

The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

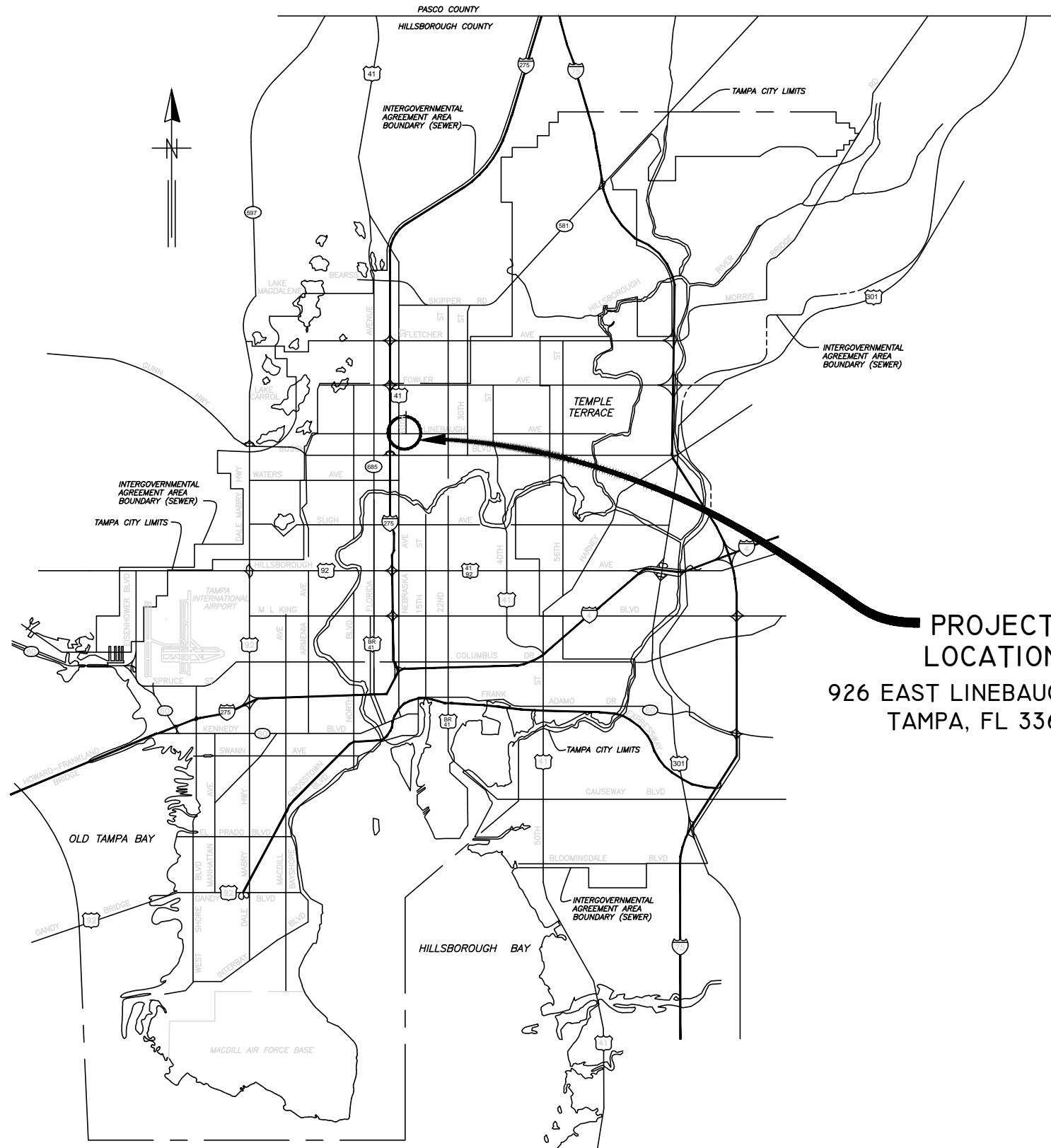
[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

Please Let Us Know If You Plan To Bid

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

LOCATION MAP

CITY of TAMPA



PROJECT LOCATION
926 EAST LINEBAUGH AVE.
TAMPA, FL 33612



WASTEWATER DEPARTMENT

PLANS FOR
LINEBAUGH PUMPING STATION
REHABILITATION

CONTRACT No.
14-C-00024

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015								
DESIGNED	LEM								
DRAWN	CVM								
CHECKED	LEM								
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION				

SCALE	
NTS	

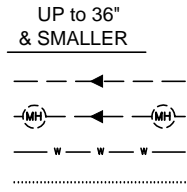
CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
COVER SHEET

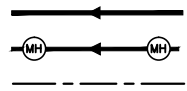
SHEET NUMBER	C-1
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015

LEGEND

EXISTING
 EX FORCE MAIN
 EX SAN SEWER & MANHOLES
 EX WATERLINE
 EX OVERHEAD WIRES

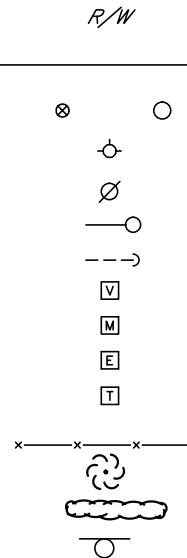


PROPOSED
 PROP FORCE MAIN
 PROP SANITARY SEWER & MANHOLES
 PROP WATERLINE



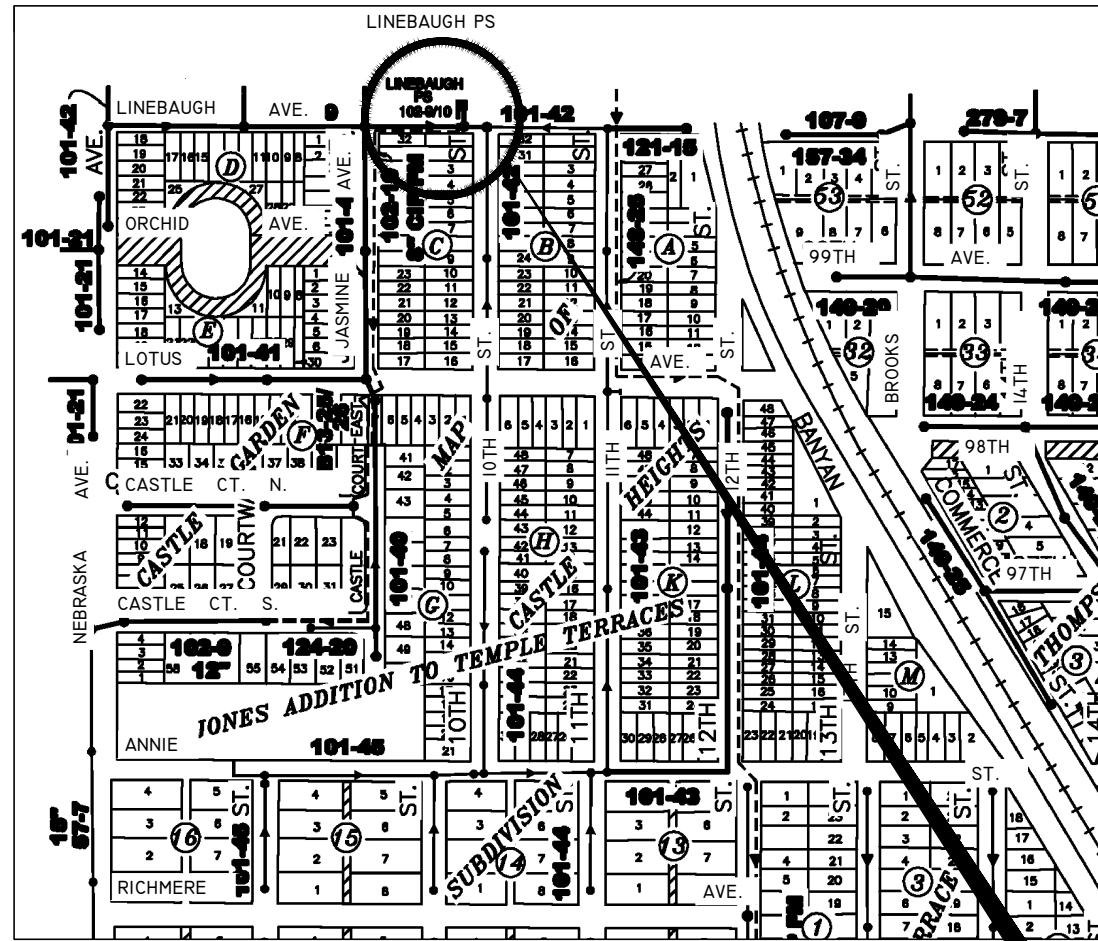
OTHER FEATURES

RIGHT of WAY LINE
 EDGE of PAVEMENT
 VALVE, AIR RELEASE VALVE
 HYDRANT
 UTILITY POLE
 GUY POLE
 GUY WIRE
 VALVE VAULT
 WATER METER
 ELECTRICAL MANHOLE or VAULT
 TELEPHONE MANHOLE or VAULT
 FENCE
 CRAPE MYRTLE
 HEDGE
 SIGN



ABBREVIATIONS

BFP	Backflow Preventer	MH	Manhole
Conc.	Concrete	NCF	No corner found
CI	Cast Iron	(P)	Plat data
CIP	Cast Iron Pipe	PROP.	Proposed
CLF	Chain Link Fence	PS	Pump Station
DIP	Ductile Iron Pipe	PVC	Polyvinyl Chloride Pipe
EB	Electric Box	(R)	Reported
EM	Electric Meter	R/W	Right of Way
EOP	Edge of Pavement	RMJ	Restrained Mechanical Joint
Exist.	Existing	SSMH	Sanitary Sewer Manhole
FH	Fire Hydrant	OHW	Overhead Wires
FIP	Found Iron Pipe	TR	Transformer on Conc.
FM	Force Main	T.O.P.	Top of Pipe
FPK&D	Found Parker Kalon Nail & Disk	UP	Utility Pole
GW	Guy Wire	WF	Wood Fence
I.E.	Invert Elevation	WM	Water Meter
LB	Licensed Business	WV	Water Valve
		CL	Centerline



**LOCATION MAP
N.T.S.**



INDEX

SHEET NO.	DESCRIPTION
C-1	COVER SHEET
C-2	LOCATION MAP AND INDEX
C-3	GENERAL NOTES (1)
C-4	GENERAL NOTES (2)
C-5	EXISTING SITE PLAN
C-6	PROPOSED SITE PLAN
C-7	GEOMETRIC LAYOUT AND GRADING PLAN
C-8	PROPOSED LANDSCAPE & FENCE PLAN
C-9	PLAN VIEW
C-10	SECTION A-A / DETAILS
C-11	WET WELL TOP SLAB PLAN / SECTION B-B VIEW
C-12	VALVE MANIFOLD SLAB
C-13	VALVE MANIFOLD SLAB SECTION J-J
C-14	PROPOSED PROFILE
C-15	PIPE SUPPORT AND HOOK RACK DETAILS
C-16	DETAILS (1)
C-17	DETAILS (2)
C-18	DETAILS (3)
C-19	DETAILS (4)
C-20	MANHOLE DETAILS
C-21	SITE DEMOLITION PLAN
C-22	DEMOLITION PLAN VIEWS ENTRANCE / INTERMEDIATE / FOUNDATION FLOOR PLAN
C-23	DEMOLITION SECTION VIEWS A-A, B-B, C-C,
C-24	DEMOLITION SECTION VIEWS E-E, D-D, F-F

INDEX

SHEET NO.	DESCRIPTION
ED-1	EXISTING ELECTRICAL (DEMOLITION) SITE PLAN
ES-1	PROPOSED ELECTRICAL SITE PLAN
ES-2	PROPOSED ELECTRICAL PUMP PAD SITE PLAN
E-1	GENERAL NOTES AND SCOPE OF ELECTRICAL WORK
E-2	ONE LINE DIAGRAM
E-3	PROPOSED ELECTRICAL CONTROL PANEL LAYOUT
E-4	PARTS SCHEDULE (1 OF 2)
E-5	PARTS SCHEDULE (2 OF 2)
E-6	ELECTRICAL CONTROLS LEGEND PLATES
E-7	ELECTRICAL SCHEMATIC LEGEND
E-8	ELECTRICAL SCHEMATIC DIAGRAM (1 OF 3)
E-9	ELECTRICAL SCHEMATIC DIAGRAM (2 OF 3)
E-10	ELECTRICAL SCHEMATIC DIAGRAM (3 OF 3)
E-11	ELECTRICAL NOTES FOR SHEETS E2 - E10
E-12	ELECTRICAL PEDESTAL DESIGN (1 OF 2)
E-13	ELECTRICAL PEDESTAL DESIGN (2 OF 2)
E-14	ELECTRICAL DETAILS
E-15	ELECTRICAL NOTES FOR SHEETS E12 - E14
E-16	ELECTRICAL DETAILS
E-17	ELECTRICAL DETAILS

**LINEBAUGH PS
PROJECT LOCATION
926 EAST LINEBAUGH AVE.
TAMPA, FL 33612**

LEGAL DESCRIPTION: (for reference only)

Lots 19 through 23, Map of Castle Heights, as per map or plat thereof as recorded in Plat Book 10, Page 32 of the Public Records of Hillsborough County, Florida.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13-015						
DESIGNED	LEM						
DRAWN	CVM						
CHECKED	LEM						
DATE	3/17/14	No.	DATE	BY	REVISION	DESCRIPTION	

SCALE

NTS

**CITY of TAMPA
WASTEWATER DEPARTMENT**

*LINEBAUGH PUMPING STATION
REHABILITATION
LOCATION MAP & INDEX*

SHEET NUMBER

C-2

LAWRENCE E. MILLS, P.E. No. 22324 FILE: 13-015

DEMOLITION NOTES

- D-1. SALVAGEABLE MATERIAL, AS DETERMINED BY DEPARTMENT PERSONNEL, SHALL BE DELIVERED TO THE PARTS WAREHOUSE LOCATED ON THE TREATMENT PLANT SITE. NON-SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- D-2. THE CONSTRUCTION SITE SHALL BE MAINTAINED IN AS NEAT AND ORDERLY CONDITION AS POSSIBLE DURING CONSTRUCTION OPERATIONS. SITE SHALL BE SECURED WITH TEMPORARY FENCING AND STRUCTURES DURING HOURS WHEN CONTRACTOR IS NOT PRESENT TO ENSURE SAFETY OF CITY EMPLOYEES AND THE PUBLIC.
- D-3. CONTRACTOR SHALL RESTORE ALL LANDSCAPING, SODDING, SPRINKLER SYSTEM PIPING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER. CONTRACTOR SHALL SOD ALL UNPAVED AREAS.

GENERAL NOTES

- G-1. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE CONTRACT ADMINISTRATION DEPARTMENT, WASTEWATER PERSONNEL AND PUMPING STATION OPERATIONS.
- G-2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS FOR THE PUMPING STATION WORK.
- G-3. THE CITY WILL OBTAIN ALL NECESSARY BUILDING PERMITS AND FDEP WASTEWATER PERMITS.
- G-4. CONTRACTOR SHALL CALL SUNSHINE (1-800-432-4770) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
- G-5. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- G-6. PROPOSED PUMPS ARE (2) FLYGT PUMPS, MODEL 3127.185. 10HP PUMPS SHALL BE SUPPLIED WITH FLYGT MIX-FLUSH VALVES. ALL PROPOSED PUMP BASES SHALL BE 6-INCH DIAMETER DISCHARGE ELBOWS. IMPELLER DIAMETER 202 mm.
- G-7. REMOVAL OF EXISTING PAVEMENT AND BASE MATERIAL SIDEWALK, CURB, POLES, UNDERGROUND PIPES, STRUCTURES, FOUNDATIONS, AND OTHER MISCELLANEOUS ITEMS SHALL BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPARATE PAYMENT WILL BE MADE.
- G-8. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.
- G-9. DIMENSIONS SHOWN ARE NOT NECESSARILY ACCURATE TO THE DEGREE REQUIRED FOR FABRICATION. EXISTING DIMENSIONS AND VIEWS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT DIMENSIONS AND REFLECT THEM ON DETAILED SHOP DRAWINGS FOR APPROVAL BEFORE ANY FABRICATION.
- G-10. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR ALL PROPOSED ITEMS. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE ORIGINALS OR HIGH QUALITY COPIES (CLEARLY LEGIBLE). NO FAXED SHEETS OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
- G-11. PUMP DISCHARGE PIPING IN WET WELL SHALL BE 6-INCH DIAMETER HDPE (PE4710), SDR-11, GREEN STRIPE, DIPS-OD. HDPE JOINTS SHALL BE FLANGED WITH 316 SS BACK UP RINGS. HDPE ELECTROFUSION JOINTS WILL BE ALLOWED, BUT ONLY IN THE WET WELL WITHIN 5 FEET FROM THE BOTTOM OF THE TOP SLAB.
- G-12. PLUG VALVES SHALL BE DEZURIK, PEF 100% PORT, ECCENTRIC PLUG VALVES OR APPROVED EQUAL. ALL ABOVE GROUND PLUG VALVES SHALL BE PROVIDED WITH 2" NUTS AND NO HANDWHEELS.
- G-13. CHECK VALVES SHALL BE APCO RUBBER FLAPPER SWING CHECK VALVES, SERIES 100. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.
- G-14. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL.
- G-15. PIPE SUPPORTS SHALL BE CONSTRUCTED AS SHOWN IN THE PIPE SUPPORT DETAIL.
- G-16. ALL CEMENTITIOUS CONCRETE AND GROUT, UNLESS OTHERWISE NOTED, SHALL BE CLASS "B", 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. ALL REINFORCING STEEL SHALL BE GRADE 60.
- G-17. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
- G-18. ALL METAL PIPE, FITTINGS, VALVES, ETC. SHALL RECIEVE:
 - 1) SHOP COAT - ONE COAT, 4-6 MILS (DRY) TNEMEC N140-1211 EPOXY PRIMER.
 - 2) FIELD COAT - ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU
 - 3) FIELD COAT
 - A) ABOVE GRADE : ONE COAT, 4-6 MILS (DRY) TNEMEC 1074U ENDURASHIELD (WITH FACTORY ADDED UV BLOCKER)
 - B) BELOW GRADE : ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU
- G-19. BACKFILL (NO CLAY OR CLAYEY MATERIAL) SHALL BE COMPACTED IN 6-INCH LAYERS (MAX.) TO 98% MAXIMUM DRY DENSITY OF MODIFIED PROCTOR IN CONFORMANCE WITH AASHTO T-180, METHOD A.

- G-20. ALL STAINLESS STEEL PARTS TO BE WELDED SHALL BE THE LOW-CARBON VERSION OF THE GRADE OF STAINLESS STEEL THAT IS CALLED FOR, SUCH AS: T-316L OR T-304L.
- G-21. CONTRACTOR SHALL PROVIDE A REDUCED PRESSURE BACKFLOW-PREVENTION DEVICE IN WATER SERVICE LINE, AS SHOWN IN DETAILS, AT A PLACE TO BE SPECIFIED DURING CONSTRUCTION. BACKFLOW PREVENTION DEVICE SHALL BE 1" WILKINS, MODEL #975 XL, OR EQUAL.
- G-22. ALUMINUM ACCESS COVERS SHALL BE DESIGNED FOR A PEDESTRIAN LIVE LOADING OF 300 PSF WITH 316 STAINLESS STEEL HARDWARE, HINGES AND AUTOMATIC HOLD-OPEN ARM AS MANUFACTURED BY US FOUNDRY AND MANUFACTURING CORPORATION OR APPROVED EQUAL. THE ACCESS DOORS SHALL ALSO BE EQUIPPED WITH A FLUSH LIFTING HANDLE, TAMPERPROOF FASTENERS AND EXPOSED PADLOCK STAPLES.
- G-23. THE ACCESS COVER SHALL CLOSE FLUSH WITH THE FRAME. ALL ALUMINUM SURFACES THAT CONTACT CONCRETE SHALL BE COATED WITH TWO COATS OF COAL TAR EPOXY OR BITUMINOUS COATING OR EQUAL. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE INSTALLATION AND CONFIGURATION OF THE ACCESS COVERS.
- G-24. PROPOSED PRECAST WET WELL SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-76, CLASS II WALL B. MINIMUM STEEL REINFORCEMENT SHALL BE INNER CAGE .76 IN²/FT AND OUTER CAGE .46 IN²/FT. (SEE SPECIFICATIONS)
- G-25. ALL DIP PIPE AND FITTING SHALL BE CLASS 53 WITH PROTECTO 401 INTERIOR COATING.
- G-26. PVC GRAVITY PIPE AND FITTINGS SHALL BE SDR-26 (HEAVY WALL) IN COMPLIANCE TO ASTM D3034. PVC FM PIPE AND FITTINGS SHALL BE C-900 (DR-18)
- G-27. ALL CONCRETE PAVEMENT, UNLESS OTHERWISE NOTED, SHALL BE MINIMUM 6" THICK CONCRETE WITH 4x4 W6xW6 WWF. CONCRETE SHALL BE CONSTRUCTED ON COMPACTED SUB-BASE (MINIMUM 98% MODIFIED PROCTOR) WITH 1.5" DEEP CONTROL JOINTS SAW-CUT @ 15' MAX, CUT WITHIN 12 HRS OF CONCRETE PLACEMENT.
- G-28. CONTRACTOR TO SUBMIT METHOD FOR 100% WATERTIGHT SEALING AT PIPE PENETRATIONS THROUGH STRUCTURES, PROPOSED LINK SEAL OR APPROVED EQUAL.
- G-29. THE CITY DOES NOT BELIEVE THAT ASBESTOS IS PRESENT IN THE BUILDING. PER EPC REQUIREMENTS, CONTRACTOR WILL BE REQUIRED TO PROCURE A THIRD PARTY ASBESTOS SURVEY FROM A LICENSED ASBESTOS CONSULTANT. DEMOLITION OF PUMP STATION BUILDING CANNOT BEGIN UNTIL (3) WEEKS AFTER THE ASBESTOS SURVEY IS SUBMITTED TO THE ENGINEER. THE CITY WILL FURNISH EPC WITH THE REQUIRED NOTIFICATION. IF THE SURVEY DISCOVERS THE PRESENCE OF ASBESTOS, THE CITY WILL UTILIZE CONTINGENCY FUNDS FOR THE ASBESTOS REMOVAL IN ACCORDANCE WITH EPC STANDARDS.
- G-30. ELEVATION INFORMATION SHOWN ON THESE PLANS IS REFERENCED TO NGVD 1929 UNLESS OTHERWISE STATED.
- G-31. DURING CONSTRUCTION, CONTRACTOR SHALL MAINTAIN A CLEAR PATH TO EXISTING PUMPING STATION FOR CITY STAFFS TO ACCESS AND MAINTAINING THE EXISTING PUMPING STATION.
- G-32. CONTRACTOR SHALL PROTECT ALL TREES IN THE VICINITY OF THE PROPOSED CONSTRUCTION IN ACCORDANCE WITH CHAPTER 13 OF THE CITY OF TAMPA CODE. NO TREES SHALL BE PRUNED WITHOUT PRIOR APPROVAL FROM THE CITY OF TAMPA PARKS AND RECREATION DEPARTMENT, NATURAL RESOURCES DIVISION, AND SHALL BE COMPLETED BY A CERTIFIED ARBORIST. ROOT PRUNING MAY BE REQUIRED AT CERTAIN LOCATIONS AND COMPLETED IN ACCORDANCE WITH CHAPTER 13 TECHNICAL MANUAL SPECIFICATIONS.
- G-33. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST ON ALL GRAVITY SEWERS AND A PRESSURE TEST ON ALL FORCE MAINS (AS APPLICABLE) IN ACCORDANCE TO THE CITY OF TAMPA'S WASTEWATER DEPARTMENT REGULATIONS. SAID TEST ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE CITY OF TAMPA WASTEWATER DEPARTMENT FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION TO ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.
- G-34. REFER TO SUBSURFACE INVESTIGATION REPORT DATED NOV. 19, 2013 BY BTL ENGINEERING SERVICES, INC. FOR PROJECT AREA GEOTECHNICAL INFORMATION.

BYPASSING NOTES

- B-1. SEWER SERVICE TO CUSTOMERS SHALL NOT BE DISRUPTED DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT DETAILED PROPOSAL FOR PUMPING STRATEGY.
- B-2. IT IS THE ENGINEER'S INTENT THAT THE NEW PUMPING STATION WILL BE CONSTRUCTED WHILE THE EXISTING PUMPING STATION REMAINS IN OPERATION. DURING THE START-UP OF THE NEW PUMP STATION, THE EX. PUMP STATION MUST BE CAPABLE OF OPERATING IN THE EVENT THERE ARE PROBLEMS WITH THE NEW PUMP STATION. AS AN ALTERNATIVE OF KEEPING THE OLD PUMP STATION OPERATIONAL, THE CONTRACTOR MAY PROVIDE BYPASS PUMPING RATED FOR 600 GPM @ 38' TDH.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE	
NTS	

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
GENERAL NOTES (1)

SHEET NUMBER	C-3
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015

STANDARD SITE PLAN NOTES:

1. All work shall comply with the regulations, requirements and ordinances of the various governing agencies having jurisdiction over said work, including, and not limited to: Hillsborough County EPC, City of Tampa, and F.D.E.P. and others as may be applicable.
2. The Contractor shall maintain copies of all applicable permits on-site and shall be responsible to adhere to all permit conditions during construction.
3. Location, dimension, elevation, and identification of existing utilities, structures and other topographic features are approximate only, according to the best information available at the time of preparation of these plans. There may be additional existing details on-site and off-site, the presence of which is not known or detected at this time. Engineer/Surveyor shall not be held responsible for undetected underground utilities. Prior to construction, it is the Contractor's responsibility to verify the location, dimension, elevation and identification of all utilities, structures and topographic features (i.e. buildings, sidewalks, canopy supports, fences, pavement, underground utilities, utility poles/guy wires, manholes, inlets, a/c units, trees, landscaping, etc.). If any of the existing or proposed conditions either: a) conflict with the proposed improvements, or b) are not shown or shown incorrectly on the plans, it is the Contractor's responsibility to contact the Engineer prior to the commencing any work activities.
4. The construction testing/inspection shall be the Contractor's responsibility to schedule and complete any and all tests as required with all site civil improvements constructed on and off site. It shall also be the Contractor's responsibility to pre-test these improvements prior to giving the Engineer-of-Record any governing agency field representative 48 hours advance notice of any formal tests.
5. Engineer/Surveyor shall not be held responsible for undetected underground utilities and/or soil conditions Site preparation to be in accordance with a geotechnical engineers recommendations and as a minimum standard must conform with the following: a) Unsuitable material to be removed upon Engineers approval; b) Fill material to be clean with no organics, muck, clay, trash, etc.; c) Fill to be placed in 12" lifts and compacted to 98% modified proctor; d) 4:1 maximum slope unless noted otherwise
6. Florida Statute 553.851 (1979) requires a minimum of 2 days and maximum of 5 days notice before excavation. Effective December 1, 1993, a new telephone number, SUNSHINE STATE ONE CALL OF FLORIDA, 1-800-432-4770 must be called for underground utility location purposes before you dig.
7. Contractor to maintain positive stormwater drainage and flood control during construction.
8. The Contractor shall use appropriate measures to prevent erosion and transport of sediment to surface drains. The Contractor shall use hay bales and/or silt barriers to mitigate adverse impacts to existing surface water quality.
9. All pipe lengths are plus or minus and are measured from center of fittings and/or structures.
10. Upon completion of the work, all surfaces and facilities will be returned to a minimum standard of profile and condition as existed prior to commencement of work.
11. Mills & Associates, Inc. makes no representations or guarantees pertaining to easements, rights of way, set back lines, reservations, agreements and other similar matters.
12. Contractor to coordinate scheduling of existing site lighting demolition and proposed site lighting installation with Tampa Electric Company.
13. Contractor to temporarily support all existing adjacent utilities/structures during pipeline/excavation work. Contact local utility for temporary securing of power poles, as necessary. Alignment may vary due to field conditions, contact Engineer. Prior to backfill of pipe trench, contact Engineer.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015								
DESIGNED	LEM								
DRAWN	CVM								
CHECKED	LEM								
DATE	3/17/14	No.	DATE	BY	REVISION	DESCRIPTION			

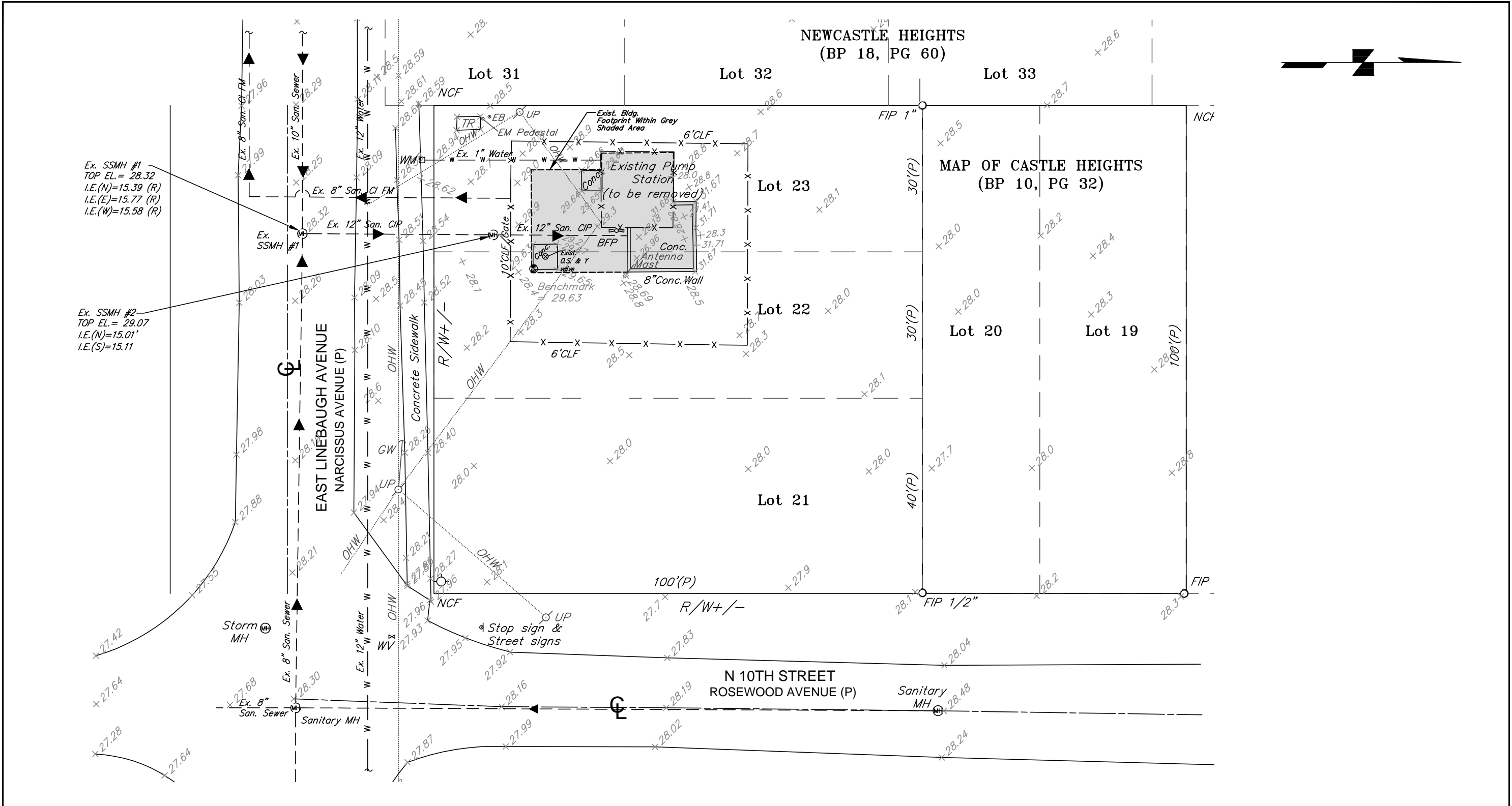
SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
GENERAL NOTES (2)

	SHEET NUMBER
	C-4
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



EXISTING SITE PLAN
SCALE: 1" = 20'

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

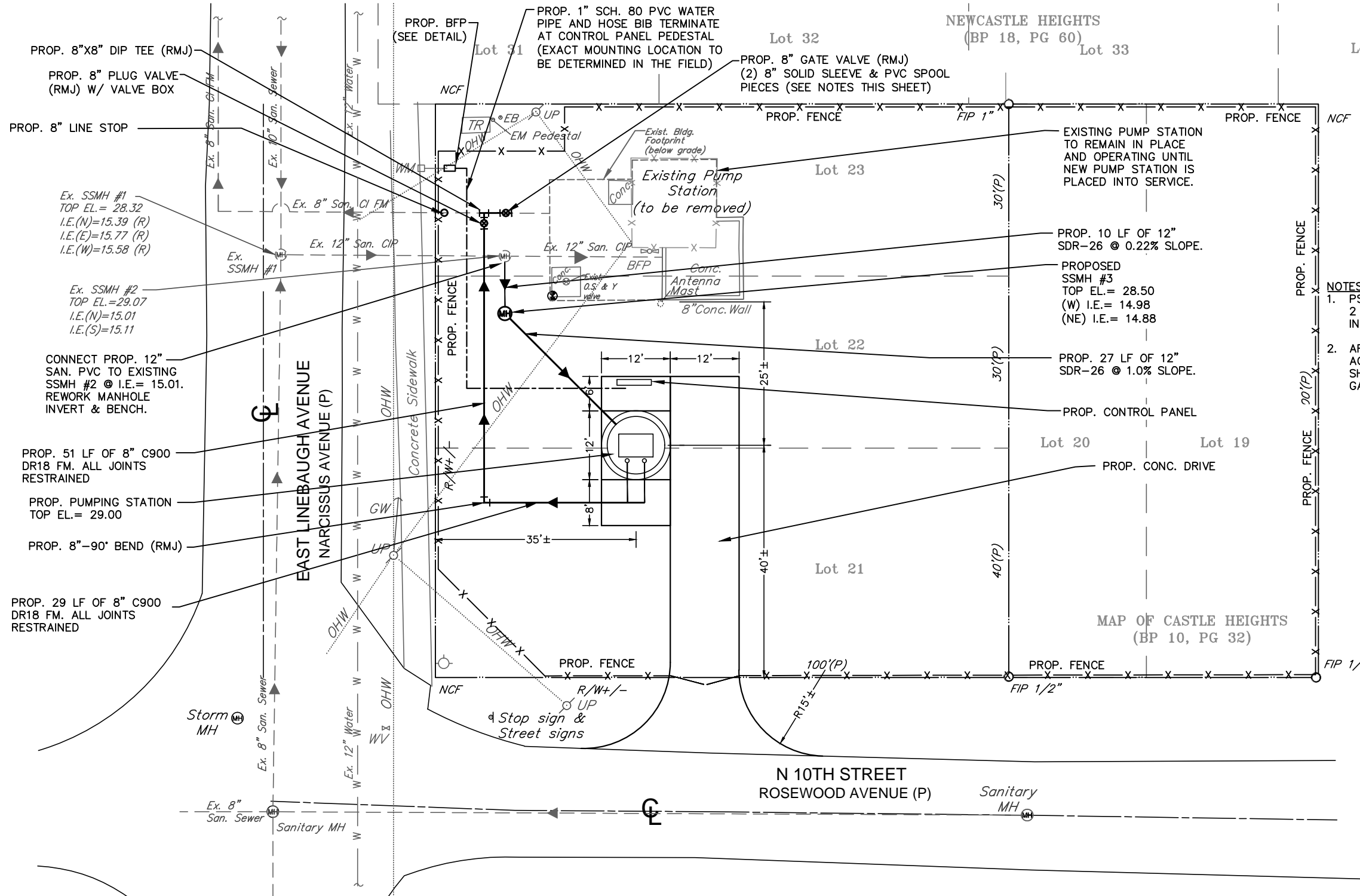
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
1" = 20'

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
EXISTING SITE PLAN

LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015
SHEET NUMBER C-5	



- NOTES:**
1. PS CAN BE SHUT DOWN FOR A MAXIMUM OF 2 HOURS BETWEEN 3AM-5AM TO PERFORM INTERCONNECTION.
 2. AFTER NEW PS IS IN OPERATION AND ACCEPTED BY THE CITY, CONTRACTOR SHALL INSTALL RMJ CAP ON NORTH SIDE OF GATE VALVE.

PROPOSED SITE PLAN
SCALE: 1" = 20'

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd., Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

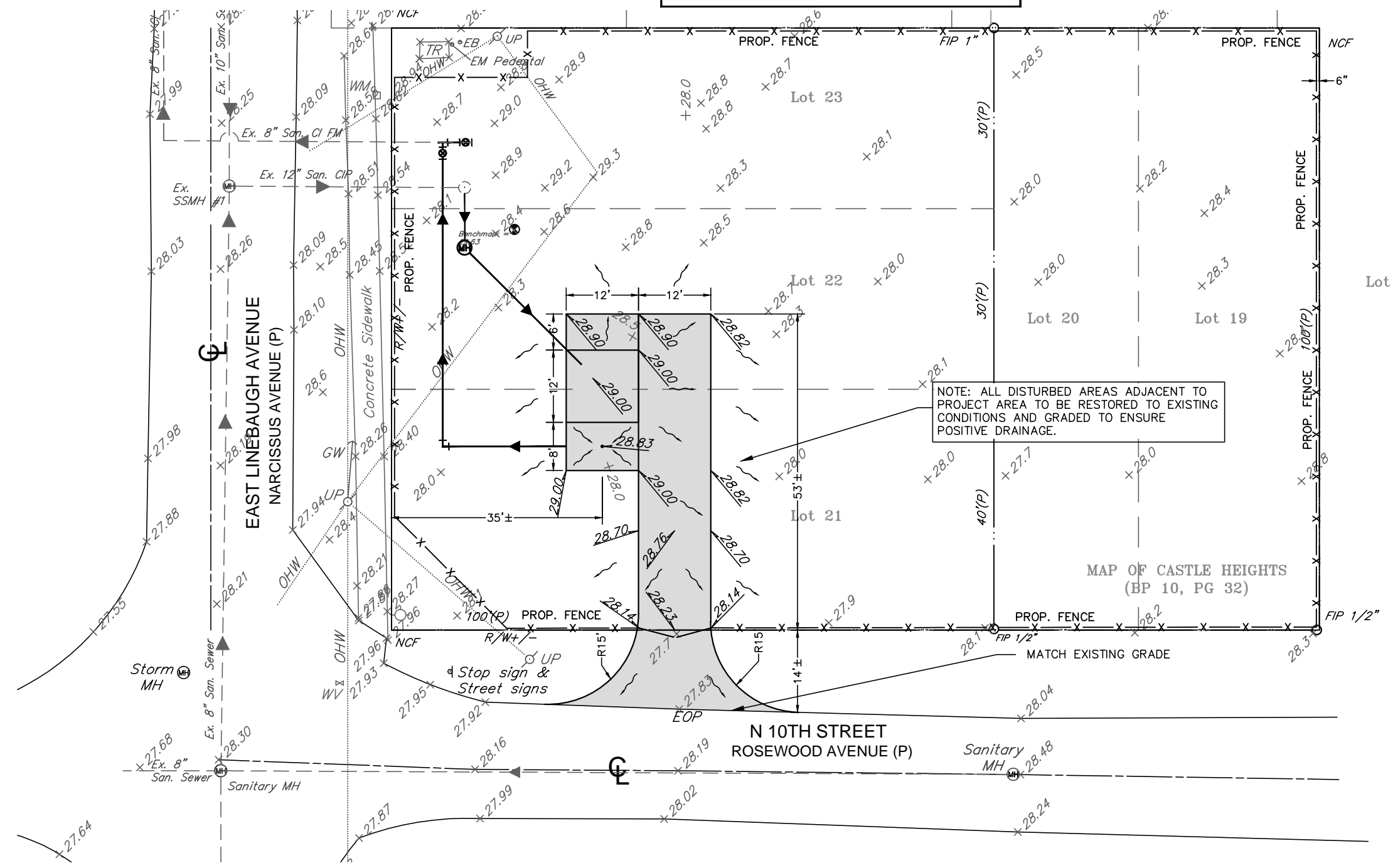
SCALE
1"=20'

CITY of TAMPA
WASTEWATER DEPARTMENT

*LINEBAUGH PUMPING STATION
REHABILITATION
PROPOSED SITE PLAN*

SHEET NUMBER	C-6
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015

$\underline{00.00}$ PROPOSED ELEVATION
 +28.0 EXISTING ELEVATION
 DRAINAGE FLOW
 PROPOSED 6" CONCRETE W/ 4"x 4" W6x W6 WWF UNLESS OTHERWISE NOTED



GEOMETRIC LAYOUT & GRADING PLAN
 SCALE: 1" = 20'

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

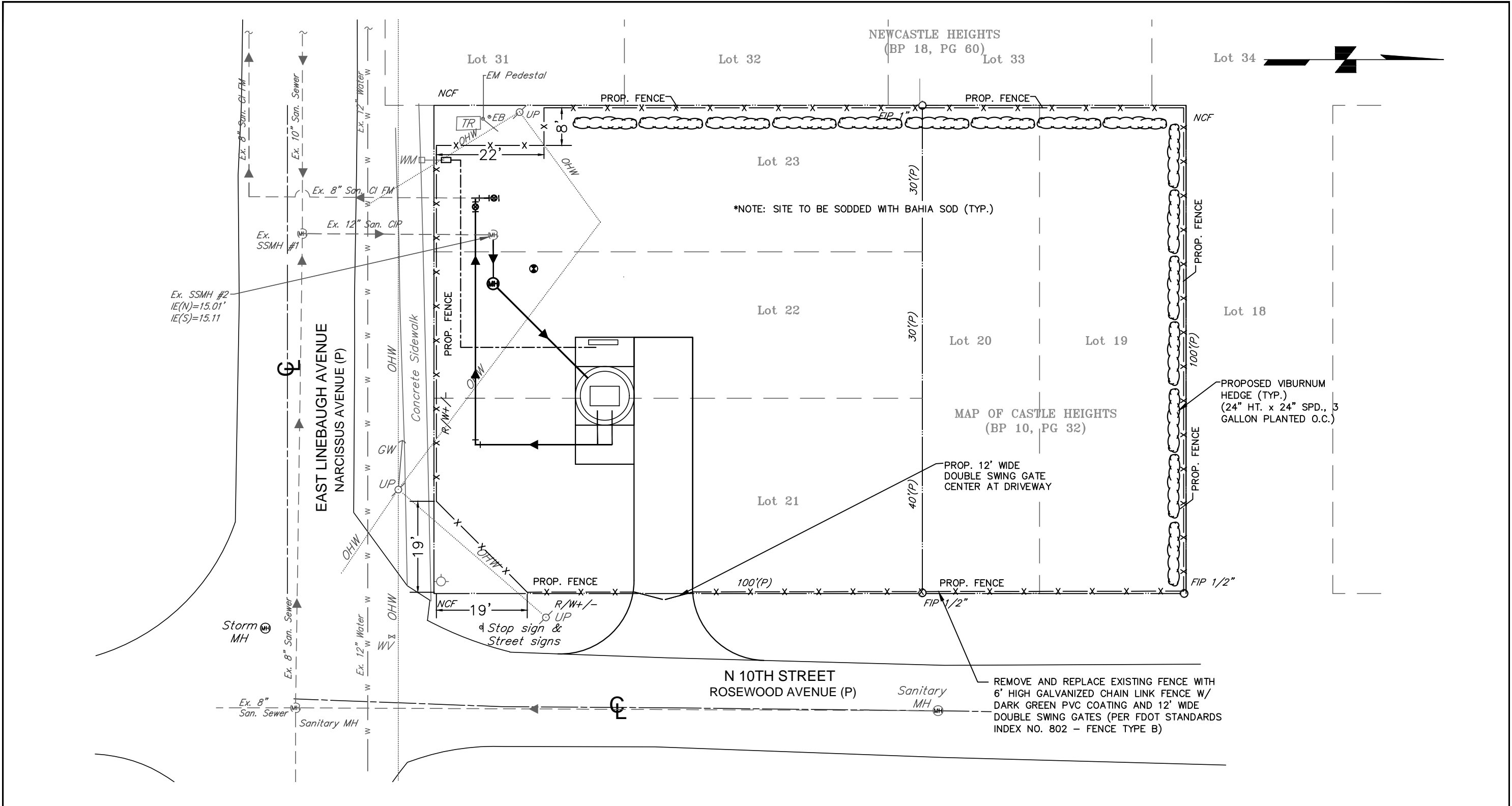
SCALE
 1" = 20'

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 GEOMETRIC LAYOUT & GRADING PLAN

LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015
-----------------------------------	--------------

SHEET NUMBER
 C-7



PROPOSED LANDSCAPE & FENCE PLAN
SCALE: 1" = 20'

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

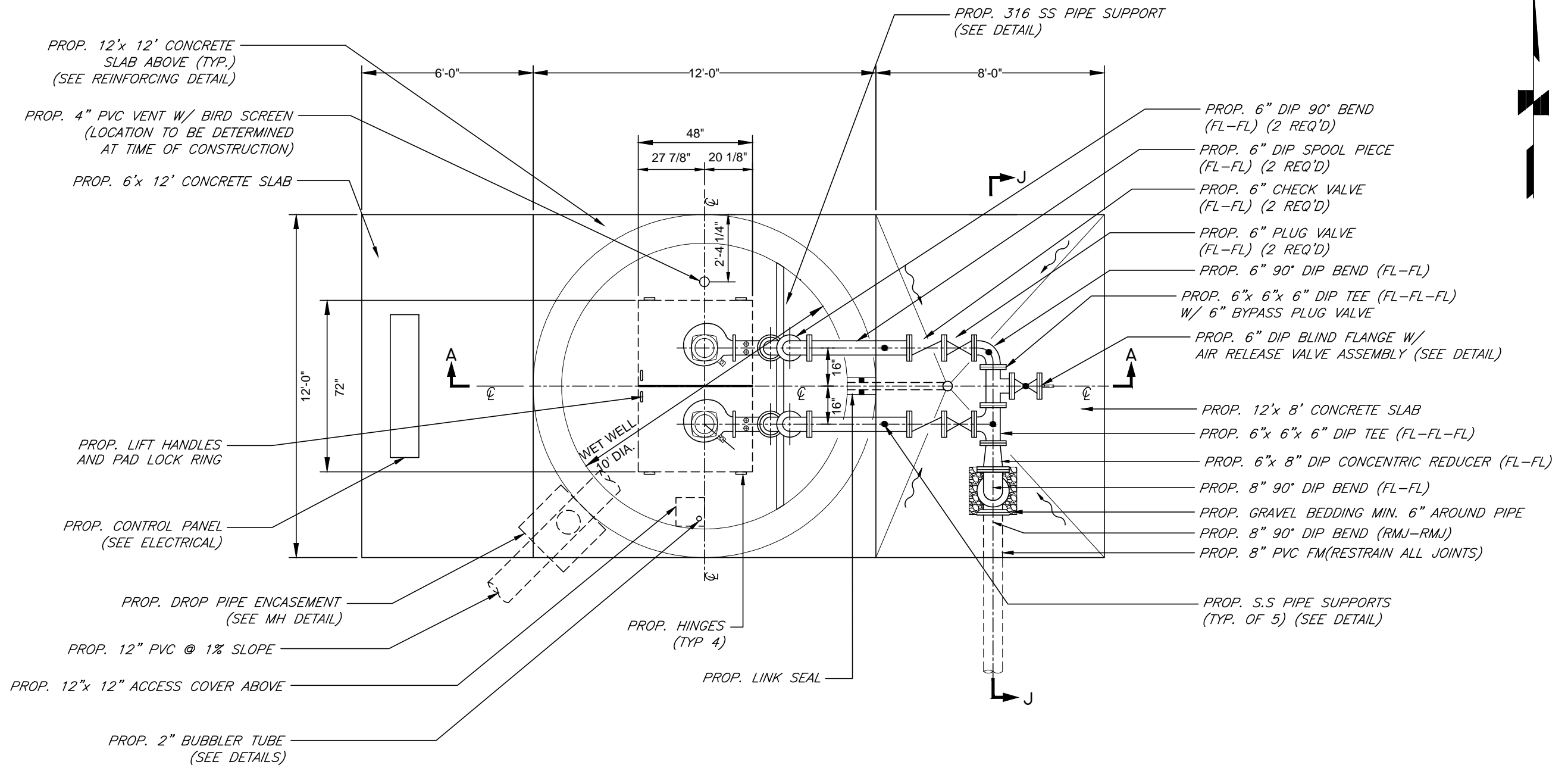
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
1"=20'

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PROPOSED LANDSCAPE &
FENCE PLAN

LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015
SHEET NUMBER C-8	



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

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

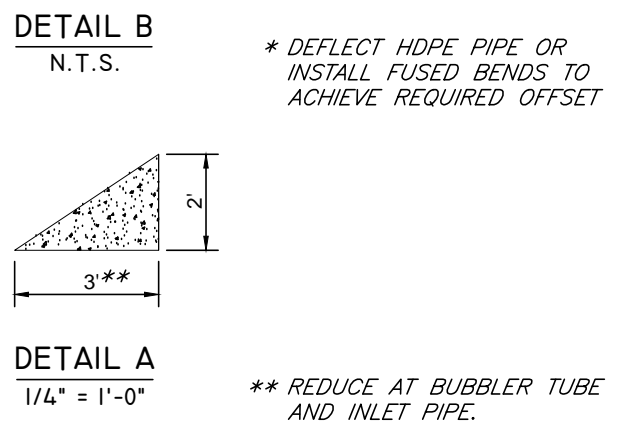
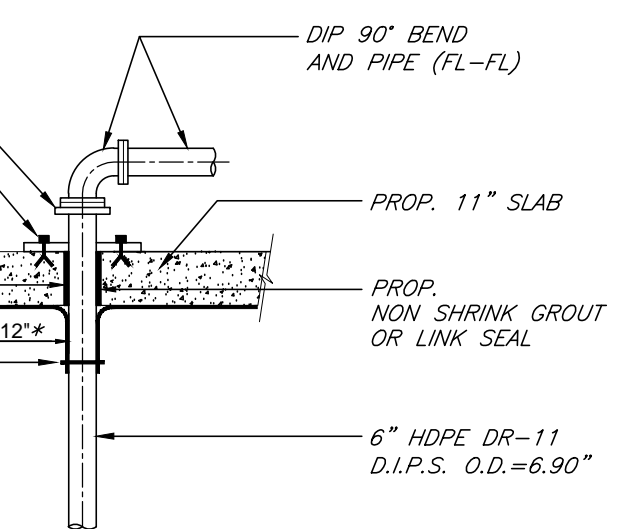
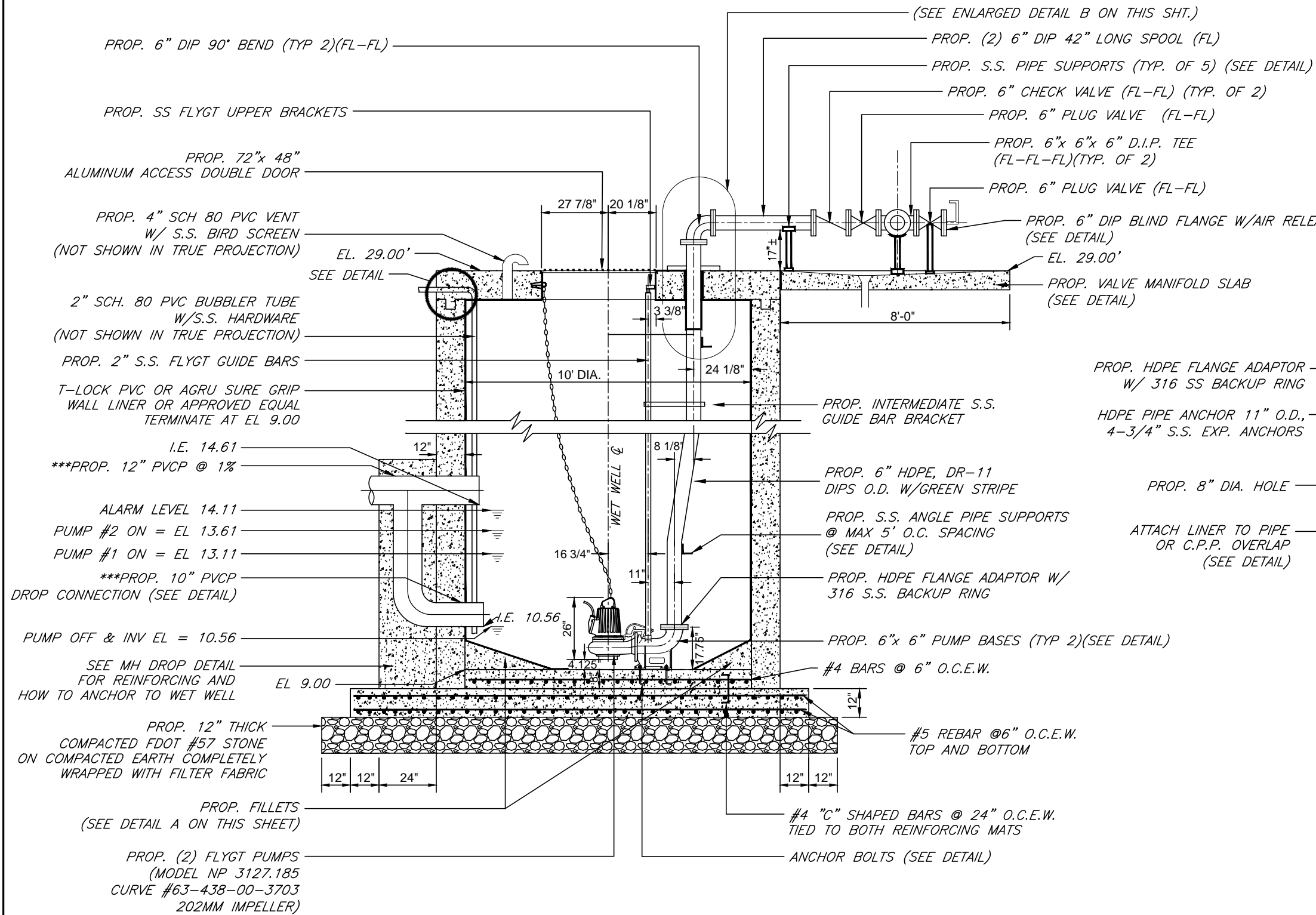
TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015	No.	DATE	BY	REVISION DESCRIPTION
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14				

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PLAN VIEW

SHEET NUMBER
C-9
LAWRENCE E. MILLS, P.E. No. 22324
FILE: 13-015



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

NOTE: FOR DIMENSION AND REINFORCING INFORMATION OF WET WELL TOP SLAB AND MANIFOLD SLAB, SEE PLAN VIEW AND SECTIONS ON SHT. C-11 AND C-12

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

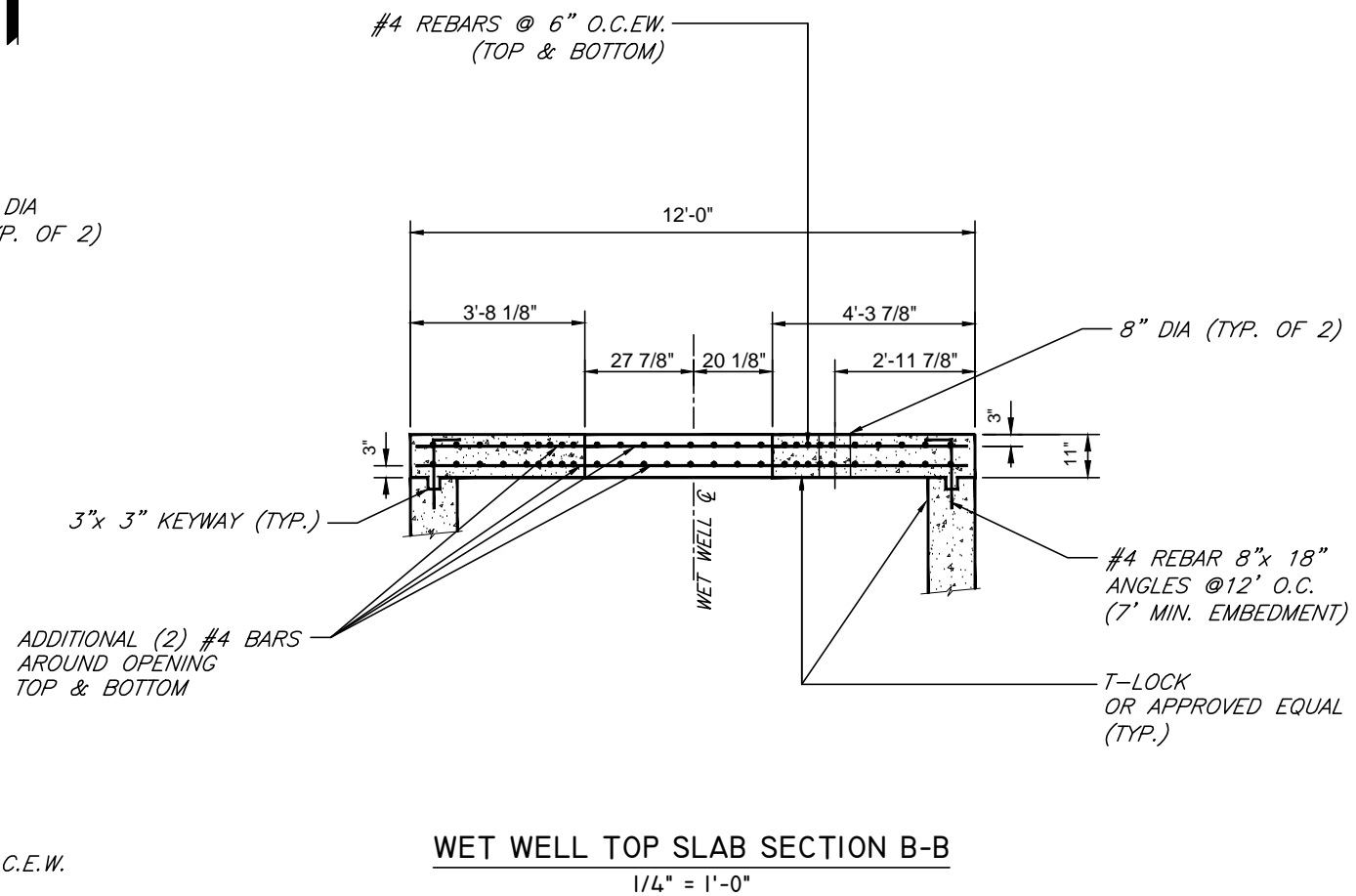
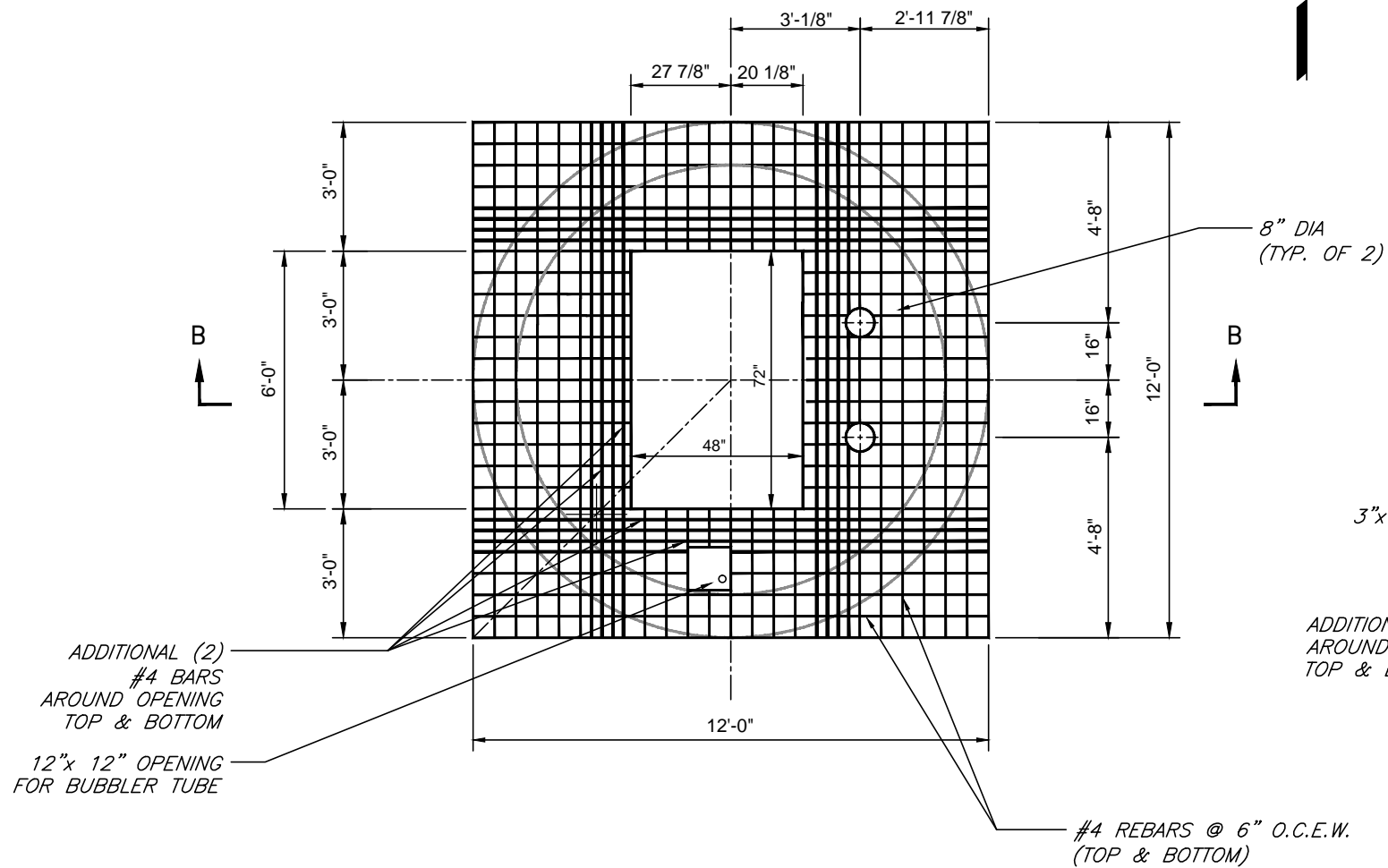
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
1/4" = 1'-0"

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
SECTION A-A/DETAILS

LAWRENCE E. MILLS, P.E. No. 22324
SHEET NUMBER
C-10
FILE: 13-015



100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

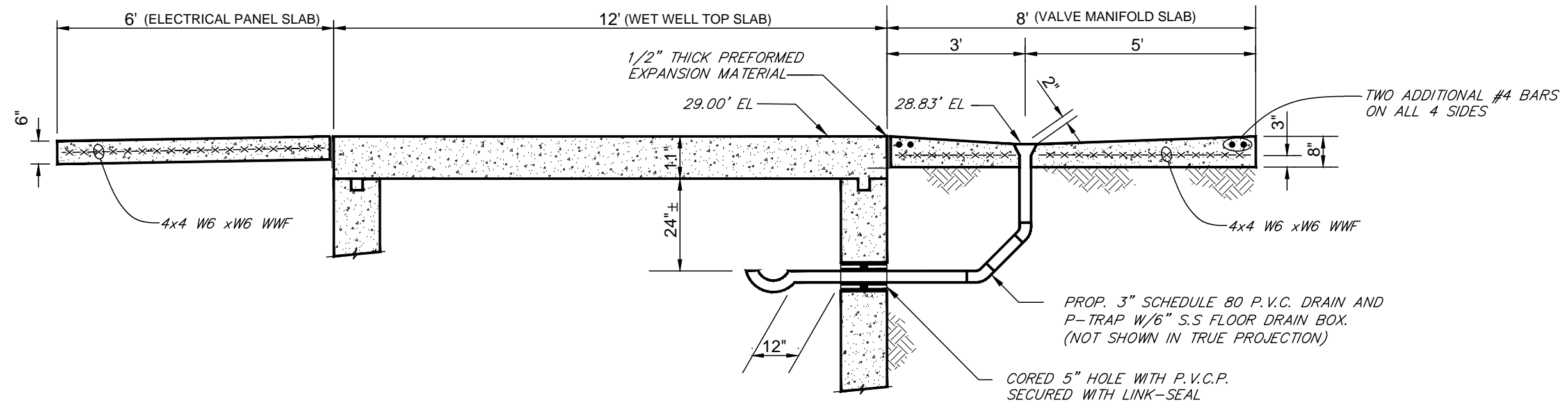
JOB No.	13-015	No.	DATE	BY	REVISION DESCRIPTION
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14				

SCALE
1/4" = 1'-0"

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
WET WELL TOP SLAB PLAN/
SECTION B-B VIEW

SHEET NUMBER
C-11
LAWRENCE E. MILLS, P.E. No. 22324
FILE: 13-015



VALVE MANIFOLD SLAB SECTION
 3/8" = 1'-0"

NOTE: THICKNESS OF ALL CONC. SLABS SHALL BE AS SHOWN AND NOT LESS THAN 6".

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

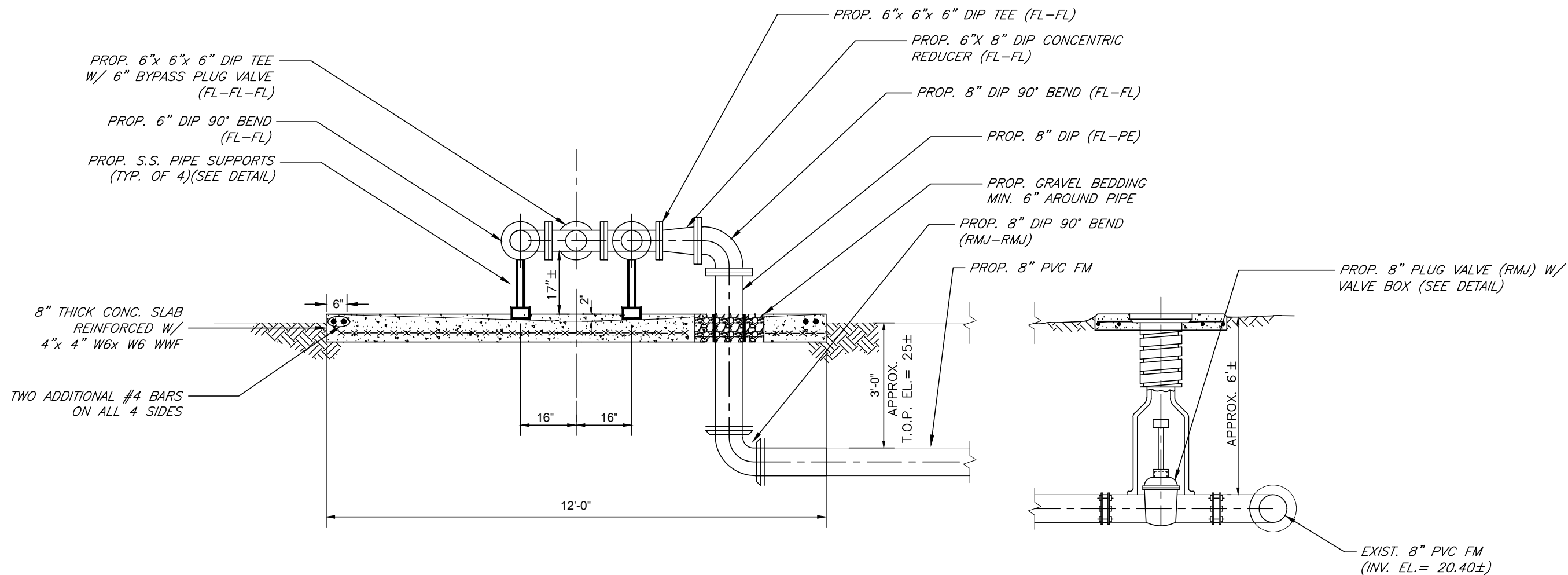
SCALE

3/8"=1'-0"

CITY of TAMPA
 WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 VALVE MANIFOLD SLAB

	SHEET NUMBER
	C-12
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



VALVE MANIFOLD SLAB J-J
 $3/8" = 1'-0"$

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

TRICON
 CONSULTING ENGINEERS
 777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

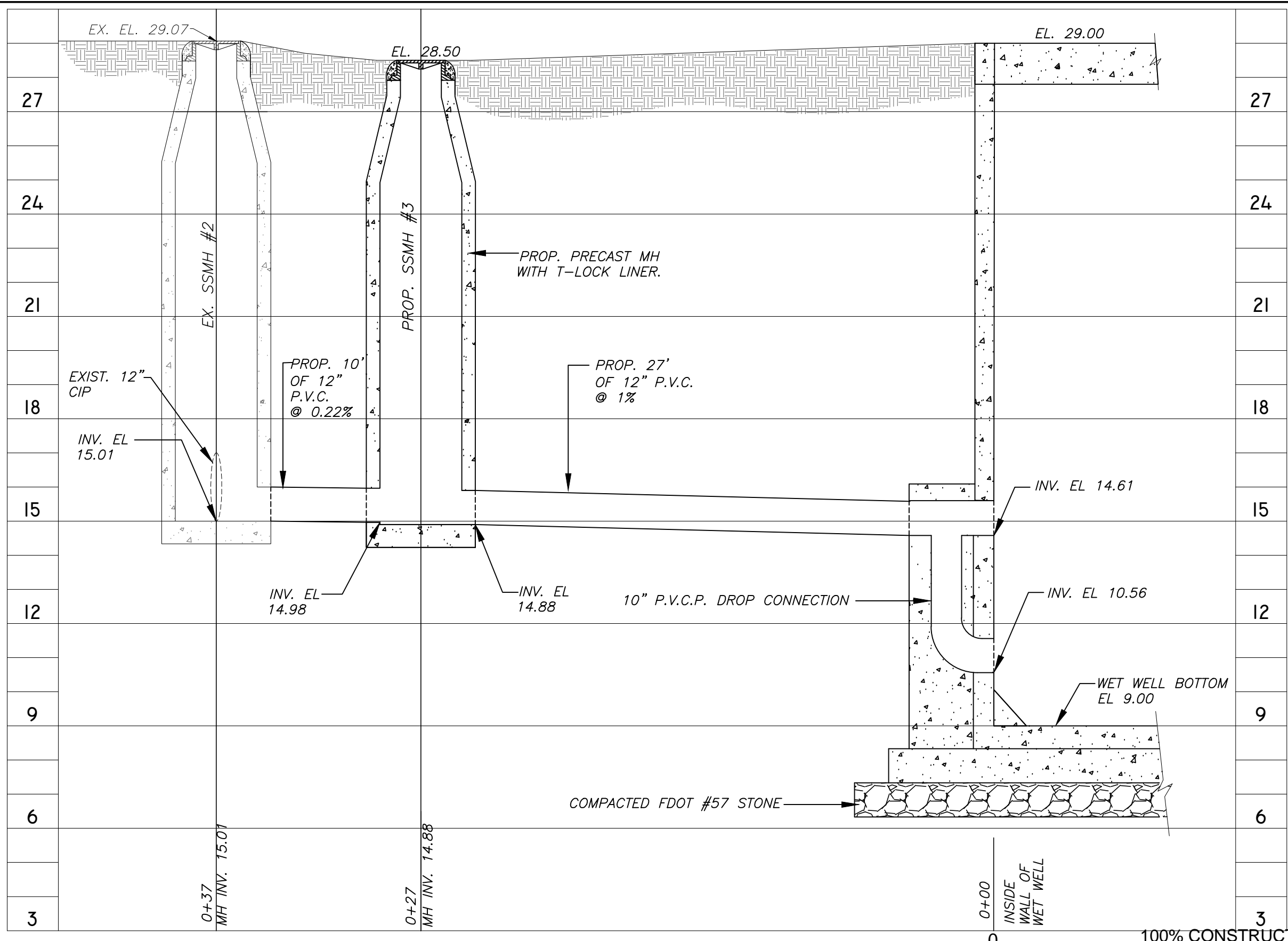
SCALE
 $3/8" = 1'-0"$

CITY of TAMPA
 WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 VALVE MANIFOLD SLAB SECTION J-J

LAWRENCE E. MILLS, P.E. No. 22324

SHEET NUMBER
C-13
 FILE: 13-015



EX. SSMH #2
 PLUG 12" CIP (NORTH) WITH NON-SHRINK GROUT AFTER ACCEPTANCE OF NEW PUMP STATION, SEAL NORTH OPENING WITH CONC. AND RECONSTRUCT MANHOLE BENCH TO ACCOMMODATE NEW FLOW DIRECTION.

PROP. SSMH #3
 STA. 0+17
 PROP. STANDARD MANHOLE
 TOP EL = 28.50±
 INV EL = 14.98± (W)
 INV EL = 14.88± (N)

PROPOSED PROFILE
 1" = 5' HORIZ.
 1" = 3' VERT.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

TRICON
 CONSULTING ENGINEERS
 777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

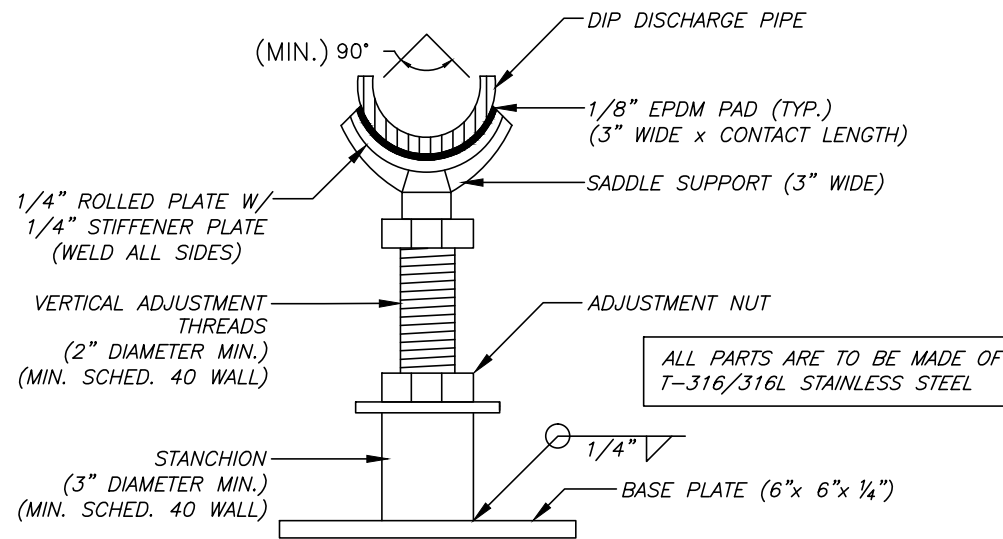
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
 1" = 5' HORIZ.
 1" = 3' VERT.

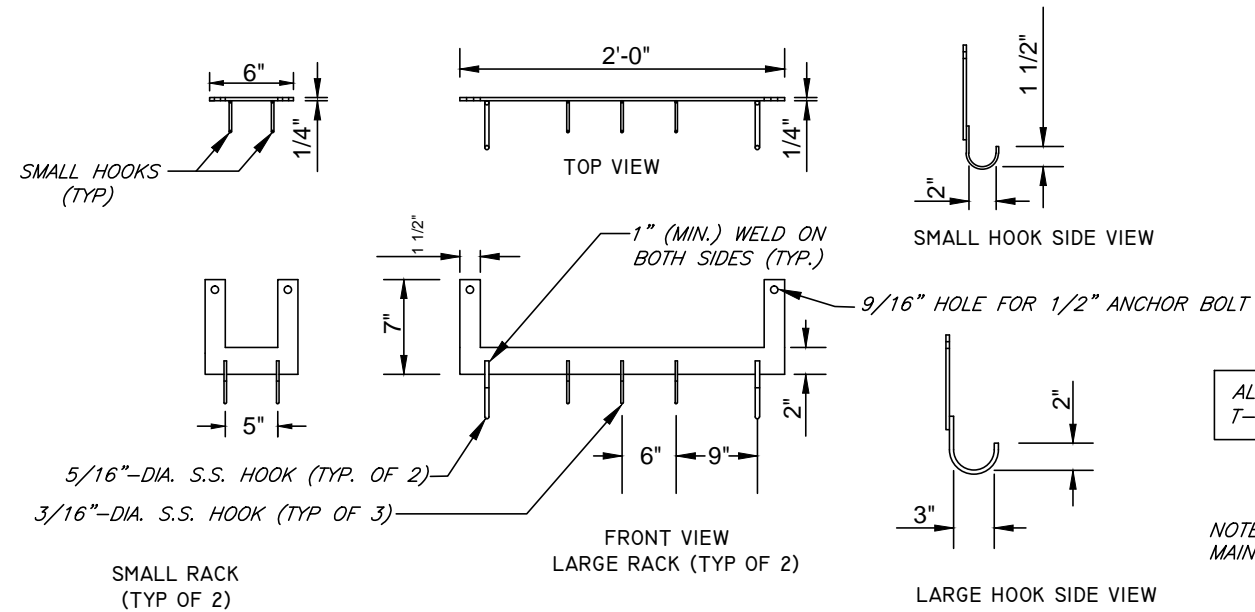
CITY of TAMPA
 WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 PROPOSED PROFILE

LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015
SHEET NUMBER C-14	



SECTION VIEW - STAINLESS STEEL STANCHION SADDLE SUPPORT
N.T.S.



DETAIL "E" PROP. STAINLESS STEEL HOOK RACKS
N.T.S.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE

N.T.S.

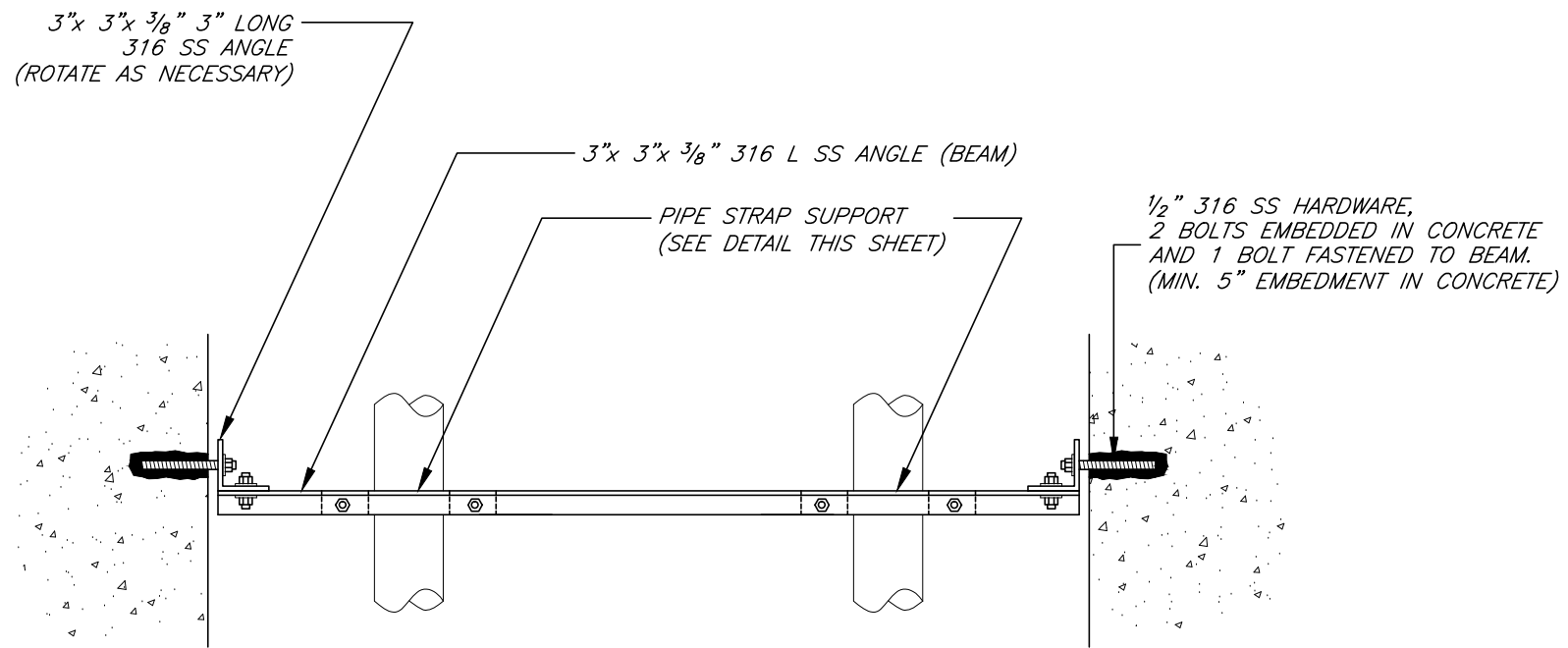
CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PIPE SUPPORT & HOOK RACK DETAILS

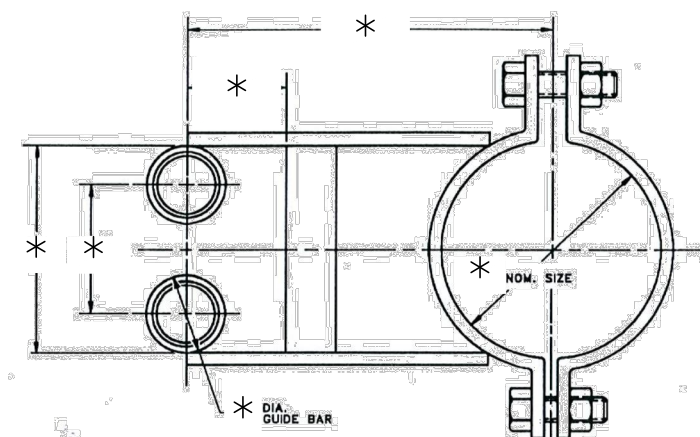
SHEET NUMBER

C-15

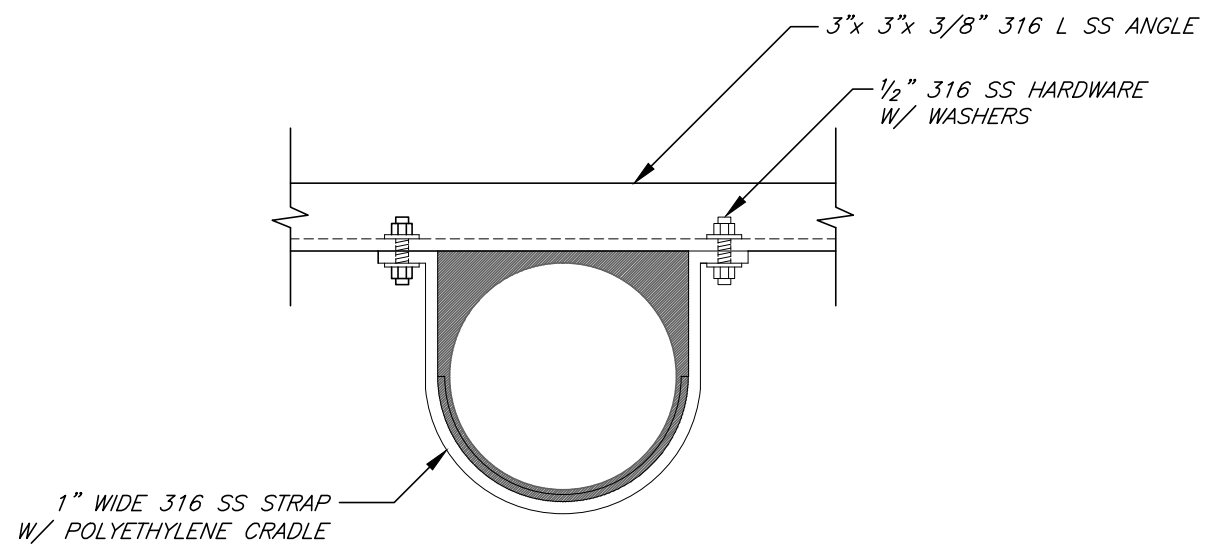
LAWRENCE E. MILLS, P.E. No. 22324 FILE: 13-015



PIPE SUPPORT ASSEMBLY
N.T.S.



INTERMEDIATE GUIDE BAR BRACKETS
N.T.S.



PIPE STRAP SUPPORT
N.T.S.

* PER PUMP MANUFACTURER'S RECOMENDATION

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE

N.T.S.

CITY of TAMPA
WASTEWATER DEPARTMENT

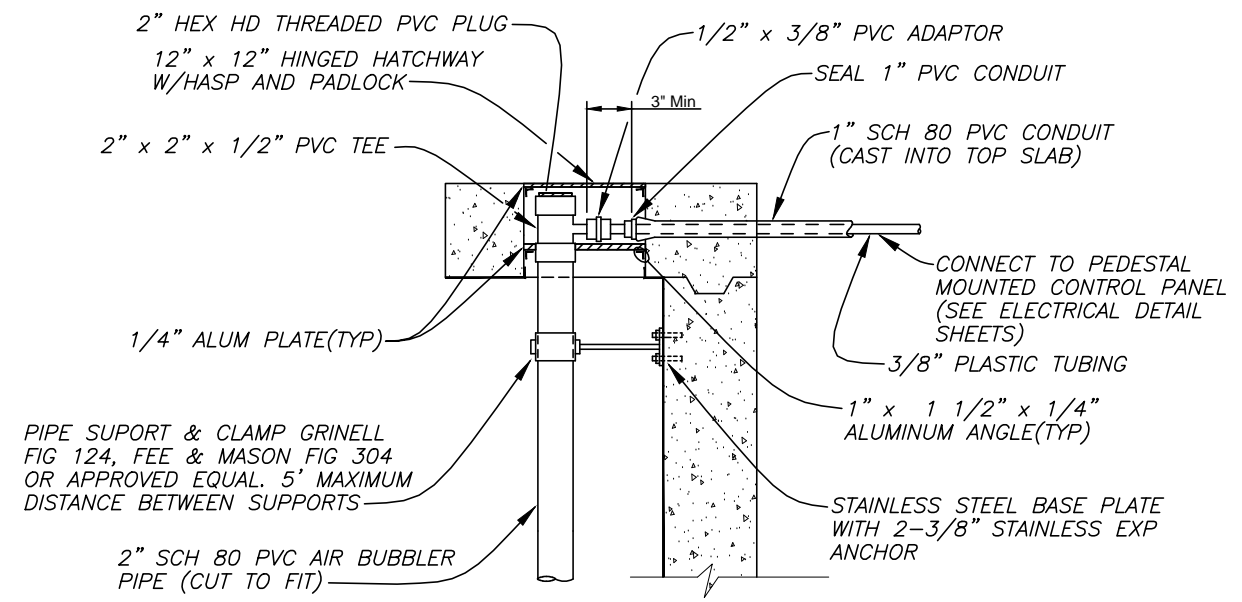
LINEBAUGH PUMPING STATION
REHABILITATION
DETAILS (1)

SHEET NUMBER

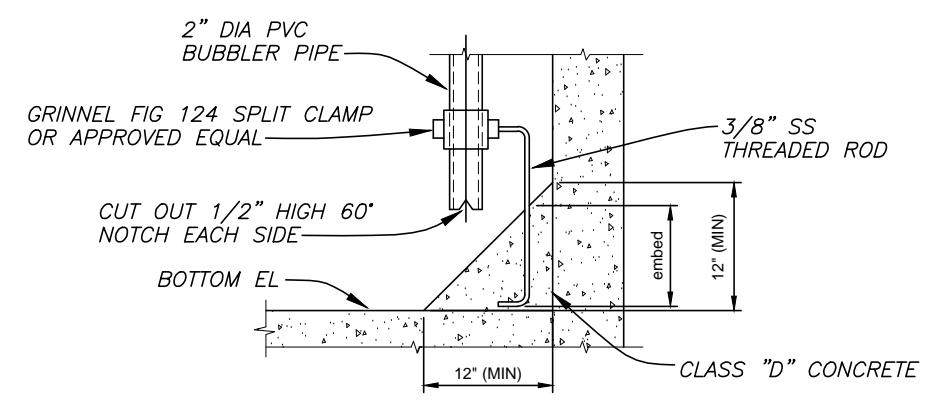
C-16

LAWRENCE E. MILLS, P.E. No. 22324

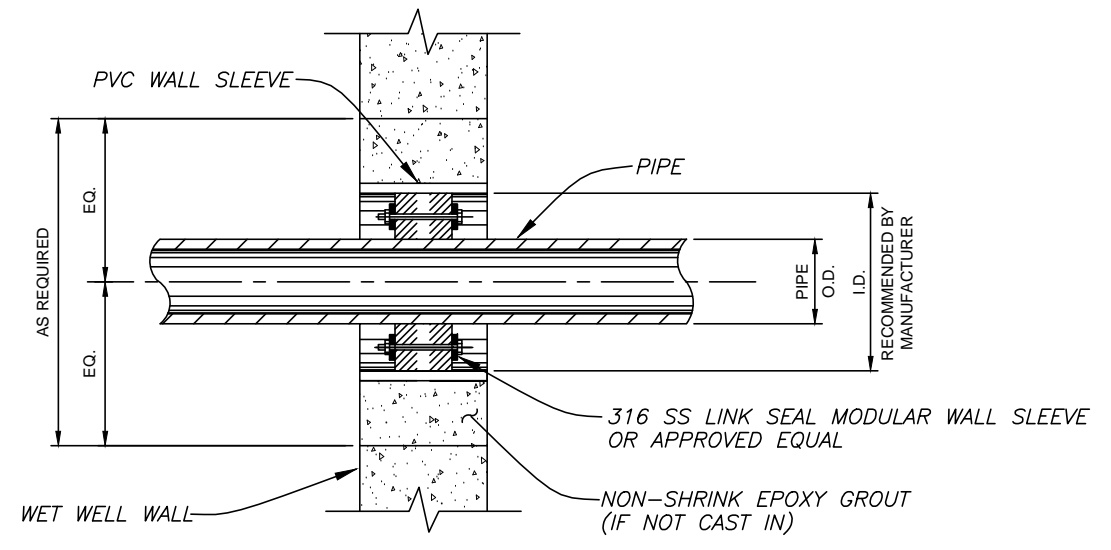
FILE: 13-015



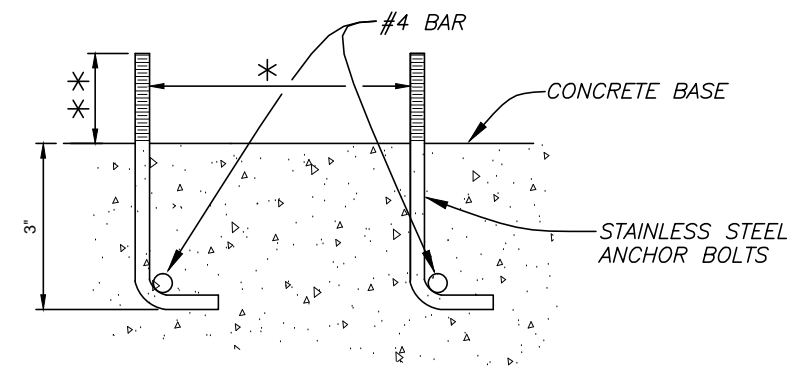
BUBBLER DETAIL
N.T.S.



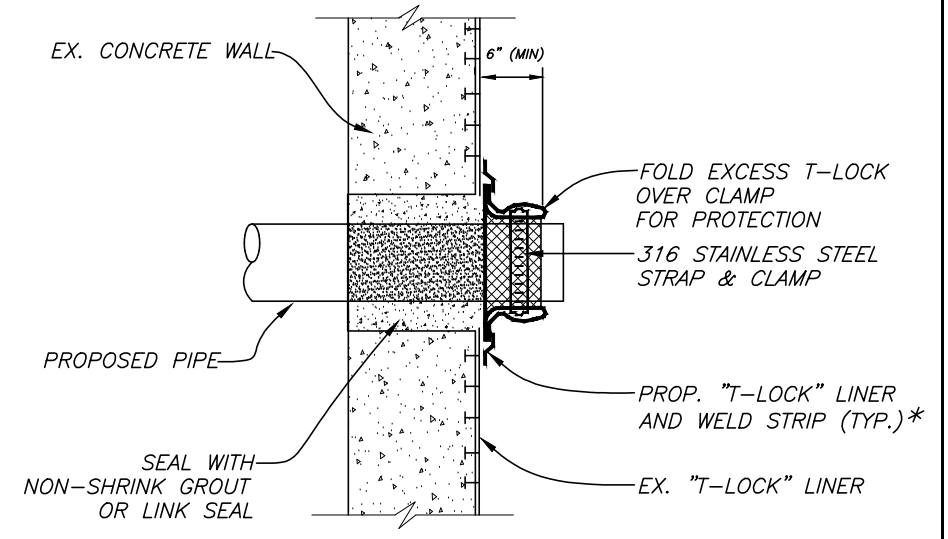
BUBBLER DETAIL
N.T.S.



LINK SEAL DETAIL
N.T.S.



ANCHOR BOLT DETAIL
N.T.S.



PIPE TO LINED STRUCTURE
N.T.S.

* ALIGNMENT OF ANCHOR BOLTS SHALL BE AS RECOMMENDED BY PUMP MANUFACTURER.
 ** CONTRACTOR SHALL PROVIDE A MINIMUM 1/2 INCH BOLT PROTRUSION ABOVE THE FINAL NUT LOCATION AFTER THE NUT IS TIGHTENED TO MANUFACTURER'S RECOMMENDATION.

*ALTERNATIVE: CONTRACTOR MAY COAT WITH 125 MILS C.P.P. AND OVERLAP EXISTING T-LOCK BY 3".

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

TRICON
 CONSULTING ENGINEERS
 777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

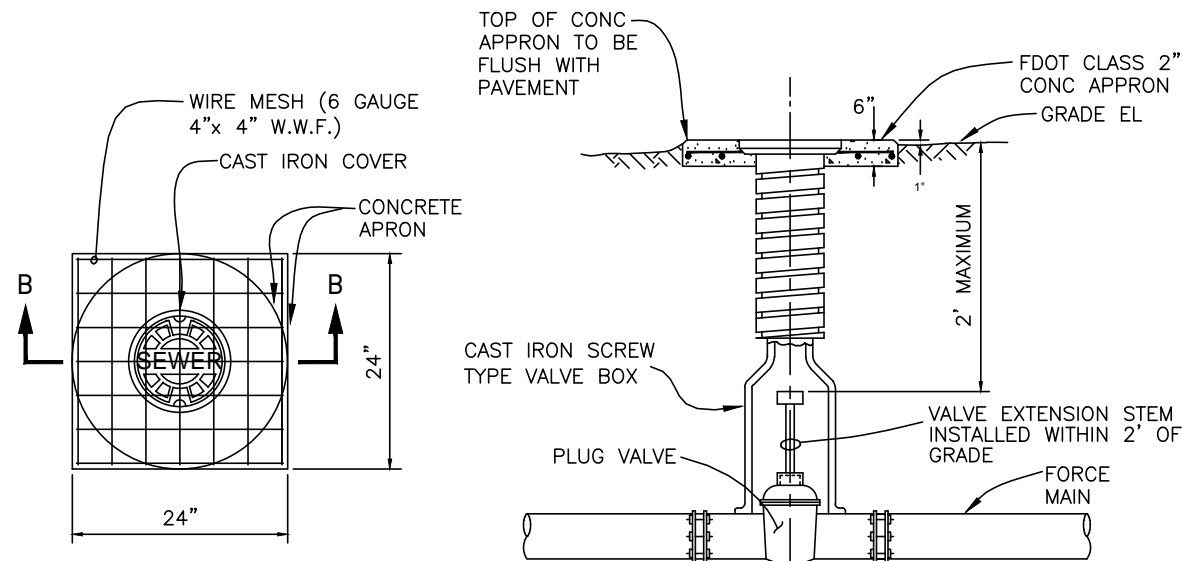
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
 N.T.S.

CITY of TAMPA
 WASTEWATER DEPARTMENT

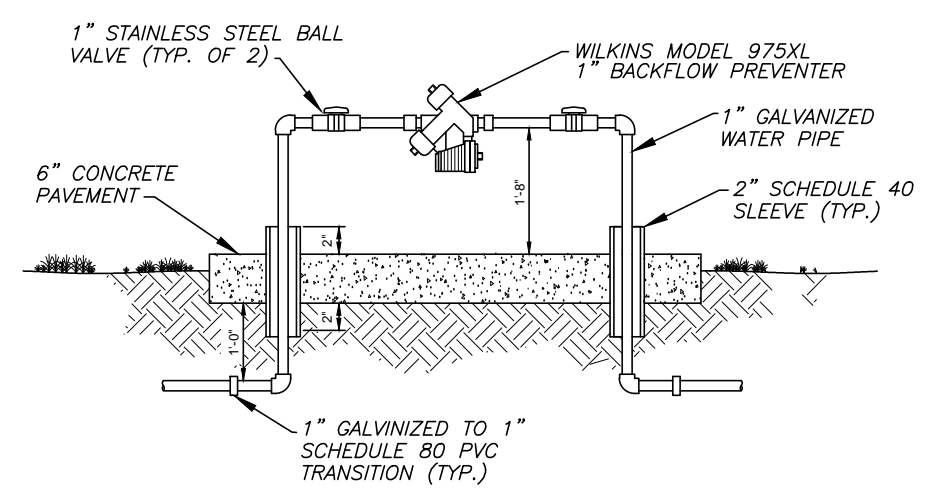
LINEBAUGH PUMPING STATION
 REHABILITATION
 DETAILS (2)

LAWRENCE E. MILLS, P.E. No. 22324
 SHEET NUMBER
 C-17
 FILE: 13-015

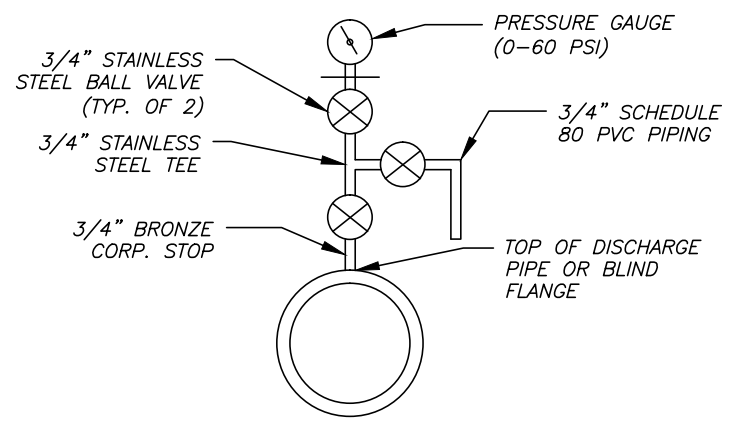


SECTION A-A

VALVE BOX DETAIL
N.T.S.



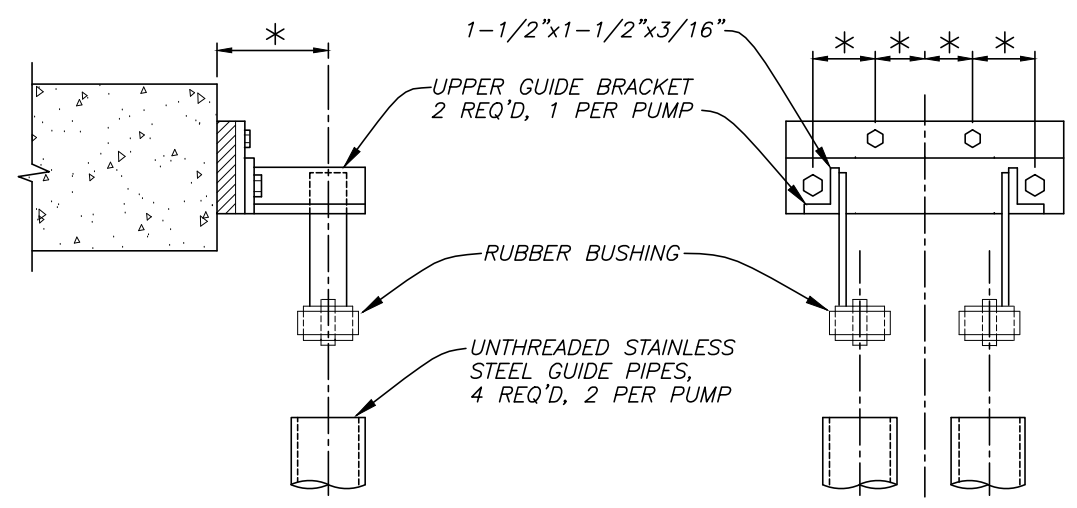
BACKFLOW PREVENTER DETAIL
N.T.S.



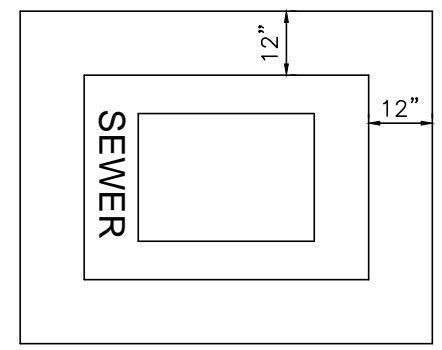
AIR RELEASE AND PRESSURE GAUGE
N.T.S.

CONTRACTOR SHALL TAP AND DRILL ONE 3/4" CORPORATION STOP WITH AIR RELEASE VALVE AND PRESSURE GAUGE ASSEMBLY. PVC PIPE AND FITTINGS (SCH80) SHALL BE PROVIDED TO DIRECT FLOW FROM THE BALL VALVE DOWNWARD TO THE FLOOR DRAIN.

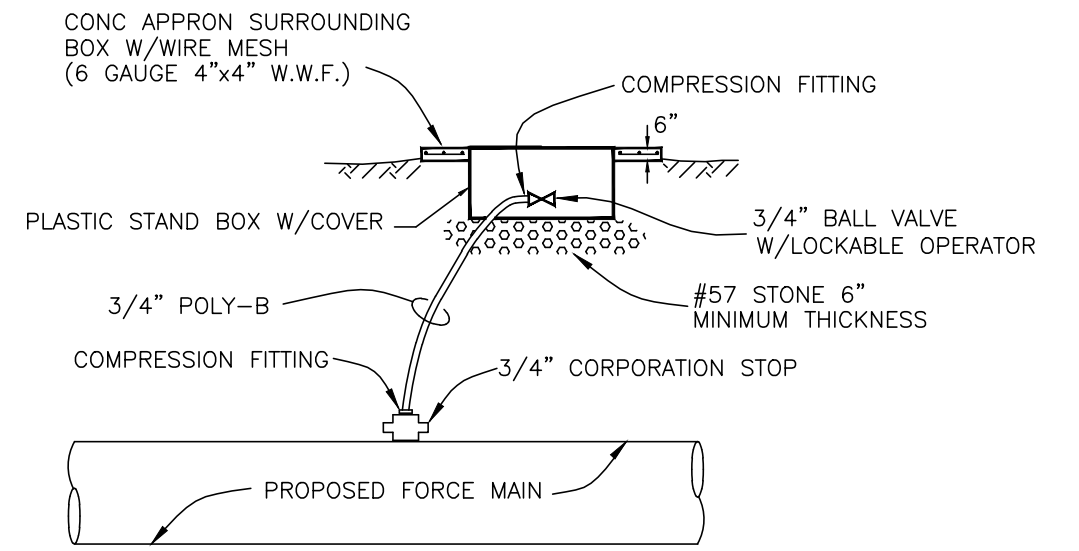
* PER PUMP MANUFACTURER'S RECOMENDATION



GUIDE BRACKET DETAIL (SUPPLIED WITH PUMPS)
N.T.S.



PLAN VIEW



AIR RELEASE VALVE DETAIL
N.T.S.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

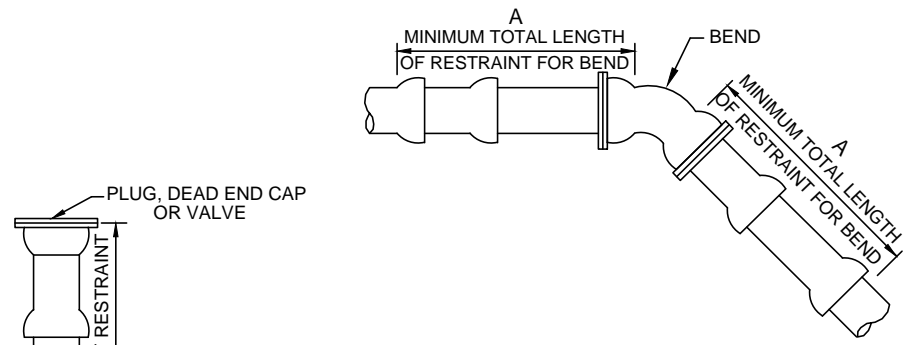
SCALE

N.T.S.

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
DETAILS (3)

SHEET NUMBER	C-18
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



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

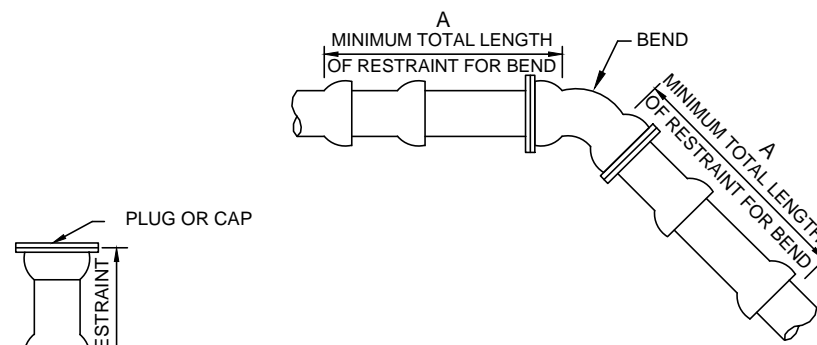
A=MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

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

- NOTES: 1. THIS TABLE IS BASED ON:
 A) MAXIMUM TEST PRESSURE OF 100 psi
 B) LAYING CONDITION CLASS 'C'
 C) POOR SOIL CONDITIONS
 D) HORIZONTAL BENDS ONLY (SEE NOTE 2)
 E) USING PVC
2. RESTRAINED LENGTHS FOR VERTICAL BENDS AND TEES ARE TO BE DETERMINED ON A CASE BY CASE BASIS, AND SPECIFIED ON THE DESIGN PLANS.
3. RESTRAINING DEVICES FOR PVC PIPE SHALL BE BY MEGALUG OR EQUAL, MEETING UNI-B-13.
4. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

FITTING RESTRAINT DETAIL

(AWWA C900/C905 PVC PIPE)

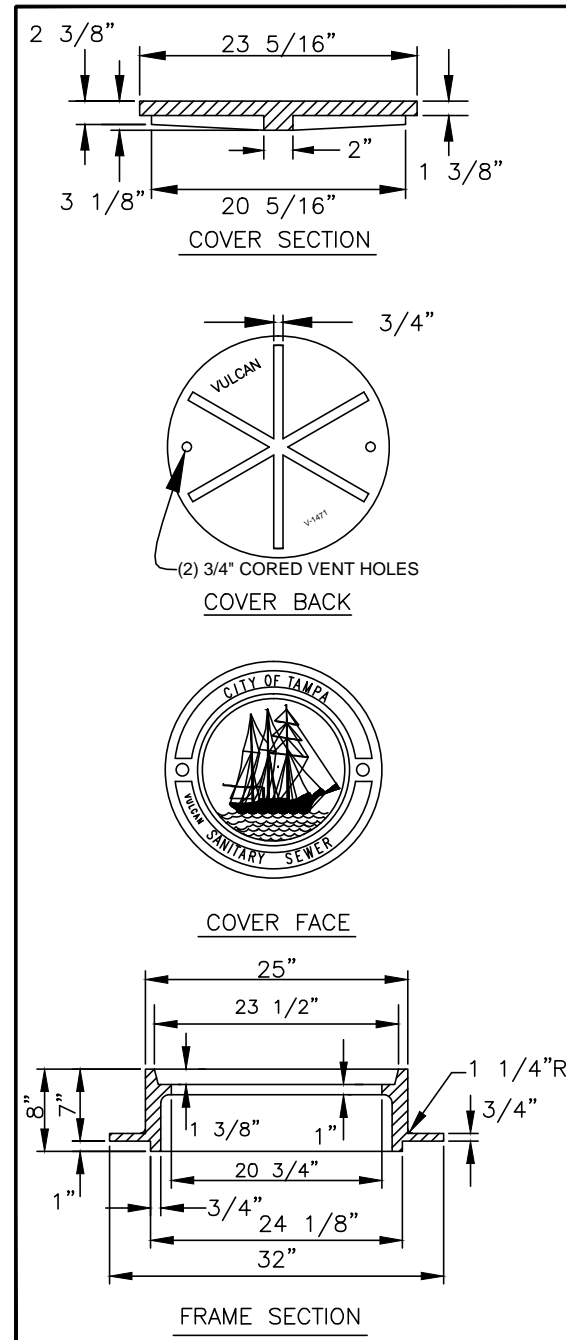


RESTRAIN "A" (LF)		4"	6"	8"	12"	16"	20"	24"	30"	36"
Fitting										
11-1/4'		3	4	6	8	9	10	12	15	17
22-1/2'		6	9	12	16	17	21	25	30	35
45°/Offset		13	18	24	34	36	44	52	62	73
90°		31	44	58	82	87	106	125	151	176
Plug/Cap		55	78	102	143	143	174	204	245	285

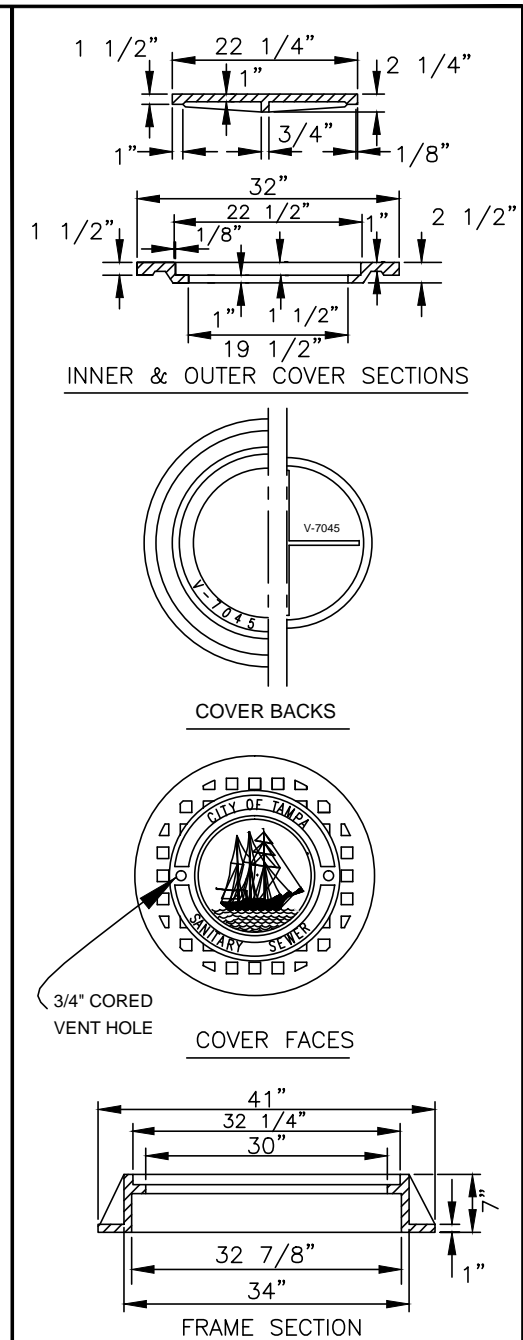
A=Minimum footage of pipe to be restrained.

- NOTES: 1. This table is based on:
 a) maximum test pressure of 190 psi
 b) laying condition type 2 (see Details 2.01 and 2.02)
 c) poor soil conditions
 d) using D.I.P.
 e) 3 feet of cover for 12" and smaller mains;
 4 feet of cover for 16" and larger mains
 f) Horizontal bends only - Engineer to submit calculations for vertical restraints
2. For polywrapped D.I.P., multiply the footage by 1.25
3. For PVC pipe, multiply footage by 1.2.
4. Restrained pipe shall be manufactured restrained pipe, push-on restraints or mechanical joint pipe restrained by Megalug or equivalent.
5. Any additional fittings within the restrained section shall

WATER PIPE RESTRAINT DETAIL



FOR MH'S OF SEWERS 24" OR LESS IN DIAMETER:
 VULCAN FOUNDRY NO. V-1471,
 U.S. FOUNDRY NO. 575-AT, OR EQUAL



FOR MH'S OF SEWERS 27" OR GREATER IN DIAMETER:
 VULCAN FOUNDRY NO. V-7045,
 U.S. FOUNDRY NO. 230-AB-M, OR EQUAL

HEAVY DUTY CAST IRON MANHOLE FRAME & COVER DETAILS

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13-015	No.	DATE	BY	REVISION DESCRIPTION
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14				

SCALE

N.T.S.

CITY of TAMPA
 WASTEWATER DEPARTMENT

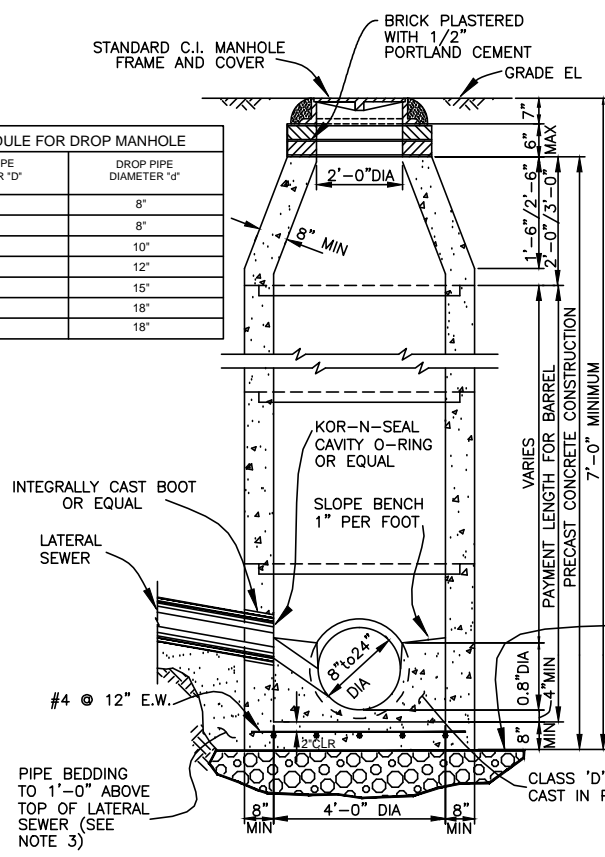
LINEBAUGH PUMPING STATION
 REHABILITATION
 DETAILS (4)

SHEET NUMBER

C-19

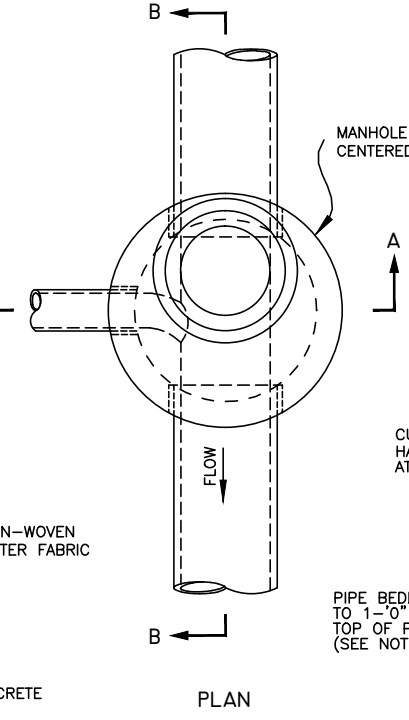
LAWRENCE E. MILLS, P.E. No. 22324 FILE: 13-015

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

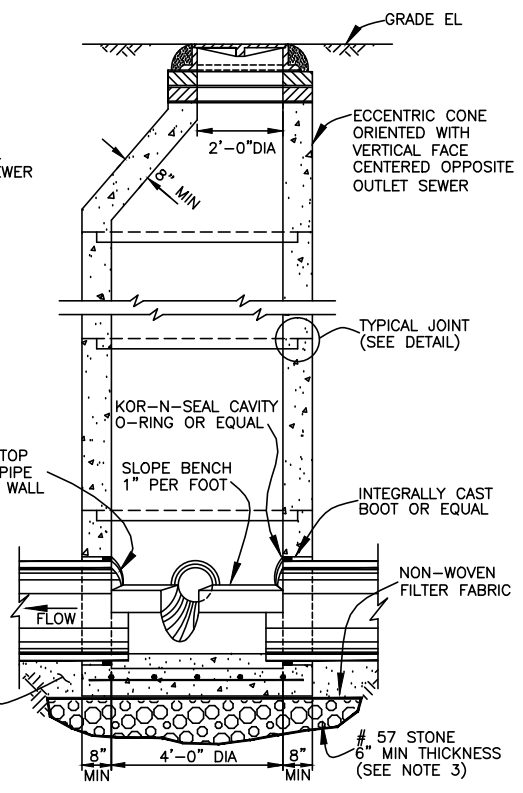


SECTION A-A

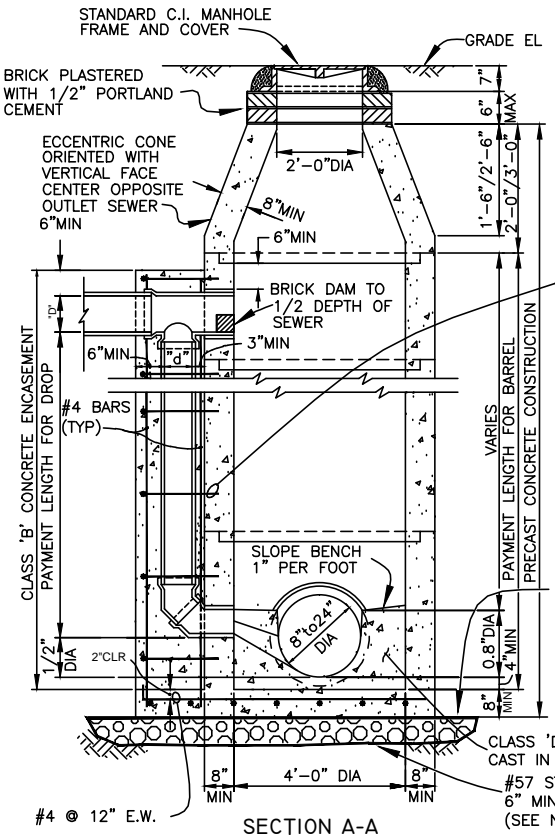
STANDARD MANHOLE - DEEP TYPE
FOR SEWERS 24" OR LESS IN DIAMETER
N.T.S.



PLAN

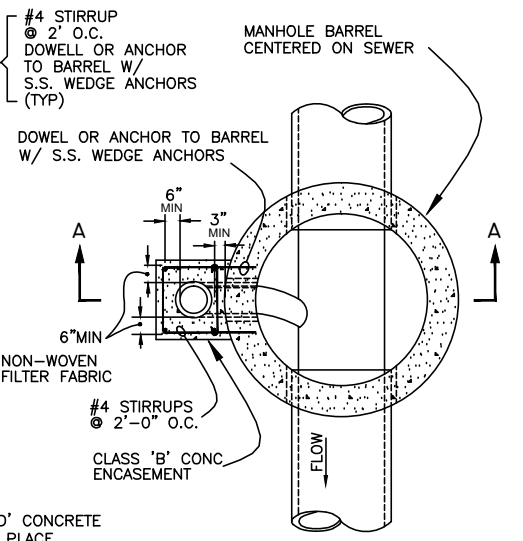


SECTION B-B

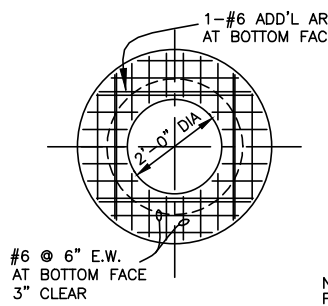


SECTION A-A

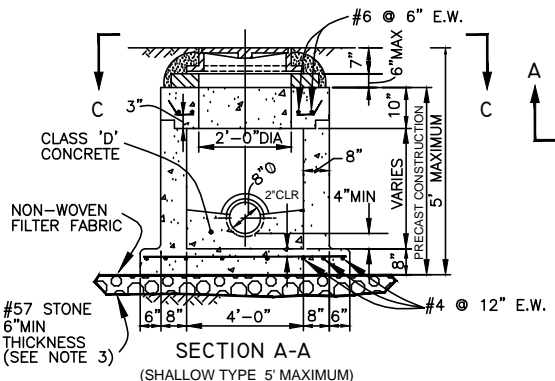
STANDARD DROP MANHOLE
FOR SEWERS 24" OR LESS IN DIAMETER
N.T.S.



PLAN

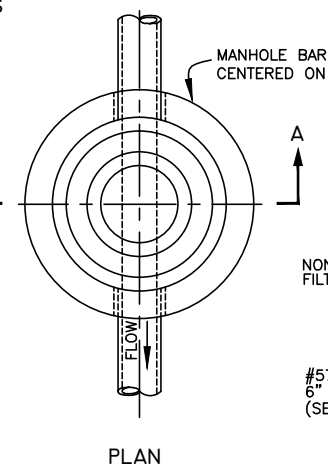


CONCRETE SLAB DETAIL
SECTION C-C

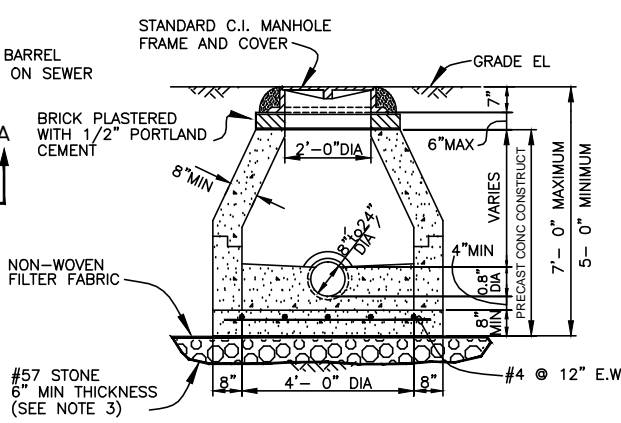


SECTION A-A
(SHALLOW TYPE 5' MAXIMUM)

STANDARD MANHOLE - SHALLOW TYPE
FOR SEWERS 24" OR LESS IN DIAMETER
N.T.S.



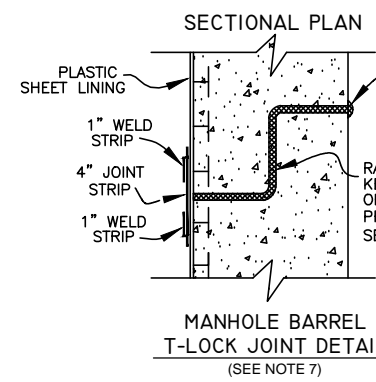
PLAN



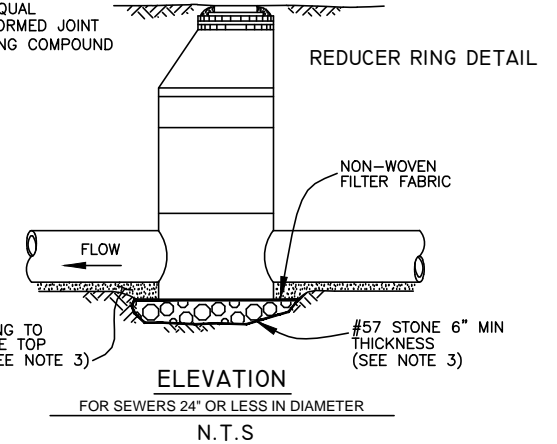
SECTION A-A
5'-0" TO 7'-0" DEEP
(SEE NOTE 4)

NOTES

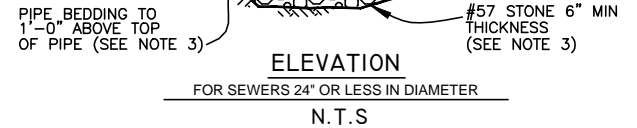
1. REINFORCING STEEL FOR ALL MANHOLES SHALL CONFORM TO ASTM-C478 AND PLACED AS DESCRIBED IN THE SPECIFICATIONS.
2. ALL PIPE STUBS FROM MANHOLES FOR FUTURE CONNECTIONS OR OTHER CONTRACT DIVISIONS SHALL BE PROVIDED WITH WATER TIGHT PLUGS PLACED FROM WITHIN THE MANHOLE.
3. SEE SPECIFICATIONS FOR MATERIALS REQUIREMENTS AND PLACEMENTS AND COMPACTION OF PIPE AND STRUCTURE BEDDING.
4. STANDARD SHALLOW-TYPE MANHOLES WITH DEPTHS BETWEEN A MAXIMUM OF 7'-0" AND A MINIMUM OF 5'-0" MUST HAVE A CONCRETE CONE FOR THE TOP SECTION.
5. ALL MANHOLE JOINTS MUST BE SEALED WITH AN ACCEPTABLE JOINT SEALING COMPOUND REGARDLESS OF WHETHER AN O-RING GASKET IN A PREFORMED GROOVE IS USED.
6. FILTER FABRIC SHALL BE NON-WOVEN FABRIC PER D.O.T. SPECIFICATION SECTIONS 514 AND 985 AND SHALL BE WRAPPED ENTIRELY AROUND THE #57 STONE.
7. PLASTIC SHEET LINER SHALL BE "T-LOCK" BY AMERON INTERNATIONAL OR APPROVED EQUAL.



MANHOLE BARREL
T-LOCK JOINT DETAIL
(SEE NOTE 7)



REDUCER RING DETAIL



ELEVATION
FOR SEWERS 24" OR LESS IN DIAMETER
N.T.S.

MANHOLE SHALL BE "T-LOCK" LINED

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

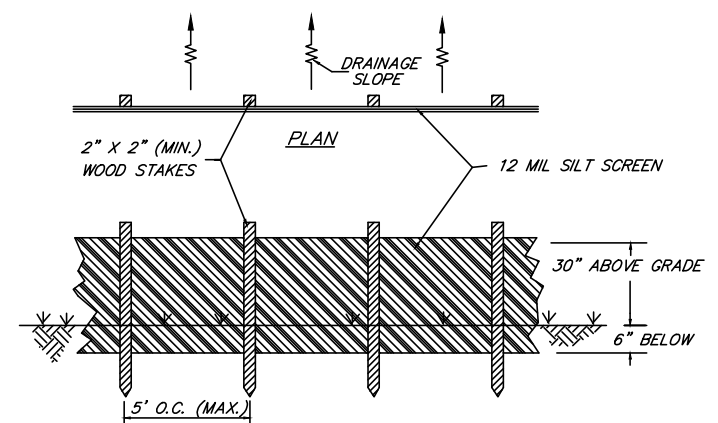
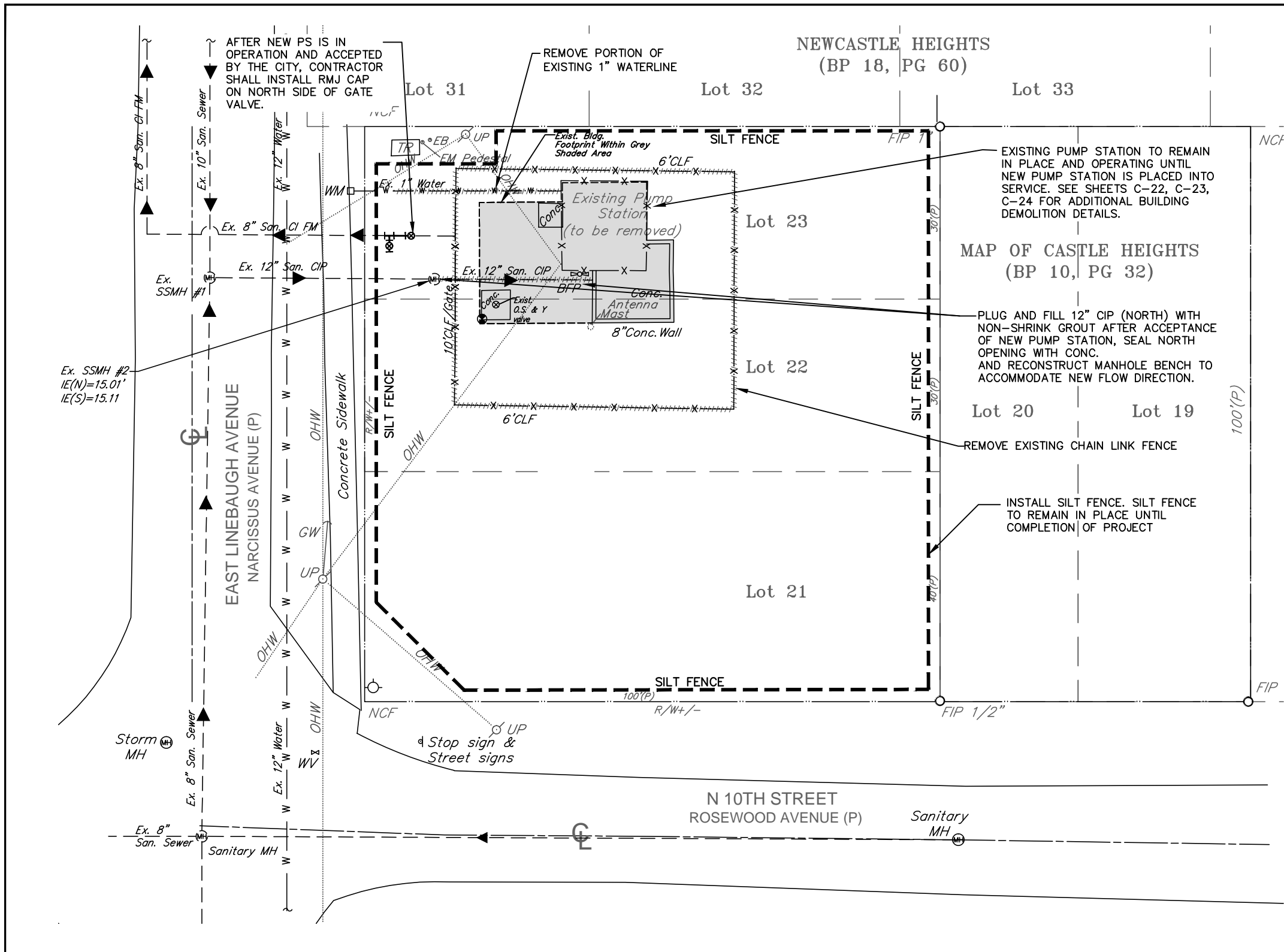
TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015	SCALE	N.T.S.
DESIGNED	LEM		
DRAWN	CVM		
CHECKED	LEM		
DATE	3/17/14	No.	DATE BY REVISION DESCRIPTION

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
MANHOLE DETAILS

SHEET NUMBER	C-20
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



NOTE:
CONTRACTOR TO SET SILT FENCE PRIOR TO THE START OF CONSTRUCTION. SILT FENCE TO REMAIN IN PLACE UNTIL COMPLETION OF PROJECT.

SITE DEMOLITION PLAN
SCALE: 1" = 20'

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

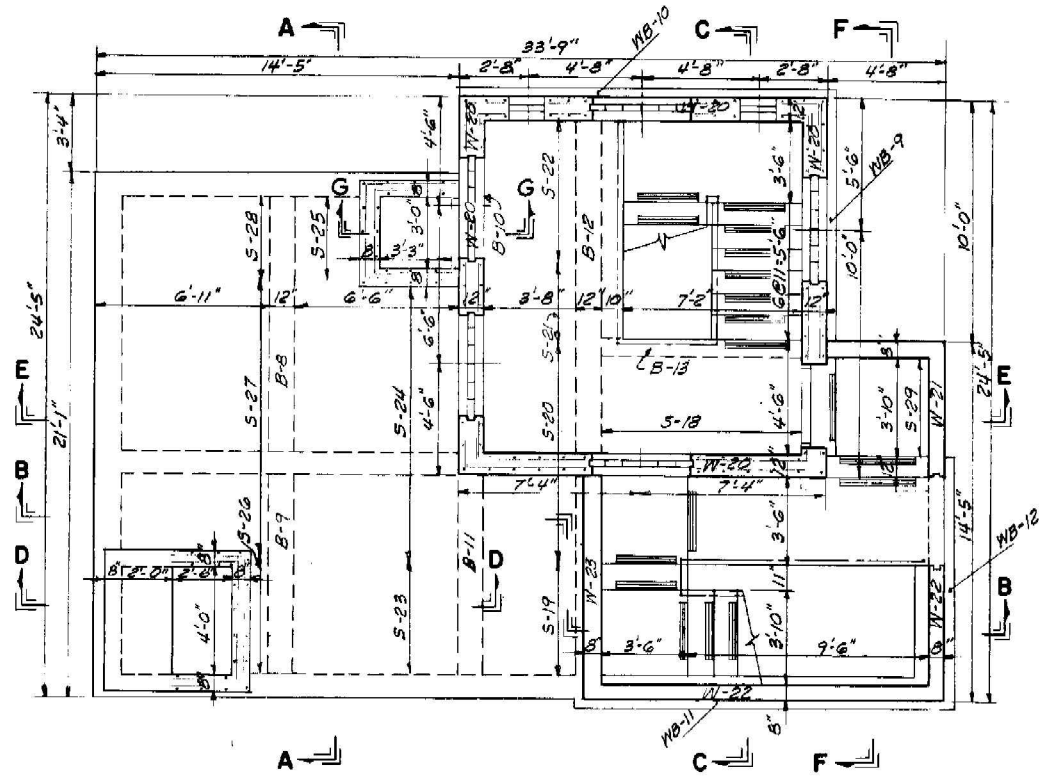
JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
1"=20'

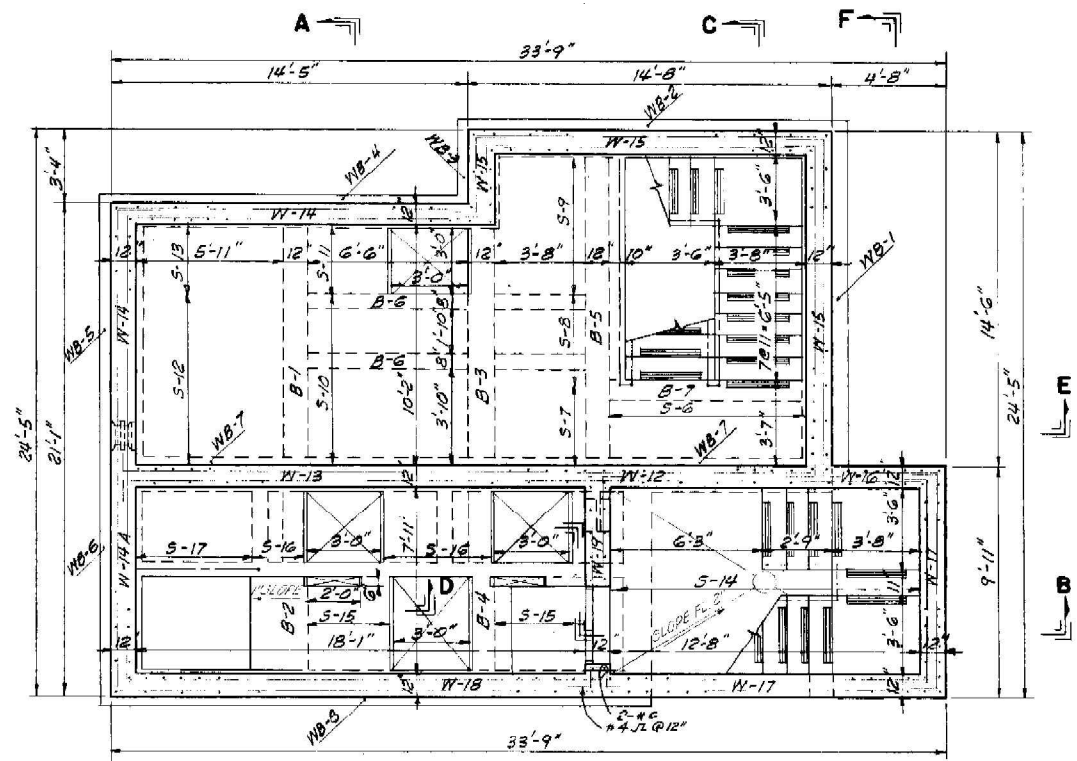
CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
SITE DEMOLITION PLAN

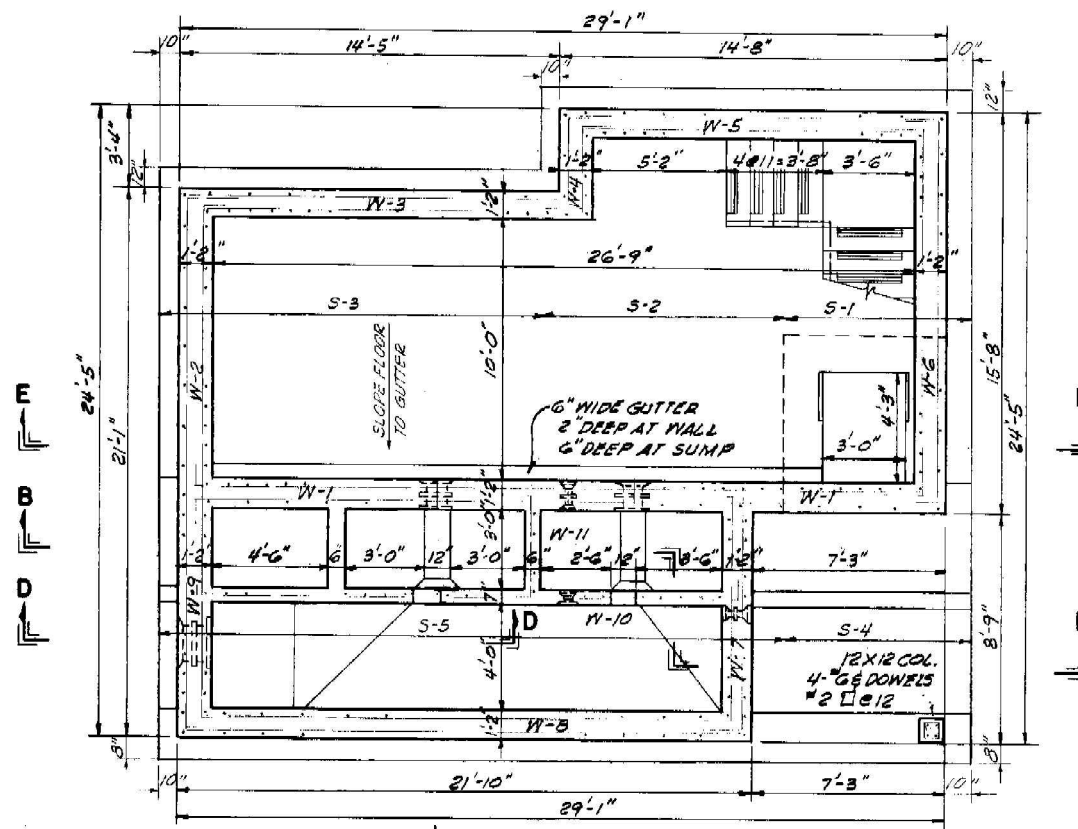
SHEET NUMBER	C-21
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



ENTRANCE FLOOR PLAN
N.T.S.



INTERMEDIATE PLAN
N.T.S.



FOUNDATION PLAN
N.T.S.

NOTES:

1. DEMOLISH ALL ITEMS DOWN TO 4-FT BELOW EXISTING GROUND ELEVATION.
2. FILL REMAINING VOIDS WITH FDOT FLOWABLE FILL
3. MAY USE CONCRETE, MASONRY METAL OR OTHER NON- DEGRABLE MATERIALS AS FILLER IN THE FLOWABLE FILL.
4. BACKFILL WITH CLEAN COMPACTED EARTH FILL TO MATCH EXISTING GROUND ELEVATIONS.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015						
DESIGNED	LEM						
DRAWN	CVM						
CHECKED	LEM						
DATE	3/17/14	No.	DATE	BY	REVISION	DESCRIPTION	

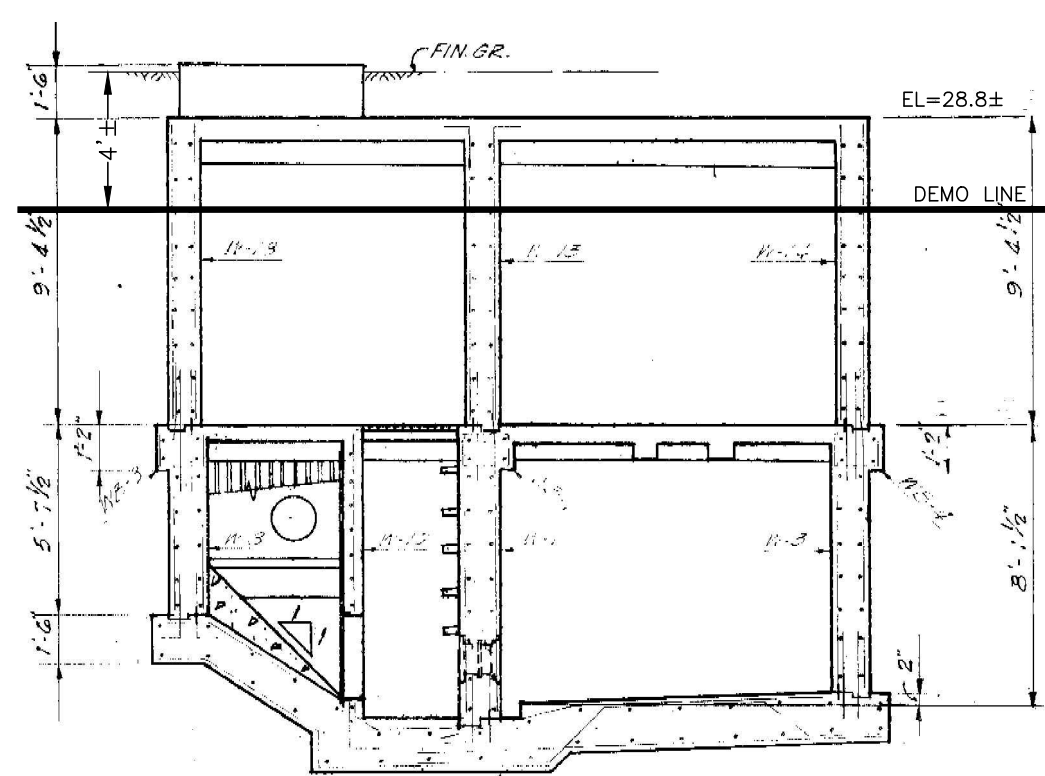
SCALE

NTS

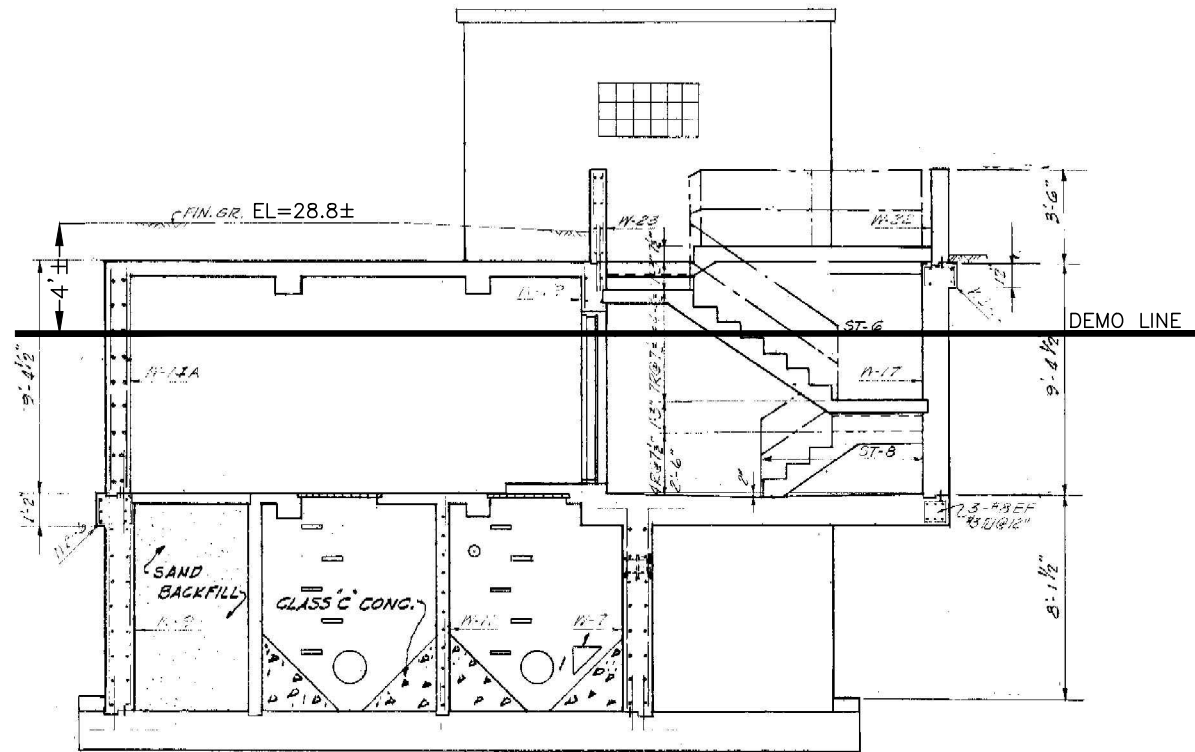
CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
DEMOLITION PLAN VIEWS

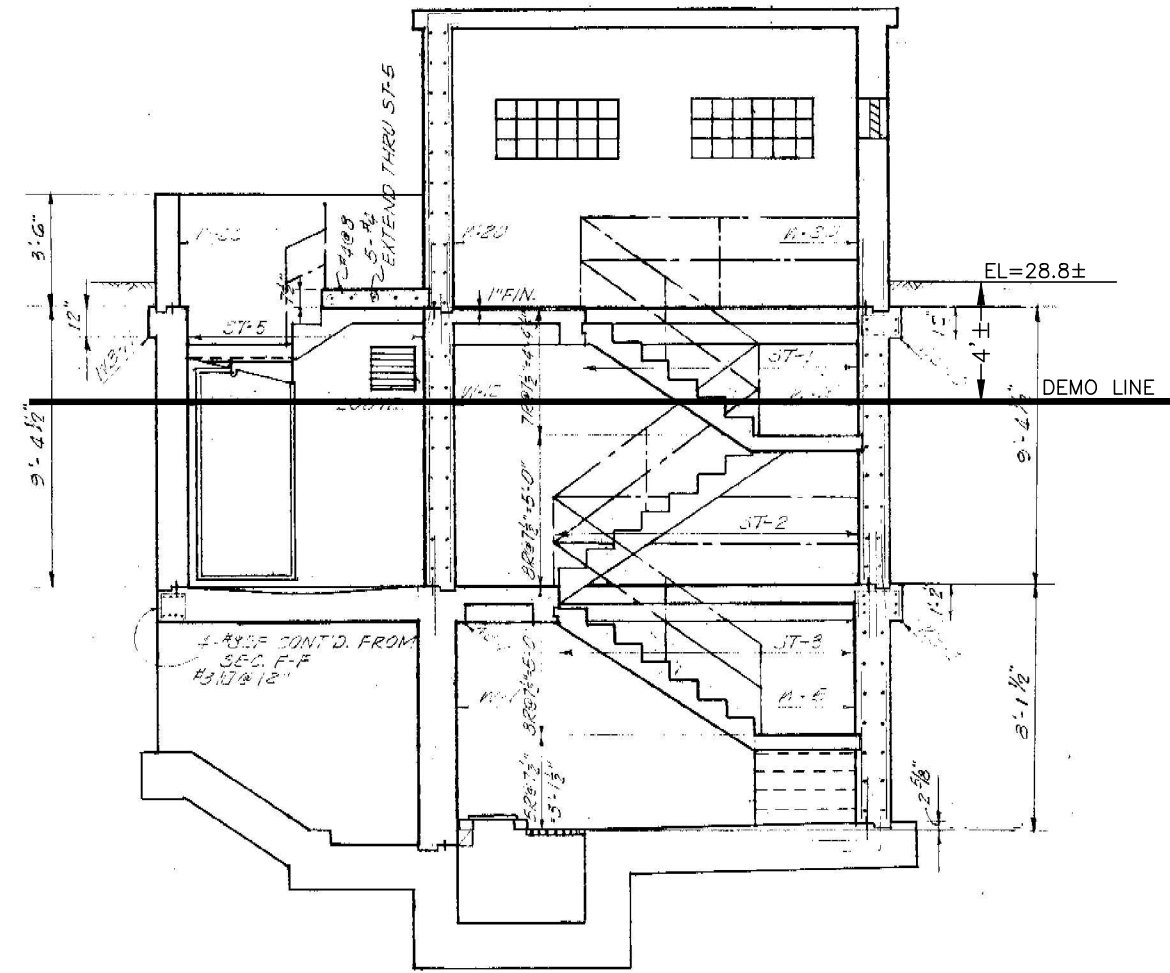
SHEET NUMBER	C-22
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015



DEMOLITION SECTION A-A
N.T.S.



DEMOLITION SECTION B-B
N.T.S.



DEMOLITION SECTION C-C
N.T.S.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015				
DESIGNED	LEM				
DRAWN	CVM				
CHECKED	LEM				
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

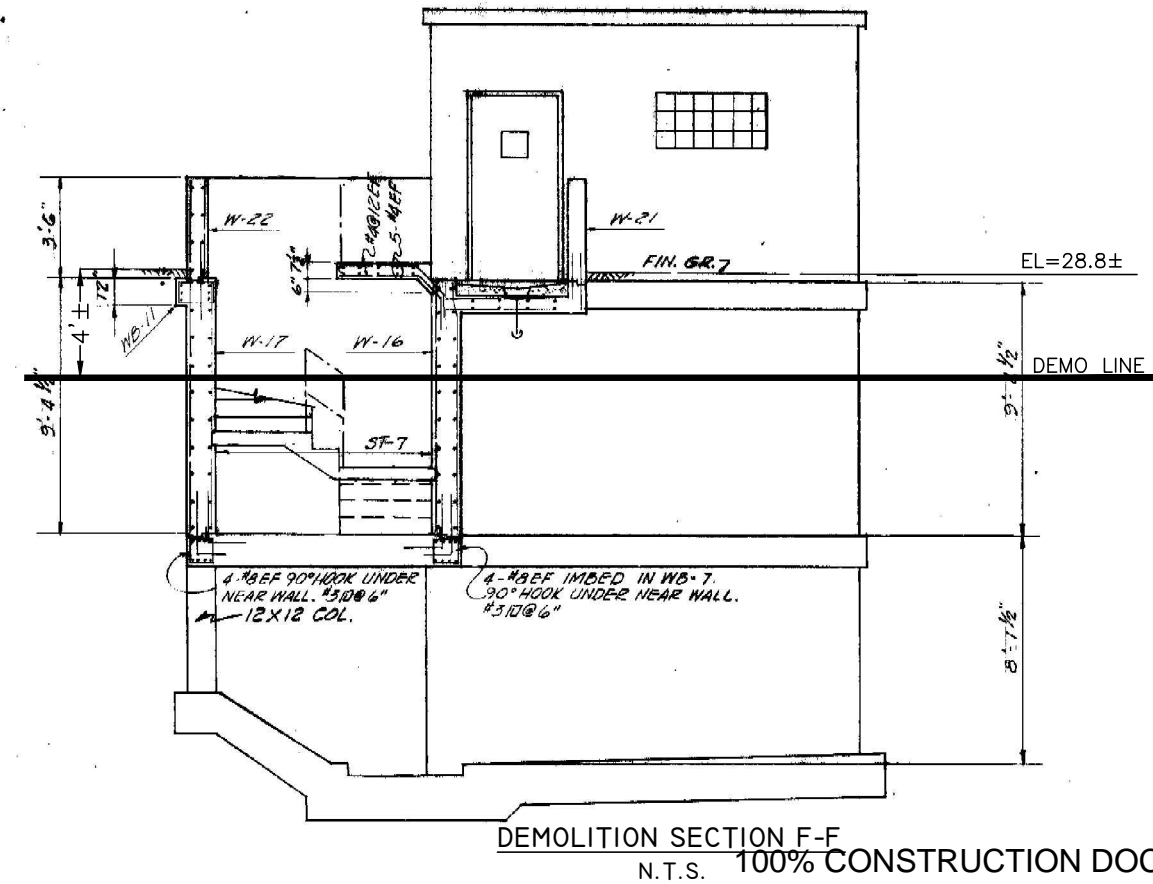
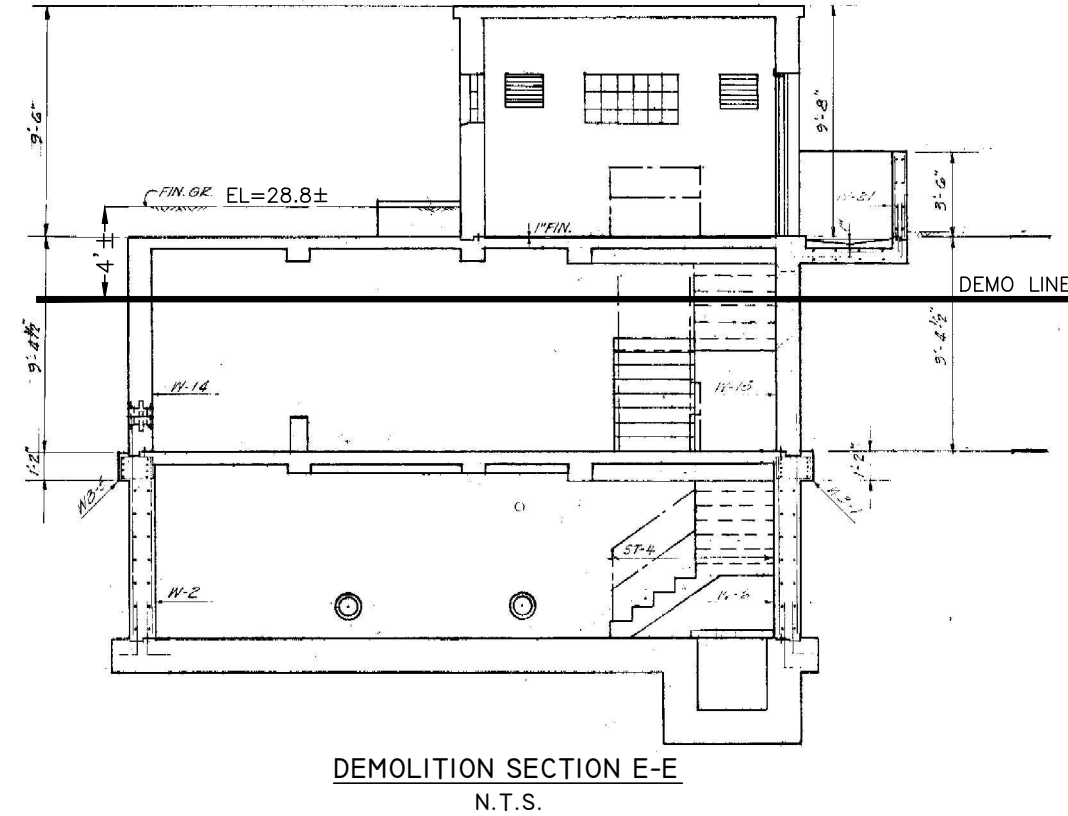
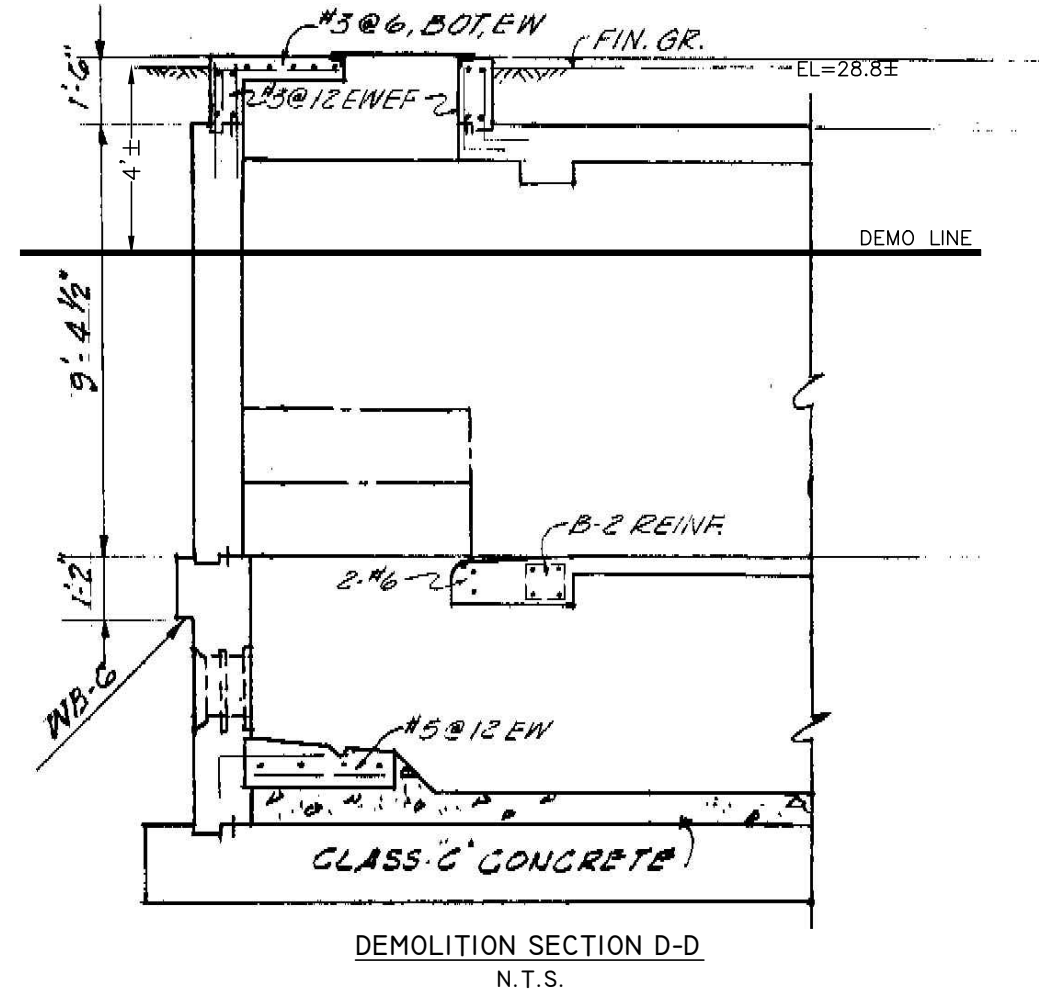
LINEBAUGH PUMPING STATION
REHABILITATION
DEMOLITION SECTION VIEWS

SHEET NUMBER

C-23

LAWRENCE E. MILLS, P.E. No. 22324

FILE: 13-015



MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13-015						
DESIGNED	LEM						
DRAWN	CVM						
CHECKED	LEM						
DATE	3/17/14	No.	DATE	BY	REVISION DESCRIPTION		

SCALE

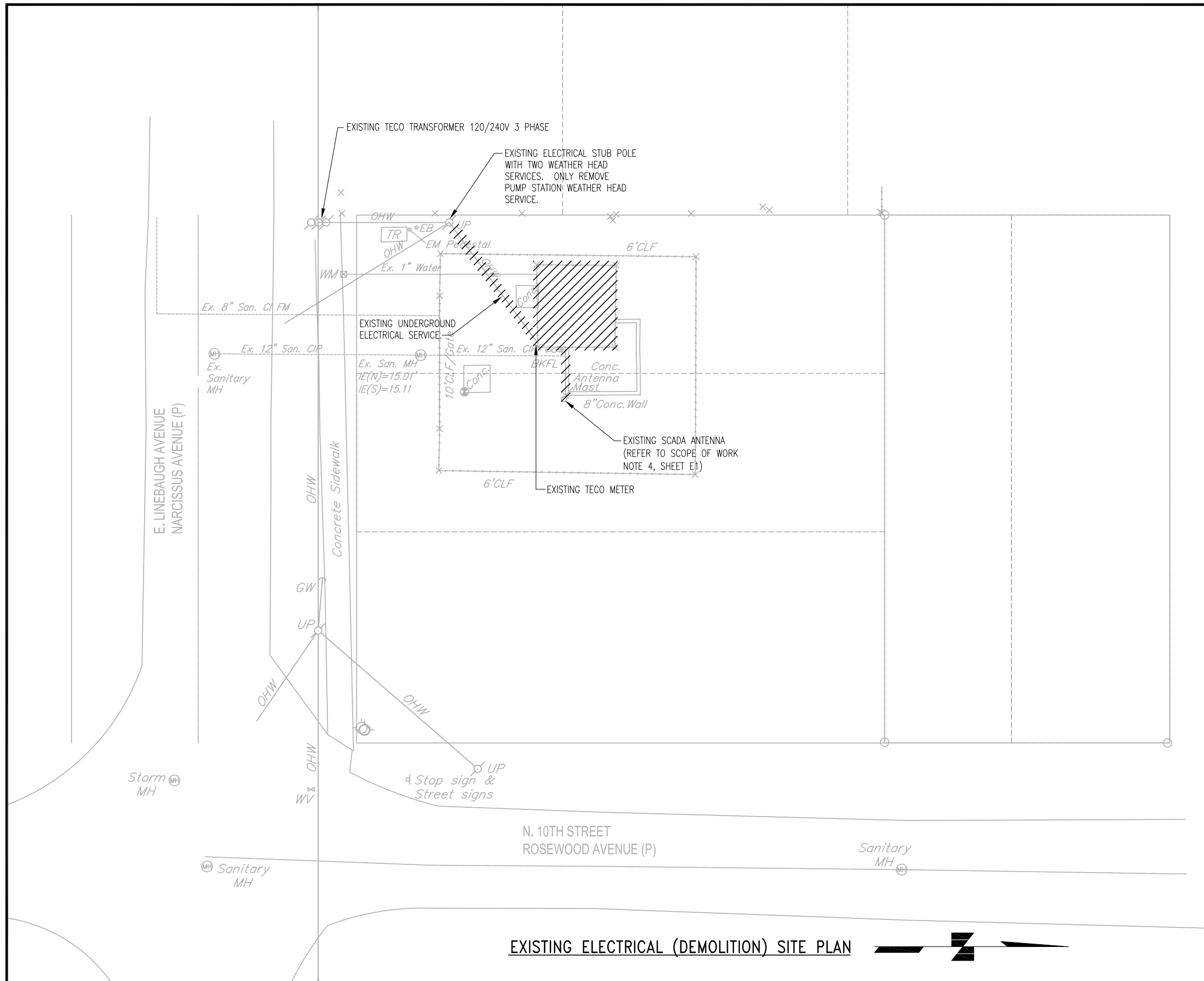
NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
DEMOLITION SECTION VIEWS

SHEET NUMBER	C-24
LAWRENCE E. MILLS, P.E. No. 22324	FILE: 13-015

100% CONSTRUCTION DOCUMENTS -03/24/14



GENERAL NOTE

- 1) DEMOLITION SHALL NOT START UNTIL NEW PUMPING STATION IS IN OPERATION.
- 2) CONTRACTOR SHALL SALVAGE EXISTING DCR SCADA AND WET WELL LIGHTS FOR THE CITY OF TAMPA.

HATCHED AREAS ON THIS SHEET INDICATE ITEMS TO BE REMOVED.

EXISTING ELECTRICAL (DEMOLITION) SITE PLAN



100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

TRICON
 CONSULTING ENGINEERS
 777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

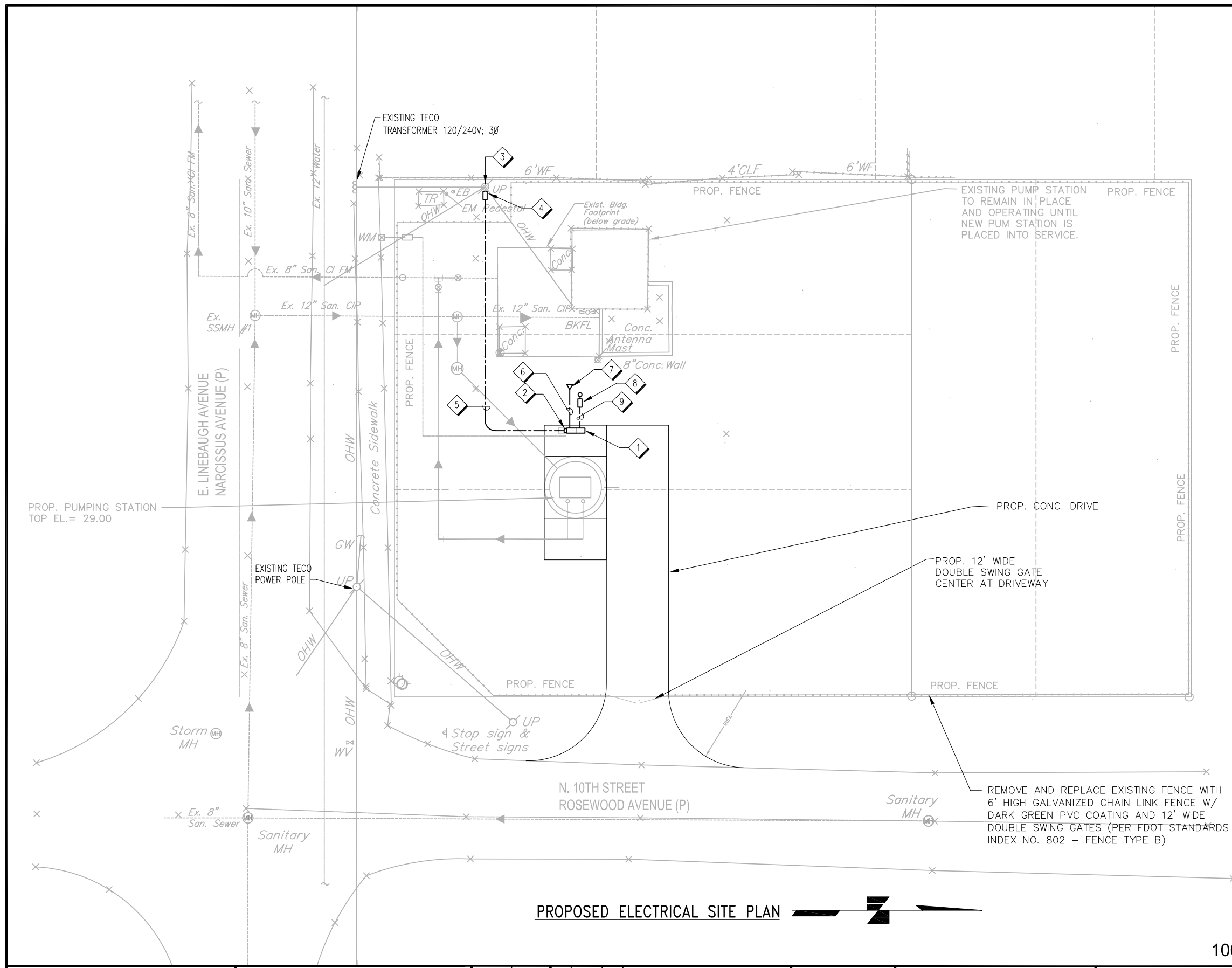
SCALE
 SCALE: 1" = 20'-0"

CITY of TAMPA
 WASTEWATER DEPARTMENT

**LINEBAUGH PUMPING STATION
 REHABILITATION**
 EXISTING ELECTRICAL (DEMOLITION) SITE PLAN

DENNIS VANN P.E. No. 57620

SHEET NUMBER
ED-1
 FILE: 1713060



SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT-CIRCUIT CURRENT AT 240V UTILITY SERVICE IS 9,758 AMPERES.
AS PER (TECO REPRESENTATIVE);

TECO CONTACT:
ALLEN ROMAN (813) 275-3080

UTILITY SERVICE:
120/240V, 3PH, 1-10 & 1-15 KVA POLE MOUNTED TRANSFORMER(S) AVAILABLE FAULT CURRENT AT SECONDARY SIDE OF TECO'S TRANSFORMER: 9,758 AMP RMS SYM. SERVICE CONDUCTOR LENGTH: 70 FEET SERVICE CONDUCTOR SIZE: #3 THWN CU.

ISCA AT THE CONTROL PANEL:

$$ISCA = \left[\frac{1}{1 + \left[\frac{(1.73)(70)(9,758)}{(3860)(240)} \right]} \right] (9,758)$$

ISCA = 4,285 AMPS RMS SYM.

- NOTES**
- 1 PROVIDE CONTROL CABINET TO MEET THE CITY OF TAMPA STANDARDS, REFER TO SHEETS E2-E15.
 - 2 PROVIDE TECO METER, REFER TO DETAILS ON SHEETS E12-E15.
 - 3 EXISTING ELECTRICAL STUB POLE WITH TWO WEATHER HEAD SERVICES.
 - 4 PROVIDE TECO HANDHOLE AT BASE OF POWER POLE.
 - 5 PROVIDE 3 #3 THWN CU AND #3 THWN CU NEUTRAL IN 2" CONDUIT RUN UNDERGROUND, WRAP PROPOSED UNDERGROUND WITH DETECTABLE WARNING TAPE.
 - 6 PROVIDE 1" CONDUIT FOR TELEMETRY RADIO ANTENNA COAX CABLE, REFER TO DETAILS AND NOTES ON SHEETS E2 & E16.
 - 7 PROPOSED ANTENNA LOCATION, VERIFY EXACT LOCATION WITH THE CITY OF TAMPA. REFER TO DETAIL ON SHEET E16.
 - 8 PROVIDE NEW LED LIGHTING FIXTURE MOUNTED TO CONCRETE POLE, REFER TO SHEET E-17.
 - 9 PROVIDE 2 #12 THWN CU AND #12 THWN CU GROUND IN 3/4" CONDUIT, RUN UNDERGROUND.

PROPOSED ELECTRICAL SITE PLAN

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

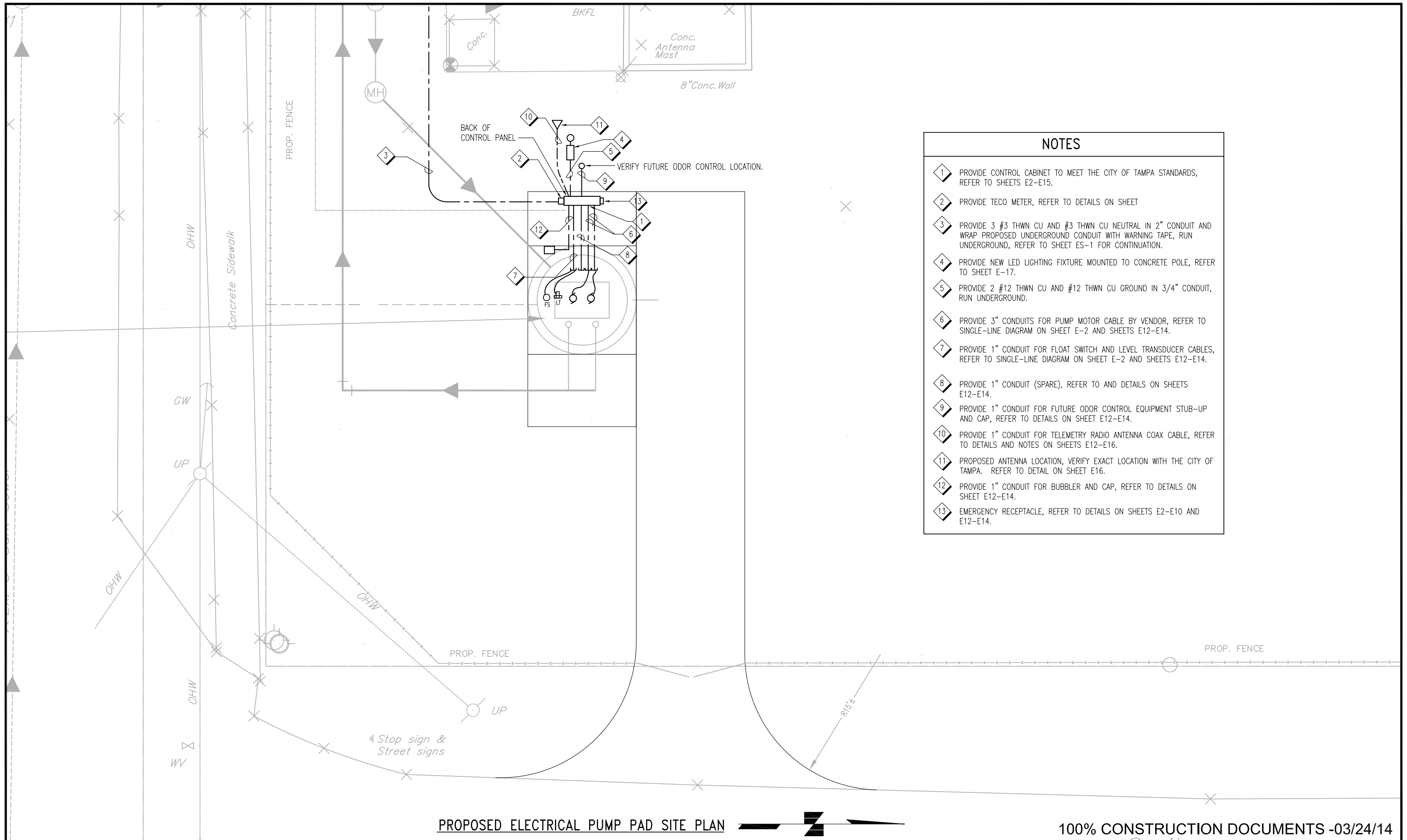
SCALE
SCALE: 1" = 20'-0"

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PROPOSED ELECTRICAL SITE PLAN

DENNIS VANN P.E. No. 57620

SHEET NUMBER
ES-1
FILE: 1713060



- ### NOTES
- 1 PROVIDE CONTROL CABINET TO MEET THE CITY OF TAMPA STANDARDS, REFER TO SHEETS E2-E15.
 - 2 PROVIDE TECO METER, REFER TO DETAILS ON SHEET
 - 3 PROVIDE 3 #3 THWN CU AND #3 THWN CU NEUTRAL IN 2" CONDUIT AND WRAP PROPOSED UNDERGROUND CONDUIT WITH WARNING TAPE, RUN UNDERGROUND, REFER TO SHEET ES-1 FOR CONTINUATION.
 - 4 PROVIDE NEW LED LIGHTING FIXTURE MOUNTED TO CONCRETE POLE, REFER TO SHEET E-17.
 - 5 PROVIDE 2 #12 THWN CU AND #12 THWN CU GROUND IN 3/4" CONDUIT, RUN UNDERGROUND.
 - 6 PROVIDE 3" CONDUITS FOR PUMP MOTOR CABLE BY VENDOR, REFER TO SINGLE-LINE DIAGRAM ON SHEET E-2 AND SHEETS E12-E14.
 - 7 PROVIDE 1" CONDUIT FOR FLOAT SWITCH AND LEVEL TRANSDUCER CABLES, REFER TO SINGLE-LINE DIAGRAM ON SHEET E-2 AND SHEETS E12-E14.
 - 8 PROVIDE 1" CONDUIT (SPARE), REFER TO AND DETAILS ON SHEETS E12-E14.
 - 9 PROVIDE 1" CONDUIT FOR FUTURE ODOR CONTROL EQUIPMENT STUB-UP AND CAP, REFER TO DETAILS ON SHEET E12-E14.
 - 10 PROVIDE 1" CONDUIT FOR TELEMETRY RADIO ANTENNA COAX CABLE, REFER TO DETAILS AND NOTES ON SHEETS E12-E16.
 - 11 PROPOSED ANTENNA LOCATION, VERIFY EXACT LOCATION WITH THE CITY OF TAMPA. REFER TO DETAIL ON SHEET E16.
 - 12 PROVIDE 1" CONDUIT FOR BUBBLER AND CAP, REFER TO DETAILS ON SHEET E12-E14.
 - 13 EMERGENCY RECEPTACLE, REFER TO DETAILS ON SHEETS E2-E10 AND E12-E14.

PROPOSED ELECTRICAL PUMP PAD SITE PLAN

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869

TRICON
 CONSULTING ENGINEERS
 777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE
 SCALE: 1" = 10'-0"

CITY of TAMPA
 WASTEWATER DEPARTMENT

**LINEBAUGH PUMPING STATION
 REHABILITATION**
 PROPOSED ELECTRICAL PUMP PAD SITE PLAN

SHEET NUMBER	ES-2
DENNIS VANN P.E. No. 57620	FILE: 1713060

GENERAL NOTES

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING IN CONSTRUCTION.
2. ALL CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. WITH THWN INSULATION, UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
4. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
5. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTION PRIOR TO COMMENCING CONSTRUCTION.
6. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.
7. ALL THREADED CONNECTIONS SHALL BE COATED WITH COPPER SHIELD ANTI-SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & S) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED WITH NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MINIMUM EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT WITH POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS AND TAPE WITH VINYL ELECTRICAL TYPE (SCOTCH 33+) POWER CONDUCTORS.
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS, NUTS ETC.) SHALL BE 316-STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED, WITH A TRANSITION FROM PVC TO ALUMINUM IN THE VERTICAL RUN AT LEAST FIVE FEET PRIOR TO EMERGENCE. ALL ALUMINUM SURFACES IN CONTACT WITH SOIL, CONCRETE, AND OTHER INCOMPATIBLE MATERIAL SHALL BE COATED WITH TWO COATS OF BITUMASTIC OR OTHER APPROVED INSULATING MATERIAL.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR IN WASHROOM AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316-STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OF THE EQUIVALENT OF FOUR-QUARTER BENDS (360° TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.

SCOPE OF WORK

1. THE CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE REQUIREMENTS WITH TAMPA ELECTRIC COMPANY (TECO). THE CITY WILL MAKE PRELIMINARY ARRANGEMENTS WITH TECO AND COMPENSATE THE UTILITY DIRECTLY FOR ANY CONTRIBUTION IN AID OF CONSTRUCTION (CIAC) REQUIRED FOR TECO TO INSTALL A HAND HOLE AT THE BASE OF THE EXISTING STUB POLE. THE EXISTING 120/240 VAC, 3-PHASE, 4-WIRE, DELTA SERVICE SHALL REMAIN. AFTER NEW PUMPING STATION IS COMPLETED AND ACCEPTED, THE EXISTING METER SOCKET, LIGHTNING ARRESTOR, AND SERVICE RISER/WEATHERHEAD SHALL BE REMOVED. THE FOLLOWING EQUIPMENT SHALL BE PROVIDED AND INSTALLED; ELECTRICAL METER SOCKET, LIGHTNING ARRESTOR, AND GROUNDING AS SHOWN ON PLANS. PROVIDE AND INSTALL UNDERGROUND CONDUIT/CONDUCTORS EXTENDING FROM THE PROPOSED TECO HAND HOLE TO THE PROPOSED METER.
2. COORDINATE REMOVAL OF THE OLD WEATHER HEAD SERVICE RISER, POLE SHALL REMAIN AS SHOWN ON PLANS.
3. DISCONNECT AND REMOVE THE EXISTING POWER CONTROL CENTER (PCC), DISC. SWITCH, MOTORS, LIGHTING AND VENTILATION EQUIPMENT MOUNTED INSIDE THE EXISTING PUMP STATION.
4. CAREFULLY REMOVE THE EXISTING DCR SCADA RTU CABINET MOUNTED ON ANTENNA. DELIVER THIS RTU PACKAGE TO THE CITY TO MAINTENANCE INVENTORY.
5. ANY SALVAGEABLE MATERIALS, AS DETERMINED BY THE CITY OF TAMPA ENGINEER, SHALL BE DELIVERED, BY THE CONTRACTOR, TO THE HOWARD F. CURRENT AWT. PLANT. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL OTHER REMOVED EQUIPMENT.
6. PREPARE THE SITE FOR THE INSTALLATION OF THE PROPOSED PUMP CONTROLS/SCADA/RADIO (PCSR) ENCLOSURE.
7. PROVIDE AND INSTALL A NEW DUPLEX PUMP CONTROL PANEL. THE CONTROL PANEL SHALL CONTAIN CONTROL COMPONENTS, INDICATOR LIGHTS, CIRCUIT BREAKERS, AND MOTOR STARTERS AS SHOWN ON THE PLANS AND DETAILED IN THE SPECIFICATIONS.
8. RELOCATE EXISTING, OR PROVIDE AND INSTALL NEW, SCADA ANTENNA/ MAST AS SHOWN OR REQUIRED.
9. CALIBRATE AND ADJUST SETPOINTS AND ALL SENSING DEVICES, ALARM DEVICES, AND TIMERS. CALIBRATIONS AND SETPOINTS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
10. PROVIDE AND INSTALL ALL NECESSARY CONDUITS AND CONDUCTORS AS SHOWN ON THE PLANS, UNLESS NOTED OTHERWISE.
11. FURNISH AND INSTALL A JUNCTION BOX CONSTRUCTED OF SHEET ALUMINUM WITH LOUVERED OPENINGS ON A CONCRETE PEDESTAL, AS SHOWN ON THE PLANS.
12. PROVIDE FOR PROPER GROUNDING AS SHOWN, SPECIFIED, AND REQUIRED.
13. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE ADOPTED BY THE STATE OF FLORIDA AND CHAPTER 5 OF THE CITY OF TAMPA CODE.

PUMP MOTOR DATA

MAKE: ITT
 MODEL: NP3127.185
 HP: 10
 240 V, 3 PHASE, 25.0 FLA
 TOTAL PUMP LOAD: 50 AMPS, 20.8 KVA

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13060						
DESIGNED	DEV						
DRAWN	EAK						
CHECKED	TDT						
DATE	03/24/14	No.	DATE	BY	REVISION	DESCRIPTION	

SCALE

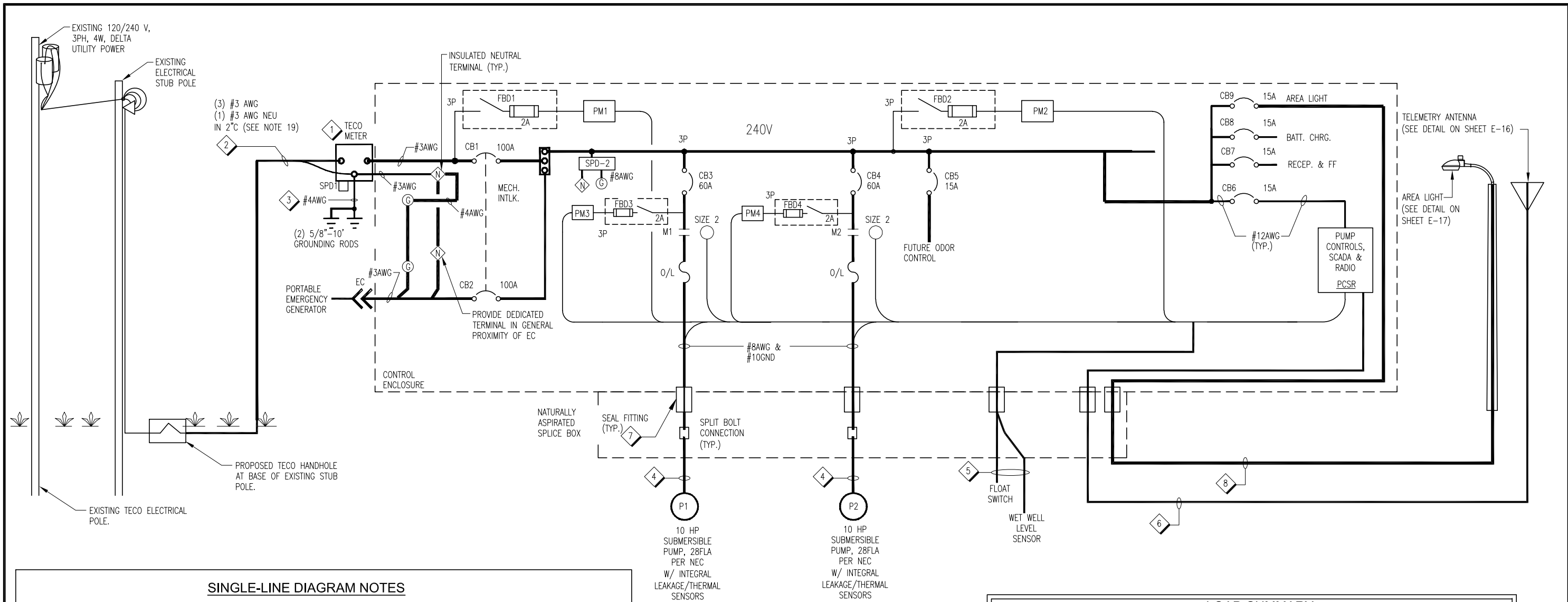
NTS

CITY of TAMPA
 WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 GENERAL NOTES AND SCOPE OF ELECTRICAL WORK

DENNIS VANN P.E. No. 57620
 FILE: 1713060

SHEET NUMBER
 E-1



SINGLE-LINE DIAGRAM NOTES

- 1 PROVIDE 100 AMP FEED-THROUGH METER SOCKET/CAN, COORDINATE REQUIREMENTS WITH TECO. REFER TO DETAILS ON SHEET E-12 - E-14.
- 2 PROVIDE 3 #3 THWN CU AND #3 THWN CU NEUTRAL IN 2" CONDUIT, REFER TO DETAILS ON SHEET E-12 - E-14.
- 3 PROVIDE #4 CU BARE GROUND CONDUCTOR TO METALLIC COLD WATER PIPE AND MINIMUM TWO 3/4" DIAMETER X 10' COPPER CLAD ROD MINIMUM 6' APART, REFER TO DETAILS ON SHEET E-12.
- 4 SUBMERSIBLE PUMP POWER CABLE: 3 #8 CU + #10 GR. POWER; 5 #12 CU (TEMP AND SEAL) CONTROL IN 3" CONDUIT, CABLE BY PUMP VENDOR. REFER TO DETAILS ON SHEET E12 - E14.
- 5 PROVIDE 1" CONDUIT FOR FLOAT SWITCH AND LEVEL SENSOR CABLES.
- 6 PROVIDE 1" CONDUIT FOR NEW COAX CABLE, REFER TO DETAIL ON SHEET E16.
- 7 PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E-12 - E-14.
- 8 PROVIDE 2 #12 THWN CU + 12 THWN CU GR IN 3/4" CONDUIT TO AREA LIGHT, REFER TO DETAIL ON SHEET E-17.

SINGLE-LINE DIAGRAM

NOT TO SCALE

LOAD SUMMARY

240 VAC, 3PH, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS		
			L1	L2	L3
PUMP #1	11.6 KVA	11.6 KVA	28.0 A	28.0 A	28.0 A
PUMP #2	11.6 KVA	11.6 KVA	28.0 A	28.0 A	28.0 A
CONTROLS	2.0 KVA	2.0 KVA	8.3 A	0.0 A	8.3 A
ODOR CONTROL (FUTURE)	0.7 KVA	0.7 KVA	1.7 A	1.7 A	1.7 A
TOTAL	25.9 KVA	25.9 KVA	66.0 A	57.7 A	66.0 A

SEE NOTES ON SHEET E-11

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060					
DESIGNED	DEV					
DRAWN	EAK					
CHECKED	TDT					
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION	

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ONE LINE DIAGRAM

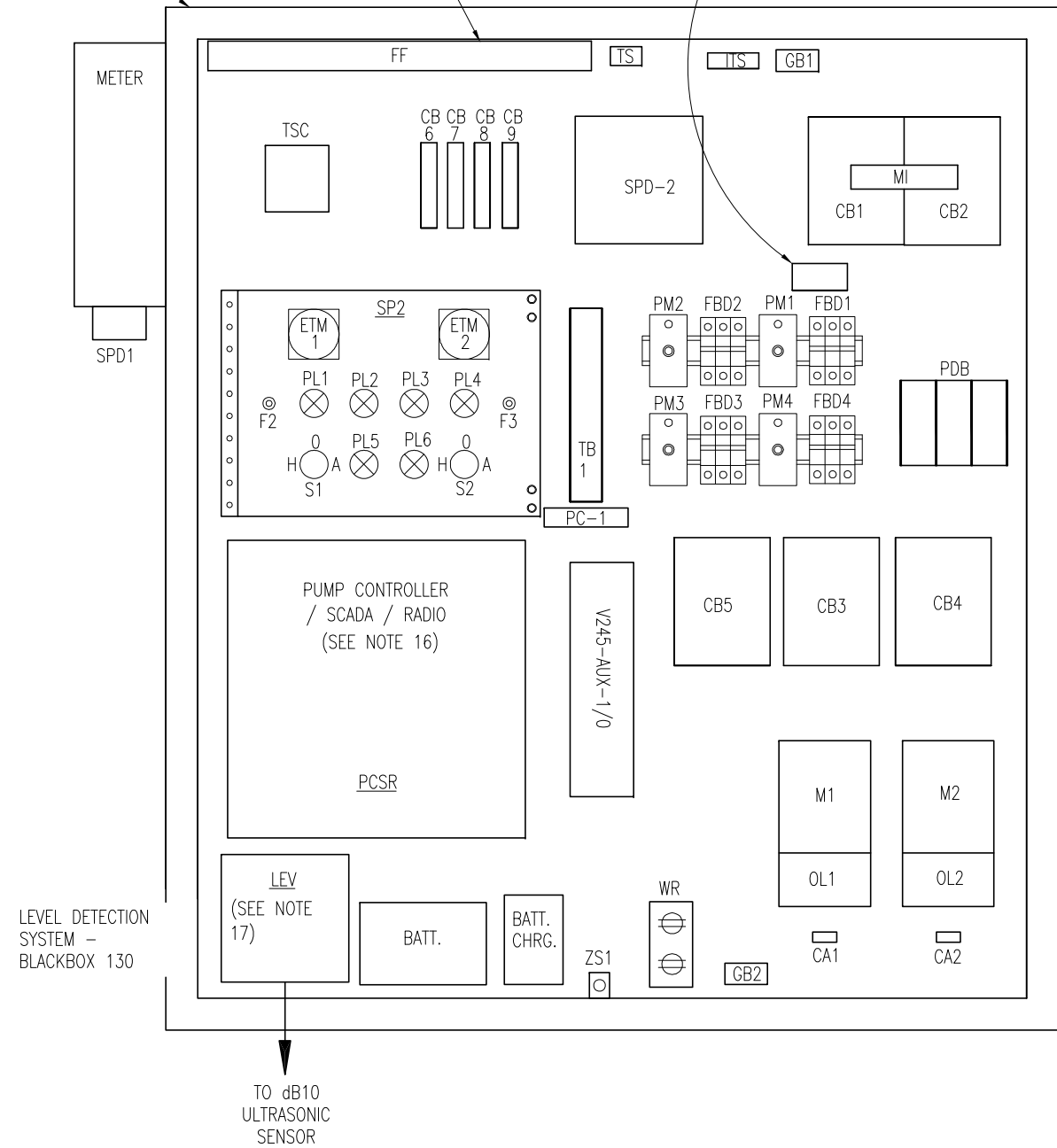
DENNIS VANN P.E. No. 57620	FILE: 1713060
----------------------------	---------------

SHEET NUMBER
E-2

ENCLOSURE SIZE
48x X 48" X 12"
(ADJUST SIZE AS NECESSARY TO SUIT
FINAL COMPONENT SELECTION - TYP.)

PANEL SIZE
45" X 39"

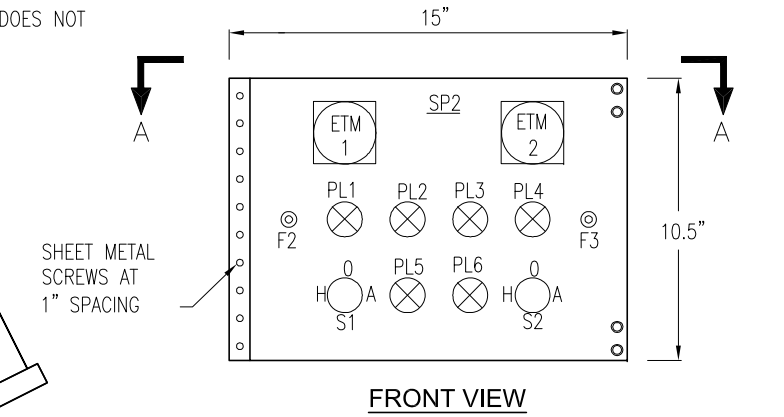
PROVIDE WARNING LABEL ABOVE FBD. LABEL TO READ:
"WARNING - OPENING MAIN CIRCUIT BREAKER DOES NOT
DE-ENERGIZE VOLTAGE TO THIS DISCONNECT".



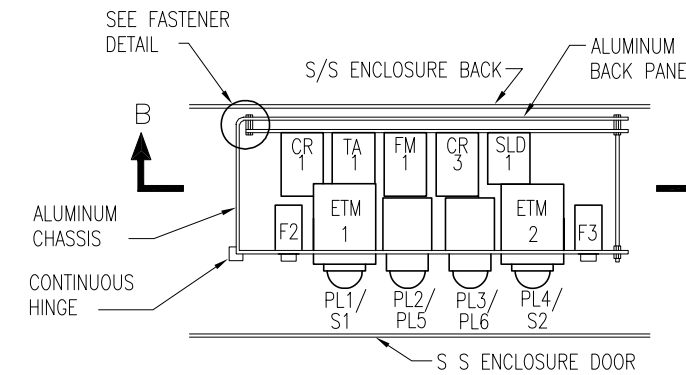
CONTROL PANEL ENCLOSURE* - FRONT VIEW

SCALE: 1/8" = 1"

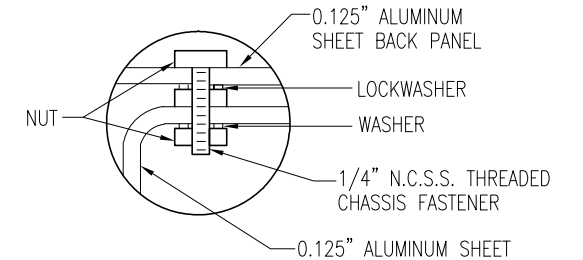
NOTE:
FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY.



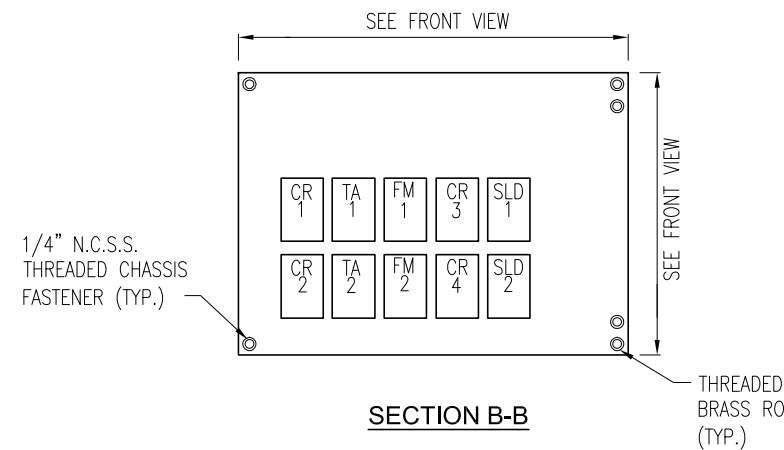
FRONT VIEW



SECTION A-A



FASTENER DETAIL



SECTION B-B

CONTROL PANEL LAYOUT

SEE NOTES ON SHEET E-11
100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060								
DESIGNED	DEV								
DRAWN	EAK								
CHECKED	TDT								
DATE	03/24/14	No.		DATE	BY	REVISION DESCRIPTION			

SCALE
1/8" = 1'-0"

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PROPOSED ELECTRICAL CONTROL PANEL LAYOUT

DENNIS VANN P.E. No. 57620

SHEET NUMBER
E-3
FILE: 1713060

PARTS SCHEDULE (CONT.)

SYMBOL	NAME	PART				REMARKS
		MAKE	TYPE	MODEL OR CAT. #	RATING	
FL	FLOAT SWITCH	ANCHOR SCIENTIFIC	SPDT	S2ONONC	10 A @ 120 V	
SPD1	LIGHTNING ARRESTOR	GENERAL ELECTRIC	TRANQUEL	9L 15 ECC 001	650 V	
TB 1	TERMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	41 CONTACTS (MIN)
ITS	INSULATED TERMINAL STRIP	ALLEN-BRADLEY	STYLE AA	1492-15-T	600 V AC NEUTRAL BLOCK	4 CONTACTS (MIN) W/ SHORTING BARS
ME	CONTROL ENCLOSURE *	QUALITY METALS	NEMA 3 THREE POINT LATCH	48"x42"x12" SS 3R	304 SS, 14 GAUGE	TWO DOORS W/STOP KITS #A-DSTOPK. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
MP	ENCLSURE PANEL *	QUALITY METALS	45" X 39", STEEL		STEEL, 12 GAUGE	
GB 1, 2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		
SLD1, SLD2	SEAL LEAK DETECTOR	SYRELEC	8 PIN PLUG-IN	PNRV110	110V INPUT, 10A CONTACT	SPDT W/ SOCKET
TA1, TA2, FM1, FM2, CR1, CR2, CR3, CR4	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG-IN	KRPA-11AG-120	120V COIL, 10A CONTACTS	DPDT W/ SOCKET AND HOLD DOWN SPRING
LEV	WET WELL LEVEL SENSOR	PULSAR, INC.	ULTRASONIC	dB10 TRANSDUCER W/ BLACKBOX 130 TRANSMITTER PART #: 130-110-300-00P-KP-TROP	1 TD 32.8 FT RANGE 115VAC/24VDC POWERED W/ 4-20MA AND (2) RELAY OUT W/ KEY PAD, DISPLAY, AND TROPICALIZATION	CITY FORCES WILL PROVIDE ASSISTANCE WITH MOUNTING AND CALIBRATION
PCSR	PLC BASED PUMP CONTROLLER, SCADA, AND RADIO SYSTEM	MOTOROLA CORP.	DUPLEX PUMP CONTROLLER BASED ON ACE 3600 PROGRAM CONTROLLER	ACE 3600 W/ UHF RADIO CDM 750, 403-512 MHz PART #: F7564	1-AC POWER SUPPLY 85-264V W/ BAT CHARGER PAR #: V261	COORDINATE EFFORT W/ SCADA INTEGRATOR 1- 10.0 Ah BATTERY PART #: V328
	SLOTS 1 & 2	MOTOROLA CORP.	1- MIXED I/O AUXILLARY INTERFACE BOARD PART #: V245-AUX-I/O	1-40 WIRE CABLE W/TB HOLDER 3M PART #: V358	1- ACE CPU3640 PART #: V446	
	1-3 I/O SLOT FRAM PART #: V103	1-20 PIN TB HOLDER KIT PART #: V158	1- 14x 14 METAL CHASSIS PART #: V214	2-16DI, 4DO(EE), 20mA MODULE PART #: V245	1-40 PIN TB HOLDER KIT PART #: V153	
PM1, PM2, PM3, PM4	3-PHASE POWER MONITOR	MOTOR CONTROLS CORP.	8 PIN PLUG-IN	PM-230-118A	230 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET
PDB	PWR DIST. BLOCK	ILSCO	THREE POLE	PDB-26-2/0-3	600 V, 350 AMP	W/ LEXAN COVER
FBD1, FBD2, FBD3, FBD4	FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
BATT.	BATTERY	POWERSONIC	ABSORBENT GLASS MAT (AGM)	PS-1270 F2	12 VOLT, 7.0 AH	W/ 0.25" x 0.032" TABS
BATT. CHR.G.	BATTERY CHARGER	DELTRAN CORP.	BATTERY TENDER	WATERPROOF 800	120VOLT, 800 mADC	QUALIFICATION, BULK, & FLOAT CHARGING
PC-1	BACKUP PUMP CONTROLLER	DCR ENGG. OR WILKERSON	DUPLEX LIFT STATION	BR560 OR DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING

NOTES:

- DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" SHALL BE DETERMINED AFTER EQUIPMENT SELECTION.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
PARTS SCHEDULE (2 OF 2)

SHEET NUMBER E-5
DENNIS VANN P.E. No. 57620 FILE: 1713060

LEGEND PLATE SCHEDULE

SYMBOL	DEVICE	LEGEND
ETM1	ELAPSED TIME METER	PUMP NO. 1 HOURS
ETM2	ELAPSED TIME METER	PUMP NO. 2 HOURS
PL1	YELLOW PILOT LIGHT	PUMP NO. 1 ON
PL2	RED ILLUMINATED PUSH BUTTON	PUMP NO. 1 HIGH TEMPERATURE AND RESET
PL3	RED ILLUMINATED PUSH BUTTON	PUMP NO. 2 HIGH TEMPERATURE AND RESET
PL4	YELLOW PILOT LIGHT	PUMP NO. 2 ON
PL5	RED PILOT LIGHT	PUMP NO. 1 SEAL LEAK
PL6	RED PILOT LIGHT	PUMP NO. 2 SEAL LEAK
S1	3 POSITION SWITCH	PUMP NO. 1 HAND-OFF-AUTO
S2	3 POSITION SWITCH	PUMP NO. 2 HAND-OFF-AUTO

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd.
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION


SCALE
NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 ELECTRICAL CONTROLS LEGEND PLATES



DENNIS VANN P.E. No. 57620




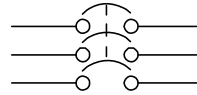



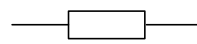

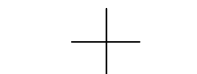
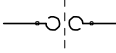

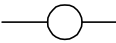


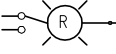
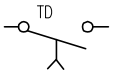
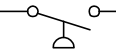
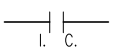
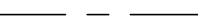
SHEET NUMBER
E-6
FILE: 1713060

TB-1  MOUNTED ON MAIN PANEL (MP)	
TERM.	DESCRIPTION
1	CB6 OUT PUMPS CONTROL POWER
2	PUMP 1 FAULT CONTROL INTERLOCK
3	PUMP 2 FAULT CONTROL INTERLOCK
4	SLOT 1 PCSR 24V+
5	STATOR TEMP. SWITCH FROM P1
6	START TEMP SWITCH FROM P2
7	} ODOR CONTROL BLOWER (FUTURE)
8	
9	
10	PUMP 1 AMPS
11	PUMP 2 AMPS
12	} P1 SEAL LEAK PROBE
13	
14	} P2 SEAL LEAK PROBE
15	
16	P1 "ON" DISC.
17	M1 "RUN" CMD
18	M2 "RUN" CMD
19	P2 "ON" DISC.
20	WET WELL HIGH

TB1 CONT'D

21	WET WELL NOT HIGH
22	NEUTRAL
23	UTIL. POWER AVAILABLE
24	PANEL PHASE LOSS
25	SPARE
26	P1 "ON" TO PCSR
27	P2 "ON" TO PCSR
28	P1 "AUTO" TO PCSR
29	P1 "HAND" TO PCSR
30	P2 "AUTO" TO PCSR
31	P2 "HAND" TO PCSR
32	M1 OVERLOAD
33	M2 OVERLOAD
34	SPARE
35	} PANEL INTRUSION
36	
37	PUMP 1 MCP STATUS
38	PUMP 2 MCP STATUS
39	AREA LIGHT

	TB2 TERM STRIP MTD ON MP-- (PCSR INTERFACE)
	TERMIANAL STRIP IN PCSR

CONTROL SCHEMATIC SYMBOLS			
	TRANSFORMER		CIRCUIT BREAKER (SINGLE-POLE)
	PUSH BOTTOM		CIRCUIT BREAKER (THREE-POLE)
	115 V, 60 Hz. DUPLEX RECEPTACLE		CONTACT NORMALLY OPEN (CLOSED)
	SWITCH		SPLIT BOLT SPLICE
	CONNECTED		NOT CONNECTED
	OVERLOAD HEATER COIL		GROUND BUS
	COIL		NEUTRAL BUS (INSULATED)
	TD - TIME DELAY RELAY CR - CONTROL RELAY ETI - TIMEMETER M - MOTOR STARTER		FUSE
	PILOT LIGHT - READ (PRESS-TO-TEST)		"ON DELAY" CONTACT
	PRESSURE LEVEL SWITCH CONTACT		INSTANT CLOSE CONTACT
	AIR LINE		

SEE NOTES ON SHEET E-11

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd.
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

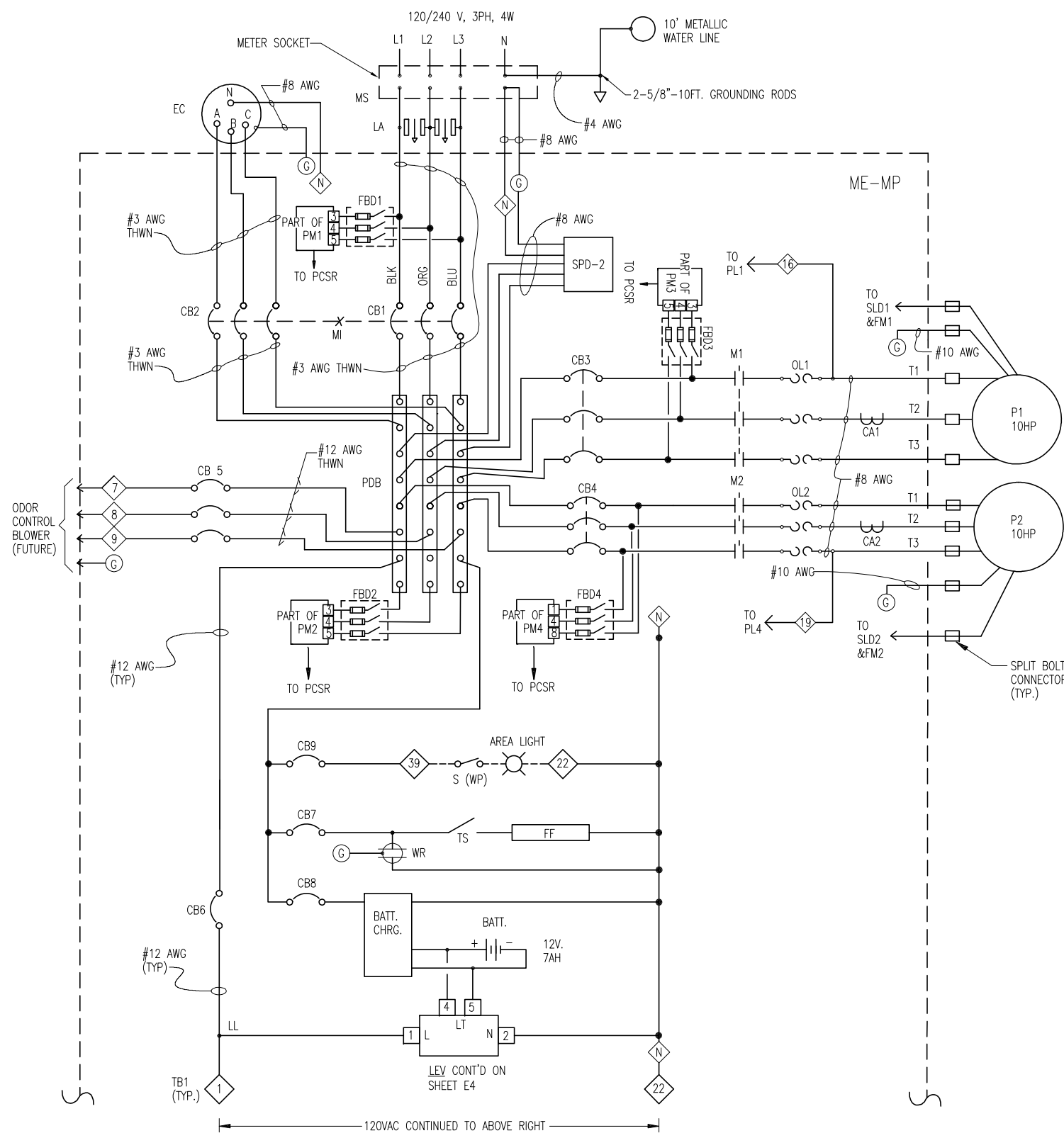
SCALE
NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL SCHEMATIC LEGEND

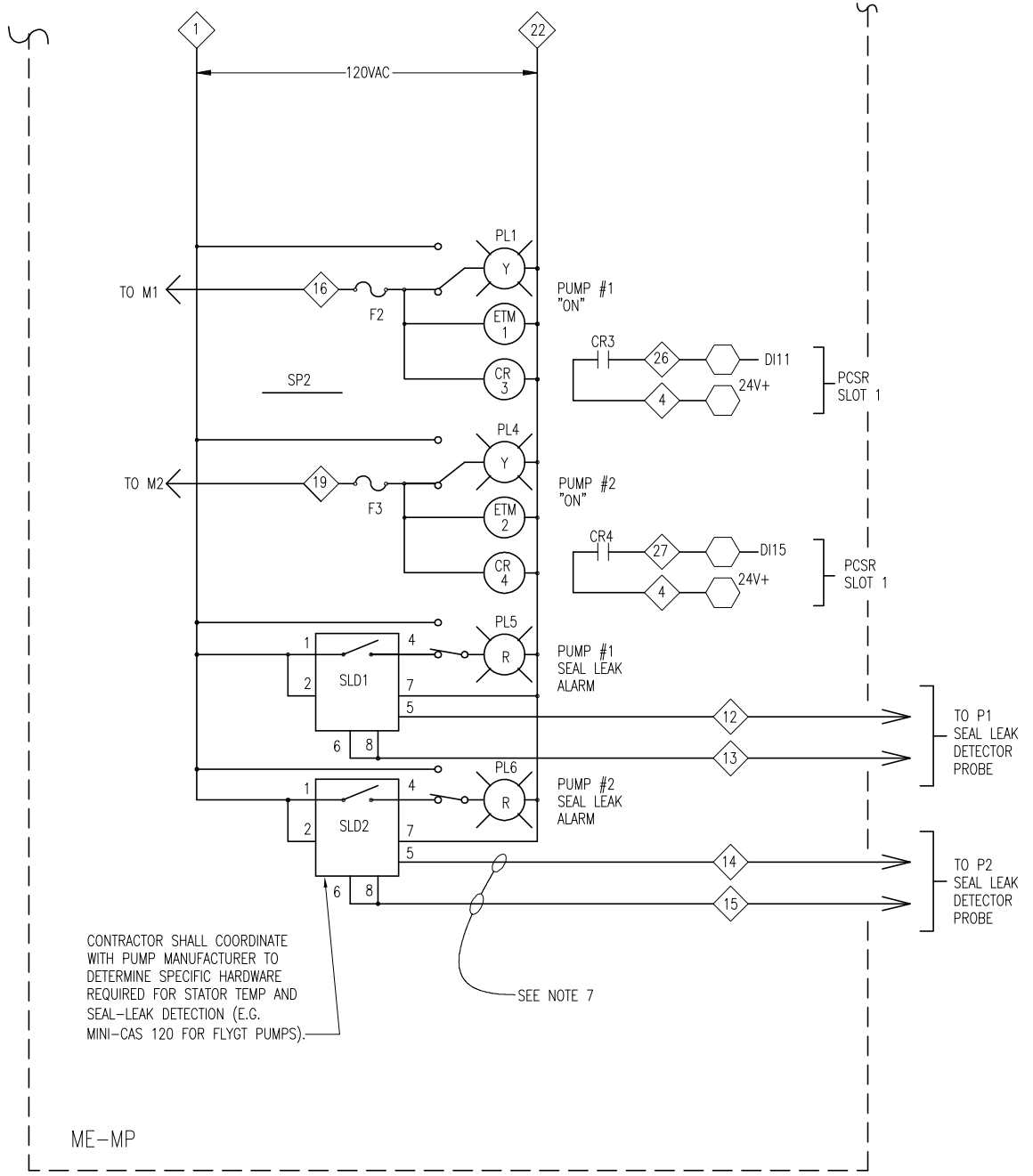
DENNIS VANN P.E. No. 57620

SHEET NUMBER
E-7
FILE: 1713060



CONTROL CABINET SCHEMATIC DIAGRAMS

NOT TO SCALE



CONTRACTOR SHALL COORDINATE WITH PUMP MANUFACTURER TO DETERMINE SPECIFIC HARDWARE REQUIRED FOR STATOR TEMP AND SEAL-LEAK DETECTION (E.G. MINI-CAS 120 FOR FLYGT PUMPS).

SEE NOTES ON SHEET E-11

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060				
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

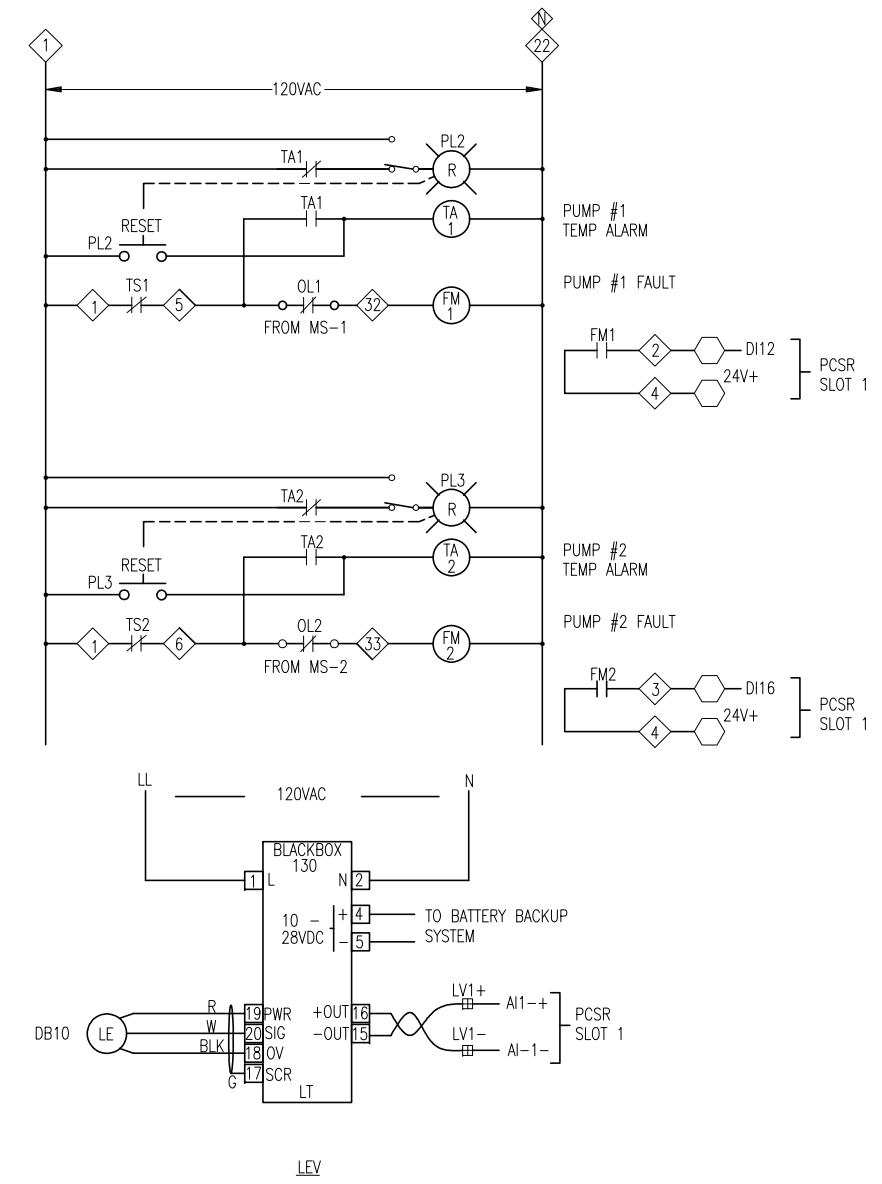
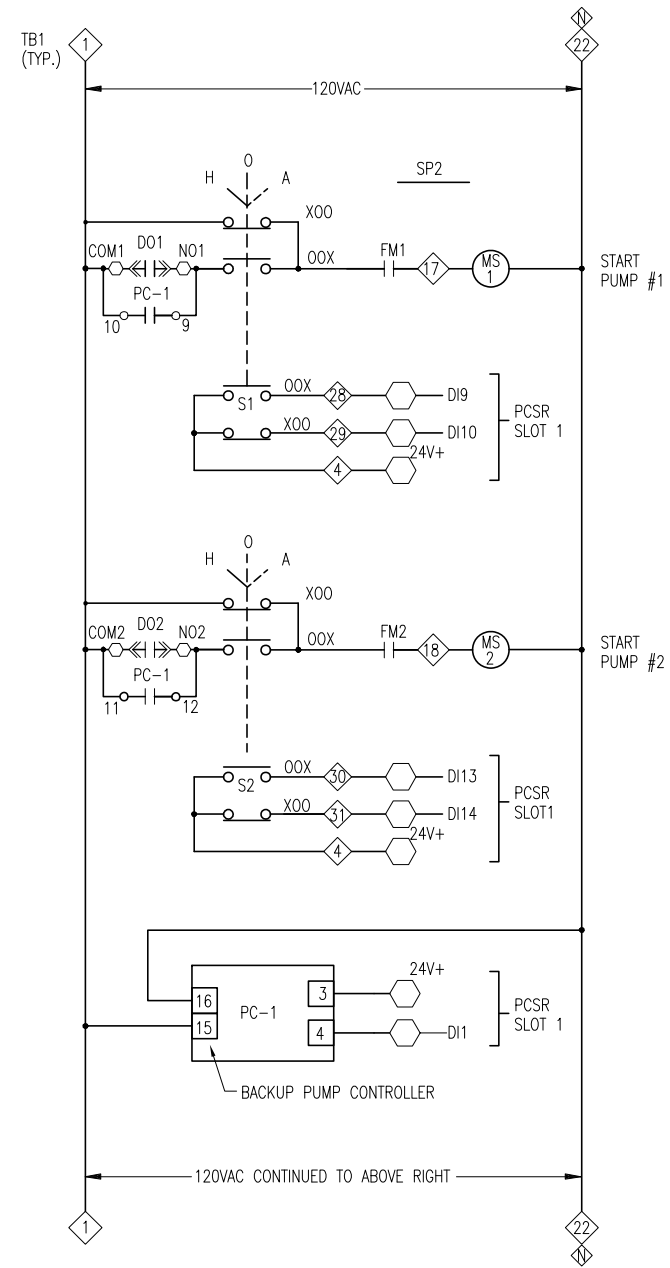
SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL SCHEMATIC DIAGRAM (1 OF 3)

DEWIS VANN P.E. No. 57620	SHEET NUMBER E-8 FILE: 1713060
---------------------------	--------------------------------------



CONTROL CABINET SCHEMATIC DIAGRAMS

NOT TO SCALE

SEE NOTES ON SHEET E-11

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060								
DESIGNED	DEV								
DRAWN	EAK								
CHECKED	TDT								
DATE	03/24/14	No.		DATE	BY	REVISION	DESCRIPTION		

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

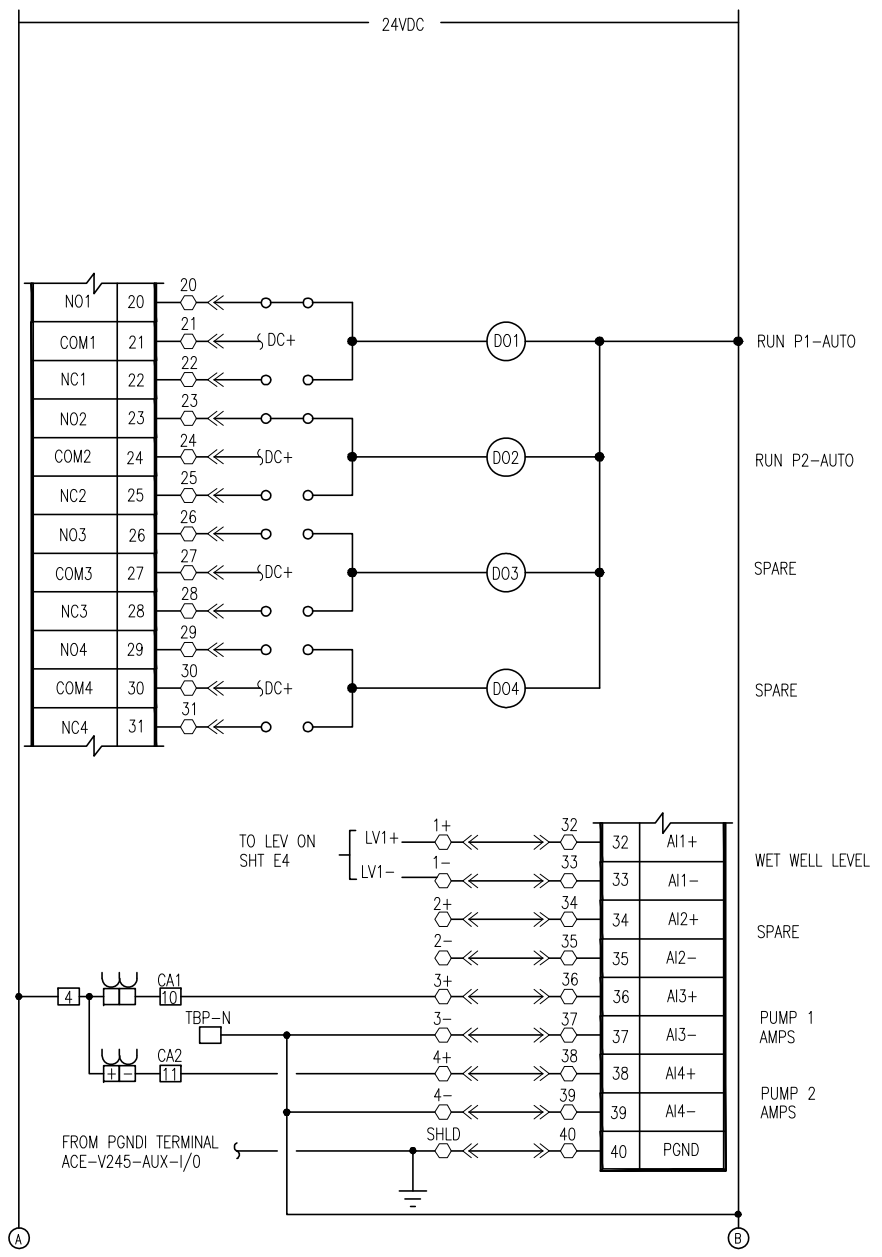
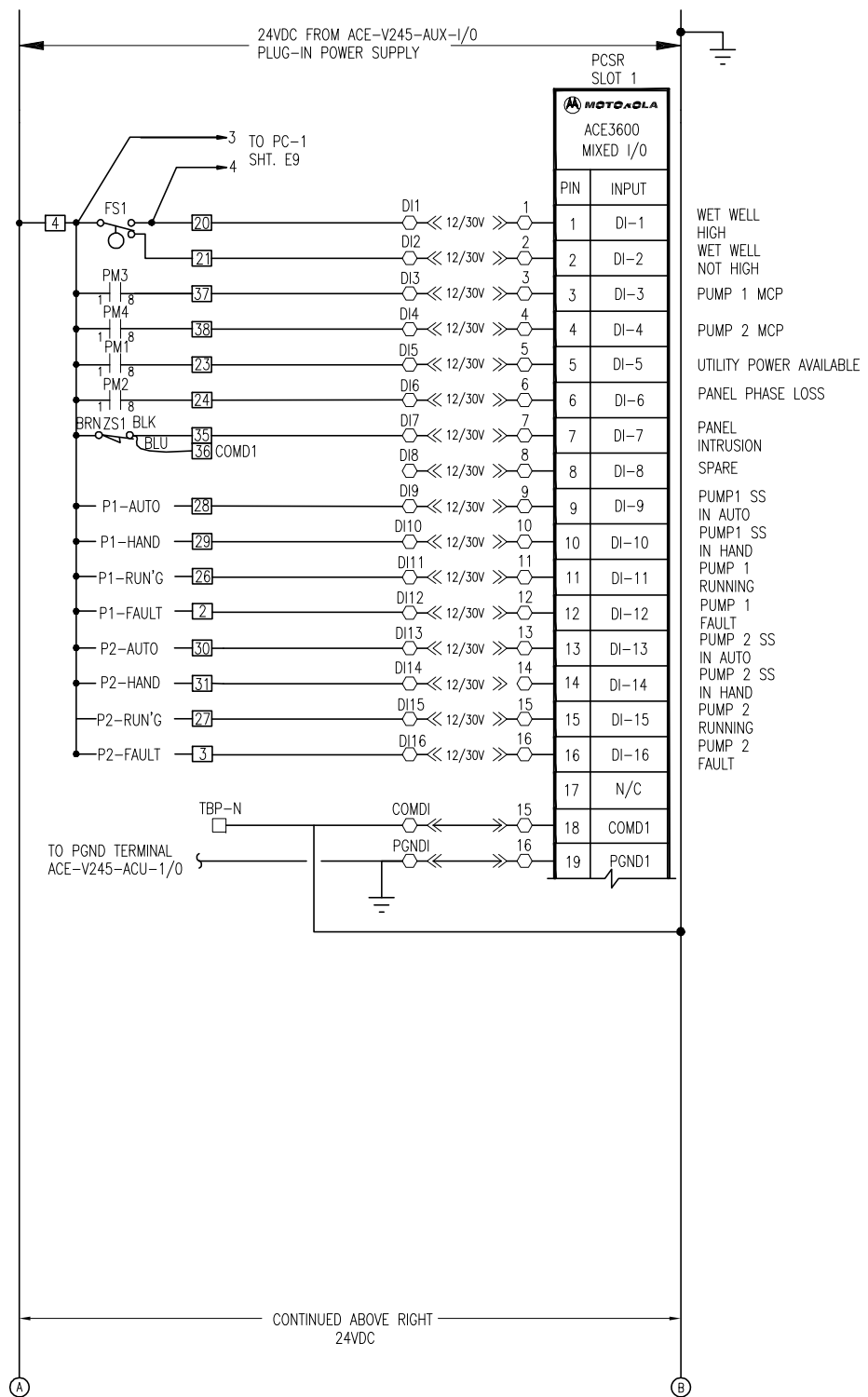
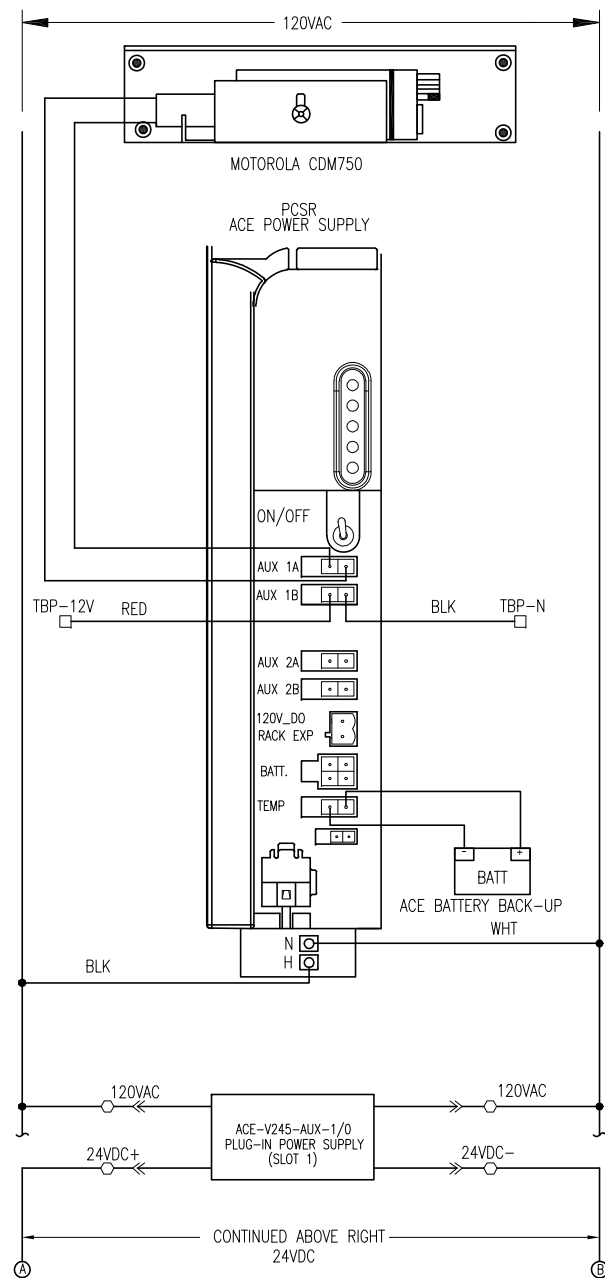
LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL SCHEMATIC DIAGRAM (2 OF 3)

DENNIS VANN P.E. No. 57620

SHEET NUMBER

E-9

FILE: 1713060



CONTROL CABINET SCHEMATIC DIAGRAMS

NOT TO SCALE

SEE NOTES ON SHEET E-11

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060	SCALE
DESIGNED	DEV	
DRAWN	EAK	
CHECKED	TDT	
DATE	03/24/14	No. DATE BY REVISION DESCRIPTION

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL SCHEMATIC DIAGRAM (3 OF 3)

DENNIS VANN P.E. No. 57620

SHEET NUMBER
E-10
FILE: 1713060

NOTES

1. TECO SERVICE: PROP 120/240V, 3Ø, 4W, DELTA CALCULATED FAULT CURRENT 9,758 AMPS AT TRANSFORMERS; PROPOSED 100 AMP, CB1 AIC RATING - 25,000A SYMMETRICAL.
2. THE WET WELL CLASSIFICATION IS CLASS I, DIVISION 2, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE CONTROL ENCLOSURE.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN LATEST NEC AND CITY OF TAMPA/ HILLSBOROUGH COUNTY CODES AND SHALL BE INSPECTED BY CITY OF TAMPA/ HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE.
4. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508 CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. ALSO LABEL THE PANEL -- "SUITABLE FOR USE AS SERVICE EQUIPMENT".
5. THE ENCLOSURE SHALL BE NEMA 3, SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304 SS, SHALL HAVE RAL 9003 WHITE POWDER COAT SURFACE, AND THE CLOSING SURFACE SHALL HAVE ROLLED LIPS, PROVIDE HINGED DOOR WITH 3-POINT LATCH AND LOCKABLE HANDLE. REFERENCE PARTS SCHEDULE.
6. ALL COMPONENTS TO BE MOUNTED ON PANEL USING TAPPED HOLES.
7. ALL WIRING SHALL BE COPPER, ALL CONTROL WIRING SHALL BE STRANDED THWN COPPER, MINIMUM AWG # 14, AND SHALL HAVE SPADE LUG TERMINATIONS.
8. ALARM FLOAT SWITCH WILL BE SUPPLIED BY THE CITY, BUT INSTALLED BY CONTRACTOR.
9. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED '*' TO BE DETERMINED AFTER EQUIPMENT SELECTION.
10. ALL MECHANICAL CONNECTORS SHALL BE TORQUED PER NEC, UL OR MANUFACTURERS SPECIFICATIONS.
11. INSTALL LAMINATED SCHEMATIC AND LAMINATED DATA SHEET ON BACK FACE OF THE DOOR INSIDE THE ENCLOSURE.
12. ENSURE THAT LINE CONNECTIONS TO METER SOCKET PROVIDE CORRECT METER ROTATION.
13. ROUTE AND SECURE SERVICE ENTRANCE CONDUCTORS SO AS NOT TO INTERFERE WITH OR CONTACT EQUIPMENT AND COMPONENTS IN THE PANEL. ALSO, PROVIDE SPACING BETWEEN THE ENCLOSURE AND ALL CONDUCTORS.
14. CONDUCTORS WITHIN THE ENCLOSURE AND NOT ROUTED IN WIREWAYS, SHALL BE SECURED TO THE BACKPANEL WITH MECHANICAL FASTENERS, FASTENERS SECURED WITH ADHESIVE ARE NOT ACCEPTABLE.
15. ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.
16. THE PSCR SHALL BE A MOTOROLA ACE 3600 PACKAGE AS DISTRIBUTED BY DCR ENGINEERING SERVICES INC., SCADAONE, LLC., OR REVERE CONTROL SYSTEMS. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH DCR, SCADAONE, OR REVERE CONTROL SYSTEMS TO ENSURE SYSTEM COMPATIBILITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY DCR, SCADAONE, OR REVERE CONTROLS - THE EXISTING PUMPING STATION DCR CONTROLS SHALL REVERT TO THE CITY AS A SPARE.
17. A WET WELL LEVEL DETECTION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE OUTPUT SHALL BE A LINEAR 4-20mA SIGNAL WITH RANGE AND CALIBRATION SUITABLE FOR THIS APPLICATION. THE SYSTEM SHALL BE OF THE ULTRASONIC TYPE-- PULSAR, INC. MODEL dB10 W/ BLACKBOX 130 TRANSMITTER. CITY INSTRUMENTATION PERSONNEL WILL ASSIST THE CONTRACTOR WITH SPECIFYING THE TRANSDUCER MOUNTING LOCATION AND CALIBRATION. THE DB10 TRANSDUCER SHALL BE MOUNTED USING A 2 1/2" x 1/4" S.S. BRACKET, SEE DB10 MOUNTING BRACKET DETAIL, SHEET E14.
18. PROVIDE 1/4" MINIMUM THICKNESS LEXAN SHIELDS OVER POWER DISTRIBUTION BLOCK AND OTHER EXPOSED CABLE TERMINATIONS.
19. PROPOSED 2" CONDUIT SHALL BE SCHEDULE 80 PVC AND SHALL BE A MINIMUM 24" IN DEPTH BETWEEN THE TOP SURFACE OF FINISH GRADE AND TOP SURFACE OF CONDUIT. CONDUIT ROUTE SHOWN IS APPROXIMATE, ADJUST TO FIELD CONDITIONS.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060								
DESIGNED	DEV								
DRAWN	EAK								
CHECKED	TDT								
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION				

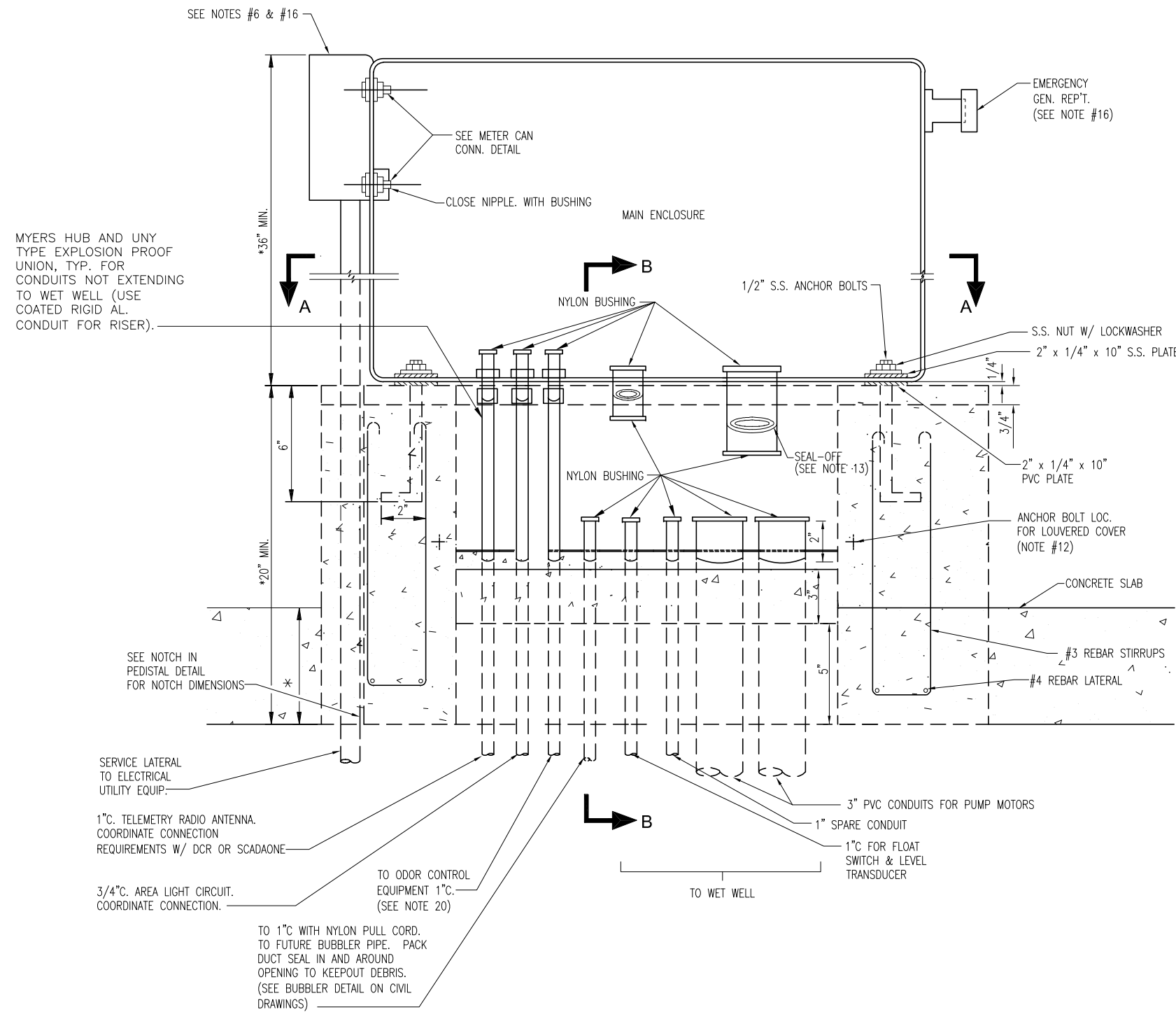
SCALE
NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL NOTES FOR SHEETS E2 - E10

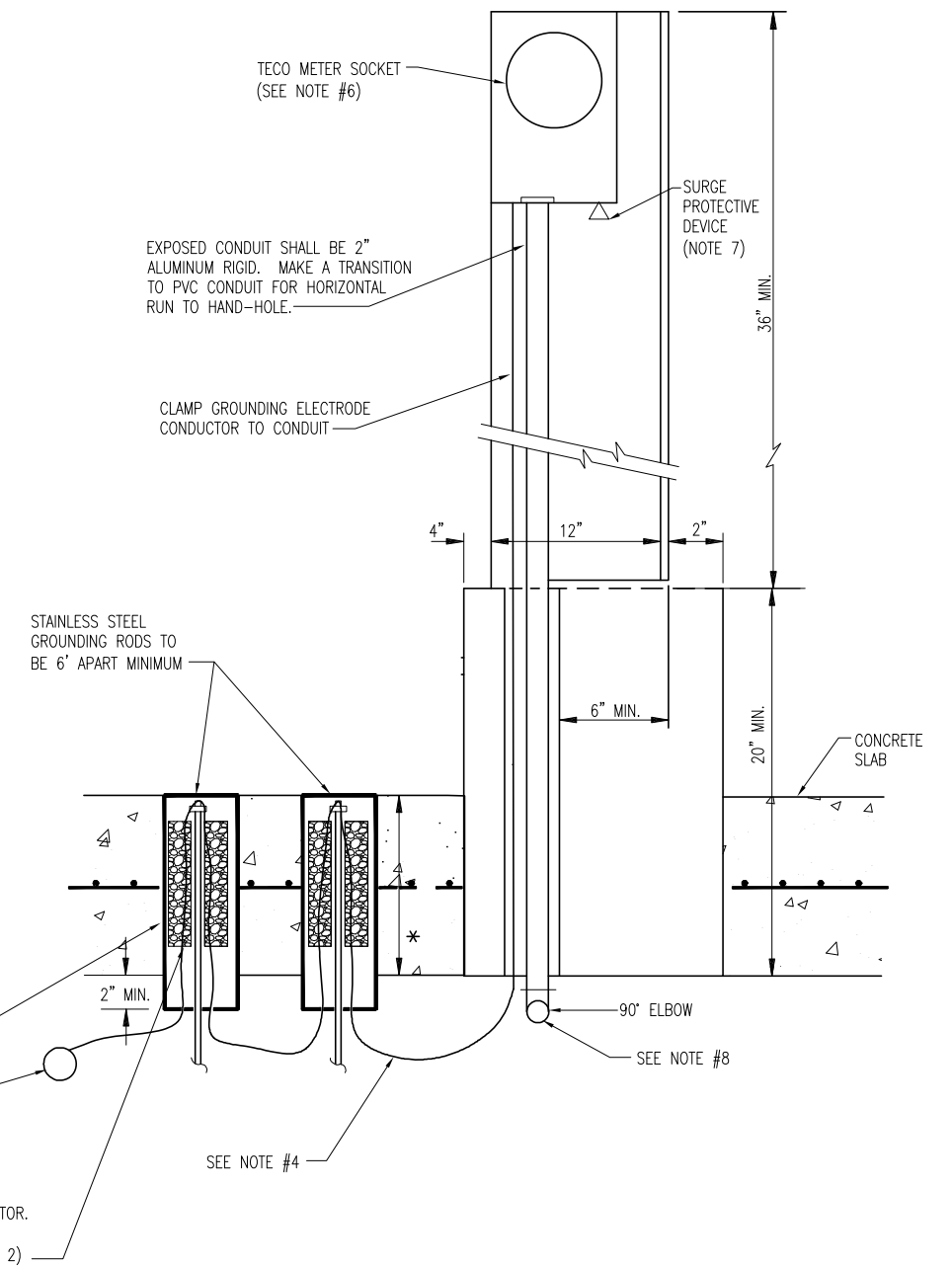
DENNIS VANN P.E. No. 57620

SHEET NUMBER
E-11
FILE: 1713060



FRONT ELEVATION

NOT TO SCALE
(LOUVERS REMOVED FOR CLARITY)



SIDE VIEW

NOT TO SCALE
SEE NOTES ON SHEET E-15

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060						
DESIGNED	DEV						
DRAWN	EAK						
CHECKED	TDT						
DATE	03/24/14	No.	DATE	BY	REVISION	DESCRIPTION	

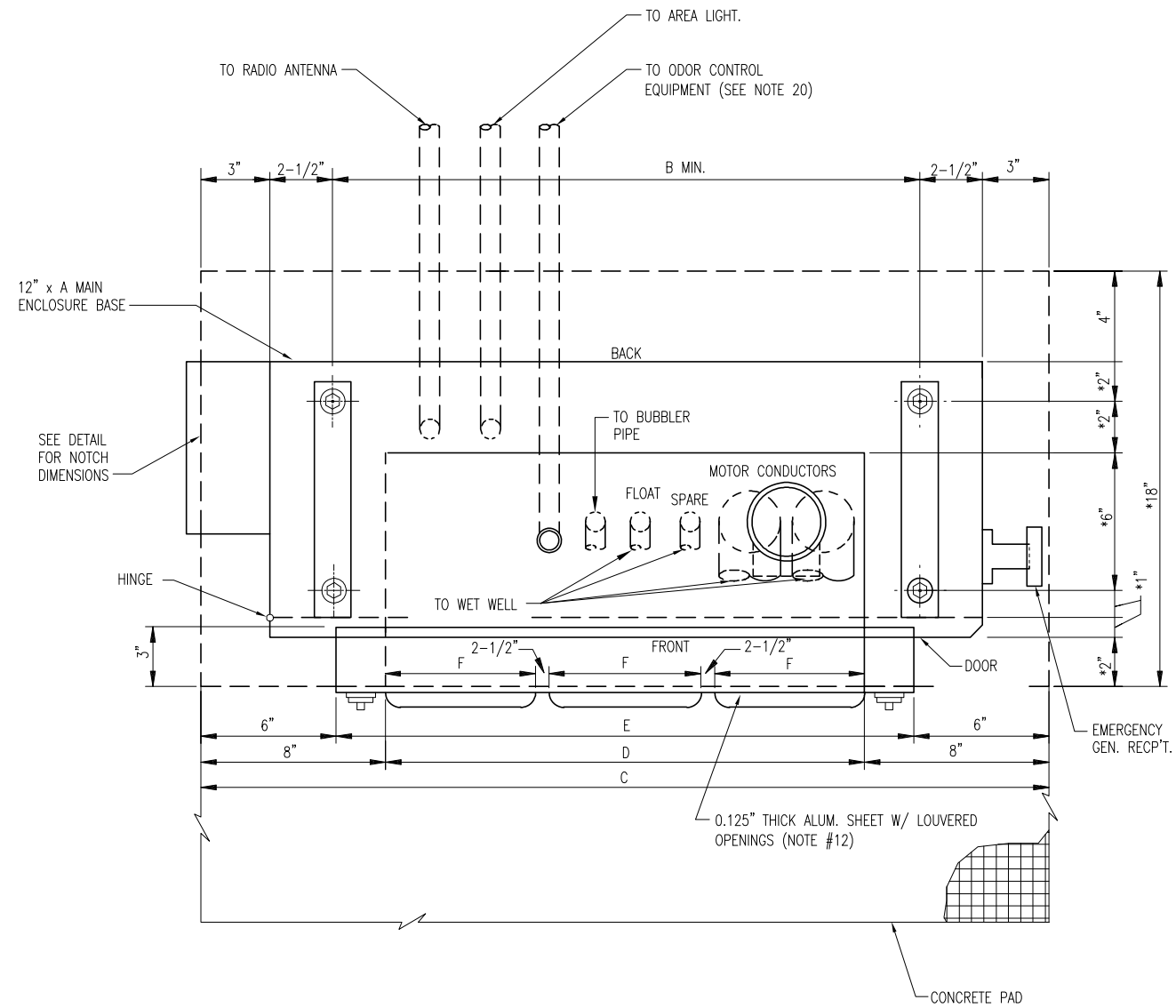
SCALE	
NTS	

CITY of TAMPA
WASTEWATER DEPARTMENT

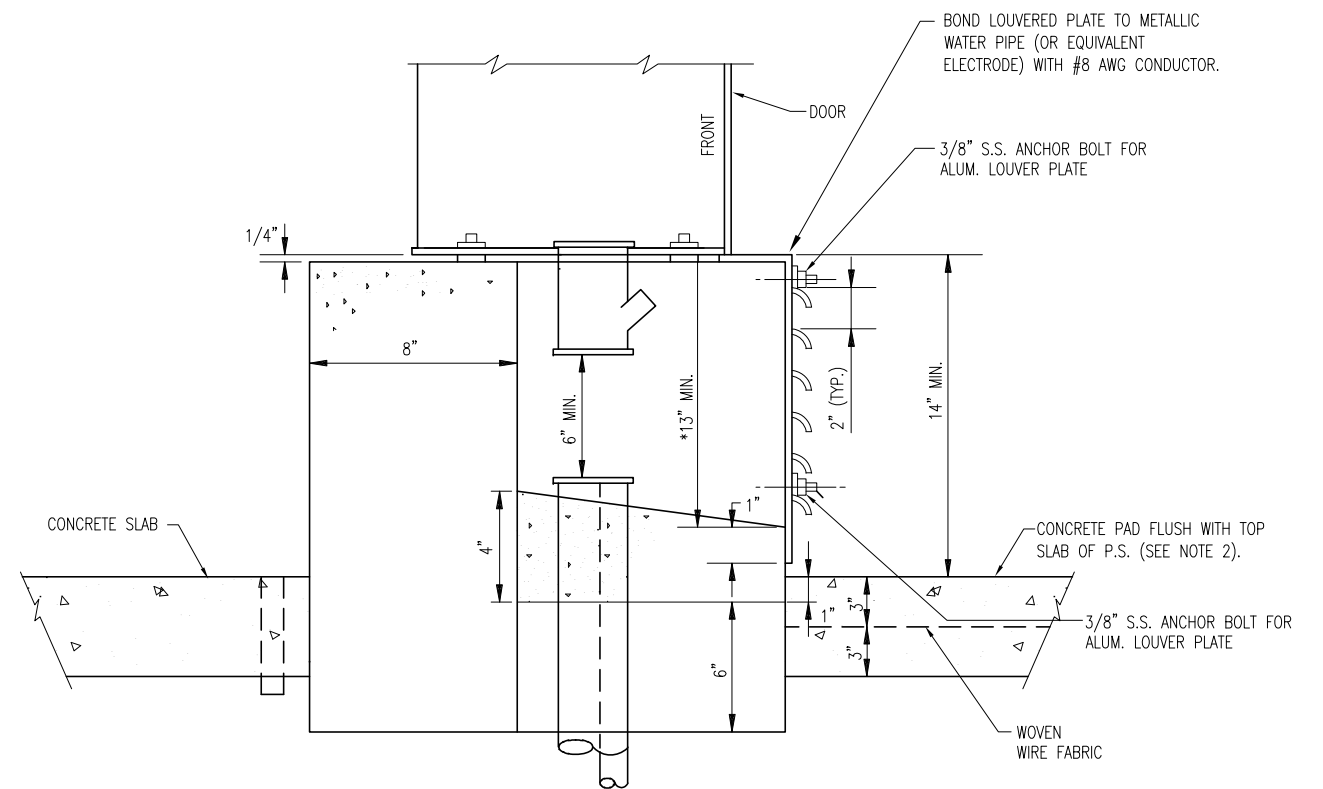
LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL PEDESTAL DESIGN (1 OF 2)

DENNIS VANN P.E. No. 57620

SHEET NUMBER	E-12
FILE:	1713060



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

PUMP SIZE	DIMENSIONS (INCHES)						ENCLOSURE SIZE
	A	B	C	D	E	F	
10.0 HP @ 240V.	48	43	54	32	36	09	48\"/>

SEE NOTES ON SHEET E-15

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd.
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060	No.	DATE	BY	REVISION DESCRIPTION
DESIGNED	DEV				
DRAWN	EAK				
CHECKED	TDT				
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

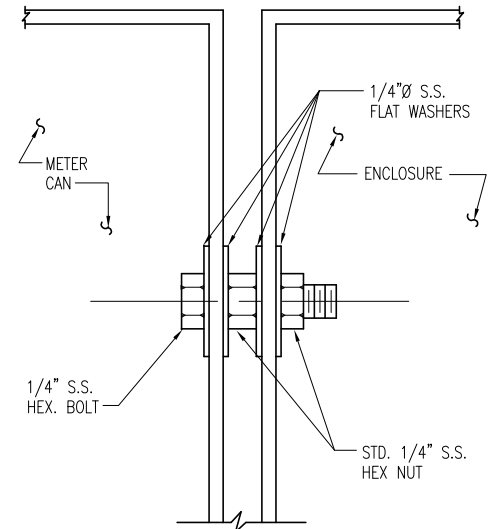
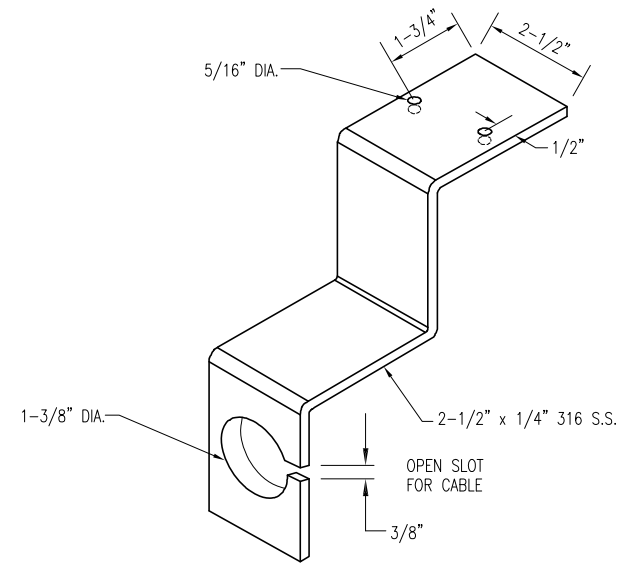
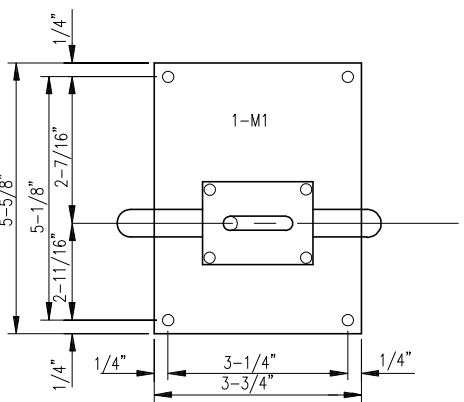
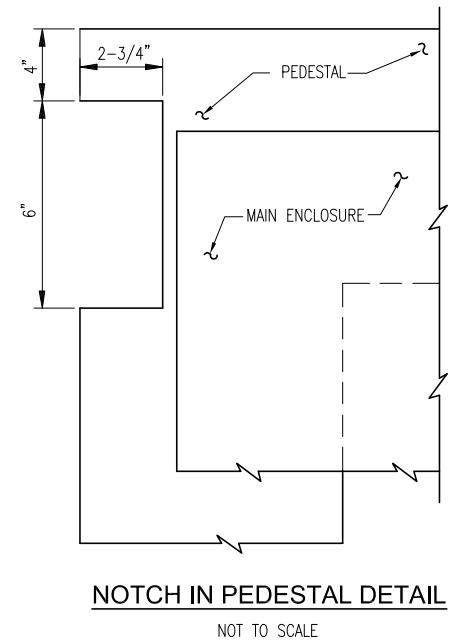
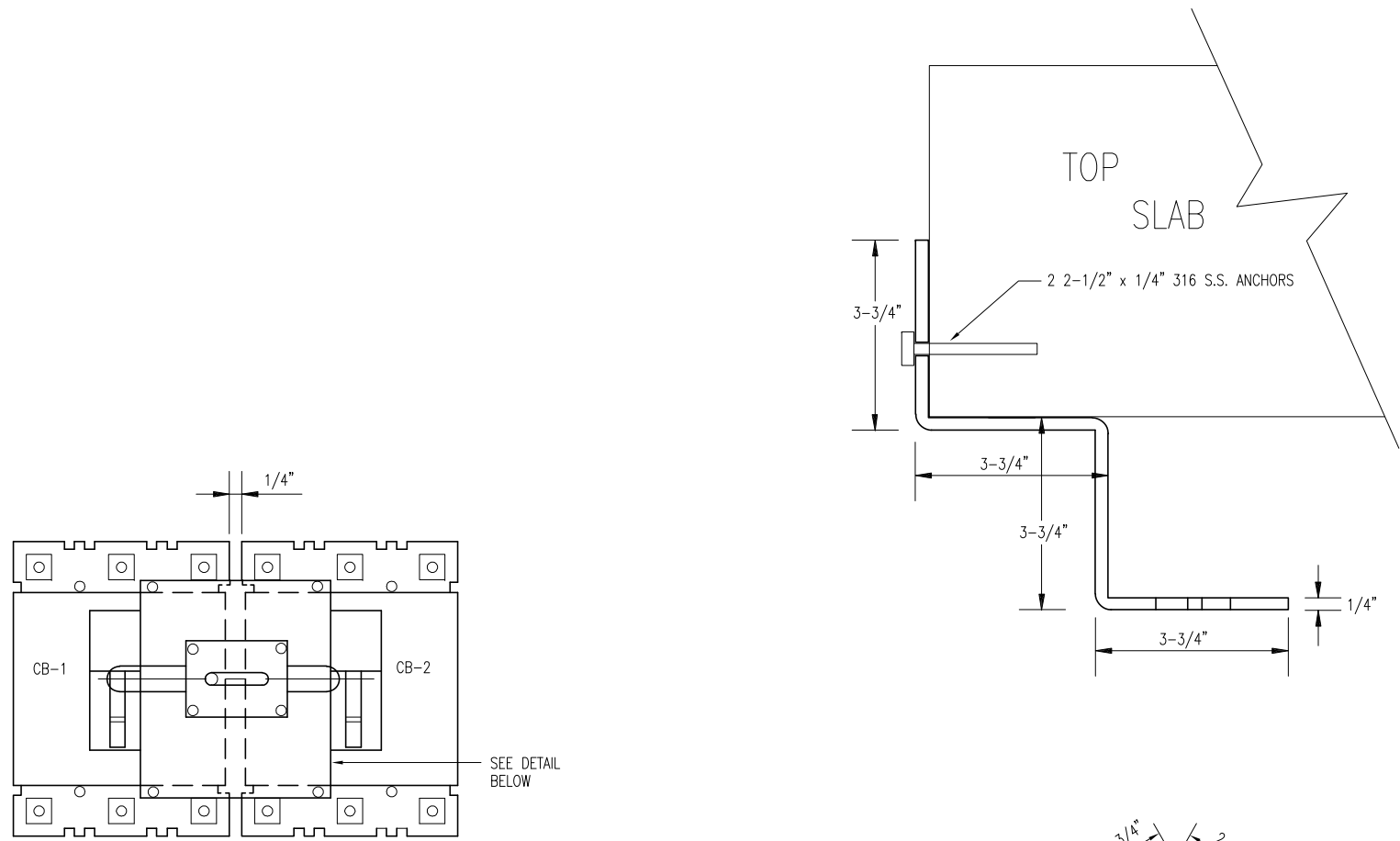
LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL PEDESTAL DESIGN (2 OF 2)

DENNIS VANN P.E. No. 57620

SHEET NUMBER

E-13

FILE: 1713060



INTERLOCK MOUNTING DETAIL
NOT TO SCALE

DB10 OR PULSAR MOUNTING BRACKET DETAIL
NOT TO SCALE

METER CAN CONNECTION
NOT TO SCALE

SEE NOTES ON SHEET E-15
100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

TRICON
CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060						
DESIGNED	DEV						
DRAWN	EAK						
CHECKED	TDT						
DATE	03/24/14	No.	DATE	BY	REVISION DESCRIPTION		

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL DETAILS

DENNIS VANN P.E. No. 57620

SHEET NUMBER
E-14
FILE: 1713060

NOTES

1. THWN CONDUCTORS (3 #8 AWG + 1 #10 AWG GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE CONTROL PANEL BELOW THE SEAL-OFF A MINIMUM OF 18" AND SHALL BE SEALED IN THE SEAL-OFF SHOWN. THE SHOWN SEAL-OFFS SHALL BE ALUMINUM BODY, CROUSE-HINDS, OR EQUIVALENT. WHEN INSTALLING THE PUMPS, THE MOTOR CONDUCTORS SHALL BE SPLICED USING SPLIT BOLTS. FOR INSULATION USE MATERIALS THAT ARE RECOMMENDED BY MANUFACTURER TO EQUAL INSULATION ON CONDUCTORS. FOLLOW THE SAME PROCEDURE FOR THE LEAKAGE AND THERMAL SENSOR CONDUCTORS.
2. CONCRETE PAD SHALL BE CONSTRUCTED OF CLASS B CONCRETE REINFORCED WITH 4x4-W6x6 WWF AND SHALL HAVE A MINIMUM THICKNESS OF 6".
3. DIMENSIONS, ITEMS OR ELEVATIONS MARKED "*" TO BE DETERMINED AFTER EQUIPMENT SELECTION.
4. APPROVED GROUND CLAMPS SHALL BE ATTACHED TO TWO APPROVED GROUNDING RODS (MINIMUM SPACING 6'-0") AND THE METALLIC WATER LINE. GROUNDING CONDUCTOR SHALL BE AWG # 4 MIN. BARE STRANDED COPPER.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A 316 S.S. MOUNTING BRACKET TO SUPPORT THE DB10 TRANSMITTER. THE BRACKET SHALL BE INSTALLED IN THE WET WELL, CITY INSTRUMENTATION PERSONNEL WILL ASSIST THE CONTRACTOR WITH SPECIFYING THE TRANSDUCER MOUNTING LOCATION AND CALIBRATION. REFER TO DB10 DETAIL ON SHEET E-14.
6. METER SOCKET SUPPLIED, AND INSTALLED BY CONTRACTOR, ALSO SEE NOTE #16. THE SOCKET EDGES ARE TO BE ALIGNED WITH THE BACK AND TOP EDGE OF THE MAIN ENCLOSURE.
7. CITY APPROVED TYPE 1 SURGE PROTECTIVE DEVICE (LIGHTNING ARRESTER) TO BE INSTALLED BY CONTRACTOR ON LOAD SIDE OF METER SOCKET.
8. ELBOWS TO BE LONG BUSHED AND THE HORIZONTAL PVC CONDUIT SHALL EXTEND TO A TECO HAND-HOLE AT THE BASE OF THE POWER POLE. PROVIDE 24" MINIMUM COVER. COORDINATE THIS WORK WITH TECO.
9. RESERVED.
10. WATER SERVICE RISER TO BE LOCATED ON THE SIDE OF PANEL OPPOSITE TO THE TECO METER BOX.
11. ALUMINUM CONDUIT SURFACE THAT IS IN CONTACT WITH SOIL OR CONCRETE SHALL BE COATED WITH TWO COATS ASPHALT VARNISH (FED. SPEC. TT-V-51) EXTENDING 4" BEYOND FINAL CONTACT POINT.
12. FRONT OF OPEN SPACE TO BE COVERED BY A LOUVERED ALUM. METAL SHEET (MIN. THICKNESS 0.125) AND FASTENED WITH MIN. OF FOUR 3/8" STAINLESS STEEL BOLTS ANCHORED IN THE CONCRETE. THE LOUVERED PANEL SHALL BE PROPERLY BONDED TO EXISTING METALLIC WATER PIPE USING MINIMUM #8 THWN CU. EXTRA FLEXIBLE GROUNDING CONDUCTOR.
13. SEALING FITTING SHALL BE SIZED FOR CONDUCTORS. ENSURE THAT SEALING FITTING CONNECTION TO MAIN ENCLOSURE IS GAS TIGHT. USE HIGH QUALITY SEALING LOCKNUTS OR WATERTIGHT HUBS WITH A SUPPLEMENTAL BARRIER (IF NECESSARY) TO EXCLUDE GASES.
14. ENSURE THAT SEALING FITTING CONNECTION TO MAIN ENCLOSURE IS GAS TIGHT, USE HIGH QUALITY SEALING LOCKNUTS OR WATER TIGHT HUBS WITH SUPPLEMENTAL BARRIER (IF NECESSARY) TO EXCLUDE GASES.
15. REINFORCEMENT SHALL BE AT LEAST 3" FROM EDGE OF PEDESTAL.
16. TECO PREFERENCES STRAIGHT UNDERGROUND SERVICE CONNECTION TO THE METER BOX. TO AVOID ANY CONFIGURATION CHANGES, THE ENCLOSURE HOLES FOR THE METER BOX AND EMERGENCY CONNECTOR SHALL BE CUT AFTER THE TECO ROUTING IS VERIFIED AT THE TIME OF INSTALLATION. THE LENGTH OF CONDUCTORS FROM TECO AND EMERGENCY SERVICES WILL DEPEND ON THE SELECTED CONFIGURATION.
17. STAINLESS STEEL HANGERS TO SUPPORT THE EXCESS LENGTH OF MOTOR CABLES SHALL BE INSTALLED IN THE WET WELL. THESE HANGERS SHALL BE LOCATED IN A SEPARATE AREA FROM THE HANGERS SUPPORTING THE PUMP CHAINS.
18. TOP OF ENCLOSURE SHALL BE A MAXIMUM OF 66" ABOVE FINAL GRADE.
19. EXTEND CONCRETE PAD SUCH THAT IT IS FLUSH WITH PUMPING STATION TOP SLAB.
20. PROVIDE AND INSTALL 1" PVC CONDUIT FOR FUTURE ODOR CONTROL EQUIPMENT AS SHOWN. EXTEND CONDUIT TO EDGE OF PAVEMENT, TURN UP, AND CAP ABOVE GRADE.
21. FOR ANY CONDUIT NOT EXTENDING TO THE WET WELL, USE COATED RIGID ALUMINUM FOR RISER, MYERS HUB AND UNY TYPE EXPLOSION PROOF UNION.
22. PROVIDE AND INSTALL A PRESTRESSED CONCRETE POLE WITH LED OUTDOOR SECURITY FIXTURE AND LIGHT SWITCH.

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 3242 HENDERSON BOULEVARD - SUITE 300
 TAMPA, FLORIDA 33609-3056
 TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
 Suite 870
 Tampa, FL 33602
 813.227.9190
 Certificate of Authorization No. 8363

JOB No.	13060							
DESIGNED	DEV							
DRAWN	EAK							
CHECKED	TDT							
DATE	03/24/14	No.	DATE	BY	REVISION	DESCRIPTION		

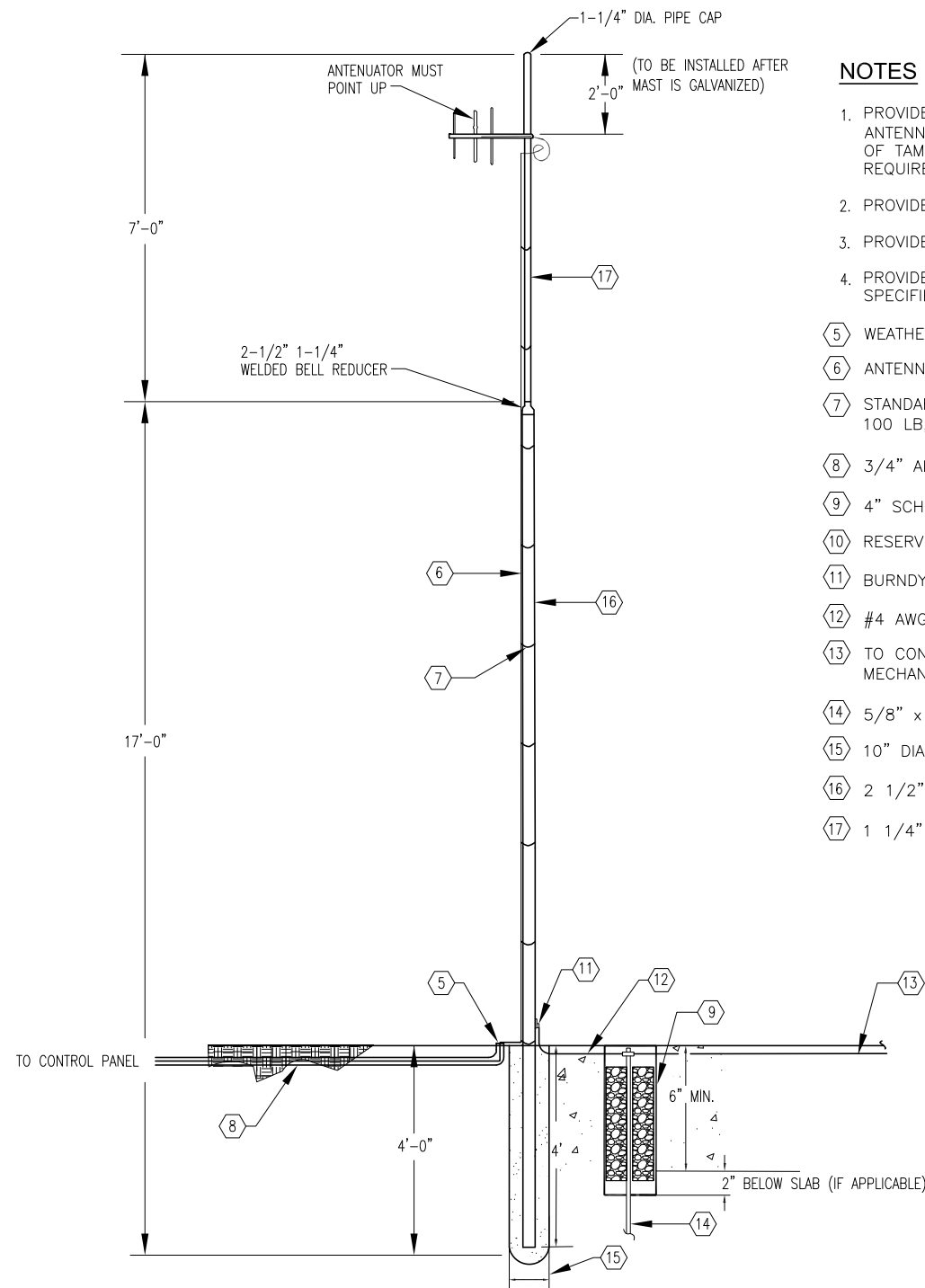
SCALE	
NTS	

CITY of TAMPA
 WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
 REHABILITATION
 ELECTRICAL NOTES FOR SHEETS E12 - E14

DENNIS VANN P.E. No. 57620

SHEET NUMBER E-15
FILE: 1713060



NOTES

1. PROVIDE AND INSTALL NEW GALVANIZED STEEL OR RELOCATE EXISTING ANTENNA/MAST AS REQUIRED. THE CONTRACTOR SHALL VERIFY WITH THE CITY OF TAMPA ELECTRICAL REPRESENTATIVE IF THE MAST CAN BE RELOCATED WITH REQUIRED MODIFICATIONS.
 2. PROVIDE AND INSTALL NEW ANTENNA COAX CABLE, AS REQUIRED.
 3. PROVIDE AND INSTALL NEW UNDERGROUND CONDUIT, AS REQUIRED.
 4. PROVIDE AND INSTALL NEW ANTENNA GROUNDING SYSTEM, AS SHOWN, SPECIFIED, AND REQUIRED.
- 5 WEATHERPROOF BUSHING
 - 6 ANTENNA CABLE
 - 7 STANDARD OUTDOOR CABLE TIES, 304 STAINLESS STEEL, TENSILE STRENGTH 100 LB, GRAINGER #6JE35
 - 8 3/4" ALUMINUM CONDUIT TO CONTROL PANEL
 - 9 4" SCHEDULE 80 PVC CONDUIT, FILLED WITH CRUSHED STONE.
 - 10 RESERVED.
 - 11 BURNDY MECHANICAL CONNECTOR #KA25-4-1/0
 - 12 #4 AWG-BARE-STRANDED
 - 13 TO CONTROL PANEL GROUNDING SYSTEM, USE CADWELD OR BURNDY MECHANICAL CONNECTOR #VT2525
 - 14 5/8" x 10' STAINLESS STEEL GROUND ROD
 - 15 10" DIA. CONCRETE FILLED HOLE
 - 16 2 1/2" RGS CONDUIT
 - 17 1 1/4" RGS CONDUIT

ANTENNA DETAIL
NOT TO SCALE
GALVANIZE MAST AFTER FABRICATION

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060						
DESIGNED	DEV						
DRAWN	EAK						
CHECKED	TDT						
DATE	03/24/14	No.	DATE	BY	REVISION	DESCRIPTION	

SCALE

NTS

CITY of TAMPA
WASTEWATER DEPARTMENT

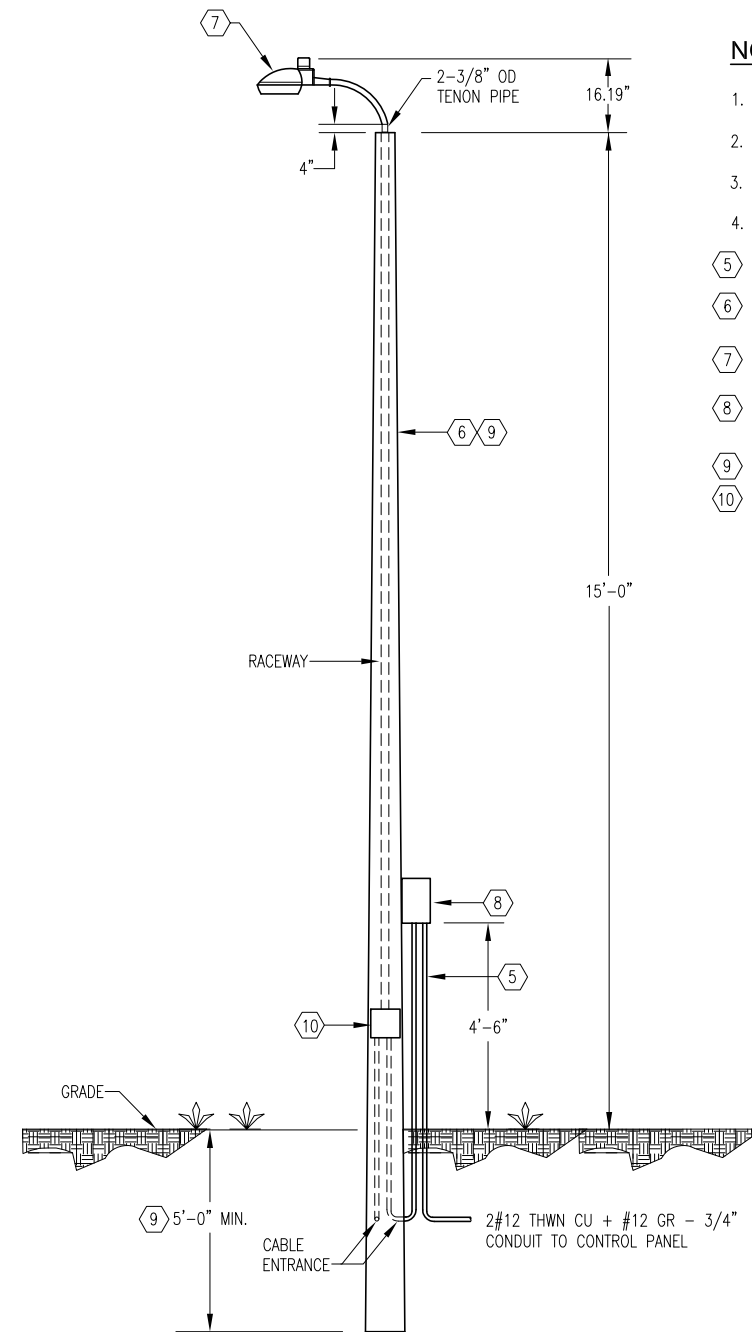
LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL DETAILS

SHEET NUMBER

E-16

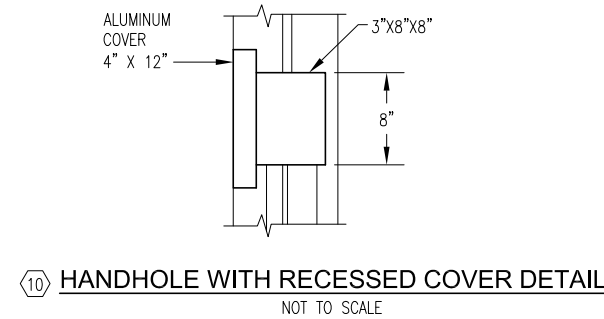
DENNIS VANN P.E. No. 57620

FILE: 1713060



NOTES

1. PROVIDE AND INSTALL NEW CONCRETE LIGHT POLE AS REQUIRED.
2. PROVIDE AND INSTALL NEW LED LIGHT FIXTURE, AS REQUIRED.
3. PROVIDE AND INSTALL NEW UNDERGROUND CONDUIT, AS REQUIRED.
4. COORDINATE LOCATION OF THE AREA LIGHT WITH CITY OF TAMPA PERSONNEL.
5. USE STAINLESS STEEL PIPE STRAPS; SPACED 2'-0" APART TO MOUNT CONDUIT.
6. NEW 20' CONCRETE POLE; PRESTRESSED CONCRETE UTILITY POLE (LONESTAR PRESTRESS MFG. INC.; CAT # 251002 OR APPROVED EQUAL.
7. NEW LED LIGHT FIXTURE WITH SYMMETRIC LENS; HUBBELL # DDL-9L-1 (SYMMETRIC)
8. 4" SQ x 2-1/8" DEEP WEATHER PROOF J.BOX WITH LIGHT SWITCH & GASKETED COVER.
9. INSTALL AT A DEPTH PER MANUFACTURER RECOMMENDATIONS.
10. HANDHOLE WITH RECESSED COVER, REFER TO DETAIL THIS SHEET.



LED AREA LIGHT/POLE DETAIL
NOT TO SCALE

100% CONSTRUCTION DOCUMENTS -03/24/14

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD - SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869



777 S. Harbour Island Blvd,
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	13060						
DESIGNED	DEV						
DRAWN	EAK						
CHECKED	TDT						
DATE	03/24/14	No.	DATE	BY	REVISION	DESCRIPTION	

SCALE	
NTS	

CITY of TAMPA
WASTEWATER DEPARTMENT

LINEBAUGH PUMPING STATION
REHABILITATION
ELECTRICAL DETAILS

DENNIS VANN P.E. No. 57620

SHEET NUMBER	E-17
FILE:	1713060