The Enclosed Document Is Provided For Your Convenience.

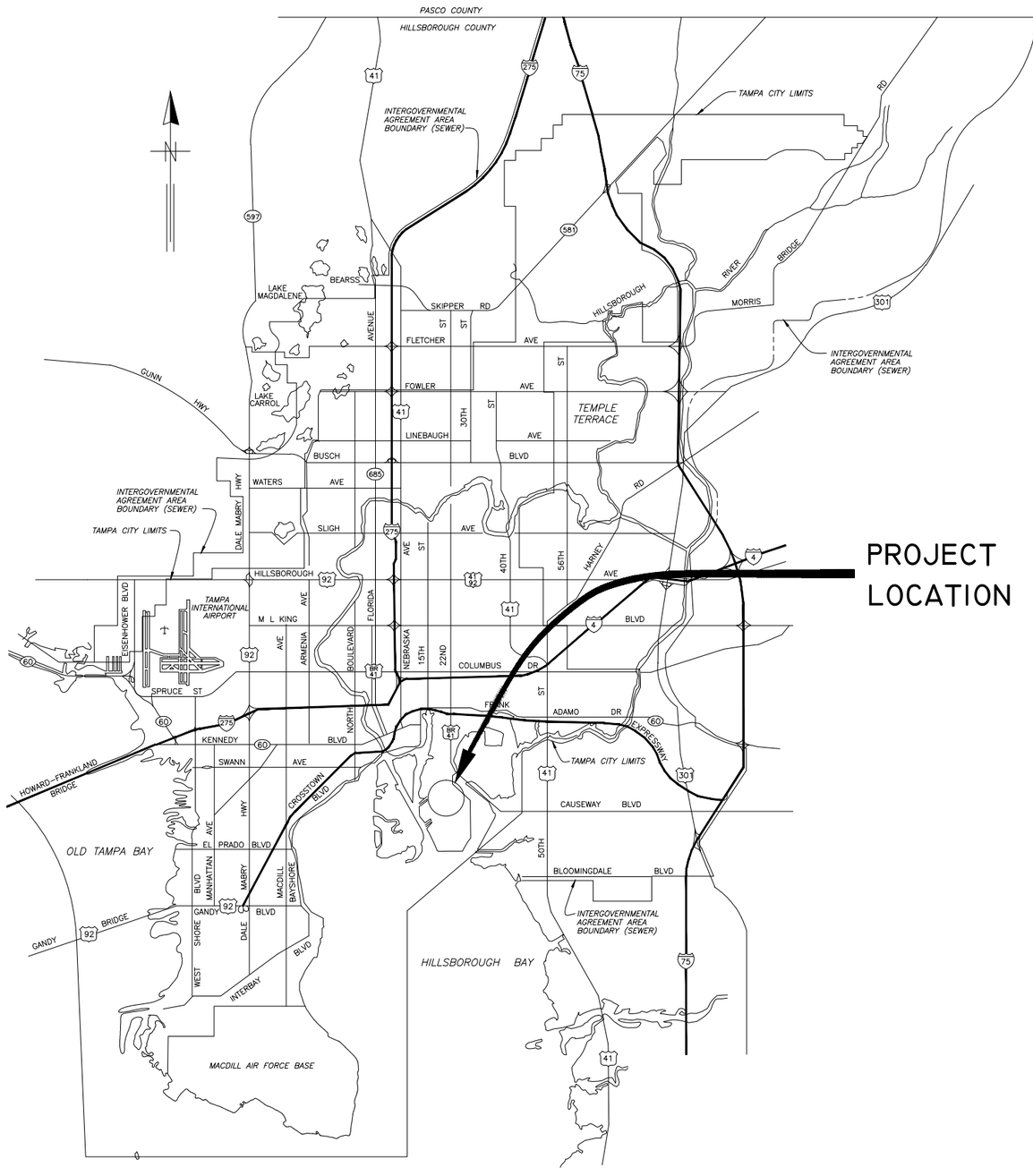
Please Email ALL Questions:

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

LOCATION MAP



PROJECT LOCATION

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT AIR COMPRESSOR REPLACEMENTS

CONTRACT No.: I7-C-00040

JACINTO CARLOS FERRAS P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: J.H./R.K. DRN: BB CKD: DATE:	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	COVER SHEET	SHEET 1
		3						
		2						
		1						

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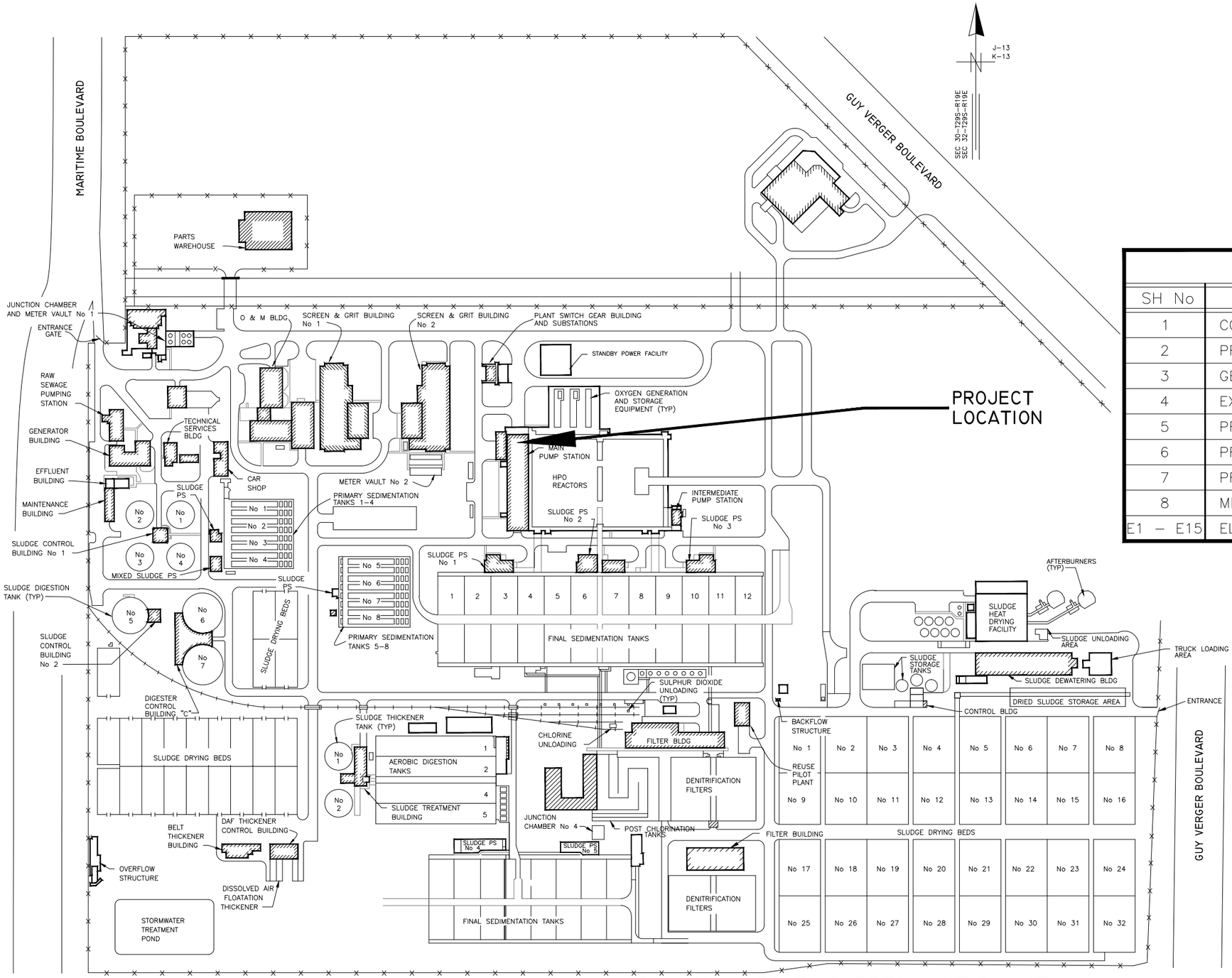

PLAN VIEW - HOWARD F. CURREN AWT PLANT

NOT TO SCALE

INDEX

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

No.	DATE	REVISIONS
3		
2		
1		

DES: J.H.
DRN: BB
CKD:
DATE:

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
AIR COMPRESSOR REPLACEMENTS
PROJECT MAP AND INDEX

SHEET 2

TP

GENERAL NOTES

A–1. EXISTING DIMENSIONS AND ELEVATIONS ARE BASED ON THE BEST INFORMATION AVAILABLE. TRUE DIMENSIONS AND ELEVATIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO LAYOUT AND SHOP DRAWING SUBMITTALS.

A–2. SHOP DRAWINGS SHALL BE SUBMITTED TO 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.

A–3. THE OIL–FREE COMPRESSED AIR SYSTEM SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL BE PERMITTED TO BE SHUT DOWN ONLY BRIEFLY WHEN MAKING NECESSARY PIPING CONNECTIONS. SHUT DOWNS SHALL BE KEPT TO A MINIMUM NUMBER AS IS PRACTICABLE.

A–4. A BACKUP, OR STANDBY, OIL–FREE AIR COMPRESSOR SHALL ALSO NEED TO BE READY TO BE PUT INTO SERVICE IN CASE THE EXISTING WORKING COMPRESSOR GOES OUT OF SERVICE FOR ANY REASON. THE EXISTING QUINCY #2 30 HP COMPRESSOR IS CURRENTLY THE BACKUP FOR THE EXISTING 50 HP KOBELCO COMPRESSOR. CONTRACTOR SHALL MAINTAIN THE ABILITY TO RUN THE QUINCY #2 COMPRESSOR AT ALL TIMES UNTIL THE PROPOSED COMPRESSORS HAVE BEEN SUCCESSFULLY TESTED AND PUT INTO SERVICE.

A–5. CONTRACTOR SHALL PROVIDE AND INSTALL TWO 50 HP KOBELCO TWO–STAGE, OIL–FREE, ROTARY SCREW AIR COMPRESSORS, MODEL # KNWA00–D/XL. EACH COMPRESSOR SHALL BE RATED AT 165 ACFM AT 100 PSIG AND SHALL BE POWERED BY A 50 HP, 460/3/60, TEFC MOTOR AND VARIABLE SPEED DRIVE. EACH COMPRESSOR ASSEMBLY SHALL BE ENCLOSED IN A STEEL, NOISE DAMPENING ENCLOSURE. SEE SPECIFICATIONS FOR FURTHER DETAILS.

A–6. AFTER THE PROPOSED AIR COMPRESSORS ARE PUT ON–LINE, THEY MUST RUN FOR A MINIMUM OF 8–DAYS, CONTINUOUSLY AND TROUBLE–FREE, PRIOR TO DISCONNECTING THE EXISTING OIL–FREE AIR COMPRESSORS. THE COMPRESSORS SHALL BE PROGRAMMED TO AUTOMATICALLY SWITCH LEAD–LAG POSITIONS EVERY 48–HOURS DURING TESTING.

A–7. AFTER THE PROPOSED AIR COMPRESSORS HAVE RUN 8–DAYS, CONTINUOUSLY AND TROUBLE FREE, THE CONTRACTOR SHALL PROVIDE TRAINING TO AWTP PERSONNEL AS PER CONTRACT SPECIFICATIONS.

A–8. ALL STAINLESS STEEL PIPING TO BE PROVIDED SHALL BE SCHEDULE 40, FLANGED OR WELDED PIPE AND FITTINGS UNLESS OTHERWISE INDICATED. ALL PVC DRAINAGE PIPE AND FITTINGS SHALL BE SCHEDULE 80.

A–9. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW 2–INCH, T–304L S.S. AIR PIPING FROM THE PROPOSED COMPRESSORS TO THE EXISTING 120–GALLON WET AIR TANK.

A–10. ALL AIR PIPING, UNLESS OTHERWISE INDICATED, SHALL BE SEAMLESS SCHEDULE 40S, TYPE 304L STAINLESS STEEL. ALL 3/8" PURGE LINES SHALL BE SEAMLESS TYPE 316L STAINLESS STEEL.

A–11. ALL STAINLESS STEEL STRAIGHT PIPING RUNS SHALL HAVE FLANGED UNIONS AT INTERVALS NO GREATER THAN 20–FEET APART. PIPE RUNS WITH A 1–INCH OR GREATER DIAMETER MAY BE BUTT–WELDED WHERE APPROPRIATE. PIPE RUNS WITH LESS THAN A 1–INCH DIAMETER SHALL BE SOCKET WELDED.

A–12. ALL STAINLESS STEEL PIPE FITTINGS (BENDS, TEES), VALVES AND DEVICES WITH A DIAMETER OF 3/4" OR GREATER SHALL HAVE FLANGED UNIONS AT EACH CONNECTION. ALL PIPE FITTINGS, VALVES AND DEVICES WITH A DIAMETER LESS THAN 3/4" SHALL HAVE COMPRESSION FITTINGS.

A–13. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A METHOD FOR PURGING OXYGEN OUT OF THE STAINLESS STEEL PIPE PRIOR TO IT BEING WELDED. THE OXYGEN CONTENT OF THE AIR IN THE PIPE SHALL BE BROUGHT DOWN TO 0.1% OR LESS OF TOTAL VOLUME.

A–14. CONTRACTOR SHALL PROVIDE AND INSTALL FLOOR DRAINS AND ASSOCIATED 4–INCH PIPING TO DRAIN COOLING AND CONDENSATE WATER INTO 4–INCH DIAMETER VERTICAL DRAIN PIPE AS SHOWN IN PLANS.

A–15. ALL PIPING AND EQUIPMENT WITH DISSIMILAR METALS SHALL HAVE DISSIMILAR METALS ELECTRICALLY INSULATED FROM EACH OTHER BY USE OF DIELECTRIC FITTINGS, NYLON WASHERS, PLASTIC INSERTS (FOR BOLTS) AND NITRILE RUBBER GASKETS.

A–16. CONTRACTOR SHALL PROVIDE AND INSTALL T–316 STAINLESS STEEL BRACING AND SUPPORTS FOR ALL PIPING AND EQUIPMENT SO AS TO MAKE PROPOSED SYSTEMS STURDY AND SAFE FROM REASONABLE INCIDENTAL CONTACT WITH PERSONNEL. NO PIPING OR CONDUIT SHALL BE MOUNTED DIRECTLY ON FLOORS OR WALLS. CONTRACTOR SHALL SUBMIT SUPPORT SYSTEMS FOR REVIEW AND APPROVAL.

A–17. CONTRACTOR SHALL BRACE ALL NEW PIPING WITH STAINLESS STEEL SUPPORTS IN THE SAME MANNER AS THE EXISTING PIPING.

A–18. ALL PIPING SHALL HAVE HANGERS AND/OR SUPPORTS IN ACCORDANCE WITH THE FOLLOWING MAXIMUM DISTANCES BETWEEN SUPPORTS (OR HANGERS):

MAXIMUM SPAN BETWEEN SUPPORTS

PIPE SIZE	STEEL PIPE	SCHEDULE 80 PVC
1/2" & SMALLER	5'–0"	–––––
2"	12'–0"	–––––
4"	–––––	6"–0"

A–19. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL.

A–20. CHEMICAL ANCHORS SHALL BE HILTI HIT–HY 150 MAX ANCHORING SYSTEM WITH TYPE 304 STAINLESS STEEL THREADED RODS, OR EQUAL.

A–21. CONTRACTOR SHALL CONSTRUCT 4–INCH HIGH CONCRETE EQUIPMENT PADS FOR ALL PROPOSED EQUIPMENT BEING INSTALLED IN THIS AREA (TOTAL OF 2 PADS). ALL PROPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.

A–22. ALL CORED CONCRETE SURFACES SHALL BE COATED WITH TWO COATS OF COAL–TAR EPOXY (10 MILS DFT/ EACH COAT).

A–23. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 5TH EDITION 2014 AND CHAPTER 5 OF THE CITY OF TAMPA CODE.

A–24. ALL BALL VALVES SHALL BE APOLLO S.S. FULL PORT BALL VALVES, SERIES 87A–208–01, OR APPROVED EQUAL WHICH MEETS ALL OF THE MANUFACTURER'S PUBLISHED FEATURES OF THE SERIES 87A–208–01 VALVE.

DEMOLITION NOTES

B–1. SALVAGEABLE MATERIAL, AS DETERMINED BY DEPARTMENT PERSONNEL, SHALL BE DELIVERED TO THE PARTS WAREHOUSE LOCATED ON THE TREATMENT PLANT SITE. NON–SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

B–2. THE CONSTRUCTION SITE SHALL BE MAINTAINED IN AS NEAT AND ORDERLY CONDITION AS POSSIBLE DURING CONSTRUCTION OPERATIONS.

B–3. CONTRACTOR SHALL RESTORE ALL STRUCTURES, SODDING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.

POSSIBLE SEQUENCE OF EVENTS

C–1. CONTRACTOR RELOCATES EXISTING TEMPORARY OIL–FREE AIR COMPRESSOR OUT OF AREA OF PROPOSED CONSTRUCTION.

C–2. CONTRACTOR FORMS AND POURS PROPOSED CONCRETE EQUIPMENT PADS AT PROPOSED AIR COMPRESSOR LOCATIONS AND INSTALLS PROPOSED FLOOR DRAIN SYSTEM, 2–INCH S.S. AIR PIPING AND ALL ELECTRICAL CONDUIT, WIRING AND EQUIPMENT.

C–3. CONTRACTOR PROVIDES, INSTALLS AND TESTS PROPOSED OIL–FREE COMPRESSED AIR EQUIPMENT FOR 8–DAYS, MINIMUM. TEMPORARY KOBELCO OIL–FREE AIR COMPRESSOR SHALL REMAIN IN SERVICE, AS BACK–UP, UNTIL PROPOSED COMPRESSORS ARE SUCCESSFULLY TESTED. THE #2 QUINCY OIL–FREE COMPRESSOR SHALL ALSO REMAIN AVAILABLE FOR SERVICE UNTIL TESTING HAS BEEN COMPLETED.

C–4. AFTER THE PROPOSED AIR COMPRESSORS ARE SUCCESSFULLY TESTED, THE #2 QUINCY OIL–FREE COMPRESSOR SHALL BE REMOVED FROM THE SITE AND THE TEMPORARY KOBELCO OIL–FREE AIR COMPRESSOR SHALL BE RELOCATED TO ANOTHER AREA AT THE HFC AWTP, AS INSTRUCTED BY THE ENGINEER.

C–5. DEMOLITION SHALL THEN BE COMPLETED AND TRAINING SHALL BE PROVIDED TO AWTP PERSONNEL AS PER CONTRACT SPECIFICATIONS.

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

No.	DATE	REVISIONS
3		
2		
1		

DES: J.H.
DRN: BB
CKD:
DATE:

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
AIR COMPRESSOR REPLACEMENTS
GENERAL & DEMOLITION NOTES AND POSSIBLE SEQUENCE OF CONSTRUCTION EVENTS

SHEET 3

TP

Ex. Heat Sink Air Dryer No.2
Ex. 2" S.S. Air Piping
Ex. Heat Sink Air Dryer No.2
Ex. 200-Gal. Wet Tank
MAIN PUMPING STATION BUILDING
K J H E B A
1 2 3 4 5 6
Ex. 200-Gal. Wet Tank
Ex. Plant (Compressed) Air To Screen & Grit Bldgs. And Points West
Ex. Oil-Free Compressed Air To Oxygen Plants, LOX Tank, And HPO Reactors
Oil-Flooded Air Compressor #1 (60 HP)
Ex. 2" Plant Air Piping
Oil-Flooded Air Compressor #2 (60 HP)
Ex. Cooling Water Filter / Sediment Trap (Typ)
Ex. Conc. Support Column Under Floor EL. 11.00 (Typ.)
Ex. 4" High Conc. Pad
Ex. 2" Plant Air Piping (AL)
Ex. Temporary 50 HP Oil-Free Air Compressor (TO BE REMOVED) SEE NOTES ON OIL-FREE COMPRESSED AIR REQUIREMENTS DURING CONSTRUCTION ACTIVITIES
Ex. 2" Oil-Free Air (S.S.)
Ex. 1" Fuel Oil Pipe (Abandoned) Elev. 8.45 (TO BE REMOVED)
Ex. 400 Gal. Dry Reciever
FLOOR ELEV. 11.00
FLOOR ELEV. -2.00
Ex. 2" Plant Air (AL)
Ex. Fuel Oil Tank (Abandoned) Approx. Elev. 3.00 (TO REMAIN)
Ex. Conc. Pad (Typ. Of 2)
MAIN PUMPING STATION BUILDING
Ex. 3" (AL) Electrical Conduit (Abandoned) Approx. Elev. 8.00 (TO BE REMOVED)
Ex. Wet Reciever
Ex. Temporary Compressed Air Flexible Service Hose
Ex. Oil-Free Air Compressors (TO BE REMOVED) SEE NOTES ON OIL-FREE COMPRESSED AIR REQUIREMENTS DURING CONSTRUCTION ACTIVITIES
FLOOR ELEV. -2.00
CUT-AWAY VIEW: REMOVED FLOOR AT ELEV. 11.00 TO VIEW EQUIPMENT SETTING ON BASEMENT FLOOR (AT ELEV. -2.00)
Ex. Conc. Pad
Ex. Electrical Boxes And Safety Switches (PLEASE REFER TO ELECTRICAL SHEETS)
Ex. 8' High Plywood Wall
Ex. Storage Compound
Ex. Plant Air To South End of HPO Reactors Sludge Pumping Stations (1, 2 and 3), Final Sedimentation Tanks and Points South.
Ex. 1½" Plant Air Piping (AL)
FLOOR ELEV. 11.00
13'-3" 13'-3" 15'-9" 15'-9" 4'-6"
12'-0" 6'-0" 6'-0" 12'-0" 18'-0"

PLAN VIEW
SCALE: 1/8" = 1'-0"

J&K-13
SEC. 30 T29S R19E
SEC. 31 T29S R19E

ITEMS SHOWN HATCHED ARE TO BE REMOVED

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

No.	DATE	REVISIONS
3		
2		
1		

DES: J.H.
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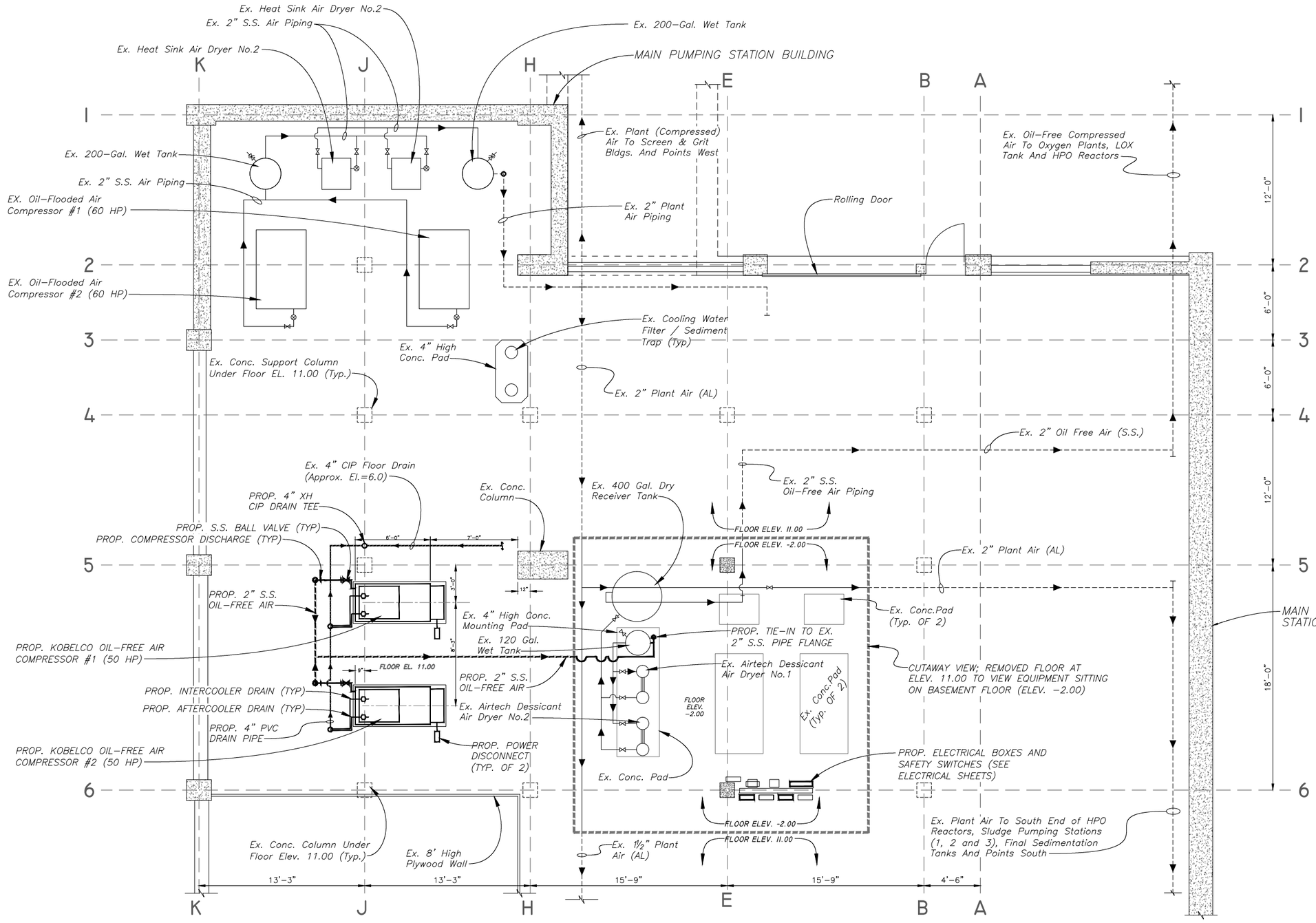
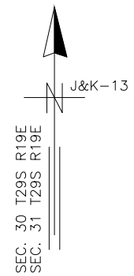
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
PLANT AIR COMPRESSOR REPLACEMENTS
EXISTING PLAN VIEW, WITH DEMOLITION PLAN

SHEET 4

TP





PLAN VIEW
SCALE: 1/8" = 1'-0"

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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
PLANT AIR COMPRESSOR REPLACEMENTS
PROPOSED PLAN VIEW - OVERALL

SHEET
5

J
H
13'-3"
15'-9"
E
TP
A/7
J&K-13
SEC. 30 T29S R19E
SEC. 31 T29S R19E
PROP. 4" EXTRA HEAVY C.I.P. TEE
Ex. 4" XH C.I.P. Floor Drain Approx. Elev. 6.00
5
5
Ex. Conc. Column Under Floor Elev. 11.00 (Typ)
9"
Ex. Conc. Column
12"
PROP. 2"x 18", T-316 S.S. BRAIDED FLEXIBLE HOSE SECTION (FL-FL)(TYP. OF 2)
PROP. KOBELCO OIL-FREE AIR COMPRESSOR #1 (50 HP)
3'-0"
℄
PROP. COMPRESSOR CONTROLS ENCLOSURE (TYP. OF 2)
PROP. POWER DISCONNECT (TYP. OF 2)
BUILT-IN AUTO DRAIN (3/8" MNPT CONN.)(TYP. OF 4)
PROP. 3/8" S.S. TUBING FOR CONDENSATE DISCHARGE (TYP. OF 4)
PROP. 2" SCH. 40, T-304L S.S. AIR PIPING APPROX. ELEV. 9.00
FLOOR EL. 11.00
8'-3"
Ex. 1 1/2" Plant Air Piping (AL)
PROP. 4" SCH. 80 PVC DRAIN APPROX. ELEV. 8.00 MAINTAIN 1.0% DROP (MIN.)
PROP. 2" S.S. BALL VALVE (TYP.)
PROP. COMPRESSOR DISCHARGE (1.5" MNPT)(TYP.)
PROP. 2" SCH. 40 S.S. OIL-FREE COMPRESSED AIR PIPING
CUT-AWAY VIEW: REMOVED FLOOR AT ELEV. 11.00 TO VIEW EQUIPMENT SITTING ON BASEMENT FLOOR (ELEV. -2.00)
PROP. 3/8" INTERCOOLER DRAIN (TYP)
PROP. 3/8" AFTERCOOLER DRAIN (TYP)
B/7
PROP. KOBELCO OIL-FREE AIR COMPRESSOR #2 (50 HP)
2"
2"(TYP)
PROP. 4" HIGH CONCRETE PAD; EXTEND 2" BEYOND EQUIPMENT ALL AROUND (TYP)
PROP. 4" SCH. 80 PVC DRAIN VERTICAL RISER (TYP. OF 2)
PROP. DRAIN TO 4" SCH. 80 PVC WYE WITH C/O PLUG
PROP. 2" OIL-FREE COMPRESSED AIR PIPING (S.S.)
Ex. 2" Alum. Plant Air Piping
Ex. 400 Gal. Dry Tank
Ex. 2" S.S. Oil-Free Air Piping
Ex. 120 Gallon Wet Tank
PROP. FLANGED TIE-IN TO EX. 2" S.S. OIL-FREE AIR PIPING
B/7
Ex. Airtech Dessicant Air Dryer #1
FLOOR ELEV. -2.00
Ex. Airtech Dessicant Air Dryer #2
Ex. 4" High Conc. Mounting Pads
Ex. Conc. Column Under Floor Elev. 11.00 (Typ)
6
6
A/7
J
H
E
Ex. 8' High Plywood Wall
Ex. Storage Compound Area
PROP. ELECTRICAL BOXES AND SAFTEY SWITCHES (SEE ELECTRICAL SHEETS)

PLAN VIEW - ELEV. 11.00 & -2.00
SCALE: 3/8" = 1'-0"

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JACINTO CARLOS FERRAS P.E. #49454
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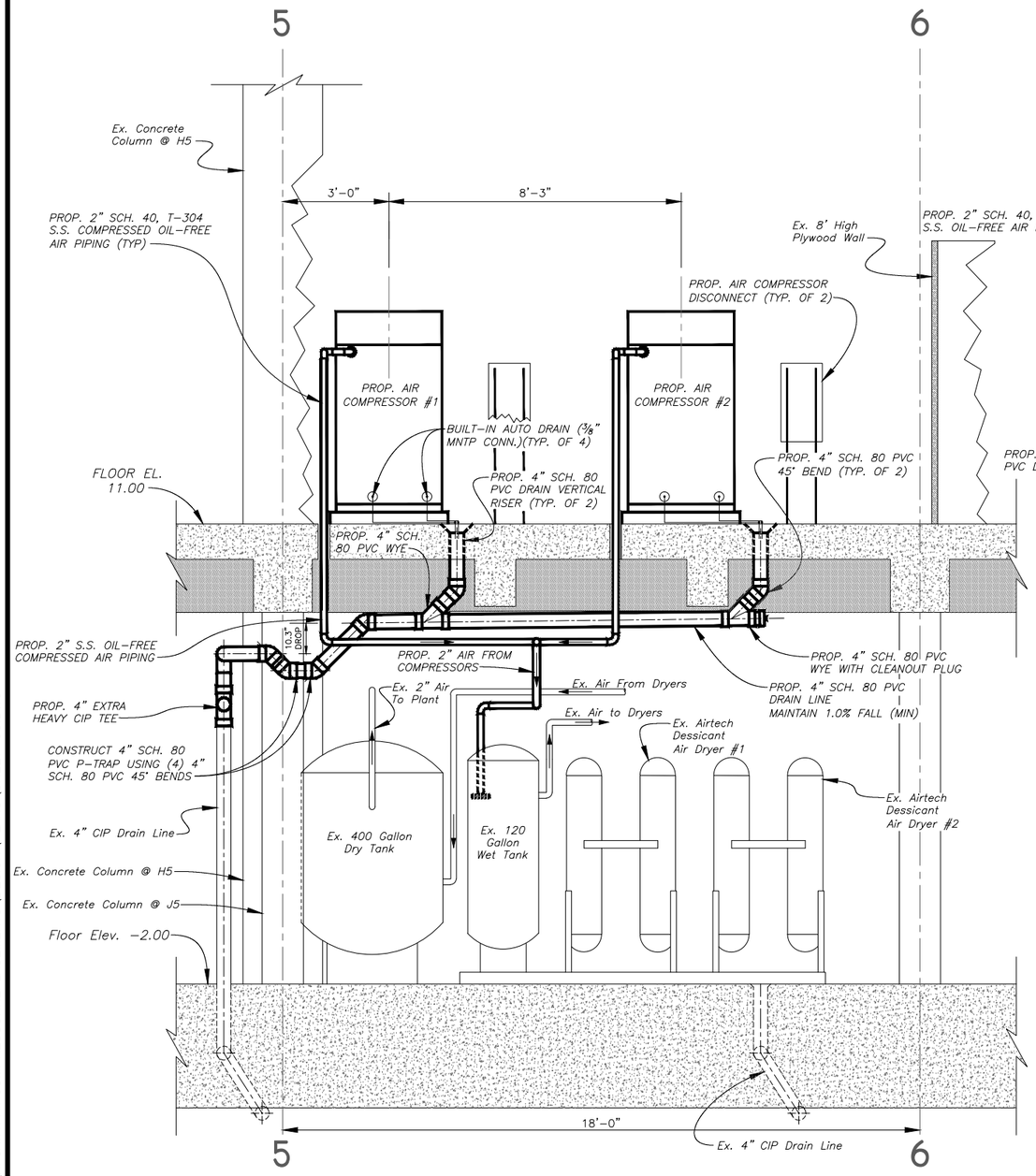
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
PLANT AIR COMPRESSORS REPLACEMENT
PROPOSED PLAN VIEW AT ELEVATIONS 11.00 & -2.00

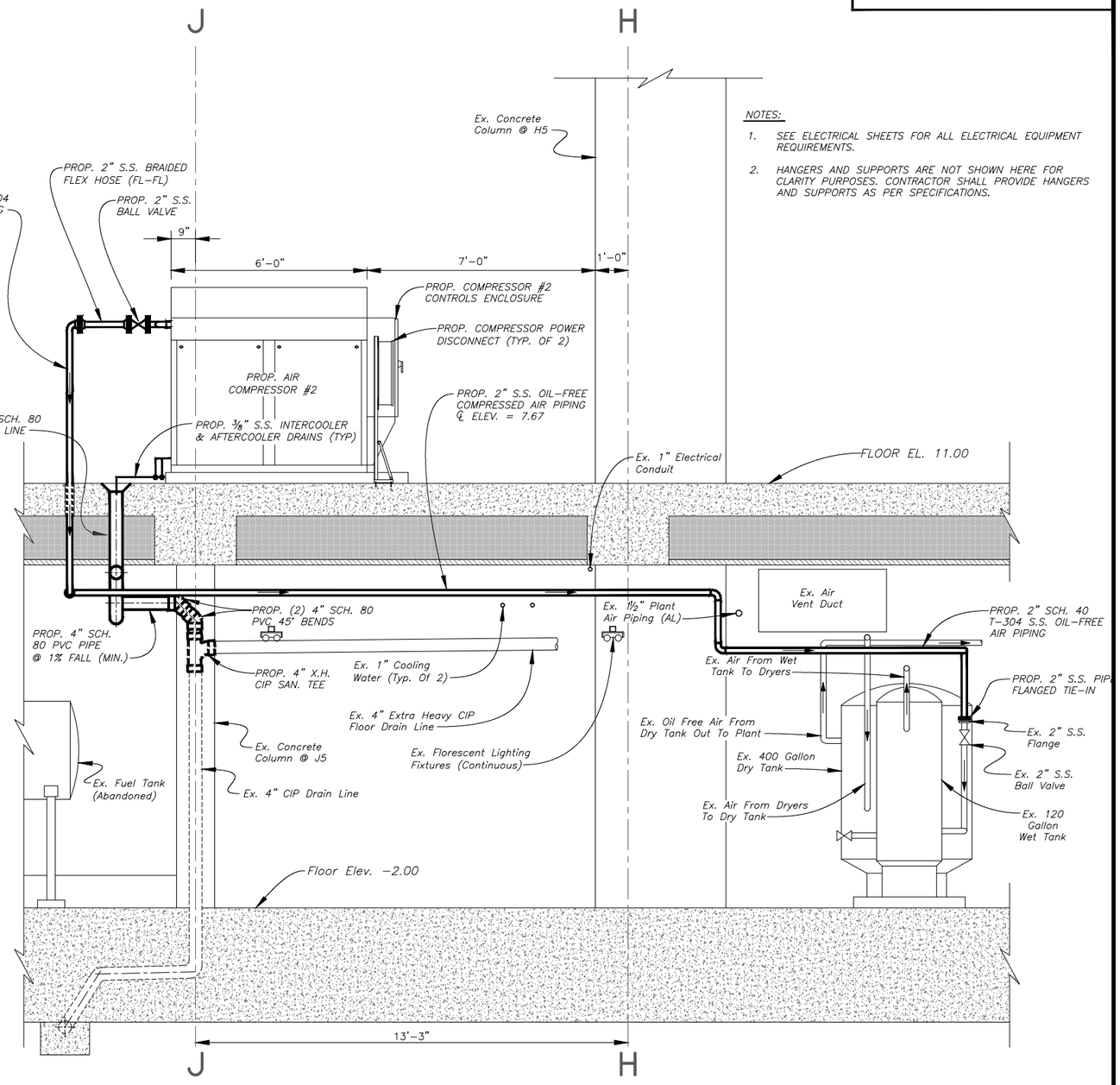
SHEET
6

TP



SECTION A/6

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



SECTION B/6

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

NOTES:

1. SEE ELECTRICAL SHEETS FOR ALL ELECTRICAL EQUIPMENT REQUIREMENTS.
2. HANGERS AND SUPPORTS ARE NOT SHOWN HERE FOR CLARITY PURPOSES. CONTRACTOR SHALL PROVIDE HANGERS AND SUPPORTS AS PER SPECIFICATIONS.

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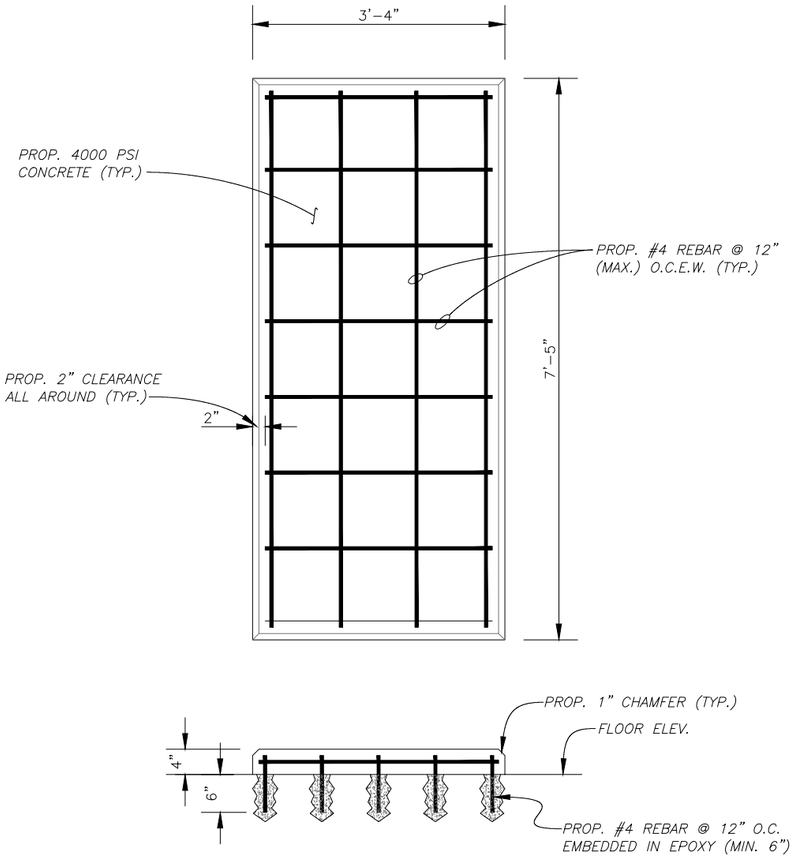
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
PLANT AIR COMPRESSORS REPLACEMENT
PROPOSED SECTIONS

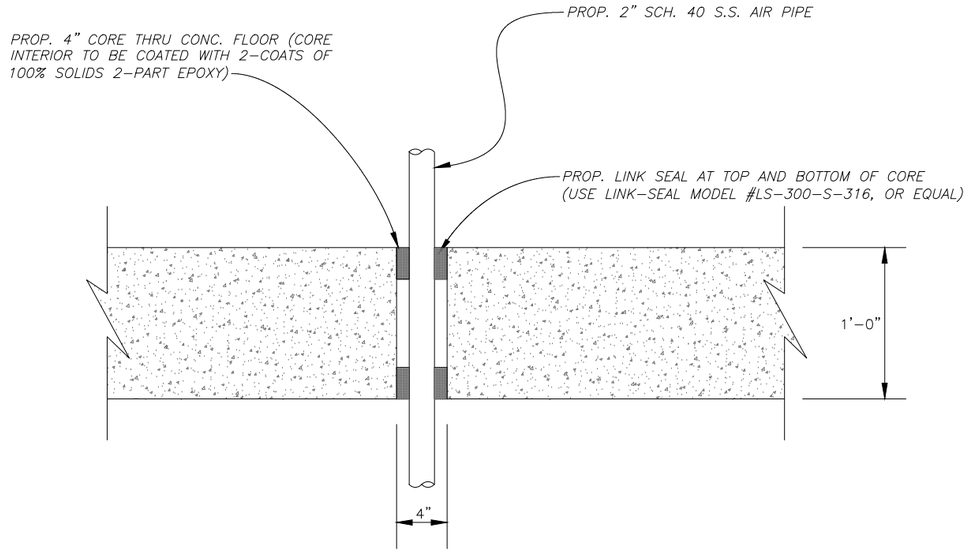
SHEET 7

TP



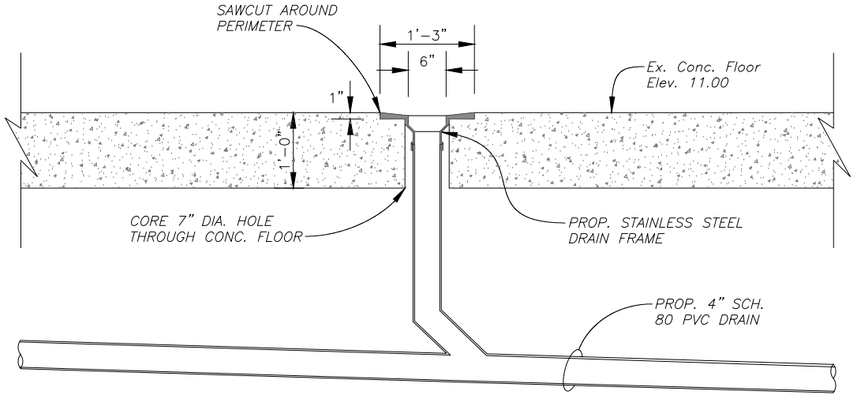
TYPICAL EQUIPMENT PAD DETAIL

SCALE: 1/2" = 1'-0"



TYPICAL AIR PIPE FLOOR PENETRATION

SCALE: 1" = 1'-0"



TYPICAL PROPOSED FLOOR DRAIN

SCALE: 1/2" = 1'-0"

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CITY of TAMPA
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ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN WASTEWATER TREATMENT PLANT
PLANT AIR COMPRESSORS REPLACEMENT
PROPOSED EQUIPMENT PAD AND DRAIN DETAILS

SHEET 8

CONDUIT RUN EXPOSED

CONDUIT RUN CONCEALED UNDERGROUND

CONDUIT RUN CONCEALED IN FLOOR OR SLAB

G — GROUNDING ELECTRODE CONDUCTOR

E — 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:

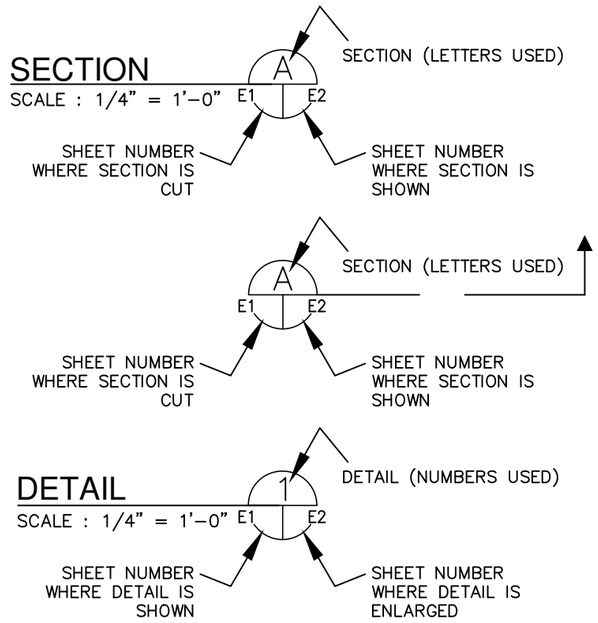
TWO WIRES:

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

K:\WASTEWATERPROJECTS\HFCAWTPAIRCOMPRESSORREPLACEMENTS\DESIGN\PLANS\DRAFTING\DWG\BUBBASDWGFILES\90%ELECTRICALUNCOMPRESSEDMAINP.SAIRCOMPRESSREPLAC'T_ELECTRICAL

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

No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
DRN: RDK
CKD:
DATE: 5/22/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
ELECTRICAL LEGEND

SHEET
E1

DRAWING INDEX

SHEET No.	SHEET TITLE
E1	ELECTRICAL LEGEND
E2	DRAWING INDEX AND GENERAL NOTES
E3	SCOPE OF ELECTRICAL WORK
E4	EXISTING ELECTRICAL PLAN @ EL. −2.00 FT
E5	ELECTRICAL DEMOLITION @ EL. −2.00 FT
E6	PROPOSED ELECTRICAL PLAN @ EL. +11.00 FT
E7	PROP. ELECTRICAL @ EL. −2.00 FT
E8	PROP. ELECTRICAL @ EL. +11.00 FT
E9	PROP. SECTION & DETAILS @ EL. −2.00 FT
E10	MCC−31 PARTIAL ONE LINE DIAGRAM
E11	ELECTRICAL RISER DIAGRAM (SHT. 1 OF 3)
E12	ELECTRICAL RISER DIAGRAM (SHT. 2 OF 3)
E13	ELECTRICAL RISER DIAGRAM (SHT. 3 OF 3)
E14	I & C INTERCONNECTION DIAGRAMS
E15	KEYED NOTES

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 PERSUANT TO THE 2011 EDITION OF THE NEC AND ALL APPLICABLE CITY OF TAMPA 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.

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

No.	DATE	REVISIONS
3		
2		
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DES: RDK
DRN: RDK
CKD:
DATE: 7/10/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
DRAWING INDEX AND GENERAL NOTES

SHEET
E2

SCOPE OF ELECTRICAL WORK

FURNISH AND INSTALL ALL EQUIPMENT, CONTROLS AND INSTRUMENTATION AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

A. SPECIFICALLY FOR MAIN PUMPING STATION AT FLOOR ELEVATION −2.00 FEET:

1. REMOVE THE FOLLOWING EQUIPMENT AND DISPOSE OF AS SHOWN, SPECIFIED OR DIRECTED BY THE ENGINEER:
   a. EXISTING OILLESS COMPRESSORS NO. 1 INCLUDING ALL ASSOCIATED CONDUITS, CONDUCTORS AND SUPPORTING EQUIPMENT (NOTE: TEMPERATURE TRANSMITTER TT−101 WILL BE REUSED FOR THE PROPOSED OILLESS COMPRESSOR NO. 1);
   b. EXISTING OILLESS COMPRESSORS NO. 2 INCLUDING ALL ASSOCIATED CONDUITS, CONDUCTORS AND SUPPORTING EQUIPMENT (NOTE: TEMPERATURE TRANSMITTER TT−102 WILL BE REUSED FOR THE PROPOSED OILLESS COMPRESSOR NO. 2);
   c. 100A ENCLOSED CIRCUIT BREAKER FOR EXISTING OILLESS COMPRESSOR NO. 1;
   d. 100A ENCLOSED CIRCUIT BREAKER FOR EXISTING OILLESS COMPRESSOR NO. 2;
   e. ENCLOSED MOTOR STARTER, AND ASSOCIATED CONDUITS AND CONDUCTORS, FOR EXISTING OILLESS COMPRESSOR NO. 1;
   f. ENCLOSED MOTOR STARTER, AND ASSOCIATED CONDUITS AND CONDUCTORS, FOR EXISTING OILLESS COMPRESSOR NO. 2; AND
   g. THE CONTENTS AND HUMAN−MACHINE−INTERFACE (HMI) FROM THE EXISTING AIR COMPRESSORS CONTROLLER ENCLOSURE. NEATLY COVER THE FRONT DOOR OPENING WITH AN ALUMINUM PLATE AND PAINT TO MATCH EXISTING. THIS ENCLOSURE WITH BE REUSED AS A TERMINAL BOX FOR DISCRETE AND ANALOG SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SIGNALS FROM THE NEW OILLESS COMPRESSORS MOUNTED UPSTAIRS.
2. PROVIDE AND INSTALL, ON THE EXISTING EQUIPMENT RACK, THE FOLLOWING AS SHOWN, SPECIFIED AND REQUIRED:
   a. PROPOSED NEMA 4X STAINLESS STEEL JUNCTION BOX FOR POWER CONNECTIONS FOR PROPOSED OILLESS COMPRESSOR NO. 1;
   b. PROPOSED NEMA 4X STAINLESS STEEL JUNCTION BOX FOR POWER CONNECTIONS FOR PROPOSED OILLESS COMPRESSOR NO. 2; AND
   c. PROPOSED SCADA TERMINALS IN FORMER COMPRESSORS CONTROLLER ENCLOSURE. CONDUITS AND WIRING SHALL BE AS SHOWN, SPECIFIED, AND REQUIRED.
3. INSTALL FEEDBACK PRESSURE TRANSDUCERS PT−102 AND PT−103 ON THE EXISTING WET TANK PIPING AS SHOWN AND REQUIRED. THE PRESSURE TRANSDUCERS SHALL BE PROVIDED BY THE OILLESS AIR COMPRESSOR MANUFACTURER.

B. SPECIFICALLY FOR MAIN PUMPING STATION AT FLOOR ELEVATION +11.00 FEET:

1. FOR EXISTING MOTOR CONTROL CENTER MCC−31, OILLESS COMPRESSOR NO.1 CUBICLE, REMOVE EXISTING CIRCUIT BREAKER AND REPLACE WITH PROPOSED 150 AMP, 65KAIC CIRCUIT BREAKER AS SHOWN, SPECIFIED, AND REQUIRED. REMOVE EXISTING COMPRESSOR NO. 1 FEEDER CONDUCTORS FROM EXISTING CONDUIT AND REPLACE WITH PROPOSED CONDUCTORS AS SHOWN, SPECIFIED, AND REQUIRED. CONDUITS MAY BE REUSED.
2. FOR EXISTING MOTOR CONTROL CENTER MCC−31, OILLESS COMPRESSOR NO.2 CUBICLE, REMOVE EXISTING CIRCUIT BREAKER AND REPLACE WITH PROPOSED 150 AMP, 65KAIC CIRCUIT BREAKER AS SHOWN, SPECIFIED, AND REQUIRED. REMOVE EXISTING COMPRESSOR NO. 2 FEEDER CONDUCTORS FROM EXISTING CONDUIT AND REPLACE WITH PROPOSED CONDUCTORS AS SHOWN, SPECIFIED, AND REQUIRED. CONDUITS MAY BE REUSED.
3. PROVIDE AND INSTALL A NEMA 4X STAINLESS STEEL, 100 AMP, NON−FUSIBLE SAFETY SWITCH FOR PROPOSED OILLESS COMPRESSOR NO. 1 AS SHOWN, SPECIFIED, AND REQUIRED.
4. PROVIDE AND INSTALL A NEMA 4X STAINLESS STEEL, 100 AMP, NON−FUSIBLE SAFETY SWITCH FOR PROPOSED OILLESS COMPRESSOR NO. 2 AS SHOWN, SPECIFIED, AND REQUIRED.

CONT'D ABOVE RIGHT

SCOPE OF ELECTRICAL WORK (CONT'D)

5. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS FOR LINE AND LOAD SIDE OF COMPRESSOR NO. 1 SAFETY SWITCH AS SHOWN, SPECIFIED AND REQUIRED. NOTE THAT CONCRETE PENETRATIONS MUST BE MADE TO INSTALL THE NEW CONDUITS (TYP.).
6. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS FOR LINE AND LOAD SIDE OF COMPRESSOR NO. 2 SAFETY SWITCH AS SHOWN, SPECIFIED AND REQUIRED.
7. INSTALL TEMPERATURE TRANSMITTER TT−101 (REMOVED FROM OLD COMPRESSOR) ON OILLESS COMPRESSOR NO. 1 AS SHOWN, SPECIFIED, AND REQUIRED.
8. INSTALL TEMPERATURE TRANSMITTER TT−102 (REMOVED FROM OLD COMPRESSOR) ON OILLESS COMPRESSOR NO. 2 AS SHOWN, SPECIFIED, AND REQUIRED.
9. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS FOR SCADA SIGNALS TO TERMINAL BOX IN BASEMENT AS SHOWN, SPECIFIED, AND REQUIRED.
10. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS FOR ANALOG SIGNALS TO TERMINAL BOX IN BASEMENT AS SHOWN, SPECIFIED, AND REQUIRED.
11. PROVIDE AND INSTALL PROPOSED CONDUIT AND CONDUCTORS BETWEEN OILLESS COMPRESSOR NO. 1 AND NO. 2 FOR LEAD − LAG INTERFACE AS SHOWN, SPECIFIED, AND REQUIRED.

C. INSTALL THE GROUND SYSTEM AS SHOWN, SPECIFIED AND REQUIRED.

D. PROVIDE AND INSTALL STAINLESS STEEL CHANNEL ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS AND OTHER EQUIPMENT.

E. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE (NEC) AND CHAPTER 5 OF THE CITY OF TAMPA CODE.

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

No.	DATE	REVISIONS
3		
2		
1		

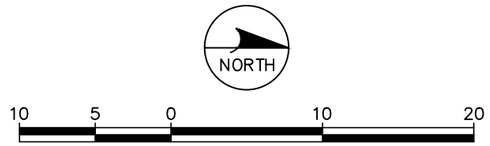
DES: RDK
DRN: RDK
CKD:
DATE: 1/23/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
SCOPE OF ELECTRICAL WORK

SHEET
E3

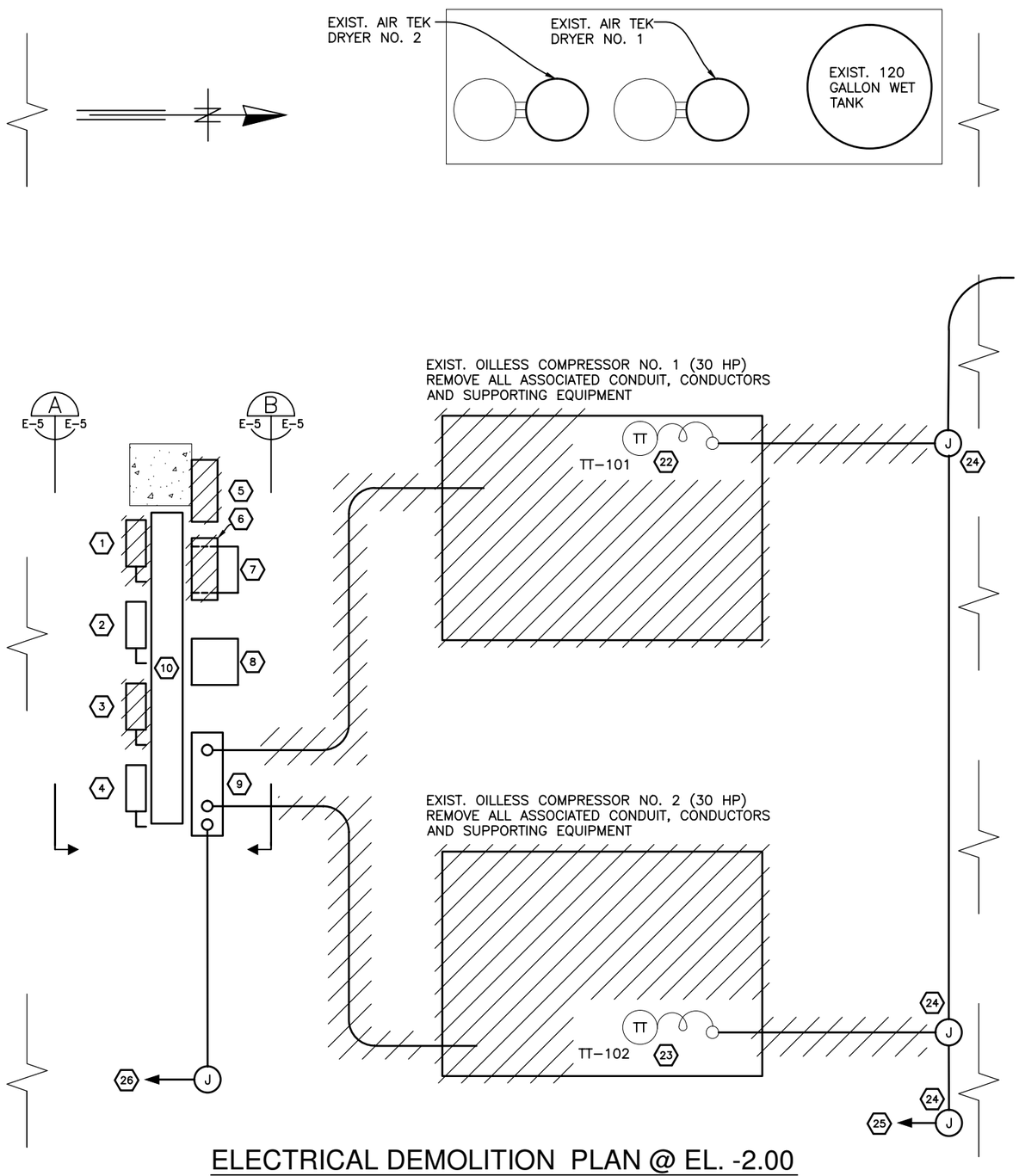
NOTE: THE SCALE SHOWN ON THIS DRAWING IS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.



EXISTING CONDUITS ARE ROUTED OVERHEAD ALONG LOWER LEVEL CEILING.

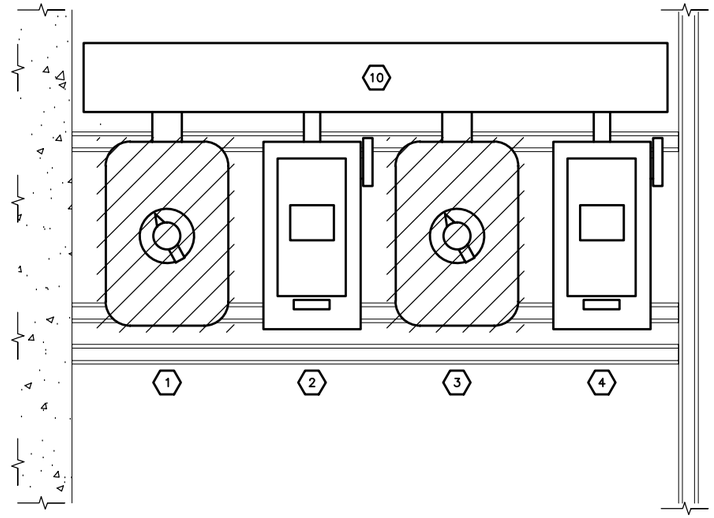
EX. ELECTRICAL PLAN (EL.-2.00 FT)

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RDK DRN: RDK CKD: DATE: 6/20/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS EXISTING ELECTRICAL PLAN @ EL. -2.00 FT	SHEET E4
	3						
	2						
	1						



ELECTRICAL DEMOLITION PLAN @ EL. -2.00

NO SCALE

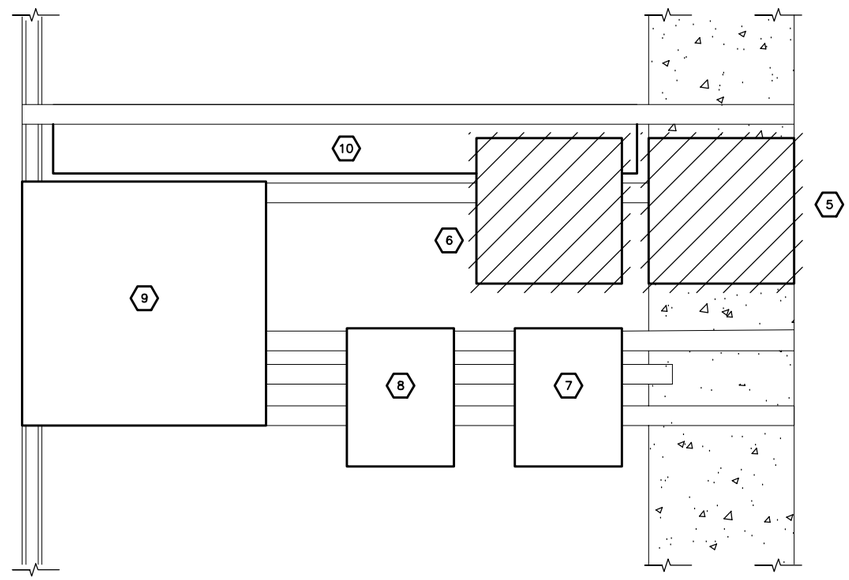


NOTE: ITEMS THAT ARE HATCHED ARE TO BE REMOVED.

(X) KEYED NOTES ARE LISTED ON SHEET E15.

EXISTING SAFETY SWITCHES

A E-5 E-5

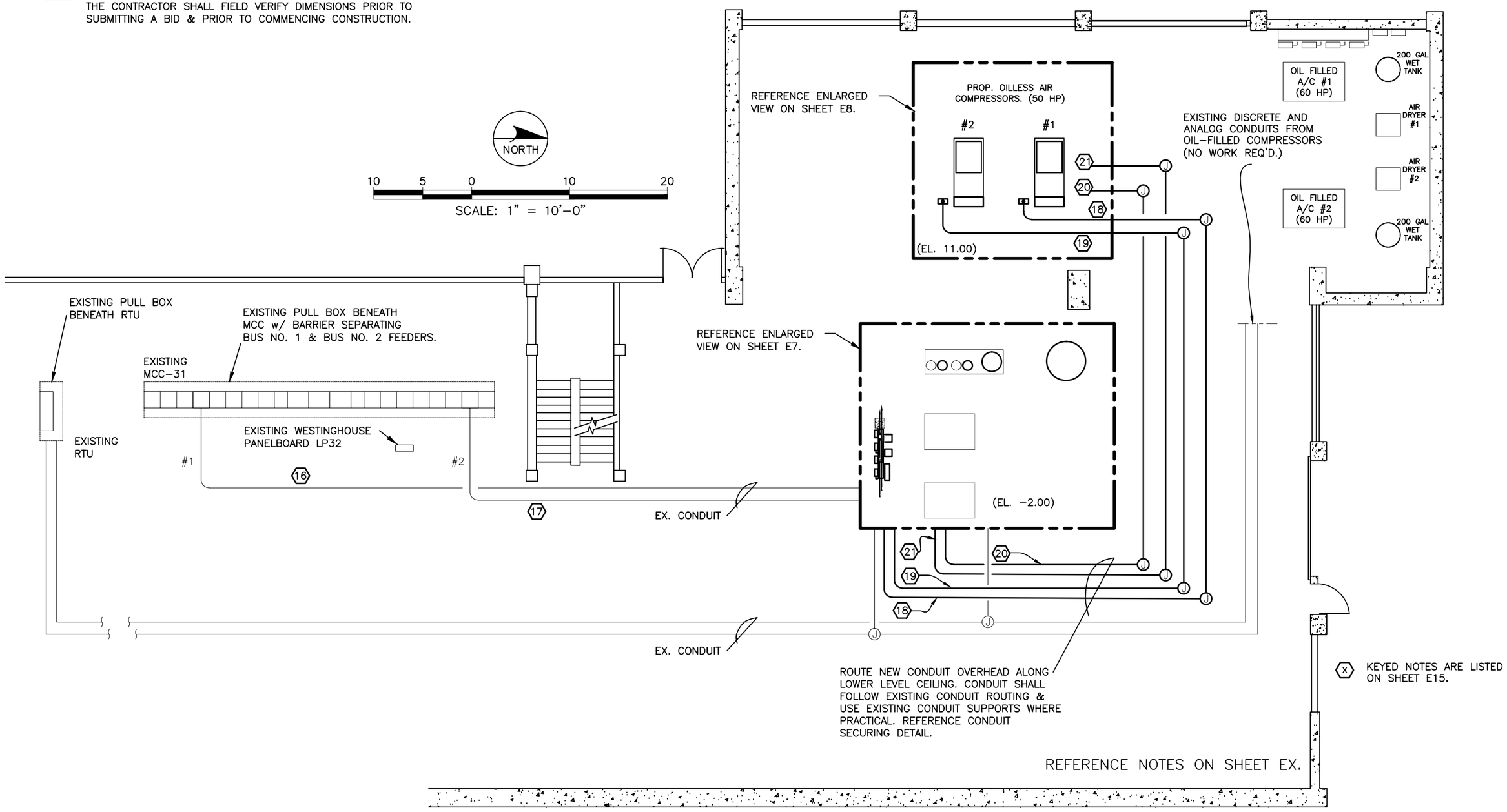


EXISTING CONTROLS & TRANSFORMERS

B E-5 E-5

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RDK DRN: RDK CKD: DATE: 6/19/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS ELECTRICAL DEMOLITION @ EL. -2.00 FT	SHEET E5
	3						
	2						
	1						

NOTE: THE SCALE SHOWN ON THIS DRAWING IS APPROXIMATE.
THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.



ELECTRICAL CONDUIT ROUTING PLAN

(UPPER LEVEL-ELEVATION 11.00)

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

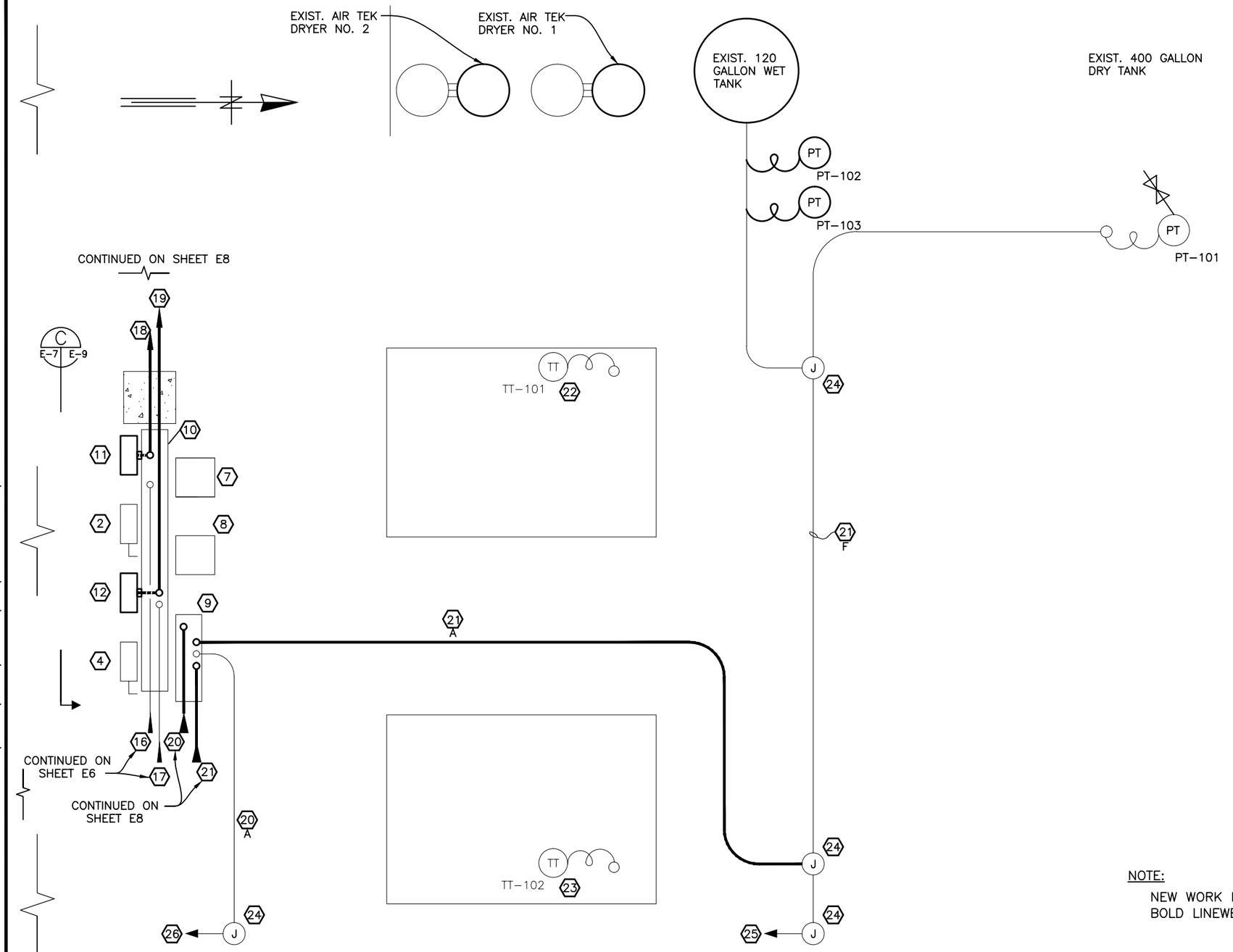
No.	DATE	REVISIONS
3		
2		
1		

DES: RDK
DRN: RDK
CKD:
DATE: 7/06/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
PROPOSED ELECTRICAL PLAN @ EL.+11.00 FT

SHEET
E6



PROP. ELECTRICAL AT EL. -2.00

NO SCALE

NOTE:

NEW WORK IS SHOWN IN BOLD LINEWEIGHT (TYP.)

(X) KEYED NOTES ARE LISTED ON SHEET E15.

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

No.	DATE	REVISIONS
3		
2		
1		

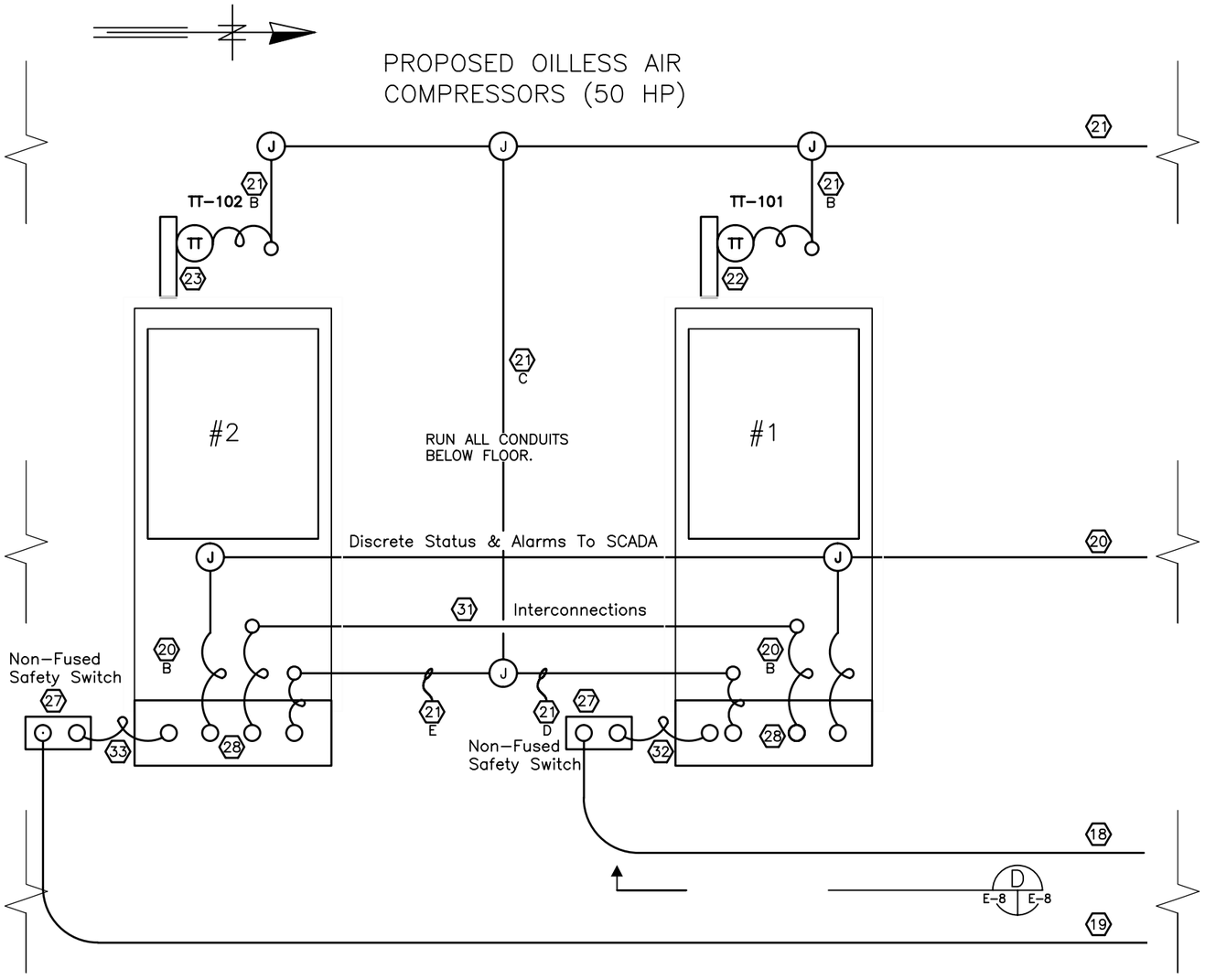
DES: RDK
DRN: RDK
CKD:
DATE: 6/02/17

CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
PROP. ELECTRICAL @ EL. -2.00 FT

SHEET
E7

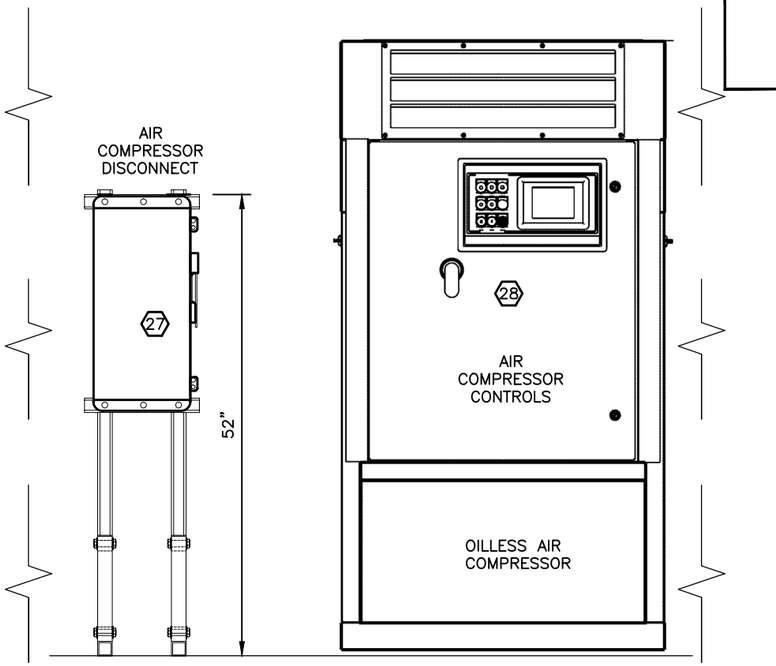
K:\WASTEWATERPROJECTS\HFCAWTPAIRCOMPRESSORREPLACEMENTS\DESIGN\PLANS\DRAFTING\DWG\BUBBASDWGFILES\90%ELECTRICALUNCOMPRESSEDMAINP..SAIRCOMPRESSREPLAC'T_ELECTRICAL



PROP. ELECTRICAL AT EL. +11.00

NO SCALE

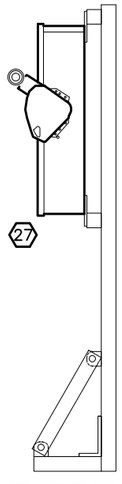
(X) KEYED NOTES ARE LISTED ON SHEET E15.



AIR COMPRESSOR DISCONNECT

D E–8 E–8

NO SCALE
COMPRESSOR #1 SHOWN, #2 IS SIMILAR

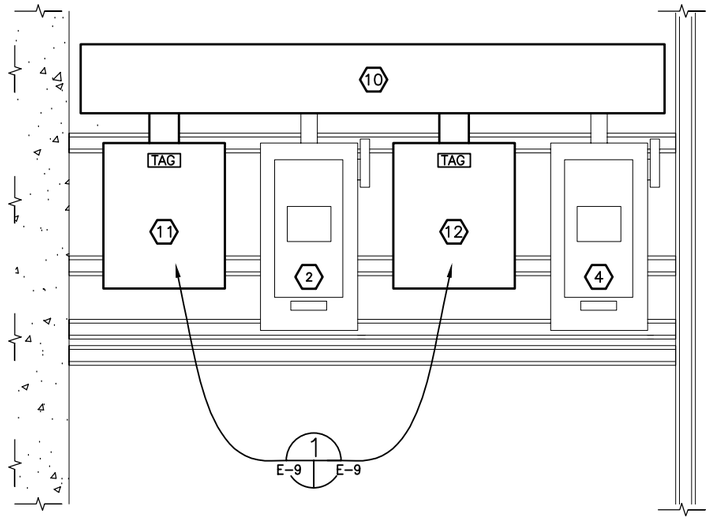


DISCONNECT STANCHION - SIDE VIEW

NO SCALE

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RDK DRN: RDK CKD: DATE: 6/02/17	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS PROP. ELECTRICAL @ EL. +11.00 FT	SHEET E8
	3						
	2						
	1						

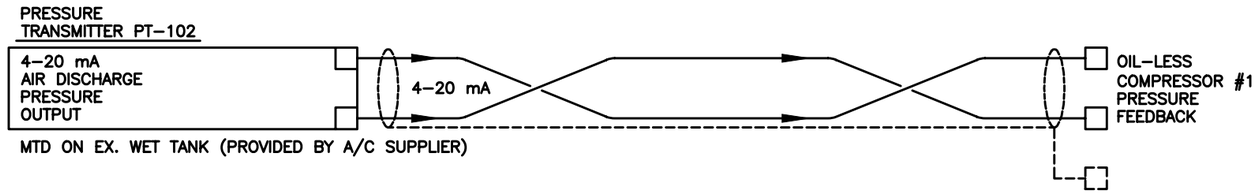
K:\WASTEWATERPROJECTS\HFCAWTPAIRCOMPRESSORREPLACEMENTS\DESIGN\PLANS\DRAFTING\DWG\BUBBASDWGFILES\90%ELECTRICALUNCOMPRESSEDMAINP.SAIRCOMPRESSREPLAC'T_ELECTRICAL

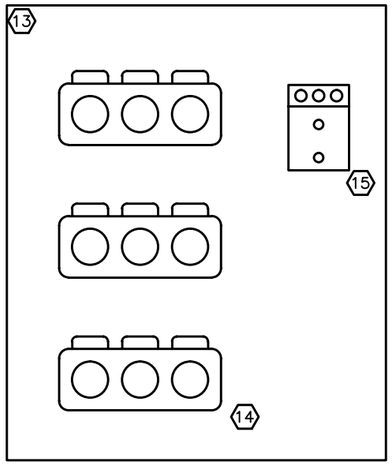


PROP. TERMINAL BOXES & EX. SAFETY SWITCHES

C
E-7 E-9

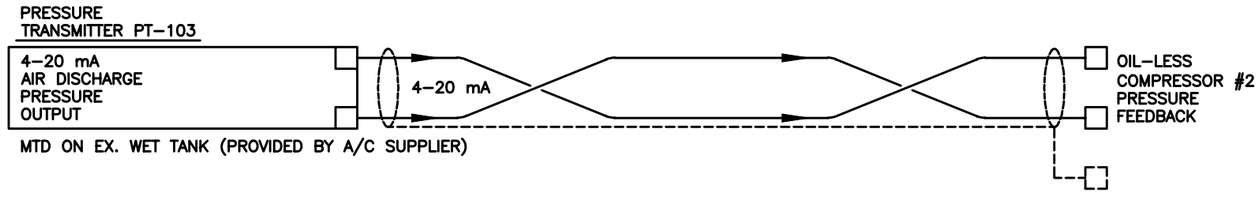
(X) KEYED NOTES ARE LISTED ON SHEET E15.





PROP. TERMINAL BOX INTERIOR

1
E-9 E-9



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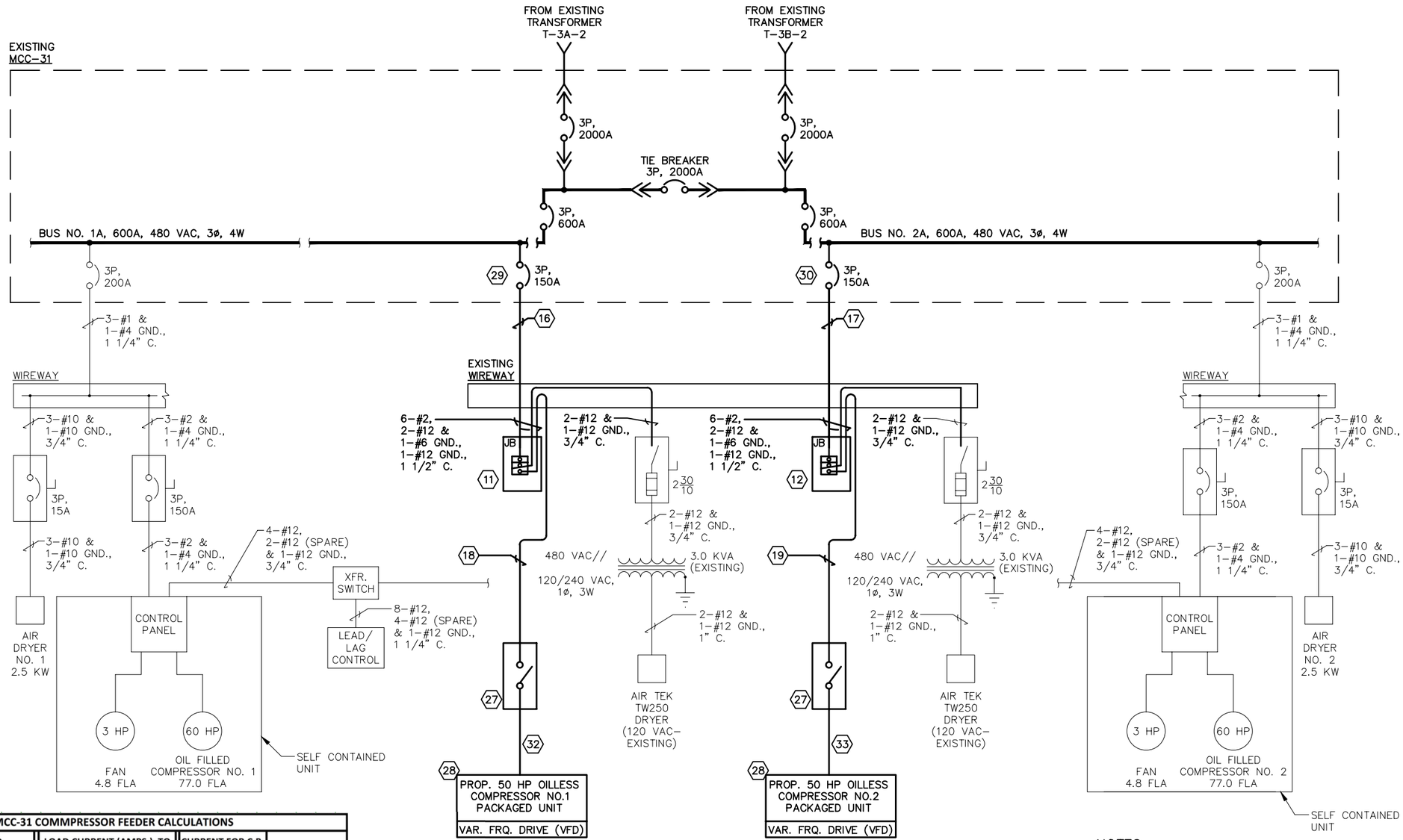
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
PROP. SECTION & DETAILS @ EL. -2.00 FT

SHEET
E9



MCC-31 COMMPRESSOR FEEDER CALCULATIONS			
COMPRESSOR LOAD BREAKDOWN	LOAD CURRENT (AMPS.) TO DETERMINE WIRE SIZE	CURRENT FOR C.B. SIZE	COMMENT
50 HP COMPRESSOR	65	162.5	(250% FLA)
OIL PUMP	1.6	1.6	
VENT FAN	3.4	3.4	
CONTROLS	0.43	0.43	
DRYER	6.25	6.25	
TOTAL CONTINUOUS AMPS.	**76.7**		
25% LARGEST MTR	16.3		
AMPS FOR WIRE SIZE	**92.9**		**USE #2 AWG W/ #6 GND**
AMPS FOR C.B. SIZE		**174.2**	**USE 150 AMP T/M C.B.**

NET MCC-31 LOAD CHANGE : +27 AMPS PER SIDE. TOTAL CONNECTED LOAD IS 62% OF MCC-31 CAPACITY.

CALCULATED VOLTAGE DROP FOR 190 FEET OF CONDUCTOR= 1.1%

MCC-31 PARTIAL ONE LINE DIAGRAM

(CONTROLS AND INSTRUMENTATION ARE SHOW ON SHEET EY)

NOTES:

1. ALL INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.
2. LOADS & FEEDERS SHOWN ON THIS ONE LINE DIAGRAM ARE THOSE INVOLVED IN THE PROPOSED DEMOLITION & INSTALLATIONS. REFERENCE GREELEY & HANSEN DWG. NO. E52 (09/1973) FOR COMPLETE ONE LINE DIAGRAM OF LOADS CONNECTED TO MCC-31.
3. NEW WORK IS SHOWN IN BOLD LINEWEIGHT.

(X) KEYED NOTES ARE LISTED ON SHEET E15.

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

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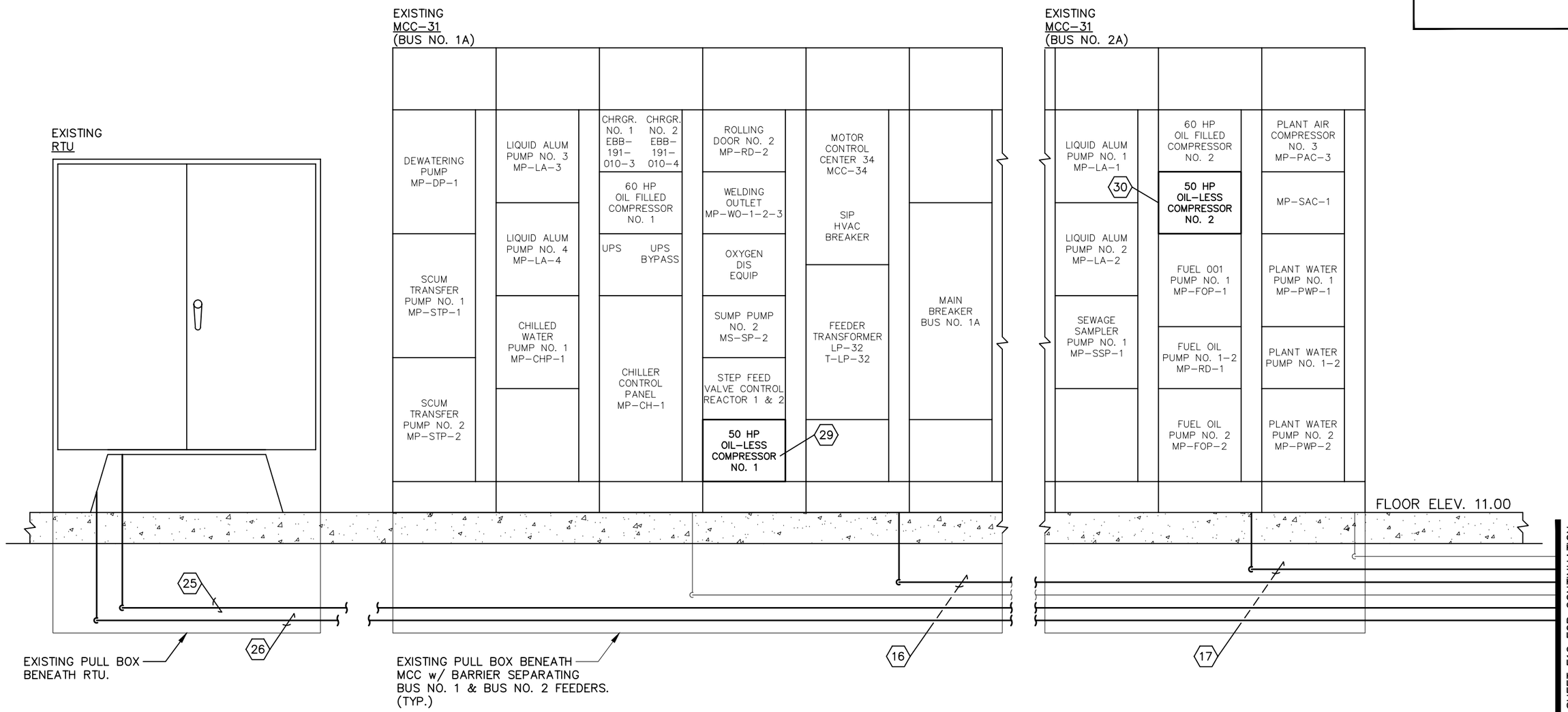
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
MCC-31 PARTIAL ONE LINE DIAGRAM

SHEET
E10

K:\WASTEWATERPROJECTS\HFCAWTPAIRCOMPRESSORREPLACEMENTS\DESIGN\PLANS\DRAFTING\DWG\BUBBASDWGFILES\90%ELECTRICALUNCOMPRESSEDMAINP.SAIRCOMPRESSREPLAC'T_ELECTRICAL



ELECTRICAL RISER DIAGRAM

(SHEET 1 OF 3)

NOTES:

1. ALL INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.
2. NEW WORK AND ITEMS OF INTEREST ARE SHOWN IN BOLD LINEWEIGHT.

(X) KEYED NOTES ARE LISTED ON SHEET E15.

ROMAN D. KORCHAK, P.E. #42626
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WASTEWATER DEPARTMENT

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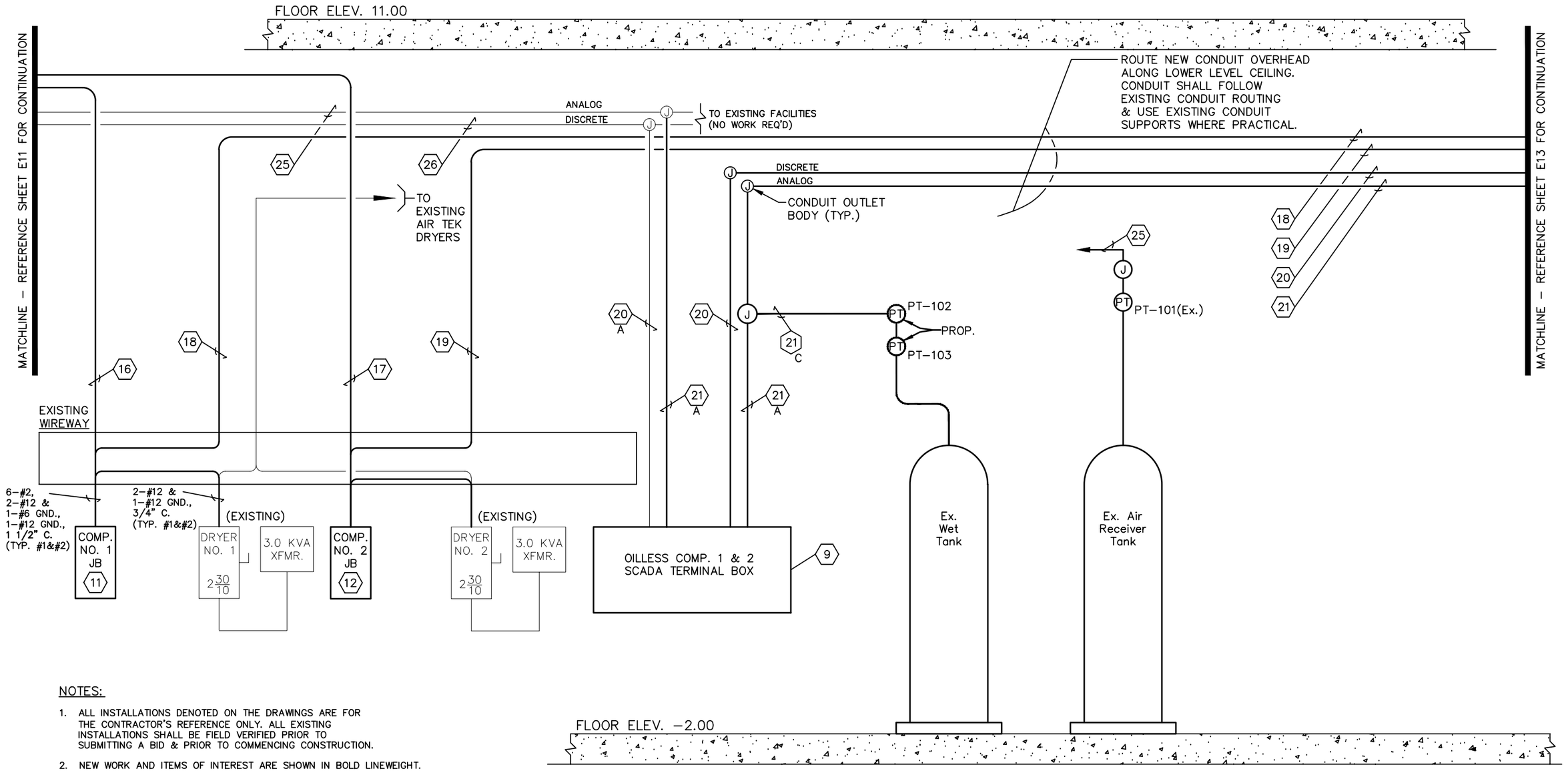
HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
ELECTRICAL RISER DIAGRAM (SHT. 1 OF 3)

SHEET
E11



NOTES:

1. ALL INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.
2. NEW WORK AND ITEMS OF INTEREST ARE SHOWN IN BOLD LINEWEIGHT.

(X) KEYED NOTES ARE LISTED ON SHEET E15.

OILLESS COMMPRESSOR ELECTRICAL RISER DIAGRAM

(SHEET 2 OF 3)

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

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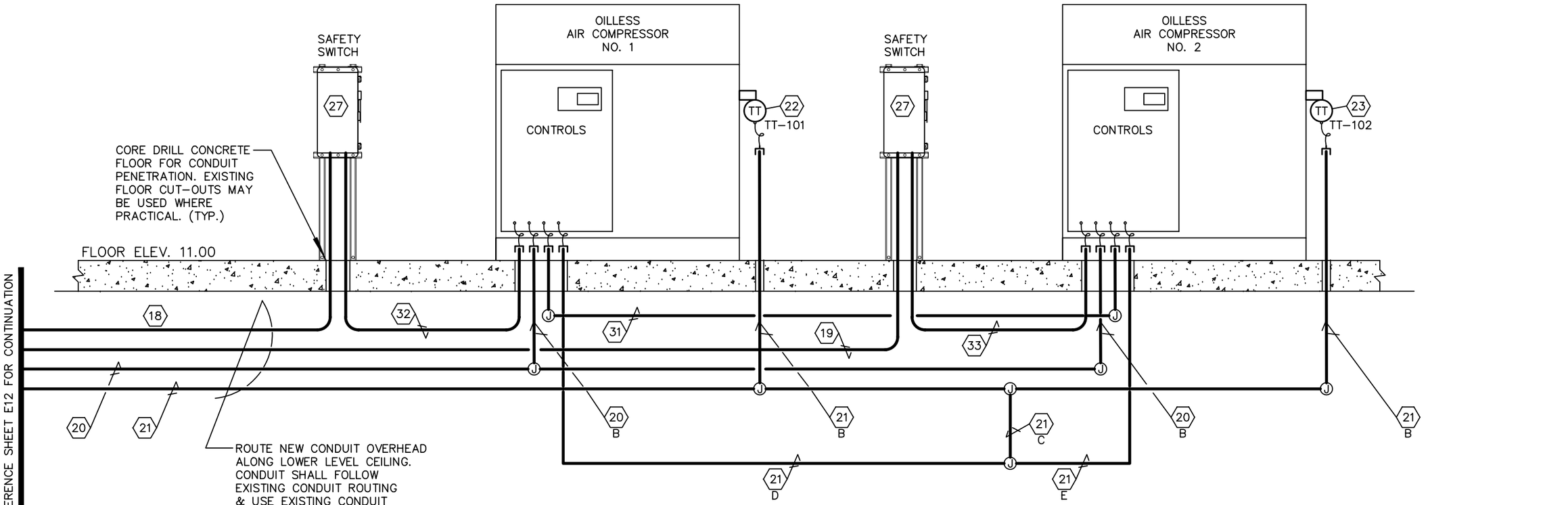
HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
ELECTRICAL RISER DIAGRAM (SHT. 2 OF 3)

SHEET
E12



ELECTRICAL RISER DIAGRAM

(SHEET 3 OF 3)

NOTES:

1. ALL INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID & PRIOR TO COMMENCING CONSTRUCTION.
2. NEW WORK AND ITEMS OF INTEREST ARE SHOWN IN BOLD LINEWEIGHT.

(X) KEYED NOTES ARE LISTED ON SHEET E15.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
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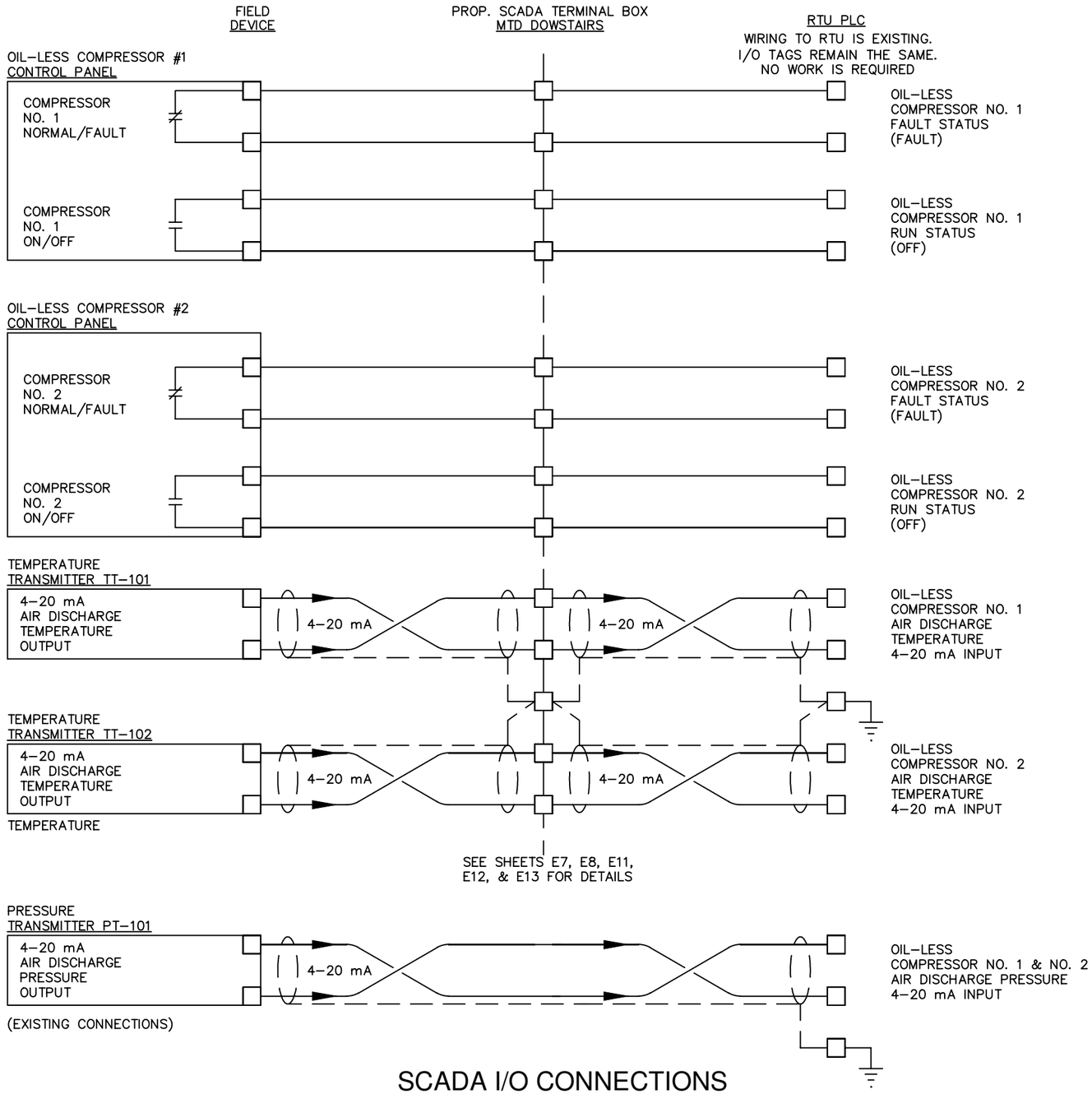
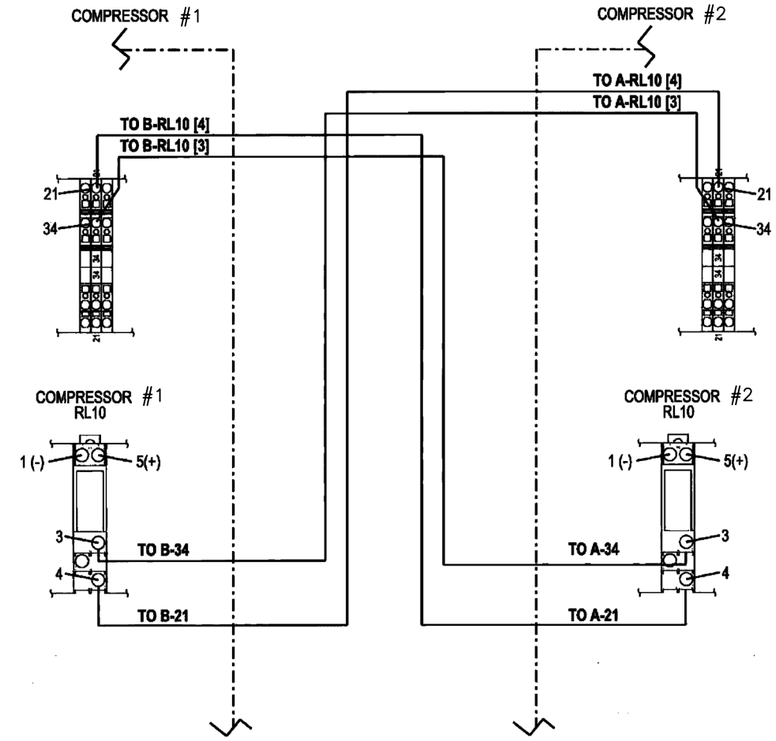
HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
ELECTRICAL RISER DIAGRAM (SHT. 3 OF 3)

SHEET
E13



SCADA I/O CONNECTIONS



COMPRESSOR #1 / COMPRESSOR #2 LAG/LEAD INTERCONNECTIONS

NOTES:

1. CONTACTS ARE SHOWN IN DE–ENERGIZED STATE.
2. THE STATUS FOR FIELD CONTACT POSITIONS ARE DENOTED IN PARENTHESIS.
3. THE SHIELD & DRAIN WIRES FOR ANALOG CABLES SHALL BE GROUNDED AT THE PLC ONLY. THE SHIELD & DRAIN WIRE AT THE END DEVICE SHALL BE NEATLY TRIMMED & TAPED w/ 2 LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).

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MAIN PUMPING SHOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
I & C INTERCONNECTION DIAGRAMS

SHEET
E14

KEYED NOTES:

1. EXISTING 3P, 100A ENCLOSED CIRCUIT BREAKER AND CONDUIT NIPPLE FOR EXISTING COMPRESSOR #1 SHALL BE REMOVED. A NEW NEMA 4X TERMINAL BOX WILL BE INSTALLED AT THIS LOCATION.
2. EXISTING NEMA 4X 2P, 30A FUSED DISCONNECT FOR AIR DRYER #1 SHALL REMAIN.
3. EXISTING 3P, 100A ENCLOSED CIRCUIT BREAKER AND CONDUIT NIPPLE FOR EXISTING COMPRESSOR #2 SHALL BE REMOVED. A NEW NEMA 4X TERMINAL BOX WILL BE INSTALLED AT THIS LOCATION.
4. EXISTING NEMA 4X 2P, 30A FUSED DISCONNECT FOR AIR DRYER #2 SHALL REMAIN.
5. EXISTING ENCLOSED MOTOR STARTER, AND ASSOCIATED CONDUITS AND CONDUCTORS, FOR EXISTING AIR COMPRESSOR #1 SHALL BE REMOVED.
6. EXISTING ENCLOSED MOTOR STARTER, AND ASSOCIATED CONDUITS AND CONDUCTORS, FOR EXISTING AIR COMPRESSOR #2 SHALL BE REMOVED.
7. EXISTING 480V//120/240V, 1PH, 3 KVA TRANSFORMER FOR AIR DRYER #1 SHALL REMAIN.
8. EXISTING 480V//120/240V, 1PH, 3 KVA TRANSFORMER FOR AIR DRYER #2 SHALL REMAIN.
9. REMOVE CONTENTS AND HMI FROM EXISTING AIR COMPRESSOR CONTROLLER ENCLOSURE AND REUSE AS TERMINAL BOX FOR DISCRETE AND ANALOG SCADA SIGNALS FROM NEW OILLESS COMPRESSORS. NEATLY COVER FRONT DOOR OPENING WITH AN ALUMINUM PLATE AND PAINT TO MATCH EXISTING. TERMINALS-- PHOENIX CONTACT UK5N, OR EQUAL. LABEL ENCLOSURE "SCADA TERMINAL BOX".
10. EXISTING WIREWAY-- EXISTING EQUIPMENT RACK SHALL REMAIN AND SHALL BE REUSED, AS REQUIRED, IN PROPOSED INSTALLATION.
11. PROPOSED NEMA 4X STAINLESS STEEL 10"X12"X6" JUNCTION BOX HOFFMAN #A12106CHNFSS. PROVIDE LAMACOID TAG ENGRAVED "OILLESS COMPRESSOR No. 1 PDB-COMPRESSOR LOCATED UPSTAIRS".
12. PROPOSED NEMA 4X STAINLESS STEEL 10"X12"X6" JUNCTION BOX HOFFMAN #A12106CHNFSS. PROVIDE LAMACOID TAG ENGRAVED "OILLESS COMPRESSOR No. 2 PDB-COMPRESSOR LOCATED UPSTAIRS".
13. PROPOSED JUNCTION BOX BACK PANEL HOFFMAN #A12P10.
14. PROPOSED POWER DISTRIBUTION BLOCK POLARIS IPLM 1/0-3.
15. PROPOSED 3 CONDUCTOR GROUND LUG- ILSCO T3A2-2.
16. EXISTING 1.25" CONDUIT FROM MCC-31 FOR OILLESS AIR COMPRESSOR #1 POWER. REMOVE EXISTING CONDUCTORS AND REPLACE WITH (3) #2 AWG & (1) #6 GND.
17. EXISTING 1.25" CONDUIT FROM MCC-31 FOR OILLESS AIR COMPRESSOR #2 POWER. REMOVE EXISTING CONDUCTORS AND REPLACE WITH (3) #2 AWG & (1) #6 GND. NOTE: IF EXISTING CONDUCTORS ARE FOUND TO BE #2 AWG OR LARGER, THEY MAY BE REUSED.
18. PROPOSED 1.25" CONDUIT W/ (3) #2 AWG & (1) #6 GND TO OILLESS AIR COMPRESSOR #1 SAFETY SWITCH, MOUNTED UPSTAIRS.
19. PROPOSED 1.25" CONDUIT W/ (3) #2 AWG & (1) #6 GND TO OILLESS AIR COMPRESSOR #2 SAFETY SWITCH, MOUNTED UPSTAIRS.
20. PROPOSED 1" CONDUIT W/ (8) #14 AWG, (8) SPARE #14 AWG & (1) #12 GND TO OILLESS AIR COMPRESSORS #1 & #2 DISCRETE STATUS AND ALARMS, MOUNTED UPSTAIRS.
20A. EXISTING 1.25" CONDUIT W/ (8) #14 AWG & (1) #12 GND FOR OILLESS COMPRESSORS #1 & #2 DISCRETE STATUS AND ALARMS TO SCADA RTU.
20B. PROPOSED 0.75" CONDUIT W/ (4) #14 AWG & (1) #12 GND FOR DISCRETE STATUS AND ALARMS TO SCADA RTU.
21. PROPOSED 1.25" CONDUIT W/ (4) 2C-#16 SHLD (BELDEN #8719), (2) SPARE 2C-#16 SHLD, & (1) #12 GND FOR ANALOG TO/FROM AIR COMPRESSORS.
21A. PROPOSED 1" CONDUIT W/ (4) 2C-#16 SHLD (BELDEN #8719), & (1) #12 GND FOR ANALOG DISCHARGE TEMPERATURE TO SCADA RTU AND PRESSURE FEEDBACK TO AIR COMPRESSORS.
21B. PROPOSED 0.75" CONDUIT W/ (1) 2C-#16 SHLD (BELDEN #8719), & (1) #12 GND FOR ANALOG DISCHARGE TEMPERATURE TO SCADA RTU.
21C. PROPOSED 0.75" CONDUIT W/ (2) 2C-#16 SHLD & (1) #12 AWG GND FOR PRESSURE FEEDBACK FROM WET TANK.
21D. PROPOSED 0.75" CONDUIT W/ (1) 2C-#16 SHLD & (1) #12 AWG GND FROM PRESSURE TRANSMITTER PT-102.
21E. PROPOSED 0.75" CONDUIT W/ (1) 2C-#16 SHLD & (1) #12 AWG GND FROM PRESSURE TRANSMITTER PT-103.
21F. EXISTING CONDUIT FOR PT-101. ADD (2) 2C-#16 SHLD FOR PT-102 AND PT-103.
22. THE EXISTING TEMPERATURE TRANSMITTER TT-101 THAT WAS REMOVED FROM THE DOWNSTAIRS LOCATION SHALL BE RELOCATED AS SHOWN. CONNECT 2C-SHIELDED CABLE AS REQUIRED.
23. THE EXISTING TEMPERATURE TRANSMITTER TT-102 THAT WAS REMOVED FROM THE DOWNSTAIRS LOCATION SHALL BE RELOCATED AS SHOWN. CONNECT 2C-SHIELDED CABLE AS REQUIRED.
24. EXISTING CONDUIT BODIES SHALL REMAIN AND BE REUSED AS SHOWN AND REQUIRED.
25. EXISTING CONDUIT AND CONDUCTORS FOR ANALOG SIGNALS TO SCADA (NO WORK REQUIRED).
26. EXISTING CONDUIT AND CONDUCTORS FOR DISCRETE SIGNALS TO SCADA (NO WORK REQUIRED).
27. PROPOSED NEMA 4X STAINLESS STEEL, 100 AMP, NON-FUSABLE SAFETY SWITCH FOR COMPRESSOR POWER- EATON #DH363UWK.
28. PROPOSED OILLESS COMPRESSOR CONTROLS & VFD (PACKAGED UNIT).
29. OILLESS AIR COMPRESSOR #1 FEEDER-- REMOVE EXISTING CIRCUIT BREAKER AND REPLACE WITH PROPOSED 150 AMP, 65kAIC CIRCUIT BREAKER- EATON #HFD3150K OR EQUAL.
30. OILLESS AIR COMPRESSOR #2 FEEDER-- REMOVE EXISTING CIRCUIT BREAKER AND REPLACE WITH PROPOSED 150 AMP, 65kAIC CIRCUIT BREAKER- EATON #HFD3150K OR EQUAL.
31. OILLESS AIR COMPRESSOR #1 & #2 LEAD - LAG INTERCONNECTIONS. PROPOSED 0.75" CONDUIT W/ (4) #14 AWG, (2) SPARE #14 & (1) #12 GND.
32. PROPOSED 1.25" CONDUIT W/ (3) #2 AWG & (1) #6 GND TO OILLESS AIR COMPRESSOR #1 MOTOR CONTROLS.
33. PROPOSED 1.25" CONDUIT W/ (3) #2 AWG & (1) #6 GND TO OILLESS AIR COMPRESSOR #2 MOTOR CONTROLS.

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HOWARD F. CURREN AWTP AIR COMPRESSOR REPLACEMENTS
KEYED NOTES

SHEET
E15