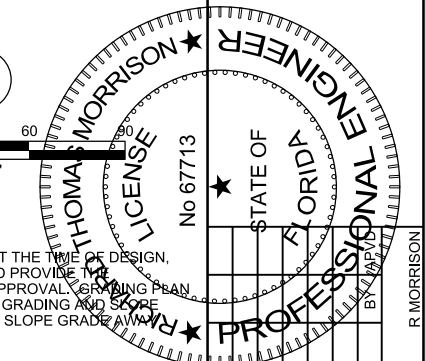


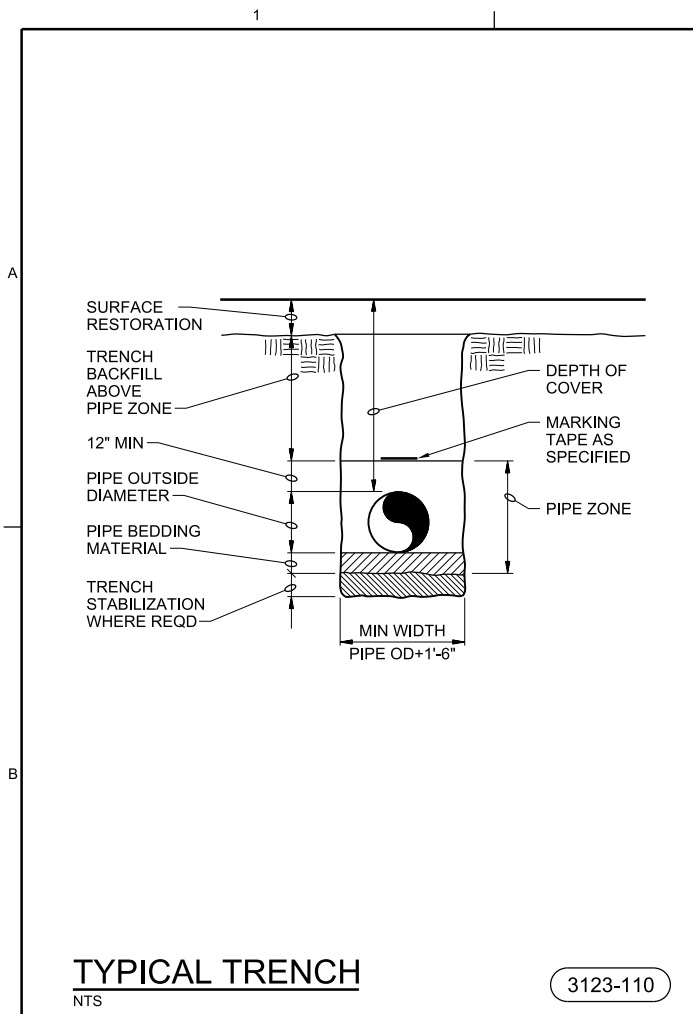
NOTE:
 1. SINCE A LIMITED SURVEY WAS PROVIDED AT THE TIME OF DESIGN, THE CONTRACTOR SHALL FIELD GRADE AND PROVIDE THE GRADING ENGINEER WITH THE GRADING PLAN FOR APPROVAL. GRADING SHALL BE CONSISTENT WITH THE EXISTING GRADING AND SLOPE TOWARDS EXISTING DRAINAGE FEATURES. SLOPE GRAD SHALL BE FROM NEW STRUCTURES.



SEE ENLARGED PLAN
 1
 005-C-5001

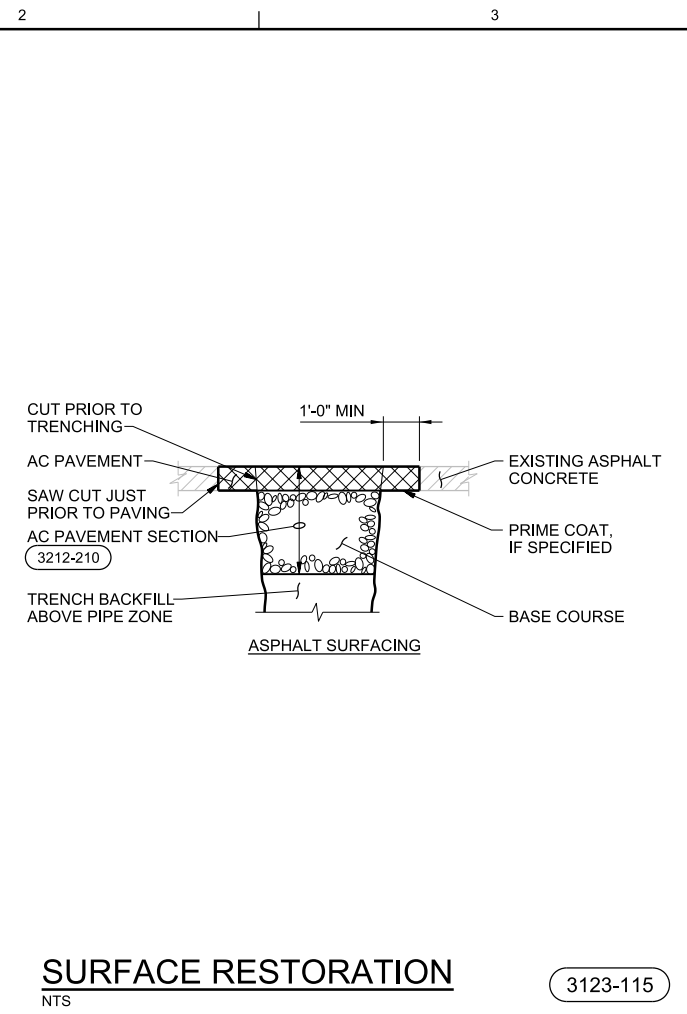
CH2MHILL CIVIL DETAILED SITE PLAN		3011 SW WILLISTON RD GAINESVILLE, FL 32608 EB0000072 AAC001992 RICHARD THOMAS MORRISON - PE 67713	SWRF NITROGEN REMOVAL AND DIGESTER MODIFICATIONS MANATEE COUNTY UTILITIES MANATEE COUNTY, FL
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	DATE: DECEMBER 2013 PROJ: 457133 DWG: 005-C-2002 SHEET: of	R. MORRISON DSGN NO. DATE REVISION CHK APVD A. MALONE	R. MORRISON PE LICENSE No 67713 STATE OF FLORIDA PROFESSIONAL ENGINEER

ISSUED FOR BID



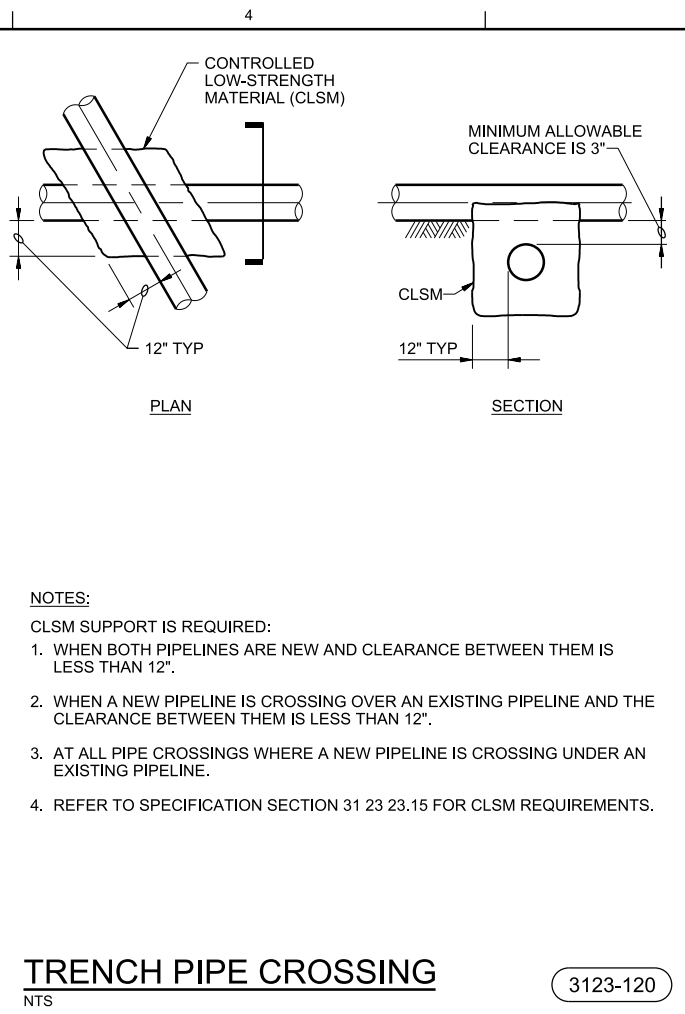
TYPICAL TRENCH
NTS

3123-110



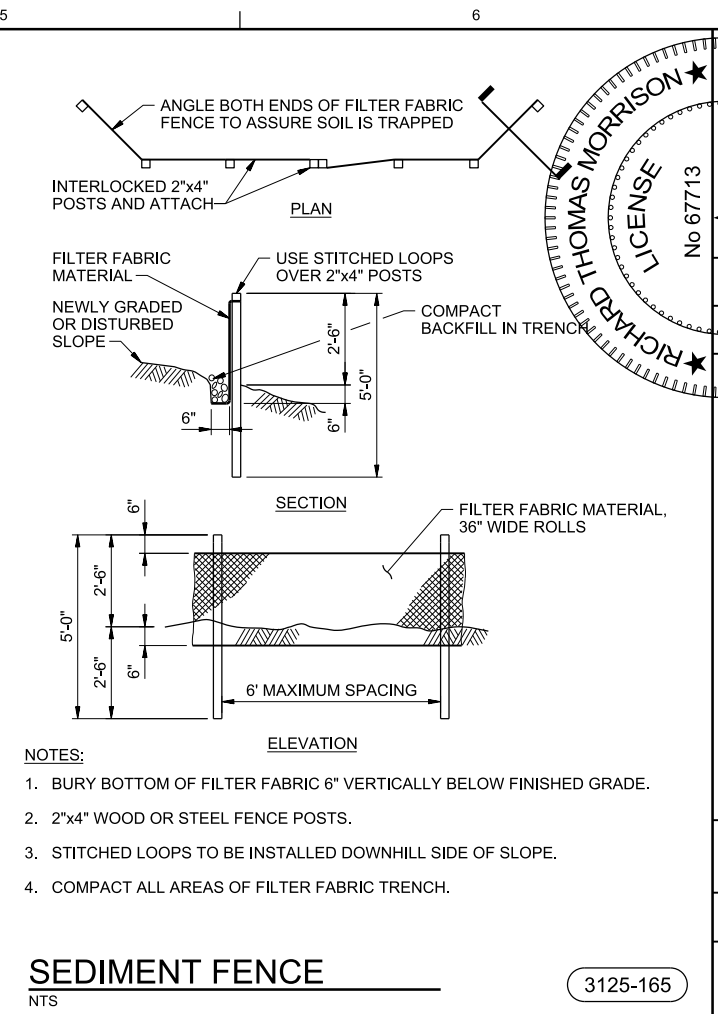
SURFACE RESTORATION
NTS

3123-115



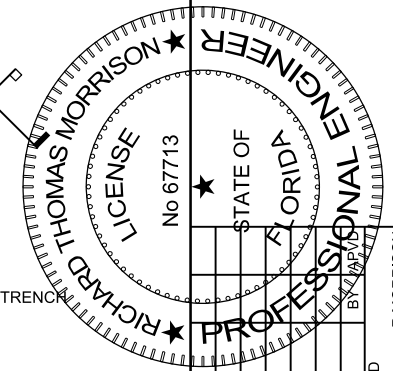
TRENCH PIPE CROSSING
NTS

3123-120

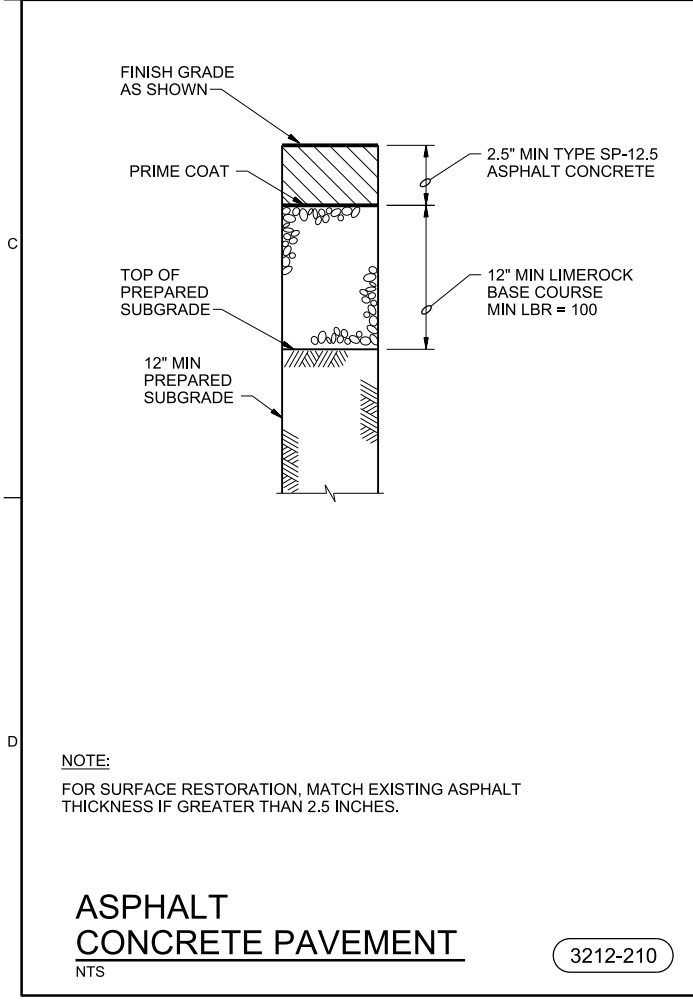


SEDIMENT FENCE
NTS

3125-165

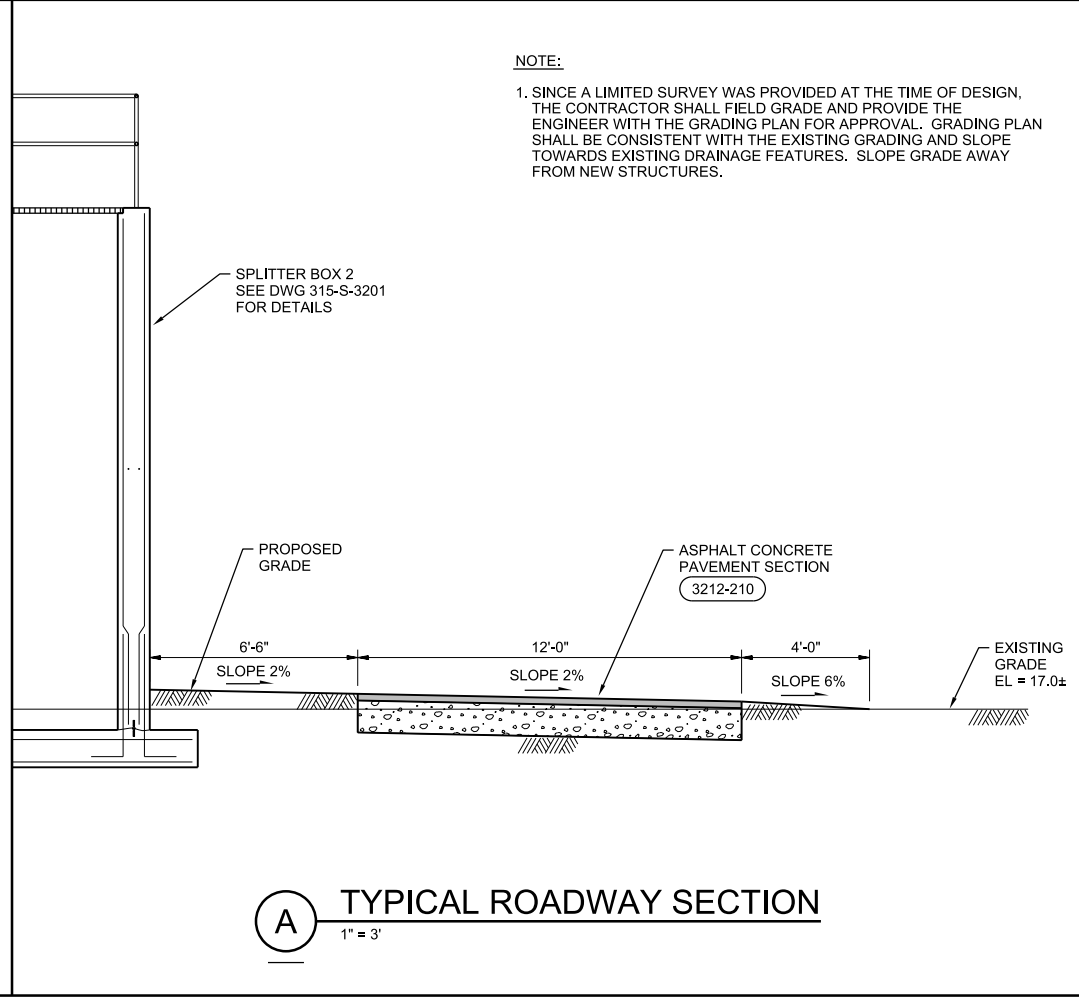


NO.	DATE	DR	APVD
DSGN		R. MORRISON	A. MALONE
REVISION		C. CHILDRESS	

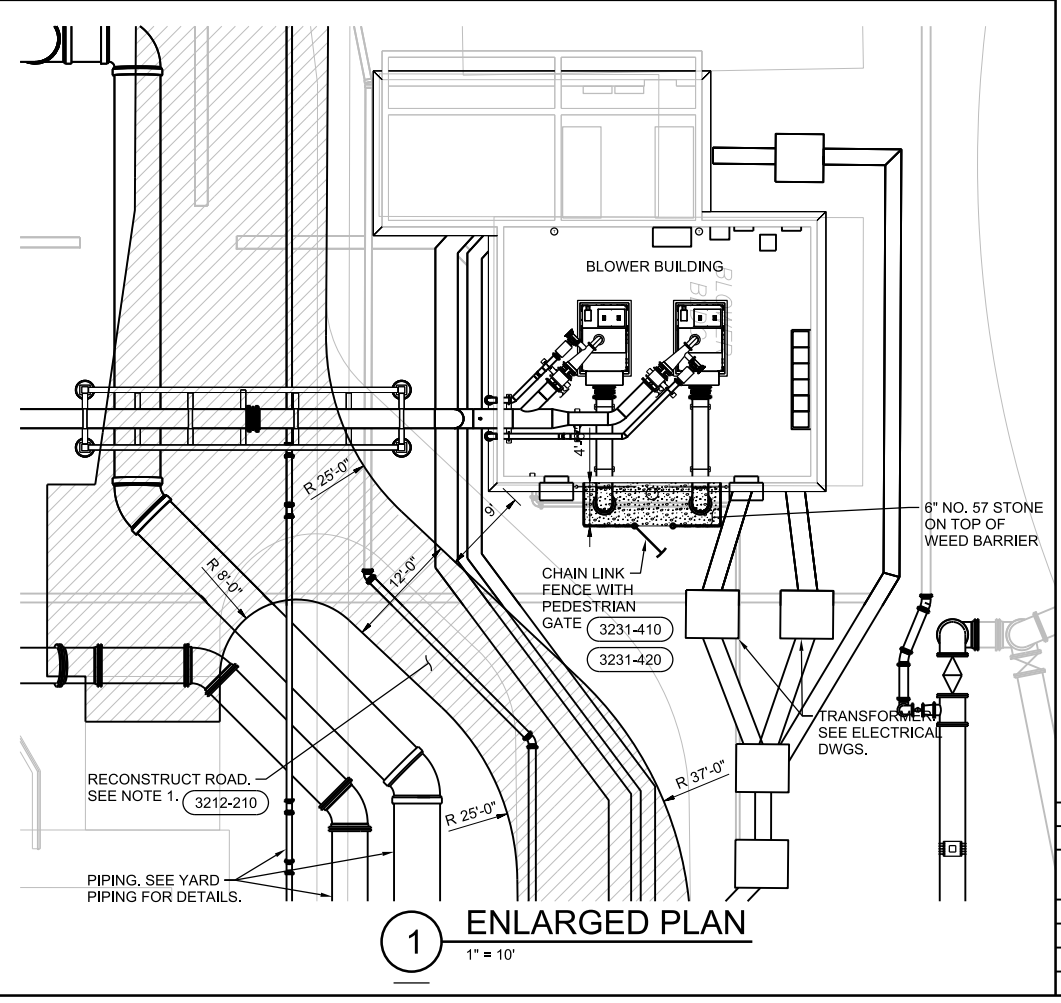


ASPHALT CONCRETE PAVEMENT
NTS

3212-210



A TYPICAL ROADWAY SECTION
1" = 3'



1 ENLARGED PLAN
1" = 10'

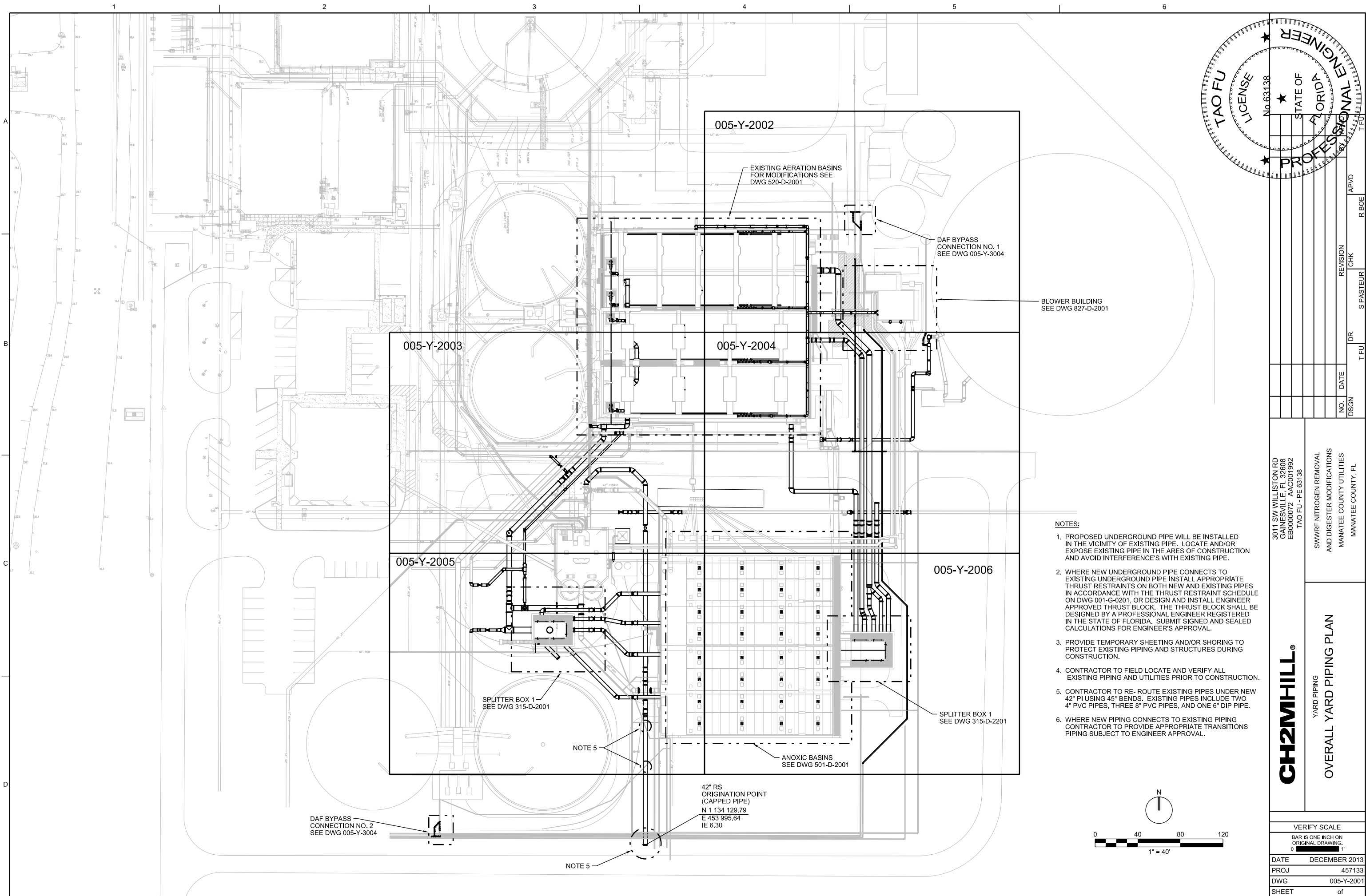
3011 SW WILLISTON RD
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EB0000072 AAC001992
RICHARD THOMAS MORRISON - PE 67713

SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

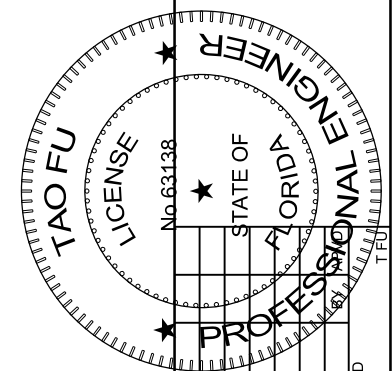
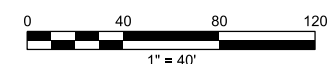
CH2MHILL
CIVIL
DETAILS

VERIFY SCALE	DATE	DECEMBER 2013
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	457133
	DWG	005-C-5001
	SHEET	of

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- NOTES:**
1. PROPOSED UNDERGROUND PIPE WILL BE INSTALLED IN THE VICINITY OF EXISTING PIPE. LOCATE AND/OR EXPOSE EXISTING PIPE IN THE AREAS OF CONSTRUCTION AND AVOID INTERFERENCE'S WITH EXISTING PIPE.
 2. WHERE NEW UNDERGROUND PIPE CONNECTS TO EXISTING UNDERGROUND PIPE INSTALL APPROPRIATE THRUST RESTRAINTS ON BOTH NEW AND EXISTING PIPES IN ACCORDANCE WITH THE THRUST RESTRAINT SCHEDULE ON DWG 001-G-0201, OR DESIGN AND INSTALL ENGINEER APPROVED THRUST BLOCK. THE THRUST BLOCK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SUBMIT SIGNED AND SEALED CALCULATIONS FOR ENGINEER'S APPROVAL.
 3. PROVIDE TEMPORARY SHEETING AND/OR SHORING TO PROTECT EXISTING PIPING AND STRUCTURES DURING CONSTRUCTION.
 4. CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING PIPING AND UTILITIES PRIOR TO CONSTRUCTION.
 5. CONTRACTOR TO RE-ROUTE EXISTING PIPES UNDER NEW 42" PI USING 45° BENDS. EXISTING PIPES INCLUDE TWO 4" PVC PIPES, THREE 8" PVC PIPES, AND ONE 6" DIP PIPE.
 6. WHERE NEW PIPING CONNECTS TO EXISTING PIPING CONTRACTOR TO PROVIDE APPROPRIATE TRANSITIONS PIPING SUBJECT TO ENGINEER APPROVAL.



NO.	DATE	REVISION

3011 SW WILLISTON RD
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 MANATEE COUNTY, FL

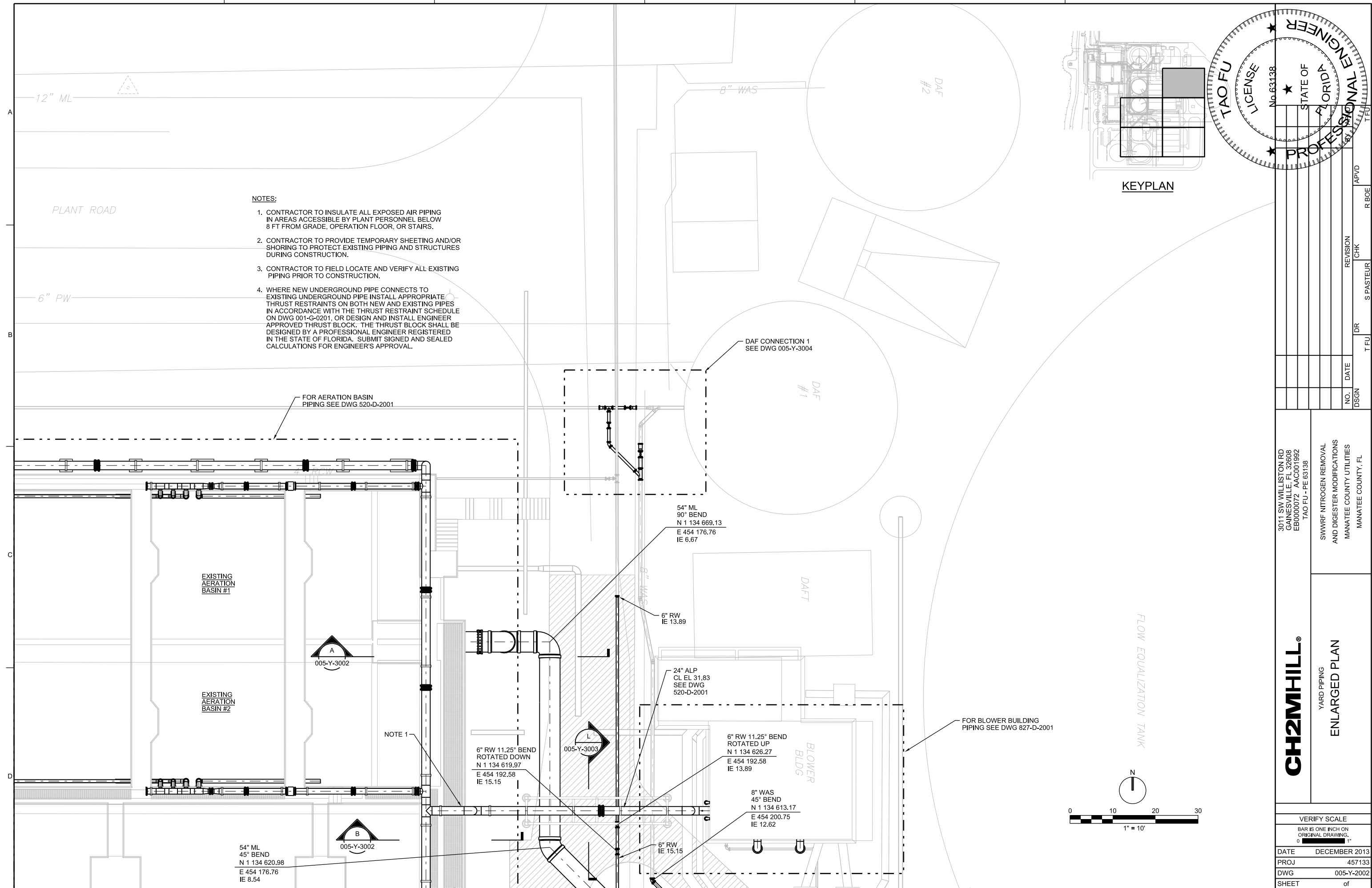
CH2MHILL®

YARD PIPING
OVERALL YARD PIPING PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2013
PROJ	457133
DWG	005-Y-2001
SHEET	of

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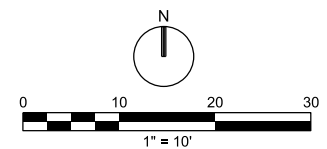
1 2 3 4 5 6



- NOTES:**
- CONTRACTOR TO INSULATE ALL EXPOSED AIR PIPING IN AREAS ACCESSIBLE BY PLANT PERSONNEL BELOW 8 FT FROM GRADE, OPERATION FLOOR, OR STAIRS.
 - CONTRACTOR TO PROVIDE TEMPORARY SHEETING AND/OR SHORING TO PROTECT EXISTING PIPING AND STRUCTURES DURING CONSTRUCTION.
 - CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING PIPING PRIOR TO CONSTRUCTION.
 - WHERE NEW UNDERGROUND PIPE CONNECTS TO EXISTING UNDERGROUND PIPE INSTALL APPROPRIATE THRUST RESTRAINTS ON BOTH NEW AND EXISTING PIPES IN ACCORDANCE WITH THE THRUST RESTRAINT SCHEDULE ON DWG 001-G-0201, OR DESIGN AND INSTALL ENGINEER APPROVED THRUST BLOCK. THE THRUST BLOCK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SUBMIT SIGNED AND SEALED CALCULATIONS FOR ENGINEER'S APPROVAL.

FOR AERATION BASIN PIPING SEE DWG 520-D-2001

FOR BLOWER BUILDING PIPING SEE DWG 827-D-2001



KEYPLAN

TAO FU
PROFESSIONAL ENGINEER
 LICENSE No. 63138
 STATE OF FLORIDA

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SWRF NITROGEN REMOVAL
 AND DIGESTER MODIFICATIONS
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FL

CH2MHILL®

YARD PIPING
ENLARGED PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2013
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1

2

3

4

5

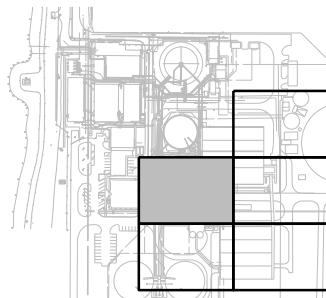
6

A

B

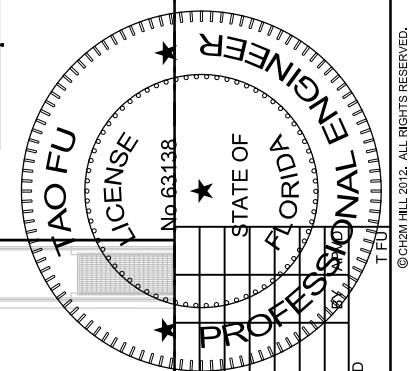
C

D



KEYPLAN

- NOTES:**
- CONTRACTOR TO REMOVE EXISTING PIPING AS NECESSARY TO INSTALL NEW PIPING. EXISTING PIPING NOT TO BE USED SHALL BE CAPPED AND ABANDONED IN PLACE.
 - EXISTING RAS LINE TO BE CONVERTED TO SRS TO/FROM THE EQ TANK.
 - KEEP THE 30" RS LINE IN SERVICE DURING CONSTRUCTION. INSTALL LINE STOPS, HOT TAPS, AND BYPASS AS REQUIRED.
 - CONTRACTOR TO PROVIDE TEMPORARY SHEETING AND/OR SHORING TO PROTECT EXISTING PIPING AND STRUCTURES DURING CONSTRUCTION.
 - CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING PIPING AND UTILITIES PRIOR TO CONSTRUCTION.
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 - INSTALL PIPE UNDER THE ELECTRICAL DUCT BANK. DO NOT DISRUPT ELECTRICAL SERVICE.



NO.	DATE	DSGN	DR	CHK	REVISION

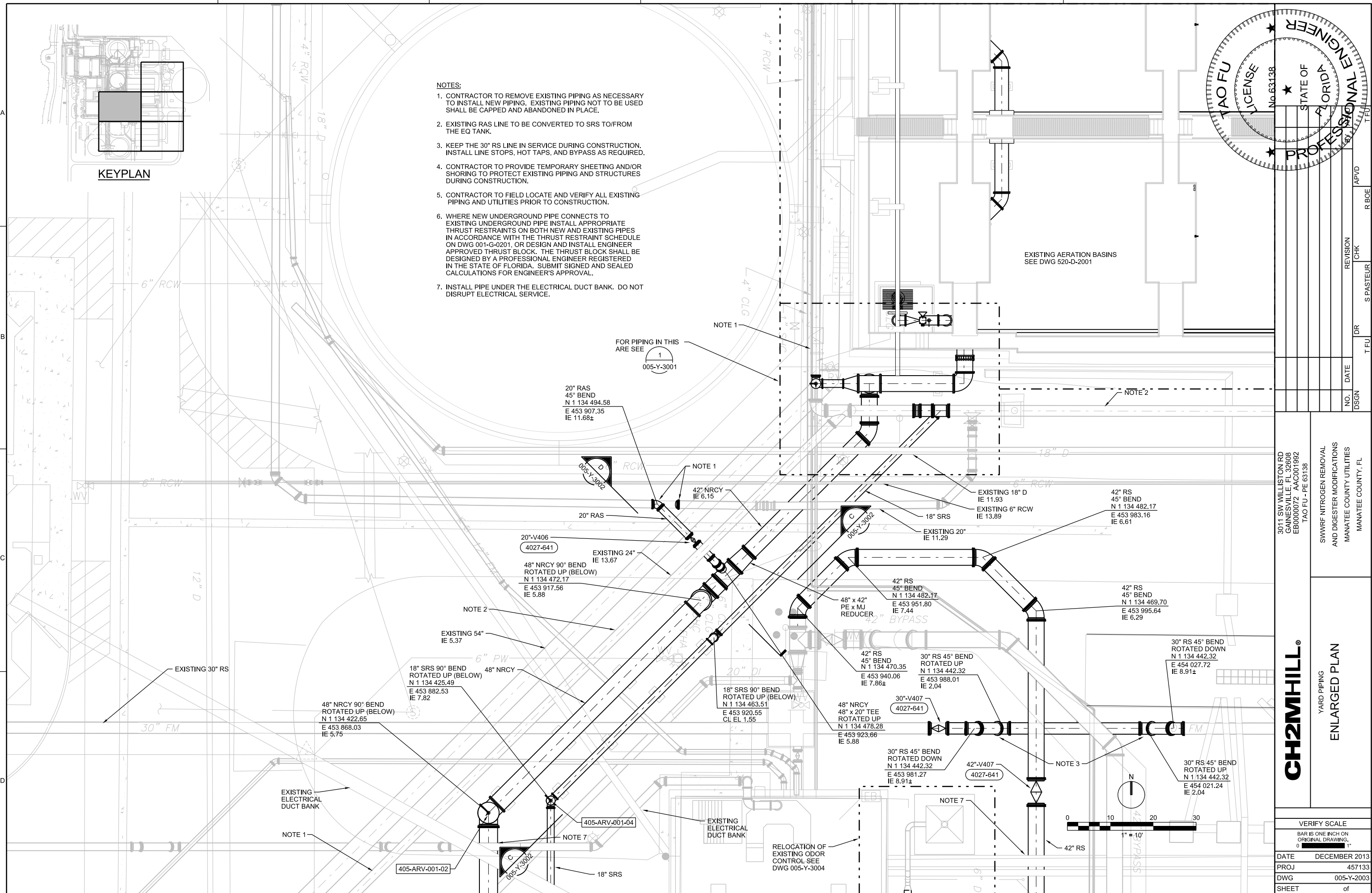
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AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

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YARD PIPING
ENLARGED PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2013
PROJ	457133
DWG	005-Y-2003
SHEET	of

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FOR PIPING IN THIS ARE SEE
1
005-Y-3001

20" RAS
45° BEND
N 1 134 494.58
E 453 907.35
IE 11.68±

20" RAS
45° BEND
N 1 134 472.17
E 453 917.56
IE 5.88

20"-V406
4027-641

EXISTING 24"
ROTATED UP (BELOW)
N 1 134 472.17
E 453 917.56
IE 5.88

18" SRS 90° BEND
ROTATED UP (BELOW)
N 1 134 425.49
E 453 882.53
IE 7.82

48" NRCY 90° BEND
ROTATED UP (BELOW)
N 1 134 422.65
E 453 868.03
IE 5.75

18" SRS 90° BEND
ROTATED UP (BELOW)
N 1 134 463.51
E 453 920.55
CL EL 1.55

42" RS
45° BEND
N 1 134 470.35
E 453 940.06
IE 7.86±

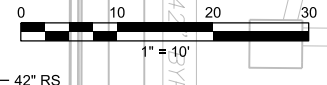
30" RS 45° BEND
ROTATED UP
N 1 134 442.32
E 453 988.01
IE 2.04

30" RS 45° BEND
ROTATED DOWN
N 1 134 442.32
E 453 981.27
IE 8.91±

42" RS
45° BEND
N 1 134 469.70
E 453 995.64
IE 6.29

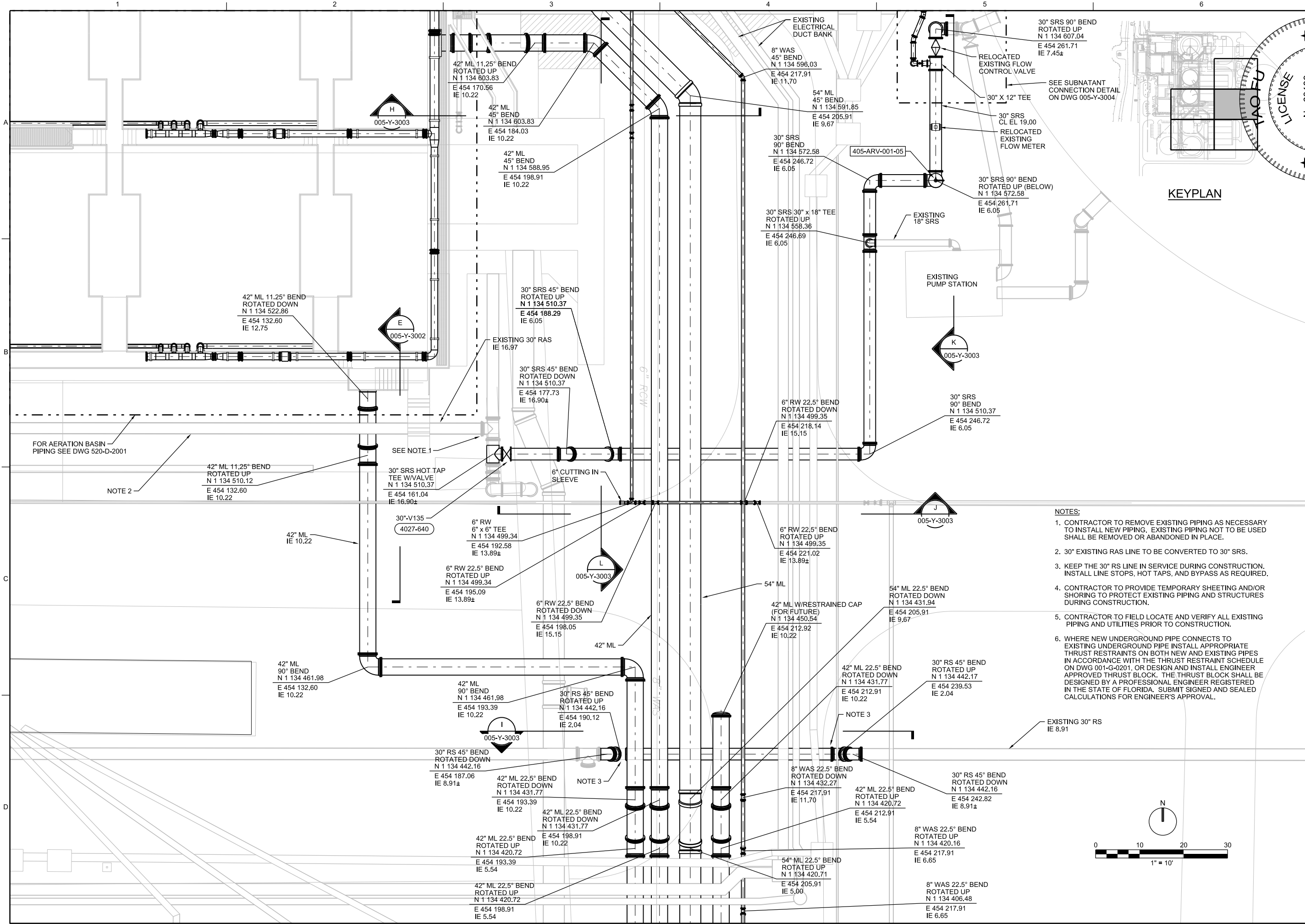
30" RS 45° BEND
ROTATED DOWN
N 1 134 442.32
E 454 027.72
IE 8.91±

30" RS 45° BEND
ROTATED UP
N 1 134 442.32
E 454 021.24
IE 2.04

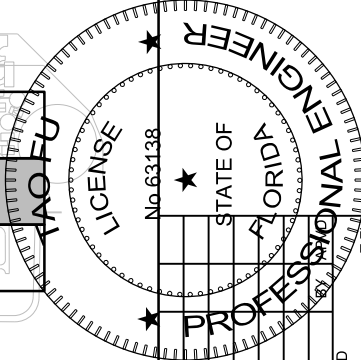


VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2013
PROJ	457133
DWG	005-Y-2003
SHEET	of

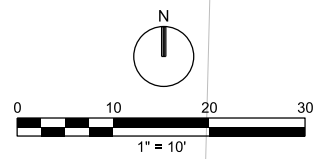
ISSUED FOR BID



KEYPLAN



- NOTES:**
- CONTRACTOR TO REMOVE EXISTING PIPING AS NECESSARY TO INSTALL NEW PIPING. EXISTING PIPING NOT TO BE USED SHALL BE REMOVED OR ABANDONED IN PLACE.
 - 30" EXISTING RAS LINE TO BE CONVERTED TO 30" SRS.
 - KEEP THE 30" RS LINE IN SERVICE DURING CONSTRUCTION. INSTALL LINE STOPS, HOT TAPS, AND BYPASS AS REQUIRED.
 - CONTRACTOR TO PROVIDE TEMPORARY SHEETING AND/OR SHORING TO PROTECT EXISTING PIPING AND STRUCTURES DURING CONSTRUCTION.
 - CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING PIPING AND UTILITIES PRIOR TO CONSTRUCTION.
 - WHERE NEW UNDERGROUND PIPE CONNECTS TO EXISTING UNDERGROUND PIPE INSTALL APPROPRIATE THRUST RESTRAINTS ON BOTH NEW AND EXISTING PIPES IN ACCORDANCE WITH THE THRUST RESTRAINT SCHEDULE ON DWG 001-G-0201. OR DESIGN AND INSTALL ENGINEER APPROVED THRUST BLOCK. THE THRUST BLOCK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SUBMIT SIGNED AND SEALED CALCULATIONS FOR ENGINEER'S APPROVAL.



NO.	DATE	DR	REVISION	CHK	APVD

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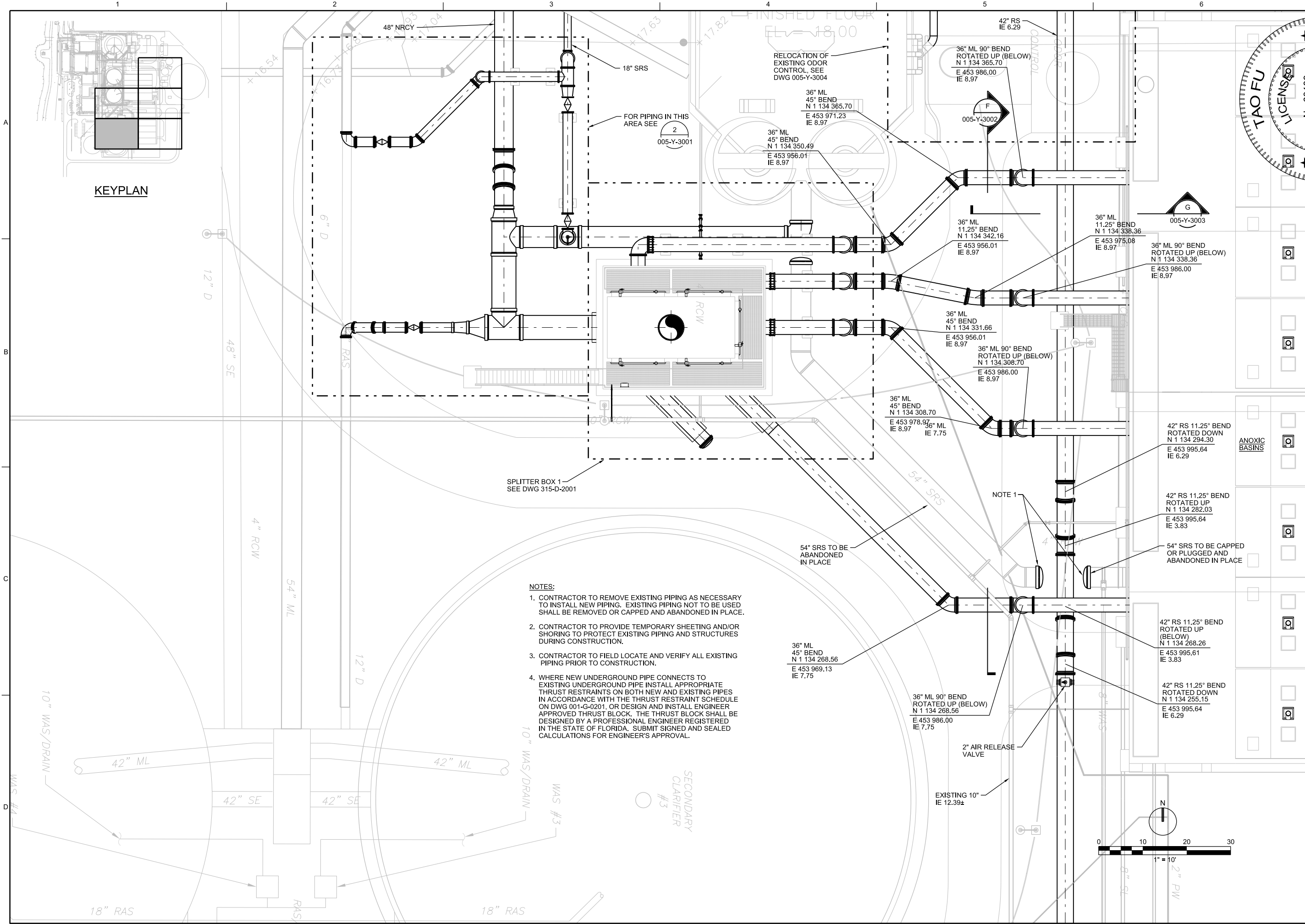
SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

CH2MHILL®

YARD PIPING
ENLARGED PLAN

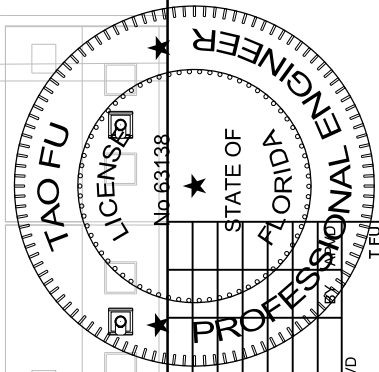
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2013
PROJ	457133
DWG	005-Y-2004
SHEET	of

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KEYPLAN

- NOTES:**
1. CONTRACTOR TO REMOVE EXISTING PIPING AS NECESSARY TO INSTALL NEW PIPING. EXISTING PIPING NOT TO BE USED SHALL BE REMOVED OR CAPPED AND ABANDONED IN PLACE.
 2. CONTRACTOR TO PROVIDE TEMPORARY SHEETING AND/OR SHORING TO PROTECT EXISTING PIPING AND STRUCTURES DURING CONSTRUCTION.
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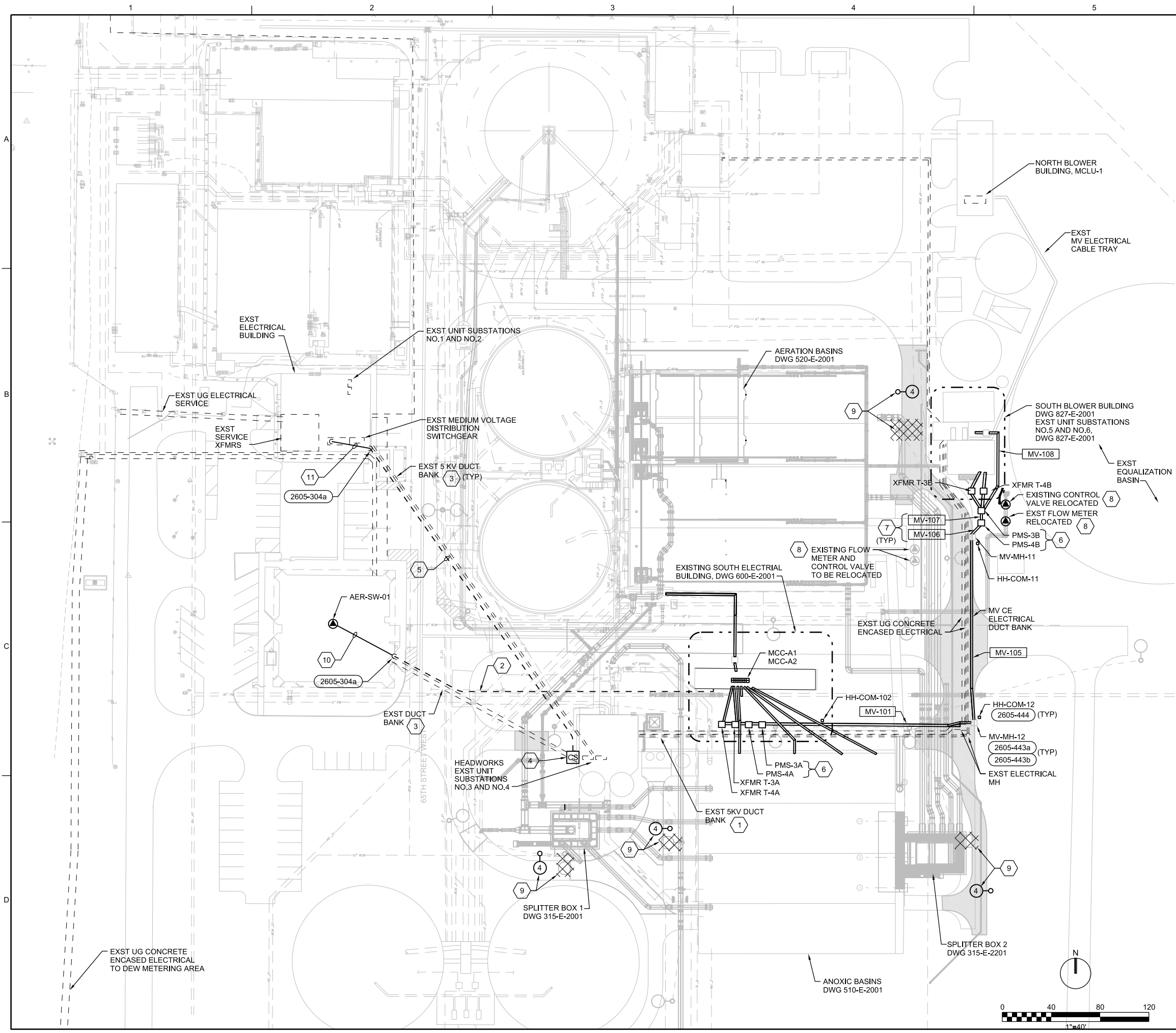
CH2MHILL®
 YARD PIPING
 ENLARGED PLAN

VERIFY SCALE	DATE	DECEMBER 2013
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	457133
	DWG	005-Y-2005
	SHEET	of

ISSUED FOR BID

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HAZARDOUS LOCATION NOTES

- PER NFPA 820, TABLE 5.2, ROW 5, LINE a, THE AERATION BASIN IS CLASSIFIED AS FOLLOWS:
 - NEC CLASS I, DIV 1 WITHIN THE ENCLOSURE BASIN.
 - NEC CLASS I, DIV 2 WITHIN A 10 FEET ENVELOPE AROUND ALL TANK OPENINGS EXTENDING TO GRADE.
- PER NFPA 820, TABLE 5.2, ROW 3 LINE C, SPLITTER BOX 1 AND SPLITTER BOX 2 ARE CLASSIFIED AS FOLLOWS:
 - NEC CLASS I, DIV 2 FOR (1) THE AREA WITHIN 10 FT. ENVELOPE AROUND THE ENTIRE TANK.
- PER NFPA 820, TABLE 5.2, ROW 7, THE AERATION BASINS ARE CLASSIFIED AS FOLLOWS:
 - NEC CLASS I, DIV 2 FOR (1) INTERIOR OF TANK, (2) TOP OF TANK WALL, (3) ENVELOPE 18 INCHES ABOVE TOP OF TANK EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL, (3) ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET HORIZONTALLY FROM THE EXTERIOR TANK WALLS.
- PER NFPA 820, TABLE 5.2, ROW 3, LINE C, THE EQUALIZATION BASIN IS CLASSIFIED AS FOLLOWS:
 - NEC CLASS I, DIV 2 FOR (1) INTERIOR OF TANK; (2) ENVELOPE 18 INCHES ABOVE TOP OF TANK EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL, (3) ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET HORIZONTALLY FROM THE EXTERIOR TANK WALLS.
- PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

GENERAL NOTES

- DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL AND STRUCTURAL DRAWINGS AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
- ALL WORK SHALL COMPLY WITH THE NEC AND LOCAL CODES.
- CONDUCTORS SHALL NOT BE SPICED EXCEPT AS NOTED IN SPECS AND SHOWN ON THE DRAWINGS.
- ALL CONDUIT SHALL HAVE AN EQUIPMENT GROUND CONDUCTOR SIZED PER TABLE 250.122 OF THE NEC UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES, PIPING, DUCT BANKS, ETC. AND RE ROUTE NEW CONDUITS & DUCT BANKS AS REQUIRED.
- ALL EXISTING INFORMATION SHOWN MUST BE FIELD VERIFIED. ACCURACY OF EXISTING WIRING IS NOT GUARANTEED.
- REFER TO SPECIFICATIONS AND STANDARD DETAILS FOR CUTTING AND PATCHING REQUIREMENTS OF EXISTING SIDEWALKS AND PAVEMENT.

SHEET KEYNOTES

- REPLACE EXST 5KV CONDUCTORS FROM UNIT SUB NO. 3 TO UNIT SUB NO. 5 AND FROM UNIT SUB NO. 4 TO UNIT SUB NO. 6. SEE 007-E-6001 AND 005-E-6002 FOR REQUIREMENTS.
- [3°C, FOC] FIELD ROUTE DIRECT EARTH BURIAL FROM SP-15 IN SOUTH ELECTRICAL BUILDING TO EXST AER-SW-01 LOCATED IN ADMIN ELECTRICAL ROOM.
- EXISTING DUCT BANKS SHOWN PER RECORD DRAWINGS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS.
- RED MUSHROOM HEAD SHUNT TRIP PUSHBUTTON IN NEMA 4X ENCLOSURE MOUNTED ADJACENT TO ELECTRICAL ROOM DOOR. LABEL PER NEC ARTICLE 225.52 REQUIREMENTS (SERVICE DISCONNECT FOR HEADWORKS, SOUTH ELECTRICAL BUILDING, SOUTH BLOWER BUILDING, AND NORTH BLOWER BUILDING).
- CONCRETE ENCASED DUCT BANK PER DETAIL 2605-400 FOR SHUNT TRIP CONDUIT. ROUTE ALONG EXISTING DUCT BANK TO EXISTING MV DISTRIBUTION SWITCHGEAR IN ELECTRICAL BUILDING USING EXISTING C&I MANHOLES.
- PROVIDE PAD-MOUNTED SWITCHGEAR GROUNDING PER DETAIL 2605-204 AND CONCRETE PAD PER DETAIL 0330-056 TYPE G.
- REFER TO DUCT BANK SCHEDULE, DWG 005-E-6002 FOR DUCT BANK REQUIREMENTS.
- PROVIDE ALL CONDUIT, WIRE, JUNCTION BOXES, HARDWARE, ETC AS REQUIRED TO RELOCATE EXISTING FLOW METER AND CONTROL VALVE. REFER TO DRAWING 008-N-6001.
- REMOVE EXST LIGHT, POLE, AND POLE BASE. PROVIDE NEW LIGHT, POLE, AND POLE BASE AT NEW LOCATION AS SHOWN. PROVIDE NEW WIRING IN KIND TO RESTORE POWER TO AREA LIGHTS.
- ROUTE OVERHEAD EXPOSED TO MEDIUM VOLTAGE DISTRIBUTION SWITCHGEAR.

PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 No 60201
 DAVID C. NICHOLSON - PE 00201

DR	D. NICHOLSON	APVD	M. WAYNE
REVISION	CHK		
NO.	DATE		

3011 SW WILLISTON RD
 GAINESVILLE, FL 32608
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 DAVID C. NICHOLSON - PE 00201

CH2MHILL
 ELECTRICAL
 YARD ELECTRICAL PLAN
 SHEET 1

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2013
PROJ	457133
DWG	005-E-2001
SHEET	of

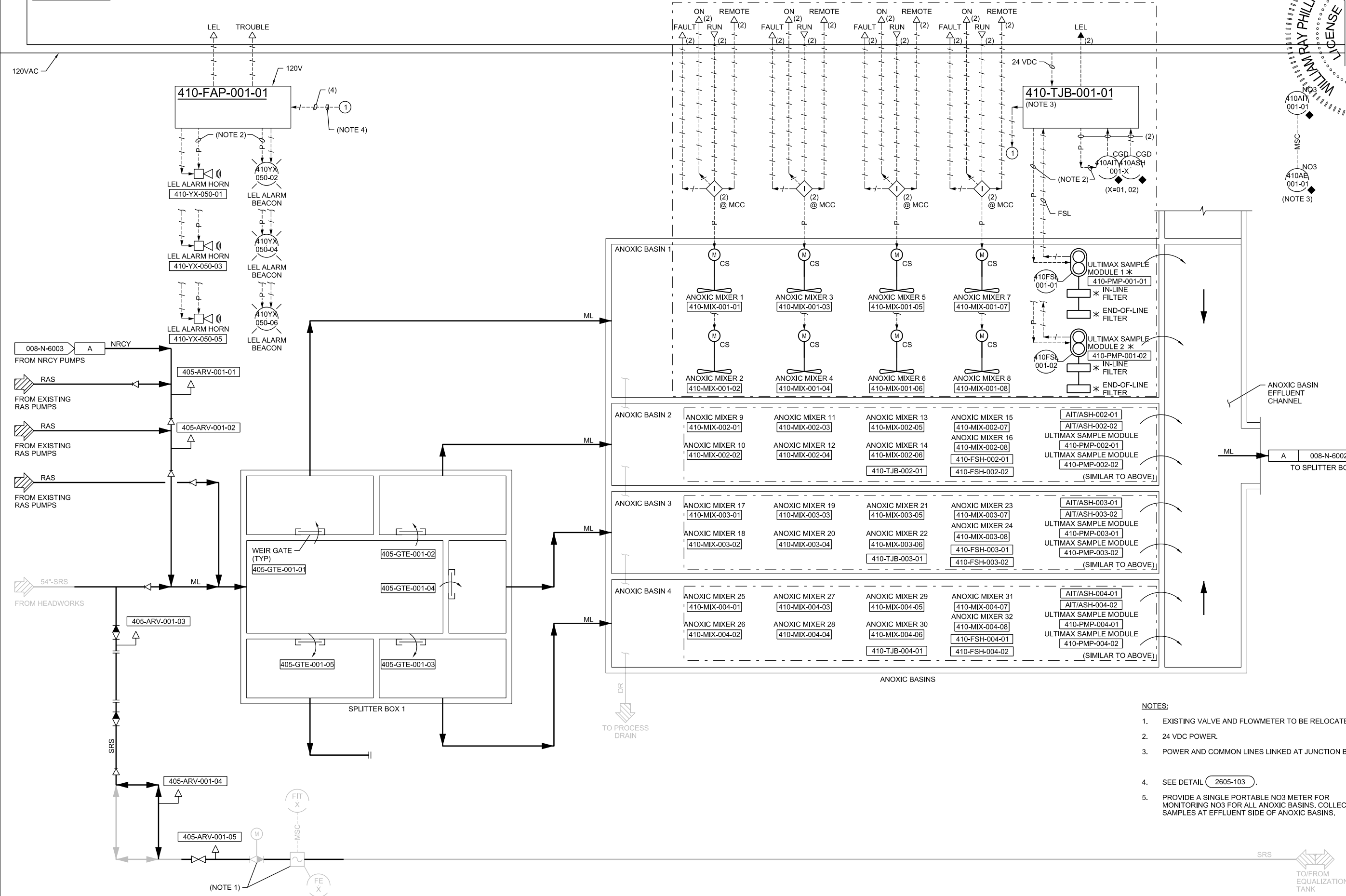
DUCT BANK ID	CONDUIT SIZE	CIRCUIT ID	CIRCUIT TYPE	FROM	TO	COMMENTS
MV-101	4"	5KV-SUB-3A	MV POWER	EXST UNIT SUB 3	PMS-3A	NOTE 4
	4"	5KV-SUB-4A	MV POWER	EXST UNIT SUB 4	PMS-4A	NOTE 5
	4"	5KV-SUB-3B	MV POWER	PMS-3A	PMS-3B	VIA MV-MH-12
	4"	5KV-SUB-4B	MV POWER	PMS-4A	PMS-4B	VIA MV-MH-12
	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6
MV-102	4"	5KV-T3A	MV POWER	PMS-3A	T-3A	
	4"	5KV-SUB-4A	MV POWER	EXST MV MANHOLE	PMS-4A	
	4"	5KV-SUB-4B	MV POWER	PMS-4A	PMS-4B	VIA MV-MH-12
MV-103	3"	5KV-T3A	MV POWER	PMS-3A	T-3A	
	3"	5KV-T4A	MV POWER	PMS-4A	T-4A	
MV-104	3"	5KV-T4A	MV POWER	PMS-4A	T-4A	
MV-105	4"	5KV-SUB-3B	MV POWER	PMS-3A	PMS-3B	VIA MV-MH-11
	4"	5KV-SUB-4B	MV POWER	PMS-4A	PMS-4B	VIA MV-MH-11
	3"	EMPTY		MV-MH-12	MV-MH-11	
	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6
MV-106	4"	5KV-SUB-3B	MV POWER	PMS-3A	PMS-3B	VIA MV-MH-11
	4"	5KV-SUB-4B	MV POWER	PMS-4A	PMS-4B	VIA MV-MH-11
	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6
MV-107	4"	5KV-SUB-3B	MV POWER	PMS-3A	PMS-3B	VIA MV-MH-11
	4"	5KV-SUB-6	MV POWER	PMS-4B	EXST UNIT SUBSTATION 6	
	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6
MV-108	4"	5KV-SUB-5	MV POWER	PMS-3B	EXST UNIT SUBSTATION 5	VIA MV-HH-10
	4"	5KV-SUB-6	MV POWER	PMS-4B	EXST UNIT SUBSTATION 6	VIA MV-HH-10
MV-109	4"	5KV-SUB-5	MV POWER	PMS-3B	EXST UNIT SUBSTATION 5	HH TO UNIT SUB
	4"	5KV-SUB-6	MV POWER	PMS-4B	EXST UNIT SUBSTATION 6	HH TO UNIT SUB
MV-110	4"	5KV-T-3B	MV POWER	PMS-3B	T-3B	
MV-111	4"	5KV-T-4B	MV POWER	PMS-4B	T-4B	
101	4"	MCC-A2	POWER	T-4A	MCC-A2	
	4"	MCC-A2	POWER	T-4A	MCC-A2	
	4"	MCC-A2	SPARE	T-4A	MCC-A2	
102	4"	MCC-A1	POWER	T-3A	MCC-A1	
	4"	MCC-A1	POWER	T-3A	MCC-A1	
	4"	MCC-A1	SPARE	T-3A	MCC-A1	
103	1"	410-MIX-001-01	POWER	410-MIX-001-01	MCC-A1	ANOXIC MIXER 1
	1"	410-MIX-001-02	POWER	410-MIX-001-02	MCC-A2	ANOXIC MIXER 2
	1"	410-MIX-002-01	POWER	410-MIX-002-01	MCC-A1	ANOXIC MIXER 9
	1"	410-MIX-002-02	POWER	410-MIX-002-02	MCC-A2	ANOXIC MIXER 10
	1"	410-MIX-003-01	POWER	410-MIX-003-01	MCC-A1	ANOXIC MIXER 17
	1"	410-MIX-003-02	POWER	410-MIX-003-02	MCC-A2	ANOXIC MIXER 18
	1"	410-MIX-004-01	POWER	410-MIX-004-01	MCC-A1	ANOXIC MIXER 25
	1"	410-MIX-004-02	POWER	410-MIX-004-02	MCC-A2	ANOXIC MIXER 26
	1"	LP-A1-1	POWER	SPLITTER BOX 1	LP-A1	120V LIGHTS, RECPTS
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7
104	1"	410-MIX-001-03	POWER	410-MIX-001-03	MCC-A1	ANOXIC MIXER 3
	1"	410-MIX-001-04	POWER	410-MIX-001-04	MCC-A2	ANOXIC MIXER 4
	1"	410-MIX-002-03	POWER	410-MIX-002-03	MCC-A1	ANOXIC MIXER 11
	1"	410-MIX-002-04	POWER	410-MIX-002-04	MCC-A2	ANOXIC MIXER 12
	1"	410-MIX-003-03	POWER	410-MIX-003-03	MCC-A1	ANOXIC MIXER 19
	1"	410-MIX-003-04	POWER	410-MIX-003-04	MCC-A2	ANOXIC MIXER 20
	1"	410-MIX-004-03	POWER	410-MIX-004-03	MCC-A1	ANOXIC MIXER 27
	1"	410-MIX-004-04	POWER	410-MIX-004-04	MCC-A2	ANOXIC MIXER 28
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7
	105	1"	410-MIX-001-05	POWER	410-MIX-001-05	MCC-A1
1"		410-MIX-001-06	POWER	410-MIX-001-06	MCC-A2	ANOXIC MIXER 6
1"		410-MIX-002-05	POWER	410-MIX-002-05	MCC-A1	ANOXIC MIXER 13
1"		410-MIX-002-06	POWER	410-MIX-002-06	MCC-A2	ANOXIC MIXER 14
1"		410-MIX-003-05	POWER	410-MIX-003-05	MCC-A1	ANOXIC MIXER 21
1"		410-MIX-003-06	POWER	410-MIX-003-06	MCC-A2	ANOXIC MIXER 22
1"		410-MIX-004-05	POWER	410-MIX-004-05	MCC-A1	ANOXIC MIXER 29
1"		410-MIX-004-06	POWER	410-MIX-004-06	MCC-A2	ANOXIC MIXER 30
1"		EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7
1"		EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7

DUCT BANK ID	CONDUIT SIZE	CIRCUIT ID	CIRCUIT TYPE	FROM	TO	COMMENTS	
106	1"	410-MIX-001-07	POWER	410-MIX-001-07	MCC-A1	ANOXIC MIXER 7	
	1"	410-MIX-001-08	POWER	410-MIX-001-08	MCC-A2	ANOXIC MIXER 8	
	1"	410-MIX-002-07	POWER	410-MIX-002-07	MCC-A1	ANOXIC MIXER 15	
	1"	410-MIX-002-08	POWER	410-MIX-002-08	MCC-A2	ANOXIC MIXER 16	
	1"	410-MIX-003-07	POWER	410-MIX-003-07	MCC-A1	ANOXIC MIXER 23	
	1"	410-MIX-003-08	POWER	410-MIX-003-08	MCC-A2	ANOXIC MIXER 24	
	1"	410-MIX-004-07	POWER	410-MIX-004-07	MCC-A1	ANOXIC MIXER 31	
	1"	410-MIX-004-08	POWER	410-MIX-004-08	MCC-A2	ANOXIC MIXER 32	
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7	
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB AT BASIN	NOTE 7	
	1"	LP-A1-3	POWER	SPLITTER BOX 2	LP-A1	120V LIGHTS, RECPTS	
107	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6	
	1"	LP-A1-11	POWER	SPLITTER BOX 2	LP-A1	30A RECEPTACLE	
	108	3"	510-PMP-005-01	POWER	510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1
		1"	510-ZSC-005-01	CONTROL	510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1
		1"	510-HS-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1
		1"	510-TSH-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1
		1"	510-XE-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1
		3"	510-PMP-006-01	POWER	510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2
		1"	510-ZSC-006-01	CONTROL	510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2
		1"	510-HS-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2
		1"	510-TSH-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2
1"		510-XE-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
3"		510-PMP-007-01	POWER	510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3	
1"	510-ZSC-007-01	CONTROL	510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-HS-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-TSH-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-XE-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
3"	510-PMP-008-01	POWER	510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-ZSC-008-01	CONTROL	510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-HS-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-TSH-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-XE-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-PIT-005-01	ANALOG I/O	510-PIT-005-01	SP-15			
1"	510-PIT-006-01	ANALOG I/O	510-PIT-006-01	SP-15			
1"	510-PIT-007-01	ANALOG I/O	510-PIT-007-01	SP-15			
1"	510-PIT-008-01	ANALOG I/O	510-PIT-008-01	SP-15			
1"	EMPTY		MCC-A1	HH-101			
1"	EMPTY		MCC-A1	HH-101			
1"	EMPTY		MCC-A2	HH-101			
1"	EMPTY		MCC-A2	HH-101			
1"	EMPTY		LP-A1	HH-101			
1"	EMPTY		LP-A1	HH-101			
1"	EMPTY		STUB UP INSIDE BLDG	HH-101			
1"	EMPTY		STUB UP INSIDE BLDG	HH-101			
1 1/2"	EMPTY		DP-A1	HH-101			
1 1/2"	EMPTY		DP-A1	HH-101			
1"	510-NMH-020-01	POWER	510-NMH-020-01	MCC-A2			
109	3"	510-PMP-005-01	POWER	510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1	
	1"	510-ZSC-005-01	CONTROL	510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1	
	1"	510-HS-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1	
	1"	510-TSH-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1	
	1"	510-XE-005-01		510-TJB-005-01	510-VFD-005-01	NRCY PUMP 1	
	3"	510-PMP-006-01	POWER	510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
	1"	510-ZSC-006-01	CONTROL	510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
	1"	510-HS-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
	1"	510-TSH-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
	1"	510-XE-006-01		510-TJB-006-01	510-VFD-006-01	NRCY PUMP 2	
	3"	510-PMP-007-01	POWER	510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3	
1"	510-ZSC-007-01	CONTROL	510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-HS-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-TSH-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
1"	510-XE-007-01		510-TJB-007-01	510-VFD-007-01	NRCY PUMP 3		
3"	510-PMP-008-01	POWER	510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-ZSC-008-01	CONTROL	510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-HS-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-TSH-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-XE-008-01		510-TJB-008-01	510-VFD-008-01	NRCY PUMP 4		
1"	510-PIT-005-01	ANALOG I/O	510-PIT-005-01	SP-15			
1"	510-PIT-006-01	ANALOG I/O	510-PIT-006-01	SP-15			
1"	510-PIT-007-01	ANALOG I/O	510-PIT-007-01	SP-15			
1"	510-PIT-008-01	ANALOG I/O	510-PIT-008-01	SP-15			
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	STUB UP	NOTE 7		
1"	EMPTY		HH-101	S	NOTE 7		
1"	510-NMH-020-01	POWER	510-NMH-020-01	MCC-2A			

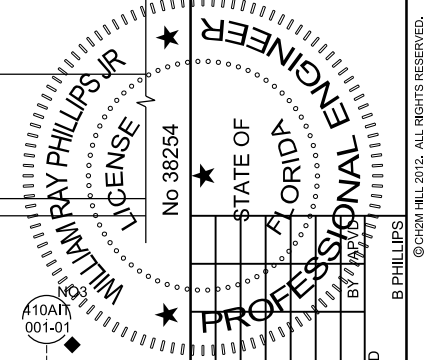
DUCT BANK ID	CONDUIT SIZE	CIRCUIT ID	CIRCUIT TYPE	FROM	TO	COMMENTS
109	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
	1"	EMPTY		STUB INSIDE ELEC BLDG	STUB OUT	NOTE 8
110	4"	FOC-25	NETWORK	MCP-25-PP-01	SP-15-PP-01	FIBER OPTIC, NOTE 6
111	4"	MCC-B5	POWER	T-3B	MCC-B5	
	4"	MCC-B5	POWER	T-3B	MCC-B5	
	4"	MCC-B5	POWER	T-3B	MCC-B5	
	4"	MCC-B5	POWER	T-3B	MCC-B5	
112	4"	MCC-B6	POWER	T-4B	MCC-B6	
	4"	MCC-B6	POWER	T-4B	MCC-B6	
	4"	MCC-B6	POWER	T-4B	MCC-B6	
	4"	EMPTY		T-4B	MCC-B6	

LUMINAIRE SCHEDULE

ID	DESCRIPTION	LAMP	CATALOG NO.	MOUNTING
1	4' FLUORESCENT OPEN INDUSTRIAL: 2-F32T8 LAMPS, HEAVY STEEL HOUSING AND REFLECTOR. PROGRAMMED START ELECTRONIC BALLAST, 120V. PROVIDE EMERGENCY LIGHTING BATTERY PACK WHERE INDICATED BY A DOT ON PLANS.	F32T8	COLUMBIA KL-4-232-VR-EP-U	SURFACE CEILING OR PENDENT
1E	SAME AS LUMINAIRE 1, EXCEPT WITH EMERGENCY LIGHTING BATTERY PACK.	F32T8	COLUMBIA KL-4-232-VR-EP-U-EL	SURFACE CEILING OR PENDENT



- NOTES:
- EXISTING VALVE AND FLOWMETER TO BE RELOCATED.
 - 24 VDC POWER.
 - POWER AND COMMON LINES LINKED AT JUNCTION BOX.
 - SEE DETAIL 2605-103.
 - PROVIDE A SINGLE PORTABLE NO3 METER FOR MONITORING NO3 FOR ALL ANOXIC BASINS. COLLECT SAMPLES AT EFFLUENT SIDE OF ANOXIC BASINS.



NO.	DATE	DR	CHK	REVISION

3011 SW WILLISTON RD
GAINESVILLE, FL 32608
EB0000072 AAC001992
WILLIAM RAY PHILLIPS - PE 38254

SWWRP NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

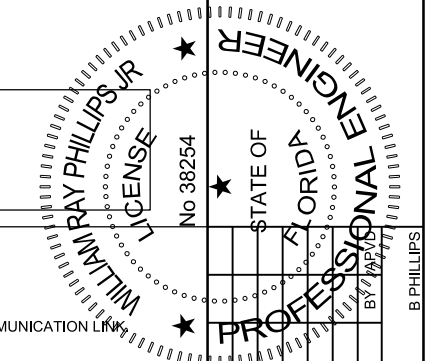
CH2MHILL

INSTRUMENTATION AND CONTROL
P&ID
SPLITTER BOX 1 AND
ANOXIC BASINS

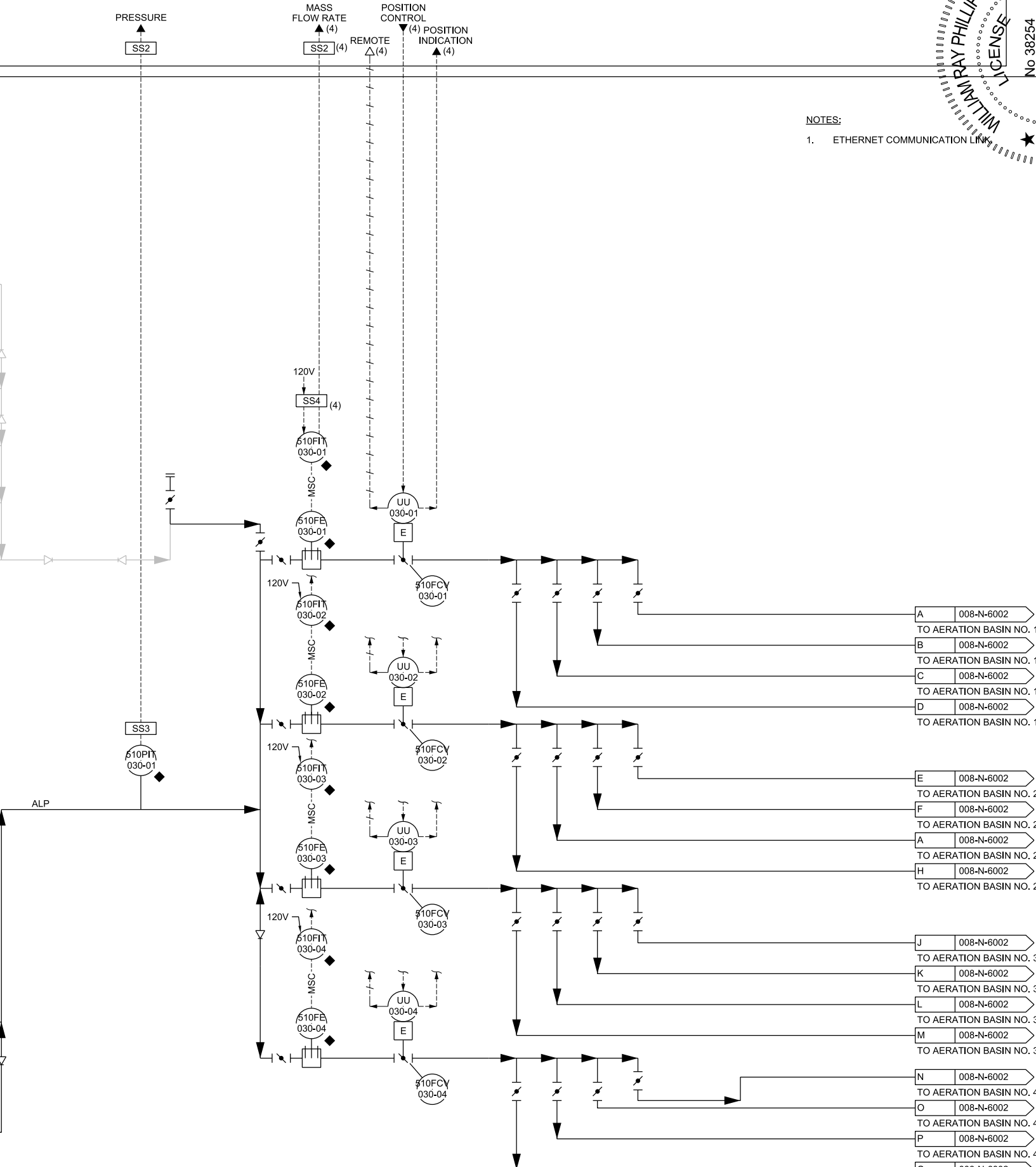
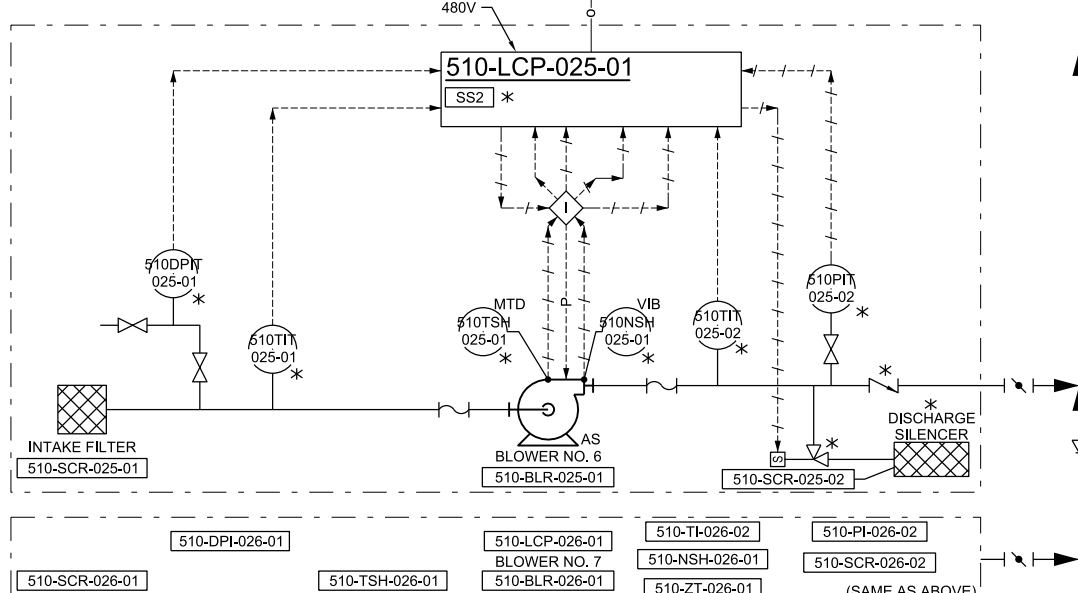
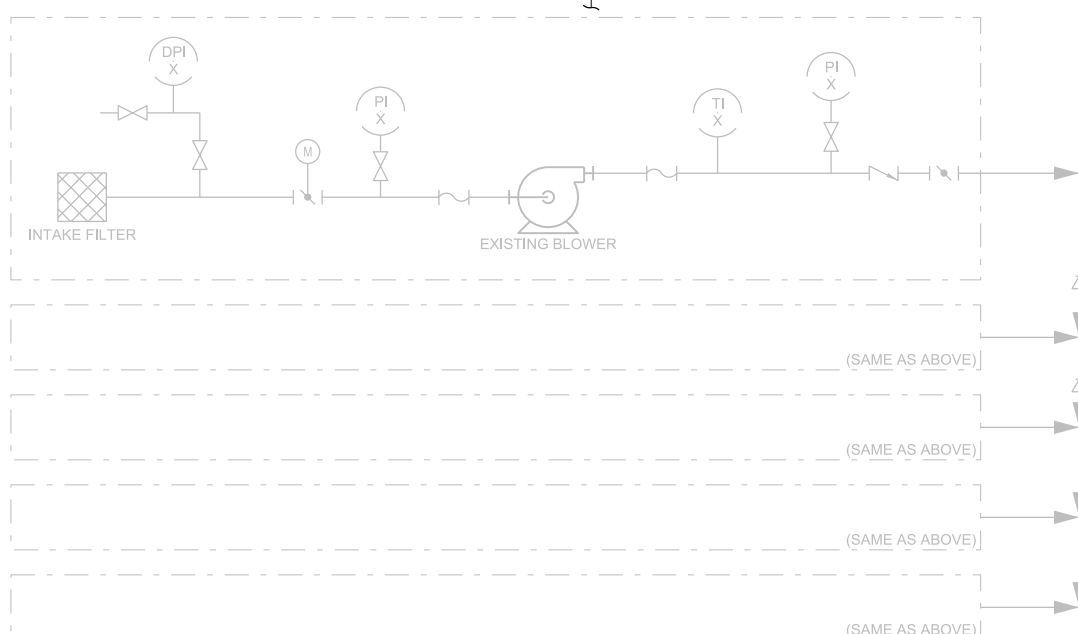
NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE DECEMBER 2013
PROJ 457133
DWG 008-N-6001
SHEET of

510-MCP-025-01

MCP-025-PLC-01



NOTES:
1. ETHERNET COMMUNICATION LINK



A	008-N-6002	TO AERATION BASIN NO. 1
B	008-N-6002	TO AERATION BASIN NO. 1
C	008-N-6002	TO AERATION BASIN NO. 1
D	008-N-6002	TO AERATION BASIN NO. 1
E	008-N-6002	TO AERATION BASIN NO. 2
F	008-N-6002	TO AERATION BASIN NO. 2
A	008-N-6002	TO AERATION BASIN NO. 2
H	008-N-6002	TO AERATION BASIN NO. 2
J	008-N-6002	TO AERATION BASIN NO. 3
K	008-N-6002	TO AERATION BASIN NO. 3
L	008-N-6002	TO AERATION BASIN NO. 3
M	008-N-6002	TO AERATION BASIN NO. 3
N	008-N-6002	TO AERATION BASIN NO. 4
O	008-N-6002	TO AERATION BASIN NO. 4
P	008-N-6002	TO AERATION BASIN NO. 4
Q	008-N-6002	TO AERATION BASIN NO. 4

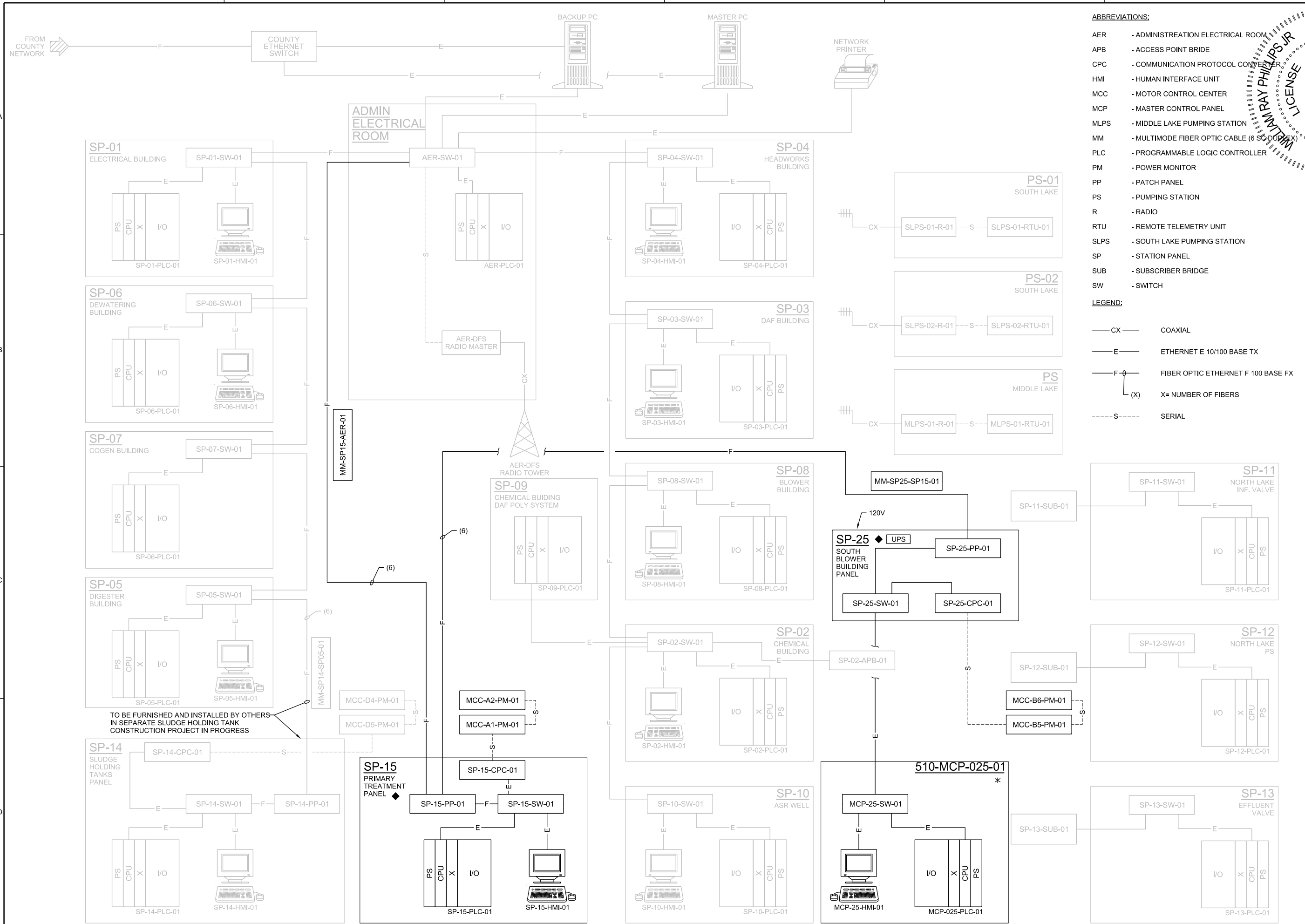
3011 SW WILLISTON RD
GAINESVILLE, FL 32608
EB0000072 AAC001992
WILLIAM RAY PHILLIPS - PE 38254

SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
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AERATION BASIN
BLOWERS

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PROJ: 457133
DWG: 008-N-6006
SHEET: of

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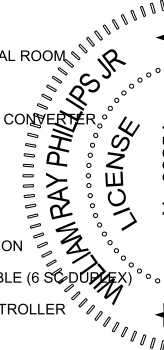


ABBREVIATIONS:

- AER - ADMINISTRATION ELECTRICAL ROOM
- APB - ACCESS POINT BRIDGE
- CPC - COMMUNICATION PROTOCOL CONVERTER
- HMI - HUMAN INTERFACE UNIT
- MCC - MOTOR CONTROL CENTER
- MCP - MASTER CONTROL PANEL
- MLPS - MIDDLE LAKE PUMPING STATION
- MM - MULTIMODE FIBER OPTIC CABLE (6 SC 0.0015)
- PLC - PROGRAMMABLE LOGIC CONTROLLER
- PM - POWER MONITOR
- PP - PATCH PANEL
- PS - PUMPING STATION
- R - RADIO
- RTU - REMOTE TELEMETRY UNIT
- SLPS - SOUTH LAKE PUMPING STATION
- SP - STATION PANEL
- SUB - SUBSCRIBER BRIDGE
- SW - SWITCH

LEGEND:

- CX COAXIAL
- E ETHERNET E 10/100 BASE TX
- F FIBER OPTIC ETHERNET F 100 BASE FX
- (X) X= NUMBER OF FIBERS
- S SERIAL



NO.	DATE	REVISION	CHK	DR	APVD

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INSTRUMENTATION AND CONTROL
BLOCK DIAGRAM

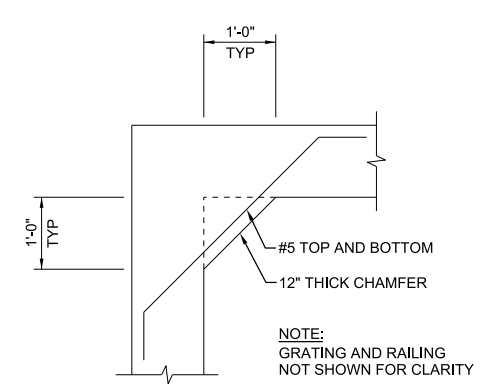
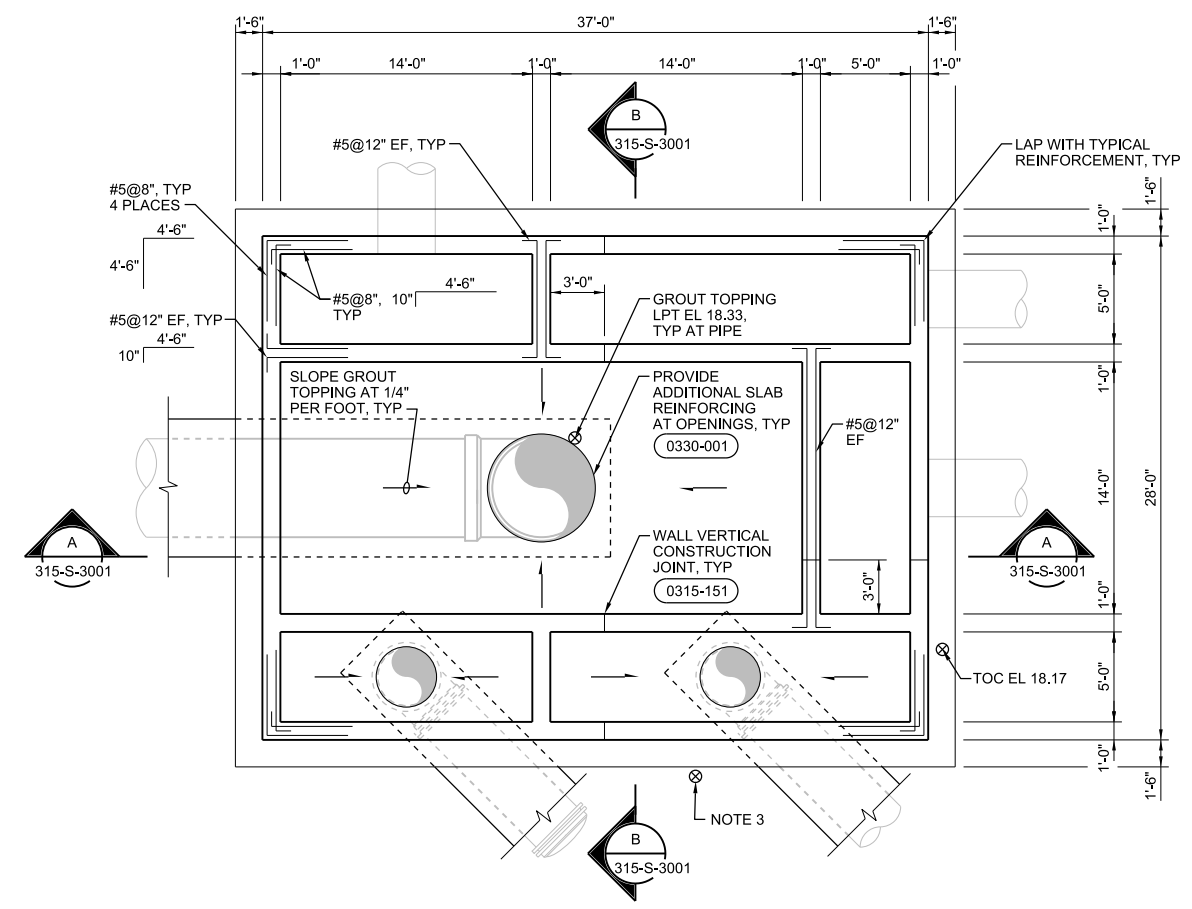
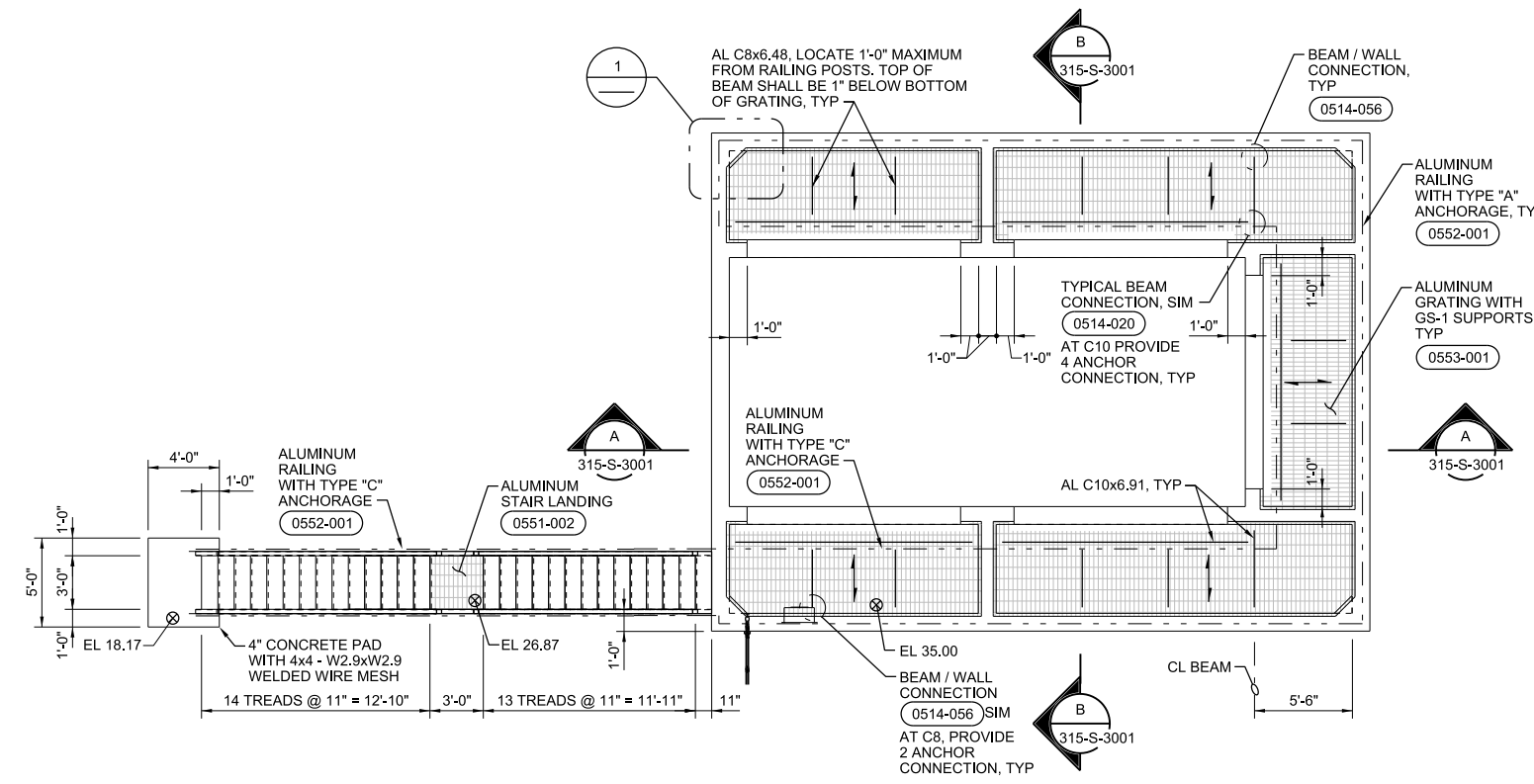
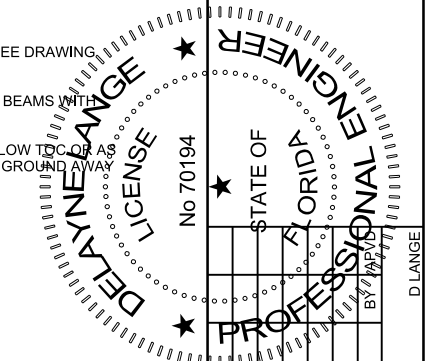
3011 SW WILLISTON RD
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SUWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

NTS	
VERIFY SCALE	
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DATE	DECEMBER 2013
PROJ	457133
DWG	008-N-6007
SHEET	of

ISSUED FOR BID	
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- NOTES:
- FOR ADDITIONAL INFORMATION SEE DRAWING 001-G-0105.
 - COORDINATE LOCATIONS OF C10 BEAMS WITH GATES PROVIDED.
 - GROUND ELEVATION TO BE 2" BELOW TOC OR AS DIRECTED BY ENGINEER. SLOPE GROUND AWAY FROM STRUCTURE.



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DELAYNE LANGE - PE 70194

SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

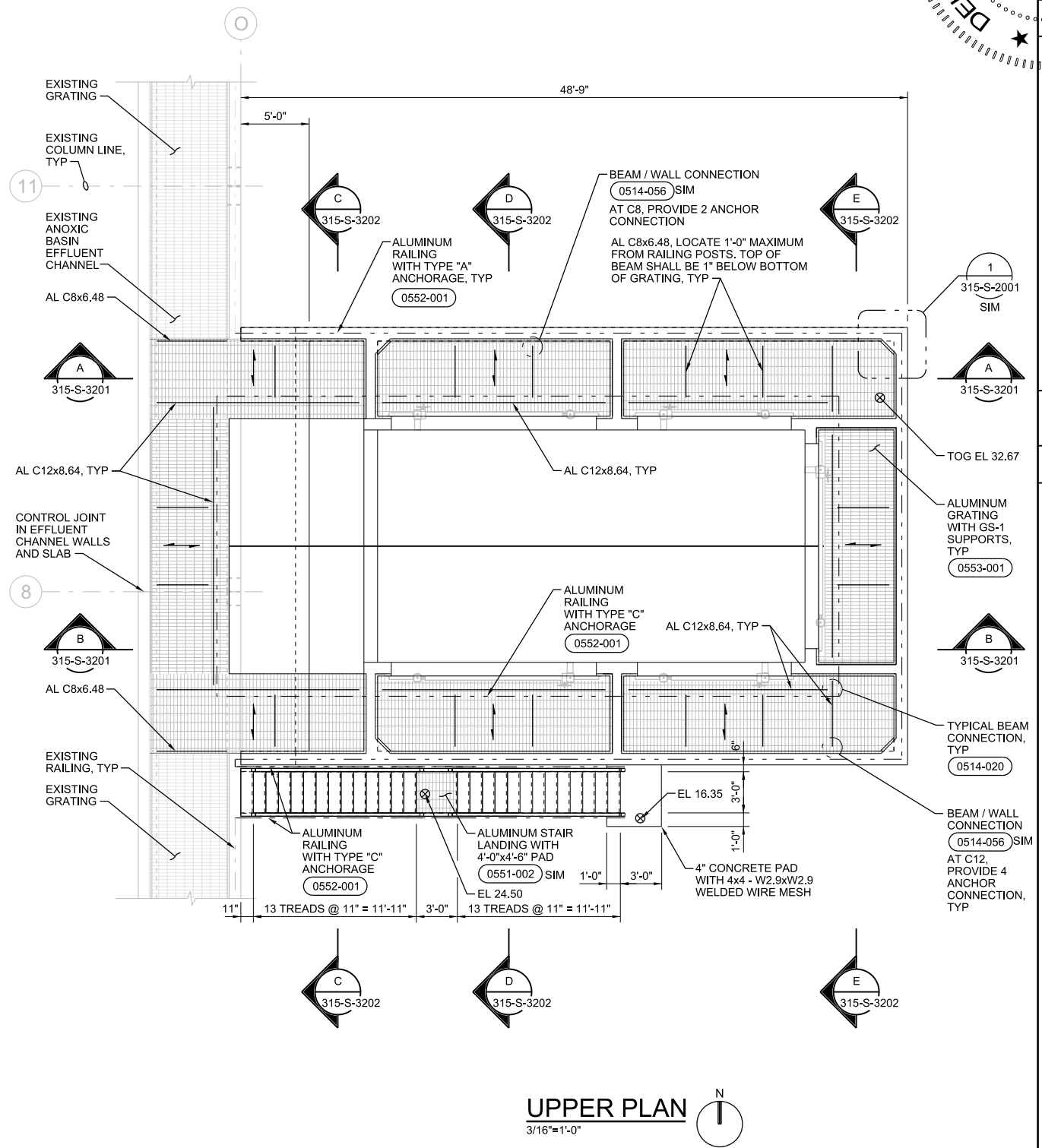
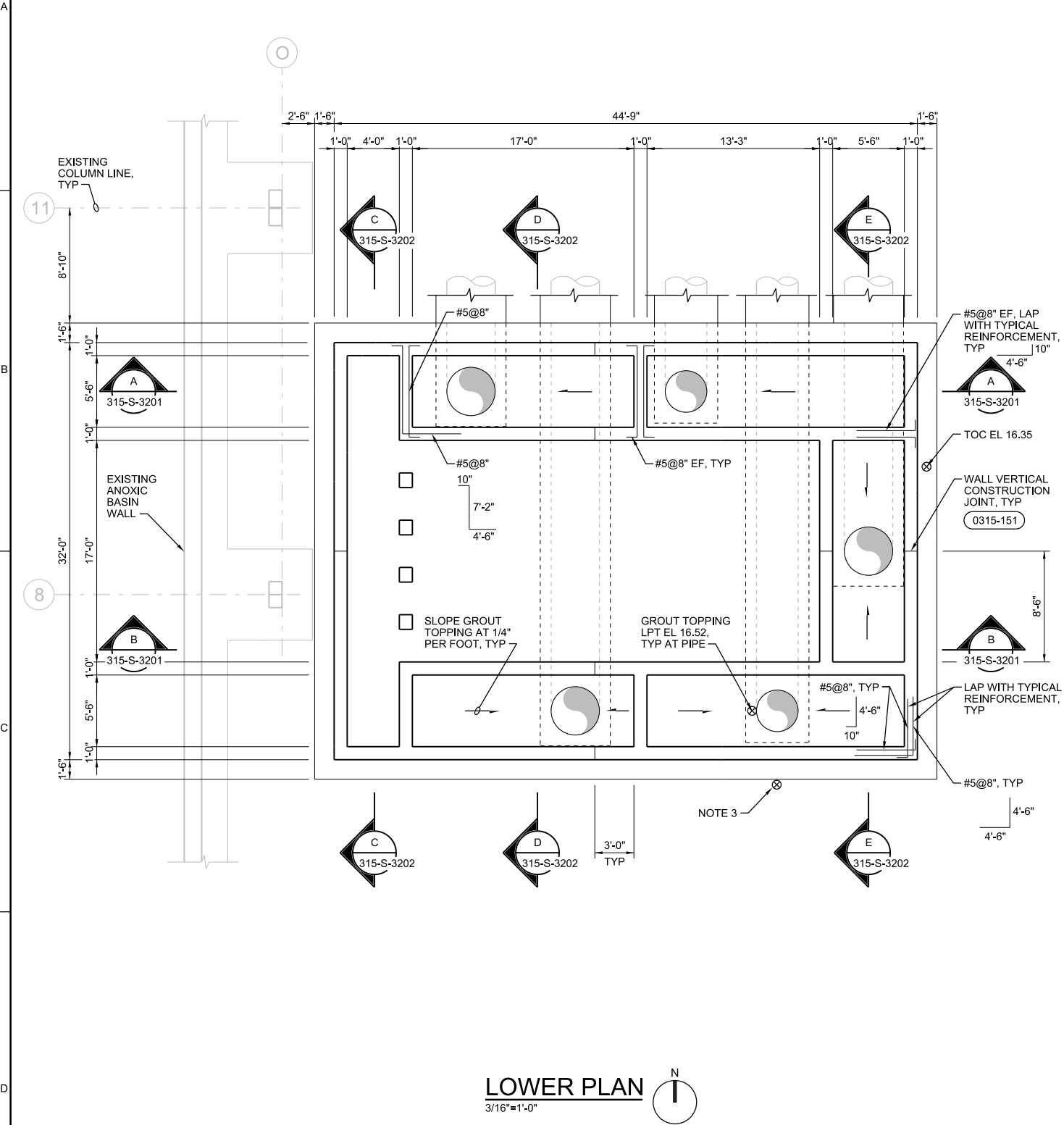
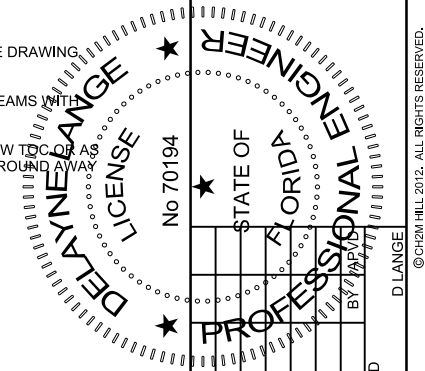
CH2MHILL®

STRUCTURAL
SPLITTER BOX 1
LOWER AND UPPER PLANS

VERIFY SCALE	DATE	DECEMBER 2013
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	457133
DWG	315-S-2001	
SHEET	of	

ISSUED FOR BID

- NOTES:**
- FOR ADDITIONAL INFORMATION SEE DRAWING 001-G-0105.
 - COORDINATE LOCATIONS OF C10 BEAMS WITH GATES PROVIDED.
 - GROUND ELEVATION TO BE 2" BELOW TOC OR AS DIRECTED BY ENGINEER. SLOPE GROUND AWAY FROM STRUCTURE.



NO.	DATE	DR	CHK	REVISION
1				

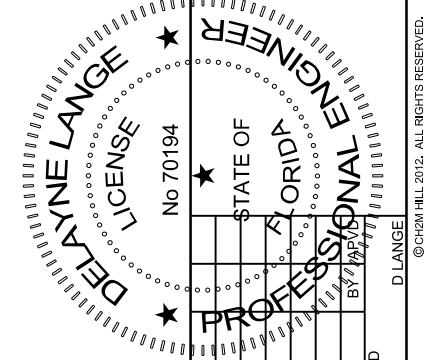
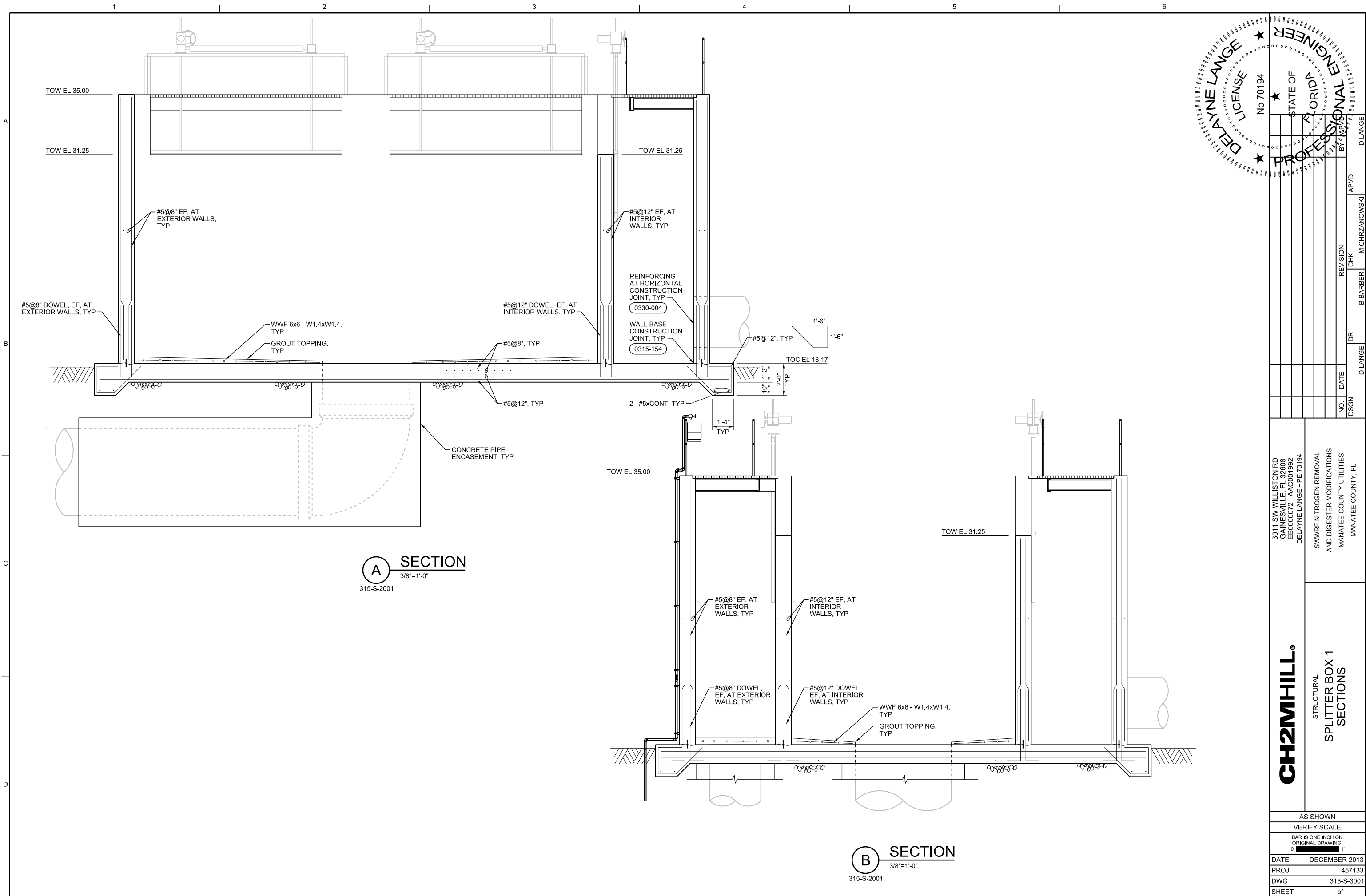
3011 SW WILLISTON RD
GAINESVILLE, FL 32608
EB0000072 AAC001992
DELAYE LANGE - PE 70194

SWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

CH2MHILL

STRUCTURAL
SPLITTER BOX 2
LOWER AND UPPER PLANS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2013
PROJ	457133
DWG	315-S-2201
SHEET	of

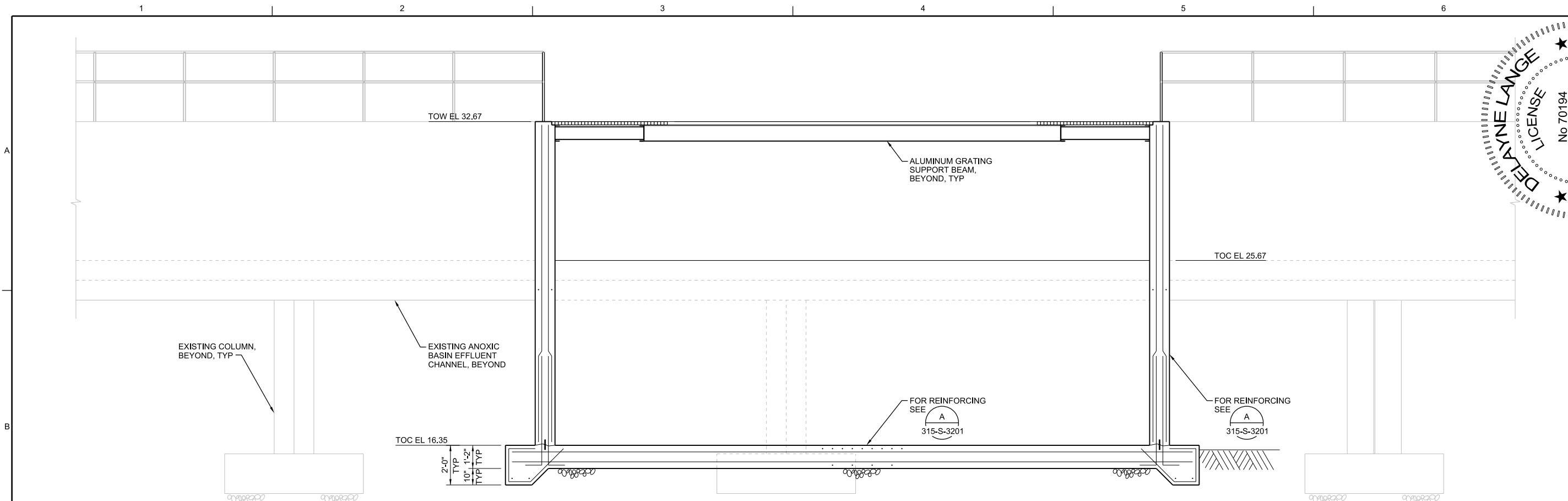


A SECTION
3/8"=1'-0"
315-S-2001

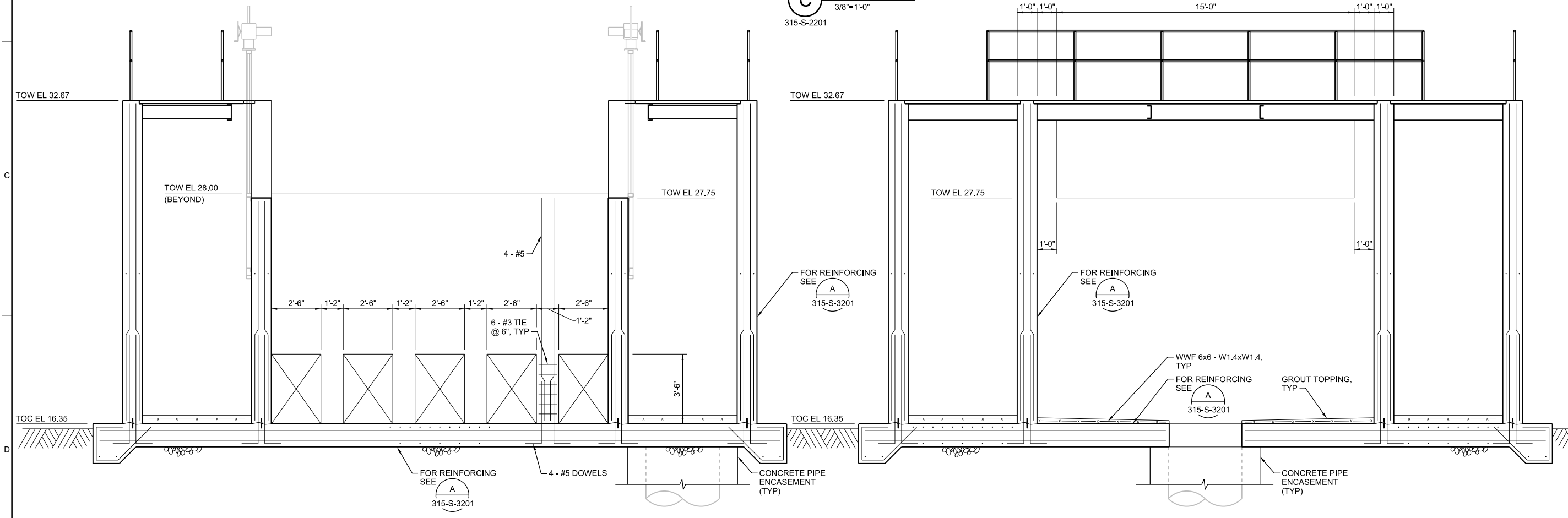
B SECTION
3/8"=1'-0"
315-S-2001

3011 SW WILLISTON RD GAINESVILLE, FL 32608 EB0000072 / AAC001992 DELAYNE LANGE - PE 70194		SWWRF NITROGEN REMOVAL AND DIGESTER MODIFICATIONS MANATEE COUNTY UTILITIES MANATEE COUNTY, FL	
CH2MHILL® STRUCTURAL SPLITTER BOX 1 SECTIONS		AS SHOWN VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2013	DWG	315-S-3001
PROJ	457133	SHEET	of
D LANGE	D LANGE	B BARBER	M CHRZANOWSKI
DR	CHK	REVISION	APVD
NO.	DATE	NO.	DATE

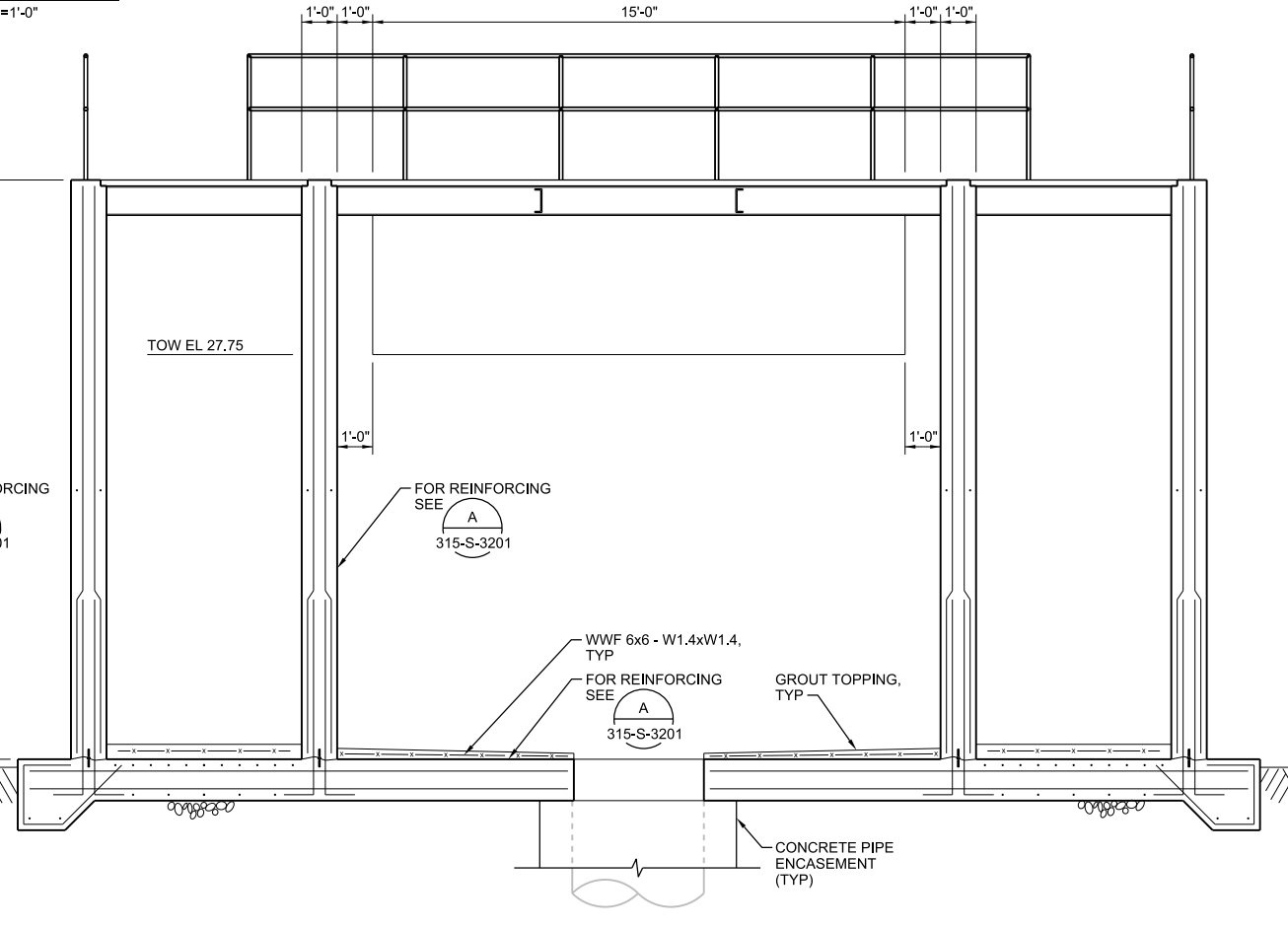
ISSUED FOR BID



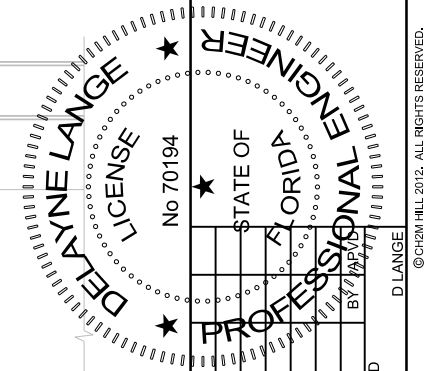
C SECTION
3/8"=1'-0"
315-S-2201



D SECTION
3/8"=1'-0"
315-S-2201



E SECTION
3/8"=1'-0"
315-S-2201



3011 SW WILLISTON RD GAINESVILLE, FL 32608 EB0000072 AAC001992 DELAYNE LANGE - PE 70194		SWWRF NITROGEN REMOVAL AND DIGESTER MODIFICATIONS MANATEE COUNTY UTILITIES MANATEE COUNTY, FL	
CH2MHILL® STRUCTURAL SPLITTER BOX 2 SECTIONS		D LANGE M CHRZANOWSKI B BARBER DR CHK REVISION NO. DATE DSGN	
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.		DATE DECEMBER 2013 PROJ 457133 DWG 315-S-3202 SHEET of	

ISSUED FOR BID

- ### SHEET KEYNOTES
1. PROVIDE CONDUIT SEALS SUITABLE TO EC CLASS 1, DIV 2 LOCATION FOR CONDUITS THAT LEAVE CLASSIFIED AREAS. SEE 005-E-2001 FOR HAZARDOUS LOCATION DEFINITION.
 2. FIELD ROUTE ALONG BASIN, THEN DOWN TO DUCT BANK 106 AT NORTH SIDE OF ANOXIC BASIN, AND TO PANELBOARD LP-A1 LOCATED IN THE SOUTH ELECTRICAL BUILDING.
 3. NEMA L5-30R TWIST LOCK RECEPTACLE FOR PORTABLE GATE VALVE OPERATOR MOUNTED OUTSIDE OF THE HAZARDOUS LOCATION.
 4. FIELD ROUTE TO DUCT BANK 106 AT NORTH SIDE OF ANOXIC BASIN, AND TO PANELBOARD LP-A1 LOCATED IN THE SOUTH ELECTRICAL BUILDING.
 5. MOUNT SWITCH AND RECEPTACLE ON EQUIPMENT PEDESTAL OUTSIDE OF THE HAZARDOUS LOCATION.
 6. MOUNT SWITCH OUTSIDE OF THE HAZARDOUS LOCATION.
 7. BOND GROUND WIRE TO STRUCTURAL STEEL.

CH2MHILL
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 No. 60201
 BY: D. NICHOLSON
 DATE: 12/13/2013

NO.	DATE	REVISION	BY	APVD

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 EB0000072 / AAC001992
 DAVID C. NICHOLSON - PE 60201

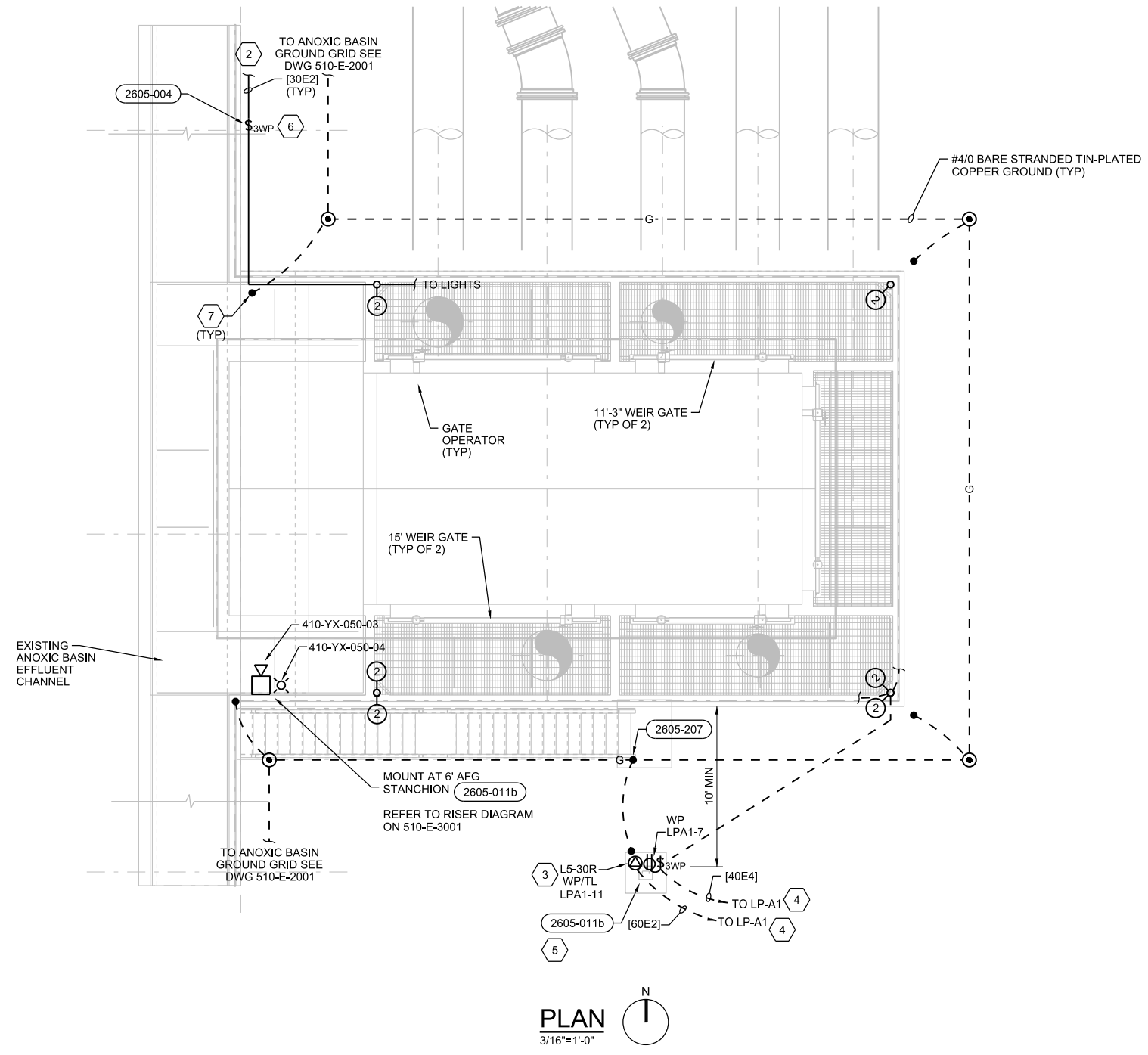
SWWRF NITROGEN REMOVAL
 AND DIGESTER MODIFICATIONS
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FL

CH2MHILL®

ELECTRICAL
SPLITTER BOX 2
PLAN

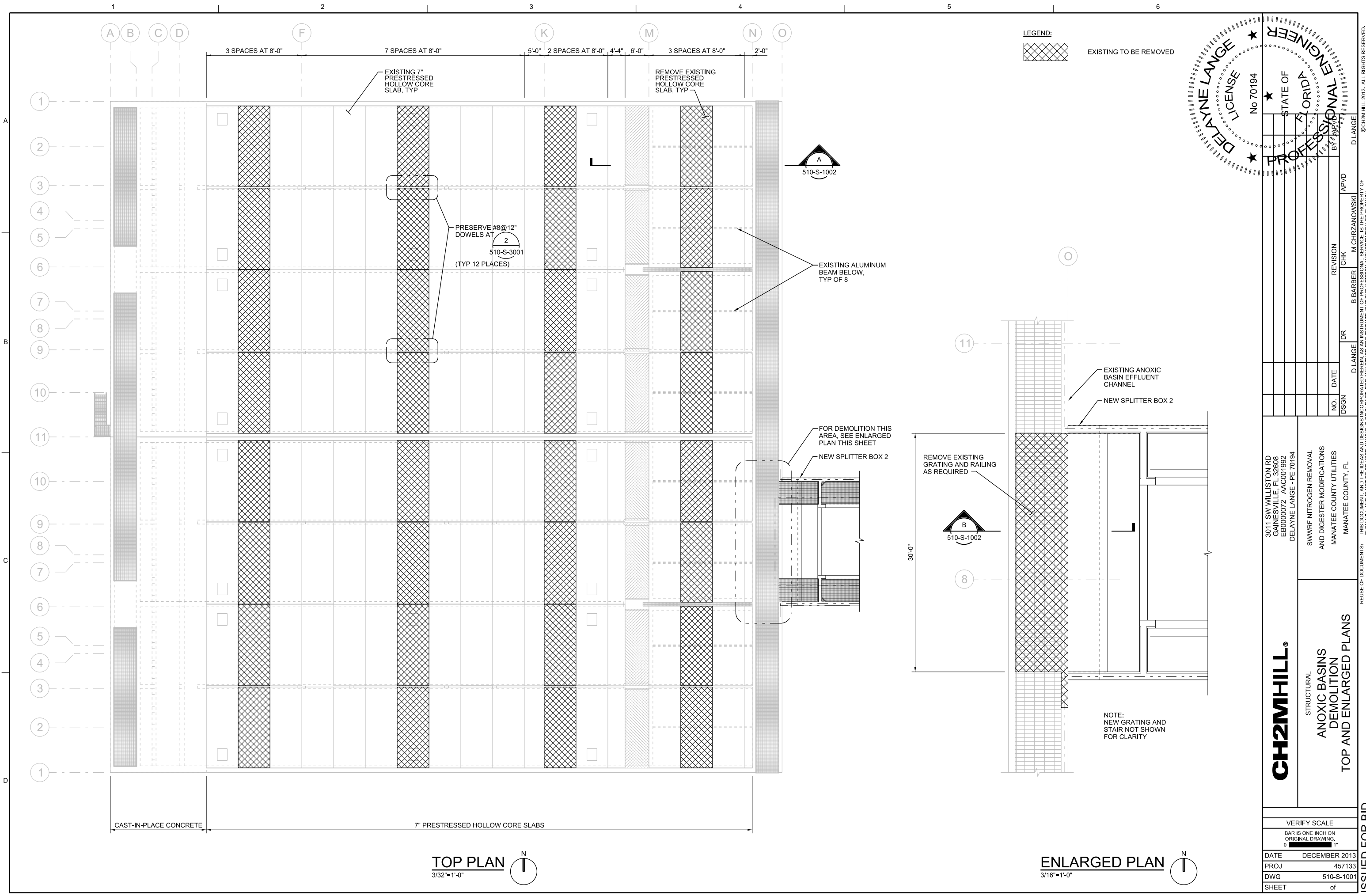
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2013
PROJ	457133
DWG	315-E-2201
SHEET	of

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PLAN
 3/16"=1'-0"

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CH2MHILL
 DELAYNE LANGE
 LICENSE No 70194
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

NO.	DATE	REVISION	CHK	APVD
			B BARBER	M CHRZANOWSKI
			DR	
			D LANGE	D LANGE

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 DELAYNE LANGE - PE 70194

SWRF NITROGEN REMOVAL
 AND DIGESTER MODIFICATIONS
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FL

CH2MHILL
 STRUCTURAL
**ANOXIC BASINS
 DEMOLITION
 TOP AND ENLARGED PLANS**

DATE	DECEMBER 2013
PROJ	457133
DWG	510-S-1001
SHEET	of

TOP PLAN
 3/32"=1'-0"

ENLARGED PLAN
 3/16"=1'-0"

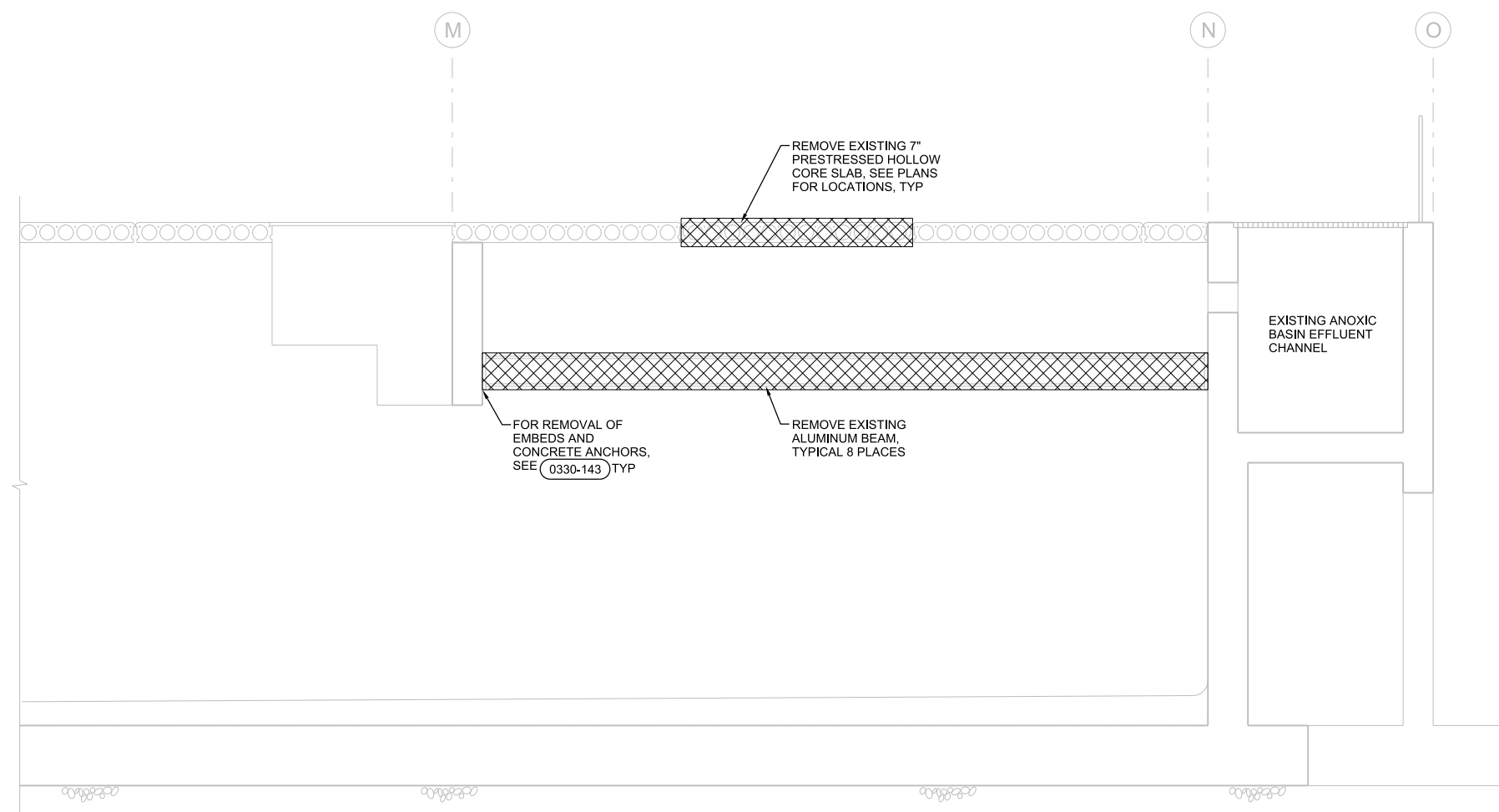
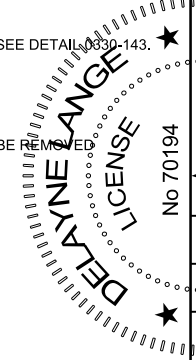
ISSUED FOR BID

1 2 3 4 5 6

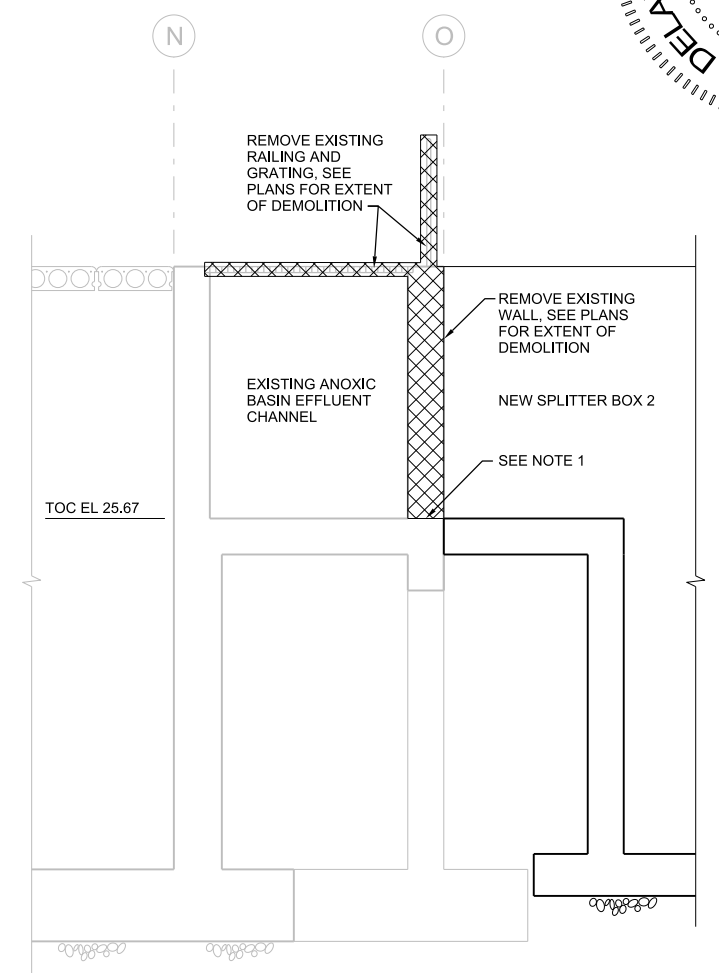
A
B
C
D

DEMOLITION NOTES:
1. FOR CONCRETE DEMOLITION, SEE DETAIL 0330-143.

LEGEND:
[Cross-hatched box] EXISTING TO BE REMOVED



A SECTION
3/8"=1'-0"
510-S-1001



B SECTION
3/8"=1'-0"
510-S-1001

NO.	DATE	DR	CHK	APVD

3011 SW WILLISTON RD
GAINESVILLE, FL 32608
EB0000072 AAC001992
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SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

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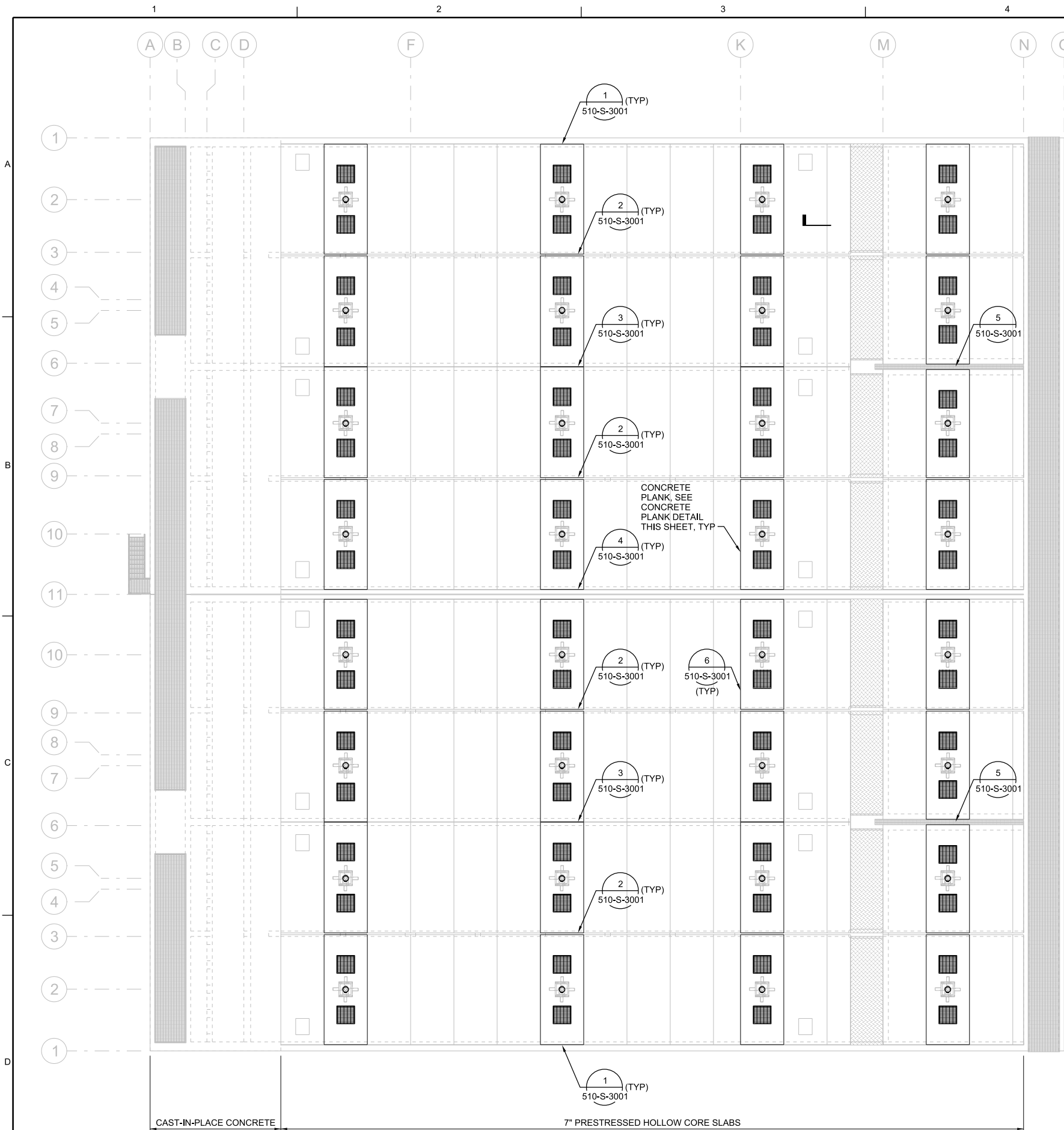
STRUCTURAL
ANOXIC BASINS
DEMOLITION
SECTIONS

DATE	DECEMBER 2013
PROJ	457133
DWG	510-S-1002
SHEET	of

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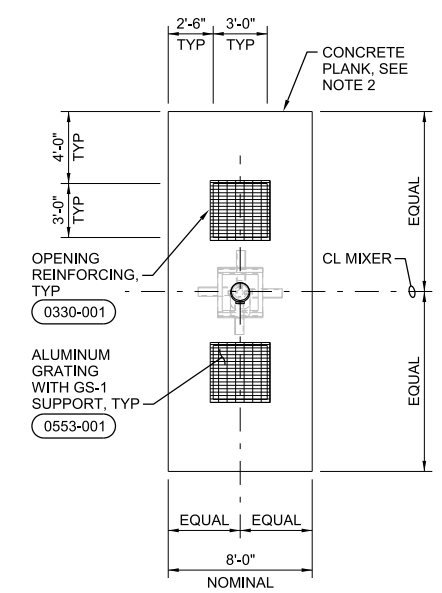
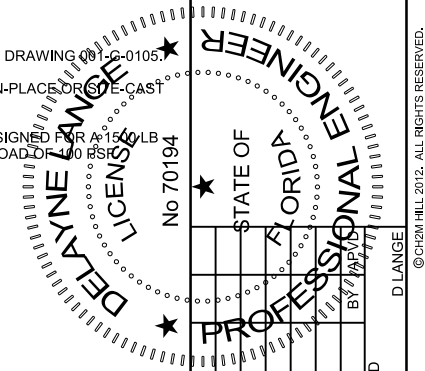
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CAST-IN-PLACE CONCRETE 7" PRESTRESSED HOLLOW CORE SLABS

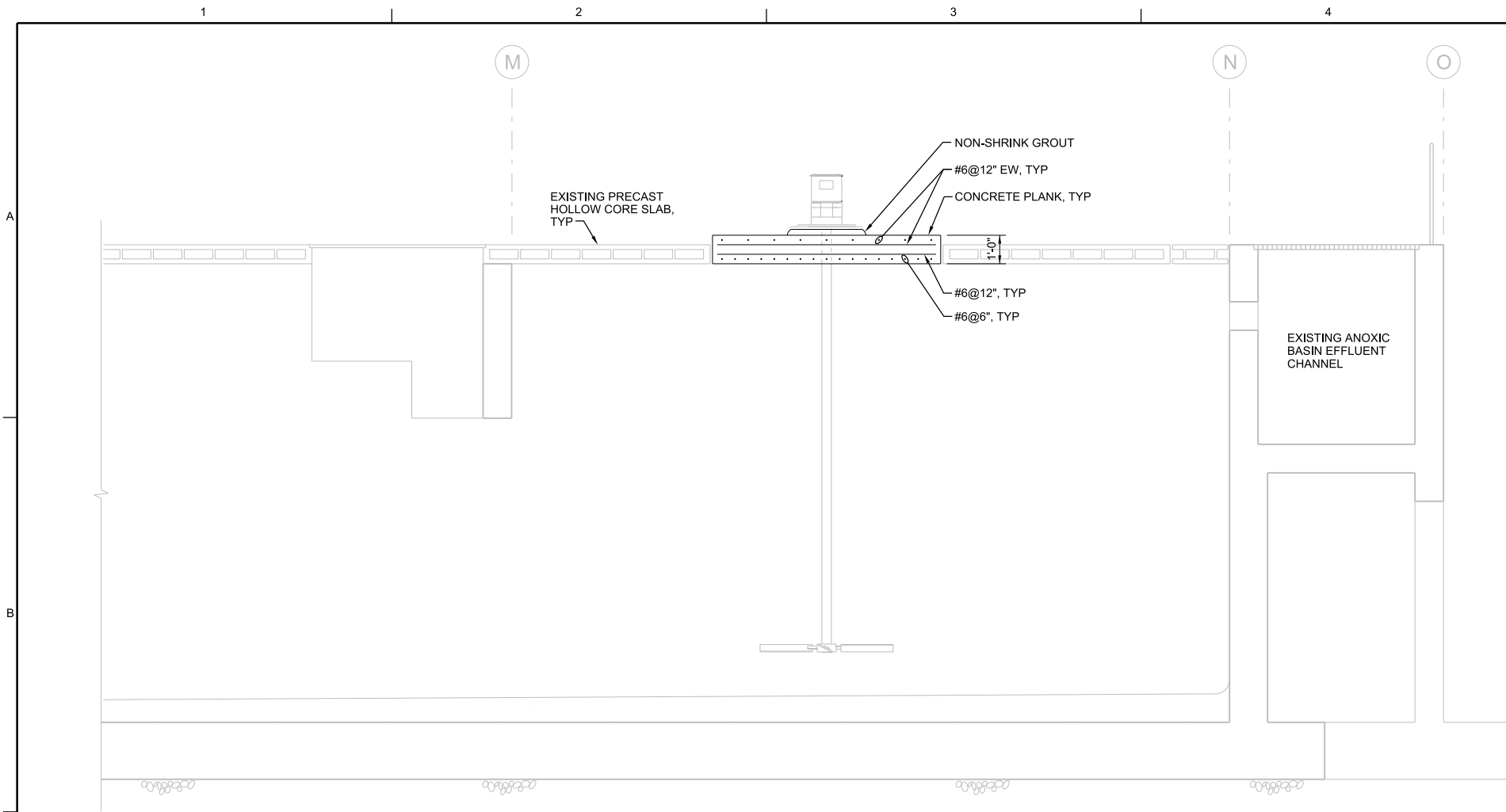
TOP PLAN
3/32"=1'-0"

- NOTES:**
1. FOR ADDITIONAL INFORMATION SEE DRAWING 0813-0105.
 2. CONCRETE PLANKS MAY BE CAST-IN-PLACE OR SITE-CAST PRECAST PLANKS.
 3. CONCRETE PLANKS HAVE BEEN DESIGNED FOR A 150 LB MIXER LOAD AND A UNIFORM LIVE LOAD OF 80 PSF.

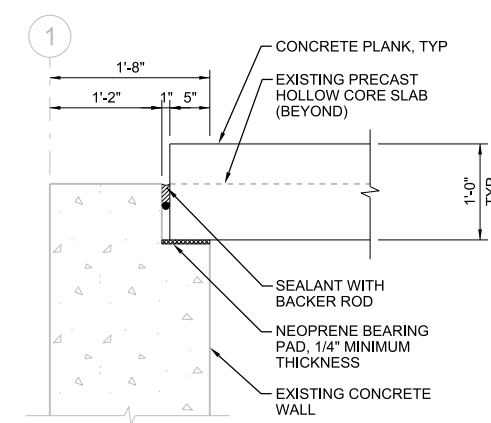


TYPICAL ALL CONCRETE PLANKS
CONCRETE PLANK DETAIL
3/16"=1'-0"

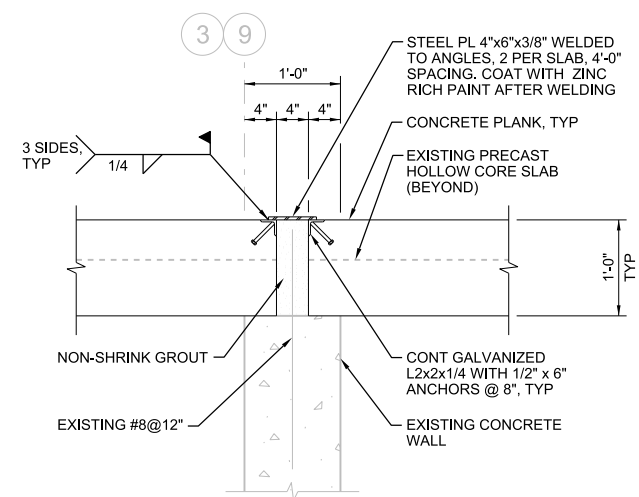
CH2MHILL® STRUCTURAL ANOXIC BASINS TOP PLAN AND CONCRETE PLANK DETAIL		3011 SW WILLISTON RD GAINESVILLE, FL 32608 EB0000072 AAC001992 DELAYNE LANGE - PE 70194	SWWRF NITROGEN REMOVAL AND DIGESTER MODIFICATIONS MANATEE COUNTY UTILITIES MANATEE COUNTY, FL	D LANGE APVD M CHRZANOWSKI CHK B BARBER DR D LANGE DSGN	NO. DATE REVISION REVISION REVISION
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.		DATE DECEMBER 2013 PROJ 457133 DWG 510-S-2001 SHEET of	REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.		



A SECTION
3/8"=1'-0"
510-S-2001



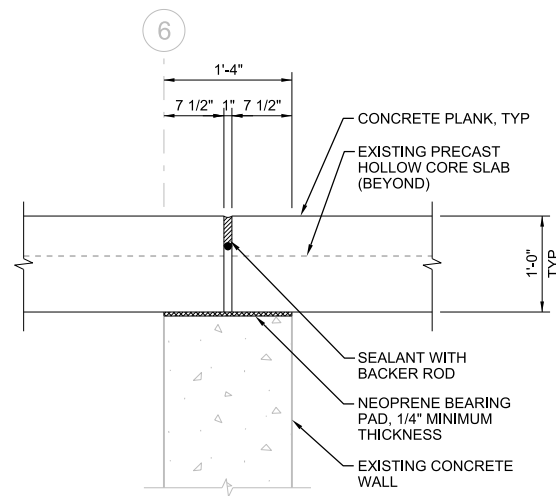
1 DETAIL
1"=1'-0"
510-S-2001



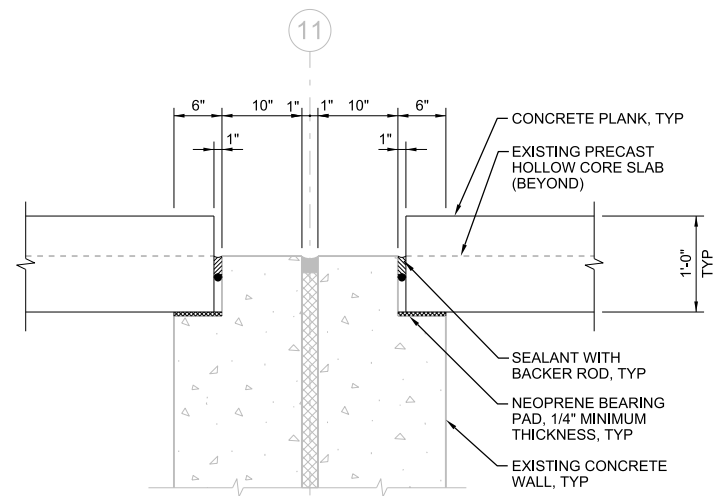
3 9

NOTE:
IF CONCRETE PLANKS ARE CAST-IN-PLACE, PLANKS SHALL BE CONTINUOUS OVER SUPPORT. DELETE GROUT AND EMBEDS.

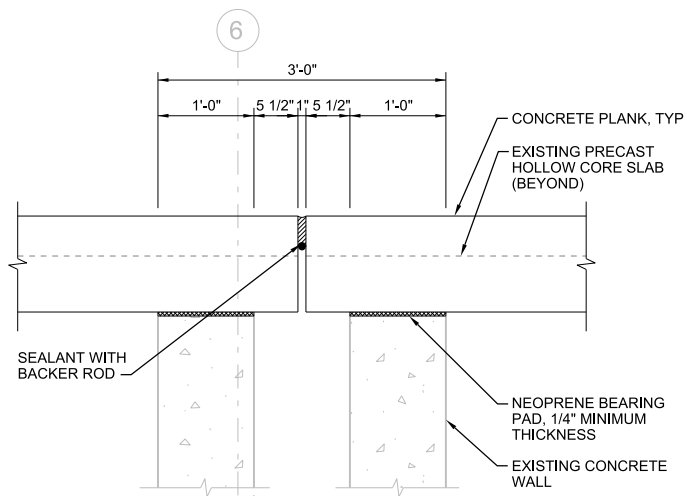
2 DETAIL
1"=1'-0"
510-S-2001



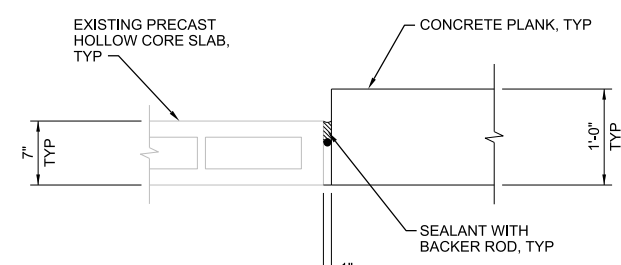
3 DETAIL
1"=1'-0"
510-S-2001



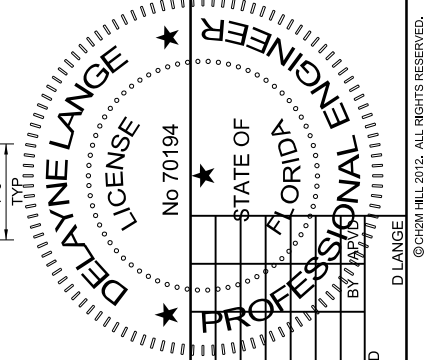
4 DETAIL
1"=1'-0"
510-S-2001



5 DETAIL
1"=1'-0"
510-S-2001



6 DETAIL
1"=1'-0"
510-S-2001



NO.	DATE	DSGN	DR	CHK	APVD

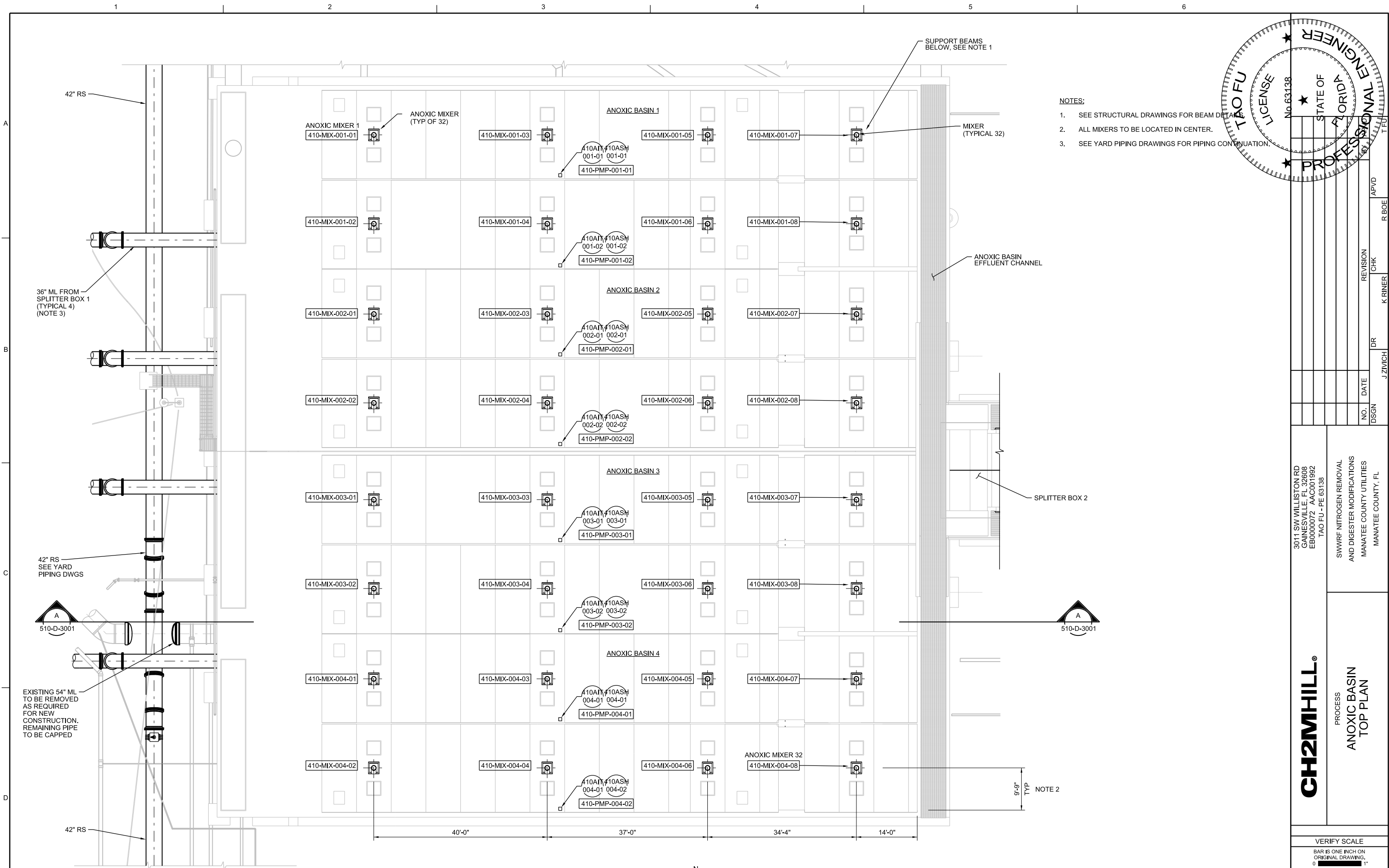
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DELAYNE LANGE - PE 70194

SWWRf NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

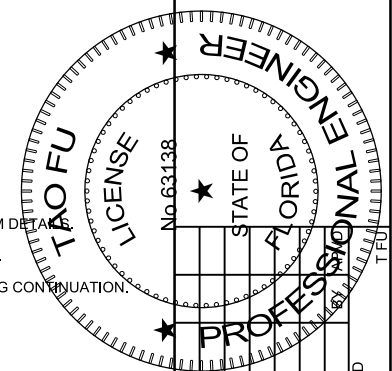
CH2MHILL®
STRUCTURAL
ANOXIC BASINS
SECTION AND DETAILS

VERIFY SCALE	
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DATE	DECEMBER 2013
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DWG	510-S-3001
SHEET	of

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- NOTES:
- SEE STRUCTURAL DRAWINGS FOR BEAM DETAIL.
 - ALL MIXERS TO BE LOCATED IN CENTER.
 - SEE YARD PIPING DRAWINGS FOR PIPING CONTINUATION.



NO.	DATE	DR	REVISION
		J ZVICH	CHK
		K KRINER	APVD
		R BOE	

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SWRF NITROGEN REMOVAL
 AND DIGESTER MODIFICATIONS
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FL

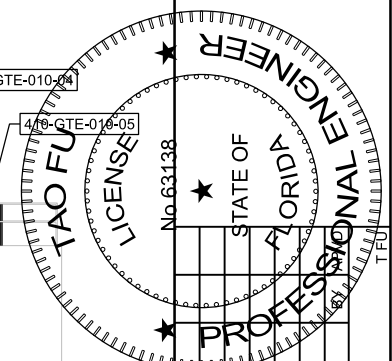
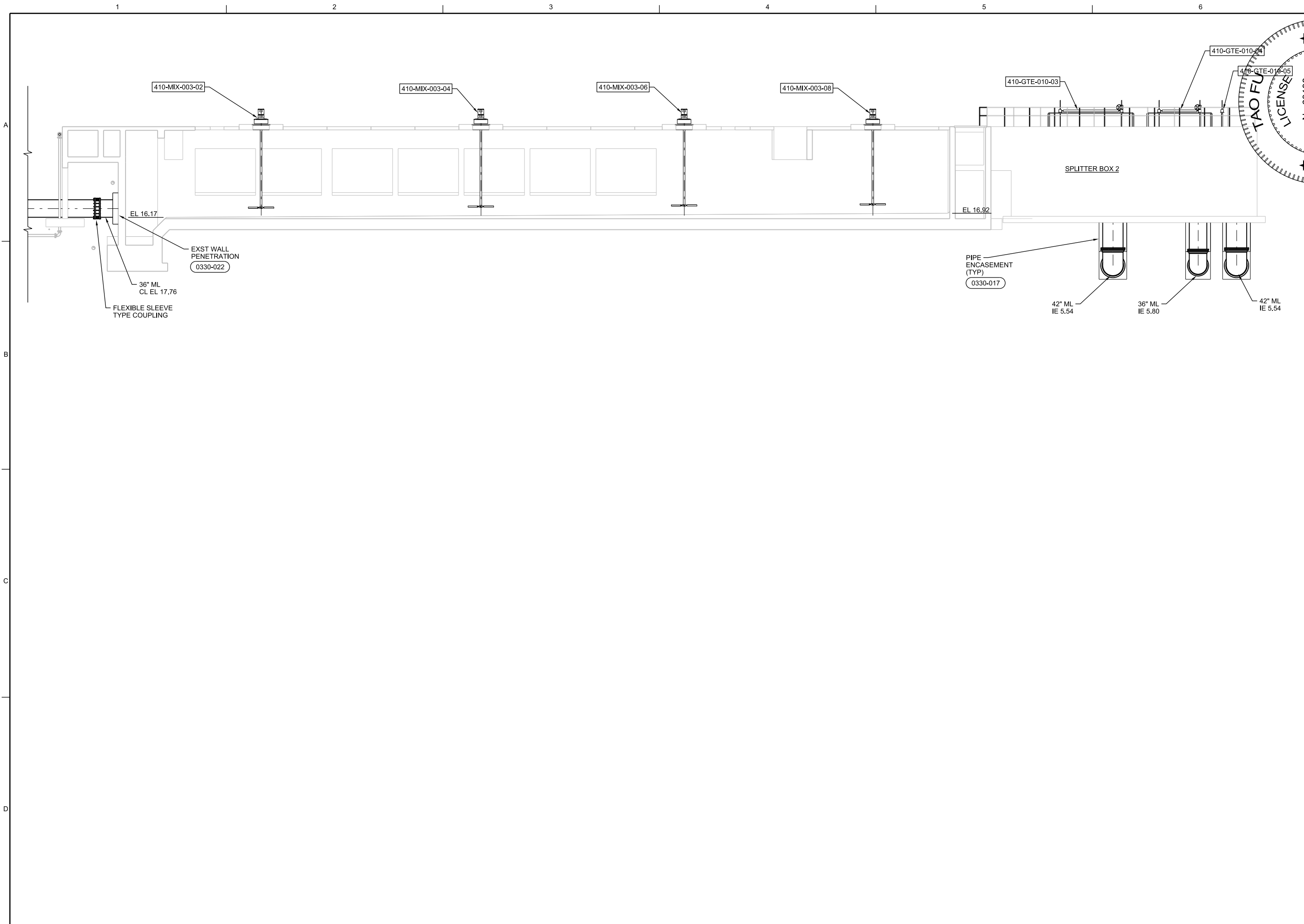
CH2MHILL

PROCESS
 ANOXIC BASIN
 TOP PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
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SHEET	of

ANOXIC BASIN - PLAN
 1"=10'

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 PROCESS
 ANOXIC BASIN
 SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2013
PROJ	457133
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SHEET	of

NO.	DATE	DR	CHK	REVISION
1		J ZIVICH	K KRINER	
2			R BOE	
3			APVD	

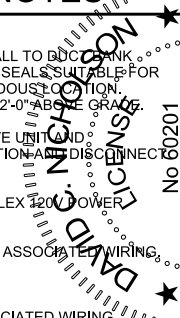
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FOR CONTINUATION
SEE 600-E-2001

- ### SHEET KEYNOTES
- ROUTE CONDUITS DOWN WALL TO DUCT BANK SYSTEM. PROVIDE CONDUIT SEALS SUITABLE FOR A NEC CLASS I, DIV 2 HAZARDOUS LOCATION. LOCATE CONDUIT SEALS AT 2'-0" ABOVE GRADE.
 - EXST POWER SKIMMER DRIVE UNIT AND ASSOCIATED CONTROL STATION AND DISCONNECT SW.
 - EXST POLE LIGHT WITH DUPLEX 120V POWER RECEPTACLE.
 - EXST VENTILATION FAN AND ASSOCIATED WIRING.
 - EXST SAMPLER.
 - EXST POLE LIGHT AND ASSOCIATED WIRING.
 - GROUND ROD BONDED TO GROUND WIRE ROUTED IN DUCT BANK.
 - BOND GROUND WIRE TO MOTOR FRAME.



STATE OF FLORIDA
PROFESSIONAL ENGINEER
DAVID C. NICHOLSON
LICENSE No. 60201
BY
M. WAYNE
APVD
N. ADAMS
CHK
REVISION
NO. DATE
DR
D. NICHOLSON
DSGN

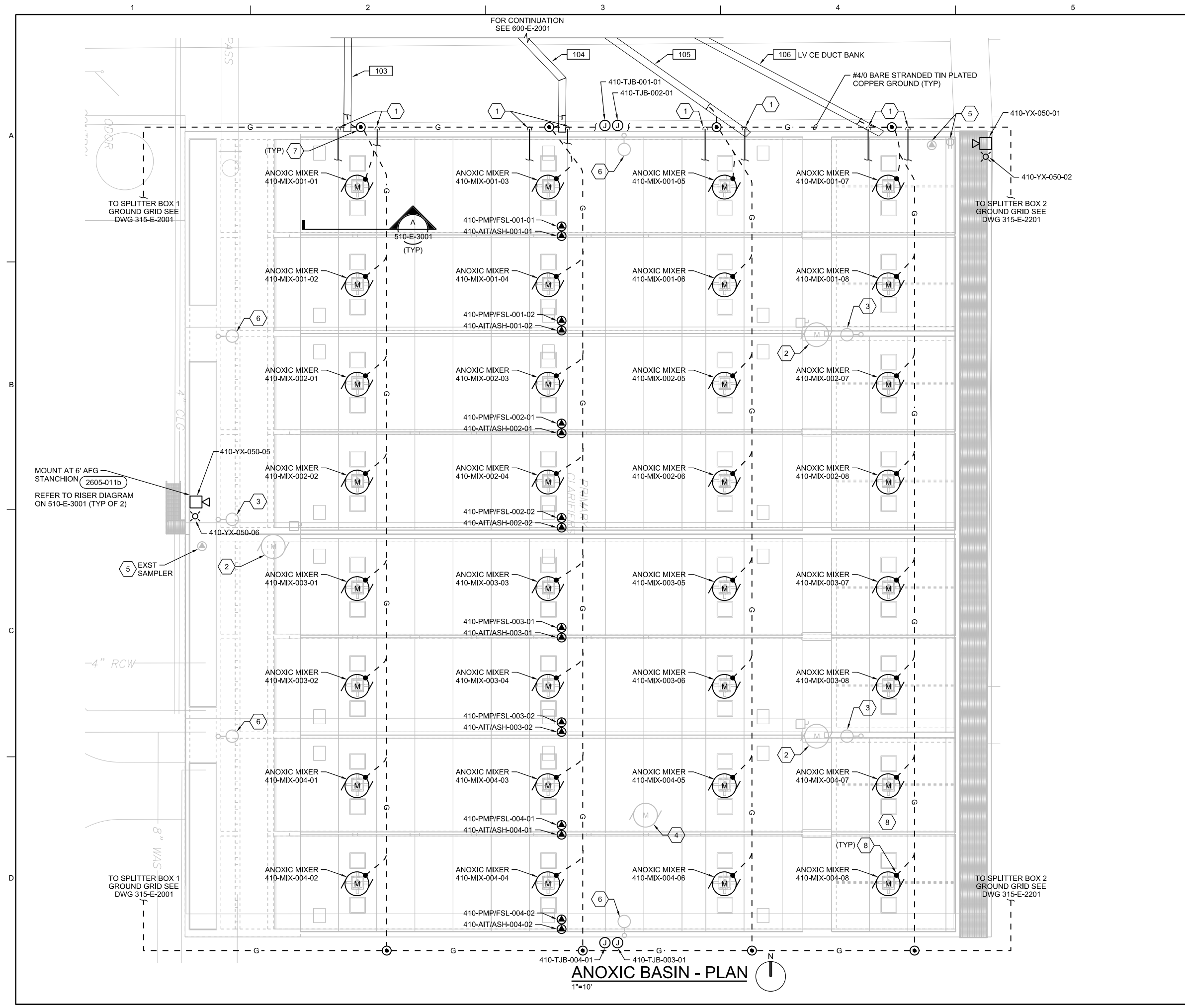
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SWWRF NITROGEN REMOVAL
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MANATEE COUNTY UTILITIES
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**ANOXIC BASIN
POWER & LIGHTING PLAN**

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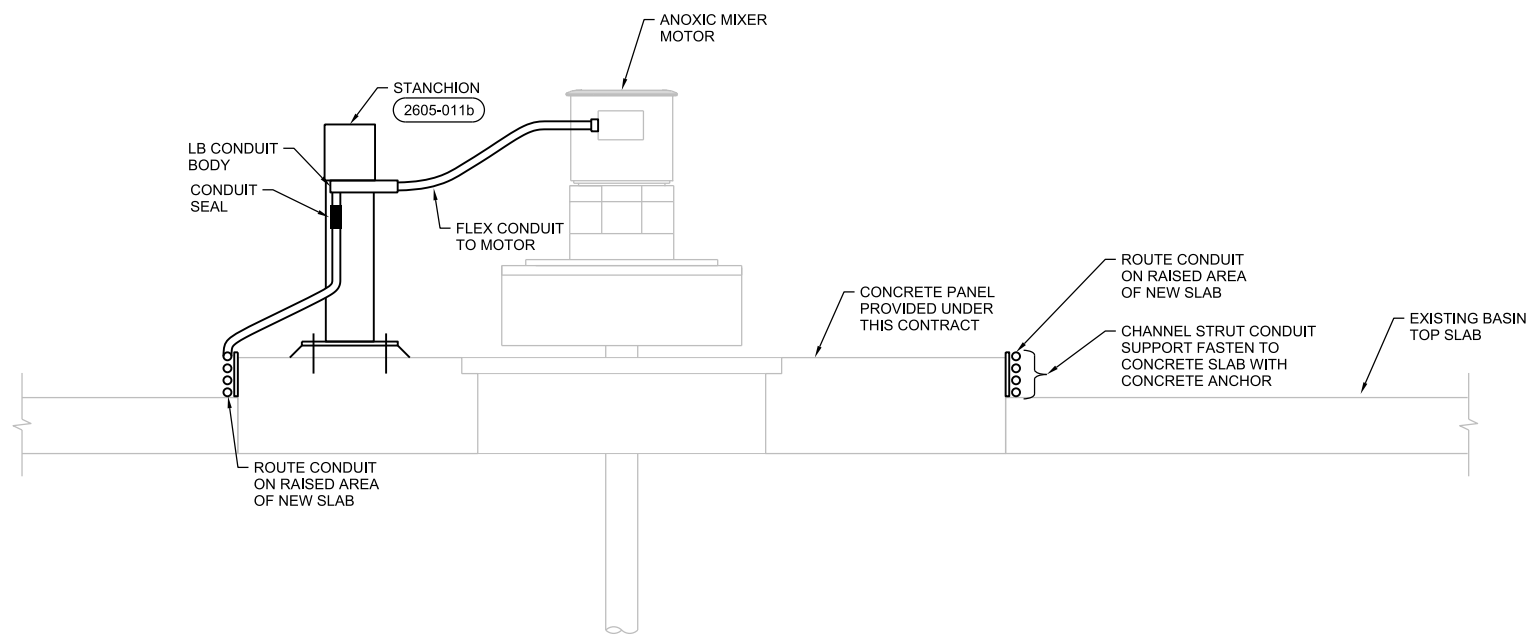
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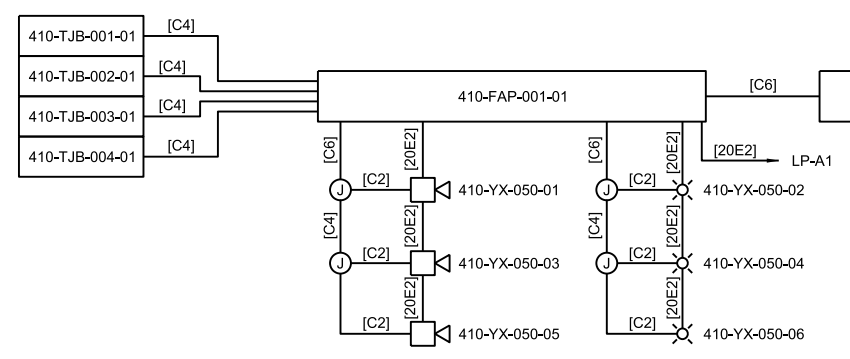
ANOXIC BASIN - PLAN
1"=10'

1 2 3 4 5 6

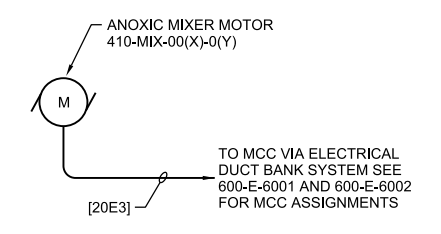
A B C D



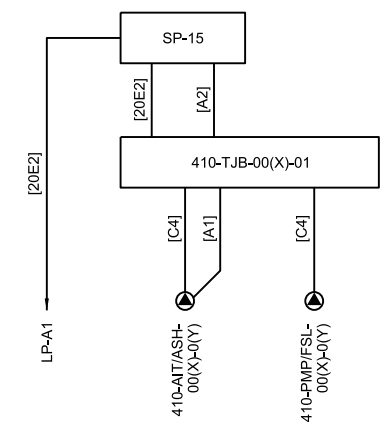
A SECTION
1"=1'-0"
510-E-2001



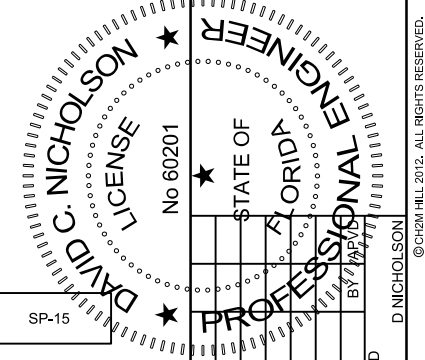
RISER DIAGRAM
FIRE ALARM PANEL



RISER DIAGRAM
(X) = 1, 2, 3, 4 (Y) = 1, 2, 3, 4, 5, 6, 7, 8



CGD RISER DIAGRAM
(X) = 1, 2, 3, 4 (Y) = 1, 2



NO.	DATE	DR	CHK	APVD
		D NICHOLSON	N ADAMS	M WAYNE
		DSGN	REVISION	BY

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EB0000072 / AAC001992
DAVID C NICHOLSON - PE 60201

SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

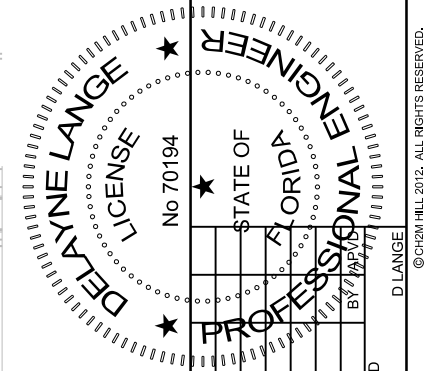
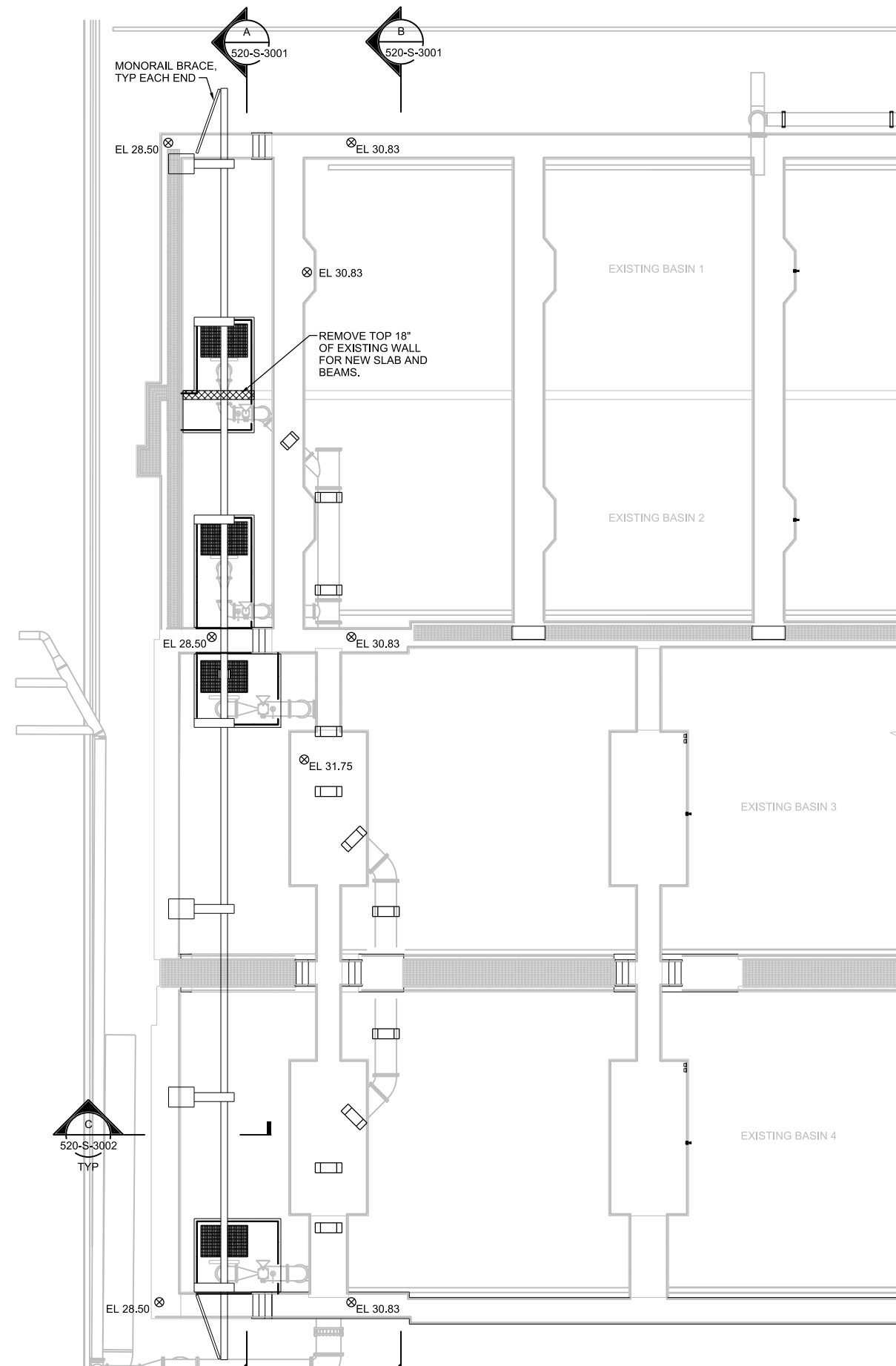
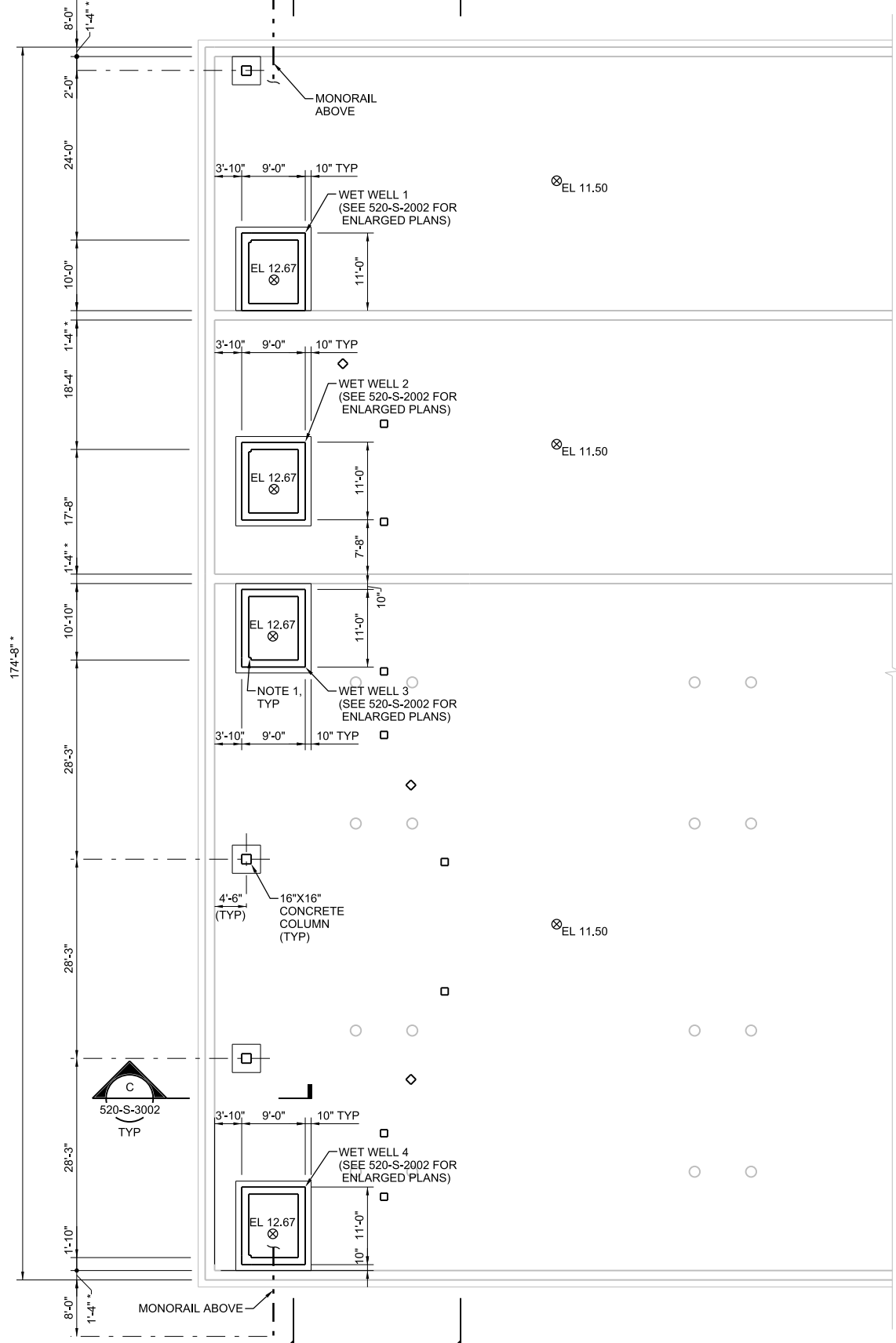
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ELECTRICAL
ANOXIC BASIN
SECTION &
RISER DIAGRAMS

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PROJ	457133
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SHEET	of

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- NOTES:**
1. FOR COLUMN REINFORCEMENT AT WET WELLS, SEE SECTION C ON DRAWING 520-S-3002, SIMILAR.
 2. FOR ADDITIONAL INFORMATION SEE DRAWING 001-G-0105.



NO.	DATE	REVISION	CHK	APVD

3011 SW WILLISTON RD
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SWWRF NITROGEN REMOVAL
AND DIGESTER MODIFICATIONS
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FL

CH2MHILL®

STRUCTURAL
**AERATION BASINS
LOWER AND UPPER PLANS**

VERIFY SCALE	
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