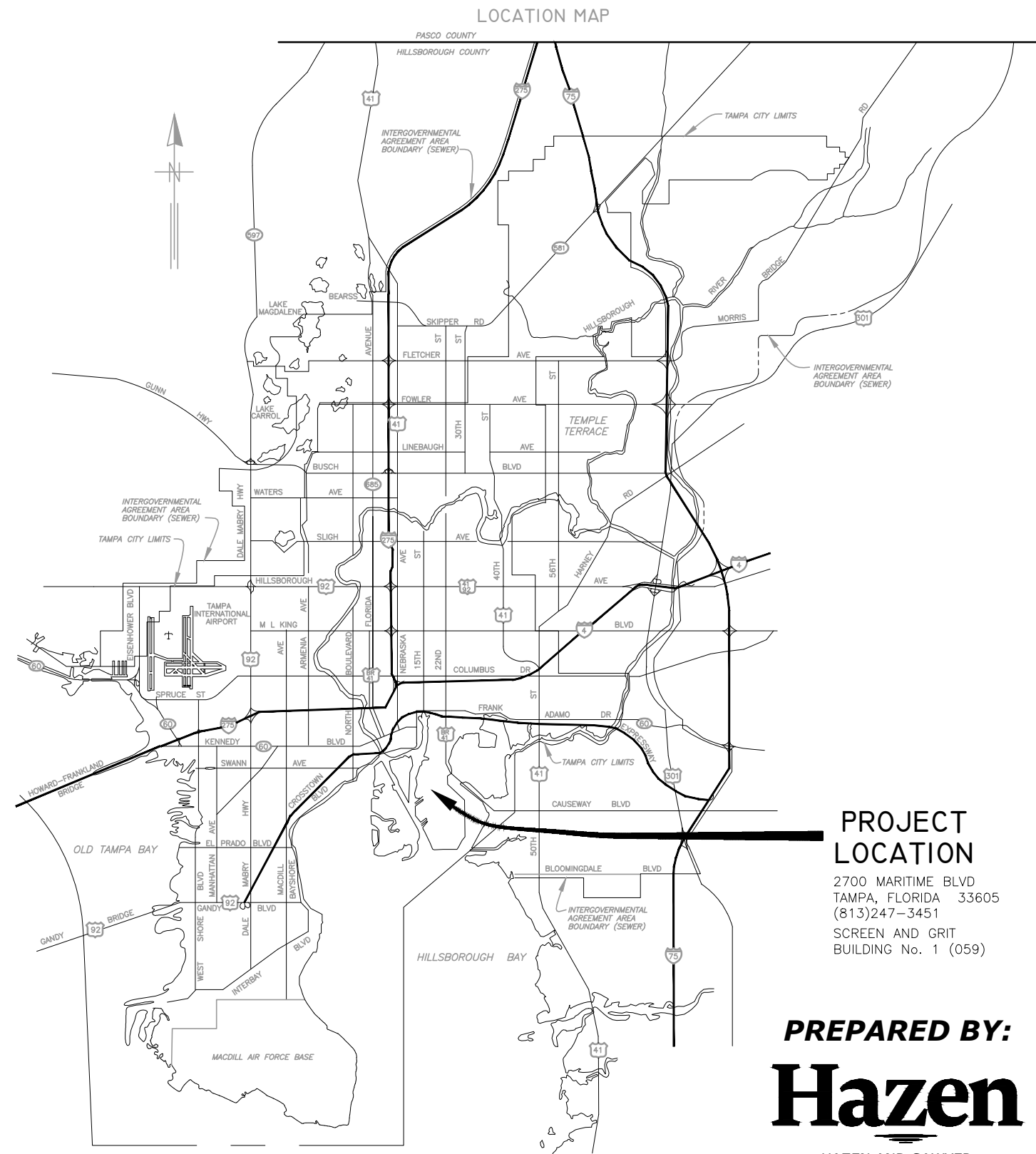


The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:
[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

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

User: szagurski Drawing Name: H:\41077-018 city of Tampa - HFC AWP Grit Washer Bldg 1 Replacement\Drawings\General\G-1 Overall.dwg Layout - Nov 15, 2018 - 8:17am



CITY of TAMPA



WASTEWATER DEPARTMENT

PLANS FOR

HOWARD F CURREN AWP SCREEN AND GRIT WASHER REPLACEMENT

CONTRACT No.
18-C-00017

PROJECT LOCATION

2700 MARITIME BLVD
TAMPA, FLORIDA 33605
(813)247-3451
SCREEN AND GRIT
BUILDING No. 1 (059)

PREPARED BY:
Hazen

HAZEN AND SAWYER
10002 PRINCESS PALM AVENUE, SUITE 200
TAMPA, FLORIDA 33619
CERTIFICATE OF AUTHORIZATION NO. : 2771

MECHANICAL JACOB L. PORTER, PE 65453	No.	DATE	REVISIONS	DES: JLP DRN: SMZ CKD: DBS DATE: OCT 2018	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWP	HOWARD F. CURREN AWP SCREEN AND GRIT WASHER REPLACEMENT PROJECT COVER SHEET	W.O. 14
	3						SHEET
	2						1
ELECTRICAL DANIEL B. SCHMIDT, PE 40233	1	10/2018	BID SET				of 32

User: szogurski Drawing Name: H:\41077-009 city of tampa - hfc awtp grit washer replacement\Drawings\General\G-2.dwg
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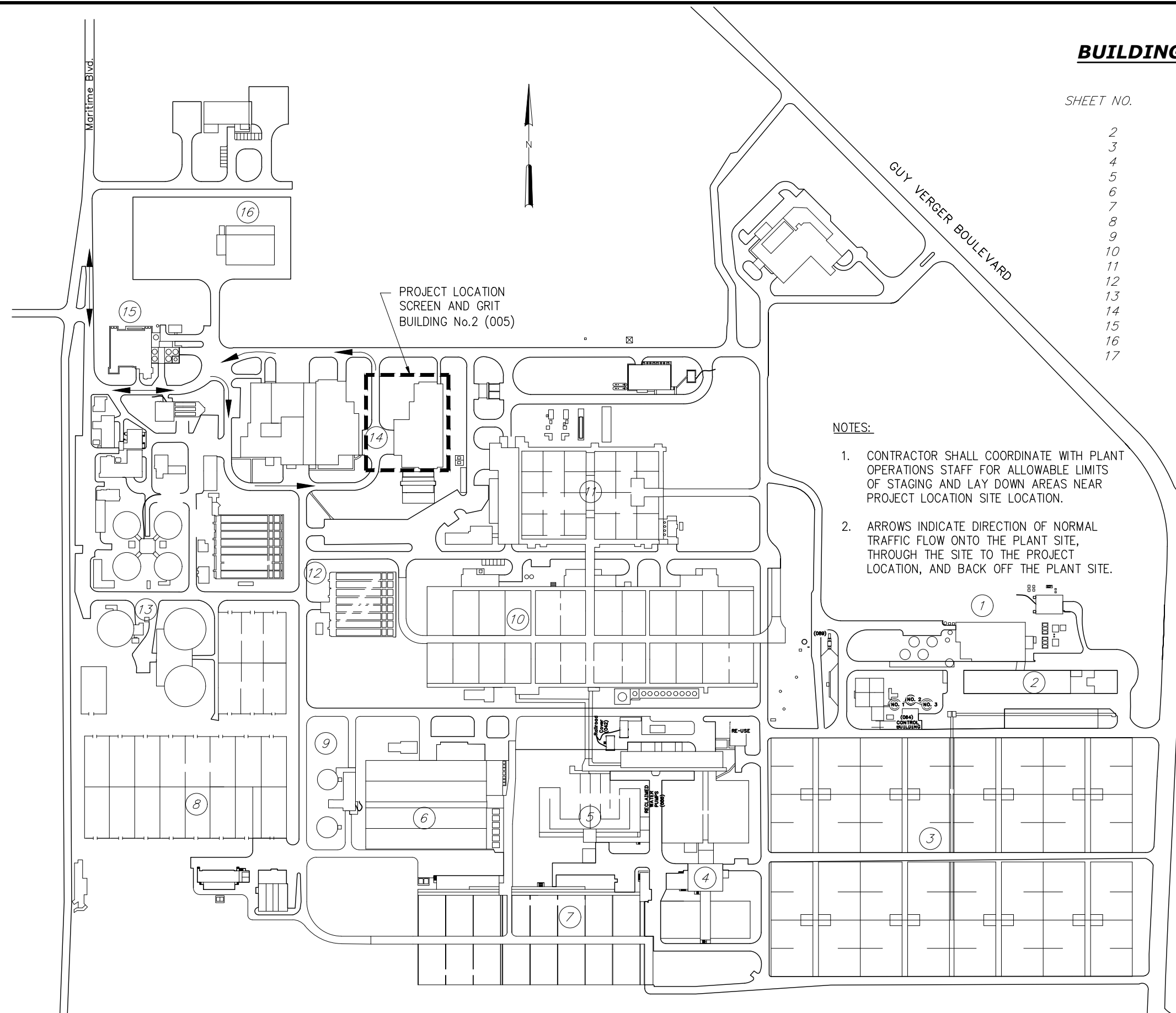
BUILDING 2 INDEX OF DRAWINGS

SHEET NO.	SHEET DESCRIPTION
2	PROJECT LOCATION MAP AND INDEX OF DRAWINGS
3	LEGEND, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
4	OVERALL EAST HEADWORKS BUILDING - KEY SHEET
5	GRIT WASHER DEMOLITION SECTIONS
6	GRIT PUMP PIPING IMPROVEMENTS PLAN
7	GRIT PUMP PIPING IMPROVEMENTS SECTIONS
8	GRIT FLUSHING AND GRIT WASHER SUPPLY PIPING
9	GRIT WASHER REPLACEMENT PLAN
10	GRIT WASHER REPLACEMENT SECTIONS
11	MECHANICAL DETAILS
12	GRIT WASHER ISOMETRIC
13	OVERALL EAST HEADWORKS BUILDING - ELECTRICAL PLAN
14	GRIT UNIT ELECTRICAL LOWER PLAN
15	GRIT UNIT ELECTRICAL UPPER PLAN
16	ELECTRICAL SCHEMATIC DIAGRAMS
17	ELECTRICAL DETAILS

NOTES:

- CONTRACTOR SHALL COORDINATE WITH PLANT OPERATIONS STAFF FOR ALLOWABLE LIMITS OF STAGING AND LAY DOWN AREAS NEAR PROJECT LOCATION SITE LOCATION.
- ARROWS INDICATE DIRECTION OF NORMAL TRAFFIC FLOW ONTO THE PLANT SITE, THROUGH THE SITE TO THE PROJECT LOCATION, AND BACK OFF THE PLANT SITE.

- ① SLUDGE HEAT DRYING FACILITY
- ② SLUDGE DEWATERING BUILDING
- ③ SLUDGE DRYING BEDS
- ④ DENITRIFICATION FILTERS
- ⑤ POST-AERATION CHLORINATION TANKS
- ⑥ DIFFUSED AIR REACTORS
- ⑦ FINAL SEDIMENTATION TANKS
- ⑧ SLUDGE DRYING BEDS
- ⑨ SLUDGE THICKENING
- ⑩ FINAL SEDIMENTATION TANKS
- ⑪ HPO REACTOR TANKS
- ⑫ PRIMARY SEDIMENTATION TANKS
- ⑬ SLUDGE DIGESTION TANKS
- ⑭ SCREEN AND GRIT BUILDINGS
- ⑮ JUNCTION CHAMBER AND METER VAULT No. 1
- ⑯ WAREHOUSE



No.	DATE	REVISIONS
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1	10/2018	BID SET

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 DRN: SMZ
 CKD: DBS
 DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
 HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
 AND GRIT WASHER REPLACEMENT
 BUILDING 2 PROJECT LOCATION
 MAP AND INDEX OF DRAWINGS

W.O. 14
 SHEET
 2
 OF 32

JACOB L. PORTER, PE
 NO. 65453

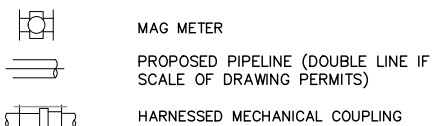
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SYMBOLS

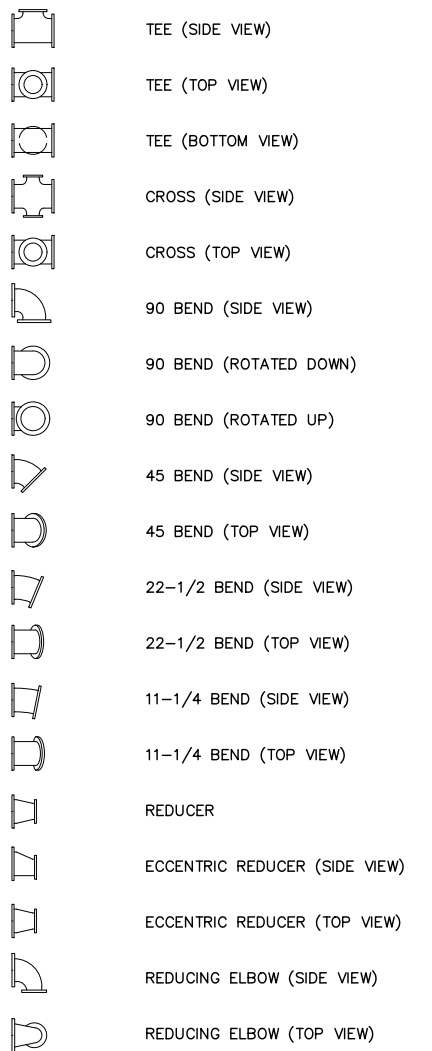
ABBREVIATIONS

SECTION AND DETAIL IDENTIFICATION

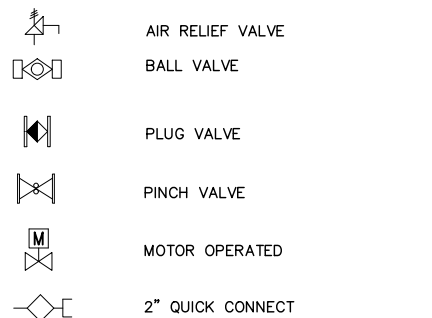
MISCELLANEOUS SYMBOLS



FLANGED JOINT FITTINGS



VALVES AND INSTRUMENTS



PIPING

DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE
<u>VALVES, FITTINGS, ETC.</u>	
ARV	AIR RELIEF VALVE
BV	BALL VALVE
BF	BLIND FLANGE
CPLG	COUPLING
FT	FEET
FTG	FITTING
FLG/FL	FLANGE
FD	FLOOR DRAIN
FRC	FLEXIBLE RUBBER COUPLING
PV	PLUG VALVE
SOV	SOLENOID OPERATED VALVE
THD	THREADED

GENERAL

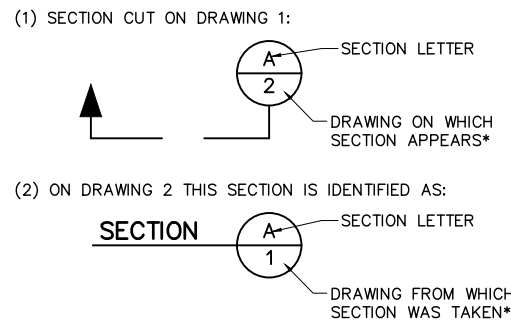
AL, ALUM	ALUMINUM
APPROX	APPROXIMATE
BLK	BLOCK
BOL	BOLLARD
BOTT	BOTTOM
BLDG	BUILDING
CL	CENTER LINE
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DISCH	DISCHARGE
D	DRAIN
EA	EACH
EOP	EDGE OF PAVEMENT
EFF	EFFLUENT
ELEC	ELECTRIC
EL, ELEV	ELEVATION
EMBED	EMBEDMENT
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
FF	FINISHED FLOOR
JB	JUNCTION BOX
MAX	MAXIMUM
MECH	MECHANICAL
MISC	MISCELLANEOUS
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
NO	NUMBER
PS	PRESSURE SWITCH
PW, W	POTABLE WATER
RAW	RAW WATER
RED	REDUCER

GENERAL

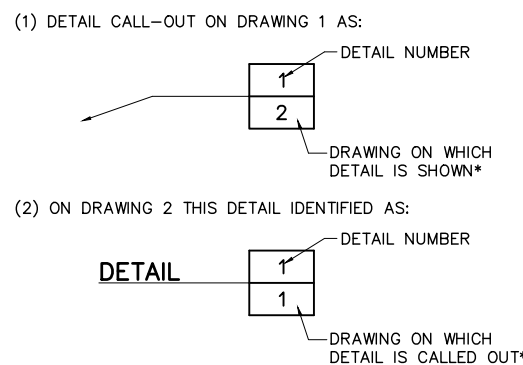
REINF	REINFORCING
REQ'D	REQUIRED
SECT	SECTION
SCH	SCHEDULE
SHT	SHEET
SPEC	SPECIFICATION
SQ	SQUARE
STL	STEEL
STRUC	STRUCTURAL
SST	STAINLESS STEEL
TYP	TYPICAL
TOP	TOP OF PIPE
W/	WITH

SECTION AND DETAIL IDENTIFICATION

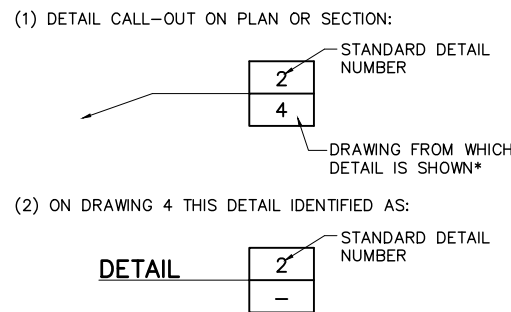
SECTION IDENTIFICATION



DETAIL IDENTIFICATION



STANDARD DETAIL IDENTIFICATION



* NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACE BY A LINE.

- NOTES:
- ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DWGS.
 - FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
 - EXISTING EQUIPMENT, STRUCTURES, AND BUILDINGS ARE SHOWN LIGHT LINED. NEW EQUIPMENT, PIPING, FITTINGS, AND VALVES ARE SHOWN DARK LINED.

GENERAL PROJECT NOTES:

- CONTRACTOR SHALL REPLACE GRIT WASHERS IN THE EAST SCREEN AND GRIT BUILDING. REPLACE GRIT WASHERS, ASSOCIATED PIPING AND ALL OTHER COMPONENTS AS LISTED IN THE EQUIPMENT SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
- CONTRACTOR SHALL REPLACE ALL FITTINGS, AND VALVES AS SPECIFIED AND SHOWN.
- CONTRACTOR SHALL REPLACE ALL EXISTING CONDUIT RUNS, RECEPTACLES, LIGHT FIXTURES, AND LOCAL CONTROL STATIONS TO THE EXTENT SHOWN ON THE DRAWINGS FOR THE GRIT WASHERS, USING NEW CABLE PULLED THROUGH THE NEW AND EXISTING CONDUIT SYSTEMS.
- CONTRACTOR WILL BE ALLOWED TO WORK ON ONLY ONE BUILDING AT A TIME. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH TREATMENT PLANT PERSONNEL AND PLANT OPERATIONS. WHILE WORKING IN A SCREEN AND GRIT BUILDING, ONLY ONE GRIT WASHER CAN BE REPLACED AT A TIME. WHEN THE FIRST GRIT WASHER IS PLACED IN SERVICE, THE UNIT SHALL BE OPERATED FOR AT LEAST (7) DAYS OF TROUBLE FREE SERVICE BEFORE REMOVAL OF THE NEXT EXISTING WASHER(S) CAN START AND INSTALLATION OF THE SECOND GRIT WASHER CAN BEGIN. WHEN THE COMPLETE GRIT WASHER SYSTEM IN THE FIRST BUILDING IS PLACED IN SERVICE, THE GRIT WASHER SYSTEM AT THAT BUILDING SHALL BE OPERATED FOR AT LEAST (14) DAYS OF TROUBLE FREE SERVICE BEFORE THE CONSTRUCTION IN THE SECOND BUILDING CAN START. SHOULD ANY PROBLEMS ARISE DURING ANY TEST PERIOD, CONTRACTOR SHALL REMEDY THE PROBLEM(S) AS SOON AS PRACTICAL AND THE TROUBLE FREE TEST PERIOD SHALL BE RESTARTED.
- EXISTING DIMENSIONS ARE BASED ON AS-BUILT DRAWINGS. TRUE DIMENSIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO LAYOUT AND SHOP DRAWING SUBMITTAL.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL PROPOSED NEW ITEMS. SHOP DRAWINGS, BOTH HARD COPIES OR ELECTRONIC IN PDF FORMAT, SHALL BE HIGH QUALITY AND EASILY READABLE. ELECTRONIC PDF FORMAT SHALL BE SEARCHABLE AND PROVIDED WITH BOOKMARKS.
- CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATIONS IN REGARDS TO WORKING CONDITIONS AND MATERIALS HANDLING AND DISPOSAL.
- CONTRACTOR SHALL MEET ALL REQUIREMENTS AS LISTED IN THE SPECIFIC PROVISIONS AND INDIVIDUAL SPECIFICATION SECTIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION 2017, CHAPTER 5 OF THE CITY OF TAMPA CODE AND NATIONAL ELECTRICAL CODE 2014 EDITION.

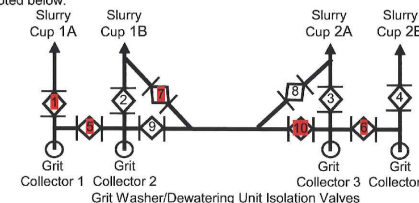
CONTROL OPERATION: Refer to Section 11412 for complete description of the operation of each grit washer unit as an individual process. Refer to Section 17000 for complete description of the entire grit removal process operation. A summary of the proposed controls is as follows:

- Grit Washer Control Panels: Each grit washer can be manually controlled through local control stations or can be placed in automatic operation, controlled through the control panel furnished with the equipment, both located in the Electrical Room. Automatic operation consists of a continuous flow of grit to the Slurry Cups on each grit washer for washing which then overflow to the grit washer's Escalator for separation of captured grit. Grit washers operate whenever a grit pump, or group of grit pumps is directed to a particular grit washer. Grit wash operation includes periodic backwashing and blowdown cycles. The grit washer belt escalator speed is adjustable to optimize grit capture and minimize grit return to the main process flow.
- Grit Removal Process Local Control Panels: The two new Grit Removal System local control panels, each located in the process area above the grit pump galleries, allow operators to monitor and manually control operation of the Grit Collector Drives, the Grit Pumps, and the Grit Basin Isolation Gates, one panel for Basins 1 and 2, the other panel for Basins 3 and 4. These devices are manually started and stopped from these local panels.
- Grit Removal System Main Control Panel: The Main Control Panel in the electrical room coordinates which Grit Washers operate and receive flow from which set of grit pumps. This panel opens and closes the 10 new grit washer isolation valves in accordance with an operator selected matrix for matching combinations of grit pumps to the each of two Grit Slurry Cups provided with each of the two Grit Washers. Selection depends on plant flow and what equipment is available to operate. The Main Control Panel also monitors and controls the rate of grit slurry flow to the selected grit washers. Selection matrix is as follows:

	Slurry Cups			
	1A	1B	2A	2B
Grit Collector 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Operators are allowed to select one Slurry Cup per Collector by clicking on the appropriate square, however, no more than 2 Grit Collectors shall be allowed to be assigned to the same Slurry Cup. Once a selection has been made, the Main Control Panel opens the appropriate isolation valves to direct grit from each grit collector (grit pump feed line) to the selected Slurry Cup and maintains an appropriate flow rate based on the selection.

One example of a selection is when all four Grit Collectors must be operated but only Grit Washer 1 is available for operation (Slurry Cups 1A and 1B). In this case, all four grit feed control valves will operate to keep flow below 400 gpm to each Slurry Cup and isolation valves 1 and 5 would be open to feed Slurry Cup 1A from Grit Collectors 1 and 2 and isolation valves 6, 7, and 10 would be open to feed Slurry Cup 1B from Grit Collectors 3 and 4 as noted below:



PIPE SCHEDULE

SERVICE	NOMINAL PIPE DIAMETER (INCHES)	MATERIAL	THICKNESS	WORKING PRESSURE (PSIG)	JOINTS	FITTINGS	PROTECTIVE COATING	
							PIPE INTERIOR	PIPE EXTERIOR
DRAIN	ALL	DIP	CLASS 53	50	FLG	DI	EL	P
GRIT WASHER FEED (INFLUENT)	ALL	DIP	CLASS 53	100	FLG	DI	GL	P
NON-POTABLE WATER (EFFLUENT)	< 2" > 2"	PVC DIP	SCH 80 CLASS 53	100 100	SW FLG	DI DI	- EL	P P
COMPRESSED AIR SUPPLY TUBING	ALL	316 SS	SCH 40	200	PER W-30	SS	-	-

No.	DATE	REVISIONS
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1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

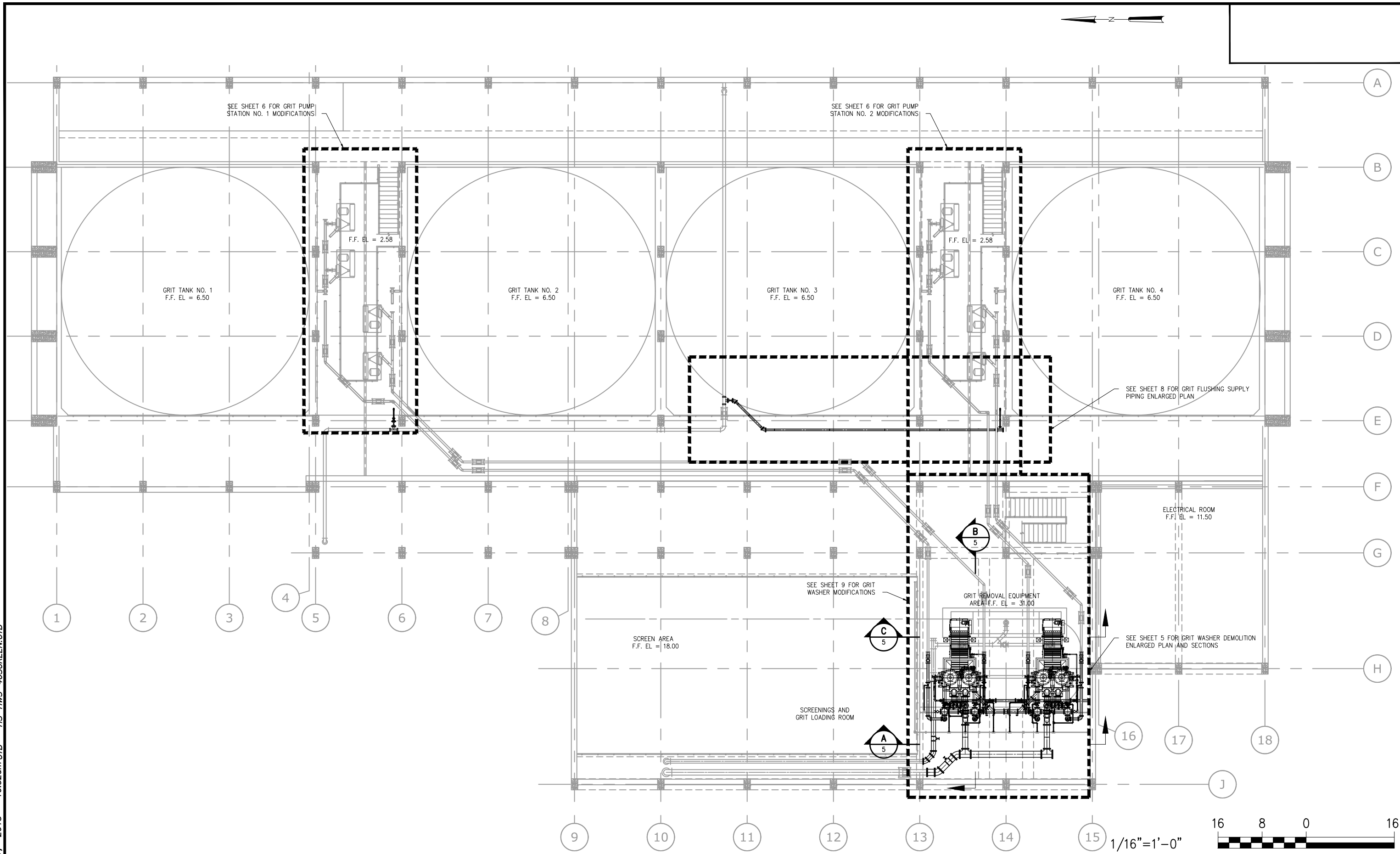
CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING 2 LEGENDS, SYMBOLS, ABBREVIATIONS AND GENERAL NOTES

W.O. 14
SHEET
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OF 32

JACOB L. PORTER, PE
NO. 65453

User: szogurski Drawing Name: H:\41077-009 city of tampa - hrc awtp grit washer replacement\Drawings\General\G-4.dwg
Layout: Oct 17, 2018 - 10:32am CTB - HS-HWS-40SCREEN.CTB



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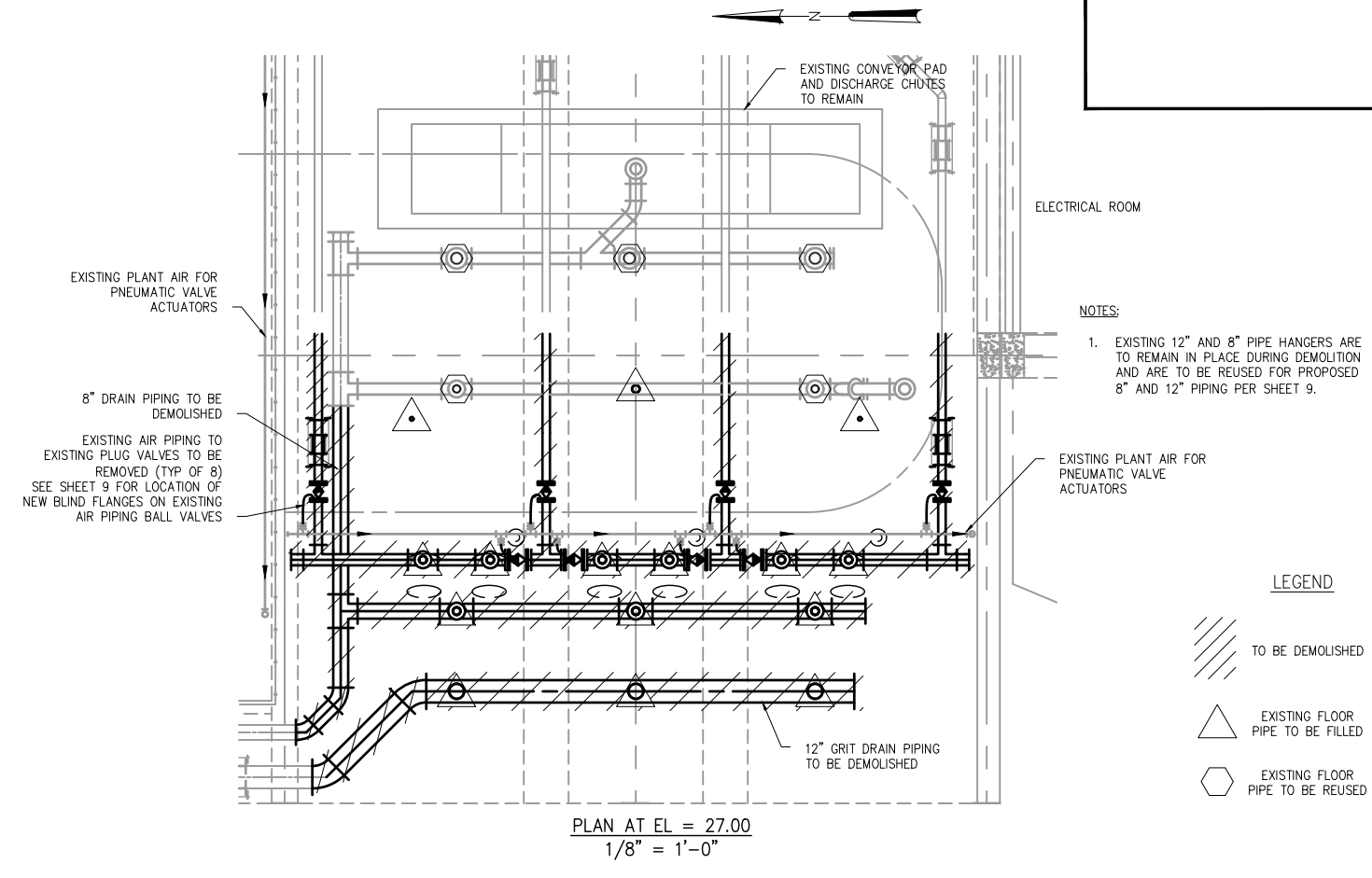
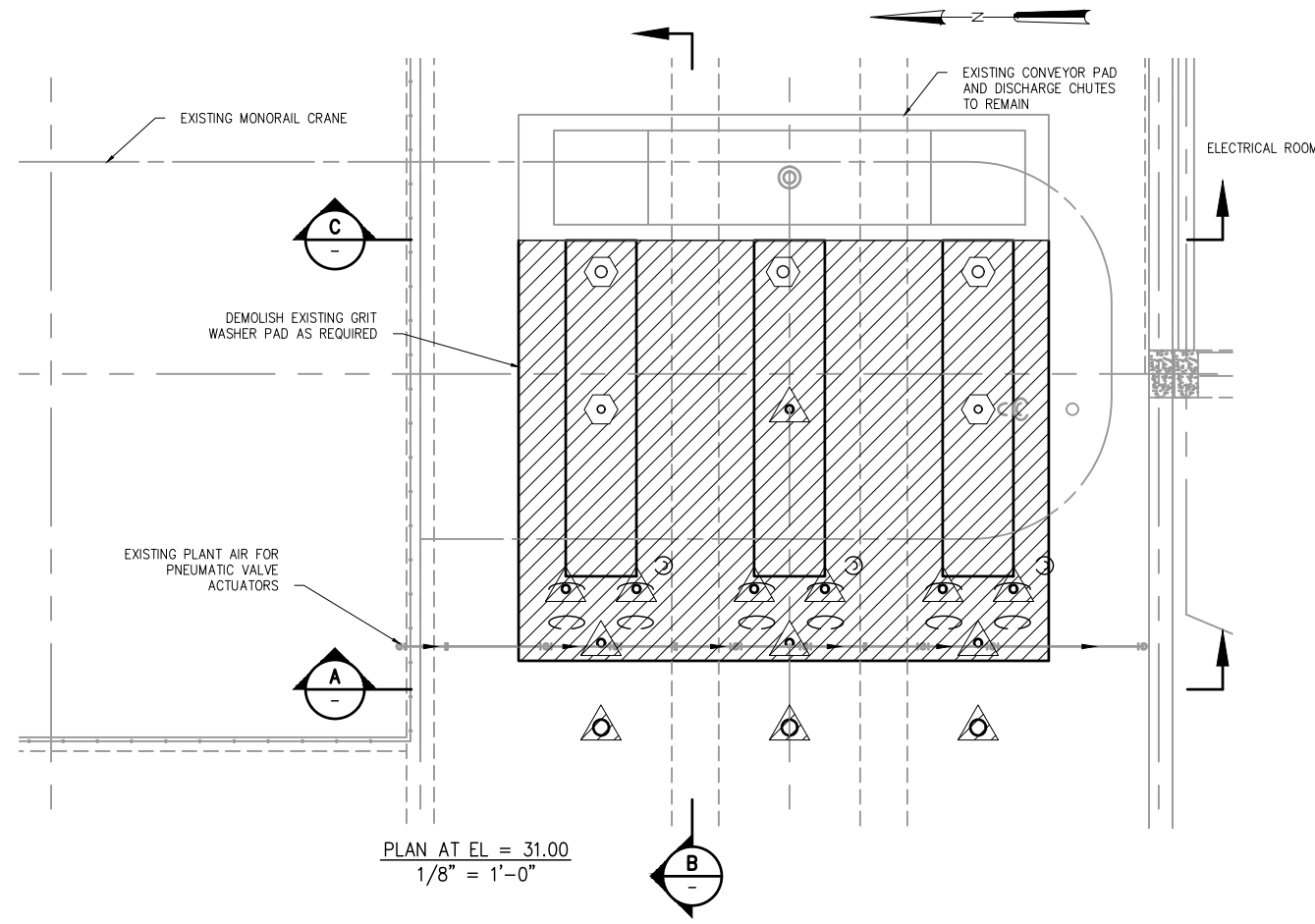
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CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

**HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING 2 OVERALL EAST
HEADWORKS BUILDING - KEY SHEET**

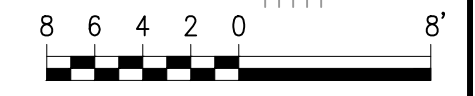
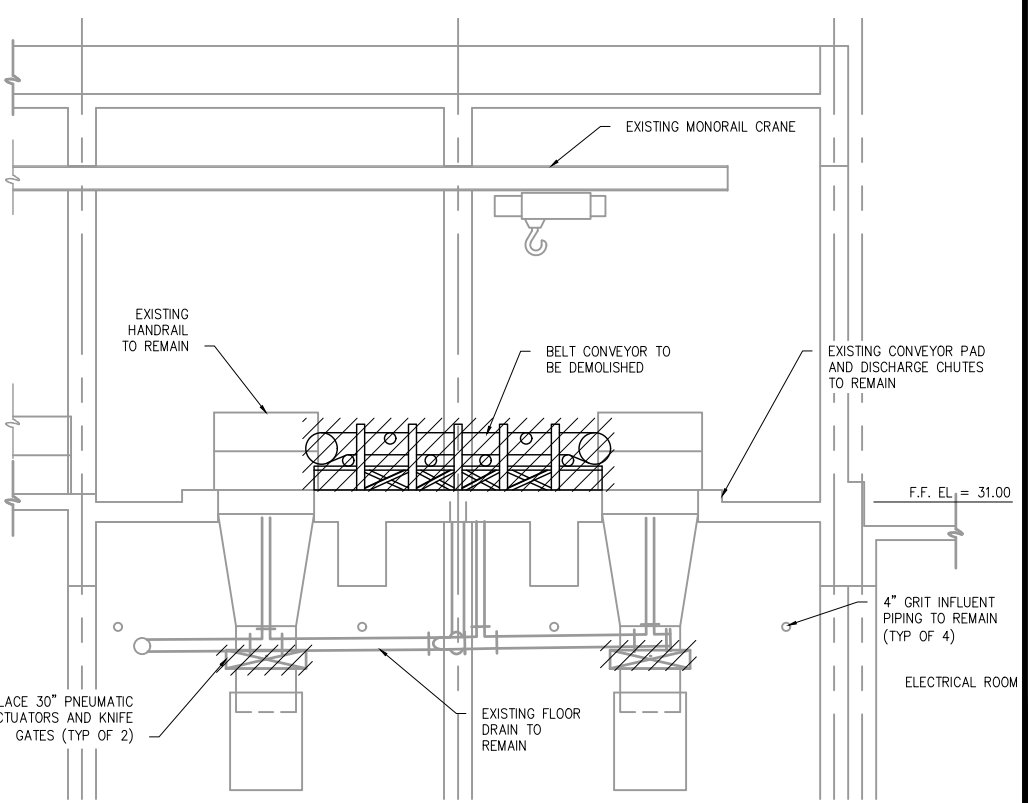
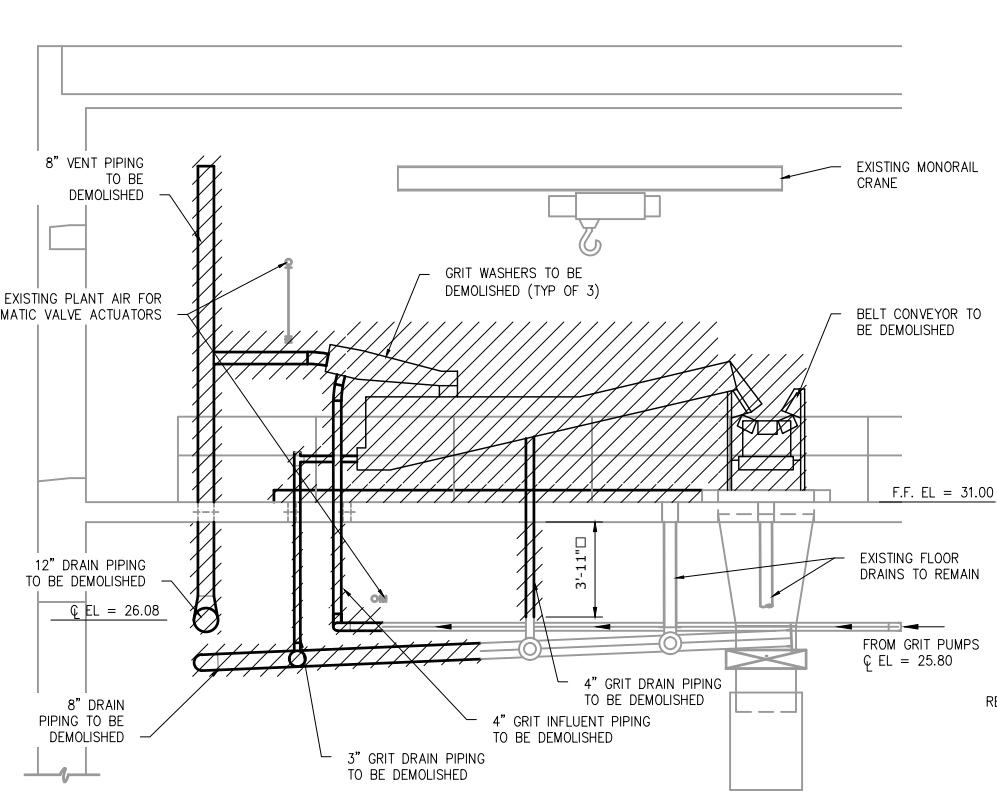
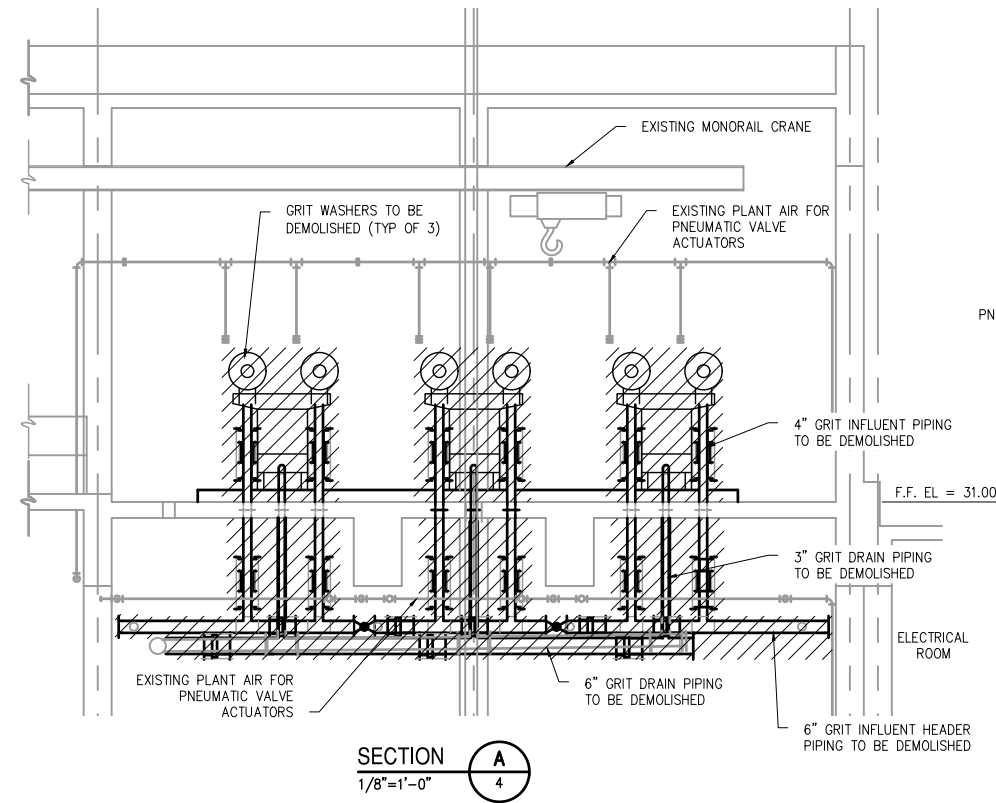
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4
OF 32

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Layout - Oct 17, 2018 - 10:33am CTB - HS-HMS-40SCREEN.CTB



NOTES:
1. EXISTING 12" AND 8" PIPE HANGERS ARE TO REMAIN IN PLACE DURING DEMOLITION AND ARE TO BE REUSED FOR PROPOSED 8" AND 12" PIPING PER SHEET 9.

- LEGEND
- TO BE DEMOLISHED
 - EXISTING FLOOR PIPE TO BE FILLED
 - EXISTING FLOOR PIPE TO BE REUSED



JACOB L. PORTER, PE NO. 65453	
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No.	DATE	REVISIONS
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1	10/2018	BID SET

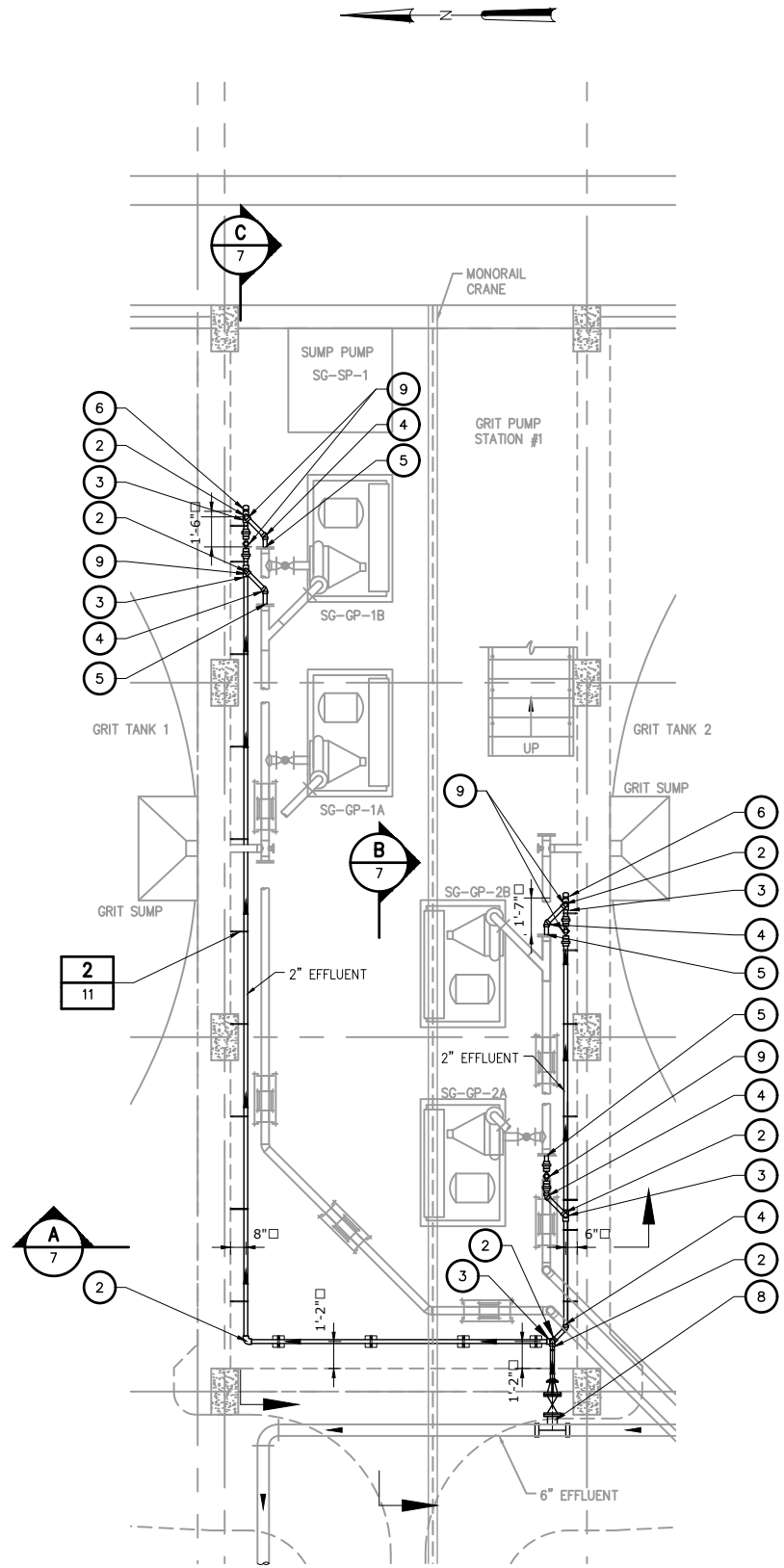
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DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

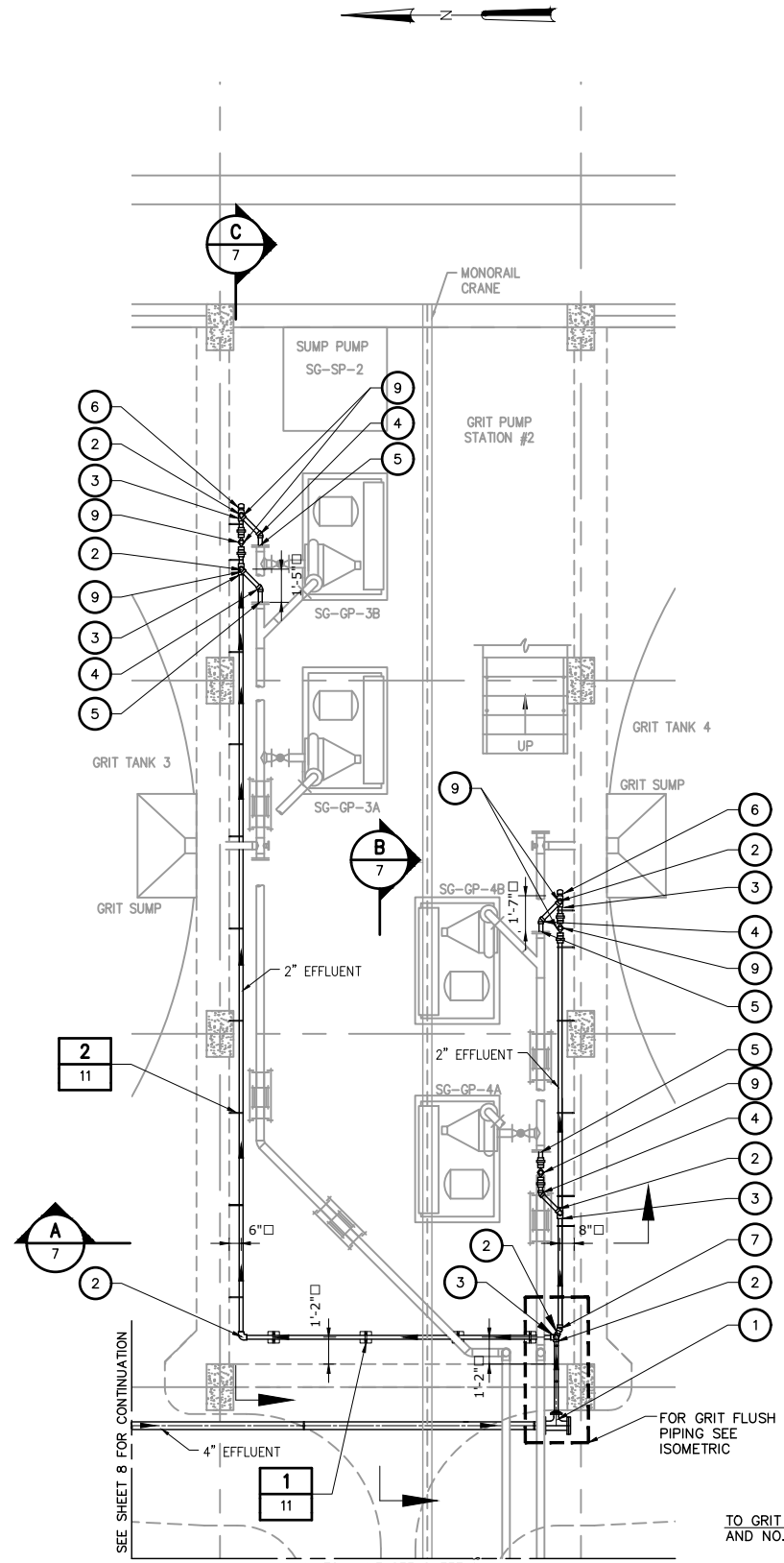
HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT
BUILDING 2 GRIT WASHER DEMOLITION SECTIONS

W.O. 14
SHEET
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OF 32

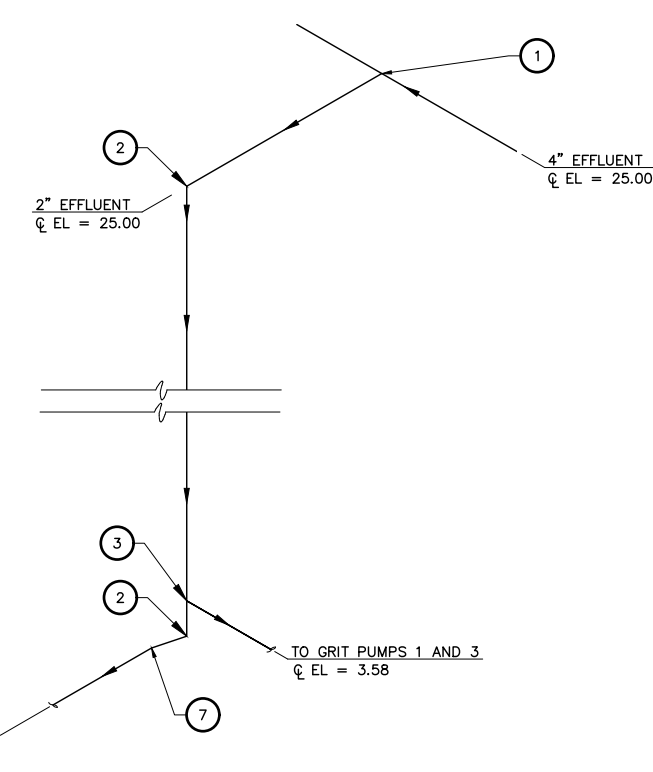
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GRIT PUMP STATION #1 EL - 2.58
1/8" = 1'-0"



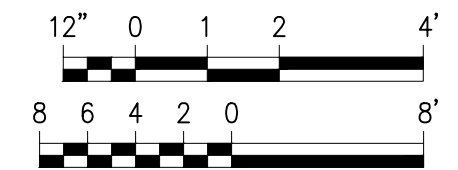
GRIT PUMP STATION #2 EL - 2.58
1/8" = 1'-0"



GRIT FLUSH PIPING ISOMETRIC
3/8" = 1'-0"

3/8" = 1'-0"

1/8" = 1'-0"



NUMBER	DESCRIPTION
1	4" X 2" TEE W/ DIP TO PVC ADAPTER AND 4" BLIND FLANGE
2	2" 90° BEND
3	2" X 2" TEE
4	2" 45° BEND
5	CONNECT 2" GRIT FLUSH WATER TO 4" BLIND FLANGE W/ 2" THREADED BOSS ON END OF EXISTING 4" LINE
6	2" THREADED PLUG
7	2" 22.5° BEND
8	6" X 4" SADDLE TAP AND VALVE AND 4" X 2" REDUCER
9	2" BALL VALVE

No.	DATE	REVISIONS
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1	10/2018	BID SET

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CKD: DBS
DATE: OCT 2018

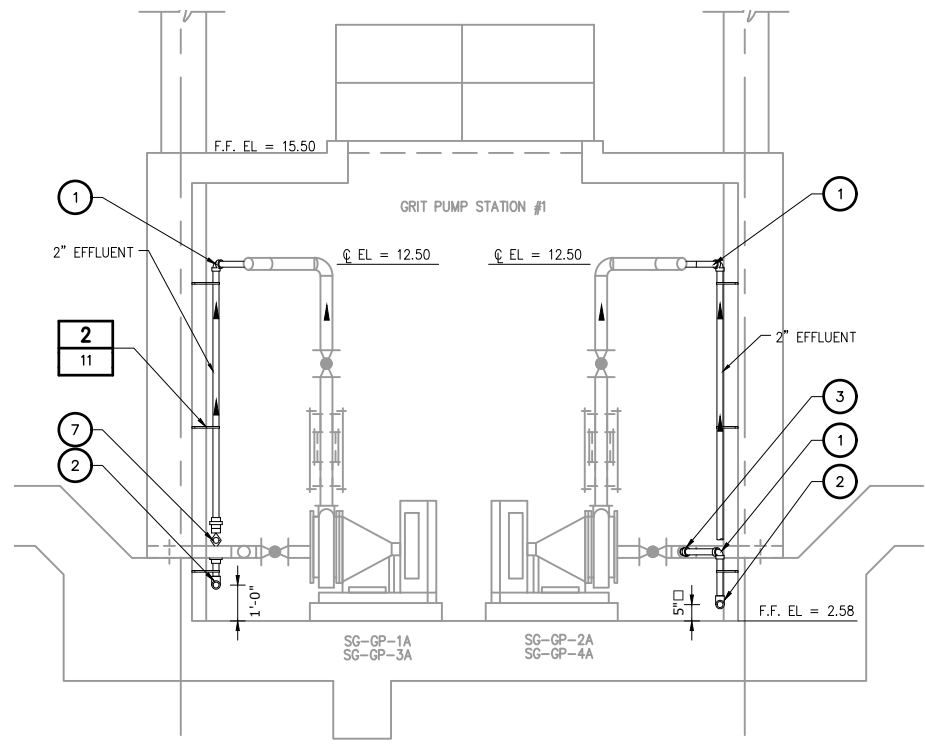
CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING 2 GRIT PUMP PIPING
IMPROVEMENTS PLAN

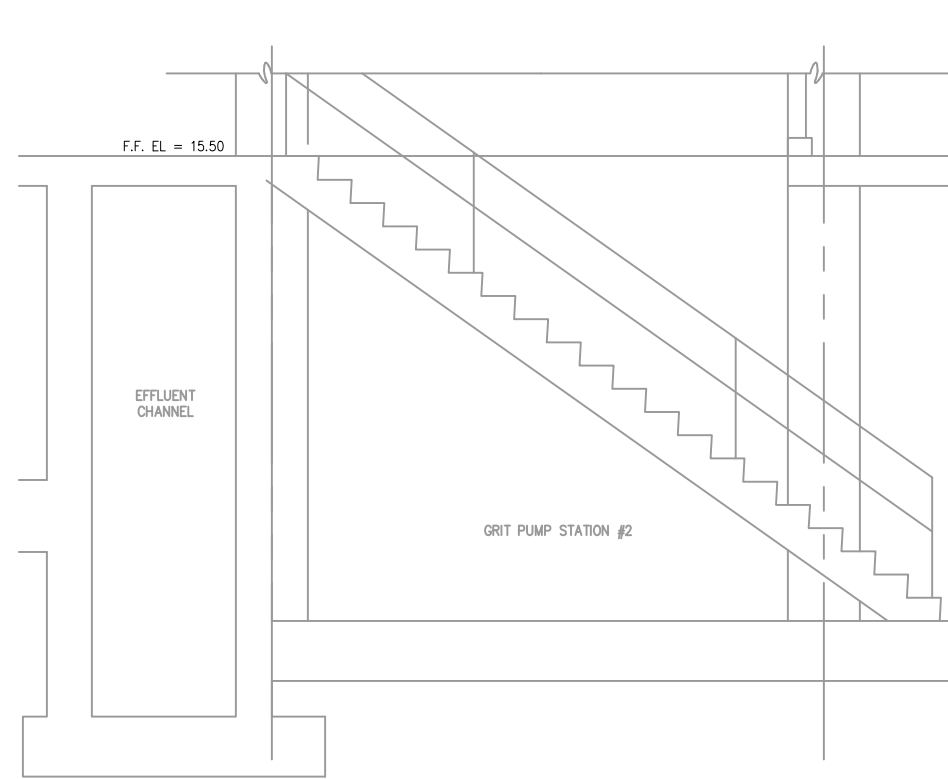
W.O. 14
SHEET
6
OF 32

JACOB L. PORTER, PE
NO. 65453

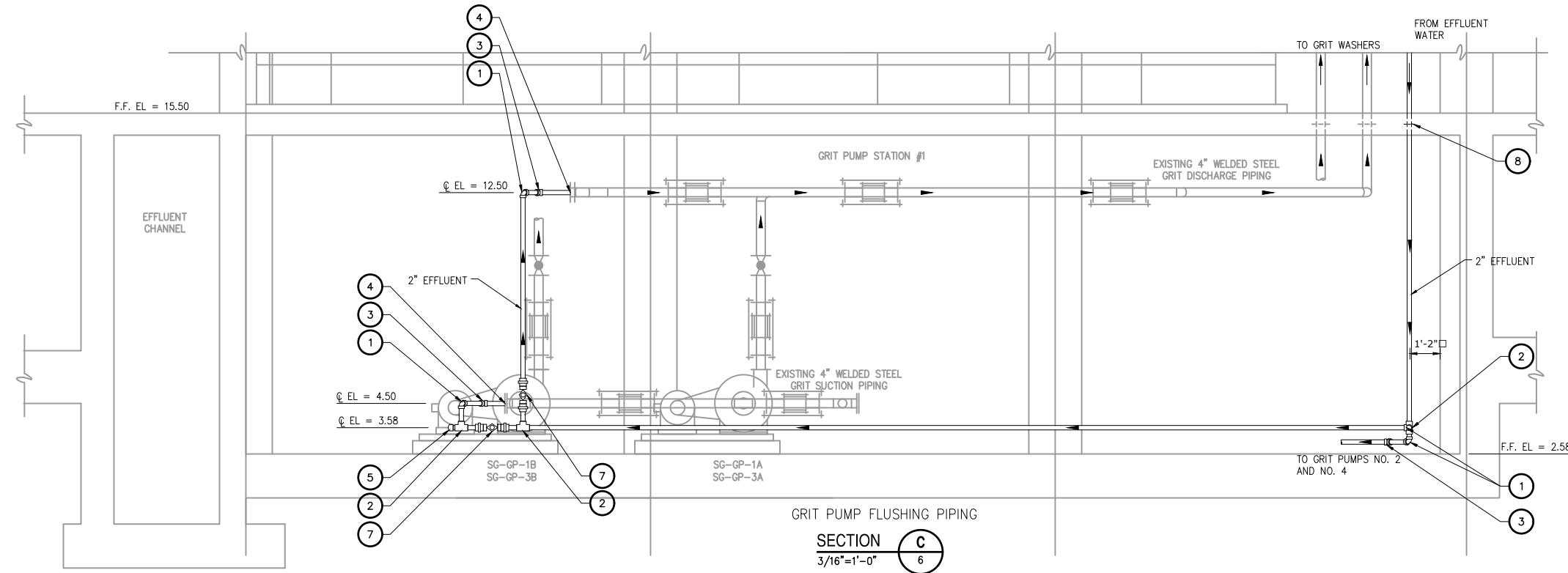
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GRIT PUMP FLUSHING PIPING
SECTION **A**
3/16"=1'-0" 6

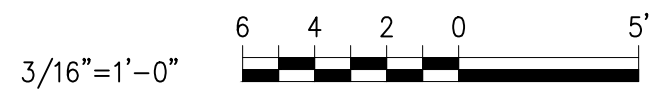


GRIT PUMP FLUSHING PIPING
SECTION **B**
3/16"=1'-0" 6



GRIT PUMP FLUSHING PIPING
SECTION **C**
3/16"=1'-0" 6

NUMBER	DESCRIPTION
1	2" 90° BEND
2	2" X 2" TEE
3	2" 45° BEND
4	CONNECT 2" GRIT FLUSH WATER TO 4" BLIND FLANGE W/ 2" THREADED BOSS
5	2" CAP
6	2" 22.5° BEND
7	2" BALL VALVE
8	CORE DRILL HOLE FOR 2" PIPE WALL SLEEVE



JACOB L. PORTER, PE
NO. 65453

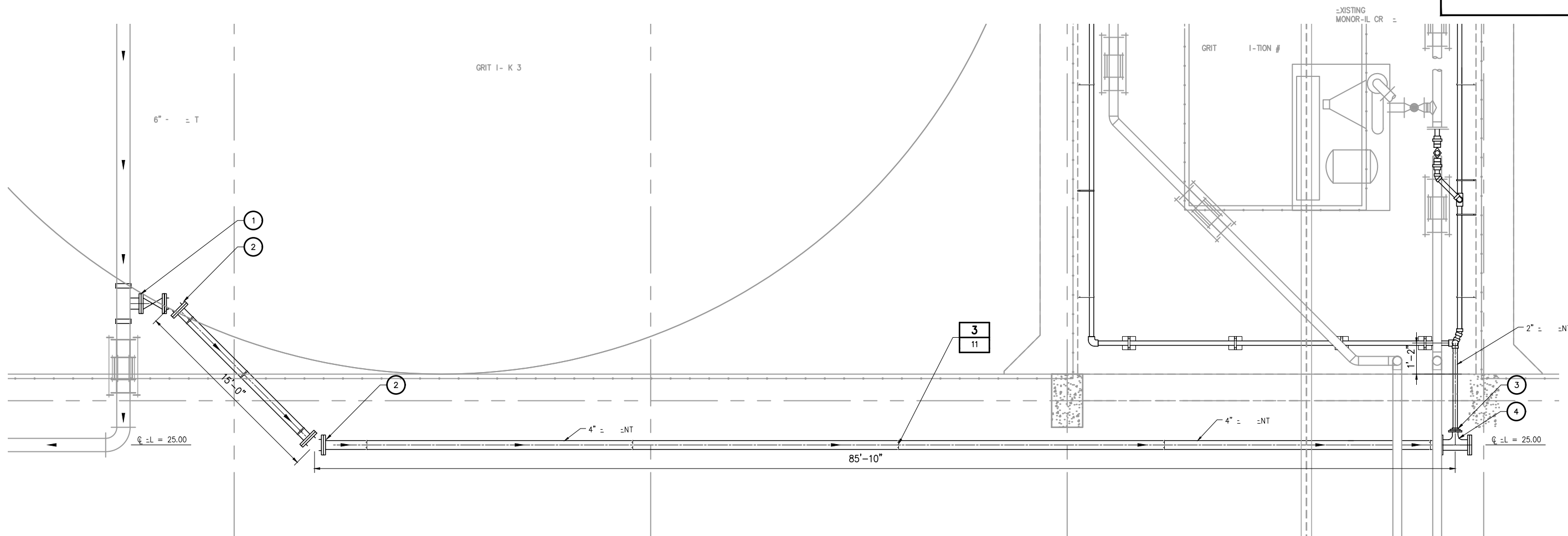
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CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING 2 GRIT PUMP PIPING
IMPROVEMENTS SECTIONS

W.O. 14
SHEET
7
OF 32



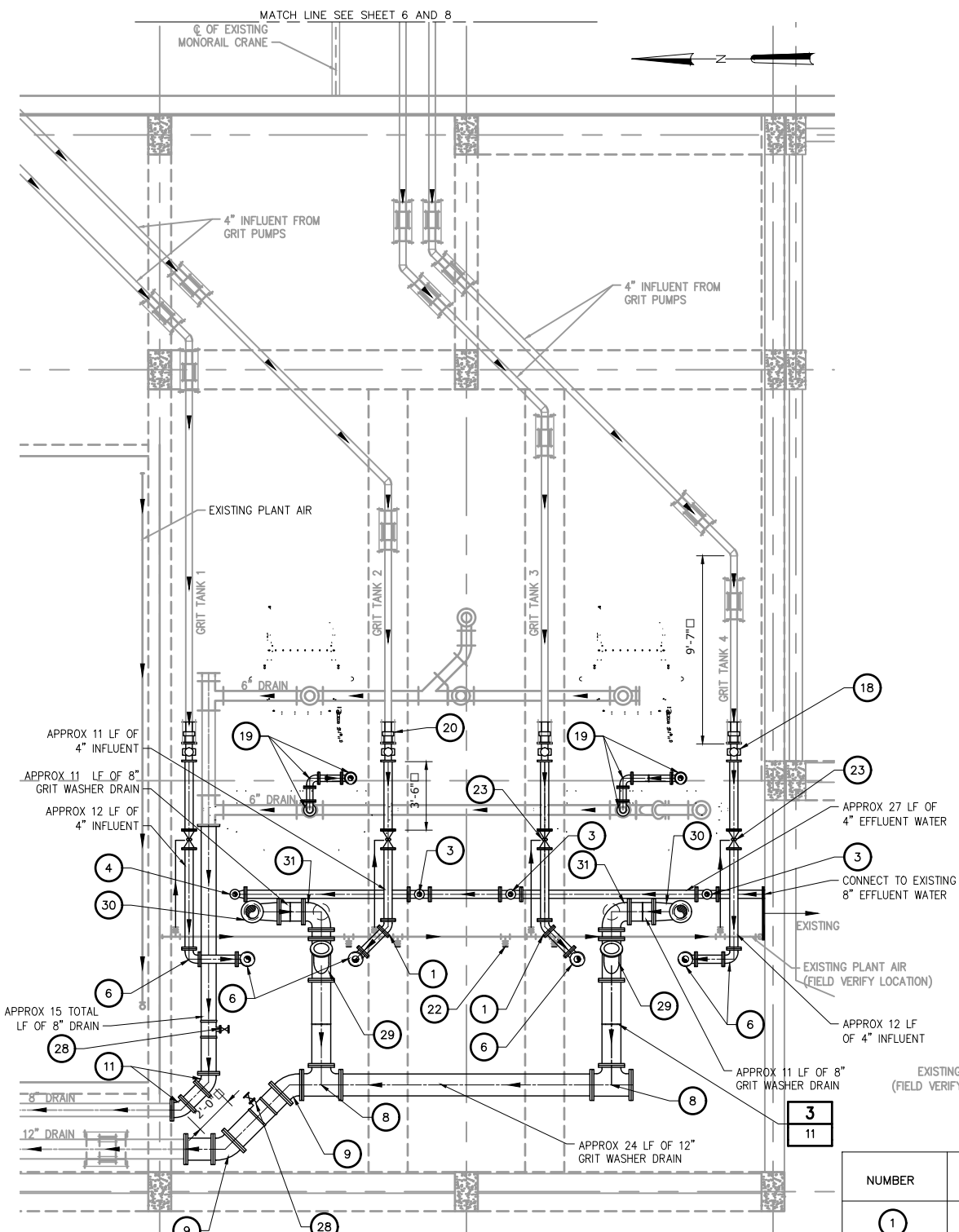
PLAN - 27.00
1/4" = 1'-0"

NUMBER	DESCRIPTION
①	6" X 4" TAPPING SLAVE
②	4" 45° BEND
③	DUCTILE IRON TO PVC TRANSITION - T-R
④	4" x 2" Tee



J-PORT-R, P- NO. 65453	No.	D-T	REVISIONS	D-S: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING 2 GRIT FLUSHING AND GRIT WASHER SUPPLY PIPING	W.O. 14
	3			DRN: SMZ			H-T
	2			CKD: DBS			8
	1	10/2018	BID SET	DATE: OCT 2018			o- 32

User: szagurski Drawing Name: H:\41077-009 city of tampa - hrc awtp grit washer replacement\Drawings\Mechanical\9 Grit Washer Replacement Plan.dwg Layout - Oct 17, 2018 - 10:39am

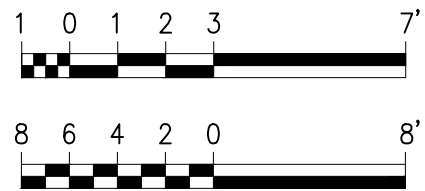


INTERMEDIATE PLAN EL - 27.00
1/8" = 1'-0"

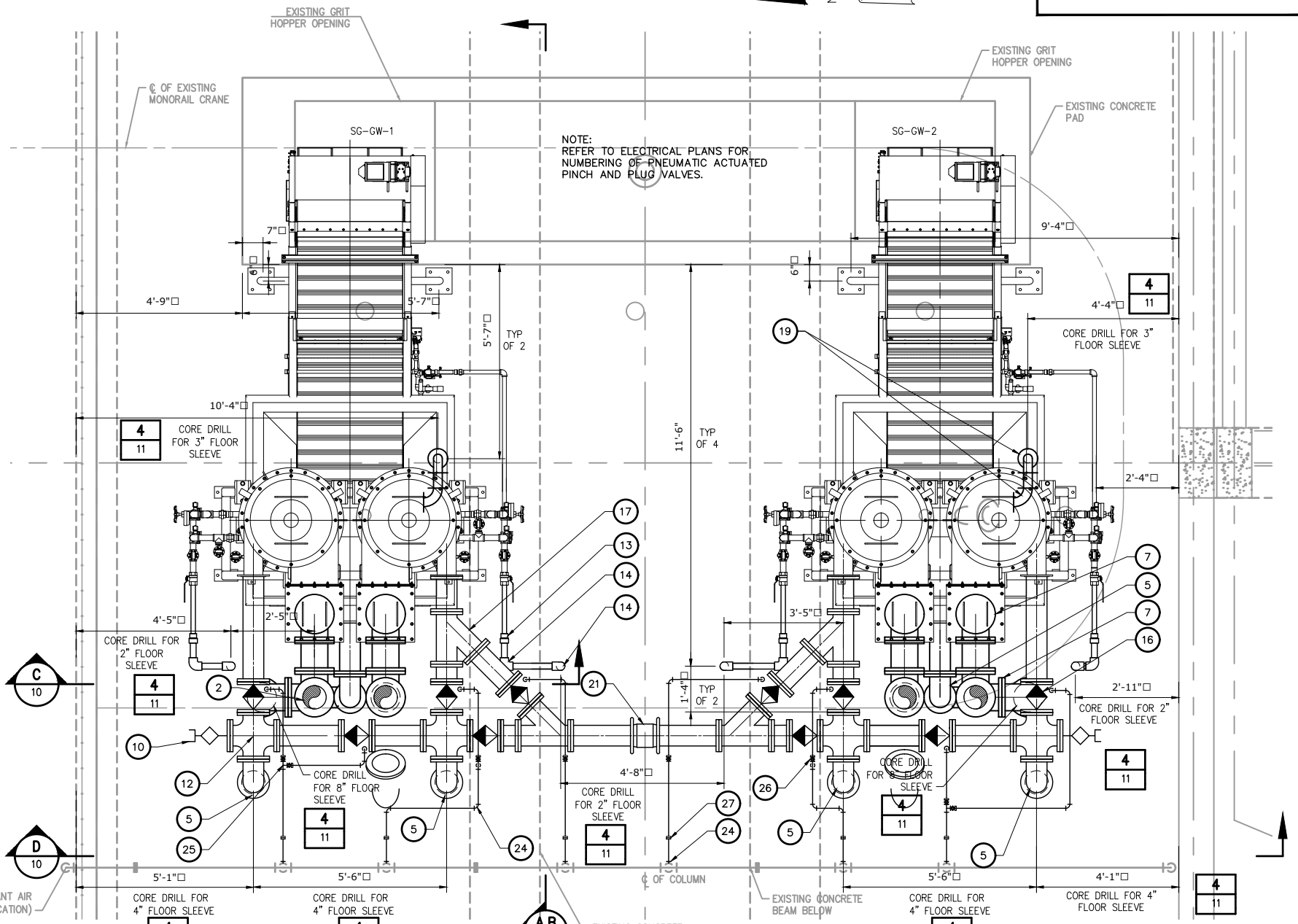
NOTE:
REPLACE EXISTING PIPE SUPPORTS WHERE EXISTING PIPE IS BEING REPLACED. FOR PIPE SUPPORT DETAIL SEE SHEET 3/11.

1/4" = 1'-0"

1/8" = 1'-0"



NUMBER	DESCRIPTION
1	4" 45° BEND
2	6" X 6" TEE (SEE SHEET 10 FOR TOTAL)
3	4" X 2" TEE
4	4" X 2" REDUCING ELBOW
5	6" 90° BEND
6	4" 90° BEND



UPPER PLAN EL - 31.00
1/4" = 1'-0"

NUMBER	DESCRIPTION
7	8" 90° BEND
8	12" X 10" TEE
9	12" 45° BEND
10	2" QUICK CONNECT FLUSHING CONNECTION (TYP OF 2)
11	8" 45° BEND
12	6" X 6" CROSS (TYP OF 4)

NUMBER	DESCRIPTION
13	2" X 1-1/2" REDUCER (TYP OF 4)
14	2" 90° BEND (TYP OF 8)
15	8" X 6" REDUCING ELBOW (TYP OF 4)
16	6" PNEUMATIC PLUG VALVE (TYP OF 10)
17	6" X 6" WYE (TYP OF 4)
18	4" FLOW METER (TYP OF 4)

NUMBER	DESCRIPTION
19	3" 90° BEND
20	4" FLANGE COUPLING ADAPTER (TYP OF 4)
21	6" STANDARD ROMAC ALPHA RESTRAINED COUPLING OR EQUAL
22	BLIND FLANGE EXISTING BALL VALVE (TYP OF 4)
23	4" PINCH VALVE (TYP OF 4)
24	3/8" 90° BEND (TYP OF 26)

NUMBER	DESCRIPTION
25	3/8" TEE (TYP OF 4)
26	3/8" BALL VALVE (TYP OF 10)
27	3/8" THREADED UNION (TYP OF 22)
28	1" SADDLE TAP W/ 1" BALL VALVE
29	10" X 8" WYE (TYP OF 2)
30	10" X 8" REDUCING ELBOW (TYP OF 2)
31	10" 90° BEND (TYP OF 2)

JACOB L. PORTER, PE
NO. 65453

No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

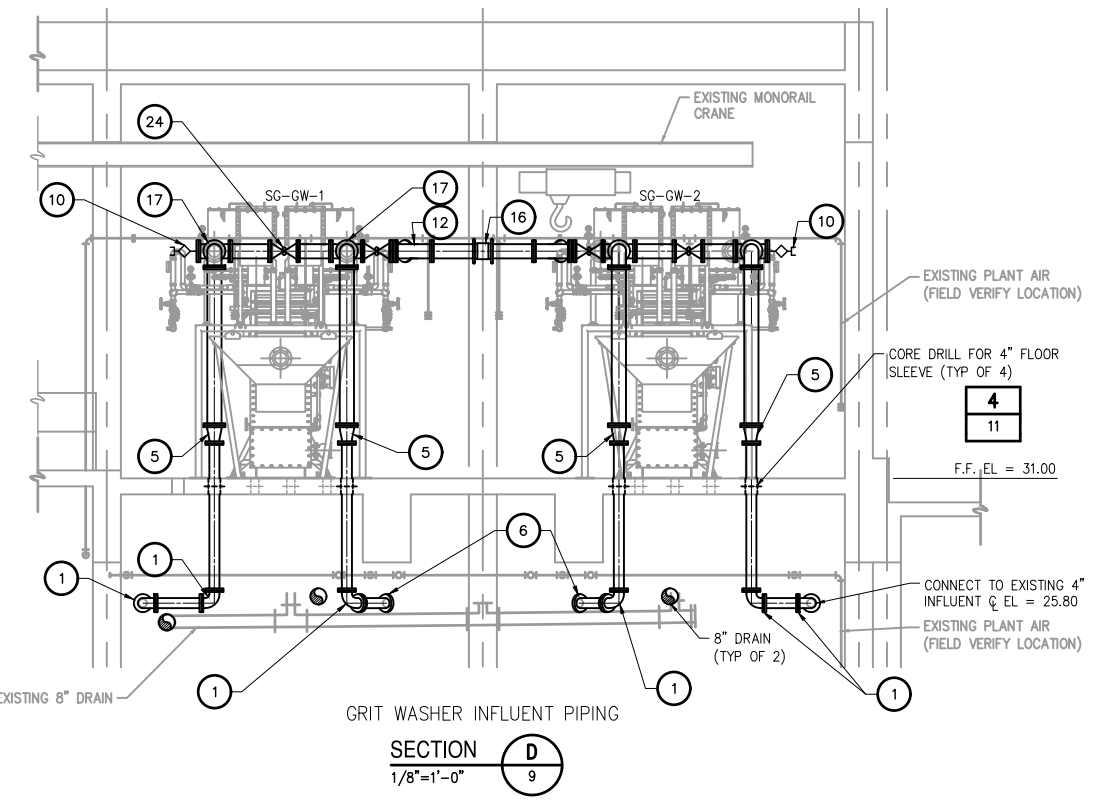
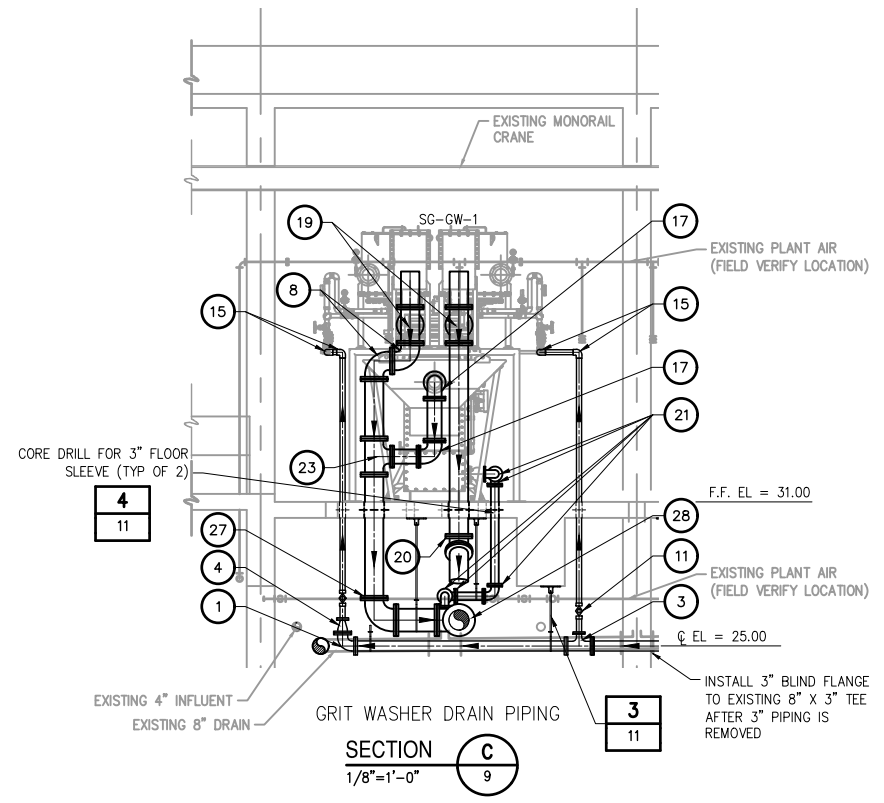
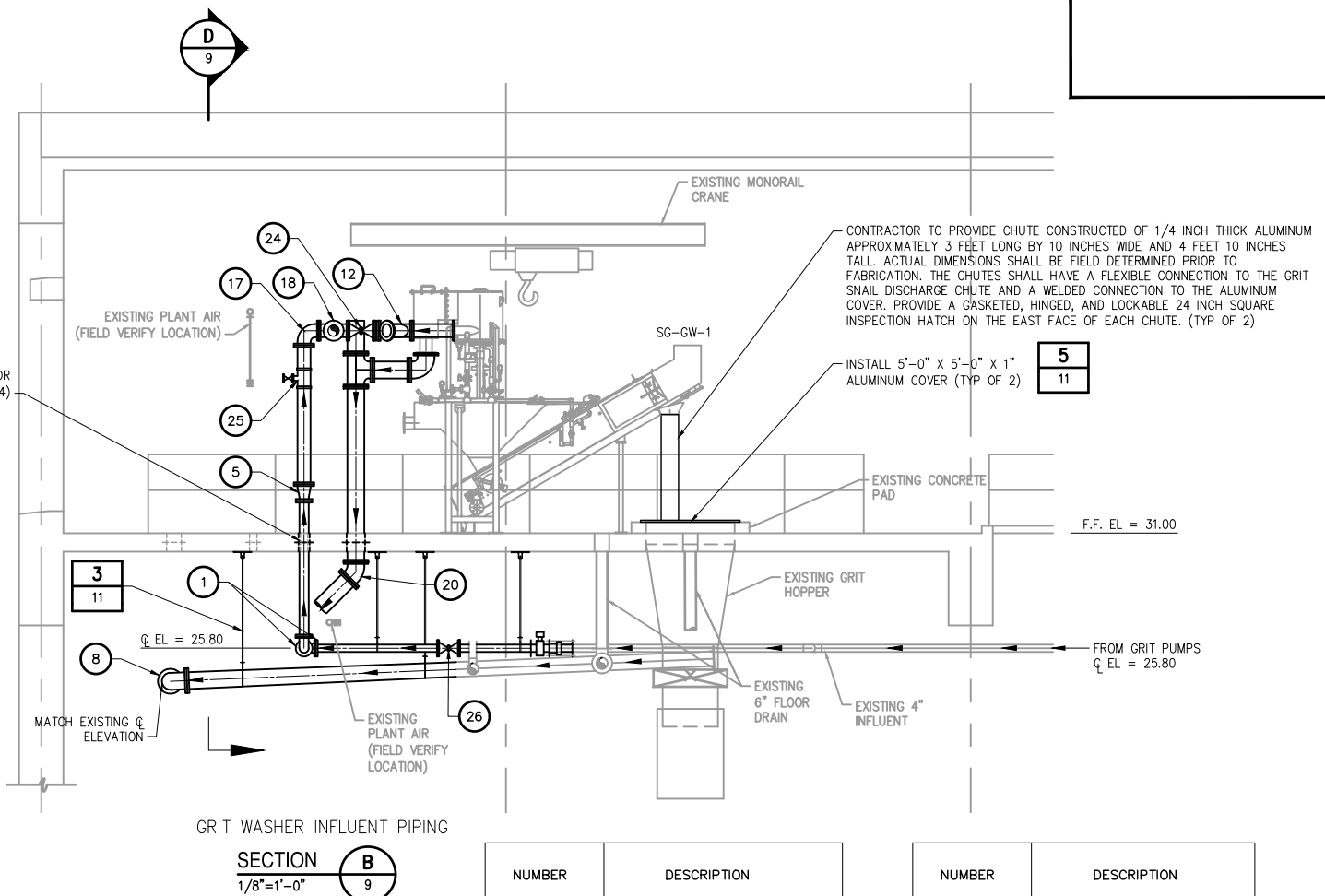
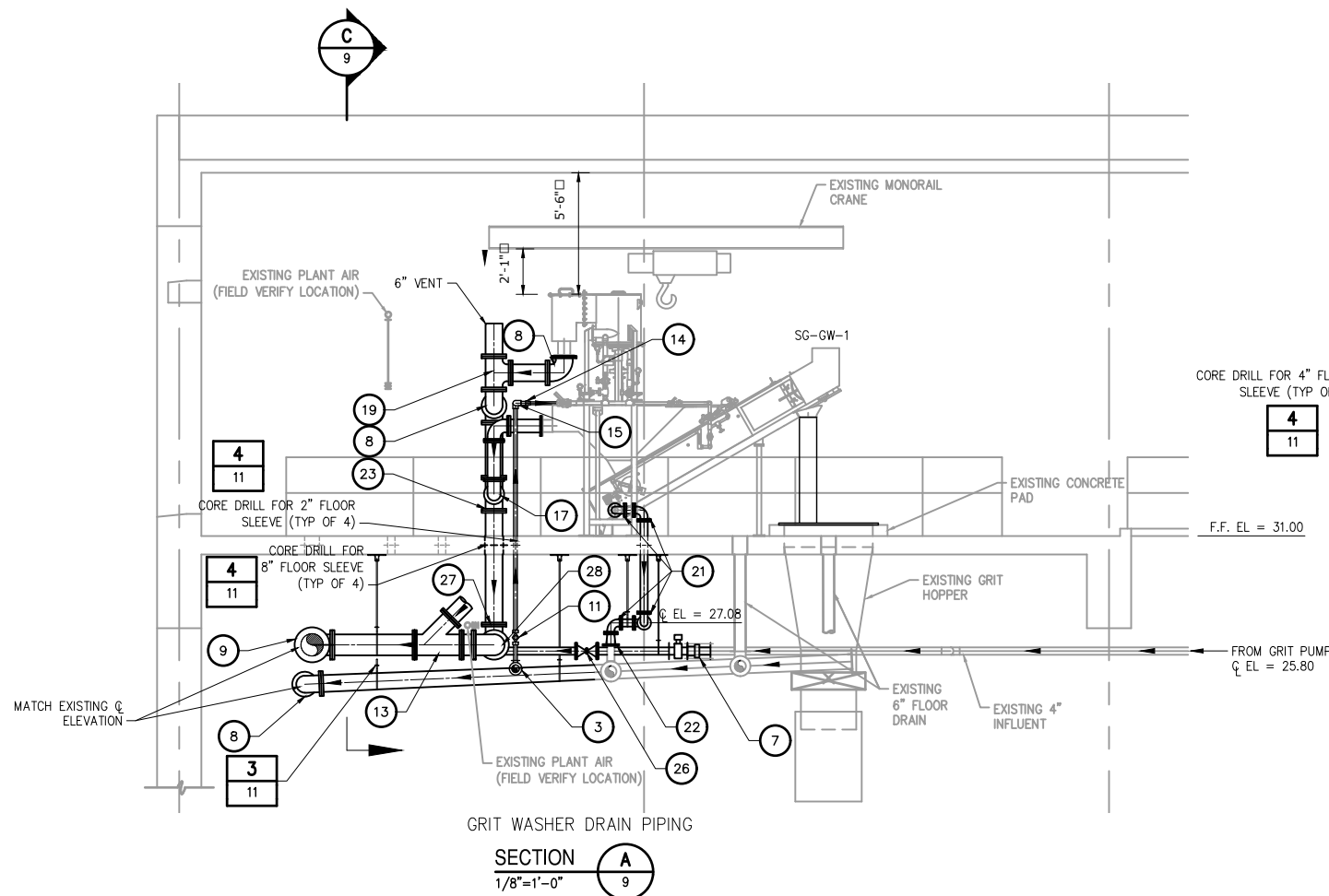
DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING 2 GRIT WASHER REPLACEMENT PLAN

W.O. 14
SHEET
9
OF 32

User: szagurski Drawing Name: H:\41077-009 city of tampa - hfc awtp grit washer replacement\Drawings\Mechanical\10 Grit Washer Replacement Sections.dwg Layout - Oct 17, 2018 - 10:41am



NUMBER	DESCRIPTION
1	4" 90° BEND
2	NOT USED
3	4" X 2" TEE
4	4" X 2" REDUCER
5	6" X 4" REDUCER
6	4" 45° BEND
7	4" COUPLING
8	8" 90° BEND
9	12" X 10" TEE
10	2" QUICK CONNECT FLUSHING CONNECTION
11	2" BALL VALVE (TYP OF 4)
12	6" X 6" WYE
13	10" X 8" WYE (TYP OF 2)
14	2" X 1-1/2" REDUCER (TYP OF 4)

NUMBER	DESCRIPTION
15	2" 90° BEND (TYP OF 8)
16	6" STANDARD ROMAC ALPHA RESTRAINED COUPLING
17	6" 90° BEND
18	6" X 6" CROSS
19	8" X 8" TEE (TYP OF 4)
20	8" 45° BEND (TYP OF 2)
21	3" 90° BEND
22	4" X 3" REDUCER
23	8" X 6" TEE
24	6" PNEUMATIC PLUG VALVE
25	1" SADDLE TAP W/ 1" BALL VALVE
26	4" PNEUMATIC PINCH VALVE
27	10" X 8" REDUCING ELBOW (TYP OF 2)
28	10" 90° BEND (TYP OF 2)



JACOB L. PORTER, PE
NO. 65453

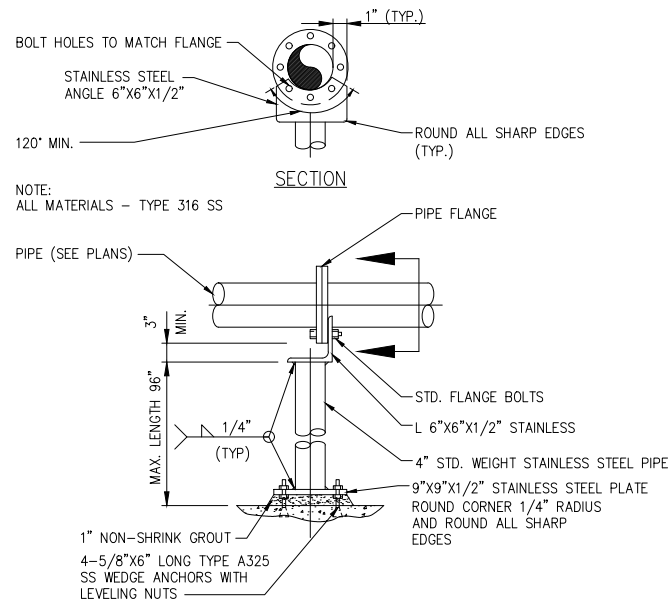
No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT
BUILDING 2 GRIT WASHER REPLACEMENT SECTIONS

W.O. 14
SHEET
10
OF 32

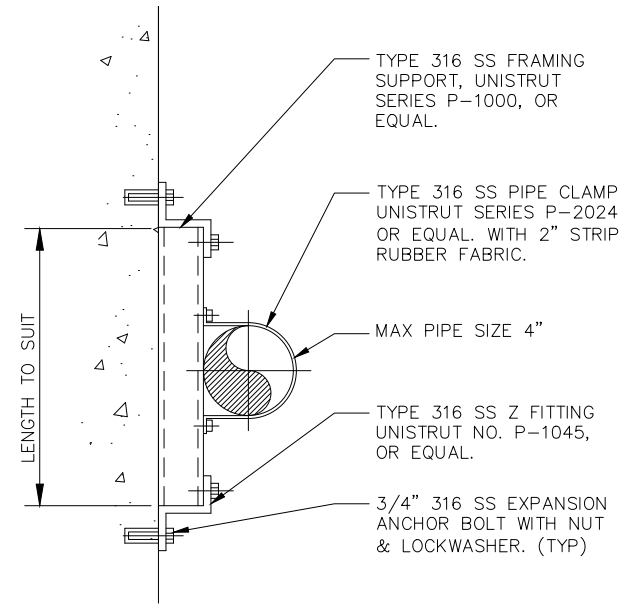


NOTE:
ALL MATERIALS - TYPE 316 SS

NOTES:
1. PIPE SUPPORT SUITABLE FOR FLANGED DIP PIPE SIZES 3\"/>

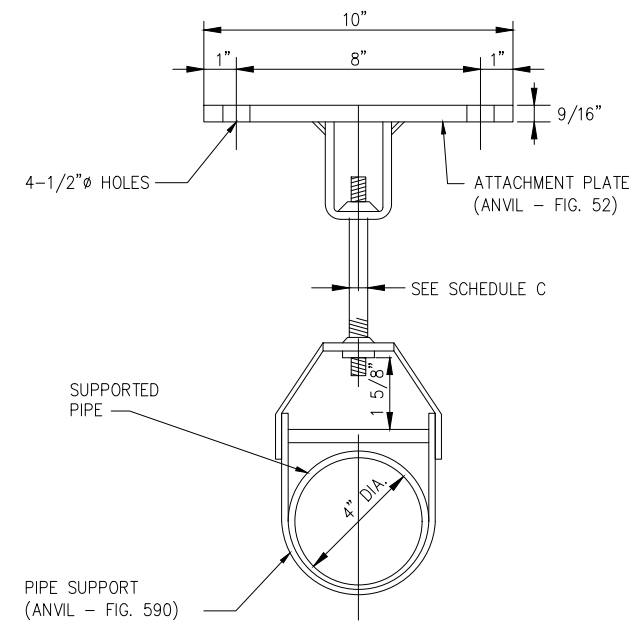
FLOOR MOUNTED FABRICATED PIPE SUPPORT

DETAIL	1
N.T.S.	STD



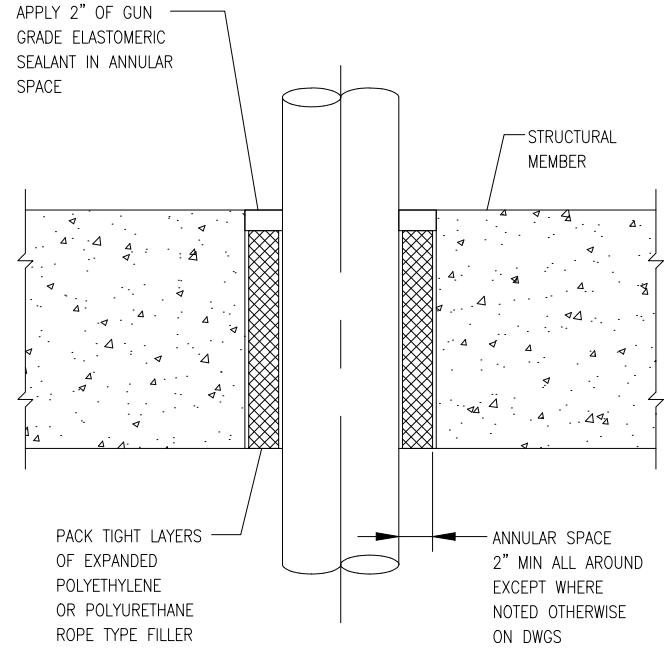
WALL MOUNTED FABRICATED PIPE SUPPORT

DETAIL	2
N.T.S.	STD



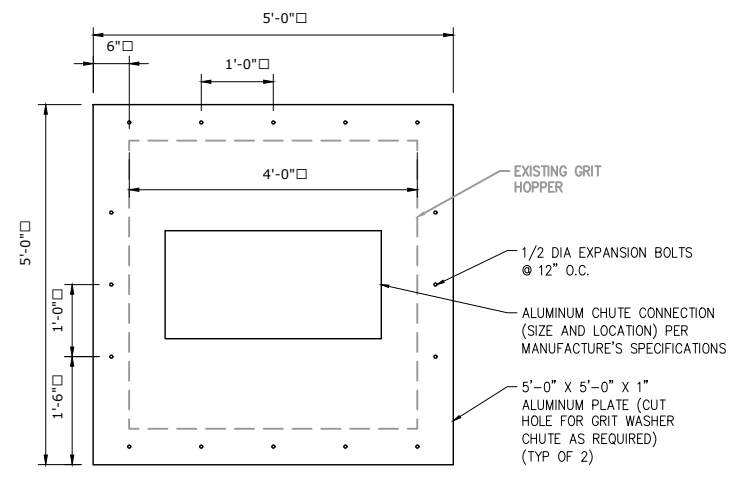
- NOTES:
1. ALL TUBULAR MATERIAL TO BE TYPE 316 STAINLESS STEEL.
 2. PLATES AND GUSSETS TO BE TYPE 316 STAINLESS STEEL.
 3. BACK PLATES SHALL BE DESIGNED BY THE CONTRACTOR ACCORDING TO WALL TYPES AND THE WEIGHTS INVOLVED. BACK PLATE TO BE SUPPLIED BY SUPPORT MANUFACTURER

SCHEDULE C							
SUPPORT RODS AND BRACKET SPACING (FOR STANDARD WEIGHT PIPE)							
PIPE SIZE (INCHES)	BACK PLATE (INCHES)	MINIMUM ROD ? (INCHES)		MAX SPAN IN FEET (SEE NOTE 8)			
		PROCESS PIPING	STEEL AIR PIPING	COPPER	PLASTIC	STEEL	DIP (SEE NOTE 7)
UP TO 1	SEE NOTE 3	3/8	3/8	5	5	6	-
1 1/4-2	-	3/8	3/8	8	5	10	-
2 1/2-3 1/2	-	3/8	3/8	8	5	12	6
4-5	-	1/2	3/8	-	5	14	8
6	-	5/8	3/8	-	5	15	9
8-12	-	3/4	1/2	-	5	15	9
14-16	-	7/8	1/2	-	5	15	9
18	-	1	1/2	-	5	18	10
20-24	-	1 1/4	5/8	-	5	18	10

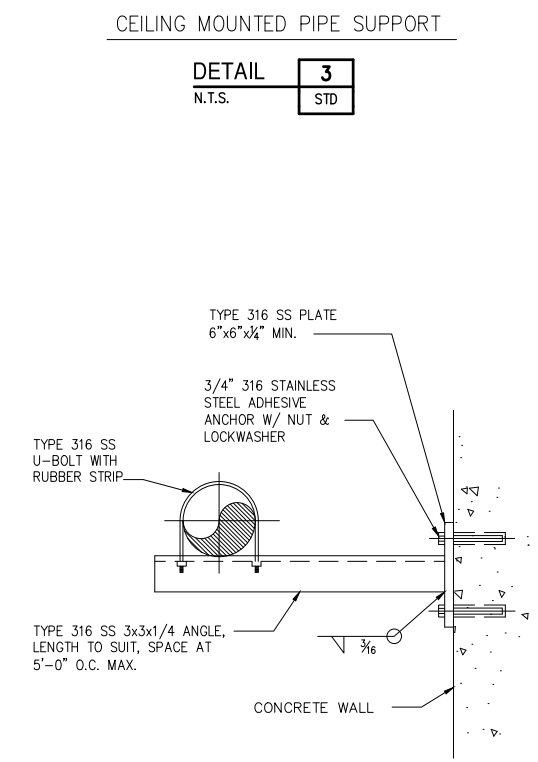


SLAB PENETRATION
SCALE: NONE

DETAIL	4
N.T.S.	STD



DETAIL	5
3/8\"/>	

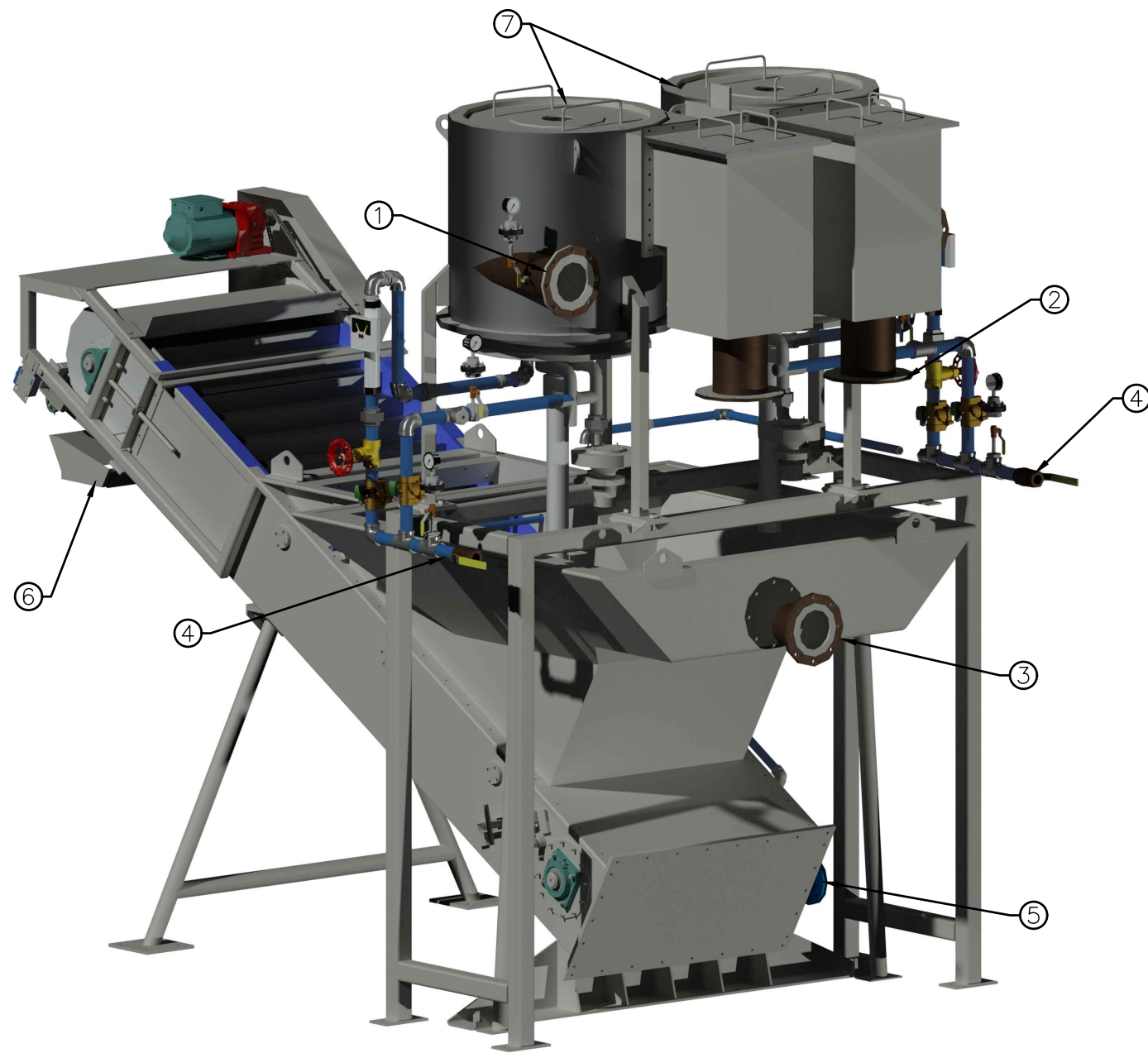


WALL-MOUNTED FABRICATED PIPE SUPPORT

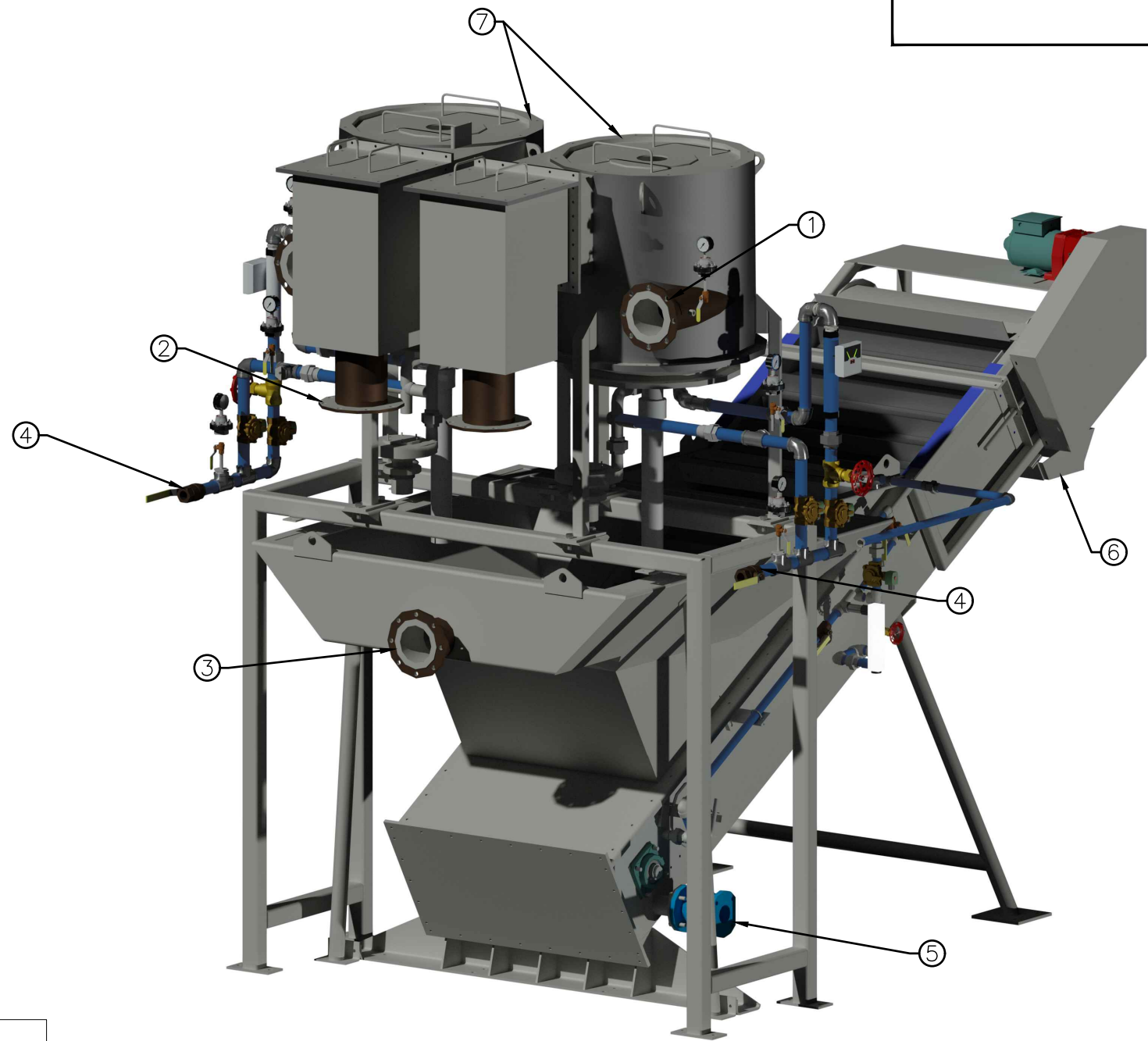
DETAIL	6
N.T.S.	STD



JACOB L. PORTER, PE NO. 65453	No.	DATE	REVISIONS	DES: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING 2 MECHANICAL DETAILS	W.O. 14
	3			DRN: SMZ			SHEET
	2			CKD: DBS			11
	1	10/2018	BID SET	DATE: OCT 2018			OF 32



GRIT SNAIL ISOMETRIC 1
N.T.S.



GRIT SNAIL ISOMETRIC 2
N.T.S.

(*) CONTRACTOR TO PROVIDE CHUTE CONSTRUCTED 0-
1/4 INCH THICK - INUM - APPROXIMATELY 3 FEET LONG
BY 10 INCHES WIDE - FEET 10 INCHES THICK -
- TUBER DIMENSIONS SHOULD BE PROVIDED PRIOR
TO INSTALLATION. THE CHUTES SHOULD BE
CONNECTION TO THE GRIT SNAIL DISCHARGE CHUTE
- PROVIDED CONNECTION TO THE - INUM COVER.
PROVIDE - KICKER, HINGED, - KICKER = 24 INCH
SQUARE INSPECTION HATCH ON THE - TOP = 0 - H
CHUTE. (TYP 0-

NUMBER	DESCRIPTION
①	6" IN - ENT CONNECTION
②	8" - ENT CONNECTION
③	6" OVER - ENT CONNECTION
④	1-1/2" SUPPLY WATER CONNECTION
⑤	3" DR-IN CONNECTION
⑥	DISCHARGE CHUTE (*)
⑦	32" DI. - SLURRY CUP

GRIT WASHING EQUIPMENT INFORMATION

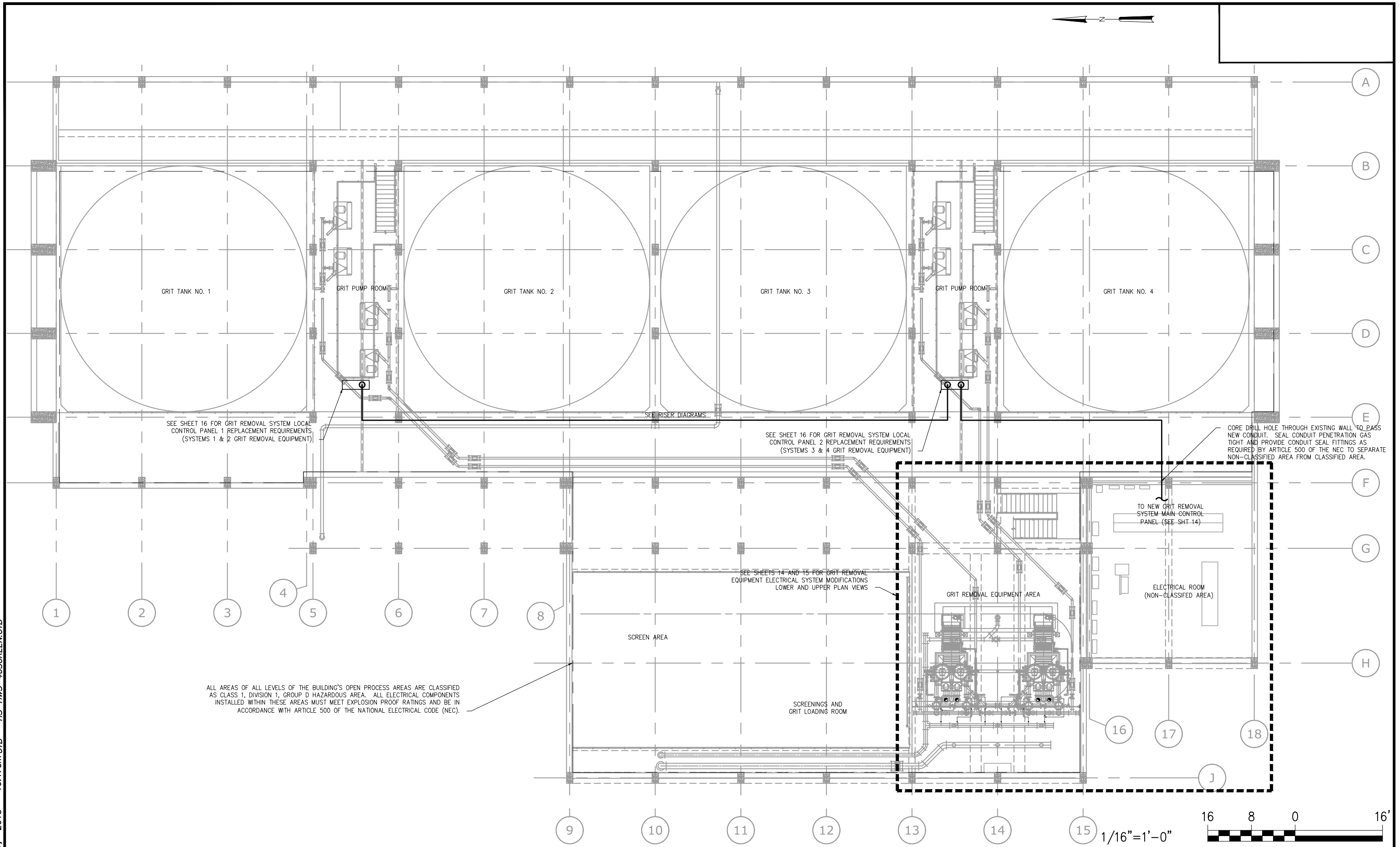
MANUFACTURER: HYDRO INTERNATIONAL

GRIT WASHING/CLASSIFICATION UNITS: SLURRY CUP
MODEL: 32DSC
DESIGN FLOW: (RANGE) 330 CPM (280-400 GPM)

DEWATERING UNITS: GRIT SNAIL
MODEL: GS3672
CAPACITY: 6 CY/HR

JACOB L. PORTER, PE NO. 65453	No.	DATE	REVISIONS	DRAWN: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING 2 GRIT WASHER ISOMETRIC	W.O. 14
	3			DRN: SMZ			H=ET
	2			CKD: DBS			12
	1	10/2018	BID SET	DAT: OCT 2018			0- 32

User: szogurski Drawing Name: H:\41077-009 city of tampa - hrc awtp grit washer replacement\Drawings\Electrical\13 OVERALL EAST HEADWORKS BUILDING - ELECTRICAL PLAN.dwg
Layout: Oct 17, 2018 - 10:47am CTB - HS-HWS-40SCREEN.CTB



SEE SHEET 16 FOR GRIT REMOVAL SYSTEM LOCAL CONTROL PANEL 1 REPLACEMENT REQUIREMENTS (SYSTEMS 1 & 2 GRIT REMOVAL EQUIPMENT)

SEE SHEET 16 FOR GRIT REMOVAL SYSTEM LOCAL CONTROL PANEL 2 REPLACEMENT REQUIREMENTS (SYSTEMS 3 & 4 GRIT REMOVAL EQUIPMENT)

CORE DRILL HOLE THROUGH EXISTING WALL TO PASS NEW CONDUIT. SEAL CONDUIT PENETRATION GAS TIGHT AND PROVIDE CONDUIT SEAL FITTINGS AS REQUIRED BY ARTICLE 500 OF THE NEC TO SEPARATE NON-CLASSIFIED AREA FROM CLASSIFIED AREA.

SEE SHEETS 14 AND 15 FOR GRIT REMOVAL EQUIPMENT ELECTRICAL SYSTEM MODIFICATIONS LOWER AND UPPER PLAN VIEWS

ALL AREAS OF ALL LEVELS OF THE BUILDING'S OPEN PROCESS AREAS ARE CLASSIFIED AS CLASS 1, DIVISION 1, GROUP D HAZARDOUS AREA. ALL ELECTRICAL COMPONENTS INSTALLED WITHIN THESE AREAS MUST MEET EXPLOSION PROOF RATINGS AND BE IN ACCORDANCE WITH ARTICLE 500 OF THE NATIONAL ELECTRICAL CODE (NEC).

DANIEL B. SCHMIDT, PE NO. 20433	
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No.	DATE	REVISIONS
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1	10/2018	BID SET

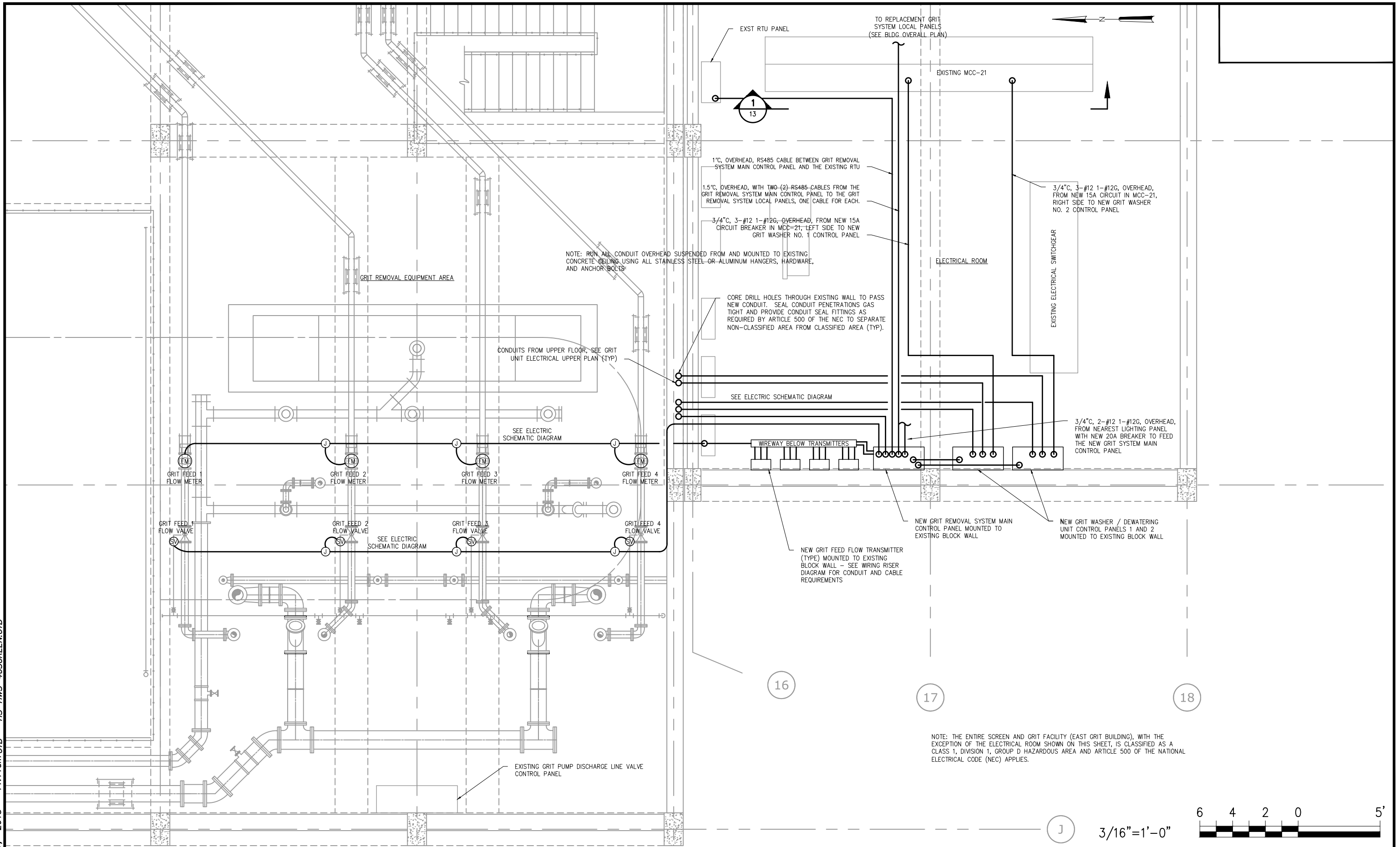
DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

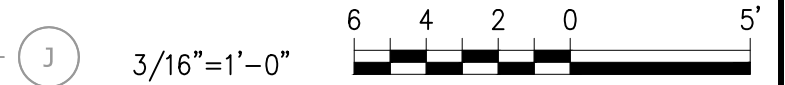
HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING 2 OVERALL EAST HEADWORKS
BUILDING - ELECTRICAL PLAN

W.O. 14
SHEET
13
OF 32

User: szogurski Drawing Name: H:\41077-009 city of tampa - hrc awtp grit washer replacement\Drawings\Electrical\14 GRIT UNIT ELECTRICAL LOWER PLAN.dwg
 Layout- Oct 17, 2018 - 11:11am CTB - HS-HWS-40SCREEN.CTB



NOTE: THE ENTIRE SCREEN AND GRIT FACILITY (EAST GRIT BUILDING), WITH THE EXCEPTION OF THE ELECTRICAL ROOM SHOWN ON THIS SHEET, IS CLASSIFIED AS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS AREA AND ARTICLE 500 OF THE NATIONAL ELECTRICAL CODE (NEC) APPLIES.



No.	DATE	REVISIONS
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1	10/2018	BID SET

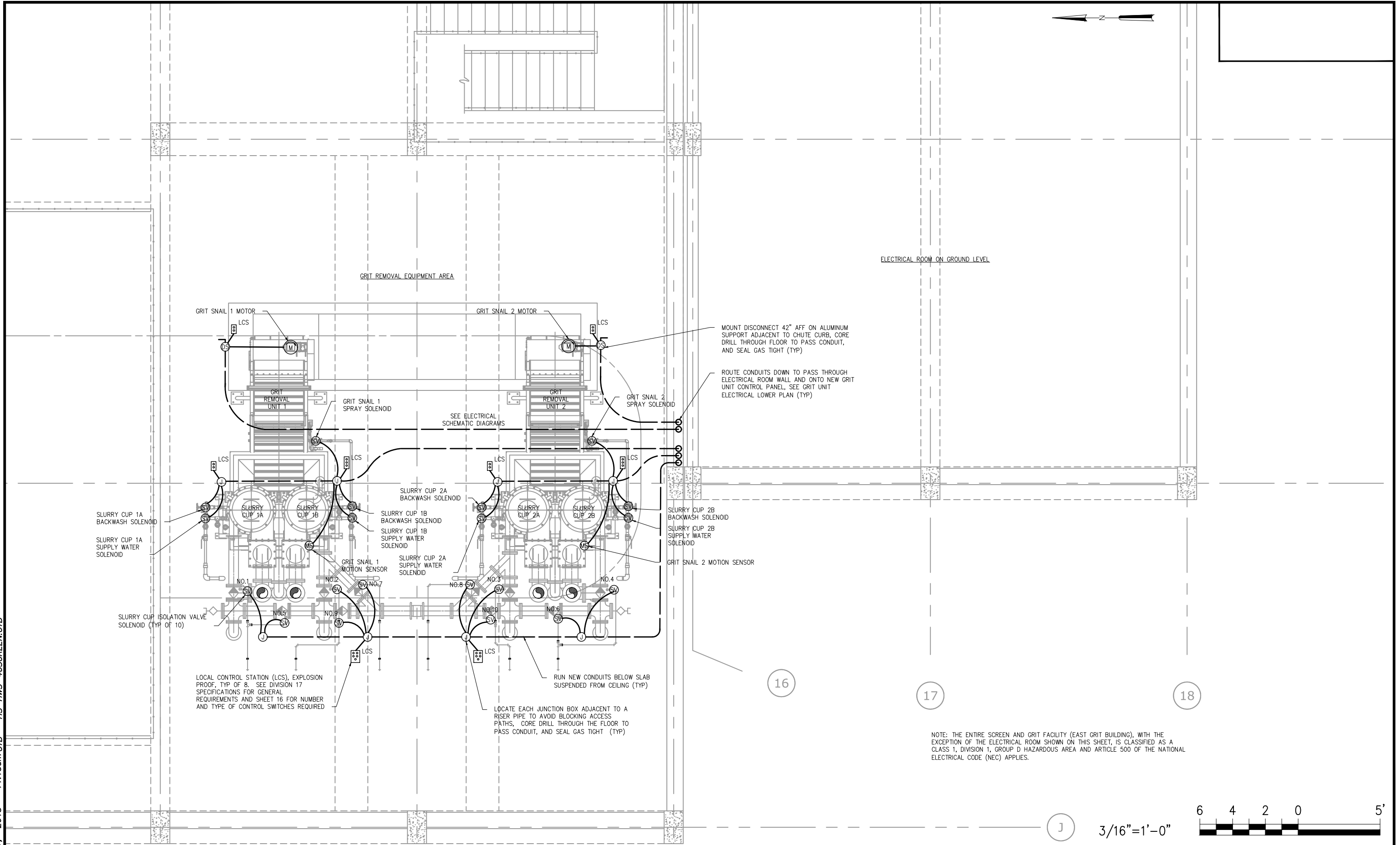
DES: JLP
 DRN: SMZ
 CKD: DBS
 DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
 HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
 AND GRIT WASHER REPLACEMENT
 BUILDING 2 GRIT UNIT ELECTRICAL LOWER PLAN

W.O. 14
 SHEET
 14
 OF 32

User: szogurski Drawing Name: H:\41077-009 city of tampa - hrc awtp grit washer replacement\Drawings\Electrical\15 GRIT UNIT ELECTRICAL UPPER PLAN.dwg Layout- Oct 17, 2018 - 11:13am CTB - HS-HWS-40SCREEN.CTB



NOTE: THE ENTIRE SCREEN AND GRIT FACILITY (EAST GRIT BUILDING), WITH THE EXCEPTION OF THE ELECTRICAL ROOM SHOWN ON THIS SHEET, IS CLASSIFIED AS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS AREA AND ARTICLE 500 OF THE NATIONAL ELECTRICAL CODE (NEC) APPLIES.



No.	DATE	REVISIONS
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1	10/2018	BID SET

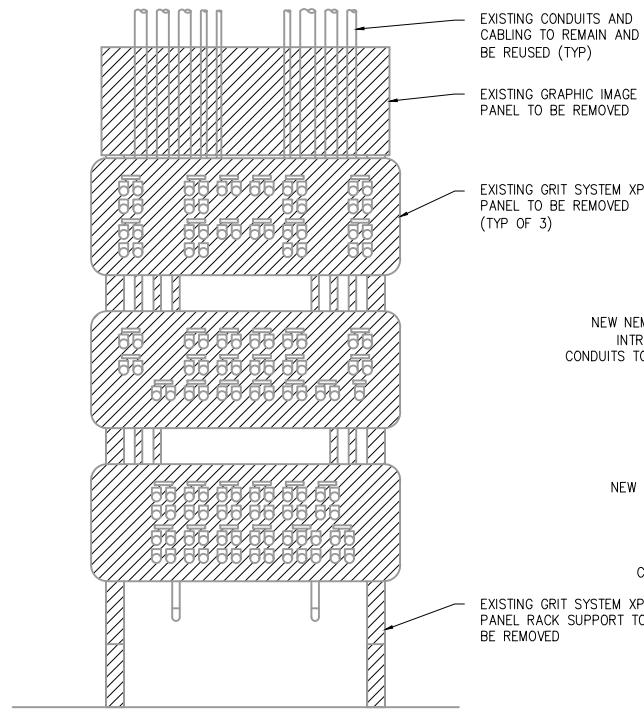
DES: JLP
 DRN: SMZ
 CKD: DBS
 DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
 HOWARD F CURREN AWTP

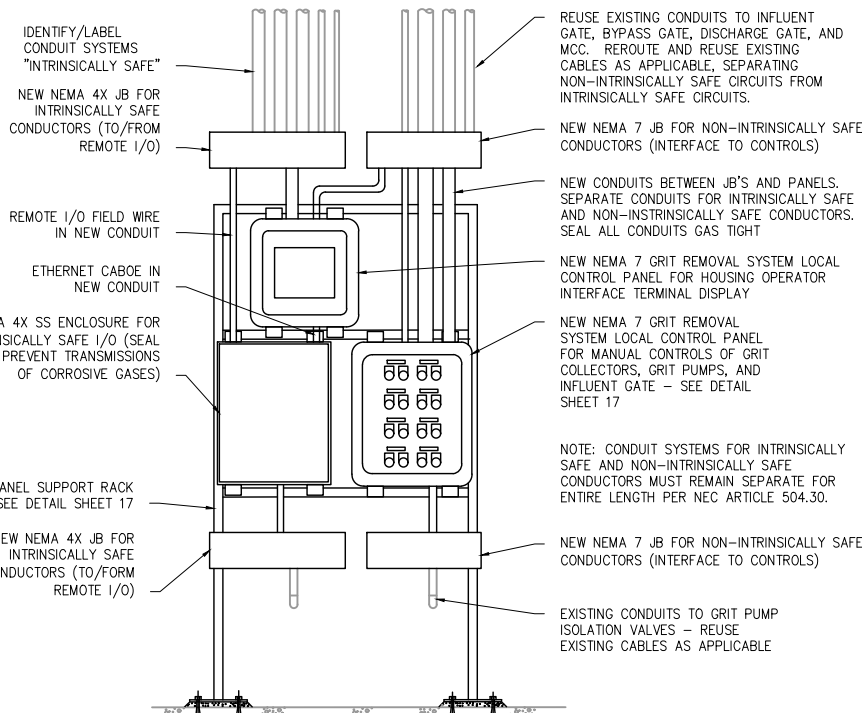
HOWARD F. CURREN AWTP SCREEN
 AND GRIT WASHER REPLACEMENT
 BUILDING 2 GRIT UNIT ELECTRICAL UPPER PLAN

W.O. 14
 SHEET
 15
 OF 32

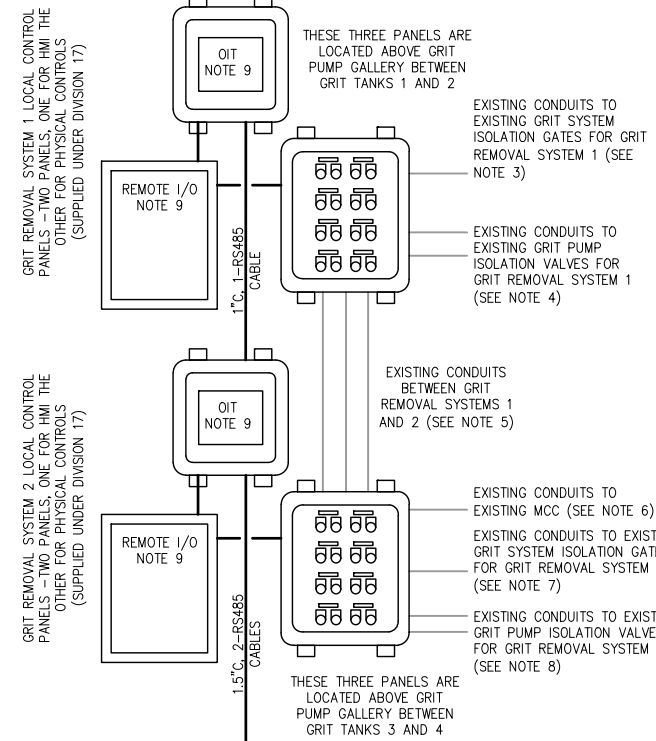
DANIEL B. SCHMIDT, PE
 NO. 20433



EXISTING GRIT SYSTEM XP LOCAL CONTROL PANEL ELEVATION (TYP OF 2)



REPLACEMENT GRIT SYSTEM XP LOCAL CONTROL PANEL ELEVATION (TYP OF 2)



NOTES:

1. LOCAL CONTROL STATIONS (LCS's) PROVIDED UNDER DIVISION 17.
2. CAT6 AND RS485 CABLES SUPPLIED UNDER DIVISION 17 AND INSTALLED UNDER DIVISION 16.
3. PROVIDE INTERFACE WITH THE EXISTING GRIT COLLECTOR 1 AND GRIT COLLECTOR 2 INFLUENT GATE ACTUATORS FROM A NEW SET OF OPEN/CLOSE PUSHBUTTONS AND PROVIDE REMOTE I/O WITHIN GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL TO PICK UP LIMIT SWITCH SIGNALS FROM THESE GATES (3-WIRE CONTROL & O/C LIMIT SWITCHES AND REUSING EXISTING WIRE AND CONDUITS).
4. PROVIDE REMOTE I/O WITHIN GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL TO PICK UP LIMIT SWITCH SIGNALS FROM THE FOLLOWING VALVES (REUSING EXISTING WIRE AND CONDUITS): GRIT PUMPS 1A AND 1B SUCTION AND DISCHARGE VALVES (O/C LIMIT SWITCHES) GRIT PUMPS 2A AND 2B SUCTION AND DISCHARGE VALVES (O/C LIMIT SWITCHES)
5. PROVIDE INTERFACE WITH THE FOLLOWING GRIT REMOVAL SYSTEM 1 EQUIPMENT STARTERS IN MCC21 FROM NEW SETS OF START/STOP PUSHBUTTONS ON GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL (REUSING EXISTING WIRE AND CONDUITS THROUGH GRIT REMOVAL SYSTEM 2 LOCAL CONTROL PANEL): GRIT COLLECTORS 1 AND 2 (3-WIRE CONTROL) GRIT PUMPS 1A AND 1B (3-WIRE CONTROL) GRIT PUMPS 2A AND 2B (3-WIRE CONTROL)
6. PROVIDE INTERFACE WITH THE FOLLOWING GRIT REMOVAL SYSTEM 2 EQUIPMENT STARTERS IN MCC21 FROM NEW SETS OF START/STOP PUSHBUTTONS ON GRIT REMOVAL SYSTEM 2 LOCAL CONTROL PANEL (REUSING EXISTING WIRE AND CONDUITS ALONG WITH WIRING FOR EQUIPMENT FROM GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL): GRIT COLLECTORS 3 AND 4 (3-WIRE CONTROL) GRIT PUMPS 3A AND 3B (3-WIRE CONTROL) GRIT PUMPS 4A AND 4B (3-WIRE CONTROL)
7. PROVIDE INTERFACE WITH THE EXISTING GRIT COLLECTOR 3 AND GRIT COLLECTOR 4 INFLUENT GATE ACTUATORS FROM A NEW SET OF OPEN/CLOSE PUSHBUTTONS AND PROVIDE REMOTE I/O WITHIN GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL TO PICK UP LIMIT SWITCH SIGNALS FROM THESE GATES (3-WIRE CONTROL & O/C LIMIT SWITCHES AND REUSING EXISTING WIRE AND CONDUITS).
8. PROVIDE REMOTE I/O WITHIN GRIT REMOVAL SYSTEM 1 LOCAL CONTROL PANEL TO PICK UP LIMIT SWITCH SIGNALS FROM THE FOLLOWING VALVES (REUSING EXISTING WIRE AND CONDUITS): GRIT PUMPS 3A AND 3B SUCTION AND DISCHARGE VALVES (O/C LIMIT SWITCHES) GRIT PUMPS 4A AND 4B SUCTION AND DISCHARGE VALVES (O/C LIMIT SWITCHES)
9. OIT AND REMOTE I/O PANELS TO BE POWERED THROUGH COMBINATION OF POE TO NETWORK COMPONENTS AND 120V THROUGH NEW BREAKERS IN NEAREST LIGHTING PANEL(S).

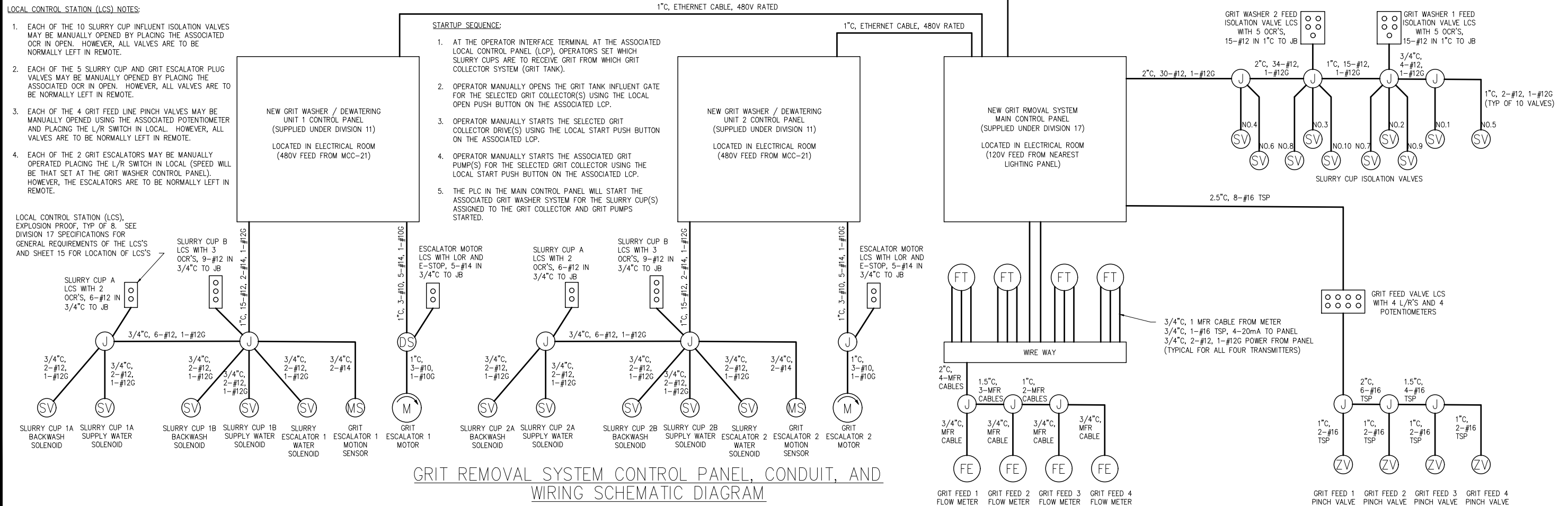
LOCAL CONTROL STATION (LCS) NOTES:

1. EACH OF THE 10 SLURRY CUP INFLUENT ISOLATION VALVES MAY BE MANUALLY OPENED BY PLACING THE ASSOCIATED OCR IN OPEN. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
2. EACH OF THE 5 SLURRY CUP AND GRIT ESCALATOR PLUG VALVES MAY BE MANUALLY OPENED BY PLACING THE ASSOCIATED OCR IN OPEN. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
3. EACH OF THE 4 GRIT FEED LINE PINCH VALVES MAY BE MANUALLY OPENED USING THE ASSOCIATED POTENTIOMETER AND PLACING THE L/R SWITCH IN LOCAL. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
4. EACH OF THE 2 GRIT ESCALATORS MAY BE MANUALLY OPERATED PLACING THE L/R SWITCH IN LOCAL (SPEED WILL BE THAT SET AT THE GRIT WASHER CONTROL PANEL). HOWEVER, THE ESCALATORS ARE TO BE NORMALLY LEFT IN REMOTE.

LOCAL CONTROL STATION (LCS), EXPLOSION PROOF, TYP OF 8. SEE DIVISION 17 SPECIFICATIONS FOR GENERAL REQUIREMENTS OF THE LCS'S AND SHEET 15 FOR LOCATION OF LCS'S

STARTUP SEQUENCE:

1. AT THE OPERATOR INTERFACE TERMINAL AT THE ASSOCIATED LOCAL CONTROL PANEL (LCP), OPERATORS SET WHICH SLURRY CUPS ARE TO RECEIVE GRIT FROM WHICH GRIT COLLECTOR SYSTEM (GRIT TANK).
2. OPERATOR MANUALLY OPENS THE GRIT TANK INFLUENT GATE FOR THE SELECTED GRIT COLLECTOR(S) USING THE LOCAL OPEN PUSH BUTTON ON THE ASSOCIATED LCP.
3. OPERATOR MANUALLY STARTS THE SELECTED GRIT COLLECTOR DRIVE(S) USING THE LOCAL START PUSH BUTTON ON THE ASSOCIATED LCP.
4. OPERATOR MANUALLY STARTS THE ASSOCIATED GRIT PUMP(S) FOR THE SELECTED GRIT COLLECTOR USING THE LOCAL START PUSH BUTTON ON THE ASSOCIATED LCP.
5. THE PLC IN THE MAIN CONTROL PANEL WILL START THE ASSOCIATED GRIT WASHER SYSTEM FOR THE SLURRY CUP(S) ASSIGNED TO THE GRIT COLLECTOR AND GRIT PUMPS STARTED.



GRIT REMOVAL SYSTEM CONTROL PANEL, CONDUIT, AND WIRING SCHEMATIC DIAGRAM

DANIEL B. SCHMIDT, PE NO. 20433	No.	DATE	REVISIONS
	3		
	2		
	1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

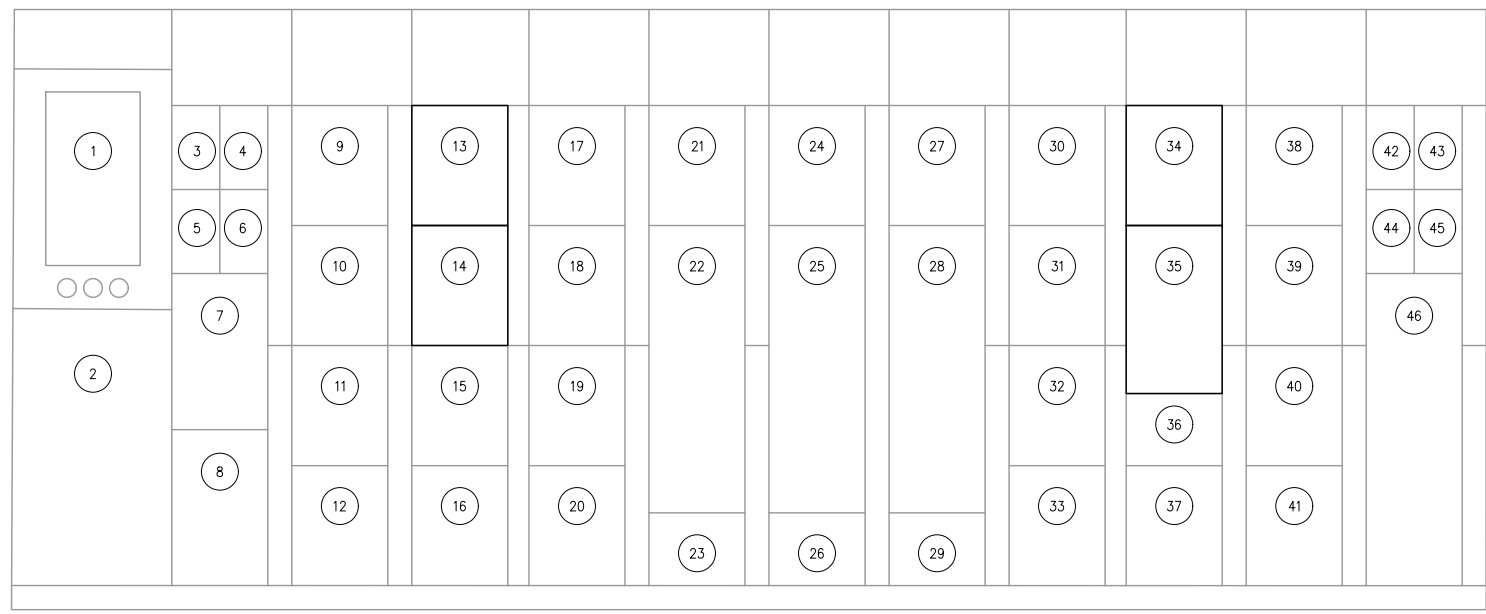
HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT
BUILDING 2 ELECTRICAL SCHEMATIC DIAGRAMS

W.O. 14
SHEET
16
OF 32

MCC-21 MODIFICATIONS

ITEM	EXISTING LOAD	MODIFICATIONS	ITEM	EXISTING LOAD	MODIFICATIONS
1.	ANNUNCIATOR		24.	ALARM MODULE	
2.	SCANNER		25.	TIE BREAKER	
3.	SLUICE GATE 1 & 2		26.	SPACE	
4.	SLUICE GATE 5 & 6		27.	METERING	
5.	SLIDE GATE 1		28.	MAIN BREAKER 2	
6.	SPACE		29.	SPACE	
7.	SPACE		30.	GRIT PUMP 2A	SEE NOTE 1
8.	GAS MONITOR		31.	GRIT PUMP 2B	SEE NOTE 1
9.	MECH SCREEN 1		32.	GRIT PUMP 4A	SEE NOTE 1
10.	SCREEN 1 CONVEYOR		33.	GRIT PUMP 4B	SEE NOTE 1
11.	SPARE BREAKER		34.	GRIT WASHER 2 (NOTE 2)	REUSE FOR NEW GRIT ESCALATOR 2
12.	SPACE		35.	GRIT CONVEYOR	CONVERT TO A SPARE
13.	GRIT WASHER 1 (NOTE 2)	REUSE FOR NEW GRIT ESCALATOR 1	36.	SPACE	
14.	GRIT WASHER 3	CONVERT TO A SPARE	37.	SPACE	
15.	GRIT COLLECTOR 1	SEE NOTE 1	38.	GRIT COLLECTOR 2	SEE NOTE 1
16.	GRIT COLLECTOR 3	SEE NOTE 1	39.	GRIT COLLECTOR 4	SEE NOTE 1
17.	GRIT PUMP 1A	SEE NOTE 1	40.	MECH SCREEN 2	
18.	GRIT PUMP 1B	SEE NOTE 1	41.	SPACE	
19.	GRIT PUMP 3A	SEE NOTE 1	42.	SLUICE GATE 3 & 4	
20.	GRIT PUMP 3B	SEE NOTE 1	43.	SLUICE GATE 7 & 8	
21.	METERING		44.	SLIDE GATE 2	
22.	MAIN BREAKER 1		45.	LTG PNL XFMR	
23.	SPACE		46.	SPACE	

- NOTES:
- REWIRE THE STARTER RUN CONTACTS TO SEND MOTOR RUNNING SIGNAL AS AN INPUT TO THE NEW GRIT REMOVAL SYSTEM MAIN CONTROL PANEL. PLC STARTER START AND STOP COMMANDS TO BE FROM NEW START/STOP PUSHBUTTONS IN THE NEW GRIT REMOVAL SYSTEM LOCAL CONTROL PANELS IN PLACE OF EXISTING DEVICES AT THE REPLACED PANELS.
 - REPLACE EXISTING MCP WITHIN THIS CUBICLE WITH A NEW CIRCUIT BREAKER COMPATIBLE WITH THE EXISTING MCC EQUIPMENT AND ADEQUATELY SIZED TO FEED THE GRIT WASHER CONTROL PANEL AS SUPPLIED BY THE MANUFACTURER.

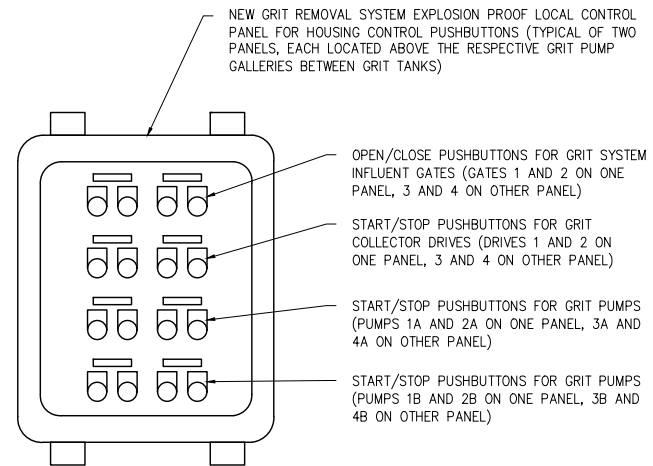


EXISTING MCC-21 FRONT ELEVATION 1/12

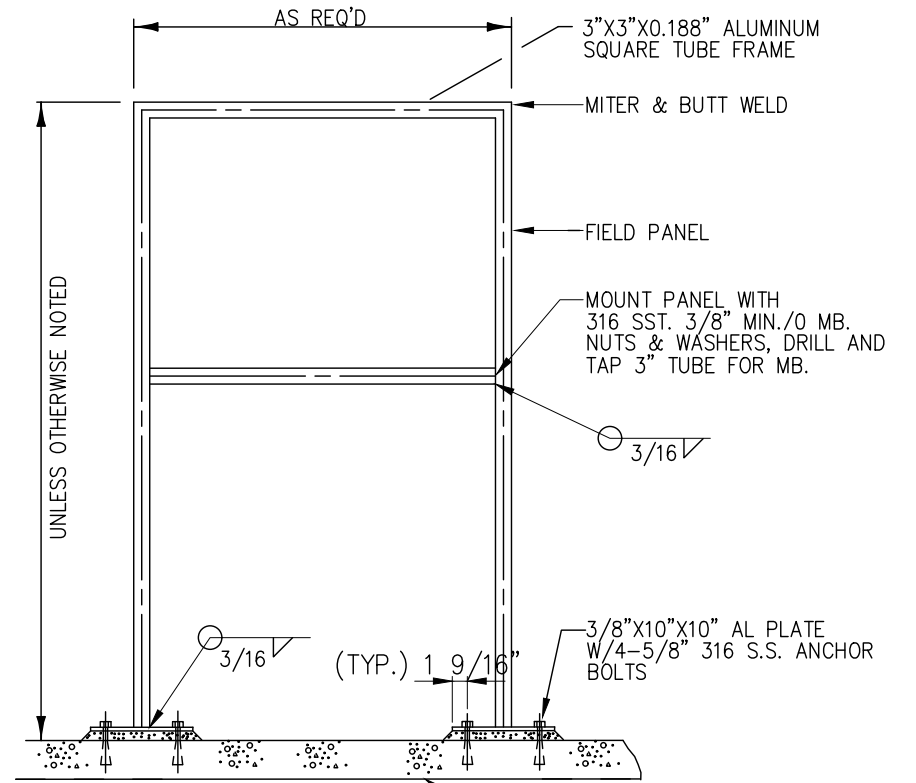
MCC-21 GRIT WASHER FEEDER CALCULATIONS			
GRIT WASHER LOAD BREAKDOWN	LOAD CURRENT (AMPS) FOR WIRE SIZE	CURRENT FOR CB SIZE	COMMENT
GRIT WASHER NO. 1 CONTROL PANEL			
ESCALATOR (1/2 HP)	0.6	1.5	250% FLA
CONTROLS	3.2	3.2	700VA CONTROLS
SOLENOID VALVES	4.5	4.5	5, 20W VALVES
TOTAL AMPS	8.3	9.2	
WIRE SIZE	3-#12, 1-#12G		
BREAKER SIZE	15		
GRIT WASHER NO. 2 CONTROL PANEL			
ESCALATOR (1/2 HP)	0.6	1.5	250% FLA
CONTROLS	3.2	3.2	700VA CONTROLS
SOLENOID VALVES	4.5	4.5	5, 20W VALVES
TOTAL AMPS	8.3	9.2	
WIRE SIZE	3-#12, 1-#12G		
BREAKER SIZE	15		

NET MCC-21 LOAD (LEFT SIDE) CHANGE:
ELIMINATE TWO, 2HP GRIT WASHERS
ADD ONE, 1/2 HP GRIT WASHER
-3.8 AMPS, LEFT SIDE
CALCULATED VOLTAGE DROP FOR 50 FEET OF CONDUCTOR = 0.59%

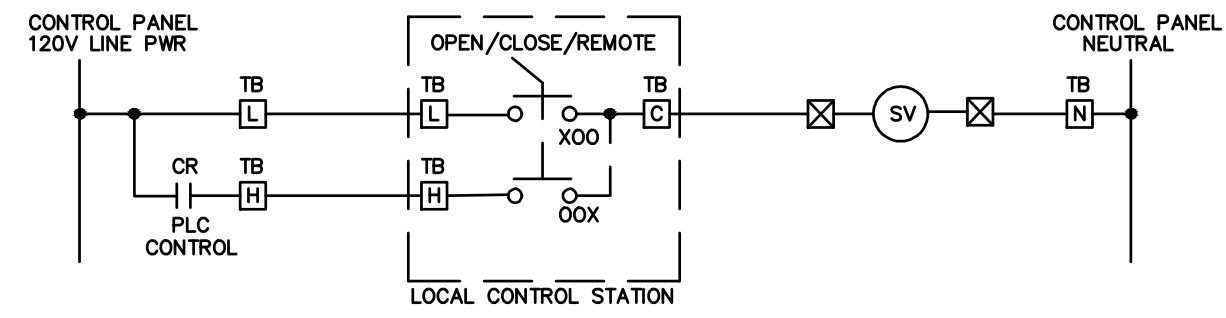
NET MCC-21 LOAD (LEFT SIDE) CHANGE:
ELIMINATE TWO, 2HP MOTORS (GRIT WASHER, GRIT CONVEYOR)
ADD ONE, 1/2 HP GRIT WASHER
-3.8 AMPS, LEFT SIDE
CALCULATED VOLTAGE DROP FOR 50 FEET OF CONDUCTOR = 0.59%



GRIT REMOVAL SYSTEM LOCAL CONTROL PANEL LAYOUT FOR CONTROL PUSHBUTTONS

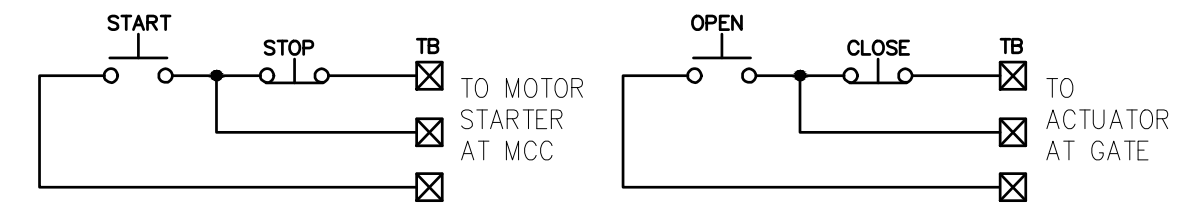


TYPICAL PANEL MOUNTING RACK

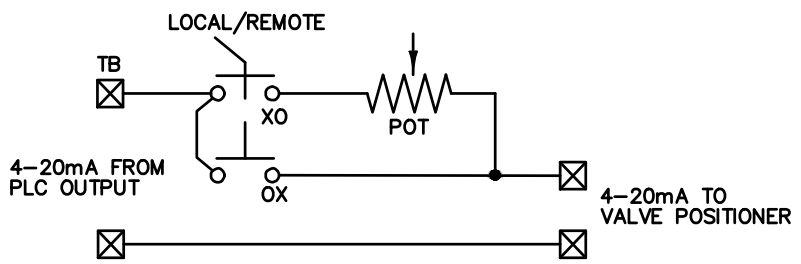


TYPICAL OCR WIRING FOR SOLENOID VALVE

NOTE: CONTROL VOLTAGE AT STARTER OR ACTUATOR



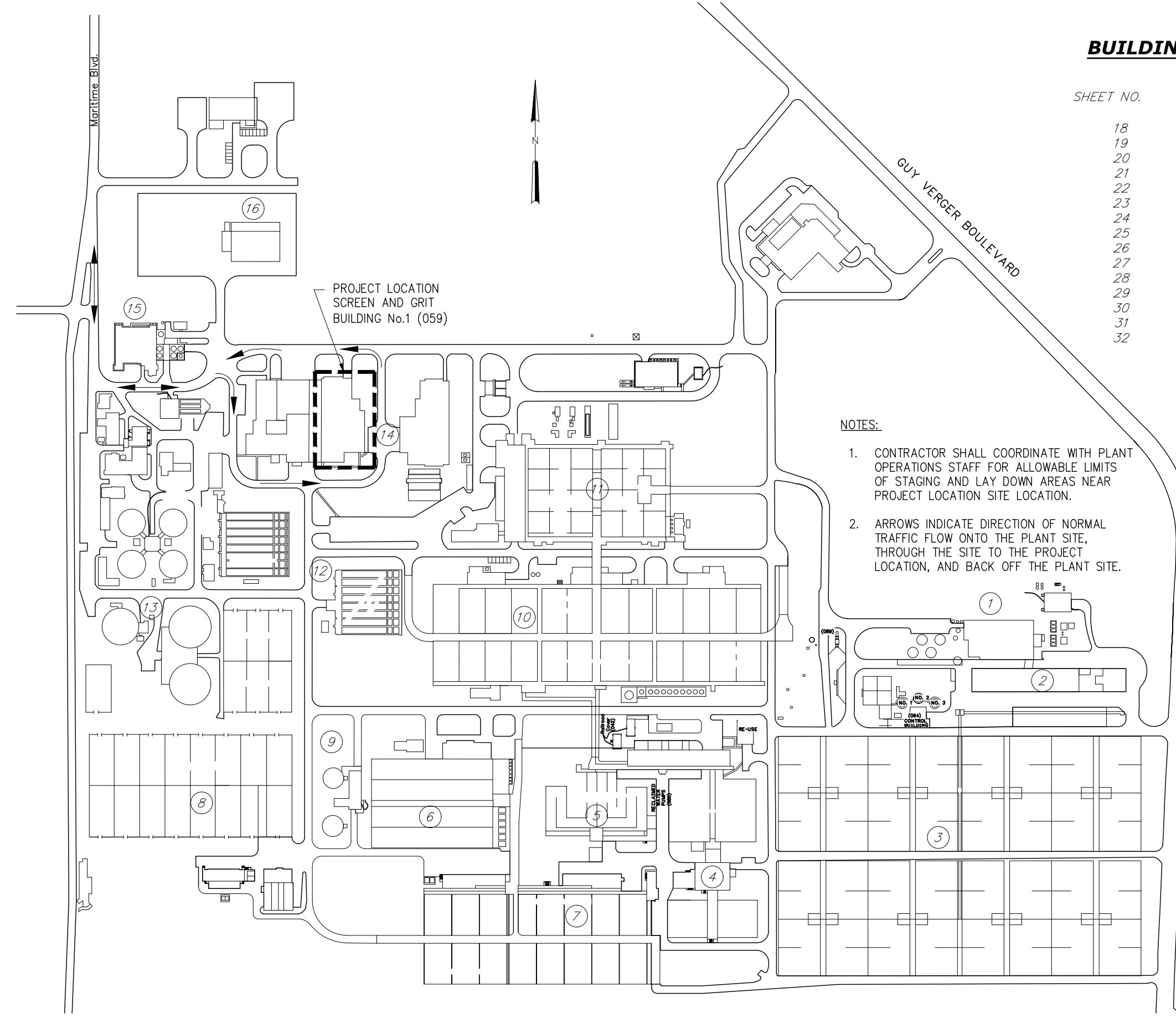
TYPICAL S/S AND O/C PUSHBUTTON WIRING FOR EXISTING EQUIPMENT



MODULATING PINCH VALVE WIRING

User: szogurski Drawing Name: H:\41077-010 city of tampa - hfc awtp grit washer bldg 1 replacement\Drawings\General\G-2.dwg
Layout: Oct 17, 2018 - 1:35pm CTB - HS-HWS-40SCREEN.CTB

BUILDING 1 INDEX OF DRAWINGS



SHEET NO.	SHEET DESCRIPTION
18	PROJECT LOCATION MAP AND INDEX OF DRAWINGS
19	LEGEND, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
20	OVERALL WEST HEADWORKS BUILDING – KEY SHEET
21	GRIT WASHER DEMOLITION SECTIONS
22	GRIT WASHER REPLACEMENT PLAN
23	GRIT WASHER REPLACEMENT SECTIONS
24	GRIT WASHER REPLACEMENT SECTIONS
25	MECHANICAL DETAILS
26	GRIT WASHER ISOMETRIC
27	OVERALL WEST HEADWORKS BUILDING – ELECTRICAL PLAN
28	ELECTRICAL ROOM PLAN
29	GRIT UNIT ELECTRICAL LOWER PLAN
30	GRIT UNIT ELECTRICAL UPPER PLAN
31	ELECTRICAL SCHEMATIC DIAGRAMS
32	ELECTRICAL DETAILS

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH PLANT OPERATIONS STAFF FOR ALLOWABLE LIMITS OF STAGING AND LAY DOWN AREAS NEAR PROJECT LOCATION SITE LOCATION.
2. ARROWS INDICATE DIRECTION OF NORMAL TRAFFIC FLOW ONTO THE PLANT SITE, THROUGH THE SITE TO THE PROJECT LOCATION, AND BACK OFF THE PLANT SITE.

- ① SLUDGE HEAT DRYING FACILITY
- ② SLUDGE DEWATERING BUILDING
- ③ SLUDGE DRYING BEDS
- ④ DENITRIFICATION FILTERS
- ⑤ POST-AERATION CHLORINATION TANKS
- ⑥ DIFFUSED AIR REACTORS
- ⑦ FINAL SEDIMENTATION TANKS
- ⑧ SLUDGE DRYING BEDS
- ⑨ SLUDGE THICKENING
- ⑩ FINAL SEDIMENTATION TANKS
- ⑪ HPO REACTOR TANKS
- ⑫ PRIMARY SEDIMENTATION TANKS
- ⑬ SLUDGE DIGESTION TANKS
- ⑭ SCREEN AND GRIT BUILDINGS
- ⑮ JUNCTION CHAMBER AND METER VAULT No. 1
- ⑯ WAREHOUSE

JACOB L. PORTER, PE NO. 65453	<table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">10/2018</td> <td style="text-align: center;">BID SET</td> </tr> </tbody> </table>	No.	DATE	REVISIONS	3			2			1	10/2018	BID SET	DES: JLP DRN: SMZ CKD: DBS DATE: OCT 2018	<h3 style="margin: 0;">CITY of TAMPA</h3> WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I PROJECT LOCATION MAP AND INDEX OF DRAWINGS	W.O. 14 SHEET <h2 style="margin: 0;">18</h2> OF 32
No.	DATE	REVISIONS															
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User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\General\G-3.dwg Layout: Oct 17, 2018 - 12:42pm CTB - HS-HMS-40SGREEN.CTB

SYMBOLS

ABBREVIATIONS

SECTION AND DETAIL IDENTIFICATION

MISCELLANEOUS SYMBOLS	
	MAG METER
	PROPOSED PIPELINE (DOUBLE LINE IF SCALE OF DRAWING PERMITS)
	HARNESSED MECHANICAL COUPLING
FLANGED JOINT FITTINGS	
	TEE (SIDE VIEW)
	TEE (TOP VIEW)
	TEE (BOTTOM VIEW)
	CROSS (SIDE VIEW)
	CROSS (TOP VIEW)
	90 BEND (SIDE VIEW)
	90 BEND (ROTATED DOWN)
	90 BEND (ROTATED UP)
	45 BEND (SIDE VIEW)
	45 BEND (TOP VIEW)
	22-1/2 BEND (SIDE VIEW)
	22-1/2 BEND (TOP VIEW)
	11-1/4 BEND (SIDE VIEW)
	11-1/4 BEND (TOP VIEW)
	REDUCER
	ECCENTRIC REDUCER (SIDE VIEW)
	ECCENTRIC REDUCER (TOP VIEW)
	REDUCING ELBOW (SIDE VIEW)
	REDUCING ELBOW (TOP VIEW)
VALVES AND INSTRUMENTS	
	AIR RELIEF VALVE
	BALL VALVE
	PLUG VALVE
	PINCH VALVE
	MOTOR OPERATED
	2" QUICK CONNECT

PIPING		GENERAL	
DIP	DUCTILE IRON PIPE	REINF	REINFORCING
PVC	POLYVINYL CHLORIDE	REQ'D	REQUIRED
	<u>VALVES, FITTINGS, ETC.</u>	SECT	SECTION
ARV	AIR RELIEF VALVE	SCH	SCHEDULE
BV	BALL VALVE	SHT	SHEET
BF	BLIND FLANGE	SPEC	SPECIFICATION
CPLG	COUPLING	SQ	SQUARE
FT	FEET	STL	STEEL
FTG	FITTING	STRUC	STRUCTURAL
FLG/FL	FLANGE	SST	STAINLESS STEEL
FD	FLOOR DRAIN	TYP	TYPICAL
FRC	FLEXIBLE RUBBER COUPLING	TOP	TOP OF PIPE
PV	PLUG VALVE	W/	WITH
SOV	SOLENOID OPERATED VALVE		
THD	THREADED		
GENERAL			
AL, ALUM	ALUMINUM		
APPROX	APPROXIMATE		
BLK	BLOCK		
BOL	BOLLARD		
BOTT	BOTTOM		
BLDG	BUILDING		
CL	CENTER LINE		
COL	COLUMN		
CONC	CONCRETE		
CONT	CONTINUOUS		
DIAG	DIAGONAL		
DIA	DIAMETER		
DIM	DIMENSION		
DISCH	DISCHARGE		
D	DRAIN		
EA	EACH		
EOP	EDGE OF PAVEMENT		
EFF	EFFLUENT		
ELEC	ELECTRIC		
EL, ELEV	ELEVATION		
EMBED	EMBEDMENT		
EQUIP	EQUIPMENT		
EXH	EXHAUST		
EXIST	EXISTING		
FF	FINISHED FLOOR		
JB	JUNCTION BOX		
MAX	MAXIMUM		
MECH	MECHANICAL		
MISC	MISCELLANEOUS		
NPW	NON POTABLE WATER		
NTS	NOT TO SCALE		
NO	NUMBER		
PS	PRESSURE SWITCH		
PW, W	POTABLE WATER		
RAW	RAW WATER		
RED	REDUCER		

SECTION AND DETAIL IDENTIFICATION

SECTION IDENTIFICATION

(1) SECTION CUT ON DRAWING 1:

(2) ON DRAWING 2 THIS SECTION IS IDENTIFIED AS:

DETAIL IDENTIFICATION

(1) DETAIL CALL-OUT ON DRAWING 1 AS:

(2) ON DRAWING 2 THIS DETAIL IDENTIFIED AS:

STANDARD DETAIL IDENTIFICATION

(1) DETAIL CALL-OUT ON PLAN OR SECTION:

(2) ON DRAWING 4 THIS DETAIL IDENTIFIED AS:

* NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACE BY A LINE.

NOTES:

- ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DWGS.
- FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.
- EXISTING EQUIPMENT, STRUCTURES, AND BUILDINGS ARE SHOWN LIGHT LINED. NEW EQUIPMENT, PIPING, FITTINGS, AND VALVES ARE SHOWN DARK LINED.

- GENERAL PROJECT NOTES:
- CONTRACTOR SHALL REPLACE GRIT WASHERS IN THE WEST SCREEN AND GRIT BUILDING. REPLACE GRIT WASHERS, ASSOCIATED PIPING AND ALL OTHER COMPONENTS AS LISTED IN THE EQUIPMENT SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
 - CONTRACTOR SHALL REPLACE ALL FITTINGS, AND VALVES AS SPECIFIED AND SHOWN.
 - CONTRACTOR SHALL REPLACE ALL EXISTING CONDUIT RUNS, RECEPTACLES, LIGHT FIXTURES, AND LOCAL CONTROL STATIONS TO THE EXTENT SHOWN ON THE DRAWINGS FOR THE GRIT WASHERS, USING NEW CABLE PULLED THROUGH THE NEW AND EXISTING CONDUIT SYSTEMS.
 - CONTRACTOR WILL BE ALLOWED TO WORK ON ONLY ONE BUILDING AT A TIME. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH TREATMENT PLANT PERSONNEL AND PLANT OPERATIONS. WHILE WORKING IN A SCREEN AND GRIT BUILDING, ONLY ONE GRIT WASHER CAN BE REPLACED AT A TIME. WHEN THE FIRST GRIT WASHER IS PLACED IN SERVICE, THE UNIT SHALL BE OPERATED FOR AT LEAST (7) DAYS OF TROUBLE FREE SERVICE BEFORE REMOVAL OF THE NEXT EXISTING WASHER(S) CAN START AND INSTALLATION OF THE SECOND GRIT WASHER CAN BEGIN. WHEN THE COMPLETE GRIT WASHER SYSTEM IN THE FIRST BUILDING IS PLACED IN SERVICE, THE GRIT WASHER SYSTEM AT THAT BUILDING SHALL BE OPERATED FOR AT LEAST (14) DAYS OF TROUBLE FREE SERVICE BEFORE THE CONSTRUCTION IN THE SECOND BUILDING CAN START. SHOULD ANY PROBLEMS ARISE DURING ANY TEST PERIOD, CONTRACTOR SHALL REMEDY THE PROBLEM(S) AS SOON AS PRACTICAL AND THE TROUBLE FREE TEST PERIOD SHALL BE RESTARTED.
 - EXISTING DIMENSIONS ARE BASED ON AS-BUILT DRAWINGS. TRUE DIMENSIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO LAYOUT AND SHOP DRAWING SUBMITTAL.
 - SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL PROPOSED NEW ITEMS. SHOP DRAWINGS, BOTH HARD COPIES OR ELECTRONIC IN PDF FORMAT, SHALL BE HIGH QUALITY AND EASILY READABLE. ELECTRONIC PDF FORMAT SHALL BE SEARCHABLE AND PROVIDED WITH BOOKMARKS.
 - CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATIONS IN REGARDS TO WORKING CONDITIONS AND MATERIALS HANDLING AND DISPOSAL.
 - CONTRACTOR SHALL MEET ALL REQUIREMENTS AS LISTED IN THE SPECIFIC PROVISIONS AND INDIVIDUAL SPECIFICATION SECTIONS INCLUDED IN THE CONTRACT DOCUMENTS.
 - ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION 2017, CHAPTER 5 OF THE CITY OF TAMPA CODE AND NATIONAL ELECTRICAL CODE 2014 EDITION.
 - LINEAR FEET (LF) NOTED FOR VARIOUS PIPE LENGTHS AND QUANTITIES OF FITTINGS (TYP OF X) INCLUDED IN THE TABLES ON THE MECHANICAL SHEETS ARE APPROXIMATE. ACTUAL LAYING LENGTH AND NUMBER OF FITTINGS TO BE DETERMINED AND VERIFIED BY THE CONTRACTOR FOR A COMPLETE AND FUNCTIONAL PIPING SYSTEM AS INTENDED.

CONTROL OPERATION: Refer to Section 11412 for complete description of the operation of each grit washer unit as an individual process. Refer to Section 17000 for complete description of the entire grit removal process operation. A summary of the proposed controls is as follows:

- Grit Washer Control Panels: Each grit washer can be manually controlled through local control stations or can be placed in automatic operation, controlled through the control panel furnished with the equipment, both located in the Electrical Room. Automatic operation consists of a continuous flow of grit to the Slurry Cups on each grit washer for washing which then overflow to the grit washer's Escalator for separation of captured grit. Grit washers operate whenever a grit pump, or group of grit pumps is directed to a particular grit washer. Grit wash operation includes periodic backwashing and blowdown cycles. The grit washer belt escalator speed is adjustable to optimize grit capture and minimize grit return to the main process flow.
- Grit Removal Process Local Control Panels: The two new Grit Removal System local control panels, each located in the process area above the grit pump galleries, allow operators to monitor and manually control operation of the Grit Collector Drives, the Grit Pumps, and the Grit Basin Isolation Gates, one panel for Basins 5 and 6, the other panel for Basins 7 and 8. These devices are manually started and stopped from these local panels.
- Grit Removal System Main Control Panel: The Main Control Panel in the electrical room coordinates which Grit Washers operate and receive flow from which set of grit pumps. This panel opens and closes the 10 new grit washer isolation valves in accordance with an operator selected matrix for matching combinations of grit pumps to the each of two Grit Slurry Cups provided with each of the two Grit Washers. Selection depends on plant flow and what equipment is available to operate. The Main Control Panel also monitors and controls the rate of grit slurry flow to the selected grit washers. Selection matrix is as follows:

Operators are allowed to select one Slurry Cup per Collector by clicking on the appropriate square; however, no more than 2 Grit Collectors shall be allowed to be assigned to the same Slurry Cup. Once a selection has been made, the Main Control Panel opens the appropriate isolation valves to direct grit from each grit collector (grit pump feed line) to the selected Slurry Cup and maintains an appropriate flow rate based on the selection.

One example of a selection is when all four Grit Collectors must be operated but only Grit Washer 3 is available for operation (Slurry Cups 3A and 3B). In this case, all four grit feed control valves will operate to keep flow below 400 gpm to each Slurry Cup and isolation valves 1 and 5 would be open to feed Slurry Cup 4A from Grit Collectors 5 and 6 and isolation valves 6, 7, and 10 would be open to feed Slurry Cup 3B from Grit Collectors 7 and 8 as noted below:

Grit Feed Matrix

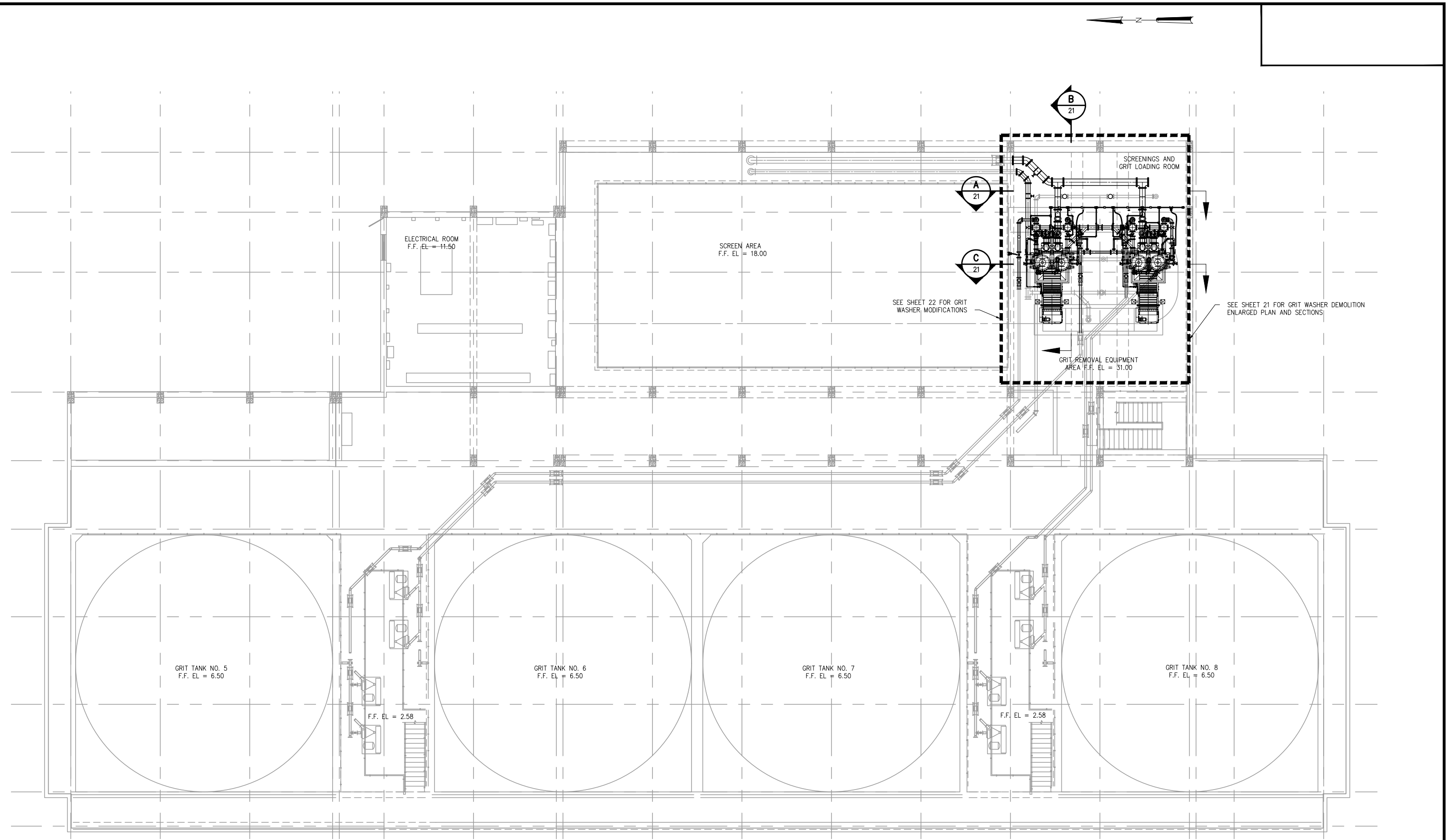
	Slurry Cups			
	3A	3B	4A	4B
Grit Collector 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grit Collector 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PIPE SCHEDULE

SERVICE	NOMINAL PIPE DIAMETER (INCHES)	MATERIAL	THICKNESS	WORKING PRESSURE (PSIG)	JOINTS	FITTINGS	PROTECTIVE COATING	
							PIPE INTERIOR	PIPE EXTERIOR
DRAIN	ALL	DIP	CLASS 53	50	FLG	DI	EL	P
GRIT WASHER FEED (INFLUENT)	ALL	DIP	CLASS 53	100	FLG	DI	GL	P
NON-POTABLE WATER (EFFLUENT)	< 2"	PVC	SCH 80	100	SW	DI	-	P
	> 2"	DIP	CLASS 53	100	FLG	DI	EL	P
COMPRESSED AIR SUPPLY TUBING	ALL	316 SS	SCH 40	200	PER W-30	SS	-	-

JACOB L. PORTER, PE NO. 65453	No.	DATE	REVISIONS	DES: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I LEGENDS, SYMBOLS, ABBREVIATIONS AND GENERAL NOTES	W.O. 14
	3			DRN: SMZ			SHEET
	2			CKD: DBS			19
	1	10/2018	BID SET	DATE: OCT 2018			of 32

User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\General\G-4.dwg
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NO. 65453

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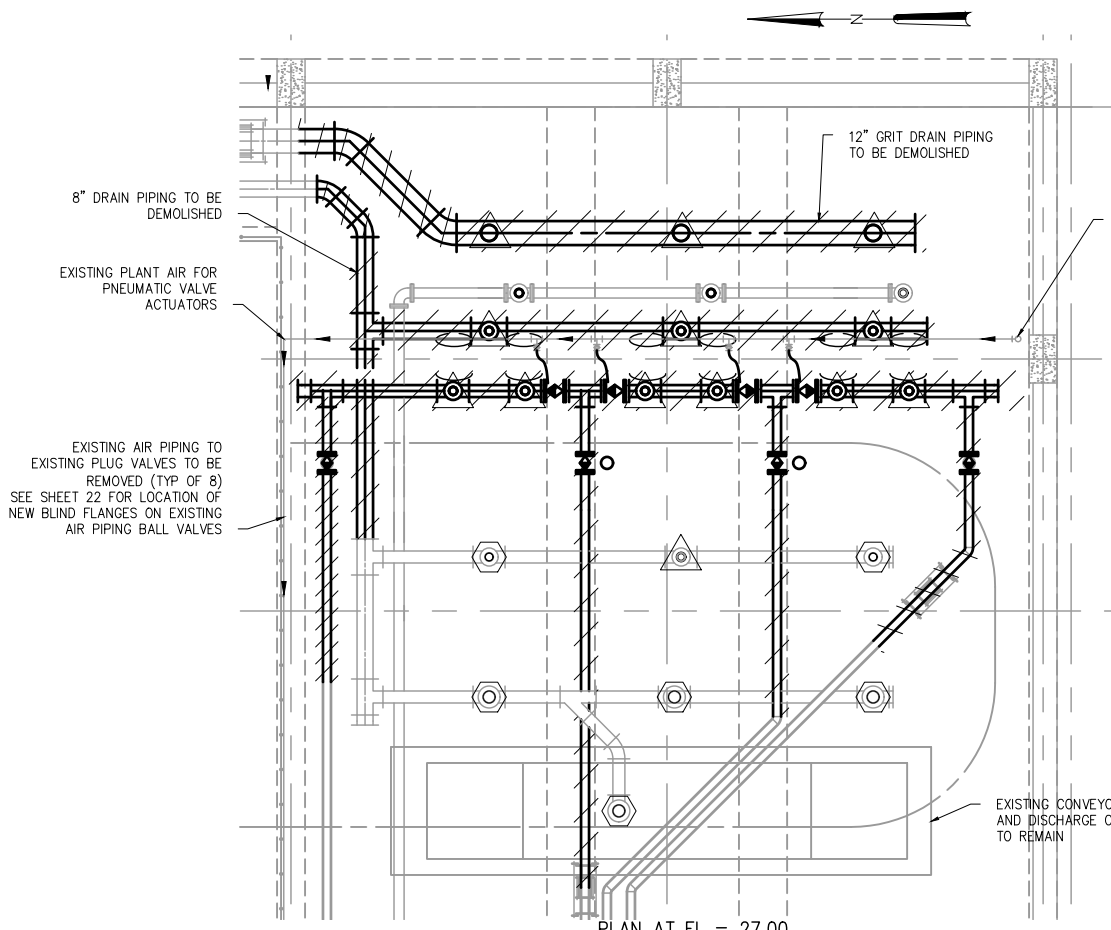
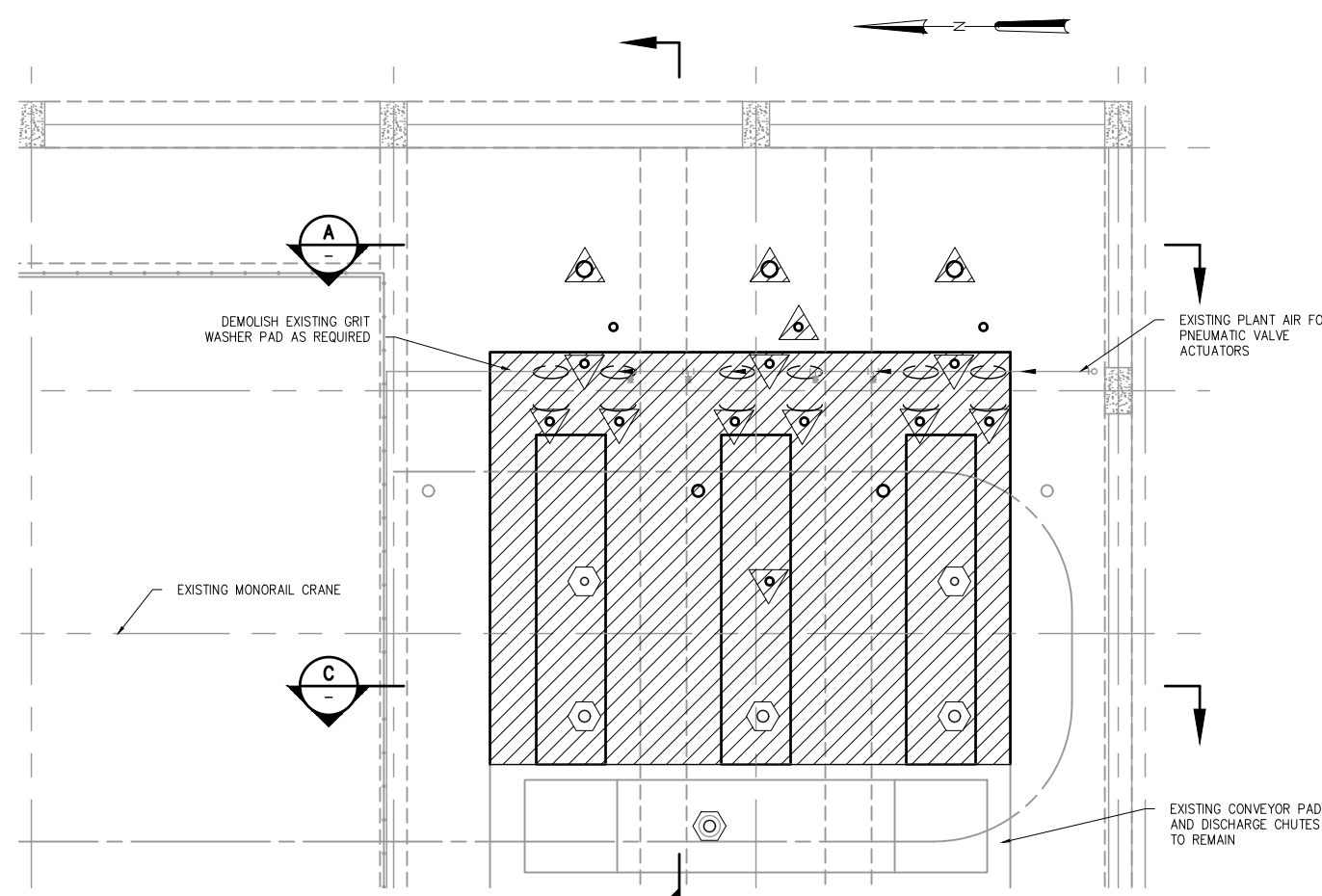
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DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING I OVERALL WEST HEADWORKS
BUILDING - KEY SHEET

W.O. 14
SHEET
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OF 32

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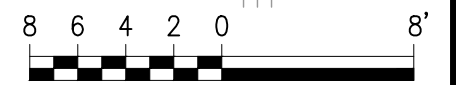
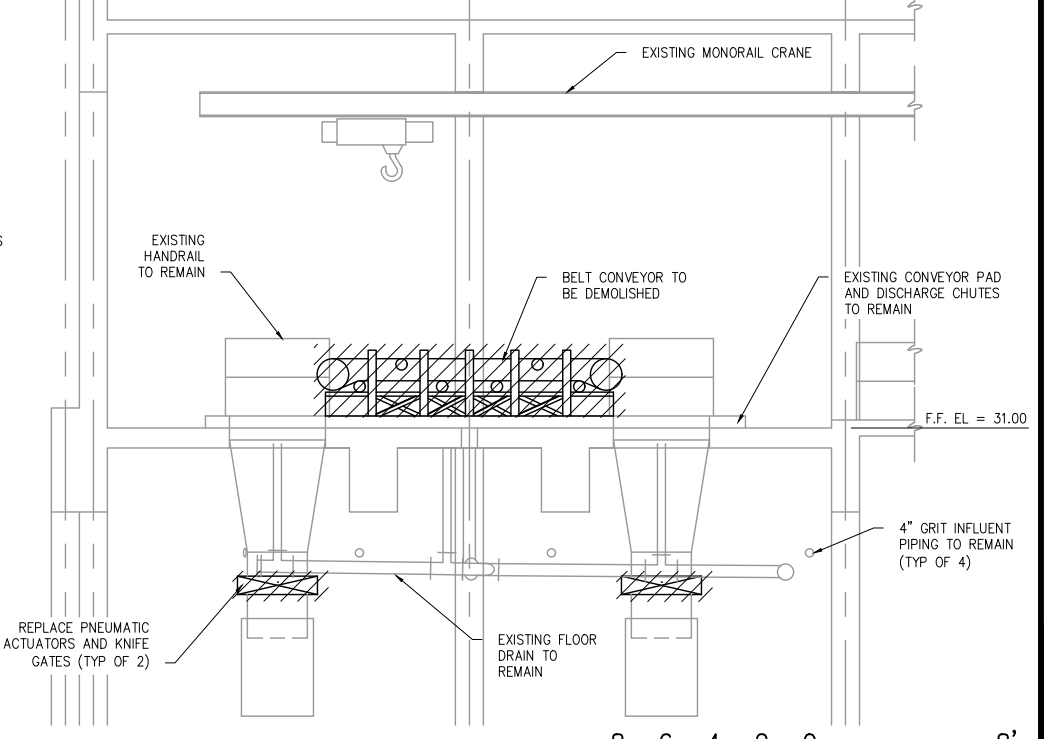
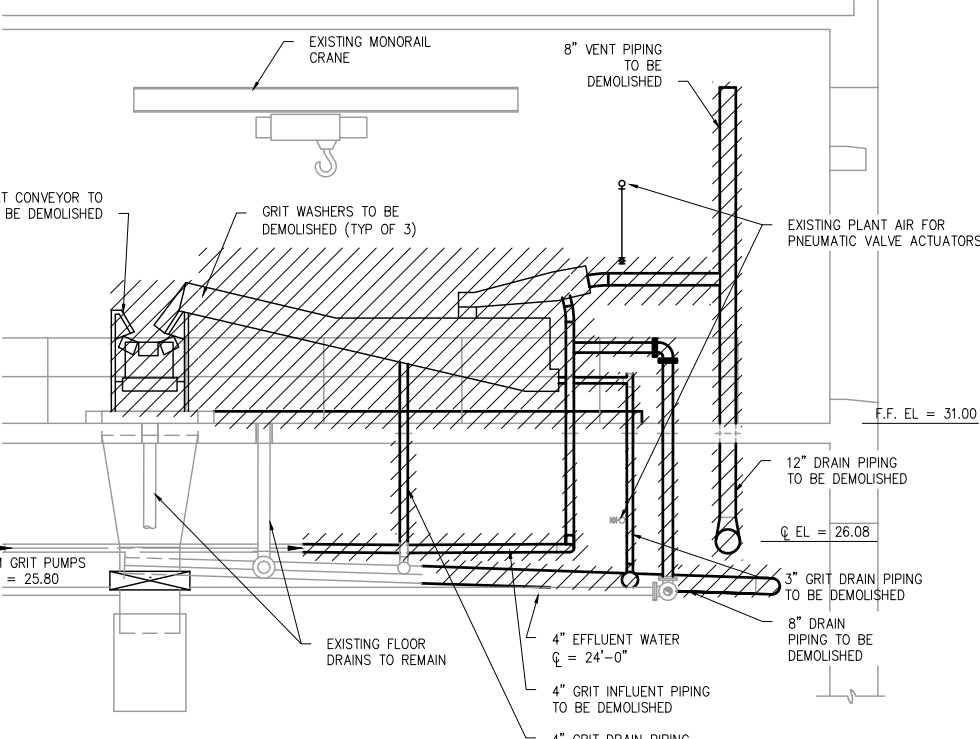
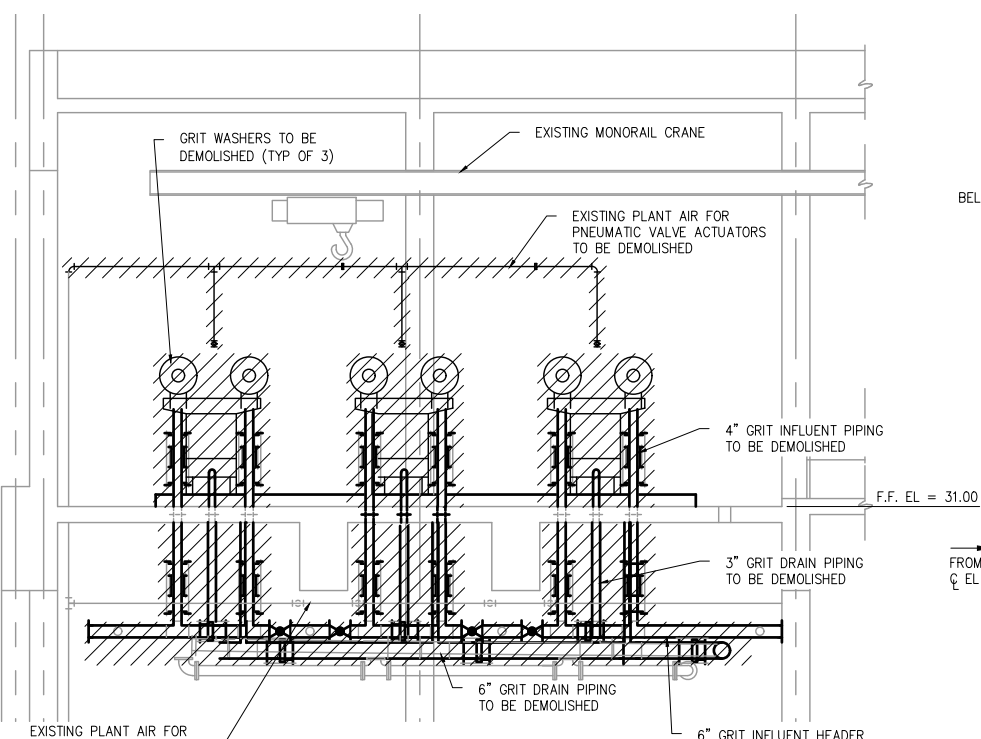


NOTES:

- EXISTING 12" AND 8" PIPE HANGERS ARE TO REMAIN IN PLACE DURING DEMOLITION AND ARE TO BE REUSED FOR PROPOSED 8" AND 12" PIPING PER SHEET 22.

LEGEND

	TO BE DEMOLISHED
	EXISTING FLOOR PIPE TO BE FILLED
	EXISTING FLOOR PIPE TO BE REUSED



No.	DATE	REVISIONS
3		
2		
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 DRN: SMZ
 CKD: DBS
 DATE: OCT 2018

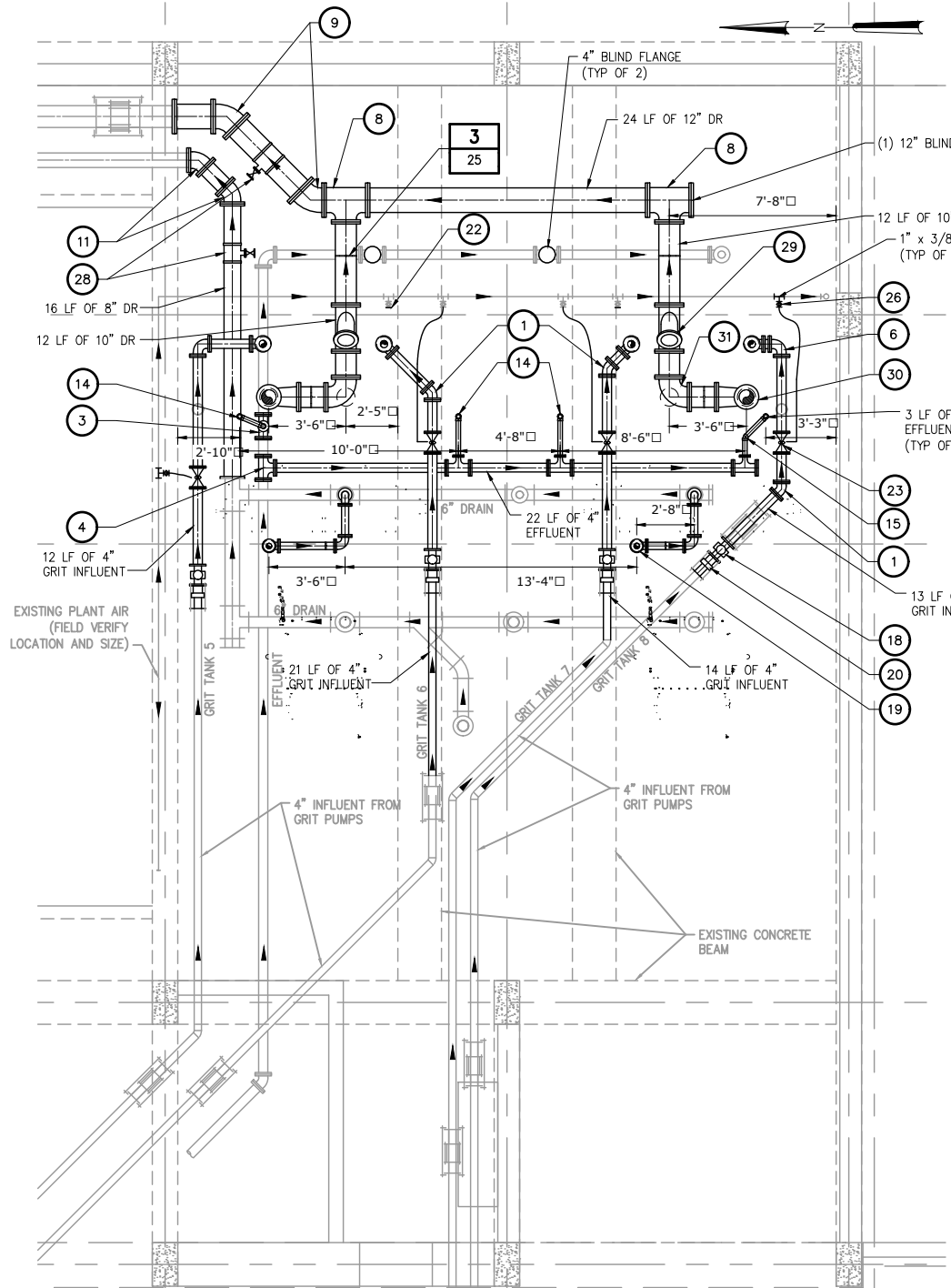
CITY of TAMPA
 WASTEWATER DEPARTMENT
 HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
 AND GRIT WASHER REPLACEMENT
 BUILDING I GRIT WASHER DEMOLITION SECTIONS

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JACOB L. PORTER, PE
 NO. 65453

User: szagurski Drawing Name: H:\41077-010 city of tampa - hfc awtp grit washer bldg 1 replacement\Drawings\Mechanical\6 Grit Washer Replacement Plan.dwg Layout - Oct 17, 2018 - 1:09pm



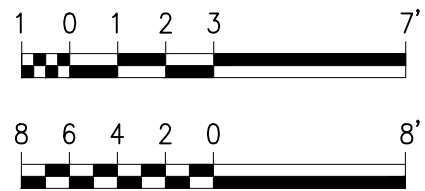
INTERMEDIATE PLAN EL - 27.00

1/8" = 1'-0"

1/4" = 1'-0"

1/8" = 1'-0"

NOTE:
REPLACE EXISTING PIPE SUPPORTS WHERE EXISTING PIPE IS BEING REPLACED. FOR PIPE SUPPORT DETAIL SEE SHEET 3/25.



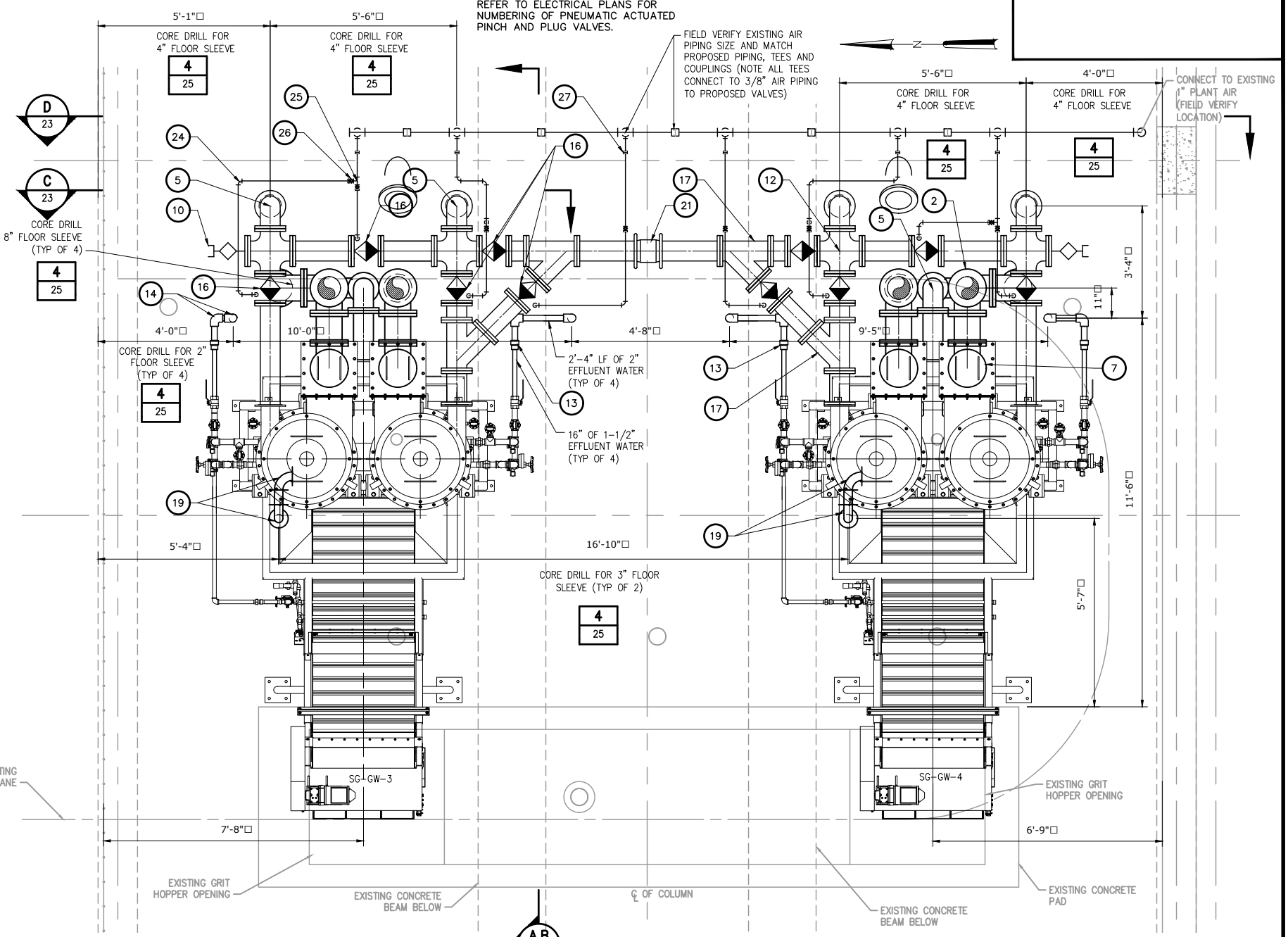
NUMBER	DESCRIPTION
1	4" 45° BEND (TYP OF 3)
2	8" X 8" TEE (TYP OF 4)
3	4" X 2" TEE (TYP OF 4)
4	4" X 4" TEE
5	6" 90° BEND (TYP OF 8)
6	4" 90° BEND (TYP OF 6)

NUMBER	DESCRIPTION
7	8" 90° BEND (TYP OF 8)
8	12" X 10" TEE (TYP OF 2)
9	12" 45° BEND (TYP OF 2)
10	2" QUICK CONNECT FLUSHING CONNECTION (TYP OF 2)
11	8" 45° BEND (TYP OF 2)
12	6" X 6" CROSS (TYP OF 4)

NUMBER	DESCRIPTION
13	2" X 1-1/2" REDUCER (TYP OF 4)
14	2" 90° BEND (TYP OF 13)
15	2" 45° BEND
16	6" PNEUMATIC PLUG VALVE (TYP OF 10)
17	6" X 6" WYE (TYP OF 4)
18	4" FLOW METER (TYP OF 4)

UPPER PLAN EL - 31.00

1/4" = 1'-0"



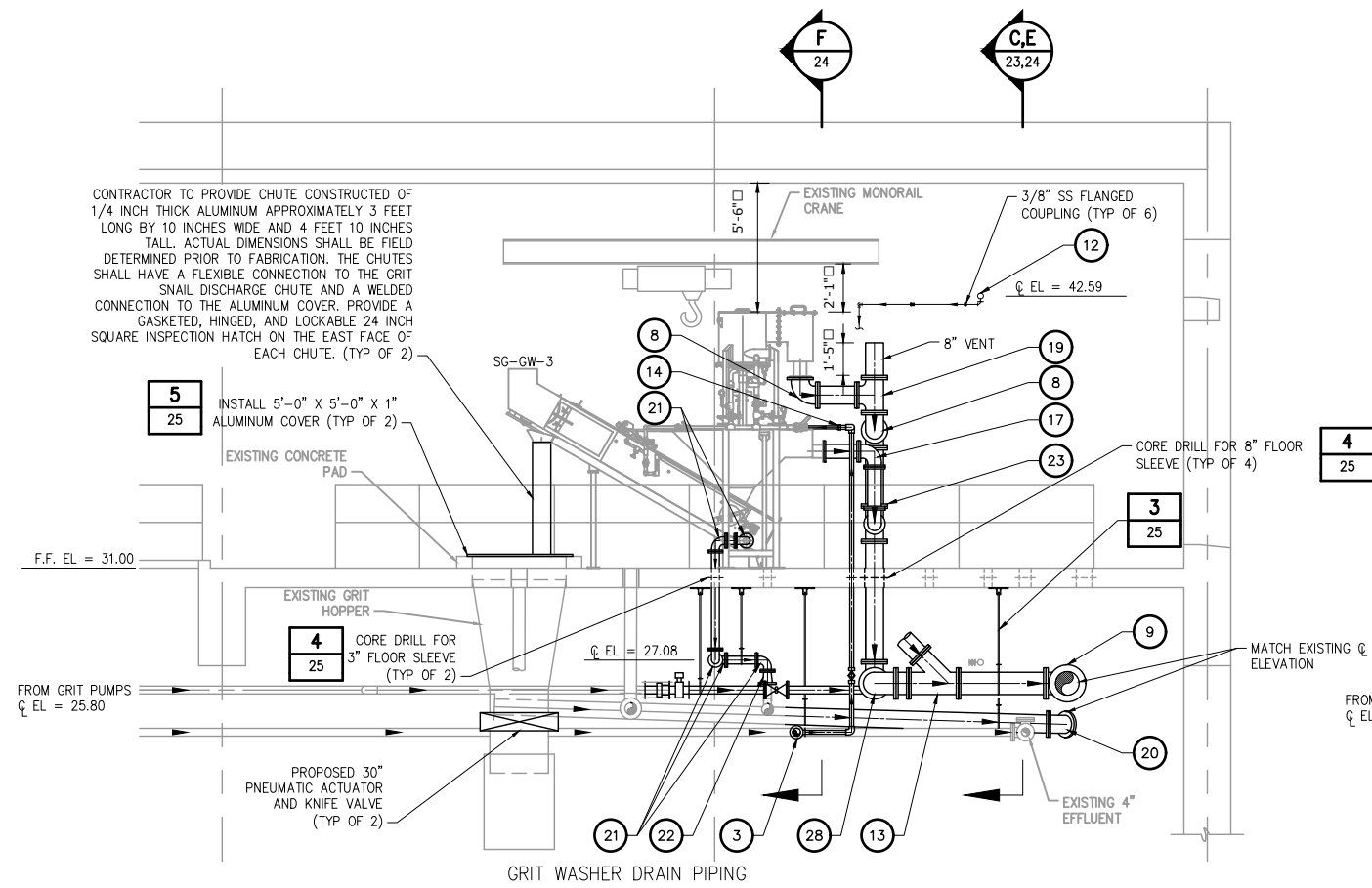
NUMBER	DESCRIPTION
19	3" 90° BEND (TYP OF 10)
20	4" FLANGE COUPLING ADAPTER (TYP OF 4)
21	6" STANDARD ROMAC ALPHA RESTRAINED COUPLING OR EQUAL
22	BLIND FLANGE EXISTING BALL VALVE (TYP OF 2)
23	4" PNEUMATIC PINCH VALVE (TYP OF 4)
24	3/8" 90° BEND (TYP OF 26)
25	3/8" TEE (TYP OF 4)
26	3/8" BALL VALVE (TYP OF 10)
27	3/8" THREADED UNION (TYP OF 22)
28	1" SADDLE TAP W/ 1" BALL VALVE (TYP OF 2)
29	10" X 8" WYE (TYP OF 2)
30	10" X 8" REDUCING ELBOW (TYP OF 2)
31	10" 90° BEND (TYP OF 2)

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2		
1	10/2018	BID SET

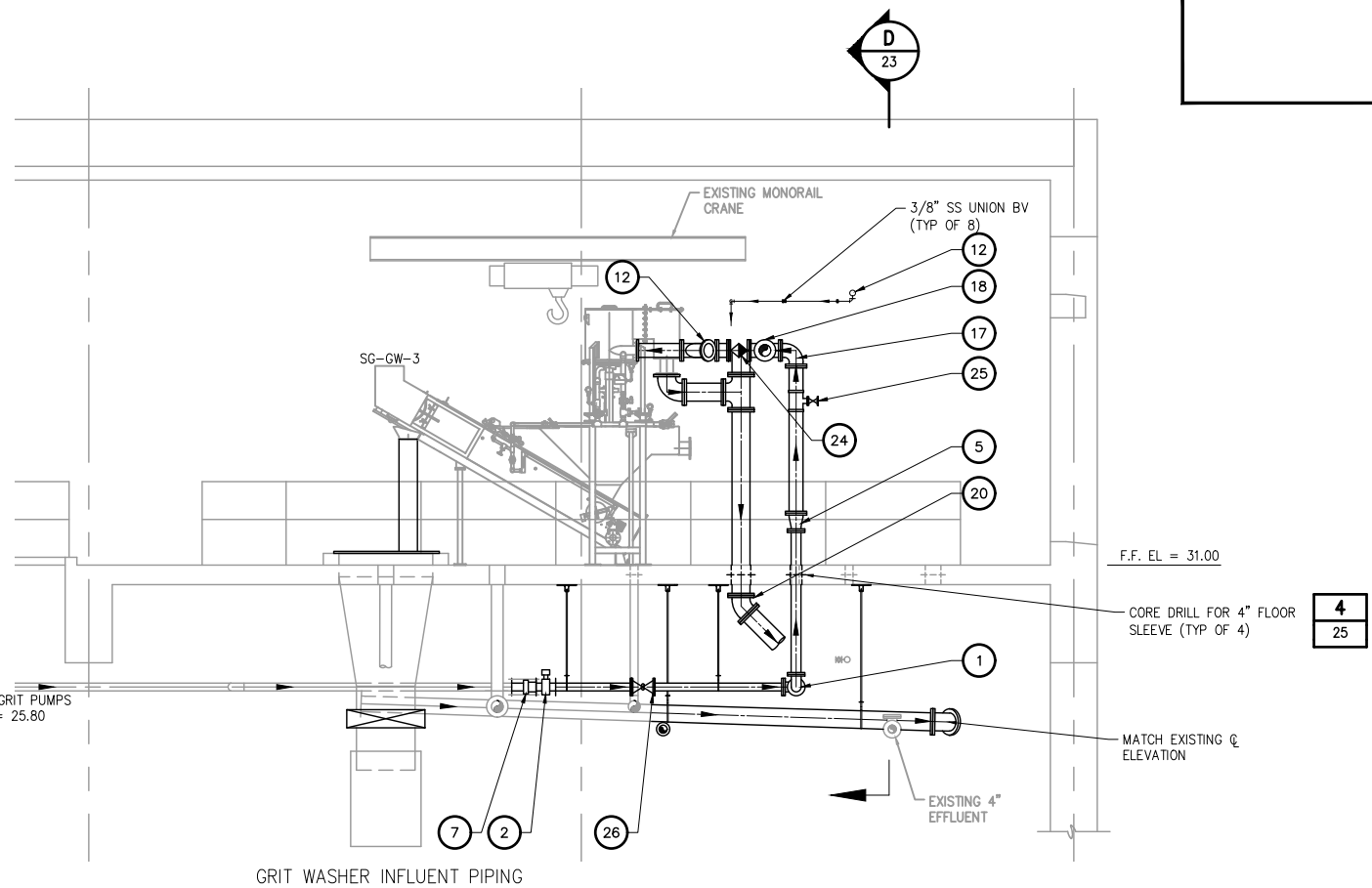
DES: JLP	 WASTEWATER DEPARTMENT HOWARD F CURREN AWTP
DRN: SMZ	
CKD: DBS	
DATE: OCT 2018	

HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I GRIT WASHER REPLACEMENT PLAN	W.O. 14 SHEET 22 of 32
--------------------------------------------------------------------------------------------------	---------------------------------

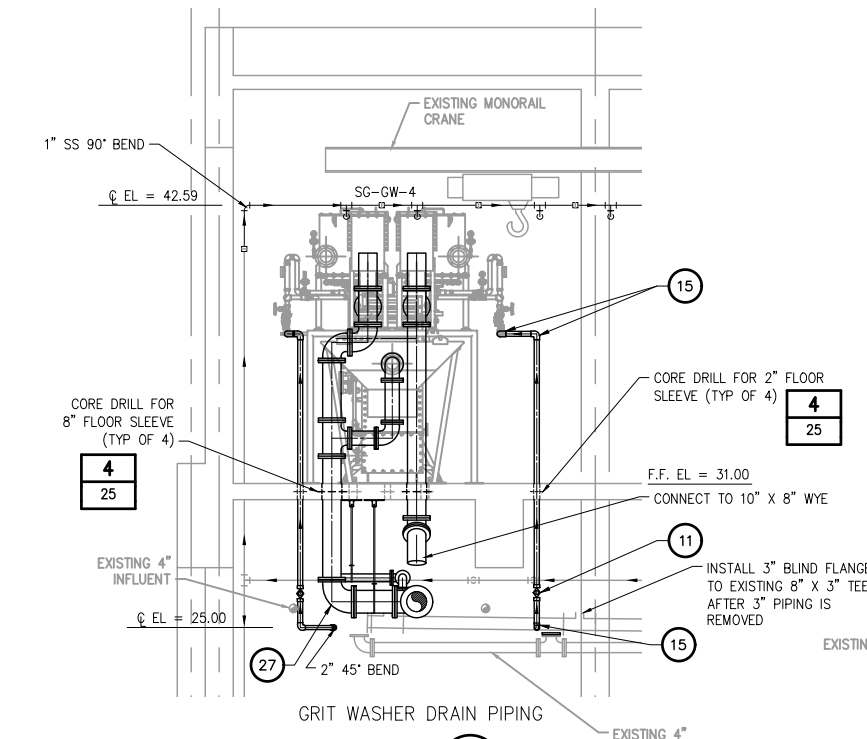
User: szagurski Drawing Name: H:\41077-010 city of tampa - hfc awtp grit washer bldg 1 replacement\Drawings\Mechanical\7 Grit Washer Replacement Sections.dwg Layout - Oct 17, 2018 - 1:04pm



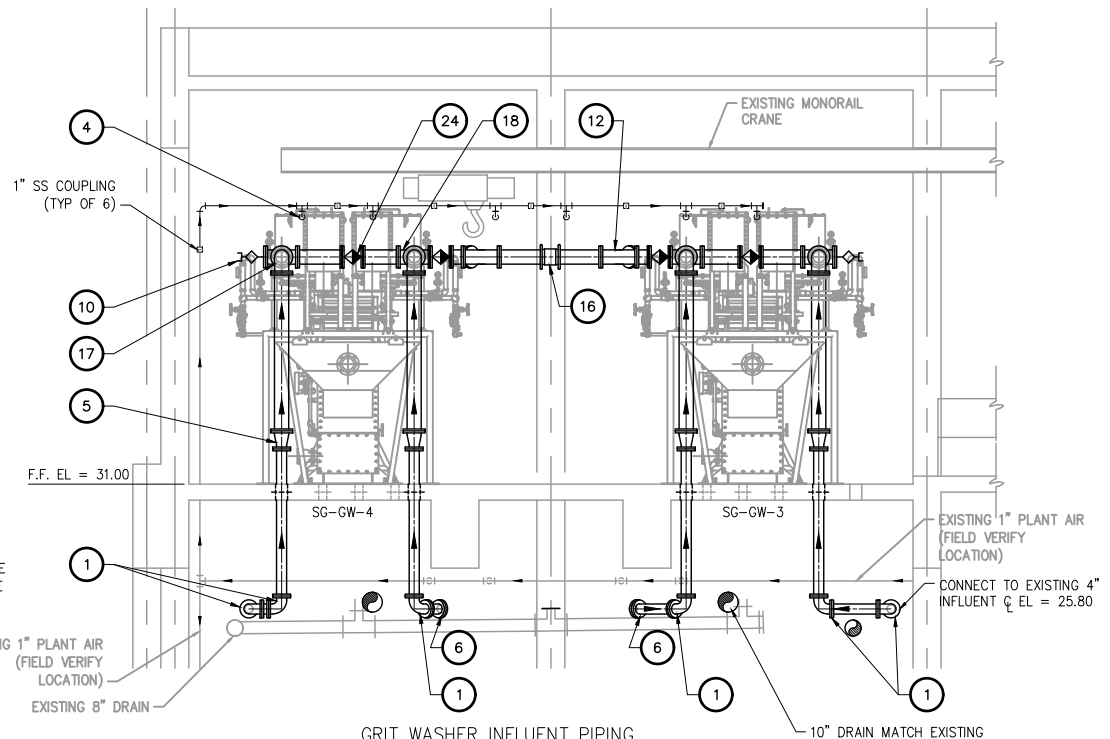
SECTION A
1/8"=1'-0" 22



SECTION B
1/8"=1'-0" 22



SECTION C
1/8"=1'-0" 22,23



SECTION D
1/8"=1'-0" 22,23

NUMBER	DESCRIPTION
1	4" 90° BEND (TYP OF 6)
2	4" FLOW METER (TYP OF 4)
3	4" X 2" TEE
4	3/8" SS 90° BEND (TYP OF 26)
5	6" X 4" REDUCER
6	4" 45° BEND
7	4" FLANGE COUPLING ADAPTER (TYP OF 4)
8	8" 90° BEND
9	12" X 10" TEE
10	2" QUICK CONNECT FLUSHING CONNECTION (TYP OF 2)
11	2" BALL VALVE (TYP OF 4)
12	1" X 3/8" TEE (TYP OF 6)
13	10" X 8" WYE (TYP OF 2)
14	2" X 1-1/2" REDUCER (TYP OF 4)

NUMBER	DESCRIPTION
15	2" 90° BEND (TYP OF 13)
16	6" STANDARD ROMAC ALPHA RESTRAINED COUPLING OR EQUAL
17	6" 90° BEND
18	6" X 6" CROSS
19	8" X 8" TEE (TYP OF 4)
20	8" 45° BEND (TYP OF 4)
21	3" 90° BEND
22	6" X 3" REDUCER
23	8" X 6" TEE
24	6" PNEUMATIC PLUG VALVE
25	1" SADDLE TAP W/ 1" BALL VALVE
26	4" PNEUMATIC PINCH VALVE
27	10" X 8" REDUCING ELBOW (TYP OF 2)
28	10" 90° BEND (TYP OF 2)



No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

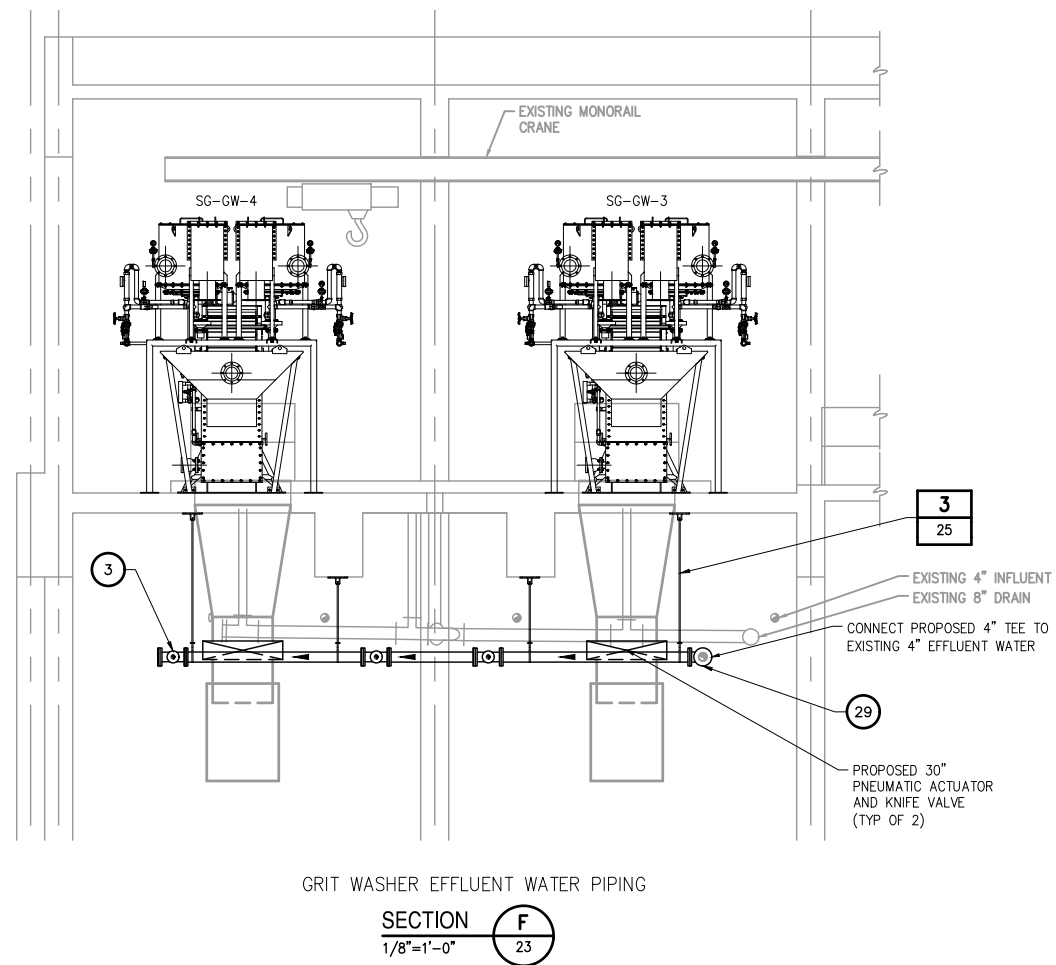
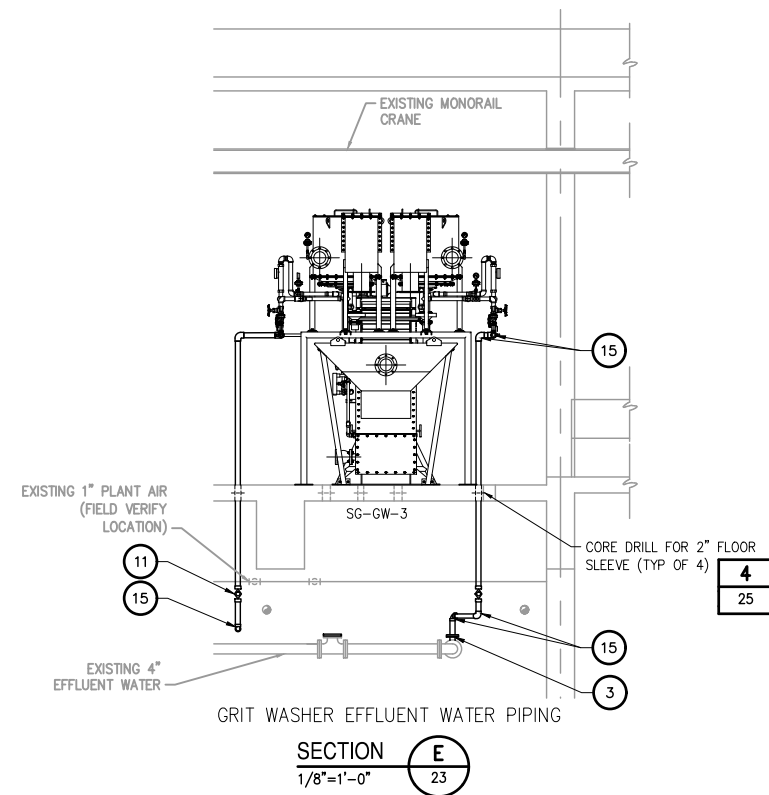
DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

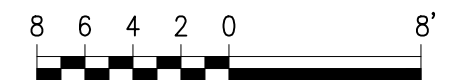
HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING I GRIT WASHER
REPLACEMENT SECTIONS

W.O. 14
SHEET
23
OF 32

JACOB L. PORTER, PE
NO. 65453



NUMBER	DESCRIPTION
3	4" x 2" TEE
11	2" BALL VALVE
15	2" 90° BEND
29	4" x 4" TEE



1/8"=1'-0"

JACOB L. PORTER, PE
NO. 65453

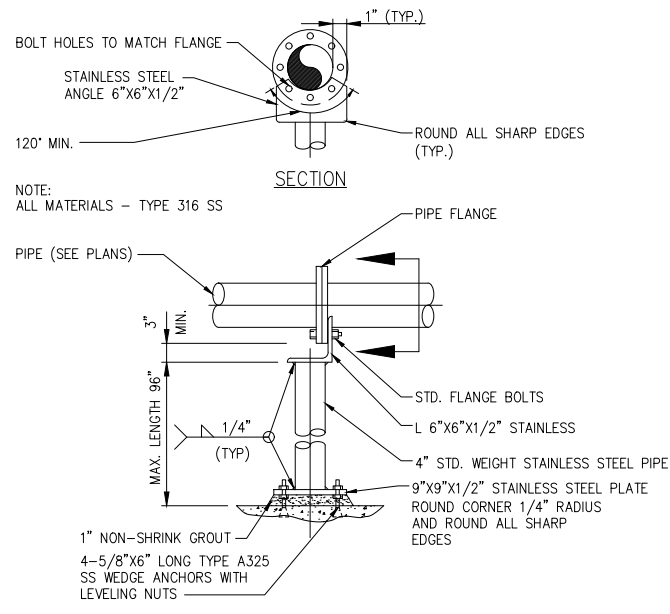
No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING I GRIT WASHER
REPLACEMENT SECTIONS

W.O. 14
SHEET
24
OF 32

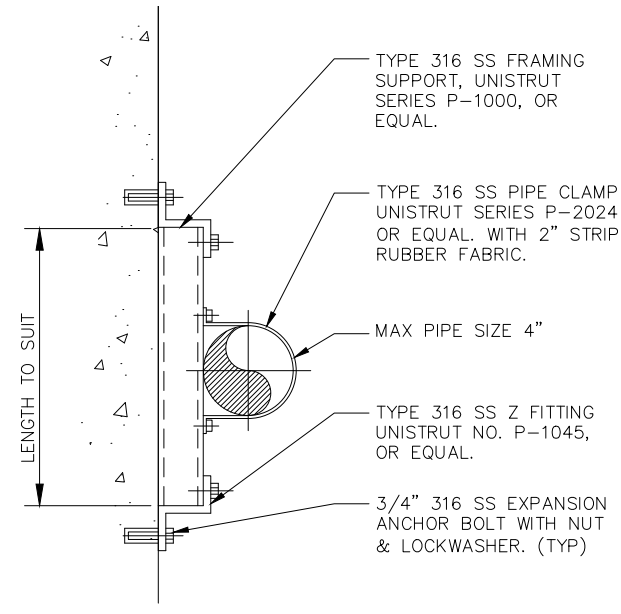


NOTE:
ALL MATERIALS - TYPE 316 SS

NOTES:
1. PIPE SUPPORT SUITABLE FOR FLANGED DIP PIPE SIZES 3" UP TO 24".

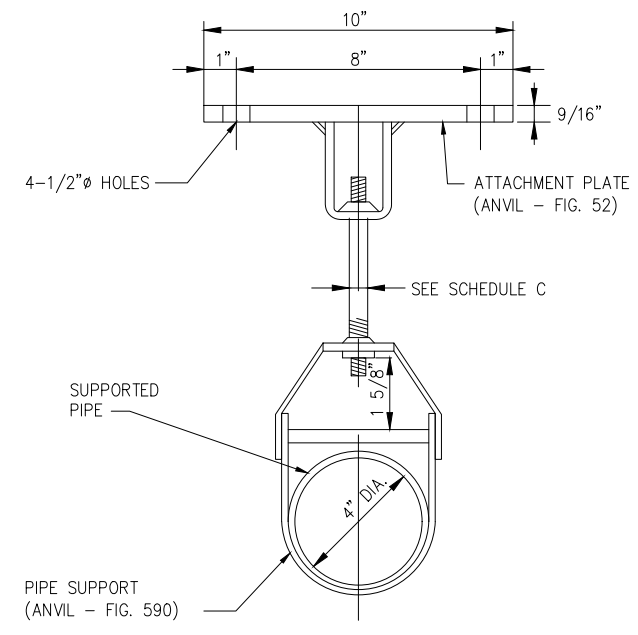
FLOOR MOUNTED FABRICATED PIPE SUPPORT

DETAIL	1
N.T.S.	STD



WALL MOUNTED FABRICATED PIPE SUPPORT

DETAIL	2
N.T.S.	STD

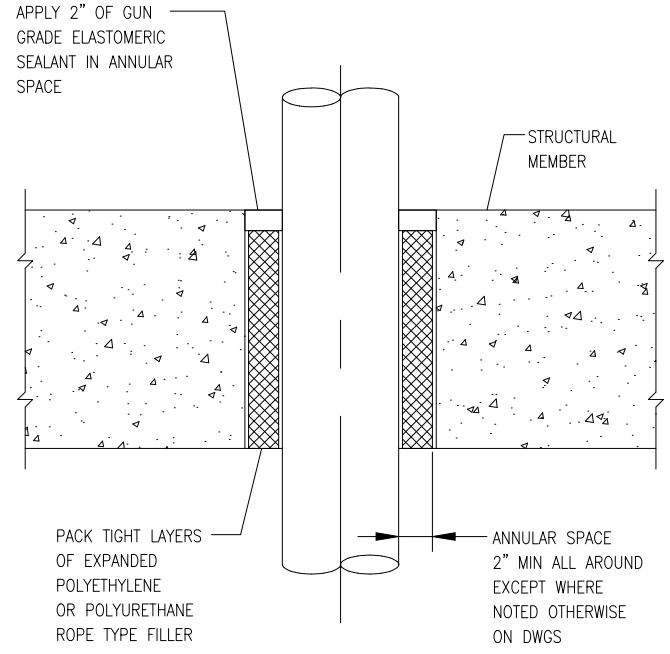


CEILING MOUNTED PIPE SUPPORT

DETAIL	3
N.T.S.	STD

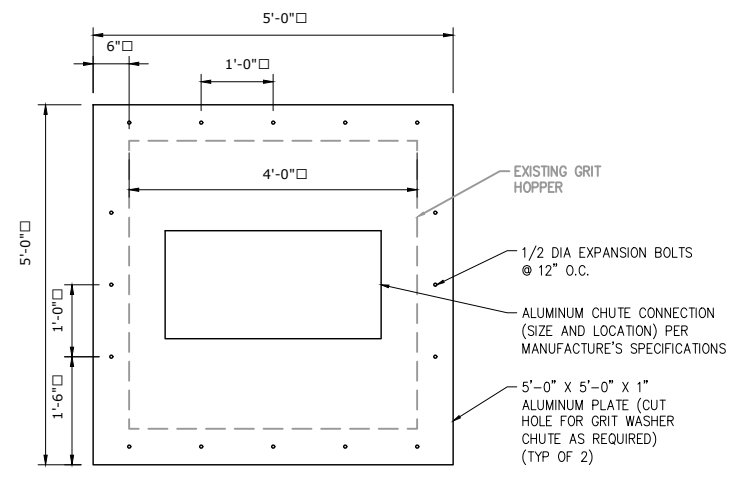
- NOTES:
1. ALL TUBULAR MATERIAL TO BE TYPE 316 STAINLESS STEEL.
 2. PLATES AND GUSSETS TO BE TYPE 316 STAINLESS STEEL.
 3. BACK PLATES SHALL BE DESIGNED BY THE CONTRACTOR ACCORDING TO WALL TYPES AND THE WEIGHTS INVOLVED. BACK PLATE TO BE SUPPLIED BY SUPPORT MANUFACTURER

SCHEDULE C							
SUPPORT RODS AND BRACKET SPACING (FOR STANDARD WEIGHT PIPE)							
PIPE SIZE (INCHES)	BACK PLATE (INCHES)	MINIMUM ROD ? (INCHES)		MAX SPAN IN FEET (SEE NOTE 8)			
		PROCESS PIPING	STEEL AIR PIPING	COPPER	PLASTIC	STEEL	DIP (SEE NOTE 7)
UP TO 1	SEE NOTE 3	3/8	3/8	5	5	6	-
1 1/4-2	*	3/8	3/8	8	5	10	-
2 1/2-3 1/2	*	3/8	3/8	8	5	12	6
4-5	*	1/2	3/8	-	5	14	8
6	*	5/8	3/8	-	5	15	9
8-12	*	3/4	1/2	-	5	15	9
14-16	*	7/8	1/2	-	5	15	9
18	*	1	1/2	-	5	18	10
20-24	*	1 1/4	5/8	-	5	18	10

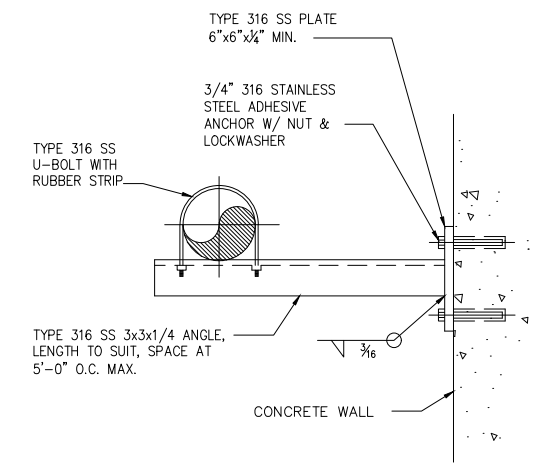


SLAB PENETRATION
SCALE: NONE

DETAIL	4
N.T.S.	STD



DETAIL	5
3/8"=1'-0"	STD

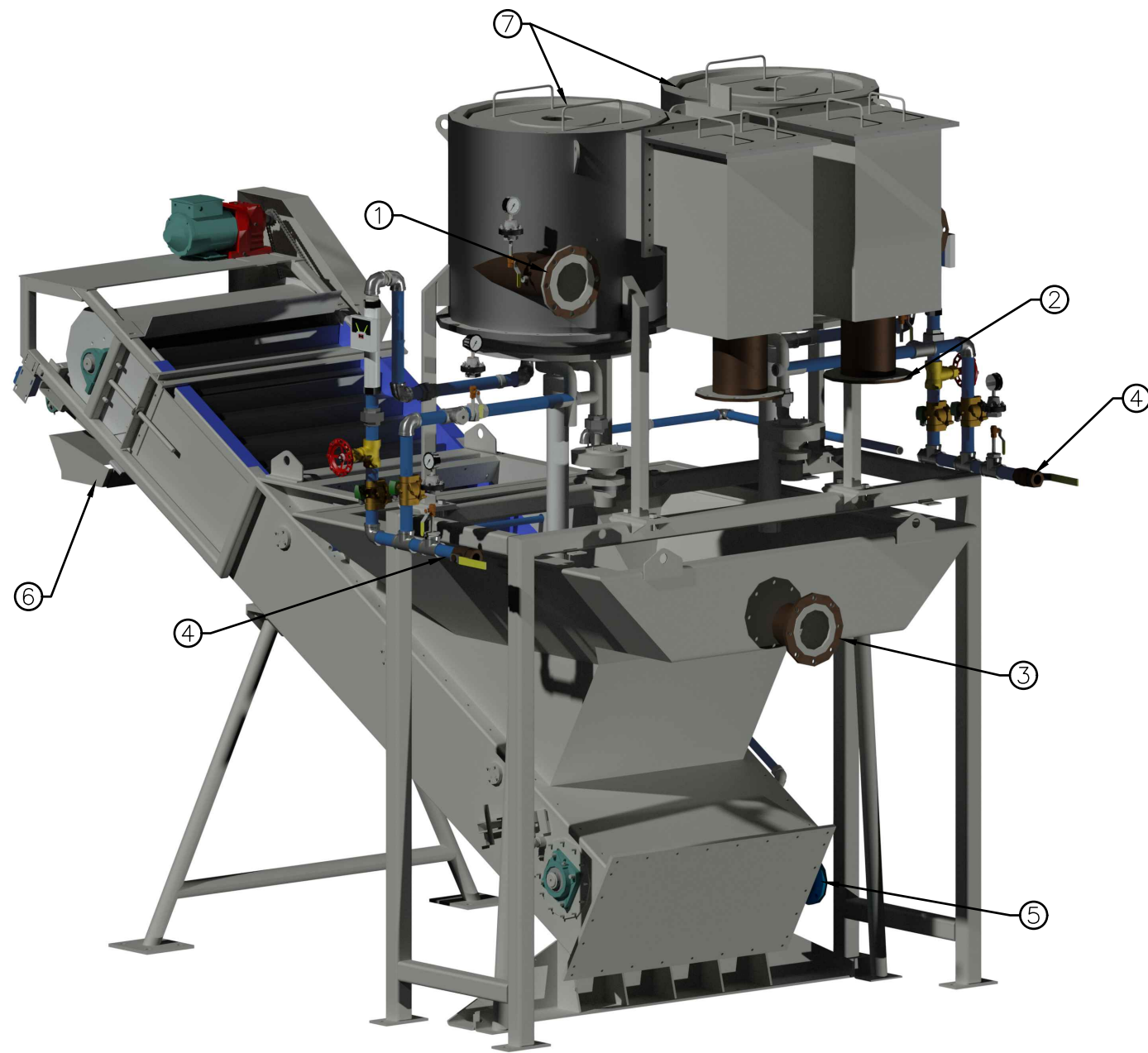


WALL-MOUNTED FABRICATED PIPE SUPPORT

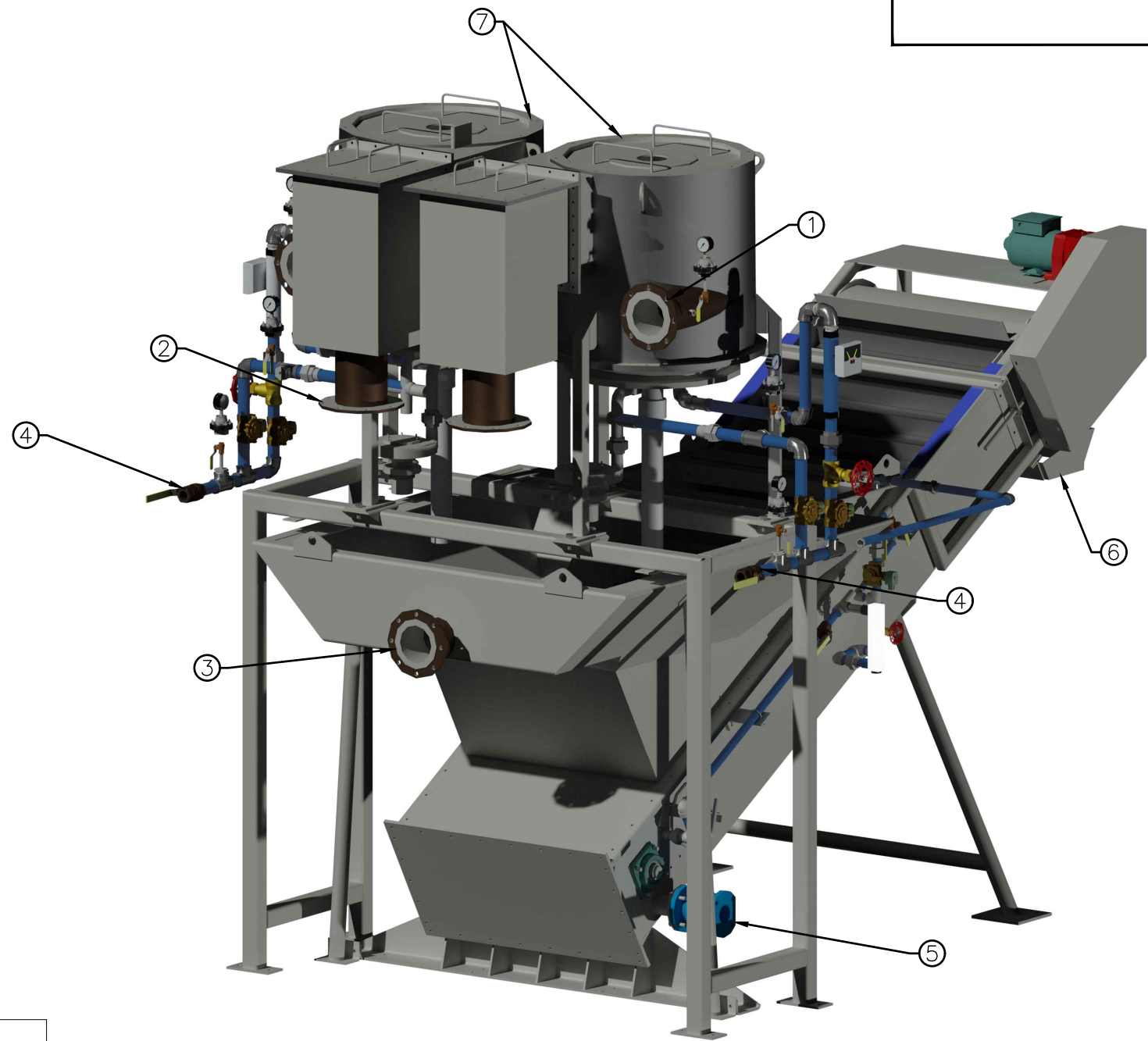
DETAIL	6
N.T.S.	STD



JACOB L. PORTER, PE NO. 65453	No.	DATE	REVISIONS	DES: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I MECHANICAL DETAILS	W.O. 14
	3			DRN: SMZ			SHEET
	2			CKD: DBS			25
	1	10/2018	BID SET	DATE: OCT 2018			OF 32



GRIT SNAIL ISOMETRIC 1
N.T.S.



GRIT SNAIL ISOMETRIC 2
N.T.S.

(*) CONTRACTOR TO PROVIDE CHUTE CONSTRUCTED OF 1/4 INCH THICK ALUMINUM APPROXIMATELY 3 FEET LONG BY 10 INCHES WIDE AND 4 FEET 10 INCHES TALL. ACTUAL DIMENSIONS SHALL BE FIELD DETERMINED PRIOR TO FABRICATION. THE CHUTES SHALL HAVE A FLEXIBLE CONNECTION TO THE GRIT SNAIL DISCHARGE CHUTE AND A WELDED CONNECTION TO THE ALUMINUM COVER. PROVIDE A GASKETED, HINGED, AND LOCKABLE 24 INCH SQUARE INSPECTION HATCH ON THE EAST FACE OF EACH CHUTE. (TYP OF 2)

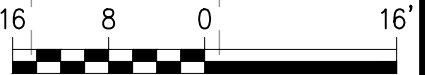
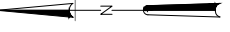
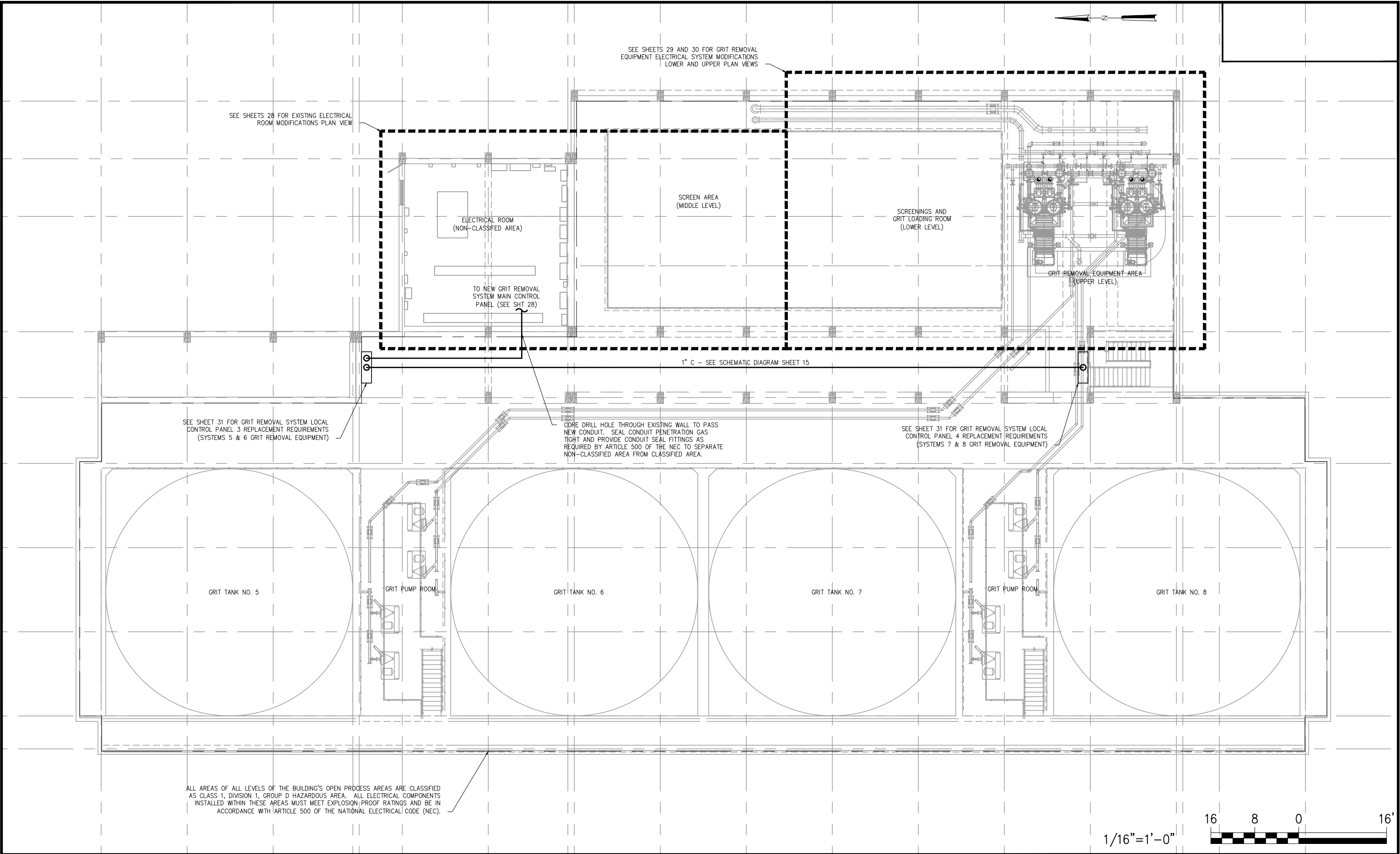
NUMB=	D=SCRIPTION
①	6" IN ENT CONNECTION
②	8" ENT CONNECTION
③	6" OVER CONNECTION
④	1-1/2" SUPPLY W-T-R CONNECTION
⑤	3" DR-IN CONNECTION
⑥	DISCH-NG- CHUTE (*)
⑦	32" DI-. SLURRY CUP

GRIT WASHING EQUIPMENT INFORMATION

MANUFACTURER: HYDRO INTERNATIONAL
 GRIT WASHING/CLASSIFICATION UNITS: SLURRY CUP
 MODEL: 32DSC
 DESIGN FLOW: (RANGE) 330 CPM (280-400 GPM)
 DEWATERING UNITS: GRIT SNAIL
 MODEL: GS3672
 CAPACITY: 6 CY/HR

JACOB L. PORTER, P.E. NO. 65453	No.	D-T=	REVISIONS	D-S: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I GRIT WASHER ISOMETRIC	W.O. 14
	3			DRN: SMZ			H=ET
	2			CKD: DBS			
	1	10/2018	BID SET	DAT=: OCT			32

User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\Electrical\11 OVERALL WEST HEADWORKS BUILDING - ELECTRICAL PLAN.dwg
Layout- Oct 17, 2018 - 1:18pm CTB - HS-HWS-40SCREEN.CTB



DANIEL B. SCHMIDT, PE
NO. 20433

No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

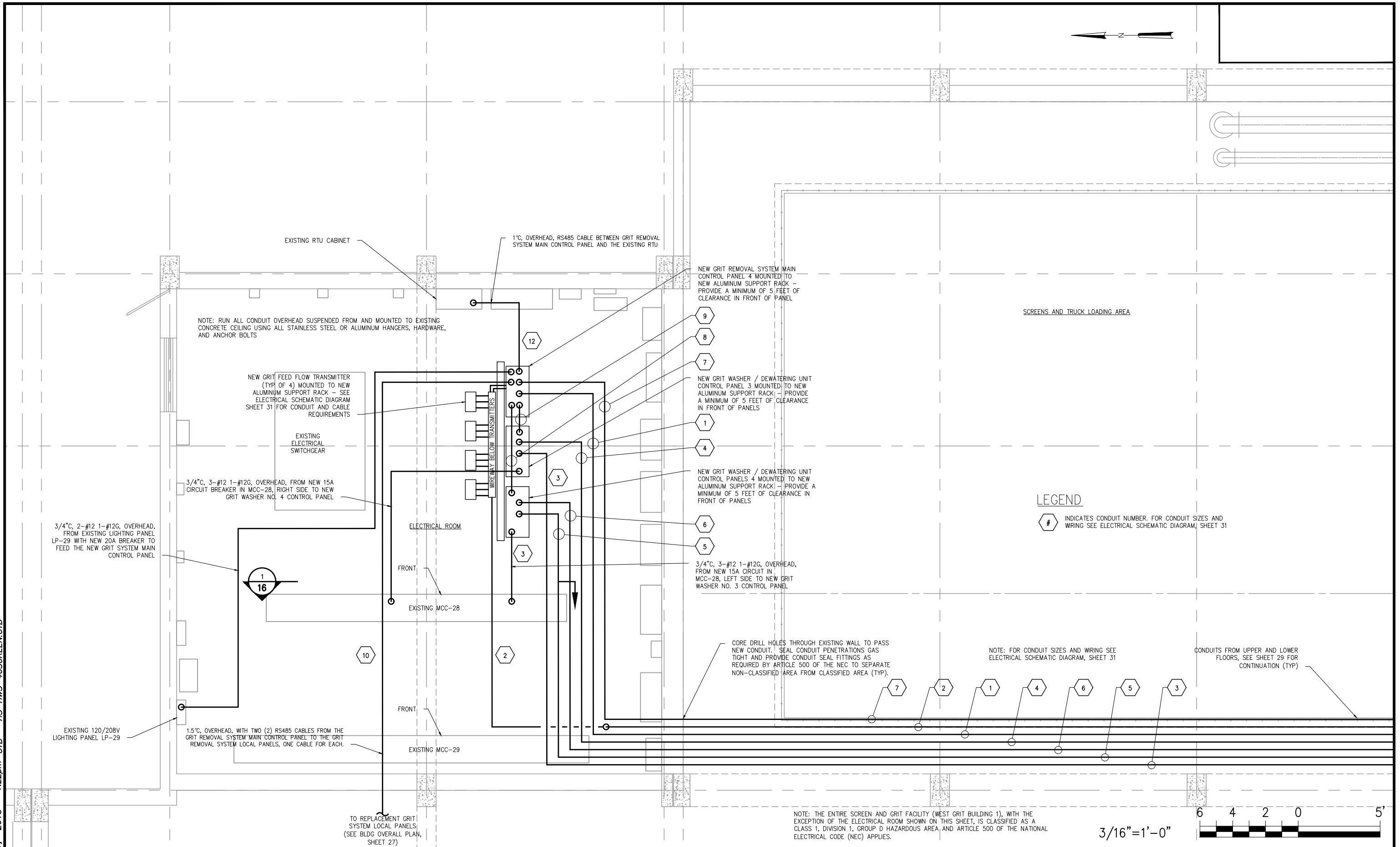
DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT
BUILDING I OVERALL WEST HEADWORKS
BUILDING - ELECTRICAL PLAN

W.O. 14
SHEET
27
OF 32

User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\Electrical\12 ELECTRICAL ROOM PLAN.dwg Layout- Oct 17, 2018 - 1:22pm CTB - HS-HWS-40SGREEN.CTB



No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

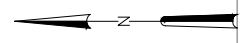
CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT
BUILDING I ELECTRICAL ROOM PLAN

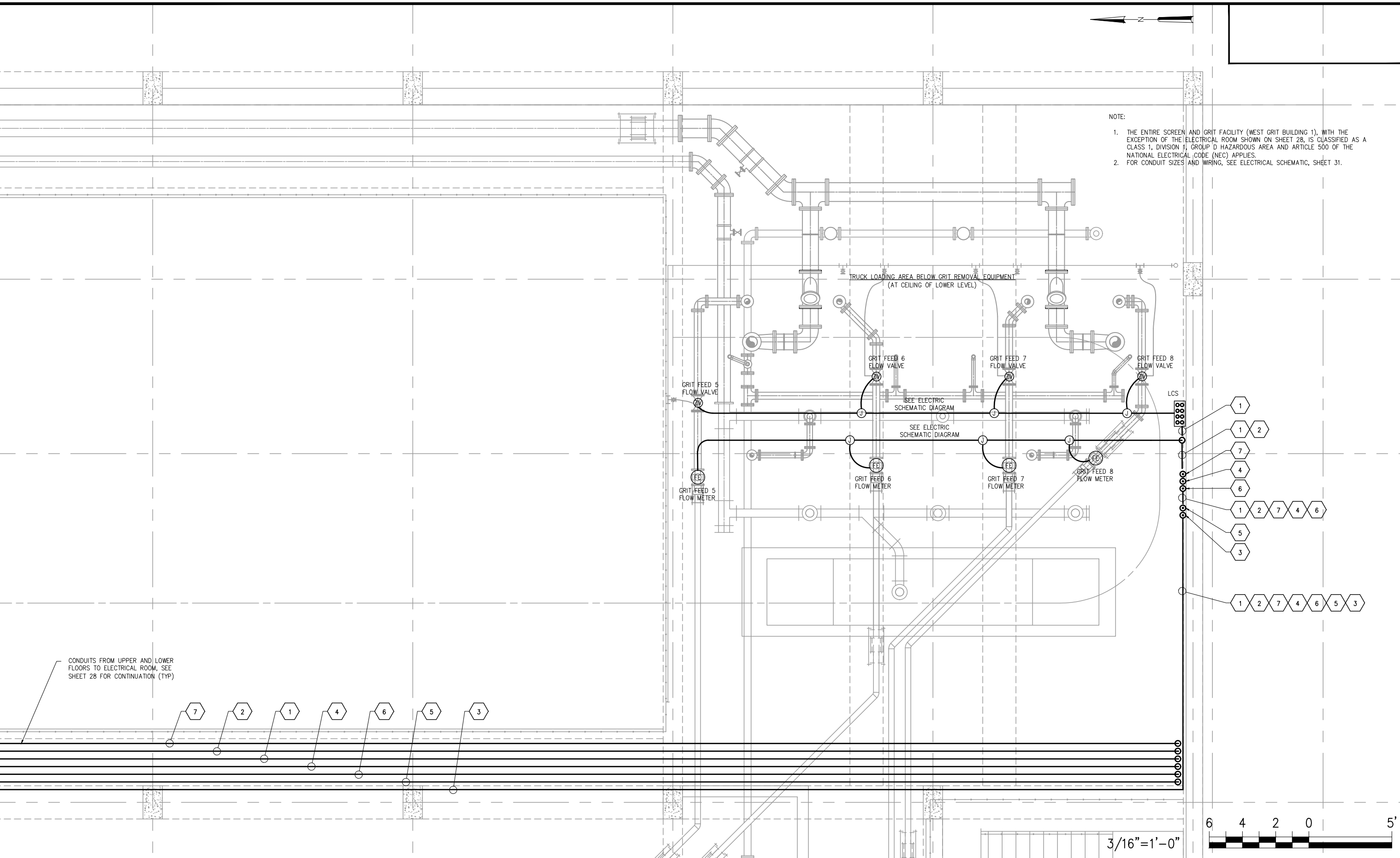
W.O. 14
SHEET
28
OF 32

DANIEL B. SCHMIDT, PE
NO. 20433

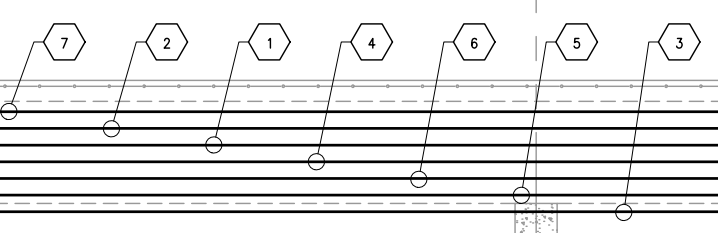
User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\Electrical\13 GRIT UNIT ELECTRICAL LOWER PLAN.dwg
Layout- Oct 17, 2018 - 1:29pm CTB - HS-HWS-40SCREEN.CTB



- NOTE:
1. THE ENTIRE SCREEN AND GRIT FACILITY (WEST GRIT BUILDING 1), WITH THE EXCEPTION OF THE ELECTRICAL ROOM SHOWN ON SHEET 28, IS CLASSIFIED AS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS AREA AND ARTICLE 500 OF THE NATIONAL ELECTRICAL CODE (NEC) APPLIES.
 2. FOR CONDUIT SIZES AND WIRING, SEE ELECTRICAL SCHEMATIC, SHEET 31.



CONDUITS FROM UPPER AND LOWER FLOORS TO ELECTRICAL ROOM, SEE SHEET 28 FOR CONTINUATION (TYP)



No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

DES: JLP
DRN: SMZ
CKD: DBS
DATE: OCT 2018

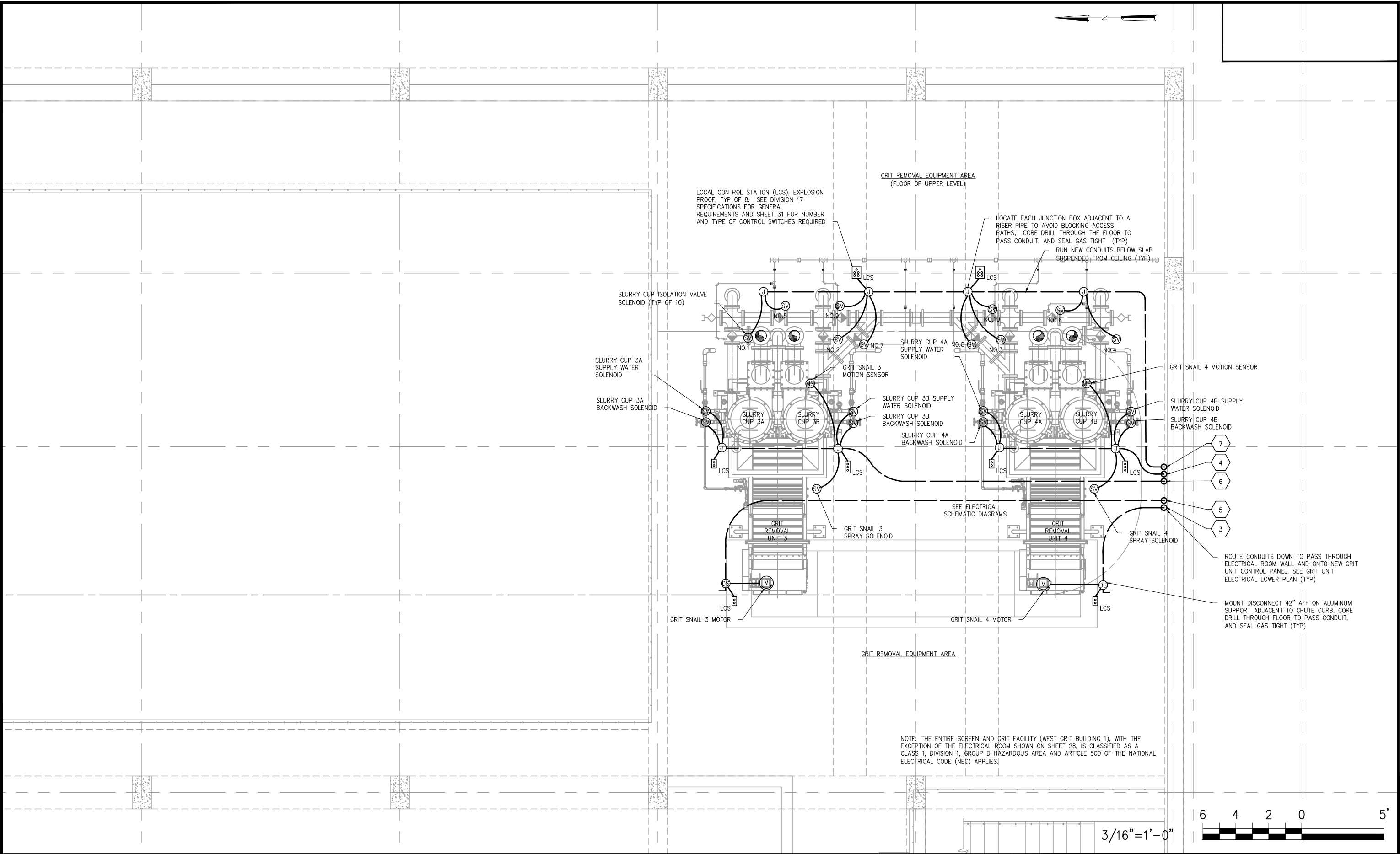
CITY of TAMPA
WASTEWATER DEPARTMENT
HOWARD F CURREN AWTP

**HOWARD F. CURREN AWTP SCREEN
AND GRIT WASHER REPLACEMENT**
BUILDING I GRIT UNIT ELECTRICAL LOWER PLAN

W.O. 14
SHEET
29
OF 32

DANIEL B. SCHMIDT, PE
NO. 20433

User: szogurski Drawing Name: H:\41077-010 city of tampa - hrc awtp grit washer bldg 1 replacement\Drawings\Electrical\14 GRIT UNIT ELECTRICAL UPPER PLAN.dwg
 Layout: Oct 17, 2018 - 1:30pm CTB - HS-HWS-40SCREEN.CTB



DANIEL B. SCHMIDT, PE
NO. 20433

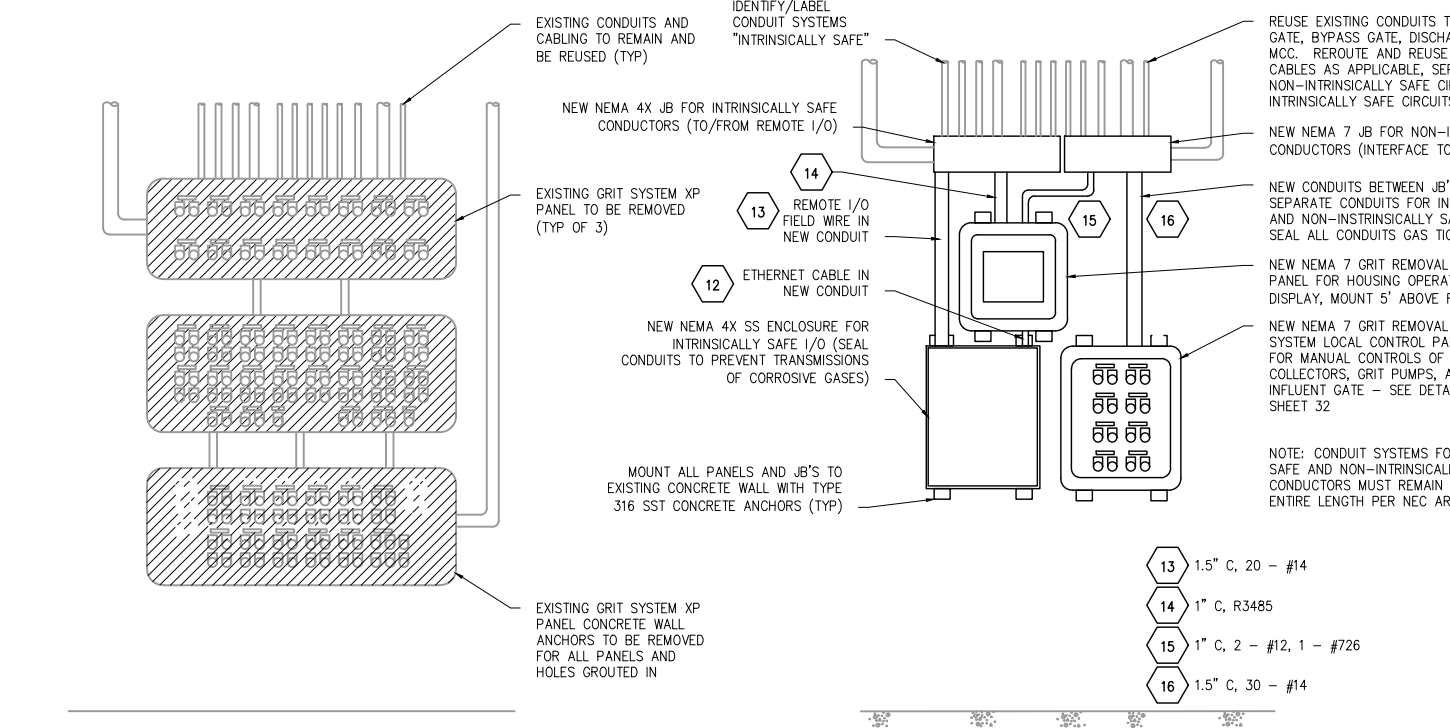
No.	DATE	REVISIONS
3		
2		
1	10/2018	BID SET

DES: JLP
 DRN: SMZ
 CKD: DBS
 DATE: OCT 2018

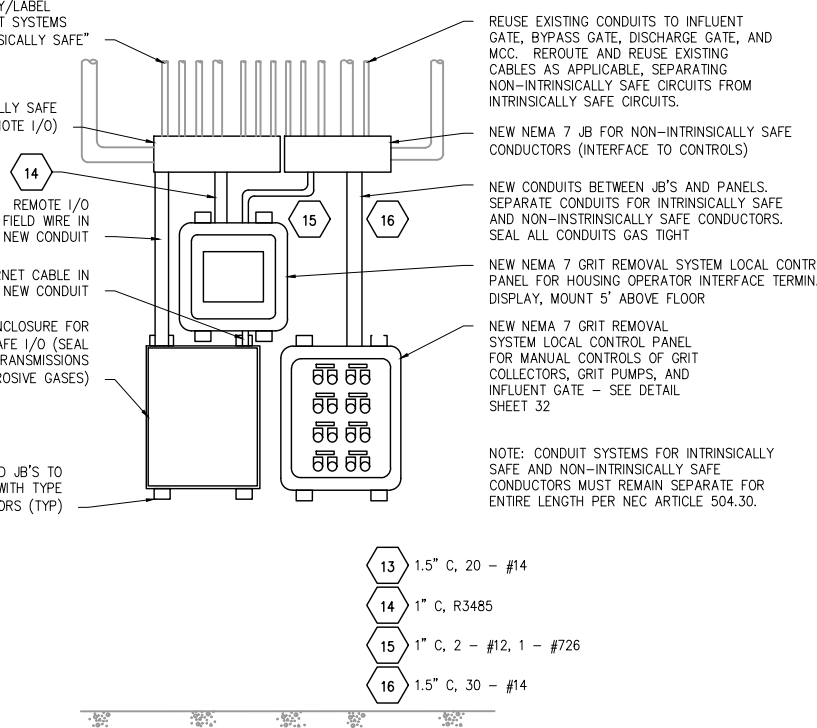
CITY of TAMPA
 WASTEWATER DEPARTMENT
 HOWARD F CURREN AWTP

HOWARD F. CURREN AWTP SCREEN
 AND GRIT WASHER REPLACEMENT
 BUILDING I GRIT UNIT ELECTRICAL UPPER PLAN

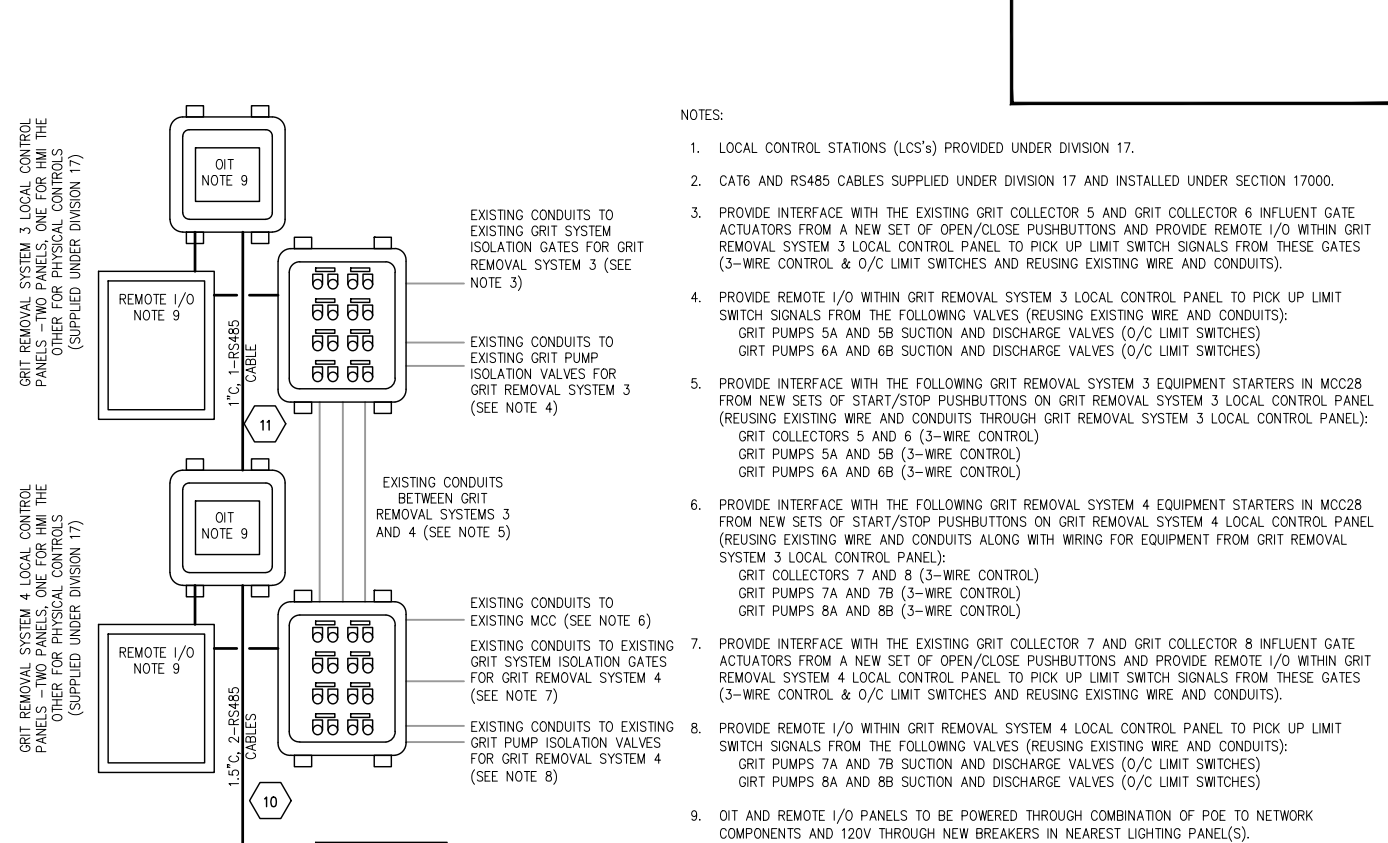
W.O. 14
 SHEET
 30
 OF 32



EXISTING GRIT SYSTEM XP LOCAL CONTROL PANEL ELEVATION (TYP OF 2)

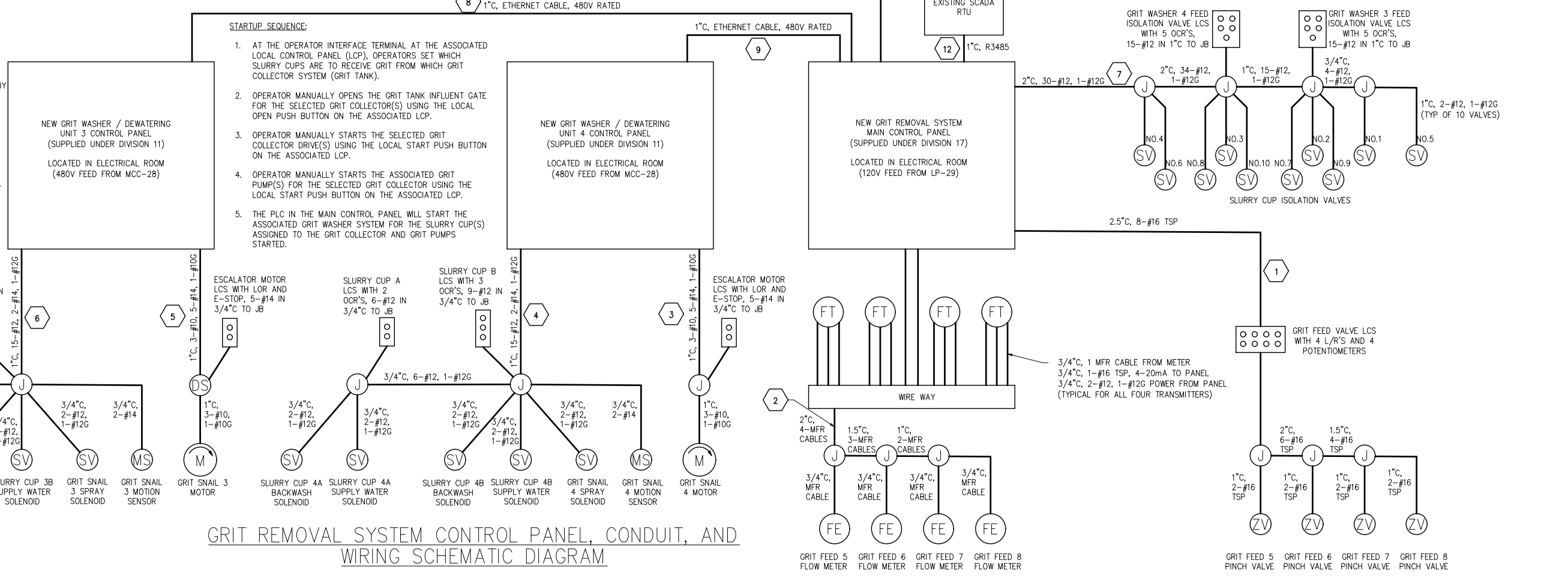


REPLACEMENT GRIT SYSTEM XP LOCAL CONTROL PANEL ELEVATION (TYP OF 2)



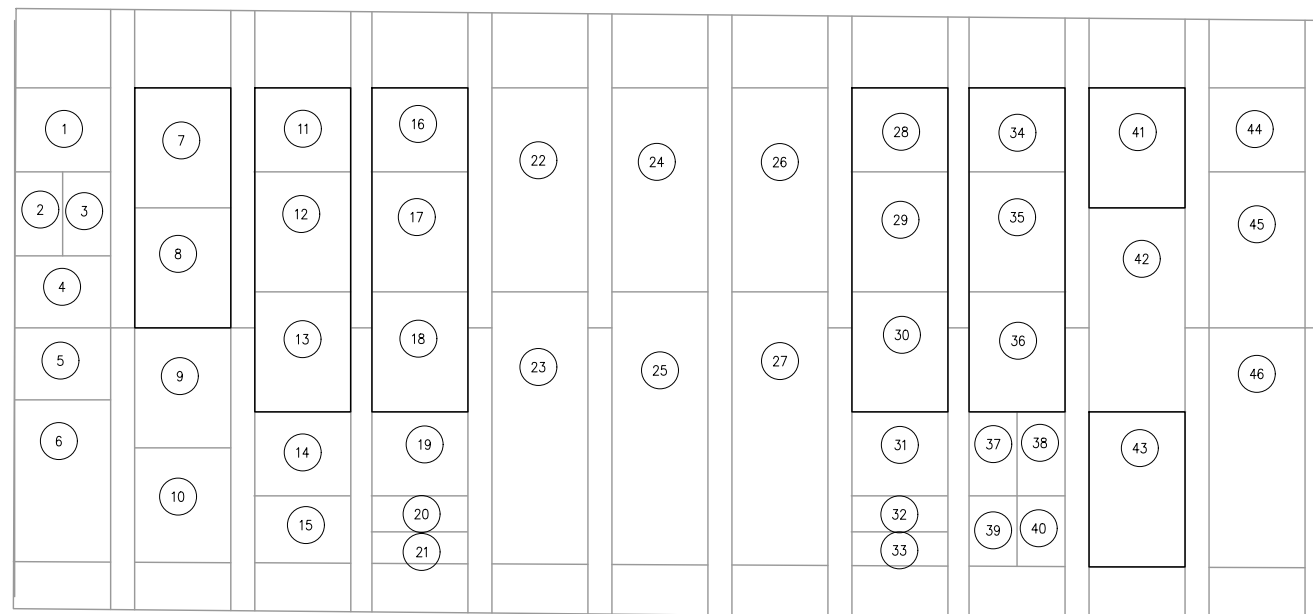
LOCAL CONTROL STATION (LCS) NOTES:

- EACH OF THE 10 SLURRY CUP INFLUENT ISOLATION VALVES MAY BE MANUALLY OPENED BY PLACING THE ASSOCIATED OCR IN OPEN. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
- EACH OF THE 5 SLURRY CUP AND GRIT ESCALATOR PLUG VALVES FOR EACH GRIT UNIT MAY BE MANUALLY OPENED BY PLACING THE ASSOCIATED OCR IN OPEN. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
- EACH OF THE 4 GRIT FEED LINE PINCH VALVES MAY BE MANUALLY OPENED USING THE ASSOCIATED POTENTIOMETER AND PLACING THE L/R SWITCH IN LOCAL. HOWEVER, ALL VALVES ARE TO BE NORMALLY LEFT IN REMOTE.
- EACH OF THE 2 GRIT ESCALATORS MAY BE MANUALLY OPERATED PLACING THE L/R SWITCH IN LOCAL (SPEED WILL BE THAT SET AT THE GRIT WASHER CONTROL PANEL). HOWEVER, THE ESCALATORS ARE TO BE NORMALLY LEFT IN REMOTE.



GRIT REMOVAL SYSTEM CONTROL PANEL, CONDUIT, AND WIRING SCHEMATIC DIAGRAM

DANIEL B. SCHMIDT, PE NO. 20433	No.	DATE	REVISIONS	DES: JLP	CITY of TAMPA WASTEWATER DEPARTMENT HOWARD F CURREN AWTP	HOWARD F. CURREN AWTP SCREEN AND GRIT WASHER REPLACEMENT BUILDING I ELECTRICAL SCHEMATIC DIAGRAMS	W.O. 14
	3			DRN: SMZ			SHEET
	2			CKD: DBS			31
	1	10/2018	BID SET	DATE: OCT 2018			OF 32



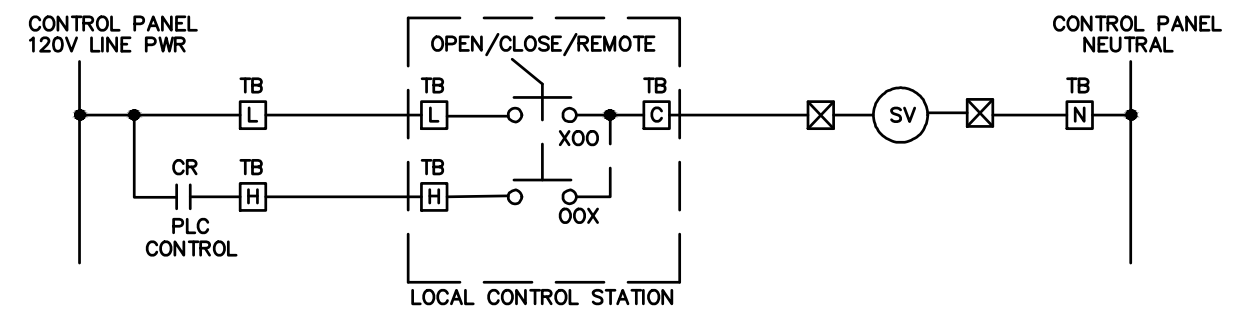
EXISTING MCC-28 FRONT ELEVATION 1/12

MCC-28 MODIFICATIONS

ITEM	EXISTING LOAD	MODIFICATIONS	ITEM	EXISTING LOAD	MODIFICATIONS
1.	MONORAIL		24.	TIE BREAKER	
2.	SUMP PUMP 4		25.	SPACE	
3.	SUMP PUMP 5		26.	MAIN BREAKER SIDE B	
4.	SLIDE GATES 9, 10, & 11		27.	SPACE	
5.	COMPACTOR 1		28.	GRIT COLLECTOR 7	SEE NOTE 1
6.	SPACE		29.	GRIT PUMP 7A	SEE NOTE 1
7.	GRIT WASHER 4 (NOTE 2)	REUSE FOR NEW GRIT ESCALATOR 3	30.	GRIT PUMP 7B	SEE NOTE 1
8.	GRIT WASHER 6	CONVERT TO A SPARE	31.	SCREEN 4	
9.	SPARE BREAKER		32.	SPACE	
10.	SPACE		33.	SPACE	
11.	GRIT COLLECTOR 5	SEE NOTE 1	34.	GRIT COLLECTOR 8	SEE NOTE 1
12.	GRIT PUMP 5A	SEE NOTE 1	35.	GRIT PUMP 8A	SEE NOTE 1
13.	GRIT PUMP 5B	SEE NOTE 1	36.	GRIT PUMP 8B	SEE NOTE 1
14.	SCREEN 3		37.	SUMP PUMP 6	
15.	SPACE		38.	SLIDE GATE 2	
16.	GRIT COLLECTOR 6	SEE NOTE 1	39.	SLIDE GATES 12, 14, & 15	
17.	GRIT PUMP 6A	SEE NOTE 1	40.	SLIDE GATES 13, 16, & 17	
18.	GRIT PUMP 6B	SEE NOTE 1	41.	GRIT WASHER 5 (NOTE 2)	REUSE FOR NEW GRIT ESCALATOR 4
19.	SCREEN 5		42.	LEL GAS DETECTION SYSTEM	
20.	SPACE		43.	GRIT CONVEYOR	CONVERT TO A SPARE
21.	SPACE		44.	COMPACTOR 2	
22.	MAIN BREAKER SIDE A		45.	SPACE	
23.	SPACE		46.	SPARE BREAKER	

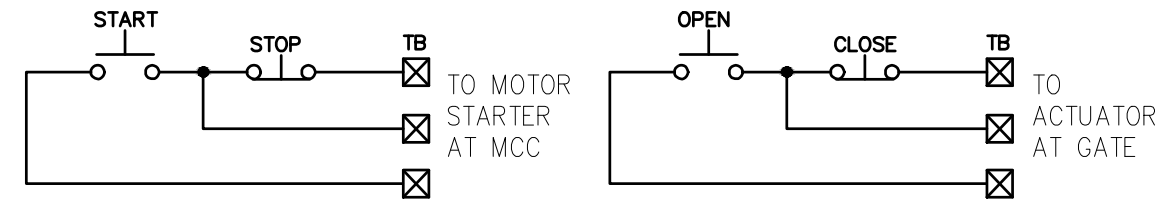
NOTES:

- REWIRE THE STARTER RUN CONTACTS TO SEND MOTOR RUNNING SIGNAL AS AN INPUT TO THE NEW GRIT REMOVAL SYSTEM MAIN CONTROL PANEL PLC. STARTER START AND STOP COMMANDS TO BE FROM NEW START/STOP PUSHBUTTONS IN THE NEW GRIT REMOVAL SYSTEM LOCAL CONTROL PANELS IN PLACE OF EXISTING DEVICES AT THE REPLACED PANELS.
- REPLACE EXISTING MCP WITHIN THIS CUBICLE WITH A NEW CIRCUIT BREAKER COMPATIBLE WITH THE EXISTING MCC EQUIPMENT AND ADEQUATELY SIZED TO FEED THE GRIT WASHER CONTROL PANEL AS SUPPLIED BY THE MANUFACTURER.

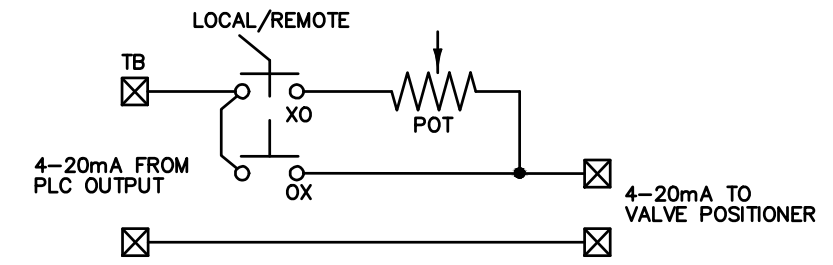


TYPICAL OCR WIRING FOR SOLENOID VALVE

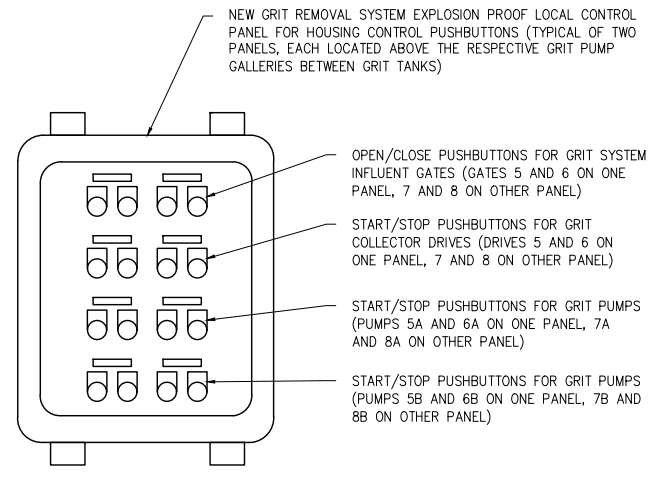
NOTE: CONTROL VOLTAGE AT STARTER OR ACTUATOR



TYPICAL S/S AND O/C PUSHBUTTON WIRING FOR EXISTING EQUIPMENT



MODULATING PINCH VALVE WIRING



GRIT REMOVAL SYSTEM LOCAL CONTROL PANEL LAYOUT FOR CONTROL PUSHBUTTONS

MCC-28 GRIT WASHER FEEDER CALCULATIONS			
GRIT WASHER LOAD BREAKDOWN	LOAD CURRENT (AMPS) FOR WIRE SIZE	CURRENT FOR CB SIZE	COMMENT
GRIT WASHER NO. 3 CONTROL PANEL			
ESCALATOR (1/2 HP)	0.6	1.5	250% FLA
CONTROLS	3.2	3.2	700VA CONTROLS
SOLENOID VALVES	4.5	4.5	5, 20W VALVES
TOTAL AMPS	8.3	9.2	
WIRE SIZE	3-#12, 1-#12G		
BREAKER SIZE	15		
GRIT WASHER NO. 4 CONTROL PANEL			
ESCALATOR (1/2 HP)	0.6	1.5	250% FLA
CONTROLS	3.2	3.2	700VA CONTROLS
SOLENOID VALVES	4.5	4.5	5, 20W VALVES
TOTAL AMPS	8.3	9.2	
WIRE SIZE	3-#12, 1-#12G		
BREAKER SIZE	15		

NET MCC-28 LOAD (LEFT SIDE) CHANGE:

ELIMINATE TWO, 2HP GRIT WASHERS
ADD ONE, 1/2 HP GRIT WASHER
-3.8 AMPS, LEFT SIDE

CALCULATED VOLTAGE DROP FOR 50 FEET OF CONDUCTOR = 0.59%

NET MCC-28 LOAD (RIGHT SIDE) CHANGE:

ELIMINATE TWO, 2HP MOTORS (GRIT WASHER, GRIT CONVEYOR)
ADD ONE, 1/2 HP GRIT WASHER
-3.8 AMPS, LEFT SIDE

CALCULATED VOLTAGE DROP FOR 50 FEET OF CONDUCTOR = 0.59%