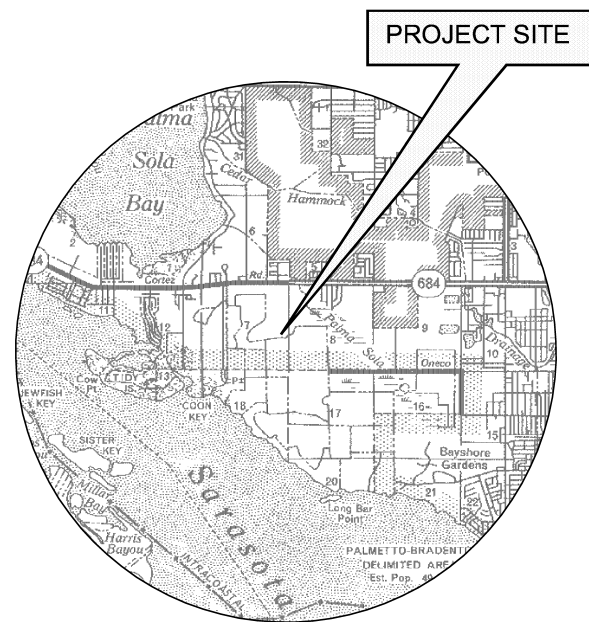


10MG RECLAIMED WATER STORAGE TANK AT THE SOUTHWEST WATER RECLAMATION FACILITY

MANATEE COUNTY PROJECT NO. 6036082

NOVEMBER 2009

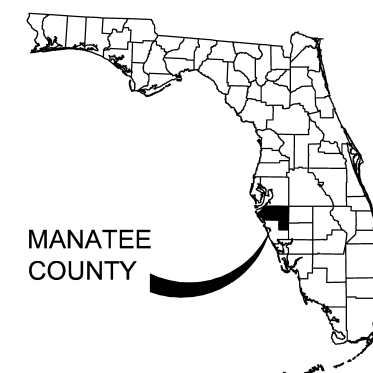
BID SET



PROJECT MAP
N.T.S.



SITE LOCATION



MANATEE COUNTY

PLOTTED November 17, 2009 2:18 PM, PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554_SWRF_TOMGAL_GST_WAFR\CADD\G-1 COVER SHEET.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

NOVEMBER 2009 - BID SET
 10MG RECLAIMED WATER STORAGE TANK AT THE SOUTHWEST WATER RECLAMATION FACILITY, MANATEE COUNTY PROJECT NO. 6036082

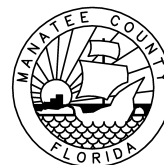


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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER
12008554
PM: D. WILCOX
ENG: R. AVALOS
DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 2, 2009

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



10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

PROJECT STATUS
BID SET
NOVEMBER 2009

G-1

GENERAL NOTES

- 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).
- 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.
- 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.
- THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK AND SHALL COMPLY WITH ALL STATE, COUNTY, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.
- UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS, THE CONTRACTOR SHALL PROVIDE SUITABLE BORROW MATERIAL, APPROVED BY THE ENGINEER, AND INSTALL SAID MATERIAL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH COUNTY STANDARDS OR AS DIRECTED BY THE ENGINEER.
- 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.
- 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.
- 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
- 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).
- 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.)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXCESS MATERIAL AND THE PROPER DISPOSAL OF THE SAME.
- 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.
- THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOILS ARE STABILIZED.
- 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.
- 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.
- A VERTICAL CLEARANCE OF 18 INCHES SHALL BE MAINTAINED BETWEEN SANITARY SEWERS AND WATER MAINS. IF CLEARANCE CANNOT BE ACHIEVED BY ADJUSTING THE WATER MAIN, THE WATER MAIN SHALL BE ENCASED IN CONCRETE FOR A REQUIRED 10 FEET ON EACH SIDE OF THE CONFLICT POINT. SUFFICIENT LENGTHS DI PIPE MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE AND MECHANICALLY RESTRAINED. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE STAGGERED AS FAR APART AS POSSIBLE WITH NOT LESS THAN 10 FEET BETWEEN ANY TWO JOINTS. SPECIAL STRUCTURAL SUPPORTS FOR THE MAINS MAY BE REQUIRED. ALTERNATIVELY, THE SANITARY SEWERS, STORM SEWERS, FORCE MAINS AND RECLAIMED WATER MAINS AT THE CROSSING CAN BE PLACED IN SLEEVES OR ENCASED IN CONCRETE TO OBTAIN THE EQUIVALENT OF THE 10 FEET SEPARATION BETWEEN JOINTS.
- A LATERAL SEPARATION OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER.
- ALL PROPOSED MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.
- THE CONTRACTOR IS TO "PROTECT IN PLACE" THE FACILITIES THAT ARE NOT TO BE RELOCATED AND/OR REMOVED, BUT ARE TO REMAIN IN PLACE.
- THE CONTRACTOR IS TO ADJUST OR RELOCATE ALL THE FACILITIES THAT FALL IN CONFLICT IN ACCORDANCE WITH COUNTY STANDARDS.
- ANY EXISTING WELLS DISCOVERED DURING CONSTRUCTION SHALL BE KEPT IN A WATERTIGHT MANNER AND BE PROTECTED DURING ALL CONSTRUCTION ACTIVITIES.
- ALL EXOTIC NUISANCE PLANT SPECIES ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED PER SECTION 715.4 OF THE MANATEE COUNTY LDC.

- 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.
- ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.
- CONTRACTOR SHALL SUBMIT DEWATERING PLAN IN A TIMELY MANNER TO SWFWMD SARASOTA OFFICE (TEL: 941-377-3722) FOR APPROVAL PRIOR TO COMMENCING DEWATERING ACTIVITIES.

FINAL SITE PLAN NOTES

- THE PROJECT SITE IS WITHIN THE MANATEE COUNTY SOUTHWEST WATER RECLAMATION FACILITY (SWWRF), A WASTEWATER TREATMENT PLANT.
- THIS PROJECT PROPOSES CONSTRUCTION OF A NEW 10 MILLION GALLON RECLAIMED WATER STORAGE TANK BETWEEN THE FACILITIES NORTH STORAGE POND AND COUNTY LAB BUILDING. THE TANK DIAMETER IS 200 FEET (31,400 SF). THE TANK SIDEWALL HEIGHT IS 42.5 FEET ABOVE FINISHED GRADE. THE TOP OF THE TANK'S DOMED ROOF IS 60.7 FEET ABOVE FINISHED GRADE.

THE PROJECT INCLUDES A STORMWATER POND, ASSOCIATED PIPING, ELECTRICAL WORK, AND LANDSCAPING AND IRRIGATION FOR A ROADWAY BUFFER ON 66TH STREET WEST.

NO NEW EMPLOYEES ARE ASSOCIATED WITH THE PROJECT. NO NEW PARKING OR PAVEMENT IS PROPOSED. NO NEW LANDSCAPING OR IRRIGATION ARE PROPOSED AT THE TANK SINCE CLEAR ACCESS AROUND THE TANK MUST BE MAINTAINED FOR OPERATION, MAINTENANCE, AND REPAIRS.
- THE PROJECT WORK AREA IS 3.42 ACRES AND LIES WITHIN THE SOUTHWEST WATER RECLAMATION FACILITY. THE SWWRF LIES WITHIN A 329 ACRE PARCEL (#5182410109) THAT ALONG WITH AN ADDITIONAL 39.8 ACRE PARCEL (#5182410208) ALSO CONTAIN A COUNTY GOLF COURSE, LAB BUILDING, MAINTENANCE AREA, AND OFFICES.
- EXISTING ZONING FOR THE PARCEL IS PDPI. FUTURE LAND USE IS P/SP-1.
- ELEVATIONS ARE BASED ON THE TEMPORARY BENCHMARK (TBM) INDICATED AND ARE SHOWN IN FEET.
- THE PROJECT AREA LIES IN FLOOD ZONE C, AS IDENTIFIED ON FEMA FLOOD MAP PANEL 120153 0328 B. THE PROJECT IS NOT LOCATED WITHIN A 100-YEAR FLOODPLAIN OR FLOODWAY.
- PROPOSED PROJECT LIGHTING AT THE 10MG TANK CONSISTS OF THREE (3) POLE MOUNTED SHOEBOX TYPE LIGHT FIXTURES (WITH FULL CUTOFF) THAT MATCH THE EXISTING SITE LIGHTING.
- ALL OPEN SPACE WILL BE MAINTAINED BY MANATEE COUNTY.
- THE PROJECT IS LOCATED WITHIN AN EXISTING COUNTY WASTEWATER TREATMENT PLANT. THERE ARE NO WETLANDS WITHIN 100 FEET OF THE PROJECT LIMITS.
- THERE CURRENTLY IS NO CERTIFIED BOUNDARY SURVEY FOR THIS SITE. THE SWWRF LIES WITHIN A 329 ACRE COUNTY OWNED PARCEL (#5182410109) THAT ALONG WITH AN ADDITIONAL 39.8 ACRE COUNTY OWNED PARCEL (#5182410208) CONTAINS A COUNTY GOLF COURSE, LAB BUILDING, MAINTENANCE AREA, AND OFFICES. BOUNDARY INFORMATION SHOWN ON THE DRAWINGS IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY.
- THERE ARE NO PERENNIAL STREAMS ON SITE.
- THERE ARE NO EASEMENTS, RESERVATIONS, OR DEDICATIONS PROPOSED FOR THIS PROJECT.
- THERE ARE NO KNOWN WELLS WITHIN THE PROJECT LIMITS. EXISTING WELLS THAT ARE DISCOVERED SHALL BE KEPT IN A WATERTIGHT MANNER AND BE PROTECTED DURING ALL CONSTRUCTION ACTIVITIES.
- THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS ON THIS SITE.
- THERE ARE NO KNOWN HISTORIC SITES OR STRUCTURES ON SITE.
- THERE ARE NO EXISTING OR PROPOSED PUBLIC USE AREAS ON THE PROJECT SITE.
- NO STREETS, TRAVELWAYS, PEDESTRIAN WALKWAYS, SIDEWALKS, BIKEWAYS, OR DRIVEWAYS ARE PROPOSED
- NO SIGNS ARE PROPOSED.
- THE CURRENT PLANT GDP IS PDPI-09-11.
- NO TRAFFIC CONTROL PLAN OR FDOT RESPONSE IS REQUIRED. NO NEW SITE ACCESS IS PROPOSED AND NO NEW TRAFFIC IS ASSOCIATED WITH THIS PROJECT.
- THE PROJECT DOES NOT REQUIRE POTABLE WATER OR SEWERAGE. FIRE PROTECTION IS NOT REQUIRED SINCE THE STRUCTURE IS A CONCRETE TANK FILLED WITH WATER.
- THERE ARE NO PRIVATELY CONTROLLED AREAS INCLUDED IN THE PROJECT.
- STATEMENT OF SCHOOL NEEDS - NO RESIDENTIAL UNITS ARE INCLUDED IN THE PROJECT.
- NO ADDITIONAL EMPLOYEES OR VEHICLES ARE ASSOCIATED WITH THIS PROJECT. NO NEW PARKING AND/OR LOADING AREAS ARE PROPOSED.
- THERE ARE NO WATERCOURSES OR OTHER SIGNIFICANT NATURAL FEATURES IN THE PROJECT AREA.
- THERE ARE NO OPEN SPACES, PUBLIC AREAS, OR RECREATION ON THE SITE.
- A LANDSCAPE BUFFER IS PROVIDED ADJACENT TO 66TH STREET WEST. NO LANDSCAPING IS PROVIDED AROUND THE TANK SINCE A CLEAR AREA IS REQUIRED FOR OPERATION, MAINTENANCE, AND REPAIRS.
- NO WASTE WILL BE GENERATED FROM THE 10MG TANK.

CONSTRUCTION SCHEDULE
ESTIMATED START DATE: FEBRUARY 2010
ESTIMATED END DATE: JANUARY 2011

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C-1	OVERALL SITE PLAN & HORIZONTAL CONTROL
C-2	PAVING GRADING AND DRAINAGE
C-3	YARD PIPING PLAN
C-4	YARD PIPING PLAN
C-5	YARD PIPING PLAN
C-6	CIVIL DETAILS
C-6A	CIVIL DETAILS
C-7	CIVIL DETAILS
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MECHANICAL	
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E-6	REVERSE CONTROL SYSTEMS AS BUILT SP-10 CONTROL PANEL
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LANDSCAPE & IRRIGATION	
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IR-1	IRRIGATION PLAN
IR-2	IRRIGATION DETAILS & NOTES
IR-3	IRRIGATION DETAILS

CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.

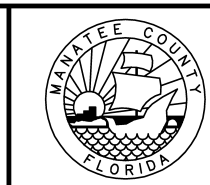
PLOTTED November 17, 2009 2:18 PM PLOTTED BY: SONENBERG, TERRY
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 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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NO.	BY	DATE	DESCRIPTION
REVISIONS			

URS JOB NUMBER
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PM: D. WILCOX
ENG: R. AVALOS
DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 12, 2009

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



10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

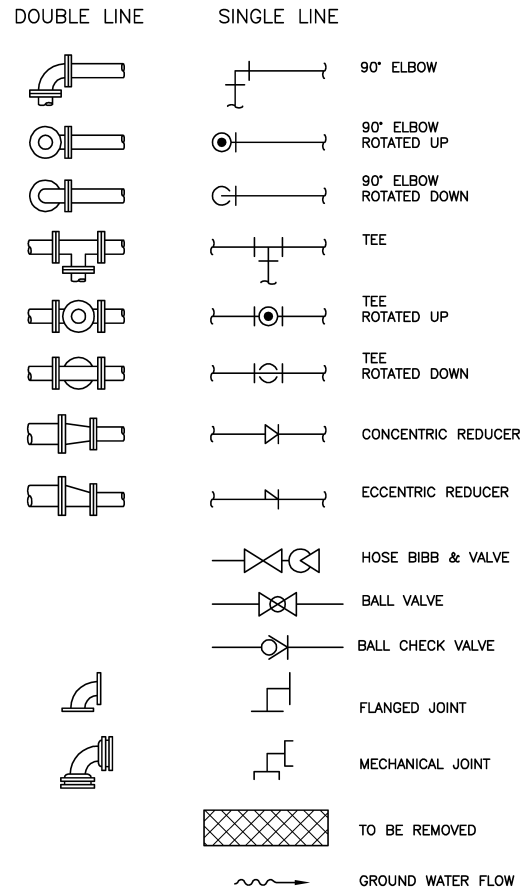
GENERAL NOTES, FINAL SITE PLAN
NOTES AND INDEX TO SHEETS

PROJECT STATUS
BID SET
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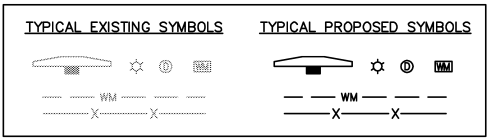
G-2

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

PIPE AND FITTING SYMBOLS



LEGEND OF SYMBOLS

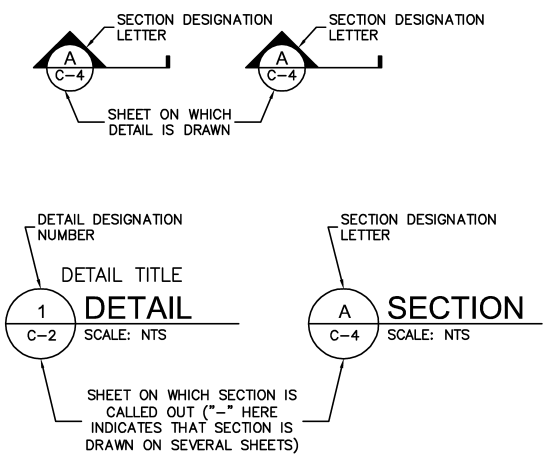


- BP = BACKFLOW PREVENTER
 - B = BOLLARD or POST
 - BCA = BOX, CABLE TELEVISION
 - BEU = BOX, ELECTRIC UTILITY
 - BT = BOX, TELEPHONE
 - DL = DECORATIVE LIGHT POLE
 - FH = FIRE HYDRANT
 - FP = FLAGPOLE
 - FE = FLARED END SECTION
 - GI = GRATE INLET
 - GL = GROUND LIGHT
 - GA = GUY ANCHOR
 - LC = LIGHT POLE, CONCRETE
 - LM = LIGHT POLE, METAL
 - LP = LIGHT POLE, WOOD
 - M = MAILBOX
 - ME = MANHOLE, ELECTRIC
 - MGT = MANHOLE, GREASE TRAP
 - MS = MANHOLE, SANITARY SEWER
 - MSS = MANHOLE, STORM SEWER
 - MT = MANHOLE, TELEPHONE
 - ME = METER, ELECTRIC
 - MG = METER, GAS
 - MWR = METER, RECLAIMED WATER
 - MW = METER, WATER
 - MES = MITERED END SECTION
 - MW = MONITORING WELL
 - PC = PEDESTRIAN CROSSING SIGNAL
 - SC = SANITARY CLEANOUT
 - SBI = SCHEDULE B-2 ITEM
 - TR = TELEPHONE RISER
 - TS = TRAFFIC SIGN
 - TSB = TRAFFIC SIGNAL BOX
 - TSP = TRAFFIC SIGNAL POLE
 - WC = CONCRETE
 - AS = ASPHALT
 - CP = CONCRETE PAVERS
 - B = 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
 - O---O---O--- = 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
 - RW--- = 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

ABBREVIATIONS:

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

DETAIL & SECTION DESIGNATION



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

PLOTTED November 17, 2009 2:19 PM. PLOTTED BY: SONNENBERG, TERRY. X:\MANATEE PROJECTS\12008554 - SWRF - 10MGAL - GST - WAFA\GADD\G-3 SYMBOLS AND ABBREVIATIONS.DWG

7650 West Courtney Campell Causeway
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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER 12008554
PM: D. WILCOX
ENG: R. AVALOS
DRW: J. SCHEUERMAN
FILE SAVE DATE: November 2, 2009

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

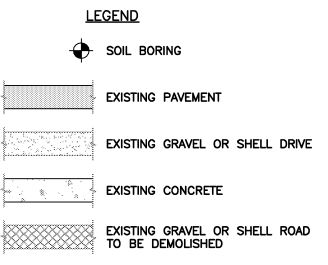
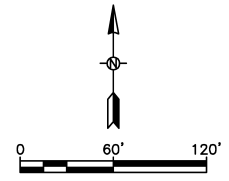
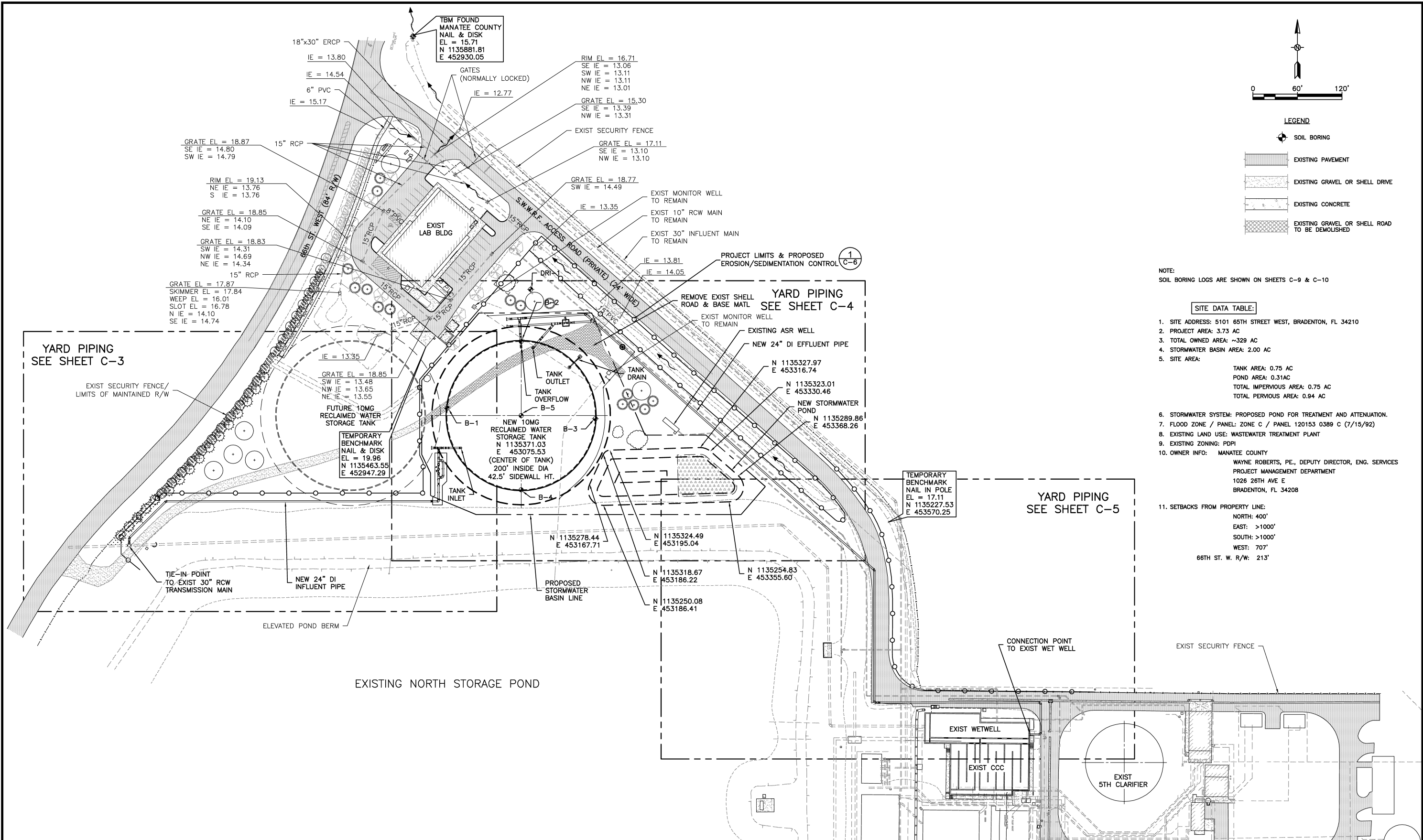
10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROJECT STATUS
BID SET
NOVEMBER 2009

SYMBOLS AND ABBREVIATIONS

G-3

PLOTTED November 17, 2009 2:19 PM. PLOTTED BY: SONNENBERG, TERRY
 X:\MANATEE PROJECTS\12008554_SWRF_TONGAL_GST_WAFR\CADD\C-1 OVERALL SITE PLAN & HORIZONTAL CONTROL.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 1" = 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



NOTE:
SOIL BORING LOGS ARE SHOWN ON SHEETS C-9 & C-10

SITE DATA TABLE:

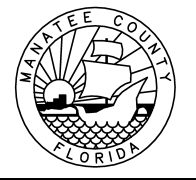
1. SITE ADDRESS: 5101 65TH STREET WEST, BRADENTON, FL 34210
2. PROJECT AREA: 3.73 AC
3. TOTAL OWNED AREA: ~329 AC
4. STORMWATER BASIN AREA: 2.00 AC
5. SITE AREA:
 - TANK AREA: 0.75 AC
 - POND AREA: 0.31AC
 - TOTAL IMPERVIOUS AREA: 0.75 AC
 - TOTAL PERVIOUS AREA: 0.94 AC
6. STORMWATER SYSTEM: PROPOSED POND FOR TREATMENT AND ATTENUATION.
7. FLOOD ZONE / PANEL: ZONE C / PANEL 120153 0389 C (7/15/92)
8. EXISTING LAND USE: WASTEWATER TREATMENT PLANT
9. EXISTING ZONING: PDP1
10. OWNER INFO: MANATEE COUNTY
WAYNE ROBERTS, PE., DEPUTY DIRECTOR, ENG. SERVICES
PROJECT MANAGEMENT DEPARTMENT
1026 26TH AVE E
BRADENTON, FL 34208
11. SETBACKS FROM PROPERTY LINE:
 - NORTH: 400'
 - EAST: >1000'
 - SOUTH: >1000'
 - WEST: 707'
 - 66TH ST. W. R/W: 213'

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URS JOB NUMBER
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 PM: D. WILCOX
 ENG: B. HANDJIEV
 DRW: J. SCHEUERMAN
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November 11, 2009

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



**10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY**
 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

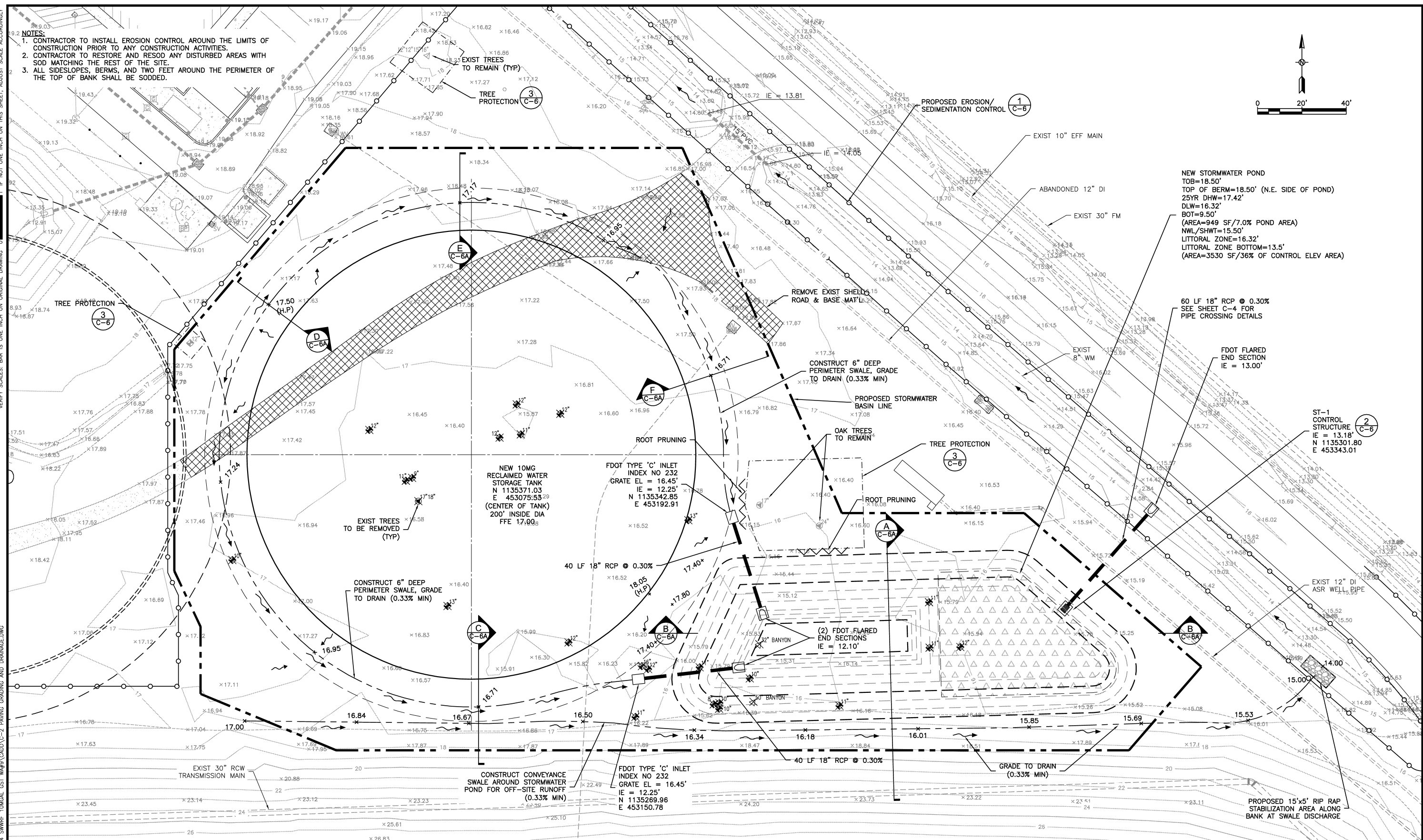
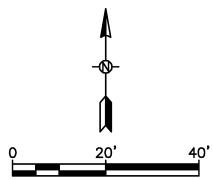
**OVERALL SITE PLAN &
HORIZONTAL CONTROL**

PROJECT STATUS
BID SET
NOVEMBER 2009

C-1

PLOTTED November 17, 2009 2:50 PM, PLOTTED BY: SONNENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 - SWRF - TONGAL (GSI WAFA) CAD\2 - PAVING GRADING AND DRAINAGE.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0"=1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

- NOTES:**
- CONTRACTOR TO INSTALL EROSION CONTROL AROUND THE LIMITS OF CONSTRUCTION PRIOR TO ANY CONSTRUCTION ACTIVITIES.
 - CONTRACTOR TO RESTORE AND RESOD ANY DISTURBED AREAS WITH SOD MATCHING THE REST OF THE SITE.
 - ALL SIDESLOPES, BERMS, AND TWO FEET AROUND THE PERIMETER OF THE TOP OF BANK SHALL BE SODDED.



NEW STORMWATER POND
 TOB=18.50'
 TOP OF BERM=18.50' (N.E. SIDE OF POND)
 25YR DHW=17.42'
 DLW=16.32'
 BOT=9.50'
 (AREA=949 SF/7.0% POND AREA)
 NWL/SHWT=15.50'
 LITTORAL ZONE=16.32'
 LITTORAL ZONE BOTTOM=13.5'
 (AREA=3530 SF/36% OF CONTROL ELEV AREA)

60 LF 18" RCP @ 0.30%
 SEE SHEET C-4 FOR
 PIPE CROSSING DETAILS

FDOT FLARED
 END SECTION
 IE = 13.00'

ST-1
 CONTROL
 STRUCTURE
 IE = 13.18'
 N 1135301.80
 E 453343.01

NEW 10MG
 RECLAIMED WATER
 STORAGE TANK
 N 1135371.03
 E 453075.53
 (CENTER OF TANK)
 200' INSIDE DIA
 FFE 17,095

FDOT TYPE 'C' INLET
 INDEX NO 232
 GRATE EL = 16.45'
 IE = 12.25'
 N 1135342.85
 E 453192.91

40 LF 18" RCP @ 0.30%
 (H.P.)

FDOT TYPE 'C' INLET
 INDEX NO 232
 GRATE EL = 16.45'
 IE = 12.25'
 N 1135269.96
 E 453150.78

CONSTRUCT CONVEYANCE
 SWALE AROUND STORMWATER
 POND FOR OFF-SITE RUNOFF
 (0.33% MIN)

CONSTRUCT 6" DEEP
 PERIMETER SWALE, GRADE
 TO DRAIN (0.33% MIN)

CONSTRUCT 6" DEEP
 PERIMETER SWALE, GRADE
 TO DRAIN (0.33% MIN)

PROPOSED STORMWATER
 BASIN LINE

REMOVE EXIST SHELLS
 ROAD & BASE MAT'L

PROPOSED EROSION/
 SEDIMENTATION CONTROL

EXIST 10" EFF MAIN

ABANDONED 12" DI

EXIST 30" FM

EXIST 8" WM

ROOT PRUNING

OAK TREES
 TO REMAIN

TREE PROTECTION

ROOT PRUNING

(2) FDOT FLARED
 END SECTIONS
 IE = 12.10'

GRADE TO DRAIN
 (0.33% MIN)

PROPOSED 15'x5' RIP RAP
 STABILIZATION AREA ALONG
 BANK AT SWALE DISCHARGE

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 ENG: K. WESTBERRY
 DRW: T. SONNENBERG
 FILE SAVE DATE:
 November 17, 2009

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

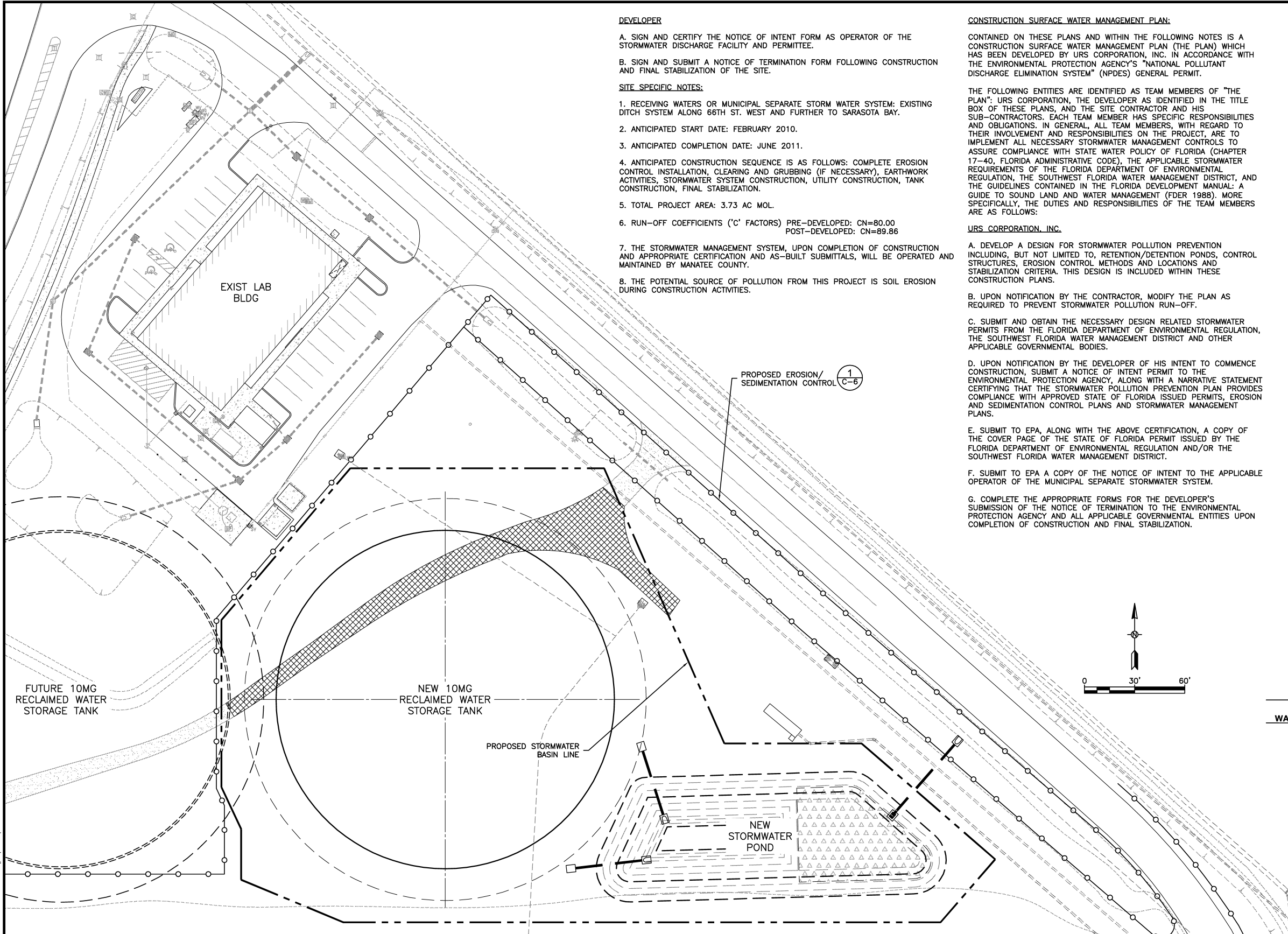
10MG RECLAIMED WATER STORAGE TANK
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 MANATEE COUNTY, FLORIDA

PROJECT STATUS
 BID SET
 NOVEMBER 2009
PAVING GRADING AND DRAINAGE

C-2

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

PLOTTED November 17, 2009 2:20 PM. PLOTTED BY: SONNENBERG, TERRY. X:\MANATEE PROJECTS\12008554_SWRF_10MGAL_GST_WAFR\CADD\C-2A CONSTRUCTION SURFACE WATER MANAGEMENT PLAN.DWG



DEVELOPER

- A. SIGN AND CERTIFY THE NOTICE OF INTENT FORM AS OPERATOR OF THE STORMWATER DISCHARGE FACILITY AND PERMITTEE.
- B. SIGN AND SUBMIT A NOTICE OF TERMINATION FORM FOLLOWING CONSTRUCTION AND FINAL STABILIZATION OF THE SITE.

SITE SPECIFIC NOTES:

1. RECEIVING WATERS OR MUNICIPAL SEPARATE STORM WATER SYSTEM: EXISTING DITCH SYSTEM ALONG 66TH ST. WEST AND FURTHER TO SARASOTA BAY.
2. ANTICIPATED START DATE: FEBRUARY 2010.
3. ANTICIPATED COMPLETION DATE: JUNE 2011.
4. ANTICIPATED CONSTRUCTION SEQUENCE IS AS FOLLOWS: COMPLETE EROSION CONTROL INSTALLATION, CLEARING AND GRUBBING (IF NECESSARY), EARTHWORK ACTIVITIES, STORMWATER SYSTEM CONSTRUCTION, UTILITY CONSTRUCTION, TANK CONSTRUCTION, FINAL STABILIZATION.
5. TOTAL PROJECT AREA: 3.73 AC MOL.
6. RUN-OFF COEFFICIENTS ('C' FACTORS) PRE-DEVELOPED: CN=80.00
POST-DEVELOPED: CN=89.86
7. THE STORMWATER MANAGEMENT SYSTEM, UPON COMPLETION OF CONSTRUCTION AND APPROPRIATE CERTIFICATION AND AS-BUILT SUBMITTALS, WILL BE OPERATED AND MAINTAINED BY MANATEE COUNTY.
8. THE POTENTIAL SOURCE OF POLLUTION FROM THIS PROJECT IS SOIL EROSION DURING CONSTRUCTION ACTIVITIES.

CONSTRUCTION SURFACE WATER MANAGEMENT PLAN:

CONTAINED ON THESE PLANS AND WITHIN THE FOLLOWING NOTES IS A CONSTRUCTION SURFACE WATER MANAGEMENT PLAN (THE PLAN) WHICH HAS BEEN DEVELOPED BY URS CORPORATION, INC. IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY'S "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM" (NPDES) GENERAL PERMIT.

THE FOLLOWING ENTITIES ARE IDENTIFIED AS TEAM MEMBERS OF "THE PLAN": URS CORPORATION, THE DEVELOPER AS IDENTIFIED IN THE TITLE BOX OF THESE PLANS, AND THE SITE CONTRACTOR AND HIS SUB-CONTRACTORS. EACH TEAM MEMBER HAS SPECIFIC RESPONSIBILITIES AND OBLIGATIONS. IN GENERAL, ALL TEAM MEMBERS, WITH REGARD TO THEIR INVOLVEMENT AND RESPONSIBILITIES ON THE PROJECT, ARE TO IMPLEMENT ALL NECESSARY STORMWATER MANAGEMENT CONTROLS TO ASSURE COMPLIANCE WITH STATE WATER POLICY OF FLORIDA (CHAPTER 17-40, FLORIDA ADMINISTRATIVE CODE), THE APPLICABLE STORMWATER REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION, THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, AND THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FDER 1988). MORE SPECIFICALLY, THE DUTIES AND RESPONSIBILITIES OF THE TEAM MEMBERS ARE AS FOLLOWS:

URS CORPORATION, INC.

- A. DEVELOP A DESIGN FOR STORMWATER POLLUTION PREVENTION INCLUDING, BUT NOT LIMITED TO, RETENTION/DETENTION PONDS, CONTROL STRUCTURES, EROSION CONTROL METHODS AND LOCATIONS AND STABILIZATION CRITERIA. THIS DESIGN IS INCLUDED WITHIN THESE CONSTRUCTION PLANS.
- B. UPON NOTIFICATION BY THE CONTRACTOR, MODIFY THE PLAN AS REQUIRED TO PREVENT STORMWATER POLLUTION RUN-OFF.
- C. SUBMIT AND OBTAIN THE NECESSARY DESIGN RELATED STORMWATER PERMITS FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION, THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND OTHER APPLICABLE GOVERNMENTAL BODIES.
- D. UPON NOTIFICATION BY THE DEVELOPER OF HIS INTENT TO COMMENCE CONSTRUCTION, SUBMIT A NOTICE OF INTENT PERMIT TO THE ENVIRONMENTAL PROTECTION AGENCY, ALONG WITH A NARRATIVE STATEMENT CERTIFYING THAT THE STORMWATER POLLUTION PREVENTION PLAN PROVIDES COMPLIANCE WITH APPROVED STATE OF FLORIDA ISSUED PERMITS, EROSION AND SEDIMENTATION CONTROL PLANS AND STORMWATER MANAGEMENT PLANS.
- E. SUBMIT TO EPA, ALONG WITH THE ABOVE CERTIFICATION, A COPY OF THE COVER PAGE OF THE STATE OF FLORIDA PERMIT ISSUED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION AND/OR THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
- F. SUBMIT TO EPA A COPY OF THE NOTICE OF INTENT TO THE APPLICABLE OPERATOR OF THE MUNICIPAL SEPARATE STORMWATER SYSTEM.
- G. COMPLETE THE APPROPRIATE FORMS FOR THE DEVELOPER'S SUBMISSION OF THE NOTICE OF TERMINATION TO THE ENVIRONMENTAL PROTECTION AGENCY AND ALL APPLICABLE GOVERNMENTAL ENTITIES UPON COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION.

CONTRACTOR

- A. DURING CONSTRUCTION, ASSURE COMPLIANCE WITH THE DESIGNED CONSTRUCTION SURFACE WATER MANAGEMENT PLANS PREPARED BY URS CORPORATION.
- B. NOTIFY URS CORPORATION, INC. AND THE DEVELOPER IN WRITING OF ANY NON-STORMWATER POLLUTION SOURCES WHICH ARE BEING STORED, OR OTHERWISE USED DURING THE CONSTRUCTION OF THE PROJECT, I.E., FERTILIZERS, FUELS, PESTICIDES, OTHER CHEMICALS. THIS NOTIFICATION SHOULD BE ACCOMPANIED WITH THE CONTRACTOR'S DESIGN AND METHODS TO PREVENT POLLUTION RUN-OFF FROM THESE SOURCES.
- C. INSPECT ALL EROSION CONTROL DEVICES (MINIMUM WEEKLY), REPAIR AND/OR REPLACE AS NEEDED.
- D. INSPECT ALL STORMWATER POINTS OF DISCHARGE AND NOTIFY URS CORPORATION IN WRITING IF EROSION CONTROL AND STORMWATER MANAGEMENT MEASURES ARE INEFFECTIVE, AND IF REVISION TO THE STORMWATER MANAGEMENT PLAN ARE NEEDED.
- E. INITIATE SITE STABILIZATION MEASURES AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
- F. SUBMIT A CERTIFICATION, UTILIZING YOUR COMPANY LETTERHEAD, TO URS CORPORATION AND TO THE DEVELOPER AS FOLLOWS:

"I CERTIFY UNDER PENALTY OF LAW, THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORMWATER DISCHARGES ASSOCIATED WITH ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION."

CONTRACTOR _____
ADDRESS _____
CITY, STATE, ZIP _____
TELEPHONE NUMBER _____
DATE _____
SIGNATURE _____
NAME & TITLE _____

- G. MAINTAIN A COPY OF THE CONSTRUCTION PLANS, WHICH INCLUDE THE CONSTRUCTION SURFACE WATER MANAGEMENT PLANS, ON-SITE.
- H. UNDERTAKE ALL REASONABLE MEASURES TO ASSURE THAT SILTED OR OTHERWISE POLLUTED STORMWATER IS NOT ALLOWED TO DISCHARGE FROM THE SITE.
- I. USE THE DETENTION PONDS AS SEDIMENTATION BASINS OR CREATE SEDIMENTATION BASINS AS NEEDED.

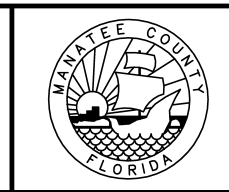
SIGNATURE _____ DATE _____
WAYNE ROBERTS, P.E. DEPUTY DIRECTOR ENGINEERING SERVICES
PRINT NAME TITLE
AUTHORIZED REPRESENTATIVE FOR:
MANATEE COUNTY PROJECT MANAGEMENT

URS
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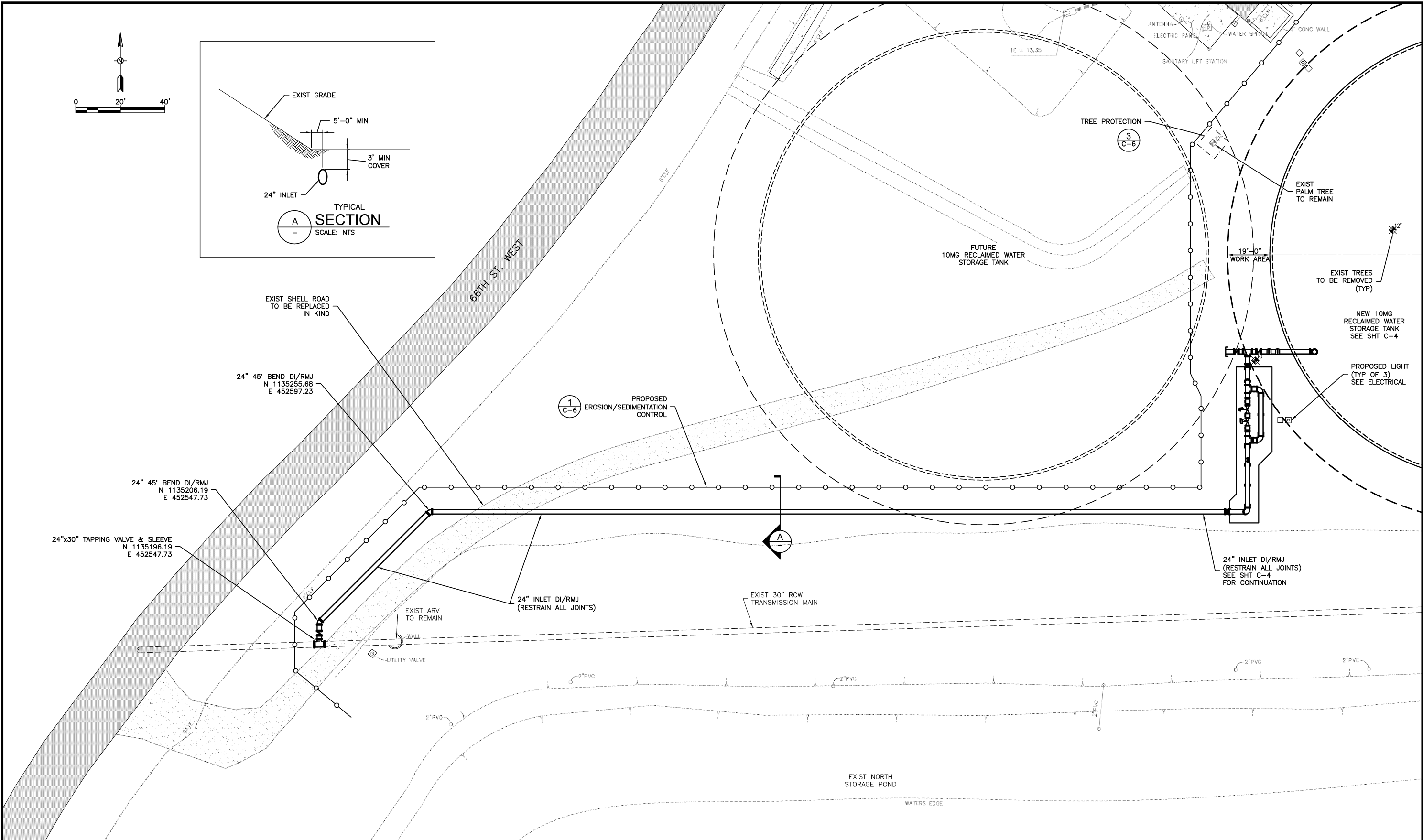
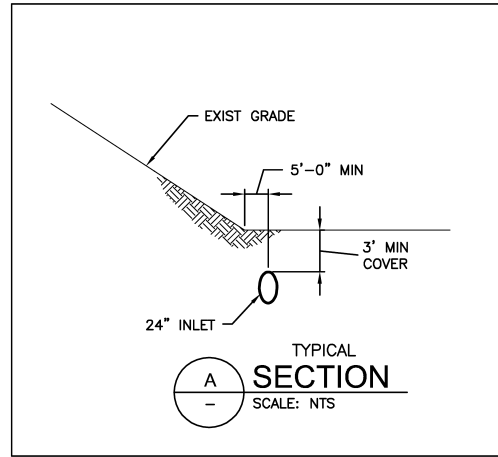
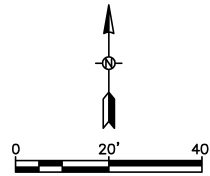
10MG RECLAIMED WATER STORAGE TANK
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MANATEE COUNTY, FLORIDA

CONSTRUCTION SURFACE WATER
MANAGEMENT PLAN

PROJECT STATUS
BID SET
NOVEMBER 2009

C-2A

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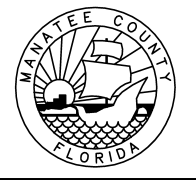


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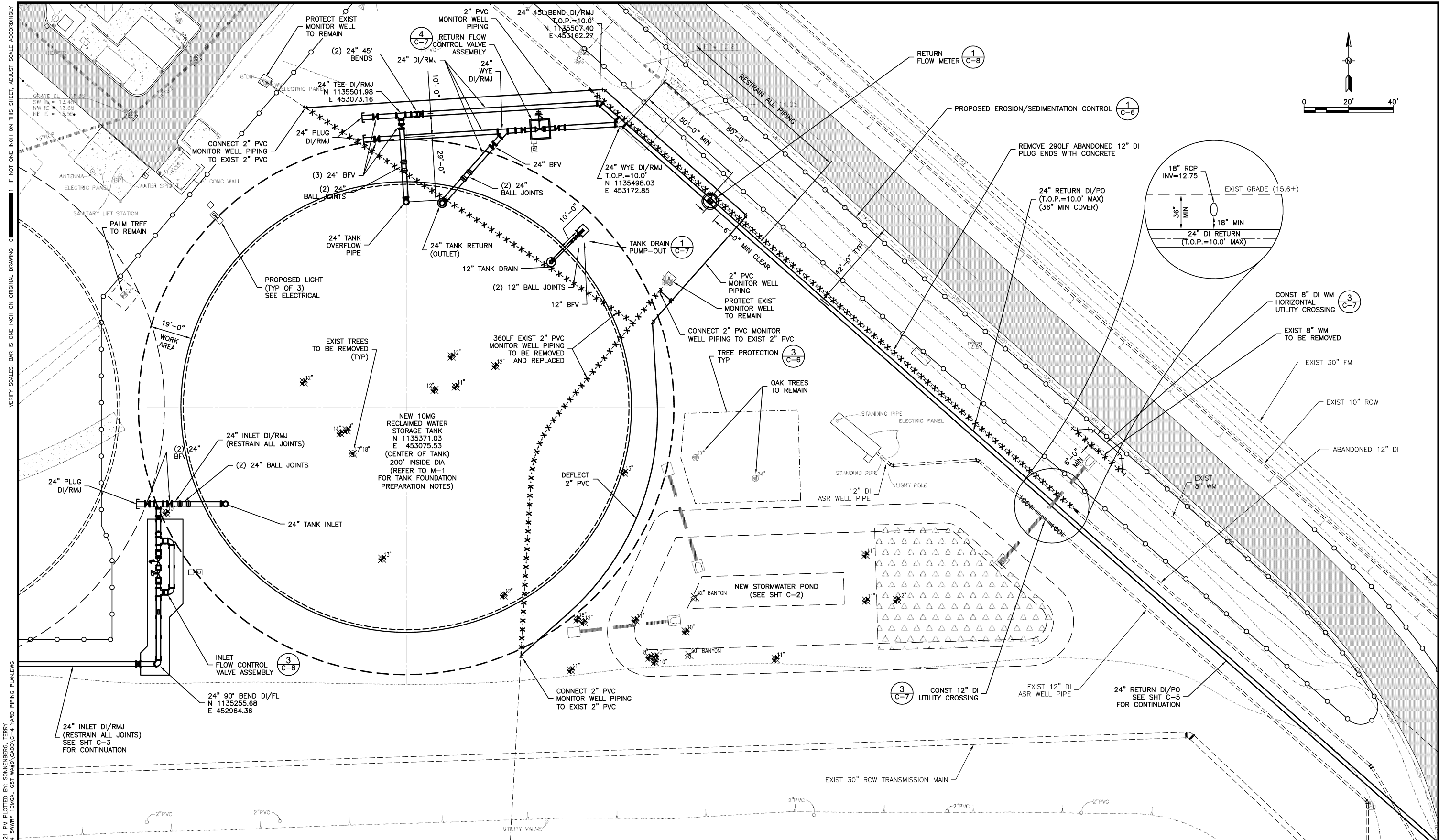
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10MG RECLAIMED WATER STORAGE TANK
 AT THE
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 FOR
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 MANATEE COUNTY, FLORIDA

YARD PIPING PLAN

PROJECT STATUS
 BID SET
 NOVEMBER 2009
C-3



PLOTTED November 17, 2009 2:21 PM, PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF TONGAL GST WAFR\GADD\C-4 YARD PIPING PLANDWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0' 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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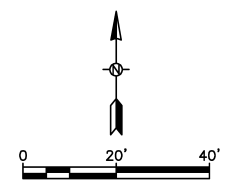
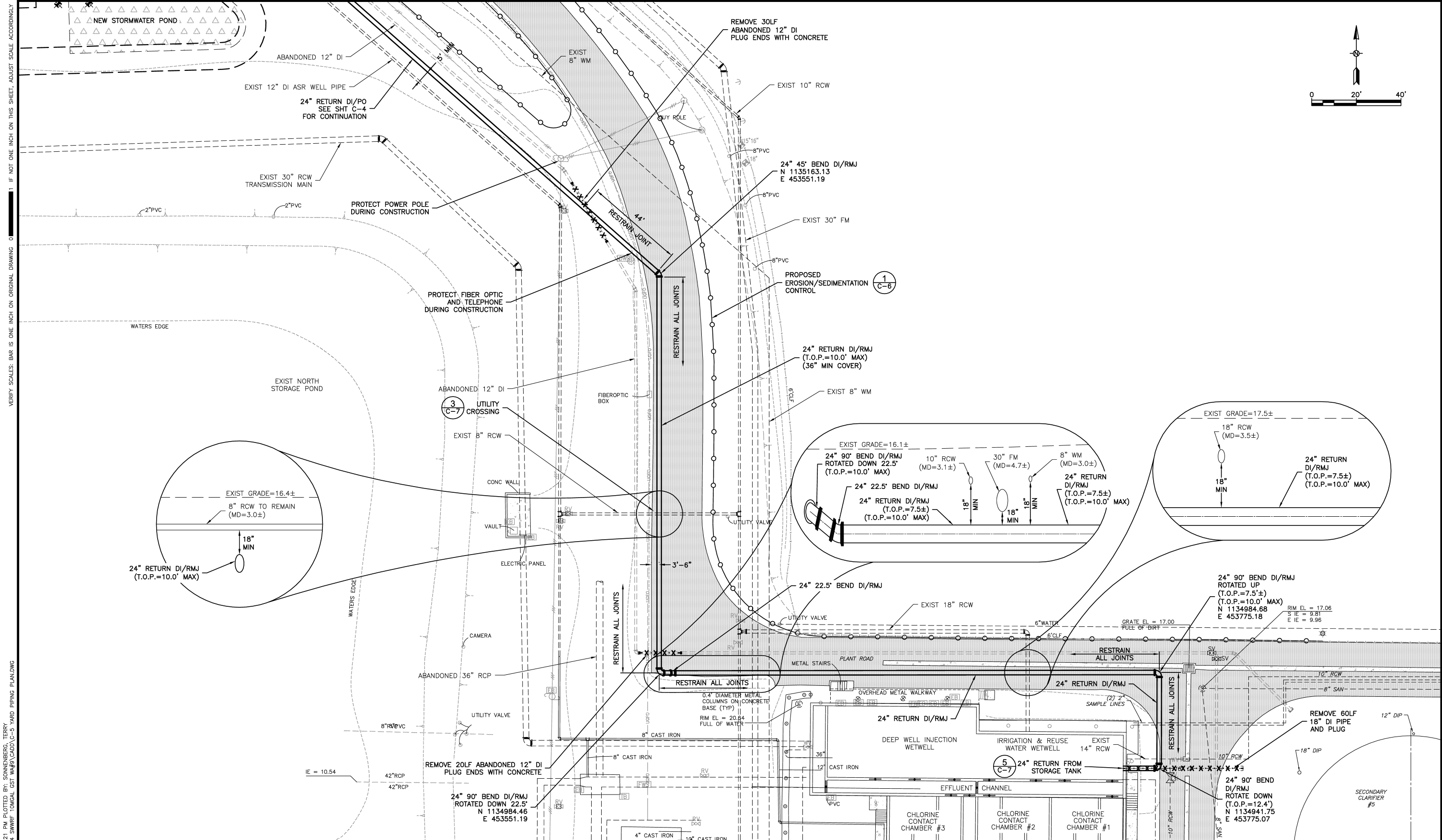


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 MANATEE COUNTY, FLORIDA

PROJECT STATUS
 BID SET
 NOVEMBER 2009

YARD PIPING PLAN

C-4




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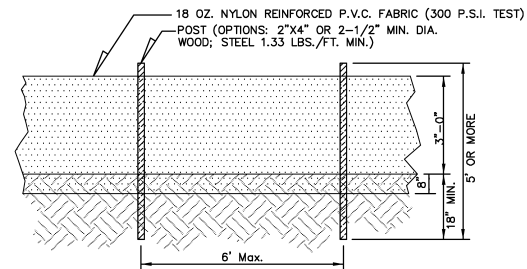
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 MANATEE COUNTY, FLORIDA

YARD PIPING PLAN

PROJECT STATUS
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 NOVEMBER 2009

C-5

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
 PLOTTED November 17, 2009 2:22 PM, PLOTTED BY: SCHNEIDER, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF\10MG CLS WAFR\CADD\C-6 CIVIL DETAILS.DWG



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

NOTES:

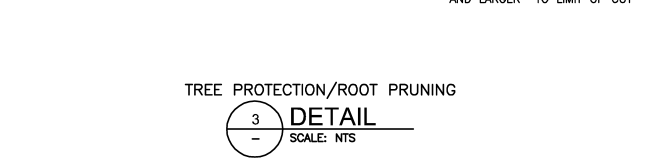
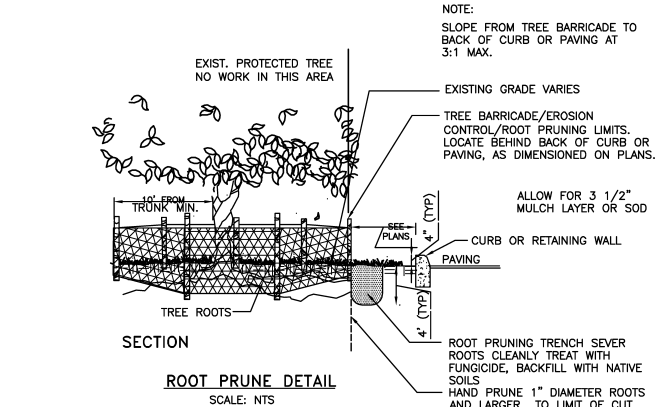
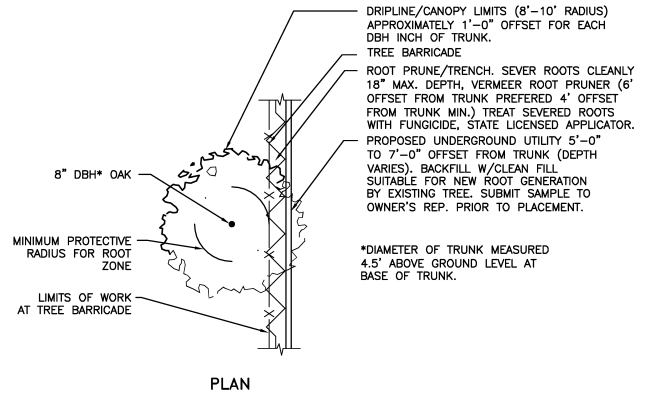
- CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES. THE DEVICE SHALL BE INSTALLED IN THE LOCATIONS ON THE DRAWINGS AND ANYWHERE ELSE THERE IS A POTENTIAL FOR EROSION AS SEDIMENT TO EXIT THE WORK AREA.
- CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE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

EROSION/SEDIMENTATION CONTROL DEVICE

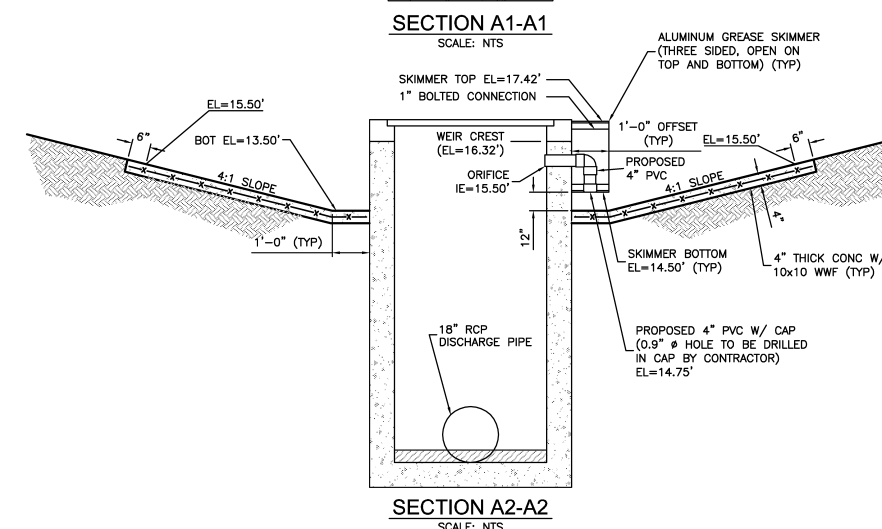
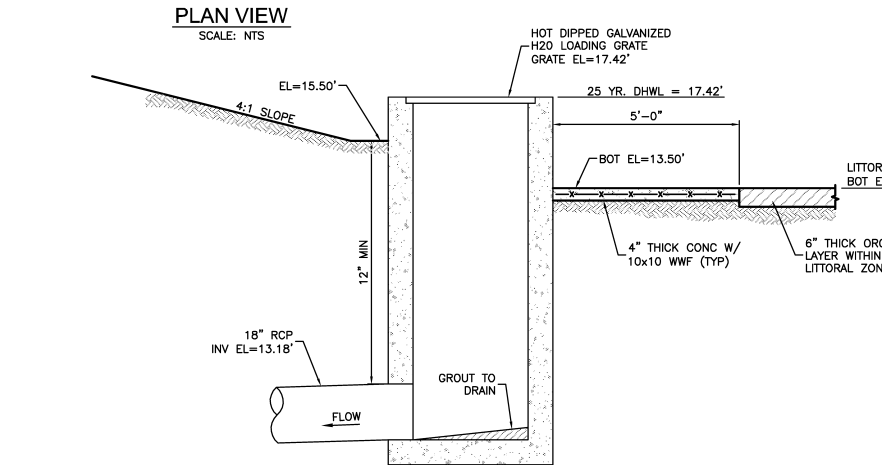
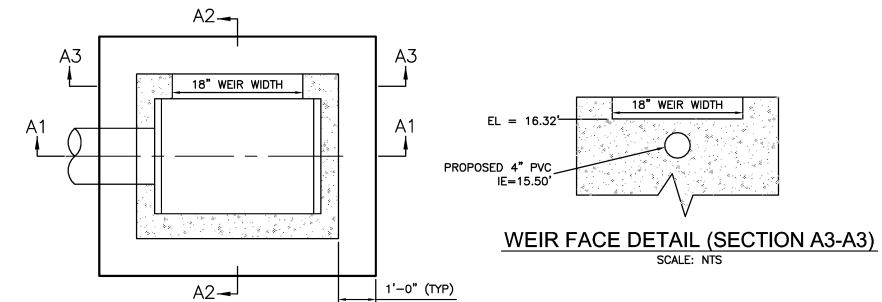


ROOT PRUNING/TREE BARRICADE NOTES:

- PRIOR TO SITE CLEARING OR OTHER CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL LOCATE TREES TO BE PRESERVED AND THOSE TO BE REMOVED. TREES TO BE REMOVED SHALL BE CLEARLY IDENTIFIED BY SURVEY FLAGGING A MINIMUM OF 72 HOURS PRIOR TO REMOVAL. TREES DESIGNATED FOR REMOVAL MUST BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO REMOVAL.
- CONTRACTOR SHALL PROTECT TREES FROM DAMAGE BY PROVIDING TREE BARRICADES ERRECTED PRIOR TO SITE CLEARING OR OTHER CONSTRUCTION ACTIVITIES, INCLUDING ROOT PRUNING. TREE BARRICADES SHALL BE INSPECTED BY OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE 72 HOURS ADVANCE NOTICE TO OWNER'S REPRESENTATIVE TO SCHEDULE AN INSPECTION OF BARRICADES AND ROOT PRUNING.
- TREE BARRICADES WILL REMAIN THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION. CONTRACTOR SHALL MONITOR THE CONDITION OF THE BARRICADES DAILY AND REPAIR ANY BREACHES IMMEDIATELY.
- CONTRACTOR SHALL PROTECT THE ROOT SYSTEMS OF TREES TO BE PRESERVED. CONSTRUCTION MATERIALS, FILL, DEBRIS, EXCAVATED MATERIALS AND CHEMICALS SHALL NOT BE STORED WITHIN THE TREE BARRICADE AREAS. EQUIPMENT SHALL NOT BE PARKED NOR OPERATED WITHIN BARRICADES UNLESS EXPRESSLY PERMITTED FOR IRRIGATION PIPE OR ELECTRICAL CONDUIT INSTALLATION. HAND EXCAVATE IRRIGATION TRENCHES OR TUNNEL UNDER EXISTING ROOTS OF PROTECTED TREES AND GRAND TREES.
- TREE BARRICADES MAY BE TEMPORARILY REMOVED TO ALLOW FOR LIMITED WORK INCLUDING INSTALLATION OF SITE LIGHTING FIXTURES OR IRRIGATION PIPING FOR IRRIGATION OF SHRUB BEDS LOCATED WITHIN TREE BARRICADES. EQUIPMENT ACCESS SHALL BE LIMITED TO THOSE AREAS WITHIN THE BARRICADES THAT ARE ABSOLUTELY ESSENTIAL TO COMPLETE THE WORK AND MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE. BARRICADES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING COMPLETION OF THE WORK.
- THE CONTRACTOR SHALL EMPLOY AN ISA CERTIFIED ARBORIST TO PERFORM OR SUPERVISE ROOT PRUNING, TREE TRIMMING AND APPLICATION OF FERTILIZER AND FUNGICIDE. SUBMIT THE CERTIFIED ARBORIST'S INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFICATION TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PERFORMING THE WORK.
- ALL TREE TRIMMING, ROOT PRUNING, FERTILIZER AND FUNGICIDE APPLICATIONS SHALL BE PERFORMED BY AN ISA CERTIFIED ARBORIST AND STATE LICENSED OPERATOR IN ACCORDANCE WITH FLORIDA STATUTES AND ANSI A300 PARTS 1-4, LATEST EDITIONS.
- CONTRACTOR SHALL LOCATE AND MARK ROOT-PRUNING LOCATIONS FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO TRENCHING. CONTRACTOR SHALL ROOT PRUNE TREES TO BE PRESERVED AS LOCATED ON THE PLANS. ROOT PRUNING SHALL OCCUR AT LOCATIONS SHOWN ON THE PLAN IN A TRENCH 12 INCHES IN WIDTH AND 14 INCHES IN DEPTH. CONTRACTOR SHALL HAND PRUNE ANY ROOTS OVER 1 INCH IN DIAMETER ENCOUNTERED DURING SITE GRADING DEEPER THAN 14 INCHES TO THE LIMIT OF CUT.
- A VERMEER ROOT-PRUNING MACHINE (OR APPROVED EQUAL) SHALL BE USED TO CUT THROUGH THE ROOTS. ALL ROOTS SHALL BE CUT CLEANLY WITH NO FRAYED OR JAGGED CUTS ALLOWED.
- FOLLOWING COMPLETION OF ROOT PRUNING, CONTRACTOR SHALL BACKFILL THE TRENCH WITH NATIVE SOILS. BACKFILLING SHALL OCCUR AT THE END OF EACH DAY. A SOIL DRENCH FUNGICIDE SHALL BE APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE TO THE TRENCH AREAS WITHIN FIVE DAYS FOLLOWING COMPLETION OF ROOT PRUNING.
- FOLLOWING COMPLETION OF ROOT PRUNING AND INSTALLATION OF TREE BARRICADES, THE REMOVAL OF IDENTIFIED TREES SHALL COMMENCE. TREES SHALL BE REMOVED IN A MANNER PREVENTING DISTURBANCE OR DAMAGE TO PRESERVED TREES.
- OFF-SITE DISPOSAL OF TREE BIOMASS INCLUDING TREE TRUNKS, LARGE BRANCHES, AND ROOTS IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY. BURNING OR BURIAL OF BIOMASS ON SITE SHALL NOT BE ALLOWED.
- REPORT TREES DAMAGED BY CONSTRUCTION TO THE OWNER'S REPRESENTATIVE WITHIN 24 HOURS. REPAIR TREES DAMAGED BY CONSTRUCTION OPERATIONS OR REMOVE TREES DETERMINED BY THE OWNER'S REPRESENTATIVE TO BE DAMAGED BEYOND REPAIR. MAKE REPAIR PROMPTLY AFTER DAMAGE OCCURS TO PREVENT PROGRESSIVE DETERIORATION OF DAMAGED TREES. REPAIRS TO OR REMOVAL OF TREES DAMAGED BY CONTRACTOR SHALL BE MADE AT CONTRACTOR'S EXPENSE.



DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOT REMOVE VEGETATION BY GRUBBING OR PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE THAT IS TO REMAIN ON THE SITE. TREE BARRICADES SHALL BE CONSTRUCTED AROUND ALL EXISTING TREES TO REMAIN PRIOR TO COMMENCEMENT OF CONSTRUCTION. TREE BARRICADES SHALL REMAIN IN PLACE UNTIL LAND ALTERATION AND CONSTRUCTION ACTIVITIES ARE COMPLETED. IN AREAS WHERE SPACE LIMITATIONS DO NOT PERMIT BARRICADE CONSTRUCTION PER DETAIL, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.



MODIFIED TYPE 'D' CONTROL STRUCTURE (ST-1)

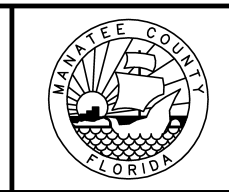


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DRW: J. SCHEUERMAN
FILE SAVE DATE: November 11, 2009

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 FLORIDA P.E. NO. 34942

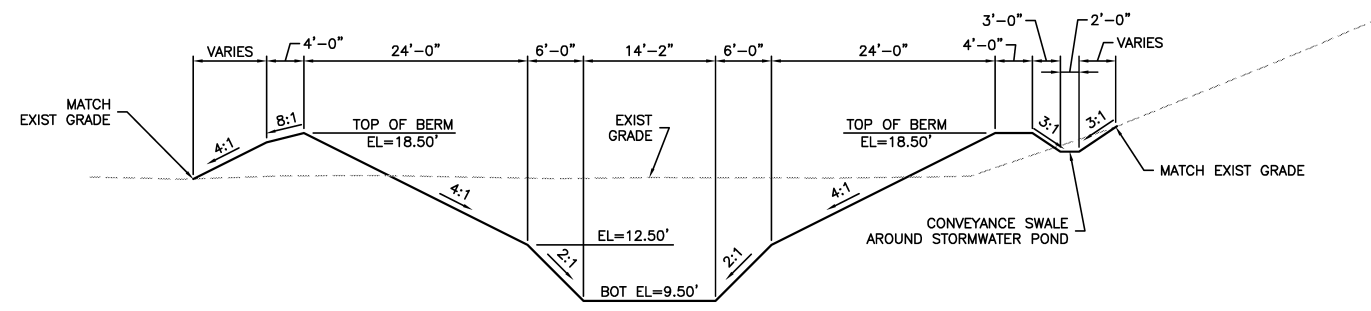


**10MG RECLAIMED WATER STORAGE TANK
 AT THE
 SOUTHWEST WATER RECLAMATION FACILITY**
 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

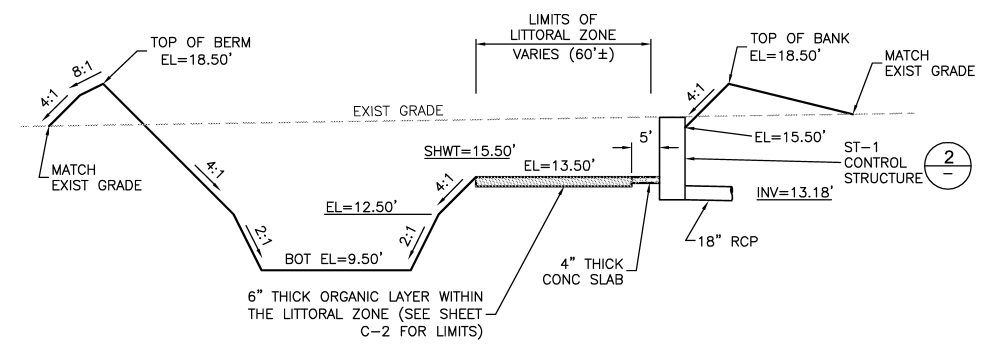
CIVIL DETAILS

PROJECT STATUS
 BID SET
 NOVEMBER 2009
C-6

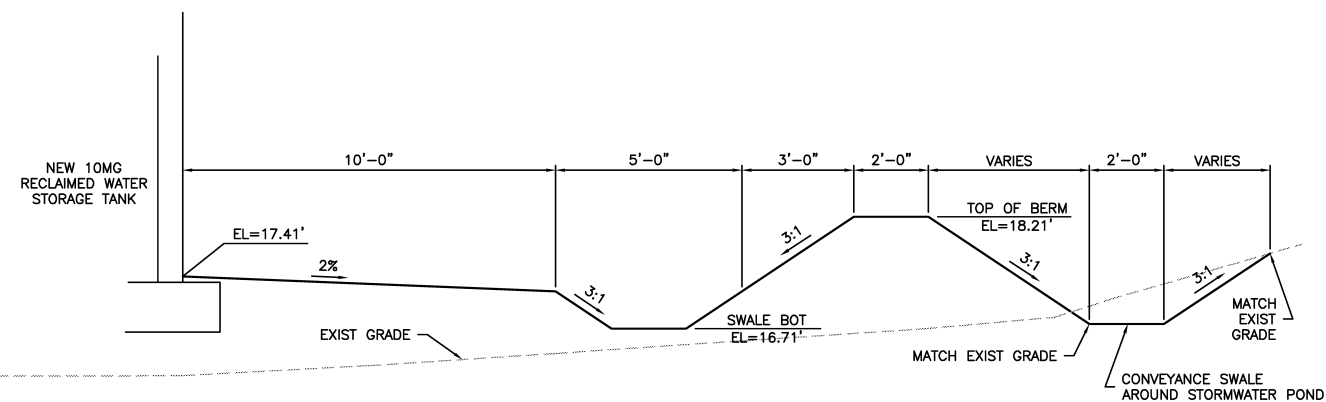
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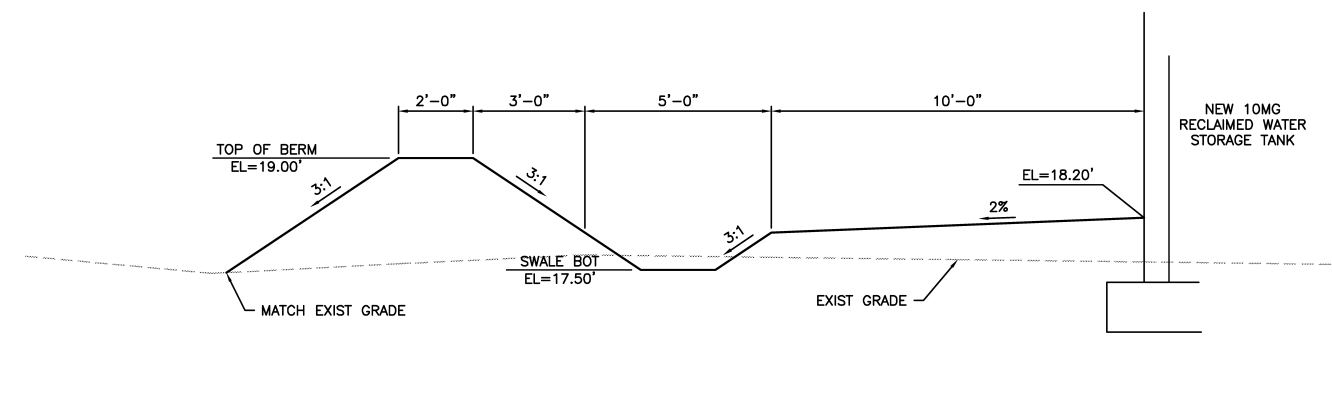
STORMWATER POND
A SECTION
 C-2 SCALE: NTS



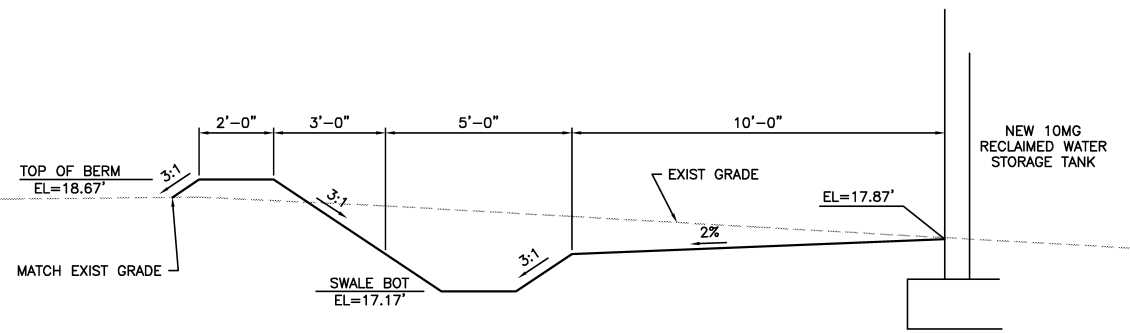
STORMWATER POND
B SECTION
 C-2 SCALE: NTS



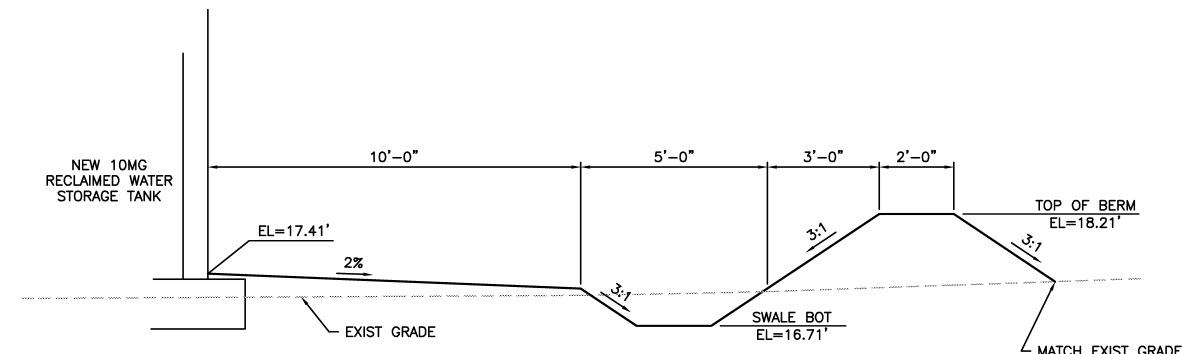
T.O.B. SOUTH SWALE @ 17.21
C SECTION
 C-2 SCALE: NTS



T.O.B. SWALE @ 18.00 (H.P.)
D SECTION
 C-2 SCALE: NTS



T.O.B. NORTH SWALE @ 17.67
E SECTION
 C-2 SCALE: NTS



T.O.B. SWALE @ 17.21
F SECTION
 C-2 SCALE: NTS

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URS JOB NUMBER
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 DRW: T. SONNENBERG
 FILE SAVE DATE:
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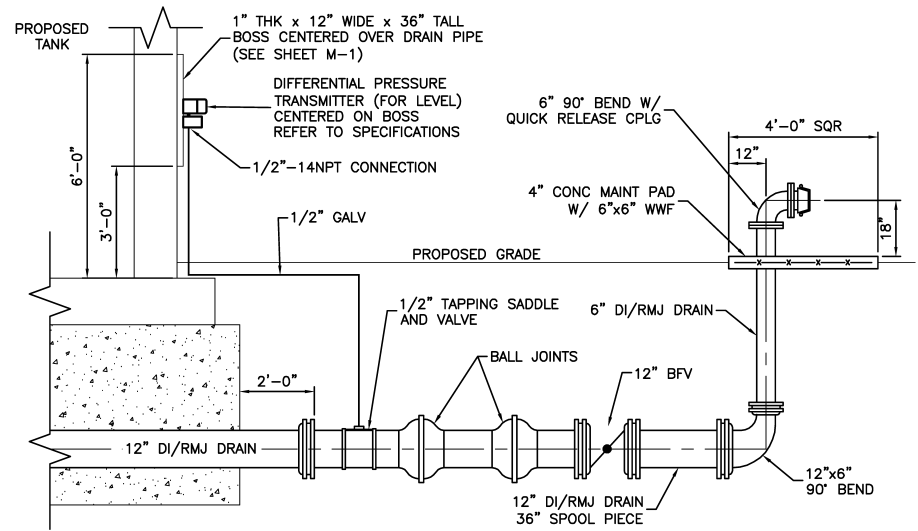
DAVID A. WILCOX
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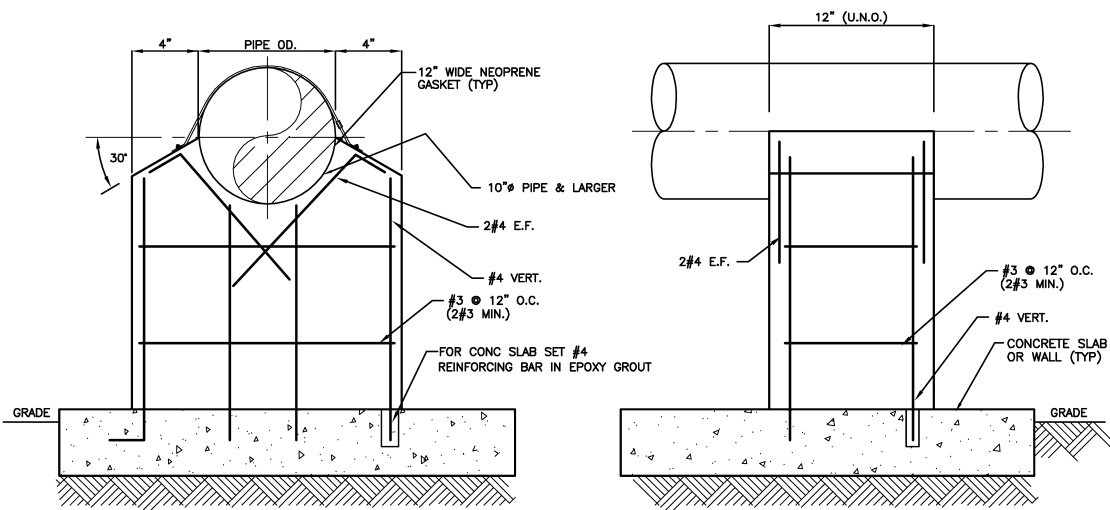
PROJECT STATUS
 BID SET
 NOVEMBER 2009
CIVIL DETAILS
C-6A

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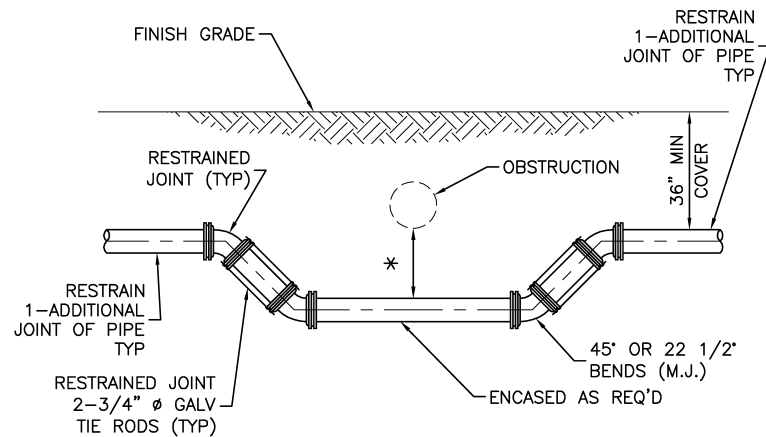


DIFFERENTIAL PRESSURE TRANSMITTER/
TANK DRAIN PUMP-OUT

1 **DETAIL**
C-4 SCALE: NTS



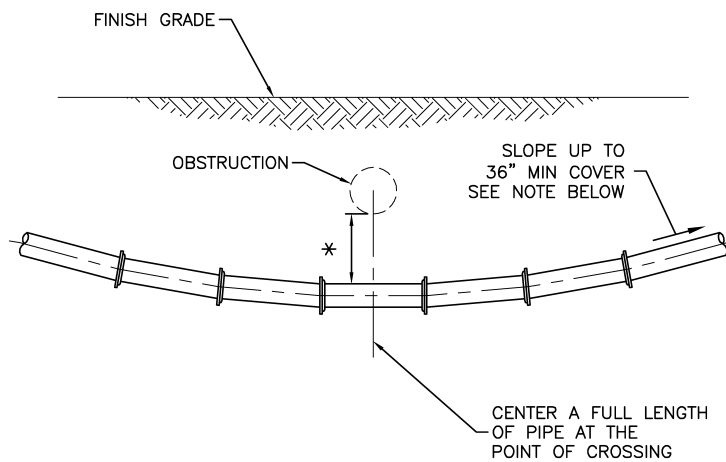
CONC PIPE SUPPORT
2 **DETAIL**
C-8 SCALE: NTS



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 THIS SHEET.

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

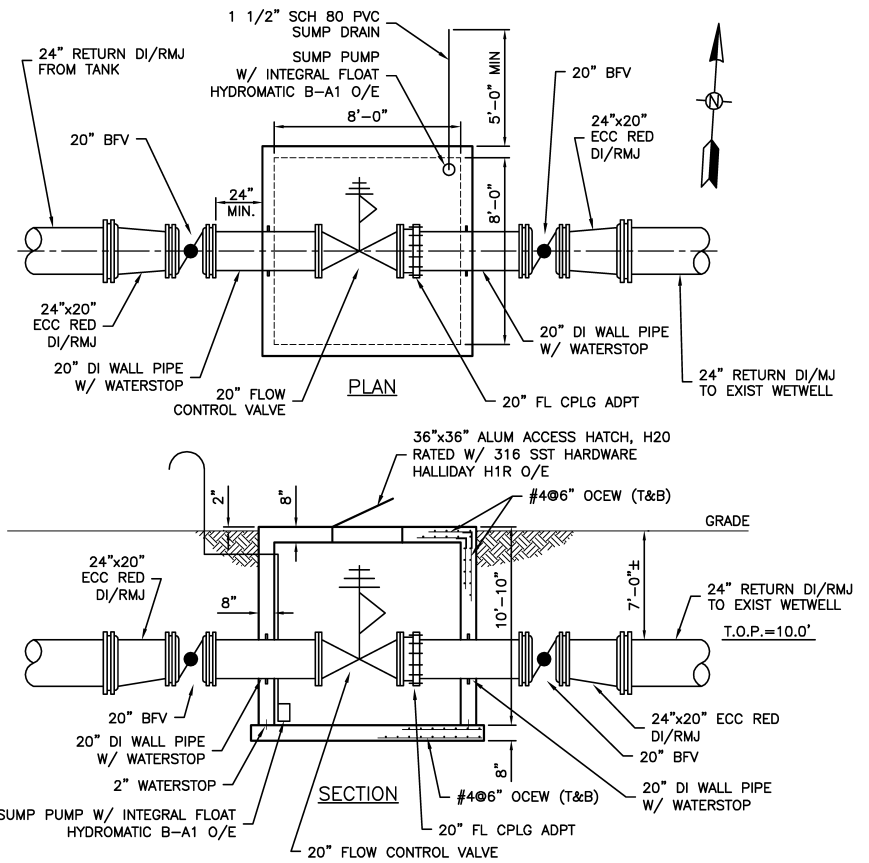


STANDARD UTILITY CROSSING - DEFLECTION TYPE
NTS

1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHERE EVER POSSIBLE.
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. CONTRACTOR SHALL COORDINATE EXISTING PIPE RELOCATIONS AND SHUT DOWNS WITH PLANT PERSONNEL.

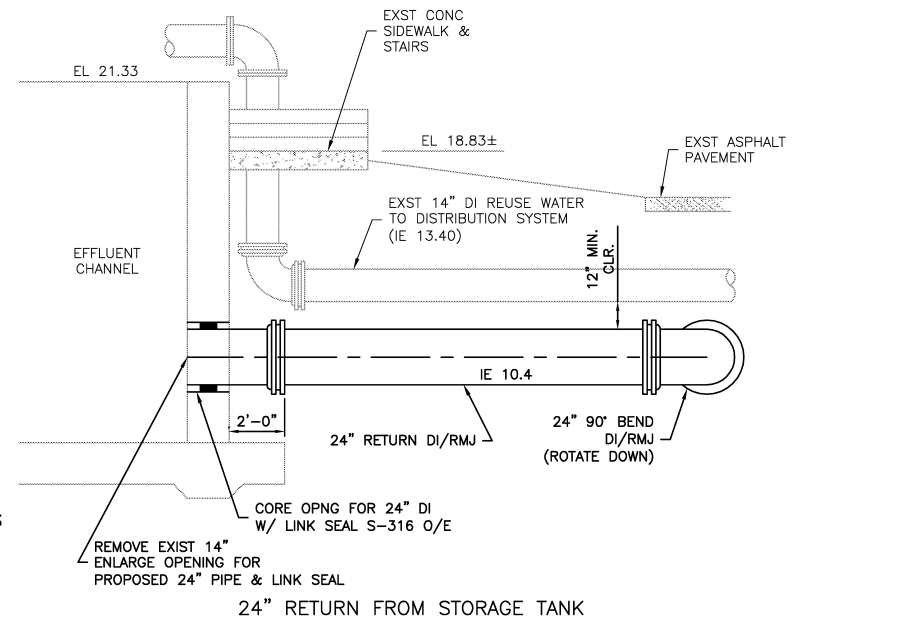
UTILITY CROSSING

3 **DETAIL**
SCALE: NTS



RETURN FLOW CONTROL VALVE ASSEMBLY

4 **DETAIL**
C-4 SCALE: NTS



5 **DETAIL**
C-5 SCALE: NTS

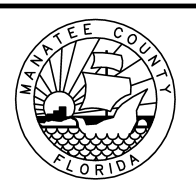
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DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 2, 2009

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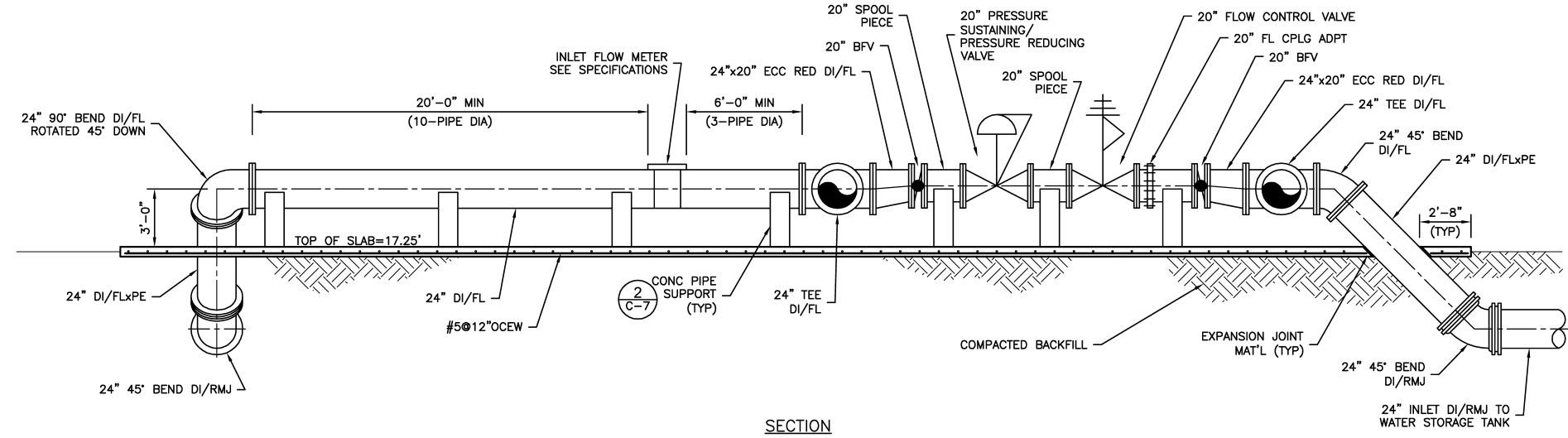
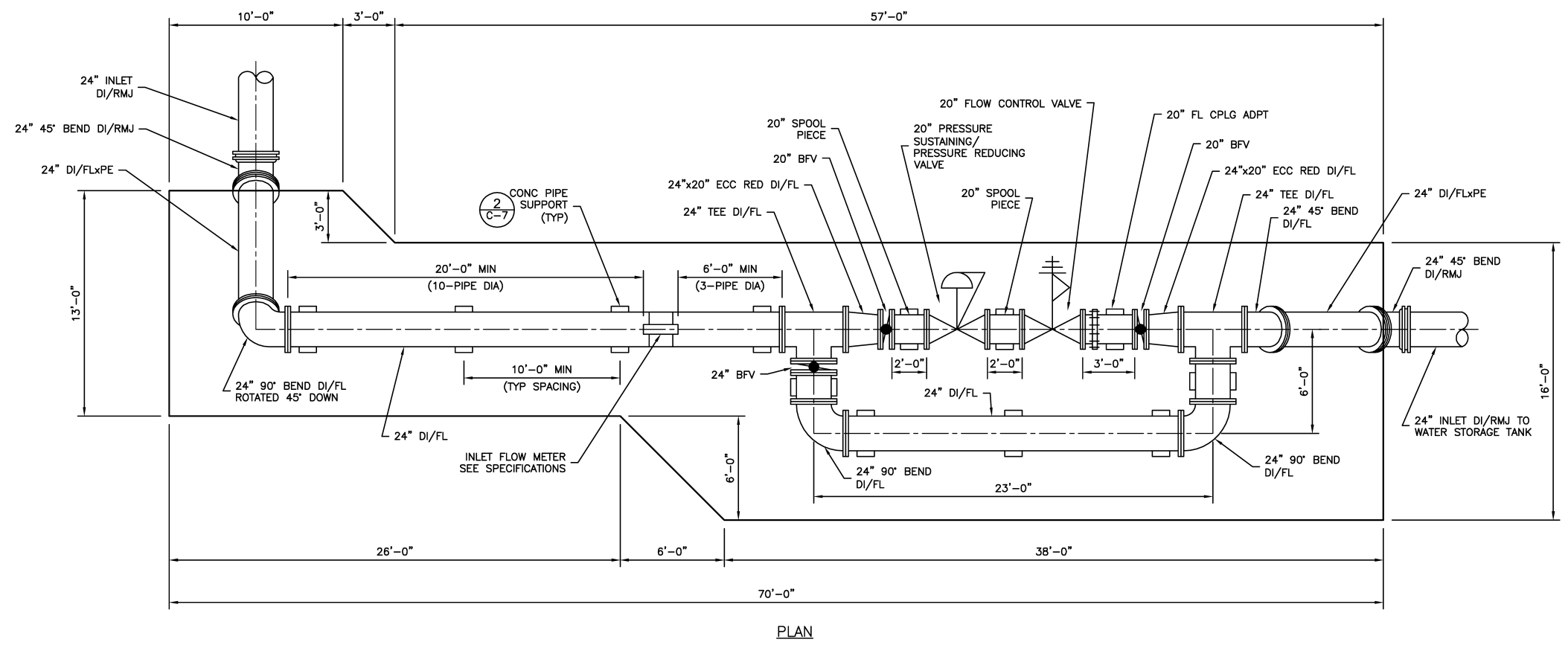
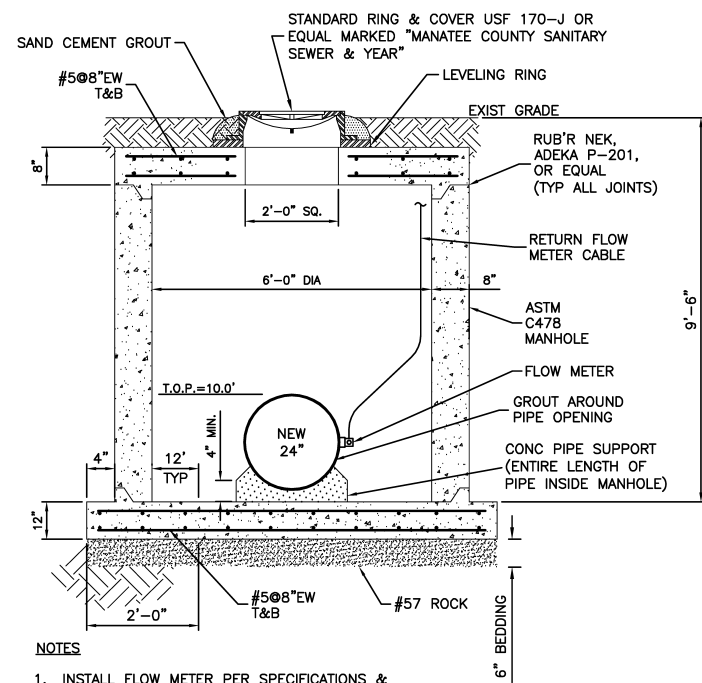
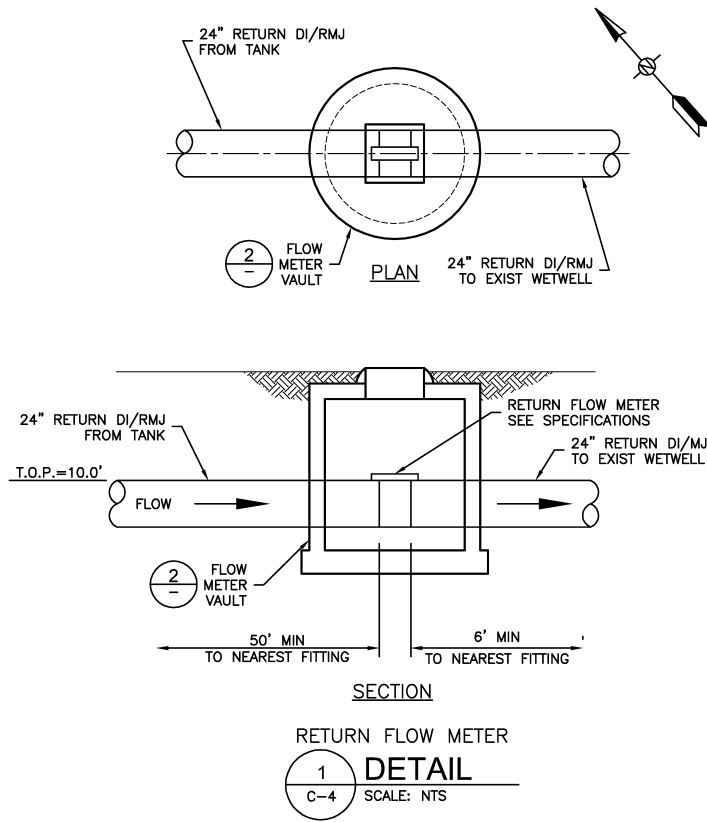


10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CIVIL DETAILS

PROJECT STATUS
BID SET
NOVEMBER 2009
C-7

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



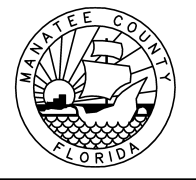
NOTES:
 1. EXPOSED DI PIPE, FITTINGS, AND VALVES SHALL BE SHOP PRIMED WITH TNEEC 66-11211 O/E AT 3.0-5.0 MILS DFT AND RECEIVE 2 FIELD COATS OF TNEEC N69 O/E AT 3.0-5.0 MILS DFT EACH, FOLLOWED BY 1 COAT TNEEC 73U O/E AT 2.5-3.5 MILS DFT.

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DAVID A. WILCOX
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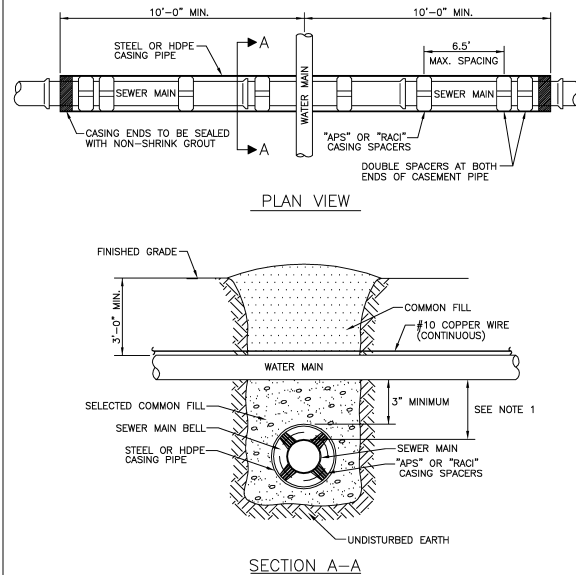


10MG RECLAIMED WATER STORAGE TANK AT THE SOUTHWEST WATER RECLAMATION FACILITY
 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

PROJECT STATUS
 BID SET
 NOVEMBER 2009
CIVIL DETAILS
 C-8

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



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

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

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

MAIN PIPE SIZE	HORIZ. BENDS	TEES		REDUCERS		PLUGS	VALVES
		SIZE	LENGTH	SIZE	LENGTH		
24	90° 45° 22.5°	X24	X20	X16	X12	X10	214
20	90° 45° 22.5°	X20	X16	X12	X10	X8	184
16	90° 45° 22.5°	X16	X12	X10	X8	X6	151
12	90° 45° 22.5°	X12	X10	X8	X6	X4	118
10	90° 45° 22.5°	X10	X8	X6	X4	X3	100
8	90° 45° 22.5°	X8	X6	X4	X3	X2	83
6	90° 45° 22.5°	X6	X4	X3	X2	X1	63
4	90° 45° 22.5°	X4	X3	X2	X1	X0	45

- NOTES:
- RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5° BENDS.
 - ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 - ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
 - PIPE SIZES ARE GIVEN IN INCHES.
 - RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
 - LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
 - 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 SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
 - SEE RESTRAINED LENGTHS FOR PIPE STD. DETAIL UG-10.

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

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

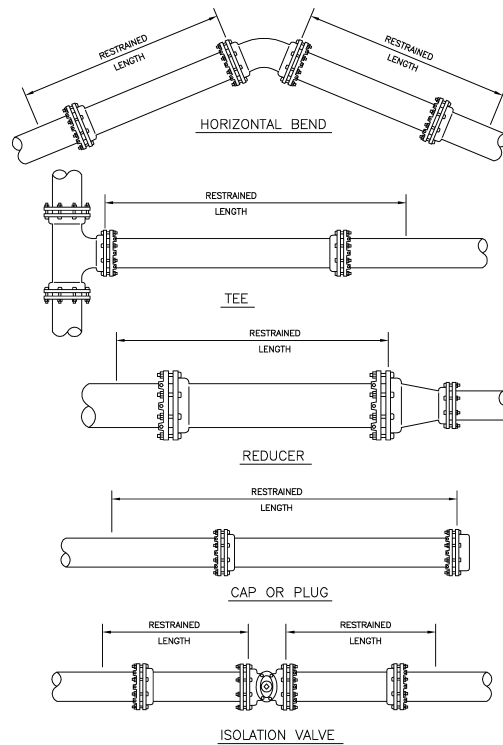
MAIN PIPE SIZE	HORIZ. BENDS	TEES		REDUCERS		PLUGS	VALVES
		SIZE	LENGTH	SIZE	LENGTH		
36	90° 45° 22.5°	X36	X30	X24	X20	X16	453
30	90° 45° 22.5°	X30	X24	X20	X16	X12	391
24	90° 45° 22.5°	X24	X20	X16	X12	X10	327
20	90° 45° 22.5°	X20	X16	X12	X10	X8	280
16	90° 45° 22.5°	X16	X12	X10	X8	X6	231
12	90° 45° 22.5°	X12	X10	X8	X6	X4	181
10	90° 45° 22.5°	X10	X8	X6	X4	X3	153
8	90° 45° 22.5°	X8	X6	X4	X3	X2	128
6	90° 45° 22.5°	X6	X4	X3	X2	X1	98
4	90° 45° 22.5°	X4	X3	X2	X1	X0	69

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

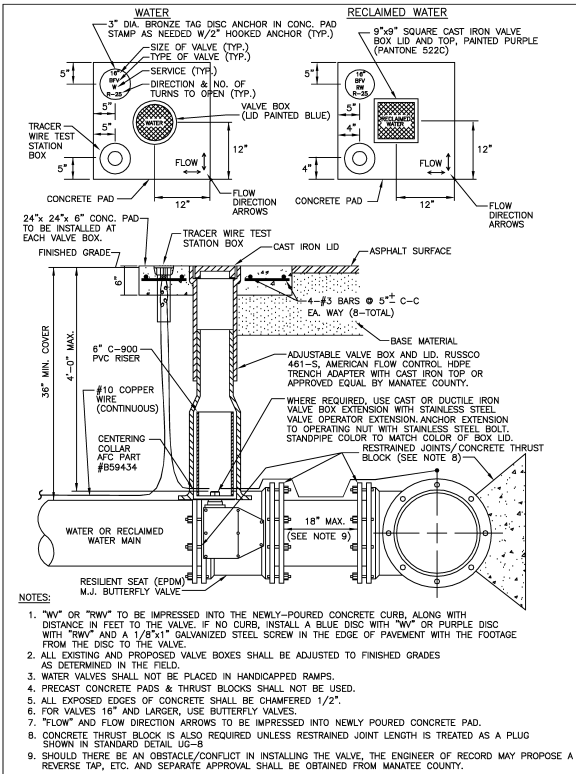
MAIN PIPE SIZE	HORIZ. BENDS	TEES		REDUCERS		PLUGS	VALVES
		SIZE	LENGTH	SIZE	LENGTH		
36	90° 45° 22.5°	X36	X30	X24	X20	X16	188
30	90° 45° 22.5°	X30	X24	X20	X16	X12	162
24	90° 45° 22.5°	X24	X20	X16	X12	X10	135
20	90° 45° 22.5°	X20	X16	X12	X10	X8	116
16	90° 45° 22.5°	X16	X12	X10	X8	X6	96
12	90° 45° 22.5°	X12	X10	X8	X6	X4	75
10	90° 45° 22.5°	X10	X8	X6	X4	X3	63
8	90° 45° 22.5°	X8	X6	X4	X3	X2	53
6	90° 45° 22.5°	X6	X4	X3	X2	X1	41
4	90° 45° 22.5°	X4	X3	X2	X1	X0	29

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

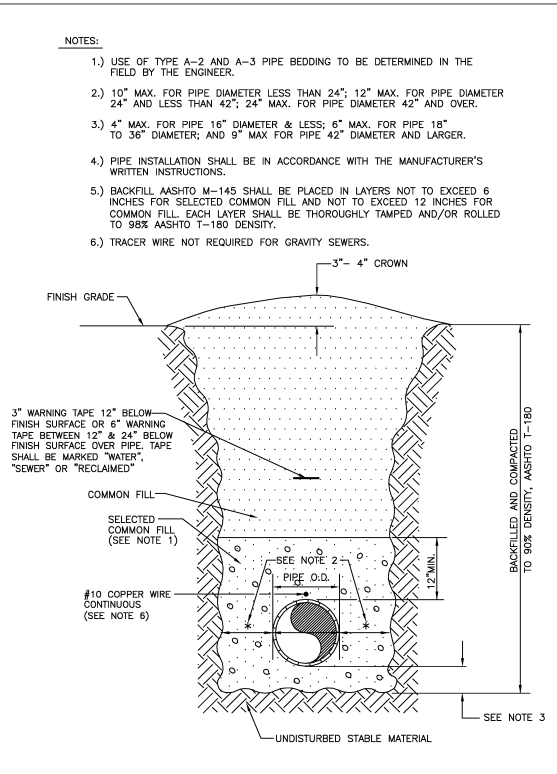
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REV. BY CLB/KE JAA/JB	DATE 8/05 10/08	MARCH 17, 2009 DATE OF APPROVAL	



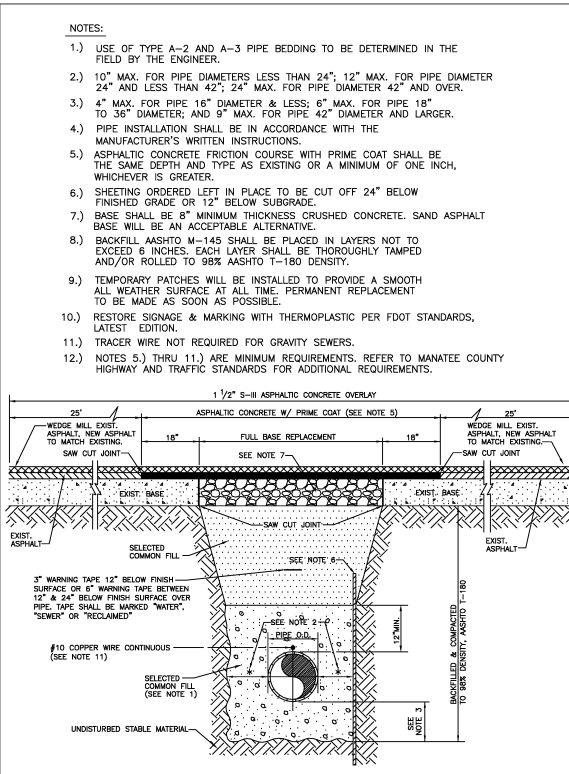
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REV. BY CLB/KE JAA/JB	DATE 8/05 10/08	MARCH 17, 2009 DATE OF APPROVAL	



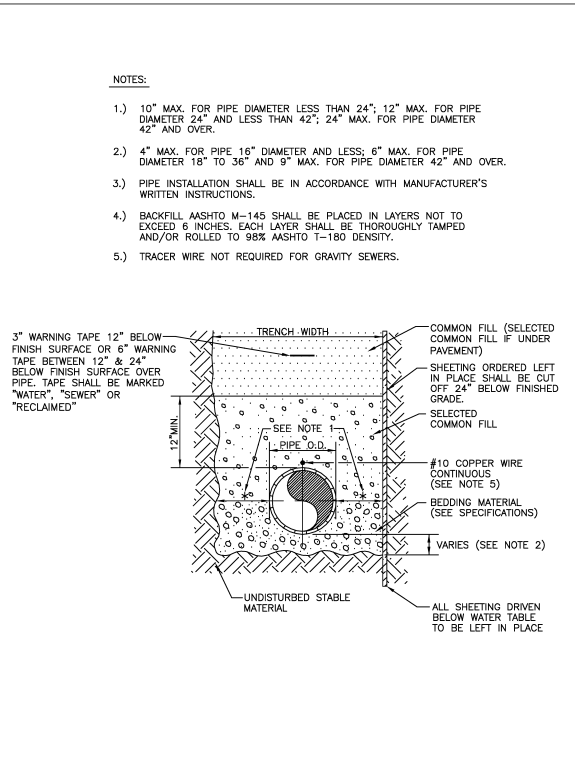
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		BUTTERFLY VALVE, BOX, LID AND TAG	UW-3
REV. BY CLB/KE JAA/JB	DATE 02/05 10/08 02/09	MARCH 17, 2009 DATE OF APPROVAL	



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



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



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

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DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 2, 2009

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

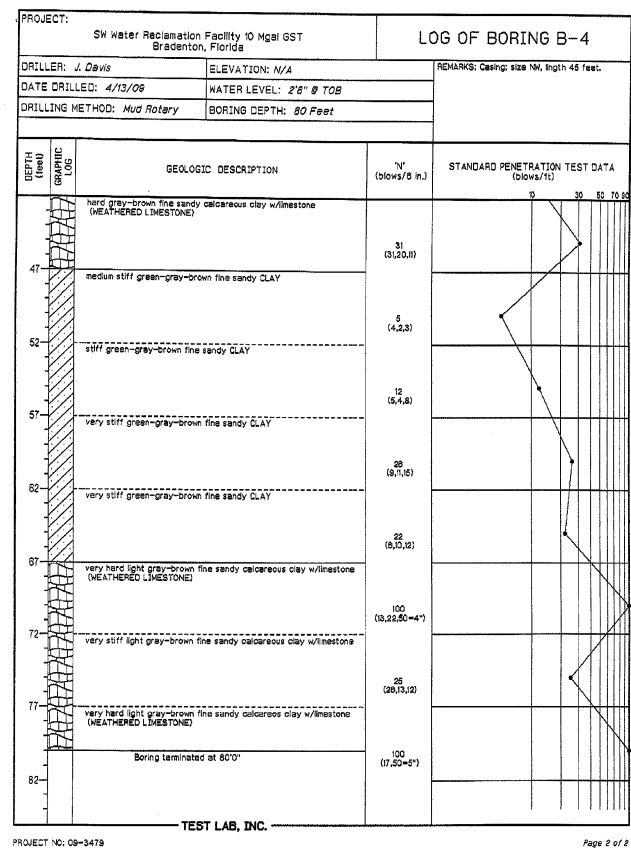
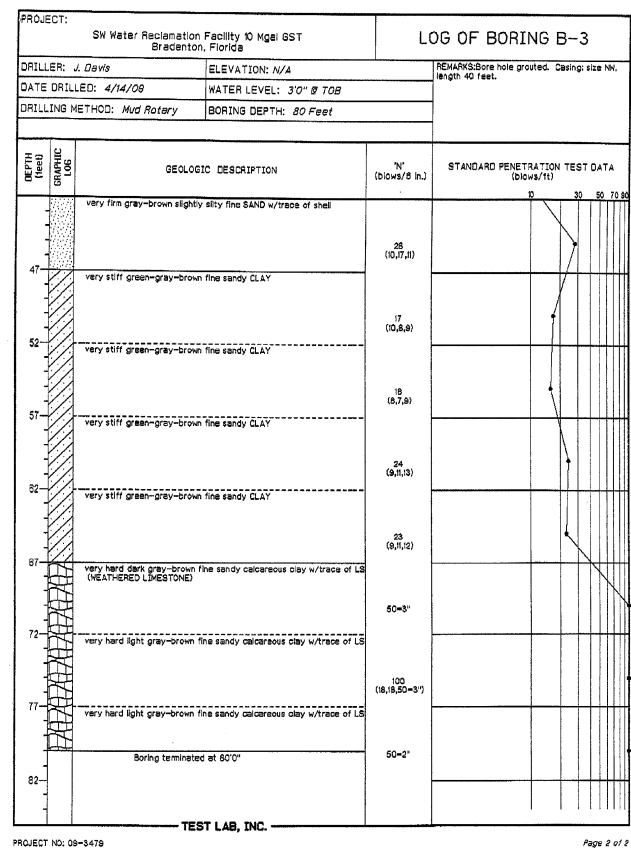
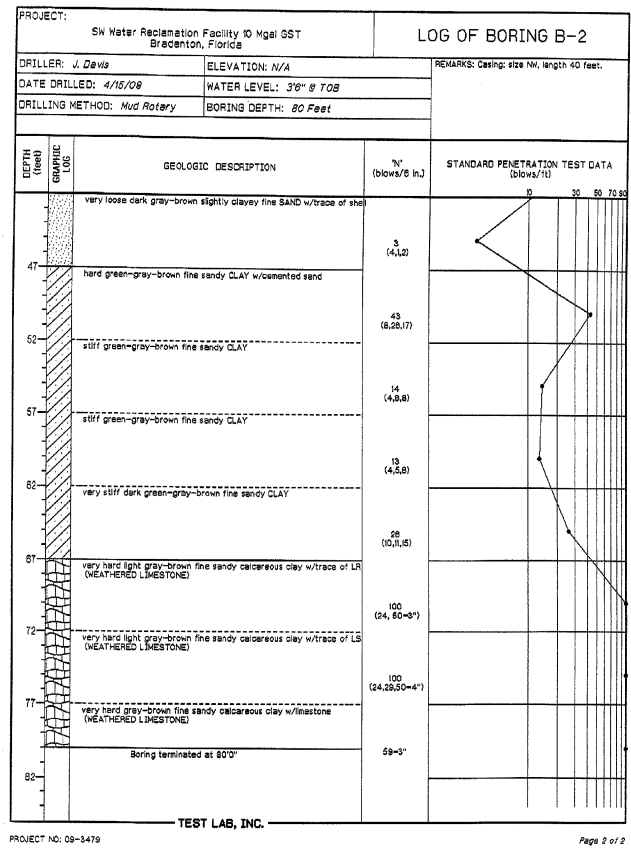
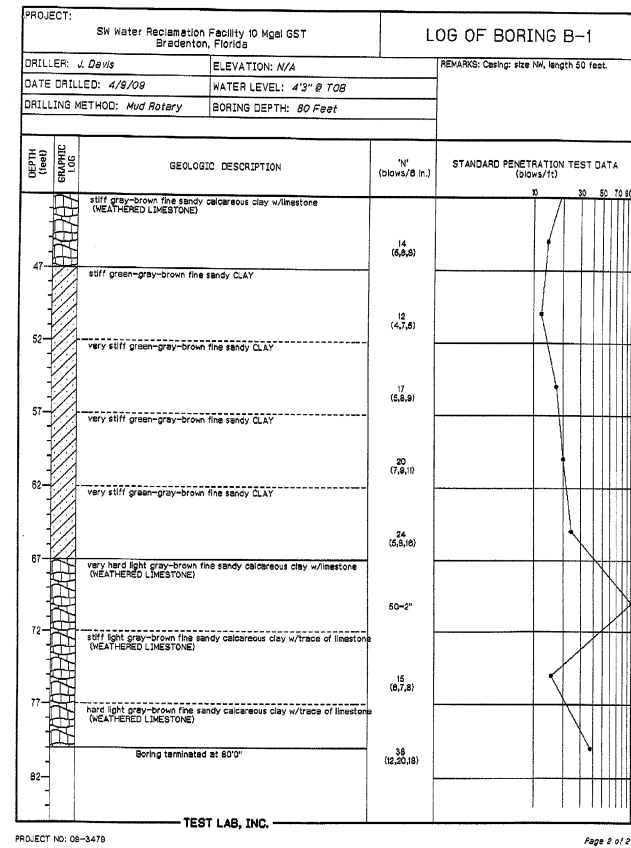
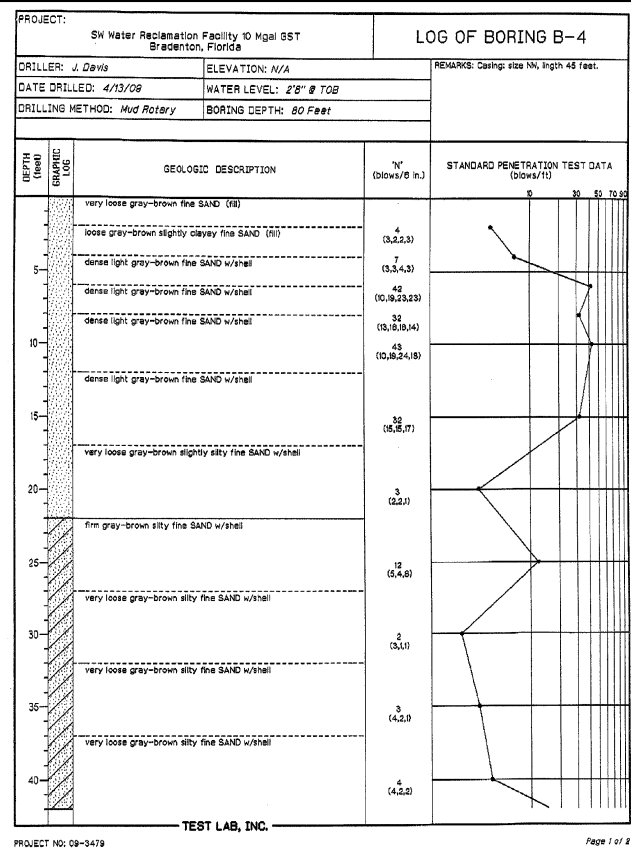
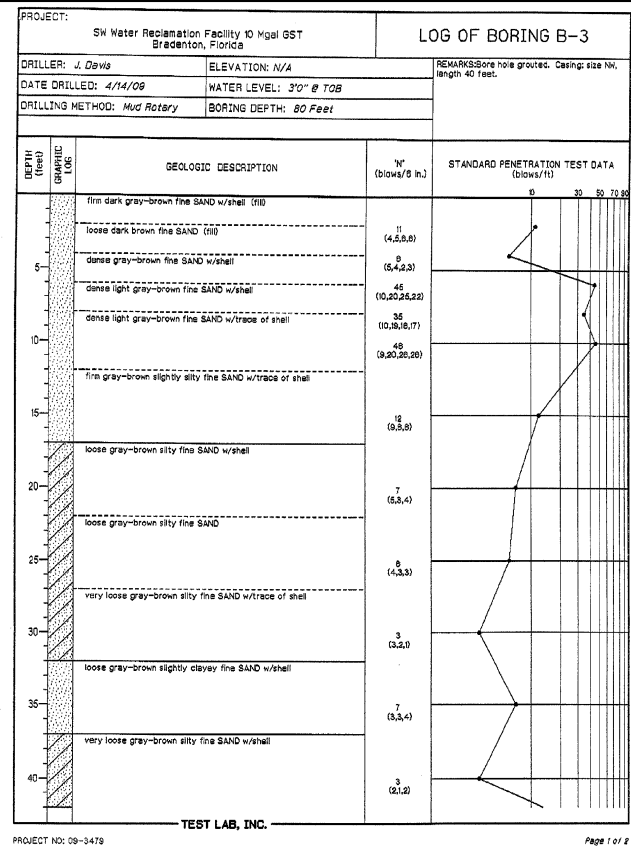
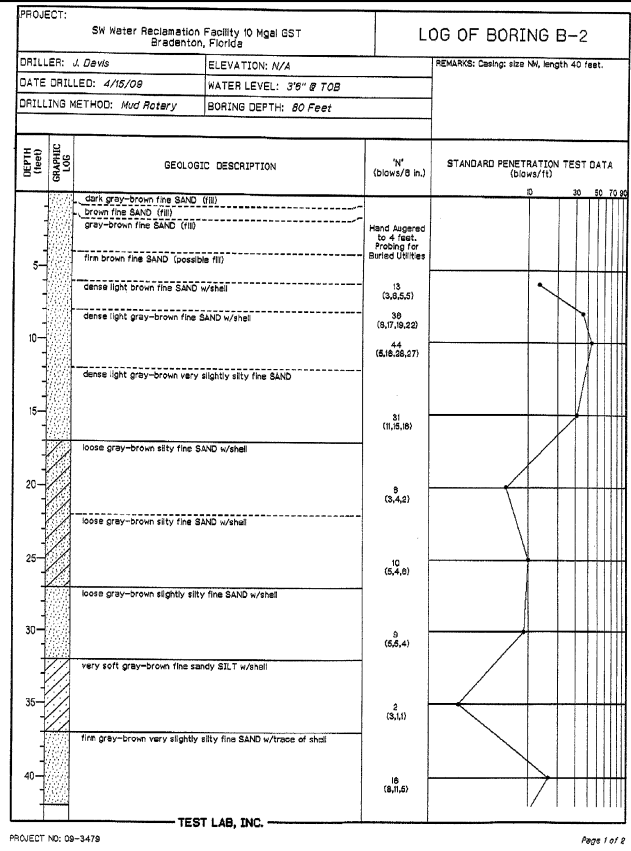
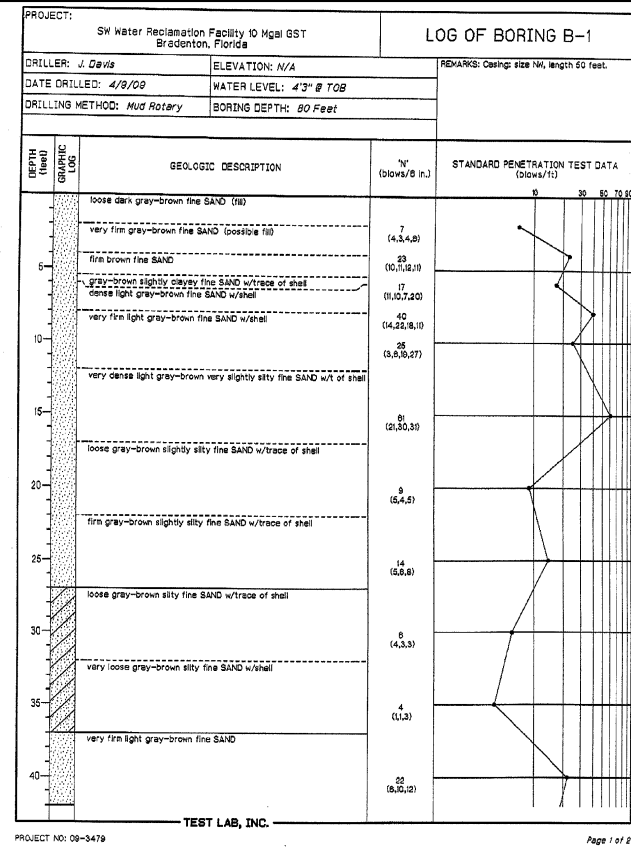
10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROJECT STATUS
BID SET
NOVEMBER 2009

CIVIL DETAILS

C-9

PLOTTED November 17, 2009 2:24 PM, PLOTTED BY: SCHNEIDER, TERRY
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 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0.1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

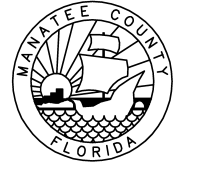


URS
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 Tampa, Florida 33607
 Ph: (813) 286-1711 Fax: (813) 286-6587
 Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER
12008554
 PM: D. WILCOX
 ENG: R. AVALOS
 DRW: J. SCHEUERMAN
 FILE SAVE DATE:
November 2, 2009

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



10MG RECLAIMED WATER STORAGE TANK
 AT THE
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PROJECT STATUS
 BID SET
 NOVEMBER 2009
SOIL BORING LOGS
C-10

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

PROJECT:		LOG OF BORING B-5	
SW Water Reclamation Facility 10 Mgal GST Bradenton, Florida		ELEVATION: N/A	
DRILLER: J. Davis	DATE DRILLED: 4/10/09	REMARKS: Bore hole grouted. Casing 1 1/2" Nk. length 40 feet.	
DRILLING METHOD: Mud Rotary	BORING DEPTH: 50 Feet	WATER LEVEL: 3'0" @ TOB	
DEPTH (feet)		STANDARD PENETRATION TEST DATA (Blows/ft)	
GEOLOGIC DESCRIPTION			
0	loose dark gray-brown fine SAND (SB)	5 (2,2,3,4)	
5	loose gray-brown slightly clayey fine SAND (SI)	7 (3,3,4,18)	
10	gray-brown fine SAND w/shell	10 (4,2,12,4,28)	
15	dense gray-brown fine SAND w/shell	18 (4,2,14,14)	
20	very fine gray-brown fine SAND w/shell	27 (3,2,2,3,1,58)	
25	very dense light gray-brown fine SAND w/trace of shell	19 (2,1,3,8)	
30	fine light gray-brown very slightly silty fine SAND w/trace of shell	7 (2,4,3)	
35	loose gray-brown silty fine SAND w/shell	10 (3,8,4)	
40	loose gray-brown silty fine SAND w/trace of shell	4 (4,2,2)	
45	loose gray-brown silty fine SAND w/trace of shell	8 (2,2,4)	
50	loose dark gray-brown silty fine SAND w/shell	7 (2,5,2)	
55	gray-brown fine sandy calcareous clay w/limestone (WEATHERED LIMESTONE)	12 (8,2,7)	
	stiff green-gray-brown fine sandy CLAY		
	Boring terminated at 50'		

PROJECT NO: 09-3479 TEST LAB, INC. Page 1 of 1

SOIL SYMBOLS

	22 SAND		24 VOID/CAVITY		75 PEAT, MUCK, ORGANIC SOILS
	4 CLAYEY SAND SILTY SAND		93 CALCAREOUS WEATHERED LIMESTONE		59 MISC. FILL, TOPSOIL, SANDY CEMENTED CLAY
	10 SANDY CLAY SANDY SILT		46 LIMESTONE		CONCRETE, ASPHALT, LIMESTONE, & ANY BASE MATERIAL
	14 CLAY, SILTY, SILTY CLAY, CLAYEY SILT		26 GRAVEL, COBBLES, BOULDERS		96 SHELL @ .2 FILL SIZE

PARTICLE SIZE IDENTIFICATION

Boulders - 8 inch diameter or more
 Cobbles - 3 to 8 inch diameter
 Gravel - 4.75mm to 3 inches
 Sand - Course 2.00 to 4.75mm (dia. of pencil lead)
 Medium 0.42 to 2.00mm (dia. of broom straw)
 Fine 0.074 to 0.42mm (dia. of human hair)
 Silt - 0.074 to 0.002mm (cannot see particles)
 Clay - Smaller than 0.002mm

CONSISTENCY

COHESIONLESS SOIL (sand)		COHESIVE SOIL (clay, silt)	
Very Loose	0 - 4 Blows/Ft.	Very Soft	0 - 2 Blows/Ft.
Loose	5 - 10 Blows/Ft.	Soft	3 - 4 Blows/Ft.
Firm	11 - 20 Blows/Ft.	Medium Stiff	5 - 8 Blows/Ft.
Very Firm	21 - 30 Blows/Ft.	Stiff	9 - 15 Blows/Ft.
Dense	31 - 50 Blows/Ft.	Very Stiff	16 - 30 Blows/Ft.
Very Dense	51 - UP Blows/Ft.	Hard	31 - 50 Blows/Ft.
		Very Hard	51 - UP Blows/Ft.

Strata Changes - In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line () represents an actually observed change, a dashed line (---) represents an estimated change.

Ground Water - Observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc. may cause changes in the water levels indicated on the logs.

SOIL LEGEND

GEOTECHNICAL & MATERIALS
 ENGINEERING, TESTING & INSPECTION

DRI-1 Test Data

Depth of Test: 24"	Inner Ring Diameter: 12"
Water Depth in Rings: 10"	Outer Ring Diameter: 24"

Elapsed Time (minutes)	Drop in Inches	Measured Infiltration Rate (inches/hour)*
0	—	—
15	0.500	2.000
30	4.825	18.500
45	4.500	18.000
60	4.750	19.000
90	8.000	18.000
120	7.250	14.500
180	16.250	16.250
240	14.750	14.750

INFILTRATION RATE* (inches/hour) 14.75

* Based upon data obtained from Inner ring

Double-Ring Infiltrometer Test

ASTM D 3385

SW Water Reclamation 10 Mgal GST
Bradenton, Florida
Test Date: April 8, 2009
Test Lab Project No: 09-3479

GEOTECHNICAL & MATERIALS
 ENGINEERING, TESTING & INSPECTION

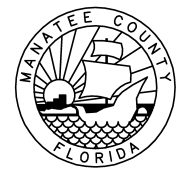
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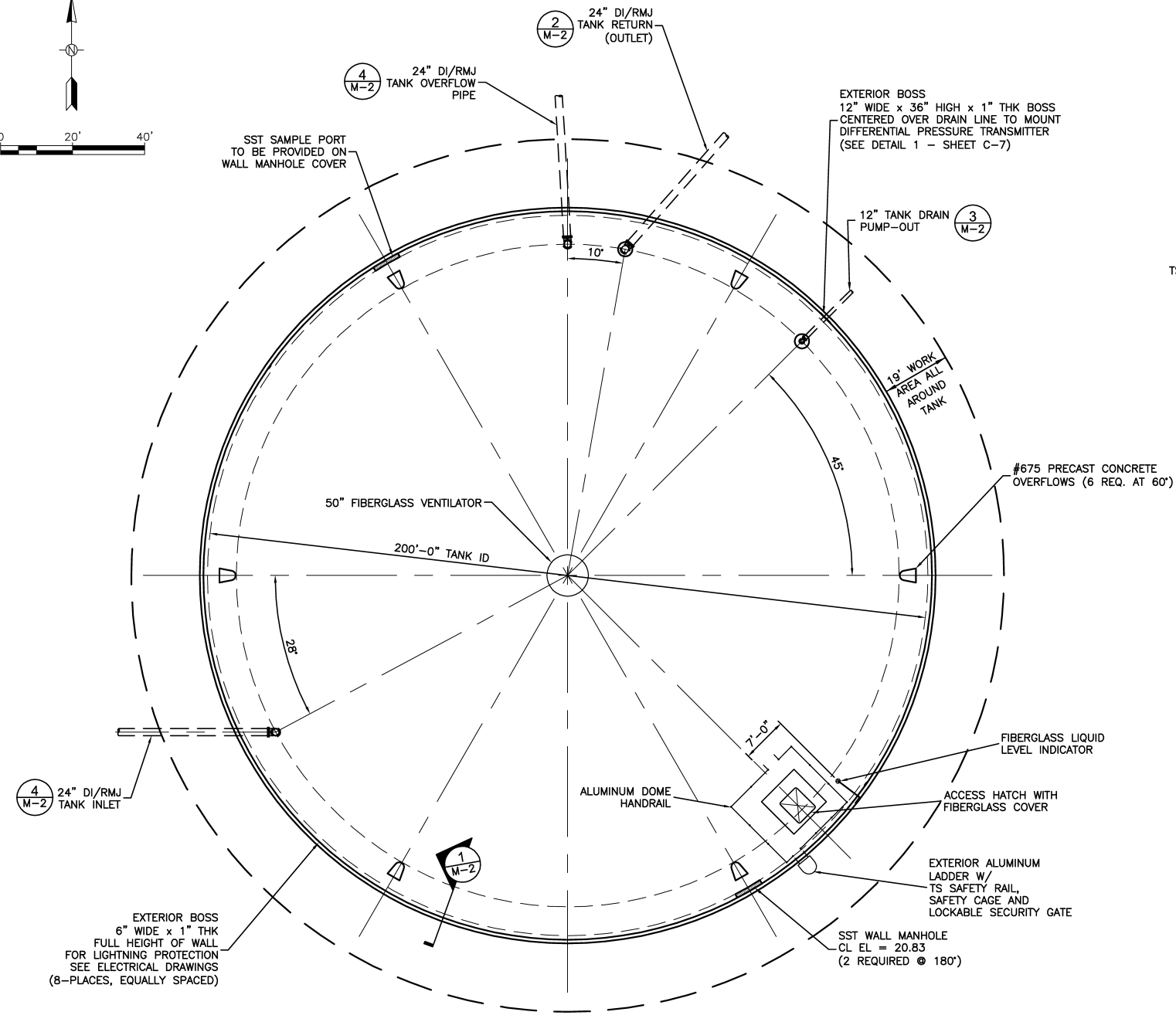
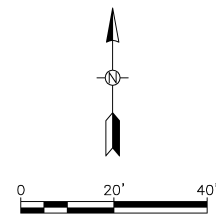
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PROJECT STATUS
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NOVEMBER 2009

SOIL BORING LOGS

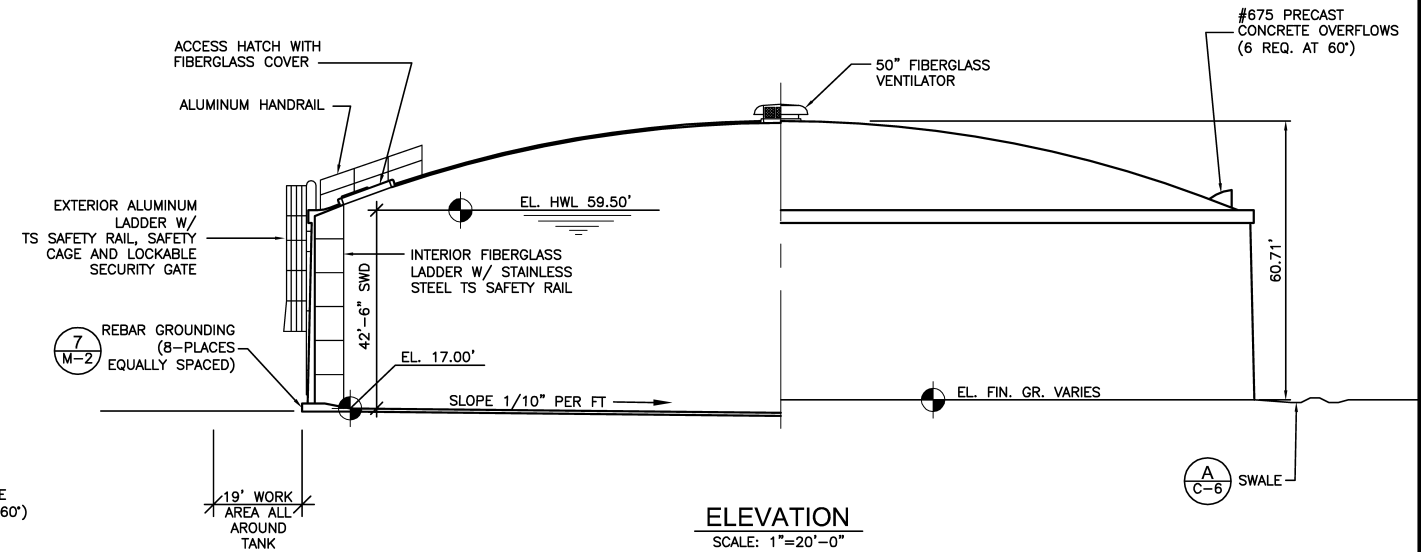
C-11

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



PLAN VIEW
SCALE: 1"=20'-0"

NOTE:
FIELD VERIFY ALL TANK BOSSES, ACCESSORIES &
PIPE LOCATIONS WITH OWNER AND ENGINEER PRIOR
TO PLACEMENT.



ELEVATION
SCALE: 1"=20'-0"

NOTE:
THE UPPER 5 FEET OF OLD FILL & POSSIBLE FILL WILL NEED TO BE UNDERCUT &
REPLACED. THE EXCAVATED SOILS CAN BE REUSED AS STRUCTURAL FILL MATERIAL FOR
BACKFILL OPERATIONS. THE SLIGHTLY CLAYEY MATERIALS ENCOUNTERED MAY REQUIRE
MOISTURE CONDITIONING TO OBTAIN PROPER COMPACTION. UPON COMPLETION OF THE
EXCAVATION THE EXPOSED SUBGRADE SOILS WILL NEED TO BE COMPACTED TO 98% OF
MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY PRIOR TO THE PLACEMENT OF
FILL MATERIALS. THE PROPOSED CONSTRUCTION AREA WILL REQUIRE DEWATERING PRIOR
TO EXCAVATION OF THE OLD FILL & ALL FILL MATERIAL PLACEMENT WILL BE PERFORMED
IN THE DRY. DEWATERING SHOULD EXTEND TO A MINIMUM DEPTH OF 3 FEET BELOW
PROPOSED DEPTH OF EXCAVATION & VERIFIED THROUGH THE PLACEMENT OF PIEZOMETERS.

PLOTTED November 17, 2009 2:24 PM. PLOTTED BY: SONNENBERG, TERRY.
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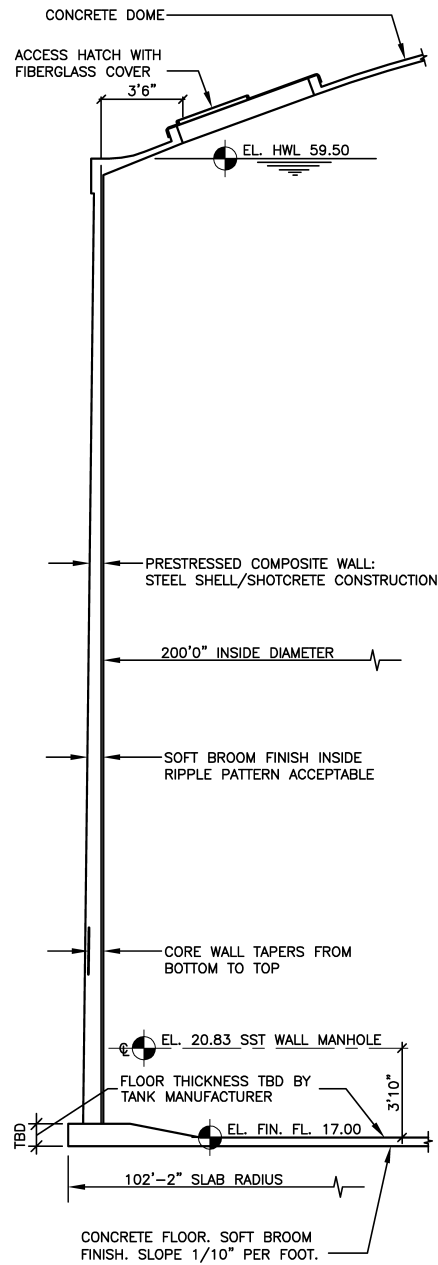
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TANK PLAN

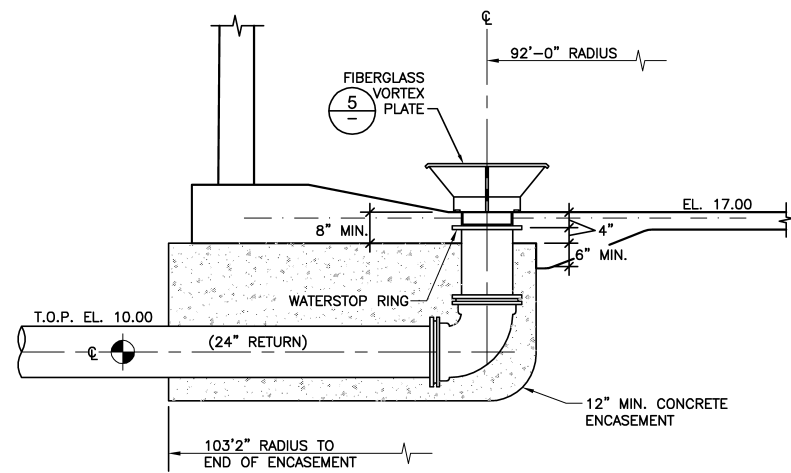
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M-1

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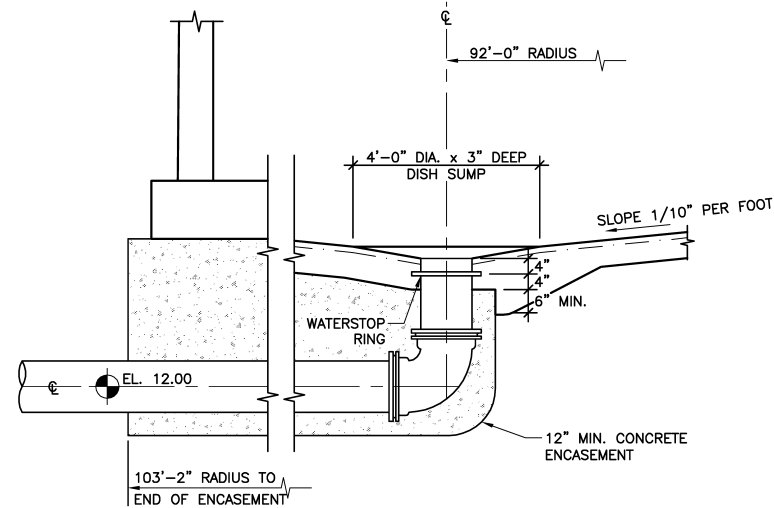
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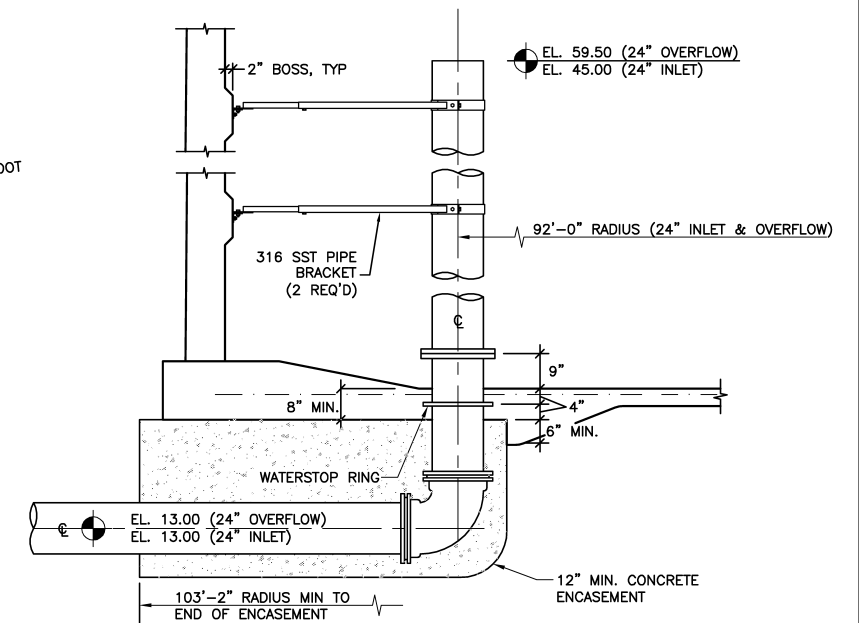
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 M-1 SCALE: NTS



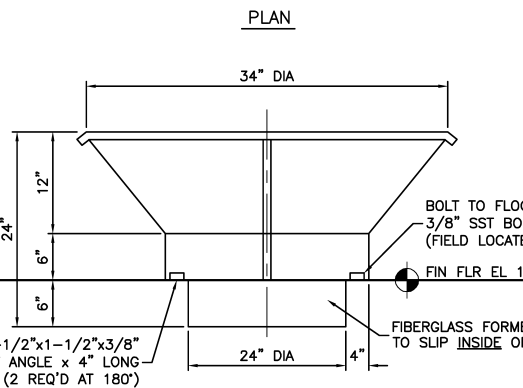
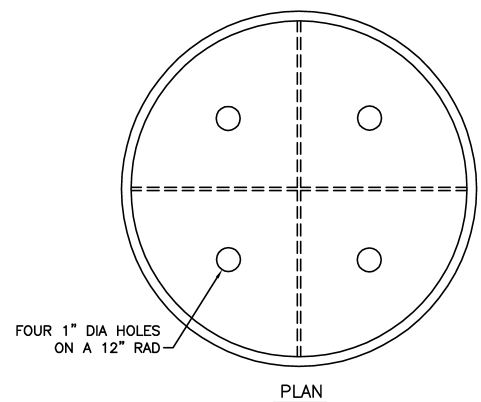
2 **DETAIL**
 M-1 SCALE: NTS



3 **DETAIL**
 M-1 SCALE: NTS

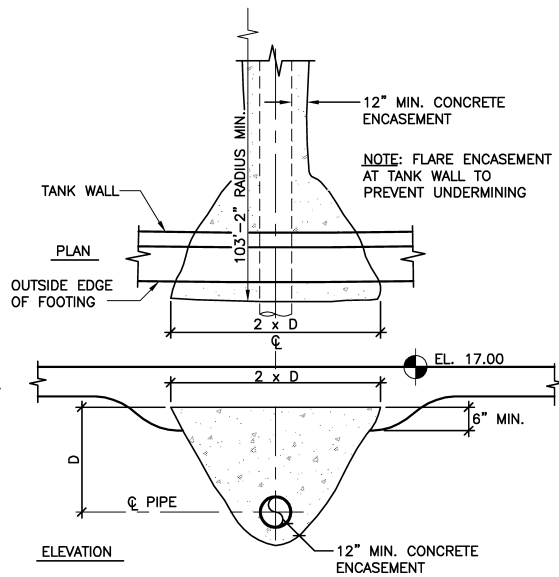


4 **DETAIL**
 M-1 SCALE: NTS

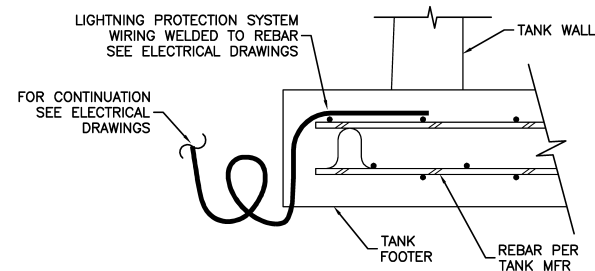


5 **DETAIL**
 SCALE: NTS

NOTE:
 REINFORCING STEEL DESIGN BY TANK MANUFACTURER.



6 **DETAIL**
 SCALE: NTS



7 **DETAIL**
 M-1 SCALE: NTS



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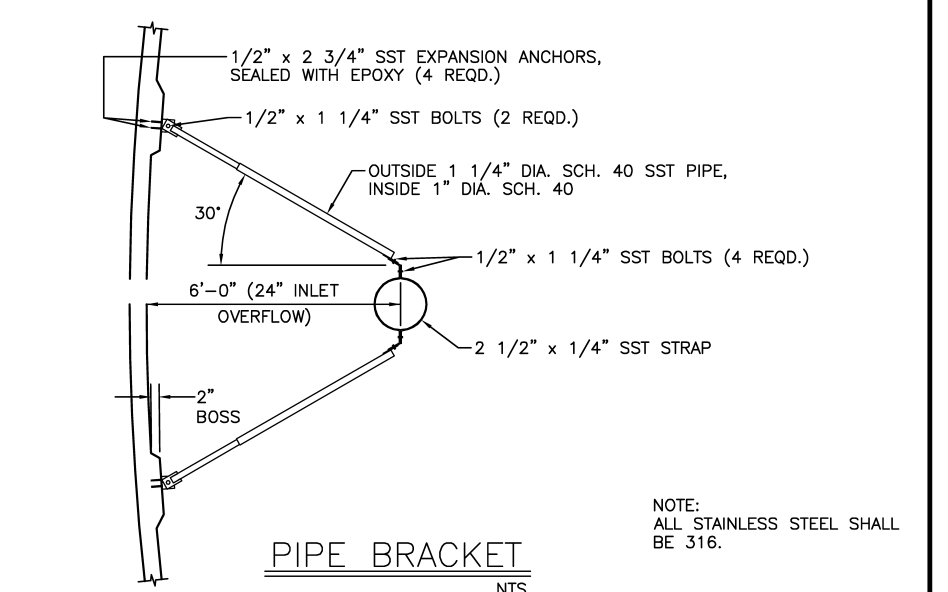
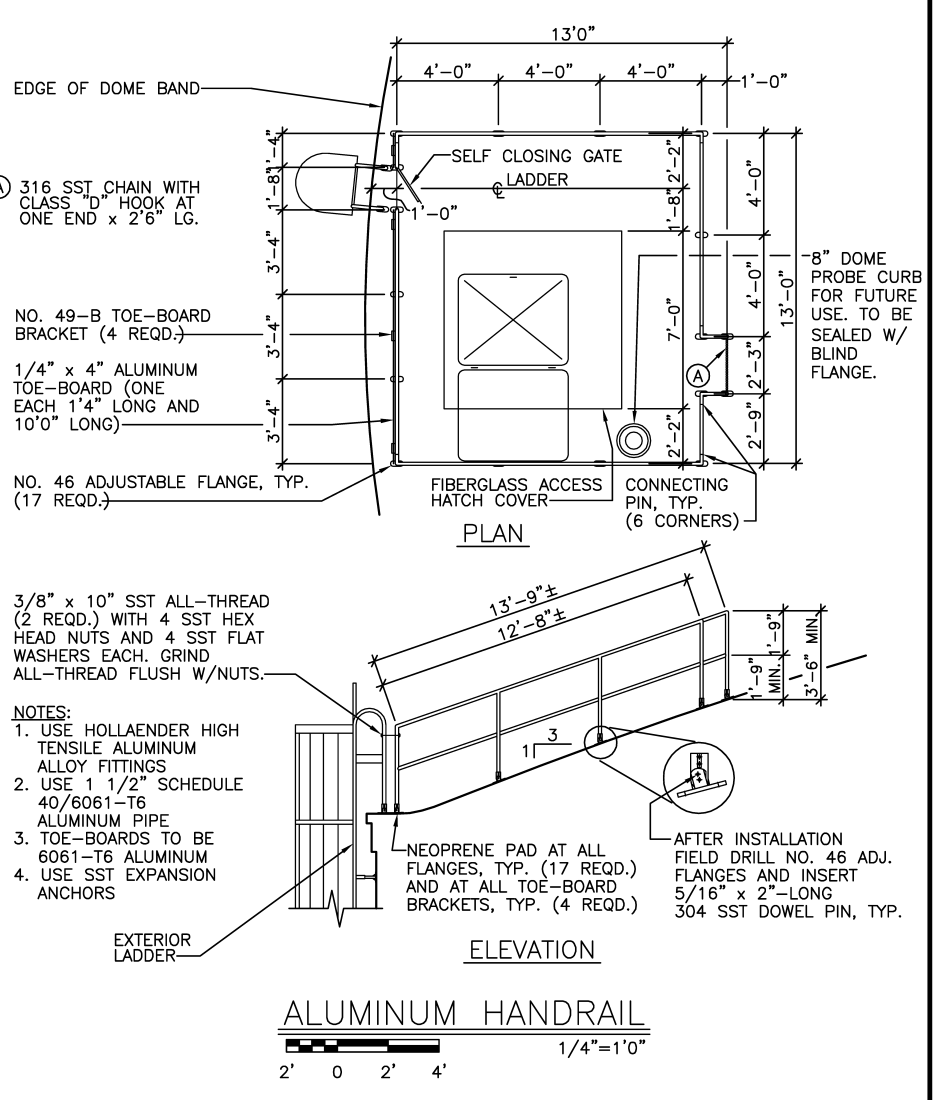
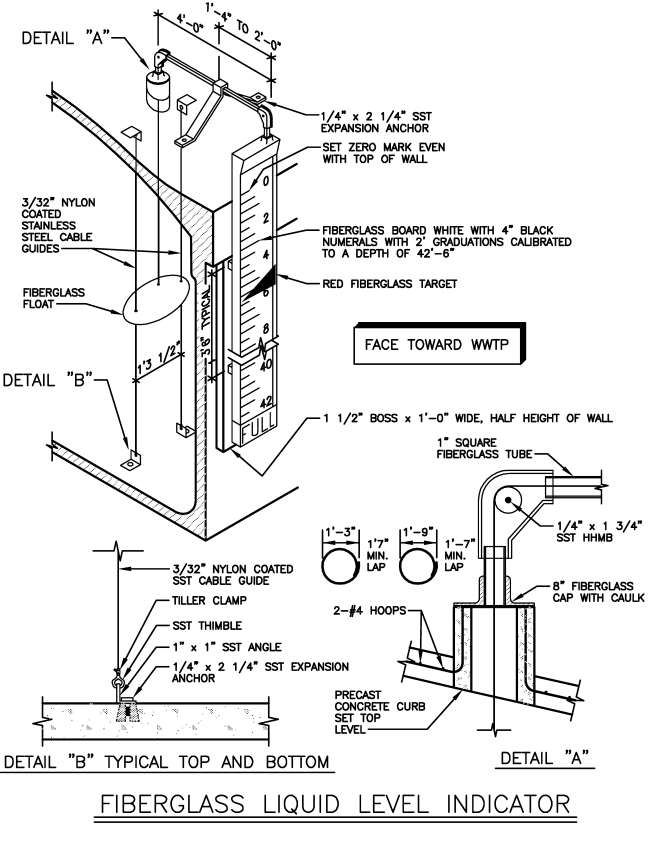
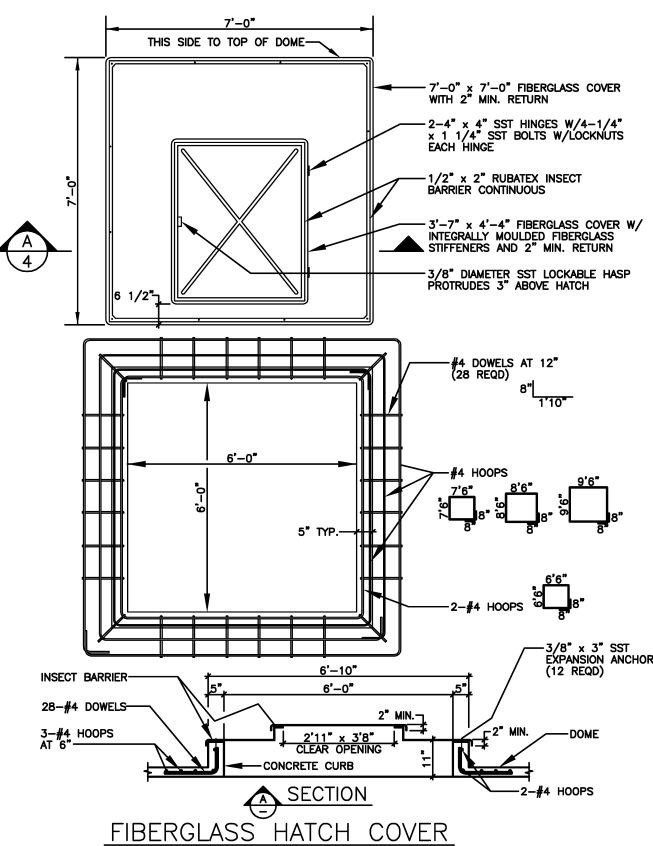
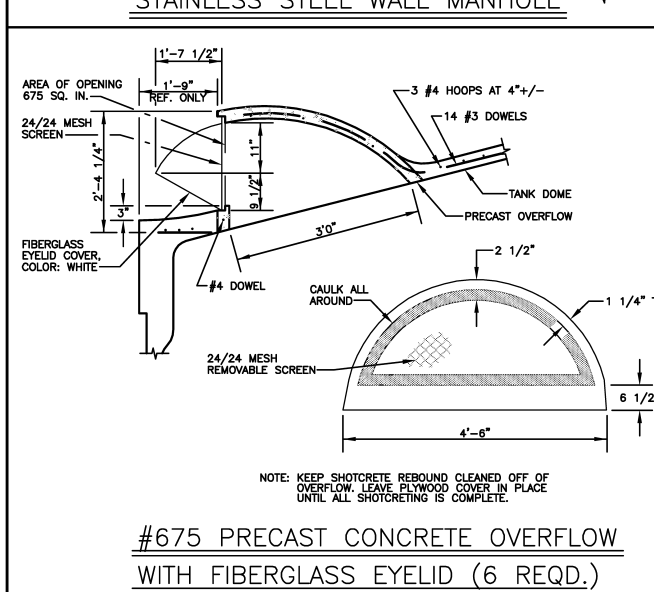
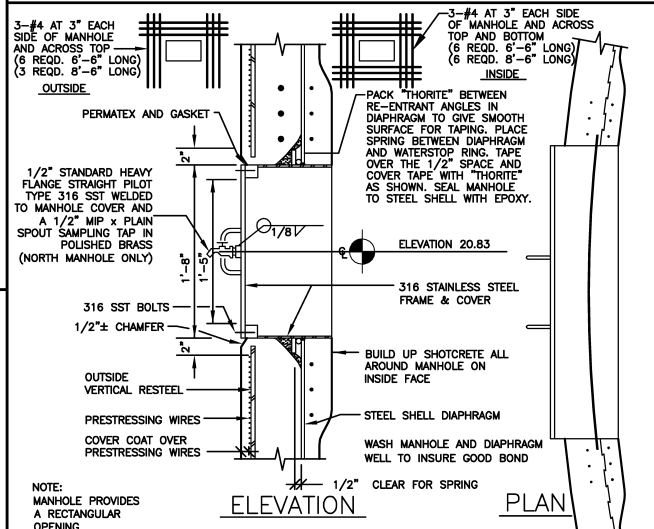
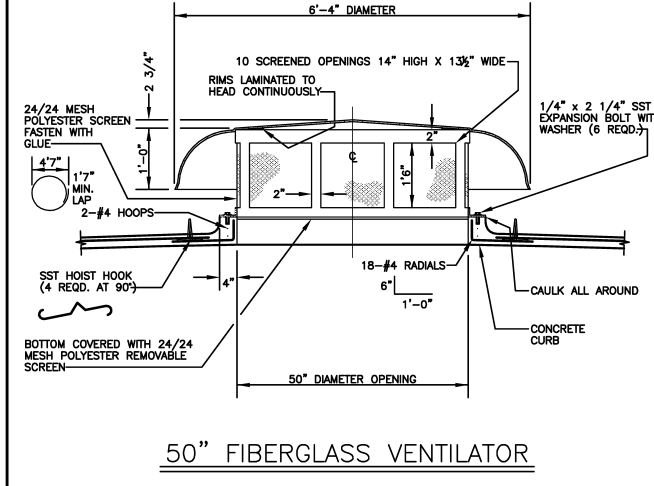
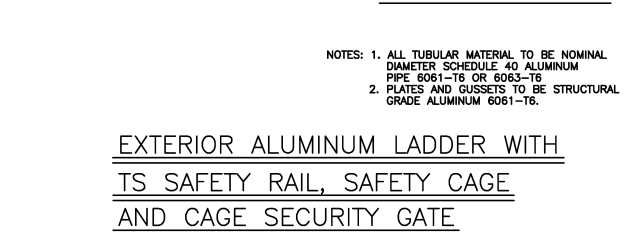
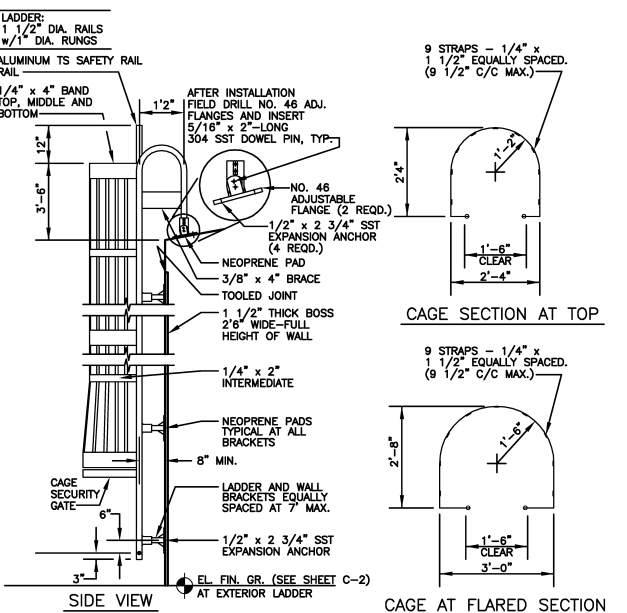
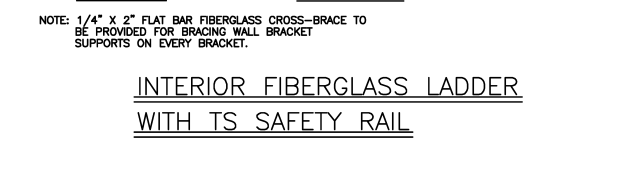
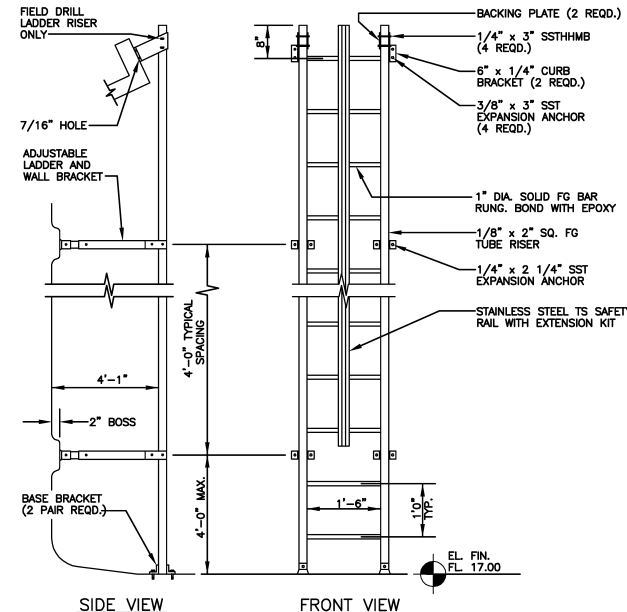
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PROJECT STATUS
 BID SET
 NOVEMBER 2009

TANK SECTIONS AND DETAILS

M-2

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BID SET
NOVEMBER 2009
TANK DETAILS

M-3

PLOTTED November 17, 2009 2:25 PM, PLOTTED BY: SCHNEIDER, TERRY
 X:\MANATEE PROJECTS\12008554_SWRF_TOMCAL_GST_WAFR\CADD\E-1 ELECTRICAL ABBREVIATIONS, LEGEND AND GENERAL NOTES.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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 ABOVE-GROUND 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
 EPO EMERGENCY POWER OFF
 EPR ETHYLENE PROPYLENE RUBBER
 EQ. EQUAL
 EQUIP. EQUIPMENT
 EQUIV. EQUIVALENT
 EXIST. EXISTING
 EXP. EXPOSED

ABBREVIATIONS:

EXT. EXTERIOR
 F FUSE
 FA FIRE ALARM
 FAA FUTURE FORCED AIR
 FACP FIRE ALARM CONTROL PANEL
 FACS FIRE ALARM CONTROL SYSTEM
 FC FOOTCANDLE
 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 & ELECTRONICS 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
 LIN. LINEAR
 LOC LOCATIONS
 LPS LIGHTNING PROTECTION SYSTEM
 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

ABBREVIATIONS:

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 MANUFACTURERS 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
 PH OR Ø PHASE
 PLC PROGRAMMABLE LOGIC CONTROLLER
 PLCS PLACES
 PM POWER METER
 PMH PRIMARY MANHOLE
 PNL PANEL
 PNLBD PANELBOARD
 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
 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














ABBREVIATIONS:

STA. STATION
 STD STANDARD
 STL STEEL
 STR STRANDED
 SW. SWITCH
 SWBD SWITCHBOARD
 SYM. SYMMETRICAL
 SYNC. SYNCHRONOUS
 SY SQUARE YARD, SQUARE YARDS
 SYS. SYSTEM
 TB TERMINAL BLOCK
 TBD TO BE DETERMINED
 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 UNINTERRUPTIBLE 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 WATTHOUR
 WM WATTHOUR 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 EXPLOSION PROOF
 XP EXPLOSION PROOF
 Z IMPEDANCE

GENERAL NOTES:

- REFER TO MECHANICAL DRAWINGS FOR PROJECT LOCATION, TANK LOCATIONS AND LOCATIONS OF BUILDINGS ON SITE PLAN.

LEGEND:

-  REFERENCE NOTE TAG
-  CONDUCTOR NOTE TAG
-  DRIVEN GROUNDING ROD ELECTRODE
-  CONNECTION POINT
-  AIR TERMINAL
-  POLE MOUNTED AREA LUMINAIRE, TYPE A
-  CONDUIT.
-  CONDUIT UNDERGROUND.
-  LIGHTNING PROTECTION SYSTEM MAIN LOOP CONDUCTOR
-  LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR
-  GROUNDING ELECTRODE CONDUCTOR
-  GFCI WP  DUPLEX RECEPTACLE, NEMA 5-20R, INDUSTRIAL SPECIFICATION GRADE. "GFCI" INDICATES THAT RECEPTACLE INCLUDES GROUND FAULT CIRCUIT INTERRUPTER. "WP" INDICATES RECEPTACLE IS WEATHERPROOF RATED.

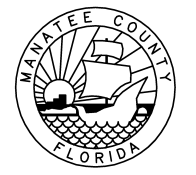


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NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER
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 ENG: G. DAVIS
 DRW: J. SCHEUERMAN
 FILE SAVE DATE:
 November 2, 2009

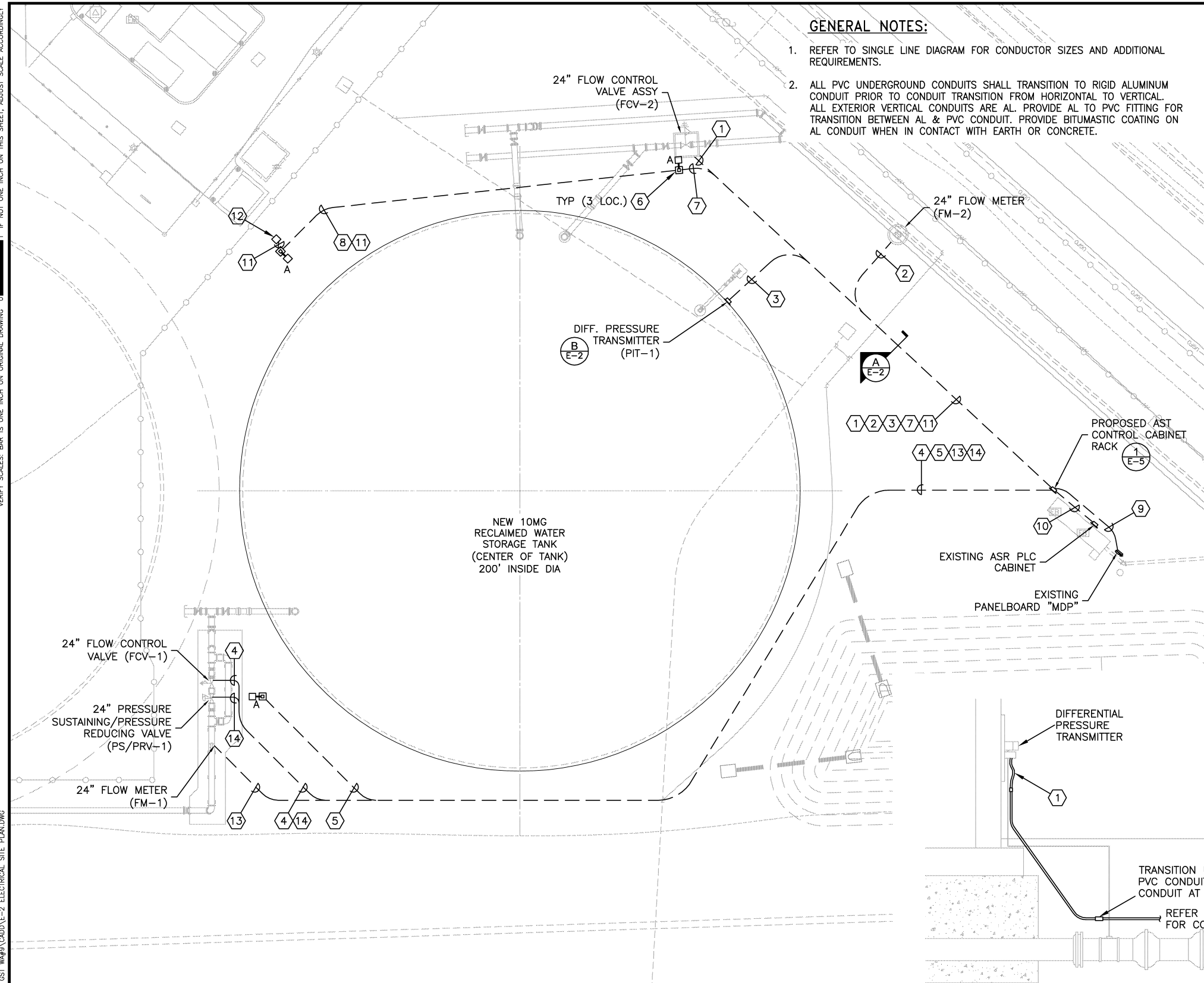
GLENN H. DAVIS
 FLORIDA P.E. NO. 66443



10MG RECLAIMED WATER STORAGE TANK
 AT THE
 SOUTHWEST WATER RECLAMATION FACILITY
 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

PROJECT STATUS
 BID SET
 NOVEMBER 2009
**ELECTRICAL ABBREVIATIONS,
 LEGEND AND GENERAL NOTES**

PLOTTED November 17, 2009 2:25 PM. PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554_SWRF_TOMGAL_GST_WAFR\CADD\E-2 ELECTRICAL 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. REFER TO SINGLE LINE DIAGRAM FOR CONDUCTOR SIZES AND ADDITIONAL REQUIREMENTS.
2. 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.

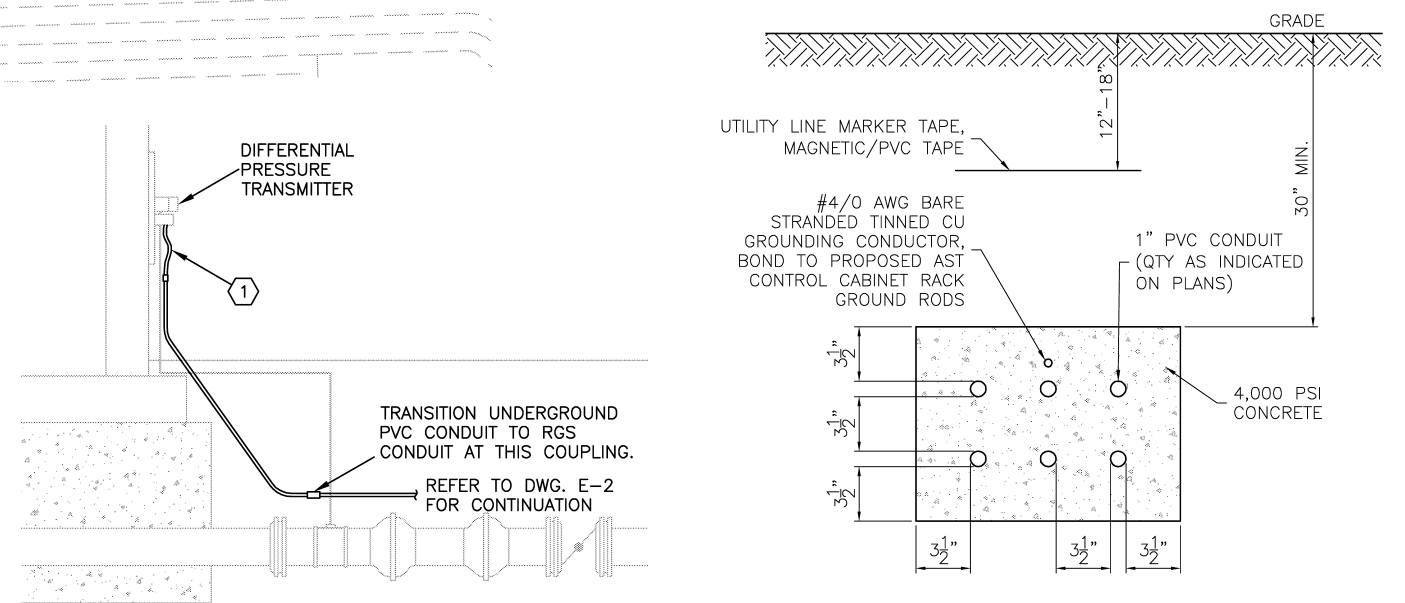
REFERENCE NOTES:

- ① PROVIDE ONE (1) 1 IN. SCHEDULE 40 CONCRETE ENCASED PVC CONDUIT UG BETWEEN FCV-2 CONTROLLER AND FLOW CONTROL VALVE FCV-2 FOR FLOW CONTROL SOLENOID POWER AND LIMIT SWITCH LS-2 SIGNAL. CONDUIT SHALL CONTAIN 5#14 CTRL, 10#14 SPARE AND 1#12 GND.
- ② PROVIDE ONE (1) 1 IN. SCHEDULE 40 CONCRETE ENCASED PVC CONDUIT UG BETWEEN AST CONTROL CABINET AND FLOW METER FM-2. CONDUIT SHALL CONTAIN 1-2/C #16 TSP CABLES, 1-2/C #16 TSP SPARE AND 1#12 GND.
- ③ PROVIDE ONE (1) 1 IN. SCHEDULE 40 CONCRETE ENCASED PVC CONDUIT UG BETWEEN EXISTING ASR PLC CABINET AND DIFF. PRESSURE TRANSMITTER (PIT-1). CONDUIT SHALL CONTAIN 1-2/C #16 TSP CABLES, 1-2/C #16 TSP SPARE AND 1#12 GND.
- ④ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT UG DIRECT BURIED BETWEEN FCV-1 CONTROLLER AND FLOW CONTROL VALVE FCV-1 FOR CONTROL WIRING. CONDUIT SHALL CONTAIN 5#14 CTRL, 10#14 SPARE AND 1#12 GND.
- ⑤ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT DIRECT BURIED UG FOR SITE LIGHTING.
- ⑥ SITE LIGHTING. REFER TO DETAILS 3, 4 & 5 ON DRAWING E-5 AND LIGHTING FIXTURE SCHEDULE.
- ⑦ PROVIDE ONE (1) 1 IN. SCHEDULE 40 CONCRETE ENCASED PVC CONDUIT FOR SITE LIGHTING & IRRIGATION CONTROLLER POWER.
- ⑧ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT DIRECT BURIED UG FOR SITE LIGHTING & IRRIGATION CONTROLLER POWER.
- ⑨ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT DIRECT BURIED UG BETWEEN EXISTING 'MDP' AND PNL 'XLC' ON AST CONTROL CABINET RACK.
- ⑩ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT DIRECT BURIED UG BETWEEN EXISTING ASR PLC CABINET AND AST CONTROL CABINET.
- ⑪ PROVIDE (1) 1 IN. SCHEDULE 80 PVC CONDUIT DIRECT BURIED UG FOR IRRIGATION CONTROLLER POWER.
- ⑫ 10' CONCRETE POST, 4' EMBEDDED IN GROUND. PROVIDE 20A, 1P, 10 KAIC RATED CB INSIDE A NEMA 3R ENCLOSURE FOR IRRIGATION CONTROLLER. PROVIDE A GROUND ROD & BOND TO ENCLOSURE & EXPOSED CONDUIT(S). PROVIDE 120V ELECTRICAL POWER FOR IRRIGATION CONTROLLER.
- ⑬ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT UG DIRECT BURIED BETWEEN AST CONTROL CABINET AND FLOW METER FM-1. CONDUIT SHALL CONTAIN 1-2/C #16 TSP CABLES, 1-2/C #16 TSP SPARE AND 1#12 GND.
- ⑭ PROVIDE ONE (1) 1 IN. SCHEDULE 80 PVC CONDUIT UG DIRECT BURIED BETWEEN AST CONTROL CABINET AND PS/PRV-1. CONDUIT SHALL CONTAIN 3#14 CTRL, 12#14 SPARE AND 1#12 GND.

1 PLAN
E-2 ELECTRICAL SITE
SCALE: 1"=20'

B DETAIL
E-2 DIFFERENTIAL PRESSURE TRANSMITTER
SCALE: NTS

A SECTION
E-2 DUCT BANK
SCALE: NTS

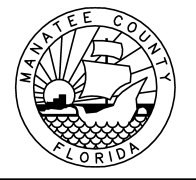


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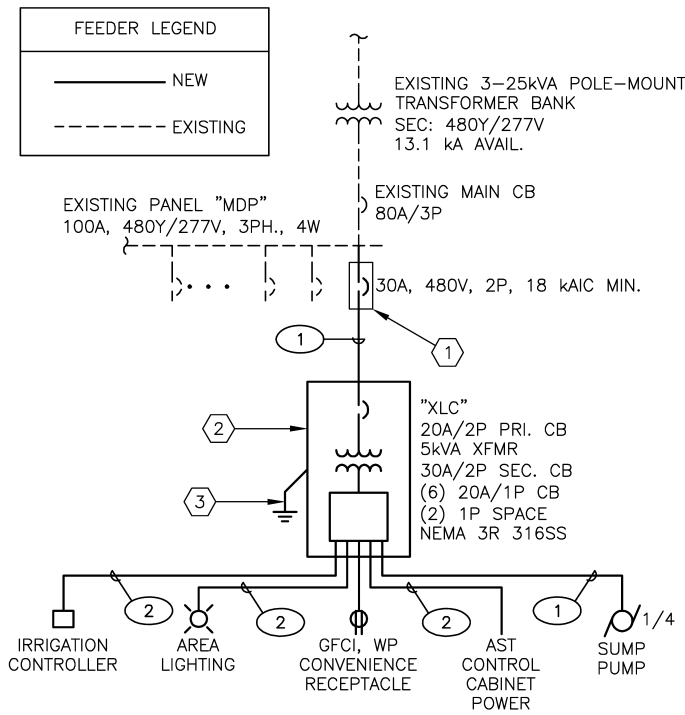


10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

PROJECT STATUS
BID SET
NOVEMBER 2009
E-2

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0



1 **DIAGRAM**
E-3
SINGLE LINE
SCALE: NTS

REFERENCE NOTES:

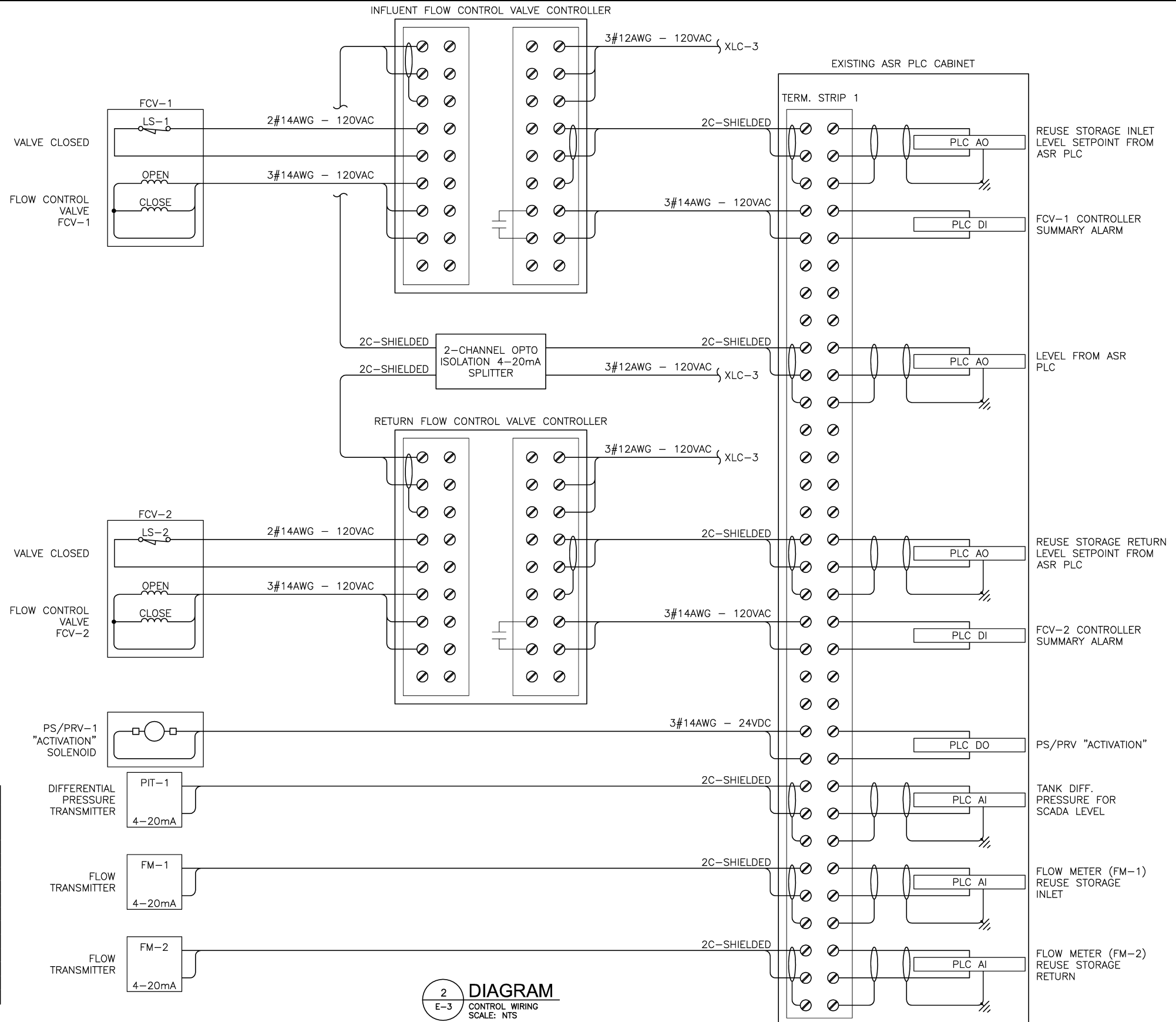
- ① PROVIDE NEW CIRCUIT BREAKER IN AVAILABLE SPACE IN EXISTING SQUARE 'D' NF SERIES PANELBOARD, "MDP".
- ② PROVIDE COMBINATION TRANSFORMER / LOAD CENTER.
- ③ REFER TO ELEVATION 1 ON DWG. E-5 FOR SEPARATELY DEVICED SYSTEM GROUND SPECIFICATION.

FEEDER SCHEDULE:

- ① (2) #10 AWG PH. AND (1) #10 AWG GND. IN 1 IN. CONDUIT.
- ② (1) #12 AWG PH., (1) #12 AWG PH., AND (1) #12 AWG GND. IN 1 IN. CONDUIT.

SERVICE LOAD SUMMARY

DESCRIPTION	LOAD	CONNECTED (kVA)	DEMAND FACTOR	DEMAND (kVA)
EXISTING 20HP ASR PUMP	20hp	21.5	125%	26.875
EXISTING ASR PUMP CONTROLLER	1kVA XFMR	1	100%	1
EXISTING 2HP SZMW-1-LCP	2HP	2.8	100%	2.8
EXISTING SZMW-1-LCP CONTROLLER	0.1kVA XFMR	0.1	100%	0.1
EXISTING 2HP SZMW-2-LCP	2HP	2.8	100%	2.8
EXISTING SZMW-2-LCP CONTROLLER	0.1kVA XFMR	0.1	100%	0.1
EXISTING LIGHTING	250W HPS	0.32	125%	0.4
NEW 'XLC'	5kVA XFMR	5	125%	6.25
				40.3 kVA
				48.6 A
25% SPARE CAPACITY		40.3	125%	50.4 kVA
				60.7 A



2 **DIAGRAM**
E-3
CONTROL WIRING
SCALE: NTS

PLOTTED November 17, 2009 2:26 PM. PLOTTED BY: SCHNEIDER, TERRY. X:\MANATEE PROJECTS\12008554_SWMF_TOMGAL_GST_WAFR\CADD\E-3_SINGLE LINE DIAGRAM AND CONTROL WIRING DIAGRAM.DWG

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FILE SAVE DATE:
November 2, 2009

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10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

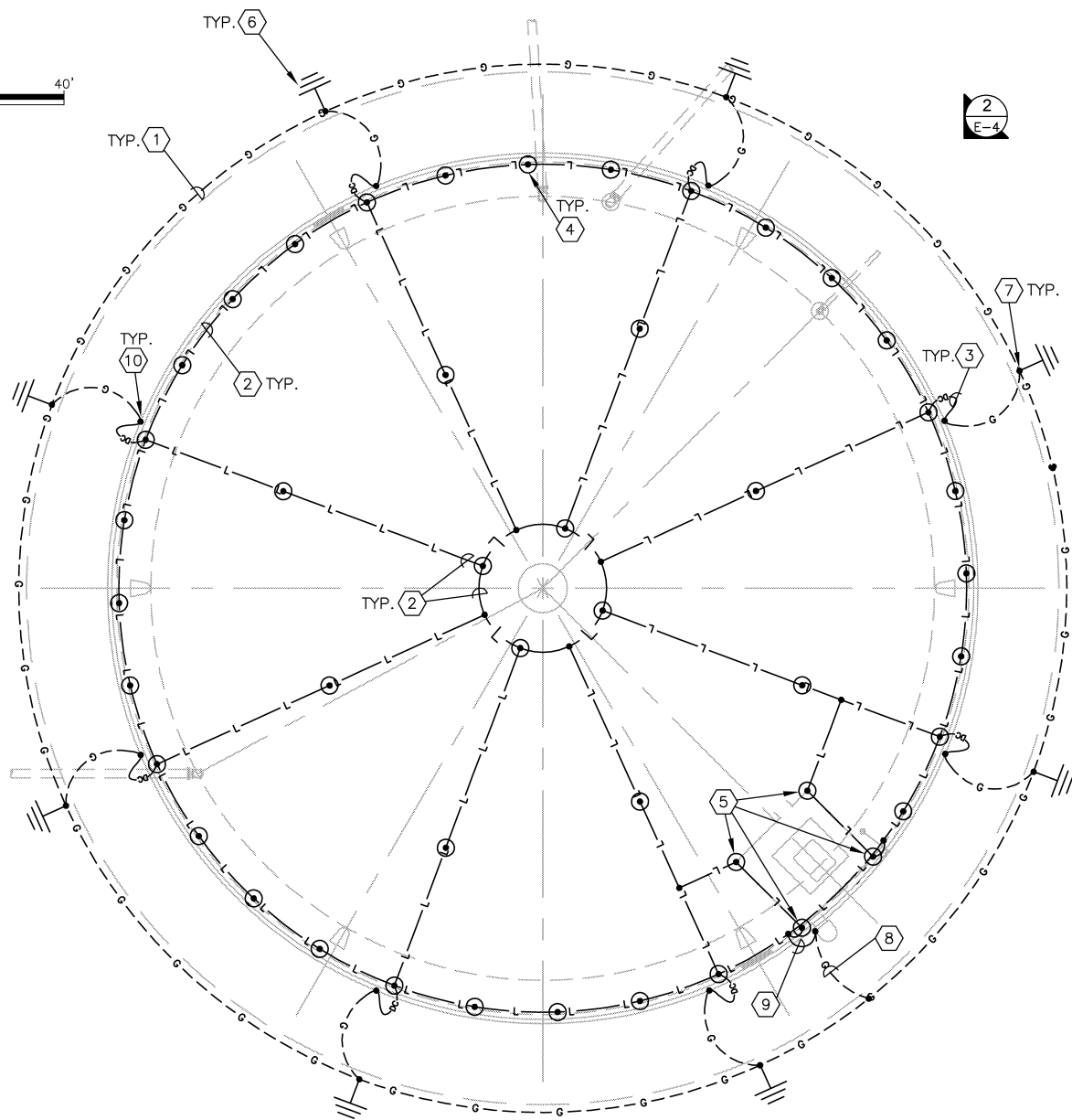
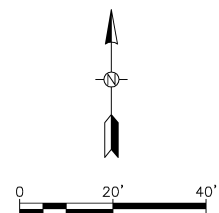
**SINGLE LINE DIAGRAM AND
CONTROL WIRING DIAGRAM**

PROJECT STATUS
BID SET
NOVEMBER 2009

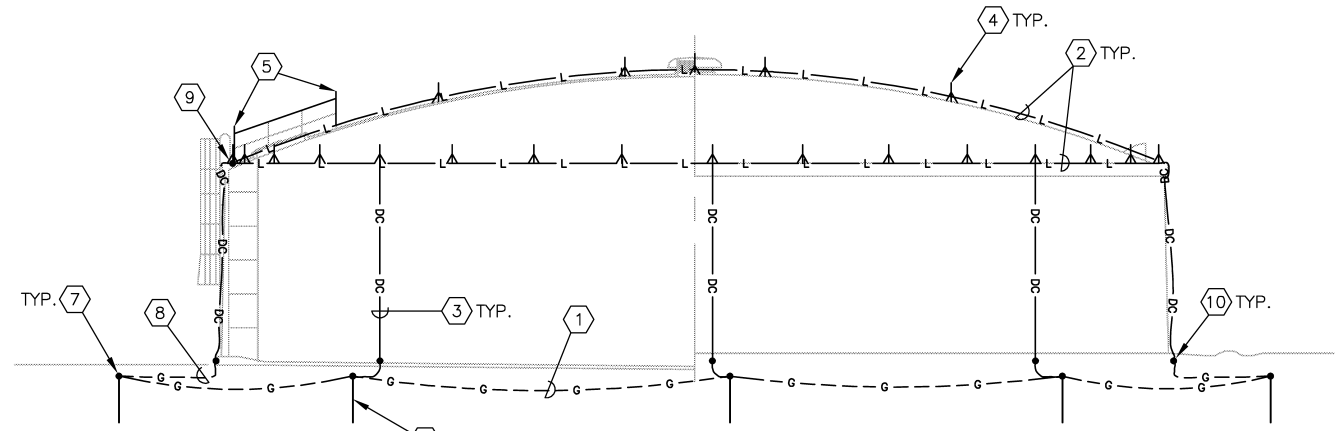
E-3

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

PLOTTED November 17, 2009 2:26 PM, PLOTTED BY: SONENBERG, TERRY
X:\MANATEE PROJECTS\12008554_SWRF_10MGAL_GST_WAF\CAD\E-4 LIGHTNING PROTECTION SYSTEM.DWG



1 PLAN
E-4 RECLAIMED TANK LIGHTNING PROTECTION SYSTEM
SCALE: 1" = 20'-0"



2 ELEVATION
E-4 WATER TANK LPS
SCALE: 1" = 20'-0"

REFERENCE NOTES:

- 1 PROVIDE #4/0 AWG BARE STRANDED TINNED COPPER COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR AROUND ABOVEGROUND STORAGE TANK (AST). DIRECT BURY COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR A MINIMUM OF 30" BELOW GRADE 20 FT. FROM TANK FOOTER.
- 2 PROVIDE LPS MAIN CONDUCTORS BETWEEN AIR TERMINALS AND BONDING POINTS FOR AST. LPS MAIN CONDUCTORS TO BE SECURED TO ROOF ON MAX. 3 FT. CENTERS.
- 3 PROVIDE DOWN CONDUCTORS BETWEEN LPS MAIN CONDUCTORS AND COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR. MOUNT DOWN CONDUCTORS ON AST ALONG 6" BOSSES PROVIDED USING EXPANSION ANCHOR CONDUCTOR SUPPORTS.
- 4 PROVIDE 48" NICKEL TIPPED COPPER AIR TERMINAL WITH ADHESIVE POINT BASE AND SUPPORTED WITH ADHESIVE MOUNT TRIPOD BRACE. SECURE AIR TERMINAL BASE AND TRIPOD TO TANK ROOF WITH MANUFACTURER APPROVED ADHESIVE.
- 5 PROVIDE 18" NICKEL TIPPED COPPER AIR TERMINAL WITH PIPE POINT BASE MOUNTING TO TOP MOST HANDRAIL HORIZONTAL PIPE SUPPORT MEMBER.
- 6 PROVIDE 3/4" DIA. X 10' GROUND ROD.
- 7 BOND DOWN CONDUCTOR AND COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR TO GROUND ROD VIA THE EXOTHERMIC WELDING PROCESS.
- 8 PROVIDE LPS SECONDARY CONDUCTOR BETWEEN COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR AND BASE OF LADDER STRUCTURE.
- 9 PROVIDE LPS SECONDARY CONDUCTOR BETWEEN LPS MAIN CONDUCTOR LOOP AND TOP OF LADDER STRUCTURE.
- 10 EXOTHERMICALLY WELD DOWN CONDUCTOR ON NEW TANK TO REBAR PROTRUSIONS FROM TANK FOOTER AND CONTINUE TO COUNTERPOISE GROUNDING ELECTRODE CONDUCTOR.

GENERAL NOTES:

1. BOND LPS MAIN CONDUCTORS, COUNTERPOISE GROUNDING ELECTRODE CONDUCTORS AND SECONDARY CONDUCTORS TO EQUIPMENT AND OTHER CONDUCTORS VIA THE EXOTHERMIC WELDING PROCESS.
2. INSTALL BONDING PLATES TO ALL METAL EQUIPMENT ON TANK ROOF AND SIDES, INCLUDING BUT NOT LIMITED TO LADDER RAILINGS. CONNECT BONDING PLATES TO LPS MAIN CONDUCTORS VIA LPS SECONDARY CONDUCTORS.

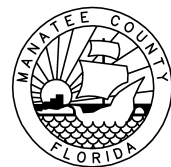


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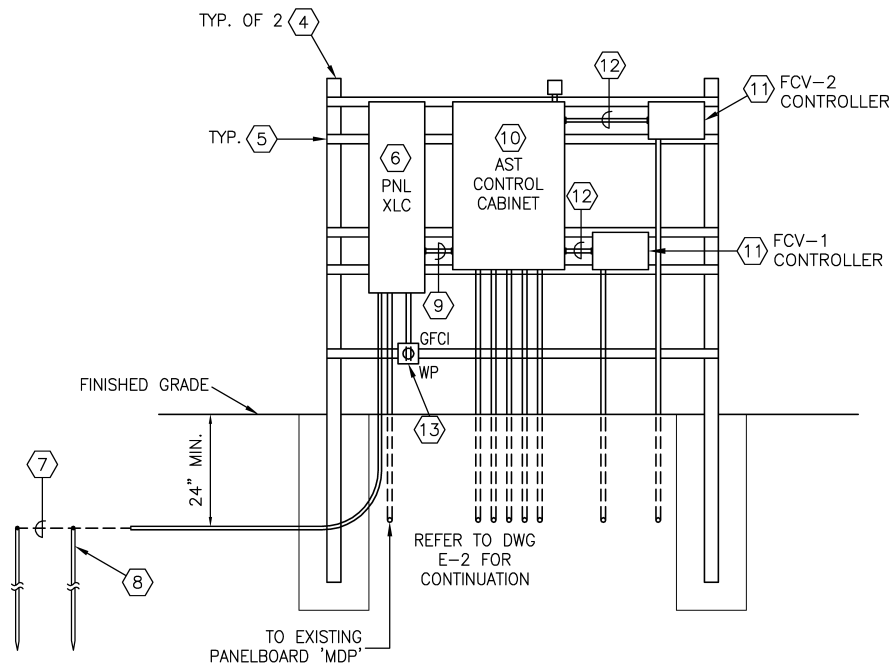


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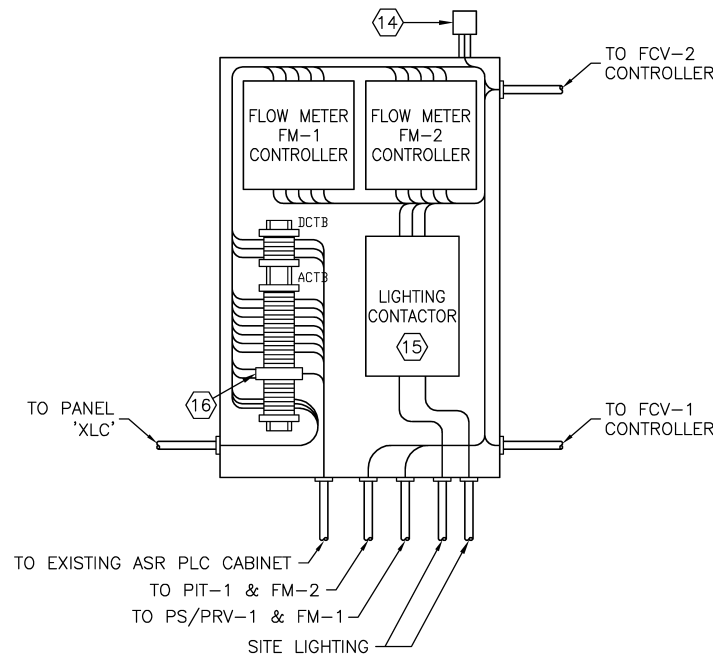
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROJECT STATUS BID SET NOVEMBER 2009
LIGHTNING PROTECTION SYSTEM
E-4

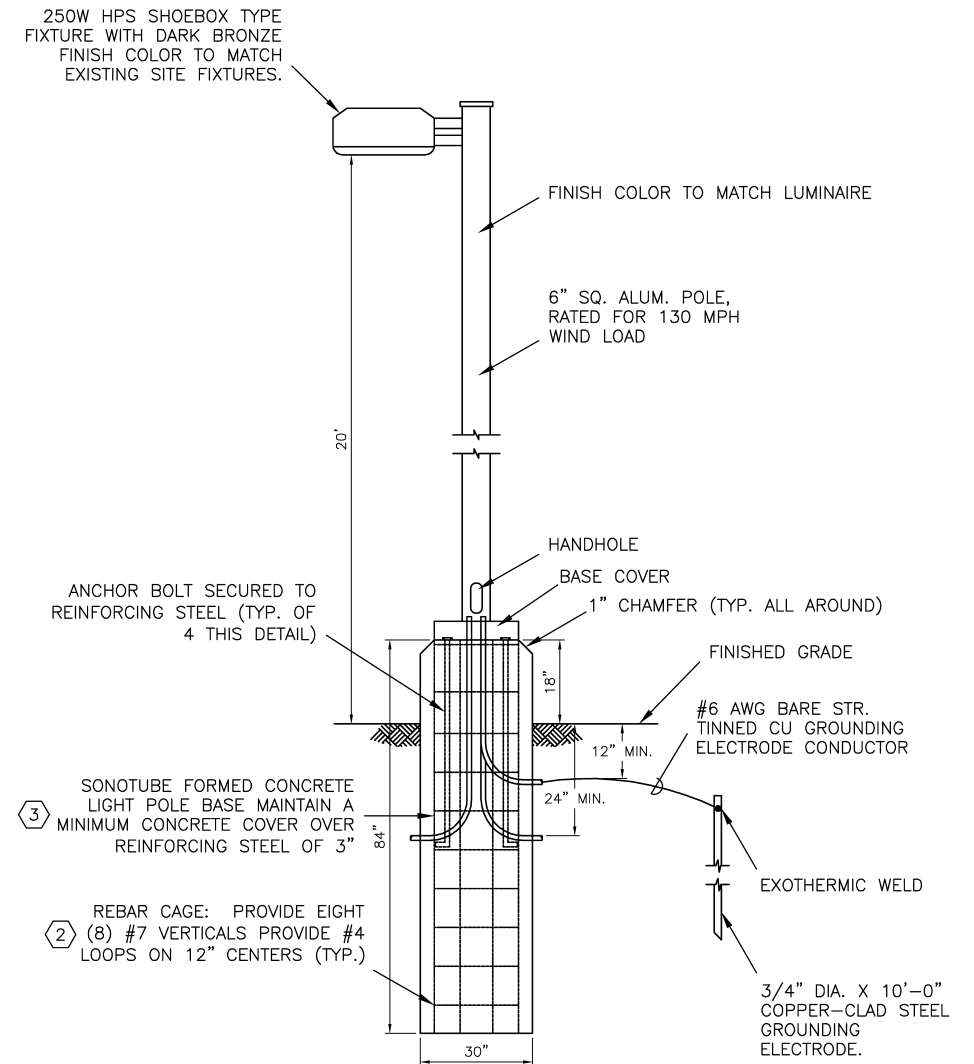
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



1 ELEVATION
E-2 AST CONTROL CABINET RACK
SCALE: NTS

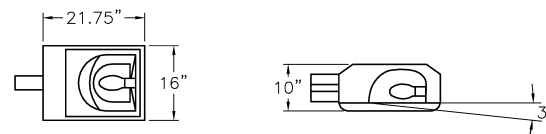


2 DETAIL
E-5 AST CONTROL CABINET LAYOUT
SCALE: NTS

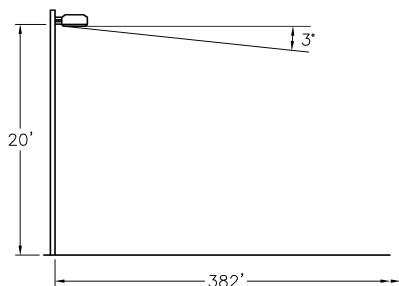


3 DETAIL
E-2 POLE MOUNTED AREA LUMINARIES
SCALE: NTS

LIGHTING FIXTURE SCHEDULE						
FIXT. TYPE	FIXTURE DESCRIPTION	MANUFACTURER & CATALOG NUMBER (BASIS OF DESIGN) OR APPROVED EQUAL	NO. AND TYPE OF LAMPS	VOLT	MOUNTING	REMARKS
A	POLE MOUNTED SITE FIXTURE	SPAULDING #CM1-MAF-S25-H3-F-Q-DB-F4	(1) 250W HPS	120	20' MTG. HT./ALUM. POLE	IESNA FULL CUTOFF LIGHTING CLASSIFICATION



4 DETAIL
E-2 LIGHT FIXTURE
SCALE: NTS



5 DETAIL
E-2 DISTANCE TO THE EDGE OF DIRECT ILLUMINATION
SCALE: NTS

REFERENCE NOTES:

- ① PROVIDE LIQUID TIGHT FLEXIBLE METAL ALUMINUM CONDUIT FOR LAST 18" OF CONDUIT RUN.
- ② REINFORCING STEEL SHALL BE DEFORMED BARS OF NEW BILLET STEEL MEETING THE REQUIREMENTS OF ASTM A 615, GRADE 60, UNCOATED.
- ③ CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS AS DETERMINED BY TEST CYLINDERS MADE IN ACCORDANCE WITH ASTM C 31 AND TESTED IN ACCORDANCE WITH ASTM C 39. CONCRETE SHALL CONTAIN NOT LESS THAN 470 LBS OF CEMENT PER CUBIC YARD. CONCRETE SHALL CONTAIN 5 PERCENT OF ENTRAINED AIR, PLUS OR MINUS 1 PERCENT, AS DETERMINED BY ASTM C 231 AND SHALL HAVE A SLUMP OF NOT MORE THAN 4" AS DETERMINED BY ASTM C 143.
- ④ PROVIDE 3" DIA. BY 9' SS SCHEDULE 40 PIPE SUPPORT POST WITH SS END CAPS, PLACE CONCRETE 6" AROUND AND UNDER EACH SUPPORT POST. CONCRETE SHALL HAVE MINIMUM STRENGTH AT 28 DAYS OF 3,000PSI.
- ⑤ 1-5/8" 12 GA. SS CHANNEL WITH END CAPS (QUANTITY AS REQUIRED). PROVIDE SS MOUNTING HARDWARE AS REQUIRED.
- ⑥ PROVIDE COMBINATION TRANSFORMER / LOAD CENTER WITH BOLT-ON FEEDER CIRCUIT BREAKERS WITH MINIMUM 18kAIC RATING, IN NEMA 3R 316SS ENCLOSURE.
- ⑦ PROVIDE #6 AWG GROUNDING ELECTRODE CONDUCTOR (GEC) BETWEEN 'XLC' AND GROUNDING ELECTRODES IN 1IN. SCHEDULE 80 PVC CONDUIT. EXOTHERMICALLY WELD GEC TO EACH GROUND ROD.
- ⑧ PROVIDE TWO (2) 3/4" DIA. BY 10' LONG GROUND RODS SPACED WITH A MINIMUM OF 10' SEPARATION.
- ⑨ PROVIDE ONE 1" RGS CONDUIT NIPPLE BETWEEN PANEL 'XLC' AND AST CONTROL CABINET.
- ⑩ PROVIDE 36"H X 24"W X 12"D NEMA TYPE 4X SS ENCLOSURE WITH CONTINUOUS HINGED COVER, T-HANDLE AND BACK PANEL. PROVIDE TWO (2) THERMOPLASTIC VENTILATORS ON OPPOSITE SIDES OF ENCLOSURE PROPERLY INSTALLED TO PROVIDE RAINPROOF VENTILATION AND ONE 3/4 IN. TYPE 316SS NEMA TYPE 4X BREATHER/DRAIN WITH CASTELLATED LOCKNUTS AND CAPTIVE "O" RING ON RECESS OF THE FACE.

REFERENCE NOTES CON'T:

- ① PROVIDE PID FLOW CONTROLLER IN NEMA TYPE 4X SS ENCLOSURE.
- ② PROVIDE 1 IN. RIGID ALUMINUM CONDUIT BETWEEN AST CONTROL CABINET AND FLOW CONTROL VALVE CONTROLLER.
- ③ PROVIDE GFCI, WP DUPLEX RECEPTACLE WITH CLOSED-WHILE-IN-USE COVER.
- ④ PROVIDE 120V RATED PHOTOELECTRIC CELL WITH SENSOR FACING NORTH AND WINDOW ADJUSTED TO COUNTY'S APPROVAL.
- ⑤ PROVIDE 30A, 2-POLE, ELECTRICALLY HELD LIGHTING CONTACTOR.
- ⑥ PROVIDE DIN RAIL MOUNTED 2-CHANNEL OPTICAL ISOLATOR / 4-20mA SPLITTER.

PLOTTED November 17, 2009 2:26 PM. PLOTTED BY: SONENBERG, TERRY
K:\MANATEE PROJECTS\12008554_SWWRF_TONGAL_GST_WAFR\CADD\E-5 LIGHTING FIXTURE SCHEDULE & ELECTRICAL DETAILS.DWG

URS
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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER
12008554

PM: D. WILCOX
ENG: G. DAVIS
DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 17, 2009

GLENN H. DAVIS
FLORIDA P.E. NO. 66443



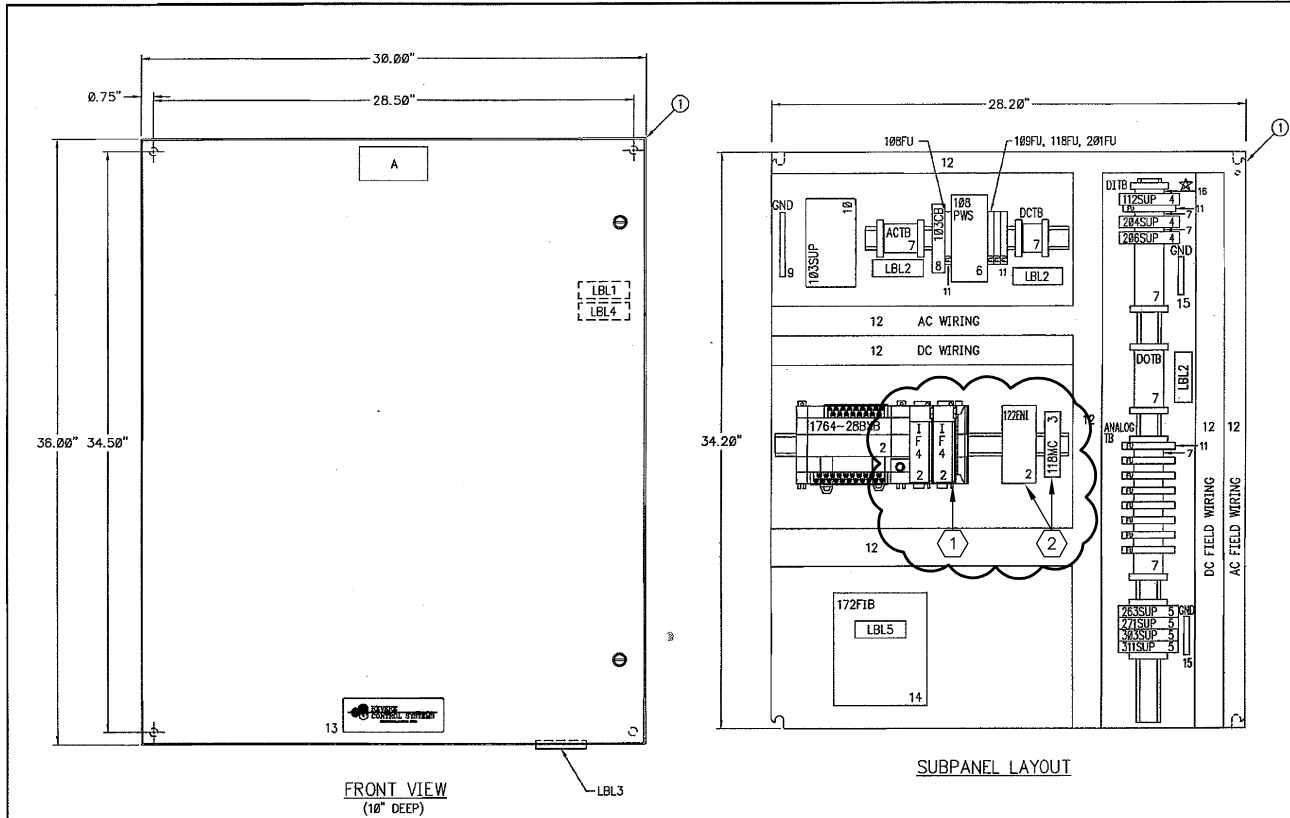
10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LIGHTING FIXTURE SCHEDULE &
ELECTRICAL DETAILS

PROJECT STATUS
BID SET
NOVEMBER 2009

E-5

PLOTTED November 17, 2009 2:26 PM, PLOTTED BY: SONNENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF TONGAL GST WAFR\CADD\E-6 REVERSE CONTROL SYSTEMS AS BUILT SP-10 CONTROL PANEL.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



FRONT VIEW
(10" DEEP)

SUBPANEL LAYOUT

LABEL SCHEDULE			
LBL1	RCS INFORMATION LABEL: SERIAL NO. G1037AN CUSTOMER ID: 60420 LINE VOLTAGE 120VAC 1 PHASE WIRE 6PHZ CONTROL VOLTAGE 120VAC LARGEST MOTOR HP N/A TOTAL FLA N/A RCS CONTACT C. HUBBIS REF. DWG. NO. G1037AN TYPE 12 ENCLOSURE SHORT CIRCUIT CURRENT RATING 2k RMS SYMMETRICAL AMPERES		
LBL2	USE COPPER CONDUCTORS ONLY. RECOMMENDED TORQUE: 5.31 - 7.08 IN. LBS.		
LBL3	TO MAINTAIN ENCLOSURE RATING, USE HUBS OR FITTINGS WITH THE SAME ENVIRONMENTAL RATING AS THE ENCLOSURE. O-2/GEDNEY CHM SERIES HUBS APPLETON HUB SERIES HUBS T & B H SERIES		
LBL4	UL508A LABEL		
LBL5	PANEL 1 XXXX	PANEL 2 FUTURE	
FUSES	108FU 109FU 112FU 118FU 201FU 263FU 267FU, 27FU, 275FU, 303FU, 307FU, 31FU, 315FU	ACC-2 ACC-5 ACC-1/4 ACC-1/8	2A 125V 5A 125V 1/4A 125V 1A 125V 1/8A 125V

NOTE: FUSE LABELS TO BE LOCATED NEAR EACH RESPECTIVE FUSEHOLDER.

ACTB	DCIB	DIIB	DOIB	ANALOG IB
H	AN1091	112SUP	AN2331	263FU
N1	AN1091	112FU	AN2351	AN2841
GND	AN1091	AN1122	AN2371	SH
N2	AN1093	204SUP	AN2301	267FU
N2		AN1122	AN2391	AN2881
		206SUP	AN2401	SH
		AN2091	AN2411	271FU
		AN2101	AN2421	AN2721
		AN2111	AN2451	SH
		AN2121	AN2461	275FU
		AN2131	AN2481	AN2761
		AN2141	AN2491	SH
		AN2151		303FU
		AN2161		AN3041
		AN2171		SH
		AN2181		307FU
		AN2191		AN3081
		AN2201		SH
				311FU
				AN3121
				SH
				315FU
				AN3161
				SH

TERMINAL BLOCK LAYOUT

BILL OF MATERIAL					
ITEM	QTY.	MANUFACTURER AND CATALOG NUMBER	DESCRIPTION		
1	1	HOFFMAN CUSTOM (CSD363010SS)	CONCEPT ENCLOSURE, NEMA 4, S.S., 36" X 30" W X 10" D		
	1	HOFFMAN CP3630	POWDER COATED WHITE INSIDE/OUTSIDE SUBPANEL, STEEL PANEL, PAINTED WHITE		
2	1	ALLEN-BRADLEY 1764-28BX0	MICROLOGIX 1500 BASE MODULE, 24VDC SUPPLY, 16DC DISCRETE INPUTS, 12 DC DISCRETE OUTPUTS		
	1	ALLEN-BRADLEY 1764-LRP	PROCESSOR, TWO RS-232 PORTS 14K USER PROGRAM CAPACITY		
	1	ALLEN-BRADLEY 1764-MMRT0	MEMORY MODULE, 8K WITH REAL TIME CLOCK		
	2	ALLEN-BRADLEY 1769-IF4	ANALOG INPUT MODULE		
	1	ALLEN-BRADLEY 1769-ECR	MODULE END CAP		
	1	ALLEN-BRADLEY 1747-CP3	PC PROGRAMMING/CONFIGURATION CABLE		
	1	ALLEN-BRADLEY 1791-NET-EN1	ETHERNET GATEWAY MODULE, DF1 SERIAL TO ETHERNET		
	1	ALLEN-BRADLEY 1761-CBL-HM02	DF1 CABLE 6.5 FT., FOR CONNECTING MICROLOGIX 1500 TO GATEWAY MODULE		
3	1	PHOENIX CONTACT 27 08 16 4	MEDIA CONVERTER, CAT5 TO F/O, FL MC 100BASET/FO 1300		
4	3	PHOENIX CONTACT 28 56 08 7	DI TVSS, PT 2X1-24DC-ST		
	3	PHOENIX CONTACT 28 56 13 9	BASE ELEMENT, PT 1X2-BE		
5	4	PHOENIX CONTACT 28 38 22 8	AI/AO TVSS, PT 2x2-24DC		
	4	PHOENIX CONTACT 28 39 20 8	BASE ELEMENT		
6	1	PHOENIX CONTACT 29 38 58 1	POWER SUPPLY, 120 VAC INPUT, 24 VDC OUTPUT, 5 AMP		
7	63	PHOENIX CONTACT 30 04 36 2	TERMINAL BLOCK, UKSN, 600 VAC, 30 AMP, #24-#10 AWG		
8	1	SQUARE D QOU-115	CIRCUIT BREAKER, 15 AMP		
9	1	SQUARE D PK9GTA	GROUND BAR		
10	1	EDCO HSP121BT-1RU	SURGE SUPPRESSOR, EPOXY ENCAPSULATED, BARRIER TERMINAL STRIPS, 120 VAC, 15 AMP		
11	13	PHOENIX CONTACT 30 04 17 1	FUSE HOLDER		
	4	BUSSMANN AGC-1	FUSE, 1/4 AMP, FAST ACTING (2 SPARE)		
	2	BUSSMANN AGC-1	FUSE, 1 AMP, FAST ACTING (1 SPARE)		
	2	BUSSMANN AGC-5	FUSE, 5 AMP, FAST ACTING (1 SPARE)		
	12	BUSSMANN AGC-1/8	FUSE, 1/8 AMP, FAST ACTING (4 SPARE)		
	2	BUSSMANN AGC-2	FUSE, 2 AMP, FAST ACTING (1 SPARE)		
12	A/R	PANDUIT TYPE F	WIRE DUCT, RIGID GRAY VINYL W/NON-SLIP COVER		
13	1	REVERE CUSTOM	NAMEPLATE "REVERE CONTROL SYSTEMS"		
14	1	CORNING CABLE SYSTEMS SPH-01P	F/O PATCH PANEL		
	1	CORNING CABLE SYSTEMS CCH-CP12-25T	12 PORT PANEL, ST MM LOADED		
	2	CORNING CABLE SYSTEMS 505792KS14106F	FIBER JUMPER, 6 FEET, ST TO SC		
15	2	SQUARE D PK5GTA	GROUND BAR		
16	1	PHOENIX CONTACT 27 98 78 9	TERMINAL BLOCK, PROVIDES CONNECTION FOR COMMON DIN RAIL REFERENCE		

ENGRAVING SCHEDULE						
ID NO.	QTY.	TYPE	SIZE	PLATE COLOR	LETTER COLOR	FIRST LINE \ SECOND LINE, ETC.
A	1	NP	2" X 4"	BLACK	WHITE	SP-10 \ SWRF PLC \ ASR WELL

ATTACH NAMEPLATE WITH STAINLESS STEEL SCREWS.
DEVICE LABELS ARE TO BE ENGRAVED AND ATTACHED WITH STAINLESS STEEL SCREWS.

NOTE:
PANEL SHALL BEAR UL508A LABEL FOR ENCLOSED INDUSTRIAL CONTROL PANELS.
★ TERMINATE TO GROUND

REVERE CONTROL SYSTEMS

(205) 824-0004 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
SOUTHWEST WRF SP-10 ASR WELL SCADA PANEL
ENCLOSURE LAYOUT, BILL OF MATERIAL & ENGRAVING

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: LDG DATE: 04-26-07
CHECKED: CH1 SCALE: 1/4" = 1"
JOB NO. 60420 DWG. NO. G1037AN 1/4

GENERAL NOTES:

- SP-10 IS AN EXISTING CONTROL PANEL. ONLY ITEMS INDICATED BY CLOUDS REPRESENT WORK TO BE DONE UNDER THIS CONTRACT.

REFERENCE NOTES:

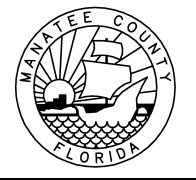
- PROVIDE ONE ALLEN BRADLEY ANALOG INPUT MODULE (1769-IF4) AND ONE ALLEN BRADLEY ANALOG OUTPUT MODULE (1769-OF8V).
- SLIDE EXISTING DEVICES ALONG EXISTING DIN RAIL TO PROVIDE SPACE REQUIRED FOR ADDITIONAL I/O MODULES.

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NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER
12008554
PM: D. WILCOX
ENG: G. DAVIS
DRW: J. SCHEUERMAN
FILE SAVE DATE:
November 2, 2009

GLENN H. DAVIS
FLORIDA P.E. NO. 66443



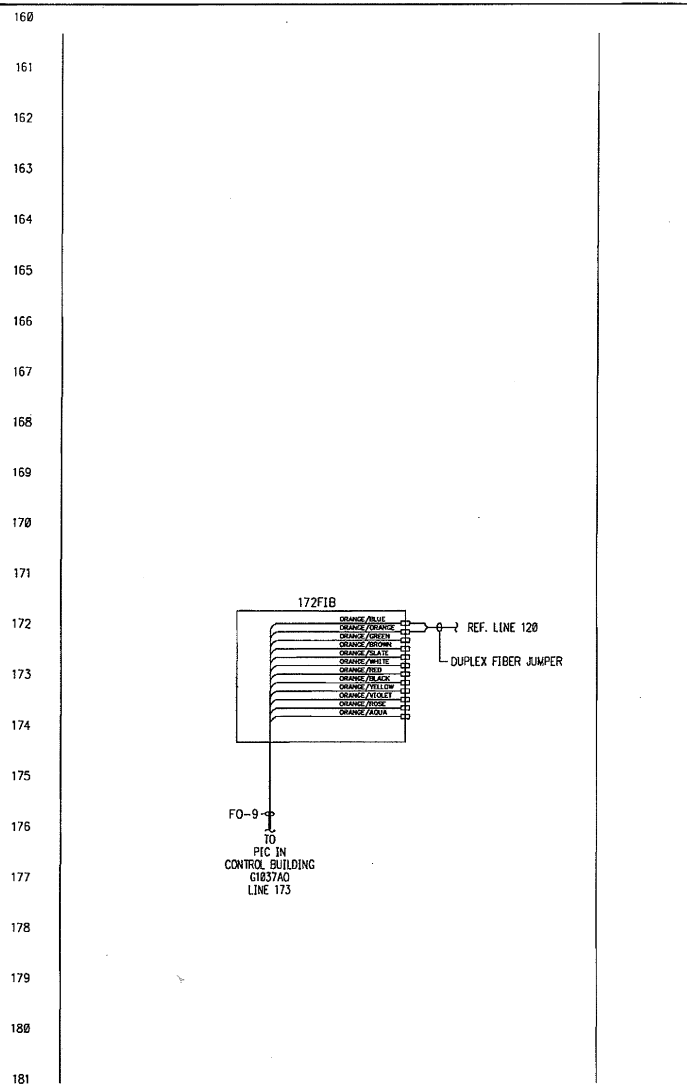
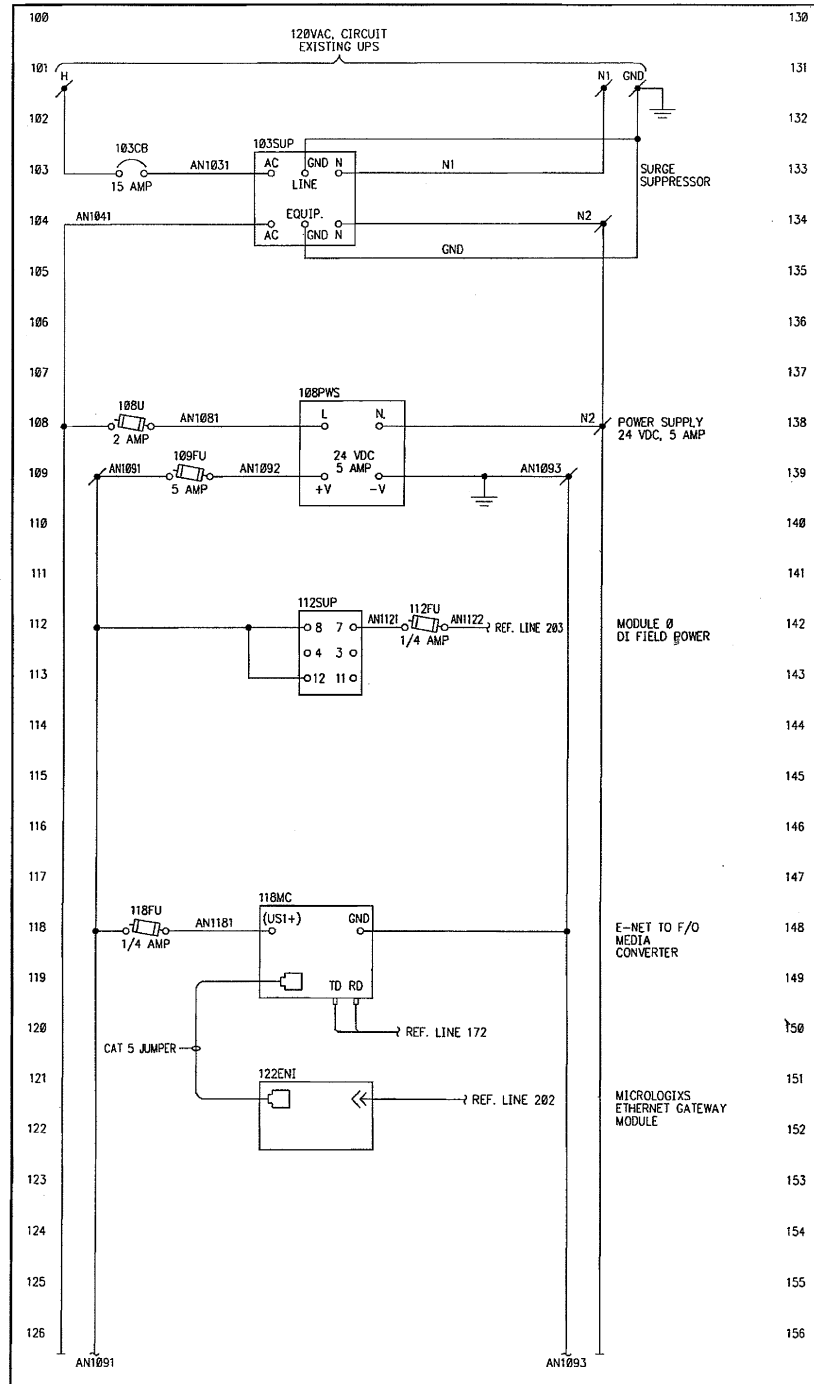
10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

REVERE CONTROL SYSTEMS AS
BUILT SP-10 CONTROL PANEL

PROJECT STATUS
BID SET
NOVEMBER 2009

E-6

PLOTTED November 17, 2009 2:27 PM, PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF TONGAL GST WAFR\CADD\E-7 REVERE CONTROL SYSTEMS AS BUILT SP-10 CONTROL PANEL.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



LEGEND:
 / DENOTES A TERMINAL BLOCK POINT
 * DENOTES A REMOTE TERMINAL BLOCK POINT BY OTHERS
 * DENOTES ITEM REMOTE FROM CONTROL PANEL
 --- DENOTES WIRING EXTERNAL TO CONTROL PANEL
 * DENOTES CONTROL RELAY TERMINAL POINT

REVERE CONTROL SYSTEMS
 (205) 824-8884 BIRMINGHAM, ALABAMA 35216
 SUBJECT: MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
 SOUTHWEST WRF SP-10 ASR WELL SCADA PANEL ELECTRICAL SCHEMATIC
 CUSTOMER: MANATEE COUNTY, FLORIDA
 DRAWN BY: LDG DATE: 04-26-07
 CHECKED: CH1 SCALE: NONE
 JOB NO: 60420 DWS. NO: G1037AN 2/4

NO.	DATE	DESCRIPTION	BY
2	09-22-08	FIELD MODIFICATION	CBC
1	09-24-07	RECORD DRAWING	LDG
REVISION			

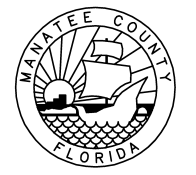
GENERAL NOTES:
 1. SP-10 IS AN EXISTING CONTROL PANEL. THIS SHEET IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

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 Florida Engineering Number: 000002

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REVISIONS			

URS JOB NUMBER
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 PM: D. WILCOX
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 DRW: J. SCHEUERMAN
 FILE SAVE DATE:
 November 2, 2009

GLENN H. DAVIS
 FLORIDA P.E. NO. 66443

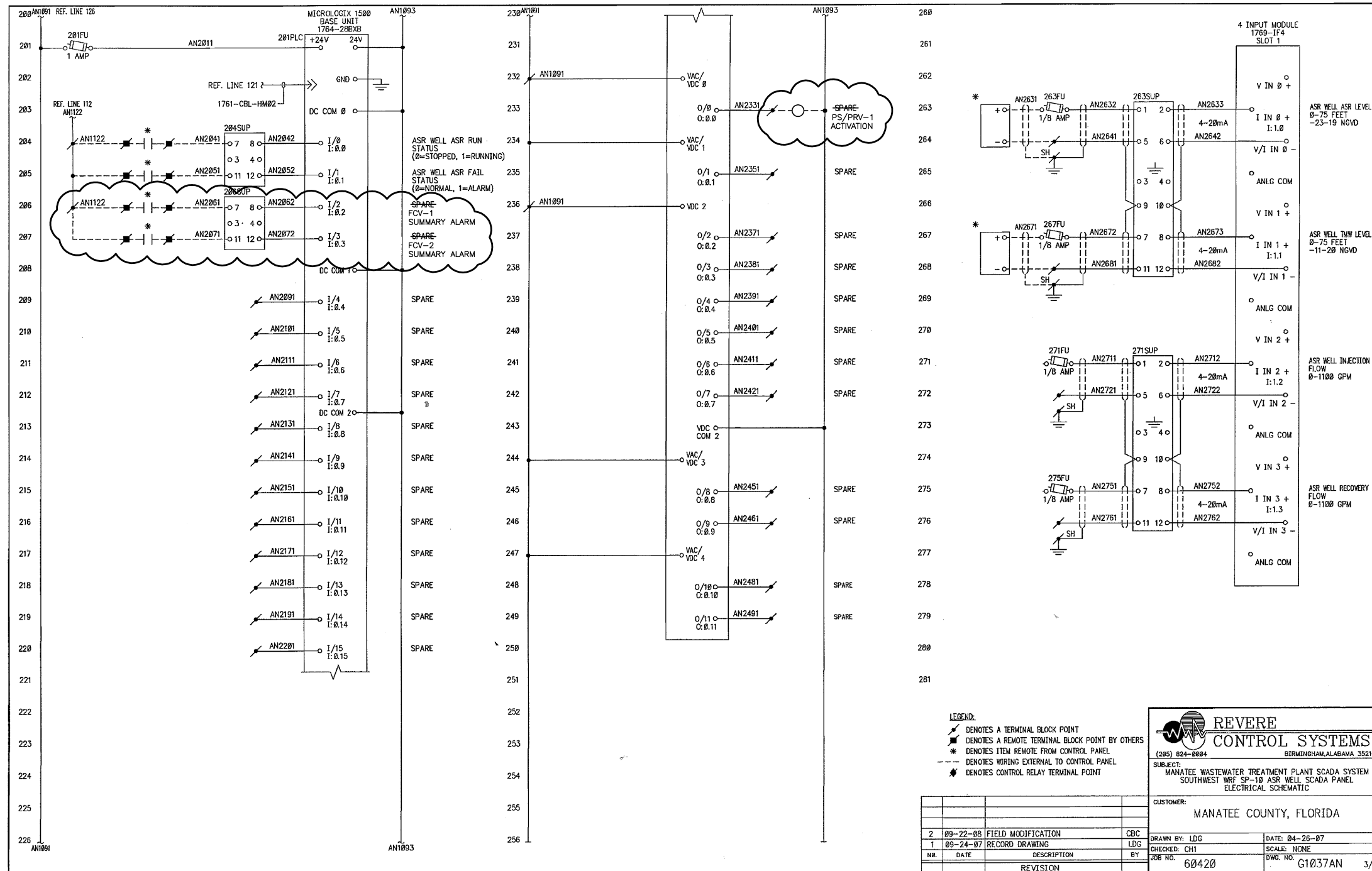


10MG RECLAIMED WATER STORAGE TANK
 AT THE
 SOUTHWEST WATER RECLAMATION FACILITY
 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

REVERE CONTROL SYSTEMS AS
 BUILT SP-10 CONTROL PANEL
 E-7

PROJECT STATUS
 BID SET
 NOVEMBER 2009

PLOTTED November 17, 2009 9:27 PM. PLOTTED BY: SONENBERG, TERRY
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GENERAL NOTES:

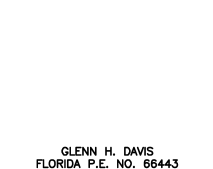
- SP-10 IS AN EXISTING CONTROL PANEL. ONLY ITEMS INDICATED BY CLOUDS REPRESENT WORK TO BE DONE UNDER THIS CONTRACT.

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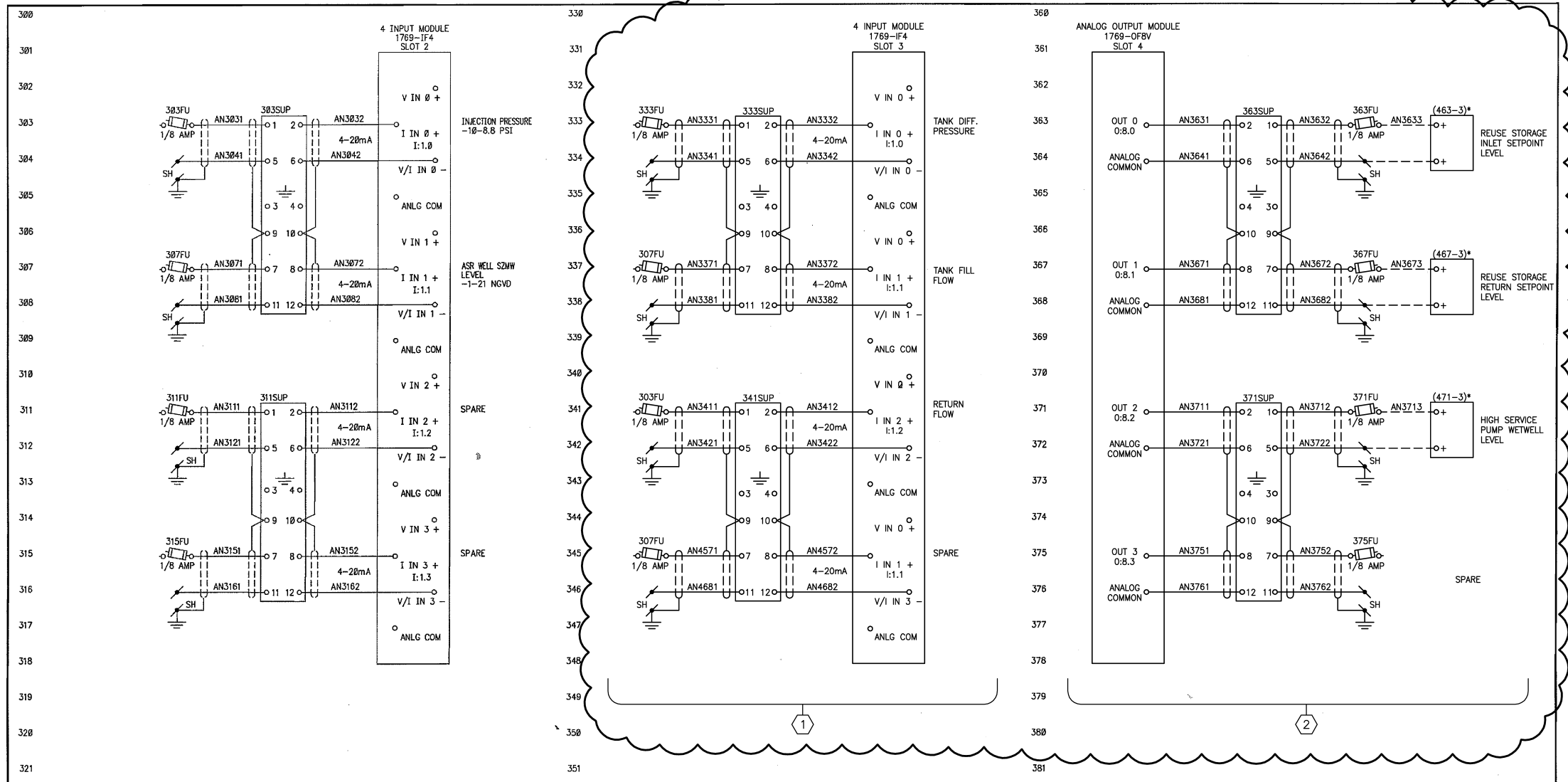
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 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

REVERE CONTROL SYSTEMS AS
 BUILT SP-10 CONTROL PANEL

PROJECT STATUS
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E-8

PLOTTED November 17, 2009 2:27 PM, PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF TONGAL GST WAFR\CADD\E-9 REVERSE CONTROL SYSTEMS AS BUILT SP-10 CONTROL PANEL.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. SP-10 IS AN EXISTING CONTROL PANEL. ONLY ITEMS INDICATED BY CLOUDS REPRESENT WORK TO BE DONE UNDER THIS CONTRACT.

REFERENCE NOTES:

1. PROVIDE ANALOG INPUT MODULE AND ASSOCIATED WIRING IN EXISTING SP-10 PANEL. REFER TO DWG. E-2 FOR FIELD WIRING CONDUIT ROUTING.

2. PROVIDE ANALOG OUTPUT MODULE AND ASSOCIATED WIRING IN EXISTING SP-10 PANEL. REFER TO DWG. E-2 FOR FIELD WIRING CONDUIT ROUTING.

LEGEND:

- ⚡ DENOTES A TERMINAL BLOCK POINT
- ⚡ DENOTES A REMOTE TERMINAL BLOCK POINT BY OTHERS
- * DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL
- ⚡ DENOTES CONTROL RELAY TERMINAL POINT

REVERE CONTROL SYSTEMS

(205) 824-8984 BIRMINGHAM, ALABAMA 35216

SUBJECT: MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
SOUTHWEST WRF SP-10 ASR WELL SCADA PANEL
ELECTRICAL SCHEMATIC

CUSTOMER: MANATEE COUNTY, FLORIDA

2	09-22-08	FIELD MODIFICATION	CBC
1	09-24-07	RECORD DRAWING	LDG
NO.	DATE	DESCRIPTION	BY
REVISION			

DRAWN BY: LDG	DATE: 04-26-07
CHECKED: CH1	SCALE: NONE
JOB NO. 60420	DWG. NO. G1037AN 4/4

URS

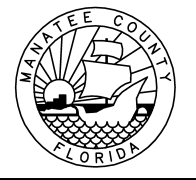
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GLENN H. DAVIS
FLORIDA P.E. NO. 66443



**10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY**

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

**REVERE CONTROL SYSTEMS AS
BUILT SP-10 CONTROL PANEL**

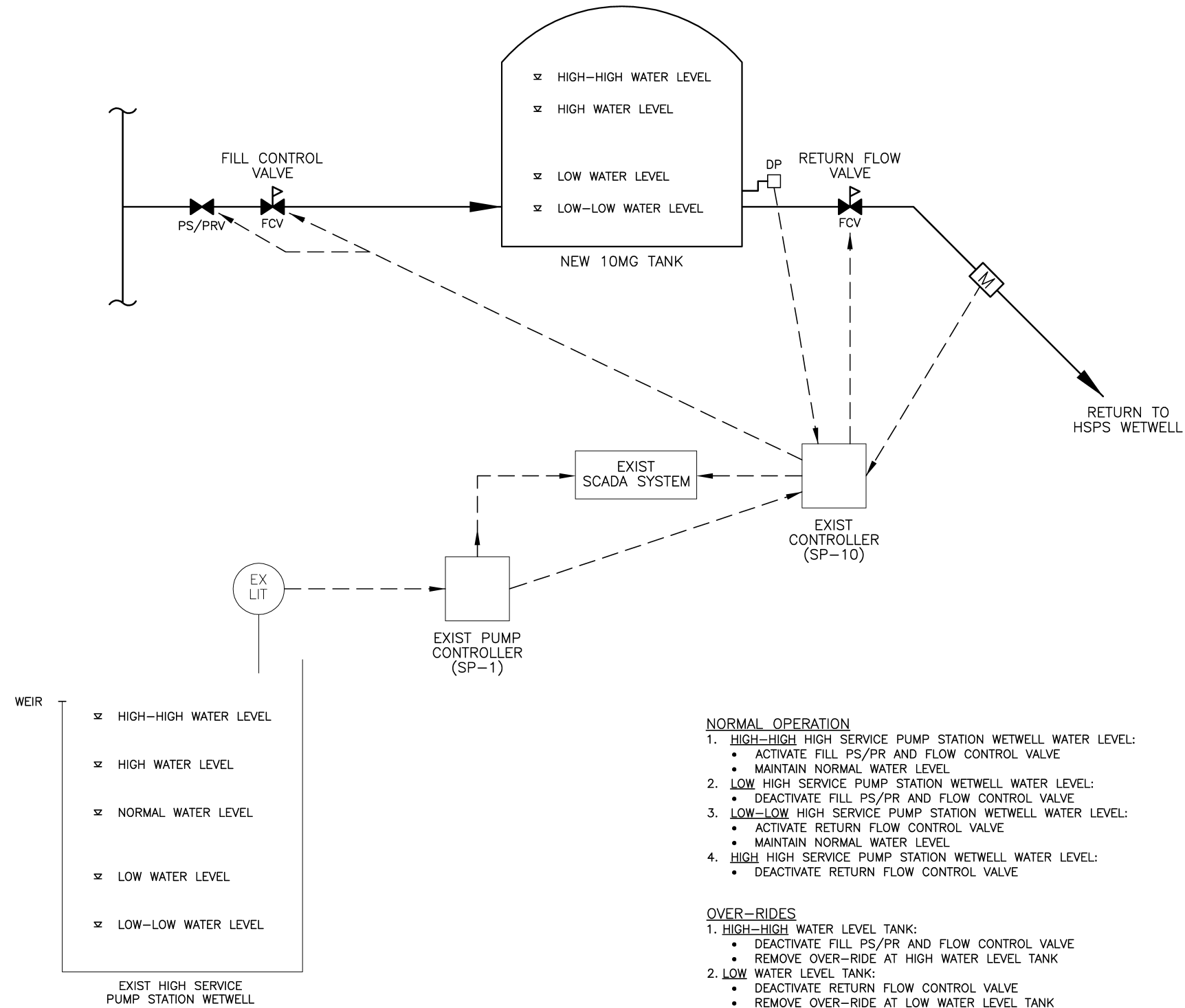
PROJECT STATUS
BID SET
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E-9

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

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THIS SHEET IS FOR INFORMATION ONLY.
 REFER TO ELECTRICAL DRAWINGS FOR
 CONDUIT AND WIRING INSTALLATION.
 ALL PROGRAMING TO BE PERFORMED BY
 MANATEE COUNTY.



- NORMAL OPERATION**
- HIGH-HIGH** HIGH SERVICE PUMP STATION WETWELL WATER LEVEL:
 - ACTIVATE FILL PS/PR AND FLOW CONTROL VALVE
 - MAINTAIN NORMAL WATER LEVEL
 - LOW** HIGH SERVICE PUMP STATION WETWELL WATER LEVEL:
 - DEACTIVATE FILL PS/PR AND FLOW CONTROL VALVE
 - LOW-LOW** HIGH SERVICE PUMP STATION WETWELL WATER LEVEL:
 - ACTIVATE RETURN FLOW CONTROL VALVE
 - MAINTAIN NORMAL WATER LEVEL
 - HIGH** HIGH SERVICE PUMP STATION WETWELL WATER LEVEL:
 - DEACTIVATE RETURN FLOW CONTROL VALVE

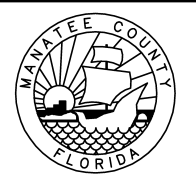
- OVER-RIDES**
- HIGH-HIGH** WATER LEVEL TANK:
 - DEACTIVATE FILL PS/PR AND FLOW CONTROL VALVE
 - REMOVE OVER-RIDE AT HIGH WATER LEVEL TANK
 - LOW** WATER LEVEL TANK:
 - DEACTIVATE RETURN FLOW CONTROL VALVE
 - REMOVE OVER-RIDE AT LOW WATER LEVEL TANK

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 AT THE
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 FOR
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

PROJECT STATUS
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INSTRUMENTATION

 I-1

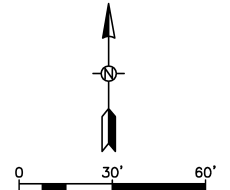
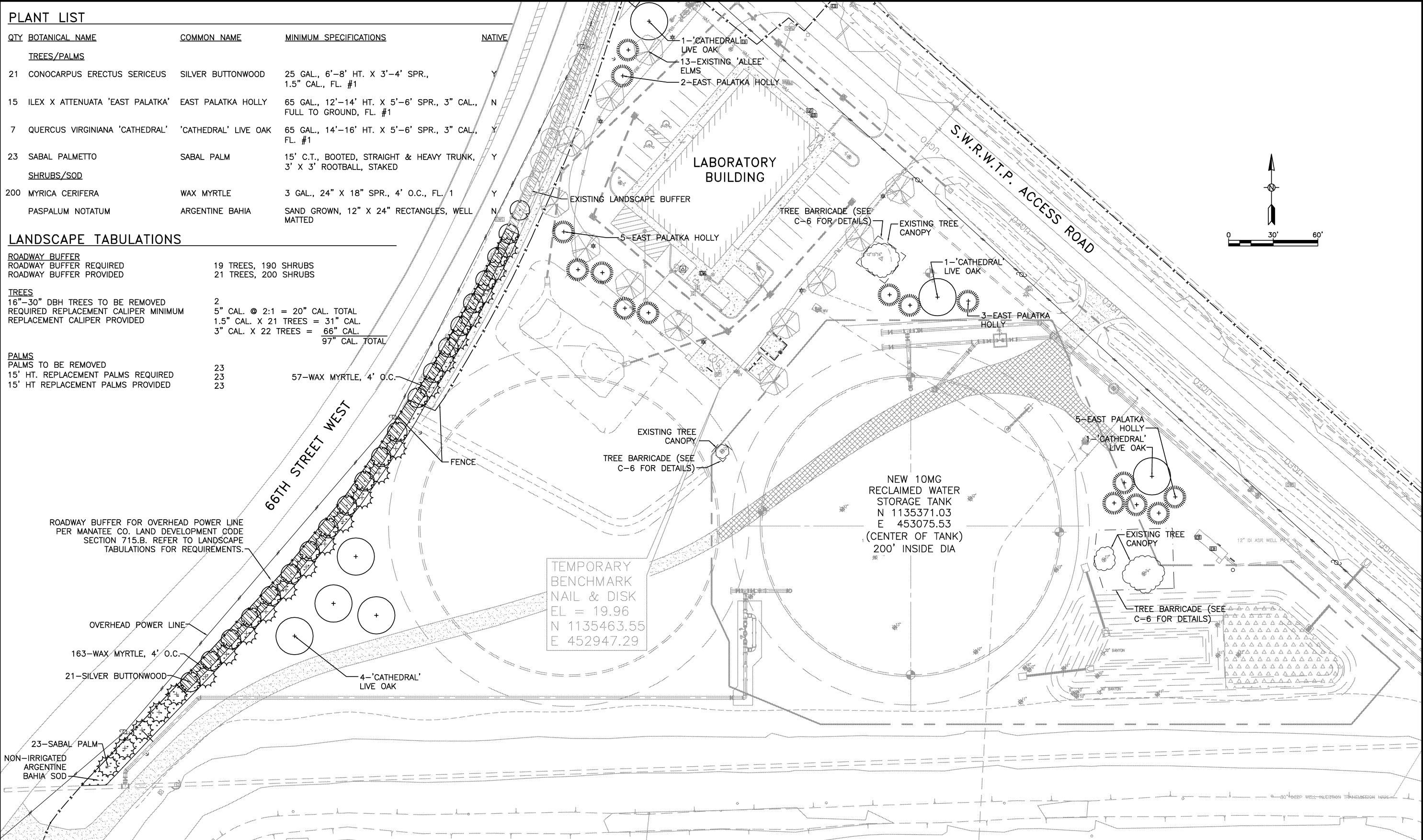
PLOTTED November 17, 2009 2:28 PM, PLOTTED BY: SONENBERG, TERRY
 X:\MANATEE PROJECTS\12008554 SWRF TONGAL GST WAFR\CAD\1-L LANDSCAPE PLAN.DWG
 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 1" = 100' IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLANT LIST

QTY	BOTANICAL NAME	COMMON NAME	MINIMUM SPECIFICATIONS	NATIVE
TREES/PALMS				
21	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTWOOD	25 GAL., 6'-8' HT. X 3'-4' SPR., 1.5" CAL., FL. #1	Y
15	ILEX X ATTENUATA 'EAST PALATKA'	EAST PALATKA HOLLY	65 GAL., 12'-14' HT. X 5'-6' SPR., 3" CAL., FULL TO GROUND, FL. #1	N
7	QUERCUS VIRGINIANA 'CATHEDRAL'	'CATHEDRAL' LIVE OAK	65 GAL., 14'-16' HT. X 5'-6' SPR., 3" CAL., FL. #1	Y
23	SABAL PALMETTO	SABAL PALM	15' C.T., BOOTED, STRAIGHT & HEAVY TRUNK, 3' X 3' ROOTBALL, STAKED	Y
SHRUBS/SOD				
200	MYRICA CERIFERA	WAX MYRTLE	3 GAL., 24" X 18" SPR., 4' O.C., FL. 1	Y
	PASPALUM NOTATUM	ARGENTINE BAHIA	SAND GROWN, 12" X 24" RECTANGLES, WELL MATTED	N

LANDSCAPE TABULATIONS

ROADWAY BUFFER	19 TREES, 190 SHRUBS
ROADWAY BUFFER REQUIRED	21 TREES, 200 SHRUBS
ROADWAY BUFFER PROVIDED	
TREES	
16"-30" DBH TREES TO BE REMOVED	2
REQUIRED REPLACEMENT CALIPER MINIMUM	5" CAL. @ 2:1 = 20" CAL. TOTAL
REPLACEMENT CALIPER PROVIDED	1.5" CAL. X 21 TREES = 31" CAL.
	3" CAL. X 22 TREES = 66" CAL.
	97" CAL. TOTAL
PALMS	
PALMS TO BE REMOVED	23
15' HT. REPLACEMENT PALMS REQUIRED	23
15' HT REPLACEMENT PALMS PROVIDED	23

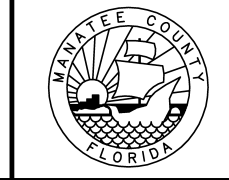


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NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER 12008554
PM: D. WILCOX
ENG: P. KURTZ
DRW: E. DEGAETANO
FILE SAVE DATE: November 11, 2009

PAUL KURTZ
 FLORIDA L.A. NO. 1716

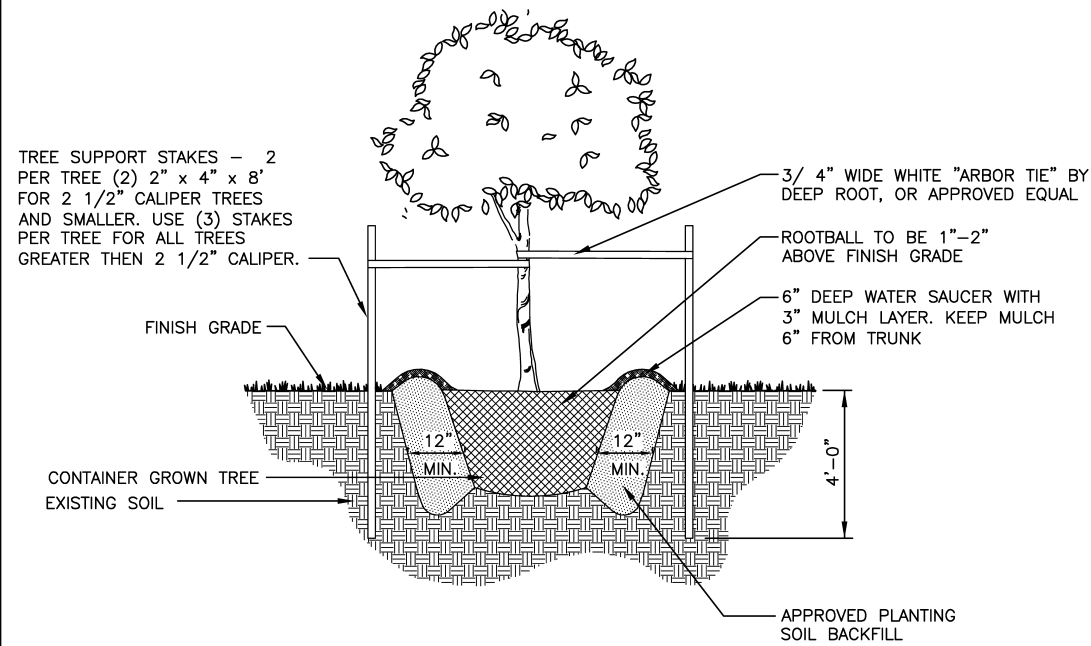


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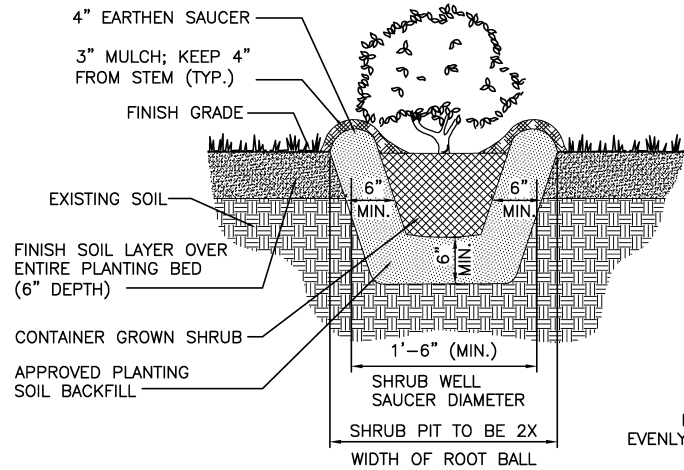
LANDSCAPE PLAN

PROJECT STATUS
 BID SET
 NOVEMBER 2009
 L-1

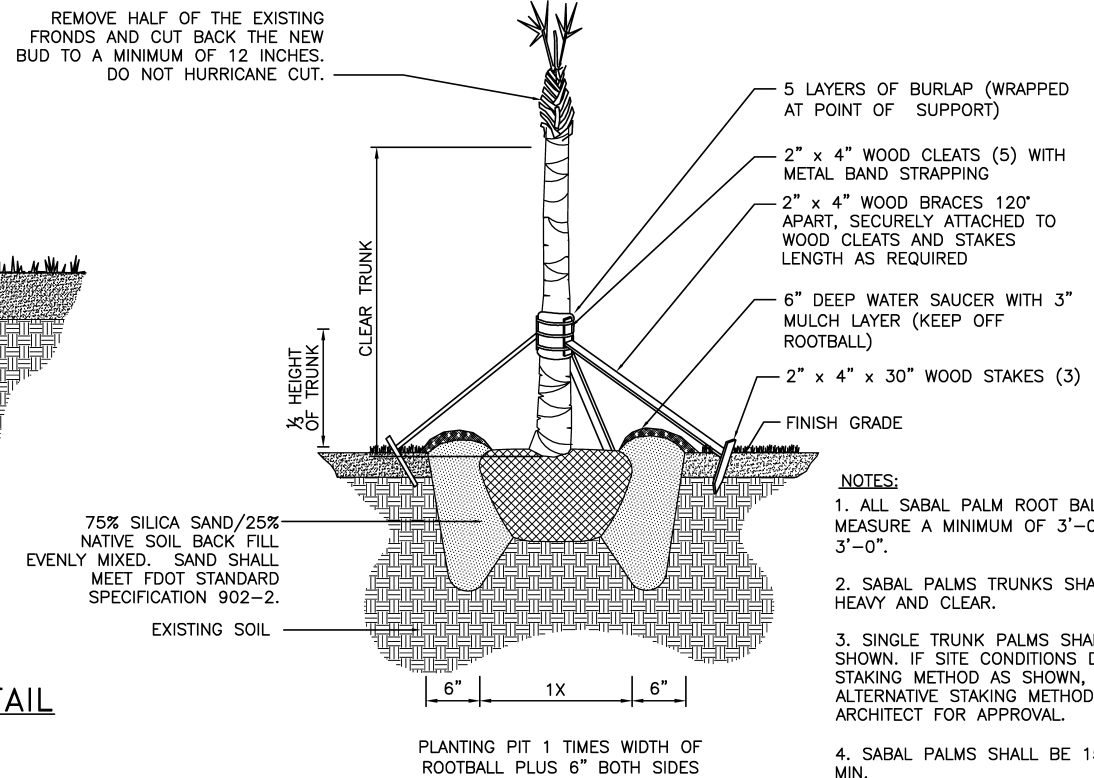
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.



① TREE PLANTING DETAIL
SCALE: NTS



② SHRUB PLANTING DETAIL
SCALE: NTS



③ SABAL PALM PLANTING DETAIL
SCALE: NTS

LANDSCAPE NOTES

1. THE WORK CONSISTS OF THE COMPLETE PLANT MATERIAL INSTALLATION AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. THIS WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE SUPPLYING OF ALL PLANT MATERIAL SPECIFIED, THE FURNISHING OF LABOR, EQUIPMENT, AND MATERIALS CALLED FOR, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE LANDSCAPE INSTALLATION AS SHOWN ON THESE PLANS. FURTHER, THE WORK SHALL INCLUDE THE MAINTENANCE OF ALL PLANTS AND PLANTING AREAS UNTIL ACCEPTANCE BY THE OWNER AND THE FULFILLING OF GUARANTEE PROVISIONS SPECIFIED HEREIN.
2. THE CONTRACTOR SHALL BE FULLY ACQUAINTED WITH THE RELATED PAVING, SITE GRADING, WATER SUPPLY, ELECTRICAL SUPPLY, AND OTHER UTILITIES TO PREVENT ANY MISUNDERSTANDING AND TO FACILITATE A TROUBLE FREE INSTALLATION. CALL THE SUNSHINE STATE ONE CALL 1-800-432-4770 PRIOR TO ANY CONSTRUCTION FOR UTILITY COORDINATION. IN ADDITION, NOTIFY THE OWNER A MINIMUM OF 72 HOURS IN ADVANCE OF CONSTRUCTION TO IDENTIFY UTILITY LINE LOCATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGES TO EXISTING FACILITIES THAT MAY RESULT FROM WORK PERFORMED BY THE CONTRACTOR. THE WORK PERFORMED UNDER THIS CONTRACT WILL INTERFACE WITH OTHER WORK BEING PERFORMED BY OTHER CONTRACTORS. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE ACTIVITIES WITH OTHER CONTRACTORS AND THEIR SUBCONTRACTORS.
4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE, PRIOR TO INSTALLATION OF SUCH MATERIALS. SUBMIT SUBSTITUTION REQUESTS IN WRITING FOR APPROVAL BY OWNER'S REPRESENTATIVE.
5. IN THE EVENT DISCREPANCIES ARE NOTED BETWEEN THE PLANT LIST AND THE ACTUAL NUMBER OF PLANTS SHOWN ON THE PLANS, THE PLANS SHALL CONTROL.
6. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS PRIOR TO THE DELIVERY OF ANY PLANT MATERIAL. THE PLANT MATERIAL SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE PRIOR TO THE UNLOADING OF ANY PLANTS.
7. PLANT MATERIALS WILL BE INSPECTED AT THE JOB SITE BY THE OWNER'S REPRESENTATIVE. WHEN INSPECTION WORK DOES NOT COMPLY WITH PROJECT REQUIREMENTS, CONTRACTOR SHALL REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL WORK IS REINSPECTED AND FOUND TO BE ACCEPTABLE. REMOVE REJECTED PLANTS AND MATERIALS FROM THE SITE WITHIN 48 HOURS AND REPLACE WITH ACCEPTABLE MATERIALS.
8. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO DIRECT THE REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH DO NOT REPRESENT SUCH AN INSTALLATION.
9. ALL PLANT MATERIALS SHALL BE GRADE FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, FLORIDA DIVISION OF PLANT INDUSTRY, FLORIDA DEPT. OF AGRICULTURE, AND SHALL CONFORM TO ANSI STANDARDS FOR NURSERY STOCK (ANSI Z60.1-1990).
10. ALL PLANTING BEDS SHALL BE MULCHED WITH A THREE (3") INCH LAYER OF FLORIMULCH, IN ACCORDANCE WITH THE PLANTING DETAILS.
11. APPLY "CHIPCO RONSTAR G" PRE-EMERGENT WITH A PROPERLY CALIBRATED GRANULAR APPLICATOR AFTER INITIAL PLANTINGS HAVE BEEN COMPLETED. APPLY AT A RATE OF 4 LBS PER 1000 SQ. FT. OF PLANTED AREA SPECIFIED. DO NOT APPLY PRE-EMERGENT CHEMICAL DIRECTLY ON PLANT MATERIAL.
12. PLANTING SOIL FOR TREE AND SHRUB MATERIALS SHALL CONSIST OF TWO (2) PARTS TOPSOIL, ONE (1) PART CLEAN SAND AND ONE (1) PART COMMERCIAL COMPOST (CONSOLIDATED RESOURCE RECOVERY SCREENED YARD MULCH FINES OR EQUAL). PLANTING SOIL MIXTURE SAMPLES MUST BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. NO PLANTING SHALL OCCUR UNTIL PLANTING SOIL IS APPROVED.

13. ALL TREES AND SHRUBS MATERIALS SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 90 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.
14. ALL SOD (GRASS) DAMAGED BY THE CONTRACTOR THAT HAS BEEN DESIGNATED TO REMAIN SHALL BE REPLACED WITH LIKE TYPE BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOD SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 120 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.
15. SOD TYPE SHALL BE ARGENTINE BAHIA AND SHALL BE WELL MATTED WITH ROOTS. THE SOD SHALL BE TAKEN UP IN RECTANGLES PREFERABLY 12" X 24" AND SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING. SOD SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASS AND SHALL HAVE A SOIL MAT OF SUFFICIENT THICKNESS ADHERING FIRMLY TO THE ROOTS TO WITHSTAND ALL NECESSARY HANDLING. THE SOD SHALL BE SHADED AND KEPT MOIST UNTIL IT IS PLANTED. DUMPING FROM VEHICLES WILL NOT BE PERMITTED. DAMAGED SOD WILL BE REJECTED. REPLANTING SHALL BE DONE WITHIN 48 HOURS AFTER TIME OF HARVESTING OR SOD SHALL BE KEPT DAMP UNTIL PLANTED.
16. SODDING SCHEDULE:
 - A. SOFT SPOTS AND INEQUITIES IN GRADE SHALL BE CORRECTED BEFORE BEGINNING SOD WORK.
 - B. GROUND SHALL BE SUFFICIENTLY MOIST PRIOR TO LAYING OF SOD. CONTRACTOR SHALL WATER AS NEEDED PRIOR TO LAYING SOD.
 - C. LAY SOD WITHOUT VOIDS, TAMP OR ROLL. SOD SHALL BE THOROUGHLY WATERED. THE SURFACE SHALL BE TRUE TO FINISHED GRADE LINES; EVEN AND FIRM AT ALL POINTS.
 - D. PLACE SOD WITH STAGGERED JOINTS CLOSELY BUTTED, TAMPED OR ROLLED TO AN EVEN SURFACE TO THE REQUIRED FINISHED GRADE. AVOID CONTINUOUS SEAM ALONG LINES OF WATER FLOW IN SWALES. PLACE SOD IN ROWS AT RIGHT ANGLES TO SLOPE.
 - E. FERTILIZE.
17. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICT OR DISCREPANCY IN PLANS PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.
18. CONTRACTOR SHALL CLEAN UP AND REMOVE ALL SURPLUS AND DISCARDED MATERIALS AND RUBBISH FROM HIS CONSTRUCTION. ON A DAILY BASIS.
19. ALL GROWN PLANT MATERIAL SHALL BE GUARANTEED FOR ONE (1) YEAR AND ALL SOD SHALL BE GUARANTEED FOR 90 DAYS AFTER FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.
20. FINAL INSPECTION WILL NOT TAKE PLACE UNTIL ALL MATERIALS ARE PLANTED/INSTALLED CORRECTLY. CONTRACTOR SHALL REQUEST A FINAL INSPECTION BY OWNER'S REPRESENTATIVE IN WRITING.
21. CONTRACTOR WILL BE NOTIFIED BY LETTER OF FINAL ACCEPTANCE WITHIN TEN DAYS AFTER FINAL INSPECTION OR TEN DAYS AFTER REINSPECTION.
22. UPON NOTICE OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME MAINTENANCE AND THE CONTRACTOR'S WARRANTY PERIOD BEGINS.

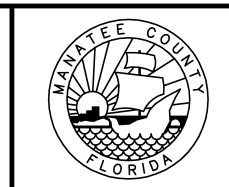
PLOTTED November 17, 2009 2:28 PM. PLOTTED BY: SONENBERG, TERRY. X:\MANATEE PROJECTS\12008554_SWMF_TONGAL_GST_WAFR\CADD\L-2_LANDSCAPE_DETAILS.DWG

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NO.	BY	DATE	DESCRIPTION

URS JOB NUMBER 12008554
PM: D. WILCOX
ENG: P. KURTZ
DRW: E. DEGAETANO
FILE SAVE DATE: November 2, 2009

PAUL KURTZ
FLORIDA L.A. NO. 1716



10MG RECLAIMED WATER STORAGE TANK
AT THE
SOUTHWEST WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LANDSCAPE DETAILS

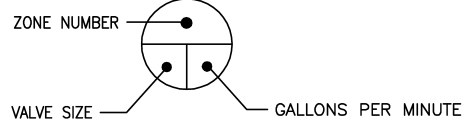
PROJECT STATUS
BID SET
NOVEMBER 2009

L-2

LEGEND

- PVC SCH 80 SLEEVE, (SEE PLAN FOR SIZES)
- PVC SCH 40 MAIN, (SEE PLAN FOR SIZES)
- PVC CLASS 200 LATERAL, (SEE PLAN FOR SIZES)
- NETAFIM TECHLINE CV, TLCV9-1210

- P.O.C.** RECLAIMED WATER SERVICE CONNECTION.
- ▲ RAIN BIRD 1400 SERIES BUBBLER - 1402 (0.5 GPM)
(TWO BUBBLERS PER SYMBOL LOCATION AS SHOWN ON PLAN)
- ⊕ RAIN BIRD PRS-D MODULE INSTALLED FOR ALL DRIP ZONES, RAIN BIRD PESB SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATING MODULE IN CONCRETE VALVE BOX WITH CAST IRON COVER
- ⊞ BRASS GATE VALVE INSTALLED IN 12" VALVE BOX
- ⊞ 1 1/4" IRRIGATION METER IN CONCRETE VALVE BOX WITH CAST IRON COVER
- ⊞ HUNTER MINI-CLIK RAIN SENSOR
- ⊞ RAINBIRD ESP-LX SERIES IRRIGATION CONTROLLER
- ⊞ POWER SOURCE
- ⊞ BACK FLOW PREVENTER
- ⊞ QUICK COUPLING VALVE



LFDL = LINEAR FEET OF DRIFLINE

VALVE TABLE

ZONE #	VALVE SIZE	GPM	TYPE
1	1 1/4"	48	BUBBLER
2	1"	8.5	DRIP
3	1"	18	BUBBLER

IRRIGATION SYSTEM DEMAND: 55 GPM @ 40 PSI

1 1/4" SUPPLY MANIFOLD
TECHLINE 1,391 LFDL
BUBBLER (TYP)

10 MG RECLAIMED WATER
STORAGE TANK PROJECT LIMIT

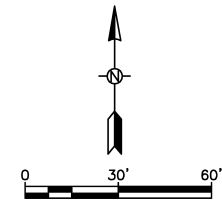
IRRIGATION CONTROLLER AND RAIN
SENSOR TO BE MOUNTED ON CONCRETE
POST 5' FROM PROPOSED LIGHT POLE.

NEW 10MG
RECLAIMED WATER
STORAGE TANK
N 1135371.03
E 453075.53
(CENTER OF TANK)
200' INSIDE DIA

LABORATORY
BUILDING

66TH STREET WEST

S.W.W.R.F. ACCESS ROAD



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

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URS JOB NUMBER
12008554
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 FILE SAVE DATE:
November 11, 2009

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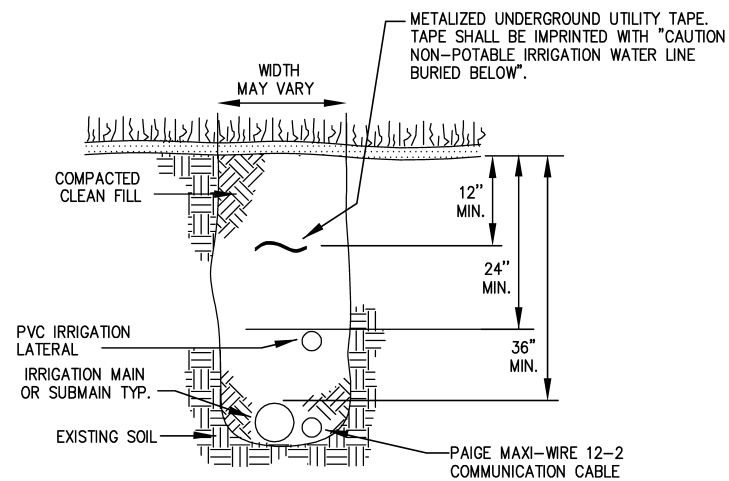
10MG RECLAIMED WATER STORAGE TANK
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FOR
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MANATEE COUNTY, FLORIDA

IRRIGATION PLAN

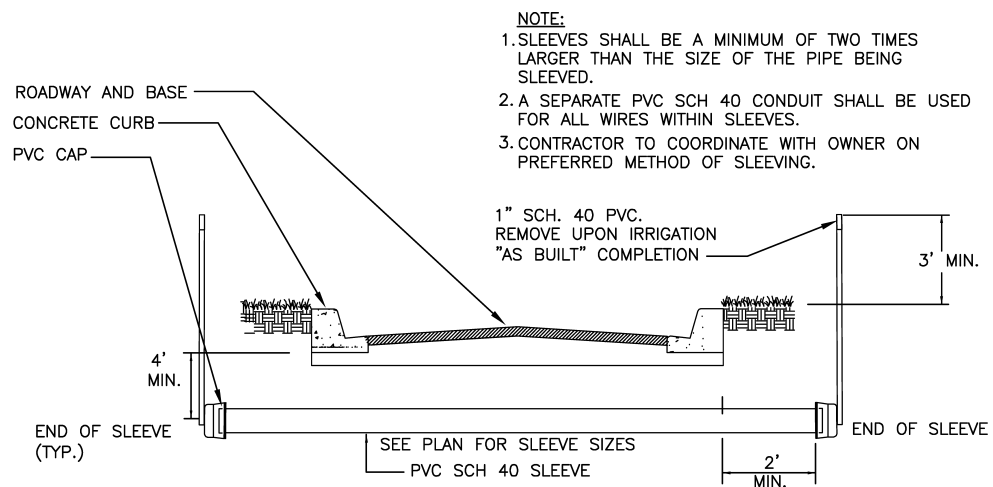
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IR-1

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1 TRENCHING DETAIL
NOT TO SCALE



2 SLEEVE DETAIL
NOT TO SCALE

IRRIGATION NOTES

- 1) IRRIGATION SYSTEM IS 100% AUTOMATIC AND INCLUDES A RAIN SENSOR WITH A SHUT-OFF DEVICE.
- 2) THE IRRIGATION WATER SOURCE IS AN EXISTING 10" RECLAIMED WATER LINE. VERIFY LOCATION OF EXISTING WATER LINE PRIOR TO INSTALLATION OF MAINLINE.
- 3) VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE PROJECT MANAGER AND THE LANDSCAPE ARCHITECT. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS--CONTRACTOR SHALL VERIFY.
- 4) ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE WITHIN SLEEVES AS NOTED. WHERE ELECTRIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
- 5) MAINLINE AND VALVES ARE SHOWN IN SCHEMATIC FORM. LOCATE AS NOTED ON PLANS.
- 6) LOCATE ALL VALVES A MINIMUM OF 24" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
- 7) CONTRACTOR SHALL PROVIDE AN AS-BUILT DRAWING TO THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE. AS-BUILT IS INCLUDED IN PRICE BID FOR IRRIGATION. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR, WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF EACH SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS.
- 8) ALL UNSIZED PIPE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- 9) ALL CONTROL VALVES AND QUICK COUPLER VALVES SHALL BE INSTALLED IN CONCRETE VALVE BOXES WITH CAST IRON COVER.
- 10) IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO MANATEE COUNTY AND THE GENERAL CONTRACTOR.
- 11) VERIFY LOCATION OF CONTROLLER AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- 12) ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR. ELECTRICAL INSTALLATION SHALL PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
- 13) ALL 24 VAC WIRING SHALL BE OF DIRECT BURIAL COPPER WIRE AS FOLLOWS: CONTROL WIRES - 14 GAUGE RED COLOR
COMMON WIRES - 12 GAUGE WHITE COLOR
SPARE WIRES - 14 GAUGE BLACK COLOR
- 14) INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.
- 15) RESTORE ALL DISTURBED AREAS. SEED AREAS WITH ARGENTINA BAHIA GRASS THAT ARE LESS THAN 12" WIDE AT THE RATE OF 10 LBS. PER 1000 SQUARE FEET. SOD AREAS 12" OR WIDER WITH ARGENTINA BAHIA GRASS SOD. PROVIDE A SMOOTH TRANSITION BETWEEN THE REPAIRED DISTURBED AREAS AND THE UNDISTURBED AREAS.

PLOTTED November 17, 2009 2:29 PM, PLOTTED BY: SCHNEIDER, TERRY
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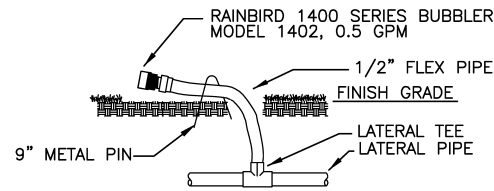
IRRIGATION DETAILS & NOTES

PROJECT STATUS
BID SET
NOVEMBER 2009

IR-2

PLOTTED November 17, 2009 2:29 PM, PLOTTED BY: SCHNEIDER, TERRY
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 VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

NOTE: INSTALL TWO BUBBLERS PER TREE ON TOP OF ROOT BALL. BUBBLERS TO BE LOCATED 180° APART, EQUALLY SPACED.



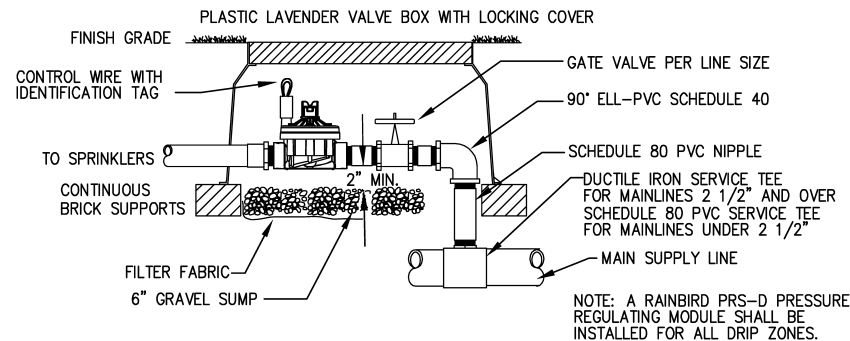
3 RAIN BIRD 1400 SERIES BUBBLER

NOT TO SCALE

MODEL NUMBERS:

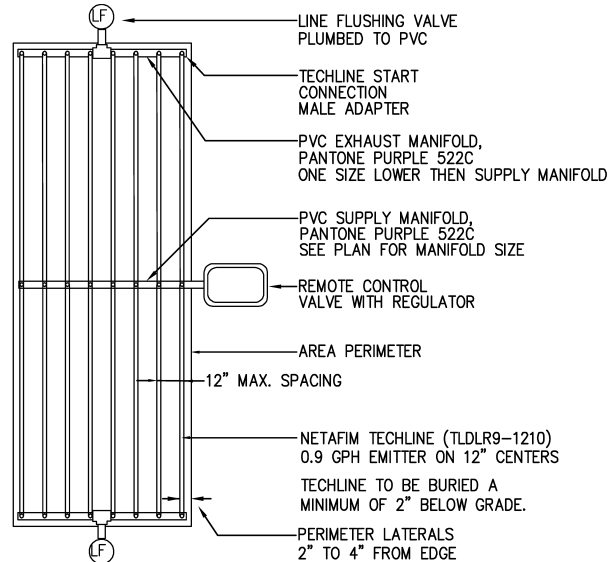
- 100-PESB: 1"
- 150-PESB: 1 1/2"
- 200-PESB: 2"

ALL CONTROL VALVES TO HAVE PURPLE FLOW CONTROL HANDLES
 PEB-NP-HAN1 (1")
 PEB-NP-HAN2 (1 1/2" & 2")



4 RAINBIRD PESB SERIES CONTROL VALVE

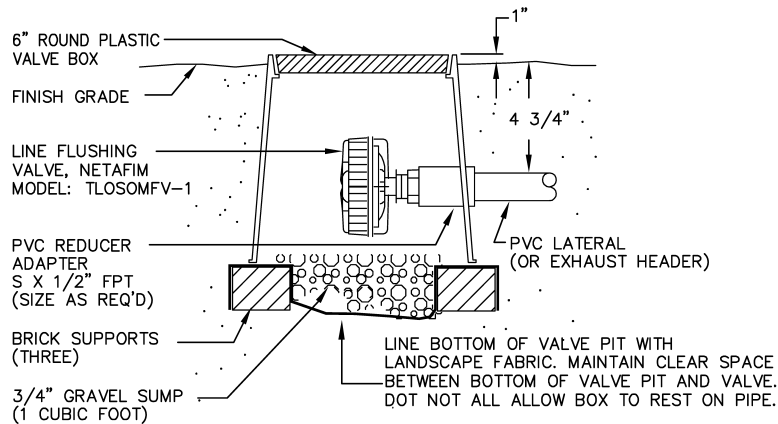
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5 NETAFIM TECHLINE-CENTER FEED LAYOUT

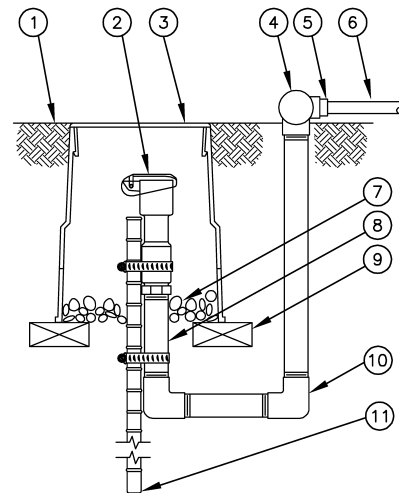
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NOTE: MAXIMUM VALVE FLOW RATE, 15 GPM. USE MULTIPLE FLUSH VALVES AS ZONE FLOW RATE REQUIRES. REFER TO PLANS FOR TOTAL ZONE FLOW RATES.



6 LINE FLUSHING VALVE

NOT TO SCALE

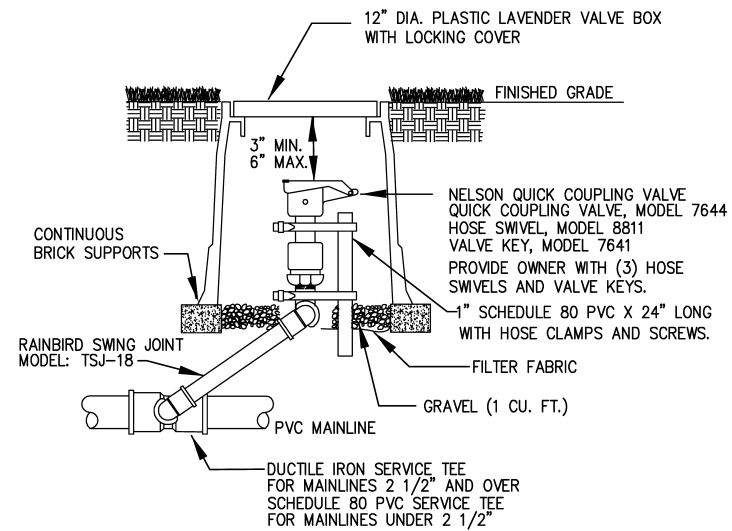


- NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.
 2. IF POLYETHYLENE IS USED FOR DISTRIBUTION MANIFOLD, SUBSTITUTE 3/4 - INCH FIPT INSERT TEE FOR SCH 40 TEE.

7 LANDSCAPE DRIPLINE FLUSH POINT

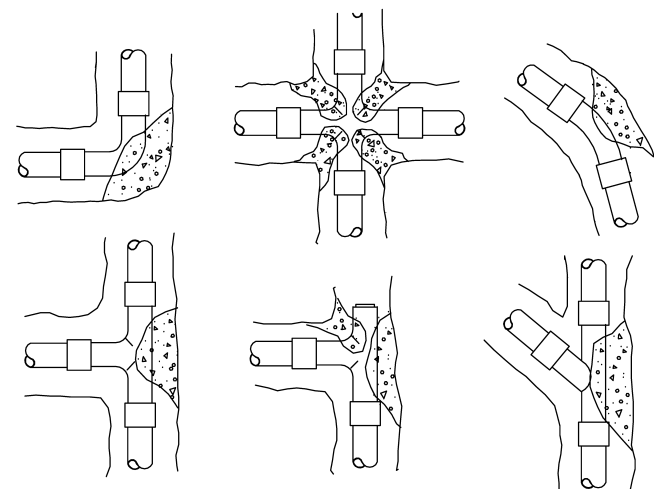
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- 1 FINISH GRADE/TOP OF MULCH
- 2 QUICK-COUPLING VALVE: RAIN BIRD MODEL 33DNP
- 3 RECTANGULAR VALVE BOX WITH PURPLE COVER: 6-INCH SIZE
- 4 PVC SCH 40 SOC X SOC X 3/4-INCH FIPT ON PVC DISTRIBUTION MANIFOLD
- 5 1/2-INCH COMP X 3/4-INCH MPT ADAPTER
- 6 NETAFIM TECHLINE INTEGRAL DRIPLERLINE
- 7 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- 8 PVC SCH 80 NIPPLE (1 OF 3, LENGTH AS REQUIRED)
- 9 BRICK (1 OF 2)
- 10 PVC SCH 40 ELL (1 OF 2)
- 11 #4 REBAR STAKE WITH STAINLESS STEEL GEAR CLAMPS OR APPROVED EQUAL SUPPORT SYSTEM (30-INCH MIN. LENGTH)



8 NELSON QUICK COUPLING VALVE

NOT TO SCALE



INSTALLATION NOTES

1. 3000 PSI CONCRETE OR BETTER IS TO BE USED FOR THRUST BLOCKS.
 2. FOR 45°/90° FITTINGS, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
 3. FOR 22-1/2° FITTINGS, MINIMUM OF 0.5 CUBIC FEET OF CONCRETE TO BE USED.
 4. FOR TEES, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
 5. FOR CONTRACTOR TO INSTALL ROOFING FELT PAPER BETWEEN PIPE AND CONCRETE.
- THRUST BLOCKS REQUIRED FOR IRRIGATION MAINLINE 2 1/2" AND LARGER.

9 THRUST BLOCK REINFORCEMENT

NOT TO SCALE



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IRRIGATION DETAILS

IR-3