

CITY OF LARGO

WET WEATHER MONITORING AND PUMPING SYSTEM



60% SUBMITTAL - NOT FOR CONSTRUCTION MARCH 2013

GENERAL, CIVIL AND MECHANICAL

TODD E. BOSSO, P.E.
FLORIDA P.E. - LICENSE NUMBER 60018

FRANK A. MILLER, P.E.
FLORIDA P.E. - LICENSE NUMBER 62179

BENJAMIN C. TURNAGE, P.E.
FLORIDA P.E. - LICENSE NUMBER 64055

STRUCTURAL

ROBERT E. HRABOVSKY, P.E.
FLORIDA P.E. - LICENSE NUMBER 43312

ELECTRICAL

JOHN S. DIEDRICH, P.E.
FLORIDA P.E. - LICENSE NUMBER 68578

SITE SURVEY

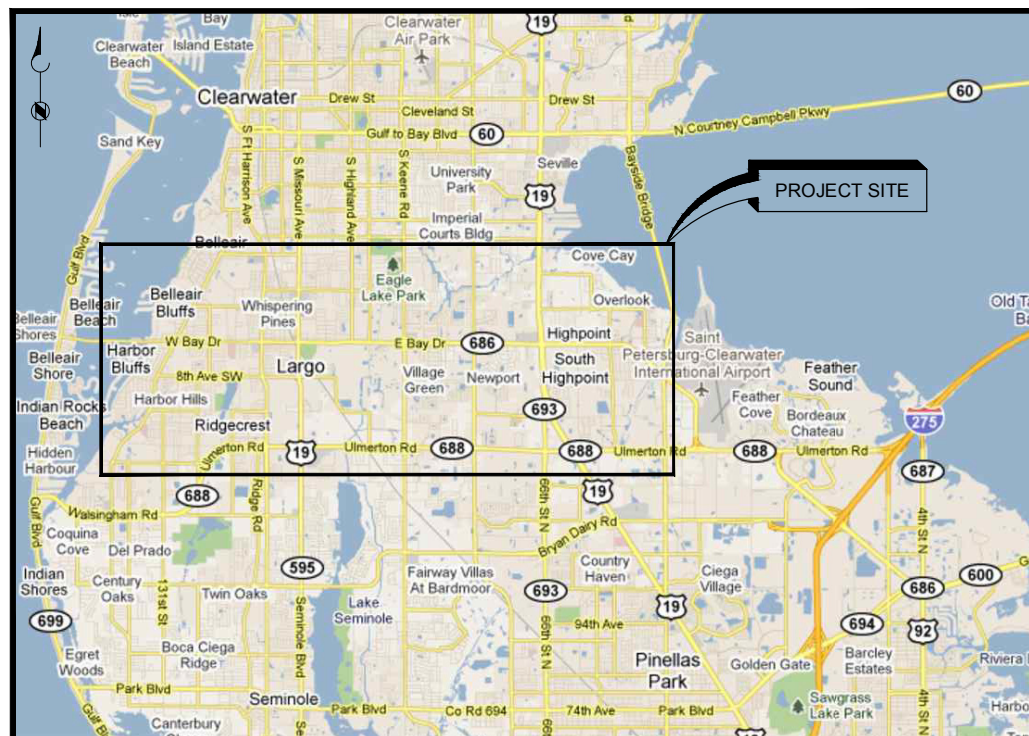
BRADLEY E. STOCKHAM, PSM
FLORIDA PROFESSIONAL SURVEYOR AND
MAPPER - LICENSE NUMBER LS6390

MARCO SURVEYING & MAPPING, LLC
SURVEYOR BUSINESS - LICENSE NUMBER
LB7705

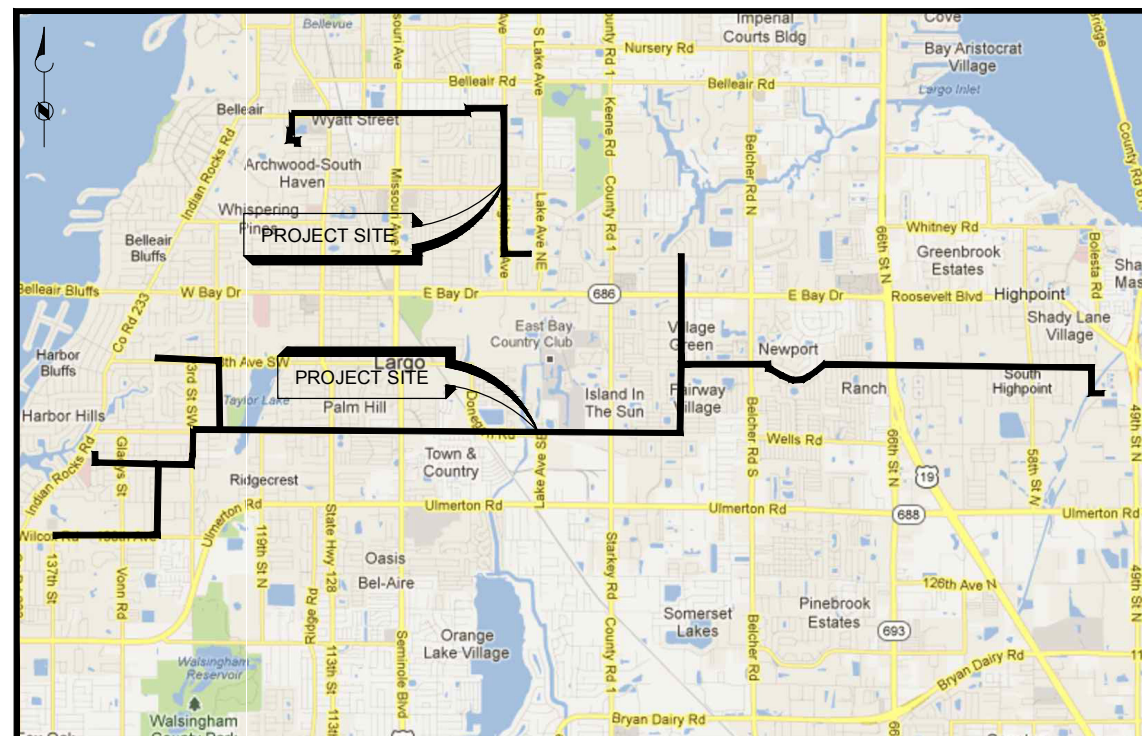
CITY OF LARGO

MAYOR	PATRICIA GERARD
COMMISSIONER 1	MICHAEL SMITH
COMMISSIONER 2	ROBERT MURRAY
COMMISSIONER 3	CURTIS HOLMES
COMMISSIONER 4	JAMIE ROBINSON
COMMISSIONER 5	HARRIET K. COZIER
COMMISSIONER 6	WOODY BROWN

CITY MANAGER	NORTON CRAIG
DIRECTOR OF E.S.	IRVIN KETY
CITY ENGINEER	LELAND DICUS
PROJECT MANAGER	ANNE ROCKE



VICINITY MAP

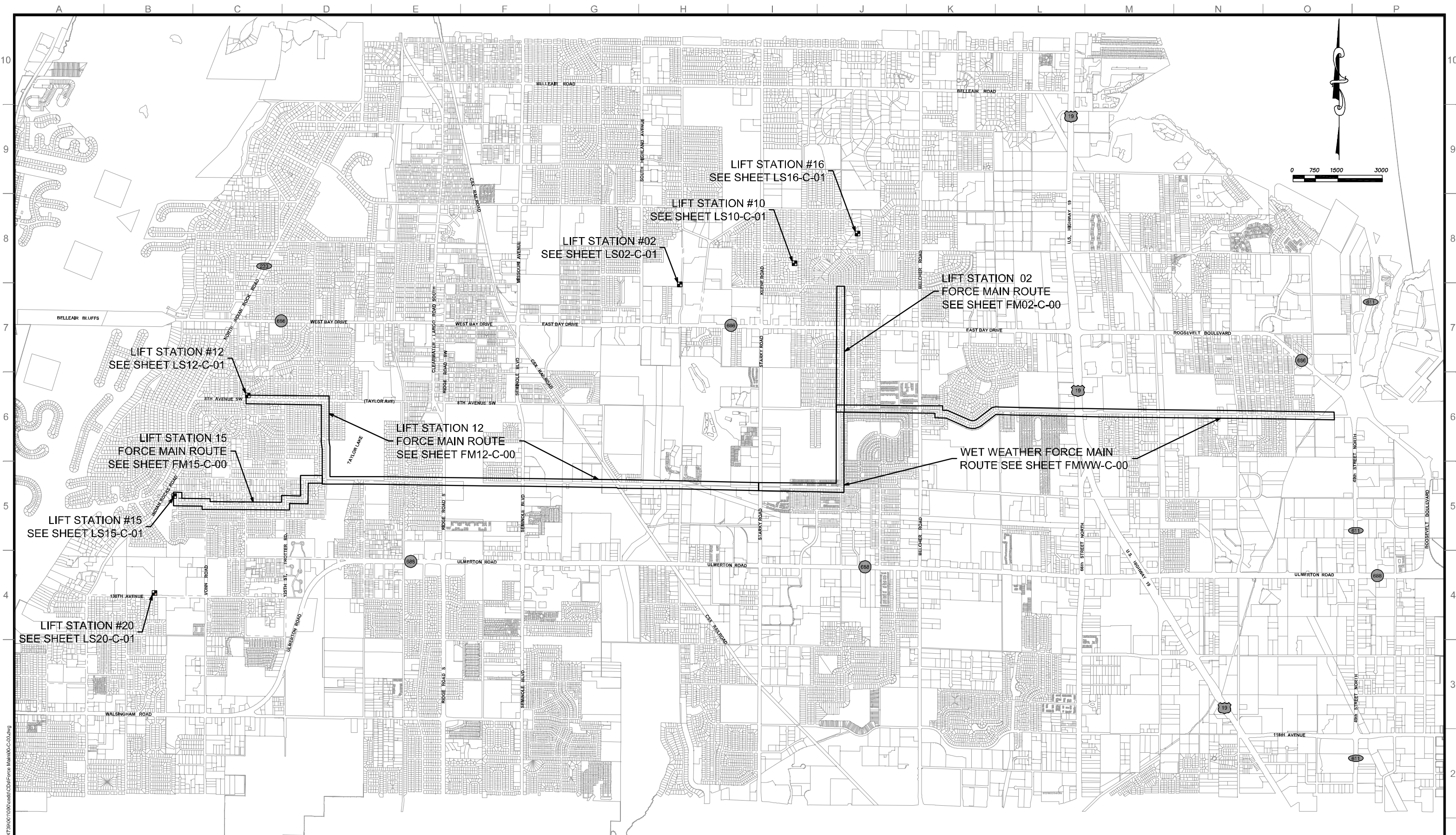


LOCATION MAP

**Brown AND
Caldwell**

King
ENGINEERING ASSOCIATES, INC.

5405 CYPRESS CENTER DR, SUITE 250, TAMPA, FLORIDA 33609
PHONE: (813) 371-9400 FAX: (813) 371-9399
BOARD OF PROFESSIONAL ENGINEERS CERTIFICATE OF AUTHORIZATION NO. 00002602
BC PROJECT NO. 140741



King

4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone 813 880-8882
Fax 813 880-8882
www.kingengineering.com
Engineering License #2610

SUBMITTED: _____

PROJECT MANAGER

DATE: _____

APPROVED: _____

BROWN AND CALDWELL

DATE: _____

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: JUL/FWP
DRAWN: FWP/TAD
CHECKED: JUL
CHECKED: BCT
APPROVED: _____

EXTERNAL REFERENCE FILES

BORDER-KING.dwg
Largo-PAQ.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	A	DRAFT/PROGRESS SET		12/19	
	B	60% SUBMITTAL		02/15	



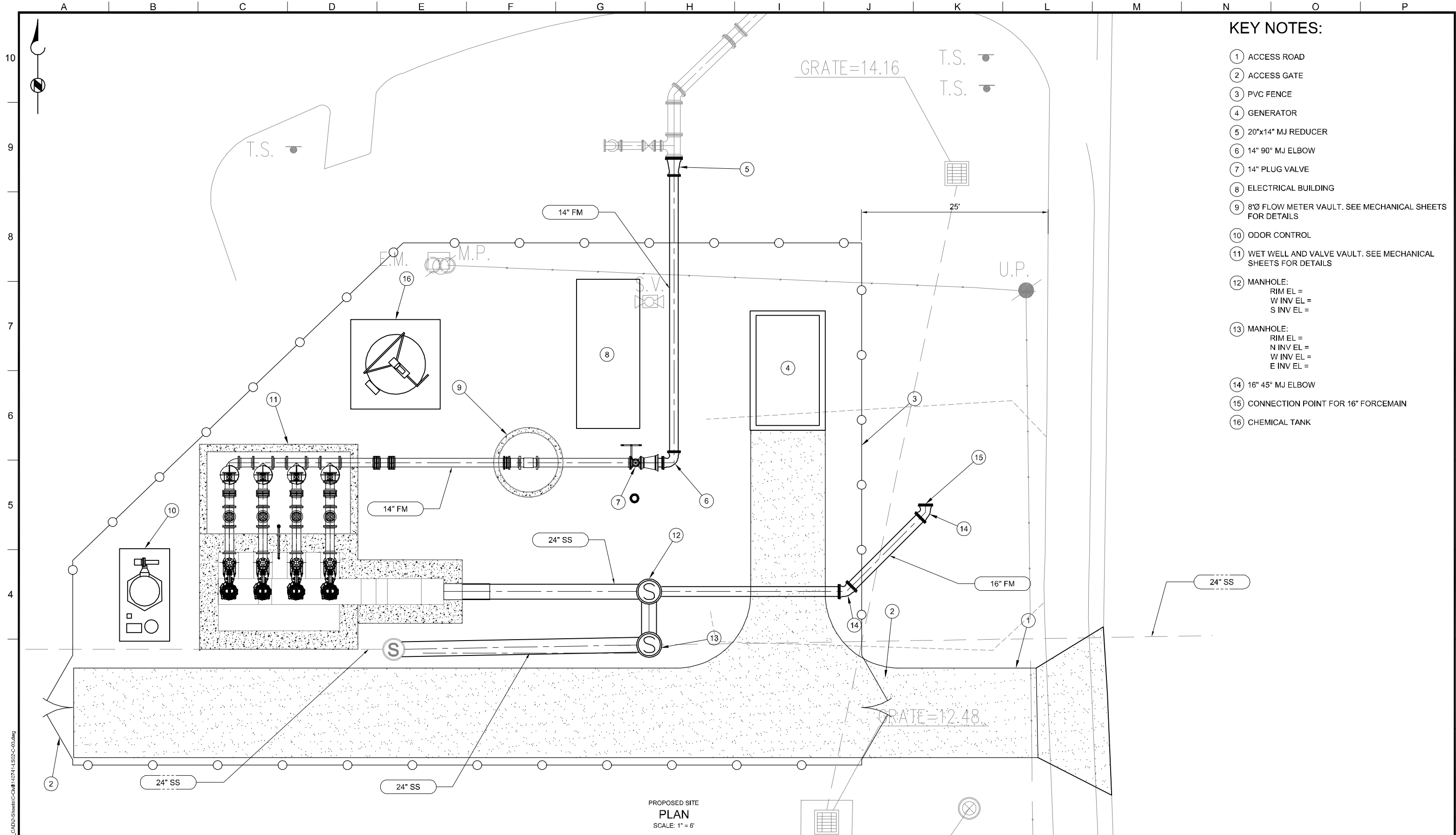
CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

**WET WEATHER MONITORING
AND PUMPING SYSTEM**

OVERALL PROJECT
SITE PLAN & KEY MAP

FILENAME
00-C-00.dwg
KING PROJECT NUMBER
4739-001-000
CLIENT PROJECT NUMBER
2010-25
DRAWING NUMBER
00-C-00
SHEET NUMBER
50 OF ##

Mar 04, 2013 - 7:04am C:\ENV\ENR\738001\000\cadd\CD\Force Main\00-C-00.dwg



- KEY NOTES:**
- 1 ACCESS ROAD
 - 2 ACCESS GATE
 - 3 PVC FENCE
 - 4 GENERATOR
 - 5 20"x14" MJ REDUCER
 - 6 14" 90° MJ ELBOW
 - 7 14" PLUG VALVE
 - 8 ELECTRICAL BUILDING
 - 9 8" FLOW METER VAULT. SEE MECHANICAL SHEETS FOR DETAILS
 - 10 ODOR CONTROL
 - 11 WET WELL AND VALVE VAULT. SEE MECHANICAL SHEETS FOR DETAILS
 - 12 MANHOLE:
RIM EL =
W INV EL =
S INV EL =
 - 13 MANHOLE:
RIM EL =
N INV EL =
W INV EL =
E INV EL =
 - 14 16" 45° MJ ELBOW
 - 15 CONNECTION POINT FOR 16" FORCEMAIN
 - 16 CHEMICAL TANK

PROPOSED SITE
PLAN
SCALE: 1" = 6'

Brown and Caldwell
TAMPA, FLORIDA

SUBMITTED: _____
PROJECT MANAGER
APPROVED: _____
BROWN AND CALDWELL

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: F MILLER
DRAWN: T DMCIELI
CHECKED: _____
CHECKED: _____
APPROVED: T BOSSO

EXTERNAL REFERENCE FILES

- 140741-TBK-0000-01.dwg
- X-L-S02-C-100.dwg
- X-L-S02-C-101.dwg
- X-L-S02-M-101.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

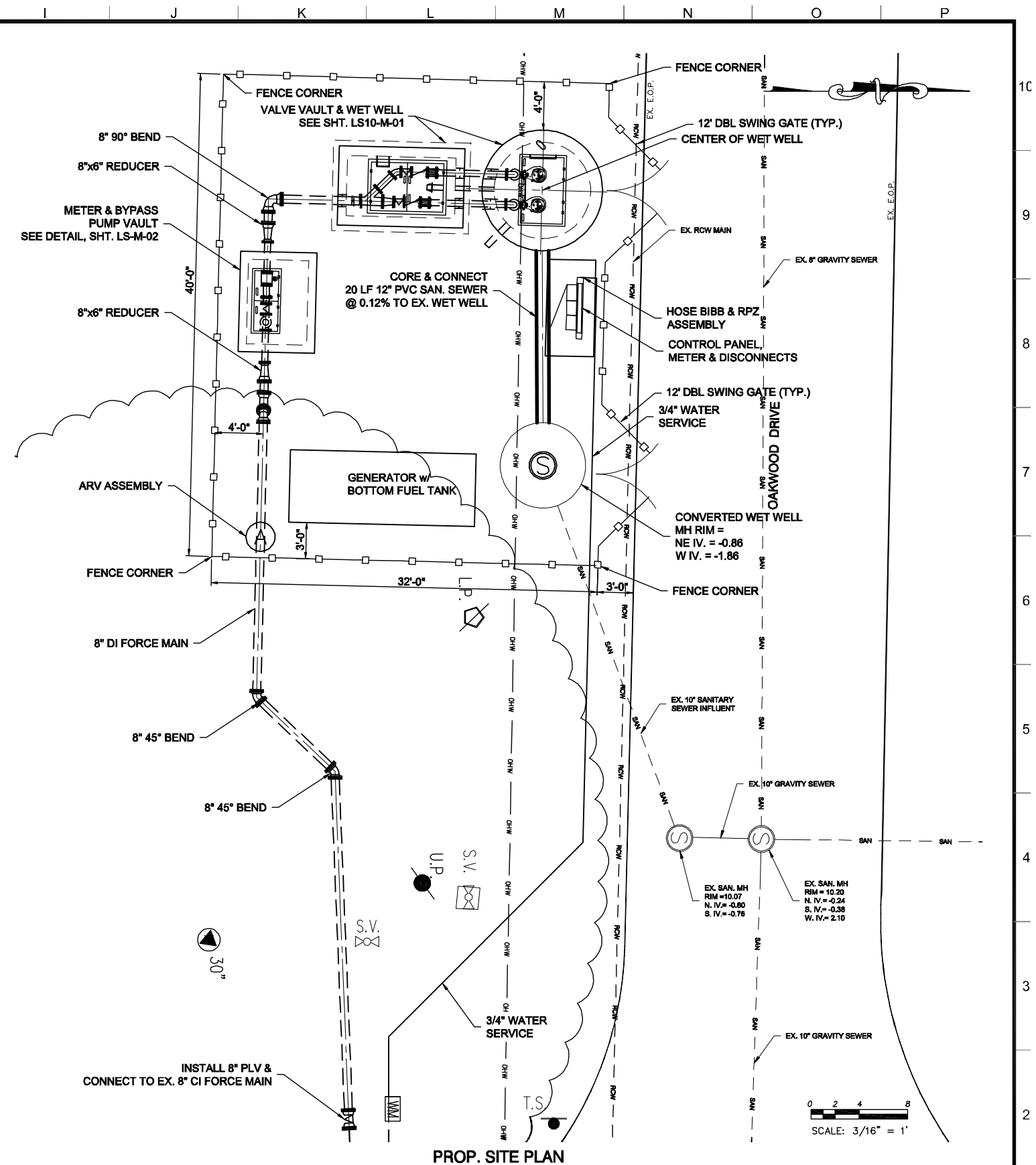
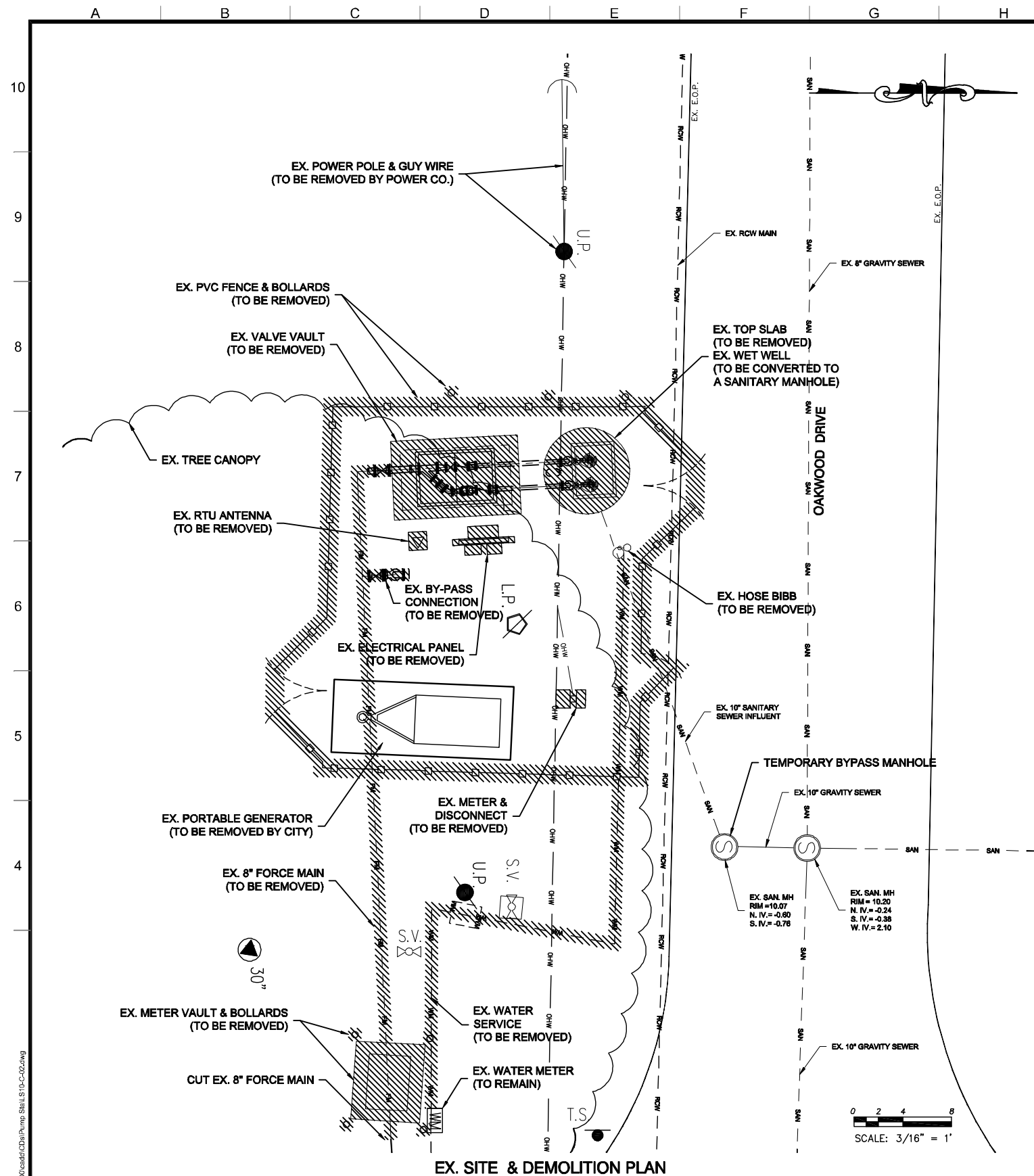


CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

**WET WEATHER MONITORING
AND PUMPING SYSTEM**

**LIFT STATION #02
SITE AND YARD PIPING PLAN**

FILENAME
140741-LS02-C-03.dwg
BC PROJECT NUMBER
140741
CLIENT PROJECT NUMBER
2010-25
DRAWING NUMBER
LS02-C-03
SHEET NUMBER
-- OF --



King
ENGINEERING ASSOCIATES, INC.

4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone 813 880-8881
Fax 813 880-8882
www.kingengineering.com
Engineers License #2610

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" = SCALE ACCORDINGLY)

DESIGNED:	JJL/FWP
DRAWN:	FWP/TAD
CHECKED:	JJL
CHECKED:	BCT
APPROVED:	

EXTERNAL REFERENCE FILES	
BORDER-KING.dwg	
LS-10_EXCOND.dwg	
LS-10_SITE_EXCOND.dwg	
LS-10_EDF.dwg	

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP
	A	DRAFT/PROGRESS SET		12/19	
	B	60% SUBMITTAL		02/15	

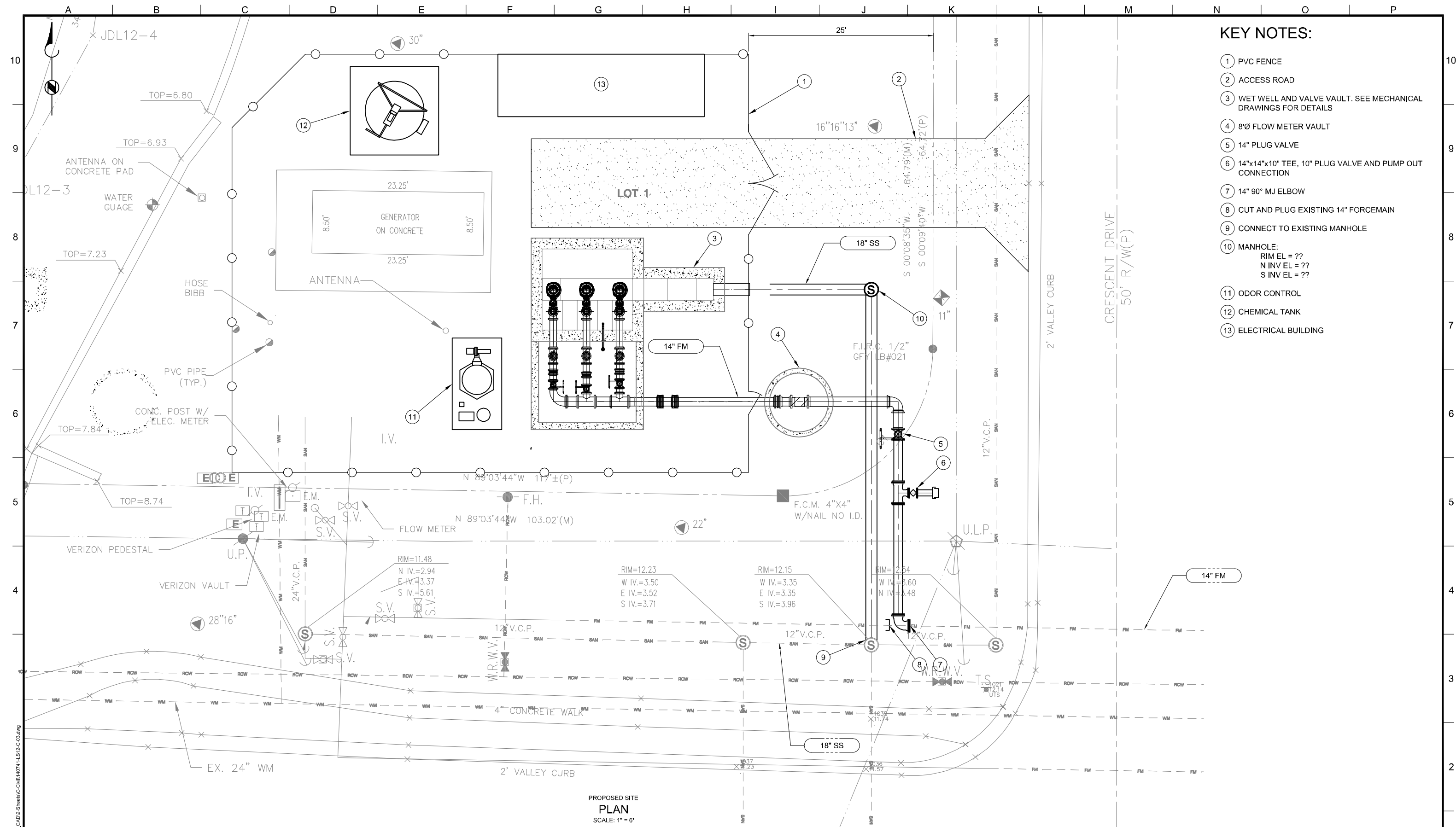


CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

WET WEATHER MONITORING AND PUMPING SYSTEM

LIFT STATION #10 EXISTING & PROPOSED SITE PLAN

FILENAME	LS10-C-02.dwg
KING PROJECT NUMBER	4739-001-000
CLIENT PROJECT NUMBER	2010-25
DRAWING NUMBER	LS10-C-02
SHEET NUMBER	206 OF ##



- # KEY NOTES:
- ① PVC FENCE
 - ② ACCESS ROAD
 - ③ WET WELL AND VALVE VAULT. SEE MECHANICAL DRAWINGS FOR DETAILS
 - ④ 8"Ø FLOW METER VAULT
 - ⑤ 14" PLUG VALVE
 - ⑥ 14"x14"x10" TEE, 10" PLUG VALVE AND PUMP OUT CONNECTION
 - ⑦ 14" 90° MJ ELBOW
 - ⑧ CUT AND PLUG EXISTING 14" FORCEMAIN
 - ⑨ CONNECT TO EXISTING MANHOLE
 - ⑩ MANHOLE:
RIM EL = ??
N INV EL = ??
S INV EL = ??
 - ⑪ ODOR CONTROL
 - ⑫ CHEMICAL TANK
 - ⑬ ELECTRICAL BUILDING

Brown AND Caldwell
TAMPA, FLORIDA

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____ BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)	
DESIGNED:	F MILLER
DRAWN:	T DIMICELI
CHECKED:	
CHECKED:	
APPROVED:	T BOSSO

EXTERNAL REFERENCE FILES
140741-TBK-0000-01.dwg
X-LS12-C-101.dwg
X-LS12-C-100.dwg
X-LS12-M-101.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

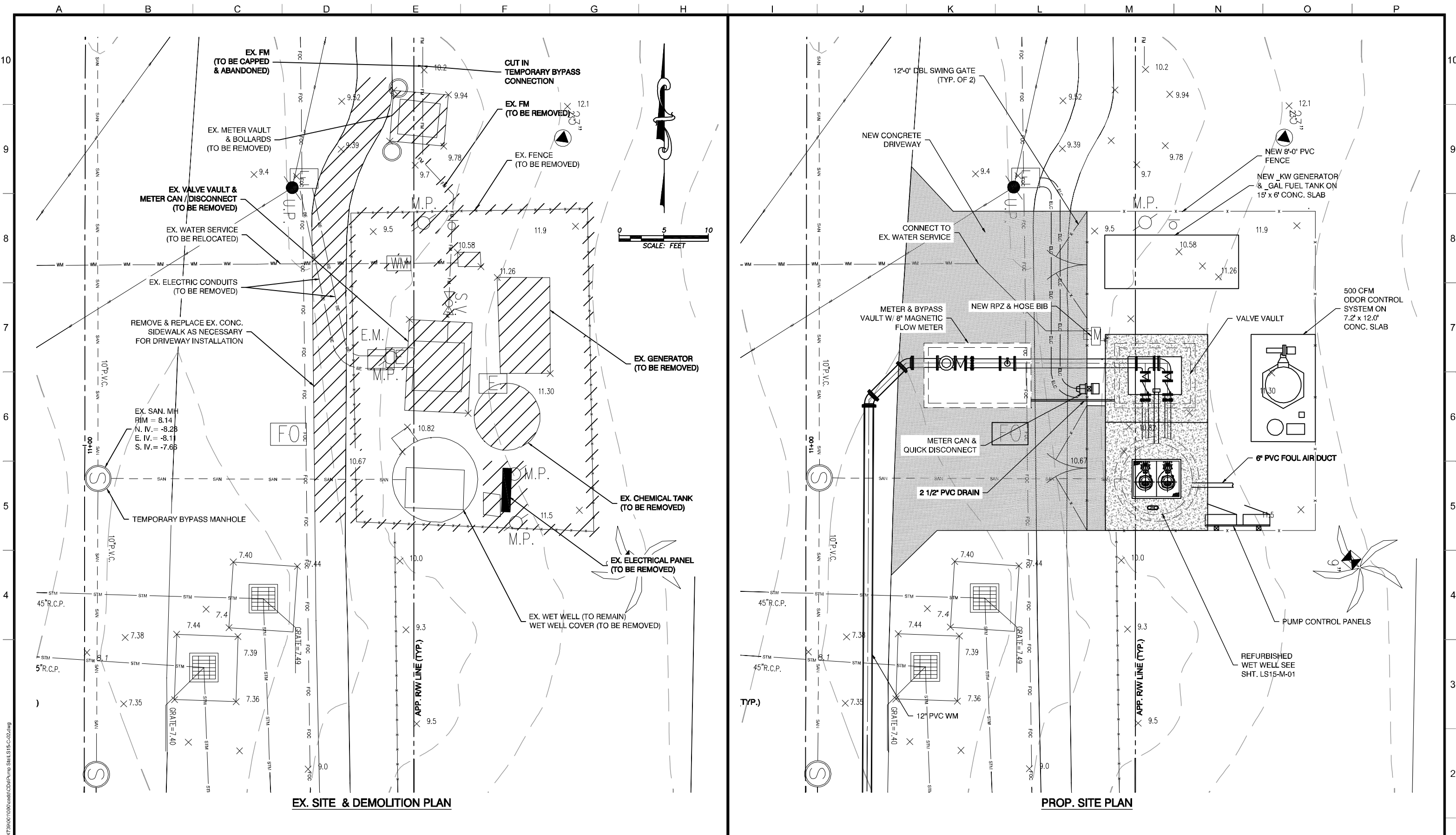
[illegible]

CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

WET WEATHER MONITORING AND PUMPING SYSTEM

LIFT STATION #12
SITE AND YARD PIPING PLAN

FILENAME	140741-LS12-C-03.dwg
BC PROJECT NUMBER	140741
CLIENT PROJECT NUMBER	2010-25
DRAWING NUMBER	LS12-C-03
SHEET NUMBER	-- OF



King
ENGINEERING ASSOCIATES, INC.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone 813 880-8882
Fax 813 880-8882
www.kingengineering.com
Engineering License #2610

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: JULFWP
DRAWN: FWPTAD
CHECKED: JUL
CHECKED: BCT
APPROVED:
DATE:
PROJECT MANAGER
DATE:
BROWN AND CALDWELL

EXTERNAL REFERENCE FILES
BORDER-KING.dwg
SURVEY-SEG_01.dwg
EDF-LS15-EX-SITE2.dwg
EDF-4-ORCEMAIN.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

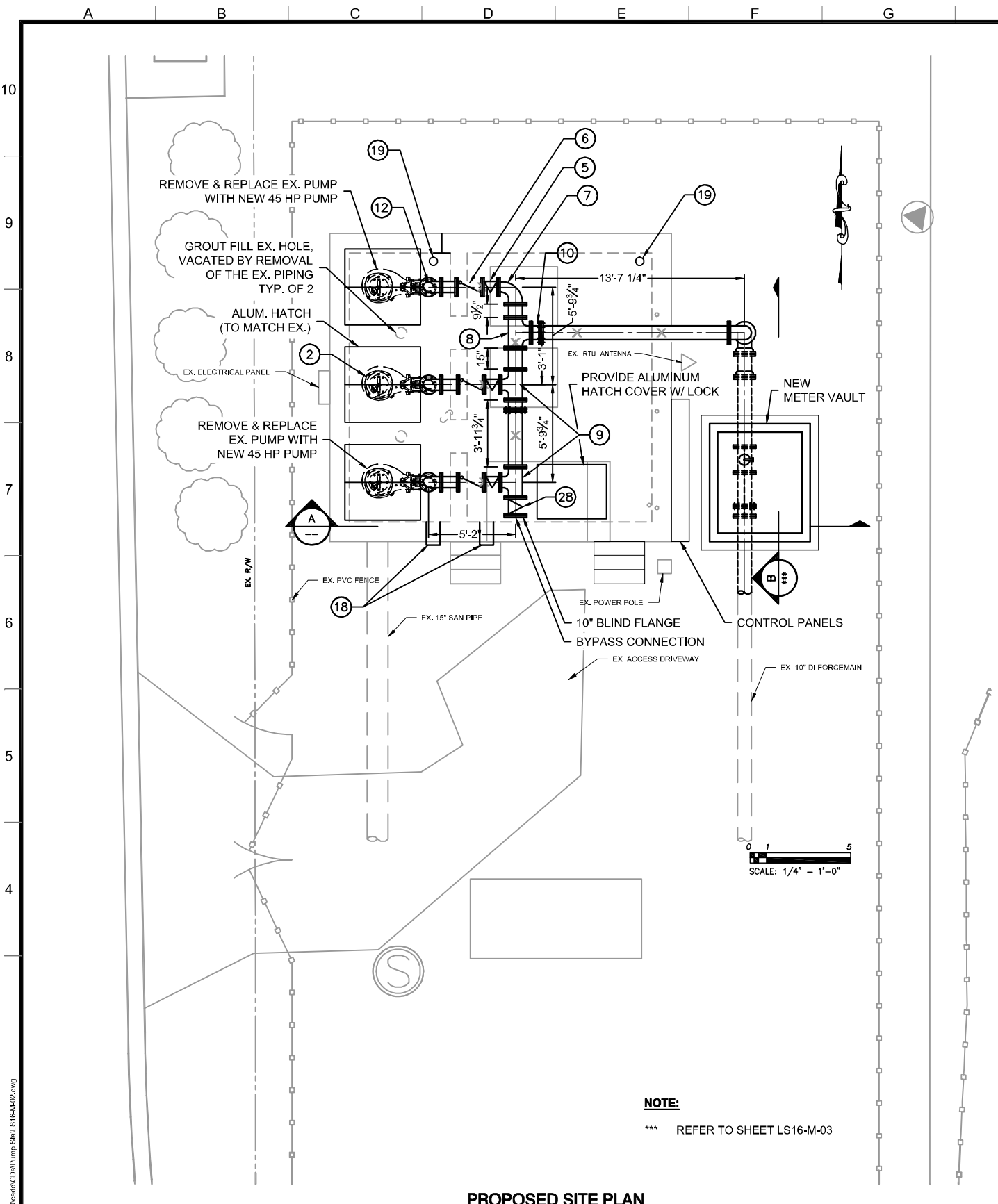
REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
A	1	DRAFT/PROGRESS SET		12/19
B	2	60% SUBMITTAL		02/15

CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

**WET WEATHER MONITORING
AND PUMPING SYSTEM**

LIFT STATION #15
EXISTING & PROPOSED
SITE PLAN

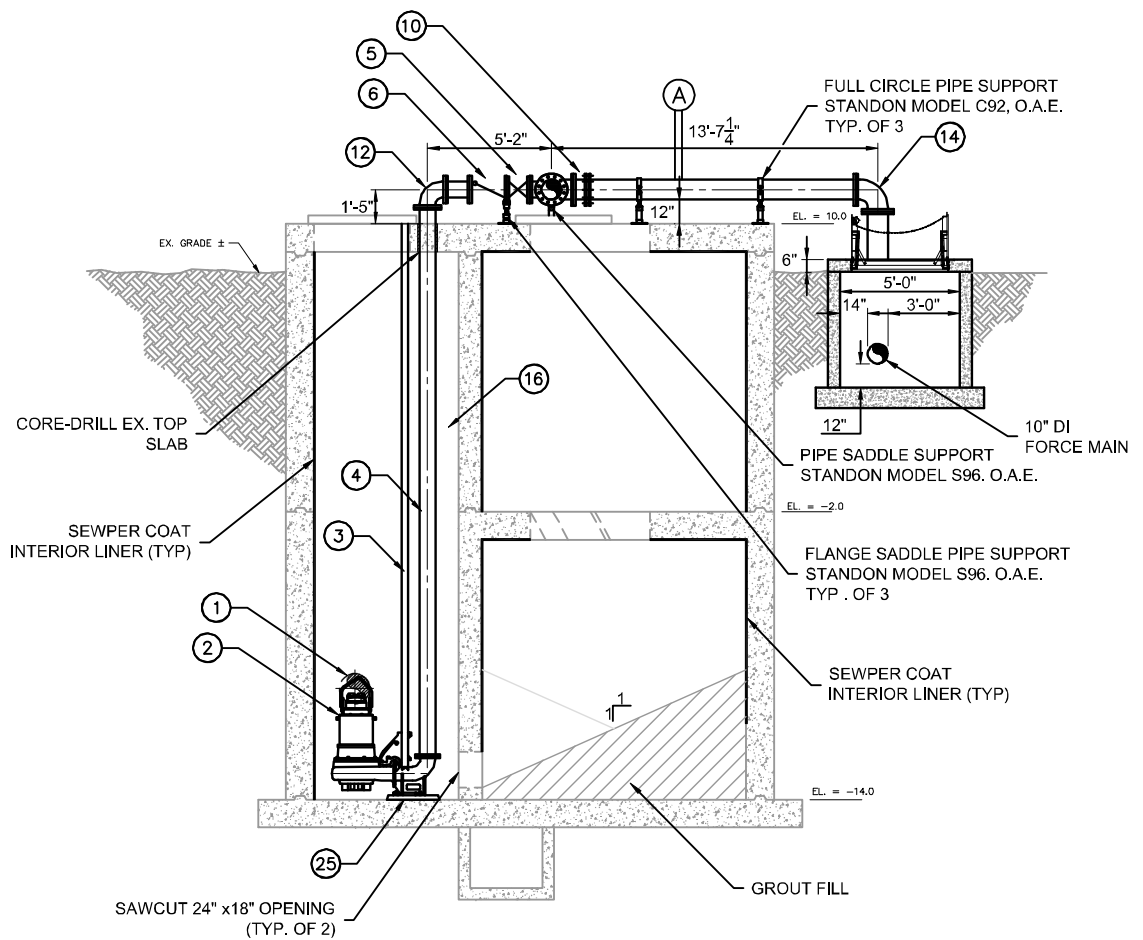
FILENAME
LS15-C-02.dwg
KING PROJECT NUMBER
4739-001-000
CLIENT PROJECT NUMBER
2010-25
DRAWING NUMBER
LS15-C-02
SHEET NUMBER
261 OF ##



PROPOSED SITE PLAN

KEY NOTES:

- 15" EX. GRAVITY INFLUENT PIPE
- SUBMERSIBLE PUMPS (TYP. OF 3)
(SEE PUMP DATA - SHT. LS16-M-03)
- NEW 3" 316 S.S. PUMP GUIDE RAILS
- 8" DIP DISCHARGE (POLY-SHRINK WRAPPED)
- 8" PLUG VALVE w/ HAND WHEEL (TYP. OF 3)
- 8" FL LEVER & WEIGHT CV
(LEVEL ARMS OUTWARD) (TYP. OF 3)
- 10" x 8" REDUCING 90° BEND
- 10" TEE
- 10"x 8" TEE (TYP. OF 2)
- 10" FLANGED COUPLING ADAPTER
- 10" PVC FOUL AIR DUCT
- 4 NEW FLOATS
- 8" 90° BEND (TYP. OF 3)
- 10" 90° BEND
- ADJUSTABLE SS PIPE SUPPORT
ANVIL FIG. 259 UNDER EACH PLUG VALVE
- S.S. PIPE SUPPORT BRACKET (10' O.C.)
- PUMP CONTROL PANEL
(SEE ELECTRICAL SHEETS)
- 10" PVC FOUL AIR DUCT
(CORE AND CONNECT)
- 6" AIR VENT (SEE DETAIL)
- EX 2" PVC DRAIN w/ P-TRAP
- 6" PVC SUCTION PUMP-OUT w/ MALE
CAM-LOK & CAP
- 2" SCH. 80 PVC ELECTRICAL CONDUITS
- 8" BASE ELBOW
- NEW 4-HOOK S.S. "J" HOOK BRACKET
- CONCRETE BENCH W/ 304 SS ANCHORS AS
REQUIRED BY PUMP MANUFACTURER
- 6" PVC 90° BEND
- LINK SEAL OR RUBBER BOOT W/ 316 SS
HARDWARE (TYP. ALL PENETRATIONS)
- 10" PLUG VALVE w/ HAND WHEEL



NOTE:

- 1) EX. RTU ANTENNA, NEW LEVEL SENSOR AND NEW CONTROL PANELS NOT SHOWN FOR CLARITY.

SECTION

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

King
ENGINEERING ASSOCIATES, INC.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone 813 880-8881
Fax 813 880-8882
www.kingengineering.com
Engineering License #2610

SUBMITTED: _____
PROJECT MANAGER
APPROVED: _____
DATE

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: JUL/FWP
DRAWN: FWP/TAD
CHECKED: JUL
CHECKED: BCT
APPROVED: _____
DATE

EXTERNAL REFERENCE FILES

- EX SITE.dwg
- LS-16-EXCOND.dwg
- BORDER-KING.dwg
- LS-16-EDF.dwg
- LS-16-EDF_SECTIONS.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
	A	DRAFT/PROGRESS SET		12/19
	B	60% SUBMITTAL		02/15

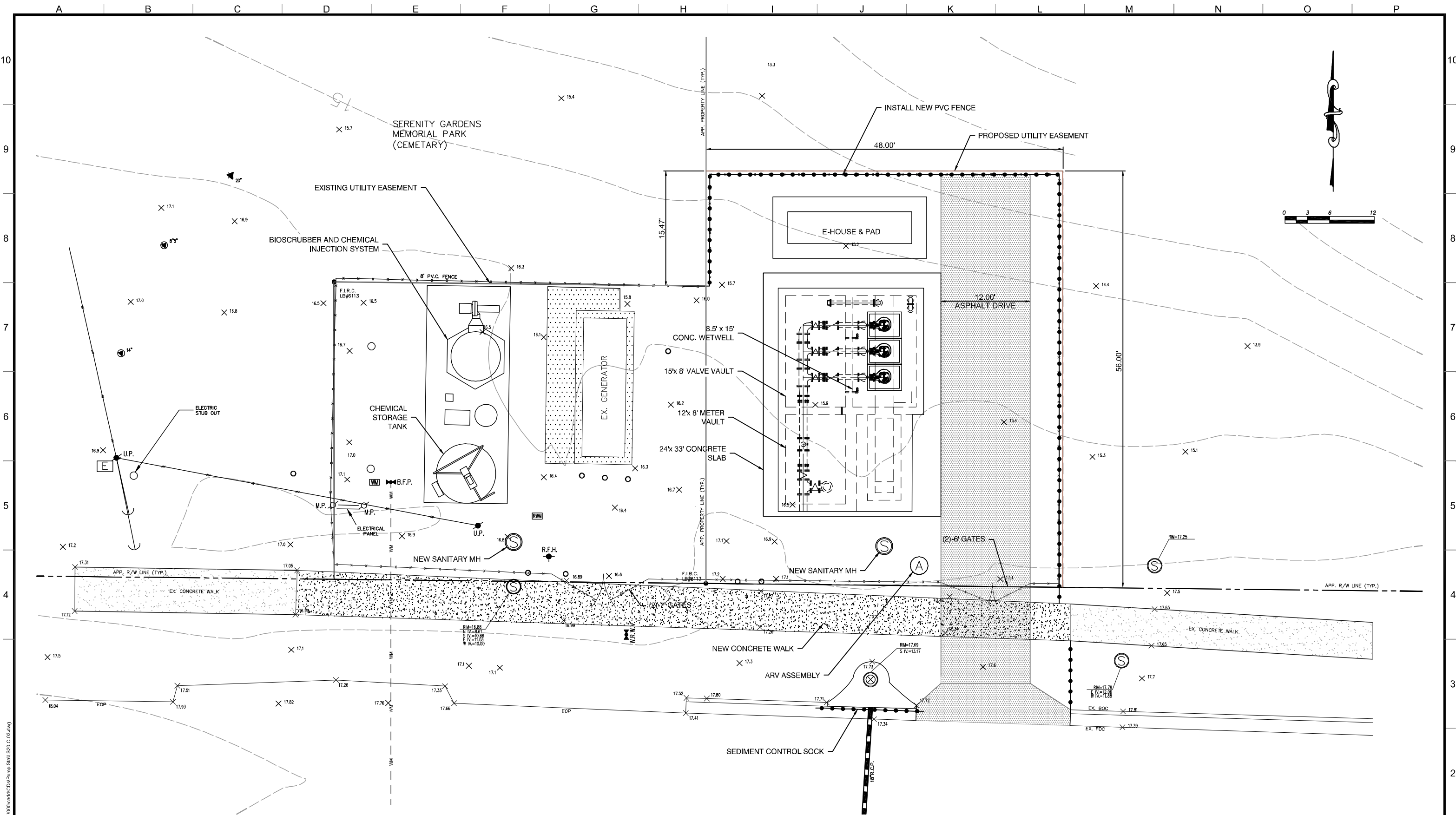


CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

**WET WEATHER MONITORING
AND PUMPING SYSTEM**

**LIFT STATION #16
PROPOSED SITE
PLAN & SECTION**

FILENAME
LS16-M-02.dwg
KING PROJECT NUMBER
4739-001-000
CLIENT PROJECT NUMBER
2010-25
DRAWING NUMBER
LS16-M-02
SHEET NUMBER
249 OF ##



Mar 04, 2013 - 9:54am
C:\ENV\ENGIN\738001\000\cadd\CD\pump\Stall\20-C-03.dwg

King
ENGINEERING ASSOCIATES, INC.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone 813 880-8881
Fax 813 880-8882
www.kingengineering.com
Engineering License #2610

SUBMITTED: _____
PROJECT MANAGER
APPROVED: _____
DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: JUL/FWP
DRAWN: FWP/TAD
CHECKED: JUL
CHECKED: BCT
APPROVED: _____
DATE: _____

EXTERNAL REFERENCE FILES

- PUMP STATION 20.dwg
- BORDER-KING.dwg
- Largo-PAO.dwg
- EDP-4-S-20.dwg
- SURVEY-SEG_03.dwg

60% SUBMITTAL

THIS DRAWING IS NOT VALID FOR
CONSTRUCTION PURPOSES UNLESS IT
BEARS THE SEAL AND SIGNATURE OF A
DULY REGISTERED PROFESSIONAL

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	A	DRAFT/PROGRESS SET		12/19	
	B	60% SUBMITTAL		02/15	



CITY OF LARGO
201 HIGHLAND AVE.
LARGO, FL. 33770

WET WEATHER MONITORING AND PUMPING SYSTEM

LIFT STATION #20 PROPOSED COORDINATE CONTROL & GRADING PLAN

FILENAME
LS20-C-03.dwg
KING PROJECT NUMBER
4739-001-000
CLIENT PROJECT NUMBER
2010-25
DRAWING NUMBER
LS20-C-03
SHEET NUMBER
262 OF ##