The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

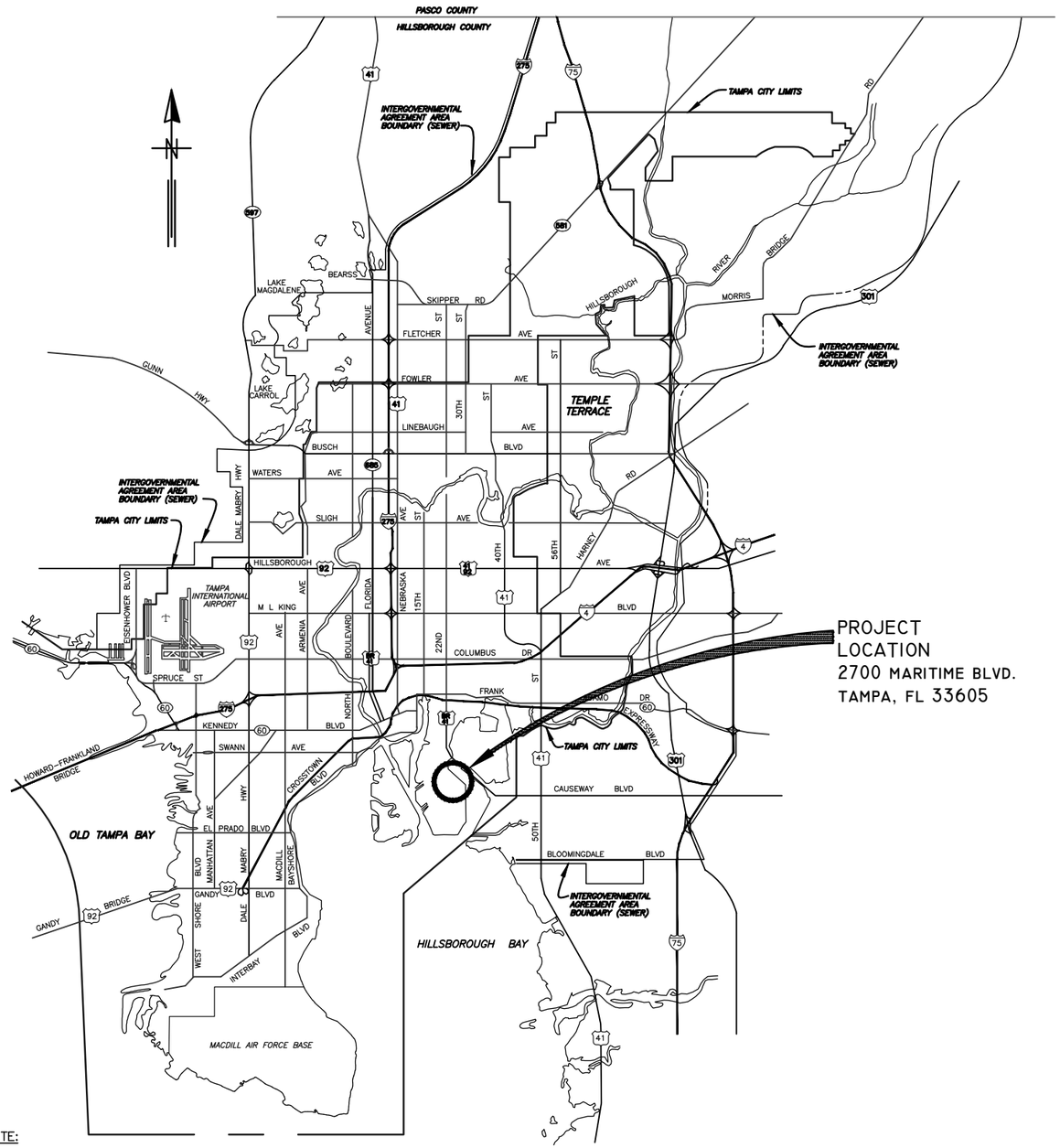
MailTo:ContractAdministration@TampaGov.net

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

TPB017–001

LOCATION MAP



PROJECT LOCATION
2700 MARITIME BLVD.
TAMPA, FL 33605

NOTE:
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

CITY of TAMPA

WASTEWATER DEPARTMENT

PLANS FOR

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

CONTRACT No.
17-C-00028

JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	ROMAN D. KORCHAK, P.E., #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	DES: MS DRN: RS CKD: ___ DATE: 3/20/17	No.	DATE	REVISIONS	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS COVER	W.O. 1000721 SHEET 1
			3					
			2					
			1					

TPB017-002

GENERAL NOTES:

1. THE CONTRACTOR SHALL COORDINATE HIS DAILY CONSTRUCTION, ACCESS, DELIVERY, STORAGE AND OTHER SIMILAR ACTIVITIES WITH THE ENGINEER AND AWTP PERSONNEL. THE FUNCTION OF THE AWTP SHALL NOT BE COMPROMISED AT ANY TIME.
2. EFFLUENT WATER FOR THE SCREEN AND GRIT BUILDING NUMBER ONE (# 059) IS PROVIDED THROUGH THIS SCREEN AND GRIT BUILDING NUMBER TWO (# 005). THEREFORE IT IS EXTREMELY IMPORTANT THAT ANY SERVICE DISRUPTION IS KEPT TO THE MINIMUM.
3. ANY PLANNED SERVICE INTERRUPTION TO THE NORMAL PLANT OPERATION SHALL BE MADE IN WRITING VIA THE ENGINEER IN SUFFICIENT ADVANCE NOTICE TO ALLOW THE AWTP PERSONNEL TO APPROVE/DISAPPROVE THE REQUEST A MINIMUM OF 72 HOURS IN ADVANCE. INTERRUPTIONS SHALL BE KEPT TO THE MINIMUM DURATION AND FREQUENCY POSSIBLE.
4. EXISTING VALVES SHALL ONLY BE CLOSED OR OPENED BY AWTP PERSONNEL. LIKEWISE, ALL AWTP EQUIPMENT SHALL ONLY BE DE-ENERGIZED OR ENERGIZED BY AWTP PERSONNEL.
5. LETTERING AND FLOW ARROWS SHALL BE STENCILED WITH PAINT. STICK-ON LABELS WILL NOT BE ACCEPTED.
6. POSSIBLE HIGH H2S GAS LEVELS MAY REQUIRE EXTRA SAFETY PRECAUTIONS AND/OR SPECIAL EQUIPMENT BY THE CONTRACTOR.
7. EXISTING DIMENSIONS AND ELEVATIONS ARE BASED ON THE BEST INFORMATION AVAILABLE. TRUE DIMENSIONS AND ELEVATIONS SHALL BE DETERMINED IN THE FIELD, BY THE CONTRACTOR, PRIOR TO LAYOUT AND SHOP DRAWING SUBMITTALS.
8. 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 (EASILY READABLE). NO FAXED SHEETS OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
9. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE AND LOCAL GOVERNMENT REGULATIONS IN REGARDS TO WORKING IN CONFINED SPACES.
10. UNLESS OTHERWISE INDICATED, CHEMICAL ANCHORS SHALL BE HILTI HIT-HY 150 MAX ANCHORING SYSTEM WITH TYPE 316 STAINLESS STEEL THREADED RODS, OR EQUAL.
11. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSES, GAS MONITORS, LOWER EXPLOSION LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC., SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
12. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH CONTRACT ADMINISTRATION PERSONNEL AND TREATMENT PLANT OPERATORS.
13. 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.
14. CONTRACTOR SHALL RESTORE ALL STRUCTURES, PIPES OR EQUIPMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.
15. ALL METAL SURFACES THAT COME IN CONTACT WITH CONCRETE SHALL RECEIVE TWO COATS OF COAL TAR EPOXY APPLIED TO THE METAL SURFACE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
16. AREAS OF CONCRETE FLOOR/WALL THAT ARE DISTURBED SHALL BE REFINISHED TO PROVIDE A SMOOTH CONCRETE SURFACE.
17. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.
18. TESTING OF THE NEW INSTALLATIONS WILL BE ACCOMPLISHED BY OPERATING EACH PROJECT LOCATION FOR A MINIMUM TWO DAYS – 24 HOUR PERIODS (ONE DAY FOR EACH PUMP) DURATION AND OBSERVING FOR ANY LEAKS OR MALFUNCTION. SHOULD ANY PROBLEMS OCCUR DURING TESTING PERIOD, THE PROBLEM MUST BE RECTIFIED AND THE PUMP SYSTEM RETESTED.
19. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.
20. CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING STRUCTURES AND EQUIPMENT FROM ANY DAMAGE.
21. ALL HARDWARE, STRAPS, SUPPORTS, ETC., SHALL BE 316 STAINLESS STEEL.
22. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 5TH EDITION 2014, AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
23. THE FOLLOWING PROPOSED PUMPS SHALL BE INSTALLED IN THE SCREEN AND GRIT BUILDING #1. PROPOSED PUMPS ARE PENTAIR AURORA PUMPS, MODEL 3804 10HP PUMPS. PROPOSED PUMPS SHALL BE 3-INCH DIAMETER INLET AND 2.5-INCH OUTLET TO PRODUCE 300 GPM @ 80' TDH.
24. THE FOLLOWING PROPOSED PUMPS SHALL BE INSTALLED IN THE SCREEN AND GRIT BUILDING #2. PROPOSED PUMPS ARE PENTAIR AURORA PUMPS, MODEL 340 7.5HP PUMPS. PROPOSED PUMPS SHALL BE 2.5" DIAMETER INLET AND 2" OUTLET TO PRODUCE 160 GPM @ 80' TDH.
25. GATE VALVES SHALL BE KENNEDY, RESILIENT WEDGE GATE VALVE, NON-RISING STEM OR APPROVED EQUAL. ALL GATE VALVES SHALL BE PROVIDED WITH HAND WHEELS.
26. 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.
27. ALL DIP PIPE AND FITTING SHALL BE CLASS 53 WITH PROTECTO 401 INTERIOR COATING AND PAINTED EXTERIOR.
28. PLUG VALVES SHALL BE DEZURIK, PEF 100% PORT, ECCENTRIC PLUG VALVES OR APPROVED EQUAL. ALL PLUG VALVES SHALL BE PROVIDED WITH HAND WHEELS.
29. ALL HARDWARE, PIPE SUPPORTS, ETC. SHALL BE 316 STAINLESS STEEL.
30. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 5th EDITION 2014, & CHAPTER 5 OF THE CITY OF TAMPA CODE.

PROJECT SCOPE:

FURNISH AND PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT TO INSTALL (2) 10 Hp AND (2) 7.5 Hp BOOSTER PUMPS INCLUDING ASSOCIATED ACCESSORY EQUIPMENT, VALVE ASSEMBLIES, ELECTRICAL CONNECTIONS AND APPURTENANCES.

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
1		

DES: MS
DRN: RS
CKD: __
DATE: 3/20/17

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

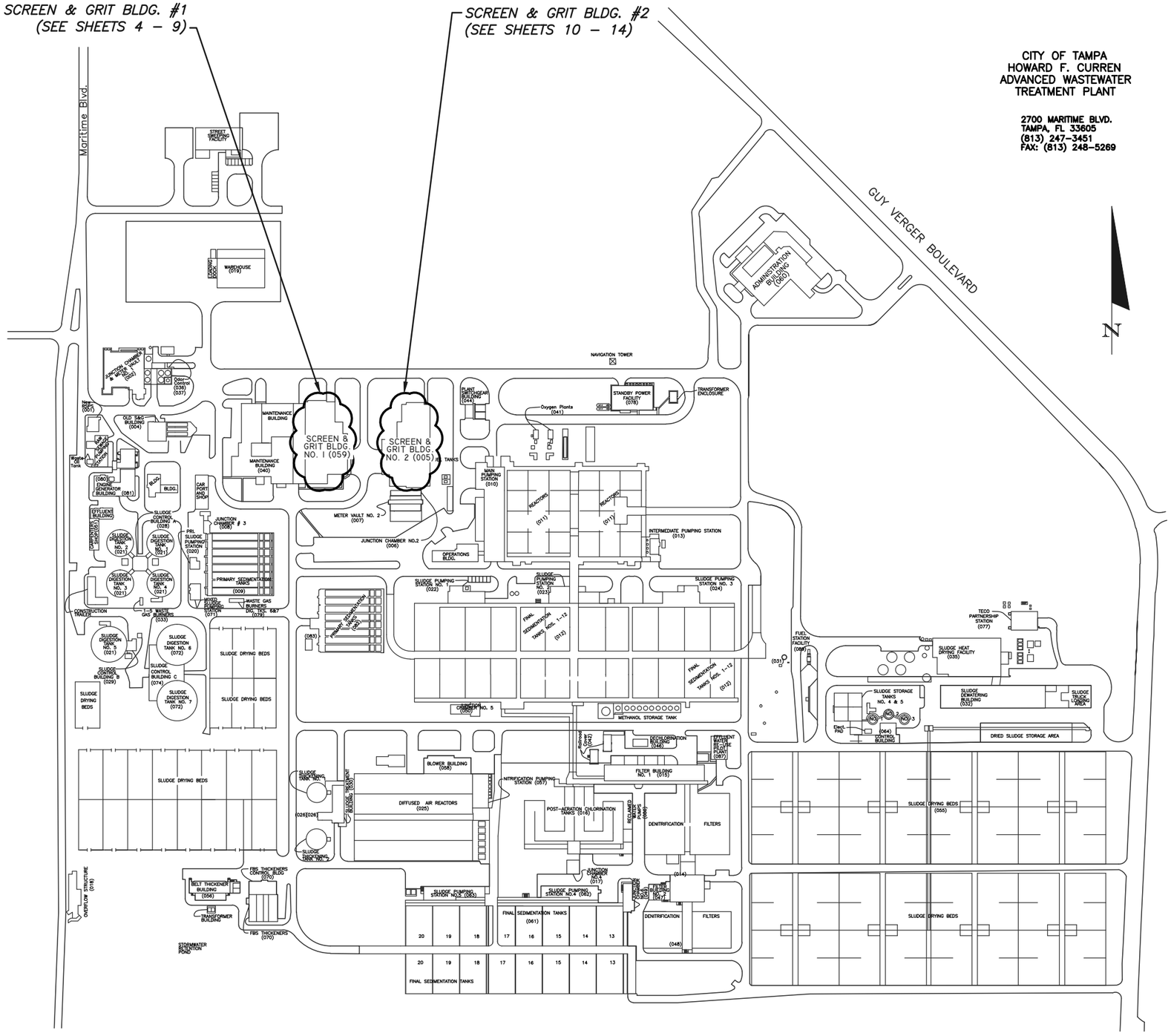
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

LOCATION MAP AND INDEX

W.O. 1000721

SHEET 2

TPB017–003



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2	NOTES
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SCREEN AND GRIT BLDG. NO. 1	
4	BUILDING PLAN
5	EXISTING FLOOR PLAN DEMOLITION
6	EXISTING FLOOR PLAN – PICTURES
7	PROP. BOOSTER PUMPS & SUCTION PIPING
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SCREEN AND GRIT BLDG. NO. 2	
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JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
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DES: MS
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CKD: ___
DATE: 3/20/17

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

W.O. 1000721

SHEET 3

LOCATION MAP AND INDEX

TPB017-004

PROPOSED LOCATION OF NEW WATER BOOSTER PUMP

10" PROCESS AIR ℄ EL 5'-9"

6" EFFLUENT WATER LINE ℄ EL 5'-9"

FOR CONTINUATION SEE DWG AG14

2" PLANT AIR ENCASED IN CONCRETE ℄ EL 5'-9"

3" PLANT WATER ENCASED IN CONCRETE ℄ EL 5'-9"

ELECTRICAL ROOM

FIN FL EL 11'-0"

4/CM4

3/CM3

48"x72" SLUICE GATE ℄ EL 12'-6" (TYP)

72" RISER

4" STOP LOG GROOVE (TYP)

SG-SG-9

SG-SG-10

INV EL 9'-6"

SG-SG-11

SCREEN CHANNEL NO. 3 INV EL 7'-6"

SCREEN CHANNEL NO. 4 INV EL 7'-6"

SCREEN CHANNEL NO. 5 INV EL 7'-6"

6" STOP LOG GROOVE

SEE GENERAL PIPING (DWG AG6) FOR CONTINUATION

CONCRETE APRON

LP EL 10'-10"

HP EL 10'-11"

OVERHEAD ROLLER DOOR (TYP) SEE ARCH DWG'S

HP EL 11'-0"

8" DRAIN ℄ STA 2+00.17X

SCREENINGS AND GRIT LOADING ROOM

HP FIN FL EL 11'-0"

MECH BAR SCREEN (TYP)

8" DRAIN INV EL 7'-2"

8" DRAIN END EL 6'-3"

SG-SP-6 SUMP

CONCRETE PAD

GRAVEL FILL

CONCRETE PAD

TRANSFORMER YARD

SLUICE GATES ℄ EL 10'-6" (TYP)

CHANNEL NO. 5

SG-SG-14

CHANNEL NO. 6

6/CM4

INFLUENT CHANNEL INV EL 7'-0"

SG-SG-12

SG-SG-13

SG-SG-17

6/CM4

CHANNEL NO. 7

4" STOP LOG GROOVES

SG-SG-16

CHANNEL NO. 8

SG-SG-15 4" STOP LOG GROOVES

60"x84" SLUICE GATE ℄ EL 10'-6"

16"x84" SLUICE GATE ℄ EL 10'-6"

℄ GRIT BUILDING

FLOW DEFLECTORS (20 PER TANK) FOR DETAILS SEE DWG CM9

16/CM8

6 @ 2'-0" = 12'-0" (TYP)

5 @ 2'-0" = 10'-0" (TYP)

6 @ 2'-0" = 12'-0" (TYP)

GRIT TANK INFLUENT CHANNEL INV EL 7'-0"

19/CM9

19/CM9

ROTATION

16/CM8

ROTATION

HP EL 2'-7"

℄ DEFLECTOR OPERATOR (TYP)

COMBUSTIBLE GAS DETECTION SAMPLE LINE. FOR CONTINUATION SEE DWG CM2 AND CM4

GRIT COLLECTING EQUIPMENT (TYP) SG-GC-6

℄ GRIT TANKS 6184.5SY

ROTATION

SG-GC-5

10" PROCESS AIR ℄ EL 11'-0"

GRIT PUMPING STATION NO. 3 FOR PIPING AND EQUIP DETAILS SEE SH CM6

GRIT TANK NO. 5

BOTTOM EL GRIT TANK 6'-6" TOP STRUCTURAL SLAB EL 6'-4" (2" GROUT TO BE SWEPT IN BY EQUIPMENT)

GRIT TANK NO. 6

ROTATION

GRIT SUMP (TYP) FOR DETAILS SEE STRUCTURAL DRAWINGS

SG-GC-7

GRIT PUMPING STATION NO. 4 FOR PIPING AND EQUIP DETAILS SEE SH CM6

CONCRETE FILL (TYP) FOR DETAILS SEE STRUCTURAL DRAWINGS

GRIT TANK NO. 7

HP EL 2'-7"

SG-GC-8

℄ GRIT TANK (TYP)

GRIT TANK NO. 8

2/CM3

2/CM3

SG-SP-4 SUMP

SG-SP-5 SUMP

8/CM4

EFFLUENT CHANNEL

SG-SL6-2

3'-2"x10'-0" SLIDE GATE ℄ EL 5'-0"

1/CM3

7/CM4 7/CM4

1/CM3

FOR EFFLUENT CHANNEL CONTINUATION SEE STRUCTURAL DRAWINGS

8/CM4

3/CM3

7'-10" 7'-10" 7'-10" 7'-10" 7'-10" 7'-10" 7'-10" 7'-10"

3" DI PROCESS AIR DIFFUSER MANIFOLD ℄ EL 1'-9" (TYP)

THE INTENT OF THIS PLAN SHEET IS TO SHOW THE GENERAL VICINITY OF THE PROPOSED WORK.

SCREEN AND GRIT BUILDING NO. 1 PLAN
N.T.S.

No.	DATE	REVISIONS
3		
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J- INTO C-\LOS =RR- .=. #49454
D=SIGN DIVISION H=
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DRN: RS
CKD: ——
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN AND GRIT BLDG. NO. 1 BUILDING PLAN

W.O.1000721

SHEET 4

User: ss1s Drawing Name: K:\Was- a- r Projec- \New Screen and Gri- illding Boos- r Pump -dition\Design\Plans\Dra ing\Shee -\SCR=-N - \IT BUILDING PL- .dwg
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TPB017–005

REMOVE AND REINSTALL

22'–7"

25'–4"

Ex. 10" Process Air

UP

7"

Bottom of Pipe El. 3' 9–5/8"

Ex. 4" Steel Pipe

Ex. 6" x 4" Reducer

Ex. 6" Plug Valve (TO BE REMOVED)

Ex. Tee

Ex. Pipe Support #1 (TO BE REMOVED)

REMOVE EX. STEEL PIPE

Bottom of Pipe El. 2' 11–1/8"

5'–9"

9'–9"

15'

Ex. 10" Diameter Drain

9' 4"

Ex. 4" Grit Suction ℄ El. 4'–8"

EX. GRIT PUMP

EX. EQUIPMENT, PIPING, VALVES TO BE REMOVED

Ex. 6" Steel Pipe

1' 6"

7' 8"

Ex. Pipe Support #2

UP

N

EX. GRIT PUMP

EX. GRIT PUMP

EXISTING SCREEN AND GRIT BUILDING NO. 1 - DEMOLITION

SCALE: 1/2" = 1'

User: ss1s Drawing Name: K:\Was- ơ r Projec \New Screen and Gri- ilding Boos- r Pump -dil-ion\Design\Plans\Dra -ing\Shee -\5 =XISTING - , PL =MOLITION.dwg
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DRN: RS
CKD: __
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

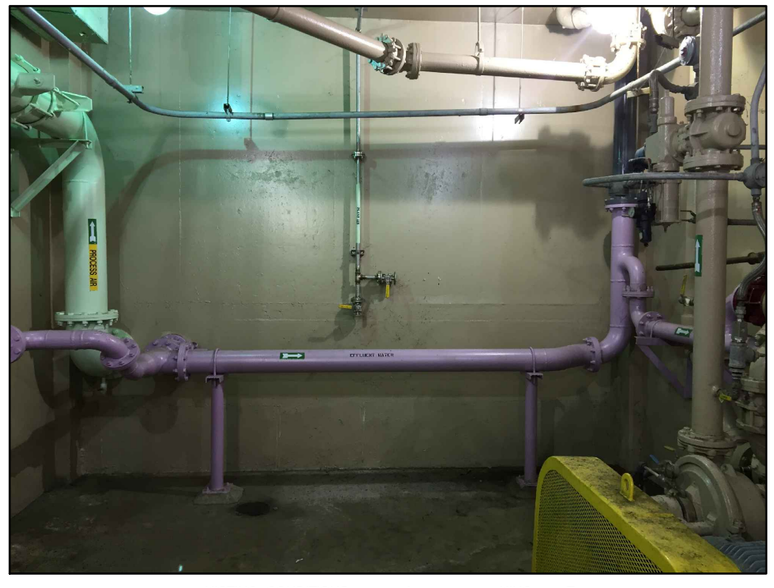
SCREEN AND GRIT BLDG. NO. 1
EXISTING FLOOR PLAN DEMOLITION

W.O.1000721

SH==T 5

TPB017-006

EXISTING CONDITIONS – NORTH – KING – TH



EXISTING CONDITIONS – EAST – KING – TH

EXISTING CONDITIONS – NORTH – KING NORTH – TH

SCREEN & GRIT BUILDING NO. 1
EXISTING FLOOR PLAN-PICTURES
N.T.S.

No.	DATE	REVISIONS
3		
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JOHN CROLEY, INC. #49454
DESIGN DIVISION HEAD
– TEWTER DEPARTMENT

DES: MS
DRN: RS
CKD: ___
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN AND GRIT BLDG. NO. 1
EXISTING FLOOR PLAN – PICTURES

W.O.1000721

SHEET
6

TPB017-007

PROP. 4" 90° DIP BEND (FL-FL)

PROP. 4"x4"x4" DIP TEE (FL-FL)

PROP. 4" DIP (FL-FL) ℄ EL. 1'-1/2"

PROP. 4" 90° DIP BEND (FL-FL)

B/9

A/9

7"

2'-4"

2'

2'

PROP. 6" DIP PLUG VALVE (FL-FL) INSTALL VERTICALLY

Ex. 6" x 4" Reducer

PUMP #2

PUMP #1

C

C

4.69'

4.69'

℄

℄

3'

1.5'

1.5'

PROP. 4 DIP GATE VALVE CLASS 125 (FL-FL) (TYP. 2)

PROP. 4"x11" LG SPOOL PIECE (FL-FL)

Ex. Tee

B/9

5'

PROP. 3'x5' CONCRETE EQUIPMENT PAD 4" THICK (TYP. 2)

PROP. 3" FLEXIBLE COUPLER (PROCO STYLE 240 OR EQUAL) (FL-FL) (TYP. 2)

PROP. 4" 90° DIP BEND (FL-FL) (TYP. 2)

PROP. 4"x3" DIP ECCENTRIC REDUCER (FL-FL) (TYP. 2)

Ex. 10" Diameter Drain

PROP. 6" X 12" LG. SPOOL PIECE (FL-FL)

PROP. 6" DIP GATE VALVE CLASS 125 (FL-FL)

PROP. 6"x6"x4" DIP TEE (FL-FL) SUCTION TEE (N) DISCHARGE TEE (S)

PROP. MEGAFLANGE

A/9

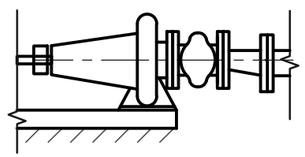
Ex. 6" Steel Pipe ℄ El. 3'-2"

Ex. Pipe Support #2

1' 6"

UP

PROP. DISCHARGE PIPING AND EX. GRIT PUMPS/PIPING ARE NOT SHOWN FOR CLARITY



SECTION C

SCALE: 1/2" = 1'

N

SUCTION PIPING PLAN VIEW

SCALE: 1/2" = 1'

PUMP DATA
PENTAIR AURORA MODEL 3804 WITH 3" INLET 2.5" OUTLET, 10HP, 240V, 3 PH, 300 GPM @ 80' TDH

No.	DATE	REVISIONS
3		
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1		

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: MS
DRN: RS
CKD: __
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

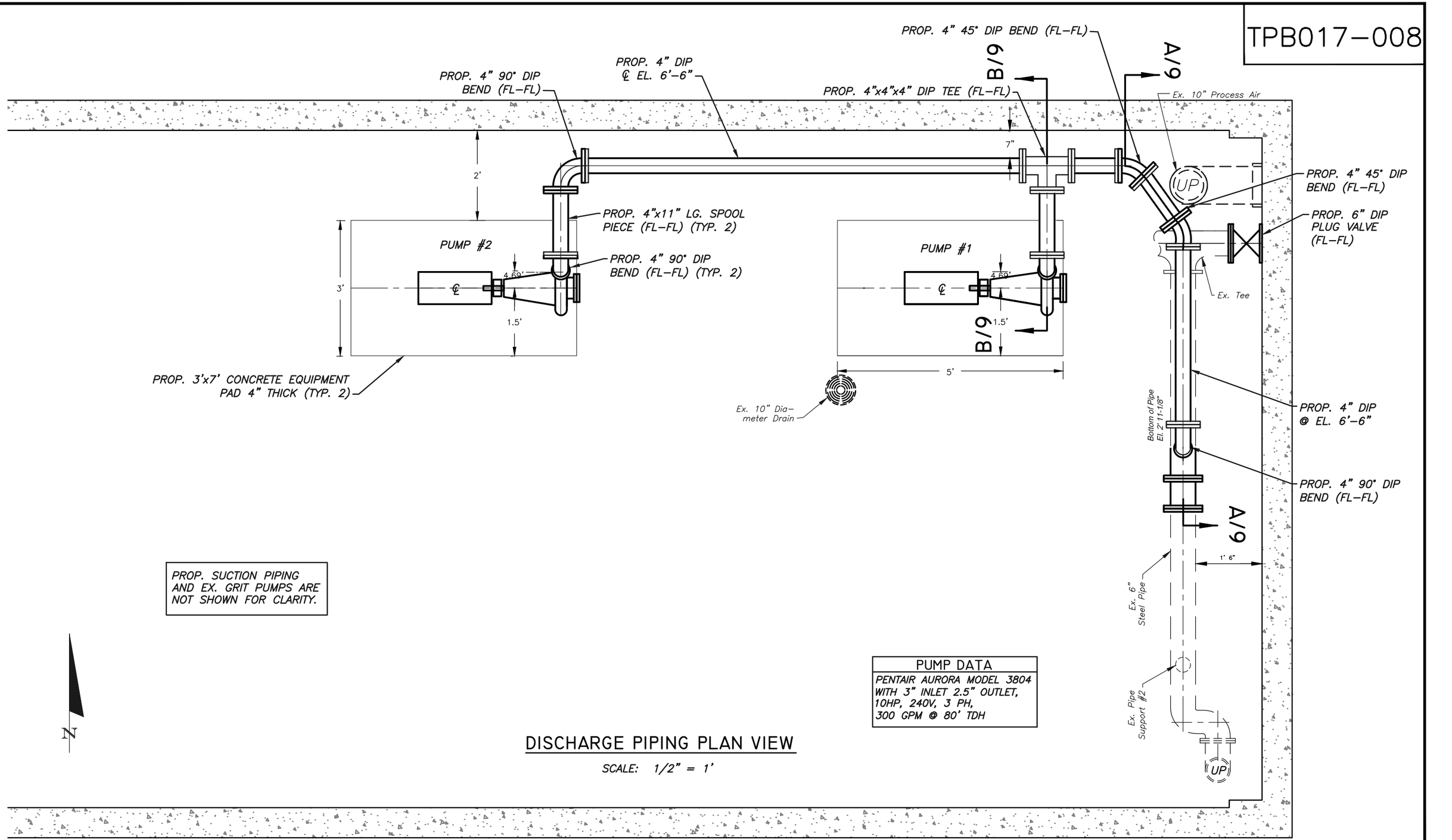
SCREEN AND GRIT BLDG. NO. 1
PROP. BOOSTER PUMPS & SUCTION PIPING

W.O.1000721

SHEET 7

User: ss1s Drawing Name: K:\WasteWater Projects\New Screen and Grit Building Booster Pump Addition\Design\Plans\Drafting\Sheetset\Prop_Bster_Pmp_Suction_Ppng_New_Scrn_Grit_Bldg.dwg
Layout- Mar 27, 2017 - 2:29pm CTB - _TOSH_UNI.CTB TOSHIBA_UNI_COLOR (NORTH WING)

TPB017-008



PROP. SUCTION PIPING AND EX. GRIT PUMPS ARE NOT SHOWN FOR CLARITY.

PUMP DATA
PENTAIR AURORA MODEL 3804 WITH 3" INLET 2.5" OUTLET, 10HP, 240V, 3 PH, 300 GPM @ 80' TDH

DISCHARGE PIPING PLAN VIEW

SCALE: 1/2" = 1'

User: ss1s Drawing Name: K:\WasteWater Projects\New Screen and Grit Building Booster Pump Addition\Design\Plans\Drafting\DWG\Discharge_Plan_Scr_Grit_Bldg.dwg
Layout- Mar 27, 2017 - 2:30pm CTB - _TOSH_UNI.CTB

No.	DATE	REVISIONS
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JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: MS
DRN: RS
CKD: --
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

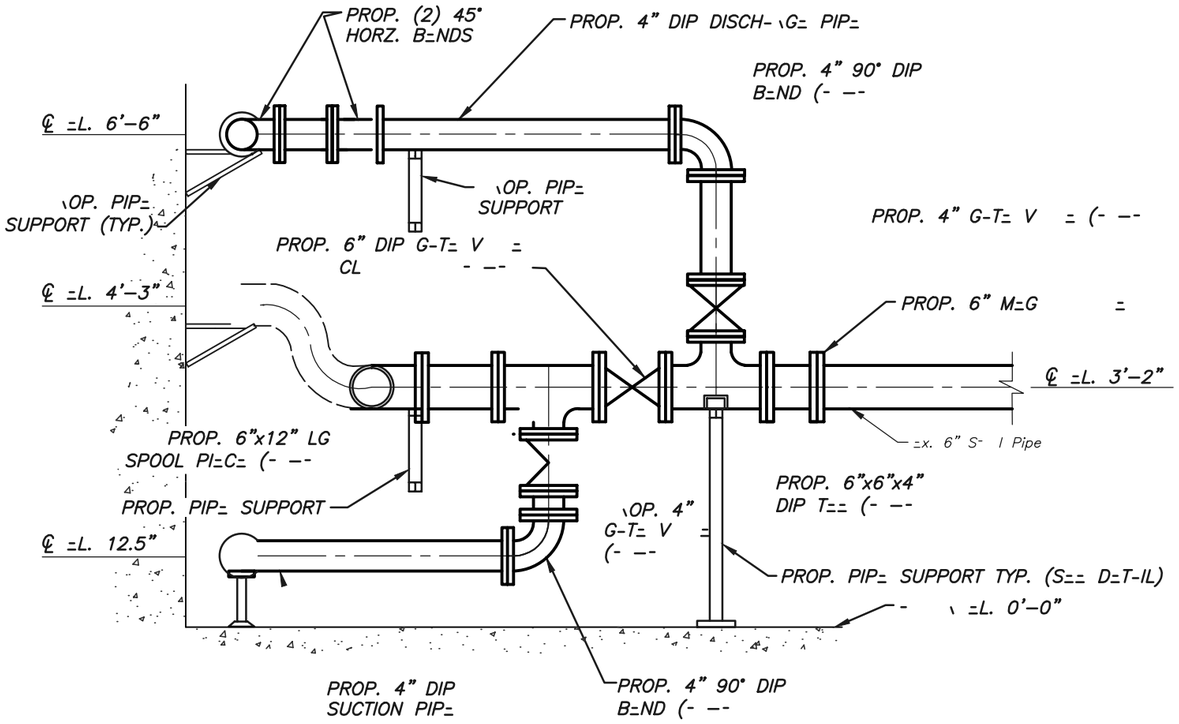
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN & GRIT BLDG. NO. 1
PROPOSED PUMPS & DISCHARGE PIPING

W.O.1000721

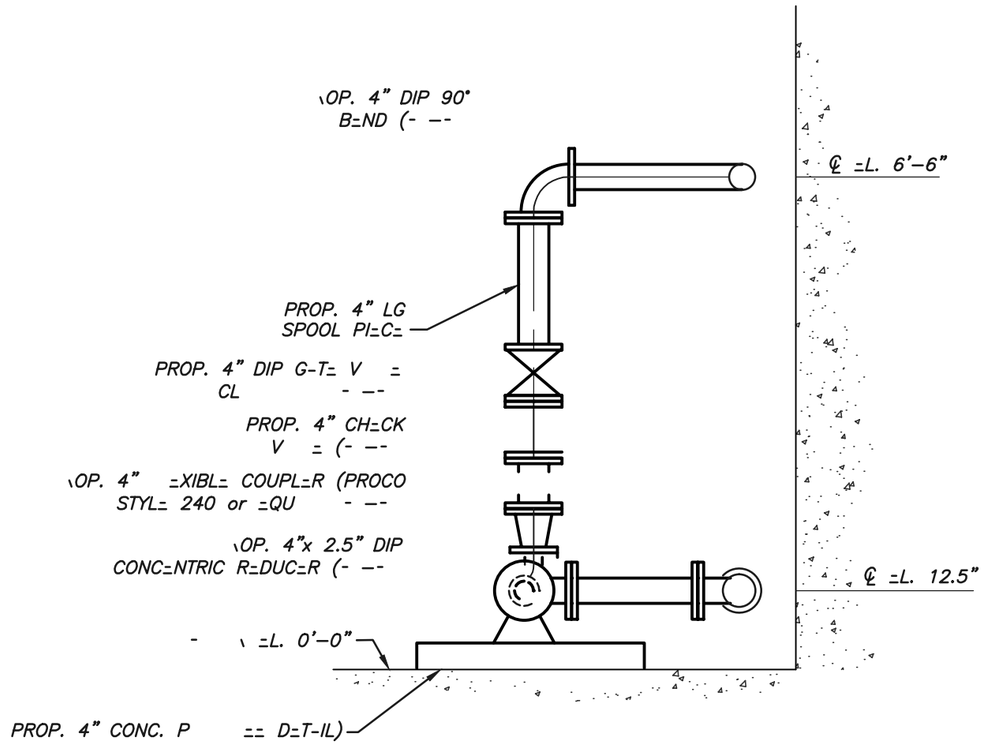
SHEET 8

TPB017–009



SECTION A/7, 8

SCAL=: 1/2" = 1'



SECTION B/7, 8

SCAL=: 1/2" = 1'

J- INTO C-\LOS =RR- .=. #49454 D=SIGN DIVISION H= - T=W-T=R D=P-\TM=NT	No.	DAT=	R=VISIONS	D=S: MS DRN: RS CKD: –– DAT=: 3/20/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS SCREEN AND GRIT BLDG. NO. 1 DETAILS A & B	W.O.1000721 SH==T 9
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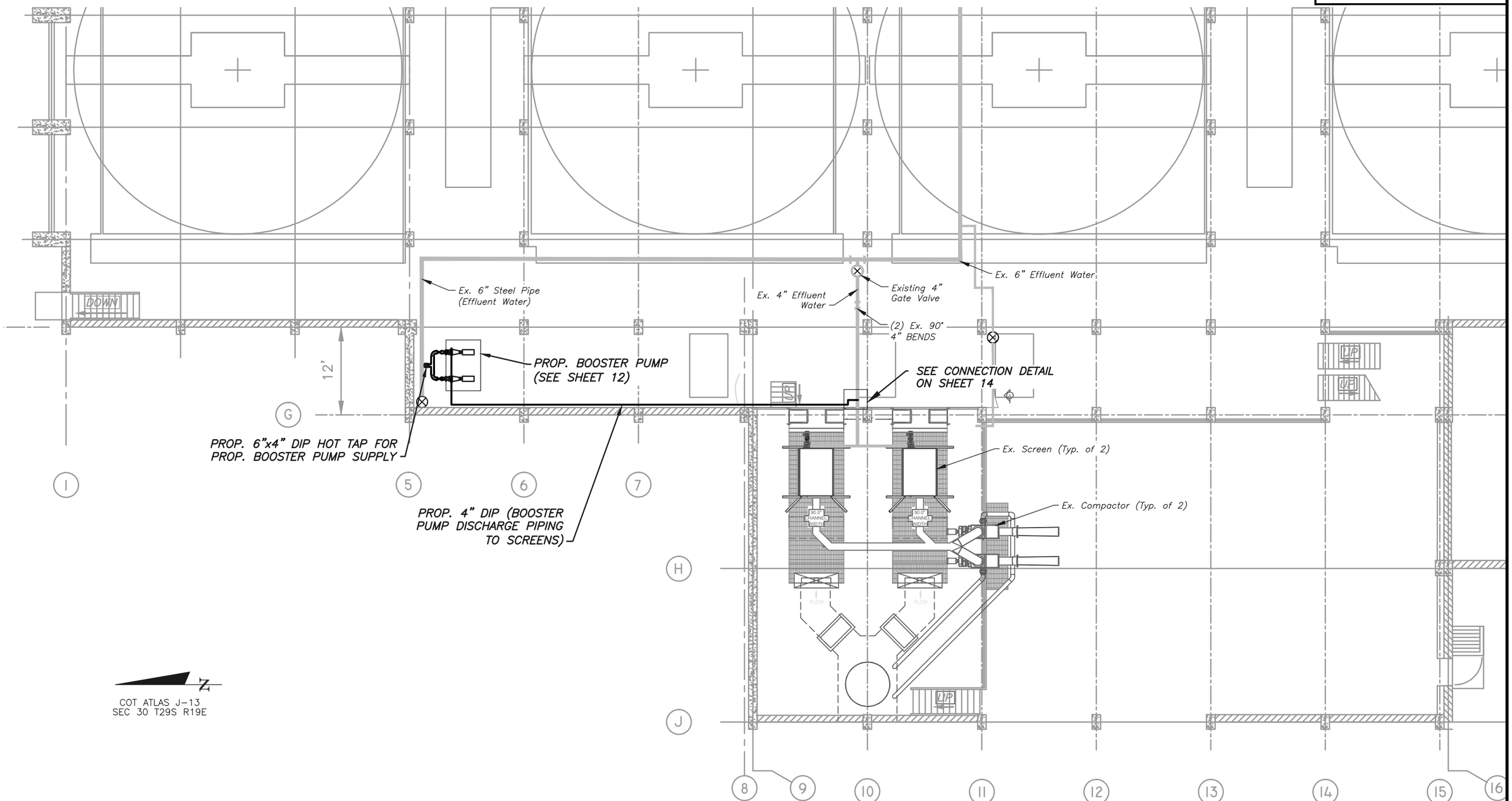
	1						

TPB017-010



COT ATLAS J-13
SEC 30 T29S R19E

SCREEN AND GRIT BUILDING NO. 2
PROPOSED PLAN VIEW

N.T.S.

No.	DATE	REVISIONS
3		
2		
1		

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: MS
DRN: RS
CKD: --
DATE: 3/20/17

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN AND GRIT BLDG. NO. 2
BUILDING PLAN

W.O.1000721

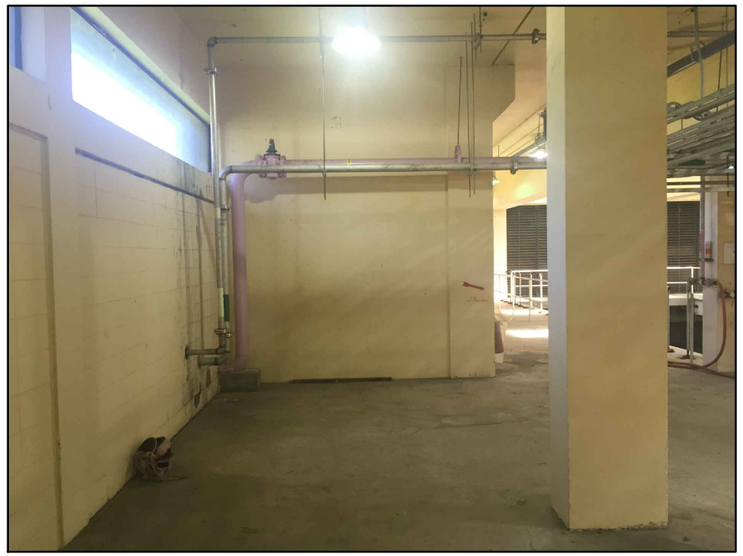
SHEET 10

User: ss1s Drawing Name: K:\WasteWater Projects\New Screen and Grit Building Booster Pump Addition\Design\Plans\Drafting\DWG\SCREEN & GRIT BLDG NO. 2 BUILDING PLAN.dwg
Layout- Mar 27, 2017 - 2:33pm CTB - _TOSH_UNI.CTB

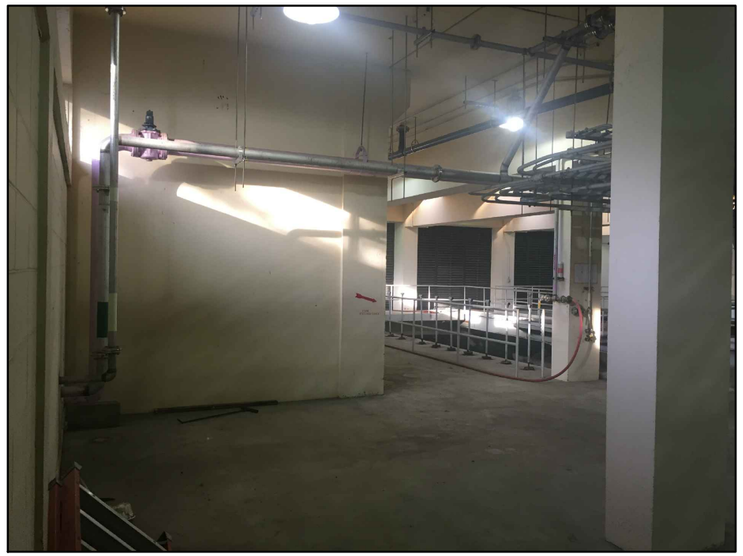
TPB017-011

EXISTING CONDITIONS – LOOKING NORTHWEST

EXISTING CONDITIONS – LOOKING WEST



EXISTING CONDITIONS – LOOKING NORTH



EXISTING CONDITIONS – LOOKING NORTHEAST

SCREEN AND GRIT BUILDING NO. 2
EXISTING FLOOR PLAN - PICTURES

N.T.S.

No.	DATE	REVISIONS
3		
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J:\ INTO C:\LOS ERR\ .E. #49454
DESIGN DIVISION HE
\ TEW\TER DEP\TMENT

DES: MS
DRN: RS
CKD: ___
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN AND GRIT BLDG. NO. 2
EXISTING FLOOR PLAN – PICTURES

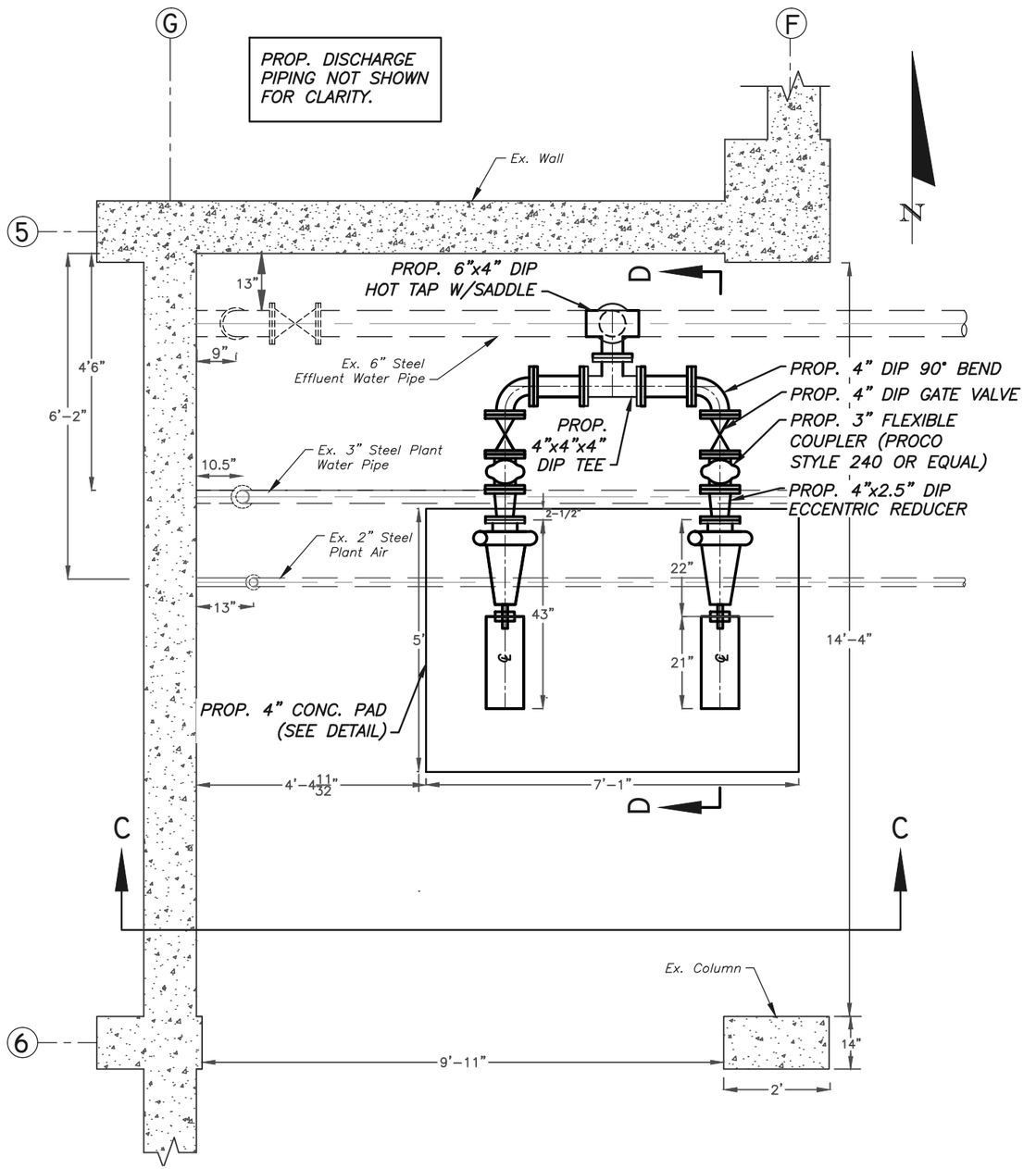
W.O.1000721

SHEET 11

User: ss1s Drawing Name: K:\Was\ r Projec\ \New Screen and Gri\ ilding Boos\ r Pump \ddi\ion\Design\Plans\Dra\ing\Shee\ -\11 SCR\EN & GRIT BLDG. NO. 2 \XISTING - \ PL\ - PICTUR\S.dwg
Layou\ Mar 27, 2017 - 2:34pm CTB - _TOSH_UNI.CTB

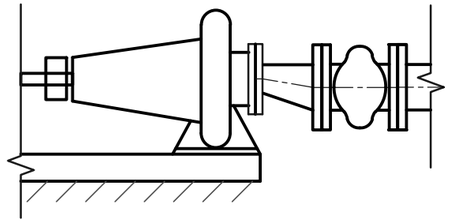
TPB017-012

PROP. DISCHARGE PIPING NOT SHOWN FOR CLARITY.



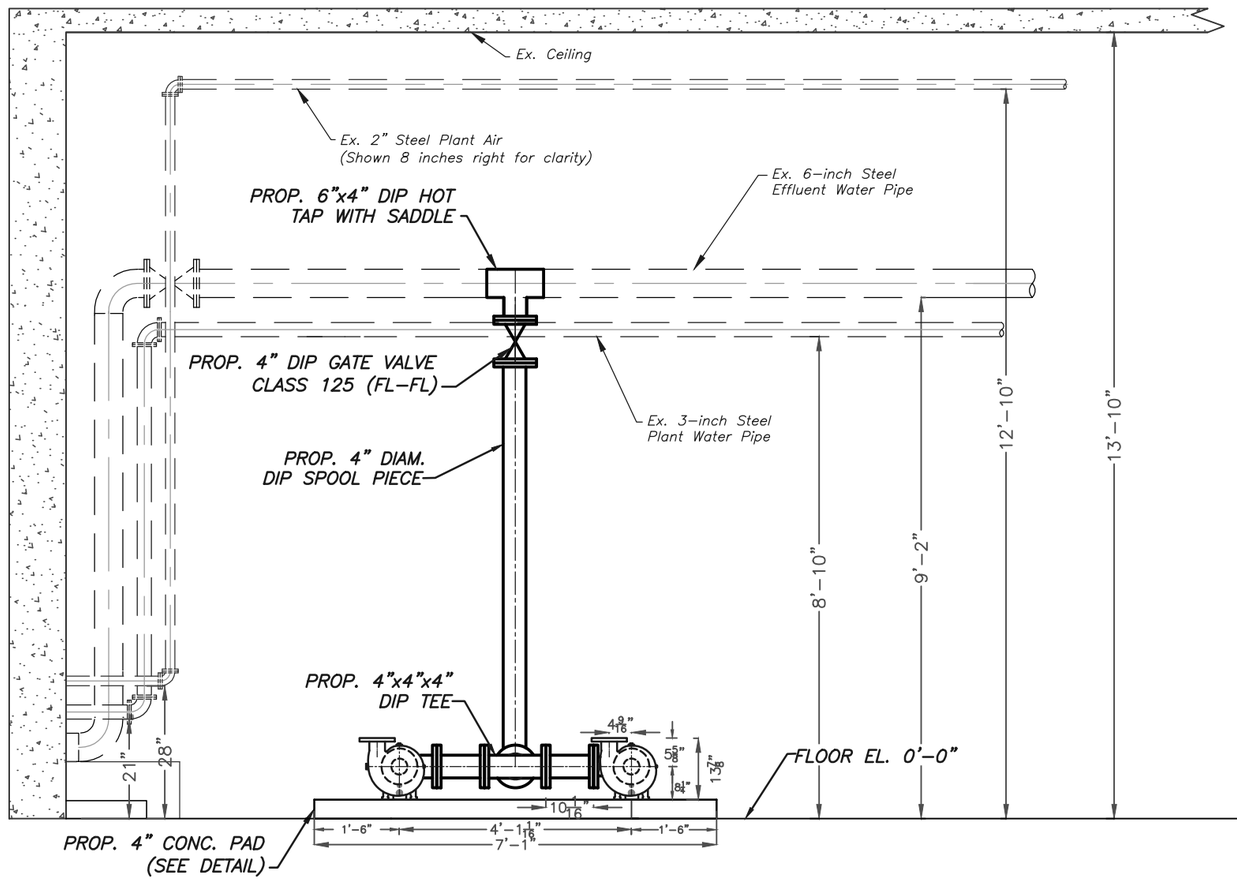
PROPOSED SECTIONAL PLAN
SCALE: 1/32"=1'

PROP. DISCHARGE PIPING NOT SHOWN FOR CLARITY.



PROPOSED SECTION VIEW D-D
N.T.S.

PUMP DATA
PENTAIR AURORA MODEL 340 WITH 2.5" INLET 2" OUTLET, 7.5HP, 240V, 3 PH, 160 GPM @ 80' TDH



PROPOSED SECTION VIEW C-C
SCALE: 1/32"=1'

No.	DATE	REVISIONS
3		
2		
1		

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: MS
DRN: RS
CKD: __
DATE: 3/20/17

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

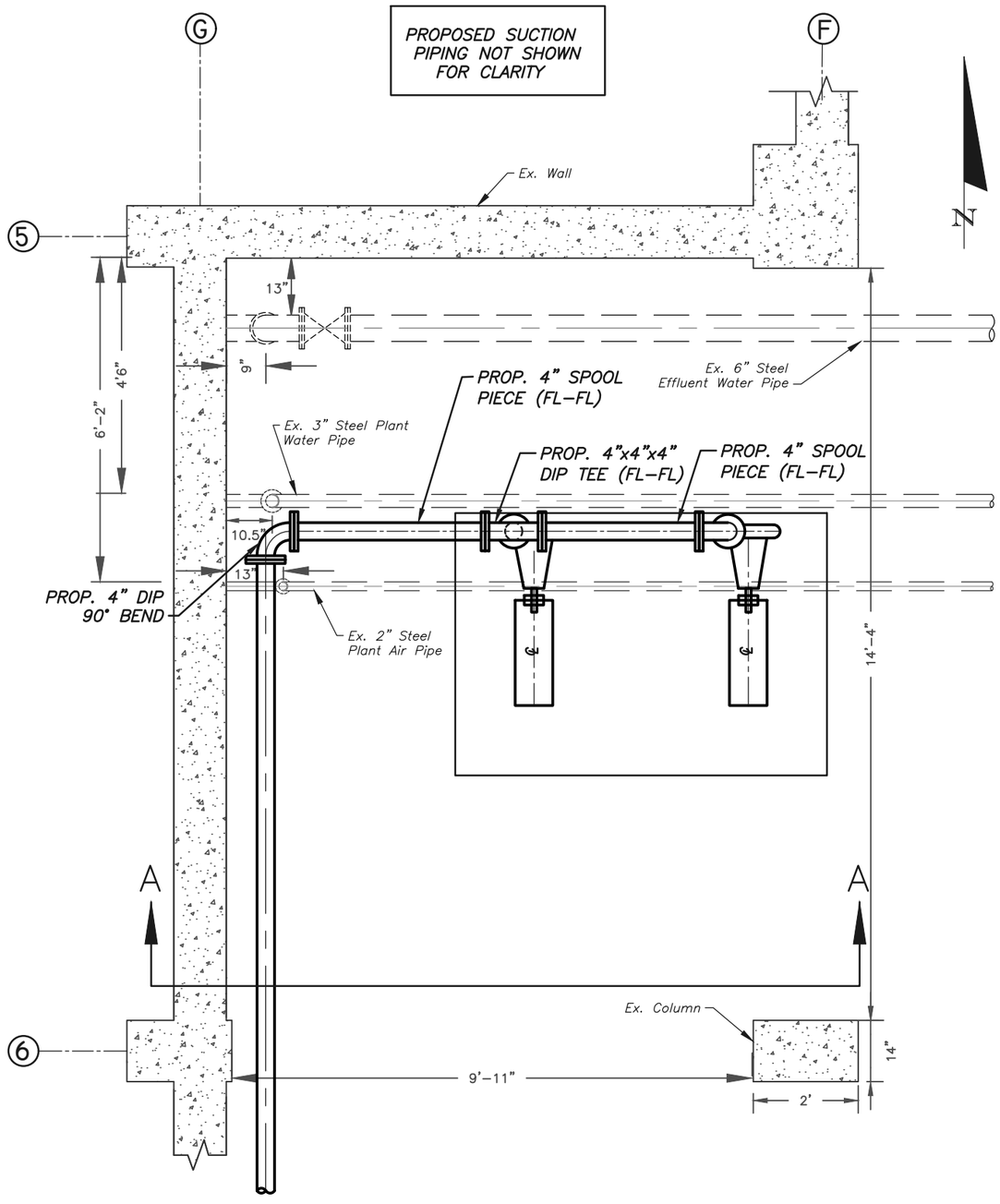
SCREEN AND GRIT BLDG. NO. 2
PROP. BOOSTER PUMP & SUCTION PIPING

W.O. 1000721
SHEET 12

User: ss1s Drawing Name: K:\WasteWater Projects\New Screen and Grit Building Booster Pump Addition\Design\Plans\Drafting\DWG\12_Scrn_Grit_Bldg_2_booster_pump_and_suction.dwg
Layout- Mar 27, 2017 - 2:35pm CTB - _TOSH_UNI.CTB

TPB017-013

PROPOSED SUCTION PIPING NOT SHOWN FOR CLARITY

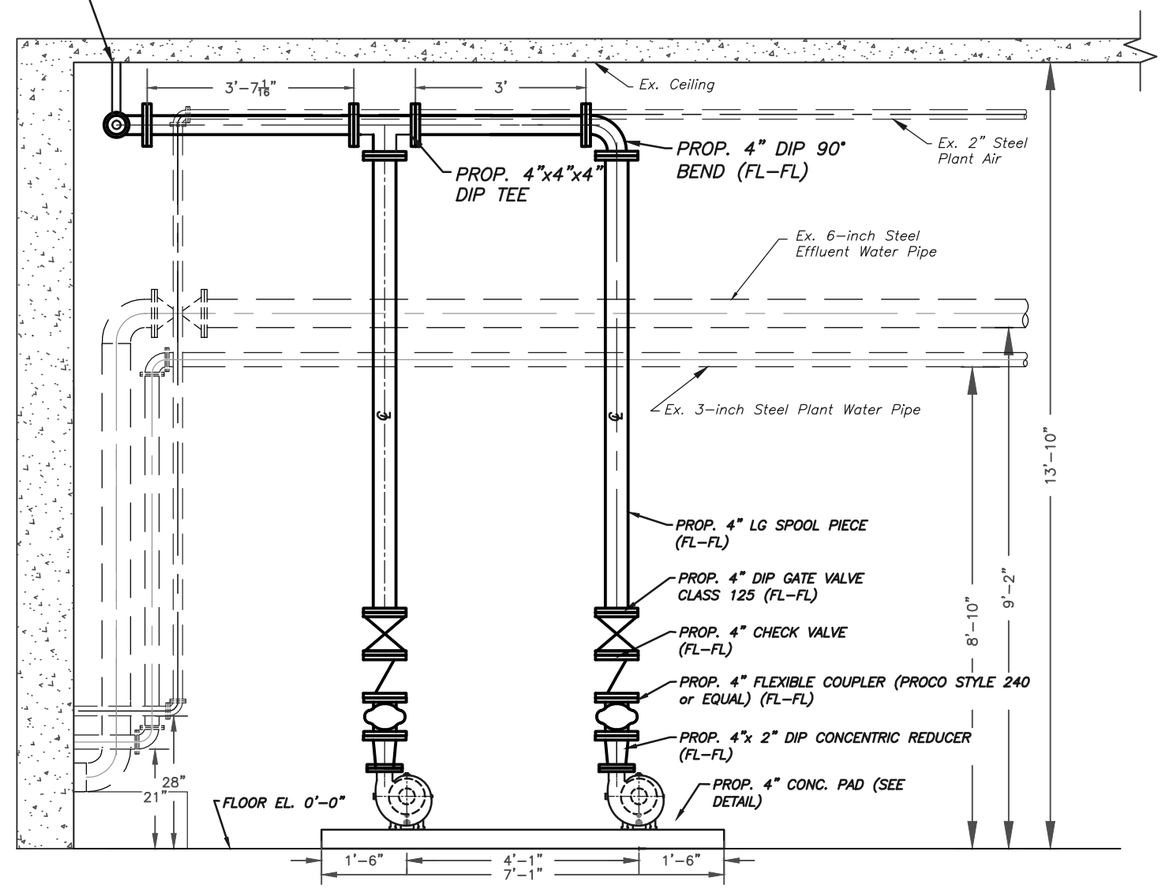


PLAN VIEW
SCALE: 1/32"=1'

PROP. STAINLESS STEEL PIPE SUPPPORT (TYP.)

PROPOSED SUCTION PIPING NOT SHOWN FOR CLARITY

PUMP DATA
PENTAIR AURORA MODEL 340 WITH 2.5" INLET 2" OUTLET, 7.5HP, 240V, 3 PH, 160 GPM @ 80' TDH



PROPOSED SECTION A-A
SCALE: 1/32"=1'

No.	DATE	REVISIONS
3		
2		
1		

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: MS
DRN: RS
CKD: --
DATE: 3/20/17

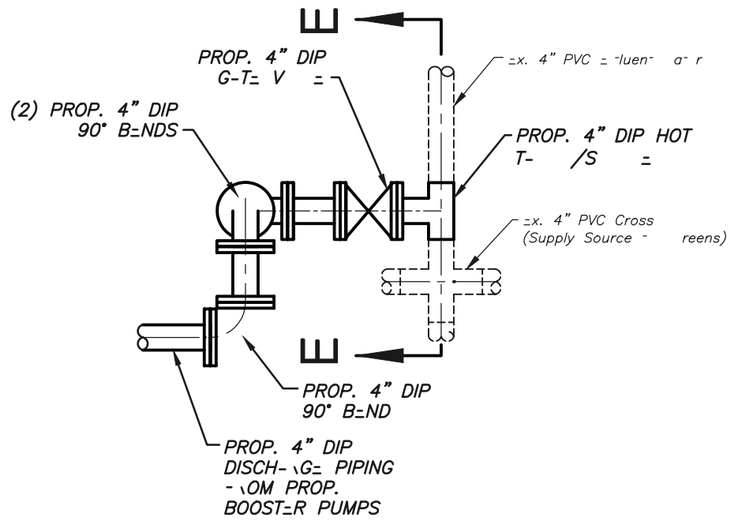
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN & GRIT BLDG. NO. 2
PROPOSED BOOSTER PUMPS AND DISCHARGE PIPING

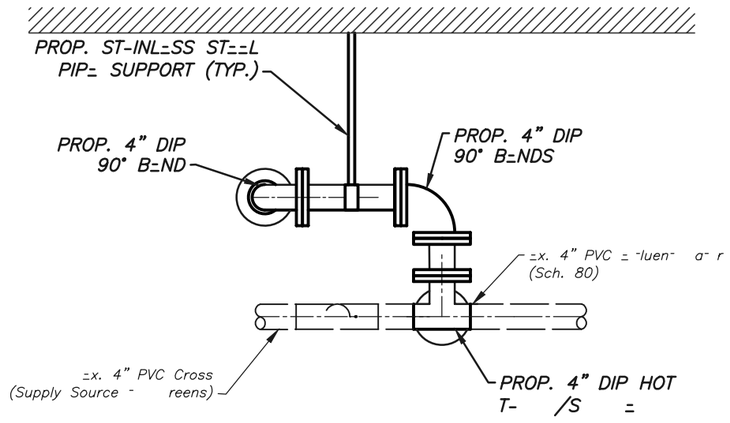
W.O. 1000721
SHEET 13

User: ats Drawing Name: K:\Wastewater Projects\New Screen and Grit Building Booster Pump Addition\Design\Plans\Drafting\DWG\SCREEN & GRIT BLDG. NO. 2 PROP. BOOSTER PUMPS & DISCHARGE PIPING.dwg
Layout- Mar 27, 2017 - 2:35pm CTB - _TOSH_UNI.CTB



CONNECTION DETAIL

SCALE: 1/2" = 1'



SECTION E-E

SCALE: 1/2" = 1'

No.	DAT=	R=VISIONS
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J- INTO C- \LOS =RR- .=. #49454
D=SIGN DIVISION H=
- T=W-T=R D=P- \TM=NT

D=S: MS
DRN: RS
CKD: __
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

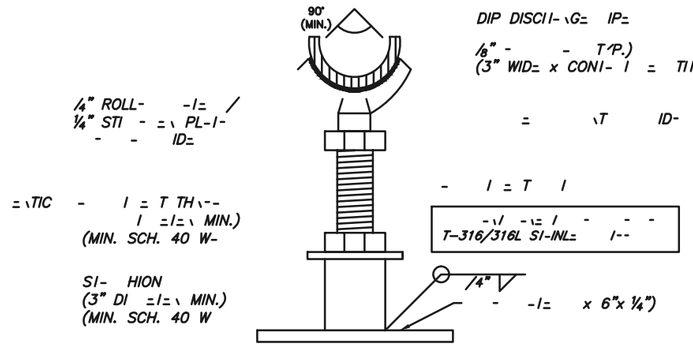
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCREEN AND GRIT BLDG. NO. 2
DETAILS

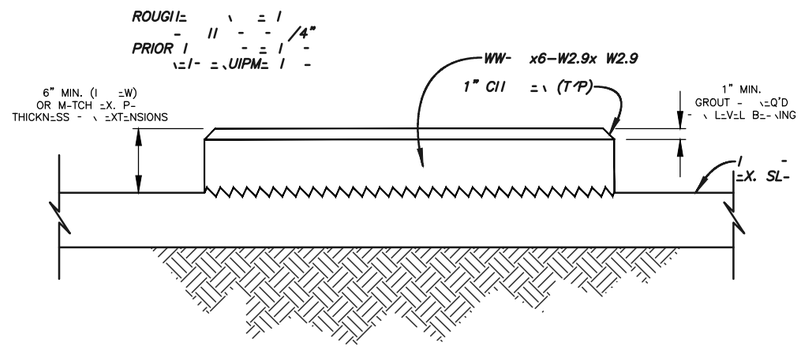
W.O. 1000721

SH==T
14

TPB017-015



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



NOTES:

1. P- IZ= IN PL- II - - \=\UIR= ' M= II- IC = I-IC-TIONS OR - \=\UIR= I - ' SUPPORI =\UIPM= T.
2. CONT\- T \ SII =\-' =\UIPM= I -TIONS WITII -IN = II- IC- \- INGS = I-IC-TIONS PRIOR T T\UCTION. =\UIPM= T II = INSI - =\ TII- - T \=\'S INST\UCTIONS.

TYPICAL HOUSEKEEPING PAD DETAIL
N.T.S.

	No.	DAT=	R=VISIONS	D=S: MS DRN: RS CKD: -- DAT=: 3/20/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS	W.O. 1000721
J- INTO C-\LOS =RR- .=. #49454 D=SIGN DIVISION H= - T=W-T=R D=P-\TM=NT	3					SCREEN AND GRIT DETAILS TYPICAL DETAILS	SH==T 15
	2						
	1						

User: ss1s Drawing Name: K:\Was- a- r Projec- \New Screen and Gri- ilding Boos- r Pump -ddi-ion\Design\Plans\Dra -ing\DWG\Diges- r_Gas_ -low_M-r.dwg
Layou-- Mar 27, 2017 - 2:36pm CTB - _TOSH_UNI.CTB

TPB017-016

CONDUIT RUN EXPOSED

CONDUIT RUN CONCEALED UNDERGROUND

CONDUIT RUN CONCEALED IN FLOOR OR SLAB

G — GROUNDING ELECTRODE CONDUCTOR

CONDUIT STUB OUT AND CAP

GROUND ROD

JUNCTION BOX

JUNCTION BOX WITH FLEXIBLE CONNECTION

480V
15 KVA, 1*
120/240V

TRANSFORMER, 480V INDICATED PRIMARY VOLTAGE, 120/240V INDICATES SECONDARY VOLTAGE, 15 KVA REPRESENTS POWER RATING, AND 1* INDICATES SINGLE PHASE (THREE PHASE IF NOT INDICATED)

3P
30A

THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

XX

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE :
N – NON-REVERSING
R – REVERSING
2S – TWO-SPEED
C – CONTACTOR
SS – SOLID STATE SOFT START

XXX

XXX DEVICE	DESCRIPTION
HLS	HIGH LEVEL SWITCH
HOA	HAND-OFF-AUTO
LD	LEAK DETECTION
LLS	LOW LEVEL SWITCH
LOR	LOCAL-OFF-REMOTE
PB	PUSH BUTTON
RTU	REMOTE TERMINAL UNIT
S/S	START/STOP SELECTOR SWITCH
SS	SOFT STARTER
SS/B	SOFT START OR BYPASS
TS	TEMPERATURE SWITCH
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
ZS	POSTION SENSOR (LIMIT SWITCH)

FUSE

XX — MOTOR

THERMAL OVERLOAD

UTILITY METER

TRANSFER SWITCH

ELECTRIC PANELBOARD

DISCONNECT OR SAFETY SWITCH

F — FLOAT SWITCH. CLOSES ON HIGH LEVEL.

FLOAT SWITCH. CLOSES ON LOW LEVEL.

NORMALLY OPEN (N.O.) CONTACT

NORMALLY CLOSED (N.C.) CONTACT

GROUND CONNECTION

R — INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS

DISCONNECT OR TOGGLE SWITCH

NORMALLY OPEN MOMENTARY CIRCUIT CLOSING PUSH-BUTTON SWITCH. SPRING OPEN. NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC

NORMALLY CLOSED MOMENTARY CIRCUIT OPENING PUSH-BUTTON SWITCH. SPRING CLOSE. NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC

LIMIT SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

TORQUE SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

MOTOR THERMAL SENSOR

PE — PHOTOCELL

S — SOLENOID VALVE

A — 4' FLUORESCENT LIGHT FIXTURE. LETTER DESIGNATES FIXTURE TYPE. REFER TO FIXTURE SCHEDULE.

B — WALLPACK LIGHT FIXTURE. LETTER DESIGNATES FIXTURE TYPE. REFER TO FIXTURE SCHEDULE.

X — EXIT LIGHT FIXTURE. REFER TO FIXTURE SCHEDULE.

DUPLEX RECEPTACLE: 20A, 125VAC

$ — SWITCH: SINGLE-POLE OR AS NOTED, 20A, 120/277VAC

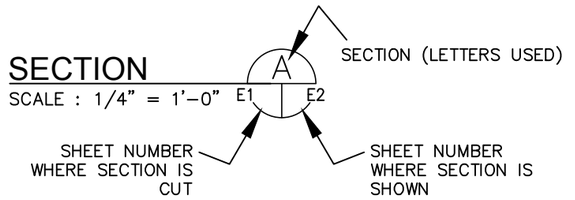
EQUIPMENT TO BE REMOVED

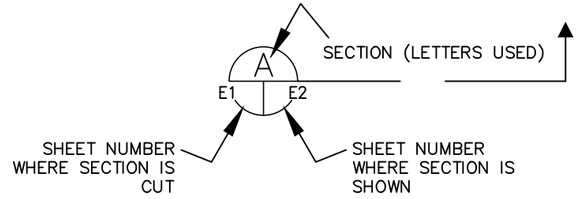
LIGHTING AND RECEPTACLE WIRING INDICATED AS FOLLOWS:

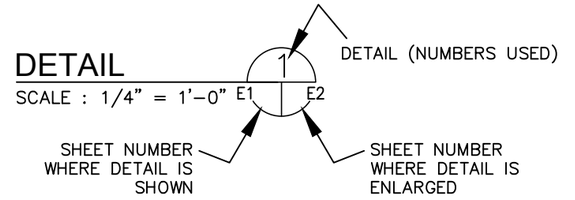
- TWO WIRES:
- THREE WIRES:
- FOUR WIRES, ETC.
  - NEUTRAL WIRE
  - ISOLATED GR. WIRE

PROVIDE 2#12 THWN CU. IN 3/4" C. UNLESS OTHERWISE NOTED AND EQUIPMENT GROUND WIRE (NOT INDICATED) IN ALL POWER AND LIGHTING RACEWAYS.

EXAMPLE OF SECTION CUT AND DETAIL







ABBREVIATIONS:

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS-THE-LINE
C	CONDUIT
CU	COPPER
EX	EXISTING
ELEC	ELECTRICAL
EXP	EXPLOSION PROOF
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
TYP	TYPICAL
V	VOLTS
WP	WEATHERPROOF

PLOT

FILENAME

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
DRN: RDK
CKD:
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

ELECTRICAL LEGEND

W.O. 1000721
SHEET
E1

TPB017-017

DRAWING INDEX

SHEET No.	SHEET TITLE
E1	ELECTRICAL LEGEND
E2	DRAWING INDEX AND GENERAL NOTES
E3	SCOPE OF ELECTRICAL WORK
E4	BUILDING No.1 FLOOR PLAN
E5	BUILDING No.1 ELECTRICAL SITE PLAN
E6	BUILDING No.1 GRIT PUMPING STATION No.3 FLOOR PLAN
E7	BUILDING No.1 & No.2 VFD ELEVATION
E8	TYPICAL VFD WIRING DIAGRAM
E9	VFD PARAMETERS
E10	PIPING AND INSTRUMENTATION DIAGRAM
E11	VFD CONTROLS SCHEDULE
E12	BUILDING No.2 FLOOR PLAN
E13	BUILDING No.2 ELECTRICAL SITE PLAN
E14	BUILDING No.2 MCC-21 DETAILS

GENERAL NOTES :

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. WITH XHHW-2 INSULATION, UNLESS OTHERWISE NOTED.
3. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
4. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
5. PLANS ARE DESIGNED IN ACCORDANCE WITH THE 5TH EDITION OF THE 2014 FLORIDA BUILDING CODE AND THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
6. ALL THREADED CONNECTIONS SHALL BE COATED WITH COPPER SHIELD ANTI-SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
7. 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") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
8. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
9. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT WITH POWER CONDUCTORS.
10. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
11. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110 OF THE NEC.
12. ALL FASTENING HARDWARE (SCREW, BOLTS, NUTS, ETC.) SHALL BE 316-STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
13. INTERIOR CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, EXTERIOR, ABOVEGROUND CONDUIT SHALL BE RIGID ALUMINUM CONDUIT WITH 40 MIL PVC COATING. BELOWGRADE CONDUIT SHALL BE SCHEDULE 80 PVC.
14. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR IN WASHDOWN AREAS.
15. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES, ETC. USE 316-STAINLESS STEEL MOUNTING HARDWARE.
16. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
17. 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.
18. 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' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
19. 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.
20. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE.
21. ALL EXISTING CONDUIT TO BE REUSED SHALL BE CLEANED USING A SWAB. THE CONTRACTOR SHALL THEN RUN A PROPERLY SIZED RUBBER SLUG MANDREL THROUGH THE CONDUIT TO PROVE INTEGRITY PRIOR TO THE INSTALLATION OF ANY NEW CONDUCTORS.

PLOT

FILENAME

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
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CKD:
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CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

GENERAL NOTES

W.O. 1000721
SHEET
E2

TPB017-018

SCOPI - H H TRICAL WORK

- \NISH - INST =QUIPM=NT, CONTROLS - INSTRUM=NT-TION - HOWN ON TH= PL =SCRIB=D IN TH= SP=CI-IC-TIONS.

-. SP=CI-IC- ′ - \ BUILDING #1 (059), GRIT PUMP ST-TION #3 (CL- I, DIVISION 1, GROUP D - \=- :
1. PROVID= - INST- T=R PUMPS WBP-1 - -2. =- H PUMP COMPRIS=S TH= - ING:
   a. 10 HP INDUCTION MOTOR
   b. SUCTION PR=SSUR= TR- ITT=R
   c. DISCH- \G= PR=SSUR= TR- ITT=R
   d. "ON-O -" PUSHBUTTON ST-TION
2. RUN CONDUITS - TORS - \OM TH= BOOST=R PUMPS TO TH= =L=CTRIC- \OOM - HOWN, SP=CI-I=D, - \=QUIR=D. NOT= TH-T CONCR=T= P=N=TR-TIONS MUST B= M =TO INST- TH= N=W CONDUITS.

B. SP=CI-IC- ′ - \ BUILDING #1 (059), =L=CTRIC- \OOM (NON-CL- I-I=D - \=- :
1. PROVID= - INST- IRCUIT BR=-K=R CUBICL=S 4= = - \ =XISTING MOTOR CONTROL C=NT=R MCC-28.
2. PROVID= - INST- T=R PUMP V- \I = - \=QU=NCY DRIV=S V - HOWN, SP=CI-I=D, - \=QUIR=D.
3. RUN CONDUITS - TORS - \OM MCC-28 TO V - HOWN, SP=CI-I=D - \=QUIR=D.
4. RUN CONDUITS - \OMV - TO =XISTING SC - \TU - HOWN, SP=CI-I=D, - \=QUIR=D.
5. PROGR - TO P=R- \M TH= T- KS D=SCRIB=D IN TH= PL- .

C. SP=CI-IC- ′ - \ BUILDING #2 (005), GRIT T- K L=V=L (CL- I, DIVISION 1, GROUP D - \=- :
1. PROVID= - INST- T=R PUMPS WBP-1 - -2. =- H PUMP COMPRIS=S TH= - ING:
   a. 7.5 HP INDUCTION MOTOR
   b. SUCTION PR=SSUR= TR- ITT=R
   c. DISCH- \G= PR=SSUR= TR- ITT=R
   d. "ON-O -" PUSHBUTTON ST-TION
2. RUN CONDUITS - TORS - \OM TH= BOOST=R PUMPS TO TH= =L=CTRIC- \OOM - HOWN, SP=CI-I=D, - \=QUIR=D. NOT= TH-T CONCR=T= P=N=TR-TIONS MUST B= M =TO INST- TH= N=W CONDUITS.

D. SP=CI-IC- ′ - \ BUILDING #2 (005), =L=CTRIC- \OOM (NON-CL- I-I=D - \=- :
1. PROVID= - INST- IRCUIT BR=-K=R CUBICL=S 3D - \ =XISTING MOTOR CONTROL C=NT=R MCC-21.
2. PROVID= - INST- T=R PUMP V- \I = - \=QU=NCY DRIV=S V - HOWN, SP=CI-I=D, - \=QUIR=D.
3. RUN CONDUITS - TORS - \OM MCC-21 TO V - HOWN, SP=CI-I=D - \=QUIR=D.
4. RUN CONDUITS - \OMV - TO =XISTING SC - \TU - HOWN, SP=CI-I=D, - \=QUIR=D.
5. PROGR - TO P=R- \M TH= T- KS D=SCRIB=D IN TH= PL- .

=. INST- TH= GROUND SYST=M - HOWN, SP=CI-I=D - \=QUIR=D.

-. PROVID= - INST- T-INL=SS ST==L CH =L =R=CTOR SYST=MS TO MOUNT - \T =NCLOSUR=S, BOX=S, CONDUITS - TH=R =QUIPM=NT.

G. =L=CTRIC- \K SH = P=R- \M=D IN - \D = WITH TH= 2011 N-TION =L=CTRIC = (N=C) - H- T=R 5 O- TH= CITY O- T =.

PLOT

-IL=N =

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
3		
2		
1		

D=S: RDK
DRN: RDK
CKD:
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

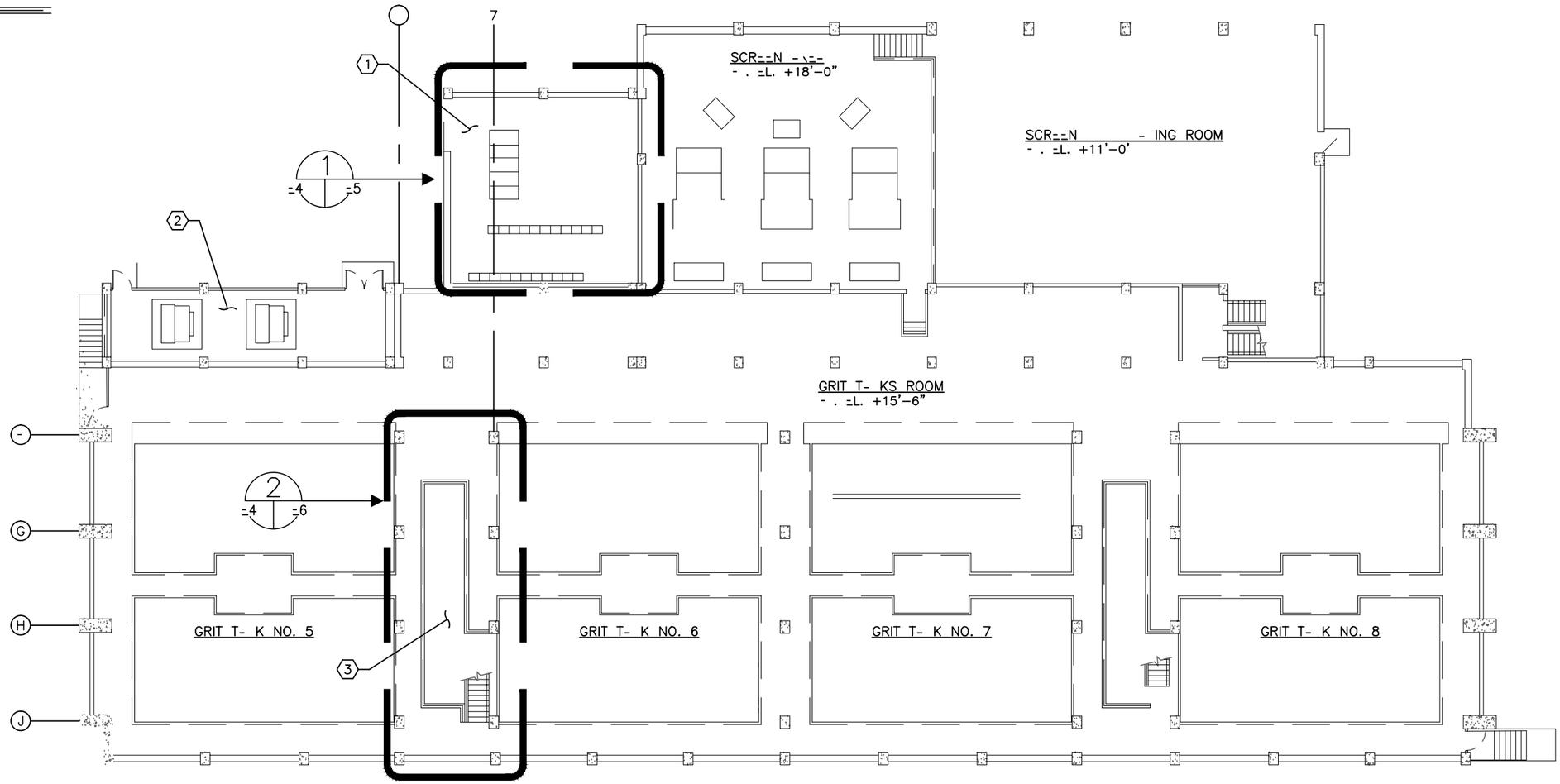
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

SCOPE OF ELECTRICAL WORK

W.O. 1000721

SH==T
E3

TPB017–019



SCREEN AND GRIT BUILDING NO. 1 (059) PLAN

SCAL= : 1" = 20'–0"

K H H D NOTI .

=XISTING =L=CTRIC- \OOM (- \ =L=V-TION +11'–0"). R= =R TO SH==TS =5 - \ WORK R=QUIR=D.

=XISTING TR - \M=R Y- \D. NO WORK R=QUIR=D.

=XISTING GRIT PUMPING ST-TION NO. 3 (- \ =L=V-TION +2'–7"). R= =R TO SH==T =6 - \ WORK R=QUIR=D.

PLOT

-IL=N =

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
3		
2		
1		

D=S: RDK
DRN: RDK
CKD:
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

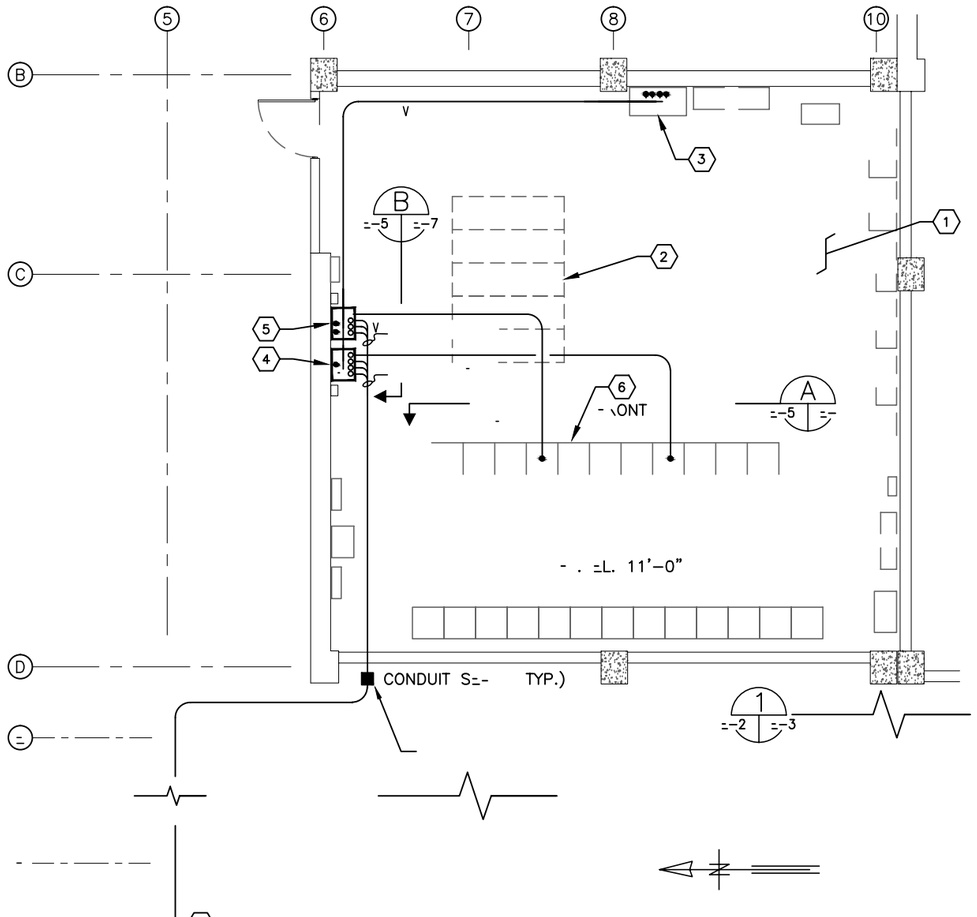
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

BUILDING No. 1 FLOOR PLAN

W.O. 1000721

SH==T E4

TPB017-020



ENTIRE SCREEN & GRIT BLDG. EXCLUDING THE ELECTRICAL ROOM IS CLASSIFIED CLASS I DIVISION 1, GROUP D. NFPA 70, ARTICLE 500 APPLIES.

KH HD NOTI .

1 =XISTING =L=CTRIC- \OOM. MODI-IC-TIONS - \= SHOWN IN BOLD LIN= W=IGHT.

- \ONT O =XISTING SWITCHG=- \ NO. 28. NO WORK R=QUIR=D.

=XISTING SC - \TU UNIT. CONTR- TOR SH- INST- IT =S - HOWN. CITY P=RSONN=L WILL M-K= - ' R=QUIR=D RTU MODI-IC-TIONS / RTU PROGR- ING -IN =CTIONS. TH= CONTR- TOR SH - IST TH= CITY WITH TH= R=QUIR=D MODBUS M- ING. -IB=R-OPTIC J.B. IS MOUNT=D DIR=CTLY = TH= SC - \TU (NO WORK R=QUIR=D).

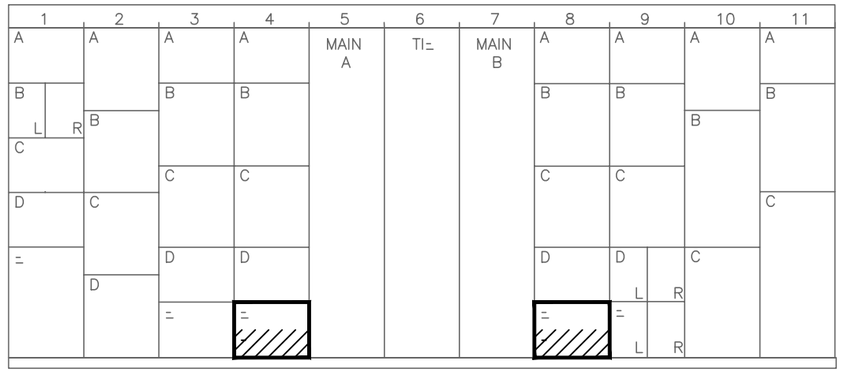
CONTR- TOR TO PROVID= - INST =W BOOST=R PUMP NO. 1. V- \= =R TO SH==T =7 - \ =L=V-TION.

5 CONTR- TOR TO PROVID= - INST =W BOOST=R PUMP NO. 2. V- \= =R TO SH==T =7 - \ =L=V-TION.

6 =XISTING W=STINGHOUS= S=RI=S 2100 MOTOR CONTROL C=NT=R (MCC-28). CUBICL=S 4=/ =/- H = MODI-I=D =C=SS-\Y TO ==D TH= PROPOS=D V - . R=MOV= =XISTING COV=R P =LS - ' N=W 3-POL=, 30 - IRCUIT BR=-K=R CUBICL=S TO M-TCH =XISTING. CIRCUIT BR=-K=RS SH- H = - INIMUM 25 k-IC R-TING.

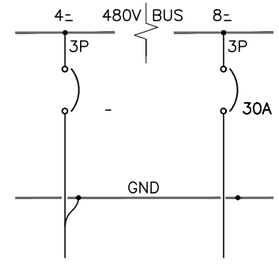
PROVID= OP=NINGS THROUGH CONCR=T= - \ - \ CONDUITS. - ' TWO CO-TS O- ITUM- TIC TO CONDUIT =XT=NDING 4" = =LOW CONCR=T=. P-TCH WITH NON-SHRINK GROUT OR OTH=R - \OV=D M=THOD.

COR= DRILL OP=NINGS - \ CONDUITS TROUGH W- . US= COPP=R--\== - INUM S=- ING -ITTINGS -TCH CONCR=T= TO M-TCH =XISTING (6 TOT- .



MCC 28 FRONT ELEVATION (NO SC =)

A =-5 =-5



MCC 28 PARTIAL ONE-LINE DIA.

SCREEN AND GRIT BUILDING NO. 1 (059) ELECTRICAL PLAN

SCAL= : 1/8" = 1'-0"

PLOT -ILEN =

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
3		
2		
1		

D=S: RDK
DRN: RDK
CKD:
DAT=: 3/20/17

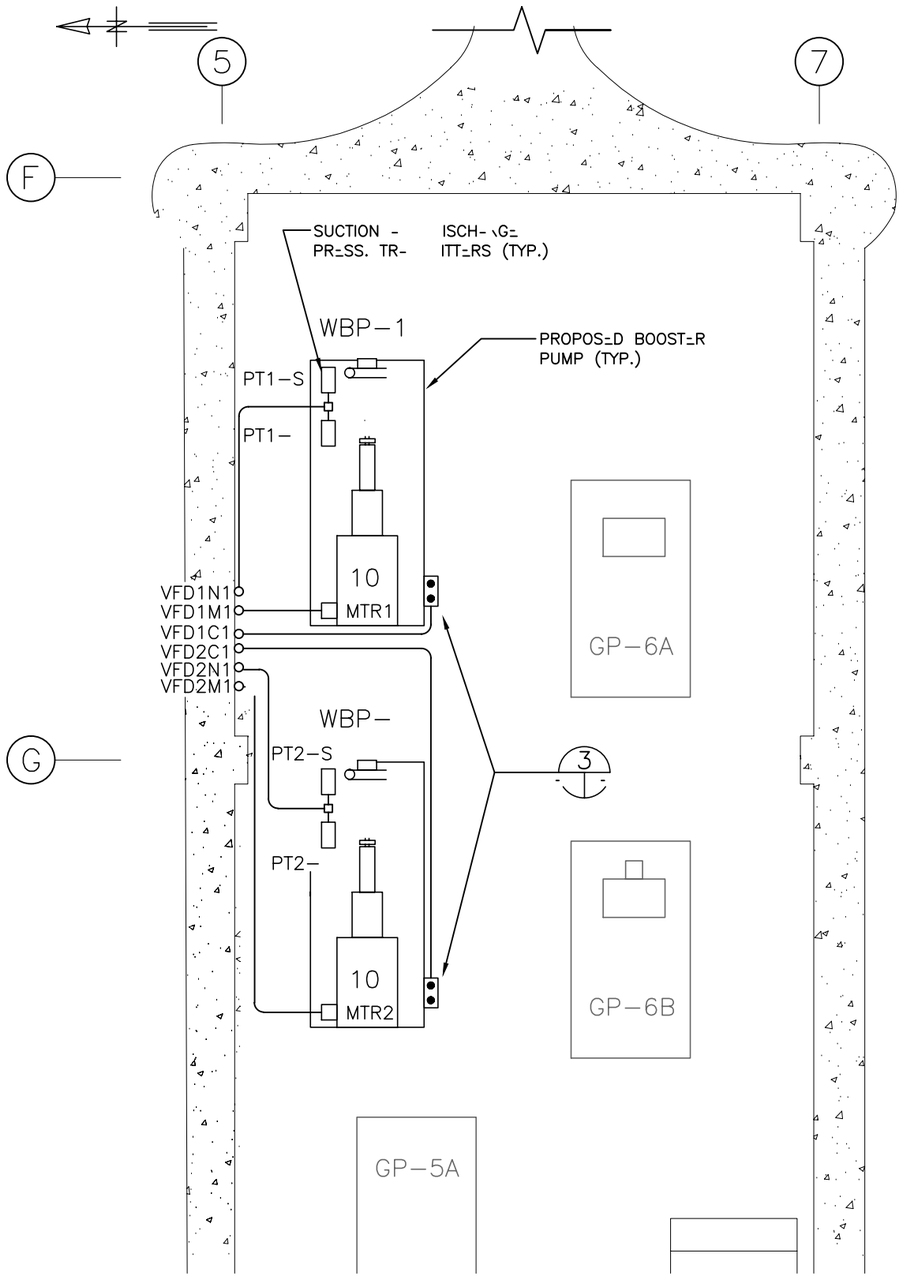
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

BUILDING No. 1 ELECTRICAL SITE PLAN

W.O. 1000721
SH==T
E5

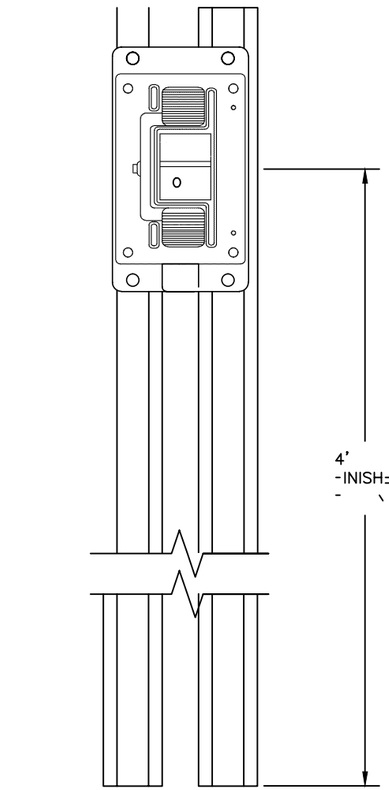
TPB017–021



GRIT PUMP STATION NO. 3 FLOOR PLAN

SCAL= : 1/4" = 1'–0" - \ =L=VATION 2'–7"

2 =4 =6



ON-OFF PUSHBUTTON STATION DETAIL

NO SCAL= =6, =13 3 =6

NOTE: NEW WORK IS SHOWN IN BOLD LINE WEIGHT (TYP.)

CONDUIT & CONDUCTOR SCHEDULE					
TAG	SIZE	CONDUCTORS	FROM	TO	COMMENTS
VFD1L1	1"C	(3) #8 AWG , (1) #10 GND	MCC28, 4E	VFD1	XHHW-2 CU
VFD1M1	1"C	(3) #8 AWG , (1) #10 GND	VFD1	WBP-1	XHHW-2 CU
VFD1C1	3/4"C	(2) #14 AWG, (1) #14 GND	LOCAL "ON-OFF" SWITCH	VFD1	XHHW-2 CU
VFD1N1	3/4"C	(2) 2C-#18-TP-SHIELDED (1) #14 GND	PRESS. TRANS PT1-S & PT1-D	VFD1	BELDEN 9341
VFD1SC	3/4"C	(1) CAT-5E	VFD1	EX. SCADA RTU	
VFD1SD	1"C	(10) #14 AWG, (1) #14 GND	VFD1	EX. SCADA RTU	XHHW-2 CU
VFD2L1	1"C	(3) #8 AWG , (1) #10 GND	MCC28, 8E	VFD2	XHHW-2 CU
VFD2M1	1"C	(3) #8 AWG , (1) #10 GND	VFD2	WBP-2	XHHW-2 CU
VFD2C1	3/4"C	(2) #14 AWG, (1) #14 GND	LOCAL "ON-OFF" SWITCH	VFD2	XHHW-2 CU
VFD2N1	3/4"C	(2) 2C-#18-TP-SHIELDED (1) #14 GND	PRESS. TRANS PT2-S & PT2-D	VFD2	BELDEN 9341
VFD2SC	3/4"C	(1) CAT-5E	VFD2	EX. SCADA RTU	
VFD2SD	1"C	(10) #14 AWG, (1) #14 GND	VFD2	EX. SCADA RTU	XHHW-2 CU

PLOT

-ILEN =

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
3		
2		
1		

D=S: RDK
DRN: RDK
CKD:
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

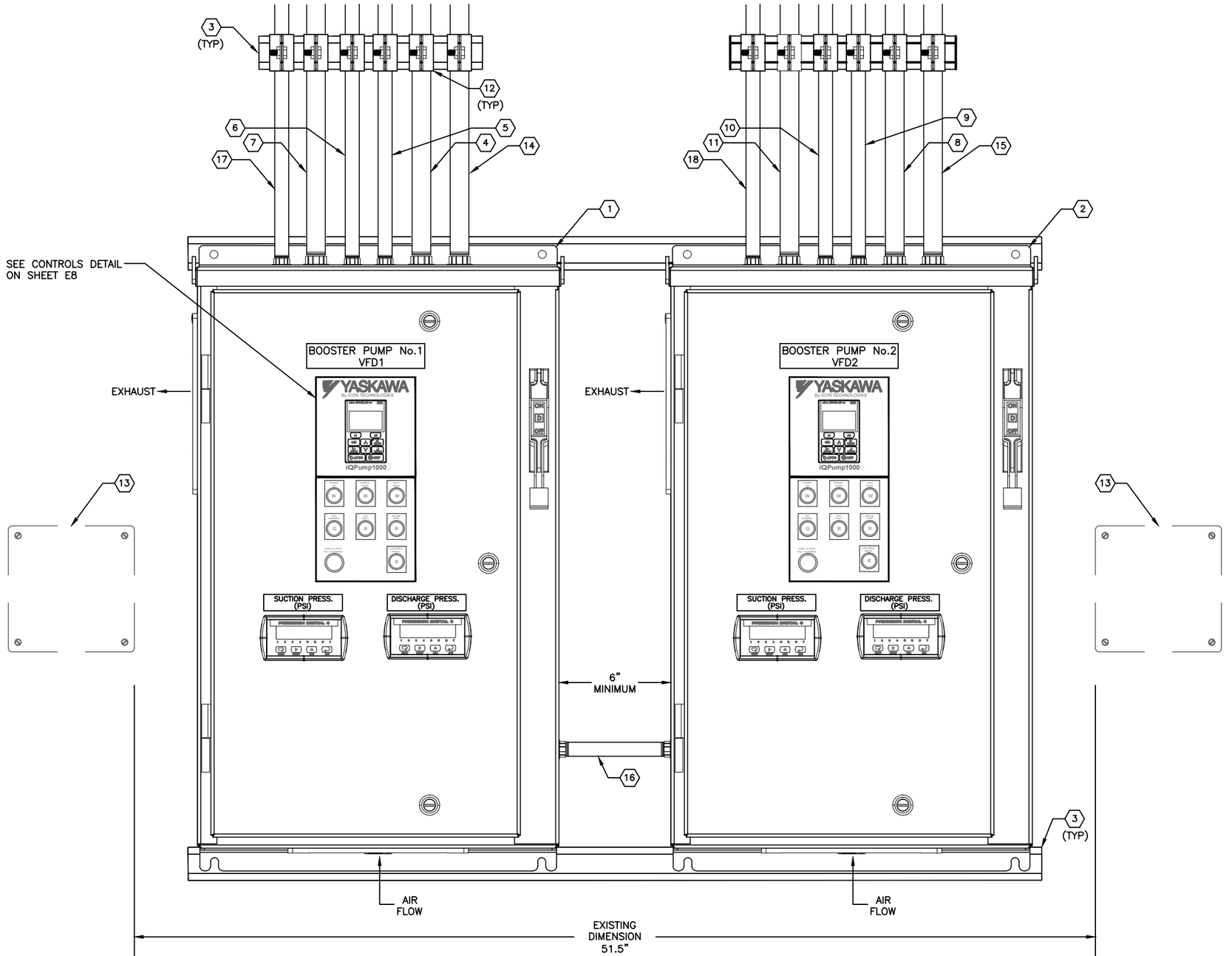
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

BUILDING No. 1, GRIT P.S. No. 3 FLOOR PLAN

W.O. 1000721

SH==T E6

TPB017-022



VFD ELEVATION

NO SCALE

B — E5 | E7

KEYED NOTES:

1. NEW 480V, 10 HP VARIABLE FREQUENCY DRIVE (VFD) FOR NEW BOOSTER PUMP NO. 1. REFER ALSO TO SPECIFICATIONS.
2. NEW 480V, 10 HP VARIABLE FREQUENCY DRIVE (VFD) FOR NEW BOOSTER PUMP NO. 2. REFER ALSO TO SPECIFICATIONS.
3. PROVIDE AND INSTALL 1-5/8" X 1-5/8" 316 STAINLESS STEEL UNISTRUT. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.
4. CONTRACTOR TO PROVIDE AND INSTALL 3-#8 XHHW-2 CU + 1-#10 XHHW-2 CU GND + 2-#12 XHHW-2 CU (MOTOR THERMALS) IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 1 VFD TO NEW BOOSTER PUMP NO. 1 MOTOR.
5. CONTRACTOR TO PROVIDE AND INSTALL 2-#14 XHHW-2 CU + 1-#14 XHHW-2 CU GND IN NEW 3/4" CONDUIT FROM NEW BOOSTER PUMP NO. 1 VFD TO NEW LOCAL ON-OFF SWITCH LOCATED ADJACENT TO BOOSTER PUMP NO. 1 MOTOR.
6. PROVIDE AND INSTALL (1) CAT-5E CABLE FROM VFD1 TO EX. SCADA RTU FOR MODBUS COMMUNICATION.
7. CONTRACTOR TO PROVIDE AND INSTALL 10-#14 XHHW-2 CU + 1-#14 XHHW-2 CU GND IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 1 VFD TO EXISTING RTU UNIT. 2-#14 FOR VFD FAULT, 2-#14 FOR VFD RUNNING, 2-#14 FOR LOW PRESSURE FEEDBACK, 4-#14 SPARES.
8. CONTRACTOR TO PROVIDE AND INSTALL 3-#8 XHHW-2 CU + 1-#10 XHHW-2 CU GND + 2-#12 XHHW-2 CU (MOTOR THERMALS) IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 2 VFD TO NEW BOOSTER PUMP NO. 2 MOTOR.
9. CONTRACTOR TO PROVIDE AND INSTALL 2-#14 XHHW-2 CU + 1-#14 XHHW-2 CU GND IN NEW 3/4" CONDUIT FROM NEW BOOSTER PUMP NO. 2 VFD TO NEW LOCAL ON-OFF SWITCH LOCATED ADJACENT TO BOOSTER PUMP NO. 2 MOTOR.
10. PROVIDE AND INSTALL (1) CAT-5E CABLE FROM VFD2 TO EX. SCADA RTU FOR MODBUS COMMUNICATION.
11. CONTRACTOR TO PROVIDE AND INSTALL 10-#14 XHHW-2 CU + 1-#14 XHHW-2 CU GND IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 2 VFD TO EXISTING RTU UNIT. 2-#14 FOR VFD FAULT, 2-#14 FOR VFD RUNNING, 2-#14 FOR LOW PRESSURE FEEDBACK, 4-#14 SPARES.
12. CONTRACTOR TO PROVIDE AND INSTALL NEW CONDUIT CLAMPS AS REQUIRED.
13. EXISTING JUNCTION BOX. EXISTING DIMENSION BETWEEN JUNCTION BOXES IS APPROXIMATELY 51.5 INCHES. CONTRACTOR SHALL INSTALL NEW VFD'S IN BETWEEN EXISTING JUNCTION BOXES WHILE MAINTAINING REQUIRED CLEARANCES FOR VFD EXHAUST.
14. CONTRACTOR TO PROVIDE AND INSTALL 3-#8 XHHW-2 CU + 1-#10 XHHW-2 CU GND IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 1 VFD TO EXISTING MCC NO. 28.
15. CONTRACTOR TO PROVIDE AND INSTALL 3-#8 XHHW-2 CU + 1-#10 XHHW-2 CU GND IN NEW 1" CONDUIT FROM NEW BOOSTER PUMP NO. 2 VFD TO EXISTING MCC NO. 28.''''
16. PROVIDE AND INSTALL (1) 1-1/2 PAIR BELDEN #3106A CABLE IN 3/4" CONDUIT FOR MEMOBUS/MODBUS COMMUNICATION.
17. PROVIDE AND INSTALL (2) 2C-TP-SHIELDED & (1) #14 GND IN 3/4" IN CONDUIT FOR PRESSURE TRANSDUCERS PT1S AND PT1D.
18. PROVIDE AND INSTALL (2) 2C-TP-SHIELDED & (1) #14 GND IN 3/4" IN CONDUIT FOR PRESSURE TRANSDUCERS PT2S AND PT2D.

FILENAME

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
DRN: RDK
CKD:
DATE: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

W.O. 1000721

BUILDING No. 1 & 2, VFD ELEVATION

SHEET E7

TPB017–023

460 VAC
60Hz 3ø

CB 30A◆

MCB 30A

2A

2A

CT1
500
VA

120 VAC

1 — 6A — 2

POWER ON — PL–1

PUSH TO STOP
PULL TO ENABLE — PB–S — ES1

ON–OFF/L△

MOTOR THERMALS — MOTOR TEMP — CR4

CR4 — MOTOR TEMP — PL–2

CR1 — VFD FAULT — PL–3

CR2 — AUTO MODE — PL–4

CR2 — MANUAL MODE — PL–5

CR5 — LOW DISCH. PRESS. — PL–6

CR3 — 20 — FAN

VFD RUNNING — PL–7

LINE REACTOR

L1A L2A L3A

R S T G

S1

ES1 — S2 DRIVE ENABLE

CR4 — S4 MTR. TEMP.

40 — SN (+24VDC OUT)

SC

SP +24V

+24V

2/C #18 TWISTED SHIELDED CABLE (TYP.)

PT1–D — RED BLK △ — DISCHARGE PRESS. TRANSMITTER

5 — 6 — A2 DISCHARGE PRESS. (PID FDBK)

PI1–D

7 — G

120V AC POWER

VFD1
IQ1000

PT1–S — RED BLK △ — SUCTION PRESS. TRANSMITTER

8 — 9 — A3 SUCTION PRESS. (FDBK)

PI1–S

SN

AC

PRECISION DIGITAL PROCESS METER #PD765–6R0–00 (TYP. 2 PLCS)

120V AC POWER

KEYPAD MOUNTED ON DOOR

FAULT

MB — MA — MC — CR1 N — VFD FAULT L

MD — ME — MF — CR2 N — AUTO MODE L

M2 — M1 — CR3 N — VFD RUNNING L

M4 — CR5 N — LOW DISH. PRESS. L

M3

MODBUS TCP/IP TO EX. SCADA RTU CAT–5E CABLE

R+ R– S+ S–

MEMOBUS RS–485 TO VFD–2

G T1 T2 T3

L1B L2B L3B

LOAD REACTOR

MOTOR

BLDG 1: 10 HP, 11.9 FLA
BLDG 2: 7.5 HP, 9.02 FLA

CR2 — 10 11 — VFD FAULT

CR3 — 12 13 — VFD RUNNING

CR5 — 14 15 — LOW DISCHARGE PRESS.

TO EX. SCADA RTU

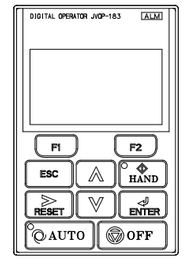
VFD1 WIRING DIAGRAM

(VFD2 WIRING DIAGRAM IS SIMILAR.)

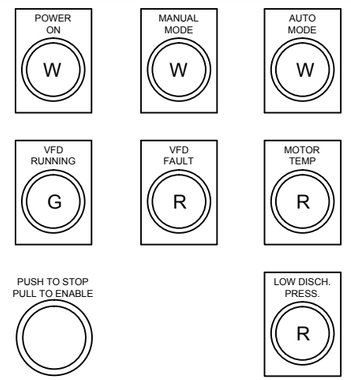
LEGEND

△ INDICATES A REMOTE DEVICE NEAR THE MOTOR
✳ CONTACT LOCATED IN PLC CONTROL PANEL
◆ INDICATES DEVICE LOCATED ON MCC–28

YASKAWA
By ICON TECHNOLOGIES



iQPump1000□



VFD1 FRONT PANEL CONTROLS LAYOUT

(VFD2 LAYOUT IS SIMILAR.)
REFERENCE SHEET E3

FILENAME

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
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CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

TYPICAL VFD WIRING DIAGRAM

W.O. 1000721
SHEET
E8

YASKAWA IQ1000 VFD PROGRAMMING			
No.	**Name**	**Description**	**Value**
OPERATION MODE SELECTION			
b1-01	Frequency Ref. Sel. 1	Reference Source: HOA Keypad	0
b1-02	Run Command Sel. 1 (Auto Mode)	Operator (HOA Keypad)	0
b1-03	Stopping Method (H1-02)	Ramp to Stop	0
b1-11	Run Delay at Stop	t= 30.0 sec	30.0
MULTI-FUNCTION DIGITAL INPUTS			
H1-02	Term. S2 Func. Select	Drive Enable (Remote Stop)	6A
H1-04	Term. S4 Func. Select	Ext. Fault- Mtr. Temp. (N.C.) Coast to Stop	25
H1-05	Term. S5 Func. Select	Analog Input Selected	C
MULTI-FUNCTION DIGITAL OUTPUTS			
H2--01	Term. M1-M2 Func. Sel.	VFD Running	0
H2-02	Term. M3-M4 Func. Sel.	Feedback Signal "Low Press."	97
H2-03	Term. MD-MF Func. Sel.	Automatic Mode	40
MULTI-FUNCTION ANALOG INPUTS			
H3-14	Analog Input Term. Enable Selection	Terminals A2 & A3 Enabled	6
H3-05	Term. A3 Level Select	Suction Feedback Level: 4-20mA	2
H3-06	Term. A3 Func. Select	Suction Input / Feedback	23
H3-07	Term. A3 Gain Setting	Suction Input Gain= 100%	100.0
H3-08	Term. A3 Bias Setting	Suction Input Bias, 4mA= 0.0%	0.0
H3-09	Term. A2 Level Select	PID Feedback Level: 4-20mA	2
H3-10	Term. A2 Func. Select	PID Feedback	B
H3-11	Term. A2 Gain Setting	PID Feedback Gain= 100%	100.0
H3-12	Term. A2 Bias Setting	PID Feedback Bias 4mA= 0.0%	0.0
MEMOBUS SETUP PARAMETERS			
H5-01	Drive Node Network Address	Booster P1 / Booster P2	1 / 2
HMI DISPLAY			
o1-01	User Monitor Select	Last Monitor Scrolled= Output Volts	106
o1-02	Power On Monitor	Frequency Reference	1
o1-03	Display Unit Select	User Selected Units (o1-09)	3
o1-06	2nd & 3rd L. Mon. Mode Sel.	3 User Selectable (o1-07 & o1-08)	1
o1-07	2nd Line Mon. Mon. Sel.	Output Frequency	102
o1-08	3rd Line Mon. Mon. Sel.	PID Feedback	191
o1-09	Freq. Ref. Disp. Units	Frequency Reference Units= PSI	1
o1-10	Display Unit Max. Value	150 PSI	1500
o1-11	Disp. Units Decimal	one decimal place	1
o1-12	Home Help Text	default = enabled= 1	1

YASKAWA IQ1000 VFD PROGRAMMING			
No.	**Name**	**Description**	**Value**
PUMP PARAMETERS			
P1-01	Pump Mode	Memobus Network	3
P1-02	System Units	PSI	1
P1-03	Feedback Device Scaling	150 PSI	150.0
P1-04	Start Level	-5.0 PSI	-5.0
P1-05	Start Level Delay Time	Time= 5 sec.	5
P1-08	Low FDBK Level	Low Level= 60 PSI	60.0
P1-09	Low FDBK Delay Time	Delay= 10 sec	10.0
P1-10	Low FDBK Selection	Display "Low FDBK" & Close D.O. H2-02= 97	1
P1-11	High FDBK Level	High Level= 125 PSI	125.0
P1-12	High FDBK Delay Time	Delay= 10 sec	10.0
P1-13	High FDBK Selection	Display "High FDBK" Only	2
P2-01	Sleep Level Type	Output Frequency	0
P2-02	Sleep Level	Freq.= 30Hz	30.0
P2-03	Sleep Delay Time	Time= 30 sec.	30
P2-15	Sleep Auto-- Off	Disable	0
PUMP ADVANCED			
P4-10	Auto Mode on Power Loss	Enabled	1
P4-17	Utility Start Delay	Time= 1 min	1.0
PUMP HAND MODE			
P5-01	Hand Mode Ref. Source	P5-01 (Hand ref.)	1
P5-02	Hand Reference 1	Freq.= 40Hz	40.0
P5-03	Hand/Auto During Run Sel.	Enabled	1
P5-04	Hand Key Func. Sel.	Hand Key Enabled	1
Network Options			
P9-01	Lead Drive Selection	Next Available	0
P9-02	Feedback Source	Analog > Network, Alarm	2
P9-05	Lag Drive Mode	Turn Off	2
P9-25	Highest Node Address	set to 3	3
P9-50	Suction Pressure Source	Analog > Network, Alarm	2
PID CONTROLLER PARAMETERS			
Q1-01 / U1-01	PID Setpoint	Disch. Pressure Set point =85 PSI	85.0
SUCTION PRESSURE CONTROLPARAMETERS			
Q5-01	Suction Press. Sel.	Suction Pressure (PSI)	1.0
Q5-02	Suction Trans'r Scaling	Full Scale (20mA)= 150 PSI	1.0
Q5-03	Suction Press. Setpoint	Setpoint= 50 PSI	50.0
Q5-04	Min. Suction Pressure	Min. Press.= 30 PSI	30.0
Q5-05	Suct. Press. Sleep Delay Time	t= 5sec.	5.0
Q5-06	Wake-Up Suction Press.	Wake-Up Suction Press.= 50 PSI	50.0
Q5-07	Suct. Press. Wake-Up Time	t= 2sec.	2.0
Q5-08	Suct. Press. Min. Speed	Min Spd.= 40Hz	40.0

TPB017-024

NOTES:

1. TH= T =S ON THIS SH==T -\= PROVID=D - ID= TO TH= V- \OGR- ING R=QUIR=D TO OP=R-T= TH= PROPOS=D BOOST=R PUMPS IN TH= M =R D=SCRIB=D B=LOW. IT IS NOT PURPORT=D TH-T TH= T =S -\= COMPL=T= OR =RROR=-\==. TH= CONTR- TOR SH = R=SPONSIBL= - \ D=T=RMINING - INST- ING TH= CORR=CT P-\ =T=RS TO - ILIT-= TH= - ING BOOST=R PUMP OP=R-TION:

2. OP=R-TION:

   TH= INT=NT IS TO R=GUL-T= DISCH-\G= PR=SSUR= - TION PR=SSUR= IN TH= - ING M =R:

   -.) WH=N TH= SUCTION PR=SSUR=, M=- \=D BY TR =R, IS = TH= PROGR =D SUCTION PR=SSUR= S=T POINT LOC-T=D IN R=GIST=R Q5-03, TH= V- ILL R=GUL-T= TH= SP==D O- TH= PUMP -T TH= PROGR =D DISCH-\G= PR=SSUR= (PID) S=TPOINT LOC-T=D IN R=GIST=R U1-01. ST-\T WITH Q5-03= 50PSI - -01=85PSI.

   B.) I- TH= SUCTION PR=SSUR= DROPS B=LOW TH= PROGR =D S=TPOINT IN Q5-03, TH= V- ILL LOW=R TH= SP==D TO M-INT-IN TH= PROGR =D SUCTION PR=SSUR= R=SULTING IN =CR= = IN DISCH-\G= PR=SSUR=. TH= S=TPOINT LOC-T=D IN R=GIST=R Q5-08 =ST- ISH=S TH= MINIMUM SP==D R=QUIR=D BY TH= PUMP TO =NSUR= - . ST-\T WITH Q5-08= 40HZ. WH=N TH= SUCTION PR=SSUR= RIS=S = TH= PROGR =D S=TPOINT IN Q5-06, - \ LONG=R TH- TH= TIM= PROGR =D IN Q5-07, NORM- ISCH-\G= PR=SSUR= R=GUL-TION WILL R=SUM=. ST-\T WITH Q5-06= 50PSI - \5-07= 2 S=C.

   C.) I- TH= SUCTION PR=SSUR= DROPS B=LOW TH= PROGR =D MINIMUM SUCTION PR=SSUR= S=TPOINT LOC-T=D IN R=GIST=R Q5-04, - \ LONG=R TH- TH= TIM= S=T IN Q5-05, TH= PUMPING SYST=M WILL SHUT DOWN (SL==P). ST-\T WITH Q5-04= 30PSI - \5-05=5 S=C. WH=N TH= SUCTION PR=SSUR= RIS=S = Q5-06 - \ LONG=R TH- TH= TIM= S=T IN Q5-07, NORM- ISCH-\G= PR=SSUR= R=GUL-TION WILL R=SUM=.

   D.) - H = TH= S = - \-T= - ILITI=S TO - TOM-TIC- ′ - T=RN-T= PUMP OP=R-TION SH = PROVID=D. THIS =-TUR= M-′ B= DIS =D BY TH= OP=R-TOR I =SIR=D.

   =.) TH= PUMPS SH =R-T= IN =X L=- / L -IGUR-TION - TH= L- H- TR- K TH= SP==D O- TH= L=- .

   -.) WH=N IN NORM- ISCH-\G= PR=SSUR= CONTROL, TH= DRIV=(S) WILL SHUT DOWN (SL==P) I- TH= PR=SSUR= ST-′S -T OR = TH= Q1-01 S=TPOINT WITH TH= L =-ST =D - TH= DRIV= RUNNING -T MINIMUM PUMP SP==D. TH= DRIV= WILL W-K= UP WH=N TH= DISCH-\G= PR=SSUR= DROPS BY TH= DI =R=NTI =T IN P1-04. ST-\T WITH P1-04= -5PSI.

3. TH= CONTR- TOR SH- I-′ TH= T =S =C=SS-\Y TO OP=R-T= IN TH= M =R D=SCRIB=D - \OVID= =T= LISTING O -\ =T=RS IN TH= O&M M - .

4. TH= MODBUS CONN=CTIONS -\OM TH= V- TO TH= =XISTING SC - \TUs SH = UTILIZ=D TO PROVID= TH= - ING IN- \M-TION - \ =- H DRIV=: DISCH-\G= PR=SSUR= S=TPOINT, SUCTION PR=SSUR= S=TPOINT, DISCH-\G= PR=SSUR=, SUCTION PR=SSUR=, MOTOR RPM, MOTOR CURR=NT, =L =D RUN TIM=, - T D=SCRIPTION. TH= CONTR- TOR SH - IST TH= CITY WITH TH= R=QUIR=D MODBUS M- ING.

-IL=N =

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
3		
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D=S: RDK
DRN: RDK
CKD:
DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

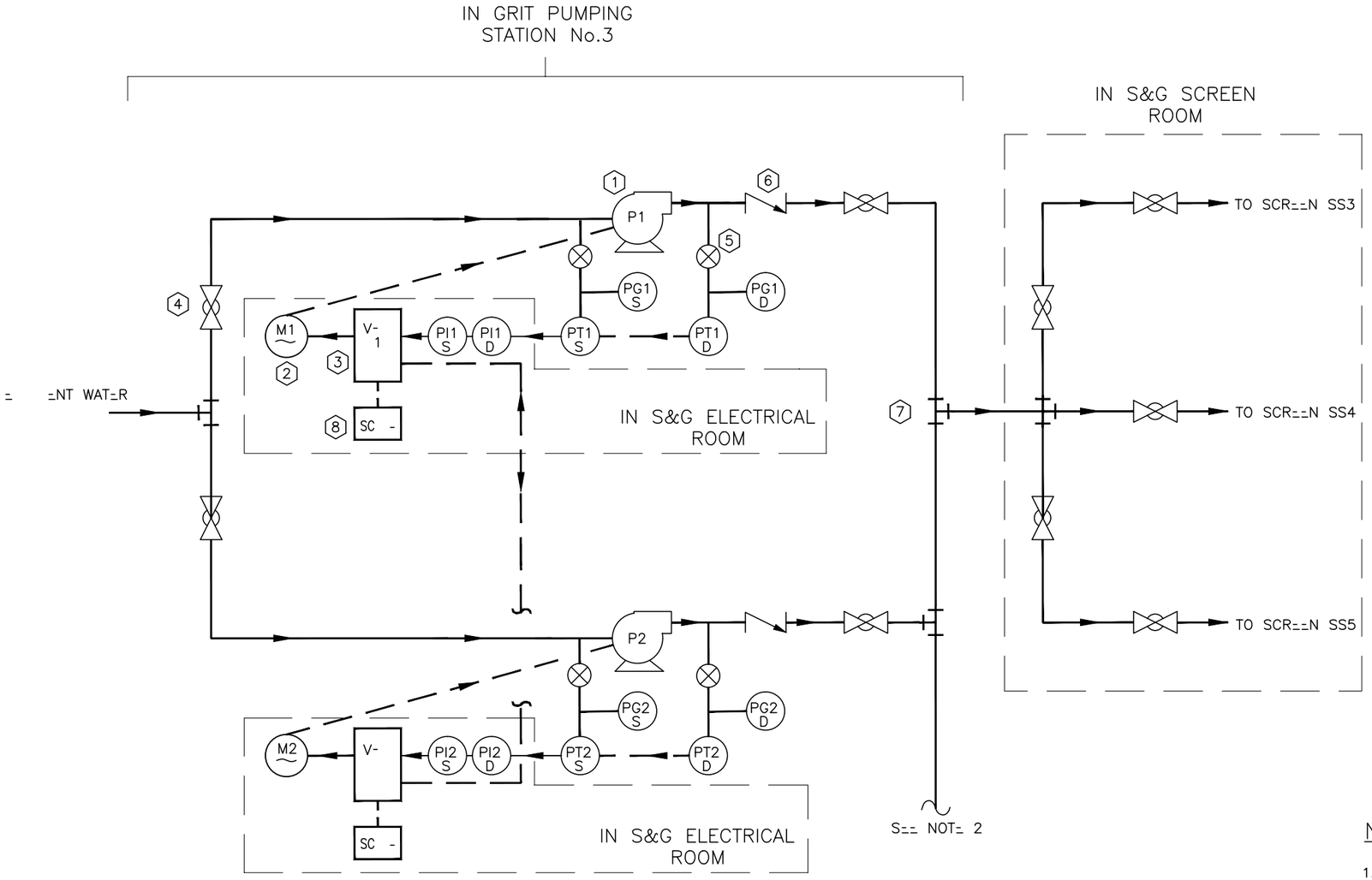
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

VFD PARAMETERS

W.O. 1000721

SH==T
E9

TPB017-025



KEYED NOTES

1. PROPOS=D BOOST=R PUMP
2. PROP. BOOST=R PUMP MOTOR
3. PROP. ADJUSTABL= - \=Q. DRIV=
4. PROP. GAT= VALV=
5. PROP. BALL VALV=
6. PROP. CH=CK VALV=
7. PROP.T==
8. =XISTING SCADA RTU

(PT) PROP. PR=SSUR= TRANSMITT=R

(PG) PROP. PR=SSUR= GAG=

(PI) PROP. PR=SSUR= INDICATOR

(M) PROP. INDUCTION MOTOR

———— = =NT WAT=R PIPING

– – – – =L=CT. VARIABL= OR BINARY

NOTES:

1.) TH= PID DIAGRAM SHOWN APPLI=S TO BUILDING No.1. TH= PID - \ BUILDING No.2 IS SIMILAR.

2.) TH= BOOST=R PUMPS - \ BUILDING No.1 AR= D=SIGN=D TO INCR=AS= TH= = =NT WAT=R PR=SSUR= - \ TH= =NTIR= --CILITY. TH= BOOST=R PUMPS - \ BUILDING No.2 AR= D=SIGN=D TO INCR=AS= TH= = =NT WAT=R PR=SSUR= TO ONLY TH= SCR==N ROOM.

ROMAN D. KORCHAK, P.=. #42626
=L=CTRICAL S=CTION H=AD
WAST=WAT=R D=PARTM=NT

No.	DAT=	R=VISIONS
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DAT=: 3/20/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

PIPING AND INSTRUMENTATION DIAGRAM

W.O. 1000721
SH==T
E10

-IL=N =

TPB017-026

VFD1 CONTROLS PARTS SCHEDULE (VFD2 SCHEDULE IS SIMILAR)

ITEM	QUAN.	DESCRIPTION	RATINGS	MANUFACTURER	PART NUMBER	COMMENTS
VFD1 (VFD2)	1	IQPUMP100 NEMA 12 VFD PACKAGE	17.5 AMPS , 480 V	YASKAWA		W/ LINE & LOAD REACTORS
MCB	1	MAIN CIRCUIT BREAKER	30 AMPS, 600 V	SQUARE D	HGL36030	35 kAIC @ 480 V
CT1	1	CONTROL TRANSFORMER	240X480V-120V, 500 VA	SQUARE D	9070TF500D1	WITH PRIMARY AND SECONDARY FUSE BLOCKS
	2	REJECTION CLASS CC FUSES	2 AMPS, 600 V	BUSSMANN	FNQ-R-2	FOR CT1 PRIMARY
	1	MIDGET FUSE	6 AMPS, 250 V	EDISON	MEN-6	FOR CT1 SECONDARY
PB-S	1	RED MUSHR'M HEAD P.B. 2-POS MAINTAINED CONTACT	NEMA 4X	SQUARE D	9001-SKR99H13	TAG- "PUSH TO STOP / PULL TO ENABLE"
PL-1, PL-4, PL-5	3	PUSH TO TEST LED PILOT LIGHT WITH WHITE LENS	NEMA 4X	SQUARE D	9001-SKT-38LRW9	TAGS AS SHOWN
PL-2, PL-3, PL-6	3	PUSH TO TEST LED PILOT LIGHT WITH RED LENS	NEMA 4X	SQUARE D	9001-SKT-38LRR9	TAGS AS SHOWN
PL-7	1	PUSH TO TEST LED PILOT LIGHT WITH GREEN LENS	NEMA 4X	SQUARE D	9001-SKT-38LRG9	TAG AS SHOWN
CR1-CR5, ES1	6	4 POLE CONTROL RELAY	120 V COIL, 15A CONTACTS	SQUARE D	RPM42F7	WITH LED & PUSH TO TEST BUTTON
	6	SOCKETS		SQUARE D	RPZF4	
	6	VARISTOR PROTECTION MODULE	110 - 240 VAC	SQUARE D	RXM021FP	
PT1-D, PT1-S (PT2-D, PT2-S)	2	PRESSURE TRANSMITTER	150PSI, 4-20mA, 2-WIRE	ASHCROFT	A2X-B-MO4-42-C2-150#-G	HAZARDOUS AREA CERTIF: CLASS I, Div. 1
PI1-D, PI1-S (PI2-D, PI2-S)	2	DIGITAL PROCESS METER	85 TO 265 VAC POWER 4-20 mA ANALOG INPUT	PRECISION DIGITAL	PD765-6XO-00	1.2" DISPLAY

-ILEN =

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ELECTRICAL SECTION HEAD
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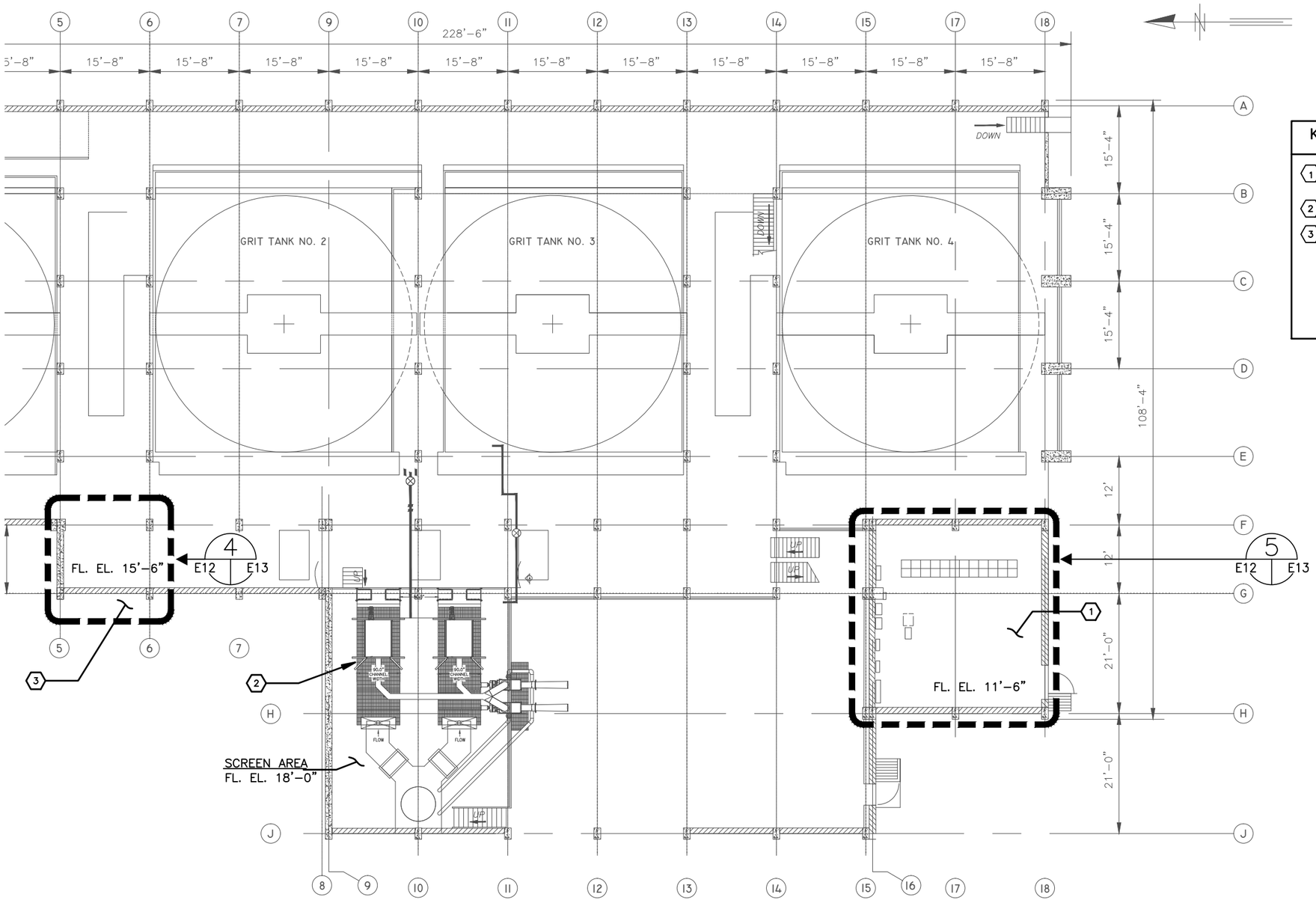
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

VFD CONTROLS SCHEDULE

W.O. 1000721
SHEET
E11

TPB017-027



KEYED NOTES:

1. EXISTING ELECTRICAL ROOM (FLOOR ELEVATION +11'-6"). REFER TO SHEETS EX FOR WORK REQUIRED.
2. EXISTING SCREENING EQUIPMENT, NO WORK REQUIRED.
3. LOCATION FOR PROPOSED BOOSTER PUMPS (FLOOR ELEVATION +15'-6").

SCREEN AND GRIT BUILDING NO. 2 (005) PLAN

SCALE : 1" = 20'-0"

FILENAME

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
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DES: RDK
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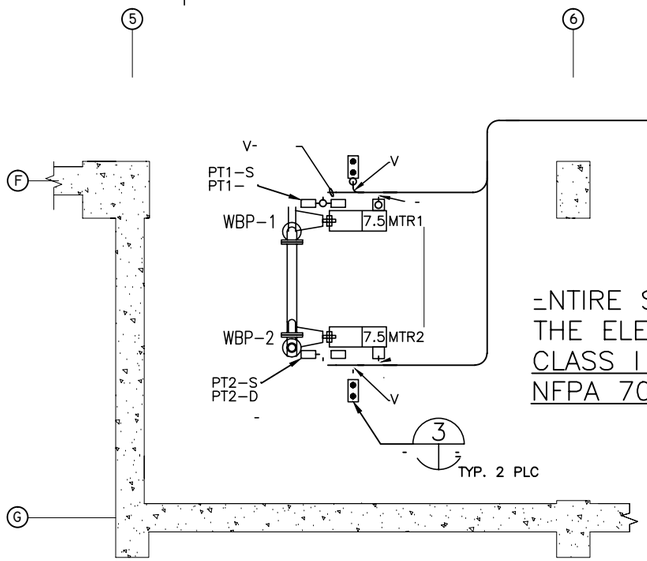
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

BUILDING No.2 FLOOR PLAN

W.O. 1000721
SHEET
E12

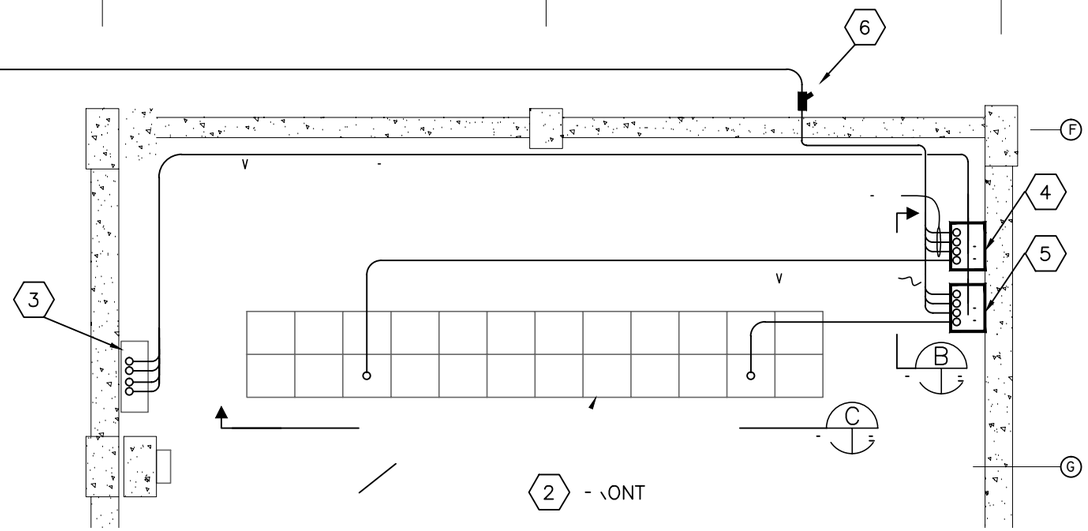
TPB017-028



ENTIRE SCREEN & GRIT BLDG. EXCLUDING THE ELECTRICAL ROOM IS CLASSIFIED CLASS I DIVISION 1, GROUP D. NFPA 70, ARTICLE 500 APPLIES.

PROPOSED BOOSTER PUMP AREA

SCALE : 1/4" = 1'-0" - ELEVATION 15'-6" — 4 / E12 E13



EXISTING ELECTRICAL ROOM

SCALE : 3/16" = 1'-0" - ELEVATION 11'-6" — 5 / E12 E13

KEYED NOTES

1 INDICATIONS - ARE SHOWN IN BOLD LINEWEIGHT.

EXISTING WESTINGHOUSE MOTOR CONTROL CENTER (MCC-21). CUBICLES 3D - H E MODIFIED ACCESS TO AND THE PROPOSED V - . REMOVE EXISTING COVER P LS - ' NEW 3-POLE, 30 - IRCUIT BREAKER CUBICLES TO MATCH EXISTING. CIRCUIT BREAKERS SHALL H E - INIMUM 25 k-IC RATING. PROVIDE COVER P LS 4 E. SEE SHEET E14 - FOR DETAILS.

EXISTING SC - TU UNIT. CONTRACTOR SHALL INSTALL IT ES - HOWN. CITY PERSONNEL WILL MAKE - ' REQUIRED RTU MODIFICATIONS / RTU PROGRAMMING -IN CTIONS. THE CONTRACTOR SHALL BE IST THE CITY WITH THE REQUIRED MODBUS MAPPING. -IBER-OPTIC J.B. IS MOUNTED DIRECTLY E THE SC - TU (NO WORK REQUIRED).

CONTRACTOR TO PROVIDE - INSTALL W BOOSTER PUMP NO. 1. V- E R TO SHEET E7 - FOR INSTALLATION.

5 CONTRACTOR TO PROVIDE - INSTALL W BOOSTER PUMP NO. 2. V- E R TO SHEET E7 - FOR INSTALLATION.

6 CORE DRILL OPENINGS - FOR CONDUITS THROUGH W- . USE COPPER-SEAL - INUM SLEEVING -ITTINGS -TCH CONCRETE TO MATCH EXISTING (6 TOT- .

CONDUIT & CONDUCTOR SCHEDULE

TAG	SIZE	CONDUCTORS	FROM	TO	COMMENTS
VFD1L1	1"C	(3) #8 AWG , (1) #10 GND	MCC28, 4E	VFD1	XHHW-2 CU
VFD1M1	1"C	(3) #8 AWG , (1) #10 GND	VFD1	WBP-1	XHHW-2 CU
VFD1C1	3/4"C	(2) #14 AWG, (1) #14 GND	LOCAL "ON-OFF" SWITCH	VFD1	XHHW-2 CU
VFD1N1	3/4"C	(2) 2C-#18-TP-SHIELDED (1) #14 GND	PRESS. TRANS PT1-S & PT1-D	VFD1	BELDEN 9341
VFD1SC	3/4"C	(1) CAT-5E	VFD1	EX. SCADA RTU	
VFD1SD	1"C	(10) #14 AWG, (1) #14 GND	VFD1	EX. SCADA RTU	XHHW-2 CU
VFD2L1	1"C	(3) #8 AWG , (1) #10 GND	MCC28, 8E	VFD2	XHHW-2 CU
VFD2M1	1"C	(3) #8 AWG , (1) #10 GND	VFD2	WBP-2	XHHW-2 CU
VFD2C1	3/4"C	(2) #14 AWG, (1) #14 GND	LOCAL "ON-OFF" SWITCH	VFD2	XHHW-2 CU
VFD2N1	3/4"C	(2) 2C-#18-TP-SHIELDED (1) #14 GND	PRESS. TRANS PT2-S & PT2-D	VFD2	BELDEN 9341
VFD2SC	3/4"C	(1) CAT-5E	VFD2	EX. SCADA RTU	
VFD2SD	1"C	(10) #14 AWG, (1) #14 GND	VFD2	EX. SCADA RTU	XHHW-2 CU

PLOT -ILEN -

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
3		
2		
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DES: RDK
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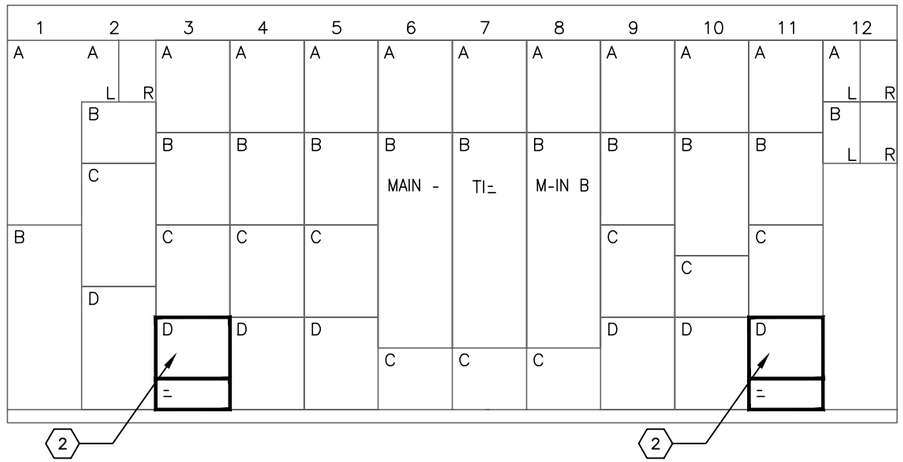
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS

BUILDING No. 2, ELECTRICAL SITE PLAN

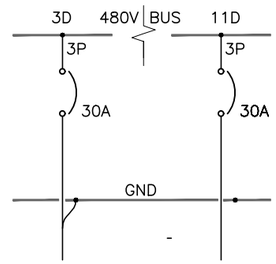
W.O. 1000721
SHEET
E13



MCC 21 FRONT ELEVATION

(NO SC =) S== K=Y=D NOT=S ON SH==T =13

C =-13 =-14



MCC 21 PARTIAL ONE-LINE DIA.

PLOT -IL=N =

ROMAN D. KORCHAK, P.=. #42626 =L=CTRICAL S=CTION H=AD WAST=WAT=R D=PARTM=NT	No.	DAT=	R=VISIONS	D=S: RDK DRN: RDK CKD: DAT=: 3/20/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SCREEN & GRIT BUILDING NOS. 1 & 2 BOOSTER PUMPS BUILDING No. 2 , MCC-21 DETAILS	W.O. 1000721 SH==T E14
	3						
	2						
	1						