

RECORD DRAWINGS FOR THE MASTER PUMP STATIONS - ODOR CONTROL PROJECT SOUTH SERVICE AREA

PREPARED FOR THE
**ORANGE COUNTY, FLORIDA
BOARD OF COUNTY COMMISSIONERS**

ORANGE COUNTY MAYOR
COMMISSIONER DISTRICT 1
COMMISSIONER DISTRICT 2
COMMISSIONER DISTRICT 3
COMMISSIONER DISTRICT 4
COMMISSIONER DISTRICT 5
COMMISSIONER DISTRICT 6

RICHARD CROTTY
S. SCOTT BOYD
FRED BRUMMER
MILDRED FERNANDEZ
LINDA STEWART
BILL SEGAL
TIFFANY MOORE RUSSELL

AJIT LALCHANDANI

COUNTY ADMINISTRATOR

MICHAEL L. CHANDLER

DIRECTOR OF UTILITIES

PROJECT SEQUENCE No. 38045



**SOUTH SERVICE AREA
PUMP STATIONS**

No.3419

No.3497

No.3499

No.3512

No.3848

No.3849

**UTILITIES ENGINEERING
ORANGE COUNTY, FLORIDA**

FEBRUARY 2009

Tt PROJECT NO. 5672.18



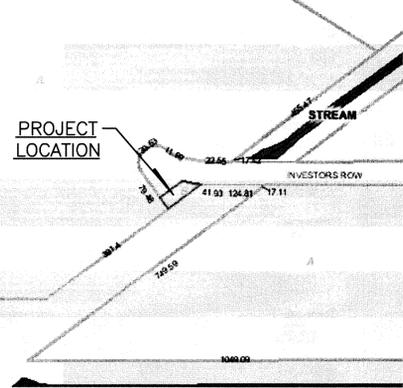
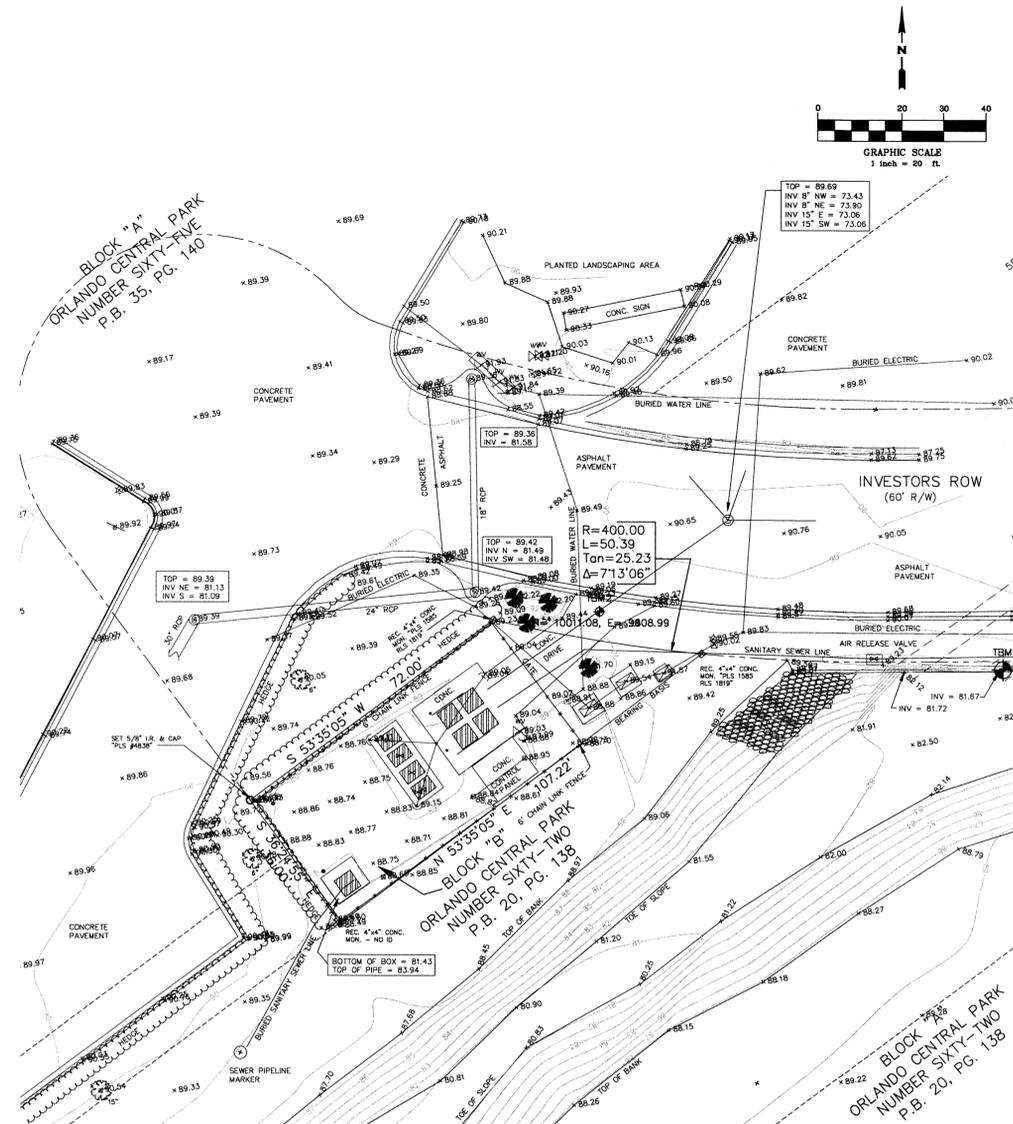
TETRA TECH

CONSULTING ENGINEERS • PLANNERS

201 EAST PINE STREET, SUITE 1000, ORLANDO, FLORIDA 32801
PH: 407-839-3955 FAX: 407-839-3790

RECORD DRAWINGS

W:\WHIS\dota\Tt-Central\Projects\5672.18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\Dwg\3419.DWG

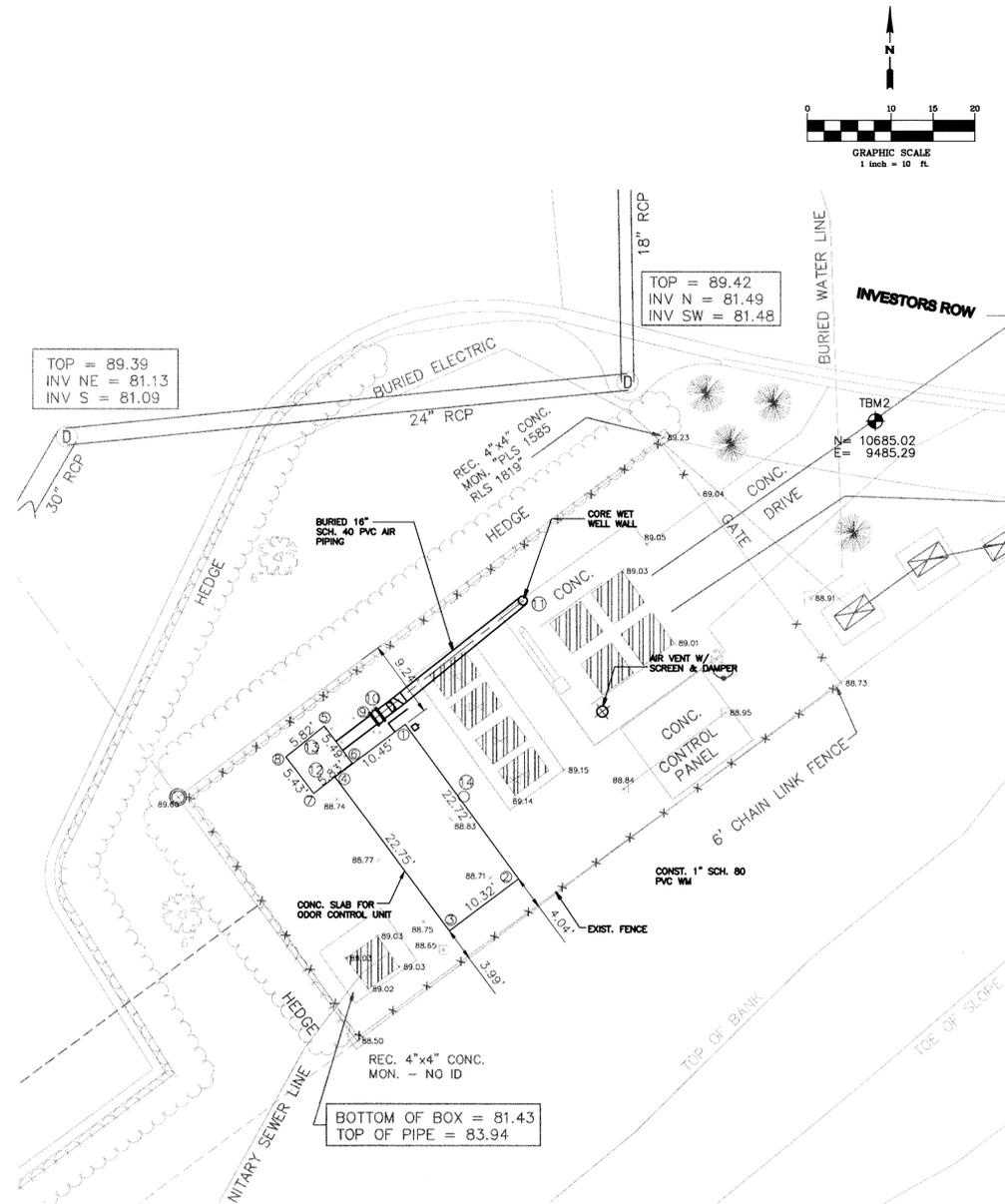


PS No.3419

Parcel Id: 04-24-29-6402-02-000

Street Address: 2600 Investors Row. Orlando, FL 32802

PUMP STATION No.3419 EXISTING SITE PLAN



PUMP STATION No.3419 SITE PLAN

NOTES:

- CONTRACTOR TO INSTALL ALL ABOVE GROUND IMPROVEMENTS (SLABS, ODOR CONTROL UNITS, BLOWERS, HOSE BIBBS, ETC.) A MINIMUM OF 3'-0" FROM EXISTING AND PROPOSED FENCES, ELECTRICAL CONTROL PANELS & VENTS. CONTRACTOR TO LOCATE SLAB IN ORDER TO MAINTAIN CLEARANCE AND NOT EXCEED MAXIMUM SLOPE REQUIREMENTS. MAXIMUM SLOPE REQUIREMENTS MAY REQUIRE ADDITIONAL DISTANCES FROM EXISTING IMPROVEMENTS.
- CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS AND HARDWARE NECESSARY TO CONSTRUCT THE AIR PIPING, ELECTRICAL COMPONENTS, DRAIN LINES AND POTABLE WATER MAINS REQUIRED TO PROVIDE A WORKING ODOR CONTROL UNIT.
- CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES AT PUMP STATIONS SITE PRIOR TO CONSTRUCTION AND ADJUST LOCATION OF AIR PIPING, CONDUIT, DRAIN LINES AND WATER MAIN IN ORDER TO AVOID CONFLICTS.
- CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT THE SITE AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION FOR ALL PROPOSED PIPING AND CONDUIT. CONTRACTOR TO CORE EXISTING WET WELL WALLS AFTER LAYING OUT ALIGNMENT OF PROPOSED PIPES AND CONDUIT.
- INVERT OF AIR PIPING AND DRAIN LINES MUST BE A MINIMUM OF 12" ABOVE HIGH LEVEL ALARM ELEVATION OF WET WELL. VERIFY IN WRITING ALL HIGH LEVEL ALARM ELEVATIONS WITH ORANGE COUNTY UTILITIES PRIOR TO CORING WET WELL.
- SIZE OF CONCRETE SLAB AND LOCATION OF ODOR CONTROL UNIT, BLOWER, AIR, DRAIN AND WATER PIPE CONNECTIONS TO ODOR CONTROL UNITS SHOWN ON PLANS ARE SCHEMATIC ONLY. CONTRACTOR TO SITE ODOR CONTROL UNIT, SIZE SLAB, AND CONNECT PROPOSED PIPING TO THE UNIT BASED ON MANUFACTURER AND MODEL OF ODOR CONTROL UNIT SELECTED FOR EACH SITE.
- SEE SHEET C-12 FOR LABEL INFORMATION ON COORDINATE ASSET TABLE.

RECORD DRAWINGS

No.	DATE	REVISION
03/03/09	06/23/07	RECORD DRAWINGS CONFORMED DOCUMENTS
TP		
TP		

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790



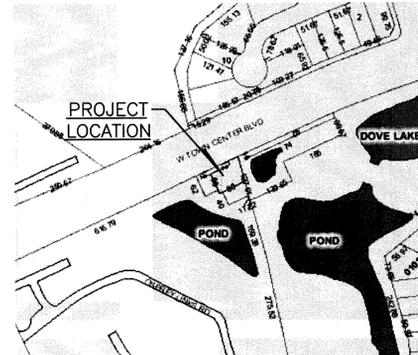
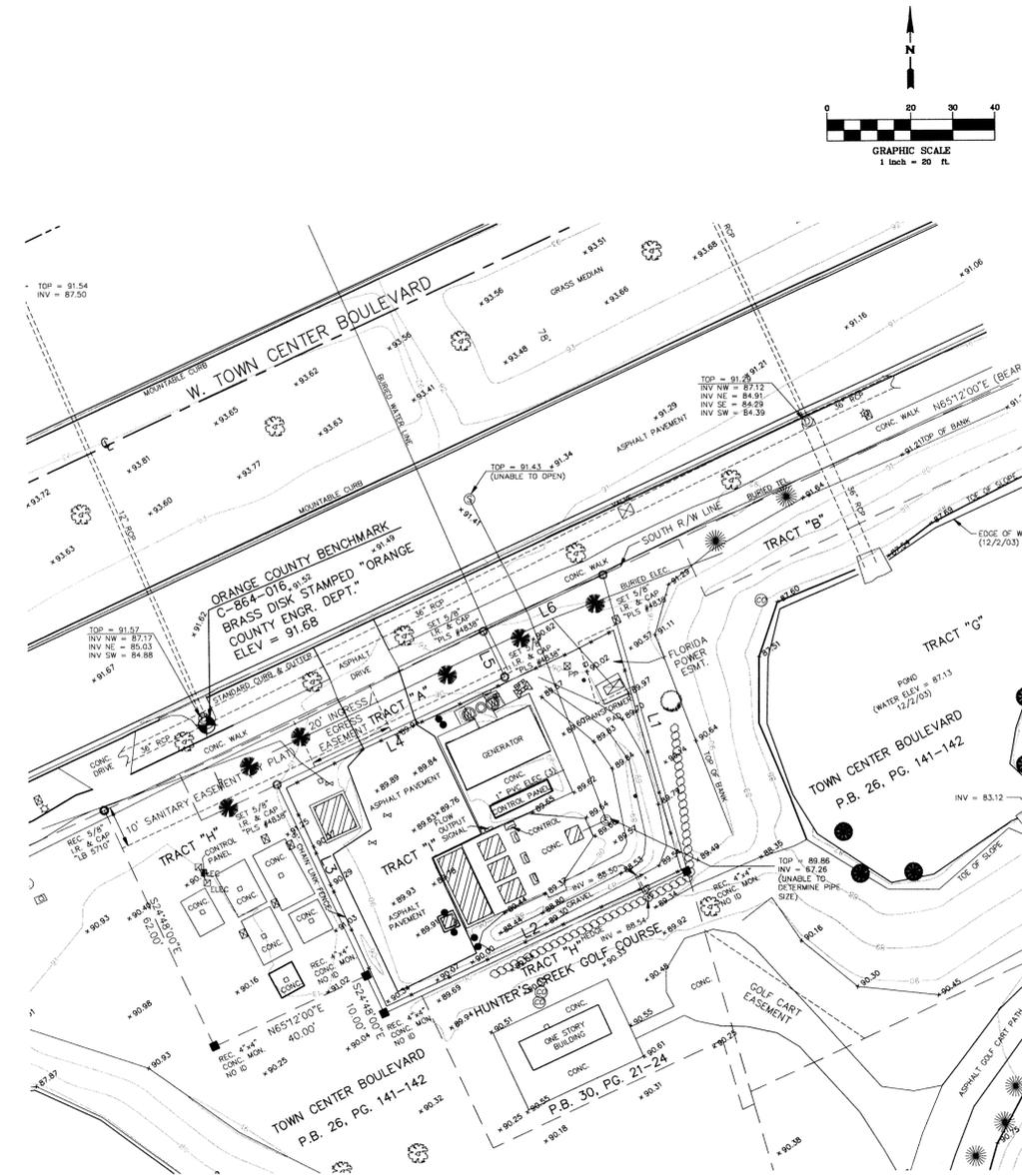
**PUMP STATION No.3419 SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT**
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

Date:	09/23/07
Drawn:	HL
Checked:	CP
Manager:	CP
Dwg Name:	5672.18-3419.dwg

Tetra Tech, Inc.
201 E. Pine St., Suite 1000
Orlando, FL 32801
Engineering Business # 2429
Charles Stephen Pappas, P.E.
Florida Registration # 58133

PROJECT No.	5672.18
SHEET No.	C-4

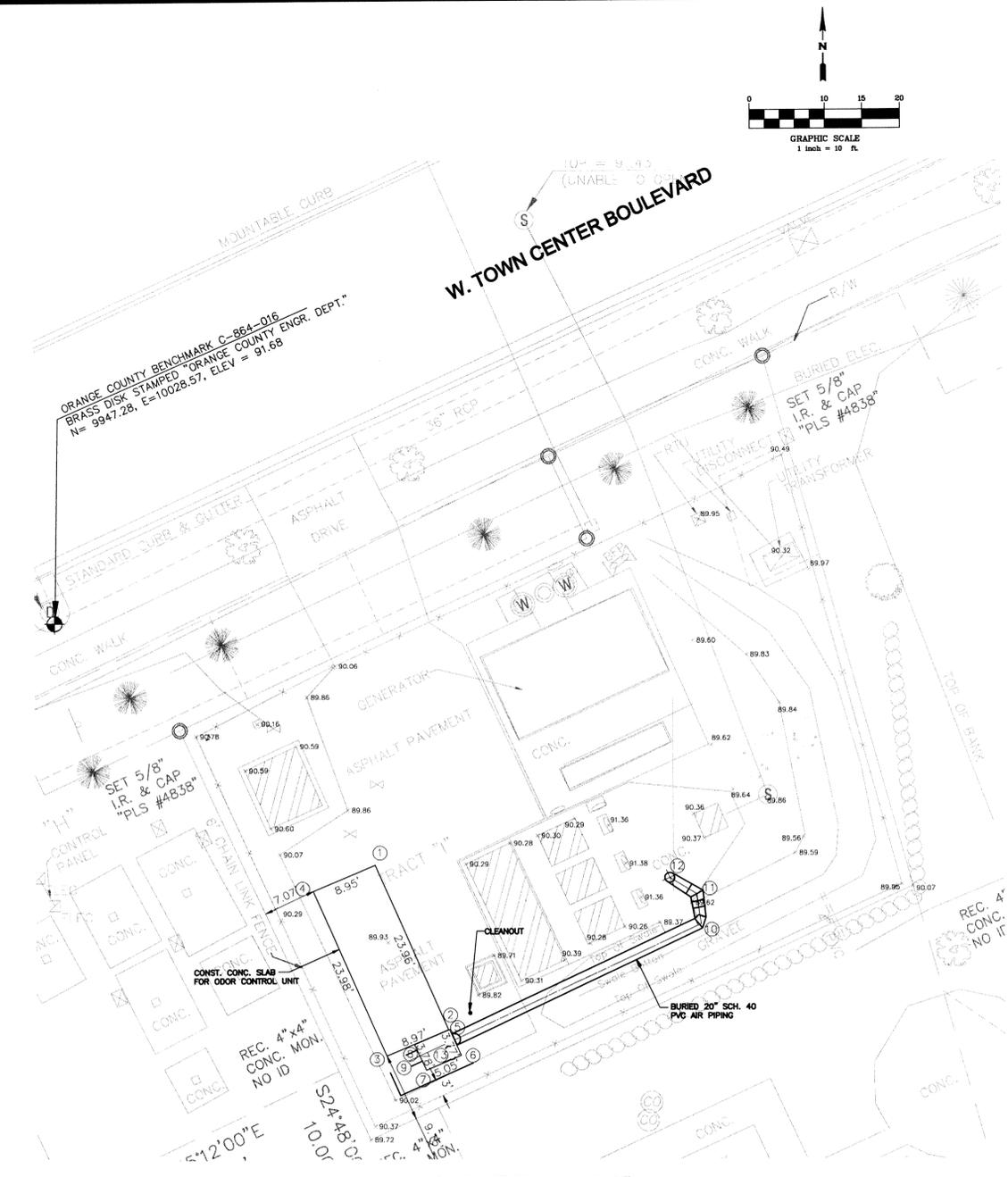
w:\whs\data\T1-Central\Projects\5672.18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\DWG\3497.DWG



PS No.3497

Parcel Id: 27-24-29-8723-00-009
 Street Address: 2710 town Center Blvd. Orlando, FL 32802

**PUMP STATION No.3497
 EXISTING SITE PLAN**



**PUMP STATION No.3497
 SITE PLAN**

- NOTES:
- CONTRACTOR TO INSTALL ALL ABOVE GROUND IMPROVEMENTS (SLABS, ODOR CONTROL UNITS, BLOWERS, HOSE BIBBS, ETC.) A MINIMUM OF 3'-0" FROM EXISTING AND PROPOSED FENCES, ELECTRICAL CONTROL PANELS & VENTS. CONTRACTOR TO LOCATE SLAB IN ORDER TO MAINTAIN CLEARANCE AND NOT EXCEED MAXIMUM SLOPE REQUIREMENTS. MAXIMUM SLOPE REQUIREMENTS MAY REQUIRE ADDITIONAL DISTANCES FROM EXISTING IMPROVEMENTS.
 - CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS AND HARDWARE NECESSARY TO CONSTRUCT THE AIR PIPING, ELECTRICAL COMPONENTS, DRAIN LINES AND POTABLE WATER MAINS REQUIRED TO PROVIDE A WORKING ODOR CONTROL UNIT.
 - CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES AT PUMP STATIONS SITE PRIOR TO CONSTRUCTION AND ADJUST LOCATION OF AIR PIPING, CONDUIT, DRAIN LINES AND WATER MAIN IN ORDER TO AVOID CONFLICTS.
 - CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT THE SITE AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION FOR ALL PROPOSED PIPING AND CONDUIT. CONTRACTOR TO CORE EXISTING WET WELL WALLS AFTER LAYING OUT ALIGNMENT OF PROPOSED PIPES AND CONDUIT.
 - INVERT OF AIR PIPING AND DRAIN LINES MUST BE A MINIMUM OF 12" ABOVE HIGH LEVEL ALARM ELEVATION OF WET WELL. VERIFY IN WRITING ALL HIGH LEVEL ALARM ELEVATIONS WITH ORANGE COUNTY UTILITIES PRIOR TO CORING WET WELL.
 - SIZE OF CONCRETE SLAB AND LOCATION OF ODOR CONTROL UNIT, BLOWER, AIR, DRAIN AND WATER PIPE CONNECTIONS TO ODOR CONTROL UNITS SHOWN ON PLANS ARE SCHEMATIC ONLY. CONTRACTOR TO SITE ODOR CONTROL UNIT, SIZE SLAB, AND CONNECT PROPOSED PIPING TO THE UNIT BASED ON MANUFACTURER AND MODEL OF ODOR CONTROL UNIT SELECTED FOR EACH SITE.
 - SEE SHEET C-12 FOR LABEL INFORMATION ON COORDINATE ASSET TABLE.

RECORD DRAWINGS

No.	DATE	REVISION	BY
TP	03/03/09	RECORD DRAWINGS	
TP	08/23/07	CONFORMED DOCUMENTS	

TETRA TECH
 CONSULTING ENGINEERS - PLANNERS
 201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
 PHONE: (407) 839-3955 FAX: (407) 839-3790

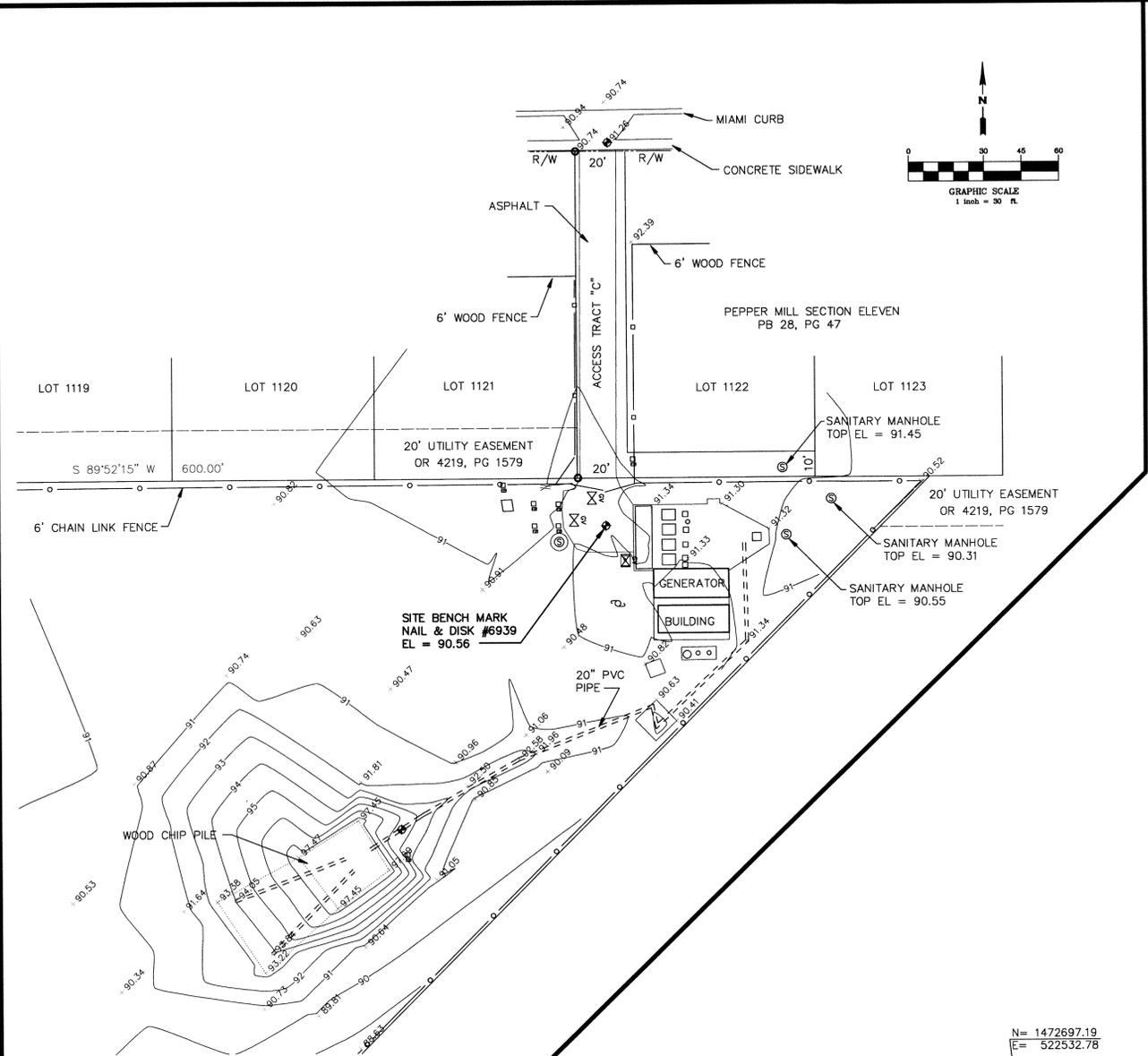


**PUMP STATION No.3497 SITE PLAN
 MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA**

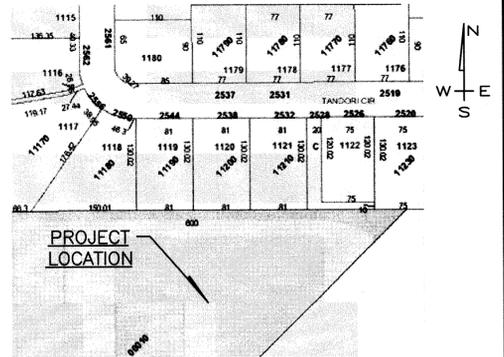
Date:	08/23/07
Drawn:	HL
Checked:	CP
Manager:	CP
Dwg Name:	5672.18-3497.dwg

PROJECT No.
5672.18
 SHEET No.
C-5

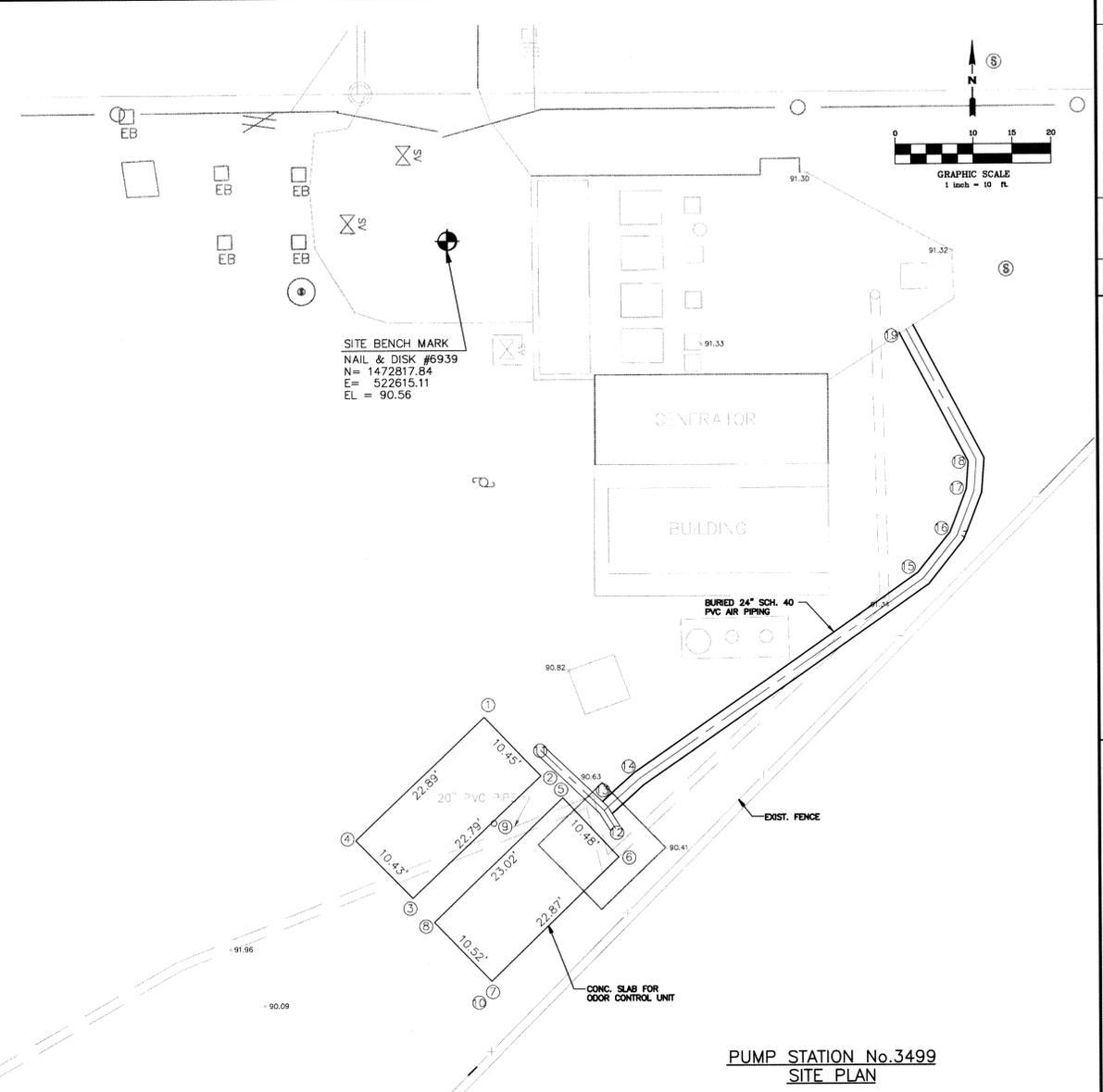
W:\WHS\data\T1-Central\Projects\5672.18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\DWG\3499.DWG



**PUMP STATION No. 3499
EXISTING SITE PLAN**



PS No. 3499
Parcel Id: 21-24-29-0000-00-010
Street Address: Tandori Cir. Orlando, FL 32802



**PUMP STATION No. 3499
SITE PLAN**

NOTES:

1. CONTRACTOR TO INSTALL ALL ABOVE GROUND IMPROVEMENTS (SLABS, ODOR CONTROL UNITS, BLOWERS, HOSE BIBBS, ETC.) A MINIMUM OF 3'-0" FROM EXISTING AND PROPOSED FENCES, ELECTRICAL CONTROL PANELS & VENTS. CONTRACTOR TO LOCATE SLAB IN ORDER TO MAINTAIN CLEARANCE AND NOT EXCEED MAXIMUM SLOPE REQUIREMENTS. MAXIMUM SLOPE REQUIREMENTS MAY REQUIRE ADDITIONAL DISTANCES FROM EXISTING IMPROVEMENTS.
2. CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS AND HARDWARE NECESSARY TO CONSTRUCT THE AIR PIPING, ELECTRICAL COMPONENTS, DRAIN LINES AND POTABLE WATER MAINS REQUIRED TO PROVIDE A WORKING ODOR CONTROL UNIT.
3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES AT PUMP STATIONS SITE PRIOR TO CONSTRUCTION AND ADJUST LOCATION OF AIR PIPING, CONDUIT, DRAIN LINES AND WATER MAIN IN ORDER TO AVOID CONFLICTS.
4. CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT THE SITE AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION FOR ALL PROPOSED PIPING AND CONDUIT. CONTRACTOR TO CORE EXISTING WET WELL WALLS AFTER LAYING OUT ALIGNMENT OF PROPOSED PIPES AND CONDUIT.
5. INVERT OF AIR PIPING AND DRAIN LINES MUST BE A MINIMUM OF 12" ABOVE HIGH LEVEL ALARM ELEVATION OF WET WELL. VERIFY IN WRITING ALL HIGH LEVEL ALARM ELEVATIONS WITH ORANGE COUNTY UTILITIES PRIOR TO CORING WET WELL.
6. SIZE OF CONCRETE SLAB AND LOCATION OF ODOR CONTROL UNIT, BLOWER, AIR, DRAIN AND WATER PIPE CONNECTIONS TO ODOR CONTROL UNITS SHOWN ON PLANS ARE SCHEMATIC ONLY. CONTRACTOR TO SITE ODOR CONTROL UNIT, SIZE SLAB, AND CONNECT PROPOSED PIPING TO THE UNIT BASED ON MANUFACTURER AND MODEL OF ODOR CONTROL UNIT SELECTED FOR EACH SITE.
7. SEE SHEET C-12 FOR LABEL INFORMATION ON COORDINATE ASSET TABLE.

No.	DATE	REVISION
03/03/09		RECORD DRAWINGS
06/23/07		CONFORMED DOCUMENTS

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-3855 FAX: (407) 839-3790



**PUMP STATION No. 3499 SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA**

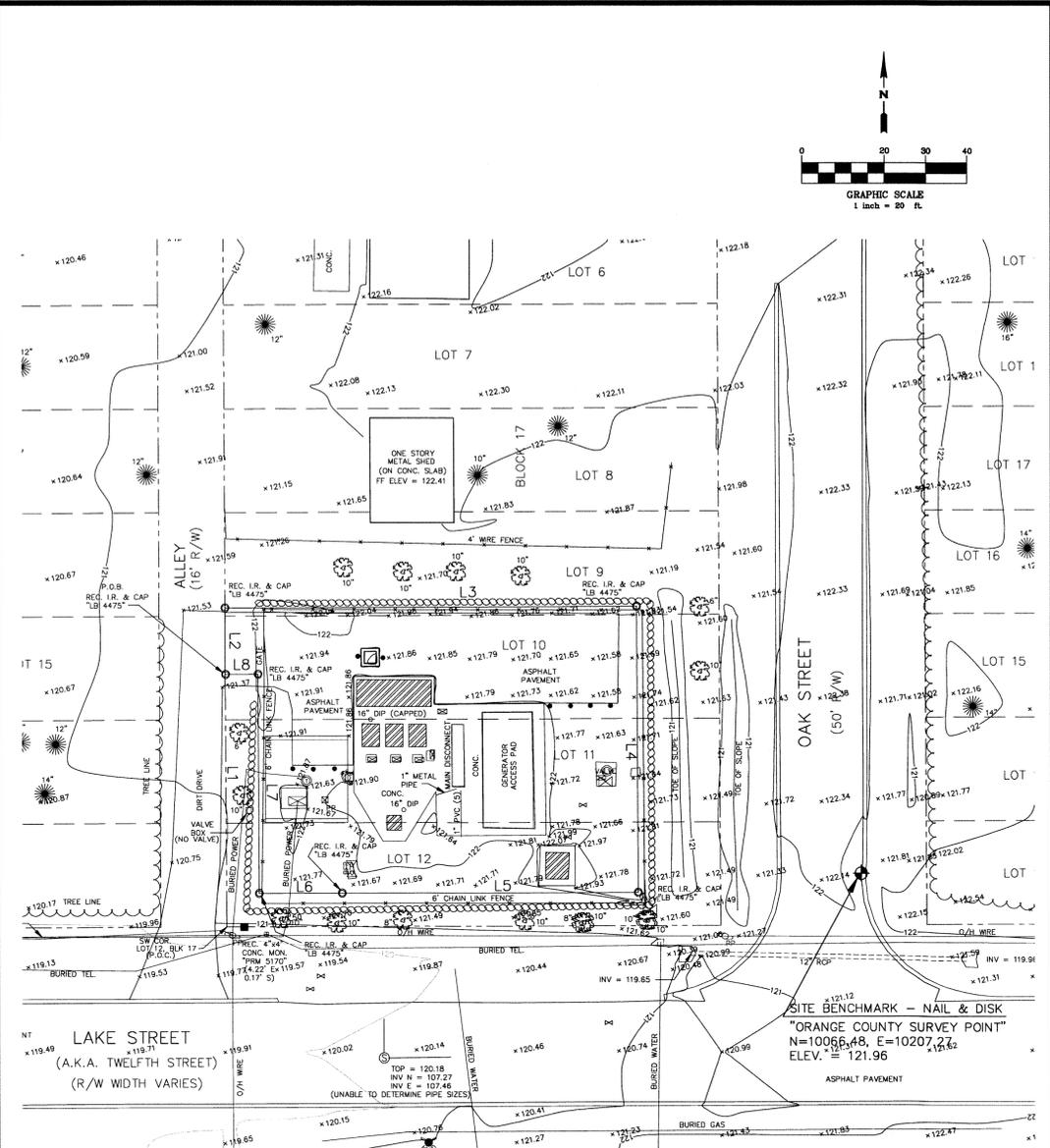
Date:	08/23/07
Drawn:	HL
Checked:	CP
Manager:	CP
Dwg Name:	5672.18-3499.dwg

Tetra Tech, Inc.
201 E. Pine St., Suite 1000
Orlando, FL 32801
Engineering Business # 429
Charles Stephen Parker, P.E.
Florida Registration # 58133

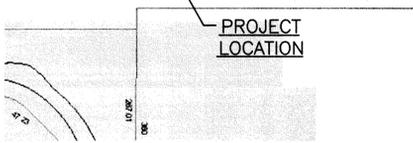
PROJECT No.
5672.18
SHEET No.
C-6

RECORD DRAWINGS

W:\WHS\data\T-Central\Projects\5672\18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\DWG\3512.DWG

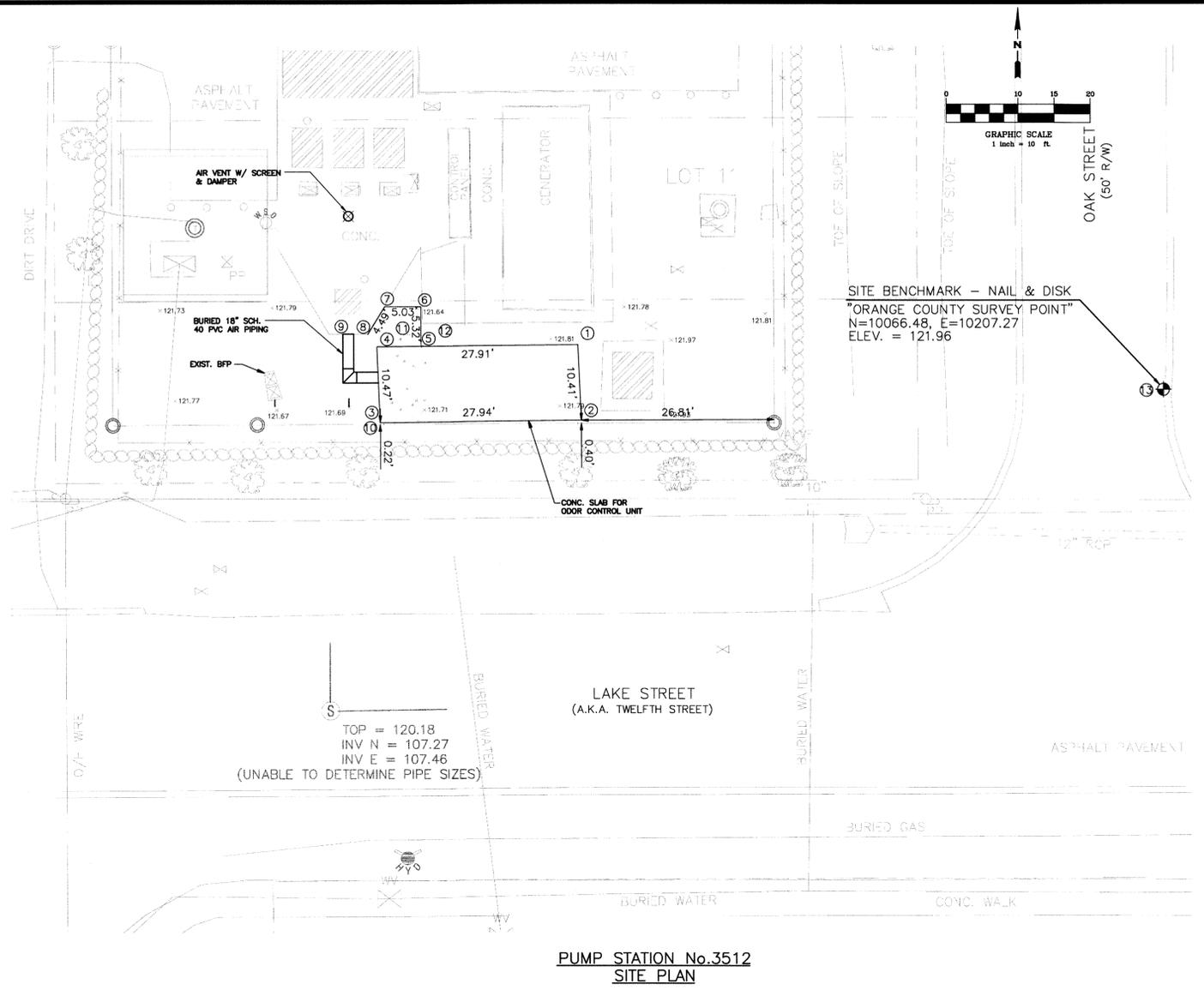


STATION	INVERT	CONDUIT	PIPE	CONDUIT	PIPE
22	120.1	12	12	12	12
21	120.2	12	12	12	12
20	120.3	12	12	12	12
19	120.4	12	12	12	12
18	120.5	12	12	12	12
17	120.6	12	12	12	12
16	120.7	12	12	12	12
15	120.8	12	12	12	12
14	120.9	12	12	12	12
13	121.0	12	12	12	12



PS No.3512

Parcel Id: 15-24-28-0211-17-051
Street Address: Orlando, FL 32802



NOTES:

- CONTRACTOR TO INSTALL ALL ABOVE GROUND IMPROVEMENTS (SLABS, ODOR CONTROL UNITS, BLOWERS, HOSE BIBBS, ETC.) A MINIMUM OF 3'-0" FROM EXISTING AND PROPOSED FENCES, ELECTRICAL CONTROL PANELS & VENTS. CONTRACTOR TO LOCATE SLAB IN ORDER TO MAINTAIN CLEARANCE AND NOT EXCEED MAXIMUM SLOPE REQUIREMENTS. MAXIMUM SLOPE REQUIREMENTS MAY REQUIRE ADDITIONAL DISTANCES FROM EXISTING IMPROVEMENTS.
- CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS AND HARDWARE NECESSARY TO CONSTRUCT THE AIR PIPING, ELECTRICAL COMPONENTS, DRAIN LINES AND POTABLE WATER MAINS REQUIRED TO PROVIDE A WORKING ODOR CONTROL UNIT.
- CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES AT PUMP STATIONS SITE PRIOR TO CONSTRUCTION AND ADJUST LOCATION OF AIR PIPING, CONDUIT, DRAIN LINES AND WATER MAIN IN ORDER TO AVOID CONFLICTS.
- CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT THE SITE AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION FOR ALL PROPOSED PIPING AND CONDUIT. CONTRACTOR TO CORE EXISTING WET WELL WALLS AFTER LAYING OUT ALIGNMENT OF PROPOSED PIPES AND CONDUIT.
- INVERT OF AIR PIPING AND DRAIN LINES MUST BE A MINIMUM OF 12" ABOVE HIGH LEVEL ALARM ELEVATION OF WET WELL. VERIFY IN WRITING ALL HIGH LEVEL ALARM ELEVATIONS WITH ORANGE COUNTY UTILITIES PRIOR TO CORING WET WELL.
- SIZE OF CONCRETE SLAB AND LOCATION OF ODOR CONTROL UNIT, BLOWER, AIR, DRAIN AND WATER PIPE CONNECTIONS TO ODOR CONTROL UNITS SHOWN ON PLANS ARE SCHEMATIC ONLY. CONTRACTOR TO SITE ODOR CONTROL UNIT, SIZE SLAB, AND CONNECT PROPOSED PIPING TO THE UNIT BASED ON MANUFACTURER AND MODEL OF ODOR CONTROL UNIT SELECTED FOR EACH SITE.
- SEE SHEET C-12 FOR LABEL INFORMATION ON COORDINATE ASSET TABLE.

No.	DATE	REVISION
03/03/09		RECORD DRAWINGS
08/23/07		CONFORMED DOCUMENTS

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790



PUMP STATION No.3512 SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

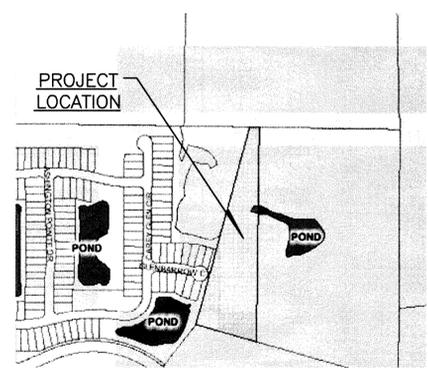
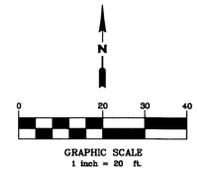
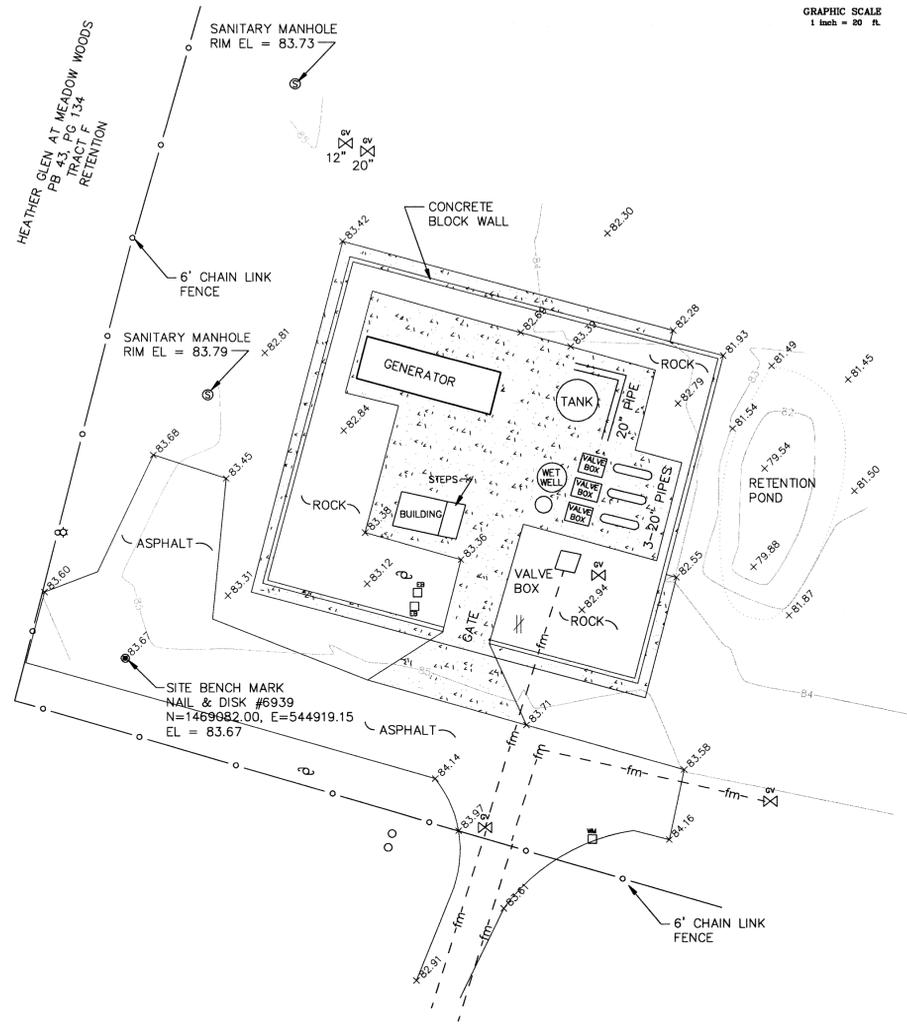
Date:	08/23/07
Drawn:	HL
Checked:	CP
Manager:	CP
Dwg Name:	5672.18-3512.dwg

Tetra Tech, Inc.
201 E. Pine St., Suite 1000
Orlando, FL 32801
Engineering Business #2629
Charles Stephen Parker, P.E.
Florida Registration # 58833

PROJECT No. **5672.18**
SHEET No. **C-7**

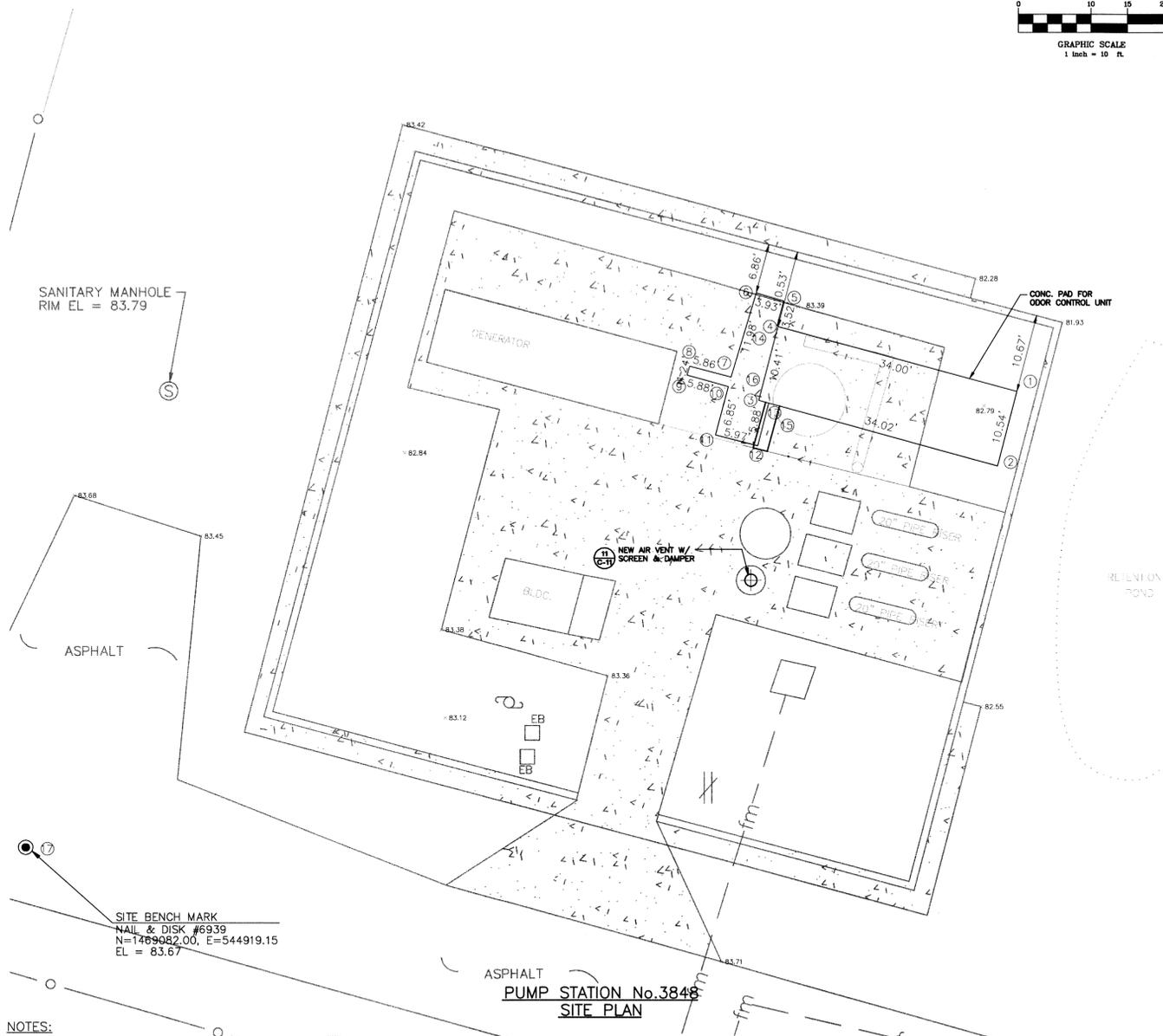
RECORD DRAWINGS

W:\MHS\data\T-Central\Projects\5672\5672.18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\DWG_3848.DWG



PS No.3848

Parcel Id: 30-24-30-0000-00-005
 Street Address: 1707 Rhode Island Cir. Orlando, FL 32802



NOTES:

1. CONTRACTOR TO INSTALL ALL ABOVE GROUND IMPROVEMENTS (SLABS, ODOR CONTROL UNITS, BLOWERS, HOSE BIBBS, ETC.) A MINIMUM OF 3'-0" FROM EXISTING AND PROPOSED FENCES, ELECTRICAL CONTROL PANELS & VENTS. CONTRACTOR TO LOCATE SLAB IN ORDER TO MAINTAIN CLEARANCE AND NOT EXCEED MAXIMUM SLOPE REQUIREMENTS. MAXIMUM SLOPE REQUIREMENTS MAY REQUIRE ADDITIONAL DISTANCES FROM EXISTING IMPROVEMENTS.
2. CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS AND HARDWARE NECESSARY TO CONSTRUCT THE AIR PIPING, ELECTRICAL COMPONENTS, DRAIN LINES AND POTABLE WATER MAINS REQUIRED TO PROVIDE A WORKING ODOR CONTROL UNIT.
3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES AT PUMP STATIONS SITE PRIOR TO CONSTRUCTION AND ADJUST LOCATION OF AIR PIPING, CONDUIT, DRAIN LINES AND WATER MAIN IN ORDER TO AVOID CONFLICTS.
4. CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT THE SITE AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION FOR ALL PROPOSED PIPING AND CONDUIT. CONTRACTOR TO CORE EXISTING WET WELL WALLS AFTER LAYING OUT ALIGNMENT OF PROPOSED PIPES AND CONDUIT.
5. INVERT OF AIR PIPING AND DRAIN LINES MUST BE A MINIMUM OF 12" ABOVE HIGH LEVEL ALARM ELEVATION OF WET WELL. VERIFY IN WRITING ALL HIGH LEVEL ALARM ELEVATIONS WITH ORANGE COUNTY UTILITIES PRIOR TO CORING WET WELL.
6. SIZE OF CONCRETE SLAB AND LOCATION OF ODOR CONTROL UNIT, BLOWER, AIR, DRAIN AND WATER PIPE CONNECTIONS TO ODOR CONTROL UNITS SHOWN ON PLANS ARE SCHEMATIC ONLY. CONTRACTOR TO SITE ODOR CONTROL UNIT, SIZE SLAB, AND CONNECT PROPOSED PIPING TO THE UNIT BASED ON MANUFACTURER AND MODEL OF ODOR CONTROL UNIT SELECTED FOR EACH SITE.
7. SEE SHEET C-12 FOR LABEL INFORMATION ON COORDINATE ASSET TABLE.

RECORD DRAWINGS

No.	DATE	REVISION	BY
03/03/09		RECORD DRAWINGS	TP
06/23/07		CONFORMED DOCUMENTS	TP

TETRA TECH
 CONSULTING ENGINEERS - PLANNERS
 201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
 PHONE: (407) 839-3855 FAX: (407) 839-3790



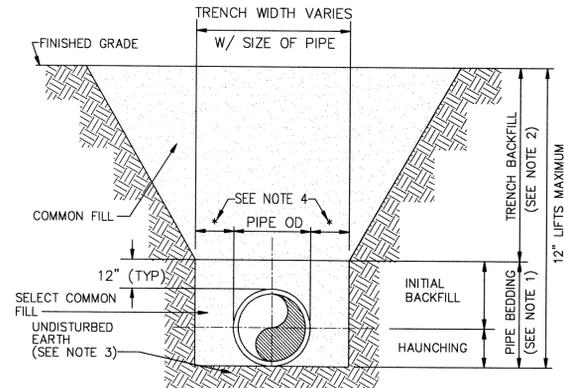
PUMP STATION No.3848 SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
 FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

Date:	08/23/07
Drawn:	HL
Checked:	CP
Manager:	CP
Dwg Name:	5672.18-3848.dwg

Tetra Tech, Inc.
 Suite 1000
 201 E. Pine St.
 Orlando, FL 32801
 Engineering Business # 2429
 Charles Stephen Palmer, P.E.
 License # 14174
 Florida Registration # 58133

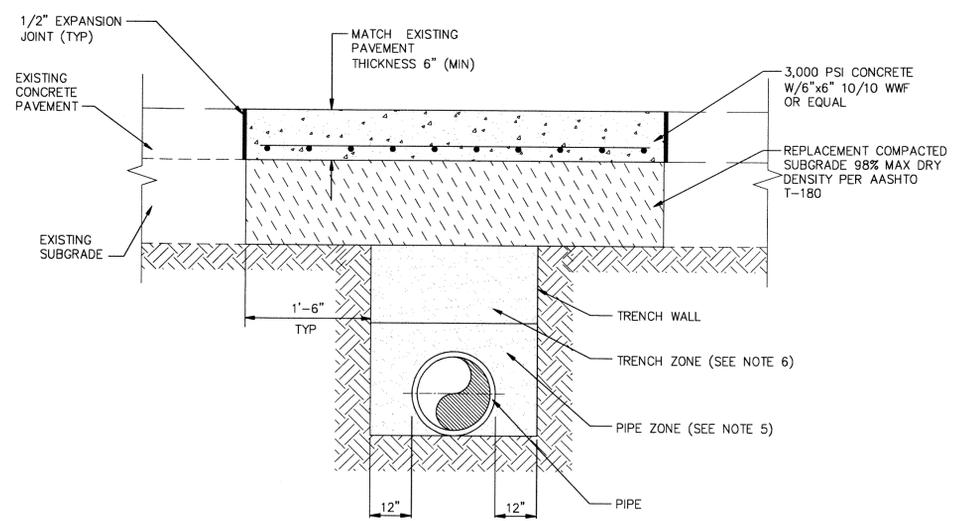
PROJECT No.	5672.18
SHEET No.	C-8





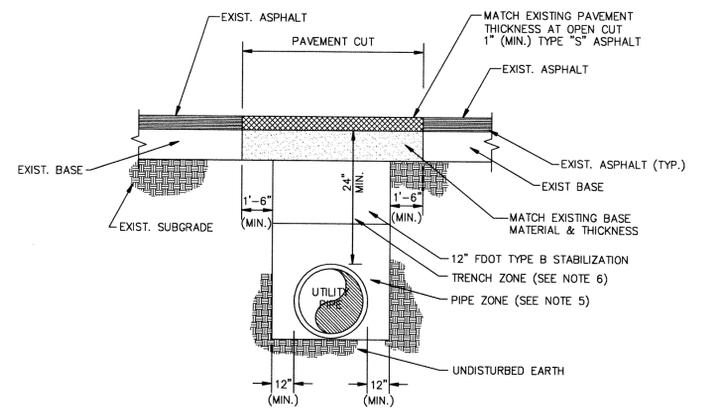
- NOTES:**
- INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK.
 - 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX (12" MIN.) FOR PIPE DIAMETER 24" AND LARGER.
 - WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.

1 TYPE B BEDDING AND TRENCHING
N.T.S.



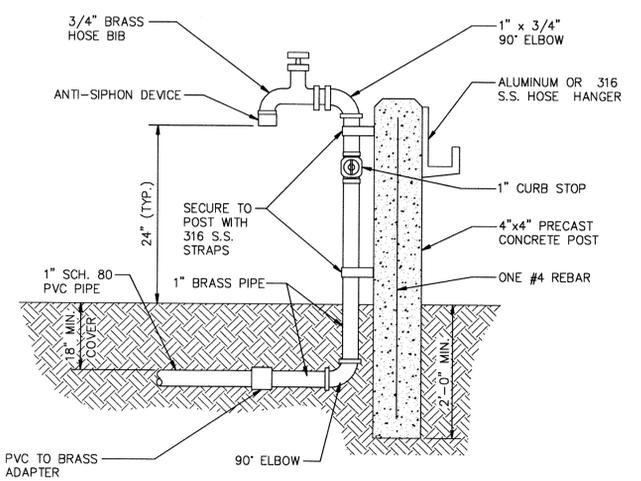
- CONCRETE PAVEMENT/DRIVEWAY RESTORATION OPEN CUT NOTES:**
- CONCRETE PAVEMENT THICKNESS SHALL MATCH EXISTING THICKNESS, WITH A MINIMUM THICKNESS OF 6".
 - COMPACTED SUBGRADE MINIMUM THICKNESS SHALL BE 6". SUBGRADE TO BE COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180 AND OBTAIN A FLORIDA BEARING VALUE (FBV) OF 35.
 - ALL OPEN CUTS SHALL BE MECHANICALLY SAWCUT IN A SMOOTH STRAIGHT LINE.
 - WATER SHALL NOT BE PERMITTED IN TRENCH DURING CONSTRUCTION.
 - PIPE BEDDING - SELECT COMMON FILL COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180.
 - TRENCH BACKFILL - COMMON FILL COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180.

2 CONCRETE PAVEMENT/DRIVEWAY RESTORATION AT OPEN CUT
N.T.S.

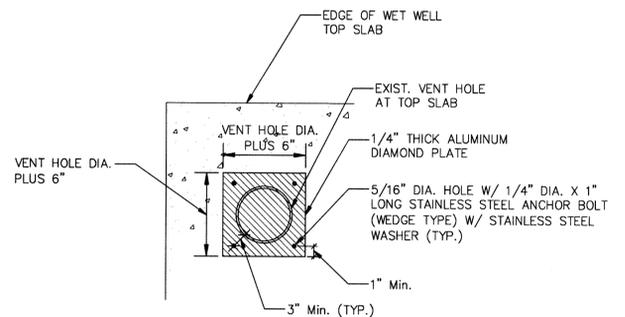


- ASPHALT PAVEMENT NOTES:**
- ASPHALTIC CONCRETE SHALL BE A MINIMUM THICKNESS OF 1".
 - NEW BASE SHALL MATCH EXISTING BASE THICKNESS, AND BASE MATERIAL, WITH A MINIMUM THICKNESS OF 6" AND A MAXIMUM THICKNESS OF 12".
 - ALL OPEN CUTS SHALL BE MECHANICALLY SAWCUT IN A SMOOTH STRAIGHT LINE.
 - WATER SHALL NOT BE PERMITTED IN TRENCH DURING CONSTRUCTION.
 - PIPE BEDDING - SELECT COMMON FILL COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180.
 - TRENCH BACKFILL - COMMON FILL COMPACTED TO 98% MAX. DRY DENSITY PER AASHTO T-180.
 - CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS ON DRIVEWAYS AND PARKING AREAS WHICH ARE REMOVED OR ALTERED BY CONSTRUCTION. PAVEMENT MARKINGS SHALL MATCH EXISTING PAVEMENT MARKINGS IN PLACE PRIOR TO CONSTRUCTION, OR AS DIRECTED BY OWNER.

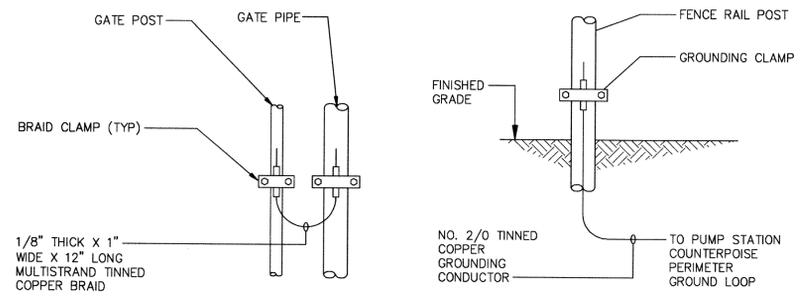
3 ASPHALT PAVEMENT RESTORATION AT OPEN CUT
N.T.S.



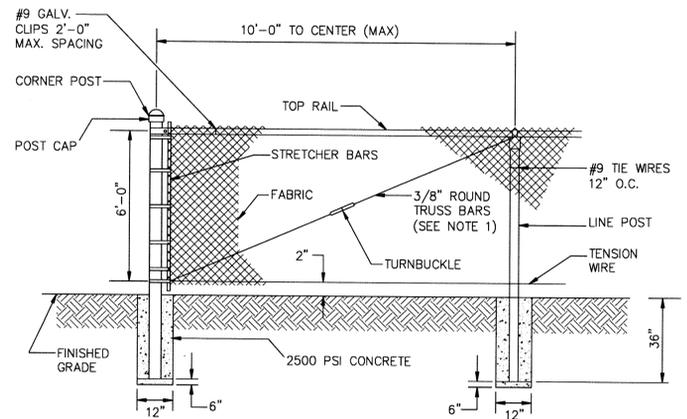
4 WATER SERVICE CONNECTION DETAIL
N.T.S.



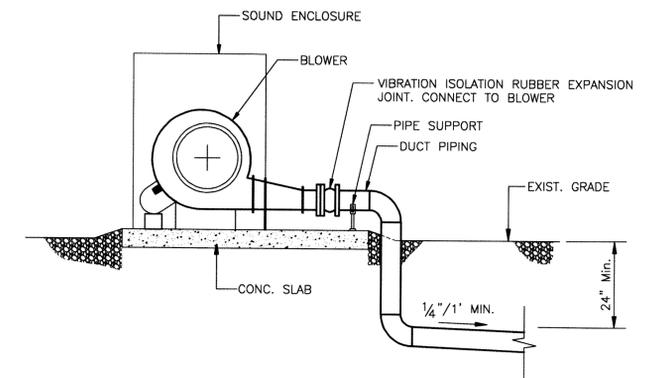
5 DETAIL AT PLATE OVER EXIST. AIR PIPING/VENT HOLE
N.T.S.



6 TYPICAL FENCE POST GROUNDING
N.T.S.



7 CHAIN LINK FENCE DETAIL
N.T.S.



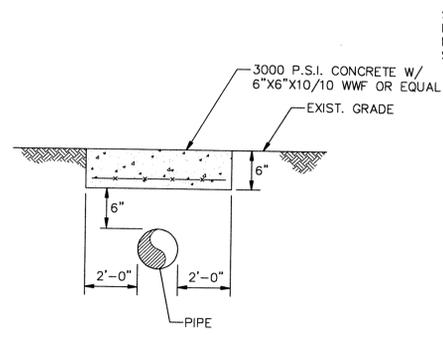
8 DETAIL OF AIR DUCT PIPE CONNECTION AT BLOWER UNIT
N.T.S.

RECORD DRAWINGS

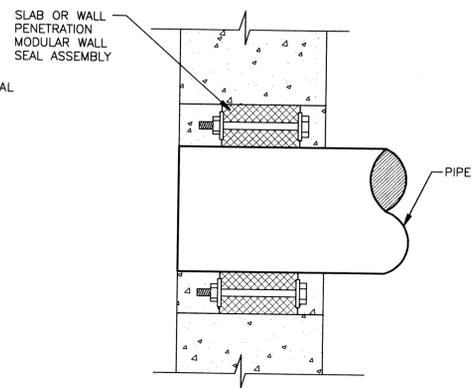
W:\VHS\data\Tl-Central\Projects\6672\18\OCU SOUTH RECORD DWGS 02-25-09\OCU South PS\DWG\5672.18-DETAILS.dwg

<p>TETRA TECH CONSULTING ENGINEERS - PLANNERS 201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801 PH: 407-659-3955 FAX: 407-659-3790</p>		<p>03/03/09 RECORD DRAWINGS TP 08/23/07 CONFORMED DOCUMENTS TP DATE REVISION BY</p>
<p>UTILITY DETAILS MASTER PUMP STATIONS ODOR CONTROL PROJECT SOUTH SERVICE AREA FOR UTILITIES DEPARTMENT ORANGE COUNTY, FLORIDA</p>		
<p>Date: 08/23/07 Drawn: HL Checked: CP Manager: CP Dwg Name: 5672.18-DETAILS.dwg</p>	<p>Tetra Tech, Inc. 201 E. Pine Street, Suite 1000 Orlando, Florida 32801 Engineering Business #2429 Charles Stephen Parker, P.E. Florida Registration # 38133</p>	<p>PROJECT No. 5672.18 SHEET No. C-10</p>

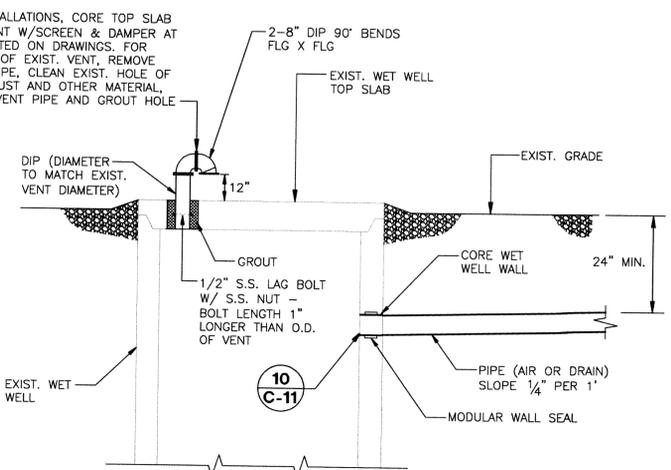
W:\WHIS\data\T1-Central\Projects\5672\18\OCU SOUTH RECORD DWGS 02-25-09\OCU_SOUTH_P51.Dwg\5672-18-DETAILS.dwg



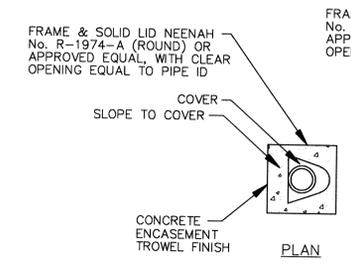
9 **DETAIL AT CONC. CAP**
N.T.S.



10 **PENETRATION SEAL**
N.T.S.



11 **CONNECTION AT WET WELL**
N.T.S.

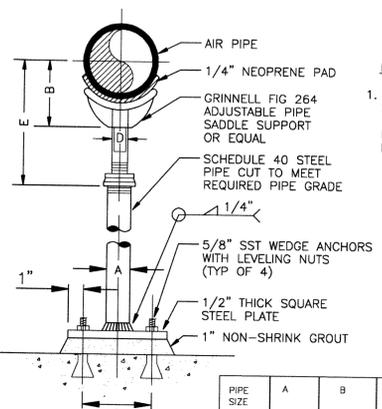


12 **CLEANOUT DETAIL**
N.T.S.

PROPOSED UTILITY	HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS								ACCEPTABLE VARIANCES
	POTABLE WATER (PW)		RECLAIMED WATER		SAN. SEWER (SS) (GRAV. & M.)		STORM SEWER		
	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	
POTABLE WATER	-	-	3' 0/0	12"	6'	12"	3'	12"	SEE GENERAL NOTES: NO. 4
RECLAIMED WATER	3' 0/0	12"	-	-	3' 0/0	12"	-	-	
SANITARY SEWER	6'	12"	3' 0/0	12"	-	-	-	-	

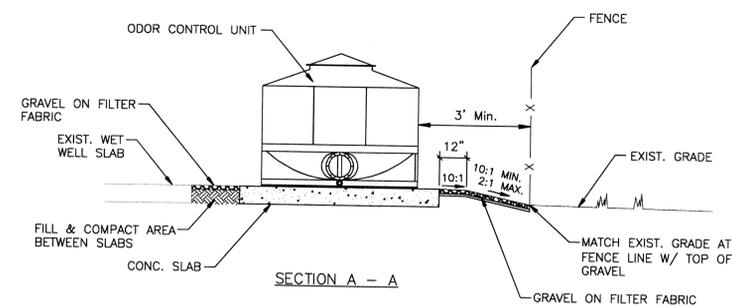
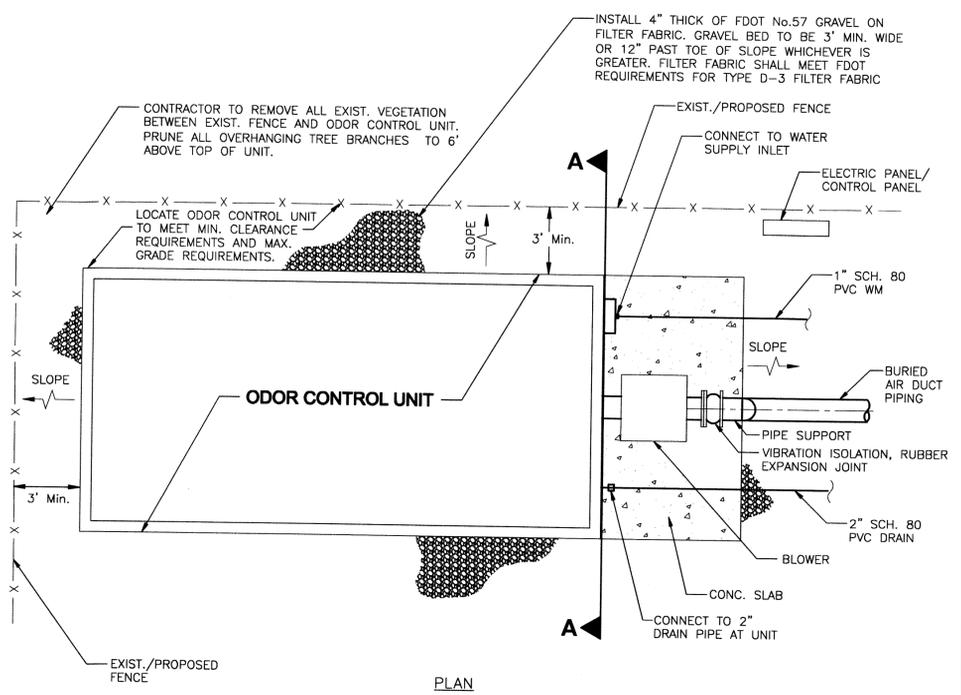
- GENERAL NOTES:**
- THE TABLE MEETS SEPARATION REQUIREMENTS AS DESCRIBED IN F.D.E.P. OF THE RULES OF THE FLORIDA ADMINISTRATION CODE (F.A.C.). THESE SEPARATION REQUIREMENTS SHALL APPLY BETWEEN NEWLY PROPOSED UTILITY LINES AND EXISTING OR PROPOSED UTILITY LINES.
 - FOR THE PURPOSE OF THIS TABLE, RECLAIMED WATER SHALL MEAN UNRESTRICTED PUBLIC ACCESS REUSE WATER AS DEFINED BY F.A.C. 62-610. OTHER TYPES OF RECLAIMED WATER ARE CONSIDERED RAW SEWAGE AND SEPARATION LISTED FOR SANITARY SEWER SHALL APPLY.
 - ALL SEPARATION DISTANCES ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE UNLESS OTHERWISE SPECIFIED. CRITERION PRODUCING GREATER CLEARANCE SHALL BE USED. 0/0 - DENOTES OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
 - ACCEPTABLE VARIANCES:
 - WHERE HORIZONTAL SEPARATION IS NOT ATTAINABLE FOR NEW INSTALLATIONS OF PW AND SS, THE PIPES WILL BE INSTALLED IN SEPARATE TRENCHES AND THE BOTTOM OF THE PW MAIN WILL BE 12" HIGHER THAN THE TOP OF THE SS.
 - WHERE HORIZONTAL SEPARATION IS NOT ATTAINABLE FOR NEW SS AND A NEW OR EXISTING PW MAIN, THE SS WILL BE UPGRADED TO THE SAME MATERIAL REQUIRED OF THE PW MAIN OF THE SAME SIZE.
 - WHERE INSTALLATION OF A NEW PW MAIN IS IN CONFLICT WITH EXISTING SS, THE FOLLOWING SHALL BE MAINTAINED:
 - VERTICAL CONFLICT: DEFLECT NEW PW MAIN 12" ABOVE THE EXISTING SS WITH SUFFICIENT COVER FOR THE PW, OR 12" BELOW THE EXISTING SS. WHERE DEFLECTION IS NOT POSSIBLE OR MINIMUM COVER NOT MET, THEN THE PW MAIN SHALL BE UPGRADED TO DIP AND CENTERED AT CROSSING.
 - HORIZONTAL CONFLICT: PW MAIN SHALL BE INSTALLED 18" HIGHER THAN THE EXISTING SS WITH SUFFICIENT COVER, OR THE PW WILL BE DIP.
 - SEPARATION REQUIREMENTS BETWEEN PW AND STORM SEWER ARE THE SAME AS WITH PW AND SS. SPECIAL SUPPORT MAY BE REQUIRED.
 - WHERE VERTICAL AND HORIZONTAL SEPARATIONS ARE NOT ATTAINABLE FOR PW AND FM, THE FOLLOWING SHALL BE MAINTAINED:
 - FM UPGRADED TO DR 14 (12 INCH DIA. AND UNDER) AND DR 18 (14 INCH DIA. AND OVER) AND PRESSURE TESTED TO 200 PSI. WHERE FM IS EXISTING PW SHALL BE UPGRADED TO DIP.
 - STAGGER THE LOCATION OF JOINTS FOR EACH PIPE.
 - NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY OR STORM WATER MANHOLE OR STRUCTURE.

13 **MINIMUM HORIZONTAL SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS**
N.T.S.



PIPE SIZE	SEPARATION REQUIREMENTS (INCHES)				
	A	B	C	D	E
2 1/2	2 1/2	3 1/2	7	1 1/2	8
3	2 1/2	3 3/4	7	1 1/2	8 1/4
3 1/2	2 1/2	4	7	1 1/2	8 1/2
4	3	4 1/4	7	2 1/2	9 1/4
5	3	4 7/8	7	2 1/2	10
6	3	5 1/2	7	2 1/2	10 1/2
8	3	6 7/8	7	2 1/2	11 3/4
10	3	8 1/2	7	2 1/2	13 1/2
12	3	9 15/16	7	2 1/2	15
14	4	10 15/16	7	3	16 1/4
16	4	12 3/8	7	3	17 3/4
18	6	13 7/8	9	3 1/2	19 1/2
20	6	15 3/8	9	3 1/2	21
24	6	17 15/16	9	4	23 1/4

14 **PIPE SUPPORT - ADJUSTABLE SADDLE**
N.T.S.



15 **DETAIL AT TYPICAL ODOR CONTROL UNIT**
N.T.S.

No.	DATE	REVISION	BY
03/03/09	08/23/07	RECORD DRAWINGS	TP
		CONFORMED DOCUMENTS	TP

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PH: 407-839-3955 FAX: 407-839-3190



UTILITY DETAILS
MASTER PUMP STATIONS ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

Date: 08/23/07
Drawn: HL
Checked: CP
Manager: CP
Dwg Name: 5672-18-DETAILS.dwg

Tetra Tech, Inc.
201 E. Pine St., Suite 1000
Orlando, FL 32801
Engineering Business # 2429
Charles Stephen Penker, P.E.
45-4-0-9
Florida Registration # 58133

PROJECT No. **5672.18**
SHEET No. **C-11**

RECORD DRAWINGS

GENERAL NOTES AND SPECIFICATIONS :

1. THE SCOPE OF WORK SHALL BE AS PER SPECIFICATION SECTION AS SHOWN ON PLANS.
2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
3. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, FLORIDA BUILDING CODE AND ORANGE COUNTY STANDARDS.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ENGINEER AND OWNER.
6. THE CONTRACTOR SHALL VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
7. GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH NEC, ARTICLE 250. THE GROUNDING SYSTEM TEST SHALL NOT EXCEED A 48 HOUR DRY RESISTANCE OF 5 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. PROVIDE A FINAL COPY OF ALL GROUNDING TEST RESULTS TO ORANGE COUNTY.
8. AN EQUIPMENT GROUND WIRE SIZED PER THE NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON PLANS.
9. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND UNUSED AND U.L. LISTED.
10. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL & CONTROL.
11. THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
12. ALL EQUIPMENT FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.
13. ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY EXACT LOCATION AND SIZE AND INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.
14. THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF CONDUIT RUNS. THESE ARE TO BE COORDINATED WITH THE OTHER TRADES SO THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATIONS.
15. USE RIGID ALUMINUM CONDUITS FOR ALL EXPOSED CONDUITS. PROVIDE PVC CONDUIT FOR ALL UNDERGROUND CONDUITS. ALL CONDUITS SHALL BE MINIMUM 24" BELOW GRADE AND BE INSTALLED WITH YELLOW "CAUTION" TAPE INSTALLED 6 INCHES BELOW GRADE.
16. FLEXIBLE CONDUITS SHALL BE USED TO TERMINATE ALL MOTORS AND OTHER VIBRATING EQUIPMENT AND SHALL BE BETWEEN 18" AND 3' IN LENGTH.
17. TYPEWRITTEN PANEL SCHEDULES SHALL BE INSTALLED IN PANELBOARD, AND TERMINAL BLOCK SCHEDULES IN EACH CONTROL CABINET.
18. ALL SPARE CONDUITS SHALL BE SEALED WITH A CAP AND A PULL STRING INSTALLED WITH IDENTIFICATION ON BOTH ENDS.
19. ALL CIRCUITS SHALL BE IDENTIFIED IN PULL BOXES, PANELS AND CONTROLLERS.
20. EXPOSED RUNS OF CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS. BENDS AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE.
21. ALL BUSSES AND CABLES SHALL BE COPPER. NO ALUMINUM ALLOWED.
22. THE PUMP STATION MUST REMAIN IN OPERATION AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER AND SUPPLY ANY BYPASS PUMPING OR TEMPORARY EQUIPMENT NECESSARY TO MAINTAIN CONTINUOUS 100% CAPACITY OPERATION.
23. ALL CONCRETE PENETRATIONS SHALL BE CORE DRILLED AND RESEALED WITH NON-SHRINK GROUT.
24. DURING SUBMITTAL THE CONTRACTOR SHALL VERIFY ALL SUPPLY BREAKER SIZES FOR ALL PACKAGED SYSTEMS, ETC. AND MODIFY ALL BREAKERS IN THE PANELBOARDS ACCORDINGLY WITHOUT ANY ADDITIONAL COST TO THE OWNER.
25. NOT ALL CONDUITS SHOWN ON RISER ARE SHOWN ON BUILDING LAYOUTS. CONTRACTOR SHALL SUPPLY ALL CONDUITS AND CABLES AS SHOWN ON RISER DIAGRAMS.
26. ALL ENCLOSURES, JB, WIREWAY, PULL BOXES ETC. SHALL CONTAIN A GROUNDING BUS. CONNECT ALL RACEWAY BONDS TO THIS BUS VIA GROUNDING BUSHING AND EXTEND BONDING JUMPER FROM THIS BUS TO THE ENCLOSURE.
27. CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS.
28. MINIMUM PARALLEL DISTANCE ALLOWED BETWEEN POWER CONDUIT AND SIGNAL (4-20mA) CONDUIT SHALL BE:

VOLTAGE	DISTANCE
480V	2 FT
120V	1 FT

SITE NOTES:

1. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING FACILITIES SHOWN NOR FOR ANY FACILITY NOT SHOWN. UTILITY PIPING SHOWN FOR REFERENCE PURPOSES ONLY. THESE DRAWINGS HAVE BEEN CREATED FROM AS-BUILT DRAWINGS PROVIDED BY THE OWNER.
2. ALL UNDERGROUND PIPING AND CONDUITS IN THE GENERAL AREA OF THE PROPOSED WORK SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL HAND DIG ALL UNDERGROUND CONDUIT INSTALLATIONS AND SHALL REPAIR ALL DAMAGES RESULTING FROM DIGGING INCLUDING, SOD, GRAVEL, ASPHALT, CONCRETE PADS, PIPING, ETC.

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO. EB 000877

PAUL F. HILLERS
 P.E. NO. 41022
 4/14/09

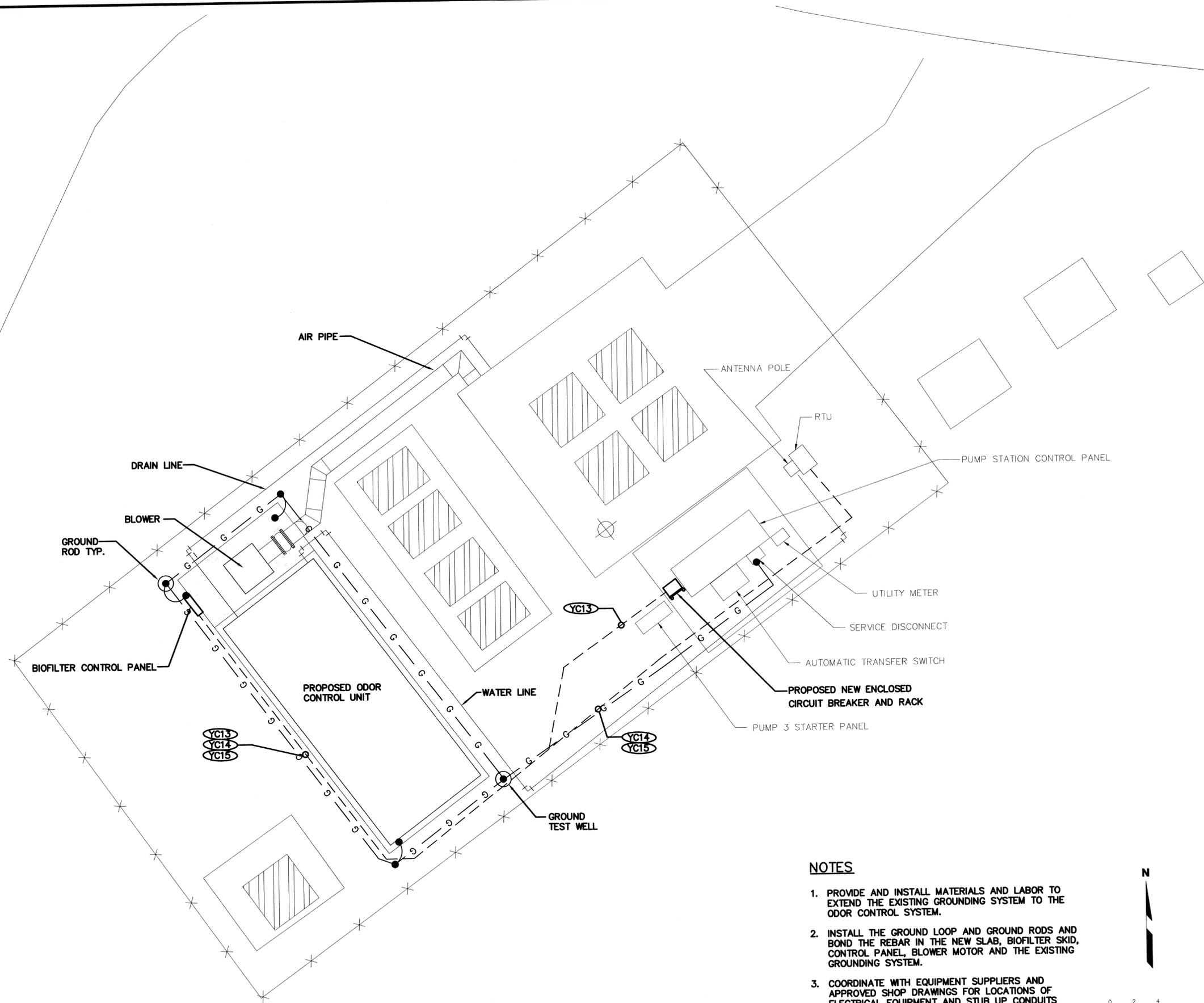
PROJECT No. **5672.18**
 SHEET No. **E-02**

ELECTRICAL GENERAL NOTES
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA



TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544

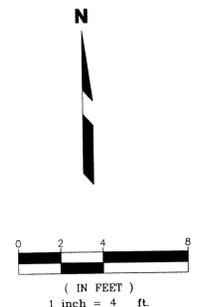
No.	DATE	REVISION
1.	04/07/09	RECORD DRAWINGS



MASTER PS 3419

NOTES

1. PROVIDE AND INSTALL MATERIALS AND LABOR TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE ODOR CONTROL SYSTEM.
2. INSTALL THE GROUND LOOP AND GROUND RODS AND BOND THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANEL, BLOWER MOTOR AND THE EXISTING GROUNDING SYSTEM.
3. COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB UP CONDUITS ACCORDINGLY



RECORD DRAWINGS
 REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

1.	04/07/09	RECORD DRAWINGS	RLC	BY

TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544



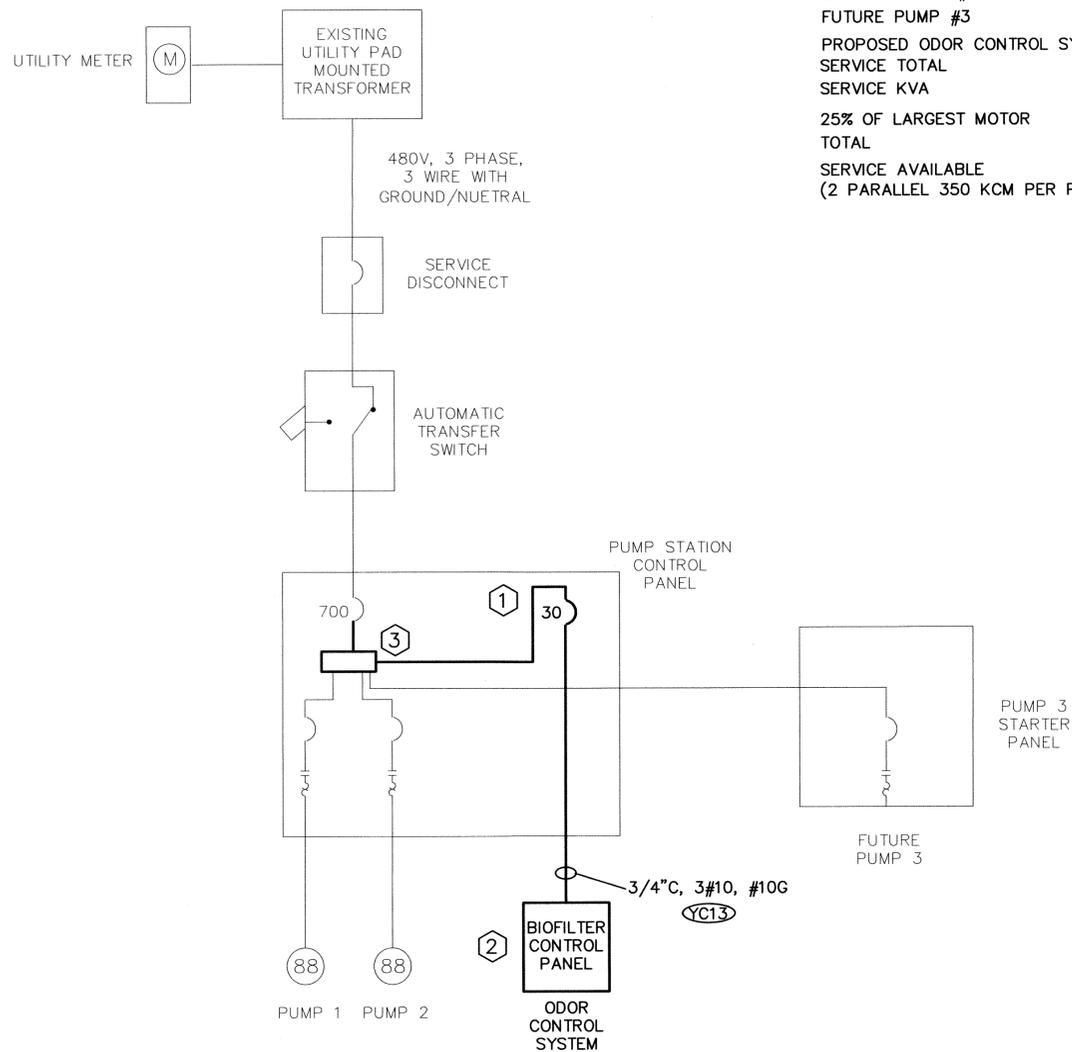
PS 3419 ELECTRICAL SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Dwg Name:	WH61E03-3419

PAUL F. HILLERS
 P.E. NO. 41022
 PROJECT No. **5672.18**
 SHEET No. **E-03**

SERVICE CALCULATION

LOAD	CONNECTED LOAD (480V)	RUNNING LOAD (480V)
EXISTING PUMP #1	113.0 A	113.0 A
EXISTING PUMP #2	113.0 A	113.0 A
FUTURE PUMP #3	0.0 A	0.0 A
PROPOSED ODOR CONTROL SYSTEM (5 1/2 HP)	9.0 A	9.0 A
SERVICE TOTAL	235.0 A	235.0 A
SERVICE KVA	195.4 KVA	195.4 KVA
25% OF LARGEST MOTOR	28.3 A	
TOTAL	263.3 A	
SERVICE AVAILABLE (2 PARALLEL 350 KCM PER PHASE)	620.0 A	



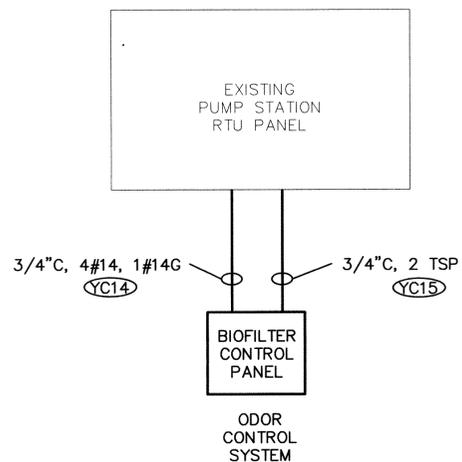
PUMP STATION 3419 ONE LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

- 1 PROVIDE AND INSTALL 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED AT 50K AIC. TAP FROM THE NEW 3 PHASE POWER DISTRIBUTION BLOCK, TAP CONDUCTORS SHALL BE LESS THAN 10 FEET LONG.
- 2 BIOFILTER CONTROL PANEL SHALL BE BUILT TO MEET THE REQUIREMENTS OF THE 2005 NATIONAL ELECTRICAL CODE, ARTICLE 409.110 MARKING (3) - SHORT-CIRCUIT CURRENT RATING (SCCR)
- 3 PROVIDE AND INSTALL A THREE PHASE POWER DISTRIBUTION BLOCK SIZED FOR ALL CONDUCTORS FED FROM THE PUMP STATION CONTROL PANEL MAIN BREAKER. ADJUST THE LOCATION OF EXISTING PANEL EQUIPMENT AS REQUIRED FOR THE INSTALLATION. PROVIDE ALL WIRING AND TERMINATIONS.

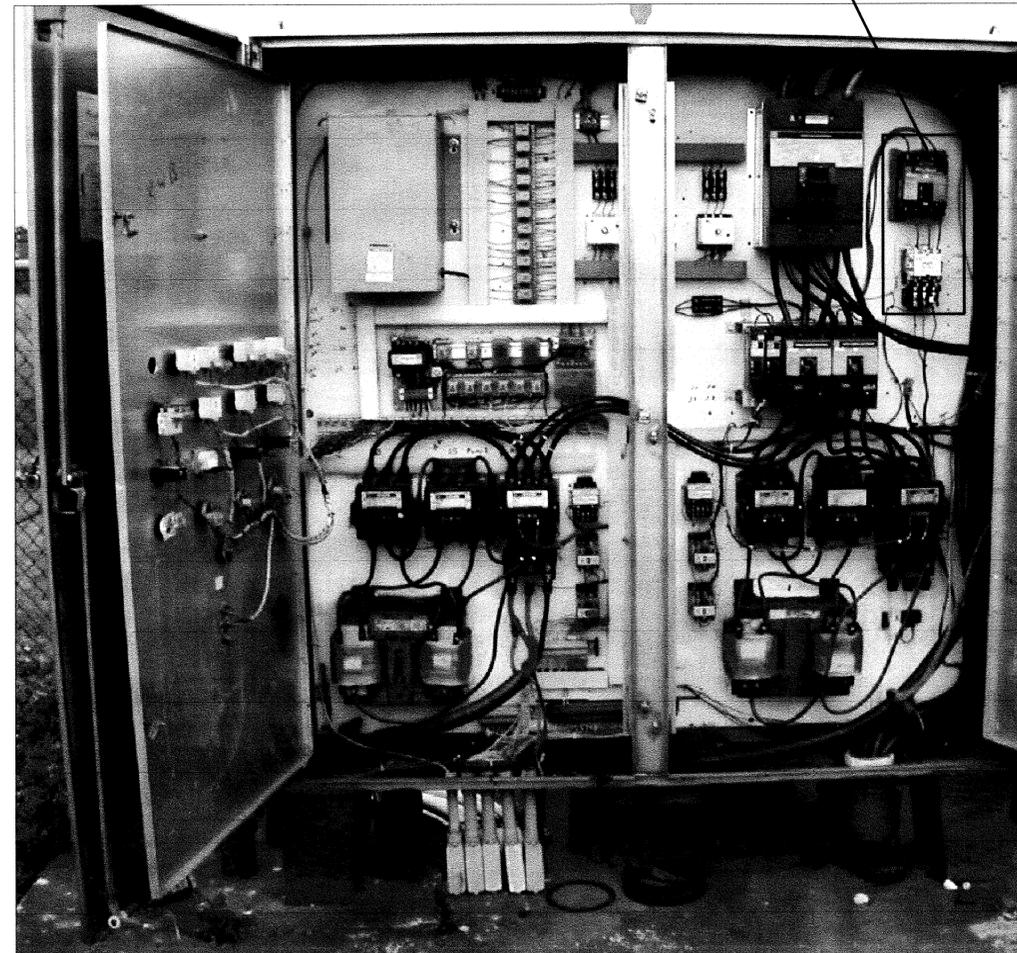
— EXISTING
— NEW



PUMP STATION 3419 CONTROL RISER DIAGRAM

SCALE: NONE

REMOVE EXISTING BREAKER AND STARTER AND REPLACE WITH NEW 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER.



EXISTING PUMP STATION 3419 CONTROL PANEL

SCALE: NONE

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS, DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFF
Dwg Name:	WB1E04-3419

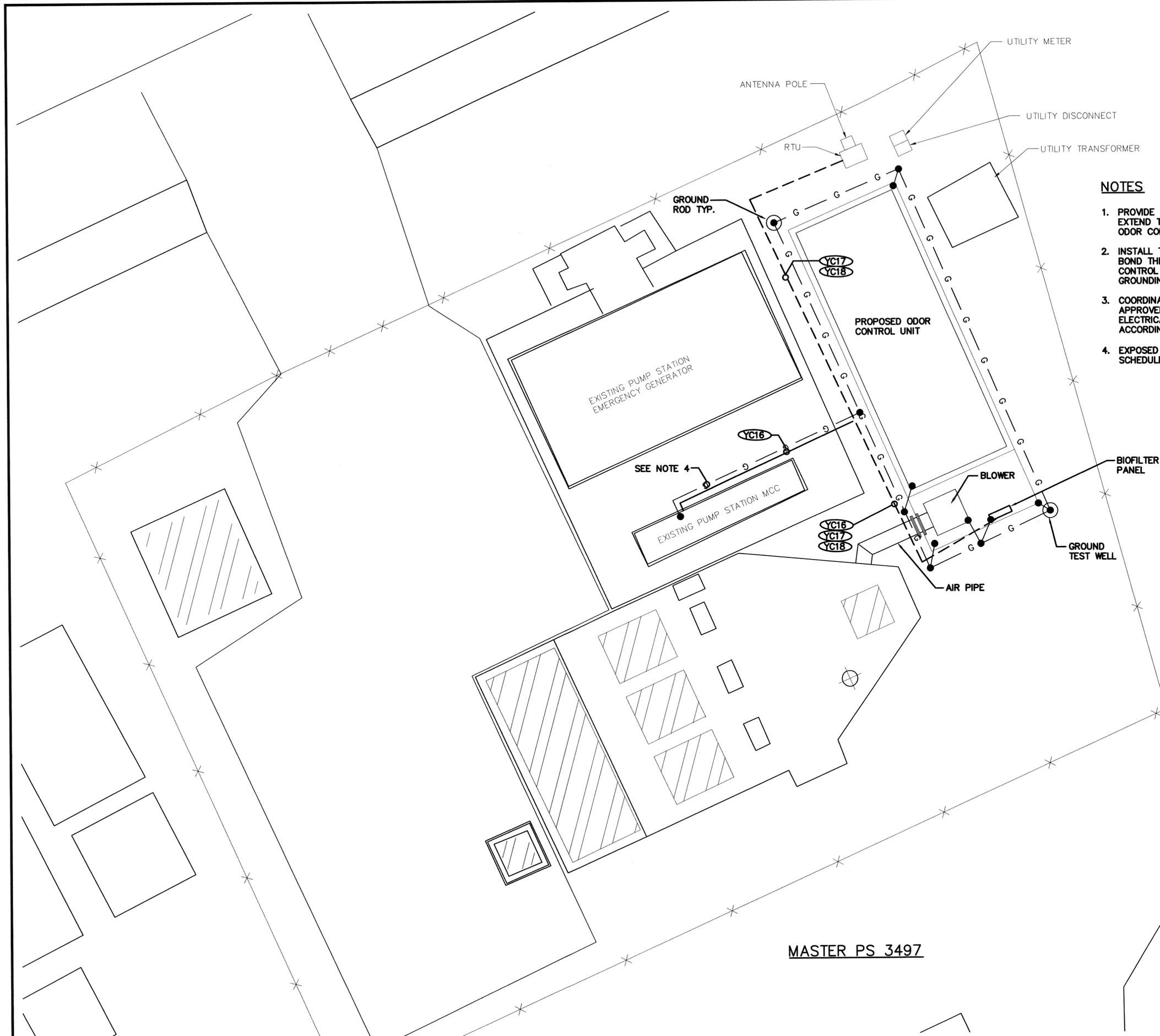
PAUL F. HILLERS
P.E. NO. 41022

PROJECT No.
5672.18
SHEET No.
E-04

PS 3419 ONE LINE AND RISER DIAGRAMS
MASTER PUMP STATION ODOR CONTROL PROJECT
FOR
SOUTH SERVICE AREA
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

TETRA TECH, INC
CONSULTING ENGINEERS PLANNERS
201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
PH: 407-644-0857 FAX: 407-644-7544

NO.	DATE	REVISION	BY
1.	04/07/09	RECORD DRAWINGS	RLC



NOTES

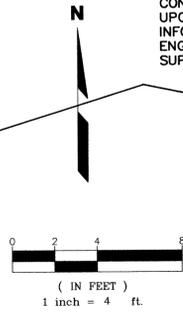
1. PROVIDE AND INSTALL MATERIALS AND LABOR TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE ODOR CONTROL SYSTEM.
2. INSTALL THE GROUND LOOP AND GROUND RODS AND BOND THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANEL, BLOWER MOTOR AND THE EXISTING GROUNDING SYSTEM.
3. COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB UP CONDUITS ACCORDINGLY
4. EXPOSED GROUND WIRE SHALL BE INSTALLED IN A 1" SCHEDULE 80 PVC CONDUIT.

MASTER PS 3497

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.



HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

DATE	04/07/09	REVISION	
NO.	1.	RECORD DRAWINGS	RLC
BY			

TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125 WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544



PS 3497 ELECTRICAL SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

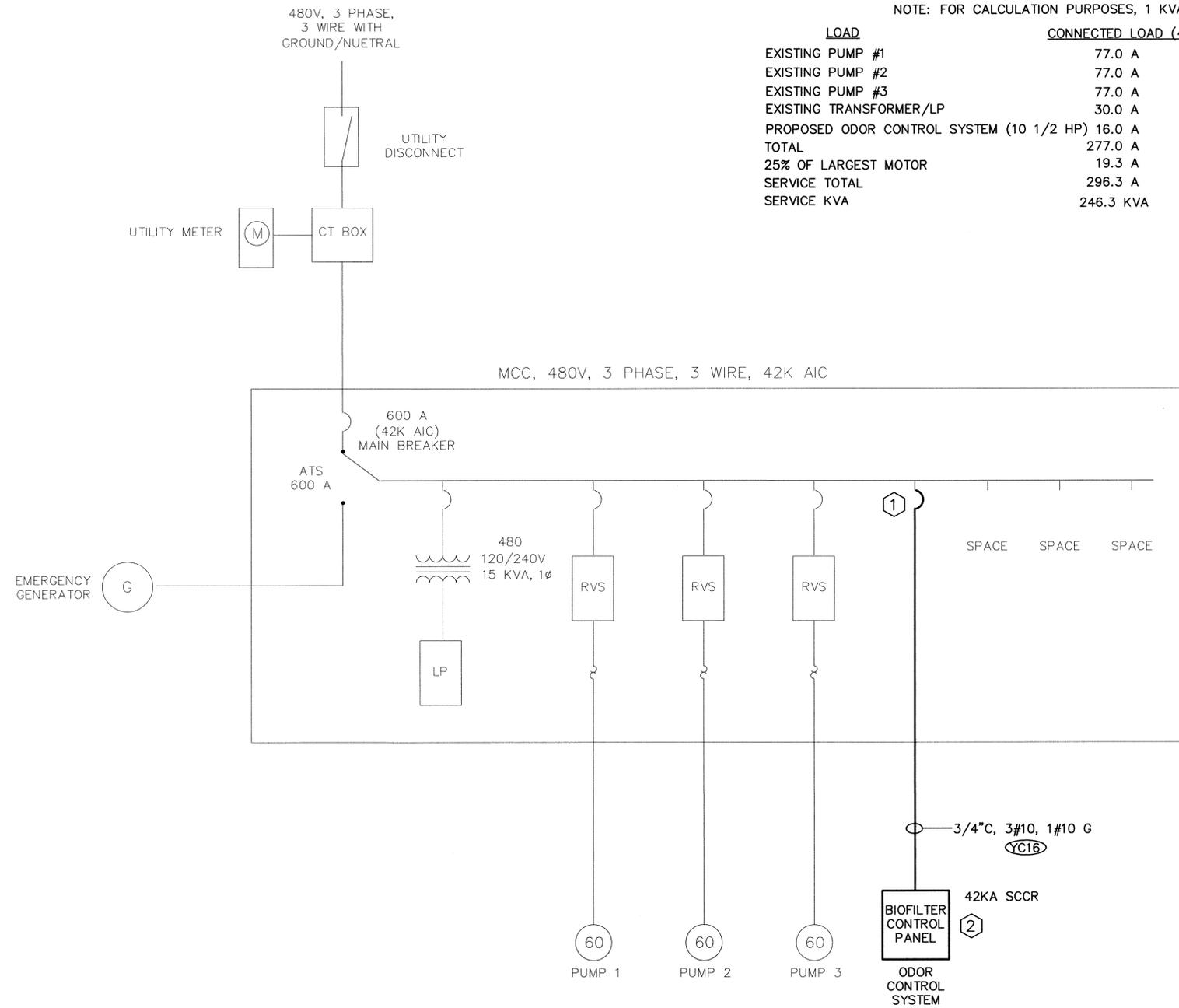
Date:	02/14/06	SPH
Drawn:	RLC	PHH
Checked:	PHH	WH61E05-3487
Manager:		
Dwg Name:		

PAUL F. HILLERS
 P.E. NO. 41022
 PROJECT No.
5672.18
 SHEET No.
E-05

SERVICE CALCULATION

NOTE: FOR CALCULATION PURPOSES, 1 KVA = 1 HP.

LOAD	CONNECTED LOAD (480V)	RUNNING LOAD (480V)
EXISTING PUMP #1	77.0 A	77.0 A
EXISTING PUMP #2	77.0 A	77.0 A
EXISTING PUMP #3	77.0 A	77.0 A
EXISTING TRANSFORMER/LP	30.0 A	30.0 A
PROPOSED ODOR CONTROL SYSTEM (10 1/2 HP)	16.0 A	16.0 A
TOTAL	277.0 A	277.0 A
25% OF LARGEST MOTOR	19.3 A	19.3 A
SERVICE TOTAL	296.3 A	296.3 A
SERVICE KVA	246.3 KVA	246.3 KVA



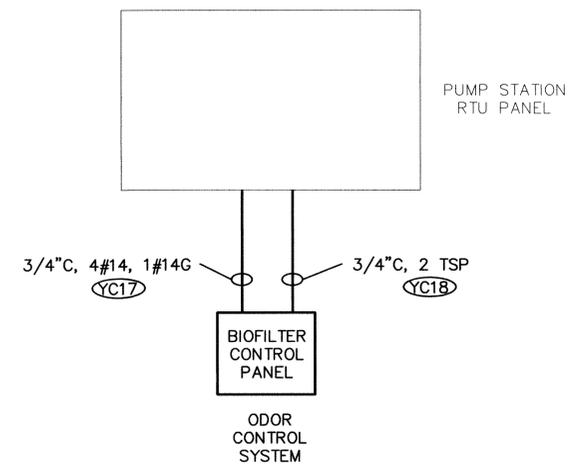
PUMP STATION 3497 ONE LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

- ① PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED 42K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ② BIOFILTER CONTROL PANEL SHALL BE BUILT TO MEET THE REQUIREMENTS OF THE 2005 NATIONAL ELECTRICAL CODE, ARTICLE 409.110 MARKING (3) – SHORT-CIRCUIT CURRENT RATING (SCCR)

— EXISTING
 — NEW



PUMP STATION 3497 CONTROL RISER DIAGRAM

SCALE: NONE

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

TETRA TECH, INC CONSULTING ENGINEERS PLANNERS		DATE	REVISION
201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789 PH: 407-644-0857 FAX: 407-644-7544		04/07/09	RECORD DRAWINGS
		1.	BY
PS 3497 ONE LINE AND RISER DIAGRAMS MASTER PUMP STATION ODOR CONTROL PROJECT SOUTH SERVICE AREA FOR UTILITIES DEPARTMENT ORANGE COUNTY, FLORIDA			
Date:	02/14/06	Drawn:	SPH
Checked:	RLC	Manager:	PFH
Dwg Name:	WH61E06-3497		
PAUL F. HILLERS P.E. NO. 41022 PROJECT No. 5672.18 SHEET No. E-06			

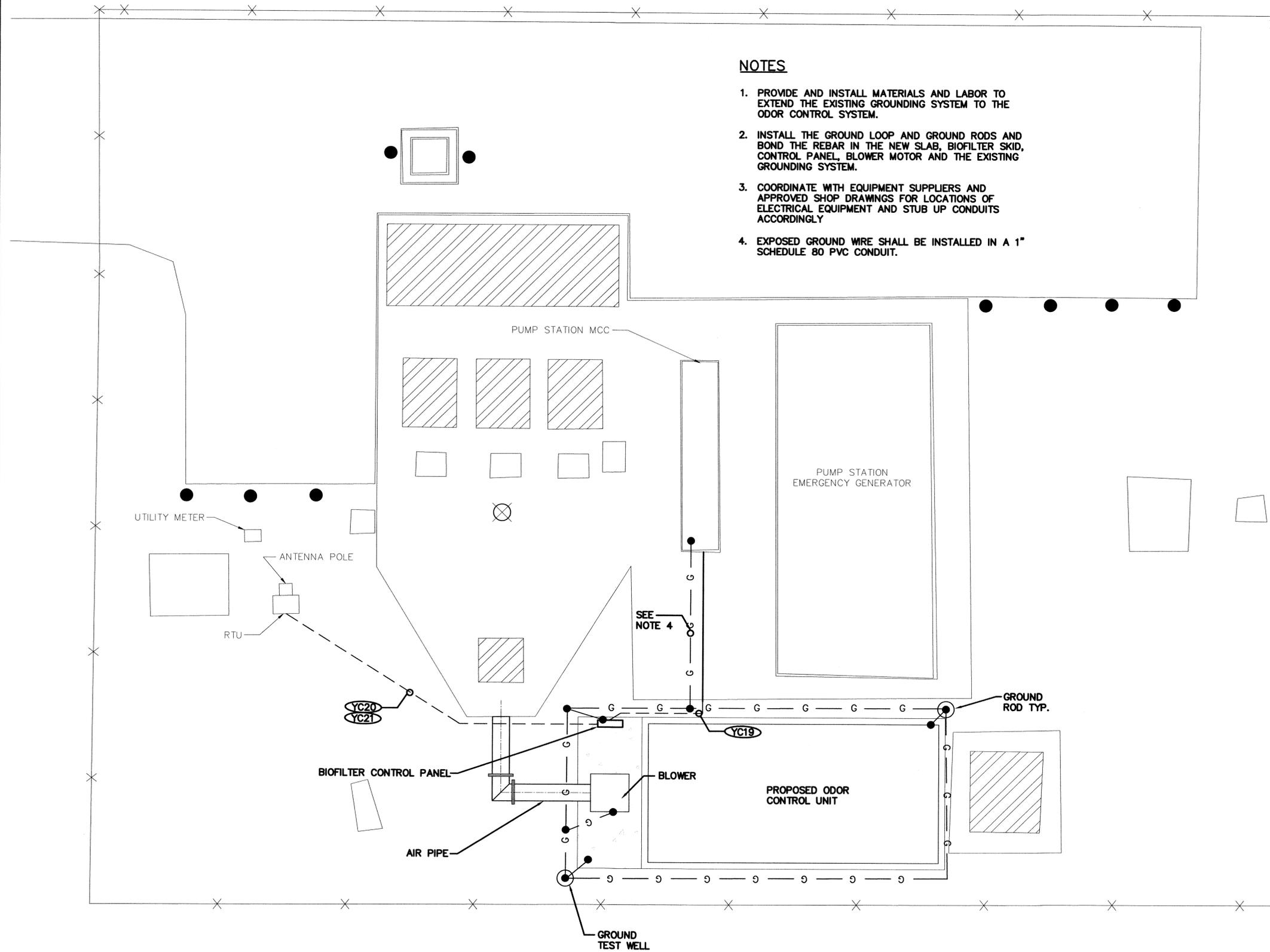
RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

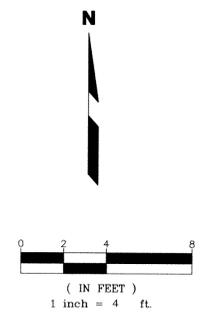
THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

NOTES

1. PROVIDE AND INSTALL MATERIALS AND LABOR TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE ODOR CONTROL SYSTEM.
2. INSTALL THE GROUND LOOP AND GROUND RODS AND BOND THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANEL, BLOWER MOTOR AND THE EXISTING GROUNDING SYSTEM.
3. COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB UP CONDUITS ACCORDINGLY
4. EXPOSED GROUND WIRE SHALL BE INSTALLED IN A 1" SCHEDULE 80 PVC CONDUIT.



MASTER PS 3512



HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

NO.	DATE	REVISION	BY
1.	04/07/09	RECORD DRAWINGS	RLC

TETRA TECH, INC.
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544

PS 3512 ELECTRICAL SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

Date:	02/14/08
Drawn:	SPH
Checked:	RLC
Manager:	PFF
Dwg Name:	WH1E08-3512

PAUL F. HILLERS
 P.E. NO. 41022

PROJECT No.
5672.18

SHEET No.
E-08

RECORD DRAWINGS

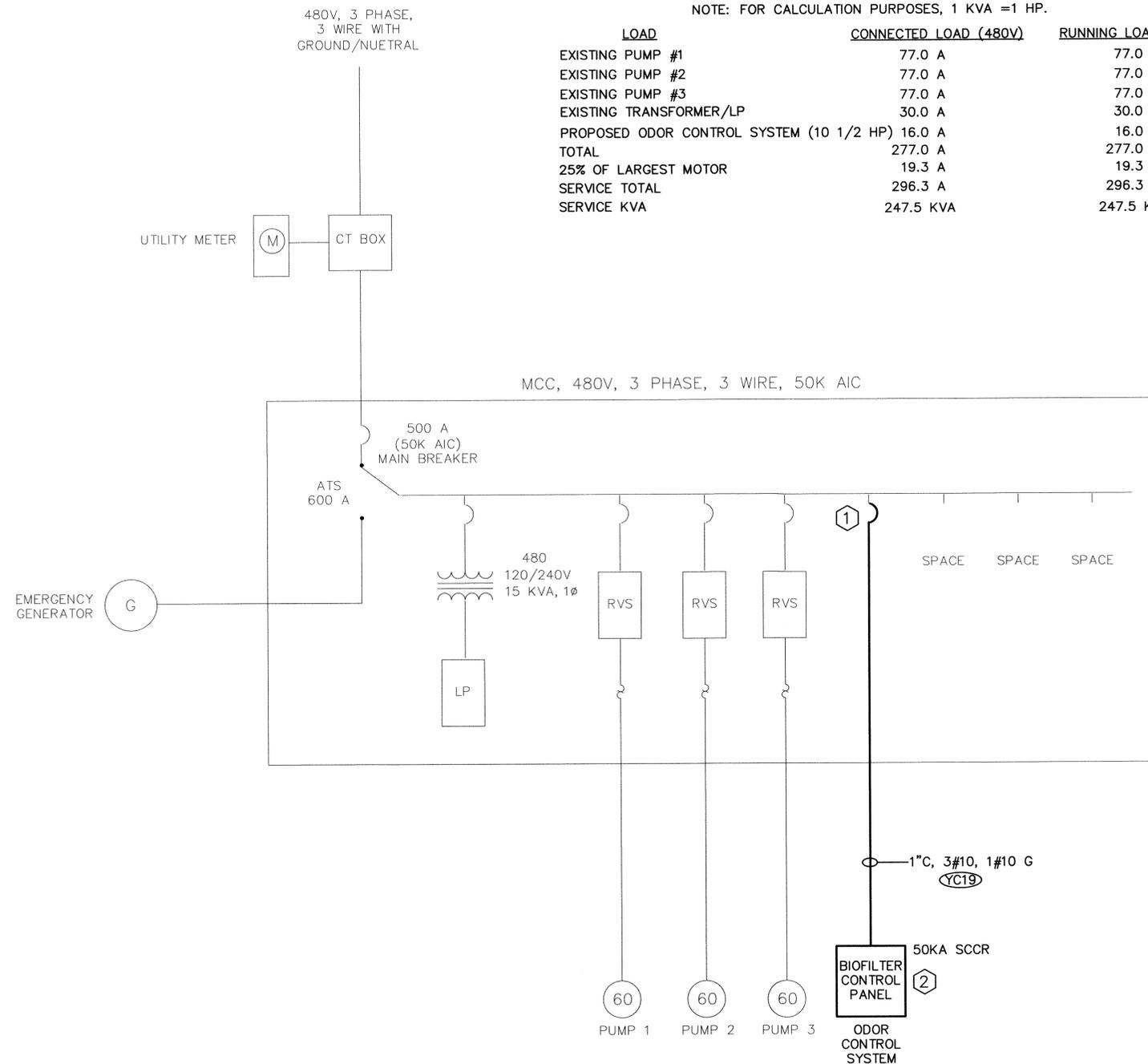
REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

SERVICE CALCULATION

NOTE: FOR CALCULATION PURPOSES, 1 KVA = 1 HP.

LOAD	CONNECTED LOAD (480V)	RUNNING LOAD (480V)
EXISTING PUMP #1	77.0 A	77.0 A
EXISTING PUMP #2	77.0 A	77.0 A
EXISTING PUMP #3	77.0 A	77.0 A
EXISTING TRANSFORMER/LP	30.0 A	30.0 A
PROPOSED ODOR CONTROL SYSTEM (10 1/2 HP)	16.0 A	16.0 A
TOTAL	277.0 A	277.0 A
25% OF LARGEST MOTOR	19.3 A	19.3 A
SERVICE TOTAL	296.3 A	296.3 A
SERVICE KVA	247.5 KVA	247.5 KVA



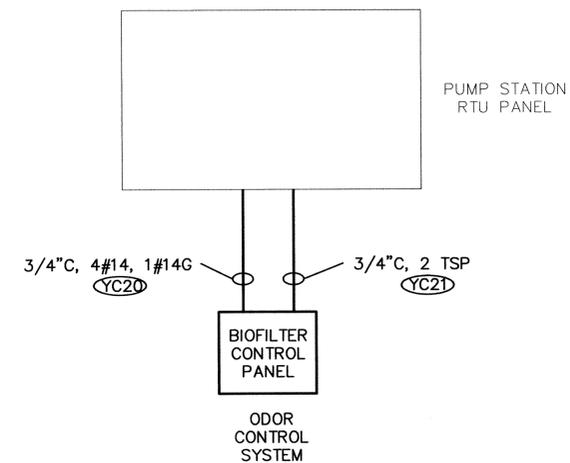
PUMP STATION 3512 ONE LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

- ① PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED 50K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ② BIOFILTER CONTROL PANEL SHALL BE BUILT TO MEET THE REQUIREMENTS OF THE 2005 NATIONAL ELECTRICAL CODE, ARTICLE 409.110 MARKING (3) - SHORT-CIRCUIT CURRENT RATING (SCCR)

— EXISTING
 — NEW



PUMP STATION 3512 CONTROL RISER DIAGRAM

SCALE: NONE

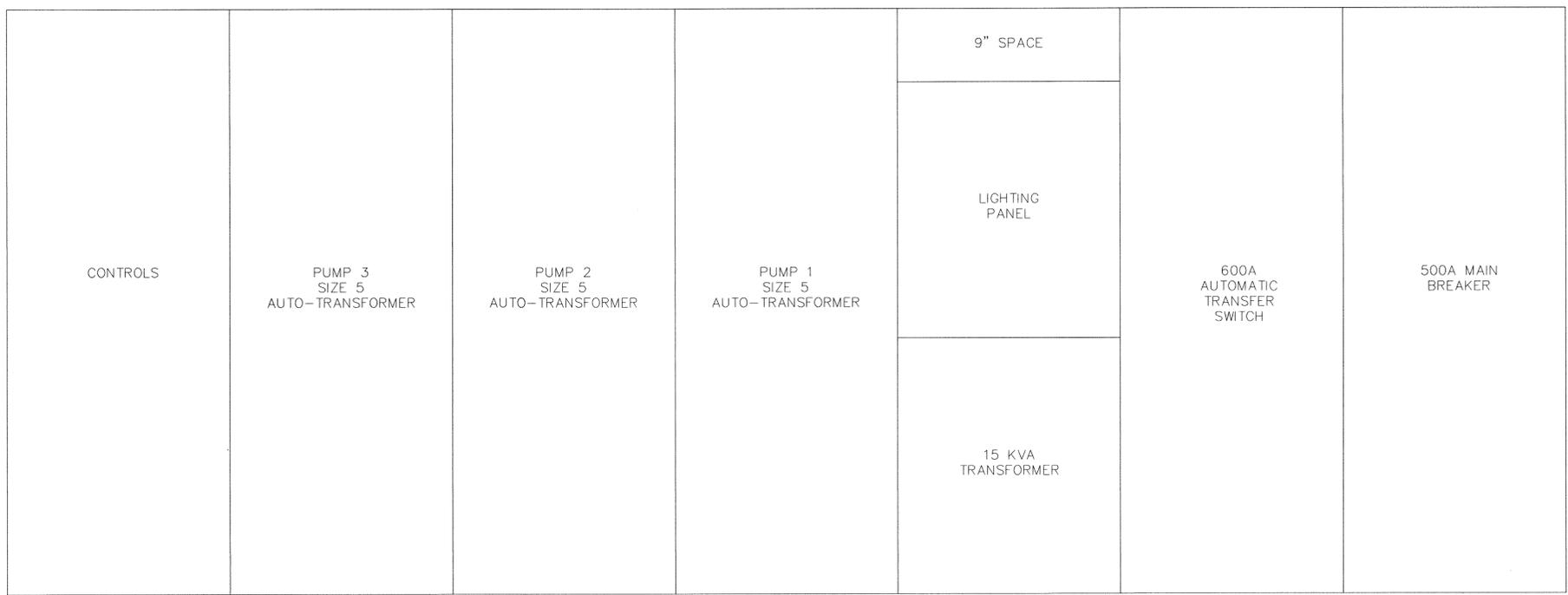
TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL, 32789
 PH: 407-644-0857 FAX: 407-644-7544

PS 3512 ONE LINE AND RISER DIAGRAMS
 MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

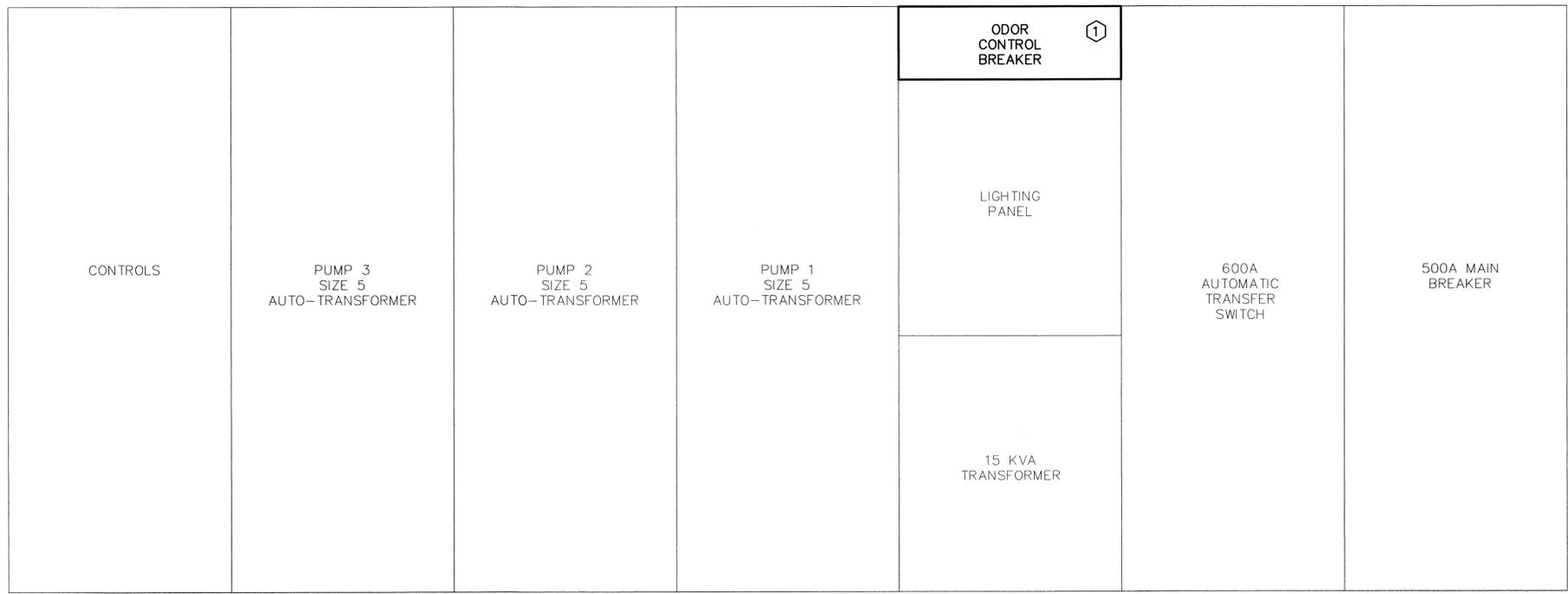
Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Dwg Name:	WH61E09-3512

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

PAUL F. HILLERS
 P.E. NO. 41022
 PROJECT No.
5672.18
 SHEET No.
E-09



EXISTING FRONT VIEW MCC PUMP STATION 3512
NOT TO SCALE



PROPOSED FRONT VIEW MCC PUMP STATION 3512
NOT TO SCALE

① PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED 65K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

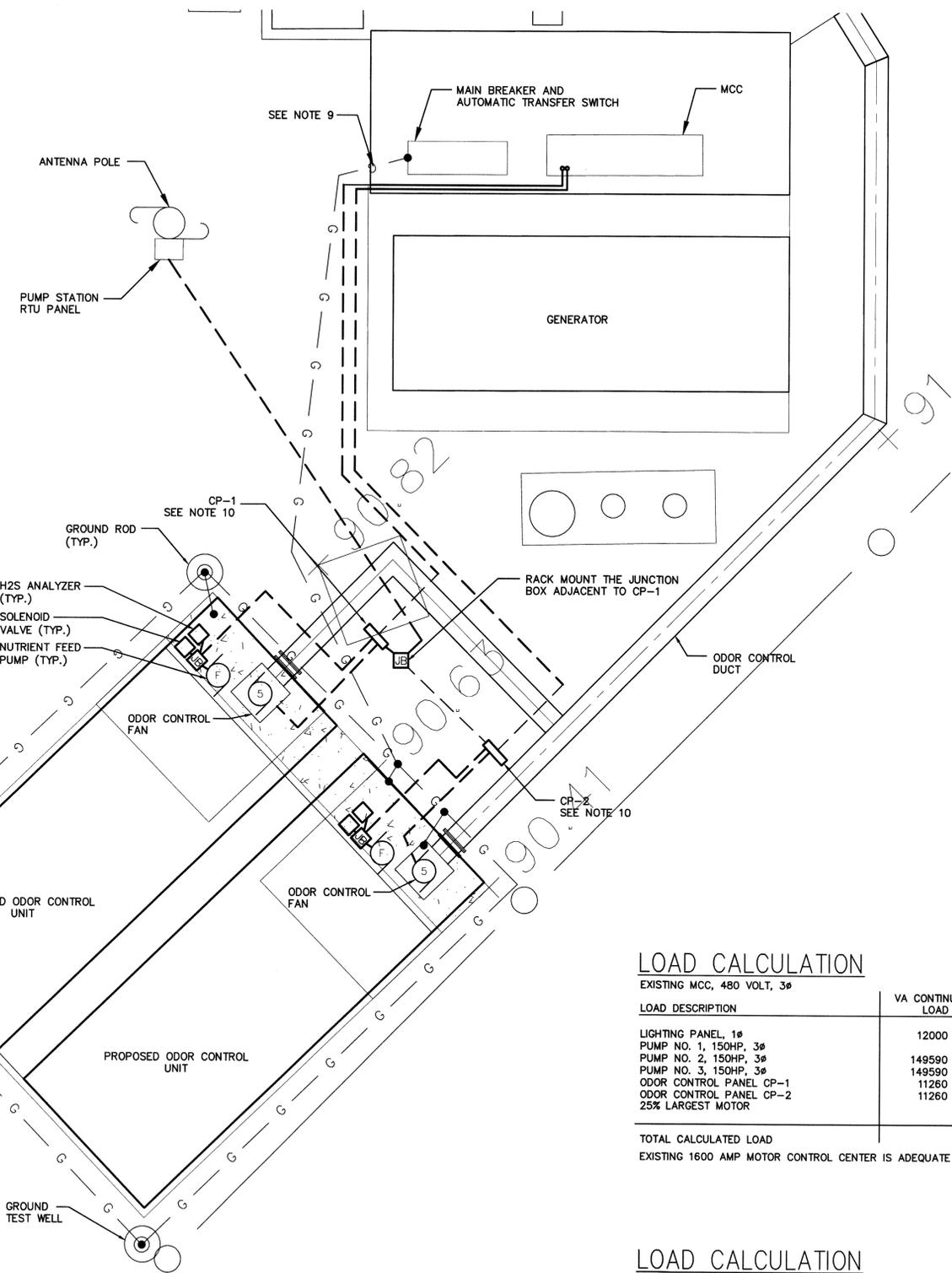
— EXISTING
— NEW

RECORD DRAWINGS
REVISIONS DRAWN BY: R. CHAMNESS, DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

<p>TETRA TECH, INC. CONSULTING ENGINEERS PLANNERS 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789 PH: 407-644-0857 FAX: 407-644-7544</p>		No. 1 DATE 04/07/09 RECORD DRAWINGS REVISION
<p>PS 3512 MCC FRONT VIEW MASTER PUMP STATION ODOR CONTROL PROJECT SOUTH SERVICE AREA FOR UTILITIES DEPARTMENT ORANGE COUNTY, FLORIDA</p>		
Date: 07/14/08 Drawn: SPH Checked: RLC Manager: PPH Dwg Name: WHR10-3512	<p>PAUL F. HILLERS P.E. NO. 41022</p> <p>PROJECT No. 5672.18 SHEET No. E-10</p>	



MASTER PS 3499
POWER AND CONTROL PLAN

LOAD CALCULATION

EXISTING MCC, 480 VOLT, 3 ϕ

LOAD DESCRIPTION	VA CONTINUOUS LOAD	VA LARGEST MOTOR	TOTAL VA
LIGHTING PANEL, 1 ϕ	12000		12000
PUMP NO. 1, 150HP, 3 ϕ		149590	149590
PUMP NO. 2, 150HP, 3 ϕ	149590		149590
PUMP NO. 3, 150HP, 3 ϕ	149590		149590
ODOR CONTROL PANEL CP-1	11260		11260
ODOR CONTROL PANEL CP-2	11260		11260
25% LARGEST MOTOR		37398	37398
TOTAL CALCULATED LOAD			520688

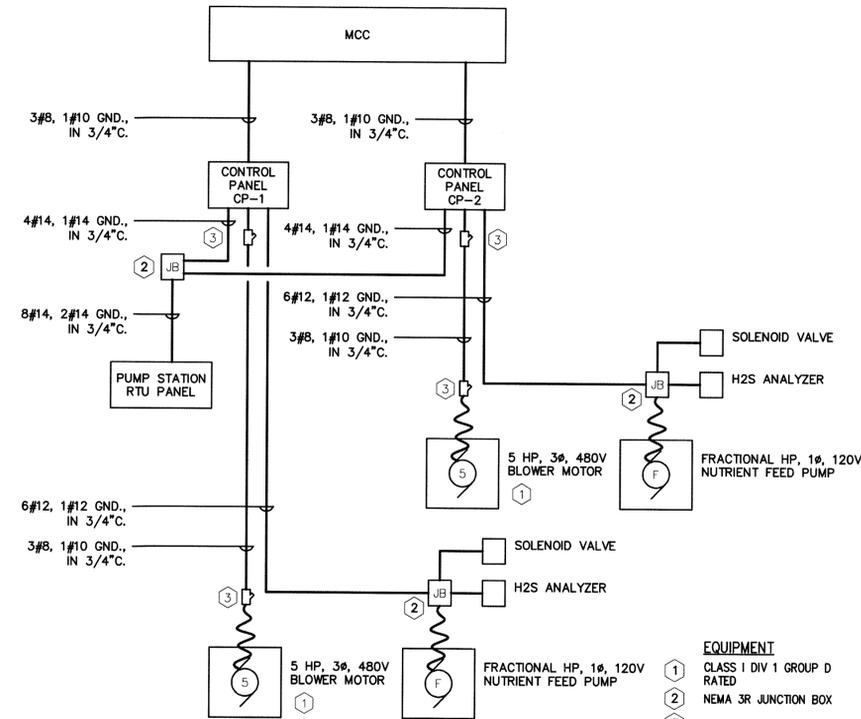
EXISTING 1600 AMP MOTOR CONTROL CENTER IS ADEQUATE (626.3 AMP)

LOAD CALCULATION

ODOR CONTROL PANEL CP-*, 480 VOLT, 3 ϕ

LOAD DESCRIPTION	VA CONTINUOUS LOAD	VA LARGEST MOTOR	TOTAL VA
ODOR CONTROL FAN, 5HP, 3 ϕ		6320	6320
MISCELLANEOUS	5000		5000
25% LARGEST MOTOR		1580	1580
TOTAL CALCULATED LOAD			12900

PROVIDE A 25 AMP, 480 VOLT, 3 PHASE ELECTRICAL SERVICE. (15.5 AMP)



ELECTRICAL RISER DIAGRAM

NOT TO SCALE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	JUNCTION BOX		TIME-DELAY FUSE
	TRANSFORMER		CONTROL RELAY COIL
	CONDUIT EXPOSED		120 VAC TRANSFORMER
	CONDUIT CONCEALED		LOW VOLTAGE DISCONNECT SWITCH
	SELECTOR SWITCH OPERATOR WITH FUNCTION SHOWN		LOW VOLTAGE FUSE (BELOW 600V)
	MOMENTARY PUSHBUTTON OPERATOR-NORMALLY OPEN		600V, 3 POLE MOLDED CASE CIRCUIT BREAKER, FRAME & RATING AS SHOWN
	INDICATING LIGHT		INPUT TO PLC CONTROL SYSTEM
	ELAPSED TIME INDICATOR		OUTPUT FROM PLC CONTROL SYSTEM
	TIMING RELAY INSTANTANEOUS CONTACTS		CONTROL PANEL

LEGEND

NOTES:

- ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE AND APPLICABLE LOCAL CODES.
- CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
- WIRE AND CABLE USED FOR POWER AND CONTROL SHALL BE COPPER WITH THWN-75 DEG. C INSULATION. WIRE SHALL NOT BE PROVIDED SMALLER THAN NO. 12 AWG UNLESS OTHERWISE STATED ON THE DRAWING.
- PROVIDE RIGID GALVANIZED STEEL CONDUIT MEETING THE REQUIREMENTS OF UL-6. CONDUIT SHALL NOT BE PROVIDED SMALLER THAN 3/4 INCHES UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL ELECTRICAL EQUIPMENT INCLUDING CONDUIT AND FITTINGS FOR A DISTANCE OF TEN FEET WITHIN THE ODOR CONTROL UNITS AND FOR A DISTANCE OF 18 INCHES ABOVE GRADE AND FROM ALL GAS CARRYING PIPES, EQUIPMENT AND GAS SOURCES SHALL COMPLY WITH THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR HAZARDOUS LOCATIONS, CLASS 1, DIVISION 1, GROUP D. AREAS WITHIN THIS 18 INCH LIMITING AREA SHALL BE CONSIDERED CLASS I, DIVISION 2 IN ACCORDANCE WITH NEC 500.
- FURNISH AND INSTALL ALL NECESSARY HARDWARE AND ACCESSORIES TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE NEW ODOR CONTROL SYSTEM UNITS AS INDICATED.
- INSTALL GROUND LOOP AND GROUND RODS AND BOND TO THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANELS, FAN MOTORS, AND THE EXISTING GROUNDING SYSTEM.
- COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB-UP CONDUITS ACCORDINGLY.
- GROUNDING CONDUCTORS SHALL BE INSTALLED DIRECTLY EXPOSED TO EARTH.
- INSTALL NEW ODOR CONTROL PANELS A MINIMUM OF 10 FEET AWAY FROM THE NEW ODOR CONTROL UNITS.

RECORD DRAWINGS

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-9955 FAX: (407) 839-3790

DATE: 06/13/08
NO. 1
BY: SMH

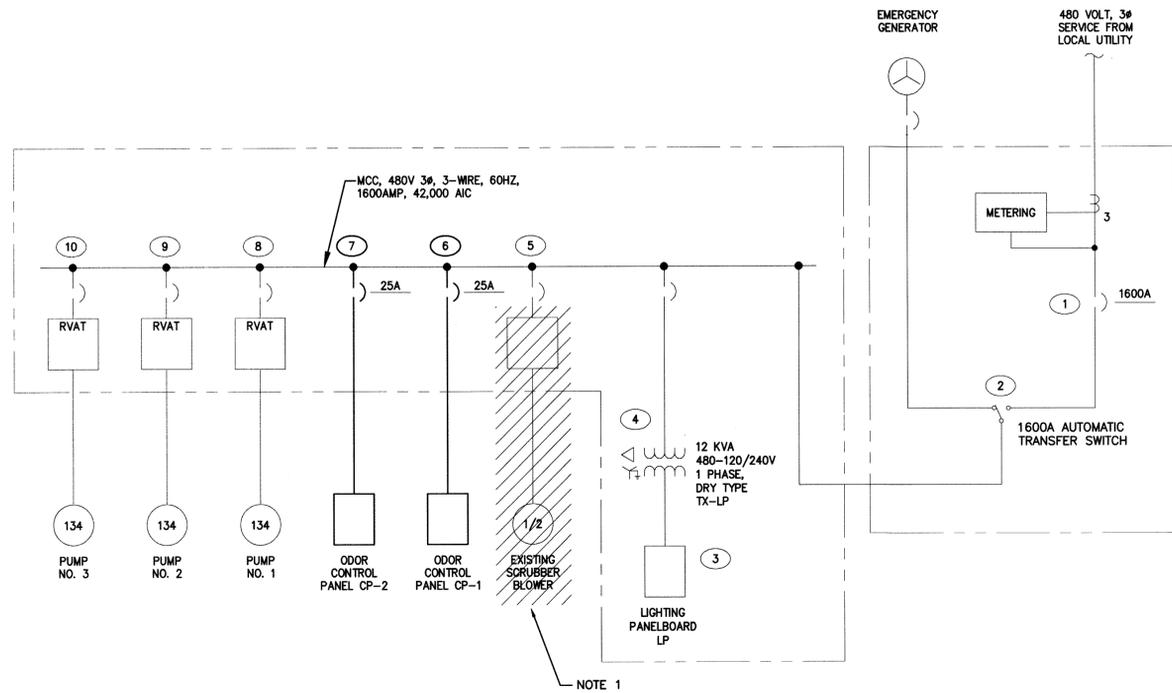
TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-9955 FAX: (407) 839-3790

MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

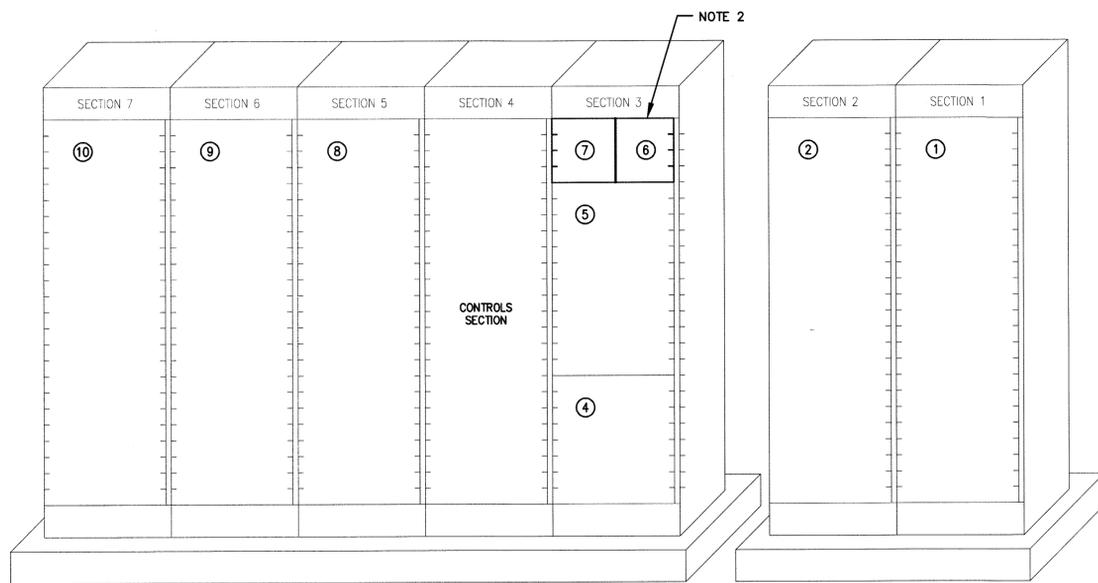
Date: 06/13/08
Drawn: SMH
Checked: WAP
Manager:
Dwg Name:

Tetra Tech, Inc. 201 E. Pine St., Suite 1000 Orlando, FL 32801
Engineering Business #2429
Dwg No. 10001, P.L.
Florida Registration # 64184
1-2-2007

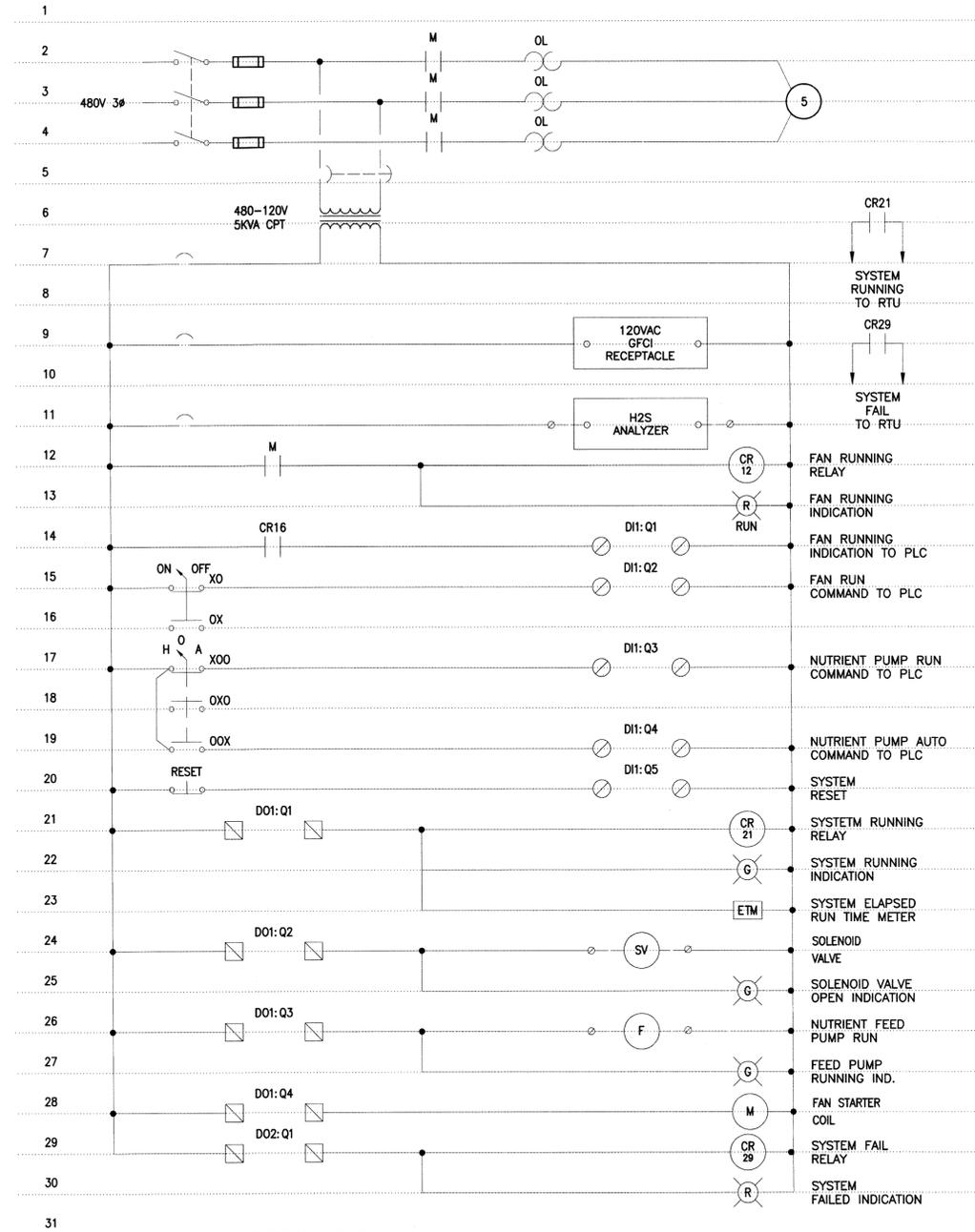
PROJECT No. 100-FLA-W567218
SHEET No. E-11



MCC SINGLE LINE DIAGRAM



MCC ELEVATION
SCALE: N.T.S.



ODOR CONTROL PANEL
ELEMENTARY CONTROL DIAGRAM

NOTES:

- DISCONNECT EXISTING SCRUBBER BLOWER AND ALL WRING. REMOVE ALL WRING BACK TO THE SOURCE. CAP ABANDONED CONDUITS AND LABEL THE MCC BUCKET AS "SPARE".
- PROVIDE AND INSTALL NEW MCC BUCKET WITH TWO (2) 25 AMP CIRCUIT BREAKERS RATED 42K AIC. PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ODOR CONTROL PANELS SHALL BE PROVIDED AS A UL LISTED ELECTRICAL ASSEMBLY BUILT TO MEET THE REQUIREMENTS OF THE 2002 NEC, ARTICLE 409.110 (3) RATED FOR 42K AIC. SHOP DRAWINGS AND CERTIFICATION OF THE UL LISTING SHALL BE PROVIDED TO THE ENGINEER-OF-RECORD FOR REVIEW AND APPROVAL PRIOR TO SHIPMENT.

DATE	05/17/08	REVISION	SMH
DATE		REVISION	BY

TETRA TECH
CONSULTING ENGINEERS - PLANNERS
201 EAST PINE STREET, SUITE 1000, ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790



MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

Date: 06/13/08
Drawn: SMH
Checked: WAP
Manager:

Tetra Tech, Inc.
201 E. Pine St., Suite 1000
Orlando, FL 32801
Engineering Business #2429
Professional Seal
Florida Registration # 65184
January 30, 2007

PROJECT No.
100-FLA-W567218
SHEET No.
E-12

RECORD DRAWINGS

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

1.	04/07/09	RECORD DRAWINGS	BY
			RLC

TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544



PS 3848 ELECTRICAL SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

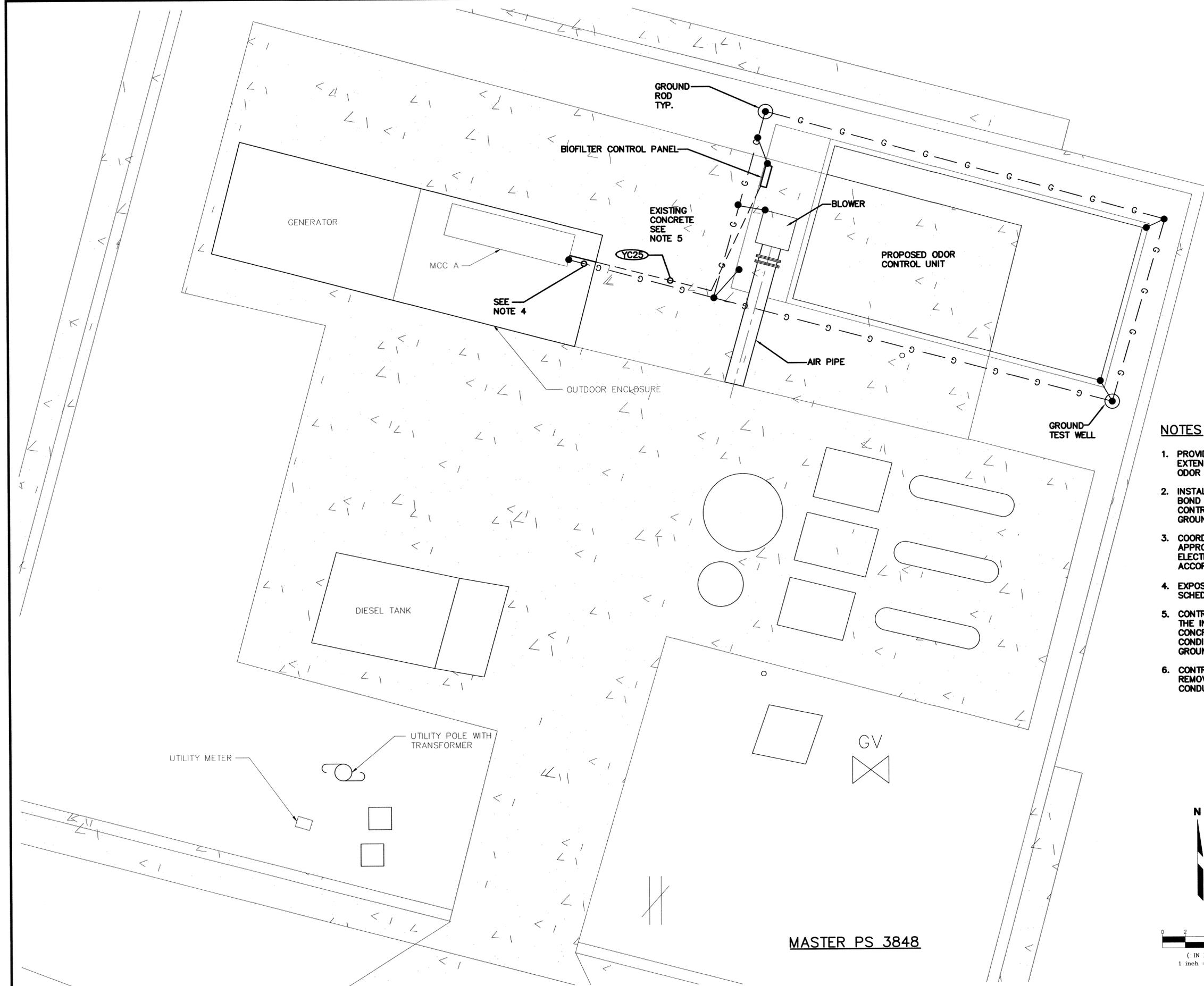
Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Dwg Name:	WH6E14-3848

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

PAUL F. HILLERS
 P.E. NO. 41022

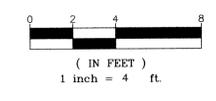
PROJECT No.
5672.18

SHEET No.
E-14



NOTES

1. PROVIDE AND INSTALL MATERIALS AND LABOR TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE ODOR CONTROL SYSTEM.
2. INSTALL THE GROUND LOOP AND GROUND RODS AND BOND THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANEL, BLOWER MOTOR AND THE EXISTING GROUNDING SYSTEM.
3. COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB UP CONDUITS ACCORDINGLY
4. EXPOSED GROUND WIRE SHALL BE INSTALLED IN A 1" SCHEDULE 80 PVC CONDUIT.
5. CONTRACTOR SHALL SAW CUT EXISTING CONCRETE FOR THE INSTALLATION OF CONDUIT AND GROUNDING. POUR CONCRETE TO PATCH SURFACES BACK TO ORIGINAL CONDITION AFTER INSTALLATION OF CONDUIT AND GROUNDING SYSTEM
6. CONTRACTOR SHALL DISCONNECT EXISTING BLOWER AND REMOVE EXISTING WIRING BACK TO THE SOURCE. CAP CONDUITS AND LABEL MCC BREAKER AS SPARE.

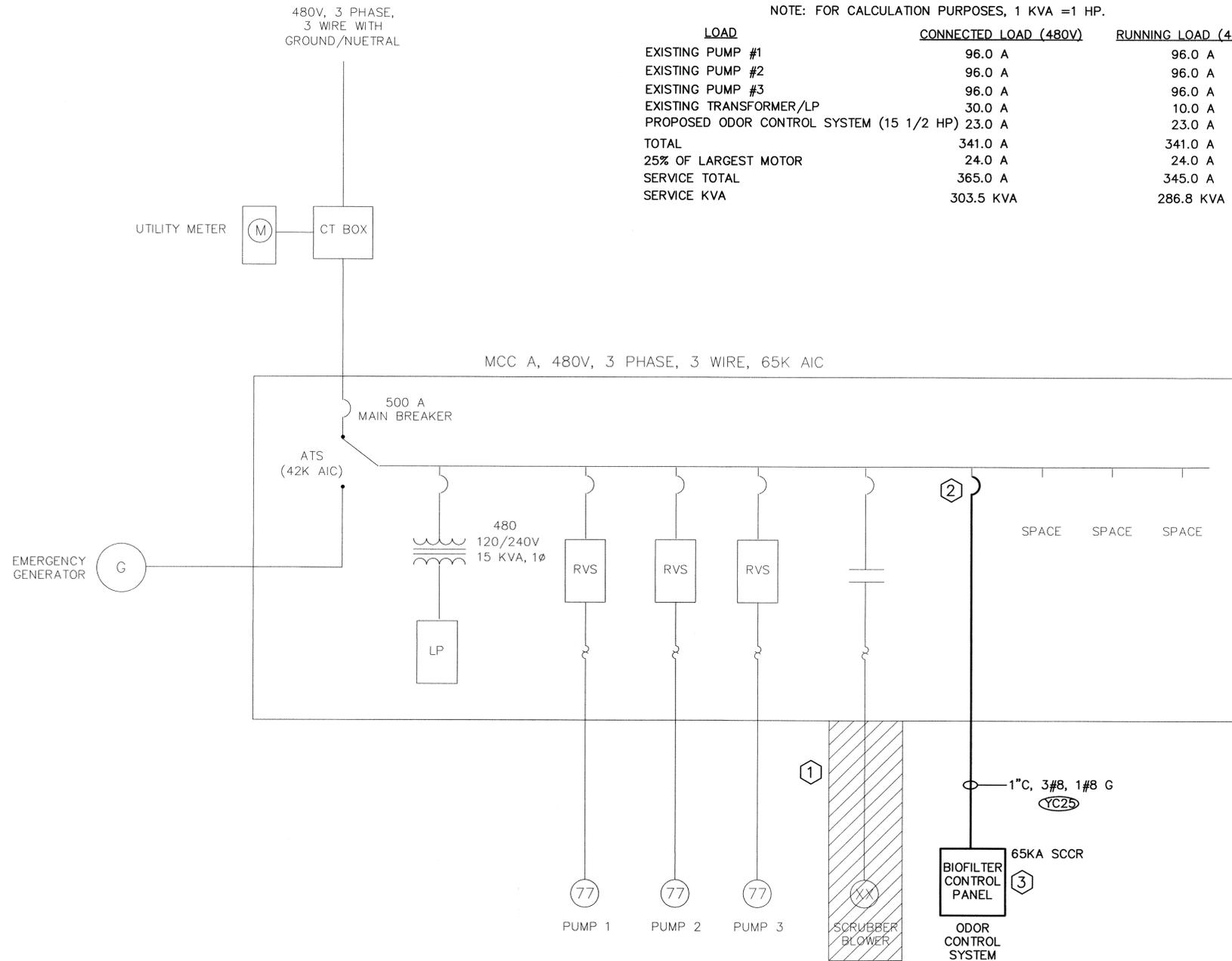


MASTER PS 3848

SERVICE CALCULATION

NOTE: FOR CALCULATION PURPOSES, 1 KVA = 1 HP.

LOAD	CONNECTED LOAD (480V)	RUNNING LOAD (480V)
EXISTING PUMP #1	96.0 A	96.0 A
EXISTING PUMP #2	96.0 A	96.0 A
EXISTING PUMP #3	96.0 A	96.0 A
EXISTING TRANSFORMER/LP	30.0 A	10.0 A
PROPOSED ODOR CONTROL SYSTEM (15 1/2 HP)	23.0 A	23.0 A
TOTAL	341.0 A	341.0 A
25% OF LARGEST MOTOR	24.0 A	24.0 A
SERVICE TOTAL	365.0 A	345.0 A
SERVICE KVA	303.5 KVA	286.8 KVA



PUMP STATION 3848 ONE LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

- ① DISCONNECT EXISTING SCRUBBER BLOWER AND ALL WIRING. REMOVE ALL WIRING BACK TO THE SOURCE, CAP ABANDONED CONDUITS AND LABEL THE MCC BUCKET "SPARE".
- ② PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 40 AMP CIRCUIT BREAKER RATED 65K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ③ BIOFILTER CONTROL PANEL SHALL BE BUILT TO MEET THE REQUIREMENTS OF THE 2005 NATIONAL ELECTRICAL CODE, ARTICLE 409.110 MARKING (3) - SHORT-CIRCUIT CURRENT RATING (SCCR)

— EXISTING
 — NEW

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS, DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

No.	DATE	REVISION
1.	04/07/09	RECORD DRAWINGS

TETRA TECH, INC.
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544

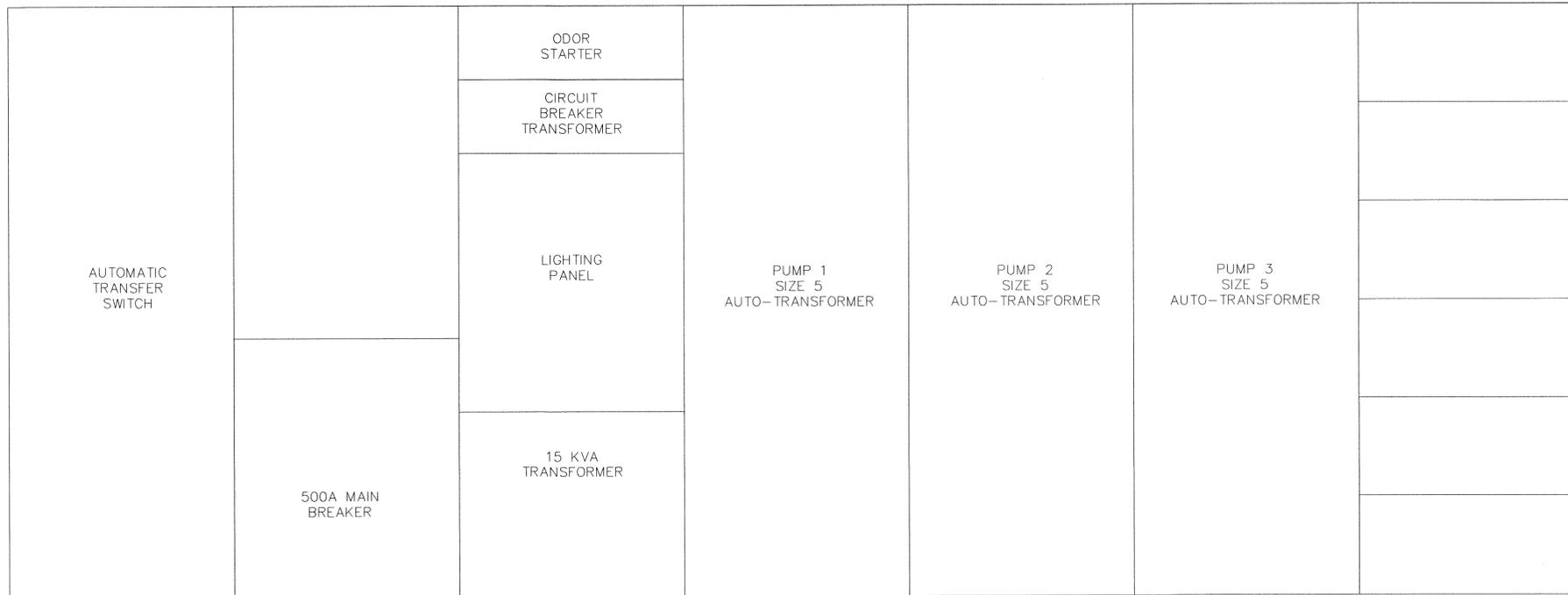


PS 3848 ONE LINE AND RISER DIAGRAMS
 MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

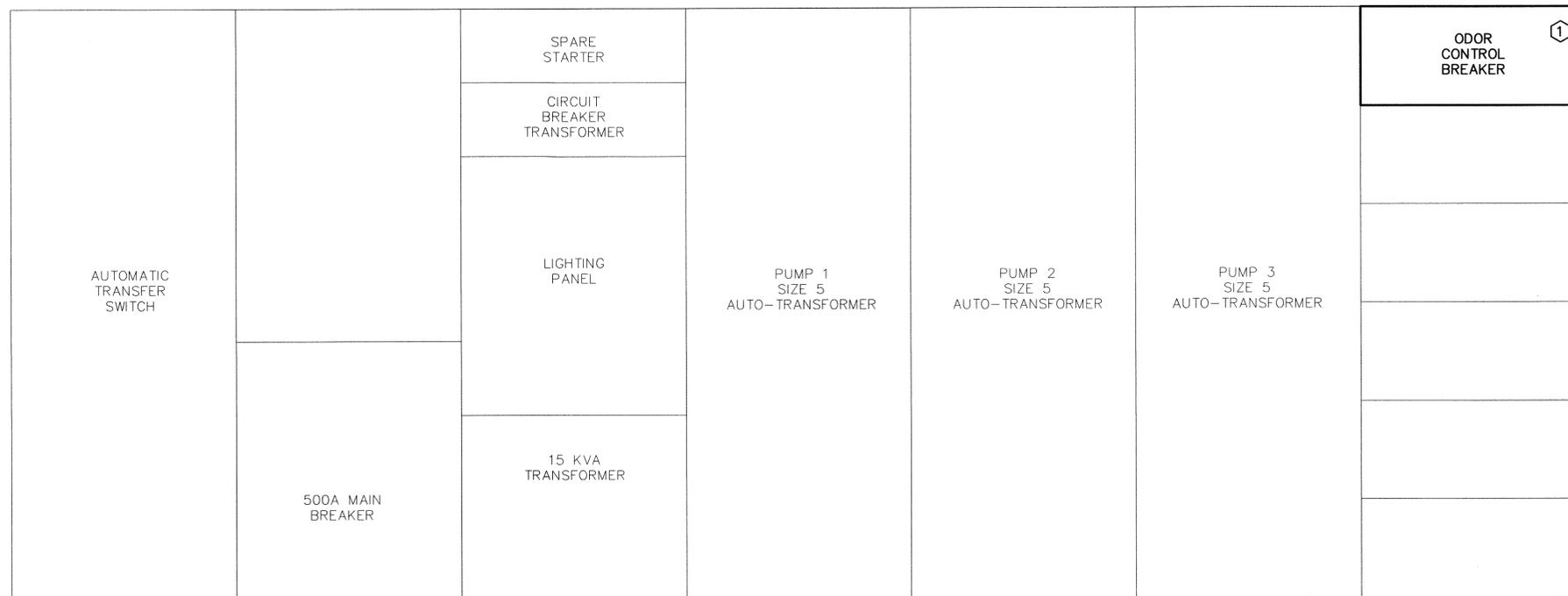
Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Draw Name:	WH61E5-3848

PAUL F. HILLERS
 P.E. NO. 41022

PROJECT No. **5672.18**
 SHEET No. **E-15**



EXISTING FRONT VIEW MCC PUMP STATION 3848
NOT TO SCALE



① PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED 65K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

— EXISTING
— NEW

RECORD DRAWINGS

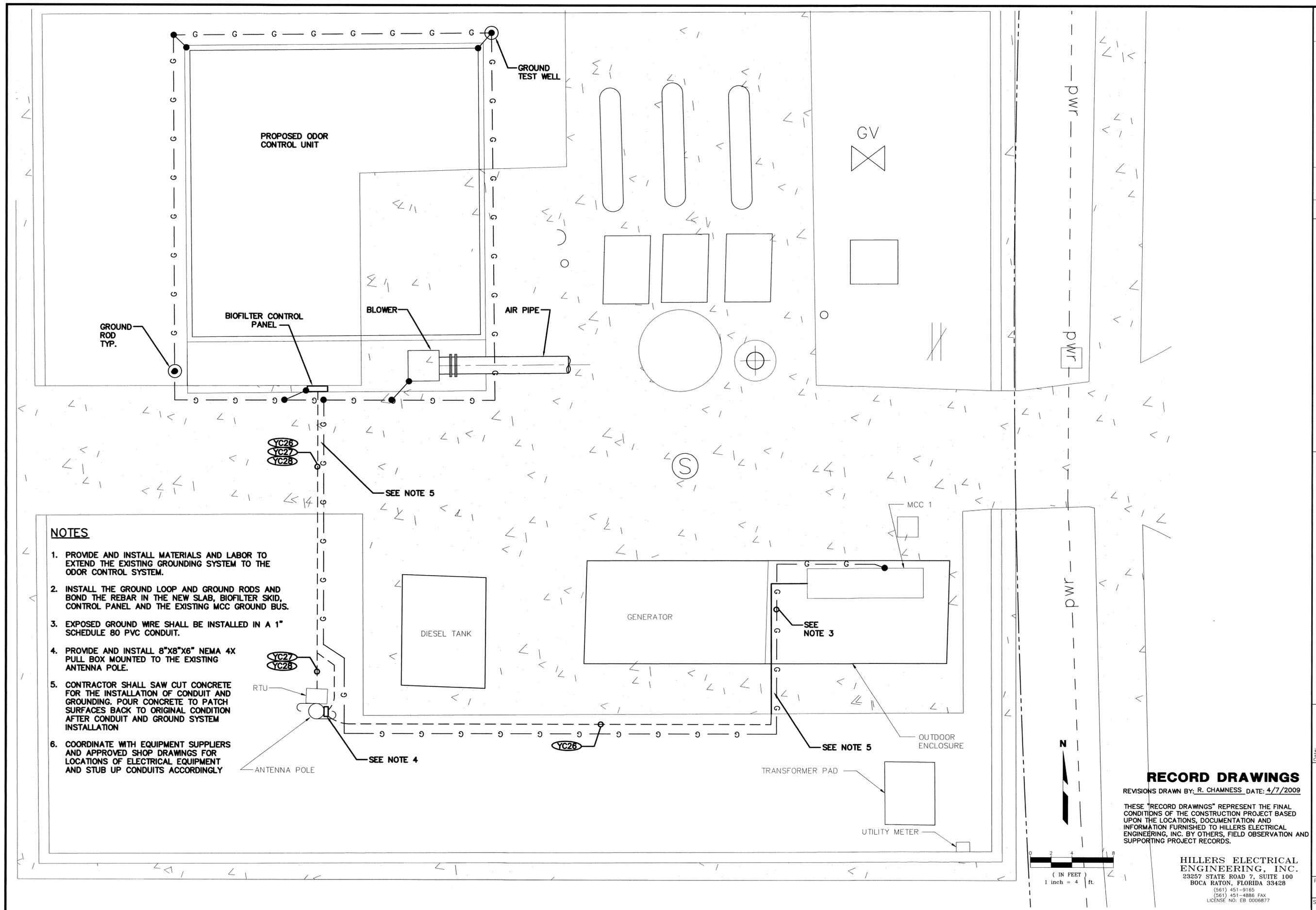
REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

PROPOSED FRONT VIEW MCC PUMP STATION 3848
NOT TO SCALE

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0068877

 <p>TETRA TECH, INC. CONSULTING ENGINEERS PLANNERS 201 WEST CANTON AVENUE, SUITE 125 WINTER PARK, FL 32789 PH: 407-644-0857 FAX: 407-644-7544</p>	
<p>PS 3848 MCC FRONT VIEW MASTER PUMP STATION ODOR CONTROL PROJECT SOUTH SERVICE AREA FOR UTILITIES DEPARTMENT ORANGE COUNTY, FLORIDA</p>	
<p>Date: 02/14/06 Drawn: SPH Checked: RLC Manager: PFH Dwg Name: WHR16-3848</p>	<p>No. 1 DATE 04/07/09 REVISION RECORD DRAWINGS BY RLC</p>
<p>PAUL F. HILLERS P.E. NO. 41022 PROJECT No. 5672.18 SHEET No. E-16</p>	



NOTES

1. PROVIDE AND INSTALL MATERIALS AND LABOR TO EXTEND THE EXISTING GROUNDING SYSTEM TO THE ODOR CONTROL SYSTEM.
2. INSTALL THE GROUND LOOP AND GROUND RODS AND BOND THE REBAR IN THE NEW SLAB, BIOFILTER SKID, CONTROL PANEL AND THE EXISTING MCC GROUND BUS.
3. EXPOSED GROUND WIRE SHALL BE INSTALLED IN A 1" SCHEDULE 80 PVC CONDUIT.
4. PROVIDE AND INSTALL 8"x8"x6" NEMA 4X PULL BOX MOUNTED TO THE EXISTING ANTENNA POLE.
5. CONTRACTOR SHALL SAW CUT CONCRETE FOR THE INSTALLATION OF CONDUIT AND GROUNDING. POUR CONCRETE TO PATCH SURFACES BACK TO ORIGINAL CONDITION AFTER CONDUIT AND GROUND SYSTEM INSTALLATION
6. COORDINATE WITH EQUIPMENT SUPPLIERS AND APPROVED SHOP DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND STUB UP CONDUITS ACCORDINGLY

NO.	DATE	REVISION
1.	04/07/09	RECORD DRAWINGS

TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544

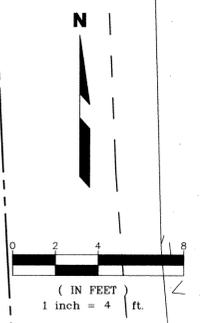


PS 3849 ELECTRICAL SITE PLAN
MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

Date:	02/14/08
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Dwg Name:	WH61E17-3849

RECORD DRAWINGS
 REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.



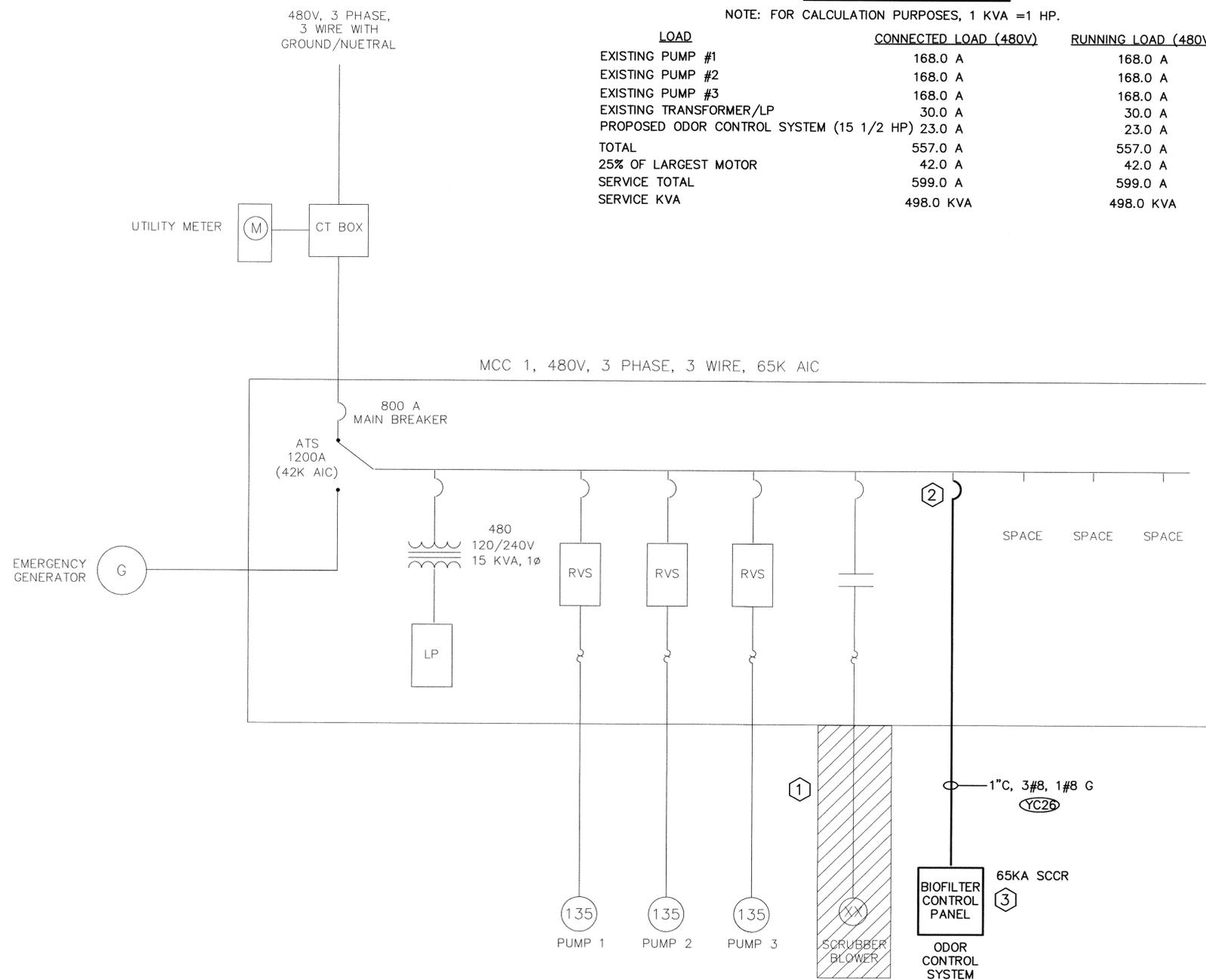
HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9155
 (561) 451-4886 FAX
 LICENSE NO: EB 0068877

PAUL F. HILLERS
 P.E. NO. 41022
 PROJECT No.
5672.18
 SHEET No.
E-17

SERVICE CALCULATION

NOTE: FOR CALCULATION PURPOSES, 1 KVA =1 HP.

LOAD	CONNECTED LOAD (480V)	RUNNING LOAD (480V)
EXISTING PUMP #1	168.0 A	168.0 A
EXISTING PUMP #2	168.0 A	168.0 A
EXISTING PUMP #3	168.0 A	168.0 A
EXISTING TRANSFORMER/LP	30.0 A	30.0 A
PROPOSED ODOR CONTROL SYSTEM (15 1/2 HP)	23.0 A	23.0 A
TOTAL	557.0 A	557.0 A
25% OF LARGEST MOTOR	42.0 A	42.0 A
SERVICE TOTAL	599.0 A	599.0 A
SERVICE KVA	498.0 KVA	498.0 KVA



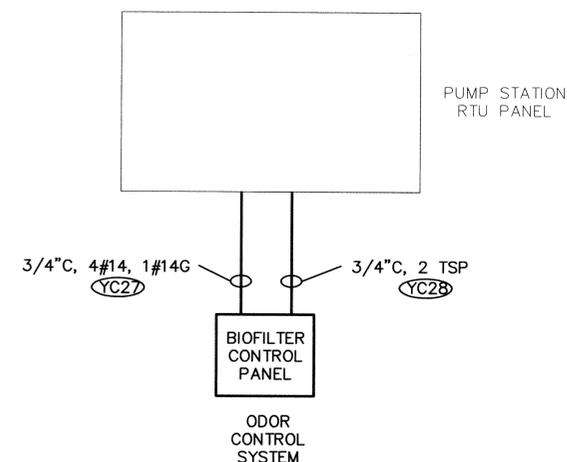
PUMP STATION 3849 ONE LINE DIAGRAM

SCALE: NONE

KEYED NOTES:

- ① DISCONNECT EXISTING SCRUBBER BLOWER AND ALL WIRING. REMOVE ALL WIRING BACK TO THE SOURCE, CAP ABANDONED CONDUITS AND LABEL THE MCC BUCKET "SPARE".
- ② PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 40 AMP CIRCUIT BREAKER RATED 65K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- ③ BIOFILTER CONTROL PANEL SHALL BE BUILT TO MEET THE REQUIREMENTS OF THE 2005 NATIONAL ELECTRICAL CODE, ARTICLE 409.110 MARKING (3) - SHORT-CIRCUIT CURRENT RATING (SCCR)

— EXISTING
— NEW



PUMP STATION 3849 CONTROL RISER DIAGRAM

SCALE: NONE

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4866 FAX
LICENSE NO: EP 0006877

NO.	DATE	REVISION
1.	04/07/09	RECORD DRAWINGS

TETRA TECH, INC.
CONSULTING ENGINEERS PLANNERS
201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL, 32789
PH: 407-644-0857 FAX: 407-644-7544



PS 3849 ONE LINE AND RISER DIAGRAMS
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

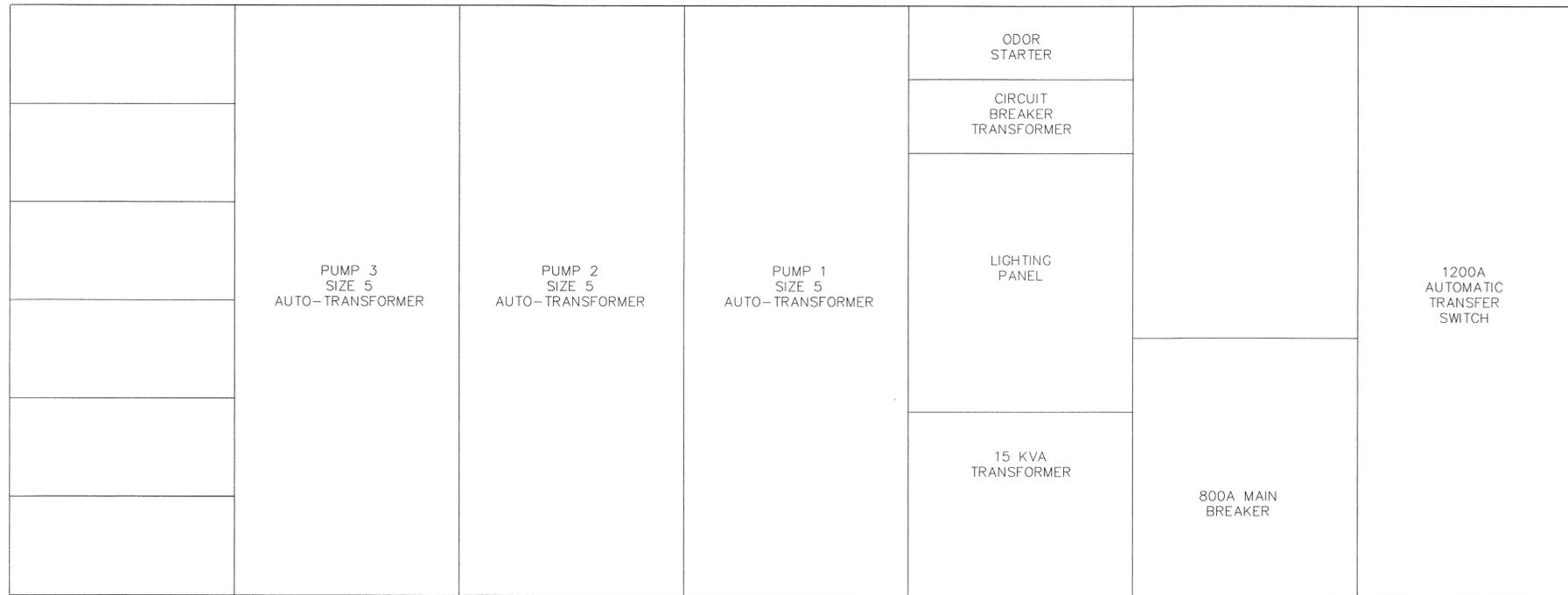
Date:	02/14/08
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Draw Name:	WB16B-3849

Paul F. Hillers
4/14/09

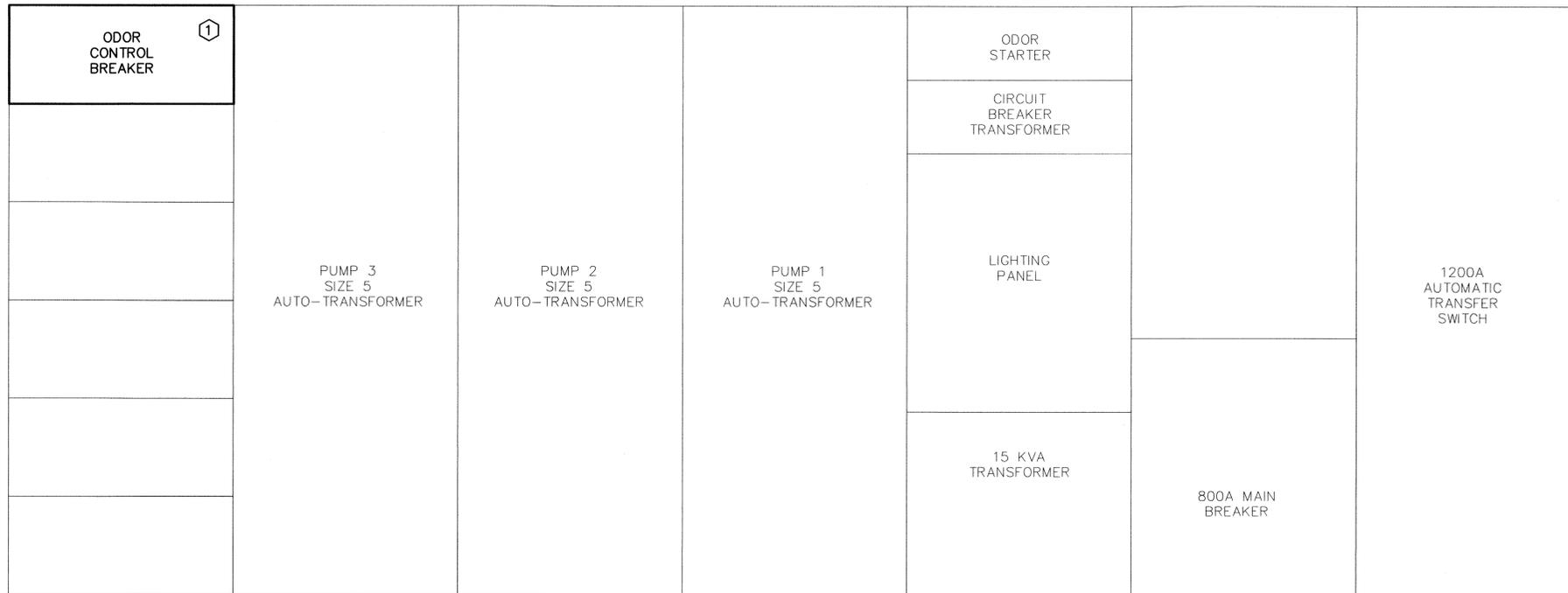
PAUL F. HILLERS
P.E. NO. 41022

PROJECT No.
5672.18

SHEET No.
E-18



EXISTING FRONT VIEW MCC PUMP STATION 3849
NOT TO SCALE



PROPOSED FRONT VIEW MCC PUMP STATION 3849
NOT TO SCALE

① PROVIDE AND INSTALL NEW MCC BUCKET WITH A 480V, 3 PHASE, 30 AMP CIRCUIT BREAKER RATED 65K AIC, PROVIDE NEW DOOR AND ALL HARDWARE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

— EXISTING
— NEW

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

DATE	04/07/09	REVISION	RECORD DRAWINGS
NO.	1.	BY	RLC

TETRA TECH, INC.
CONSULTING ENGINEERS PLANNERS
201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
PH: 407-644-0857 FAX: 407-644-7544



PS 3849 MCC FRONT VIEW
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

Date:	02/14/06
Drawn:	SPH
Checked:	RLC
Manager:	PFH
Dwg Name:	WH61E19-3849

PAUL F. HILLERS
P.E. NO. 41022

PROJECT No.
5672.18
SHEET No.
E-19

YARD CONDUIT SCHEDULE FOR SOUTH PUMP STATIONS				
CKT I.D.	PUMP STATION I.D.	FROM	TO	REMARKS
YC13	3419	PROPOSED NEW BREAKER ENCLOSURE	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-04
YC14	3419	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-04
YC15	3419	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-04
YC16	3497	PUMP STATION MCC	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-06
YC17	3497	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-06
YC18	3497	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-06
YC19	3512	PUMP STATION MCC	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-09
YC20	3512	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-09
YC21	3512	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-09
YC22	3499	PUMP STATION MCC	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-12
YC23	3499	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-12
YC24	3499	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-12
YC25	3848	PUMP STATION MCC A	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-15
YC26	3849	PUMP STATION MCC 1	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-18
YC27	3849	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-18
YC28	3849	PUMP STATION RTU PANEL	BIOFILTER CONTROL PANEL	SEE ONE LINE DWG E-18

RECORD DRAWINGS

REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
 23257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-9165
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

Date: 02/14/06
 Drawn: SPH
 Checked: RLC
 Manager: PFH
 Dwg Name: WH61E20

YARD CONDUIT SCHEDULE
 MASTER PUMP STATION ODOR CONTROL PROJECT
 SOUTH SERVICE AREA
 FOR
 UTILITIES DEPARTMENT
 ORANGE COUNTY, FLORIDA

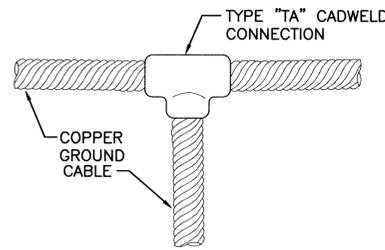


TETRA TECH, INC
 CONSULTING ENGINEERS PLANNERS
 201 WEST CANTON AVENUE, SUITE 125, WINTER PARK, FL 32789
 PH: 407-644-0857 FAX: 407-644-7544

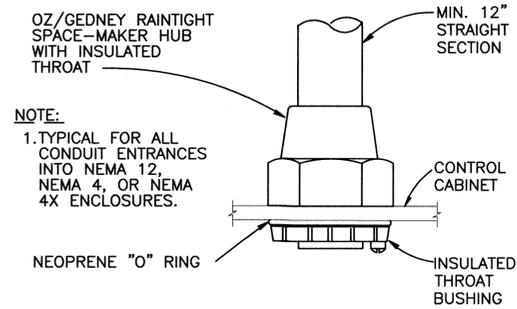
No.	DATE	REVISION	BY
1.	04/07/09	RECORD DRAWINGS	RLC

PAUL F. HILLERS
 P.E. NO. 41022

PROJECT No.
5672.18
 SHEET No.
E-20

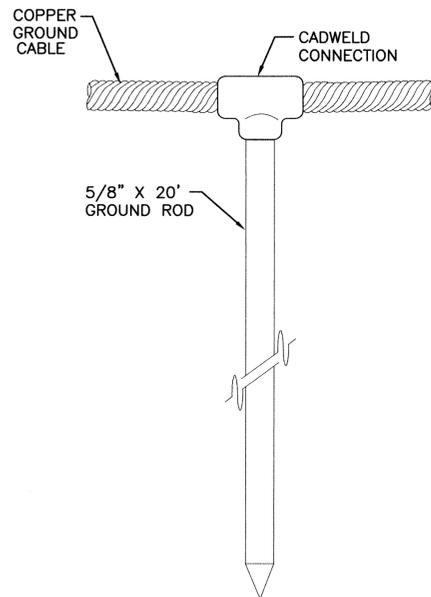


GROUND CABLE CONNECTION
NOT TO SCALE

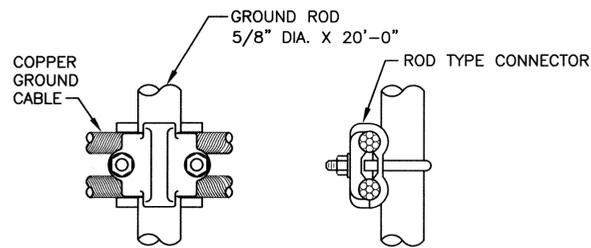


NOTE:
1. TYPICAL FOR ALL CONDUIT ENTRANCES INTO NEMA 12, NEMA 4, OR NEMA 4X ENCLOSURES.

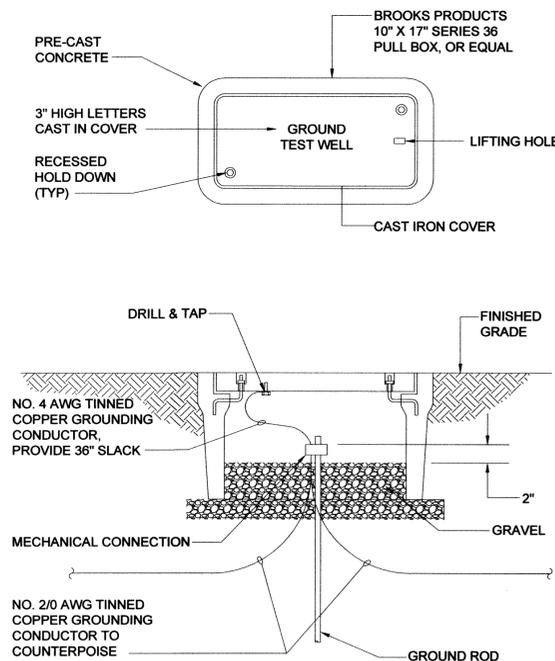
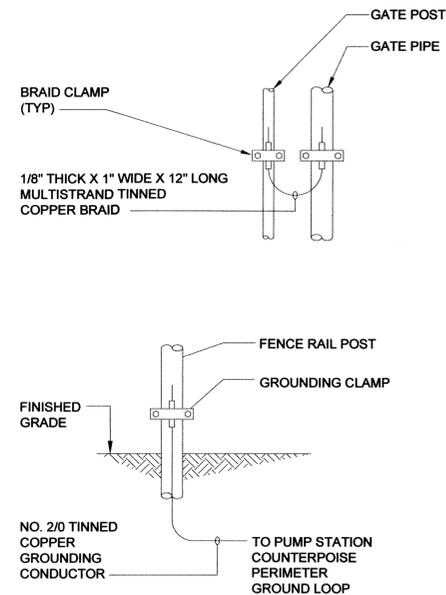
CONDUIT HUB
NOT TO SCALE



GROUND ROD TO CABLE CONNECTION
NOT TO SCALE



CABLE TO ROD CONNECTION
TEST WELL
NOT TO SCALE



RECORD DRAWINGS
REVISIONS DRAWN BY: R. CHAMNESS DATE: 4/7/2009

THESE "RECORD DRAWINGS" REPRESENT THE FINAL CONDITIONS OF THE CONSTRUCTION PROJECT BASED UPON THE LOCATIONS, DOCUMENTATION AND INFORMATION FURNISHED TO HILLERS ELECTRICAL ENGINEERING, INC. BY OTHERS, FIELD OBSERVATION AND SUPPORTING PROJECT RECORDS.

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

DATE	04/07/09	REVISION	1.
NO.		RECORD DRAWINGS	
BY		RLC	

TETRA TECH, INC.
CONSULTING ENGINEERS PLANNERS
201 WEST CANTON AVENUE, SUITE 125 WINTER PARK, FL 32789
PH: 407-644-0857 FAX: 407-644-7544



ELECTRICAL DETAILS
MASTER PUMP STATION ODOR CONTROL PROJECT
SOUTH SERVICE AREA
FOR
UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA

DATE	02/14/06
DRAWN	SPH
CHECKED	RLC
MANAGER	PFH
DWG. NAME	WH61E21

PAUL F. HILLERS
P.E. NO. 41022
PROJECT No. **5672.18**
SHEET No. **E-21**