an	At Filters 6 & 7, conduits are in concrete filter walls.
68	2"	PVC - ductbank (3/4" PVC in concrete basin walls)	Panel LEF-21, Electrical Building	South End, Lights & Receptacles	Power	1	3/C#10 tray cable	None.	At Filters 6 & 7, conduits are in concrete filter walls.
AUTOMATIC BACKWASH FILTERS 6 & 7 INFLUENT METER VAULT									
---	---	---	Panel LEF, Electrical Building	FIT-1, ABW 6 & 7 Influent Flow	Power	1	3/C#10 tray cable	**Demolish**	
---	---	---	Instrumentation Cable Terminal Box I5-A, Electrical Building	FIT-1, ABW 6 & 7 Influent Flow	Analog - Flow	1	1PR#16 instrument cable	**Demolish**	
---	---	---	MCC-E2, "Backflow Valve BFV-14 (6 & 7)", Electrical Building	BFV-14	Power	3	3/C#10 600v power tray cable	**Demolish**	
---	---	---	Instrumentation Cable Terminal Box I5-A, Electrical Building	BFV-14	Analog - Control - Open/Close	2	1PR#16 instrument cable	**Demolish**	
---	---	---	Panel LEF, Electrical Building	LIGHTS & RECEPTACLES	Power	1	3/C#10 tray cable	**Demolish**	
AUTOMATIC BACKWASH FILTERS 3, 4 & 5									
69	2"	PVC - ductbank	Panel LEF, Electrical Building	FIT 4, Lake Water Return Flowmeter at Filters 3, 4 & 5	Power	1	3/C#10 tray cable	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	
70	2"	PVC - ductbank	I5-A, Electrical Building	FIT 4, Lake Water Return Flowmeter at Filters 3, 4 & 5	Analog - Flow	1	1PR#16 instrument cable	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	
71	2-1/2" PVC	PVC Sch 80	MCC-E2, "ABW Filter #3", Electrical Building	ABW #3 Festoon (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#8 #8 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
72	2-1/2" PVC	PVC Sch 80	MCC-E1, "ABW Filter #4", Electrical Building	ABW #4 Festoon (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#8 #8 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
71	2-1/2" PVC	PVC Sch 80	MCC-E2, "ABW Filter #5", Electrical Building	ABW #5 Festoon (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#8 #8 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
72	2-1/2" PVC	PVC Sch 80	MCC-E1, "Flash Mixer #2", Electrical Building	Flash Mixer #2 (480 V Power Pull Box on east side of Filters 3, 4 &	Power	6 1	#10 #10 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
72	2-1/2" PVC	PVC Sch 80	MCC-E1, "Sluice Gate #3", Electrical Building	ABW #3 Sluice Gate (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#12 #12 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
72	2-1/2" PVC	PVC Sch 80	MCC-E1, "Sluice Gate #4", Electrical Building	ABW #4 Sluice Gate (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#12 #12 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
72	2-1/2" PVC	PVC Sch 80	MCC-E1, "Sluice Gate #5", Electrical Building	ABW #5 Sluice Gate (480 V Power Pull Box on east side of Filters 3, 4 &	Power	3 1	#12 #12 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
73	2-1/2" PVC	PVC Sch 80	Panel C-5, Electrical Building	ABW #3,4 &5 Monitoring (120 V Status Pullbox on east side of Filters 3, 4 &	Discrete - Run & Trouble for #3, 4 & 5	12	#14	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
74	2-1/2" PVC	PVC Sch 80	MCC-E2, "Floc #3", Electrical Building	Flocculator #3 (Pull Box on east side of Filters 3,4 & 5)	Power	4 1	#10 #10 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.
75	2-1/2" PVC	PVC Sch 80	Flocculator #4 DC Drive, Electrical Building	Flocculator #4 (DC Power Pull Box on east side of Filters 3,4 & 5)	Power - DC	4 1	#10 #10 GND	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	Routed to junction box on north exterior wall of Electrical Building.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING CONDUIT & WIRE SCHEDULE (PAGE 3 OF 4)

PROJECT STATUS
BID SET
JULY 2010

C–15

NOTES:

1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C–13 TO C–16) W/ EXISTING ELECTRICAL SITE PLANS (C–9 TO C–12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. EXISTING CONDUIT AND WIRE WERE DETERMINED FROM COUNTY RECORD DRAWINGS AND LIMITED FIELD INVESTIGATION.
3. TABLE ENTRIES REFLECT DESCRIPTIONS AND TERMINOLOGY USED IN EACH SET OF RECORD DRAWINGS.
4. ITEMS IDENTIFIED AS "ASSUMED" WERE NOT IDENTIFIED IN RECORD DRAWINGS. USE ASSUMED VALUES FOR BIDDING PURPOSES.
5. WHEN MATCHING EXISTING CONDUIT, MATCH SIZE ONLY. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80. ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS.
7. SPLICING OF CONDUCTORS IS NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
8. ALL SINGLE WIRE CONDUCTORS SHALL BE THHN, 600V. ALL CONDUCTORS SHALL BE COPPER STRANDED.
9. ALL ANALOG CABLE SHALL BE SHIELDED.
10. ALL CONDUIT SHALL CONTAIN EQUIPMENT GROUNDING CONDUCTOR.
11. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LATEST NATIONAL ELECTRIC CODE.

CONDUIT NO.	CONDUIT DIAM	CONDUIT MATL	FROM	TO	TYPE (Power, Discrete, Analog)	WIRE NO.	WIRE SIZE	ACTIVITY	NOTES
76	1"	PVC sch 80 - in concrete basin wall	Panel LEF, Electrical Building	North End & East Side, Lights & Receptacles	Power	2 1	#10 #10 GND	Conduit in SE corner of concrete wall will be removed for installation of new gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match existing wire and cond	
77	1"	PVC sch 80 - in concrete basin wall	Panel LEF, Electrical Building	Center (Dual Fixtures), Lights & Receptacles	Power	2 1	#10 #10 GND	Conduit in SE corner of concrete wall will be removed for installation of new gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match existing wire and cond	
78	1"	PVC sch 80 - in concrete basin wall	Panel LEF, Electrical Building	South End, Lights & Receptacles	Power	2 1	#10 #10 GND	Conduit in SE & SW corners of concrete wall will be removed for installation of piping and new stop gate. Reroute conduit and wire from pullbox at south edge of basin to fixtures, running conduit on filter deck so as to minimize tripping hazard. Match	
79	3/4"	PVC Sch 80	C-5, Control Panel, Electrical Building	Float Switch ABW #3	Discrete	2	#14	Reroute away from Filters 3, 4 & 5 Influent Flowmeter that is being demolished.	Existing wiring connects to Junction Box at SE corner of Filter 3
80	3/4"	PVC Sch 80	C-5, Control Panel, Electrical Building	Float Switches ABW #2 & #3	Discrete	4	#14	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels . Refer to Electrical Drawings for Offset Details.	Existing wiring connects to Junction Box at SE corner of Filter 3
AUTOMATIC BACKWASH FILTERS 3,4 & 5 INFLUENT FM									
---	---	---	Panel LEF, Electrical Building	Flow Meter, ABW #3, 4 & 5 Influent Flow	Power	2 1	#10 #10 GND	**DEMOLISH**	
---	---	---	P/I-5, Electrical Building	Flow Meter, ABW #3, 4 & 5 Influent Flow	Analog - Flow	1	#16 2/C SH	**DEMOLISH**	
---	---	---	Panel LEF, Electrical Building	Lights & Receptacles	Power	2 1	#10 #10 GND	**DEMOLISH**	
AUTOMATIC BACKWASH FILTERS 1 & 2									
81	1"	Sch 80 PVC /Alum RMC	Panel HP, Reuse Pump Station	ABW #1 Effluent Weir Gate Actuator	Power	4	#12	Temporarily reroute as necessary for excavation activities. Permanently reroute over new 54" DIP to CCC. Refer to Electrical Drawings for Details.	From Panel HP, attached to cable tray before running underground
82	2"	PVC - ductbank	Panel LEF, Electrical Building	FIT 3, Lake Water Return Flowmeter at Filters 1 & 2	Power	1	3/C#10 tray cable	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	
83	2"	PVC - ductbank	I5-A, Electrical Building	FIT 3, Lake Water Return Flowmeter at Filters 1 & 2	Analog - Flow	1	1PR#16 instrument cable	Reroute over new 54" DIP between Filters 1 & 2 and Filters 3, 4 & 5 influent channels. Refer to Electrical Drawings for Details.	
84	1"	Galv Rigid Steel	MCC-E1, "ABW Filter #1", Electrical Building	ABW #1 Festoon (Aqua-Aerobics)	Power	3 1	#6 #8	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	When filter was retrofitted in 2008, existing power and monitoring were reused.
85	1"	Galv Rigid Steel	MCC-E2, "ABW Filter #2", Electrical Building	ABW #2 Festoon	Power	3 1	#6 #8	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
86	3/4"	Galv Rigid Steel	C5-A, Electrical Building	ABW #1 & #2 Festoon Controls	Discrete - Run x2 -Fault x2	8	#14	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
87	1" (assumed)	Galv Rigid Steel	MCC-E1, "Flash Mixer #1", Electrical Building	Flash Mixer #1	Power	10	#12	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
88	3/4"	Galv Rigid Steel	Floc Drive #1 (DC), Electrical Building	Flocculator #1	Power	10	#14	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
89	3/4"	Galv Rigid Steel	Floc Drive #2 (DC), Electrical Building	Flocculator #2	Power	9	#14	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
90	3/4" (assumed)	Galv Rigid Steel	MCC-E1, "Sluice Gate #1", Electrical Building	ABW #1 Sluice Gate	Power	3 1	#12 #12 GND	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
91	3/4" (assumed)	Galv Rigid Steel	MCC-E1, "Sluice Gate #2", Electrical Building	ABW #2 Sluice Gate	Power	3 1	#12 #12 GND	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
92	3/4"	Galv Rigid Steel	Panel PC/TC, Electrical Building	Lights & Receptacles, North and East Sides	Power	3	#10	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	
93	3/4"	Galv Rigid Steel	Panel PC/TC, Electrical Building	Lights & Receptacles, South and West Sides	Power	3	#10	Install new conduit and wire to match existing. If necessary, route new conduit over new 54" pipe between Filters 1 & 2 and Filters 3, 4 & 5 influent channels or under new 54" pipe between Filters 1 & 2 influent channel and 54" PCCP pipe. Refer to Elect	Conduit in SE corner of concrete wall will be removed for installation of new gate.
94	Unknown	Galv Rigid Steel	Intercom Panel, Electrical Building	Speaker	---	Unknown	Unknown	**DEMOLISH**	
95	3/4"	PVC Sch 80	C-5, Control Panel, Electrical Building	Float Switch ABW #2	Discrete	2	#14	Reroute away from Filters 3, 4 & 5 Influent Flowmeter that is being demolished.	Existing wiring connects to Junction Box at SE corner of Filter 3.
96	1"	Alum RMC	Filter 1 Influent Limit Switches and Effluent Float Switch & Limit	ABW#1 Shore Control Panel (Aqua-Aerobics)	Discrete	10 1	#14 #14 GND	Reroute away from new Filter 1 Influent Weir Gate.	
97	1"	Alum RMC	Filter 1 Pressure Transducers, Filter Basin and Effluent Channel	ABW#1 Shore Control Panel (Aqua-Aerobics)	Analog - Level	2	Belden Cables #8760	Reroute away from new Filter 1 Influent Weir Gate.	
AUTOMATIC BACKWASH FILTERS 1 & 2 INFLUENT FLOWMETER									
---	---	---	Panel LE-32, Electrical Building	Sump Pump	Power	---	---	**DEMOLISH**	
---	---	---	Panel LE-32, Electrical Building	Flowmeter	Power	---	---	**DEMOLISH**	
---	---	---	P/I-5, Electrical Building	Flowmeter	Analog - Flow	---	---	**DEMOLISH**	
---	---	---	Panel LE-30, Electrical Building	Flow Relay	Discrete	---	---	**DEMOLISH**	
---	---	---	Panel LE-34, Electrical Building	Lights & Receptacles	Power	---	---	**DEMOLISH**	
OUTFALL JUNCTION BOX									
98	1" (assumed)	Unknown	MCC E-1, "54" Valve Meter Vault", Electrical Building	Valve Actuator	Power GND Discrete-Open/Close Discrete-Position Open/Position Closed (assumed)	3 1 2 2 (assumed)	#12 #12 #14 #14	None.	Conduit and wire information unknown, including route. Route is assumed to be on west side of Filters 6 & 7, thus , not requiring relocation.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 29, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING CONDUIT & WIRE SCHEDULE (PAGE 4 OF 4)

PROJECT STATUS
BID SET
JULY 2010

C–16

GENERAL STRUCTURAL NOTES:

A. BUILDING CODES:

1. FLORIDA BUILDING CODE, 2007 EDITION.
2. ACI 318–05 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
3. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, NINTH EDITION.

B. DESIGN CRITERIA:

1. LIVE LOADS:
   GRATING AREAS ———— 50 PSF

C. CONSTRUCTION MATERIALS:

1. CAST–IN–PLACE CONCRETE COMPRESSIVE STRENGTH: 4000 PSI AT 28 DAYS
2. STAINLESS STEEL EXPANSION BOLTS – TYPE 316
3. REINFORCING STEEL – ASTM A 615, GRADE 60 UNCOATED.
4. STRUCTURAL STEEL SHAPES ASTM A572, GRADE 50 (U.N.O.); GALVANIZED
5. ALL MISCELLANEOUS STEEL ASTM – A 36; GALVANIZED
6. CONNECTION BOLTS – ASTM A 325 N, 3/4" DIAMETER, UNLESS NOTED OTHERWISE: GALVANIZED
7. GROUT FOR PIPE ABANDONMENT SHALL BE FLOWABLE FILL, 200 PSI.

D. FOUNDATIONS:

1. ALL EARTHWORK AND COMPACTION FOR STRUCTURES SHALL BE AS PER SPECIFICATION SECTION 02220 EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES.

E. GENERAL NOTES:

1. ALL CONCRETE EMBEDDED STEEL ANGLES, WELD PLATES, ANCHORAGE DEVICES, ETC., SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123 AND / OR A 153.
2. ALL REINFORCEMENT TO BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315–94 ALL CONSTRUCTION JOINTS, WITH REINFORCING PASSING THROUGH THE JOINT, SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" INCH, UNLESS NOTED OTHERWISE.
3. PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE ON THE PLANS:
   SLABS ———————— 3"
   WALLS ———————— 1 1/2"
4. ALL BOLTED CONNECTIONS (BEARING TYPE) SHALL USE STANDARD HOLES UNLESS OTHERWISE NOTED ON DRAWINGS.
5. CONTRACTOR SHALL VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. APPLY FINISH TO ALL CONCRETE AS NOTED IN THE SPECIFICATIONS.
7. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" X 3/4", EXCEPT AS NOTED OTHERWISE.

F. EXCAVATIONS:

1. THE SIDES OF EXCAVATIONS, SHALL BE CUT TO STABLE SLOPES OR SHALL BE SHEETED, SHORED, OR BRACED BY CONTRACTOR AS REQUIRED FOR STABILITY.

G. COORDINATION:

1. THE CONTRACTOR SHALL COORDINATE ALL PENETRATIONS THROUGH CONCRETE WITH THE CIVIL, MECHANICAL, ELECTRICAL, AND SPECIALTY SUB–CONTRACTORS SHOP DRAWINGS PRIOR TO PLACING CONCRETE. THE MECHANICAL SUB–CONTRACTORS SHALL PROVIDE SHOP DRAWINGS FOR ALL ANCHOR BOLT LOCATIONS.
2. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE CIVIL, MECHANICAL, AND ELECTRICAL SHEETS TO PROPERLY LOCATE PIPE SLEEVES, ANCHOR BOLTS, BLOCK–OUTS, ETC. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE PROJECT SPECIFICATIONS.

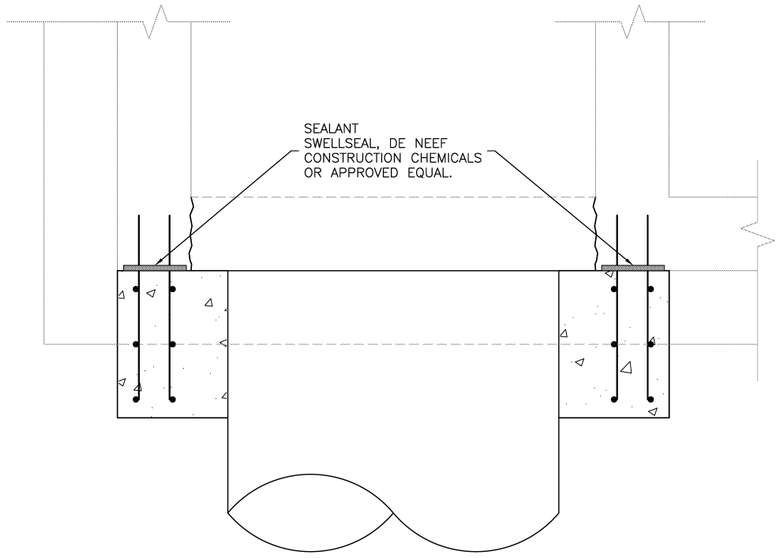
H. PRECAUTIONS:

1. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE FLOTATION OF STRUCTURES UNTIL ALL BACKFILL IS IN PLACE AND COMPACTED AND CONSTRUCTION IS COMPLETE.

J. DEWATERING

1. THE CONTRACTOR SHALL EXPECT TO PERFORM DEWATERING.

DO NOT INSTALL BACKFILL UNTIL WALLS HAVE ATTAINED 100% OF THEIR DESIGN COMPRESSIVE STRENGTH. DO NOT FILL ANY INTERIOR AREA WITH WATER UNTIL ALL BACKFILL IS INSTALLED.



PLAN

A CONCRETE SEAL SHALL BE ADDED TO THE INTERFACE OF ALL NEW AND EXISTING CONCRETE TO ACT AS A WATERSTOP.

CONCRETE SEAL DETAIL

N.T.S.

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

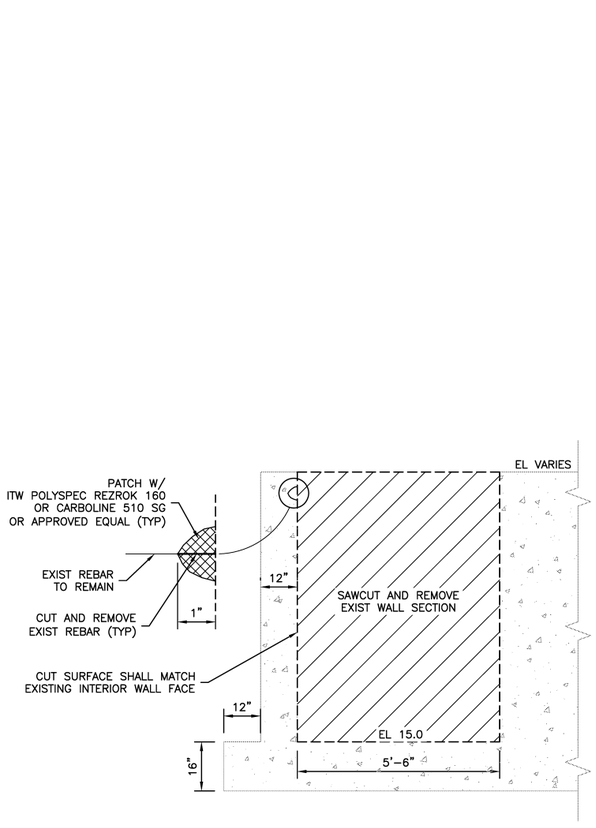
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

STRUCTURAL GENERAL NOTES

PROJECT STATUS
BID SET
JULY 2010

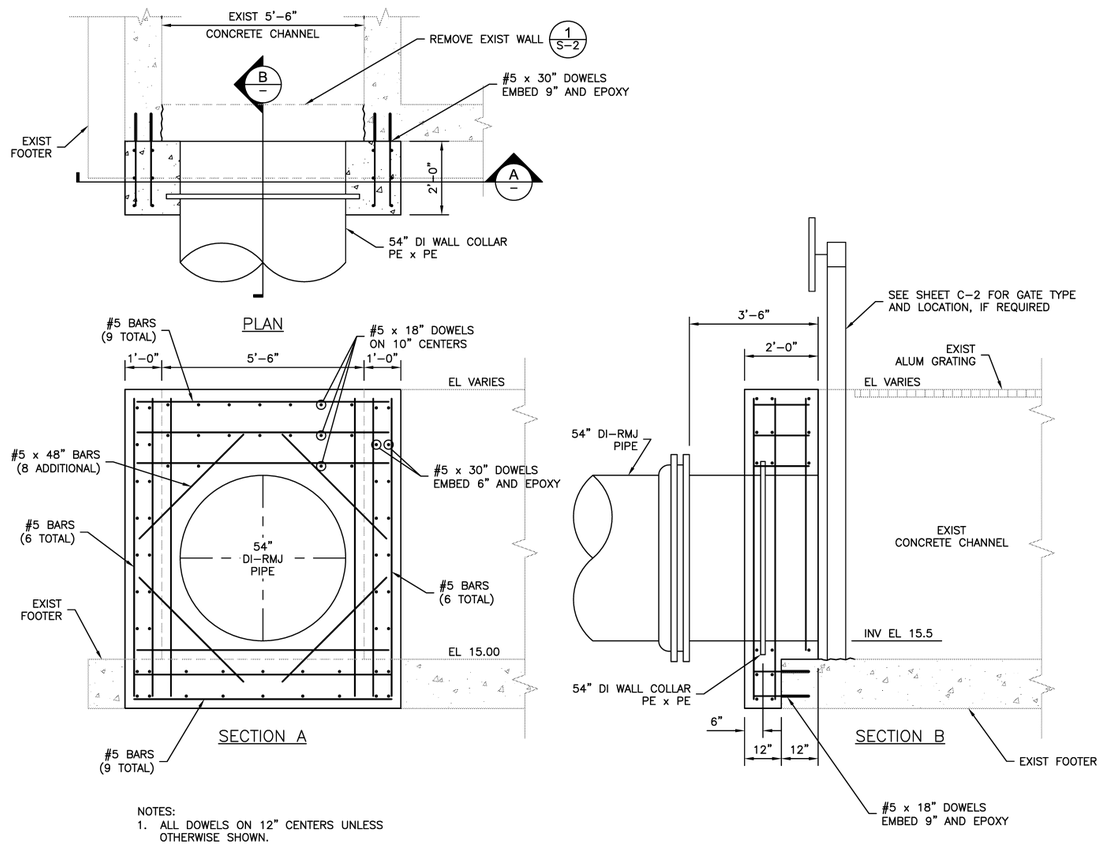
S–1



SECTION

TYPICAL CHANNEL WALL REMOVAL

1 / – DETAIL
SCALE: NTS



NOTES:
1. ALL DOWELS ON 12" CENTERS UNLESS OTHERWISE SHOWN.

TYPICAL 54" DI PIPE TO EXISTING CHANNEL CONNECTION

2 / – DETAIL
SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

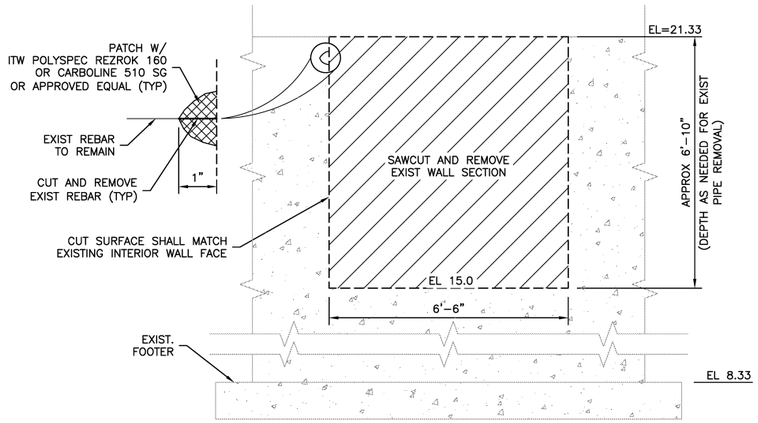
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CHANNEL STRUCTURAL DETAILS

PROJECT STATUS
BID SET
JULY 2010

S-2

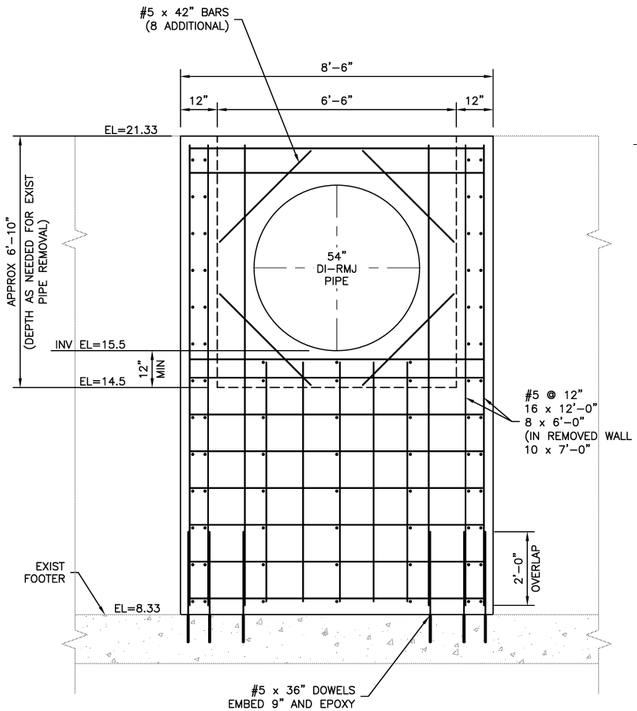


SECTION

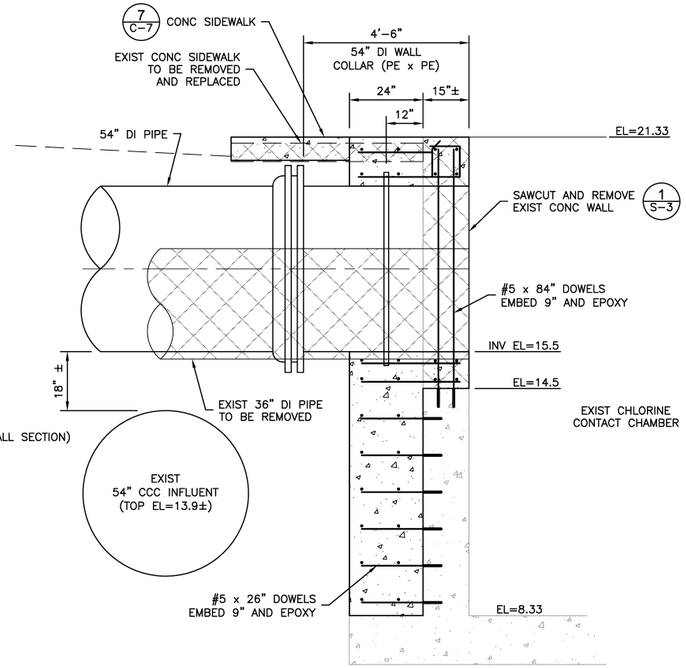
CCC CHANNEL WALL REMOVAL

1 / – DETAIL

SCALE: NTS



FRONT

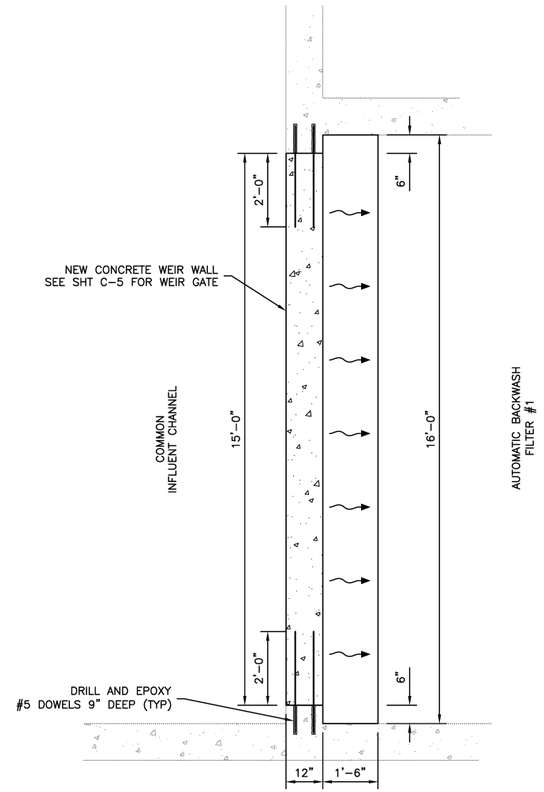


SECTION

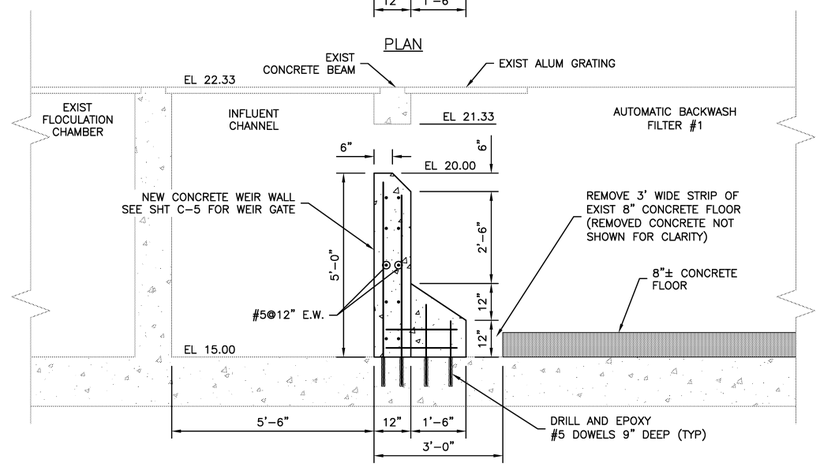
CCC PIPE CONNECTION

3 / C-2 DETAIL

SCALE: NTS



PLAN



NEW WEIR WALL – ABW FILTER #1

2 / C-2 DETAIL

SCALE: NTS

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

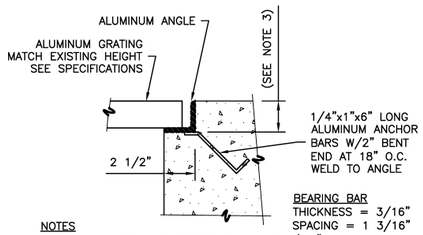
FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

STRUCTURAL DETAILS

PROJECT STATUS
BID SET
JULY 2010

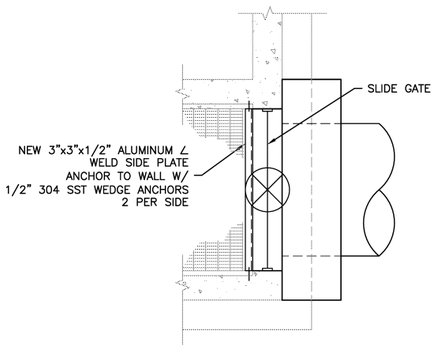
S-3

PLOTTED July 29, 2010 9:34 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\S-3 STRUCTURAL DETAILS.DWG

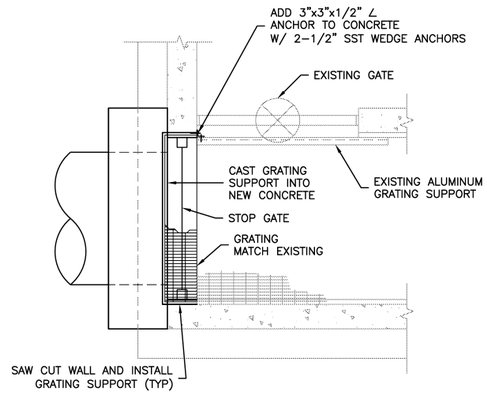


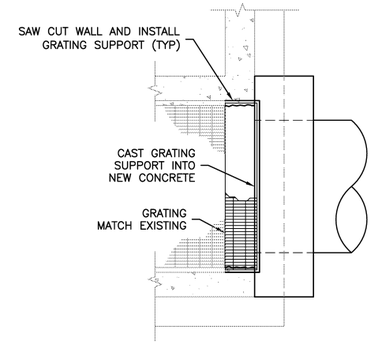
NOTES
1. MAXIMUM SPAN OF GRATING SHALL BE 6'–0".
2. GRATING SHALL BE FLUSH WITH CONCRETE FLOOR (TYP).
3. EXISTING HEIGHT + 1/4".

CAST GRATING SUPPORT
5 / – DETAIL
SCALE: NTS

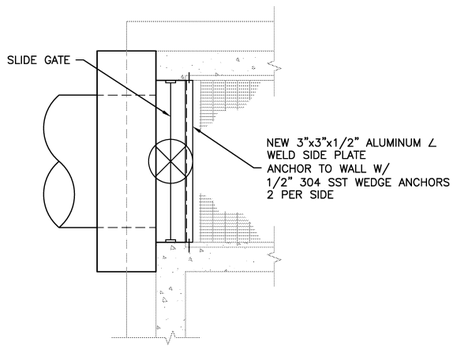


FILTERS 6 AND 7 INFLUENT GRATING LAYOUT
3 / C–2 DETAIL
SCALE: NTS

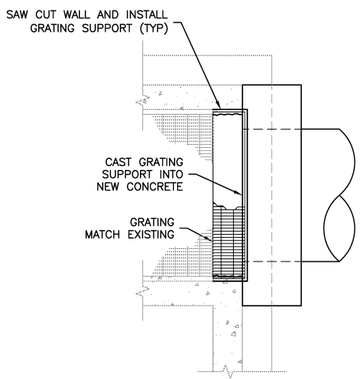




FILTERS 1 AND 2 INFLUENT GRATING LAYOUT
1 / C–2 DETAIL
SCALE: NTS

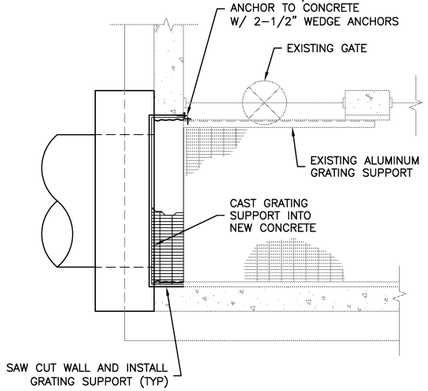


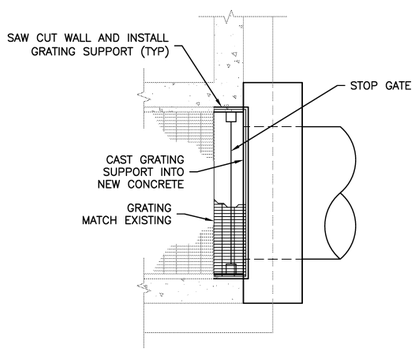
W/ SLIDE GATE



W/OUT SLIDE GATE

FILTERS EFFLUENT GRATING LAYOUT
4 / C–2 DETAIL
SCALE: NTS





FILTERS 3, 4 AND 5 INFLUENT GRATING LAYOUT
2 / C–2 DETAIL
SCALE: NTS

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED July 29, 2010 9:34 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WALL\CADD\S-4 GRATING DETAILS.DWG

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. AVALOS
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GRATING DETAILS

PROJECT STATUS
BID SET
JULY 2010

S–4

ABBREVIATIONS:

A	AMPS, AMPERE
AC	ALTERNATING CURRENT
AF	AMP FRAME, AMP FUSE
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALT.	ALTERNATE
AM	AMMETER
AMPS	AMPERES
APPROX.	APPROXIMATE
ASPH.	ASPHALT
AST	ABOVEGROUND STORAGE TANK
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX.	AUXILIARY
AUTO.	AUTOMATIC
AVG.	AVERAGE
AWG	AMERICAN WIRE GAUGE
&	AND
@	AT
BATT.	BATTERY
BC	BARE COPPER, BOLT CIRCLE
BET.	BETWEEN
BIS	BITS PER SECOND
BIL	BASIC IMPULSE LEVEL
BLDG	BUILDING
BKR	BREAKER
BNC	BAYONET–NIELL–CONCELMAN
BOT.	BOTTOM
C	CONDUIT, CONDUCTOR
CAB.	CABINET
CAT.	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER, CATCH BASIN
CEM.	CEMENT
CF	CUBIC FOOT
CIP	CAST–IN–PLACE
CKT	CIRCUIT
CLR	CLEAR
CL	CLASS, CENTERLINE, CURRENT LIMITING
CLG	CEILING
COL.	COLUMN
CMH	COMMUNICATIONS MANHOLE
COMM.	COMMUNICATION(S)
CONC.	CONCRETE
COND.	CONDUIT
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUED
CONTR	CONTRACTOR
COORD.	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRS	PVC COATED RIGID STEEL CONDUIT
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CTR	CENTER
CTRL	CONTROL
CU	COPPER
DB	DIRECT BURIED
dB	DECIBELS
DC	DIRECT CURRENT
DED.	DEDICATED
DEG.	DEGREES
DET.	DETAIL
DIA.	DIAMETER
DIV.	DIVISION
DIFF.	DIFFERENTIAL
DIM.	DIMENSIONS
DWG.	DRAWING
EA.	EACH
ELEC.	ELECTRIC, ELECTRICAL
EL.	ELEVATION
EMBT	EMBEDMENT
EMT	ELECTRICAL METALLIC TUBING
ENCL.	ENCLOSURE, ENCLOSED
ENGR	ENGINEER

ABBREVIATIONS:

EPO	EMERGENCY POWER OFF
EPR	ETHYLENE PROPYLENE RUBBER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT
EXIST.	EXISTING
EXP.	EXPOSED
EXT.	EXTERIOR
F	FUSE
FA	FIRE ALARM
FAA	FUTURE FORCED AIR
FACP	FIRE ALARM CONTROL PANEL
FACS	FIRE ALARM CONTROL SYSTEM
FC	FOOT–CANDLE
FND	FOUNDATION
FDR	FEEDER
FHP	FRACTIONAL HORSEPOWER
FIN.	FINISHED
FIN. FL.	FINISHED FLOOR
FIXT.	FIXTURE
FLEX.	FLEXIBLE
FLR	FLOOR
FLUOR.	FLUORESCENT
FO	FIBER OPTIC
FT	FOOT, FEET
FTG	FOOTING
FU	FUSE
FUT.	FUTURE
FV	FULL VOLTAGE
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON–REVERSING
GA	GAUGE
GALV.	GALVANIZED
GEN.	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
H	HEIGHT
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND–OFF–AUTOMATIC
HORIZ.	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HZ	HERTZ
I.D.	INSIDE DIMENSION
IE	INVERT ELEVATION
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY
IN.	INCH(ES)
INCL.	INCLUDING
INST.	INSTANTANEOUS
INSTR.	INSTRUMENT, INSTRUMENTATION
IMH	INSTRUMENTATION MANHOLE
INV.	INVERT
J, JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
K	KIRK KEY INTERLOCK
KA	KILO AMPERES
KAIC	KILO AMPS INTERRUPTING CAPACITY
KCMIL	ONE THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATTS
KWH	KILOWATT HOURS
KWHD	KILOWATT HOURS DEMAND
L	LENGTH
LB	POUND
LBS	POUNDS
LC	LOAD CENTER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LFMC	LIQUID–TIGHT FLEXIBLE METAL CONDUIT
LIN.	LINEAR
LOC	LOCATIONS
LPS	LIGHTNING PROTECTION SYSTEM

ABBREVIATIONS:

LS	LIMIT SWITCH
LT	LIGHT
LTG	LIGHTING
LTS	LIGHTS
LV	LOW VOLTAGE
LVMH	LOW VOLTAGE MANHOLE
L–G	LINE–TO–GROUND
L–L	LINE–TO–LINE
M	MOTOR
MAX.	MAXIMUM
MCM	ONE THOUSAND CIRCULAR MILS
MCOV	MAXIMUM CIRCUIT OPERATING VOLTAGE
MECH.	MECHANICAL
MEMB.	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MOV	METAL OXIDE VARISTOR
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT AMPERES
N	NEUTRAL
NC	NORMALLY CLOSED
NE	NORTH EAST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NEUT.	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NPT	NOMINAL PIPE THREAD
NTS	NOT TO SCALE
O.C.	ON CENTER(S)
O.D.	OUTSIDE DIAMETER
OH	OVERHEAD
OL	OVERLOADS
OPP.	OPPOSITE
OPER.	OPERATOR
OWS	OIL WATER SEPARATOR
P	POLE
PB	PULL BOX, PUSH BUTTON
PE	PHOTOELECTRIC DEVICE
PF	POWER FACTOR, PHASE FAILURE RELAY
PH OR ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
PM	POWER METER
PMH	PRIMARY MANHOLE
PNL	PANEL
PNLBD	PANEL BOARD
PR	PAIR
PRI.	PRIMARY
PROJ.	PROJECT
PS	PRESSURE SENSOR, POWER SUPPLY
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER, PRESSURE TRANSMITTER
PVC	POLYVINYL CHLORIDE
PWR	POWER
%	PERCENT
QTY	QUANTITY
RECP.	RECEPTACLE
REF.	REFERENCE
REINF.	REINFORCEMENT
REQD	REQUIRED
REV.	REVISION, REVISED
RF	RATING FACTOR
RGS	RIGID GALVANIZED STEEL
RMS	ROOT–MEAN–SQUARE
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVNR	REDUCED VOLTAGE NON–REVERSING
R/W	RIGHT–OF–WAY
SA	SURGE ARRESTER
SCH.	SCHEDULE
SEC.	SECONDARY, SECOND(S)
SECT.	SECTION
SF	SQUARE FOOT, SQUARE FEET
SHLD	SHIELDED

ABBREVIATIONS:

SHT	SHEET
SI	SQUARE INCH, SQUARE INCHES
SIM.	SIMILAR
SMH	SECONDARY MANHOLE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION(S)
SQ.	SQUARE
SS	STAINLESS STEEL
ST.	STREET
STA.	STATION
STD	STANDARD
STL	STEEL
STR	STRANDED
SUBST.	SUBSTATION
SW.	SWITCH
SWBD	SWITCHBOARD
SYM.	SYMMETRICAL
SYNC.	SYNCHRONOUS
SY	SQUARE YARD, SQUARE YARDS
SYS.	SYSTEM
TB	TERMINAL BLOCK
TBD	TO BE DETERMINED
TC	TRAY CABLE
TD	TIME DELAY
TELE.	TELEPHONE
TEMP.	TEMPORARY, TEMPERATURE
TERM.	TERMINAL
THHN	HEAT RESISTANT THERMOPLASTIC INSULATION
THK	THICK
THWN	HEAT AND MOISTURE RESISTANT THERMOPLASTIC INSULATION
THRU	THROUGH
T.O.S.	TOP OF STEEL, TOP OF SLAB
TYP	TYPICAL
TSP	TWISTED SHIELDED PAIR
UBC	UNIFORM BUILDING CODE
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
UVIR	ULTRAVIOLET INFRARED
V	VOLTS, VOLTAGE
VAR	VOLT AMPERES REACTIVE
VERT.	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VOL.	VOLUME
VT	VOLTAGE TRANSFORMER
W	WATT, WIDE, WIDTH, WIRE
WF	WASTE FUEL
WH	WATT–HOUR
WM	WATT–HOUR METER
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W/	WITH
X	REACTANCE
XFMR	TRANSFORMER
XHHW	HEAT AND MOISTURE RESISTANT CROSS LINKED SYNTHETIC POLYMER
XP	EXPLOSION PROOF
Z	IMPEDANCE

GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS FOR CONDUIT SCHEDULE, PROJECT LOCATION AND EQUIPMENT LOCATION.
2. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80.
3. CONDUIT ABOVE GRADE SHALL BE RIGID ALUMINUM.
4. ALL PVC UNDERGROUND CONDUITS SHALL TRANSITION TO RIGID ALUMINUM CONDUIT PRIOR TO CONDUIT TRANSITION FROM HORIZONTAL TO VERTICAL. ALL EXTERIOR VERTICAL CONDUITS ARE AL. PROVIDE AL TO PVC FITTING FOR TRANSITION BETWEEN AL & PVC CONDUIT. PROVIDE BITUMASTIC COATING ON AL CONDUIT WHEN IN CONTACT WITH EARTH OR CONCRETE.
5. BURIED CONDUIT WITH LESS THAN 30" OF COVER SHALL BE IN A DUCT BANK.
6. ABANDONED DUCT BANKS SHALL BE CUT AND REMOVED AS NECESSARY FOR NEW PIPE CROSSINGS. PLUG CUT ENDS.

LEGEND:

- (#) REFERENCE NOTE TAG
- (#) DEMOLITION NOTE TAG
- (#) FEEDER NOTE TAG
- DRIVEN GROUNDING ROD ELECTRODE
- CONNECTION POINT
- CONDUIT.
- CONDUIT UNDERGROUND.
- CONDUIT EXISTING
- CONDUIT TO BE REMOVED
- CIRCUIT BREAKER
- COMBINATION STARTER
- (#) MOTOR, # REPRESENTS HP RATING
- TRANSFORMER
- CIRCUITING SYMBOLOGY FEEDER. REFER TO SINGLE–LINE DIAGRAM FOR CONDUIT AND WIRE SPECIFICATION.
- JB JUNCTION BOX
- POLE MOUNTED LIGHT FIXTURE
- M FLOW METER

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL ABBREVIATIONS
SYMBOLS LEGEND & NOTES

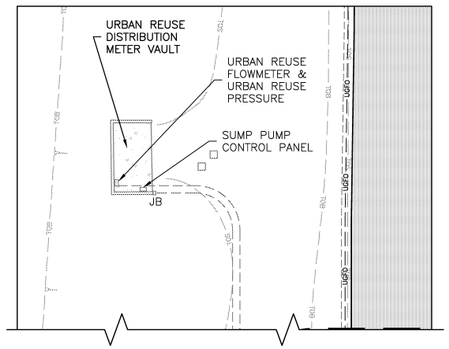
PROJECT STATUS
BID SET
JULY 2010

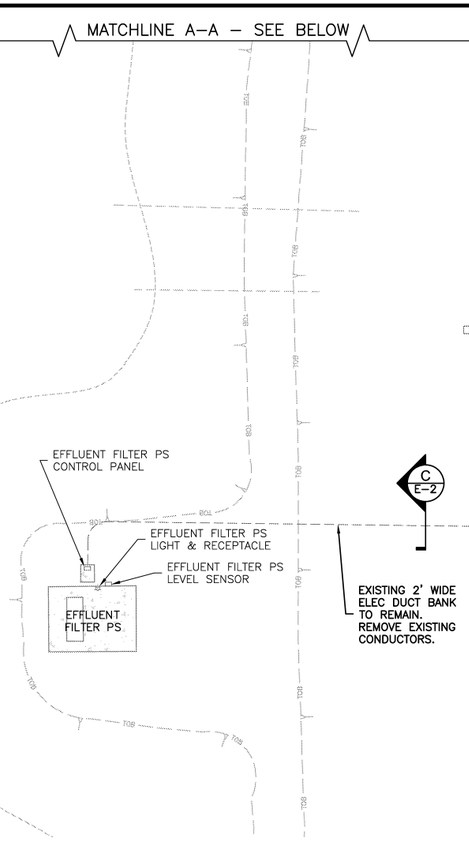
E–1

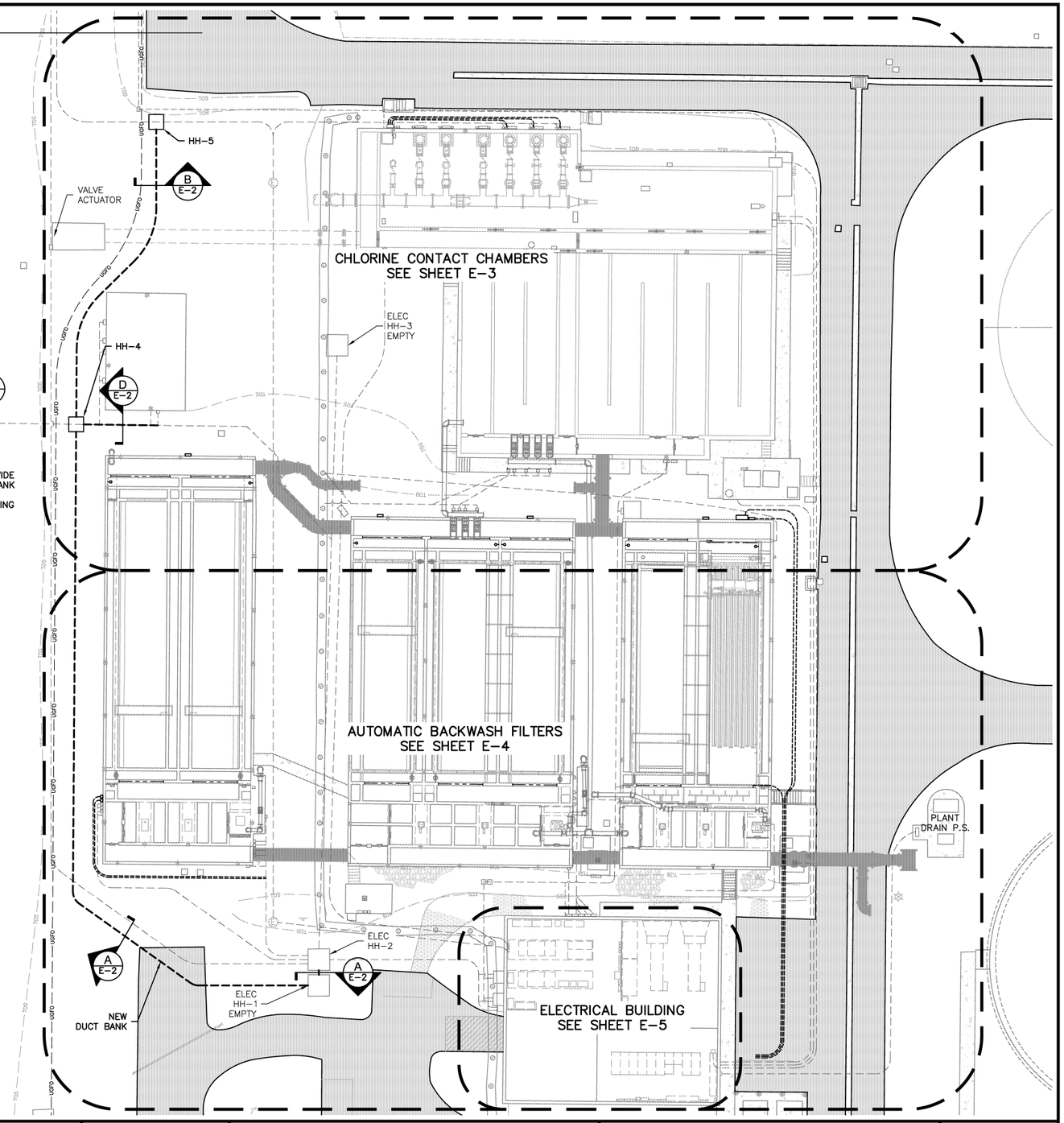
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

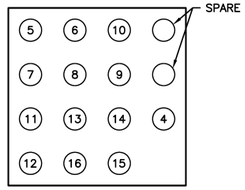
0 20' 40'

NOTES:
1. UTILIZE EXISTING CONDUIT AND WIRE SCHEDULE (C-13 TO C-16) WITH EXISTING ELECTRICAL SITE PLANS (C-9 TO C-12) TO DETERMINE REQUIRED ELECTRICAL AND INSTRUMENTATION RELOCATES. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
2. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL EXPOSE AND VERIFY EXISTING CONDUIT AND WIRE. ANY DEVIATIONS SHALL BE REPORTED TO THE ENGINEER.
3. IN CONJUNCTION WITH OVERALL PHASING PLAN REFERENCED ON SHEETS G-4 & G-5, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE COUNTY AND ENGINEER FOR REVIEW AND APPROVAL TO RELOCATE THE EXISTING WIRE AND CONDUIT AS SHOWN ON THE DRAWINGS, INCLUDING PROVISIONS FOR TEMPORARY SERVICE.
4. CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND SIGNALS TO ENSURE UNINTERRUPTED SERVICE.
5. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SHUT DOWNS WITH PLANT PERSONNEL.
6. CONTRACTOR SHALL PROVIDE NEW CABLES IN RELOCATED DUCT BANKS. SPLICES SHALL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
7. CONDUIT SIZE & CONDUCTORS SHOWN IN DUCT BANK DETAIL SHALL BE THE SAME AS SHOWN ON CONDUIT AND WIRE SCHEDULE (C-13 TO C-16).
8. ALL CONDUIT SHALL CONTAIN AN EQUIPMENT GROUND CONDUCTOR.
9. INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE LATEST NATIONAL ELECTRIC CODE.
10. ABANDONED DUCT BANKS SHOWN ONLY RELATE TO NEW WORK. REFER TO CONDUIT AND WIRE SCHEDULE (C-13 TO C-16) FOR ADDITIONAL DUCT BANKS TO BE ABANDONED.
11. CONDUIT BELOW GRADE OR IN DUCT BANK SHALL BE PVC SCH 80. ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM. ALL PVC UNDERGROUND CONDUITS SHALL TRANSITION TO RIGID ALUMINUM CONDUIT PRIOR TO CONDUIT TRANSITION FROM HORIZONTAL TO VERTICAL. ALL EXTERIOR VERTICAL CONDUITS ARE AL. PROVIDE AL TO PVC FITTING FOR TRANSITION BETWEEN AL & PVC CONDUIT. PROVIDE BITUMASTIC COATING ON AL CONDUIT WHEN IN CONTACT WITH EARTH OR CONCRETE.



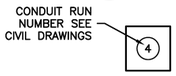




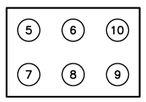


A SECTION – SCALE: NTS

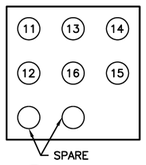
CONDUIT RUN NUMBER SEE CIVIL DRAWINGS



B SECTION – SCALE: NTS



C SECTION – SCALE: NTS



D SECTION – SCALE: NTS

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL OVERALL SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

E-2

PLOTTED: July 29, 2010 9:34 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\E-2 ELECTRICAL OVERALL SITE PLAN.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

0 10' 20'

EXIST DUCT BANK TO REMAIN

EXIST DUCT BANK TO BE ABANDONED

HANDHOLE HH-5 CUT EXIST DUCT BANK (4/E-6)

NEW DUCT BANK

PROVIDE 2-#12, #12 GND, 3/4" COND TO EXIST PANEL LP FOR MOTOR SPACE HEATER (TYP OF 3)

PROVIDE 3-20A 1P CB'S IN EXIST PANEL LP

EFFLUENT WETWELL AND REUSE PUMP STATION

CHLORINE CONTACT CHAMBER #3

CCC BYPASS

CHLORINE CONTACT CHAMBER #2

CHLORINE CONTACT CHAMBER #1

DISK FILTERS

B E-2

HANDHOLE HH-4 CUT EXIST DUCT BANK (4/E-6)

EXIST DUCT BANK TO BE ABANDONED

REMOVE AND REPLACE W/ NEW DUCT BANK

C E-2

3/C #10 TC, 1" COND (TYP)

D E-2

CABLE BY MFG (TYP)

FLOWMETER PANEL 6 & 7

IC-F

LP-F

NEW DUCT BANK

A E-2

NEW PIPING (TYP)

1-2/C #16 SHIELDED PAIR, 1" COND

2-2/C #16 SHIELDED PAIR, 1" COND (TYP)

FLOWMETER PANEL 5

FLOWMETER PANEL 3 & 4

AUTOMATIC BACKWASH FILTERS NO. 6 & 7

FLOWMETER SENSOR 7 (1/E-6)

REFER TO DWG E-4 FOR CONTINUATION

FLOWMETER SENSOR 6 (1/E-6)

FLOWMETER SENSOR 5 (1/E-6)

FLOWMETER SENSOR 4 (1/E-6)

FLOWMETER SENSOR 3 (1/E-6)

AUTOMATIC BACKWASH FILTERS NO. 3, 4 & 5

INSTRUMENT BOX IC-F

RATE OF FLOW CONTROLLER

FLOWMETER PANEL 1 & 2

PANEL LP-F

FLOWMETER SENSOR 2 (1/E-6)

FLOWMETER SENSOR 1 (1/E-6)

AUTOMATIC BACKWASH FILTERS NO. 1 & 2

7-2/C #16 SHIELDED CABLES, 1-1 1/2" COND TO EXIST PANEL PI/5 SHOWN ON SHT E-5

1-3/C #10 TC, 1" COND TO EXIST PANEL LE SHOWN ON SHT E-5

REFER TO DWG E-4 FOR CONTINUATION

PANEL LP-F
30 AMP 120/240V
1ø PANEL, NEMA 4X
W/ 6-20A 1P CB
& 6-SPARES

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL CHLORINE CONTACT CHAMBER ENLARGED SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

E-3

PLOTTED: July 29, 2010 9:35 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\E-3 ELECTRICAL CHLORINE CONTACT CHAMBER.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

REFER TO DWG E-3 FOR CONTINUATION

AUTOMATIC BACKWASH FILTERS NO. 6 & 7

AUTOMATIC BACKWASH FILTERS NO. 3, 4 & 5

AUTOMATIC BACKWASH FILTERS NO. 1 & 2

REFER TO DWG E-3 FOR CONTINUATION

7-2/C #16 SHIELDED CABLES, 1-1 1/2" COND TO EXIST PANEL PI/5 SHOWN ON SHT E-5

1-3/C #10 TC, 1" COND TO EXIST PANEL LE SHOWN ON SHT E-5

0 10' 20'

TYPICAL PANEL MOUNTING DETAIL (2 / E-6)

RELOCATED ABW #6 FESTOON PANEL

RELOCATED FLOCCULATOR #5 PANEL

1-3/C #10 TC & #12 GND 1" COND TO EXIST MCC-E1 SHOWN ON SHT E-5

NEW WEIR GATE #1 ELECTRIC ACTUATOR

EXIST ABW #6 FESTOON PANEL TO BE RELOCATED

EXIST FLOCCULATOR #5 PANEL TO BE RELOCATED

ROUTE NEW CONDUIT UNDER PROPOSED 54" PIPE

PLANT DRAIN P.S.

COND 58, 59 REROUTED

NEW DUCT BANK

(A / E-2)

(A / E-2)

NEW DUCT BANK

ELECTRICAL BUILDING

REFER TO DWG E-5 FOR CONTINUATION

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188

PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

MANATEE COUNTY FLORIDA

FILTER PIPING IMPROVEMENTS AT THE SOUTHWEST WATER RECLAMATION FACILITY

FOR

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL ABW FILTERS ENLARGED SITE PLAN

PROJECT STATUS
BID SET
JULY 2010

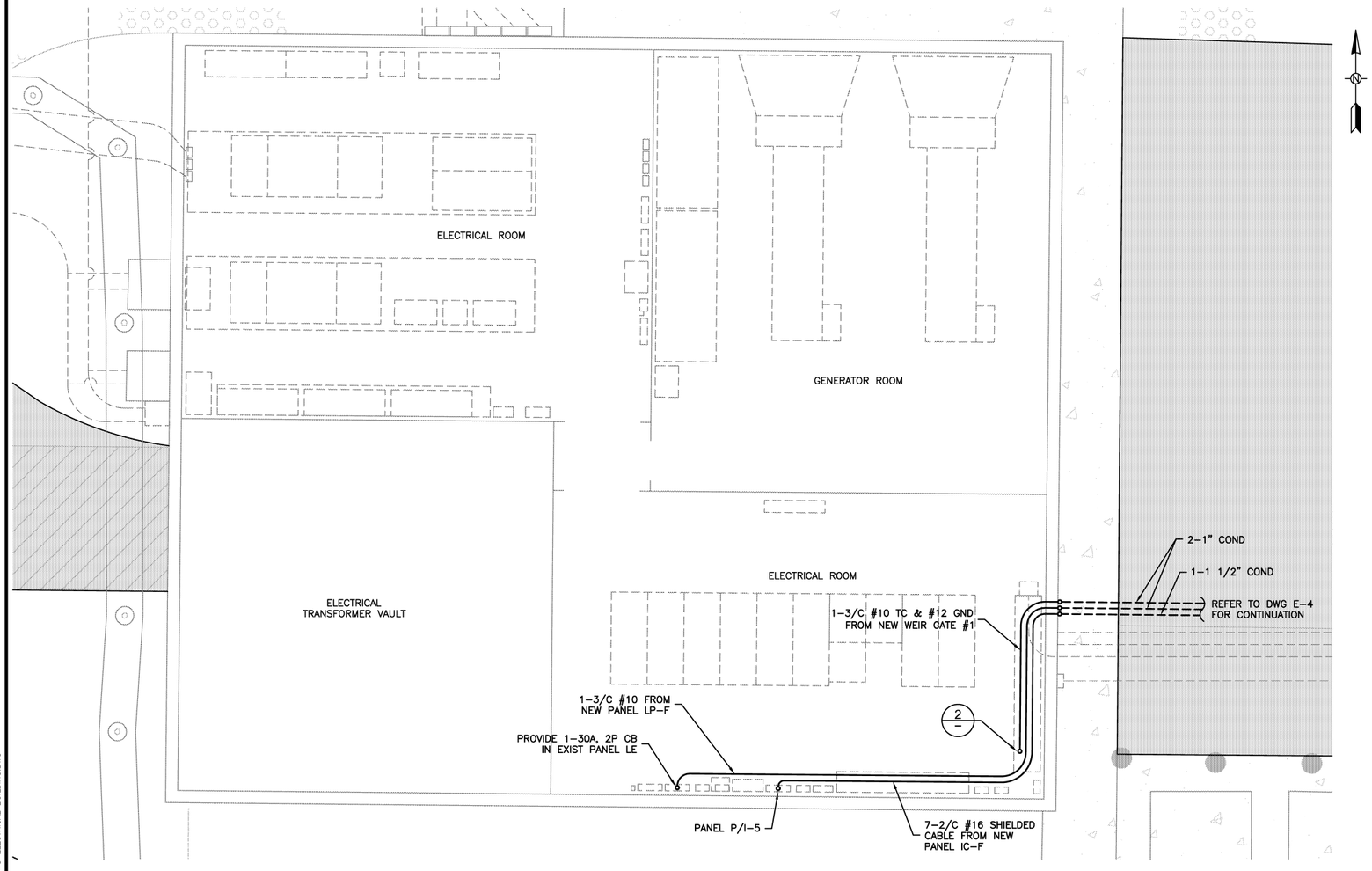
E-4

PLOTTED July 29, 2010 9:35 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WALL\CADD\E-4 ELECTRICAL ABW FILTERS ENLARGED SITE PLAN.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

GENERAL NOTES:

1. ALL PVC SCH 80 UNDERGROUND CONDUITS SHALL TRANSITION TO RIGID ALUMINUM CONDUIT PRIOR TO CONDUIT TRANSITION FROM HORIZONTAL TO VERTICAL. ALL EXTERIOR VERTICAL CONDUITS ARE RIGID ALUMINUM.
2. CONDUIT IS SHOWN DIAGRAMMATICALLY, CONTRACTOR SHALL COORDINATE WITH EXISTING CONDITIONS FOR FINAL CONDUIT ROUTING.



EXISTING ELECTRICAL BUILDING – ENLARGED PLAN

1 / – DETAIL
SCALE: 3/16"=1'-0"

SPACE		SPACE		SPACE	
				EF #7-1 (VFD ROOM ROOF FAN)	54" VALVE METER VAULT
ABW #6 SLUICE GATE	ABW #6 FES-TOON	PANEL P4 MAINT BLDG	SLUICE GATE #3		SLUICE GATE #4
				FLASH MIXER #2	FLASH MIXER #1
CL-2 CONTACT BASIN DRAIN PUMP DP-1		5 HP UNFILTER SUBMERSIBLE CCC			
SLUICE GATE #5	ABW FILTER #1	ABW FILTER #4	ROOF A/C #1	REUSE PUMP #3	ELR & LDR RELAY COMP
MAIN LUGS		MAIN LUGS			SPARE / SPARE
					SPACE

SPACE	50HP SPRINKLER SUBMERSIBLE DEEP WELL INJECTION PUMP MOTOR EAST
SPACE	IRRIGATION PUMP #2

REPLACE SPARE WITH 20A, 3P CIRCUIT BREAKER FOR NEW WEIR GATE #1

EXISTING MCC-E1 FRONT VIEW

2 / – DETAIL
SCALE: NTS

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

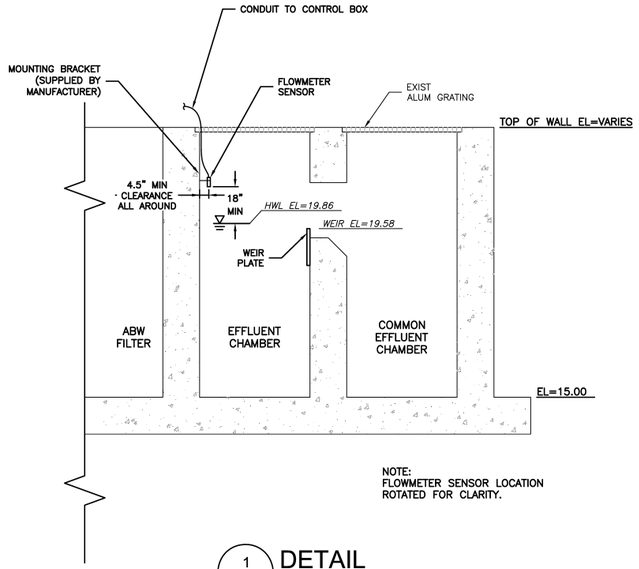
FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL BUILDING

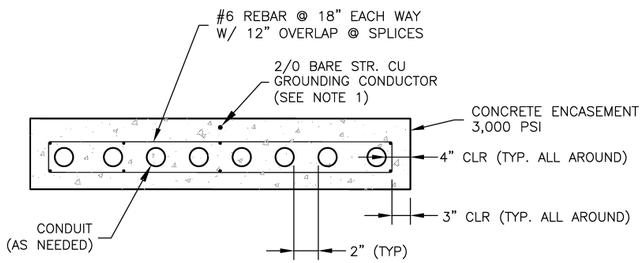
PROJECT STATUS
BID SET
JULY 2010

E-5

PLOTTED July 29, 2010 9:35 AM PLOTTED BY: TERRY SONNENBERG
X:\MANATEE PROJECTS\12009188 SWWRF PIPE ADJ FILTER WA#14\CADD\E-5 ELECTRICAL BUILDING.DWG

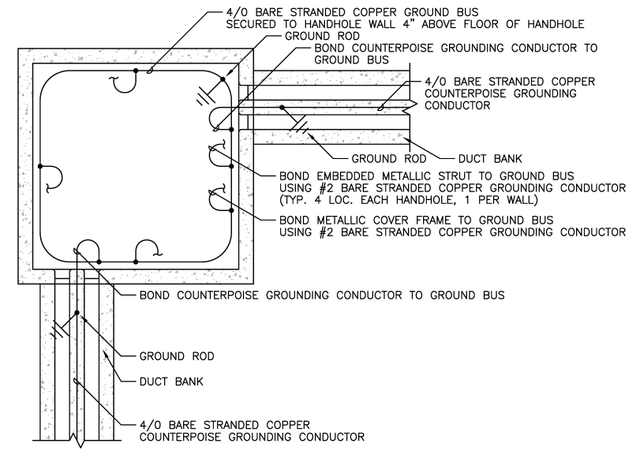


1 / E-2 **DETAIL**
FLOWMETER SENSOR
SCALE: NTS

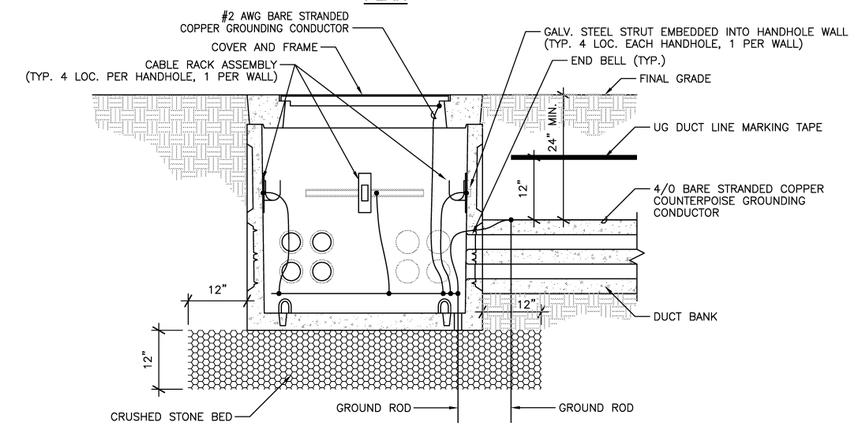


NOTES:
1. PROVIDE GROUND RODS ON MAXIMUM 100 FT. CENTERS BETWEEN DUCTBANK TERMINATIONS AT HANDHOLES AND STRUCTURES. BOND GROUNDING CONDUCTOR TO GROUND SYSTEMS AT EACH END OF DUCT BANK VIA EXOTHERMIC WELDING PROCESS.

5 / – **DETAIL**
TYPICAL ELECTRICAL DUCT BANK
SCALE: NTS



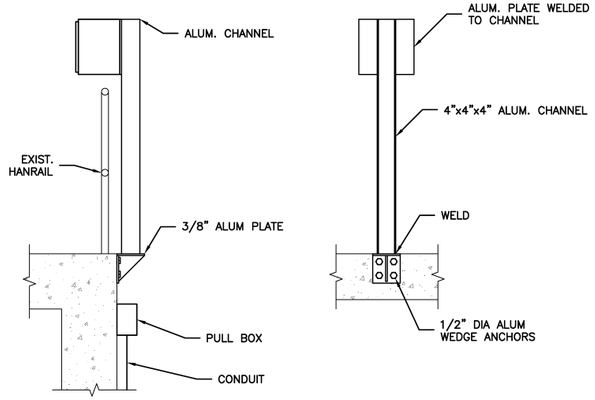
PLAN



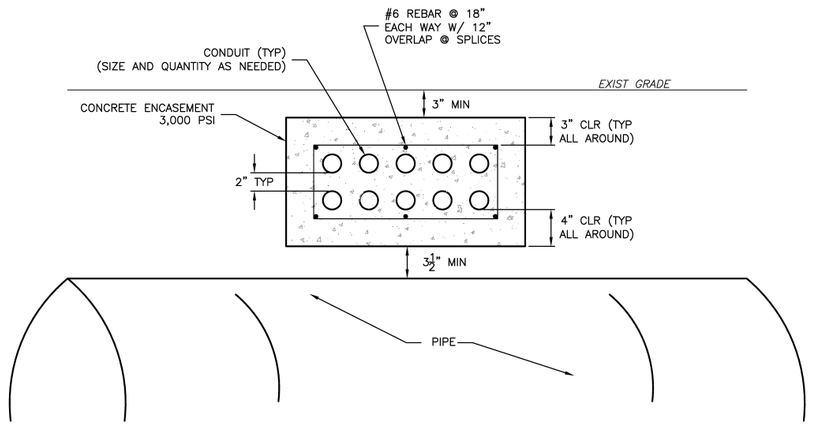
SECTION

NOTES:
1. PROVIDE GROUND RODS ON MAXIMUM 100 FT. CENTERS BETWEEN DUCTBANK TERMINATIONS AT HANDHOLES AND STRUCTURES. BOND GROUNDING CONDUCTOR TO GROUND SYSTEMS AT EACH END OF DUCT BANK VIA EXOTHERMIC WELDING PROCESS.
2. PROVIDE 3'-6" SQ. BY DEPTH AS NECESSARY (I.D.) PRECAST CONCRETE HANDHOLE, H-20 TRAFFIC RATED WITH H-20 TRAFFIC RATED COVER, RACKING, AND GROUNDING, UTILITY OLDCASTLE PRECAST INC./VAULT 444-LA SERIES WITH 332P SERIES COVER. COVER SHALL HAVE 2'-9 1/2" SQ. CLEAR OPENING, SHALL BE CONSTRUCTED OF STEEL DIAMOND PLATE WITH STEEL FRAME AND HARDWARE, ALL GALVANIZED AFTER FABRICATION, SHALL BE H-20 TRAFFIC LOAD RATED IN OFF-STREET LOCATIONS NOT SUBJECT TO HIGH DENSITY TRAFFIC, SHALL BE HINGED (180° OPENING) WITH SPRING ASSIST OPENING MECHANISM, AND SHALL BE EQUIPPED WITH PENTAHEAD BOLT SECURED LOCKING LATCH, AND RECESSED LIFT HANDLE, AND SHALL BE EQUIPPED WITH 3" HIGH BLOCK LETTER LEGEND, "ELECTRIC" FOR HANDHOLE.

4 / – **DETAIL**
TYPICAL ELECTRICAL HANDHOLE
SCALE: NTS



2 / E-4 **DETAIL**
TYPICAL PANEL MOUNTING
SCALE: NTS



3 / – **DETAIL**
TYPICAL ELECTRICAL DUCT BANK ABOVE PIPE (SHOWN WITH 10 CONDUITS)
SCALE: NTS

VISTA SYSTEMS
P.O. BOX 74
Palm Harbor, FL 34682-0074
No. 29519

URS
7650 West Courtney Campell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
			REVISIONS

URS JOB NUMBER 12009188
PM: D. WILCOX
ENG: R. TOTH
DRW: T. SONNENBERG
FILE SAVE DATE: July 15, 2010

ROBERT L. TOTH
FLORIDA P.E. NO. 36541

FILTER PIPING IMPROVEMENTS
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL DETAILS

PROJECT STATUS
BID SET
JULY 2010

E-6