



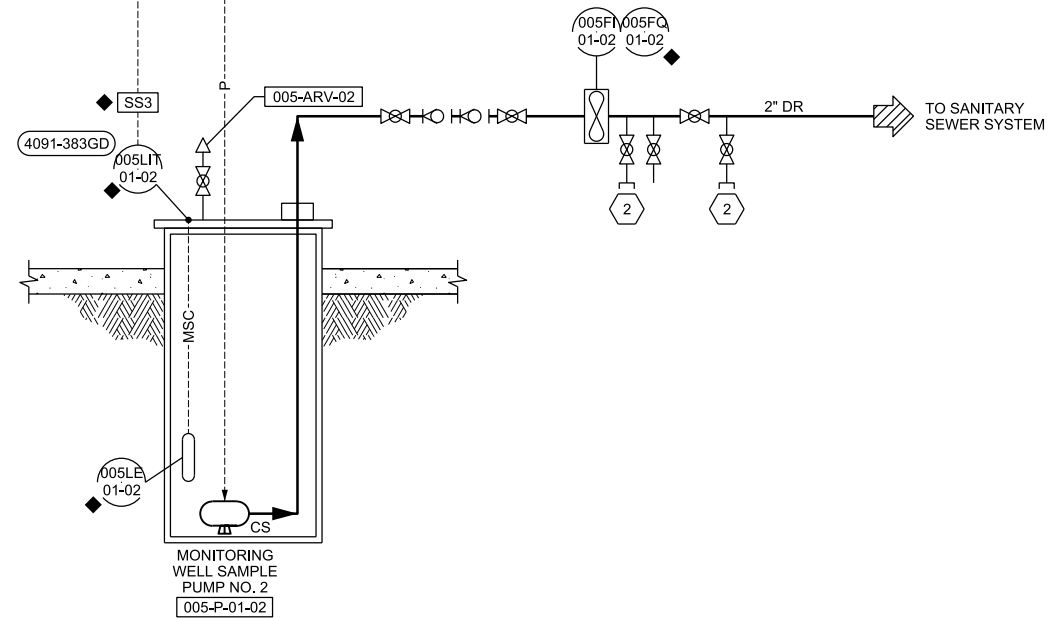
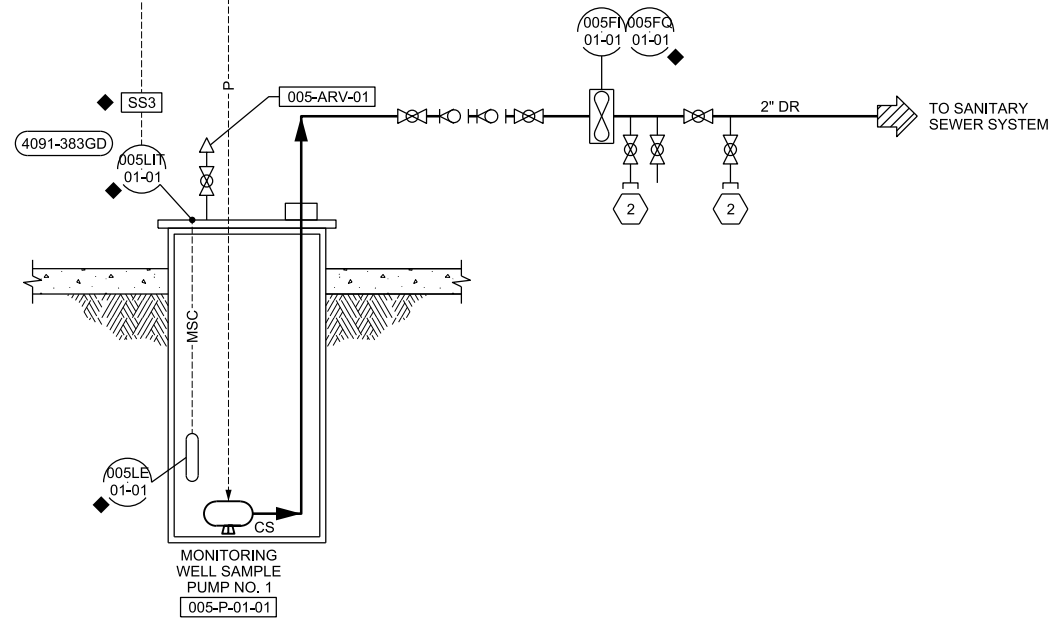
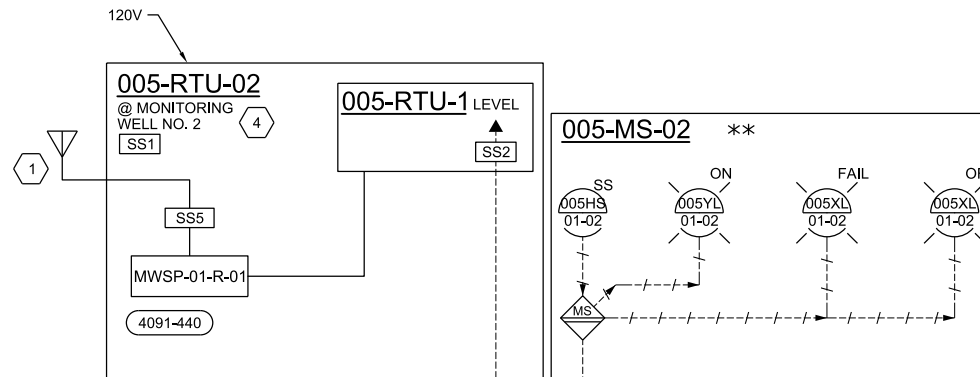
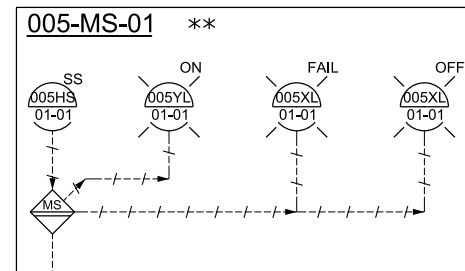
1. QUICK-CONNECT FOR CONNECTION TO FLOW-THRU CELL.
2. RE-USE EXISTING SPARE SURGE SUPPRESSORS. IF EXISTING SURGE SUPPRESSOR DOES NOT EXIST, PROVIDE NEW SURGE SUPPRESSOR.

<div>CH2MHILL®</div> <div>INSTRUMENTATION AND CONTROL P&ID RECHARGE WELL</div>		SOUTHWEST REGIONAL WATER RECLAMATION FACILITY - RECHARGE WELL SYSTEM MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA		3011 S.W. WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 AXC001992 Thomas Andrew Ridgik PE 35105										
				NO.		DATE		REVISION		APVD				
		DSGN						CHK		APVD		T RIDGIK		
								DR		D CORY		AL PASTRANA		

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SP-08-PLC-01
EXIST PLANT PLC

SS2 3



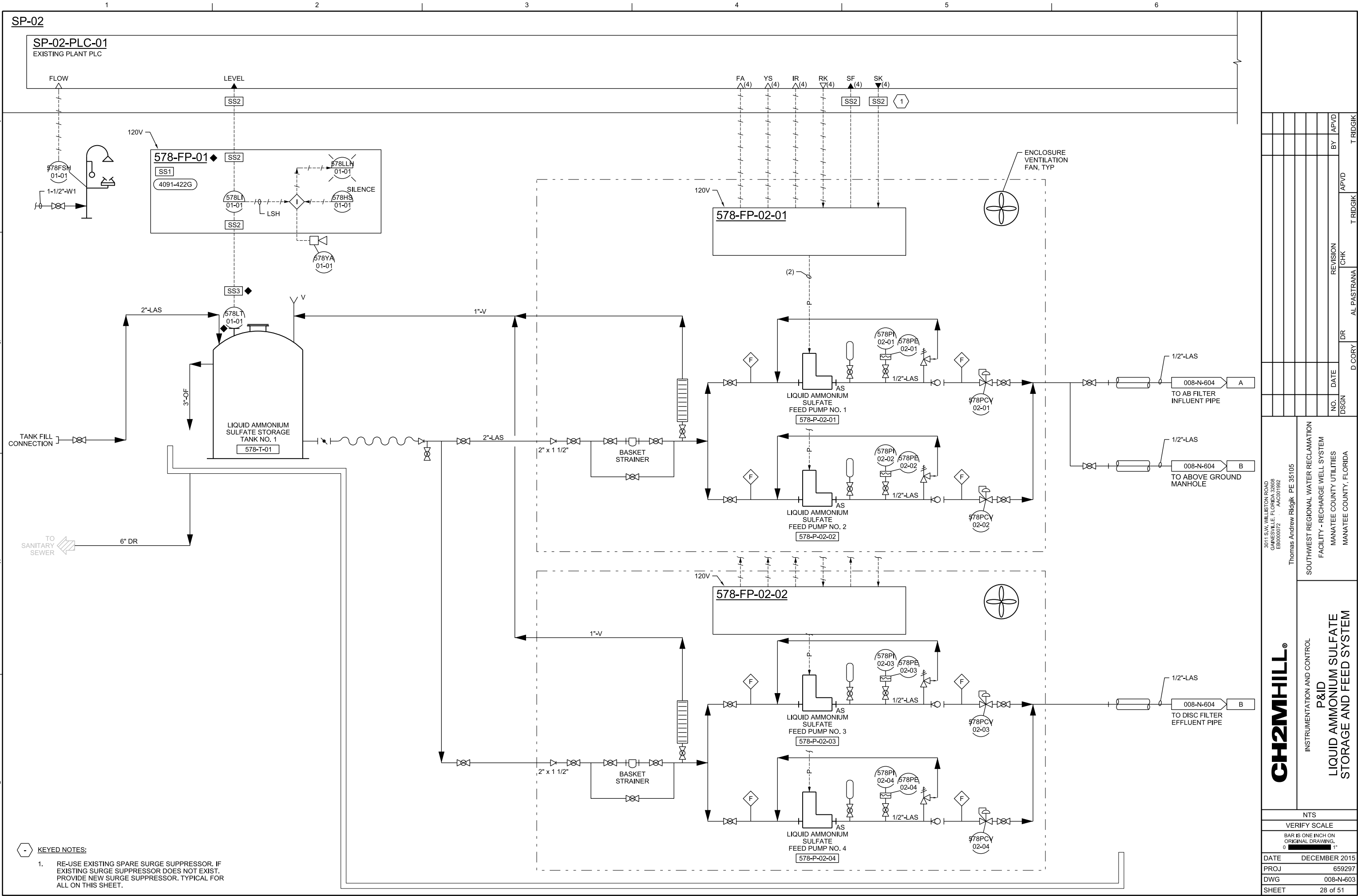
KEYED NOTES:

1. SEE 08-N-605. RADIO TRANSMITS TO EXISTING AER-DFS RADIO TOWER IN ADMIN/ELECTRICAL ROOM.
2. QUICK-CONNECT FOR CONNECTION TO FLOW-THRU CELL.
3. RE-USE EXISTING SPARE SURGE SUPPRESSOR. IF EXISTING SURGE SUPPRESSOR DOES NOT EXIST, PROVIDE NEW SURGE SUPPRESSOR.
4. FURNISHED BY RADIO VENDOR UNDER SECTION 40 95 60, TELEMETRY SUBSYSTEM.

<div><div>3011 S.W. WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 A/COUT199Z</div><div>Thomas Andrew Ridgik PE 35105</div></div>										<div><div>SOUTHWEST REGIONAL WATER RECLAMATION FACILITY - RECHARGE WELL SYSTEM MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA</div></div>										NO.	DATE	REVISION	CHK	APVD	BY	APVD
										DSGN				DR	AL PASTRANA	T RIDGIK	T RIDGIK									

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DATE	COURT	AL FAS TRAVA	NIDGK	NIDGK
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EB0000072 AAC001992

Thomas Andrew Ridgik, PE 35105

SOUTHWEST REGIONAL WATER RECLAMATION
FACILITY - RECHARGE WELL SYSTEM
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

INSTRUMENTATION AND CONTROL
P&ID
LIQUID AMMONIUM SULFATE
STORAGE AND FEED SYSTEM

NTS

VERIFY SCALE

BAR IS ONE INCH ON
ORIGINAL DRAWING.
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DATE DECEMBER 2015

PROJ 659297

DWG 008-N-603

SHEET 28 of 51

NO. DATE

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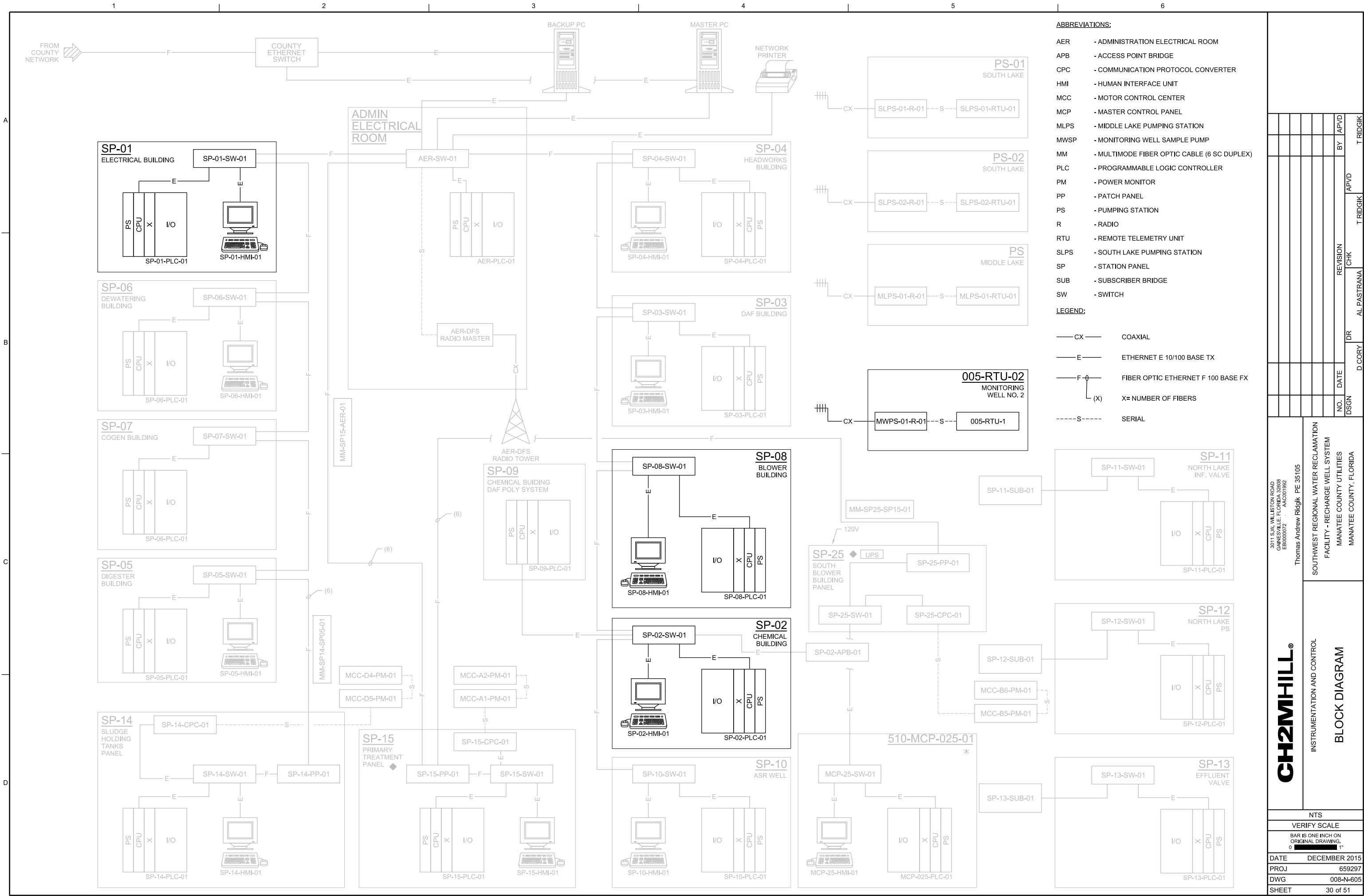
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T RIDGIK

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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
MWSP	- MONITORING WELL SAMPLE PUMP
MM	- MULTIMODE FIBER OPTIC CABLE (6 SC DUPLEX)
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

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GAINESVILLE, FLORIDA 32608
EB0000072 AAC001992

Thomas Andrew Ridgik, PE 35105

SOUTHWEST REGIONAL WATER RECLAMATION
FACILITY - RECHARGE WELL SYSTEM
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

CH2MHILL®

INSTRUMENTATION AND CONTROL
BLOCK DIAGRAM

NTS

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DATE DECEMBER 2015

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SHEET 30 of 51

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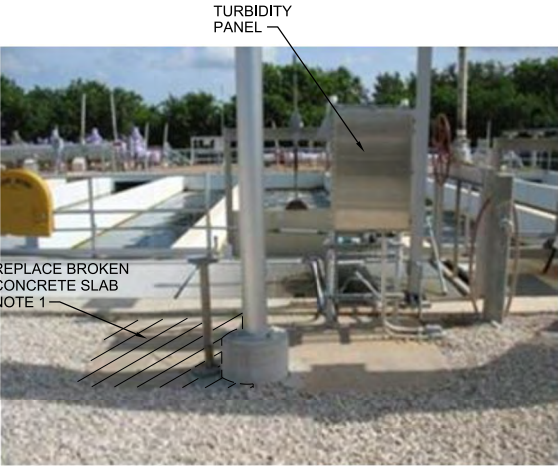
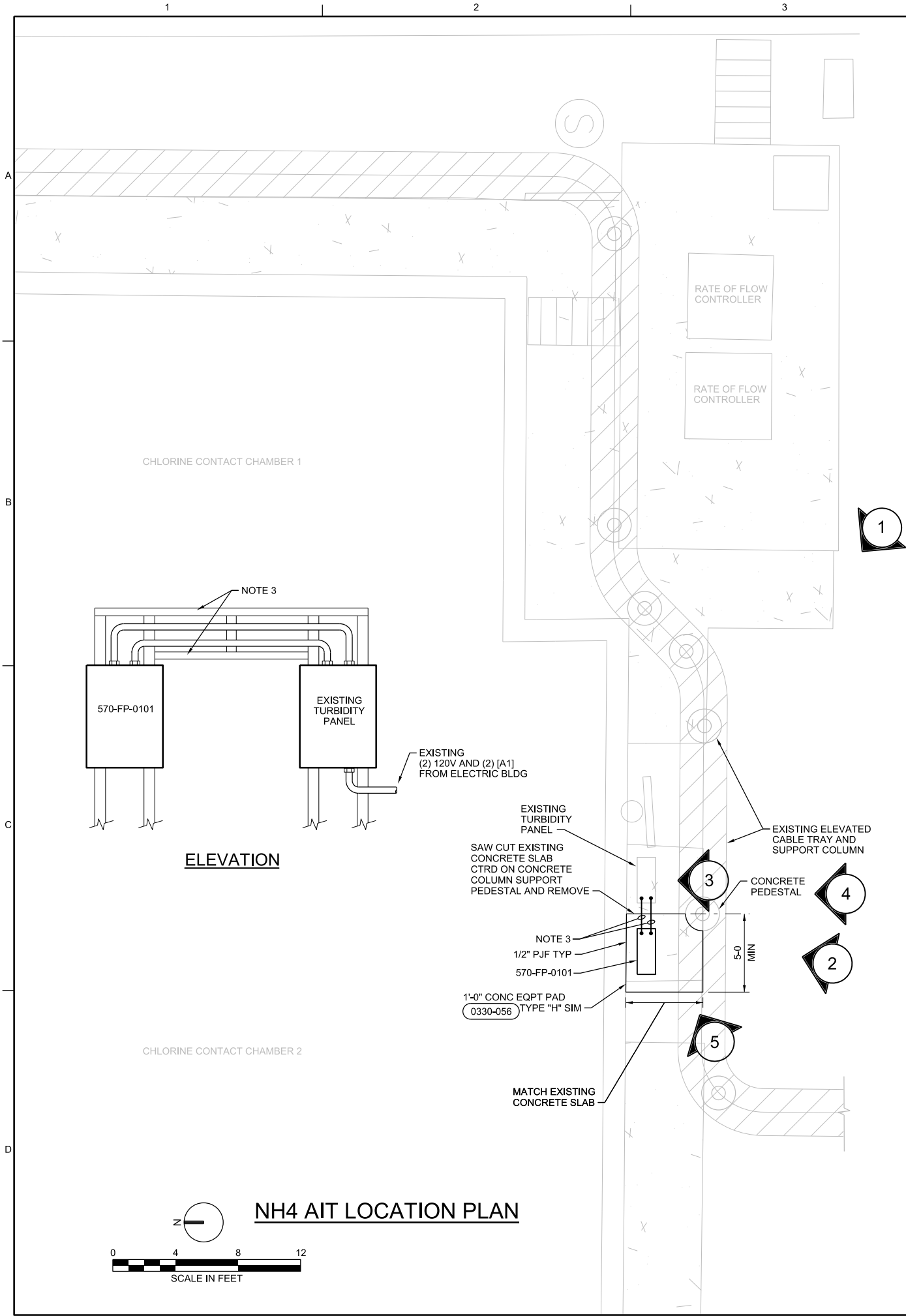
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FILENAME: 008-N-6005_659297.dgn PLOT DATE: 12/10/2015 PLOT TIME: 12:41:22 PM



NOTES:

1. REMOVE AND REPLACE WITH NEW SLAB SIZED FOR 570-FP-0101 PER OTHER DIVISIONS OF CONTRACT.
2. PROVIDE 570-FP-0101 ON STAINLESS STEEL FRAMING, CLEAR OF CABLE TRAY SUPPORT COLUMN.
3. PROVIDE OVERHEAD CONDUITS TO CONNECT 570-FP-0101 TO EXISTING TURBIDITY PANEL, 7 FEET ABOVE FINISHED FLOOR. PROVIDE [20E2] IN ALUMINUM CONDUIT FOR POWER AND [A1] IN STAINLESS STEEL OR PVC COATED RGS FOR ANALOG. PROVIDE (4) ALUMINUM MYERS HUBS, ONE FOR EACH END OF EACH CONDUIT. EXTEND STAINLESS STEEL FRAMING ABOVE BOTH ENCLOSURES TO SUPPORT CONDUITS.

<div>CH2MHILL®</div>		<div>ELECTRICAL</div>		<div>NH4 AIT ENLARGED LOCATION PLAN AND PHOTO VIEW DETAILS</div>		<div>3011 S.W. WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 AAC001992 ROCCO DE VILLIERS KOEHLER MANATEE COUNTY, FLORIDA David C. Nicholson PE 60201</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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A

B

C

D

575-LC-3		Feeder = [150E3]		PANEL BOARD SCHEDULE												575-LC-3	
208Y/120VOLTS		225A BUS		150 AMP'S MAIN CB		3 Phase		4 Wire		Chlorine Building		NEMA 4X Stainless Steel		KAIC = 10			
CKT NBR	EQUIPMENT CONNECTED	POLE	TRIP	Nbr	WIRE AND CONDUIT **	Phase	Neu	Grd	Cond	Phase	Neu	Grd	Cond	SETS	POLE	TRIP	CKT NBR
1	Chlorine AIT (4)	1	20		[20E2]				2.0					1	20	Spare	2
3	Ammonia Pumps #1	1	20		[20E2]				2.0					1	20	Spare	4
5	Ammonia Pumps #2	1	20		[20E2]									1	20	Spare	6
7	Amm Tank & Shower	1	20		[20E2]				2.0					1	20	Spare	8
9	Spare	1	20											1	20	Spare	10
11	Spare	1	20											1	20	Spare	12
13	Spare	1	20											1	20	Spare	14
15	Spare	1	20											1	20	Spare	16
17	Spare	1	20											1	20	Spare	18
19	Spare	1	20											1	20	Spare	20
21	Spare	1	20											1	20	Spare	22
23	Spare	1	20											1	20	Spare	24
25	Spare	1	20											1	20	Spare	26
27	Spare	1	20											1	20	Spare	28
29	Spare	1	20											1	20	Spare	30
31	Spare	1	20											1	20	Spare	32
33	Spare	1	20											1	20	Spare	34
35	Spare	1	20											1	20	Spare	36
37	Spare	1	20											1	20	Spare	38
39	Spare	1	20											1	20	Spare	40
41	Spare	1	20											1	20	Spare	42
SFL																	
Provide service rated		Subfeed Lugs		CONNECTED KVA =		4.0		2.0		2.0							
				CONNECTED AMPS =		33		17		17							

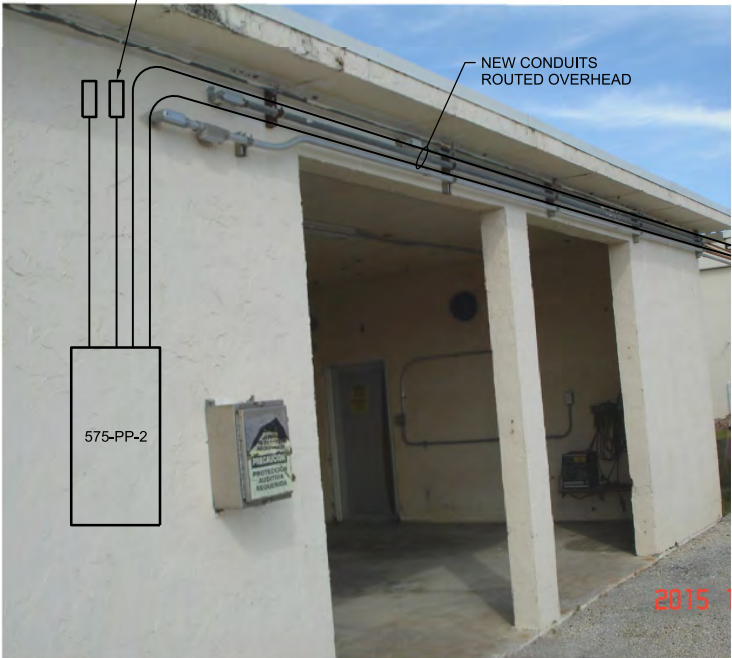
575-PP-1		Feeder = [225E3]		PANEL BOARD SCHEDULE												575-PP-1	
480 VOLTS		225A BUS		200 AMP'S MAIN CB		3 Phase		4 Wire		Chlorine Building		NEMA 4X Stainless Steel		KAIC = 35			
CKT NBR	EQUIPMENT CONNECTED	POLE	TRIP	Nbr	WIRE AND CONDUIT **	Phase	Neu	Grd	Cond	Phase	Neu	Grd	Cond	SETS	POLE	TRIP	CKT NBR
1									10.0								2
3	575-LC-3 (via 575-TR-1)	3	80		[80E2]				9.0					3	20	Spare	4
5													8.0				6
7									15.0								8
9	575-PP-2	3	100		[100E3]				15.0					3	20	Spare	10
11													15.0				12
13	Spare	3	30											3	20	Spare	14
15														3	20	Spare	16
17														3	20	Spare	18
19														3	20	Spare	20
21	Spare	3	30											3	20	Spare	22
23														3	20	Spare	24
25	Spare	3	20											3	20	Spare	26
27														3	20	Spare	28
29														3	20	Spare	30
31														3	20	Spare	32
33	Spare	3	20											3	20	Spare	34
35														3	20	Spare	36
37														3	20	Spare	38
39	SPD	3	30											3	20	Spare	40
41																	42
SFL																	
Provide service rated. Integral SPD. Lockout Device on each CB. Main CB with LSI adjustable Trip.		Subfeed Lugs		CONNECTED KVA =		25.0		24.0		23.0							
				CONNECTED AMPS =		30		29		28							



6 PHOTO 6
NTS
575-E-201

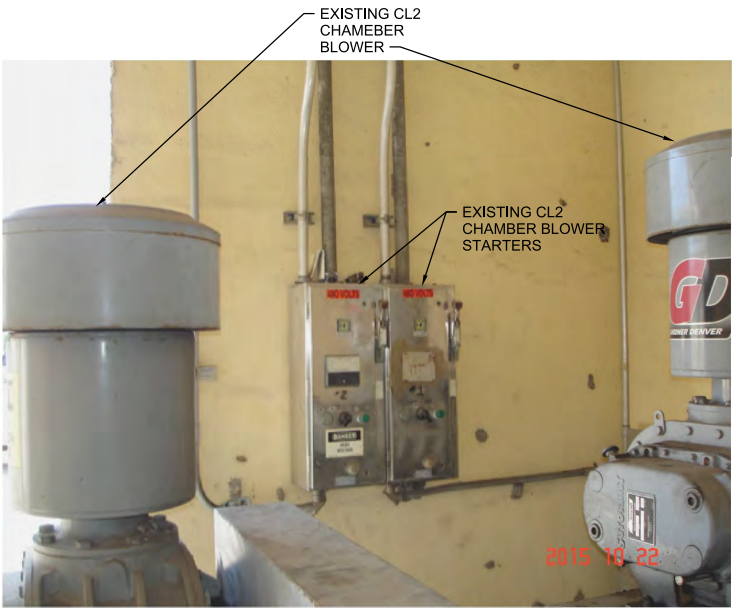


7 PHOTO 7
NTS
575-E-201



8 PHOTO 8
NTS
575-E-201

575-PP-2		Feeder = [100E3]		PANEL BOARD SCHEDULE												575-PP-2	
480 VOLTS		100A Bus		100 AMP'S MAIN CB1		100 AMP'S MAIN CB2		3 Phase		4 Wire		Chlorine Blower Building		KAIC = 35			
CKT NBR	EQUIPMENT CONNECTED	POLE	TRIP	Nbr	WIRE AND CONDUIT **	Phase	Neu	Grd	Cond	Phase	Neu	Grd	Cond	SETS	POLE	TRIP	CKT NBR
1	CL2 Chamber Blower No. 1 Starter	3	60		[60E3]				7.5								2
3																	4
5																	6
7	CL2 Chamber Blower No. 2 Starter	3	60		[60E3]				7.5								8
9																	10
11																	12
13																	14
15	Spare	3	20														16
17																	18
19																	20
21	SPD	3	30														22
23																	24
SFL																	
Provide service rated. Integral SPD. Main Breakers Mechanically Interlocked. Lockout Device on each CB.		Subfeed Lugs		CONNECTED KVA =		15.0		15.0		15.0							
				CONNECTED AMPS =		18		18		18							



9 PHOTO 9
NTS
575-E-201

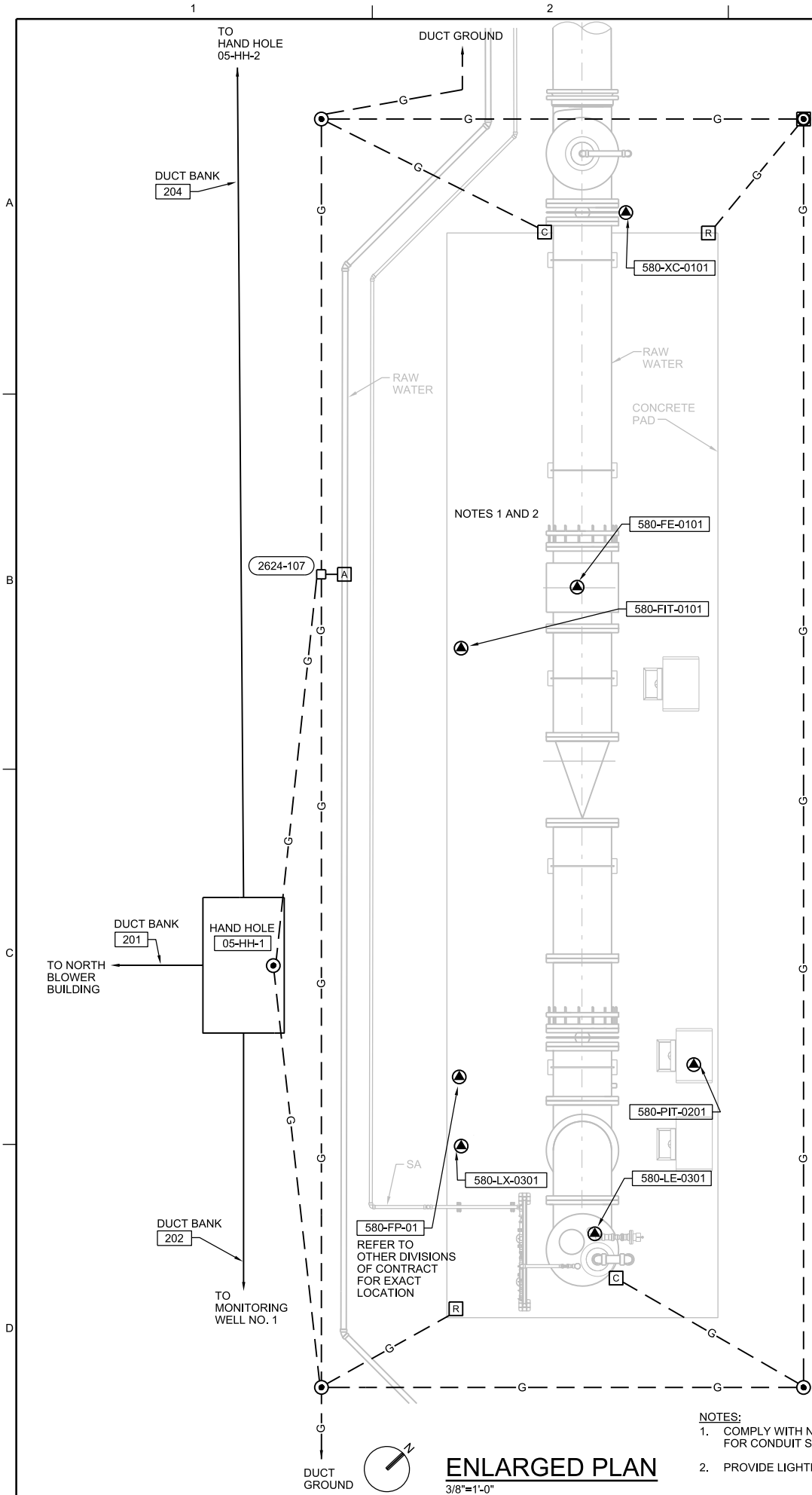
3011 SW WILLISTON ROAD
GAINESVILLE, FLORIDA 32608
EB0000072 AAC001992
David C. Nicholson PE 60201

SOUTHWEST REGIONAL WATER RECLAMATION
FACILITY - RECHARGE WELL SYSTEM
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

CH2MHILL®
ELECTRICAL

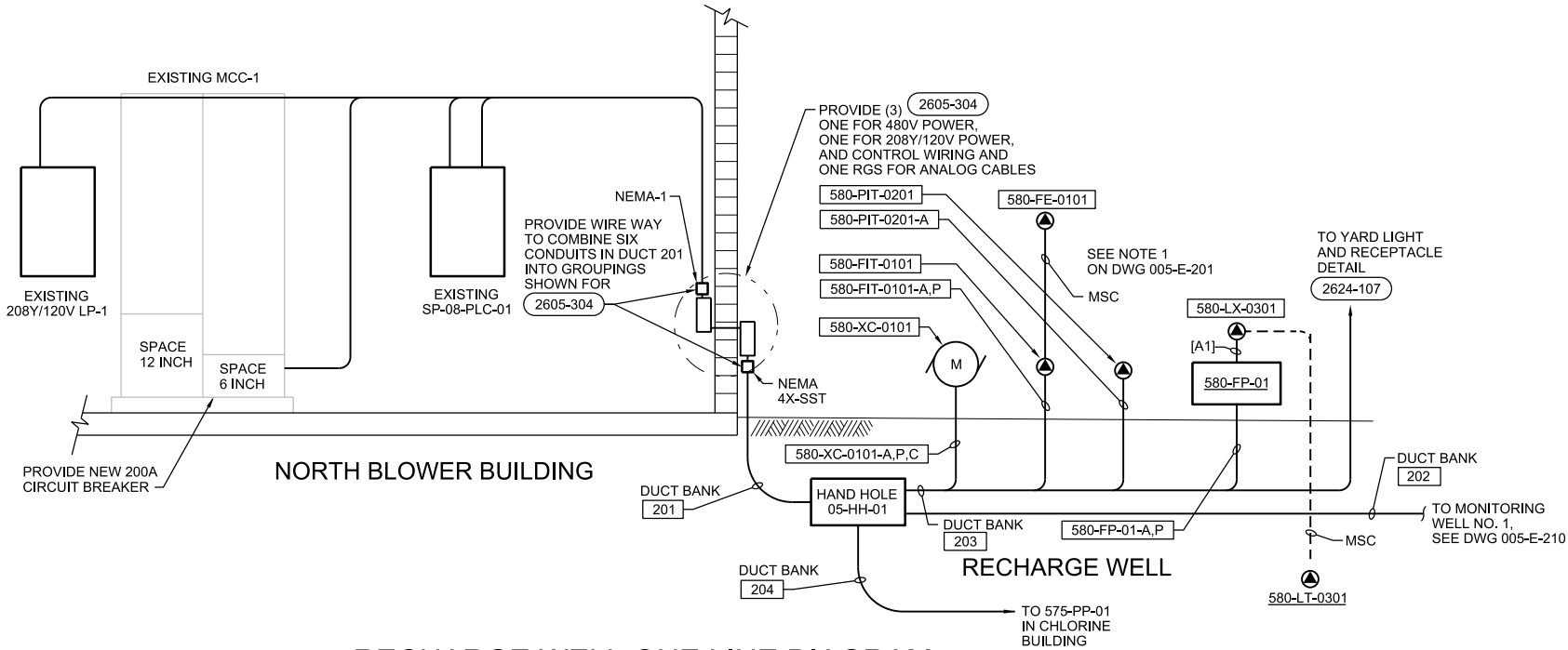
SCHEDULES AND PHOTO DETAILS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2015
PROJ	659297
DWG	575-E-601
SHEET	33 of 51



EXISTING LP1				PANEL BOARD SCHEDULE												EXISTING LP1															
208Y/120V LVS 225A Bus				Feeder = Existing				50 AMPS MAIN CB				3 Phase				4 Wire				North Blower Bldg Rm #102				NEMA 1				KAIC = 10			
CKT NBR	EQUIPMENT CONNECTED	CKT BKR		Nbr Sets	WIRE AND CONDUIT **				PHASE KVA			WIRE AND CONDUIT **				Nbr Sets	CKT BKR		EQUIPMENT CONNECTED	CKT NBR											
		POLE	TRIP		Phase	Neu	Grd	Cond	A	B	C	Phase	Neu	Grd	Cond		POLE	TRIP													
1	Lts, Rm 101, Em Exit	1	20						1.4	0.7						1	20	Lts, Rm 102, Em Exit	2												
3	Lts, Outside	1	20								0.6	0.9				1	20	Rec. Rm 101, rooftop & outside	4												
5	Rec. Rm 101 west wall	1	20										0.9	0.9		1	20	Rec. Rm 102 & outside	6												
7	Control System Cabinet	1	20						1.9							1	20	Spare	8												
9	Rec, roof top	1	20								0.2	0.06				1	20	PRV-4 Louvers	10												
11	PRV-1 Louvers	1	20										0.06	0.06		1	20	PRV-2 Louvers	12												
13	PRV-3 Louvers	1	20						0.06							1	20	Spare	14												
15	NEW Recharge Well	2	20					[20E2]			1.0					1	20	Spare	16												
17												1.0				1	20	Spare	18												
19																1	20	Spare	20												
21	NEW Monitoring Well #1	2	30					[30E2]	2.0		2.0					1	20	Spare	22												
23	Spare	1	20													1	20	Spare	24												
25	Spare	1	20													1	20	Spare	26												
27	Spare	1	20													1	20	Spare	28												
29	Spare	1	20													1	20	Spare	30												
SFL	Subfeed Lugs																														
Existing panelboard data from Manatee County Project #411-8712-537Aeration System Retrofit Dec 1997 As-Built Dwg.				CONNECTED KVA =				6.0				4.7				2.9				All loads and CBs shown are existing except where designated NEW											
				CONNECTED AMPS =				50				40				24															

PANEL BOARD SCHEDULE LP1



RECHARGE WELL ONE LINE DIAGRAM

- NOTES:
1. COMPLY WITH NOTE 3 ON DRAWING 575-E-201 FOR CONDUIT STUB UP LOCATIONS.
 2. PROVIDE LIGHTNING PROTECTION SYSTEM.

ENLARGED PLAN
3/8"=1'-0"

3011 SW WILLISTON ROAD
GAINESVILLE, FLORIDA 32608
EB0000072 AAC001992
David C. Nicholson PE 60201

SOUTHWEST REGIONAL WATER RECLAMATION
FACILITY - RECHARGE WELL SYSTEM
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

RECHARGE WELL ENLARGED PLAN,
PANEL BOARD SCHEDULE LP1 AND
ONE LINE DIAGRAM

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING,
0 1"

DATE DECEMBER 2015
PROJ 659297
DWG 580-E-201
SHEET 35 of 51

NO. DATE
D NICHOLSON
D NICHOLSON
M REICHERT
M WAYNE
D NICHOLSON

REVISION
CHK
APVD
BY
APVD

DR

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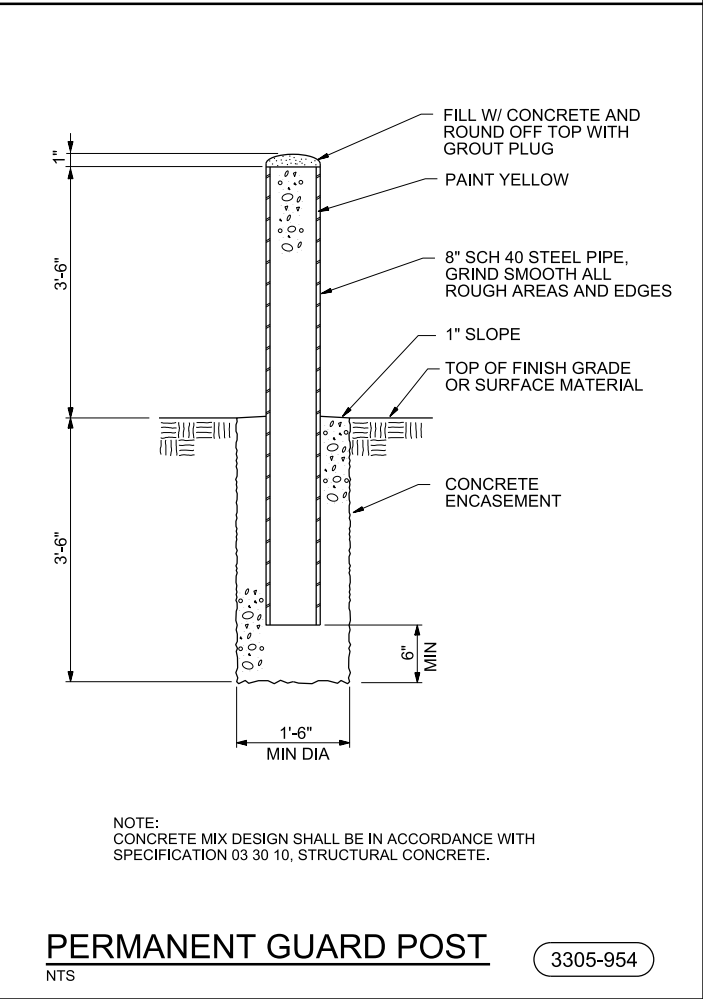
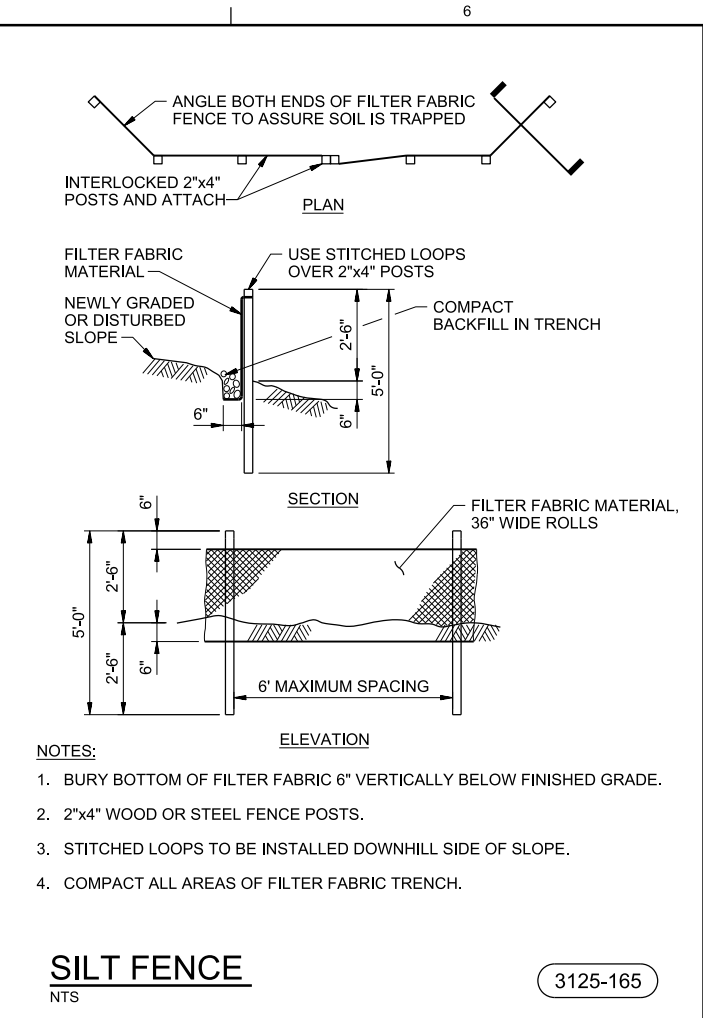
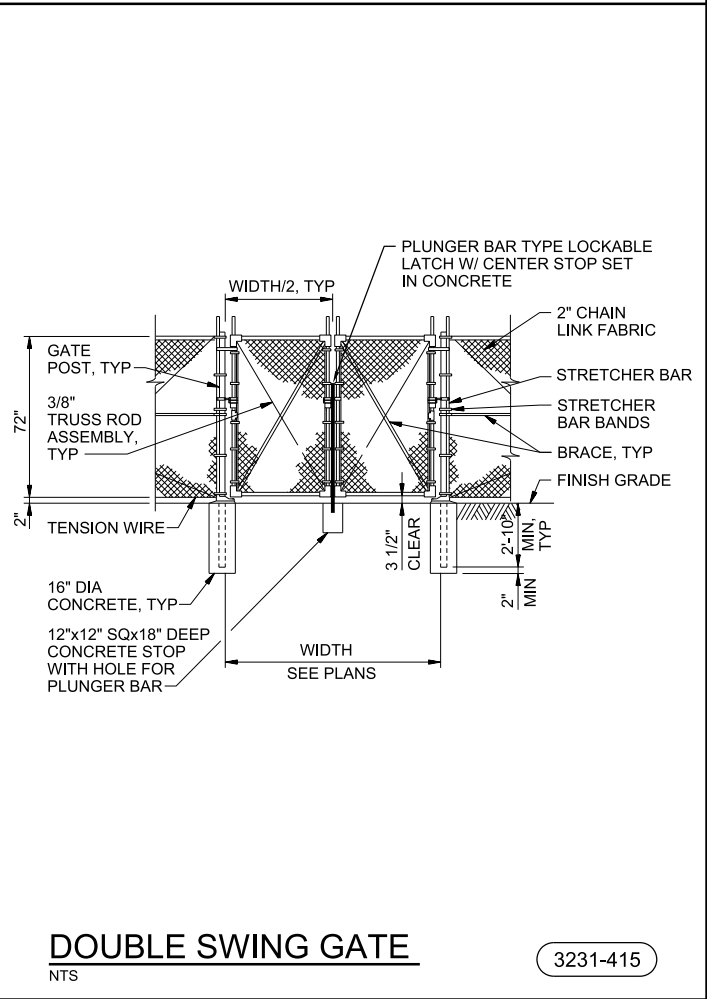
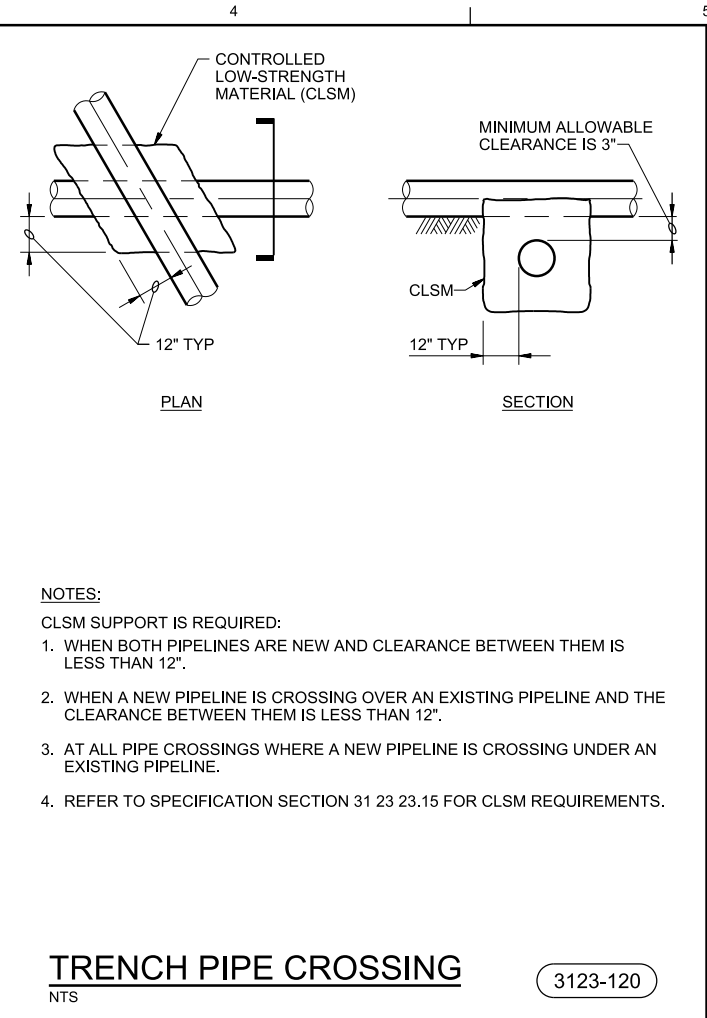
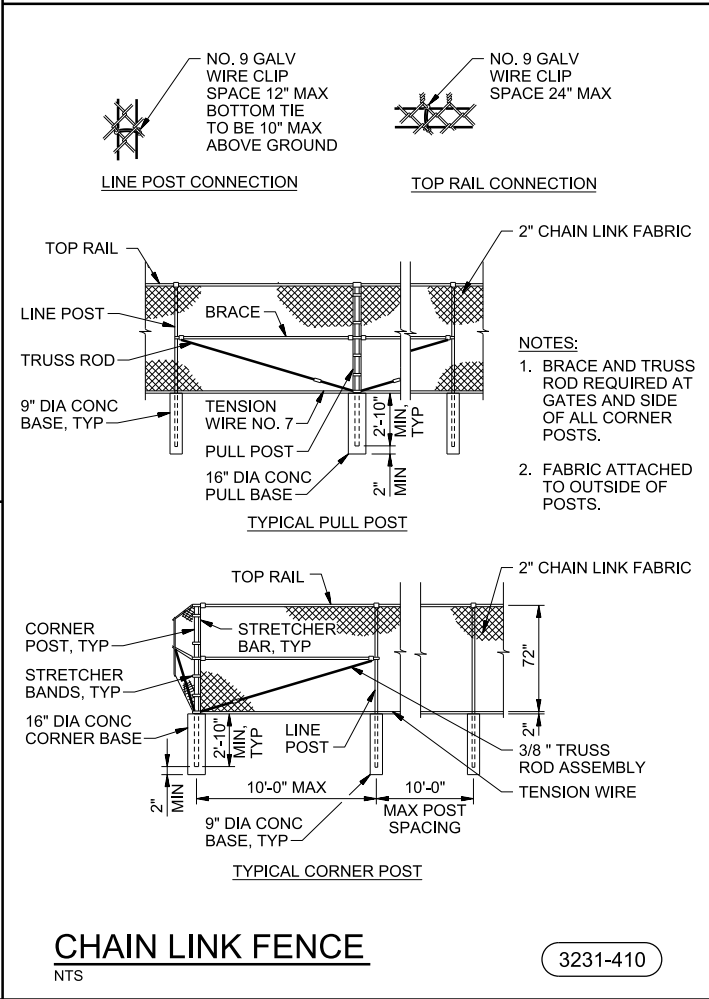
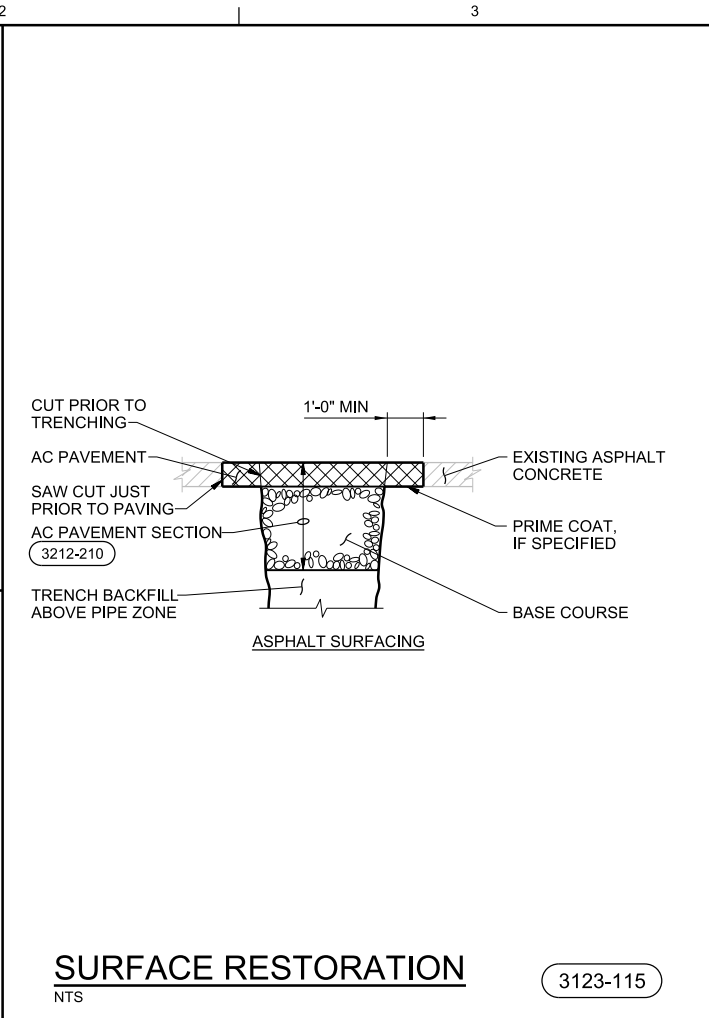
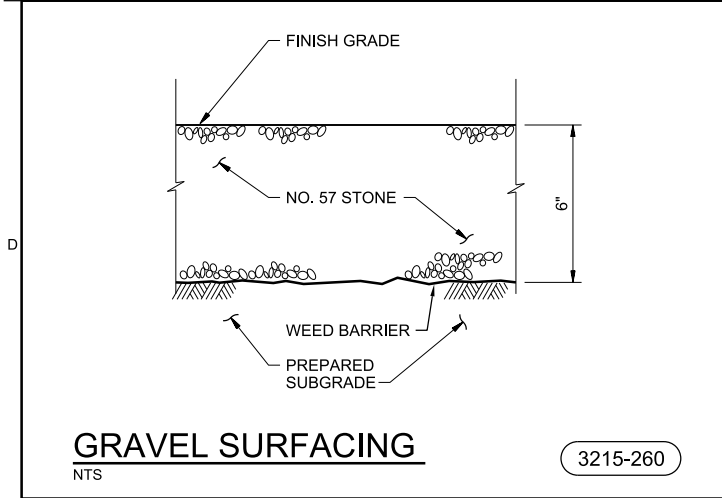
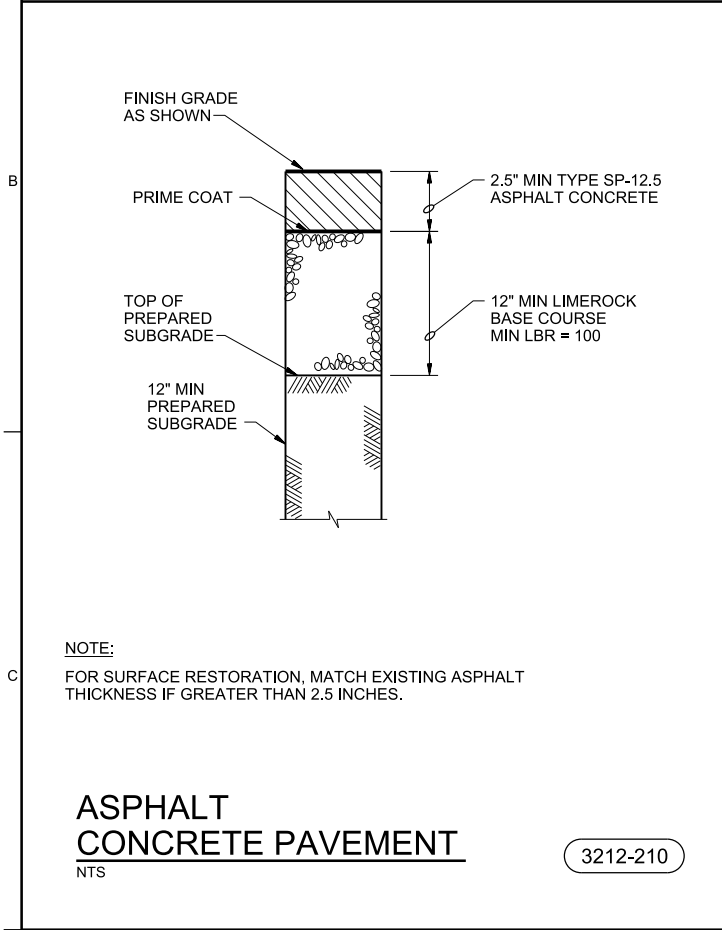
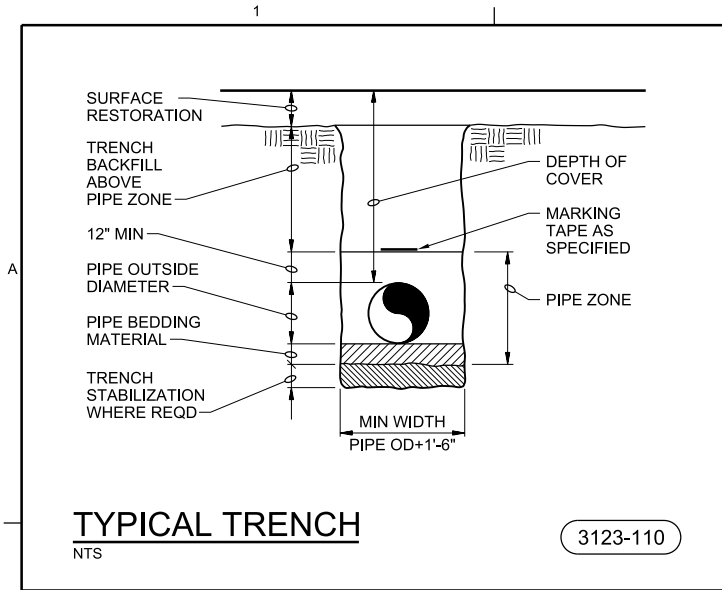
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FILENAME: 580-E-2001_659297.dgn PLOT DATE: 12/16/2015 PLOT TIME: 9:14:31 AM



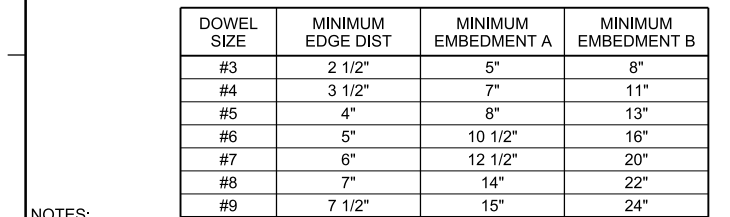
DUCT BANK SECTION SCHEDULE																
SECTION OR WIRE WAY	1A	1B	1C	1D	2A	2B	2C	2D	3A	3B	3C	3D	4A	4B	4C	4D
201	Spare 2"C	Spare 2"C	005-FP-01-A	580-FIT-0101-A580-FP-01-A 580-PIT-0201-A 580-XC-0101-A	005-JB-0101-P	580-FIT-0101-P 580-FP-01-P 580-XC-0101-P	580-XC-0101-C	575-PP-01-P								
202	Spare 2"C	Spare 2"C	NOT USED		005-FP-01-A	005-JB-0101-P	NOT USED	NOT USED								
203				NOT USED												
204	Spare 2"C	575-PP-01-P	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED								
205	570-FP-0102-A	Spare 2"C	NOT USED	NOT USED	575-PP-01-P	578-FP-01-P 578-FP-0201-P 578-FP-0202-P	NOT USED	NOT USED								
206	578-FP-01-A 578-FP-0201-A 578-FP-0202-A	570-FP-0102-A	578-FP-0201-C 578-FP-01-C 578-FSH-0101-C	NOT USED	578-FP-0202-C	Spare 2"C	Spare 2"C	NOT USED								

REFER TO OTHER DOCUMENTS, INCLUDING CABLE, MCC AND PB SCHEDULES, FOR REQUIREMENTS FOR CONDUIT AND CABLE TYPES AND SIZES.



										R MORRISON	
										A MALONE	
										C CHILDRESS	
										R MORRISON	
										DR	
										DGN	
										NO. DATE	
										REVISION	
										CHK	
										APVD	
										BY	
										APVD	
										R MORRISON	
										© CH2M HILL 2015. ALL RIGHTS RESERVED.	

3011 SW WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 AAC001982	Richard Thomas Morrison PE 67713	SOUTHWEST REGIONAL WATER RECLAMATION FACILITY - RECHARGE WELL SYSTEM MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA	CIVIL	STANDARD DETAILS
CH2MHILL®				
VERIFY SCALE				
BAR IS ONE INCH ON ORIGINAL DRAWING, 1"				
DATE	DECEMBER 2015			
PROJ	659297			
DWG	950-C-501			
SHEET	37 of 51			



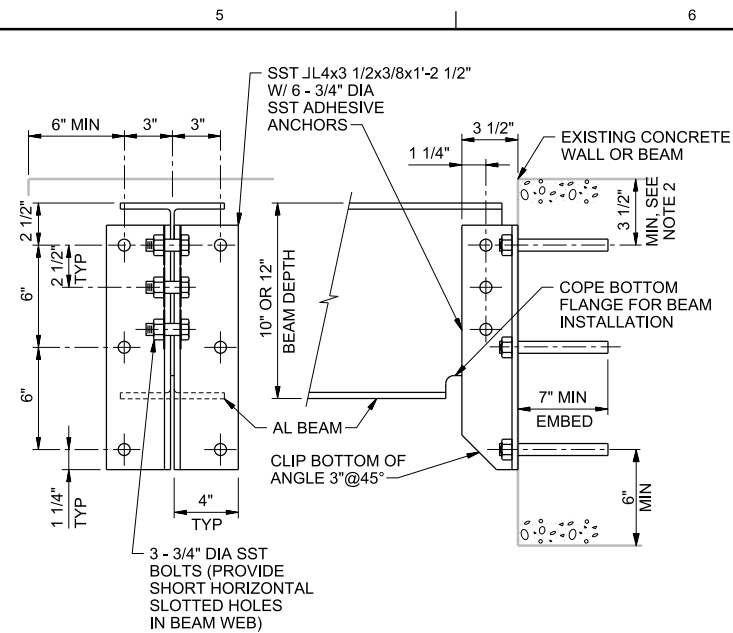
NOTES:

1. CONFORM TO THE REQUIREMENTS OF SPECIFICATION SECTION 03 63 00, CONCRETE DOWELING.
2. FOLLOW ADHESIVE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
3. USE MINIMUM EMBEDMENTS SHOWN, EXCEPT USE MANUFACTURER'S MINIMUM RECOMMENDED EMBEDMENT IF GREATER.
4. LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS OTHERWISE NOTED ON DRAWINGS. WHERE 2 ROWS OF DOWELS INDICATED, STAGGER SPACING & LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.

ADHESIVE DOWEL

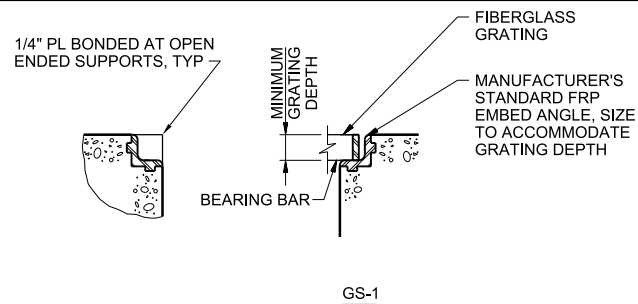
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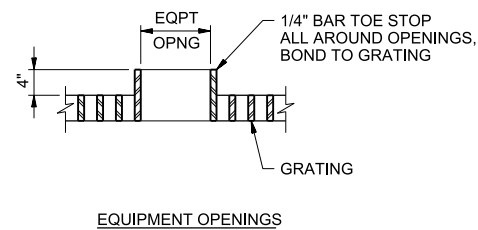
BEAM/WALL CONNECTION - ALUMINUM

NTS



STANDARD FIBERGLASS GRATING

NTS



COLUMN BASE - STEEL

NTS

0512-001

FOOT TRAFFIC		
MAXIMUM SPAN	MINIMUM GRATING DEPTH	* GRATING TYPE
3'-6"	1 1/2"	M OR P
4'-0"	1 1/2"	M OR P
4'-6"	1 1/2"	M OR P
5'-0"	2"	P
5'-6"	2"	P

* M = MOLDED GRATING
P = PULTRUDED GRATING

CH2MHILL®

STRUCTURAL STANDARD DETAILS

3011 S.W. WILLISTON ROAD
GAINESVILLE, FLORIDA 32608
EB0000072 : AAC001992

Rocco Deviliars Koekemoer PE 76468
SOUTHWEST REGIONAL WATER RECLAMATION
FACILITY - RECHARGE WELL SYSTEM
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

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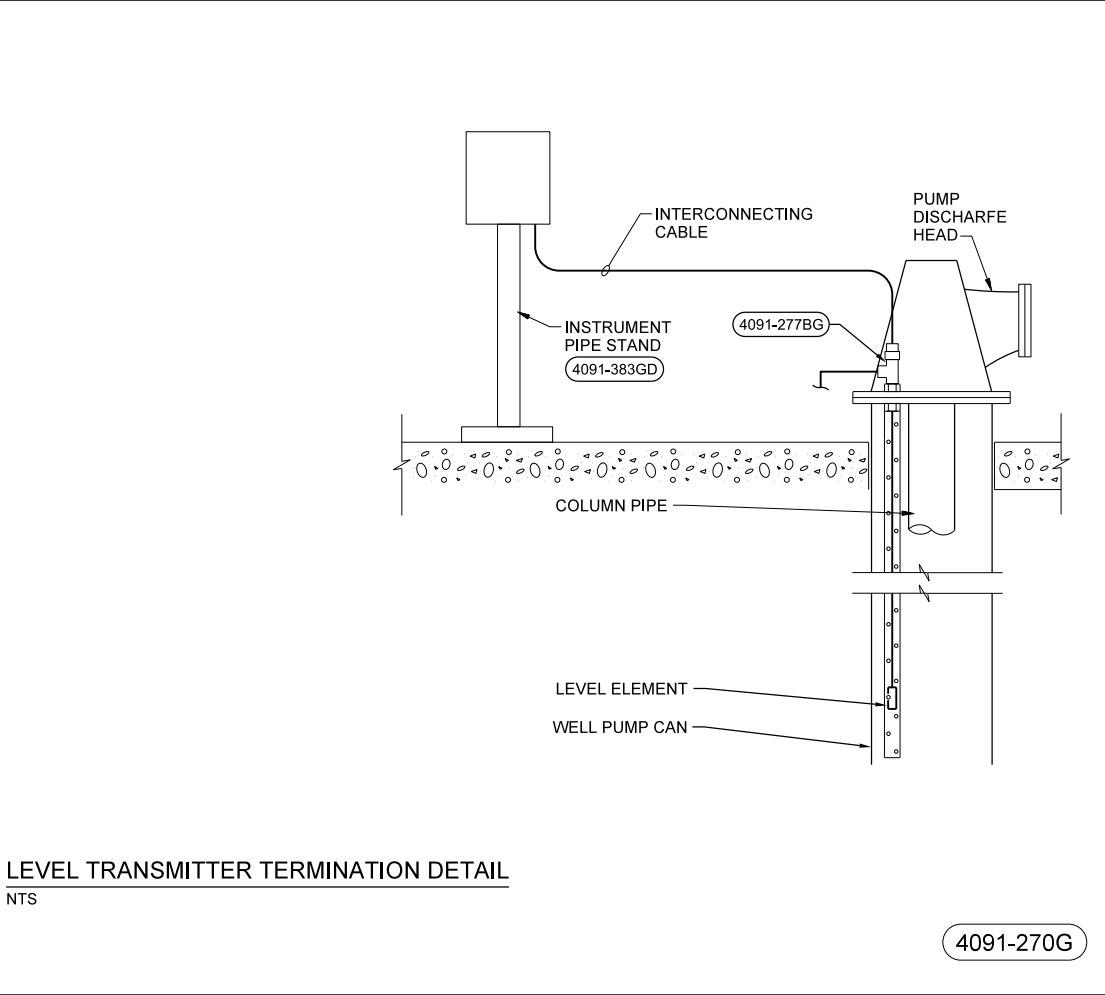
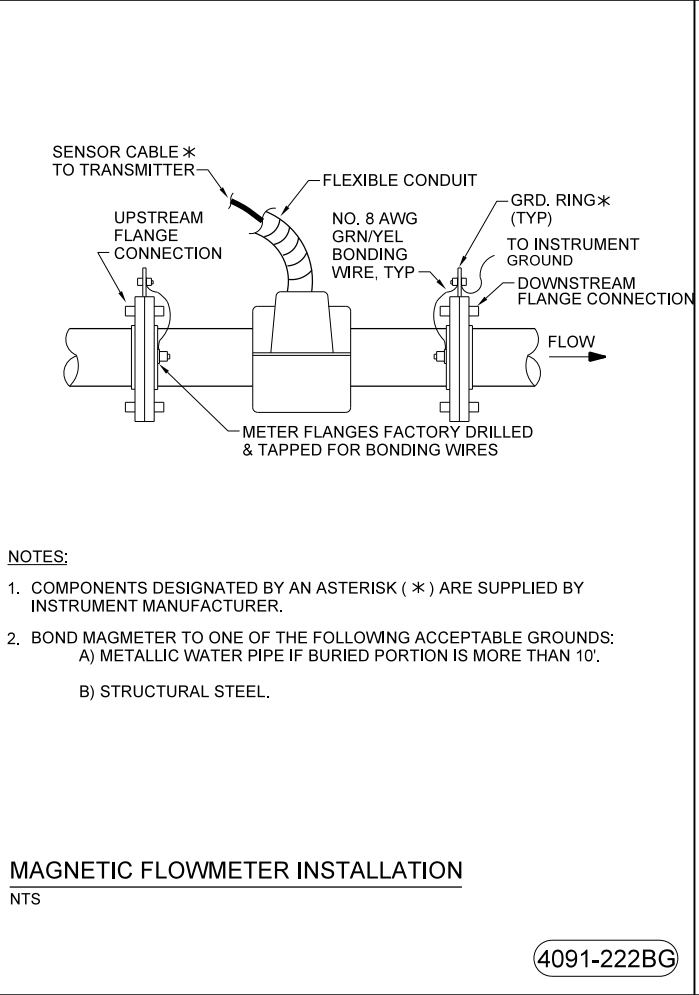
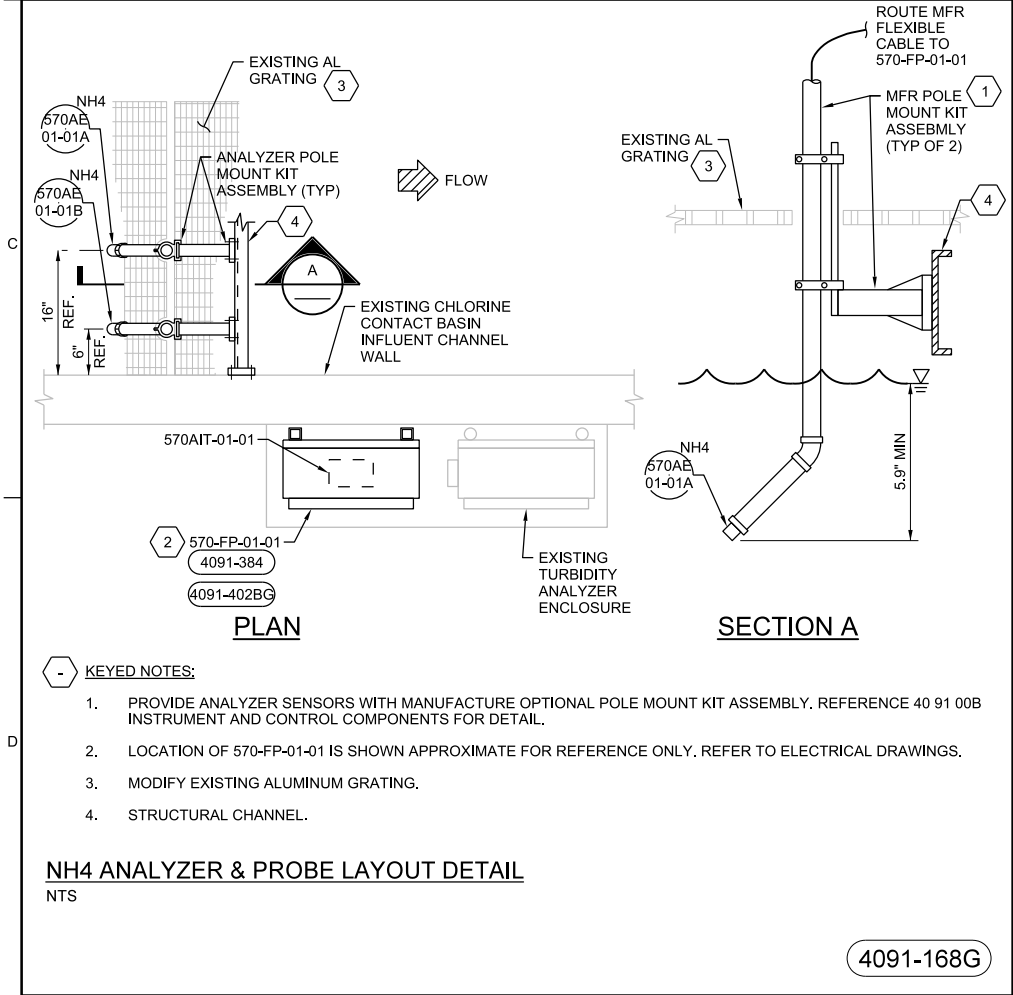
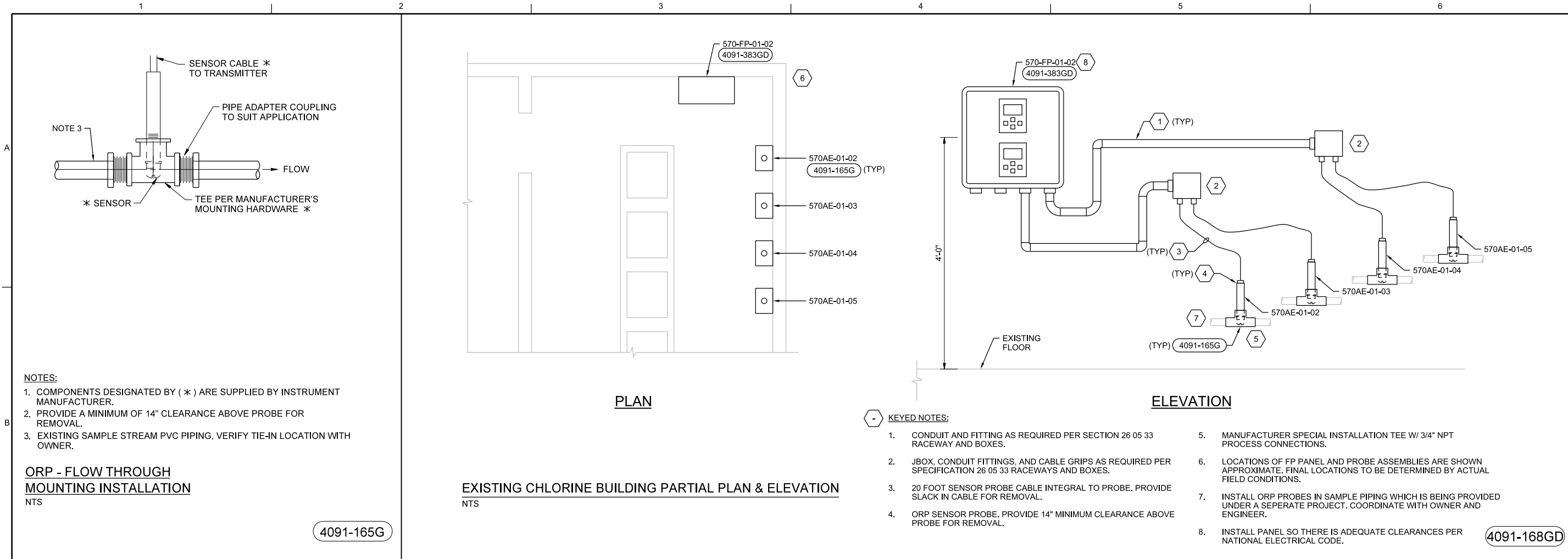
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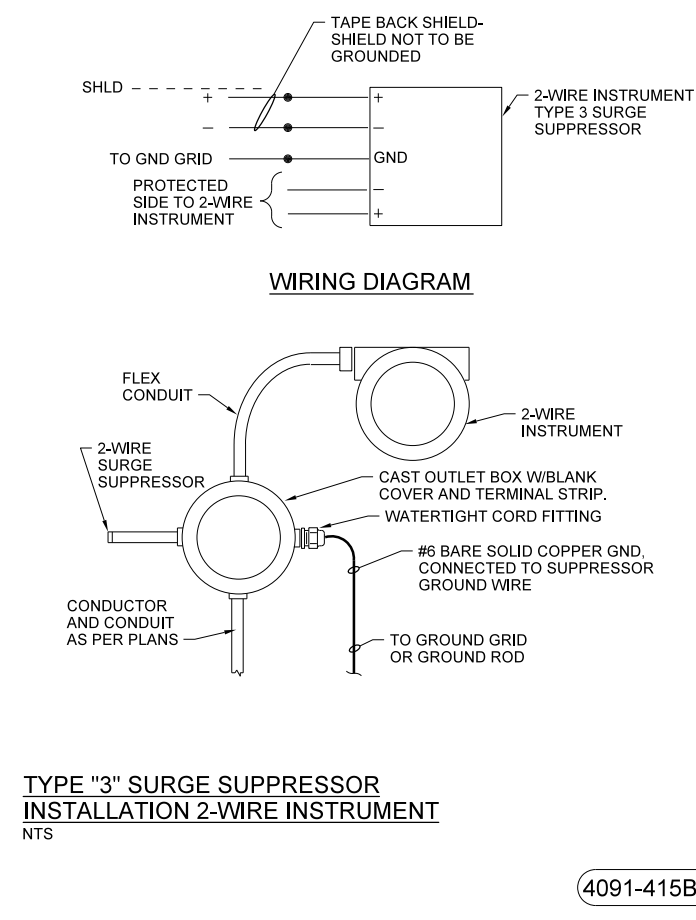
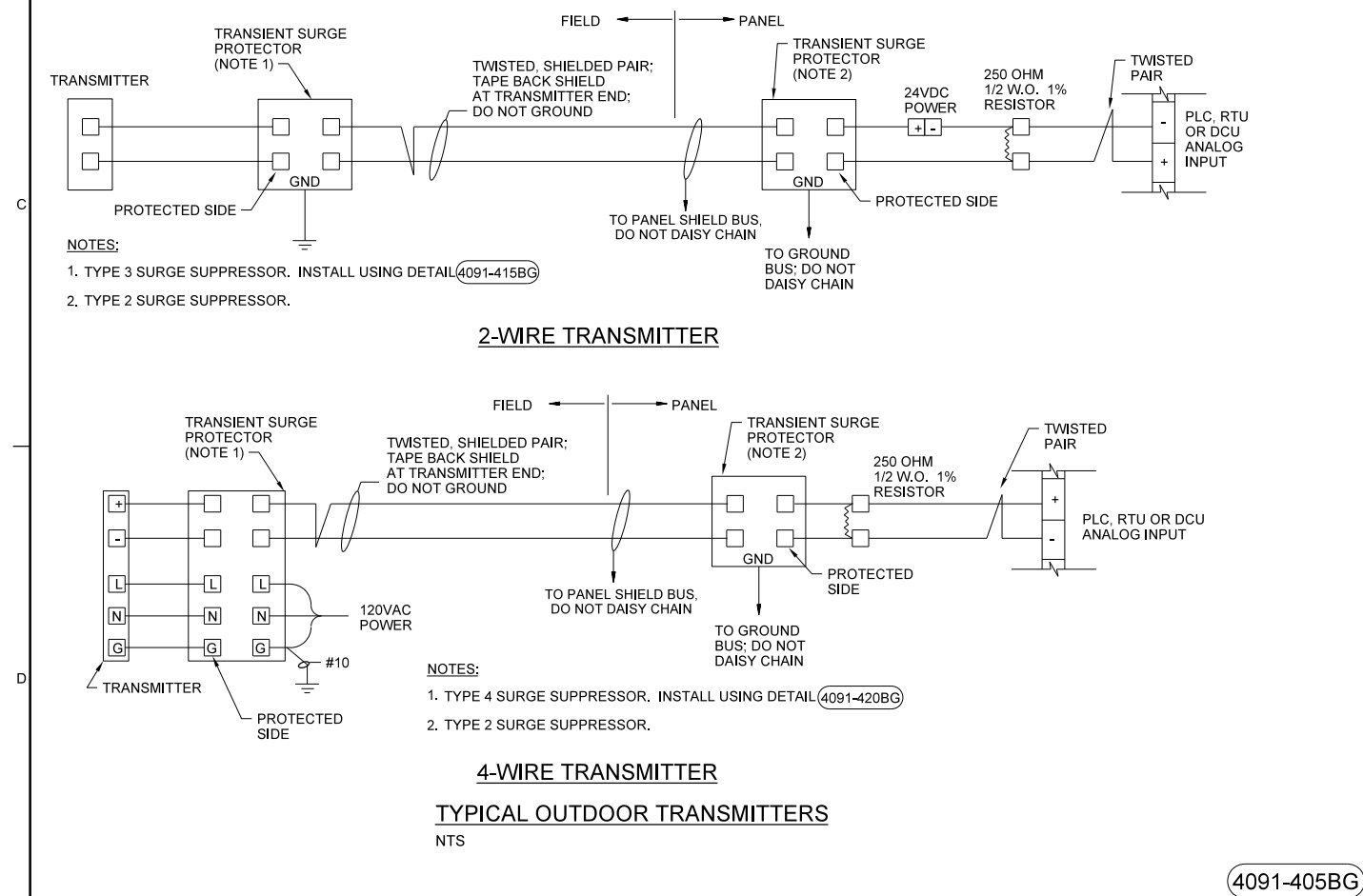
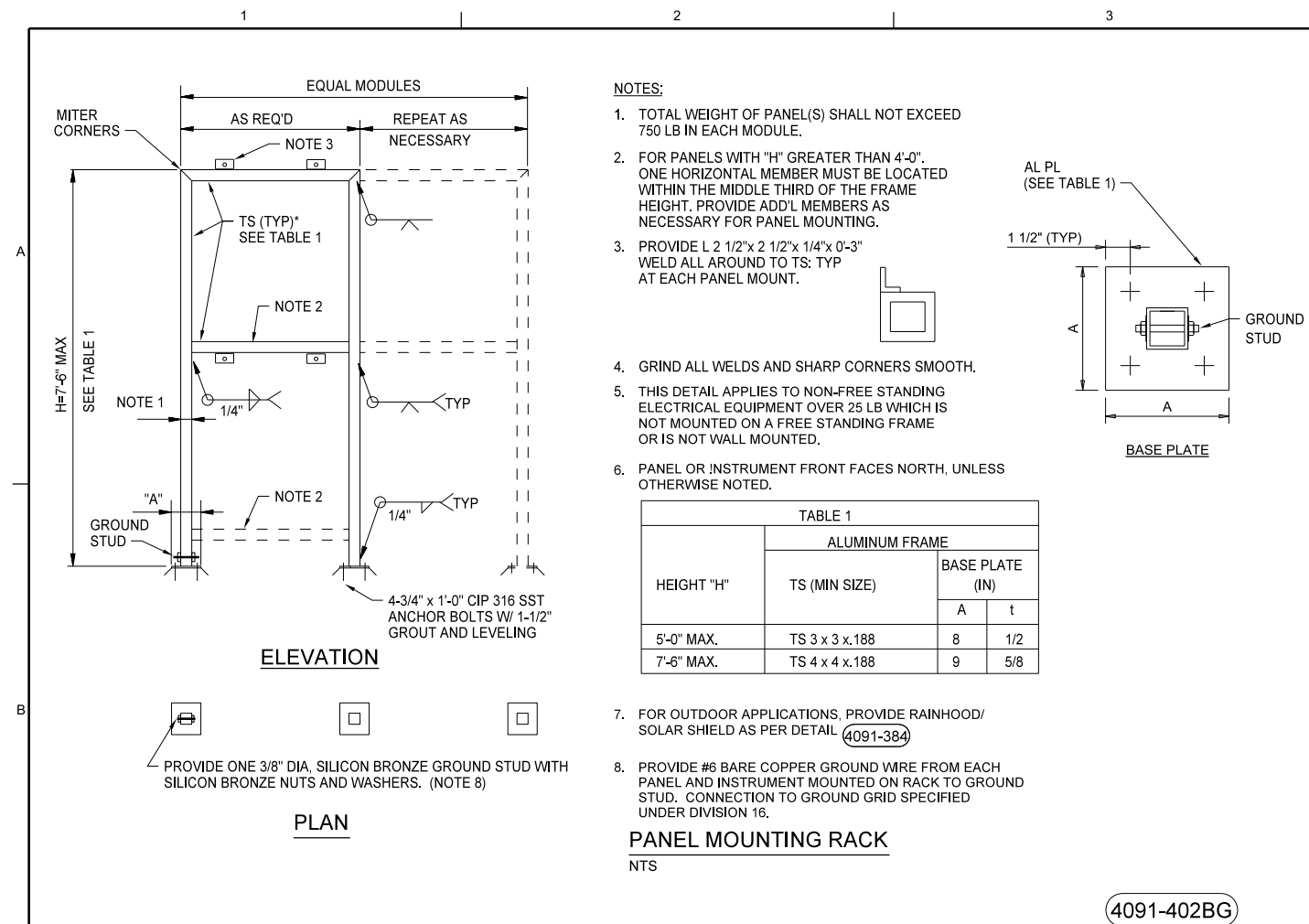
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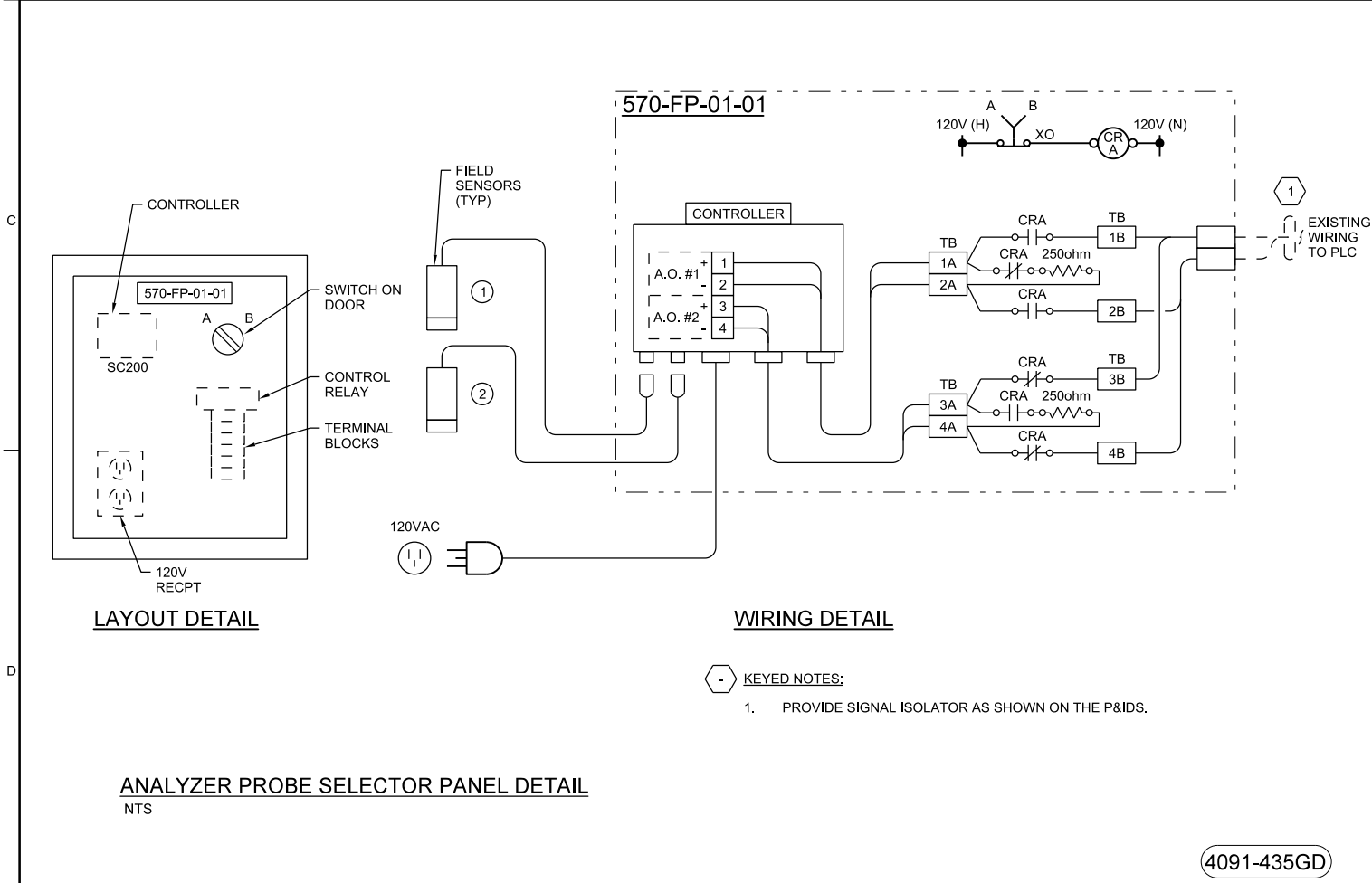
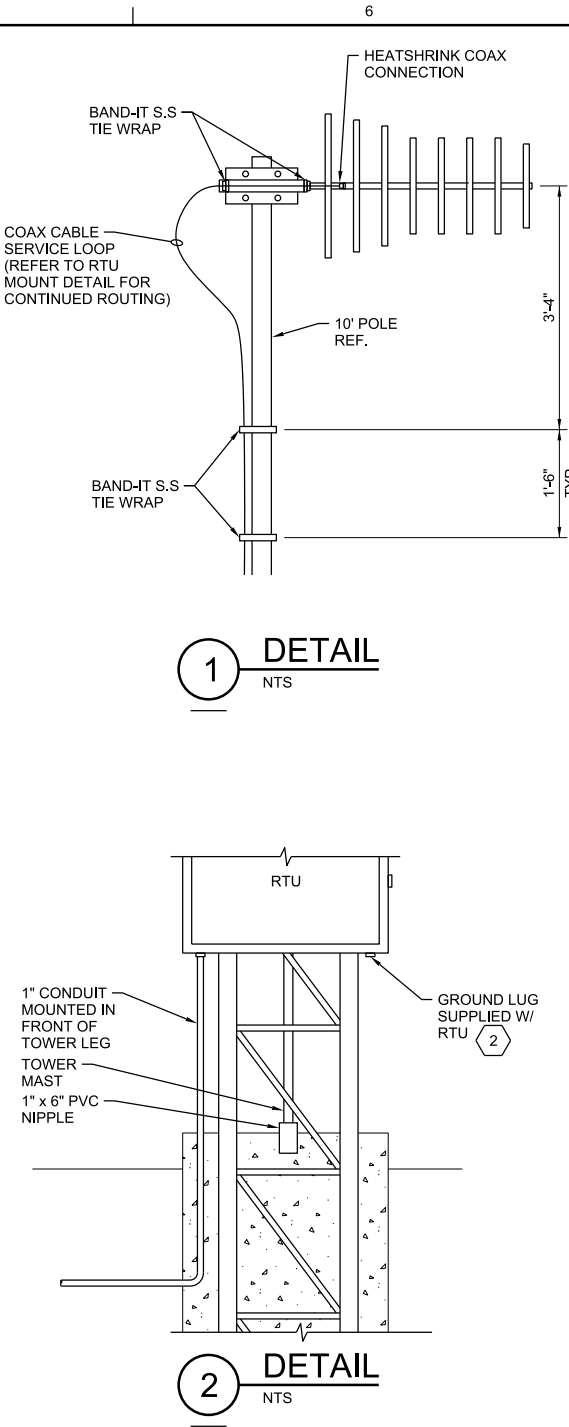
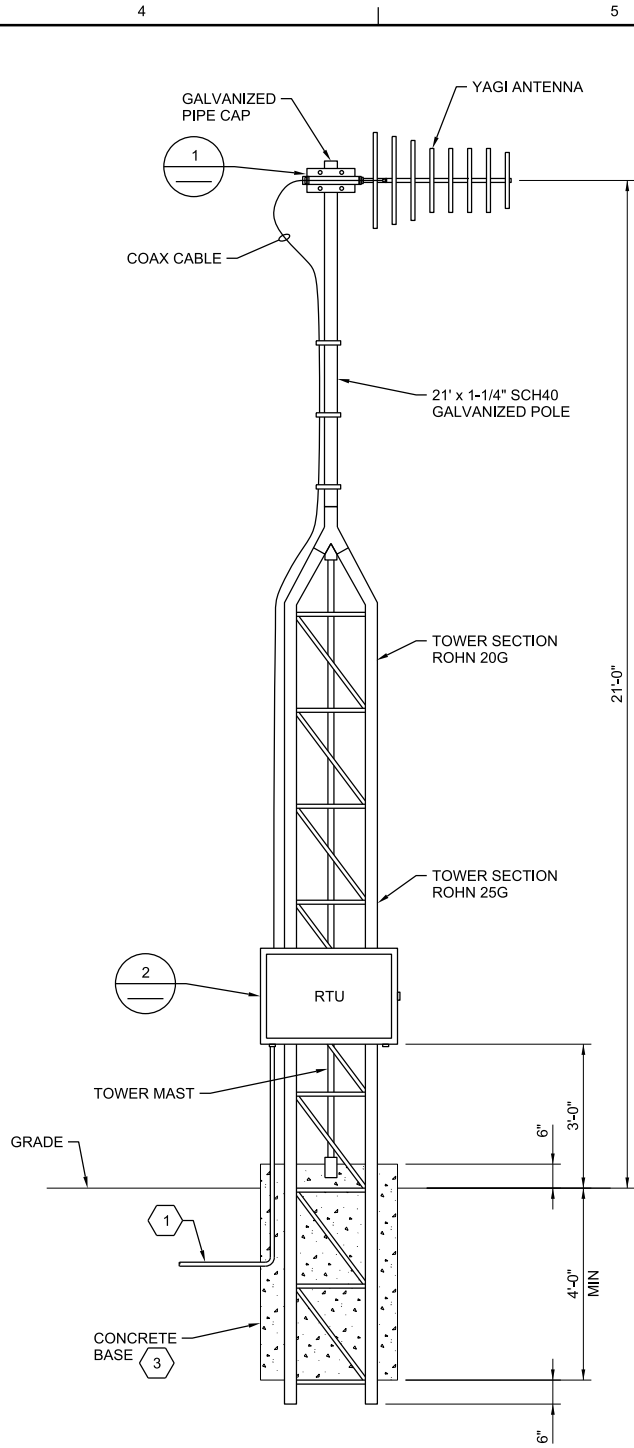
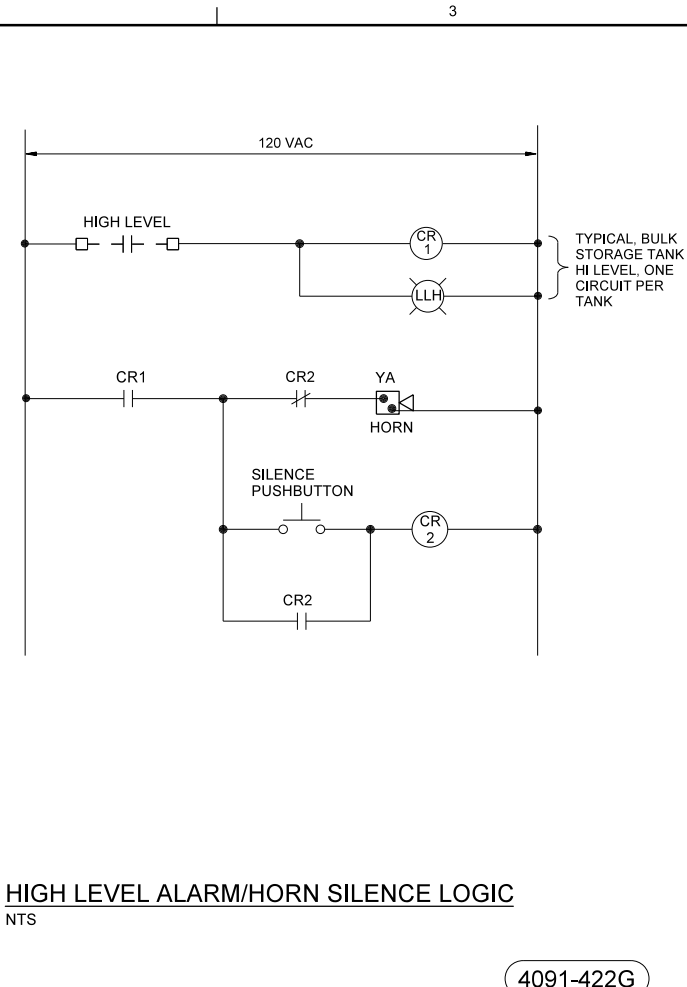
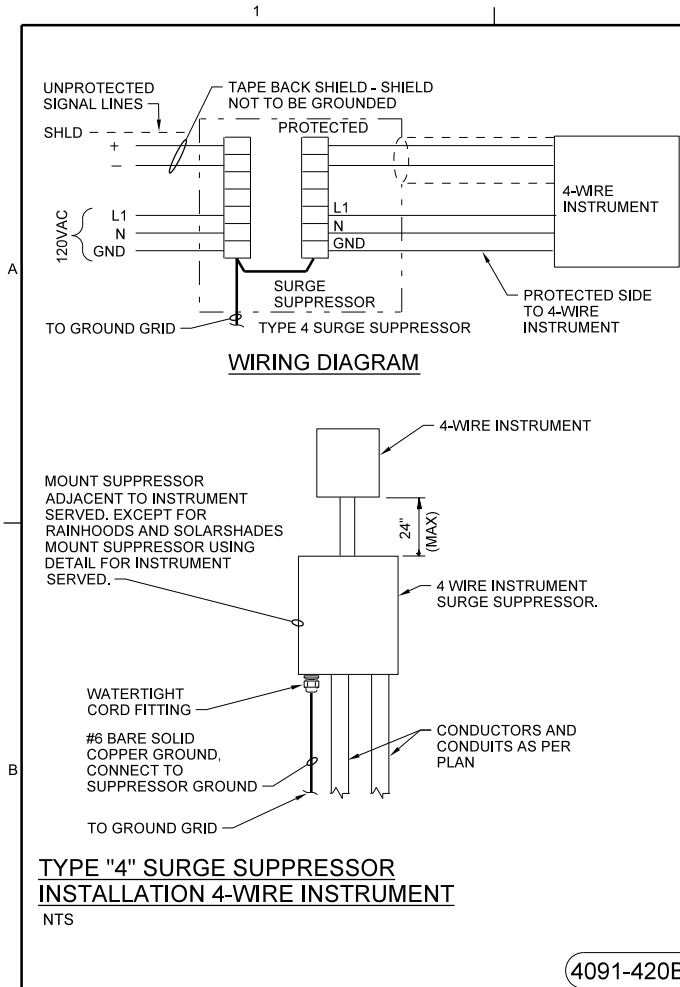
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										Thomas Andrew Ridgik PE 35105																	
STANDARD DETAILS												NO.		DATE		DR		A PASTRANA		T RIDGIK		APVD		BY		APVD	
												DSGN		REVISION		CHK		T RIDGIK		APVD		BY		APVD			
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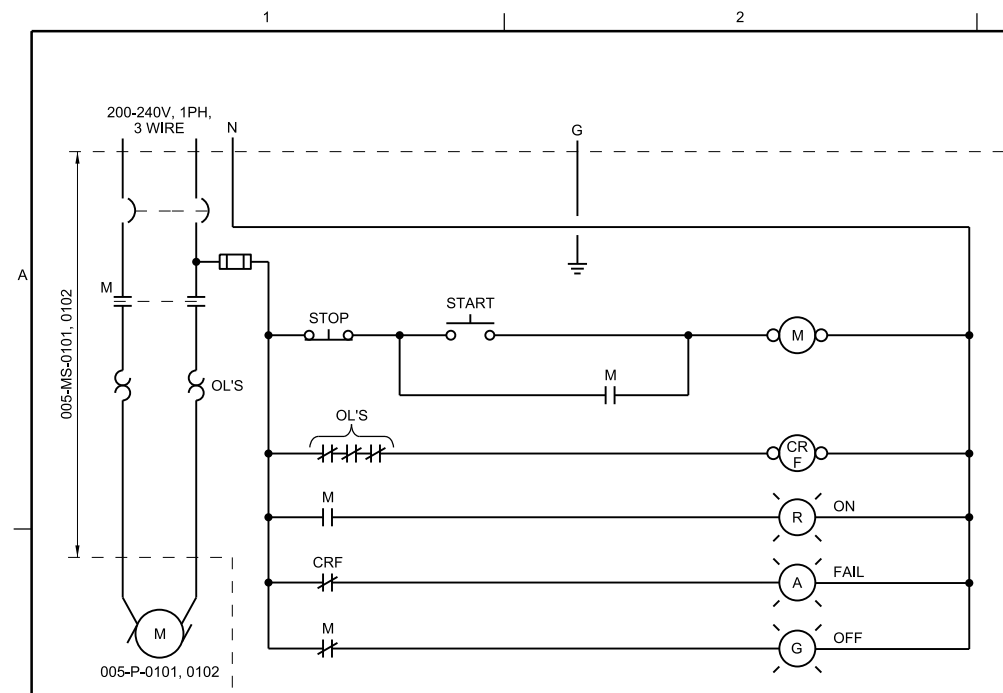




- GENERAL NOTES:**
- A. RTU AND TOWER FURNISHED UNDER SECTION 40 95 60, TELEMETRY SUBSYSTEM.
 - B. DETAIL IS BASED ON VENDOR DRAWINGS. NOT ALL DETAILS SHOWN. PRIOR TO INSTALLATION, REVIEW DETAIL WITH VENDOR AND UPDATE AS NECESSARY.
 - C. CONTRACTOR SHALL PROVIDE ANCILLARY PARTS NOT FURNISHED BY VENDOR.
- KEYED NOTES:**
- 1. TYPICAL CONDUITS FOR POWER AND ANALOG SIGNALS. SEE DIV 26.
 - 2. GROUND AND PROVIDE LIGHTNING PROTECTION UNDER DIV 26.
 - 3. DURING CONSTRUCTION, VENDOR SHALL DESIGN CONCRETE BASE. REFERENCE GENERAL STRUCTURAL NOTES FOR DESIGN CRITERIA.

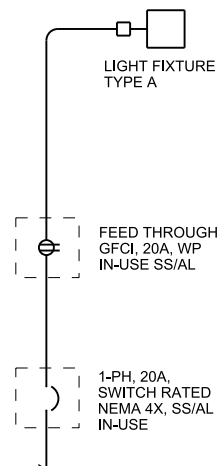
3011 SW WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 AAC001992		Thomas Andrew Ridgik, PE 35105		SOUTHWEST REGIONAL WATER RECLAMATION FACILITY - RECHARGE WELL SYSTEM MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA		NO. DATE D CORY D SGN		DR A PASTRANA		REVISION CHK T RIDGIK		BY APVD T RIDGIK	
CH2MHILL®												INSTRUMENTATION AND CONTROL STANDARD DETAILS	
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING, 1"													
DATE DECEMBER 2015													
PROJ 659297													
DWG 950-N-504													
SHEET 46 of 51													

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MONITORING WELL
PUMP MOTOR CONTROL 005-MS-0101, 0102
NTS

2624-106



YARD LIGHTING AND ELECTRICAL

2624-107

<div><div>CH2MHILL®</div><div>ELECTRICAL</div><div>STANDARD DETAILS</div></div>		3011 S.W. WILLISTON ROAD GAINESVILLE FLORIDA 32608 EB0000072 AAC301992		David C. Nicholson PE 60201		SOUTHWEST REGIONAL WATER RECLAMATION FACILITY - RECHARGE WELL SYSTEM MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA		NO.	DATE	DR		MA REICHERT		APVD		BY	APVD
								DSGN		CHK		M WAYNE					
NTS		VERIFY SCALE		BAR IS ONE INCH ON ORIGINAL DRAWING.		0		1"									
DATE		DECEMBER 2015		PROJ		659297		DWG		950-E-505		SHEET		51 of 51			

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