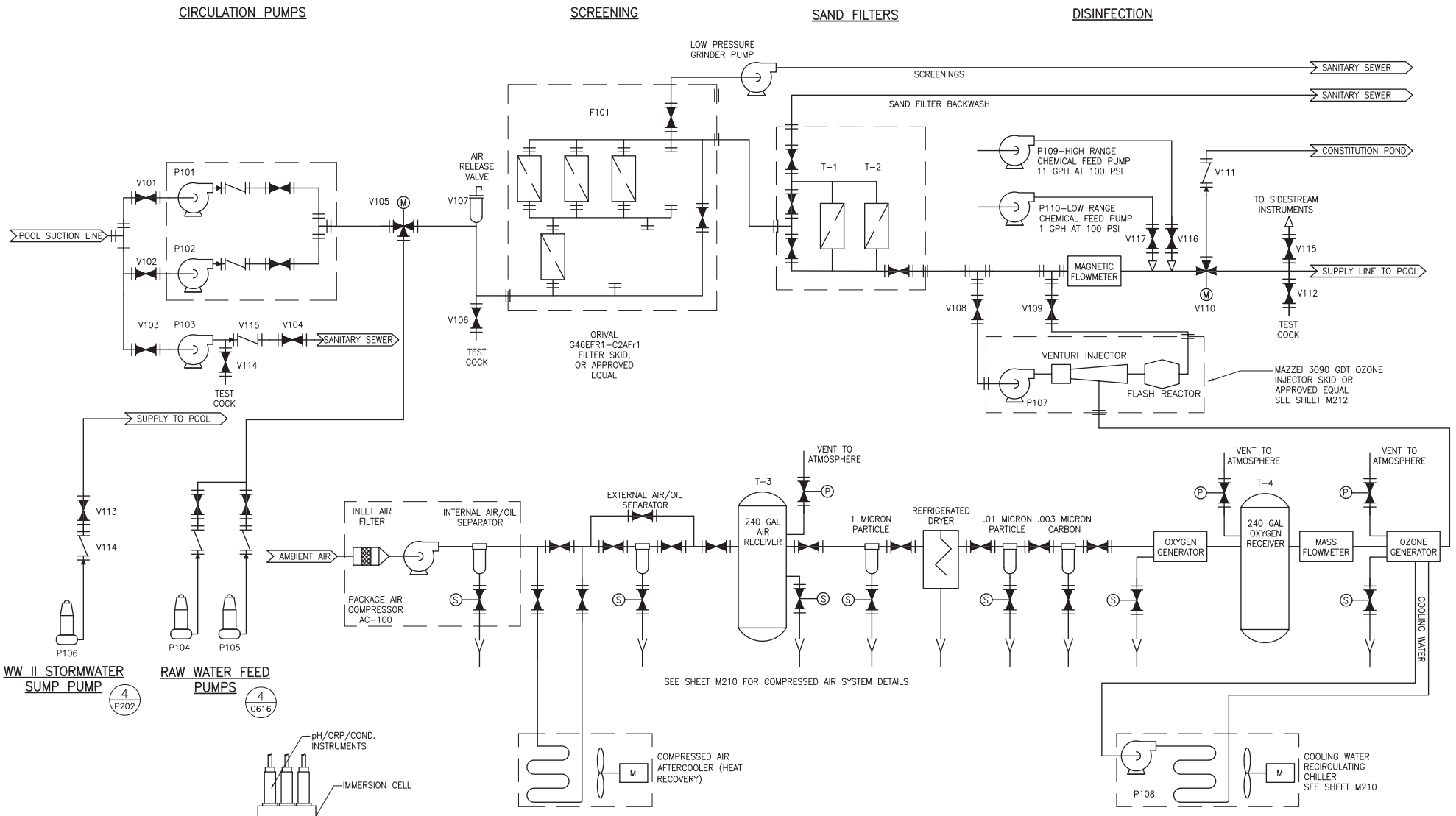
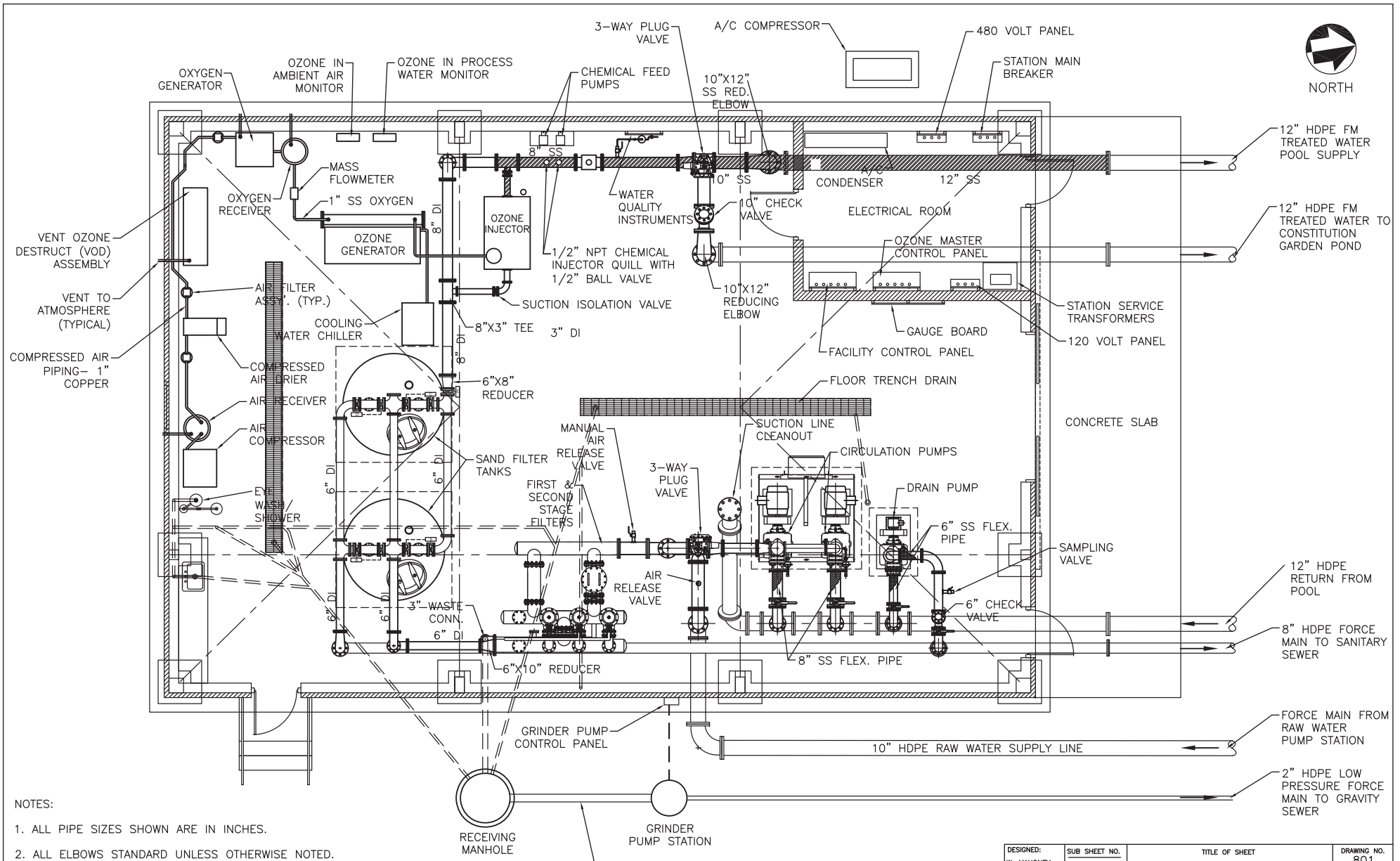


PUMP STATION PROCESS FLOW DIAGRAM
NOT TO SCALE

DESIGNED: W. MAHONEY DRAWN: W. MAHONEY TECH. REVIEW: L. RAGOZZINO DATE: 05/28/2010	SUB SHEET NO. M201	TITLE OF SHEET WATER TREATMENT STRUCTURE PROCESS FLOW DIAGRAM LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 192 OF 234

5/27/10 11:49 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\WAMA\150274\DRAWINGS\MECH\M201.DWG XREFS: ..\BASE\XG-2NDSHT2G.DWG;



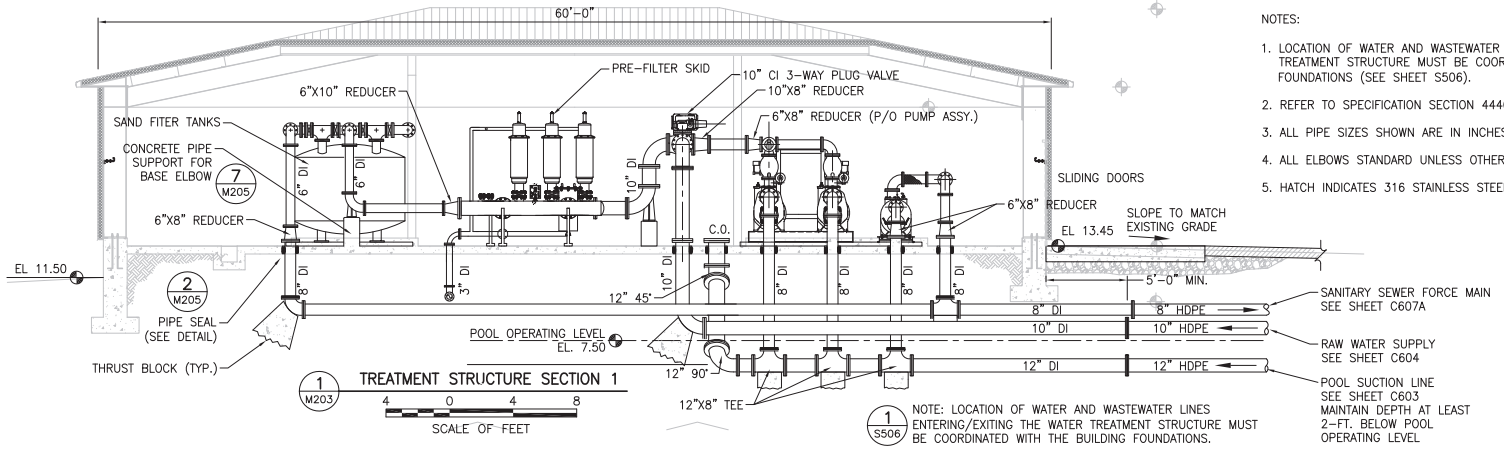
NOTES:

1. ALL PIPE SIZES SHOWN ARE IN INCHES.
2. ALL ELBOWS STANDARD UNLESS OTHERWISE NOTED.
3. HATCH INDICATES 316 STAINLESS STEEL PIPE AND FITTINGS.
4. SMALL-DIAMETER LINES ARE NOT SHOWN ON THIS DRAWING.

NOT TO SCALE

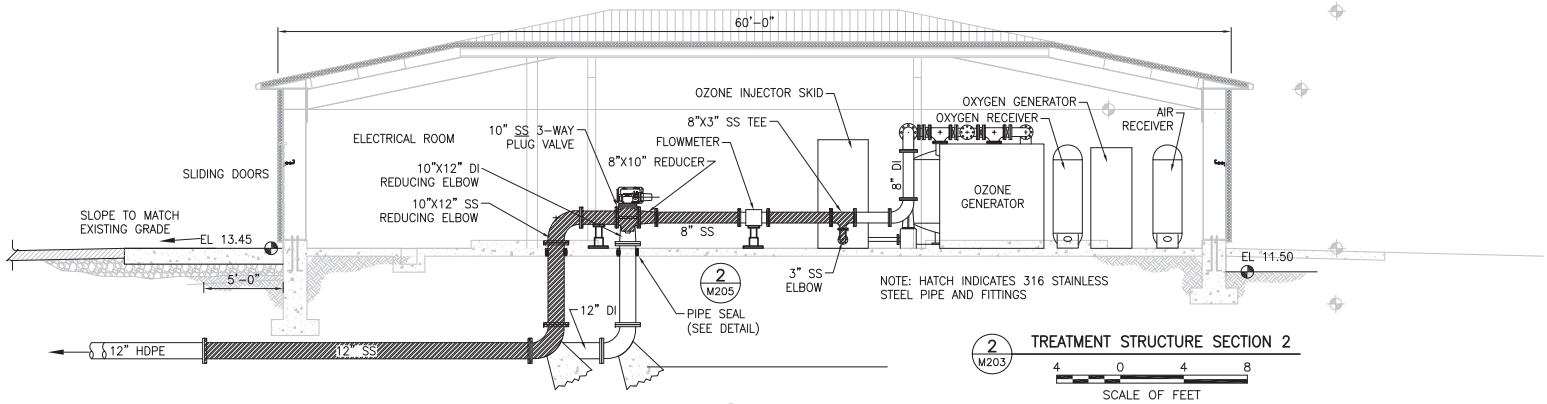
DESIGNED: W. MAHONEY DRAWN: W. MAHONEY TECH. REVIEW: L. RAGOZZINO DATE: 01/01/2013	SUB SHEET NO. M202	TITLE OF SHEET: WATER TREATMENT STRUCTURE LAYOUT PLAN LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 193 OF 234

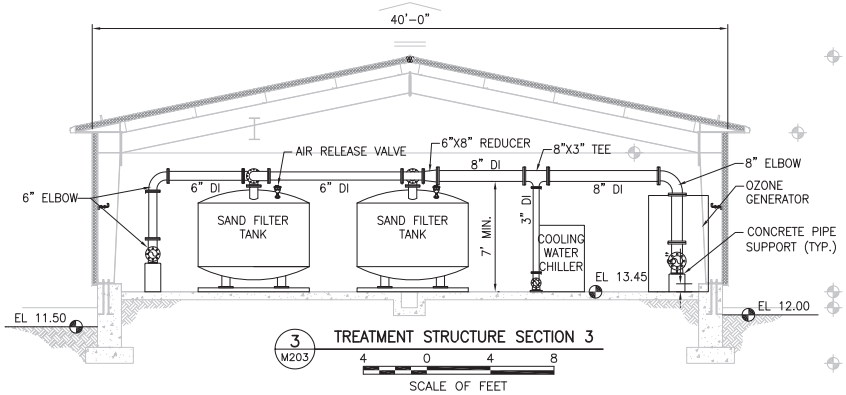
5/21/10 15:29 ACORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\MAMA\150274\DRAWINGS\LBA-SITE-PLAN.DWG XREFS: \BASE\VC-SURVEY.DWG; \BASE\VC-SURVEY-HPS.DWG; \BASE\VC-090424-INFRAMP UTILITY_17-TH STR.DWG; IMAGES: F:\PUBDOCS\GRAPHICS\NON-LBG_LOGOS\NPS LOGO SHIELD.JPG; F:\PUBDOCS\GRAPHICS\LBGLOGOS\LBA-GRP.JPG; F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\Z-OLD-DRAWINGS\SURVEY DATA\BOUND-COMPOSITE_SURVEY - STANDARD\REFLECTING POOL.JPG;



NOTES:

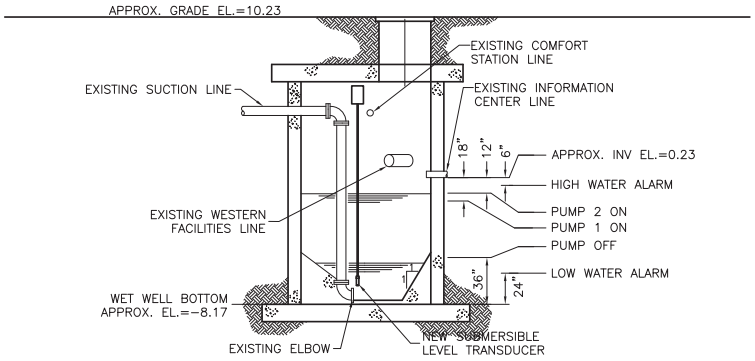
1. LOCATION OF WATER AND WASTEWATER LINES ENTERING/EXITING THE WATER TREATMENT STRUCTURE MUST BE COORDINATED WITH THE BUILDING FOUNDATIONS (SEE SHEET S506).
2. REFER TO SPECIFICATION SECTION 444000 FOR COMPONENT DETAILS.
3. ALL PIPE SIZES SHOWN ARE IN INCHES.
4. ALL ELBOWS STANDARD UNLESS OTHERWISE NOTED.
5. HATCH INDICATES 316 STAINLESS STEEL PIPE AND FITTINGS.





DESIGNED: W. MAHONEY DRAWN: W. MAHONEY TECH. REVIEW: L. RAGOZZINO DATE: 05/28/2010	SUB SHEET NO. M203	TITLE OF SHEET WATER TREATMENT STRUCTURE SECTIONS LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 194 OF 234

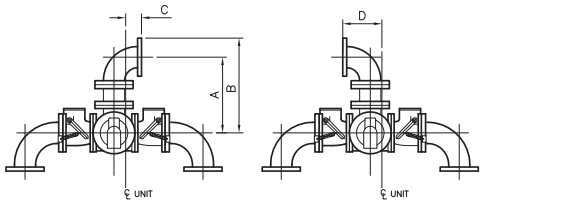
7/6/10 13:16 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\DRAWINGS\WAMA\150274\DRAWINGS\MECH\M203.DWG XREFS: ..\BASE\XG-2INDSHT2G.DWG; ..\BASE\XM-TRTM-BLD-EQIP_LAY.DWG; ..\BASE\XA-TRTMNT BLDG.DWG;



1 M204 EXISTING COMFORT STATION WETWELL REHABILITATION SECTION VIEW

NOT TO SCALE

RIGHT & LEFT HAND DISCHARGE						
PLUMBING			A	B	C	D
SUCT.	DISCH.	HDR.				
4"	4"	4"	17 7/8"	22 3/8"	3 3/4"	9 1/4"
4"	4"	6"	19 3/8"	24 7/8"	5 1/4"	10 3/4"

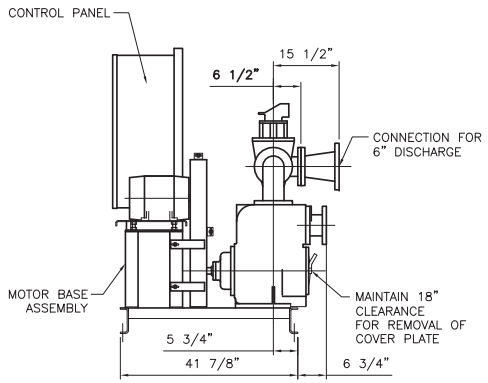


5 M204 LEFT HAND DISCHARGE

NOT TO SCALE

4 M204 RIGHT HAND DISCHARGE

NOT TO SCALE

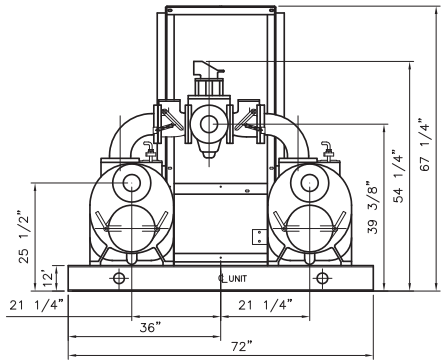


6 M204 COMFORT STATION PUMP ALIGNMENT SECTION VIEW

NOT TO SCALE

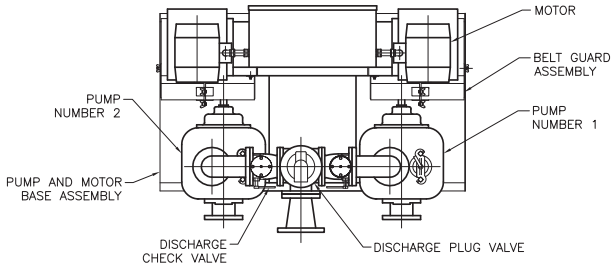
NOTES:
1. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF EXISTING PUMPS, PIPING AND CONTROLS.
2. COMFORT STATION REPLACEMENT PUMPS SHALL BE GORMAN-RUPP T4A-B-4, OR APPROVED EQUAL.
3. FIELD VERIFY PIPE LENGTHS AND FITTINGS REQUIRED TO CONNECT TO EXISTING SUCTION/DISCHARGE LINES BASED ON PUMP MANUFACTURER/MODEL AND FIELD ALIGNMENT/PLACEMENT.
4. CONTRACTOR MUST SUPPLY ADEQUATELY SIZED, ADA COMPLIANT RESTROOM TRAILERS WHILE COMFORT STATION IS OUT OF SERVICE DURING CONSTRUCTION.
5. WETWELL LEVEL CONTROLS TO BE RESET AS SHOWN IN DETAIL 1.

DESCRIPTION	MATERIAL & SIZE
PUMP & MOTOR BASE ASSY	STEEL
MOTOR	CAST IRON
PUMP	CAST IRON
DISCHARGE PLUG VALVE	CAST IRON 4"
CONTROL PANEL	STEEL 36" x 30"
BELT GUARD ASSY	STEEL
DISCHARGE CHECK VALVE	CAST IRON 4"



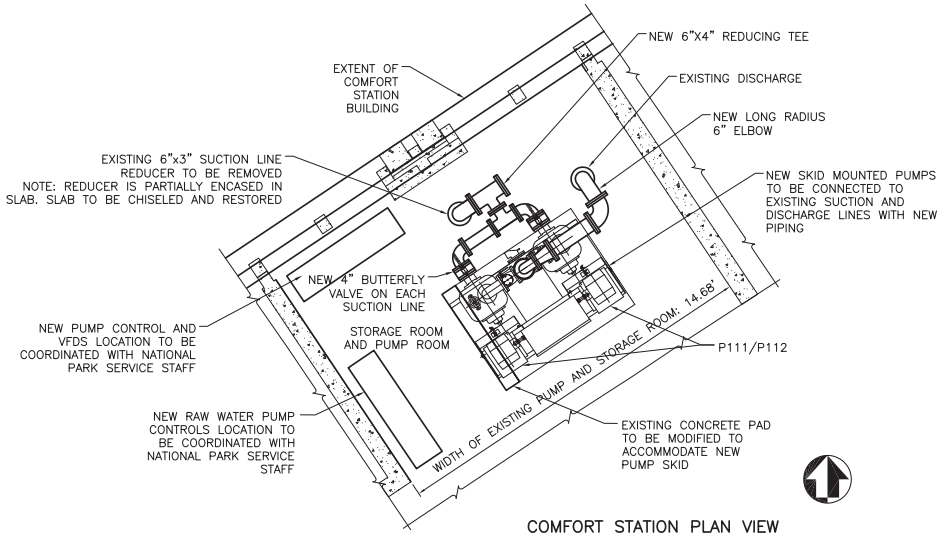
3 M204 CENTER DISCHARGE

NOT TO SCALE



2 M204 COMFORT STATION PUMP SKID PLAN VIEW

NOT TO SCALE



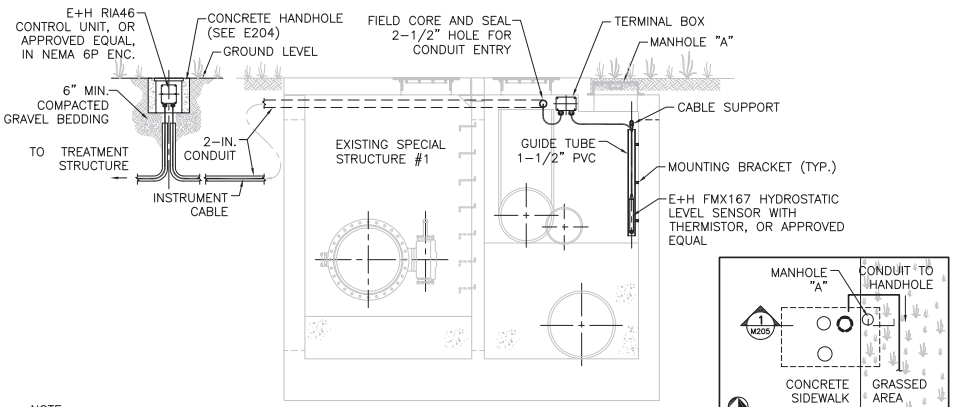
COMFORT STATION PLAN VIEW

2.5 0 2.5 5

SCALE OF FEET

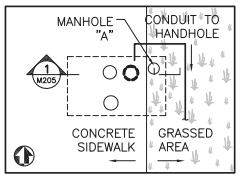
DESIGNED: T. PAYNE DRAWN: C. LUPPINO TECH. REVIEW: L. RAGOZZINO DATE: 05/28/2010	SUB SHEET NO. M204	TITLE OF SHEET WWII COMFORT STATION PUMP REPLACEMENT LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 195 OF 234

5/27/10 11:44 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\NAMA\150274\DRAWINGS\MECH\M204.DWG XREFS: ..\BASE\XG-2NDSHT2G.DWG;

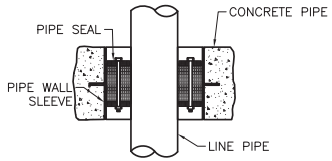


NOTE
1. INSTALL IP66 TERMINAL BOX ABOVE WATER LINE IN S.S.#1.
2. MOUNT RIA45 CONTROL UNIT IN HANDHOLE AS SHOWN ON SHEET E 204-MAX. DISTANCE FROM LEVEL SENSOR SHALL BE LESS THAN 900 FEET.
3. PROVIDE 316 SS HARDWARE IN ALL LOCATIONS.
4. CONTROL UNIT AND LEVEL SENSOR/THERMISTOR SHALL BE COMPATIBLE AND FROM THE SAME SUPPLIER.

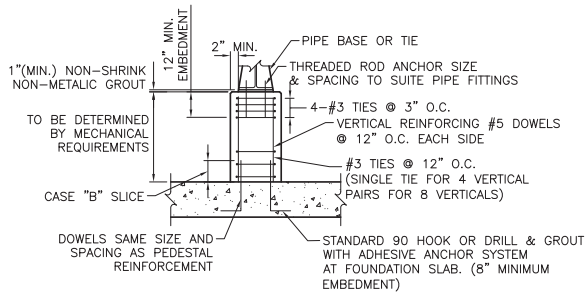
1 M205 LEVEL SENSOR MOUNTING DETAIL AT SPECIAL STRUCTURE #1
NOT TO SCALE



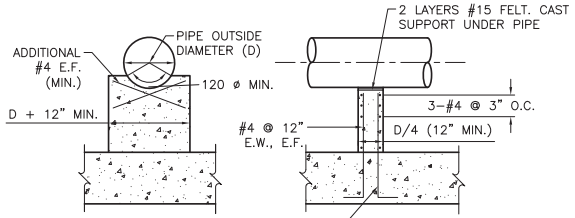
EXISTING SPECIAL STRUCTURE #1 PLAN
NOT TO SCALE



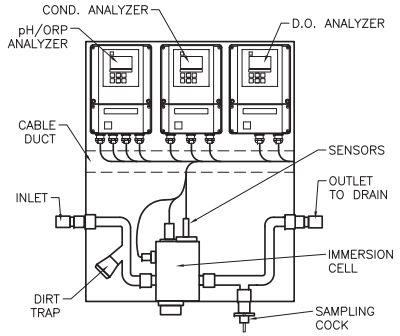
2 M205 TYPICAL PIPE SEAL INSTALLATION
NOT TO SCALE



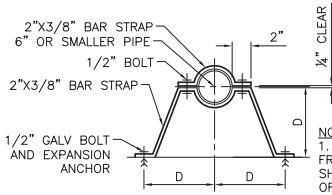
3 M205 CONCRETE PIPE BASE SUPPORT
NOT TO SCALE



6 M205 CONCRETE PIPE SUPPORT DETAILS
NOT TO SCALE

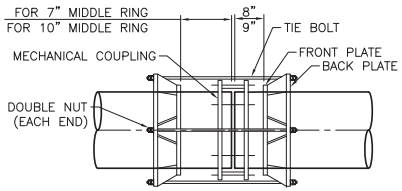


8 M205 pH/ORP/COND. INSTRUMENT MOUNTING
NOT TO SCALE

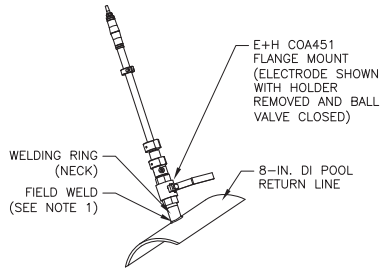


NOTE
1. D=DISTANCE FROM WALL SHOWN ON PLAN OR SECTION

4 M205 VERTICAL PIPE SUPPORT
NOT TO SCALE

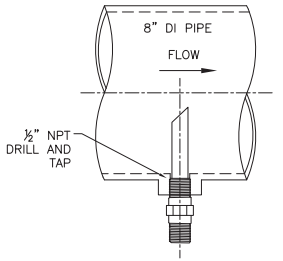


5 M205 STEEL PIPE HARNESSED MECHANICAL COUPLING WITH TYPE RR LUGS
NOT TO SCALE

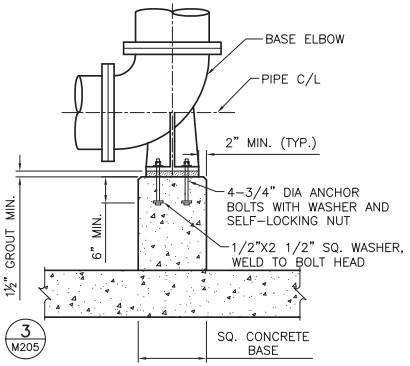


NOTE
1. CONSULT PIPE MANUFACTURER FOR WELDING ELECTRODE RECOMMENDATION.
2. REMOVE ASPHALTIC COATING AND GRIND WELD AREA DOWN TO CLEAN BRIGHT METAL BEFORE WELDING
3. USE DC ARC WELDER, REVERSE POLARITY

9 M205 DISSOLVED OXYGEN INSTRUMENT MOUNTING
NOT TO SCALE



10 M205 CHEMICAL INJECTOR QUILL INSTALLATION
NOT TO SCALE

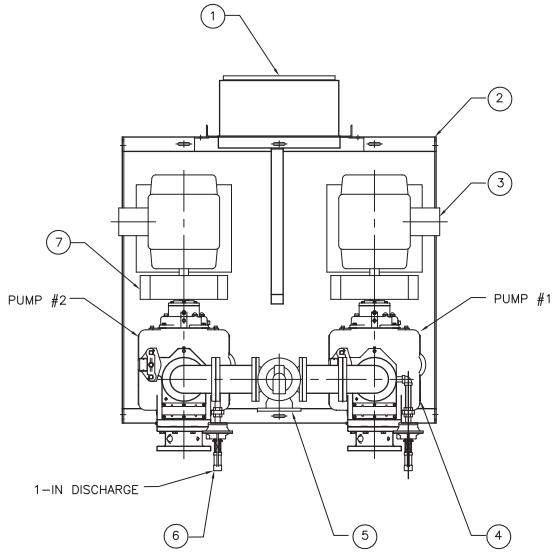


7 M205 CONCRETE SUPPORT FOR BASE ELBOW
NOT TO SCALE

SUPPORTED PIPE SIZE INCHES	ANCHOR BOLT CIRCLE INCHES	MINIMUM PEDESTAL SIZE INCHES	MINIMUM VERTICAL REINFORCEMENT
2	3.50	12x12	4-#6
3	3.88	12x12	4-#6
4	4.75	12x12	4-#6
6	5.50	16x16	4-#8
8	7.50	16x16	4-#8
10	7.50	16x16	4-#8
12	9.50	18x18	4-#9
14	9.50	18x18	4-#9
16	9.50	18x18	4-#9
18	11.75	18x18	4-#9
20	11.75	18x18	4-#9
24	11.75	18x18	4-#9
30	14.25	22x22	8-#7
36	17.00	25x25	8-#8
42	21.25	30x30	8-#10
48	22.75	30x30	8-#10

DESIGNED: T. PAYNE	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 801
DRAWN: C. LUPPINO	M205	WATER TREATMENT STRUCTURE DETAILS 1	101,025A
TECH. REVIEW: L. RAGOZZINO			PMIS/PKG NO. 150274
DATE: 05/28/2010		LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	SHEET 196 OF 234

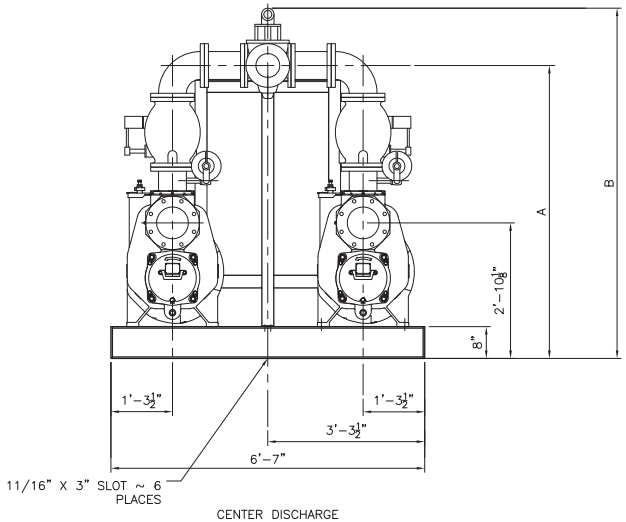
5/27/10 11:50 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\WAM\150274\DRAWINGS\MECH\M205.DWG XREFS: ..\BASE\XG-2NDSHT2G.DWG;



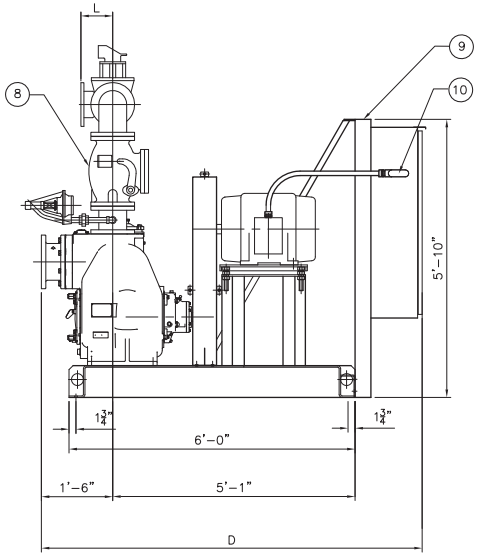
NOTE:
CIRCULATION PUMPS SHALL BE GORMAN-RUPP V6A-B, OR APPROVED EQUAL

VALVE	L
10"	11"

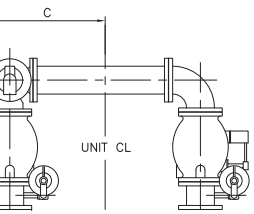
1 M206 CIRCULATION PUMPS PLAN VIEW
NOT TO SCALE



2 M206 CIRCULATION PUMPS
NOT TO SCALE

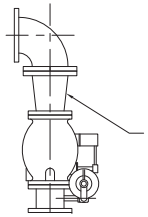


4 M206 CIRCULATION PUMPS SIDE VIEW
NOT TO SCALE



RIGHT HAND DISCHARGE

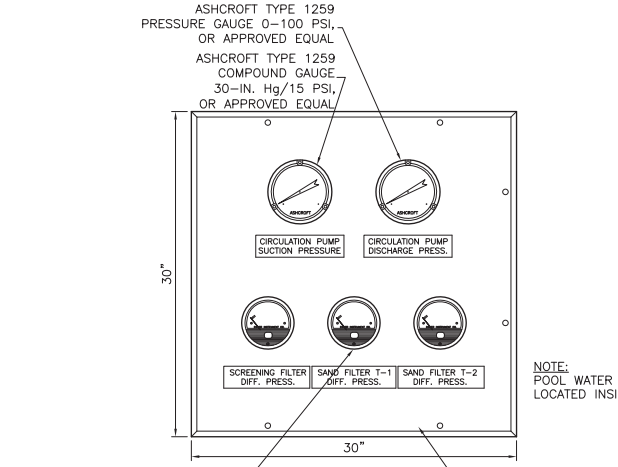
3 M206 CIRCULATION PUMPS
NOT TO SCALE



CONTROL PANEL DIMENSIONS	D
36" X 30" X 14"	94 1/2"
48" X 30" X 14"	94 1/2"
60" X 36" X 16"	96 1/2"

ITEM	DESCRIPTION	MATERIAL & SIZE
1	CONTROL PANEL	STEEL
2	PUMP & MOTOR BASE ASSY	STEEL
3	MOTOR	CAST IRON
4	PUMP	CAST IRON
5	DISCHARGE PLUG VALVE	CAST IRON 3-WAY
6	AIR RELEASE VALVE	CAST IRON 1" (SHIPPED LOOSE)
7	BELT GUARD ASSY	STEEL
8	DISCHARGE CHECK VALVE	CAST IRON
9	CONTROL PANEL FRAME ASSY	STEEL
10	MOTOR CONDUIT	LIQUID TIGHT

RIGHT HAND DISCHARGE DIMENSIONS					
PLUMBING			A	B	C
SUCT.	DISCH.	HDR.			
8"	10"	10"	88 1/2"	96 1/2"	32 3/8"

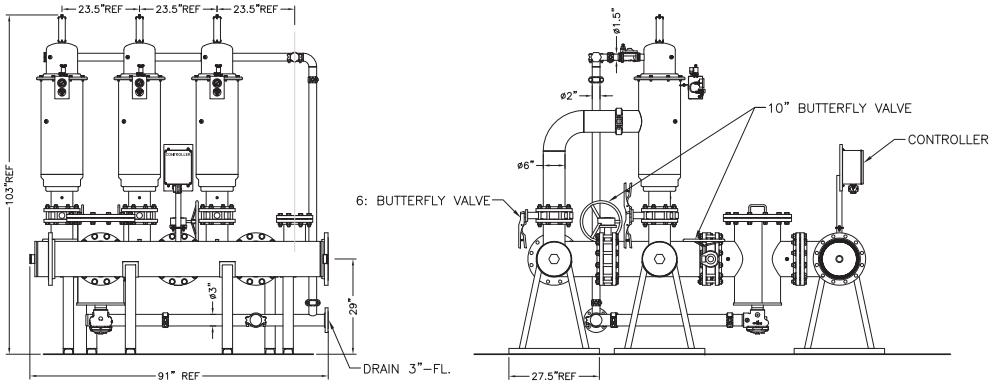


NOTE:
POOL WATER LEVEL INSTRUMENT LOCATED INSIDE ENCLOSURE

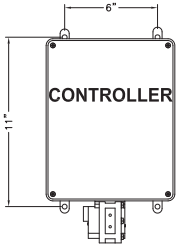
5 M206 TREATMENT STRUCTURE GAUGE PANEL
NOT TO SCALE

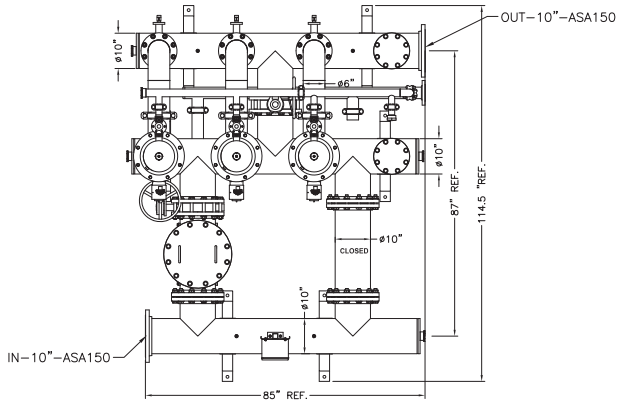
DESIGNED: W. MAHONEY DRAWN: A. SYLVIA TECH. REVIEW: L. RAGOZZINO DATE: 05/28/2010	SUB SHEET NO. M206	TITLE OF SHEET: WATER TREATMENT STRUCTURE DETAILS 2 LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 197 OF 234

5/27/10 12:02 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\WAMA\150274\DRAWINGS\MECH\M206.DWG XREFS: ..\BASE\XG-2NDSHT2G.DWG;

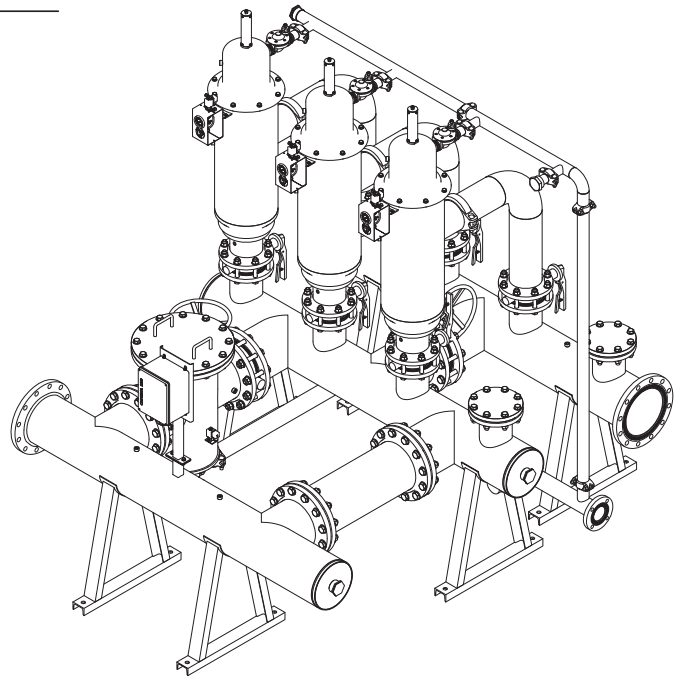


1 M207 PRE–FILTER SCREENING SKID SYSTEM





2 M207 PRE–FILTER SCREENING SKID SYSTEM



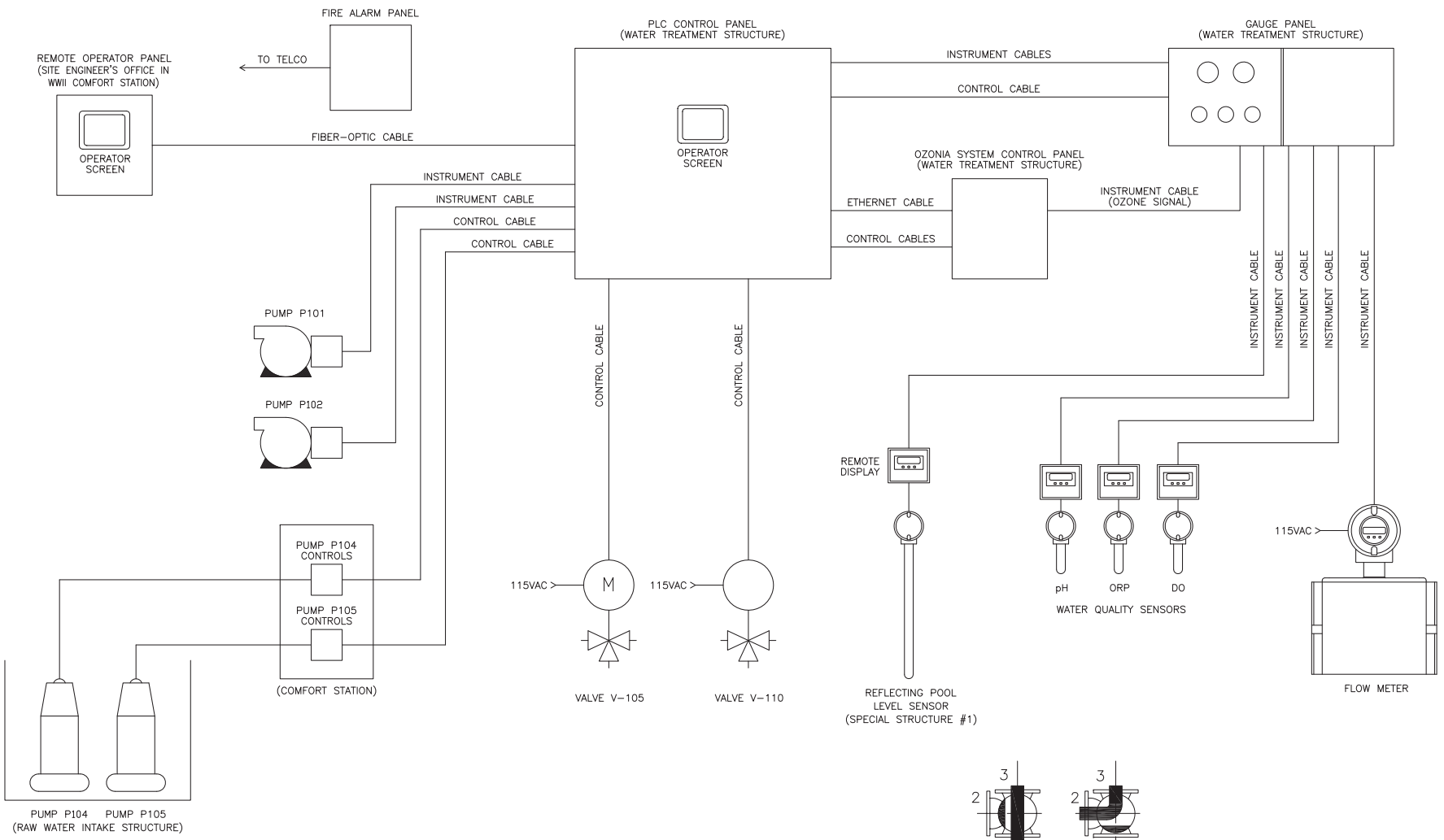
3 M207 PRE–FILTER SCREENING SKID SYSTEM

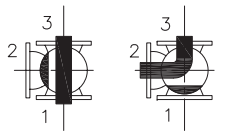
NOTE:

1. FILTER LAYOUT – 1 COARSE 10" AND 3 FINE 6" SECTIONS IN A RACK CONFIGURATION WITH COMMON DISCHARGE MANIFOLD
2. USE ORIVAL MODEL G46EFR1–C2AFR1, OR APPROVED EQUAL.

DESIGNED: ORIVAL INC. / A. GORETOY TECH. REVIEW: W. MAHONEY DATE: 05/28/2010	SUB SHEET NO. M207	TITLE OF SHEET WATER TREATMENT STRUCTURE DETAILS 3 LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 198 OF 234

5/27/10 12:01 AGORETOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\WAMA\150274\DRAWINGS\MECH\M207.DWG XREFS: ..\BASE\XG-2NDSHT2G.DWG;



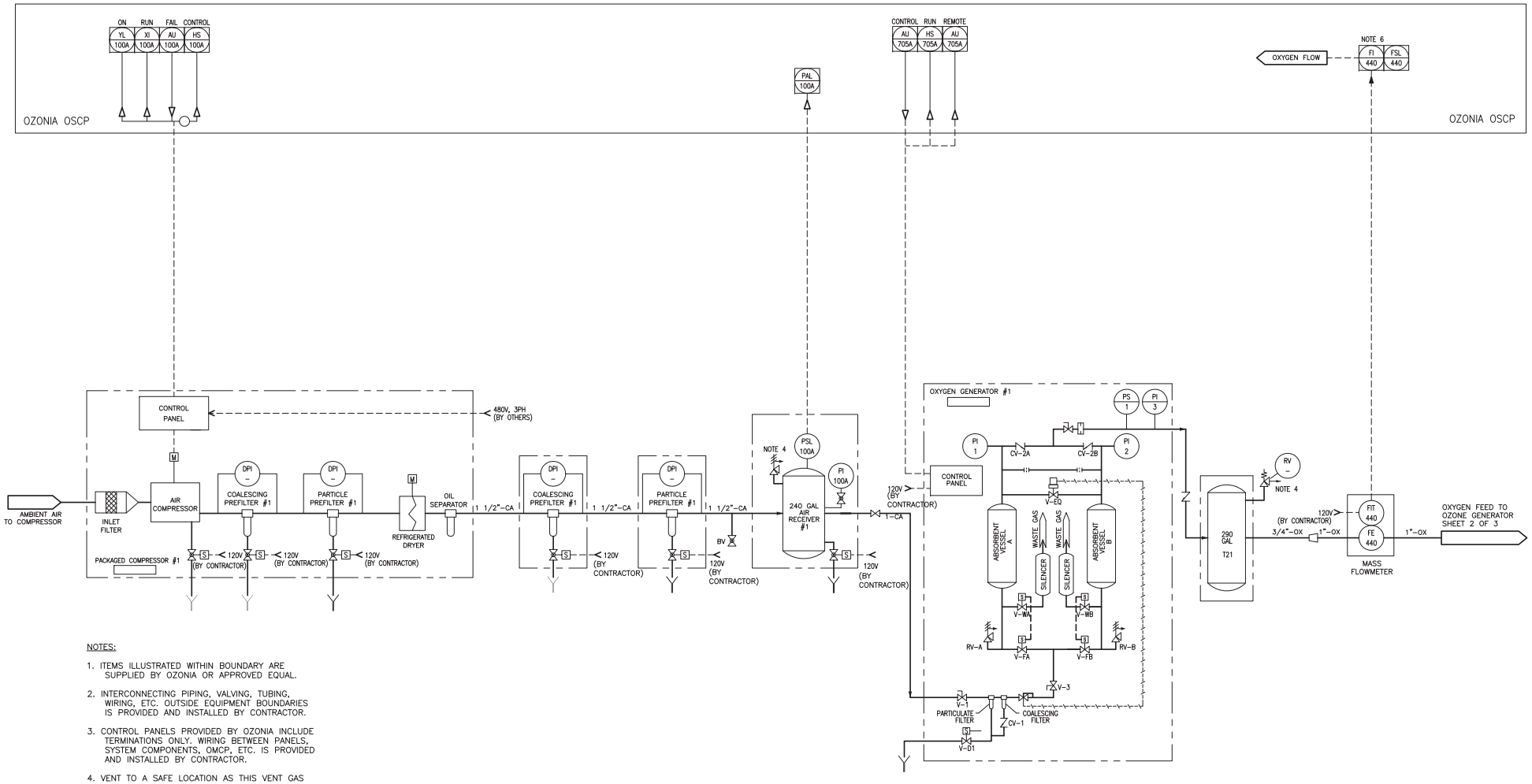


V-105 & V-110 PLUG POSITIONS

OPERATION	VALVE				PUMPS		
	V-103	V-104	V-105	V-110	P-101/102	P-104/105	P-103
RECIRCULATION	CLLOSED	CLOSED	3-1	3-1	RUN	STOP	STOP
FILL POOL	CLOSED	CLOSED	3-2	3-1	STOP	RUN	STOP
EMPTY POOL	OPEN	OPEN	3-1	3-1	STOP	STOP	RUN
FILL POND	CLOSED	CLOSED	3-2	3-2	STOP	RUN	STOP
MANUAL OVERIDE	CLOSED	CLOSED	3-1	3-1	STOP	STOP	STOP

DESIGNED: W. MAHONEY DRAWN: W. MAHONEY TECH. REVIEW: L. RAGOZZINO DATE: 05/28/2010	SUB SHEET NO. M208	TITLE OF SHEET PIPING AND INSTRUMENTATION DIAGRAM LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 199 OF 234

5/27/10 12:01 AGOMEYOY R17 F:\PROJECT\1919 LINCOLN MEMORIAL REFLECTING POOL\NAMA\150274\DRAWINGS\MECH\M208.DWG XREFS: .\M201.DWG, ..\BASE\VG-2NDSHT26.DWG;

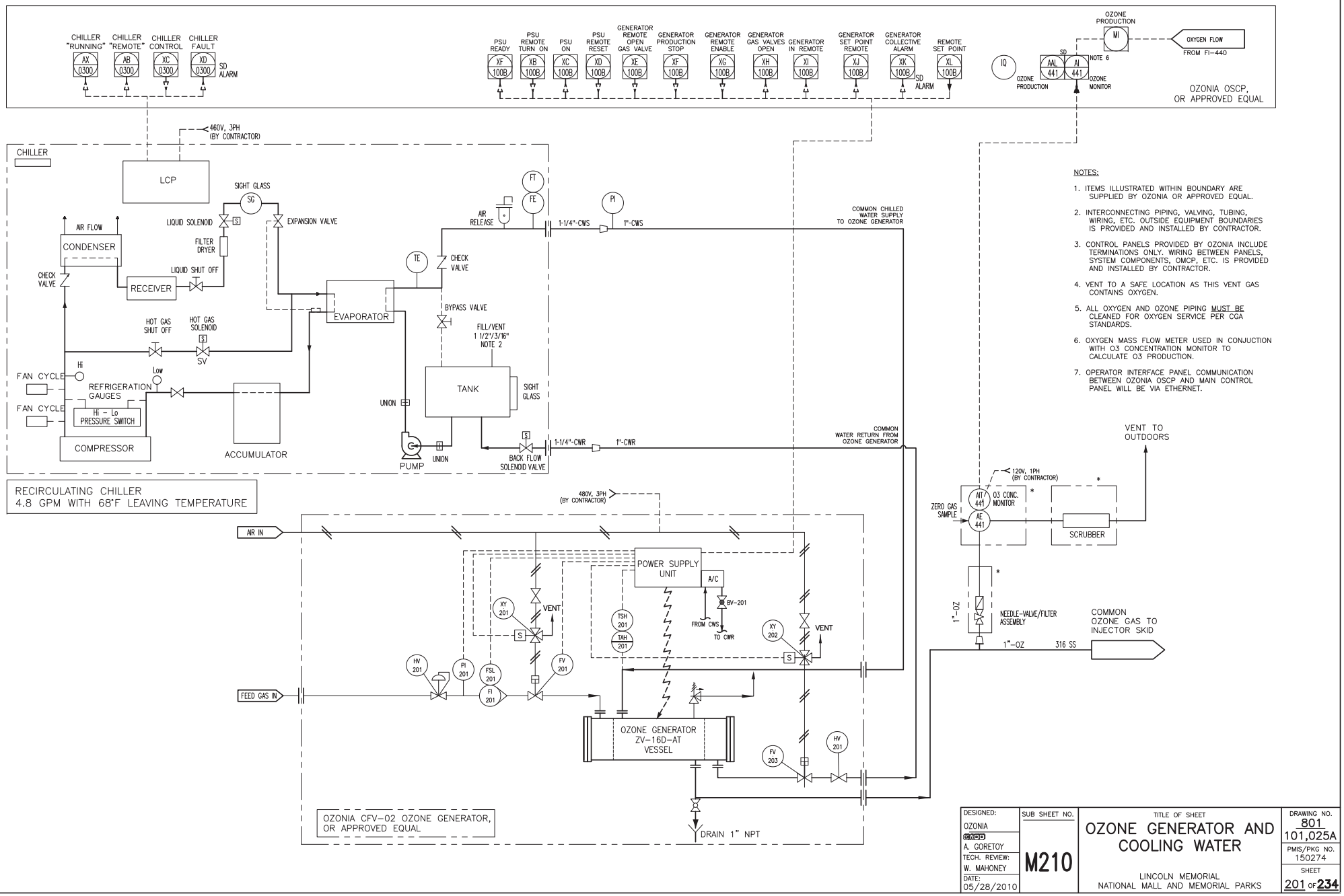


NOTES:

1. ITEMS ILLUSTRATED WITHIN BOUNDARY ARE SUPPLIED BY OZONIA OR APPROVED EQUAL.
2. INTERCONNECTING PIPING, VALVING, TUBING, WIRING, ETC. OUTSIDE EQUIPMENT BOUNDARIES IS PROVIDED AND INSTALLED BY CONTRACTOR.
3. CONTROL PANELS PROVIDED BY OZONIA INCLUDE TERMINATIONS ONLY. WIRING BETWEEN PANELS, SYSTEM COMPONENTS, OMCP, ETC. IS PROVIDED AND INSTALLED BY CONTRACTOR.
4. VENT TO A SAFE LOCATION AS THIS VENT GAS CONTAINS OXYGEN.
5. ALL OXYGEN AND OZONE PIPING MUST BE CLEANED FOR OXYGEN SERVICE PER CGA STANDARDS.
6. OXYGEN MASS FLOW METER USED IN CONJUCTION WITH O3 CONCENTRATION MONITOR TO CALCULATE O3 PRODUCTION.
7. OPERATOR INTERFACE PANEL COMMUNICATION BETWEEN OZONIA OSCP AND MAIN CONTROL PANEL WILL BE VIA ETHERNET.

DESIGNED: OZONIA / GADD / A. GORETOY TECH. REVIEW: W. MAHONEY DATE: 05/28/2010	SUB SHEET NO. M209	TITLE OF SHEET: AIR COMPRESSOR AND OXYGEN GENERATOR LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 200 OF 234

6/3/10 16:49 YLEE R17 V:\OPERATIONS\174\1001\WAMA\150274\TEMPORARY FOLDER FINAL CD\CADD DELIVERABLE - 06012010\TEMP DRAWINGS FOLDER\MECH\M209.DWG XREFS: ..\BASES\XG-2NDSHT2G.DWG;

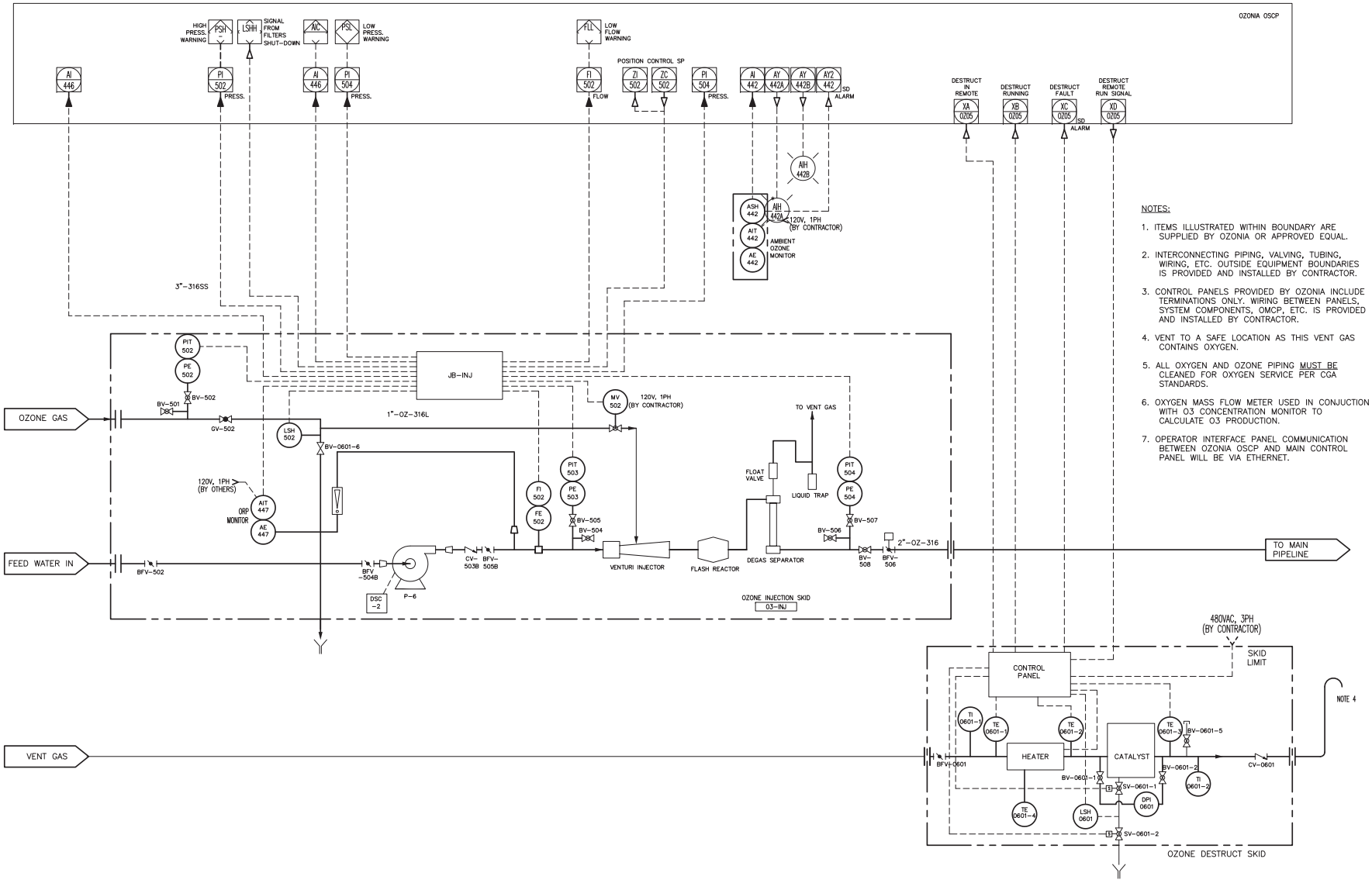


NOTES:

1. ITEMS ILLUSTRATED WITHIN BOUNDARY ARE SUPPLIED BY OZONIA OR APPROVED EQUAL.
2. INTERCONNECTING PIPING, VALVING, TUBING, WIRING, ETC. OUTSIDE EQUIPMENT BOUNDARIES IS PROVIDED AND INSTALLED BY CONTRACTOR.
3. CONTROL PANELS PROVIDED BY OZONIA INCLUDE TERMINATIONS ONLY. WIRING BETWEEN PANELS, SYSTEM COMPONENTS, OMCP, ETC. IS PROVIDED AND INSTALLED BY CONTRACTOR.
4. VENT TO A SAFE LOCATION AS THIS VENT GAS CONTAINS OXYGEN.
5. ALL OXYGEN AND OZONE PIPING MUST BE CLEANED FOR OXYGEN SERVICE PER CGA STANDARDS.
6. OXYGEN MASS FLOW METER USED IN CONJUCTION WITH O3 CONCENTRATION MONITOR TO CALCULATE O3 PRODUCTION.
7. OPERATOR INTERFACE PANEL COMMUNICATION BETWEEN OZONIA OSCP AND MAIN CONTROL PANEL WILL BE VIA ETHERNET.

DESIGNED: OZONIA CADD A. GORETOY TECH. REVIEW: W. MAHONEY DATE: 05/28/2010	SUB SHEET NO. M210	TITLE OF SHEET OZONE GENERATOR AND COOLING WATER LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 201 OF 234

6/3/10 16:50 YLEE R17 V:\OPERATIONS\174\1001\WAMA\150274\TEMPORARY FOLDER FINAL CD\CADD DELIVERABLE - 06012010\TEMP DRAWINGS FOLDER\MECH\M210.DWG XREFS: ..\BASES\VG-2NDSHT2G.DWG;



NOTES:

1. ITEMS ILLUSTRATED WITHIN BOUNDARY ARE SUPPLIED BY OZONIA OR APPROVED EQUAL.
2. INTERCONNECTING PIPING, VALVING, TUBING, WIRING, ETC. OUTSIDE EQUIPMENT BOUNDARIES IS PROVIDED AND INSTALLED BY CONTRACTOR.
3. CONTROL PANELS PROVIDED BY OZONIA INCLUDE TERMINATIONS ONLY. WIRING BETWEEN PANELS, SYSTEM COMPONENTS, OMCP, ETC. IS PROVIDED AND INSTALLED BY CONTRACTOR.
4. VENT TO A SAFE LOCATION AS THIS VENT GAS CONTAINS OXYGEN.
5. ALL OXYGEN AND OZONE PIPING MUST BE CLEANED FOR OXYGEN SERVICE PER CGA STANDARDS.
6. OXYGEN MASS FLOW METER USED IN CONJUCTION WITH O3 CONCENTRATION MONITOR TO CALCULATE O3 PRODUCTION.
7. OPERATOR INTERFACE PANEL COMMUNICATION BETWEEN OZONIA OSCP AND MAIN CONTROL PANEL WILL BE VIA ETHERNET.

DESIGNED: OZONIA DRAWN: A. GORETOY TECH. REVIEW: W. MAHONEY DATE: 05/28/2010	SUB SHEET NO. M211	TITLE OF SHEET INJECTION CONTACT AND OZONE DESTRUCTION LINCOLN MEMORIAL NATIONAL MALL AND MEMORIAL PARKS	DRAWING NO. 801 101,025A PMIS/PKG NO. 150274 SHEET 202 OF 234

6/3/10 16:49 YLEE R17 V:\OPERATIONS\174\1001\WAMA\150274\TEMPORARY FOLDER FINAL CD\CADD DELIVERABLE - 06012010\TEMP DRAWINGS FOLDER\MECH\M211.DWG XREFS: ..\BASES\G-2NDSHT2G.DWG;