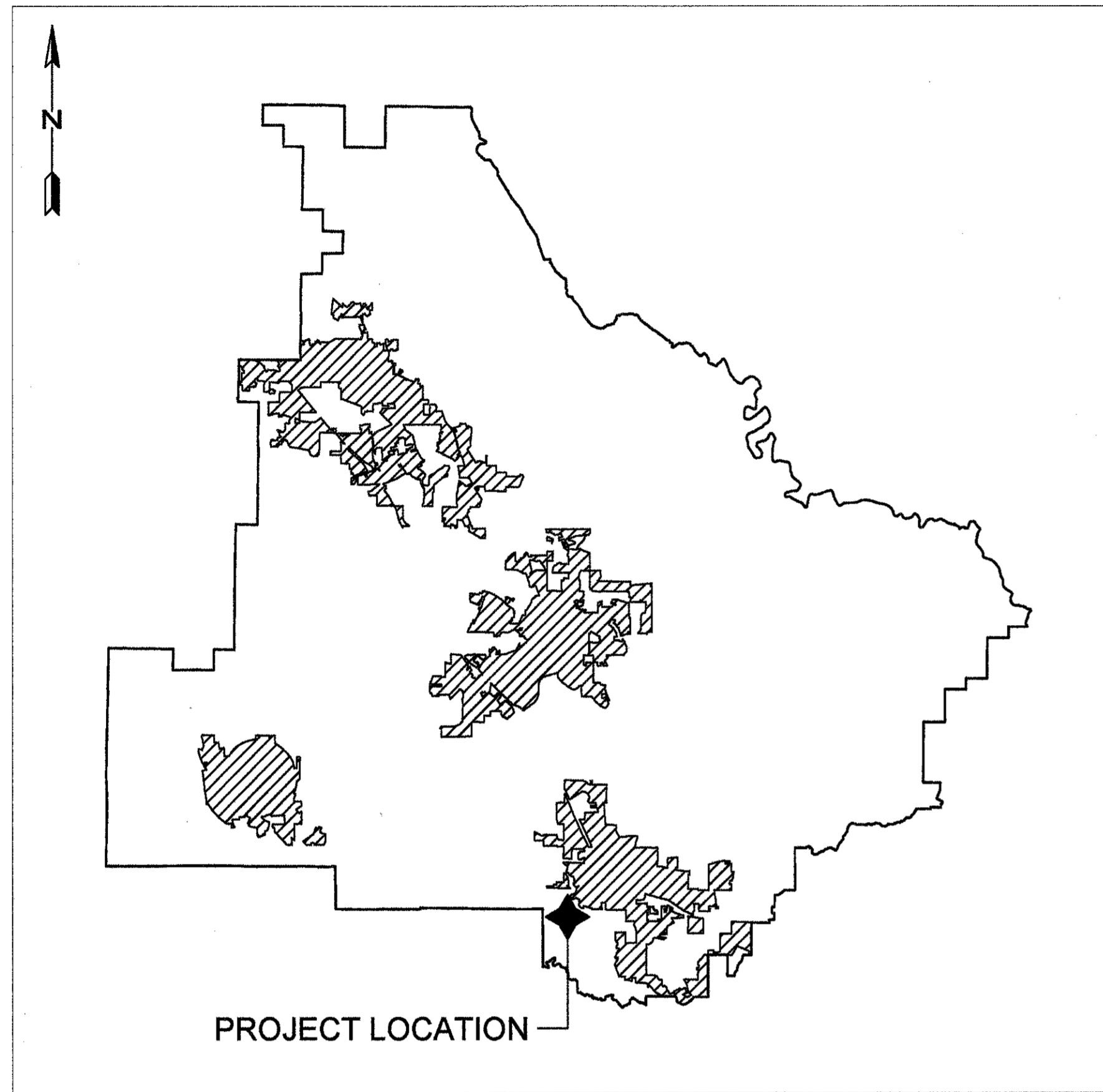
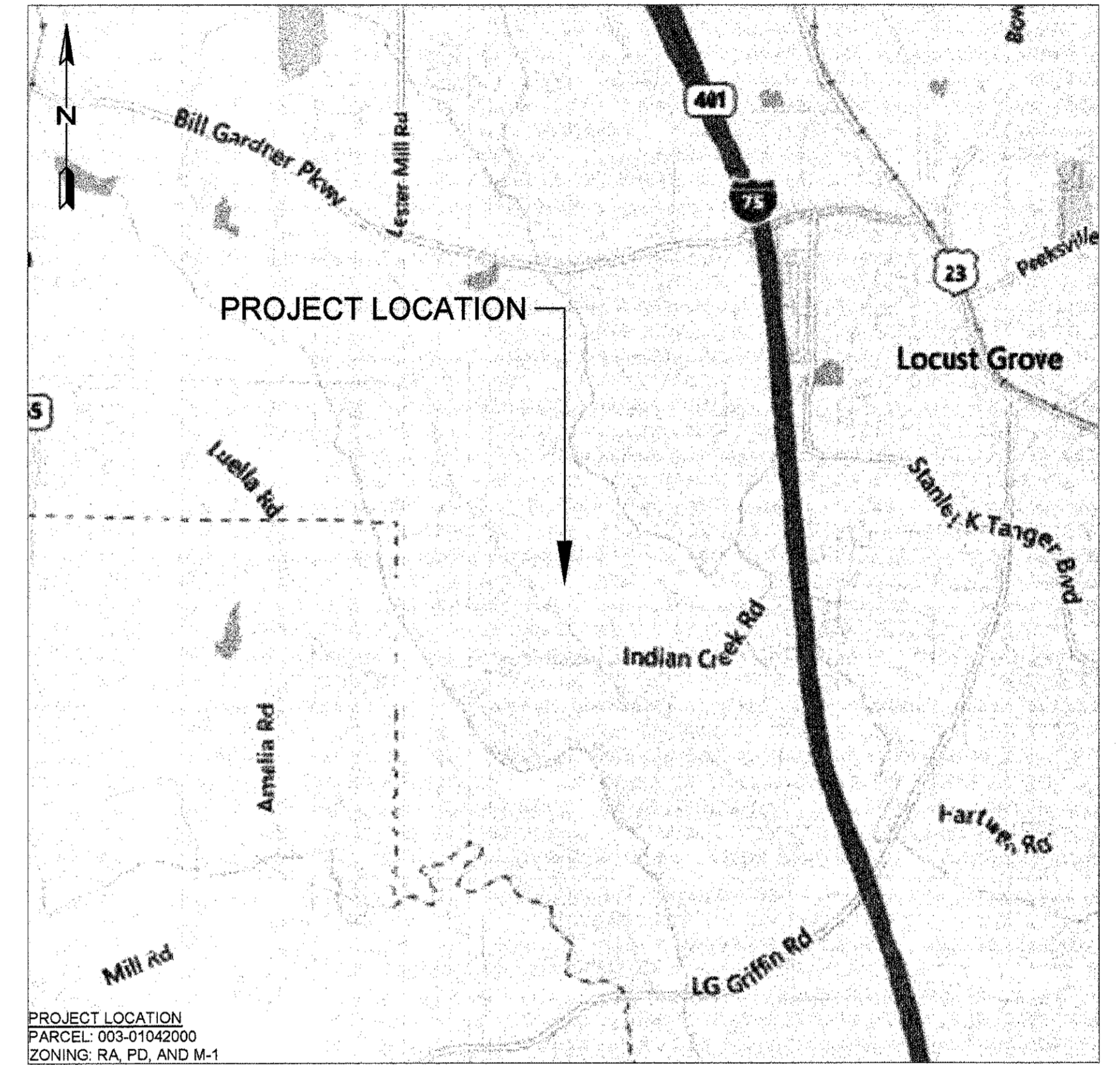
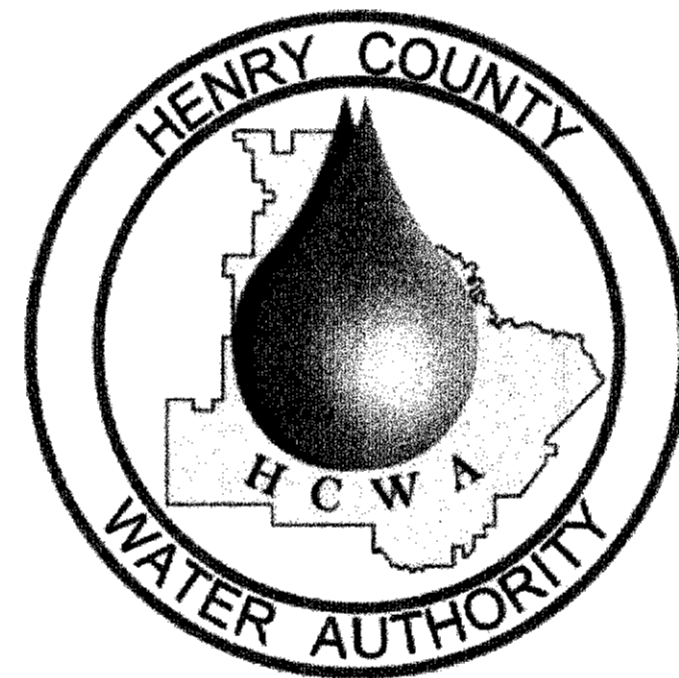


CONSTRUCTION PLANS FOR: HENRY COUNTY WATER AUTHORITY



PROJECT VICINITY MAP

DISTURBED AREA: 12.915 AC.



PROJECT LOCATION MAP

PROJECT: INDIAN CREEK WRF EXPANSION TO 3 MGD

CONSULTING ENGINEER:

ESI

ENGINEERING STRATEGIES, INC.

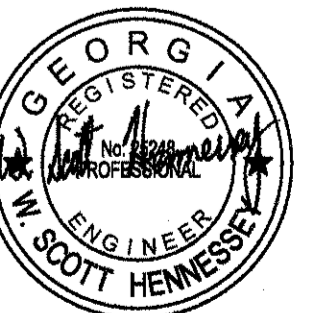
Phone: (770) 429-0001

AUGUST 2016

HENRY COUNTY WATER AUTHORITY BOARD MEMBERS	
JIMMY CARTER	CHAIRMAN
RICK JEFFARES	VICE CHAIRMAN
CARLOTTA HARRELL	SECRETARY/TREASURER
HAROLD JENKINS	BOARD MEMBER
MIKE BARR	BOARD MEMBER

I CERTIFY THAT I HAVE BEEN IN RESPONSIBLE CHARGE OF THE DESIGN OF THIS PROJECT IN ACCORDANCE WITH THE RULES OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS. I FURTHER CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED IN ACCORDANCE WITH CURRENT STANDARD ENGINEERING PRACTICES AND ACCURATELY REFLECT THE DESIGN DEVELOPMENT REPORT (DDR) PREVIOUSLY REVIEWED AND CONCURRED IN BY EPD. I FURTHER CERTIFY THAT THE SYSTEM AS DESIGNED CAN REASONABLY BE EXPECTED TO CONSISTENTLY MEET ALL CURRENT AND APPLICABLE PERMIT LIMITS, CONDITIONS, AND REGULATORY REQUIREMENTS, PROVIDED THE FACILITY IS CONSTRUCTED AS DESIGNED AND PROPERLY OPERATED AND MAINTAINED.

W. Scott Hennessey
W. SCOTT HENNESSEY, P.E.



PROJECT DATA

PROJECT NAME: INDIAN CREEK WRF EXPANSION TO 3 MGD
 PROJECT LOCATION: 1603 LESTER MILL ROAD, LOCUST GROVE, GA 30248
 OWNER: HENRY COUNTY WATER AUTHORITY
 1695 HIGHWAY 20 WEST
 McDONOUGH, GA 30253
 ENGINEER: ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE EXPANSION OF THE EXISTING INDIAN CREEK WATER RECLAMATION FACILITY (WRF) FROM 1.5 MILLION GALLONS PER DAY (MGD) TO 3 MGD. IT ALSO INVOLVES THE CONVERSION OF THE EXISTING TREATMENT PLANT FROM A LAND APPLICATION SYSTEM TO A SURFACE WATER DISCHARGE FACILITY. THE TREATMENT PROCESS WILL BE CONVERTED FROM A CONTACT-STABILIZATION PROCESS TO A MEMBRANE BIOLOGICAL REACTOR (MBR) TREATMENT PROCESS. THE INDIAN CREEK WRF IS AN OPERATING FACILITY THAT MUST REMAIN IN OPERATION AT ALL TIMES. THEREFORE, THIS PROJECT WILL REQUIRE PHASED CONSTRUCTION.

GENERAL NOTES

1. THE EXISTING INDIAN CREEK WRF IS AN OPERATING FACILITY AND MUST REMAIN IN OPERATION AT ALL TIMES. SHUT DOWN OF ANY EQUIPMENT, TREATMENT PROCESS, POWER SUPPLY, ETC. MUST BE COORDINATED WITH HCWA. CONTRACTOR SHALL NOT TURN ON OR OFF ANY EQUIPMENT OR TURN ON OR OFF POWER TO ANY EQUIPMENT UNLESS SPECIFICALLY AUTHORIZED BY HCWA. HCWA PERSONNEL MUST BE PRESENT WHEN ANY EQUIPMENT IS TURNED ON OR OFF.
2. ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE HCWA SPECIFICATIONS AND HENRY COUNTY ORDINANCES.
3. CONTRACTOR SHALL PRESERVE PROPERTY CORNERS, BENCH MARKS, RIGHT-OF-WAY MONUMENTS, AND OTHER SURVEY MONUMENTS WHICH EXIST ON THE PROJECT AT THE TIME OF CONTRACT AWARD. THE CONTRACTOR SHALL PROVIDE PERSONNEL FULLY CAPABLE OF STAKING THE CORNERS OF STRUCTURES AND THE CENTERLINE OF PIPELINES SHOWN ON THE PLANS. ANY PROPERTY CORNERS, BENCH MARKS, RIGHT-OF-WAY MONUMENTS, OR OTHER SURVEY MONUMENTS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
4. EXISTING UTILITIES AND INFRASTRUCTURE SHOWN ON THESE DRAWINGS WERE TAKEN FROM BEST AVAILABLE INFORMATION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE HORIZONTAL OR VERTICAL ACCURACY OF SAID UTILITIES OR THE POSSIBILITY THAT UNDERGROUND UTILITIES OTHER THAN THE ONES SHOWN MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION AND SIZE OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL CONTACT THE UTILITIES PROTECTION CENTER AT LEAST 72 HOUR PRIOR TO BEGINNING EXCAVATION ON THE PROJECT.
5. DRAINAGE SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT. ALL DRAINAGE STRUCTURES SHALL BE KEPT FREE OF DEBRIS AND IN OPERATING CONDITION AT ALL TIMES.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
7. CLEANUP SHALL BE ACCOMPLISHED AT THE END OF EACH DAY WITH ACCESS TO ALL FACILITIES RESTORED.

GENERAL CIVIL NOTES

1. EXISTING CONTOURS ARE BASED ON A FIELD SURVEY PREPARED BY POINT-TO-POINT LAND SURVEYORS, INC. IN OCTOBER 2015. SURVEY IS BASED ON GEORGIA STATE PLANE - WEST ZONE, AND 83, COORDINATE SYSTEM. ELEVATIONS ARE ADJUSTED TO NAVD 88 AND HAVE A VERTICAL ACCURACY OF ±1-FOOT.
2. UNLESS OTHERWISE SPECIFIED, ALL FILL AREAS SHALL BE COMPACTED TO MINIMUM 95-PERCENT STANDARD PROCTOR (ASTM D698). COMPACTION TESTING SHALL BE CONDUCTED BY AN APPROVED GEOTECHNICAL ENGINEER AND COMPACTION REPORTS FOR ALL FILL AREAS SHALL BE SUBMITTED TO THE ENGINEER.
3. ALL PRESSURIZED FORCE MAINS SHALL BE CONSTRUCTED USING RESTRAINED JOINT PIPE AND FITTINGS.
4. WHERE A NEW PRESSURIZED FORCE MAIN IS TIED INTO AN EXISTING PRESSURIZED FORCE MAIN, THE CONTRACTOR SHALL INSTALL AN APPROPRIATELY SIZED THRUST BLOCK TO PREVENT THE EXISTING PRESSURIZED FORCE MAIN FROM MOVING WHEN THE NEW SYSTEM IS PLACED IN SERVICE.
5. UNLESS APPROVED BY THE ENGINEER, POTABLE WATER LINES AND SEWAGE LINES SHALL BE SEPARATED BY A MINIMUM DISTANCE OF 10-FEET HORIZONTALLY AND 18-INCH VERTICALLY WITH THE POTABLE WATER LINE BEING ON TOP. DISTANCES ARE MEASURED EDGE TO EDGE.
6. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE STABILIZED WITH PERMANENT VEGETATION UNLESS OTHERWISE NOTED.

GENERAL MECHANICAL NOTES

1. ALL REQUIRED FITTINGS AND VALVES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. CONTRACTOR SHALL SUPPLY ALL FITTINGS AND VALVES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
2. ALL PIPE UNDER STRUCTURES SHALL BE ENCASED IN MINIMUM 2,500 PSI CONCRETE. THERE SHALL BE A MINIMUM OF 6" OF CONCRETE AROUND THE PIPE.
3. DIFFERENT MANUFACTURERS OF SIMILAR EQUIPMENT MAY HAVE DIFFERENT INSTALLATION REQUIREMENTS (I.E. STRUCTURAL OPENINGS, PIPE CONNECTIONS, BOLT PATTERNS, ETC.). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE PROPER INSTALLATION OF ALL EQUIPMENT PROVIDED. THIS SHALL INCLUDE PROVIDING ADDITIONAL FITTINGS AND APPURTENANCES, AS REQUIRED, TO PROPERLY INSTALL THE SELECTED EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION OF VALVE OPERATORS. VALVE OPERATORS SHALL BE LOCATED SUCH THAT THERE IS CLEAR ACCESS TO THE OPERATOR AND THE OPERATOR CAN BE OPERATED WITHOUT OBSTRUCTION.
5. FOR CLARITY, NOT ALL PIPE SUPPORTS ARE SHOWN ON DRAWINGS. ALL PIPES SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. ALL VALVES AND ALL CHANGES IN DIRECTION SHALL BE SUPPORTED BY CONCRETE PIER OF MECHANICAL TYPE PIPE SUPPORTS.
6. ALL NUTS, BOLTS, WASHERS, SET SCREWS, ANCHOR BOLTS, AND OTHER HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
7. ALL CORED WALL PENETRATIONS SHALL BE SEALED WATERTIGHT WITH MODULAR SEALS. MODULAR SEALS SHALL BE PROVIDED WITH TYPE 316 STAINLESS STEEL HARDWARE. PIPE SHALL BE SUPPORTED ON BOTH SIDES OF WALL PENETRATION SO THAT THE MODULAR SEAL IS NOT SUPPORTING THE PIPE.
8. THE SURFACE OF ALL ALUMINUM AND STEEL PRODUCTS IN CONTACT WITH CONCRETE SHALL BE COATED WITH A BITUMASTIC COATING.

PIPE CODES	
PIPE DIAMETER	12"-RWW-DIP-HT
SERVICE	
PIPE MATERIAL	
SPECIAL	

SERVICE ABBREVIATIONS	
DRN	DRAIN
EFF	EFFLUENT
INF	INFLUENT
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
NPW	NON-POTABLE WATER
OOD	ODOR CONTROL DUCT
PA	PROCESS AIR
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RAW	RAW WASTE WATER
SCM	SCUM
SLG	SLUDGE
WAS	WASTE ACTIVATED SLUDGE

PIPE MATERIAL ABBREVIATIONS	
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL
CU	COPPER
DIP	DUCTILE IRON PIPE
FRP	FIBERGLASS REINFORCED PLASTIC
GS	GALVANIZED STEEL
HDPE	HIGH DENSITY POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SS	STAINLESS STEEL

SPECIAL ABBREVIATIONS	
304	TYPE 304 STAINLESS STEEL
316	TYPE 316 STAINLESS STEEL
HT	HEAT TRACE AND INSULATE
RJ	RESTRAINED JOINT



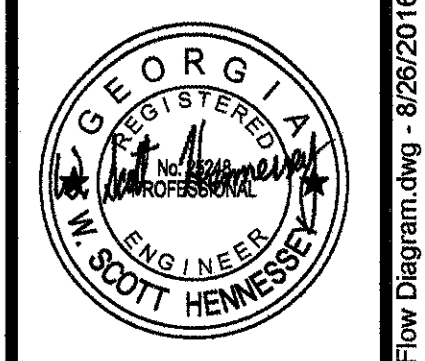
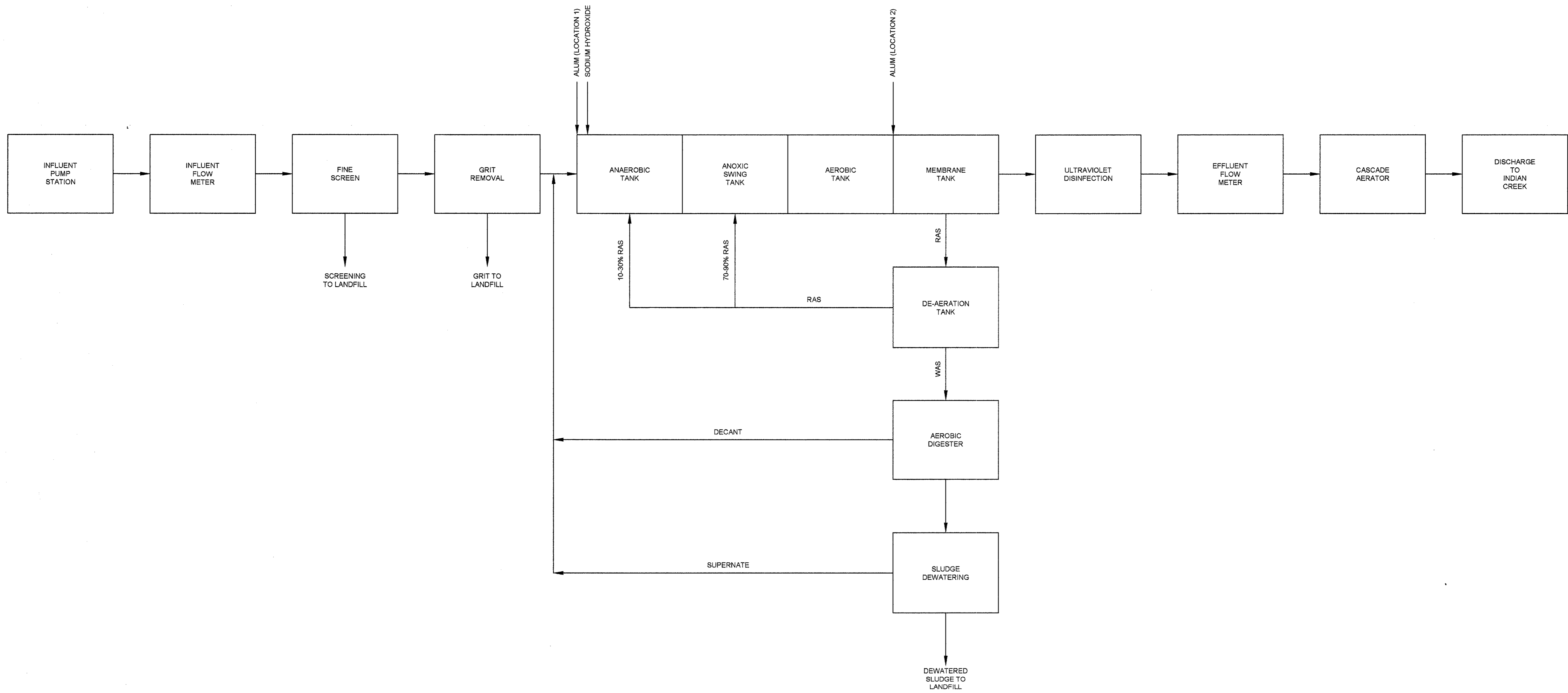
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	AUGUST 2016
	REVISION	
	DATE	

Dsgn:
 DRWN:
 CHCK:
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 GENERAL NOTES

SHEET NO.
 00-G-2



ESI
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 (770) 425-0001

PROJECT NUMBER:	DATE:
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REVISION	DATE
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DSGN: WSH
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 CHCK: WSH

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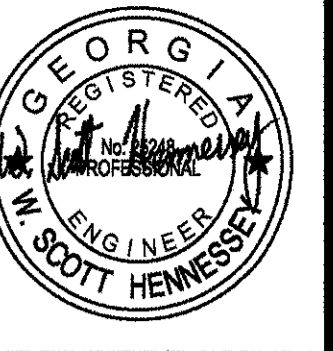
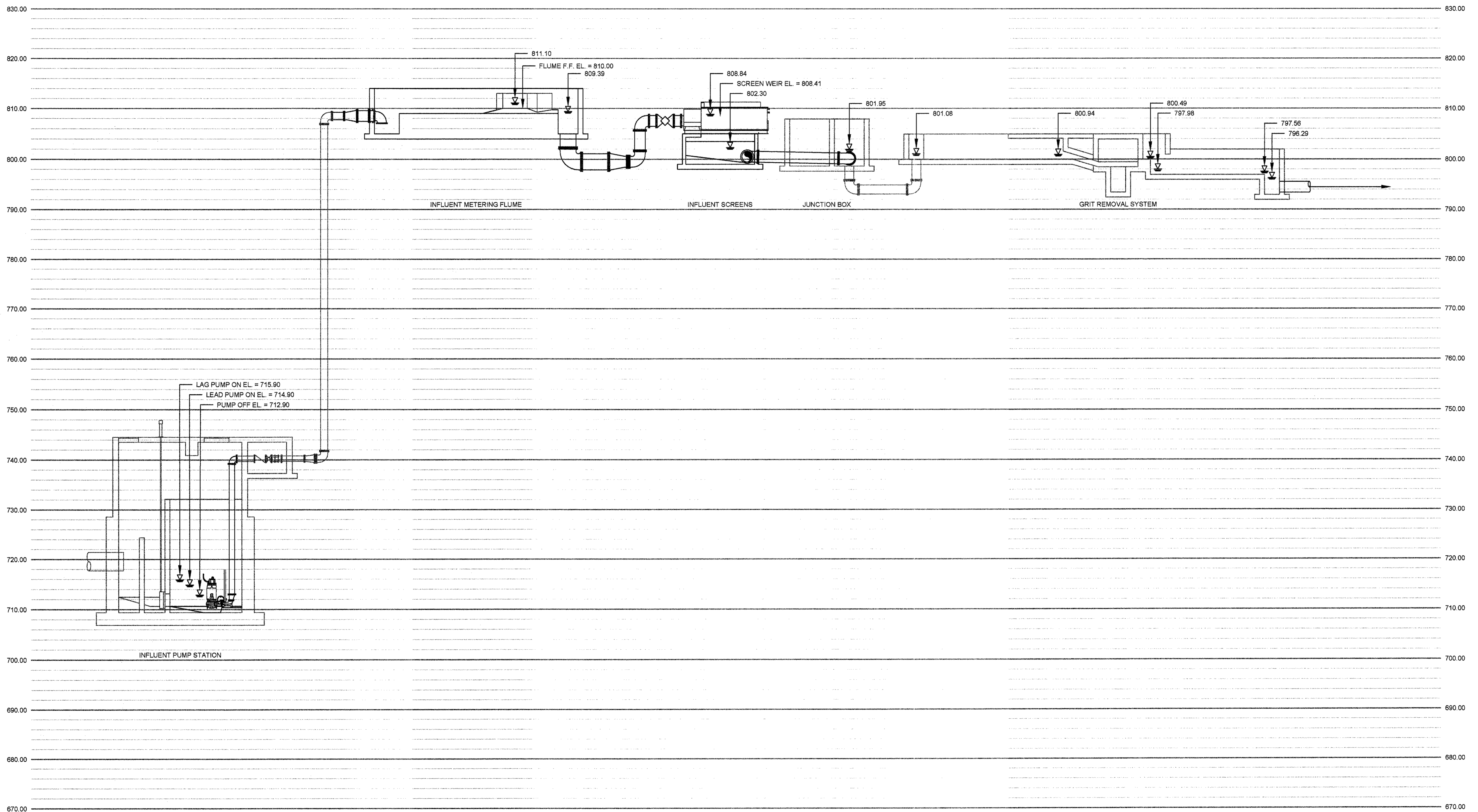
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PROCESS FLOW
 DIAGRAM

SHEET NO.
 00-G-3

NOTES:

1. WATER SURFACE ELEVATIONS BASED ON A PEAK FLOW RATE OF 6 MGD AND A RECYCLE RATE OF 15.4 MGD.



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REVISION	DATE
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 CHCK: WSH

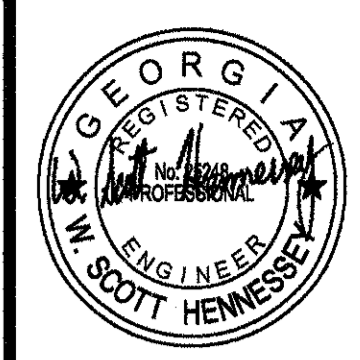
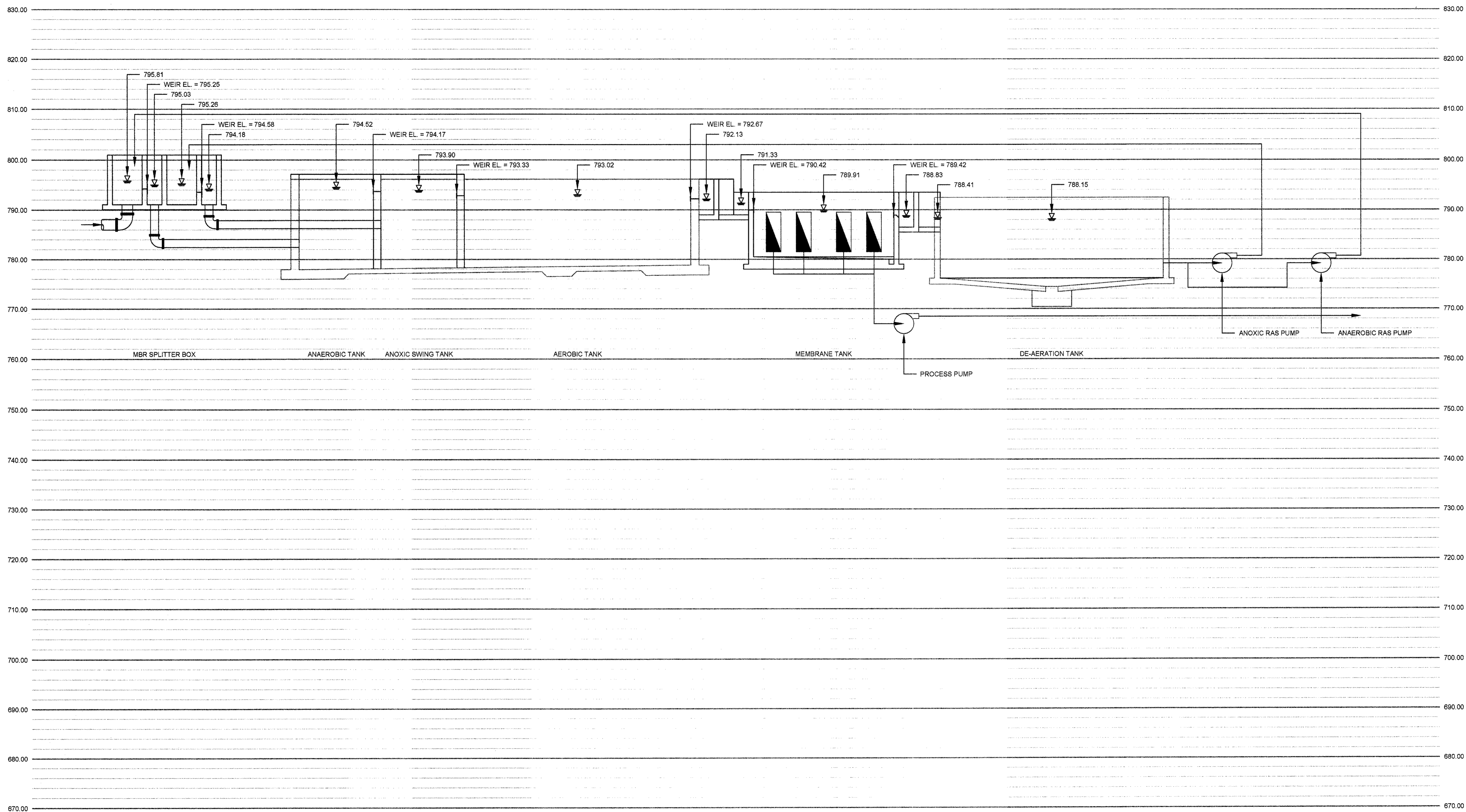
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 HYDRAULIC PROFILE
 (SHEET 1 OF 3)

SHEET NO.
 00-G-4

NOTES:

1. WATER SURFACE ELEVATIONS BASED ON A PEAK FLOW RATE OF 6 MGD AND A RECYCLE RATE OF 15.4 MGD.



ESI
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 MARIETTA, GA 30062
 (770) 429-0001

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REVISION	DATE
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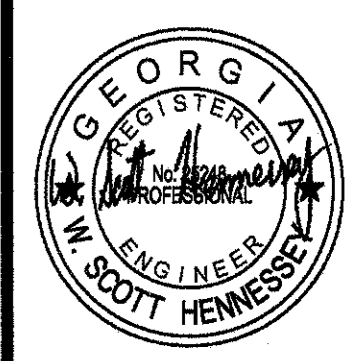
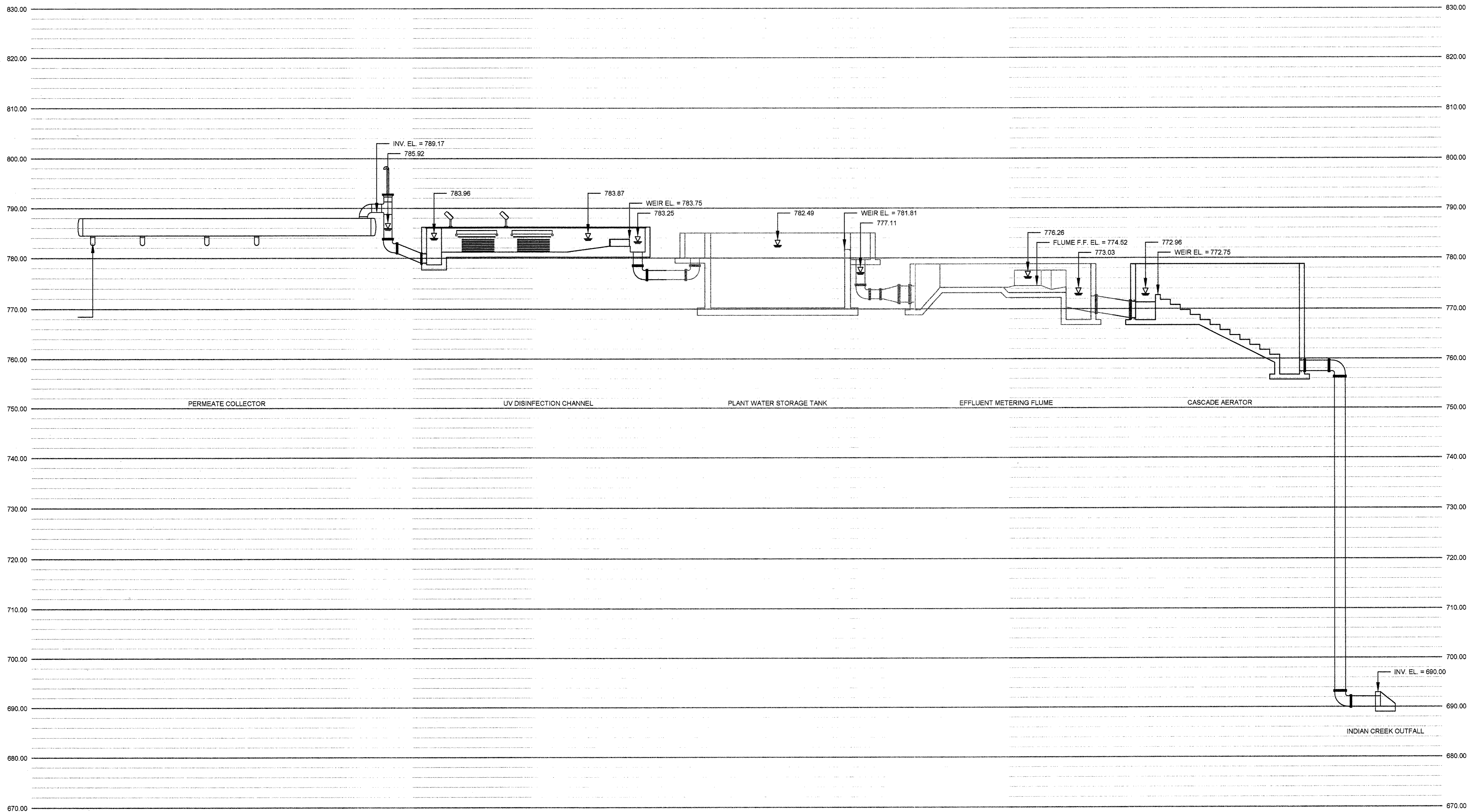
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

HYDRAULIC PROFILE
 (SHEET 2 OF 3)

SHEET NO.
 00-G-5

NOTES:

1. WATER SURFACE ELEVATIONS BASED ON A PEAK FLOW RATE OF 6 MGD AND A RECYCLE RATE OF 15.4 MGD.



ESI
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
△	AUGUST 2016
REVISION	DATE

DSGN: WSH
 DRWN: WSH
 CHCK: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 HYDRAULIC PROFILE
 (SHEET 3 OF 3)

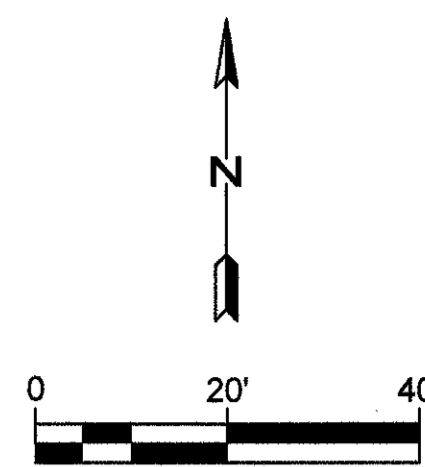
SHEET NO.
 00-G-6

SSMH
RIM EL. = 752.84
42" INV. IN = 718.24
42" INV. OUT = 718.24

SSMH
RIM EL. = 747.91
12" INV. IN = 737.29
12" INV. OUT = 737.21

SSMH
RIM EL. = 773.54
12" INV. IN = 726.83
42" INV. IN = 718.23
42" INV. OUT = 718.14

SSMH
RIM EL. = 759.17
12" INV. IN = 747.60
12" INV. OUT = 747.47



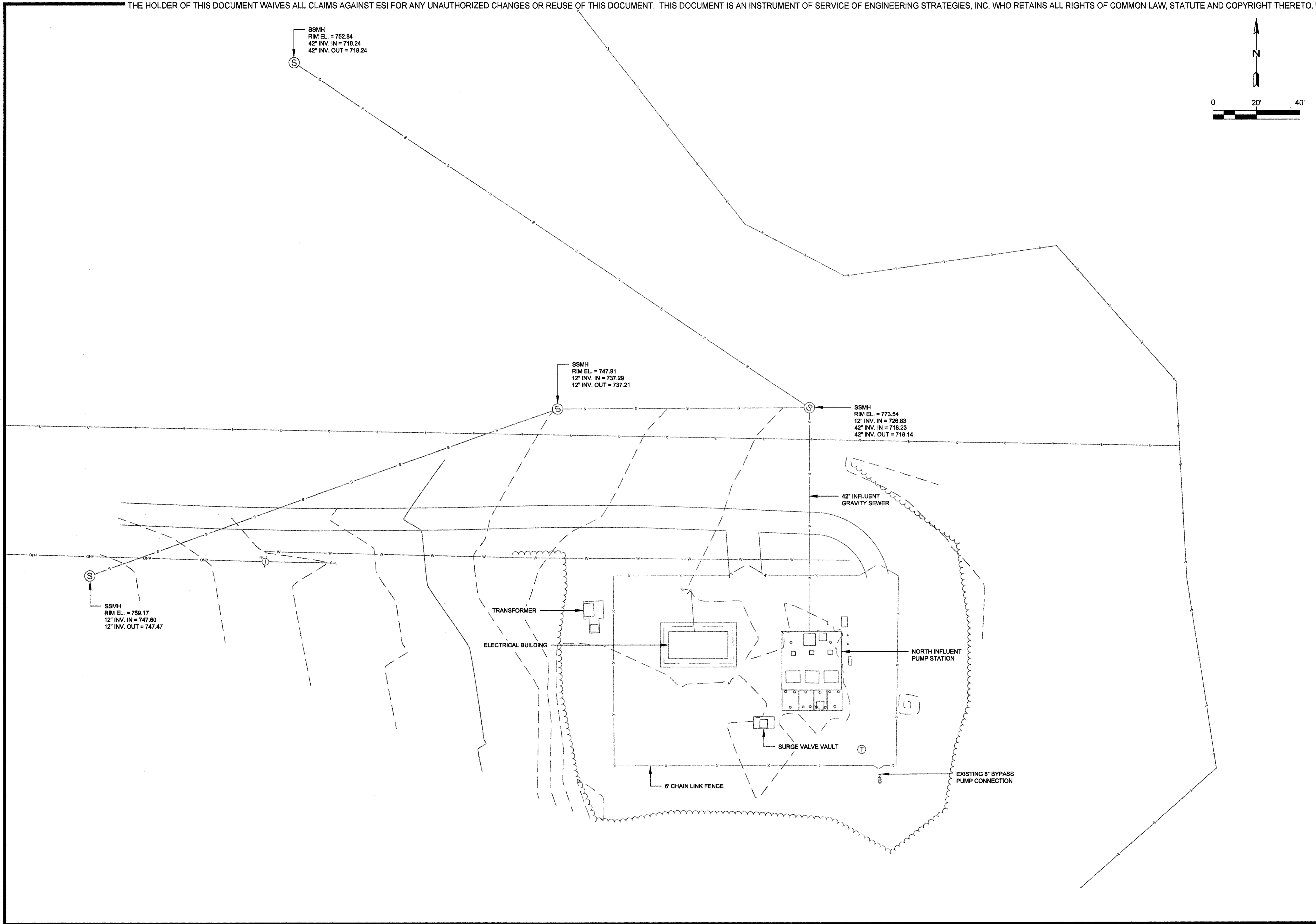
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

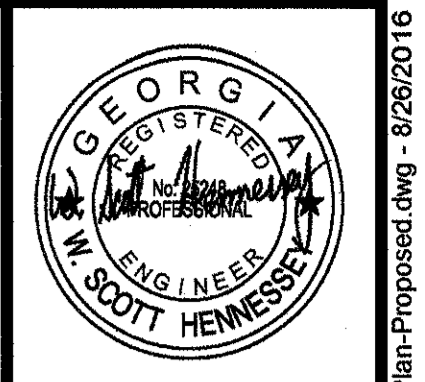
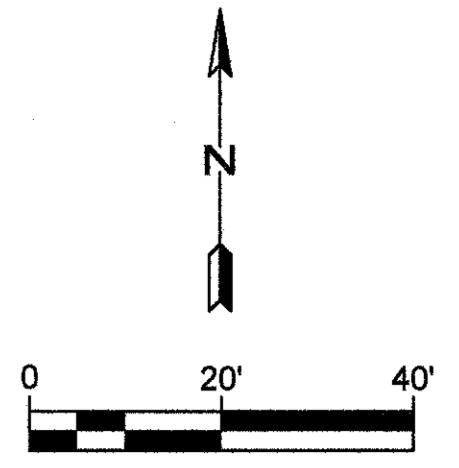
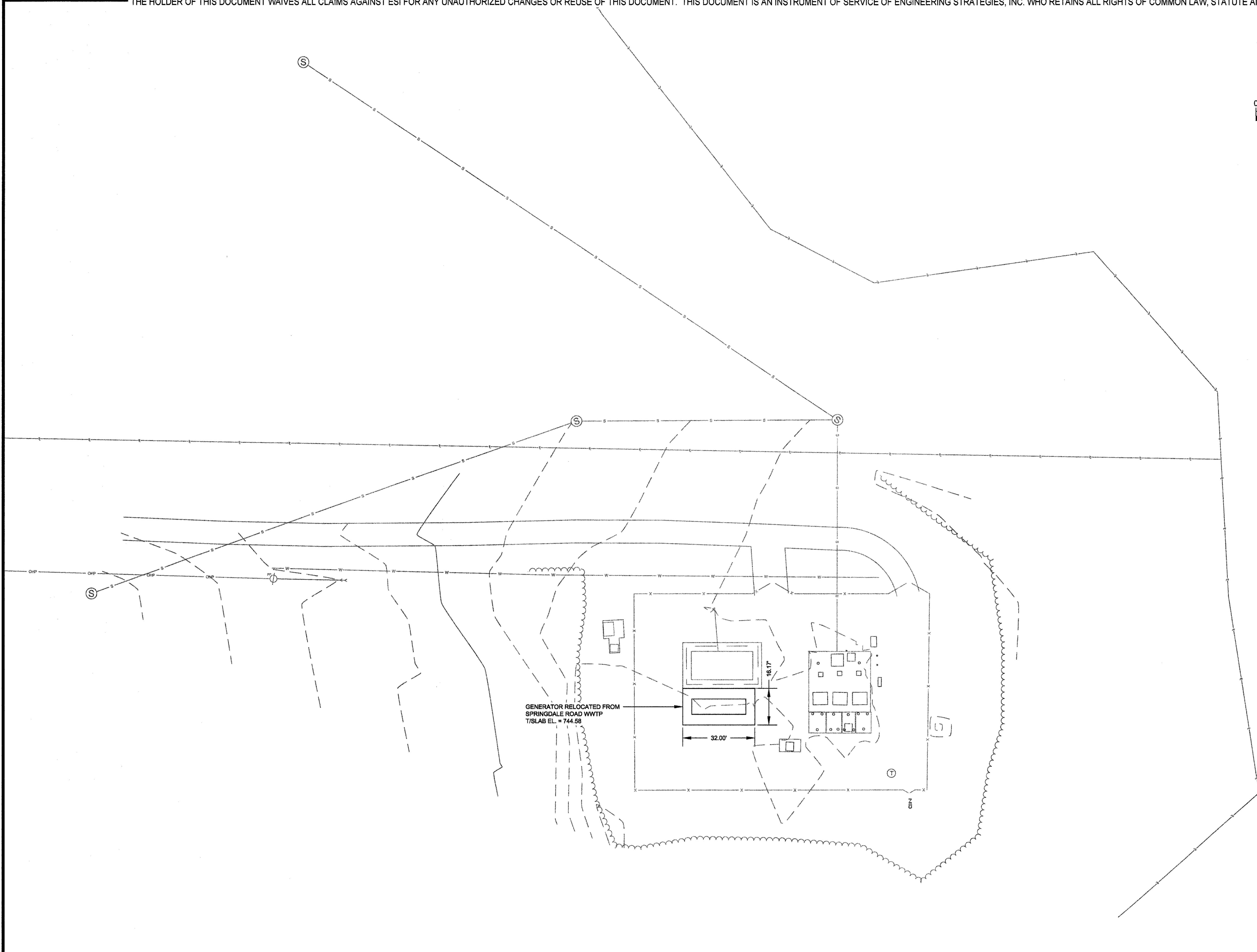
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION
EXISTING SITE PLAN

SHEET NO.
00-C-1





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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

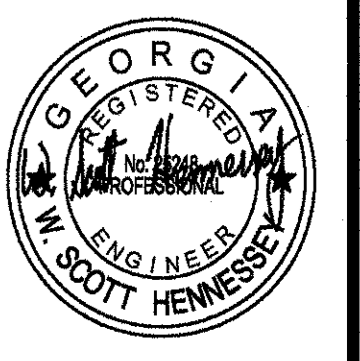
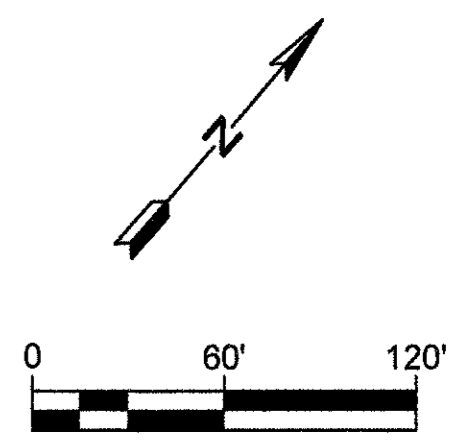
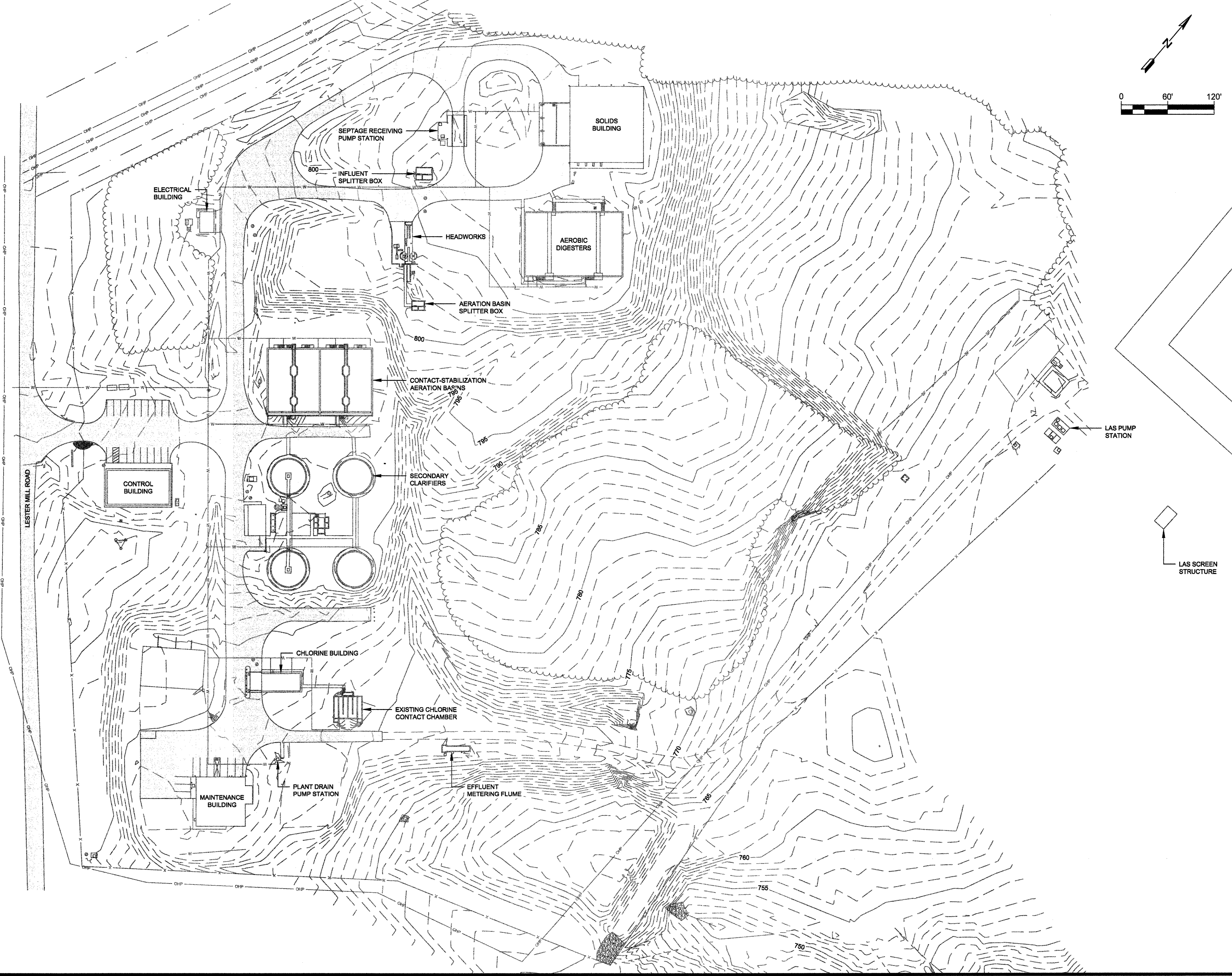
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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 CHCK: WSH

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION
PROPOSED SITE PLAN

SHEET NO.
 00-C-2



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 423-0001

PROJECT NUMBER:	DATE:
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REVISION	DATE
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DSGN: WSH
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 CHCK: WSH

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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 EXISTING SITE PLAN

SHEET NO.
 00-C-3



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
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 (770) 429-0001

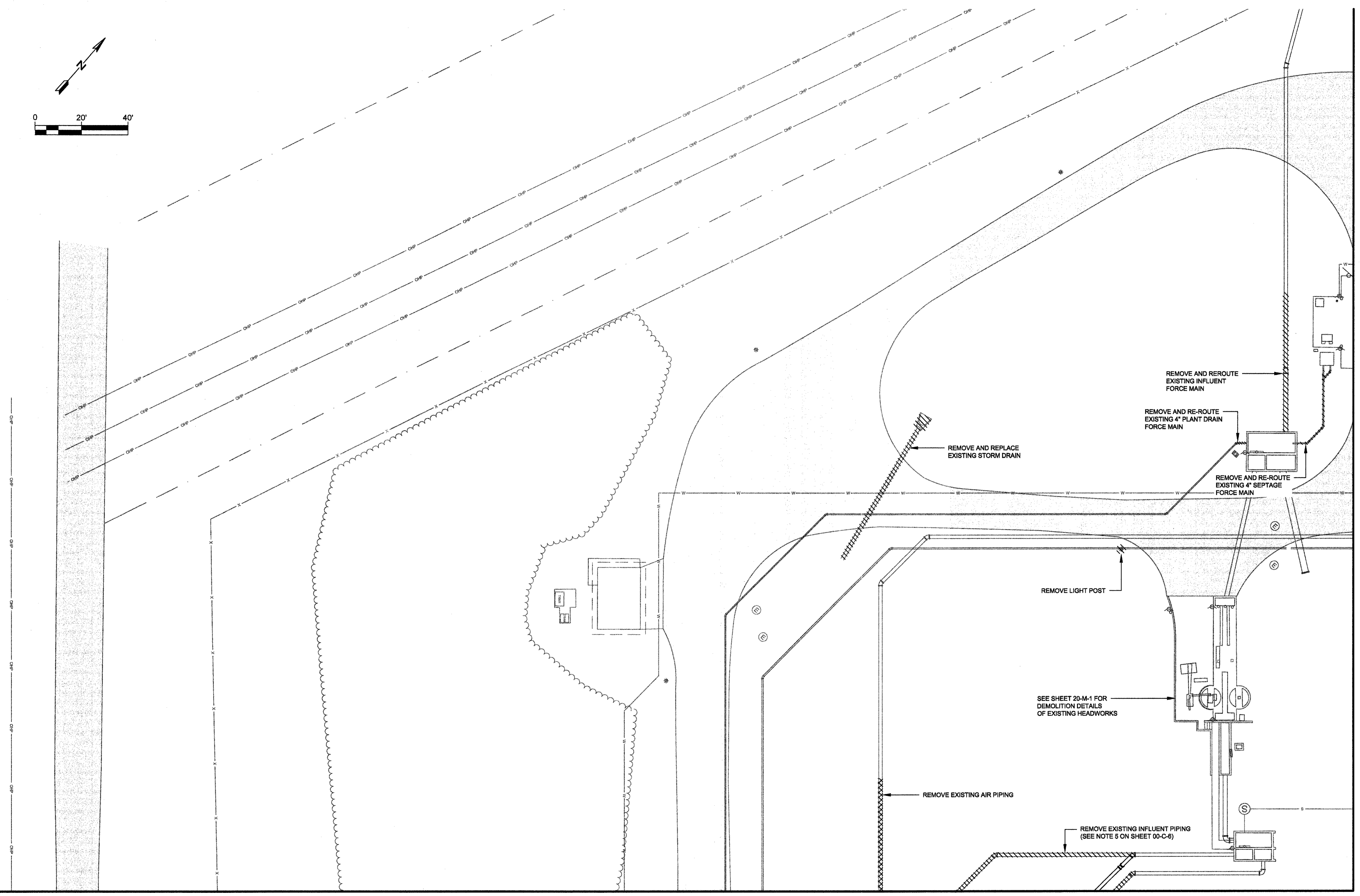
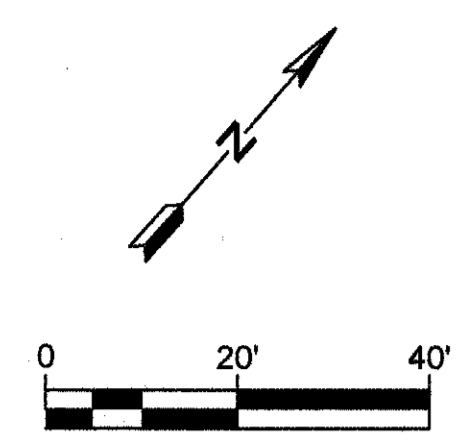
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Δ	AUGUST 2016
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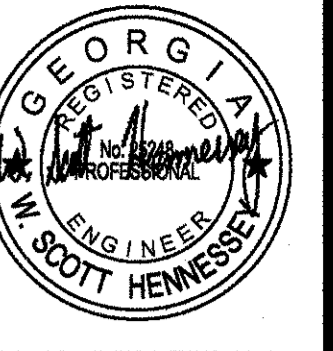
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
TREATMENT PLAN
DEMOLITION PLAN 1

SHEET NO.
 00-C-4



MATCH LINE A

MATCH LINE 1



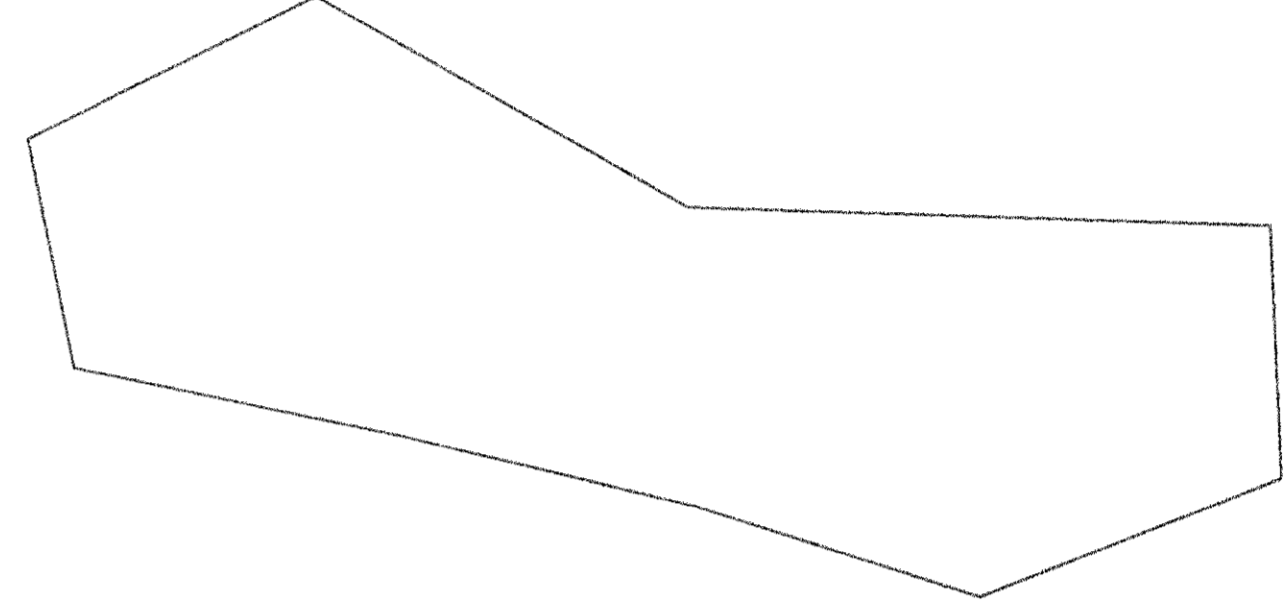
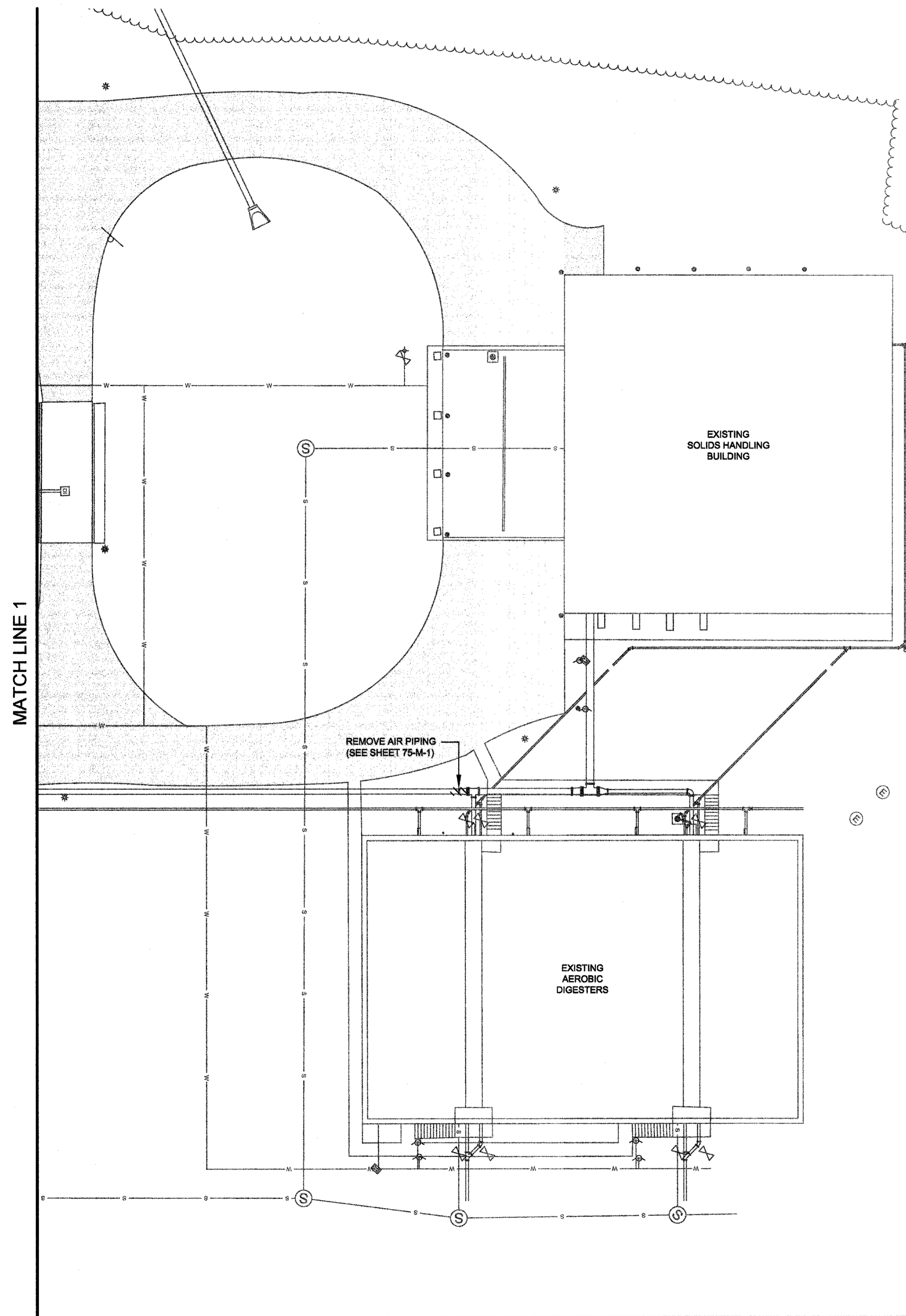
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ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN:
 DRWN:
 CHCK:
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 DEMOLITION PLAN 2

SHEET NO.
 00-C-5



MATCH LINE B



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN:
 DRWN:
 CHCK:

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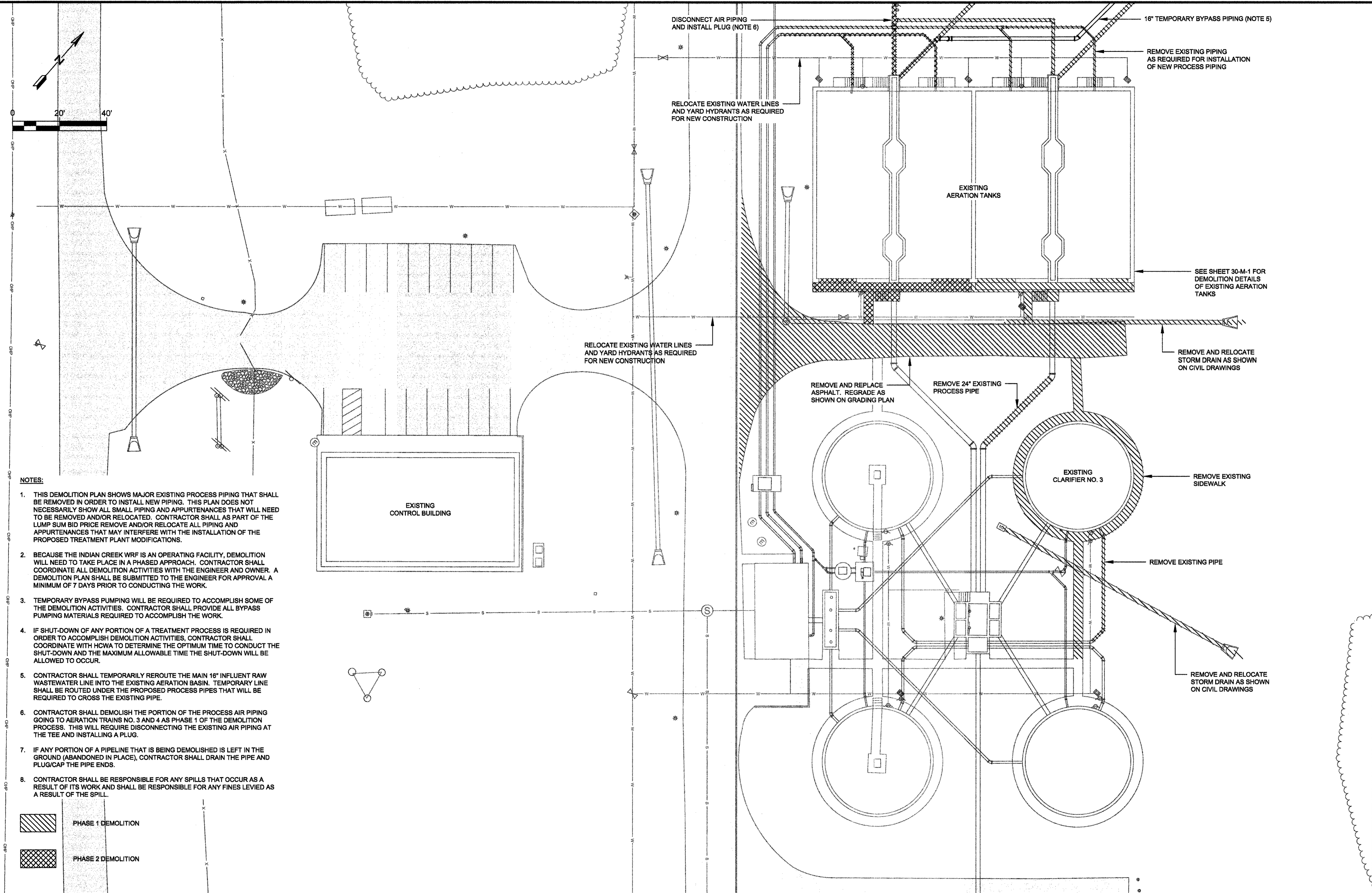
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 DEMOLITION PLAN 3

SHEET NO.
 00-C-6

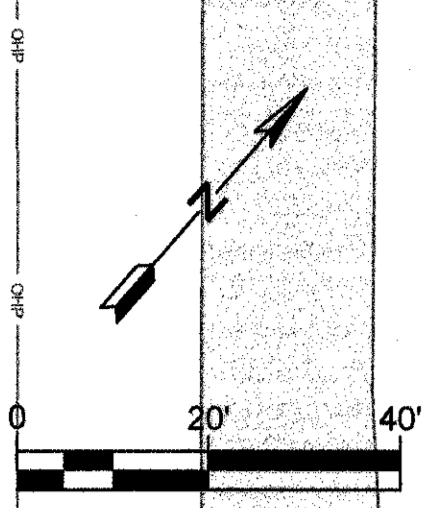
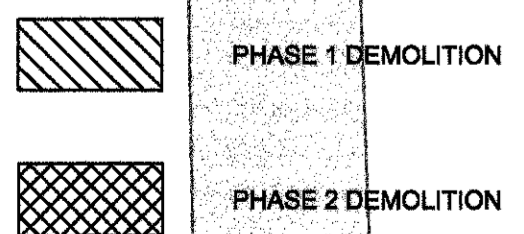
MATCH LINE A

MATCH LINE C

MATCH LINE 2

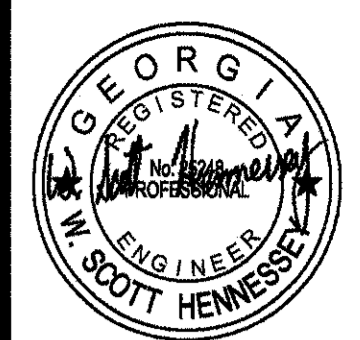


- NOTES:**
- THIS DEMOLITION PLAN SHOWS MAJOR EXISTING PROCESS PIPING THAT SHALL BE REMOVED IN ORDER TO INSTALL NEW PIPING. THIS PLAN DOES NOT NECESSARILY SHOW ALL SMALL PIPING AND APPURTENANCES THAT WILL NEED TO BE REMOVED AND/OR RELOCATED. CONTRACTOR SHALL AS PART OF THE LUMP SUM BID PRICE REMOVE AND/OR RELOCATE ALL PIPING AND APPURTENANCES THAT MAY INTERFERE WITH THE INSTALLATION OF THE PROPOSED TREATMENT PLANT MODIFICATIONS.
 - BECAUSE THE INDIAN CREEK WRF IS AN OPERATING FACILITY, DEMOLITION WILL NEED TO TAKE PLACE IN A PHASED APPROACH. CONTRACTOR SHALL COORDINATE ALL DEMOLITION ACTIVITIES WITH THE ENGINEER AND OWNER. A DEMOLITION PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL A MINIMUM OF 7 DAYS PRIOR TO CONDUCTING THE WORK.
 - TEMPORARY BYPASS PUMPING WILL BE REQUIRED TO ACCOMPLISH SOME OF THE DEMOLITION ACTIVITIES. CONTRACTOR SHALL PROVIDE ALL BYPASS PUMPING MATERIALS REQUIRED TO ACCOMPLISH THE WORK.
 - IF SHUT-DOWN OF ANY PORTION OF A TREATMENT PROCESS IS REQUIRED IN ORDER TO ACCOMPLISH DEMOLITION ACTIVITIES, CONTRACTOR SHALL COORDINATE WITH HCWA TO DETERMINE THE OPTIMUM TIME TO CONDUCT THE SHUT-DOWN AND THE MAXIMUM ALLOWABLE TIME THE SHUT-DOWN WILL BE ALLOWED TO OCCUR.
 - CONTRACTOR SHALL TEMPORARILY REROUTE THE MAIN 16" INFLUENT RAW WASTEWATER LINE INTO THE EXISTING AERATION BASIN. TEMPORARY LINE SHALL BE ROUTED UNDER THE PROPOSED PROCESS PIPES THAT WILL BE REQUIRED TO CROSS THE EXISTING PIPE.
 - CONTRACTOR SHALL DEMOLISH THE PORTION OF THE PROCESS AIR PIPING GOING TO AERATION TRAINS NO. 3 AND 4 AS PHASE 1 OF THE DEMOLITION PROCESS. THIS WILL REQUIRE DISCONNECTING THE EXISTING AIR PIPING AT THE TEE AND INSTALLING A PLUG.
 - IF ANY PORTION OF A PIPELINE THAT IS BEING DEMOLISHED IS LEFT IN THE GROUND (ABANDONED IN PLACE), CONTRACTOR SHALL DRAIN THE PIPE AND PLUG/CAP THE PIPE ENDS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SPILLS THAT OCCUR AS A RESULT OF ITS WORK AND SHALL BE RESPONSIBLE FOR ANY FINES LEVIED AS A RESULT OF THE SPILL.



MATCH LINE B

MATCH LINE 2



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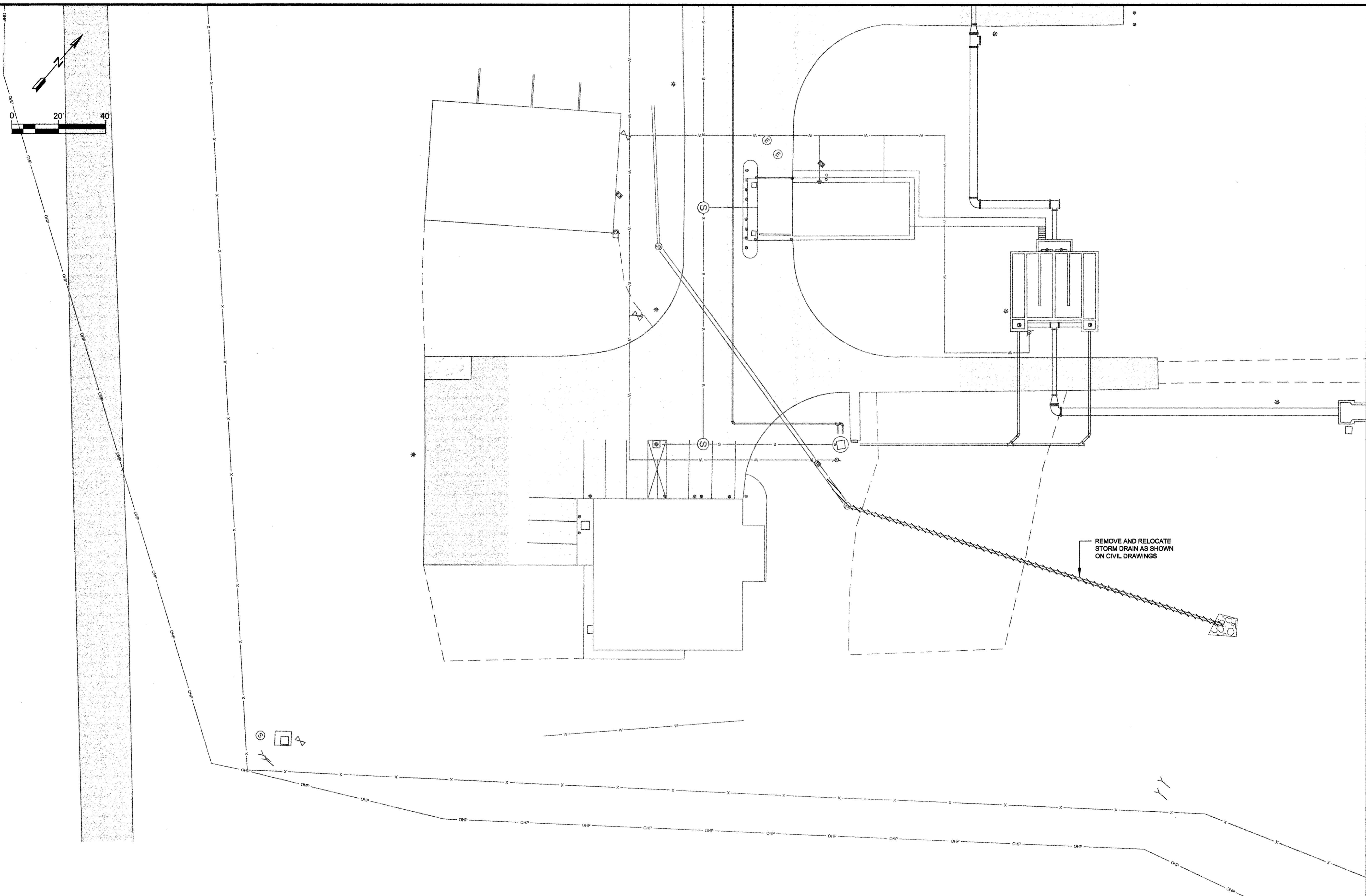
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 DRWN:
 CHCK:
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 DEMOLITION PLAN 4

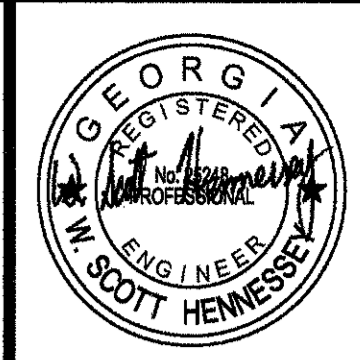
SHEET NO.
 00-C-7

MATCH LINE D

MATCH LINE C



MATCH LINE 3



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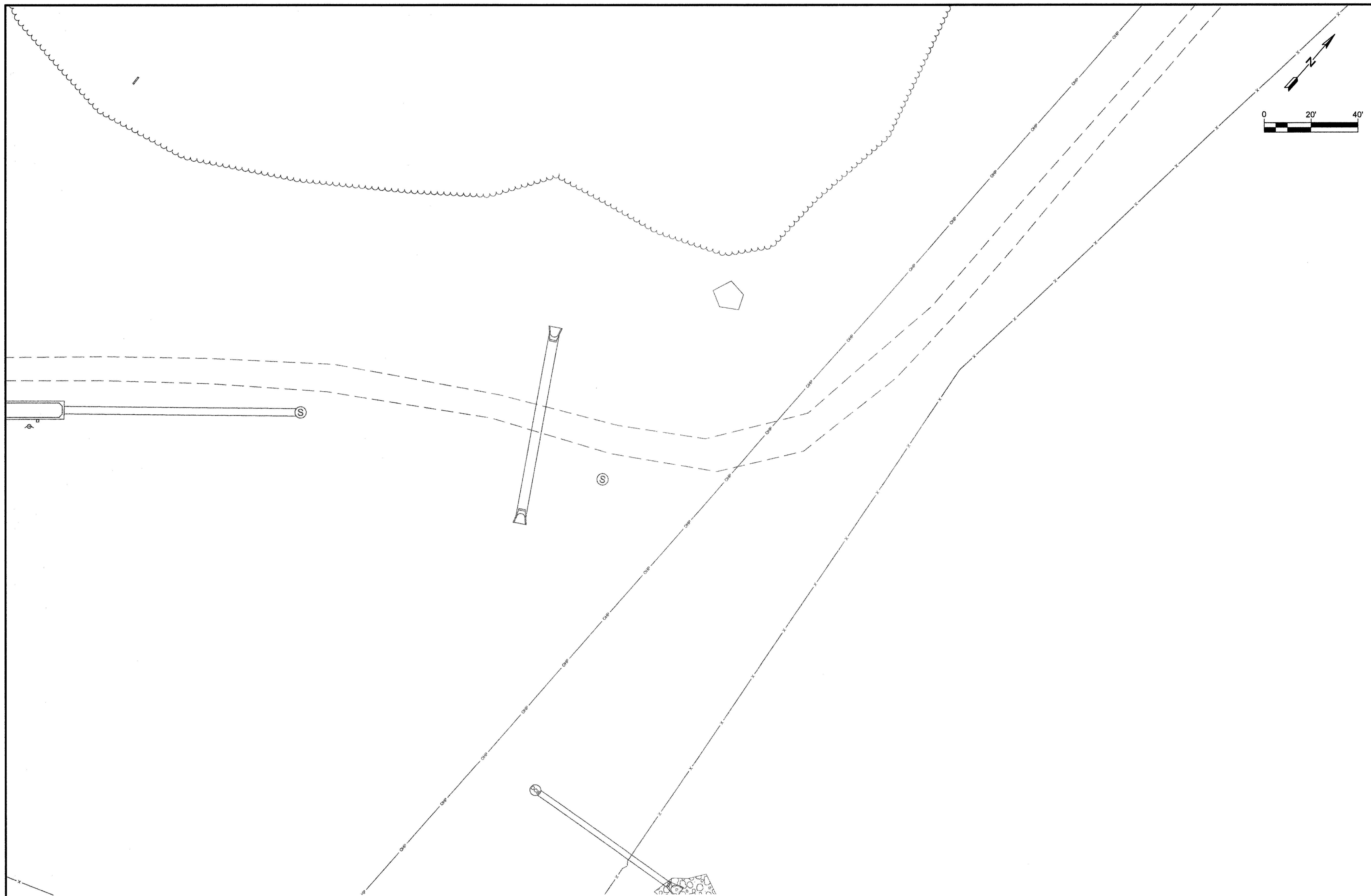
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 DEMOLITION PLAN 5

SHEET NO.
 00-C-8

MATCH LINE D

MATCH LINE 3



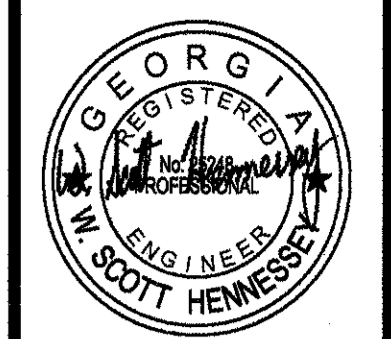
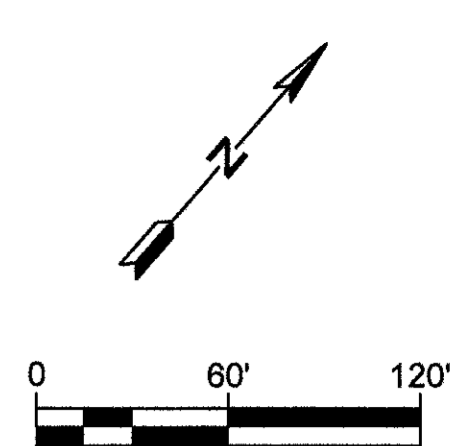
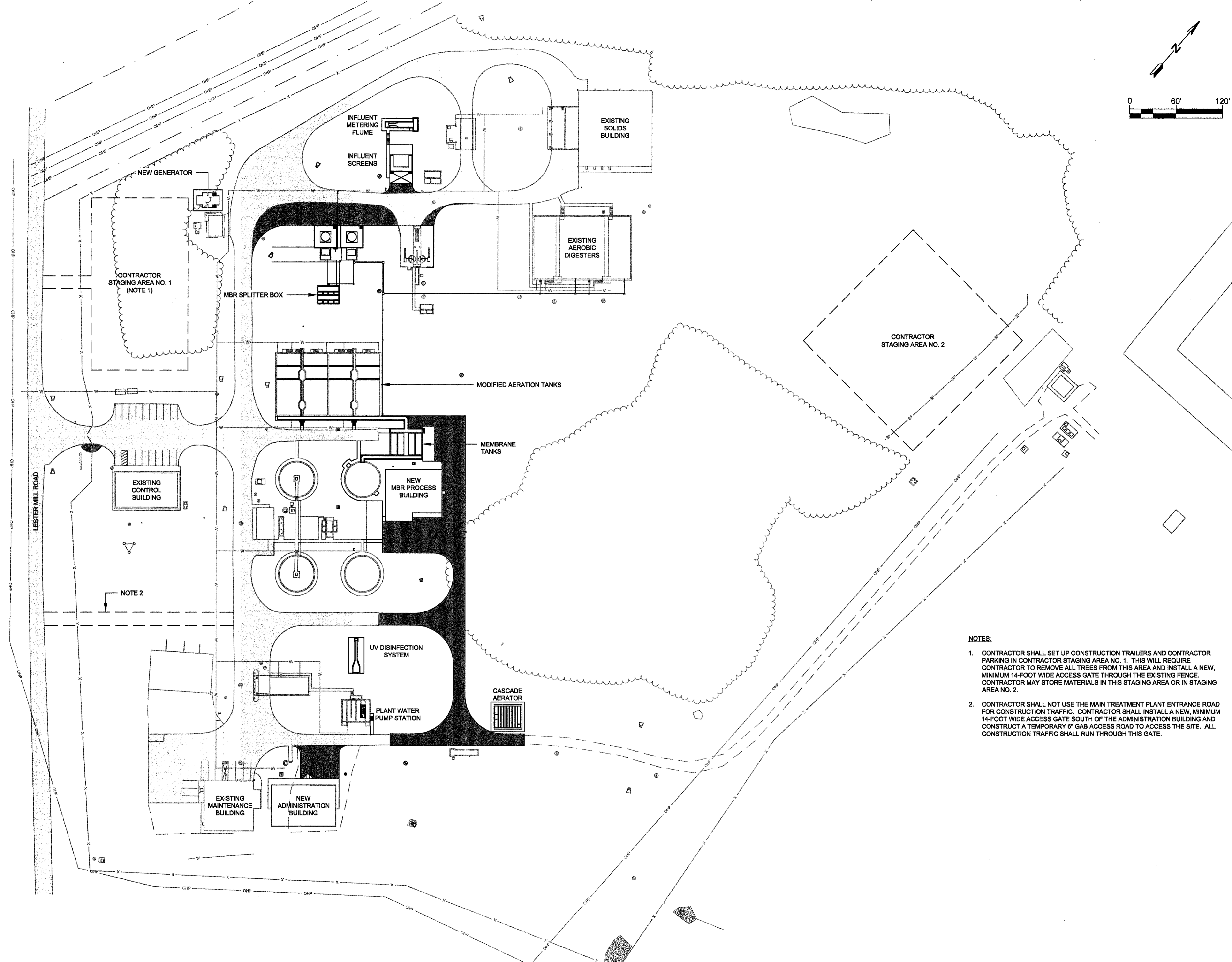
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PROJECT NUMBER:	DATE:
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 DEMOLITION PLAN 6

SHEET NO.
 00-C-9



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 DRWN: WSH
 CHCK: WSH

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- NOTES:**
- CONTRACTOR SHALL SET UP CONSTRUCTION TRAILERS AND CONTRACTOR PARKING IN CONTRACTOR STAGING AREA NO. 1. THIS WILL REQUIRE CONTRACTOR TO REMOVE ALL TREES FROM THIS AREA AND INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE THROUGH THE EXISTING FENCE. CONTRACTOR MAY STORE MATERIALS IN THIS STAGING AREA OR IN STAGING AREA NO. 2.
 - CONTRACTOR SHALL NOT USE THE MAIN TREATMENT PLANT ENTRANCE ROAD FOR CONSTRUCTION TRAFFIC. CONTRACTOR SHALL INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE SOUTH OF THE ADMINISTRATION BUILDING AND CONSTRUCT A TEMPORARY 6" GAB ACCESS ROAD TO ACCESS THE SITE. ALL CONSTRUCTION TRAFFIC SHALL RUN THROUGH THIS GATE.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 PROPOSED SITE PLAN

SHEET NO.
 00-C-10



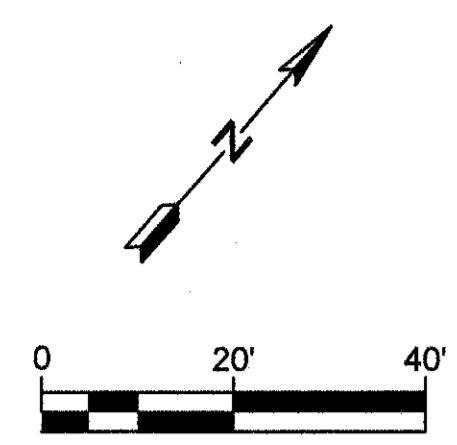
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 STAKING PLAN 1

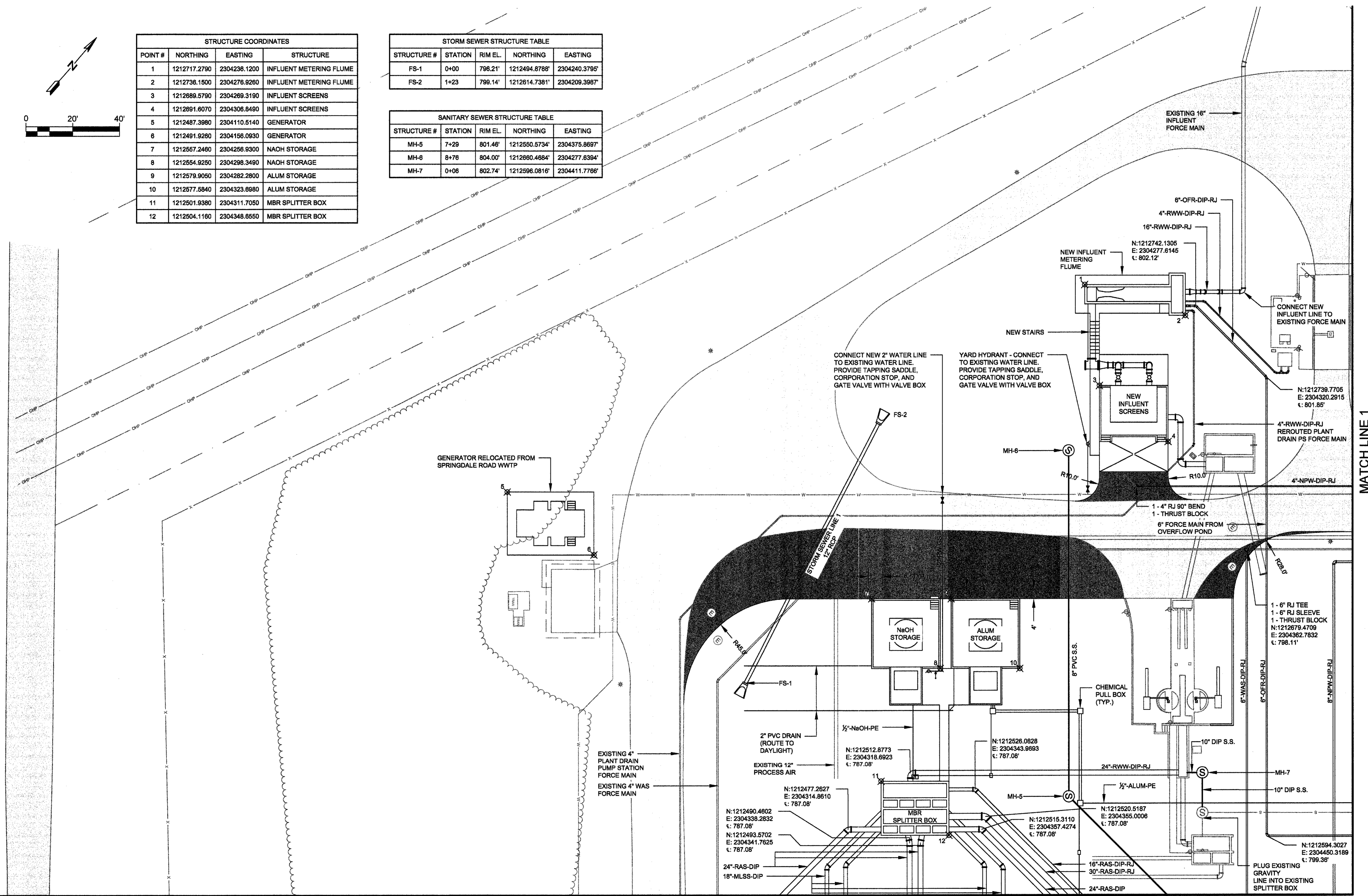
SHEET NO.
 00-C-11



STRUCTURE COORDINATES			
POINT #	NORTHING	EASTING	STRUCTURE
1	1212717.2790	2304236.1200	INFLUENT METERING FLUME
2	1212736.1500	2304276.9260	INFLUENT METERING FLUME
3	1212689.5790	2304269.3190	INFLUENT SCREENS
4	1212691.6070	2304306.8490	INFLUENT SCREENS
5	1212487.3980	2304110.5140	GENERATOR
6	1212491.9280	2304156.0930	GENERATOR
7	1212557.2460	2304256.9300	NAOH STORAGE
8	1212554.9250	2304298.3490	NAOH STORAGE
9	1212579.9050	2304282.2800	ALUM STORAGE
10	1212577.5840	2304323.6980	ALUM STORAGE
11	1212501.9380	2304311.7050	MBR SPLITTER BOX
12	1212504.1160	2304348.6550	MBR SPLITTER BOX

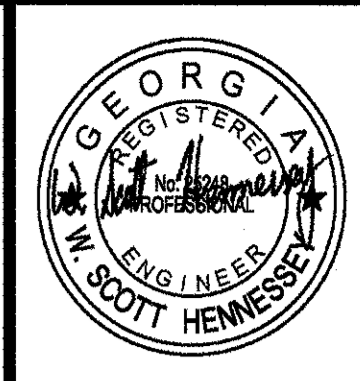
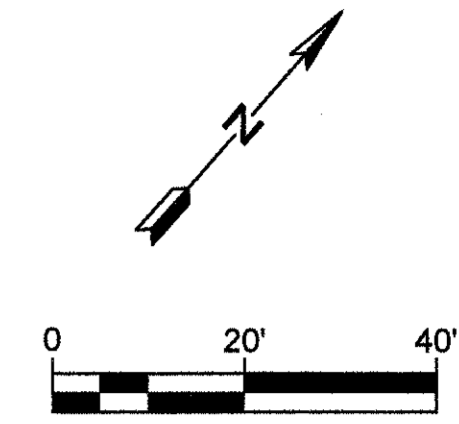
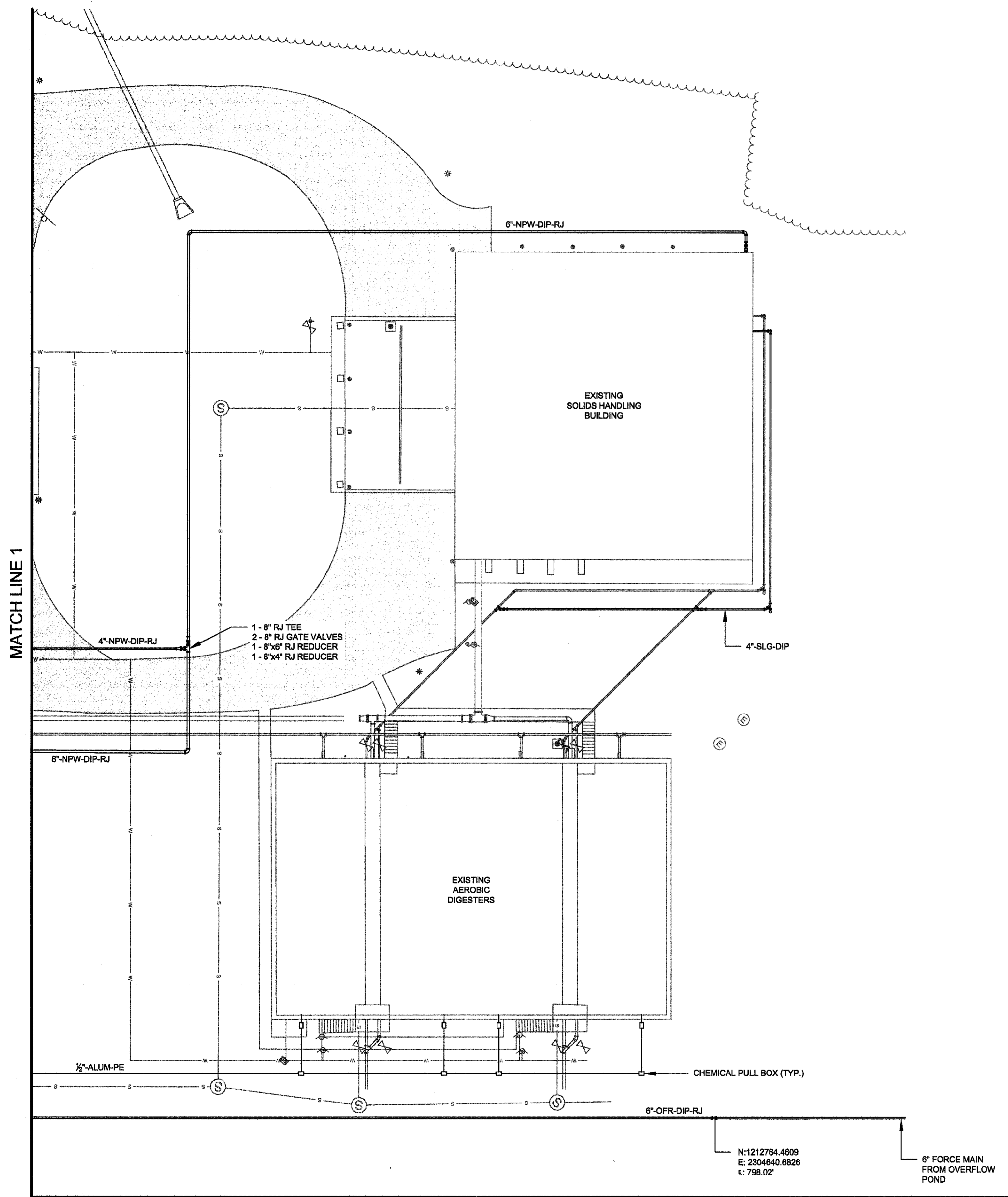
STORM SEWER STRUCTURE TABLE				
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
FS-1	0+00	796.21'	1212494.8788'	2304240.3795'
FS-2	1+23	799.14'	1212614.7381'	2304209.3987'

SANITARY SEWER STRUCTURE TABLE				
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
MH-5	7+29	801.46'	1212550.5734'	2304375.8697'
MH-6	8+76	804.00'	1212660.4684'	2304277.6394'
MH-7	0+06	802.74'	1212596.0816'	2304411.7766'



MATCH LINE A

MATCH LINE 1



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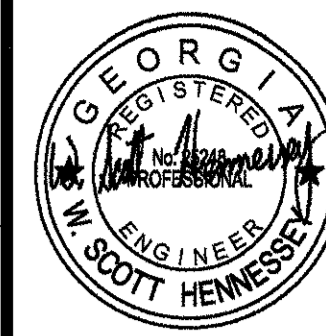
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 STAKING PLAN 2

SHEET NO.
 00-C-12



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REVISION	DATE
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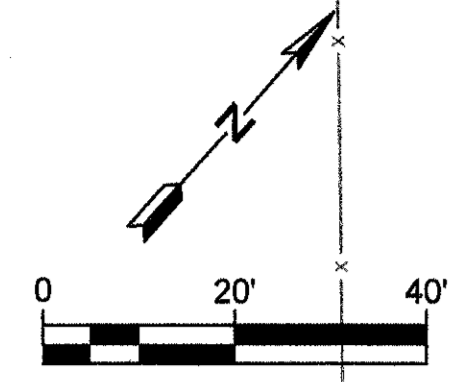
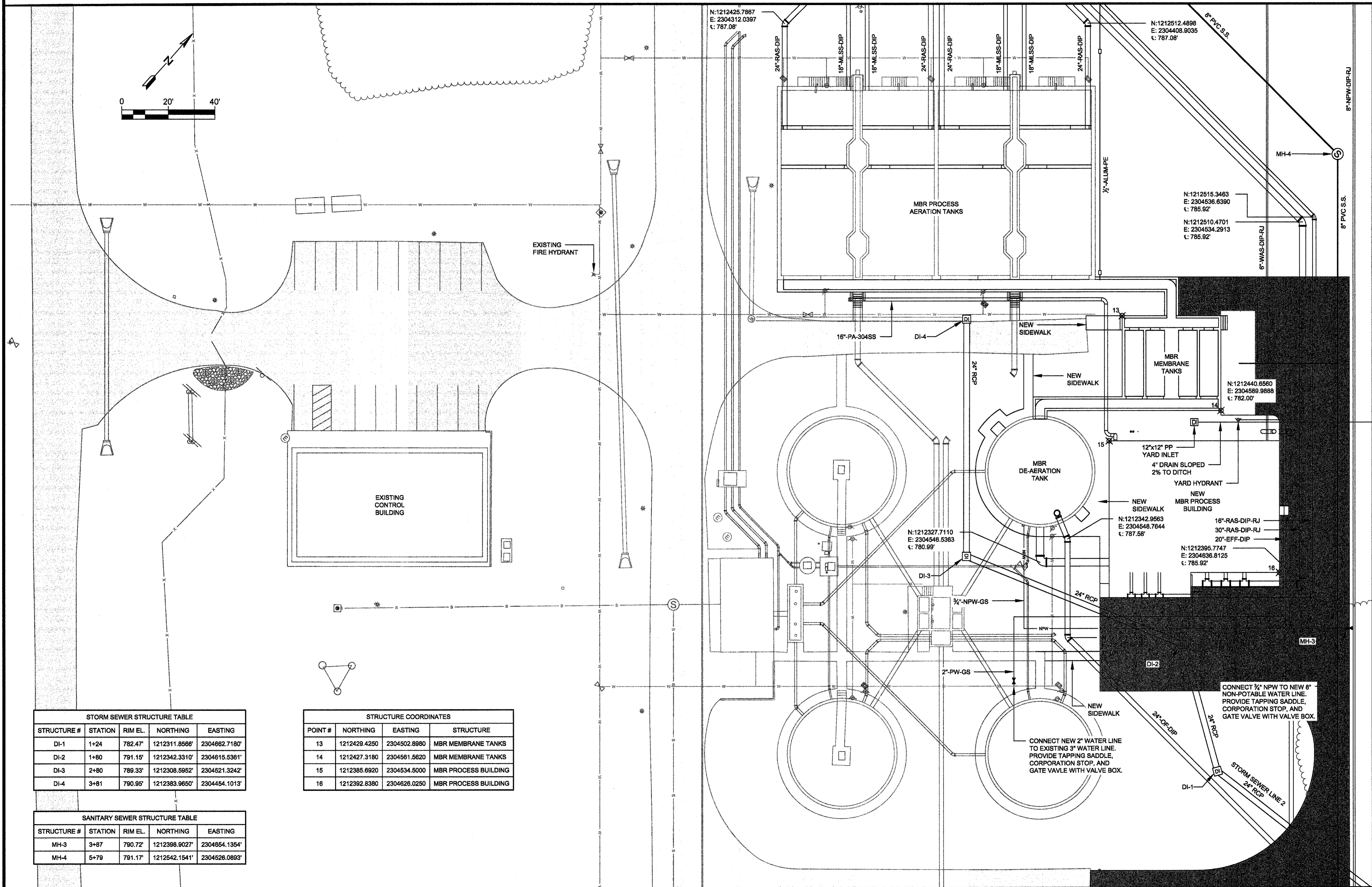
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLAN
 STAKING PLAN 3

SHEET NO.
 00-C-13

MATCH LINE A

MATCH LINE 2

MATCH LINE C



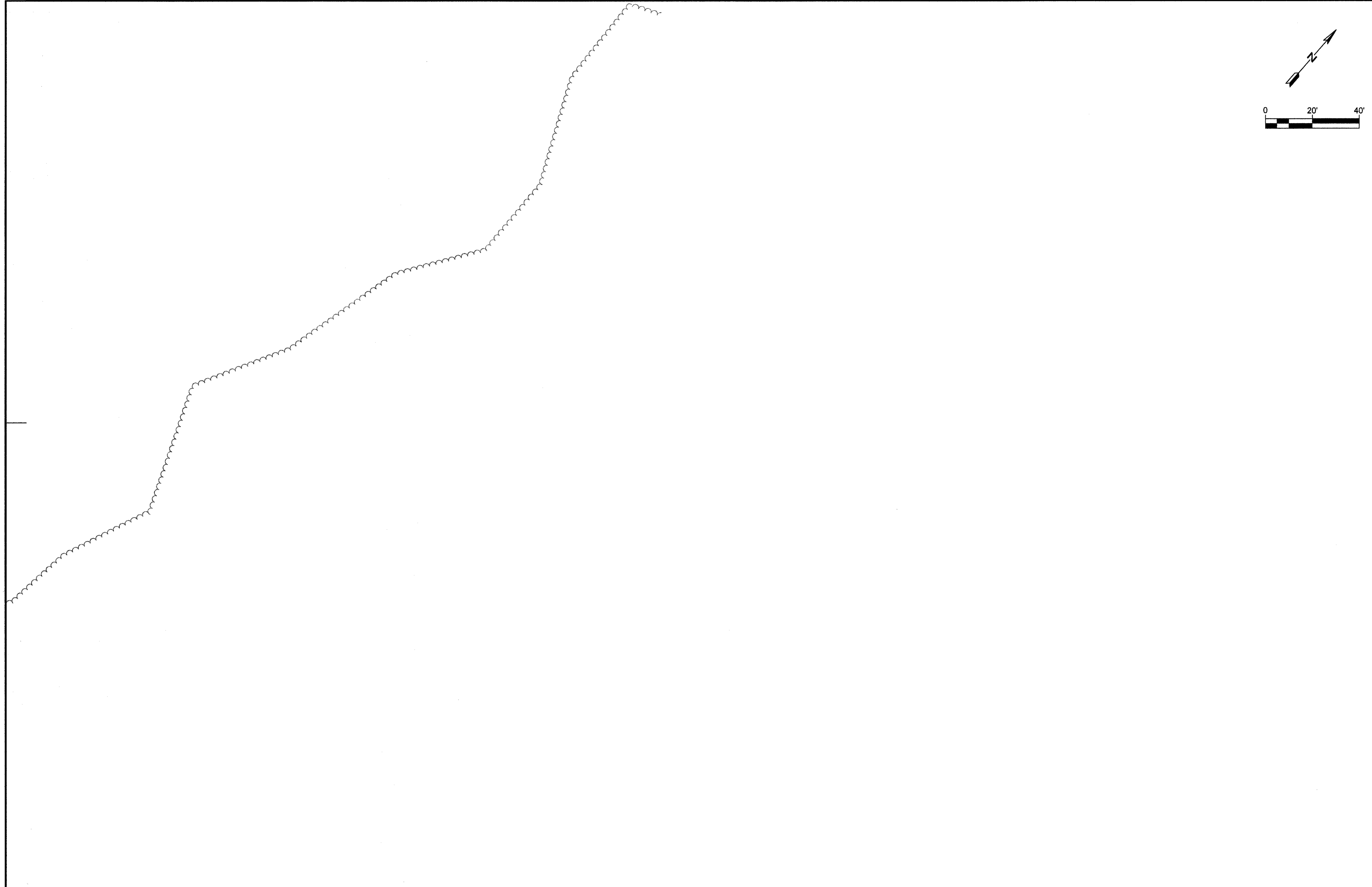
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
DI-1	1+24	782.47'	1212311.8568'	2304662.7180'
DI-2	1+80	791.15'	1212342.3310'	2304615.5361'
DI-3	2+80	789.33'	1212308.5952'	2304521.3242'
DI-4	3+81	790.95'	1212383.9650'	2304454.1013'

POINT #	NORTHING	EASTING	STRUCTURE
13	1212428.4250	2304502.8980	MBR MEMBRANE TANKS
14	1212427.3180	2304561.5620	MBR MEMBRANE TANKS
15	1212385.6920	2304534.5000	MBR PROCESS BUILDING
16	1212392.8380	2304626.0250	MBR PROCESS BUILDING

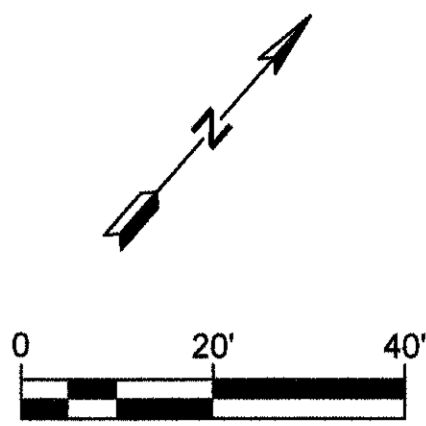
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
MH-3	3+87	790.72'	1212398.9027'	2304854.1354'
MH-4	5+79	791.17'	1212542.1541'	2304526.0893'

MATCH LINE 2

MATCH LINE B



MATCH LINE D



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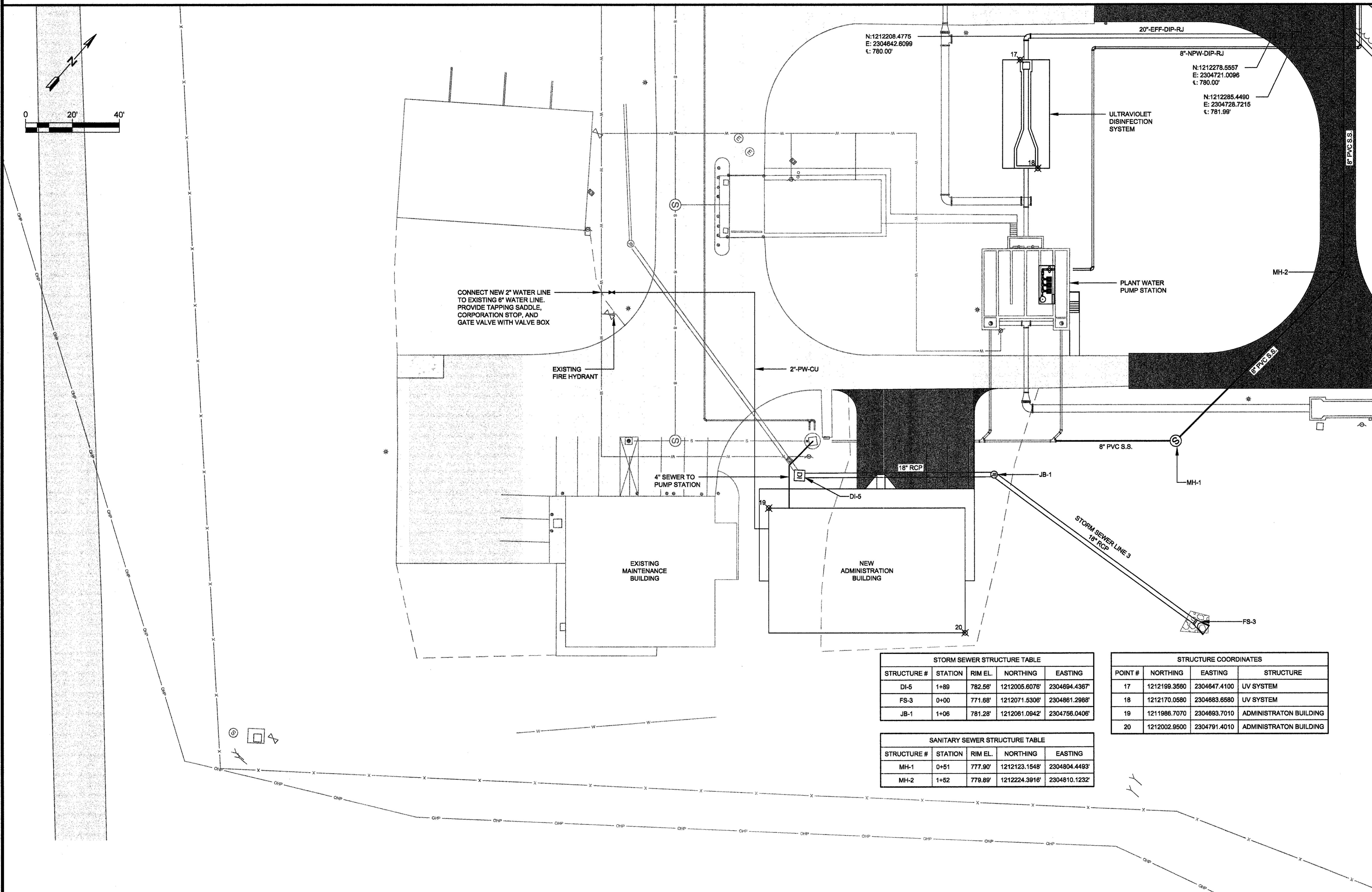
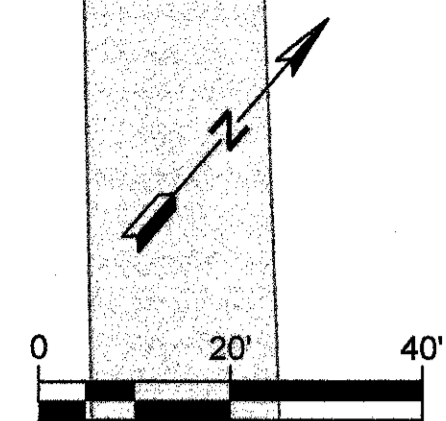
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

TREATMENT PLANT
 STAKING PLAN 4

SHEET NO.
 00-C-14

MATCH LINE C

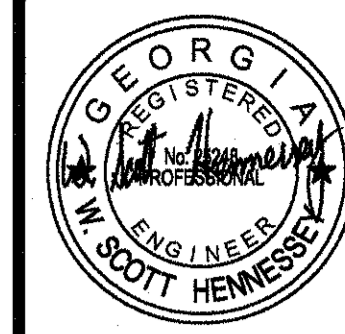


MATCH LINE 3

STORM SEWER STRUCTURE TABLE				
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
DI-5	1+89	782.58'	1212005.6076'	2304694.4367'
FS-3	0+00	771.68'	1212071.5306'	2304861.2988'
JB-1	1+06	781.28'	1212061.0942'	2304756.0405'

STRUCTURE COORDINATES			
POINT #	NORTHING	EASTING	STRUCTURE
17	1212199.3560	2304647.4100	UV SYSTEM
18	1212170.0580	2304883.6580	UV SYSTEM
19	1211986.7070	2304693.7010	ADMINISTRATON BUILDING
20	1212002.9500	2304791.4010	ADMINISTRATON BUILDING

SANITARY SEWER STRUCTURE TABLE				
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
MH-1	0+51	777.90'	1212123.1548'	2304804.4493'
MH-2	1+52	779.89'	1212224.3916'	2304810.1232'



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REVISION	DATE
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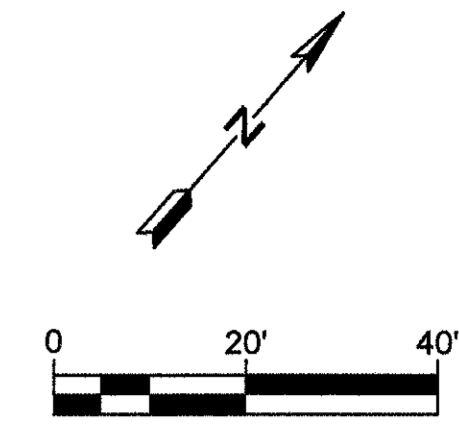
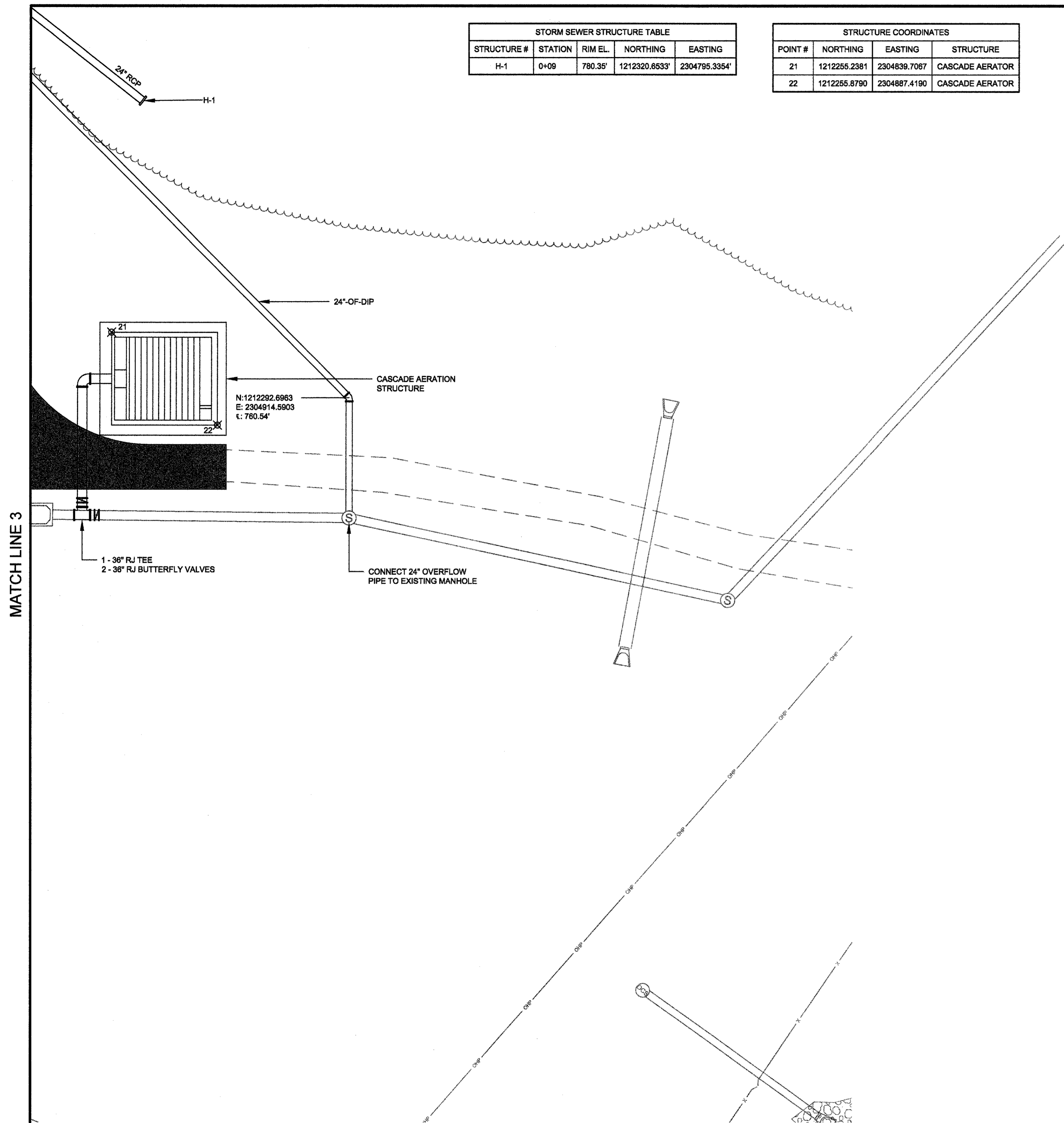
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 STAKING PLAN 5

MATCH LINE D

STORM SEWER STRUCTURE TABLE				
STRUCTURE #	STATION	RIM EL.	NORTHING	EASTING
H-1	0+09	780.35'	1212320.6533'	2304795.3354'

STRUCTURE COORDINATES			
POINT #	NORTHING	EASTING	STRUCTURE
21	1212255.2381	2304839.7067	CASCADE AERATOR
22	1212255.8790	2304887.4190	CASCADE AERATOR



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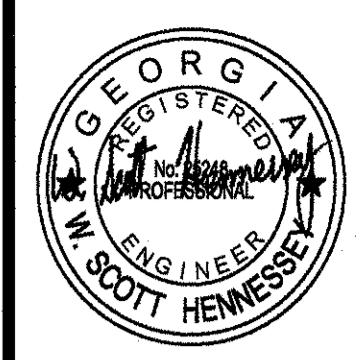
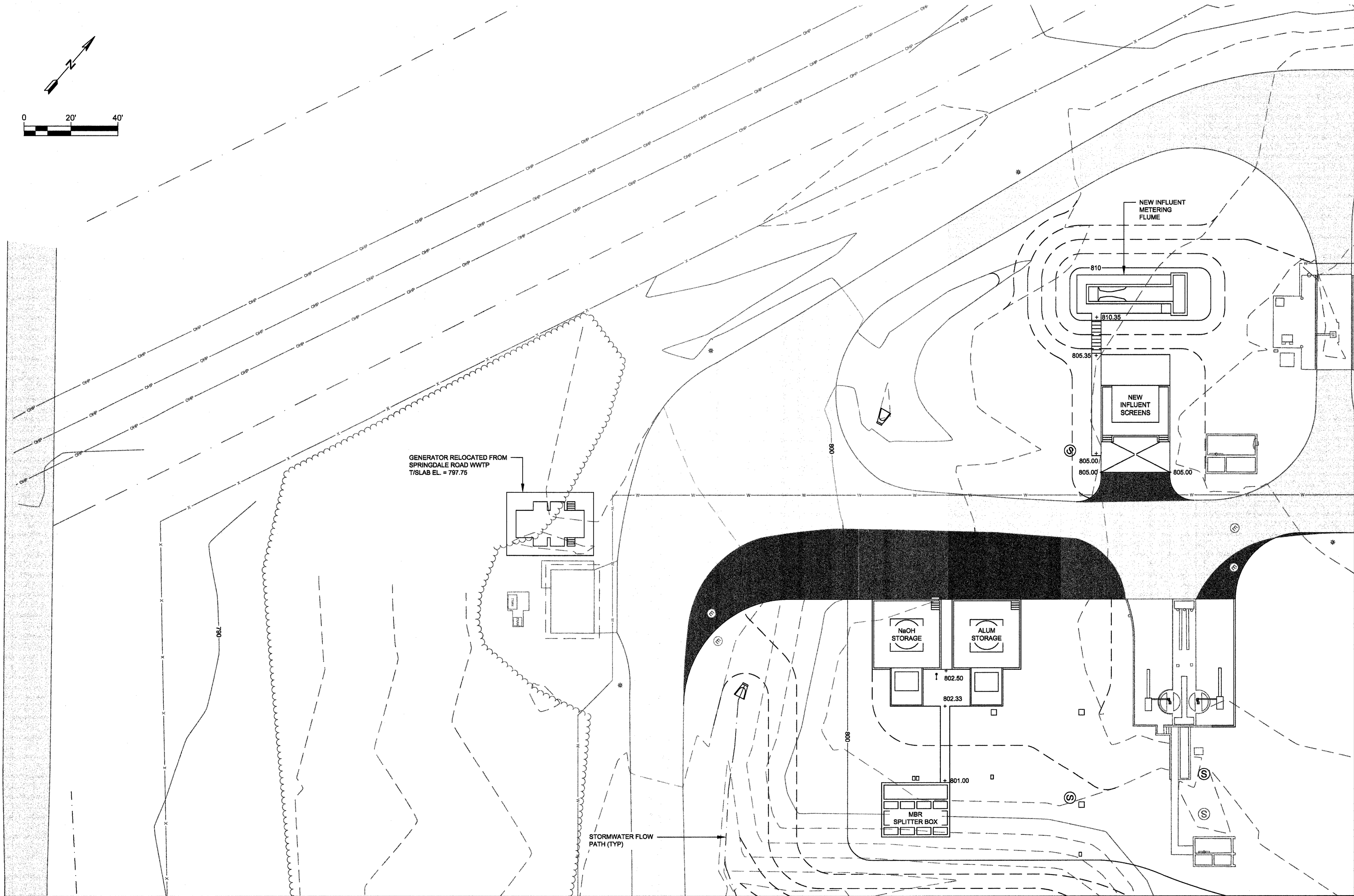
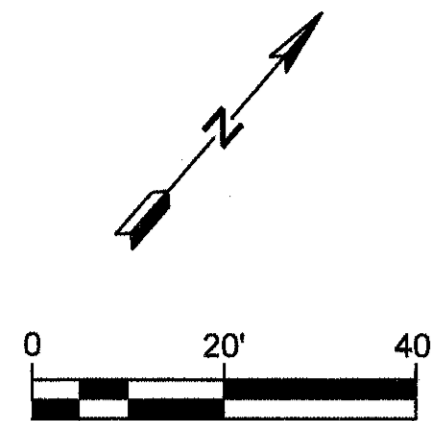
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 STAKING PLAN 6

SHEET NO.
 00-C-16



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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 1

SHEET NO.
 00-C-17

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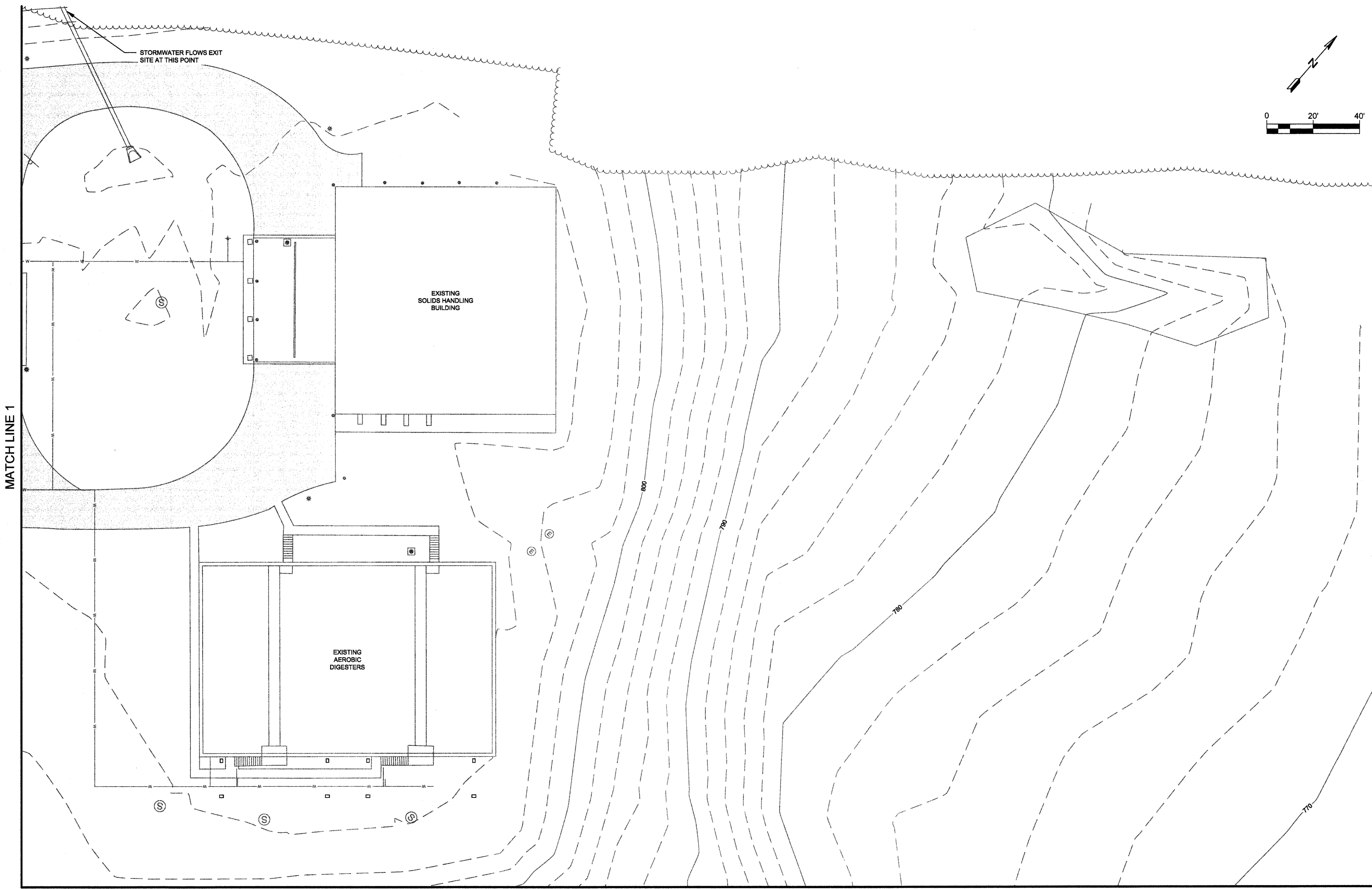
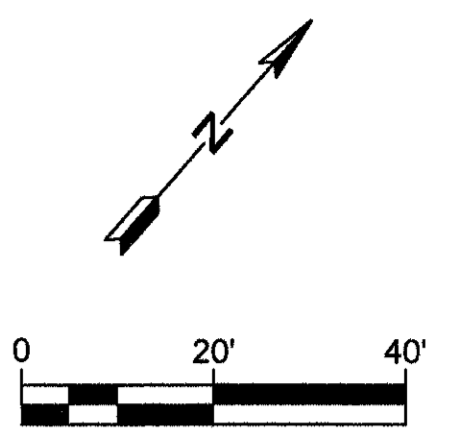
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 2

SHEET NO.
 00-C-18





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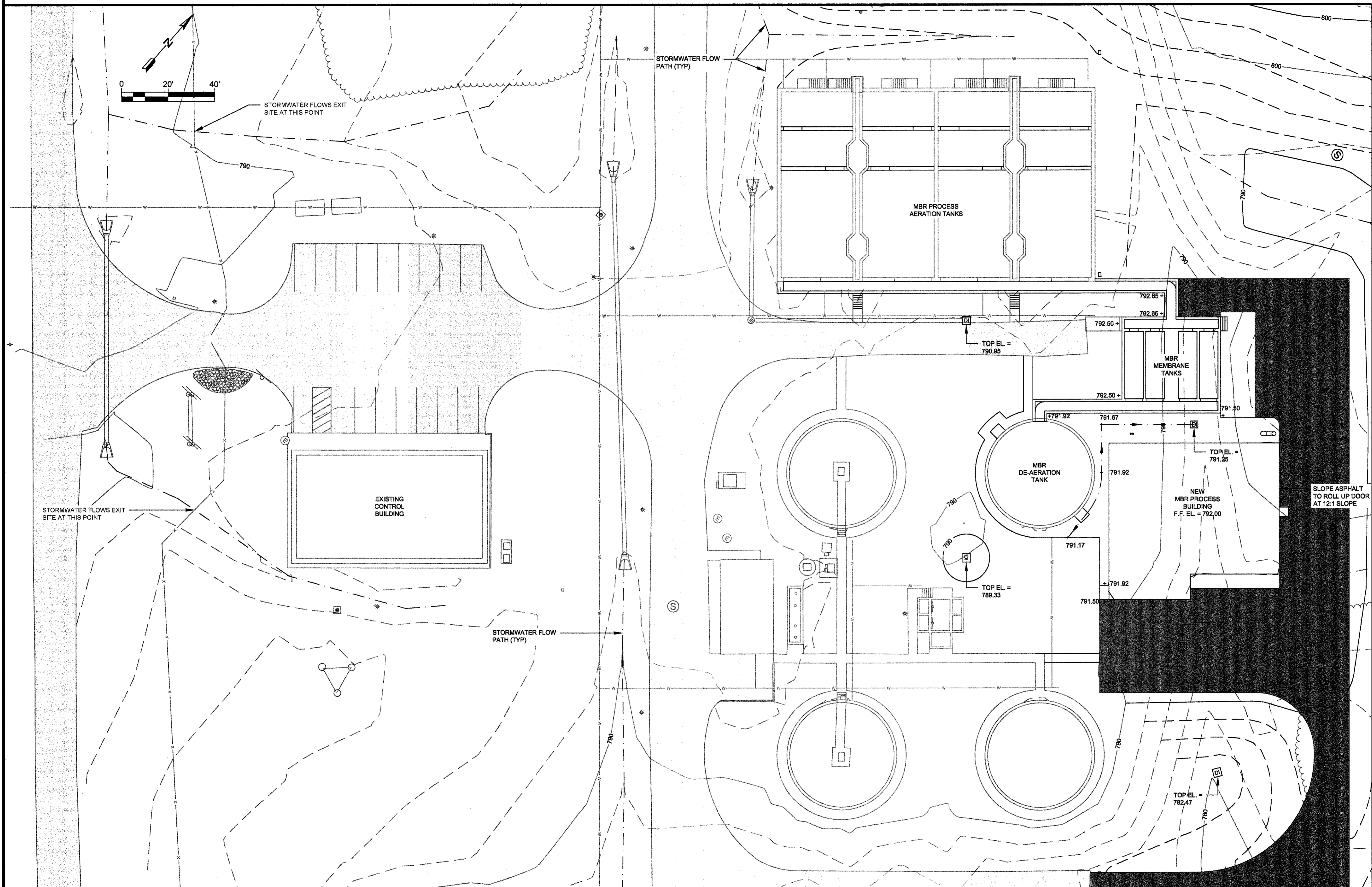
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 3

SHEET NO.
 00-C-19

MATCH LINE A

MATCH LINE 2

MATCH LINE C



MATCH LINE B

MATCH LINE 2



MATCH LINE D



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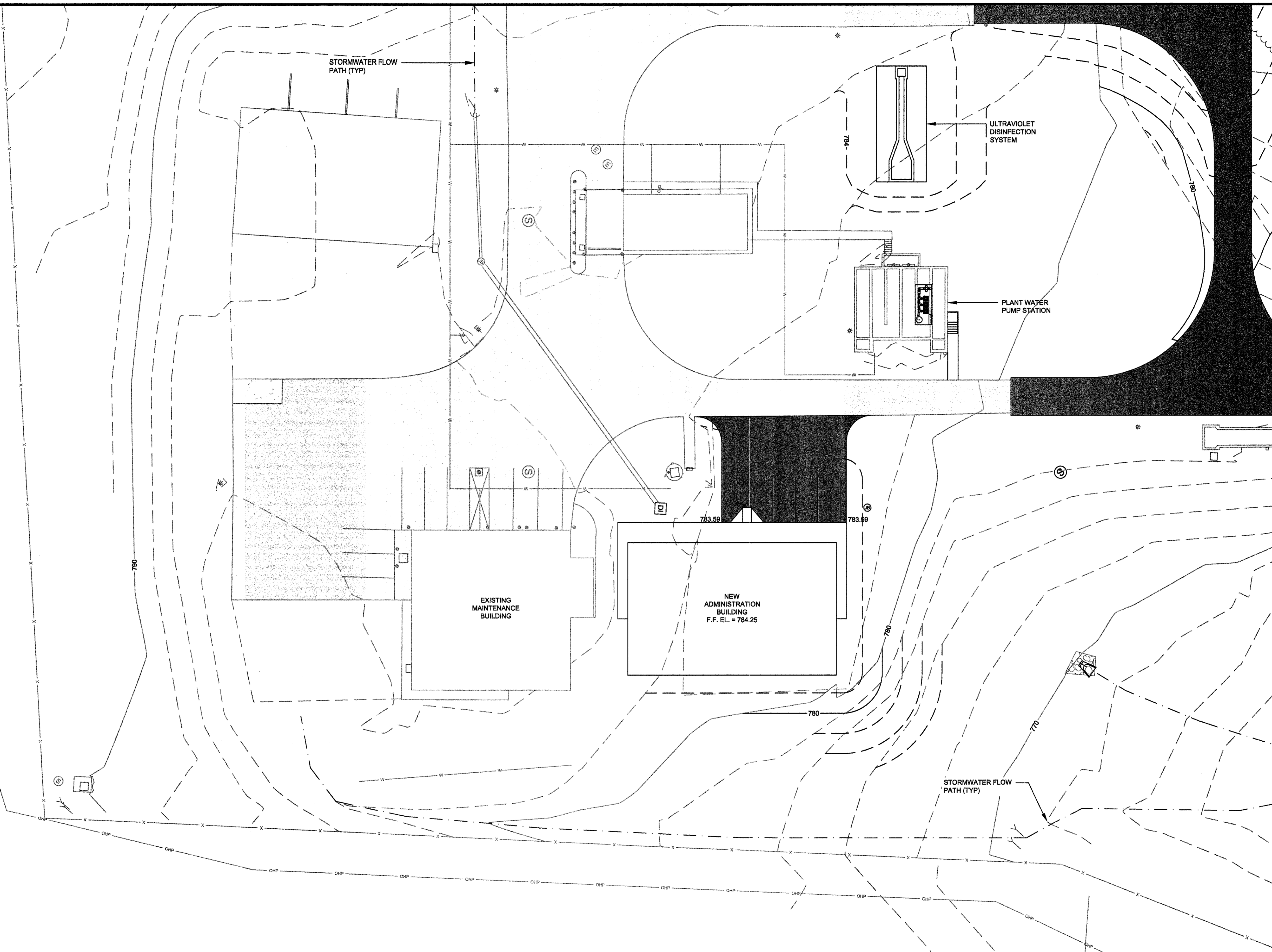
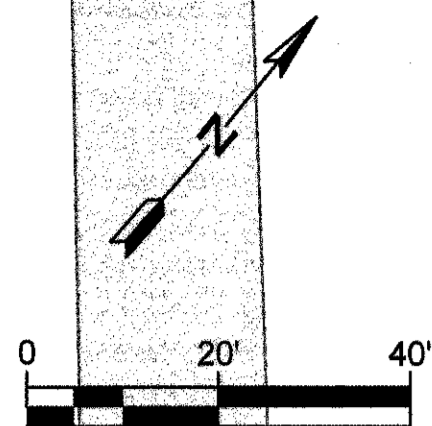
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 4

SHEET NO.
 00-C-20

MATCH LINE C



MATCH LINE 3



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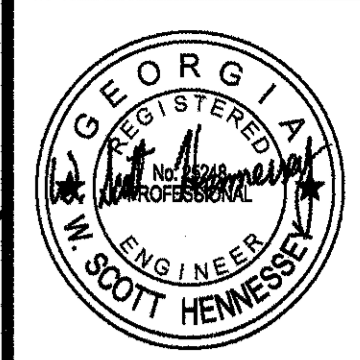
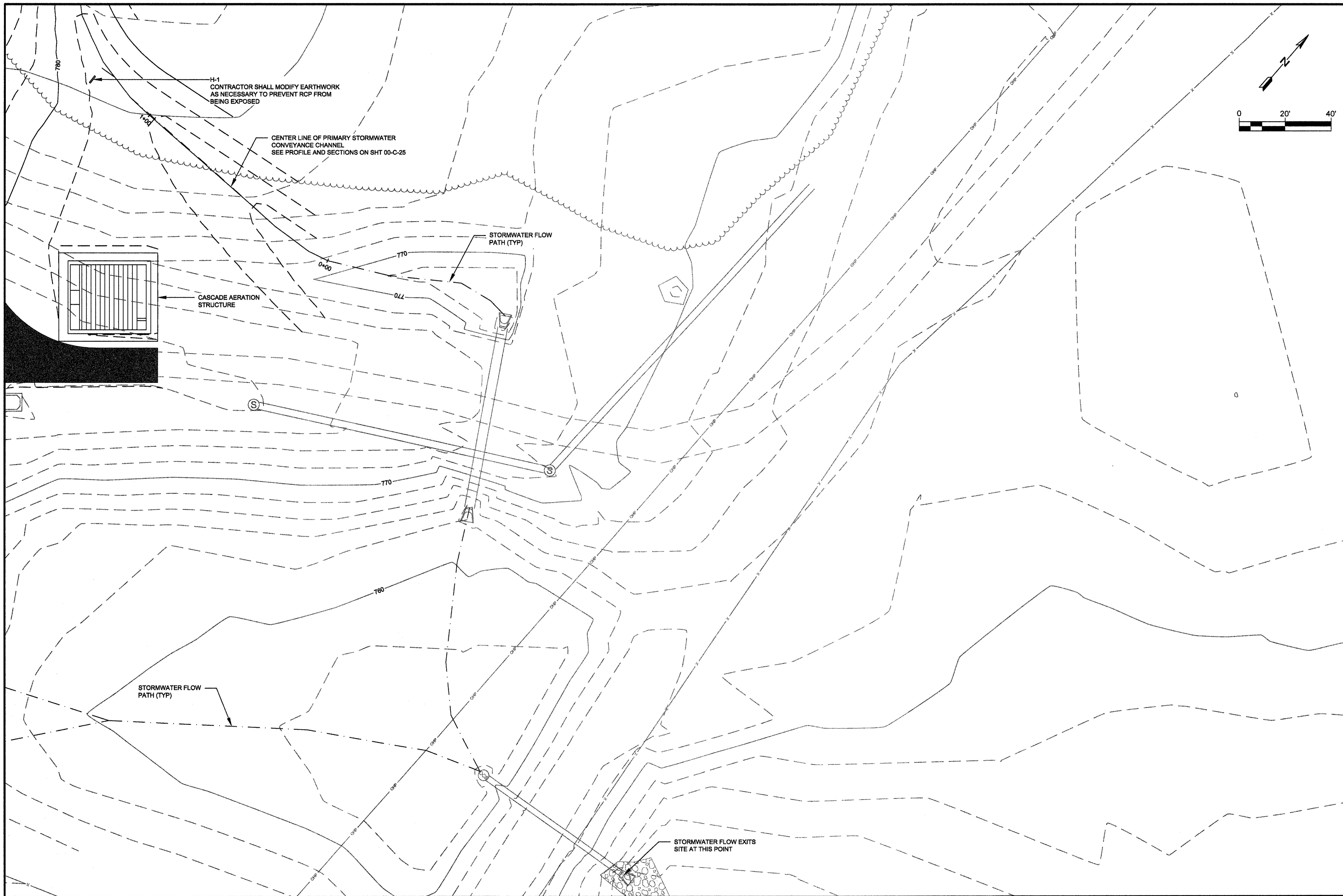
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 5

SHEET NO.
 00-C-21

MATCH LINE D



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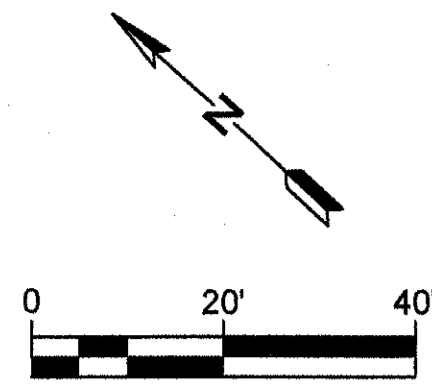
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 GRADING PLAN 6

SHEET NO.
 00-C-22



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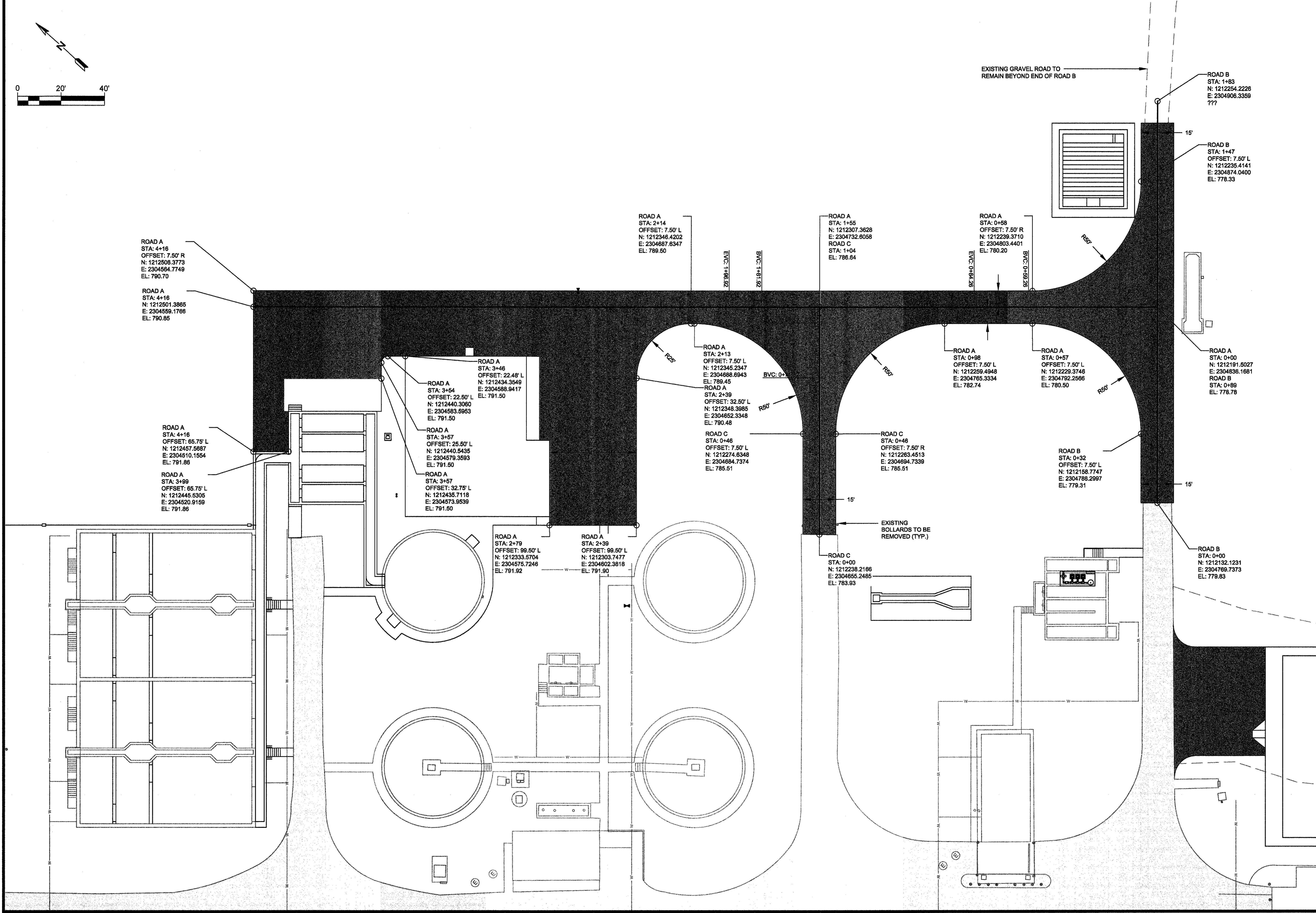
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REVISION	DATE
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DSGN: DE	CHK: WSH
DRWN: DE	

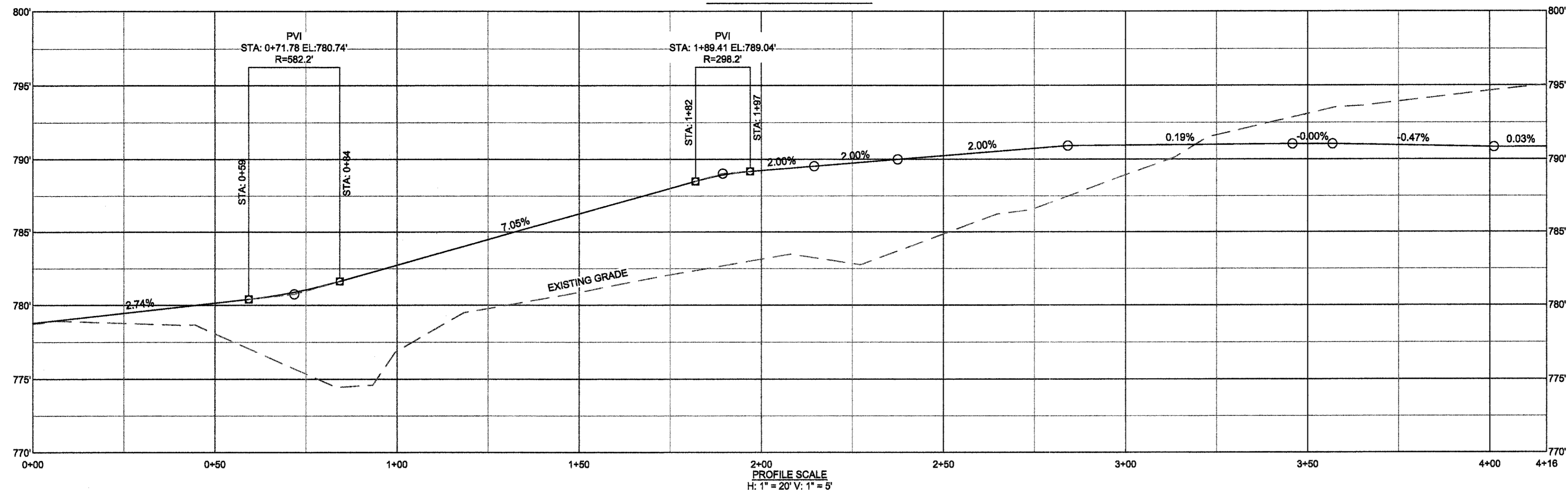
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 ACCESS ROAD PLAN

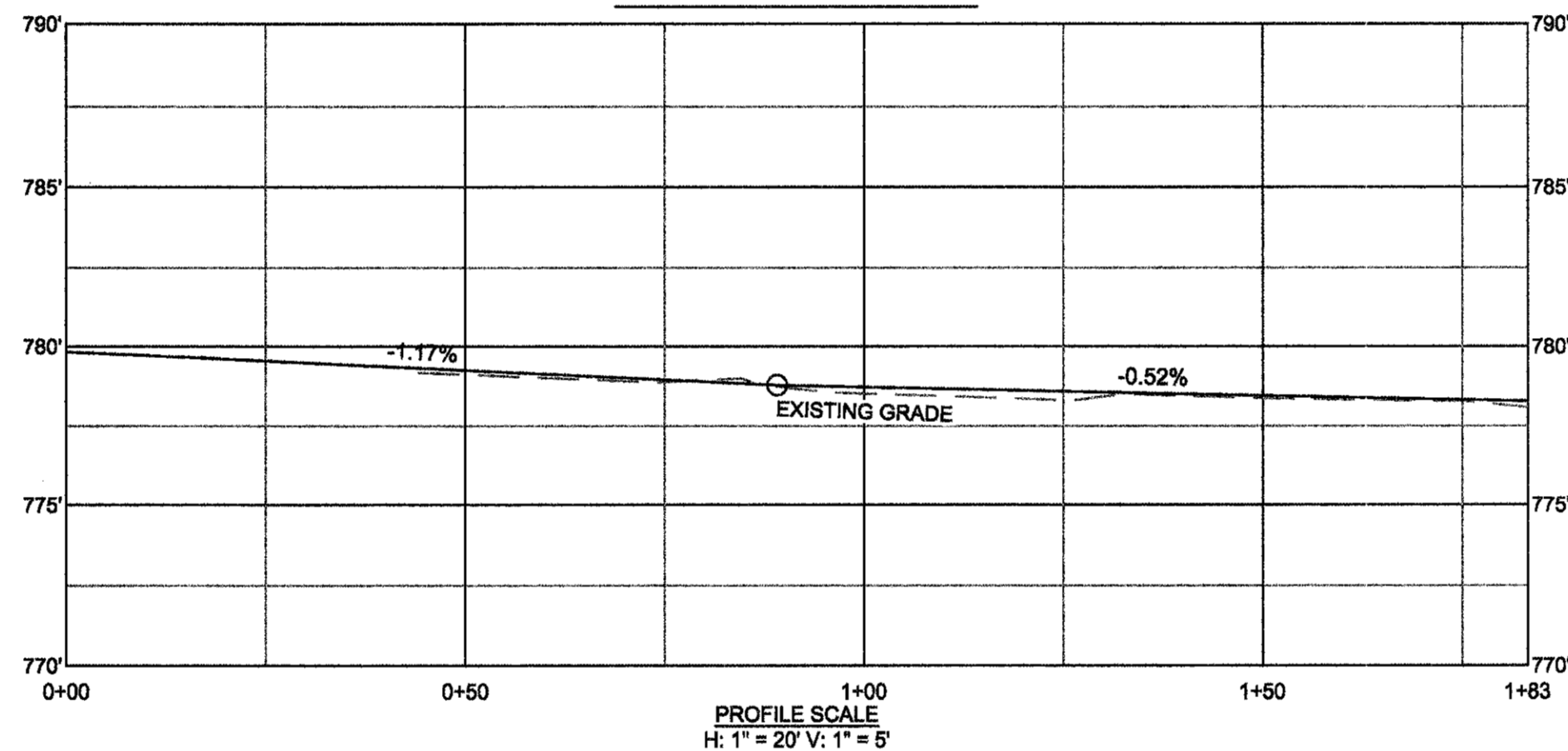
SHEET NO.
 00-C-23



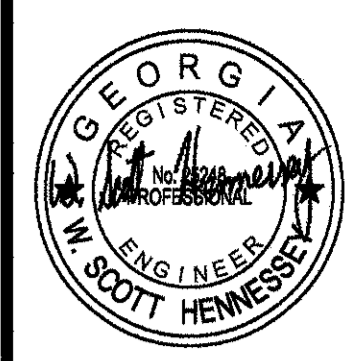
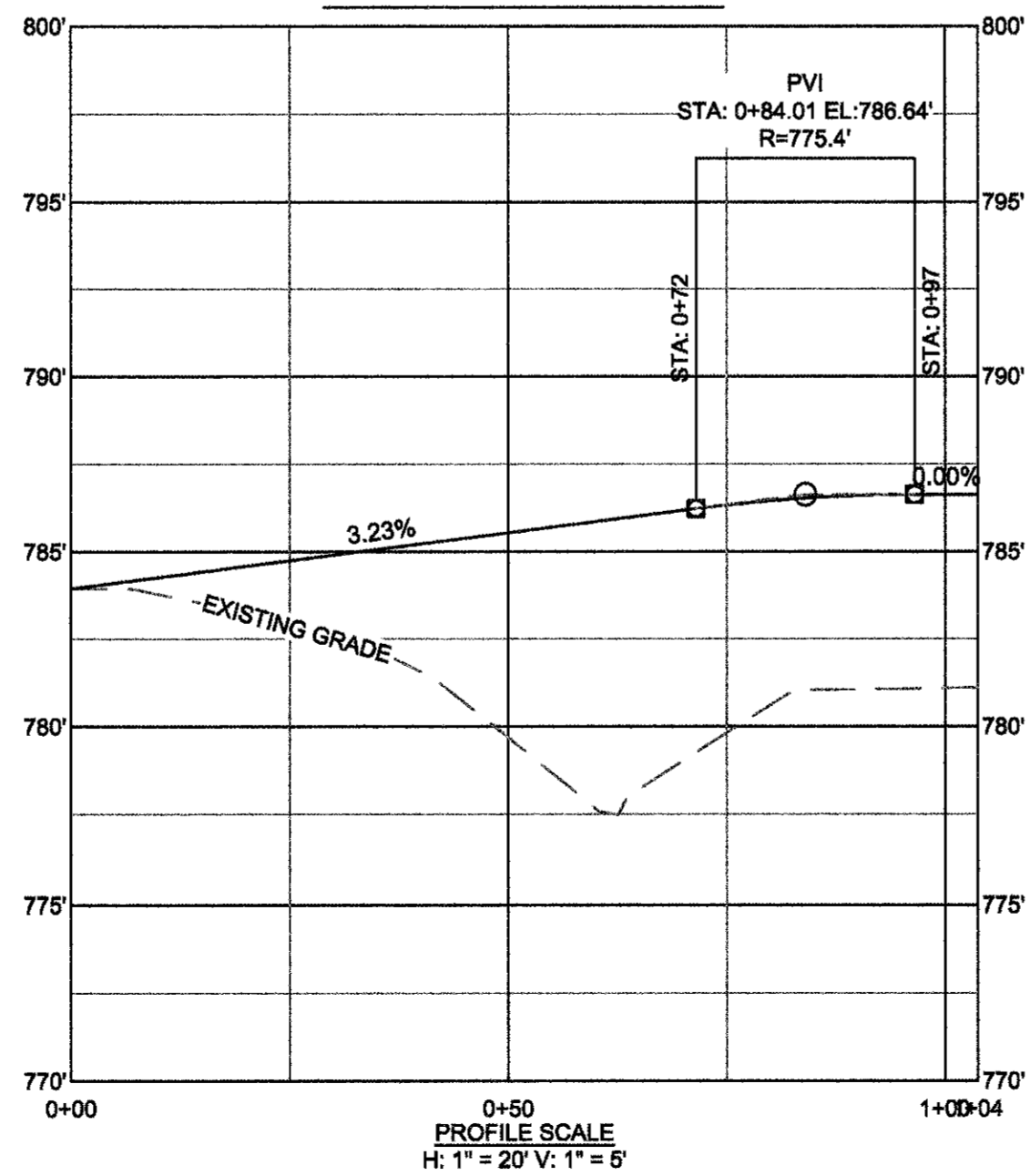
ROAD A PROFILE



ROAD B PROFILE



ROAD C PROFILE



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

DATE:	AUGUST 2016
PROJECT NUMBER:	
DATE:	
REVISION:	

DSGN: DE
 DRWN: DE
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 ACCESS ROAD PROFILES

SHEET NO.
 00-C-24



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLWORTH ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

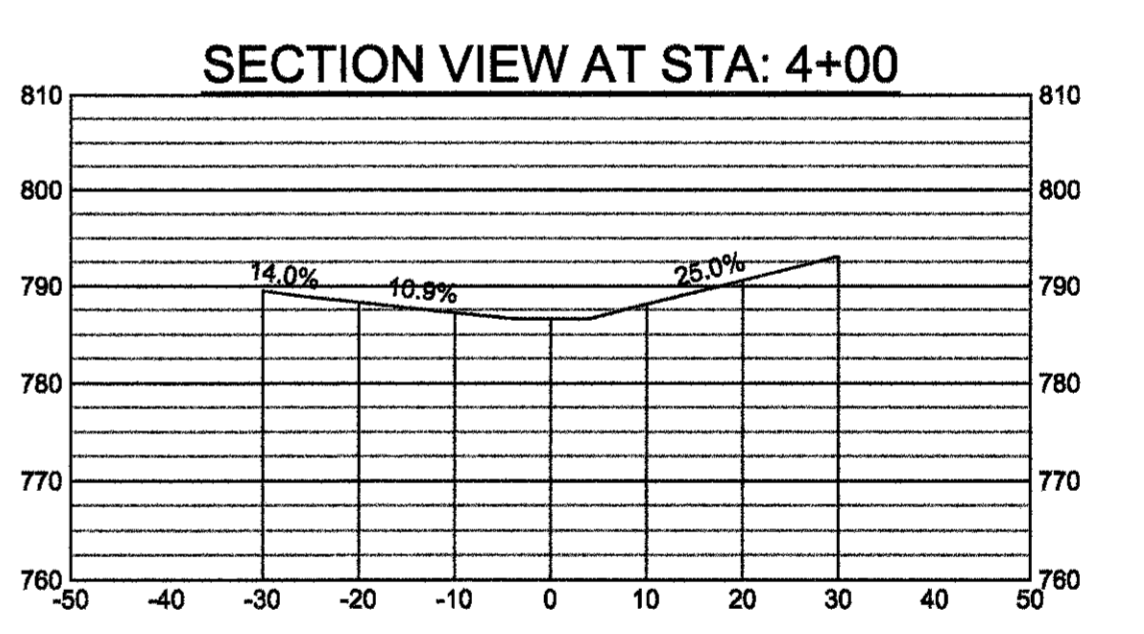
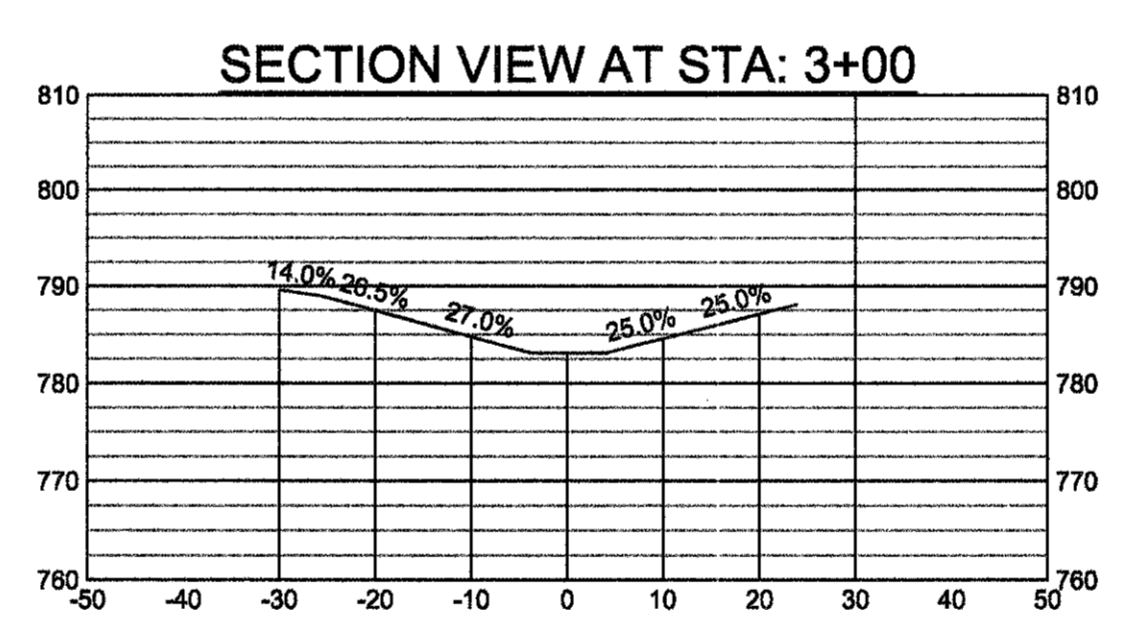
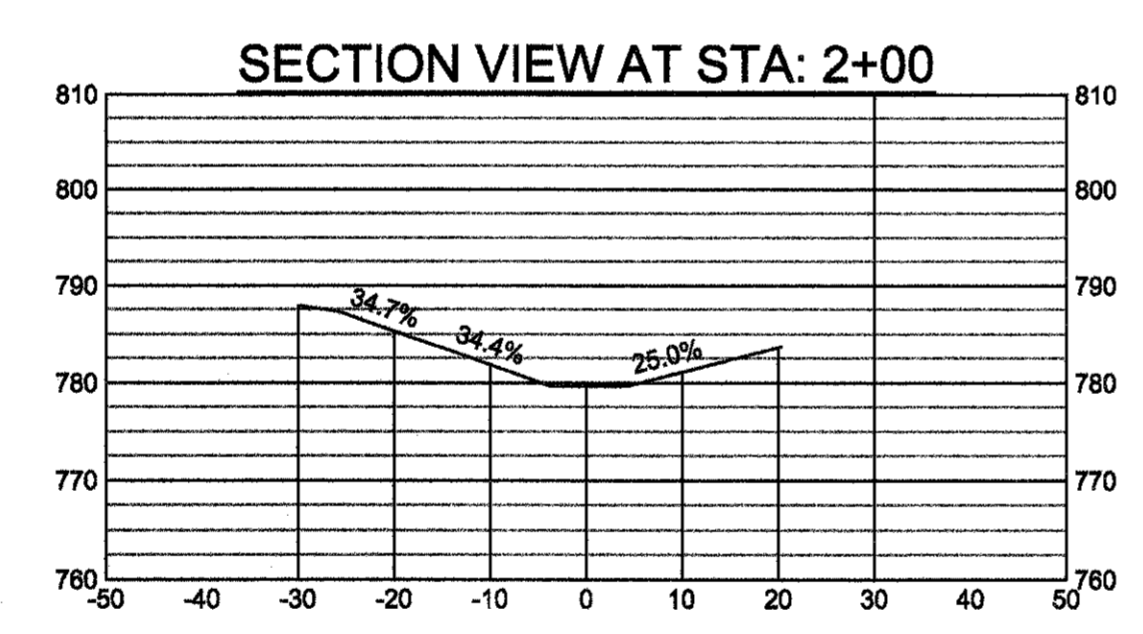
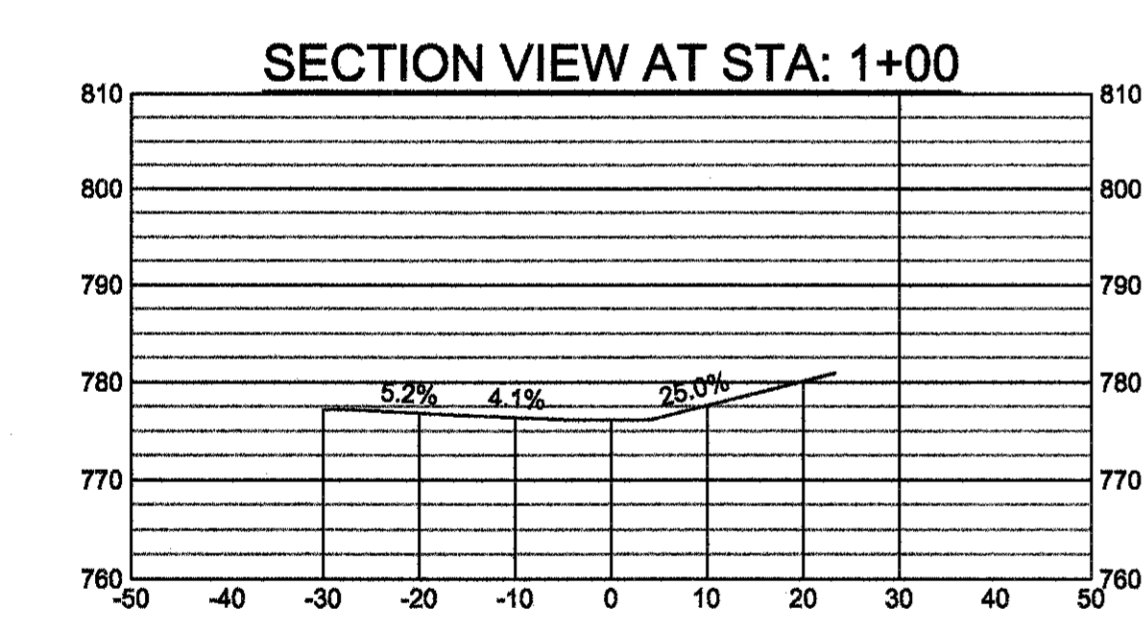
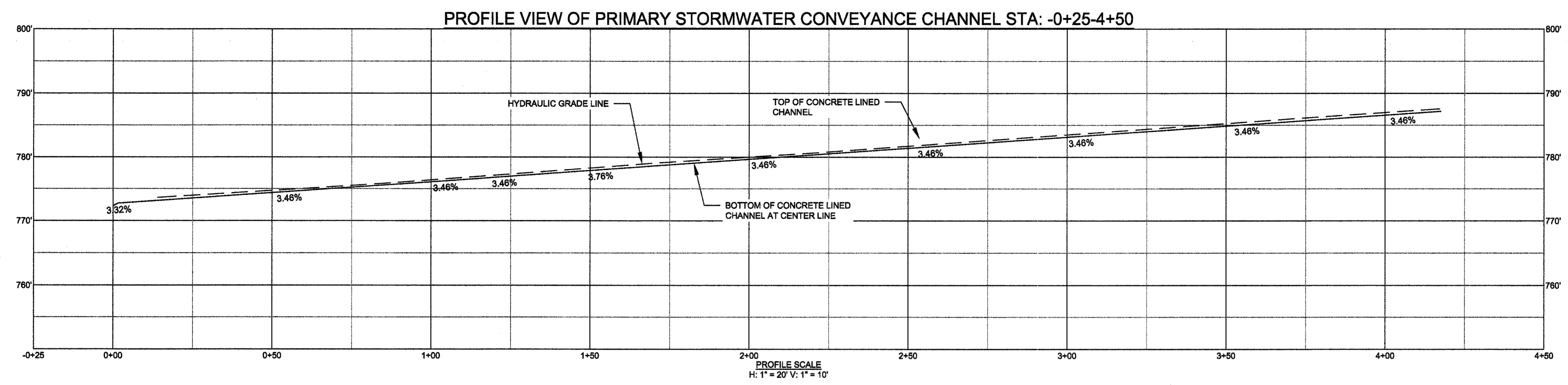
PROJECT NUMBER:	DATE:
△	AUGUST 2016
REVISION	DATE

DSGN: AHW
 DRWN: AHW
 CHCK: WSH

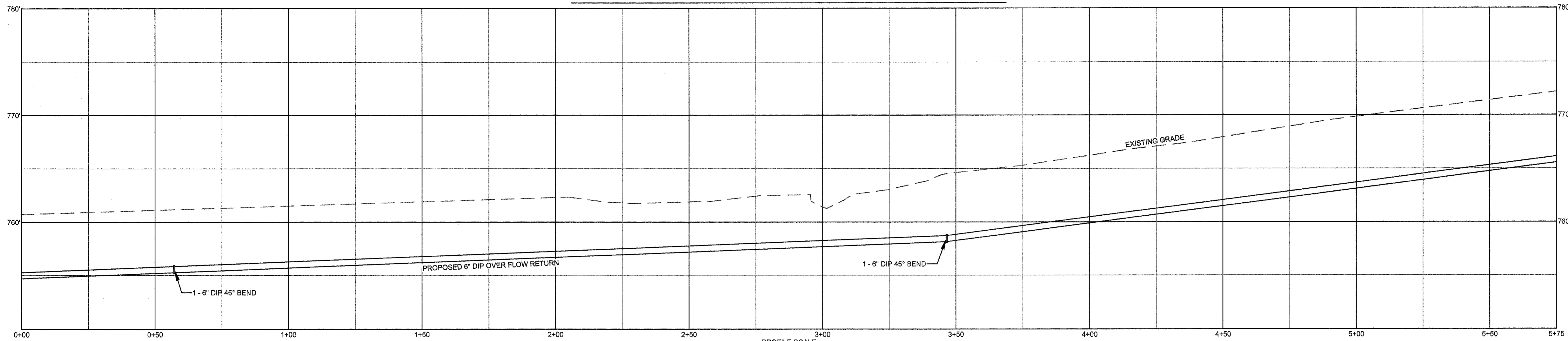
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 STORMWATER MANAGEMENT
 PROFILE AND SECTION

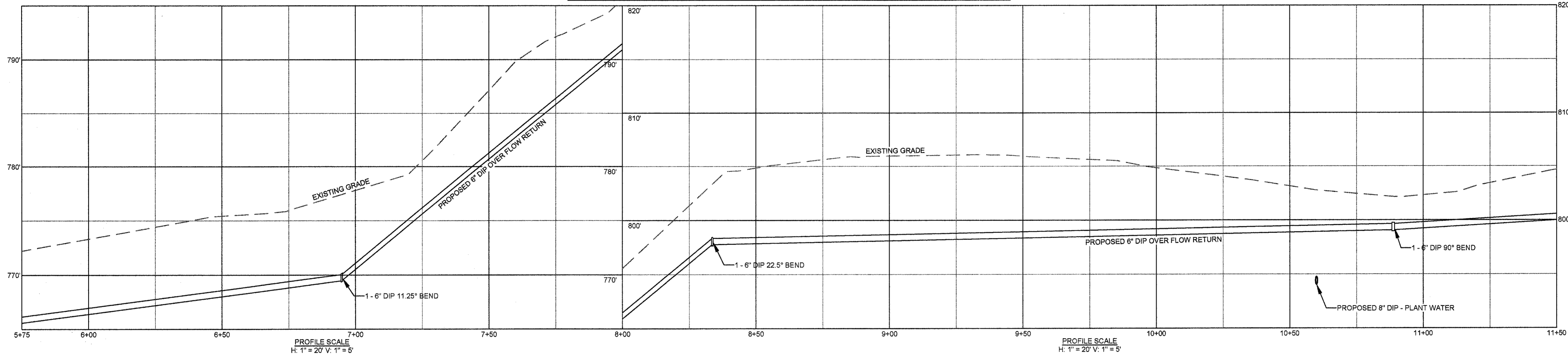
SHEET NO.
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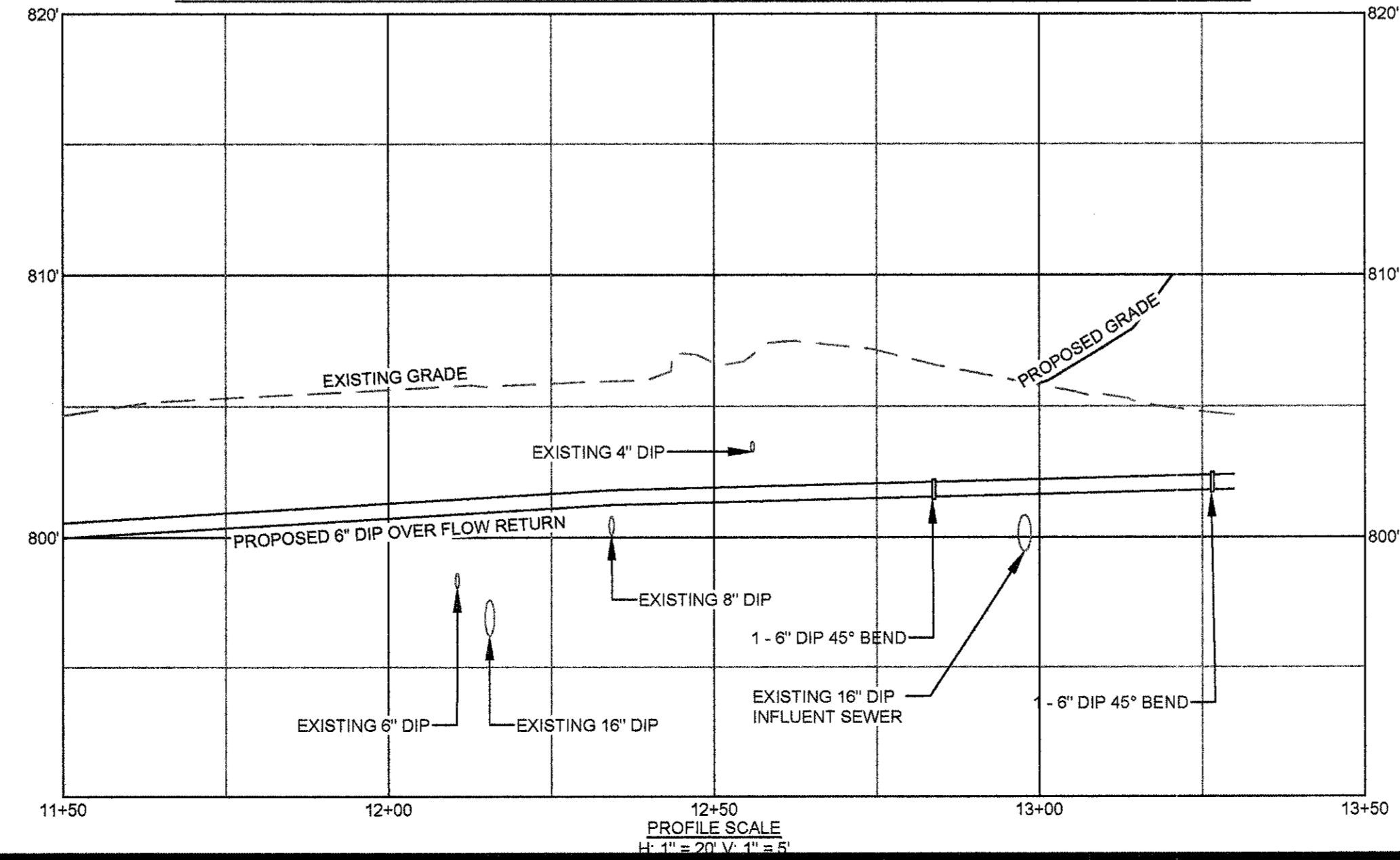
PROFILE VIEW OF 6" OVERFLOW RETURN LINE STA: 0+00 - 5+75



PROFILE VIEW OF 6" OVERFLOW RETURN LINE STA: 5+75 - 11+50



PROFILE VIEW OF 6" OVERFLOW RETURN LINE STA: 11+50 - END



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(770) 429-0001

PROJECT NUMBER:	DATE:
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REVISION	DATE
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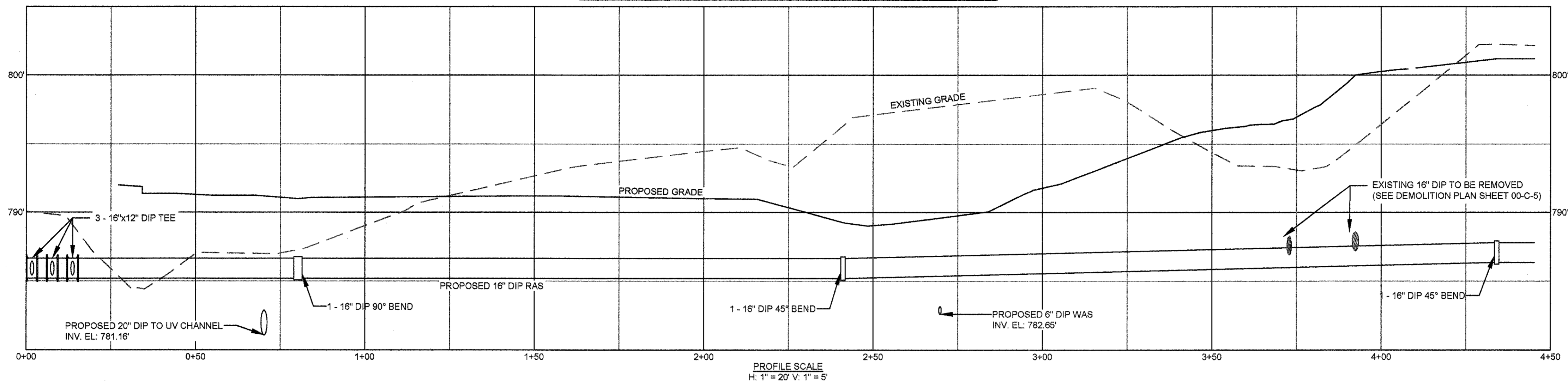
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CHK: WSH

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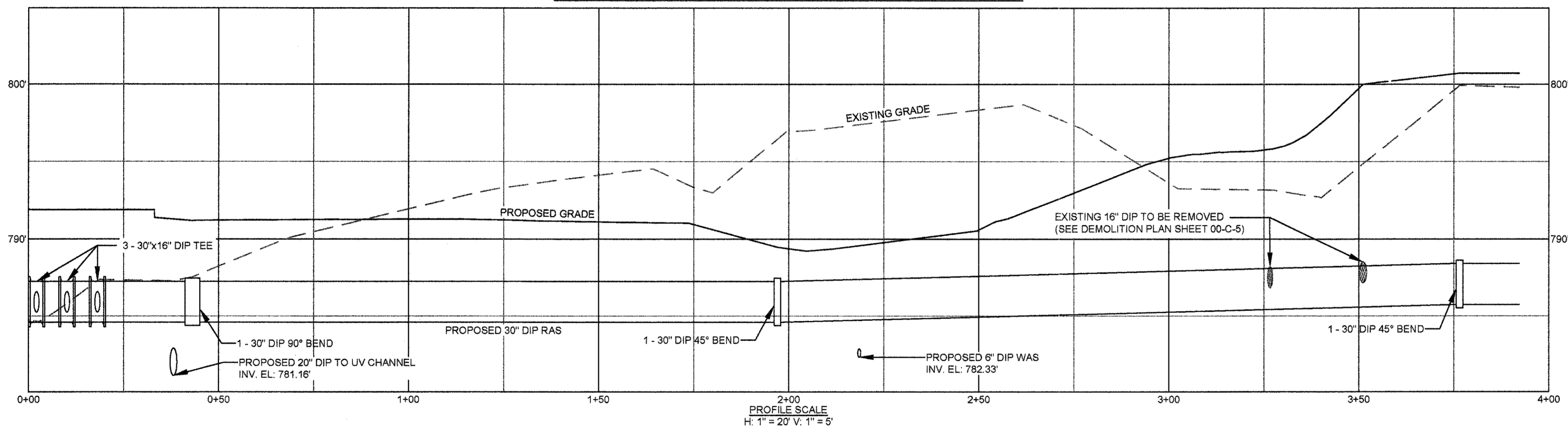
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
TREATMENT PLANT
YARD PIPING PROFILES (SHEET 1 OF 3)

SHEET NO.
00-C-26

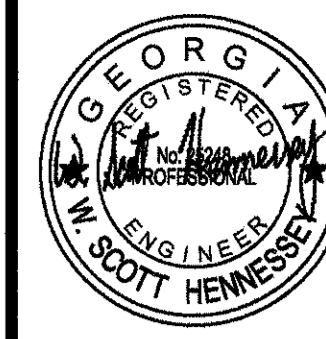
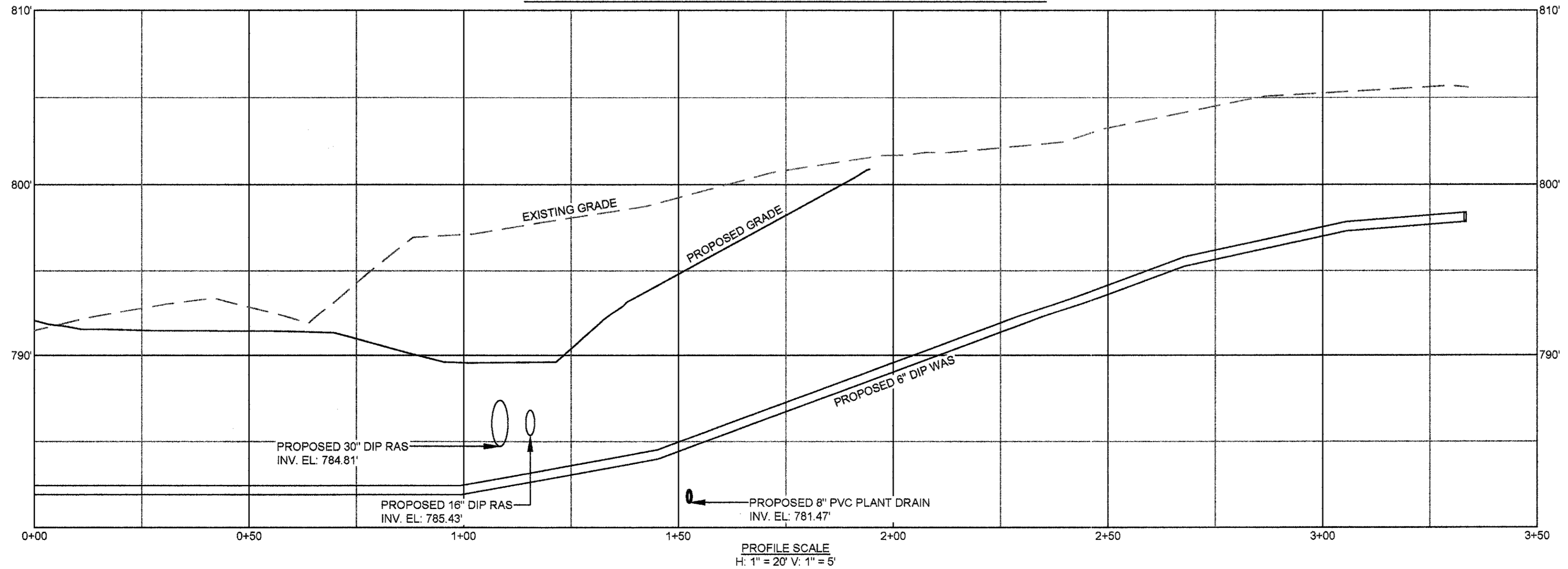
PROFILE VIEW OF 16" RAS LINE STA: 0+00 - 4+50



PROFILE VIEW OF 30" RAS LINE STA: 0+00 - 4+00



PROFILE VIEW OF 6" WAS LINE STA: 0+00 - 3+50



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 (770) 429-0001

PROJECT NUMBER:	DATE:
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REVISION	DATE
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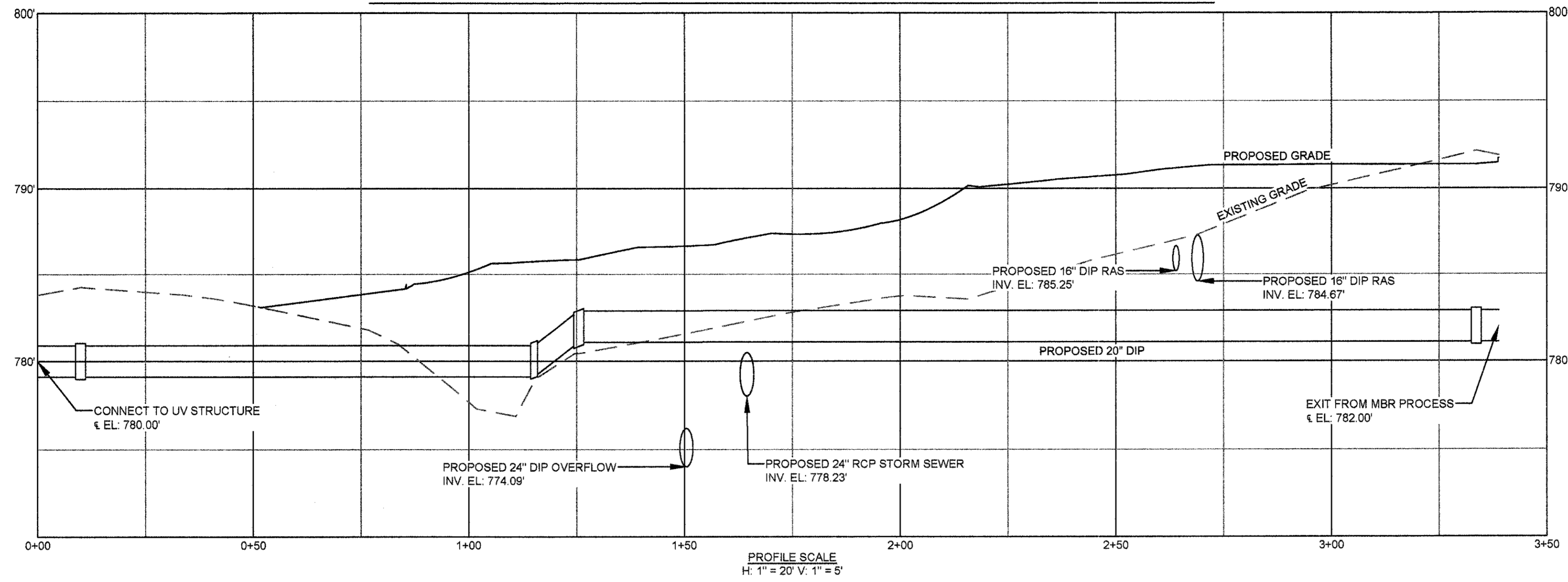
DSGN: DE
 DRWN: DE
 CHCK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 YARD PIPING PROFILES (SHEET 2 OF 3)

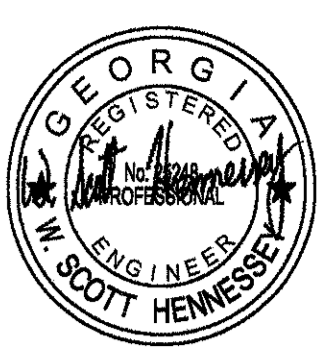
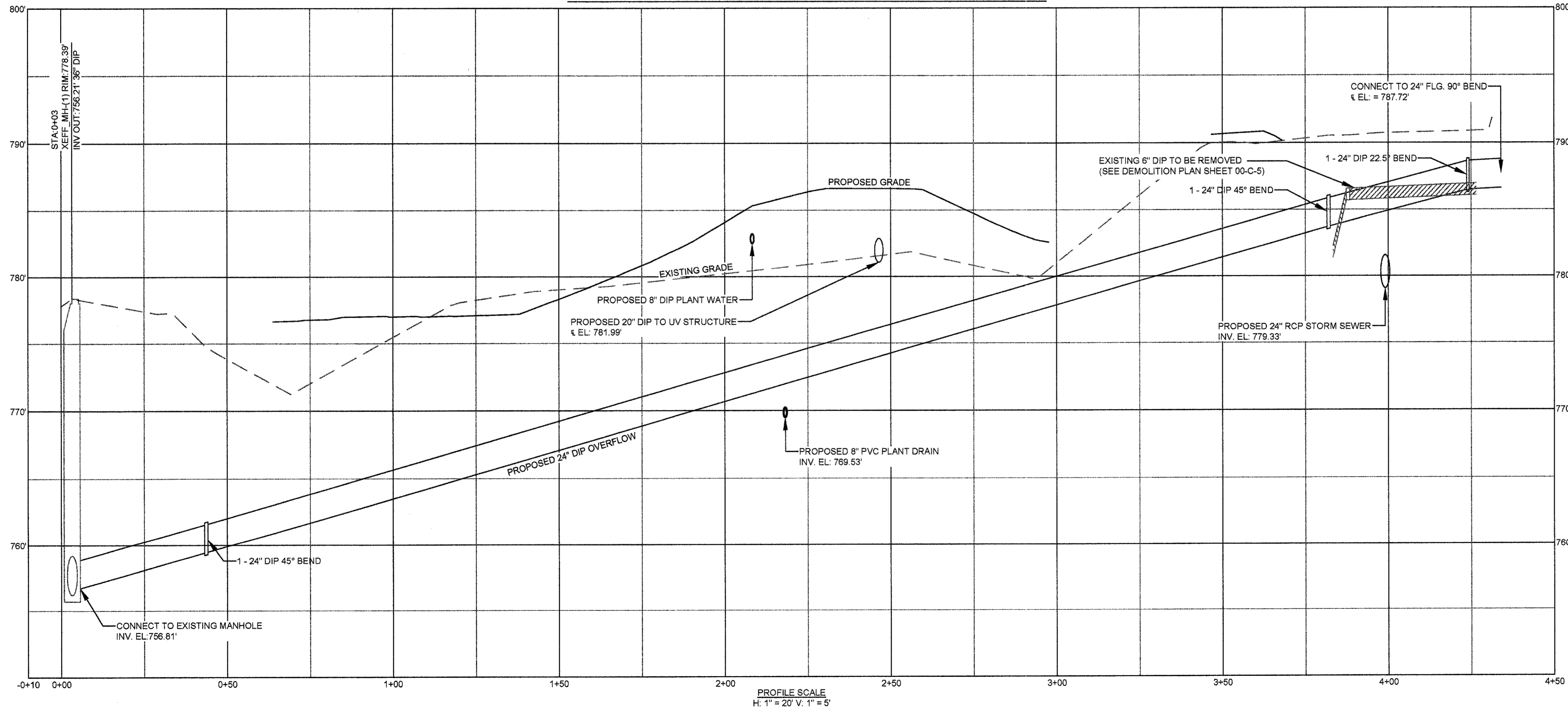
SHEET NO.
 00-C-27

L:\Henry County WA\CVARF Design\Drawings\Sheets\CS-Pipe Profiles.dwg - 8/26/2016

PROFILE VIEW OF 20" EFFLUENT LINE FROM MBR PROCESS STA: 0+00 - END



PROFILE VIEW OF 24" OVERFLOW LINE STA: -0+10 - 4+50



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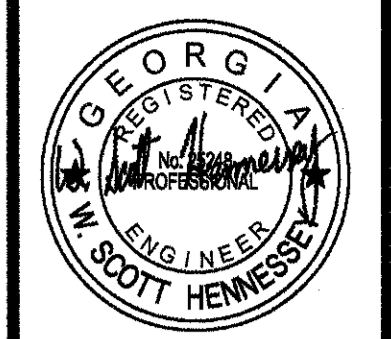
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DE
 DRWN: DE
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 YARD PIPING PROFILES (SHEET 3 OF 3)

SHEET NO.
 00-C-28



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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
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(770) 429-0001

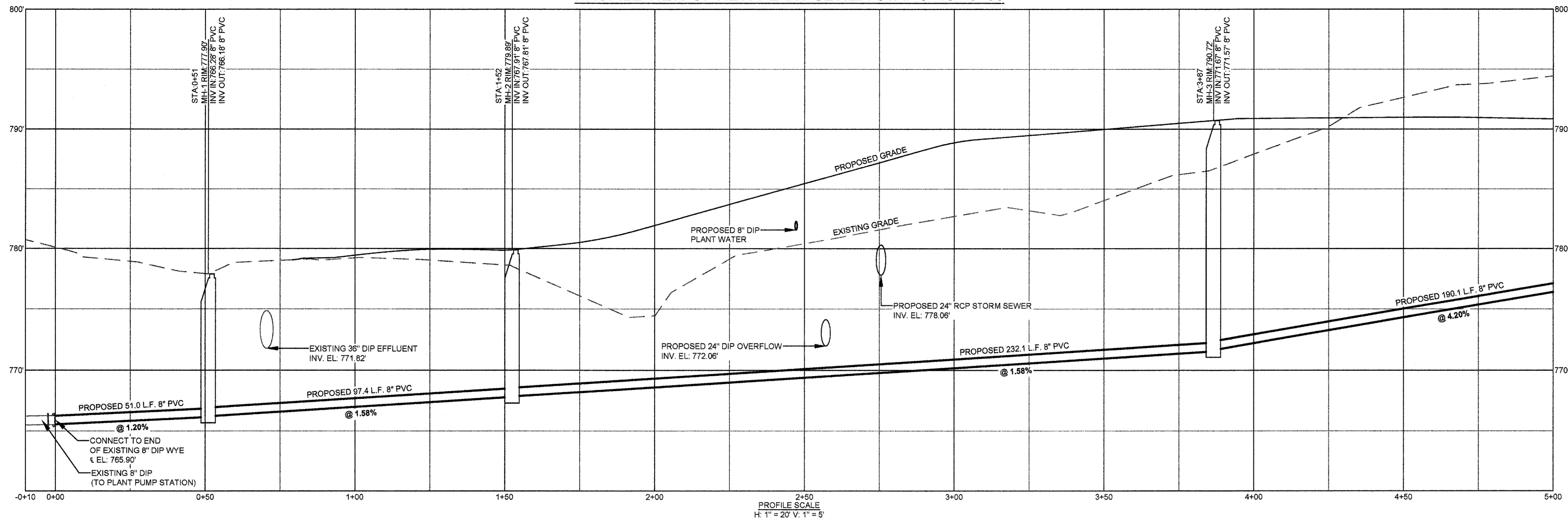
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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CHK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

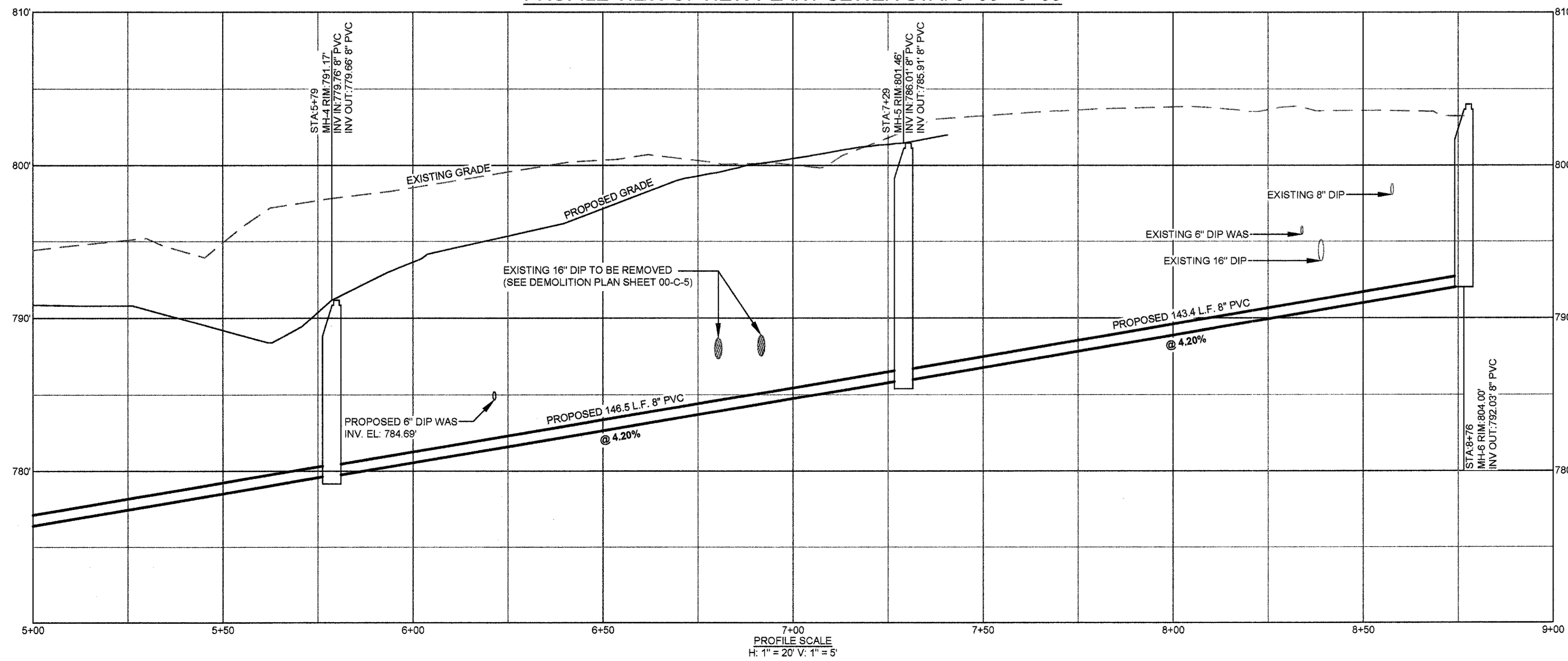
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
TREATMENT PLANT
PLANT SEWER PLANT AND PROFILE

SHEET NO.
00-C-29

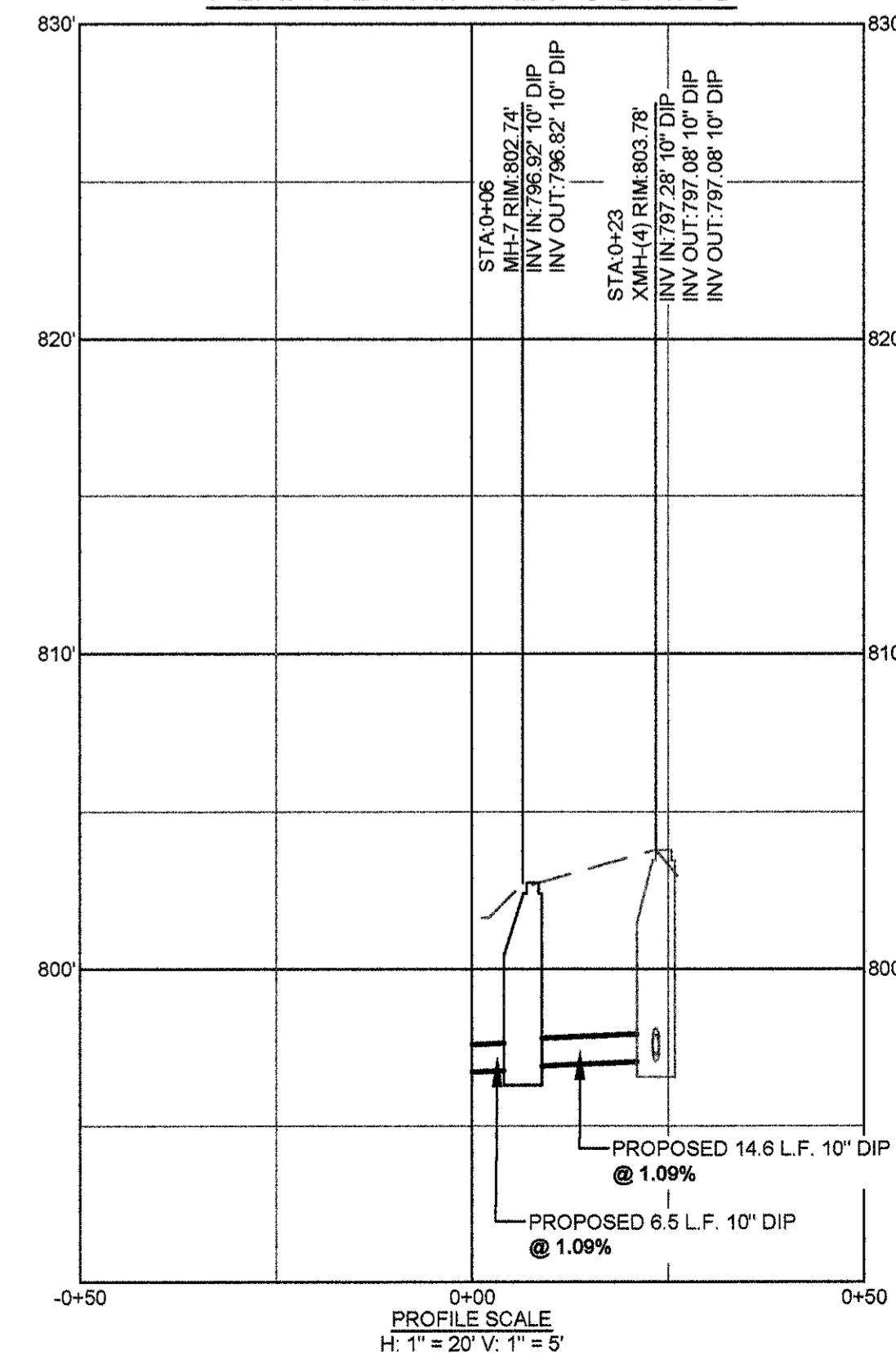
PROFILE VIEW OF NEW PLANT SEWER STA: -0+10 - 5+00

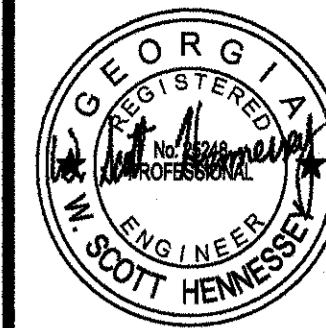


PROFILE VIEW OF NEW PLANT SEWER STA: 5+00 - 9+00



PROFILE VIEW OF PLANT DRAIN REROUTING

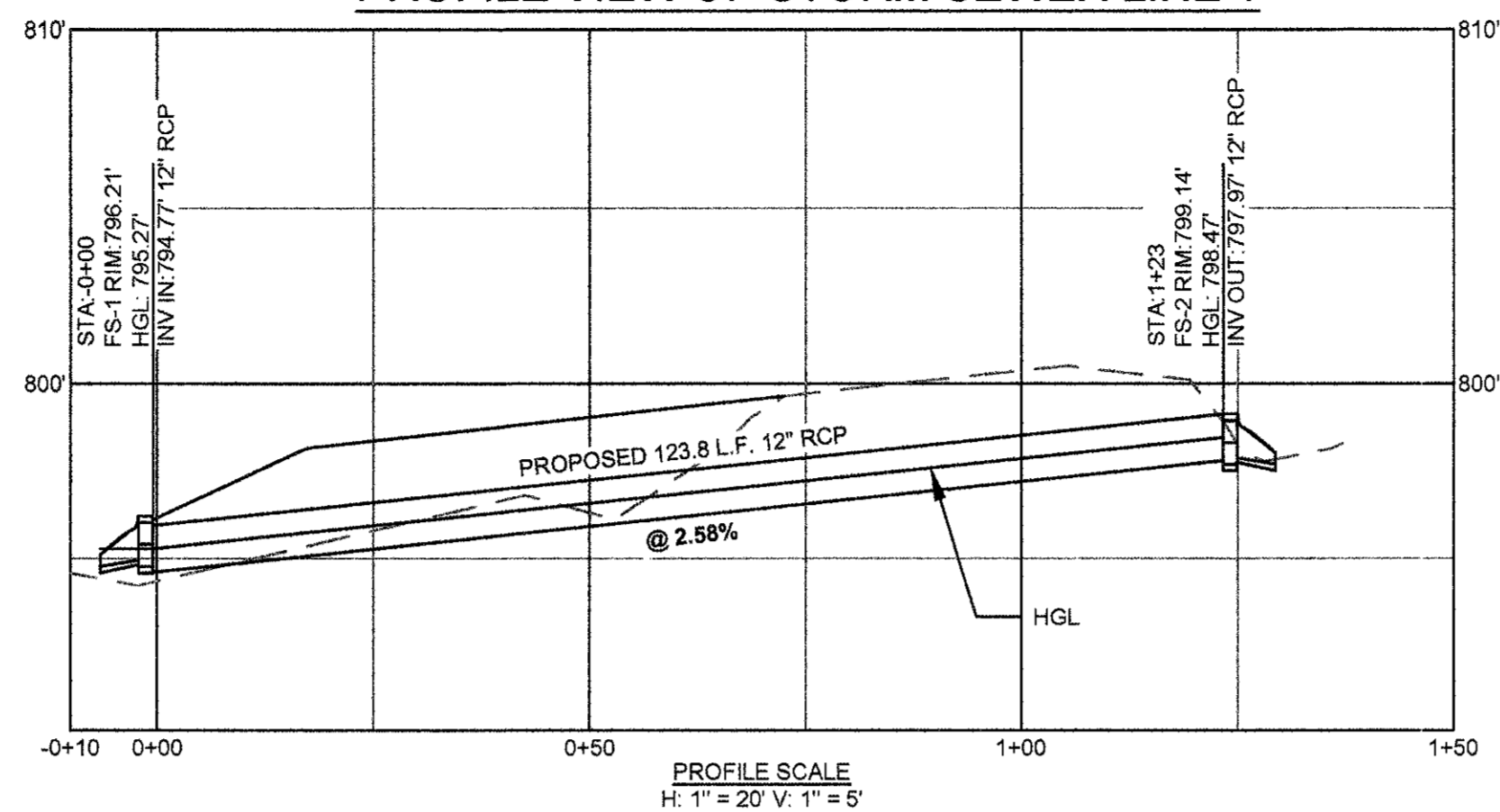




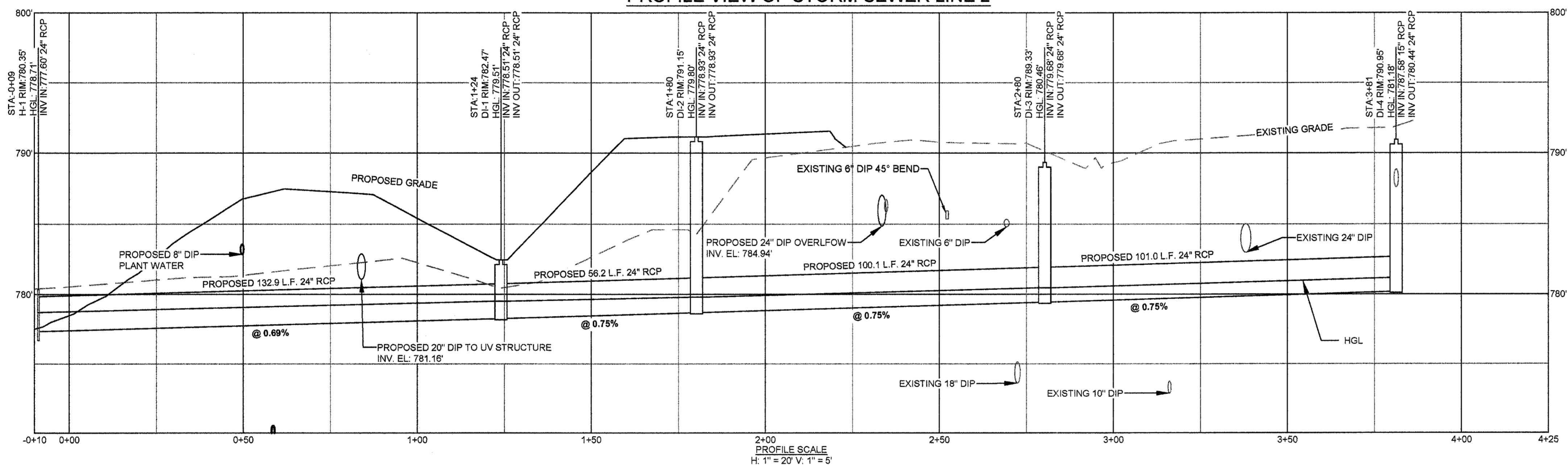
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 MARIETTA, GA 30062
 (770) 423-0001

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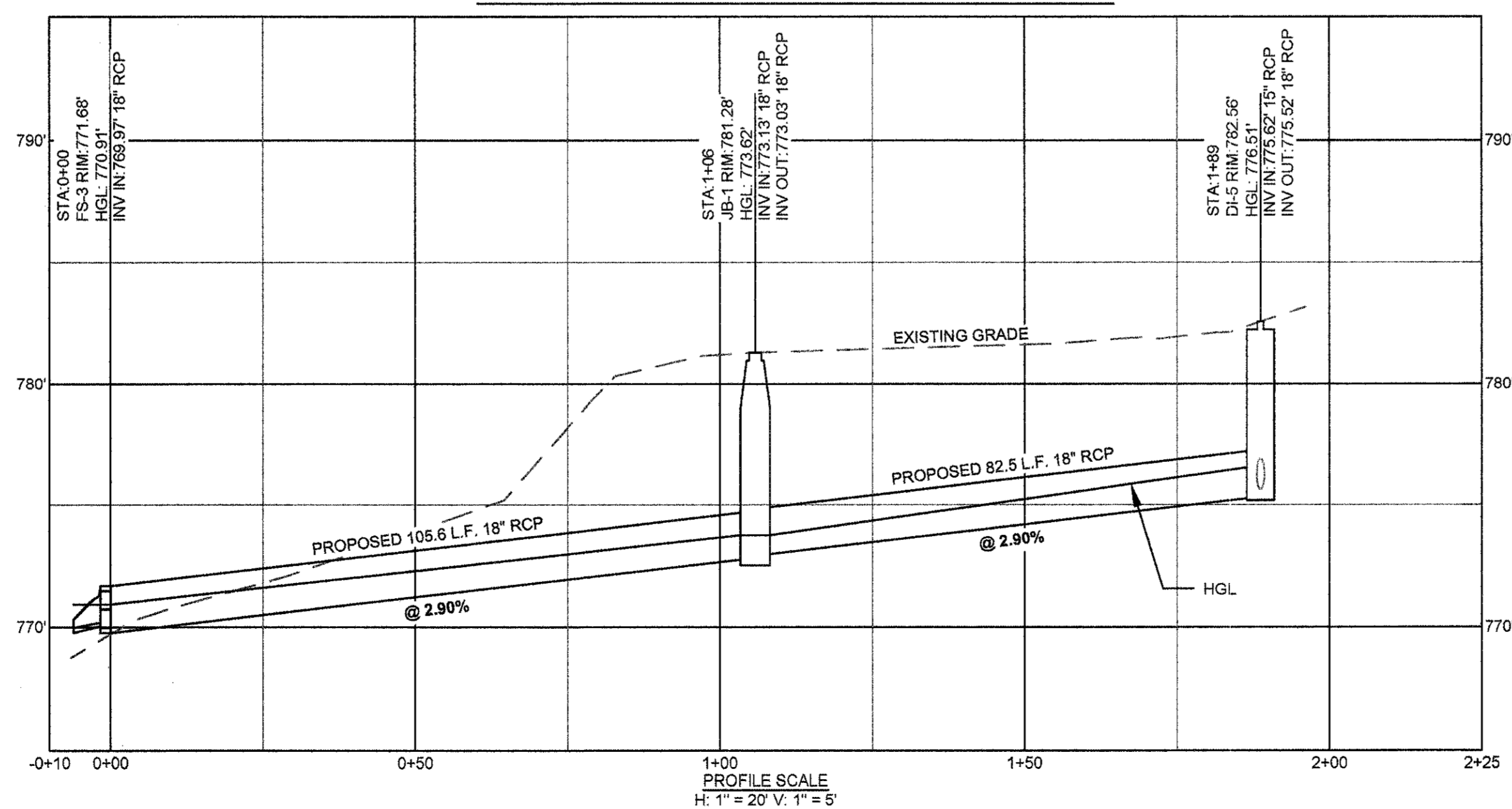
PROFILE VIEW OF STORM SEWER LINE 1



PROFILE VIEW OF STORM SEWER LINE 2



PROFILE VIEW OF STORM SEWER LINE 3

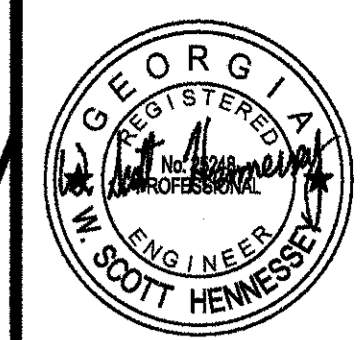


PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DE
 DRWN: DE
 CHCK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 TREATMENT PLANT
 STORM SEWER PROFILES**

SHEET NO.
00-C-30



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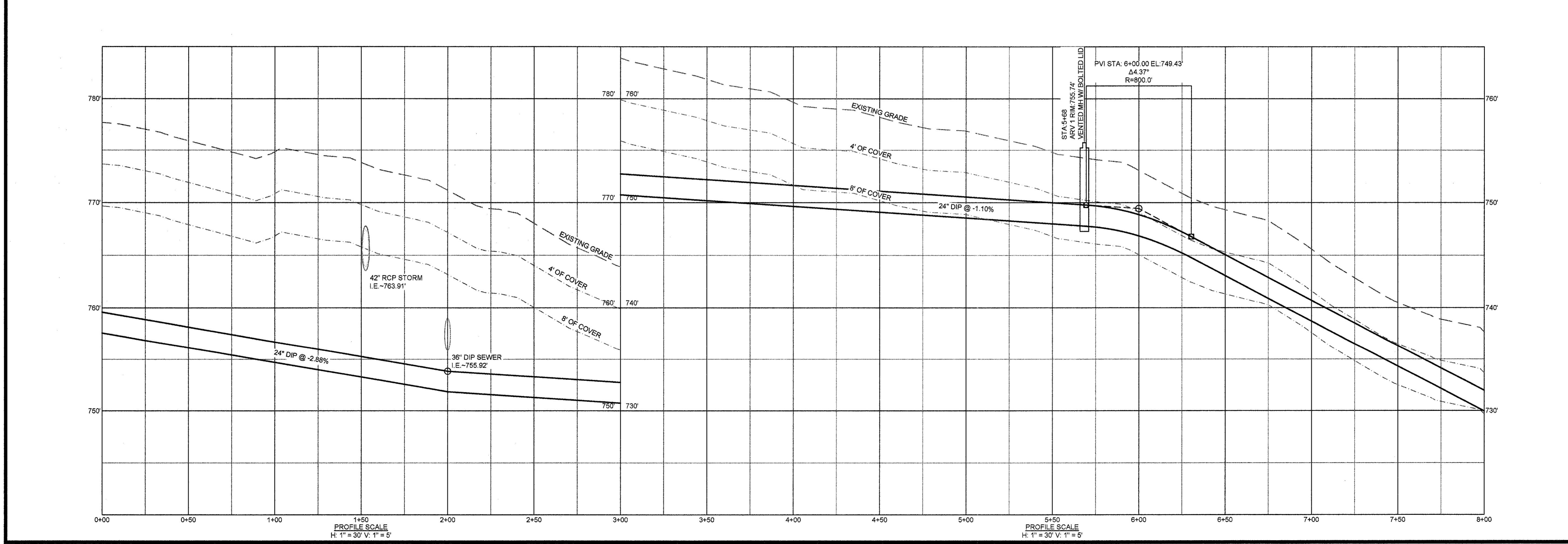
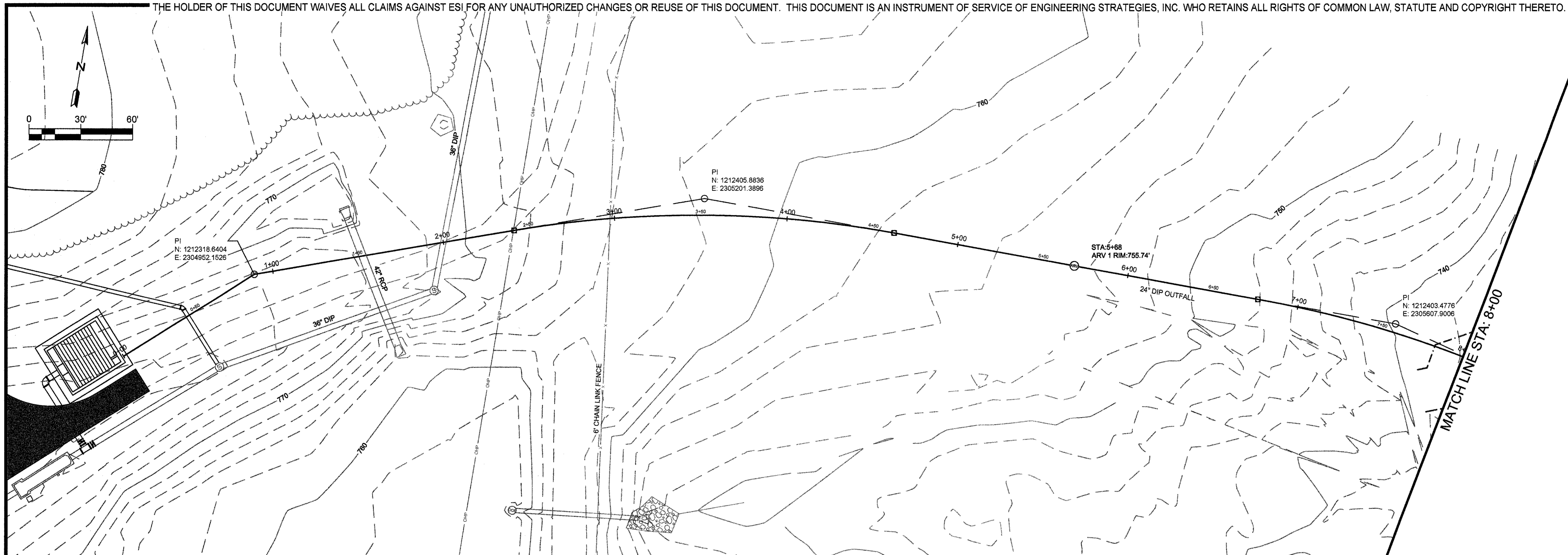
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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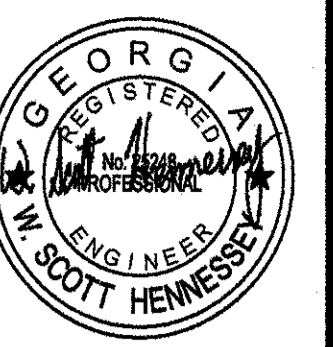
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DRWN: DE	

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
OUTFALL PLAN AND PROFILE
 STA: 0+00-8+00

SHEET NO.
 00-C-31





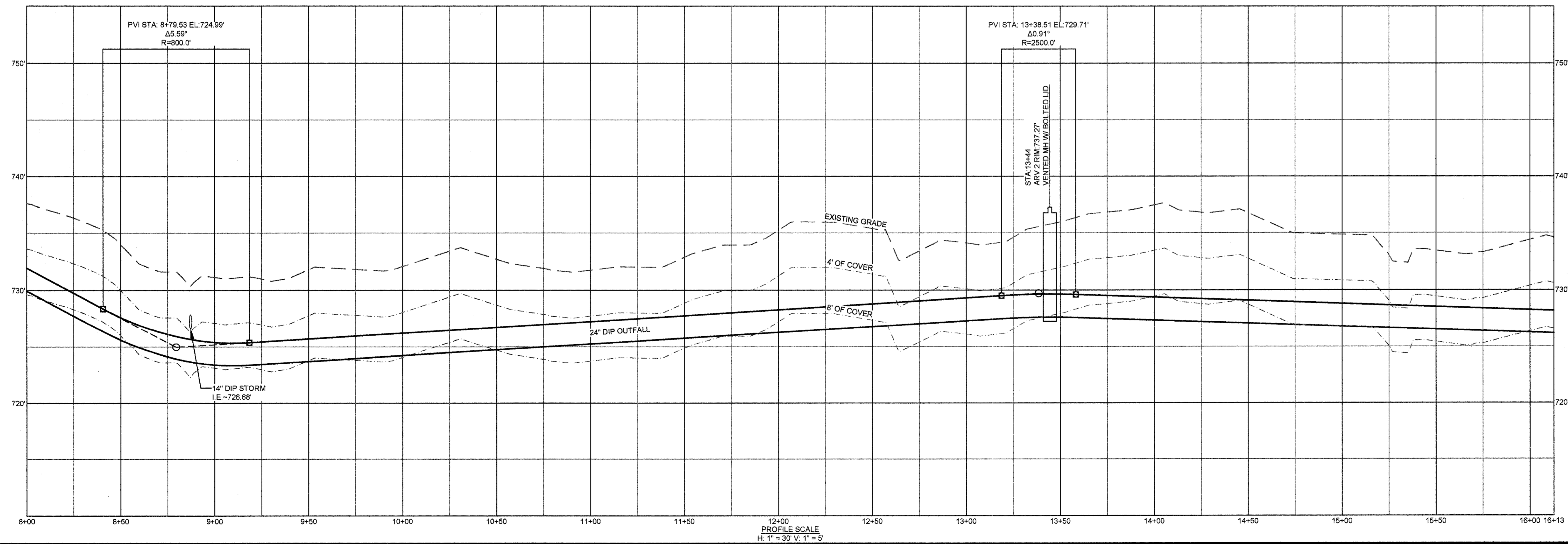
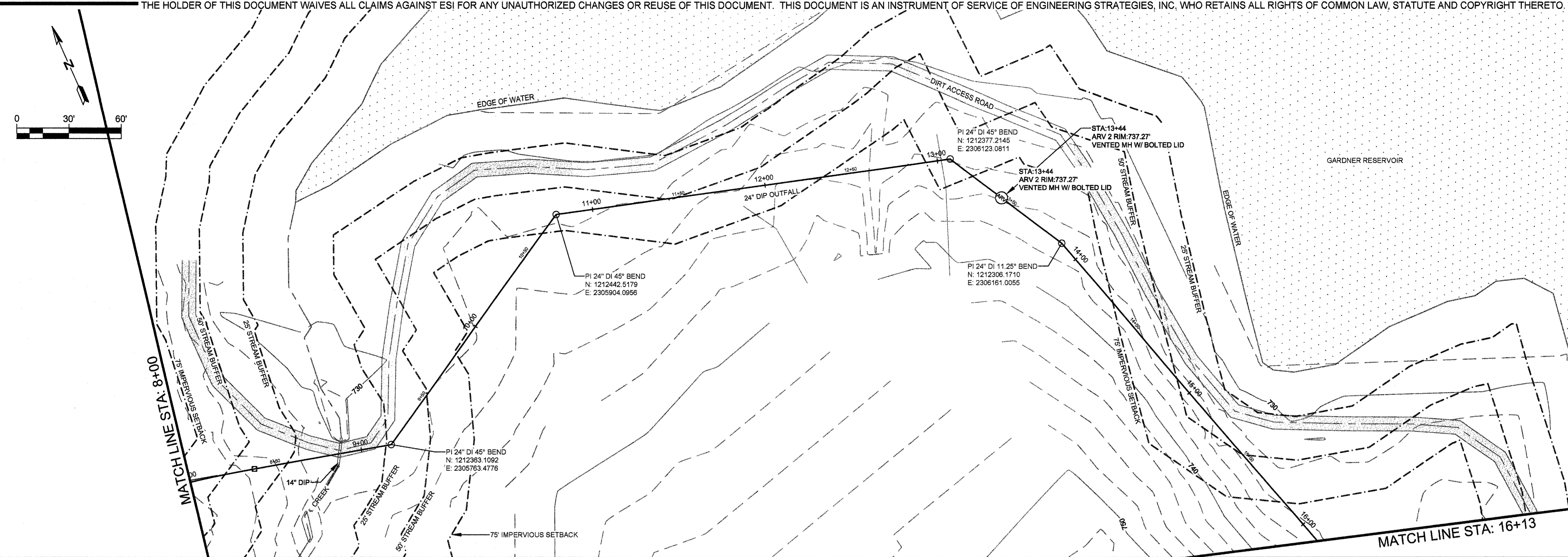
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

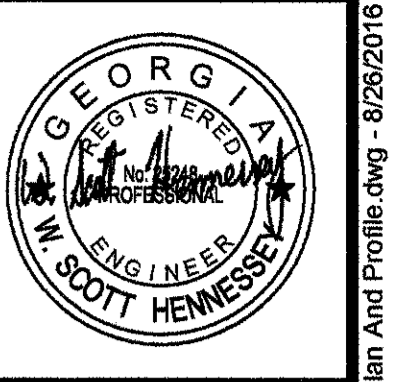
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

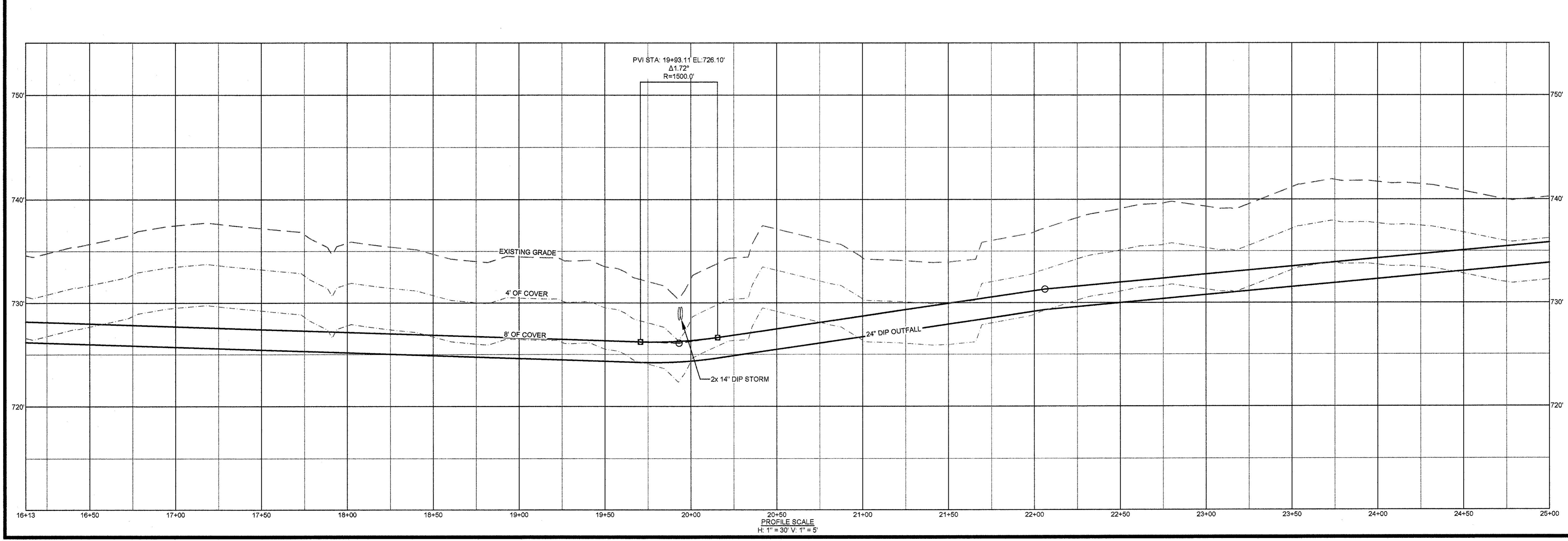
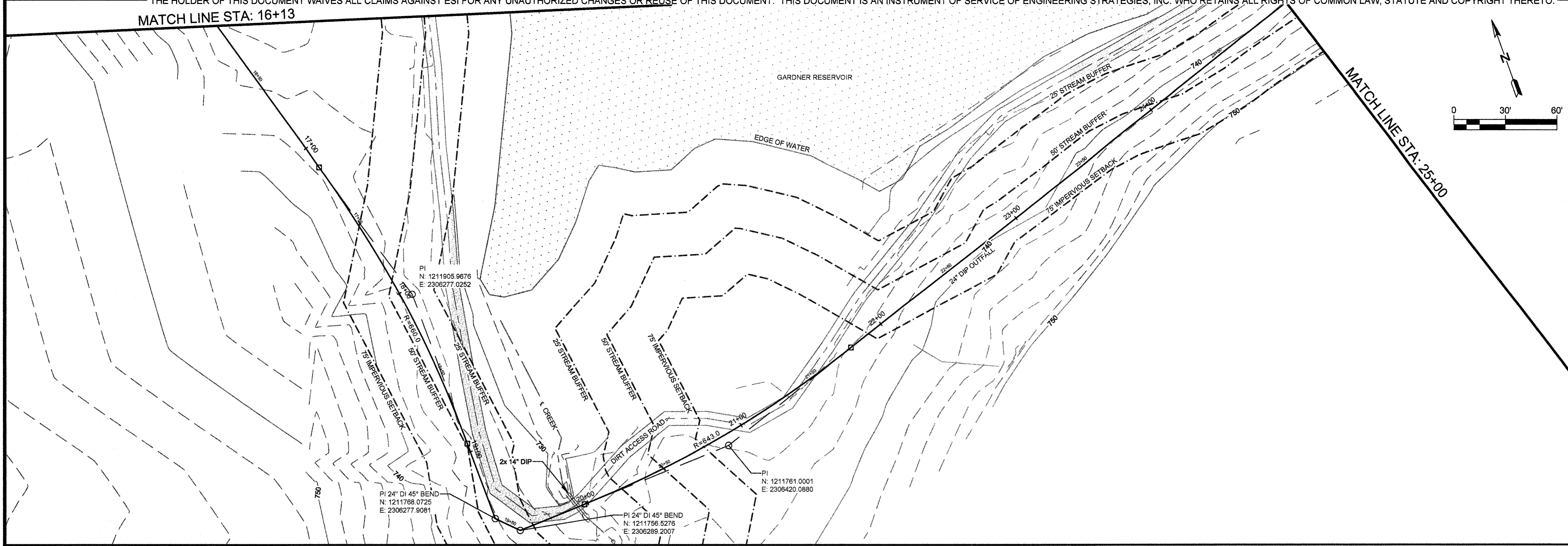
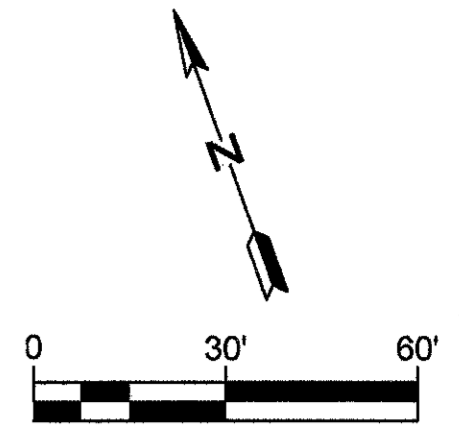
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 OUTFALL PLAN AND PROFILE
 STA: 8+00-16+13

SHEET NO.
 00-C-32





ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
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 (770) 429-0001



PROJECT NUMBER: _____ DATE: AUGUST 2016

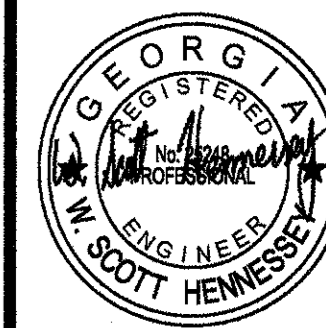
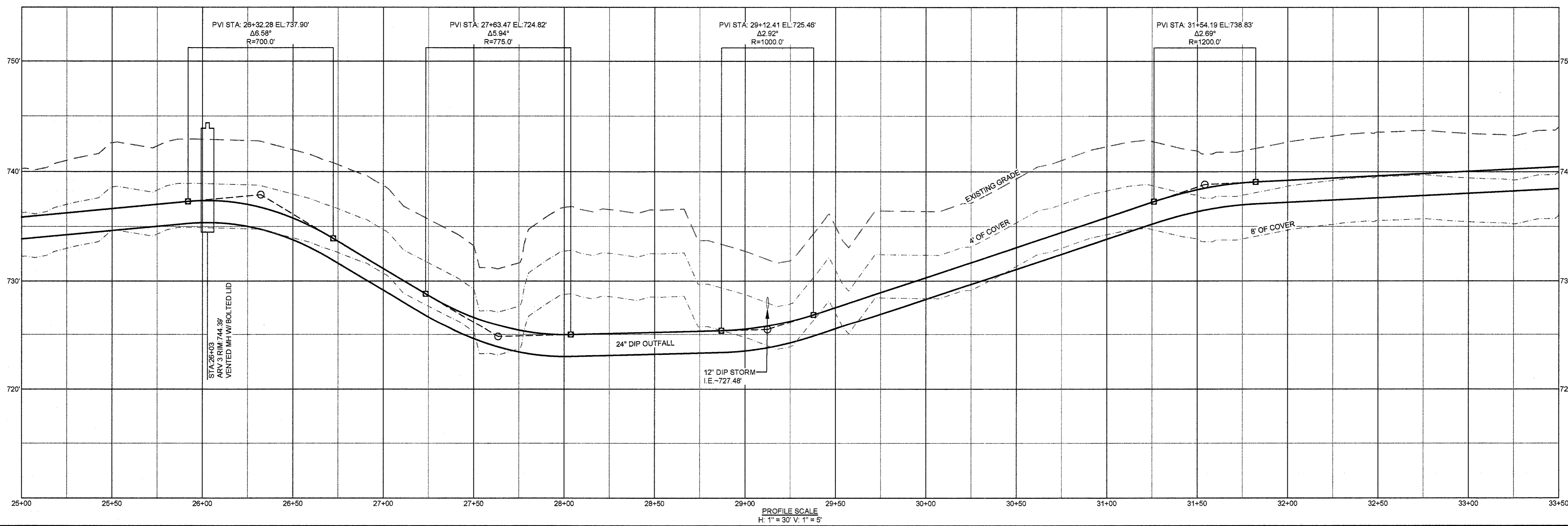
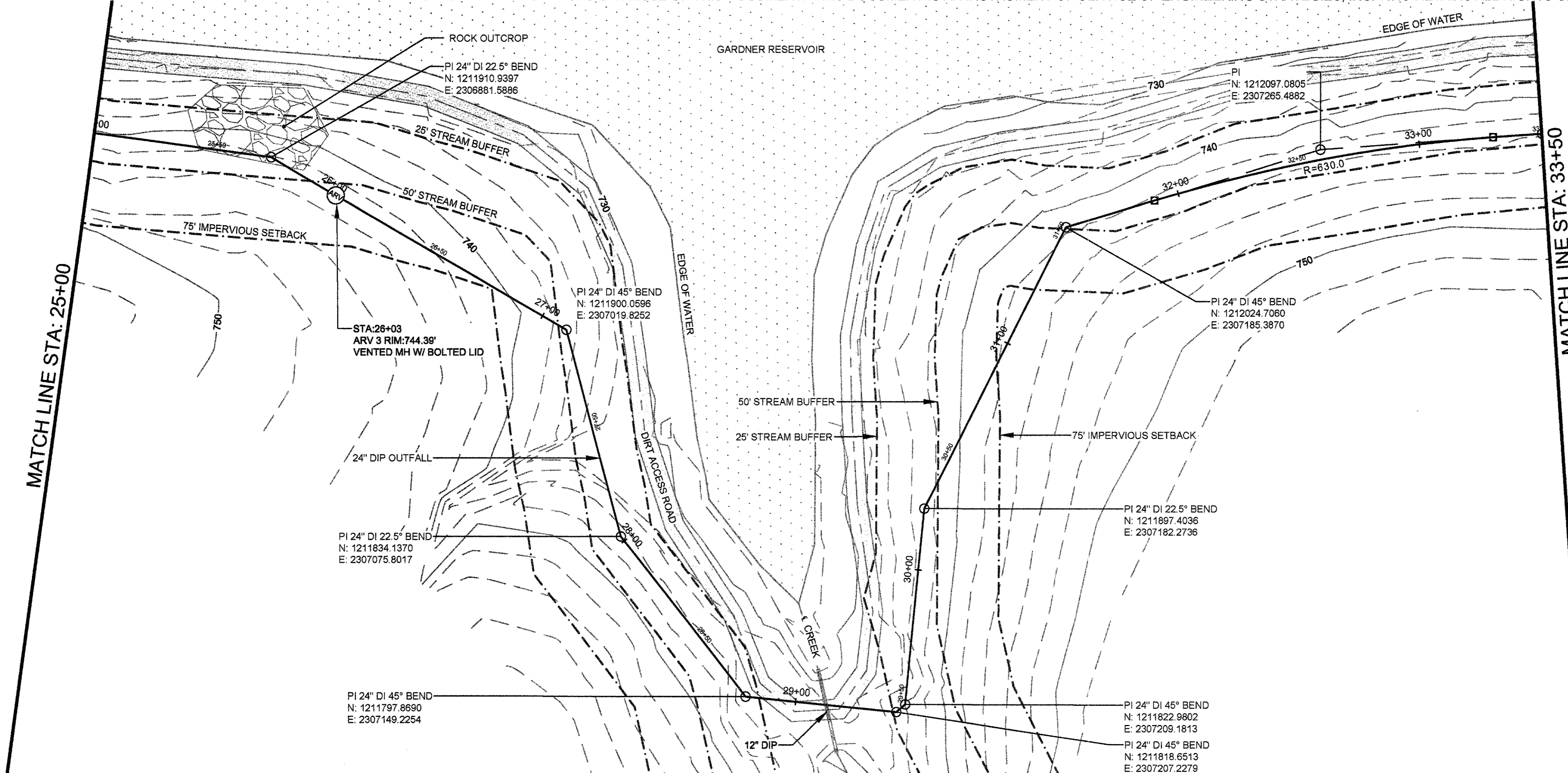
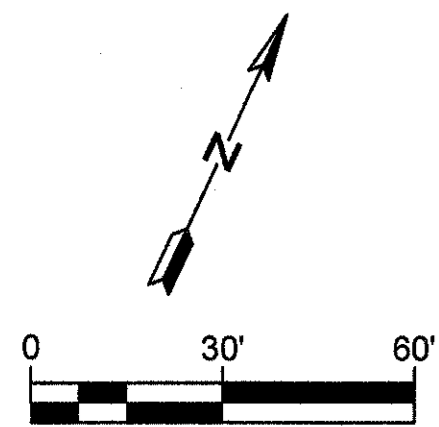
REVISION	DATE
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DSGN: DE
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 CHCK: WSH

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
OUTFALL PLAN AND PROFILE
STA: 16+13-25+00

SHEET NO.
00-C-33



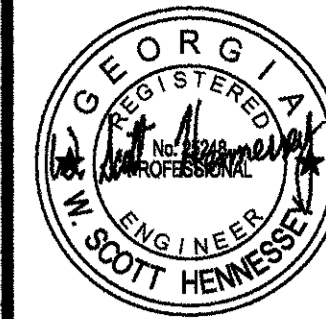
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOUFORD ROAD, SUITE 525
 MARETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DE
 DRWN: DE
 CHCK: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 OUTFALL PLAN AND PROFILE
 STA: 25+00-33+50

SHEET NO.
 00-C-34



ESI
 ENGINEERING STRATEGIES, INC.
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 MARIETTA, GA 30062
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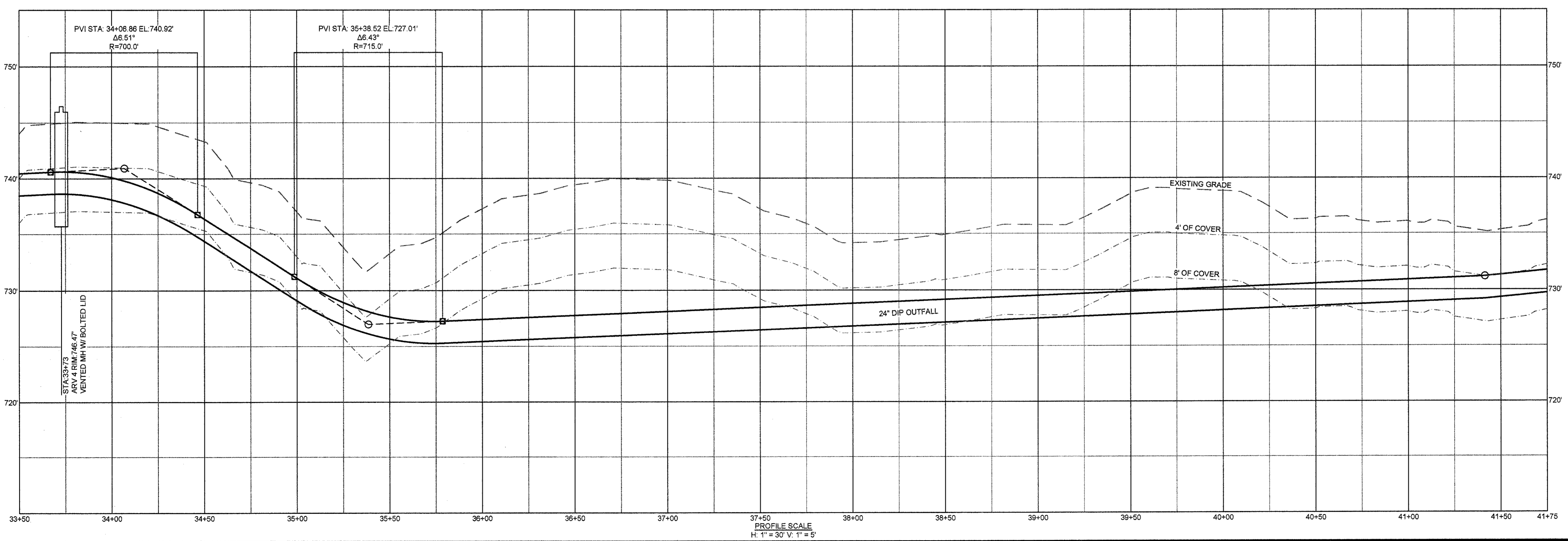
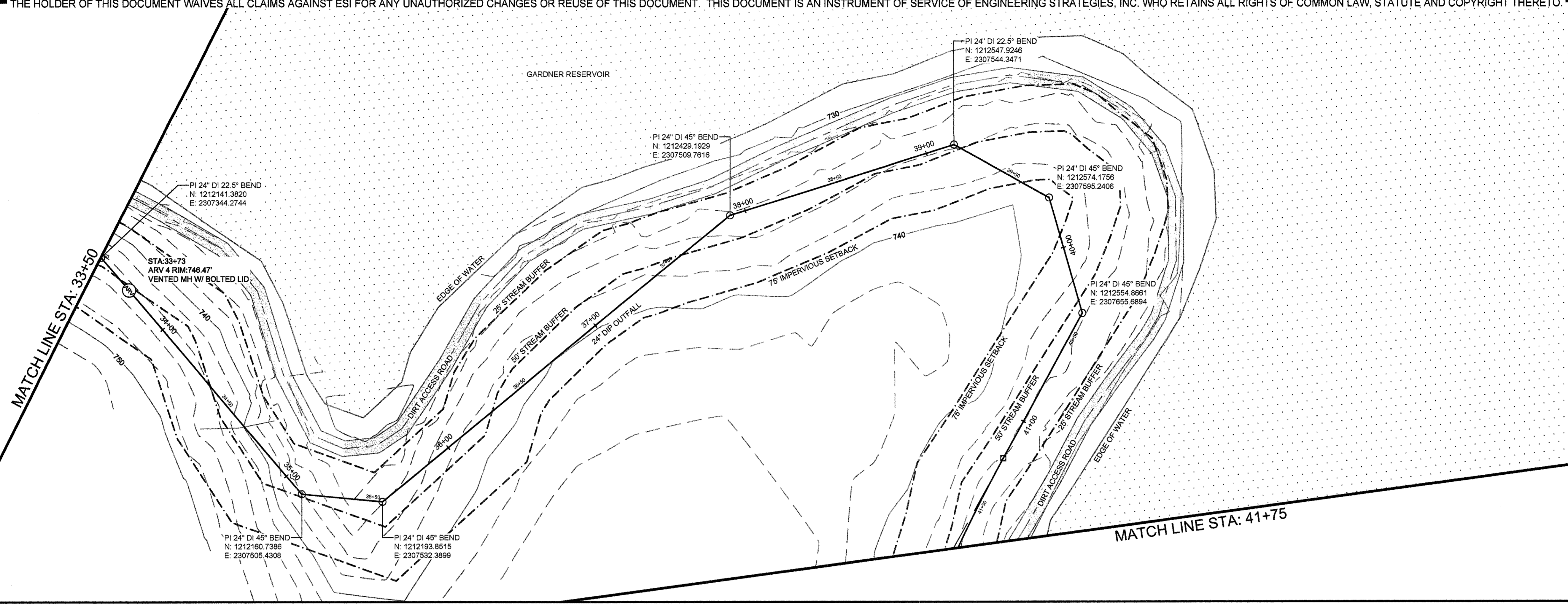
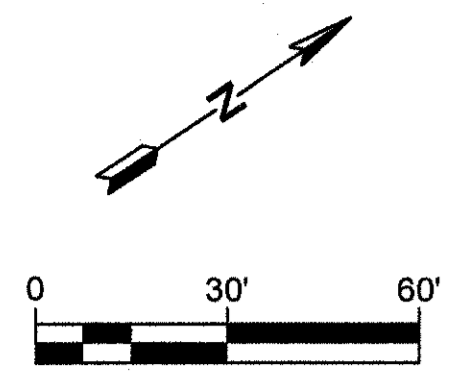
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	AUGUST 2016
REVISION	DATE
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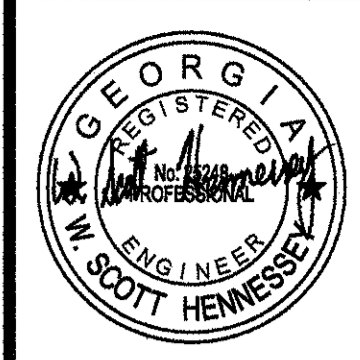
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 CHCK: WSH

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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 OUTFALL PLAN AND PROFILE
 STA: 33+50-41+75

SHEET NO.
 00-C-35





ESI
ENGINEERING STRATEGIES, INC.
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 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:
 DATE: AUGUST 2016

DATE	REVISION

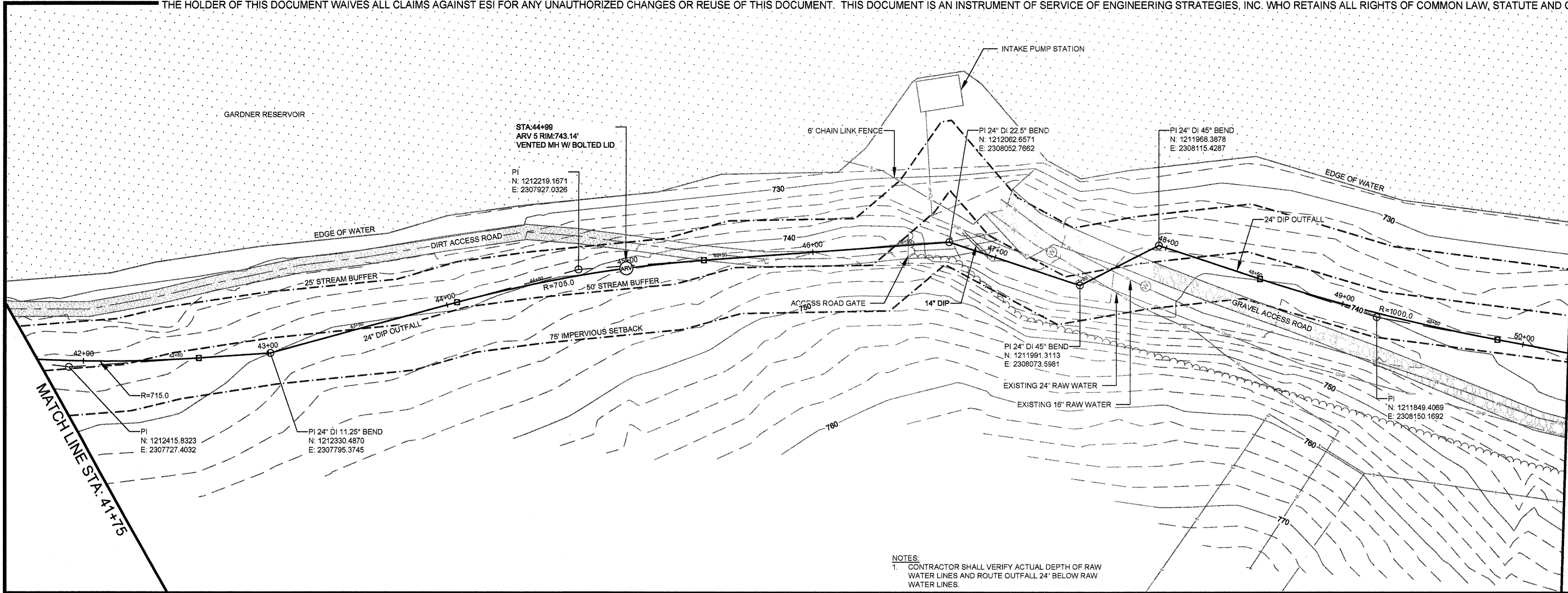
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PROJECT NUMBER:	DATE:

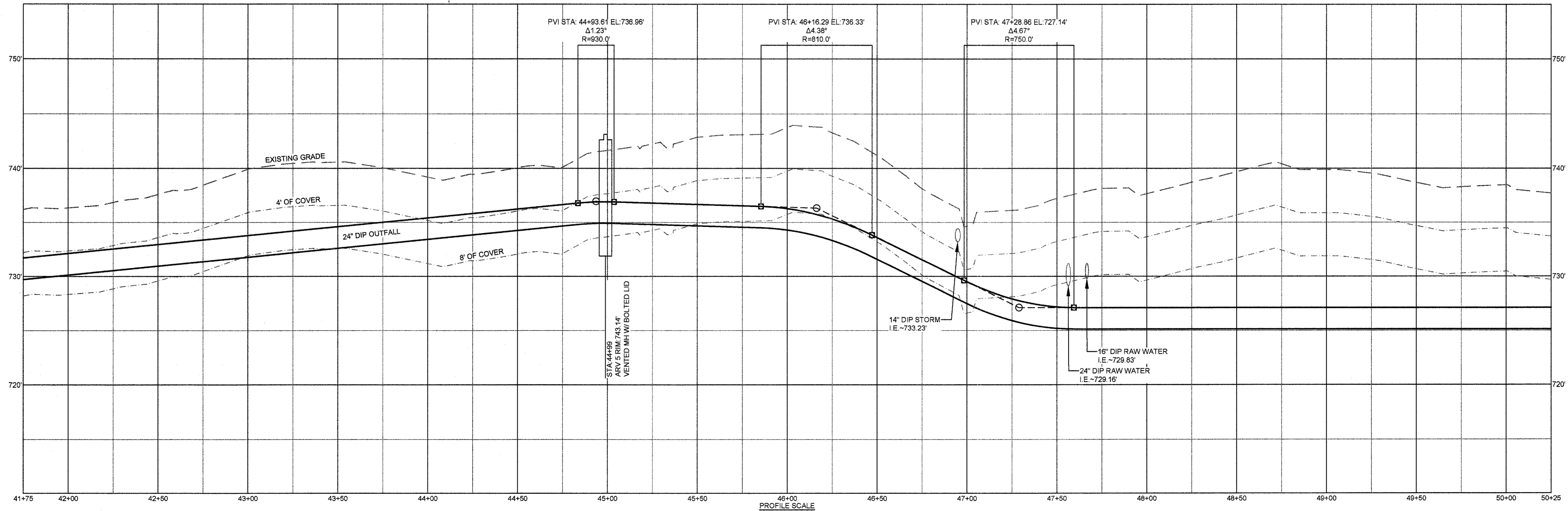
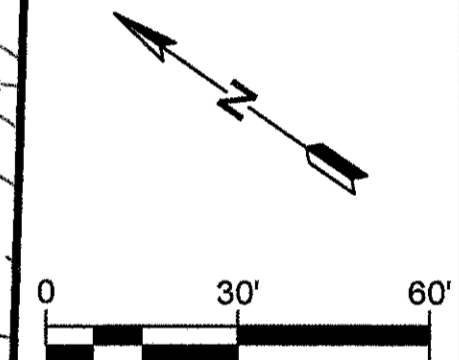
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
OUTFALL PLAN AND PROFILE
 STA: 41+75-50+25

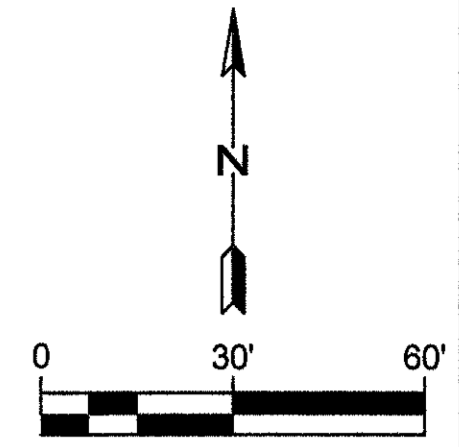
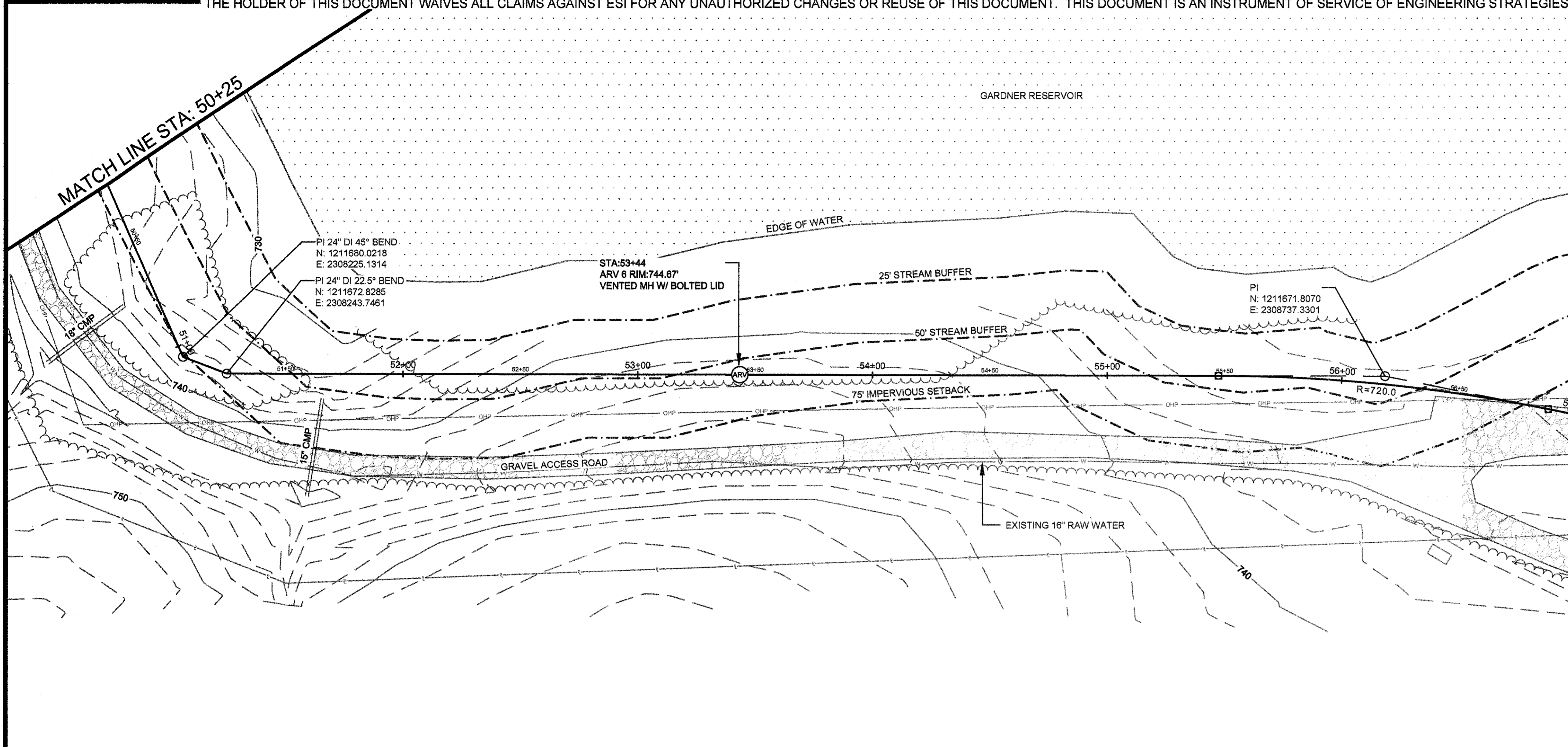
SHEET NO.
 00-C-36



NOTES:
 1. CONTRACTOR SHALL VERIFY ACTUAL DEPTH OF RAW WATER LINES AND ROUTE OUTFALL 24' BELOW RAW WATER LINES.



PROFILE SCALE
 H: 1" = 30' V: 1" = 5'

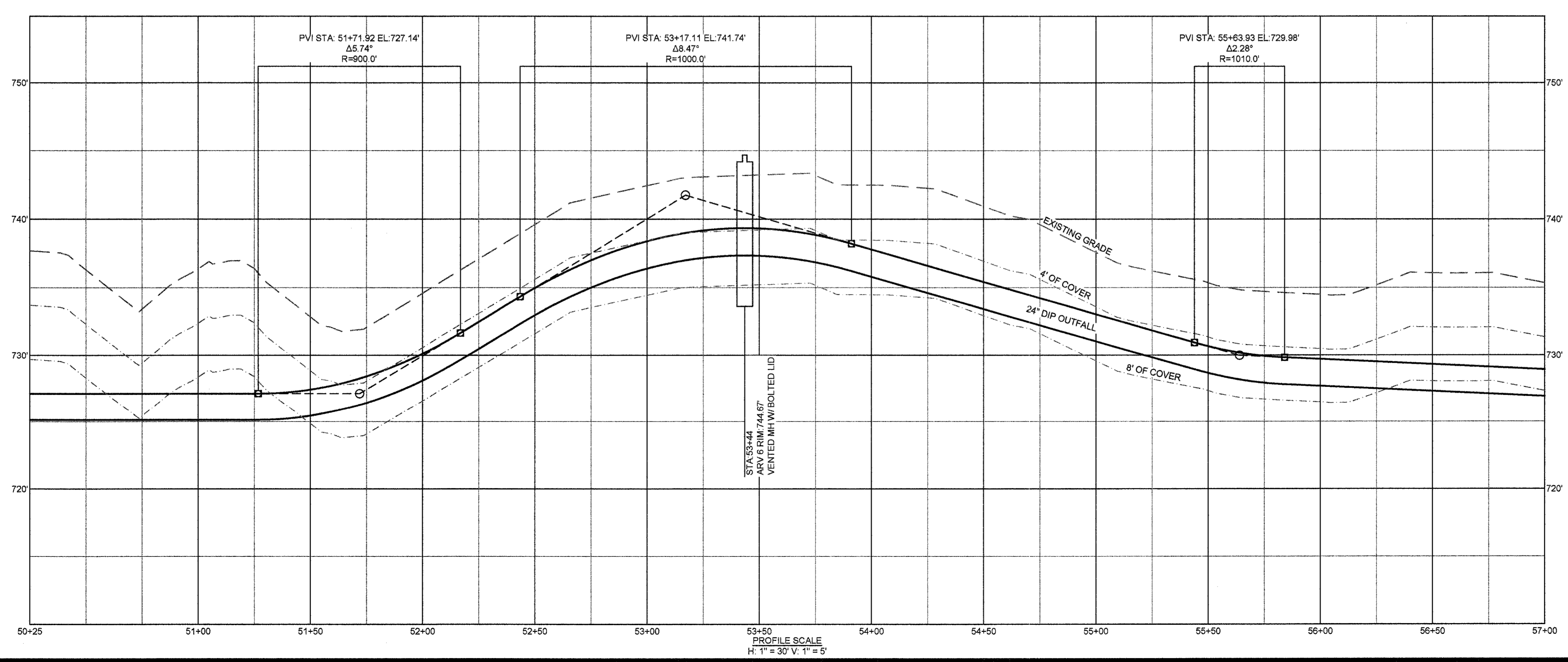


ESI
 ENGINEERING STRATEGIES, INC.
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 (770) 429-0001

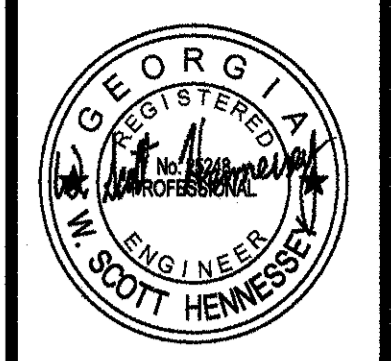
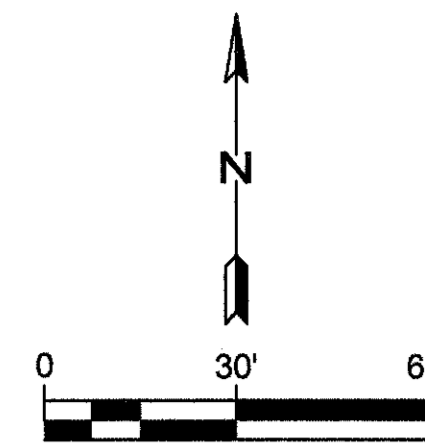
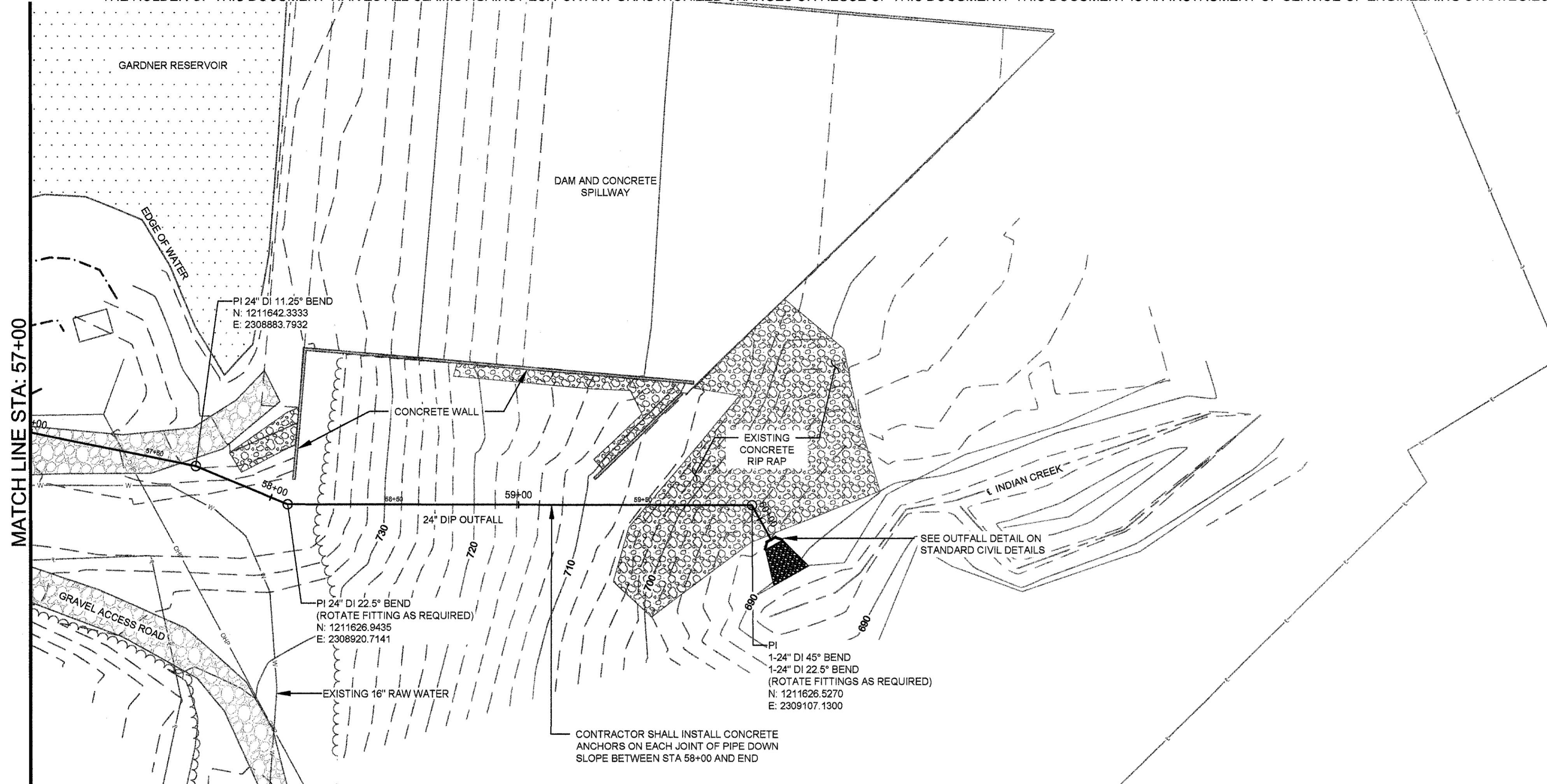
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DSGN: DE
 DRWN: DE
 CHCK: WSH
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 OUTFALL PLAN AND PROFILE
 STA: 50+25-57+00



SHEET NO.
 00-C-37

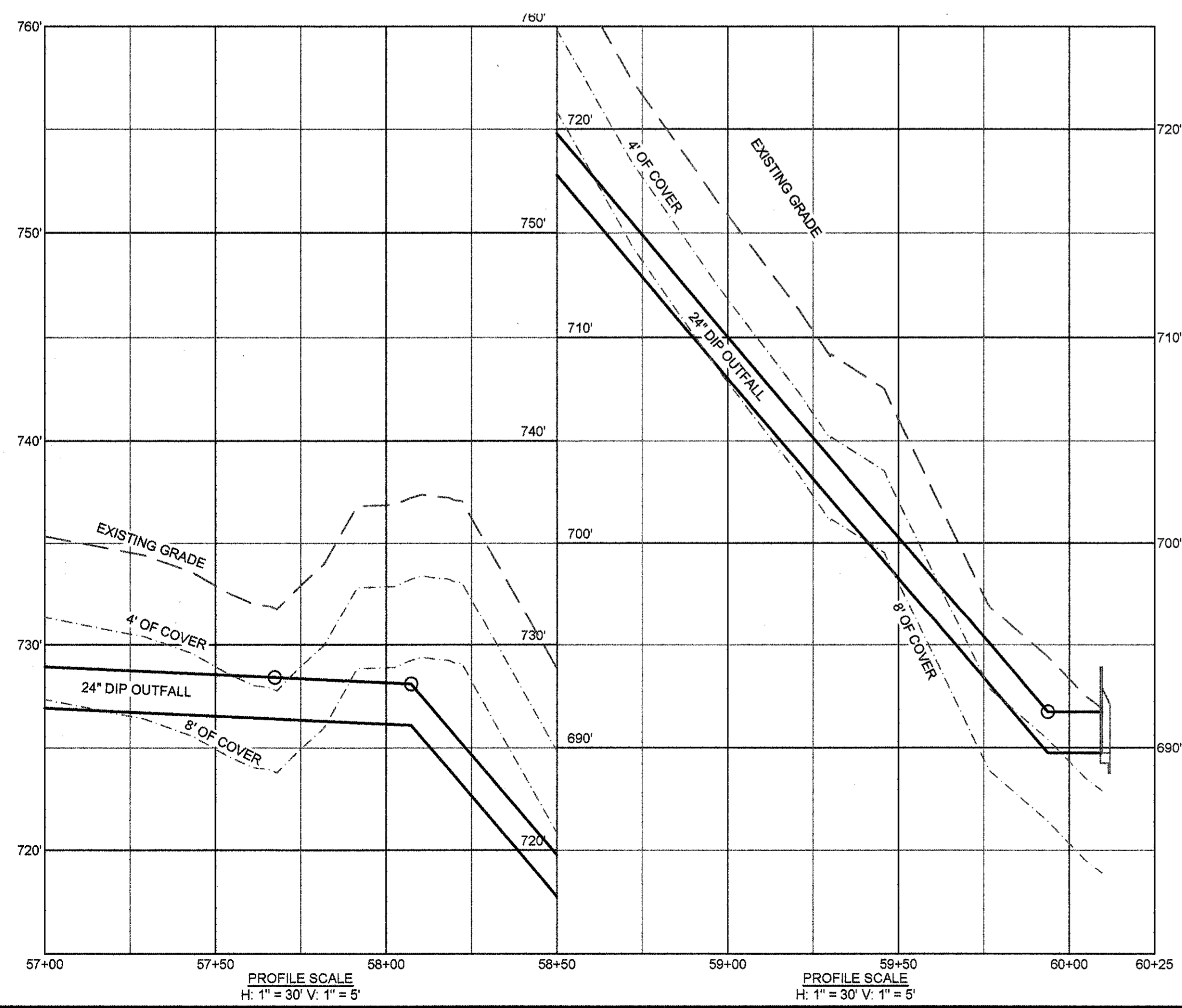


ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

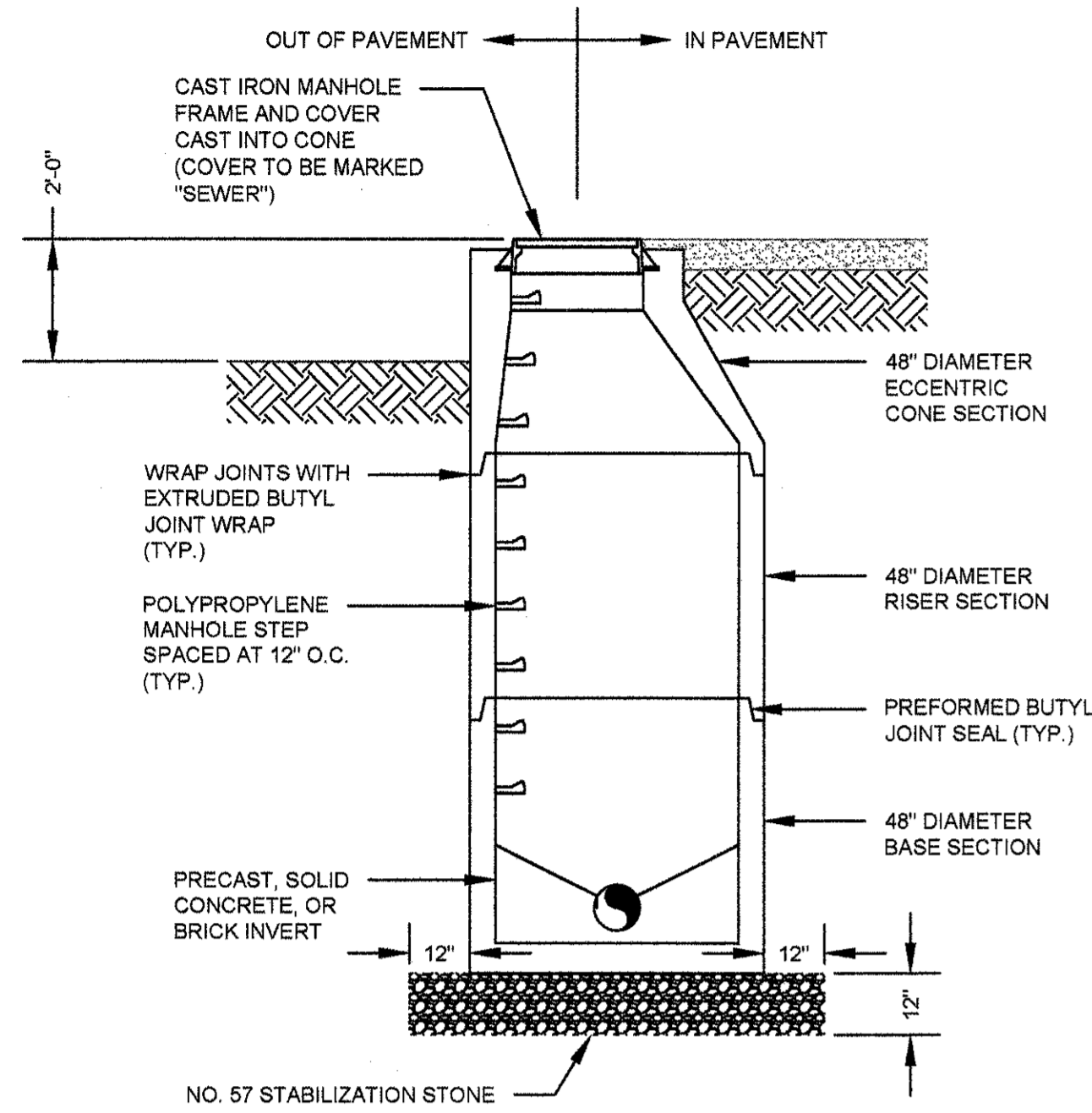
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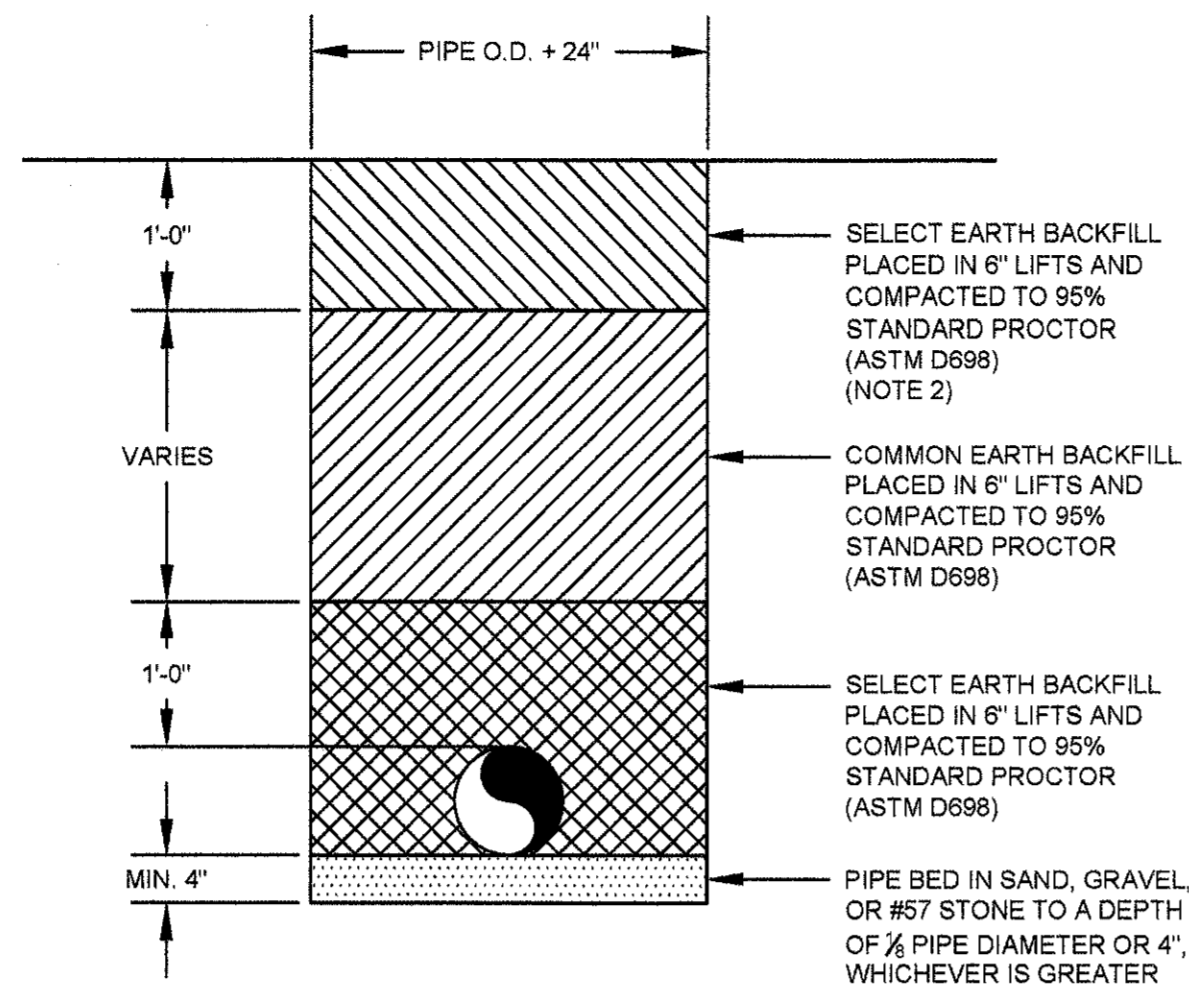
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
OUTFALL PLAN AND PROFILE
STA: 57+00-END

SHEET NO.
00-C-38



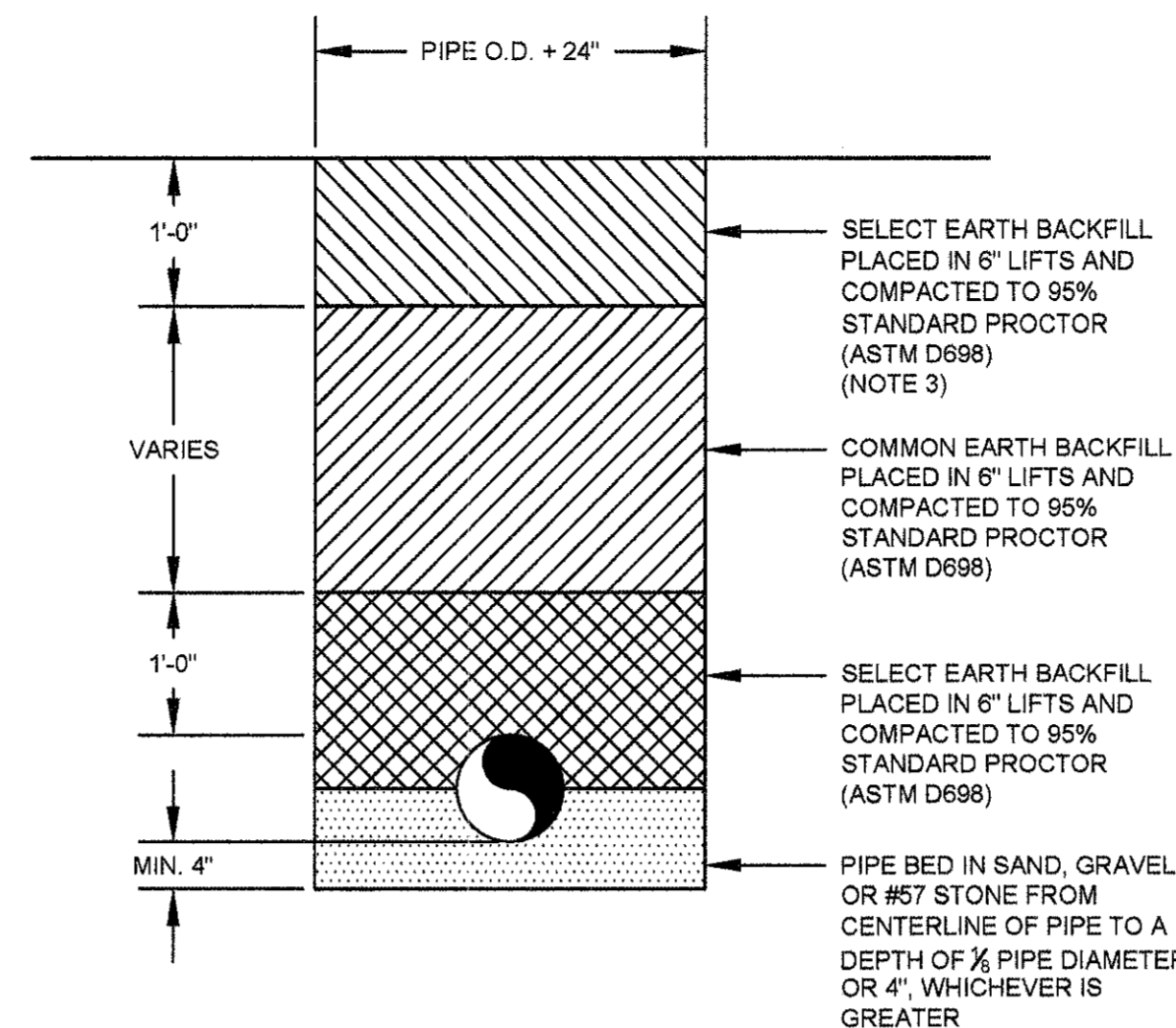
- NOTES:**
- MANHOLES LOCATED OUTSIDE OF PAVEMENT SHALL HAVE BOLT-DOWN LIDS.
 - MANHOLES SHALL HAVE A MINIMUM DROP OF 0.10 FEET FROM INFLUENT INVERT TO EFFLUENT INVERT.

SANITARY SEWER MANHOLE DETAIL
SCALE: N.T.S.



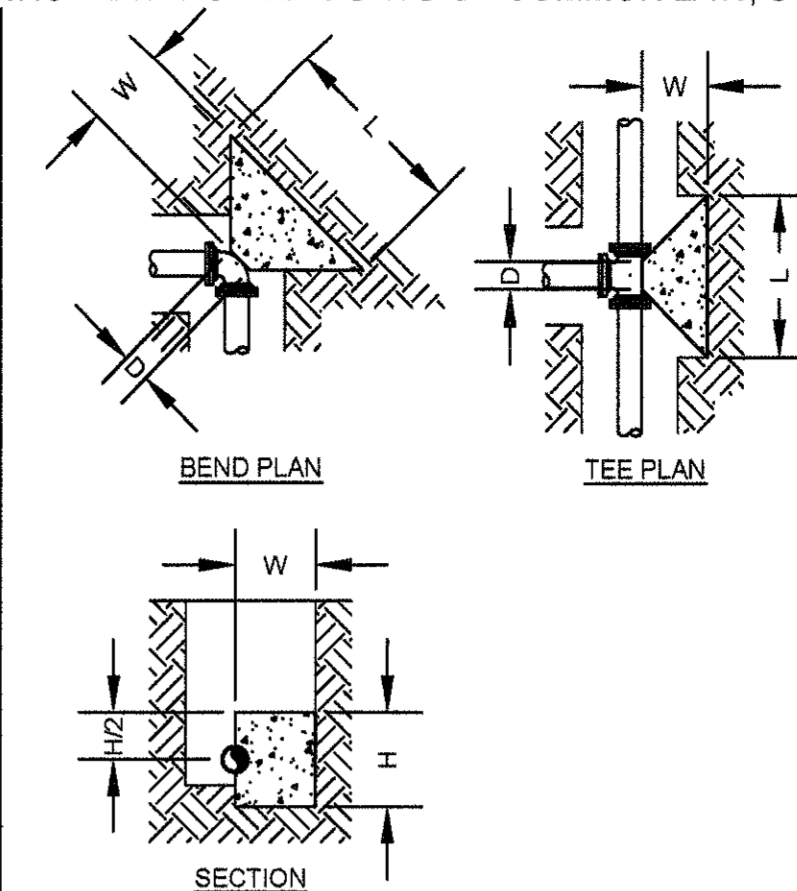
- NOTES:**
- DUCTILE IRON PIPE SHALL BE BED IN ACCORDANCE WITH AWWA C600.
 - THE TOP 12" OF PIPE TRENCH SHALL BE COMPACTED TO 100% STANDARD PROCTOR (ASTM D698) IN PIPE TRENCHES THAT ARE IN ROADWAYS/DRIVEWAYS. COMPACTION REQUIREMENTS SHALL EXTEND TO 5- FEET BEYOND THE EDGE OF PAVEMENT.

TYPE 4 BEDDING DETAIL
SCALE: N.T.S.



- NOTES:**
- DUCTILE IRON PIPE SHALL BE BED IN ACCORDANCE WITH AWWA C600.
 - POLYVINYL CHLORIDE (PVC) AND HIGH DENSITY POLYETHYLENE (HDPE) PIPE SHALL BE BED IN ACCORDANCE WITH AWWA C805.
 - THE TOP 12" OF PIPE TRENCH SHALL BE COMPACTED TO 100% STANDARD PROCTOR (ASTM D698) IN PIPE TRENCHES THAT ARE IN ROADWAYS/DRIVEWAYS. COMPACTION REQUIREMENTS SHALL EXTEND TO 5- FEET BEYOND THE EDGE OF PAVEMENT.

TYPE 5 BEDDING DETAIL
SCALE: N.T.S.



TEES						
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD ³)	THRUST (LBF)
4	0'-8"	2'-4"	1'-2"	0'-11"	0.08	4,072
6	0'-8"	3'-4"	1'-8"	1'-4"	0.16	8,413
8	0'-9"	4'-8"	2'-3"	1'-10"	0.39	14,473
10	0'-11"	6'-8"	2'-9"	2'-3"	0.73	21,773
12	1'-1"	8'-5"	3'-3"	2'-8"	1.20	30,791

90° BENDS						
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD ³)	THRUST (LBF)
4	0'-5"	2'-9"	1'-5"	1'-2"	0.10	5,758
6	0'-8"	4'-0"	2'-0"	1'-8"	0.29	11,898
8	0'-9"	5'-3"	2'-8"	2'-3"	0.67	20,458
10	0'-11"	6'-8"	3'-3"	2'-9"	1.21	30,792
12	1'-1"	8'-7"	3'-10"	3'-3"	2.00	43,545

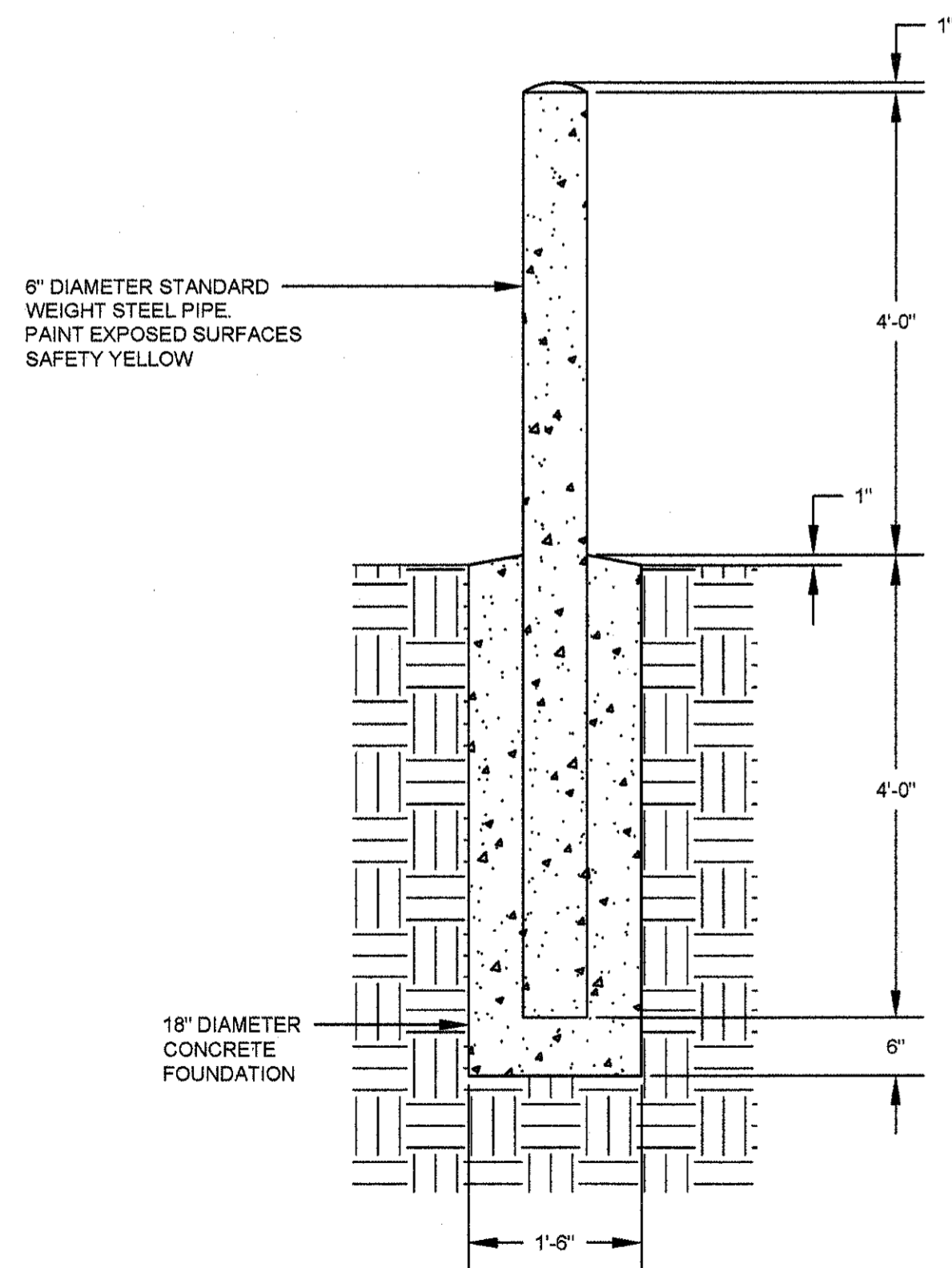
45° BENDS						
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD ³)	THRUST (LBF)
4	0'-4"	2'-0"	1'-0"	0'-10"	0.04	3,116
6	0'-7"	2'-11"	1'-8"	1'-2"	0.11	6,436
8	0'-8"	3'-10"	1'-11"	1'-7"	0.25	11,077
10	0'-11"	4'-9"	2'-5"	1'-11"	0.49	16,664
12	1'-1"	6'-7"	2'-10"	2'-3"	0.79	23,566

22½° BENDS						
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD ³)	THRUST (LBF)
4	0'-5"	1'-5"	0'-9"	0'-6"	0.01	1,589
6	0'-7"	2'-1"	1'-1"	0'-9"	0.04	3,283
8	0'-9"	2'-9"	1'-5"	1'-0"	0.09	5,647
10	0'-10"	3'-4"	1'-8"	1'-3"	0.16	8,495
12	1'-0"	4'-0"	2'-0"	1'-6"	0.28	12,014

- NOTES:**
- THRUST BLOCK DIMENSIONS BASED ARE BASED ON THE FOLLOWING DESIGN CRITERIA.
WORKING PRESSURE = 150 PSI
SOIL BEARING CAPACITY = 1,500 PSF
SAFETY FACTOR = 1.5

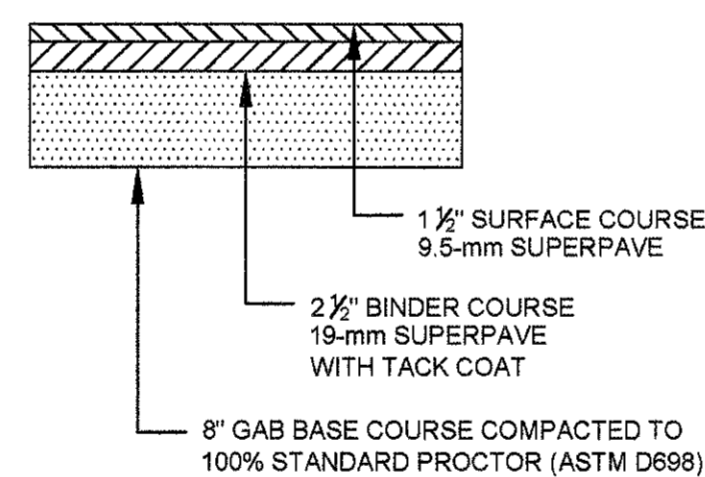
THESE ARE THE MINIMUM DESIGN CRITERIA. IF ACTUAL WORKING PRESSURE IS GREATER THAN 150 PSI OR IF ACTUAL SOIL BEARING CAPACITY IS LESS THAN 1,500 PSF, DIMENSIONS SHALL BE RECALCULATED.
 - THRUST BLOCK CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
 - THRUST BLOCK SHALL BEAR AGAINST UNDISTURBED SOIL.
 - A MINIMUM 10 MIL PLASTIC SHEET SHALL BE PLACED BETWEEN CONCRETE AND PIPE.
 - ALL BOLTS SHALL REMAIN ACCESSIBLE. DO NOT COVER WITH CONCRETE.

THRUST BLOCK DETAIL
SCALE: N.T.S.



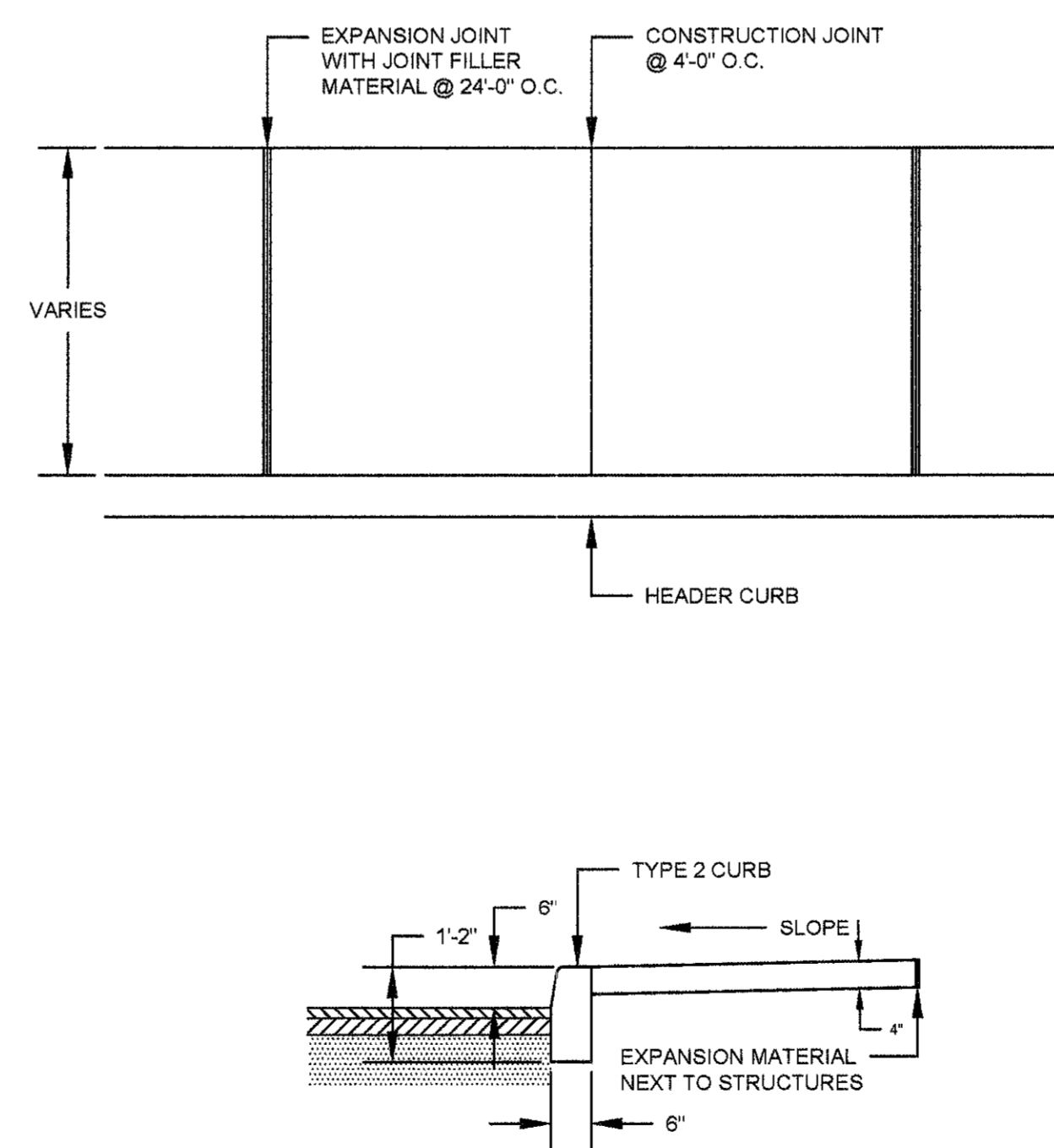
- NOTES:**
- CONCRETE SHALL BE MINIMUM 3,000 PSI AT 28 DAYS.

PIPE BOLLARD DETAIL
SCALE: N.T.S.

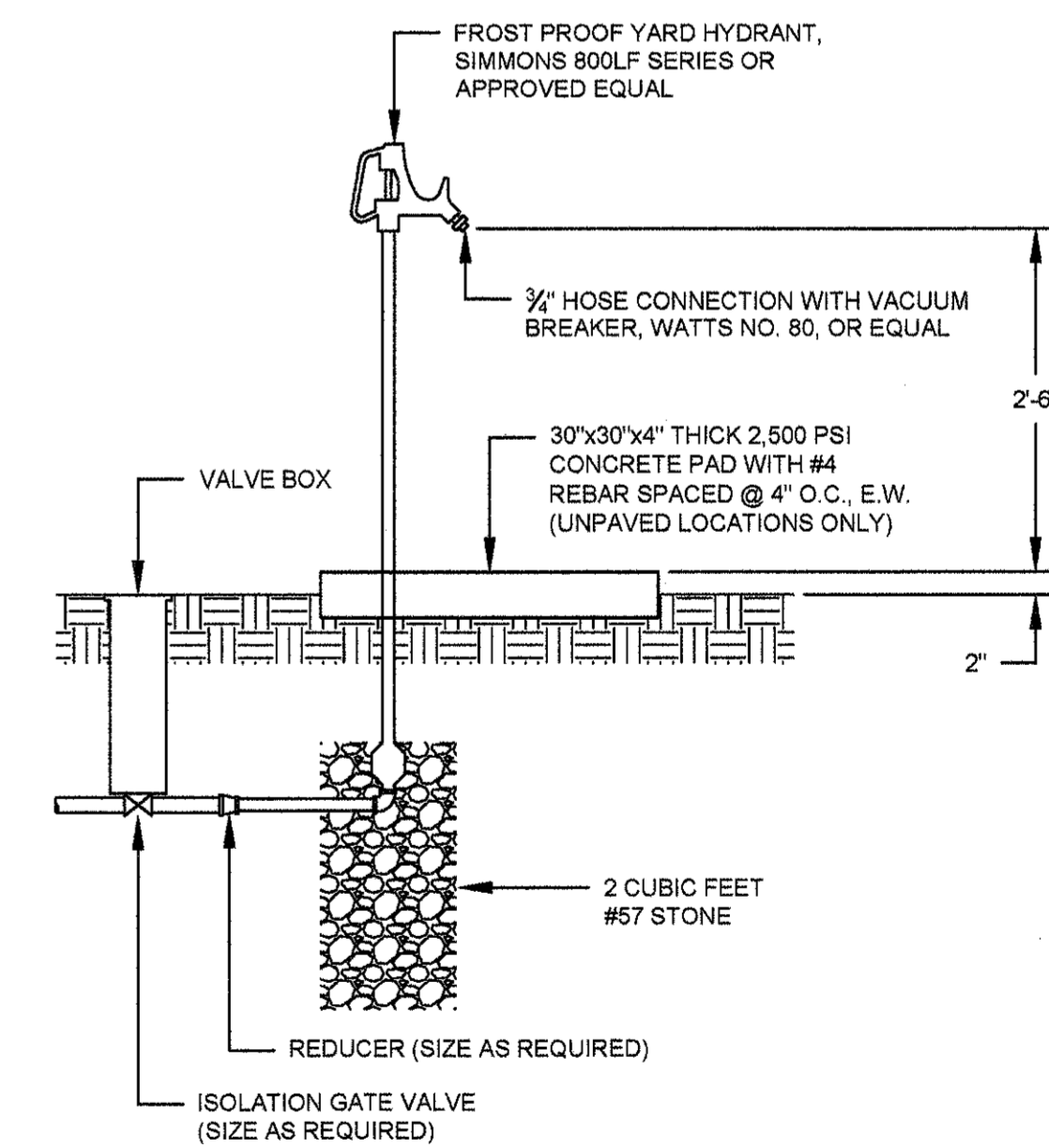


- NOTES:**
- SUB-GRADE SHALL BE PREPARED IN ACCORDANCE WITH GDOT STANDARDS.
 - IN AREAS WHERE THE EXISTING PAVEMENT IS REMOVED FOR INSTALLATION OF MATERIALS, THE OPEN TRENCH SHALL BE REPAIRED USING THIS DETAIL. ADDITIONALLY, THE EXISTING ASPHALT SHALL BE MILLED 1½" A MINIMUM OF 20- FEET BEYOND ALL EDGES OF THE DISTURBED AREA AND RESURFACED WITH A 1½" SURFACE COURSE.
 - ALL PAVED AREAS THAT ARE DAMAGED BY CONSTRUCTION SHALL BE REPAIRED USING THIS DETAIL. ALL DAMAGED ASPHALT SHALL BE COMPLETELY REMOVED AND REPLACED. ADDITIONALLY, THE EXISTING ASPHALT SHALL BE MILLED 1½" A MINIMUM OF 20- FEET BEYOND ALL LIMITS OF THE DAMAGED AREA AND RESURFACED WITH A 1½" SURFACE COURSE.
 - THE EDGES OF ALL DAMAGED AREAS THAT ARE TO BE REPLACED SHALL BE SAW-CUT WITH TRUE-STRAIGHT LINES.
 - ALL SURFACES WHERE NEW ASPHALT WILL CONTACT EXISTING ASPHALT SHALL BE COATED WITH TACK COAT.

ASPHALT PAVEMENT DETAIL
SCALE: N.T.S.

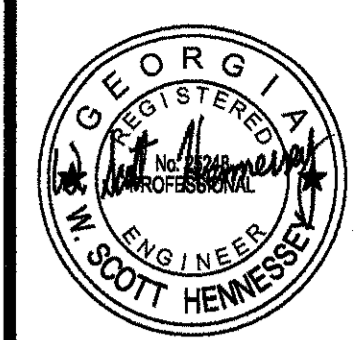


SIDEWALK DETAIL
SCALE: N.T.S.



- NOTES:**
- CONTRACTOR SHALL PROVIDE 100- FEET OF ¾" HOSE AND A SPRAY NOZZLE WITH EACH YARD HYDRANT.

YARD HYDRANT DETAIL
SCALE: N.T.S.



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 505
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:
REVISION:	DATE:

DSGN: WSH
DRWN: WSH
CHK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD CIVIL
DETAILS 1

SHEET NO.
00-C-39



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: WSH
DRWN: WSH
CHK: WSH

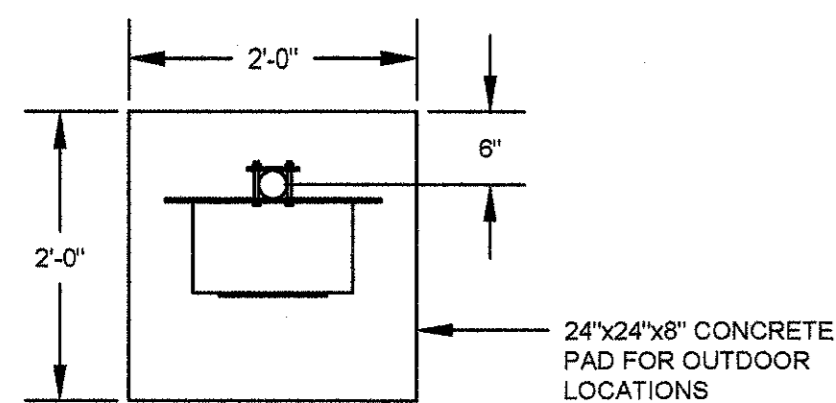
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG IN THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 STANDARD CIVIL
 DETAILS 2

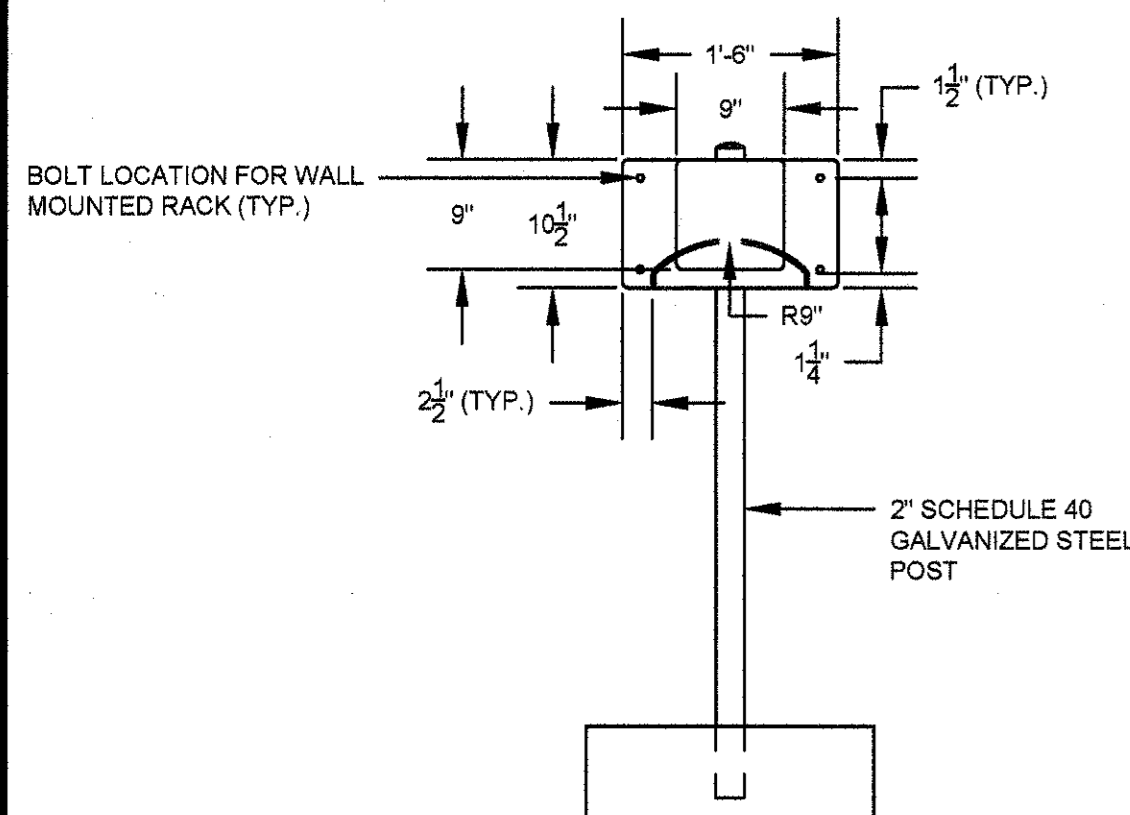
SHEET NO.
 00-C-40

NOTES:

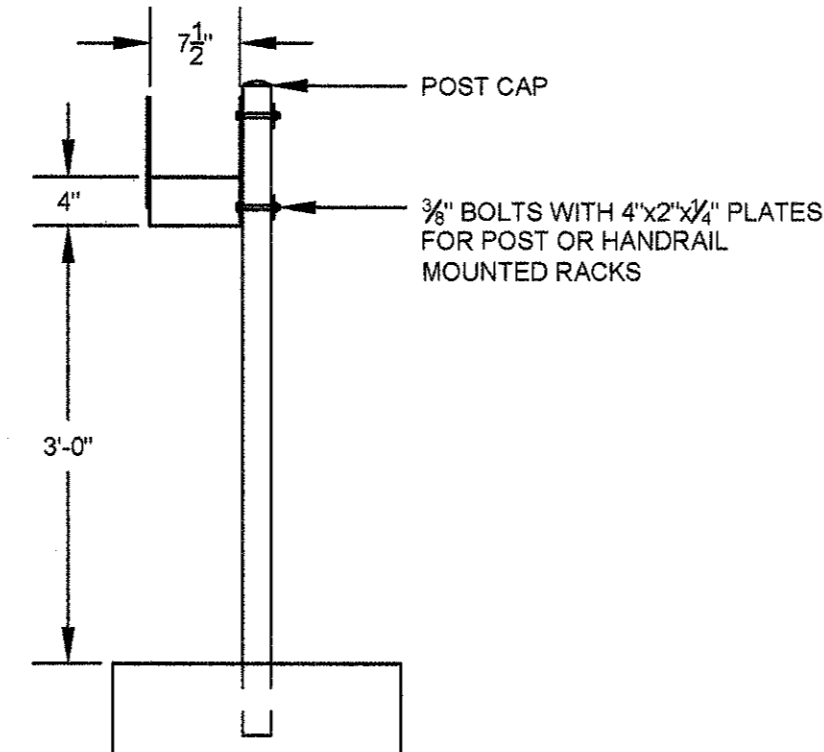
- HOSE RACK SHALL BE FABRICATED FROM 6061-T6 ALUMINUM SHAPES.
- HOSE RACKS ATTACHED TO WALLS SHALL BE ATTACHED USING 3/8" ADHESIVE TYPE ANCHORS.
- HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
- ALL SHAPES SHALL BE FILLET WELDED ON ALL SIDES.
- LOCATE HOSE RACK ADJACENT TO ALL NEW YARD HYDRANTS/WALL HYDRANTS.



TOP VIEW



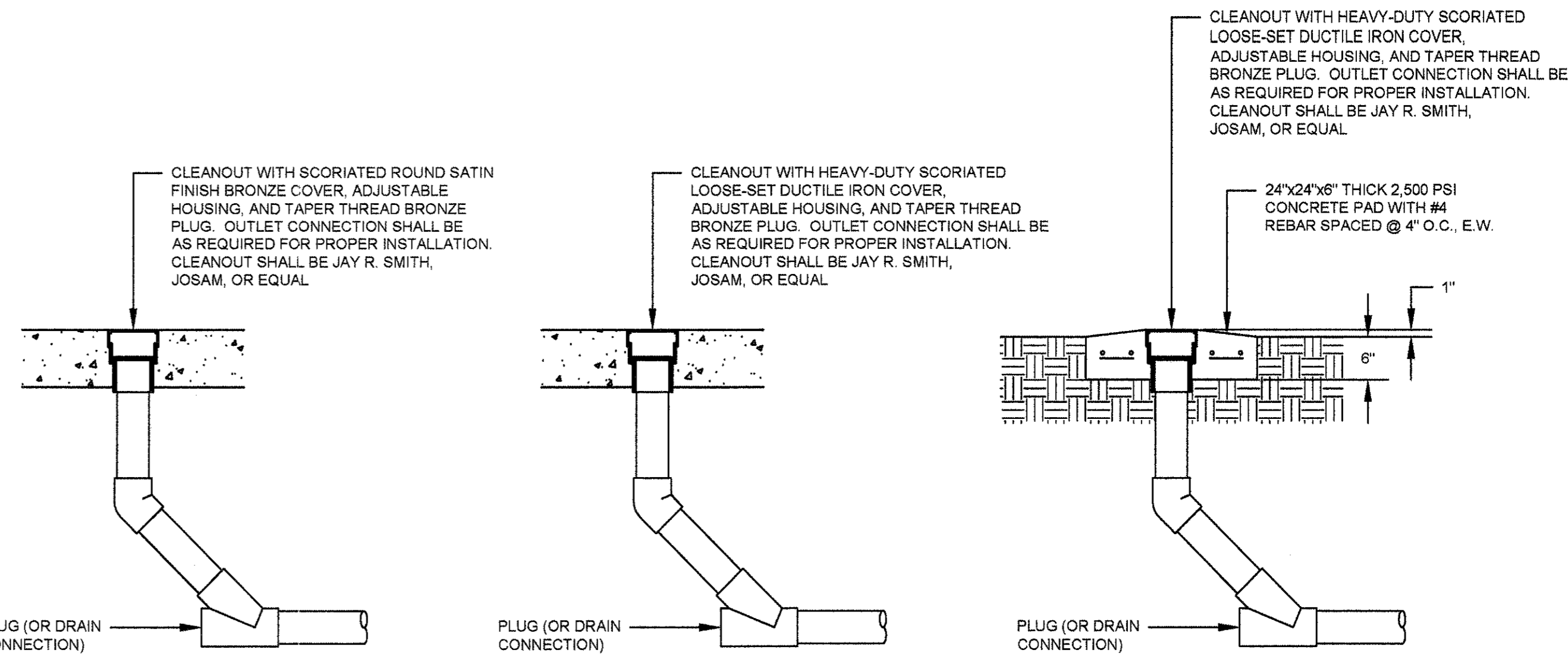
FRONT VIEW



SIDE VIEW

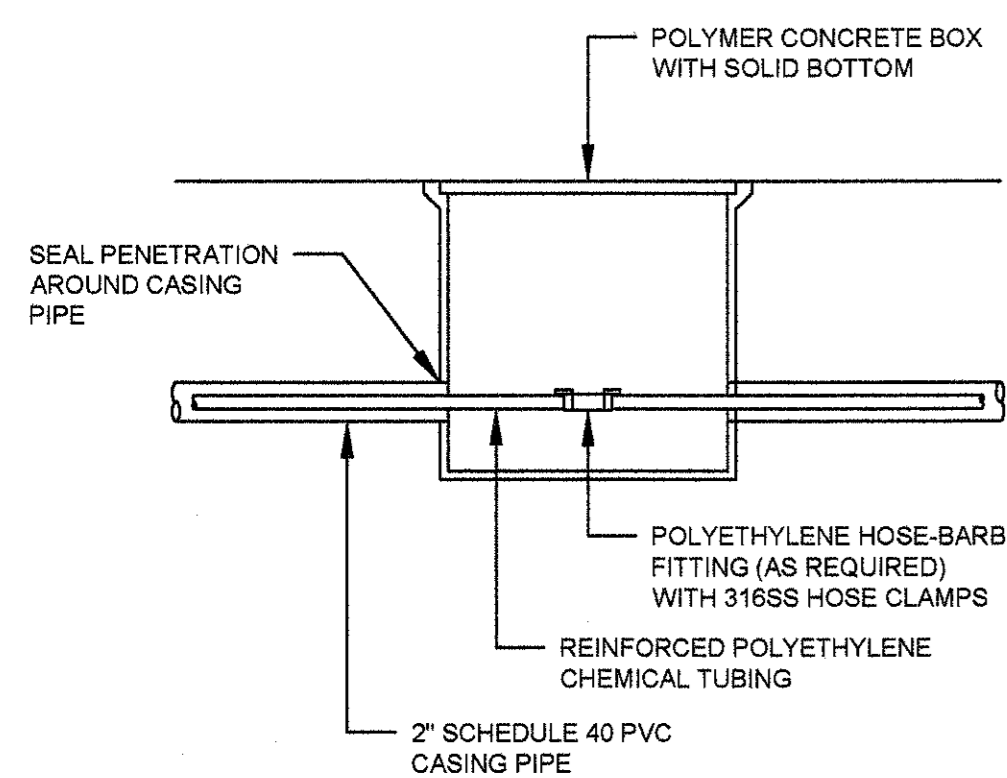
HOSE RACK DETAIL

SCALE: N.T.S.



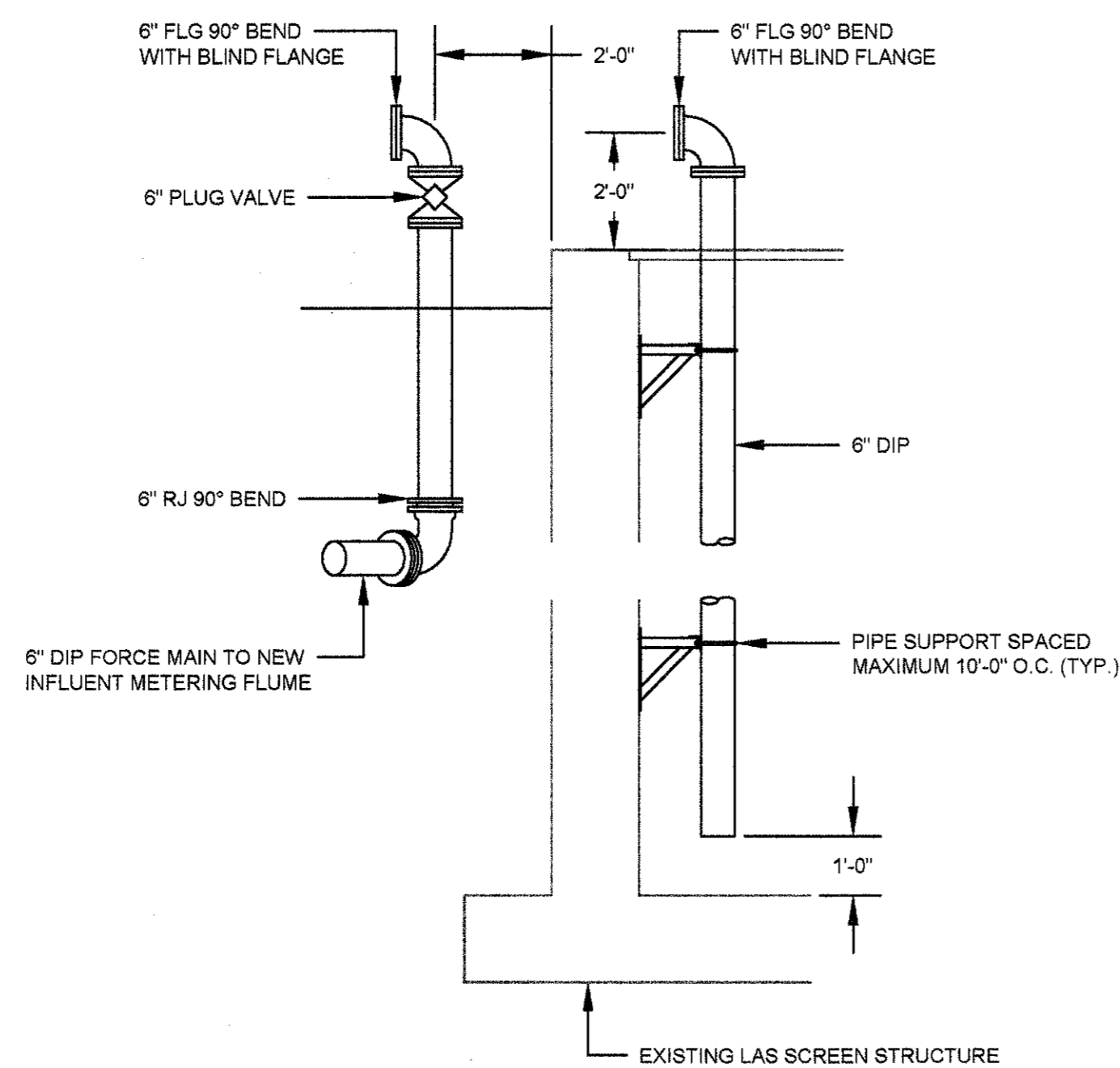
CLEANOUT DETAIL

SCALE: N.T.S.



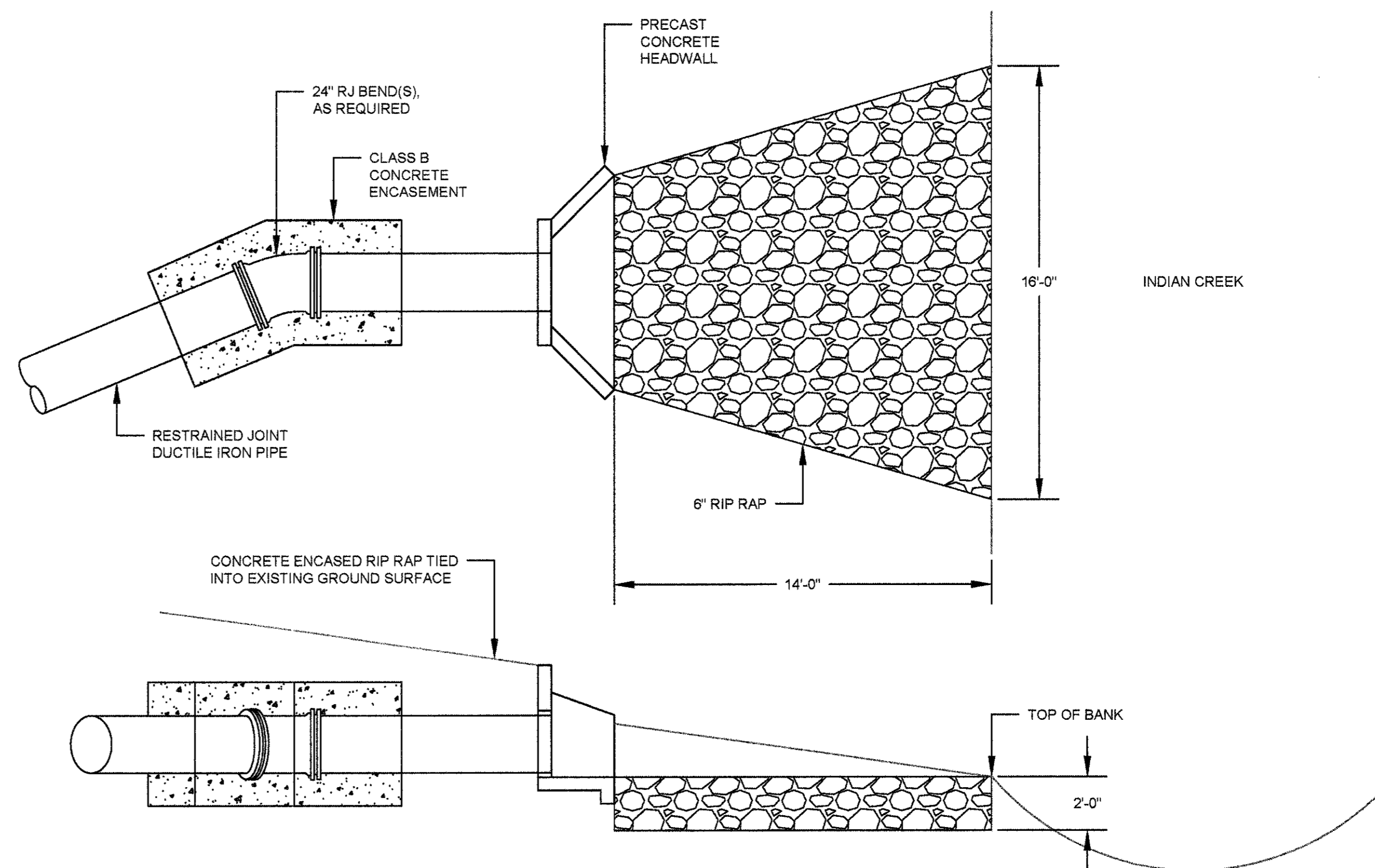
CHEMICAL LINE PULL-BOX DETAIL

SCALE: N.T.S.



OVERFLOW POND RETURN FORCE MAIN

SCALE: N.T.S.



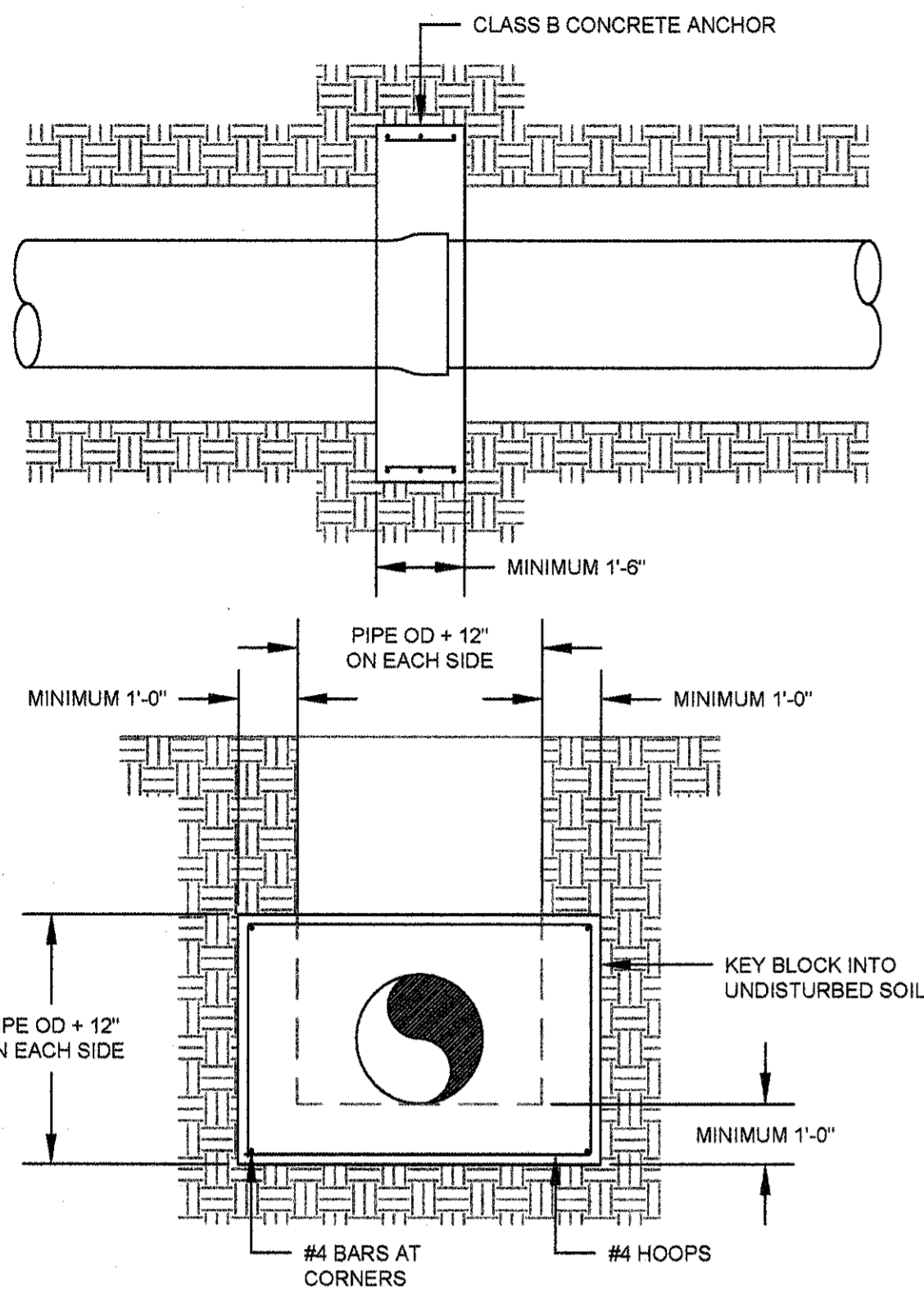
INDIAN CREEK OUTFALL DETAIL

SCALE: N.T.S.

NOTES:

- PULL BOXES SHALL BE QUAZITE POLYMER CONCRETE BOXES WITH LID AND SOLID BOTTOM, OR EQUAL.
- BOXES WITH A SINGLE CONDUIT ENTERING THE BOX ON A SINGLE SIDE SHALL BE 11"x18" BOXES. BOXES WITH 2 OR 3 CONDUITS ENTERING THE BOX ON A SINGLE SIDE SHALL BE 24"x24" BOXES.

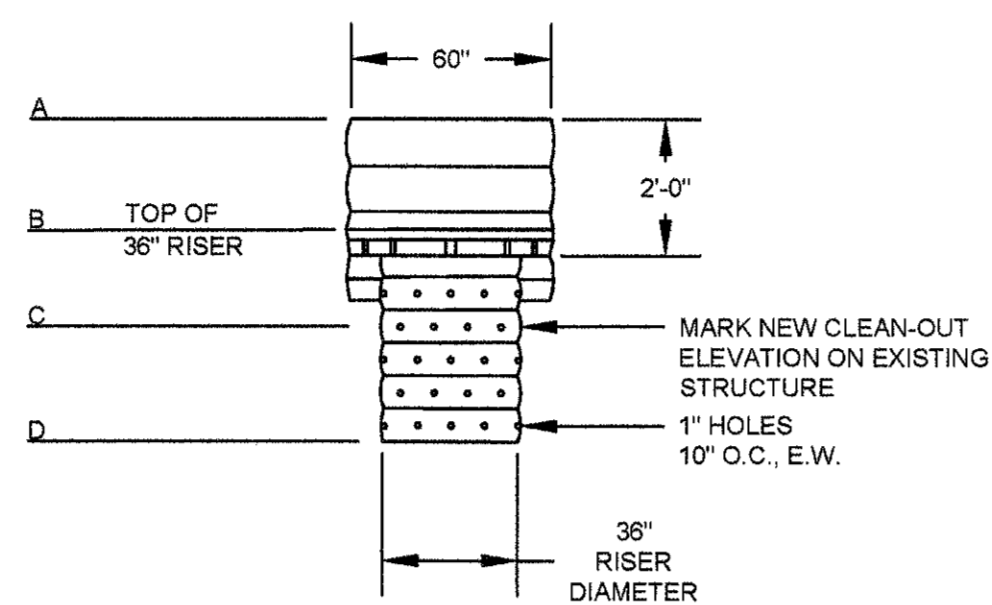
L:\Henry County WA\ICWRF Design\Drawings\Standard Civil Details.dwg - 8/26/2016



NOTES:

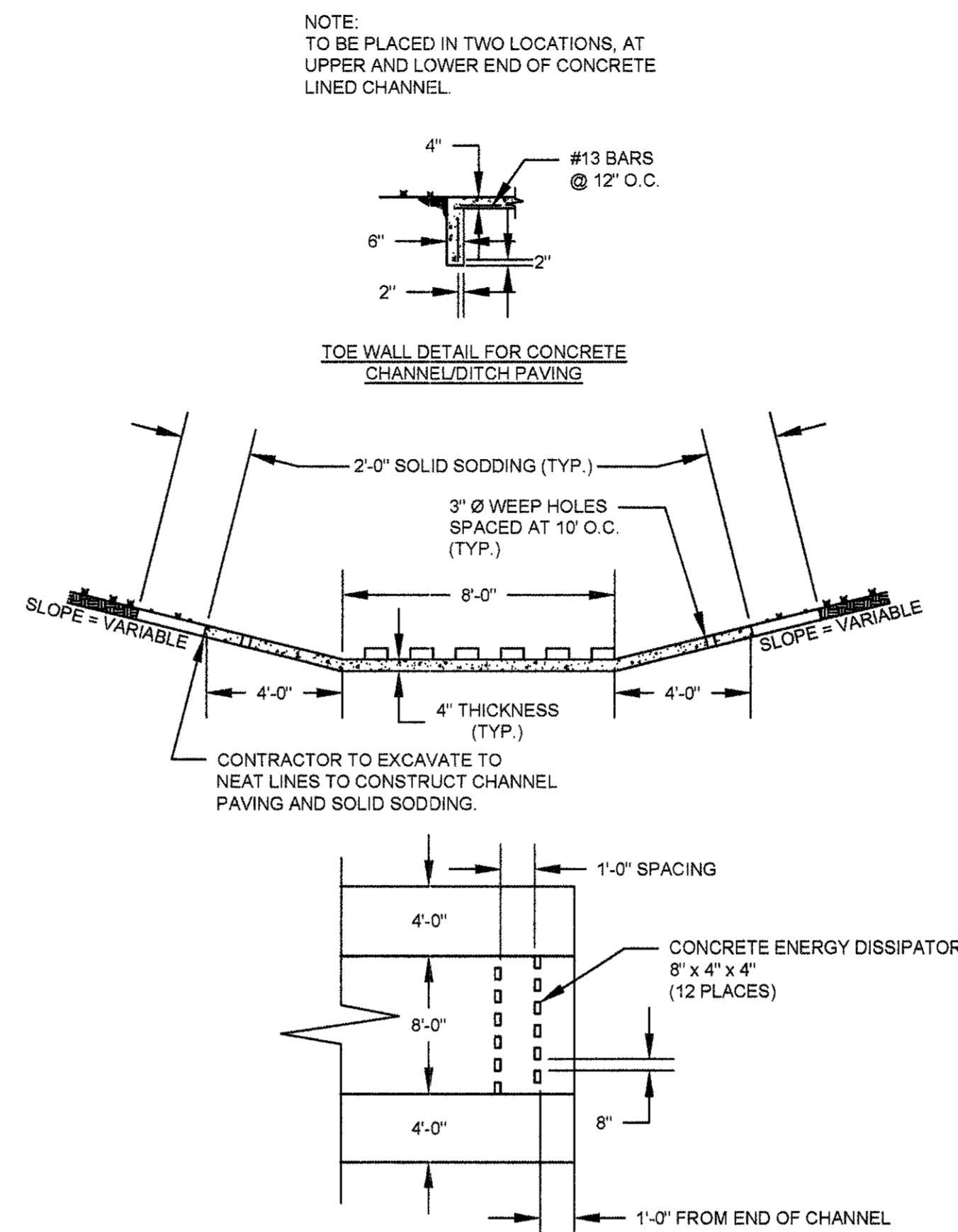
1. CONCRETE ANCHOR COLLAR SHALL BE INSTALLED ON ALL PIPES WITH A SLOPE GREATER THAN OR EQUAL TO 20-PERCENT AND IN OTHER LOCATIONS CALLED FOR ON DRAWINGS.
2. ANCHOR COLLAR SHALL BE INSTALLED ON EACH JOINT.
3. PIPE JOINTS SHALL BE RESTRAINED.

CONCRETE ANCHOR COLLAR DETAIL
SCALE: N.T.S.

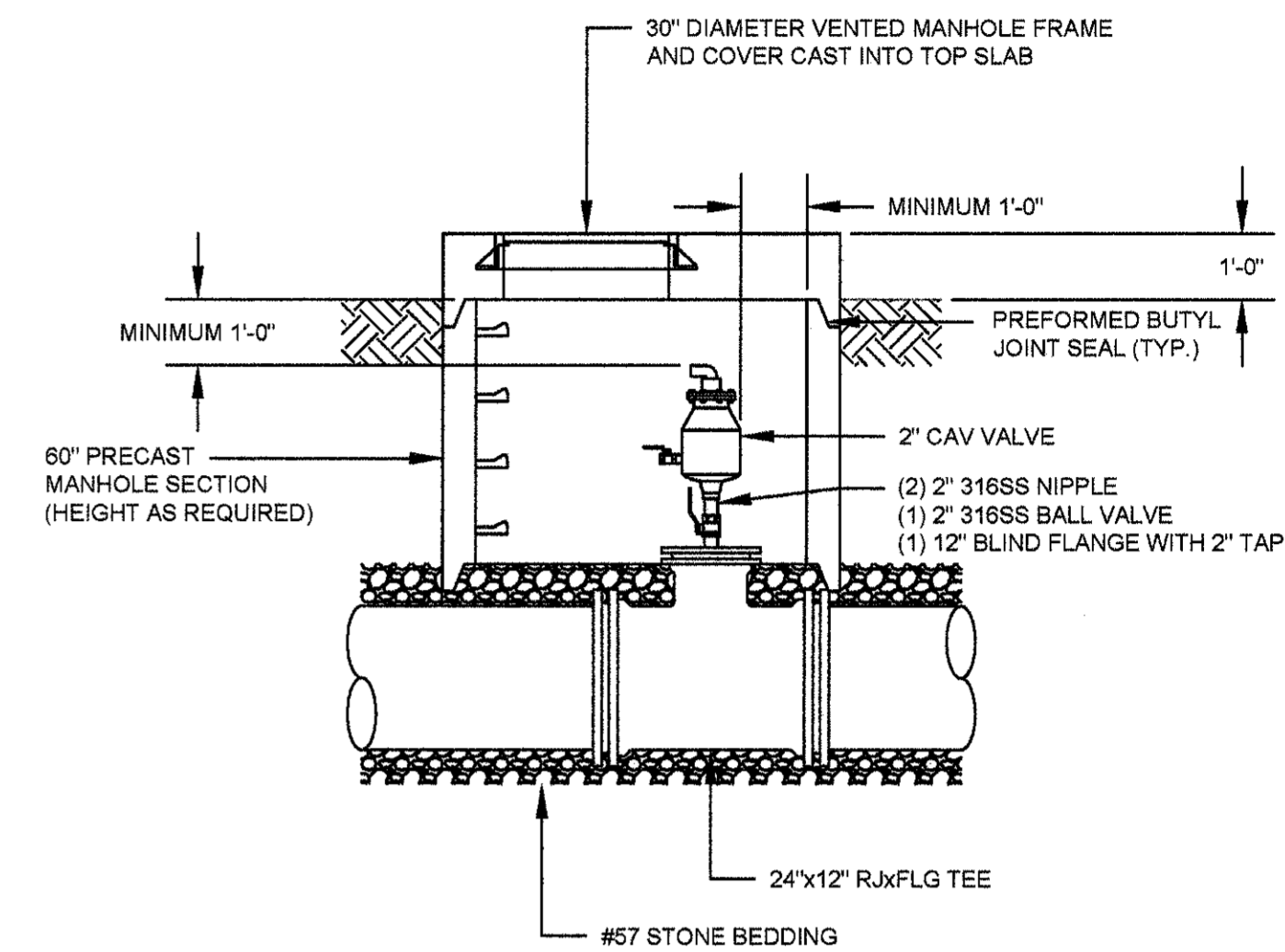


ELEVATION TABLE		
MARK	DESCRIPTION	ELEVATION
A	TOP 60" ANTI-VORTEX COLLAR	762.32
B	TOP 36" RISER	760.00
C	CLEAN-OUT ELEVATION	758.25
D	BOTTOM OF 36" CMP RISER	757.16

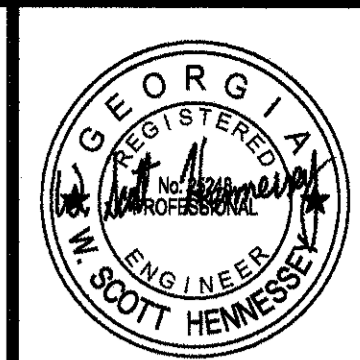
RISER PIPE OUTLET CONTROL STRUCTURE DETAIL
SCALE: N.T.S.



CONCRETE CHANNEL/DITCH PAVING DETAIL
SCALE: N.T.S.



COMBINATION AIR/VACUUM VALVE DETAIL
SCALE: N.T.S.



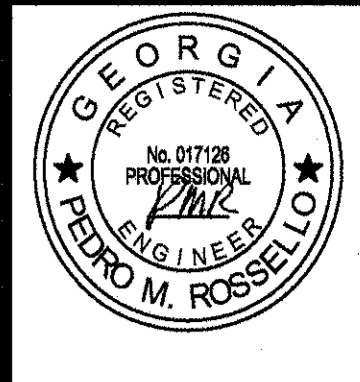
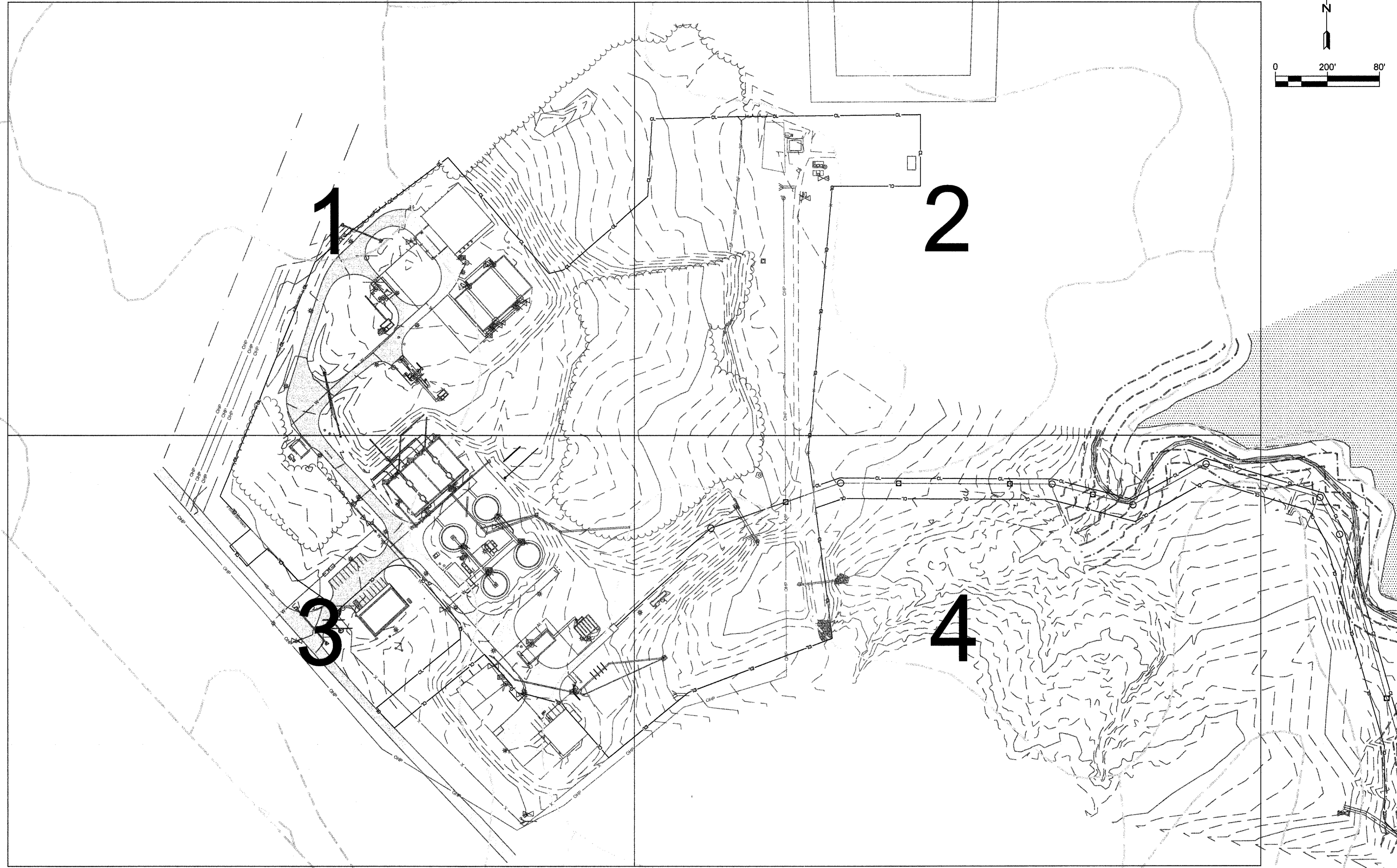
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	
		DATE

DGSN:
DRWN:
CHCK:
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD CIVIL
DETAILS 3

SHEET NO.
00-C-41



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

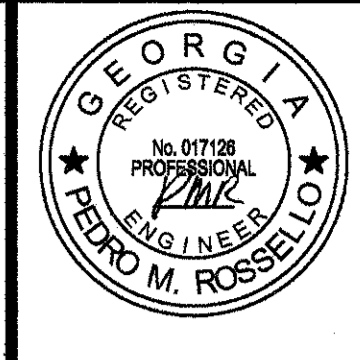
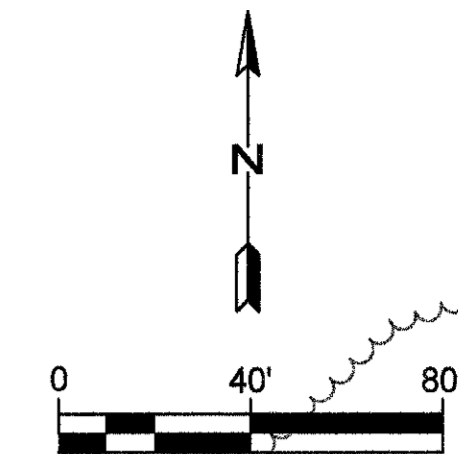
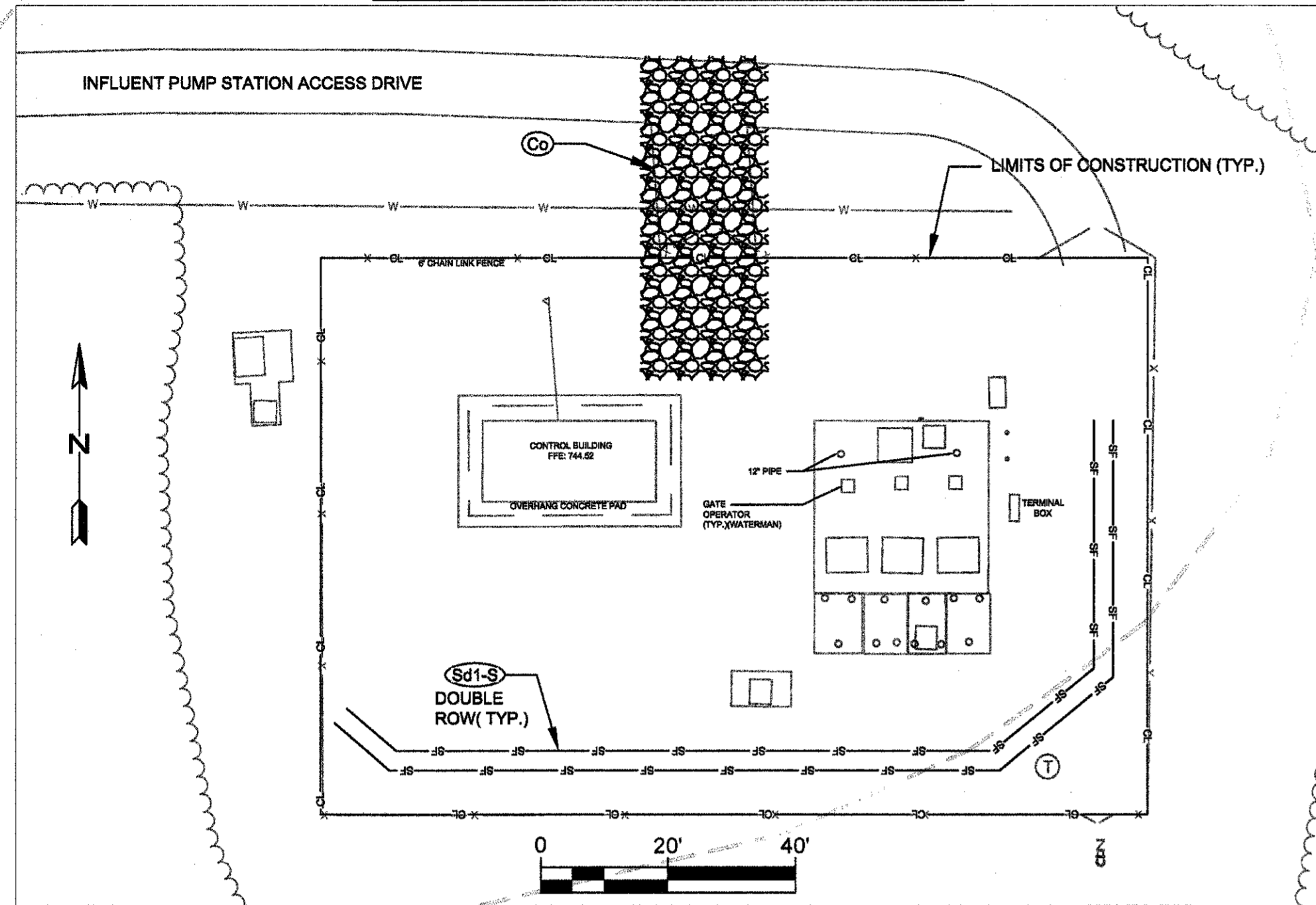
DSGN: AHW
 DRWN: AHW
 CHCK: PMR
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 KEY PLAN**

SHEET NO.
 00-ESC-1

MdB

OFF SITE INFLUENT PUMP STATION



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DESIGN: AHW
 DRAWN: AHW
 CHECK: PMR
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 1 - GRID 1

SHEET NO.
 00-ESC-2

MfC2

CeB

MdC

MdC

100' POWER EASEMENT

SOIL SERIES DELINEATION LINE (TYPICAL)

LIMITS OF CONSTRUCTION (TYP.)

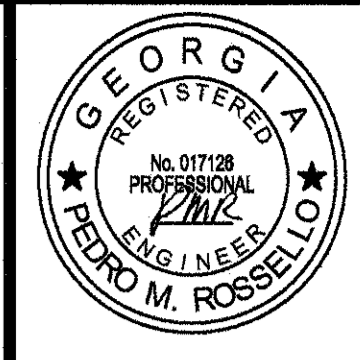
CLEARING LIMITS

CLEARING LIMITS

MATCHLINE - GRID SHEET 2

MATCHLINE - GRID SHEET 3

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

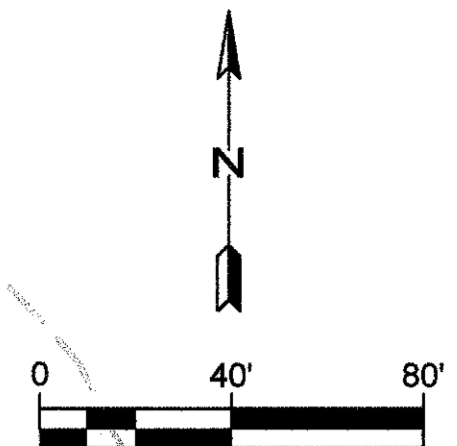
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: AHW
 DRWN: AHW
 CHCK: PMR

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

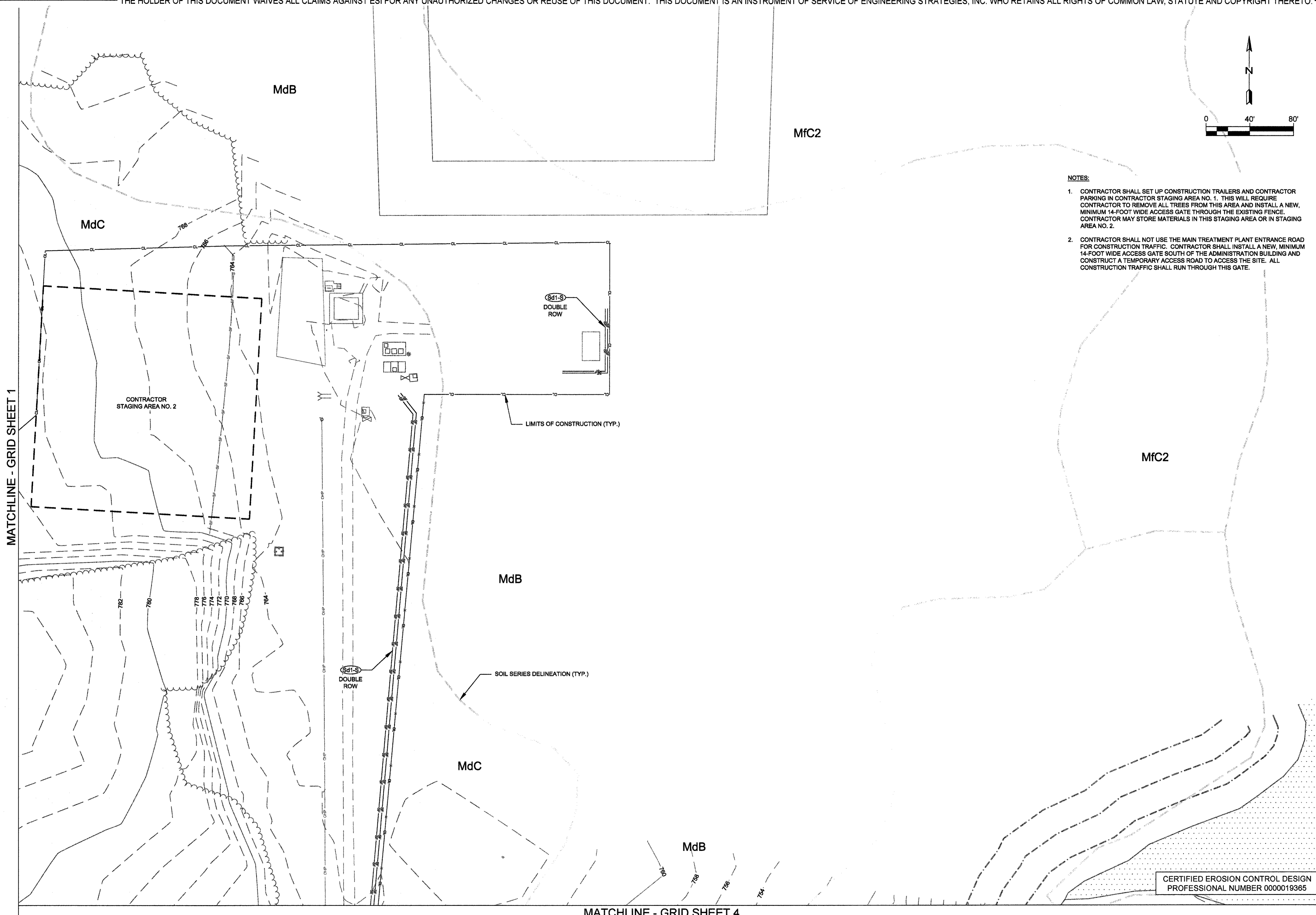
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL PLAN
PHASE 1 - GRID 2

SHEET NO.
00-ESC-3



NOTES:

- CONTRACTOR SHALL SET UP CONSTRUCTION TRAILERS AND CONTRACTOR PARKING IN CONTRACTOR STAGING AREA NO. 1. THIS WILL REQUIRE CONTRACTOR TO REMOVE ALL TREES FROM THIS AREA AND INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE THROUGH THE EXISTING FENCE. CONTRACTOR MAY STORE MATERIALS IN THIS STAGING AREA OR IN STAGING AREA NO. 2.
- CONTRACTOR SHALL NOT USE THE MAIN TREATMENT PLANT ENTRANCE ROAD FOR CONSTRUCTION TRAFFIC. CONTRACTOR SHALL INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE SOUTH OF THE ADMINISTRATION BUILDING AND CONSTRUCT A TEMPORARY ACCESS ROAD TO ACCESS THE SITE. ALL CONSTRUCTION TRAFFIC SHALL RUN THROUGH THIS GATE.

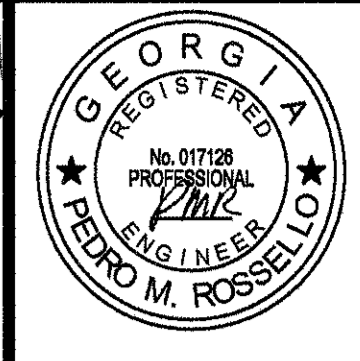


MATCHLINE - GRID SHEET 1

MATCHLINE - GRID SHEET 4

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365

MATCHLINE - GRID SHEET 1



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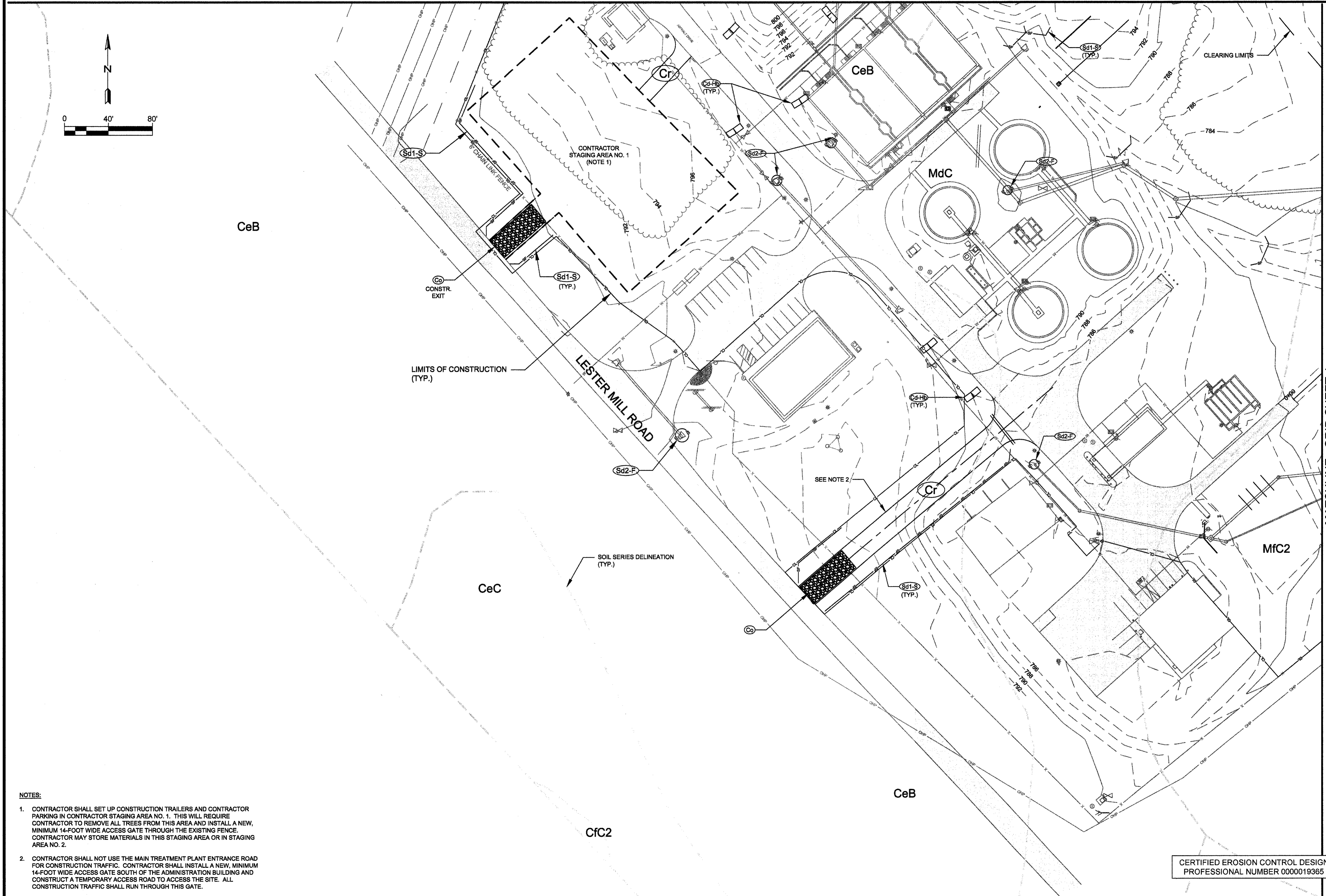
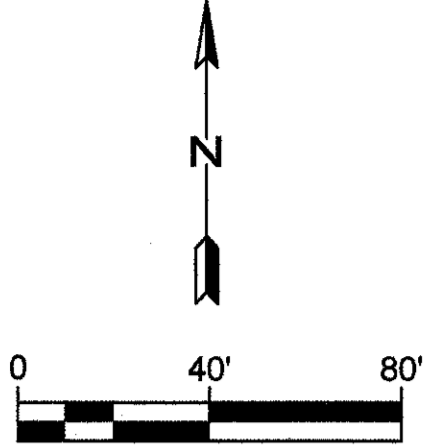
DATE:	AUGUST 2016
PROJECT NUMBER:	
DATE:	
REVISION:	

DSGN: AHW
 DRWN: AHW
 CHCK: PMR

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 1 - GRID 3

SHEET NO.
 00-ESC-4



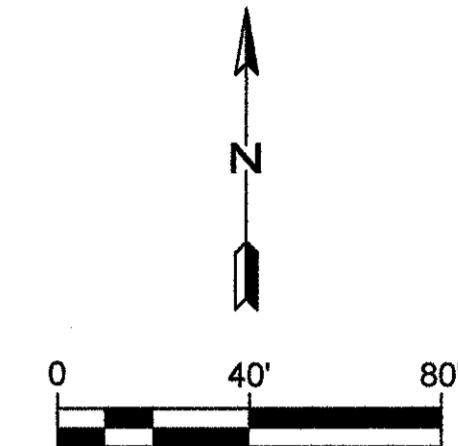
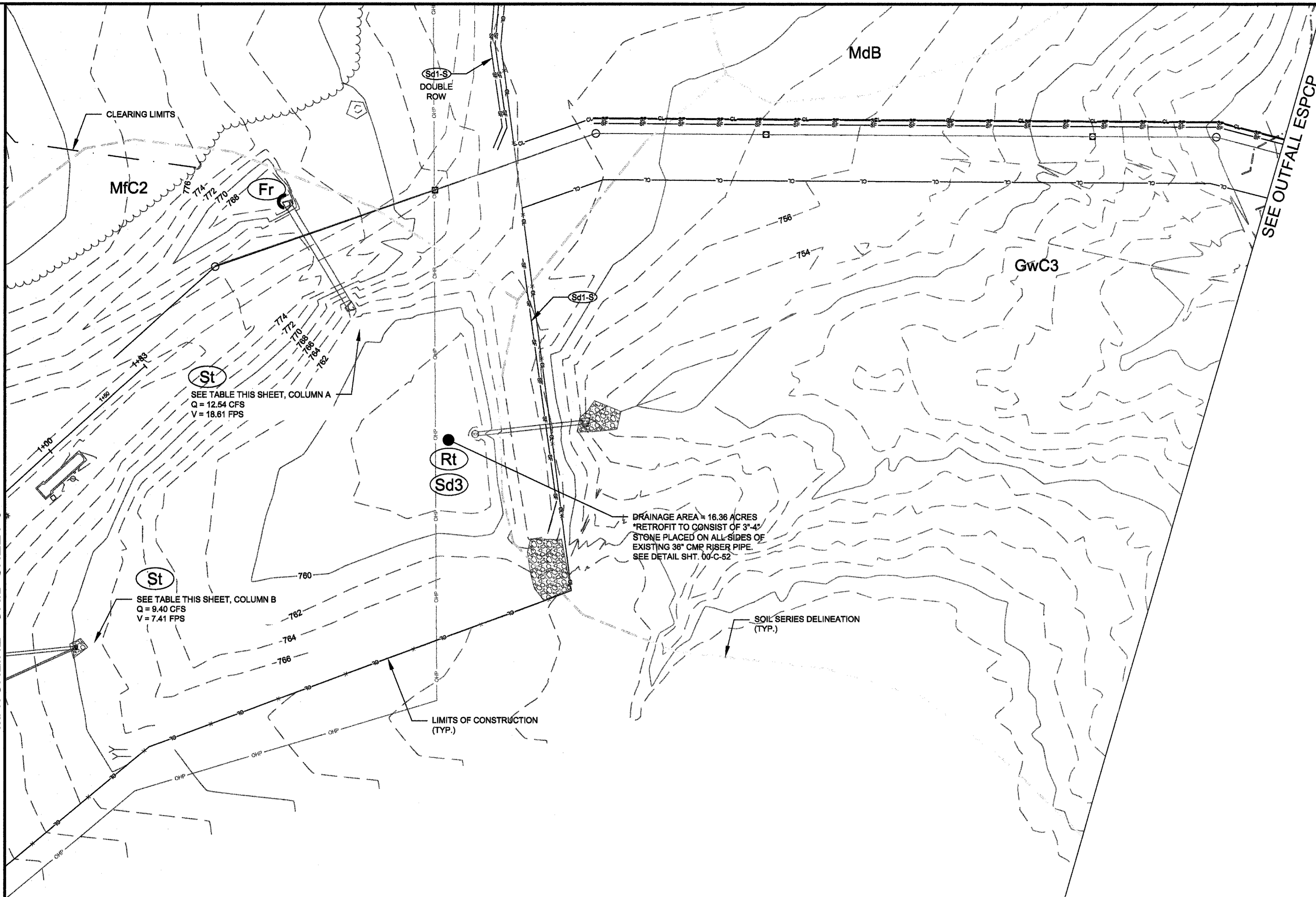
- NOTES:**
- CONTRACTOR SHALL SET UP CONSTRUCTION TRAILERS AND CONTRACTOR PARKING IN CONTRACTOR STAGING AREA NO. 1. THIS WILL REQUIRE CONTRACTOR TO REMOVE ALL TREES FROM THIS AREA AND INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE THROUGH THE EXISTING FENCE. CONTRACTOR MAY STORE MATERIALS IN THIS STAGING AREA OR IN STAGING AREA NO. 2.
 - CONTRACTOR SHALL NOT USE THE MAIN TREATMENT PLANT ENTRANCE ROAD FOR CONSTRUCTION TRAFFIC. CONTRACTOR SHALL INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE SOUTH OF THE ADMINISTRATION BUILDING AND CONSTRUCT A TEMPORARY ACCESS ROAD TO ACCESS THE SITE. ALL CONSTRUCTION TRAFFIC SHALL RUN THROUGH THIS GATE.

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365

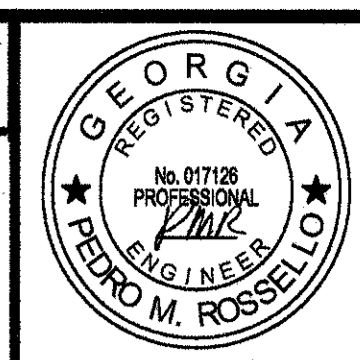
MATCHLINE - GRID SHEET 4

MATCHLINE - GRID SHEET 2

MATCHLINE - GRID SHEET 3



RIP RAP APRON TABLE		
	A	B
LENGTH (La)	21 ft	12 ft
W1 = Do*3	10.5 ft	6 ft
W2 = La + Do	24.5 ft	14 ft
STONE SIZE (d50)	8 in	6 in
THICKNESS (D)	24 in	18 in



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

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REVISION	DATE
Δ	

DSGN: AHW
 DRWN: AHW
 CHCK: PMR
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

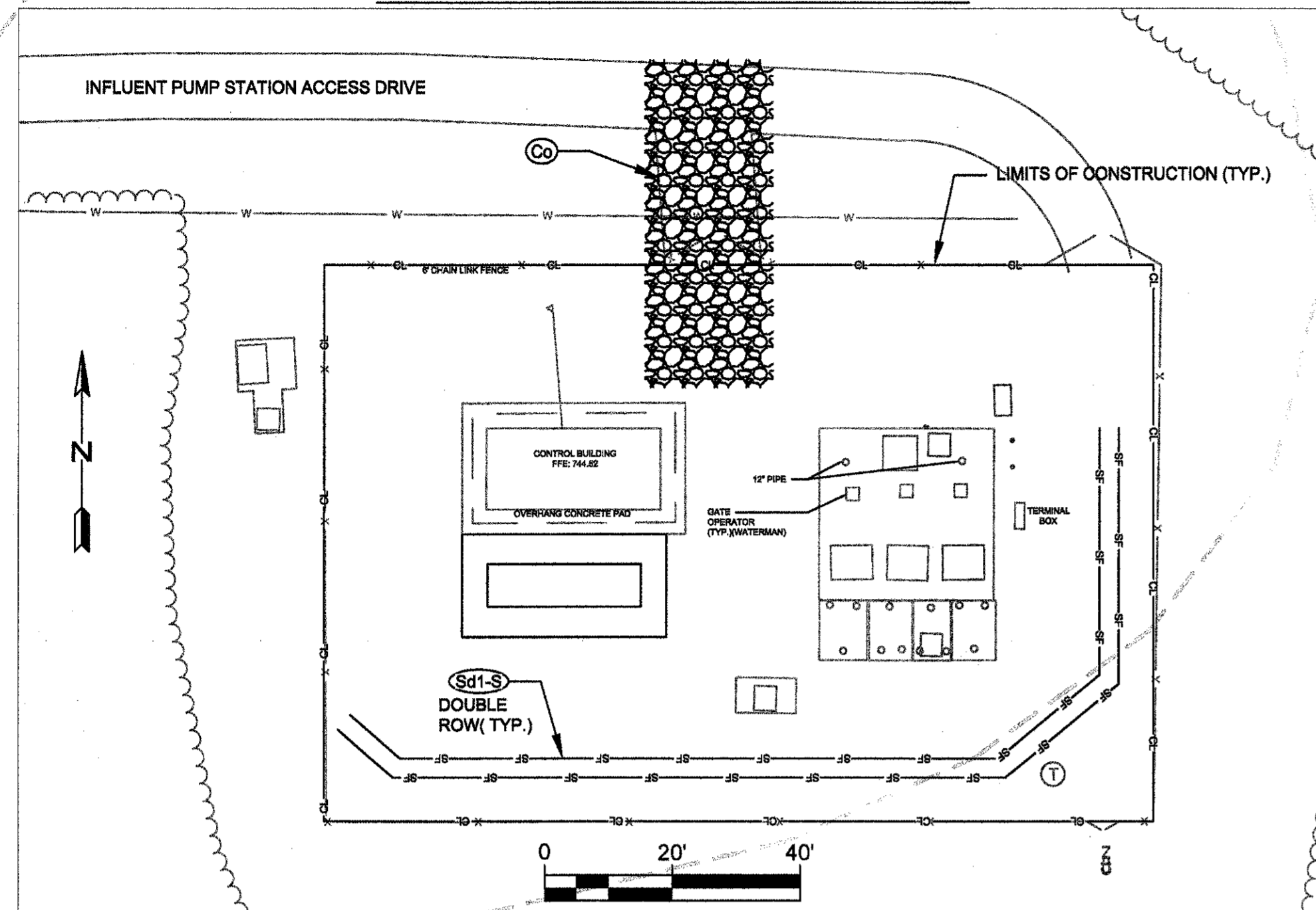
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 1 - GRID 4

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365

SHEET NO.
 00-ESC-5

MdB

OFF SITE INFLUENT PUMP STATION



MfC2

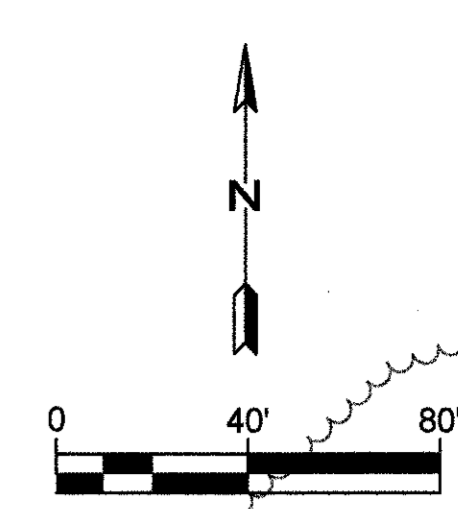
SOIL SERIES DELINEATION LINE (TYPICAL)

CeB

MdC

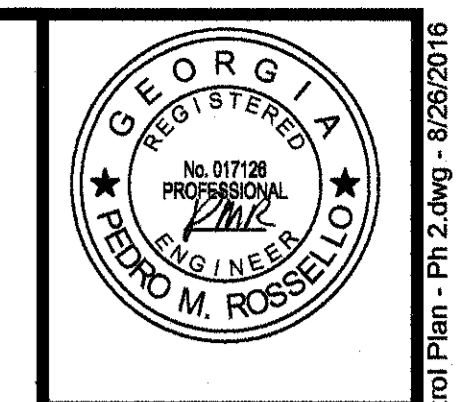
100' POWER EASEMENT

CLEARING LIMITS



MATCHLINE - GRID SHEET 2

MATCHLINE - GRID SHEET 3



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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

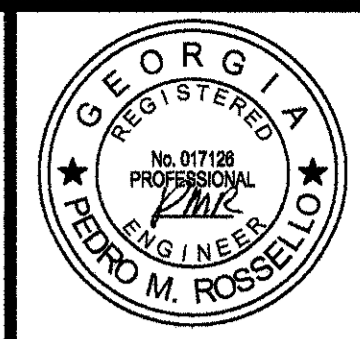
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: AHW
DRWN: AHW
CHK: PMR
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL PLAN
PHASE 2 - GRID 1

SHEET NO.
00-ESC-6

CERTIFIED EROSION CONTROL DESIGN
PROFESSIONAL NUMBER 0000019365



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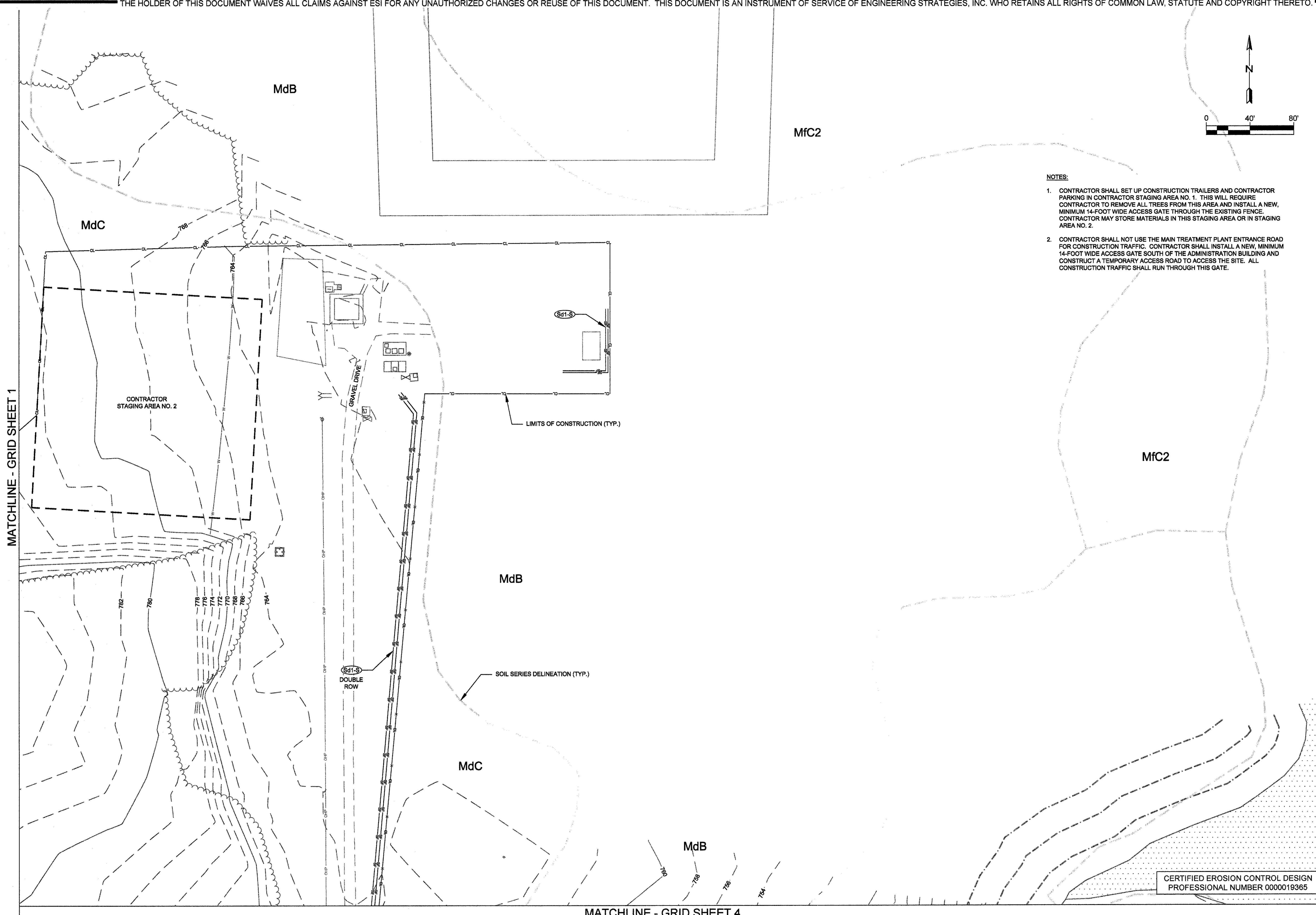
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**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 2 - GRID 2**

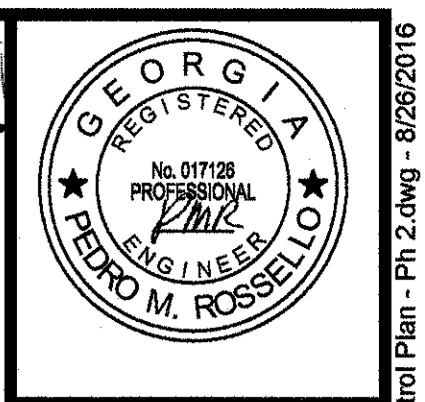
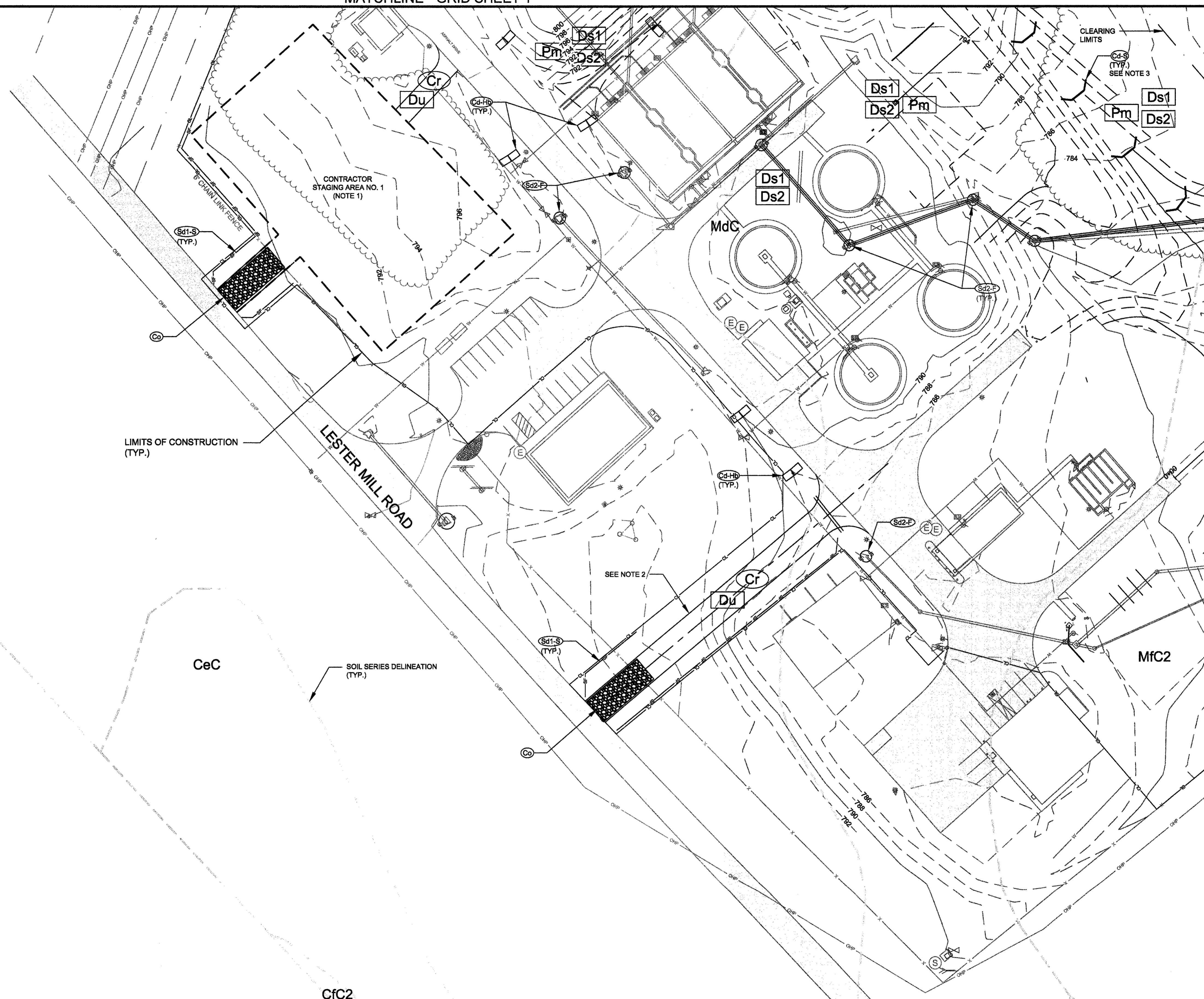
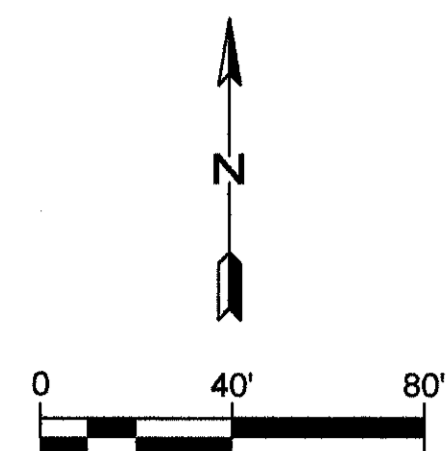
SHEET NO.
00-ESC-7



- NOTES:**
1. CONTRACTOR SHALL SET UP CONSTRUCTION TRAILERS AND CONTRACTOR PARKING IN CONTRACTOR STAGING AREA NO. 1. THIS WILL REQUIRE CONTRACTOR TO REMOVE ALL TREES FROM THIS AREA AND INSTALL A NEW, MINIMUM 14-FOOT WIDE ACCESS GATE THROUGH THE EXISTING FENCE. CONTRACTOR MAY STORE MATERIALS IN THIS STAGING AREA OR IN STAGING AREA NO. 2.
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MATCHLINE - GRID SHEET 1



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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 2 - GRID 3

SHEET NO.
 00-ESC-8

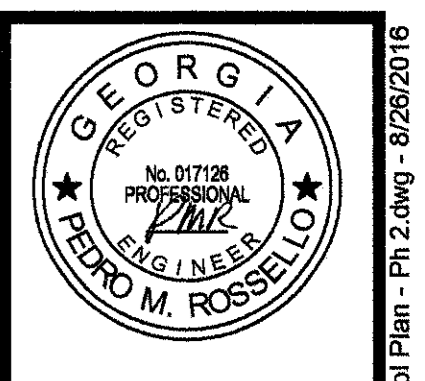
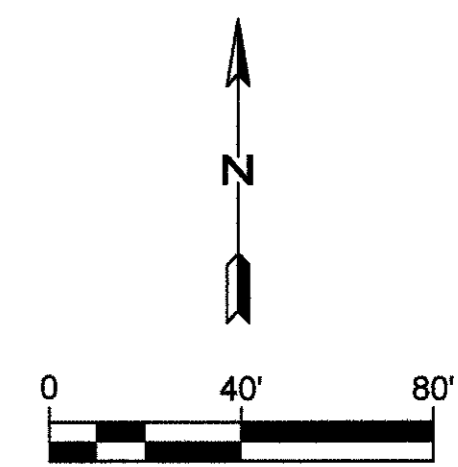
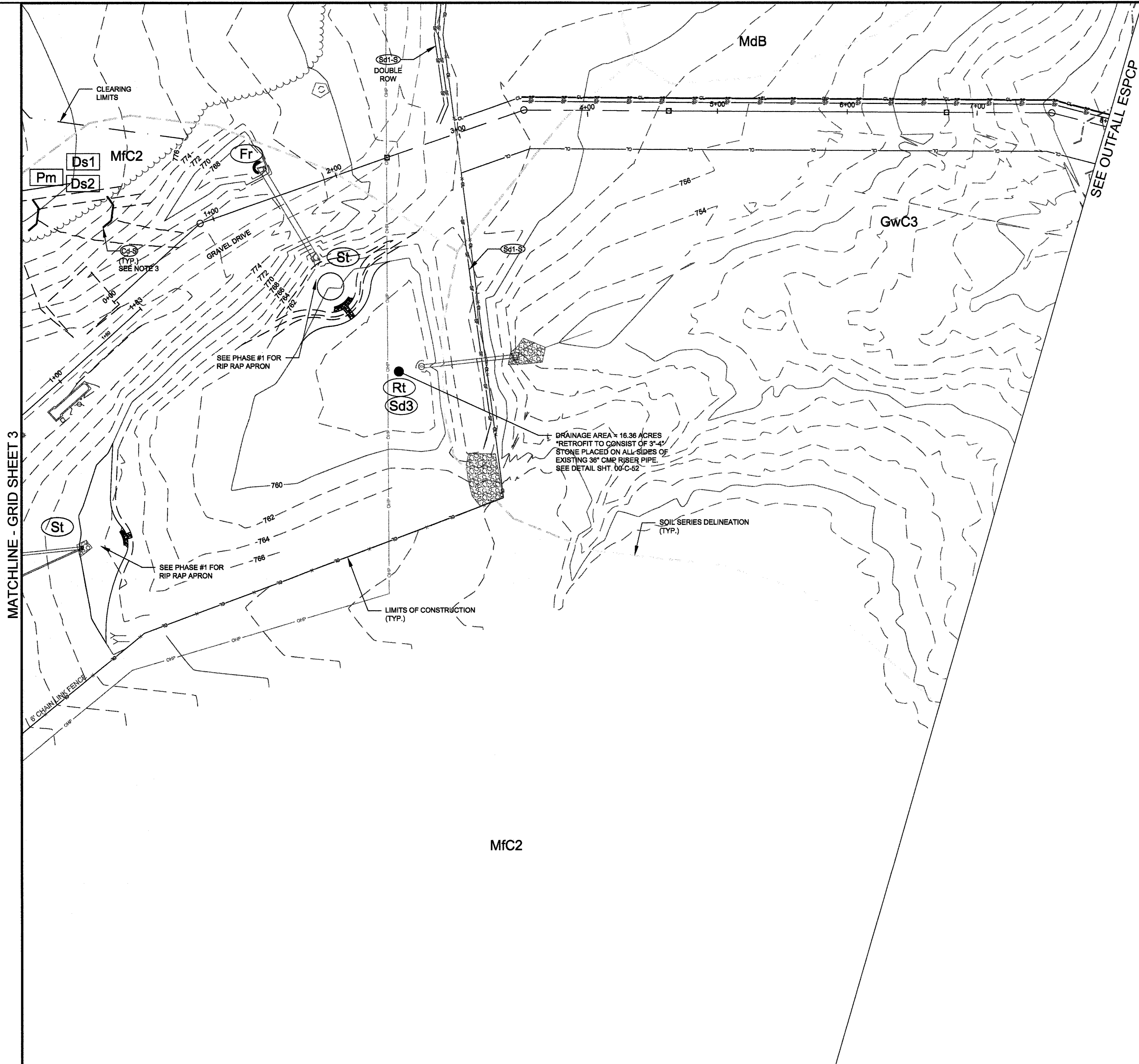
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 - THE FLOW (IN CFS) IN THE CHANNEL/DITCH IS APPROX. 12.54 CFS. BECAUSE THIS IS GRATER THAN 2.0 CFS, COMPOST FILTER SOCKS, OR APPROVED EQUAL, SHALL BE PLACED ON THE UPSTREAM SIDE OF EACH CHECK DAM SUCH THAT THE COMPOST FILTER SOCK REACHES AT LEAST 24-INCHES FURTHER THAN THE STONE CHECK DAMS, LATERALLY UP THE BANK ON EACH SIDE OF THE CHANNEL.

MATCHLINE - GRID SHEET 4

L:Henry County WACWRF DesignDwgSheetsESCS-Erosion & Sediment Control Plan - Ph 2.dwg - 8/26/2016

MATCHLINE - GRID SHEET 2



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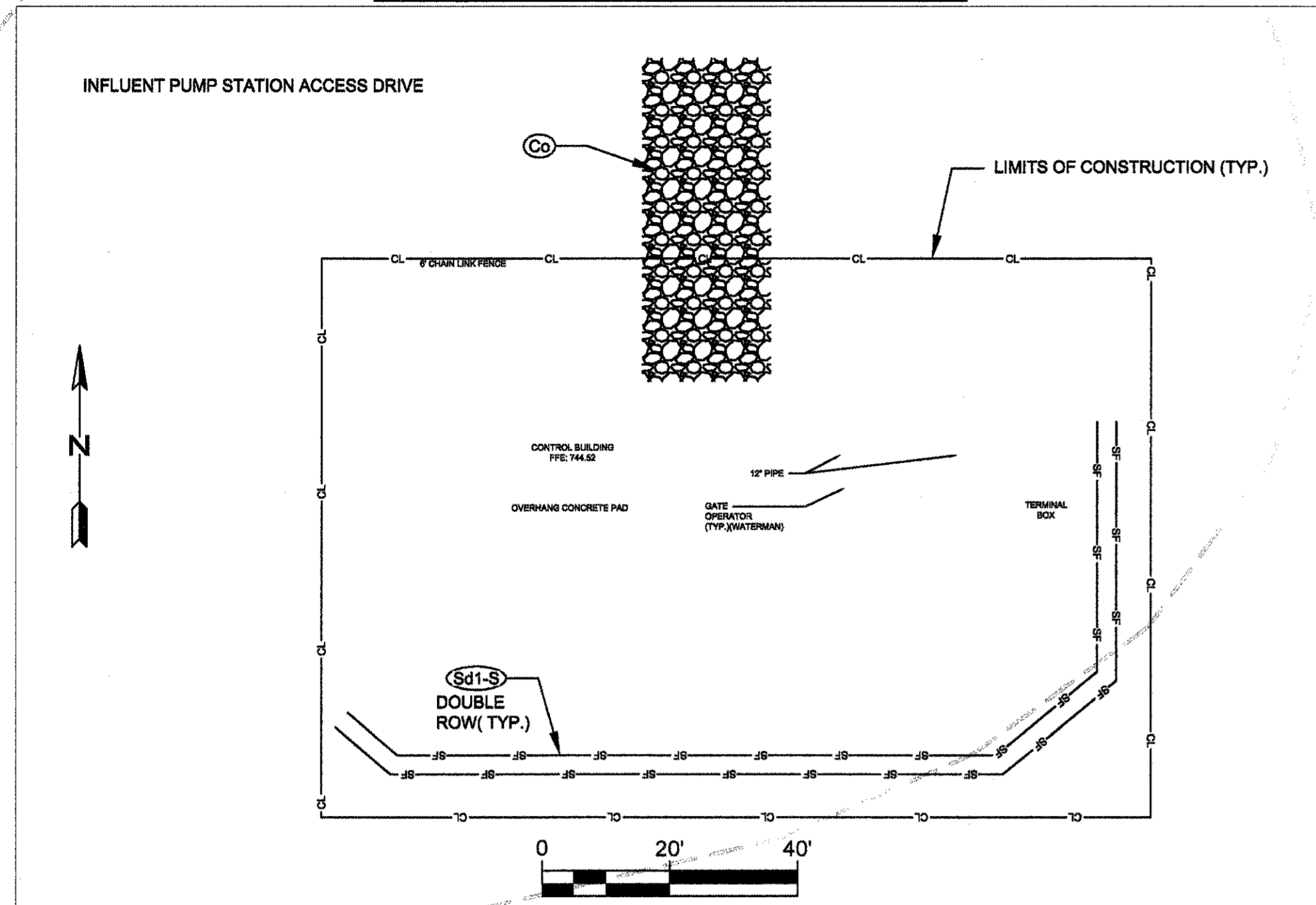
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 2 - GRID 4

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365

SHEET NO.
 00-ESC-9

MdB

OFF SITE INFLUENT PUMP STATION

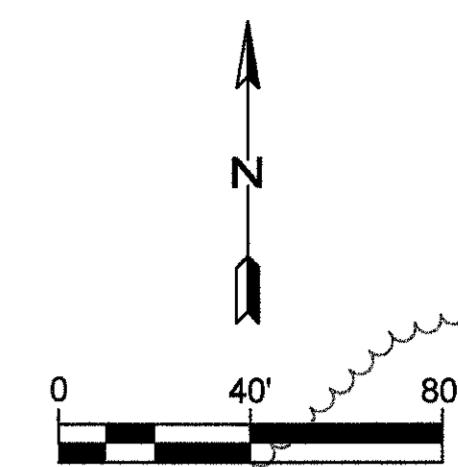


MfC2

SOIL SERIES DELINEATION LINE (TYPICAL)

CeB

MdC



100' POWER EASEMENT

CLEARING LIMITS

Ds3
(TYP. ALL DISTURBED AREAS)

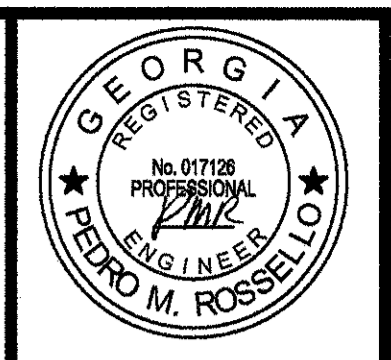
Ds3
(TYP. ALL DISTURBED AREAS)

CONCRETE LINED DITCH
(SEE DETAIL SHT. 00-C-41)

CLEARING LIMITS

MATCHLINE - GRID SHEET 3

MATCHLINE - GRID SHEET 2



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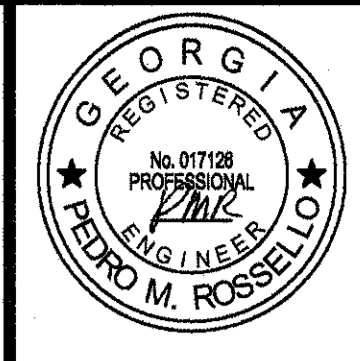
DATE:	AUGUST 2016
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HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL PLAN
PHASE 3 - GRID 1

SHEET NO.
00-ESC-10

CERTIFIED EROSION CONTROL DESIGN
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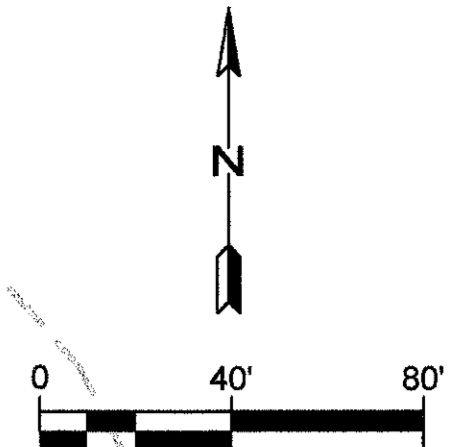
PROJECT NUMBER:	DATE:
△	AUGUST 2016
REVISION	DATE

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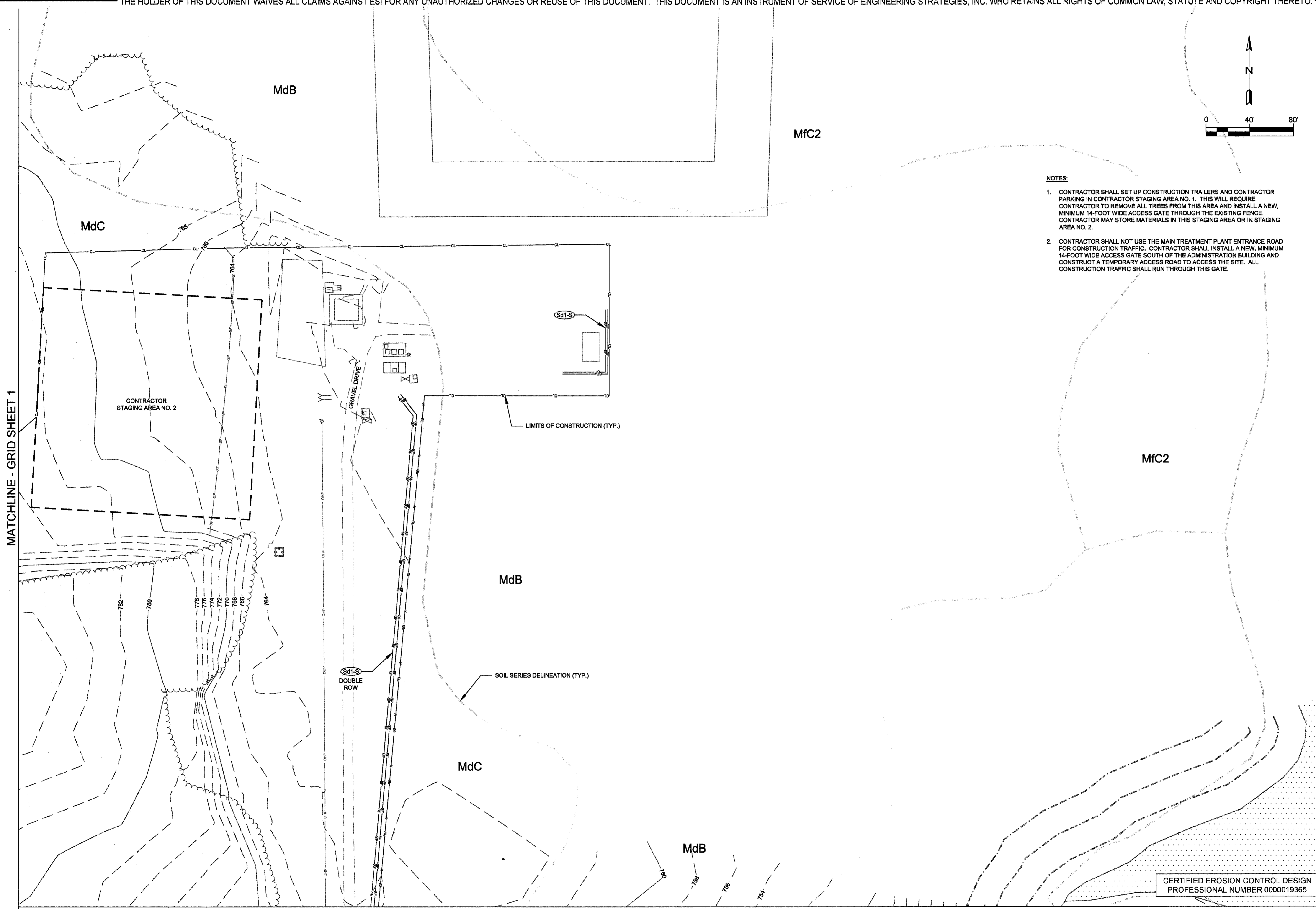
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL PLAN
PHASE 3 - GRID 2

SHEET NO.
00-ESC-11



NOTES:

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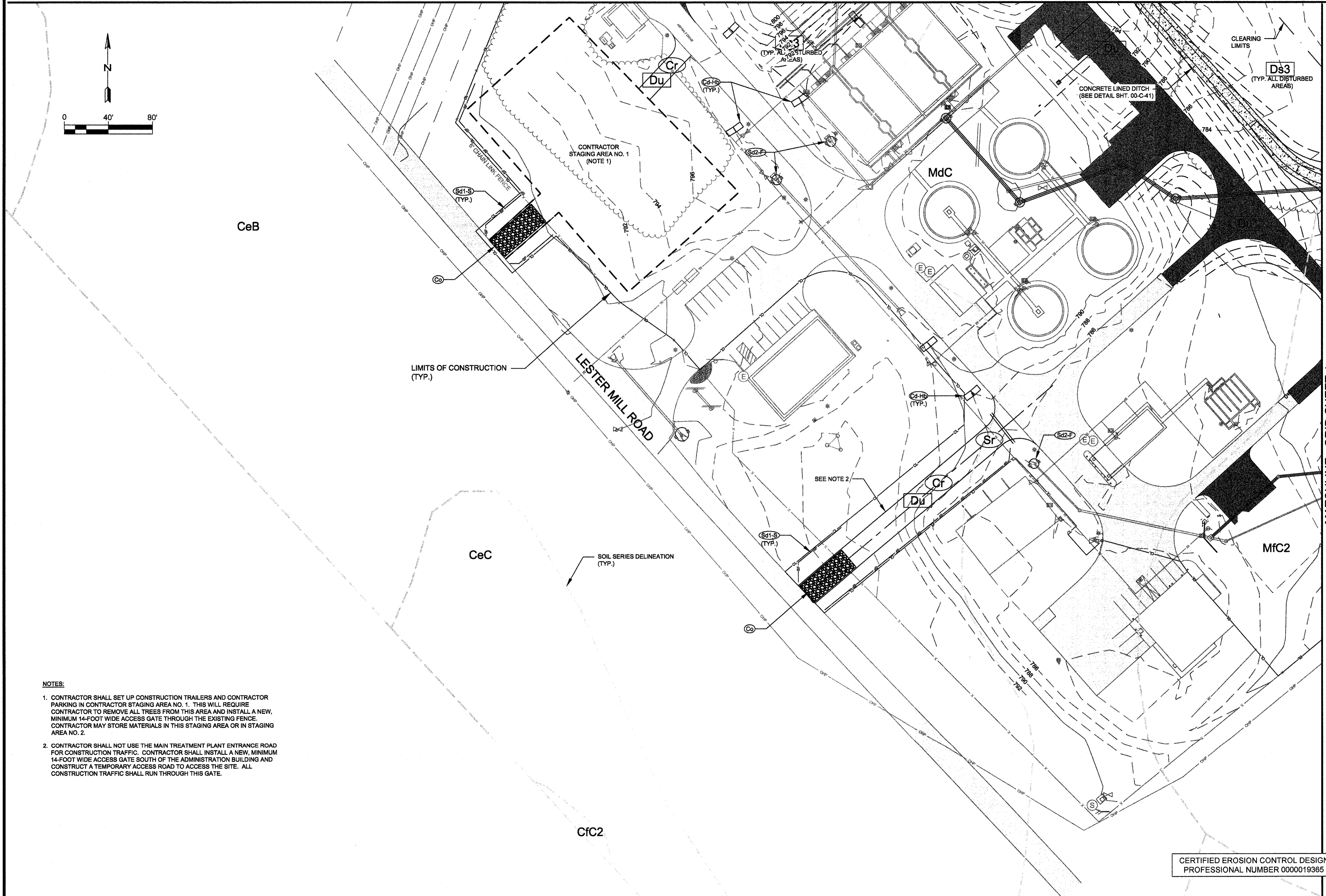
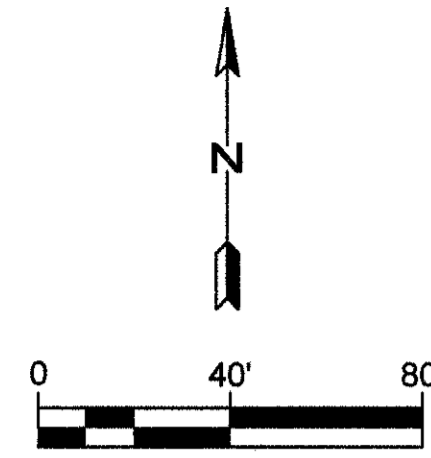


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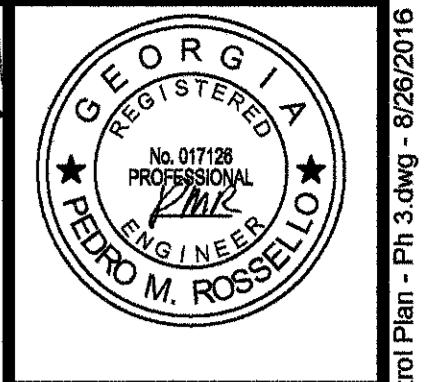
MATCHLINE - GRID SHEET 1

MATCHLINE - GRID SHEET 4

MATCHLINE - GRID SHEET 1



- NOTES:**
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 (770) 429-0001

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DATE:	
REVISION:	

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 CHCK: PMR

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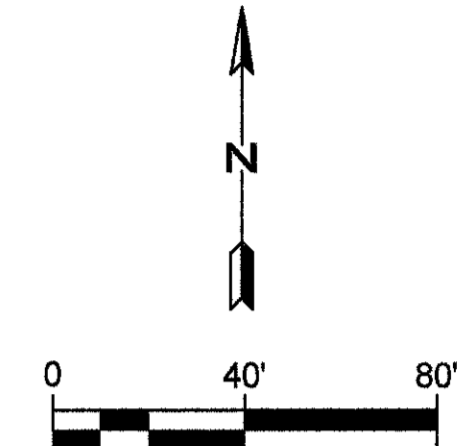
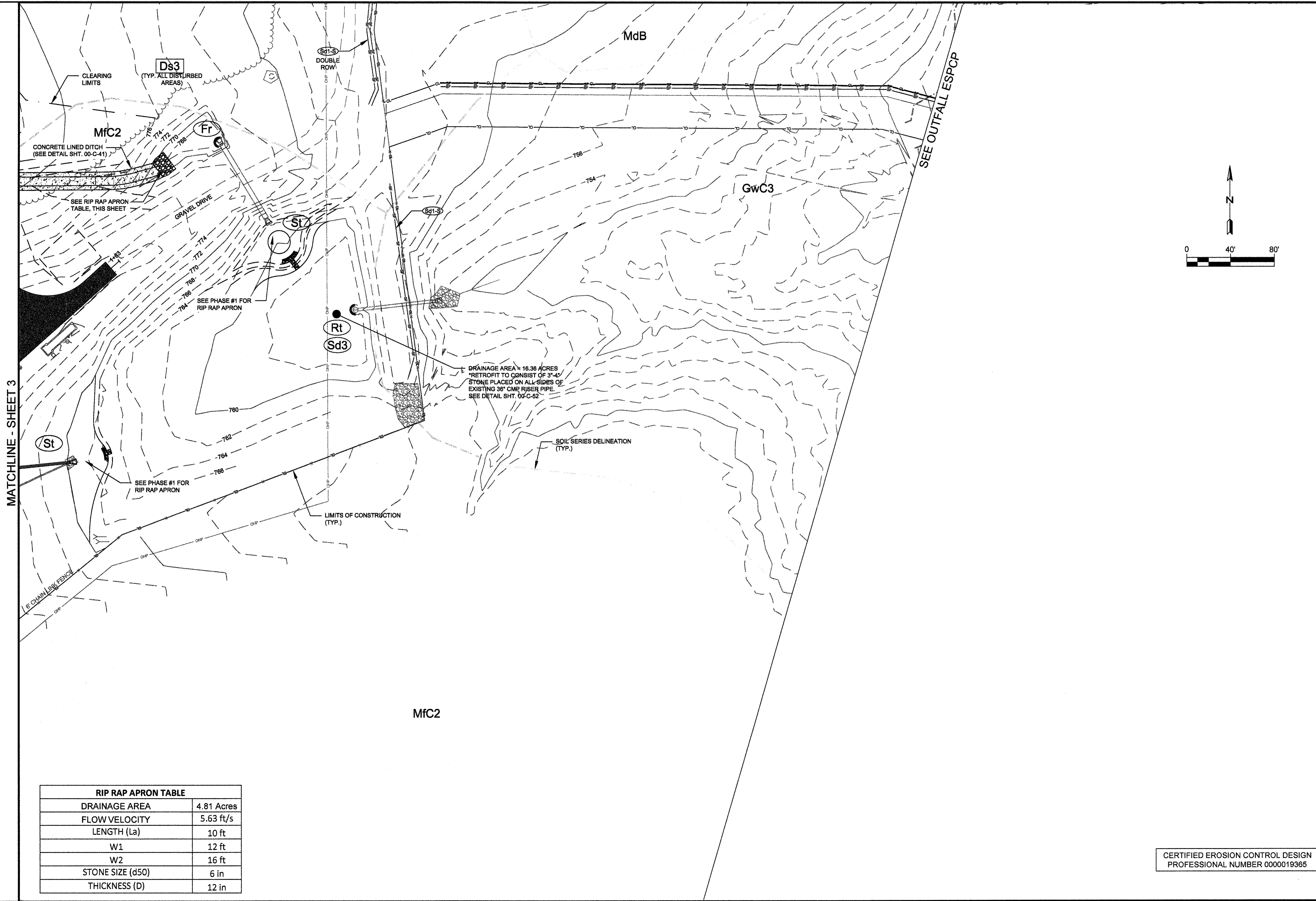
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 3 - GRID 3

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365

SHEET NO.
 00-ESC-12

MATCHLINE - GRID SHEET 2

MATCHLINE - SHEET 3



RIP RAP APRON TABLE	
DRAINAGE AREA	4.81 Acres
FLOW VELOCITY	5.63 ft/s
LENGTH (La)	10 ft
W1	12 ft
W2	16 ft
STONE SIZE (d50)	6 in
THICKNESS (D)	12 in



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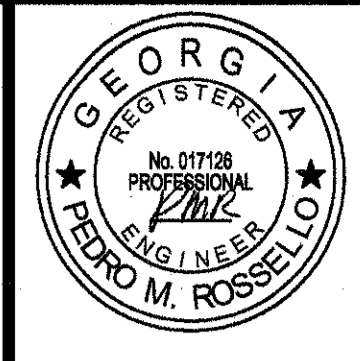
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 PHASE 3 - GRID 4

CERTIFIED EROSION CONTROL DESIGN
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SHEET NO.
 00-ESC-13



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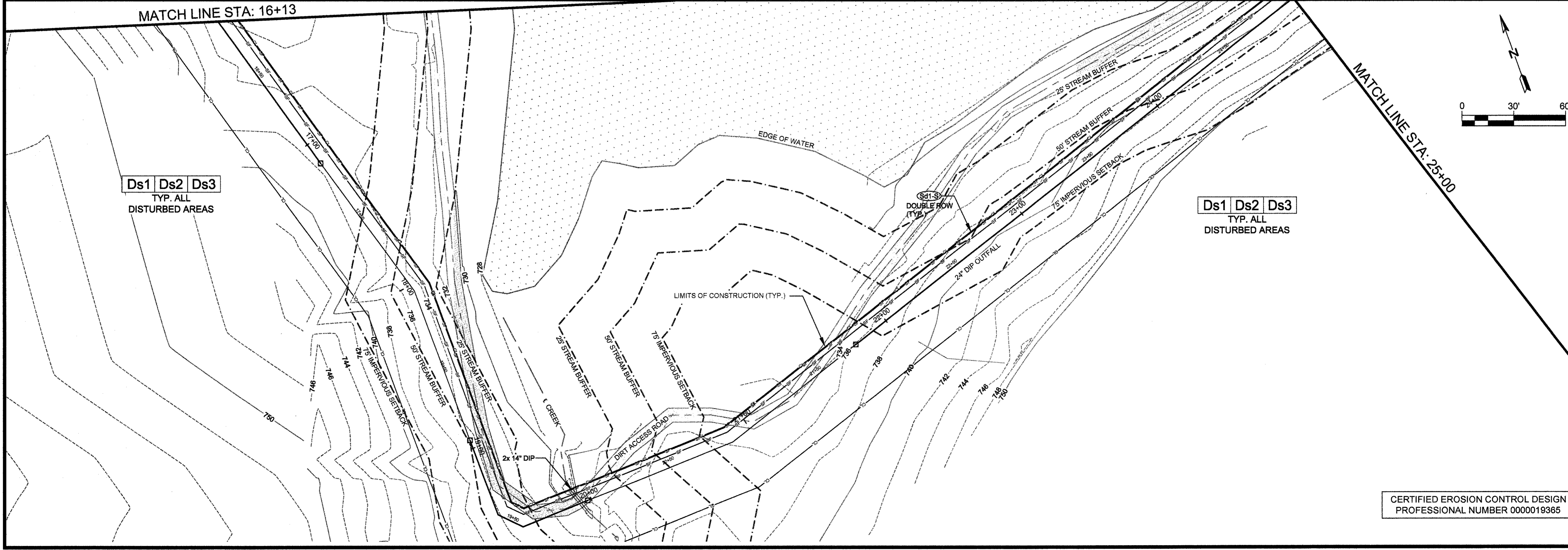
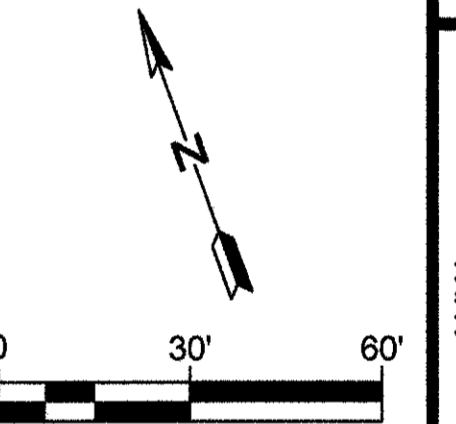
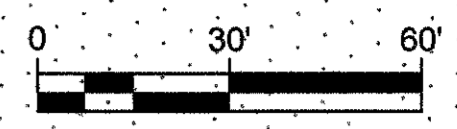
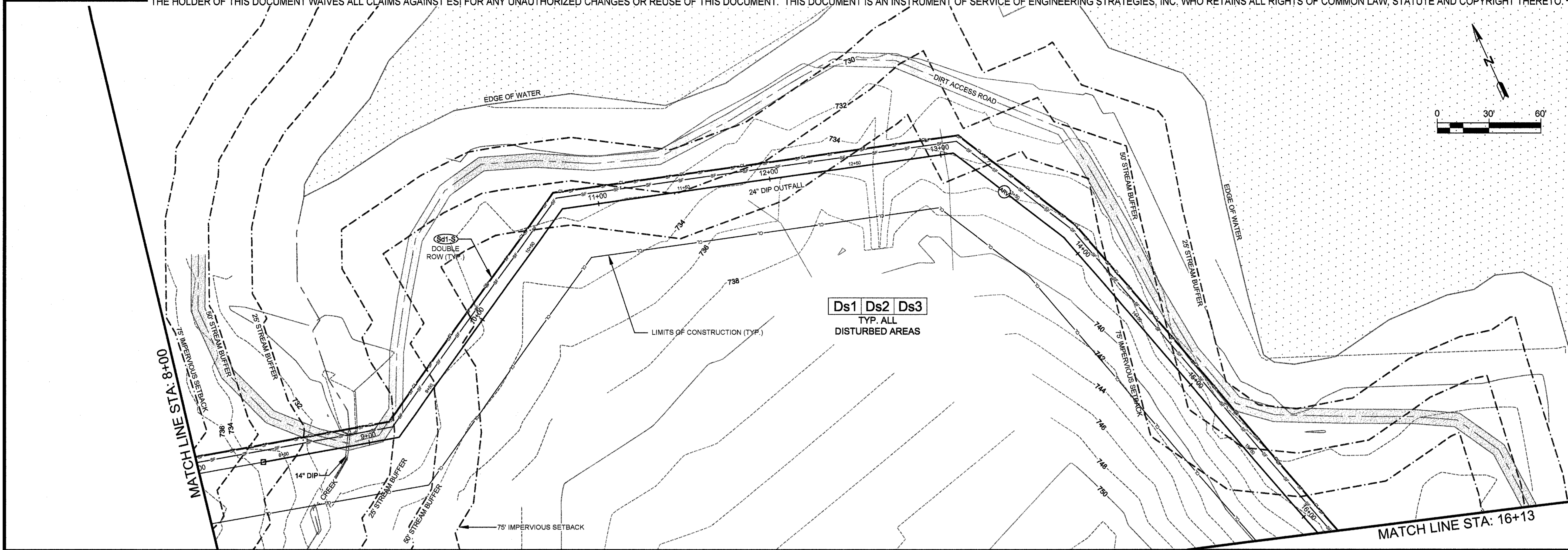
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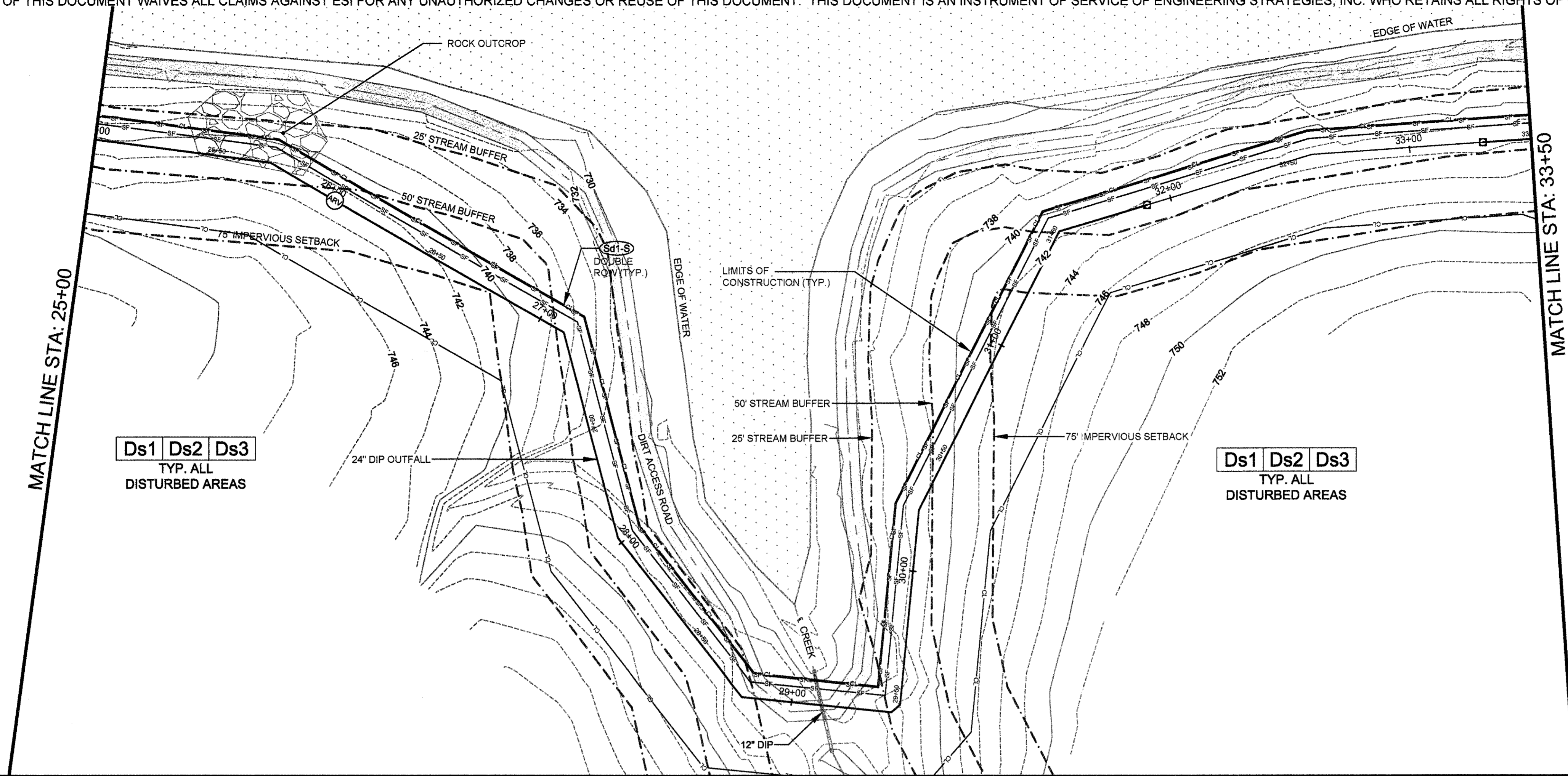
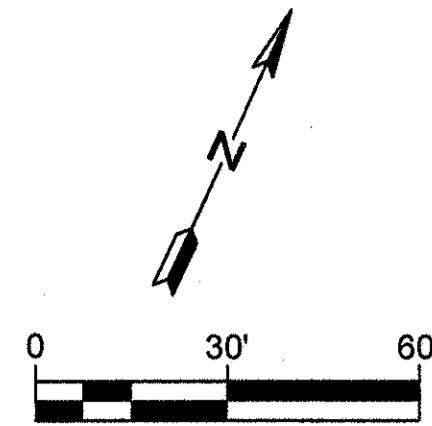
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL PLAN
 OUTFALL STA: 8+00 - 25+00

SHEET NO.
 00-ESC-14



CERTIFIED EROSION CONTROL DESIGN
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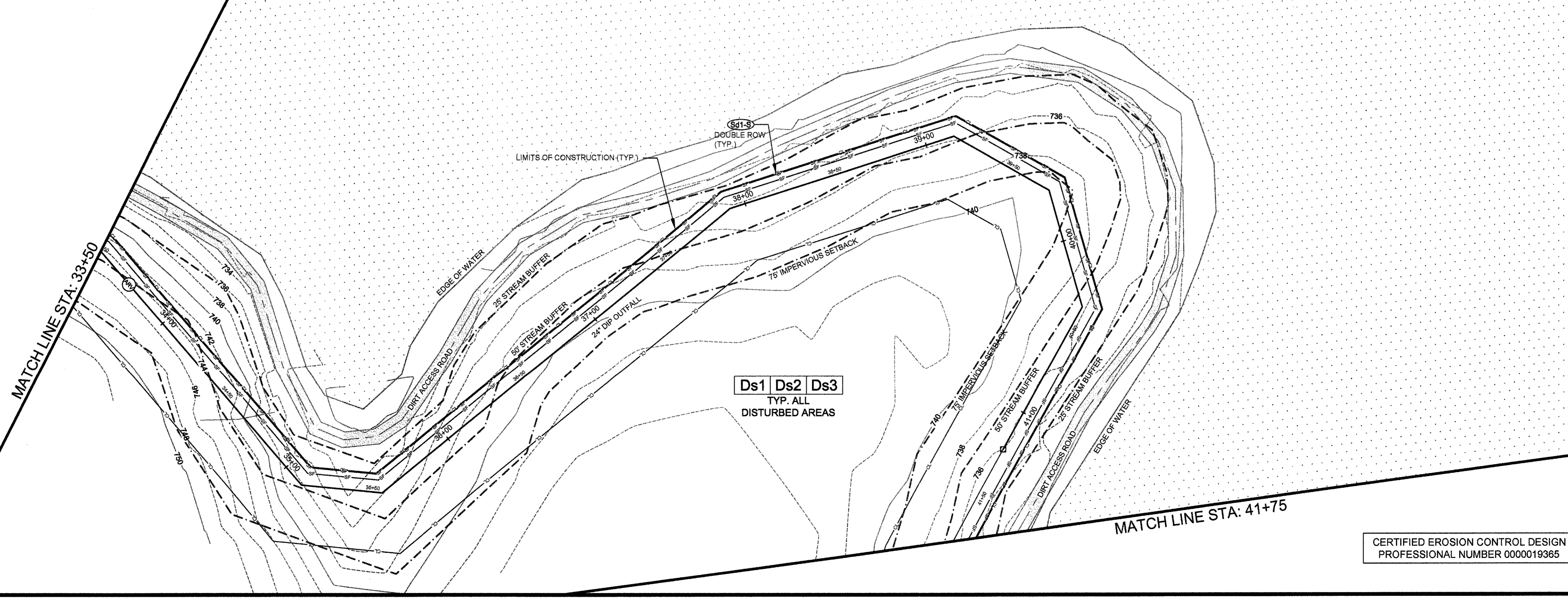
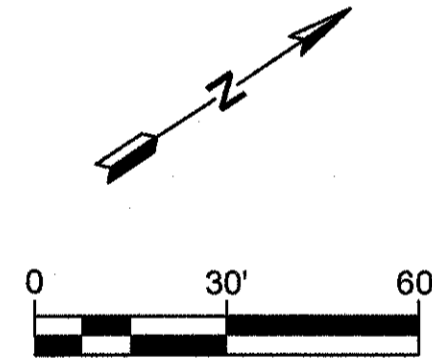


MATCH LINE STA: 25+00

MATCH LINE STA: 33+50

Ds1 Ds2 Ds3
TYP. ALL
DISTURBED AREAS

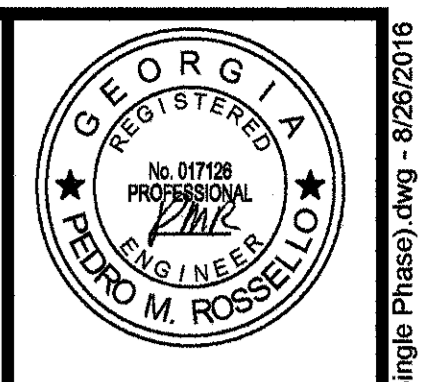
Ds1 Ds2 Ds3
TYP. ALL
DISTURBED AREAS



MATCH LINE STA: 33+50

MATCH LINE STA: 41+75

Ds1 Ds2 Ds3
TYP. ALL
DISTURBED AREAS



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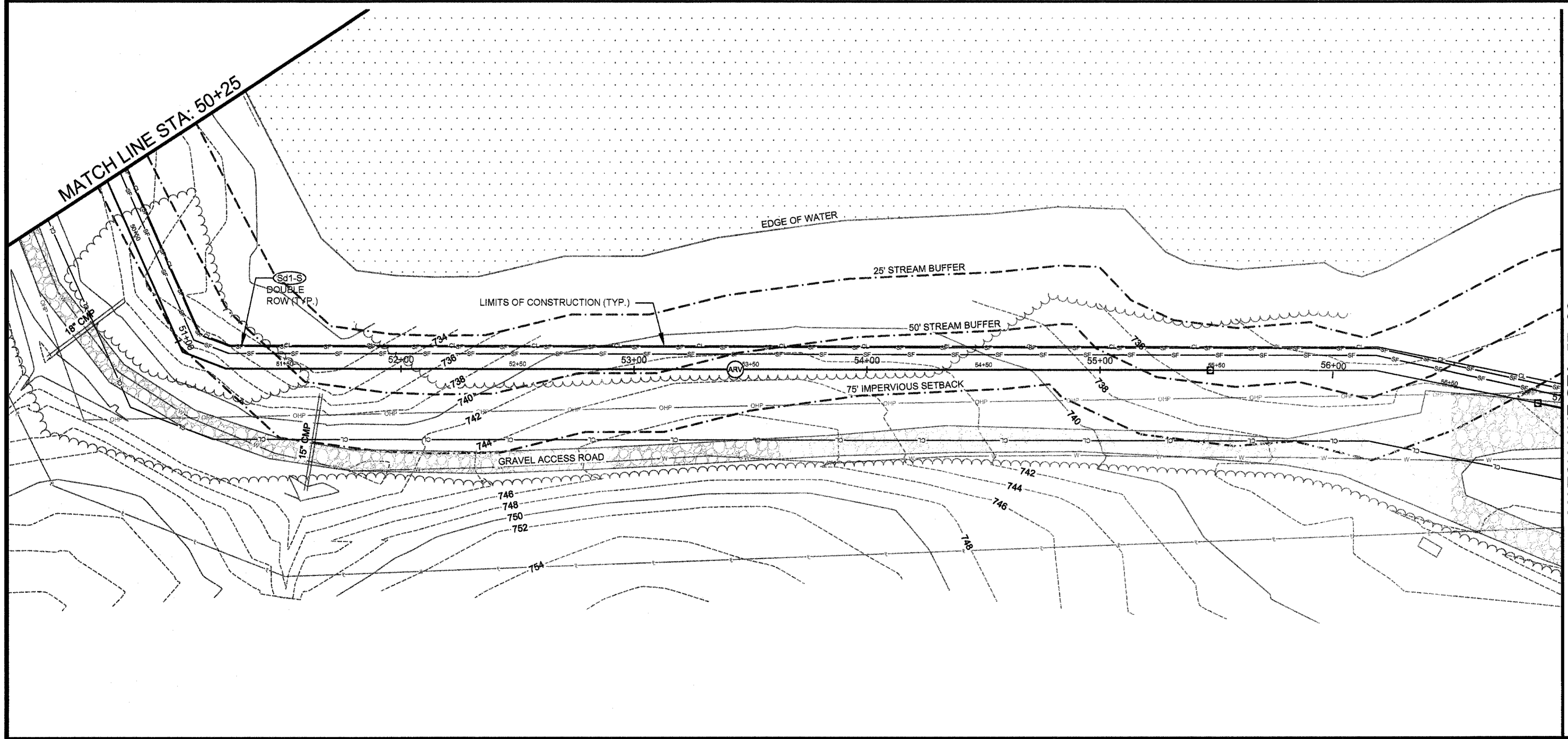
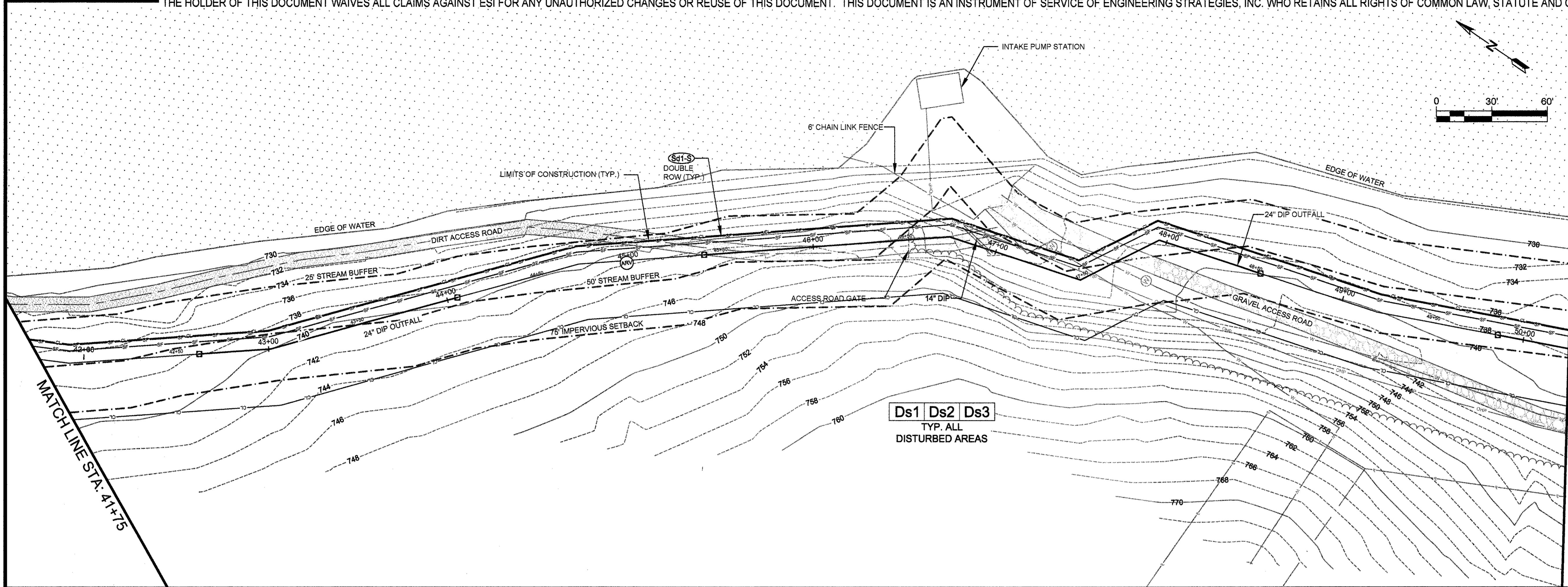
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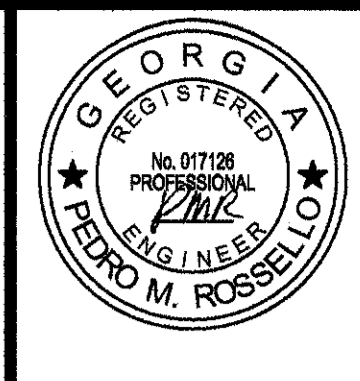
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EROSION AND SEDIMENT CONTROL PLAN
OUTFALL STA: 25+00 - 41+75

CERTIFIED EROSION CONTROL DESIGN
PROFESSIONAL NUMBER 0000019365

SHEET NO.
00-ESC-15



Ds1 Ds2 Ds3
TYP. ALL
DISTURBED AREAS



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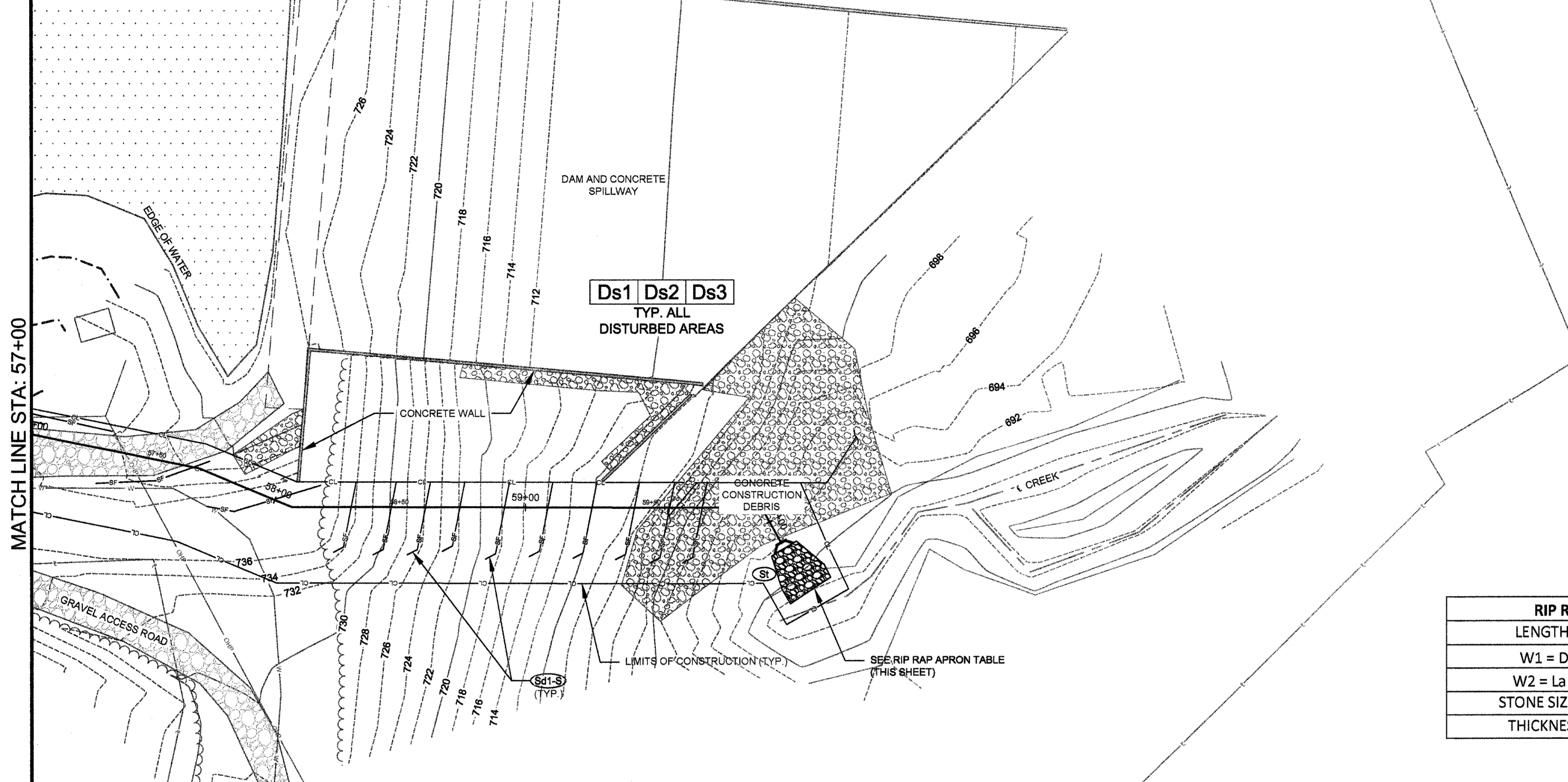
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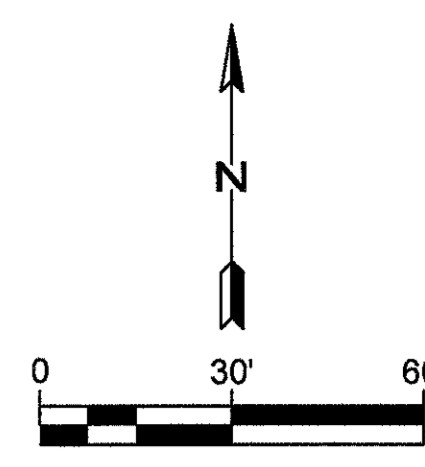
INDIAN CREEK WRF EXPANSION TO 3 MGD
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OUTFALL STA: 41+75 - 57+00

CERTIFIED EROSION CONTROL DESIGN
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SHEET NO.
00-ESC-16



RIP RAP APRON TABLE	
LENGTH (La)	14 ft
W1 = Do*3	6 ft
W2 = La + Do	16 ft
STONE SIZE (d50)	6 in
THICKNESS (D)	24 in



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EROSION AND SEDIMENT CONTROL PLAN
OUTFALL STA: 57+00 - END

CERTIFIED EROSION CONTROL DESIGN
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SHEET NO.
00-ESC-17

**GEORGIA UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION**

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crowned stone and located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A driveway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter basins which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainage ways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle features obligating a temporary sediment trap from a temporary sediment basin is the lack of a gate or dike.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, basins, or basins at a controlled rate of flow.
Spb	SEEP BERM			A liner control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

PRODUCT SPECIFIC PRACTICES

PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS SHALL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLES AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS SHALL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS, AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS SHALL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS SHALL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT SHALL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON-SITE.

FERTILIZER/HERBICIDES - THESE PRODUCTS SHALL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS SHALL BE UNDER ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIAL SHALL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or stacked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paired or vegetative water outlets for ditches, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)			Planting vegetation on dunes that are denuded, artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)			Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion-reducing cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)			Establishing a temporary vegetative cover with fast growing seedlings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)			Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (WOODING)			A permanent vegetative cover using sods or tightly erodible or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS			Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Ca	FLOCCULANTS AND COAGULANTS			Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)			The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION			A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, stone lines, or channels.
Tac	TACKPERS AND BONDERS			Substance used to anchor straw or hay mulch by causing the organic material to sand together.

CERTIFICATION
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT CERTIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

AUTHORIZED REPRESENTATIVE'S PRINTED NAME: _____
SIGNATURE: _____ **DATE:** _____

CONSTRUCTION SCHEDULE

ACTIVITY	MONTH								
	1	2	3	4	5	6	7	8	9
NOTICE TO PROCEED	■								
INSTALLATION OF EROSION CONTROL	■								
MAINTENANCE OF EROSION CONTROL	■								
INSTALLATION OF SANITARY SEWER	■								
TEMPORARY AND PERMANENT GRASSING	■								
CLEAN-UP	■								

CONSTRUCTION ACTIVITIES ARE EXPECTED TO BEGIN IN JANUARY 2017.

**CERTIFIED EROSION CONTROL DESIGN
PROFESSIONAL NUMBER 0000019365**

STORM WATER AND EROSION CONTROL NOTES

- FLOODPLAIN ON THIS PROPERTY FROM A WATER COURSE WITH A DRAINAGE BASIN AREA EXCEEDING 100 ACRES IS SHOWN. THE PROJECT PRIMARILY FALLS IN AN AREA LOCATED OUTSIDE OF THE FLOOD PLAIN. PORTIONS OF THE OUTFALL LINE FALL IN ZONE 4 (NO BASE FLOODPLAIN ELEVATIONS DETERMINED). PER FIRM PANEL 13151C0260C, EFFECTIVE MAY 16, 2006.
- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS. A 50-FOOT UNDISTURBED BUFFER AND A 75-FOOT IMPERVIOUS SETBACK SHALL BE MAINTAINED ADJACENT TO ALL STREAMS.
- THIS PROJECT LIES IN THE UPPER OCMULGEE WATERSHED.
- SOURCE OF TOPOGRAPHY IS TAKEN FROM A GROUND RUN SURVEY PROVIDED BY POINT TO POINT LAND SURVEYORS, DATED OCTOBER 2, 2015. ALL DATA IS IN GEORGIA WEST STATE PLANE ZONE, NAVD 88.
- APPROVAL OF THESE PLANS DOES NOT CONSTITUTE APPROVAL BY HENRY COUNTY OF ANY LAND DISTURBING ACTIVITIES WITHIN WETLAND AREAS. JURISDICTIONAL WATERS OF THE STATE, AREAS OF THREATENED/ENDANGERED SPECIES OR AREAS OF HISTORICAL SIGNIFICANCE. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO CONTACT THE APPROPRIATE REGULATORY AGENCY FOR ANY REQUIRED APPROVALS.
- HENRY COUNTY ASSUMES NO RESPONSIBILITY FOR OVERFLOW OR EROSION OF NATURAL OR ARTIFICIAL DRAINS BEYOND THE EXTENT OF THE STREET RIGHT-OF-WAY, OR FOR THE EXTENSION OF CULVERTS BEYOND THE POINT SHOWN ON THE APPROVED AND RECORDED PLAN. HENRY COUNTY DOES NOT ASSUME THE RESPONSIBILITY FOR THE MAINTENANCE OF PIPES IN DRAINAGE EASEMENTS BEYOND THE COUNTY RIGHT-OF-WAY.
- EROSION AND SEDIMENT CONTROL DEVICES SHOWN ARE THE MINIMUM REQUIRED. ADDITIONAL DEVICES MAY BE REQUIRED AS NECESSARY.
- PERMANENT GRASSING AND/OR LANDSCAPING SHALL BE INSTALLED WITHIN TWO WEEKS (14 DAYS) AFTER THE COMPLETION OF ANY LAND DISTURBING ACTIVITY, OR IF ACTIVITY IS DISCONTINUED FOR A PERIOD OF TWO WEEKS (14 DAYS) OR LONGER.
- A TEMPORARY COVER OF HEAVY MULCH OR MULCH WITH TEMPORARY SEEDING SHALL BE PLACED ON ALL AREAS WHERE PERMANENT COVER CAN NOT BE ESTABLISHED IMMEDIATELY DUE TO SEASONAL LIMITATIONS.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION AND SEDIMENT CONTROL DEVICES IN GOOD WORKING CONDITION AND CLEANING OUT THE DEVICES BEFORE THEY ARE HALF-FULL OF SEDIMENT, OR AS DIRECTED BY GSWCC MANUAL FOR EROSION CONTROL AND SEDIMENT CONTROL IN GEORGIA.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT UNDER NO CIRCUMSTANCES ANY SEDIMENT, TRASH, OR DEBRIS BE ALLOWED ONTO ADJACENT PROPERTIES, PUBLIC LANDS, WITHIN THE PIPE TRENCH EXCAVATION OR OUTSIDE OF THE CONSTRUCTION LIMITS.
- ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE USED ARE DETAILED ON THE EROSION CONTROL PLAN AND/OR EROSION CONTROL DETAILS. ALL EROSION CONTROL DEVICES, THAT ARE NOT DIRECTLY SPECIFIED AS TO INSTALLATION AND MATERIALS, SHALL MEET THE REQUIREMENTS OF THE GA. DEPT. OF TRANSPORTATION, SPECIFICATIONS FOR THE CONSTRUCTION OF ROADS AND BRIDGES, CURRENT EDITION, AND LATEST SUPPLEMENT IN EFFECT AT THE TIME OF BID OPENING OR THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET THE MINIMUM REQUIREMENTS OF THE SPECIFICATIONS AND ALL LOCAL, STATE, AND FEDERAL LAWS AS APPLICABLE TO THIS PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL DEVICES SHALL BE PROPERLY INSTALLED AND BE OF SUITABLE MATERIALS, ANY DEVICES JUDGED TO BE INADEQUATE IN MATERIAL AND/OR CONSTRUCTION SHALL IMMEDIATELY BE REPLACED WITH NEW OR ADDITIONAL DEVICES TO ENSURE PROPER CONTROL.
- TEMPORARY SILT CONTROL FENCE, TYPE 'S' OR 'NS' SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR THROUGHOUT THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL INSPECT SILT FENCE DAILY AND AFTER EVERY RAIN EVENT. ACCUMULATED SILT SHALL BE REMOVED AS SOON AS PRACTICAL, BUT NO LATER THAN WHEN FENCE IS HALF FULL. CONTRACTOR SHALL REMOVE THE SILT FENCE WHEN PERMANENT GRASSING HAS BEEN ESTABLISHED.
- CONTRACTOR SHALL BUILD, MAINTAIN, AND USE A CONSTRUCTION EXIT (CO) AT ALL SITE ENTRY/EXIT LOCATIONS ADJACENT TO A PUBLIC RIGHT-OF-WAY, STREET ALLEY, SIDEWALK OR PARKING AREA.
- CONSTRUCTION EXITS (CO) SHALL BE REQUIRED AT ALL LOCATIONS USED FOR INGRESS/EGRESS FROM THE CONSTRUCTION AREA. CONSTRUCTION MATERIAL STORAGE AREAS WILL REQUIRE THE INSTALLATION OF A CONSTRUCTION EXIT TO REDUCE OR ELIMINATE THE TRANSPORT OF MUD FROM THE AREA. SILT FENCE SHALL ALSO BE INSTALLED TO PREVENT SEDIMENT FROM LEAVING THE MATERIAL STORAGE AREA. AFTER DEMOBILIZATION, THE MATERIAL STORAGE AREA SHALL BE SEEDING AND MULCHED, AND THE SILT FENCE SHALL REMAIN UNTIL THE AREA IS PERMANENTLY STABILIZED.
- MAXIMUM SLOPE FOR CUT OR FILL IS 2H:1V EXCEPT EARTHEN DAM EMBANKMENTS SHALL BE 3H:1V.
- THE DESIGN PROFESSIONAL WHOSE SEAL APPEARS HEREON, CERTIFIES THE FOLLOWING: 1) THE NATIONAL WETLANDS INVENTORY MAPS HAVE BEEN CONSULTED; AND 2) THE APPROPRIATE PLAN SHEET DOES NOT INDICATE AREAS OF UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTIONAL WETLANDS AS SHOWN ON THE MAPS; AND 3) IF WETLANDS ARE INDICATED, THE LAND OWNER OR DEVELOPER HAS BEEN ADVISED THAT LAND DISTURBANCE OF PROTECTED WETLANDS SHALL NOT OCCUR UNLESS THE APPROPRIATE FEDERAL WETLANDS ALTERATION PERMIT HAS BEEN OBTAINED.

HENRY COUNTY EROSION CONTROL NOTES

THE EXISTING AND PROPOSED LAND USE FOR THE PROJECT SITE IS THE INSTALLATION OF ALL FACILITIES AND EQUIPMENT ASSOCIATED WITH THE EXPANSION OF THE EXISTING INDIAN CREEK WRF TO 3-MGD AS WELL AS TRANSITIONING FROM A LAND APPLICATION SYSTEM TO A MEMBRANE BIO-REACTOR PROCESS. THIS PROJECT IS LOCATED IN AN UNINCORPORATED AREA IN THE SOUTHERN PORTION OF HENRY COUNTY.

- OWNER/DEVELOPER:
HENRY COUNTY WATER AUTHORITY
1695 HIGHWAY 20 WEST
McDONOUGH, GA 30253
770 957 6659
- 24-HOUR CONTACT: BILL BANKS - 678 583 2447
- TOTAL PROJECT AREA: 27.838± ACRES
- TOTAL DISTURBED AREA: 12.915± ACRES
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.**
- THERE IS NO PROPOSED VEGETATION TO BE PLACED WITHIN AND/OR ADJACENT TO ANY STORMWATER MANAGEMENT FACILITIES.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION AND SEDIMENT CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE MAXIMUM ALLOWABLE STORAGE VOLUME.
- MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE PROPERTY OWNER.
- A 50-FOOT UNDISTURBED BUFFER AND A 75-FOOT IMPERVIOUS SETBACK IS TO BE MAINTAINED ADJACENT TO ALL STREAMS.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED

- WITH MULCH OR TEMPORARY SEEDING.
- ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE TOE OF THE SLOPE.
- CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING BLANKET.
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPs AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5. WITHIN 7 DAYS AFTER INITIAL INSTALLATION.**
- UPON NOTIFICATION AND AUTHORIZATION OF THE OWNER, THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS RESPONSIBLE FOR INSPECTING THE INSTALLATION OF THE BMP'S WITHIN 7 DAYS AFTER INITIAL CONSTRUCTION ACTIVITIES BEGIN.
- PER HENRY COUNTY PRESENT/FUTURE CONDITIONS FLOODPLAIN MAP PANEL 260 OF 305, THIS PROJECT LIES PRIMARILY IN AN AREA LOCATED OUTSIDE OF THE FLOOD PLAIN, PRESENT AND FUTURE PORTIONS OF THE OUTFALL LINE FALL WITHIN THE AREA OF 1% ANNUAL FLOOD CHANCE.
- THE RECEIVING WATER FOR THIS PROJECT IS INDIAN CREEK.
- THERE ARE NO WETLANDS TO BE DISTURBED DURING THE CONSTRUCTION OF THIS PROJECT. A WETLANDS INVESTIGATION WAS PERFORMED BY CORBLU, DATED APRIL, 2016.
- THERE ARE NO KNOWN EXISTING LANDFILLS OR PROPOSED ON-SITE BURY PITS ON THIS PROJECT.
- THERE WILL BE A CHANGE IN FLOW REGIME TO THE CONSTRUCTION SITE DUE TO THE NATURE OF CONSTRUCTION ACTIVITIES CAUSING A CHANGE IN SURFACE AREA CHARACTERISTICS. THE ESTIMATE OF THE PRE-CONSTRUCTION RUNOFF COEFFICIENT IS C = 0.266. THE ESTIMATE OF THE POST CONSTRUCTION RUNOFF COEFFICIENT IS C = 0.291.

TREE PRESERVATION/PROTECTION PLANTING NOTES

- ALL LIMITS OF CONSTRUCTION AS INDICATED ON THE DRAWINGS SHALL BE CLEARLY IDENTIFIED BY ORANGE SAFETY FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE EXCEPT THOSE OPERATIONS NEEDED TO INSTALL EROSION CONTROL FACILITIES. ENGINEER SHALL INSPECT SAFETY FENCING PRIOR TO LAND DISTURBANCE.
- THE CONTRACTOR SHALL PROTECT ALL TREES AND VEGETATION ON THE SITE EXCEPT AS NOTED ON THE PLANS OR APPROVED BY HENRY COUNTY, ENGINEER OR INSPECTOR.
- ALL TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
- ORANGE SAFETY FENCING SHALL BE INSTALLED ALONG THE OUTER EDGE OF AND COMPLETELY SURROUNDING THE CRITICAL ROOT ZONES OF ALL SPECIMEN TREES OR STANDS OF TREES, OR OTHERWISE DESIGNATED TREE PROTECTION ZONES PRIOR TO ANY LAND DISTURBANCE. SPECIMEN TREES AND TREE PROTECTION ZONES SHALL BE FLAGGED BY HENRY COUNTY PRIOR TO NOTICE TO PROCEED.
- ALL TREE PROTECTION ZONES SHALL BE DESIGNATED WITH "TREE SAVE AREA" SIGNS.
- WHEN DIGGING NEAR TREES, THE CONTRACTOR SHALL PRUNE ALL EXPOSED ROOTS ONE (1) INCH IN DIAMETER AND LARGER ON THE SIDE OF THE TRENCH ADJACENT TO THE TREES. PRUNING SHALL CONSIST OF MAKING A CLEAN CUT FLUSH WITH THE SIDE OF THE TRENCH TO PROMOTE NEW ROOT GROWTH.
- PRUNING OF TREE LIMBS TO PROVIDE CLEARANCE FOR EQUIPMENT AND MATERIALS SHALL BE DONE ACCORDING TO STANDARD ARBORICULTURAL PRACTICES.
- ALL BUFFERS AND TREE SAVE AREAS ARE TO BE CLEARLY IDENTIFIED WITH PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.

EROSION CONTROL PROJECT NARRATIVE

THE PROPOSED PROJECT CONSISTS OF THE EXPANSION OF THE EXISTING INDIAN CREEK WRF TO A CAPACITY OF 3-MGD IN AN UNINCORPORATED AREA OF HENRY COUNTY JUST SOUTHWEST OF LOCUST GROVE. THE TOTAL PROJECT AREA IS 27.838± ACRES AND THE DISTURBED AREA IS 12.915± ACRES.

- SIX (6) TYPES OF EROSION CONTROL MEASURES WILL BE UTILIZED IN THE CONSTRUCTION OF THE PROJECT.
- SILT FENCE (Sd1-S) SHALL BE INSTALLED AT APPROPRIATE LOCATIONS TO PREVENT SEDIMENT FROM BEING WASHED OFF OF THE SITE.
 - MULCHING, TEMPORARY AND PERMANENT GRASSING (Ds1, Ds2 & Ds3) SHALL BE USED TO RE-ESTABLISH VEGETATION ON THE DISTURBED AREAS AS CONSTRUCTION PROCEEDS.
 - CHECK DAMS (BOTH HAY BALE AND/OR STONE, Cq4-Hq/Cq4-S) SHALL BE INSTALLED IN DITCH CENTERLINES OR AREAS OF CONCENTRATED FLOW TO PREVENT THE TRANSPORT OF SEDIMENT OUTSIDE OF THE PROJECT AREA.
 - CONSTRUCTION EXITS (CO) WILL BE INSTALLED TO PREVENT THE ESCAPE OF SEDIMENT FROM THE SITE WHERE EQUIPMENT ENTERS/EXITS THE SITE.
 - ALL DISTURBED AREAS WILL BE STABILIZED WITH EITHER TEMPORARY OR PERMANENT MEASURES WITHIN 48 HOURS OR PRIOR TO ANY EXPECTED RAINFALL EVENT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF A STRONG STAND OF PERMANENT GRASSING BEFORE BEING RELEASED FROM HIS CONTRACTUAL OBLIGATIONS. HE WILL BE HELD RESPONSIBLE FOR A PERIOD OF TWELVE MONTHS AFTER ACCEPTANCE OF THE PROJECT TO REPAIR ANY WASHOUT AREAS, ETC.

PERMITTEE CONTACT INFORMATION

HENRY COUNTY WATER AUTHORITY
1695 HIGHWAY 20 WEST
McDONOUGH, GA 30253
770 957 6659 - BILL BANKS

CERTIFICATION

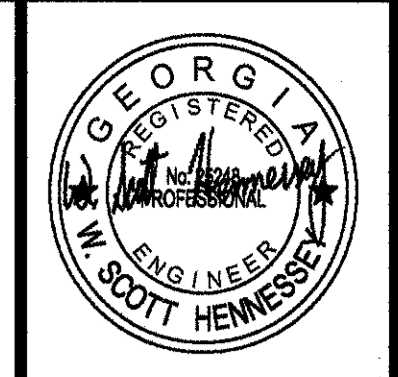
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT CERTIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1ST OF THE YEAR IN WHICH THE LAND DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100002

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION.

THE PROPOSED EROSION AND RUNOFF CONTROL MEASURES ARE IN COMPLIANCE WITH THE COBB COUNTY SEDIMENT CONTROL AND FLOOD PROTECTION REGULATIONS AND WILL NOT INCREASE THE RUNOFF RATE FROM THE SITE FOR RAINSTORMS WITH A RETURN PERIOD OF 2, 5, 10, 25, 50 AND/OR 100 YEARS.

Pedro M. Rosello
PEDRO M. ROSSELLO, P.E.
LEVEL II CERTIFIED DESIGN PROFESSIONAL #0000019365
EXP. DATE: 12/06/2018



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 425-0001

DATE: AUGUST 2016	DATE
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PROJECT NUMBER: Δ	REVISION
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DSGN: AHW	CHK: PMR
DRAWN: AHW	

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL NOTES
SHEET 1 OF 2**

SHEET NO.

00-ESC-18

INTRODUCTION

THIS EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN (ESPCP) IS FOR THE PROJECT KNOWN AS INDIAN CREEK WRF EXPANSION TO 3-MGD. LOCATED IN SOUTHERN HENRY COUNTY, GEORGIA, THE PROPOSED PROJECT CONSISTS OF THE INSTALLATION OF FACILITIES AND EQUIPMENT ASSOCIATED WITH THE EXPANSION OF THE EXISTING INDIAN CREEK WRF TO A CAPACITY OF 3-MGD, IN AN UNINCORPORATED AREA OF HENRY COUNTY NEAR INDIAN CREEK SOUTHWEST OF LOCUST GROVE. THE TOTAL PROJECT AREA IS 27.8384 ACRES. THE TOTAL DISTURBED AREA IS 12.9152 ACRES.

THE INTENT OF THIS ESPCP IS TO COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NUMBER GAR 100001 (PERMIT) BY PROVIDING BEST MANAGEMENT PRACTICES (BMPs) TO MINIMIZE AND MANAGE STORM WATER DISCHARGE FROM THE CONSTRUCTION SITE.

THE PERMIT AUTHORIZES STORM WATER DISCHARGES TO WATERS OF THE STATE FROM STAND ALONE CONSTRUCTION ACTIVITIES SUBJECT TO LIMITATIONS, MONITORING REQUIREMENTS AND OTHER CONDITIONS SET FORTH IN THE PERMIT.

REQUIREMENTS OF THIS ESPCP ARE INCORPORATED BY REFERENCE INTO THE CONSTRUCTION CONTRACT DOCUMENTS FOR THE INDIAN CREEK WRF EXPANSION TO 3-MGD (THE PROJECT).

IMPLEMENTATION

THE CONTRACTOR FOR CONSTRUCTION OF THE PROJECT IS CONTRACTUALLY OBLIGATED TO CARRY OUT ALL RESPONSIBILITIES OF THE PERMIT OPERATOR AS DEFINED IN THE PERMIT. THE BMPS AND CONTROL ELEMENTS WILL BE IMPLEMENTED TO COMPLY WITH THOSE RECOMMENDED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION FOUND IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, LATEST EDITION (MANUAL). THE CONTRACTOR WILL INSTALL, INSPECT, MAINTAIN, AND DOCUMENT THE BMPS AND CONTROL ELEMENTS IN ACCORDANCE WITH THIS DOCUMENT, THE CONTRACT DOCUMENTS AND THE CONSTRUCTION PLANS.

GEORGIA LAW STIPULATES THAT ANY INCREASE IN TURBIDITY ABOVE THE STIPULATED AMOUNTS IN THE PERMIT IS A VIOLATION OF THE PERMIT UNLESS THE BMPS HAVE BEEN PROPERLY INSTALLED AND MAINTAINED. VIOLATIONS OF THE PERMIT DESCRIBED IN THE GEORGIA WATER QUALITY CONTROL ACT INCLUDE SIGNIFICANT FINES AND/OR IMPRISONMENT.

SITE DESCRIPTION

THIS PROJECT IS LOCATED IN HENRY COUNTY IN AN UNINCORPORATED AREA SOUTHWEST OF LOCUST GROVE. THE PROPOSED SITE AREA FOR THIS PROJECT IS IN A PRIMARILY WOODED AREA WITH SOME STREAMS AND LOW LYING AREAS. THE FACILITIES TO BE CONSTRUCTED FOR THIS EXPANSION OF INDIAN CREEK WRF WILL BE ADJACENT TO THE EXISTING PLANT'S FACILITIES AND INCLUDE AN OUTFALL PIPELINE OF APPROXIMATELY 6,010 LF THAT RUNS EAST TO DISCHARGE INTO INDIAN CREEK, JUST DOWNSTREAM OF THE EMERGENCY SPILLWAY FOR THE RESERVOIR. A 20-FOOT PERMANENT EASEMENT WILL BE MAINTAINED ALONG THE PROPOSED OUTFALL ROUTE.

UPON REVIEW OF THE APPLICABLE FEMA PANELS AND NATIONAL WETLANDS INVENTORY MAP FOR THE PROJECT AREA, THE FLOODPLAIN AND WETLANDS BOUNDARIES ARE SHOWN ON PLAN AS REQUIRED. ADDITIONALLY, THIS PROJECT DOES NOT LIE IN THE FLOOD AREA DEPICTED ON HENRY COUNTY FLOOD CONDITIONS MAP PANEL 260 OF 305. THE INTENT OF THIS ESPCP IS TO COMPLY WITH THE GEORGIA EROSION AND SEDIMENTATION CONTROL ACT OF 1975.

PER SECTION 3.04.00 OF HENRY COUNTY CODE OF ORDINANCES, THIS PROJECT LIES WITHIN THE INDIAN CREEK WATERSHED PROTECTION DISTRICT. THE PROJECT HOWEVER DOES NOT ENCRoACH INTO THE WATER QUALITY CRITICAL AREA ASSOCIATED WITH THIS WATERSHED PROTECTION DISTRICT. THE AMOUNT OF IMPERVIOUS AREA WILL INCREASE BY 39,639.6 SF (0.91 ACRES) WHICH CORRELATES TO A 38.56% INCREASE IN IMPERVIOUS AREA WHICH SATISFIES THE MAXIMUM IMPERVIOUS AREA INCREASE CONDITION OF 75%. THE EXISTING IMPERVIOUS AREA IS 102,801.6 SF (2.36 ACRES) AND THE PROPOSED IMPERVIOUS AREA IS 142,441.2 SF (3.27 ACRES).

CONTROLS

THIS ESPCP CONTAINS THE FOLLOWING BMPs AND CONTROL ELEMENTS:

- EROSION AND SEDIMENT CONTROL BMPs
- CONTROLS FOR OTHER CONSTRUCTION-RELATED POLLUTANTS

TO COMPLY WITH THE PERMIT, BMPs AND CONTROL ELEMENTS DESCRIBED BELOW WILL BE IMPLEMENTED FOR CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT.

EROSION AND SEDIMENT CONTROL BMPs

EROSION AND SEDIMENT CONTROL BMPs WILL BE USED TO REDUCE EROSION AT LAND-DISTURBING ACTIVITIES AND TO LIMIT THE DEPOSITION OF SEDIMENT ONTO ADJACENT LANDS AND/OR WATERSHEDS.

THE CONTRACTOR WILL IMPLEMENT THE EROSION AND SEDIMENT CONTROL BMPs LISTED BELOW AND THE BMPs SPECIFIED IN THE CONTRACT DOCUMENTS AND CONSTRUCTION PLANS. THE SPECIFIED EROSION AND SEDIMENT CONTROL BMPs ARE DESCRIBED IN THE MANUAL. EXAMPLES OF EROSION AND SEDIMENT CONTROL BMPs THAT WILL BE USED FOR THIS PROJECT INCLUDE, BUT ARE NOT LIMITED TO:

- TEMPORARY SEEDING
- PERMANENT SEEDING
- MULCHING
- SILT FENCE
- INLET PROTECTION
- FILTER RING
- HAY BALE & STONE CHECK DAMS
- CONSTRUCTION EXITS

THE STANDARD CONFIGURATION AND DEFINITIONS OF ADDITIONAL BMPs CAN BE FOUND ON SHEET 00-C-51. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL INCLUDE:

- CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2), (a) - (c) OF THE PERMIT.
- USING STAGED CONSTRUCTION TO MINIMIZE THE EXPOSURE TO NATURAL EROSION ELEMENTS;
- STABILIZING DISTURBED SOILS WITH GRASS SEEDING AND HAY MULCH DAILY AS CONSTRUCTION PROGRESSES. NORMALLY, EROSION IS PREVENTED WITH VEGETATIVE MEASURES AND THEN SILT FENCE IS USED TO PROVIDE STORAGE FOR ANY SEDIMENT RELEASED. THE TYPICAL STORAGE IN SILT FENCE ACCEPTED BY MOST JURISDICTIONS IS 0.2 CY PER LINEAR FOOT OF SILT FENCE. THIS PROJECT WILL CONTAIN 13,744 LF OF SILT FENCE WHICH WILL PROVIDE STORAGE OF 0.2 X 13,744 LF = 2748.8 CY. THIS IS ADEQUATE STORAGE FOR THE 67 CY X 12.915 DISTURBED ACRES = 868 CY. IN THE GRASSSED AREAS, THE SURFACE RESTORATION WILL INVOLVE EITHER SOIL REPLACEMENT OR SEEDING AND MULCHING THE DISTURBED AREA, DEPENDING ON THE TYPE OF EXISTING GROUND COVER. THE RESEEDING AND MULCHING IS TYPICALLY APPLIED WITHIN 48 HOURS OF PIPE INSTALLATION OR PRIOR TO ANY ANTICIPATED RAIN FALL SO NO ADDITIONAL BMPs ARE TYPICALLY REQUIRED.

CONTROLS FOR OTHER CONSTRUCTION-RELATED POLLUTANTS

THE CONTRACTOR WILL IMPLEMENT THE FOLLOWING CONTROLS FOR POTENTIAL CONSTRUCTION-RELATED POLLUTANTS:

- ADEQUATE WASTE CONTAINERS WILL BE PROVIDED AT APPROPRIATE LOCATIONS ON THE PROJECT SITE AWAY FROM STREETS, GUTTERS, WATER COURSES AND STORM DRAINS, AND WILL HAVE PROPER DISPOSAL. WORKERS WILL BE REQUIRED TO UTILIZE WASTE CONTAINERS.
- LIQUID WASTE COLLECTION AREAS SHALL BE LOCATED WITHIN SECONDARY CONTAINMENT STRUCTURES TO MINIMIZE THE RISK OF CONTAMINATED DISCHARGES.
- ALL SANITARY SEWER OR SEPTIC SYSTEM WASTE SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH THE STATE AND/OR LOCAL REGULATIONS.
- CONSTRUCTION MATERIALS STORED AT THE SITE WILL BE MONITORED AND KEPT IN A LOCATION WHERE CONTACT WITH STORM WATER, WELLS, AND ANY OTHER BODY OF WATER CAN BE PREVENTED.
- STORAGE CONTAINERS FOR OIL, FUEL AND OTHER HAZARDOUS SUBSTANCES WILL BE LOCATED IN DESIGNATED AREAS PROTECTED WITH IMPERVIOUS CONTAINMENT BERMS.
- THE CONTRACTOR WILL NOTIFY GEORGIA EPD (404-656-4863) AND THE NATIONAL RESPONSE CENTER (NRC) (800-424-8802) UPON AWARENESS OF A RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL IN AN AMOUNT EQUAL TO OR GREATER THAN A REPORTING QUANTITY ESTABLISHED UNDER THE GEORGIA OIL OR HAZARDOUS MATERIAL SPILL OR RELEASE ACT (O.C.G.A. 12-14-2, ET SEQ.), 40 CFR 117 AND 40 CFR 302, AS SOON AS THE CONTRACTOR HAS KNOWLEDGE OF THE DISCHARGE.
- DISCHARGE OF CONSTRUCTION MATERIALS INTO ANY BODY OF WATER WILL BE PREVENTED.
- ANY SPILL WILL BE CLEANED UP IMMEDIATELY.
- WHEN WASHING VEHICLES BEFORE THEY LEAVE THE SITE, ANY HAZARDOUS SUBSTANCES THAT HAVE BEEN IN CONTACT WITH THE CONSTRUCTION VEHICLES WILL NOT BE WASHED INTO ANY STREAMS, LAKES, WELLS, ETC.
- THERE IS NO CONCRETE WORK ANTICIPATED FOR THIS PROJECT. HOWEVER, IF CONCRETE WORK IS INVOLVED, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS FOR CONCRETE EQUIPMENT WASHDOWN AS SHOWN IN THE CONCRETE WASHDOWN DETAIL ON SHEET ESC-4.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

AMMENDMENTS/REVISIONS TO THE ES & PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

SPILL CLEANUP AND CONTROL PRACTICES

- LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
- MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
- FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1 - 800 - 426 - 2675.
- FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1 - 800 - 426 - 2675.
- FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE GEORGIA E.P.D. WILL BE CONTACTED WITHIN 24 HOURS.
- FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

INSPECTIONS

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. MEASURE RAINFALL ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY UNTIL A NOTICE OF TERMINATION IS SUBMITTED. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
3. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NONWORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES, EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS SUBMITTED TO EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.(5) OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A STATEMENT THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

MAINTENANCE

THE CONTRACTOR WILL IMPLEMENT ROUTINE MAINTENANCE PROCEDURES, SUCH AS REMOVING SILT AT SILT BARRIERS WHEN THE ACCUMULATION REACHES FIFTY PERCENT OF CAPACITY, TO ENSURE THAT THE BMPs WILL FUNCTION AS INTENDED THROUGHOUT THE DURATION OF THE PROJECT. WITHIN 48 HOURS FOLLOWING EACH INSPECTION, ANY REQUIRED MAINTENANCE MUST BE COMPLETED. MAINTENANCE OF EACH EROSION AND SEDIMENT CONTROL DEVICE WILL BE PERFORMED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL FINAL STABILIZATION IS ACHIEVED.

THERE WILL BE NO MAINTENANCE EASEMENTS TO STORMWATER MANAGEMENT FACILITIES ON THIS SITE. THE PROJECT WILL TAKE PLACE ON A PARCEL OWNED BY HENRY COUNTY WATER AUTHORITY AND FOR SAFETY REASONS, NO PUBLIC ACCESS VIA EASEMENTS WILL BE PERMITTED. THE STORMWATER MANAGEMENT FACILITIES WILL BE MAINTAINED BY HENRY COUNTY WATER AUTHORITY PERSONNEL.

SAMPLING REQUIREMENTS

THE PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THE PERMIT.

RECEIVING WATER SAMPLES AND STORM WATER DISCHARGE SAMPLES WILL BE COLLECTED BY GRAB SAMPLES AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES SPECIFIED BY THE PERMIT. THE FREQUENCY OF SAMPLING WILL BE AS DESCRIBED IN THE FOLLOWING SECTION. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED BELOW WILL BE REPORTED TO THE EPD.

1. SAMPLE CONTAINERS WILL BE LABELED BEFORE COLLECTING SAMPLES.
2. SAMPLES WILL BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. CLEAN GLASS OR PLASTIC JARS WITH LARGE MOUTHS WILL BE USED TO COLLECT SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RINSING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THE PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALL BEYOND THE MINIMUM FREQUENCY STATED IN THE PERMIT MUST BE REPORTED TO EPD.

SAMPLING POINTS

THE CONTRACTOR WILL SAMPLE NAMED CREEKS AND TRIBUTARIES AND UNNAMED TRIBUTARIES AT THE LOCATIONS LISTED BELOW. THE PLAN SHEETS WITHIN THESE CONSTRUCTION PLANS SHOW THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED, AND THE SAMPLING LOCATIONS FOR EACH REPRESENTATIVE STORM WATER OUTFALL.

UPSTREAM SAMPLING LOCATION #1 - PROPOSED STORM WATER DITCH (AT NORTHERNMOST END OF DEFINED CHANNEL; AT CENTERLINE)

LATITUDE: N33° 20' 0.42" LONGITUDE: W84° 08' 26.04"

UPSTREAM SAMPLING LOCATION #2 - INDIAN CREEK (STREAM CENTER LINE - JUST NORTH OF RESERVOIR SPILLWAY)

LATITUDE: N33° 19' 54.81" LONGITUDE: W84° 07' 27.57"

DOWNSTREAM SAMPLING LOCATION #1 - DISCHARGE FROM STORM WATER DETENTION POND (CHANNEL CENTER LINE - JUST DOWNSTREAM OF CHANNEL STABILIZATION MEASURES)

LATITUDE: N33° 19' 57.44" LONGITUDE: W84° 08' 18.06"

DOWNSTREAM SAMPLING LOCATION #2 - INDIAN CREEK (STREAM CENTER LINE - JUST NORTH OF INDIAN CREEK ROAD)

LATITUDE: N33° 19' 49.1" LONGITUDE: W84° 07' 33.11"

IT SHOULD BE NOTED THAT ALL OF THE ABOVE SAMPLING LOCATIONS MAY NOT BE ACTIVE AT ALL TIMES DURING CONSTRUCTION. A SAMPLING LOCATION WILL BE ACTIVE FROM THE TIME CONSTRUCTION ACTIVITY STARTS IN THE WATERSHED THAT FEEDS THE SAMPLING LOCATION UNTIL FINAL STABILIZATION IS ACHIEVED IN THAT WATERSHED. THE TIMING OF THE CONSTRUCTION ACTIVITY WITHIN A WATERSHED DEPENDS ON CONSTRUCTION STAGING. HOWEVER, CONSTRUCTION STAGING HAS NOT YET BEEN DETERMINED. THE CONTRACTOR MAY STAGE THE CONSTRUCTION SO THAT 1) CONSTRUCTION BEGINS AT ONE END OF THE PROJECT AND PROGRESSES SYSTEMATICALLY TO THE OTHER END, 2) CONSTRUCTION BEGINS AT BOTH ENDS OF THE PROJECT AND PROGRESSES TO A COMMON MEETING POINT, OR 3) MULTIPLE CREWS BEGIN CONSTRUCTION AT DIFFERENT SECTIONS OF THE PROJECT AND EVENTUALLY LINK UP WITH EACH OTHER.

MANUAL SAMPLING

- SAMPLING WILL BEGIN AT THE DESIGNATED REPRESENTATIVE RECEIVING WATER(S) AT THE DOWNSTREAM LOCATION. THIS SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PROJECT. FOR LARGE STREAMS WHERE VARIATIONS IN COLOR ARE VISIBLE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE DOWNSTREAM VALUE.
- UPSTREAM SAMPLES WILL BE TAKEN AFTER DOWNSTREAM SAMPLES HAVE BEEN ACQUIRED. THE UPSTREAM SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST UPSTREAM AT THE SITE BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PROJECT. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE UPSTREAM VALUE.

- THE SAMPLES WILL BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).
- CARE WILL BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.
- THE SAMPLING CONTAINER WILL BE HELD SO THAT THE OPENING FACES UPSTREAM.
- THE SAMPLES WILL BE KEPT FREE OF FLOATING DEBRIS.
- ONCE THE SAMPLE JAR OR BOTTLE IS FULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY, BUT NO LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

SAMPLING FREQUENCY

THE CONTRACTOR MUST SAMPLE IN ACCORDANCE WITH THIS ES&PCP AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW:

- a. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* (MONDAY THROUGH FRIDAY, 8:00 AM TO 5:00 PM AND SATURDAY 8:00 AM TO 5:00 PM, EXCLUDING ALL NONWORKING FEDERAL HOLIDAYS, WHEN CONSTRUCTION ACTIVITY IS BEING CONDUCTED BY THE PRIMARY PERMITTEE) THAT OCCURS AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;
- b. IN ADDITION TO ITEM (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* THAT OCCURS EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST;
- c. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO ITEMS (A) AND (B) ABOVE, IF BMPs ARE FOUND TO BE PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, NO FURTHER ACTION IS REQUIRED. IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM ARE NOT PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED, AND MAINTAINED;
- d. EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT THAT HAVE MET THE SAMPLING REQUIRED BY (a) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (b). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (b) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (c) ABOVE.

*NOTE THAT THE CONTRACTOR MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING AT ANY TIME OF THE DAY OR WEEK.

RAINFALL DATA

MEASUREMENT OF RAINFALL DATA WILL BE RECORDED DAILY (ONCE DURING EACH 24-HOUR PERIOD) AT THE DOWNSTREAM MONITORING POINT FOR EACH ACTIVE CONSTRUCTION STAGE IN WHICH STREAM MONITORING IS UTILIZED AND NEAR THE CENTER OF EACH ACTIVE CONSTRUCTION STAGE IN WHICH OUTFALL MONITORING IS UTILIZED. THE CONTRACTOR WILL ESTABLISH A RAIN GAUGE ON EACH ACTIVE CONSTRUCTION STAGE FOR THIS PURPOSE. FURTHERMORE, THE CONTRACTOR WILL COLLECT AND RECORD THE RAINFALL DATA ON THE DAILY RAINFALL MONITORING DATA FORM.

TESTING

THE CONTRACTOR WILL EMPLOY QUALIFIED PERSONNEL WHO SHALL GATHER SAMPLES OF STORM WATER AS OUTLINED IN THE PERMIT PART IV, D.5 AND AS FURTHER DEFINED IN THIS ESPCP. THE CONTRACTOR WILL HAVE THE TURBIDITY OF EACH SAMPLE TESTED BY A QUALIFIED TESTING LABORATORY.

ALL TURBIDITY TESTS WILL BE CONDUCTED IN ACCORDANCE WITH 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001 AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

NTU LIMIT RATIONAL

THE CONTRACTOR SHALL SAMPLE THE RECEIVING STREAM BOTH UPSTREAM OF THE PROJECT AREA AND DOWNSTREAM OF THE PROJECT AREA. THE TOTAL INCREASE IN TURBIDITY FROM SAMPLE LOCATIONS UPSTREAM AND DOWNSTREAM OF THE CONSTRUCTION SITE SHALL NOT EXCEED 25 NTU FOR WARM WATER FISHERIES AND 10 NTU FOR TROUT STREAMS.

REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART 11.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.
2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
 - a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
 - b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
 - c. THE DATE(S) ANALYSES WERE PERFORMED;
 - d. THE TIME(S) ANALYSES WERE INITIATED;
 - e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
 - f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
 - g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
 - h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
 - i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.
3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. IF AN ELECTRONIC SUBMITTAL IS PROVIDED BY EPD THEN THE WRITTEN CORRESPONDENCE MAY BE SUBMITTED ELECTRONICALLY; IF REQUIRED, A PAPER COPY MUST ALSO BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL OR SIMILAR SERVICE.

THE CONTRACTOR MUST RETAIN COPIES OF ALL MONITORING RESULTS AND SHALL PROVIDE THE OWNER WITH COPIES OF ALL MONITORING RESULTS.

RETENTION OF RECORDS

THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:

- a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
 - b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
 - c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
 - d. A COPY OF ALL MONITORING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
 - e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.a. OF THIS PERMIT;
 - f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
 - g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.a.(1)(c) OF THIS PERMIT.
- COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, REPORTS, PLANS, MONITORING REPORTS, MONITORING INFORMATION, INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

REPORT SUBMITTAL

ALL WRITTEN CORRESPONDENCE REQUIRED BY THE PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THE PERMIT.

COPIES OF THE DATA SENT TO GEORGIA EPD, INCLUDING THE RETURN RECEIPTS, WILL BE PROVIDED TO THE OWNER AND THE ENGINEER ON A MONTHLY BASIS.

CERTIFIED EROSION CONTROL DESIGN PROFESSIONAL NUMBER 0000019365



ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

DATE:	AUGUST 2016
PROJECT NUMBER:	INDIAN CREEK WRF EXPANSION TO 3 MGD HENRY COUNTY WATER AUTHORITY
DESIGN:	AHW
DRAWN:	AHW
CHECK:	PWR
REVISION:	

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL NOTES
SHEET 2 OF 2

SHEET NO.
00-ESC-19

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATION TECHNIQUES SHALL BE EMPLOYED.

SITE PREPARATION

- GRADE TO PERMIT THE USE OF EQUIPMENT FOR APPLYING AND ANCHORING MULCH.
- INSTALL NEEDED EROSION CONTROL MEASURES AS REQUIRED SUCH AS DIKES, DIVERSION BERMS, TERRACES, AND SEDIMENT BARRIERS.
- LOOSEN COMPACT SOIL TO A MINIMUM DEPTH OF 3 INCHES.

APPLYING MULCH

WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.

- DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
- IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET THE UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
- CUTBACK ASPHALT SHALL BE APPLIED UNIFORMLY. CARE SHOULD BE TAKEN IN AREAS OF PEDESTRIAN TRAFFIC DUE TO PROBLEMS OF TRACKING IN, OR DAMAGE TO SHOES, CLOTHING, ETC.
- APPLY POLYETHYLENE FILM ON EXPOSED AREAS.

ANCHORING MULCH

- STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL PACKER DISK. DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERECT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION.
- STRAW OR HAY SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1). THE ASPHALT EMULSION SHALL BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH. TACKIFIERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLASTIC MESH OR NETTING WITH A MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
- POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

Ds1 MULCHING

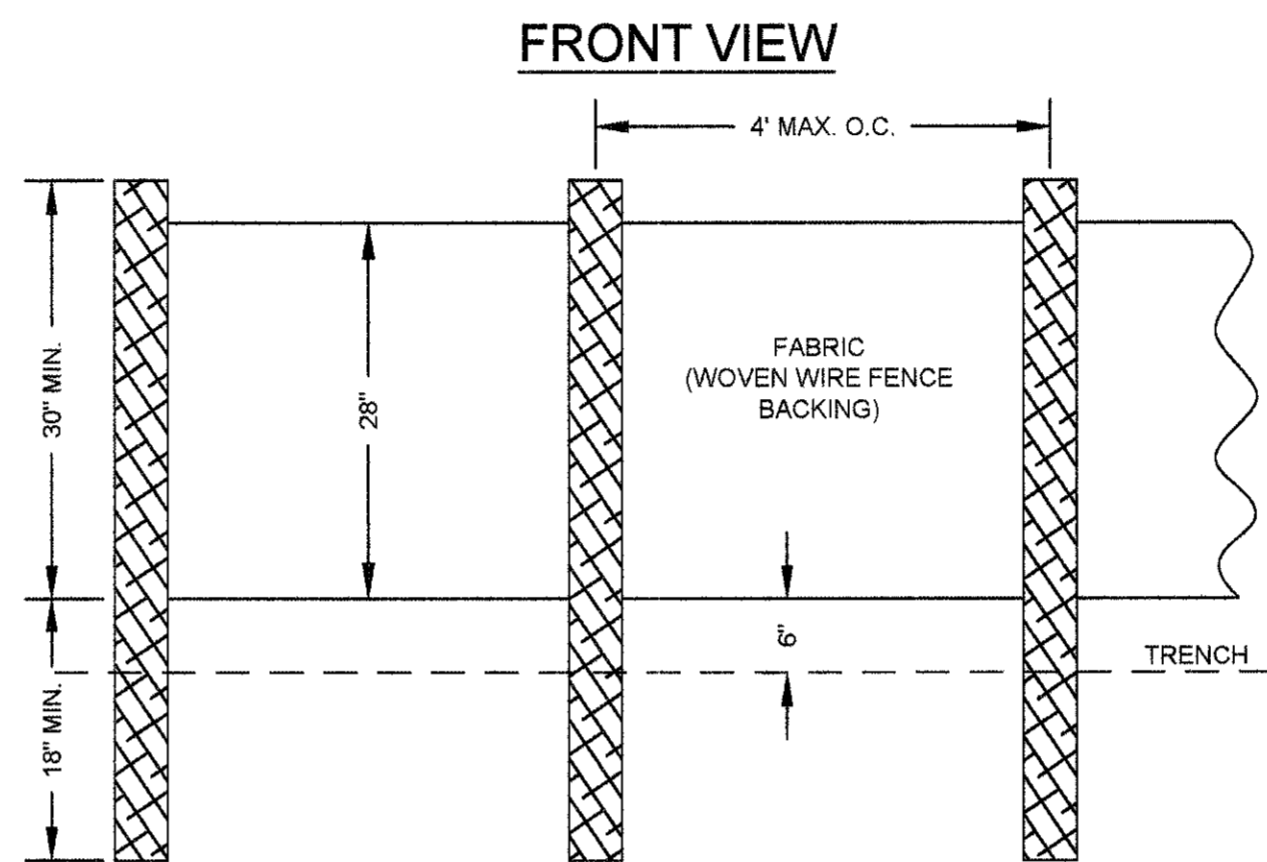
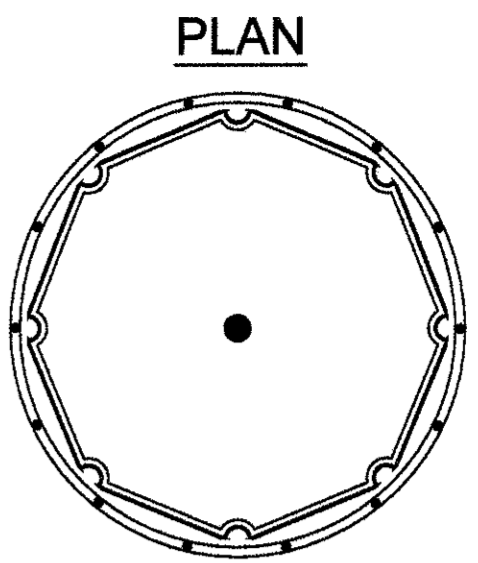
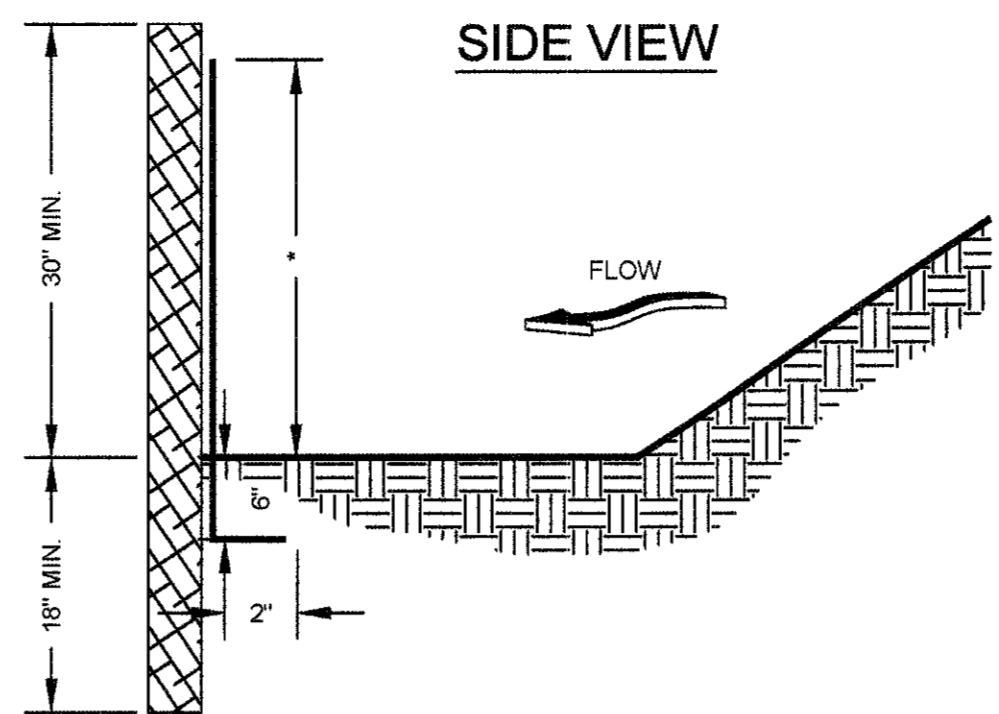
VEGETATIVE COVERS

	MONTH	TEMPORARY SEED	RATE/ACRE	RATES/1,000 SQ. FT.		PERMANENT SEED	RATE/ACRE	RATES/1,000 SQ. FT.		MAINTENANCE
				FERTILIZER	LIME STONE			FERTILIZER	LIME STONE	
1)	JANUARY	RYEGRASS	40 - 50 LB.	12 LB (10-10-10)	45 LB.	UNHULLED BERMUDA SERICEA LESPEDEZA (2)	8 - 10 LB. 30 - 40 LB. (1)	12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10)
2)	FEBRUARY	RYEGRASS	40 - 50 LB.	12 LB (10-10-10)	45 LB.	UNHULLED BERMUDA SERICEA LESPEDEZA (2) FESCUE	8 - 10 LB. 30 - 40 LB. 30 - 50 LB.	12 LB (10-10-10) 35 LB (6-12-12) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
3)	MARCH	RYE ANNUAL LESPEDEZA WEEPING LOVEGRASS	2 - 3 BU. 20 - 25 LB. 4 - 6 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	UNHULLED BERMUDA SERICEA LESPEDEZA (2) FESCUE	8 - 10 LB. 30 - 40 LB. 30 - 50 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
4)	APRIL	RYE BROWN TOP MILLET ANNUAL LESPEDEZA SUDAN ANNUAL	2 - 3 BU. 30 - 40 LB. 20 - 25 LB. 35 LB.	12 LB (10-10-10) 12 LB (10-10-10) 35 LB (6-12-12) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB. 45 LB.	WEEPING LOVEGRASS HULLED BERMUDA BAHIA	4 - 6 LB. 5 - 6 LB. 40 - 60 LB.	12 LB (10-10-10) 12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
5)	MAY	WEEPING LOVEGRASS SUDAN GRASS BROWN TOP MILLET	4 - 6 LB. 35 LB. 30 - 40 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	WEEPING LOVEGRASS HULLED BERMUDA BAHIA	4 - 6 LB. 5 - 6 LB. 40 - 60 LB.	12 LB (10-10-10) 12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
6)	JUNE	WEEPING LOVEGRASS SUDAN GRASS BROWN TOP MILLET	4 - 6 LB. 35 LB. 30 - 40 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	WEEPING LOVEGRASS HULLED BERMUDA BAHIA	4 - 6 LB. 5 - 6 LB. 40 - 60 LB.	12 LB (10-10-10) 12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
7)	JULY	WEEPING LOVEGRASS SUDAN GRASS BROWN TOP MILLET	4 - 6 LB. 35 LB. 30 - 40 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	WEEPING LOVEGRASS SUDAN GRASS BROWN TOP MILLET	4 - 6 LB. 35 LB. 30 - 40 LB.	12 LB (10-10-10) 35 LB (6-12-12) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
8)	AUGUST	RYEGRASS WEEPING LOVEGRASS	40 - 50 LB. 4 - 6 LB.	12 LB (10-10-10) 12 LB (10-10-10)	45 LB. 45 LB.	HULLED BERMUDA BAHIA	5 - 6 LB. 40 - 60 LB.	12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10)
9)	SEPTEMBER	RYEGRASS TALL FESCUE	40 - 50 LB. 30 - 50 LB.	12 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB.	TALL FESCUE	30 - 50 LB.	35 LB (6-12-12)	45 LB.	10 LB (10-10-10)
10)	OCTOBER	WHEAT	2 - 3 BU.	12 LB (10-10-10)	45 LB.	UNHULLED BERMUDA SERICEA LESPEDEZA (2) FESCUE	8 - 10 LB. 30 - 40 LB. 30 - 50 LB.	12 LB (10-10-10) 35 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
11)	NOVEMBER	WHEAT	2 - 3 BU.	12 LB (10-10-10)	45 LB.	UNHULLED BERMUDA FESCUE SERICEA LESPEDEZA	8 - 10 LB. 30 - 50 LB. 30 - 40 LB.	12 LB (10-10-10) 35 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)
12)	DECEMBER	RYE RYEGRASS WHEAT	2 - 3 BU. 40 - 50 LB. 2 - 3 BU.	12 LB (10-10-10) 12 LB (10-10-10) 12 LB (10-10-10)	45 LB. 45 LB. 45 LB.	UNHULLED BERMUDA SERICEA LESPEDEZA FESCUE	8 - 10 LB. 30 - 40 LB. 30 - 50 LB.	12 LB (10-10-10) 35 LB (10-10-10) 35 LB (6-12-12)	45 LB. 45 LB. 45 LB.	10 LB (10-10-10) 10 LB (10-10-10) 10 LB (10-10-10)

(1) - USE A MINIMUM OF 40 LBS. SCARIFIED SEED. REMAINDER MAY BE UNSCARIFIED, CLEAN HULLED SEED.
 (2) - USE EITHER COMMON SERALA OR INTERSTATE SERICEA LESPEDEZA.

THE ABOVE SEEDING CHART LISTS ALL POTENTIAL OPTIONS. CONTRACTOR IS TO SUBMIT THE SCHEDULE AND PROPOSED SEED MIXTURE FOR THIS PROJECT FOR ENGINEER'S APPROVAL PRIOR TO SEEDING.

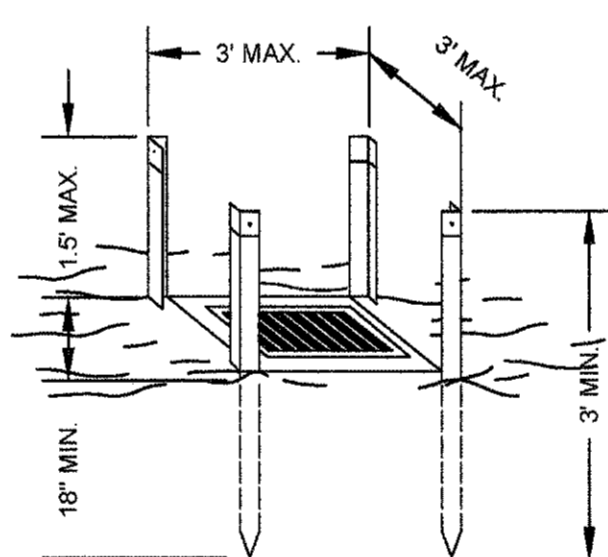
Ds2 Ds3 TEMPORARY & PERMANENT GRASSING



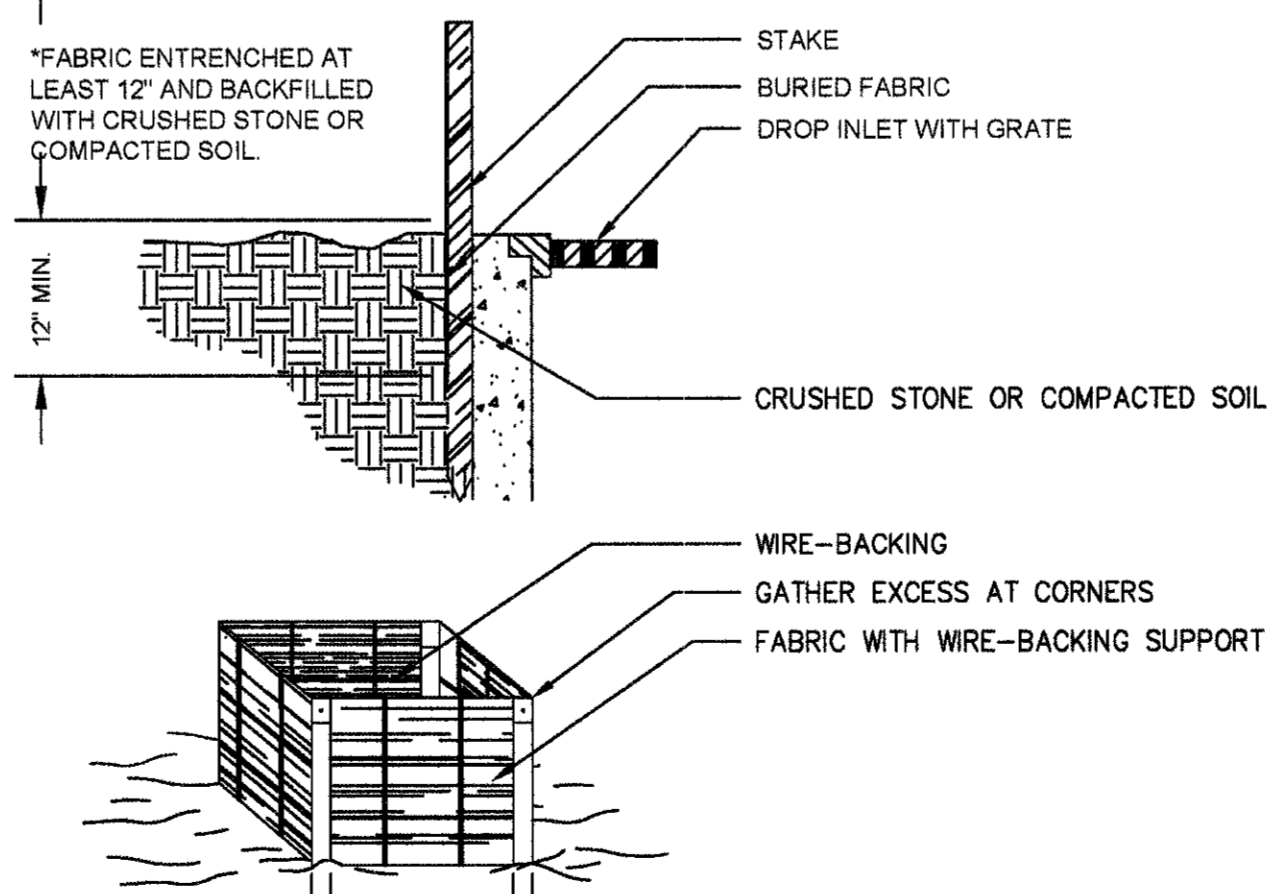
NOTES:
 1. USE POSTS AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

**SILT FENCE - TYPE SENSITIVE
Sd1-S**

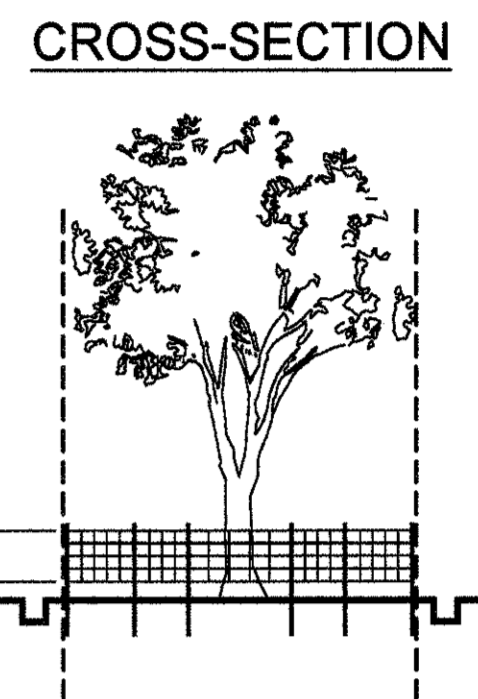
**FABRIC AND SUPPORTING FRAME FOR
INLET PROTECTION**



- NOTES
- DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
 - THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
 - THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
 - THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

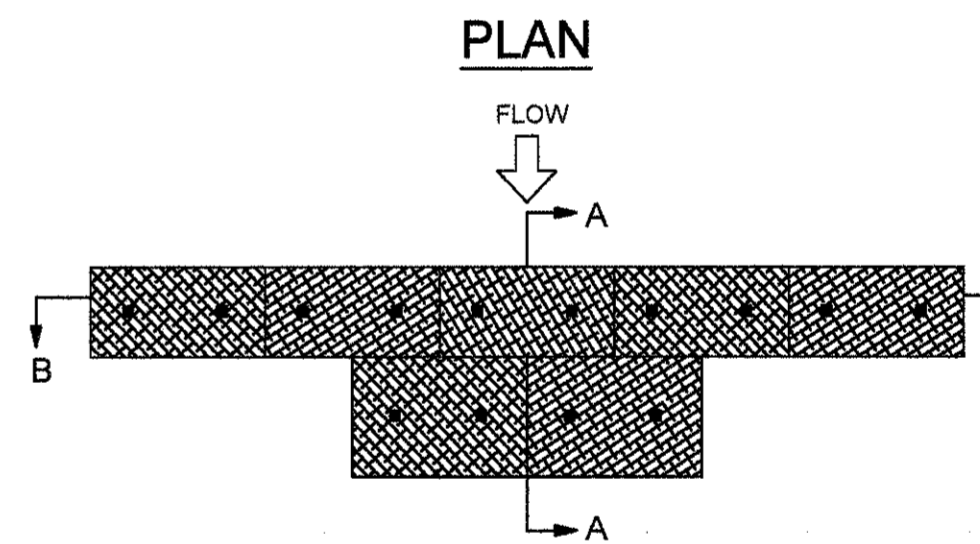


**STEEL FRAME AND SILT FENCE INSTALLATION
Sd2-F**

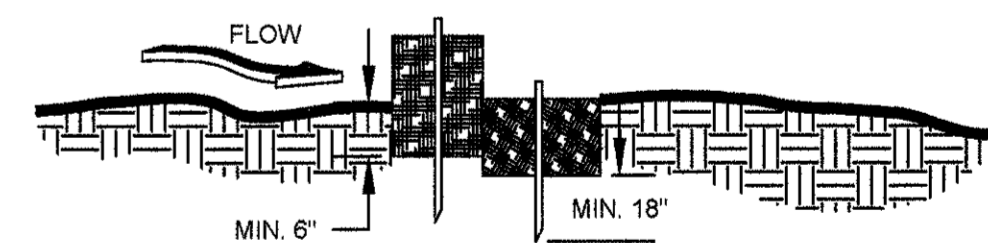


- NOTES:
- USE TRENCHER (I.E. DITCH WHICH) TO CUT A 4"-5" W X 18" D TRENCH ALONG DRIP LINE (LIMIT OF CLEARING) AND BACKFILL WITH SAND AND LIGHTLY COMPACT.
 - SPACE STAKES AT INTERVALS SUFFICIENT TO MAINTAIN ALL FENCING OUT OF DRIP LINE OR AS SHOWN BY ENGINEER (SET STAKES NO GREATER THAN 6 FEET ON CENTER-REBAR IS NOT TO BE USED FOR STAKES).
 - MAINTAIN FENCE BY REPAIRING AND/OR REPLACING DAMAGED FENCE. DO NOT REMOVE FENCING PRIOR TO LANDSCAPING OPERATIONS.
 - DO NOT STORE OR STACK MATERIALS, EQUIPMENT, OR VEHICLES WITHIN FENCED AREA.
 - FENCE SHALL BE ORANGE VINYL "SNOW FENCE" 4' HIGH MINIMUM.

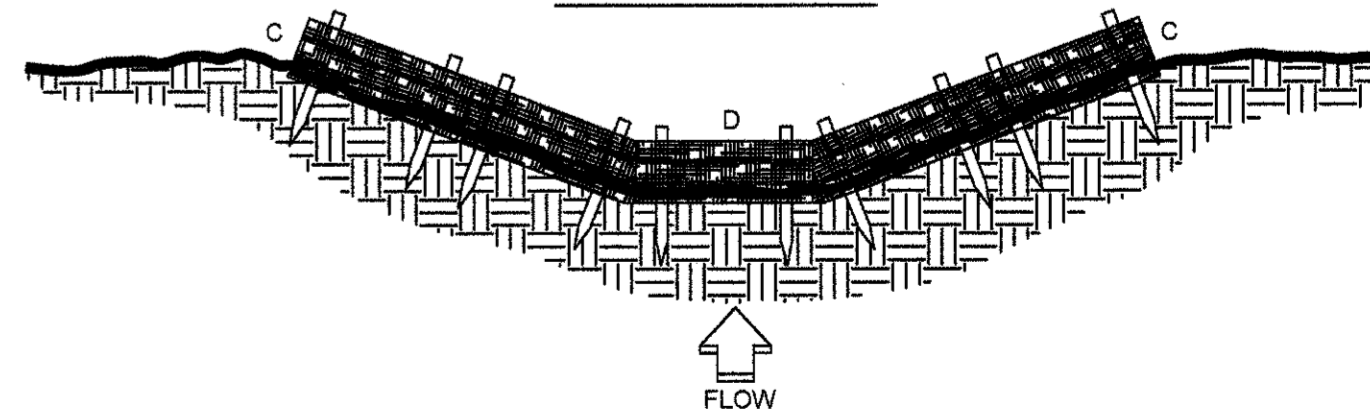
**TREE PROTECTION - "SNOW" FENCE
Tr**



SECTION A-A



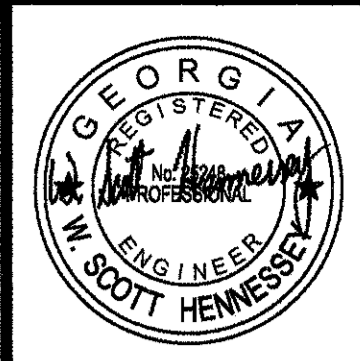
SECTION B-B



- NOTES:
- BALES SHOULD BE BOUND WITH WIRE OR NYLON STRING AND SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 - REMOVE #4 REBAR AFTER STRAW BALES ARE NO LONGER IN PLACE.
 - POINT C OF SECTION B-B SHOULD ALWAYS BE HIGHER THAN POINT D.

**TYPICAL STRAW BALE CHECK DAM
Cd-Hb**

CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 0000019365



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: _____

DATE: AUGUST 2016

DATE	REVISION

DRSN: AHW
 DRWN: AHW
 CHCK: PMR

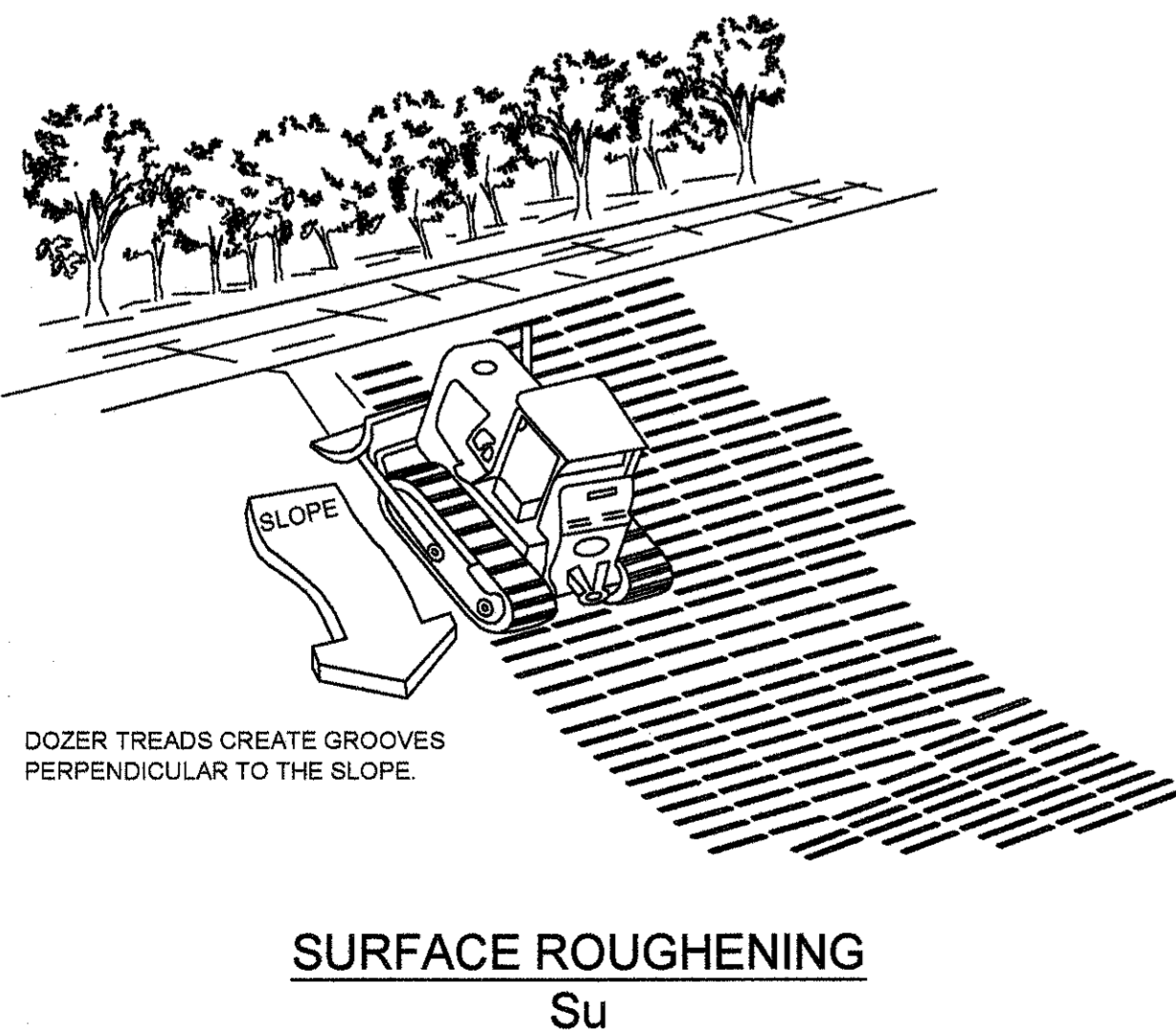
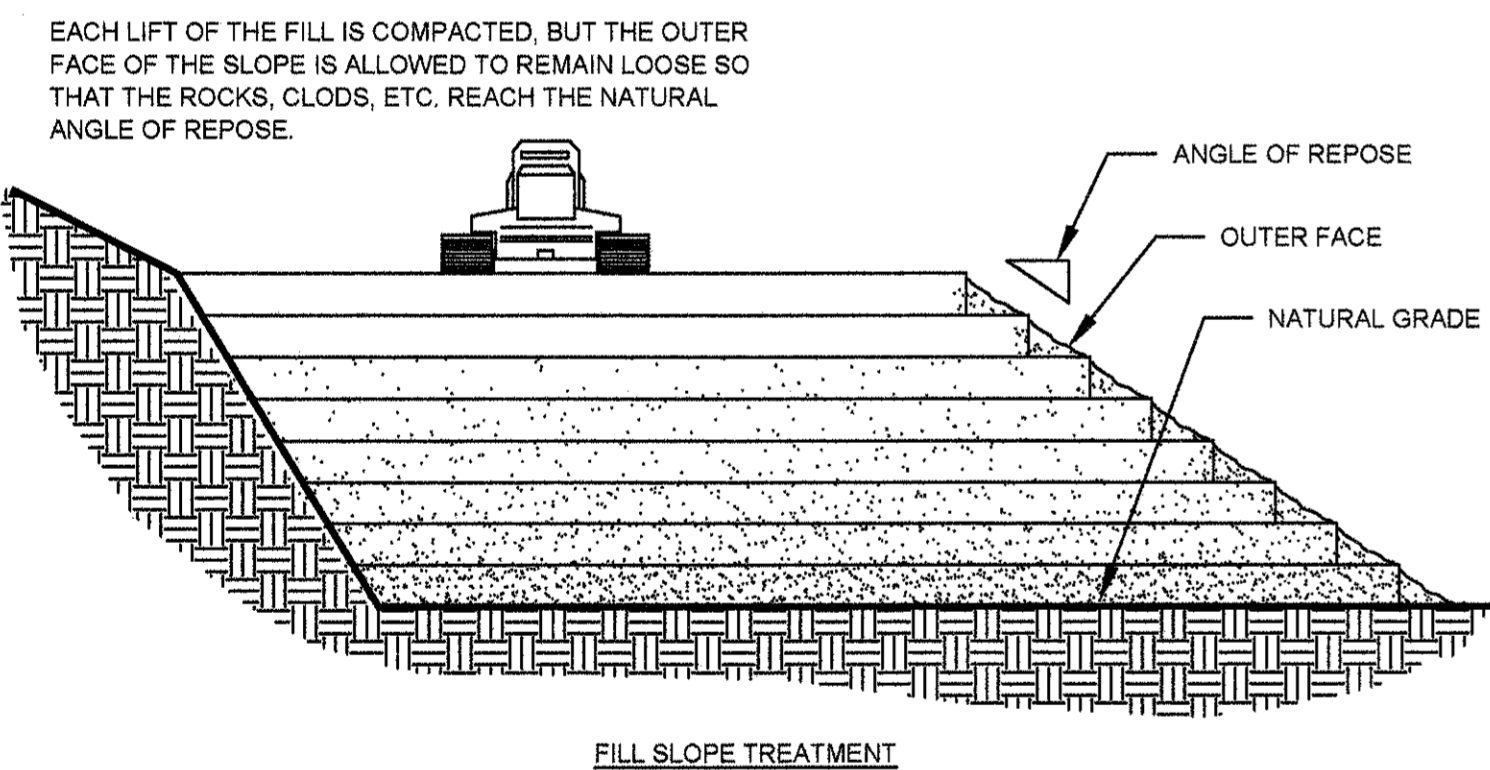
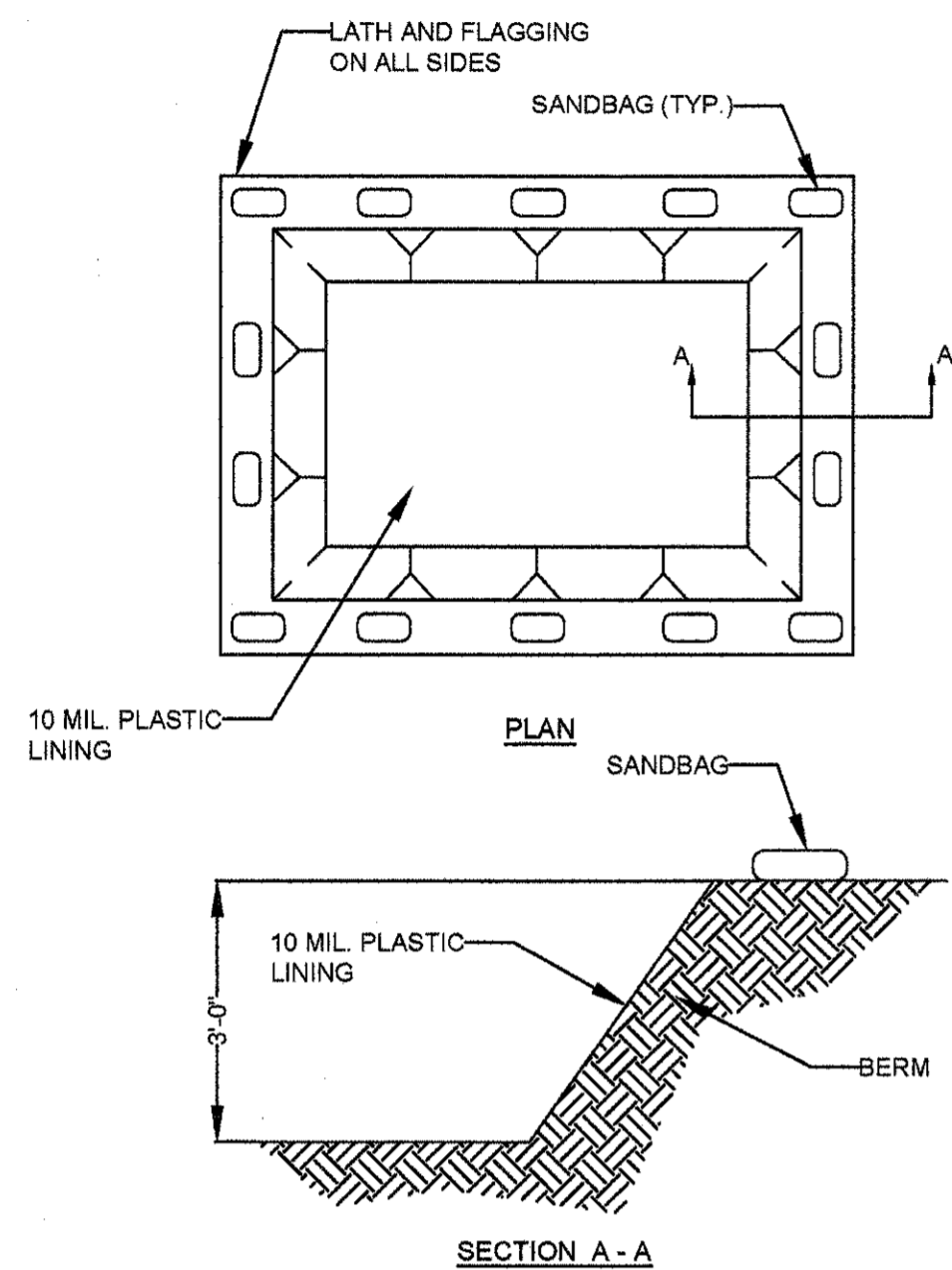
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EROSION AND SEDIMENT CONTROL DETAILS
 SHEET 1 OF 2

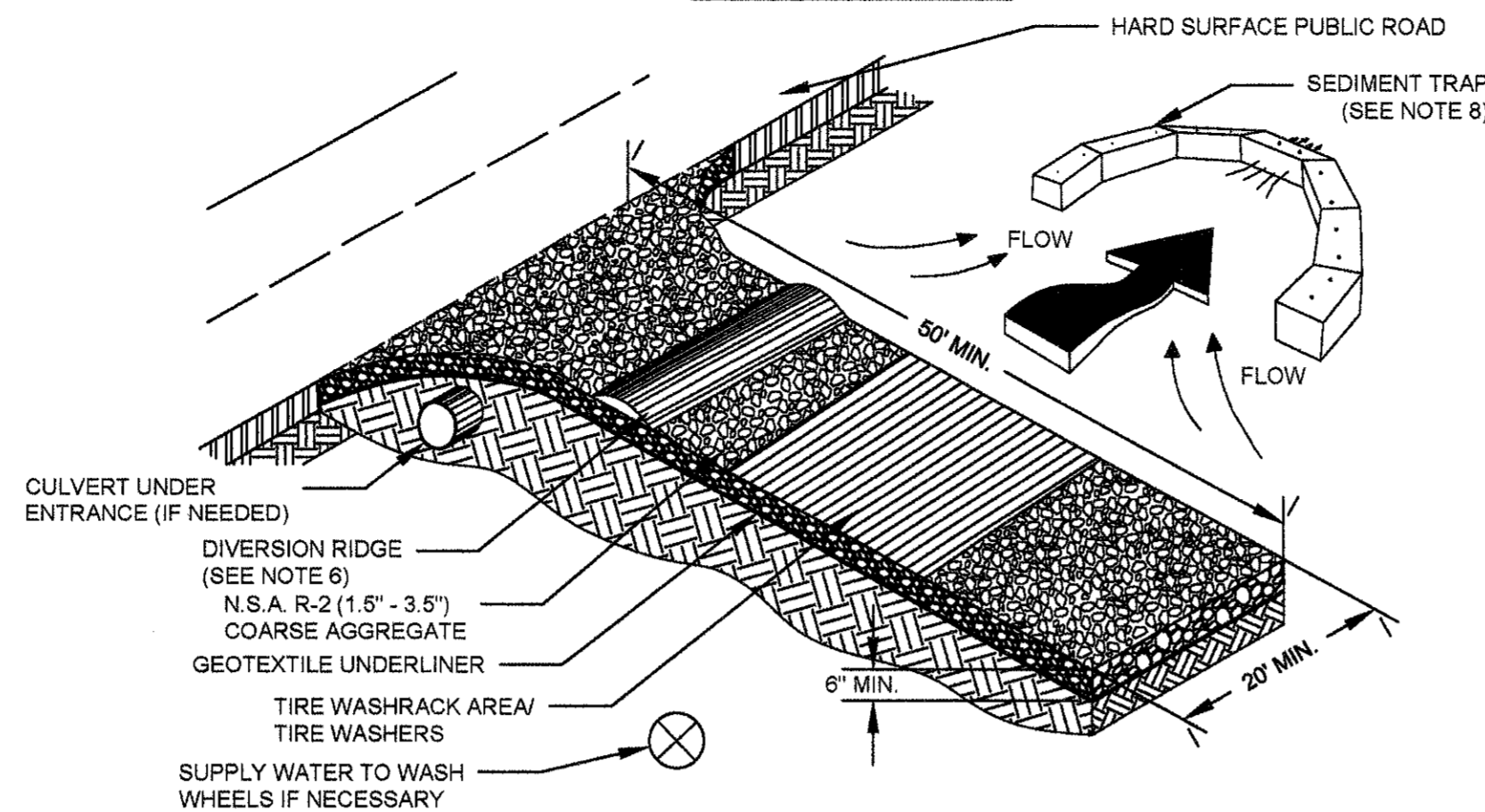
SHEET NO.
 00-ESC-20

NOTES:

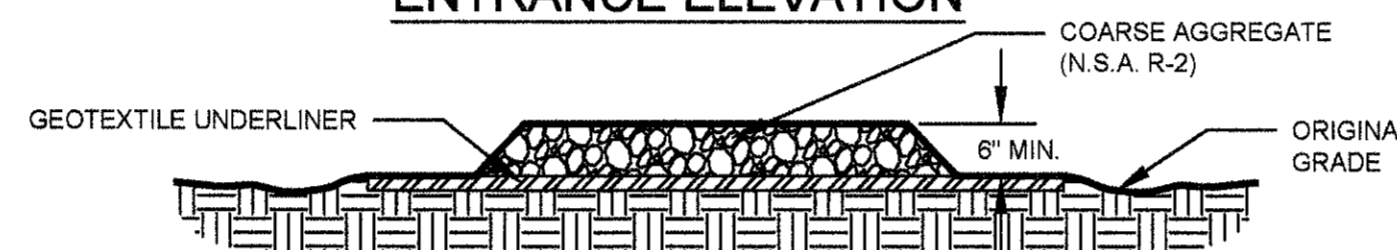
1. THE CONTRACTOR SHALL PROVIDE A DESIGNATED AREA FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF THE VEHICLES. THIS AREA MUST HAVE A CONCRETE WASHOUT FACILITY AND SHALL BE CONSTRUCTED ACCORDING TO THE DETAIL SHOWN BELOW.
2. THE CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES.
3. WASHOUT DISCHARGE FROM THE CLEANING OF CONCRETE TRUCKS, TOOLS AND OTHER EQUIPMENT SHALL NOT BE DISCHARGED INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
4. EXCESS CONCRETE SHALL NOT BE DISPOSED OF ON-SITE. ALL EXCESS CONCRETE SHALL BE TRANSPORTED OFF-SITE AND DISPOSED OF PROPERLY.
5. IT IS PROHIBITED TO WASHOUT THE MIXING DRUM OF CONCRETE TRUCKS ON-SITE.



EXIT DIAGRAM



ENTRANCE ELEVATION



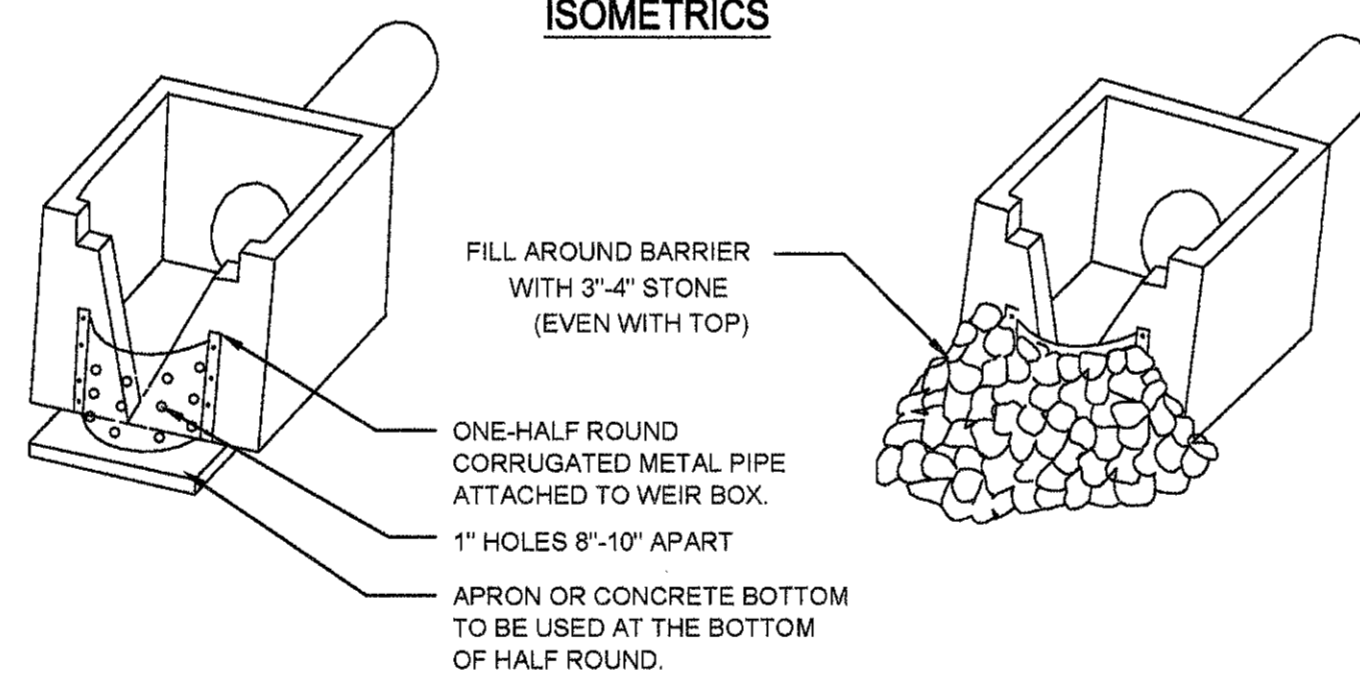
NOTES:

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

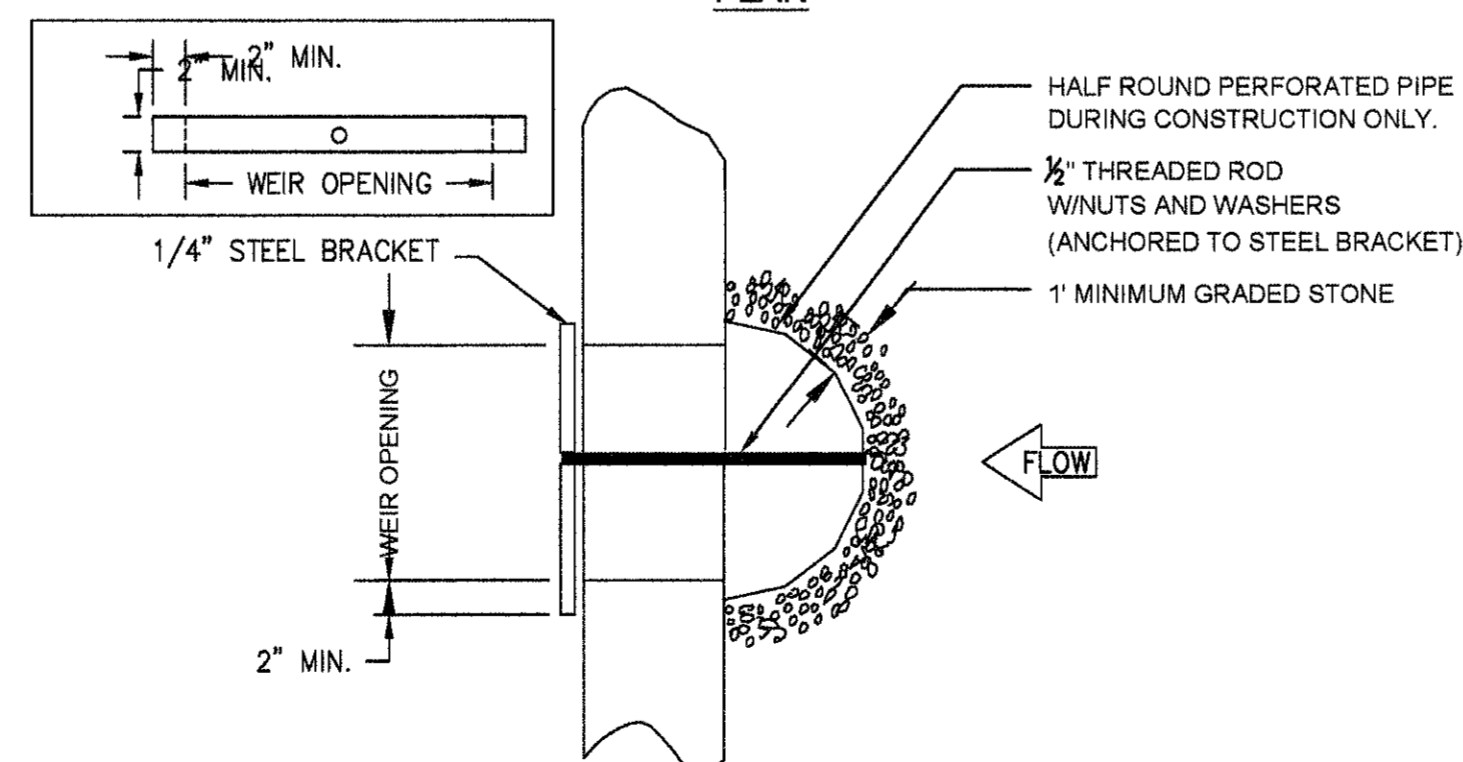
CRUSHED STONE CONSTRUCTION EXIT

Co

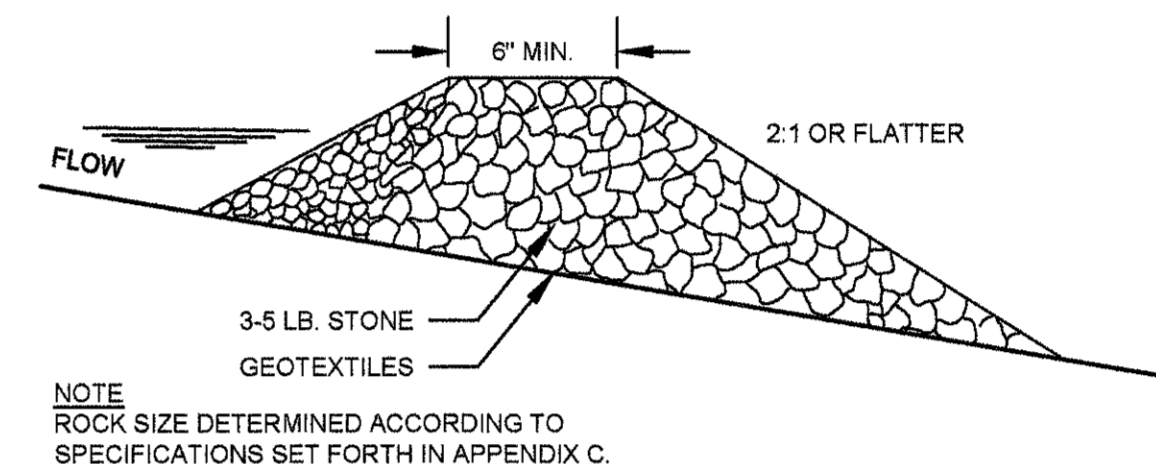
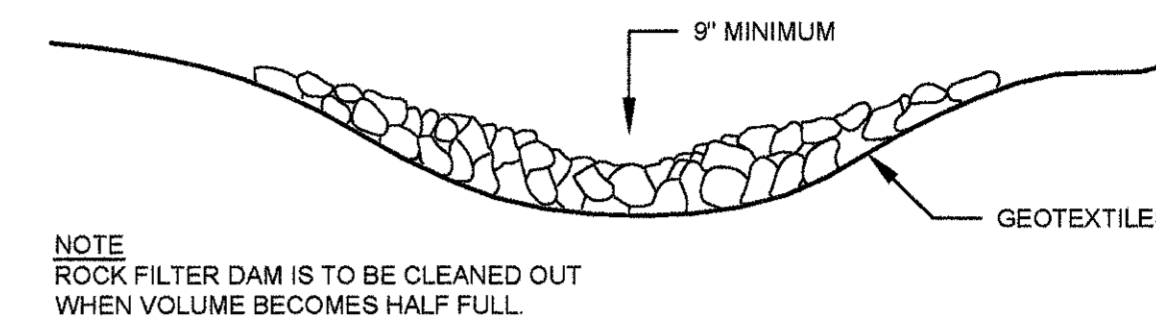
ISOMETRICS



PLAN



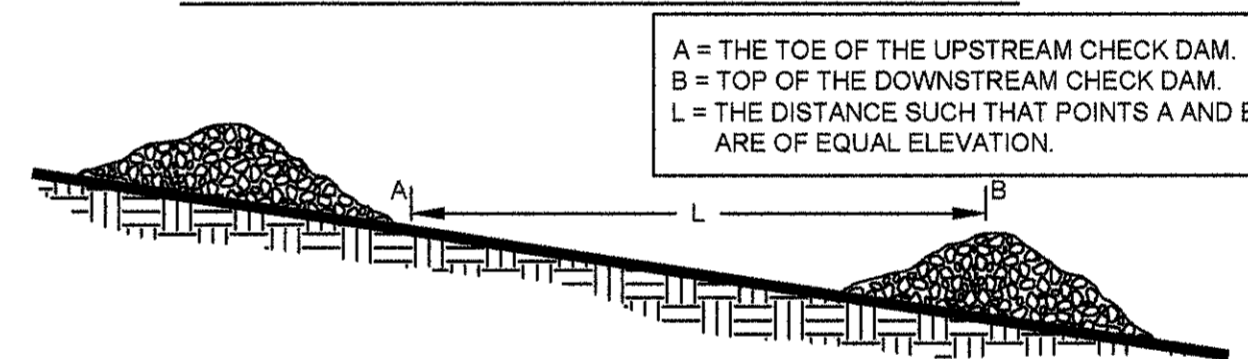
PERFORATED HALF-ROUND PIPE WITH STONE FILTER (RETROFIT)



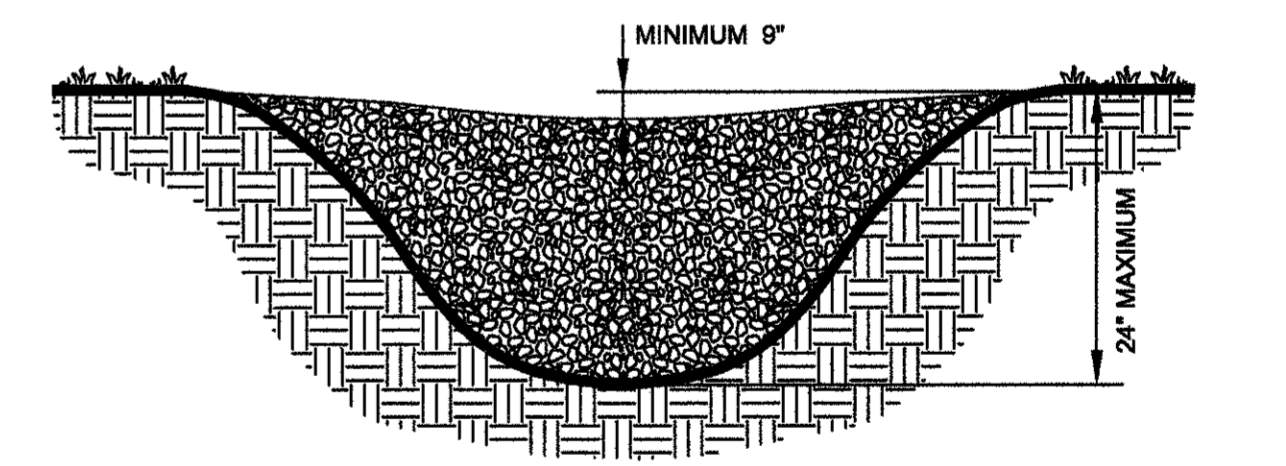
ROCK FILTER DAM

Rd

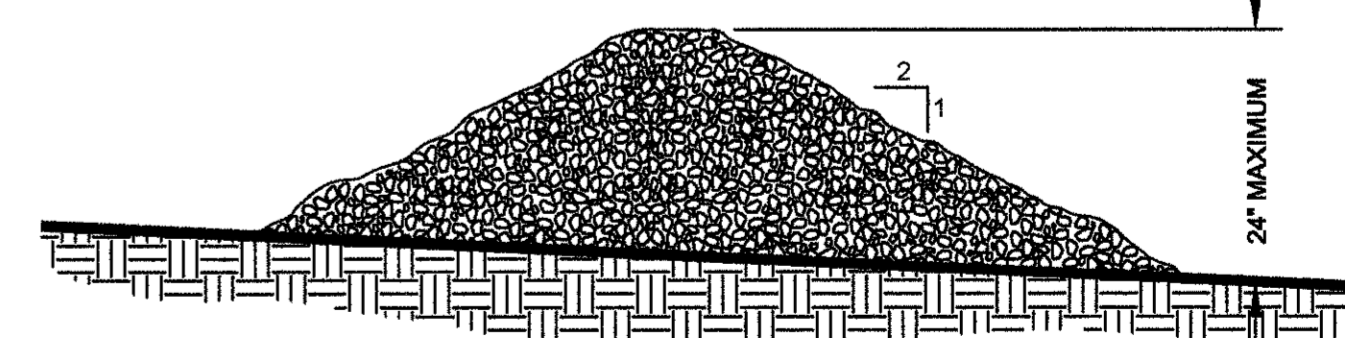
SPACING BETWEEN CHECK DAMS



CROSS SECTION



PROFILE VIEW



NOTES:

1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
5. THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
6. GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

STONE CHECK DAM

CERTIFIED EROSION CONTROL DESIGN
PROFESSIONAL NUMBER 0000019365



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DGSN: AHW
DRWN: AHW
CHK: PMR

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
EROSION AND SEDIMENT CONTROL DETAILS
SHEET 2 OF 2

SHEET NO.
00-ESC-21



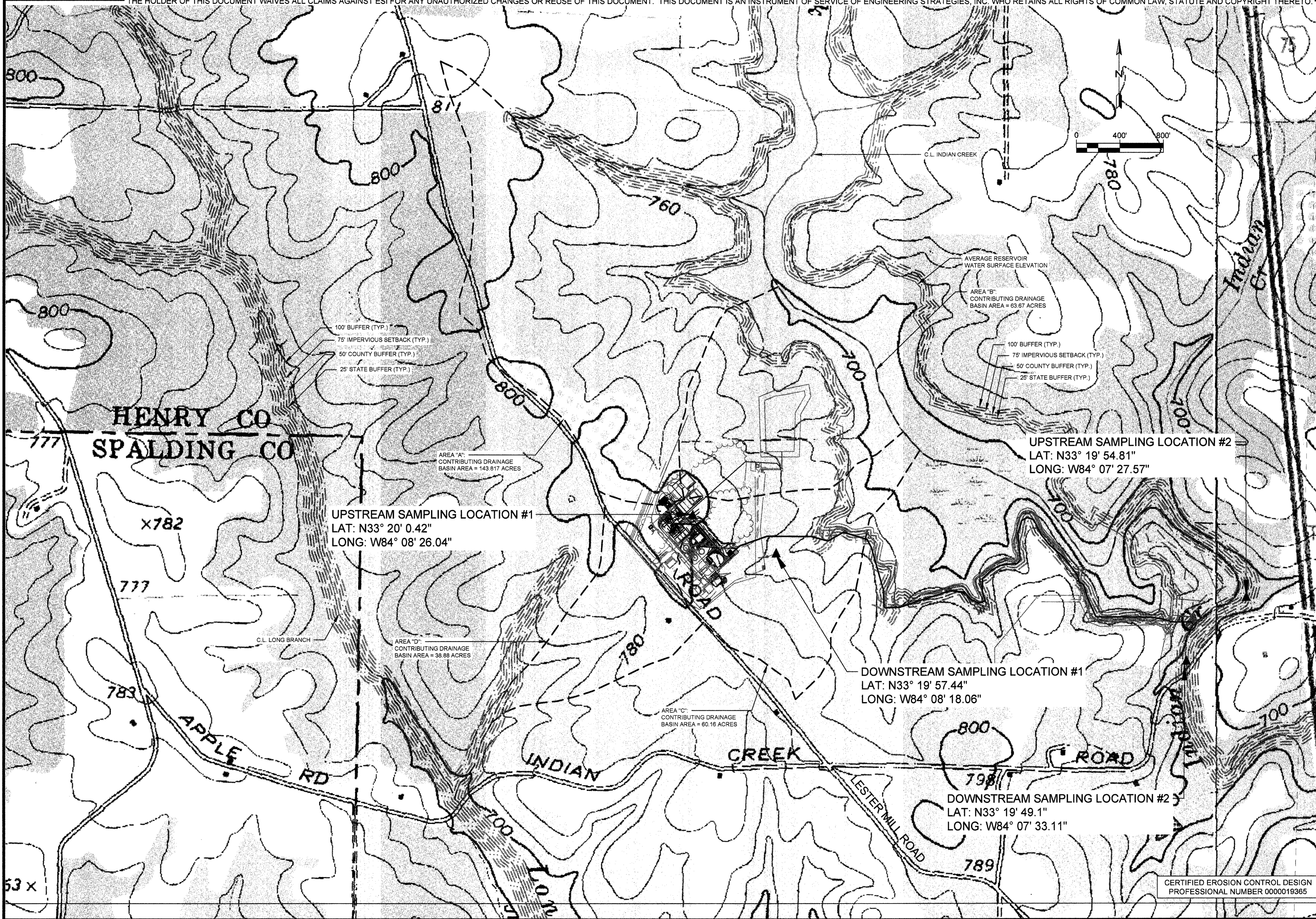
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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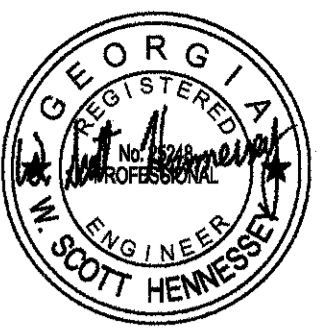
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 DRAINAGE BASINS AND
 SAMPLING LOCATIONS

SHEET NO.
 00-ECS-22



CERTIFIED EROSION CONTROL DESIGN
 PROFESSIONAL NUMBER 000019365



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 MARIETTA, GA 30062
 (770) 429-0001

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	AUGUST 2016
REVISION	DATE
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 DRWN: WSH
 CHCK: WSH

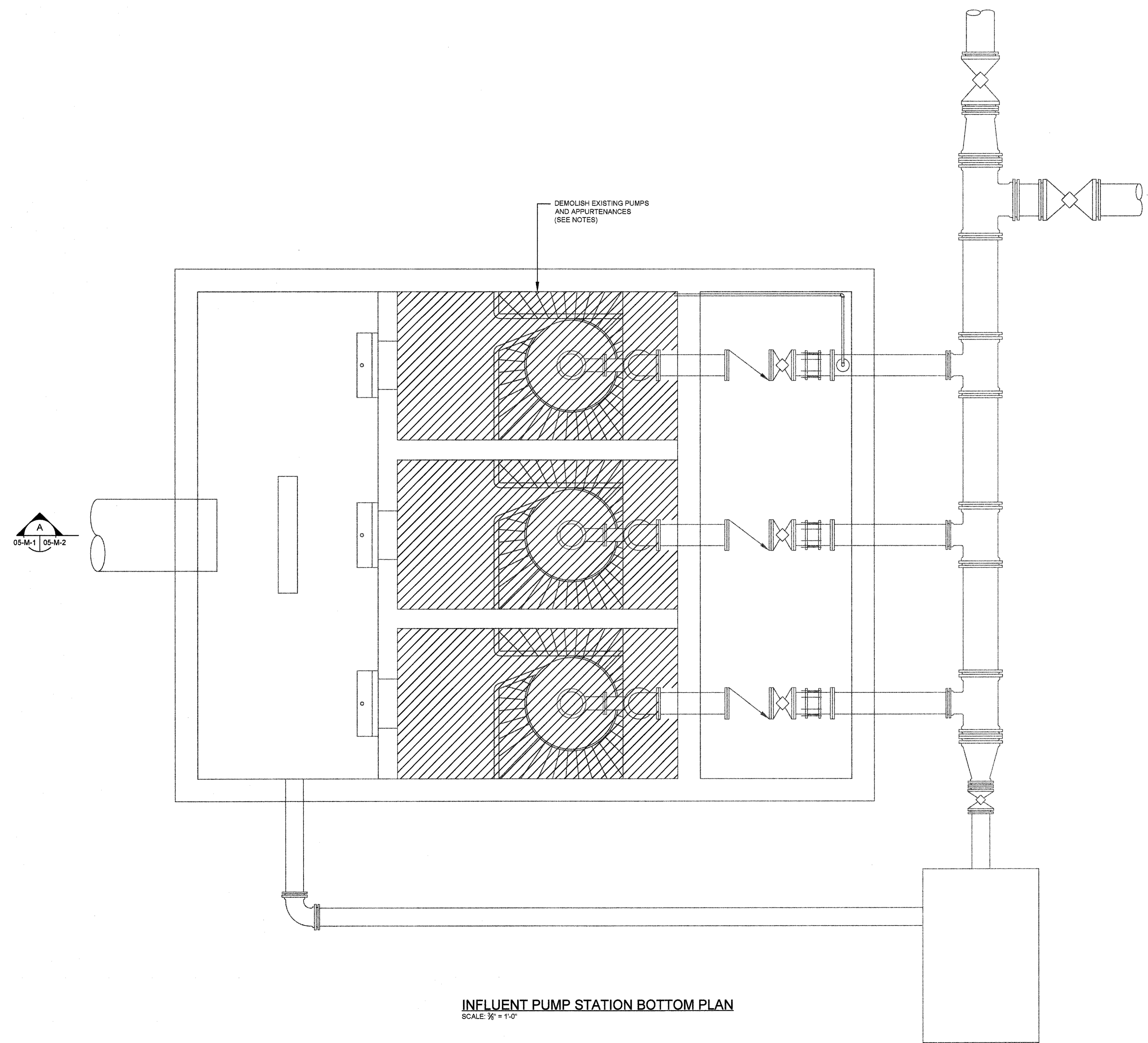
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT PUMP STATION
 DEMOLITION PLAN 1

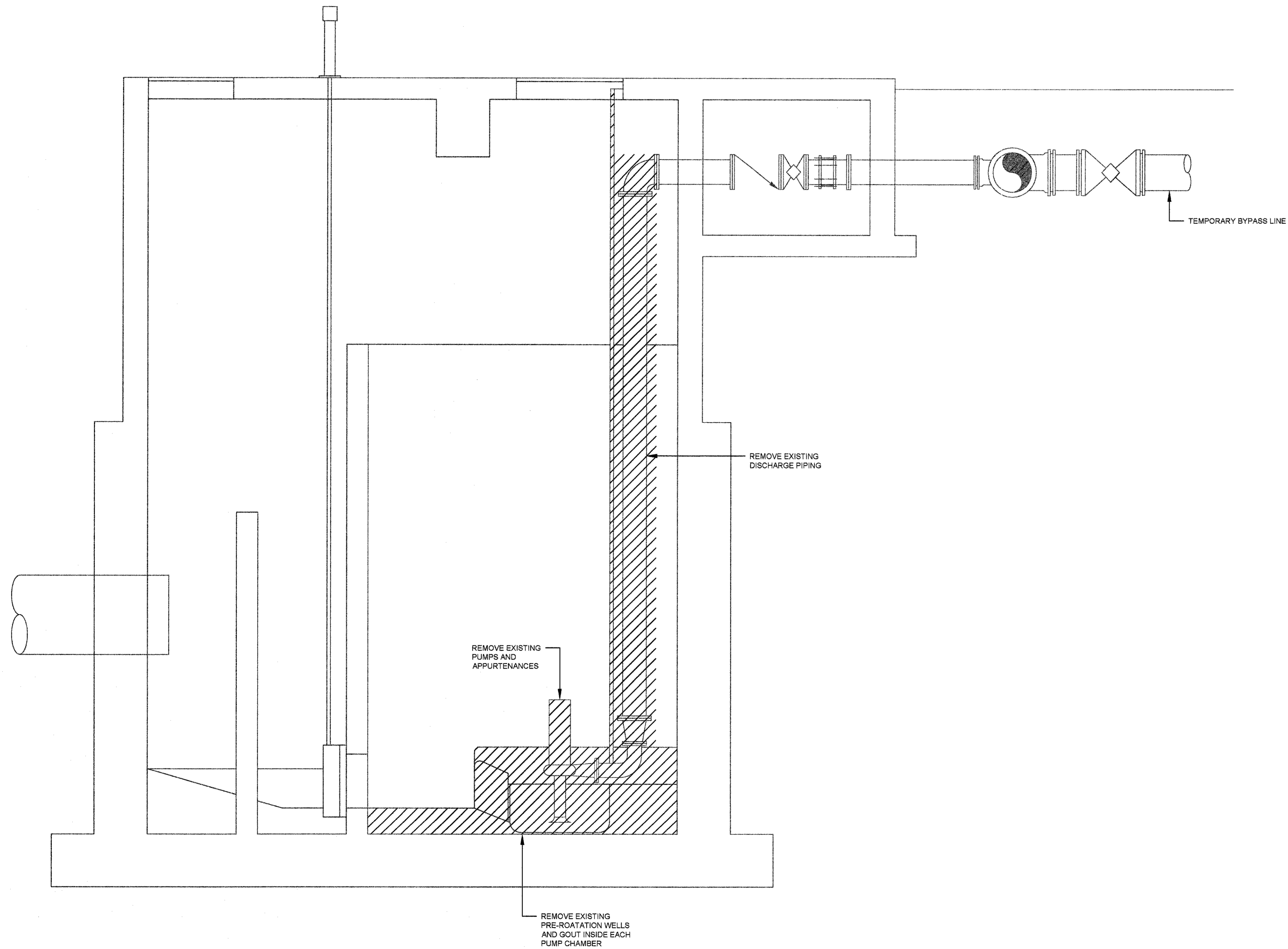
SHEET NO.
 05-M-1

NOTES:

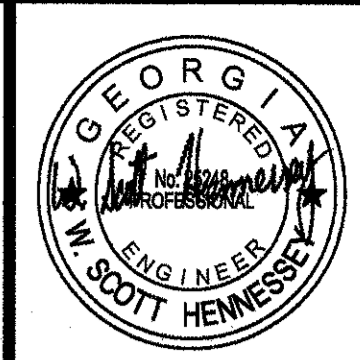
- PRIOR TO TAKING INFLUENT PUMP STATION OUT OF SERVICE, CONTRACTOR SHALL PROVIDE TEMPORARY PUMPING FACILITIES. TEMPORARY PUMPING FACILITIES SHALL OPERATE FOR A MINIMUM OF 24 HOURS WITHOUT FAILURE PRIOR TO TAKING THE PUMP STATION OUT OF SERVICE.
- TEMPORARY PUMPS SHALL BE SET UP TO PUMP OUT OF FIRST UPSTREAM MANHOLE.
- TEMPORARY PUMPING SYSTEM SHALL BE A COMPLETE TURNKEY SYSTEM CONSISTING OF PUMPS, PIPING, CONTROLS, AND ALL APPURTENANCES REQUIRED FOR A COMPLETE SYSTEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE TEMPORARY PUMPING SYSTEM INCLUDING PROVIDING FUEL FOR THE OPERATION OF THE SYSTEM.
- CONTRACTOR SHALL KEEP THE AREA AROUND THE TEMPORARY PUMPING SYSTEM CLEAN AT ALL TIMES AND SHALL BE RESPONSIBLE FOR CLEANING ALL SPILLS. IF ANY WASTEWATER SPILLS OCCUR AS A RESULT OF THE CONTRACTORS NEGLIGENCE, THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYING ALL FINES LEVIED AS A RESULT OF THE SPILLS.
- PROVIDE A MINIMUM OF THREE (3) PUMPS, TWO (2) DUTY AND ONE (1) STANDBY, TO MEET THE FOLLOWING DESIGN CONDITIONS:
 PEAK FLOW RATE WITH 2 PUMPS OPERATING = 2,400 GPM @ 110 FT TDH
 MINIMUM FLOW RATE WITH 1 PUMP OPERATING = 1,200 GPM @ 97 FT TDH
- PROVIDE A CONTROL PANEL FOR THE TEMPORARY PUMPING SYSTEM. CONTROL PANEL SHALL HAVE ALL CONTROLS REQUIRED TO OPERATE THE TEMPORARY PUMPING SYSTEM AND SHALL HAVE A LIGHT AND HORN ALARM FOR ALARMS.
- PROVIDE ALARMS FOR THE TEMPORARY PUMPING SYSTEM TO MONITOR HIGH LEVEL AND LOW LEVEL IN THE MANHOLE, PUMP FAILURE, AND ANY OTHER CRITICAL ALARMS. PROVIDE AN AUTO DIALER WITH CELLULAR PHONE SERVICE TO NOTIFY THE CONTRACTOR AND VENDOR OF AN ALARM CONDITION.
- SUPPORT PIPING AND PROVIDE RAMPS AND BARRIERS AS NECESSARY TO PREVENT TRIP HAZARDS AND DAMAGE TO PIPE.
- AFTER TEMPORARY PUMPING IS COMPLETE, REMOVE ALL TEMPORARY PUMPING FACILITIES AND RESTORE ALL AREAS TO PREEXISTING CONDITIONS.
- REMOVE PUMPS, GUIDE RAILS, PUMP APPURTENANCES, AND DISCHARGE PIPING AS SHOWN ON THE DRAWINGS.
- DEMOLISH GROUT FORMED PRE-ROTATIONAL STRUCTURES.



INFLUENT PUMP STATION BOTTOM PLAN
 SCALE: 3/8" = 1'-0"



SECTION A
SCALE: 3/8" = 1'-0"
05-M-1 | 05-M-2



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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION
DEMOLITION PLAN 2

SHEET NO.
05-M-2



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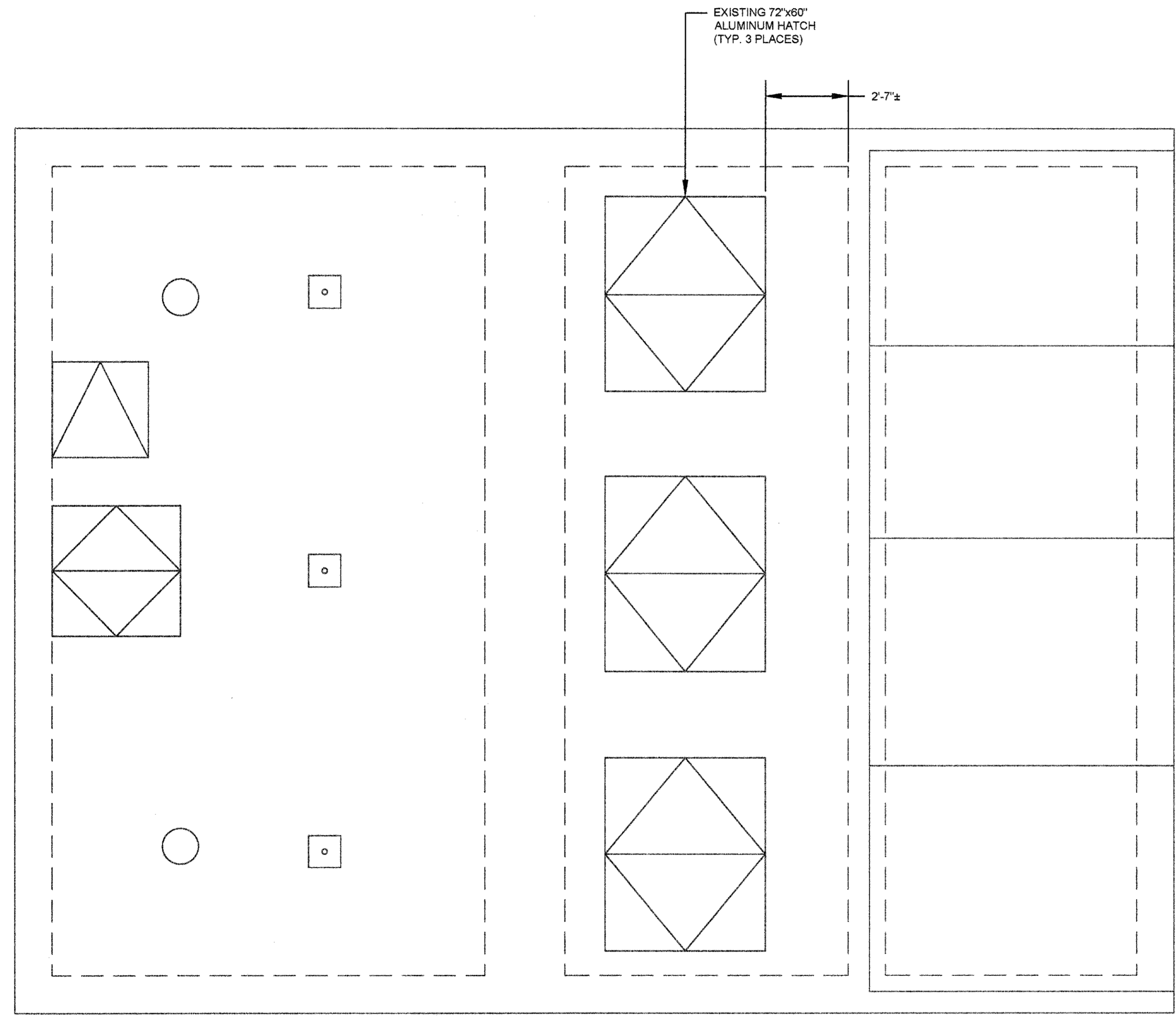
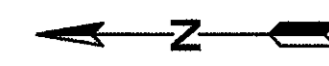
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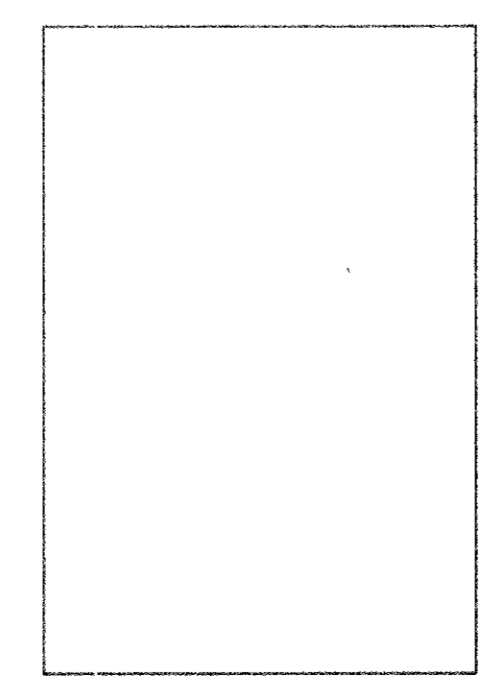
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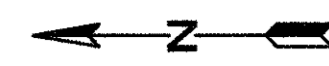
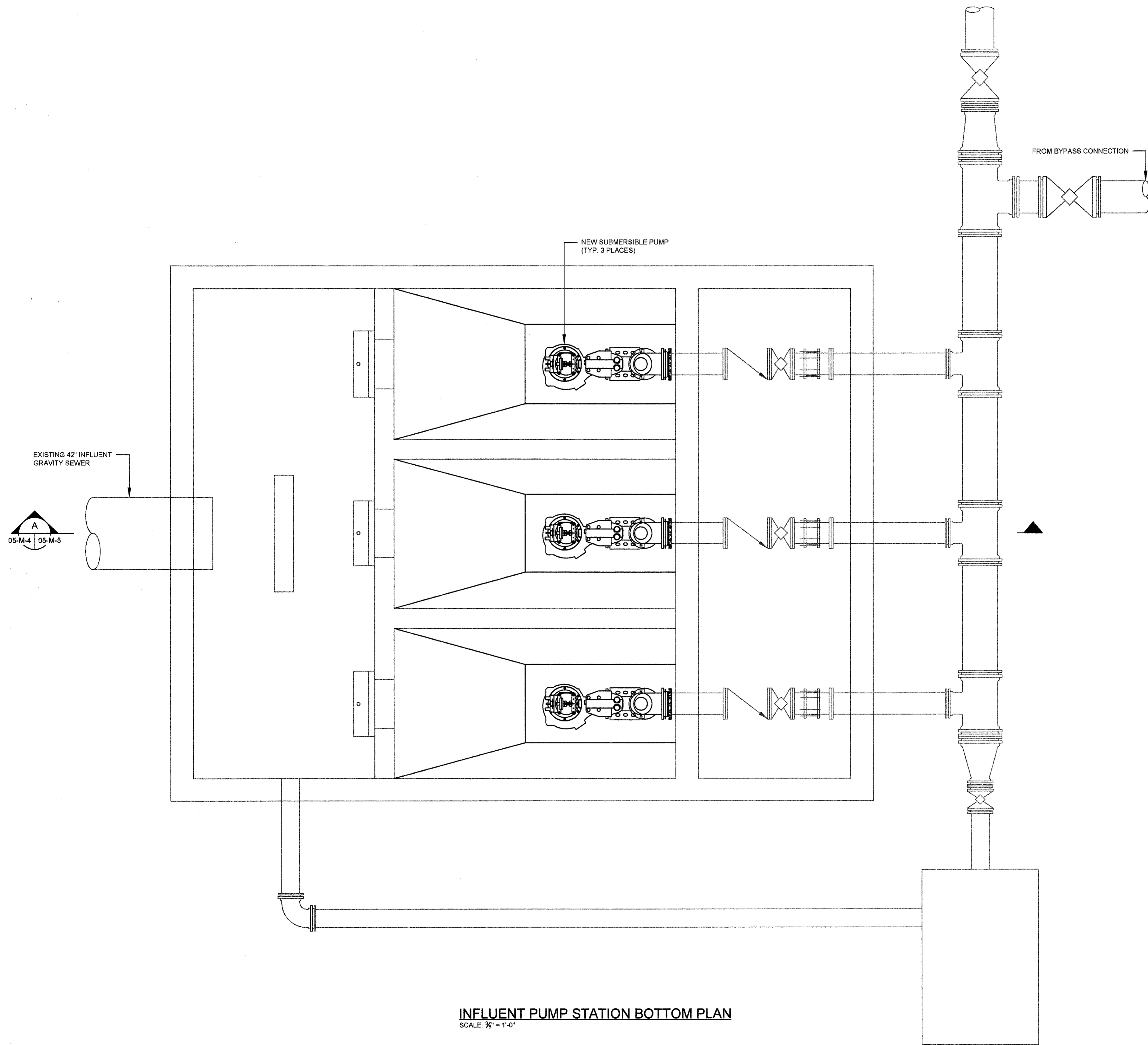
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT PUMP STATION
 TOP PLAN

SHEET NO.
 05-M-3



INFLUENT PUMP STATION TOP PLAN
 SCALE: 3/8" = 1'-0"





INFLUENT PUMP STATION BOTTOM PLAN

SCALE: 3/8" = 1'-0"



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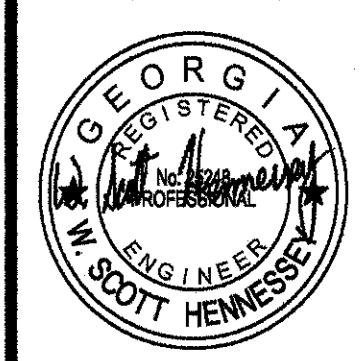
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT PUMP STATION
 BOTTOM PLAN

SHEET NO.
 05-M-4



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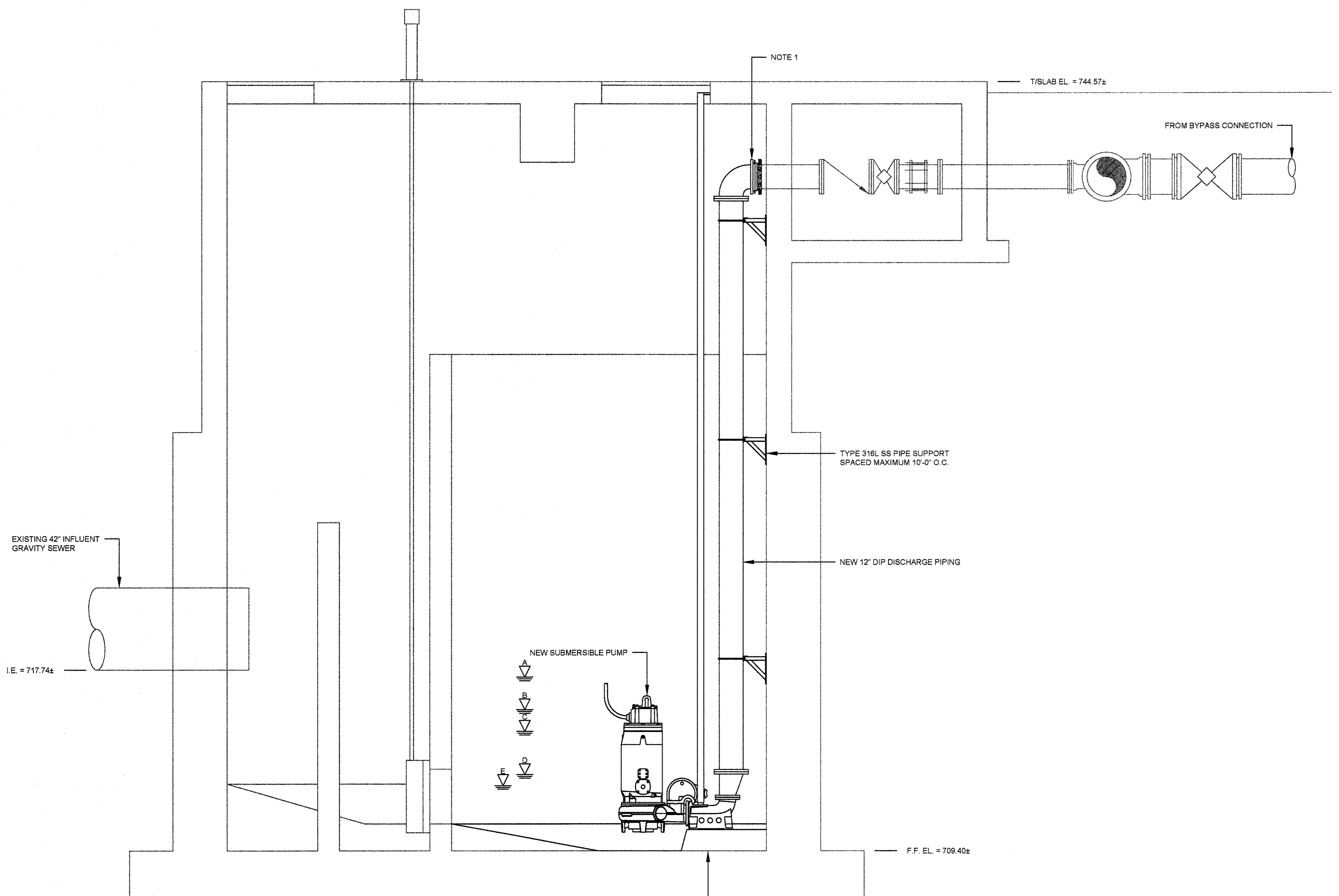
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION SECTIONS

SHEET NO.
05-M-5

NOTES:

- IF REQUIRED TO PROPERLY ALIGN PUMP BASE WITH HATCH OPENING, CONTRACTOR SHALL CUT FLANGE OFF EXISTING WALL PIPE AND INSTALL AN EBA IRON SERIES 2100 MEGAFLANSE, OR EQUAL, RESTRAINED FLANGE ADAPTER. FLANGE SHALL ONLY BE CUT OFF IF THERE IS SUFFICIENT PIPE REMAINING TO INSTALL THE RESTRAINED FLANGE ADAPTER.
- CLEAN ALL SURFACES INSIDE WET WELL AND PAINT (ALL NEW AND EXISTING CONCRETE SURFACES AND ALL NEW AND EXISTING PIPING AND APPURTENANCES) WITH A COATING SYSTEM DESIGNED FOR SEVERE EXPOSURE.



NOTE 1

T/SLAB EL. = 744.57±

FROM BYPASS CONNECTION

EXISTING 42" INFLUENT GRAVITY SEWER

I.E. = 717.74±

TYPE 316L SS PIPE SUPPORT SPACED MAXIMUM 10'-0" O.C.

NEW 12" DIP DISCHARGE PIPING

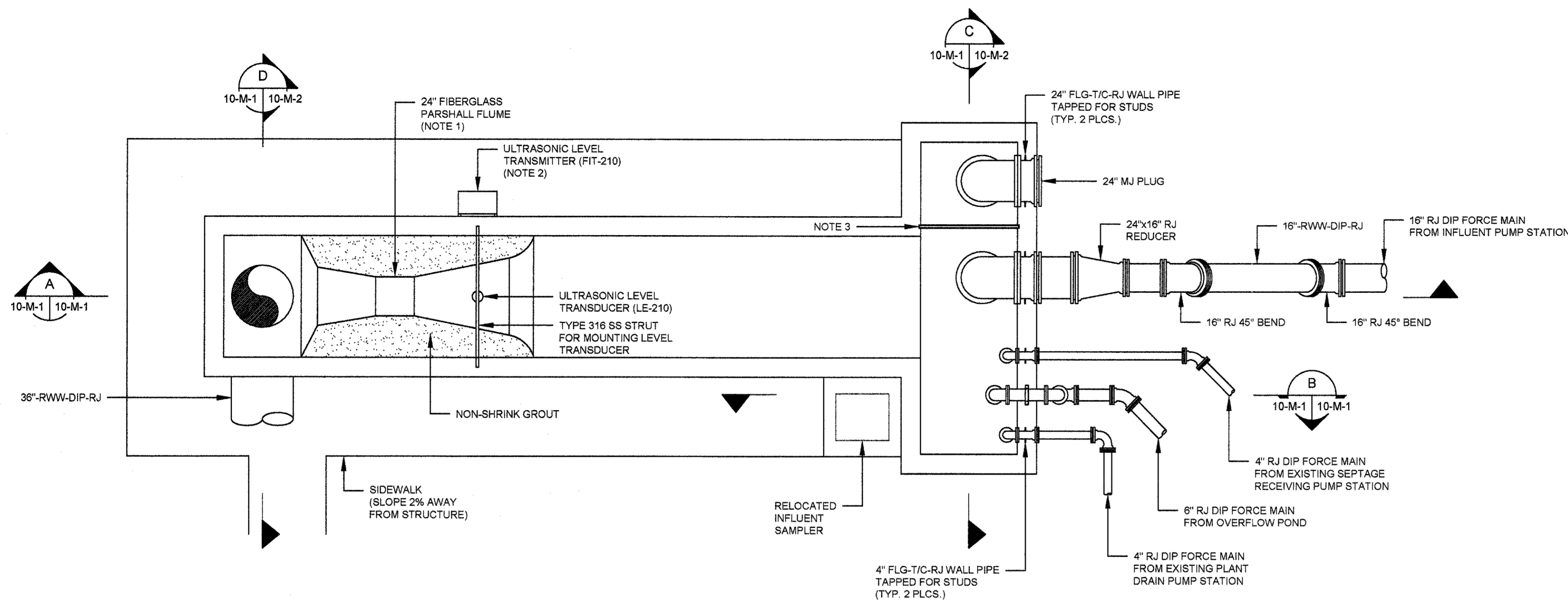
NEW SUBMERSIBLE PUMP

F.F. EL. = 709.40±

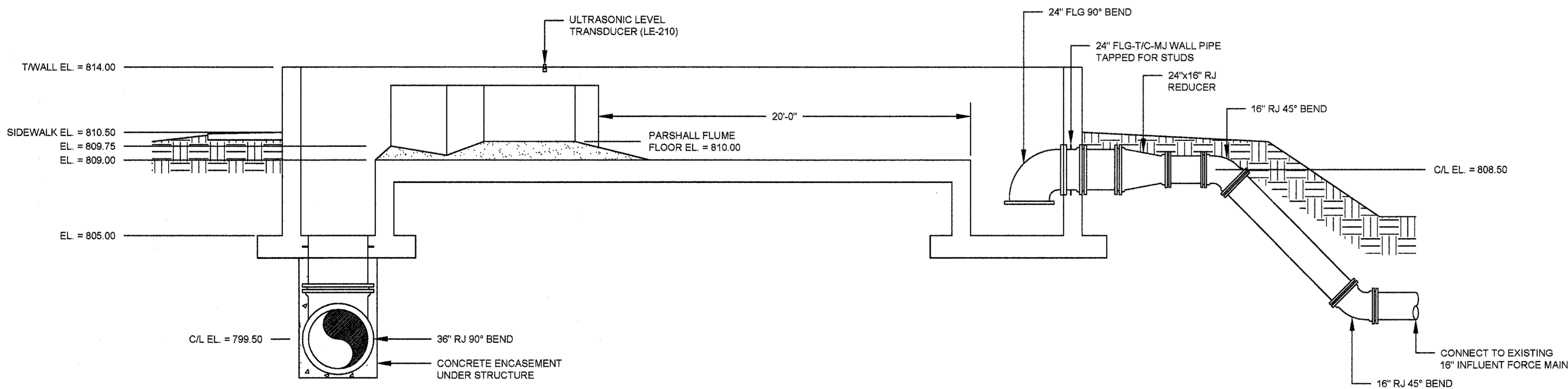
FORM CONCRETE SHELF IN ACCORDANCE WITH PUMP MANUFACTURER'S RECOMMENDATION. PROVIDE #4 @ 12" O.C. REINFORCING, EACH WAY, AT TOP OF SHELF WITH 2" COVER. DRILL AND EPOXY #4 DOWELS AT 12" O.C. GRID PATTERN INTO FLOOR SLAB WITH 6" EMBEDMENT. DOWELS TO HAVE 8" LONG, 90° HOOKS AT ONE END AND SHALL PROJECT A MINIMUM HEIGHT OF 8" ABOVE FLOOR SLAB INTO CONCRETE BASE.

SECTION
 SCALE: 3/8" = 1'-0"
 05-M-3/4 | **A** | 05-M-5

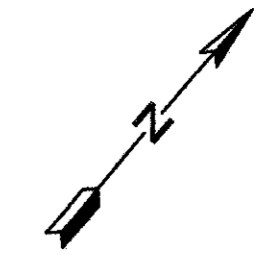
PUMP OPERATIONAL LEVEL		
TAG	DESCRIPTION	DEPTH (FT)
A	HIGH LEVEL ALARM	8.00
B	LAG PUMP ON	6.50
C	LEAD PUMP ON	5.50
D	PUMPS OFF	3.50
E	LOW LEVEL ALARM	3.00



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

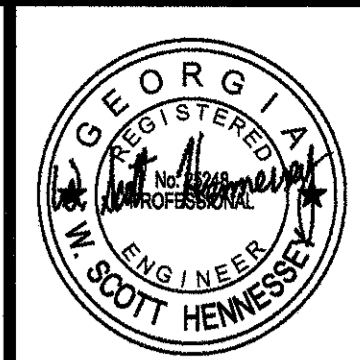


SECTION
SCALE: 1/4" = 1'-0"



NOTES:

1. PARSHALL FLUME SHALL BE PROVIDED WITH LAMINATED, HIGH-VISIBILITY STAFF GAUGE GRADUATED IN 1/10-FOOT, 1/100-FOOT, AND MGD INCREMENTS AND RADIUS TYPE INLET WINGWALLS.
2. ULTRASONIC LEVEL TRANSMITTER SHALL BE PROVIDED WITH TYPE 304 STAINLESS STEEL SUN/RAIN HOOD. MOUNT TRANSMITTER AND HOOD TO METERING FLUME WALL WITH TYPE 316 STAINLESS STEEL STRUT.
3. PROVIDE 2x1x1/2 TYPE 316L STAINLESS STEEL, NON-TAPPED C-CHANNEL ALONG EACH SIDE OF CHANNEL AND ALONG FLOOR FOR FUTURE 2"x12" STOP LOGS.



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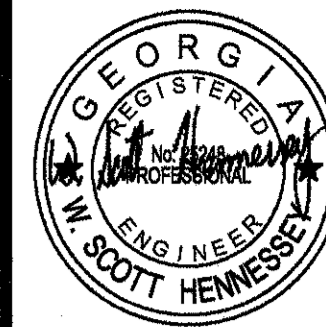
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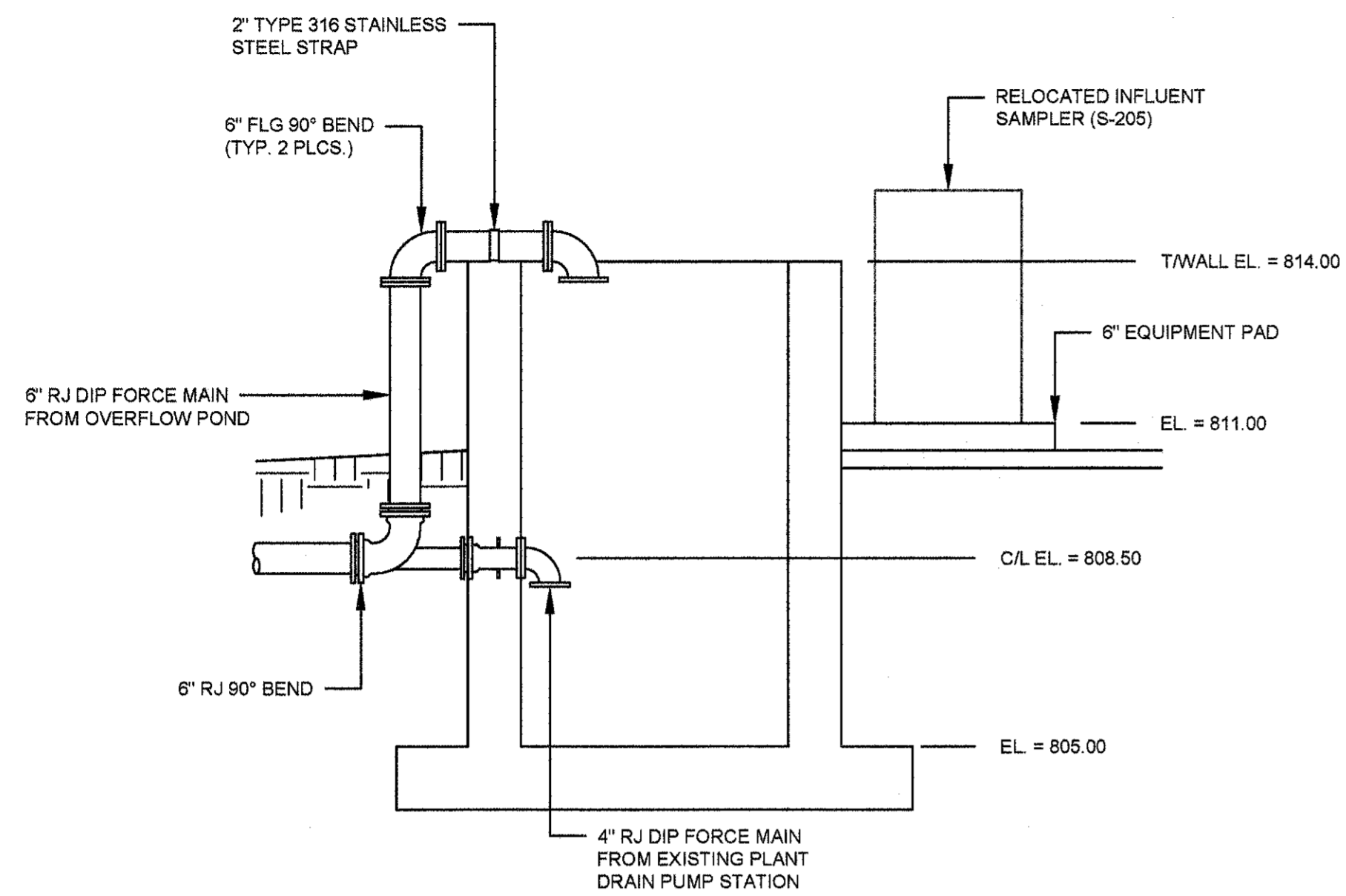
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT METERING FLUME
PLAN AND SECTIONS

SHEET NO.
10-M-1

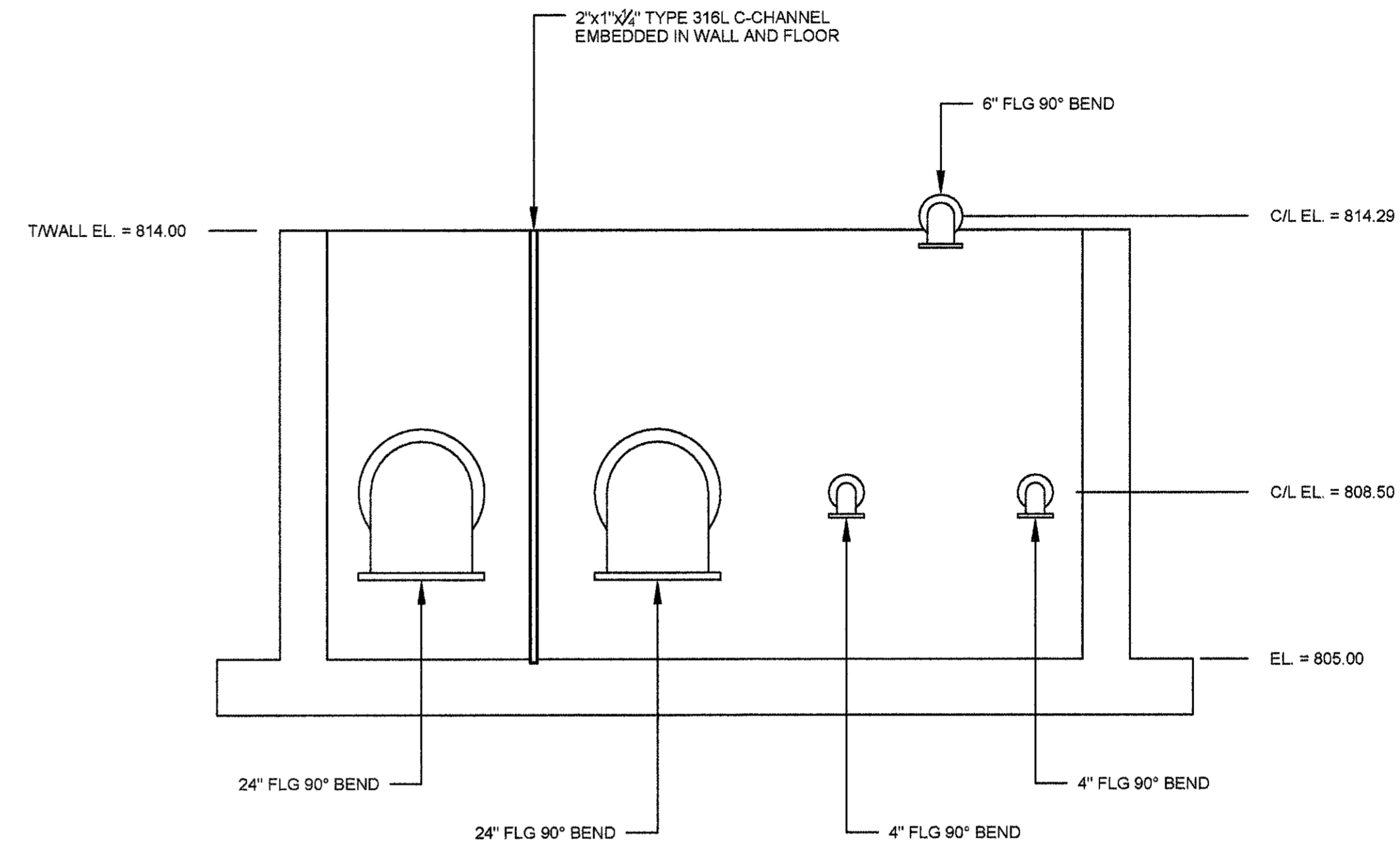


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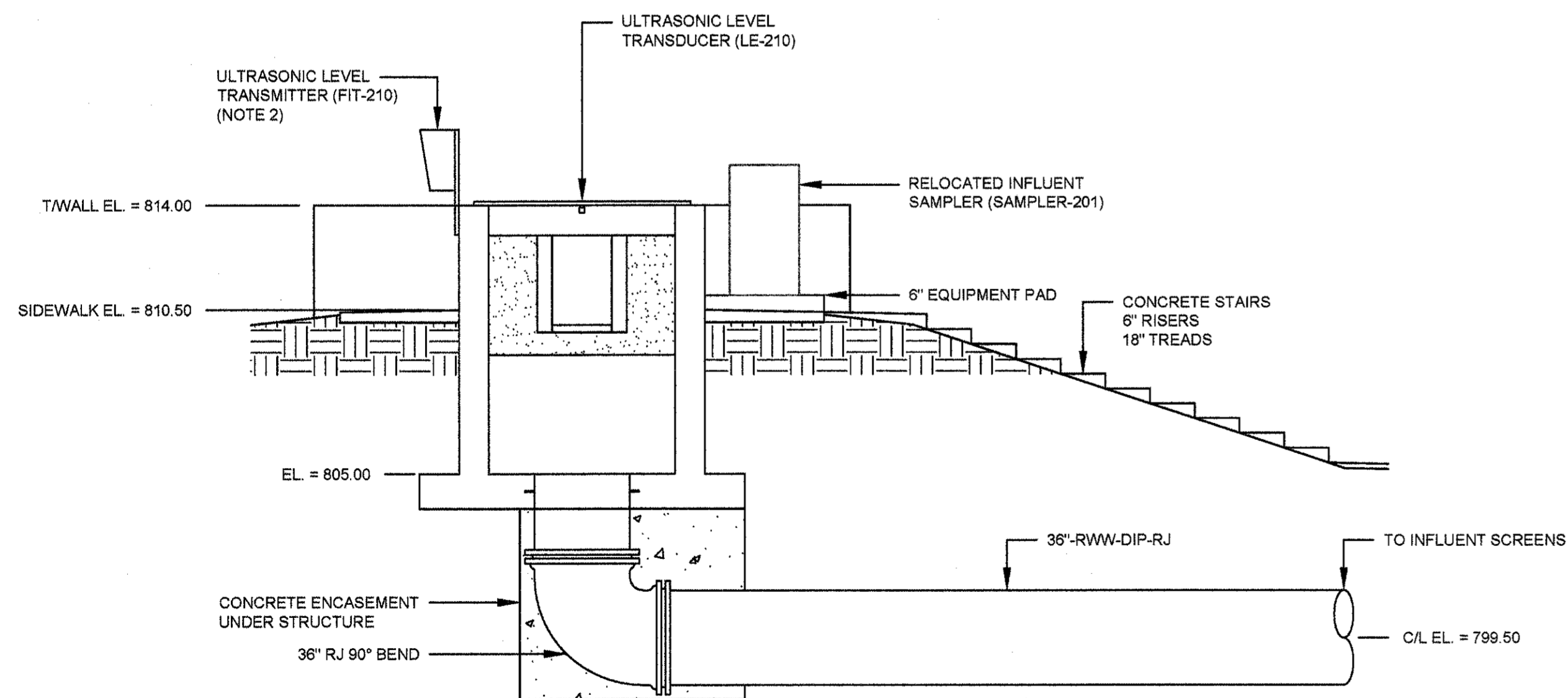
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SECTION B
 SCALE: 3/8" = 1'-0"
 10-M-1 | 10-M-2



SECTION C
 SCALE: 3/8" = 1'-0"
 10-M-1 | 10-M-2



SECTION D
 SCALE: 1/4" = 1'-0"
 10-M-1 | 10-M-2

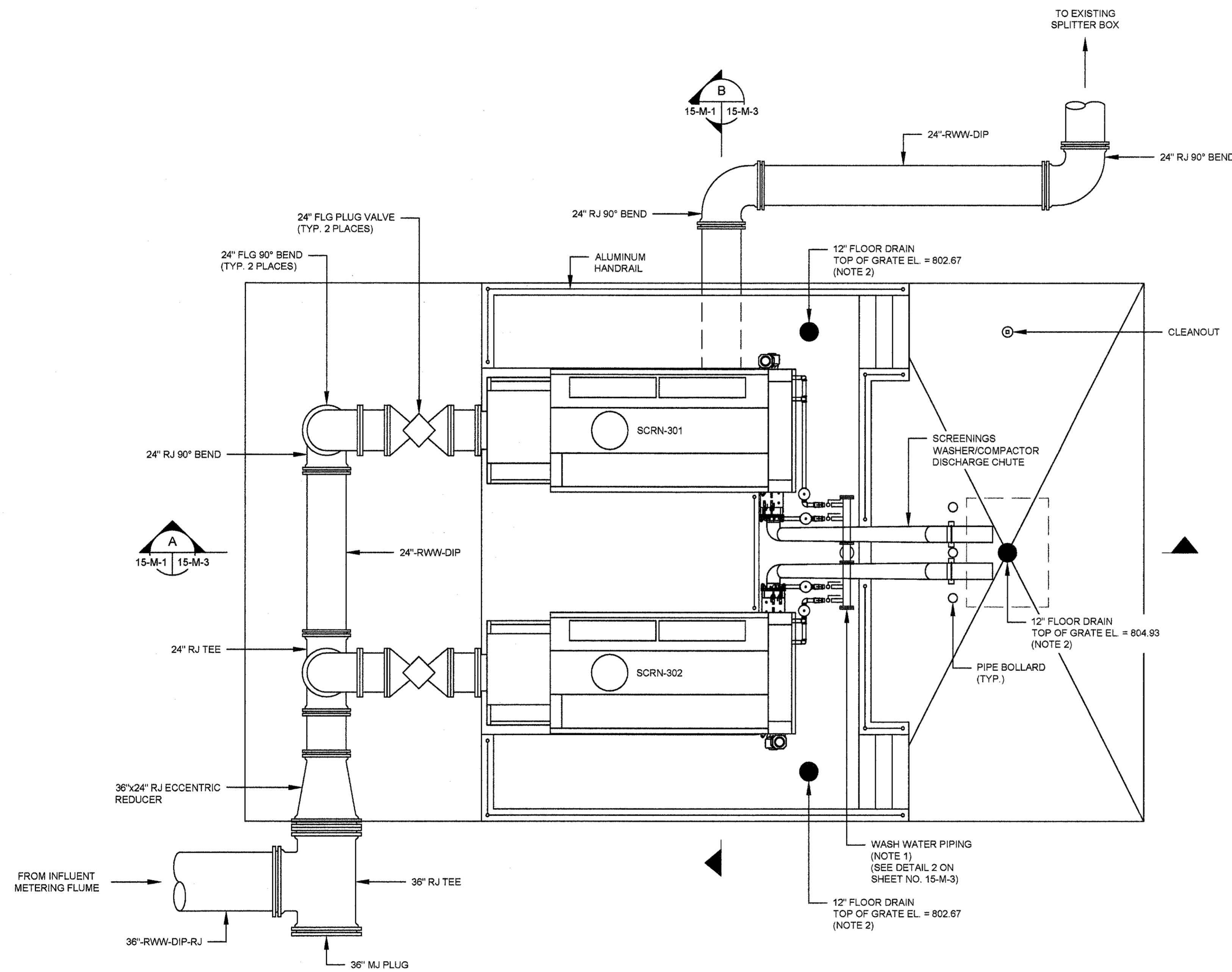
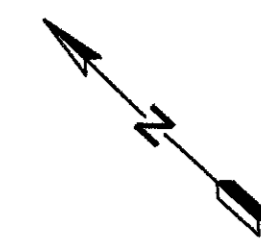
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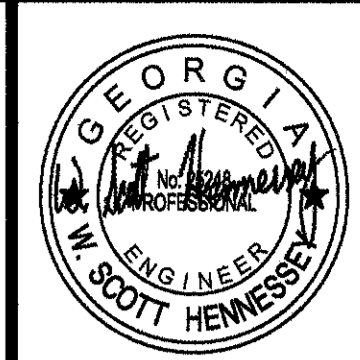
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT METERING FLUME SECTIONS

SHEET NO.
 10-M-2



NOTES:

1. ALL ABOVE GRADE WATER PIPING 12" IN DIAMETER AND SMALLER SHALL BE HEAT TRACED AND INSULATED.
2. FLOOR DRAIN SHALL BE 12" ROUND HEAVY DUTY FLOOR DRAIN WITH 4" NO-HUB OUTLET, DUCTILE IRON TRACTOR GRATE, AND SEDIMENT BUCKET, JAY R. SMITH MFG. CO., MODEL 2142Y-M, OR EQUAL.



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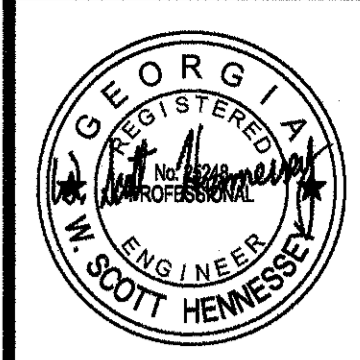
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT SCREENS
 PLAN 1

SHEET NO.
 15-M-1

INFLUENT SCREENS TOP PLAN
 SCALE: 1/2" = 1'-0"

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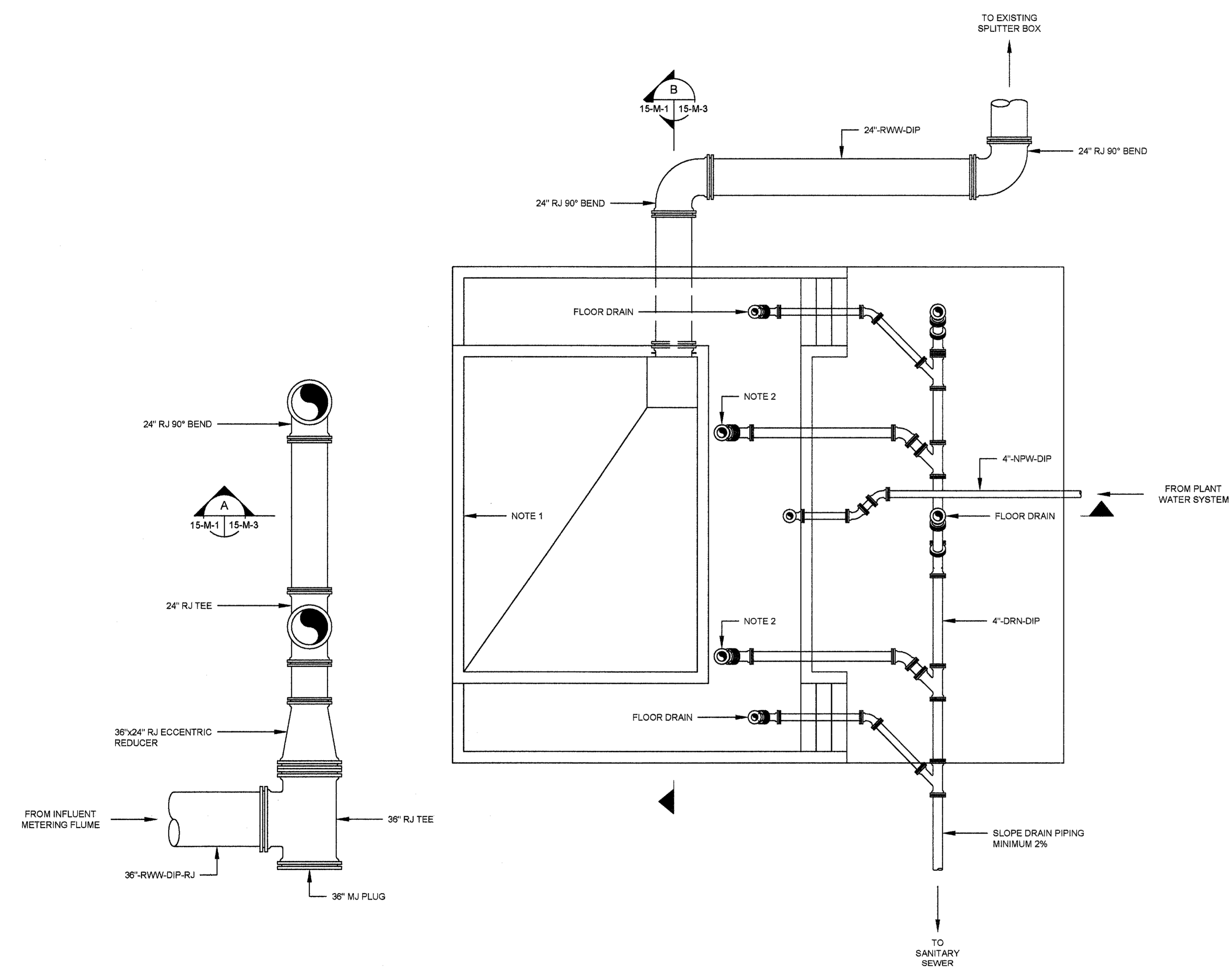
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT SCREENS
 PLAN 2

SHEET NO.
 15-M-2

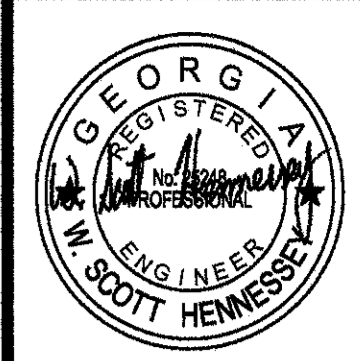
NOTES:

1. ALL INTERIOR SURFACES LOCATED IN THE WELL UNDERNEATH THE SCREENS SHALL BE COATED WITH A POLYURETHANE LINING SYSTEM TO PROTECT THE CONCRETE FROM CORROSION. POLYURETHANE LINING SYSTEM SHALL BE SPRAYROQ, INC. SPRAYWALL, OR EQUAL.
2. LOCATION OF SCREENINGS WASHER/COMPACTOR DRAIN SHALL BE COORDINATED WITH THE ACTUAL EQUIPMENT PROVIDED.



INFLUENT SCREENS BOTTOM PLAN
 SCALE: 1/4" = 1'-0"

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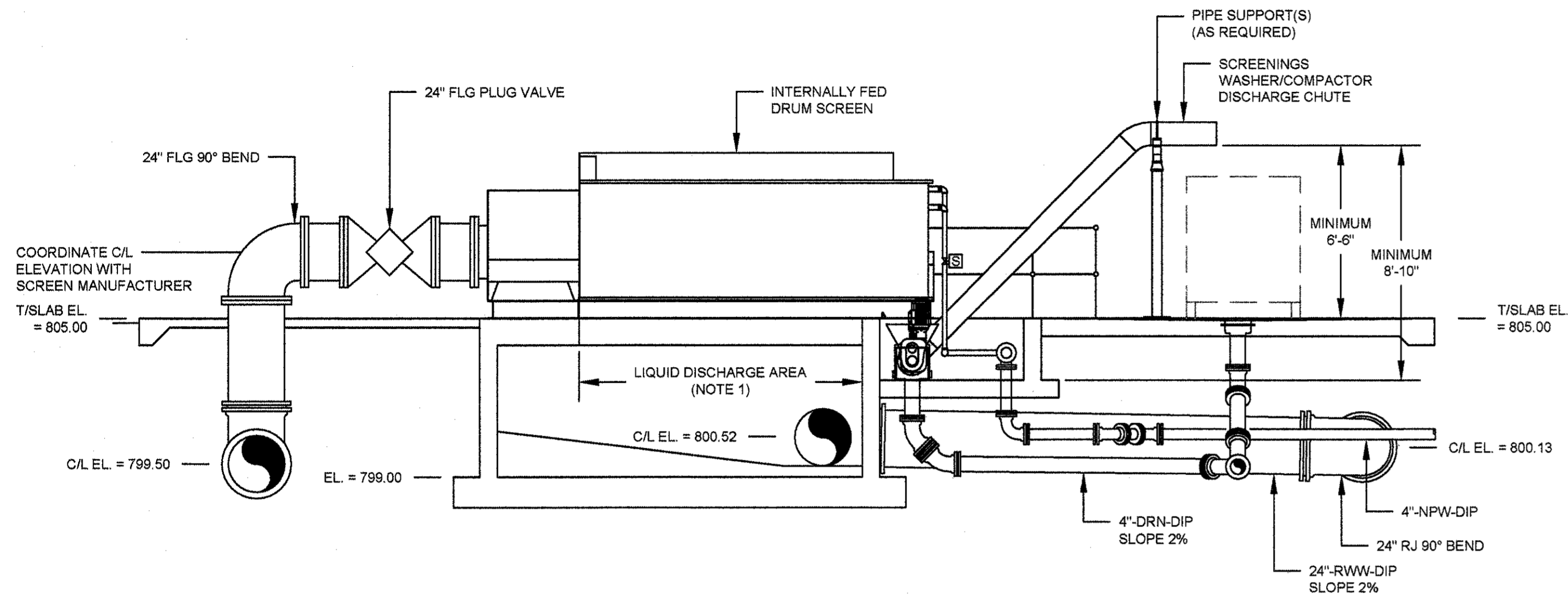
ESI
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REVISION	DATE
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DSGN: WSH	BAR BELOW IS 1" LONG FOR SCALES
DRWN: WSH	SHOWN ON THIS SHEET. IF NOT 1"
CHK: WSH	LONG ON THIS SHEET, ADJUST
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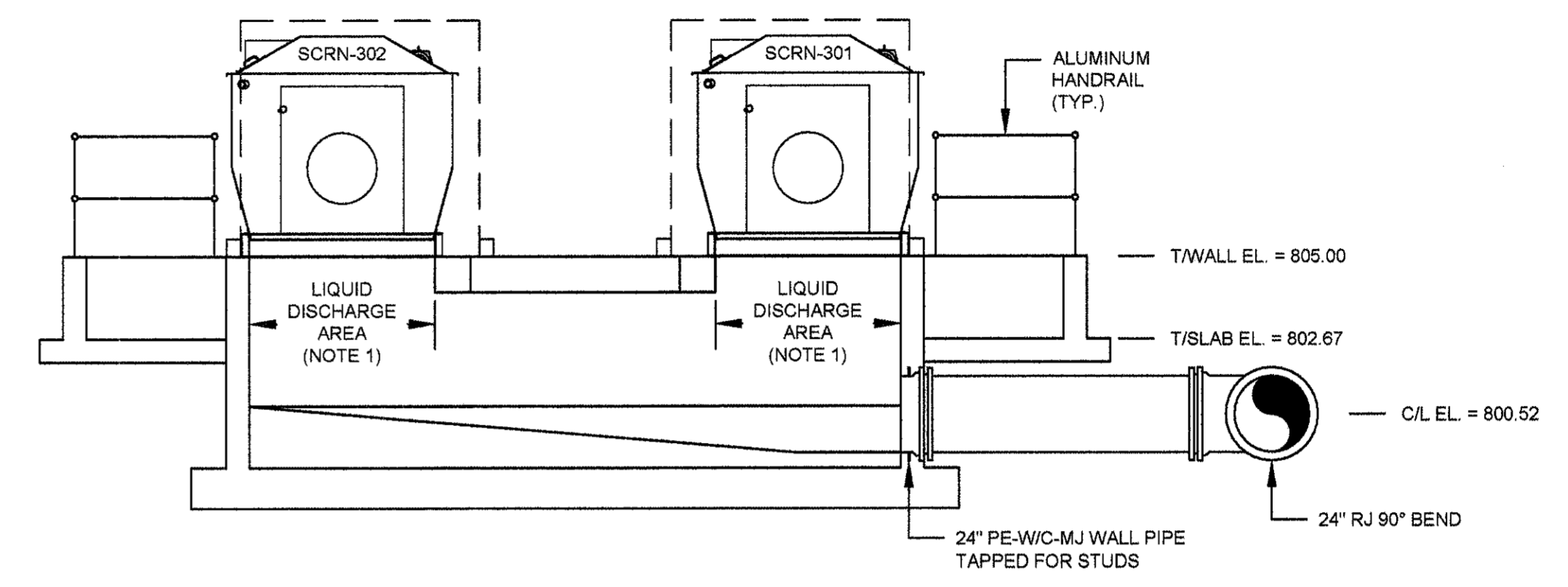
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT SCREENS
SECTIONS AND DETAILS

SHEET NO.
15-M-3



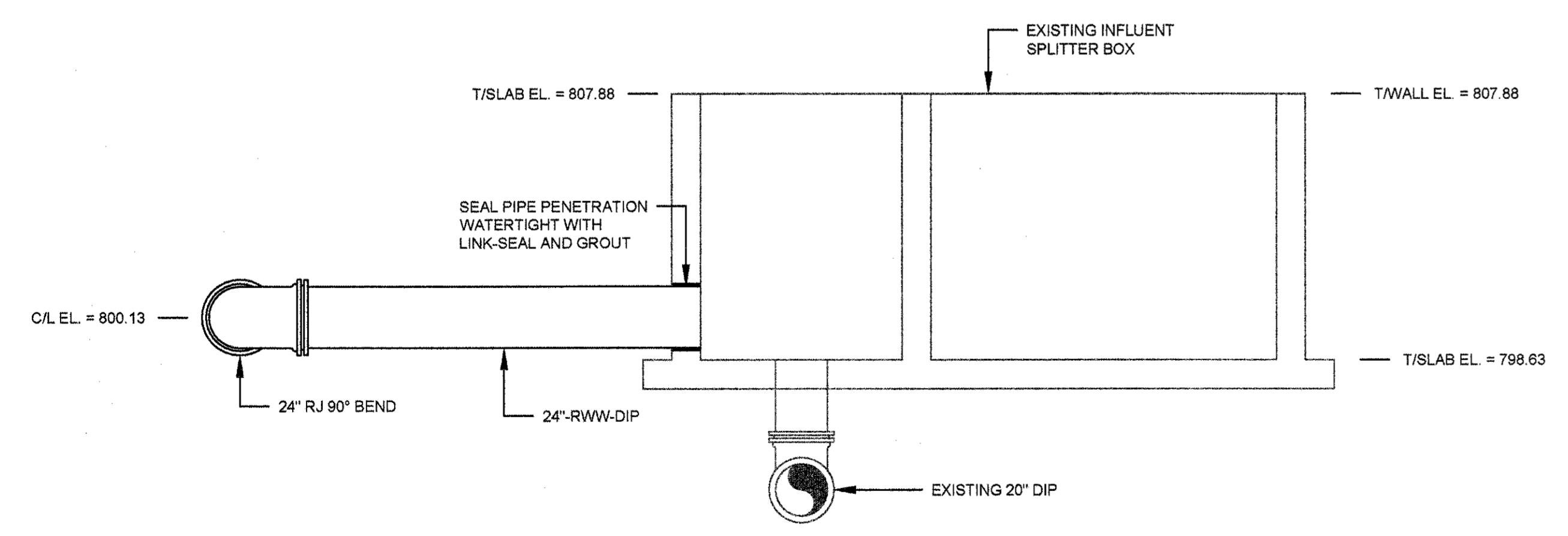
NOTES:
1. THE LIQUID DISCHARGE AREA VARIES DEPENDING ON THE SCREEN SUPPLIED. CONTRACTOR SHALL ADJUST CONCRETE DIMENSIONS, AS REQUIRED, TO ACCOMMODATE THE REQUIRED LIQUID DISCHARGE AREA OF THE ACTUAL SCREEN THAT IS PROVIDED.

SECTION A
SCALE: 1/2" = 1'-0"
15-M-1/2 15-M-3



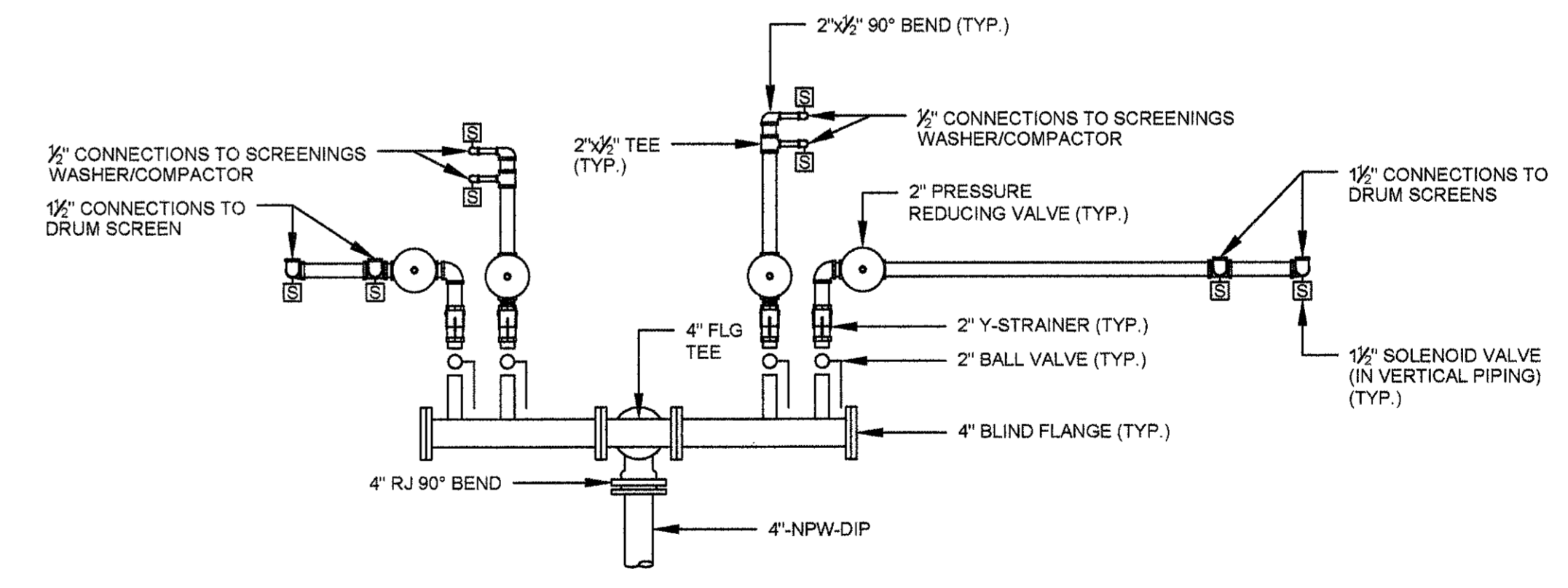
NOTES:
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SECTION B
SCALE: 1/2" = 1'-0"
15-M-1/2 15-M-3



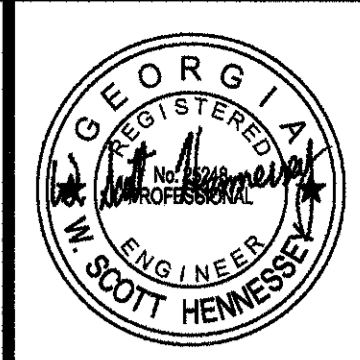
NOTES:
1. CONTRACTOR SHALL PROVIDE BYPASS PUMPING WHEN MAKING CONNECTION TO EXISTING SPLITTER BOX.

SPLITTER BOX CONNECTION DETAIL 1
SCALE: 1/2" = 1'-0"



NOTES:
1. ALL SMALL DIAMETER WATER PIPE, FITTINGS, AND VALVES SHALL BE TYPE 316 SS.
2. ALL WATER PIPING SHALL BE HEAT TRACED AND INSULATED.
3. CONNECT SMALL DIAMETER PIPING TO 4" DUCTILE IRON PIPE WITH 2" TAPPING SADDLES.

WASH WATER PIPING DETAIL 2
SCALE: 1/2" = 1'-0"



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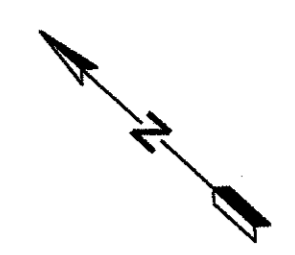
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 HEADWORKS
 DEMOLITION PLAN

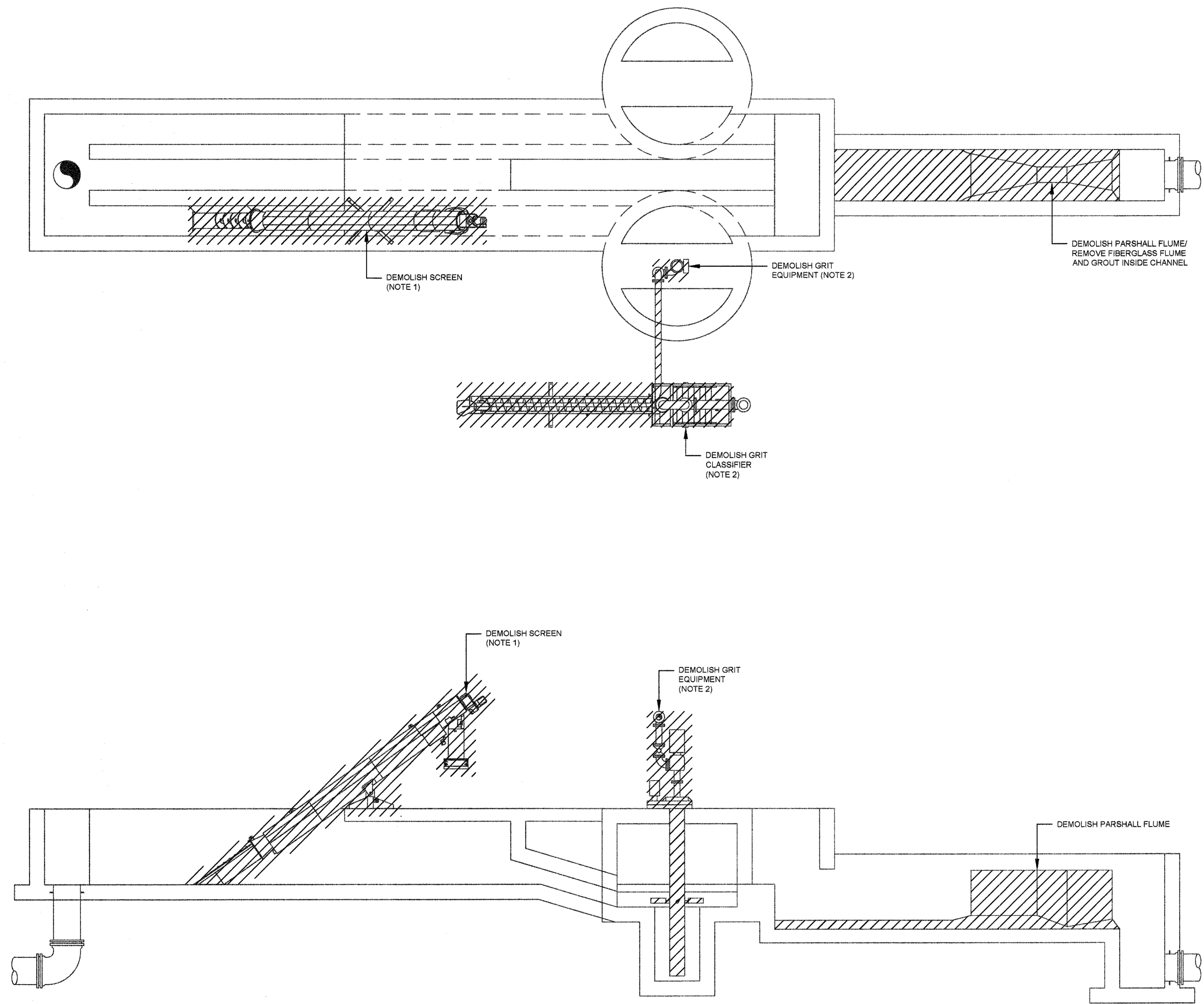
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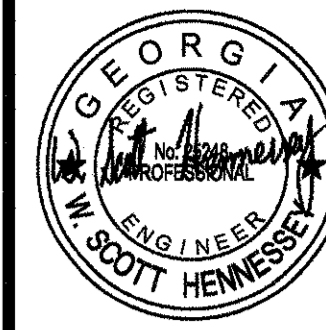
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NOTES:

1. SCREEN SHALL NOT BE DEMOLISHED UNTIL THE NEW INFLUENT SCREENS ARE INSTALLED AND OPERATIONAL.
2. GRIT EQUIPMENT SHALL NOT BE DEMOLISHED UNTIL THE NEW INFLUENT SCREENS ARE INSTALLED AND OPERATIONAL AND THE NEW ADJACENT GRIT SYSTEM IS INSTALLED AND OPERATIONAL.
3. CONTRACTOR SHALL DISPOSE OF ALL MATERIALS THAT ARE REMOVED FROM THE HEADWORKS THAT HCWA DOES NOT WANT TO KEEP.
4. ALL CONDUITS THAT ARE CONNECTED TO EQUIPMENT THAT IS BEING DEMOLISHED AND WILL NO LONGER BE USED SHALL BE CUT, CLEANED, AND CAPPED.
5. CONTRACTOR SHALL PROVIDE BYPASS PUMPING, AS REQUIRED, WHEN DEMOLISHING HEADWORKS EQUIPMENT AND INSTALLING NEW EQUIPMENT AND PIPING.





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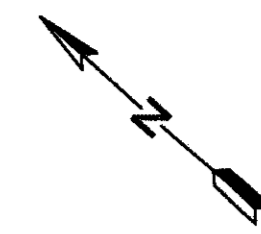
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CHK: WSH	

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

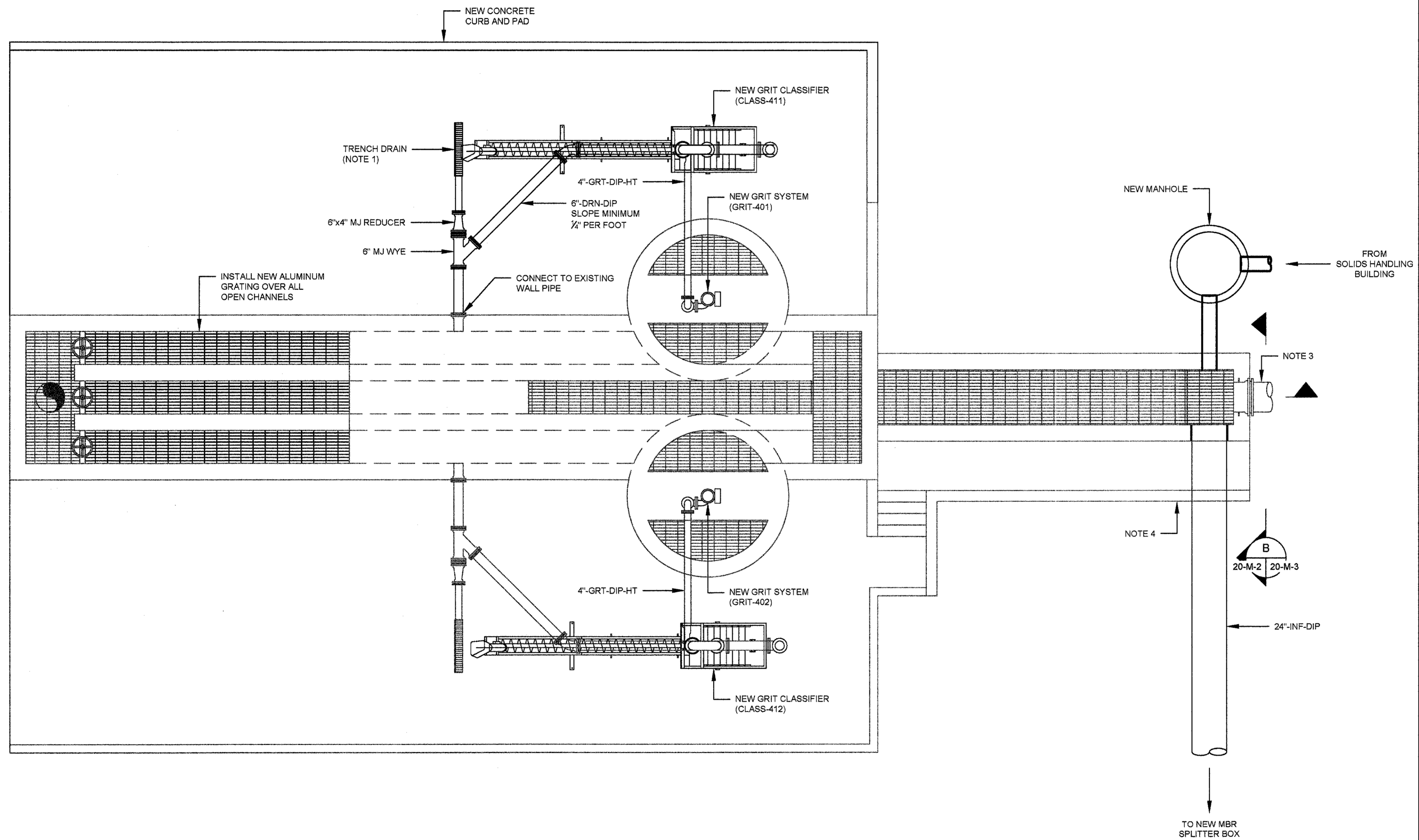
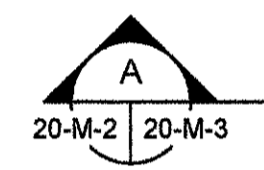
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
HEADWORKS PLAN

SHEET NO.
 20-M-2

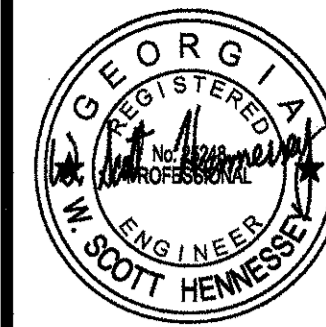


NOTES:

- TRENCH DRAIN SHALL BE HEAVY DUTY 6" WIDE SUPER-FLO SECTIONAL TRENCH DRAIN, JOSAM MODEL 76004-001-102, OR EQUAL. TRENCH DRAIN SHALL HAVE ONE OUTLET SECTION AND TWO END SECTIONS.
- ABOVE GRADE GRIT PIPING SHALL BE HEAT TRACED AND INSULATED.
- WHEN FLOW IS READY TO BE DIVERTED TO NEW MBR SPLITTER BOX, EXISTING 20" PIPE EXITING HEADWORKS STRUCTURE SHALL BE CUT AND PLUGGED.
- REMOVE AND REPLACE RETAINING WALL AND SIDEWALK, AS REQUIRED, TO INSTALL NEW 24" DIAMETER PIPE TO NEW MBR SPLITTER BOX.
- IF THE SELECTED GRIT SYSTEM REQUIRES WASH WATER, CONTRACTOR SHALL RUN 2" WATER LINES FROM THE NEW 4" NON-POTABLE WATER LINE FEEDING THE NEW INFLUENT SCREENS TO EACH GRIT SYSTEM. PROVIDE A PRESSURE REDUCING VALVE AND AN ISOLATION BALL VALVE AT EACH CONNECTION POINT.

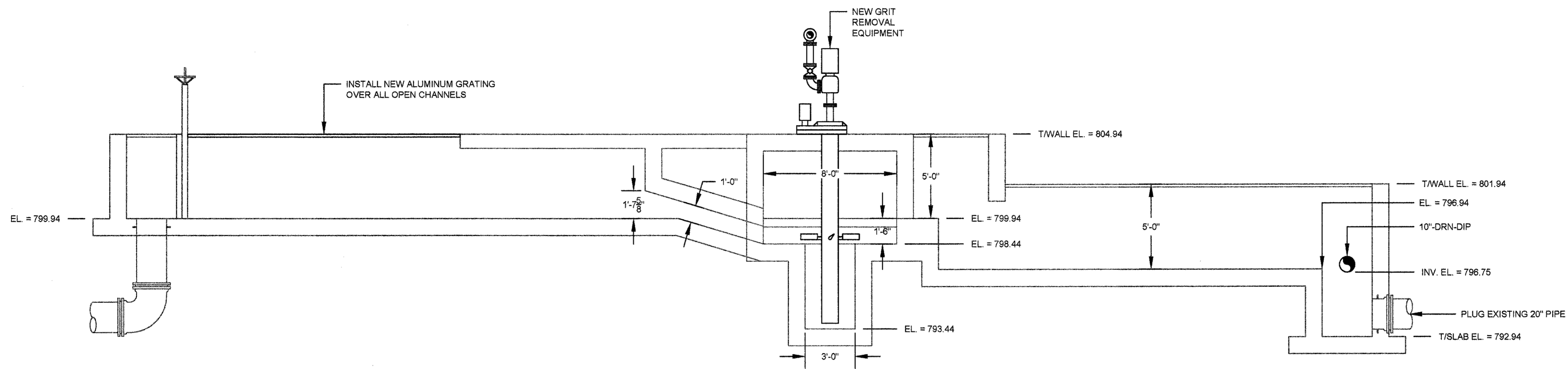


HEADWORKS PLAN
 SCALE: 1/2" = 1'-0"

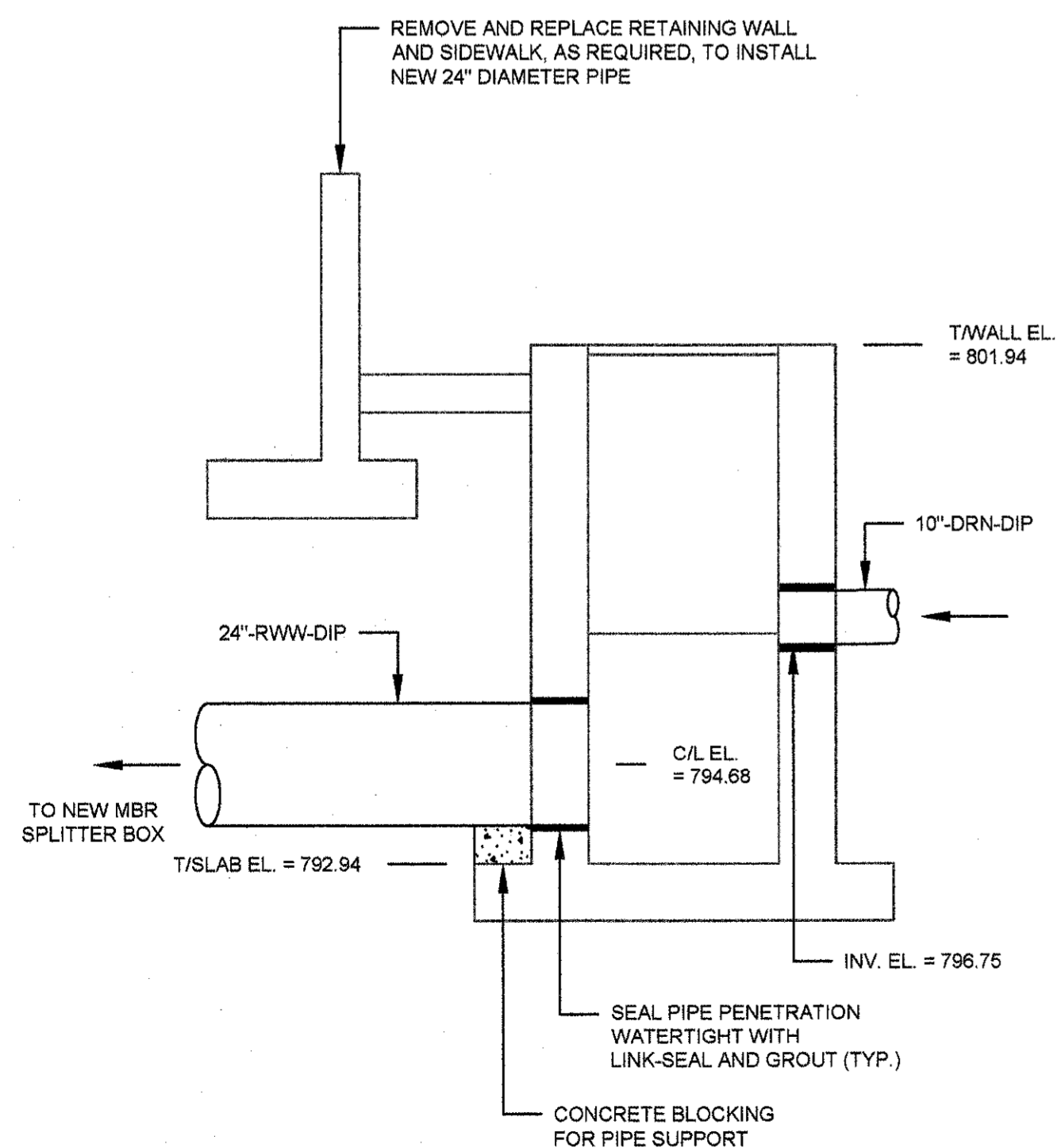


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SECTION A
 SCALE: 1/4" = 1'-0"
 20-M-2 | 20-M-3



SECTION B
 SCALE: 3/8" = 1'-0"
 20-M-2 | 20-M-3

PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE
Δ	

DGSN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1' LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1' LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 HEADWORKS
 SECTIONS AND DETAILS

SHEET NO.
 20-M-3



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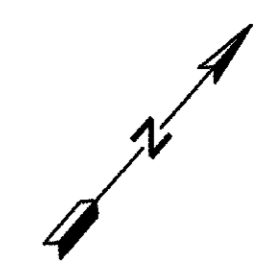
PROJECT NUMBER:	DATE:
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REVISION	DATE
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DSGN: WSH
 DRWN: WSH
 CHCK: WSH

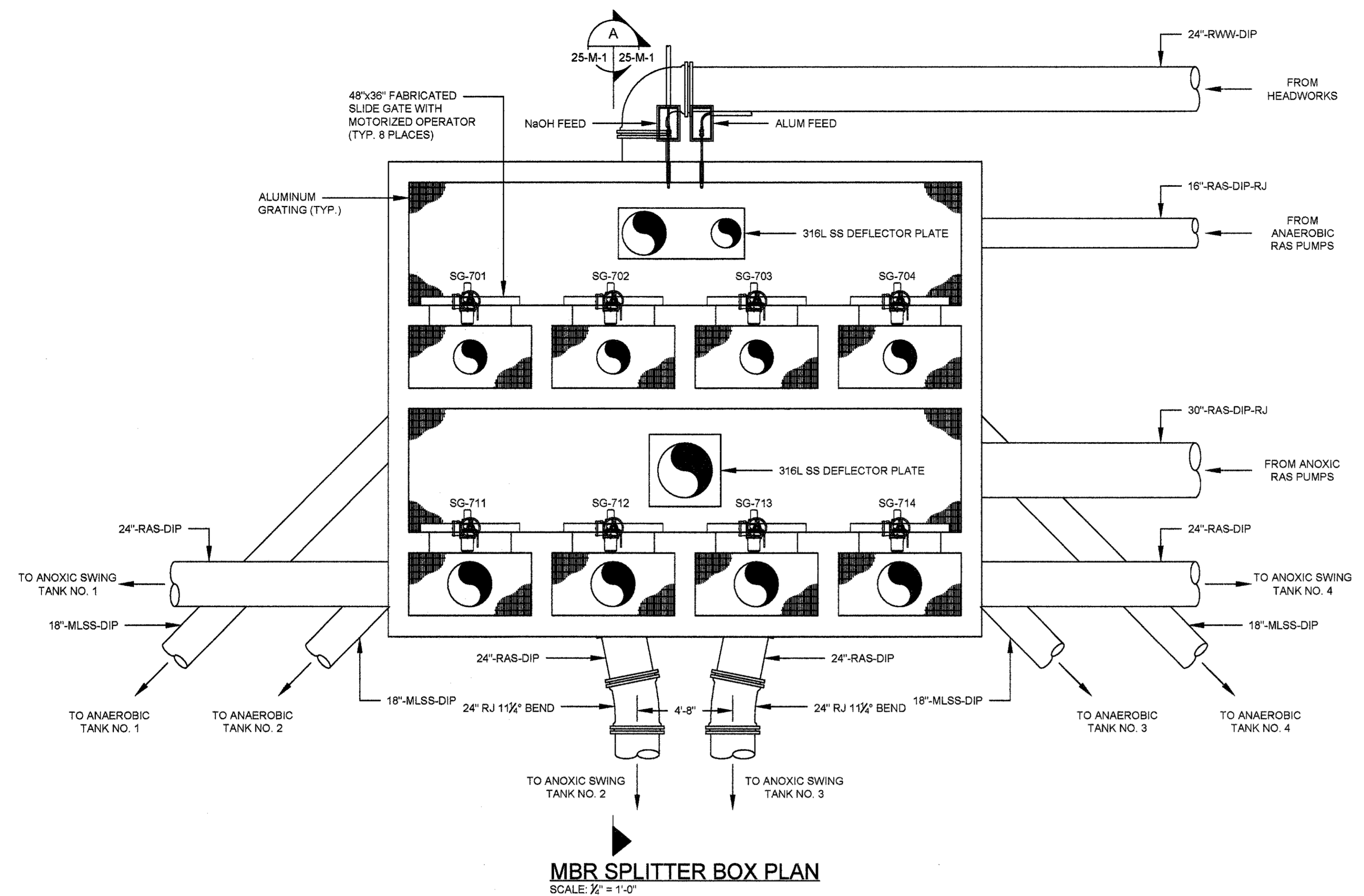
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR SPLITTER BOX
 PLAN AND SECTIONS

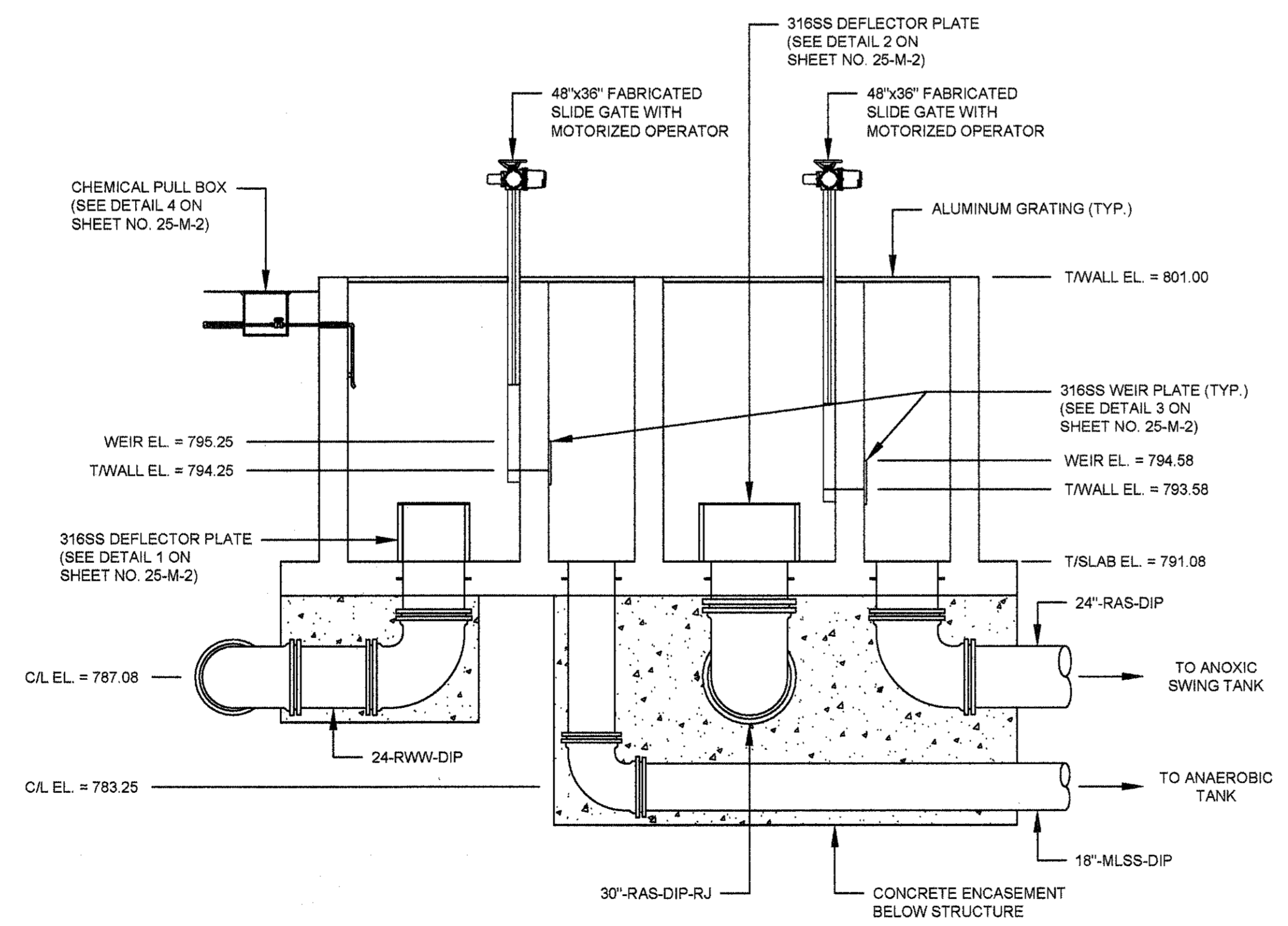
SHEET NO.
 25-M-1



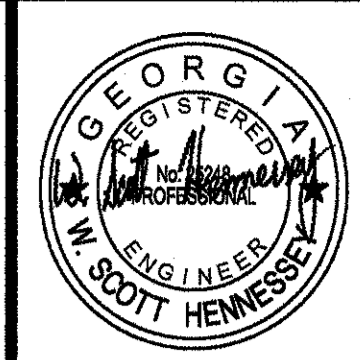
NOTES:
 1. ALL WALL PIPES SHALL BE PROVIDED WITH WATER COLLARS.



MBR SPLITTER BOX PLAN
 SCALE: 1/2" = 1'-0"



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



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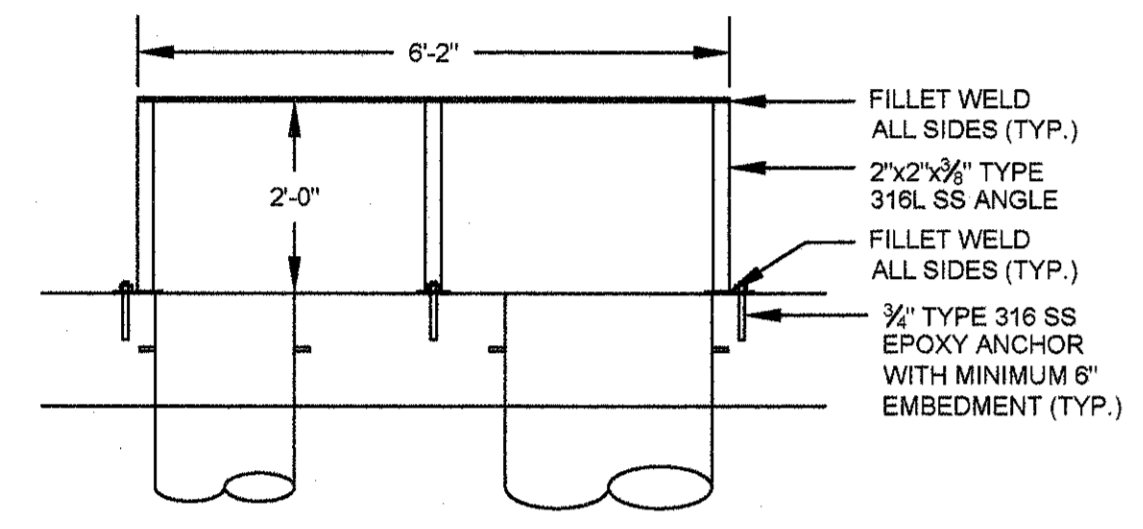
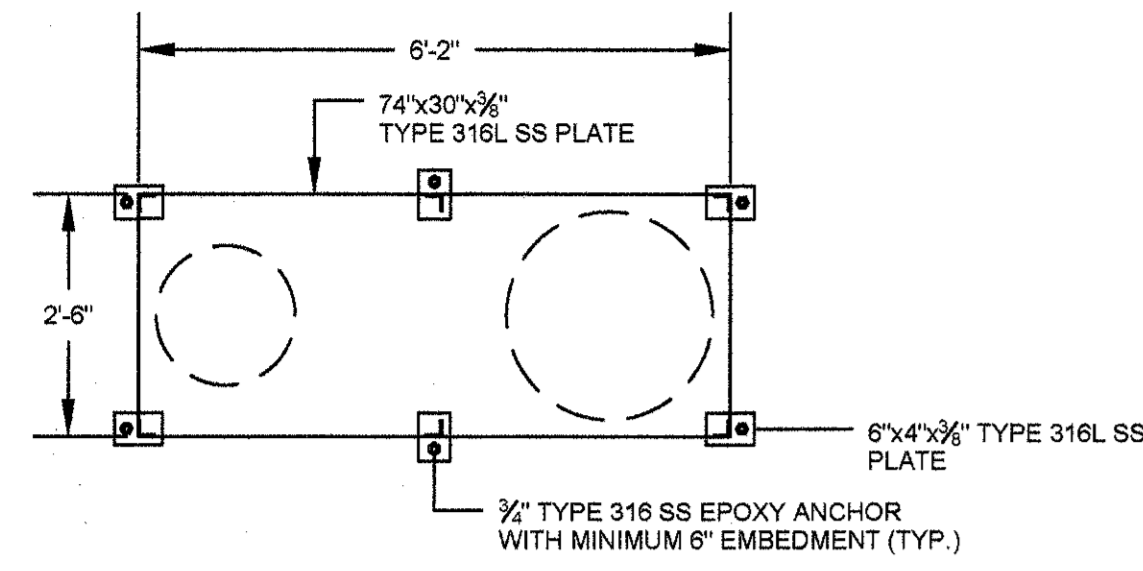
DSGN: WSH
 DRWN: WSH
 CHCK: WSH

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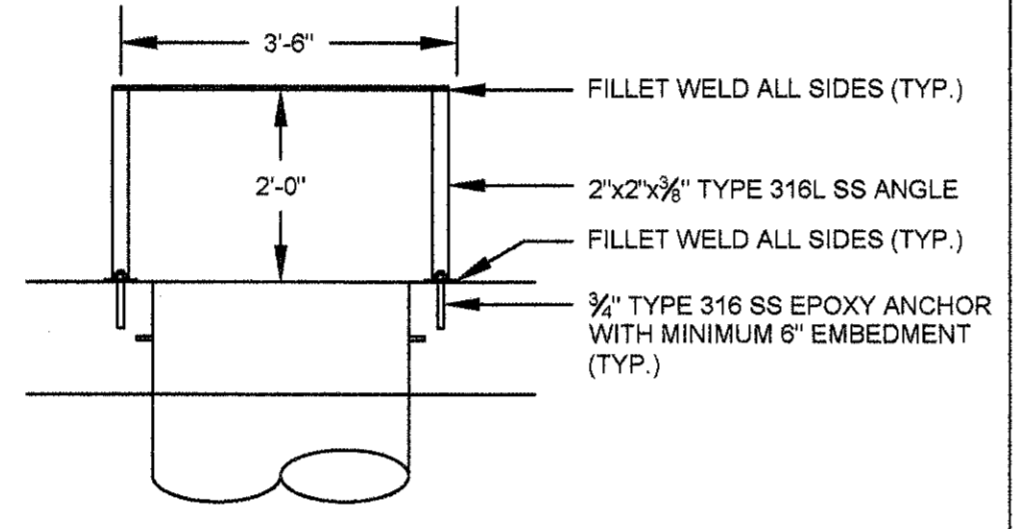
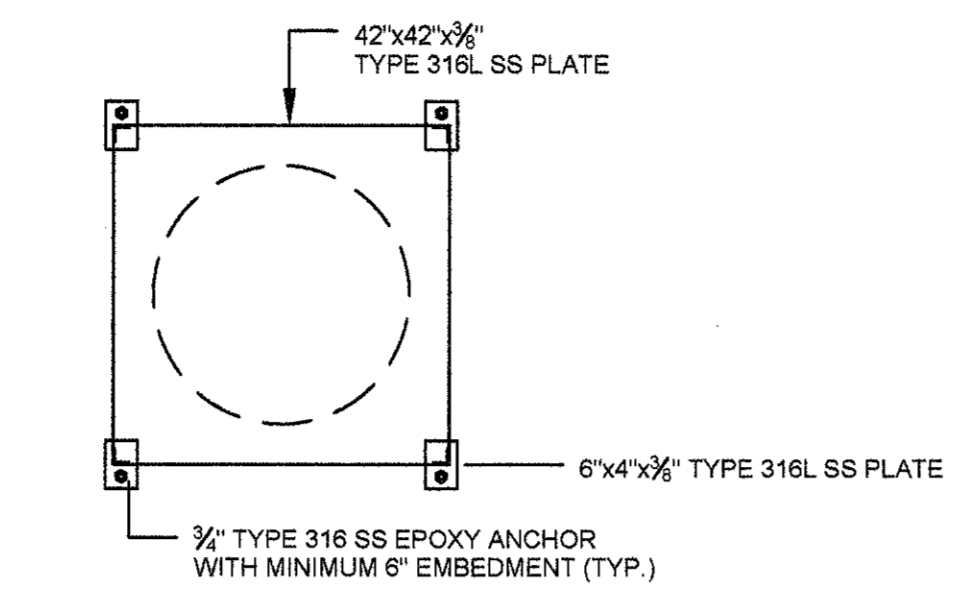
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

MBR SPLITTER BOX
 DETAILS

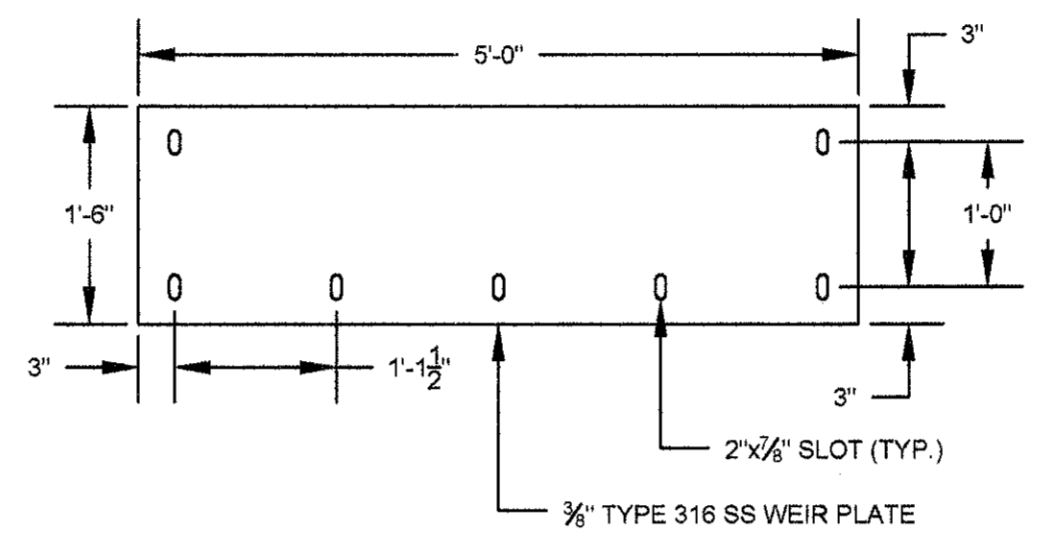
SHEET NO.
 25-M-2



DEFLECTOR PLATE DETAIL 1
 SCALE: 1/2" = 1'-0"
 25-M-1 25-M-1

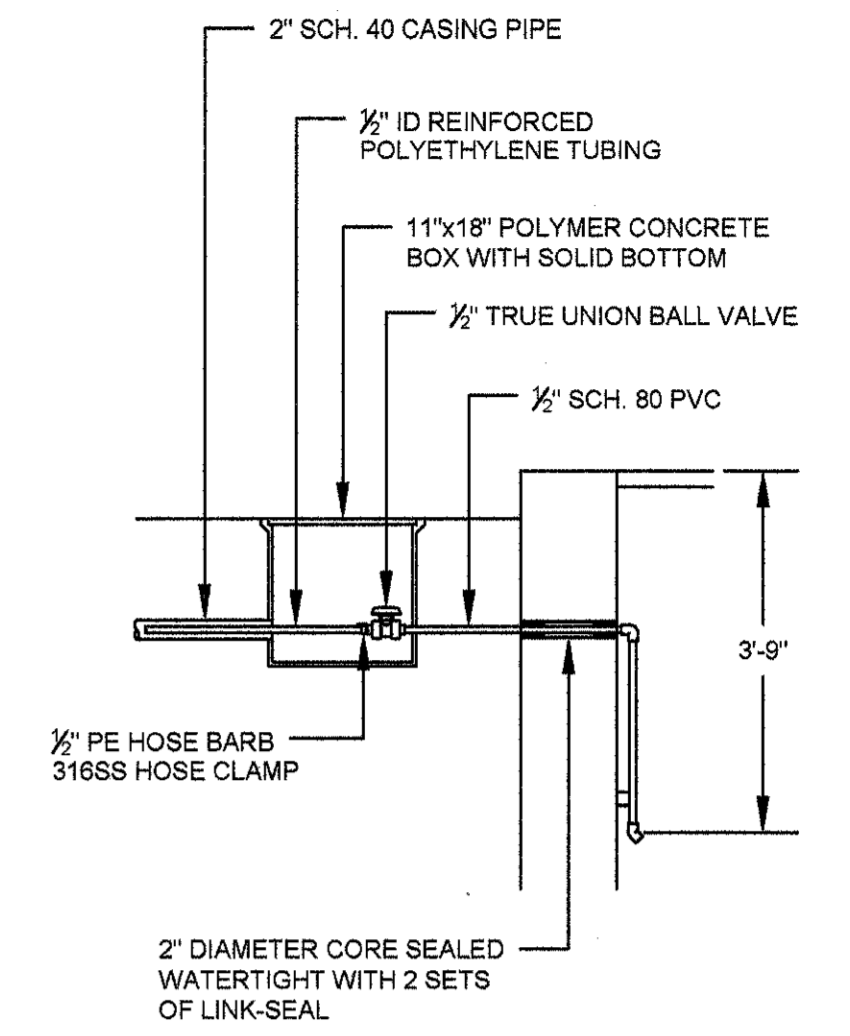


DEFLECTOR PLATE DETAIL 2
 SCALE: 1/2" = 1'-0"
 25-M-1 25-M-1

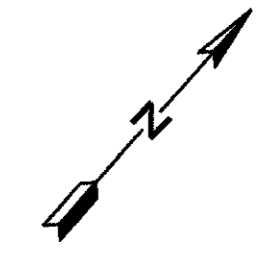


- NOTES:**
- INSTALL NEOPRENE GASKET BETWEEN WEIR PLATE AND WALL.
 - MOUNT TO WALL WITH 3/4" TYPE 316 SS EPOXY ANCHOR BOLTS WITH MINIMUM 6" EMBEDMENT.

WEIR PLATE DETAIL 3
 SCALE: 3/4" = 1'-0"
 25-M-1 25-M-1



CHEMICAL PULL-BOX DETAIL 4
 SCALE: 1/2" = 1'-0"
 25-M-1 25-M-1



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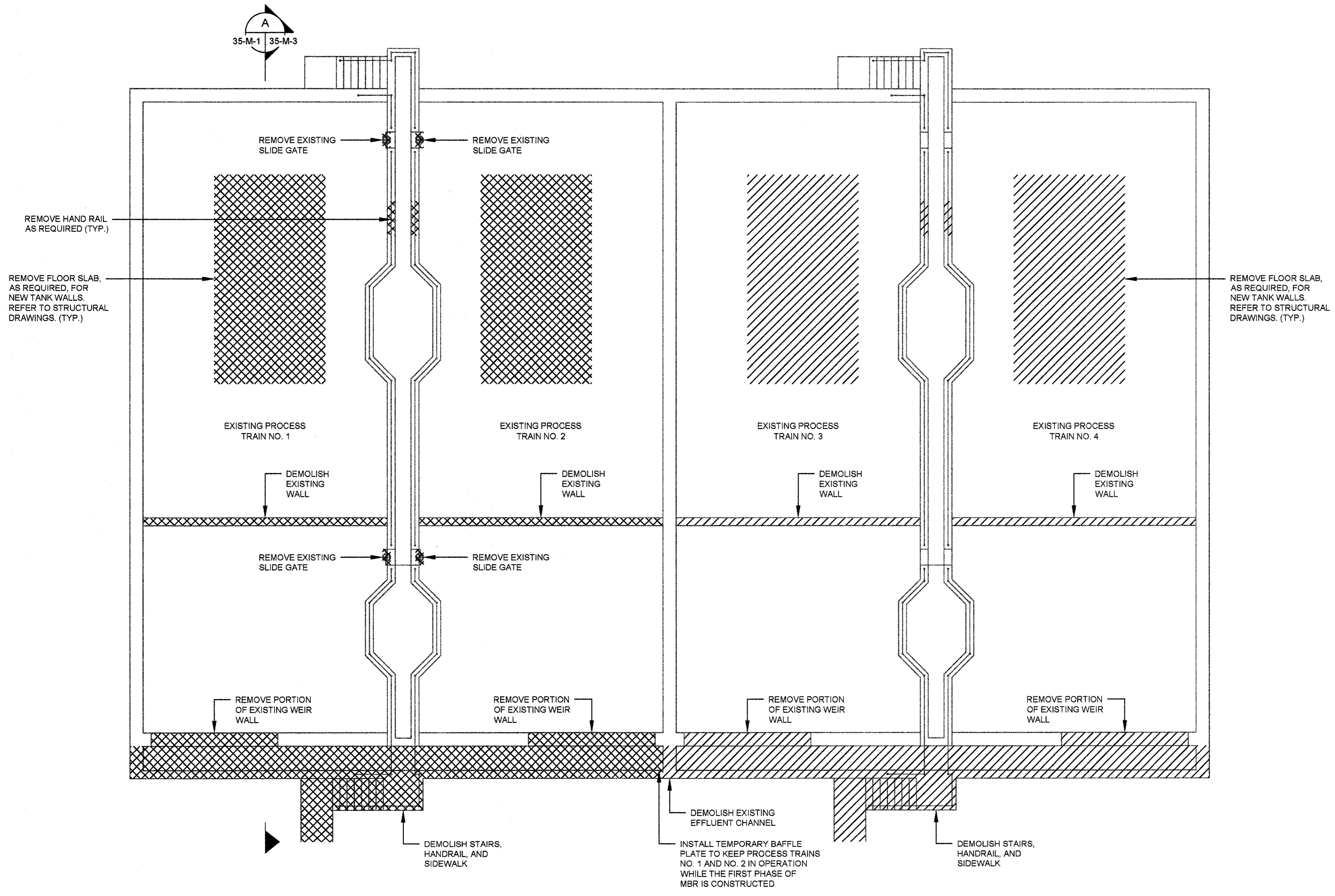
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 AERATION TANK
 DEMOLITION PLAN 1

SHEET NO.
 30-M-1

- NOTES:**
- DEMOLITION OF THE AERATION TANKS SHALL BE CONDUCTED IN TWO PHASES IN ORDER TO KEEP THE WASTEWATER TREATMENT PLANT IN OPERATION AT ALL TIMES. PHASE 2 DEMOLITION SHALL NOT BEGIN UNTIL TRAINS 3 AND 4 OF THE NEW MBR TREATMENT PROCESS IS CONSTRUCTED AND OPERATIONAL.
 - CONTRACTOR SHALL PROPERLY DISPOSE OF ALL MATERIALS REMOVED FROM THE AERATION TANKS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING PROCESS TANKS AND TRANSFERRING LIQUIDS BETWEEN PROCESS TANKS DURING CONSTRUCTION.

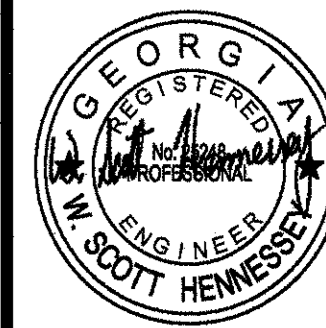
IN THE PROCESS TANKS THAT CONTAIN ACCUMULATED RAIN WATER, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED TO PUMP THE WATER TO THE EXISTING INFLUENT SPLITTER BOX. THE MAXIMUM PUMPING RATE SHALL BE 100 GPM. CONTRACTOR SHALL CLEAN THE PROCESS TANKS OF ALL MATERIAL AND DEBRIS AND PROPERLY DISPOSE OF ANY MATERIAL REMOVED FROM THE TANK.

IN THE PROCESS TANKS THAT CONTAIN MIXED LIQUOR SUSPENDED SOLIDS, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED TO PUMP THE MIXED LIQUOR TO THE APPROPRIATE PROCESS TANK IDENTIFIED BY HCWA. IF THERE IS ACCUMULATED SLUDGE OR GRIT IN THE BOTTOM OF THE TANKS, HCWA WILL USE THEIR EXISTING SLUDGE HAULER TO REMOVE THE SLUDGE. CONTRACTOR SHALL DRAIN TANKS TO THE TOP OF THE SLUDGE AND THEN COORDINATE WITH HCWA TO HAVE SLUDGE REMOVED FROM EACH PROCESS TANK AFTER IT IS DRAINED. CONTRACTOR SHALL ALLOW A MINIMUM OF 4 WEEKS PER TANK IN THEIR SCHEDULE TO ALLOW HCWA TO COORDINATE WITH THE SLUDGE HAULER AND FOR THE SLUDGE HAULER TO PERFORM THE WORK.



EXISTING AERATION TANK TOP PLAN
 SCALE: 1/8" = 1'-0"

PHASE 1 DEMOLITION
 PHASE 2 DEMOLITION



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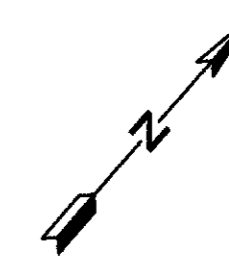
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DSGN: WSH
 DRWN: WSH
 CHCK: WSH

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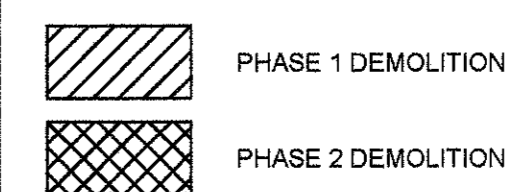
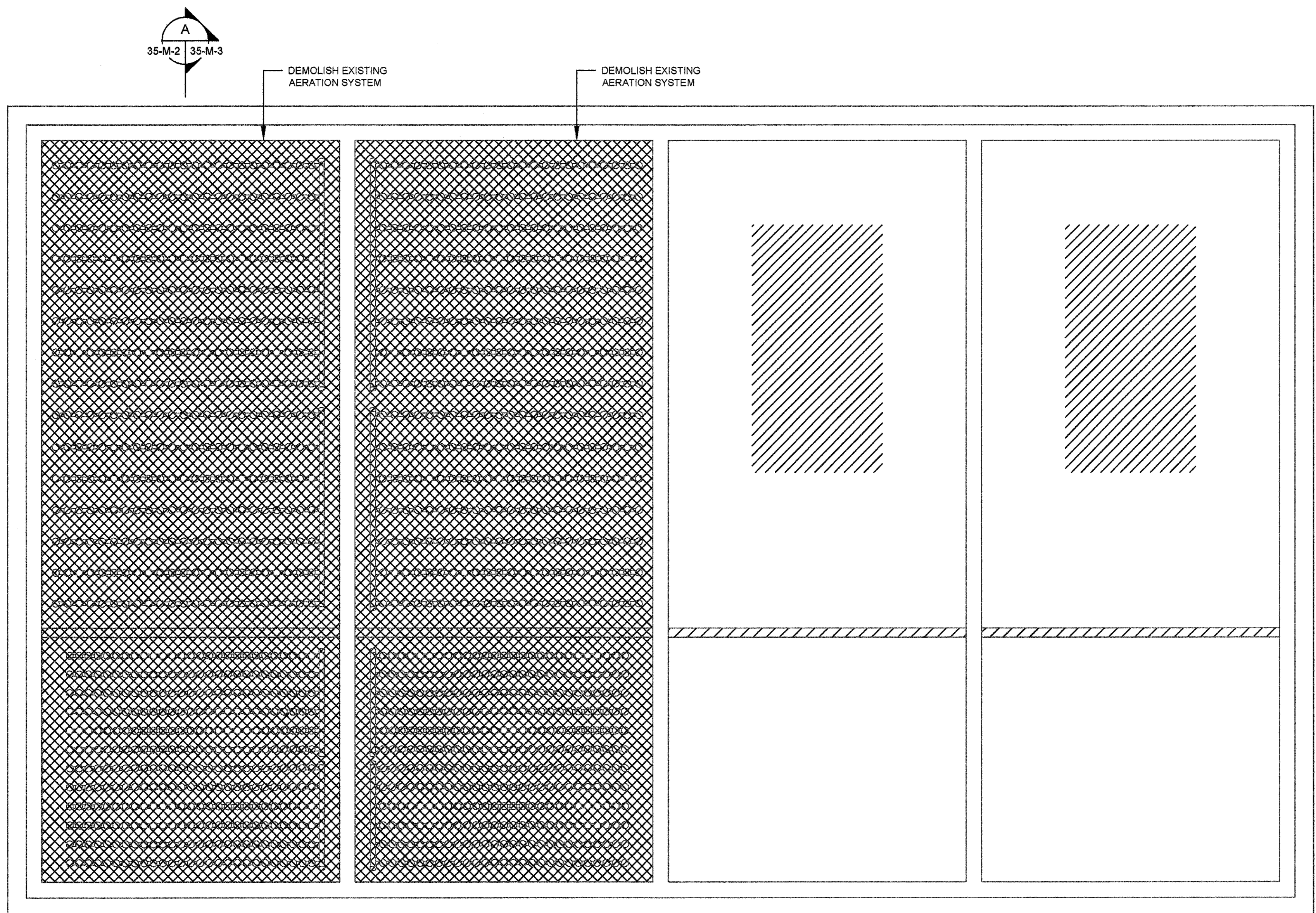
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 AERATION TANK
 DEMOLITION PLAN 2

SHEET NO.
 30-M-2

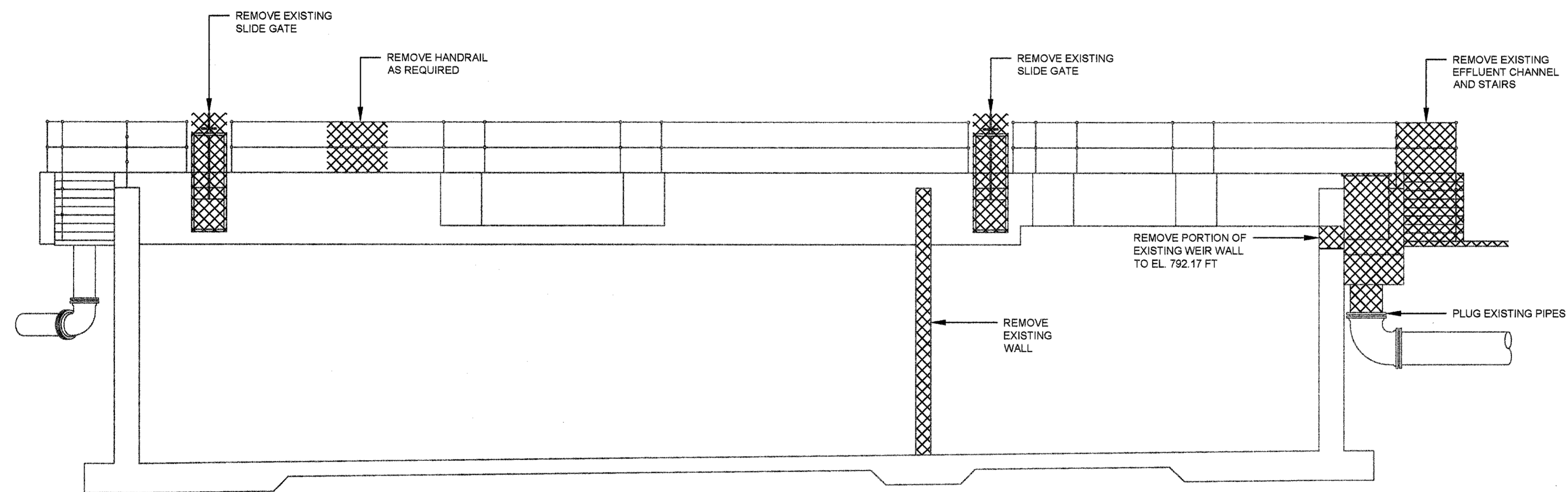


NOTES:

1. DEMOLITION OF THE AERATION TANKS SHALL BE CONDUCTED IN TWO PHASES IN ORDER TO KEEP THE WASTEWATER TREATMENT PLANT IN OPERATION AT ALL TIMES. PHASE 2 DEMOLITION SHALL NOT BEGIN UNTIL TRAINS 3 AND 4 OF THE NEW MBR TREATMENT PROCESS IS CONSTRUCTED AND OPERATIONAL.
2. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL MATERIALS REMOVED FROM THE AERATION TANKS.
3. CONTRACTOR SHALL REMOVE ALL SLUDGE AND DEBRIS FROM THE AERATION TANKS AND PROPERLY DISPOSE OF IT IN A SANITARY LANDFILL.



EXISTING AERATION TANK BOTTOM PLAN
 SCALE: 1/8" = 1'-0"



SECTION A
 SCALE: $\frac{3}{16}'' = 1'-0''$ 35-M-1/2 | 35-M-3

- PHASE 1 DEMOLITION
- PHASE 2 DEMOLITION



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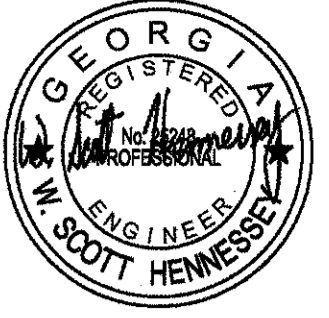
PROJECT NUMBER:	DATE: AUGUST 2016	DATE:
Δ	REVISION	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

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**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 AERATION TANK
 DEMOLITION PLAN 3**

SHEET NO.
30-M-3



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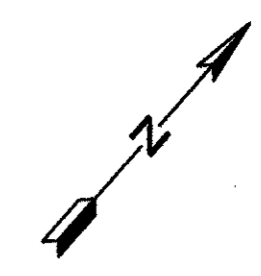
PROJECT NUMBER:	DATE:
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DSGN: WSH	DATE:
DRWN: WSH	
CHK: WSH	

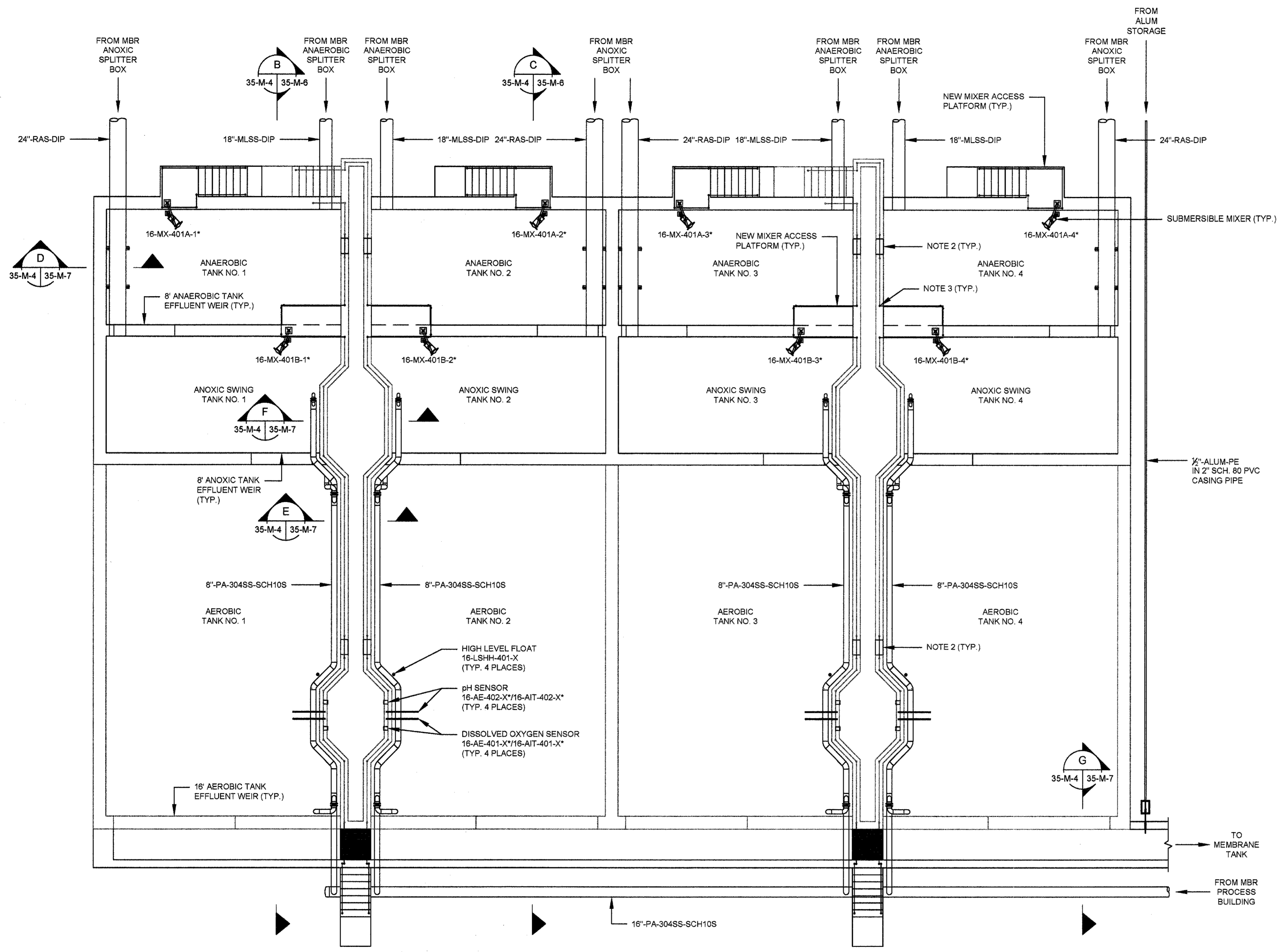
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR AERATION TANK
TOP PLAN

SHEET NO.
30-M-4



- NOTES:**
- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
 - FILL IN GATE OPENINGS WITH CONCRETE PER STRUCTURAL DRAWINGS AND CONNECT HANDRAIL TO CREATE A CONTINUOUS SAFETY BARRIER.
 - CUT EXISTING HANDRAIL SECTION AND TIE NEW HANDRAIL INTO EXISTING HANDRAIL CREATING A CONTINUOUS SAFETY BARRIER.



PROPOSED AERATION TANK TOP PLAN
SCALE: 1/8" = 1'-0"



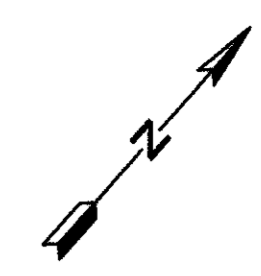
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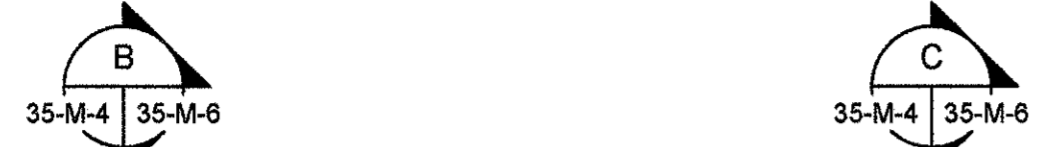
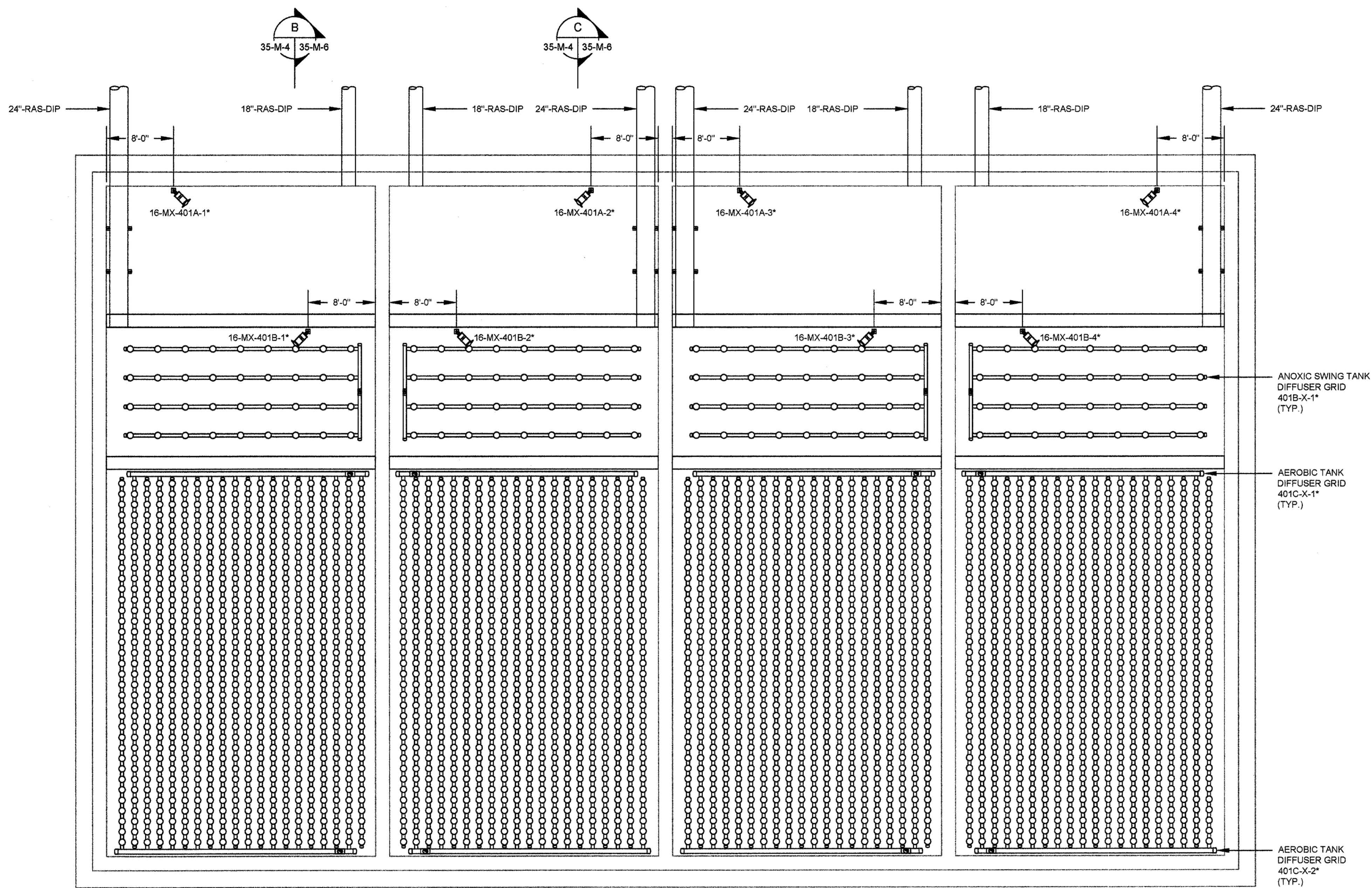
DSGN: WSH
DRWN: WSH
CHK: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR AERATION TANK
BOTTOM PLAN

SHEET NO.
30-M-5

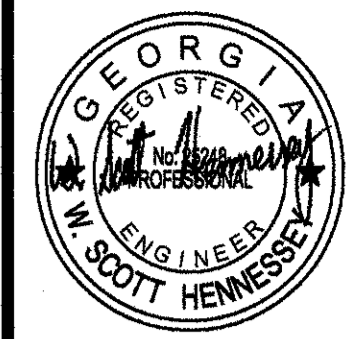


- NOTES:**
- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.



PROPOSED AERATION TANK BOTTOM PLAN
SCALE: 1/8" = 1'-0"

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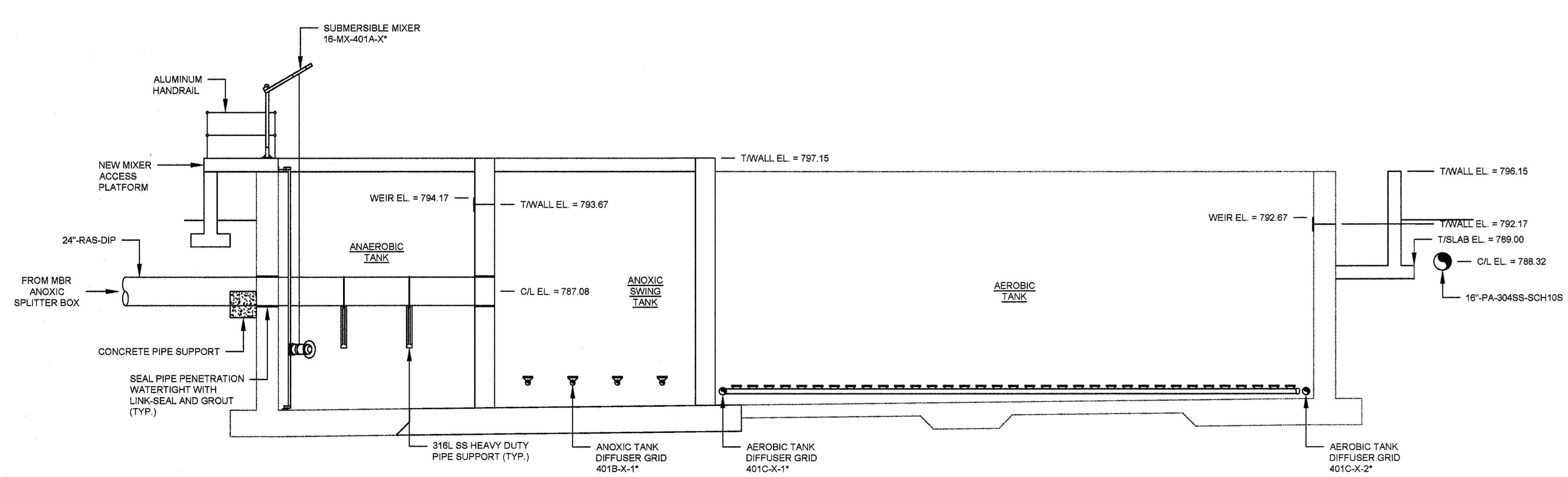
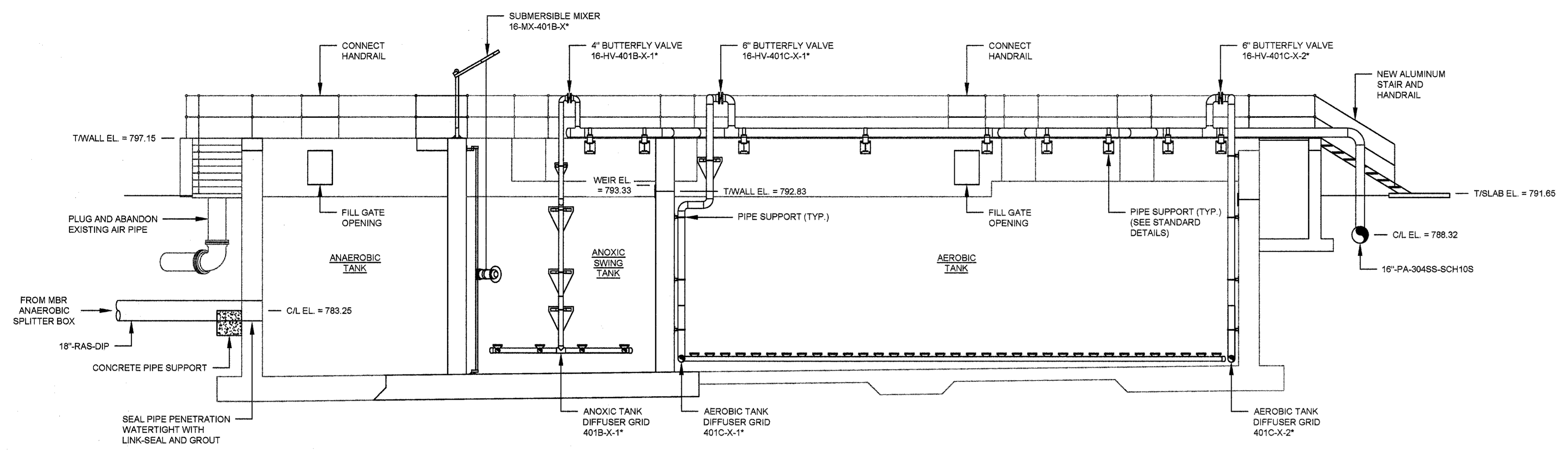
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REVISION	DATE

DSGN: WSH
 DRWN: WSH
 CHCK: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR AERATION TANK SECTIONS

SHEET NO.
 30-M-6



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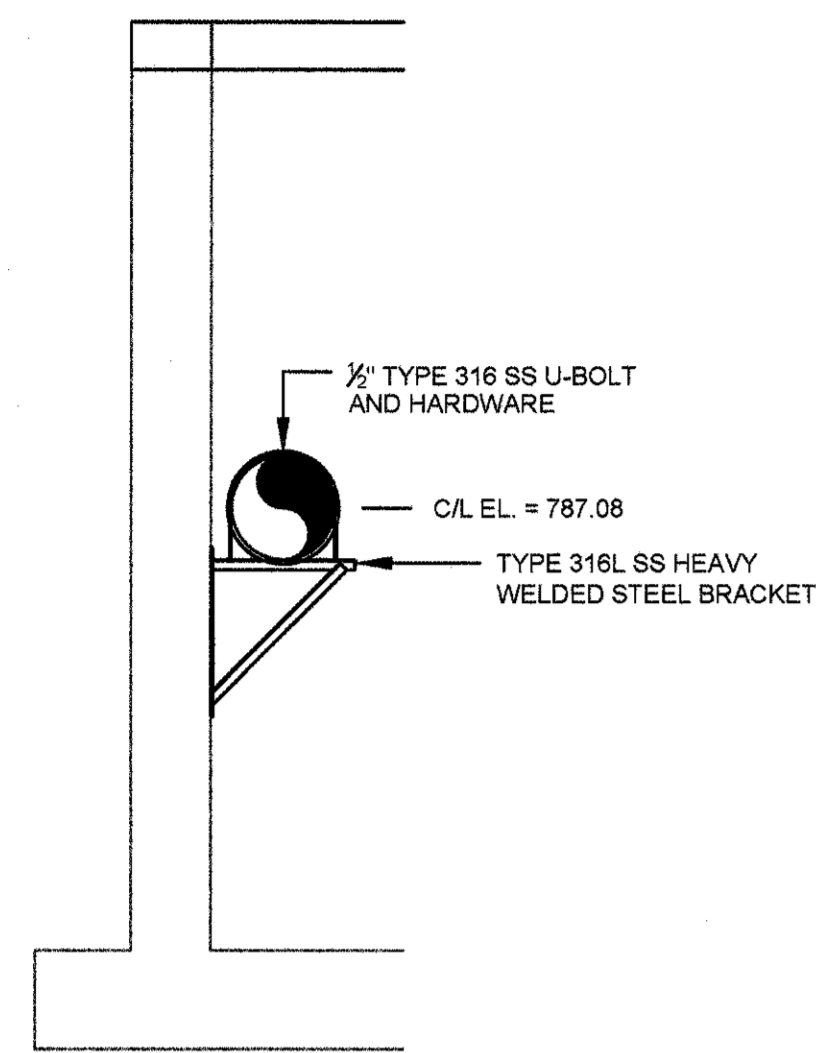
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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 HENRY COUNTY WATER AUTHORITY

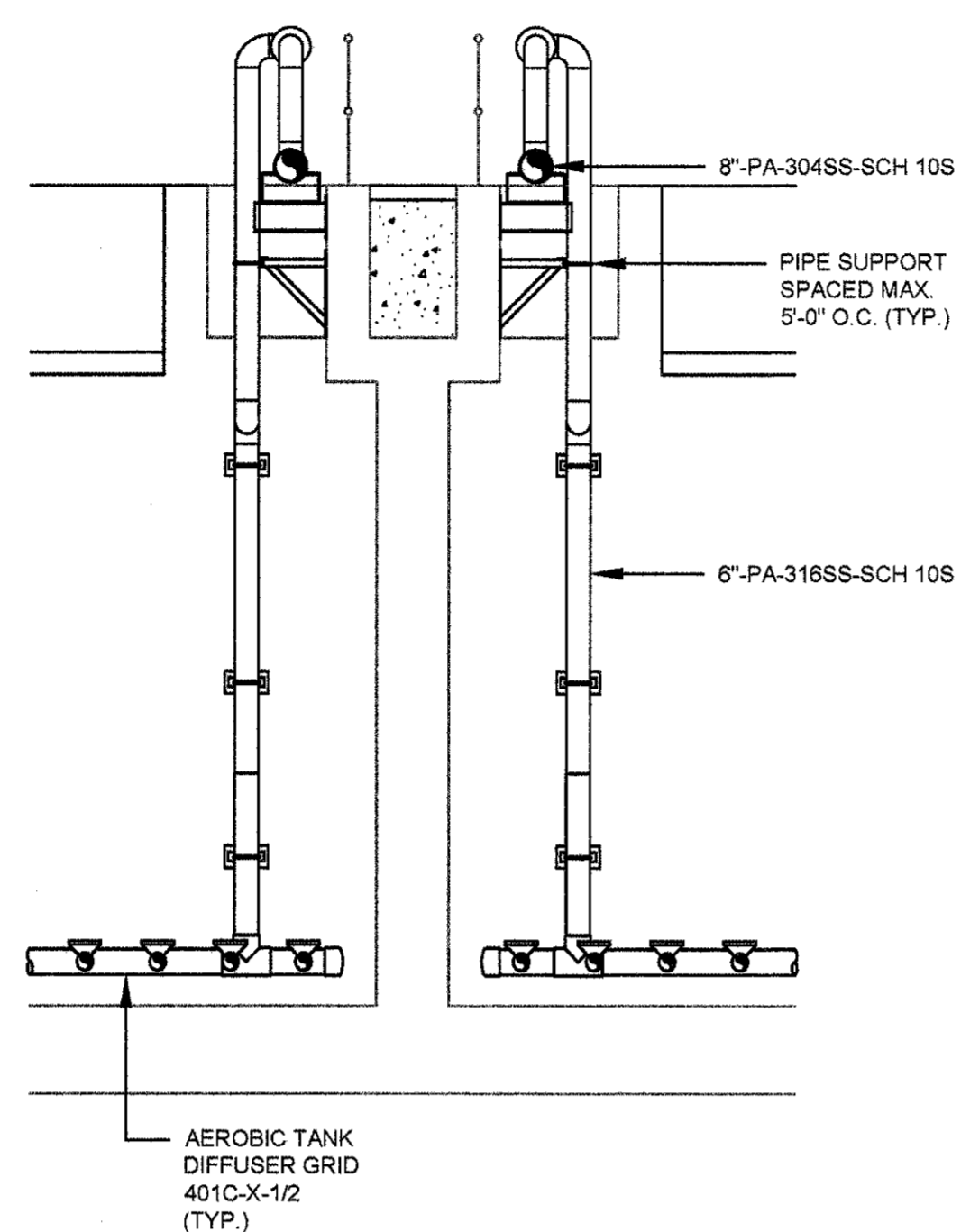
MBR AERATION TANK
 SECTIONS AND DETAILS

SHEET NO.
 30-M-7

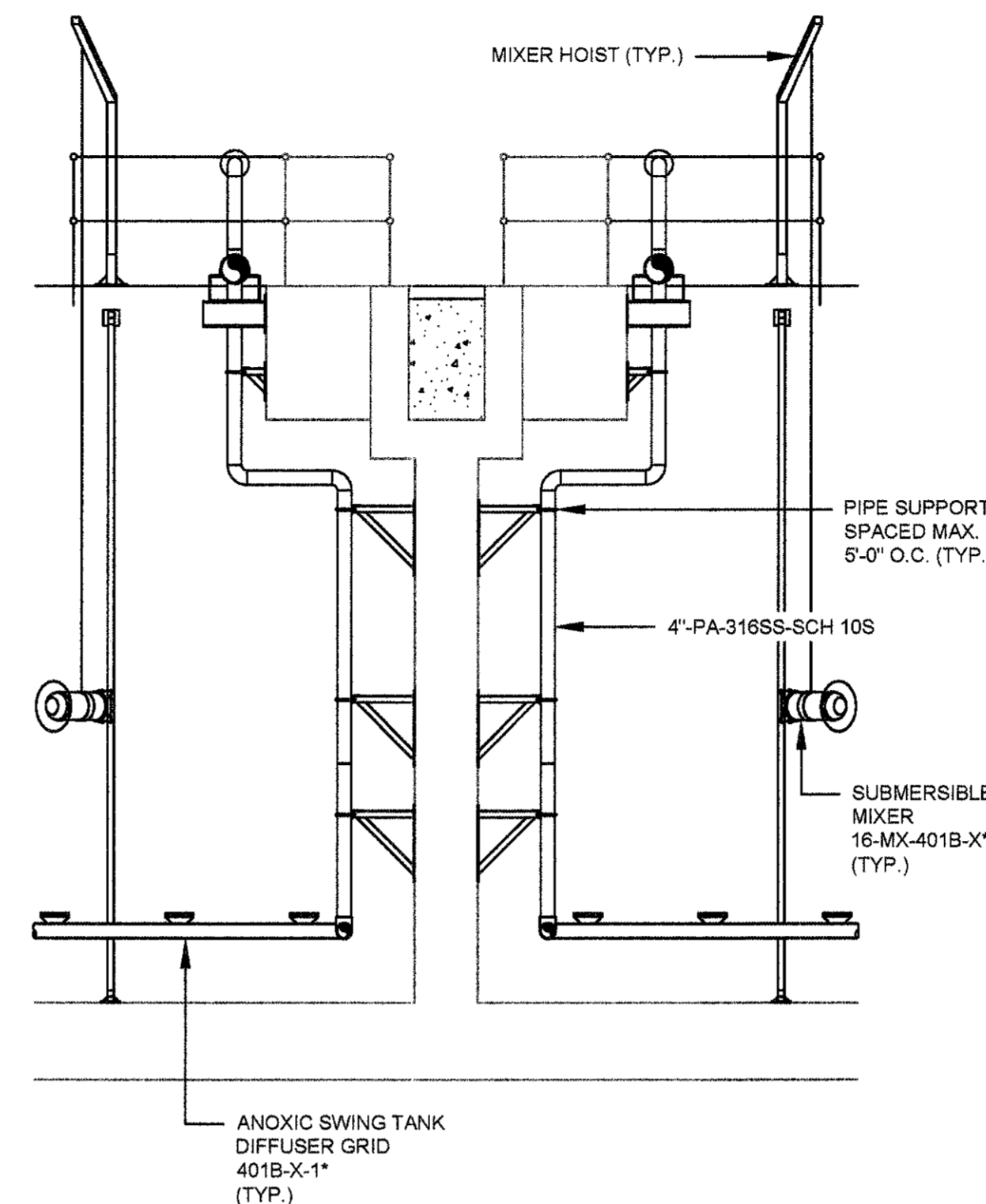
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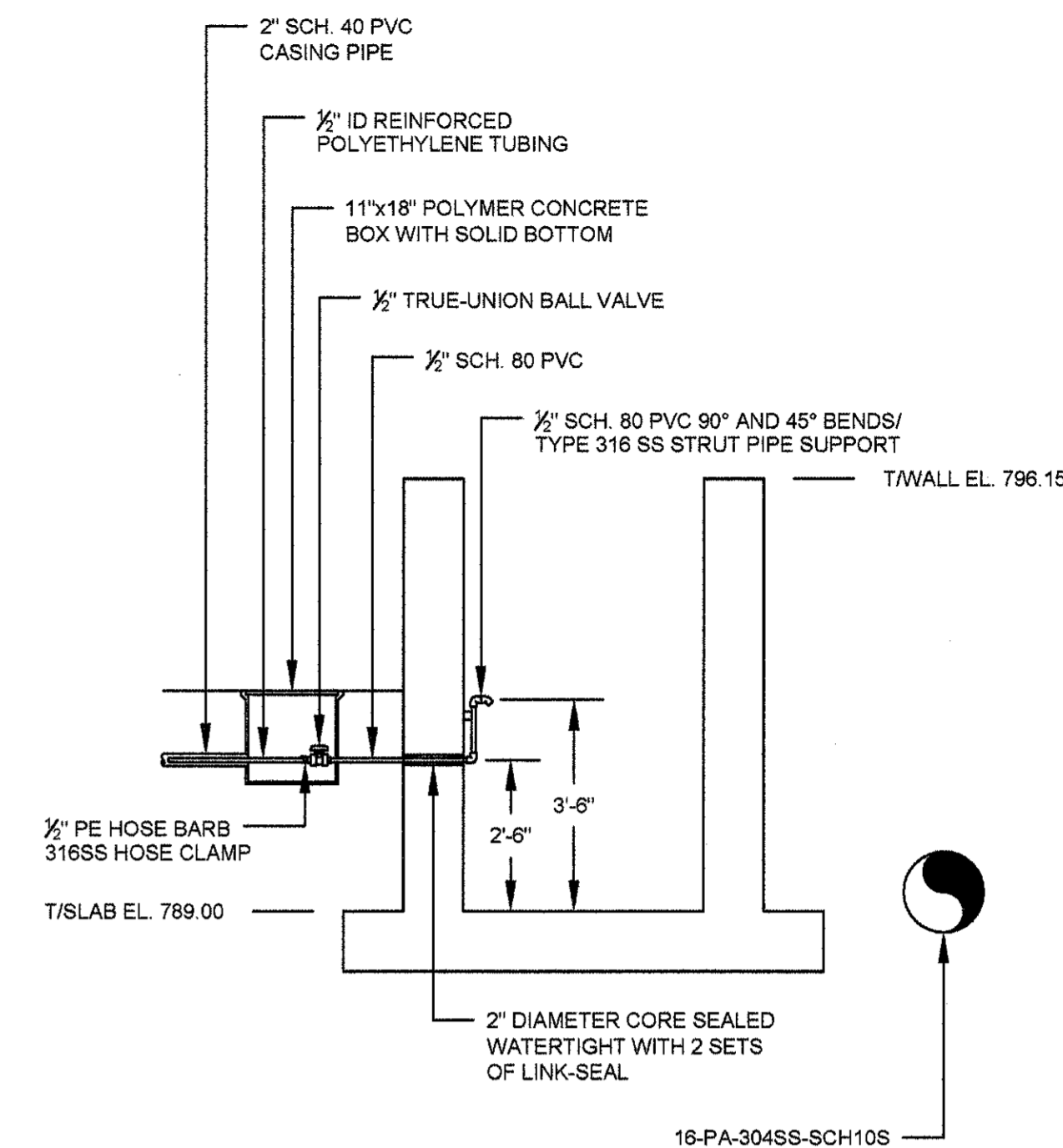
SECTION D
 SCALE: 1/2" = 1'-0"
 35-M-4 35-M-7



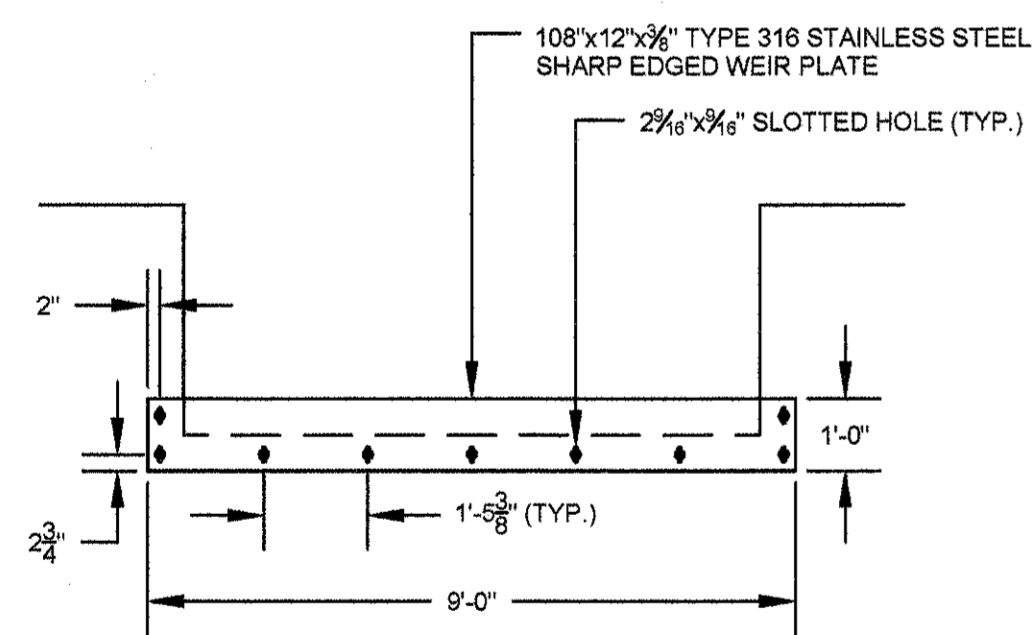
SECTION E
 SCALE: 1/2" = 1'-0"
 35-M-4 35-M-7



SECTION F
 SCALE: 1/2" = 1'-0"
 35-M-4 35-M-7



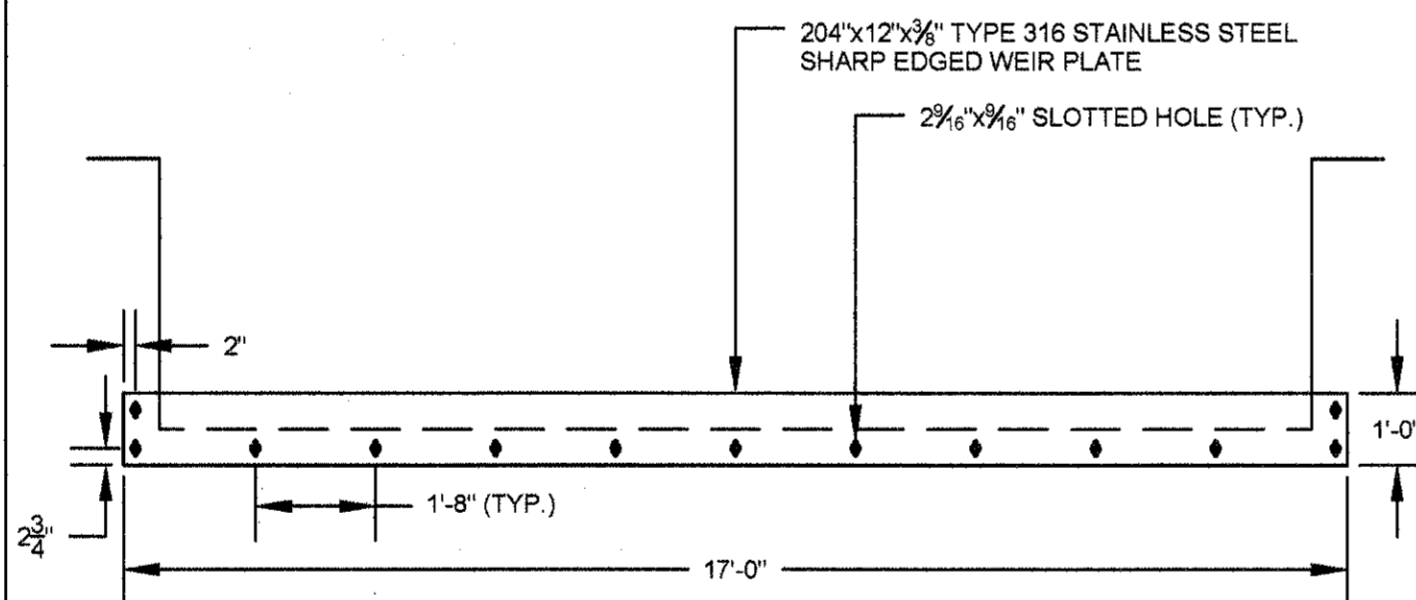
SECTION G
 SCALE: 3/8" = 1'-0"
 35-M-4 35-M-7



1/2" TYPE 316 SS EPOXY ANCHOR BOLT WITH MINIMUM 6" EMBEDMENT

- NOTES:
- INSTALL NEOPRENE GASKET BETWEEN WEIR PLATE AND WALL.

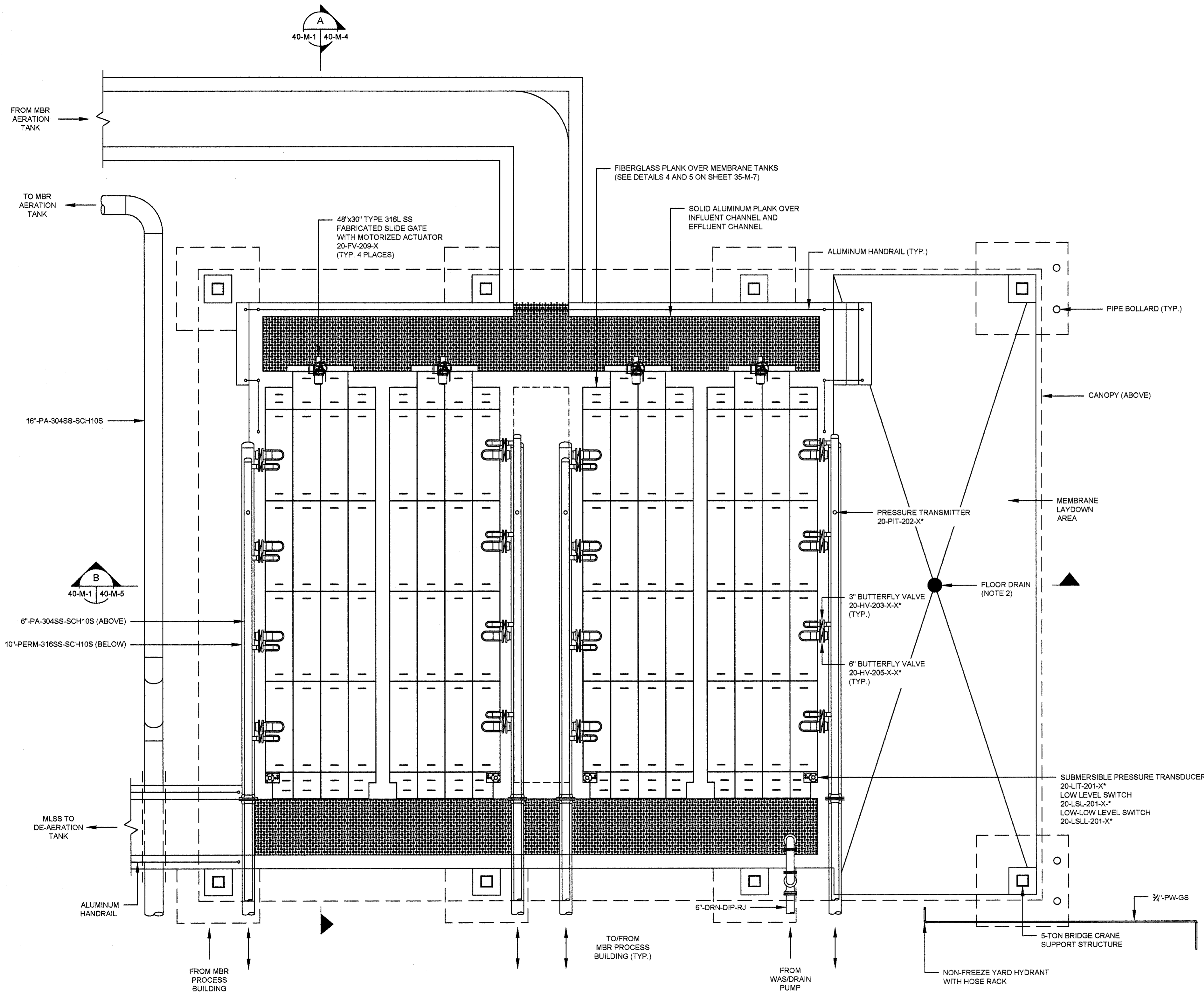
ANEROBIC/ANOXIC WEIR DETAIL 1
 SCALE: 3/8" = 1'-0"



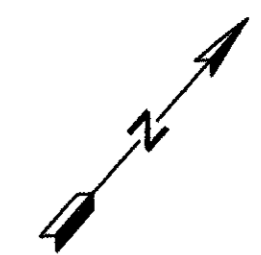
1/2" TYPE 316 SS EPOXY ANCHOR BOLT WITH MINIMUM 6" EMBEDMENT

- NOTES:
- INSTALL NEOPRENE GASKET BETWEEN WEIR PLATE AND WALL.

AEROBIC WEIR DETAIL 2
 SCALE: 3/8" = 1'-0"



MBR MEMBRANE TANK TOP PLAN
SCALE: 1/2" = 1'-0"



- NOTES:
- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
 - FLOOR DRAIN SHALL BE HEAVY DUTY FLOOR DRAIN WITH 4" NO-HUB OUTLET, DUCTILE IRON TRACTOR GRATE, AND SEDIMENT BUCKET, JAY R. SMITH MFG. CO. MODEL 2142Y-M, OR EQUAL.



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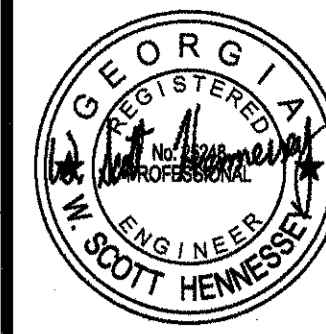
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DRWN: WSH
CHK: WSH

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
**MBR MEMBRANE TANK
TOP PLAN**

SHEET NO.
35-M-1

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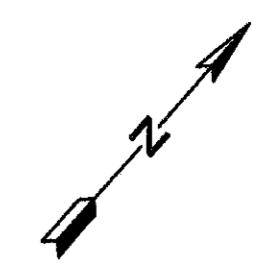
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 DRWN: WSH
 CHK: WSH

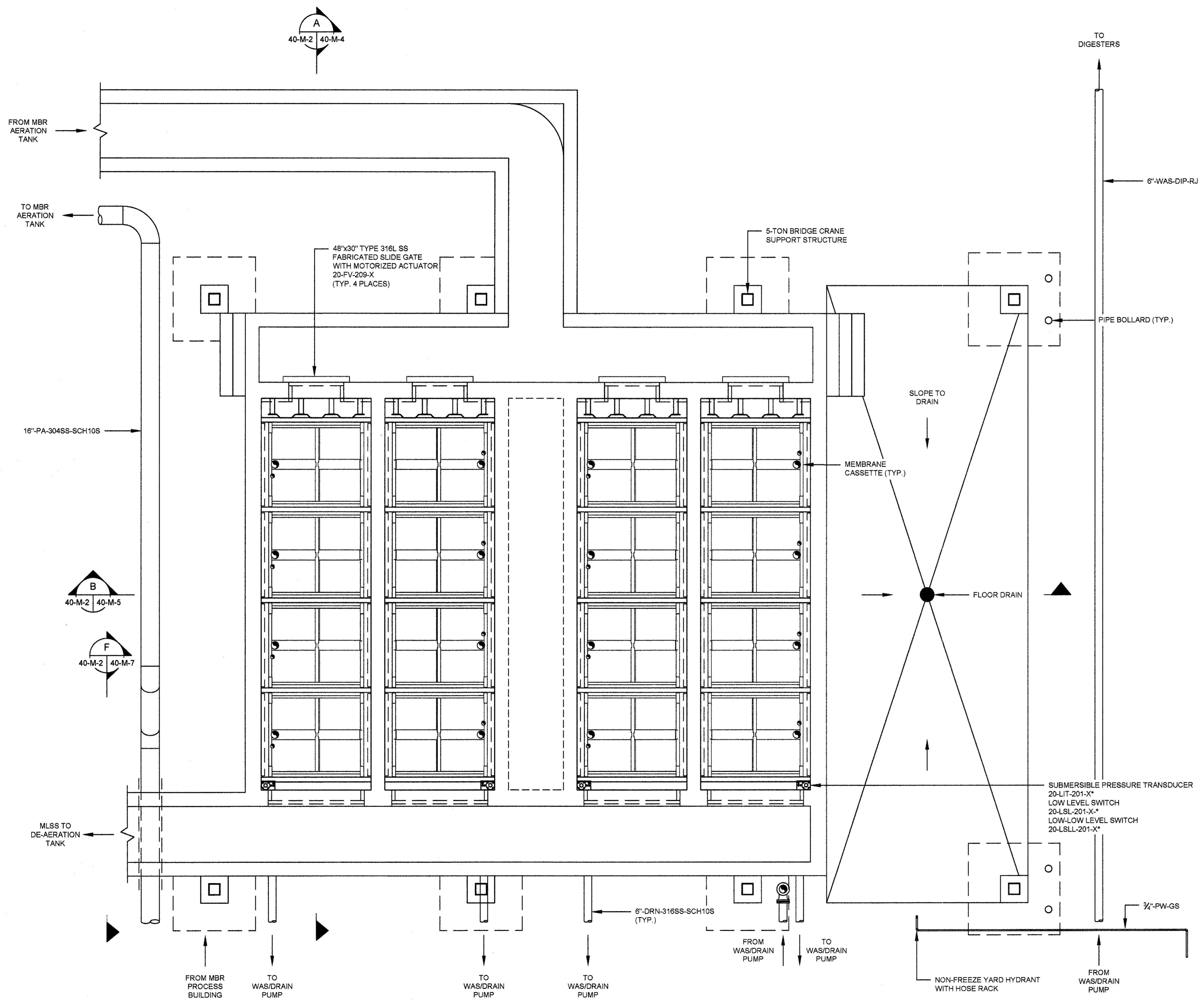
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 INTERMEDIATE PLAN

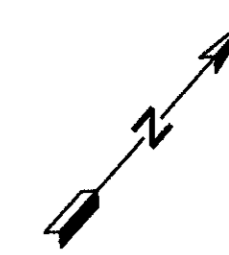
SHEET NO.
 35-M-2



NOTES:
 1. EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.

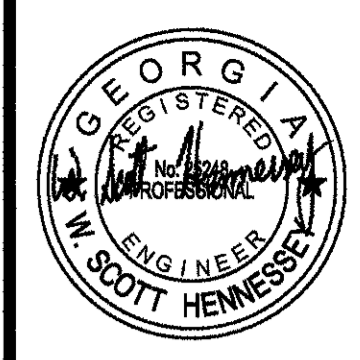


MBR MEMBRANE TANK INTERMEDIATE PLAN
 SCALE: 1/2" = 1'-0"



NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.



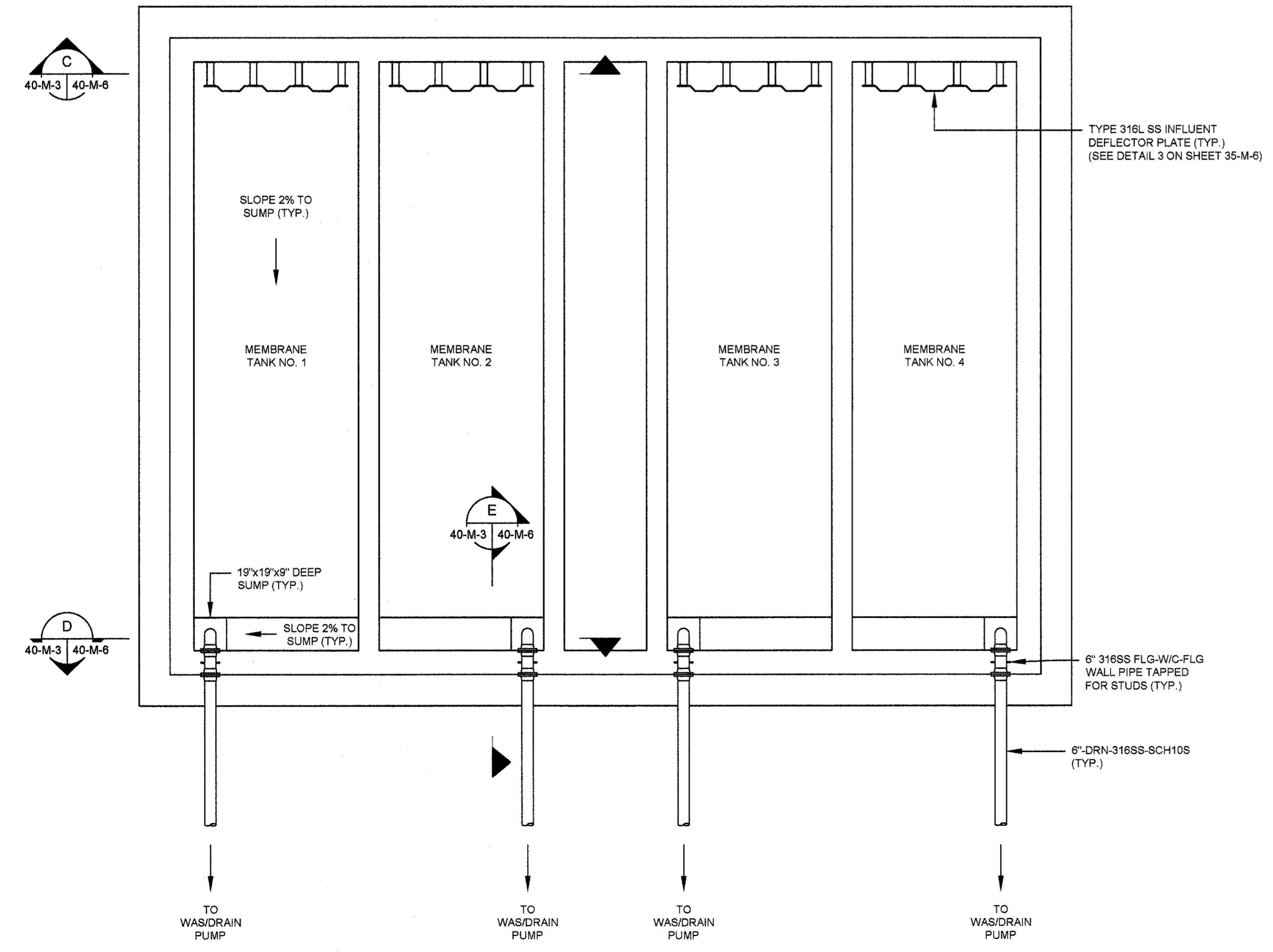
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 BOTTOM PLAN

SHEET NO.
 35-M-3



MBR MEMBRANE TANK BOTTOM PLAN
 SCALE: 1/4" = 1'-0"

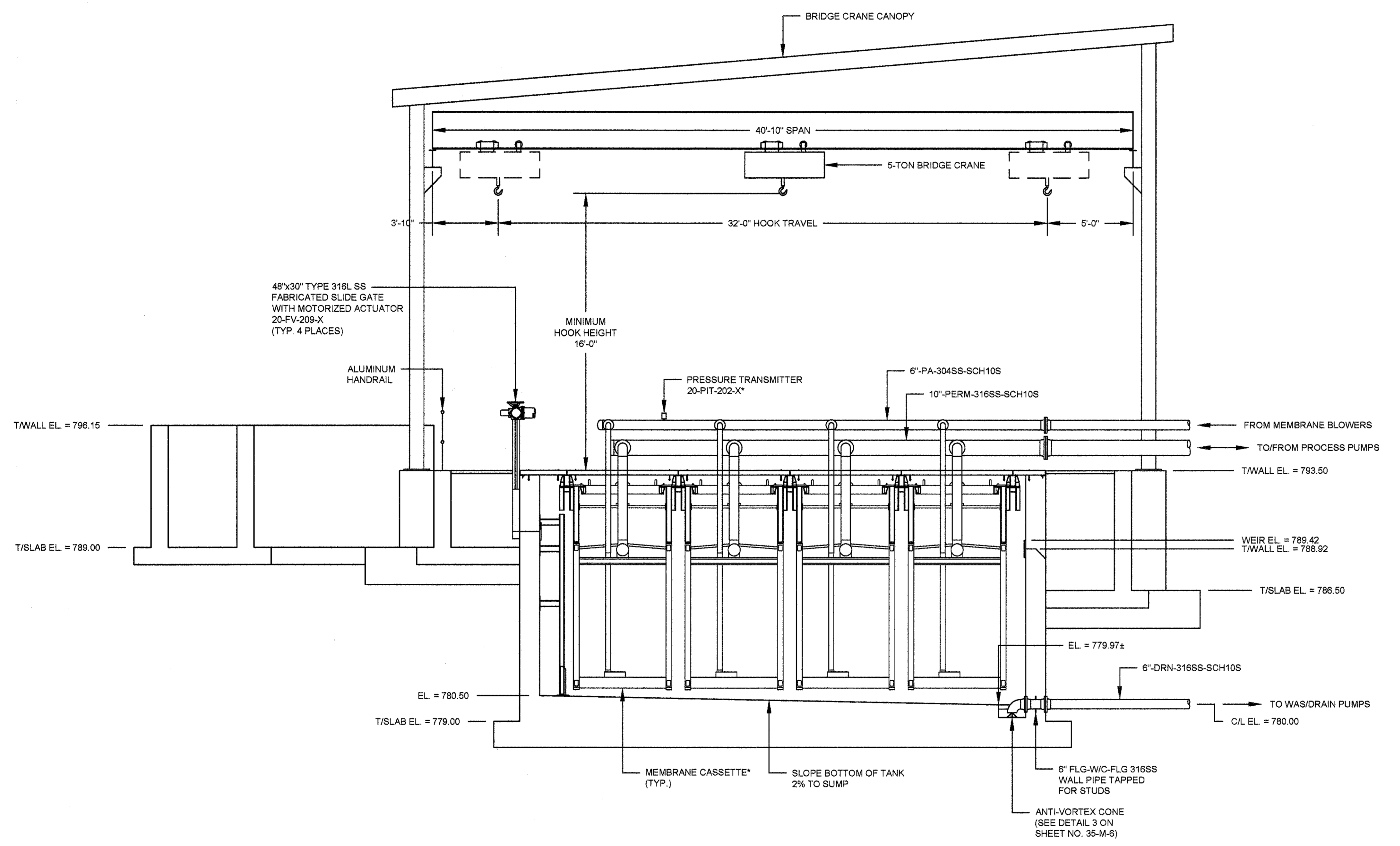
NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.



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SECTION A
 SCALE: 1/2" = 1'-0"
 40-M-1/2 40-M-4

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		
		Δ	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 SECTIONS AND DETAILS 1**

SHEET NO.
 35-M-4

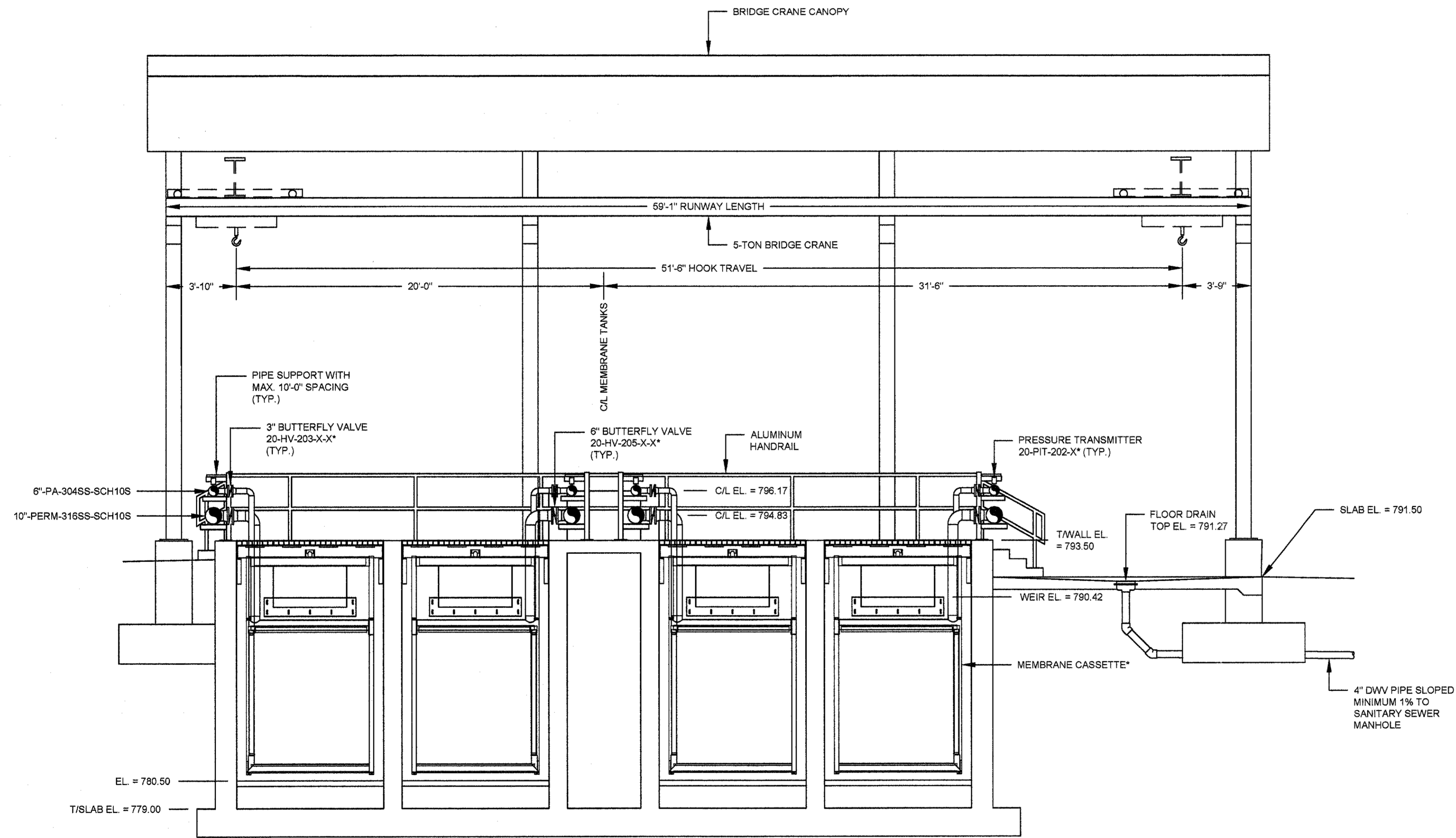
NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.



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REVISION	DATE
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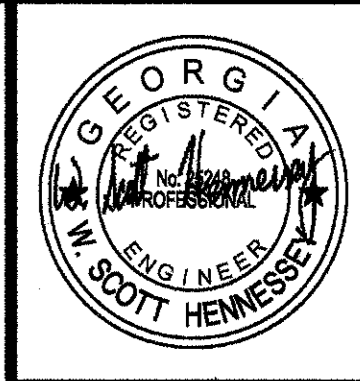
DSGN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 SECTIONS AND DETAILS 2

SHEET NO.
 35-M-5

SECTION **B**
 SCALE: 3/4" = 1'-0" 40-M-1/2 | 40-M-5



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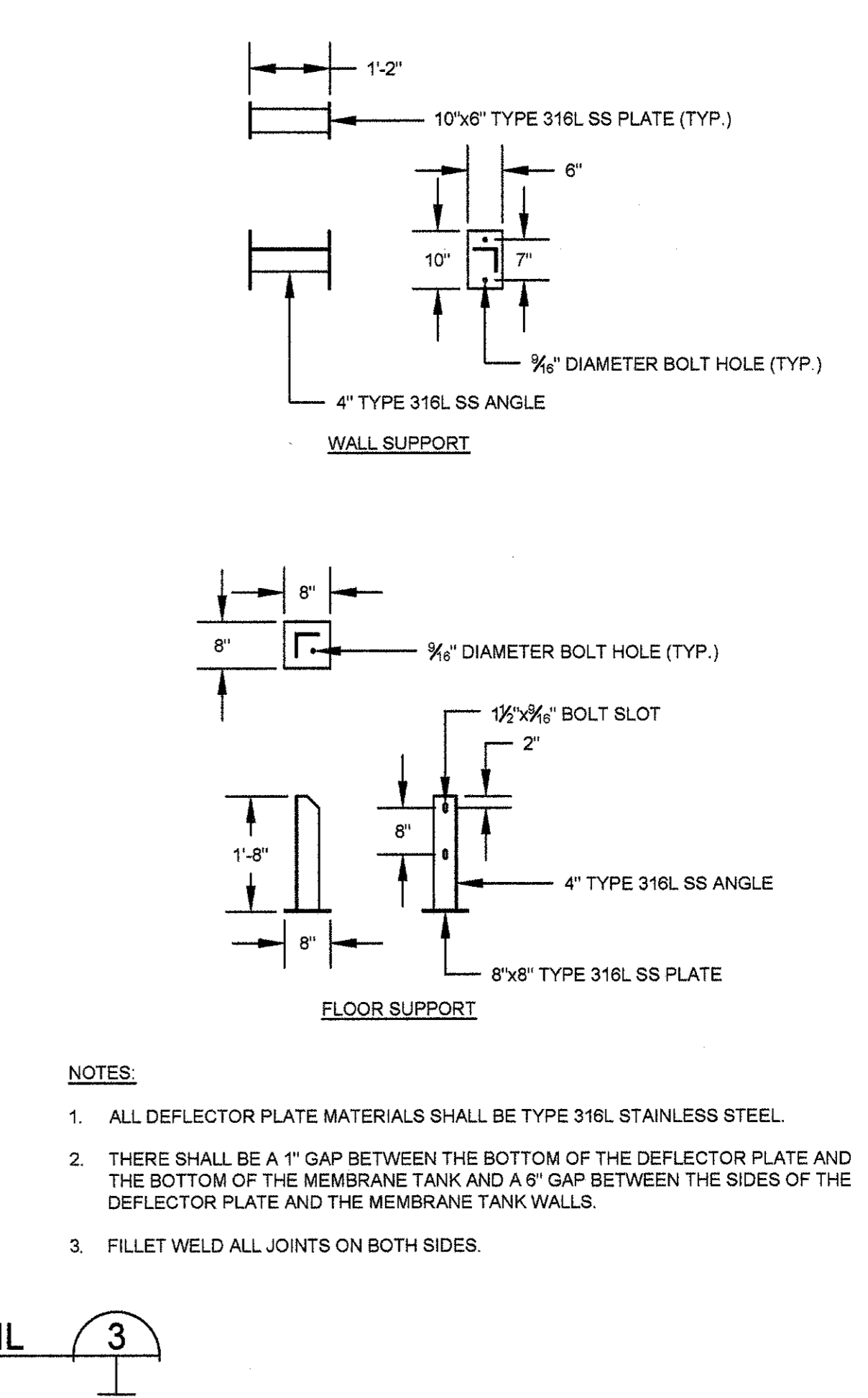
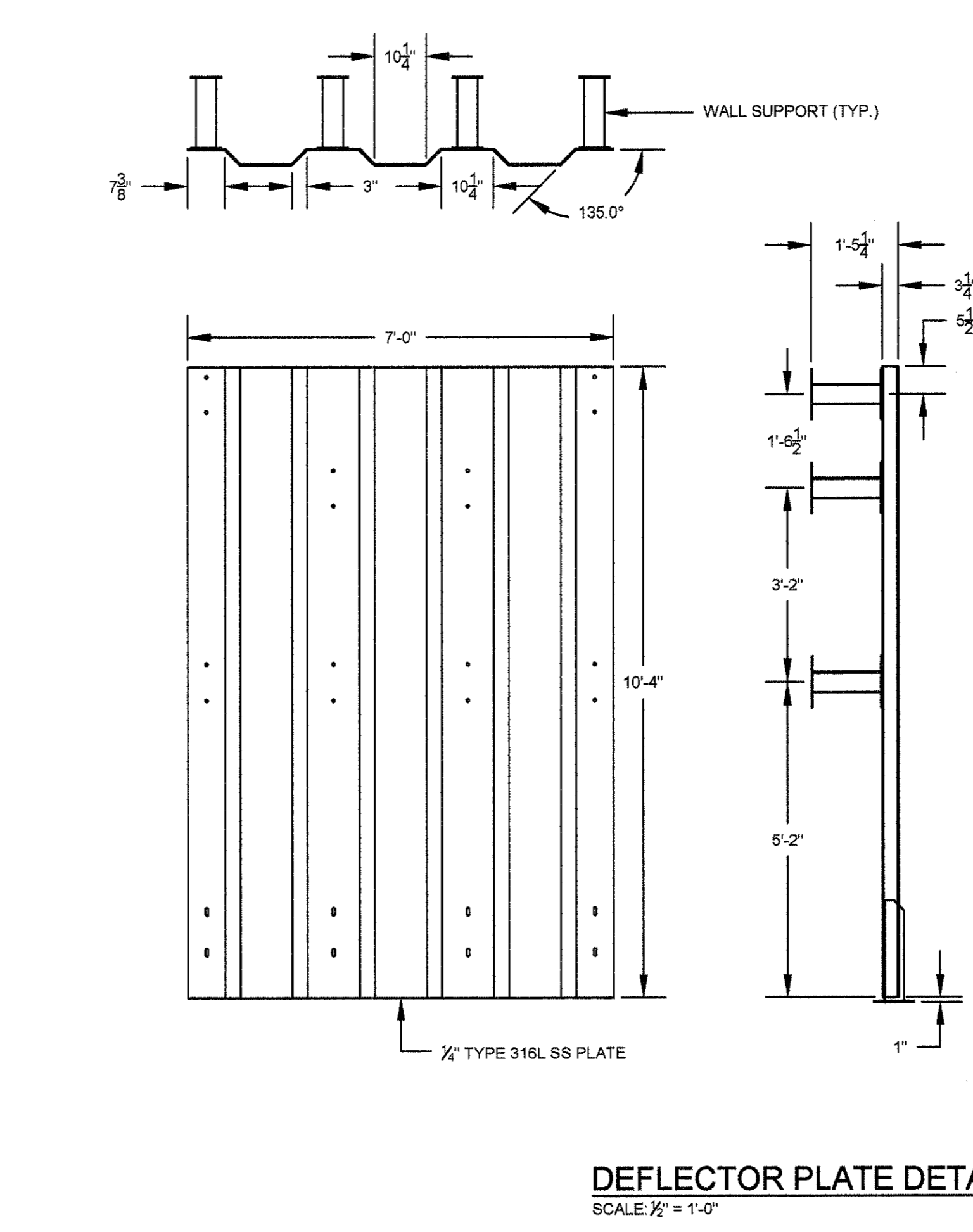
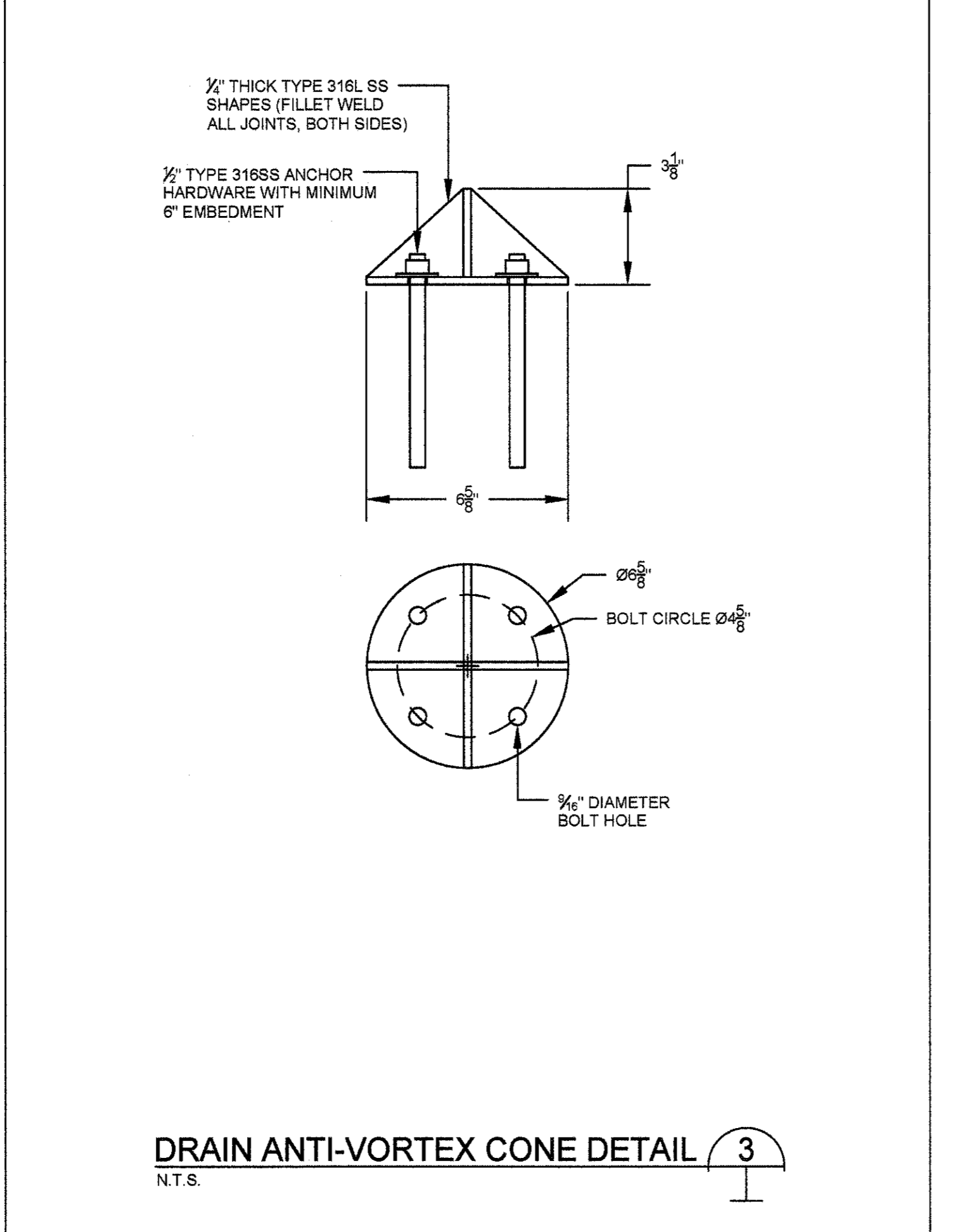
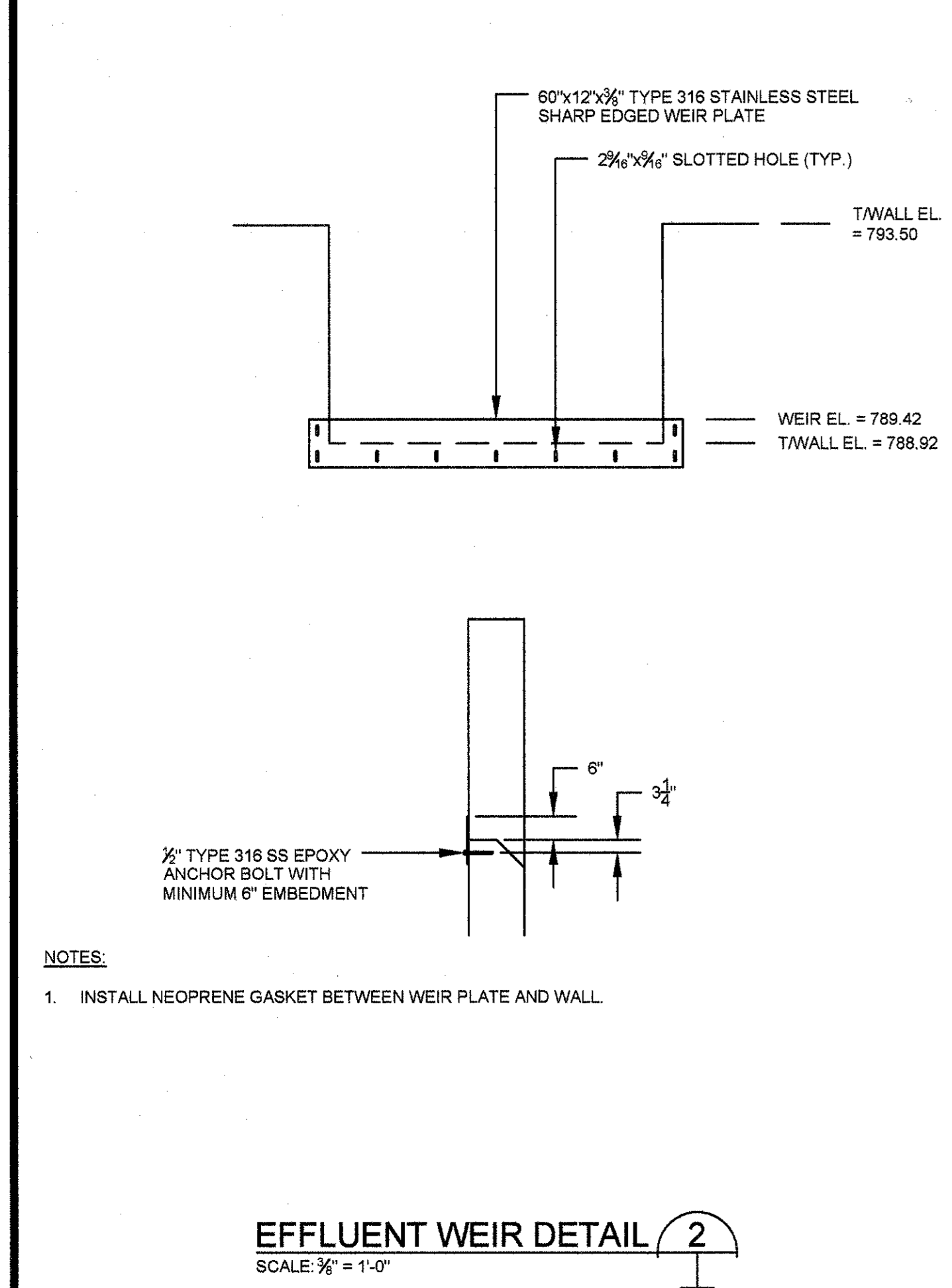
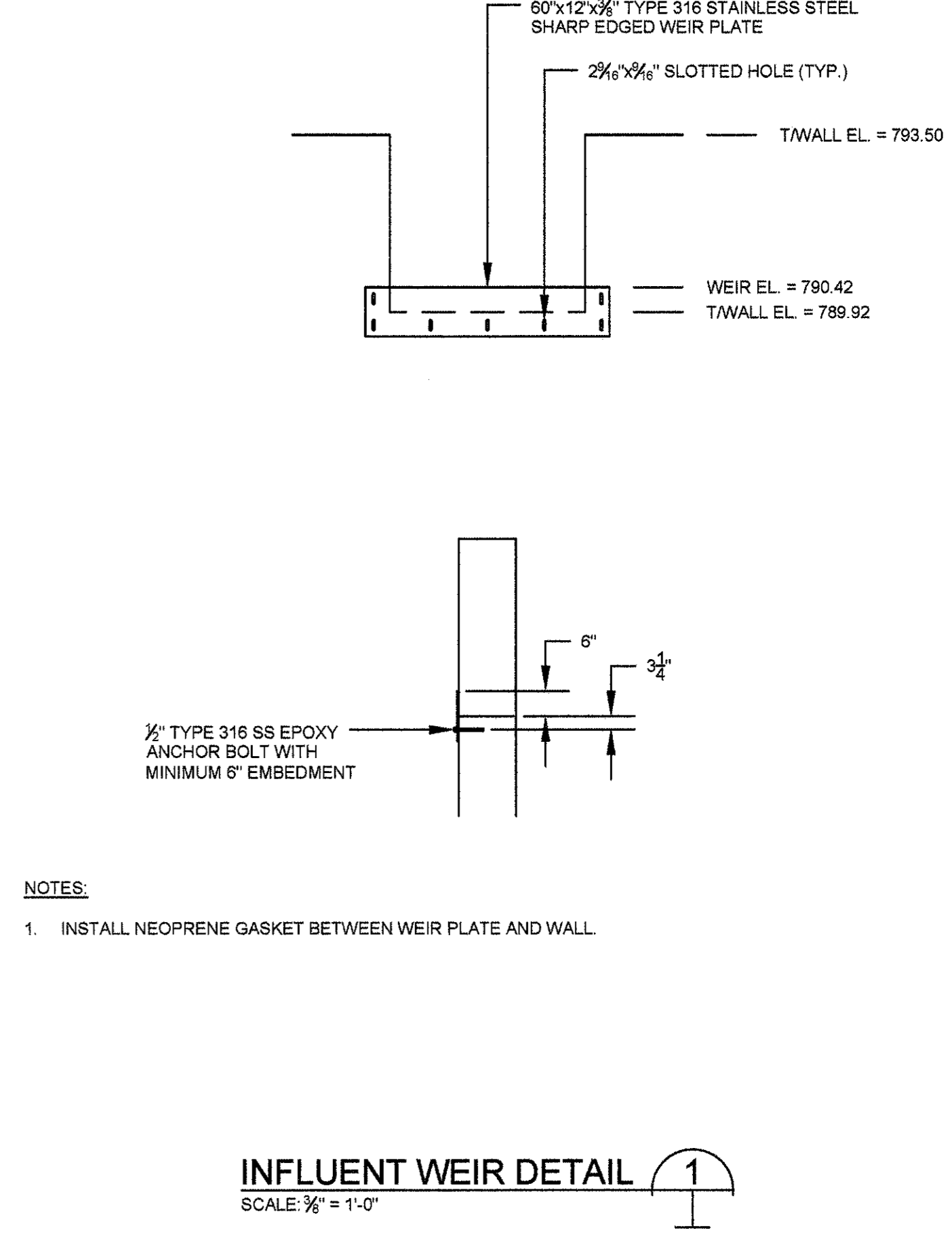
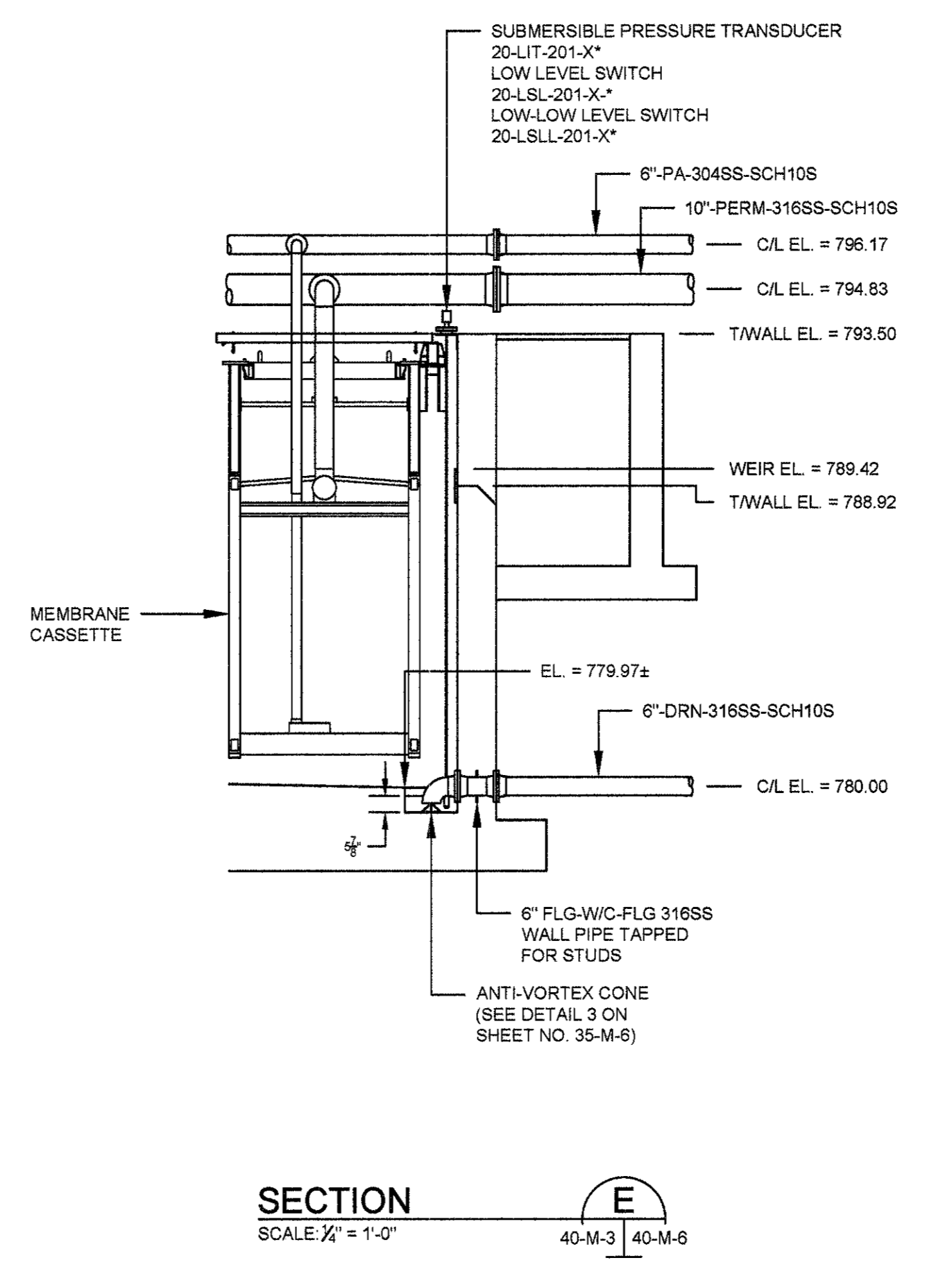
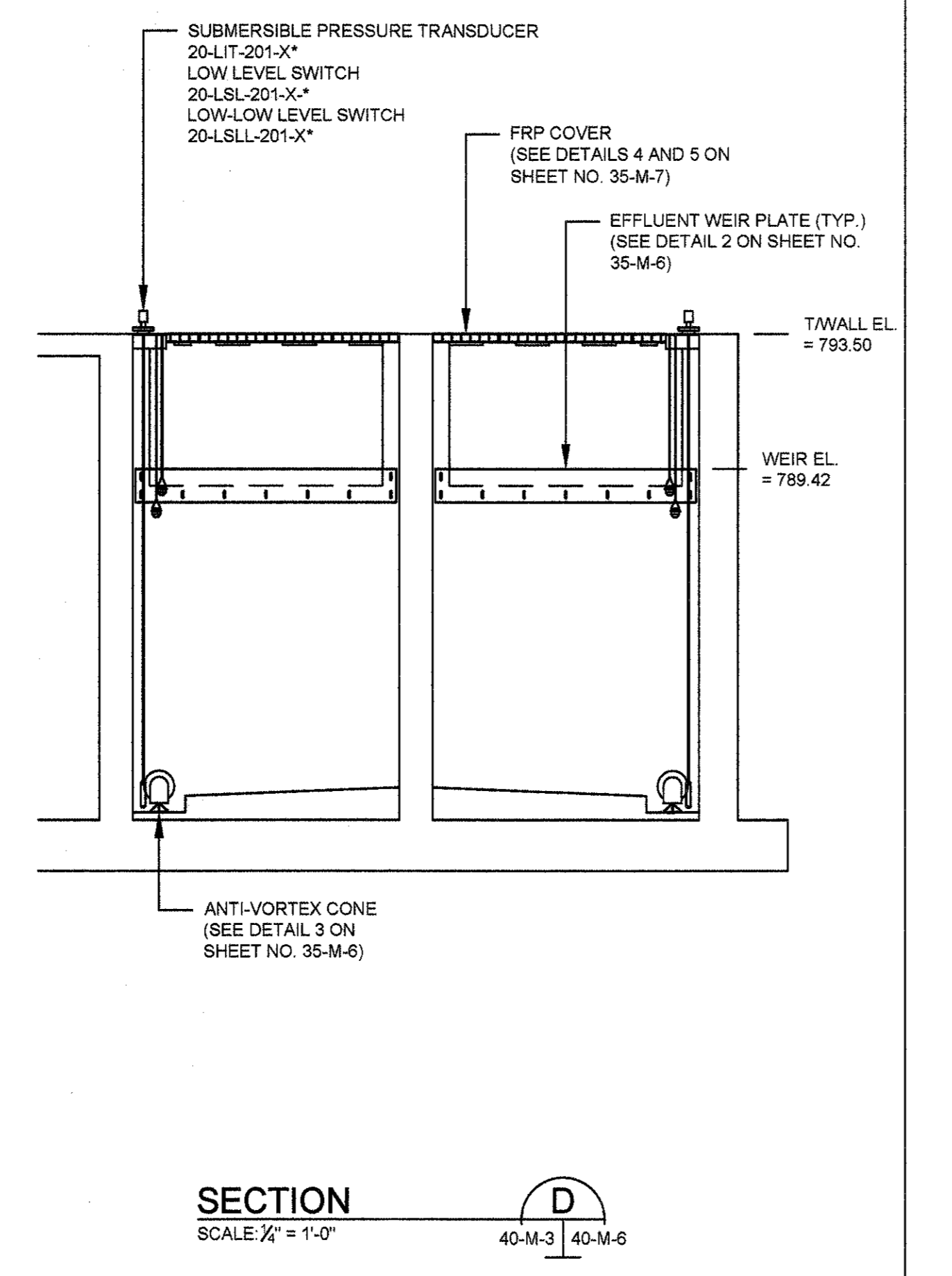
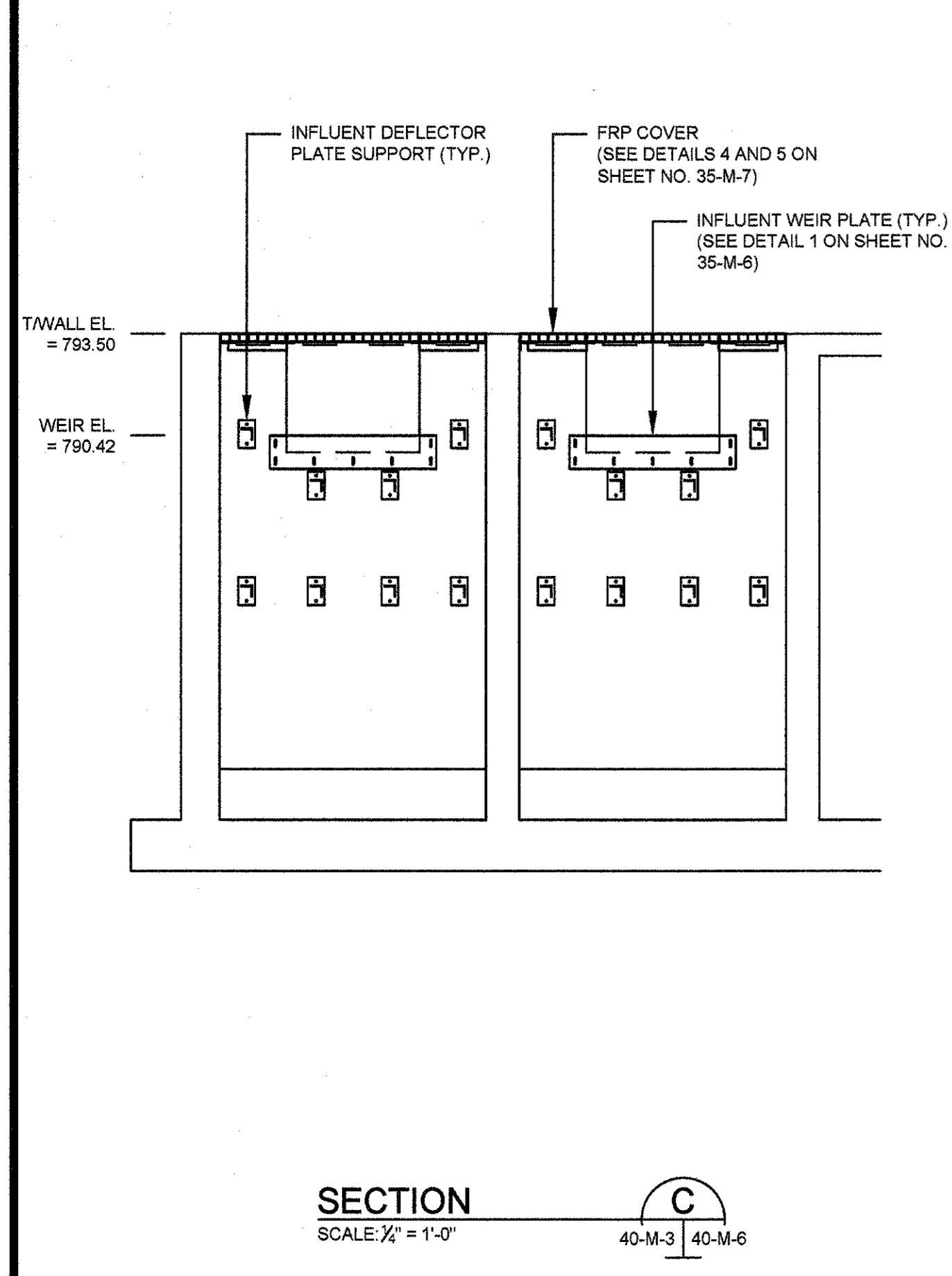
PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

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 DRWN: WSH
 CHCK: WSH

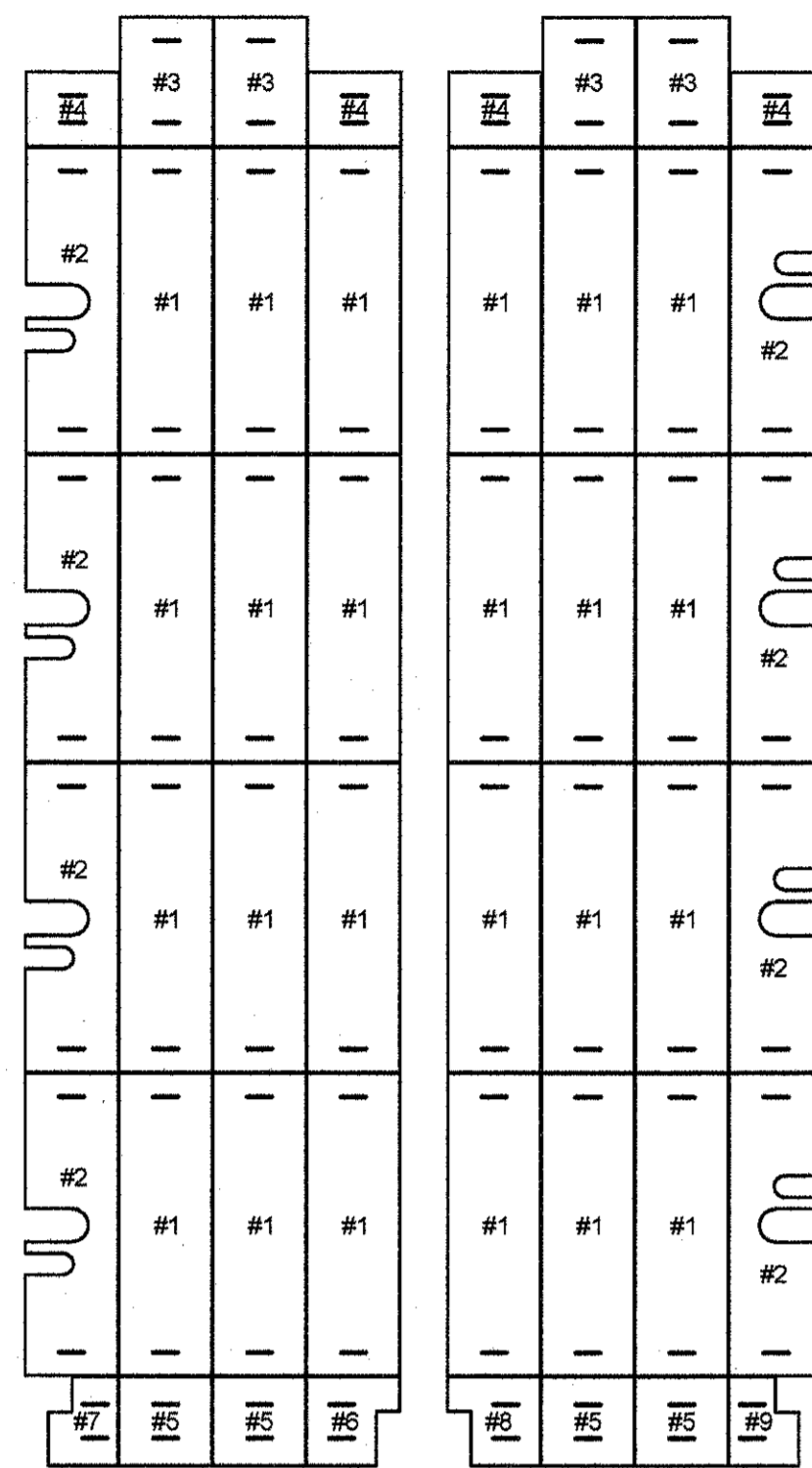
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 SECTIONS AND DETAILS 3

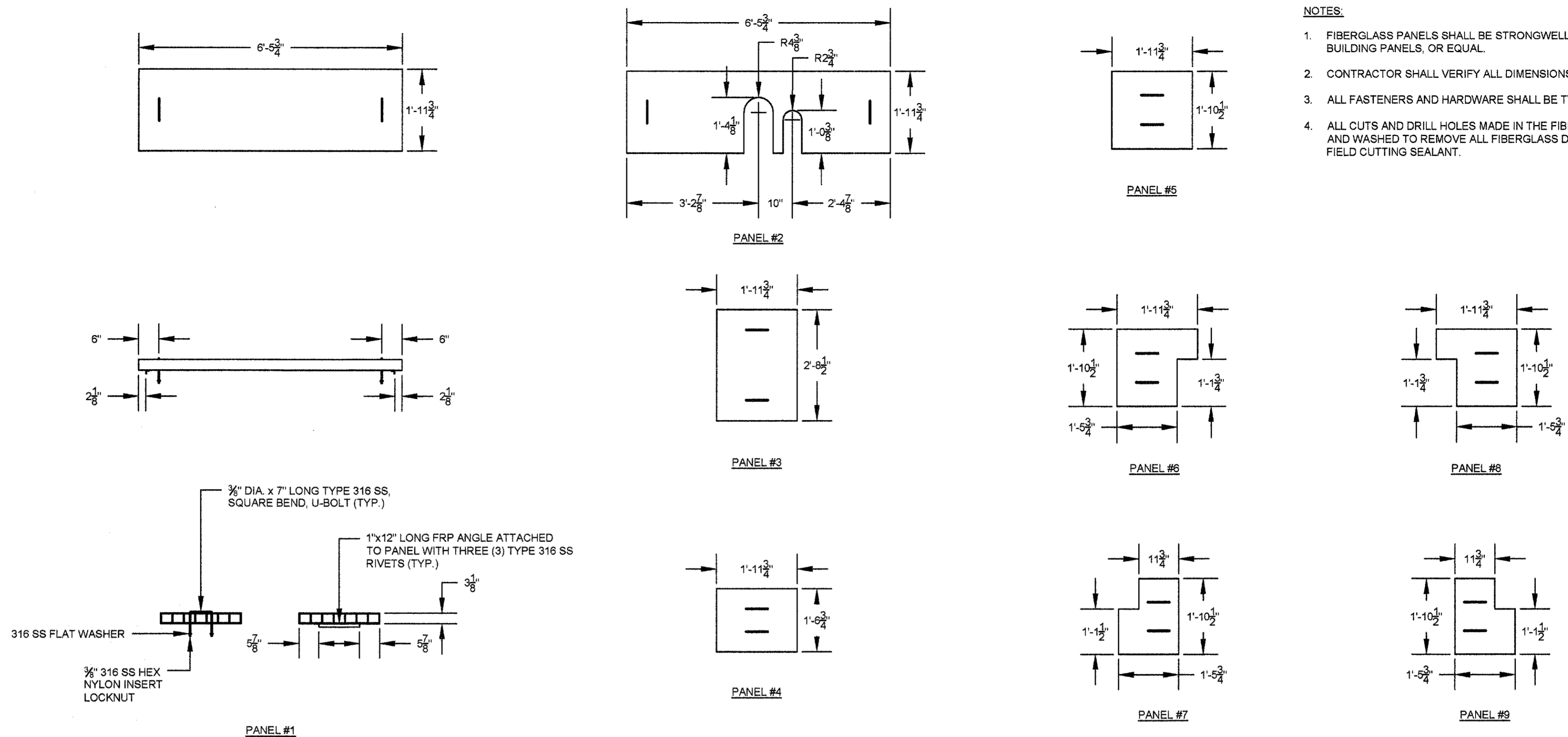
SHEET NO.
 35-M-6



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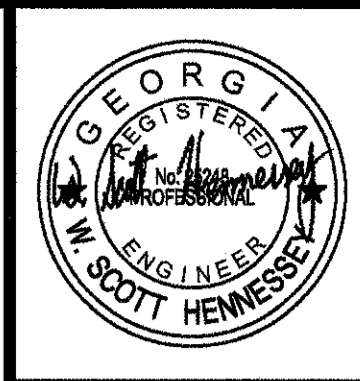
MEMBRANE COVER LAYOUT DETAIL 4
SCALE: 1/2" = 1'-0"



MEMBRANE COVER DETAILS 5
SCALE: 1/2" = 1'-0"

NOTES:

1. FIBERGLASS PANELS SHALL BE STRONGWELL COMPOSOLITE FIBERGLASS BUILDING PANELS, OR EQUAL.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS.
3. ALL FASTENERS AND HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
4. ALL CUTS AND DRILL HOLES MADE IN THE FIBERGLASS PANELS SHALL BE CLEANED AND WASHED TO REMOVE ALL FIBERGLASS DEBRIS AND SHALL BE SEALED WITH FIELD CUTTING SEALANT.



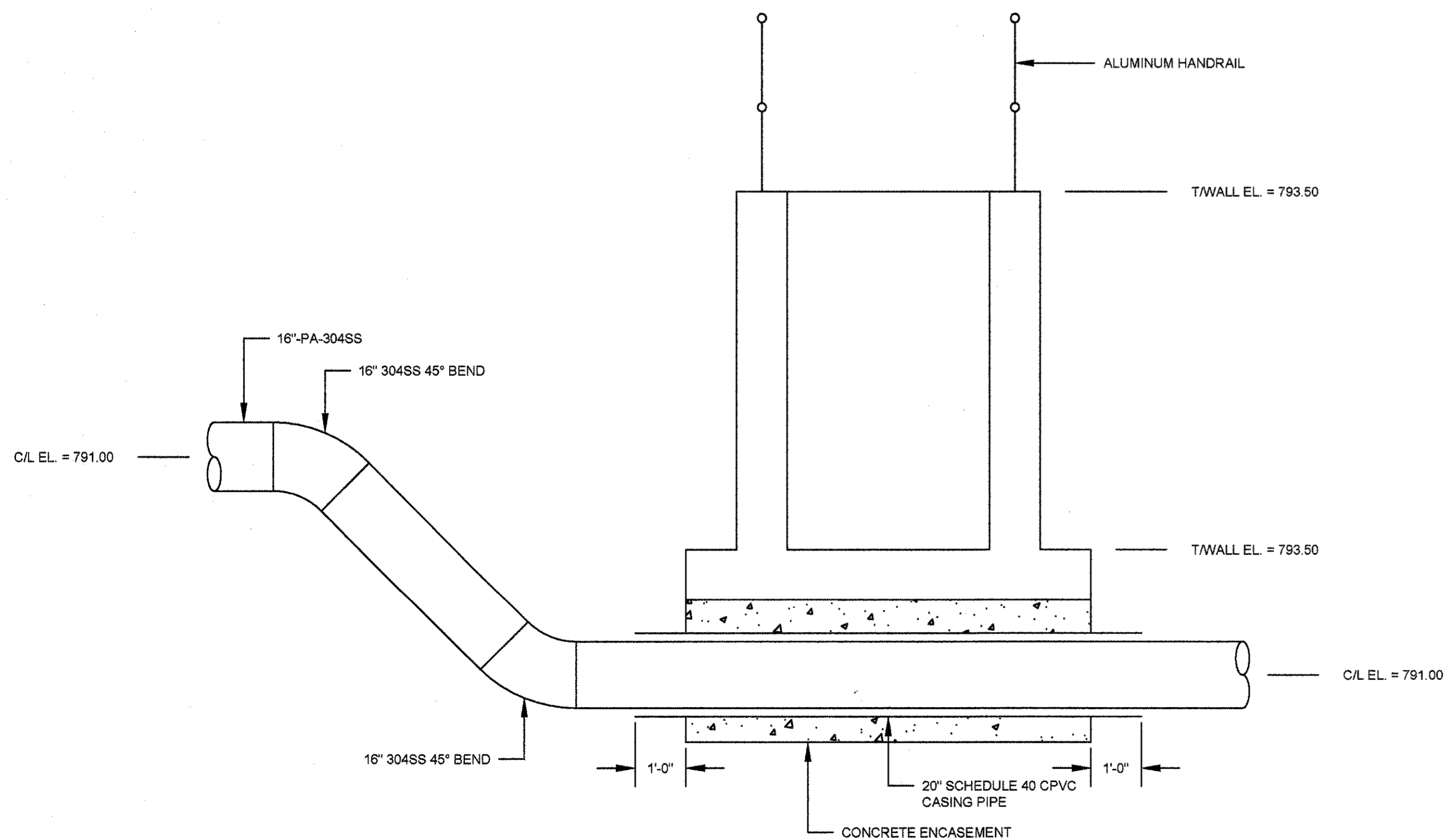
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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

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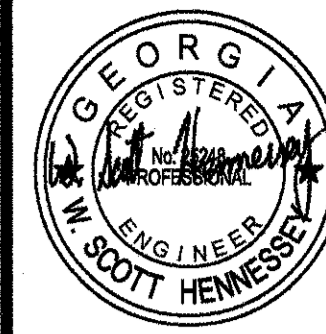
DSGN: WSH
DRWN: WSH
CHK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR MEMBRANE TANK
SECTIONS AND DETAILS 4

SHEET NO.
35-M-7



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

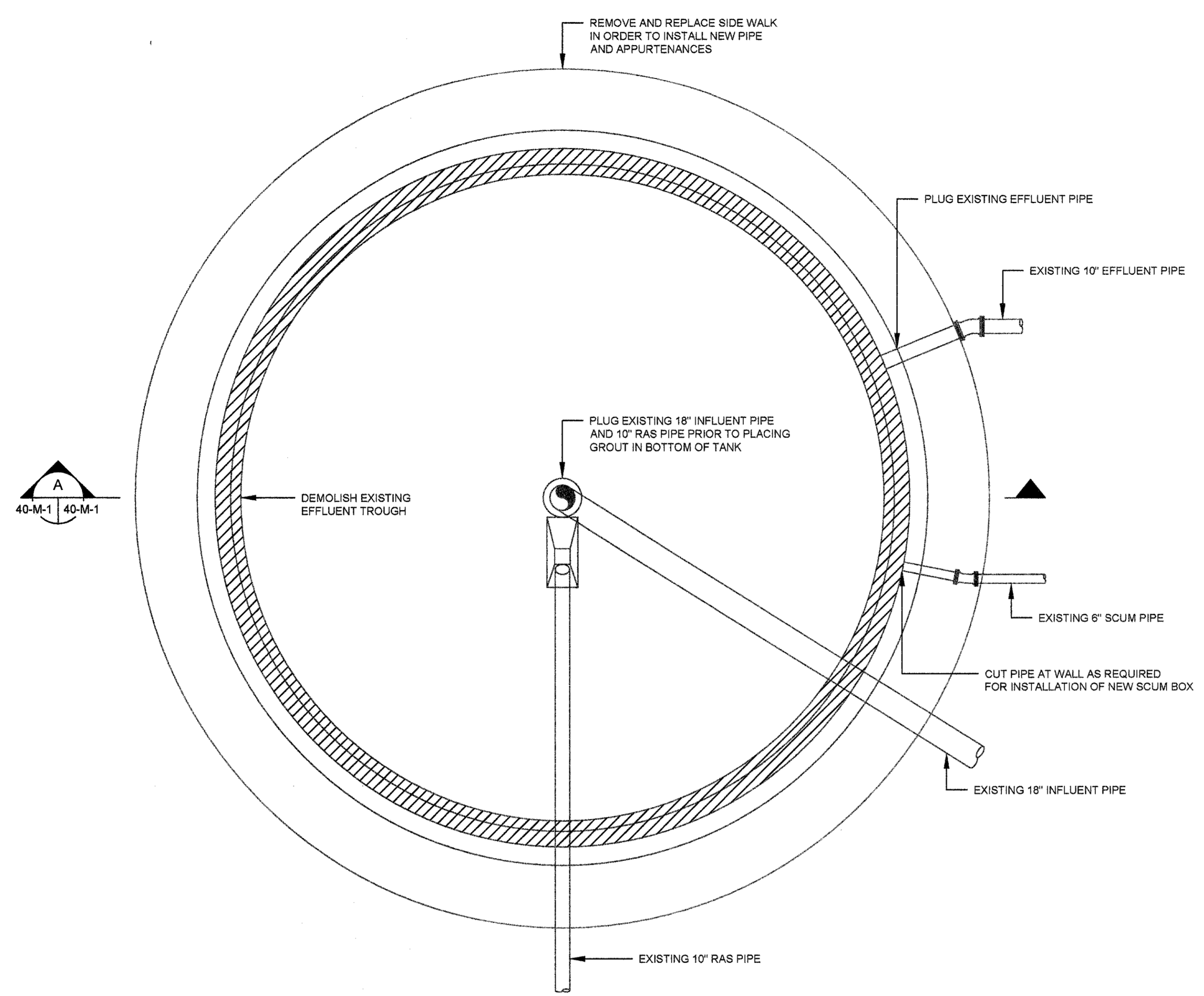


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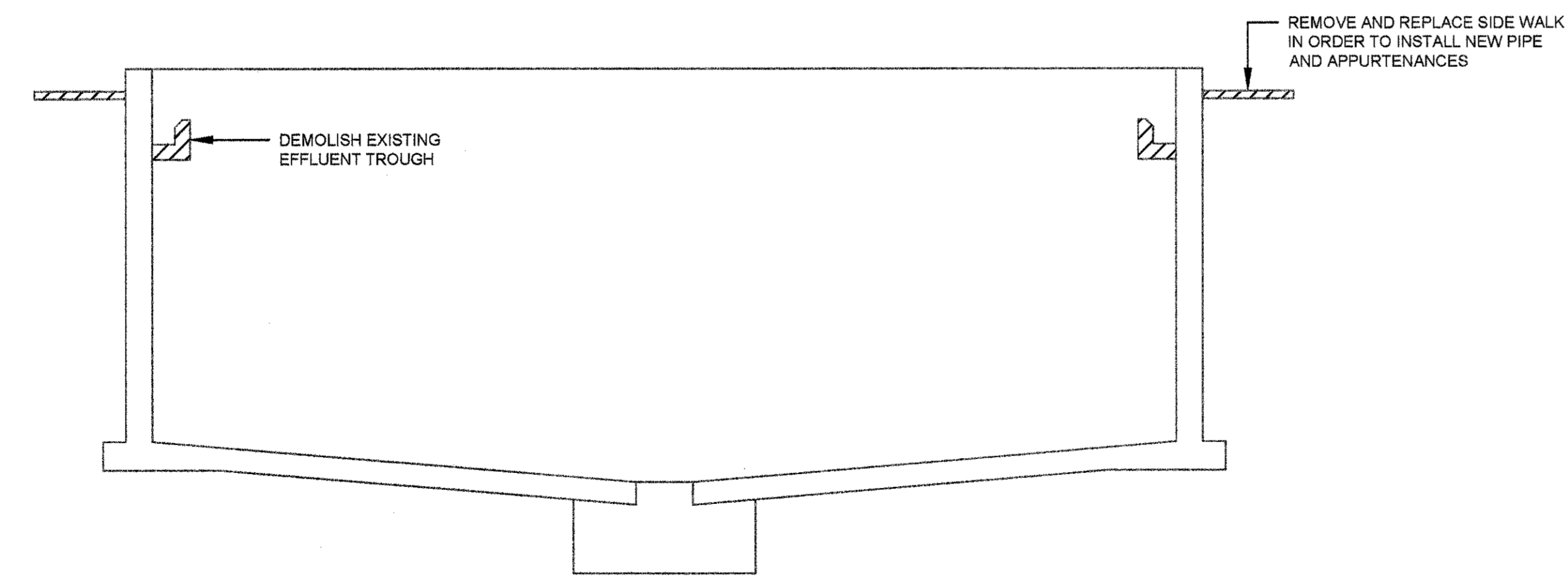
L:\Henry County W\A\IC\WRF - Design\DWG\Sheets\MIS-MBR De-Aeration Tank - Demo.dwg - 8/29/2016

NOTES:

1. CONTRACTOR SHALL REMOVE ALL MATERIAL FROM THE CLARIFIER AND DISPOSE IT IN A SANITARY LANDFILL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING ACCUMULATED RAIN WATER FROM CLARIFIER TANK. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED TO PUMP THE WATER TO THE EXISTING INFLUENT SPLITTER BOX. THE MAXIMUM PUMPING RATE SHALL BE 100 GPM. CONTRACTOR SHALL CLEAN THE CLARIFIER OF ALL MATERIAL AND DEBRIS AND PROPERLY DISPOSE OF ANY MATERIAL REMOVED FROM THE TANK.



EXISTING CLARIFIER NO. 3 DEMOLITION PLAN
SCALE: 3/8" = 1'-0"



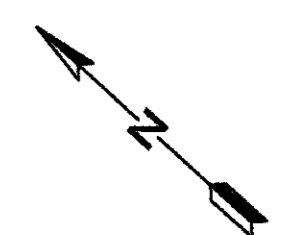
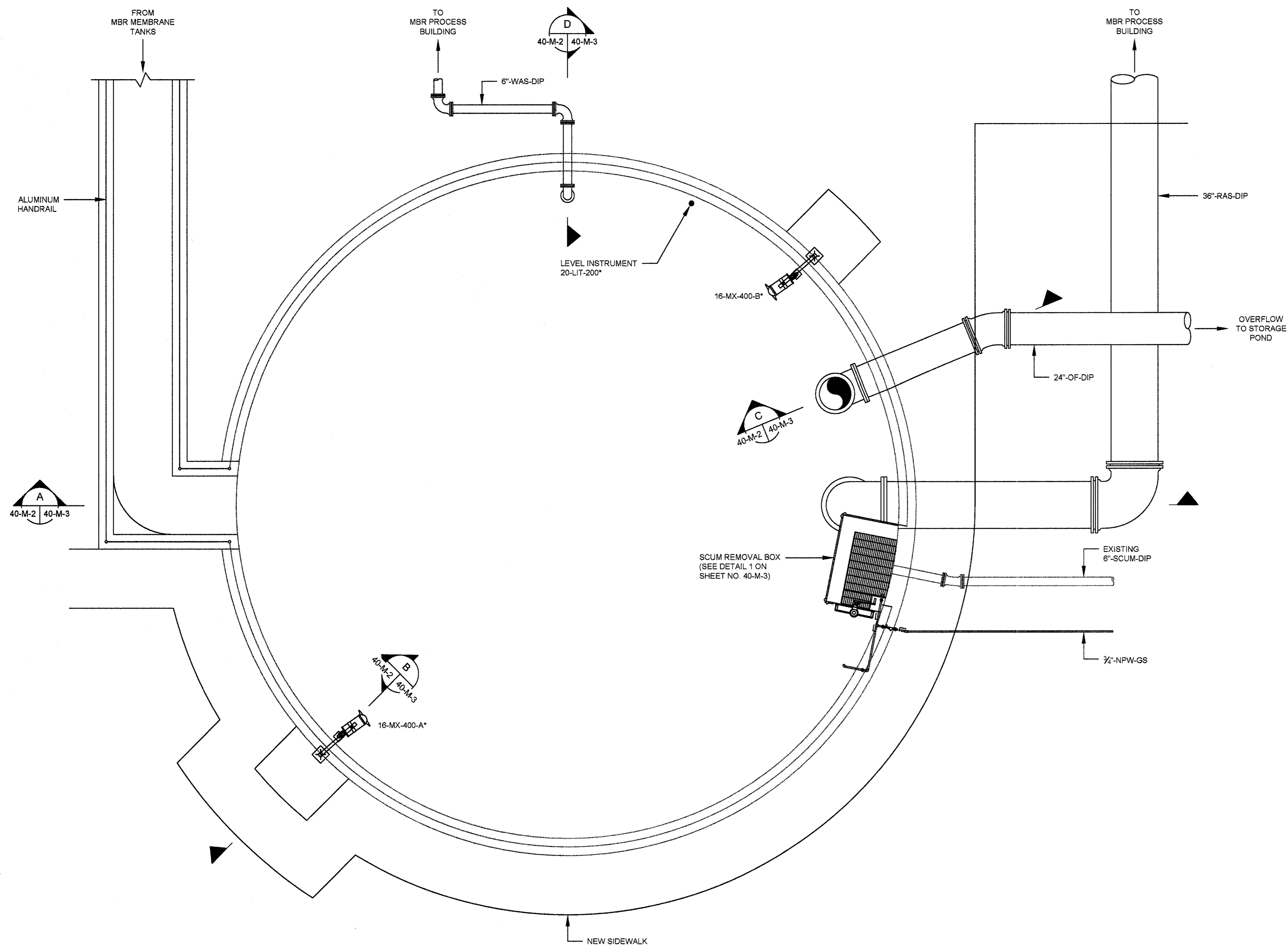
SECTION
SCALE: 3/8" = 1'-0"
A
40-M-1 40-M-1

PROJECT NUMBER:	DATE:
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DSGN: WSH	BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DRWN: WSH	
CHK: WSH	

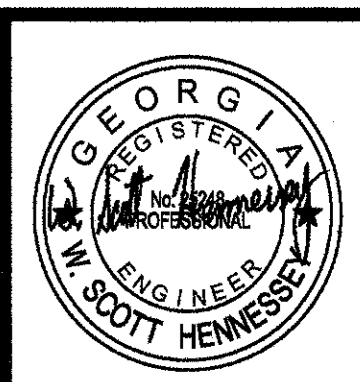
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SECONDARY CLARIFIER
DEMOLITION PLAN

SHEET NO.
40-M-1



NOTES:

1. EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
2. PRIOR TO PLACING GROUT FILL IN BOTTOM OF TANK, CONTRACTOR SHALL PLUG EXISTING INFLUENT LINE AND EXISTING RAS LINE.



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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR DE-AERATION TANK
 PLAN

SHEET NO.
 40-M-2

DE-AERATION TANK PLAN
 SCALE: 1/4" = 1'-0"



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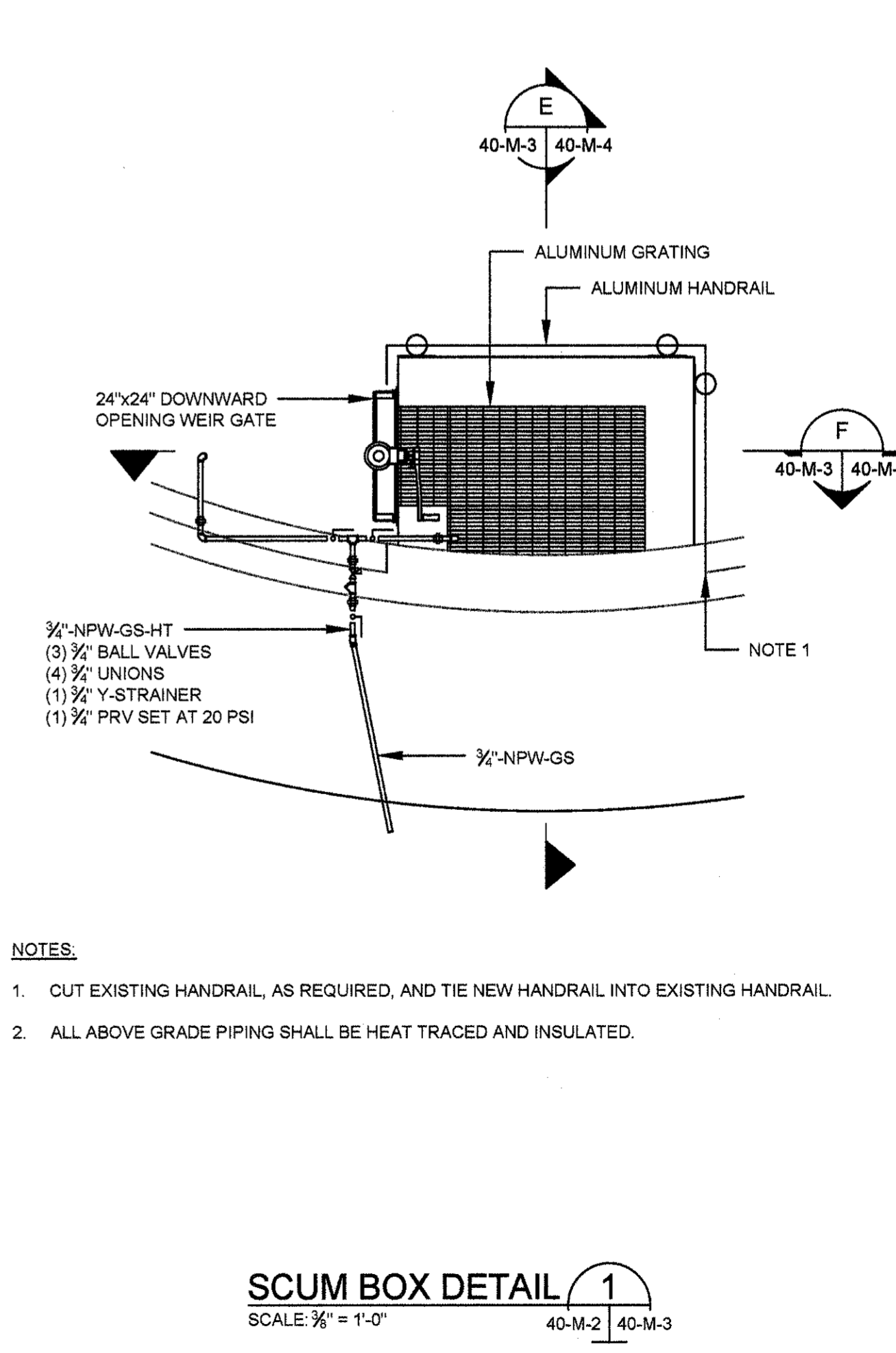
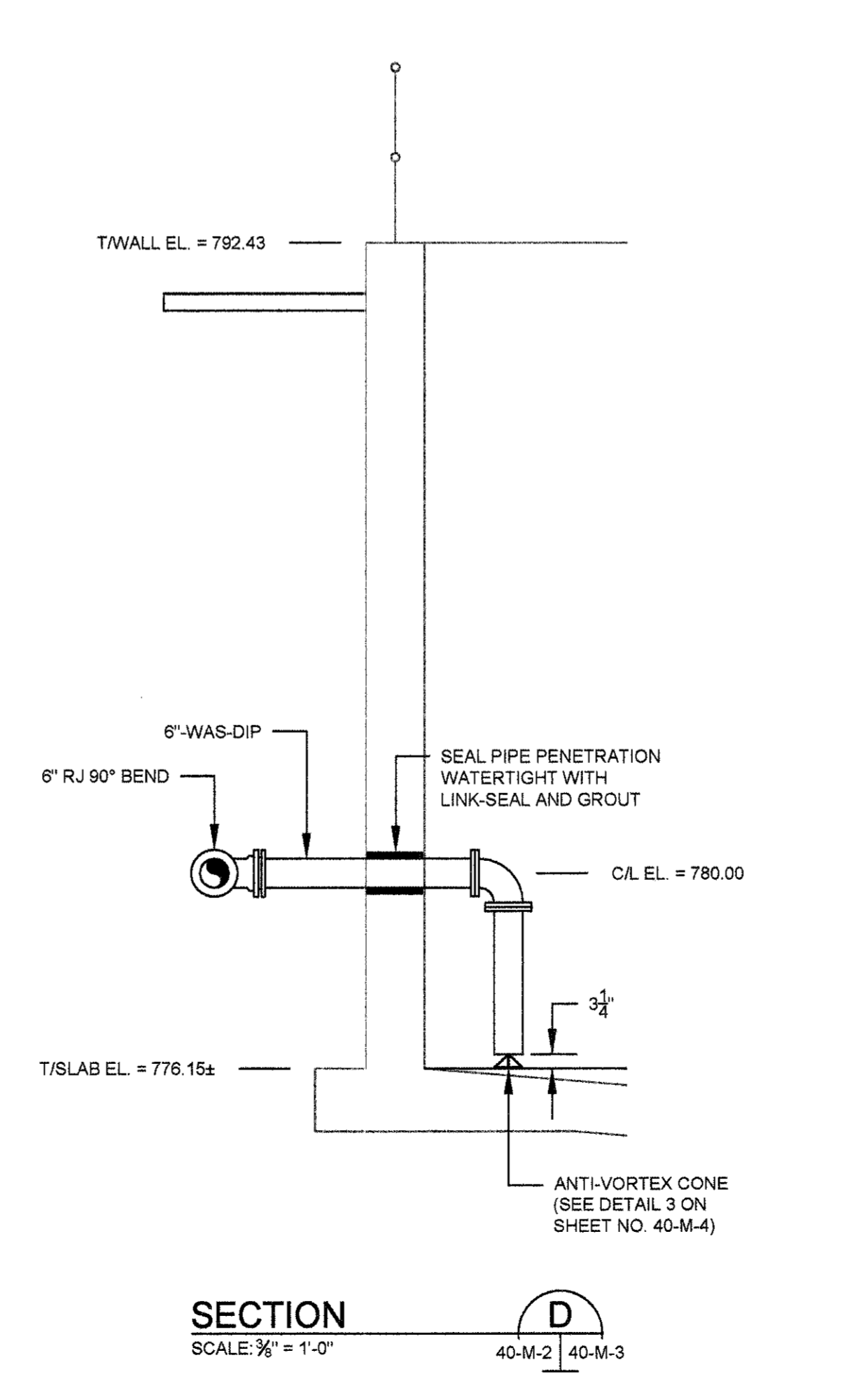
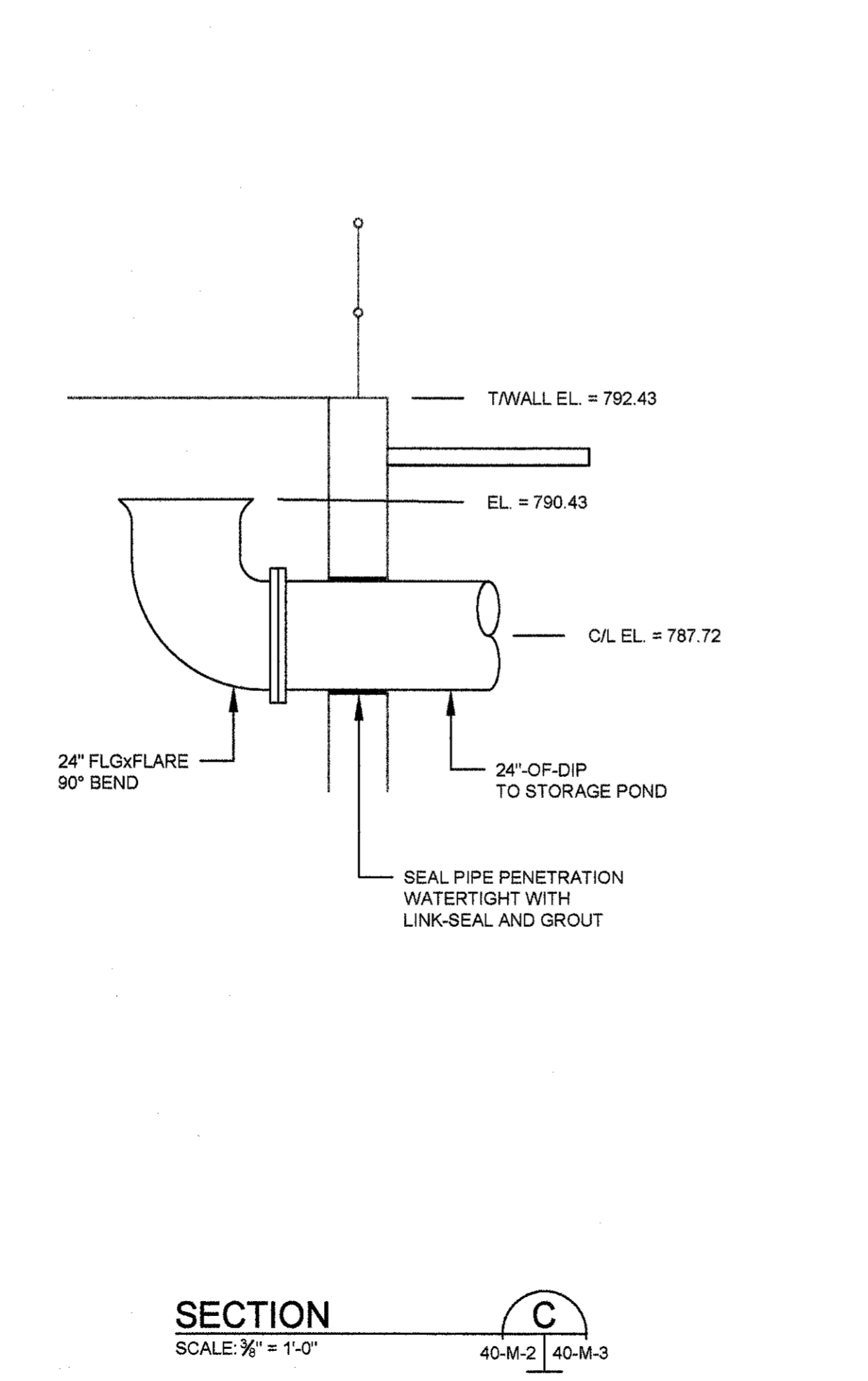
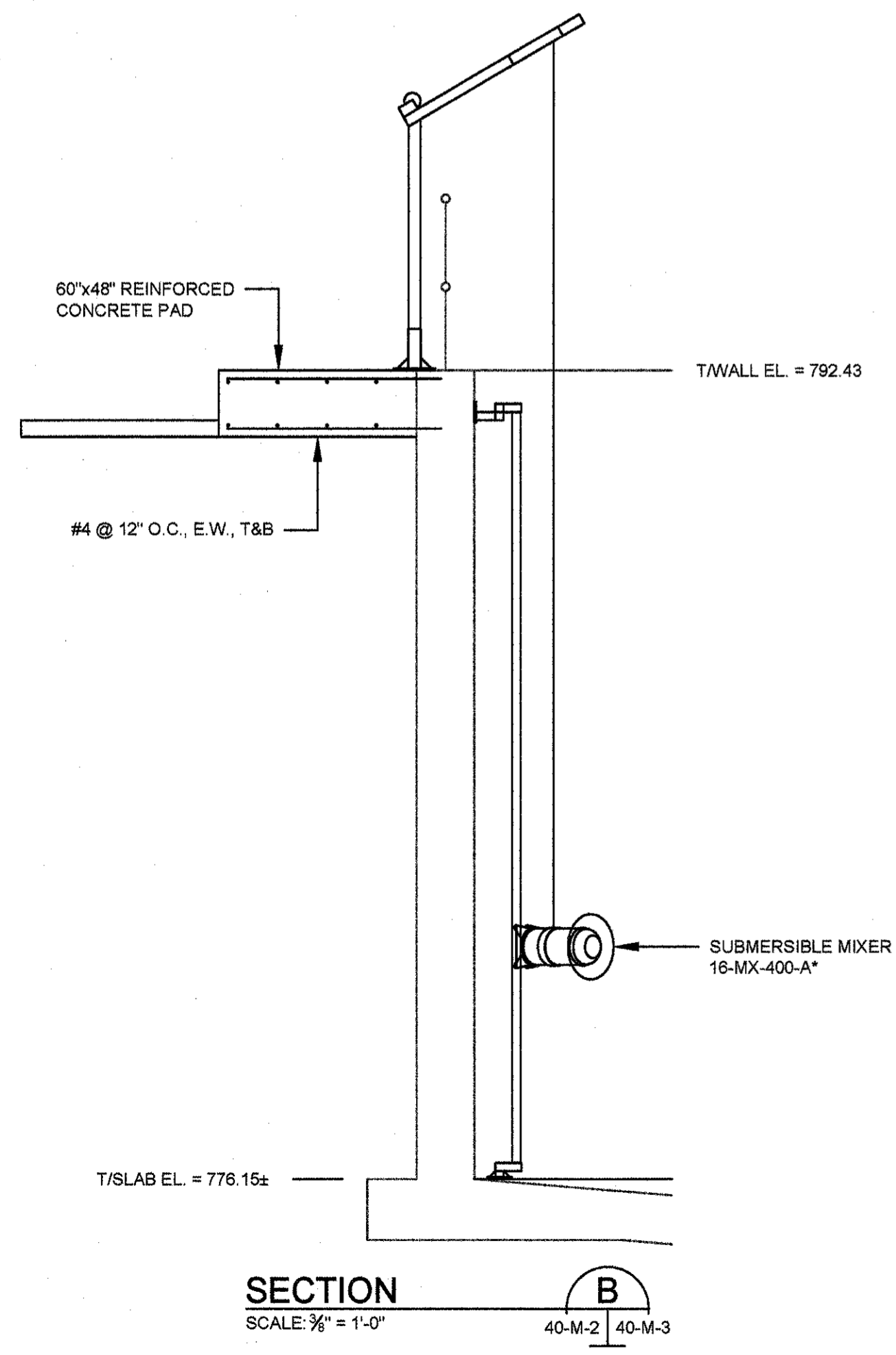
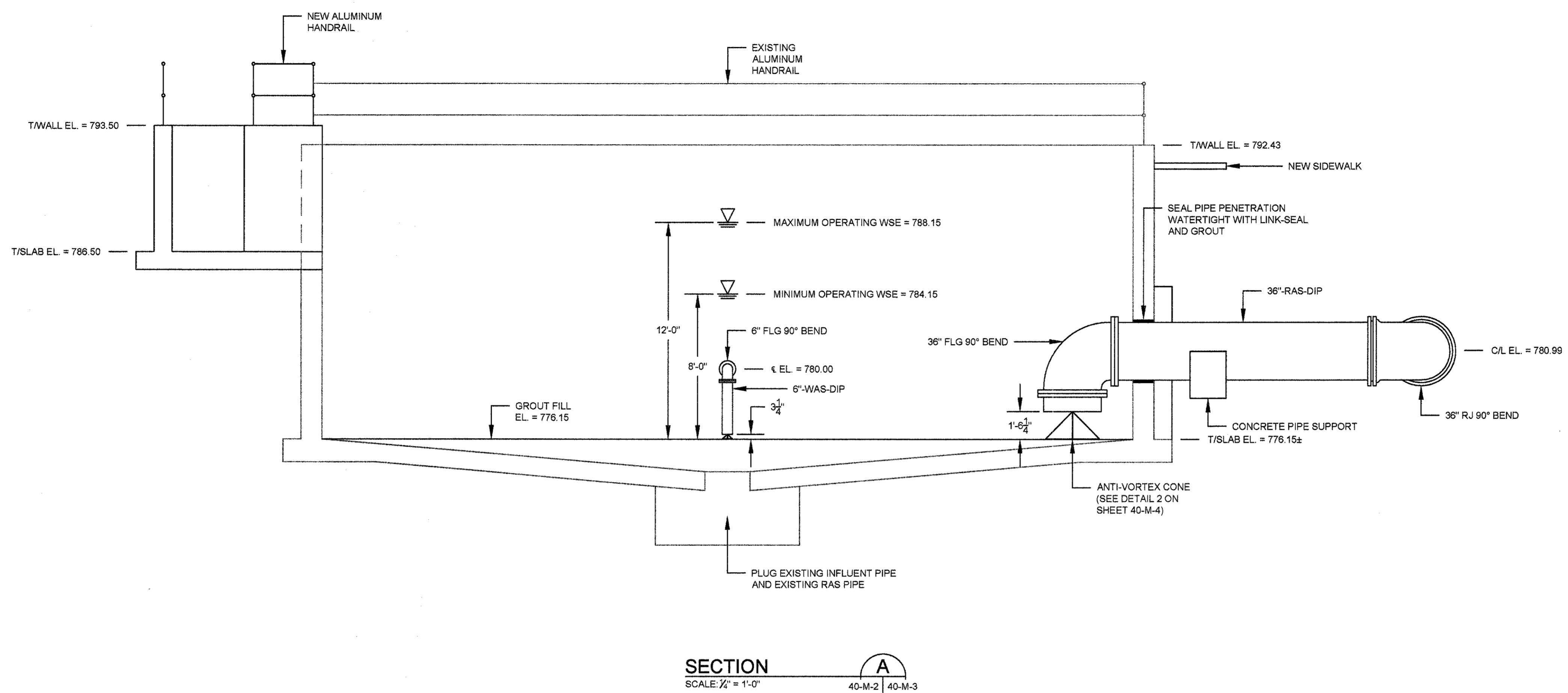
PROJECT NUMBER:	DATE:
	AUGUST 2016
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DSGN: WSH
 DRWN: WSH
 CHCK: WSH

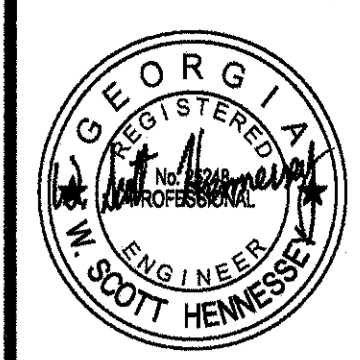
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR DE-AERATION TANK
 SECTIONS AND DETAILS 1

SHEET NO.
 40-M-3



- NOTES:
- CUT EXISTING HANDRAIL, AS REQUIRED, AND TIE THE NEW HANDRAIL INTO EXISTING HANDRAIL.
 - ALL ABOVE GRADE PIPING SHALL BE HEAT TRACED AND INSULATED.



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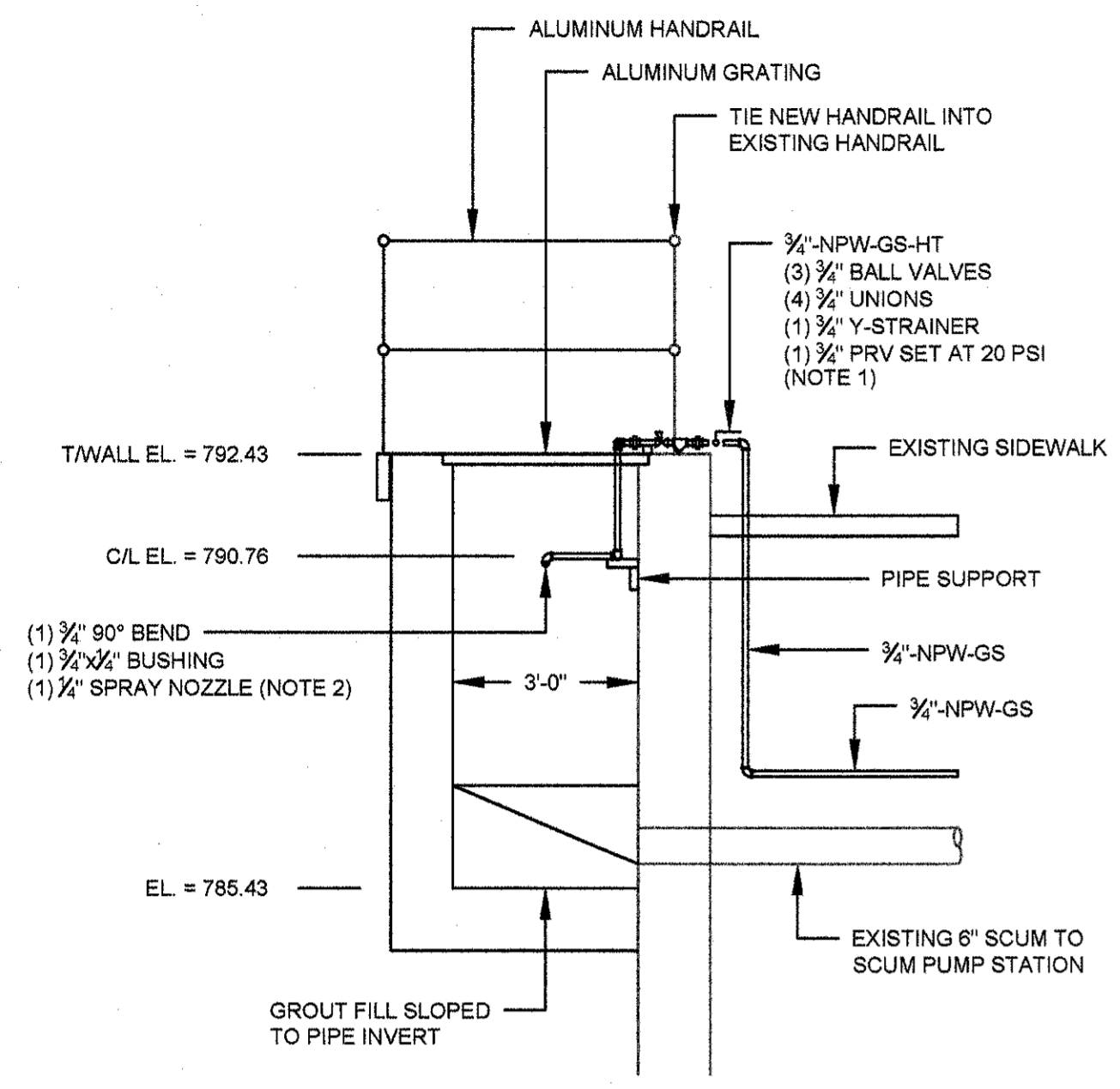
DSGN: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

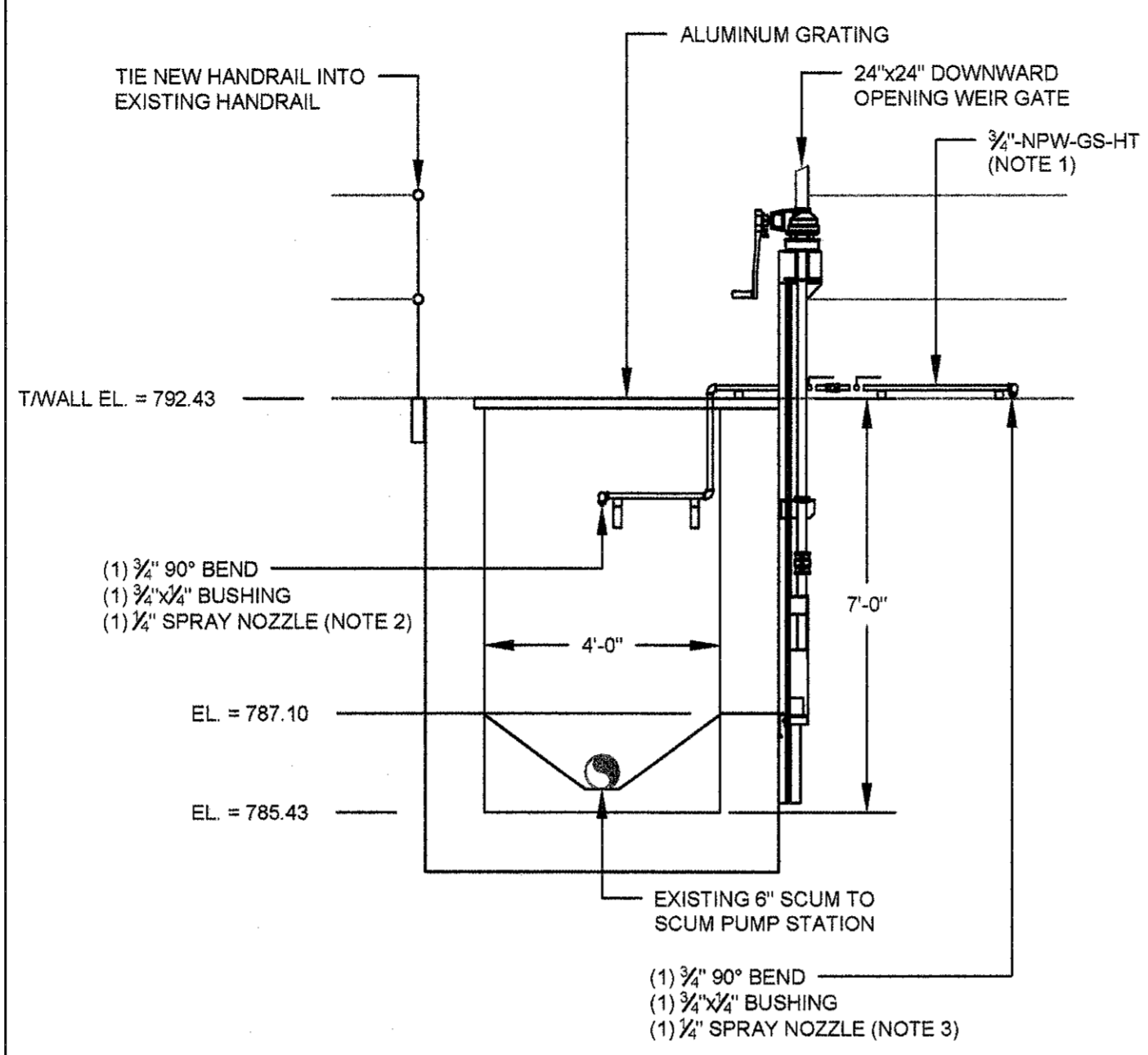
MBR DE-AERATION TANK
SECTIONS AND DETAILS 2

SHEET NO.
40-M-4



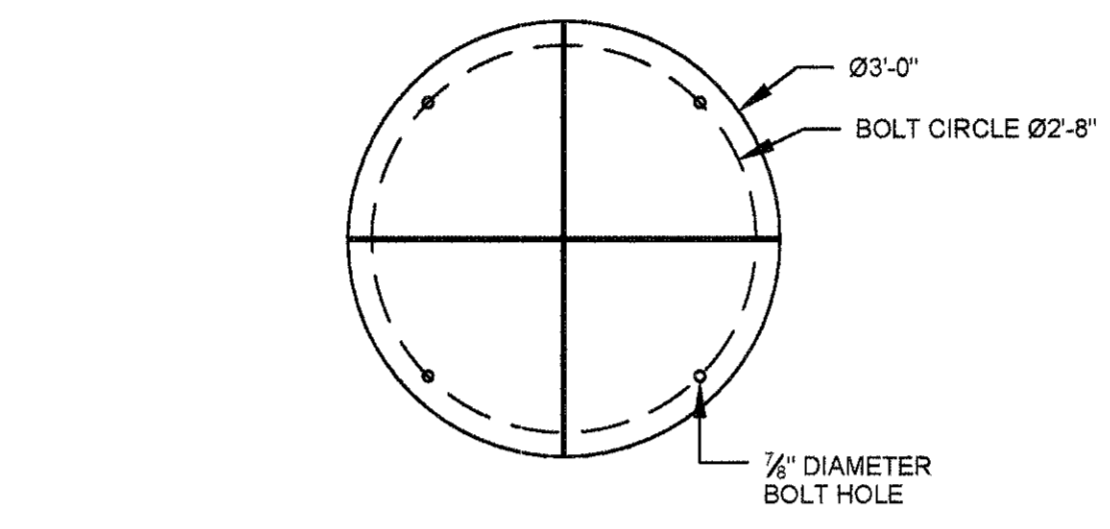
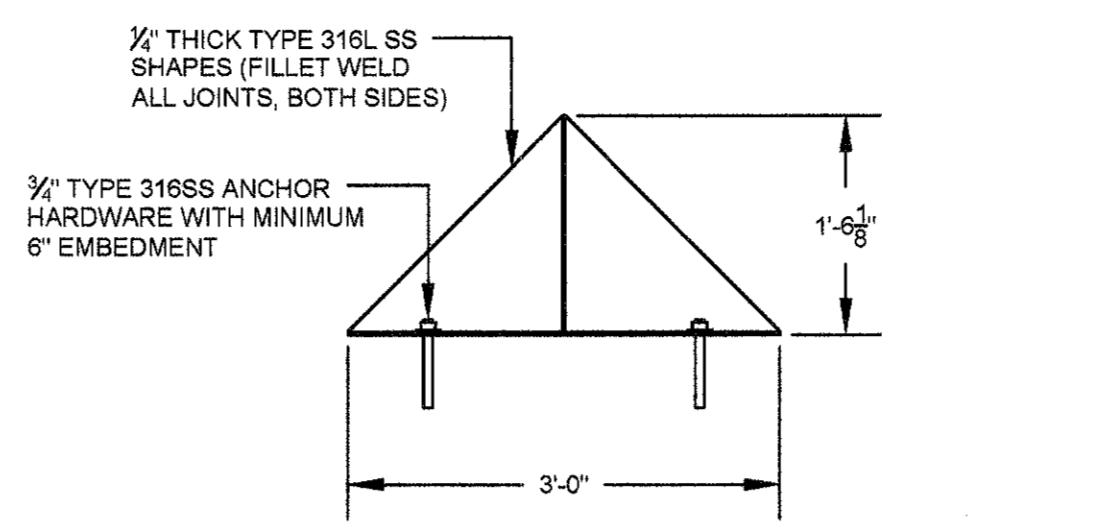
- NOTES:
- ALL ABOVE GRADE PIPING SHALL BE HEAT TRACED AND INSULATED.
 - BRASS SPRAY NOZZLE SHALL BE McMASTER-CARR NO. 32885K15 WITH FULL CONE SPRAY PATTERN, 120° SPRAY ANGLE, 0.10" DIAMETER ORIFICE, AND 1 GPM FLOW RATE AT 20 PSI, OR EQUAL.

SECTION **E**
SCALE: 3/8" = 1'-0"
40-M-3 | 40-M-4

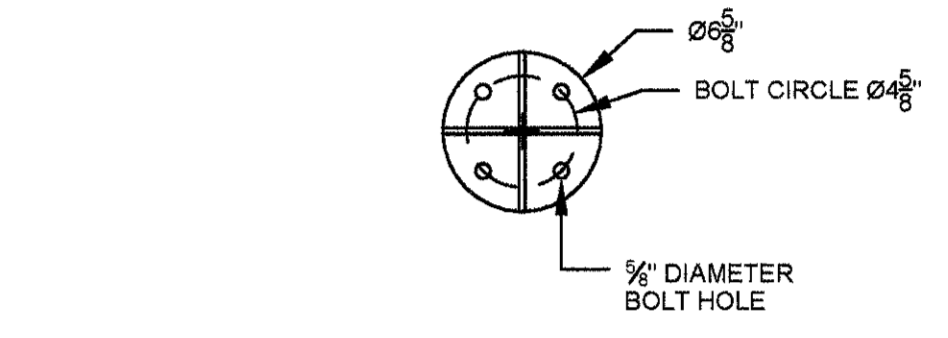
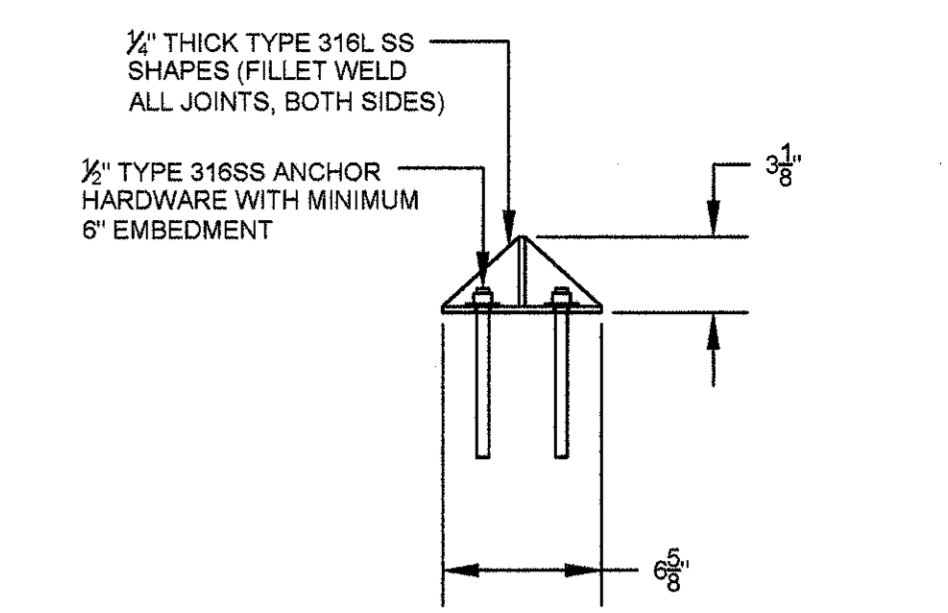


- NOTES:
- ALL ABOVE GRADE PIPING SHALL BE HEAT TRACED AND INSULATED.
 - BRASS SPRAY NOZZLE SHALL BE McMASTER-CARR NO. 32885K15 WITH FULL CONE SPRAY PATTERN, 120° SPRAY ANGLE, 0.10" DIAMETER ORIFICE, AND 1 GPM FLOW RATE AT 20 PSI, OR EQUAL.
 - BRASS SPRAY NOZZLE SHALL BE McMASTER-CARR NO. 3404K14 WITH FLAT SPRAY PATTERN, 120° SPRAY ANGLE, 0.09" DIAMETER ORIFICE, AND 1 GPM FLOW RATE AT 20 PSI, OR EQUAL.

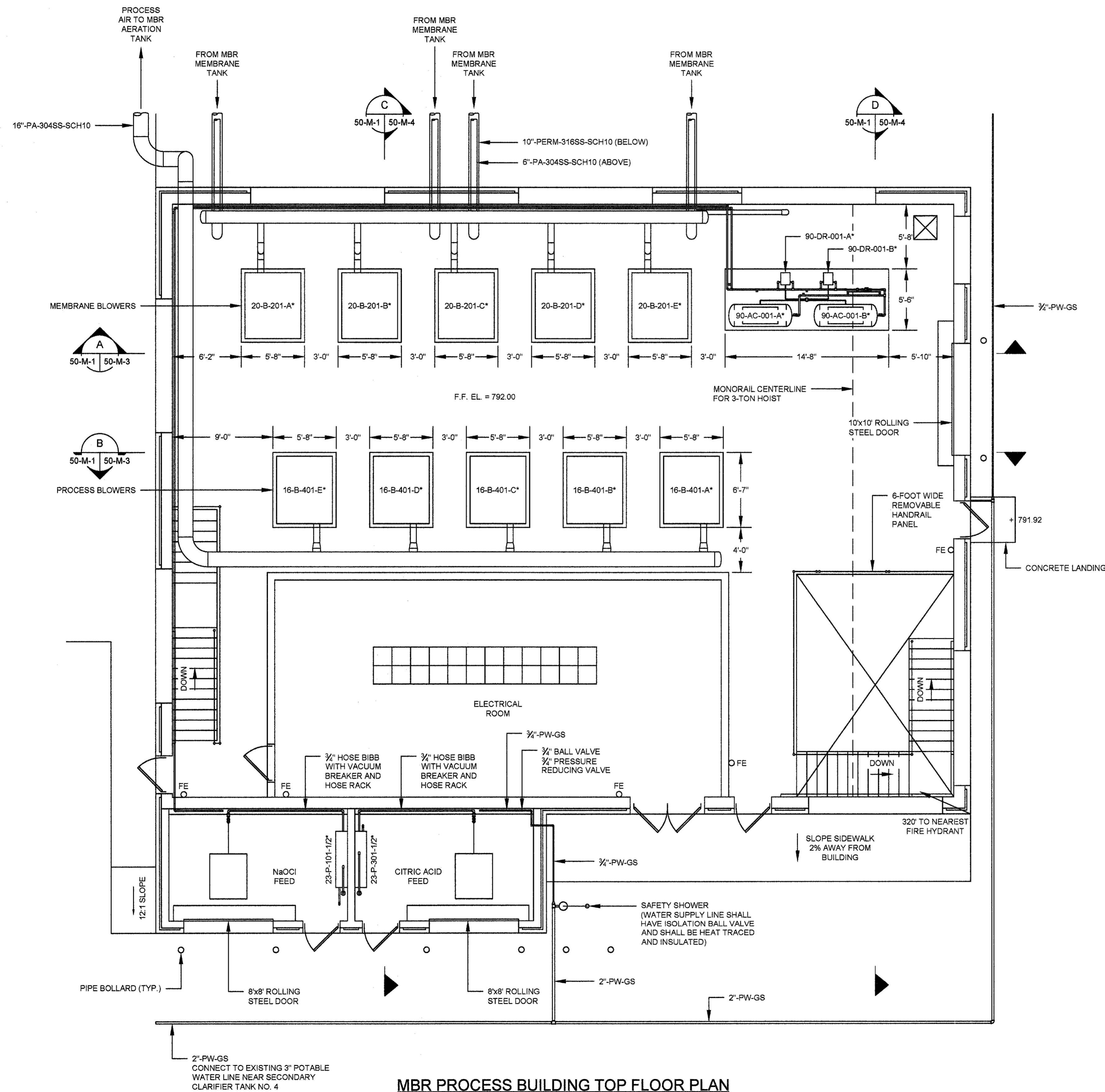
SECTION **F**
SCALE: 3/8" = 1'-0"
40-M-3 | 40-M-4



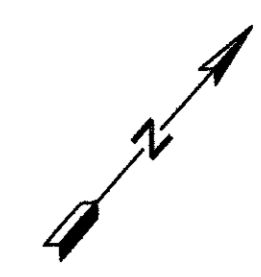
RAS ANTI-VORTEX CONE DETAIL **2**
SCALE: 3/4" = 1'-0"
40-M-2 | 40-M-4



WAS ANTI-VORTEX CONE DETAIL **3**
SCALE: 1-1/2" = 1'-0"
40-M-2 | 40-M-4

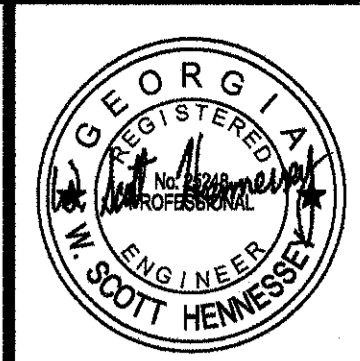


MBR PROCESS BUILDING TOP FLOOR PLAN
SCALE: 3/8" = 1'-0"



NOTES:

1. EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
2. ALL PROCESS AIR PIPE AND FITTINGS NOT IN CONTACT WITH LIQUIDS SHALL BE TYPE 304, SCHEDULE 10S STAINLESS STEEL. ALL PROCESS AIR PIPE AND FITTINGS IN CONTACT WITH LIQUIDS SHALL BE TYPE 316, SCHEDULE 10S STAINLESS STEEL.
3. ALL COMPRESSED AIR PIPE, FITTINGS, AND VALVES SHALL BE TYPE 304, SCHEDULE 40 STAINLESS STEEL.
4. ALL REQUIRED PIPE SUPPORTS ARE NOT SHOWN ON THESE DRAWINGS. PROVIDE PIPE SUPPORTS AT THE SPACING REQUIRED FOR THE PIPE MATERIAL BEING SUPPORTED AS RECOMMENDED BY THE PIPE MANUFACTURER. SUPPORT PIPE AT ALL BENDS.



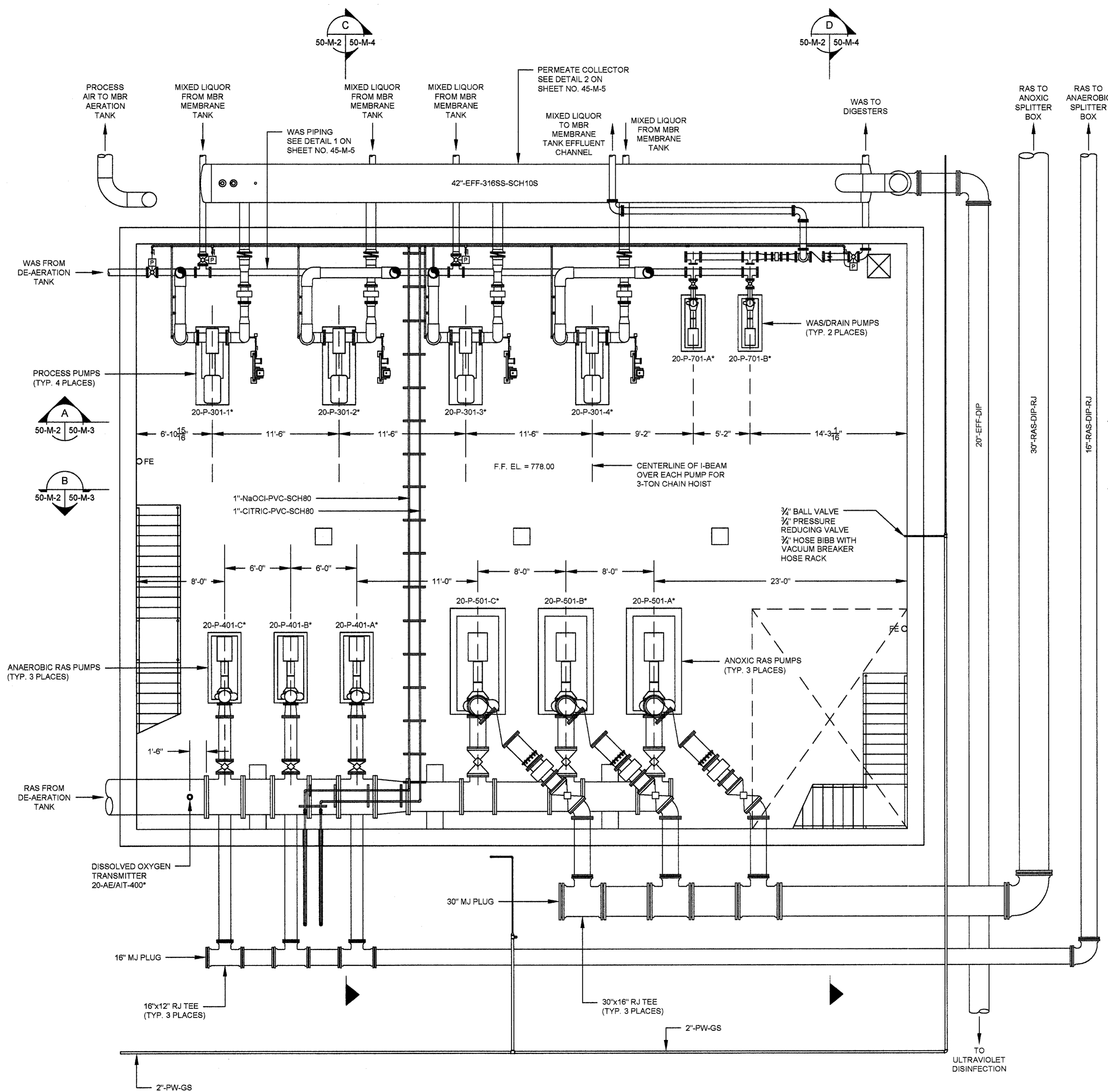
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
PLAN 1

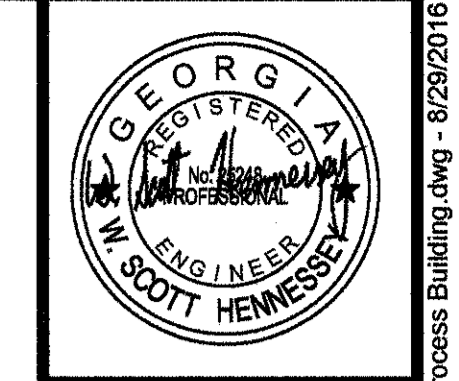
SHEET NO.
45-M-1



MBR PROCESS BUILDING BOTTOM FLOOR PLAN
SCALE: 3/8" = 1'-0"

NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
- ALL PERMEATE PIPING SHALL BE TYPE 316, SCHEDULE 10S STAINLESS STEEL.
- ALL CHEMICAL PIPING SHALL BE SCHEDULE 80 PVC.
- ALL VALVES USED ON SODIUM HYPOCHLORITE PIPING SHALL BE VENTED.
- ALL REQUIRED PIPE SUPPORTS ARE NOT SHOWN ON THESE DRAWINGS. PROVIDE PIPE SUPPORTS AT THE SPACING REQUIRED FOR THE PIPE MATERIAL BEING SUPPORTED AS RECOMMENDED BY THE PIPE MANUFACTURER. SUPPORT PIPE AT ALL BENDS.



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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
PLAN 2

SHEET NO.
45-M-2

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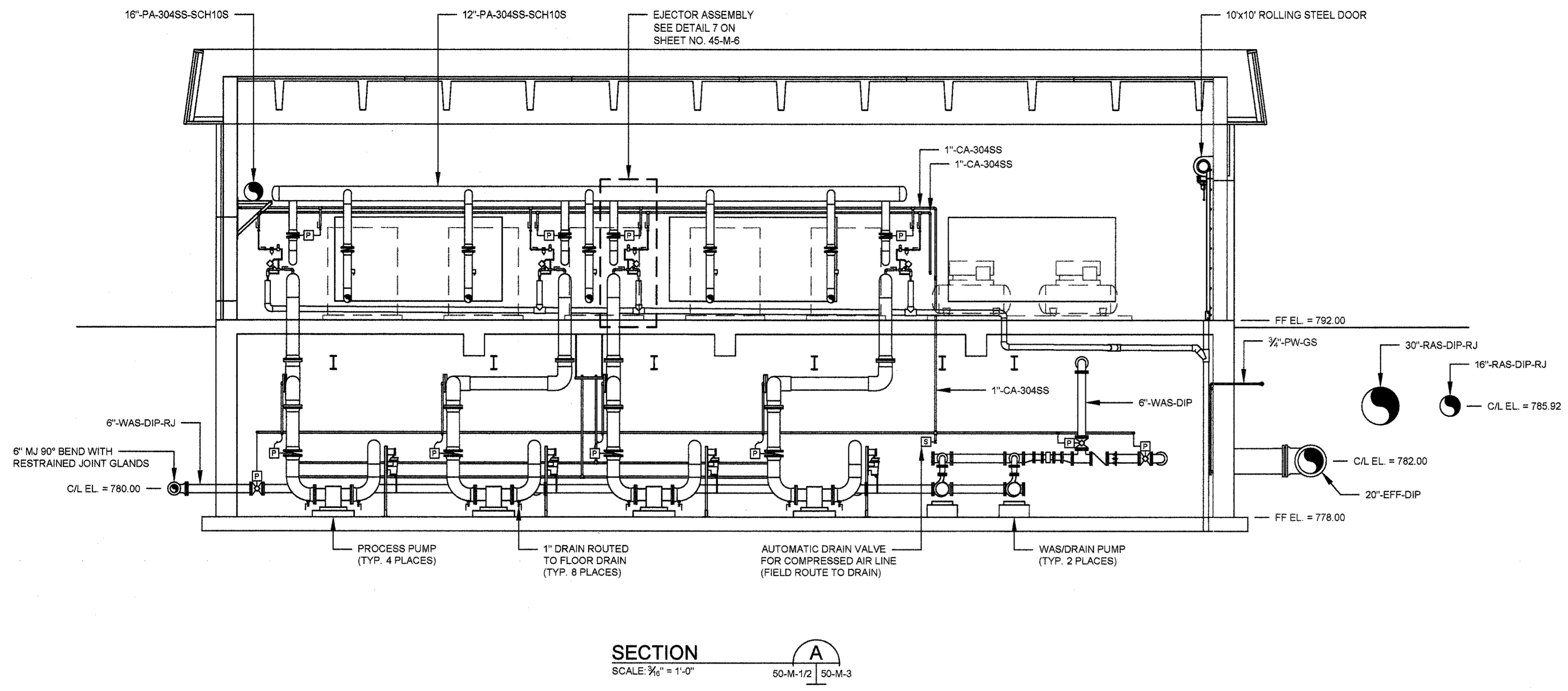
PROJECT NUMBER:	DATE:	REVISION
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DSGN: WSH
 DRWN: WSH
 CHCK: WSH

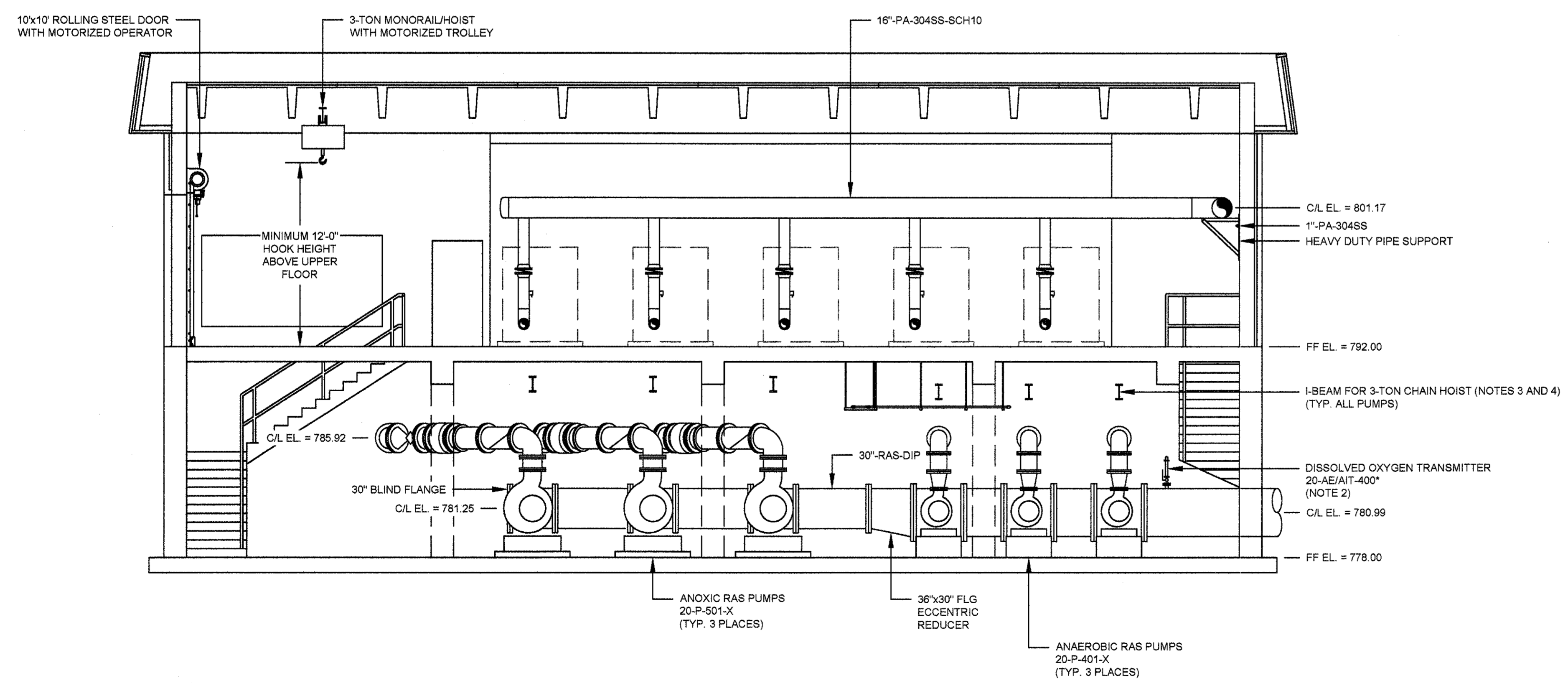
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 SECTIONS 1

SHEET NO.
 45-M-3



SECTION A
 SCALE: 3/16" = 1'-0"
 50-M-1/2 | 50-M-3

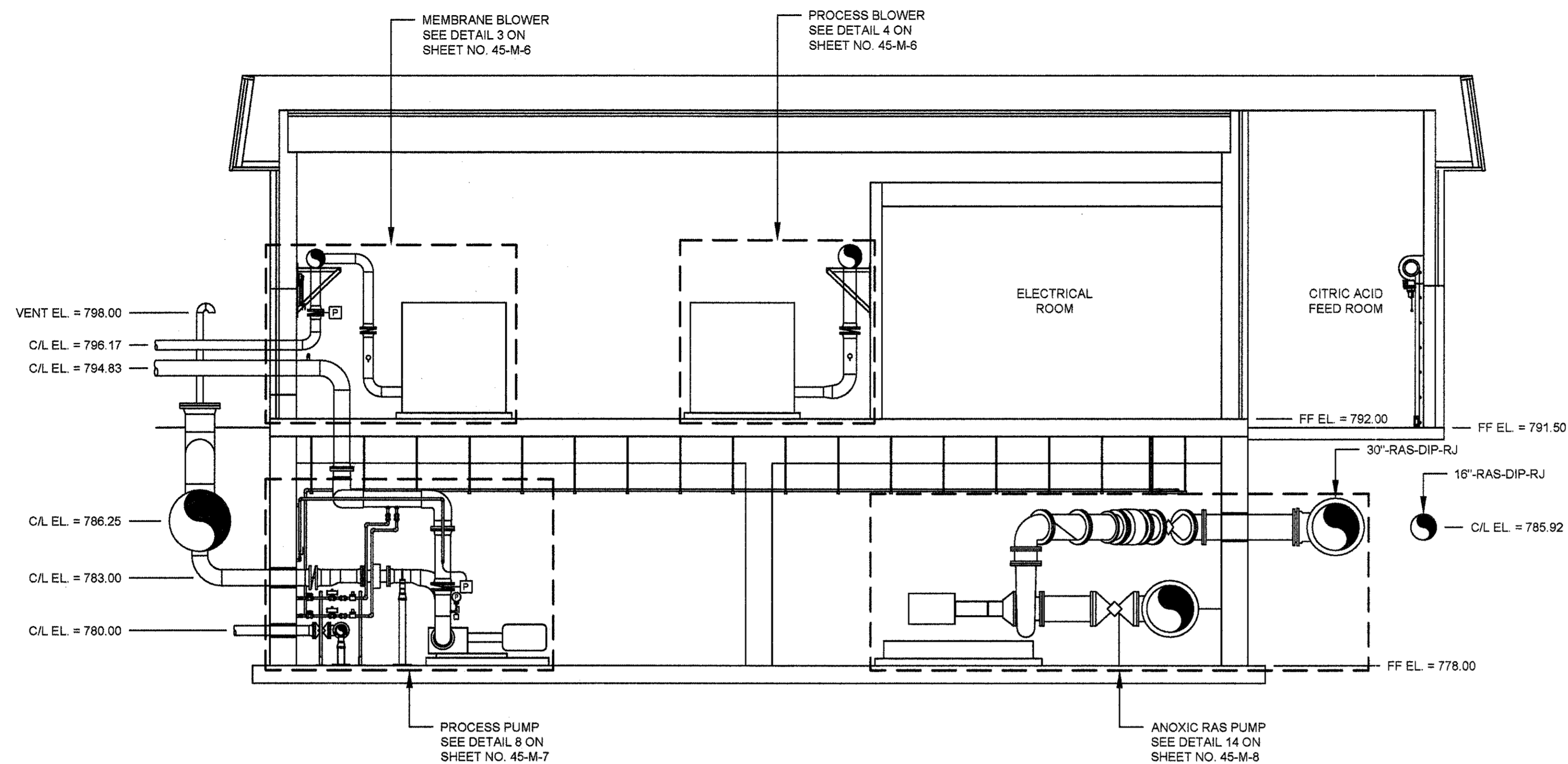


SECTION B
 SCALE: 3/16" = 1'-0"
 50-M-1/2 | 50-M-3

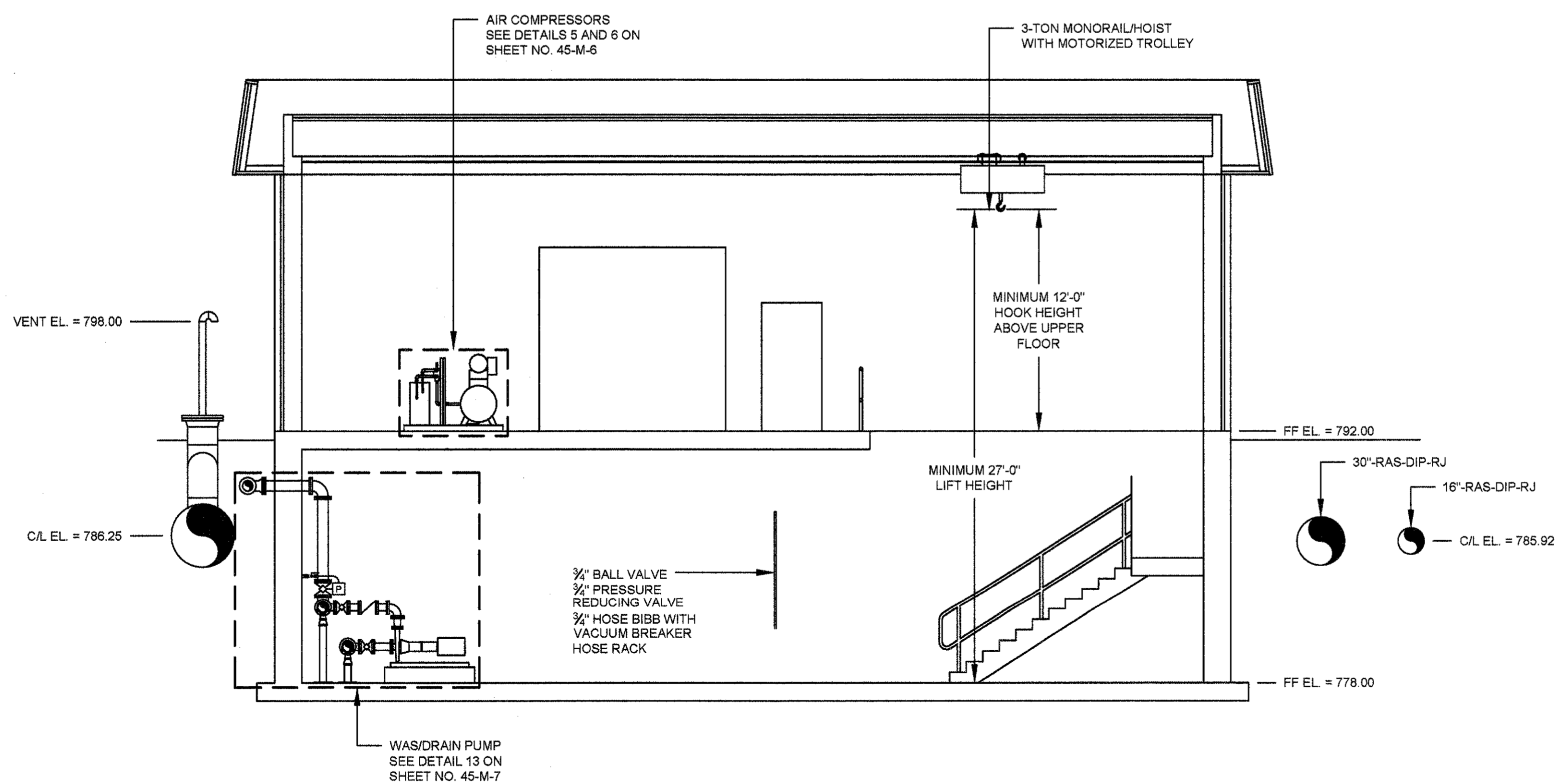
NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
- PROVIDE 2" OUTLET WITH 150 LB. FLANGE ON TOP DEAD CENTER OF 36" RAS PIPE FOR INSTALLATION OF DISSOLVED OXYGEN TRANSMITTER.
- PROVIDE ONE (1) 3-TON CHAIN HOIST WITH GEARED TROLLEY THAT CAN BE MOVED FROM I-BEAM TO I-BEAM, AS REQUIRED, TO LIFT PUMP COMPONENTS. CHAIN HOIST SHALL BE HARRINGTON, OR EQUAL. CHAIN HOIST SHALL BE LUG MOUNTED TO TROLLEY AND SHALL HAVE A MINIMUM LIFTING HEIGHT OF 10-FEET.
- I-BEAM SHALL BE CENTERED OVER PUMP AND MOTOR.
- ALL REQUIRED PIPE SUPPORTS ARE NOT SHOWN ON THESE DRAWINGS. PROVIDE PIPE SUPPORTS AT THE SPACING REQUIRED FOR THE PIPE MATERIAL BEING SUPPORTED AS RECOMMENDED BY THE PIPE MANUFACTURER. SUPPORT PIPE AT ALL BENDS.

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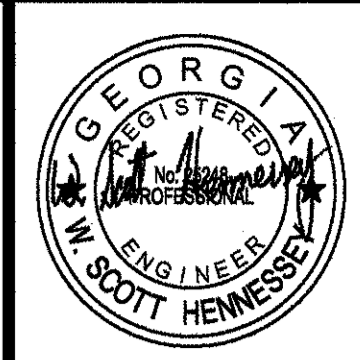
SECTION C
SCALE: 3/16" = 1'-0"
50-M-1/2 | 50-M-4



SECTION D
SCALE: 3/16" = 1'-0"
50-M-1/2 | 50-M-4

NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
- ALL REQUIRED PIPE SUPPORTS ARE NOT SHOWN ON THESE DRAWINGS. PROVIDE PIPE SUPPORTS AT THE SPACING REQUIRED FOR THE PIPE MATERIAL BEING SUPPORTED AS RECOMMENDED BY THE PIPE MANUFACTURER. SUPPORT PIPE AT ALL BENDS.



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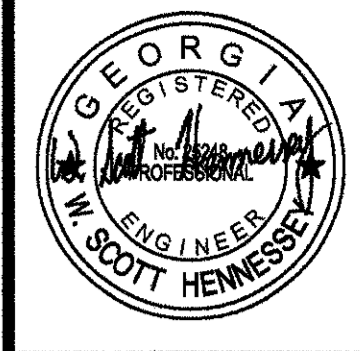
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		
		Δ	

DSGN: WSH
DRWN: WSH
CHK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
SECTIONS 2

SHEET NO.
45-M-4



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(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

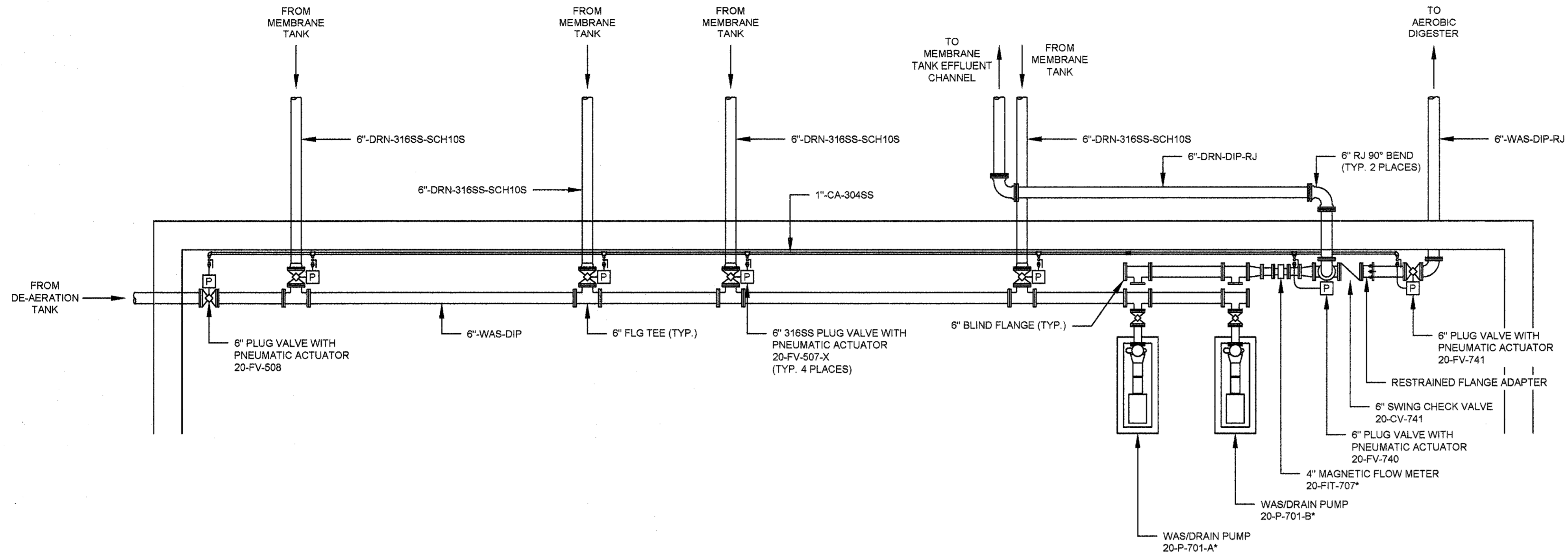
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BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
DETAILS 1

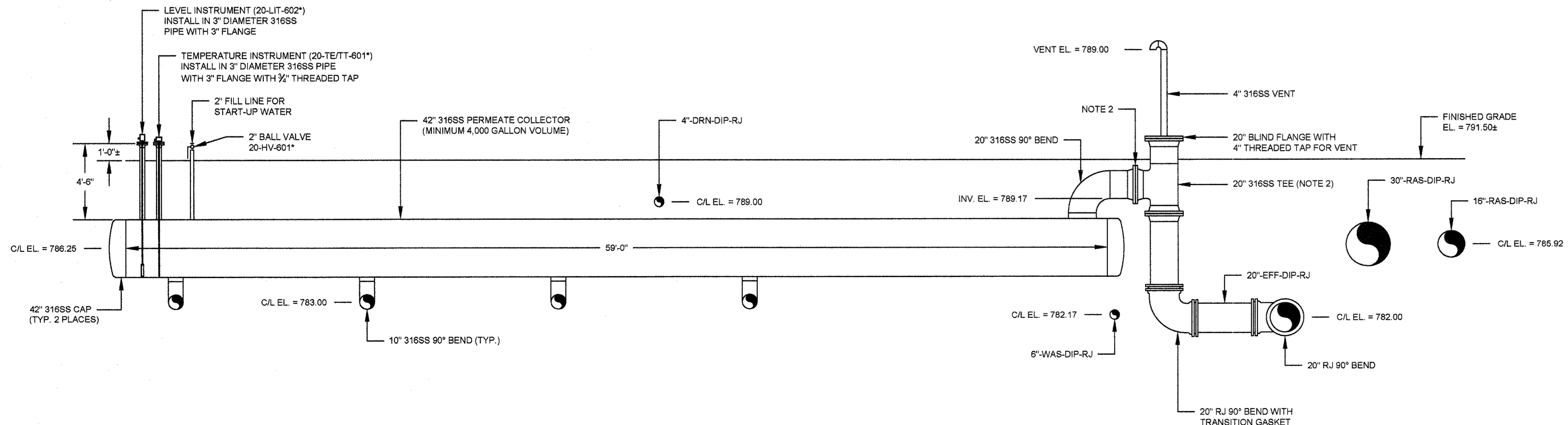
SHEET NO.
45-M-5

NOTES:

- EQUIPMENT THAT IS DENOTED WITH A * IS PROVIDED IN GE WATER & PROCESS TECHNOLOGIES SCOPE OF SUPPLY. ALL OTHER EQUIPMENT AND MATERIALS ARE TO BE PROVIDED BY THE CONTRACTOR.
- PRIOR TO INSTALLING THE VENT AND TEE ON THE PERMEATE COLLECTOR DISCHARGE, CONTRACTOR SHALL INSTALL TEMPORARY 12-INCH DIAMETER HDPE PIPING AND ROUTE IT TO THE MBR SPLITTER BOX. THIS TEMPORARY PIPING WILL BE USED TO START UP THE NEW MBR SYSTEM. AFTER THE MBR SYSTEM IS TESTED AND CERTIFIED FOR OPERATION, CONTRACTOR SHALL REMOVE TEMPORARY PIPING AND INSTALL VENT TEE.



WAS/DRAIN PIPING DETAIL 1
SCALE: 1/2" = 1'-0"

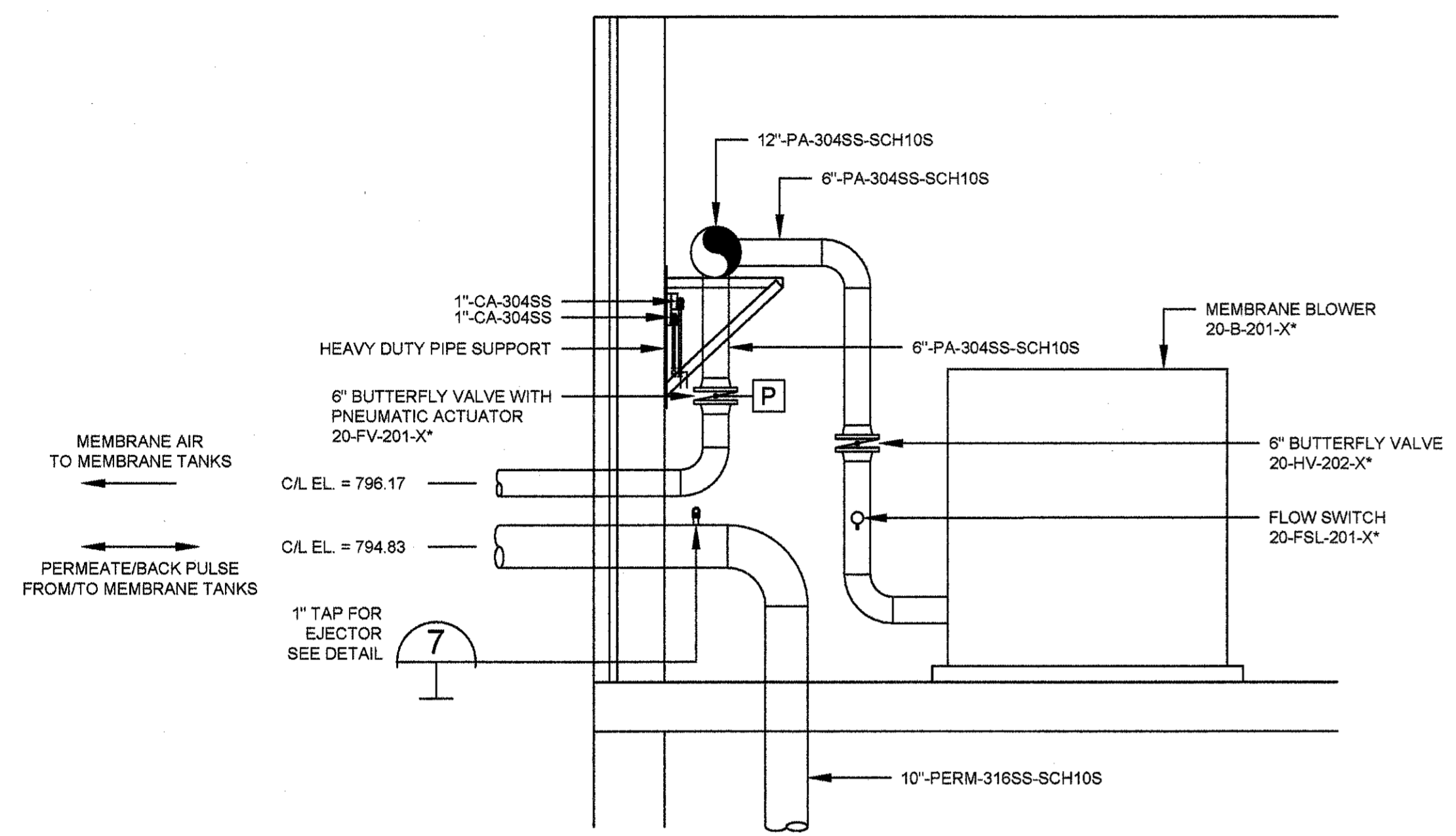


PERMEATE COLLECTOR DETAIL 2
SCALE: 1/2" = 1'-0"



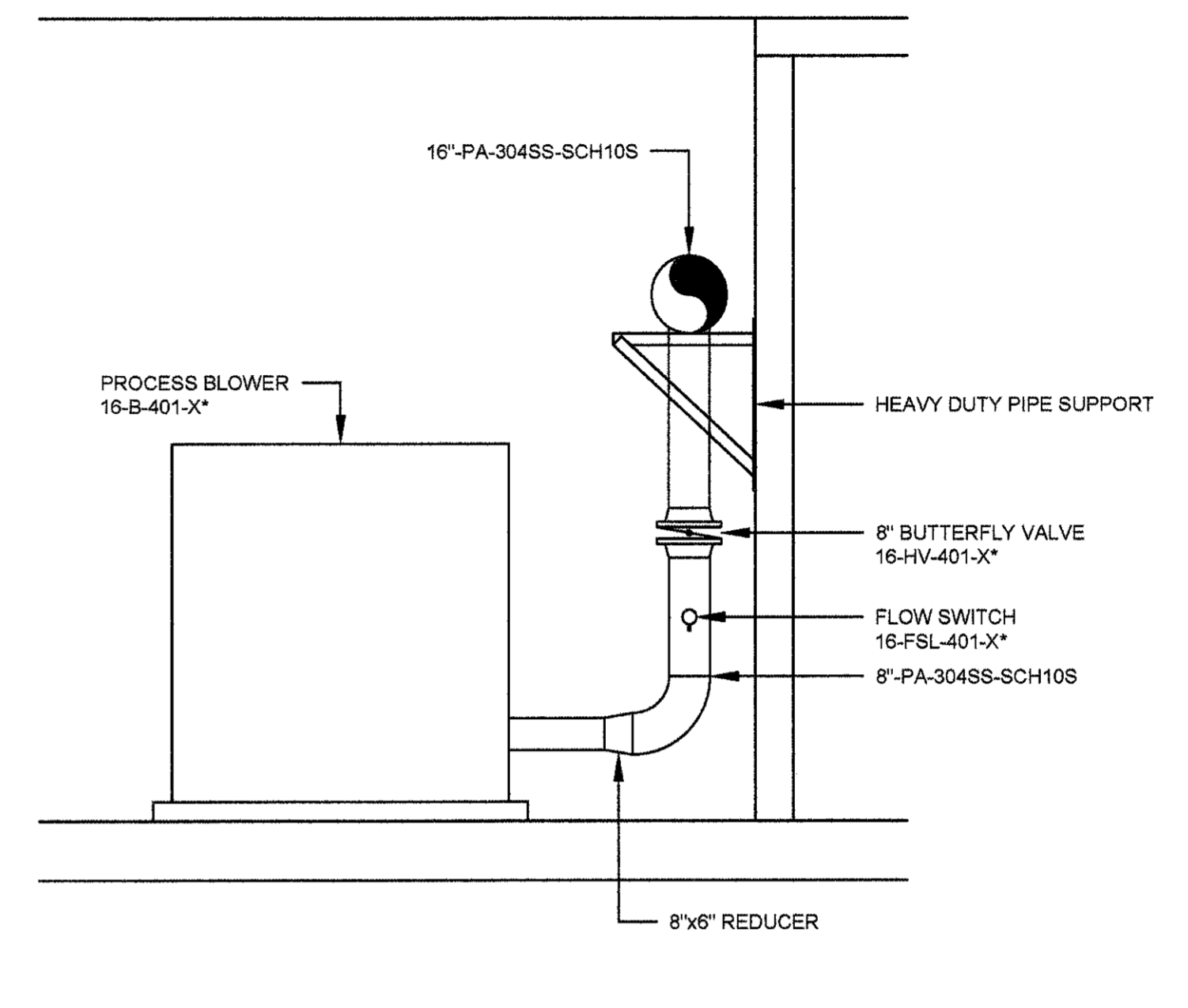
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NOTES:
 1. AIR PIPING SHALL BE INSULATED TO 8'-0" ABOVE FINISHED FLOOR.

MEMBRANE BLOWER DETAIL 3
 SCALE: 3/8" = 1'-0"



NOTES:
 1. AIR PIPING SHALL BE INSULATED TO 8'-0" ABOVE FINISHED FLOOR.

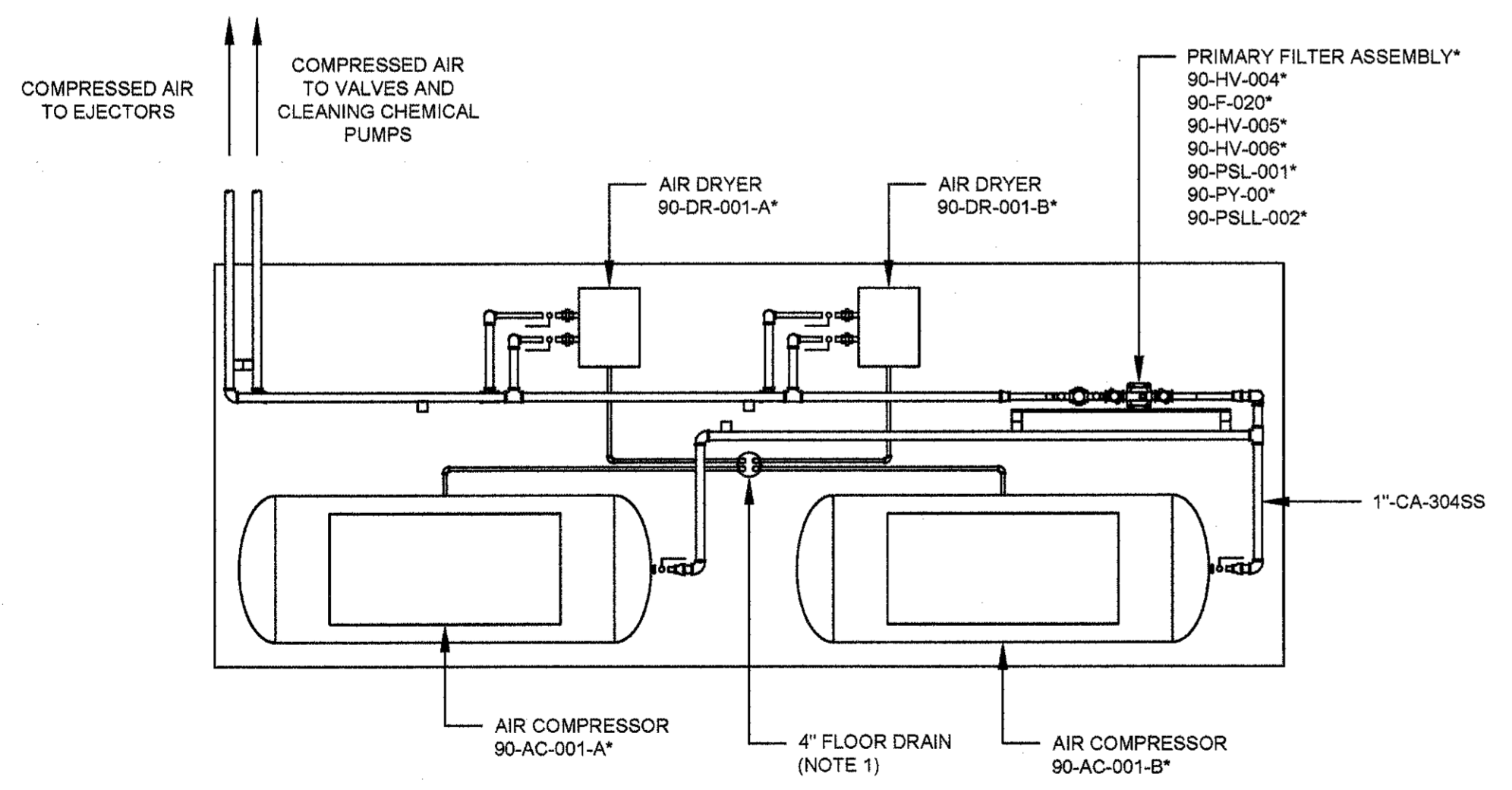
PROCESS BLOWER DETAIL 4
 SCALE: 3/8" = 1'-0"

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

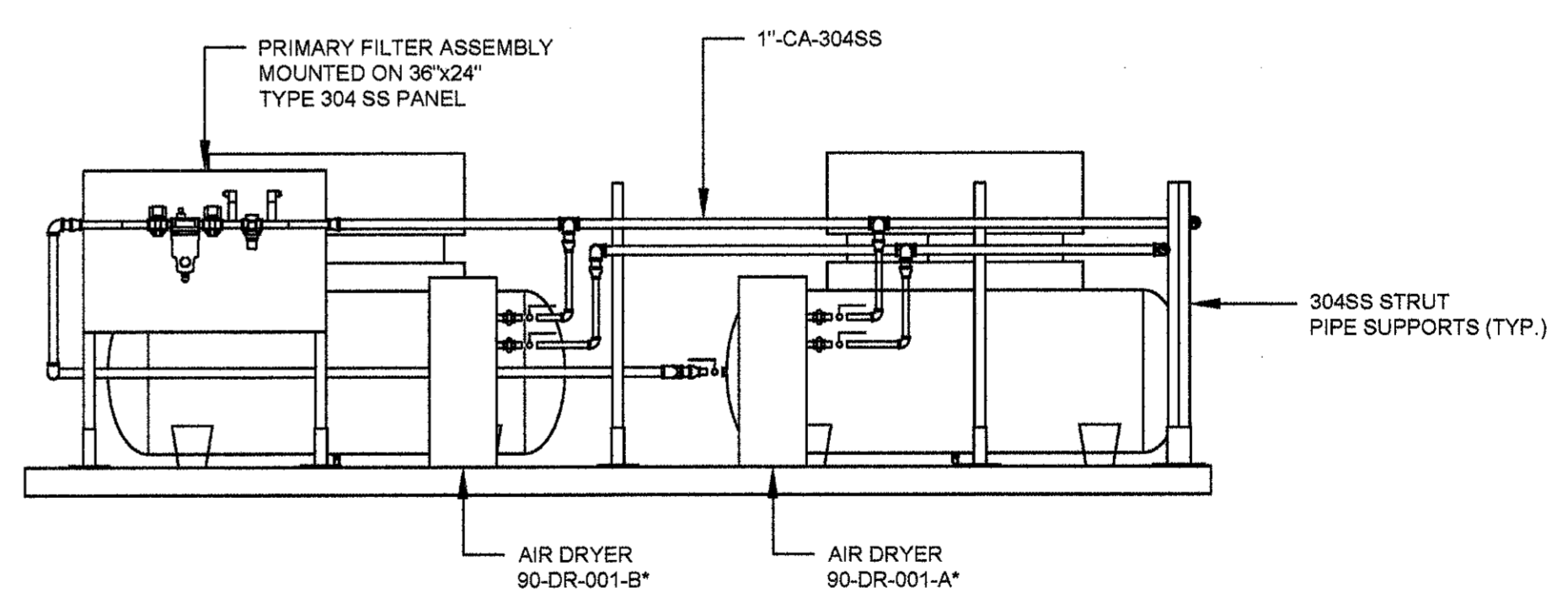
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 DETAILS 2

SHEET NO.
 45-M-6



NOTES:
 1. ALL DRAIN CONNECTIONS ON AIR COMPRESSORS AND AIR DRYERS SHALL BE FIELD ROUTED TO FLOOR DRAIN.

AIR COMPRESSOR DETAIL 5
 SCALE: 1/2" = 1'-0"



AIR COMPRESSOR DETAIL 6
 SCALE: 1/2" = 1'-0"



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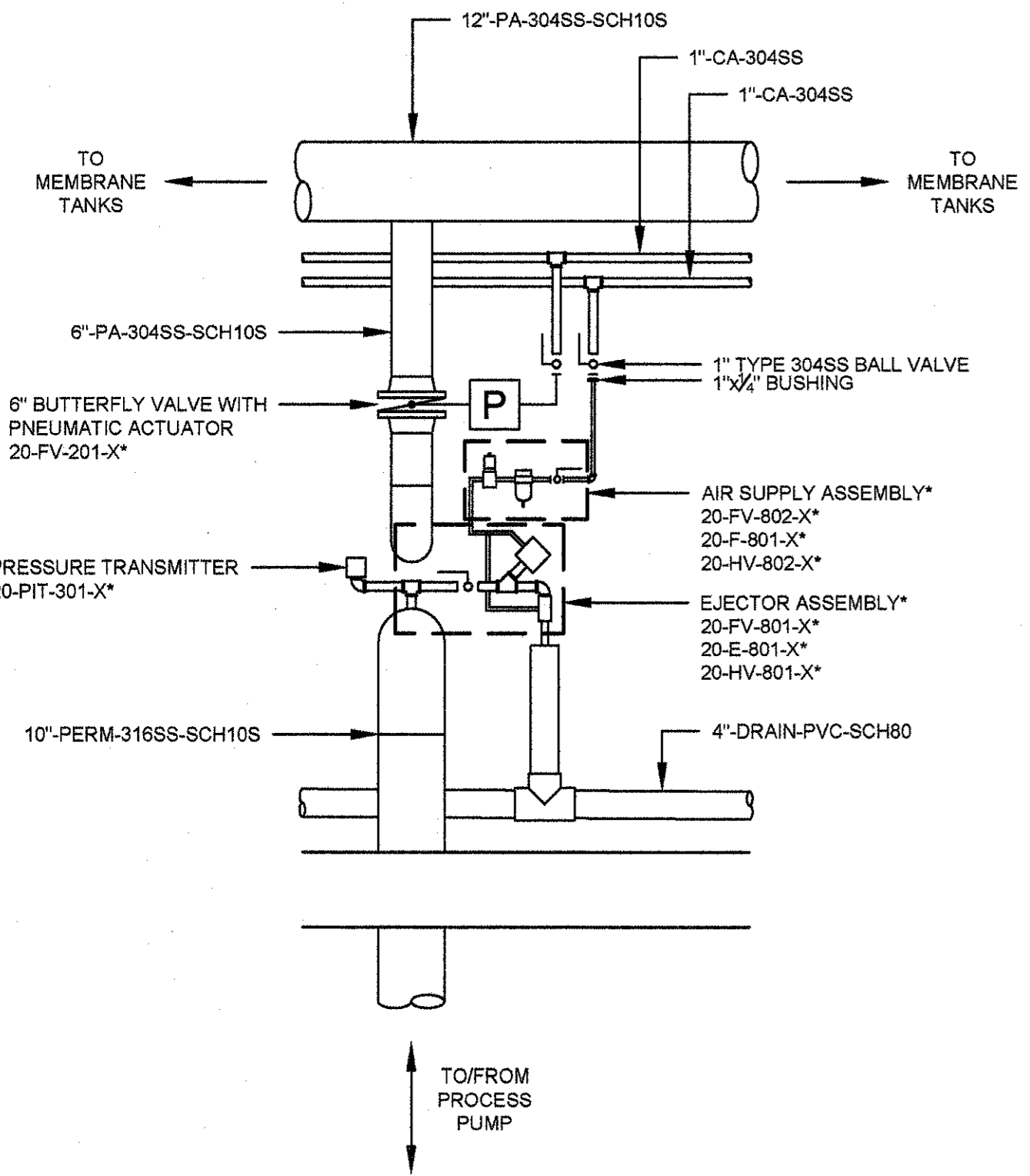
PROJECT NUMBER:	
DATE:	AUGUST 2016
REVISION	
DATE	

DESIGN: WSH
DRAWN: WSH
CHECK: WSH

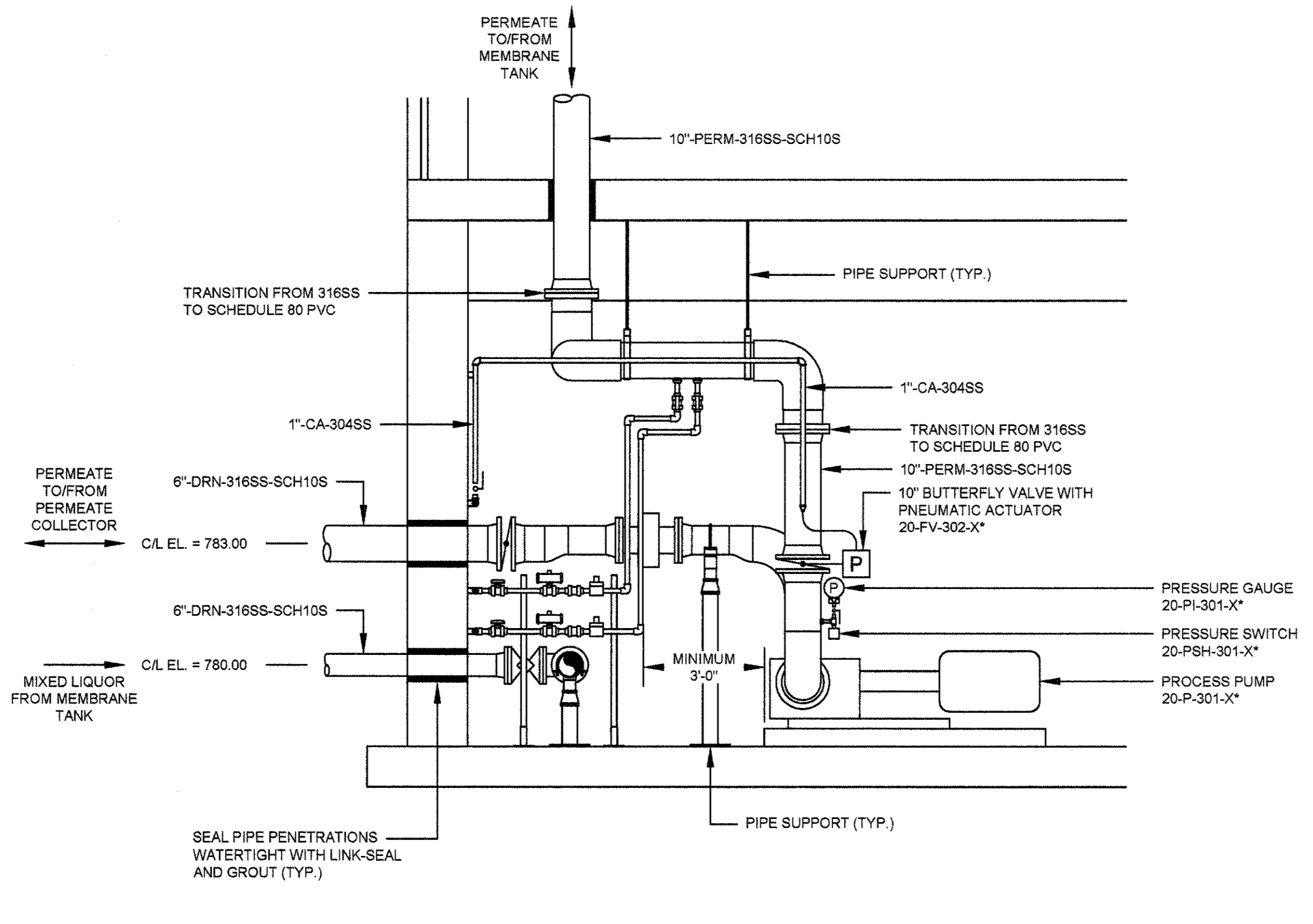
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
DETAILS 3

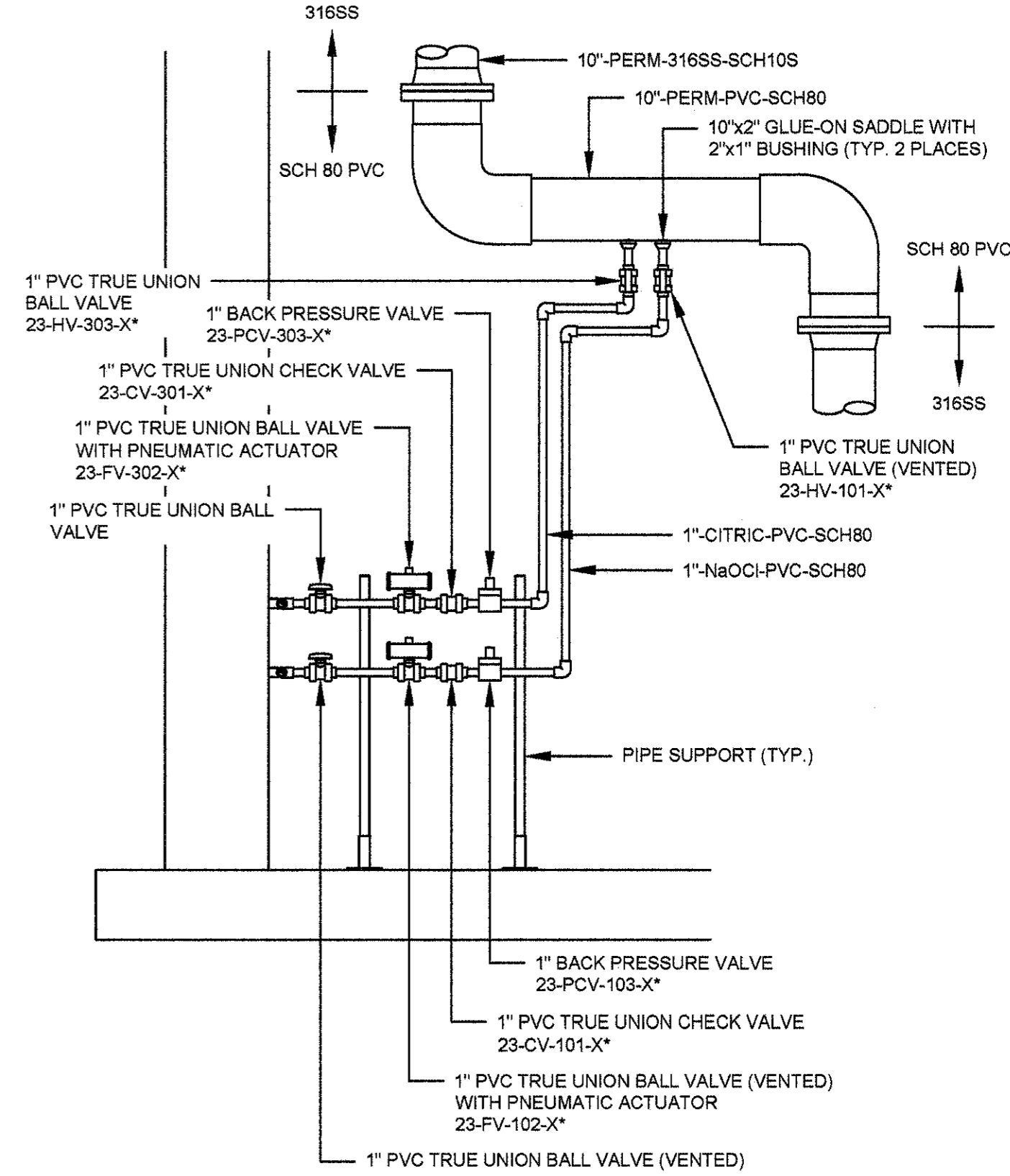
SHEET NO.
45-M-7



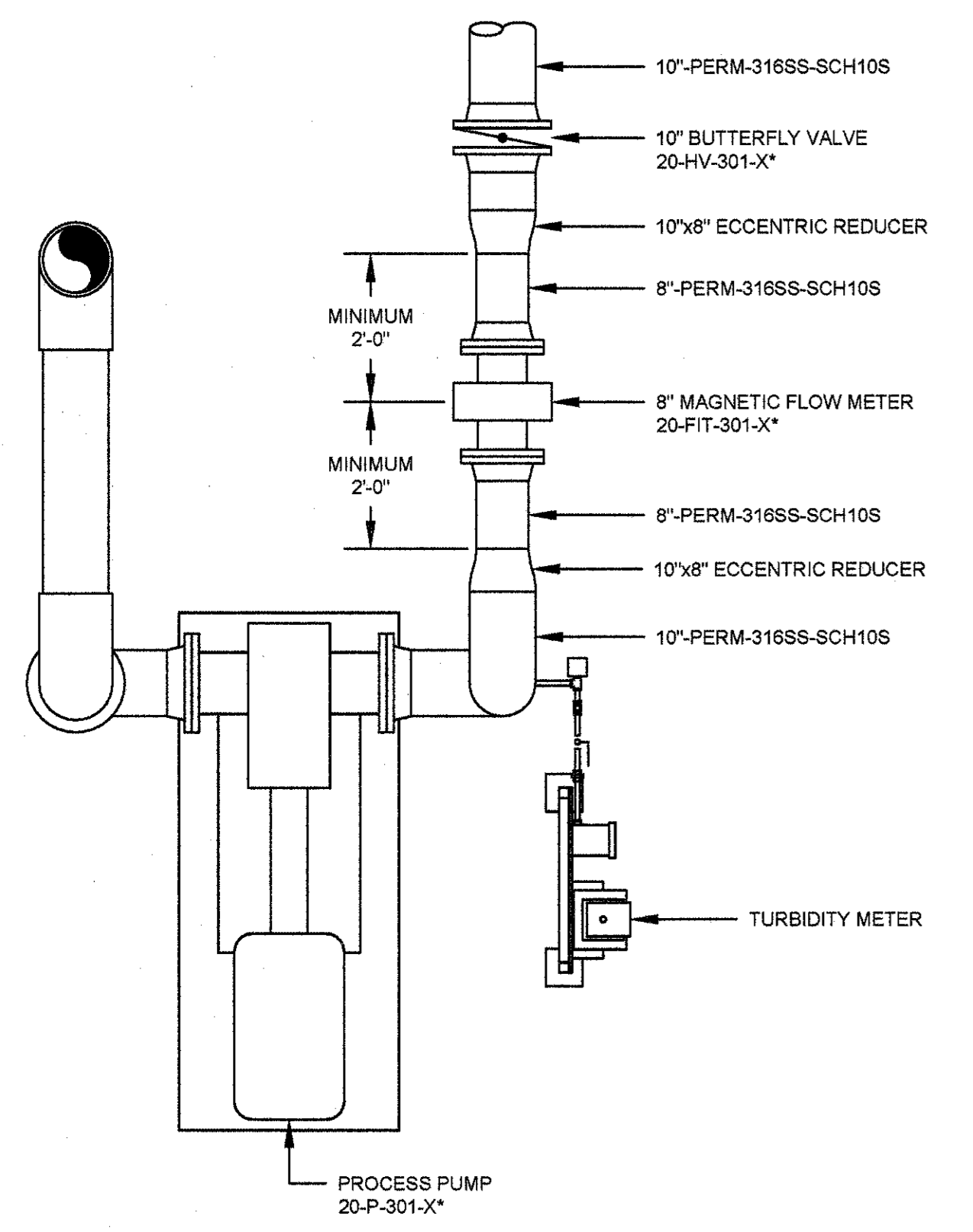
EJECTOR DETAIL 7
SCALE: 1/2" = 1'-0"



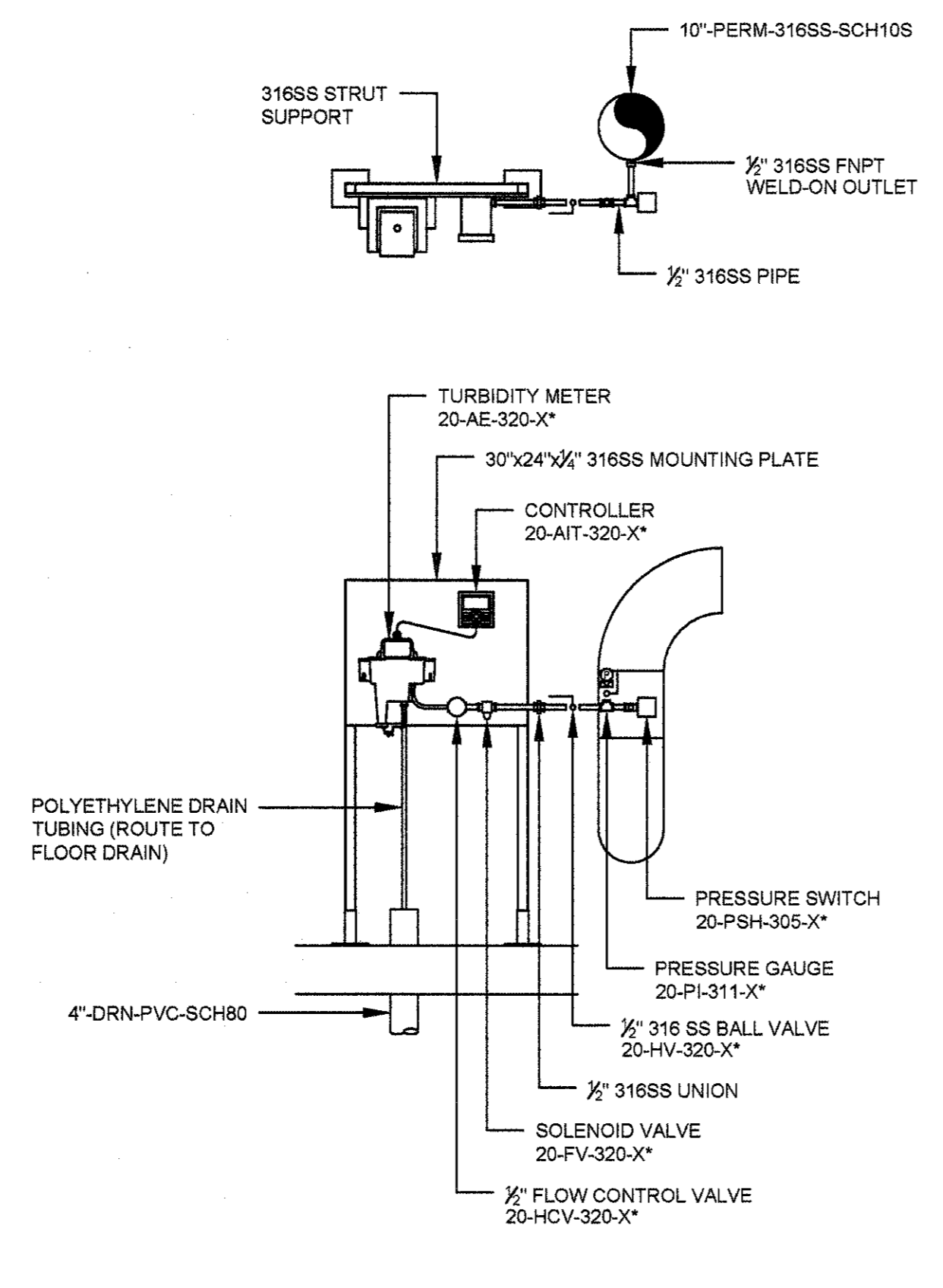
PROCESS PUMP DETAIL 8
SCALE: 3/8" = 1'-0"



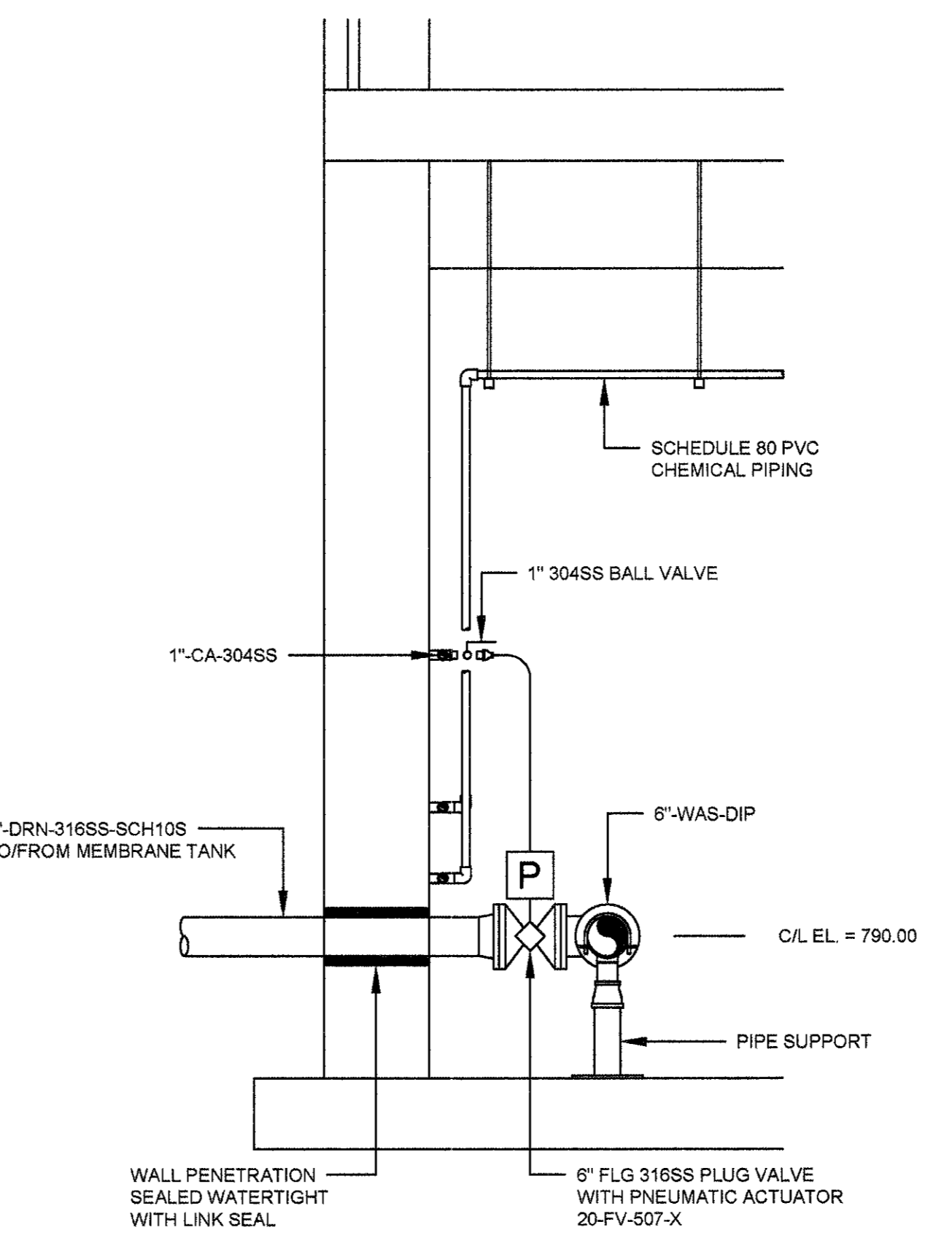
CHEMICAL FEED PIPING DETAIL 9
SCALE: 1/2" = 1'-0"



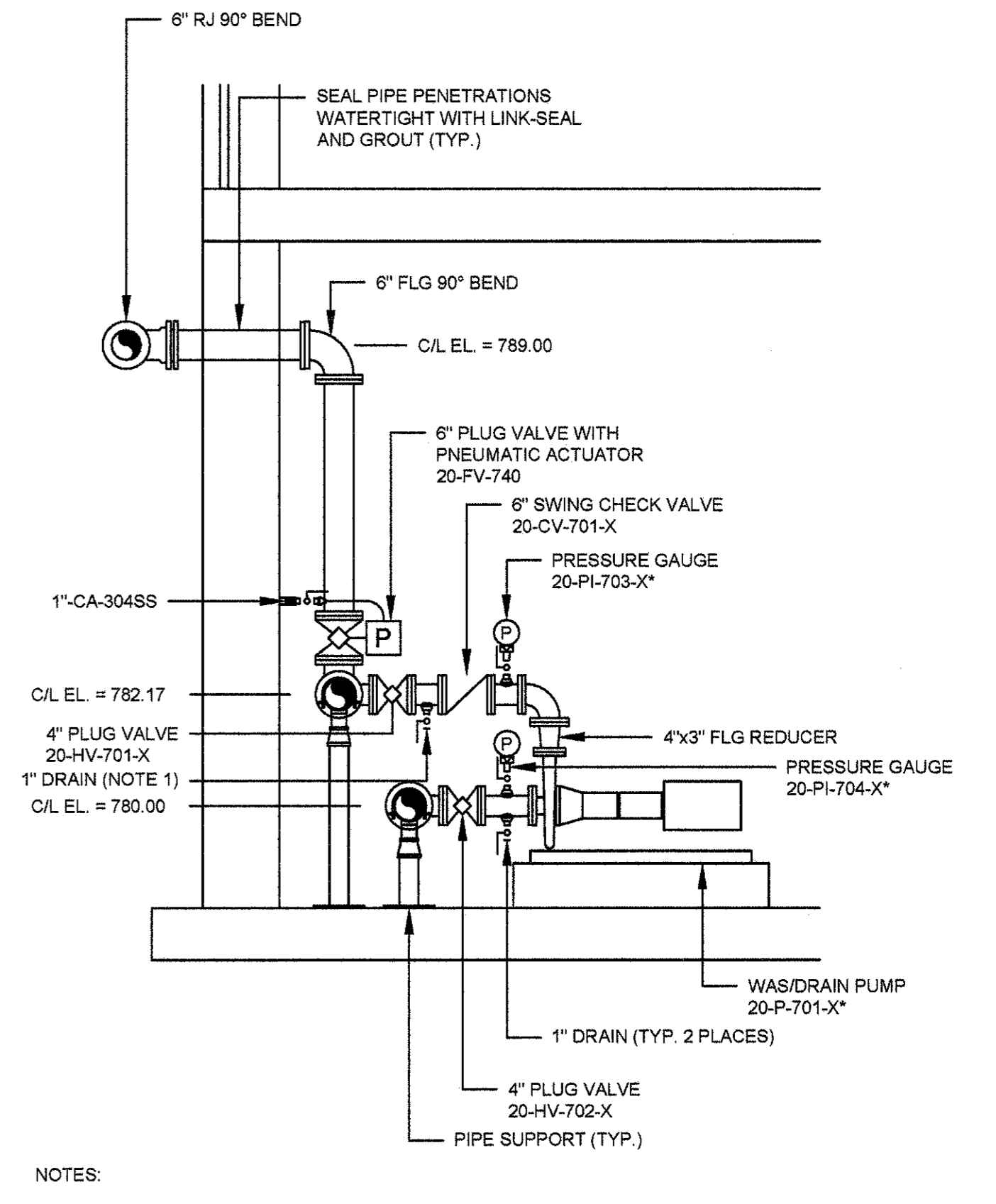
PROCESS PUMP DETAIL 10
SCALE: 1/2" = 1'-0"



TURBIDITY METER DETAIL 11
SCALE: 1/2" = 1'-0"

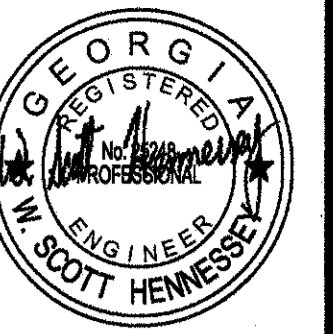


WAS/DRAIN PIPING DETAIL 12
SCALE: 1/2" = 1'-0"



WAS/DRAIN PUMP DETAIL 13
SCALE: 3/8" = 1'-0"

NOTES:
1. PIPE DRAINS SHALL BE PIPED (FIELD ROUTE) TO FLOOR DRAINS.



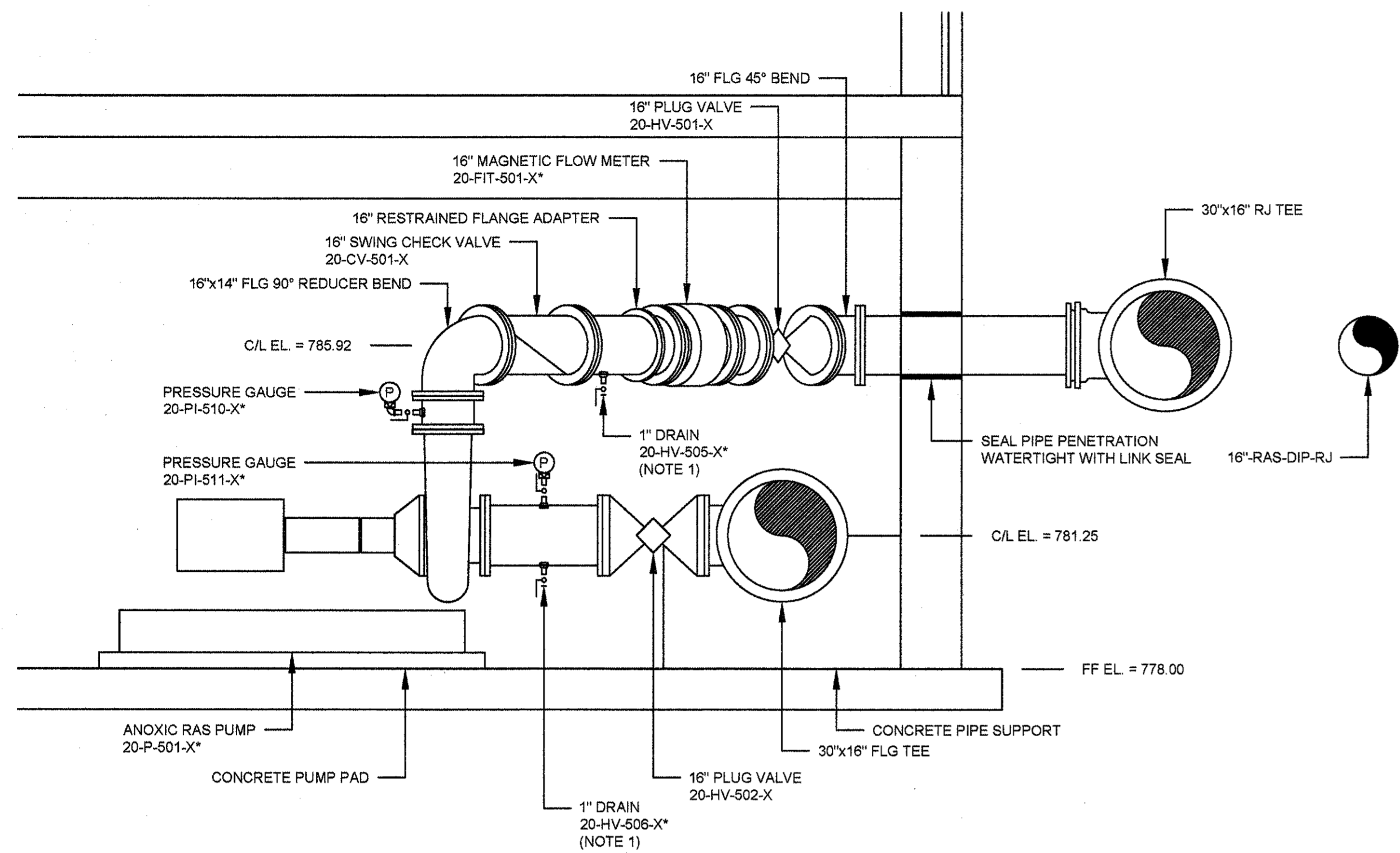
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 (770) 429-0001

PROJECT NUMBER:	DATE:
REVISION	AUGUST 2016
DATE	

DSGN: WSH	BAR BELOW IS 1" LONG FOR SCALES
DRWN: WSH	SHOWN ON THIS SHEET. IF NOT 1"
CHK: WSH	LONG ON THIS SHEET, ADJUST
	SCALES ACCORDINGLY.

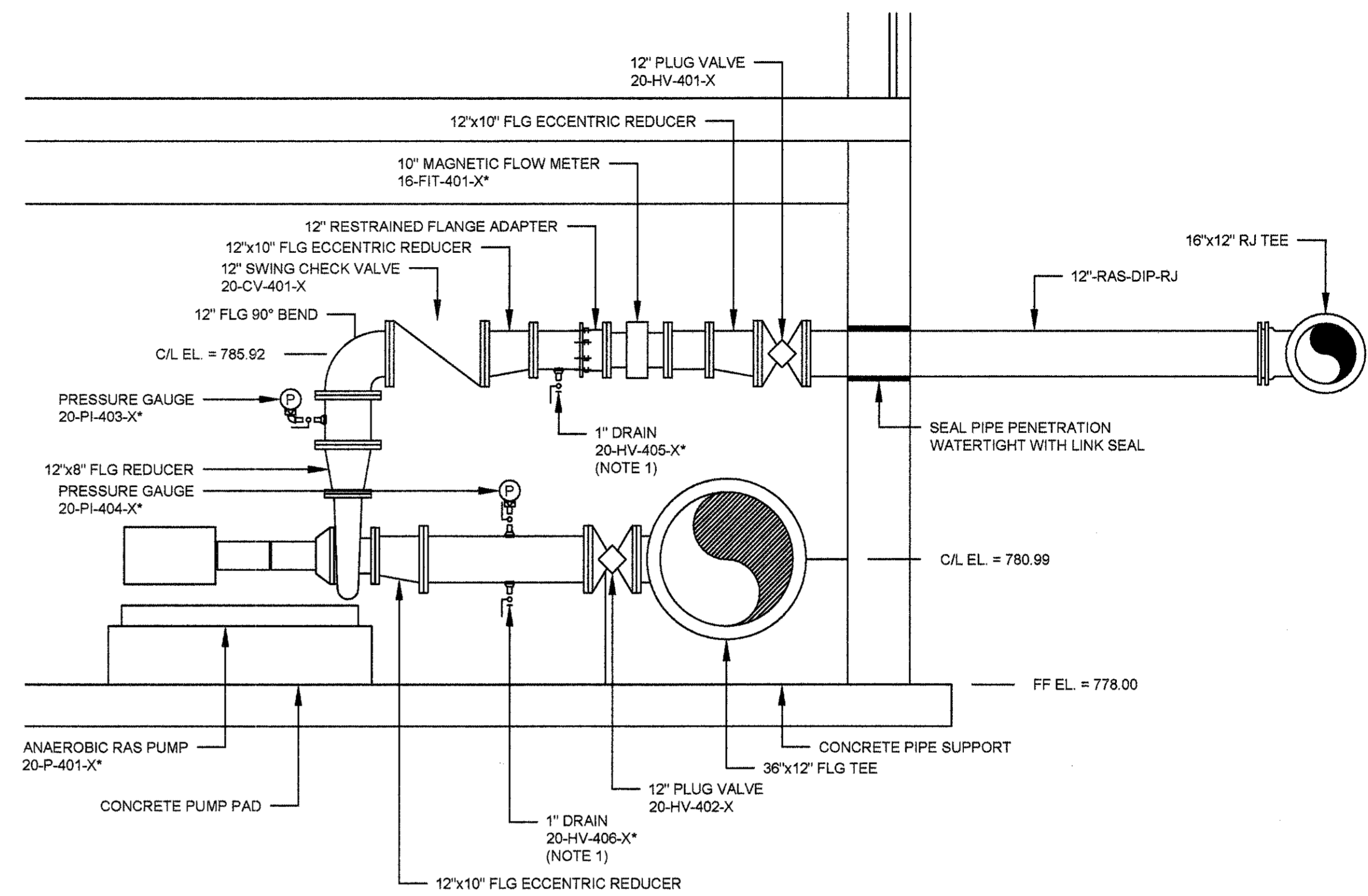
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 DETAILS 4

SHEET NO.
 45-M-8



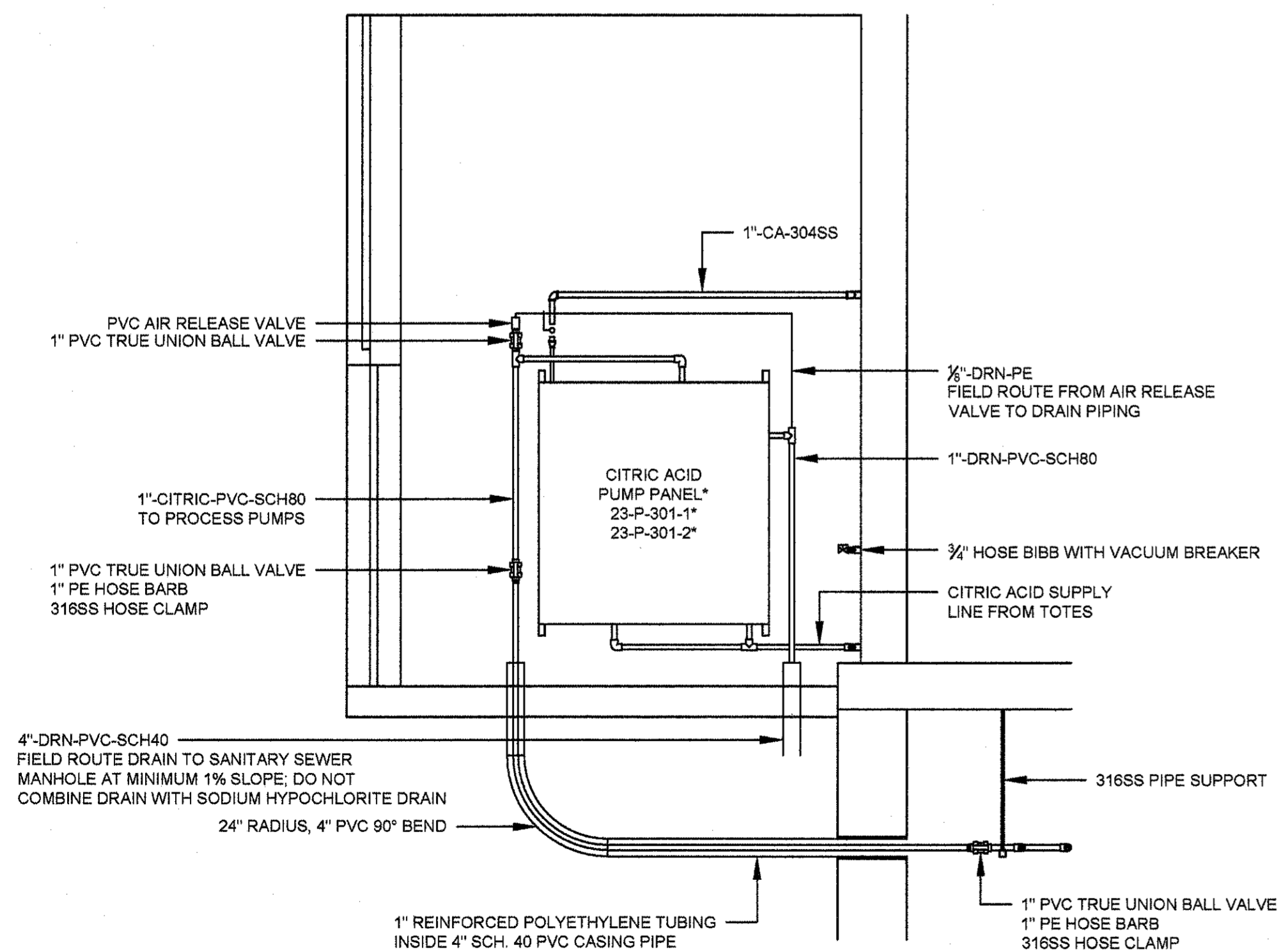
- NOTES:
 1. PIPE DRAINS SHALL BE PIPED (FIELD ROUTE) TO FLOOR DRAINS.

ANOXIC RAS PUMP DETAIL 14
 SCALE: 3/8" = 1'-0"

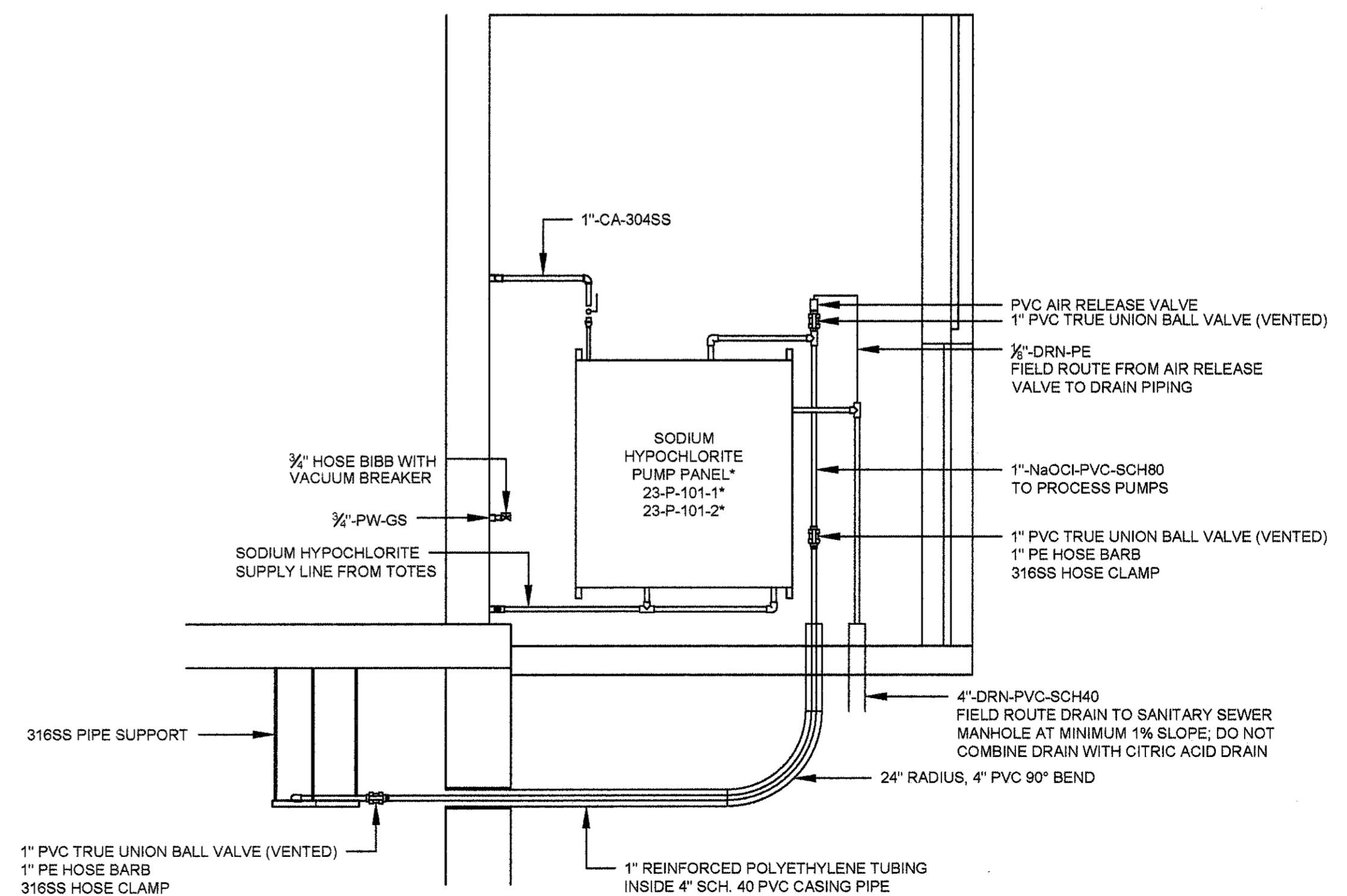


- NOTES:
 1. PIPE DRAINS SHALL BE PIPED (FIELD ROUTE) TO FLOOR DRAINS.

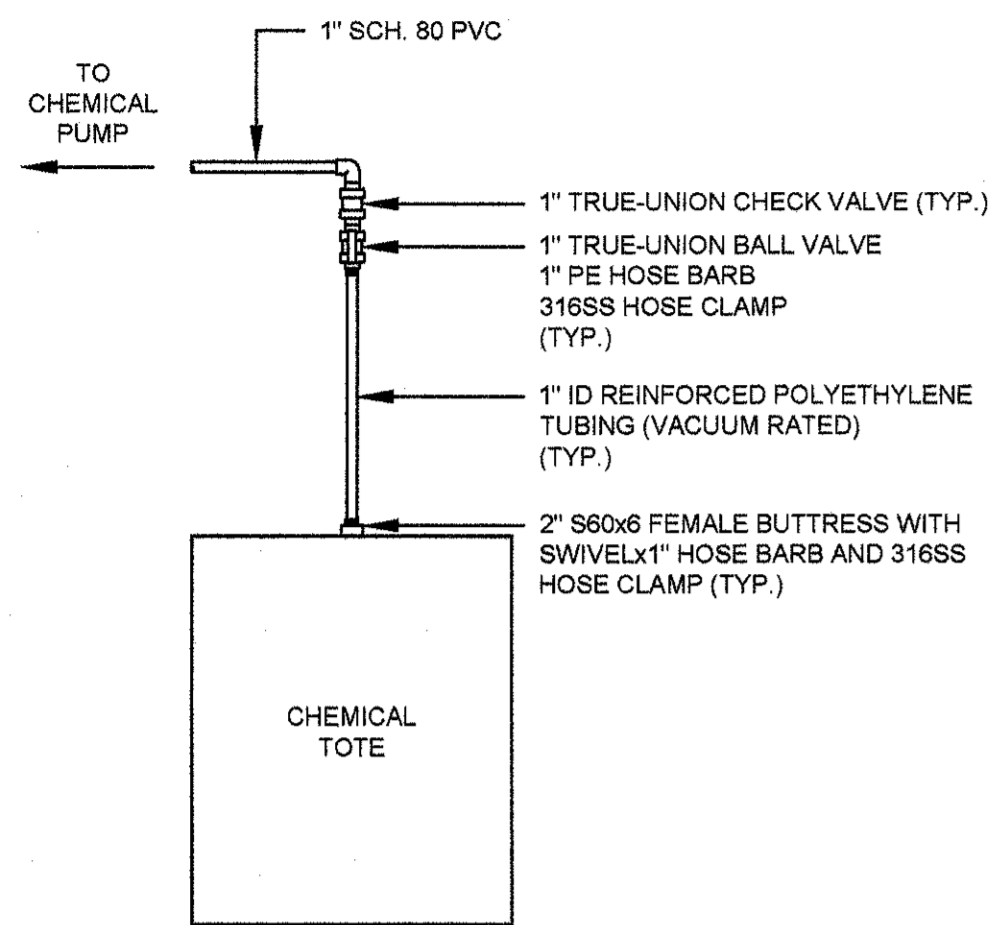
ANAEROBIC RAS PUMP DETAIL 15
 SCALE: 3/8" = 1'-0"



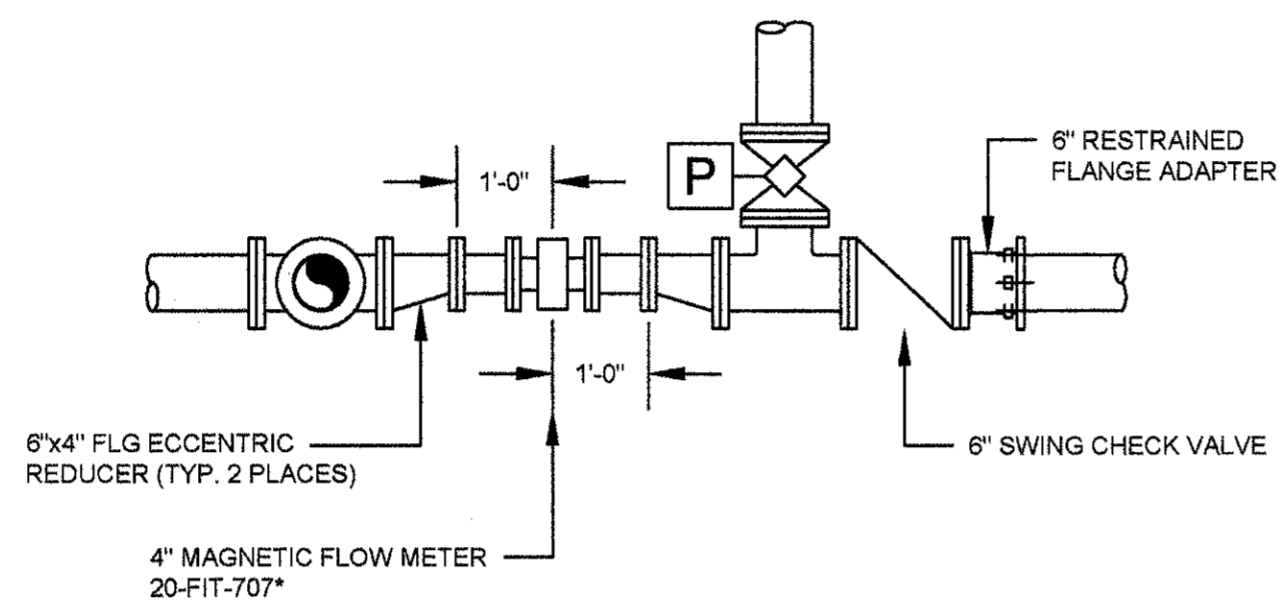
CITRIC ACID PUMP PANEL DETAIL 16
 SCALE: 3/8" = 1'-0"



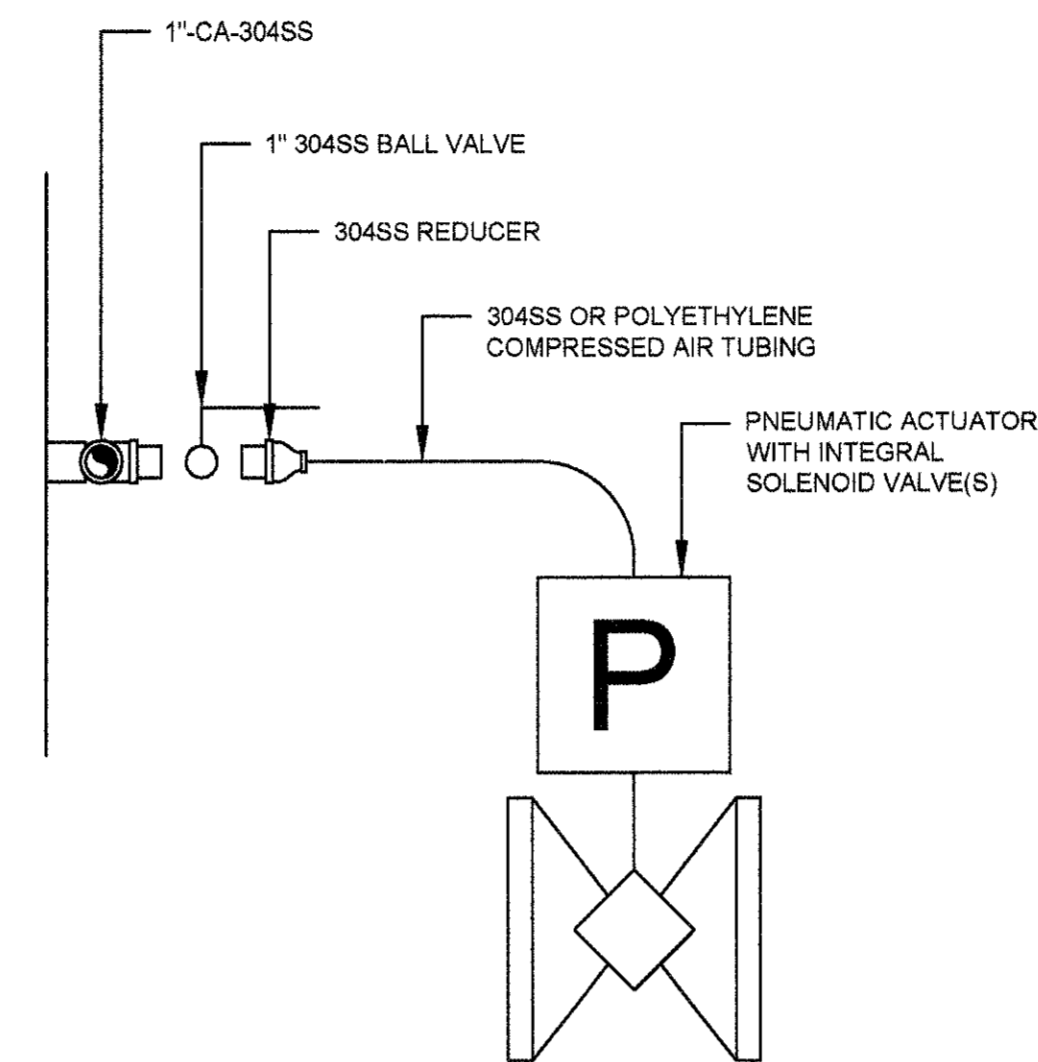
SODIUM HYPOCHLORITE PUMP PANEL DETAIL 17
 SCALE: 3/8" = 1'-0"



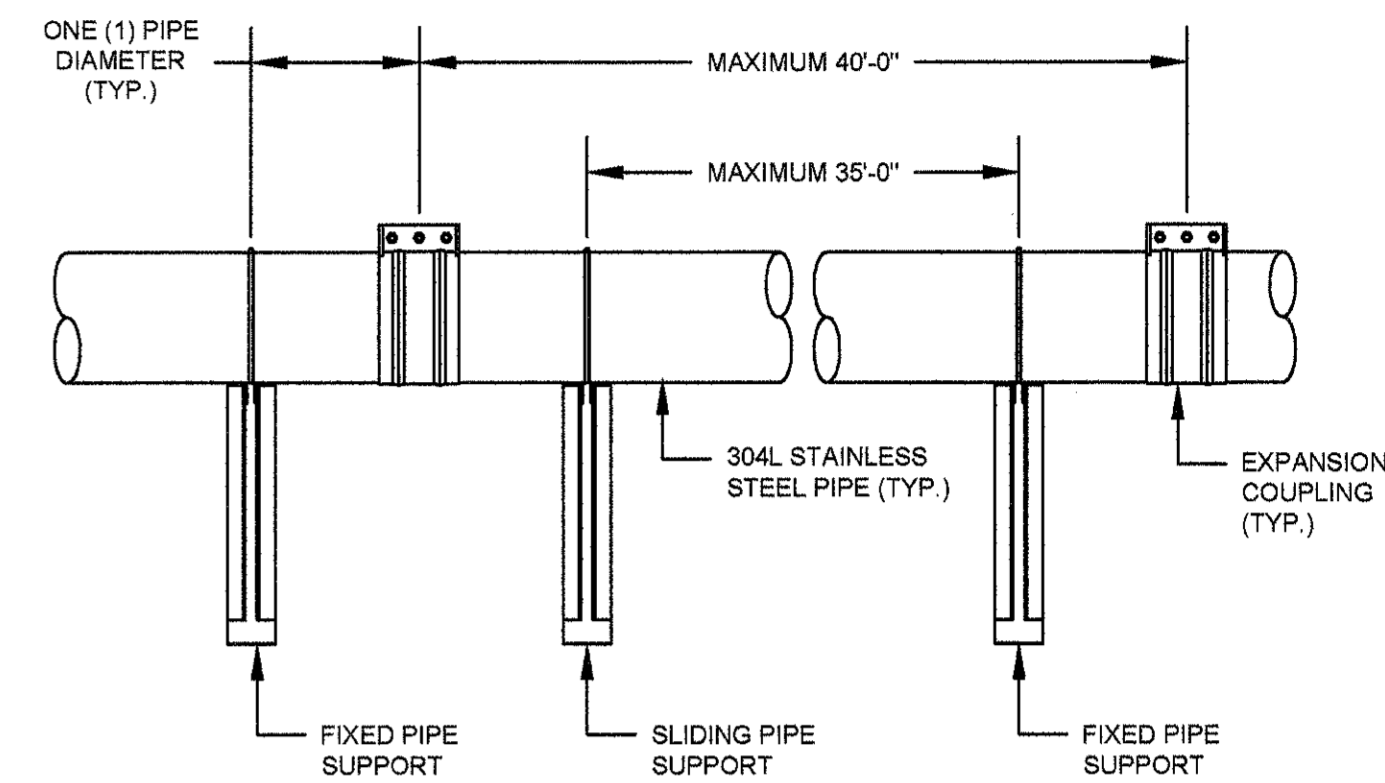
CHEMICAL TOTE CONNECTION DETAIL (18)
SCALE: 1/2" = 1'-0"



WAS/DRAIN PUMP FLOW METER DETAIL (19)
SCALE: 1/2" = 1'-0"



COMPRESSED AIR CONNECTION DETAIL (20)
SCALE: 1-1/2" = 1'-0"



NOTES:

- EXPANSION COUPLINGS ON ABOVE GRADE INSTALLATIONS SHALL BE VICTAULIC STYLE 2316, TYPE 2, NON-RESTRAINED FLEXIBLE EXPANSION COUPLINGS, OR EQUAL. ONE END SHALL BE FIXED AND ONE END SHALL ALLOW AXIAL MOVEMENT OF THE PIPE. CONTRACTOR SHALL COORDINATE GAP SIZE AT INSTALLATION WITH COUPLING MANUFACTURER.
- EXPANSION COUPLINGS ON BURIED INSTALLATIONS SHALL BE VICTAULIC STYLE 2335 RESTRAINED FLEXIBLE COUPLINGS, OR EQUAL. CONTRACTOR SHALL COORDINATE GAP SIZE AT INSTALLATION WITH COUPLING MANUFACTURER.
- FIXED PIPE SUPPORTS SHALL PREVENT MOVEMENT OF PIPE. SLIDING PIPE SUPPORTS SHALL ALLOW AXIAL MOVEMENT OF PIPE FOR THERMAL EXPANSION.

AIR PIPE EXPANSION COUPLING DETAIL (21)
SCALE: 1/2" = 1'-0"



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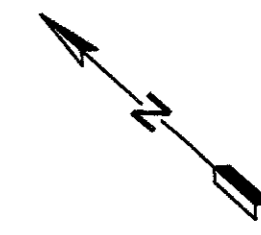
DSGN: WSH
DRWN: WSH
CHK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
DETAILS 5

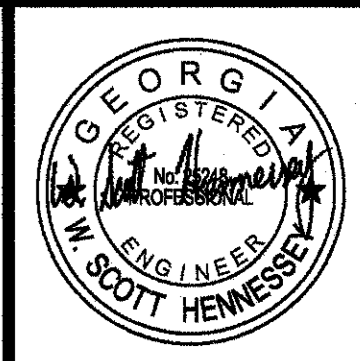
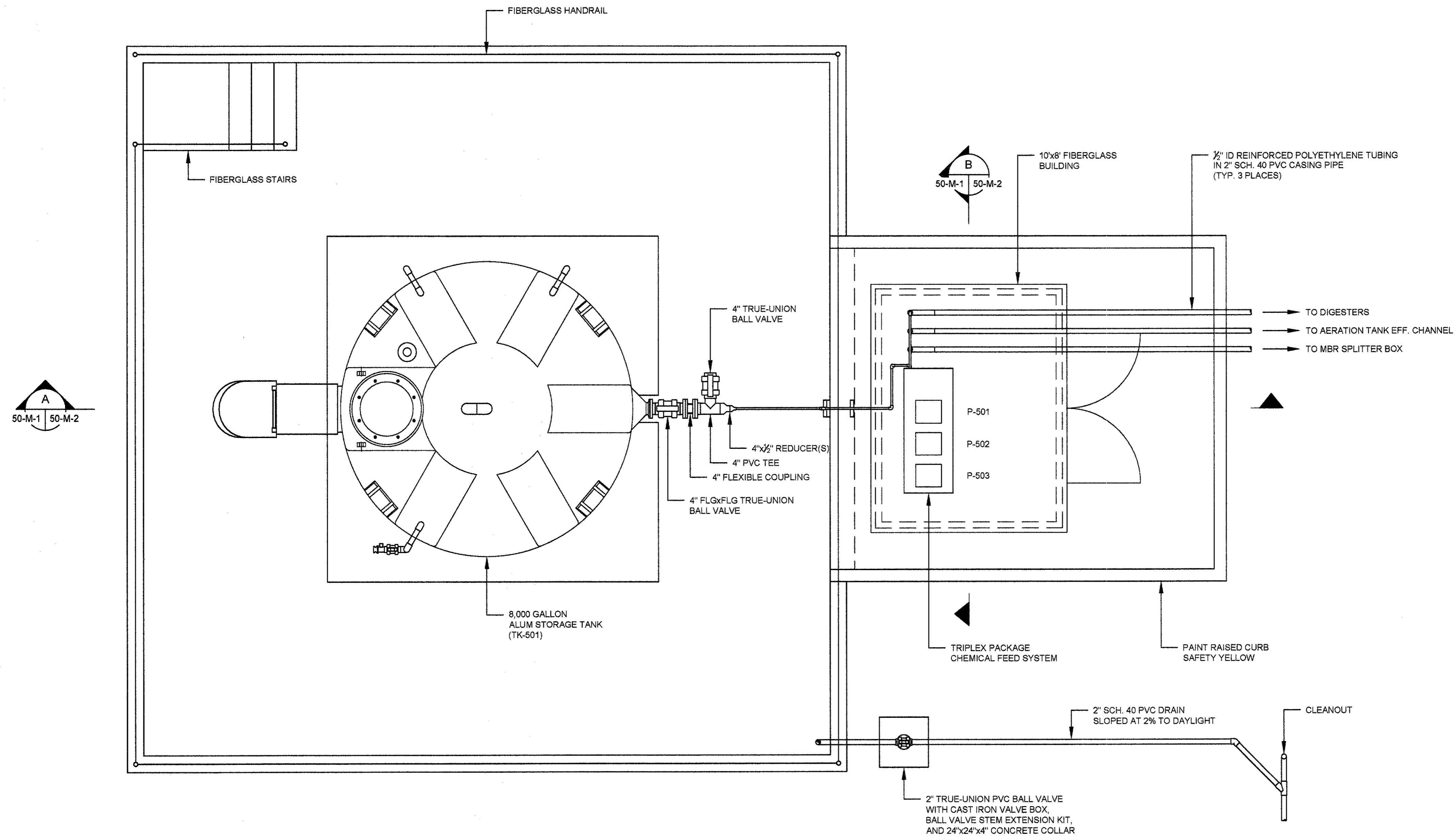
SHEET NO.

45-M-9



NOTES:

1. ALL CHEMICAL PIPE AND FITTINGS SHALL BE SCHEDULE 80 PVC.
2. ALL EXTERIOR CHEMICAL PIPING SHALL BE HEAT TRACED AND INSULATED.
3. ALL PIPE SUPPORTS FOR CHEMICAL PIPING SHALL BE FABRICATED FROM FIBERGLASS REINFORCED PLASTIC (FRP) STRUTS AND CONNECTOR PLATES. PIPE CLAMPS SHALL BE NON-METALIC STRAPS WITH NON-METALIC BOLTS AND HEX NUTS.
4. INSTALL 6 LAYERS OF FELT PAPER BETWEEN TANK AND SLAB.



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PROJECT NUMBER:	DATE:
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REVISION	DATE
Δ	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ALUM CHEMICAL STORAGE AREA
 PLAN

SHEET NO.
 50-M-1



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 (770) 429-0001

PROJECT NUMBER: _____ DATE: AUGUST 2016

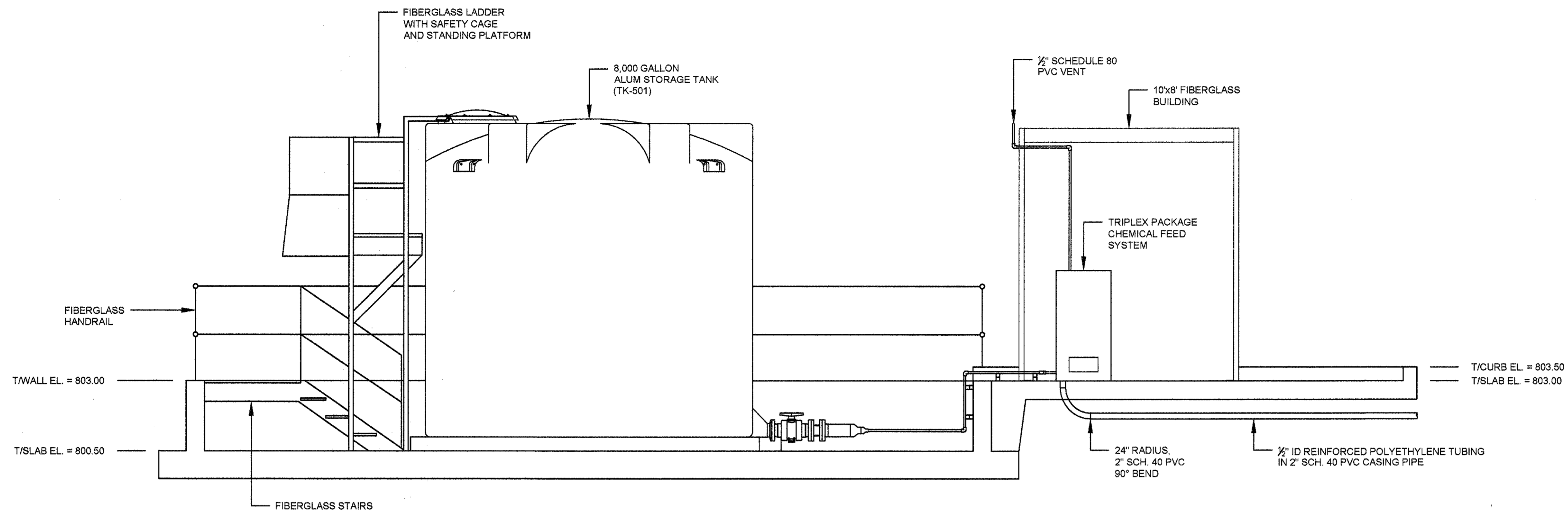
DATE	REVISION

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

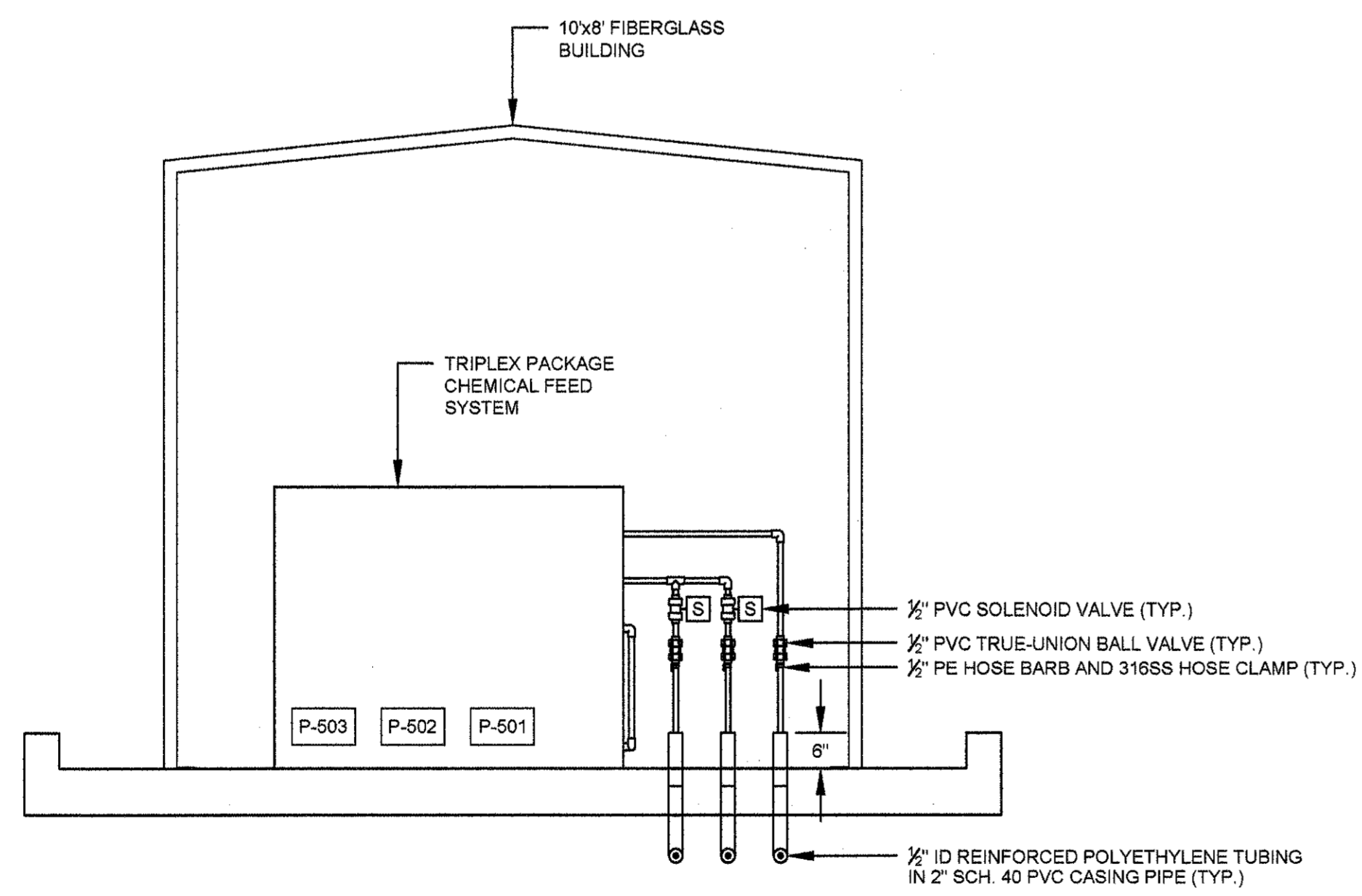
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ALUM CHEMICAL STORAGE AREA
 SECTIONS AND DETAILS

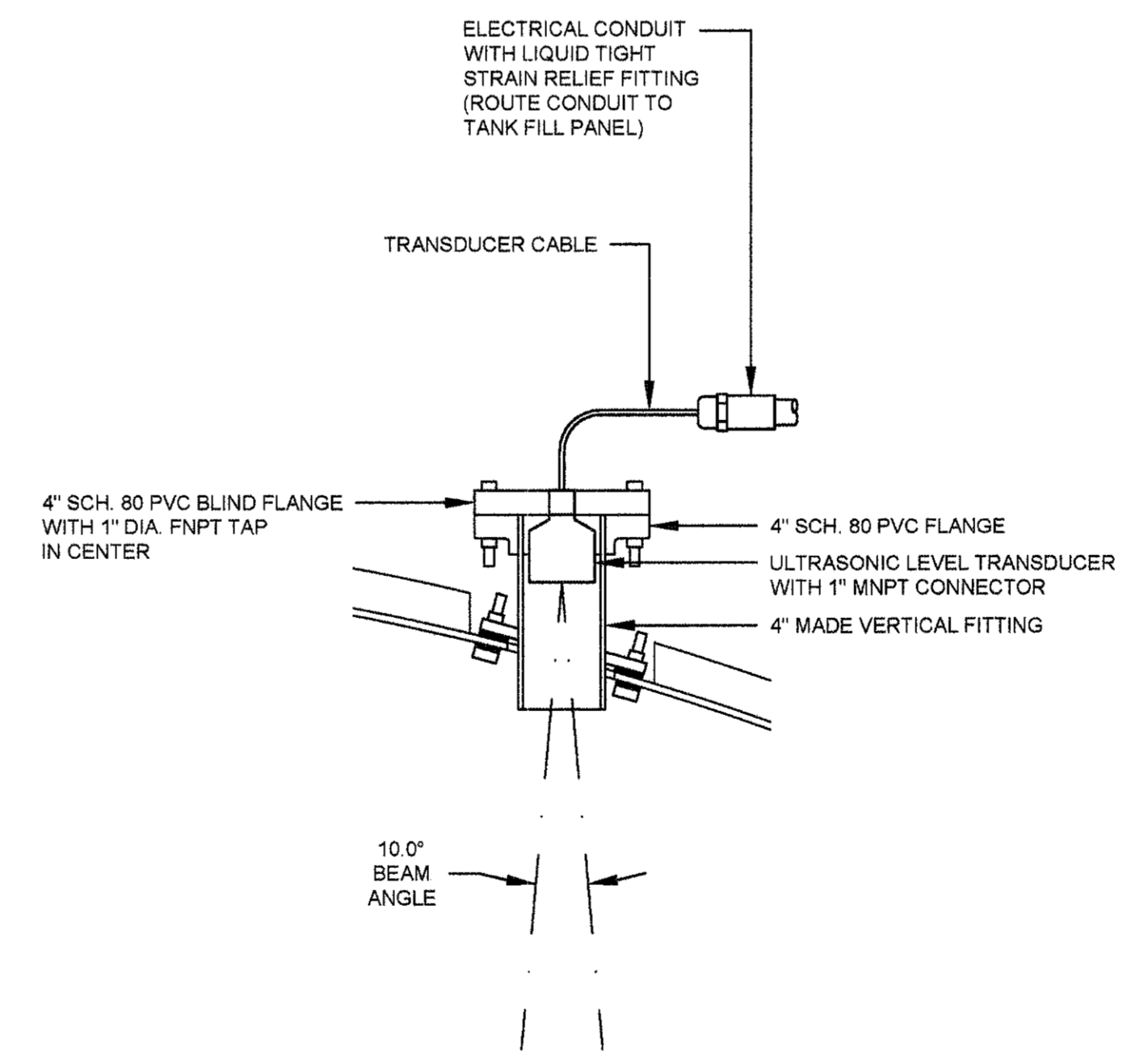
SHEET NO.
 50-M-2



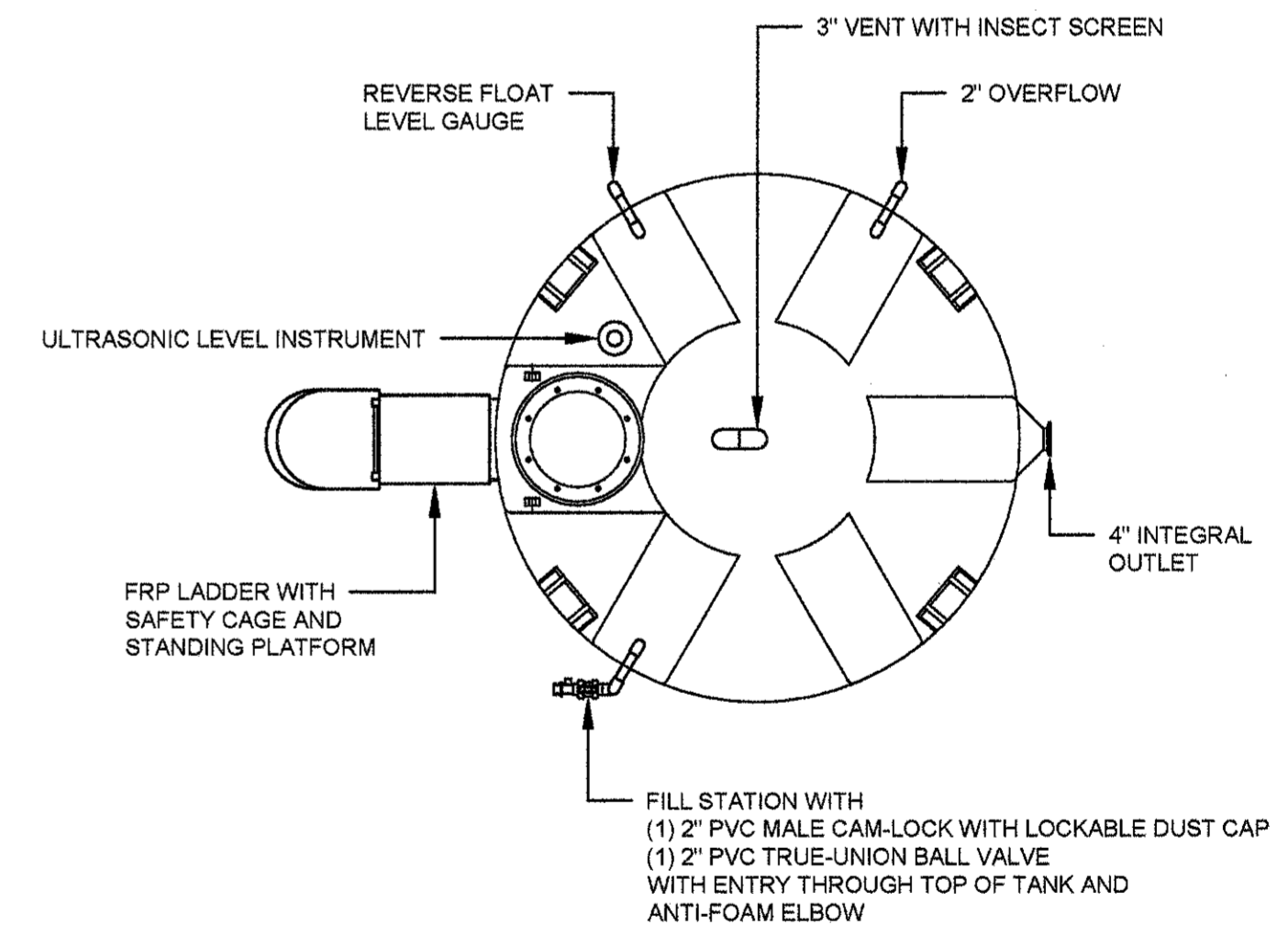
SECTION A
 SCALE: 3/8" = 1'-0"
 50-M-1 | 50-M-2



SECTION B
 SCALE: 1/2" = 1'-0"
 50-M-1 | 50-M-2



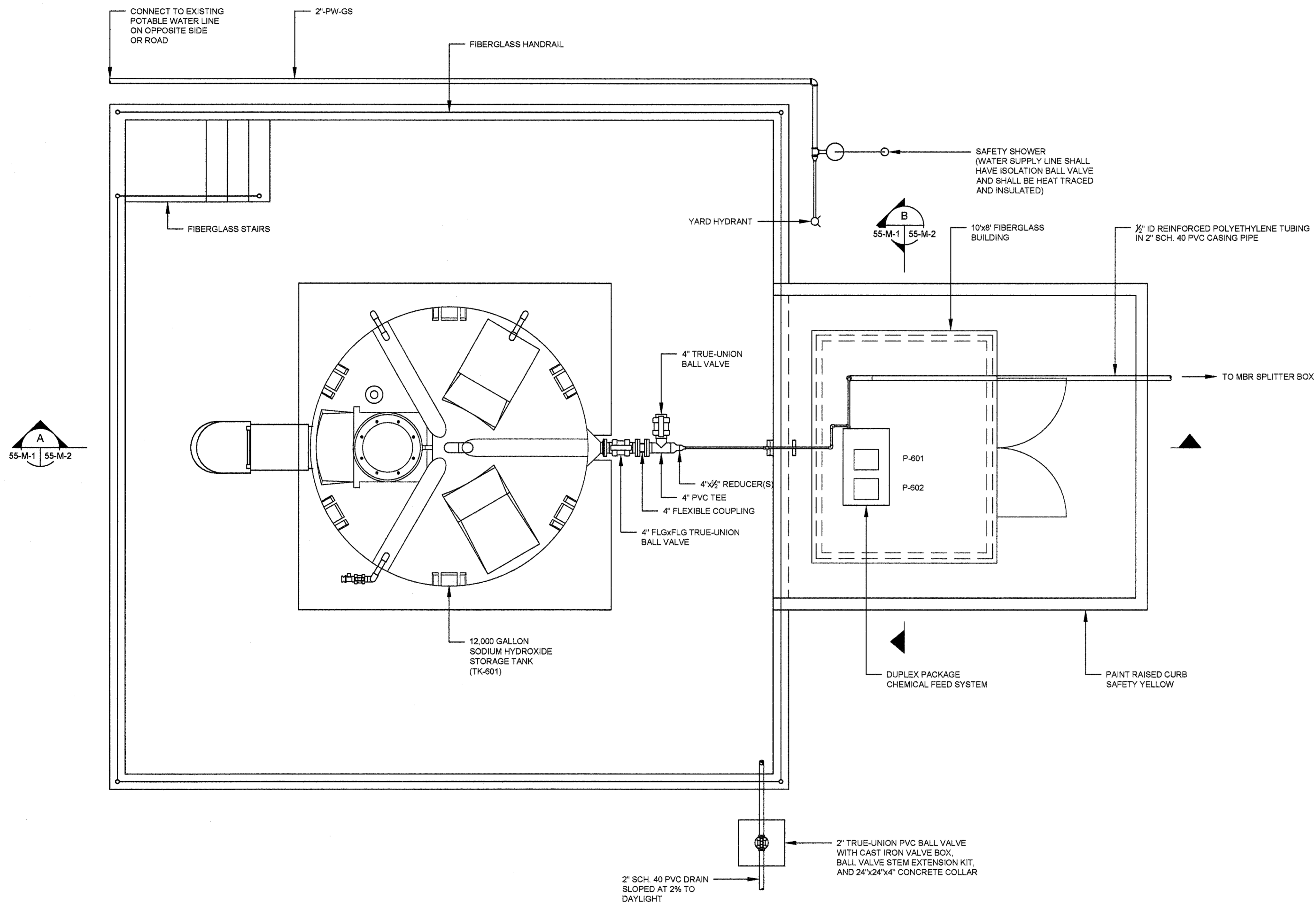
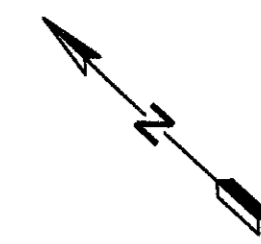
SECTION C
 SCALE: 1 1/2" = 1'-0"
 50-M-1 | 50-M-2



TANK FITTINGS AND ACCESSORIES		
ITEM	DEGREES	LOCATION
16" MANWAY	0°	TOP
2" FILL LINE	60°	TOP
4" OUTLET	180°	BOTTOM (INTEGRAL)
2" OVERFLOW	240°	TOP
REVERSE FLOAT LEVEL INDICATOR	300°	TOP
4" FLANGE FOR LEVEL INSTRUMENT	325°	TOP - 24" FROM EDGE
3" VENT	TOP CENTER	TOP

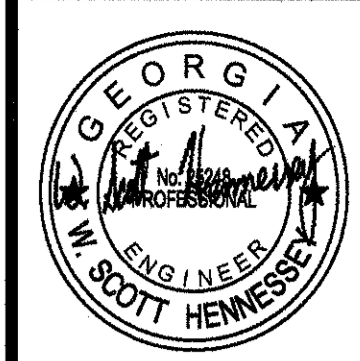
- NOTES:**
- THERE SHALL BE NO PENETRATIONS THROUGH TANK SIDEWALL BELOW THE MAXIMUM WATER LEVEL ELEVATION. ALL ATTACHMENTS SHALL BE MADE USING STRAPS OR OTHER METHODS THAT DO NOT REQUIRE PENETRATING THE TANK SIDEWALL.
 - TANK SHALL BE HEAT TRACED AND INSULATED.

SECTION D
 SCALE: 1/4" = 1'-0"
 50-M-1 | 50-M-2



NOTES:

1. ALL CHEMICAL PIPE AND FITTINGS SHALL BE SCHEDULE 80 PVC.
2. ALL EXTERIOR CHEMICAL PIPING SHALL BE HEAT TRACED AND INSULATED.
3. ALL PIPE SUPPORTS FOR CHEMICAL PIPING SHALL BE FABRICATED FROM FIBERGLASS REINFORCED PLASTIC (FRP) STRUTS AND CONNECTOR PLATES. PIPE CLAMPS SHALL BE NON-METALIC STRAPS WITH NON-METALIC BOLTS AND HEX NUTS.
4. INSTALL 6 LAYERS OF FELT PAPER BETWEEN TANK AND SLAB.



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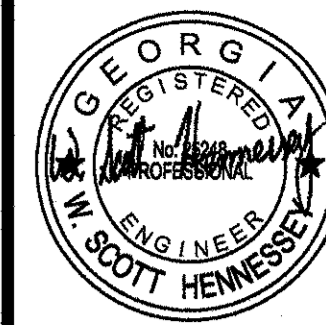
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

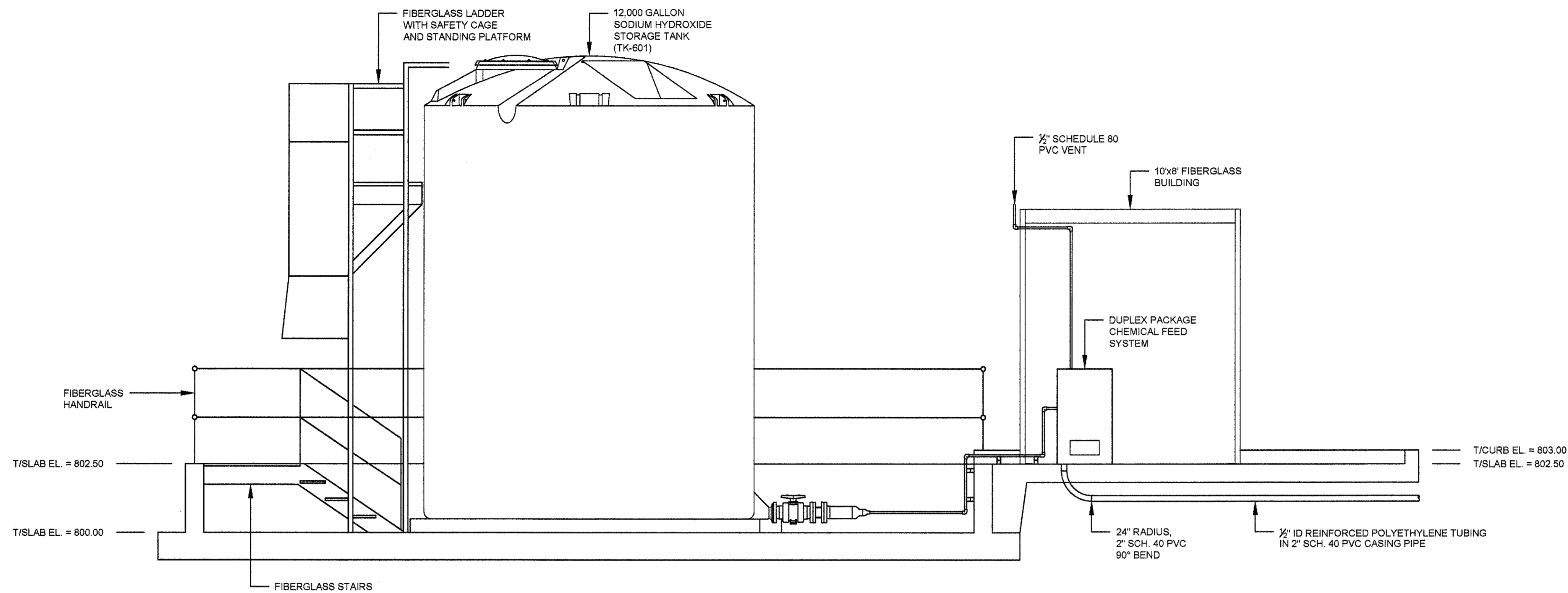
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
NAOH CHEMICAL STORAGE AREA
PLAN

SHEET NO.
 55-M-1

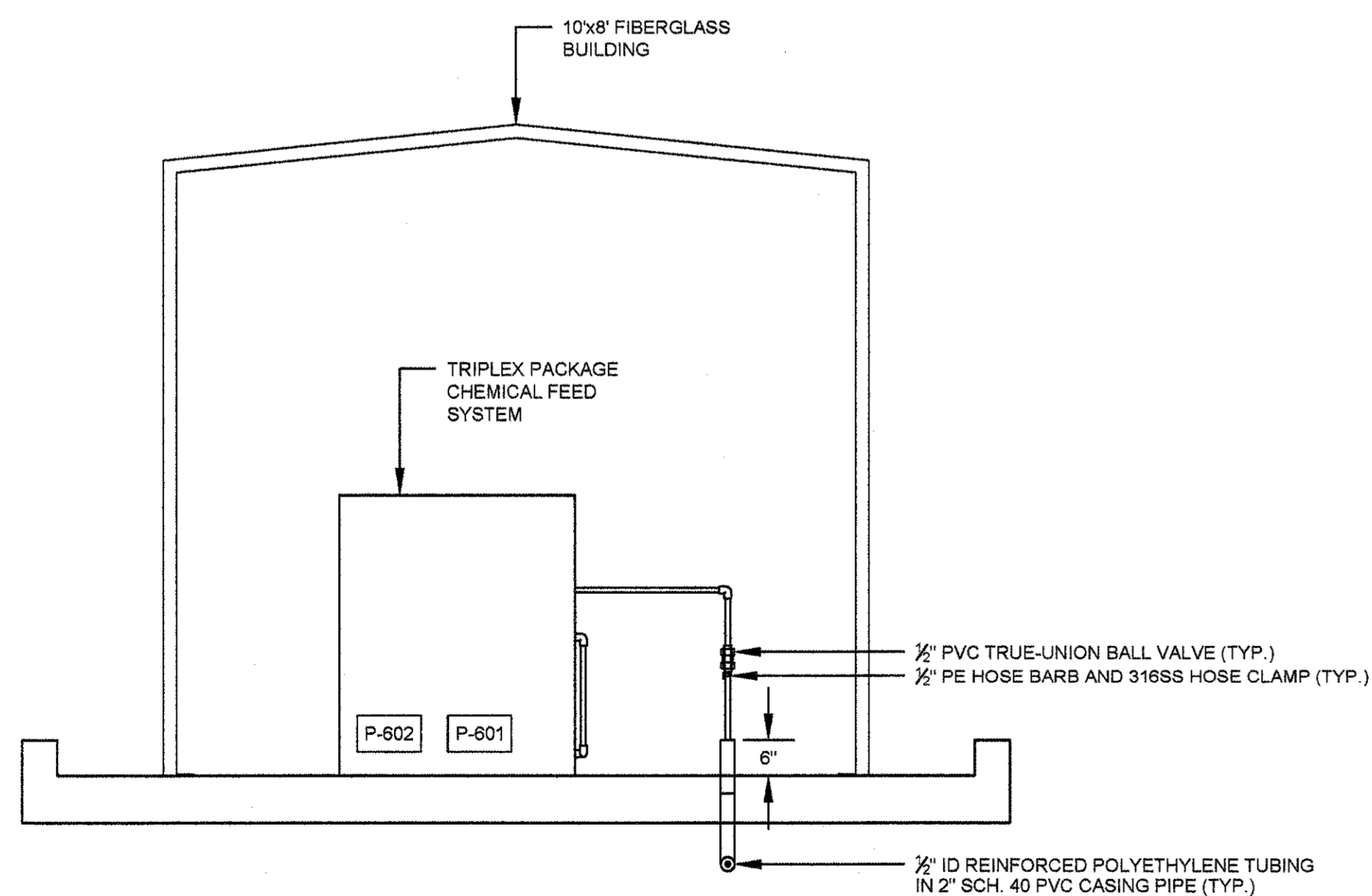


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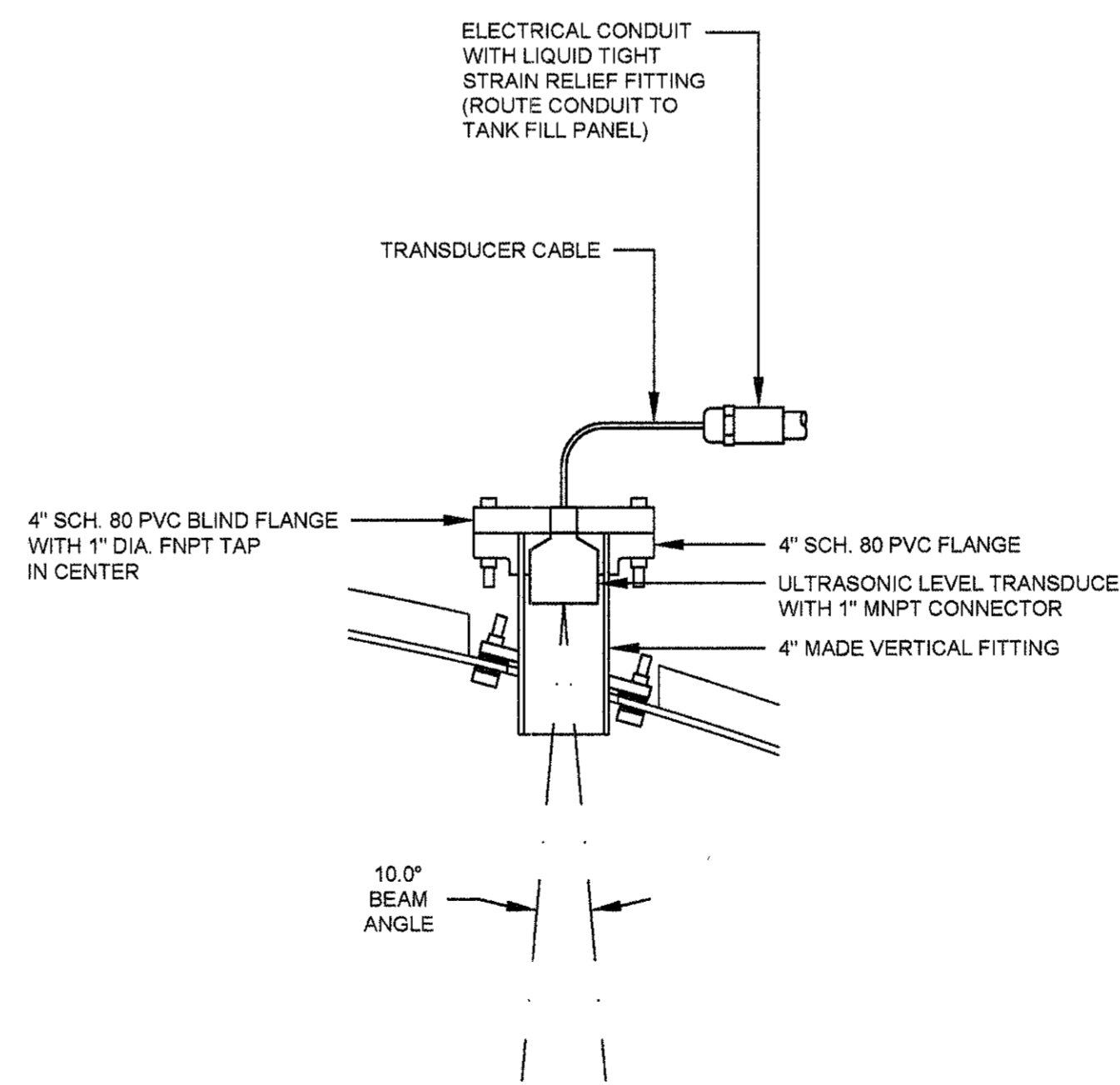
L:\Henry County WAIC\WRF Design\Wg\Sheets\MIS-NAOH Storage.dwg - 8/29/2016



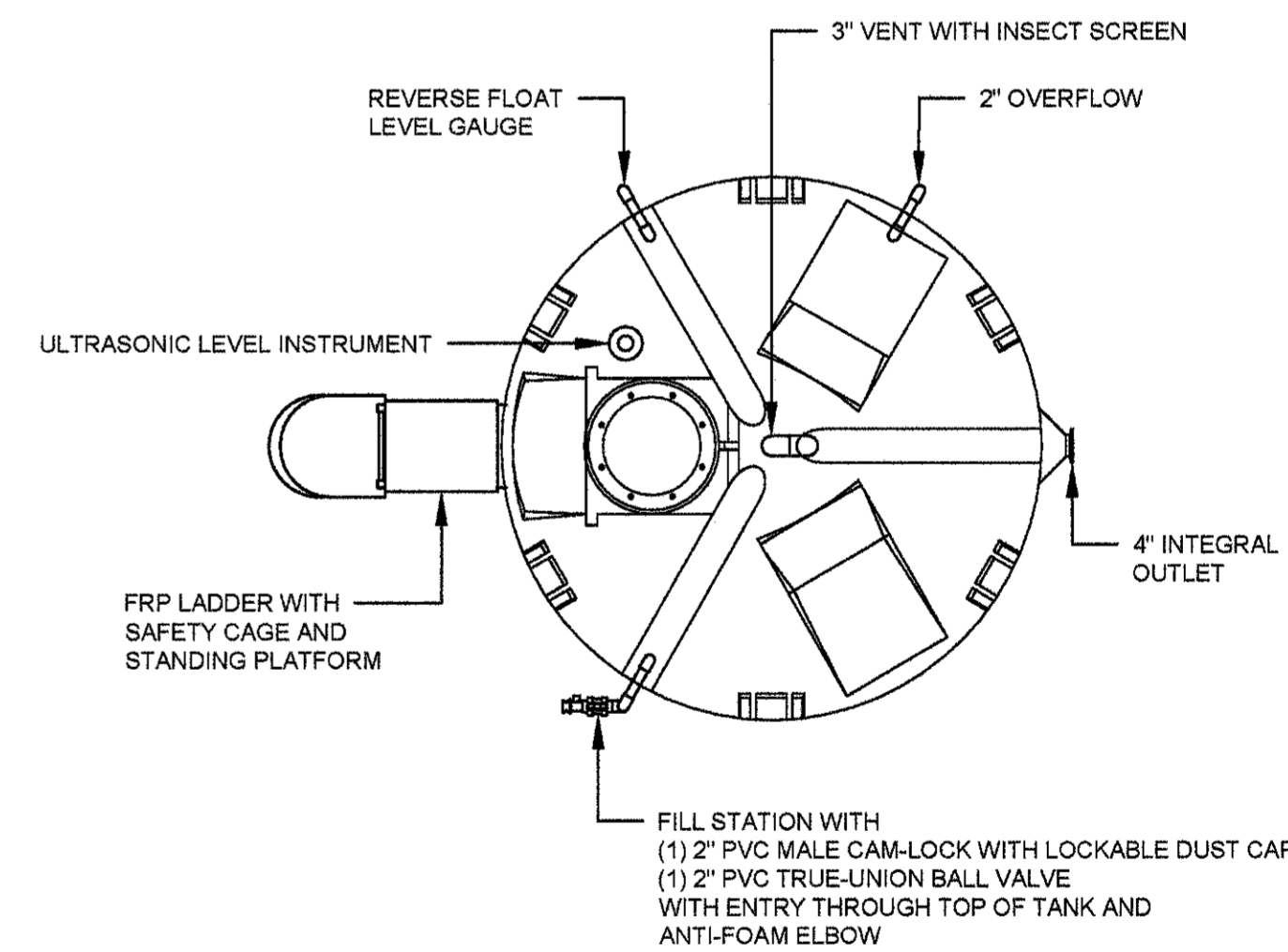
SECTION A
 SCALE: 3/8" = 1'-0"
 55-M-1 55-M-2



SECTION B
 SCALE: 1/2" = 1'-0"
 55-M-1 55-M-2



SECTION B
 SCALE: 1-1/2" = 1'-0"
 55-M-1 55-M-2



TANK FITTINGS AND ACCESSORIES		
ITEM	DEGREES	LOCATION
16" MANWAY	0°	TOP
2" FILL LINE	60°	TOP
4" OUTLET	180°	BOTTOM (INTEGRAL)
2" OVERFLOW	240°	TOP
REVERSE FLOAT LEVEL INDICATOR	300°	TOP
4" FLANGE FOR LEVEL INSTRUMENT	325°	TOP - 24" FROM EDGE
3" VENT	TOP CENTER	TOP

- NOTES:**
- THERE SHALL BE NO PENETRATIONS THROUGH TANK SIDEWALL BELOW THE MAXIMUM WATER LEVEL ELEVATION. ALL ATTACHMENTS SHALL BE MADE USING STRAPS OR OTHER METHODS THAT DO NOT REQUIRE PENETRATING THE TANK SIDEWALL.
 - TANK SHALL BE HEAT TRACED AND INSULATED.

SECTION B
 SCALE: 1/4" = 1'-0"
 55-M-1 55-M-2

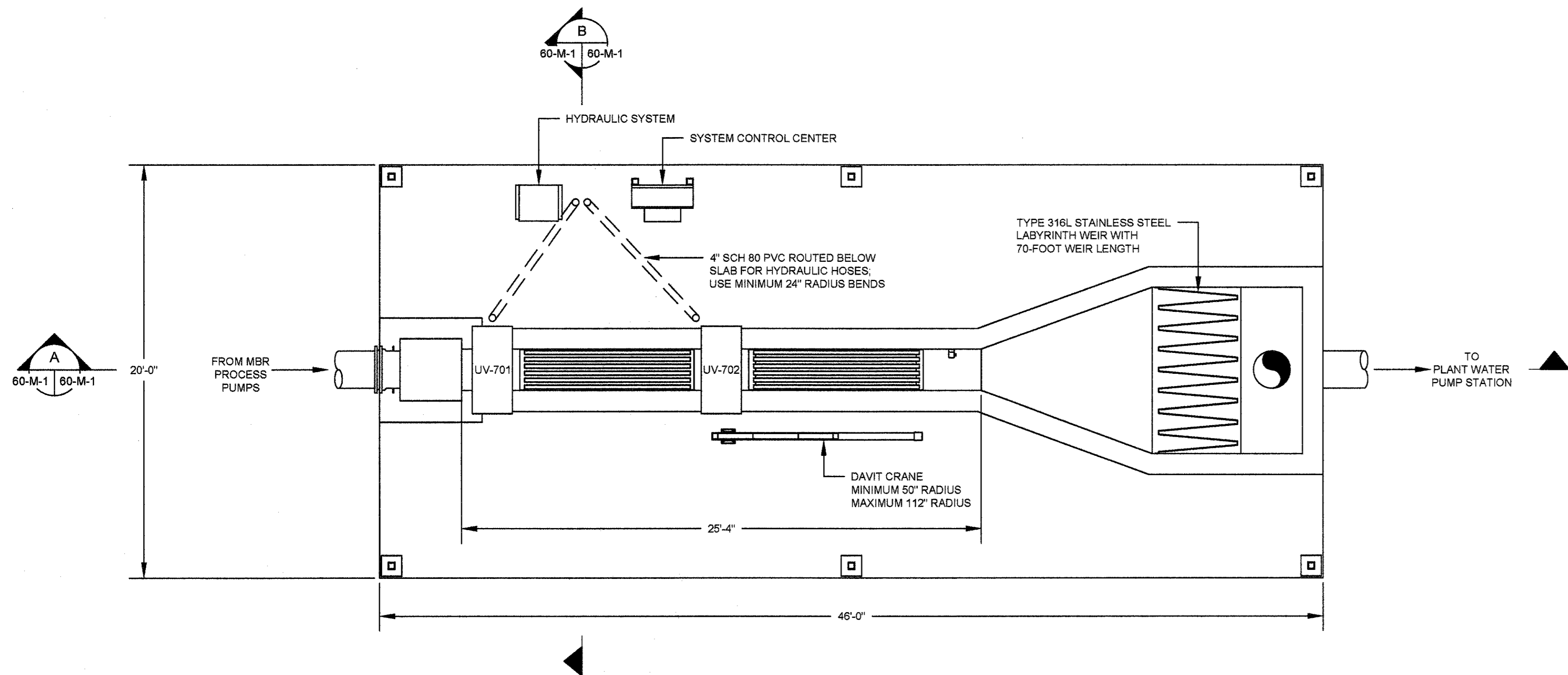
PROJECT NUMBER:	DATE:	REVISION:
	AUGUST 2016	

DSGN: WSH
 DRWN: WSH
 CHKD: WSH

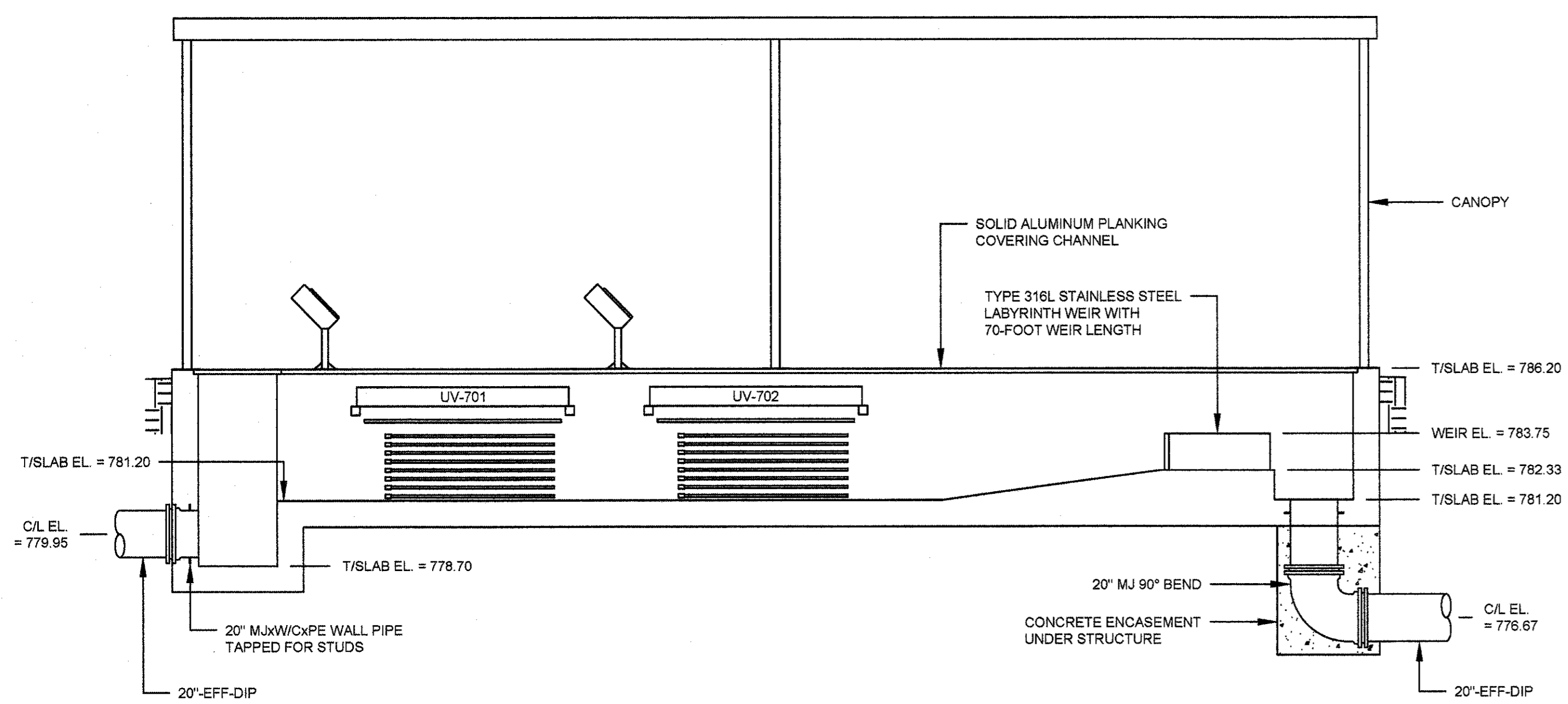
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
NAOH CHEMICAL STORAGE AREA
SECTIONS AND DETAILS

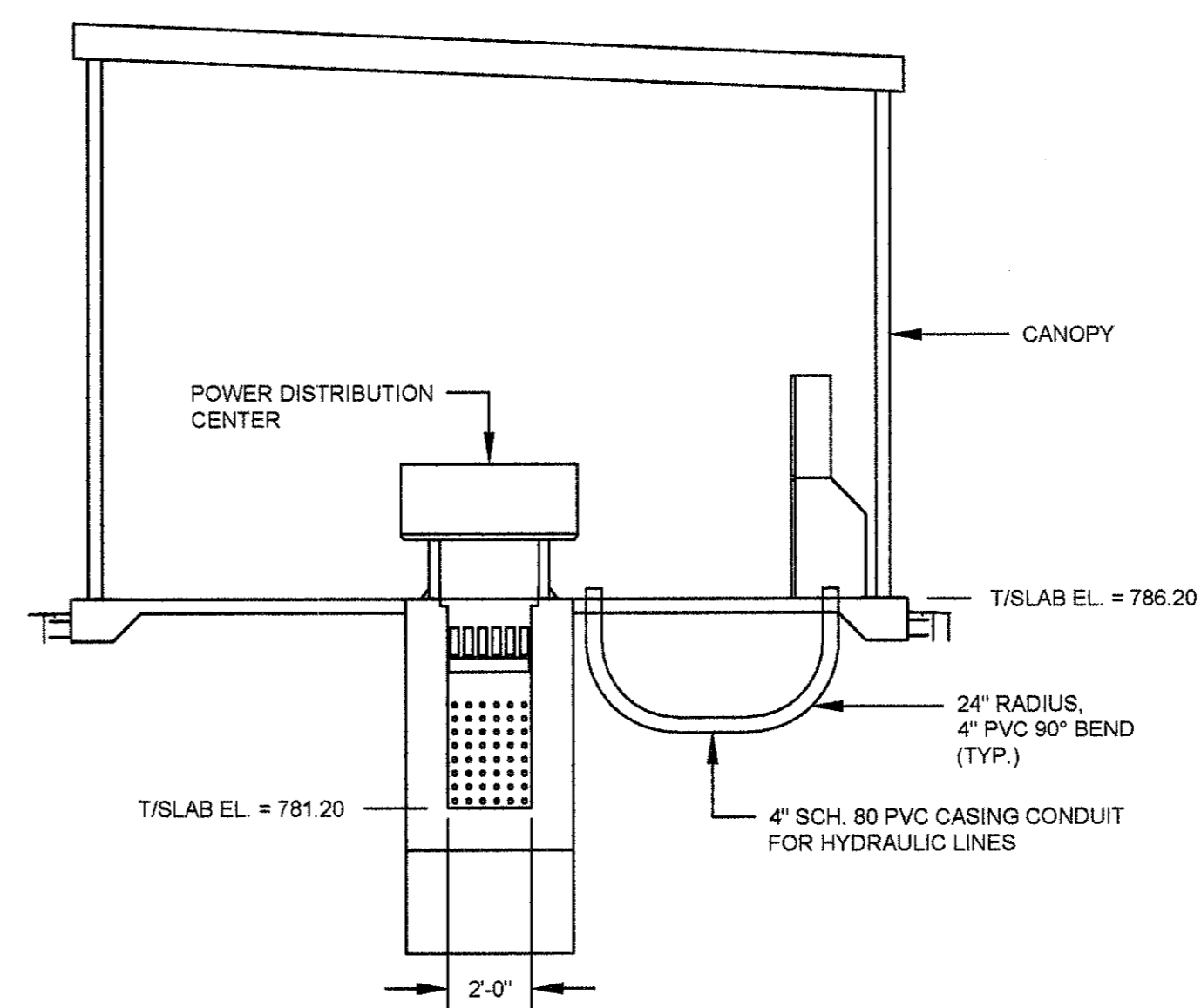
SHEET NO.
55-M-2



TROJAN UV SYSTEM PLAN
SCALE: 1/4" = 1'-0"



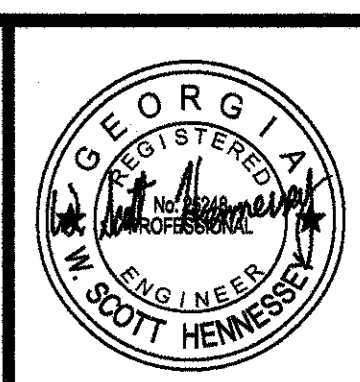
SECTION A
SCALE: 1/4" = 1'-0"



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

NOTES:

1. THE CHANNEL PRESENTED ON THIS DRAWING IS BASED ON THE TROJAN UV 3000 PLUS ULTRAVIOLET DISINFECTION SYSTEM. THE UV CHANNEL SHALL BE CONSTRUCTED BASED ON THE REQUIREMENTS OF THE ACTUAL ULTRAVIOLET DISINFECTION SYSTEM THAT IS PROVIDED.
2. ALL ELECTRICAL EQUIPMENT WILL BE LOCATED IN AN OUTDOOR ENVIRONMENT. UV SYSTEM SUPPLIER SHALL PROVIDE AIR CONDITIONING UNITS FOR ALL UV SYSTEM COMPONENTS THAT REQUIRE A TEMPERATURE CONTROLLED ENVIRONMENT.



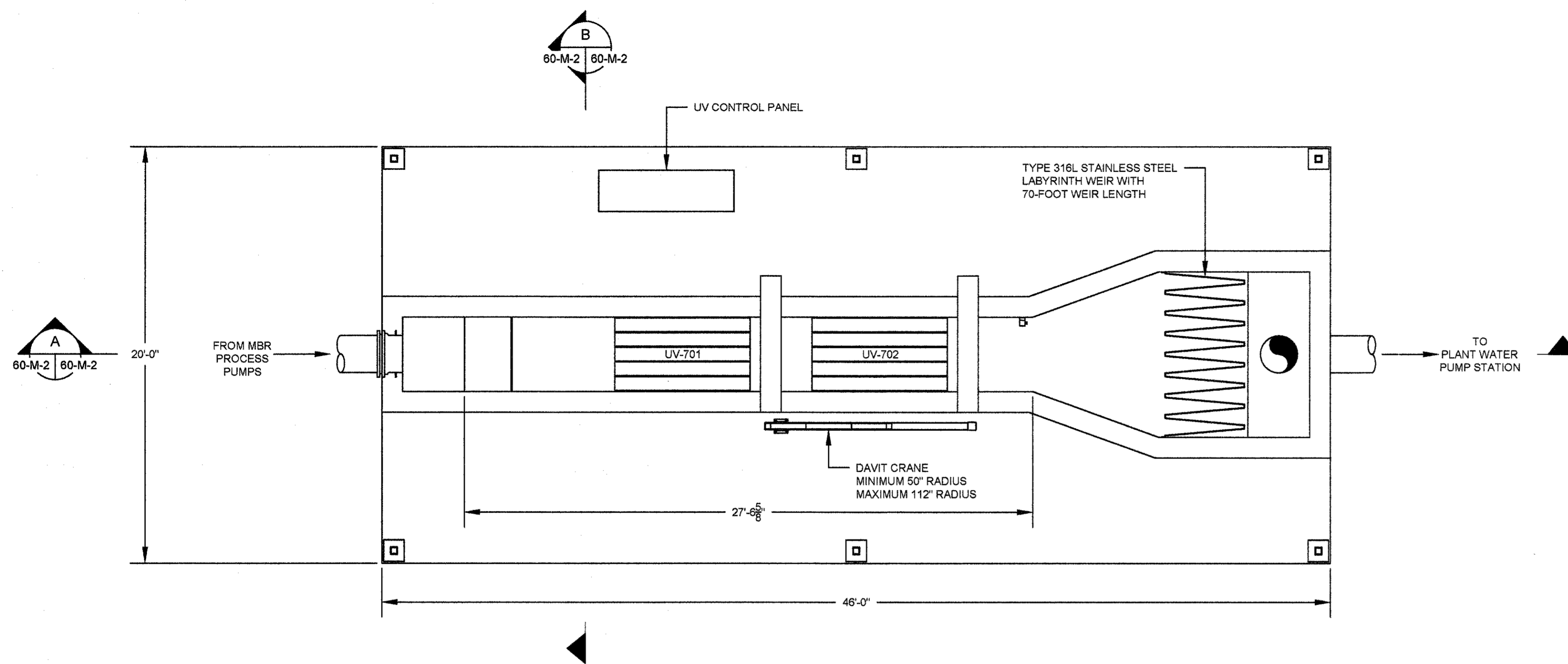
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

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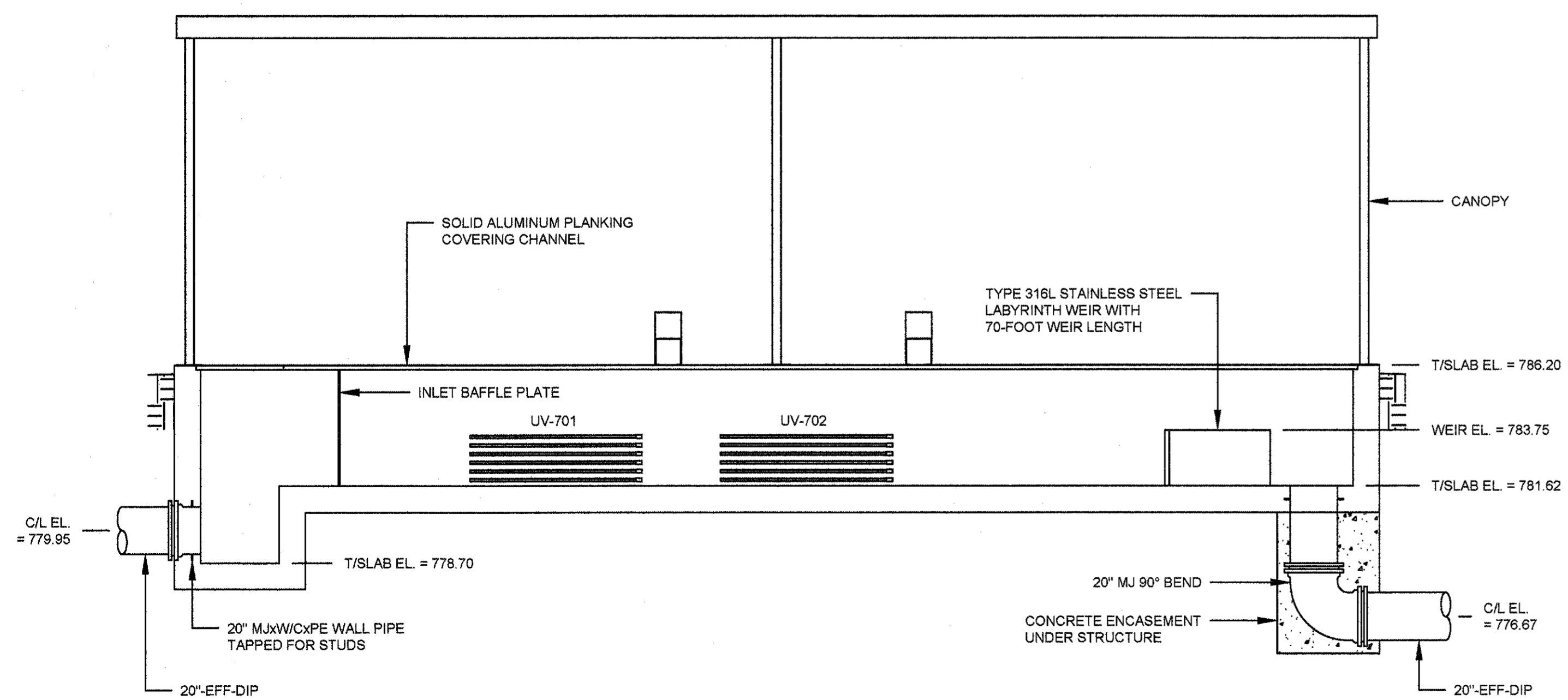
DSGN: WSH
DRWN: WSH
CHK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ULTRAVIOLET DISINFECTION SYSTEM
PLAN AND SECTIONS (TROJAN)

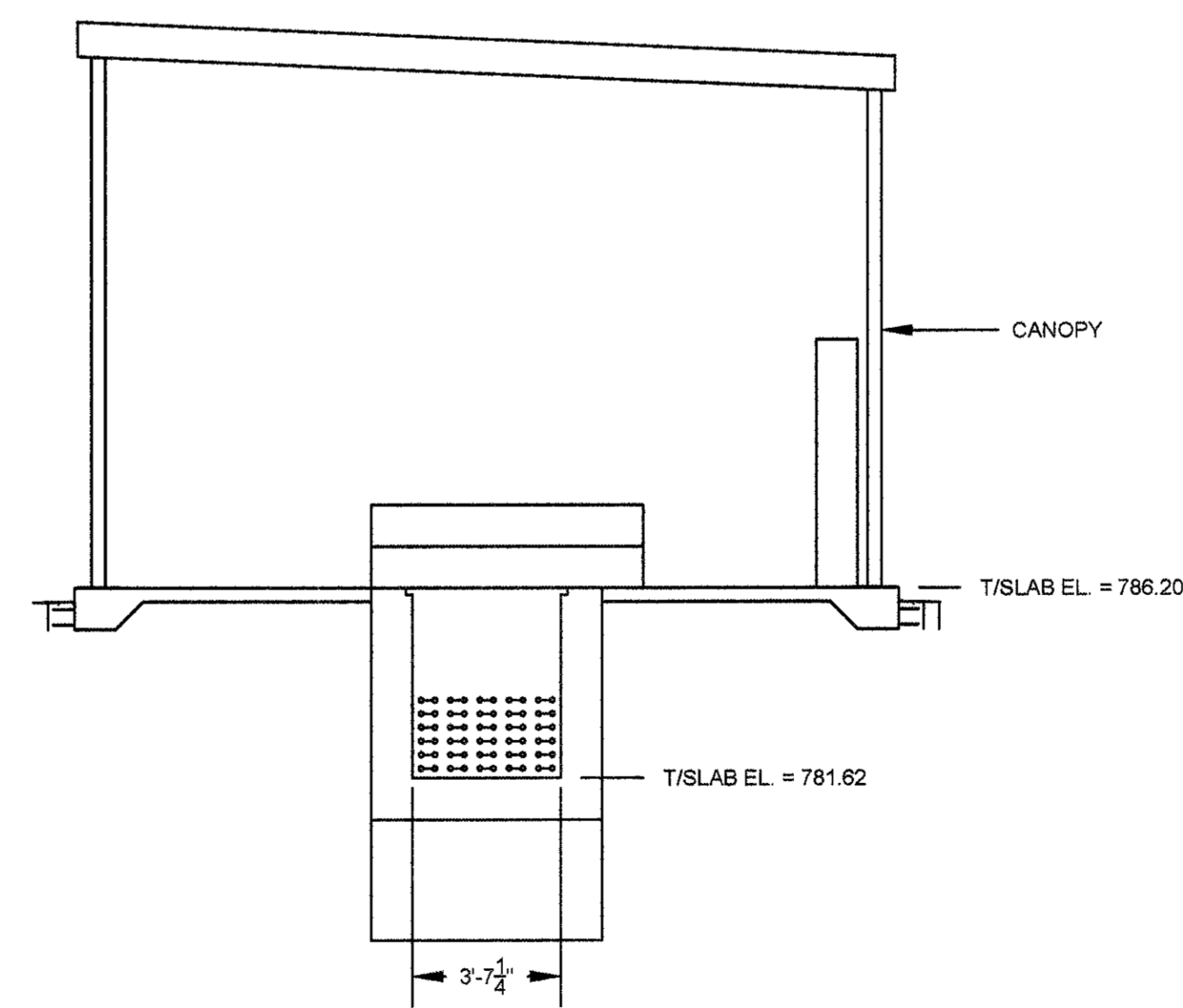
SHEET NO.
60-M-1



WEDECO UV SYSTEM PLAN
SCALE: 1/4" = 1'-0"



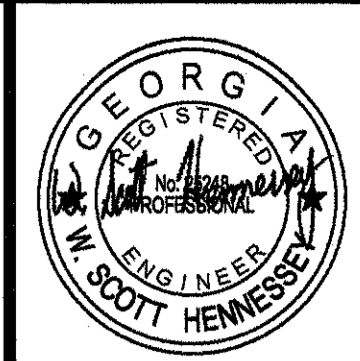
SECTION A
SCALE: 1/4" = 1'-0"



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

NOTES:

1. THE CHANNEL PRESENTED ON THIS DRAWING IS BASED ON THE WEDECO TAK55 ULTRAVIOLET DISINFECTION SYSTEM. THE UV CHANNEL SHALL BE CONSTRUCTED BASED ON THE REQUIREMENTS OF THE ACTUAL ULTRAVIOLET DISINFECTION SYSTEM THAT IS PROVIDED.
2. ALL ELECTRICAL EQUIPMENT WILL BE LOCATED IN AN OUTDOOR ENVIRONMENT. UV SYSTEM SUPPLIER SHALL PROVIDE AIR CONDITIONING UNITS FOR ALL UV SYSTEM COMPONENTS THAT REQUIRE A TEMPERATURE CONTROLLED ENVIRONMENT.



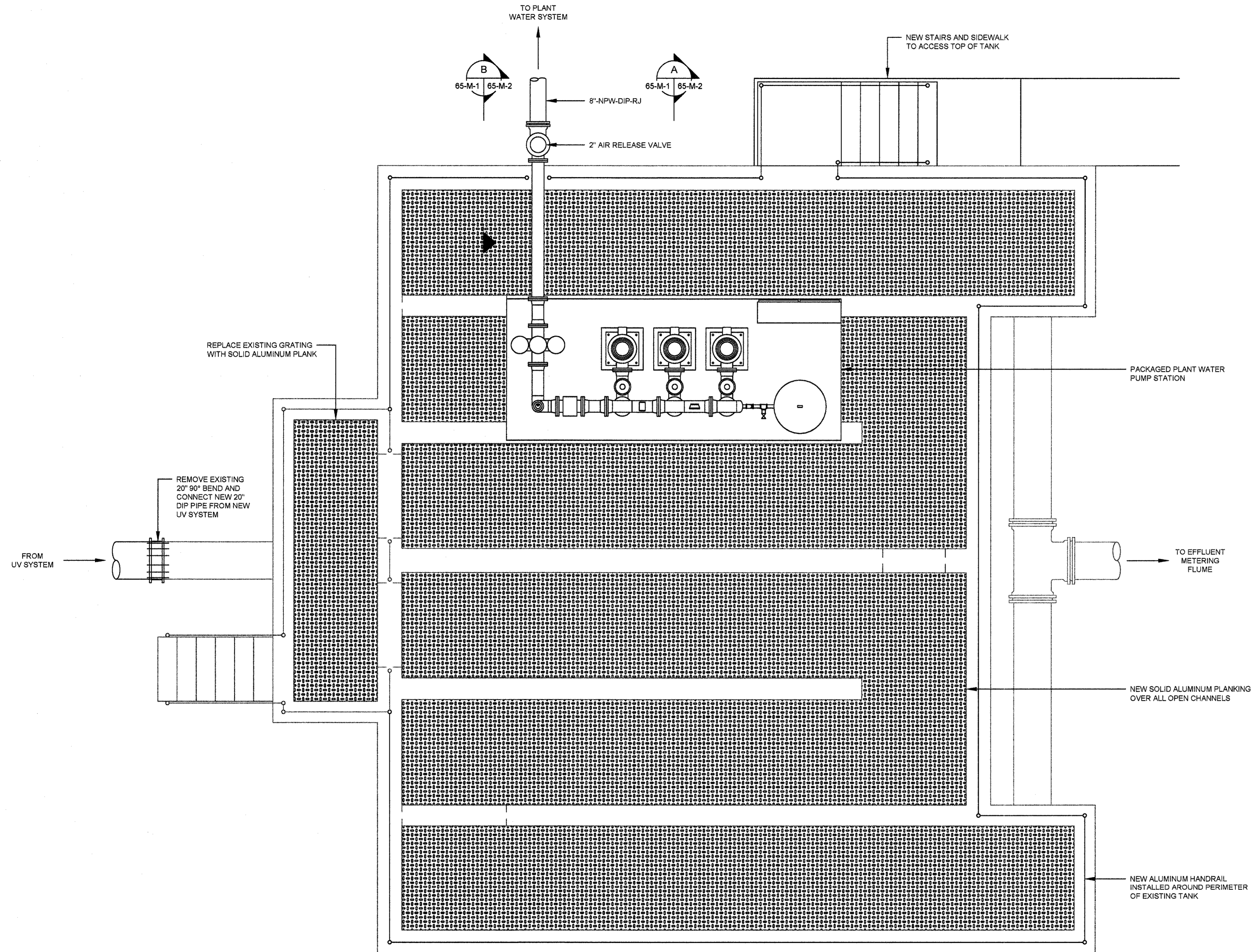
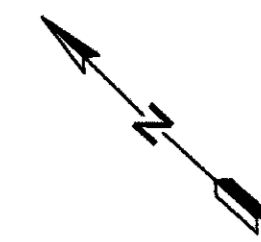
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(770) 423-0001

PROJECT NUMBER:	DATE:
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REVISION	DATE
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DSGN: WSH
DRWN: WSH
CHK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

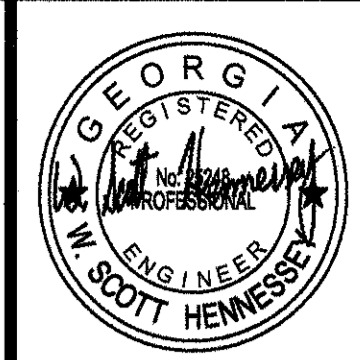
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ULTRAVIOLET DISINFECTION SYSTEM
PLAN AND SECTIONS (WEDECO)

SHEET NO.
60-M-2



NOTES:

1. CONTRACTOR SHALL PROVIDE BYPASS PUMPING, AS REQUIRED, TO MAKE MODIFICATIONS TO THE EXISTING CHLORINE CONTACT CHAMBER AND TO TIE IN NEW CONNECTIONS.
2. CONTRACTOR SHALL HEAT TRACE AND INSULATE ALL EXPOSED PIPING, INCLUDING THE PIPING ON THE PUMP SKID.
3. ALL NON-POTABLE REUSE WATER PIPING AND EQUIPMENT SHALL BE PAINTED PURPLE.



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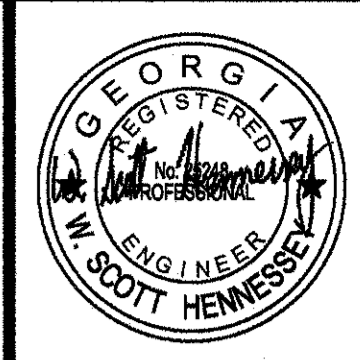
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 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT WATER PUMP STATION
PLAN

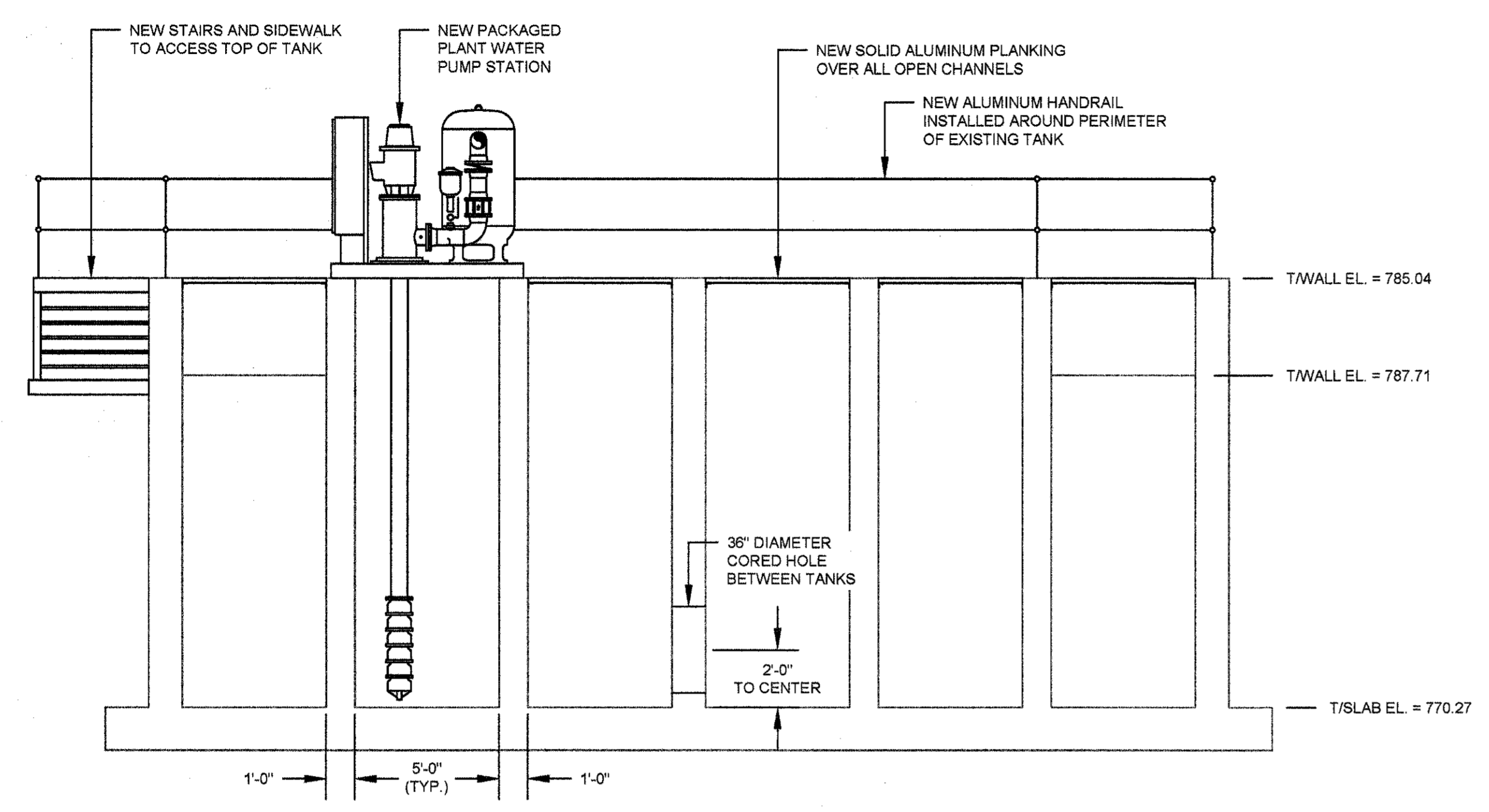
SHEET NO.
65-M-1

PLANT WATER PUMP STATION PLAN
 SCALE: 3/8" = 1'-0"

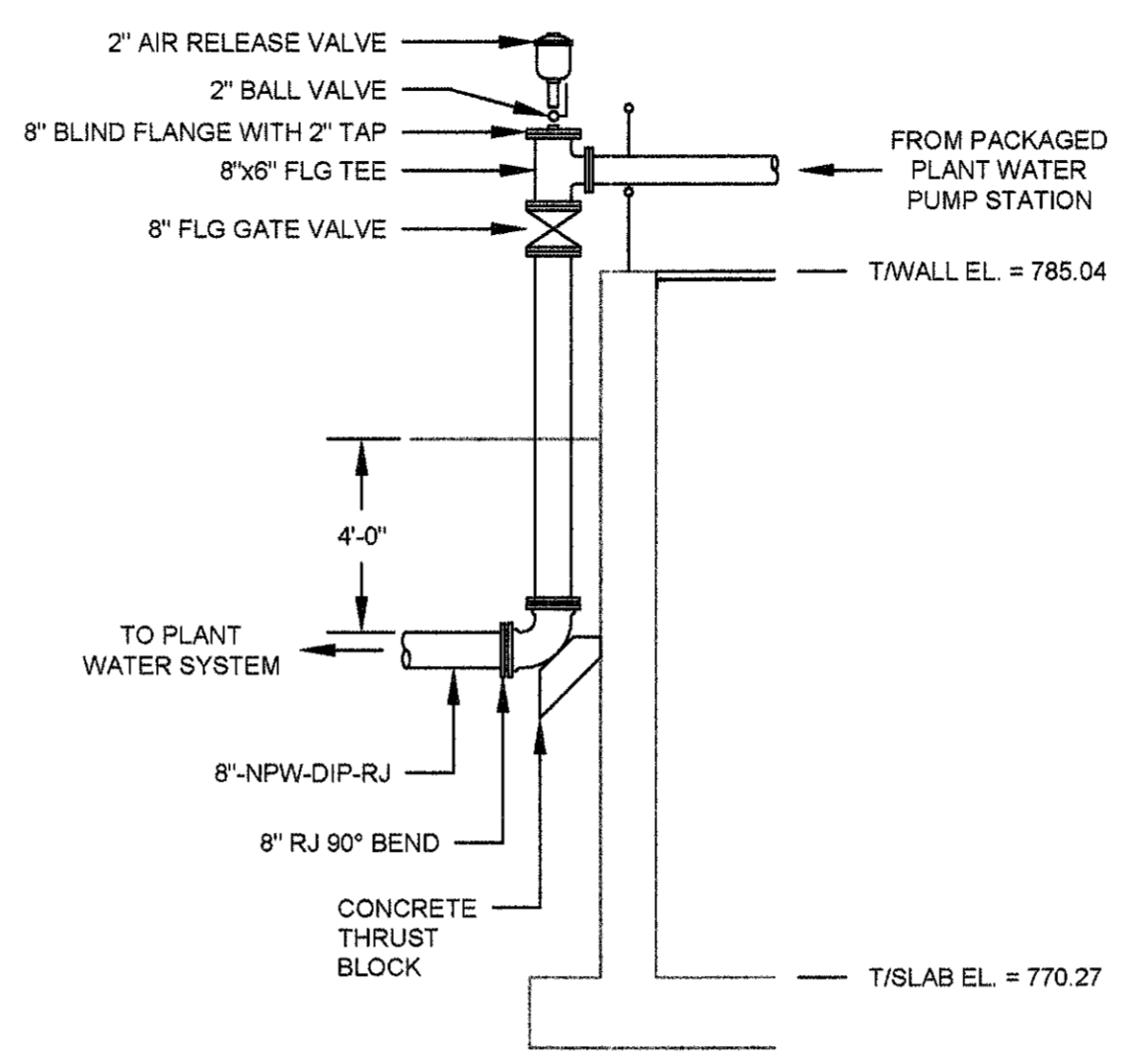


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SECTION A
 SCALE: 1-1/2" = 1'-0"
 65-M-1 65-M-2



SECTION B
 SCALE: 1-1/2" = 1'-0"
 65-M-1 65-M-2

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: WSH
 DRWN: WSH
 CHCK: WSH
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT WATER PUMP STATION
 SECTIONS

SHEET NO.
 65-M-2



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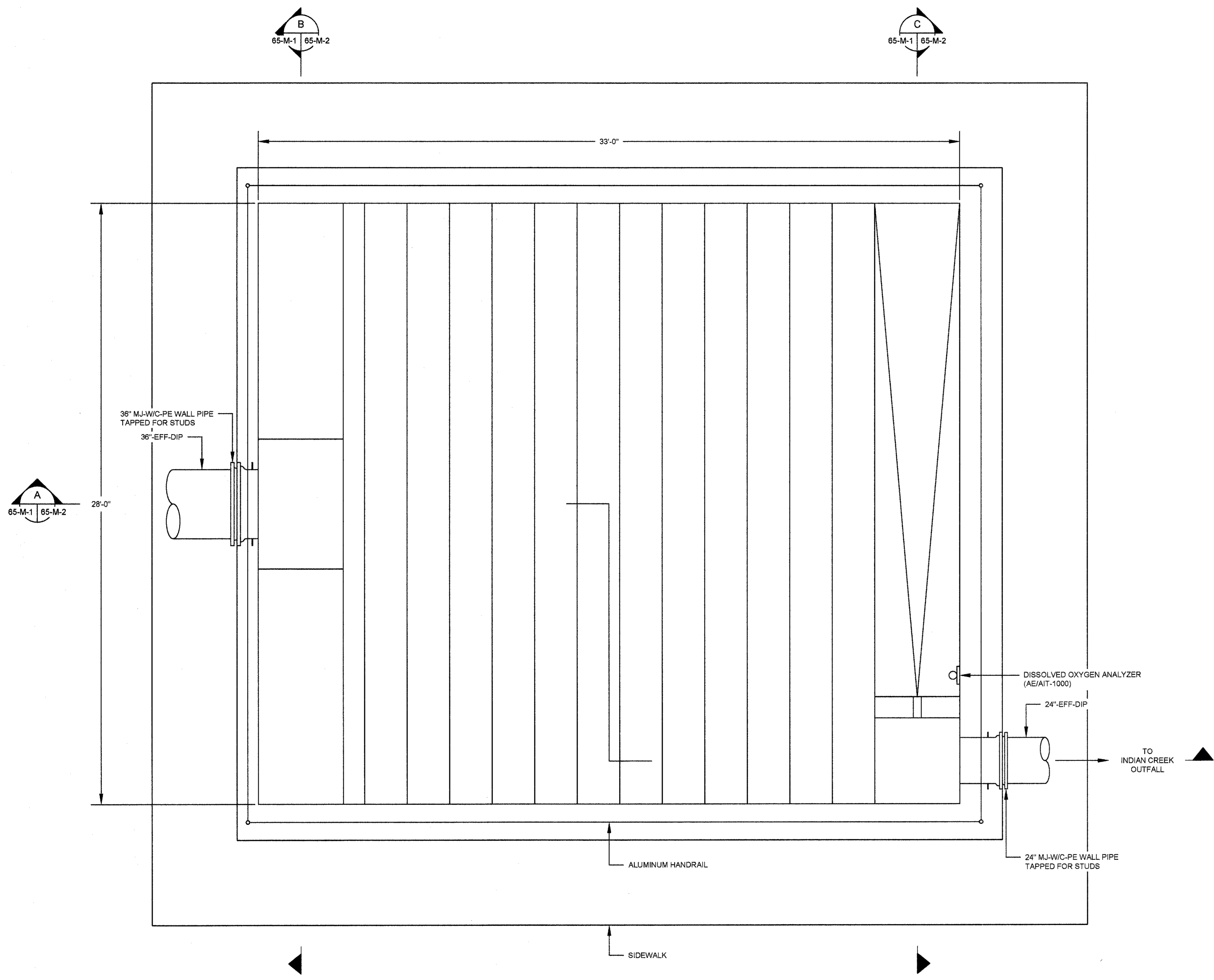
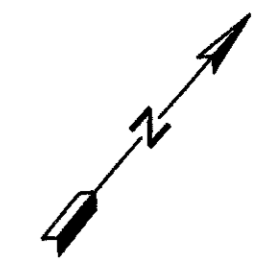
PROJECT NUMBER:	DATE:
Δ	AUGUST 2016
REVISION	DATE

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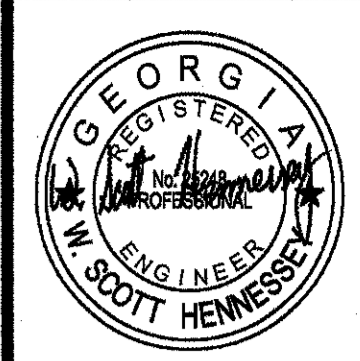
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 CASCADE AERATOR
 PLAN

SHEET NO.
 70-M-1



CASCADE AERATOR PLAN
 SCALE: 3/8" = 1'-0"



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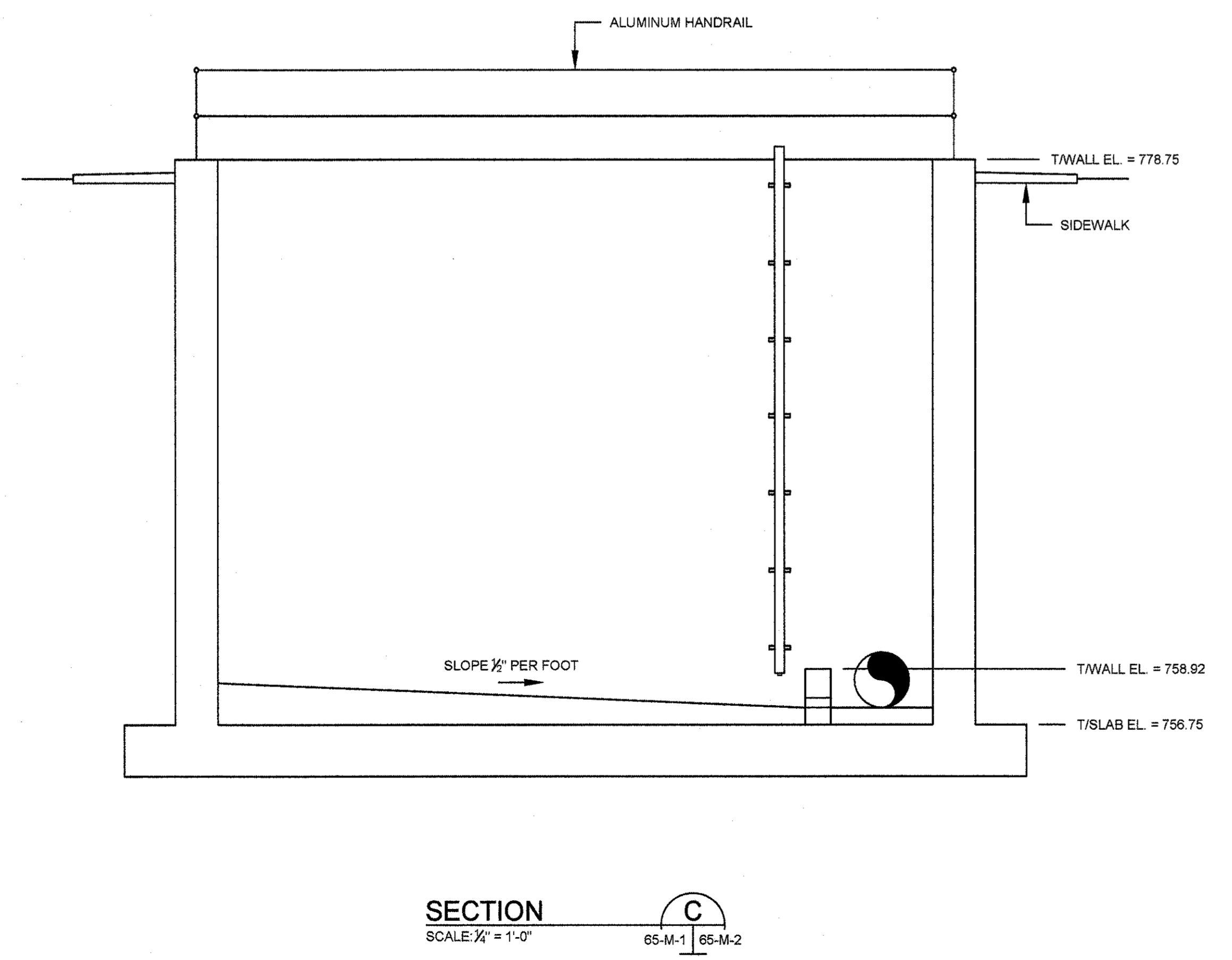
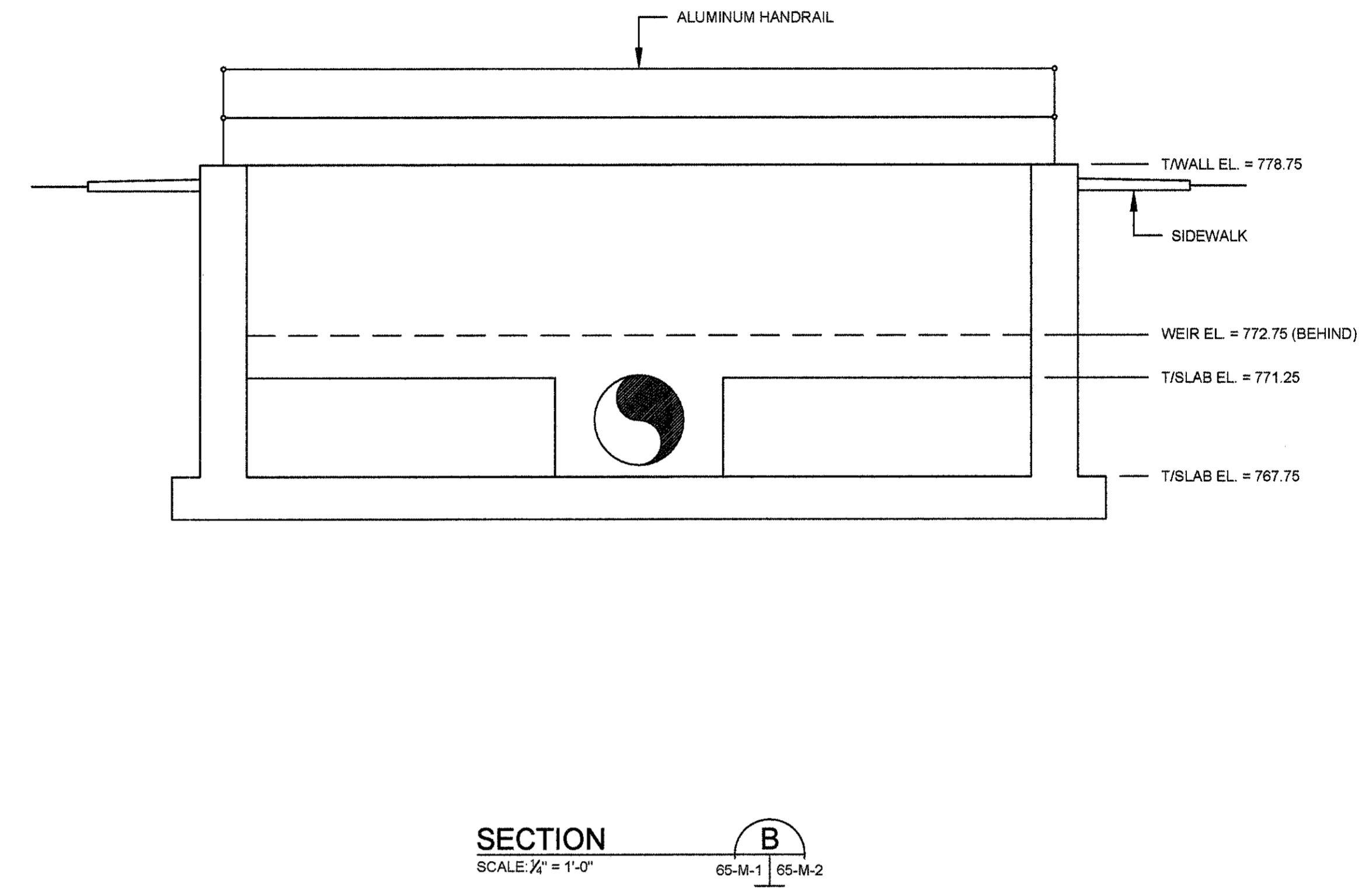
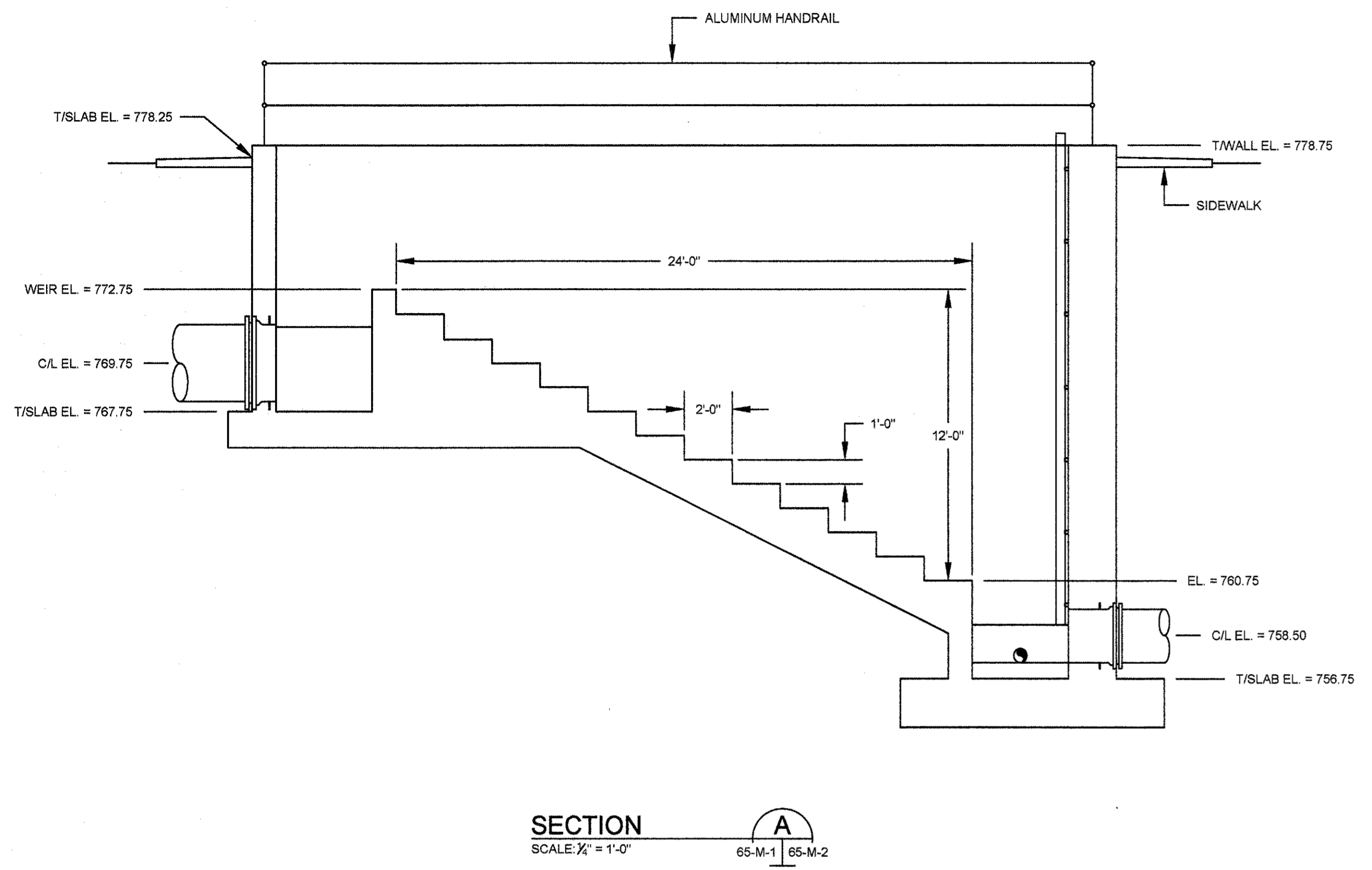
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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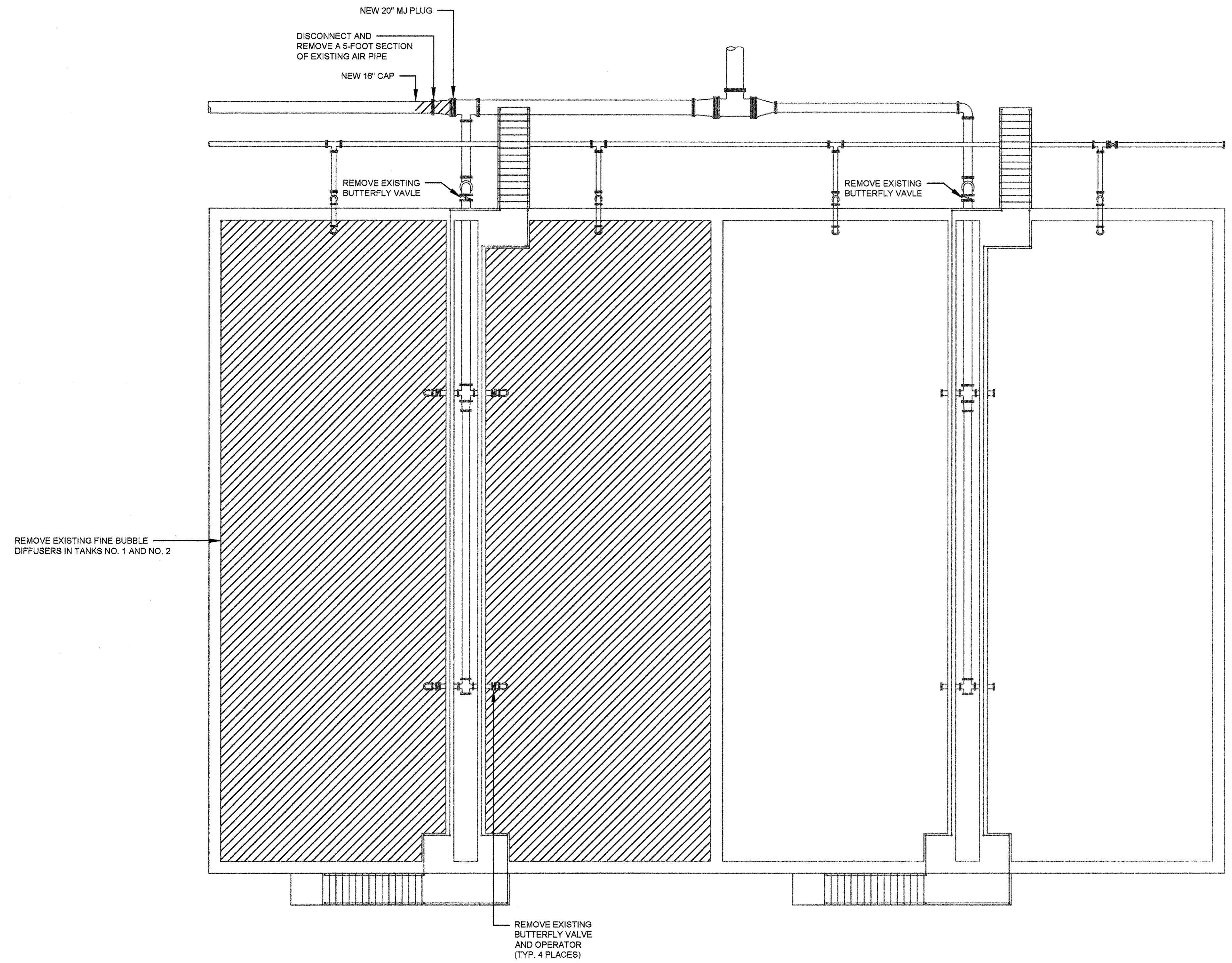
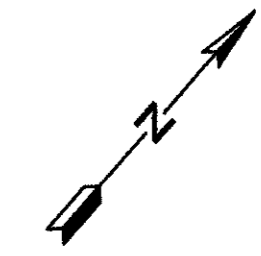
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 DRWN: WSH
 CHCK: WSH
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 CASCADE AERATOR
 SECTIONS

SHEET NO.
 70-M-2

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NOTES:

1. A MINIMUM OF 2 DIGESTER TANKS SHALL BE IN OPERATION AT ALL TIMES.
2. AIR PIPING SHALL NOT BE DEMOLISHED UNTIL THE NEW MBR SYSTEM IS OPERATIONAL AND CONTACT-STABILIZATION TANKS NO. 1 AND NO. 2 ARE TAKEN OUT OF SERVICE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING DIGESTER TANKS AND TRANSFERRING LIQUIDS BETWEEN TANKS DURING CONSTRUCTION.

IN THE TANKS THAT CONTAIN ACCUMULATED RAIN WATER, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED TO PUMP THE WATER TO THE EXISTING INFLUENT SPLITTER BOX. THE MAXIMUM PUMPING RATE SHALL BE 100 GPM. CONTRACTOR SHALL CLEAN THE TANKS OF ALL MATERIAL AND DEBRIS AND PROPERLY DISPOSE OF ANY MATERIAL REMOVED FROM THE TANKS.

IN THE TANKS THAT CONTAIN DIGESTED SLUDGE, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED TO PUMP THE SLUDGE TO THE APPROPRIATE TANK IDENTIFIED BY HCWA. IF THERE IS ACCUMULATED GRIT IN THE BOTTOM OF THE TANKS, HCWA WILL USE THEIR EXISTING SLUDGE HAULER TO REMOVE THE SLUDGE. CONTRACTOR SHALL DRAIN TANKS TO THE TOP OF THE GRIT AND THEN COORDINATE WITH HCWA TO HAVE GRIT REMOVED FROM EACH TANK AFTER IT IS DRAINED. CONTRACTOR SHALL ALLOW A MINIMUM OF 4 WEEKS PER TANK IN THEIR SCHEDULE TO ALLOW HCWA TO COORDINATE WITH THE SLUDGE HAULER AND FOR THE SLUDGE HAULER TO PERFORM THE WORK.



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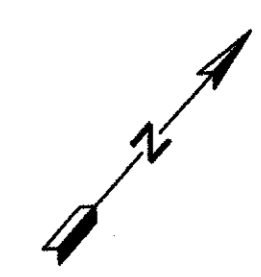
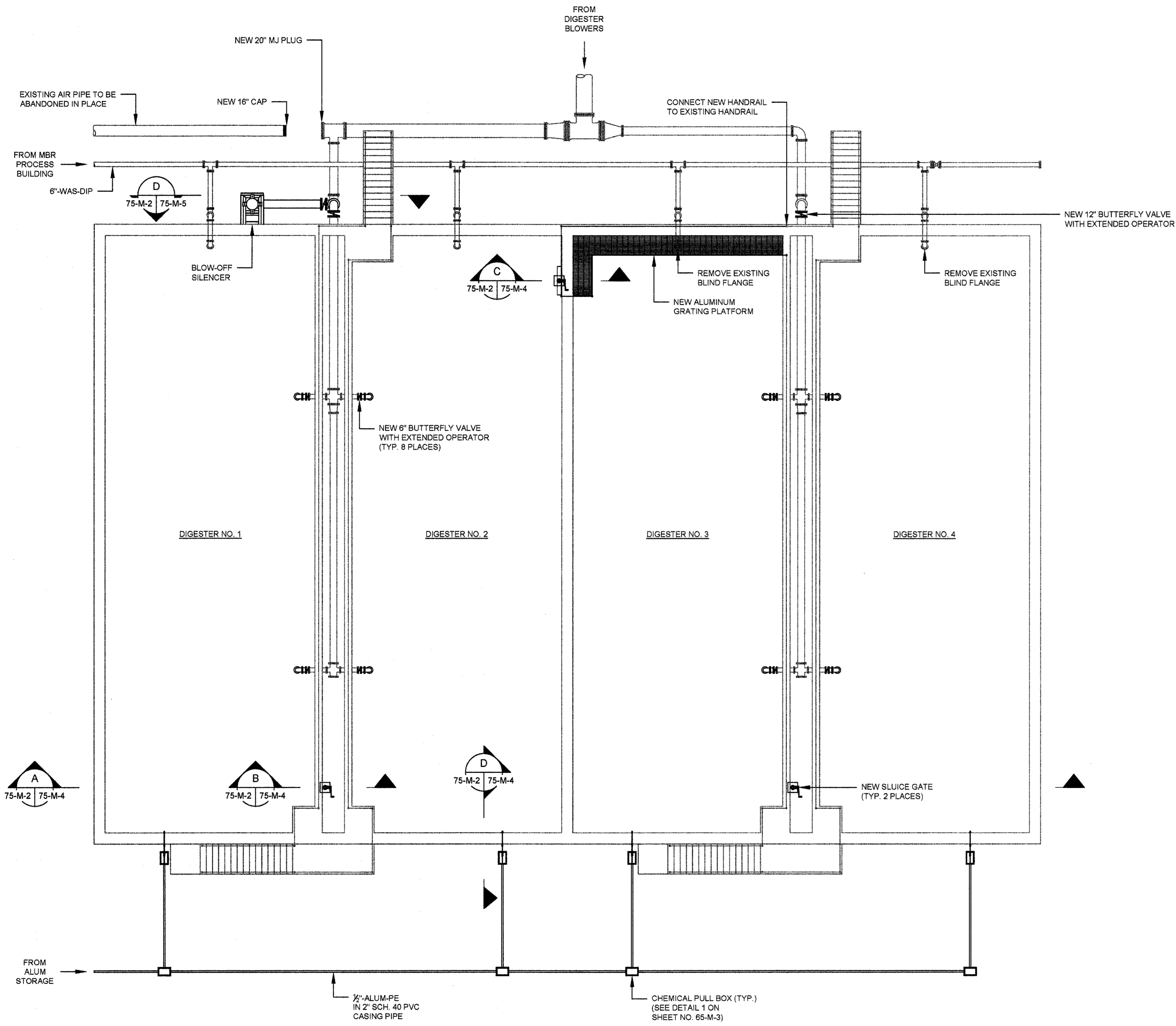
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BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

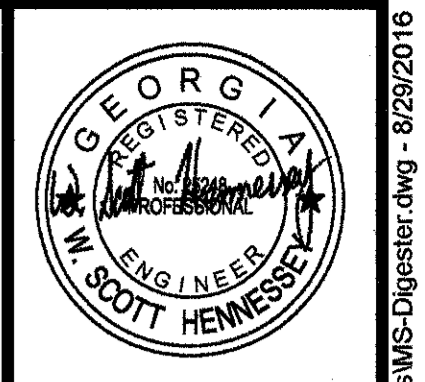
DIGESTER
DEMOLITION PLAN

SHEET NO.
75-M-1



NOTES:

1. A MINIMUM OF 2 DIGESTER TANKS SHALL BE IN OPERATION AT ALL TIMES.
2. CONTRACTOR SHALL CLEAN EACH DIGESTER TANK AND DISPOSE OF SLUDGE IN A SANITARY LANDFILL.
3. REPLACE ALL BUTTERFLY VALVES AND EXTENDED OPERATORS WITH NEW VALVES AND OPERATORS.



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	AUGUST 2016		

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

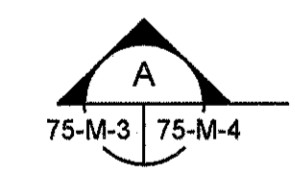
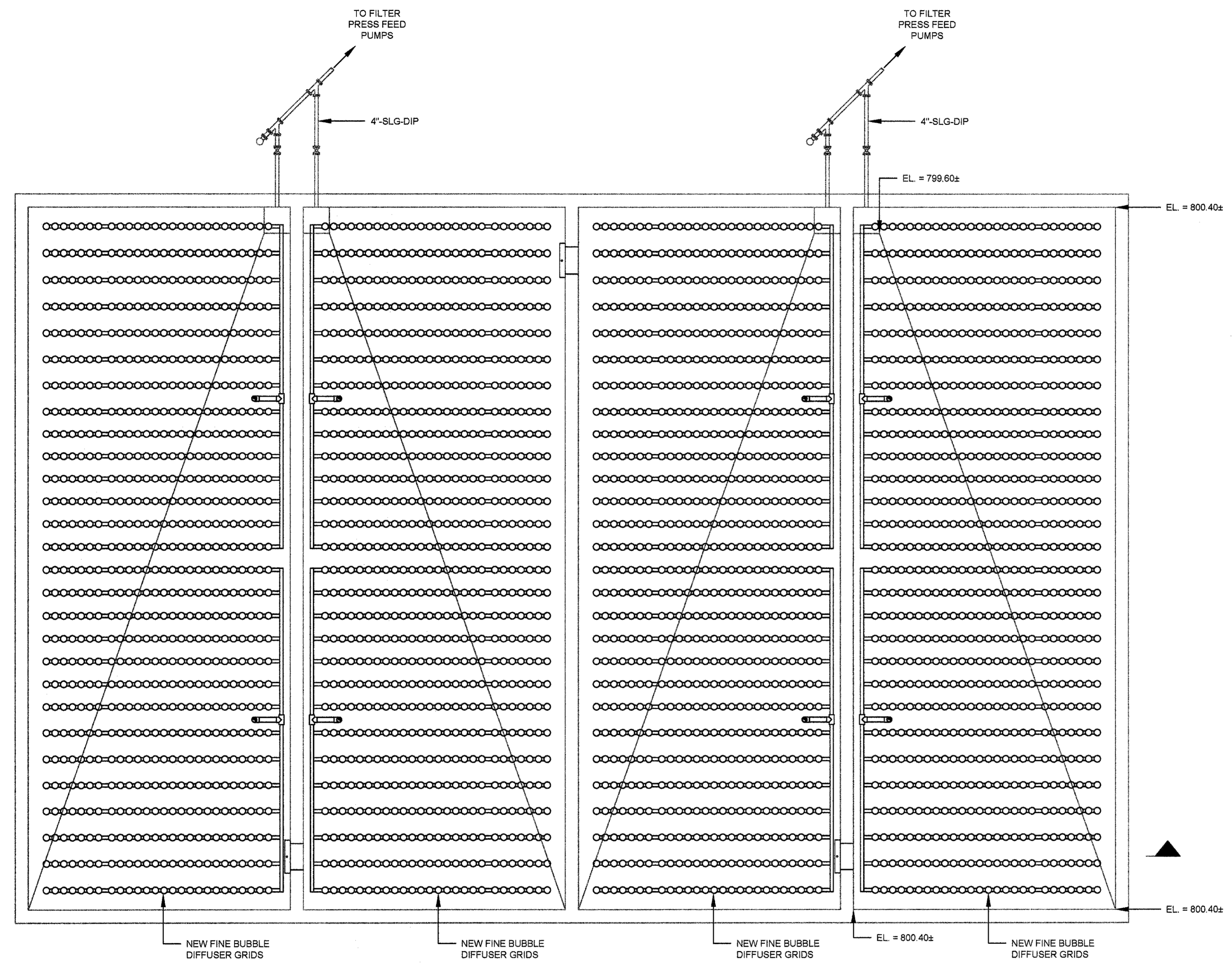
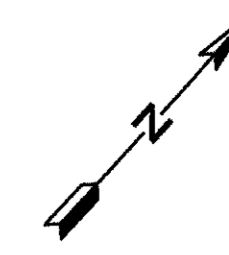
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

DIGESTER
 TOP PLAN

SHEET NO.
 75-M-2

EXISTING DIGESTER TOP PLAN
 SCALE: 1/8" = 1'-0"



NOTES:

- FLOOR ELEVATIONS SHOWN FOR DIGESTER NO. 4 ARE TYPICAL FOR ALL DIGESTERS.



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DSGN: WSH
 DRWN: WSH
 CHCK: WSH

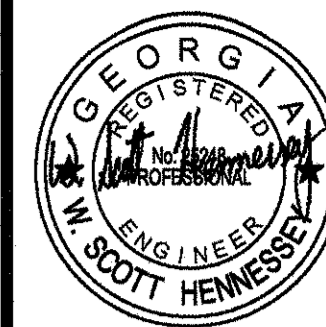
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

DIGESTER
 BOTTOM PLAN

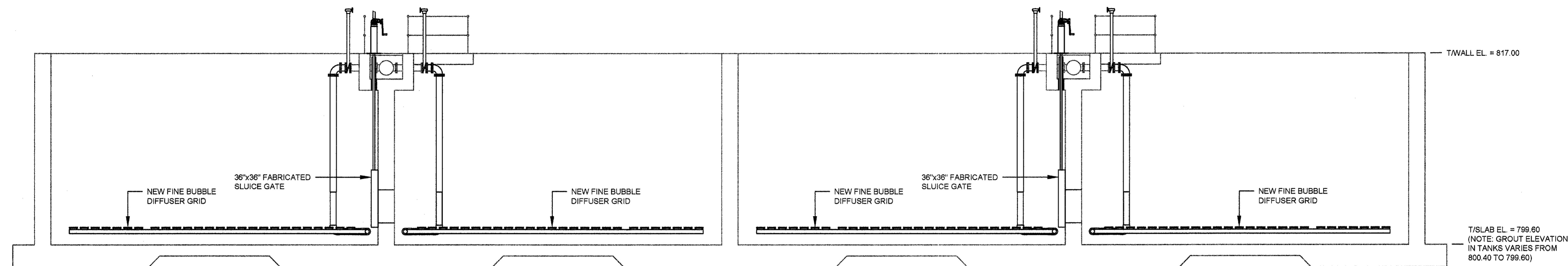
SHEET NO.
 75-M-3

EXISTING DIGESTER BOTTOM PLAN
 SCALE: 1/8" = 1'-0"

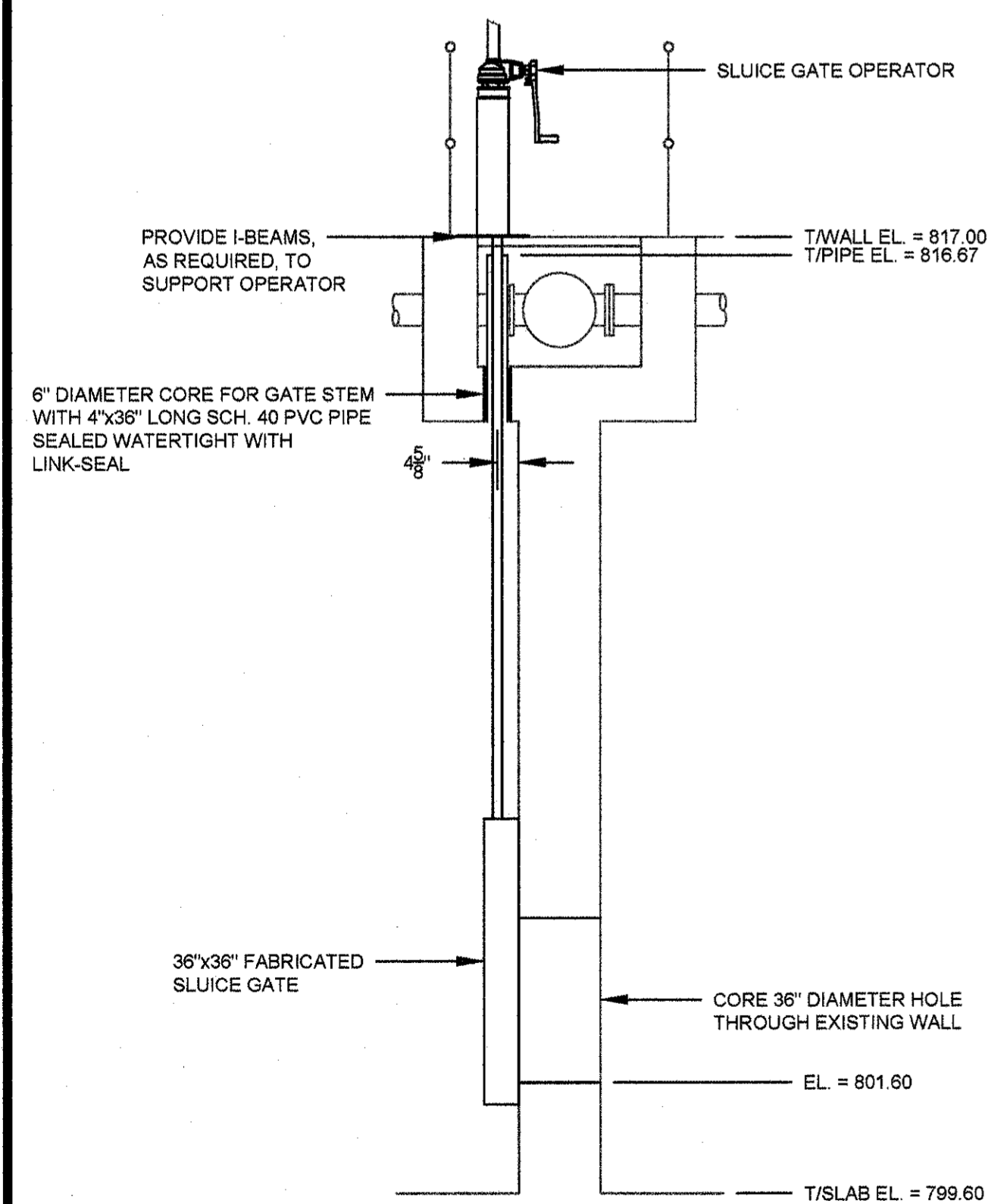


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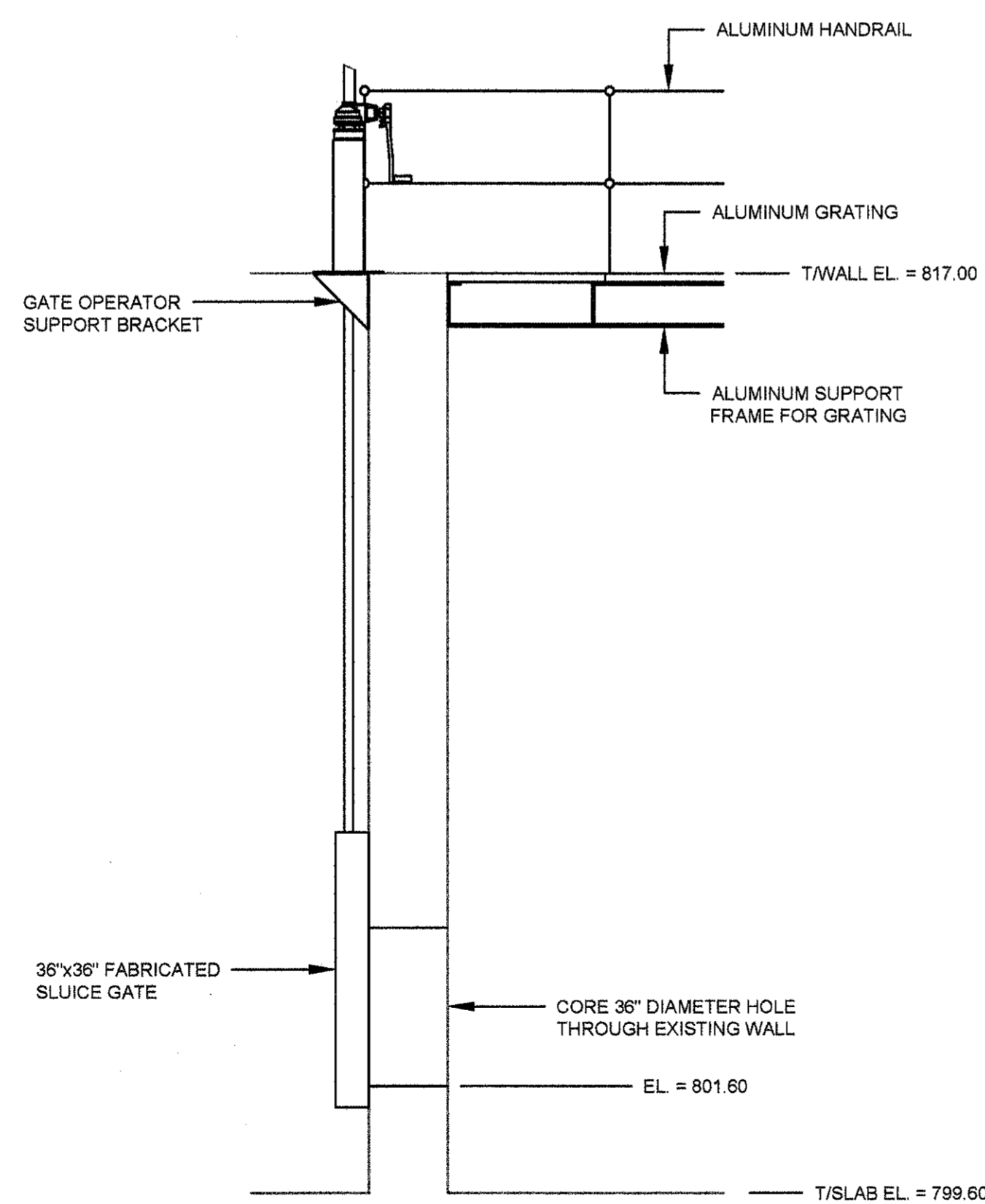
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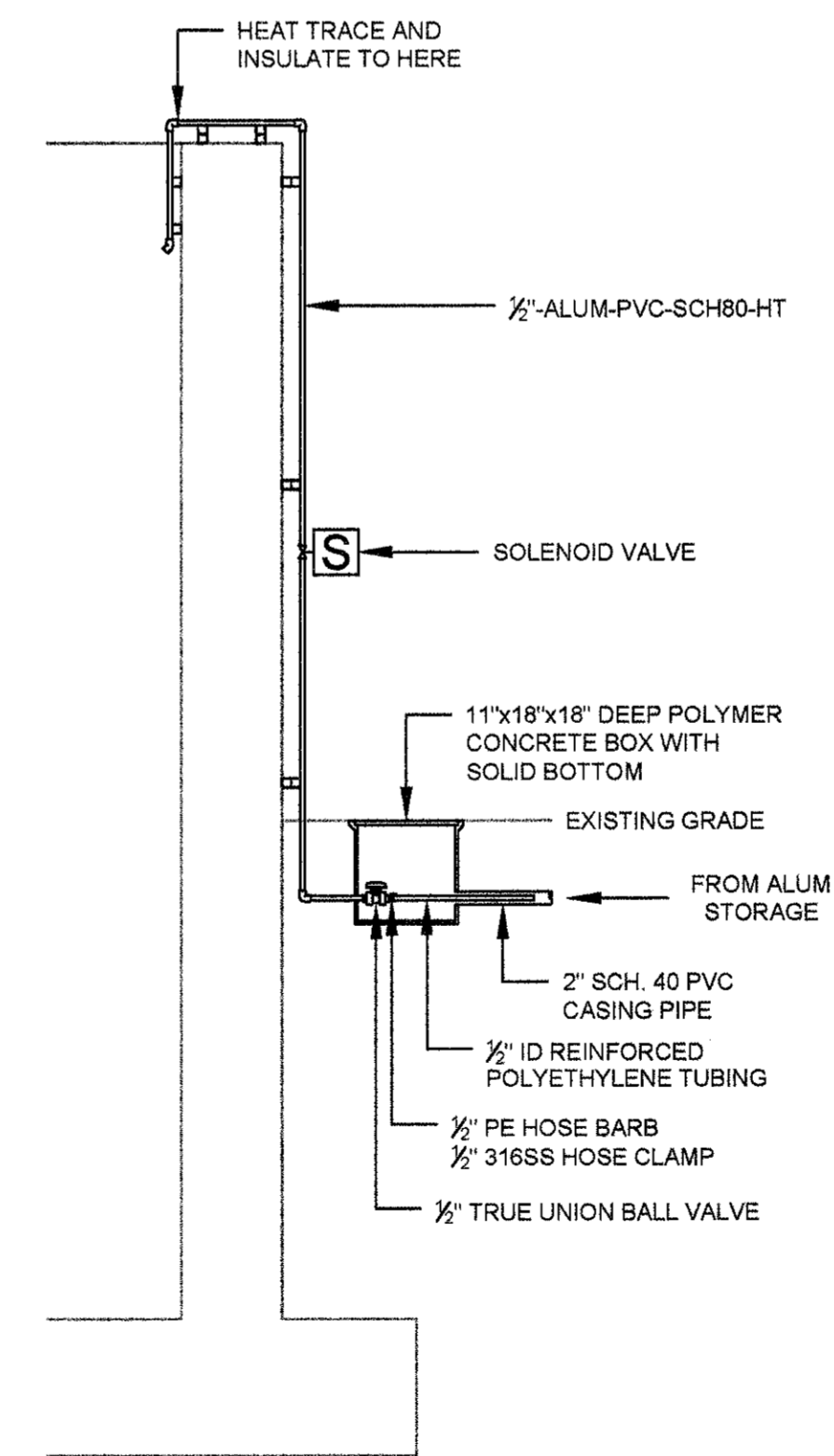
SECTION A
 SCALE: 3/8" = 1'-0"
 75-M-2/3 | 75-M-4



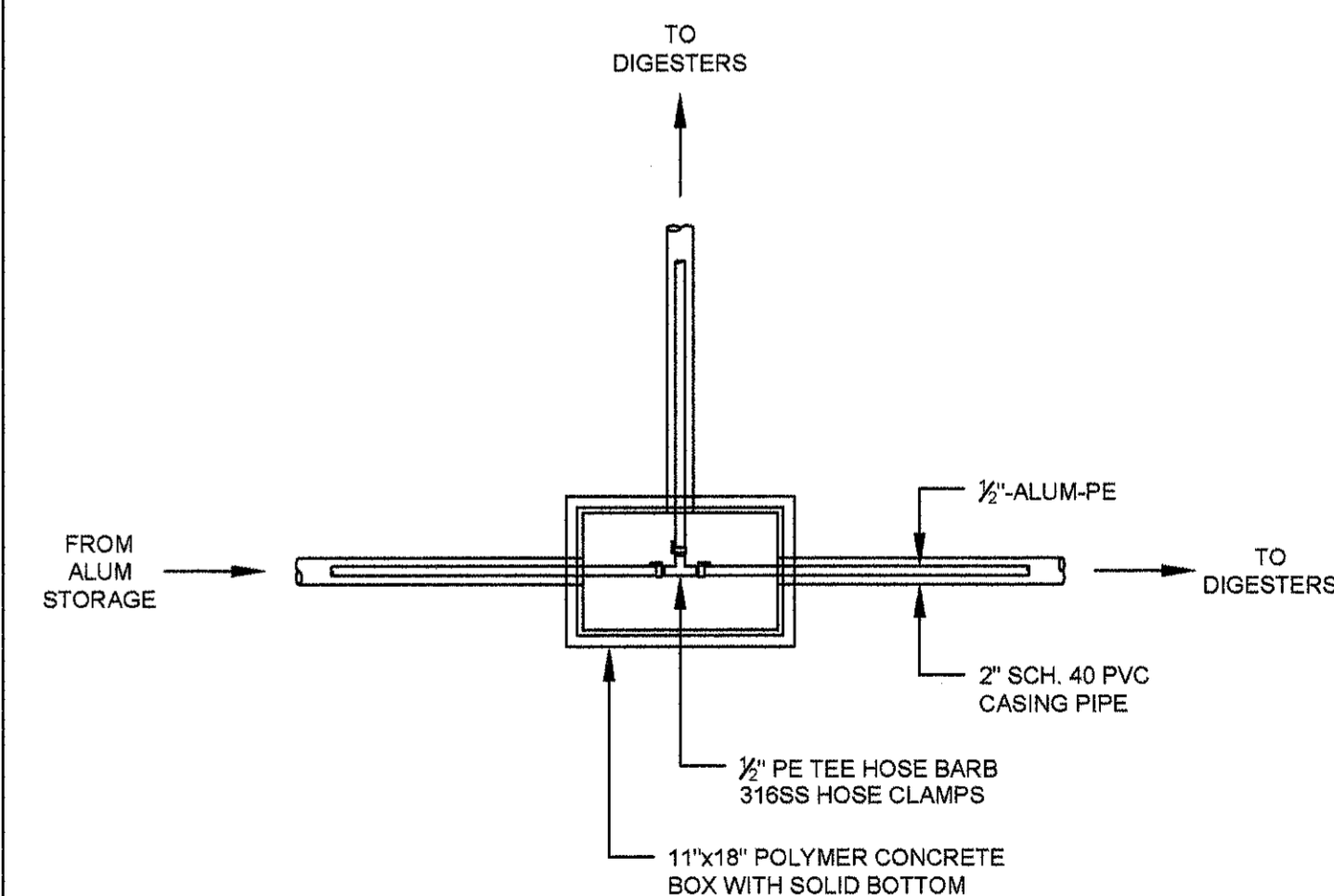
SECTION B
 SCALE: 3/8" = 1'-0"
 75-M-2 | 75-M-4



SECTION C
 SCALE: 3/8" = 1'-0"
 75-M-2 | 75-M-4



SECTION D
 SCALE: 3/8" = 1'-0"
 75-M-2 | 75-M-4



NOTES:
 1. ALUM TUBING SHALL BE 1/2" ID REINFORCED POLYETHYLENE TUBING.

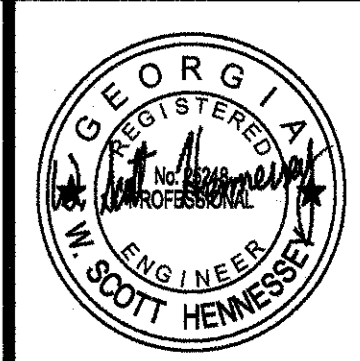
CHEMICAL PULL BOX DETAIL 1
 SCALE: 3/4" = 1'-0"

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: WSH
 DRWN: WSH
 CHCK: WSH
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY**
**DIGESTER
 SECTIONS AND DETAILS 1**

SHEET NO.
 75-M-4



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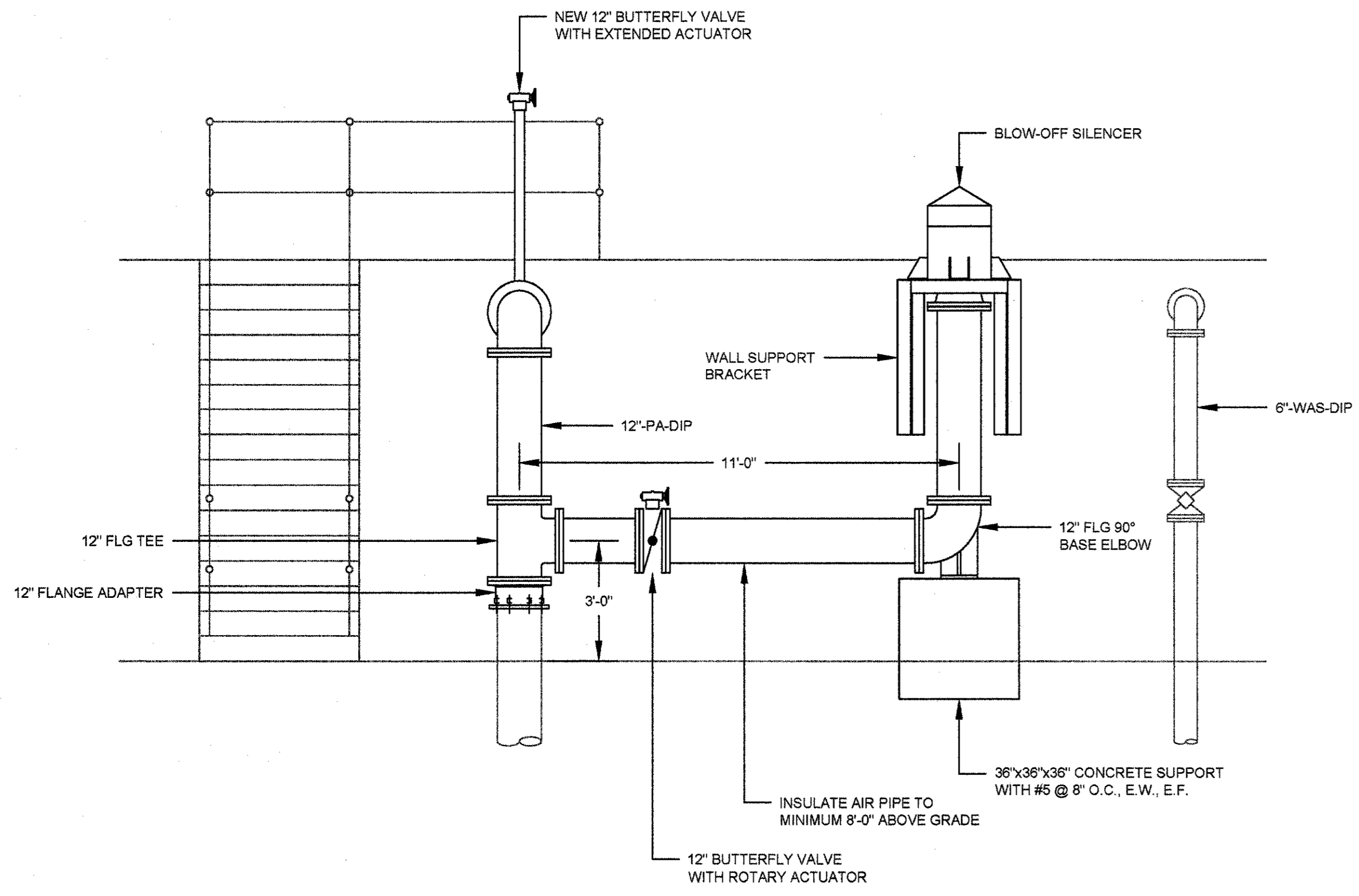
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 CHCK: WSH

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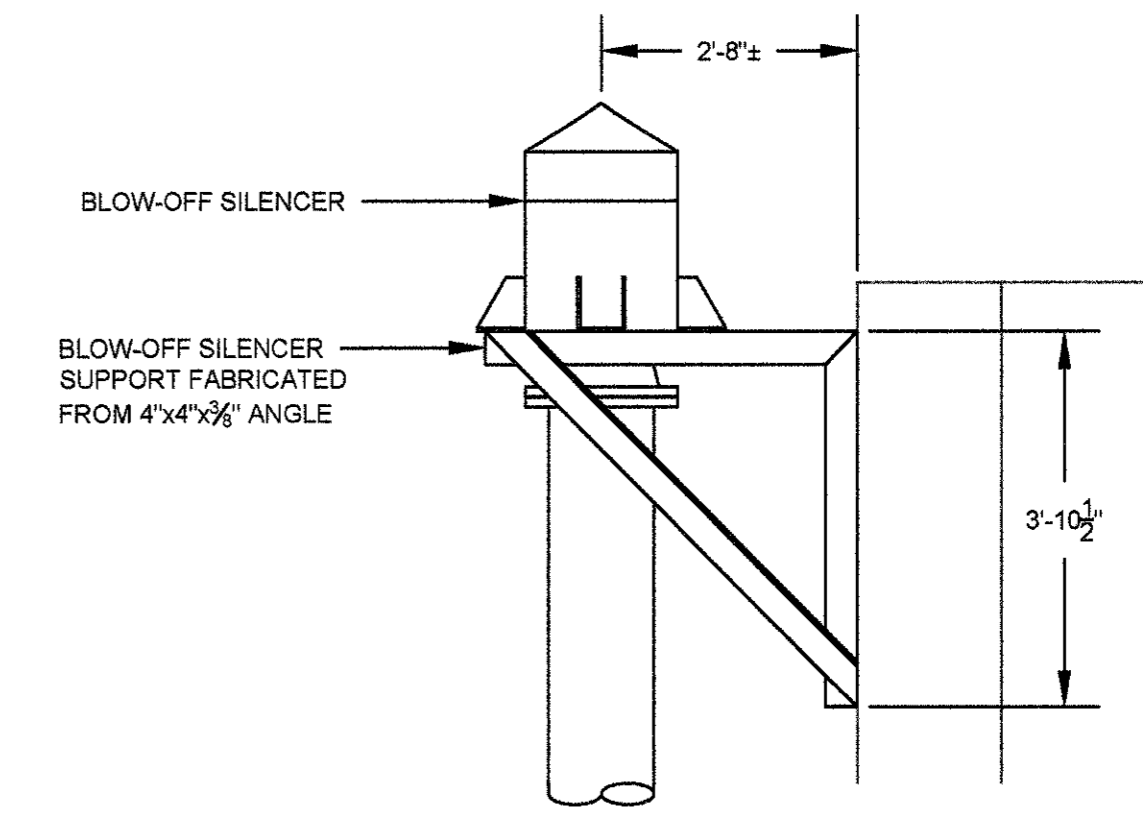
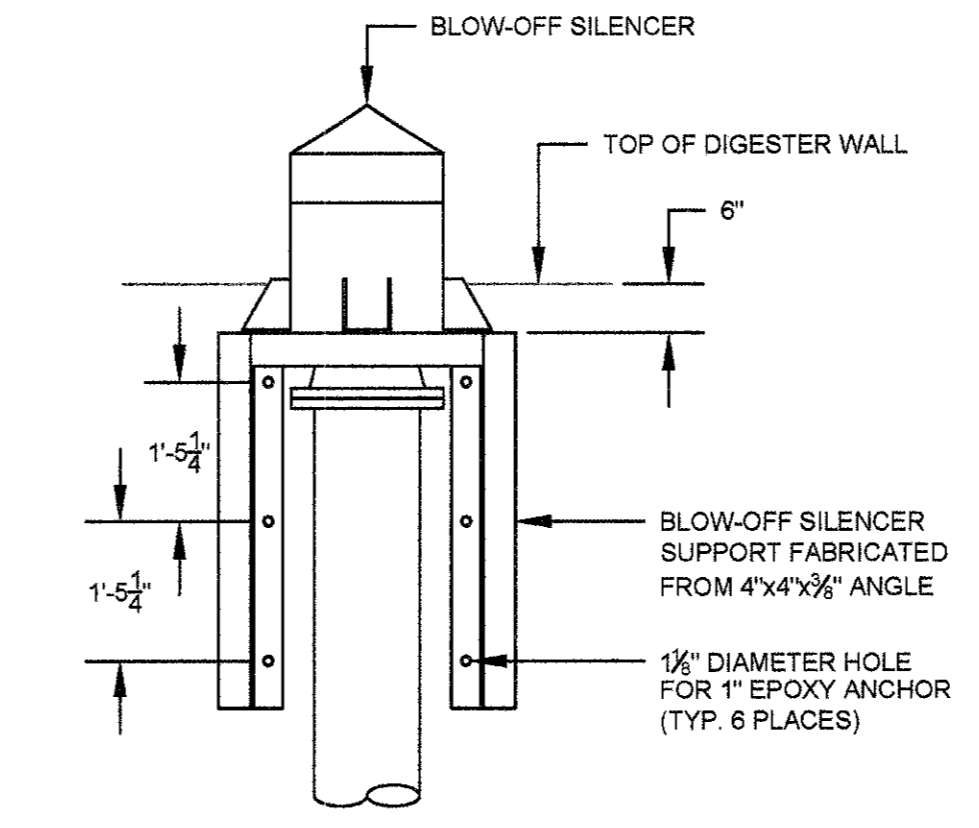
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 DIGESTER
 SECTIONS AND DETAILS 2

SHEET NO.
 75-M-5

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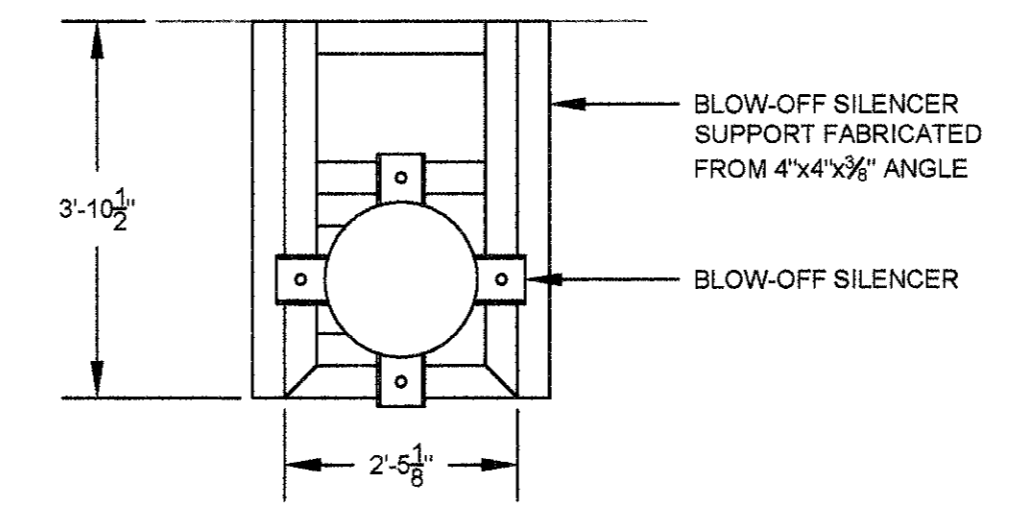


SECTION E
 SCALE: 3/8" = 1'-0"
 75-M-2 75-M-5

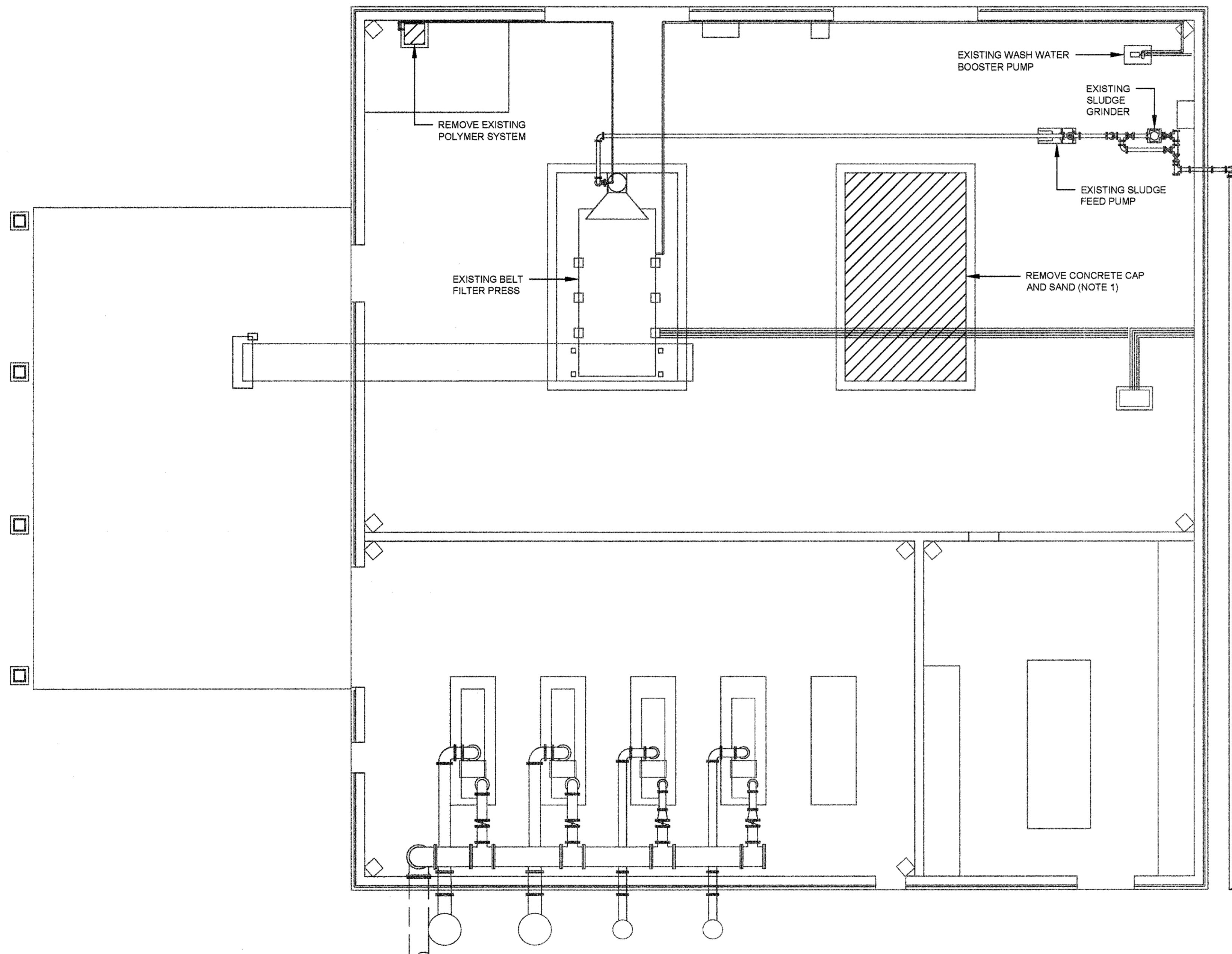
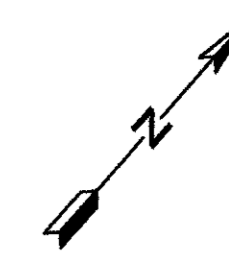


NOTES:

- BLOW-OFF SILENCER SHALL BE DESIGNED TO REDUCE NOISE TO LESS THAN OR EQUAL 70 dBA AT 10-FEET. DESIGN CRITERIA SHALL BE AS FOLLOWS:
 - APPLICATION = AIR
 - FLOW RATE = 4,800 SCFM
 - VALVE UPSTREAM TEMPERATURE = 235°F
 - VALVE UPSTREAM PRESSURE = 7.2 PSI
 - VALVE CONNECTION SIZE = 12" CLASS 150 FLANGE
 BLOW-OFF SILENCER SHALL BE MANUFACTURED BY BURGESS-AARDING SILENCER TECHNOLOGY GROUP, ORCHARD PARK, NY, OR EQUAL.
- SILENCER SUPPORT BRACKET SHALL BE FABRICATED FROM 4"x4"x3/8" STEEL ANGLES. ANGLES SHALL BE FILLET WELDED ON ALL SIDE. FINAL DIMENSIONS OF SUPPORT BRACKET SHALL BE COORDINATED WITH THE ACTUAL DIMENSIONS OF THE SILENCER THAT IS PROVIDED AND THE ACTUAL DISTANCE FROM THE WALL.
- SUPPORT BRACKET SHALL BE ANCHORED TO WALL WITH 1" DIAMETER TYPE 316 STAINLESS STEEL EPOXY ANCHORS. MINIMUM EMBEDMENT DEPTH SHALL BE 6".

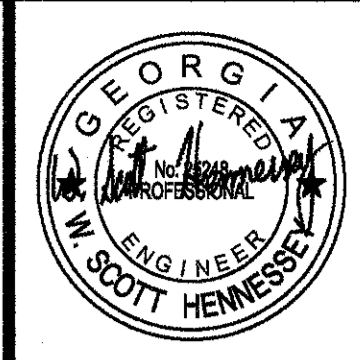


BLOW-OFF SILENCER DETAIL 2
 SCALE: 1/2" = 1'-0"



NOTES:

1. REMOVE CONCRETE CAP AND SAND FOR INSTALLATION OF RELOCATED BELT FILTER PRESS. CLEAR ALL DRAIN LINES AND CONFIRM THAT THEY FLOW UNOBSTRUCTED.
2. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL MATERIALS REMOVED FROM THE SOLIDS HANDLING BUILDING.



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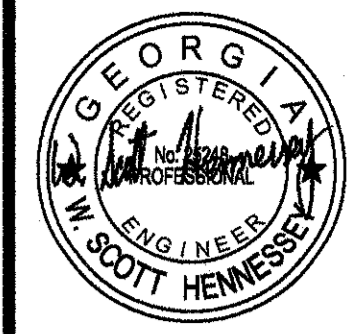
PROJECT NUMBER:	DATE:
Δ	AUGUST 2016
REVISION	DATE

DSGN: WSH
 DRWN: WSH
 CHCK: WSH

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SOLIDS HANDLING BUILDING
DEMOLITION PLAN

SHEET NO.
80-M-1



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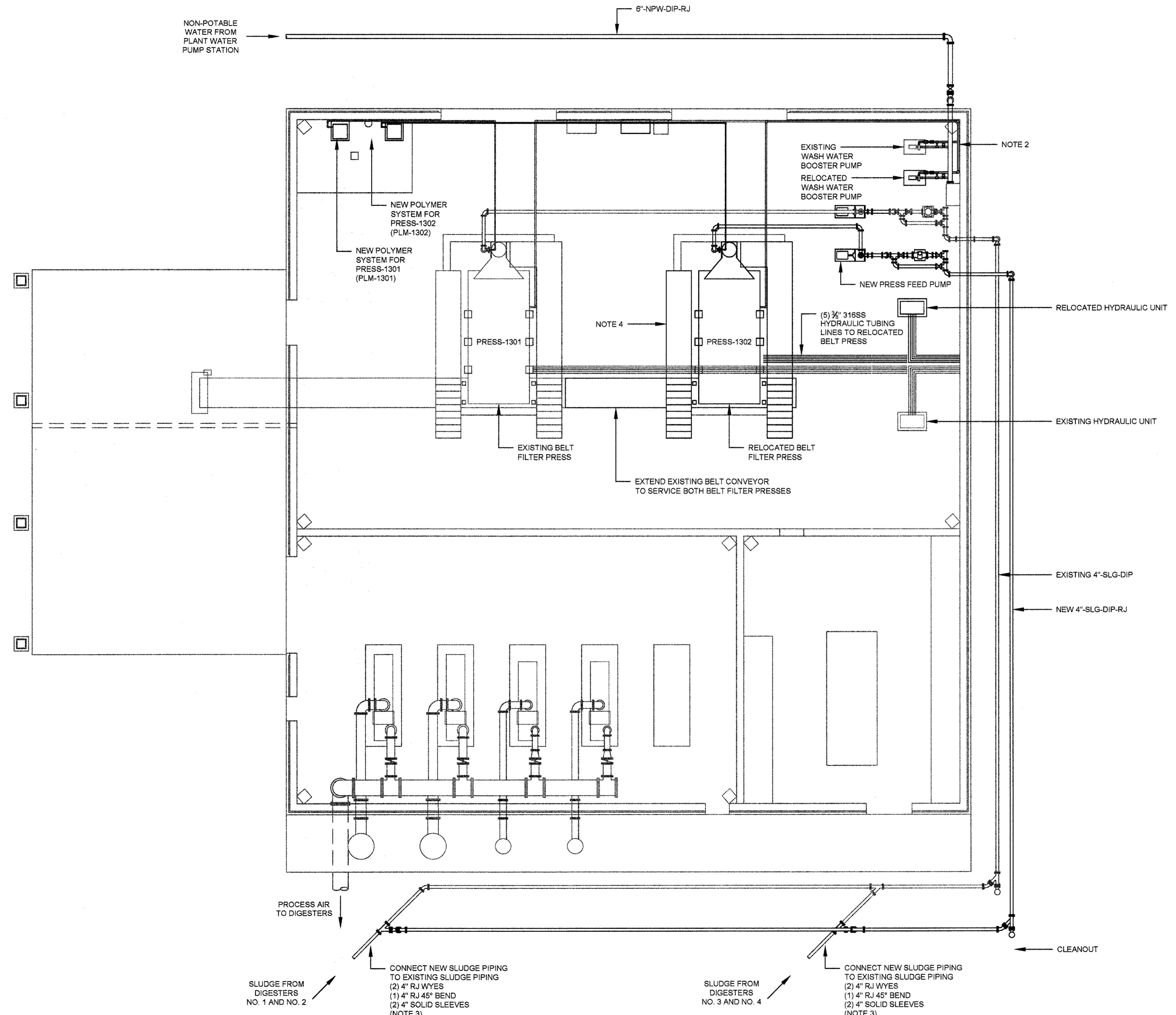
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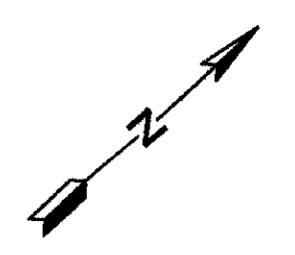
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SOLIDS HANDLING BUILDING
PLAN

SHEET NO.
80-M-2

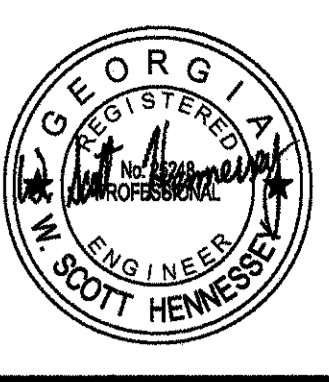


- NOTES:**
1. THE BELT FILTER PRESS SYSTEM FROM THE DECOMMISSIONED SPRINGDALE ROAD WASTEWATER TREATMENT PLANT (WWTP) WILL BE RELOCATED TO THE INDIAN CREEK WATER RECLAMATION FACILITY. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO DISMANTLE THE BELT FILTER PRESS SYSTEM AT THE SPRINGDALE ROAD WWTP AND TRANSPORT IT TO THE INDIAN CREEK WRF. THE BELT FILTER PRESS SYSTEM SHALL THEN BE INSTALLED AND MADE OPERATIONAL.
 2. DISCONNECT EXISTING 2" POTABLE WATER CONNECTION TO EXISTING WASH WATER BOOSTER PUMP ON DOWNSTREAM SIDE OF 2" BALL VALVE AND CAP POTABLE WATER LINE. CONNECT EXISTING WASH WATER BOOSTER SUCTION LINE TO NEW 6" NON-POTABLE WATER LINE. RECONFIGURE EXISTING WASH WATER BOOSTER PUMP DISCHARGE PIPING AND RECONNECT TO EXISTING DISCHARGE PIPING RUNNING TO BELT FILTER PRESS.
 3. PRIOR TO CONNECTING NEW SLUDGE PIPING TO EXISTING SLUDGE PIPING, CONTRACTOR SHALL COORDINATE WITH HCWA TO LOWER DIGESTERS TO MINIMUM LEVELS TO PROVIDE SUFFICIENT TIME TO MAKE PIPE TIE-INS. CONTRACTOR SHALL CONFIRM DRAIN VALVES ON DIGESTERS ARE CLOSED AND SLUDGE PIPING IS DRAINED PRIOR TO CUTTING INTO PIPE.
 4. CONTRACTOR SHALL INSTALL NEW ALUMINUM GRATING AND GALVANIZED STEEL PLATFORMS AROUND THE RELOCATED BELT FILTER PRESS. ALUMINUM GRATING AND PLATFORM CONFIGURATION SHALL BE SIMILAR TO THE GRATING AND PLATFORM CONFIGURATION AROUND THE EXISTING BELT FILTER PRESS.

SOLIDS HANDLING BUILDING PLAN
SCALE: 1/8" = 1'-0"



L:\Henry County WA\ICWRF Design\DWG\Sheets\MS-Solids Handling Building.dwg - 8/29/2016



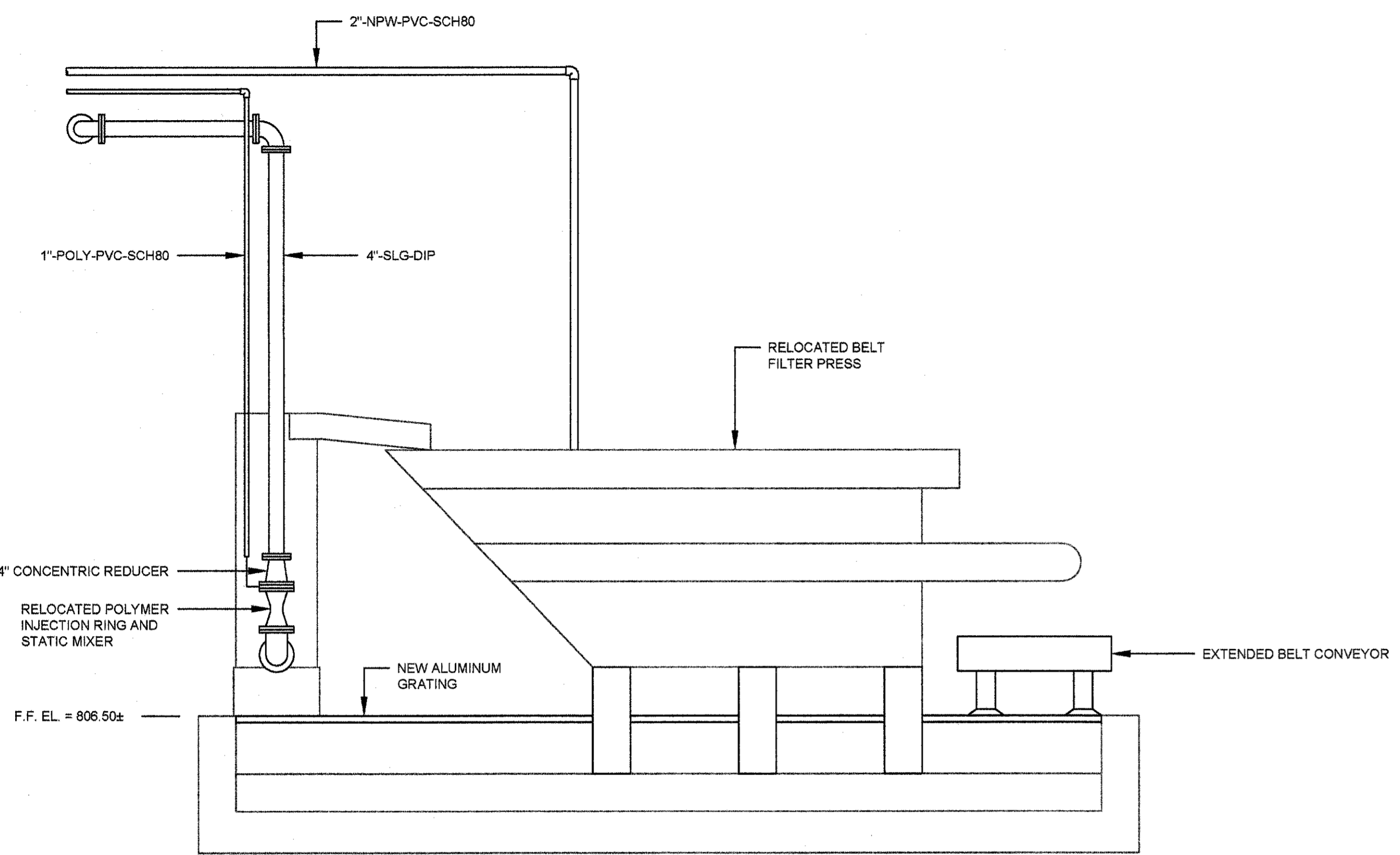
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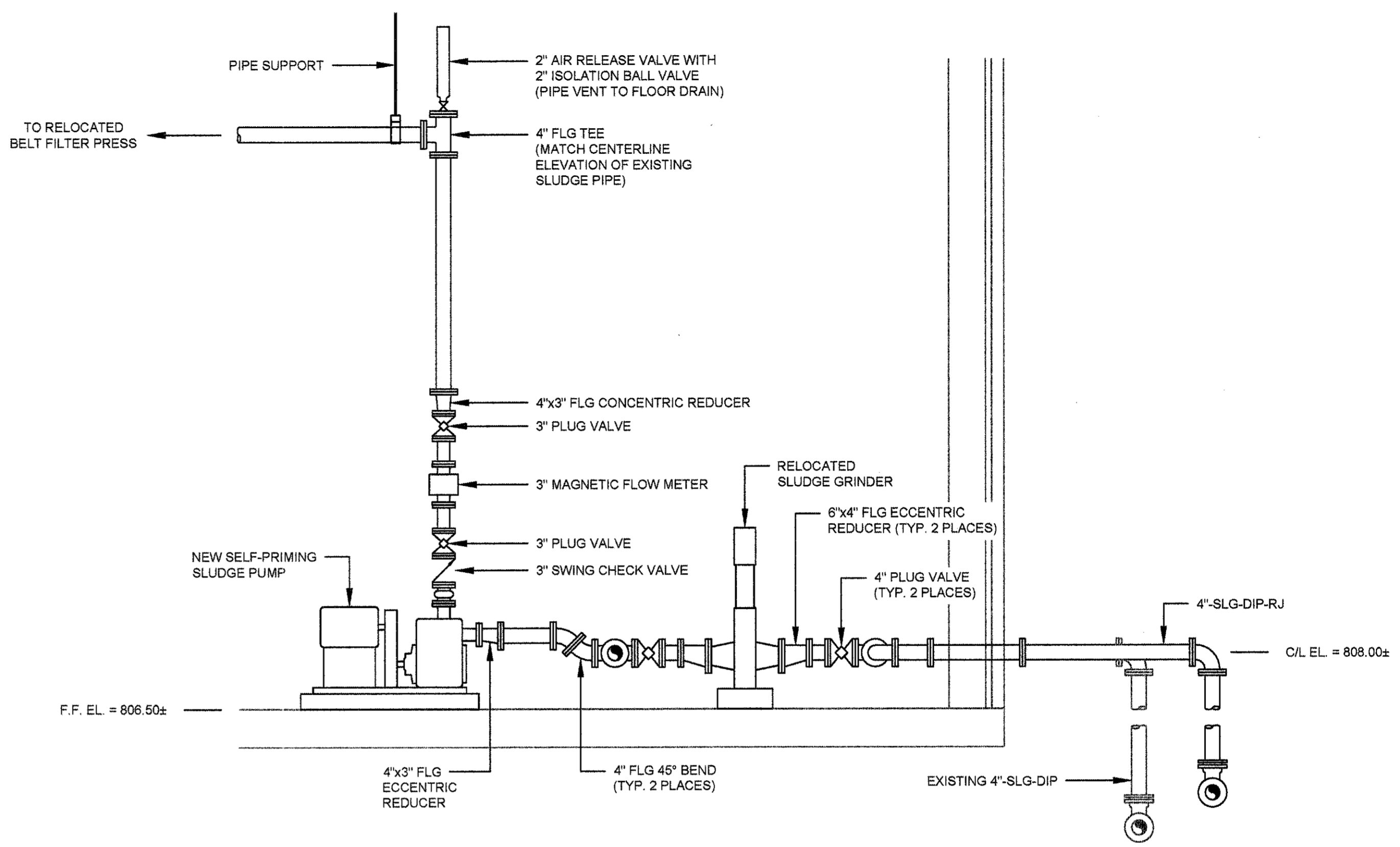
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DRWN: WSH
CHK: WSH
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SOLIDS HANDLING BUILDING
DETAILS

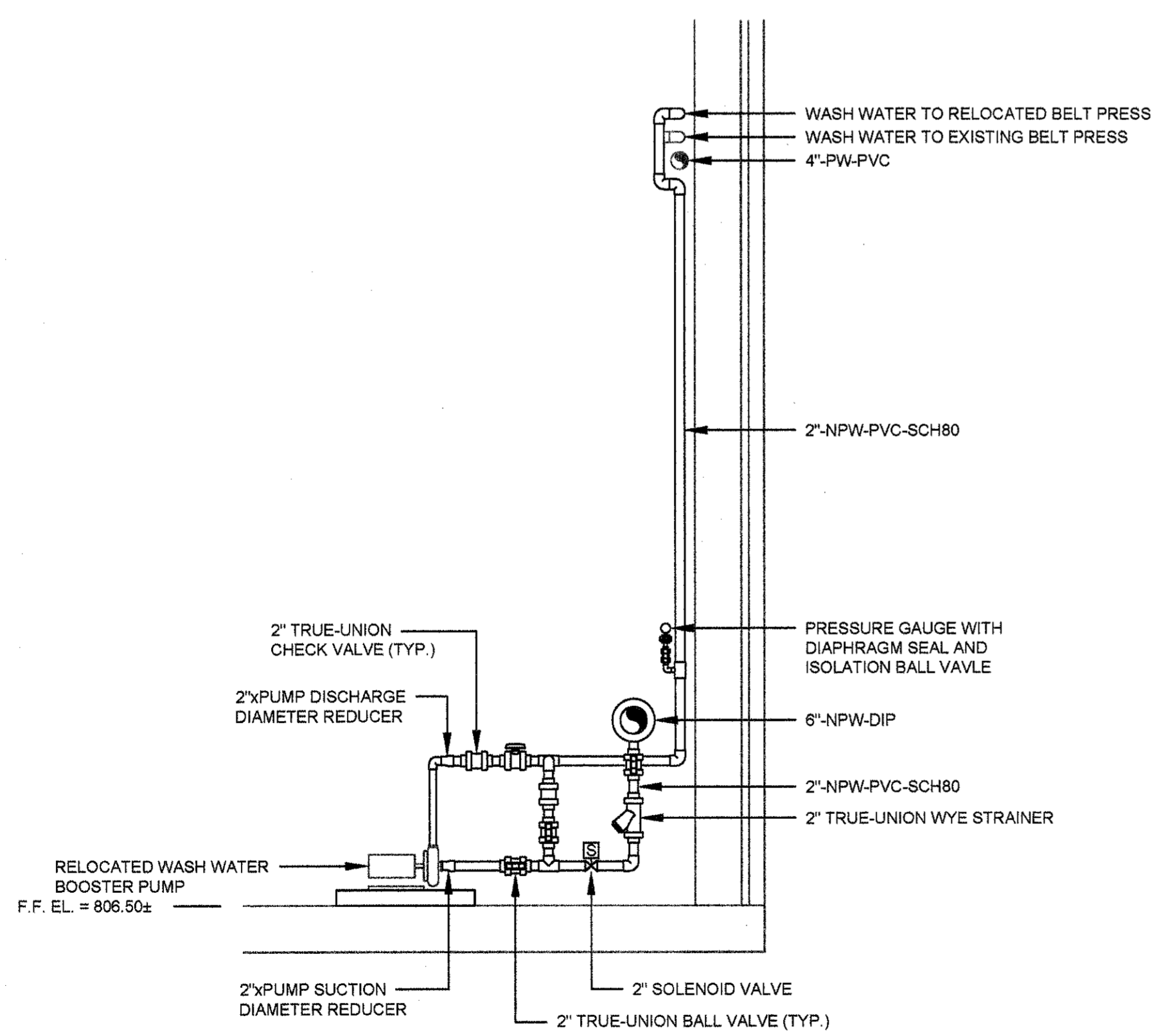
SHEET NO.
80-M-3



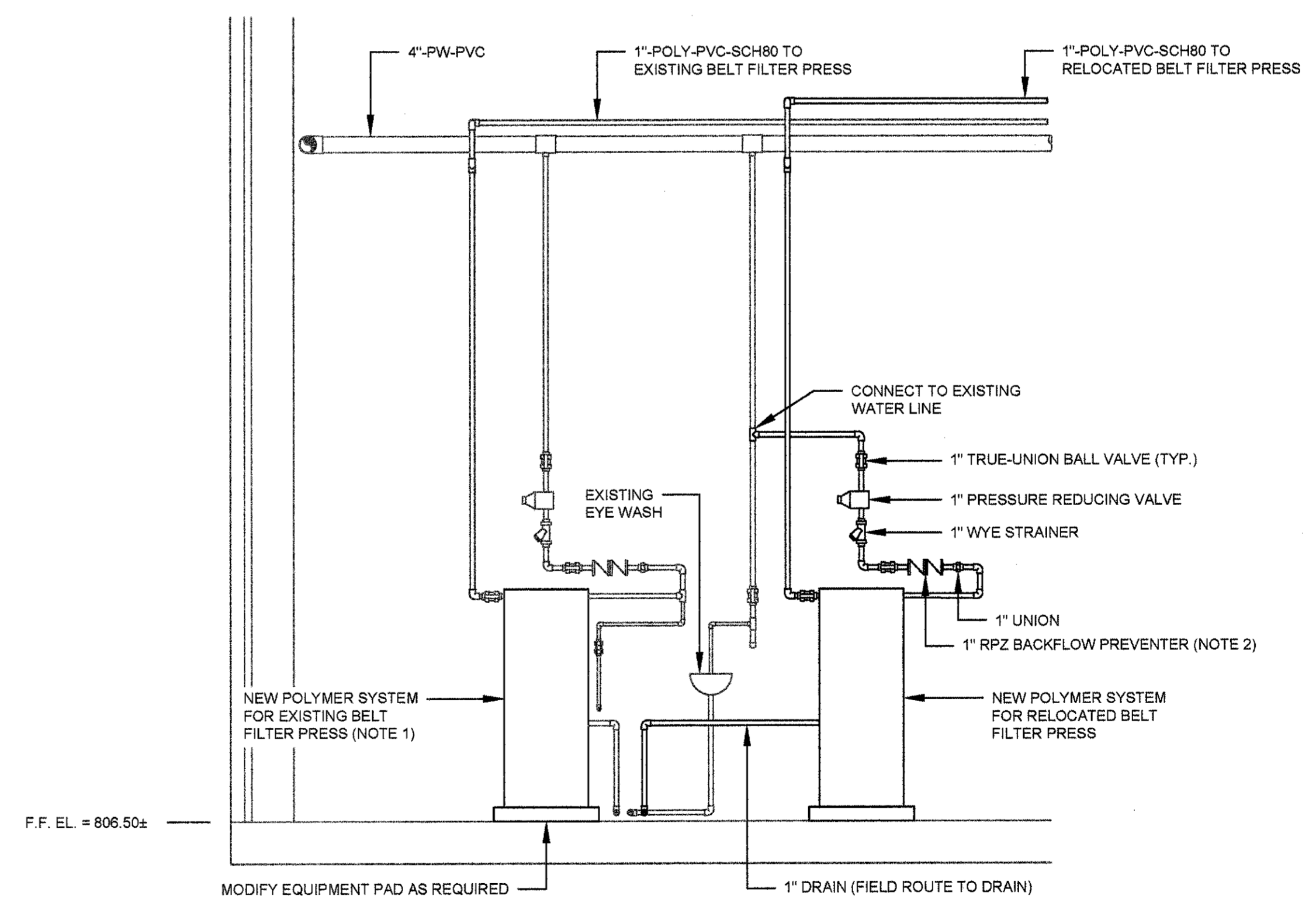
BELT PRESS DETAIL 1
SCALE: 3/8" = 1'-0"



BELT PRESS FEED PUMP DETAIL 2
SCALE: 3/8" = 1'-0"

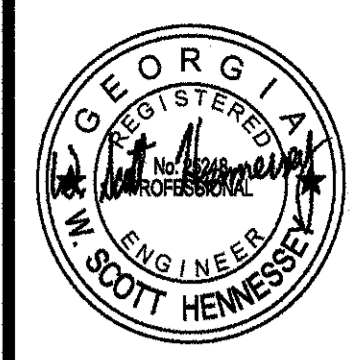


WASH WATER PUMP DETAIL 3
SCALE: 3/8" = 1'-0"



POLYMER SYSTEM DETAIL 4
SCALE: 3/8" = 1'-0"

- NOTES:**
1. REPLACE EXISTING POLYMER SYSTEM WITH A NEW POLYMER SYSTEM. CONNECT EXISTING WATER LINE, POLYMER SOLUTION LINE, AND DRAIN LINE TO NEW POLYMER SYSTEM USING NEW FITTINGS AS REQUIRED.
 2. PROVIDE AN AIR-GAP FITTING FOR BOTH THE NEW AND EXISTING REDUCED PRESSURE ZONE BACKFLOW PREVENTERS. ROUTE PIPING FROM AIR-GAP FITTINGS TO DRAIN.



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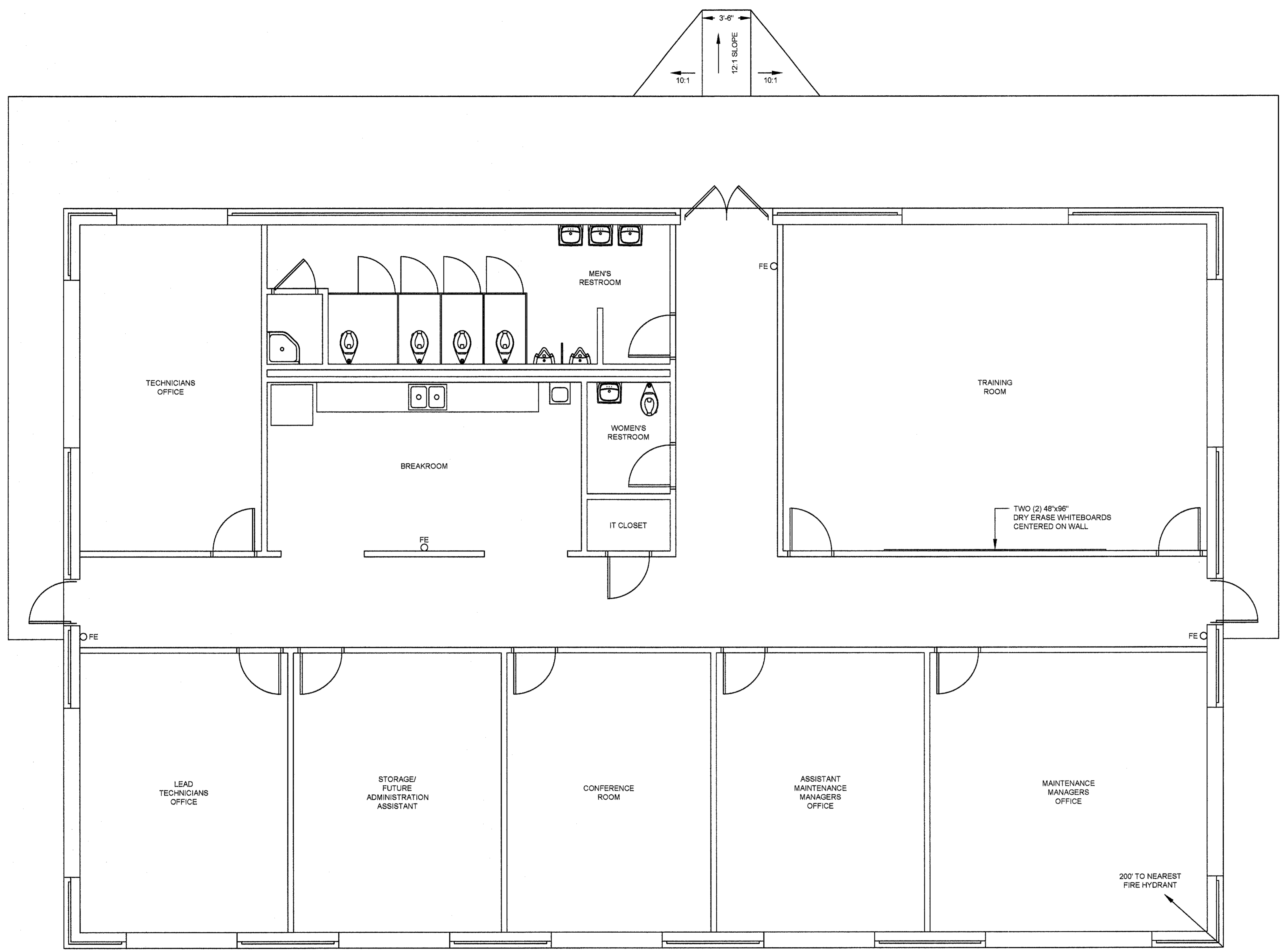
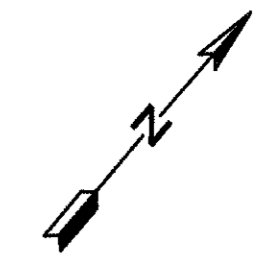
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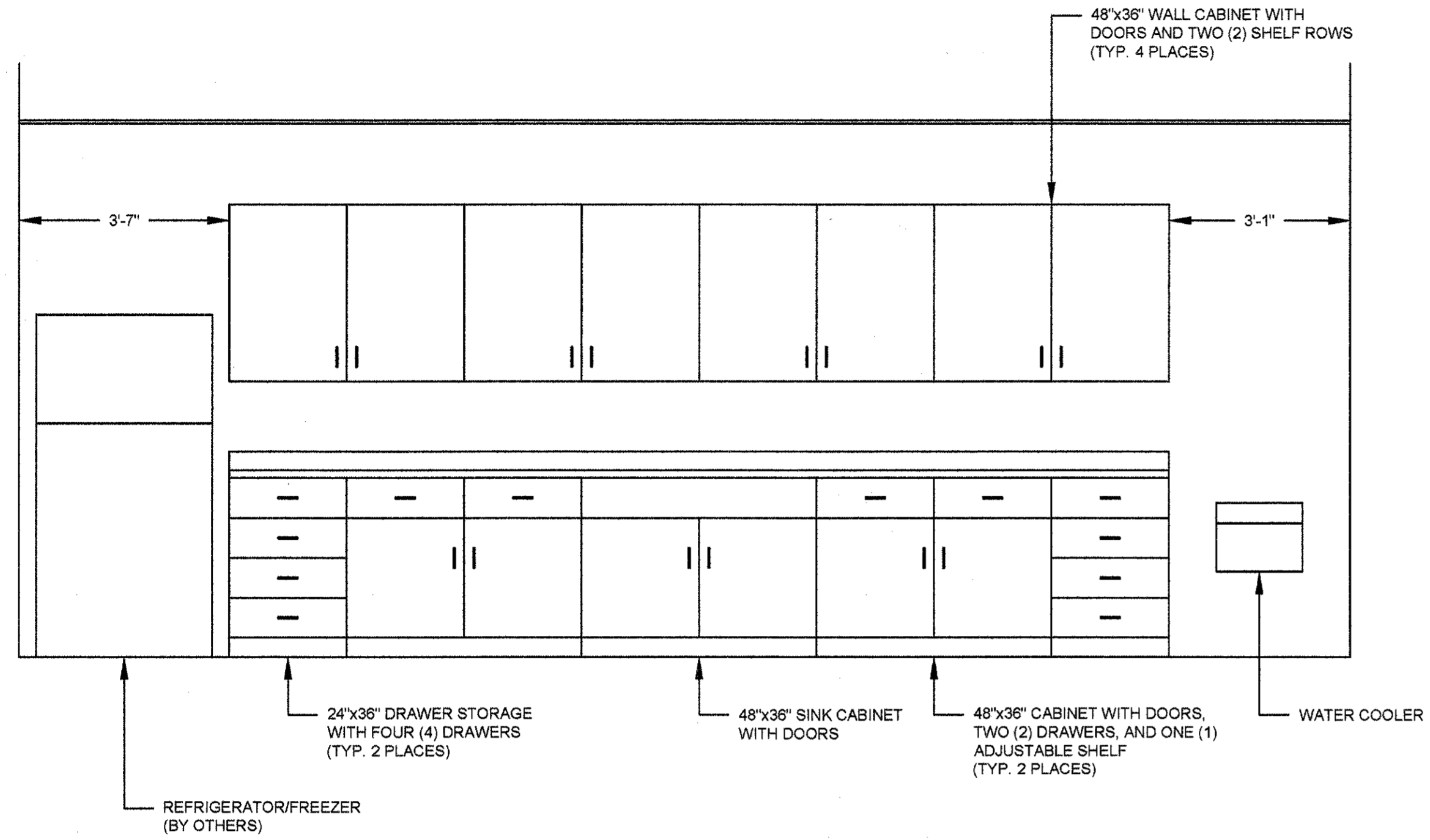
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATION BUILDING
PLAN

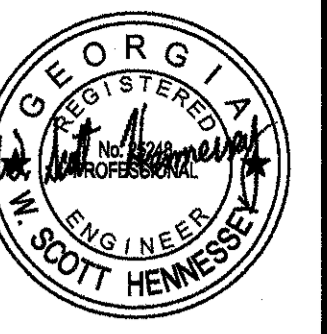
SHEET NO.
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ADMINISTRATION BUILDING PLAN
SCALE: 1/2" = 1'-0"



BREAKROOM COUNTER AREA DETAIL
SCALE: 1/2" = 1'-0"



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DATE: AUGUST 2016

DATE

REVISION

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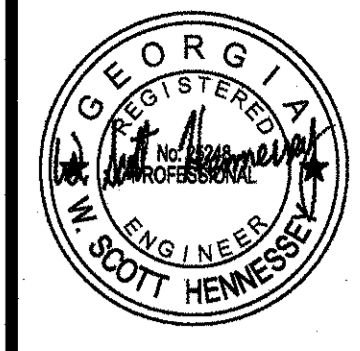
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

ADMINISTRATION BUILDING
DETAILS

SHEET NO.

90-M-2



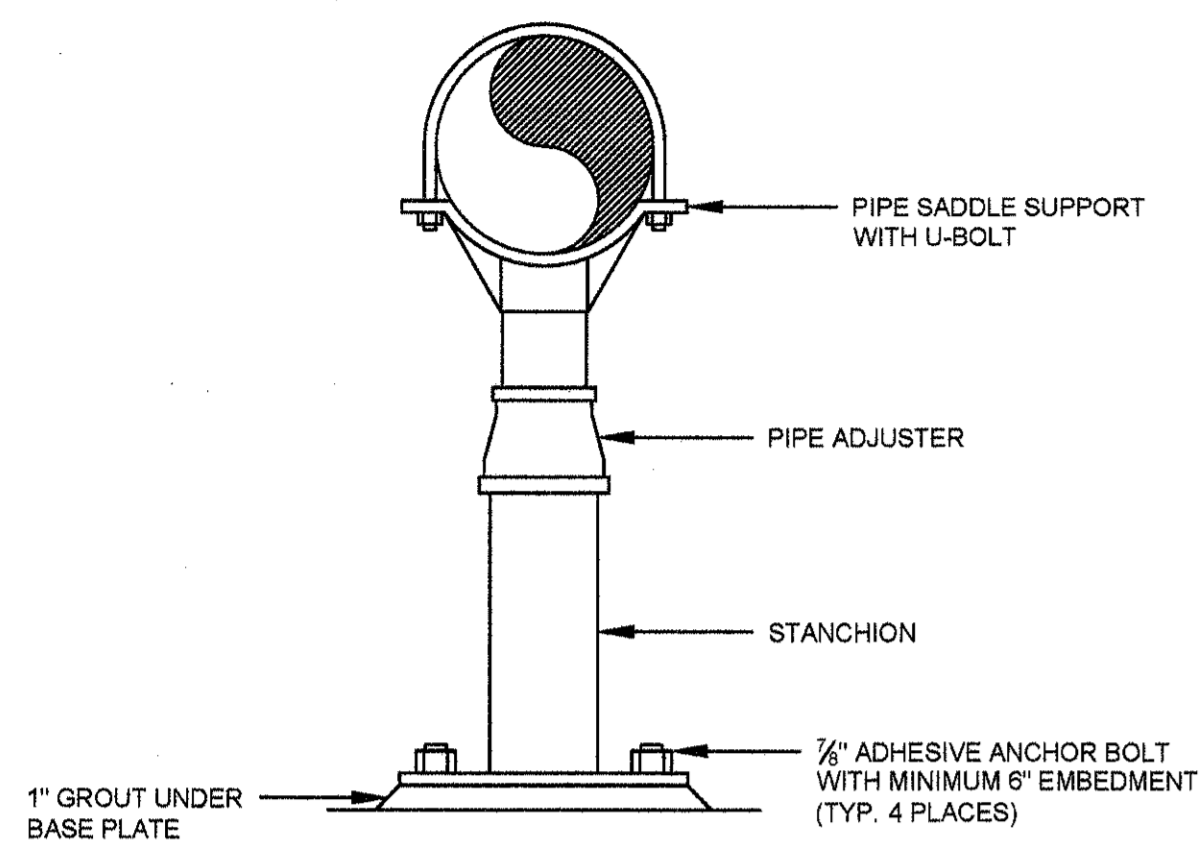
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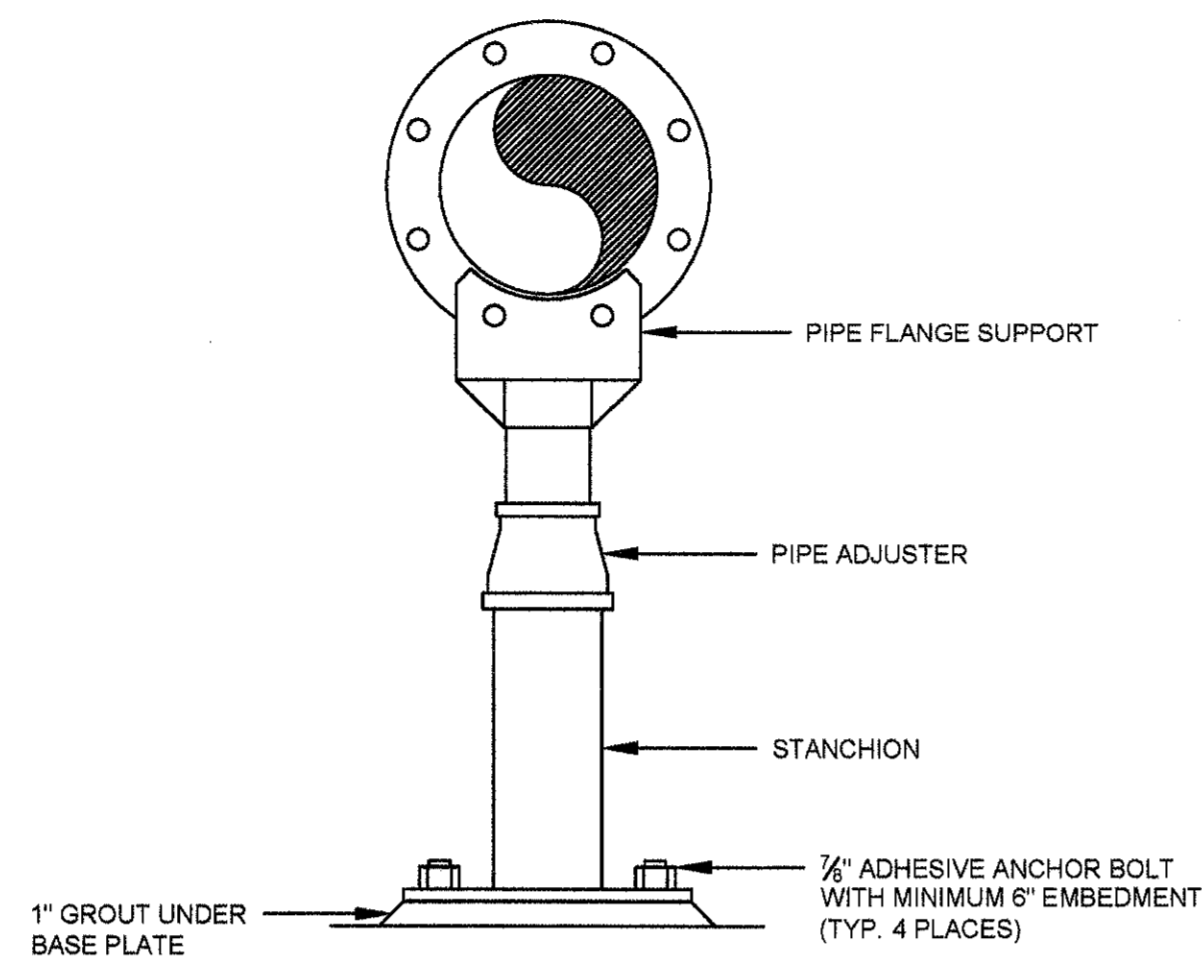
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 STANDARD MECHANICAL
 DETAILS 1

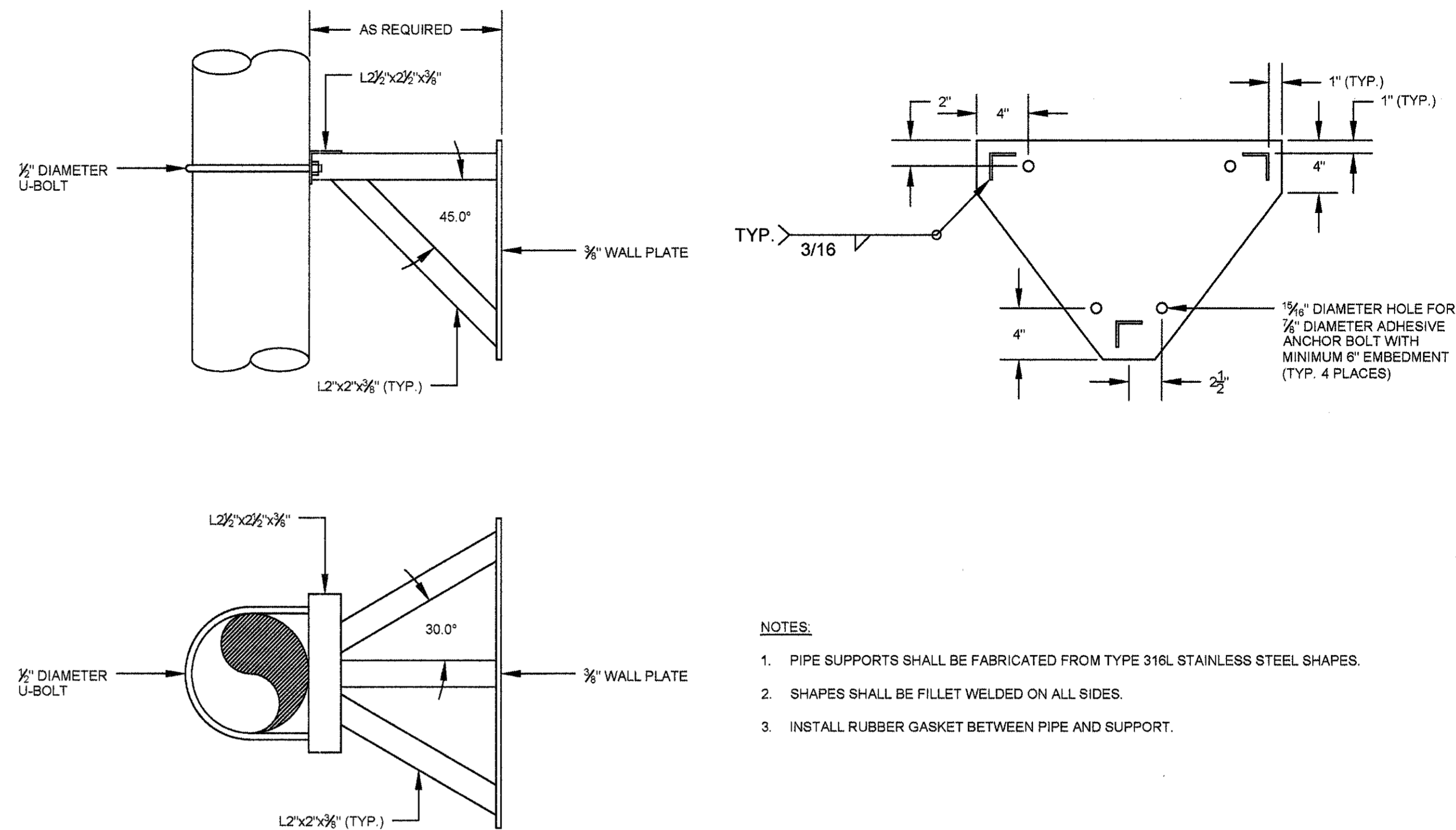
SHEET NO.
 95-M-1



ADJUSTABLE PIPE SUPPORT WITH U-BOLT
 SCALE: N.T.S.

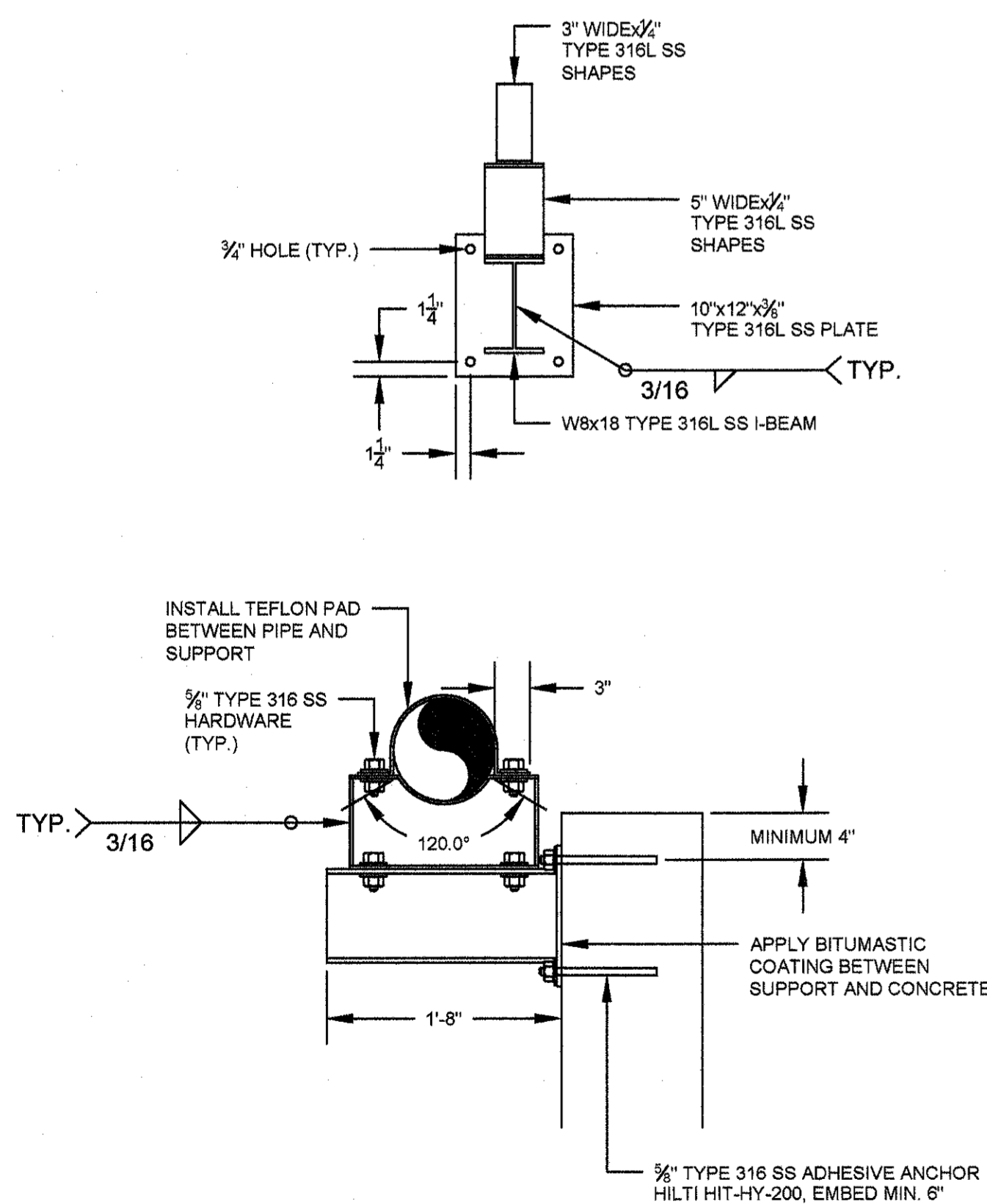


ADJUSTABLE PIPE FLANGE SUPPORT
 SCALE: N.T.S.

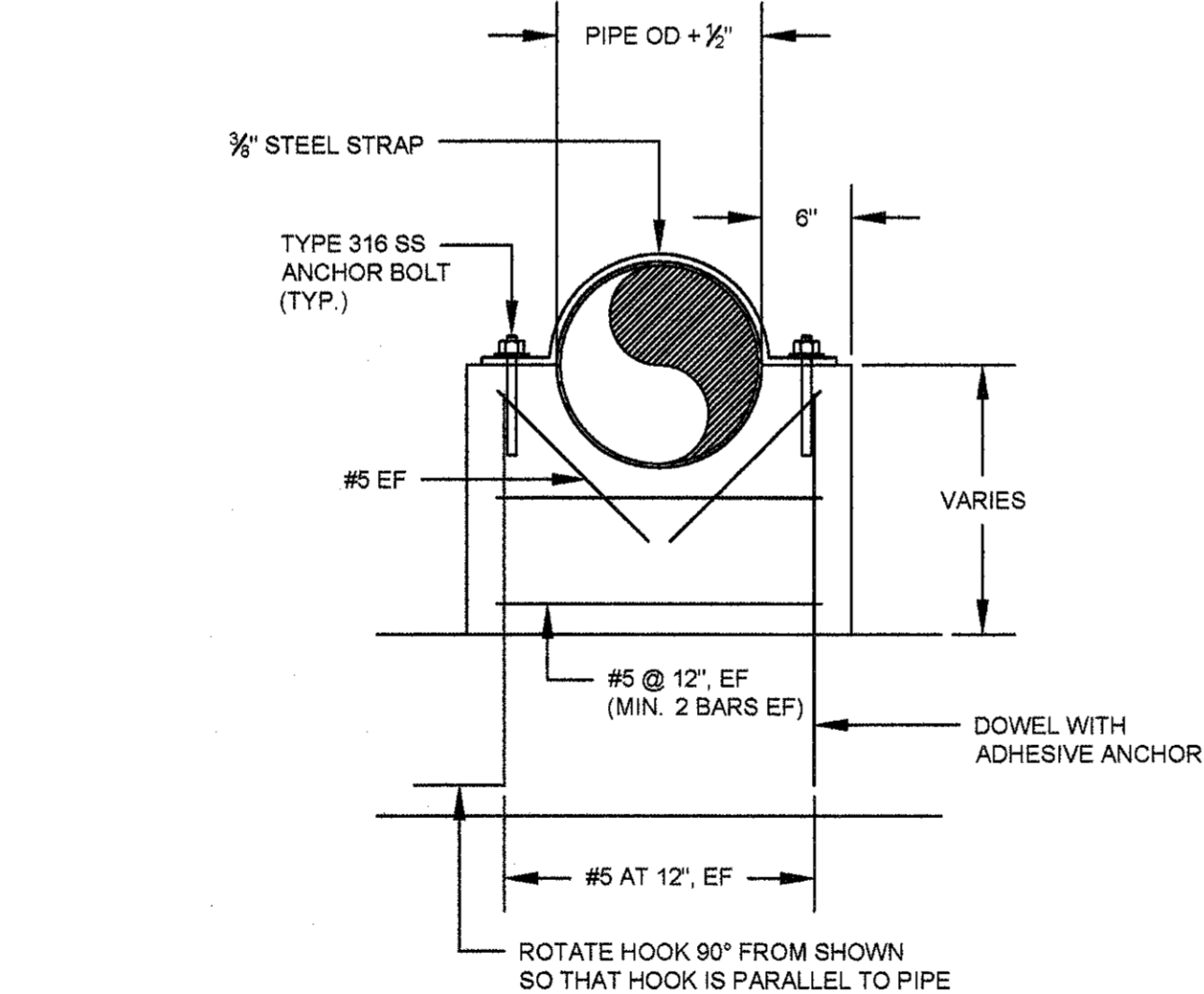


- NOTES:**
- PIPE SUPPORTS SHALL BE FABRICATED FROM TYPE 316L STAINLESS STEEL SHAPES.
 - SHAPES SHALL BE FILLET WELDED ON ALL SIDES.
 - INSTALL RUBBER GASKET BETWEEN PIPE AND SUPPORT.

VERTICAL WALL MOUNT PIPE SUPPORT
 SCALE: N.T.S.

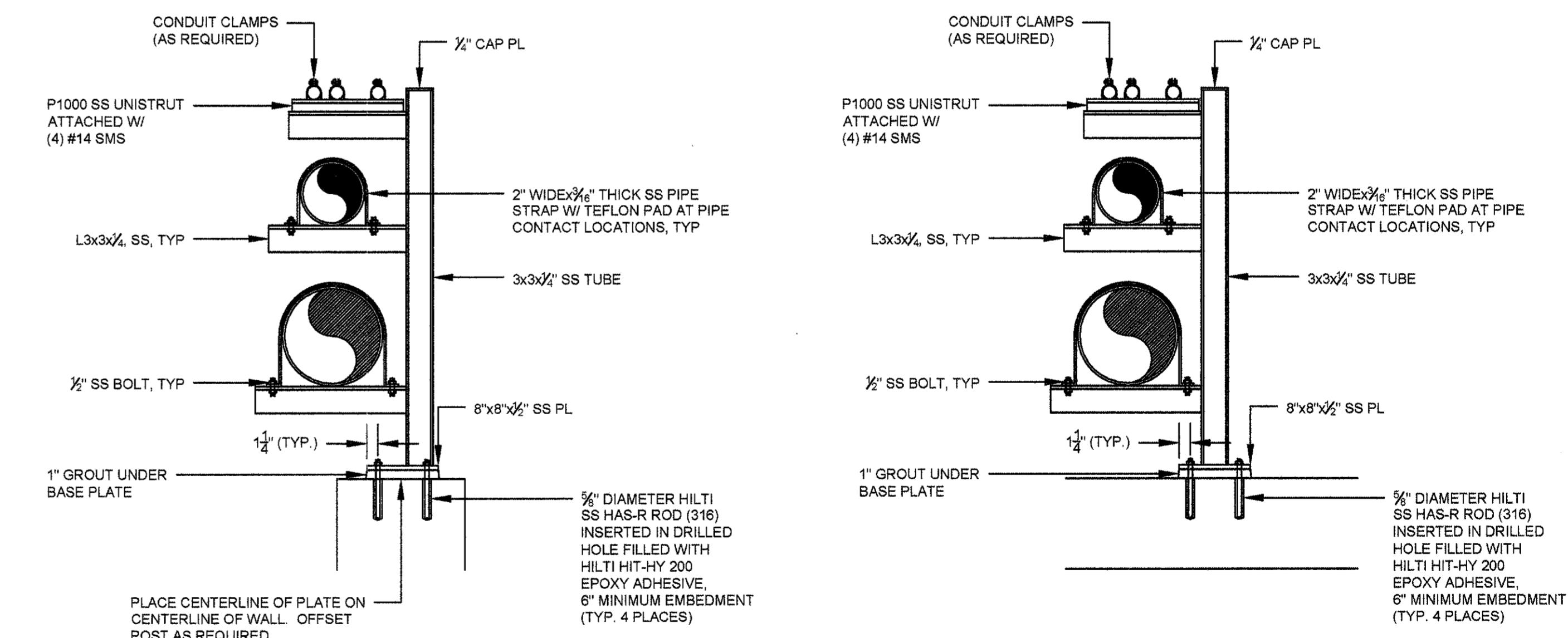


AERATION BASIN AIR PIPING PIPE SUPPORT
 SCALE: N.T.S.



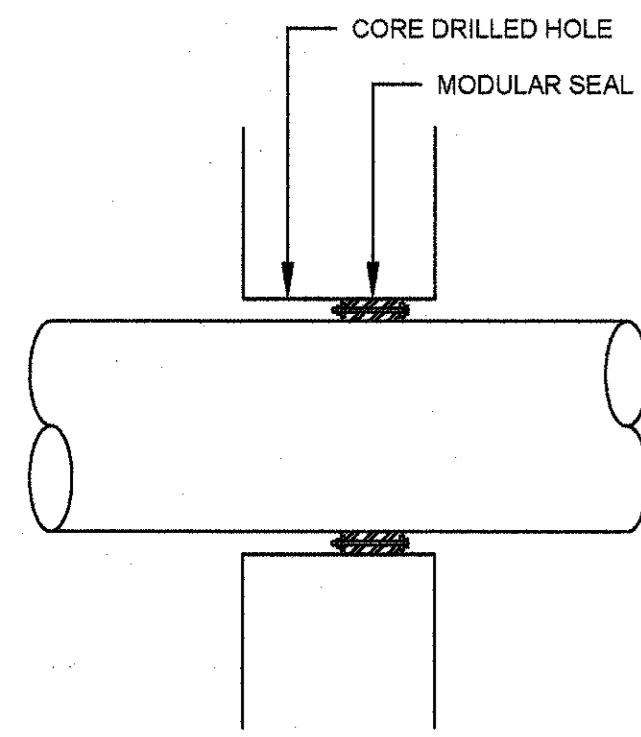
- NOTES:**
- DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. DOWELS SHALL BE EMBEDDED A MINIMUM OF 8". WHERE FLOOR SLAB IS LESS THAN 10" THICK, DOWELS SHALL BE EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.
 - PIPE SUPPORT SHALL BE MINIMUM 12" THICK FOR PIPES 20" IN DIAMETER AND SMALLER. PIPE SUPPORT SHALL BE MINIMUM 18" FOR PIPES LARGER THAN 20" IN DIAMETER.
 - FOR PIPE LESS THAN 16" IN DIAMETER, PIPE STRAP SHALL BE 3" WIDE AND ANCHORED WITH TWO (2) 3/4" TYPE 316 STAINLESS STEEL ANCHOR BOLTS. FOR PIPE 16" AND LARGER IN DIAMETER, PIPE STRAP SHALL BE 6" WIDE AND ANCHORED WITH FOUR (4) TYPE 316 STAINLESS STEEL ANCHOR BOLTS. MINIMUM ANCHOR BOLT EMBEDMENT SHALL BE 6".
 - A MINIMUM 1/2" TEFLON PAD SHALL BE PLACED BETWEEN PIPE AND CONCRETE AND PIPE STRAP.

CONCRETE PIPE SUPPORT
 SCALE: N.T.S.

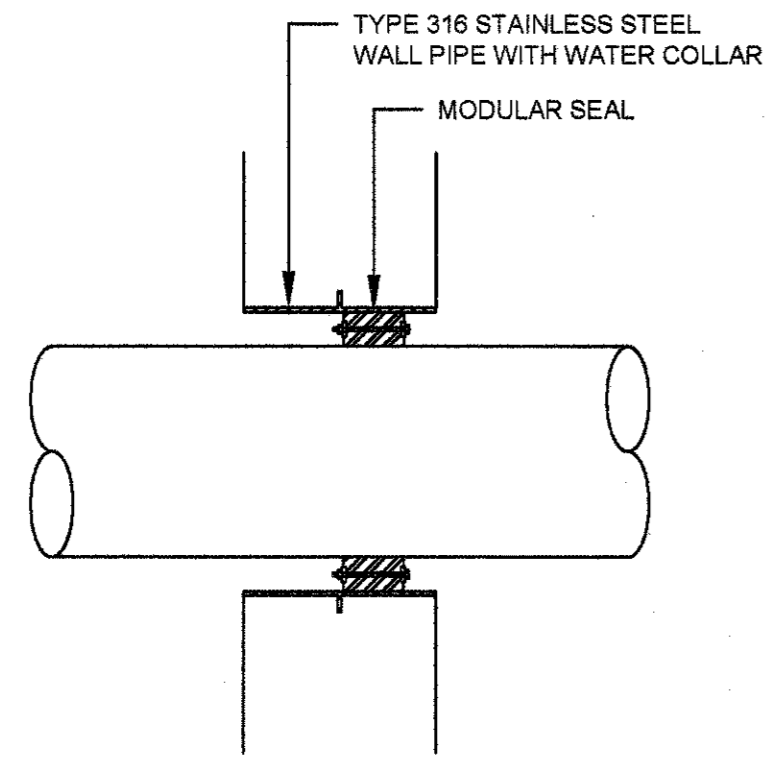


- NOTES:**
- PIPE SUPPORTS SHALL BE MANUFACTURED FROM TYPE 316L STAINLESS STEEL SHAPES.
 - SHAPES SHALL BE FILLET WELDED ON ALL SIDES.
 - CONTRACTOR SHALL FIELD COORDINATE EXACT ELEVATIONS AND DIMENSIONS OF SUPPORTS.
 - MAXIMUM SUPPORT SPACING SHALL BE 10'-0" O.C.

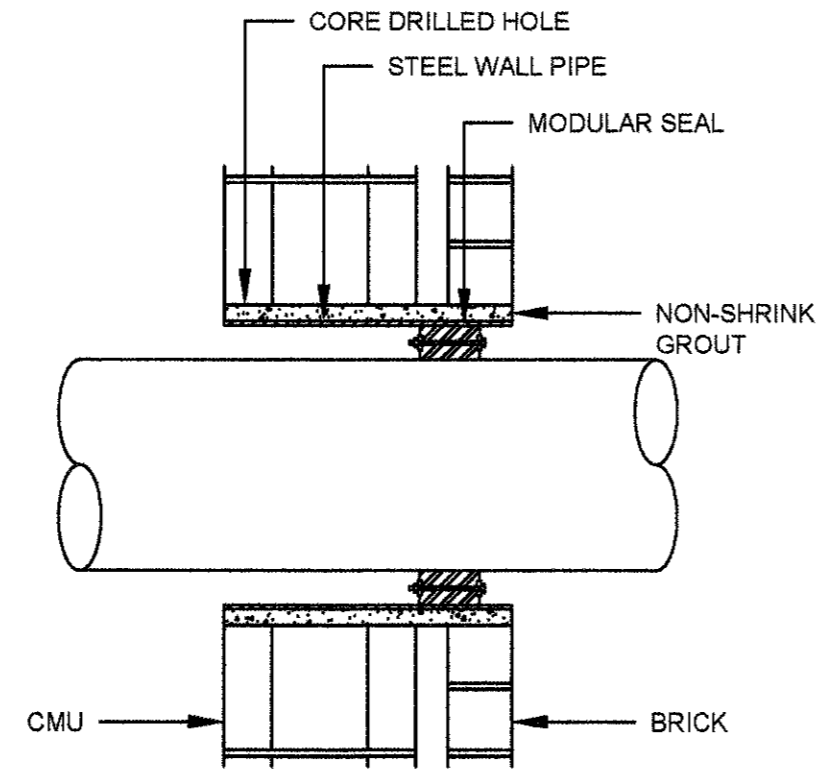
MEMBRANE TANK PROCESS PIPING PIPE SUPPORTS
 SCALE: N.T.S.



EXISTING CONCRETE WALL



NEW CONCRETE WALL

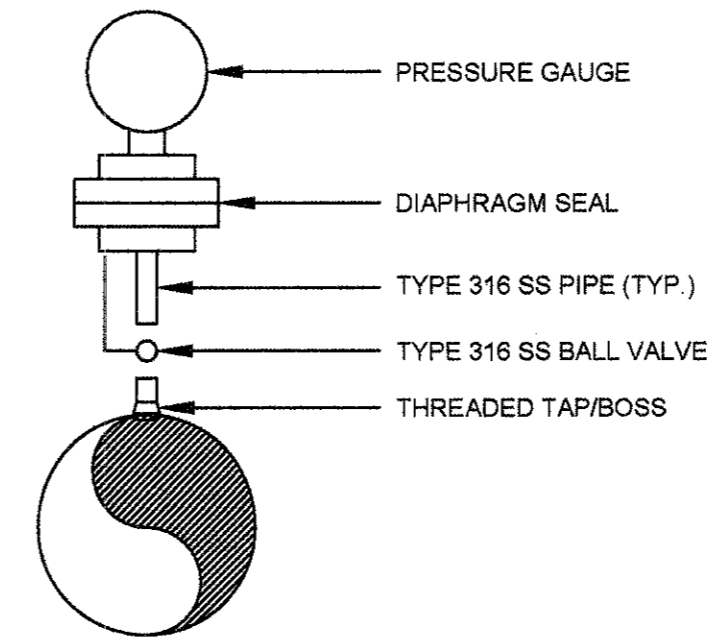


CMU WALL

NOTES:

1. MODULAR SEALS FOR WATER PIPE SHALL BE EPDM. MODULAR SEALS FOR PROCESS AIR PIPE SHALL BE SILICON RATED FOR MINIMUM 400°F.
2. MODULAR SEAL HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
3. CORE DIAMETERS AND WALL PIPE DIAMETERS SHALL BE AS RECOMMENDED BY THE MODULAR SEAL MANUFACTURER.
4. MODULAR SEALS SHALL BE GPT LINK-SEAL, OR EQUAL.
5. PIPE SHALL BE SUPPORTED ON BOTH SIDES OF WALL PENETRATION SUCH THAT THE MODULAR SEAL IS NOT SUPPORTING THE PIPE.

TYPICAL WALL PENETRATIONS
SCALE: N.T.S.



TYPICAL PRESSURE GAUGE DETAIL
SCALE: N.T.S.



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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD MECHANICAL
DETAILS 2

SHEET NO.
95-M-2

GENERAL STRUCTURAL NOTES

GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ARCHITECTURAL, ELECTRICAL, HVAC, PLUMBING AND SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HVAC, AND PLUMBING DRAWINGS FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- ANY CONSTRUCTION EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURE.
- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
- STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

DESIGN CRITERIA

BUILDING CODES AND REFERENCES:

- 2012 INTERNATIONAL BUILDING CODE (IBC) W/ GEORGIA AMENDMENTS
- REINFORCED CONCRETE:
 - WATER RETAINING ENVIRONMENTAL STRUCTURES: ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"
 - ALL OTHER STRUCTURES: ACI 318-11 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
- MASONRY: TMS 402-11/ACI 530-11/ASCE 5-11 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES."
- STRUCTURAL STEEL: AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION
- ALUMINUM: ADM-2010, ALUMINUM DESIGN MANUAL

LIVE LOADS:

1. PROCESS RELATED STRUCTURES:

a. WALKWAYS, STAIRWAYS AND LANDINGS:	100 PSF
b. ELEVATED SLABS AT PROCESS AREAS:	200 PSF
c. SLABS ON GRADE	300 PSF

2. BUILDINGS:

a. ROOF	20 PSF
b. STORAGE AREAS (HEAVY), ELECTRICAL ROOMS	300 PSF
c. STORAGE AREAS (LIGHT)	150 PSF

WIND LOADS:

1. WIND LOAD DESIGN DATA:

a. RISK CATEGORY	III
b. WIND IMPORTANCE FACTOR, I_w	1.00
c. ULTIMATE DESIGN WIND SPEED, V_{ULT}	120 MPH
d. NOMINAL DESIGN WIND SPEED, V_{ASD}	93 MPH
e. EXPOSURE CATEGORY	C

SNOW LOAD:

1. BASIC GROUND SNOW LOAD	5 PSF
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SEISMIC LOADS:

1. SEISMIC DESIGN DATA:

a. SHORT PERIOD MCE SPECTRAL RESPONSE ACCELERATION, S_s	0.162
b. 1 SECOND PERIOD MCE SPECTRAL RESPONSE ACCELERATIONS, S_1	0.084
c. SITE CLASS	D
d. SEISMIC DESIGN CATEGORY	B
e. DESIGN SHORT PERIOD MCE SPECTRAL RESPONSE ACCELERATION, S_{DS}	0.173
f. DESIGN 1 SECOND PERIOD MCE SPECTRAL RESPONSE ACCELERATION, S_{D1}	0.135
g. SEISMIC IMPORTANCE FACTOR, I_a	1.15

FOUNDATIONS

GEOTECHNICAL REPORT:

- GEOTECHNICAL REPORT "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION" PREPARED BY GEO HYDRO ENGINEERS, GEO-HYDRO PROJECT NUMBER 160205.20, DATED MAY 3, 2016. ANY INTERPRETATION OF THE CONTENTS OF THE GEOTECHNICAL REPORT IS THE RESPONSIBILITY OF THE CONTRACTOR.

FOUNDATION DESIGN:

1. ALLOWABLE BEARING PRESSURES USED FOR DESIGN BY STRUCTURE:

- 1,000 PSF - INFLUENT METERING FLUME, INFLUENT SCREENS, NAOH/ALUM STORAGE AREA, MBR SPLITTER BOX, UV STRUCTURE
- 1,500 PSF - CASCADE AERATOR
- 2,000 PSF - MBR MEMBRANE TANK, MBR PROCESS BUILDING & ADMINISTRATION BUILDING

CONCRETE

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRANED WITH A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.
- WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
- ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS FINISHING IS COMPLETED OR FORMS ARE REMOVED.
- ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

- REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A315 REQUIREMENTS. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:
 - CONCRETE CAST AGAINST EARTH 3"
 - FORMED SURFACE IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER 2"
 - FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:
 - SLABS, WALLS AND JOIST 3/4"
 - BEAMS AND COLUMNS 1 1/2"
- LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL.
- THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

MASONRY

- MASONRY DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, $f'_m = 1500$ PSI MINIMUM.
- MATERIALS:
 - BLOCK : CONFORM TO ASTM C90 - LOAD BEARING, NORMAL WEIGHT TWO-CELL, 8"x8"x16", 12"x8"x16".
 - MORTAR : CONFORM TO ASTM C270, Type S, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 1800 PSI. UTILIZE TYPE II CEMENT AND TYPE S LIME, MASONRY CEMENT WILL NOT BE CONSIDERED.
 - GROUT : CONFORM TO ASTM C476, COURSE GROUT, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 2500 PSI.
 - STEEL : BOND BEAM AND FILLED CELL REINFORCEMENT AS NOTED ON DRAWINGS (ASTM A615, GRADE 60). DURO-O-WALL OR EQUAL JOINT REINFORCEMENT AT EVERY OTHER COURSE (16" O.C.).
- CONSTRUCTION:
 - THE GROUT FOR FILLED CELLS SHALL BE RODDED OR PUDDLED DURING PLACEMENT TO INSURE COMPLETE FILLING TO THE BLOCK CORE.
 - PROVIDE CLEAN OUT AND INSPECTION BLOCK OUT IN CELLS CONTAINING REINFORCEMENT FOR GROUT LIFTS EXCEEDING 5'-0".

STRUCTURAL STEEL

- DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND THE DESIGN DRAWINGS.
- STEEL MATERIAL:
 - W-SHAPED SECTIONS : ASTM A992, GRADE 50
 - HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B
 - ALL OTHER STRUCTURAL STEEL: ASTM A36
 - ALL PIPE: ASTM A53, GRADE B
- WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. ELECTRODES SHALL BE E-70XX.
- BOLTED CONNECTIONS:
 - MAIN CONNECTIONS: 3/4" DIA, ASTM A325 BOLTS. HOLES: 13/16" DIA CONNECTION SHALL BE "BEARING" TYPE WITH THREADS EXCLUDED FROM THE SHEAR PLANE.
 - SECONDARY CONNECTION: 3/4" DIA, ASTM A307 GRADE A BOLTS.
 - ALL CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS. GUSSET PLATES SHALL BE A MINIMUM OF 3/8" THICK.
 - ALL COLUMNS AND POSTS SHALL HAVE MILLED ENDS FOR FULL BEARING AT BASE PLATES.

ALUMINUM

- ALUMINUM DESIGN, DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL.
- ALUMINUM IN CONTACT WITH OR EMBEDDED IN CONCRETE OR MASONRY SURFACES SHALL BE COATED WITH A HEAVY COATING OF ALKALI RESISTANCE BITUMINOUS PAINT.
- ALL BOLTS USED IN CONNECTIONS WITH ALUMINUM MEMBERS SHALL BE STAINLESS STEEL A316, UNLESS NOTED OTHERWISE.
- ALL WELDING OF ALUMINUM STRUCTURES SHALL CONFORM TO "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, LATEST EDITION.

STAINLESS STEEL

- STAINLESS STEEL PLATES, SHEETS AND STRUCTURAL SHAPES SHALL BE IN ACCORDANCE TO ASTM A240.
- STAINLESS STEEL MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - EXTERIOR AND SUBMERGED USE: TYPE 316 TYPE 316L (WHERE WELDED)
 - INTERIOR AND ARCHITECTURAL USE : TYPE 304 TYPE 304L (WHERE WELDED)
- ALL WELDING OF STRUCTURAL STAINLESS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STAINLESS STEEL", ASW D1.6, LATEST EDITION.
- STAINLESS STEEL BOLTS, NUTS AND WASHERS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F593 UNLESS NOTED OTHERWISE.

FLOTATION CONSIDERATION

- STRUCTURES WERE DESIGNED TO BE NON-BUOYANT AFTER THEY ARE PLACED INTO OPERATION. THEREFORE THE STRUCTURES MAY BE BUOYANT DURING CONSTRUCTION. GENERAL CONTRACTOR SHALL PROTECT ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION REGARDLESS OF GROUND WATER LEVELS UNTIL STRUCTURES ARE PLACED INTO OPERATION.

WATERIGHTNESS OF REINFORCED CONCRETE WATER RETAINING STRUCTURES

- HYDROSTATICALLY TEST REINFORCED CONCRETE STRUCTURES WHICH WILL CONTAIN WATER PER SPECIFICATIONS AND IN ACCORDANCE TO ACI 350.1-TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING STRUCTURES. ALL REPAIRS AND RETESTING OF TANKS SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE OWNER.

LIGHT GAGE COLD FORMED STEEL FRAMING

- ALL LIGHT GAGE COLD FORMED STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE.
- PRIOR TO ERECTION SUBMIT FOR REVIEW ENGINEERED SHOP DRAWINGS SIGNED AND SEALED BY A GEORGIA REGISTERED PROFESSIONAL ENGINEER FOR ALL COLD FORMED FRAMING COMPONENTS.
- STEEL FOR 12, 14, AND 16 GAGE STUDS AND FOR ALL DIAGONAL TENSION STRAPS OR BRACES SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL FOR ALL 18, 20 AND 25 GAGE STUDS AND ALL GAGES OF TRACK AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI. STEEL SHALL BE GALVANIZED AT ALL LOCATIONS UNLESS OTHERWISE NOTED.
- ALL STUDS SHALL BE SECURELY SEALED FOR FULL END BEARING WITH TOP AND BOTTOM TOLERANCES OF 1/4" COMBINED ON TOP AND BOTTOM TRACK. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, AND BEAM BEARINGS.
- LATERAL BRIDGING SHALL BE INSTALLED AT MID-HEIGHT OF ALL EXTERIOR WALLS ON THE EXTERIOR FACE OF WALL. BRIDGING SHALL BE CONTINUOUS 2" WIDE 20 GAGE STRAP OR BETTER ATTACHED TO EACH STUD WITH A #6 SCREW MINIMUM. LATERAL BRIDGING SHALL BE SPACED AT 5'-0" OC MAXIMUM FOR WALLS GREATER THAN 10'-0" HIGH.
- SCREWS SHALL BE SELF DRILLING PLACED INTO NEW MATERIAL. SCREWS WHICH ARE REMOVED SHALL BE REPLACED BY A SCREW OF A LARGER DIAMETER WHERE THE REPLACEMENT IS MADE INTO AN EXISTING HOLE. REPLACE ALL SCREWS WHICH STRIP OUT MATERIAL. SCREWS SHALL BE SPACED NO CLOSER THAN 5/8 INCH ON CENTER AND WITH A MINIMUM FREE EDGE DISTANCE OF 1/2 INCH. CLIP ANGLES OR FLAT CLIPS USED FOR ATTACHMENTS SHALL BE 20 GAGE MINIMUM. CLIP ANGLES FOR TRUSS TO WALL CONNECTIONS SHALL BE 3 1/2" LONG 18 GAGE MINIMUM. SIZE CLIP ANGLES AND FLAT CLIPS TO MAINTAIN MINIMUM SCREW SPACING AND EDGE DISTANCES. ALL SCREWS #8 AND LARGER SHALL HAVE A MINIMUM HEAD SIZE OF 5/16 INCH.
- STUD SIZE WHERE NOT SPECIFICALLY NOTED ON DETAILS SHALL BE 1-5/8 INCH WIDE BY 3-1/2 INCH DEEP BY 20 GAGE MINIMUM. TRACK SIZE WHERE NOT SPECIFICALLY NOTED ON DETAILS SHALL BE 1" WIDE BY 3-1/2 INCH BY 20 GAGE MINIMUM.

STATEMENT OF SPECIAL INSPECTIONS

- SPECIAL INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE (IBC). THE SPECIAL INSPECTOR (FROM AN INDEPENDENT INSPECTION AGENCY) SHALL BE EMPLOYED BY THE OWNER OR OWNER'S REPRESENTATIVE TO PERFORM THE FOLLOWING SPECIAL INSPECTION AND THRESHOLD REPORTS. THE INSPECTION AGENCY SHALL FURNISH INSPECTION REPORTS FROM THE SPECIAL INSPECTOR TO THE ENGINEER OF RECORD AND BUILDING OFFICIAL. THIS DOES NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE FOLLOWING ITEMS, AS A MINIMUM REQUIRE SPECIAL VERIFICATION AND INSPECTION:
 - SOILS (1705.6)
 - CONCRETE CONSTRUCTION (1705.3)
 - STEEL CONSTRUCTION (1705.2)
 - MASONRY (1705.4)
 - POST INSTALLED ANCHORS (1705.3, 1705.4) - CONTINUOUS INSPECTION FOR ANCHOR PRODUCT, NAME, TYPE AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR EMBEDMENT AND TIGHTENING TORQUE.
- THE CONTRACTOR SHALL NOTIFY THE INSPECTOR 24 HOURS IN ADVANCE OF ALL INSPECTIONS.

ABBREVIATIONS

STRUCTURAL ABBREVIATIONS APPLY TO "S" SHEETS ONLY		
@	AT	POUNDS
#	AND	LOW POINT MANUFACTURER MATERIAL
&	AL, ALU, ALUM	MAXIMUM
ADD'L	ALUMINUM	MINIMUM
BLD	ADDITIONAL	MASONRY OPENING
BM	BUILDING	MISCELLANEOUS
BOT	BEAM	NUMBER
CJ	BOTTOM	NOT TO SCALE
CLR	CONTROL JOINT	ON CENTER
CMU	CLEAR	OPPOSITE HAND
	CONCRETE	OPENING
	MASONRY UNIT	PIECES
COL	COLUMN	PRE-ENGINEERED
CONC	CONCRETE	METAL BUILDING
CONST JT	CONSTRUCTION JOINT	POUNDS PER LINEAR
CONT	CONTINUOUS	PLF
CTR	CENTER	FOOT
CTR'D	CENTERED	PT
DIA	DIAMETER	PROJ
DO	DITTO	PSF
DWG	DRAWING	
DWL	DOWEL	PSI
EF	EACH FACE	
EJ	EXPANSION JOINT	
EL	ELEVATIONS	SCHED
EOR	EQUAL	SIM
EQ	ENGINEER OF RECORD	SJ
EW	EACH WAY	SPECS
EXP	EXPANSION	SQR
FE	FIRE EXTINGUISHER	SS
FF	FAR FACE	STD
FIN	FINISHED	STL
FRP	FIBER REINFORCED PLASTIC	REINF
	T/	T&B
FTG	FOOTING	TOS
GALV	GALVANIZED	TRP
GR	GRADE	UNO
HK	HOOK	
HORIZ	HORIZONTAL	
HP	HIGH POINT	VERT
ID	INSIDE DIAMETER	W/
JT	JOINT	WWF
		POUNDS
		MANUFACTURER
		MAT'L
		MAX
		MIN
		MISC
		NO
		NTS
		OC
		OH
		OPNG
		PCS
		PEMB
		PLF
		PT
		PROJ
		PSF
		PSI
		SCHED
		SIM
		SJ
		SPECS
		SQR
		SS
		STD
		STL
		REINF
		T/
		T&B
		TOS
		TRP
		UNO
		VERT
		W/
		WWF
		POUNDS PER LINEAR
		MASONRY OPENING
		MISCELLANEOUS
		NUMBER
		NOT TO SCALE
		ON CENTER
		OPPOSITE HAND
		OPENING
		PIECES
		PRE-ENGINEERED
		METAL BUILDING
		POUNDS PER LINEAR
		PLF
		PT
		PROJ
		PSF
		PSI
		SCHED
		SIM
		SJ
		SPECS
		SQR
		SS
		STD
		STL
		REINF
		T/
		T&B
		TOS
		TRP
		UNO
		VERT
		W/
		WWF
		POUNDS PER SQUARE
		FOOT
		INCH
		SCHEDULE
		SIMILAR
		SAWCUT JOINT
		SPECIFICATIONS
		SQUARE
		STAINLESS STEEL
		STANDARD
		STEEL
		REINFORCEMENT
		TOP OF
		TOP AND BOTTOM
		TOP OF STEEL
		TYPICAL
		UNLESS NOTED
		OTHERWISE
		VERTICAL
		WITH
		WELDED WIRE FABRIC

LEGEND

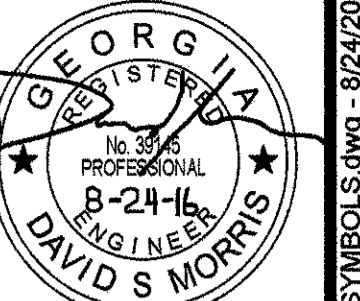
STRUCTURAL LEGEND APPLIES TO "S" SHEETS ONLY, UNO

	EARTH FILL		CONCRETE
	UNDISTURBED EARTH		EXISTING CONCRETE
	COMPACTED GRANULAR FILL		CONCRETE MASONRY
	GROUT OR SAND (AS NOTED)		STEEL
	GRATING		ALUMINUM

SYMBOLS

SYMBOLS APPLY TO "S" SHEETS ONLY

	COLUMN OR WALL LINE TAG		SECTION NO.		DETAIL NO.
	BUILDING SECTION INDICATOR		DWG. NO. OF SECTION VIEW		DWG. NO. OF DETAIL
	DWG. NO. OF SECTION CUT		COLUMN TAG		DETAIL CUT INDICATOR
	COLUMN TAG		BEAM TAG		DWG. NO. OF DETAIL
	ELEVATION TAG				



ENGINEERING TECHNOLOGIES, INC.
 3851 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500

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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

DATE: AUGUST 2016

REVISION

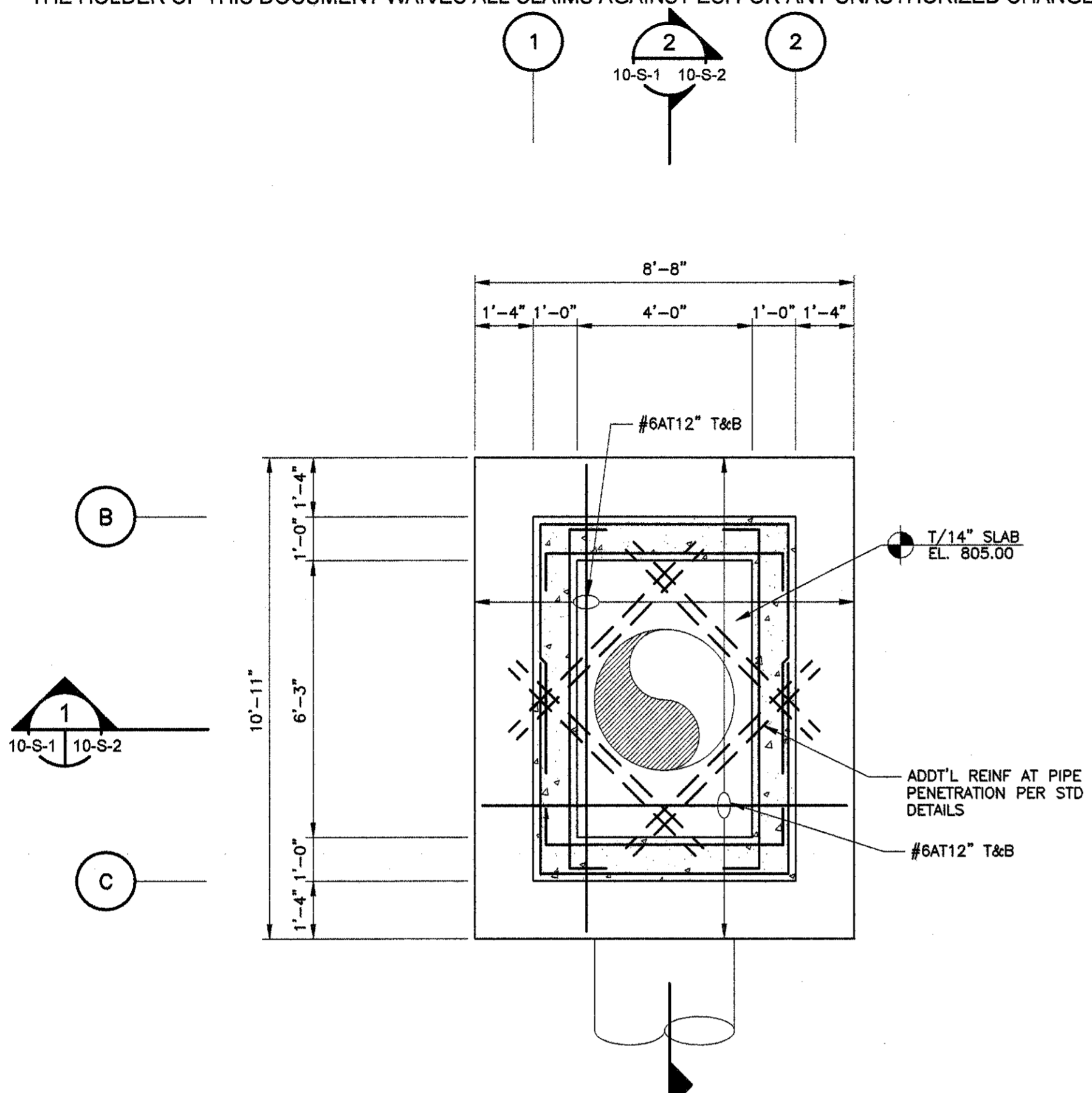
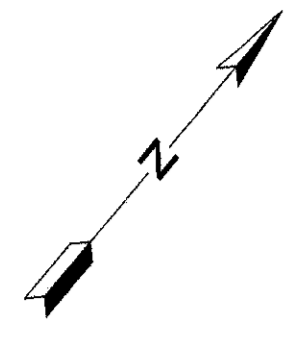
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 DRWN: DSM
 CHK: JVS

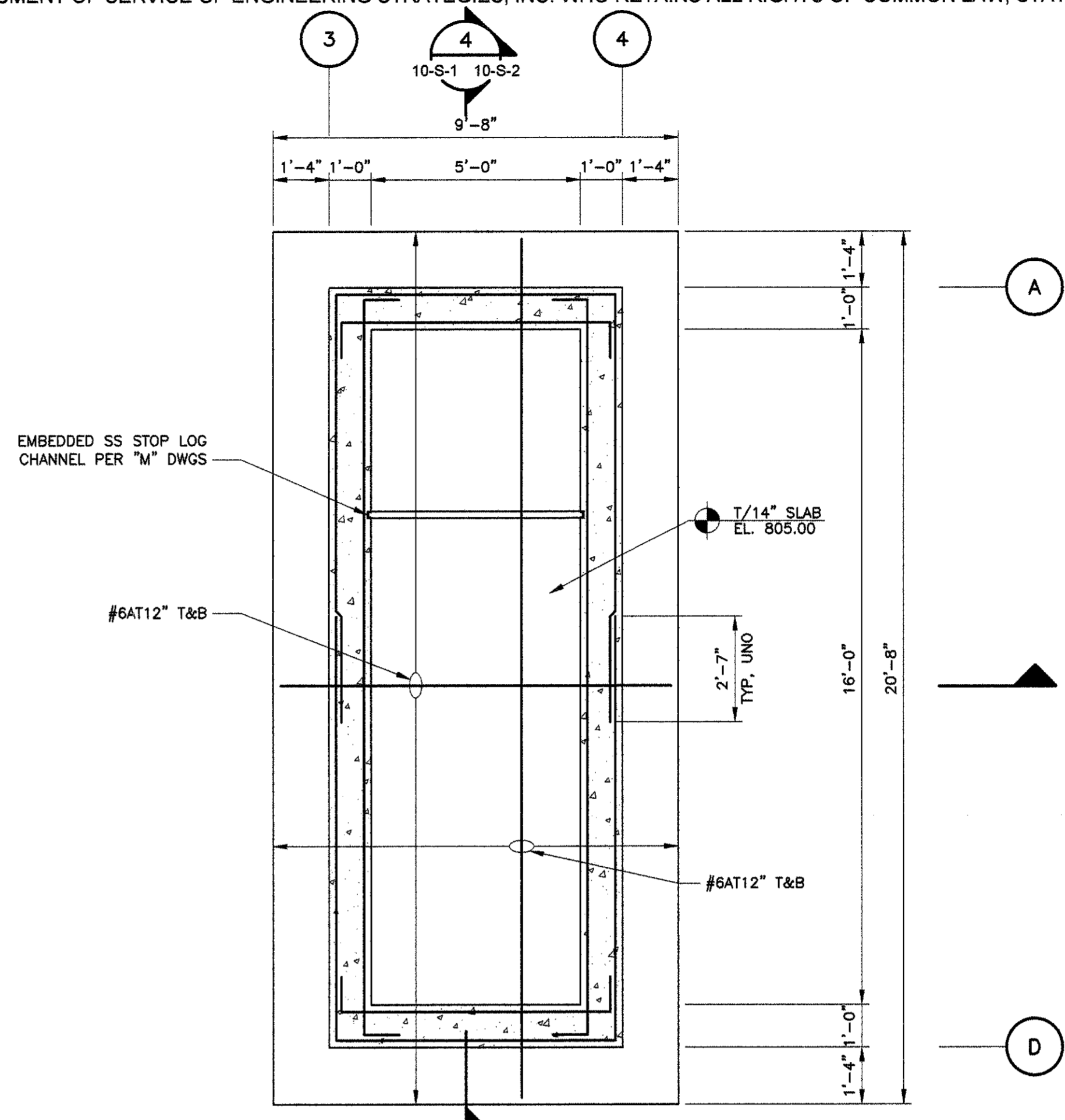
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

GENERAL NOTES,
 ABBREVIATIONS AND SYMBOLS

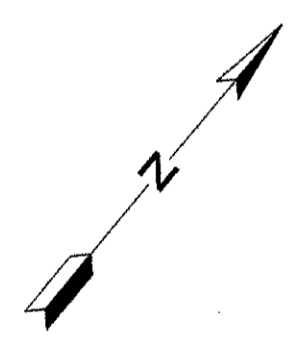
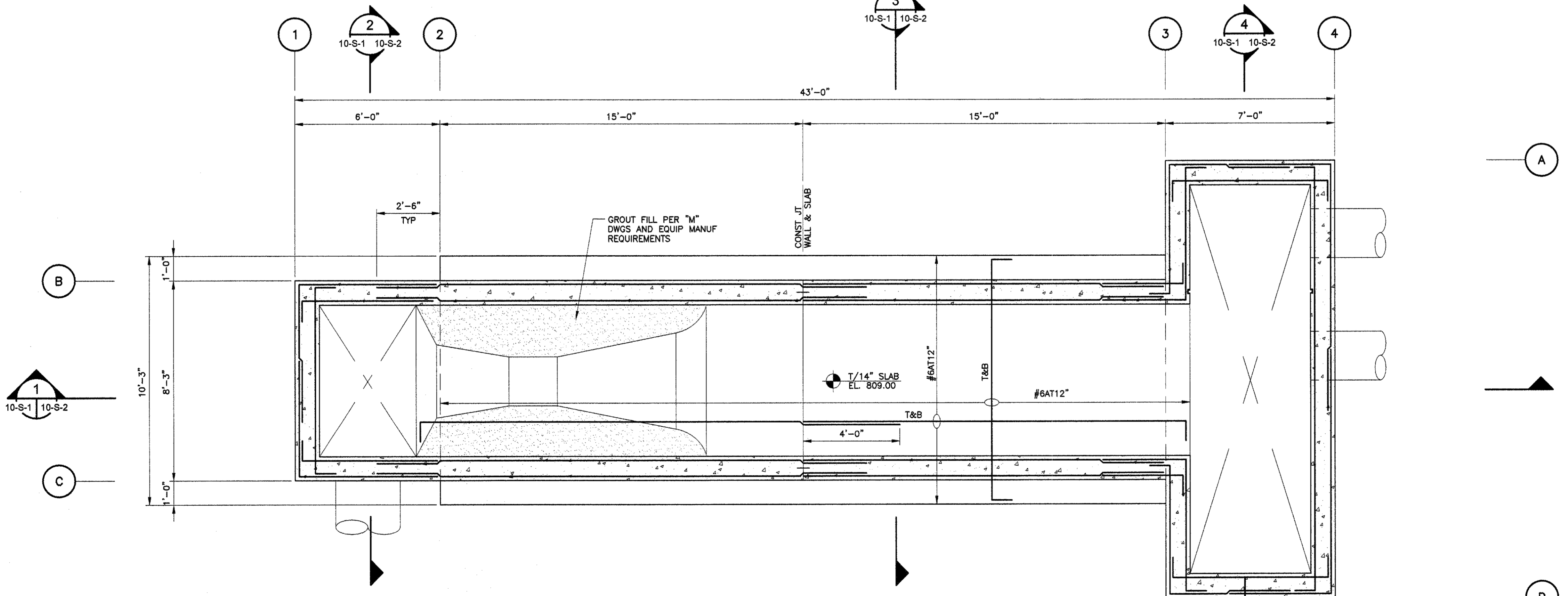
SHEET NO.
 00-S-1



BASE SLAB AT EL. 805.00
PLAN
 3/8"=1'-0"



INTERMEDIATE SLAB AT EL. 809.00
PLAN
 3/8"=1'-0"



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	AUGUST 2016		

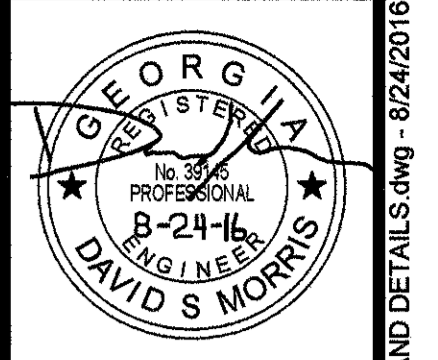
DSGN: DSM	CHK: JVS
DRWN: DSM	

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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT METERING FLUME
 BASE AND CHANNEL SLAB PLAN

SHEET NO.
 10-S-1

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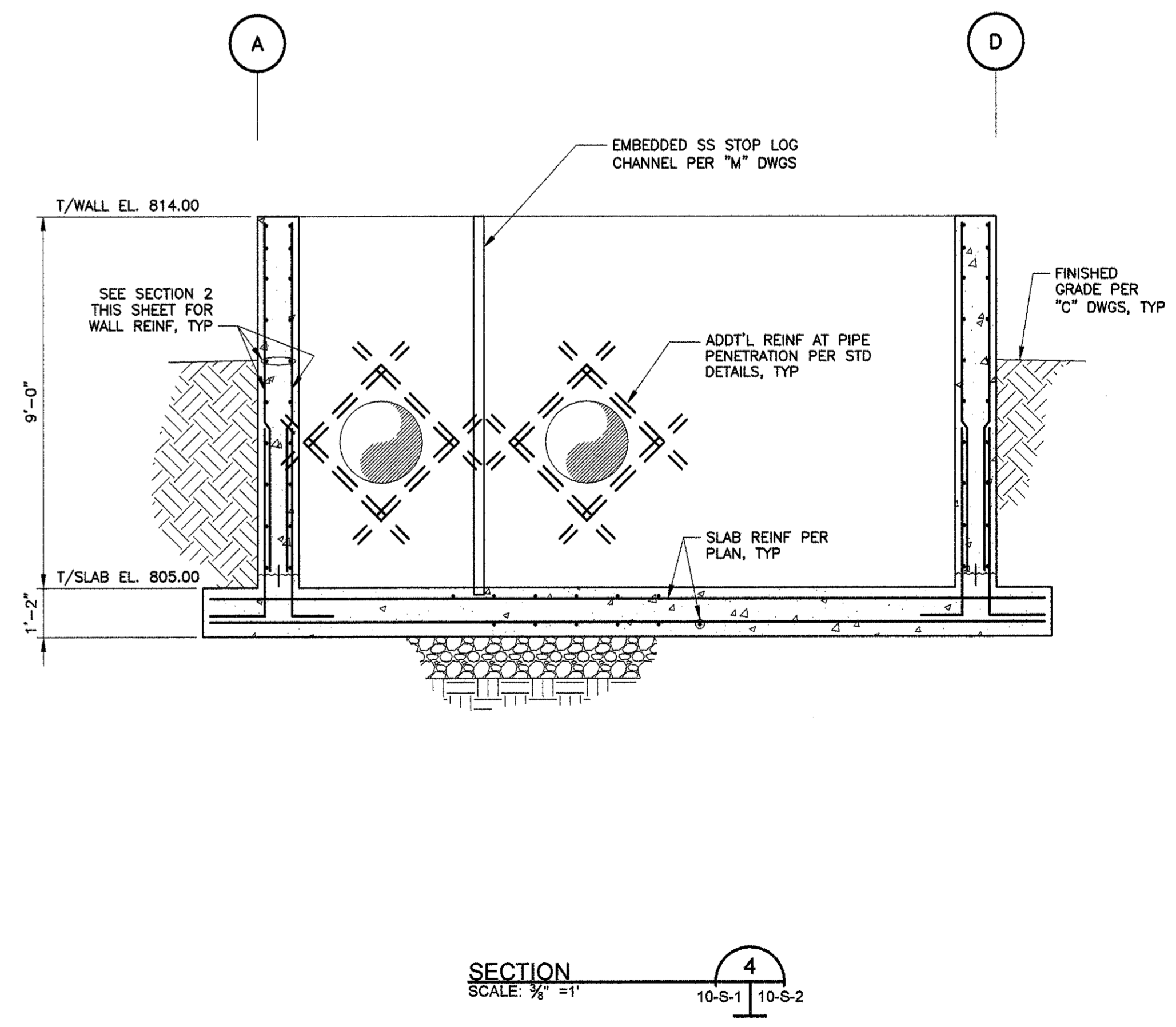
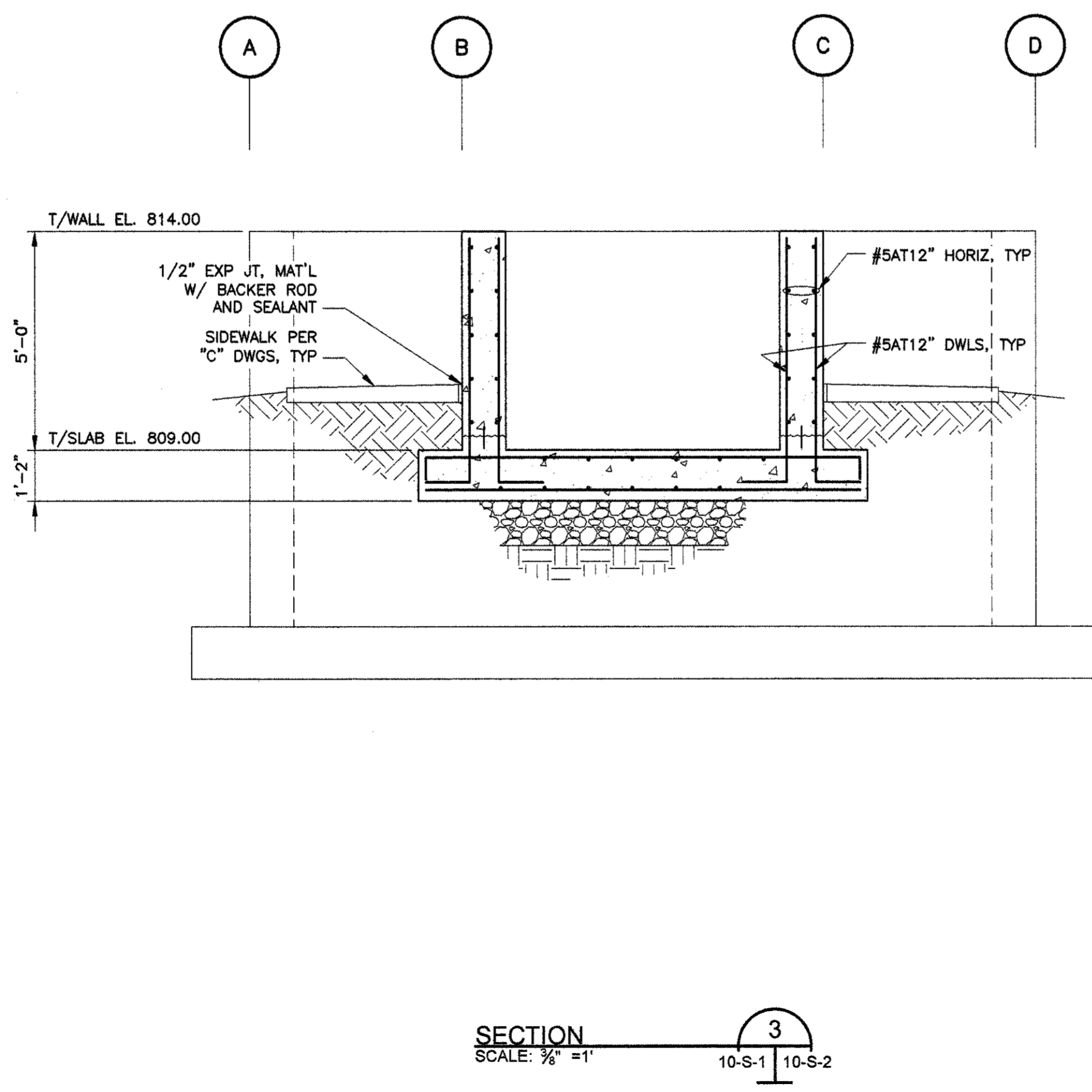
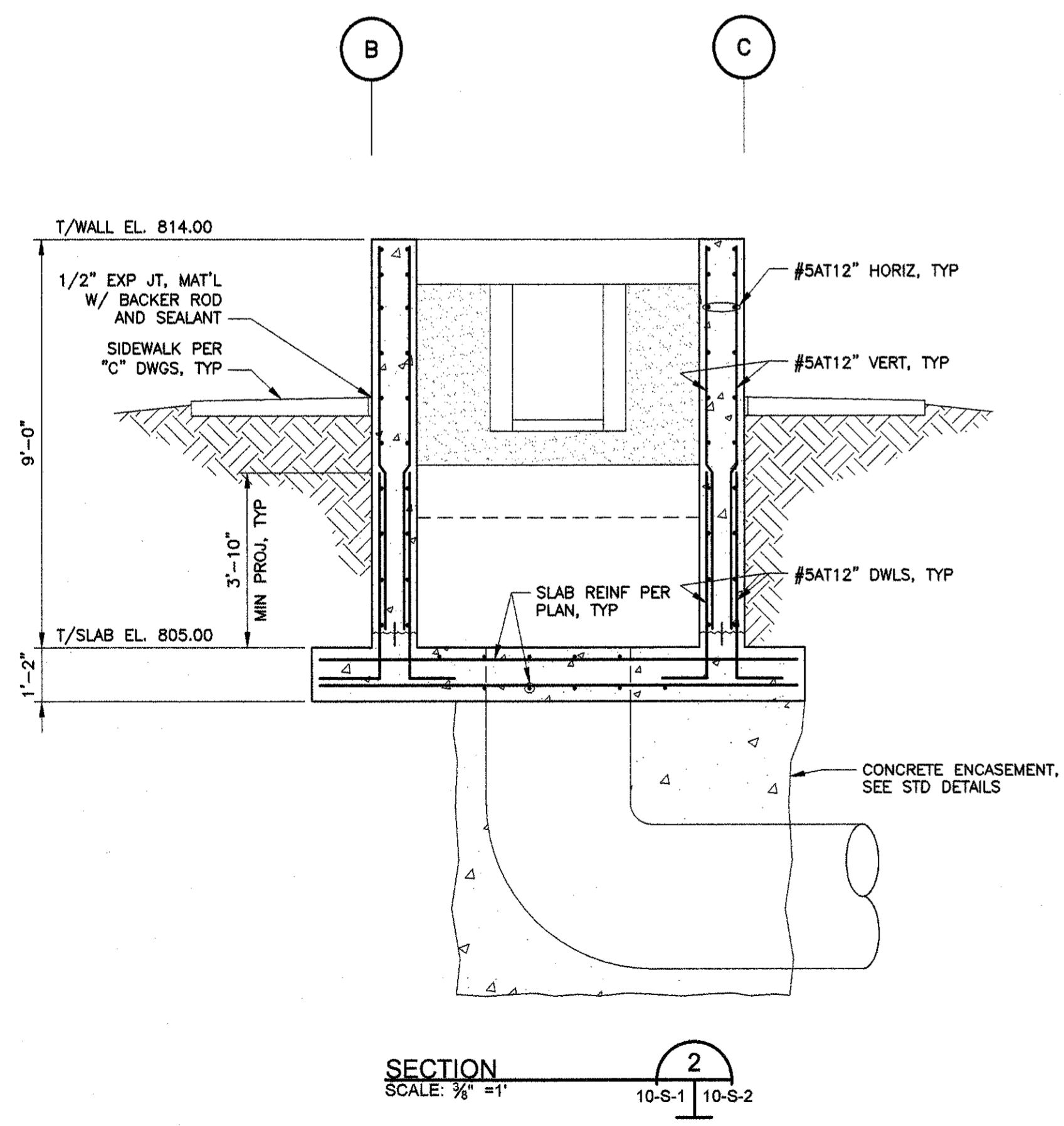
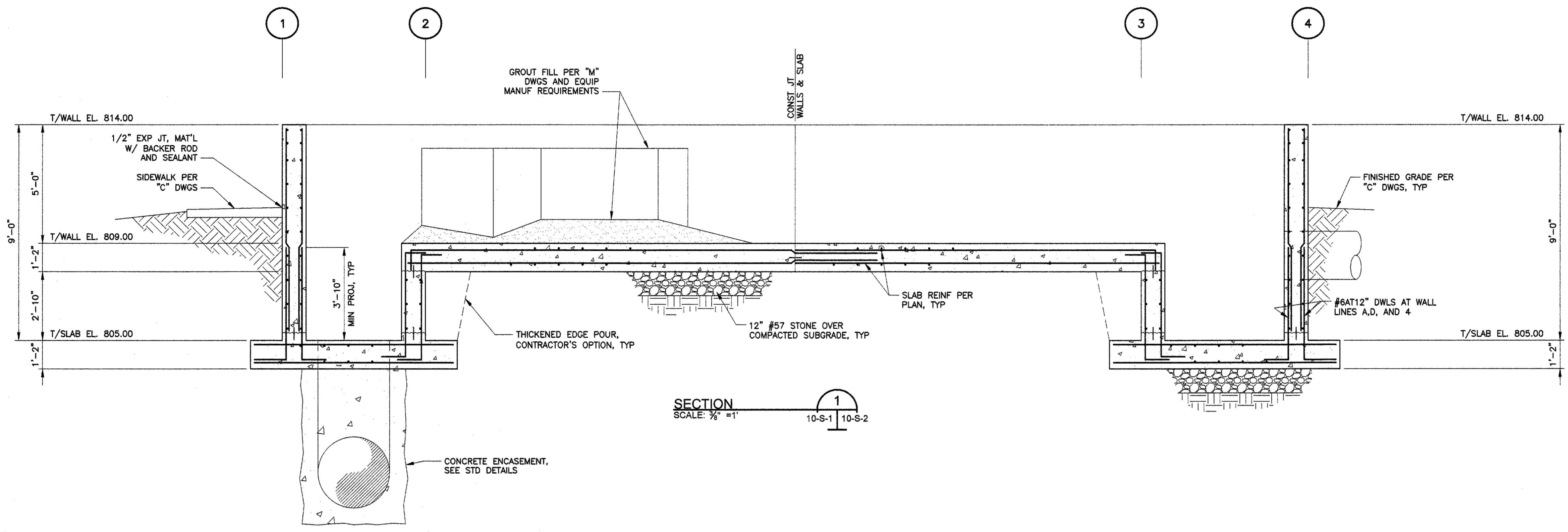
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	AUGUST 2016
REVISION	DATE
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CHKD: JVS	

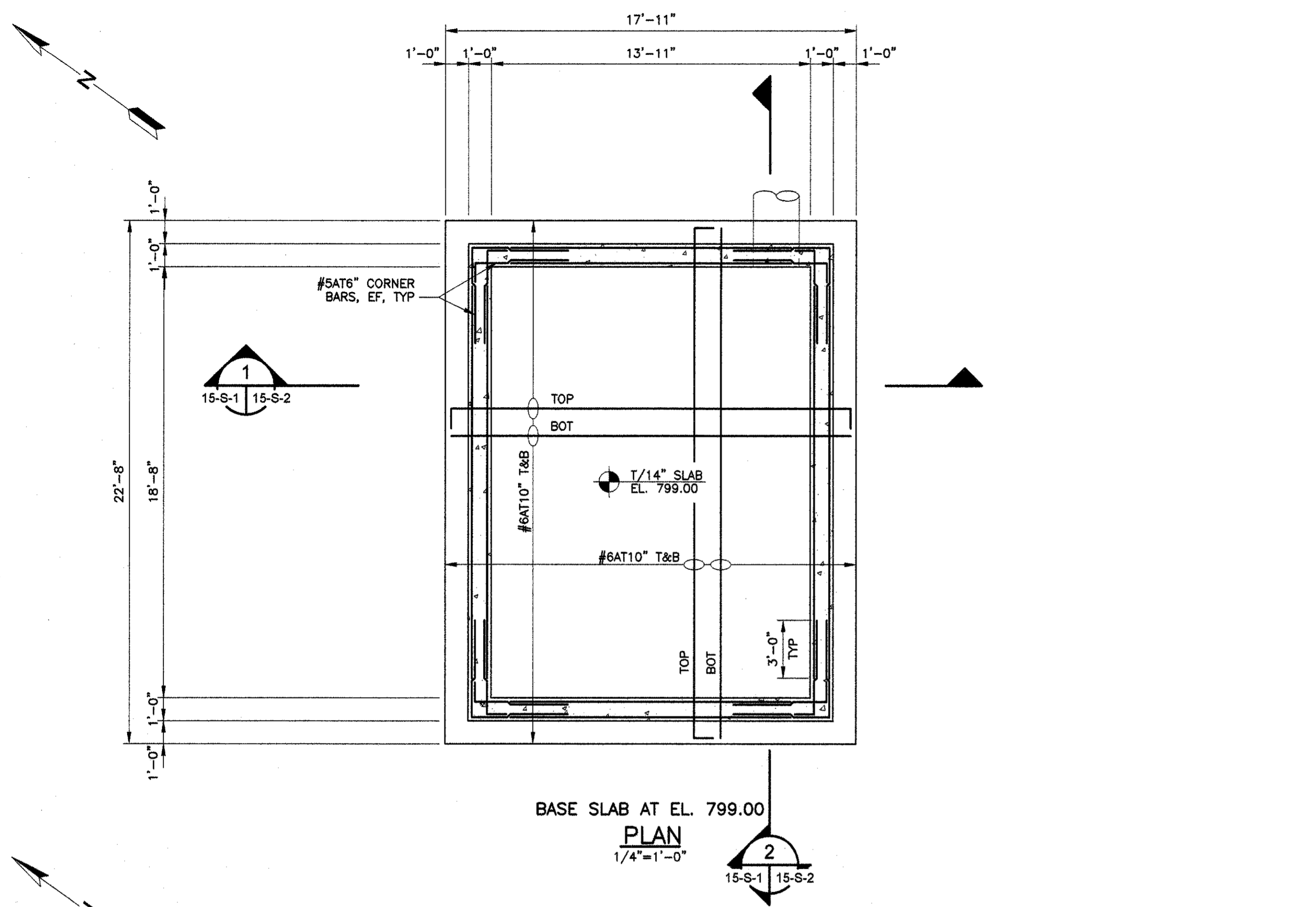
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT METERING FLUME SECTIONS

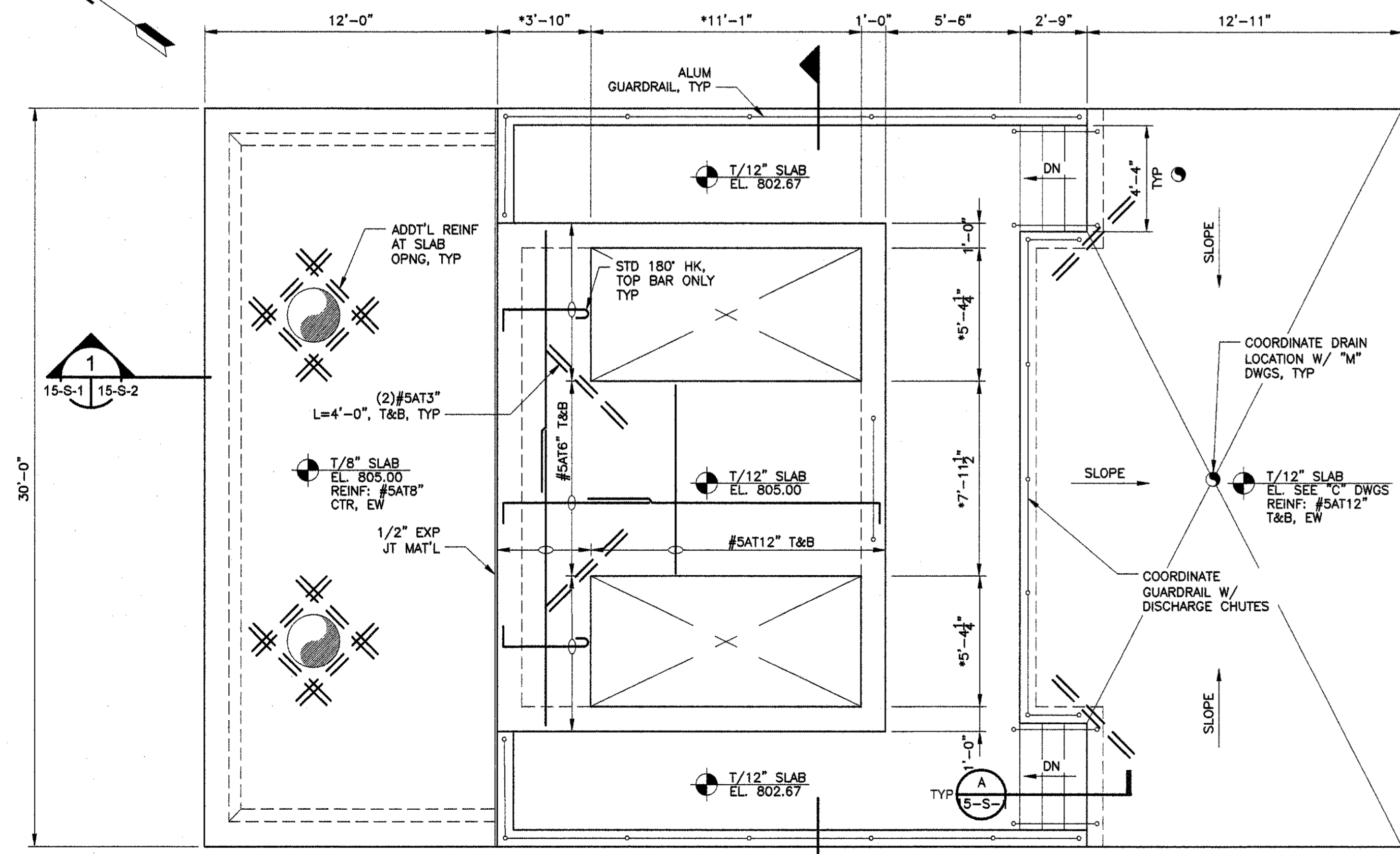
SHEET NO.
 10-S-2



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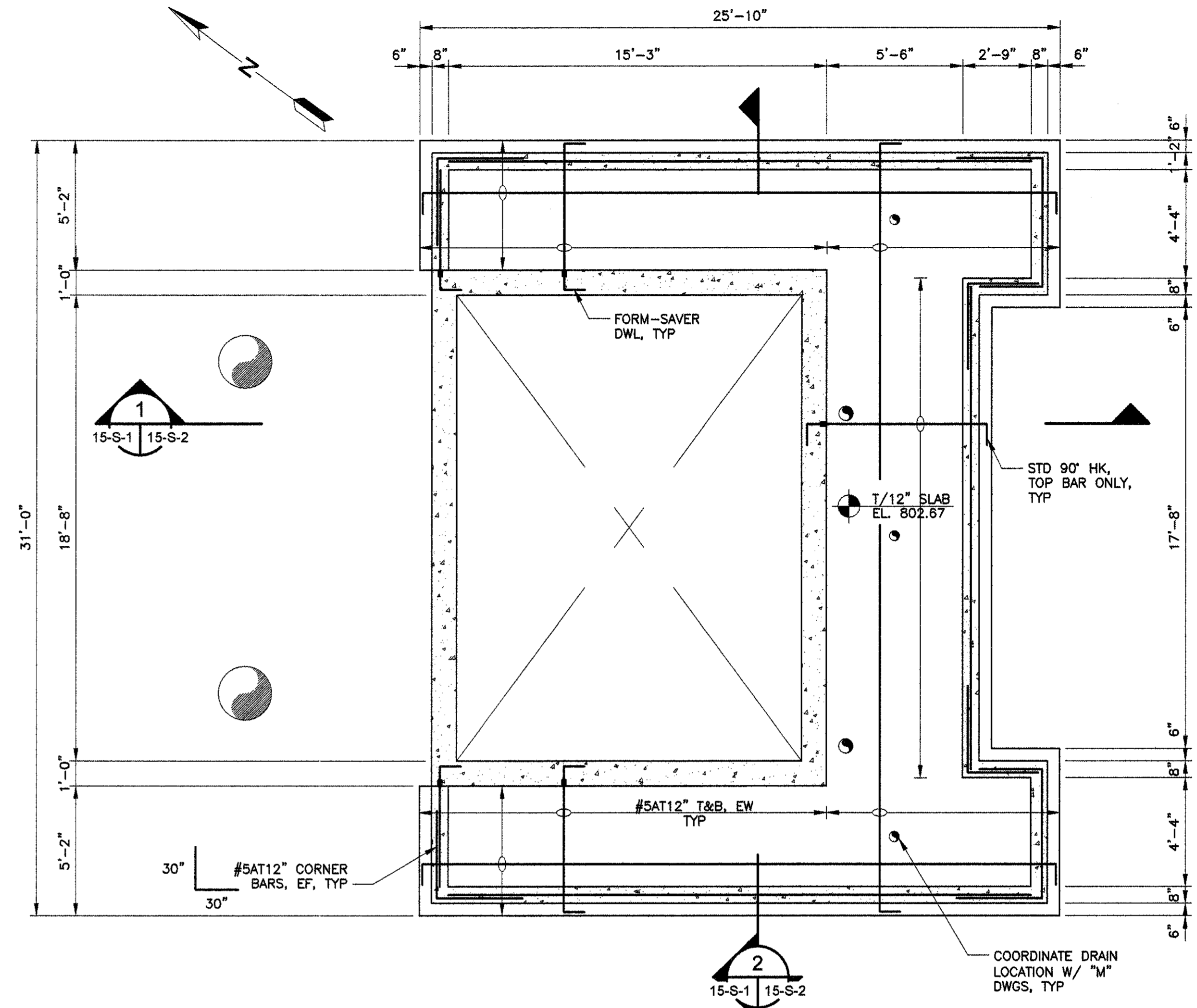


BASE SLAB AT EL. 799.00
PLAN
 1/4"=1'-0"
 15-S-1 15-S-2

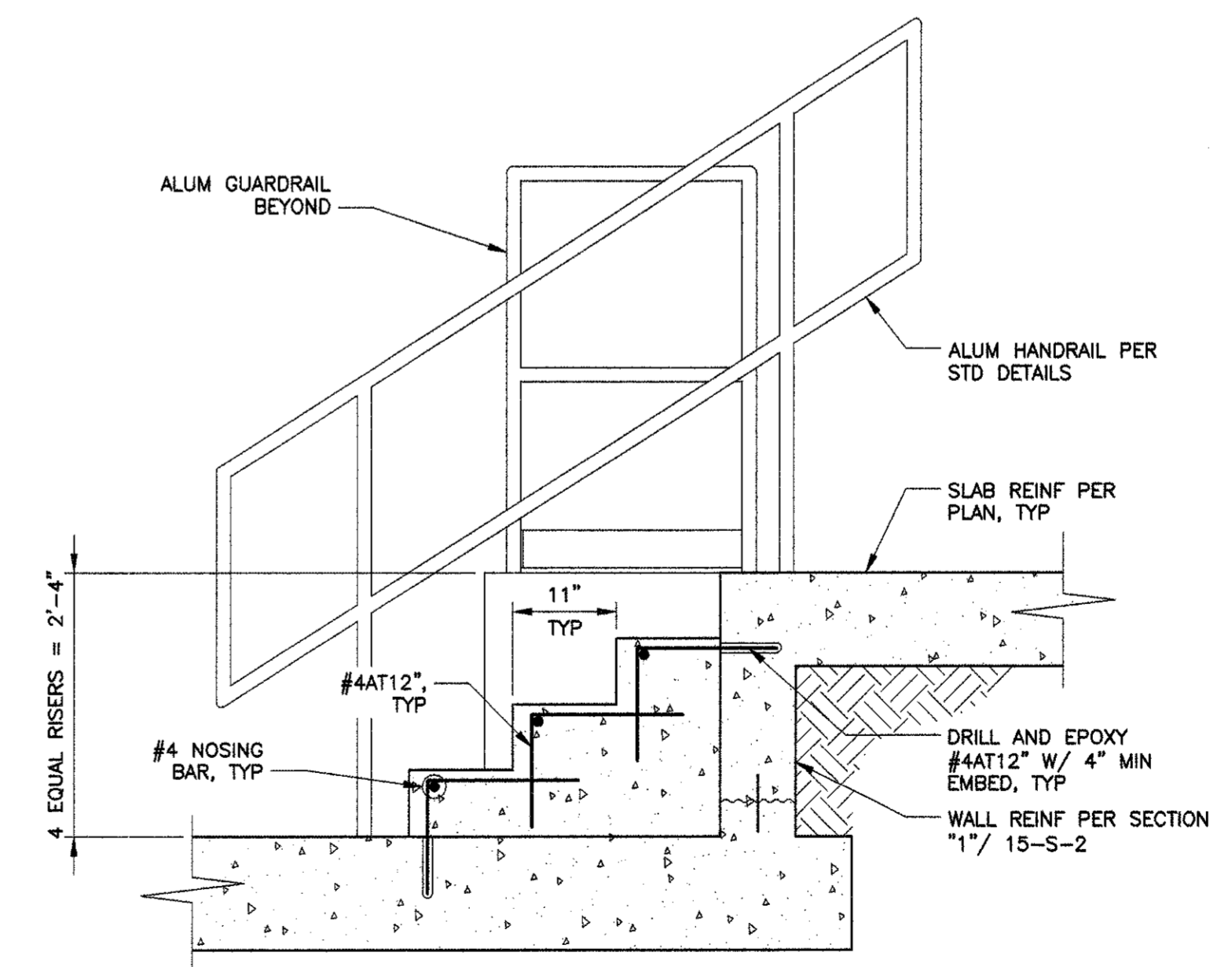


T/STRUCTURE
PLAN
 1/4"=1'-0"
 15-S-1 15-S-2

* SLAB OPENINGS TO BE COORDINATED WITH EQUIPMENT MANUFACTURER'S REQUIREMENTS

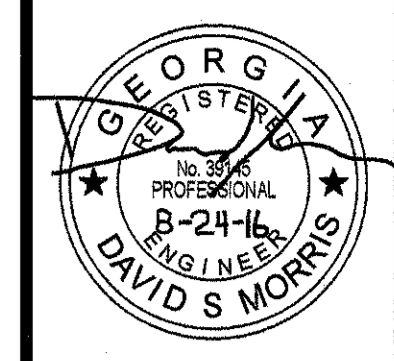


SLAB AT EL. 802.67
PLAN
 1/4"=1'-0"
 15-S-1 15-S-2



DETAIL
 SCALE: 3/8"=1'
 15-S-1 15-S-1

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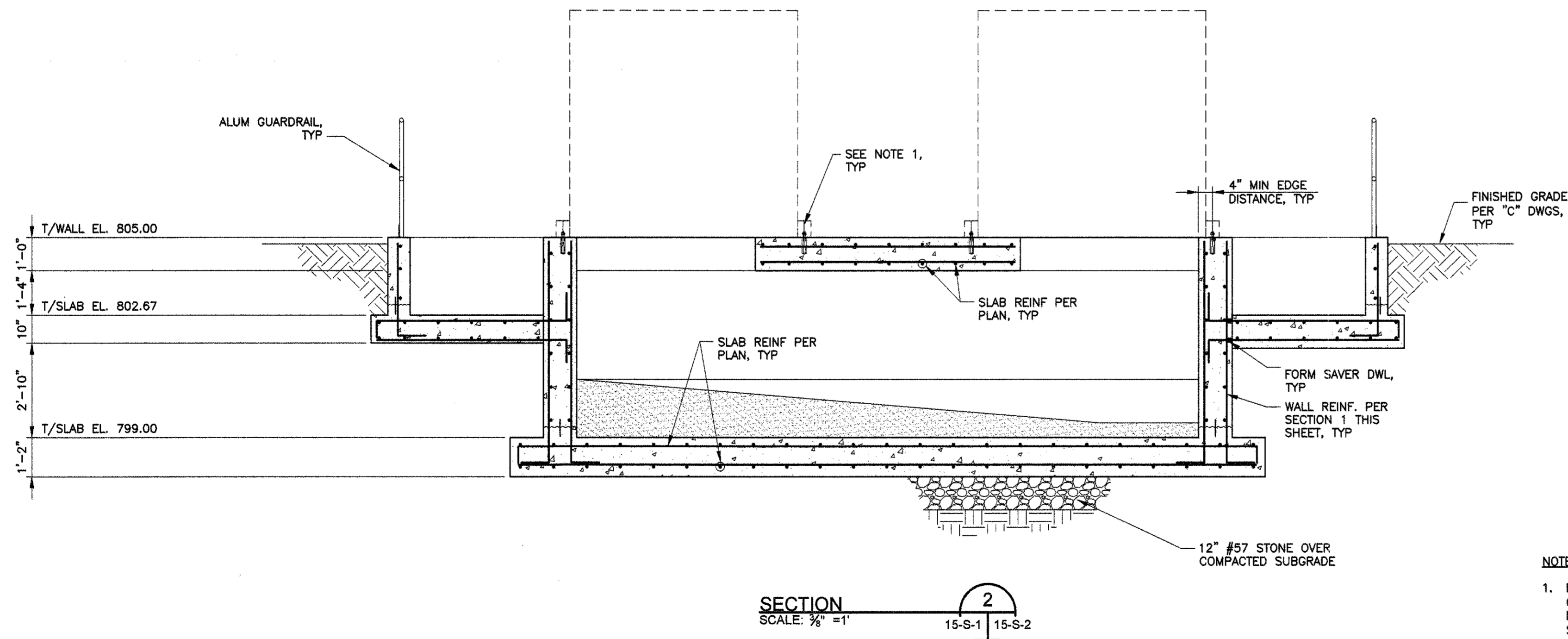
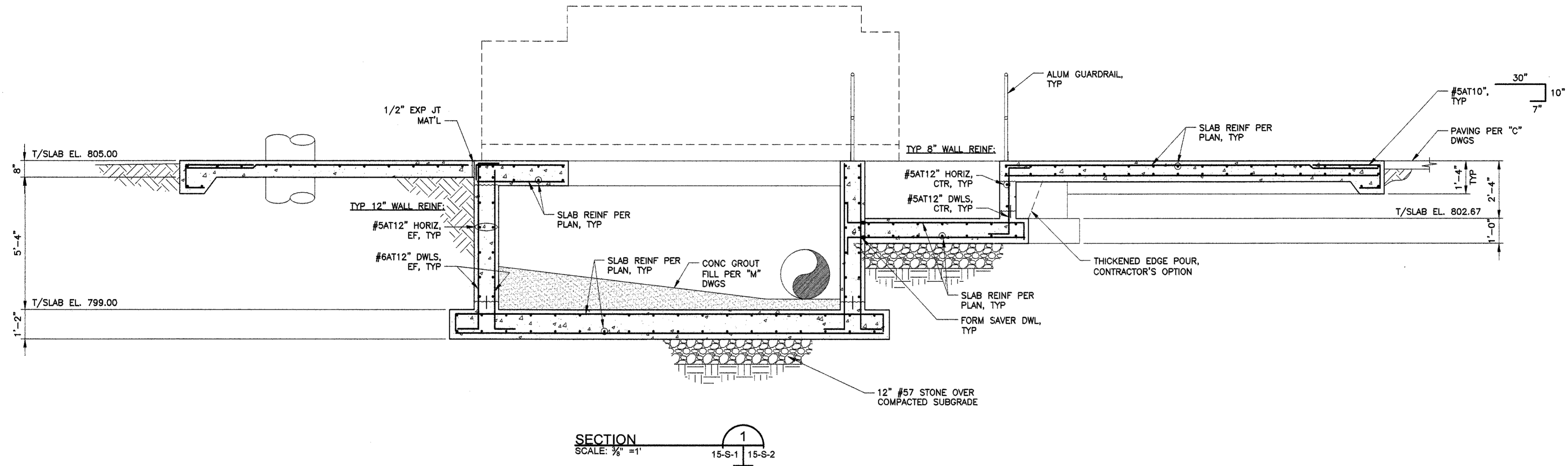
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DSM
 DRAWN: DSM
 CHCK: JVS
 BAR BEYOND IS 1" LONG FOR SCALES BAR BEYOND IS 1" LONG FOR SCALES BAR BEYOND IS 1" LONG FOR SCALES LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
**INFLUENT SCREENS
 PLANS AND DETAIL**

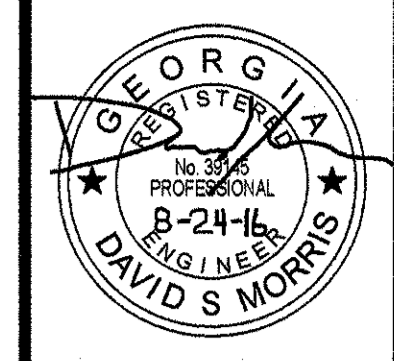
SHEET NO.
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- NOTES:**
- EQUIPMENT ANCHOR PATTERN AND SIZE TO BE COORDINATED WITH THE "M" DWGS AND EQUIPMENT MANUFACTURER. ANCHORS TO BE STAINLESS STAINLESS STEEL WITH 1/2" MINIMUM DIAMETER.

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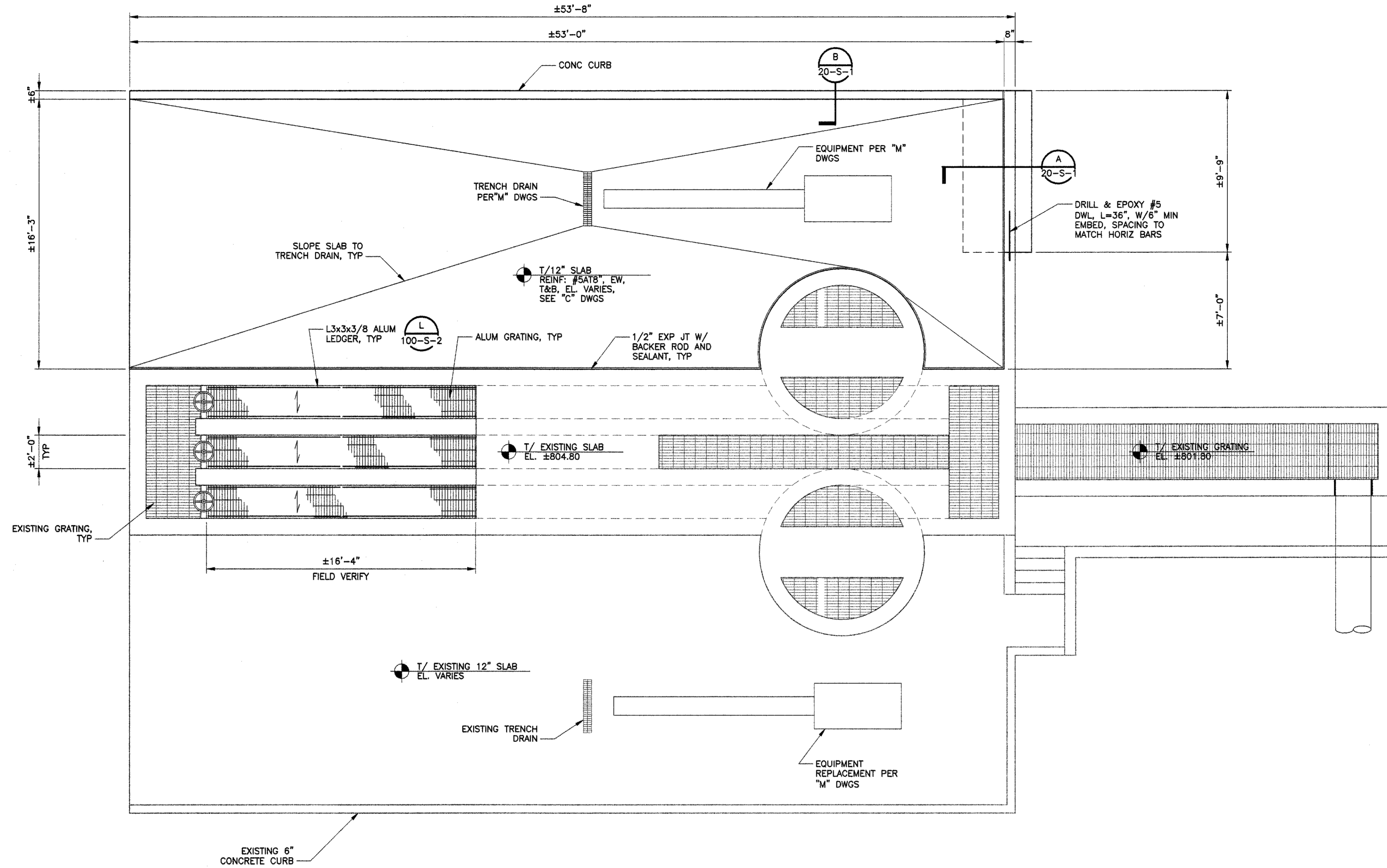
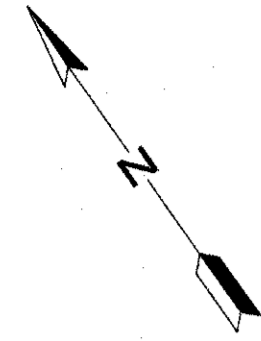
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 HAS BEEN REVIEWED FOR CONFORMANCE WITH THE "M" DWGS AND EQUIPMENT MANUFACTURER. ANCHORS TO BE STAINLESS STAINLESS STEEL WITH 1/2" MINIMUM DIAMETER.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
INFLUENT SCREENS
 SECTIONS

SHEET NO.
 15-S-2

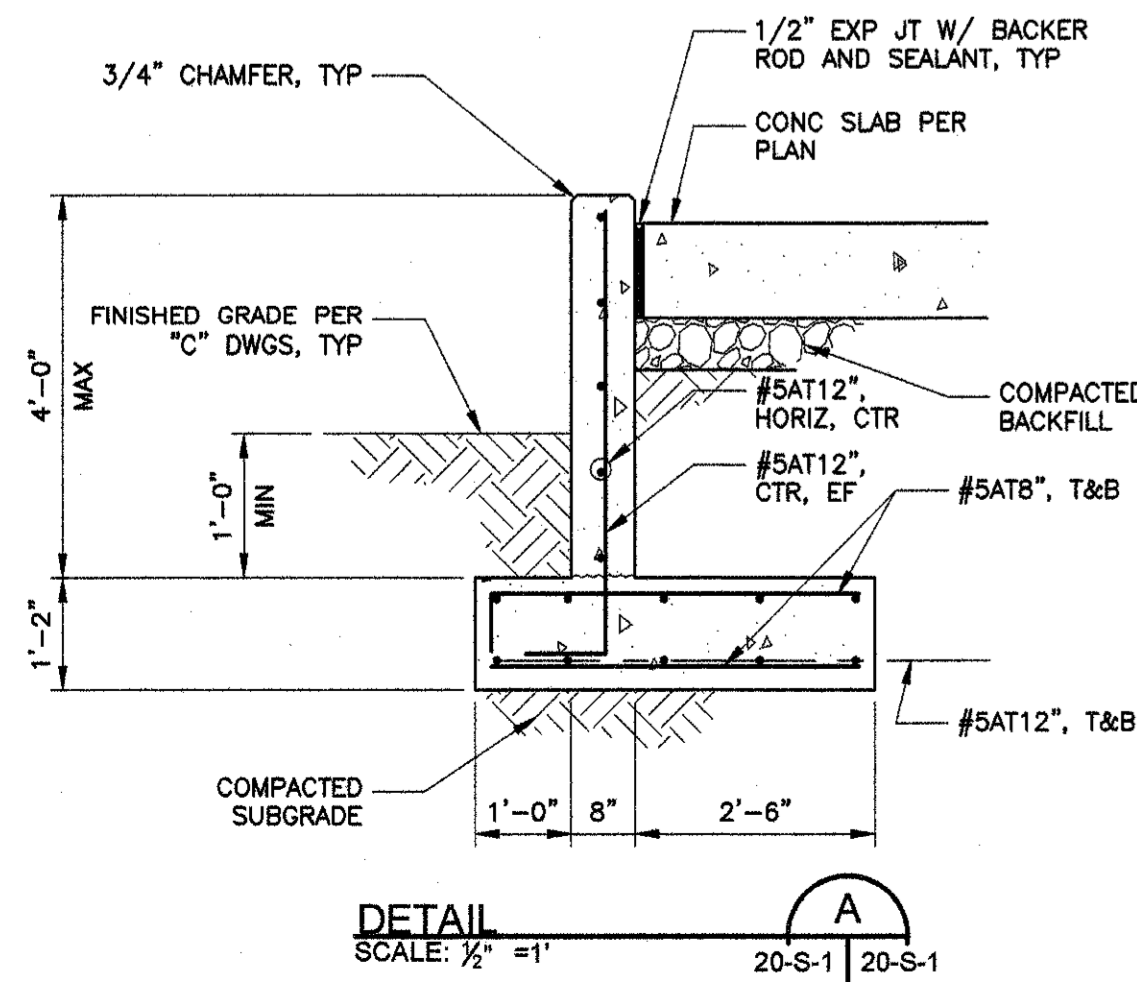
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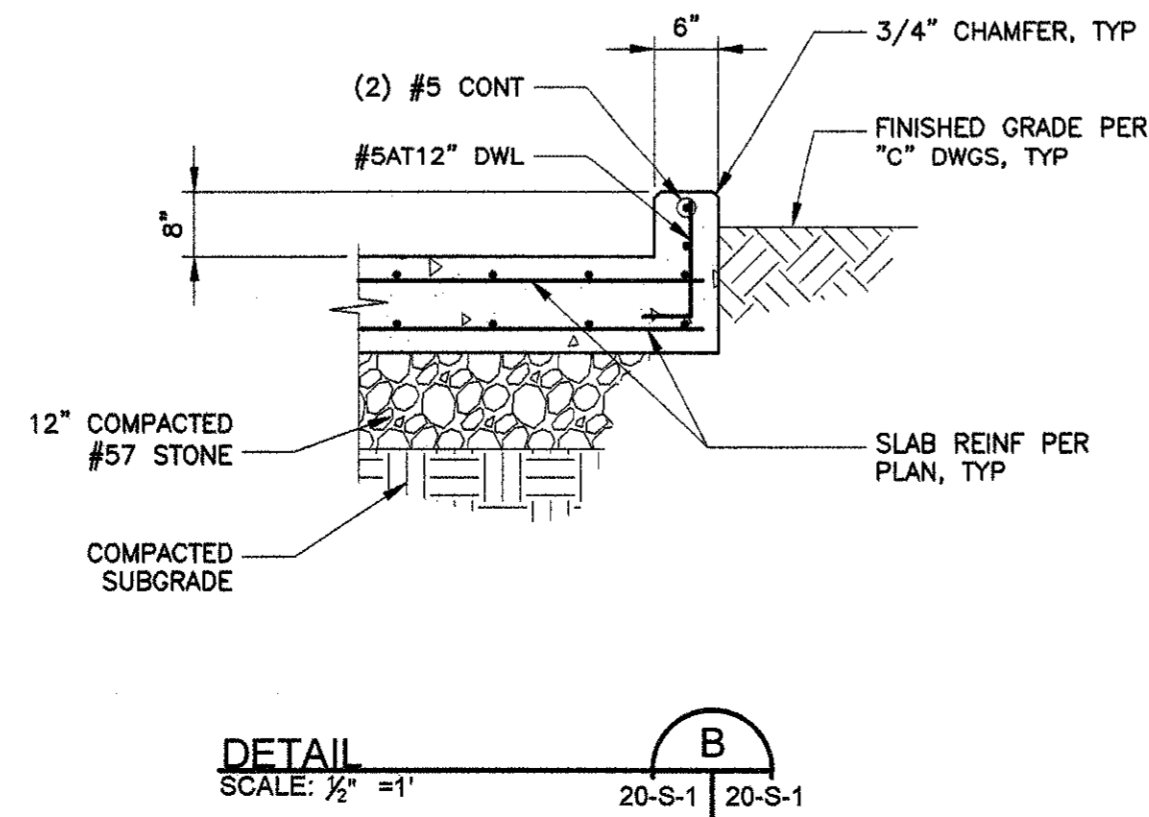
T/STRUCTURE
PLAN
1/4"=1'-0"

NOTES:

1. ALL EQUIPMENT SHALL BE LOCATED PER THE "M" DWGS.

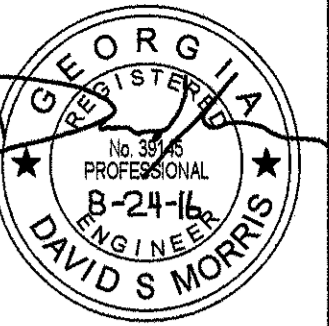


DETAIL A
SCALE: 1/2" = 1'
20-S-1



DETAIL B
SCALE: 1/2" = 1'
20-S-1

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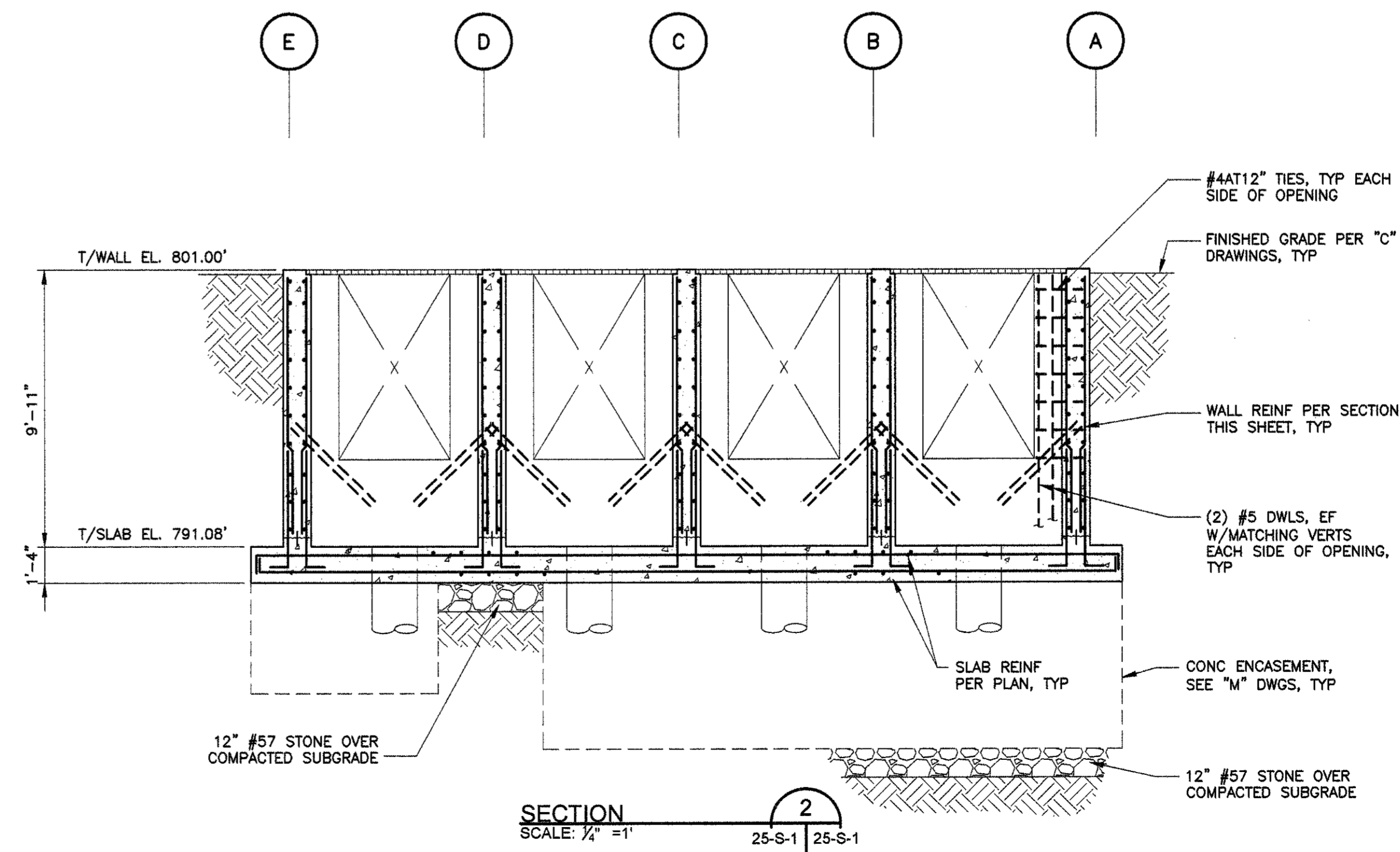
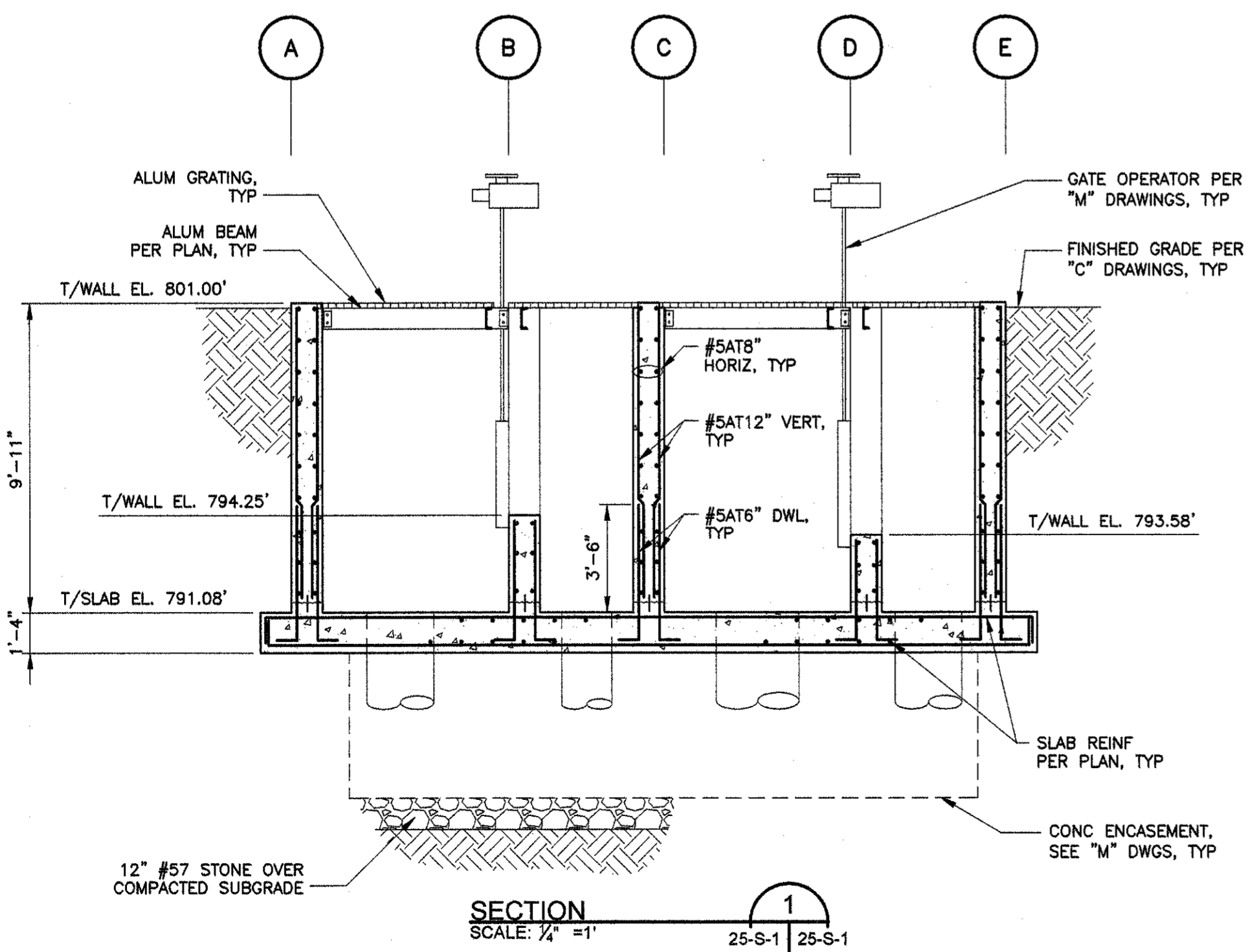
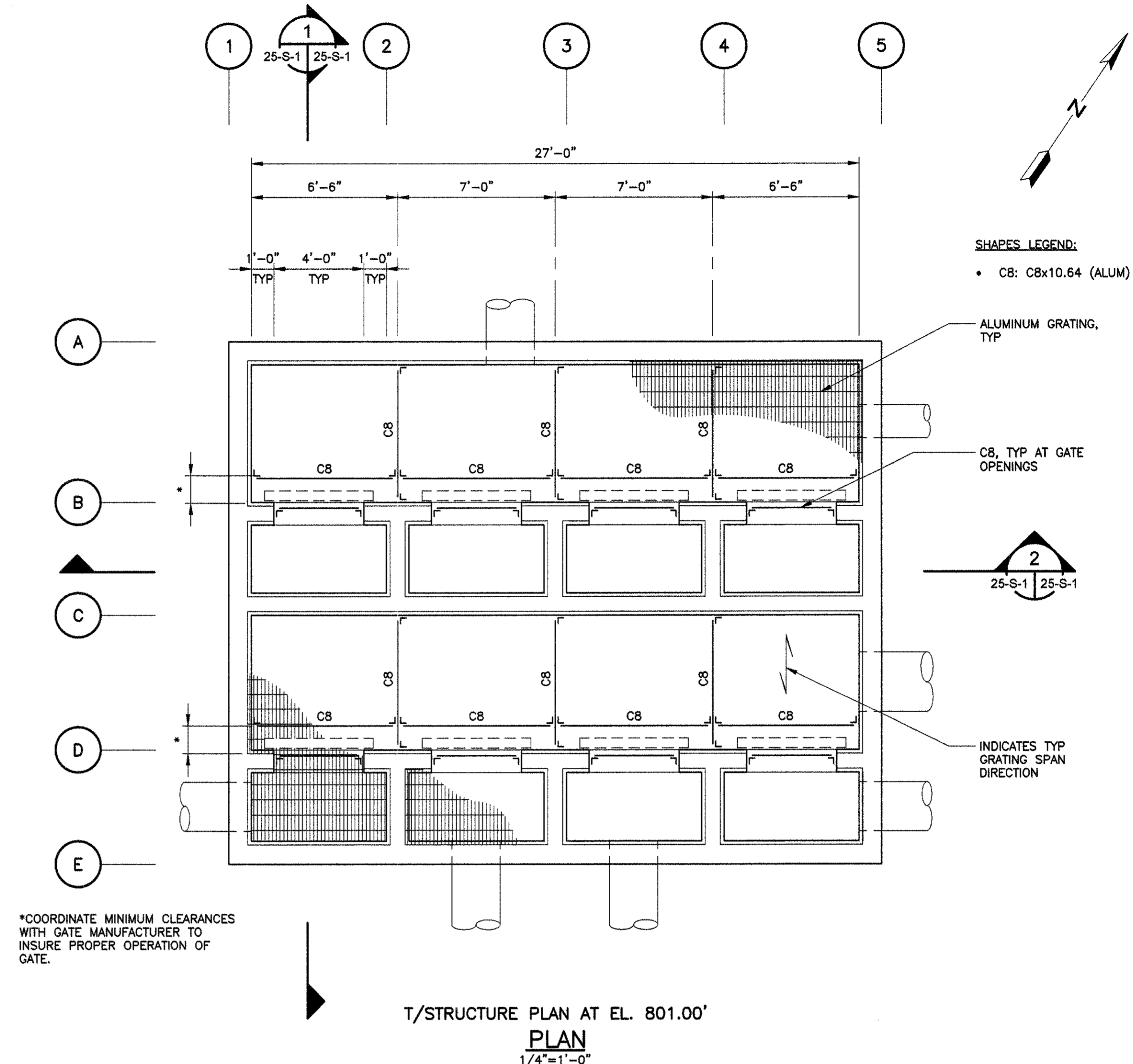
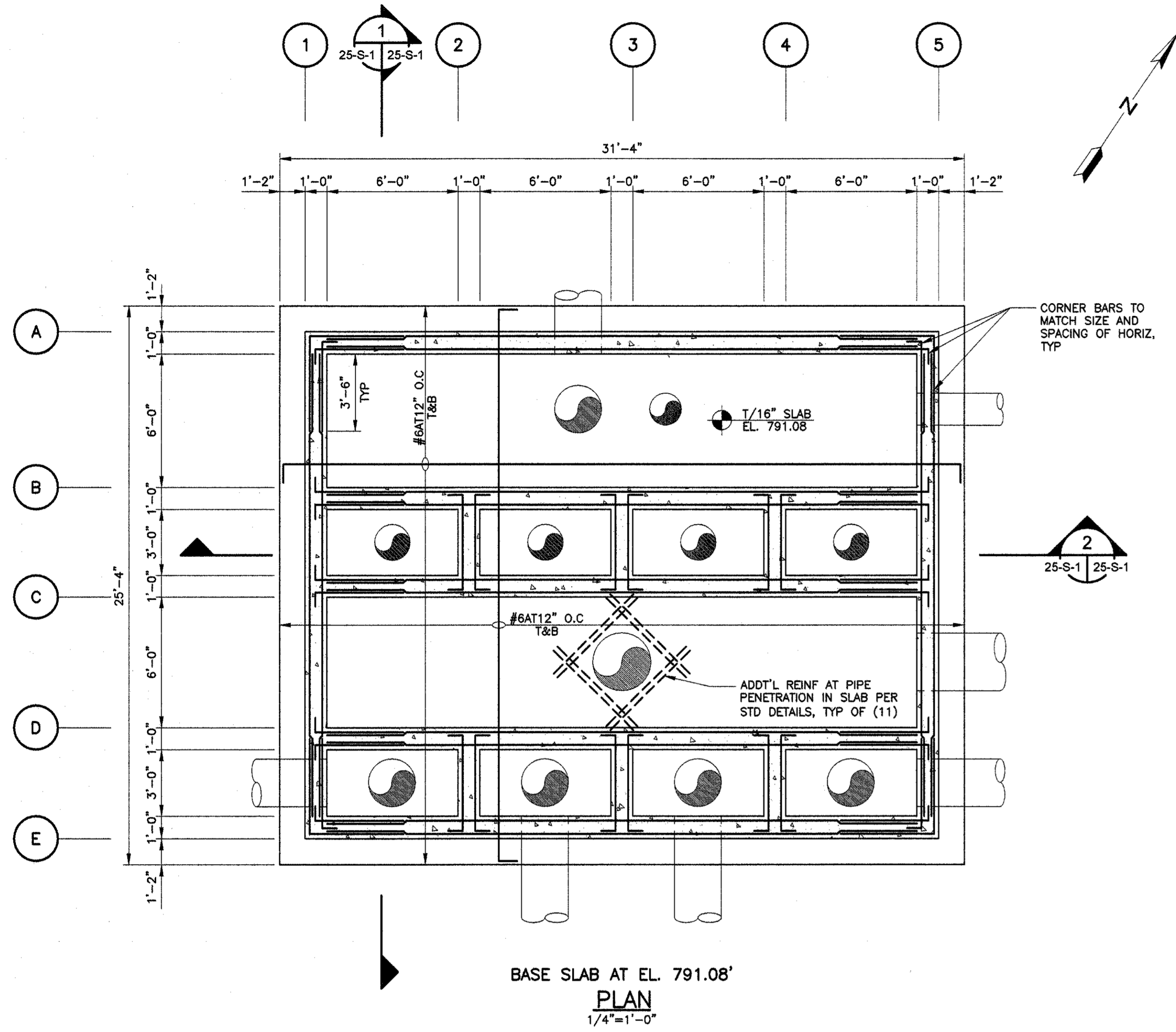
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DSM	CHK: JVS
DRWN: DSM	
BAR BELOWS 1" LONG FOR SCALES SHOWING THIS SCALE. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	

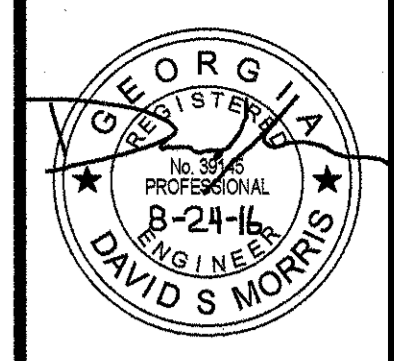
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
HEADWORKS
MODIFICATION PLAN AND DETAILS

SHEET NO.
20-S-1

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	AUGUST 2016		

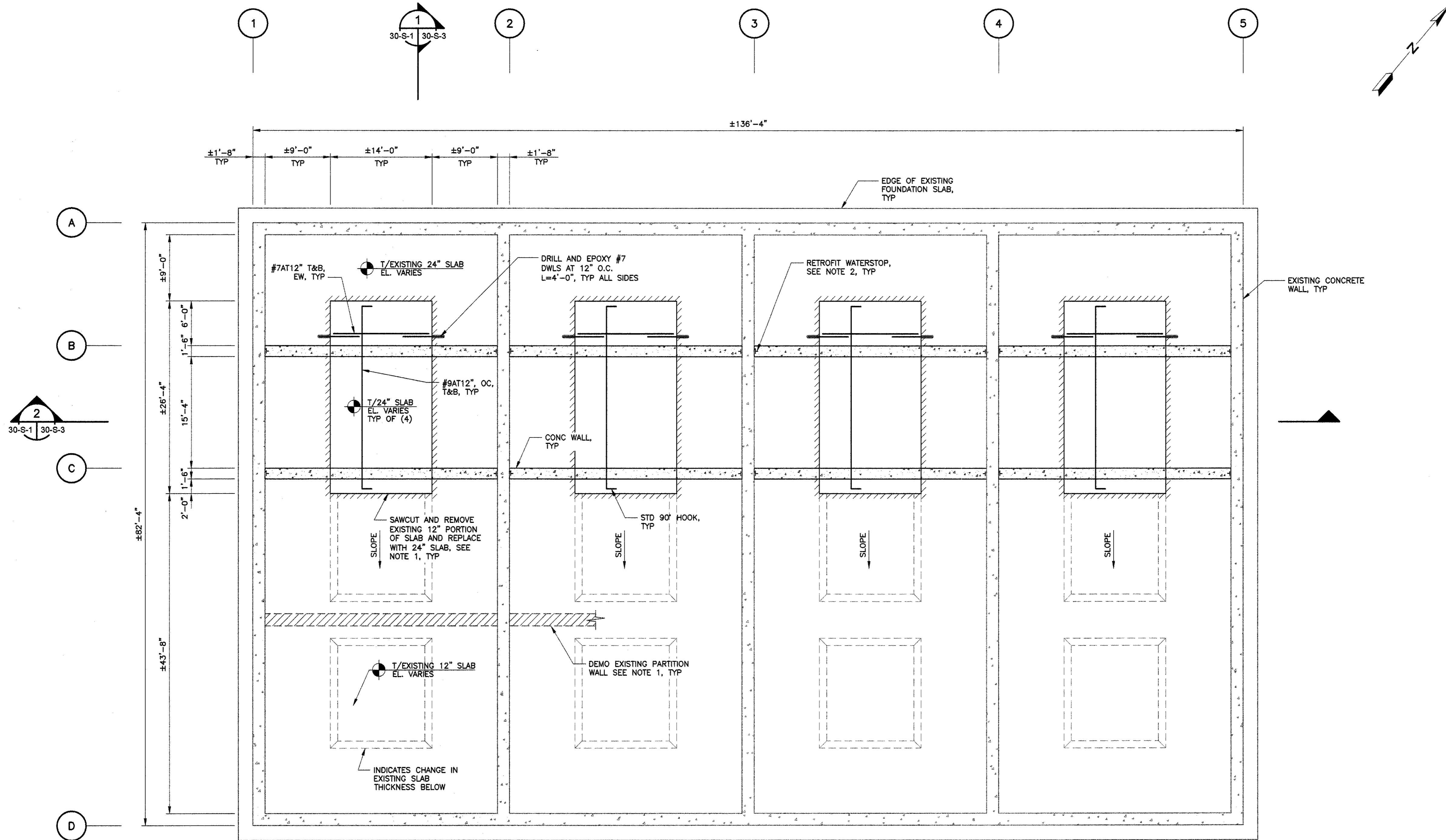
DSGN: DSM
 DRWN: DSM
 CHCK: JVS

BAR BELOW IS 4" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR SPLITTER BOX
 PLANS AND SECTIONS

SHEET NO.
 25-S-1

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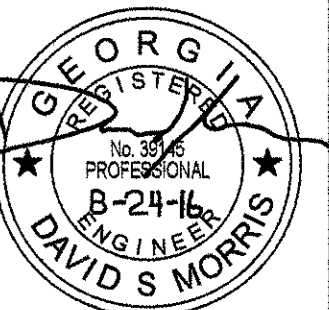


BASE SLAB - BASIN MODIFICATIONS
PLAN
 1/8"=1'-0"

NOTES:

1. NOT ALL DEMOLITION ITEMS ARE SHOWN, SEE "M" DWGS FOR EXTENT & SEQUENCING OF DEMOLITION ACTIVITIES. REPAIR ALL EXPOSED REINFORCING PER DETAIL "G"/30-S-4.
2. INSTALL 6" RETROFIT WATERSTOP BY GREENSTREAK PER DETAIL "A" / 30-S-4.
3. CONTRACTOR TO DETERMINE GROUNDWATER ELEVATION PRIOR TO DRAINING BASINS. IN THE EVENT GROUNDWATER LEVEL IS ABOVE THE BOTTOM OF THE STRUCTURE'S BASE SLAB DEWATERING WILL BE REQUIRED TO PREVENT UPLIFT FORCES ON BASE OF STRUCTURE DURING CONSTRUCTION ACTIVITIES.

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 PHONE (407) 322-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: DATE: AUGUST 2016

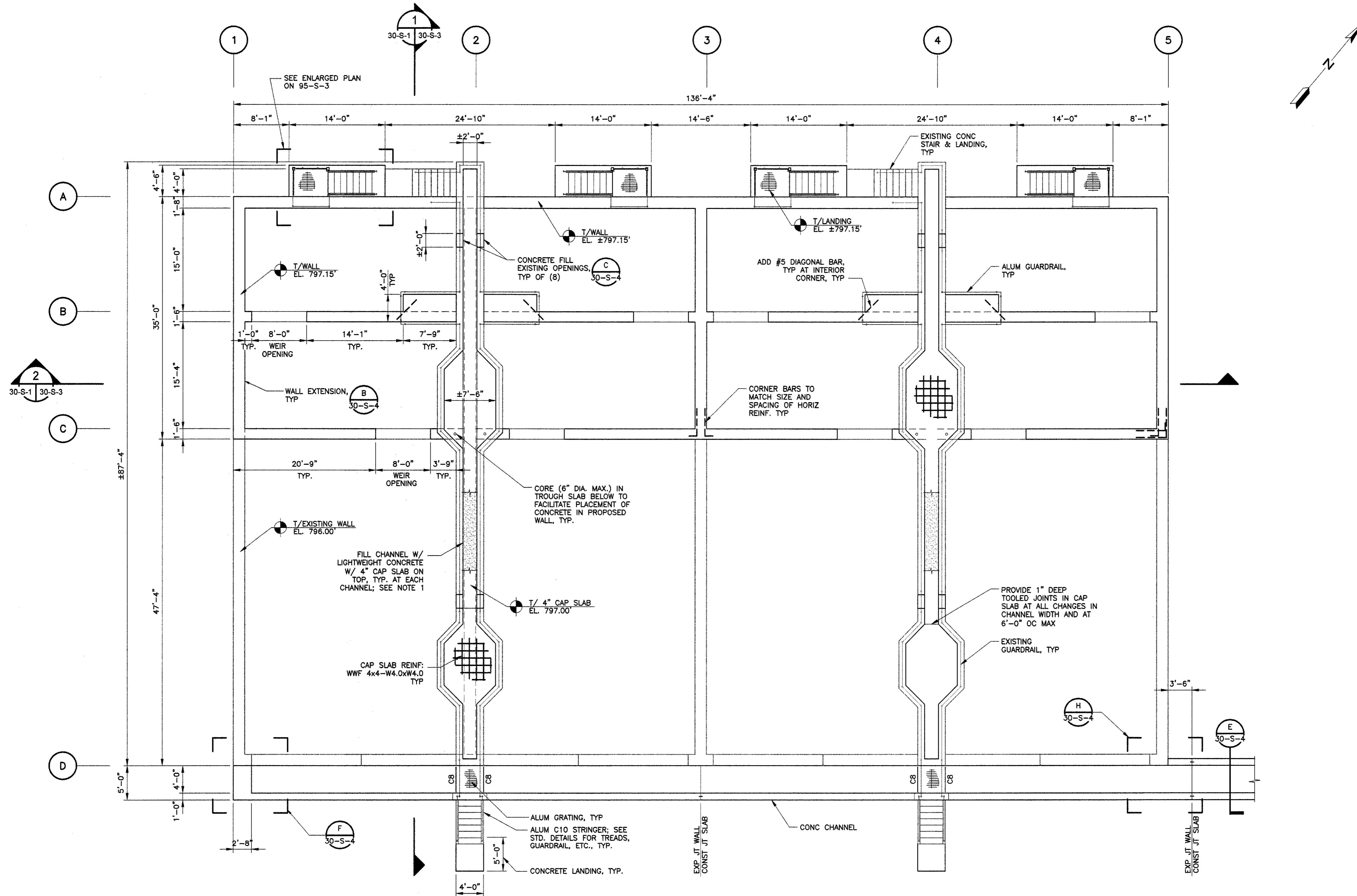
REVISION	DATE

DSGN: DSM
 DRWN: DSM
 CHCK: JVS

FOR BELOW 1/8" LONG FOR SCALES
 LONGER THAN THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR AERATION TANK MODIFICATIONS
 FOUNDATION PLAN

SHEET NO.
 30-S-1

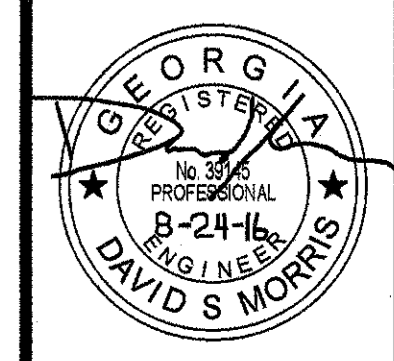


T/STRUCTURE - BASIN MODIFICATIONS
 PLAN
 1/8" = 1'-0"

ALUMINUM LEGEND:
 • C8: C8x5.79
 • C10: C10x6.14

NOTE:
 1. LIGHTWEIGHT CONCRETE FILL TO BE VERMICULITE CONCRETE WITH WET DENSITY LESS THAN 90 PCF AND A MINIMUM COMPRESSIVE STRENGTH OF 200 PSI.

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ENGINEERING STRATEGIES, INC.
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 MARIETTA, GA 30062
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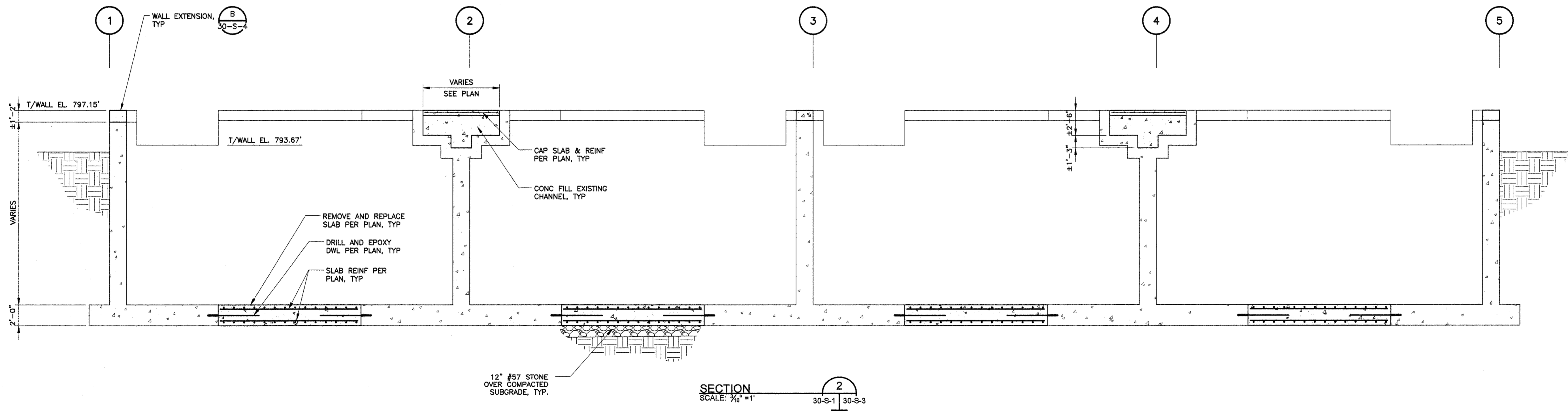
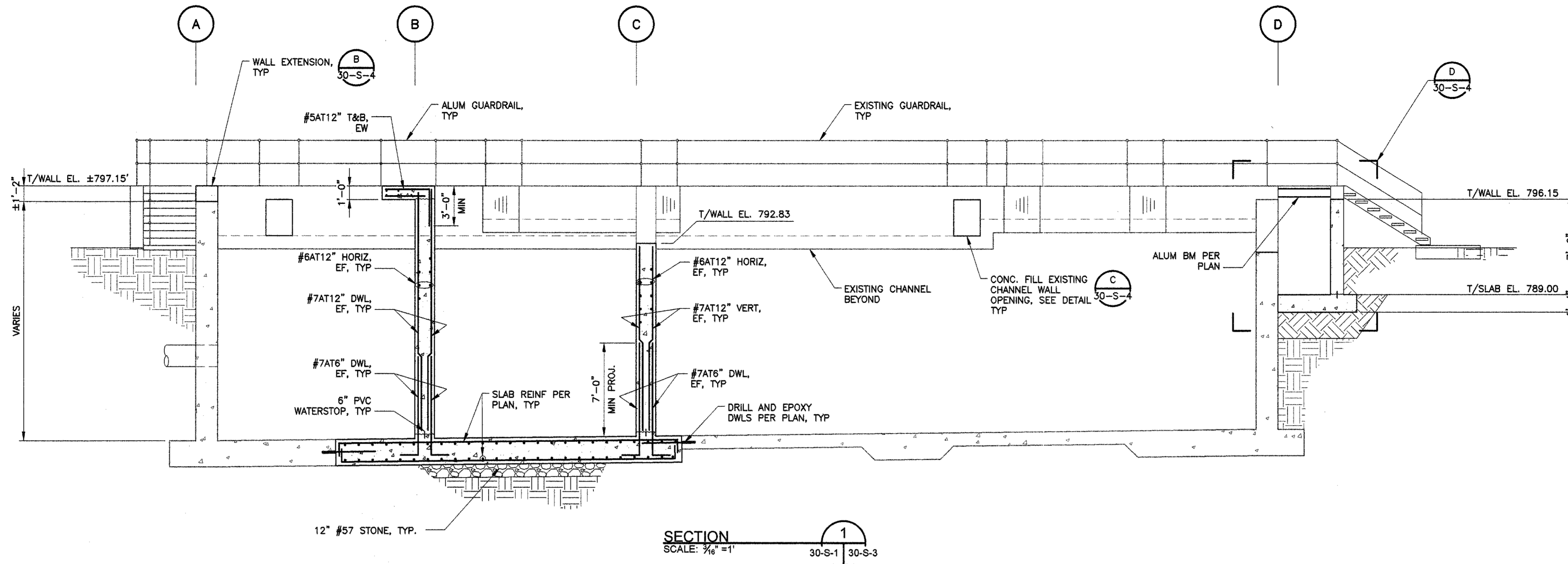
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 HAS BEEN REVIEWED FOR SCALES
 SHOWN ON THIS SHEET. ADJUST
 LONG ON THIS SHEET. ADJUST
 SCALES ACCORDINGLY.

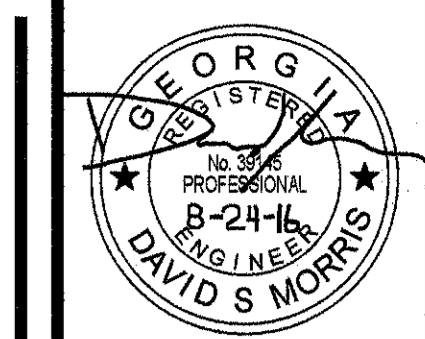
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR AERATION TANK MODIFICATIONS
 T/STRUCTURE PLAN

SHEET NO.
 30-S-2

I:\LEO\el_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\30-S-2 MBR AERATION TANK TOP PLAN.dwg - 8/24/16



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PHONE: (407) 322-0500



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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: _____
DATE: AUGUST 2016

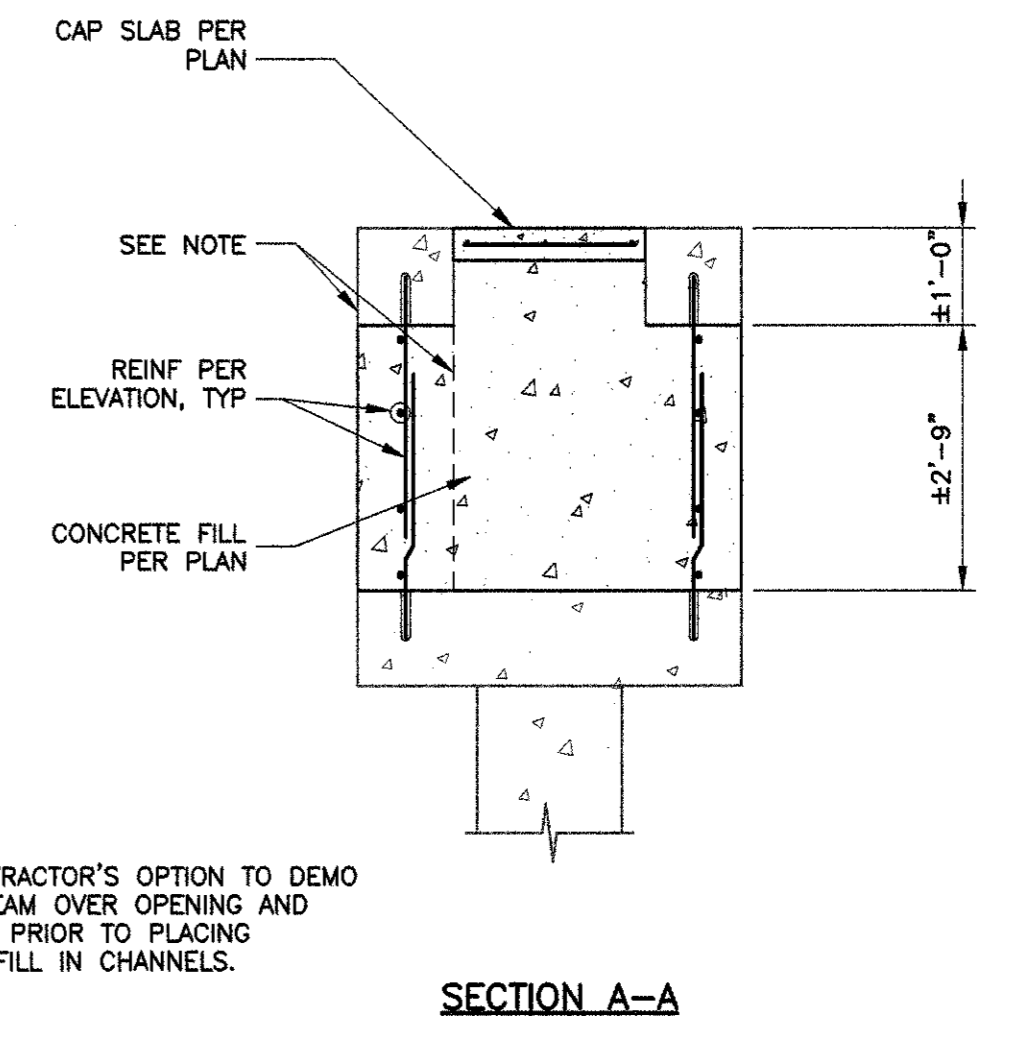
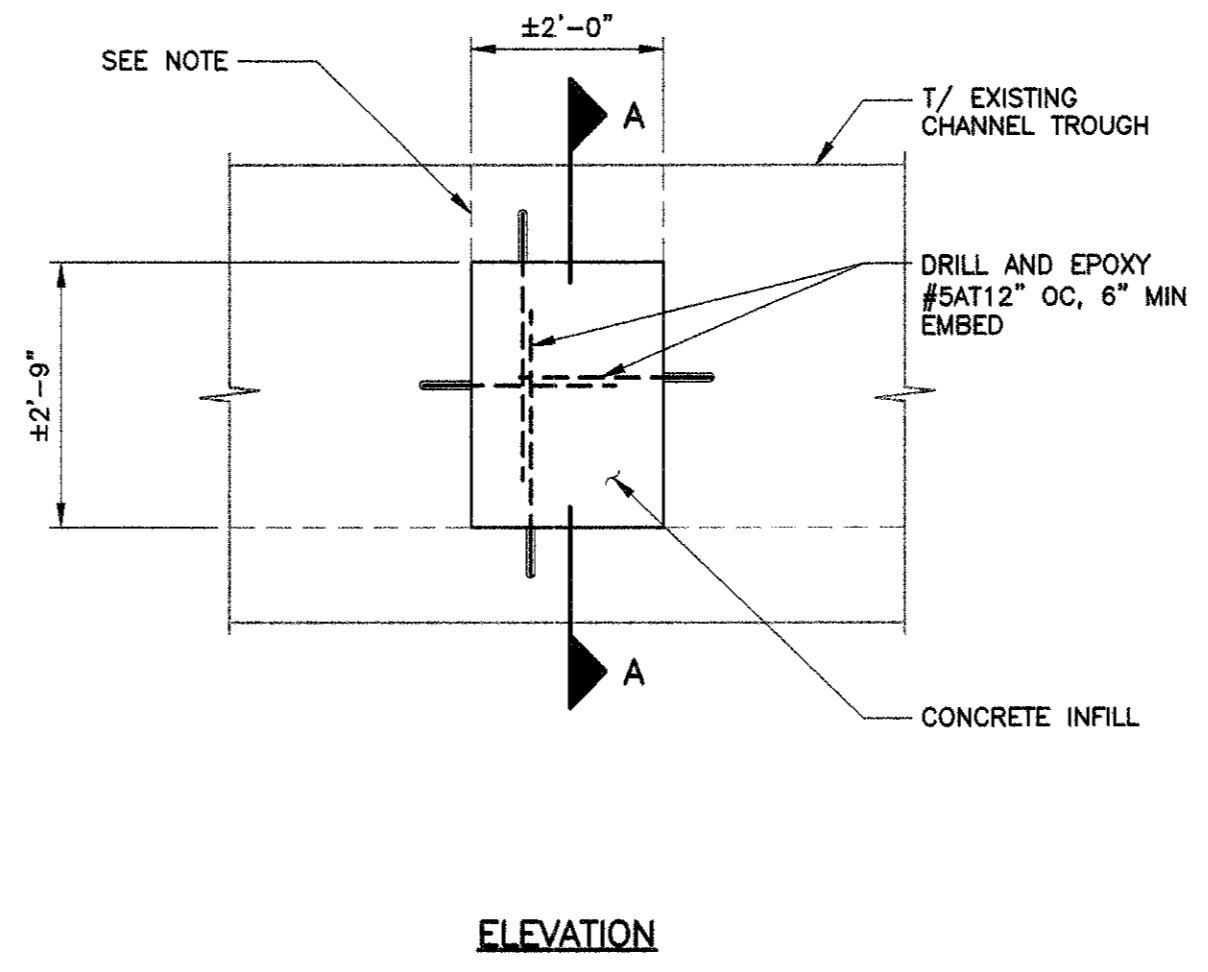
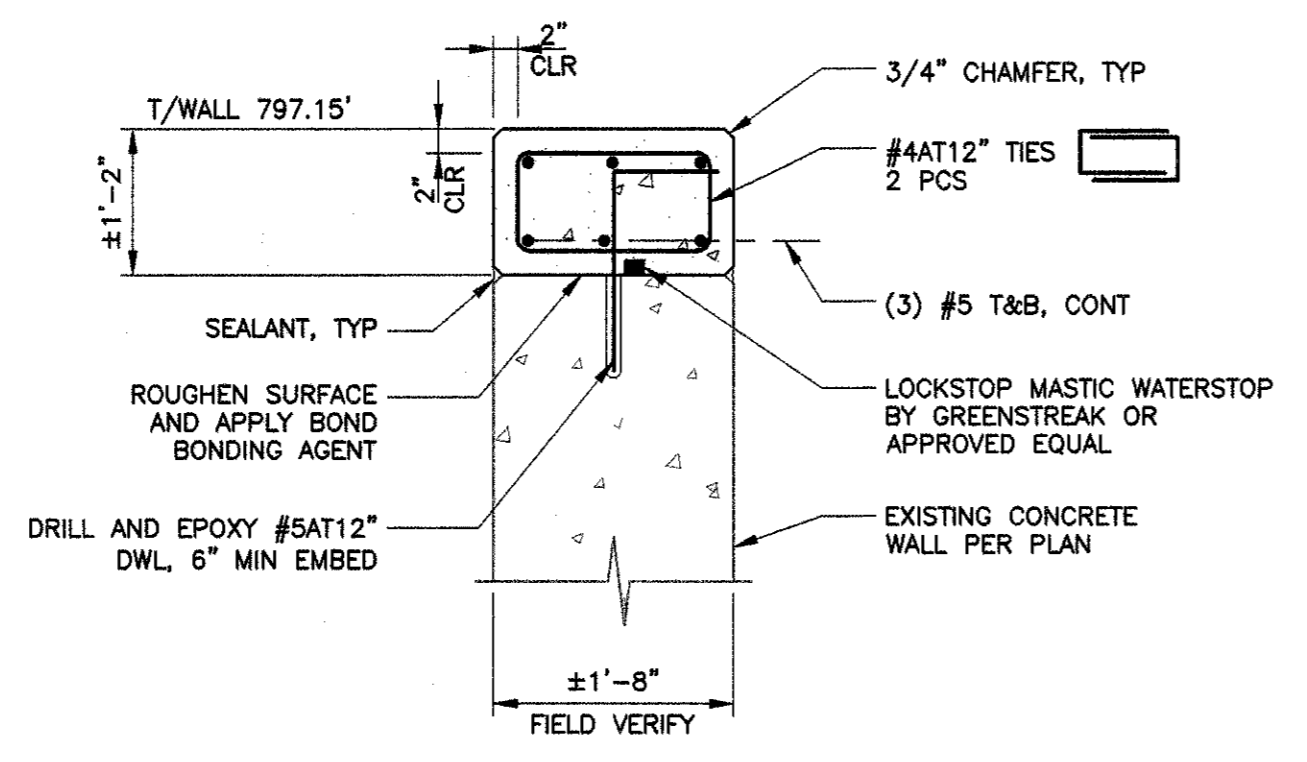
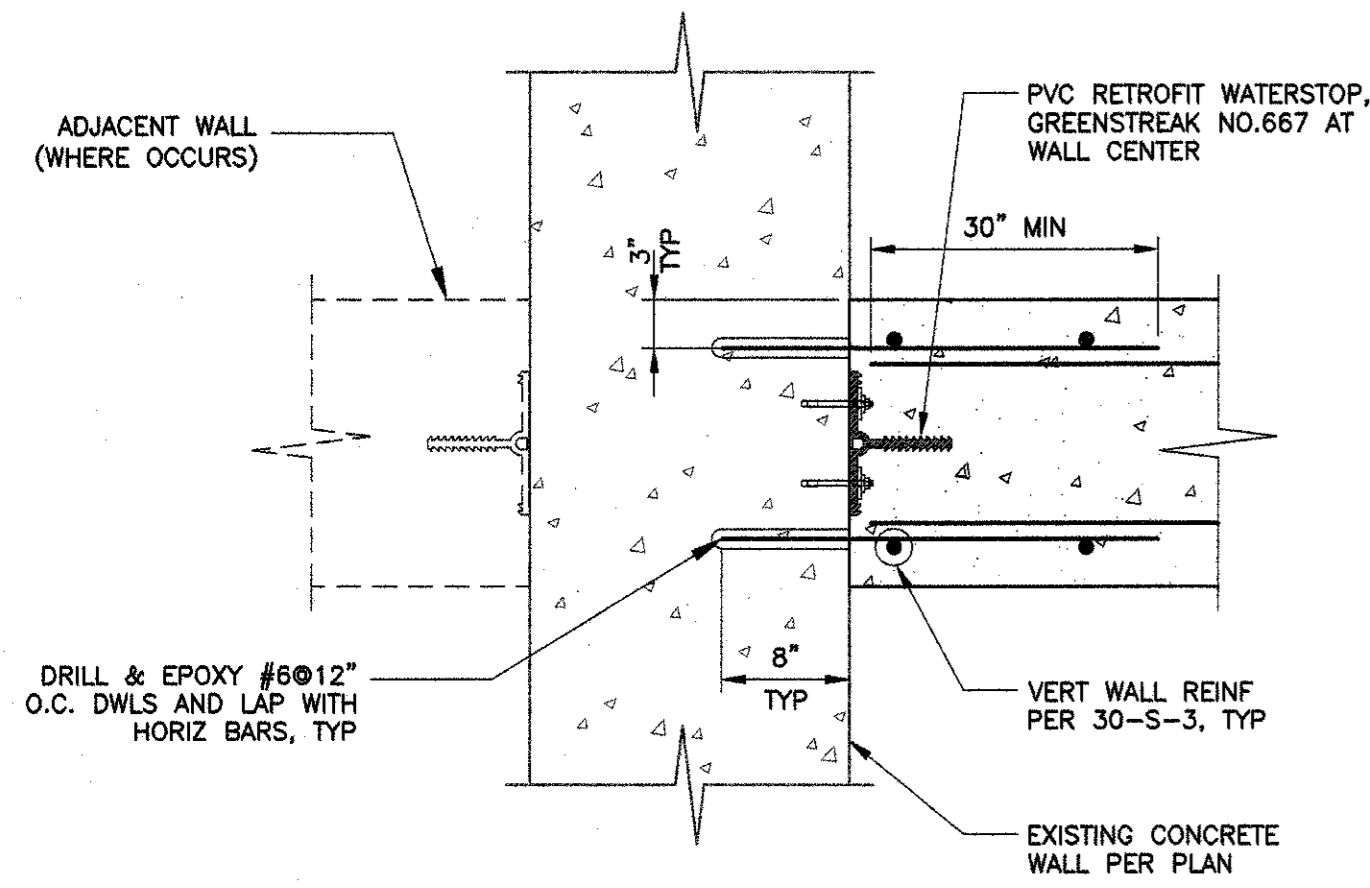
REVISION	DATE

DSGN: DSM
DRAWN: DSM
CHK: JVS
BAR BELOW IS LONG FOR SCALES LONG ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR AERATION TANK MODIFICATIONS
SECTIONS

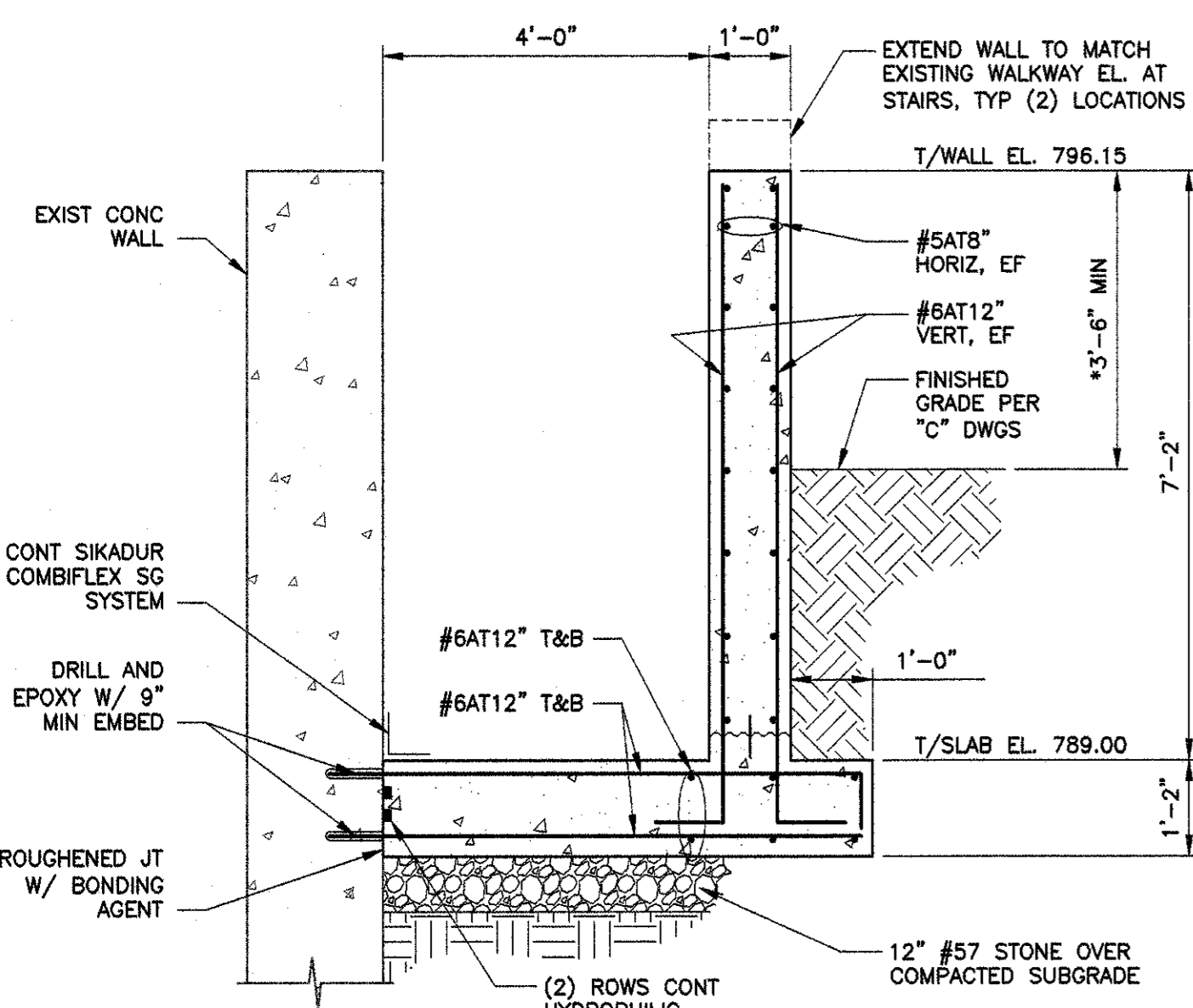
SHEET NO.
30-S-3

NCLEO\data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\30-S-3 MBR AERATION TANK SECTIONS.dwg - 8/24/16



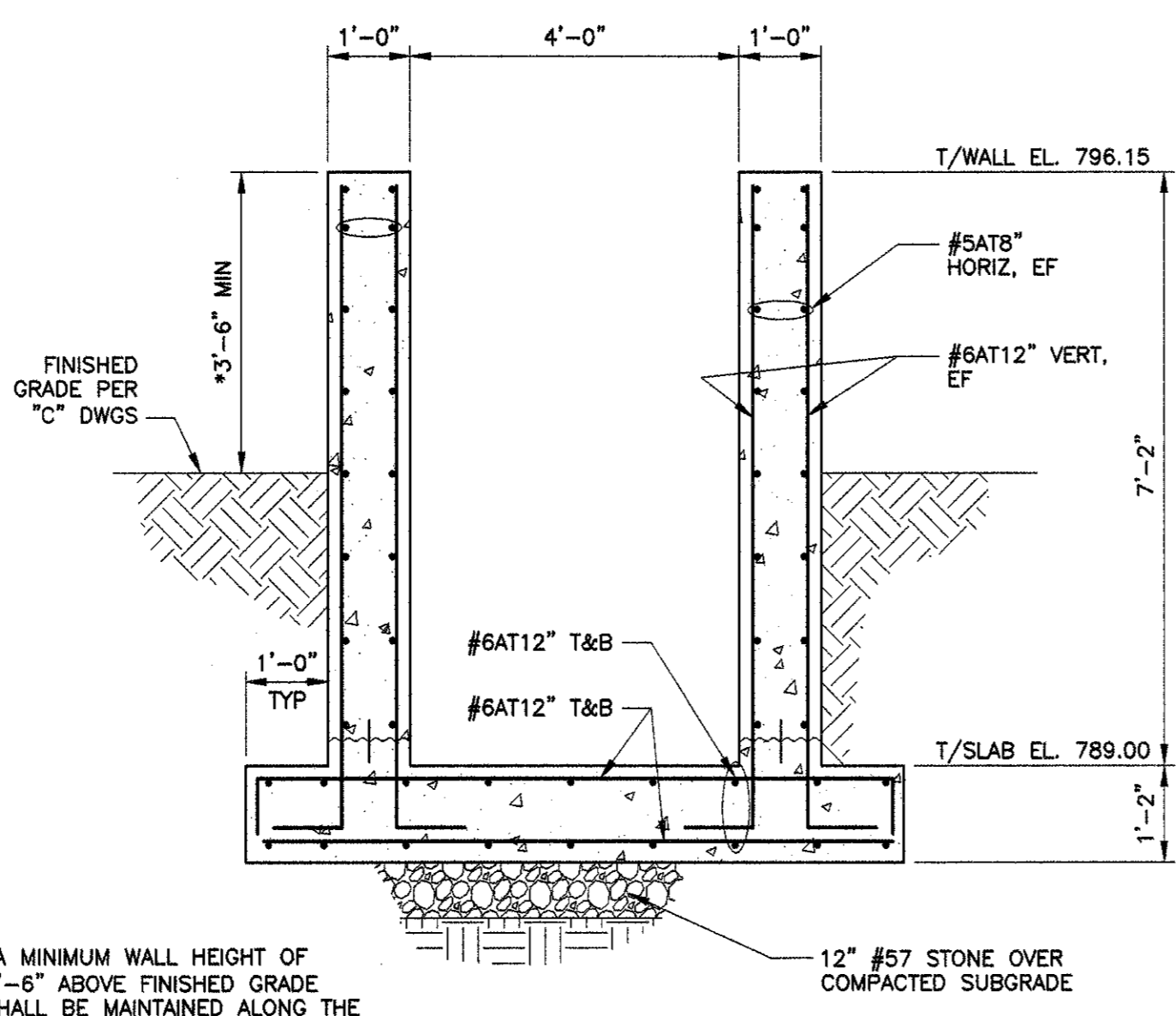
NOTE: CONTRACTOR'S OPTION TO DEMO EXISTING BEAM OVER OPENING AND FORM WALL PRIOR TO PLACING CONCRETE FILL IN CHANNELS.

DETAIL SCALE: 1" = 1' 30-S-1 30-S-4



DETAIL SCALE: 1/2" = 1' 30-S-1 30-S-4

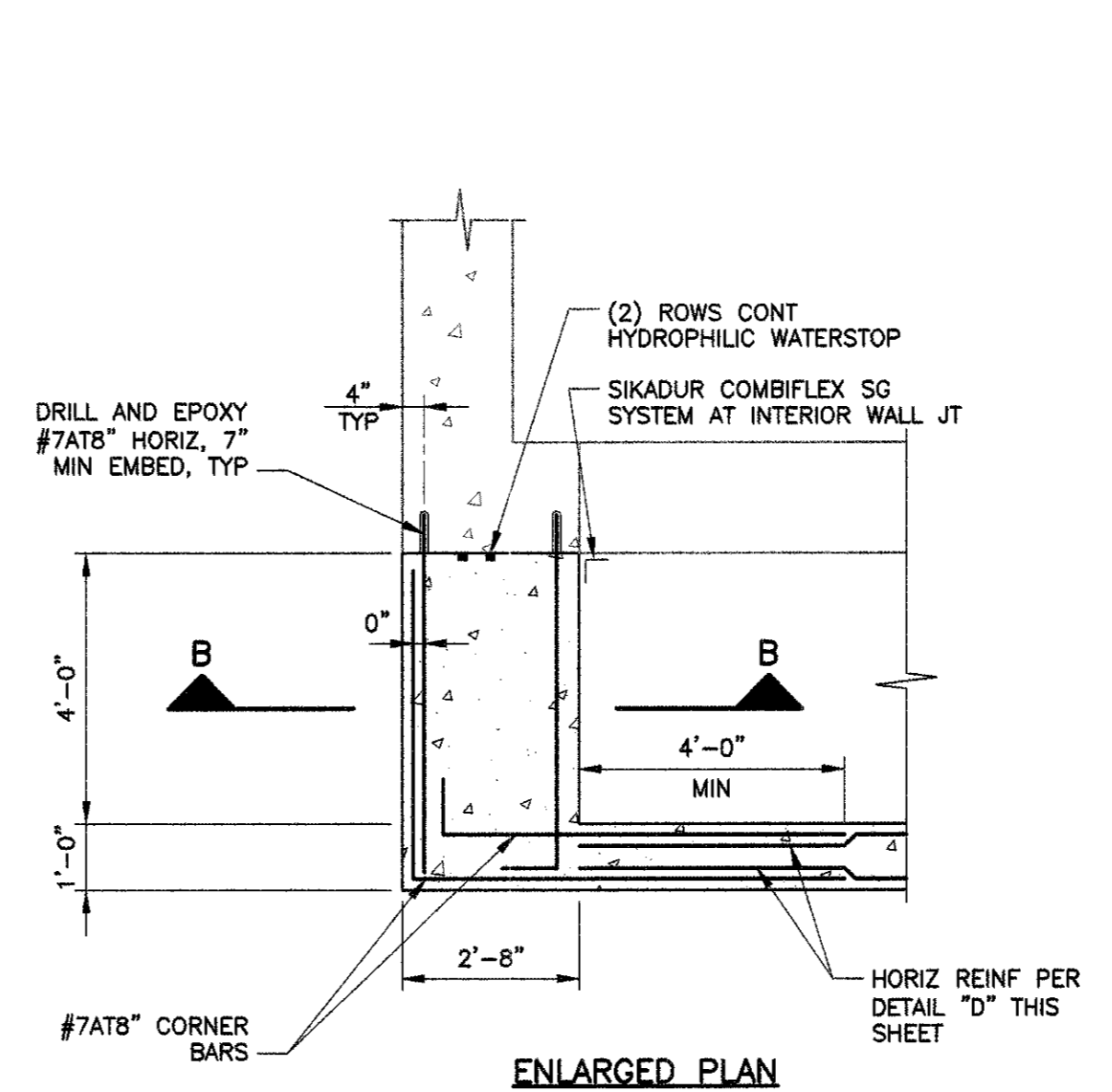
DETAIL SCALE: 3/4" = 1' 30-S-1 30-S-4



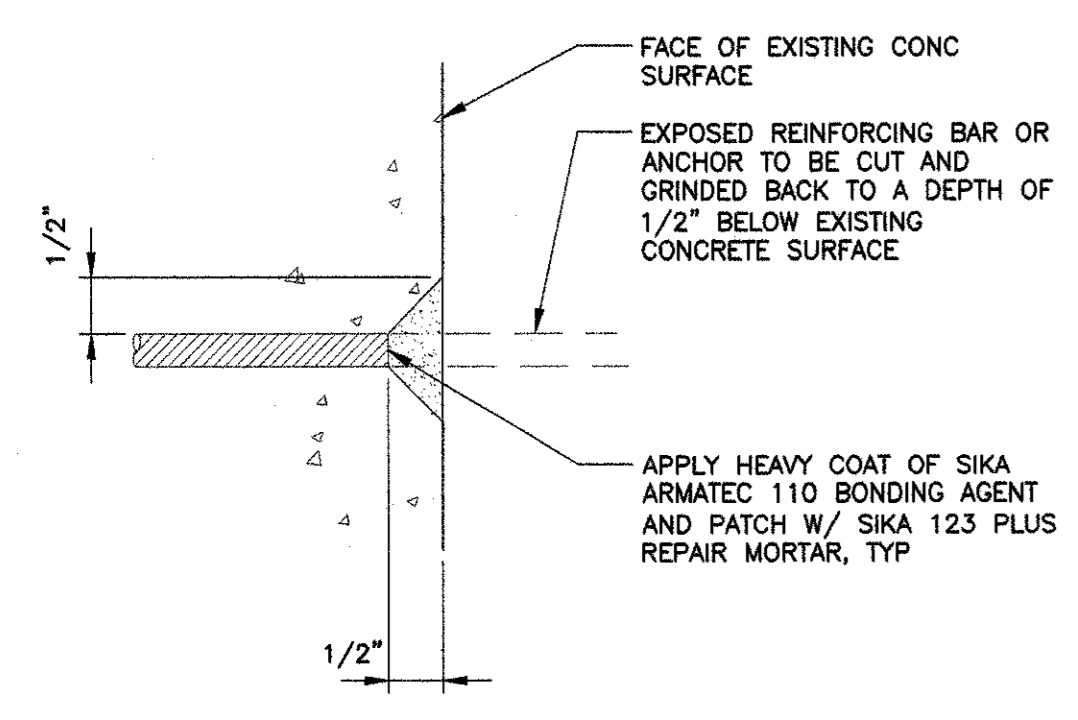
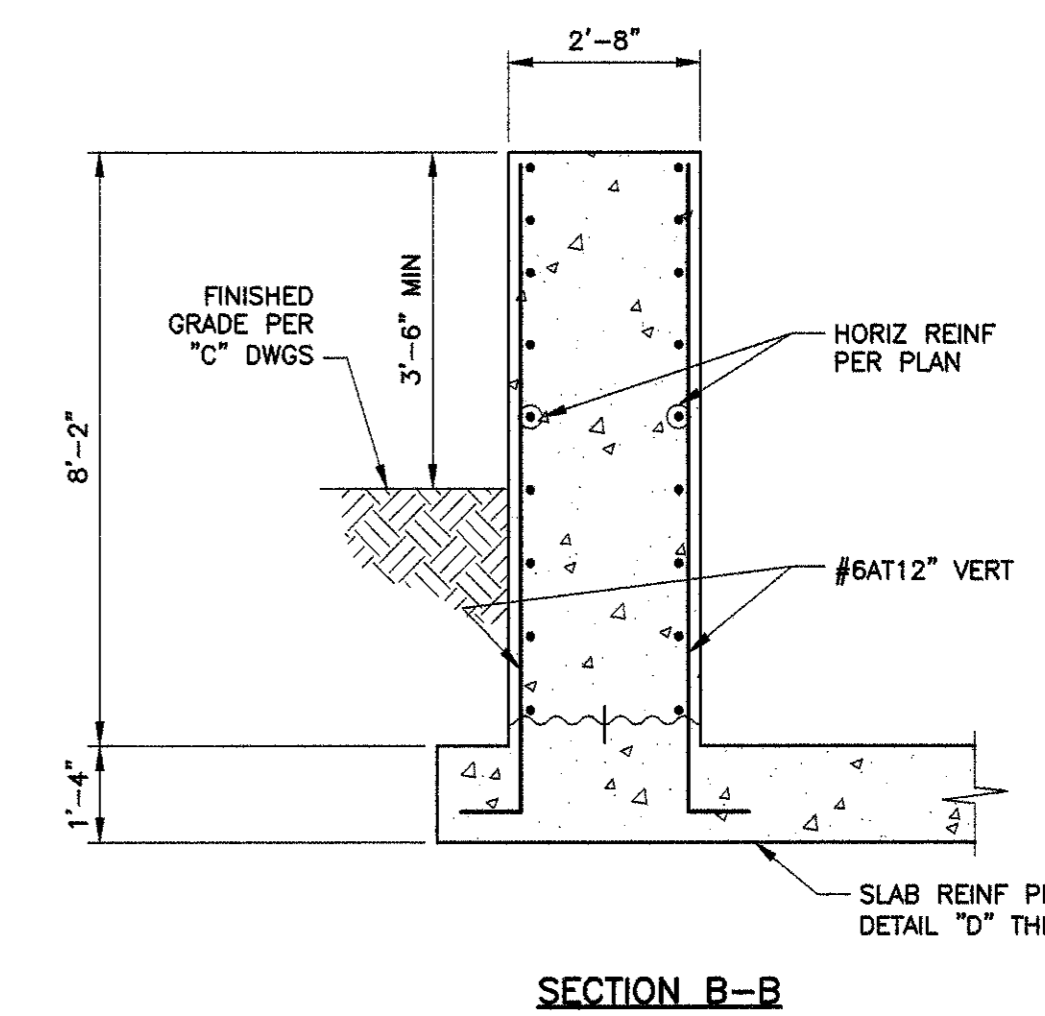
DETAIL SCALE: 1/2" = 1' 30-S-1 30-S-4

*A MINIMUM WALL HEIGHT OF 3'-6" ABOVE FINISHED GRADE SHALL BE MAINTAINED ALONG THE ENTIRE CHANNEL LENGTH.

DETAIL SCALE: 1/2" = 1' 30-S-1 30-S-4

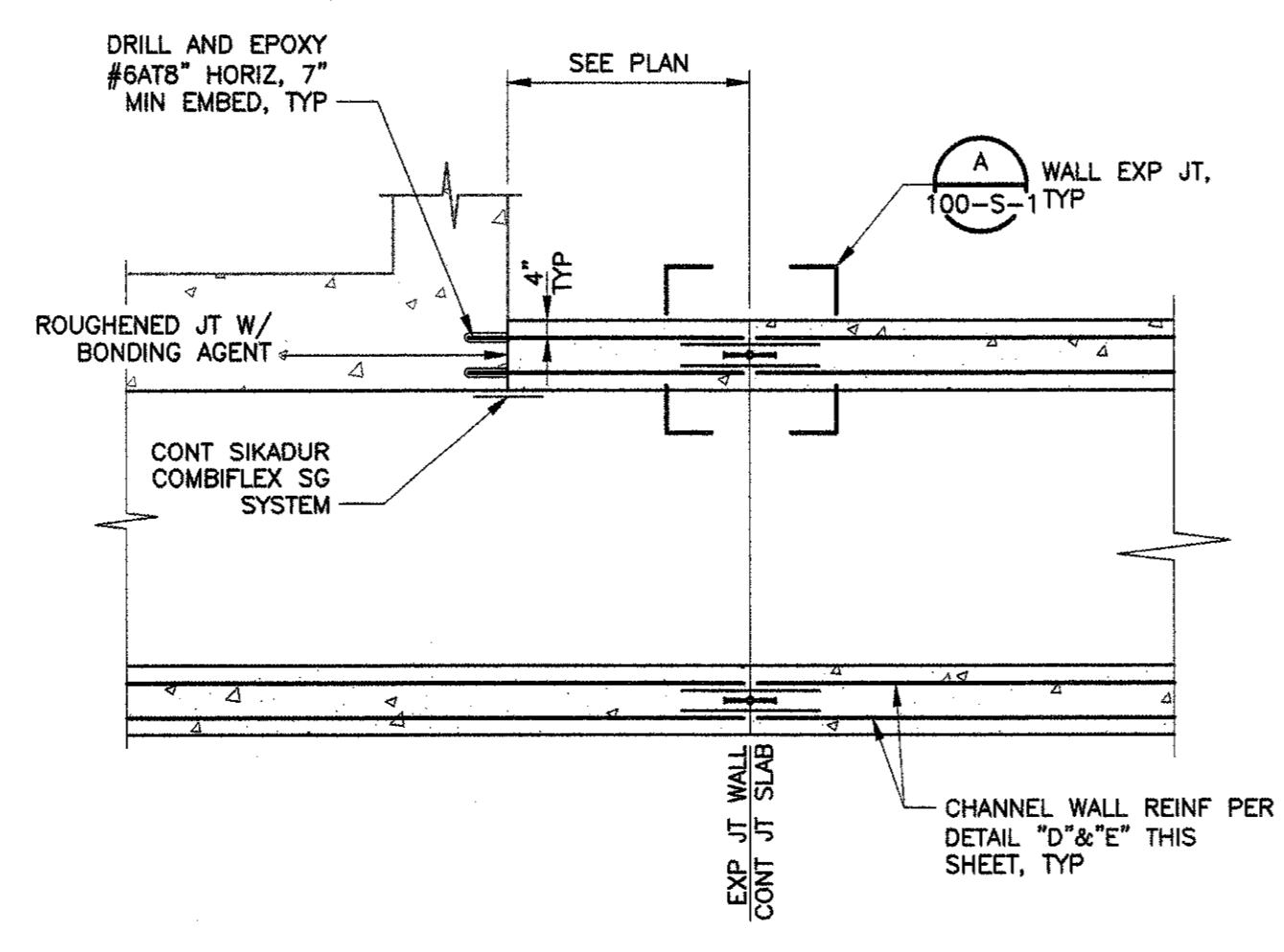


DETAIL SCALE: 3/8" = 1' 30-S-1 30-S-4



DETAIL SCALE: NTS 30-S-1 30-S-4

NOTES:
1. BONDING AGENT AND REPAIR MORTAR SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. DETAIL IS APPLICABLE TO VERTICAL AND HORIZONTAL SURFACES.



DETAIL SCALE: 3/8" = 1' 30-S-1 30-S-4

ENGINEERING TECHNOLOGIES, INC.
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ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
DSM	AUGUST 2016		
DSM			
JVS			

DATE: AUGUST 2016

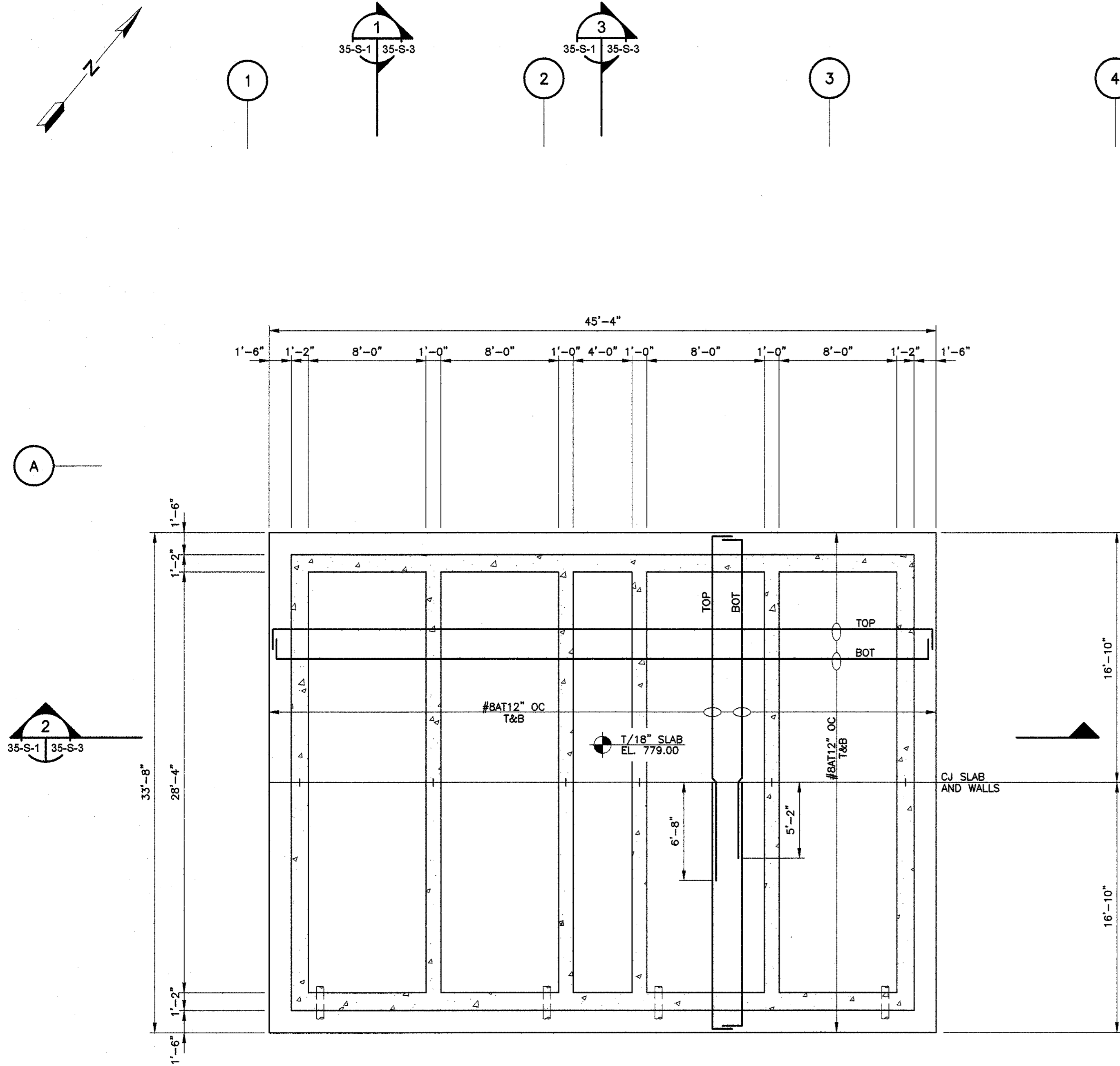
REVISION

DATE

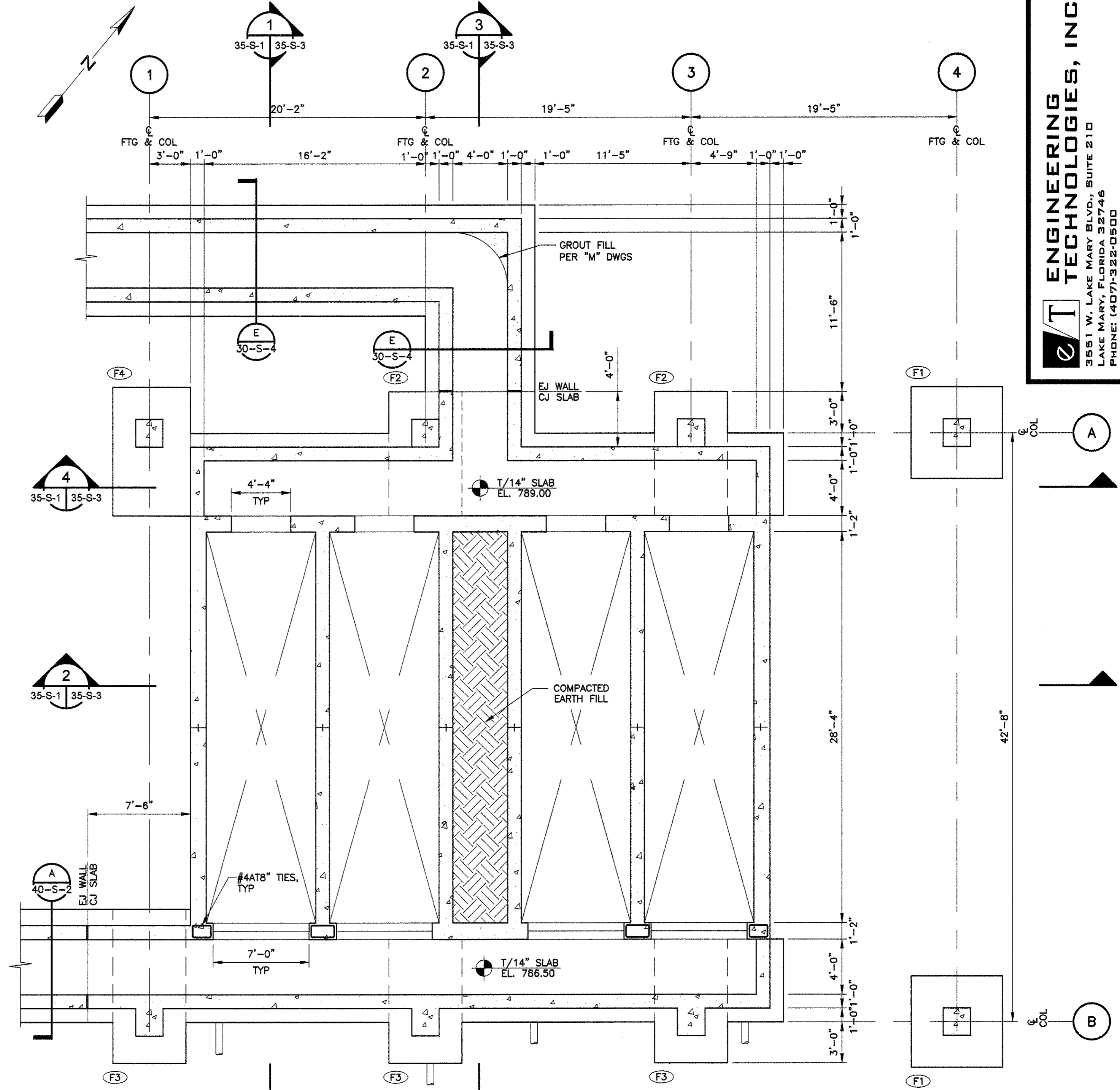
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR AERATION TANK MODIFICATIONS
DETAILS

SHEET NO.
30-S-4

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BASE SLAB AT EL. 779.00
PLAN
 3/16"=1'-0"

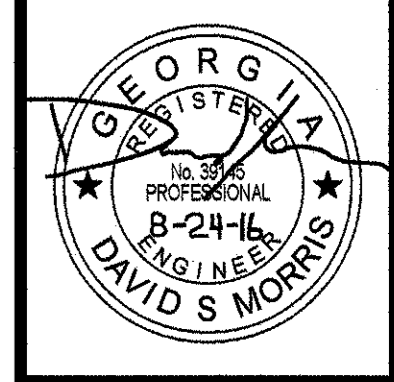


INTERMEDIATE SLAB AT EL. 789.00
PLAN
 3/16"=1'-0"

NOTES:

1. SEE SHEET 35-S-4 FOR WALL REINFORCING SCHEDULE.
2. (F2) INDICATES FOOTING TYPE, SEE SHEET 35-S-5 FOR DETAILS
3. CJ = CONSTRUCTION JOINT

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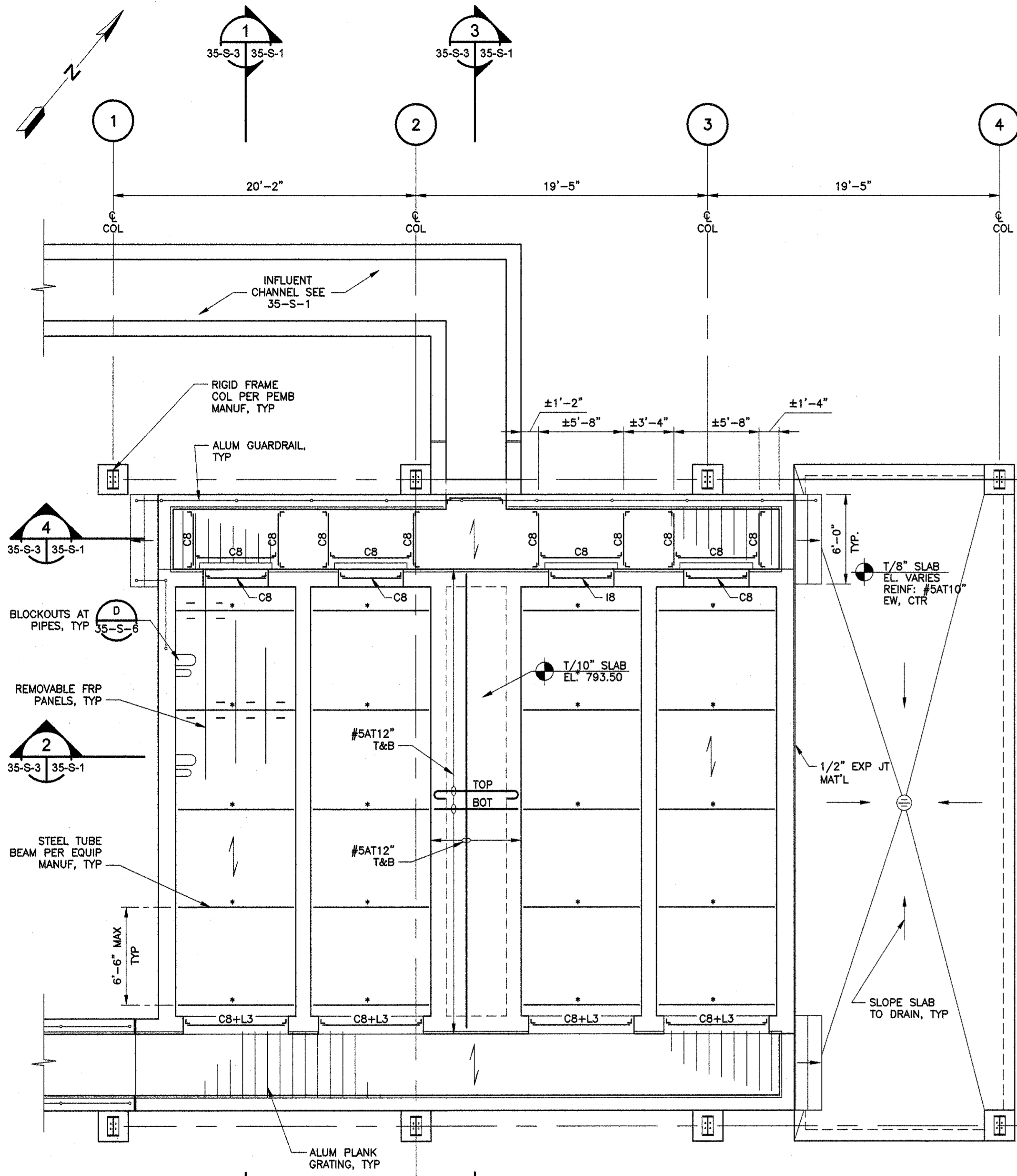
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: DSM	DRWN: DSM	CHK: JVS
BAR RELONGS TO LONGER SCALE. SHOW ON THIS SHEET. IF NOT LONGER ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 BASE PLANS

SHEET NO.
 35-S-1

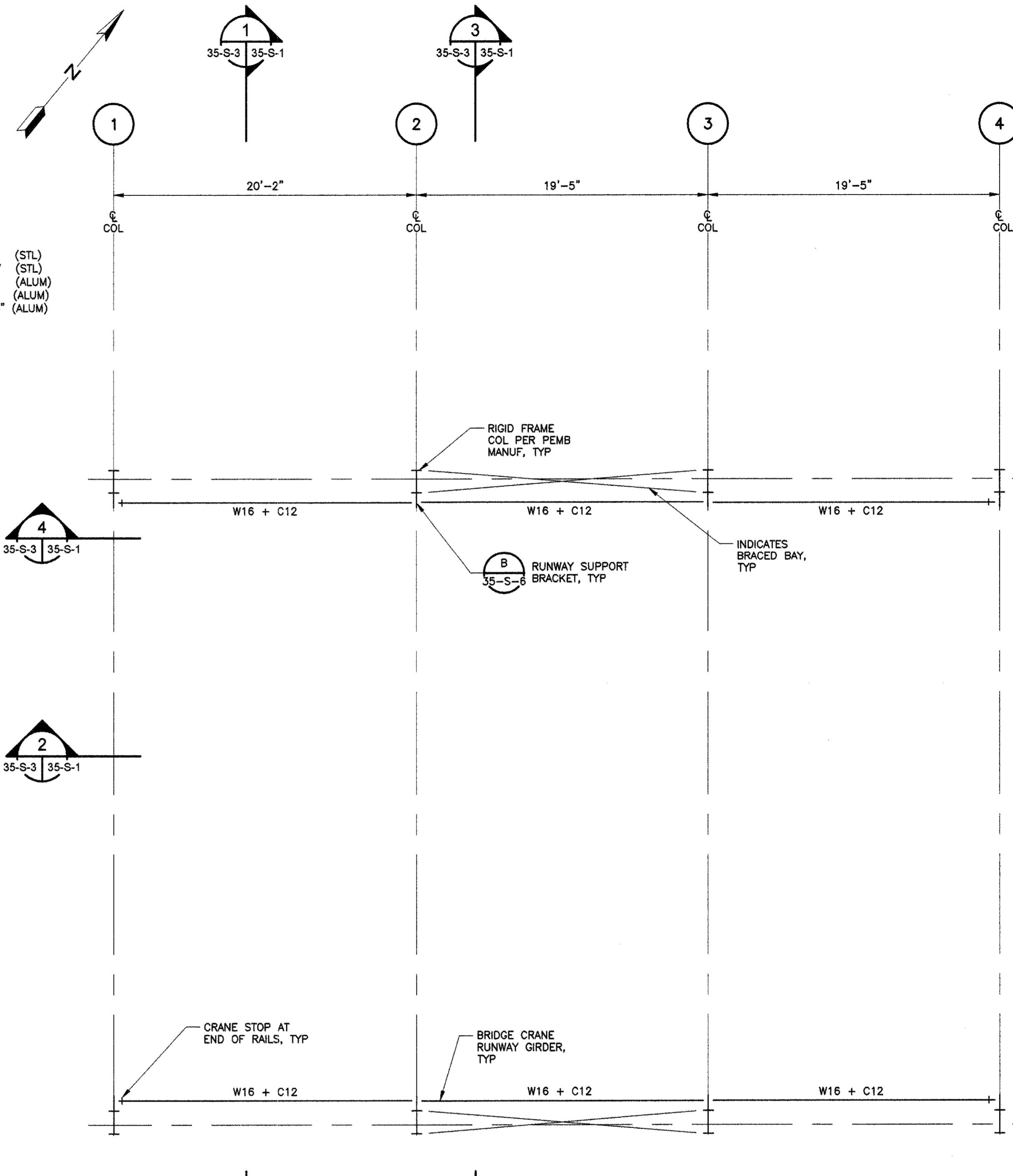
V:\E\Olat_data\Projects\2007\Engineering Strategies_2007\Engineering Strategies_Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\35-S-1 MBR Membrane Tank Plan.dwg - 8/24/2016



T/STRUCTURE AT EL. 793.50
PLAN
 3/16"=1'-0"

SHAPE LEGEND:

- W16: W16x36 (STL)
- C12: C12x20.7 (STL)
- I8: I8x6.18 (ALUM)
- C8: C8x6.48 (ALUM)
- L3: L3x3x1/4" (ALUM)



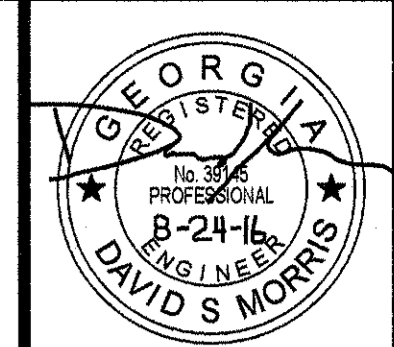
BRIDGE CRANE RUNWAY PLAN
PLAN
 3/16"=1'-0"

NOTES:

1. * INDICATES 8"x4"x1/4" STEEL BEAM TUBES WITH BRACKET SUPPORTS PROVIDED BY EQUIPMENT MANUFACTURER. BEAMS SHALL BE LOCATED PER EQUIPMENT MANUFACTURE AND "M" DWGS.
2. REMOVABLE FIBERGLASS PANELS TO BE BY COMPOSOLITE PANEL SYSTEM BY STRONGWELL CORPORATION (3.16"x23.80" NOMINAL PANEL SIZE). PANELS SHALL BE PROVIDED WITH STAINLESS STEEL LIFTING HANDLES AT PANELS ENDS.



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 (770) 429-0001

PROJECT NUMBER: _____ DATE: AUGUST 2016

NO.	REVISION	DATE

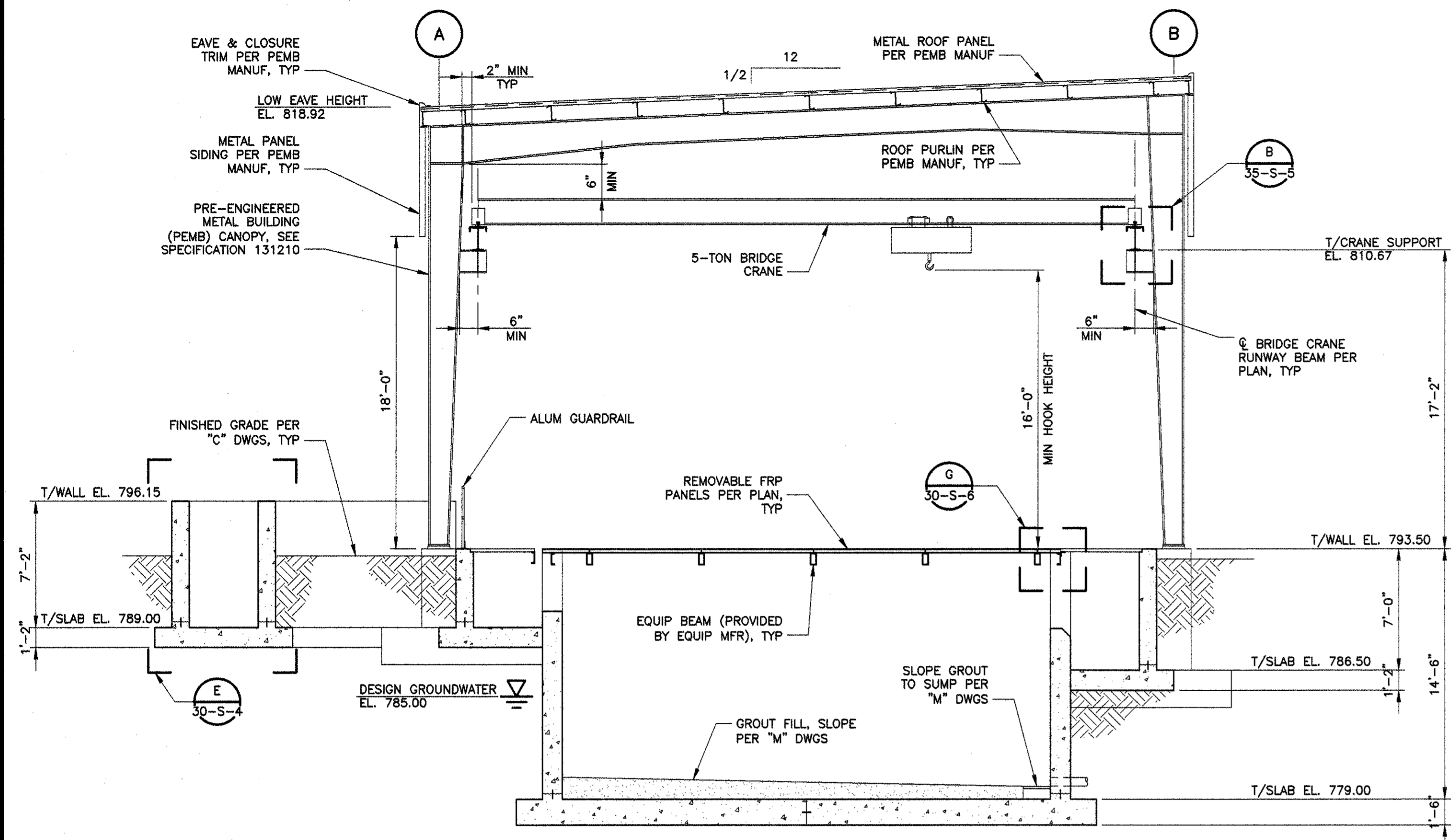
DSGN: DSM
 DRWN: DSM
 CHCK: JVS

BAR BEAMS 1/4" LONG FOR SCALES
 BAR BEAMS 1/2" LONG FOR NOT T
 LONG ON THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

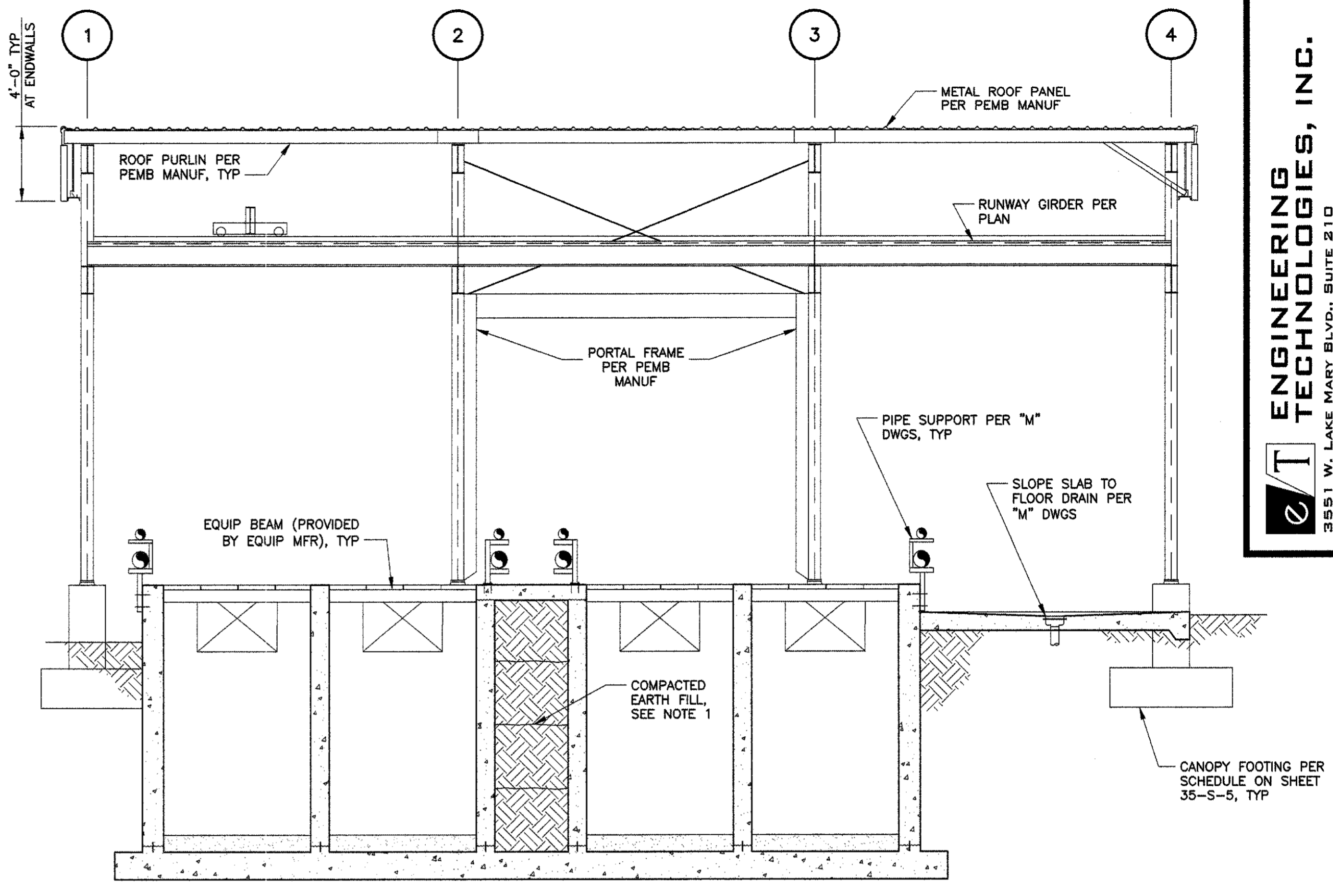
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 TOP PLANS

SHEET NO.
 35-S-2

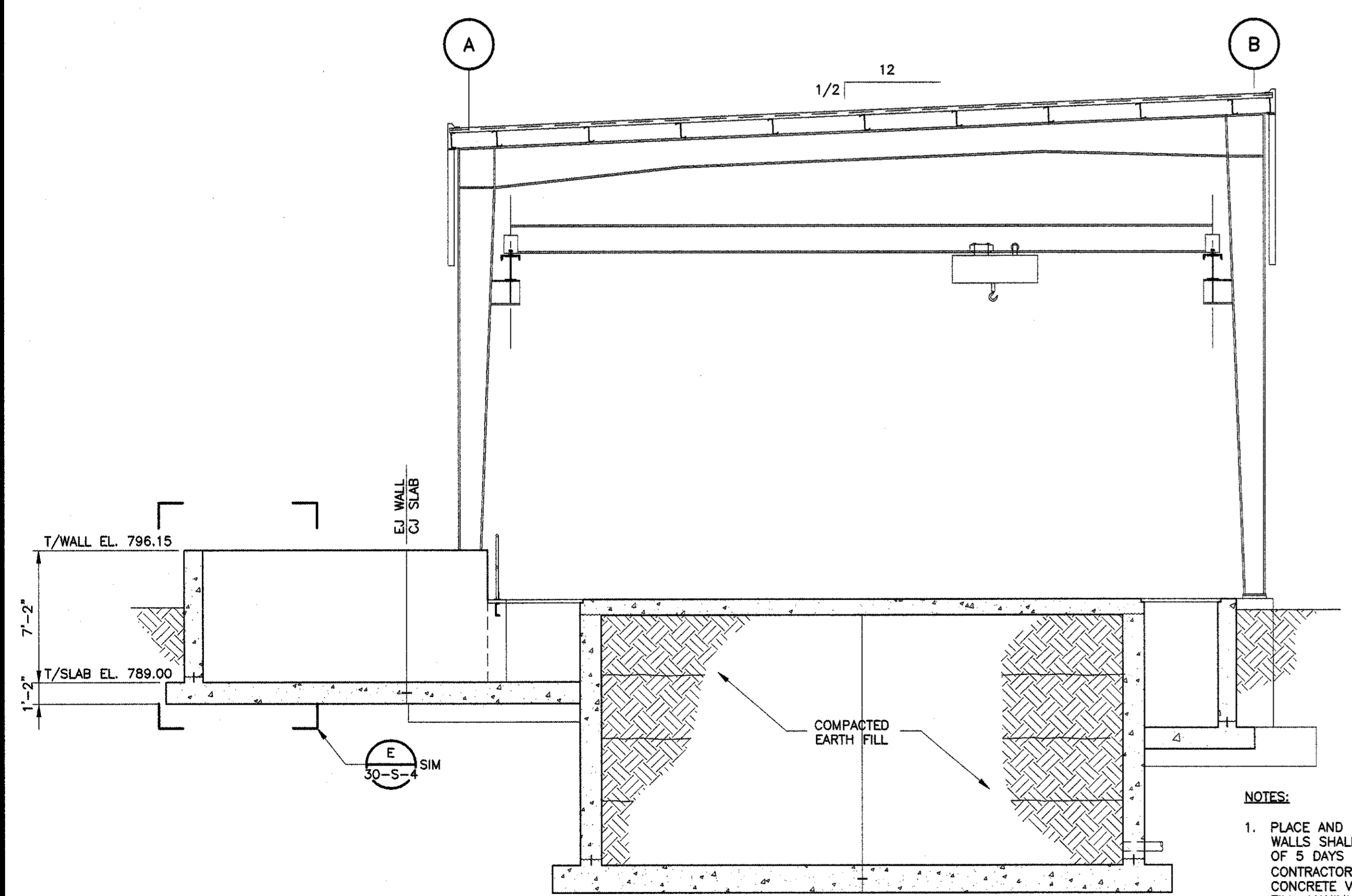
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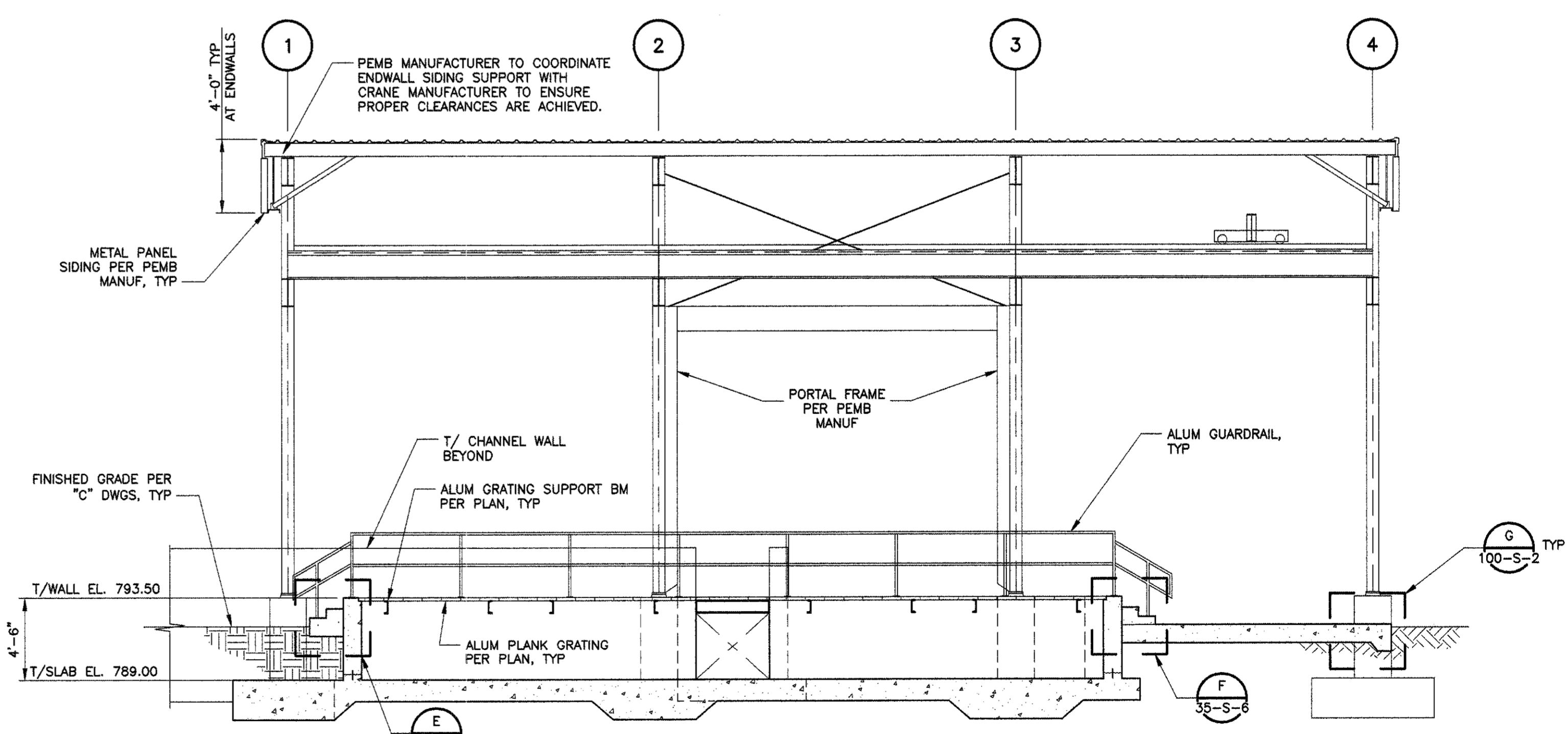
SECTION 1
SCALE: 3/16" = 1'
35-S-1 35-S-3



SECTION 2
SCALE: 3/16" = 1'
35-S-1 35-S-3



SECTION 3
SCALE: 3/16" = 1'
35-S-1 35-S-3

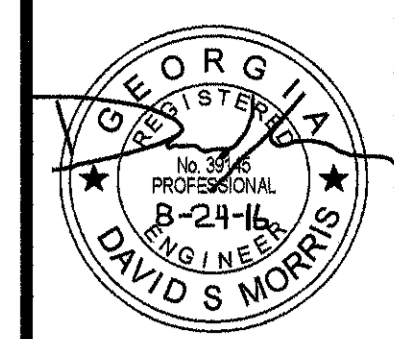


SECTION 4
SCALE: 3/16" = 1'
35-S-1 35-S-3

NOTES:

1. PLACE AND COMPACT FILL IN (4) FOUR EQUAL LIFTS. WALLS SHALL BE CAST AND CURED FOR A MINIMUM OF 5 DAYS PRIOR TO PLACING EARTH FILL. CONTRACTOR'S OPTION TO SUBSTITUTE LIGHTWEIGHT CONCRETE VOID FORM SYSTEM IN LIEU OF EARTH FILL. MAXIMUM UNIT WEIGHT OF CONCRETE TO BE 65 PCF AND MINIMUM 28-COMPRESSIVE STRENGTH TO BE 2500 PSI.
2. PRE-ENGINEERED METAL BUILDING (PEMB) MANUFACTURER TO COORDINATE/CONFIRM ALL BRIDGE CRANE CLEARANCES W/ CRANE MANUFACTURER.

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(770) 479-0001

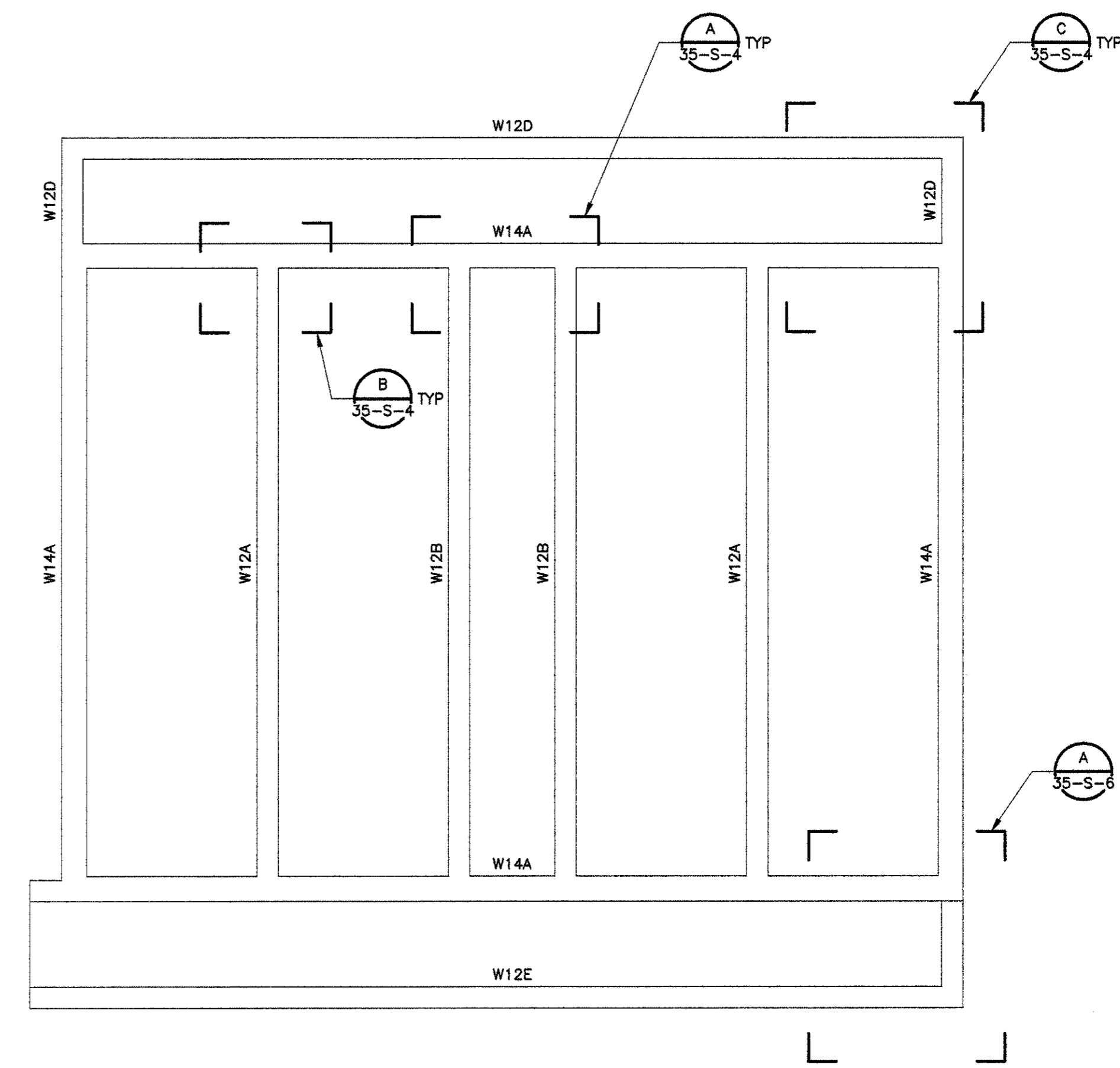
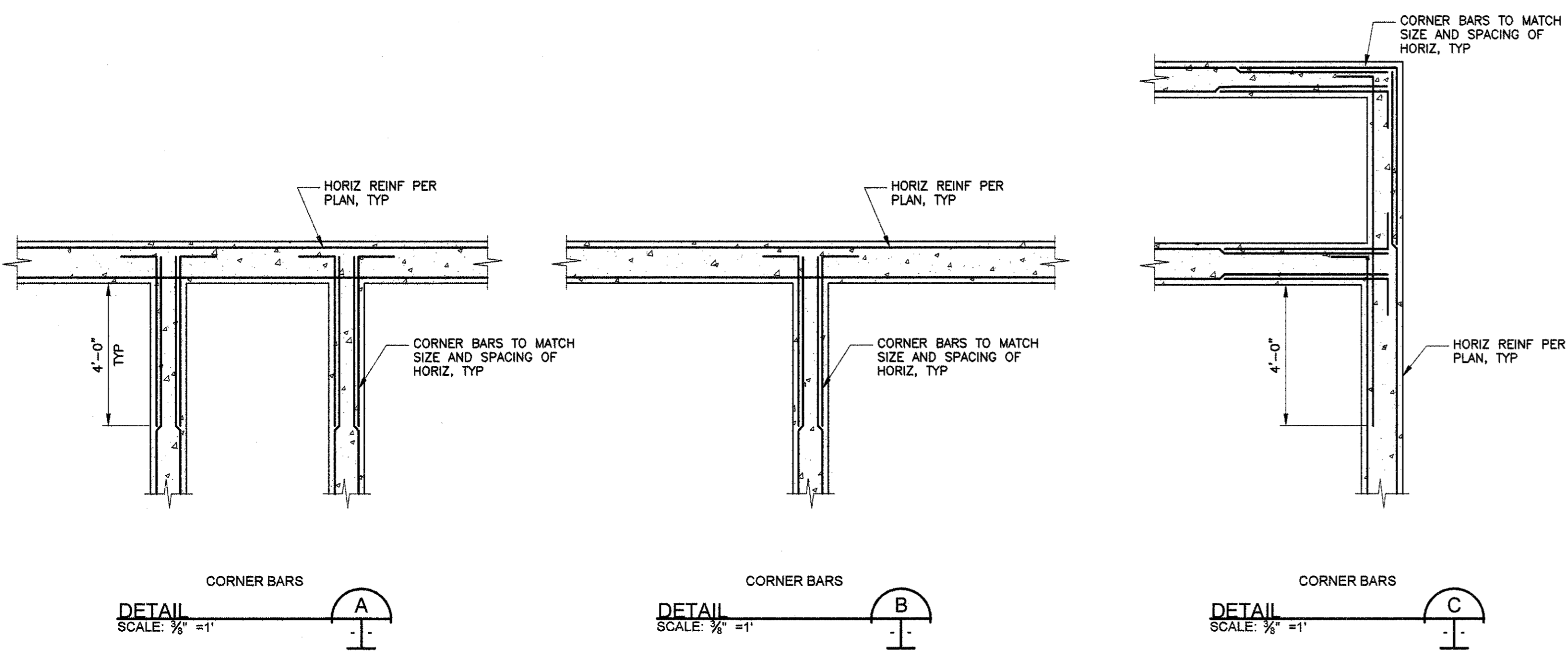
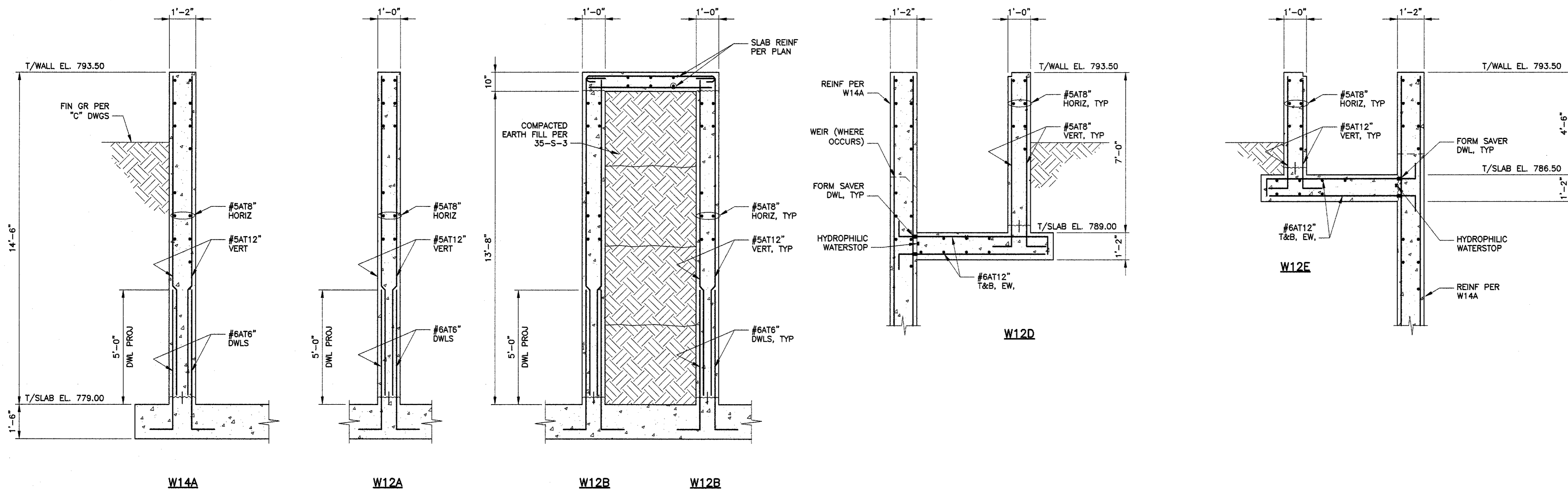
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DSM
DRWN: DSM
CHK: JVS
BAR BELOW IS 1" LONG FOR SCALES LONGER THAN 12" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR MEMBRANE TANK SECTIONS

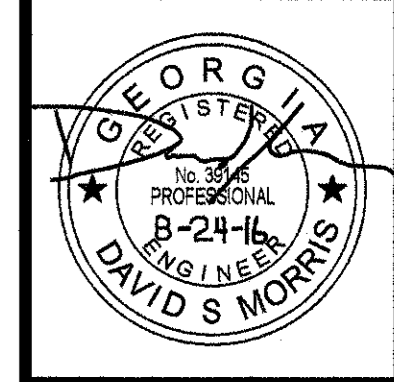
SHEET NO.
35-S-3

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WALL REINFORCING
KEYPLAN
NTS

ENGINEERING STRATEGIES, INC.
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LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

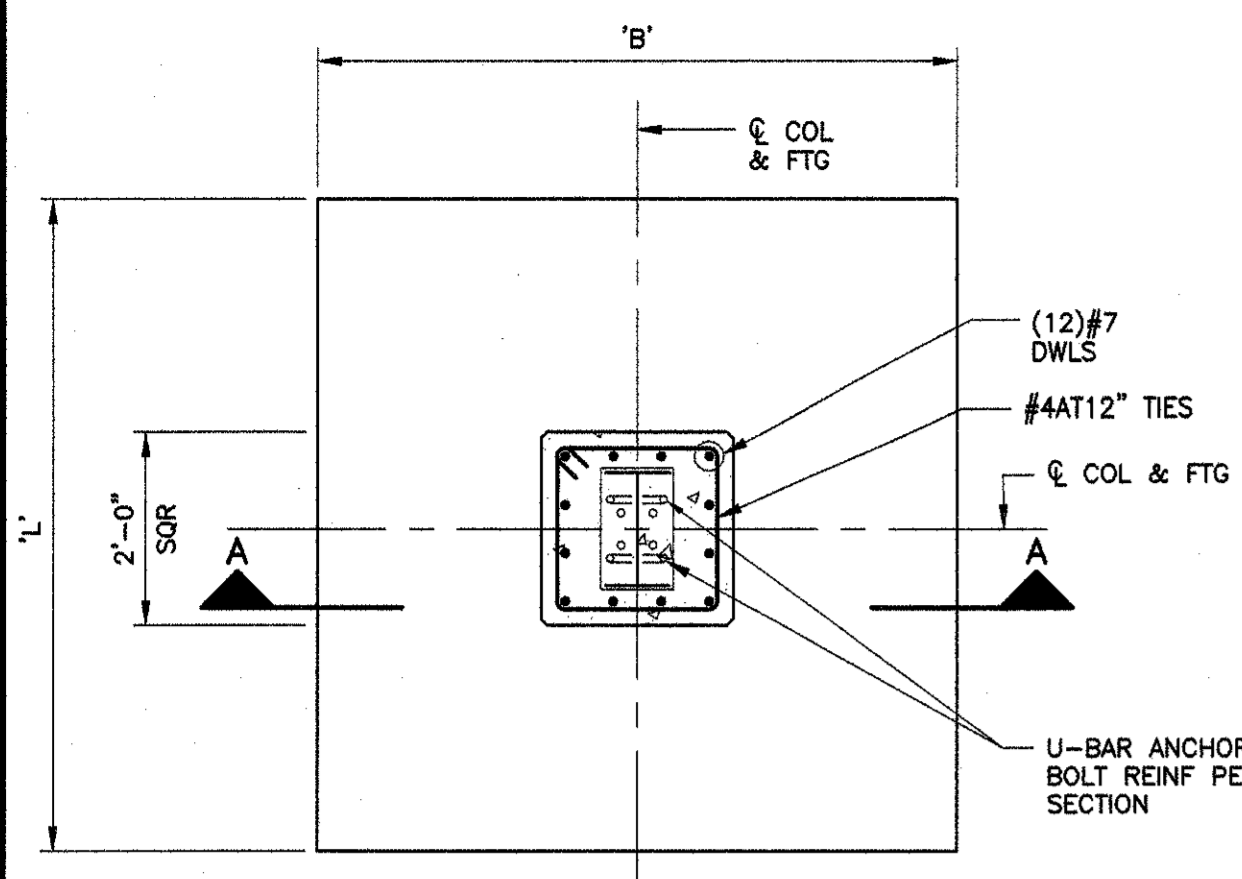
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DSM
DRWN: DSM
CHK: JVS
BAR BELOWS 1/4" LONG FOR SCALES SHOWN IN THIS SHEET. ADJUST LONG ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

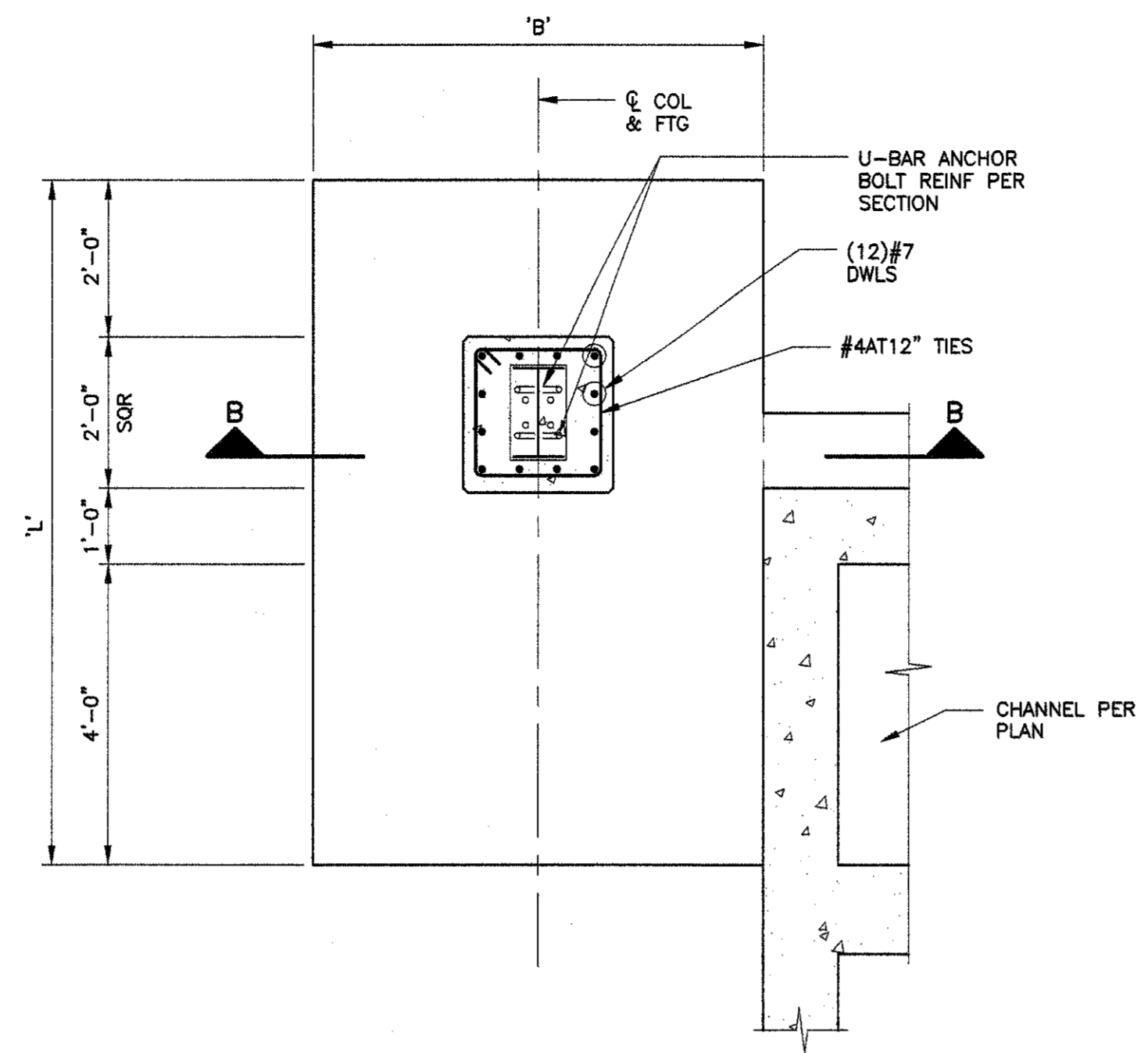
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR MEMBRANE TANK
WALL SCHEDULE AND DETAILS

SHEET NO.
35-S-4

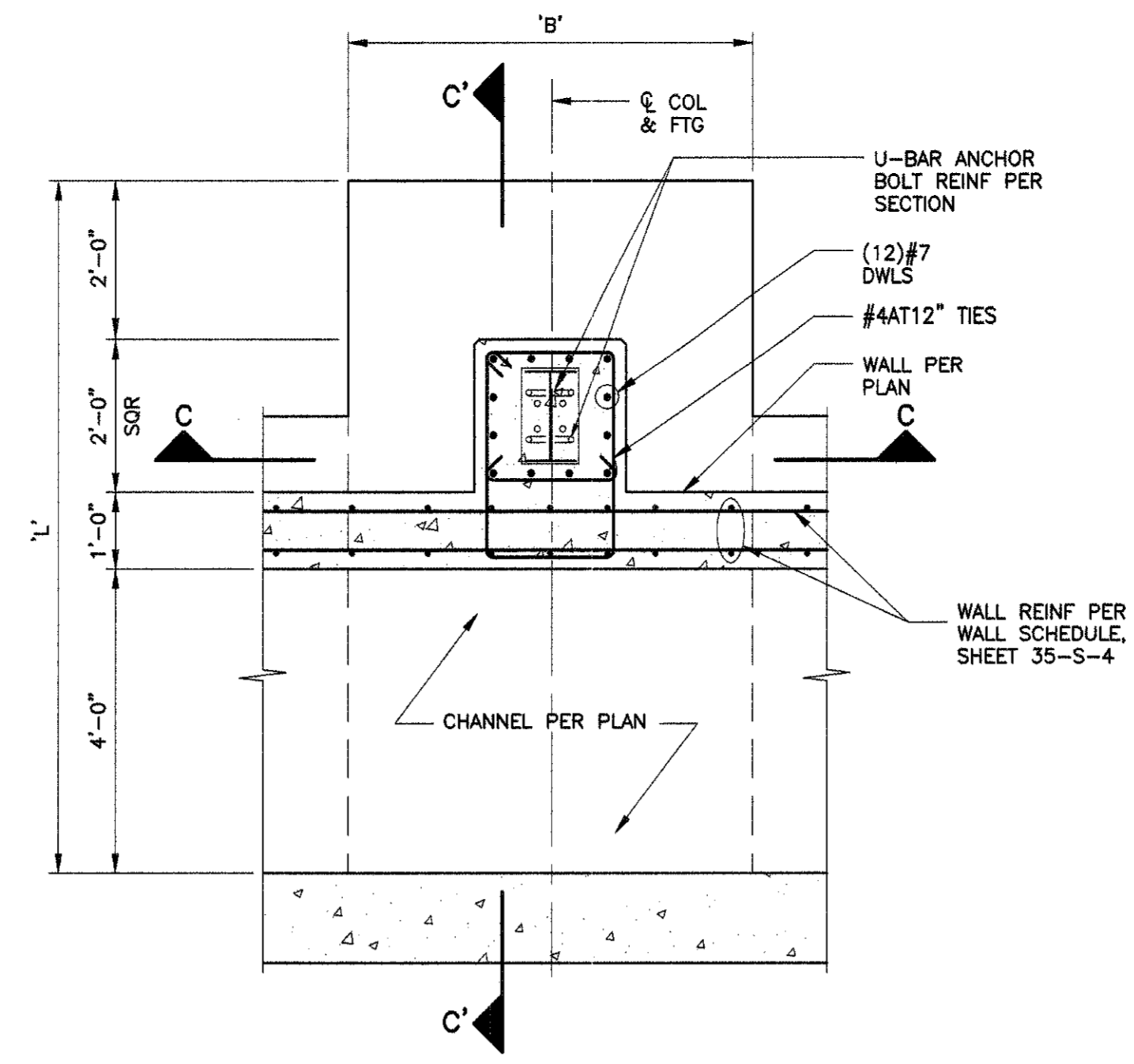
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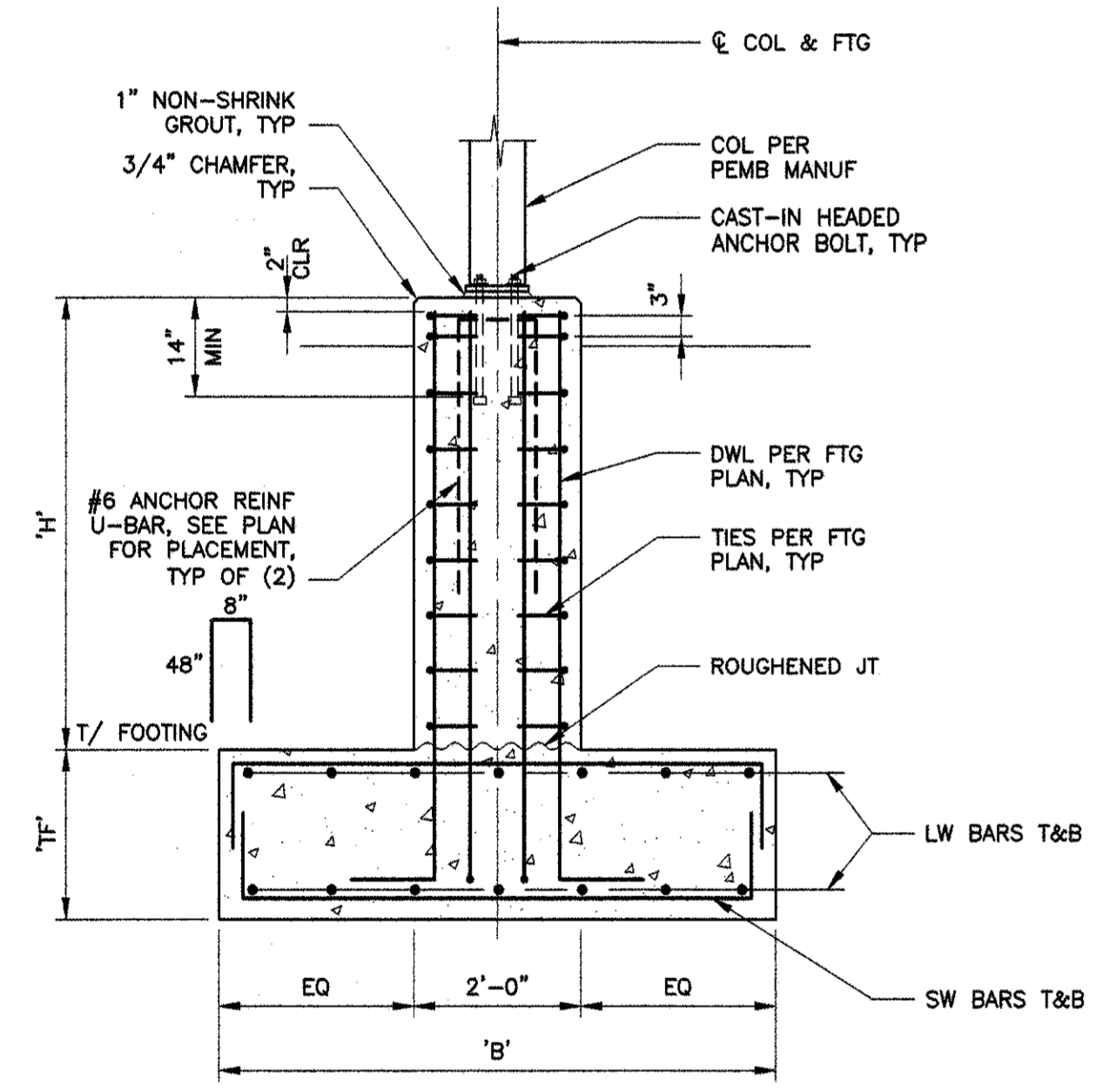
FOOTING TYPE - A
PLAN
1/2"=1'-0"



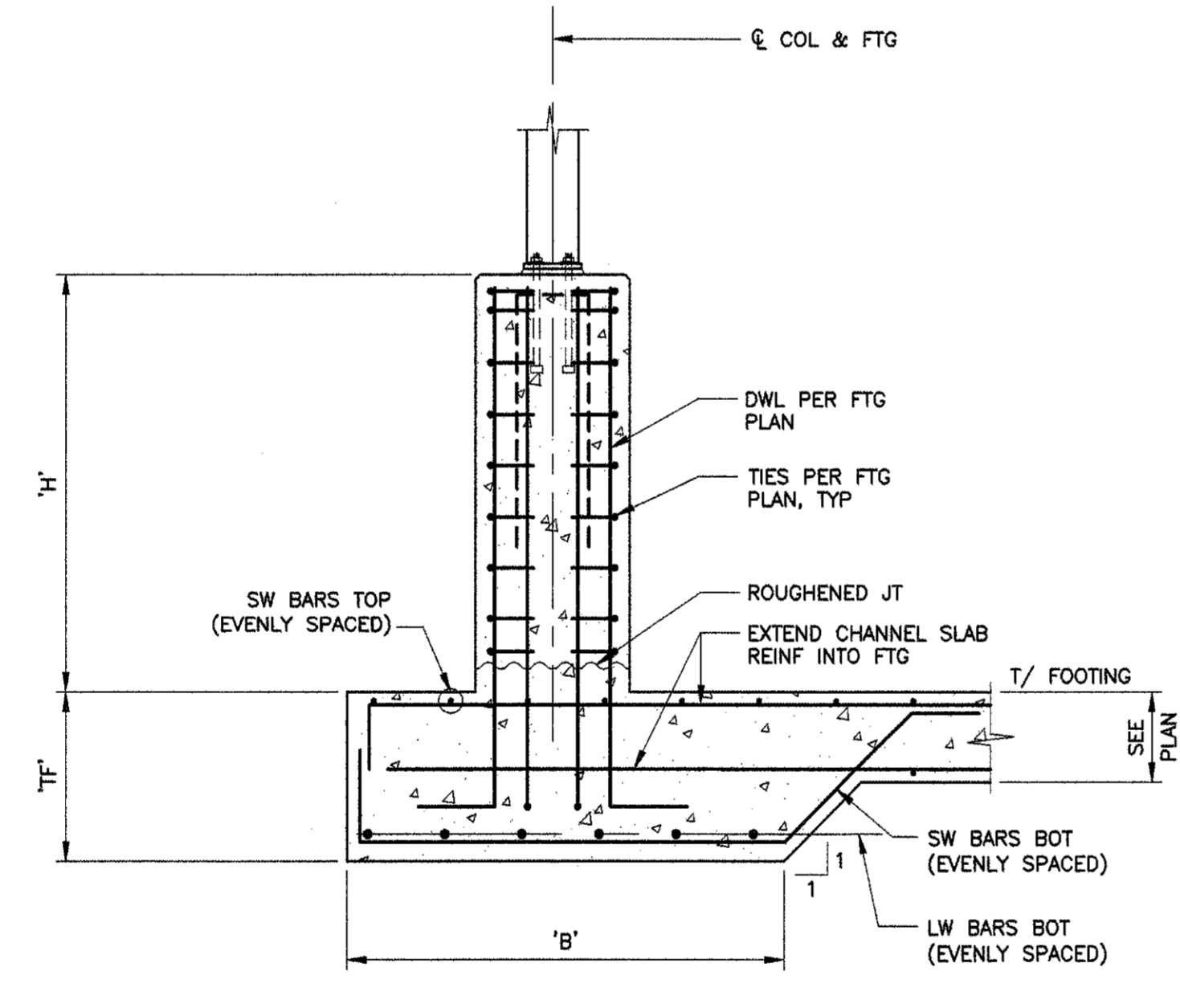
FOOTING TYPE - B
PLAN
1/2"=1'-0"



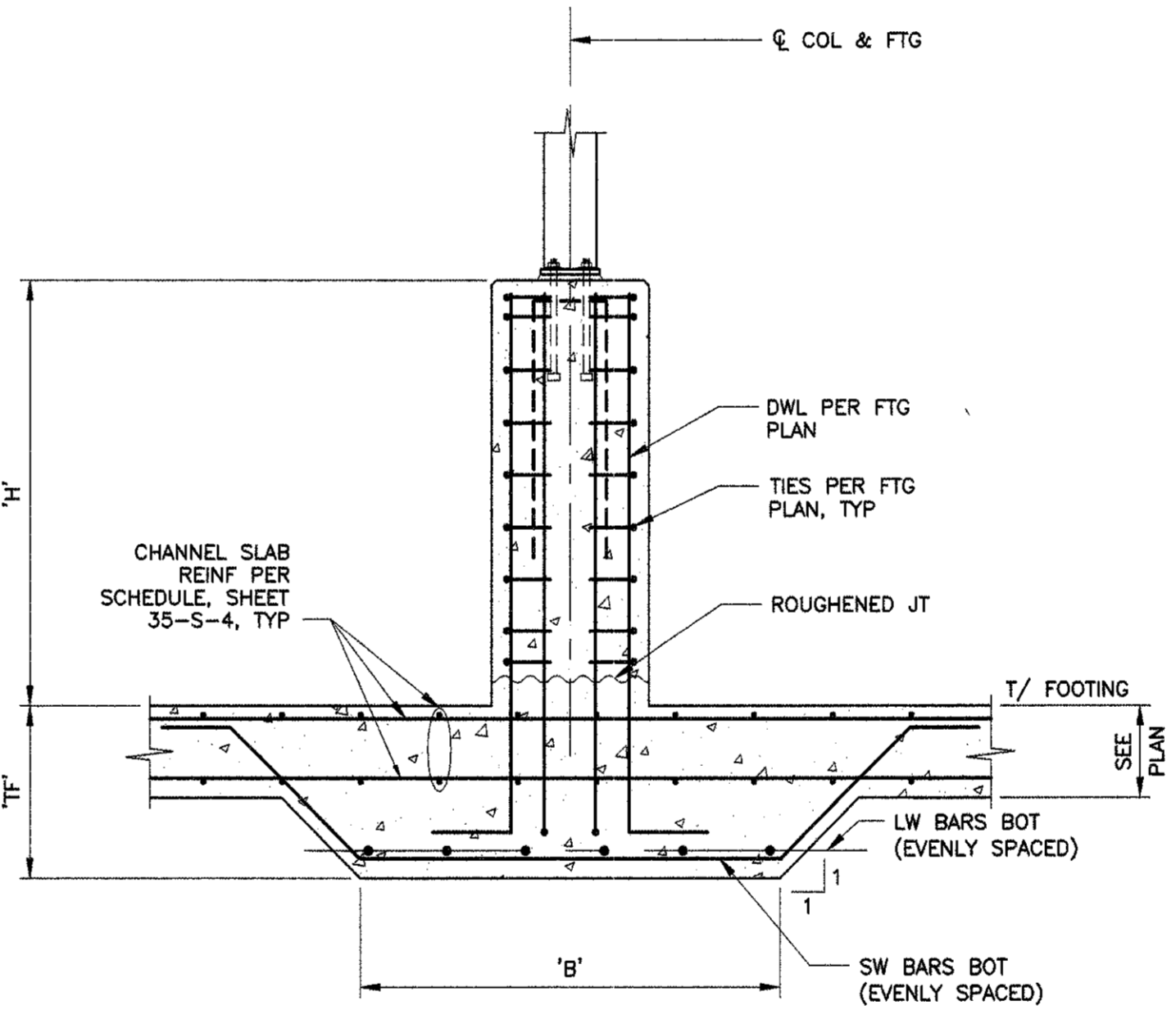
FOOTING TYPE - C
PLAN
1/2"=1'-0"



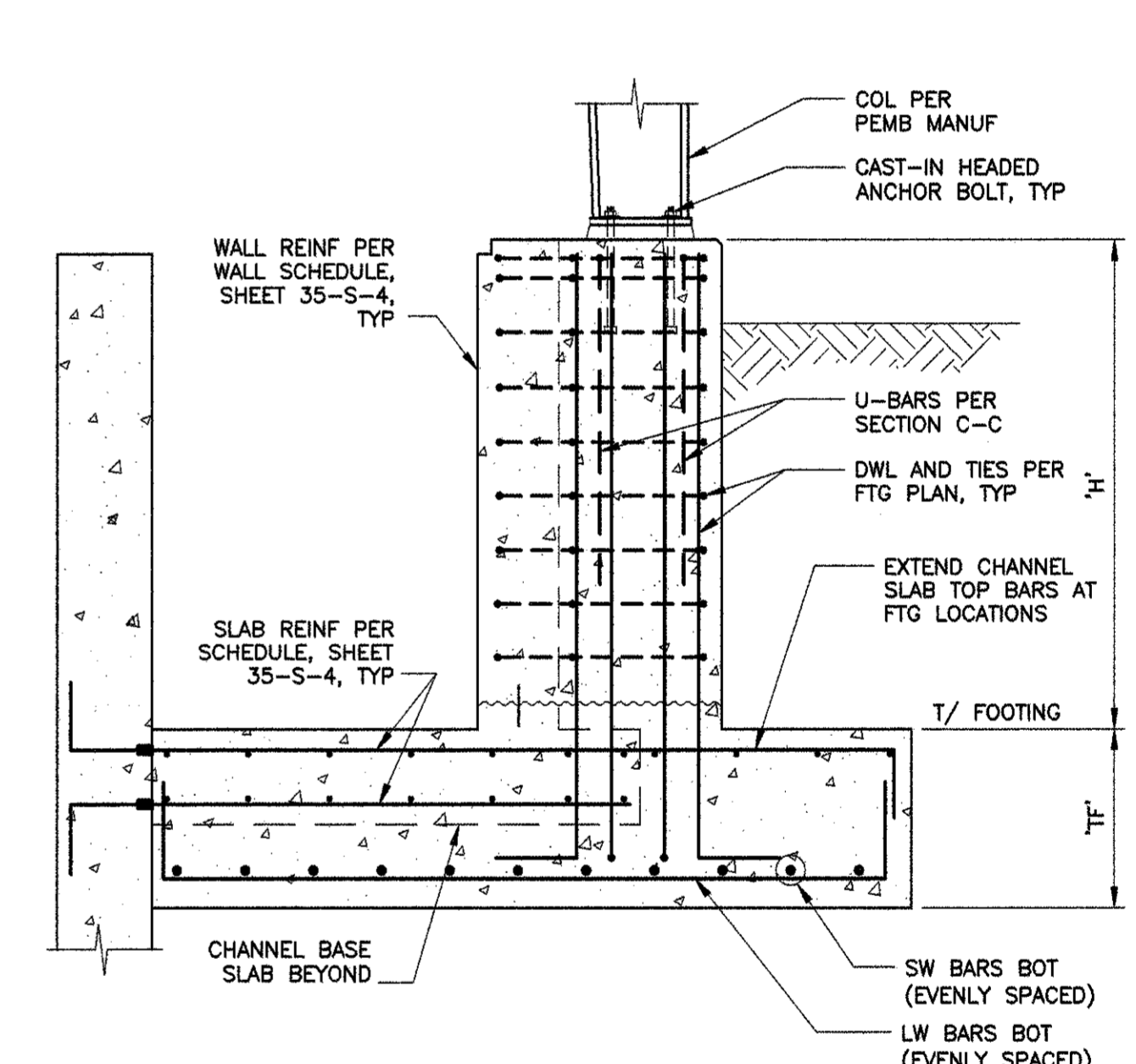
SECTION A-A



SECTION B-B



SECTION C-C



SECTION C'-C'

FOOTING SCHEDULE								
FOOTING MARK	FOOTING TYPE	GEOMETRY			REINFORCEMENT			REMARKS
		WIDTH 'B'	LENGTH 'L'	THICKNESS 'TF'	PEDESTAL HEIGHT 'H'	LONG BARS 'LW'	SHORT BARS 'SW'	
F1	"A"	6'-8"	6'-8"	2'-2"	4'-6"	(9) #7 T&B	(9) #7 T&B	T/FOOTING EL. 789.00
F2	"C"	5'-4"	9'-0"	2'-2"	4'-6"	(6) #7 BOT	(10) #7 BOT	T/FOOTING EL. 789.00
F3	"C"	5'-4"	9'-0"	2'-2"	7'-0"	(6) #7 BOT	(10) #7 BOT	T/FOOTING EL. 786.50
F4	"B"	5'-4"	9'-0"	2'-2"	4'-6"	(6) #7 BOT	(10) #7 BOT	T/FOOTING EL. 786.50

NOTES:
 1. PEMB SUBMITTAL MUST BE APPROVED PRIOR TO FOUNDATION SHOP DRAWING SUBMITTAL AND CONSTRUCTION. FOOTING DETAIL MAY BE REVISED TO SUIT MANUFACTURER'S DESIGN.
 2. FOOTING SIZES SHOWN ARE PRELIMINARY AND ARE SUBJECT TO CHANGE UNTIL FINAL REACTIONS ARE PROVIDED BY THE PEMB MANUFACTURER.
 3. ANCHOR BOLT DIAMETERS SHALL BE DESIGNED BY THE PEMB AND INSTALLED WITH EMBEDMENT AND EDGES DISTANCED AS SPECIFIED BY THE EOR.

CANOPY FOOTING DETAILS
 DETAIL
 SCALE: 1/2" = 1'

ENGINEERING TECHNOLOGIES, INC.
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ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROFESSIONAL ENGINEER
 B-2416
 DAVID S. MORRIS

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	
DATE:		

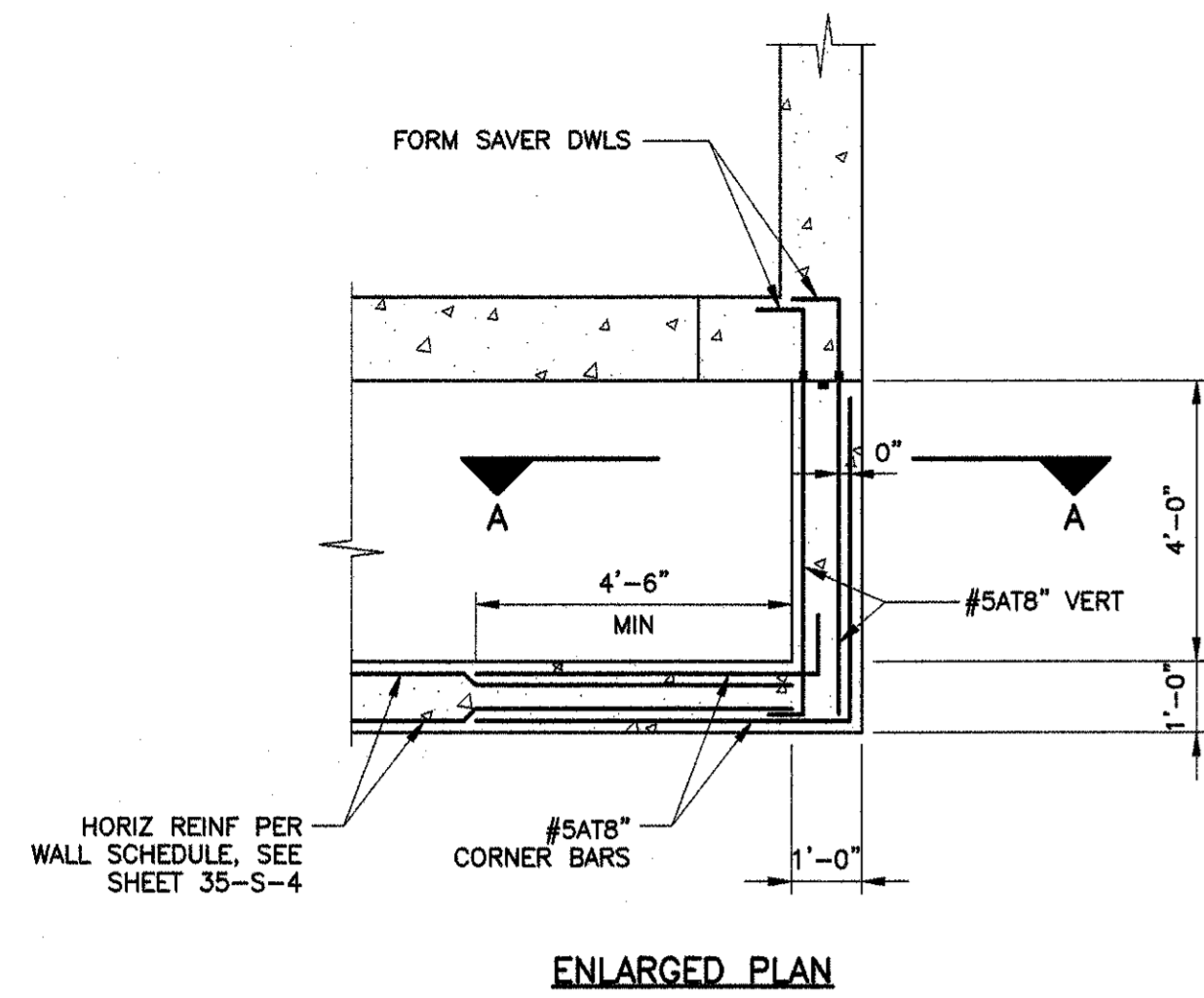
DSGN: DSM
 DRAW: DSM
 CHK: JVS

BAR REVISIONS: 1" LONG PER SCALES SHOWN ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR MEMBRANE TANK
 DETAILS

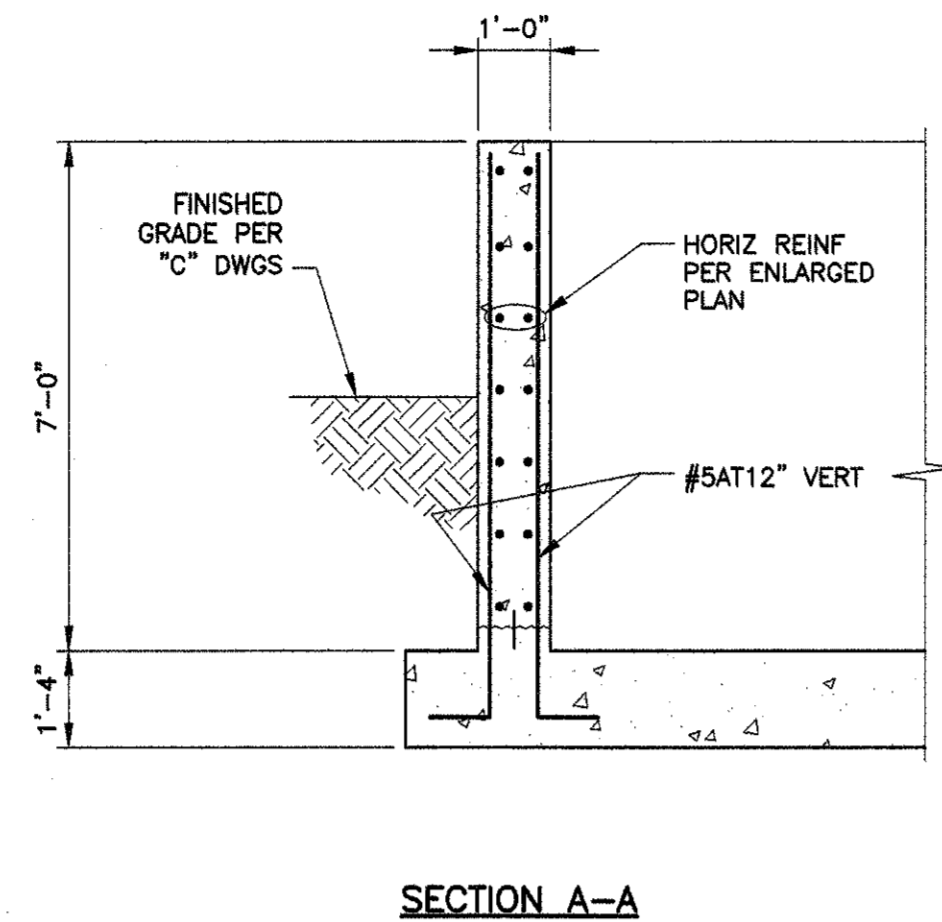
SHEET NO.
 35-S-5

V:\LEO\et_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Head\Structural\35-S-5 MBR MEMBRANE TANK DETAILS.dwg - 8/24/2016

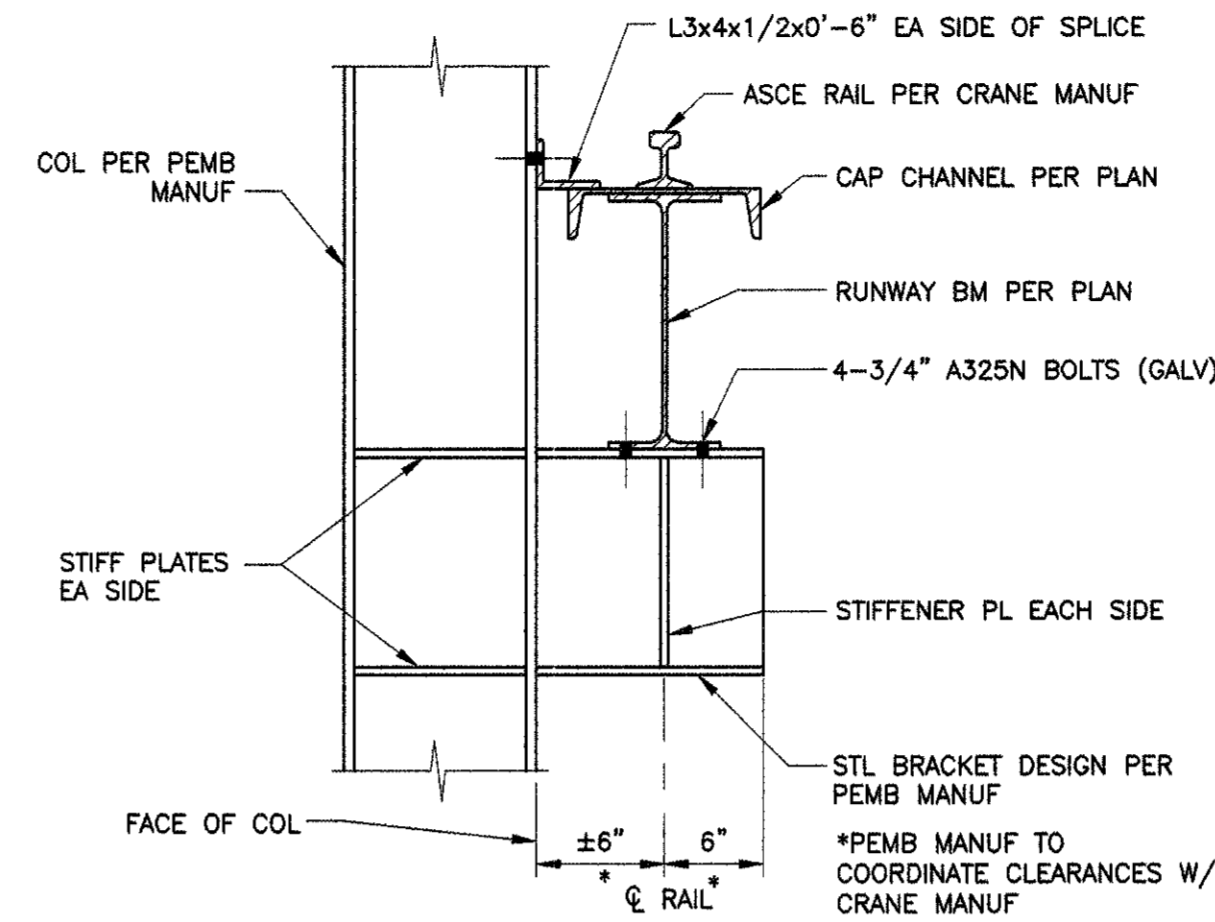


ENLARGED PLAN AT EFFLUENT CHANNEL CORNER

DETAIL A
SCALE: 3/8" = 1'
35-S-2 | 35-S-6

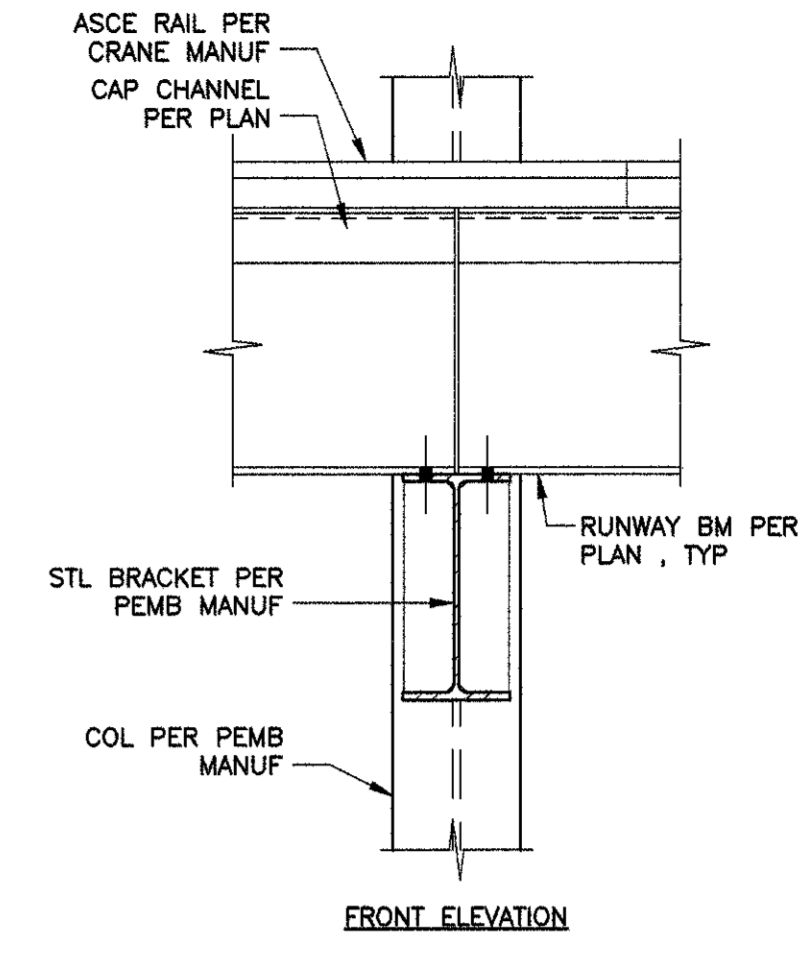


SECTION A-A



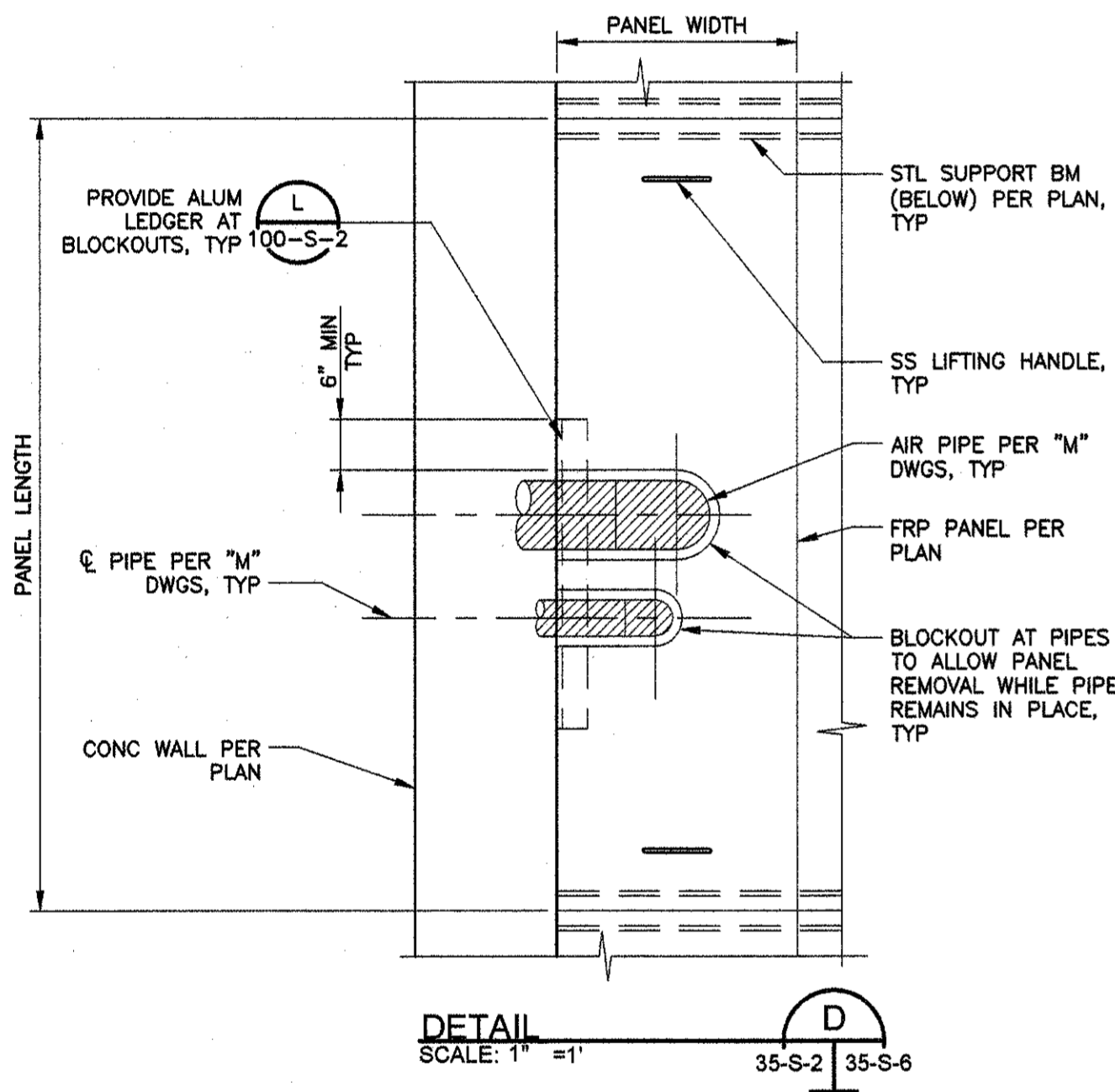
CRANE RUNWAY SUPPORT BRACKET

DETAIL B
SCALE: 1" = 1'
35-S-2 | 35-S-6

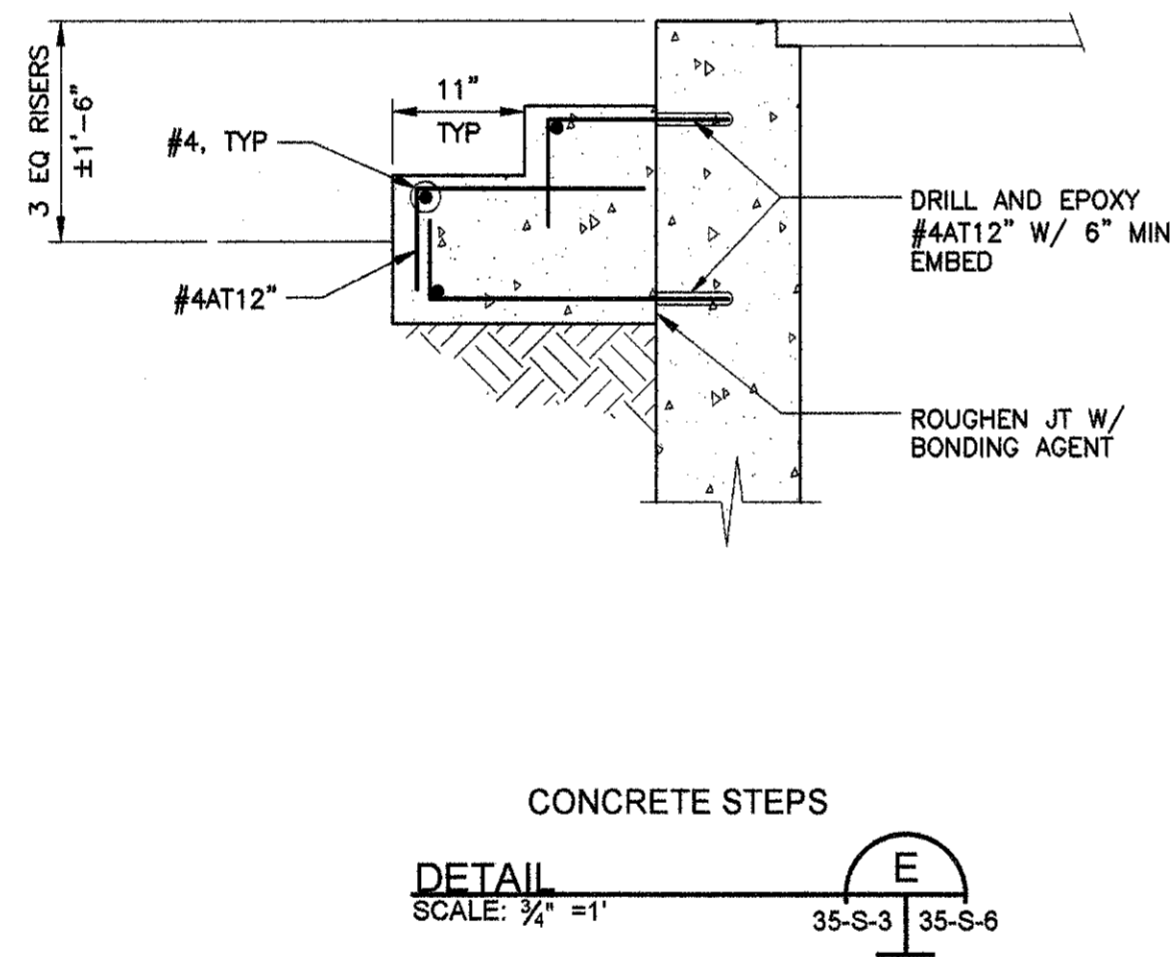


CRANE RUNWAY SUPPORT CORBEL

DETAIL C
SCALE: 1" = 1'
35-S-2 | 35-S-6

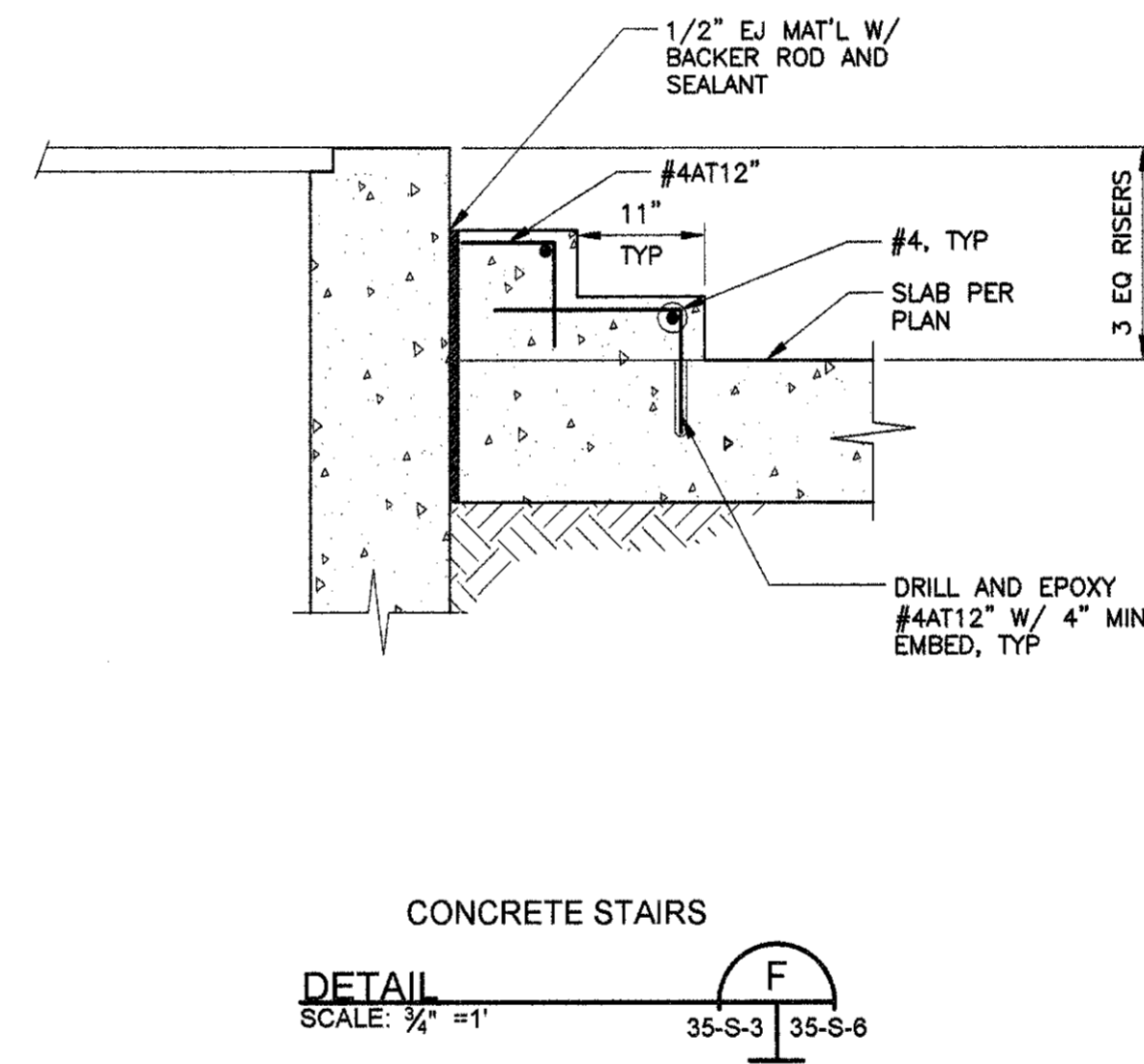


DETAIL D
SCALE: 1" = 1'
35-S-2 | 35-S-6



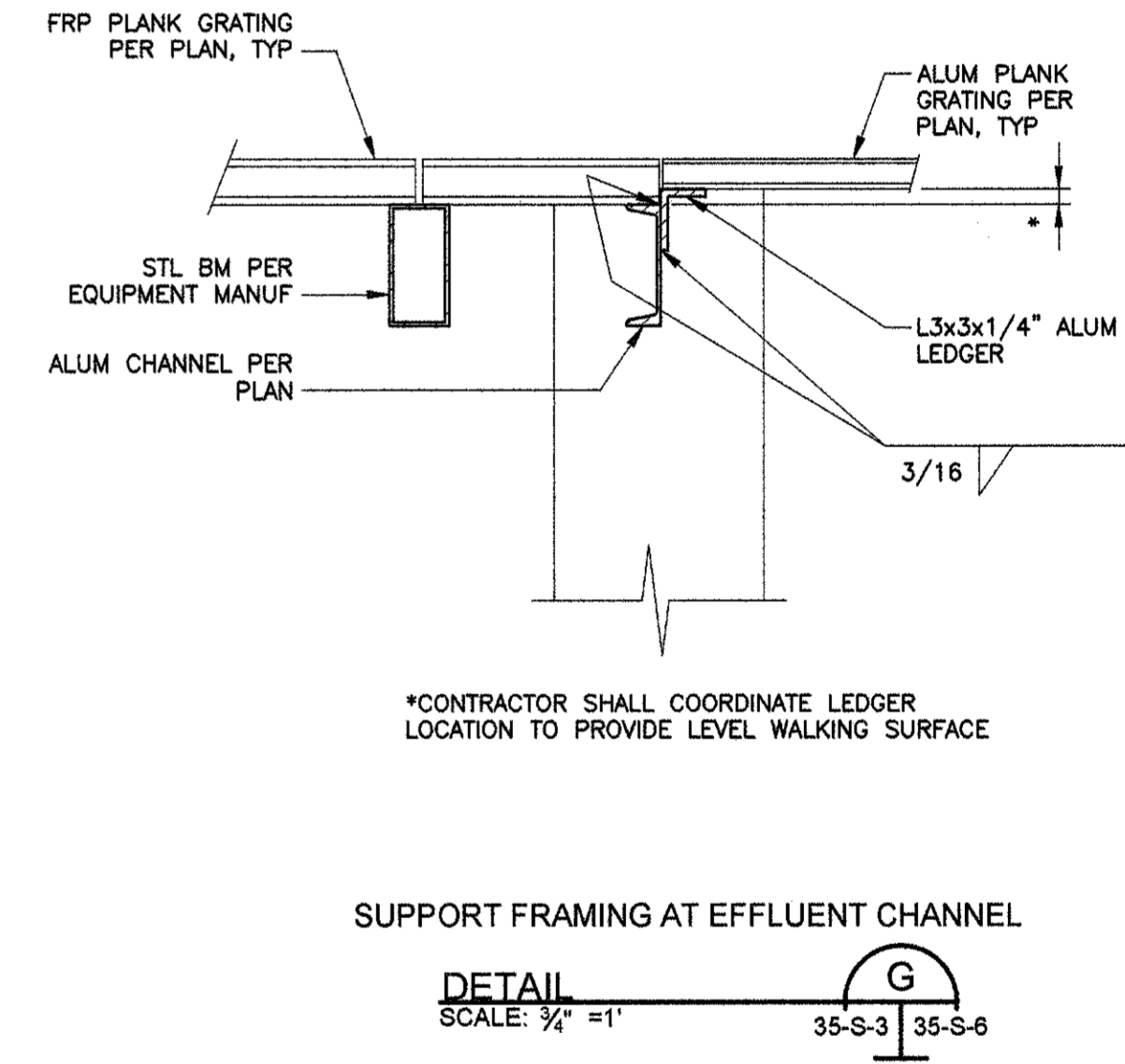
CONCRETE STEPS

DETAIL E
SCALE: 3/4" = 1'
35-S-3 | 35-S-6



CONCRETE STAIRS

DETAIL F
SCALE: 3/4" = 1'
35-S-3 | 35-S-6



SUPPORT FRAMING AT EFFLUENT CHANNEL

DETAIL G
SCALE: 3/4" = 1'
35-S-3 | 35-S-6

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LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
E/T PROJECT NO. 15-137

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DSM
DRWN: DSM
CHK: JVS
BAS REL ON US 11' ON SCS SCALES SHOWN ON THIS SHEET. IF NOT 11' LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

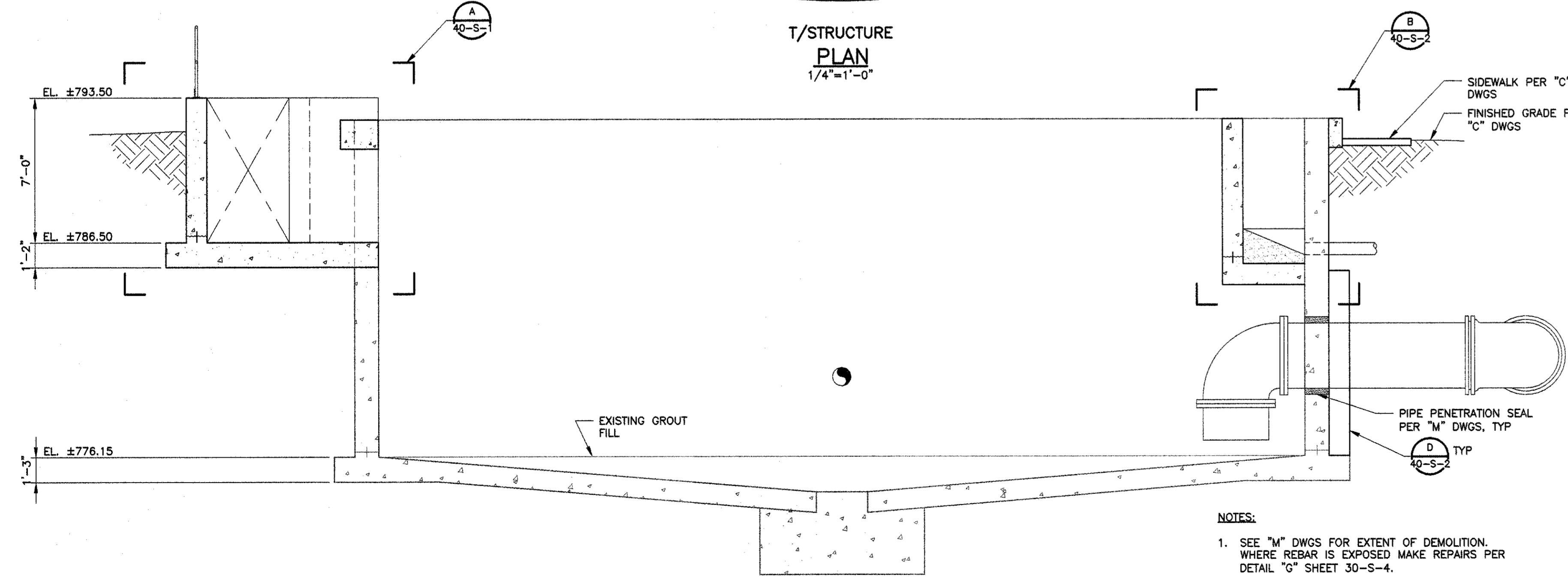
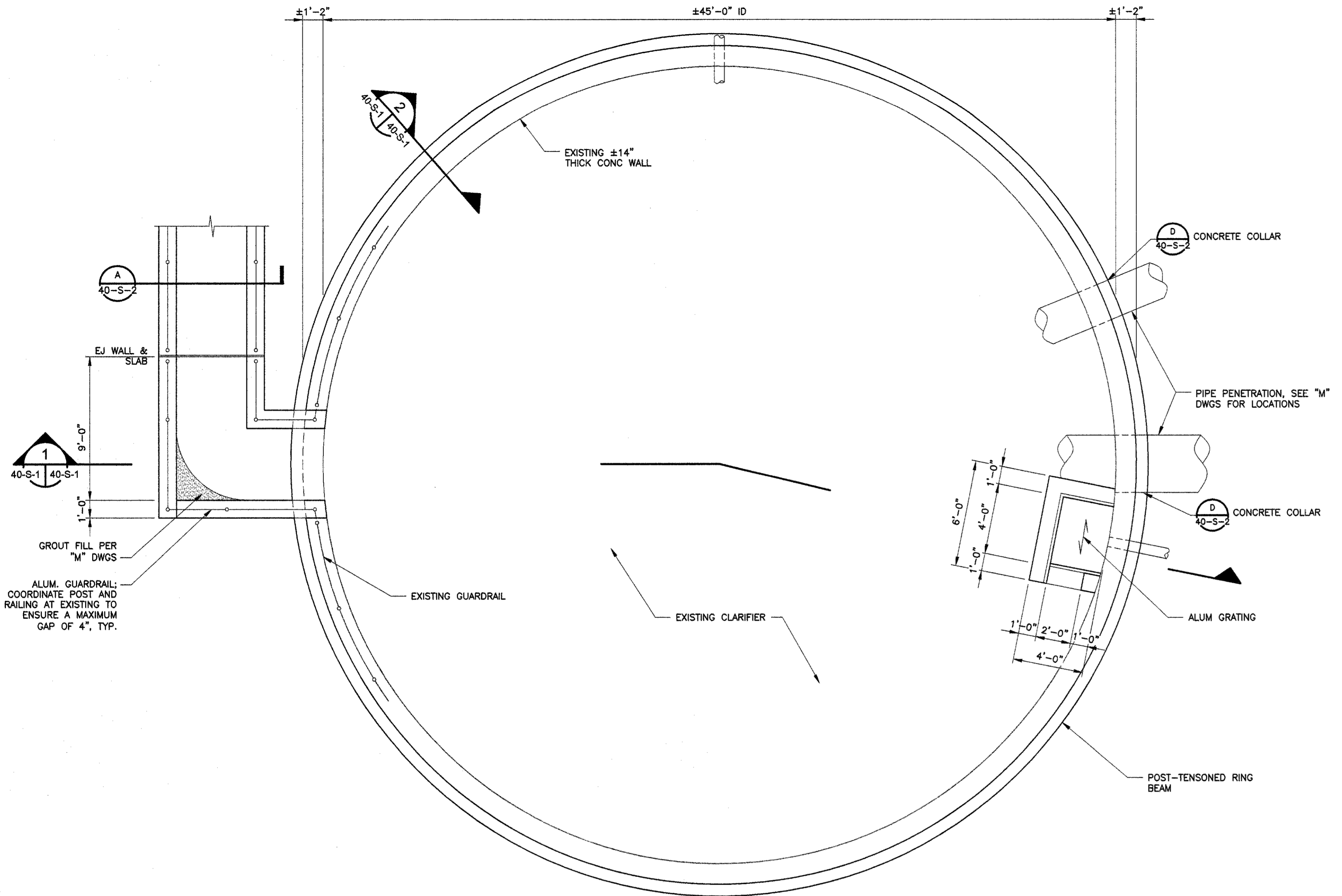
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR MEMBRANE TANK
DETAILS

SHEET NO.
35-S-6

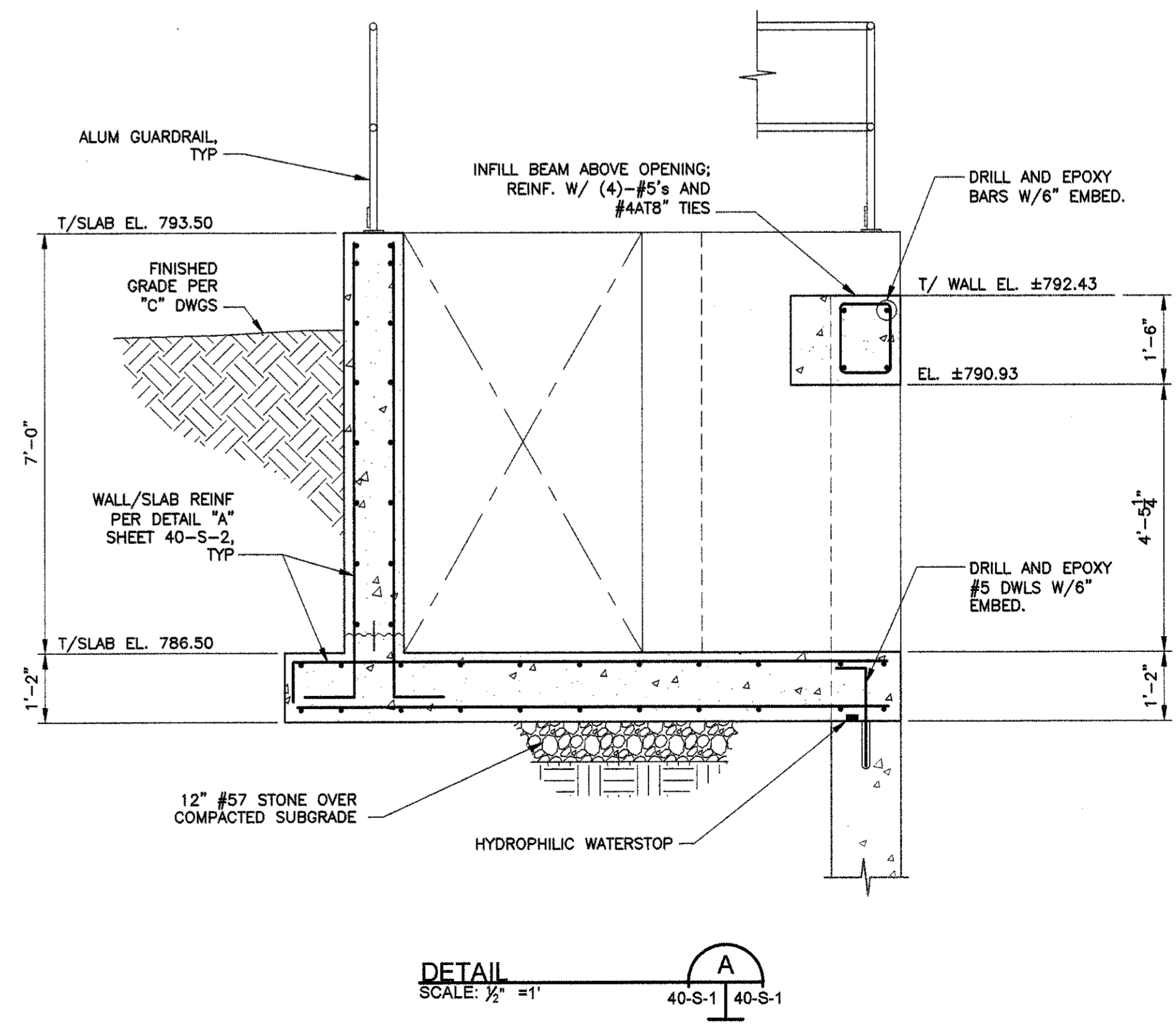
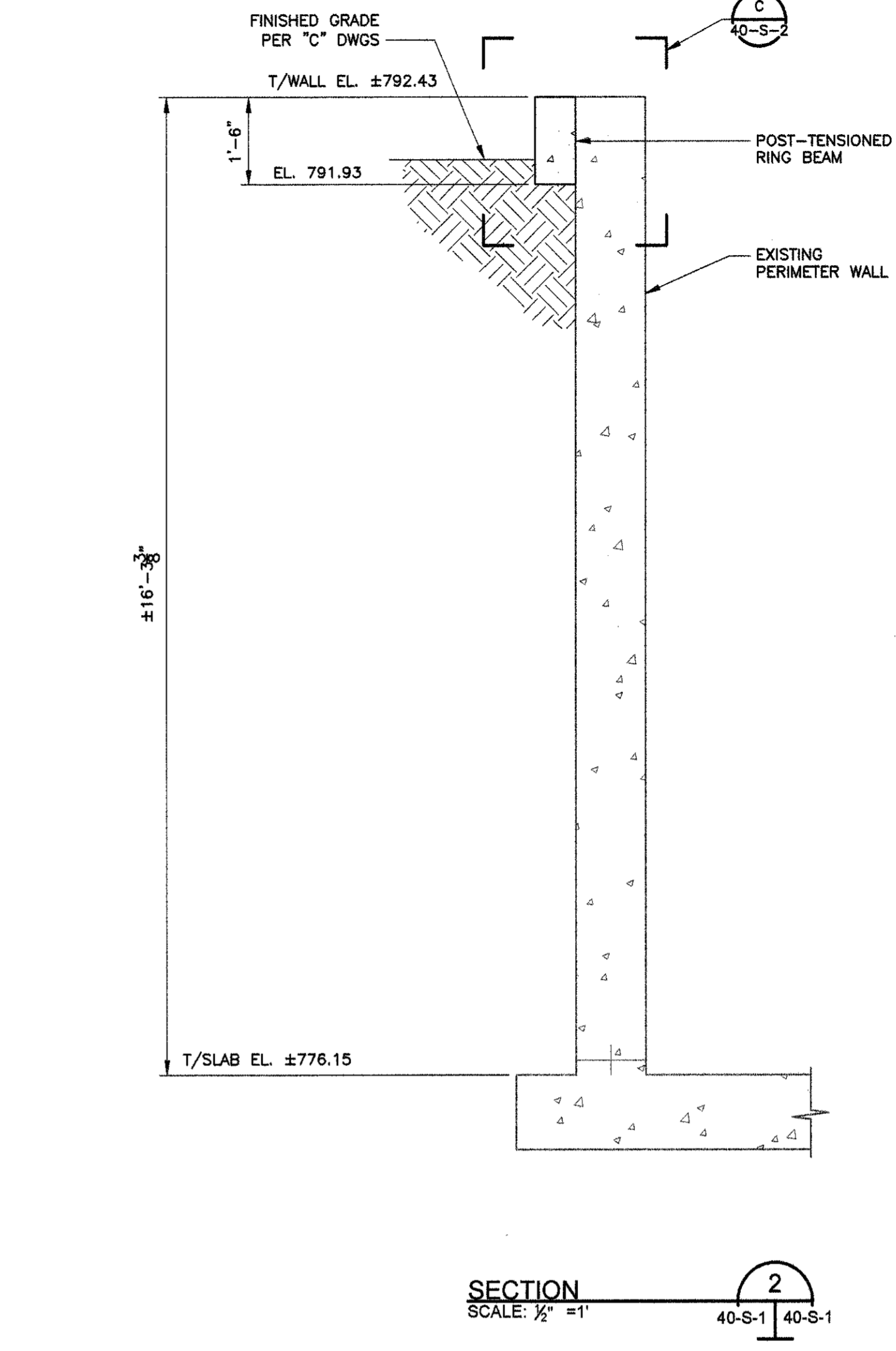


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I:\LEO\et_data\Projects\Projects_2007\Engineering Strategies_Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\35-S-6 MBR MEMBRANE TANK DETAIL S.dwg - 8/24/2016



- NOTES:
1. SEE "M" DWGS FOR EXTENT OF DEMOLITION. WHERE REBAR IS EXPOSED MAKE REPAIRS PER DETAIL "C" SHEET 30-S-4.
 2. LOCATE SCUM BOX PER "M" AND EQUIPMENT MANUFACTURER'S DRAWINGS.



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 LAKE MARY, FLORIDA 32746
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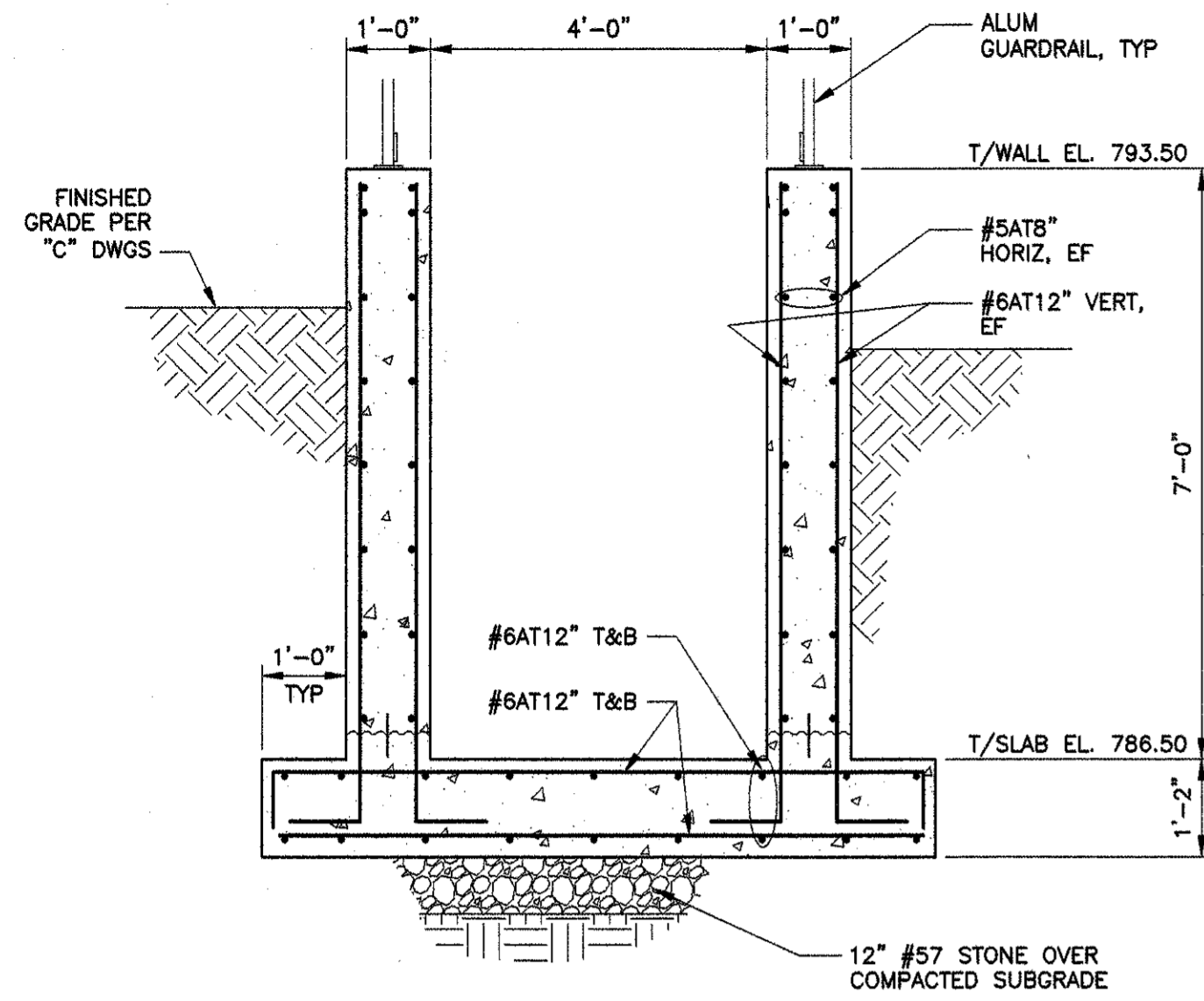
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ON THIS SHEET ARE NOT TO BE ADJUSTED UNLESS OTHERWISE NOTED. SCALE: AS SHOWN.

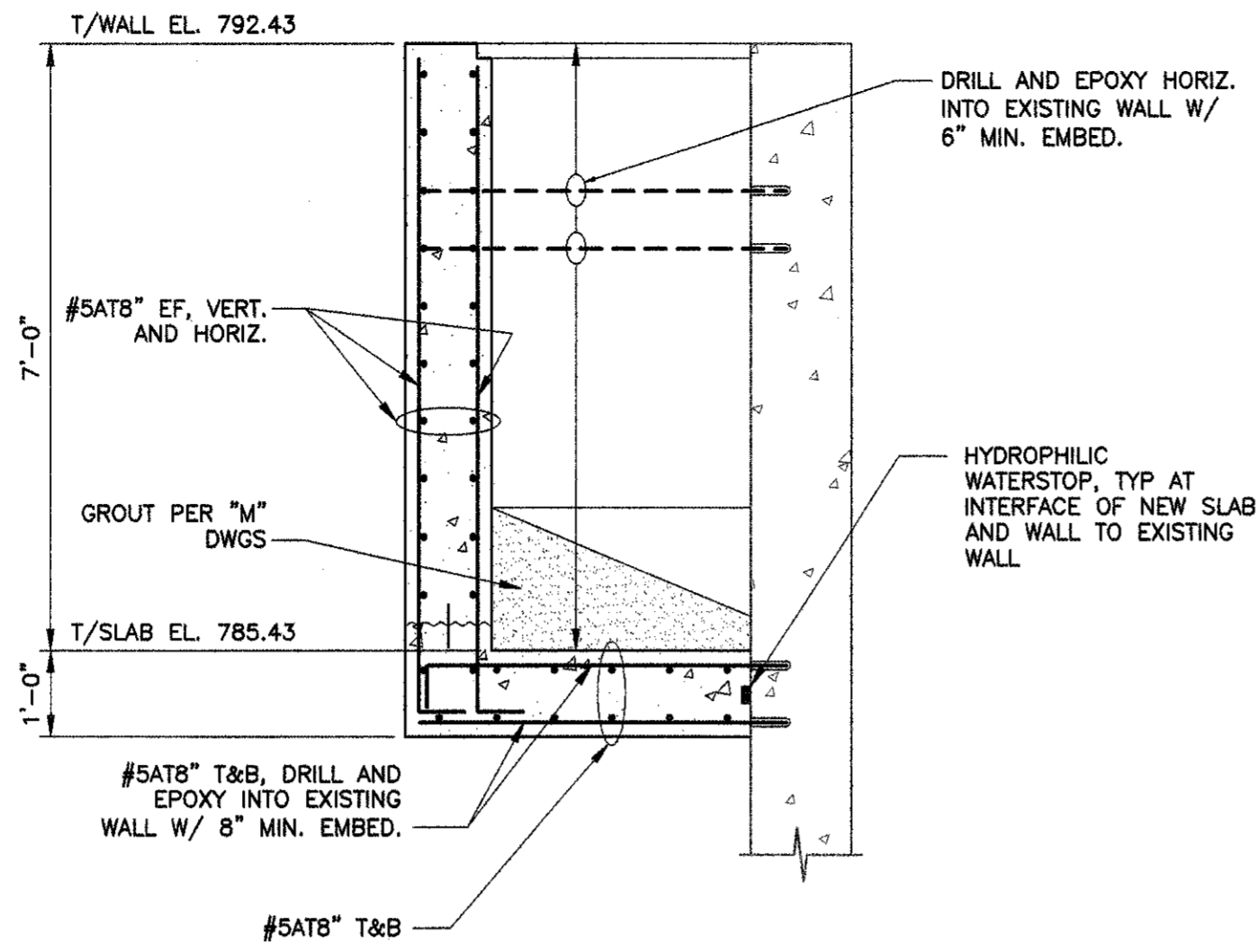
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR DE-AERATION TANK
 PLAN AND DETAILS

SHEET NO.
 40-S-1

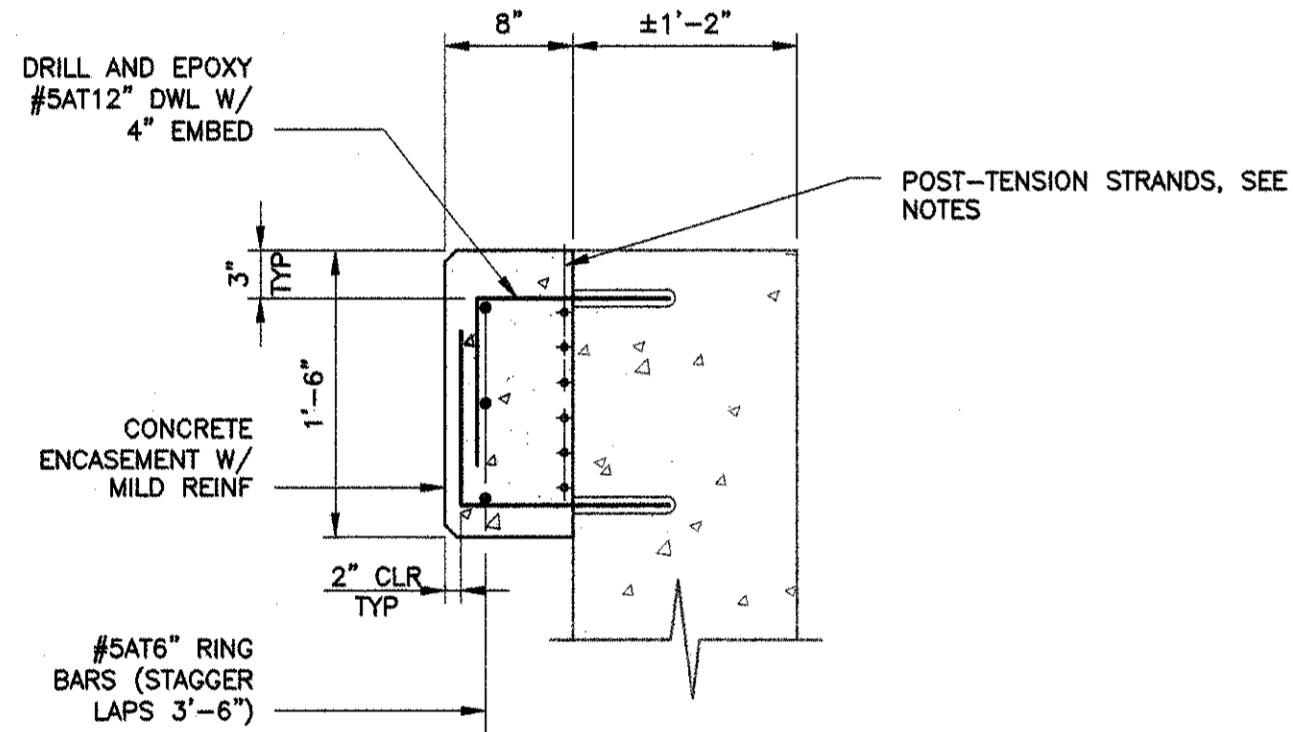
\\CLEOet_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\40-S-1 DE-AERATION TANK.dwg - 8/24/2016



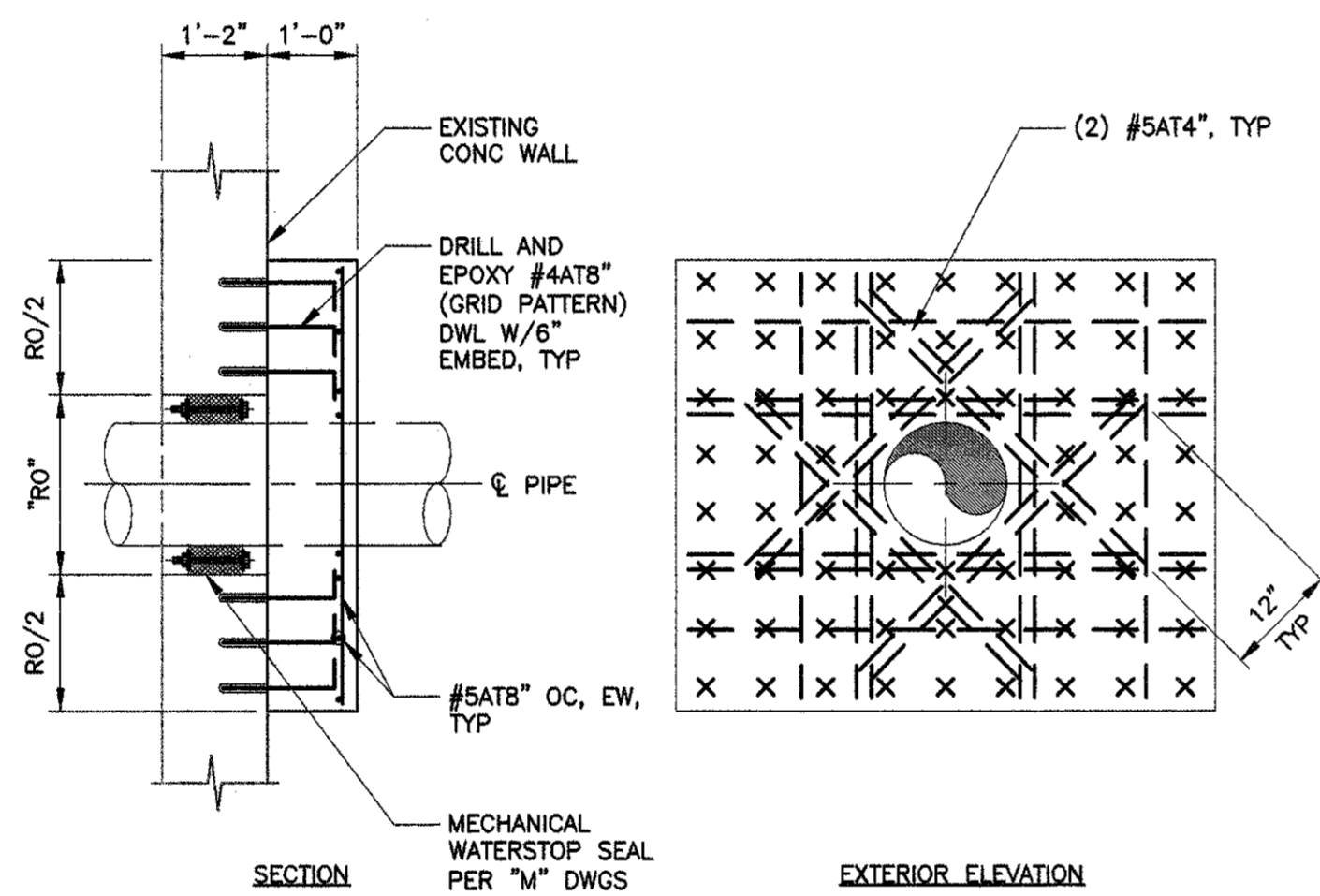
DETAIL A
SCALE: 1/2" = 1'
40-S-1 | 40-S-2



DETAIL B
SCALE: 1/2" = 1'
40-S-1 | 40-S-2



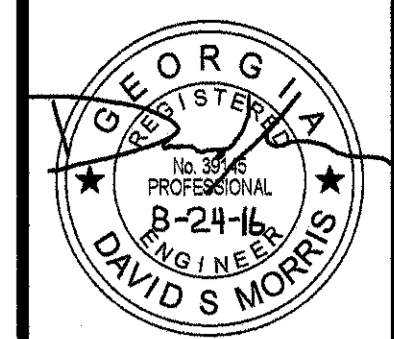
DETAIL C
SCALE: 1" = 1'
40-S-1 | 40-S-2



DETAIL D
SCALE: 1/2" = 1'
40-S-1 | 40-S-2

- NOTES:
- CONTRACTOR SHALL HIRE A SPECIALTY ENGINEER TO DESIGN POST TENSIONING SYSTEM. THE SPECIALTY ENGINEER SHALL PROVIDE SHOP DRAWINGS OUTLINING THE POST-TENSIONING PROCEDURE, LOCATIONS OF JACKING FORCE APPLICATION, MATERIALS, ETC.
 - STRANDS: SHALL BE A MIN. OF 270K LOW RELAXATION STAND CONFORMING TO ASTM A426. STRANDS SHALL BE COATED WITH ARMATEC 110 RUSH INHIBITOR BY SIKA AND ENCASED IN CONCRETE AS SHOWN
 - STRAND CONNECTORS: PROVIDE COUPLERS BY DYWIDAG SYSTEMS INTERNATIONAL OR APPROVED EQUAL.
 - FINAL POST-TENSION FORCE: 50 KIPS

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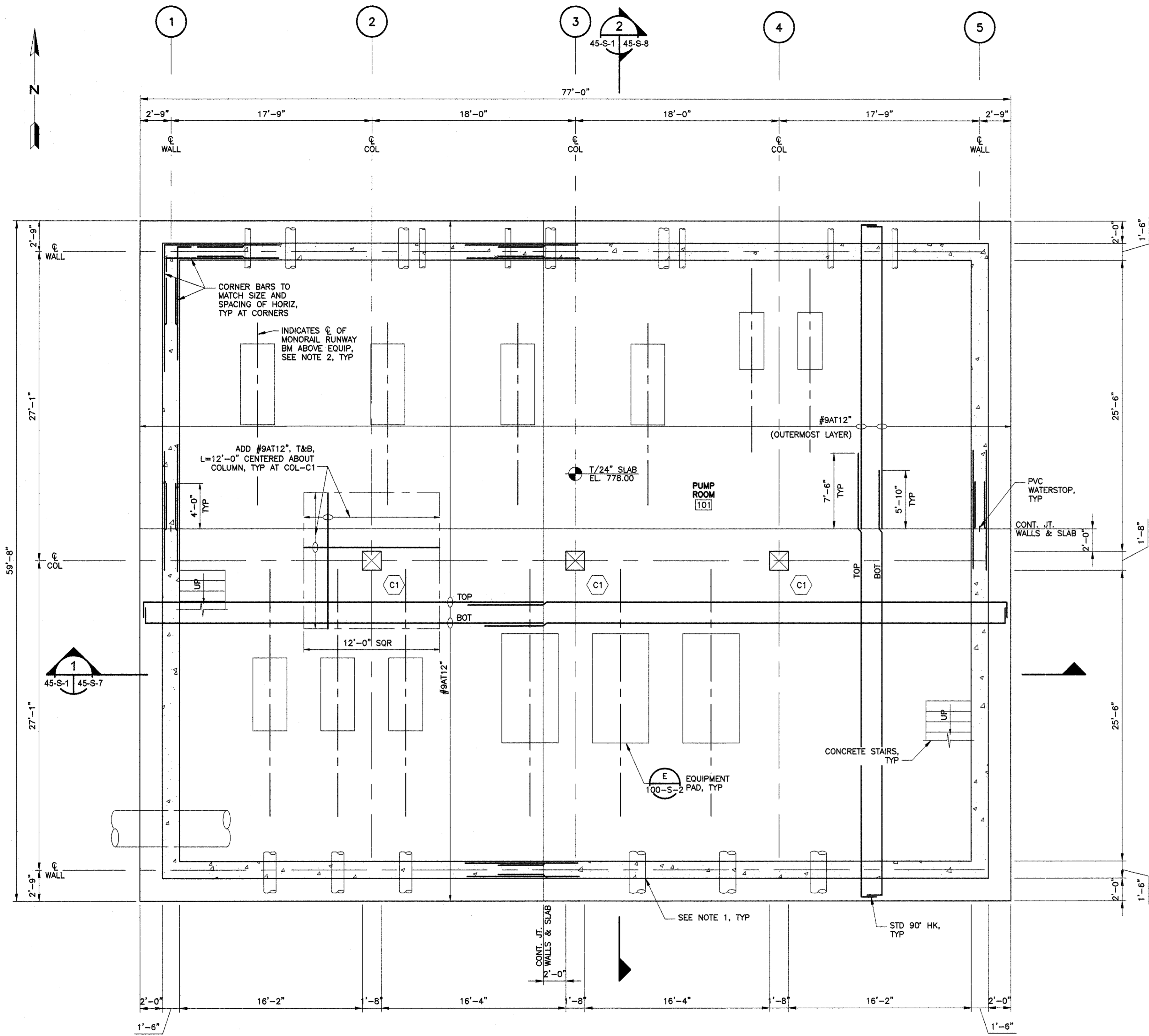
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: DSM
DRWN: DSM
CHK: JVS
BIG BE ONLINE 11:05 AM 08/05/16
SHOW ON THIS SHEET IF NOT 11:05 AM
LONG ON THIS SHEET, ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR DE-AERATION TANK
DETAILS

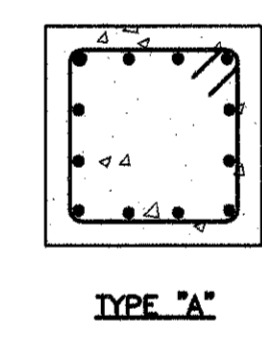
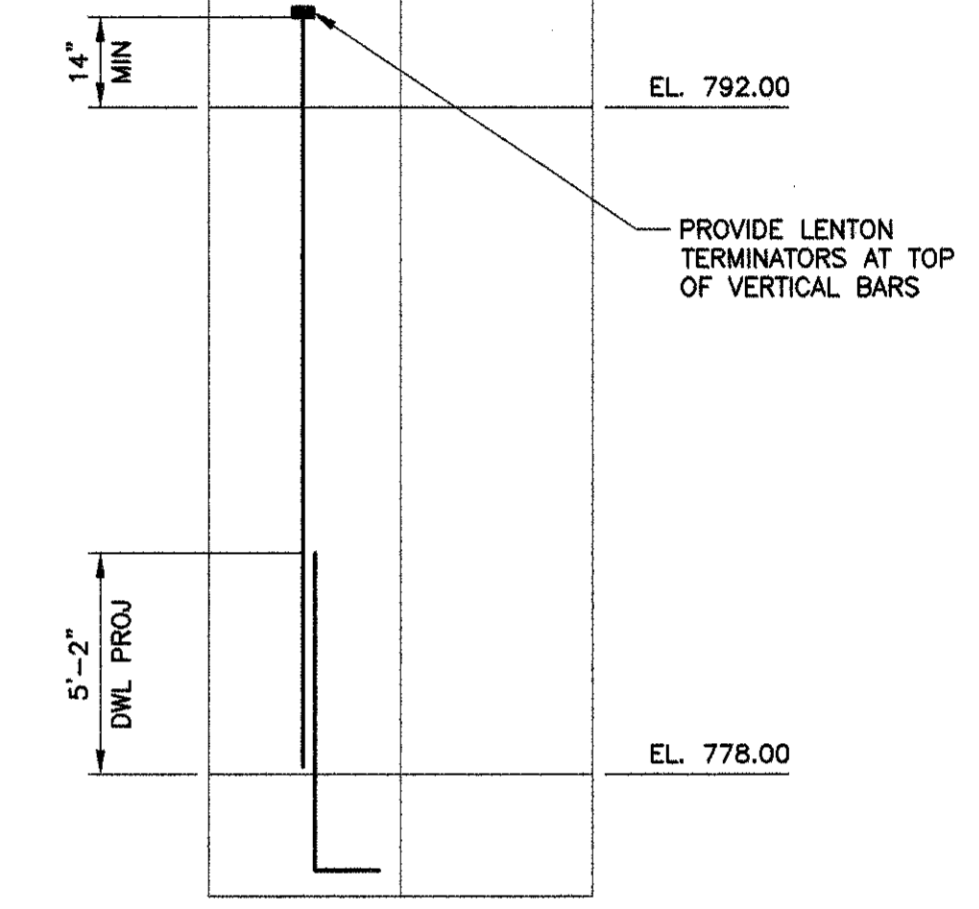
SHEET NO.
40-S-2



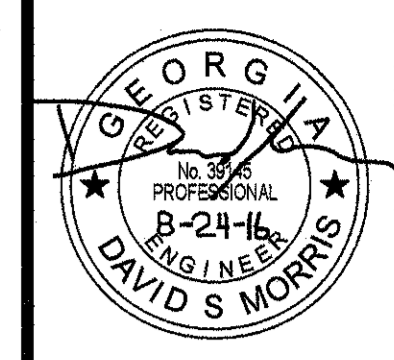
FOUNDATION PLAN AT EL. 778.00
PLAN
 3/16"=1'-0"

- NOTES:**
1. WALL PENETRATION LOCATIONS PER "M" DWGS. PROVIDE ADDITIONAL REINFORCING AT PENETRATION WHERE REQUIRED PER STD DETAILS.
 2. EQUIPMENT PADS AND OVERHEAD RUNWAY BEAMS SHALL BE LOCATED PER THE "M" DWGS. SEE SHEET 45-S-2 FOR RUNWAY BEAM AND RUNWAY BEAM SUPPORT FRAMING.
 3. PROVIDE XYPEX WATERPROOFING ADDITIVE IN FOUNDATION PERIMETER WALLS AND SLAB PER NOTE 1 / SHEET 45-S-7.

COLUMN SCHEDULE	
MARK	C1
SIZE	20"x20"
LONGITUDINAL REINF	(12) #8
TYPE	A
DOWELS	(12) #8
TIES	#4@12"
REMARKS	-



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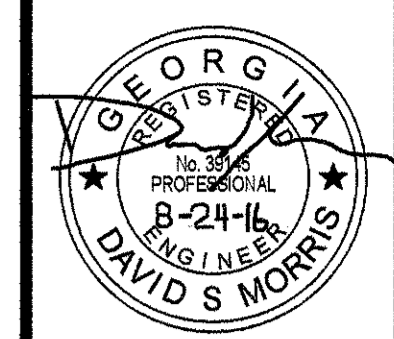
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 BAR BELOW IS 1" LONG FOR SCALES
 LONG ON THIS SHEET. ADJUST
 SCALES ACCORDINGLY.

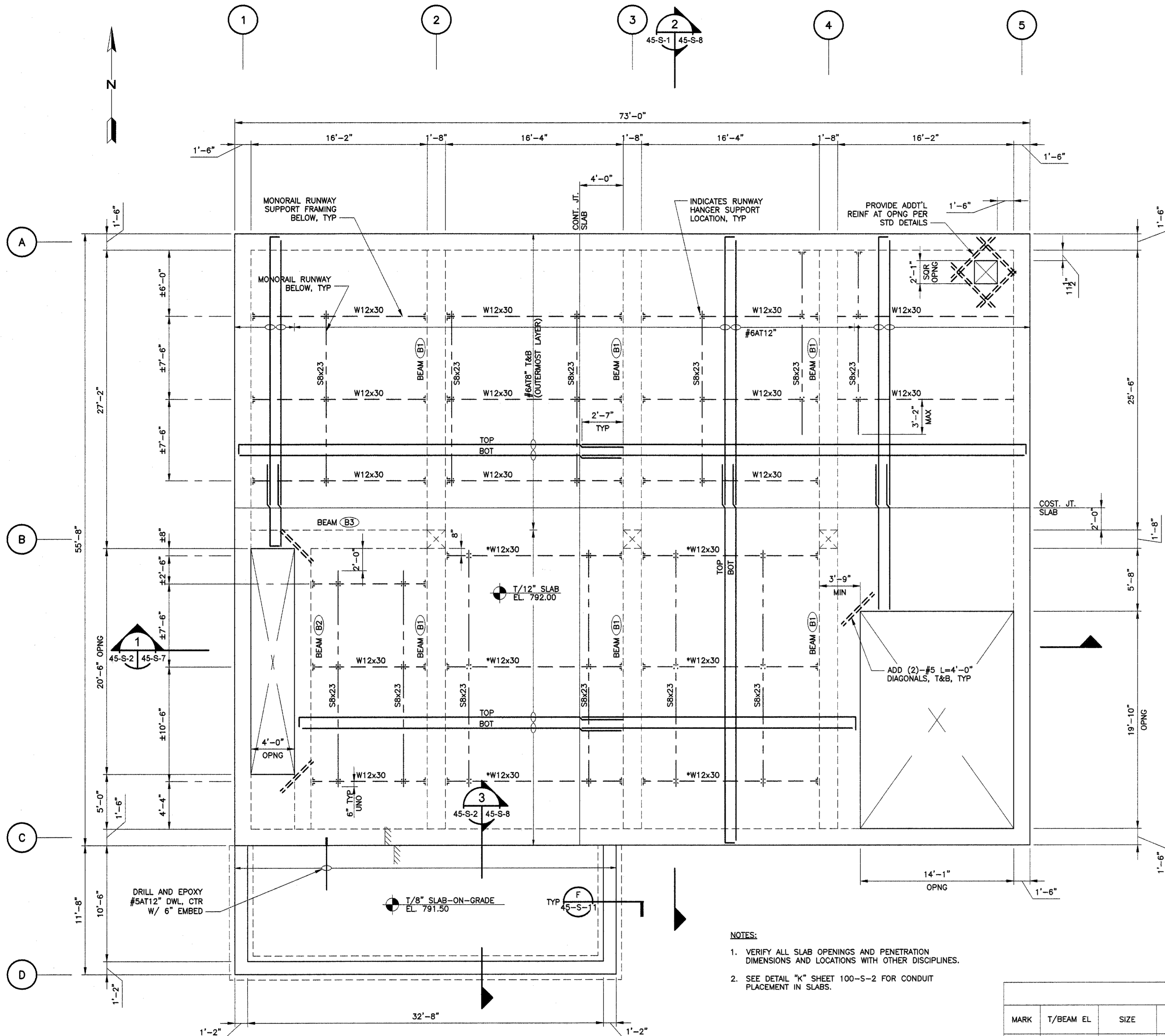
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 FOUNDATION PLAN

SHEET NO.
 45-S-1

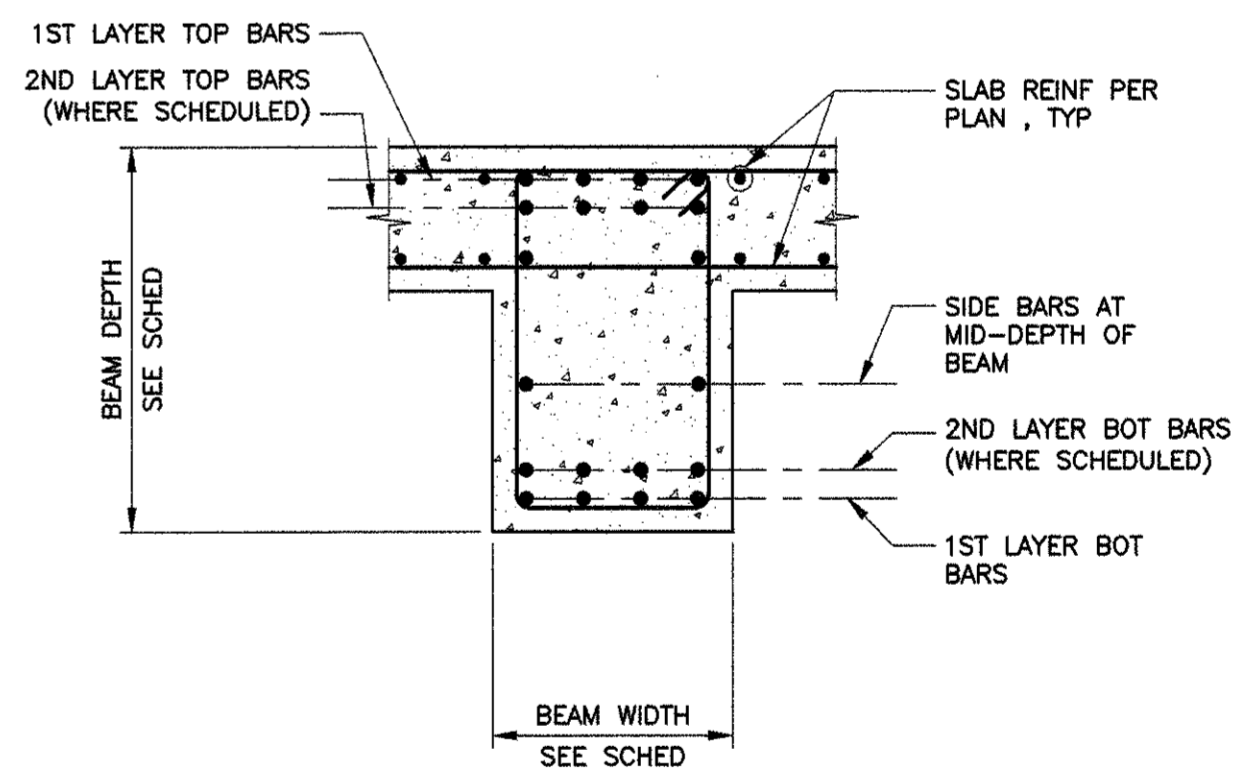
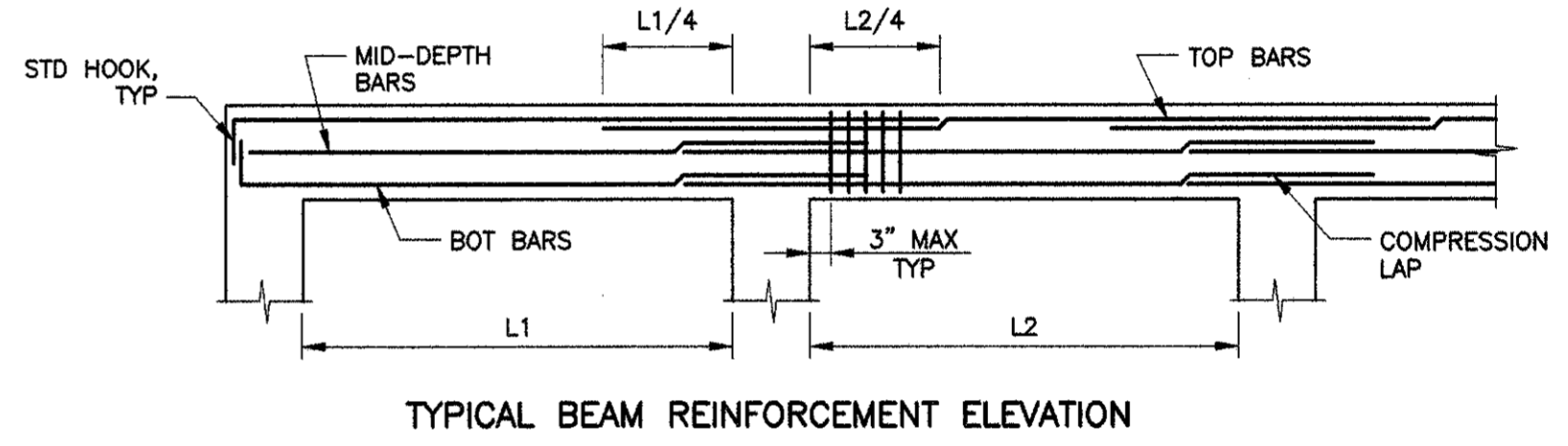
ENGINEERING TECHNOLOGIES, INC.
 3851 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 325-0500
 E/T PROJECT NO. 15-137



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STEEL FRAMING LEGEND:
 - - - - - INDICATES MONORAIL SUPPORT FRAMING (BELOW SLAB) TOS EL. 790.50, UNO
 - - - - - INDICATES UNDERHUNG MONORAIL RUNWAY BEAM (BELOW SLAB)
 *INDICATES TOS EL. 791.00



- NOTES:**
1. VERIFY ALL SLAB OPENINGS AND PENETRATION DIMENSIONS AND LOCATIONS WITH OTHER DISCIPLINES.
 2. SEE DETAIL "K" SHEET 100-S-2 FOR CONDUIT PLACEMENT IN SLABS.

MARK	T/BEAM EL	SIZE	BOT BARS	TOP BARS	SIDE BARS	STIRRUPS			REMARKS
						SIZE	TYPE	SPA	
B1	EL. 799.00	18" x 32"	(5) #9 1ST	(5) #9 1ST	(1) #6 EF	#4	□	4" OC	STIRRUP SPACING AT EACH END TO EXTEND 6'-0" TO THE CENTER OF THE BEAM; 8" SPACING AT MIDDLE
B2	EL. 799.00	18" x 28"	(5) #8 1ST	(5) #8 1ST	-	#4	□	8" OC	
B3	EL. 799.00	18" x 28"	(4) #8 1ST	(4) #8 1ST	-	#4	□	8" OC	

- BEAM SCHEDULE NOTES:**
1. PROVIDE TOP BAR SPLICE WHEN NEEDED AT CENTER OF EACH SPAN.
 2. NORTH-SOUTH DIRECTION REINFORCING STEEL SHALL BE LOCATED AT OUTER MAT OF BOTH TOP AND BOTTOM REINFORCING MATS. EAST-WEST DIRECTION SHALL BE LOCATED AT INTER MAT OF BOTH TOP AND BOTTOM REINFORCING MATS.

SLAB PLAN AT EL. 792.00
PLAN
 3/16"=1'-0"

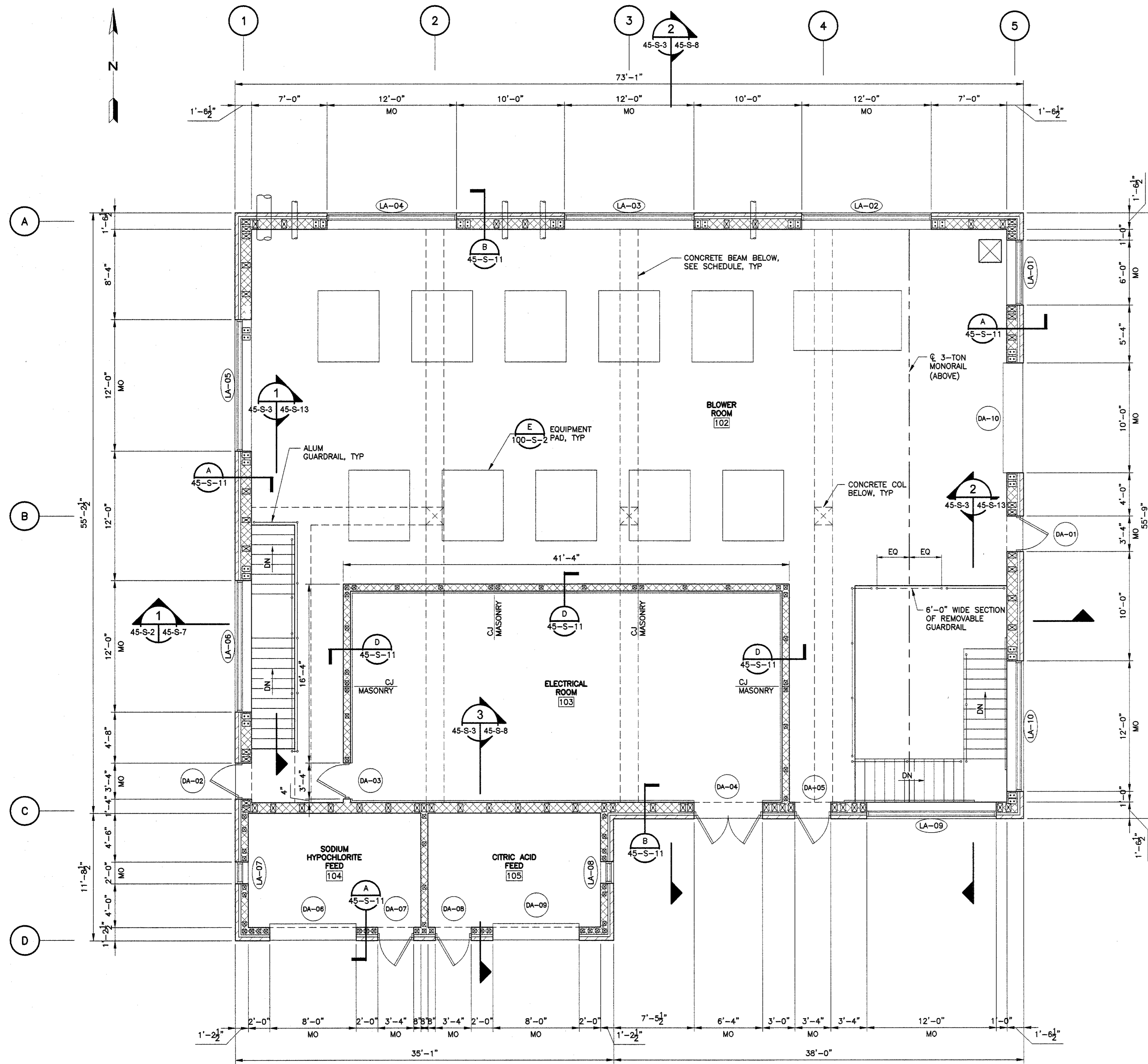
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 BAR BEYOND 1' LONG FOR SCALES LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 SLAB PLAN

SHEET NO.
 45-S-2

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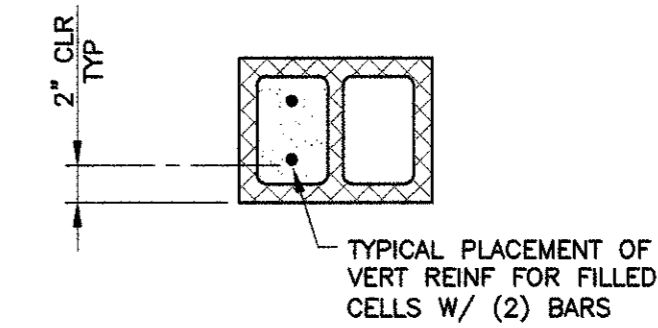


WALL LEGEND:

- INDICATES 12" CMU W/ 4" BRICK VENEER
- INDICATES 12" CMU
- INDICATES 8" CMU W/ 4" BRICK VENEER
- INDICATES 8" CMU

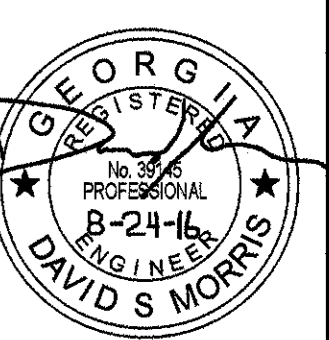
CMU WALL REINFORCEMENT

- DENOTES FILLED CELL. PROVIDE FILLED CELLS AT ALL CORNERS PER STD DETAILS, OPENINGS AND WHERE SHOWN ON PLAN.
- 12" CMU WALL FILLED CELL REINFORCING TO BE (1)-#5 VERT BAR, CTR. MAXIMUM 32" OC, MIN LAP LENGTH: 30", UNO.
- 8" EXTERIOR CMU WALL FILLED CELL REINFORCING TO BE (1)-#5 VERT BAR, CTR. MAXIMUM 24" OC, MIN LAP LENGTH: 30", UNO.
- 8" INTERIOR CMU WALL FILLED CELL REINFORCING TO BE (1)-#5 VERT BAR, CTR. MAXIMUM 48" OC, MIN LAP LENGTH: 30", UNO.
- PROVIDE HORIZONTAL BOND BEAMS AT A SPACING NO GREATER THAN 48" O.C AND WHERE SHOWN ON DRAWINGS.
- PROVIDE CLEAN OUT AND INSPECTION BLOCK OUTS IN CELLS CONTAINING REINF FOR GROUT LIFTS EXCEEDING 5'-0".
- DENOTES FILLED CELL W/ (2) #5 BARS



FLOOR PLAN AT EL. 792.00
PLAN
 3/16"=1'-0"

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 E/T PROJECT NO. 15-137



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ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

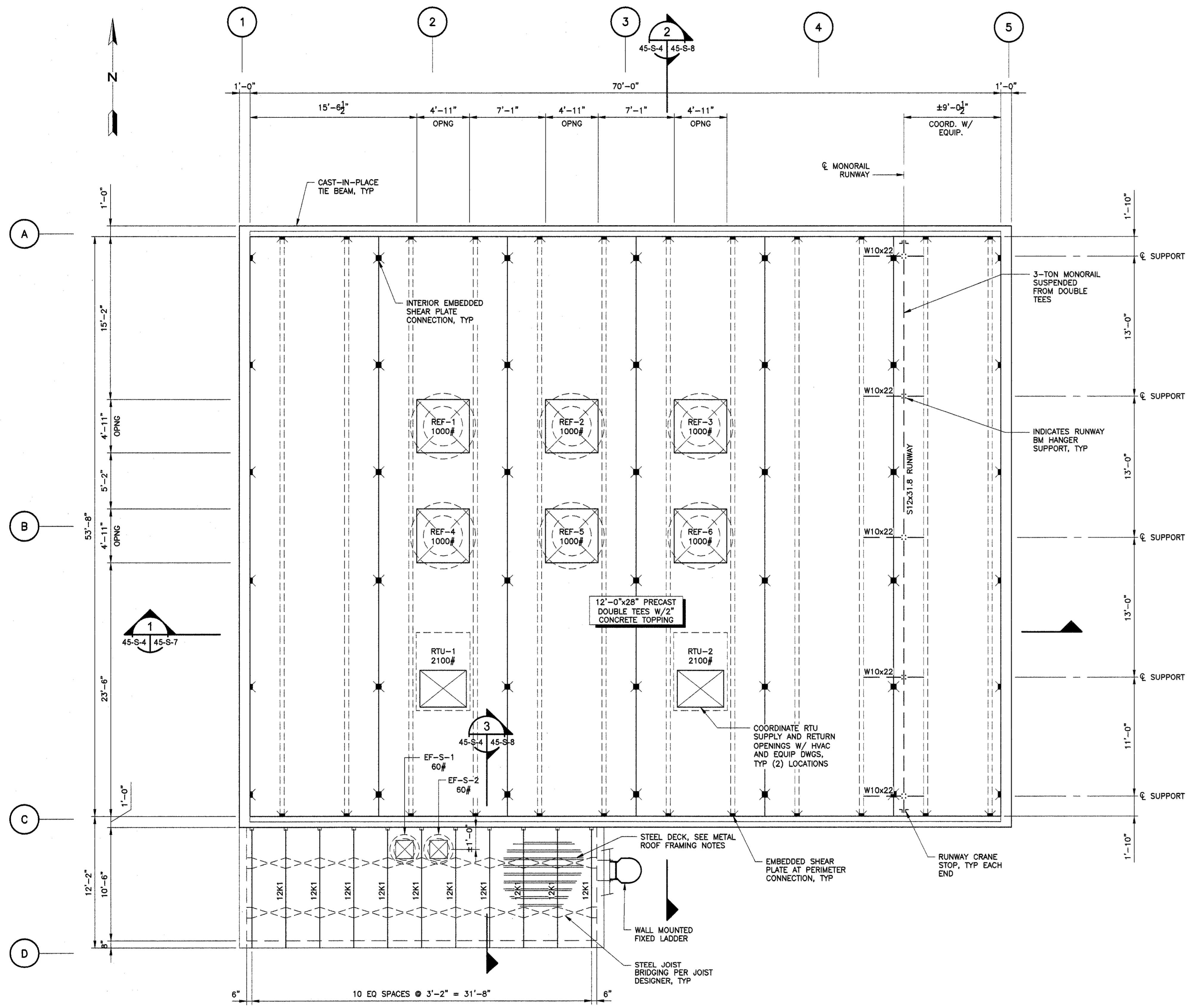
DSGN: DSM	CHCK: JVS
DRWN: DSM	

BAR BEYOND 11' LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 11' LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
FLOOR PLAN

SHEET NO.
 45-S-3

N:\CLEVEL_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\45-S-3 MBR PROCESS BLD FLOOR PLAN.dwg - 8/24/2016



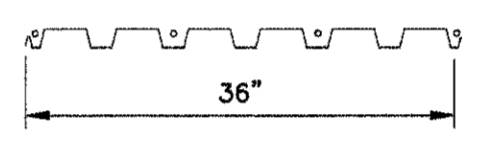
ROOF FRAMING AT EL. 806.00
PLAN
 3/16"=1'-0"

PRECAST CONCRETE DOUBLE TEE NOTES:

- ALL DOUBLE TEES SHALL BE DESIGNED BY THE PRECAST SUPPLIER FOR THE FOLLOWING SUPERIMPOSED LOADS:
 - SUPERIMPOSED DEAD LOAD = 15 PSF + TOPPING
 - SUPERIMPOSED LIVE LOAD = 30 PSF
 - WIND PRESSURES (LRFD) = +21 PSF, -40 PSF
 - SNOW LOAD: = PER 00-S-1
 - CONCENTRATED EQUIP LOADS = AS INDICATED ON PLAN
- SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA AND SHALL BE SUBMITTED TO THE ENGINEER FOR RECORD PURPOSES.
- ALL LOADS FROM EQUIPMENT, PIPING, MISC ITEMS LOCATED ON THE ROOF, OR SUSPENDED FROM THE ROOF, ARE TO BE SUPPLIED AND VERIFIED BY THE PRECAST SUPPLIER WITH EACH INDIVIDUAL EQUIPMENT SUPPLIER, LETTERS STATING THESE LOADS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE WITH PRECASTER THE TYPE AND LOCATION OF SUPPORTS TO BE USED FOR PIPE SUPPORTS AND ANY OTHER EQUIPMENT SUSPENDED FROM THE DOUBLE TEES.
- COORDINATE ALL ROOF OPENINGS & PENETRATIONS WITH APPROVED EQUIPMENT DRAWINGS AND "M" & "E" DRAWINGS PRIOR TO SHOP DRAWING SUBMITTAL.

METAL ROOF FRAMING NOTES:

- METAL ROOF DECK SHALL BE GALV. 1-1/2" TYPE B WIDE RIB, 18 GAUGE, GALVANIZED (G90) COATING. DECK FASTENERS AT SUPPORTS AND EXTERIOR EDGES SHALL BE 5/8" PUDDLE WELDS AT 36/4 PATTERN. SIDE LAPS SHALL BE FASTENED WITH #10 TEK SCREWS - 4 PER SPAN.
- METAL DECKING PANELS SHALL SPAN CONTINUOUS OVER 2 FRAMING MEMBERS MINIMUM.



METAL DECK PROPERTIES PER FOOT OF WIDTH:

DEPTH: 1-1/2"
 MIN GAGE: 20 GA (GALV)
 MIN Ix: 0.201 IN⁴ (+), 0.222 IN⁴ (-)
 MIN Sx: 0.234 IN³ (+), 0.247 IN³ (-)
 MIN Fy: 33,000 PSI

3. JOIST DESIGN LOADS:

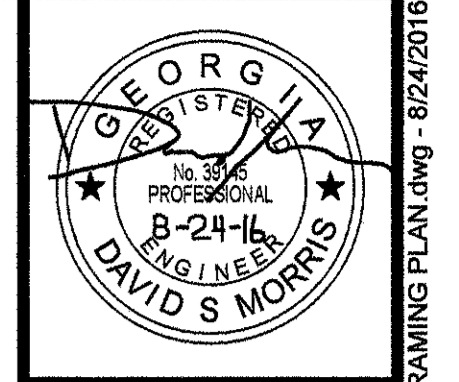
SUPERIMPOSED DEAD LOAD: 15 PSF
 SUPERIMPOSED LIVE LOAD: 20 PSF
 WIND PRESSURES (LRFD): +22 PSF, -41 PSF
 SNOW LOAD: PER 00-S-1
 CONCENTRATED EQUIP LOADS: PER EQUIP SHOP DRAWINGS

- STEEL JOIST, JOIST CONNECTIONS, AND BRIDGING SHALL BE DESIGNED BY THE JOIST MANUFACTURER. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A STATE OF GEORGIA REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW. IT SHALL BE THE RESPONSIBILITY OF THE JOIST DESIGNER TO DETERMINE THE EFFICIENT JOIST FOR THE INDICATED LOADS.
- FOR ROOF OPENINGS, DRAINS AND DETAILS, SEE "A", "M", & "H" DRAWINGS. ADDITIONAL FRAMING SHALL BE PROVIDED PER DETAIL F/100-S-5

NOTES:

- EQUIPMENT LOCATIONS AND WEIGHTS SHOWN AND SHALL BE VERIFIED WITH OTHER DISCIPLINES AND APPROVED EQUIPMENT DRAWINGS.

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 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 EIT PROJECT NO. 15-137



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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
DSGN: DSM	AUGUST 2016		
DRWN: DSM			
CHK: JVS			

DATE: AUGUST 2016

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 ROOF FRAMING PLAN

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 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: DATE: AUGUST 2016

REVISION DATE

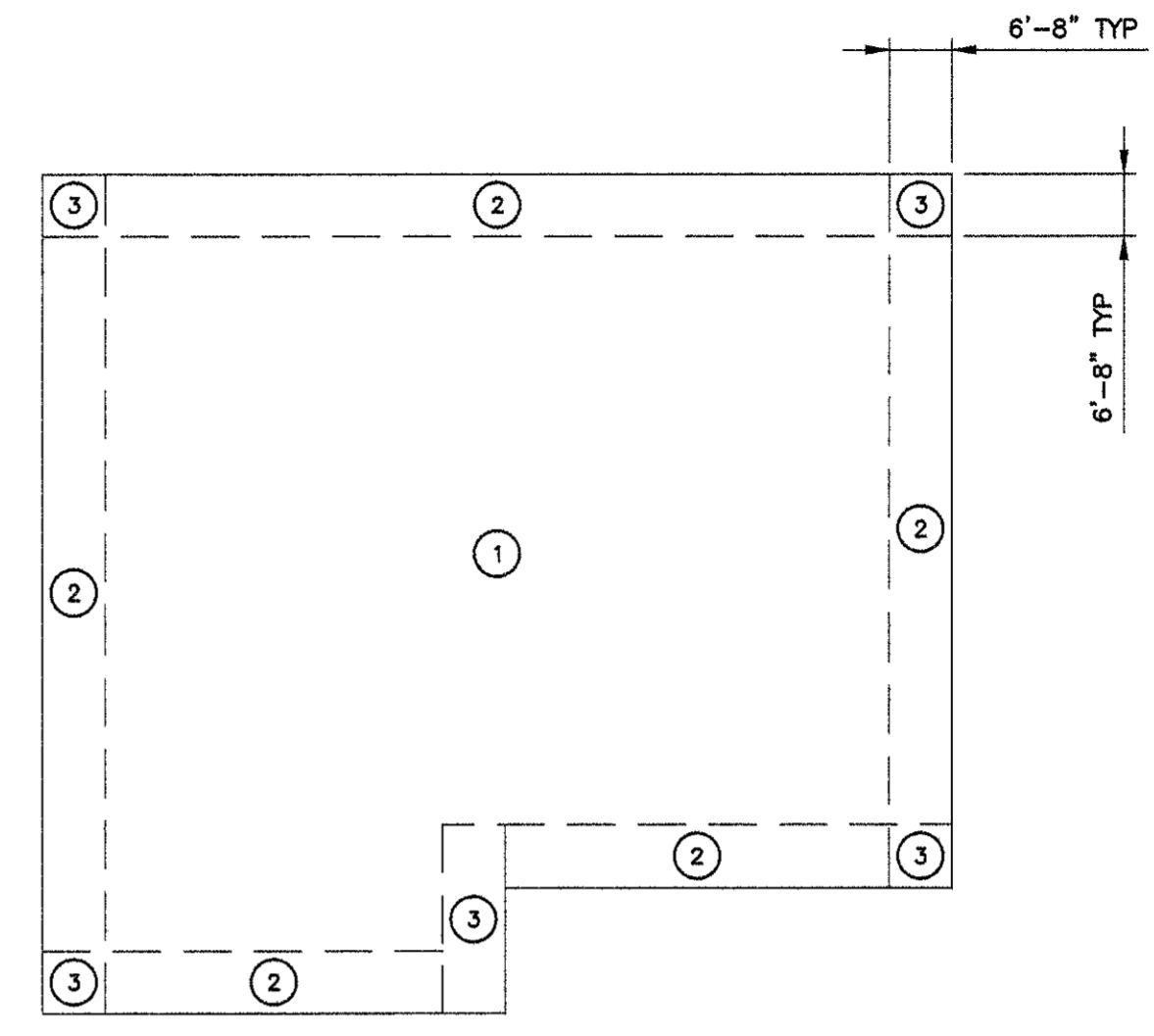
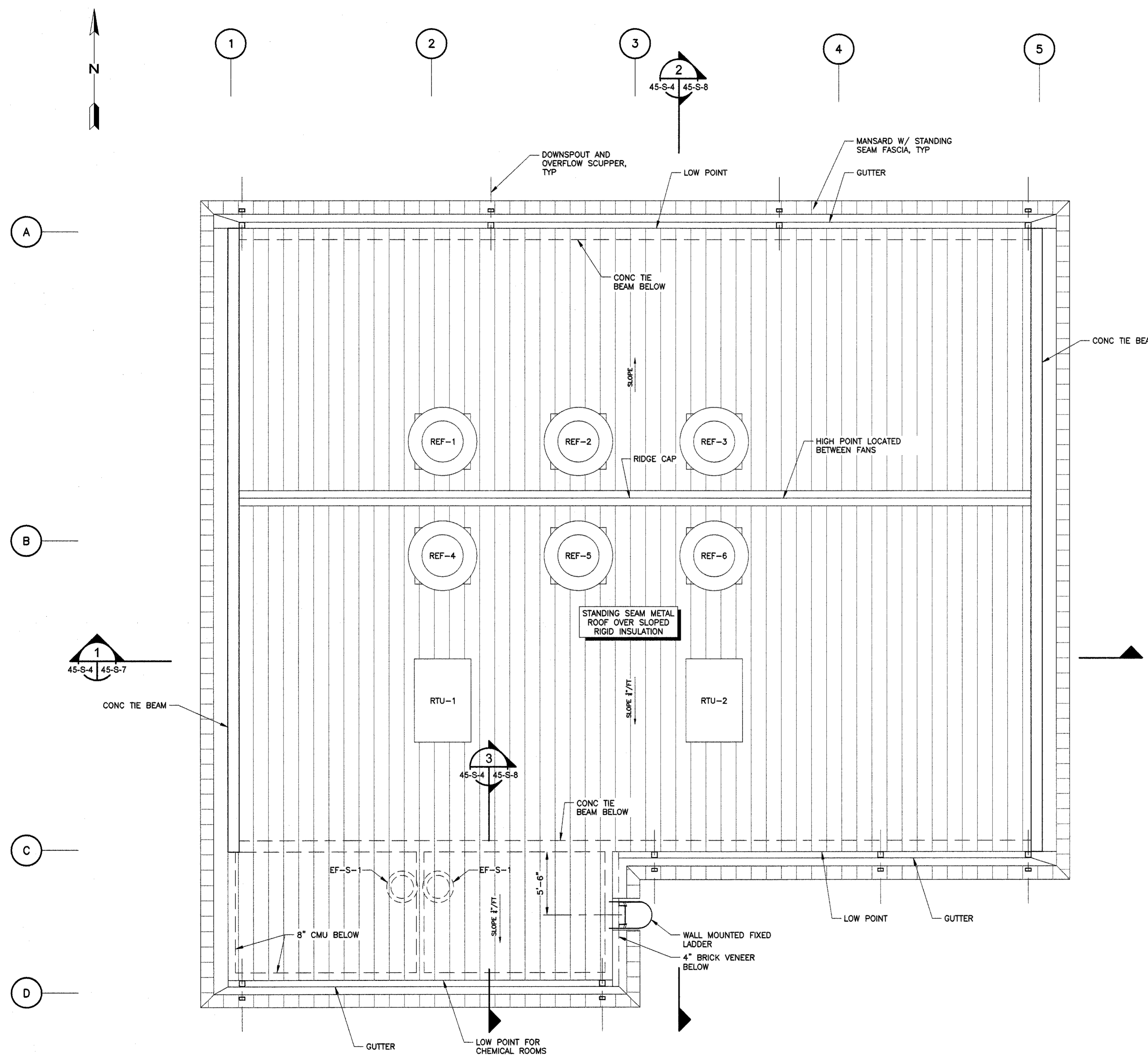
DSGN: DSM
 DRWN: DSM
 CHCK: JVS

BAR BELONGS TO US. ALL DIMENSIONS AND SCALES SHOWN ON THIS SHEET, IF NOT TYPED OTHERWISE, SHALL BE IN ACCORDANCE WITH THE SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

MBR PROCESS BUILDING
 ROOF PLAN

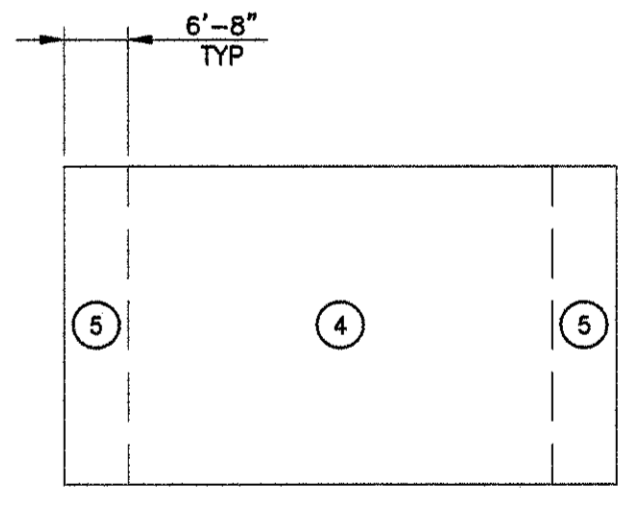
SHEET NO.
 45-S-5



ROOF WIND LOADS
 KEYPLAN
 NTS

AREA (FT ²)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	23.3	-42.4	23.3	-64.3	23.3	-91.7
25	22.2	-41.3	22.2	-56.7	22.2	-73.2
50	21.3	-40.5	21.3	-50.9	21.3	-59.2
>100	20.5	-39.7	20.5	-45.2	20.5	-45.2

AREA (FT ²)	ZONE 4 (FIELD)		ZONE 5 (CORNER)	
	(+)	(-)	(+)	(-)
<10	39.7	-42.1	39.7	-49.5
50	36.6	-39.1	36.6	-43.5
200	34.0	-36.5	34.0	-38.2
>500	32.3	-34.8	32.3	-34.8



WALL WIND LOADS
 ELEVATION
 NTS

WIND PRESSURE NOTES:

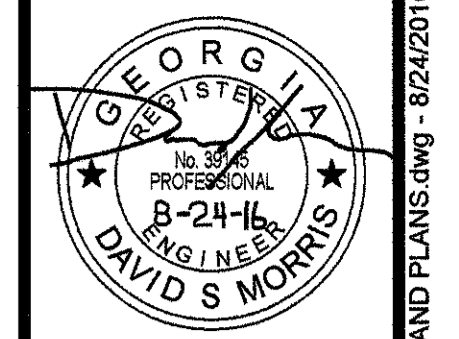
- SEE GENERAL STRUCTURAL NOTES ON S-001 FOR WIND DESIGN CRITERIA.
- DESIGN PRESSURES PROVIDED AT LRFD LEVEL TO OBTAIN ASD PRESSURES MULTIPLY BY A FACTOR OF 0.6.
- NEGATIVE SIGN INDICATED OUTWARD PRESSURES (SUCTION)
- CORNER ZONE WIDTH: SEE DIAGRAMS
- INTERPOLATION OF WIND PRESSURES IS PERMITTED.

NOTES:

- ALL EQUIPMENT LOCATIONS SHOWN SHALL BE VERIFIED WITH OTHER DISCIPLINES.

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

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ENGINEERING TECHNOLOGIES, INC.
 3851 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

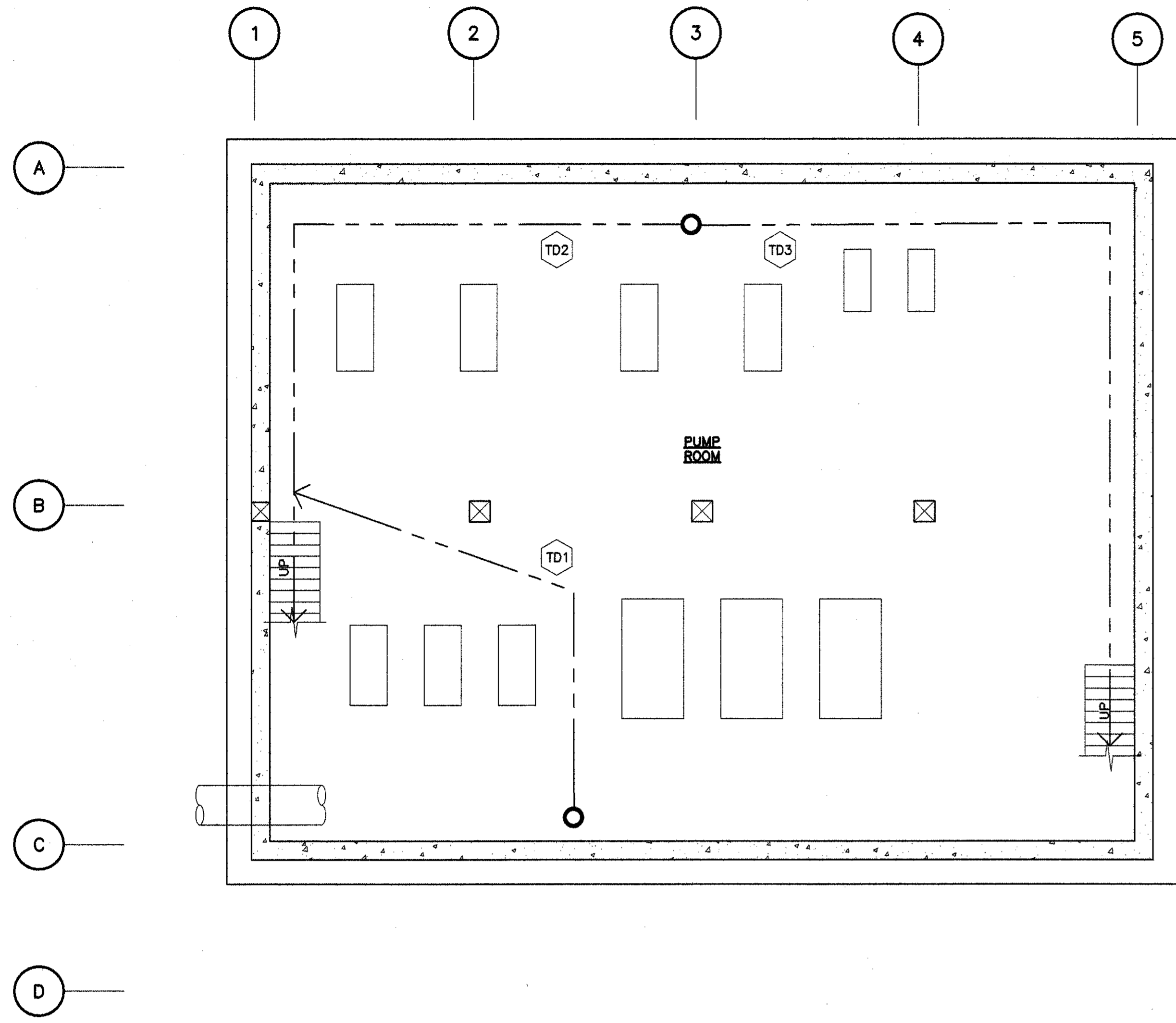
PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

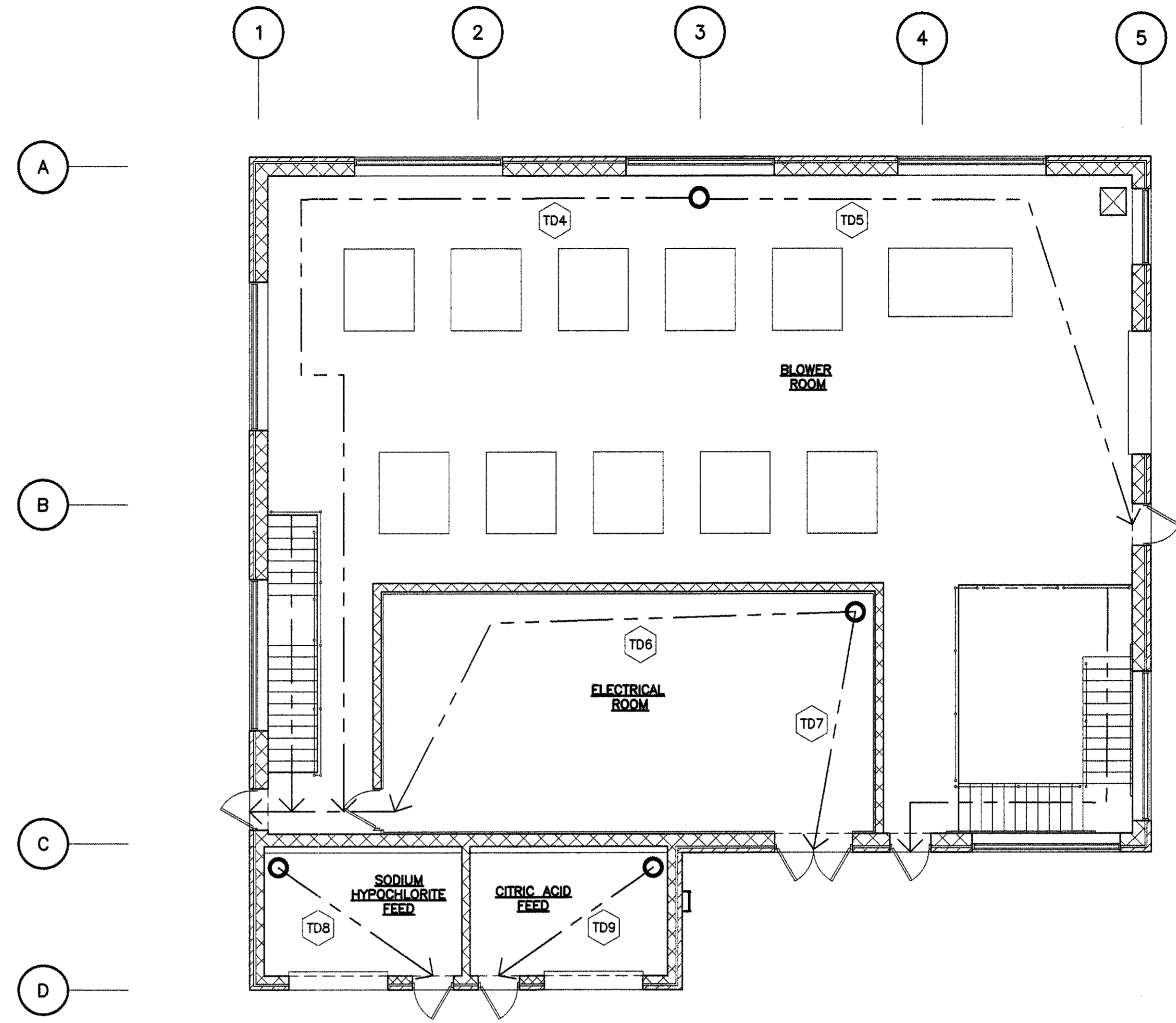
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 DRWN: DSM
 CHCK: JVS
 BAR BELOW IS 1" LONG FOR SCALES LONGER THAN 1' ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 CODE ANALYSIS AND PLANS

SHEET NO.
 45-S-6



LOWER LEVEL - EL. 778.00
PLAN
 1/8"=1'-0"



LEVEL 1 - EL. 792.00
PLAN
 1/8"=1'-0"

BUILDING DATA:

PROCESS BUILDING

CODE REVIEW: 2012 IBC

OCCUPANCY CLASSIFICATION: GROUP F-2 FACTORY INDUSTRIAL
CONSTRUCTION TYPE: TYPE II-B, NONSPRINKLED
MAX ALLOWABLE SQ FOOTAGE: B = 23,000 SF PROVIDED = 7,861 SF
MAX ALLOWABLE HEIGHT: B = 55 FT PROVIDED = ±21'-0"
NO. FLOORS PERMITTED: B = 3 FLRS
OCCUPANCY SEPERATION: ALL ONE OCCUPANCY
AUTOMATIC FIRE SPRINKLERS: NOT REQUIRED

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS) PER TABLE 601

PRIMARY STRUCTURAL FRAME	0 HOURS
BEARING WALLS - INTERIOR & EXTERIOR	0 HOURS
NONBEARING WALLS & PARTITION - EXTERIOR	0 HOURS
NONBEARING WALLS & PARTITION - INTERIOR	0 HOURS
FLOOR CONSTRUCTION & SECONDARY MEMBERS	0 HOURS
ROOF CONSTRUCTION & SECONDARY MEMBERS	0 HOURS

OCCUPANT LOAD		
FACTORY INDUSTRIAL GROUP F-2 (IBC 304)		
FLOOR/ROOM OR SPACE	FLOOR AREA & OCCUPANT LOAD FACTOR	NO. OF OCCUPANTS
LOWER LEVEL		
101 - PUMP ROOM	3686 SF, 100	37
LEVEL 1		
102 - BLOWER ROOM	2865 SF, 100	29
103 - ELECTRICAL ROOM	774 SF, 100	8
104 - SODIUM HYPOCHLORITE FEED ROOM	168 SF, 100	2
105 - CITRIC ACID FEED ROOM	168 SF, 100	2
TOTAL		78

EGRESS WIDTH: WITHOUT SPRINKLER SYSTEM = 0.2" / PERSON
MIN EXIT DOOR WIDTH: 0.2" X 78 OCCUPANTS = 15.6" PROVIDED = 252"
MIN NUMBER OF EXITS: 2 PROVIDED = 4
MIN CORRIDOR WIDTH: 44" PROVIDED = 78"
MAX CORRIDOR DEAD END: 20 FT
ADA COMPLIANCE: NO

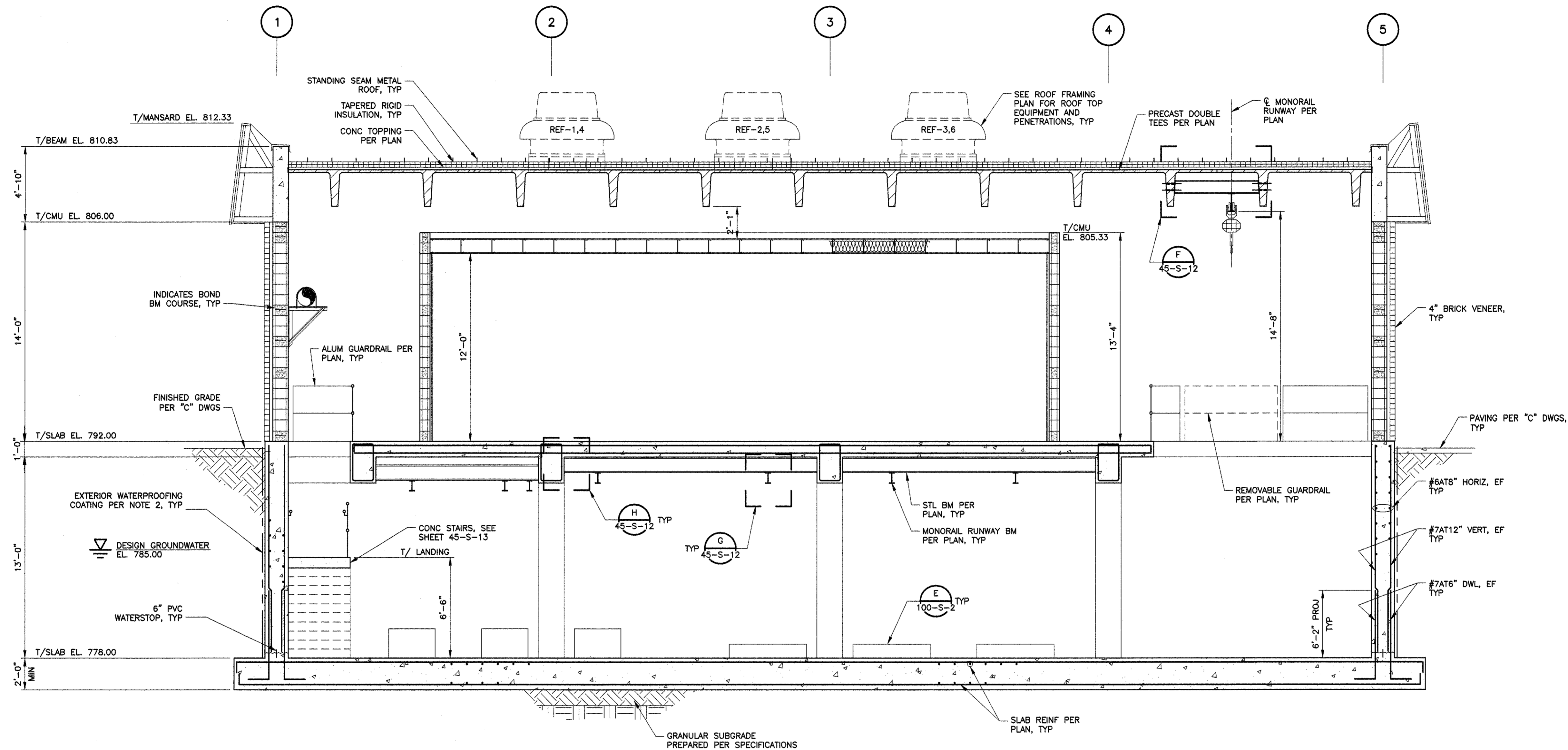
CHEMICALS						
CHEMICAL BEING STORED	HEALTH	FIRE	REACTIVITY	SPECIAL HAZARD	QUANTITY	MAX. EXEMPT QUANTITY PER CONTROL AREA
SODIUM HYPOCHLORITE	3	0	0	CORROSIVE	330 Gal.	500 Gal.
CITRIC ACID	2	1	0	IRRITANT	330 Gal.	500 Gal.

MAX ALLOWABLE TRAVEL DISTANCES: 300 FT

MAXIMUM DISTANCES PROVIDED:

- TD1 TRAVEL DISTANCE = 71.67 FT
- TD2 TRAVEL DISTANCE = 82.08 FT
- TD3 TRAVEL DISTANCE = 102.17 FT
- TD4 TRAVEL DISTANCE = 92.17 FT
- TD5 TRAVEL DISTANCE = 55.25 FT
- TD6 TRAVEL DISTANCE = 58.17 FT
- TD7 TRAVEL DISTANCE = 19.67 FT
- TD8 TRAVEL DISTANCE = 16.67 FT
- TD9 TRAVEL DISTANCE = 16.67 FT

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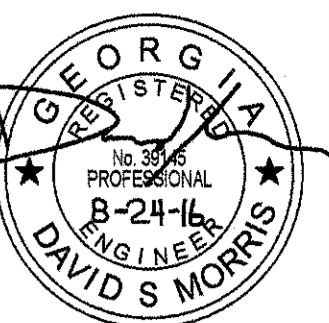


SECTION 1
SCALE: 1/4" = 1'
45-S-1 45-S-7

NOTES:

1. PERIMETER WALLS BELOW GRADE AND BASE SLAB CONCRETE SHALL BE POURED WITH XYPEX C-1000 WATERPROOFING ADDITIVE.
2. EXTERIOR OF WALLS BELOW GRADE SHALL BE COATED W/ XYPEX MODIFIED WATERPROOFING PER THE MANUFACTURER'S INSTRUCTIONS. TWO COATS SHALL BE APPLIED.

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
EAT PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: DATE: AUGUST 2016

REVISION	DATE

DSGN: DSM
DRWN: DSM
CHK: J/S

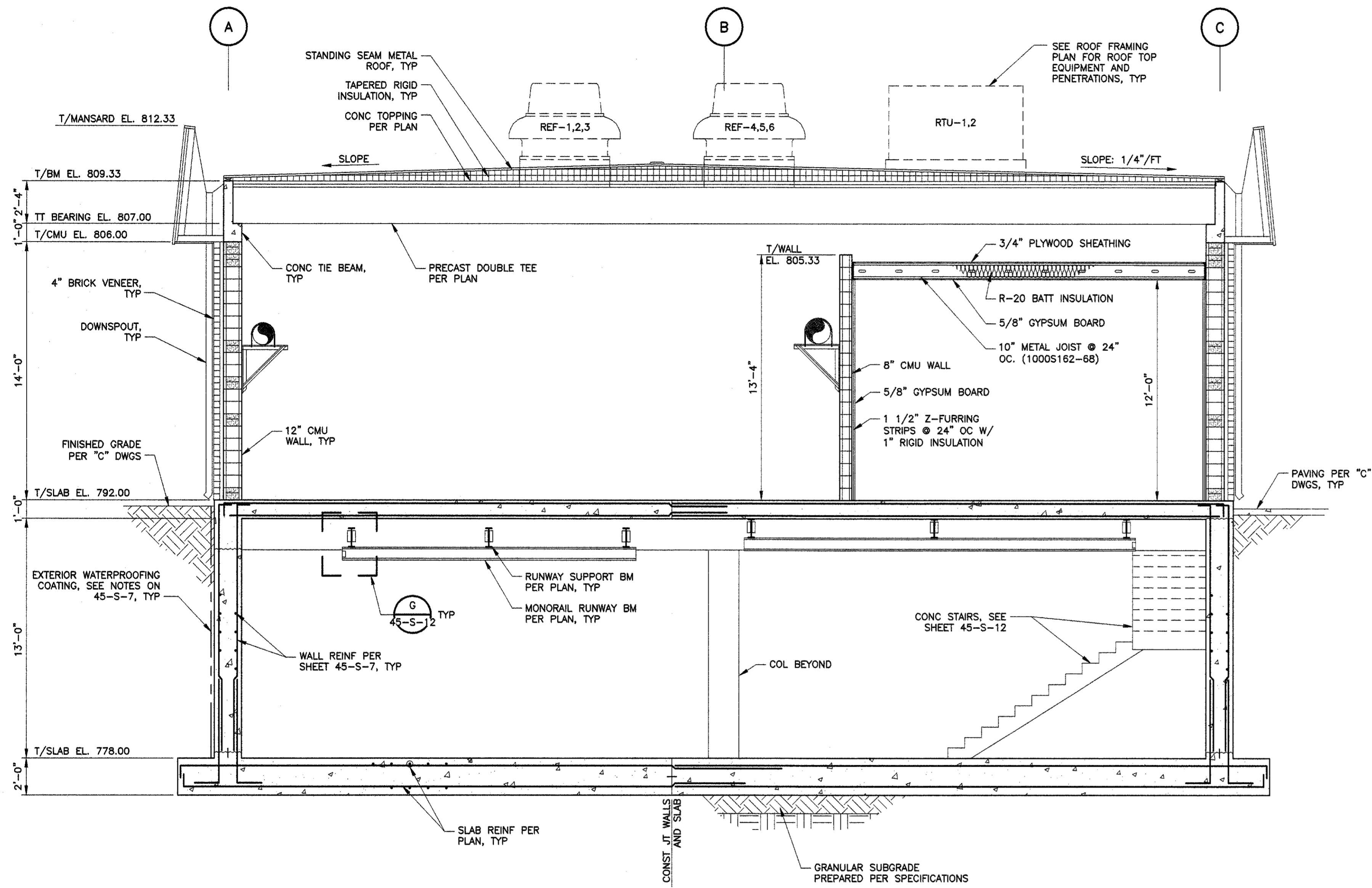
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LONGER THAN 1/8" LONG
LONG ON THIS SHEET ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

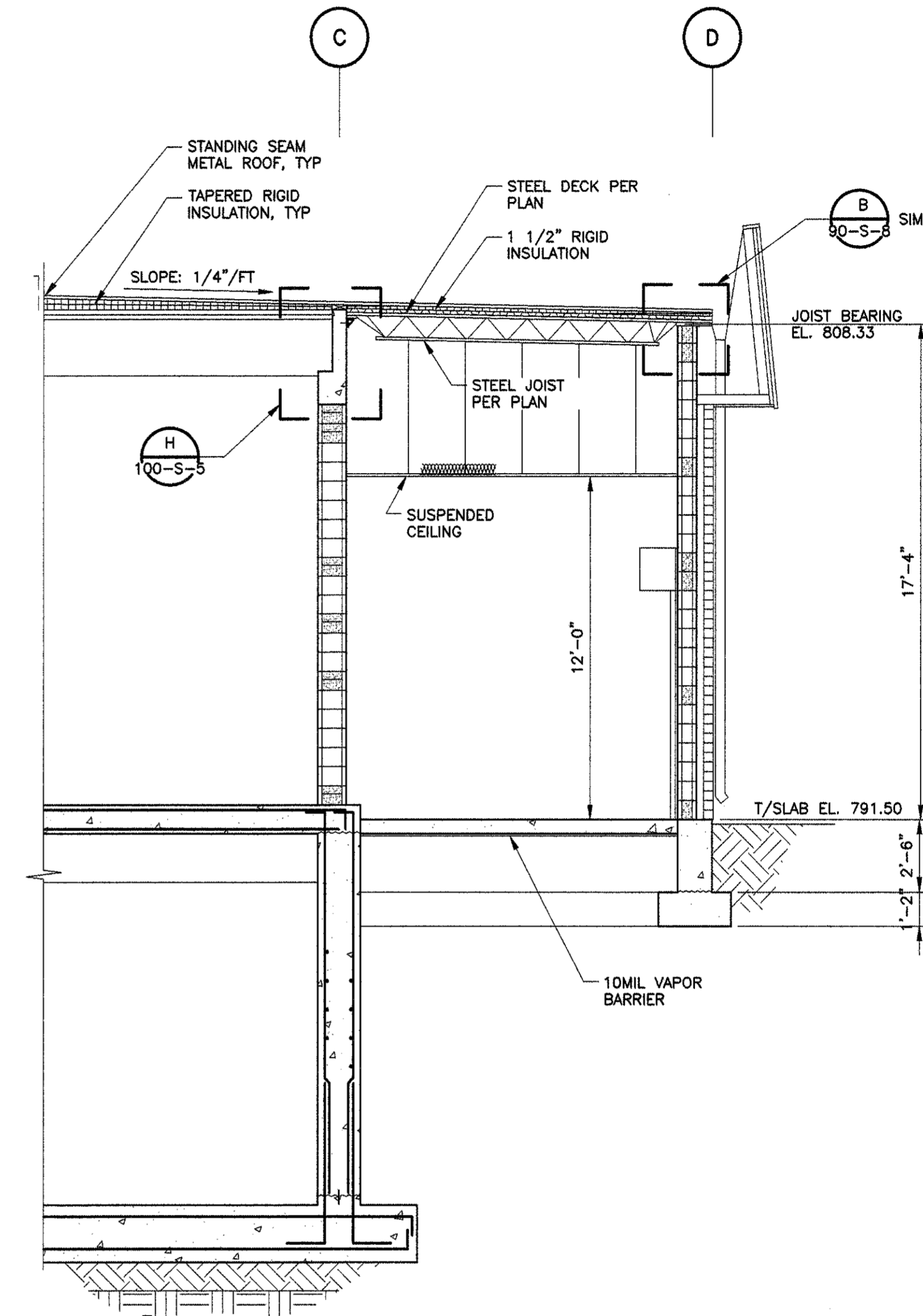
MBR PROCESS BUILDING
SECTIONS 1 OF 2

SHEET NO.

45-S-7



SECTION 2
SCALE: 1/4" = 1'
45-S-1 | 45-S-8



SECTION 3
SCALE: 1/4" = 1'
45-S-2 | 45-S-8

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
EIT PROJECT NO. 15-137



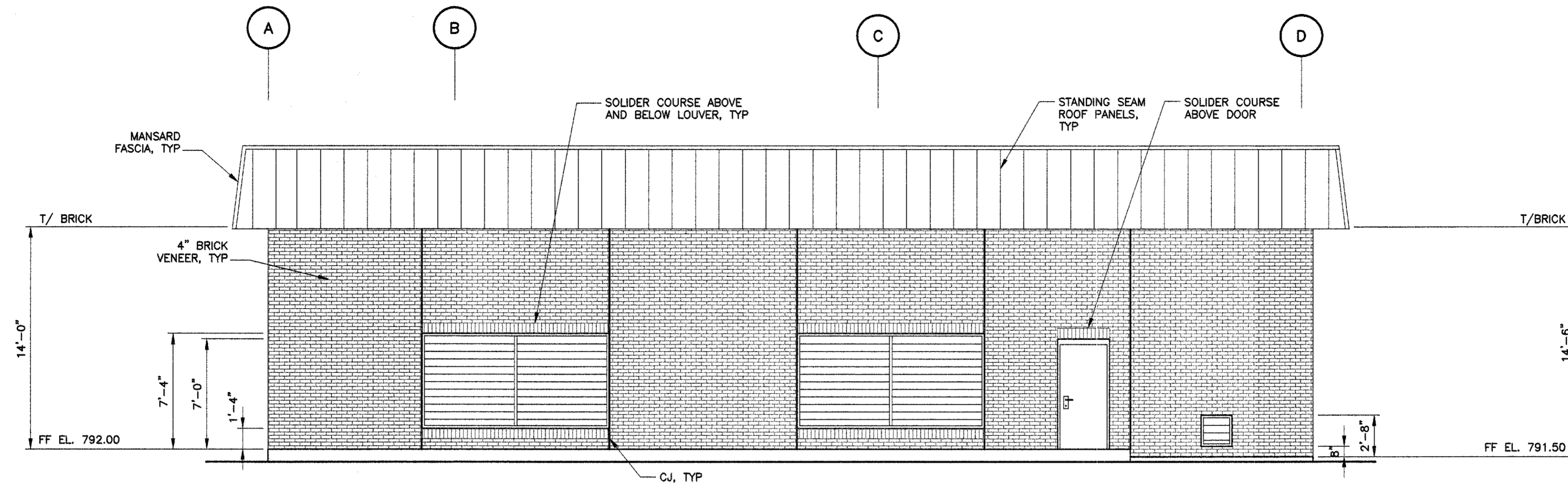
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

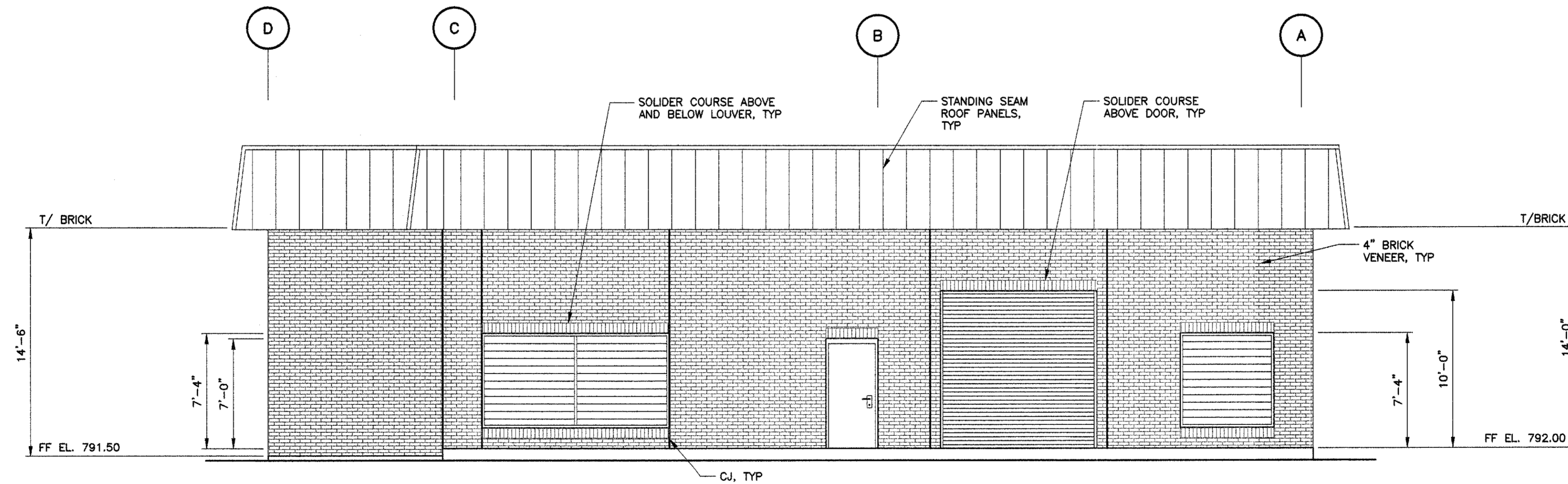
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DRWN: DSM
CHK: JVS
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LONG ON THIS SHEET. ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
SECTIONS 2 OF 2

SHEET NO.
45-S-8



WEST
ELEVATION
3/16"=1'-0"

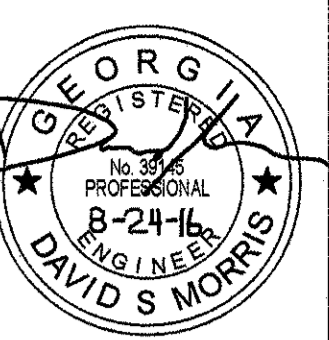


EAST
ELEVATION
3/16"=1'-0"



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	AUGUST 2016

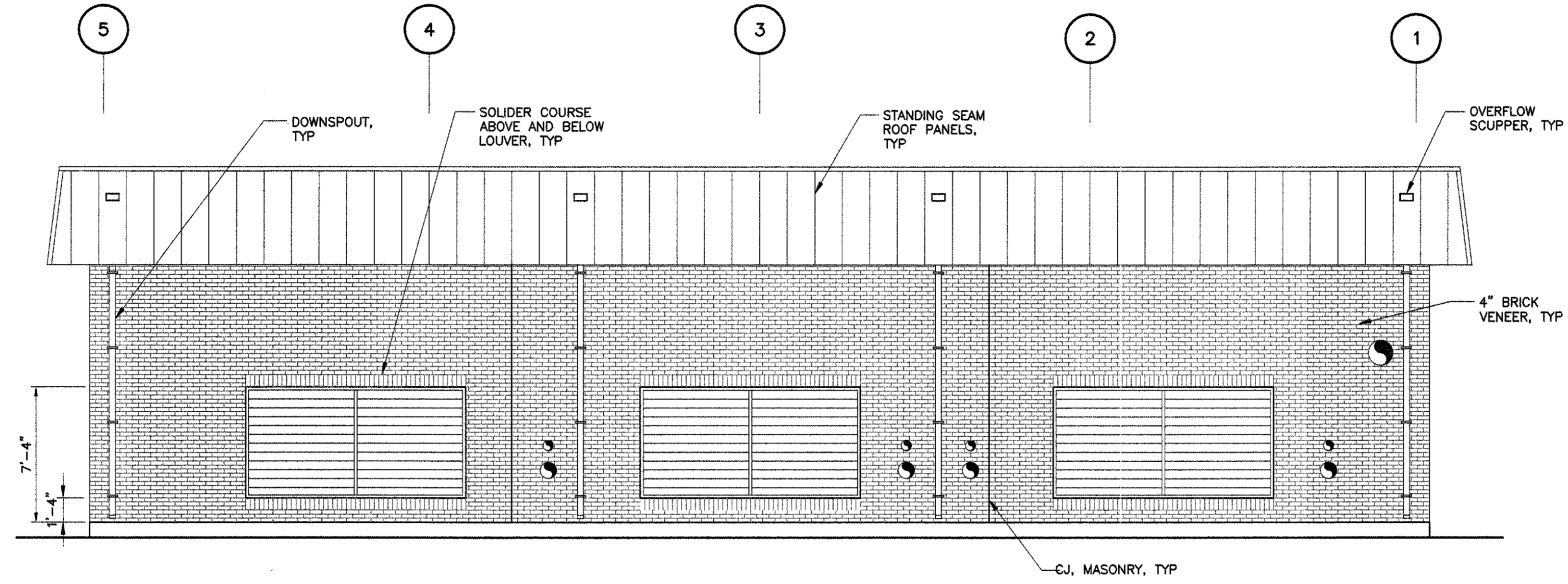
REVISION	DATE

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CHK: JVS
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SHOWN ON THIS SHEET. ADJUST
LONG ON THIS SHEET. ADJUST
SCALES ACCORDINGLY.

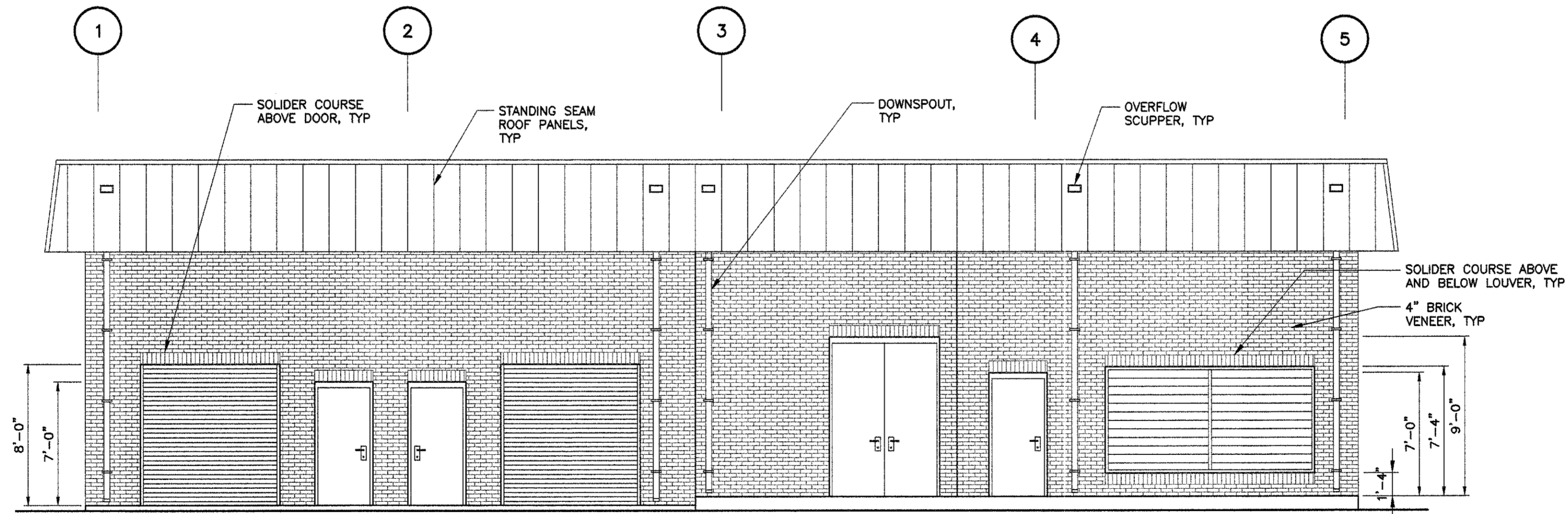
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
ELEVATIONS 1 OF 2

SHEET NO.
45-S-0

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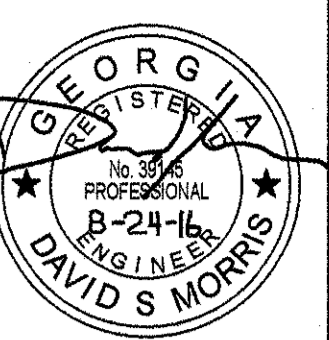


NORTH
ELEVATION
3/16"=1'-0"



SOUTH
ELEVATION
3/16"=1'-0"

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ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

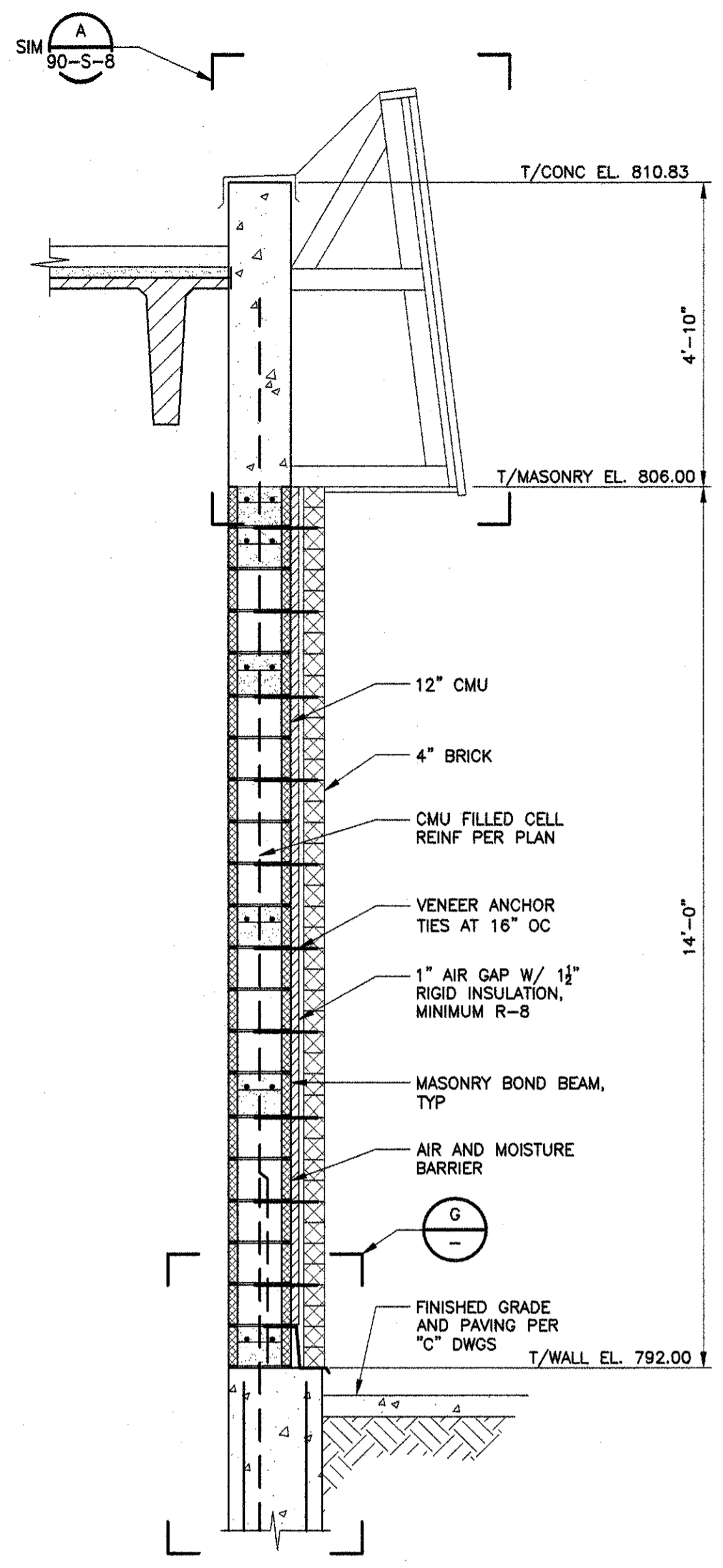
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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DSGN: DSM
DRWN: DSM
CHK: JVS
FOR ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS SHALL BE TO FACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS SHALL BE TO FACE UNLESS NOTED OTHERWISE.

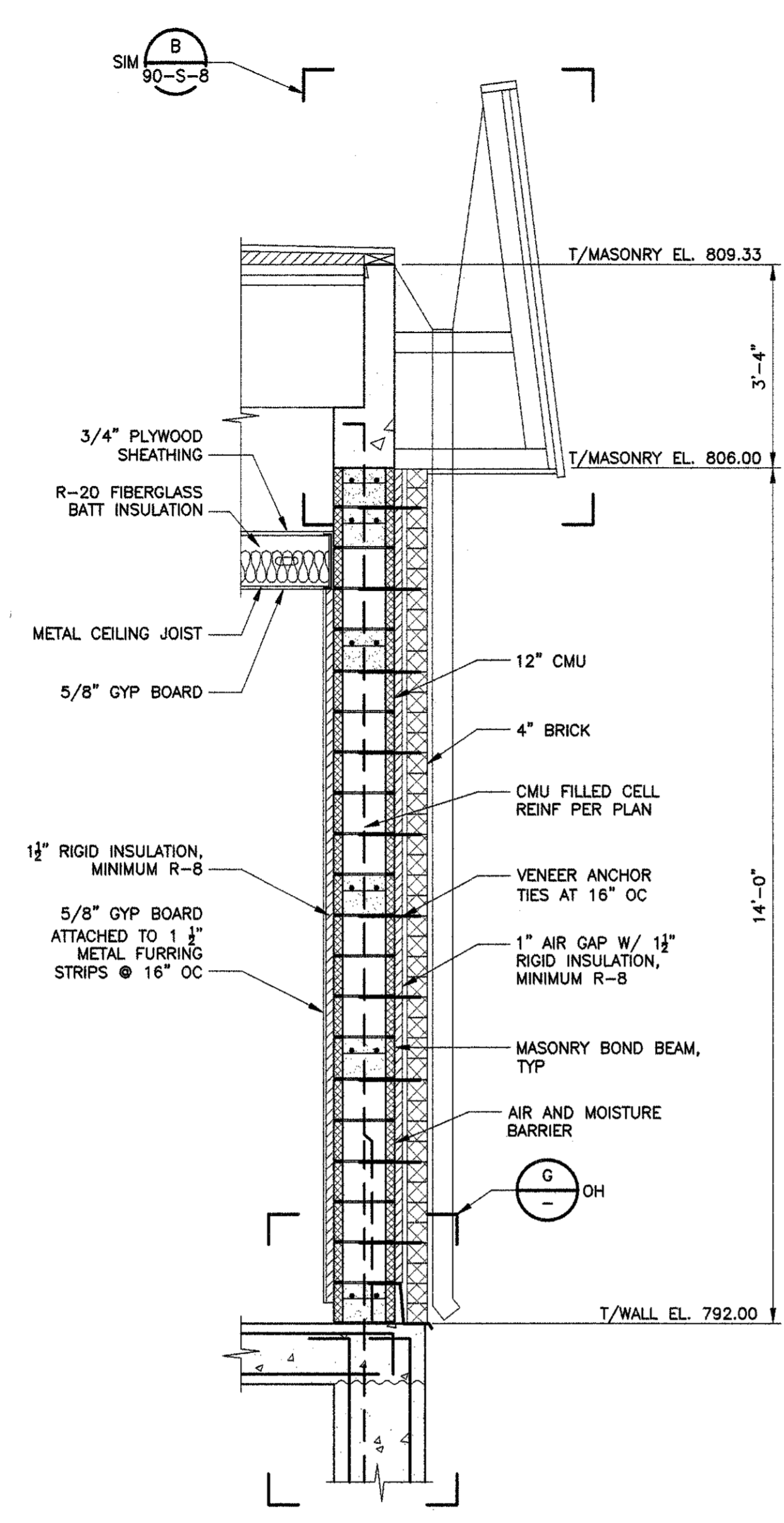
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
ELEVATIONS 2 OF 2

SHEET NO.
45-S-10

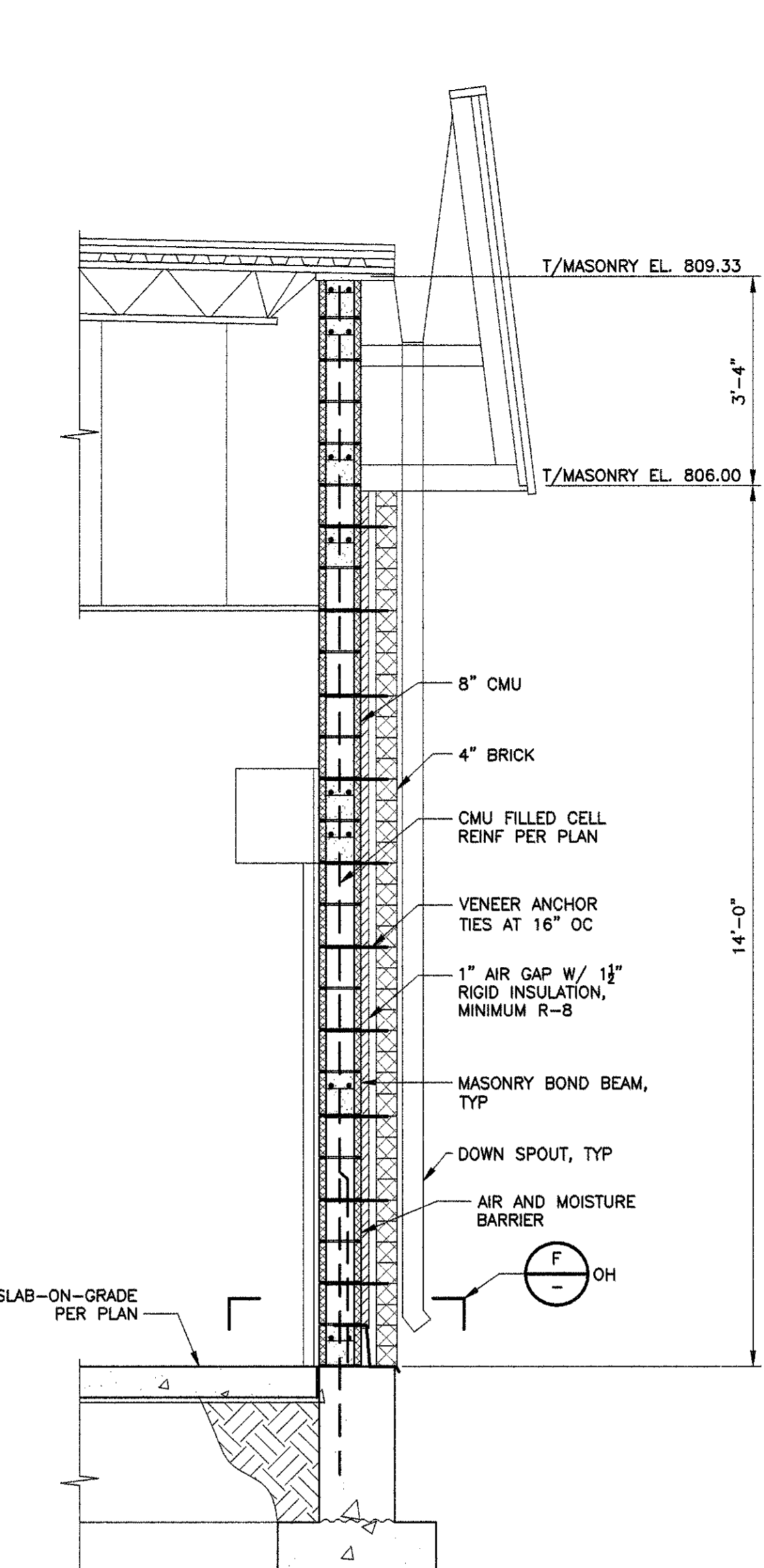
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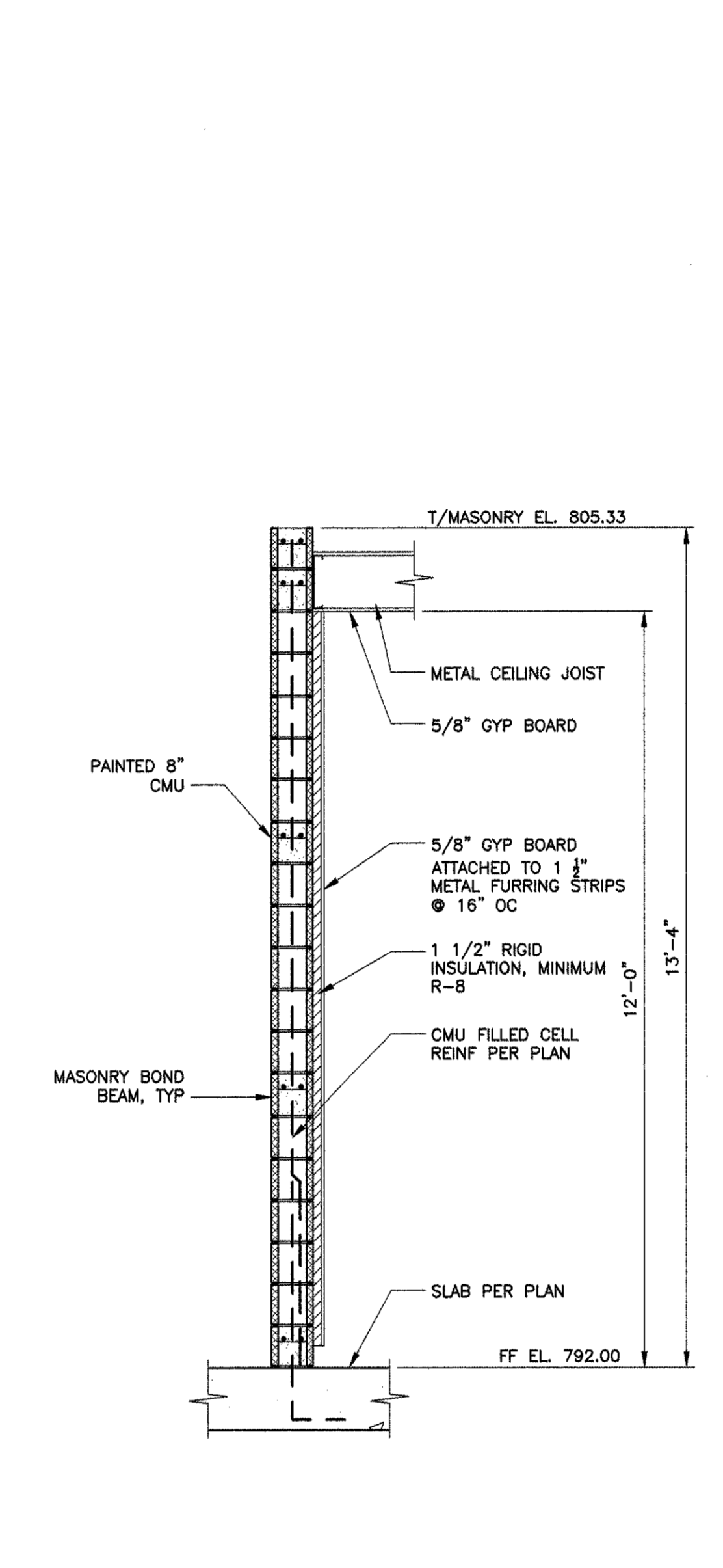
WALL SECTION
DETAIL A
SCALE: 1/2" = 1'
35-S-2 | 35-S-5



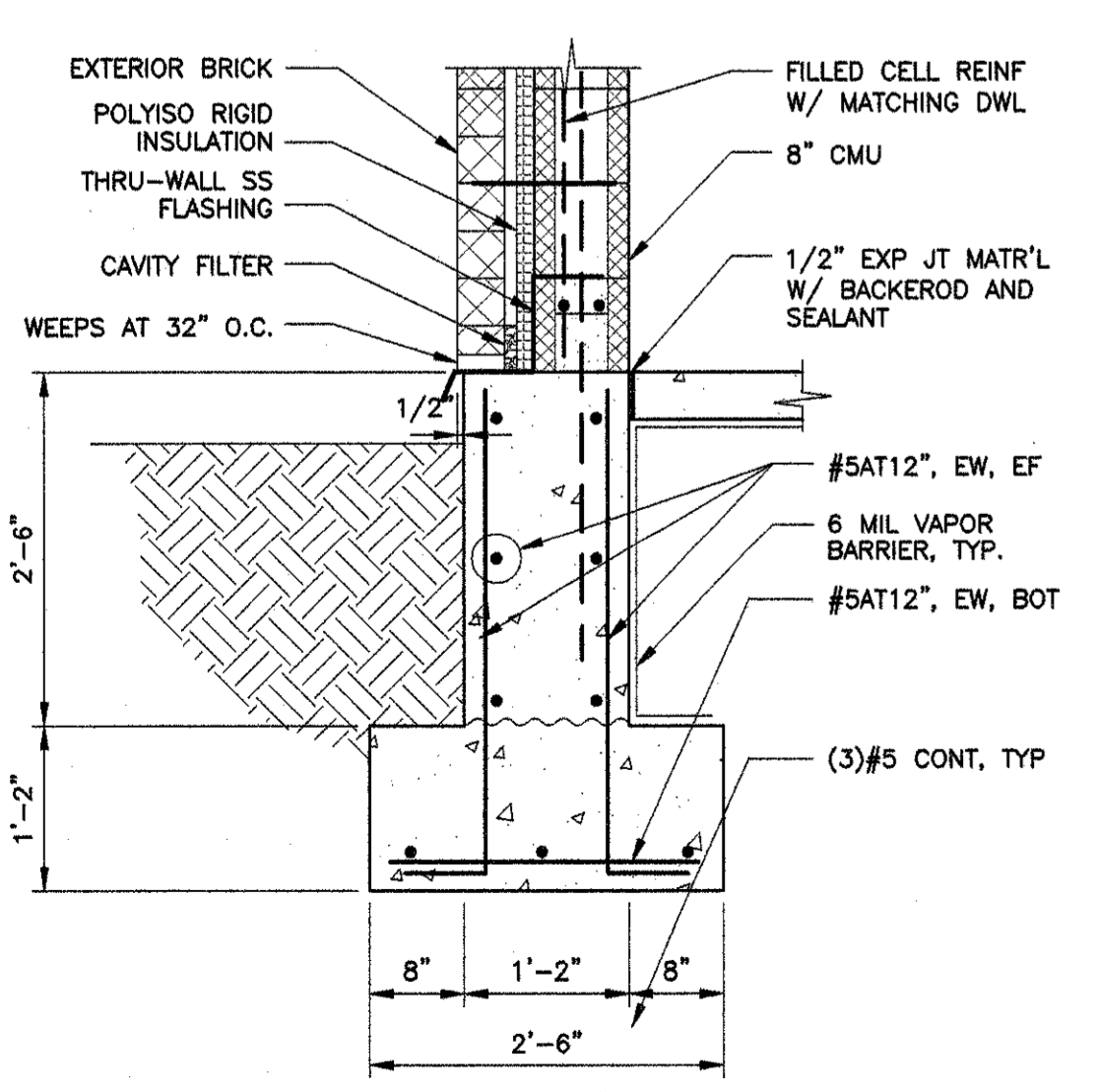
WALL SECTION
DETAIL B
SCALE: 1/2" = 1'
35-S-2 | 35-S-5



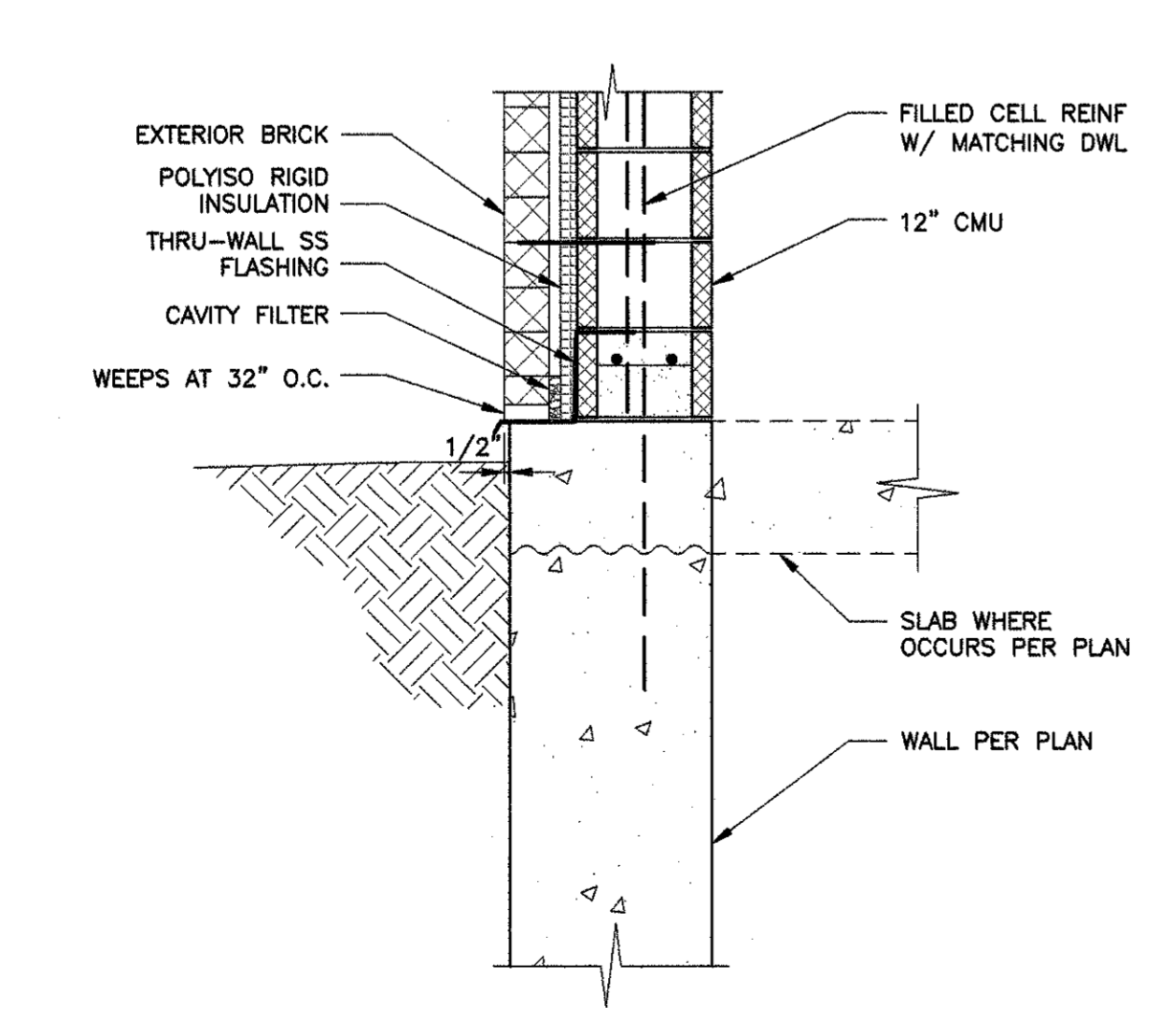
WALL SECTION
DETAIL C
SCALE: 1/2" = 1'
35-S-2 | 35-S-5



WALL SECTION
DETAIL D
SCALE: 1/2" = 1'
35-S-2 | 35-S-5



FOOTING/WALL BASE AT CHEMICAL FEED ROOMS
DETAIL F
SCALE: 1/2" = 1'
35-S-2 | 35-S-5



TYPICAL WALL BASE
DETAIL G
SCALE: 1/2" = 1'
35-S-2 | 35-S-5

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ESI
ENGINEERING STRATEGIES, INC.
3655 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

REGISTERED PROFESSIONAL ENGINEER
DAVID S. MORRIS

PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

DSGN: DSM
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CHK: JVS

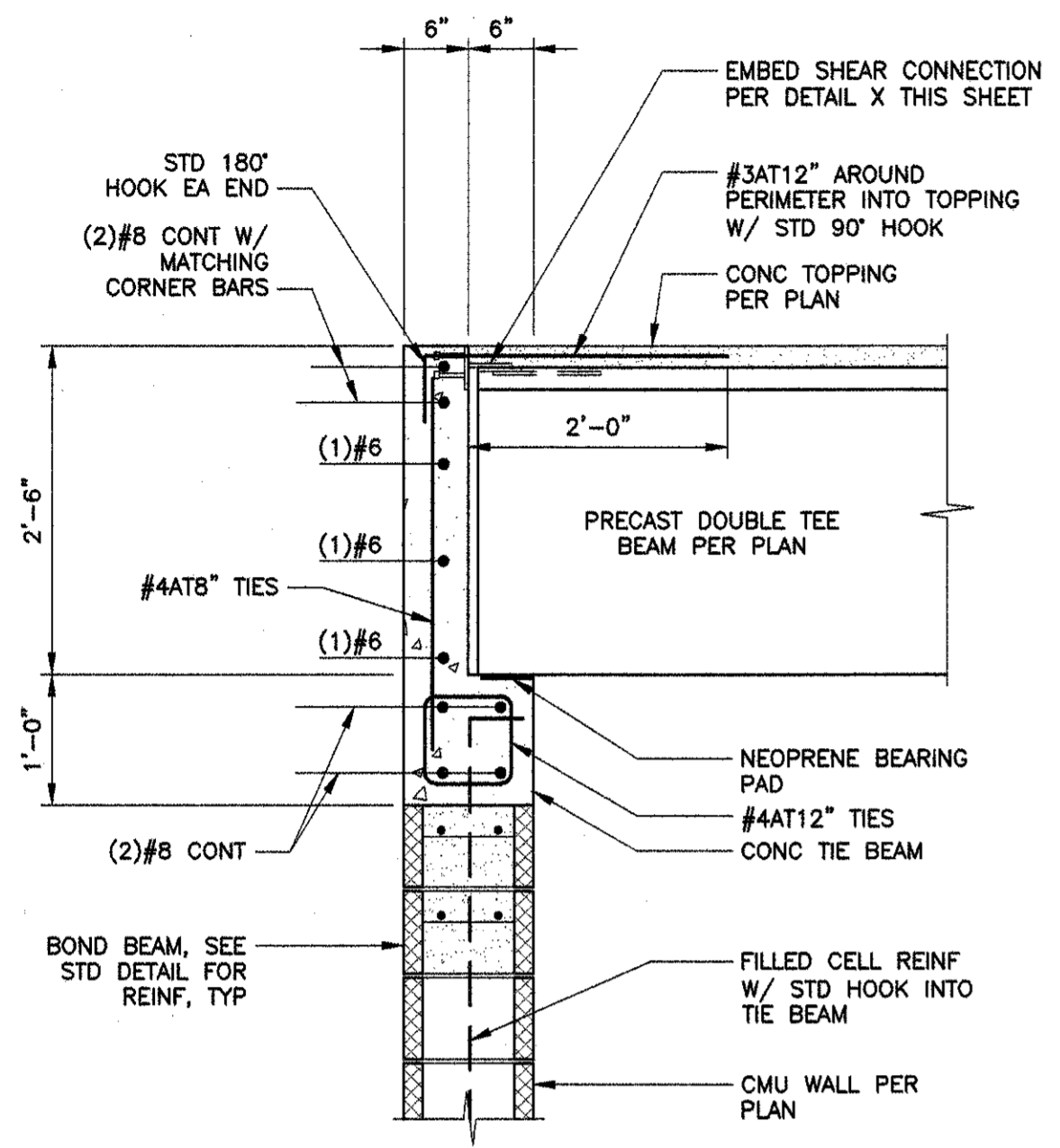
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

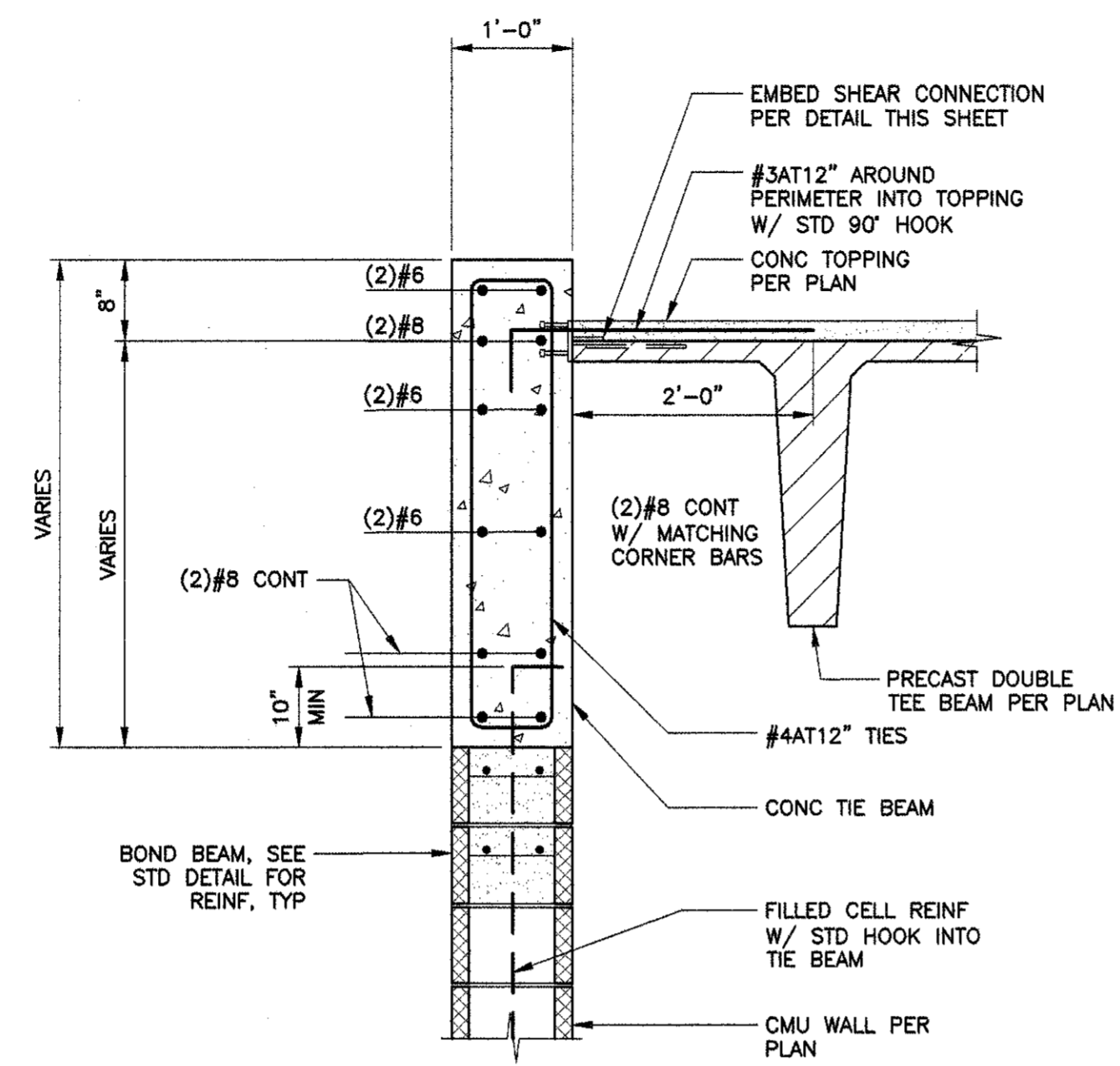
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DETAILS

SHEET NO.
45-S-11

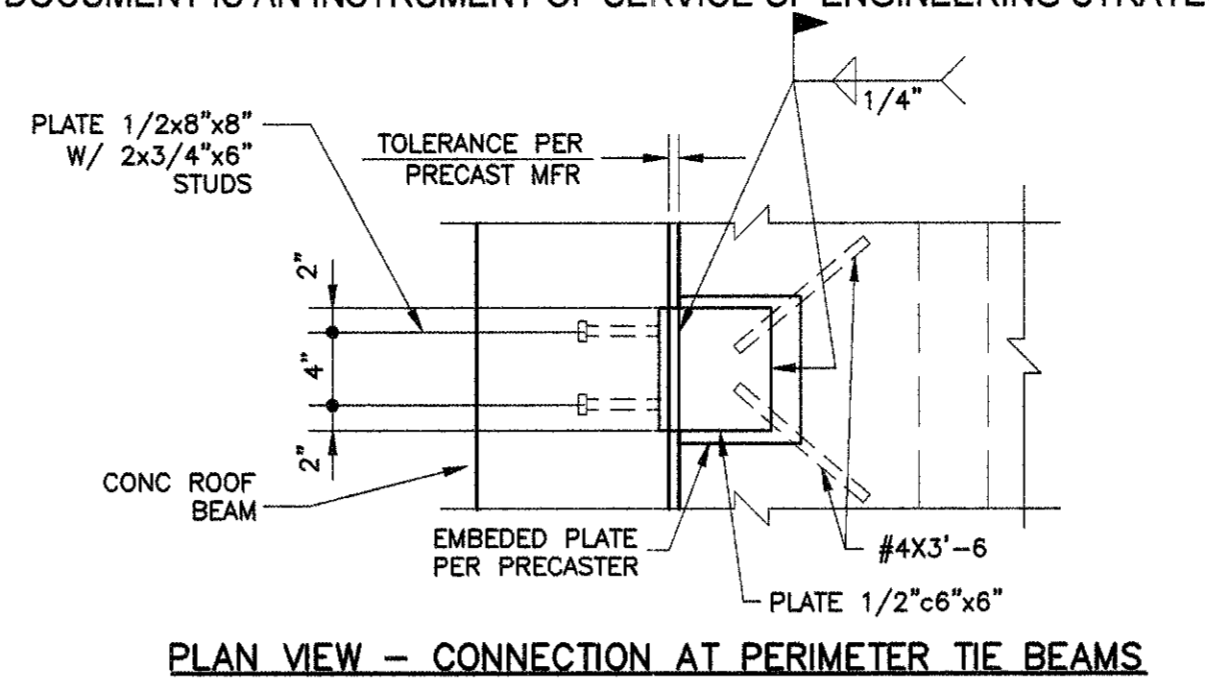
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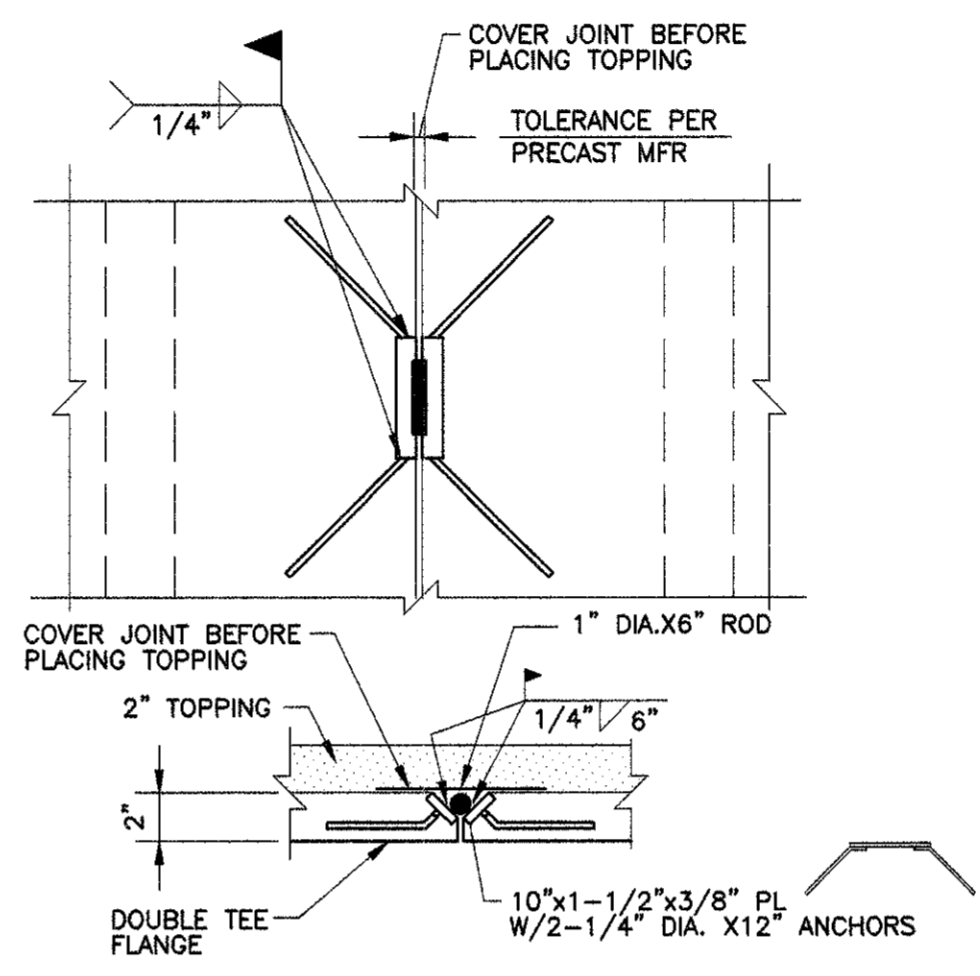
DOUBLE TEE END BEARING AT ROOF BEAM
DETAIL B
 SCALE: 3/4" = 1'
 45-S-3 | 45-S-12



DOUBLE TEE SIDE CONNECTION AT ROOF BEAM
DETAIL C
 SCALE: 3/4" = 1'
 45-S-3 | 45-S-12

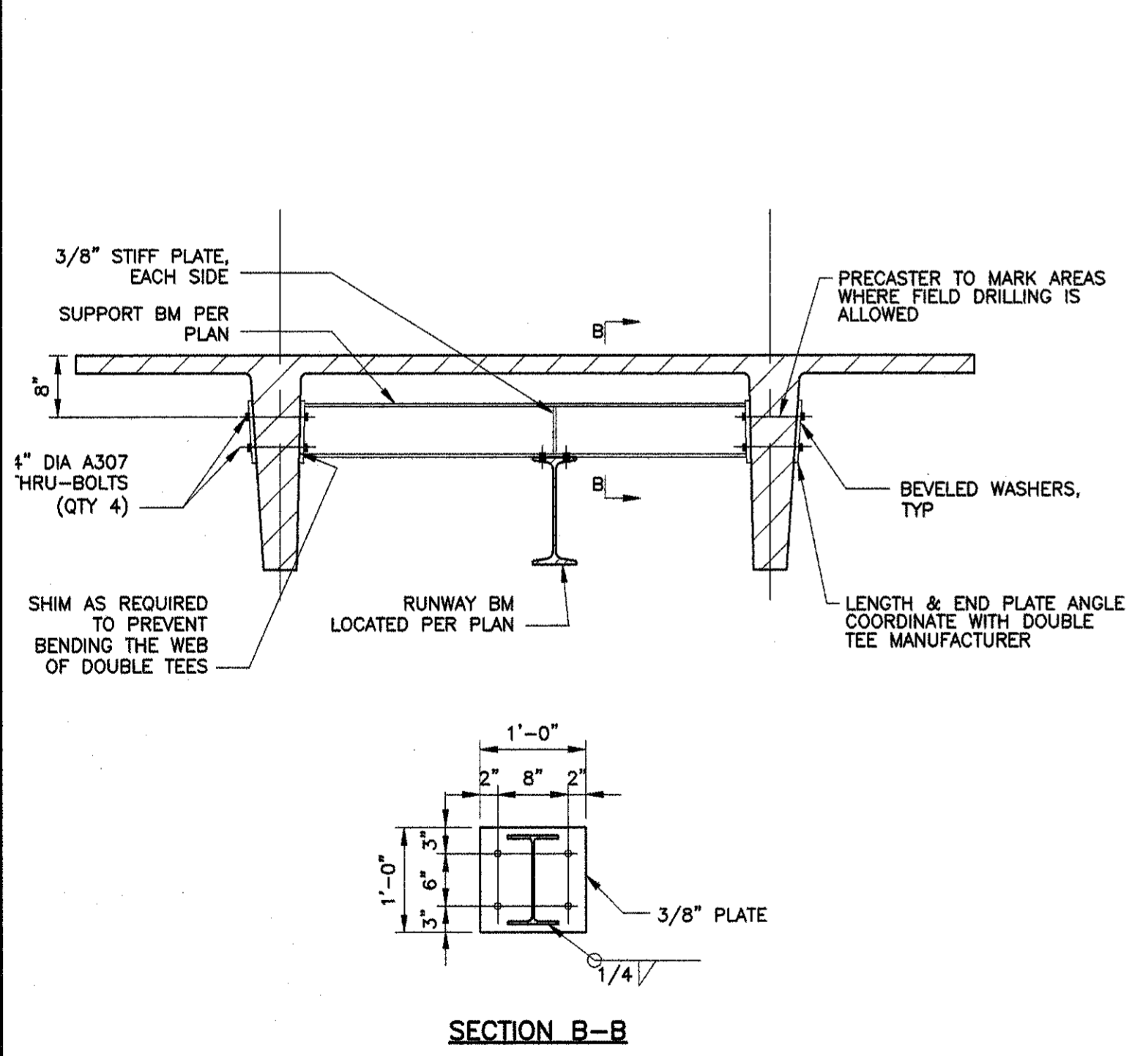


PLAN VIEW - CONNECTION AT PERIMETER TIE BEAMS

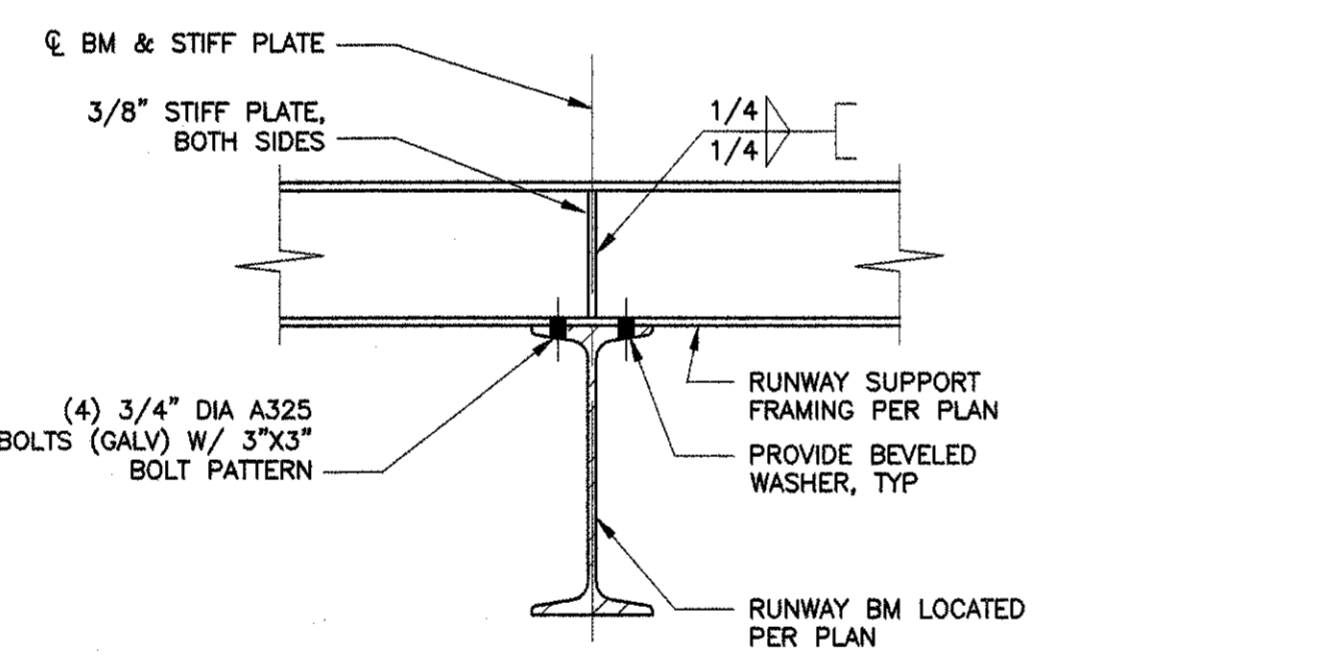


PLAN VIEW - CONNECTION BETWEEN DOUBLE TEES

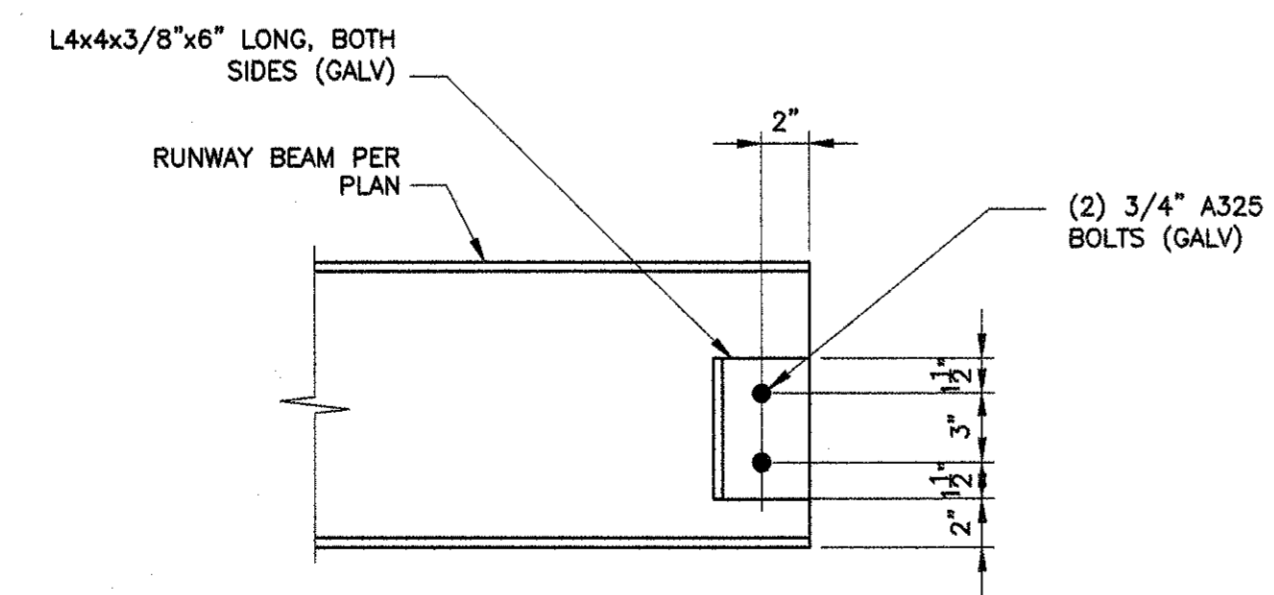
SHEAR PLATE CONNECTIONS
DETAIL D
 SCALE: 3/4" = 1'
 45-S-3 | 45-S-12



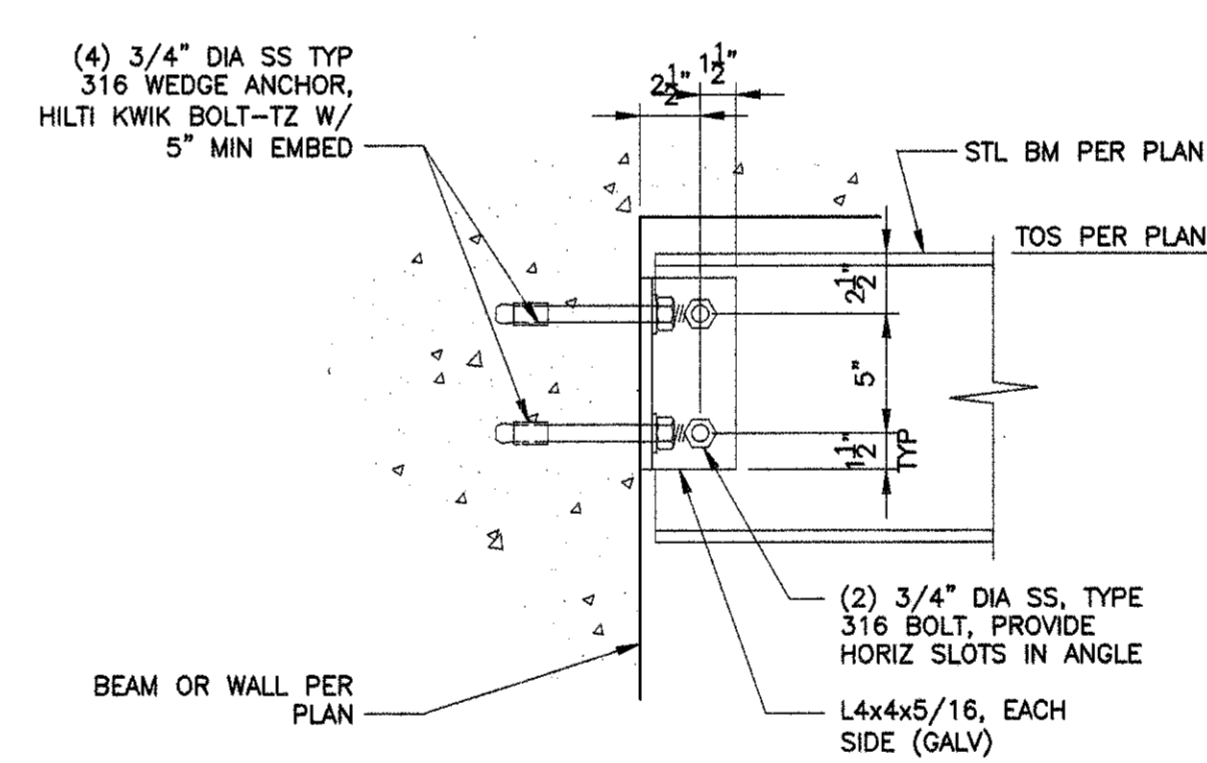
SECTION B-B



RUNWAY CONNECTION SECTION



RAIL STOP SIDE ELEVATION



CONNECTION DETAIL
DETAIL H
 SCALE: 1/2" = 1'
 45-S-7 | 45-S-12

DOUBLE TEE SIDE CONNECTION AT ROOF BEAM
DETAIL F
 SCALE: 3/4" = 1'
 45-S-3 | 45-S-12

RUNWAY BEAM CONNECTION AND RAIL STOP
DETAIL G
 SCALE: 1/2" = 1'
 45-S-3 | 45-S-12

NOTE: ALL STEEL SHALL BE HOT-DIPPED GALVANIZED

ENGINEERING TECHNOLOGIES, INC.
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 E/T PROJECT NO. 15-137

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

REGISTERED PROFESSIONAL ENGINEER
 DAVID S. MORRIS

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

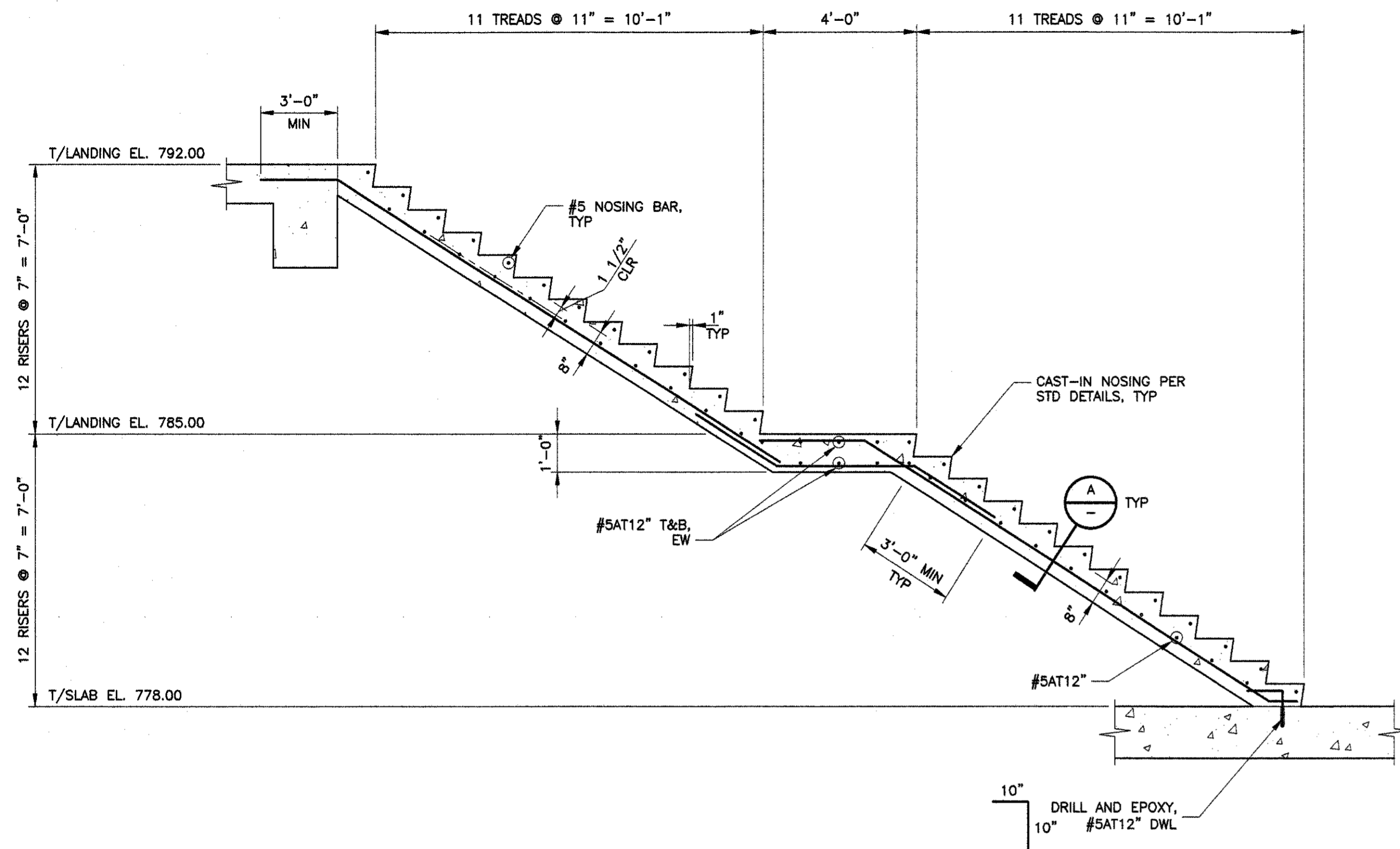
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DRWN: DSM	AUGUST 2016
CHKD: JVS	REVISION

BAR BEYOND 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" SCALES ACCORDINGLY.

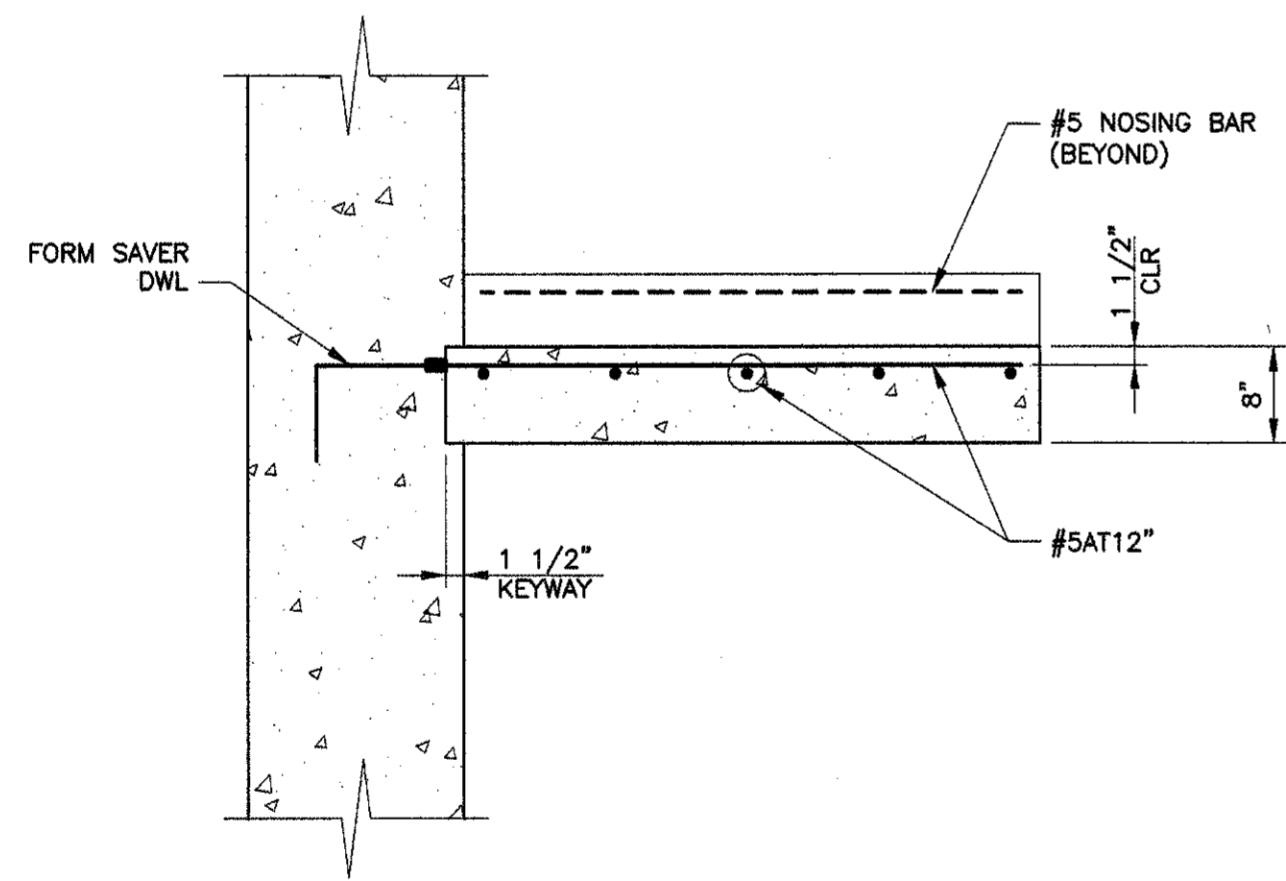
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 DETAILS

SHEET NO.
 45-S-12

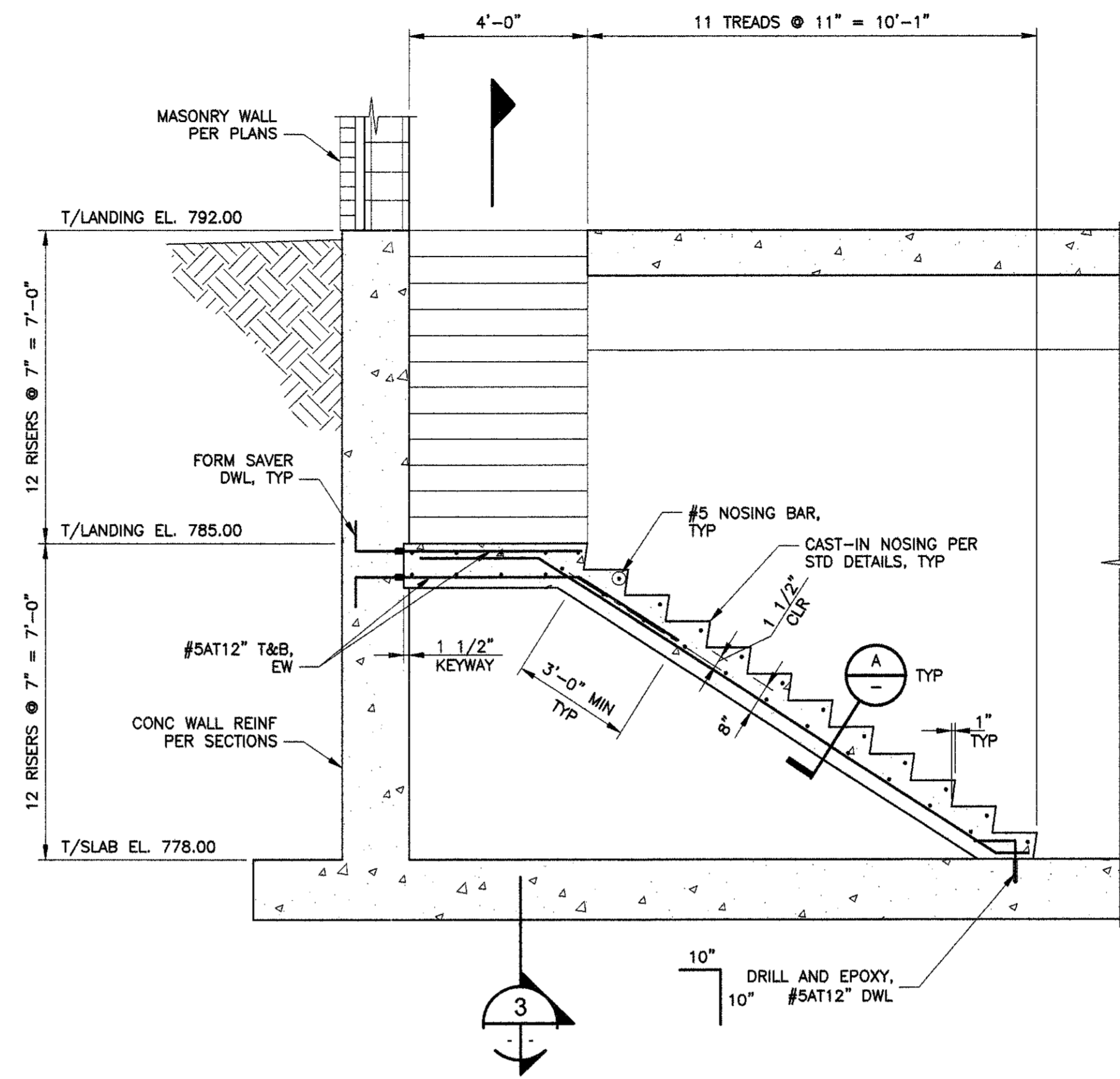
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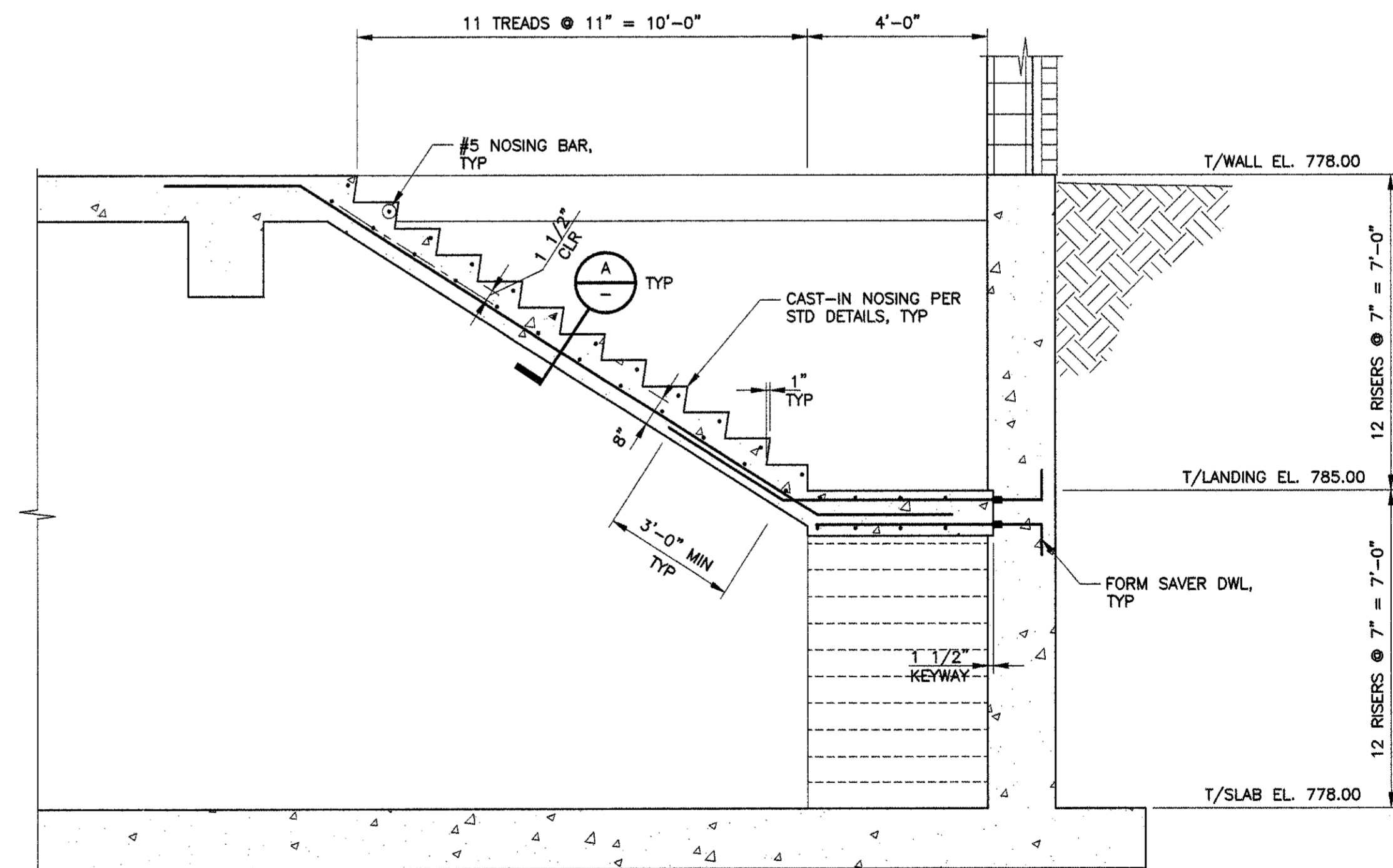
SECTION
SCALE: 3/8" = 1'
1
45-S-3 45-S-13



DETAIL
SCALE: 3/4" = 1'
A

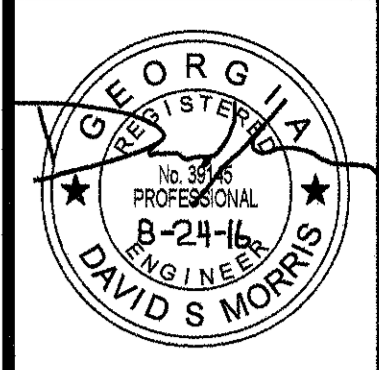


SECTION
SCALE: 3/8" = 1'
2
45-S-3 45-S-13



SECTION
SCALE: 3/8" = 1'
3

ENGINEERING TECHNOLOGIES, INC.
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REVISION	DATE

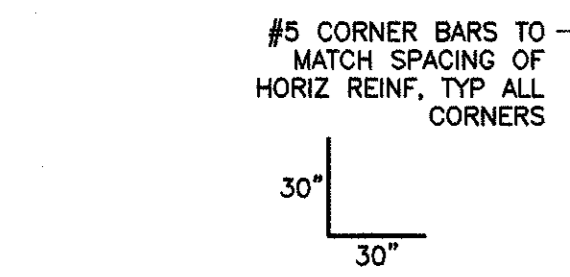
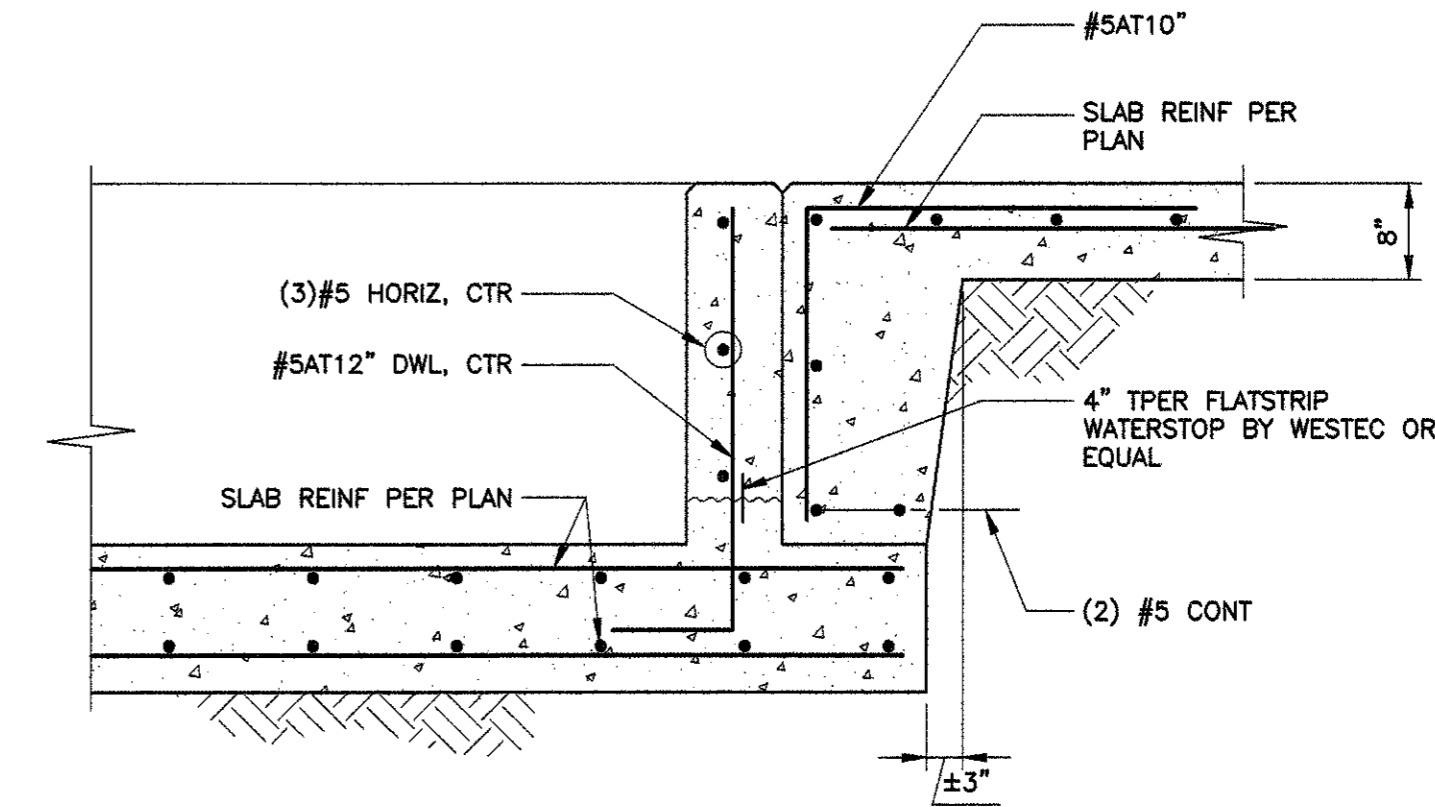
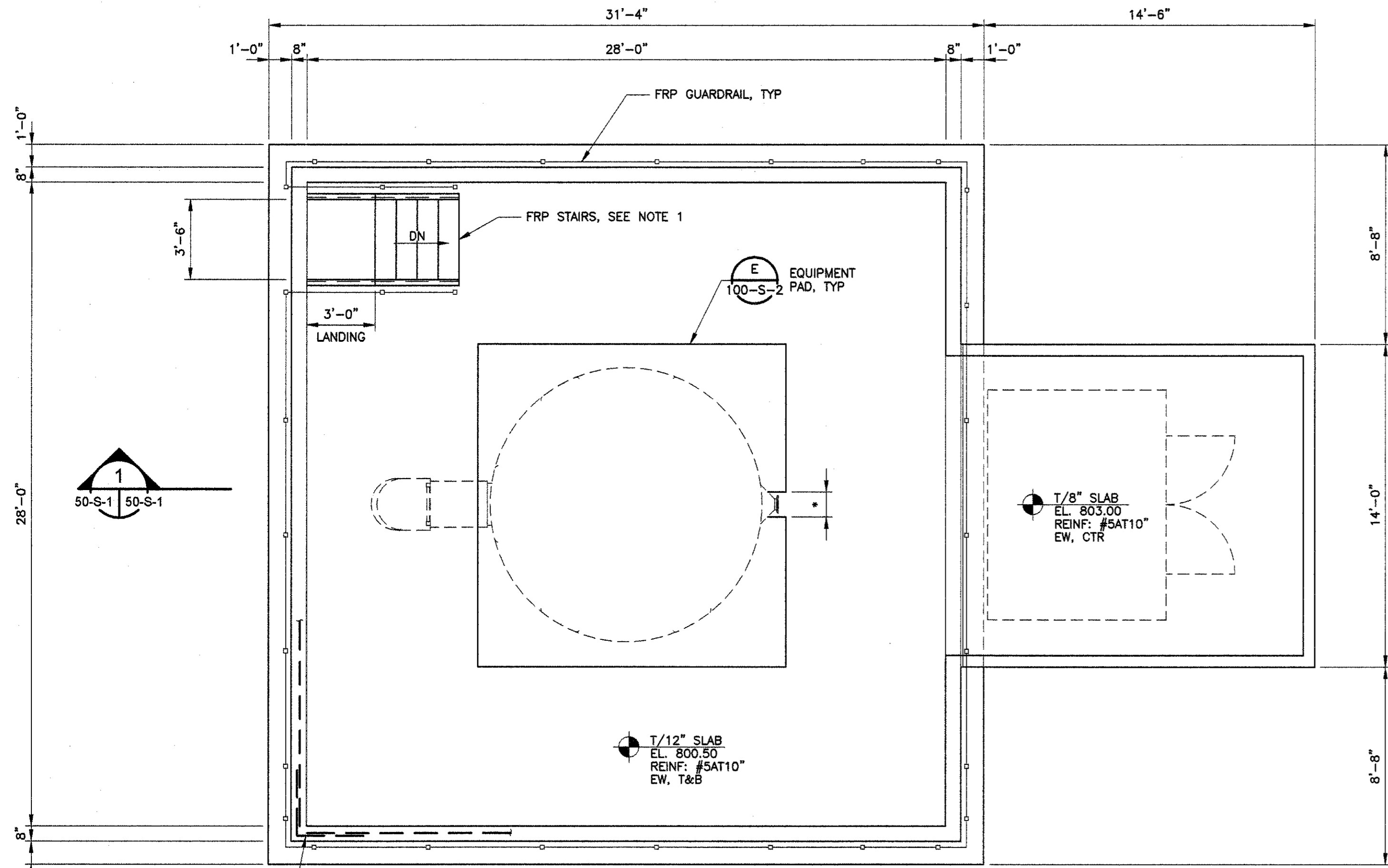
DSGN: DSM	DATE:
DRWN: DSM	
CHK: JVS	

FOR REVISIONS: 1" LINES FOR SCALES SHOWN ON THIS SHEET. IF ANY 1" LINES LONGER ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

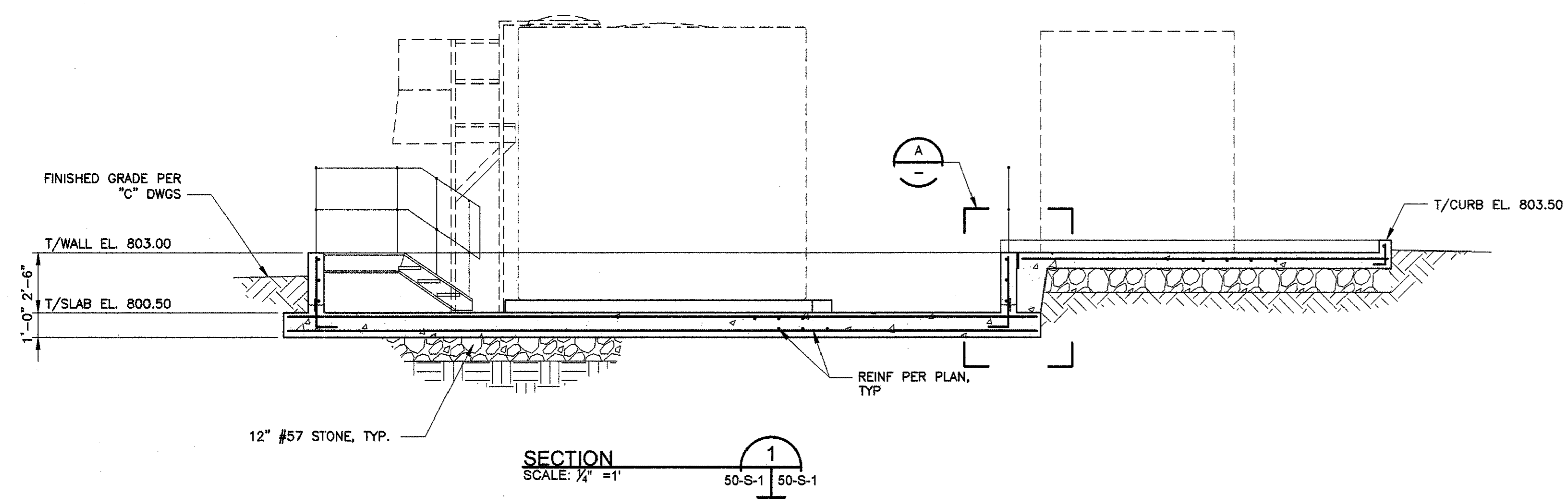
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING
STAIR SECTIONS AND DETAIL

SHEET NO.
45-S-13

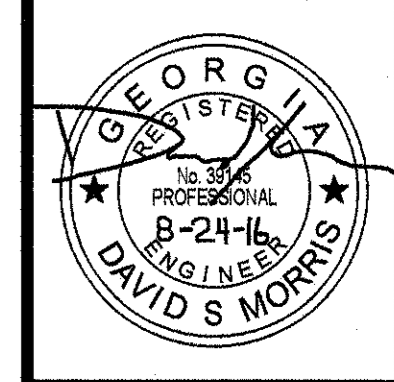
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- NOTES:**
- FRP STAIRS AND PLATFORM TO USE ALL FRP SHAPES FOR FRAMING AND GUARDRAILS. ALL BOLTED CONNECTIONS BETWEEN STRUCTURAL MEMBERS TO USE VINYL ESTER NUTS AND BOLTS. USE A MINIMUM CBX2-3/16x3/8 CHANNEL FOR ALL STRINGERS. ALL STAIR TREADS TO BE FRP. SEE STANDARD DETAILS ON FOR GENERAL GEOMETRY OF FRP GUARDRAIL. SEE SPECIFICATION 06615.



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3551 W. LAKE MARY BLVD., SUITE 210
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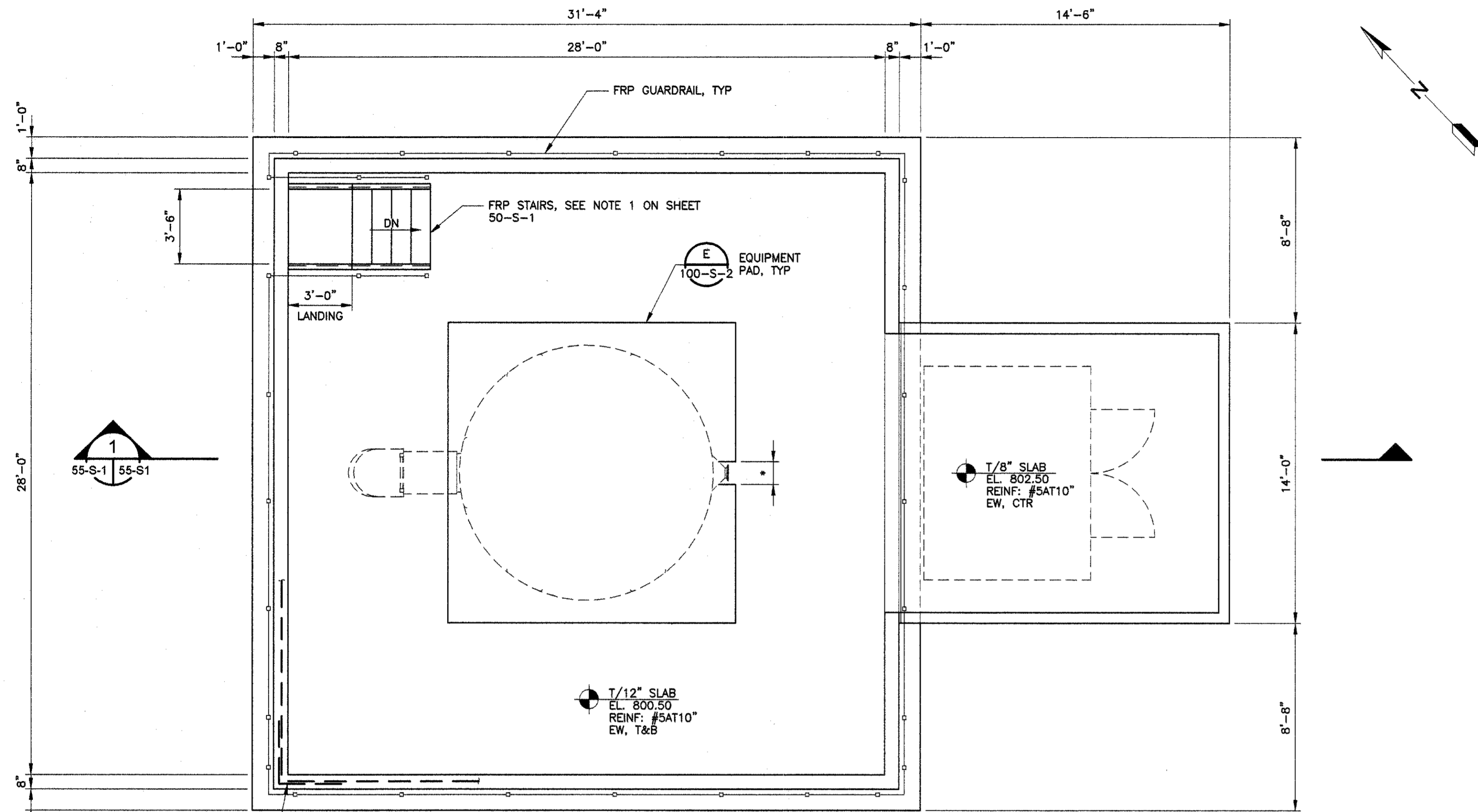
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		
DSGN: DSM			
DRAWN: DSM			
CHECK: JVS			
BAR BELOW IS 1" LONG FOR SCALES BELOW THIS SHEET. ADJUST SCALES ACCORDINGLY.			

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ALUM CHEMICAL STORAGE AREA
PLAN, SECTION AND DETAIL

SHEET NO.
50-S-1

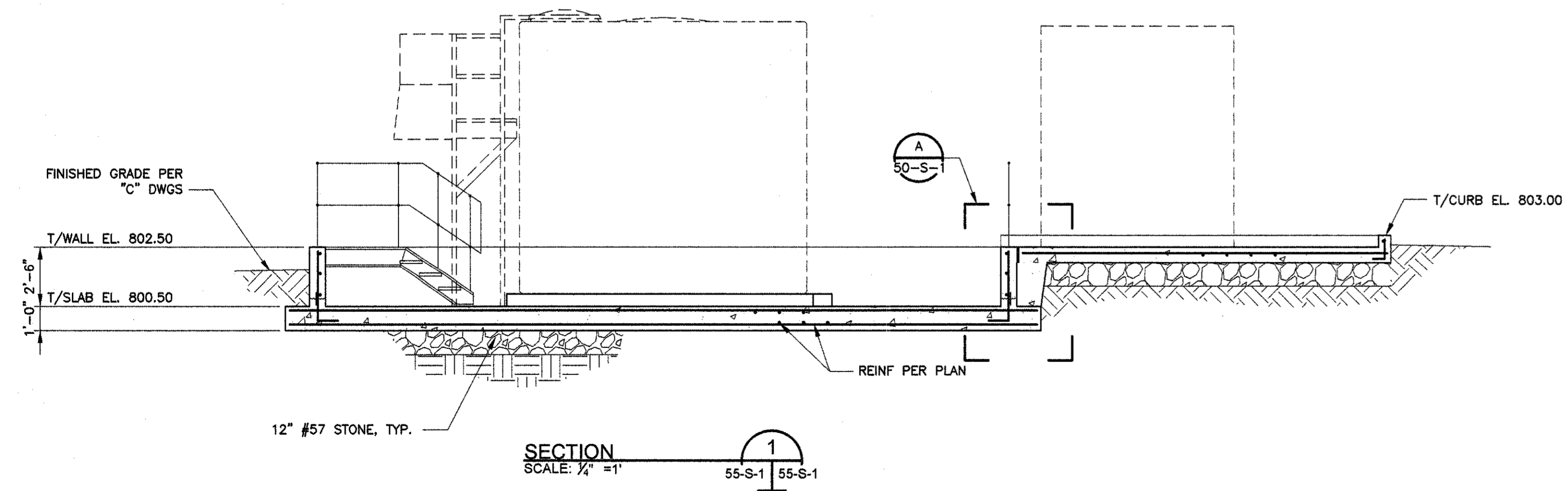
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#5 CORNER BARS TO MATCH SPACING OF HORIZ REINF. TYP ALL CORNERS

T/STRUCTURE
PLAN
1/4"=1'-0"

* COORDINATE BLOCKOUT W/ TANK MANUFACTURER REQUIREMENTS



SECTION
SCALE: 1/4" = 1'
55-S-1

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407)-322-0500
EIT PROJECT NO. 15-137

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

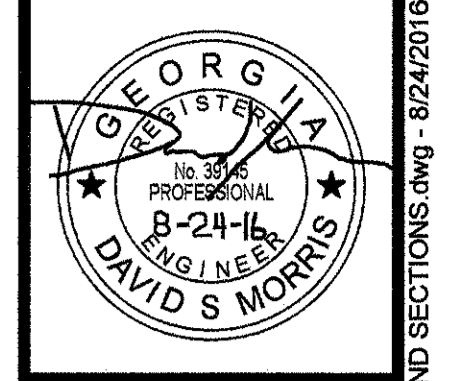
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DSGN: DSM
DRWN: DSM
CHK: JVS
SEE REVISION #1 FOR SCALES
SHOWING ON THIS SHEET. ADJUST
LONG ON THIS SHEET, ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
NAOH CHEMICAL STORAGE AREA
PLAN AND SECTION

SHEET NO.
55-S-1

\\LEO\el_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\55-S-1 NAOH CHEMICAL STORAGE AREA.dwg - 8/24/2016



ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 EIT PROJECT NO. 15-1137

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: DATE: AUGUST 2016

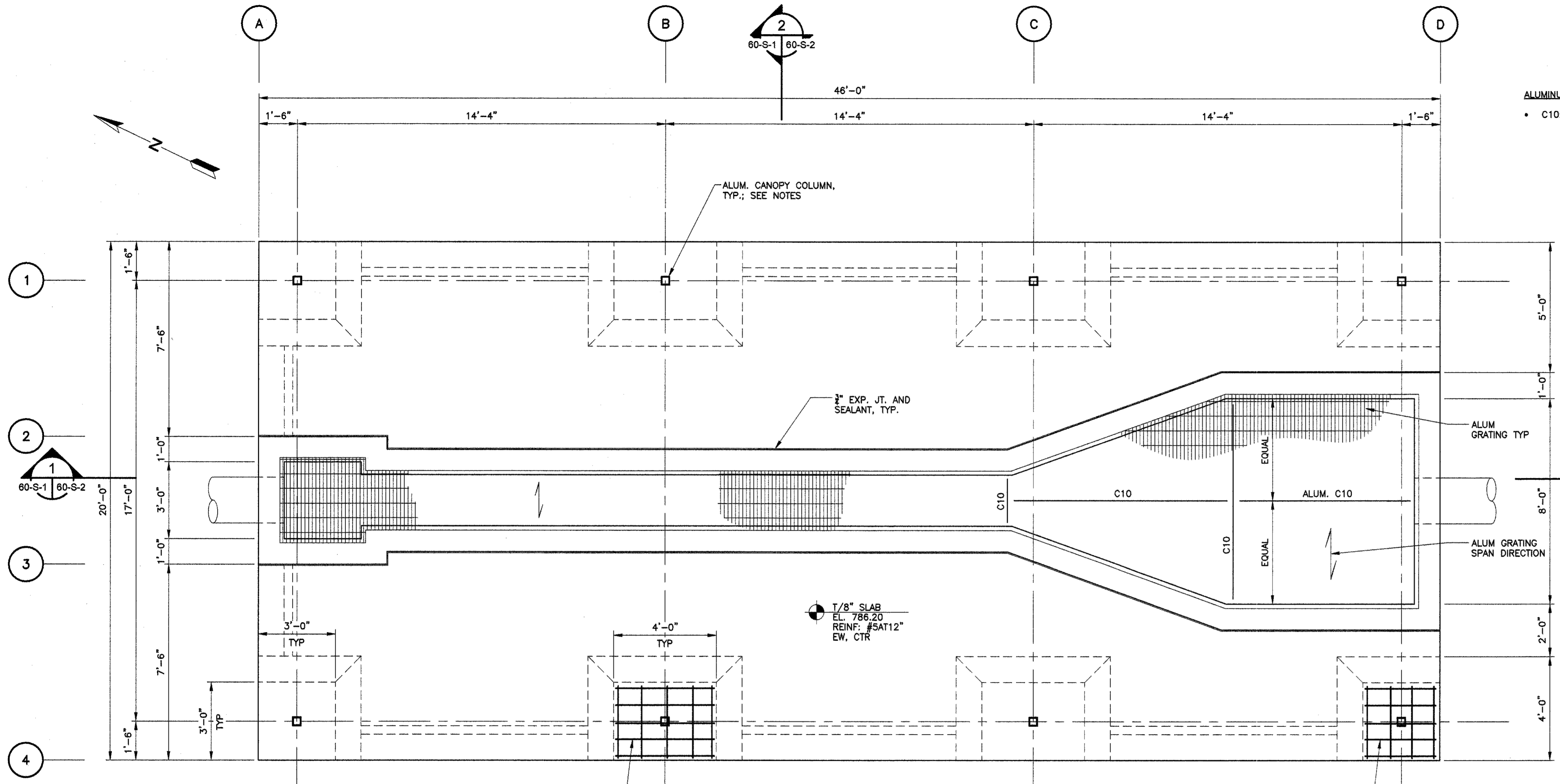
REVISION	DATE

DSGN: DSM
 DRWN: DSM
 CHCK: JVS

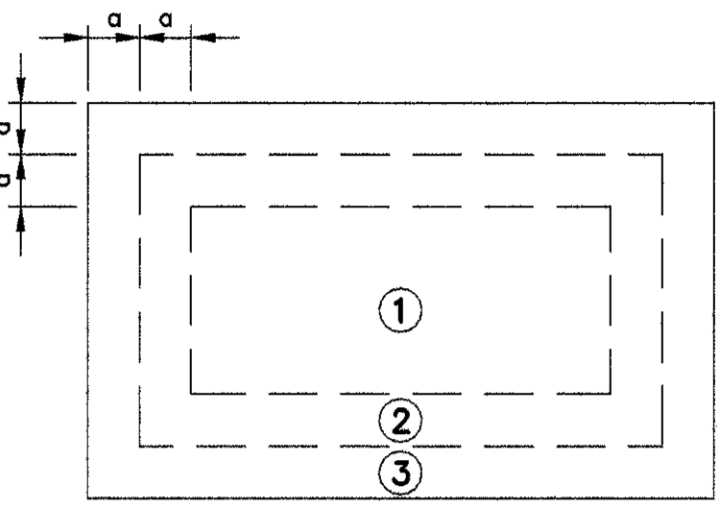
BASE DIMS IN INCHES FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" = 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ULTRAVIOLET DISINFECTION SYSTEM
 T/STRUCTURE PLAN AND DETAILS

SHEET NO.
 60-S-1



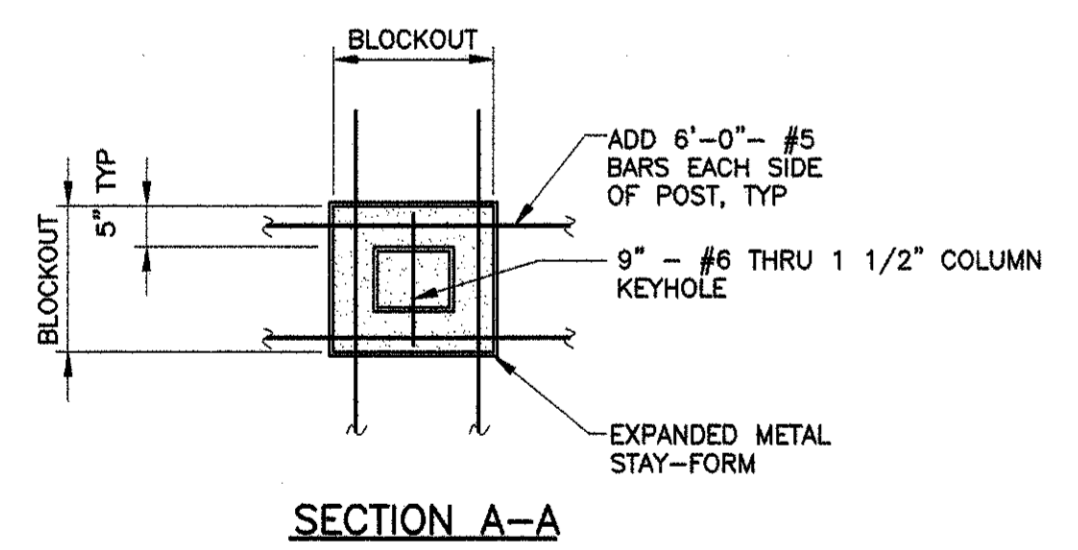
ALUMINUM LEGEND:
 • C10: C10x8.64



ROOF COMPONENTS AND CLADDING PRESSURES (+,-) PSF

AREA (F ²)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
<=a ² (9)	25.4	-22.7	38.0	-34.7	50.7	-68.2
2a ² (18)	25.4	-22.7	38.0	-34.7	38.0	-34.7
>4a ² (36.1)	25.4	-22.7	24.4	-22.7	25.4	-22.7

WIND NOTES:
 1. SEE GENERAL STRUCTURAL NOTES FOR WIND DESIGN CRITERIA.
 2. DESIGN PRESSURES PROVIDED AT LRFD LEVEL. TO OBTAIN ASD PRESSURES MULTIPLY BY A FACTOR OF 0.6.
 3. NEGATIVE SIGN INDICATED PRESSURES OUTWARD
 4. CORNER ZONE WIDTH: a=3'-0"



NOTE:
 1. TROJAN UV SYSTEM GEOMETRY AND STRUCTURAL DESIGN IS SHOWN ON SHEETS 60-S-1 & 60-S-2. IF WEDECO ALTERNATIVE UV SYSTEM IS SELECTED, THE UV STRUCTURE SHALL HAVE THE SAME STRUCTURAL DESIGN, WHICH INCLUDES SLAB & WALL THICKNESS AND REINFORCEMENT SHOWN. DIFFERING GEOMETRY SHALL BE COORDINATED W/ "M" DRAWINGS. FINAL UV STRUCTURE DIMENSIONS SHALL BE PER THE APPROVED SHOP DRAWING. UV SYSTEM EQUIPMENT SHOP DRAWING SHALL BE SUBMITTED AND APPROVED PRIOR TO THE REINFORCING LAYOUT SHOP DRAWINGS FOR THE STRUCTURE.

PRE-ENGINEERED ALUMINUM CANOPY

LOADING:
 - ROOF COLLATERAL 3 PSF
 - ROOF LIVE 20 PSF
 - WIND LOADS AS SPECIFIED ON 00-S-1 AND THIS SHEET

CANOPY DESIGN:

THE PRE-ENGINEERED CANOPY SHALL CONSIST OF A DOUBLE OVERHANG SYSTEM WITH ROOF DECK, POST, FLASHING, AND OTHER MISCELLANEOUS FRAMING FLASHING. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL PLAN DIMENSIONS WITH PRE-ENGINEERED CANOPY DIMENSIONS AND RESOLVING DIMENSIONS AND SPACIAL CONFLICTS PRIOR TO SECURING MATERIALS. ROOF DRAINAGE TO BE PROVIDED BY INTERNAL GUTTERS IN ROOF FRAMING MEMBERS AND DOWNSPOUTS AT POST BASE.

CANOPY SHALL BE DESIGNED BY A STATE OF GEORGIA REGISTERED ENGINEER RETAINED BY THE MANUFACTURER IN COMPLIANCE TO BUILDING CODE REQUIREMENTS AND FOR WIND SPEED AS SPECIFIED ON 00-S-1. DETAILED SIGNED AND SEALED SHOP DRAWING SHALL BE SUBMITTED FOR ENGINEERS REVIEW. DEFLECTION SHALL BE LIMITED TO L/180 FOR ROOF MEMBERS (WIND OR LIVE). LATERAL DRIFT SHALL BE LIMITED TO H/60 (WIND).

DESIGN REQUIREMENTS:

DESIGN, FABRICATION, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH LATEST ALUMINUM DESIGN MANUAL ERECT CANOPY IN ACCORDANCE WITH MANUFACTURER'S INSTALLATIONS INSTRUCTIONS.

THE FABRICATOR SHALL DESIGN AND DETAIL ALL PARTS OF CONNECTIONS NOT FULLY DETAILED ON THE DESIGN DRAWINGS. THE NUMBER OF FASTENERS AND OTHER SIMILAR ELEMENTS SHOWN ON THE DRAWINGS ARE PICTORIAL ONLY.

CONTRACTOR TO ENSURE NO STEEL COMPONENTS WITHIN THE CONCRETE FOUNDATION COME IN CONTACT WITH ALUMINUM COLUMN OR DOWELS DURING THE INSTALLATION OF THE CANOPY COLUMNS UNO.

SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

SPECIALTY ENGINEER TO PREPARE COMPLETE STRUCTURAL DESIGN CALCULATIONS FOR CANOPY MEMBERS EXCEPT FOOTINGS. PROVIDE REACTIONS AS REQUIRED FOR FOOTING DESIGN BY THE

ENGINEER OF RECORD:

SUBMIT COLOR CHARTS OF COLORS AVAILABLE FOR POST, TRIM, AND ROOF PANELS, HOWEVER, CONTRACTOR TO INCLUDE THE COST TO CUSTOM COLOR MATCH OWNERS' PREFERRED COLOR.

MATERIALS:

- ALUMINUM EXTRUSIONS: 6063 ALLOY, T-6 TEMPER
- GROUT: 1 PART PORTLAND CEMENT, 3 PARTS MASONRY SAND: 3000 PSI COMPRESSIVE STRENGTH.
- FOAM BLOCK-OUTS: RIGID FOAM BLOCKS SIZED AS REQUIRED FOR COLUMN EMBEDMENT DEPTH AND SHAPE.

FASTENERS:

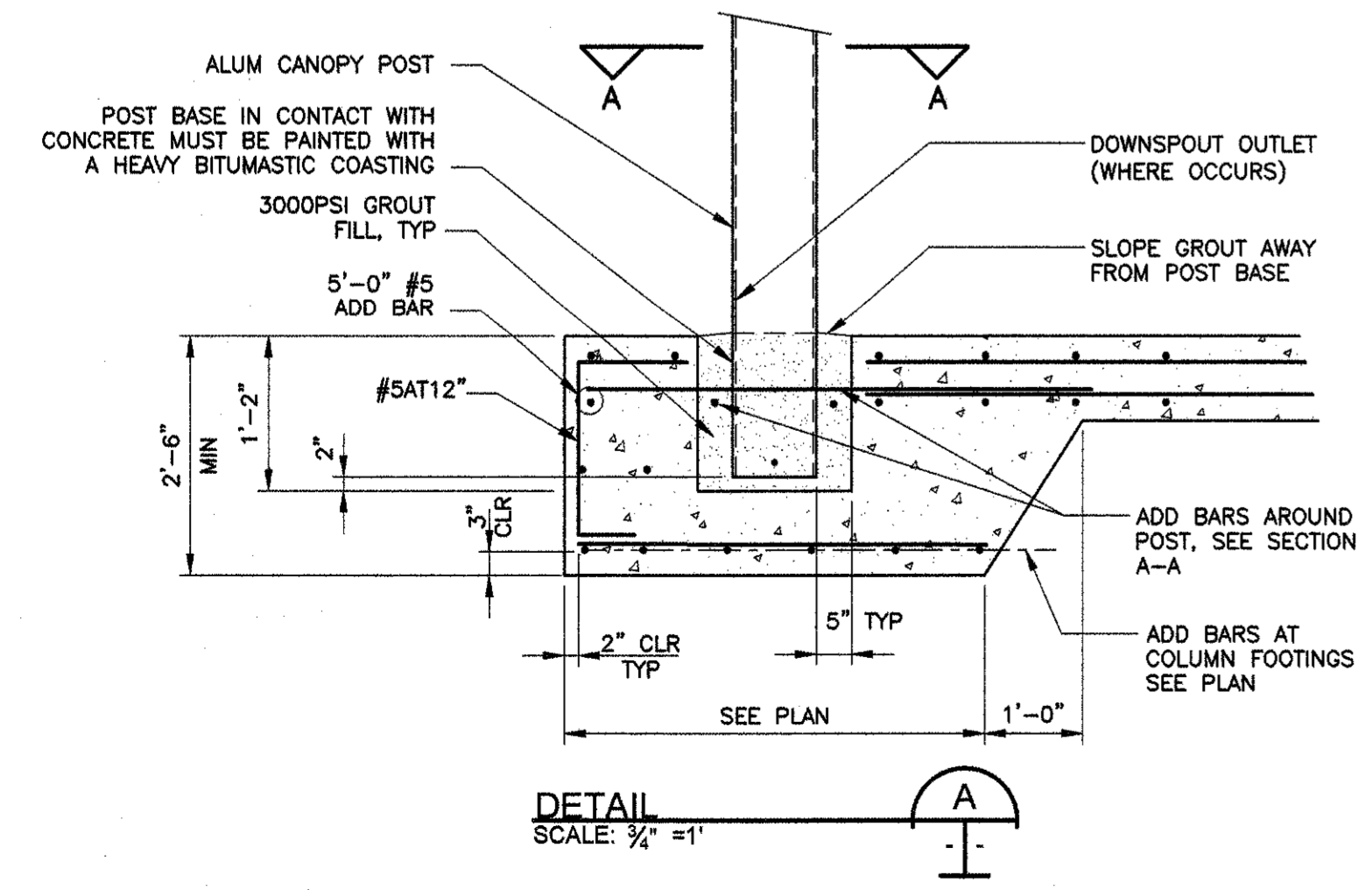
- DECK SCREWS: NO. 14x1 INCH (25MM), SELF-TAPPING, TYPE 18-8 STAINLESS STEEL WITH NEOPRENE WASHER.
- TRIM SCREWS: NO. 10x1/2 INCH (13MM), SELF-TAPPING, TYPE 18-8 STAINLESS STEEL.
- OTHER FASTENERS: TYPE 18-8 STAINLESS STEEL, FASTENER TYPE AS RECOMMENDED BY MANUFACTURER FOR SPECIFIC CONDITIONS.

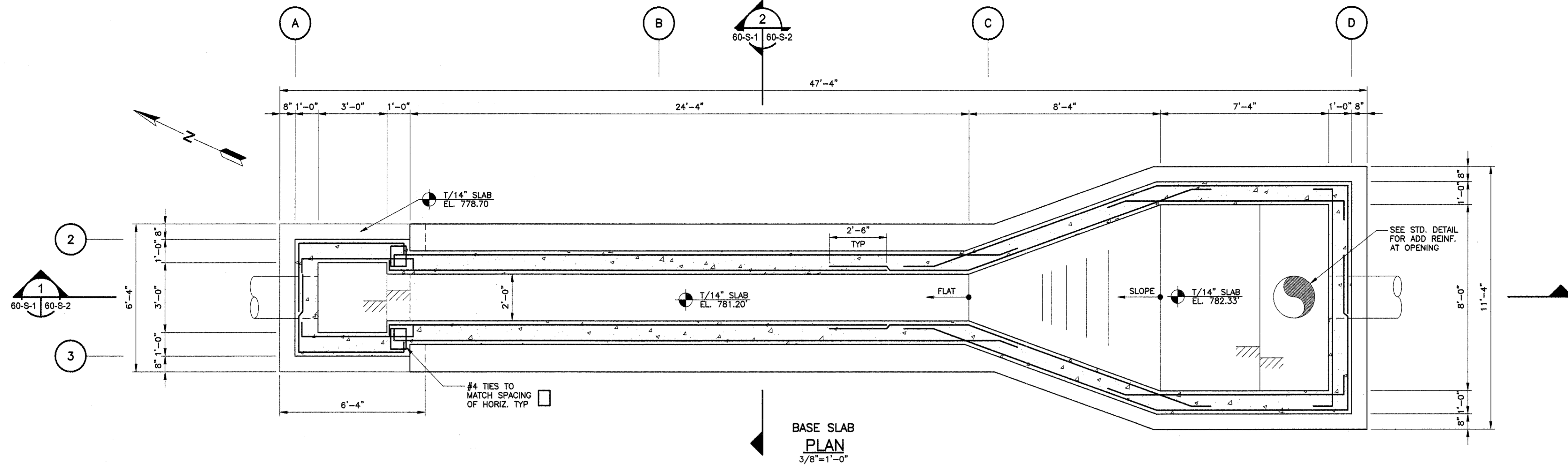
FINISH:

- FINISH SYSTEM SHALL BE KYNAR 500 PVDF, FORMULATED TO CONTAIN 70 PERCENT PVDF RESIN. EPOXY PRIME COAT SHALL BE APPLIED TO BOTH SIDES TO A DRY FILM THICKNESS OF APPROXIMATELY 0.2 MIL. ONE COAT OF PVDF COLOR COATING SHALL BE APPLIED TO EXPOSED SIDES TO PROVIDE A DRY FILM THICKNESS OF NOT LESS THAN 0.8 MIL. 1.0 MIL TOTAL COATING.
- THE SURFACE CONDITION OF THE FINISH COAT SHALL BE 100 PERCENT FREE OF HOLIDAYS, DRIP MARKS, SCRATCHES, ROLL MARKS, OR ABRASIONS. SURFACES SHALL BE FREE OF CHECKING, CRAZING, PEELING, OR LOSS OF ADHESION.

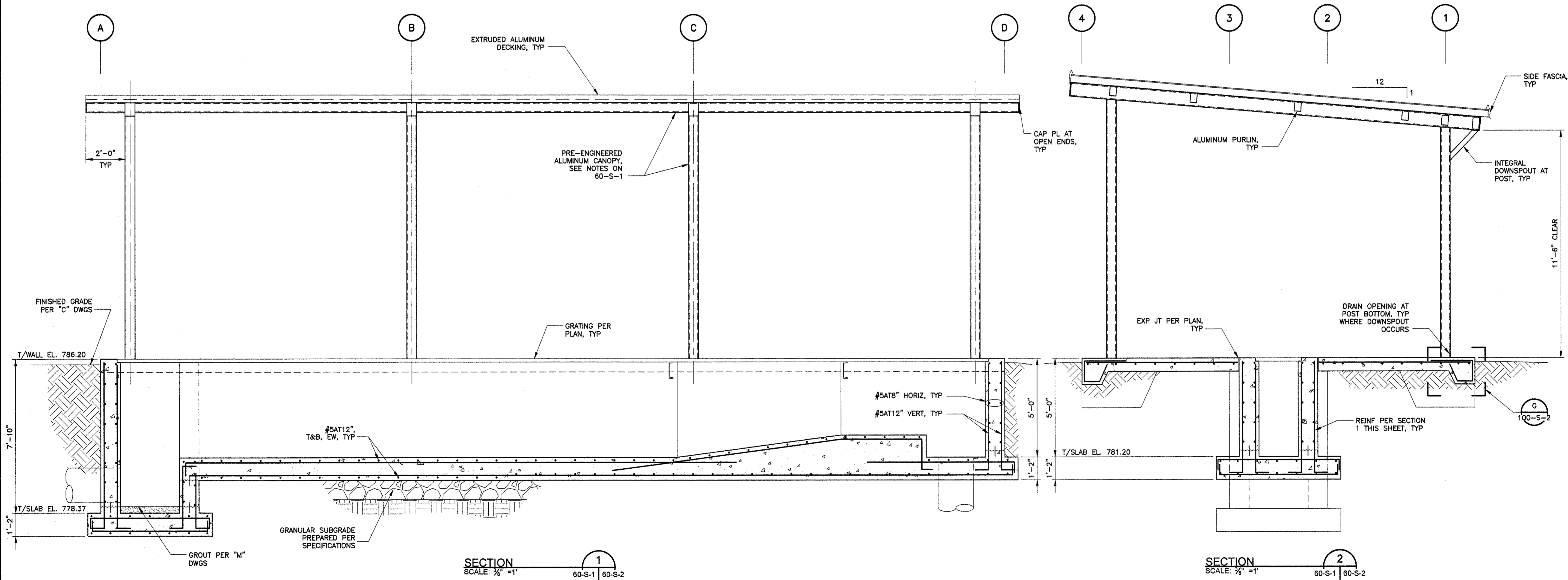
WARRANTY:

- MANUFACTURER SHALL WARRANT THE ENTIRE SYSTEM AGAINST DEFECTS IN LABOR AND MATERIALS FOR A PERIOD OF 2 YEARS COMMENCING ON THE DATE OF SUBSTANTIAL COMPLETION. THIS WARRANTY REQUIRED THE MANUFACTURER TO DO ALL THAT IS NECESSARY TO EFFECTIVELY CORRECT ANY DEFICIENCIES IN A TIMELY MANNER AT NO EXPENSE TO THE OWNER.





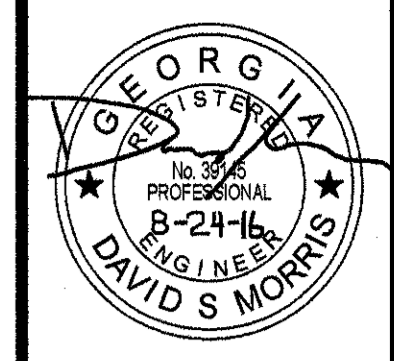
BASE SLAB
PLAN
3/8"=1'-0"



SECTION 1
SCALE: 3/8"=1'

SECTION 2
SCALE: 3/8"=1'

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
E/T PROJECT NO. 15-137



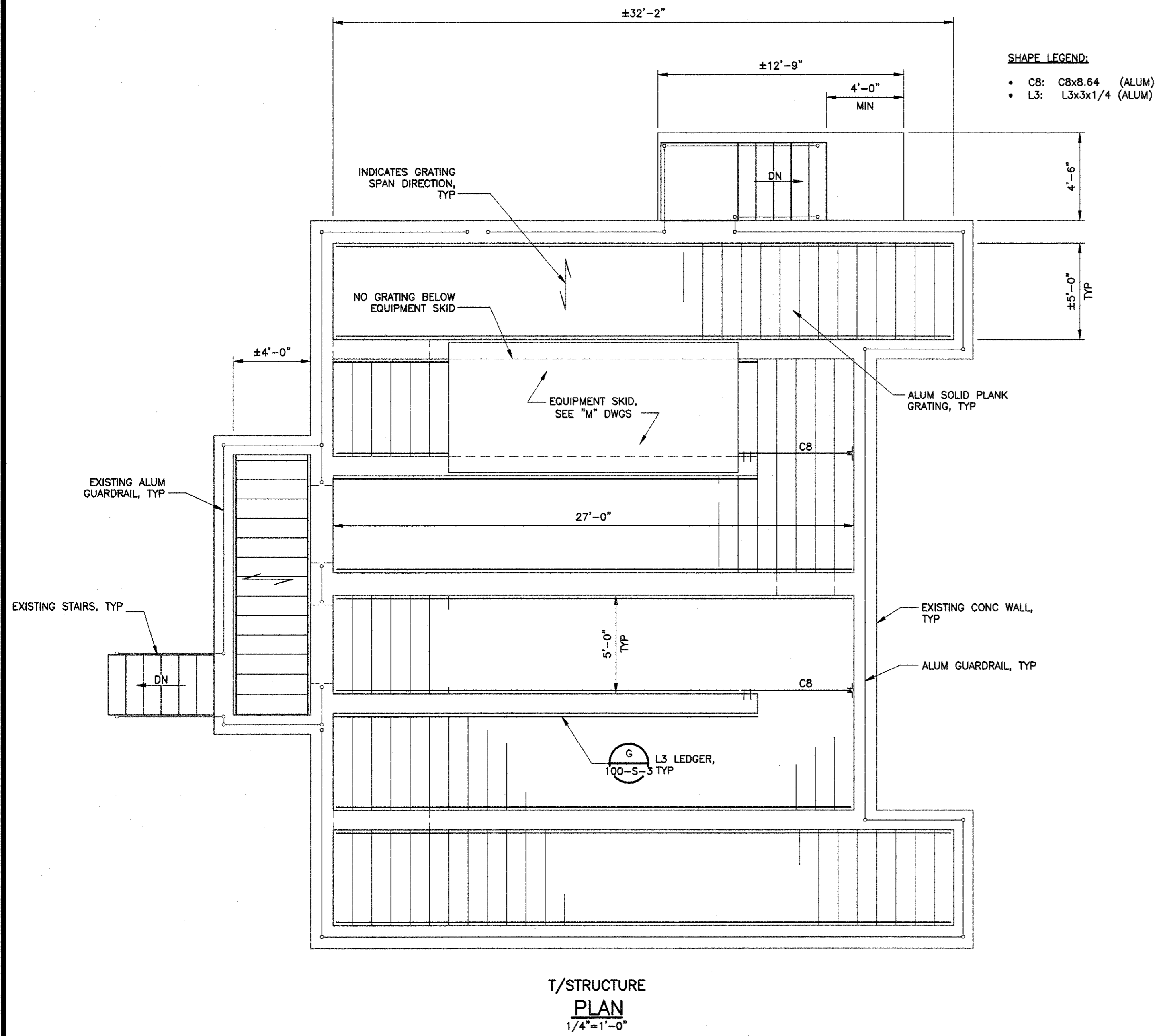
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
DSGN: DSM	CHCK: JVS
DRWN: DSM	
BAS BELOW 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ULTRAVIOLET DISINFECTION SYSTEM
BASE SLAB PLAN AND SECTIONS

SHEET NO.
60-S-2

I:\Projects\2016\Projects\Projects_2016\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\60-S-2 UV SECTIONS AND DETAILS.dwg - 8/24/2016



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 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3655 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:
 DATE: AUGUST 2016

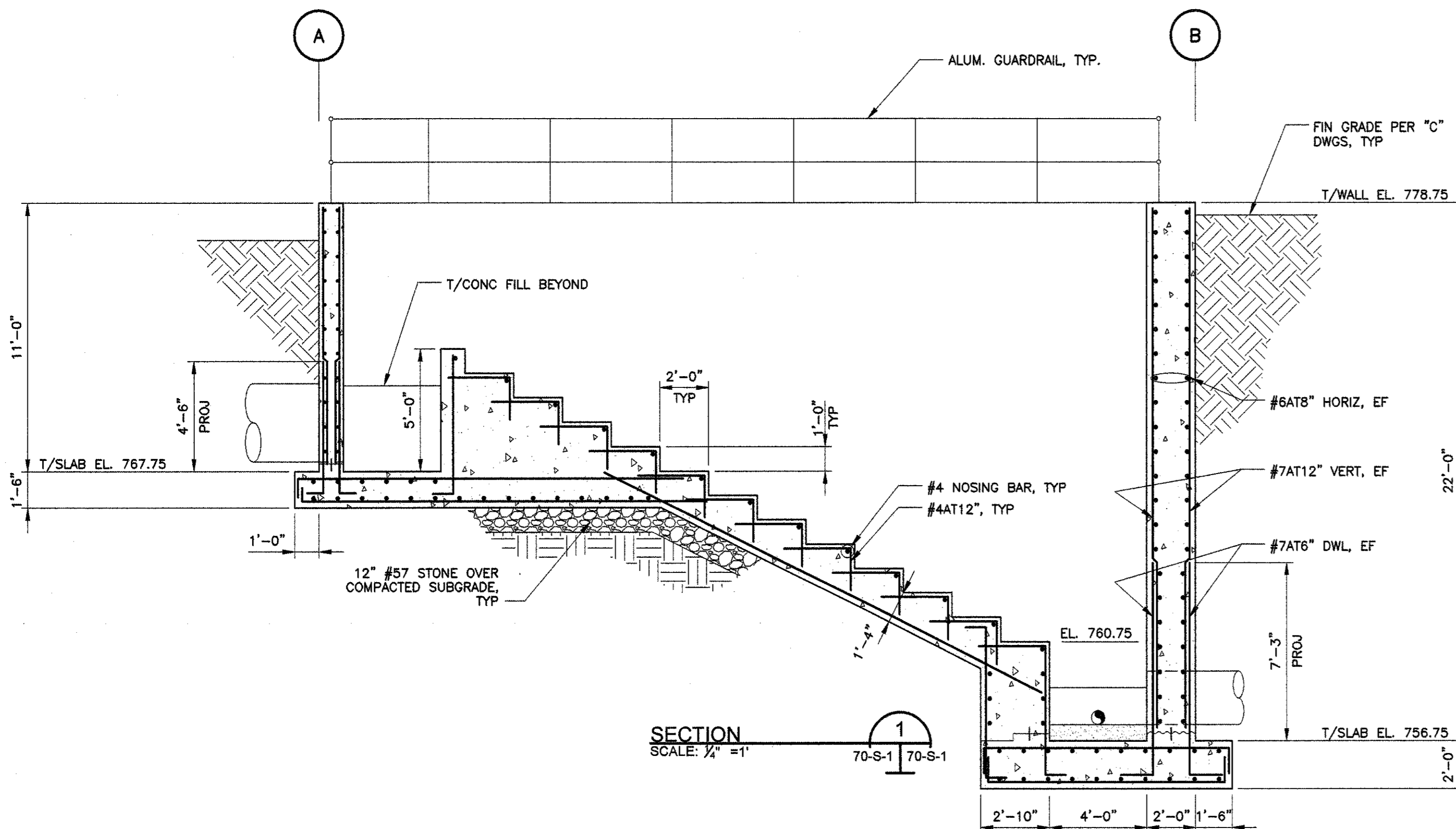
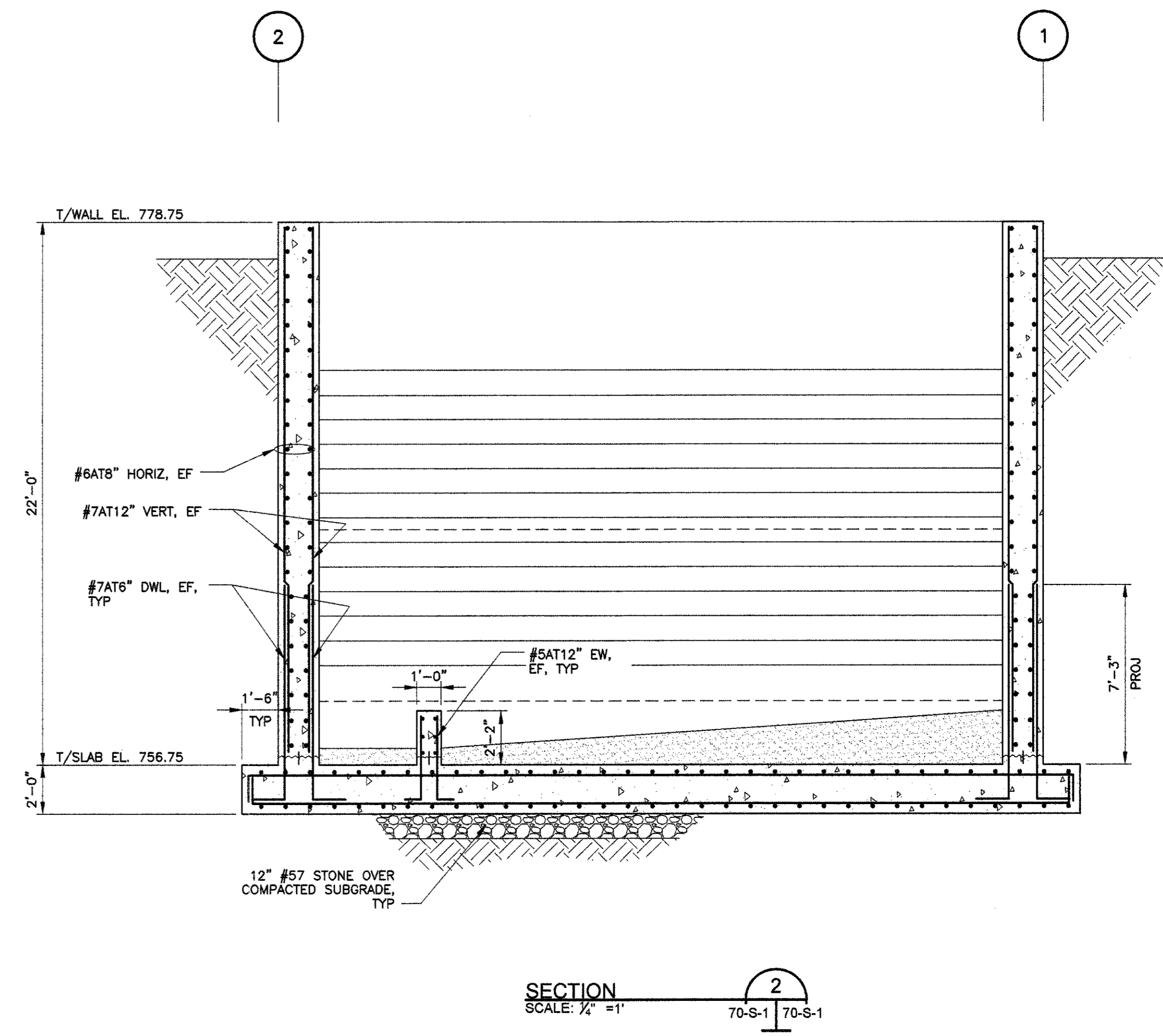
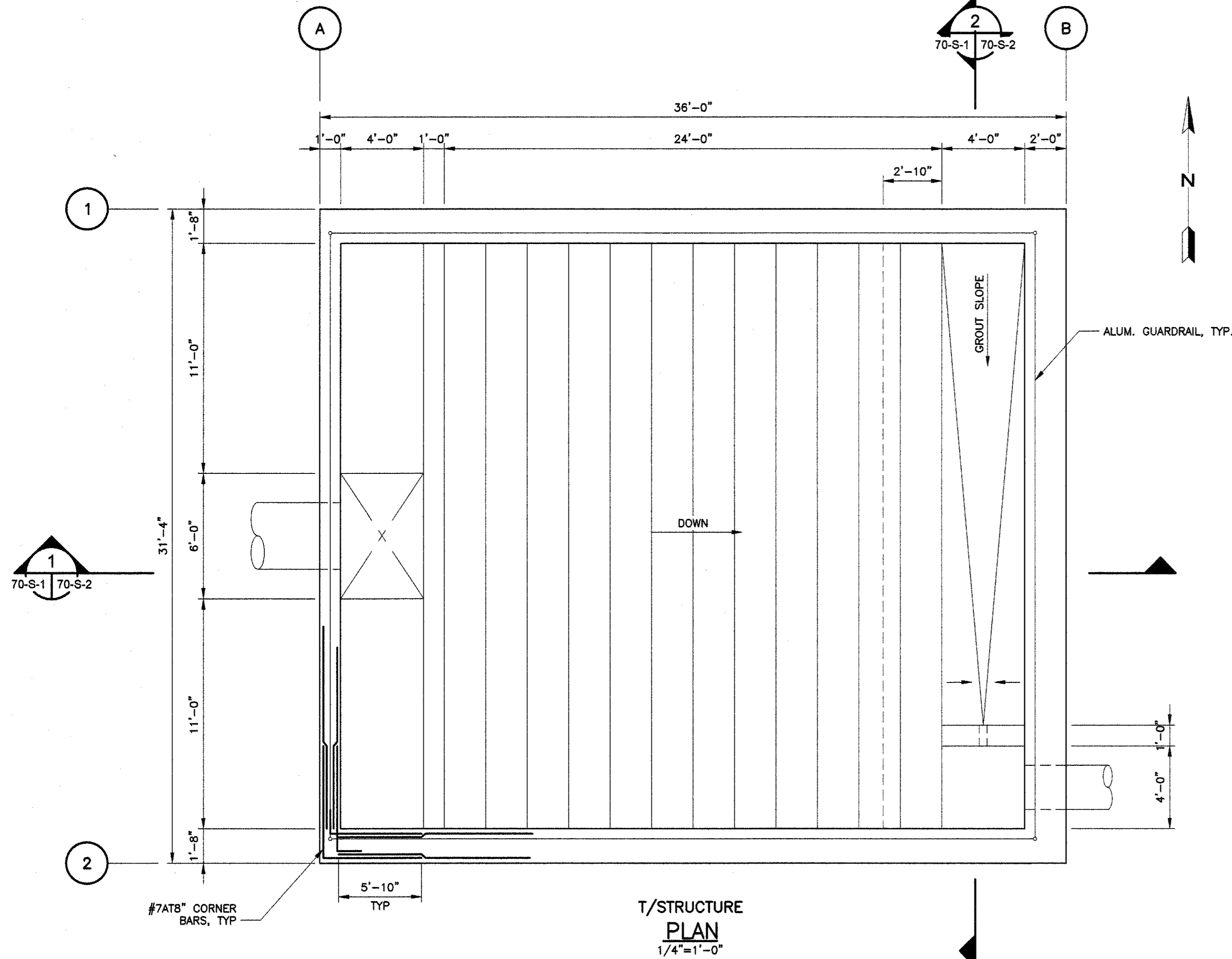
REVISION	DATE

DSGN: DSM
 DRWN: DSM
 CHCK: JVS

BAR BEYOND 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT WATER PUMP STATION
 TOP PLAN

SHEET NO.
 65-S-1



ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

REGISTERED PROFESSIONAL ENGINEER
 DAVID S. MORRIS
 STATE OF GEORGIA

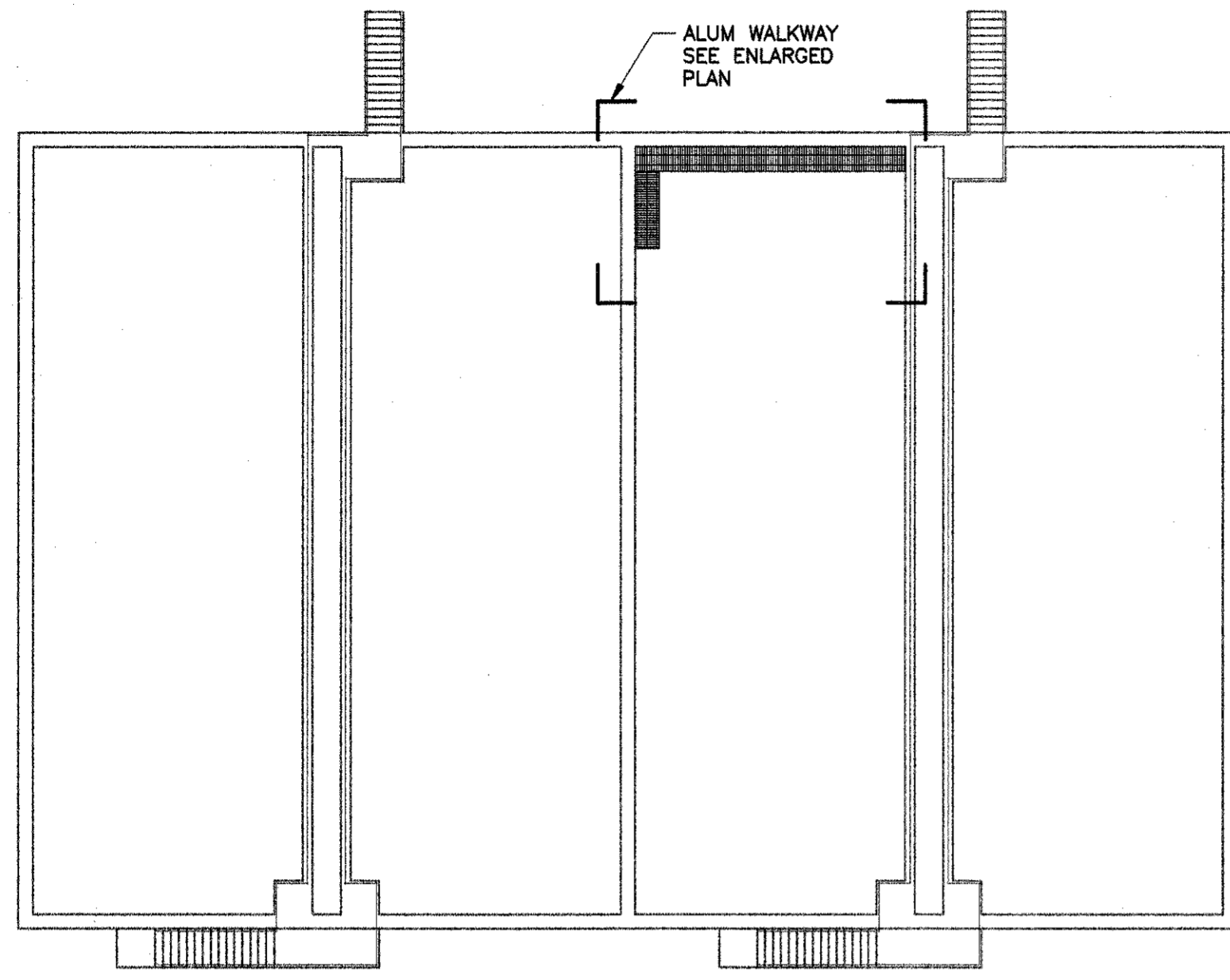
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		
DGN: DSM			
DRW: DSM			
CHK: JVS			

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

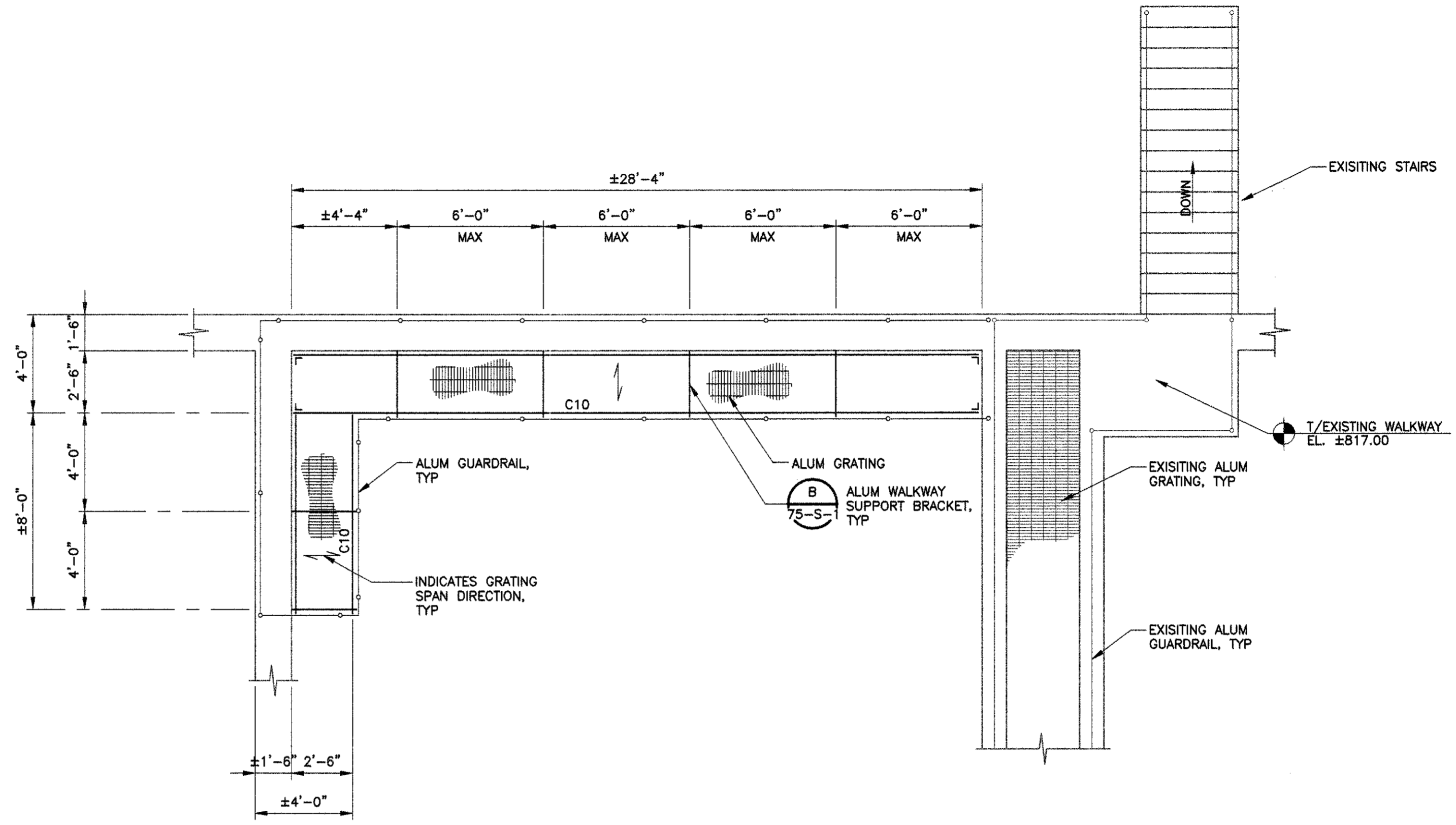
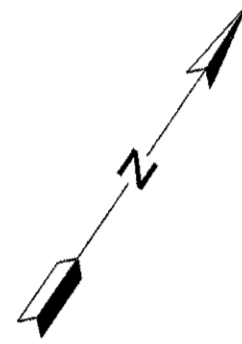
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 CASCADE AERATOR PLAN AND SECTIONS

SHEET NO.
 70-S-1

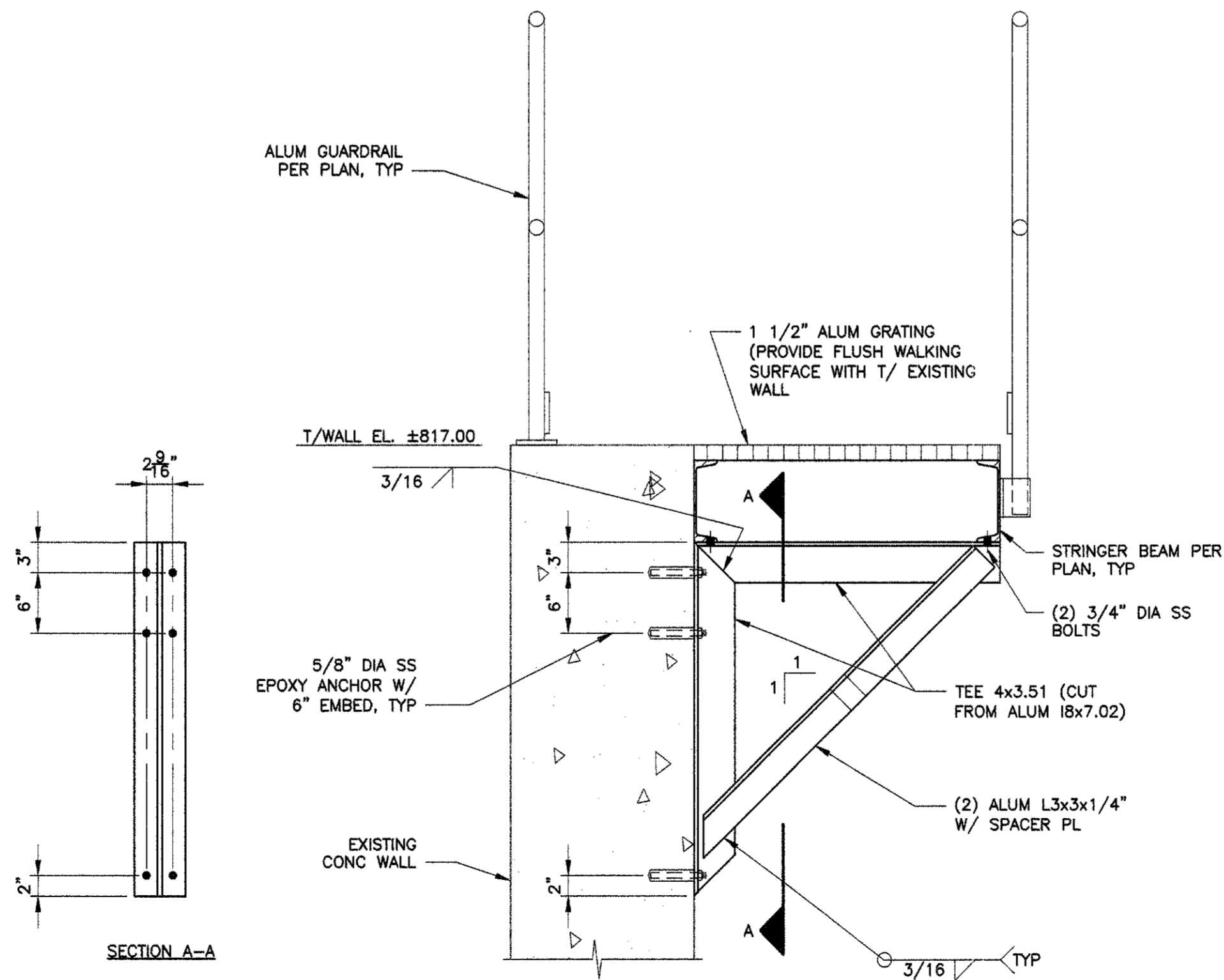
I:\CLEVEL_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\70-S-1 CASCADE AERATOR PLANS AND SECTIONS.dwg - 8/24/2016



T/STRUCTURE
KEYPLAN
NTS



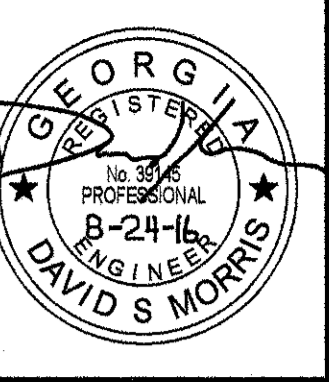
ENLARGED - T/STRUCTURE
PLAN
1/4"=1'-0"



WALKWAY SUPPORT BRACKET
DETAIL
SCALE: 1"=1'
75-S-1

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500

E/T PROJECT NO. 15-137



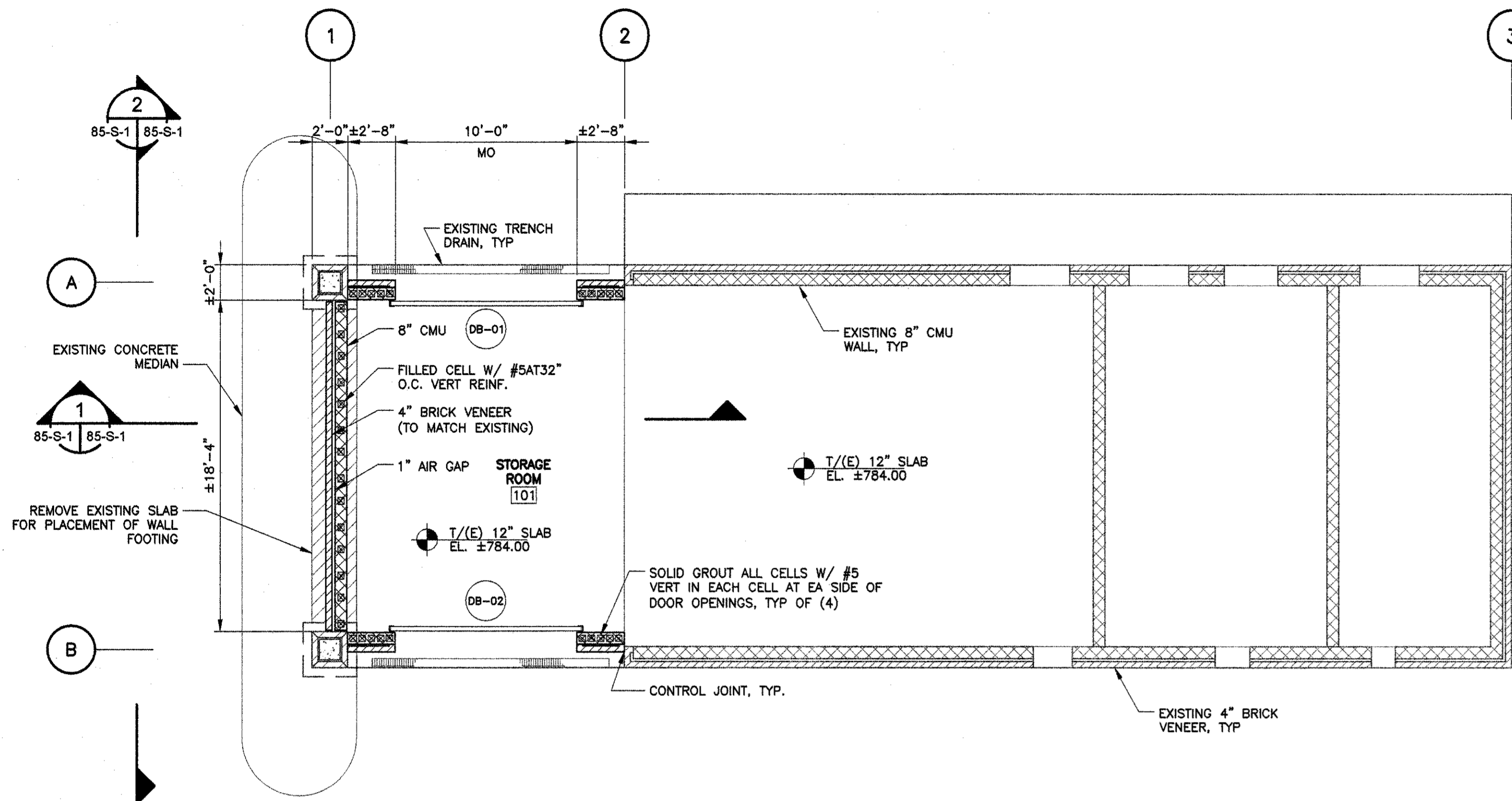
ESI
ENGINEERING STRATEGIES, INC.
3655 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		
DSGN: DSM			
DRWN: DSM			
CHK: JVS			
PER BELOW 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
DIGESTER
TOP PLAN AND DETAILS

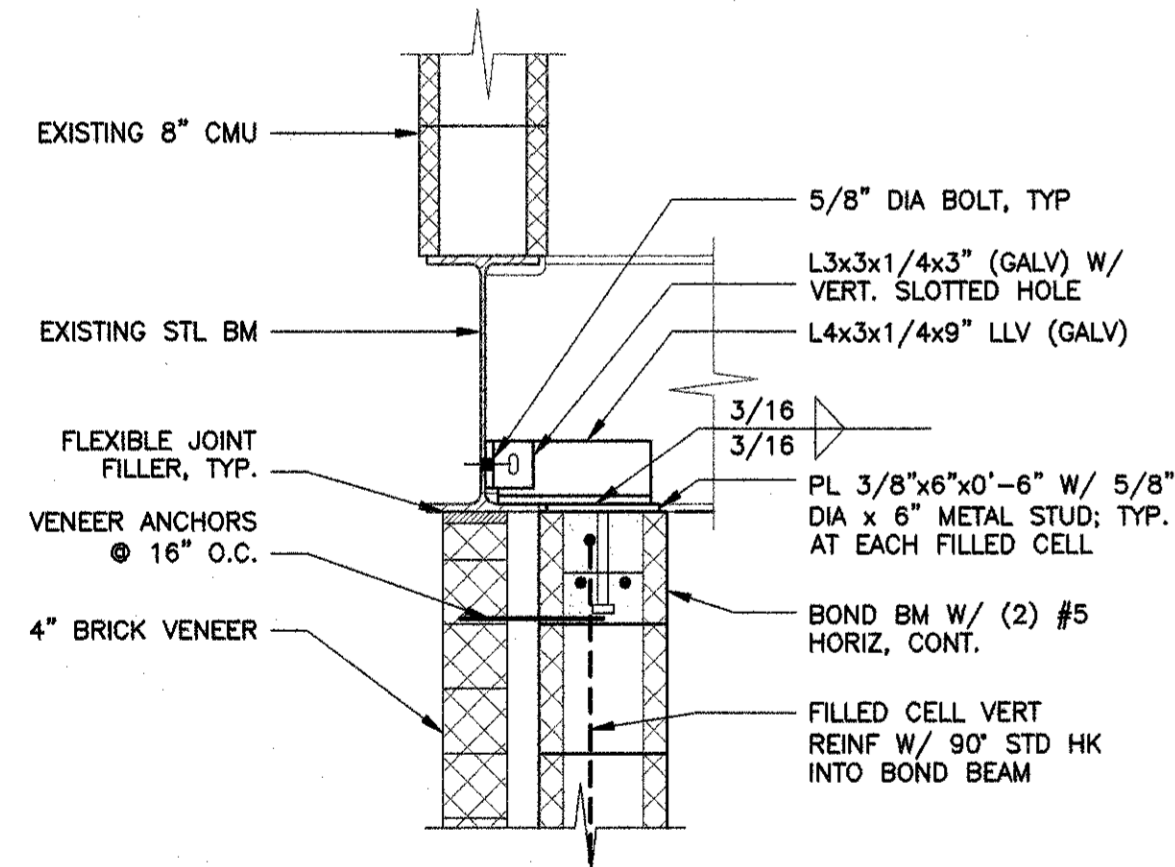
SHEET NO.
75-S-1

I:\CLEVEL\data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\75-S-1 DIGESTER PLAN AND DETAILS.dwg - 8/24/2016

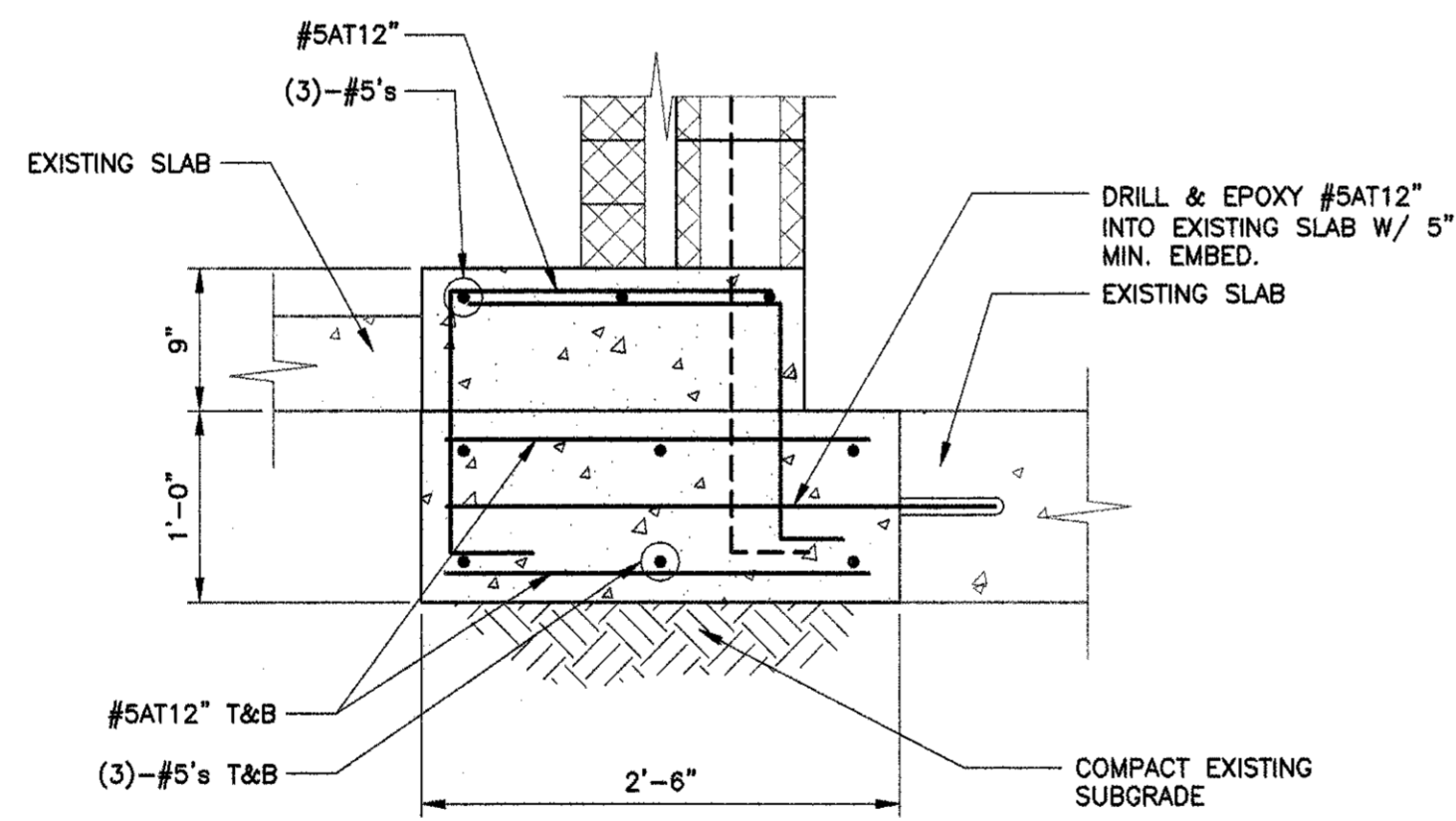


NOTE:
1. SEE SHEET 95-S-1 FOR DOOR SCHEDULE.

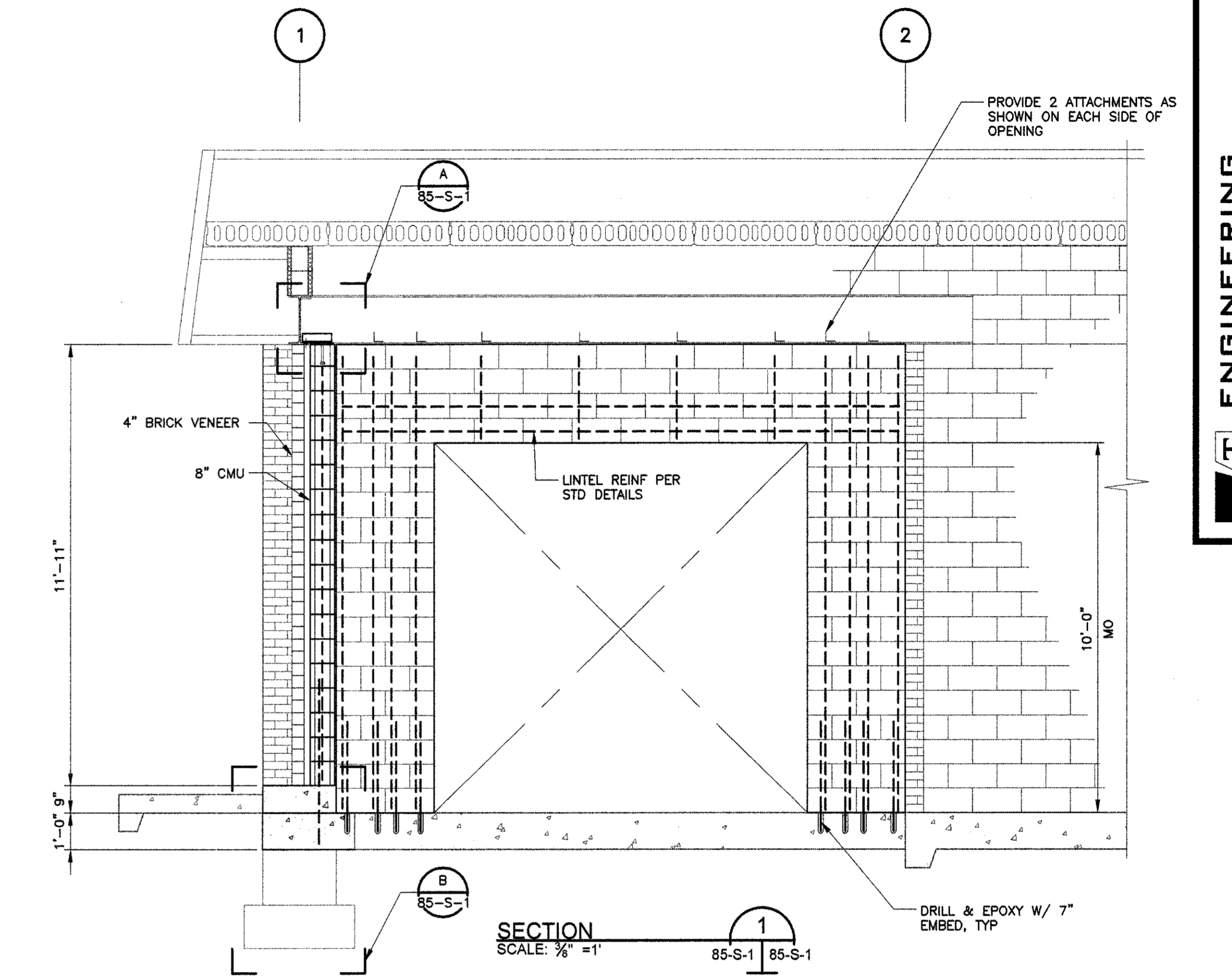
FLOOR PLAN
3/16"=1'-0"



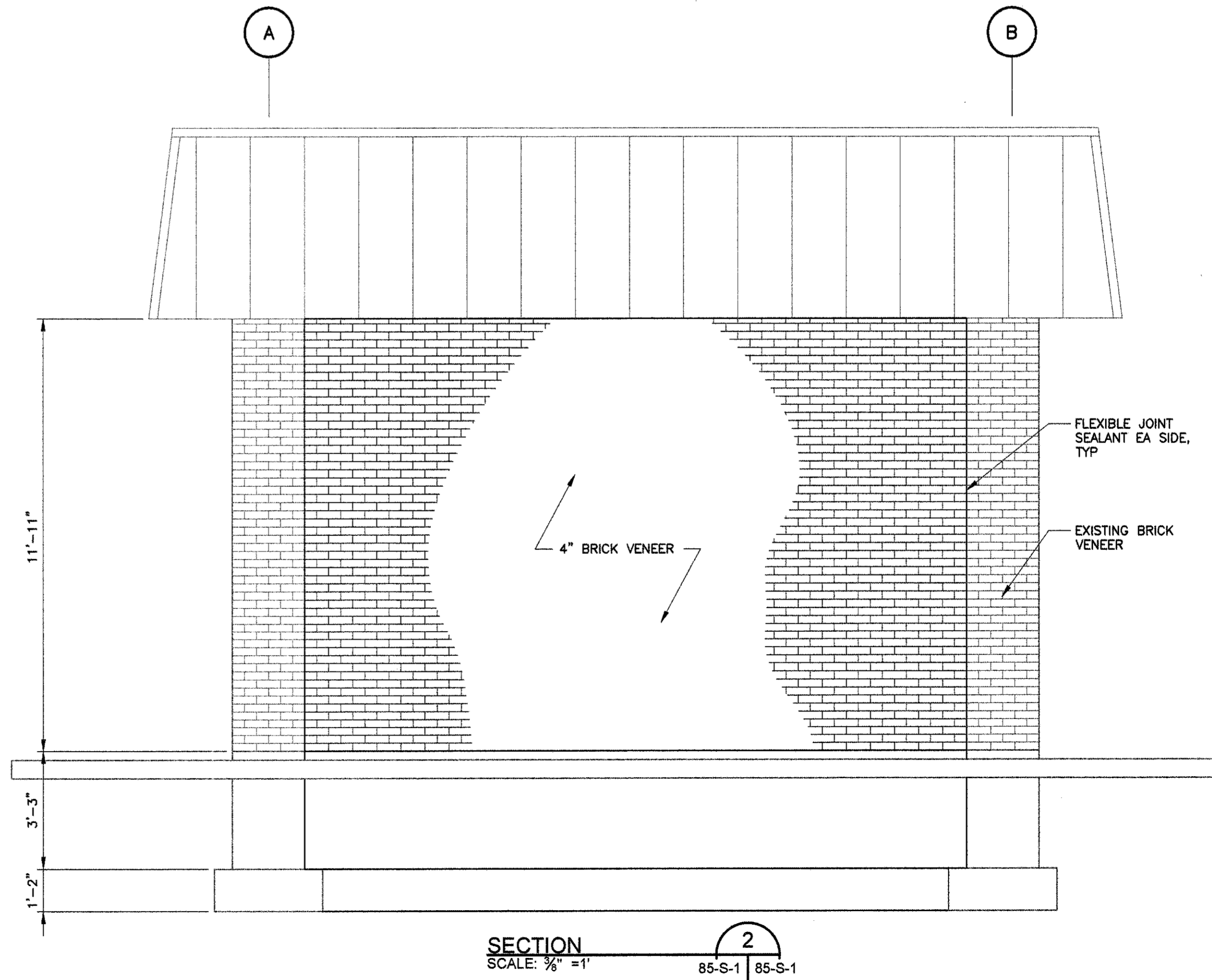
DETAIL A
SCALE: 1/2"=1'



DETAIL B
SCALE: 1/2"=1'

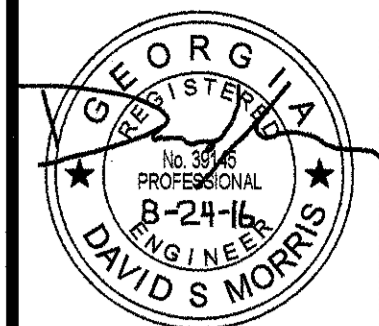


SECTION 1
SCALE: 3/8"=1'



SECTION 2
SCALE: 3/8"=1'

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
EAT PROJECT NO. 15-137



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ENGINEERING STRATEGIES, INC.
3655 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: DATE: AUGUST 2016

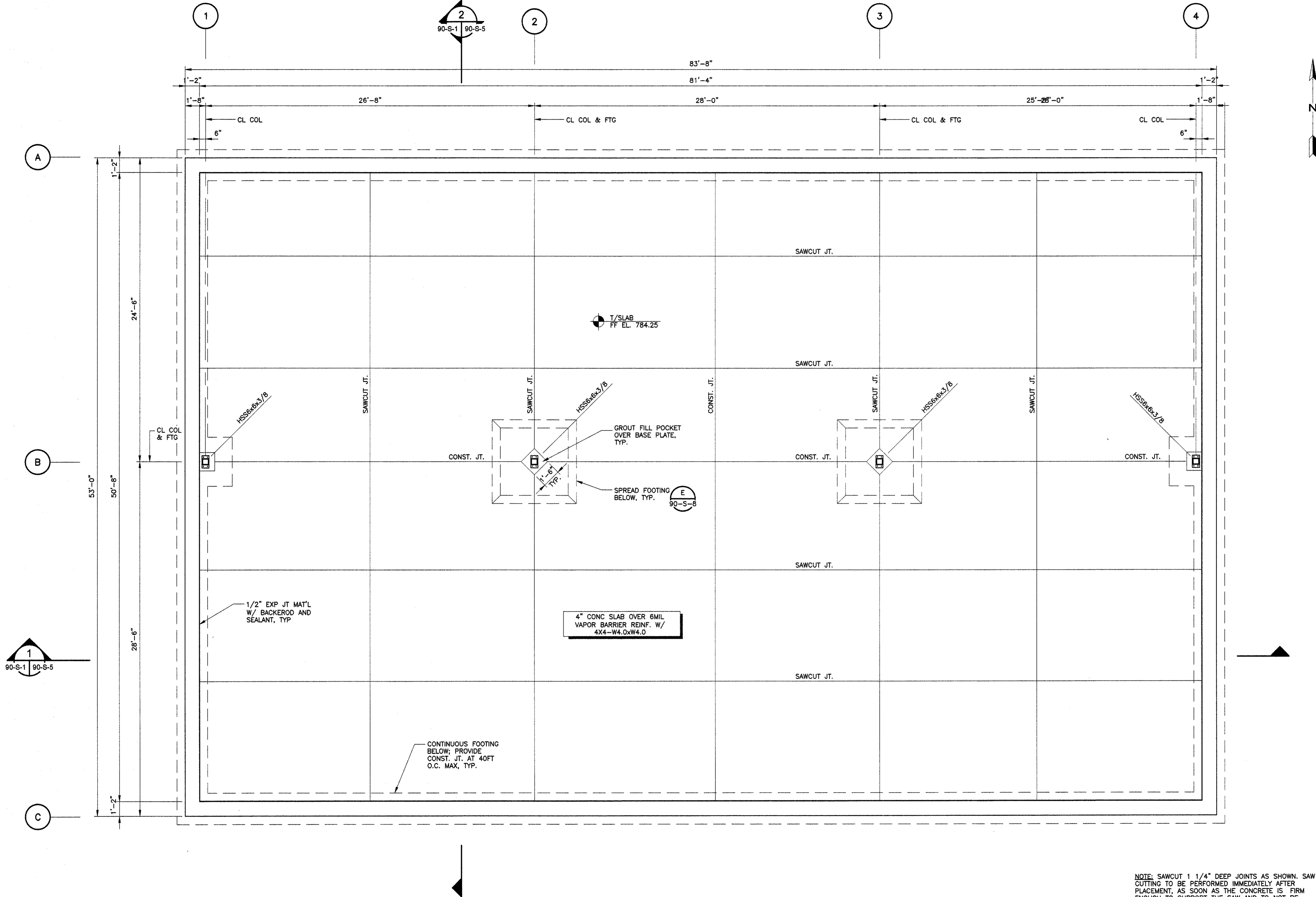
REVISION	DATE

DSGN: DSM
DRAWN: DSM
CHECK: JVS
BAR BELOW IS 1" LONG FOR SCALES BELOW THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

CHLORINE BUILDING
PLAN, SECTIONS AND DETAILS

SHEET NO.
85-S-1



FOUNDATION - EL. 784.25
PLAN
 1/4" = 1'-0"

NOTE: SAWCUT 1 1/4" DEEP JOINTS AS SHOWN. SAW CUTTING TO BE PERFORMED IMMEDIATELY AFTER PLACEMENT, AS SOON AS THE CONCRETE IS FIRM ENOUGH TO SUPPORT THE SAW AND TO NOT BE TORN OR DAMAGED BY THE BLADE.

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 3551 W. LAKE MARY BLVD., SUITE 210
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

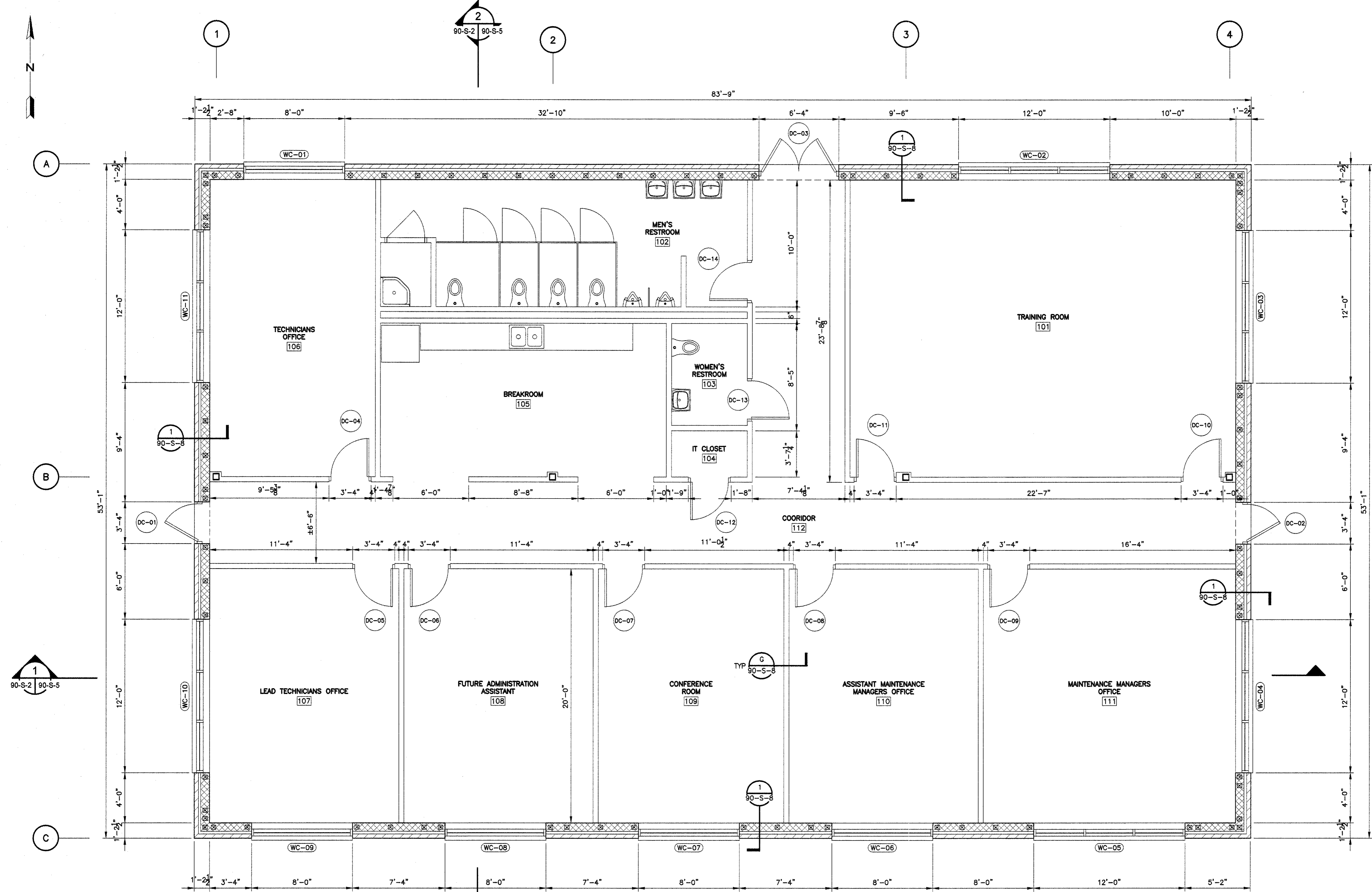
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DGN: DSM	BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DRWN: DSM	
CHK: JVS	

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
**ADMINISTRATION BUILDING
 FOUNDATION PLAN**

SHEET NO.
 90-S-1

V:\LEO\et_data\Projects\Projects_2007\Engineering Strategies_Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\90-S-1 ADMIN BUILDING FOUNDATION PLAN.dwg - 8/24/2016



CMU WALL REINFORCEMENT

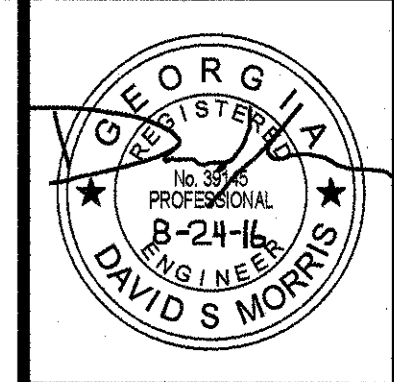
- ☒ DENOTES FILLED CELL. PROVIDE FILLED CELLS AT ALL CORNERS PER STD DETAILS, OPENINGS AND WHERE SHOWN ON PLAN.
- 8" EXTERIOR CMU WALL FILLED CELL REINFORCING TO BE (1)-#5 VERT BAR, CTR. MAXIMUM 32" OC, MIN LAP LENGTH: 30", UNO.
- PROVIDE HORIZONTAL BOND BEAMS AT A SPACING NO GREATER THAN 48" O.C AND WHERE SHOWN ON DRAWINGS.
- PROVIDE CLEAN OUT AND INSPECTION BLOCK OUTS IN CELLS CONTAINING REINF FOR GROUT LIFTS EXCEEDING 5'-0".

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

WALL LEGEND:

- [Hatched Pattern] INDICATES 8" CMU W/ 4" BRICK VENEER
- [Solid Line] 3-5/8" METAL STUD PARTITION WALL

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
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ENGINEERING STRATEGIES, INC.
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MARIETTA, GA 30062
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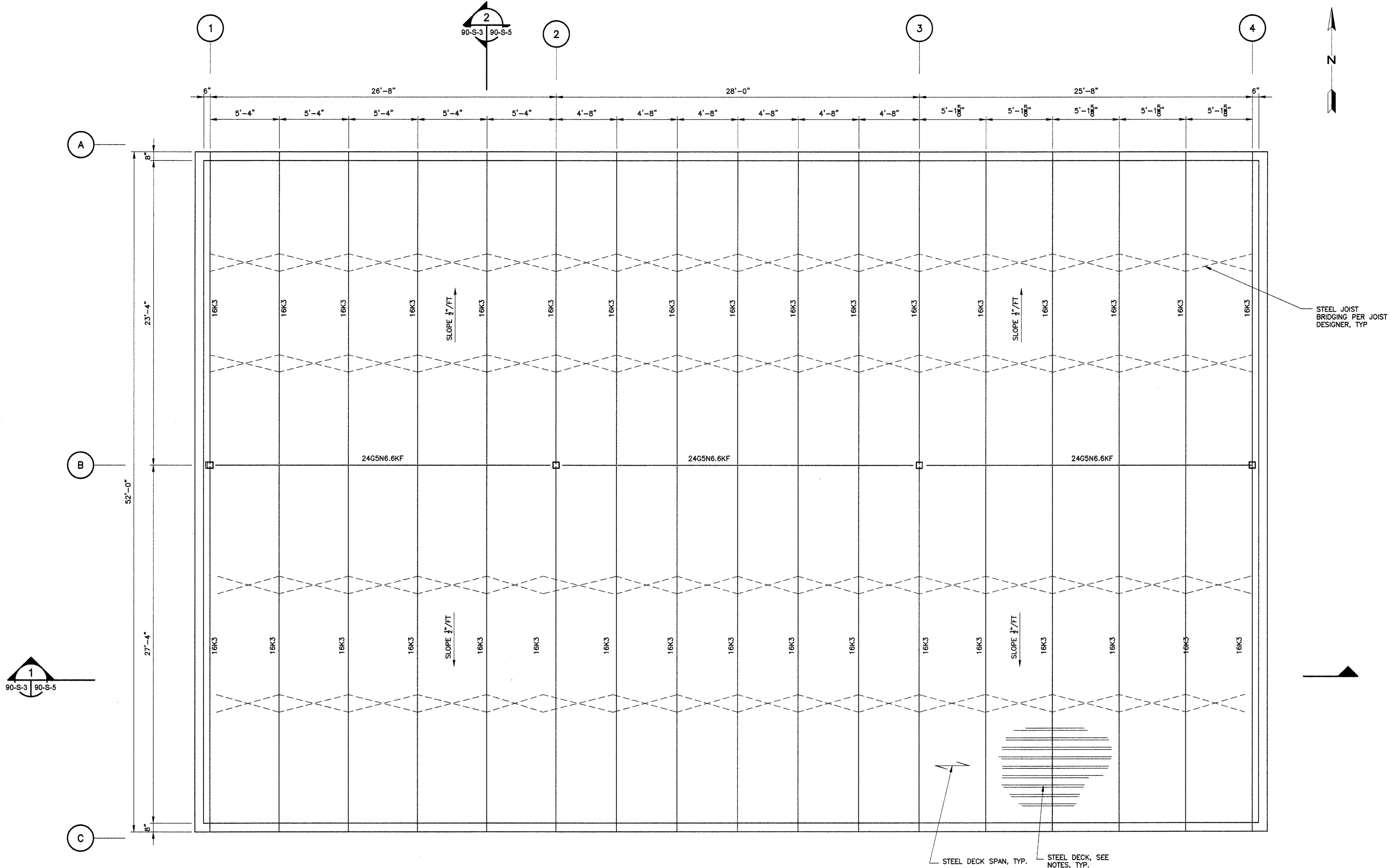
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DSGN: DSM
DRWN: DSM
CHK: JVS
BASE REVISIONS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATION BUILDING
FLOOR PLAN

SHEET NO.
90-S-2

I:\CLEVELand\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\90-S-2 ADMIN BLD FLOOR PLAN.dwg - 8/24/2016



STEEL JOIST BRIDGING PER JOIST DESIGNER, TYP

STEEL DECK SPAN, TYP. STEEL DECK, SEE NOTES, TYP.

METAL ROOF FRAMING NOTES:

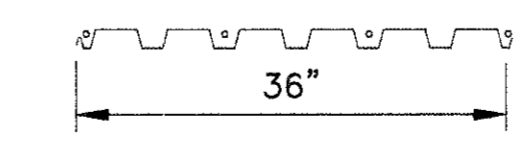
- METAL ROOF DECK SHALL BE GALV. 1-1/2" TYPE B WIDE RIB, 18 GAUGE, GALVANIZED (G90) COATING. DECK FASTENERS AT SUPPORTS AND EXTERIOR EDGES SHALL BE 5/8" PUDDLE WELDS AT 36/4 PATTERN. SIDE LAPS SHALL BE FASTENED WITH #10 TEK SCREWS - 4 PER SPAN.
- METAL DECKING PANELS SHALL SPAN CONTINUOUS OVER 2 FRAMING MEMBERS MINIMUM.

3. JOIST DESIGN LOADS:
- | | |
|---------------------------|-------------------------|
| SUPERIMPOSED DEAD LOAD: | 15 PSF |
| SUPERIMPOSED LIVE LOAD: | 20 PSF |
| WIND PRESSURES (LRFD): | +16 PSF, -24 PSF |
| SNOW LOAD: | PER 00-S-1 |
| CONCENTRATED EQUIP LOADS: | PER EQUIP SHOP DRAWINGS |

4. STEEL JOIST, JOIST CONNECTIONS, AND BRIDGING SHALL BE DESIGNED BY THE JOIST MANUFACTURER. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A STATE OF GEORGIA REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW. IT SHALL BE THE RESPONSIBILITY OF THE JOIST DESIGNER TO DETERMINE THE EFFICIENT JOIST FOR THE INDICATED LOADS.

5. FOR ROOF OPENINGS, DRAINS AND DETAILS, SEE "A" "M", & "H" DRAWINGS. ADDITIONAL FRAMING SHALL BE PROVIDED PER DETAIL F/100-S-5

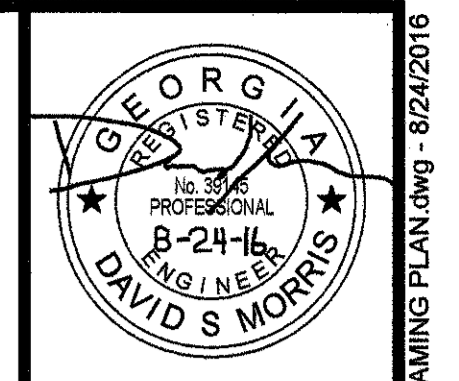
ROOF FRAMING PLAN
1/4"=1'-0"



METAL DECK PROPERTIES PER FOOT OF WIDTH:

- DEPTH: 1-1/2"
 MIN GAGE: 20 GA (GALV)
 MIN Ix: 0.201 IN⁴ (+), 0.222 IN⁴ (-)
 MIN Sx: 0.234 IN³ (+), 0.247 IN³ (-)
 MIN Fy: 33,000 PSI

ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407)-322-0500
 EAT PROJECT NO. 15-137



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

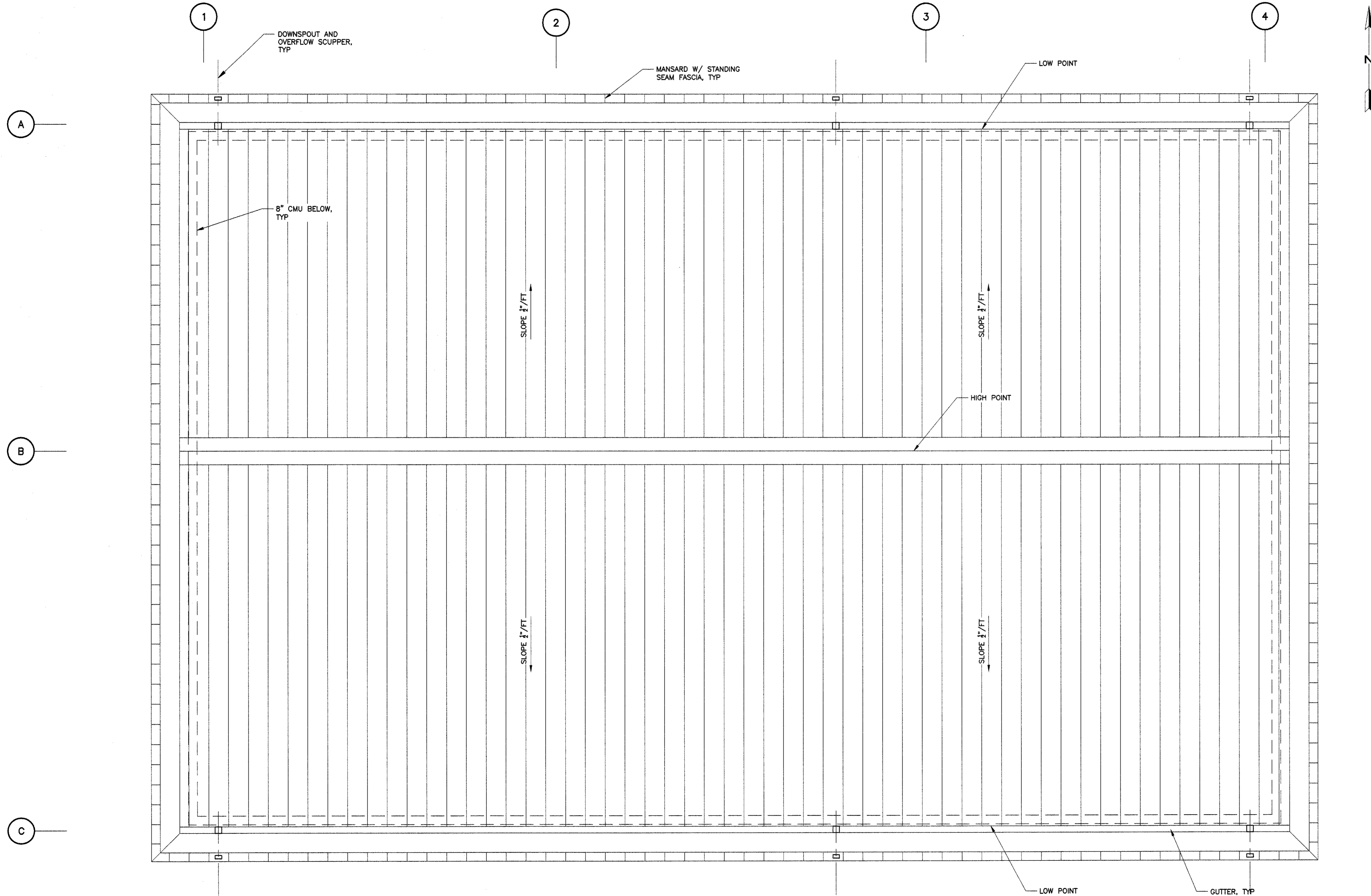
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSM: DSM
 DRAWN: DSM
 CHECK: JVS
 DO NOT SCALE OR COPY FROM THIS SHEET. ADJUST SCALES ACCORDINGLY.

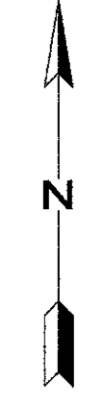
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATION BUILDING
 ROOF FRAMING PLAN

SHEET NO.
 90-S-3

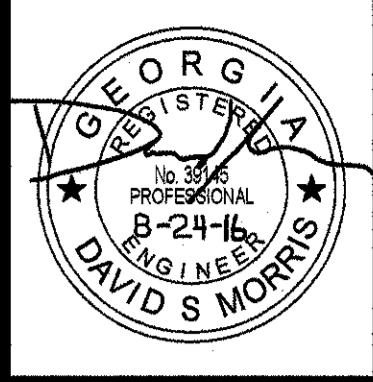
I:\C\oper_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\HeadStructural\90-S-3 ADMIN BLD ROOF FRAMING PLAN.dwg - 8/24/2016



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



ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 EAT PROJECT NO. 15-137



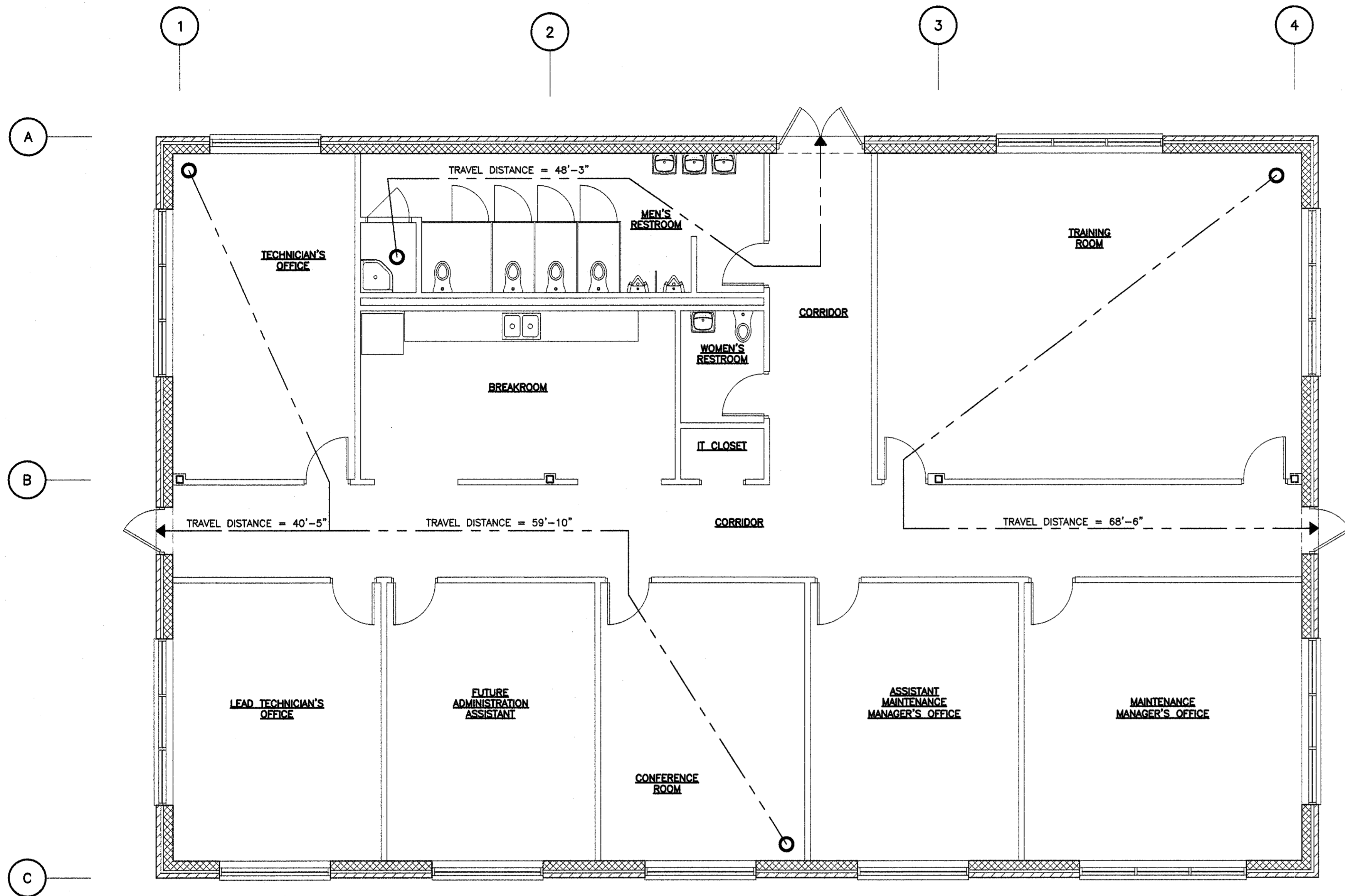
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
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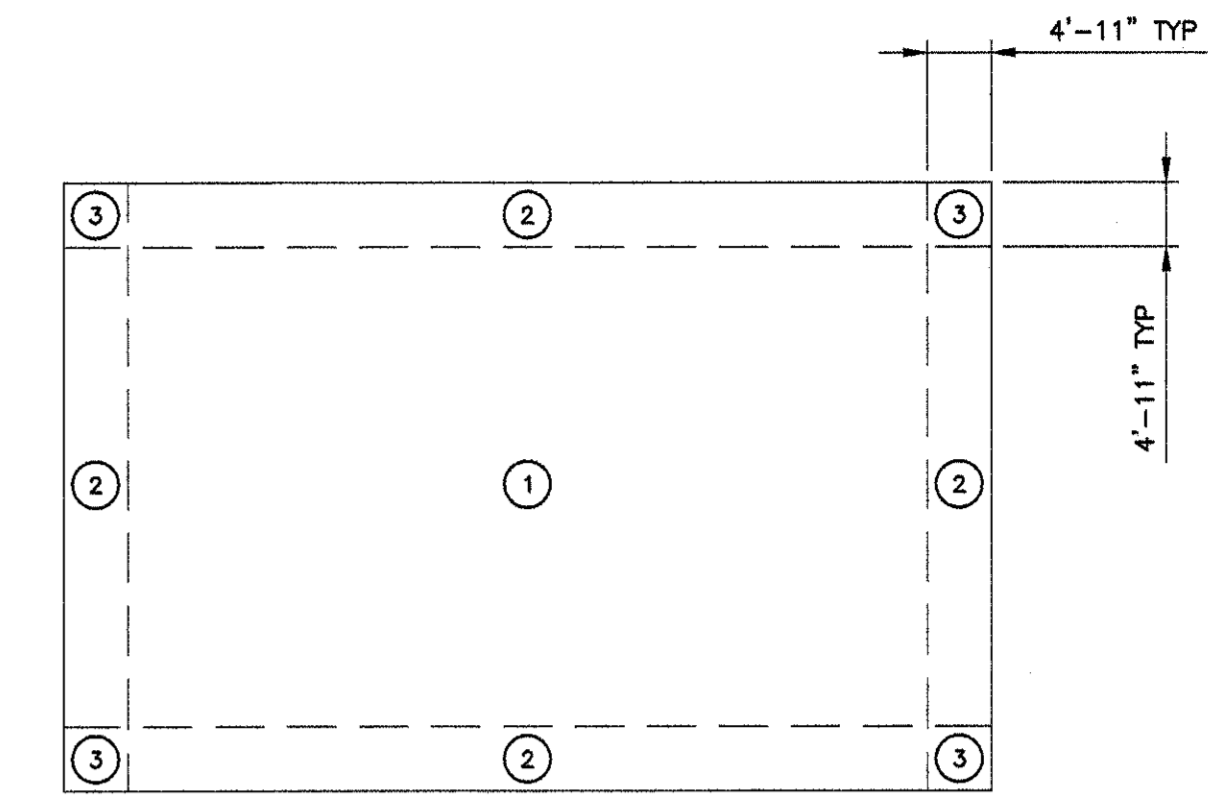
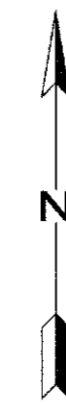
DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 BAR BELOW IS 1" LONG FOR SCALES
 LONG ON THIS SHEET. ADJUST
 SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATION BUILDING
 ROOF PLAN

SHEET NO.
 90-S-4



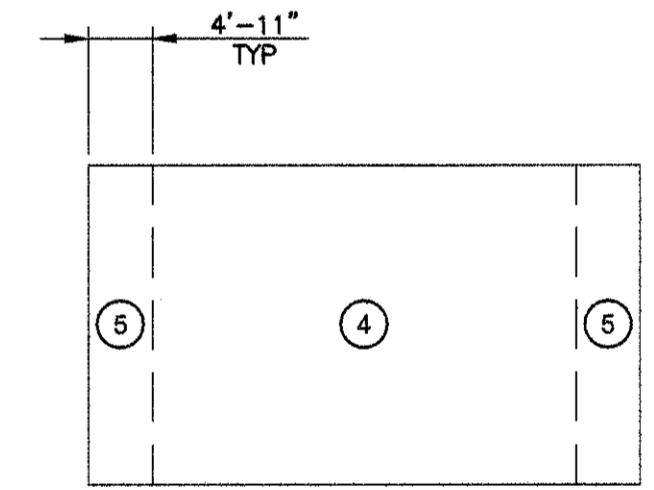
LIFE SAFETY - ADMINISTRATION BLDG
PLAN
 3/16"=1'-0"



ROOF WIND LOADS
KEYPLAN
 NTS

AREA (FT ²)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	16.0	-25.9	16.0	-43.4	16.0	-65.4
25	16.0	-25.0	16.0	-37.3	16.0	-50.5
50	16.0	-24.3	16.0	-32.7	16.0	-39.3
>100	16.0	-23.7	16.0	-28.1	16.0	-28.1

AREA (FT ²)	ZONE 4 (FIELD)		ZONE 5 (CORNER)	
	(+)	(-)	(+)	(-)
<10	23.7	-25.7	23.7	-31.6
50	21.3	-23.2	21.3	-26.7
200	19.2	-21.1	19.2	-22.5
>500	17.8	-19.7	17.8	-19.7



WALL WIND LOADS
ELEVATION
 NTS

WIND PRESSURE NOTES:

- SEE GENERAL STRUCTURAL NOTES ON S-001 FOR WIND DESIGN CRITERIA.
- DESIGN PRESSURES PROVIDED AT LRFD LEVEL. TO OBTAIN ASD PRESSURES MULTIPLY BY A FACTOR OF 0.6.
- NEGATIVE SIGN INDICATED OUTWARD PRESSURES (SUCTION)
- CORNER ZONE WIDTH: SEE DIAGRAMS
- INTERPOLATION OF WIND PRESSURES IS PERMITTED.

BUILDING DATA:

ADMINISTRATION BUILDING

CODE REVIEW: 2012 IBC

NOTES:

- THE TRAINING ROOM IS LESS THAN 750 SF AND IS THEREFORE CLASSIFIED AS AN ACCESSORY TO THE GROUP B BUSINESS CLASSIFICATION OF THE REST OF THE STRUCTURE PER IBC 303.1.2.

OCCUPANCY CLASSIFICATION: GROUP B BUSINESS
CONSTRUCTION TYPE: TYPE II-B, NONSPRINKLED
MAX ALLOWABLE SQ FOOTAGE: B = 23,000 SF PROVIDED = 4,121 SF
MAX ALLOWABLE HEIGHT: B = 55 FT PROVIDED = ±14'-6"
NO. FLOORS PERMITTED: B = 3 FLRS
OCCUPANCY SEPERATION: ALL ONE OCCUPANCY
AUTOMATIC FIRE SPRINKLERS: NOT REQUIRED

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS) PER TABLE 601

PRIMARY STRUCTURAL FRAME	0 HOURS
BEARING WALLS - INTERIOR & EXTERIOR	0 HOURS
NONBEARING WALLS & PARTITION - EXTERIOR	0 HOURS
NONBEARING WALLS & PARTITION - INTERIOR	0 HOURS
FLOOR CONSTRUCTION & SECONDARY MEMBERS	0 HOURS
ROOF CONSTRUCTION & SECONDARY MEMBERS	0 HOURS

OCCUPANT LOAD

FLOOR/ROOM OR SPACE	FLOOR AREA & OCCUPANT LOAD FACTOR	NO. OF OCCUPANTS
101 - TRAINING ROOM	714 SF, 15	48
102 - MEN'S RESTROOM	290 SF, -	-
103 - WOMEN'S RESTROOM	48 SF, -	-
104 - IT CLOSET	22 SF, 100	1
105 - BREAKROOM	272 SF, 15	18
106 - TECHNICIAN'S OFFICE	308 SF, 100	3
107 - LEAD TECHNICIAN'S OFFICE	300 SF, 100	3
108 - FUTURE ADMINISTRATION ASSISTANT	300 SF, 100	3
109 - CONFERENCE ROOM	295 SF, 100	3
110 - ASSISTANT MAINTENANCE MANAGER'S OFFICE	300 SF, 100	3
111 - MAINTENANCE MANAGER'S OFFICE	400 SF, 100	4
112 - CORRIDOR	702 SF, -	-
TOTAL		86

EGRESS WIDTH: WITHOUT SPRINKLER SYSTEM = 0.2" / PERSON
 0.2" X 86 OCCUPANTS = 17.2" PROVIDED = 128"
MIN EXIT DOOR WIDTH: PROVIDED = 3"
MIN NUMBER OF EXITS: PROVIDED = 68'-6"
MAX ALLOWABLE TRAVEL DISTANCES: 200FT PROVIDED = 78"
MIN CORRIDOR WIDTH: 44" PROVIDED = NONE
MAX CORRIDOR DEAD END: 20 FT PROVIDED = NONE
ADA COMPLIANCE: YES

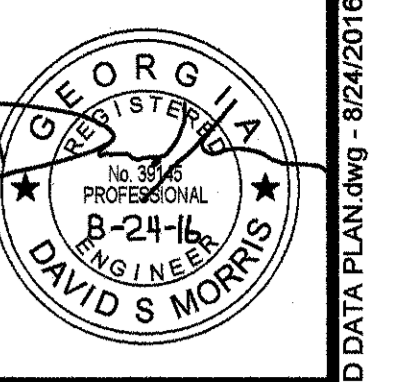
PLUMBING FIXTURES (TABLE 2902.1)

86 OCCUPANTS
 61 MALE & 25 FEMALE

MALE
 LAVATORY (1:40 FOR 1ST 80 & 1:80 FOR REMAINDER) = 1.53 = 2 REQUIRED 2 PROVIDED
 WATER CLOSET (1:25 FOR 1ST 50 & 1:50 FOR REMAINDER) = 2.22 = 2 REQUIRED 6 PROVIDED

FEMALE
 LAVATORY (1:40 FOR 1ST 80 & 1:80 FOR REMAINDER) = 0.63 = 1 REQUIRED 1 PROVIDED
 WATER CLOSET (1:25 FOR 1ST 50 & 1:50 FOR REMAINDER) = 1.00 = 1 REQUIRED 1 PROVIDED

DRINKING FOUNTAIN (1:100) = 0.86 = 1 REQUIRED 1 PROVIDED
 SERVICE SINK = 1 REQUIRED 1 PROVIDED



ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 EAT PROJECT NO. 15-137

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500

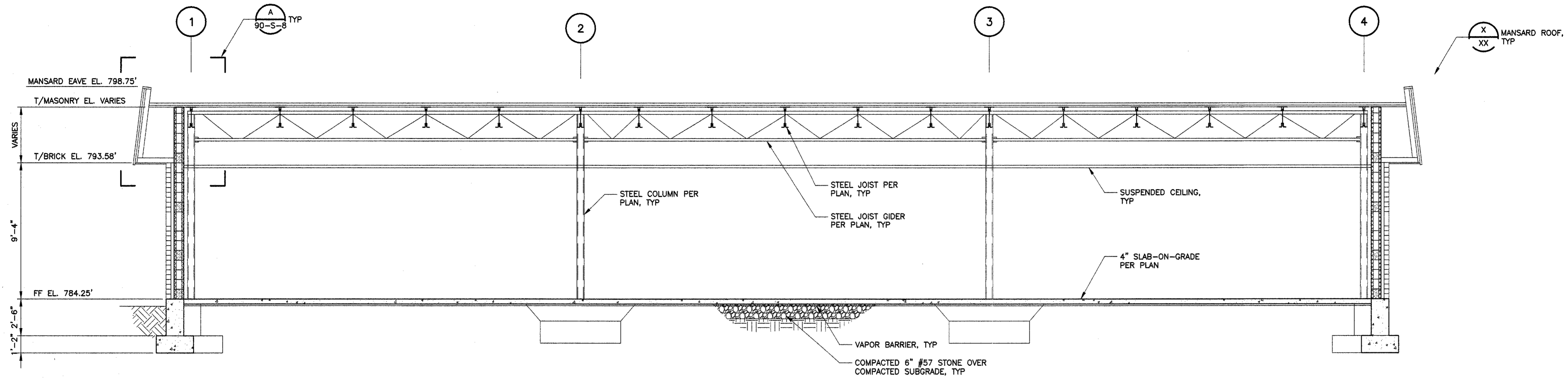
PROJECT NUMBER: DATE: AUGUST 2016
 REVISION: DATE

DSM: DSM
 DRAWN: DSM
 CHECK: JVS
 BAR BEYOND THIS SCALE
 SHALL BE ON THIS SHEET. IF NOT 1"
 LONG ON THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

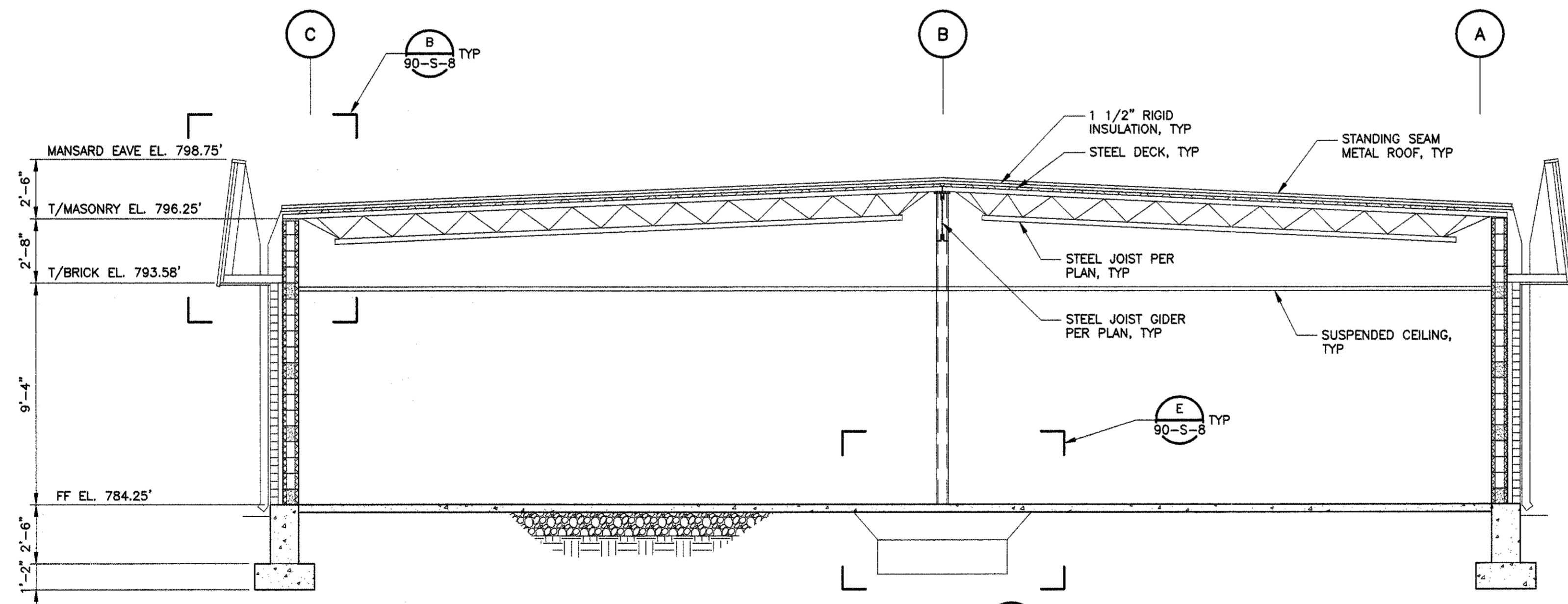
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATION BUILDING
 DATA AND PLAN

SHEET NO.
 90-S-5

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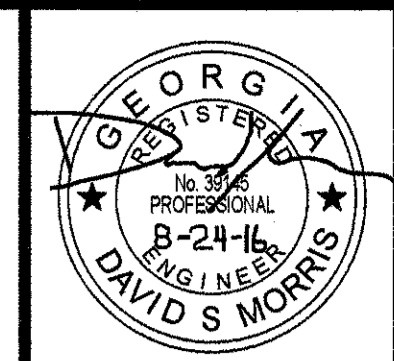


SECTION 1
SCALE: 1/4" = 1'



SECTION 2
SCALE: 1/4" = 1'

ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 325-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

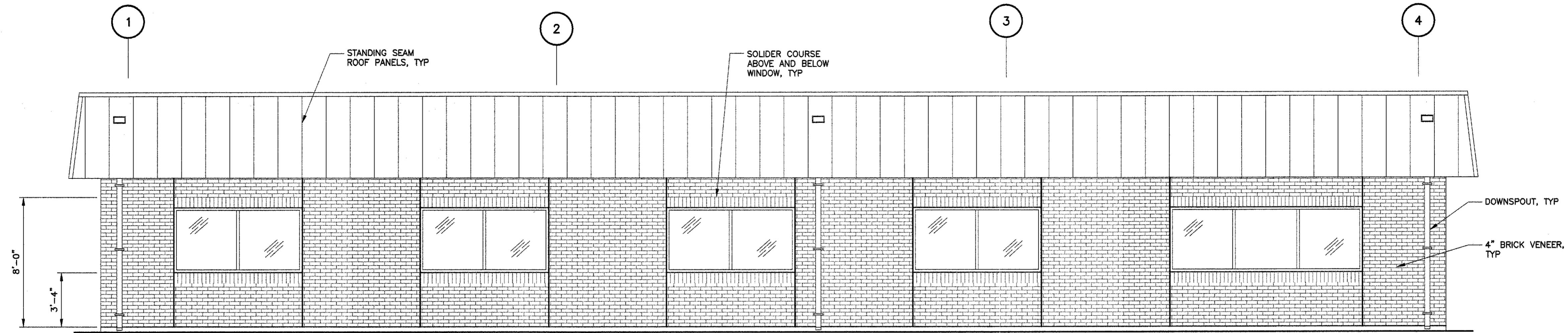
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 DRWN: DSM
 CHCK: JVS

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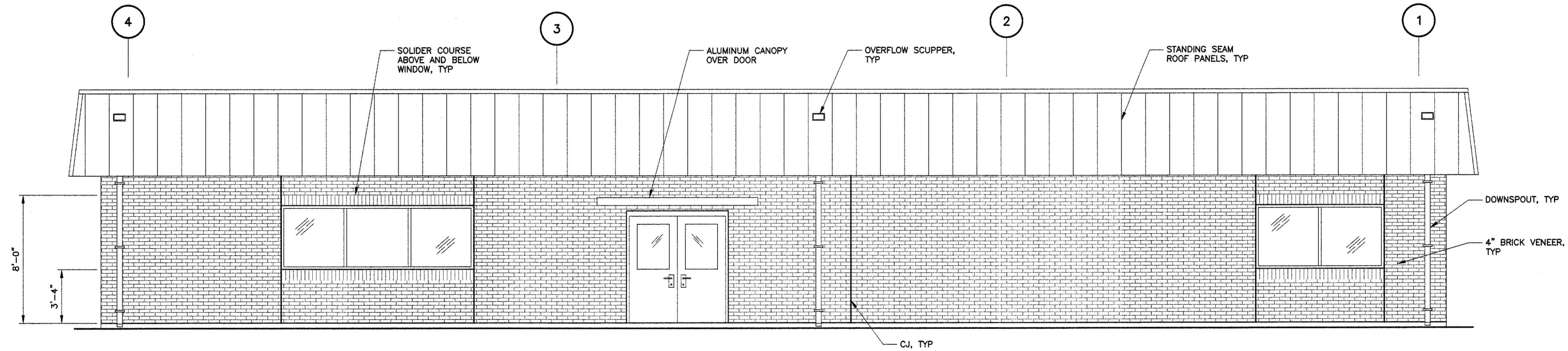
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATION BUILDING
 SECTIONS

SHEET NO.
 90-S-6

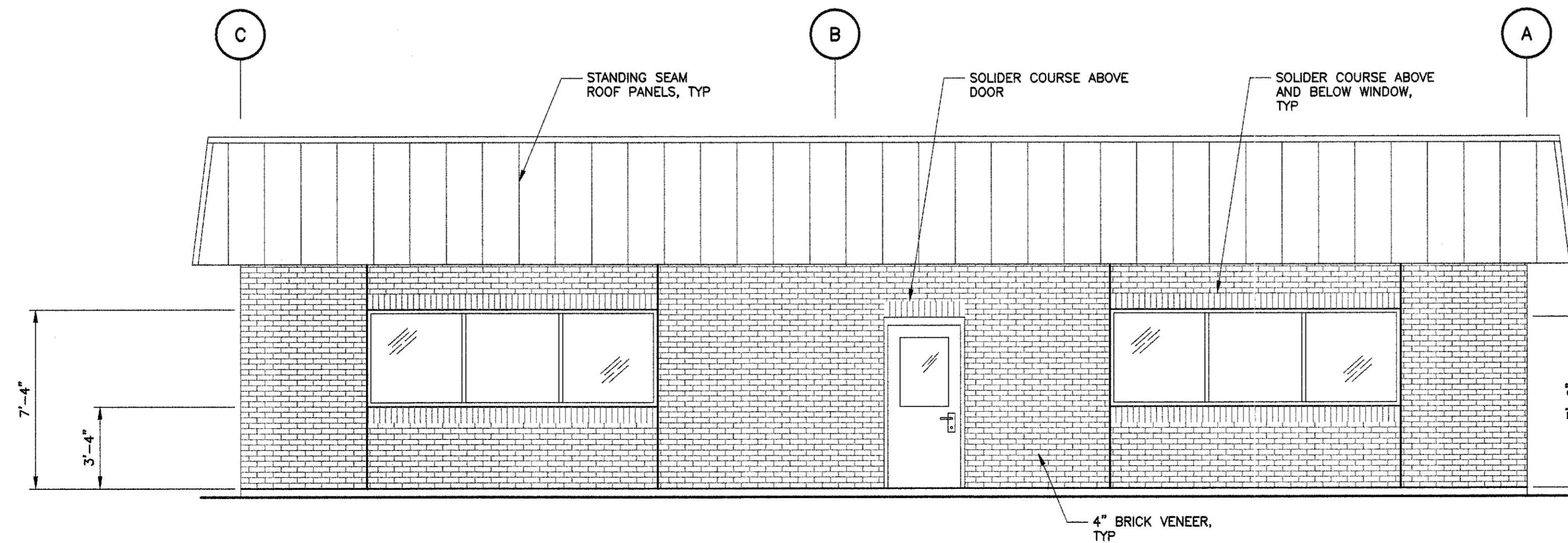
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SOUTH ELEVATION
1/4"=1'-0"

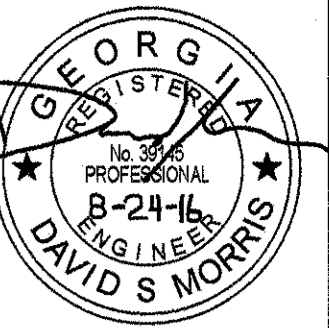


NORTH ELEVATION
1/4"=1'-0"



EAST (WEST SIMILAR) ELEVATION
1/4"=1'-0"

ENGINEERING TECHNOLOGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
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MARIETTA, GA 30062
(770) 429-0001

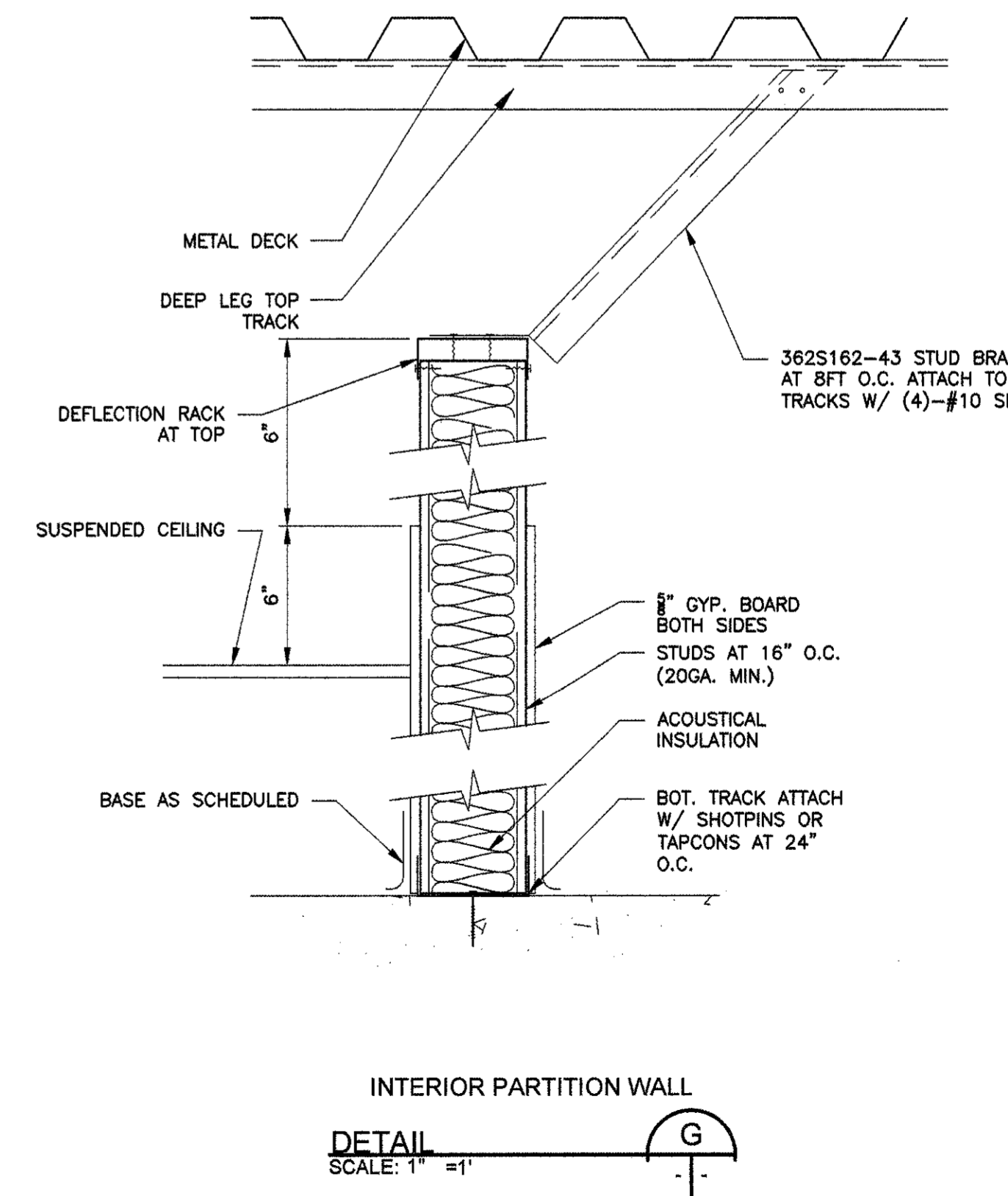
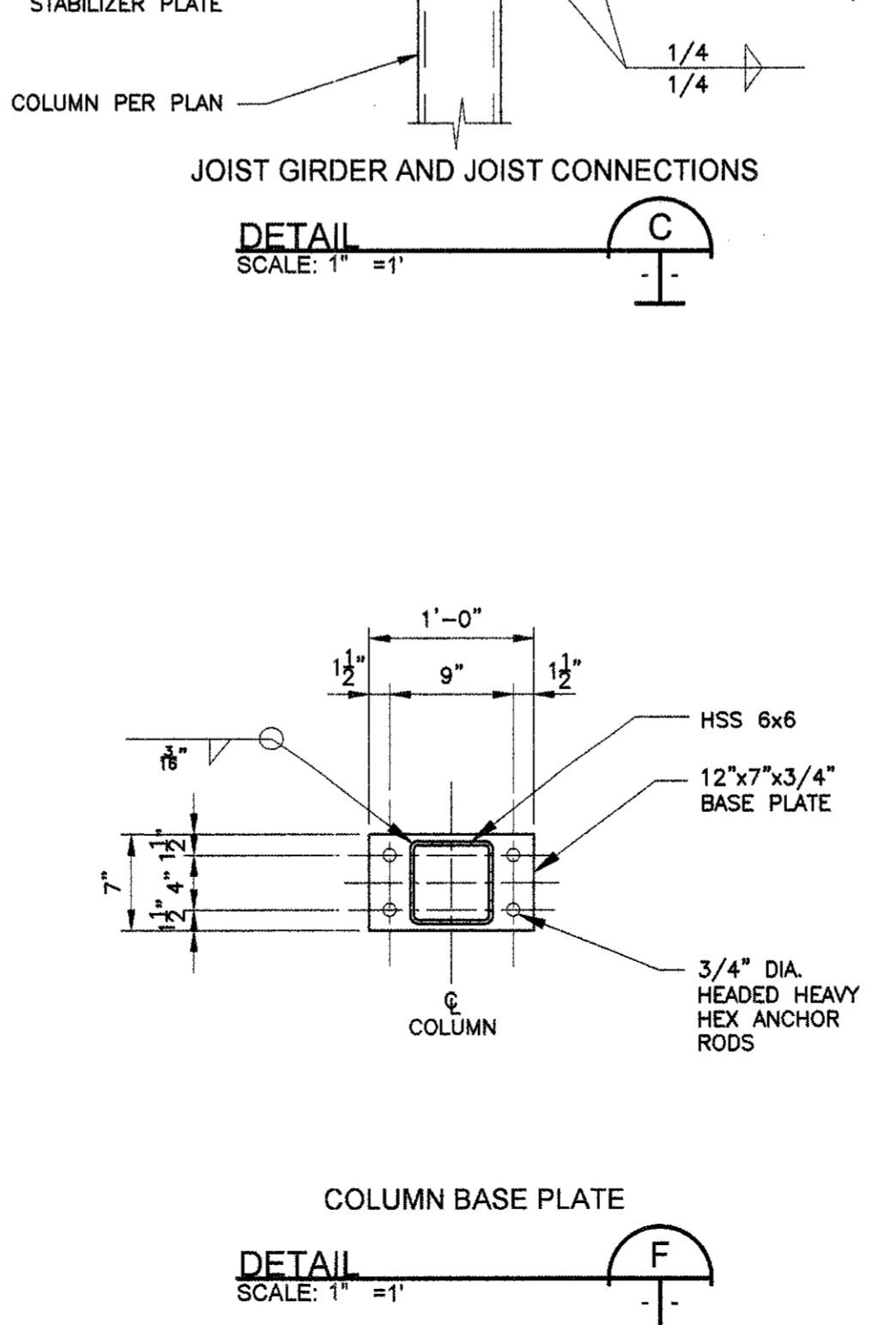
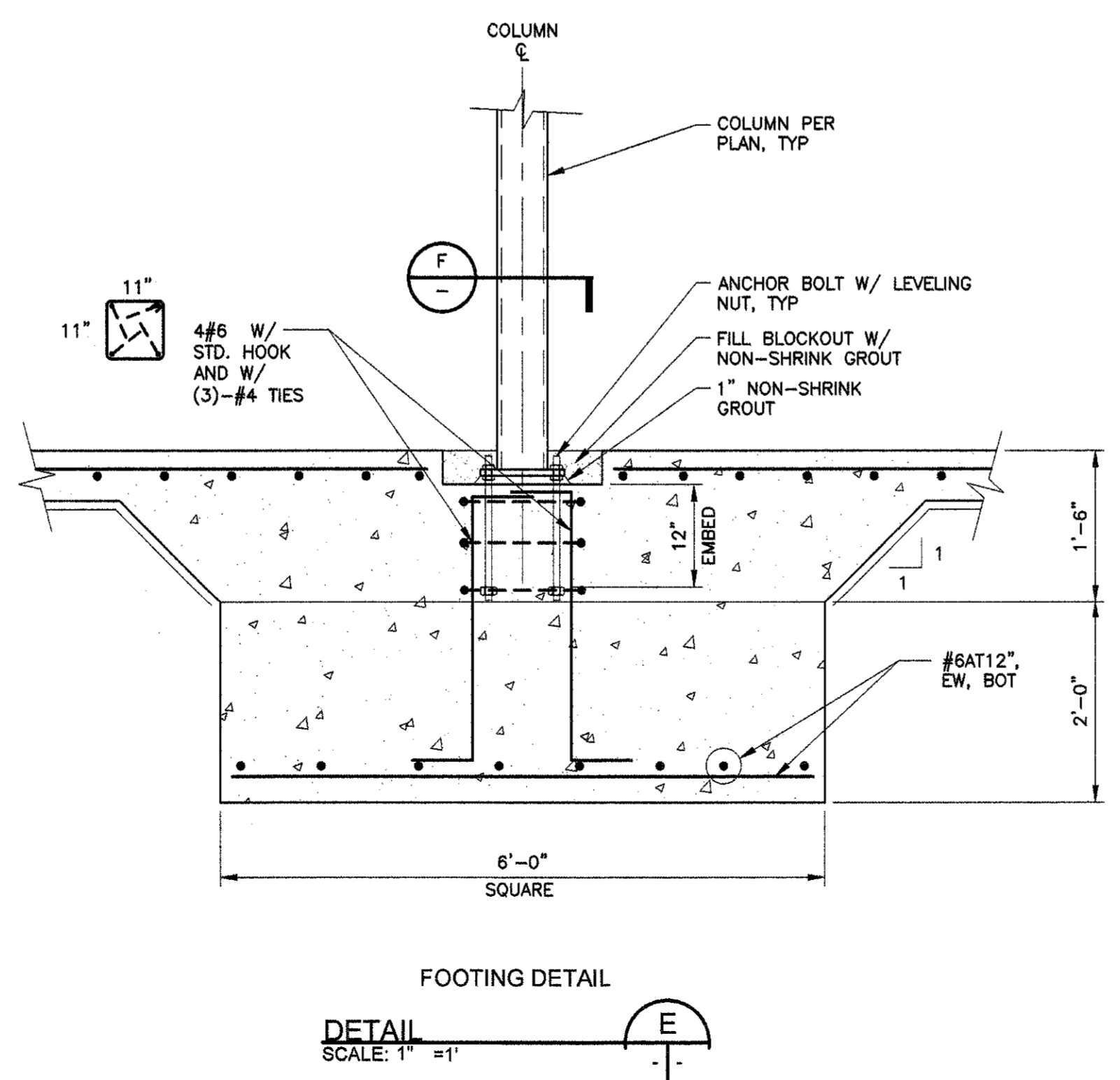
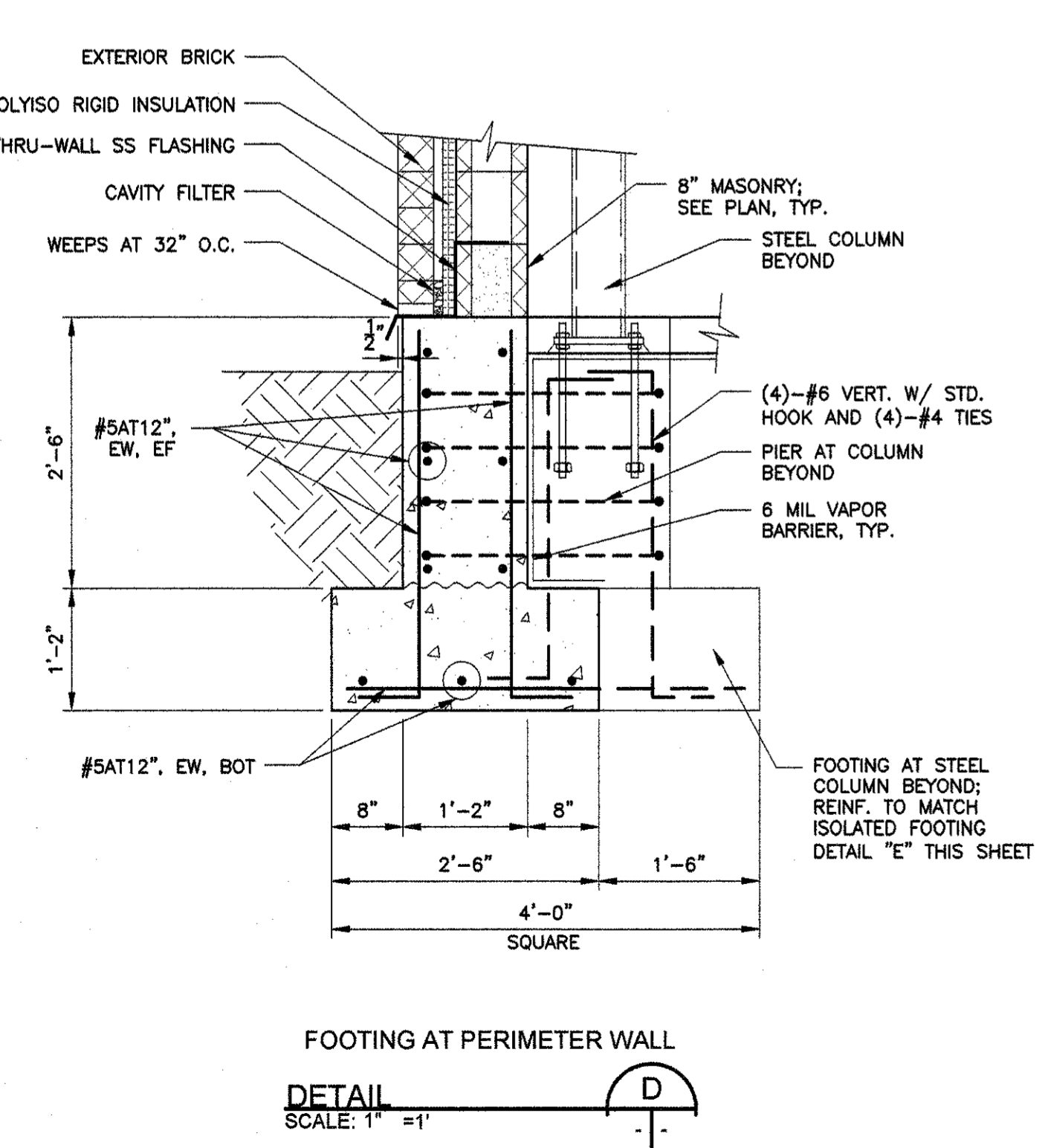
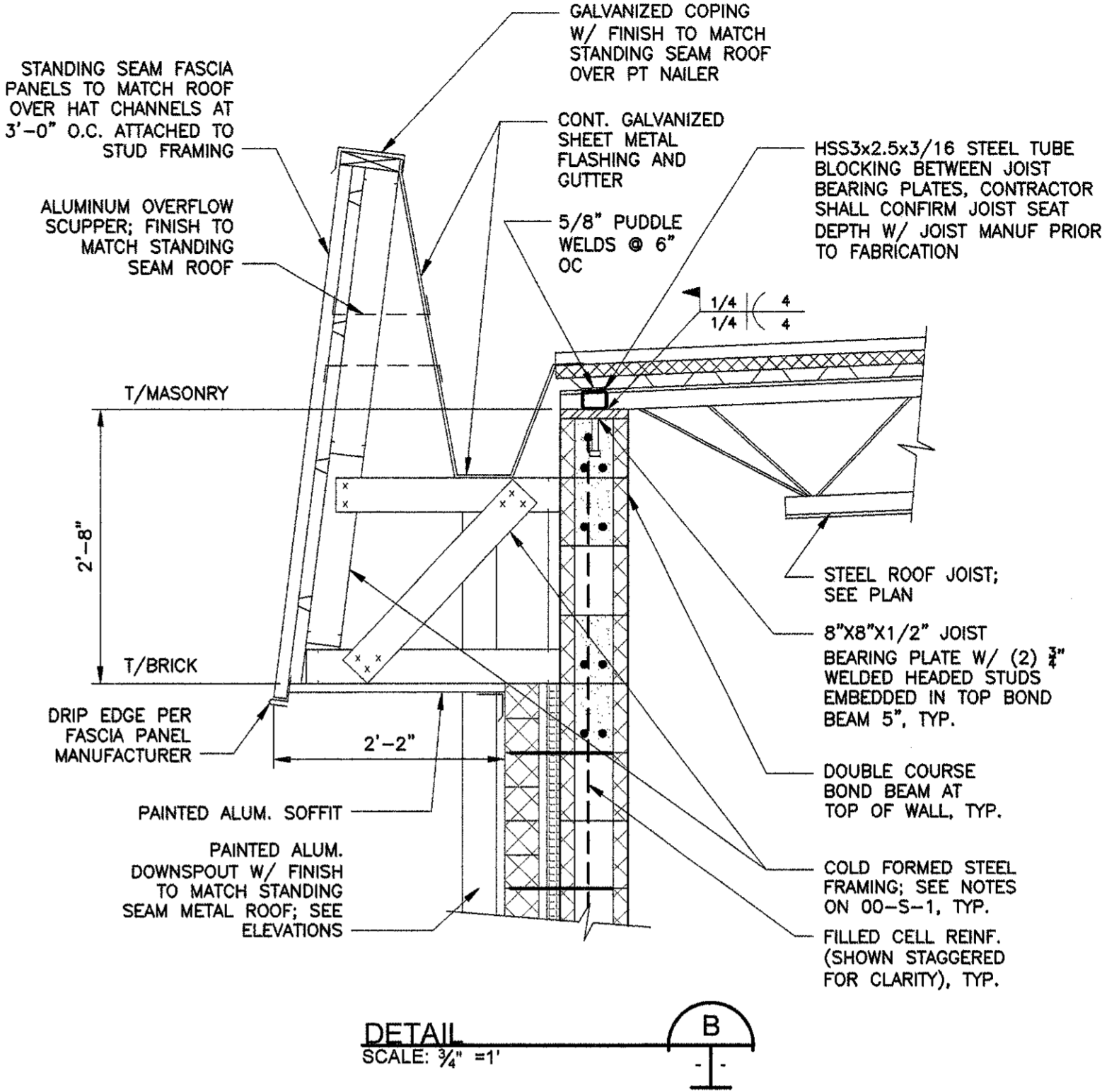
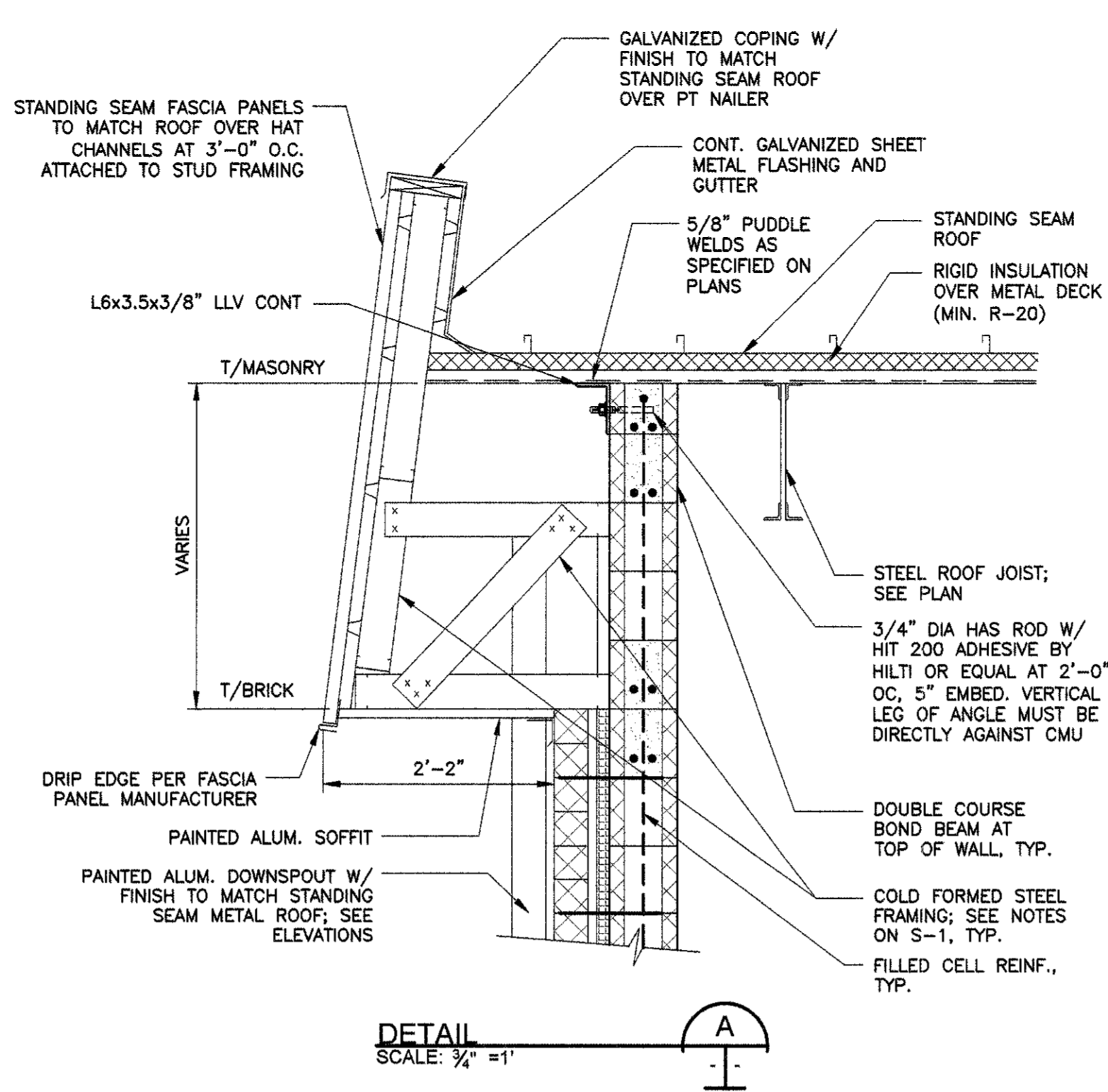
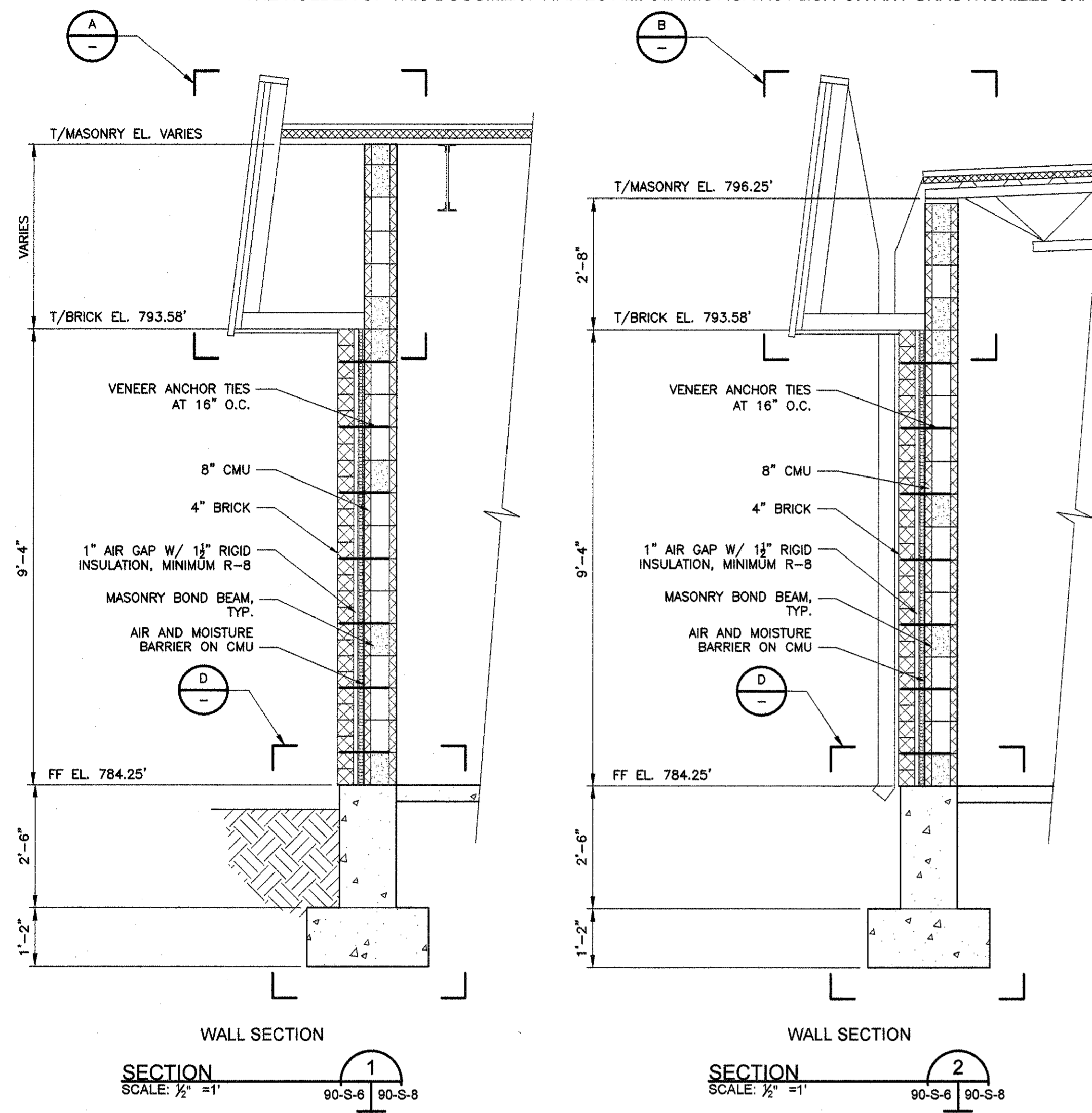
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: DSM
DRWN: DSM
CHK: JVS
BAR BELOW IS 1" LONG FOR SCALES
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SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATION BUILDING
ELEVATIONS

SHEET NO.
90-S-7

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3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
FAX: (407) 322-0500
PROJECT NO. 15-137

ESI
ENGINEERING STRATEGIES, INC.
3555 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

REGISTERED PROFESSIONAL ENGINEER
NO. 2416
DAVID S. MORRIS

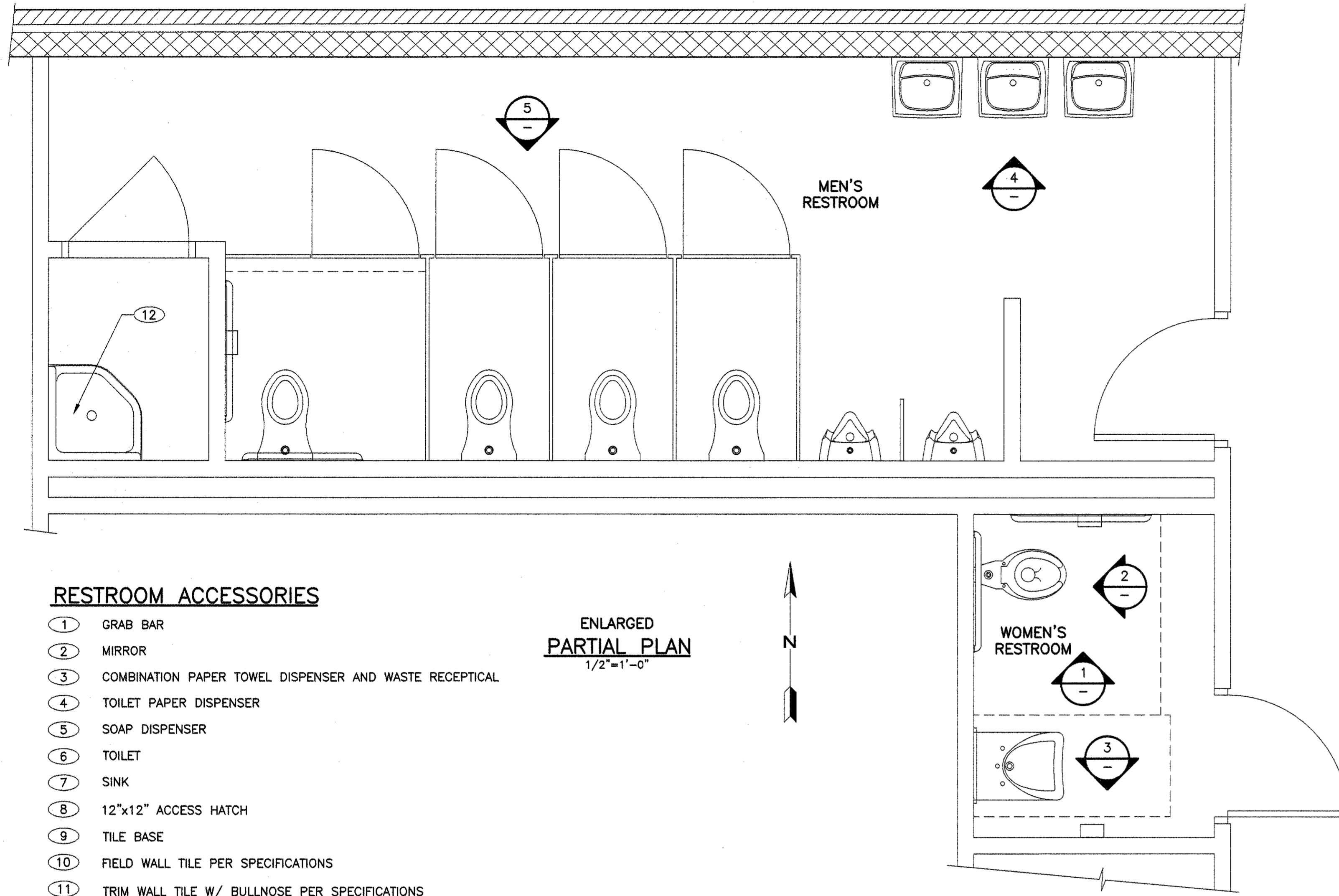
PROJECT NUMBER:	DATE:	REVISION:
DSM	AUGUST 2016	
DRWN: DSM	DATE:	
CHK: JVS		

BAR BELOW IS 1" LONG FOR SCALES LONGER THAN THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATION BUILDING
WALL SECTIONS AND DETAILS

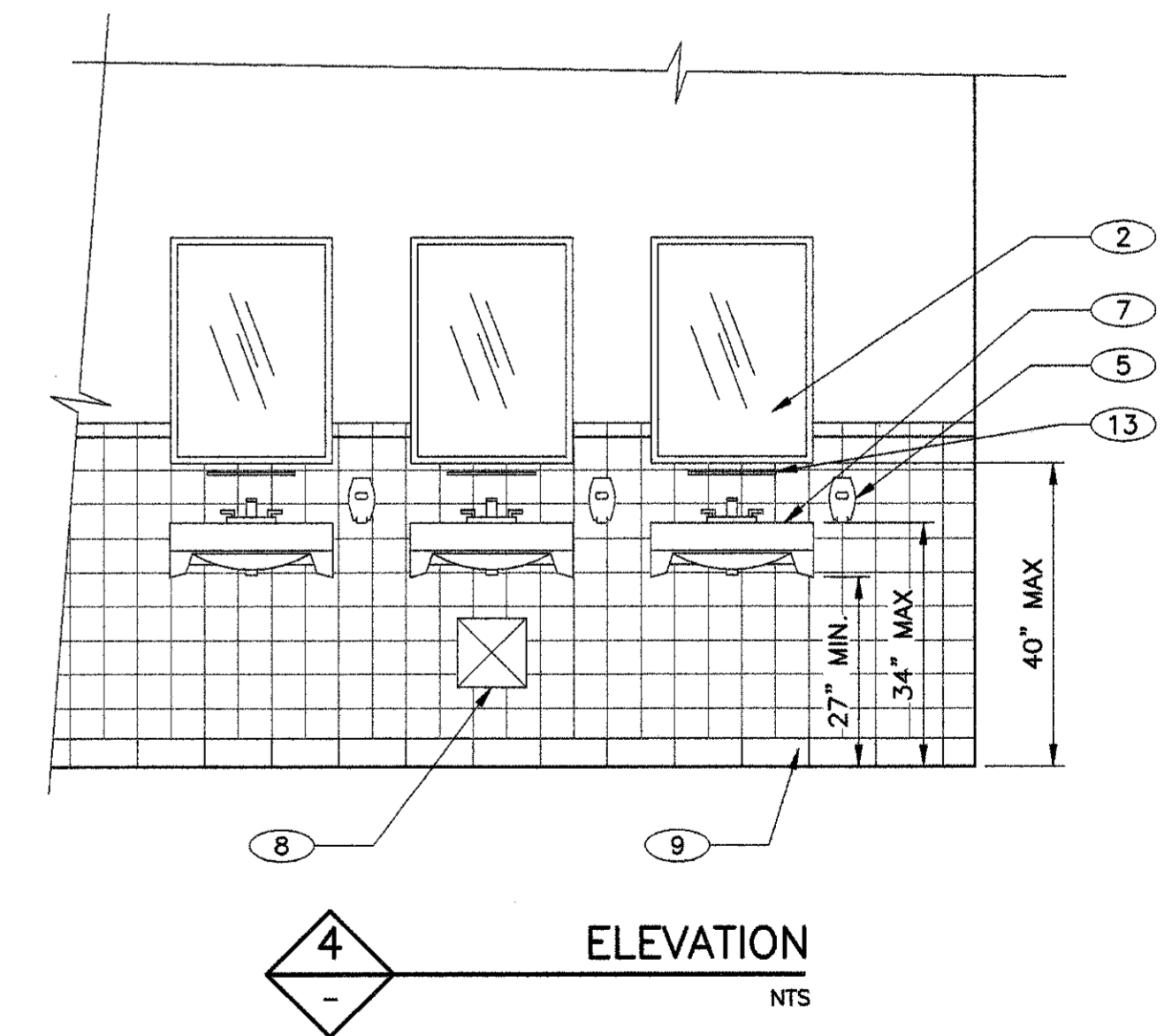
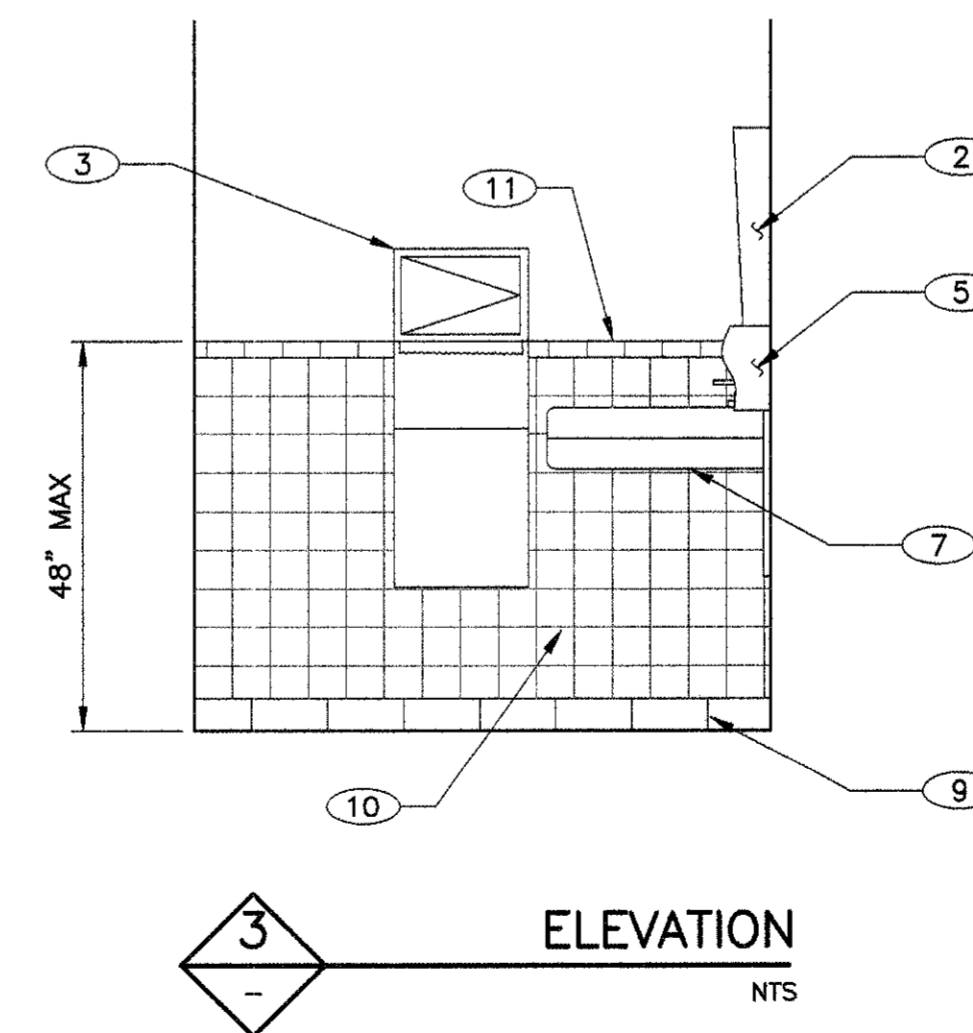
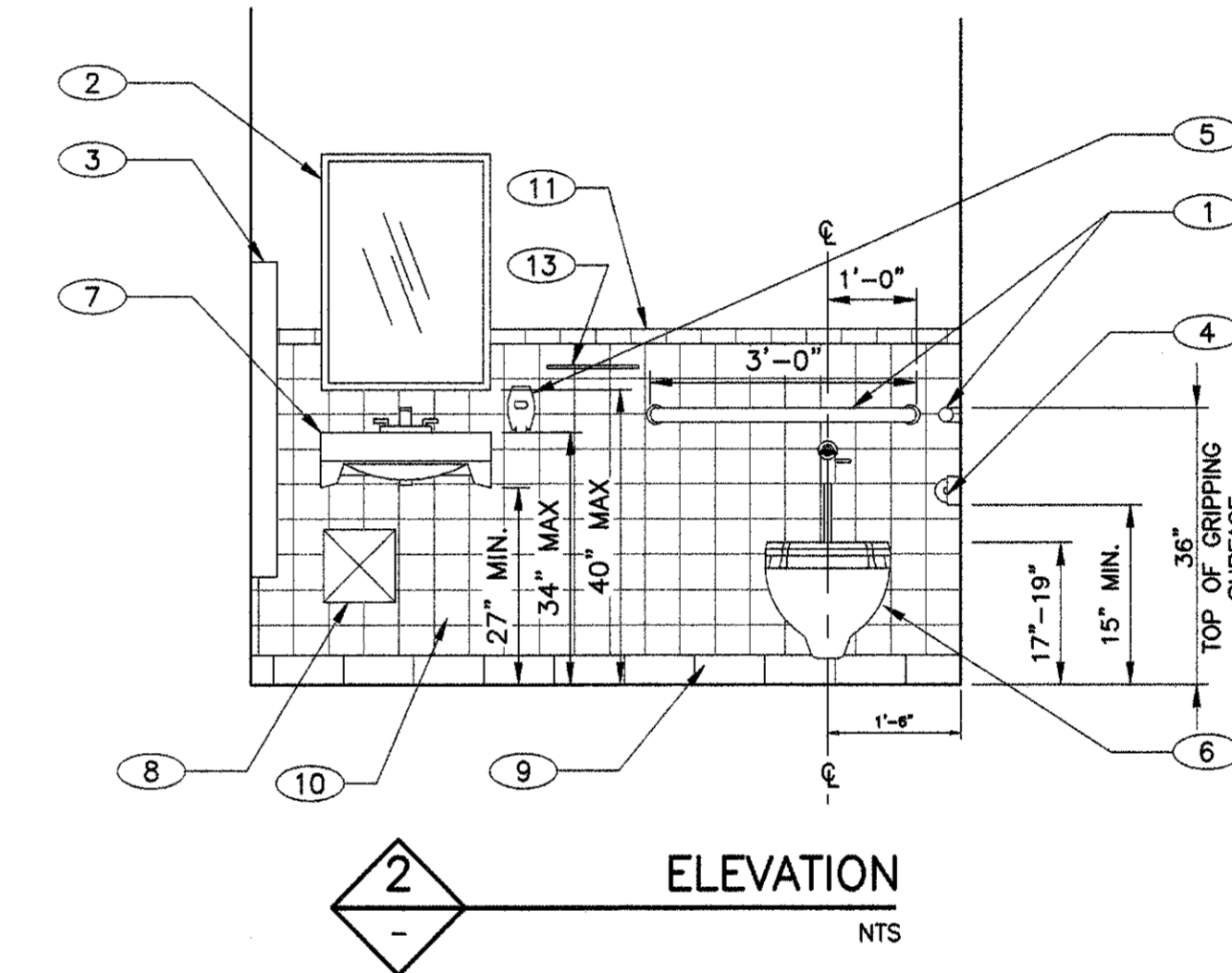
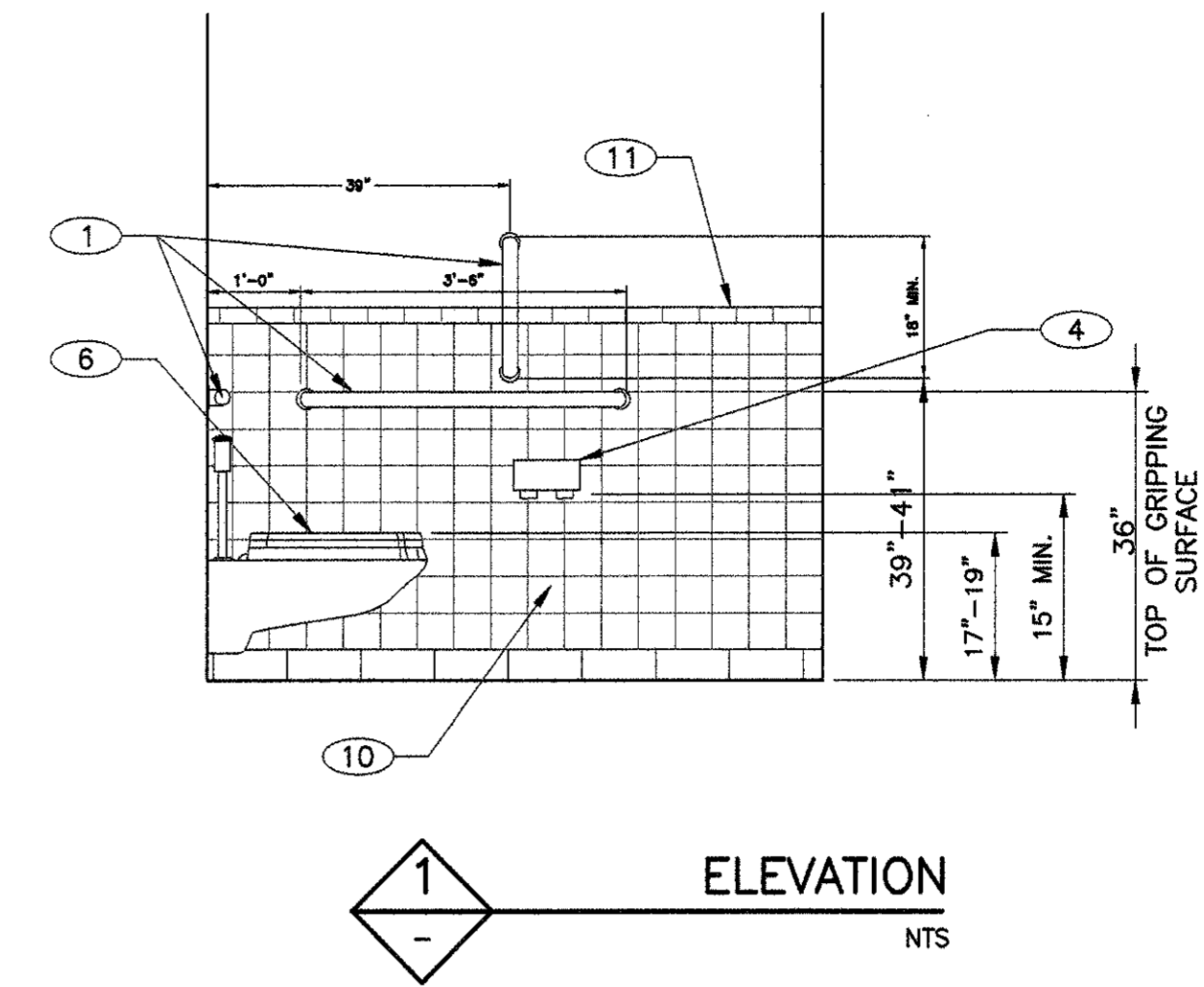
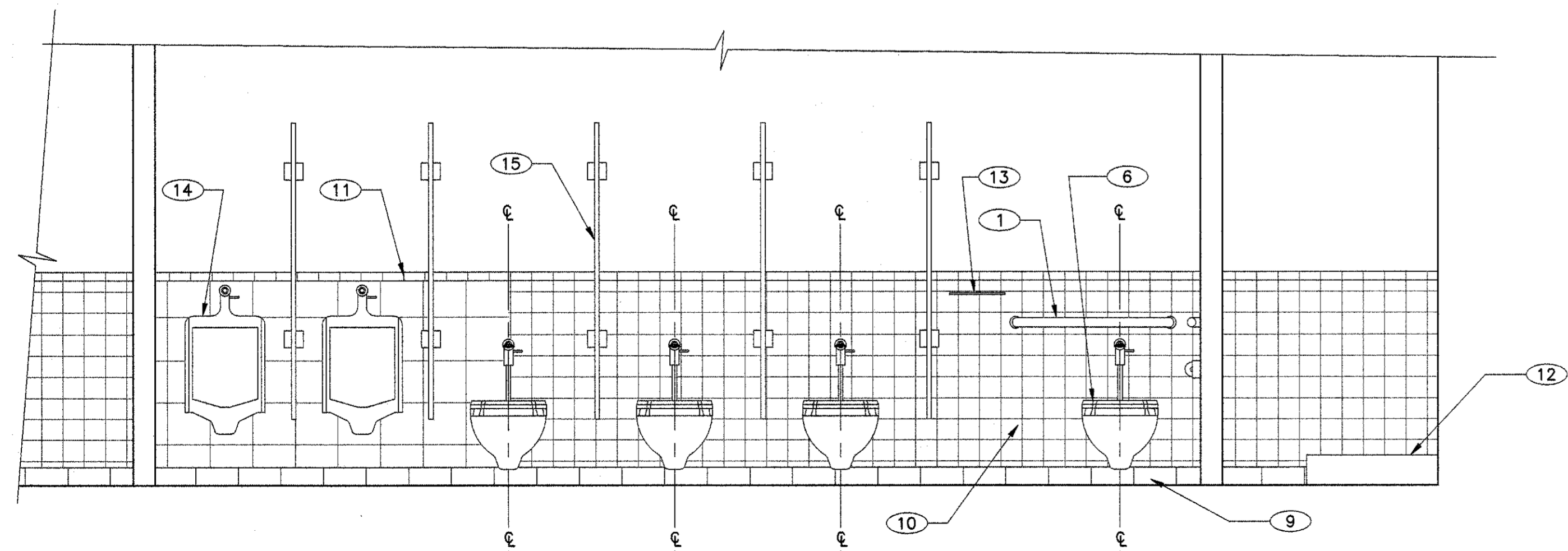
SHEET NO.
90-S-8

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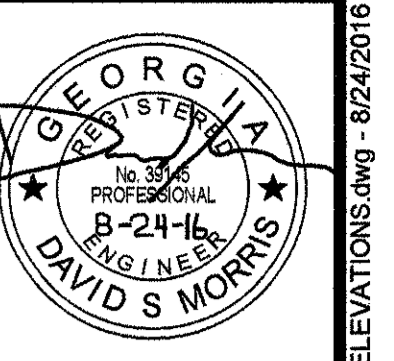


RESTROOM ACCESSORIES

- ① GRAB BAR
- ② MIRROR
- ③ COMBINATION PAPER TOWEL DISPENSER AND WASTE RECEPTAL
- ④ TOILET PAPER DISPENSER
- ⑤ SOAP DISPENSER
- ⑥ TOILET
- ⑦ SINK
- ⑧ 12"x12" ACCESS HATCH
- ⑨ TILE BASE
- ⑩ FIELD WALL TILE PER SPECIFICATIONS
- ⑪ TRIM WALL TILE W/ BULLNOSE PER SPECIFICATIONS
- ⑫ MOP SINK
- ⑬ SHELF
- ⑭ URINAL
- ⑮ PARTITION



ENGINEERING TECHNOLOGIES, INC.
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PHONE: (407) 322-0500
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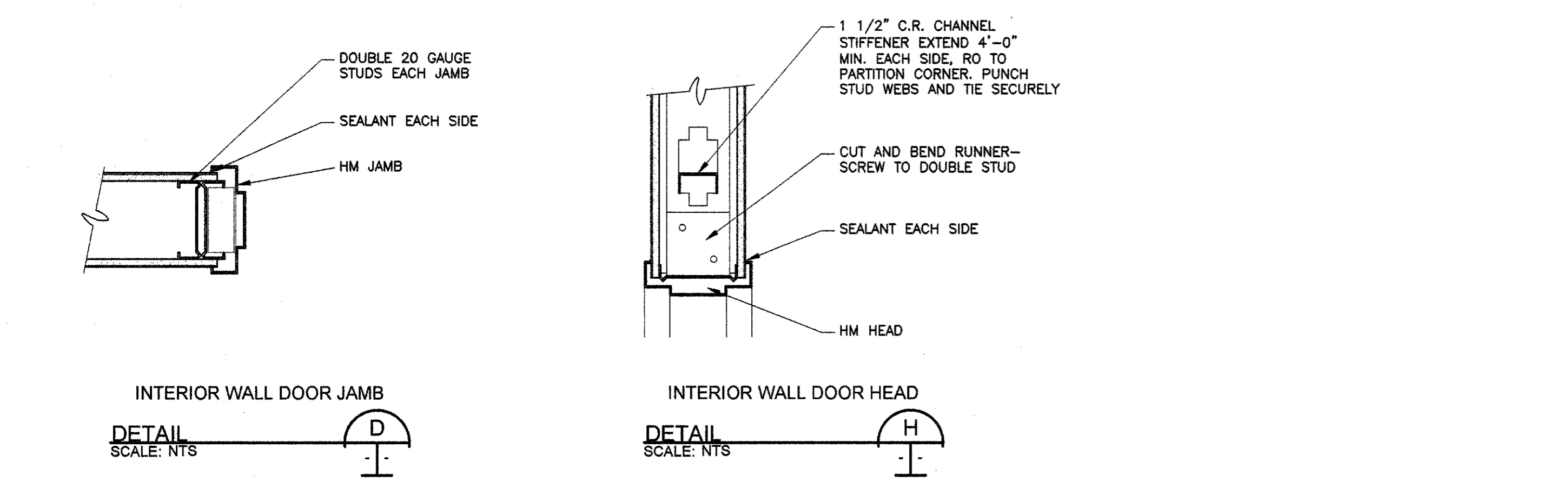
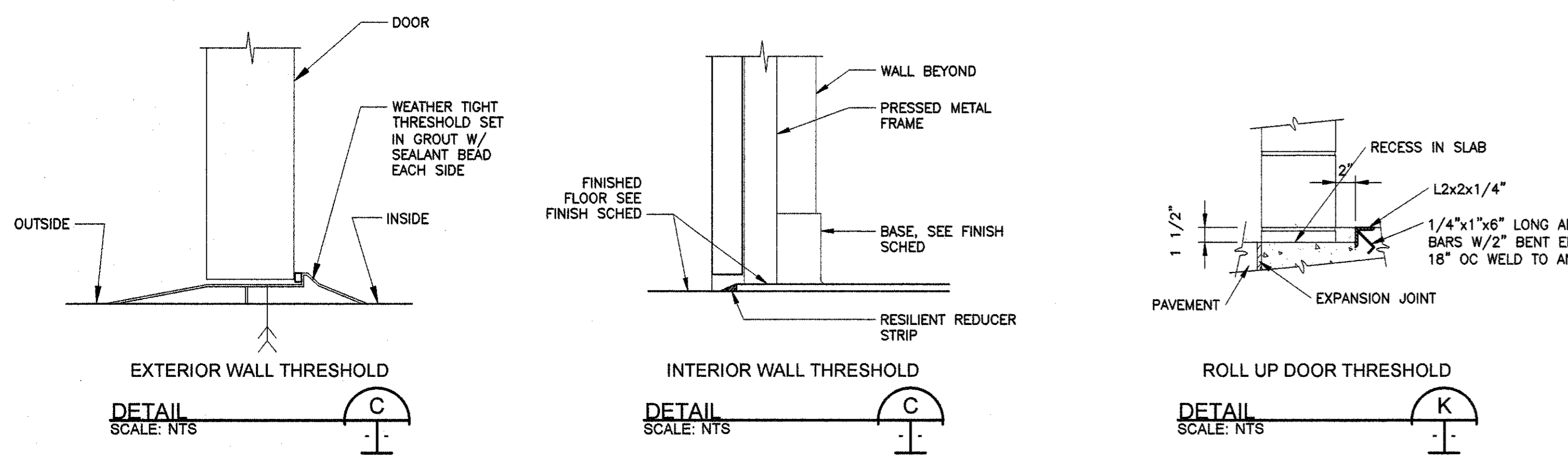
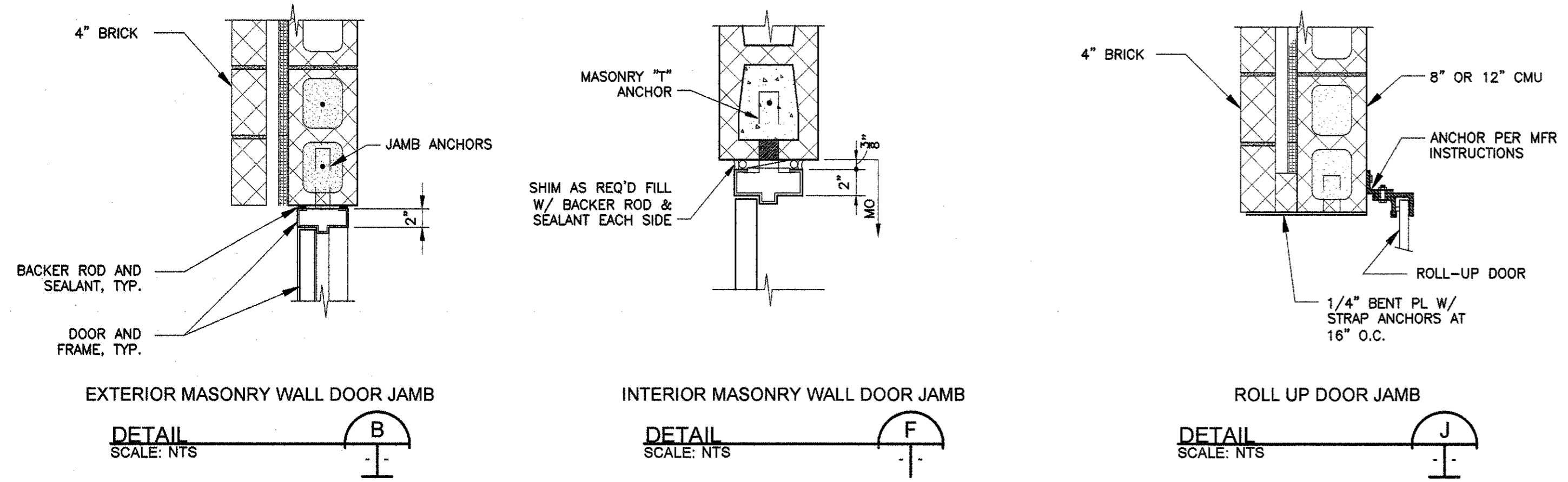
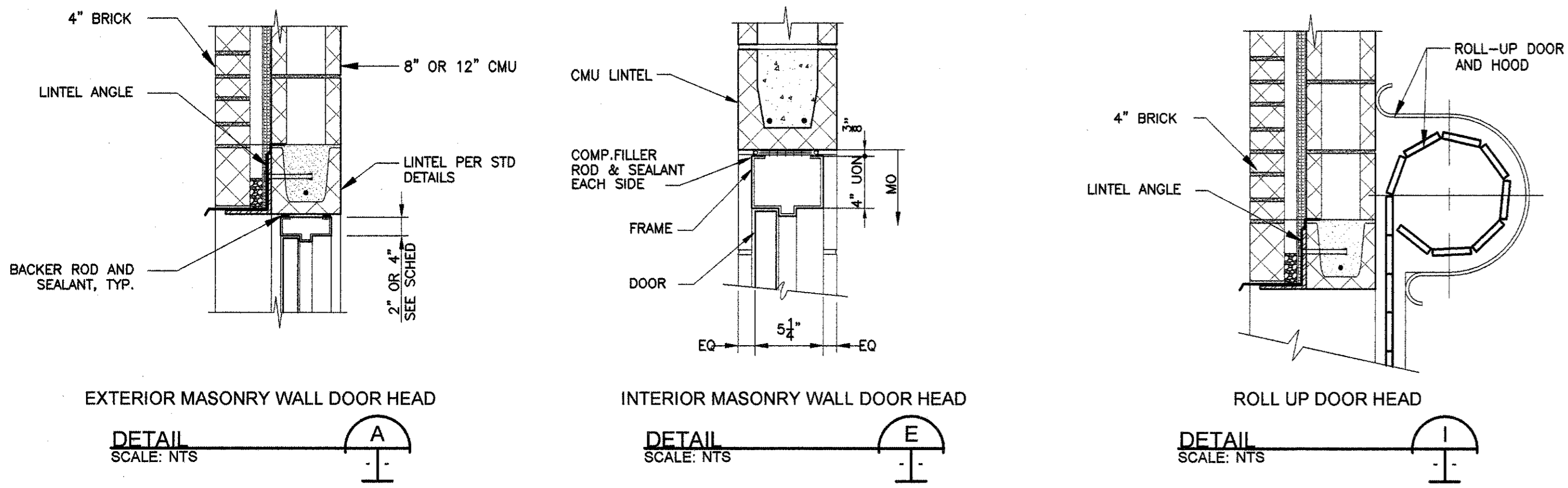
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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:
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Δ	

DSGN: DSM
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CHK: JVS
BAR BELOW IS 1" LONG FOR SCALES
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATION BUILDING
INTERIOR ELEVATIONS

SHEET NO.
90-S-9

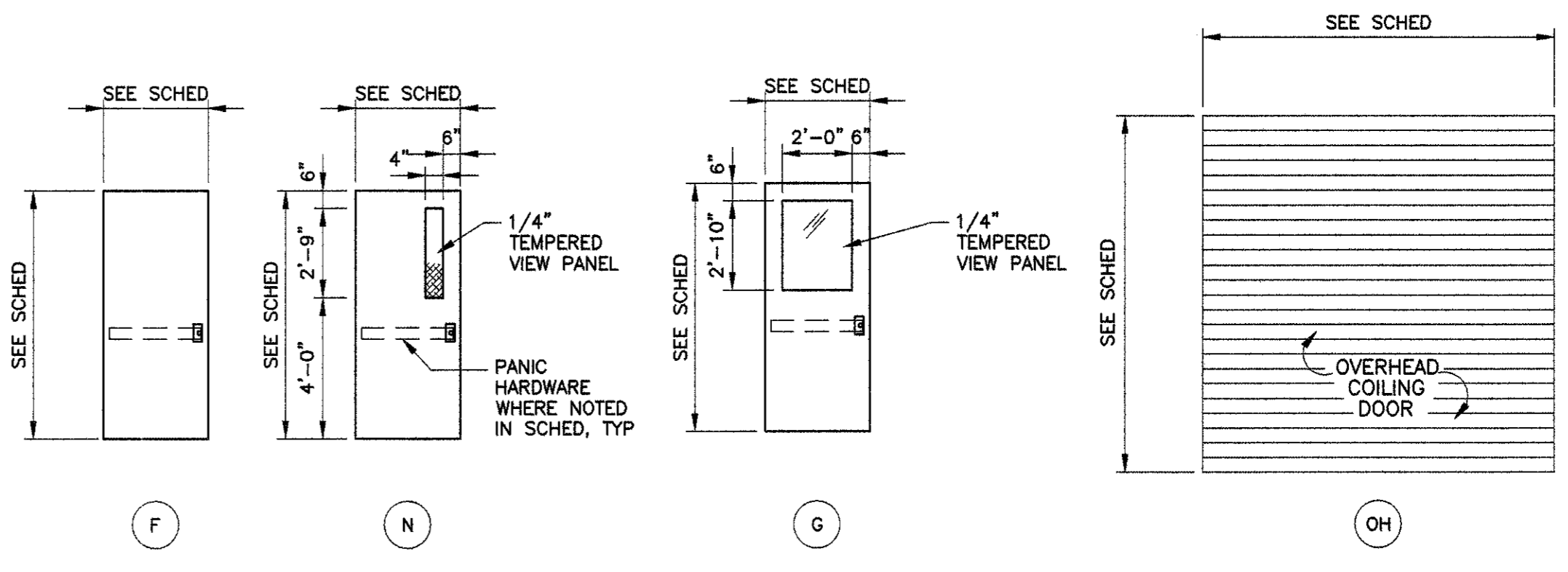


DOOR SCHEDULE

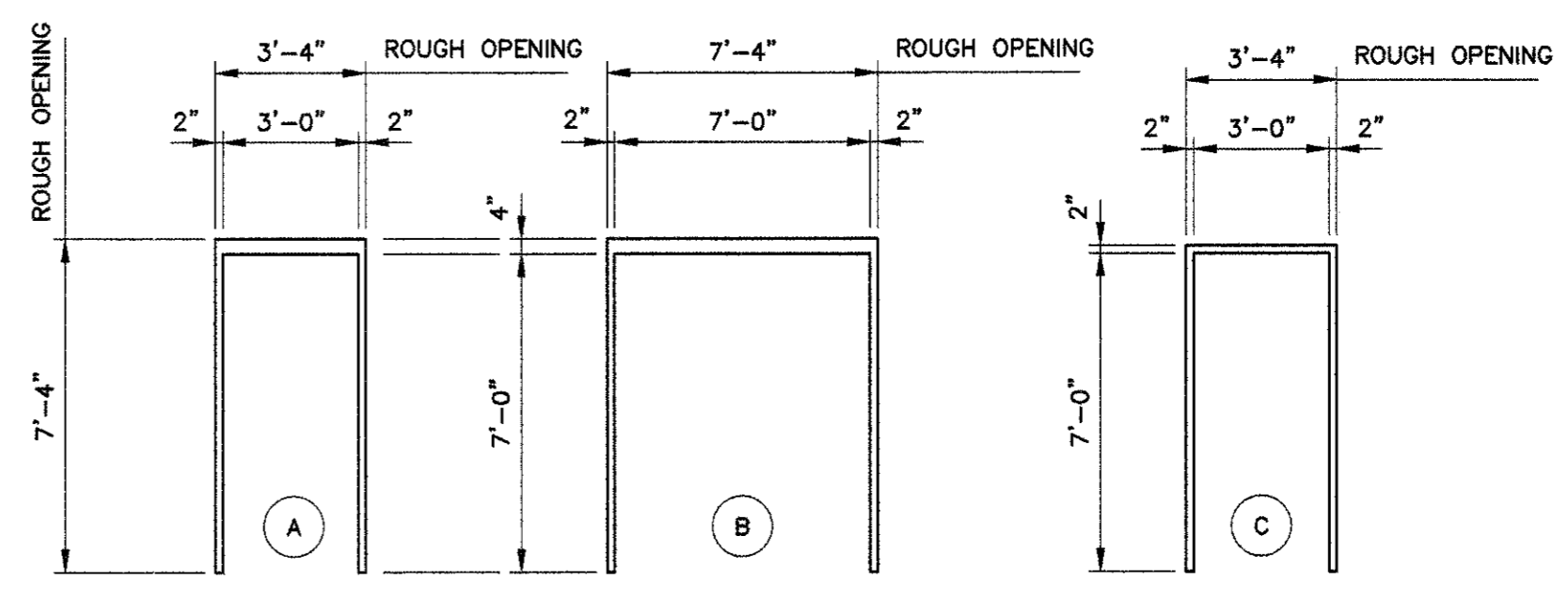
BUILDING	NUMBER	DOOR SIZE		DOOR			FRAME			DETAILS			FIRE RATING (HOURS)	HARDWARE SET	DESIGN WIND PRESSURE	NOTE NO.
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	HEAD	JAMB	THRESH.				
MBR PROCESS	DA-01	3'-0"	7'-0"	F	STL	-	A	STL	-	A	D	G	-	1	+39/-44	4
	DA-02	3'-0"	7'-0"	F	STL	-	A	STL	-	A	D	G	-	1	+39/-44	4
	DA-03	3'-0"	7'-0"	F	STL	-	A	STL	-	A	D	G	-	1	+39/-44	4
	DA-04	2x3'-0"	9'-0"	F	STL	-	B	STL	-	A	D	G	-	2	+39/-44	4
	DA-05	3'-0"	7'-0"	F	STL	-	A	STL	-	A	D	G	-	1	+39/-44	-
	DA-06	8'-0"	8'-0"	OH	ALUM	-	-	-	-	B	E	H	-	5	+39/-44	-
	DA-07	3'-0"	7'-0"	F	FRP	-	A	FRP	-	A	D	G	-	1	+39/-44	4
	DA-08	3'-0"	7'-0"	F	FRP	-	A	FRP	-	A	D	G	-	1	+39/-44	4
	DA-09	8'-0"	8'-0"	OH	ALUM	-	-	-	-	B	E	H	-	5	+39/-44	-
	DA-10	10'-0"	10'-0"	OH	ALUM	-	-	-	-	B	E	H	-	5	+39/-44	-
CHLORINE	DB-01	10'-0"	10'-0"	OH	ALUM	-	-	-	B	E	H	-	5	+39/-44	-	
	DB-02	10'-0"	10'-0"	OH	ALUM	-	-	-	B	E	H	-	5	+39/-44	-	
ADMIN	DC-01	3'-0"	7'-0"	G	STL	-	A	STL	-	A	D	G	-	1	+39/-44	4
	DC-02	3'-0"	7'-0"	G	STL	-	A	STL	-	A	D	G	-	1	+39/-44	4
	DC-03	2x3'-0"	7'-0"	G	STL	-	B	STL	-	A	D	G	-	2	+39/-44	4
	DC-04	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	4	-/-	-
	DC-05	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-06	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-07	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-08	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-09	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-10	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-11	3'-0"	7'-0"	N	WD	-	C	STL	-	C	F	-	-	3	-/-	-
	DC-12	3'-0"	7'-0"	F	WD	-	C	STL	-	C	F	-	-	4	-/-	-
	DC-13	3'-0"	7'-0"	F	WD	-	C	STL	-	C	F	-	-	6	-/-	-
	DC-14	3'-0"	7'-0"	F	WD	-	C	STL	-	C	F	-	-	6	-/-	-

GENERAL NOTES:
 1 - PROVIDE WALL MOUNTED DOORSTOP
 2 - ACOUSTIC SOUND/WEATHER SEALS
 3 - ALL HARDWARE TO BE STAINLESS STEEL
 4 - PROVIDE PANIC HARDWARE
 FOR HARDWARE SET DESCRIPTION REFER TO SPEC SECTION 8710
 WIND DESIGN PRESSURE PROVIDED IN PSF AND ARE AT LFRD LEVELS.
 GROUT FILL STEEL DOOR FRAMES UNLESS NOTED OTHERWISE

LIST OF ABBREVIATIONS:
 WD = WOOD
 STL = GALVANIZED STEEL
 FRP = FIBERGLASS REINFORCED PLASTIC
 ALUM = ALUMINUM
 SST = STAINLESS STEEL



DOOR TYPES
NTS



FRAME TYPES
NTS

ENGINEERING STRATEGIES, INC.

3855 SHALLOWFORD ROAD, SUITE 525
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 FAX: (407) 322-0500

PROJECT NO. 15-137

ES I

ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DSGN: DSM
 DRWN: DSM
 CHCK: JVS

BAR BELOW IS 1" LONG FOR SCALES LONGER THAN 1" LONG ON THIS SHEET ADJUST SCALES ACCORDINGLY.

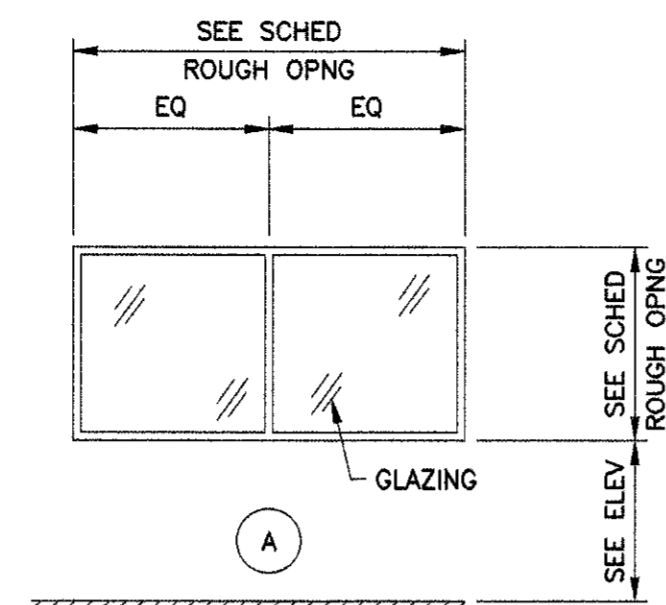
**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY**

**BUILDING SCHEDULES
 AND DETAILS**

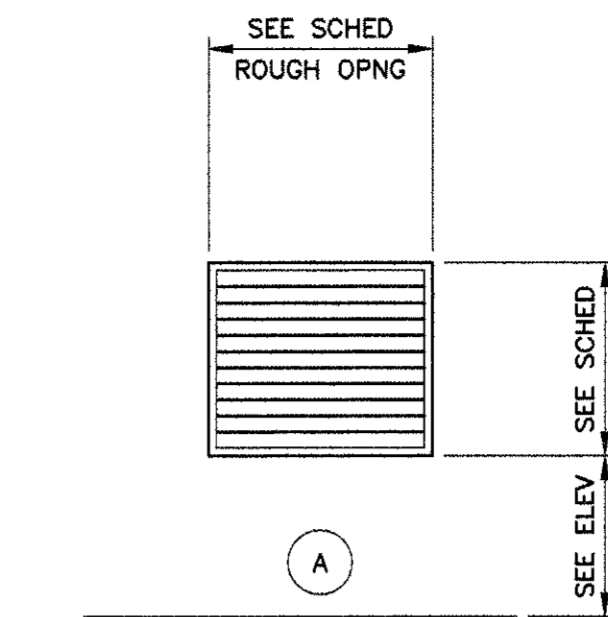
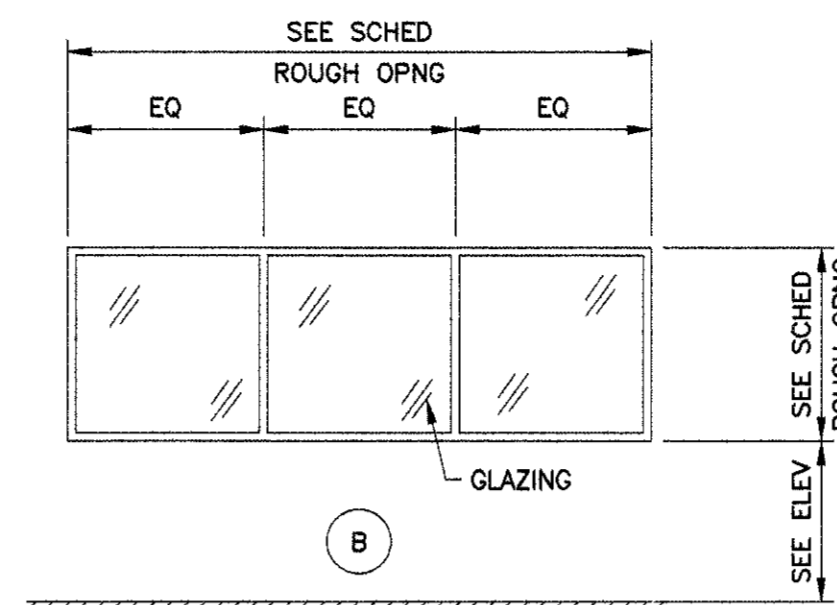
SHEET NO.
 95-S-1

V:\C001_data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\05-S-1 BUILDING SCHEDULES AND DETAILS.dwg - 8/24/2016

WINDOW SCHEDULE												
BUILDING	NUMBER	ROUGH OPENING		TYPE	MAT'L	FIN	DETAILS			GLAZING	DESIGN WIND PRESSURE	NOTES
		WIDTH	HEIGHT				HEAD	JAMB	SILL			
ADMIN	WC-01	8'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-02	12'-0"	4'-0"	B	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-03	12'-0"	4'-0"	B	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-04	12'-0"	4'-0"	B	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-05	12'-0"	4'-0"	B	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-06	8'-0"	4'-0"	B	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-07	8'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-08	8'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-09	8'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-10	12'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
	WC-11	12'-0"	4'-0"	A	ALUM	ANOD	-	-	-	1" INSULATED	+38/-47	
GENERAL NOTES	NOTES: LIST OF ABBREVIATIONS: K = KYMAR ALUM = ALUMINUM ANOD = ANODIZED											



WINDOW TYPES
NTS

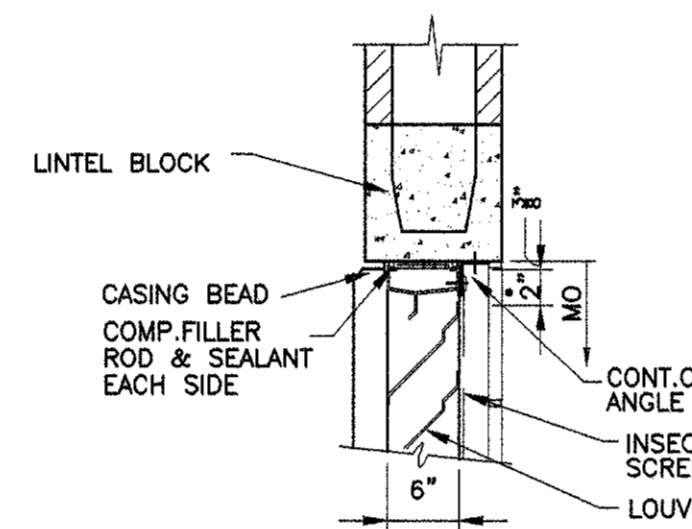


LOUVER TYPES
NTS

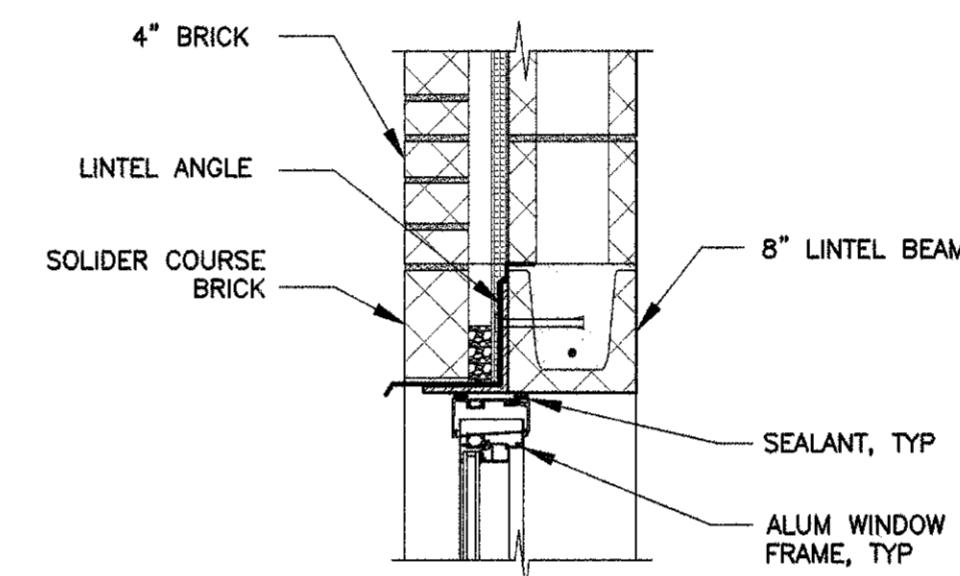
LOUVER SCHEDULE											
BUILDING	NUMBER	TYPE	PERFORMANCE	LOUVER SIZE			DETAILS			DESIGN WIND PRESSURE	NOTES
				WIDTH	HEIGHT	DEPTH	HEAD	JAMB	SILL		
MBR PROCESS	LA-01	A	DRAINABLE	6'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-02	B	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-03	B	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-04	B	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-05	B	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-06	B	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-07	C	DRAINABLE	2'-0"	2'-0"	4"	-	-	-	+38/-41	
	LA-08	C	DRAINABLE	2'-0"	2'-0"	4"	-	-	-	+38/-41	
	LA-09	A	DRAINABLE	12'-0"	6'-6"	4"	-	-	-	+38/-41	
	LA-10	N	DRAINABLE	6'-0"	6'-6"	4"	-	-	-	+38/-41	
GENERAL NOTES	NOTES: SEE DETAILS A, B, & C FOR HEAD, JAMB AND SILL DETAILS										

ROOM FINISH SCHEDULE																
BUILDING	ROOM NUMBER	ROOM NAME	FLOOR		WALL						CEILING		REFERENCE DWG.			
			TYPE	FLOORING	TYPE	NORTH	EAST	SOUTH	WEST	BASE	TYPE	FINISH	HEIGHT	FLOOR PLAN	INTERIOR ELEVATIONS	
MBR PROCESS	101	PUMP ROOM	CONC	EX	CONC	P	P	P	P	N	CONC	P	UES			
	102	BLOWER ROOM	CONC	EX	CMU	P	P	P	P	N	CONC	P	UES			
	103	ELECTRICAL ROOM	CONC	PF	GB	P	P	P	P	RB	GB	P	12'-0"			
	104	SODIUM HYPOCHLORITE FEED ROOM	CONC	PF	CMU	P	P	P	P	N	AT	P	12'-0"			
	105	CITRIC ACID FEED ROOM	CONC	PF	CMU	P	P	P	P	N	AT	P	12'-0"			
CHLORINE	101	STORAGE AREA	CONC	EX	CMU	P	P	P	P	N	CONC	P	UES			
ADMIN	101	TRAINING ROOM	CONC	VT	GB	P	P	P	P	RB	AT	P	9'-0"			
	102	MEN'S RESTROOM	CONC	CT	CMU,P	GB,CT,P	GB,CT,P	GB,CT,P	CT	AT	AT	P	9'-0"			
	103	WOMEN'S RESTROOM	CONC	CT	TB	CT,P	CT,P	CT,P	CT,P	CT	AT	P	9'-0"			
	104	IT CLOSET	CONC	VT	GB	P	P	P	P	RB	AT	P	9'-0"			
	105	BREAKROOM	CONC	VT	GB	P	P	P	P	RB	AT	P	9'-0"			
	106	TECHNICIAN'S OFFICE	CONC	C	CMU,P	CMU,P	GB,P	GB,P	RB	AT	AT	P	9'-0"			
	107	LEAD TECHNICIAN'S OFFICE	CONC	C	GB,P	CMU,P	GB,P	GB,P	RB	AT	AT	P	9'-0"			
	108	FUTURE ADMINISTRATION ASSISTANT	CONC	C	GB,P	GB,P	CMU,P	GB,P	RB	AT	AT	P	9'-0"			
	109	CONFERENCE ROOM	CONC	C	GB,P	GB,P	CMU,P	GB,P	RB	AT	AT	P	9'-0"			
	110	ASSISTANT MAINTENANCE MANAGER'S OFFICE	CONC	C	GB,P	GB,P	CMU,P	GB,P	RB	AT	AT	P	9'-0"			
	111	MAINTENANCE MANAGER'S OFFICE	CONC	C	GB,P	GB,P	CMU,P	GB,P	RB	AT	AT	P	9'-0"			
	112	CORRIDOR	CONC	VT	GB	P	P	P	P	RB	AT	P	9'-0"			

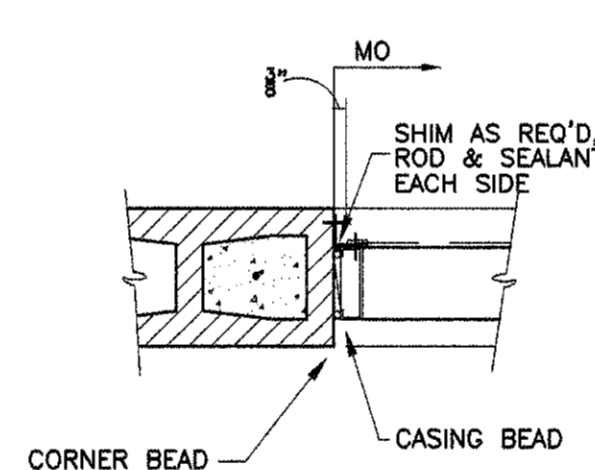
LIST OF ABBREVIATIONS:
 CONC = CONCRETE
 CMU = EXPOSED CONC BLOCK
 CT = CERAMIC TILE
 VT = VINYL TILE
 C = CARPET
 P = PAINT
 AP = ACOUSTICAL PANELS
 GB = GYPSUM BOARD
 TB = TILE BACKER BOARD
 QT = QUARRY TILE
 AT = SUSPENDED ACOUSTIC TILE
 PF = EPOXY FLOOR
 GB = GYPSUM BOARD
 PLY = T1-11 PLYWOOD
 WD = WOOD
 N = NONE
 EX = EXPOSED
 UES = UNDERSIDE OF EXPOSED STRUCTURE



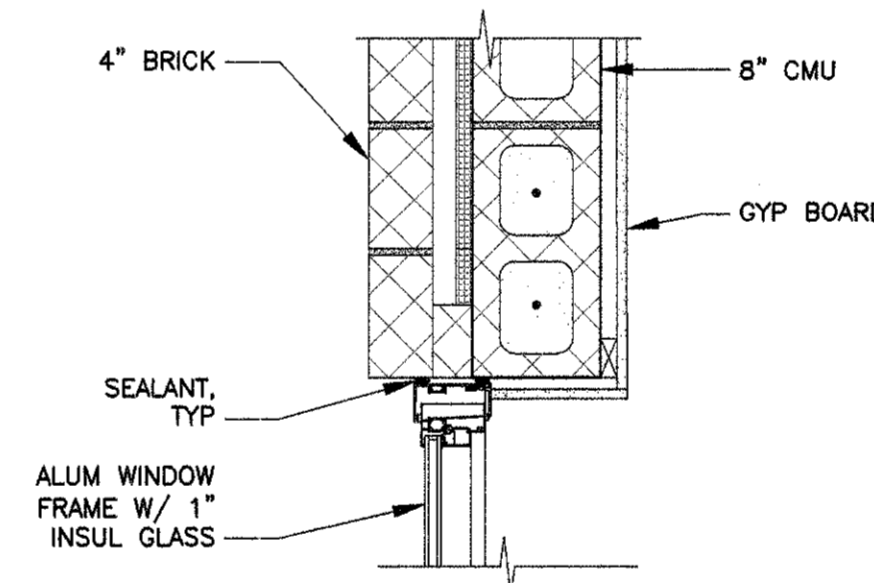
EXTERIOR MASONRY LOUVER HEAD
DETAIL SCALE: NTS



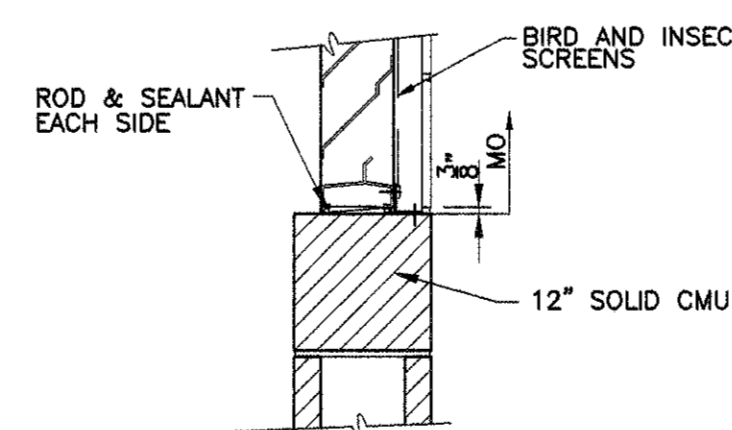
EXTERIOR MASONRY WINDOW HEAD
DETAIL SCALE: NTS



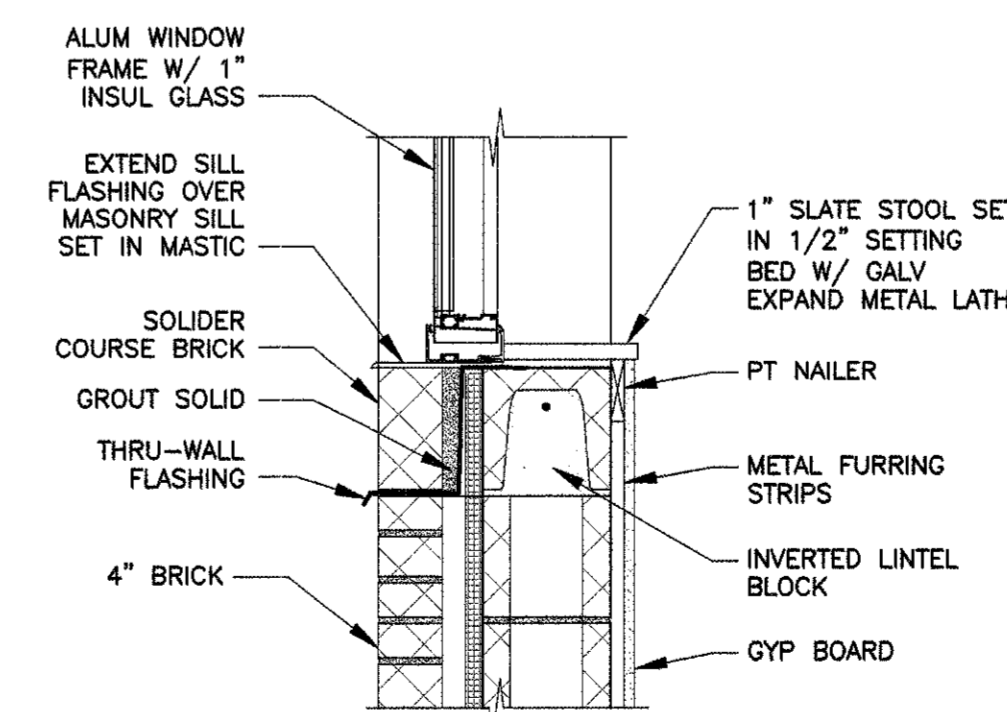
EXTERIOR MASONRY LOUVER JAMB
DETAIL SCALE: NTS



EXTERIOR MASONRY WINDOW JAMB
DETAIL SCALE: NTS

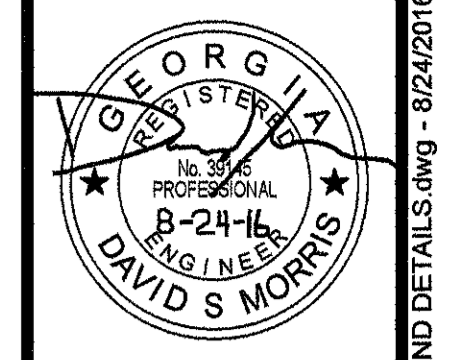


EXTERIOR MASONRY LOUVER SILL
DETAIL SCALE: NTS



EXTERIOR MASONRY WINDOW SILL
DETAIL SCALE: NTS

ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 922-0900
 EAT PROJECT NO. 15-137

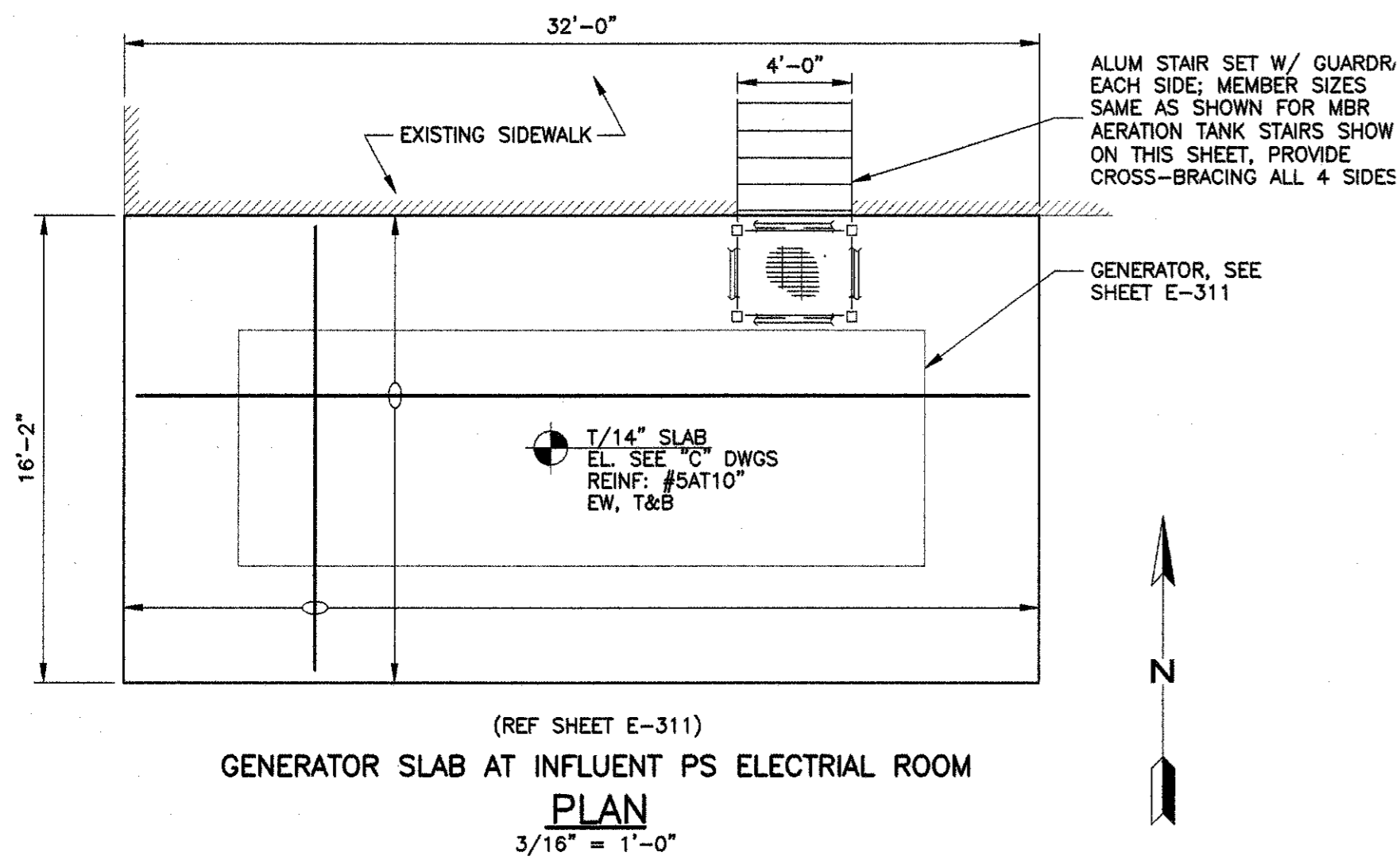


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ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

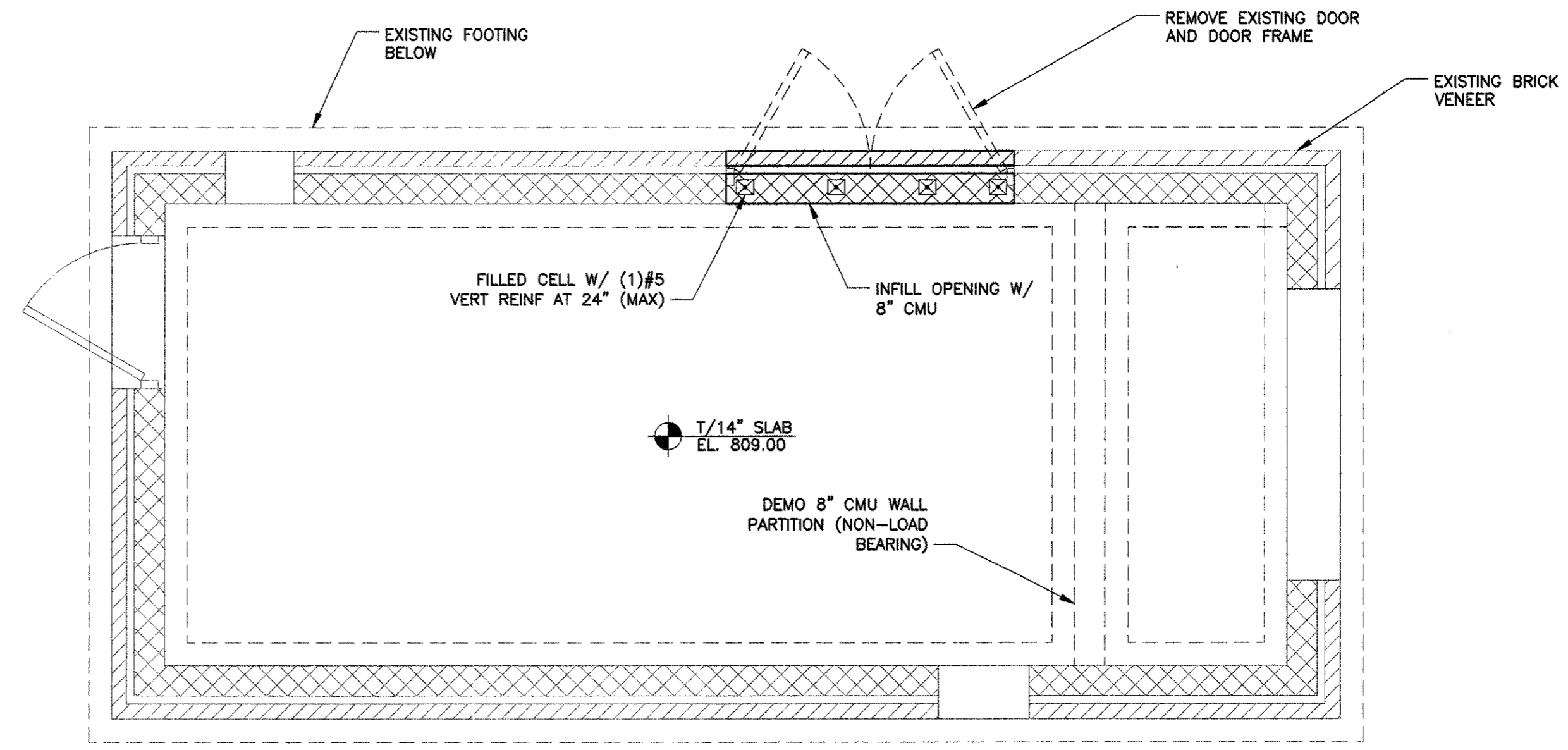
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: DSM
 DRAWN: DSM
 CHECK: JVS
 BAR BELOW IS 1" LONG FOR SCALES LONGER THAN THIS SHEET. ADJUST SCALES ACCORDINGLY.

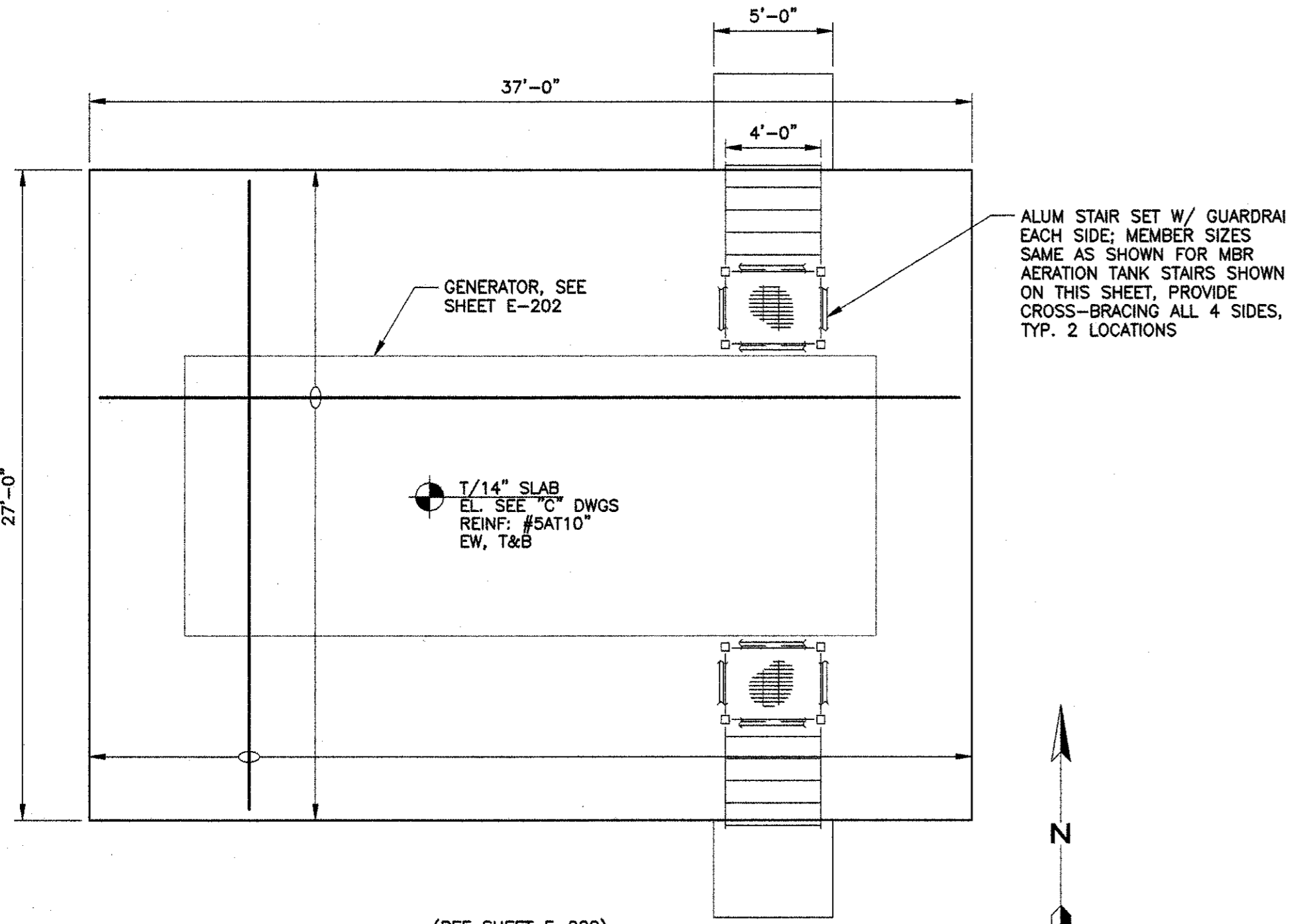
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
BUILDING SCHEDULES AND DETAILS



(REF SHEET E-311)
GENERATOR SLAB AT INFLUENT PS ELECTRICAL ROOM
PLAN
 3/16" = 1'-0"

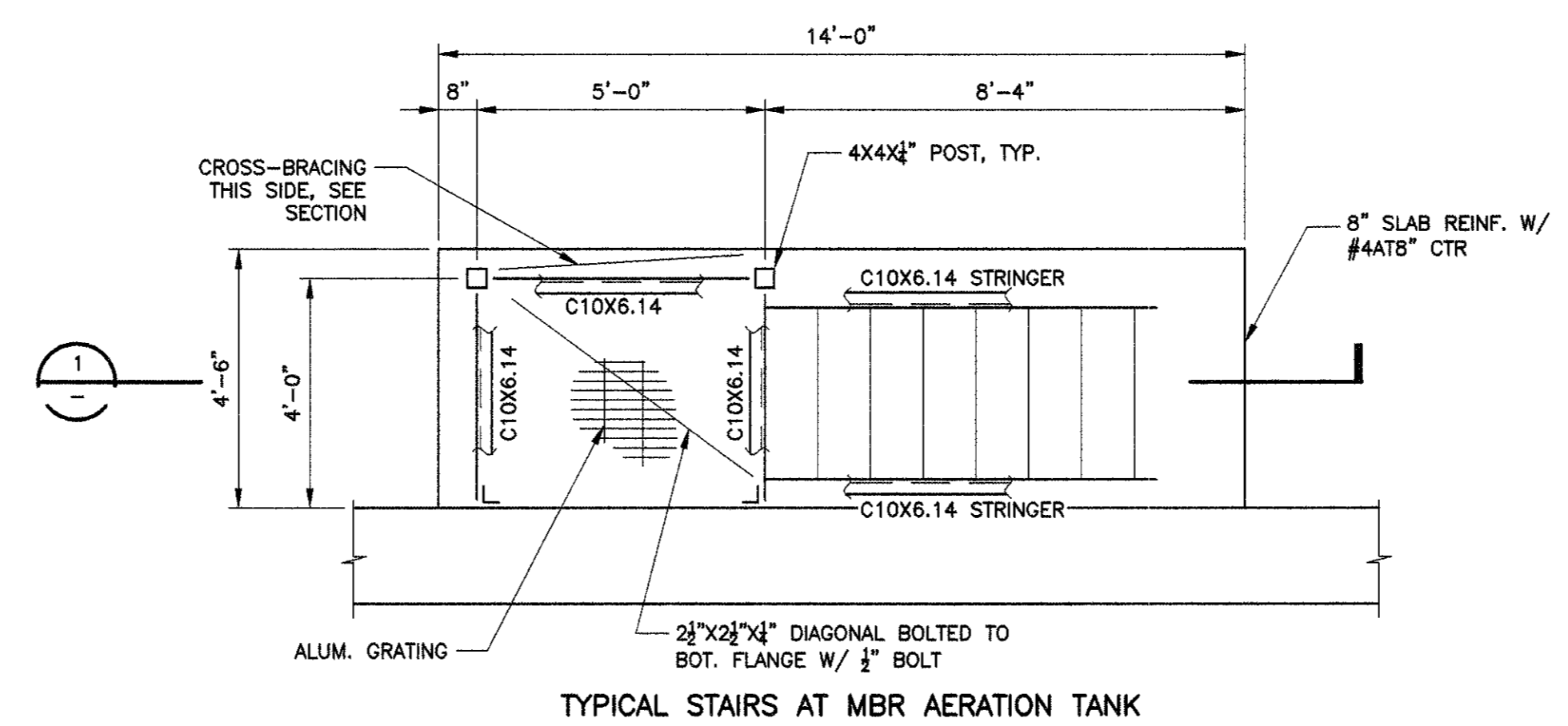


(REF SHEET E-311)
FLOOR PLAN
 3/8" = 1'-0"



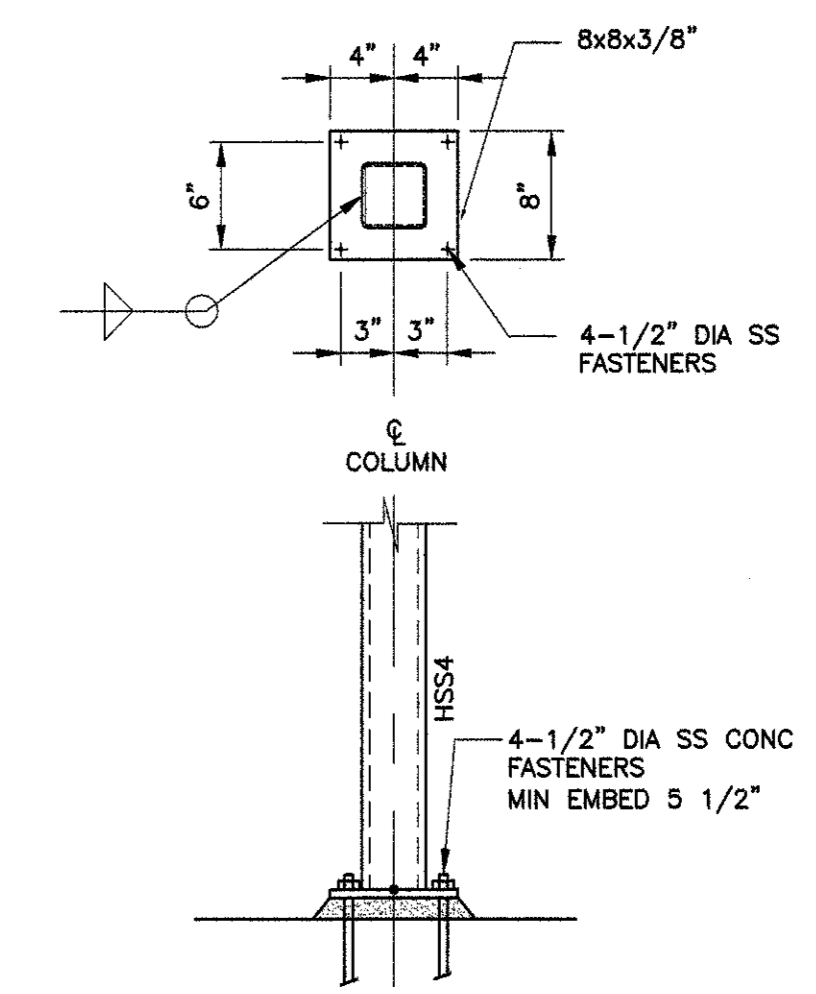
(REF SHEET E-202)
GENERATOR SLAB AT EXISTING ELECTRICAL BUILDING
PLAN
 3/16" = 1'-0"

NOTE:
 1. STAIR LOCATIONS SHOWN SHALL BE COORDINATED W/ GENERATOR MANUFACTURER REQUIREMENTS.
 2. PROVIDE CONCRETE LANDINGS W/ MINIMUM DIMENSIONS AS SHOWN.

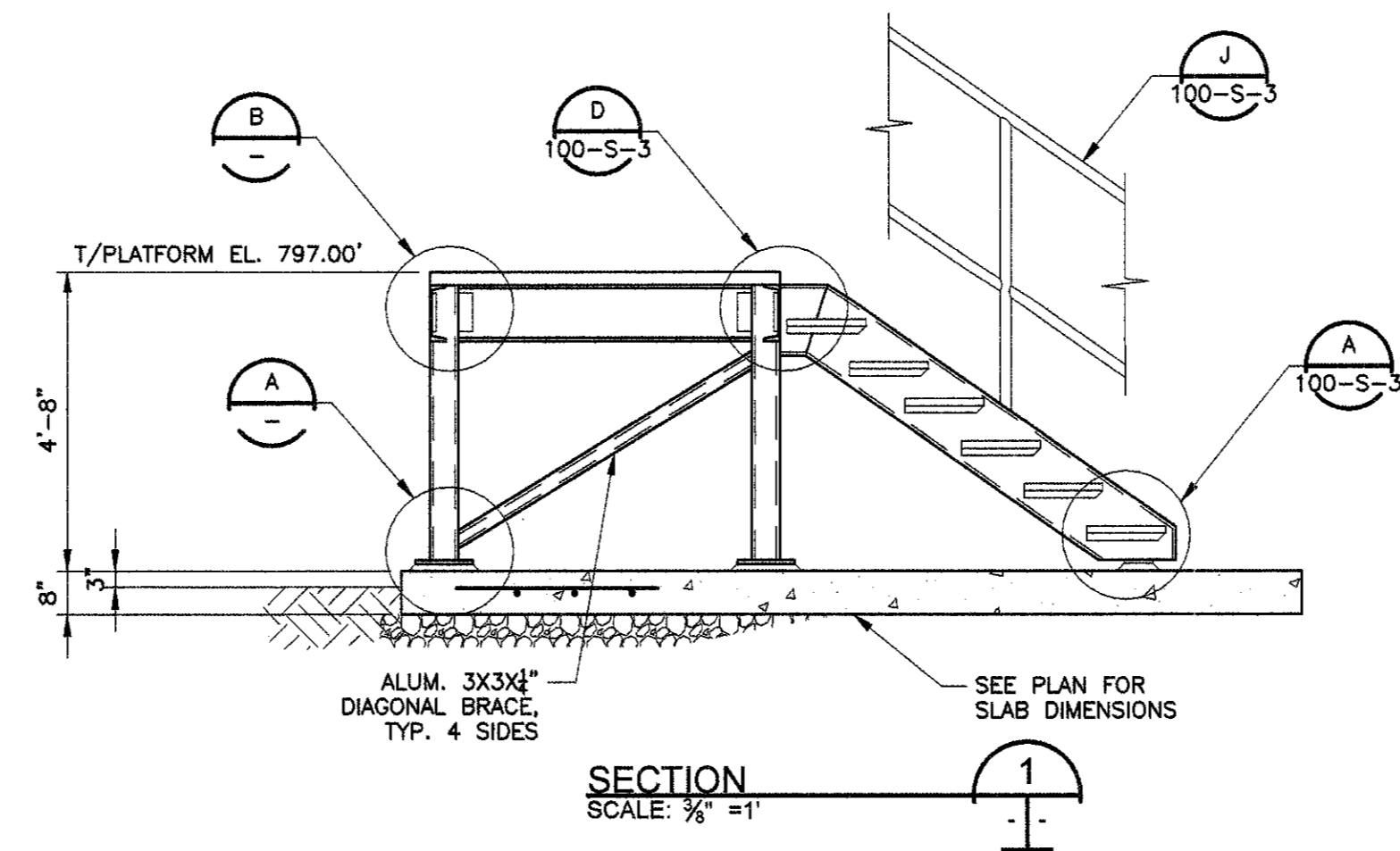


TYPICAL STAIRS AT MBR AERATION TANK
PLAN
 3/8" = 1'-0"

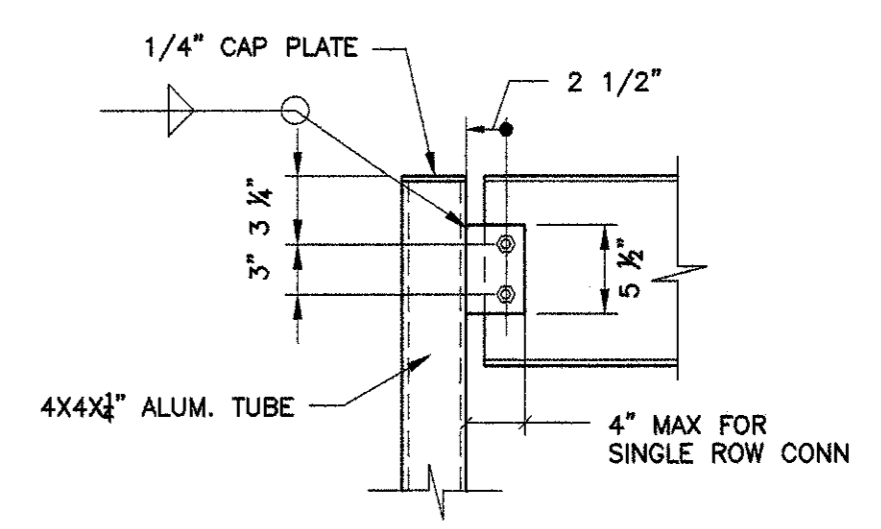
NOTE:
 1. ALUMINUM GUARDRAIL IS NOT SHOWN FOR CLARITY. SEE OVERALL PLAN ON 30-S-2 FOR EXTENT.
 2. ALL MATERIAL SHOWN IS TO BE ALUMINUM.



TYPICAL COLUMN BASE PLATE
DETAIL
 SCALE: 1" = 1'

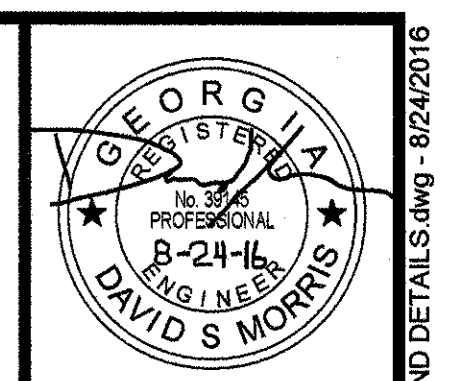


SECTION
 SCALE: 3/8" = 1'



TYPICAL BEAM CONNECTION
DETAIL
 SCALE: 1" = 1'

ENGINEERING TECHNOLOGIES, INC.
 3851 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

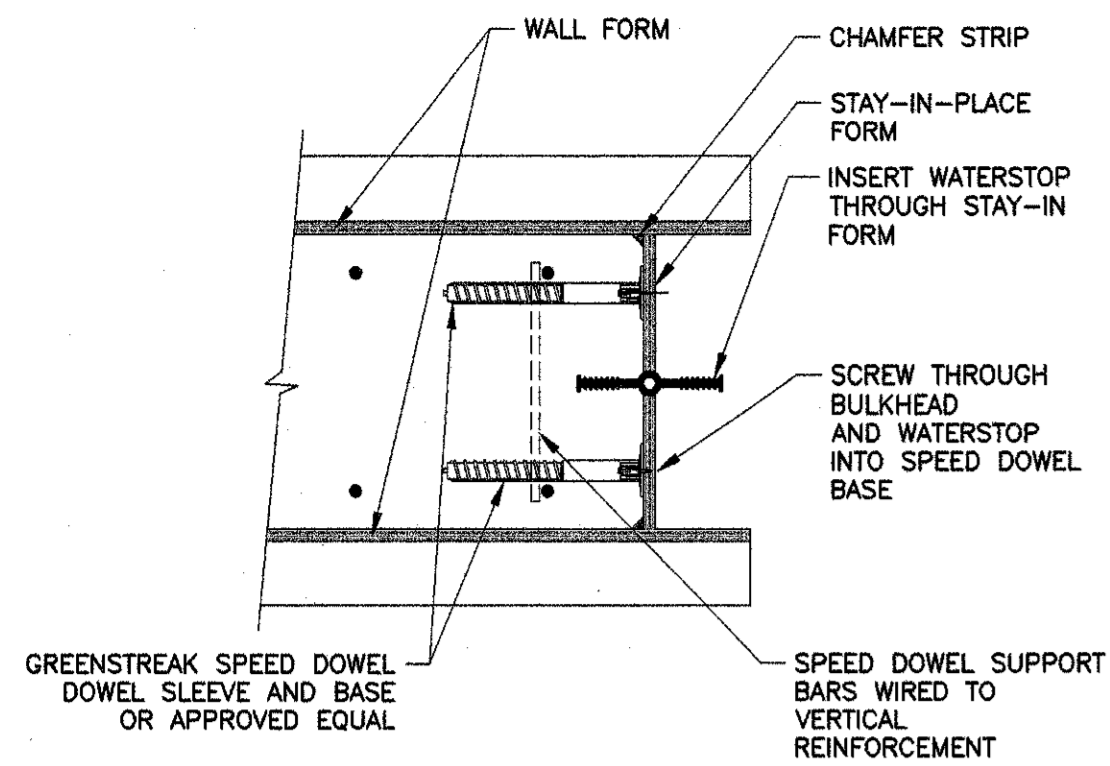
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: DSM
 DRWN: DSM
 CHCK: JVS
 FOR REVIEW: 1" LONG FOR SCALES SHOWN ON THIS SHEET. ADJUST LONGS ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

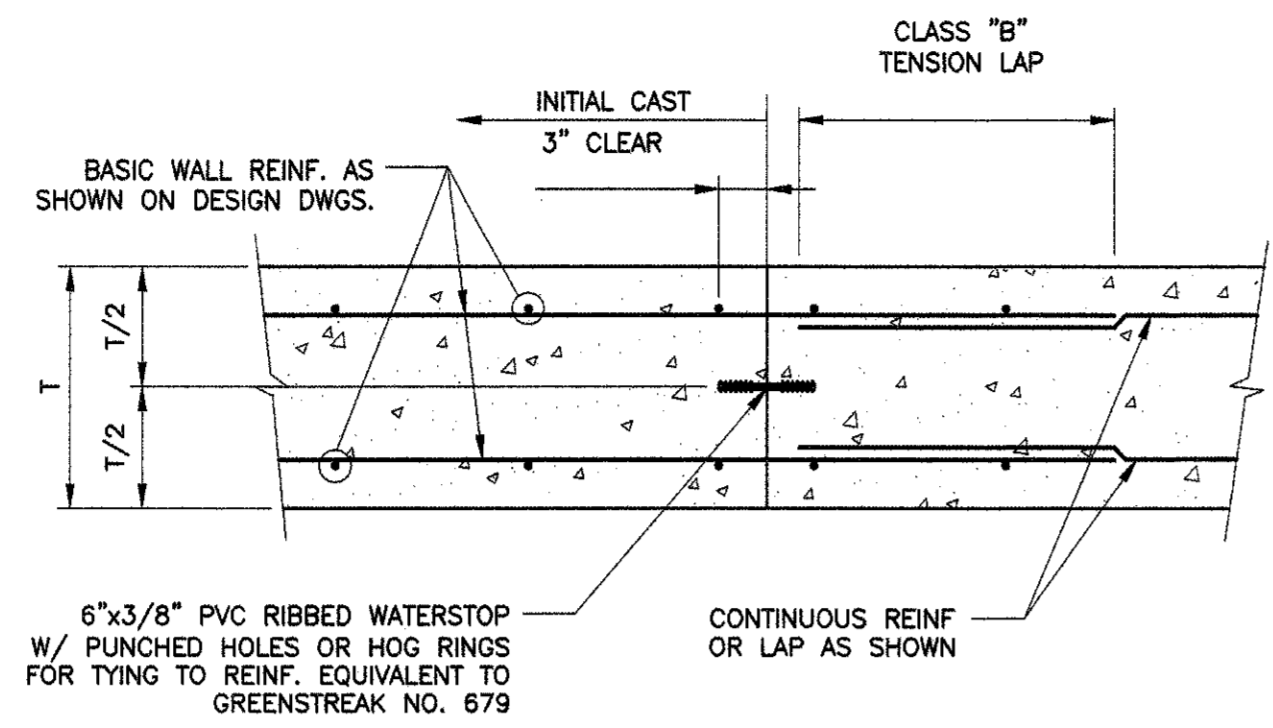
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION
PLAN AND DETAILS

SHEET NO.
 95-S-3

N:\CLEO\data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\95-S-3 MISCELLANEOUS SLAB SCHEDULE AND DETAILS.dwg - 8/24/2016

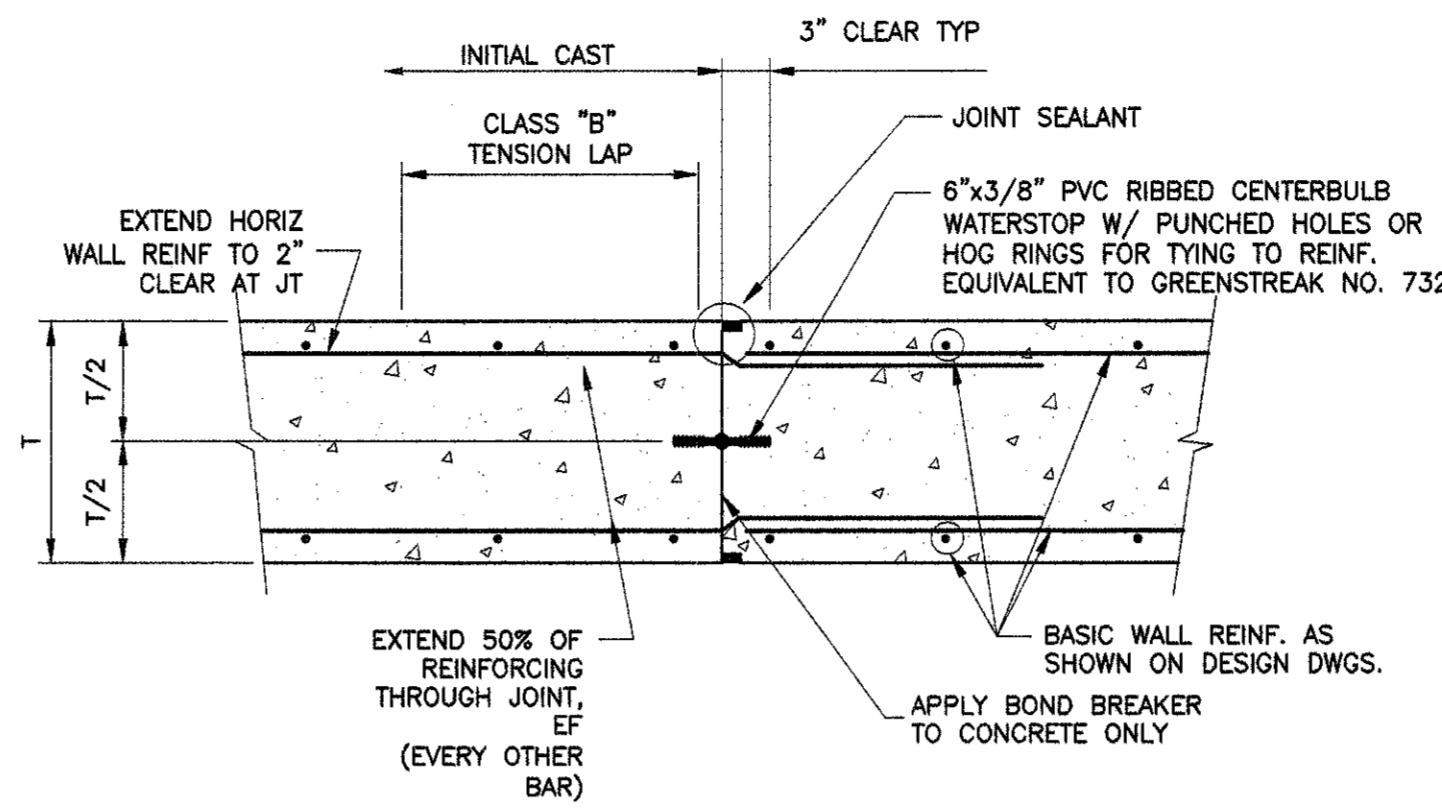


CONSTRUCTION PLAN



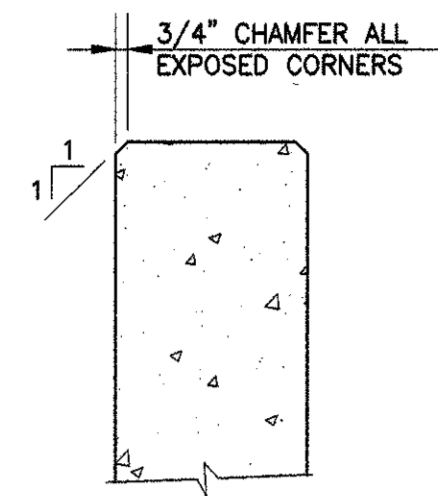
WALL CONSTRUCTION JOINT

DETAIL B



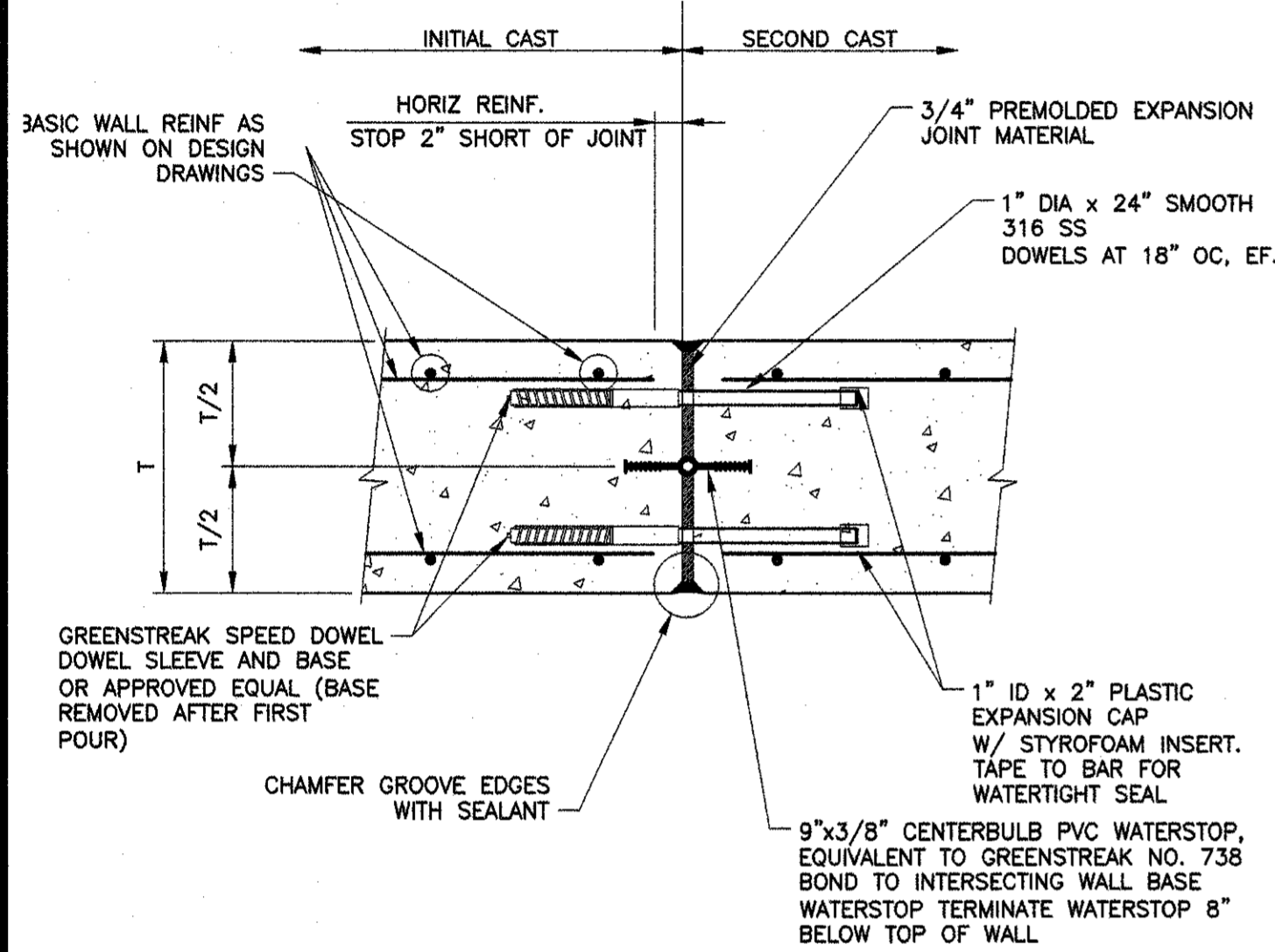
WALL CONTROL JOINT

DETAIL C

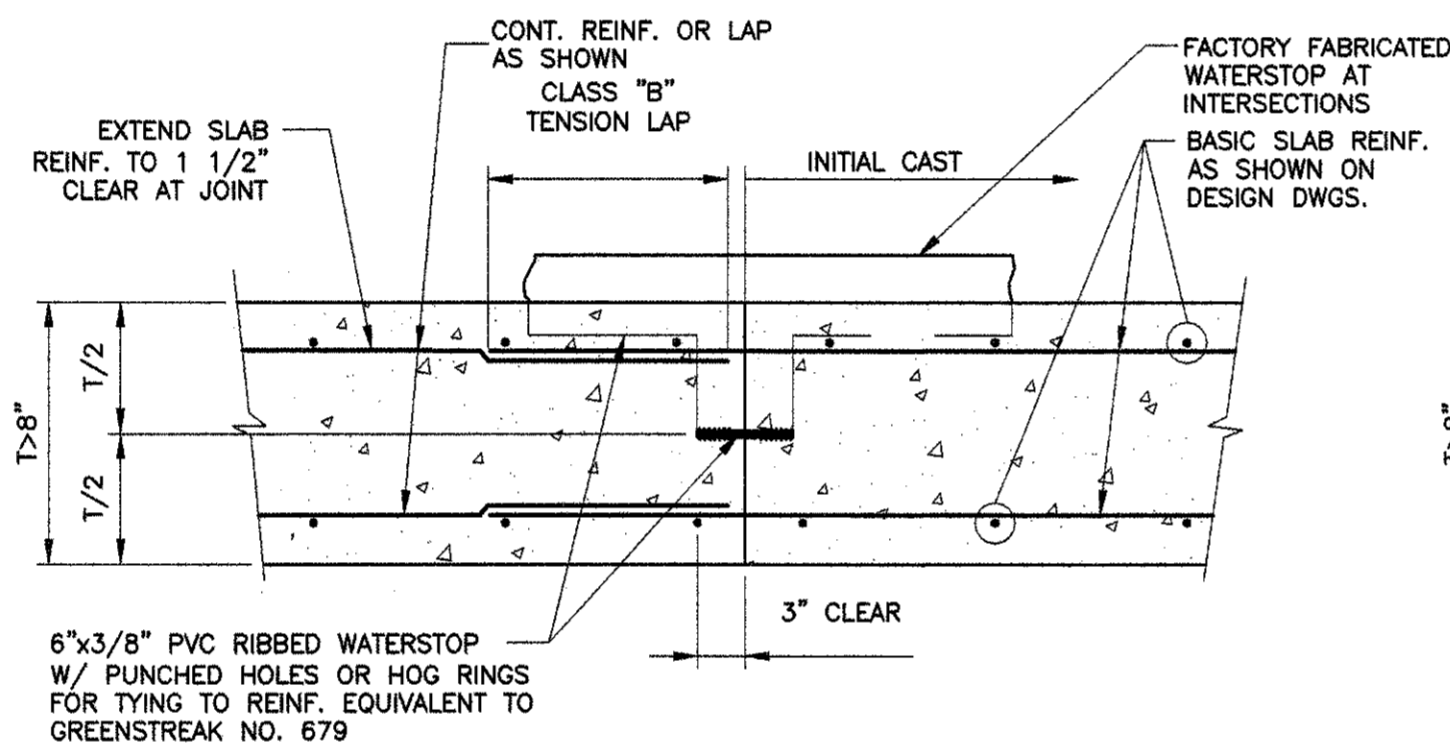


CHAMFER

DETAIL D

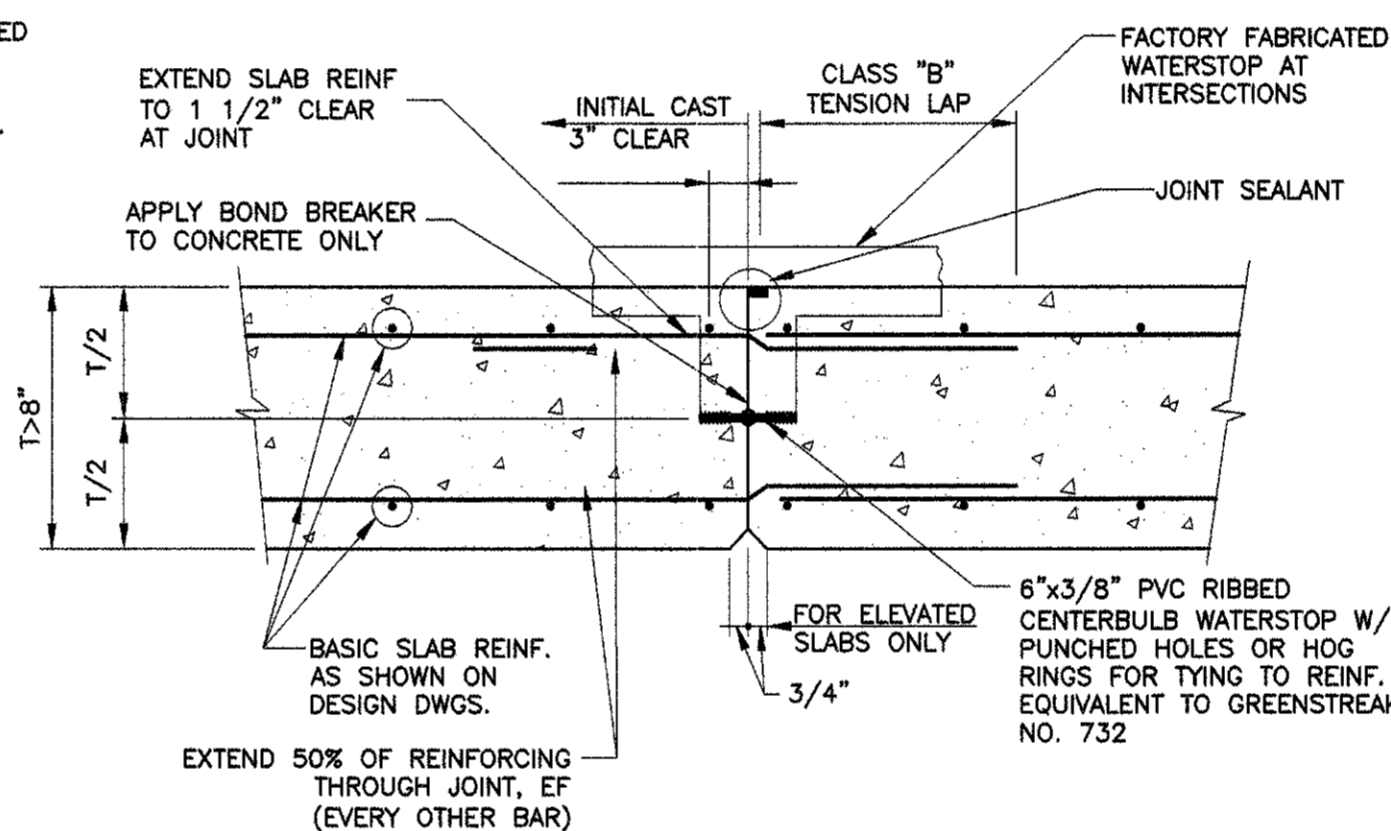


FINISH JOINT PLAN



BASE/ELEVATED SLAB CONSTRUCTION JOINT

DETAIL E

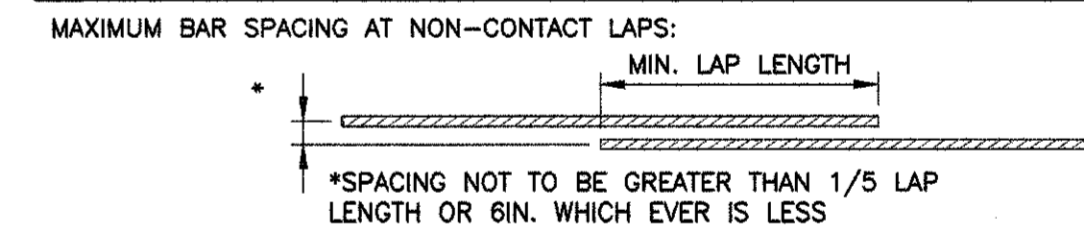


BASE/ELEVATED SLAB CONTROL JOINT

DETAIL F

REBAR MINIMUM TENSION DEVELOPMENT & LAP LENGTHS					
CONCRETE STRENGTH $f'_c = 4,000$ PSI OR GREATER					
BAR SIZE	DEVELOPMENT LENGTH, l_d		LAP LENGTH (CLASS B SPLICE)		BAR SIZE
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	1'-7"	1'-3"	2'-0"	1'-7"	#3
#4	2'-1"	1'-7"	2'-8"	2'-0"	#4
#5	2'-7"	2'-0"	3'-4"	2'-7"	#5
#6	3'-1"	2'-4"	4'-0"	3'-1"	#6
#7	4'-6"	3'-6"	5'-10"	4'-6"	#7
#8	5'-2"	3'-11"	6'-8"	5'-2"	#8
#9	5'-10"	4'-6"	7'-6"	5'-10"	#9
#10	6'-6"	5'-0"	8'-6"	6'-6"	#10
#11	7'-3"	5'-7"	9'-6"	7'-3"	#11

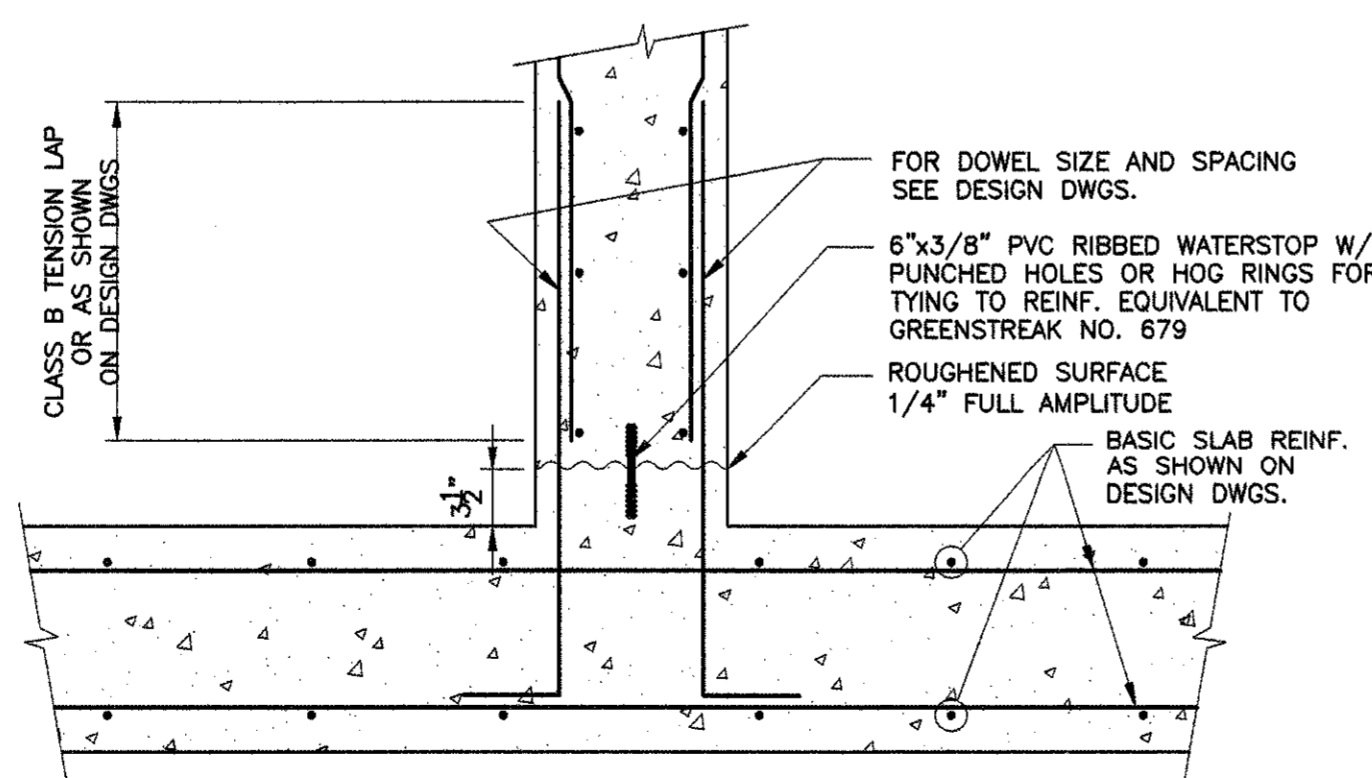
NOTES:
 1. GRADE 60 UNCOATED REINFORCEMENT
 2. SPLICE LENGTHS GIVEN ABOVE ARE TO BE USED UNLESS NOTED OTHERWISE ON DESIGN DRAWINGS.



- NOTES:
- IT IS THE INTENTION OF THIS JOINT THAT IT ALLOW FREE THERMAL EXPANSION OF THE WALL WHILE RESTRAINING OUT OF PLANE LATERAL MOVEMENT. THE DOWELS ARE TO BE PLACED TO ALLOW UNHINDERED MOVEMENT PARALLEL TO THE CENTERLINE OF THE WALL.
 - THE DOWELS SHALL BE PLACED PARALLEL TO THE CENTERLINE OF THE WALL, BOTH VERTICALLY AND HORIZONTALLY. DEVIATION FROM LINE BY MORE THAN 1/4" OVER THE LENGTH OF THE DOWEL WILL NOT BE PERMITTED. THE SPEED DOWELS TO SHORT PIECE OF REBAR AND VERTICAL REINFORCEMENT TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. PLACE CONCRETE 2 TO 3 FEET AWAY FROM BULKHEAD AND WORK INTO JOINT DURING PLACEMENT TO AVOID DISLOGGING THE DOWELS.
 - AFTER FIRST SECTION IS CAST AND BULKHEAD FORM IS STRIPPED, PLACE DOWELS IN SPEED DOWEL SLEEVES 1/2" SHORT OF BOTTOMING. STYROFOAM CAPS ARE TO BE PLACED TO AVOID THE POSSIBILITY OF DOWELS BOTTOMING AS WALL EXPANSION OCCURS.

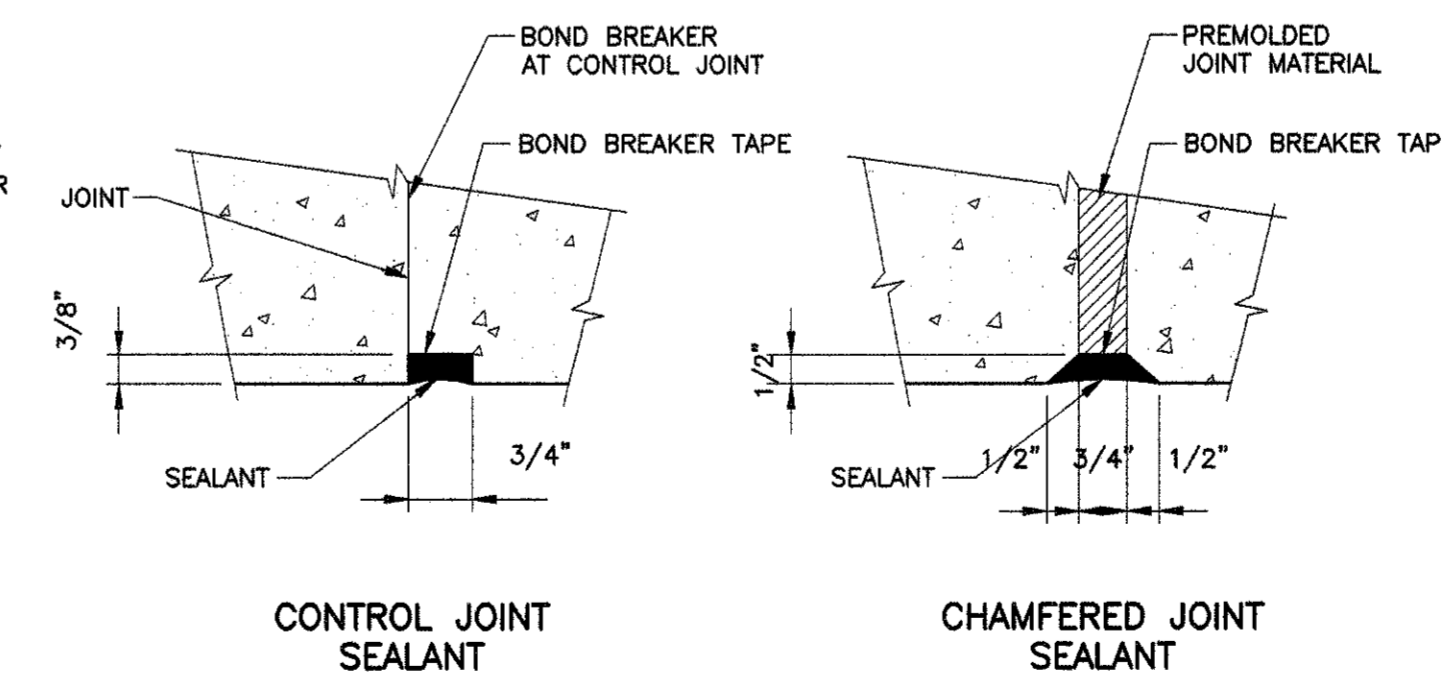
WALL EXPANSION JOINT

DETAIL A



WALL BASE CONSTRUCTION JOINT

DETAIL G

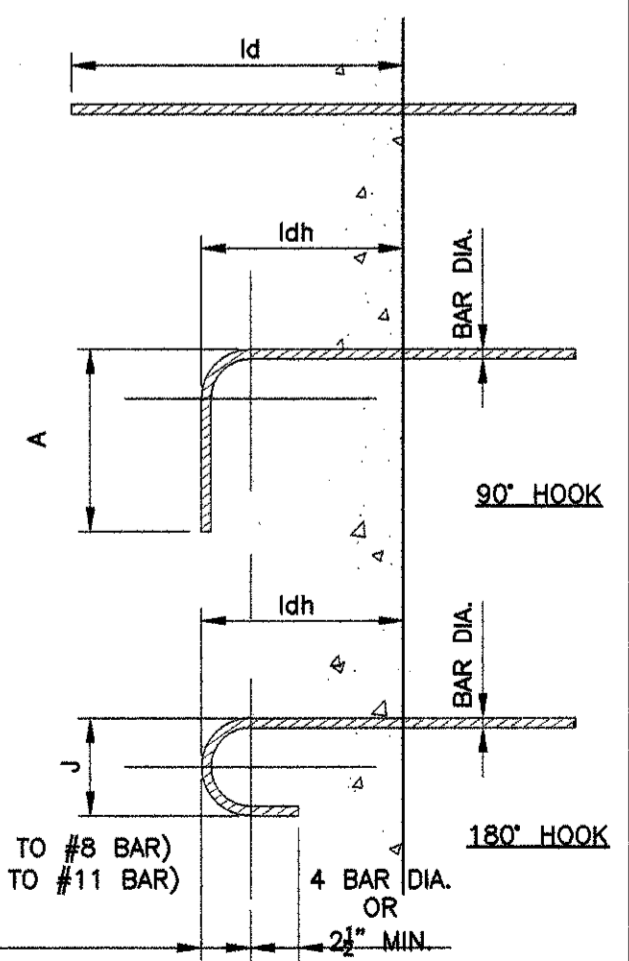


JOINT SEALANTS

DETAIL H

STANDARD HOOK DEVELOPMENT LENGTH			
BAR SIZE	90° STD HOOK "A"	180° STD HOOK "J"	DEVELOPMENT LENGTH, l_{dh}
#3	6"	3"	6"
#4	8"	4"	7"
#5	10"	5"	9"
#6	1'-0"	6"	10"
#7	1'-2"	7"	1'-0"
#8	1'-4"	8"	1'-2"
#9	1'-7"	11 1/2"	1'-3"
#10	1'-10"	1'-1 1/2"	1'-5"
#11	2'-0"	1'-2 1/2"	1'-7"

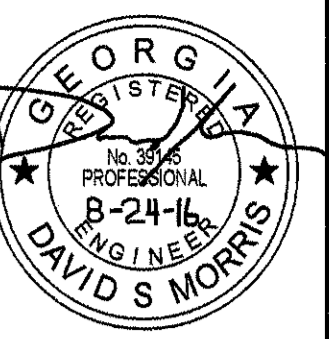
*FOR STD HOOK BAR GEOMETRY NOT SHOWN REFER TO MINIMUM ACI REQUIREMENTS



STANDARD REINFORCEMENT DETAILS

DETAIL I

ENGINEERING TECHNOLOGIES, INC.
 3851 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 E/T PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: AUGUST 2016

DATE: DATE

REVISION

DATE

DATE

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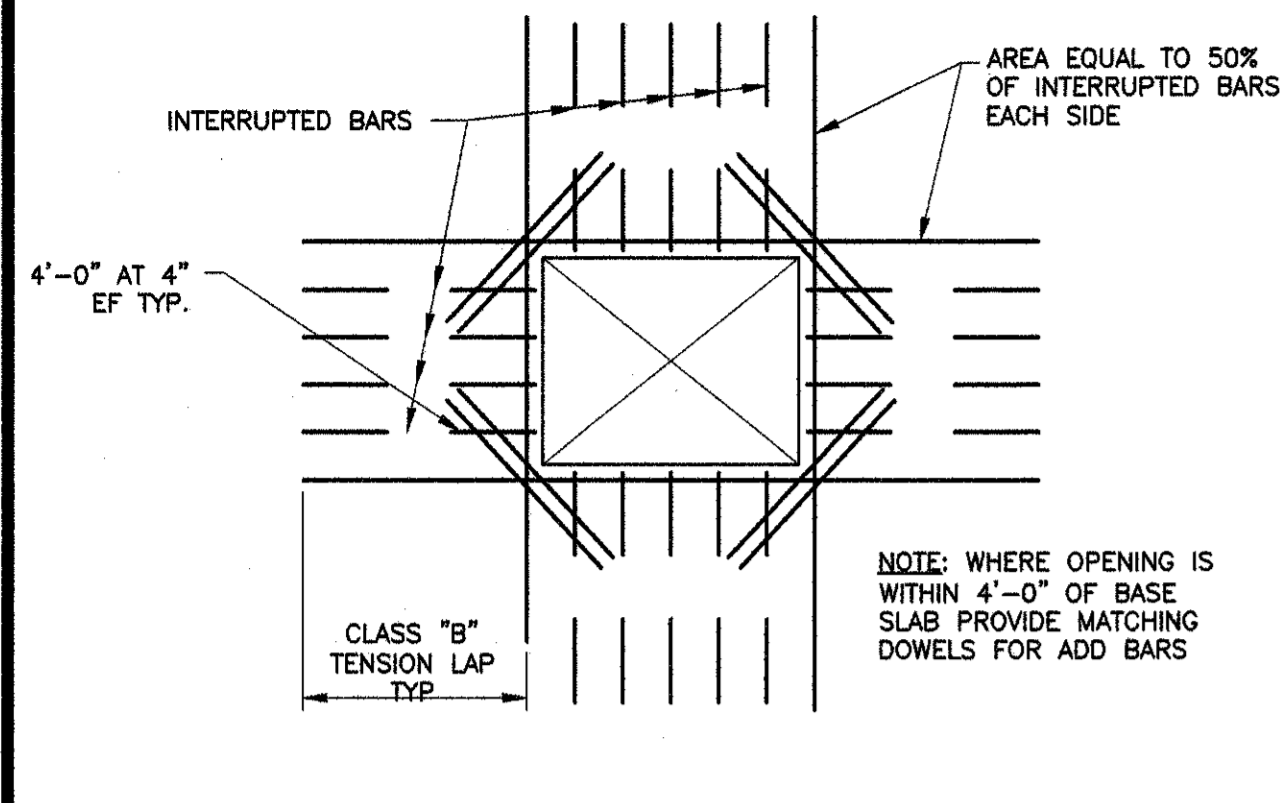
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

STANDARD STRUCTURAL DETAILS
 1 OF 1

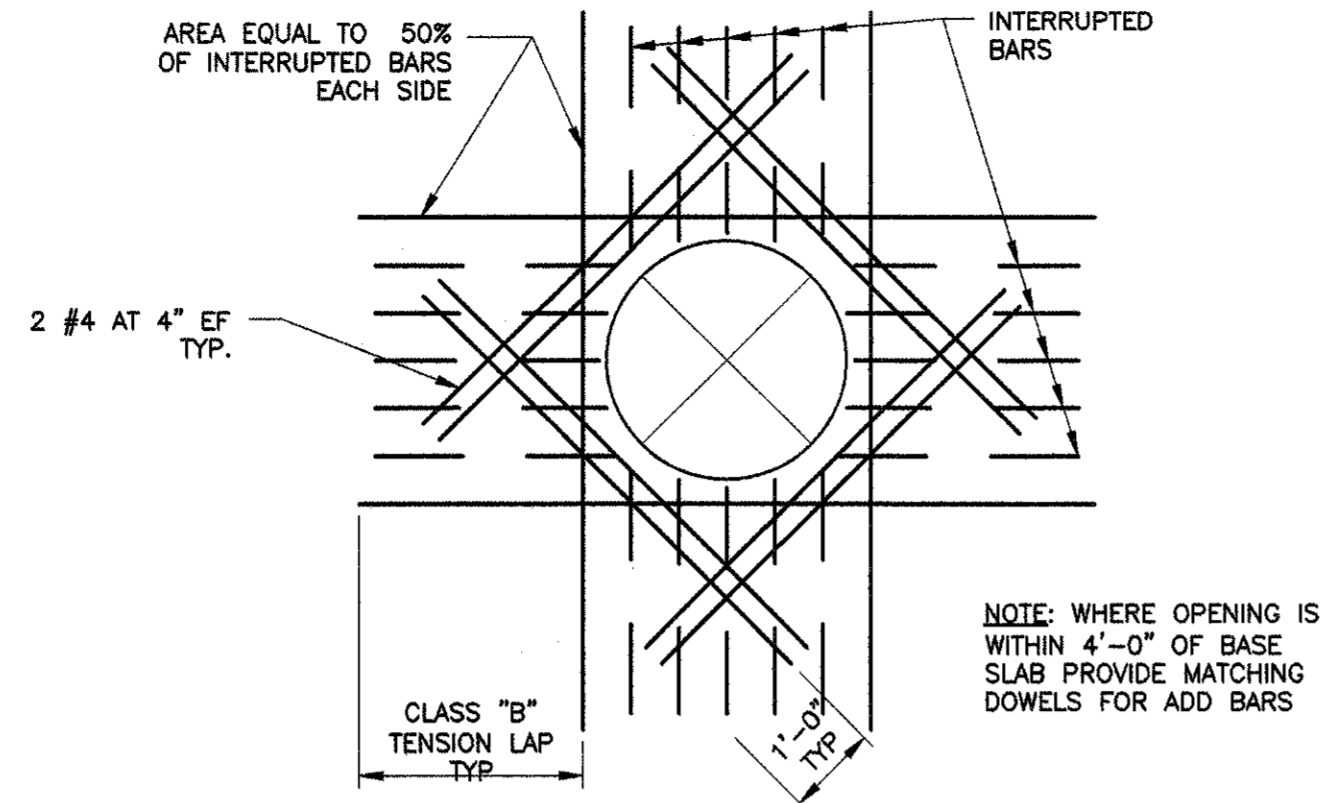
SHEET NO.
 100-S-1

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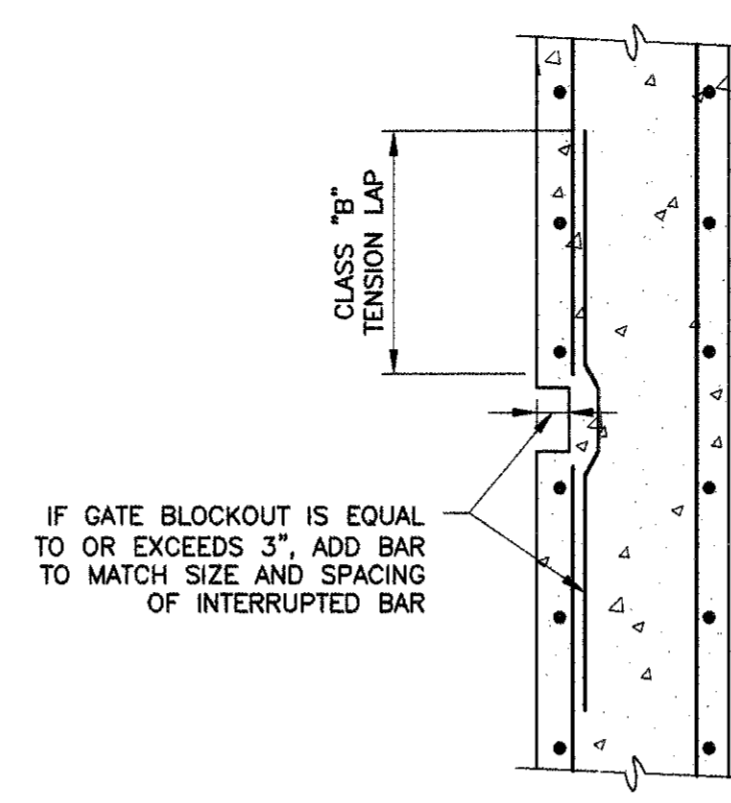
REINF AT RECTANGULAR OPENINGS GREATER THAN 12"

DETAIL A
NTS



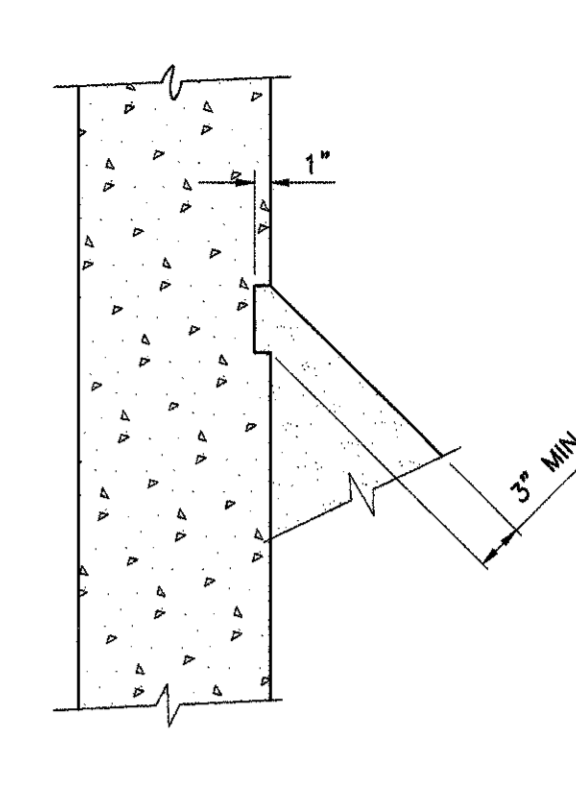
REINF AT CIRCULAR OPENINGS GREATER THAN 12"

DETAIL B
NTS



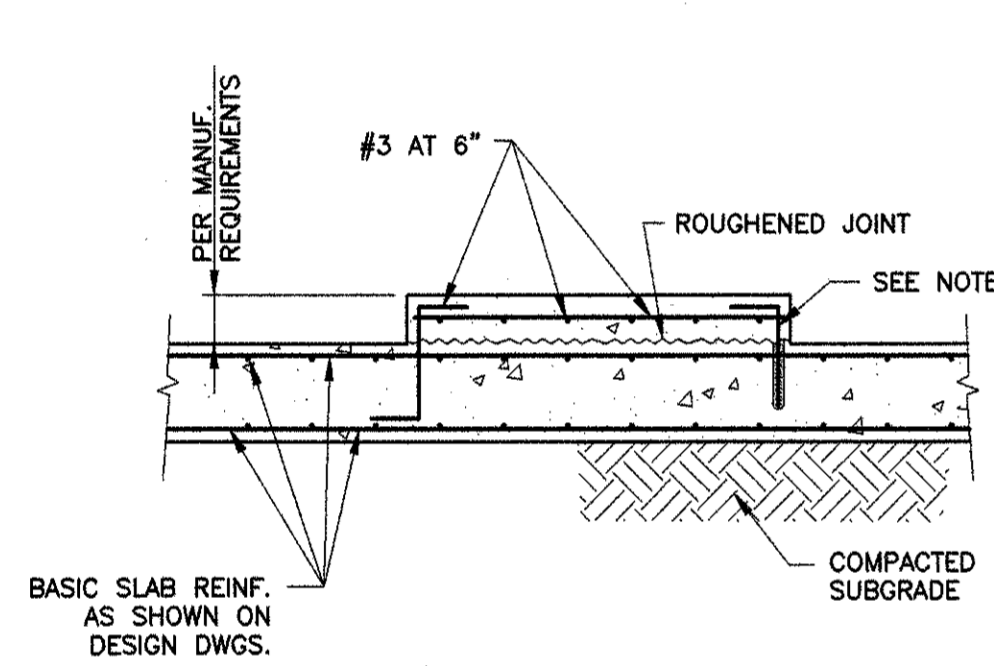
GATE BLOCKOUT

DETAIL C
NTS



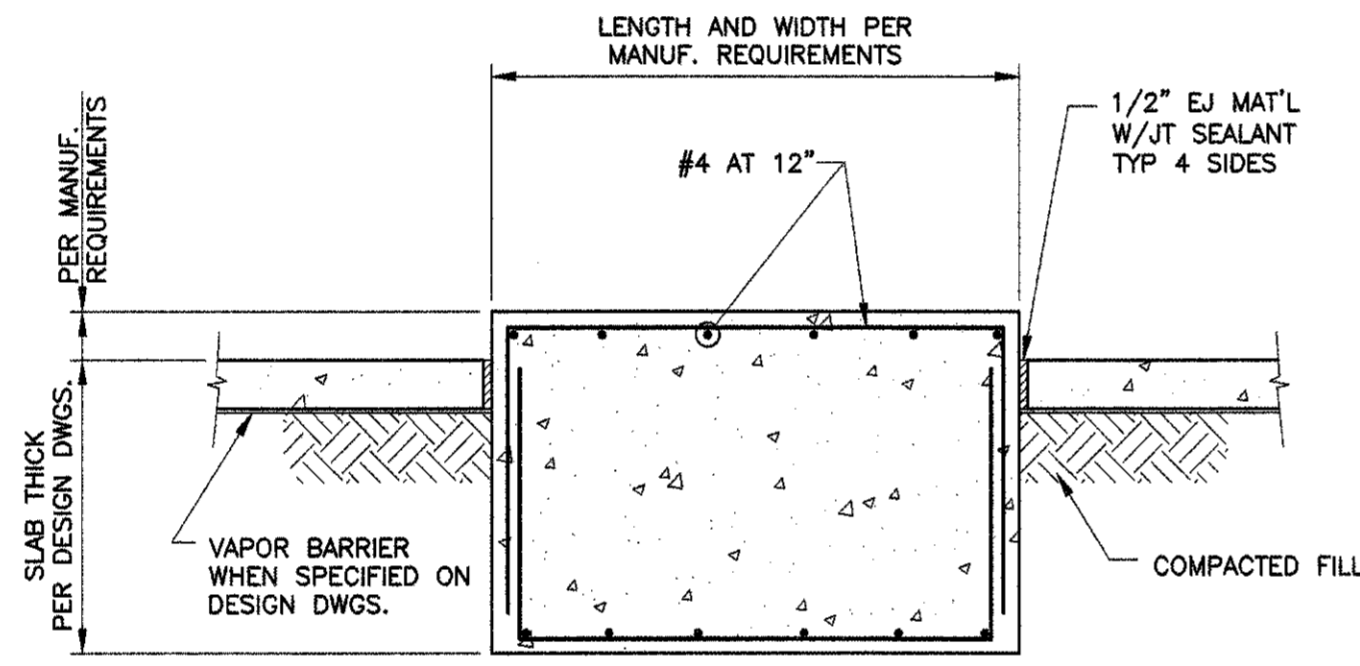
GROUT FILLET

DETAIL D
NTS



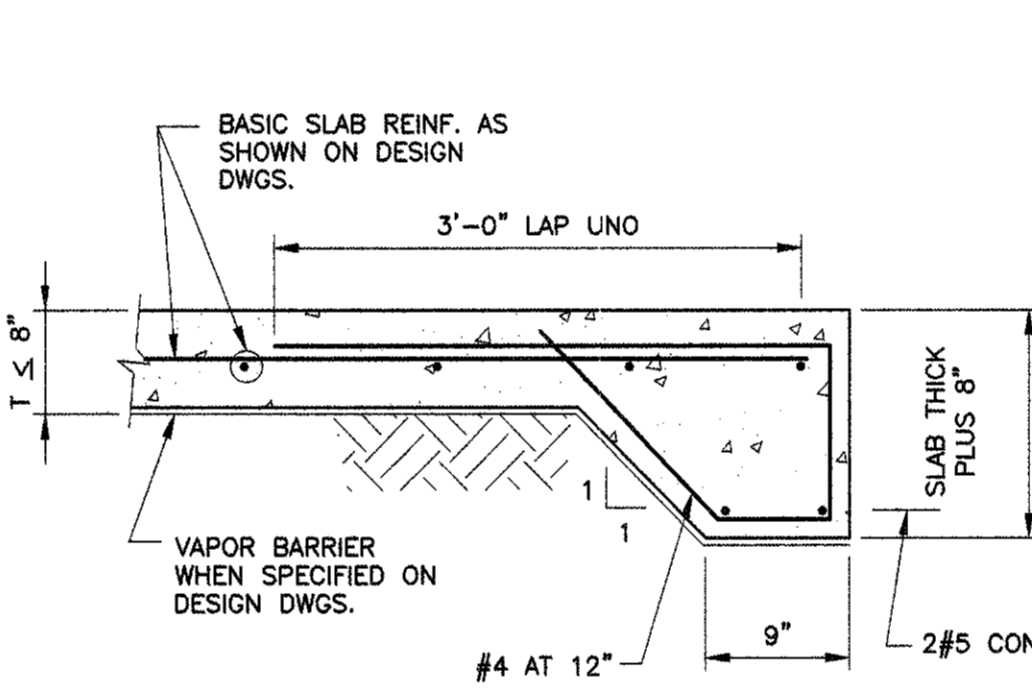
EQUIPMENT PAD

DETAIL E
NTS



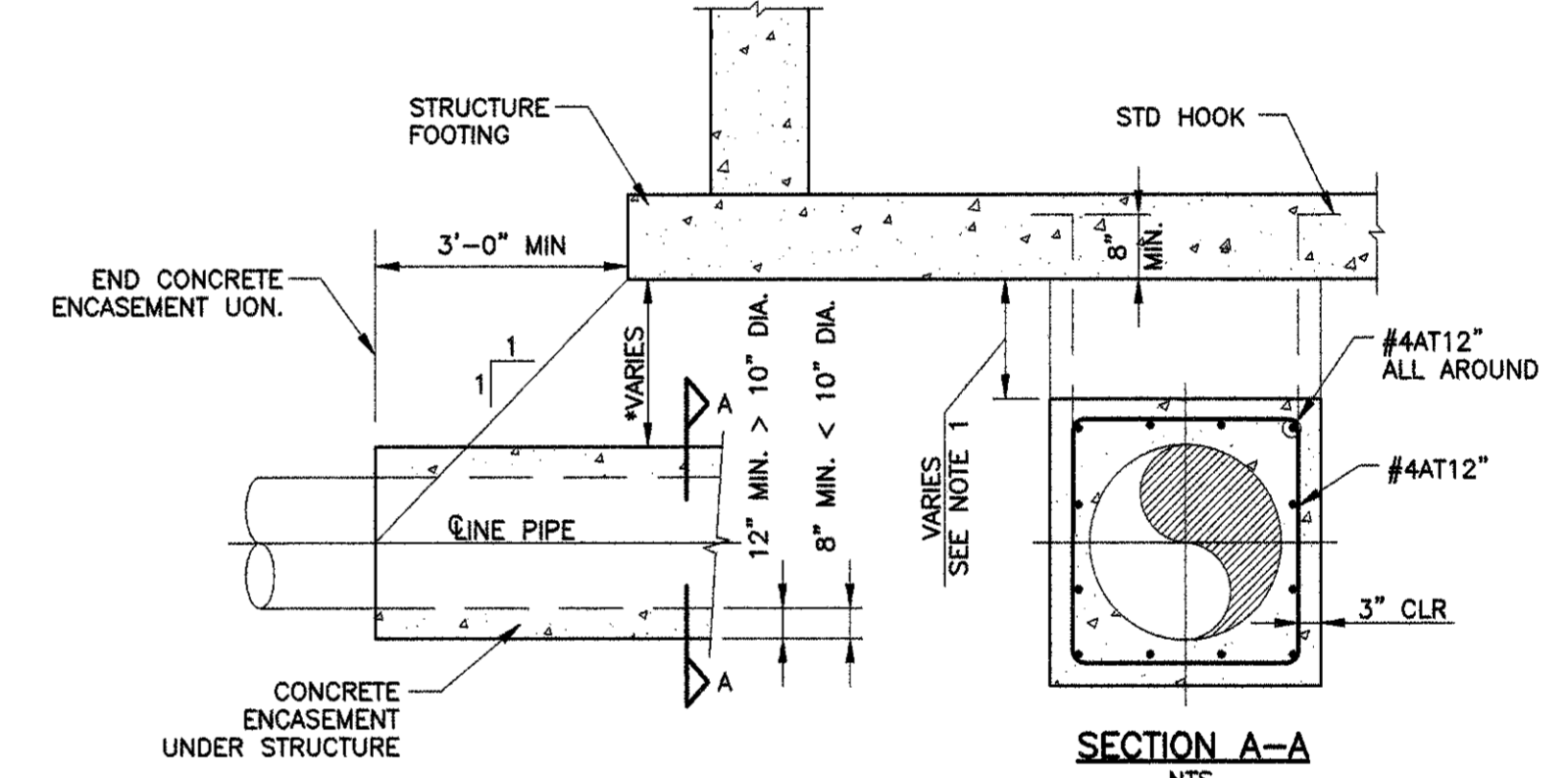
ISOLATED EQUIPMENT PAD

DETAIL F
NTS



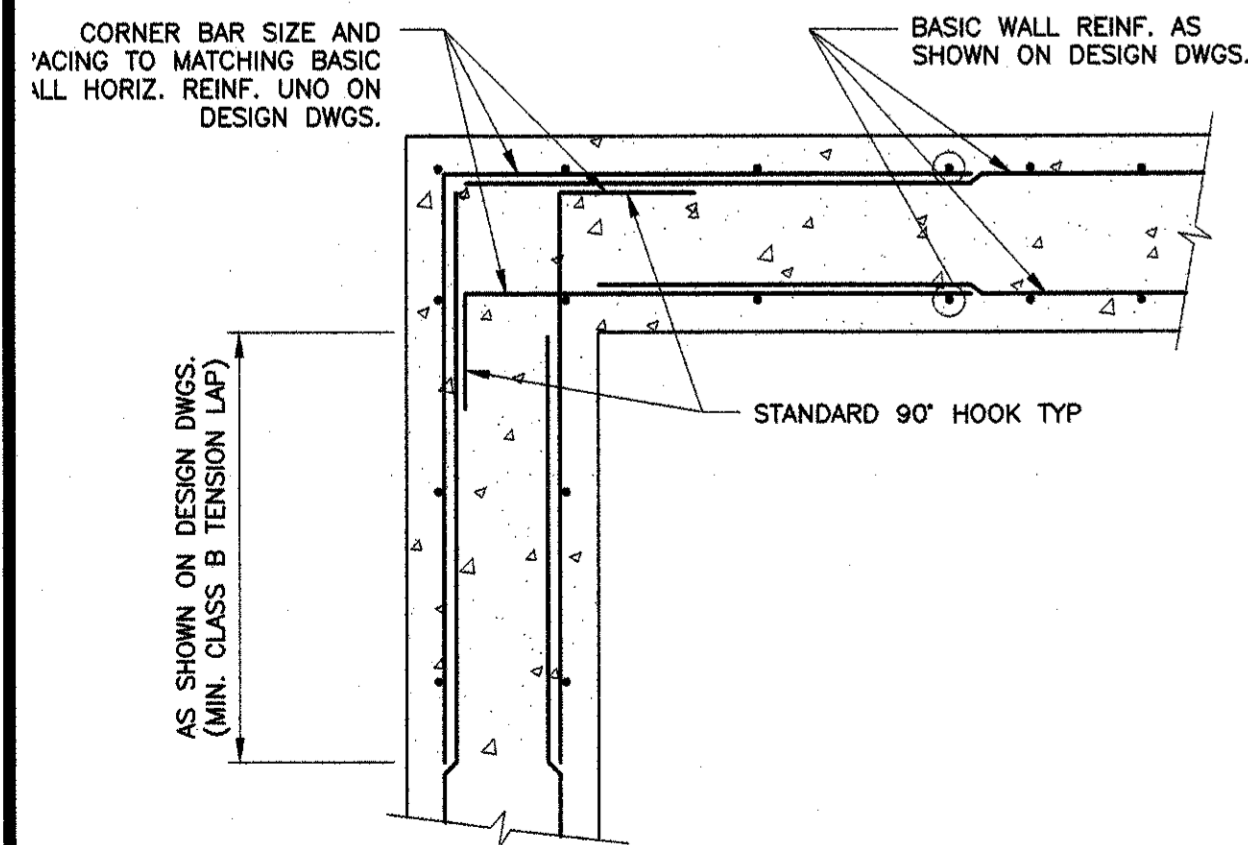
THICKENED EDGE SLAB

DETAIL G
NTS



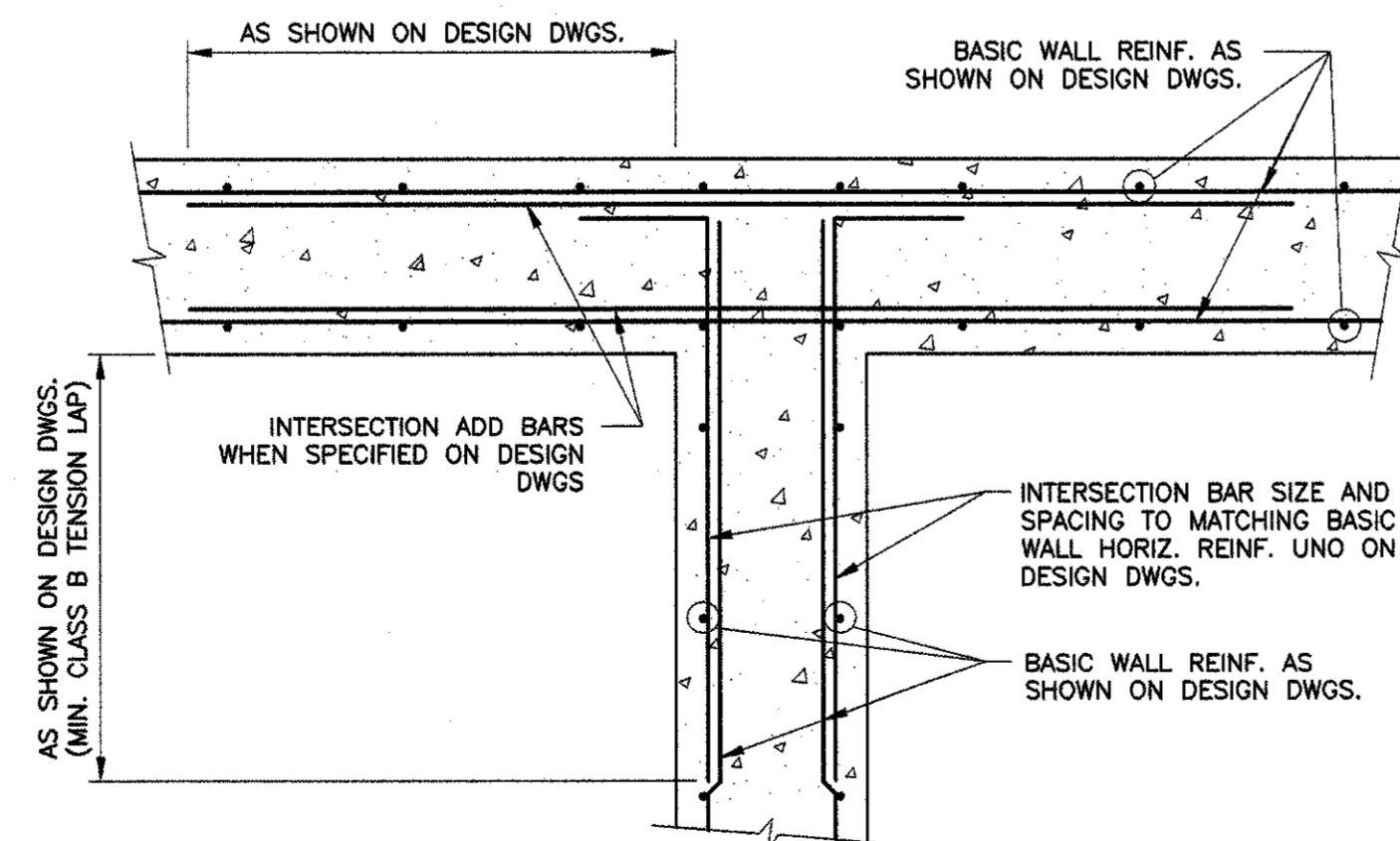
PIPE ENCASUREMENT

DETAIL H
NTS



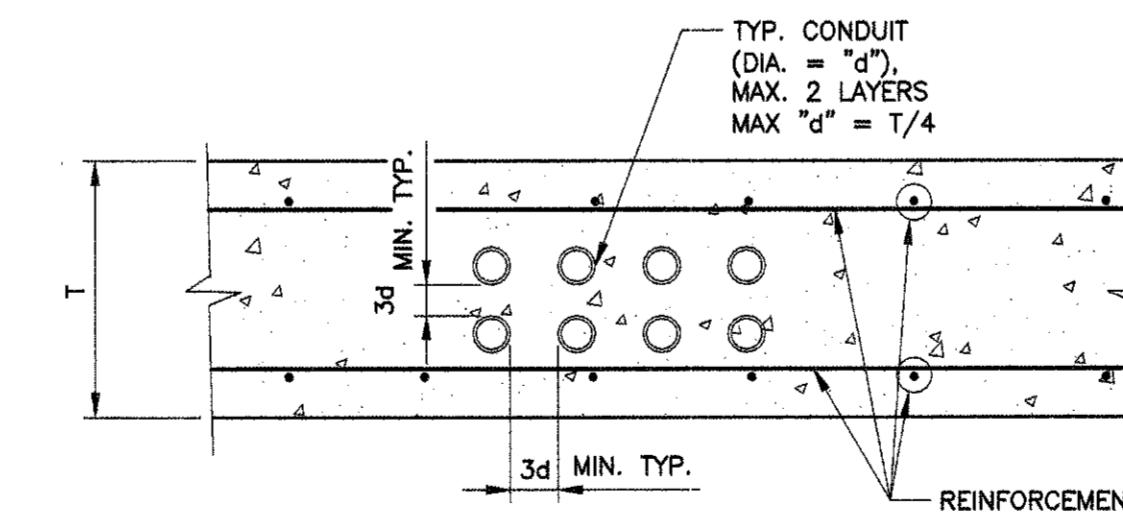
WALL CORNER REINFORCING

DETAIL I
NTS



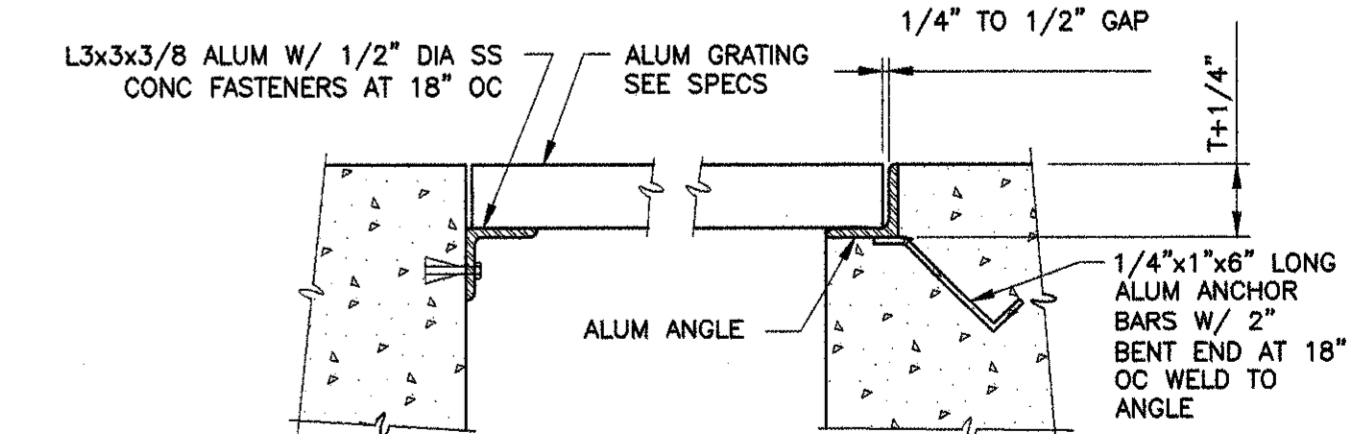
WALL INTERSECTION REINFORCING

DETAIL J
NTS



TYPICAL CONDUIT PLACEMENT IN SLAB

DETAIL K
NTS



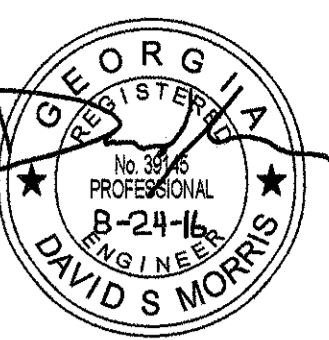
GRATING AND GRATING SUPPORT

DETAIL L
NTS

MAXIMUM SPAN	DEPTH	BEARING BAR	
		THICKNESS	SPACING
3'-0"	1 1/4"	3/16"	1 3/16"
4'-0"	1 1/2"	3/16"	1 3/16"
5'-0"	2"	3/16"	1 3/16"
6'-0"	2 1/4"	3/16"	1 3/16"

- NOTES:
1. COORDINATE W/ ENGINEER FOR PLACEMENT OF CONDUIT WHERE DIMENSION REQUIREMENTS SHOWN CAN NOT BE MET.
2. NO REINFORCEMENT MAY BE CUT, RELOCATED, OR BEND TO ALLOW FOR CONDUIT PLACEMENT WITHOUT PERMISSION FROM ENGINEER.

ESI ENGINEERING TECHNOLOGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
E/T PROJECT NO. 15-137



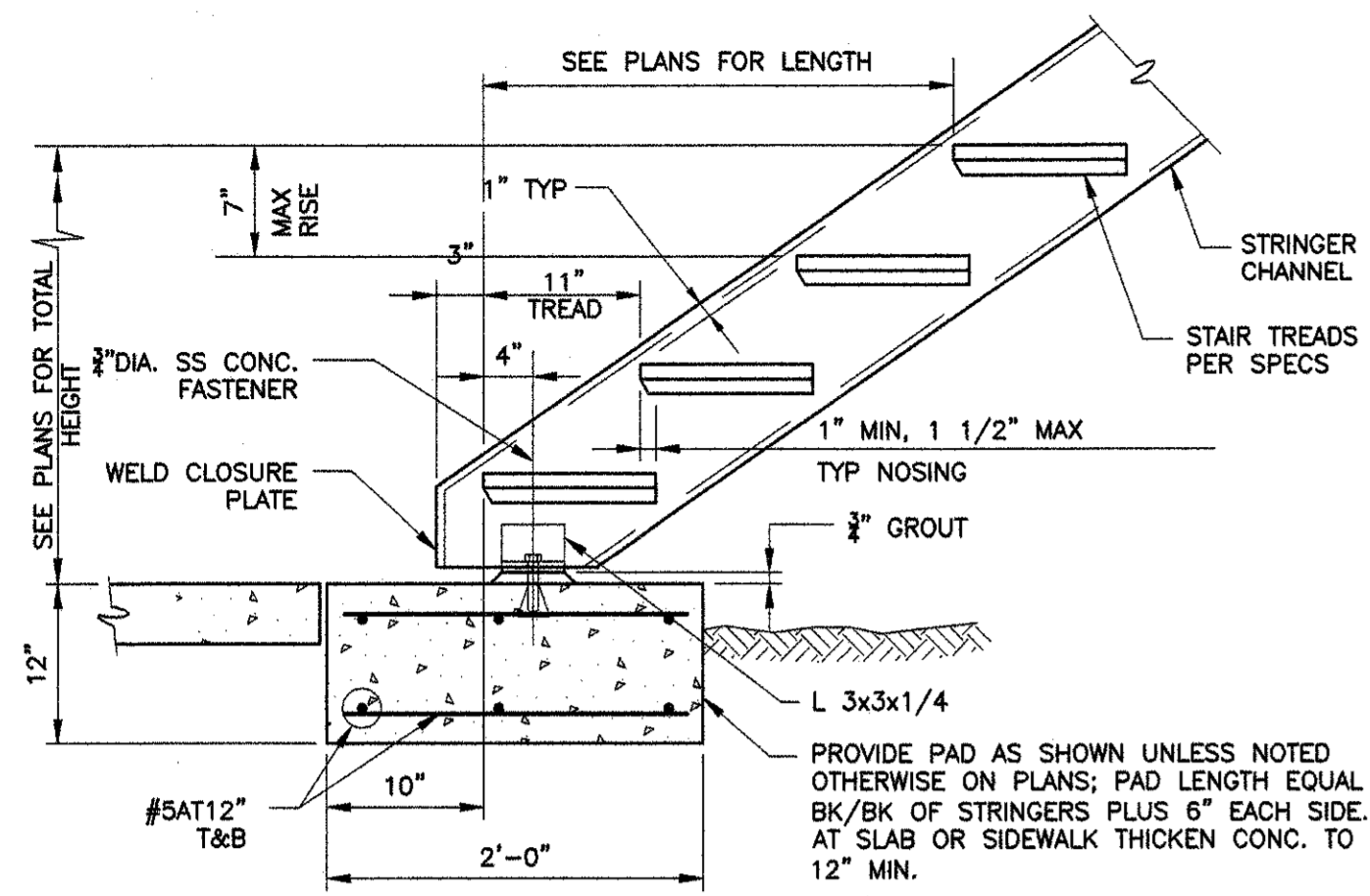
ESI ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
LAKE MARY, FLORIDA 32746
PHONE: (407) 322-0500
E/T PROJECT NO. 15-137

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DSGN: DSM
DRWN: DSM
CHK: JVS
BAR BELOW IS 1" LONG FOR SCALES UNLESS NOTED OTHERWISE. SCALE ON THIS SHEET ADJUST SCALES ACCORDINGLY.

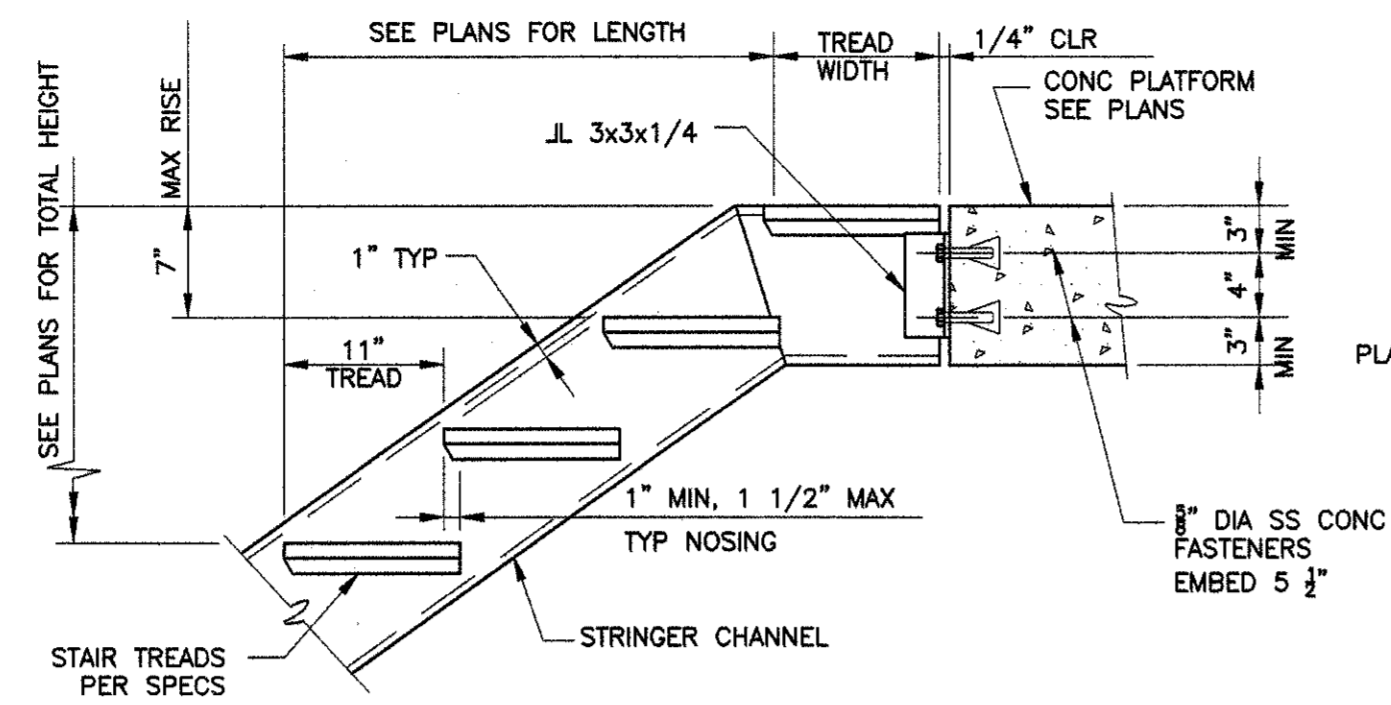
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD STRUCTURAL DETAILS
II OF V

SHEET NO.
100-S-2



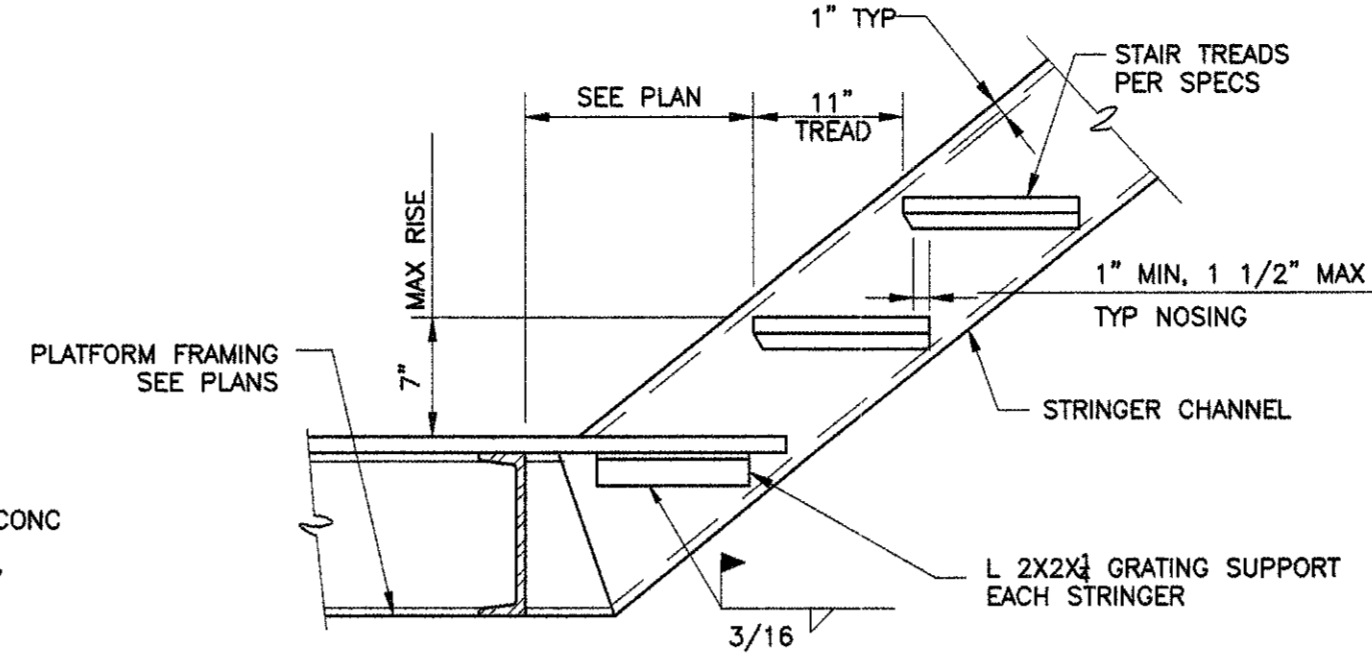
ALUM STAIR STRINGER TO CONCRETE

DETAIL A
NTS



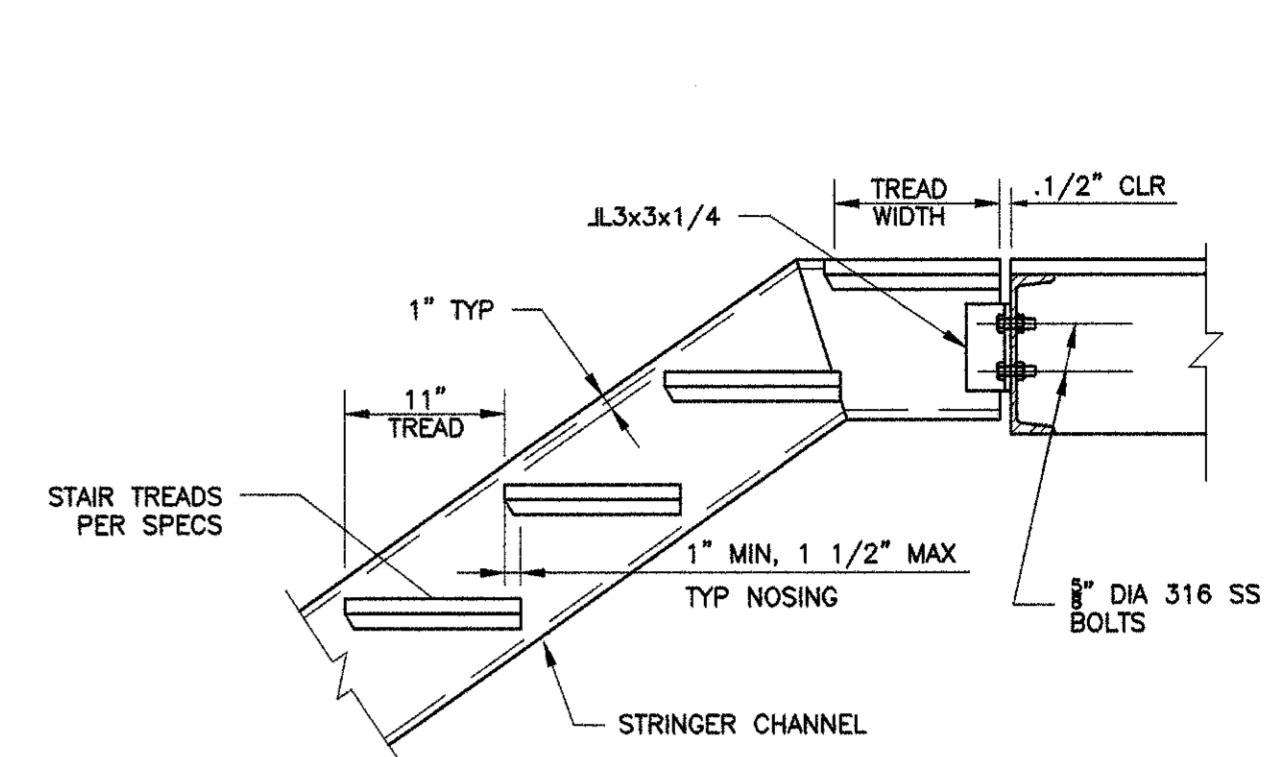
ALUM STAIR STRINGER TO CONCRETE PLATFORM TOP

DETAIL B
NTS



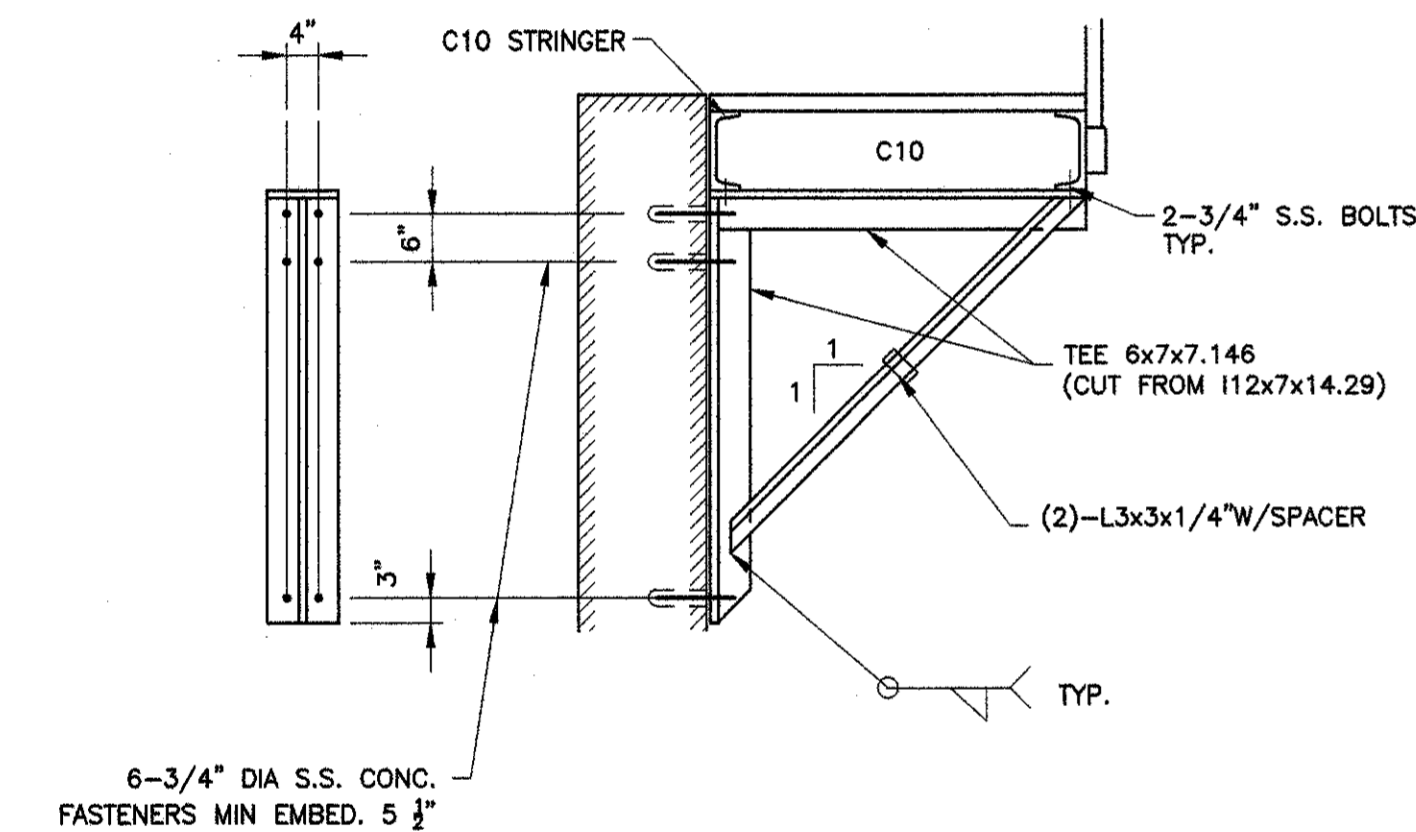
ALUM STAIR STRINGER TO PLATFORM

DETAIL C
NTS



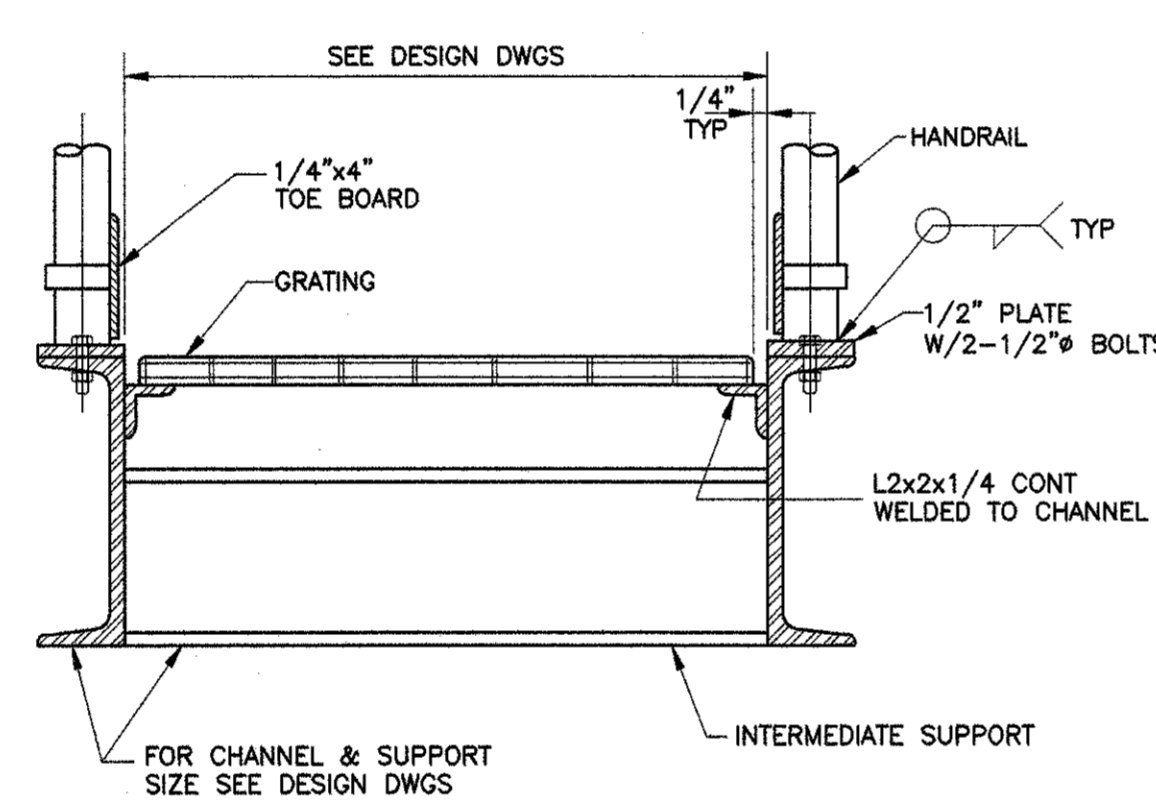
ALUM STAIR STRINGER TO PLATFORM TOP

DETAIL D
NTS



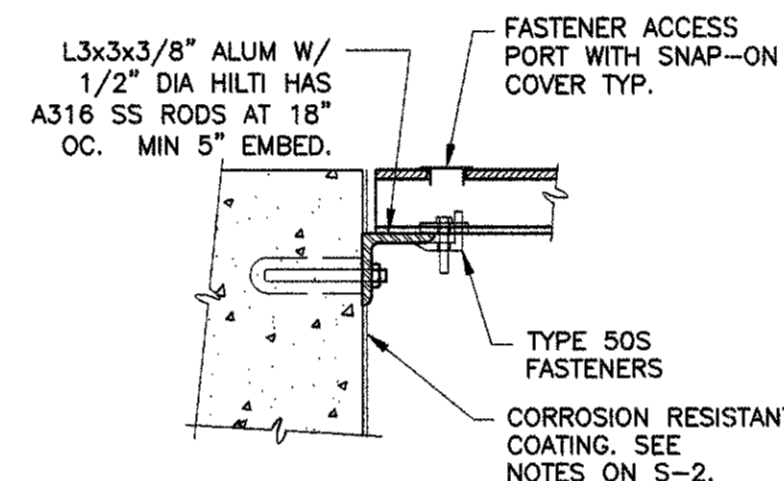
WALKWAY SUPPORT BRACKET

DETAIL E
NTS



TYPICAL PLATFORM SECTION

DETAIL F
NTS



ALUM PLANK GRATING AND GRATING SUPPORT

DETAIL G
NTS

MAXIMUM SPAN	DEPTH	TYPE	STYLE
5'-0"	1 1/2"	HD	P
6'-0"	1 3/4"	HD	P
7'-0"	2"	HD	P
7'-6"	2 1/4"	HD	P
8'-0"	2 1/2"	HD	P

CONNECT INDIVIDUAL 6" WIDE PIECES TO ACHIEVE 4'-0" WIDE SECTIONS. PROVIDE 4 TYPE 50 FASTENERS PER EACH 4'-0" SECTION.

NOTES:

- ALUMINUM EMBEDDED IN CONCRETE MUST BE PAINTED WITH ONE SHOP COAT OF HEAVY BITUMASTIC.
- ALUMINUM SHAPES IN CONTACT WITH CONCRETE MUST BE SEPARATED BY 3/8" NEOPRENE GASKET OR ANY CASE WHERE TWO DIFFERENT METALS ARE TO BE IN CONTACT, A NEOPRENE GASKET MUST BE PROVIDED.
- HANDRAILS, GUARDRAILS, POST, BRACKETS AND MOUNTINGS SHALL MEET THE 2012 INTERNATIONAL BUILDING CODE (IBC) AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS (OSHA) LOADING REQUIREMENTS.
- TOP OF ALL GUARDRAILS SHOULD BE 42" HIGH ABOVE THE FINISH FLOOR OR WALKWAY. THE INTERMEDIATE RAILS SHALL BE EQUALLY SPACED BETWEEN THE TOP RAIL AND THE TOEBOARD.
- ALL WALKWAYS SHALL USE GRATING UNLESS OTHERWISE SHOWN ELSEWHERE ON THE DRAWINGS. GRATING SHALL BE PLACED SUCH THAT OPENINGS AROUND GATES AND OTHER EQUIPMENT SHALL NOT BE INTERRUPTED AND SHALL BE SPECIFICALLY ADDRESSED IN SHOP DRAWING SUBMITTALS.
- HANDRAIL AT GATE LOCATIONS SHALL NOT BE INTERRUPTED AND SHALL BE SPECIFICALLY ADDRESSED IN SHOP DRAWING SUBMITTALS.

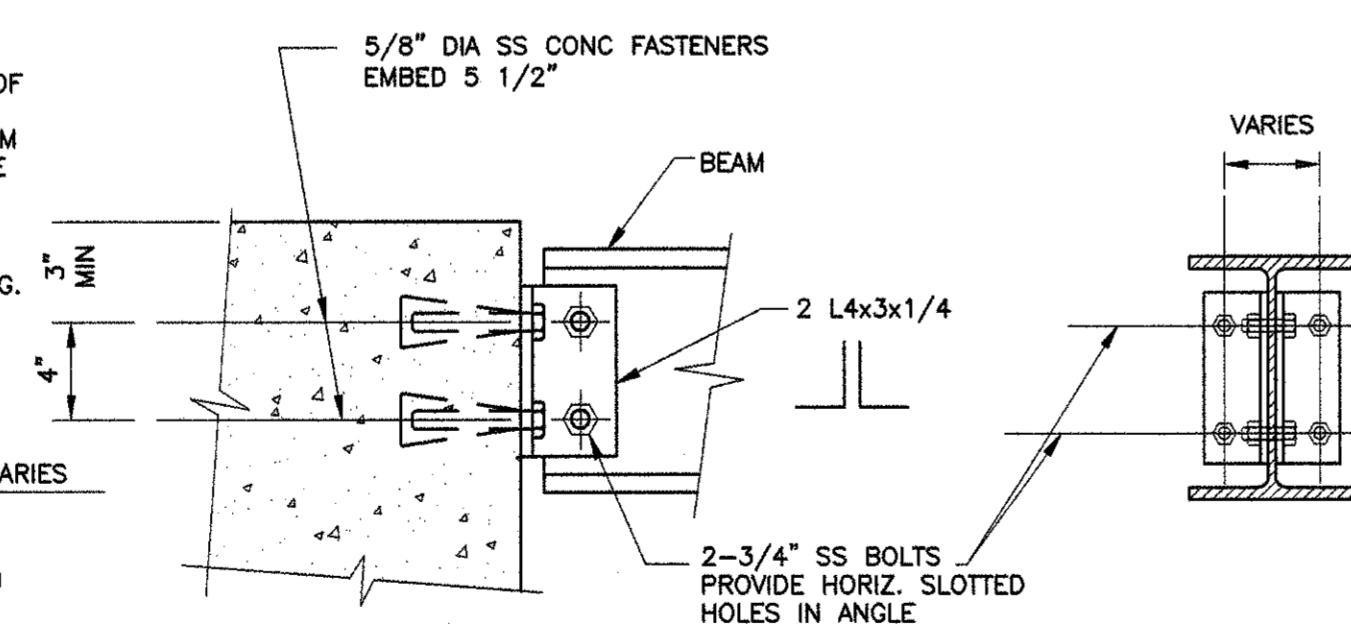
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
36	7	1'-8 1/2"
30-33	6	1'-5 1/2"
24-27	5	1'-2 1/2"
18-21	4	11 1/2"
12-15	3	8 1/2"
8-10	2	5 1/2"
6	1	3"

NOTES:

- NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSE WEB.
- ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING DRAWINGS.
- ADD 1 1/4" TO ANGLE LENGTH FOR STAGGERED BOLT CONNECTIONS.
- USE SS BOLTS FOR ALL ALUMINUM FRAMING.
- USE WASHERS ON NUTS.

NOTE:

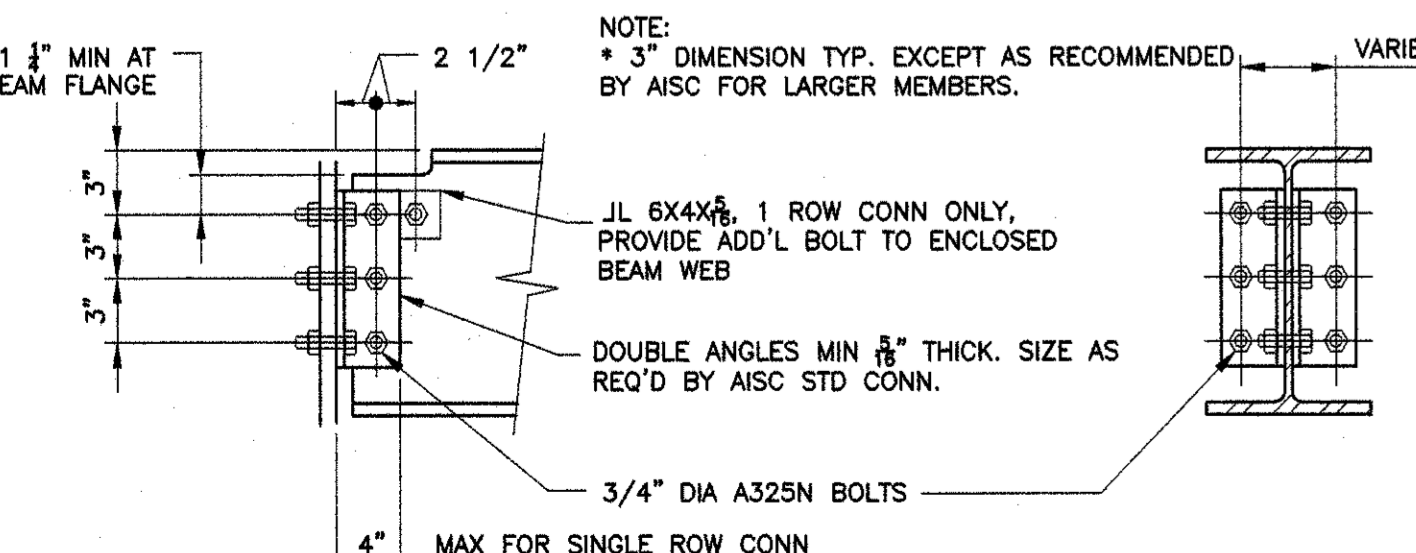
* 3" DIMENSION TYP. EXCEPT AS RECOMMENDED BY AISC FOR LARGER MEMBERS.



BEAM DEPTH	NO. OF ANCHORS
8, 10, 12	4
14, 16, 18	6

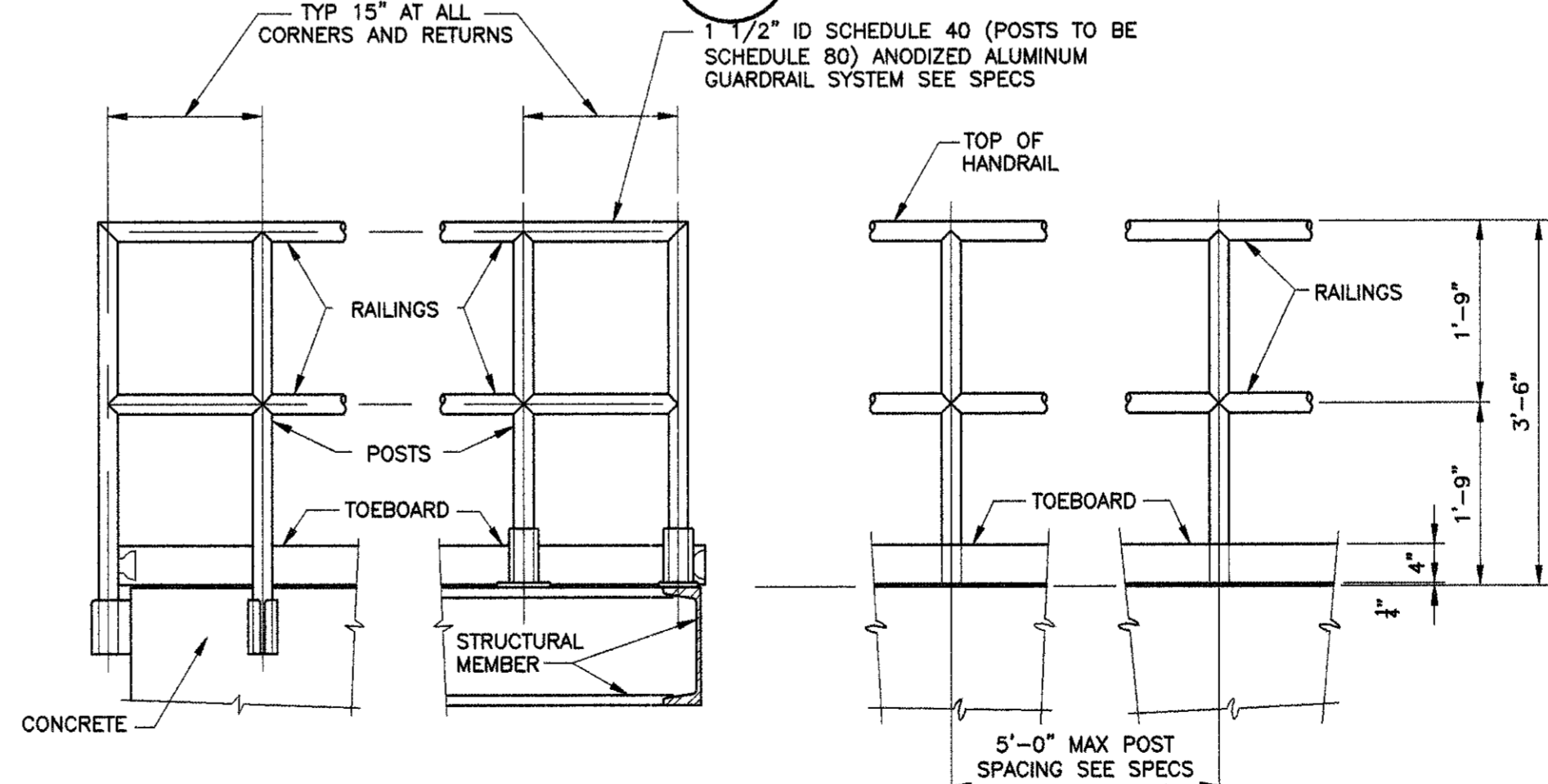
BEAM TO CONCRETE

DETAIL I
NTS



TYPICAL FRAMING CONNECTION

DETAIL H
NTS



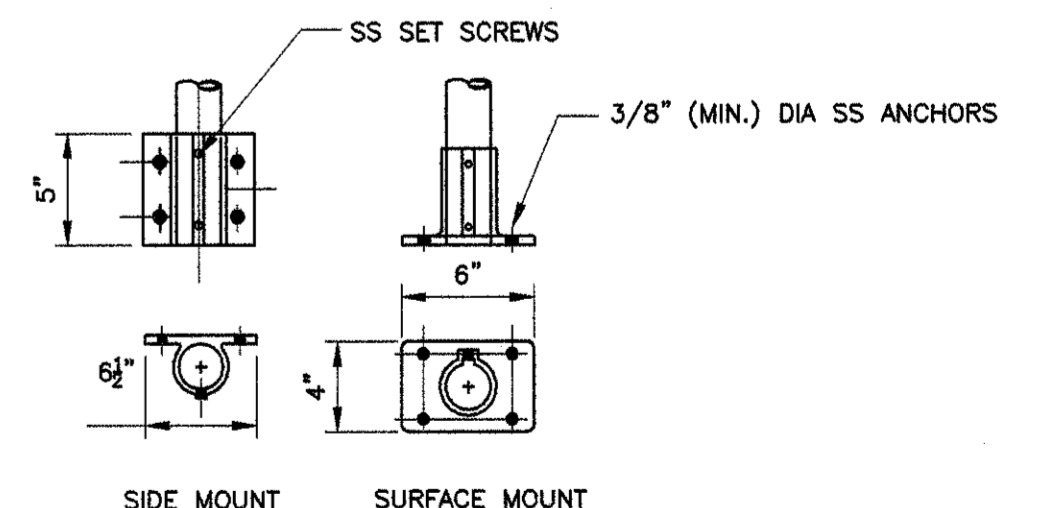
FACE MOUNTED

SURFACE MOUNTED

RAIL-POST ARRANGEMENT

GUARDRAILS

DETAIL J
NTS



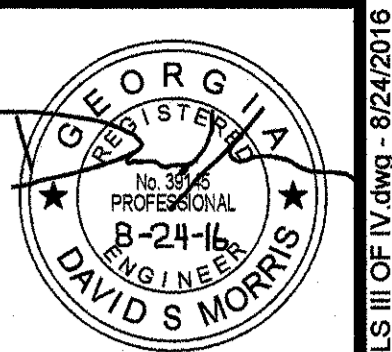
CONNECTIONS

1/2"

LOCATED AT 30'-0" MAX INTERVALS

EXPANSION JT

BASE CONNECTION NOTE: 4 ANCHOR PATTERN SHOWN, 2 BOLT PATTERN WILL BE ACCEPTABLE GIVEN THE LOADING REQUIREMENTS SPECIFIED ARE SATISFIED AND A MINIMUM OF 1/2" DIA. SS BOLTS ARE PROVIDED.



ENGINEERING STRATEGIES, INC.
3551 W. LAKE MARY BLVD., SUITE 210
LAKE MARY, FLORIDA 32746
PHONE: (407) 325-0500
EIT PROJECT NO. 15-137

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

DATE: AUGUST 2016

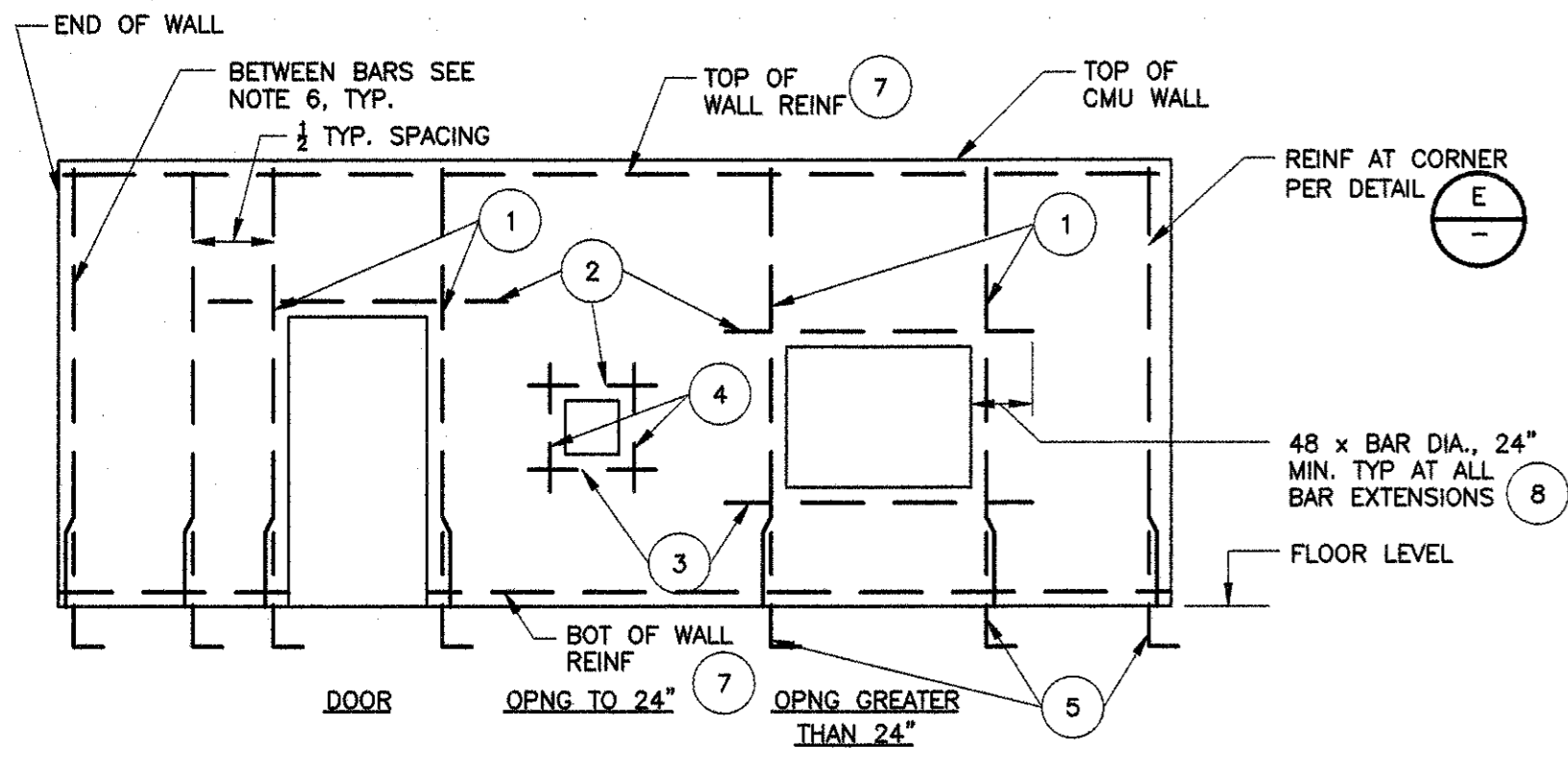
PROJECT NUMBER:

REVISION

DSGN: DSM
DRWN: DSM
CHK: JVS

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD STRUCTURAL DETAILS
III OF V

SHEET NO.
100-S-3



WALL REINFORCING IN CMU WALLS
DETAIL A
NTS

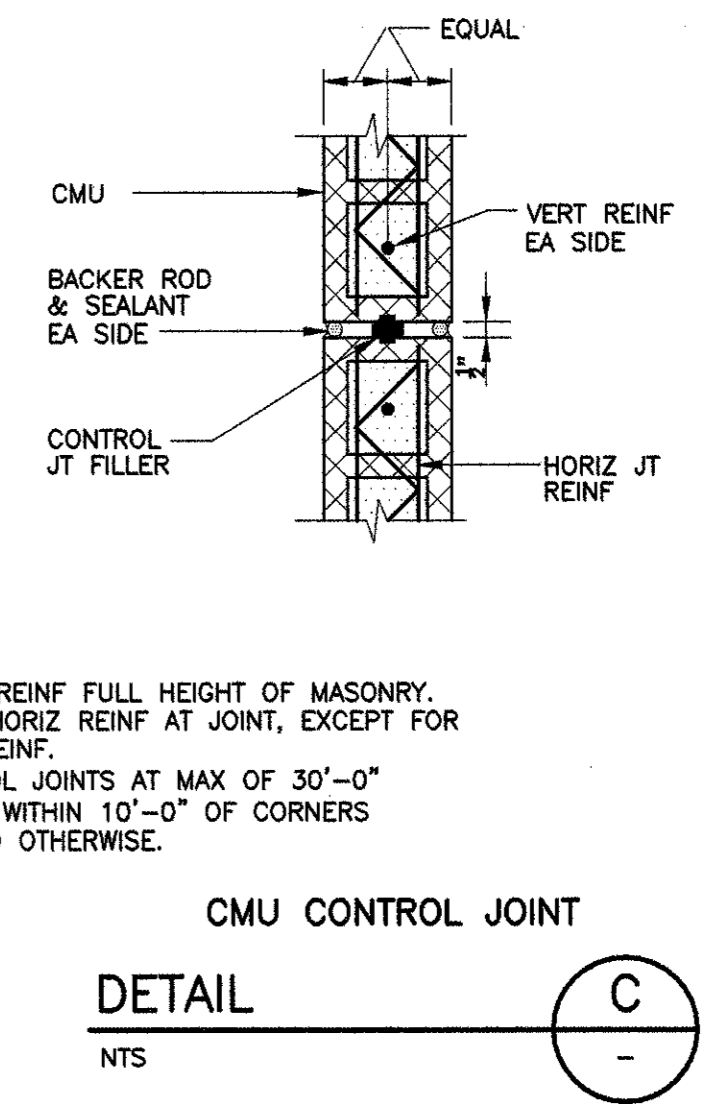
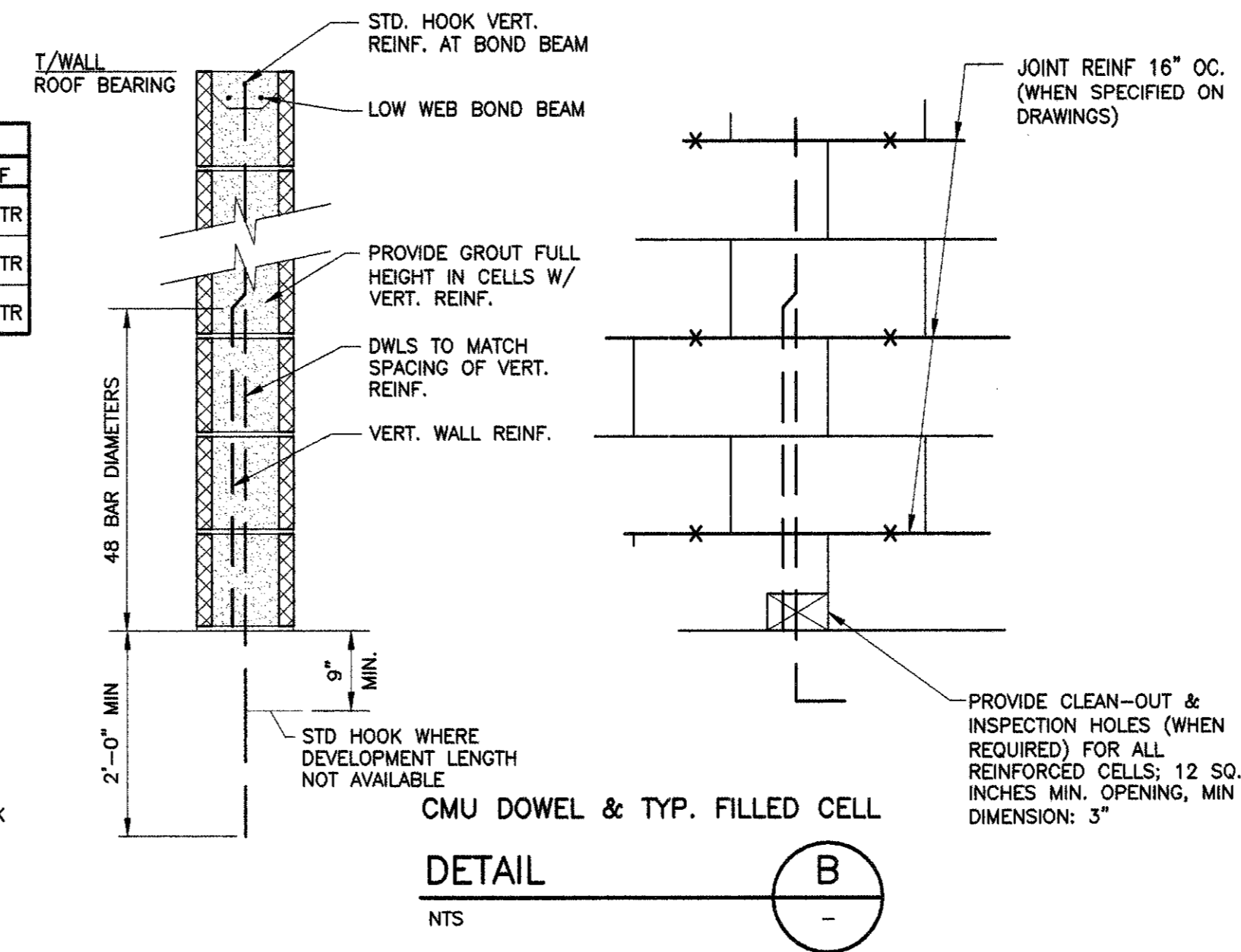
NOTES:

- VERTICAL REINFORCEMENT AT OPENINGS:

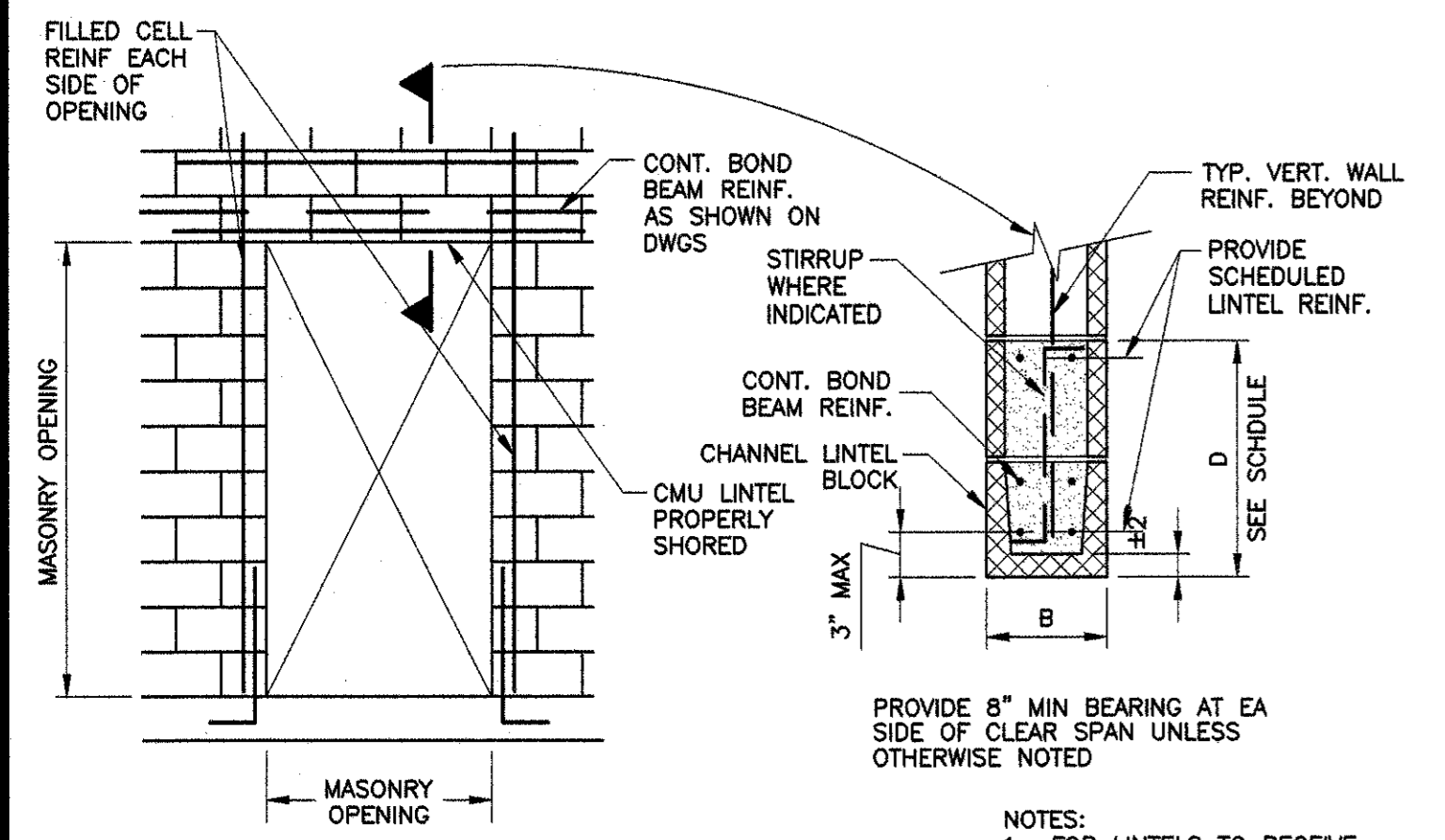
OPNG	CMU	8"	12"	
	D	REINF	D	REINF
TO 4'-3"	8"	1#5 CTR	8"	1#6 CTR
4'-4" TO 6'-3"	16"	1#5 CTR	16"	1#6 CTR
6'-4" TO 12'-0"	24"	1#5 CTR	24"	1#6 CTR

VERT REINF W/MATCHING DWLS UNO ON DRAWINGS

- FOR LINTEL BARS SEE DETAIL C & D/-.
- SILL BARS, 2-#5 IN BOND BEAM
- 1-#5 EACH SIDE
- DOWEL SIZE & QTY TO MATCH BARS BESIDE OPNG. SEE DETAIL B/- FOR DOWEL
- BETWEEN BARS AT CORNERS & OPNGS, PROVIDE TYP WALL REINF PER DETAIL B/-
- TOP AND BOTTOM OF WALL COURSE, UNO ON DWGS. PROVIDE 2-#5 IN BOND BEAM.
- IF FULL LENGTH IS NOT AVAILABLE, PROVIDE STD HOOK AND EXTEND AS FAR AS POSSIBLE.



- NOTES:**
- EXTEND VERT REINF FULL HEIGHT OF MASONRY.
 - DISCONTINUE HORIZ REINF AT JOINT, EXCEPT FOR BOND BEAM REINF.
 - PLACE CONTROL JOINTS AT MAX OF 30'-0" CENTERS AND WITHIN 10'-0" OF CORNERS UNLESS NOTED OTHERWISE.

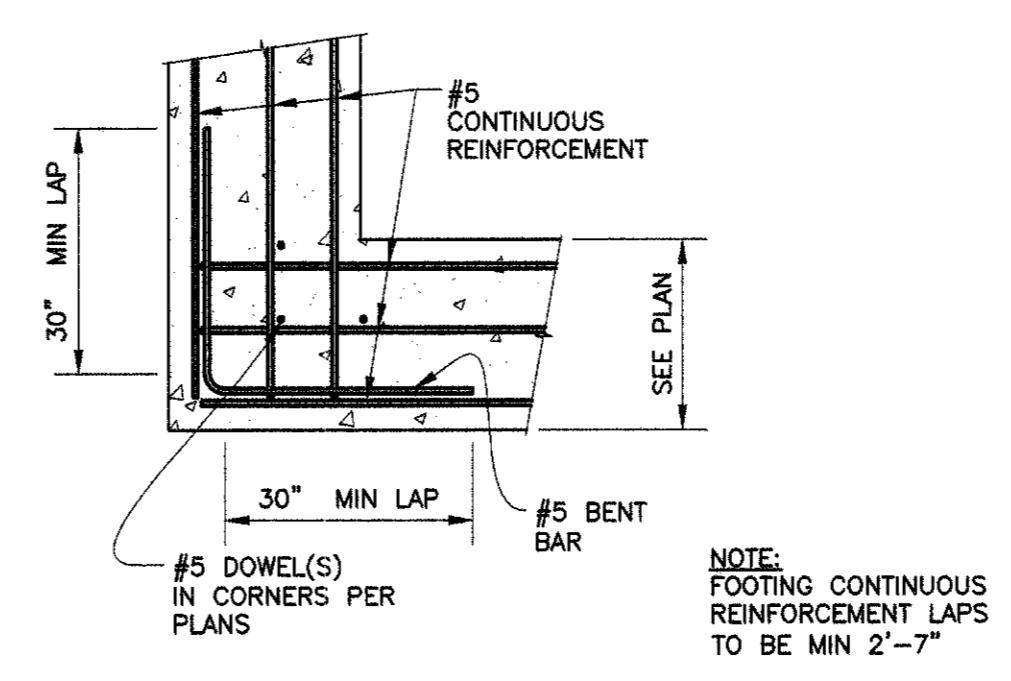
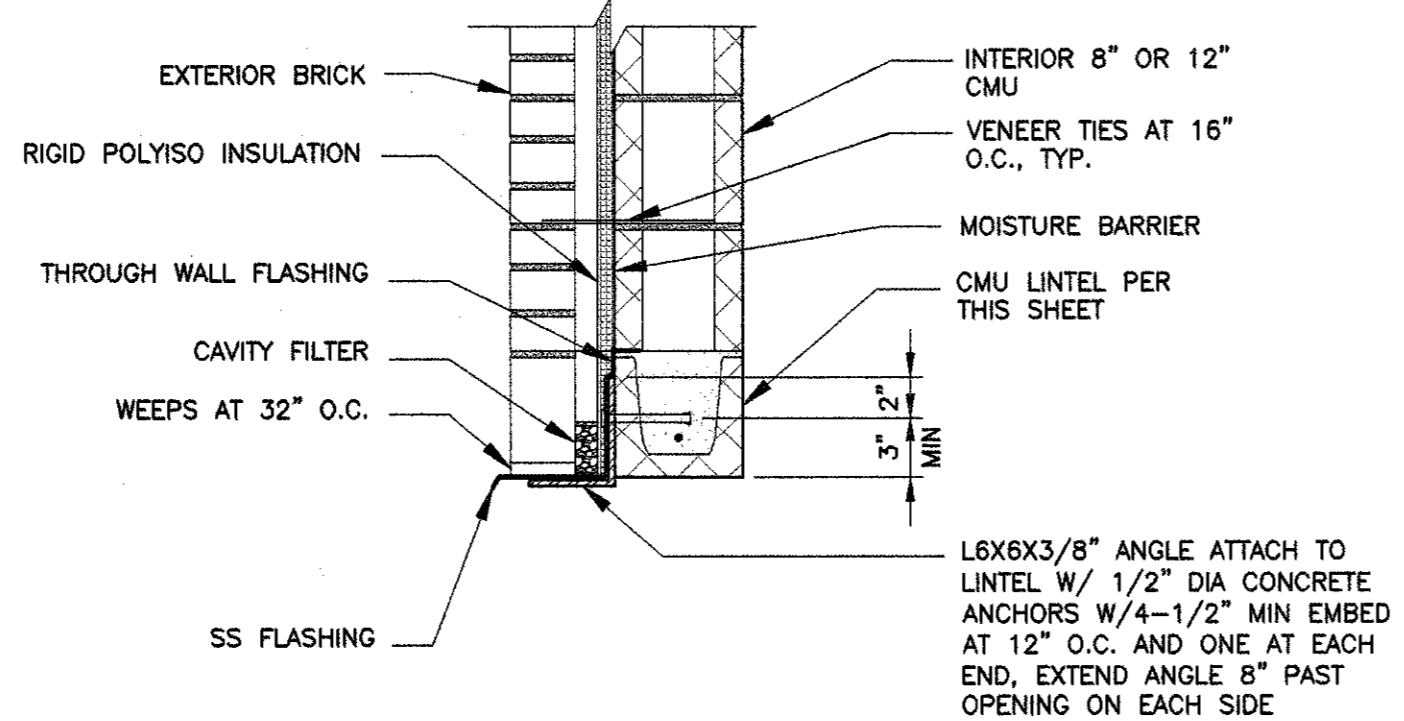
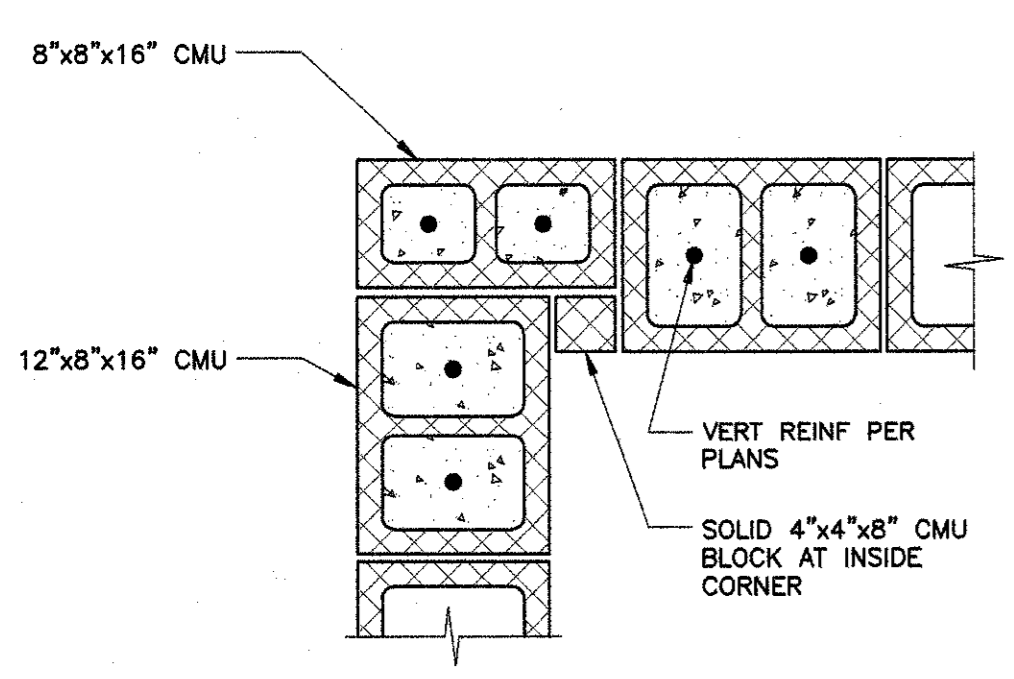
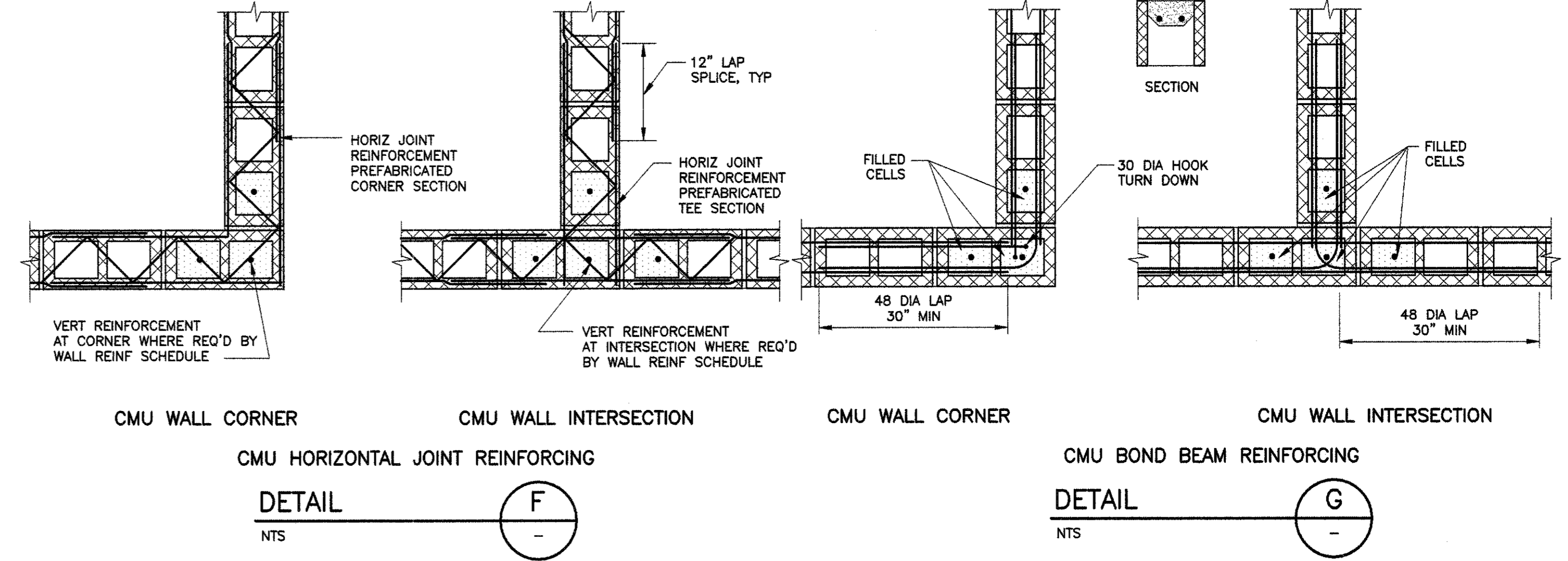


- NOTES:**
- FOR LINTELS TO RECEIVE STUCCO OR VENEER FINISH PRE-CAST CONCRETE LINTEL MAY BE USED.
 - IF SPAN EXCEEDS 12'-0" PRECAST PRESTRESSED TYPE OR CAST-IN-PLACE CONSTRUCTION MUST BE USED.

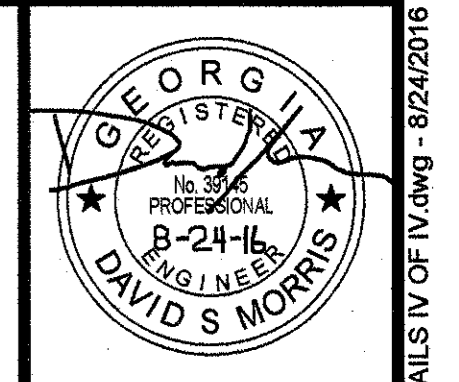
SPAN	MARK	B	D	REINF	STIRRUPS
TO 4'-3"		8"	8"	1-#5 BOT	-
		12"	8"	2-#5 BOT	-
4'-4" TO 6'-3"		8"	16"	2-#5 BOT	-
		12"	16"	2-#5 BOT	-
6'-4" TO 12'-0"		8"	24"	2-#5 T&B	-
		12"	24"	2-#5 T&B	#3AT8"

- NOTES:**
- PROVIDE REINF AS INDICATED AT ALL OPENINGS, BOTH INTERIOR & EXTERIOR WALLS
 - PROVIDE 8" MINIMUM BEARING AT EACH SIDE OF CLEAR SPAN.
 - FULLY GROUT CMU OVER DEPTH "D" TO ENDS OF BEARING.
 - D OF 16" MAY CONSIST OF ONE FULLY GROUTED 16" CMU LINTEL BLOCK OR ONE FULLY GROUTED 8" CMU LINTEL BLOCK PLUS ONE FULLY GROUTED 8" CMU.

CMU LINTEL REINFORCING SCHEDULE
DETAIL E
NTS



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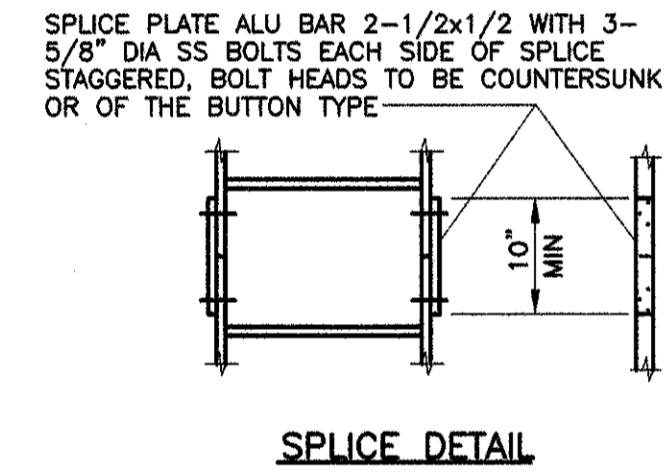
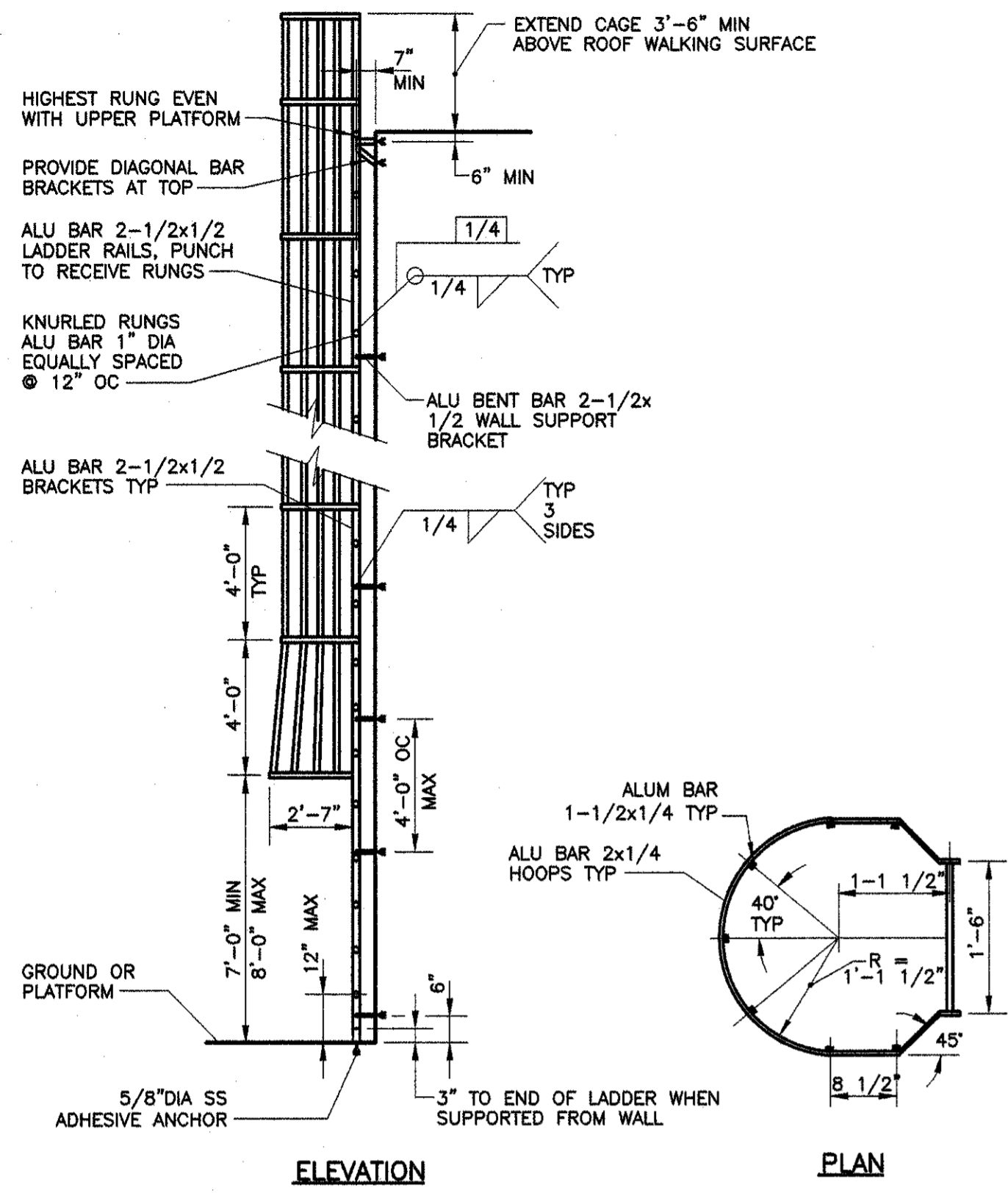
ESI ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

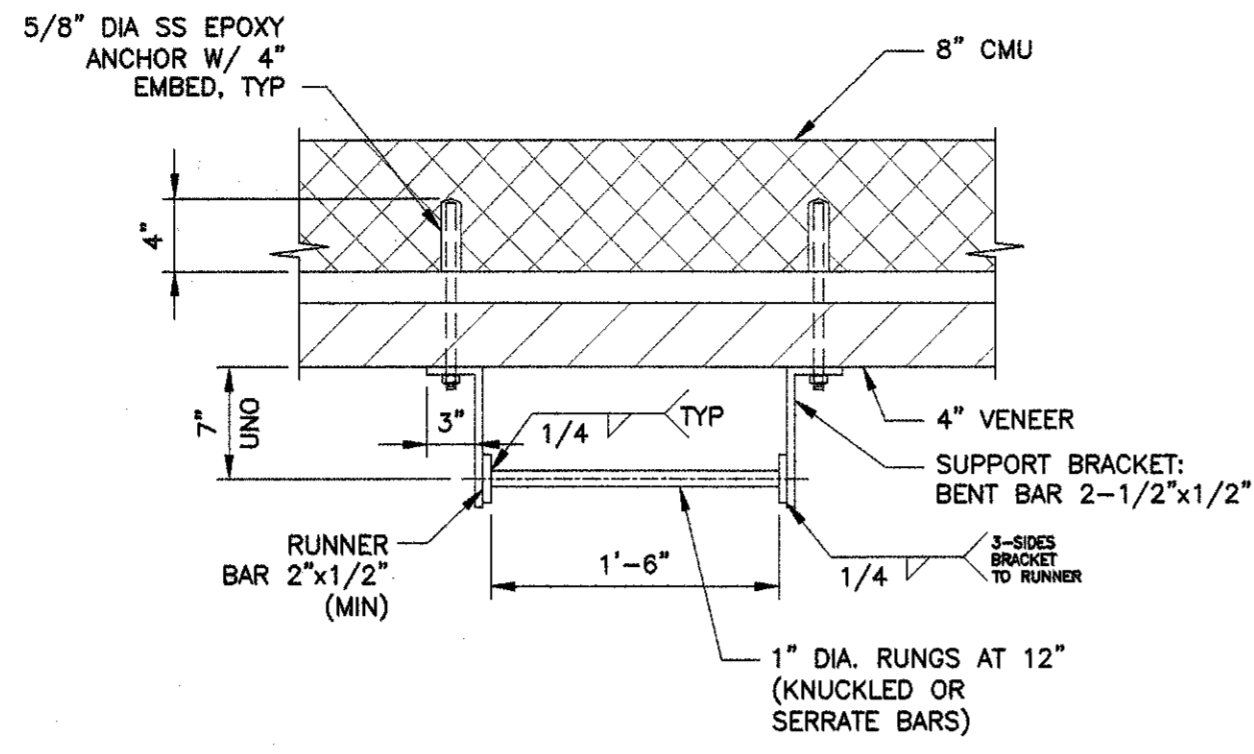
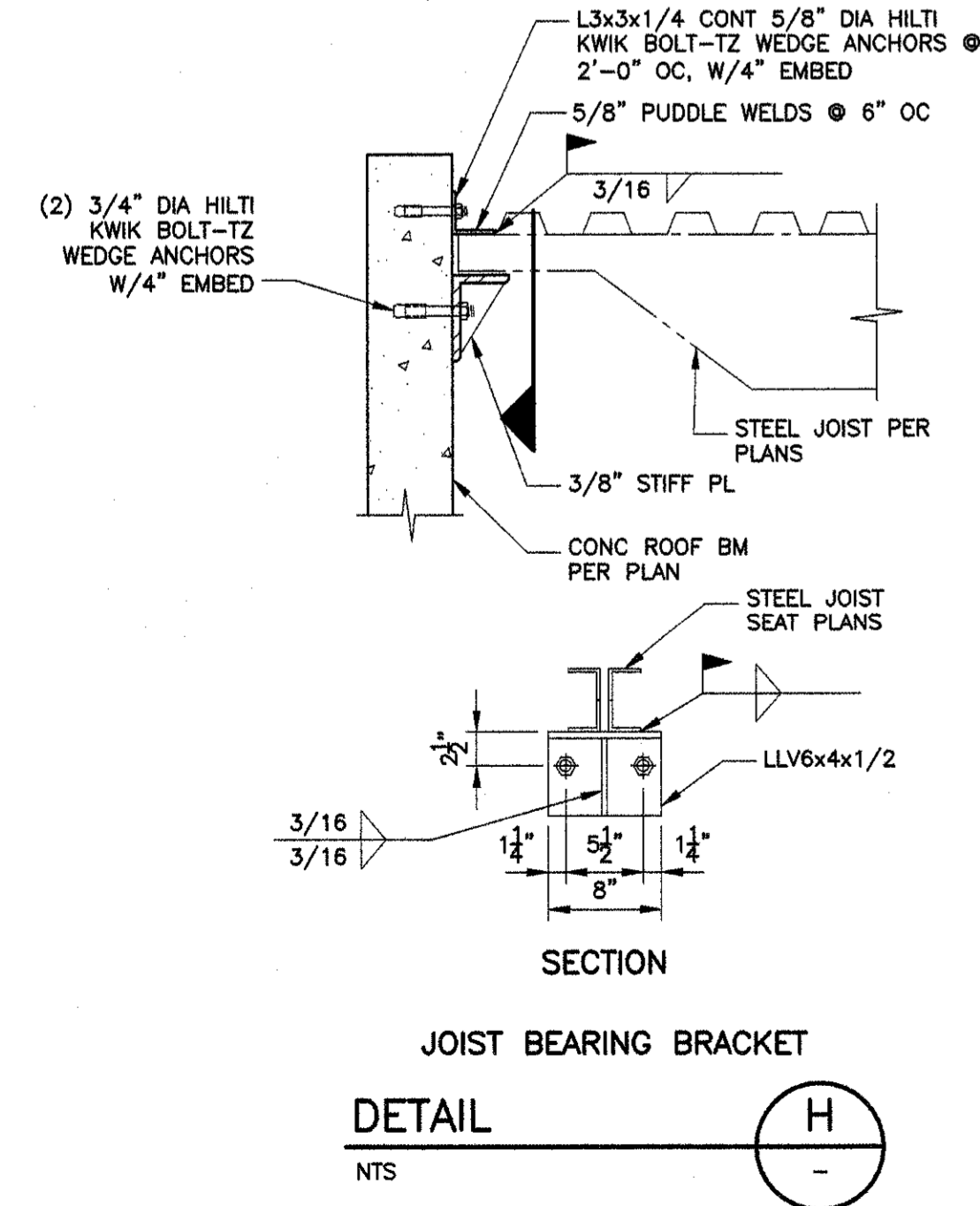
DSGN: DSM
DRAWN: DSM
CHKD: JVS
BAR BELOW 1" LONG FOR SCALES LONGER THAN THIS SHEET ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
STANDARD STRUCTURAL DETAILS
IV OF V

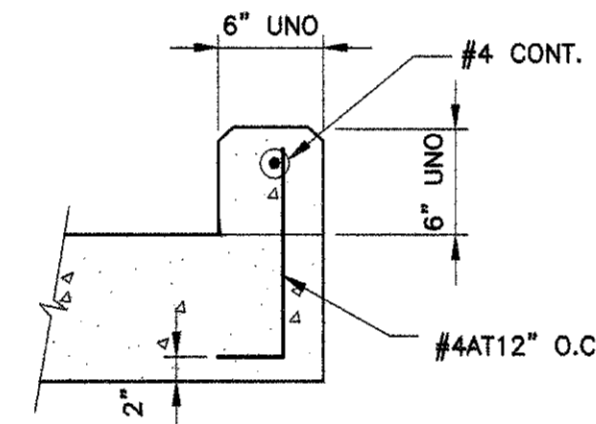
NCLEO\Data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\100-S-4-STANDARD STRUCTURAL DETAILS IV OF V.dwg - 8/24/2016



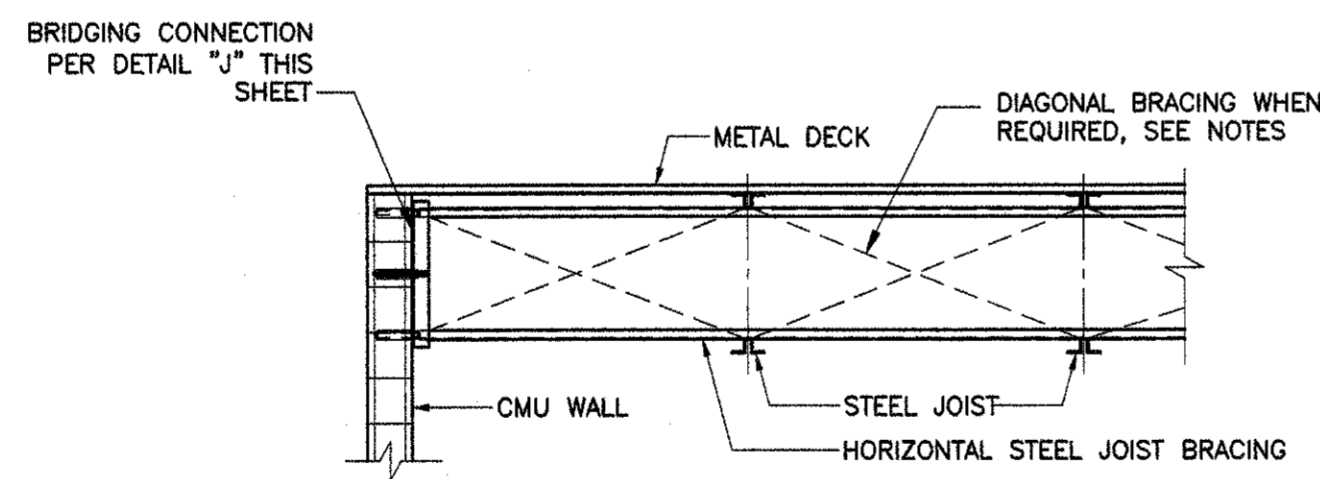
ROOF ACCESS LADDER W/ CAGE
DETAIL A
 NTS



FIXED LADDER PLAN
DETAIL B
 NTS

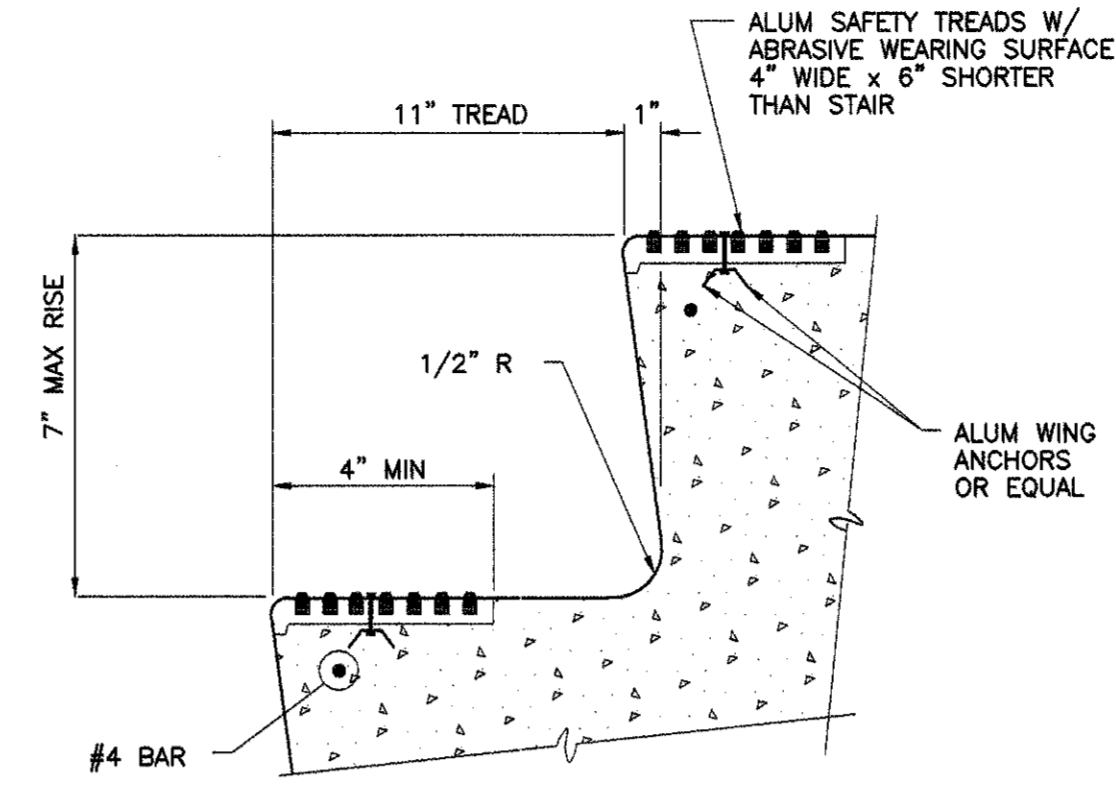


TYPICAL CONCRETE CURB
DETAIL E
 NTS

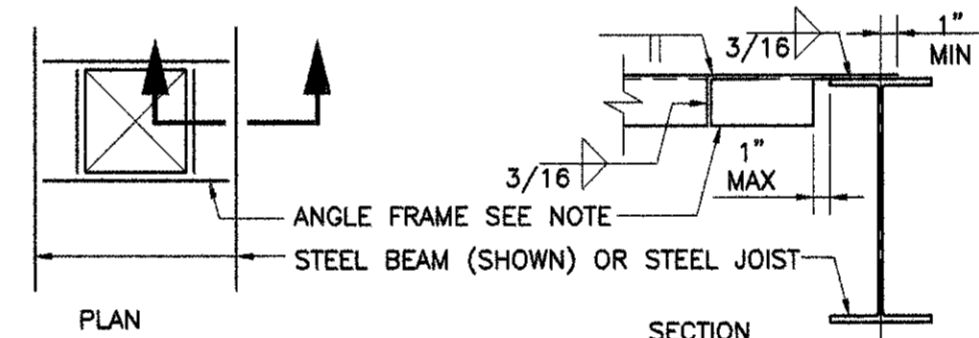
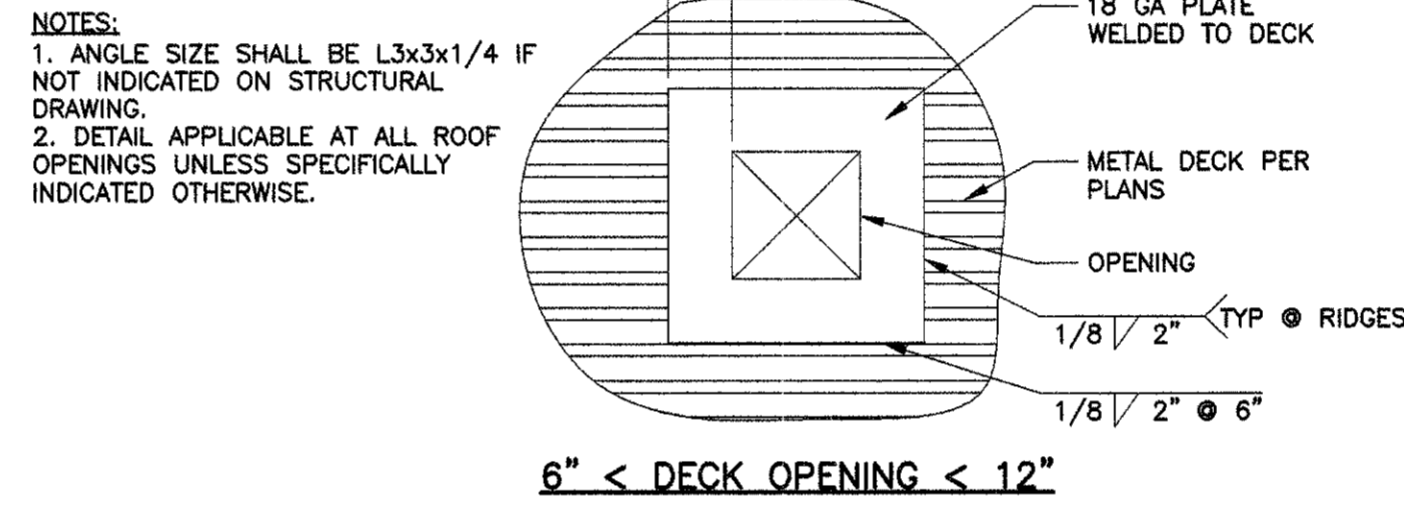


- NOTES:**
- STEEL JOIST HORIZONTAL BRACING AS PER STEEL JOIST INSTITUTE RECOMMENDATIONS. PROVIDE X-BRACING IN LIEU OF HORIZONTAL BRACING AS PER RECOMMENDATIONS OF STEEL JOIST INSTITUTE.
 - CONNECTION OF BRACING TO STEEL JOISTS AND WALL CONNECTION ANGLE AS PER STEEL JOIST INSTITUTE RECOMMENDATIONS.
 - CONNECTION OF METAL DECKING TO STEEL JOIST AND CMU WALL SHALL BE AS SHOWN ON THE DRAWINGS UNLESS NOTED OTHERWISE.
 - CMU WALL REINFORCING NOT SHOWN.
 - WHERE STEEL JOIST TOP CHORD IS NOT PARALLEL TO BOTTOM CHORD, PROVIDE STEEL SHIM PLATE AT STEEL JOIST TOP HORIZONTAL BRACING AT WALL CONNECTION ANGLE. WELD SHIM PLATE TO WALL CONNECTION ANGLE.
 - JOIST BRIDGING DETAILS MAY MODIFIED TO SUIT JOIST MANUFACTURER'S STANDARD INSTALLATION DETAILS. BRIDGING DETAIL MUST BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL IN THE JOIST SHOP DRAWINGS.

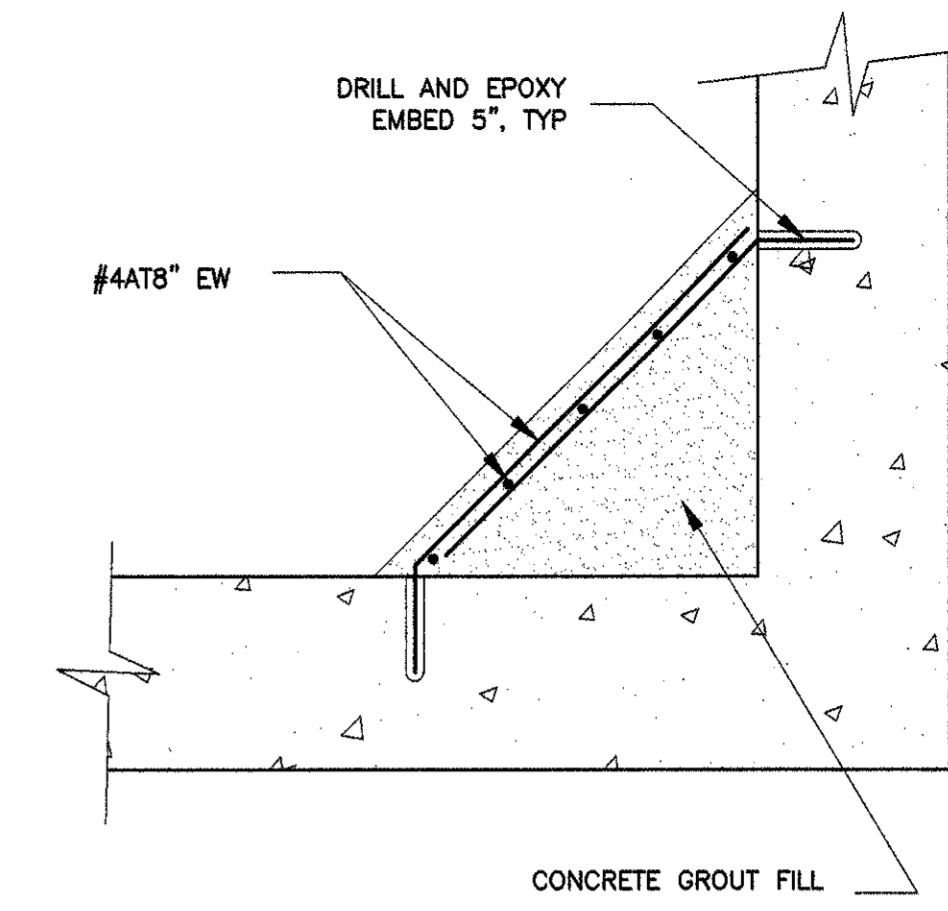
STEEL JOIST BRIDGING
DETAIL I
 NTS



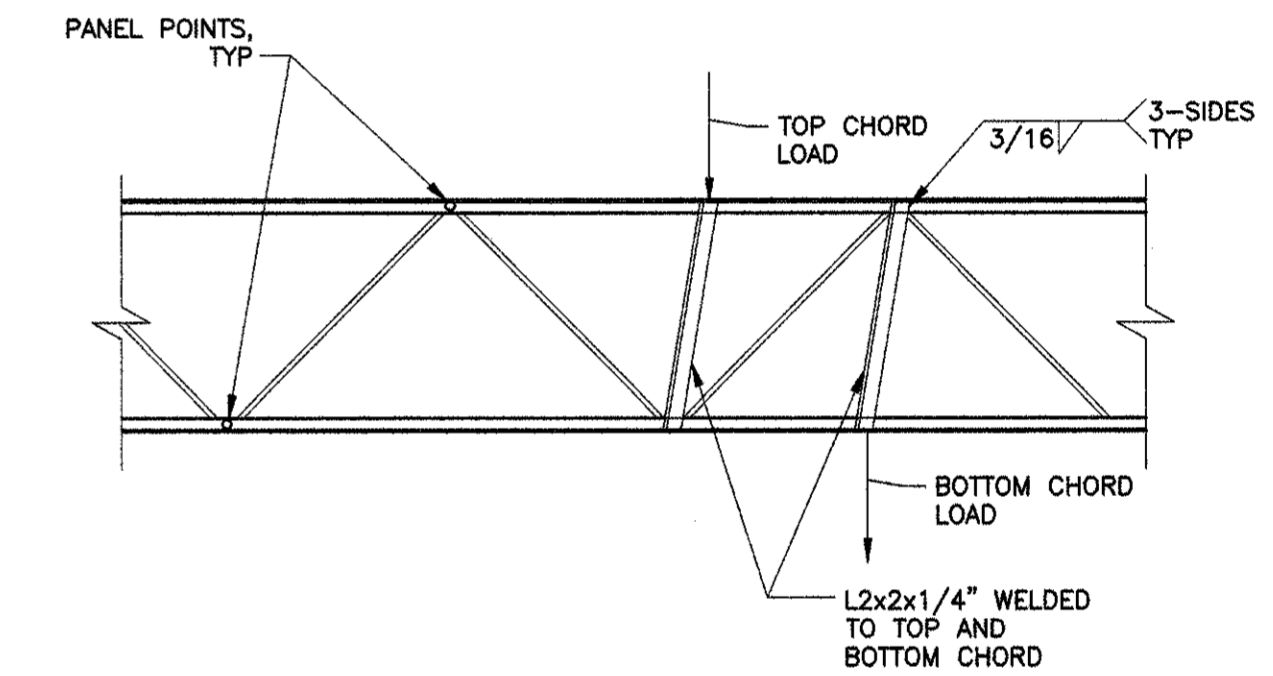
EMBEDDED SAFETY TREAD
DETAIL C
 NTS



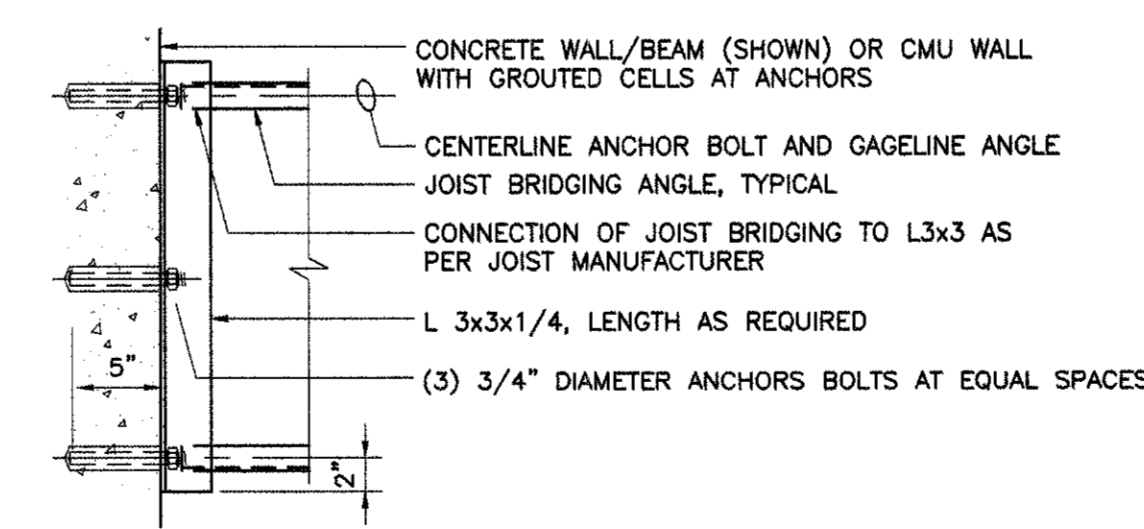
METAL DECK OPENINGS
DETAIL F
 NTS



CORNER GROUT FILLET
DETAIL D
 NTS



STEEL JOIST REINFORCING AT POINT LOADS OTHER THAN AT PANEL POINTS
DETAIL G
 NTS



STEEL JOIST BRIDGING
DETAIL J
 NTS

ENGINEERING TECHNOLOGIES, INC.
 3551 W. LAKE MARY BLVD., SUITE 210
 LAKE MARY, FLORIDA 32746
 PHONE: (407) 322-0500
 EIT PROJECT NO. 15-137



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: DSM	CHK: JVS
DRWN: DSM	

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 STANDARD STRUCTURAL DETAILS
 V OF V

SHEET NO.
 100-S-5

I:\Data\Projects\Projects_2007\Engineering Strategies, Inc\15-137 Indian Creek WRF Expansion\Acad\Structural\100-S-5 STANDARD STRUCTURAL DETAILS V OF V.dwg - 8/24/2016



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



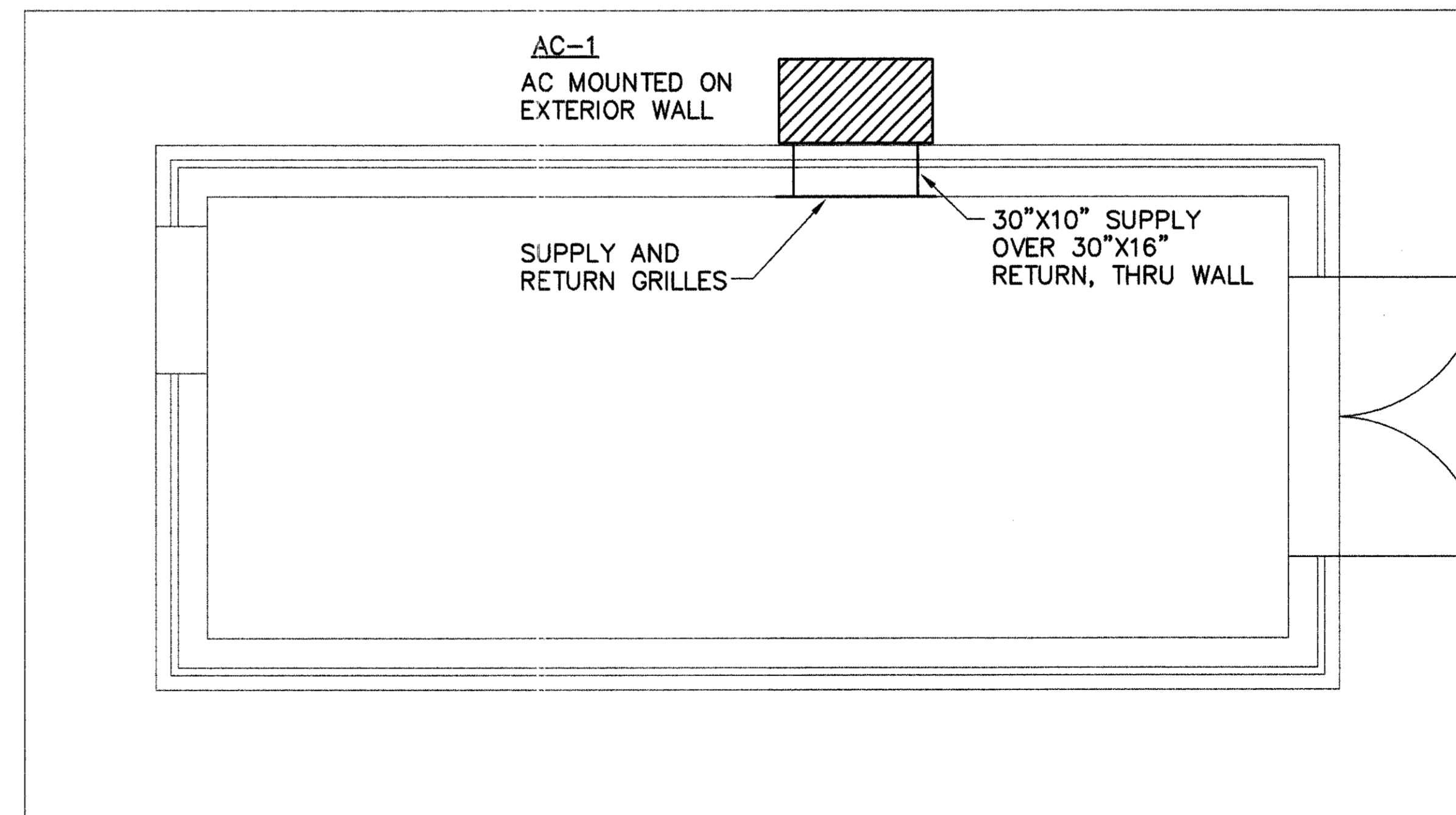
07/15/16

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

AIR CONDITIONING UNIT											
MARK NO.	SERVES	S.A. CFM	O.A. CFM	E.S.P. "W.G.	FAN HP	COOLING CAPACITY TOTAL SENS. MBH	HEATING CAPACITY NOM. MBH	ELECT. INPUT	HEATING CAPACITY OUTPUT	ELECT. CHAR.	BARD MODEL NO.
AC	Elect. Room - Influent Pump Bldg.	1,960	0	0	¼	50.5	44.5	5	none	none	460v/3ph W60AADCOZ MXXX3E

NOTES:

- Unit is wall-mount, non-ducted (except for sleeves through wall), packaged air conditioning unit, cooling only.
- Cooling capacities are minimum MBH required at the following entering air conditions:
 Evaporator coil: 75° FDB / 62.5° FWB Condenser coil: 100° FDB
- Provide programmable cooling/heating thermostat for system. Set thermostat for 75°F.
- See electrical drawings to confirm electrical characteristics. CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT. (PROVIDE A LETTER TO ARCHITECT INDICATING THAT THIS RE-COORDINATION HAS OCCURRED.)
- Provide low ambient control for low ambient temperature operation.
- Provide Bard SG/W series supply air grille and RG/W series return air grille to match supply and return duct connections of unit.



1
 05-H-1 INFLUENT PUMP STATION ELECTRICAL ROOM - HVAC
 SCALE: 3/8" = 1' - 0"

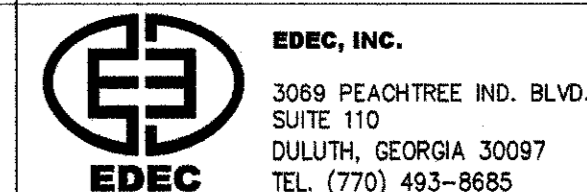
PROJECT NUMBER:
 DATE: AUGUST 2016

REVISION	DATE
Δ	

DSGN: GHF
 DRWN: WJM
 CHCK: GHF
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

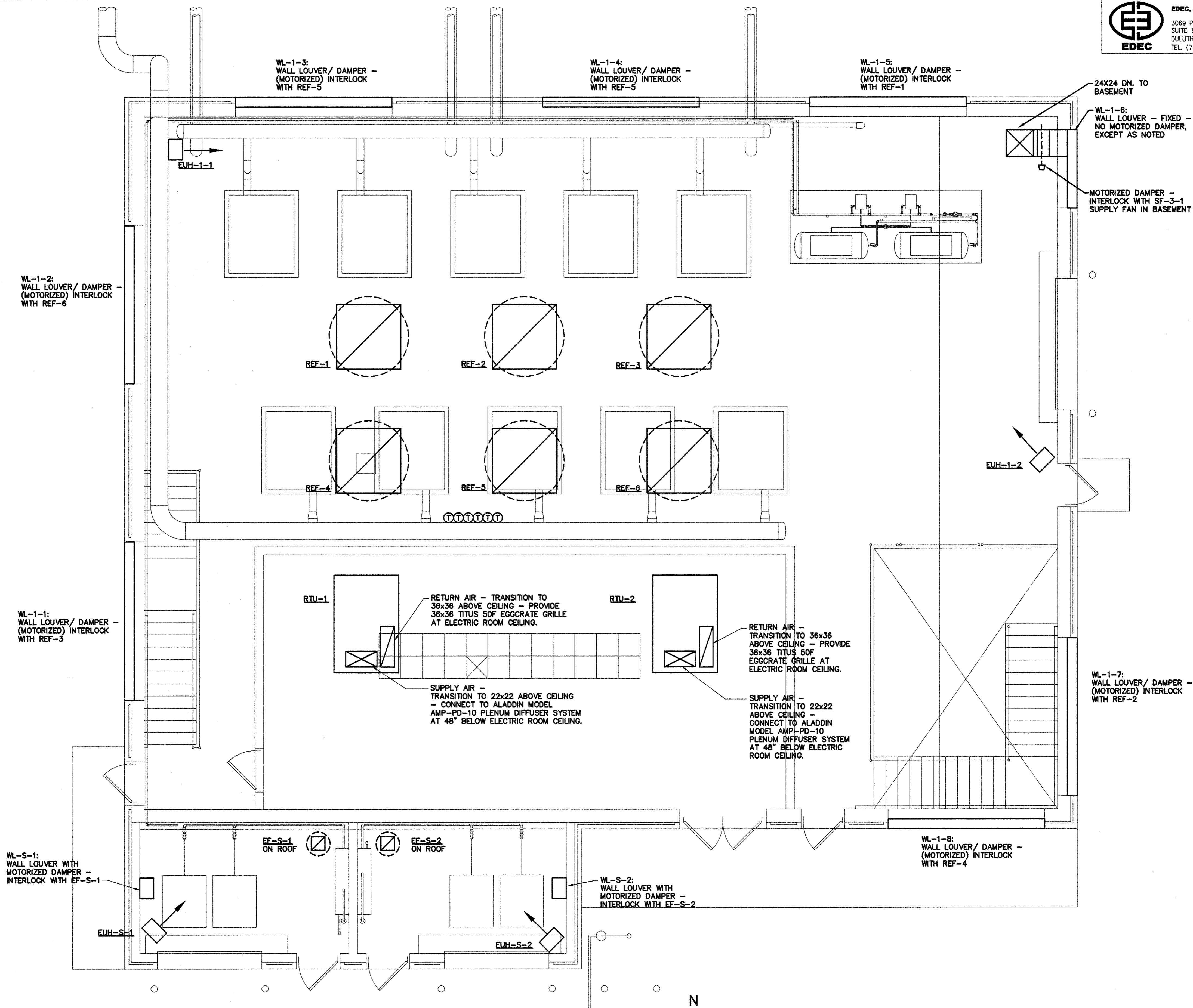
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT PUMP STATION -
 HVAC FLOOR PLAN

SHEET NO.
 05-H-1
 1606 05-H-1 OF 1



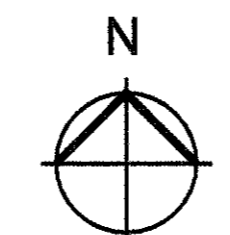
07/15/16

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001



PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	
DATE:	DATE:	
DSGN: GHF	DRWN: WJM	CHK: GHF
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		

1 HVAC PLAN - MAIN LEVEL
45-H-1 SCALE: 1/4" = 1'-0"



INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BLDG. -
HVAC MAIN FLOOR PLAN

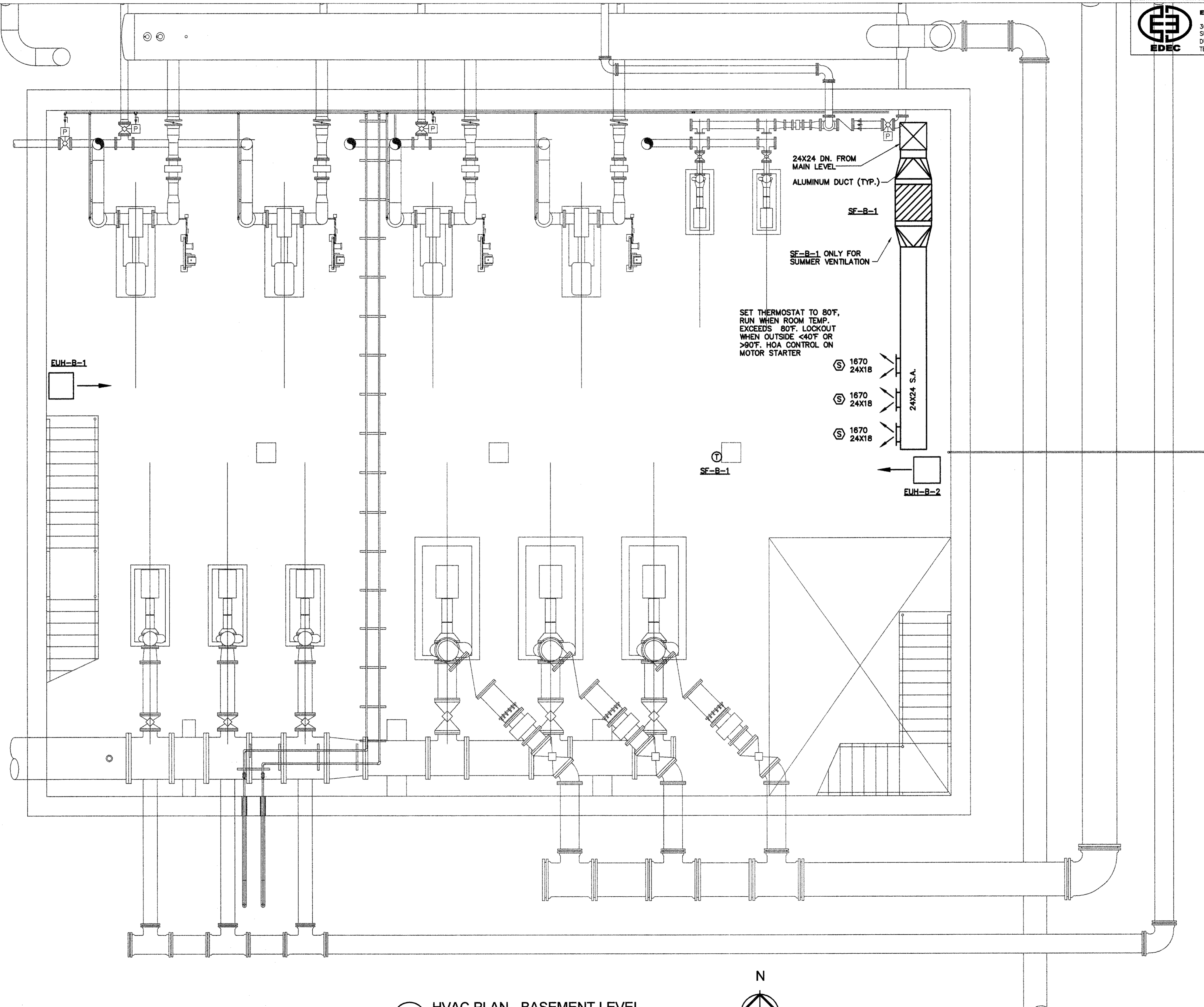
SHEET NO.
45-H-1

EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8885



07/15/16

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001



PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

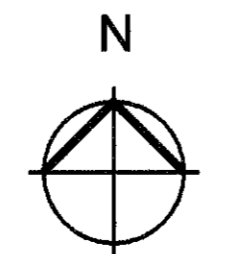
DSGN: GHF
 DRWN: WJM
 CHCK: GHF

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BLDG. -
 HVAC BASEMENT FLOOR PLAN

SHEET NO.
 45-H-2

1 HVAC PLAN - BASEMENT LEVEL
 45-H-2 SCALE: 1/4" = 1' - 0"





EDC, INC.
3069 PEACHTREE IND. BLVD.
SUITE 110
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



07/15/16

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOFWOOD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

PROJECT NUMBER:
DATE: AUGUST 2016

REVISION
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PLUMBING SPECIFICATIONS

- THESE DRAWINGS ARE PARTIALLY SCHEMATIC IN CHARACTER AND SHOULD NOT BE SCALED, BUT THE CONTRACTOR SHALL FIT THE WORK TO THE JOB, CAREFULLY INVESTIGATING THE STRUCTURAL, ARCHITECTURAL, SPACE AND FINISH CONDITIONS AFFECTING THE WORK, ARRANGING THE WORK ACCORDINGLY AND FURNISHING NECESSARY BENDS, OFFSETS, FITTINGS, JOINTS, ETC., WHETHER SPECIFICALLY SHOWN OR CALLED FOR OR NOT, AND SEEING THAT THERE ARE NO INTERFERENCES BETWEEN THIS WORK AND THE WORK OF ANY OTHER TRADE. THE PLUMBING SYSTEMS SHALL BE INSTALLED COMPLETE AND IN ACCORDANCE WITH ALL APPLICABLE CODES, LAWS, AND REGULATIONS, LOCAL HEALTH DEPARTMENT STANDARDS, AND OWNER'S REQUIREMENTS. THE SYSTEMS SHALL BE FREE FROM OBJECTIONABLE NOISE, VIBRATION, AND ANY STOPPAGES.
- ALL PLUMBING WORK AND EQUIPMENT SHALL CONFORM TO THE CURRENT REQUIREMENTS OF THE LOCAL BUILDING INSPECTION DEPARTMENT. PLUMBING WORK SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
 - 2012 INTERNATIONAL BUILDING CODE, WITH 2014 AND 2015 GEORGIA AMENDMENTS,
 - 2012 INTERNATIONAL PLUMBING CODE, WITH 2014 AND 2015 GEORGIA AMENDMENTS,
 - 2009 INTERNATIONAL ENERGY CONSERVATION CODE, WITH 2011 AND 2012 GEORGIA SUPPLEMENTS AND AMENDMENTS,
 - LOCAL HEALTH DEPARTMENT STANDARDS,
 - STATE AND LOCAL FIRE MARSHALS' OFFICES,
 - APPLICABLE SECTIONS OF NFPA AND ANSI,
 - 2010 GEORGIA ACCESSIBILITY CODE FOR BUILDINGS AND FACILITIES.
- WHERE REQUIREMENTS OF THESE DOCUMENTS EXCEED CODE REQUIREMENTS, THESE DOCUMENTS SHALL GOVERN. IN THE EVENT THAT QUESTIONS ARISE BETWEEN SPECIFICATIONS AND FLOOR PLANS, THE FLOOR PLANS SHALL TAKE PRECEDENT.
- ALL PLUMBING EQUIPMENT AND MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. ALL FIXTURES AND EQUIPMENT SHALL BE INSTALLED LEVEL AND PLUMB, RUNNING PARALLEL AND PERPENDICULAR TO BUILDING WALLS.
- CONTRACTOR SHALL SECURE ALL PERMITS, INSPECTION CERTIFICATES, AND AUTHORITY APPROVALS, AND PAY ALL ASSOCIATED CHARGES AND FEES.
- ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER OPERATION. ANY APPARATUS, APPLIANCE, OR MATERIAL WHICH MAY BE NECESSARY TO MAKE THE WORK COMPLETE AND FULLY OPERATIONAL, EVEN IF NOT EXPLICITLY STATED, SHALL BE PROVIDED BY THE CONTRACTOR.
- IT IS THE INTENT OF THESE SPECIFICATIONS TO OBTAIN FINISHED WORK, TESTED AND READY FOR OPERATION. ANY APPARATUS, APPLIANCE, OR MATERIAL WHICH MAY BE NECESSARY TO MAKE THE WORK COMPLETE AND FULLY OPERATIONAL, EVEN IF NOT EXPLICITLY STATED, SHALL BE PROVIDED BY THE CONTRACTOR.
- LOCATE AND CONNECT TO DOMESTIC WATER AND SANITARY SEWER AS NOTED ON DRAWINGS. CONFIRM INVERTS OF SANITARY SEWER TO ASSURE ADEQUATE DEPTH AND SLOPE.
- DOMESTIC WATER PIPING BELOW GRADE SHALL BE TYPE L SOFT COPPER TUBING (NO SUBSTITUTION). THERE SHALL BE NO JOINTS OR FITTINGS OF COLD OR HOT WATER BELOW GRADE INSIDE THE BUILDING, EXCEPT FOR THE INCOMING WATER SERVICE. "BELOW GRADE" INCLUDES WATER PIPING UNDERGROUND OR UNDER A FLOOR SLAB, SIDEWALK, OR PAVEMENT.
- DOMESTIC WATER PIPING ABOVE GRADE SHALL BE TYPE L HARD COPPER TUBING (NO SUBSTITUTION). FITTINGS SHALL BE WROUGHT COPPER WITH LEAD-FREE SOLDER. PIPING SHALL NOT TOUCH FERROUS MATERIALS. FIRMLY SUPPORT PIPING USING NON-FERROUS PIPE SUPPORTS.
- THERE IS NO DOMESTIC WATER INSIDE THE BUILDING.
- SANITARY WASTE AND VENT PIPING SHALL BE STANDARD WEIGHT DWV PVC (DRAINAGE/WASTE/VENT POLYVINYL CHLORIDE) PIPE AND FITTINGS.
- ROOF PENETRATIONS: ROOF PENETRATIONS SHALL BE MADE BY THE BUILDING OWNER'S DESIGNATED ROOFING CONTRACTOR. FIRST, PLUMBING SUBCONTRACTOR SHALL MARK EACH PROPOSED PENETRATION ON ROOF, THEN ROOFING CONTRACTOR SHALL MAKE ACTUAL ROOF PENETRATION. PLUMBING SUBCONTRACTOR SHALL THEN INSTALL DEVICE THRU ROOF. FINALLY, ROOFING CONTRACTOR SHALL COMPLETE FINAL FLASHING AND WATERPROOFING OF DEVICE.
- SEAL ALL EXTERIOR WALL OPENINGS WATER-TIGHT AND AIR-TIGHT, USING SEALANT AND/OR CAULK HAVING MINIMUM 20 YEAR GUARANTEED LIFE.
- TEST NEW SANITARY WASTE AND VENT PIPING AT A HYDROSTATIC PRESSURE OF 10 FEET OF WATER. TEST WATER PIPING AT A HYDROSTATIC PRESSURE OF 130 PSIG.
- PROVIDE 3 COPIES OF AN OPERATING AND MAINTENANCE MANUAL, WHICH SHALL PROVIDE USABLE, FULL INFORMATION ON ALL MECHANICAL EQUIPMENT AND PRODUCTS. THE MANUAL SHALL BE IN A BLACK 3-RING BINDER, WITH TITLE SHEET, TABLE OF CONTENTS, AND INDEX TABS. CUT SHEETS, PERFORMANCE DATA, INSTALLATION AND MAINTENANCE BROCHURES, REPLACEMENT PARTS LISTS, WARRANTIES, AND HEALTH DEPARTMENT APPROVALS SHALL BE INCLUDED. DELIVER TO ARCHITECT FOR DISTRIBUTION TO THE OWNER.

PLUMBING FIXTURE SCHEDULE

FD FLOOR DRAIN: Josam 32100-81-50.
FCO FLOOR CLEANOUT: Josam 55000-1.
YCO YARD CLEANOUT: Josam 55000 series.
BV BALL VALVE: Nibco S-585-70.
EWSH EMERGENCY SHOWER/EYEWASH COMBINATION: Guardian GFR1902 freeze-resistant safety station with eyewash and plastic shower head. Refer to website: http://www.gsaafety.com/products/freeze_resistant/GFR1902.shtml

ACCEPTABLE MANUFACTURERS:
FLOOR DRAINS, CLEANOUTS:
Josam, J. R. Smith, Mifab, Wade, Zurn
BALL VALVES:
Kitz, Nibco, Watts
EMERGENCY EYE WASH/SHOWER:
Acorn, Bradley, Guardian, Haws

FAN SCHEDULE

MARK NO.	DESCRIPTION	SERVES	CFM EA.	S.P. " W.G.	DRIVE TYPE	RPM	HP	ELECT. CHAR.	MFR./MODEL NO.	REMARKS
EF-S-1	Centrifugal Roof Exhaust Fan	Sodium Hypochlorite Storage	300	1/2"	Direct Drive	1216	1/12 hp	120v/1 ph	Penn Domex DX110R	See Notes 1, 2, 4-10
EF-S-2	Centrifugal Roof Exhaust Fan	Citric Acid Storage	300	1/2"	Direct Drive	1216	1/12 hp	120v/1 ph	Penn Domex DX110R	See Notes 1, 2, 4-10
REF-1 thru REF-6	Centrifugal Roof Exhaust Fan	Blower Room	28,000	1/2"	Direct Drive	416	10 hp	460v/3 ph	Penn Domex JB48	See Notes 1, 2, 6-10
SF-B-1	Centrifugal Inline Supply Fan	Pump Room (Basement)	5,000	1/2"	Belt Drive	707	1 1/2 hp	460v/3 ph	Penn Inliner SX225BC	See Notes 1-3, 6-10

- NOTES:**
- Provide the following accessories and options:
EF-S-1, EF-S-2: Aluminum birdscreen, epoxy coating, gravity backdraft damper, disconnect switch, variable speed control (VSC), NEMA 1 internal wiring, thermal overload, sloped roof curb.
REF-1 thru REF-6: Aluminum birdscreen, neoprene vibration isolators, NEMA 1 disconnect switch, NEMA 1 interlock wiring, 12" high roof curb.
SF-B-1: Aluminum housing, epoxy coating, gravity backdraft damper, motor cover, NEMA 3R disconnect switch, NEMA 3R internal wiring, spring vibration isolation mounts. Duct-mounted motorized damper at duct connection to wall louver.
 - Provide the following controls for fans:
EF-S-1, EF-S-2: Fan shall run continuously, except when outside temperature is 10°F or lower.
REF-1 thru REF-6: Fans shall be controlled by a series of room thermostats. See Louver/Fan Interlock Schedule.
SF-B-1: Fan shall run continuously, except when outside temperature is 55°F or lower or when outside temperature is 90°F or higher.
 - Provide duct transition where duct size is different from fan connection size.
 - Mount variable speed control (VSC) for each fan where accessible for maintenance and service. Mount VSC on ceiling beside roof exhaust fan.
 - VARIABLE SPEED CONTROL IS INTENDED FOR BALANCING PURPOSES ONLY, AND IS NOT INTENDED TO BE USED AS THE UNIT'S DISCONNECT SWITCH.
 - Label each variable speed control, each disconnect switch, each thermostat, and each fan with fan's mark number.
 - Refer to electrical drawings to confirm equipment voltages PRIOR TO ORDERING EQUIPMENT.
 - Acceptable fan manufacturers: Acme, Cook, Greenheck, Penn
 - Maximum allowable sound levels (noise) at scheduled CFM and static pressure:
EF-S-1, EF-S-2: 3.9 REF-1 thru REF-6: 16.1 SF-B-1: 10.5
 - Fans submitted exceeding the sound levels scheduled here ARE SUBJECT TO REJECTION OF THE MANUFACTURER. Fans discovered to have sound levels exceeding these values, even if installed, shall be removed from the site and replaced with fans which do comply.

LOUVER SCHEDULE

MARK NO.	SERVES	SIZE, DN.	FREE AREA, MIN.SQ.FT.	MATERIAL	DAMPER	FRAME TYPE	MFR./MODEL NO.	REMARKS
WL-S-1	Sodium Hypochlorite Storage (Intake)	16"x16"	0.54	Aluminum	Combination Lvr./Dpr.	Flanged Frame	United Enertech CFL-D-6	See Notes 1-6
WL-S-2	Citric Acid Storage (Intake)	16"x16"	0.54	Aluminum	Combination Lvr./Dpr.	Flanged Frame	United Enertech CFL-D-6	See Notes 1-6
WL-1-1 thru WL-1-5	Blower Room (Intake)	144"x72"	18.00	Aluminum	Combination Lvr./Dpr.	Flanged Frame	United Enertech CFL-D-6	See Notes 1-6
WL-1-6	Blower Room (Intake) (Normally Open)	72"x72"	9.00	Aluminum	Combination Lvr./Dpr.	Flanged Frame	United Enertech CFL-D-6	See Notes 1-6
WL-1-7 thru WL-1-8	Blower Room (Intake)	144"x72"	18.00	Aluminum	Combination Lvr./Dpr.	Flanged Frame	United Enertech CFL-D-6	See Notes 1-6

- NOTES:**
- Louvers shall be type for mounting in respective wall type and thickness. Confirm and coordinate with architectural drawings and construction conditions.
 - Minimum free area of louvers shall be established by the manufacturer/model scheduled. Acceptable manufacturers: Greenheck, Ruskin, and United Enertech.
 - Dimensions scheduled for wall louvers are WIDTH x HEIGHT.
 - Interlock louvers with exhaust fans as shown in Louver/Fan Interlock Schedule.
 - Wall louvers shall be all aluminum. Frame shall be factory-primed for painting by the project's painting contractor. (Color to match building exterior, approval by architect.)
 - WL-S-1, WL-S-2:
Provide 6" deep drainable blade combination louver/dampers with PVC blade seals and stainless steel jamb seals, bird screen (not insect screen). One Belimo motor per louver, 120 volts.
WL-1-1 thru WL-1-5, WL-1-7, WL-1-8:
Provide 6" deep drainable blade combination louver/damper with PVC blade seals and stainless steel jamb seals, bird screen (not insect screen). Two Belimo AFBUP and two NFBUP motors per louver, 120 volts.
WL-1-6:
Provide 6" deep drainable blade combination louver/damper with PVC blade seals and stainless steel jamb seals, bird screen (not insect screen). One Belimo AFBUP and one NFBUP motor, 120 volts. This damper will normally be open. Provide a switch to allow personnel to close the damper in an emergency. Label switch: NORMALLY OPEN LOUVER - ONLY CLOSE LOUVER IN EMERGENCY

HVAC EQUIPMENT SCHEDULE

MARK NO.	SERVES	S.A. CFM	O.A. CFM	E.S.P. " W.G.	FAN HP	COOLING CAPACITY, TOTAL	HEATING CAPACITY, NOM.	ELECT. INPUT	ELECT. OUTPUT	CHAR.	CARRIER MODEL NO.
RTU-1	Electrical Room	4,000	0	0.4	2.14 bhp	115.1 mbh	93.4 mbh tons	10	no heat	460v/3ph	50HC-E11C2 M6-0AFJ0
RTU-2	Electrical Room	4,000	0	0.4	2.14 bhp	115.1 mbh	93.4 mbh tons	10	no heat	460v/3ph	50HC-E11C2 M6-0AFJ0

- NOTES:**
- RTUs are packaged air conditioning rooftop units with no heat, belt drive, vertical (down) discharge.
 - Cooling capacities are minimum MBH required at the following entering air conditions:
Evaporator coil: 80° FDB / 67° FWB Condenser coil: 95° FDB
 - Provide programmable cooling/heating thermostat for each HVAC system.
 - Provide aluminum/copper coils, louvered hail guards, foil faced insulation and hinged access panels, 2 speed fan controller (VFD) and non-fused disconnect.
 - See electrical drawings to confirm electrical characteristics. CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT. (PROVIDE A LETTER TO ARCHITECT INDICATING THAT THIS RE-COORDINATION HAS OCCURRED.)
 - External static pressures for RTUs include supply ductwork, return ductwork, supply diffuser, and return grille.
 - Provide a smoke detector for each system, located in the supply air ductwork. Smoke detector shall shut down the respective HVAC system upon detection of smoke. If there is a building fire alarm system, the smoke detector shall be fully compatible with the system, and the smoke detector shall also signal the fire alarm system upon the detection of smoke.
 - For each rooftop unit, provide an 14" high, factory-fabricated, insulated roof curb, dimensioned to compensate for roof slope, so that the top of the unit sits level +/- 1%. Carrier model number CRRFCURB003A01.
 - Locate disconnect switch so it doesn't block equipment nameplate.
 - Energy efficiencies of RTUs shall be equal to or greater than those of Carrier model numbers specified:
RTU-1, RTU-2: 12.0 EER, 14.5 IEER
 - Weights: Rooftop Unit RTU-1: 1641 lbs. + Roof Curb 143 lbs. = 1784 lbs.
Rooftop Unit RTU-2: 1641 lbs. + Roof Curb 143 lbs. = 1784 lbs.
 - Provide low ambient control for operation down to -10°F.

ELECTRIC UNIT HEATER SCHEDULE

MARK NO.	SERVES	DESCRIPTION	MFR./MODEL NO.	REMARKS
EUH-B-1, EUH-B-2	Pump Room (Basement)	Electric Unit Heater - Electric Corrosion-Resistant Heater - 20 kW - 460 volts, 3 phase. Internal single pole thermostat. Disconnect Switch. Standard stainless steel swivel-type wall bracket. 68,280 BTU/hr output.	Indeeco 234-U11L-0200U	See Notes 1-4
EUH-1-1, EUH-1-2	Blower Room	Electric Unit Heater - Electric Corrosion-Resistant Heater - 10 kW - 460 volts, 3 phase. Internal single pole thermostat. Disconnect Switch. Standard stainless steel swivel-type wall bracket. 34,140 BTU/hr output.	Indeeco 234-U11N-0100U	See Notes 1-4
EUH-S-1	Sodium Hypochlorite Storage	Electric Unit Heater - Electric Corrosion-Resistant Heater - 5 kW - 460 volts, 3 phase. Internal single pole thermostat. Disconnect Switch. Standard stainless steel swivel-type wall bracket. 17,070 BTU/hr output.	Indeeco 234-U11N-0050U	See Notes 1-4
EUH-S-2	Citric Acid Storage	Electric Unit Heater - Electric Corrosion-Resistant Heater - 5 kW - 460 volts, 3 phase. Internal single pole thermostat. Disconnect Switch. Standard stainless steel swivel-type wall bracket. 17,070 BTU/hr output.	Indeeco 234-U11N-0050U	See Notes 1-4

- NOTES:**
- See electrical drawings to confirm electrical characteristics.
 - CAUTION: CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT.
 - Electric ceiling heaters shall be Chromalox, Indeeco, or Marley.
 - Set heater thermostats for 40°F.

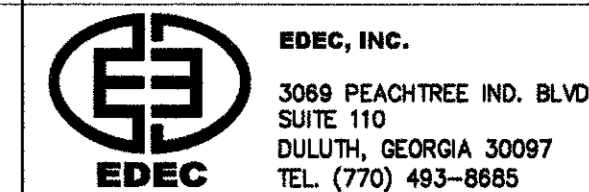
AIR DISTRIBUTION SCHEDULE

MARK NO.	DESCRIPTION	FACE SIZE, IN.	NECK SIZE, IN.	MATERIAL	DAMPER	FRAME TYPE	TITUS MODEL NO.	REMARKS
S	Double Deflection Sidewall Supply Register	17 1/2"x13 1/4"	16"x12"	Aluminum	Opposed Blade	Duct Mount	300FS	See Notes 1 thru 4

- NOTES:**
- Register shall be type for mounting in side of supply duct.
 - Register finish shall be manufacturer's standard off-white.
 - Diffusers and grilles by Nailor, Price, or Titus shall be acceptable.
 - No steel parts. Use aluminum screws.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BLDG.-
HVAC SPECIFICATIONS AND SCHEDULES

SHEET NO.
45-H-3



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

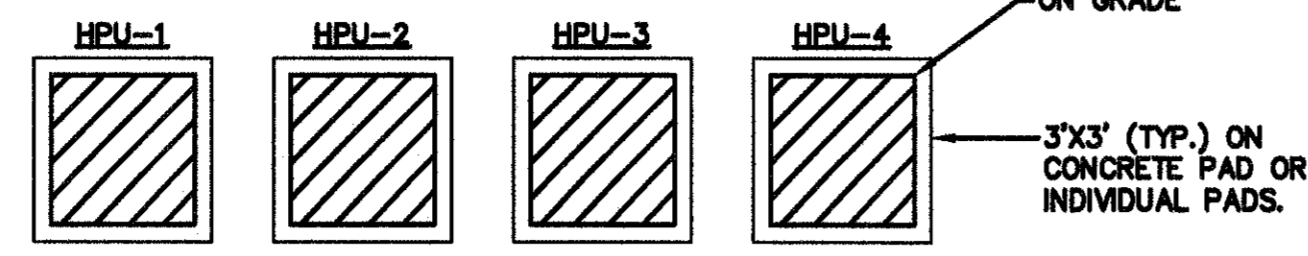
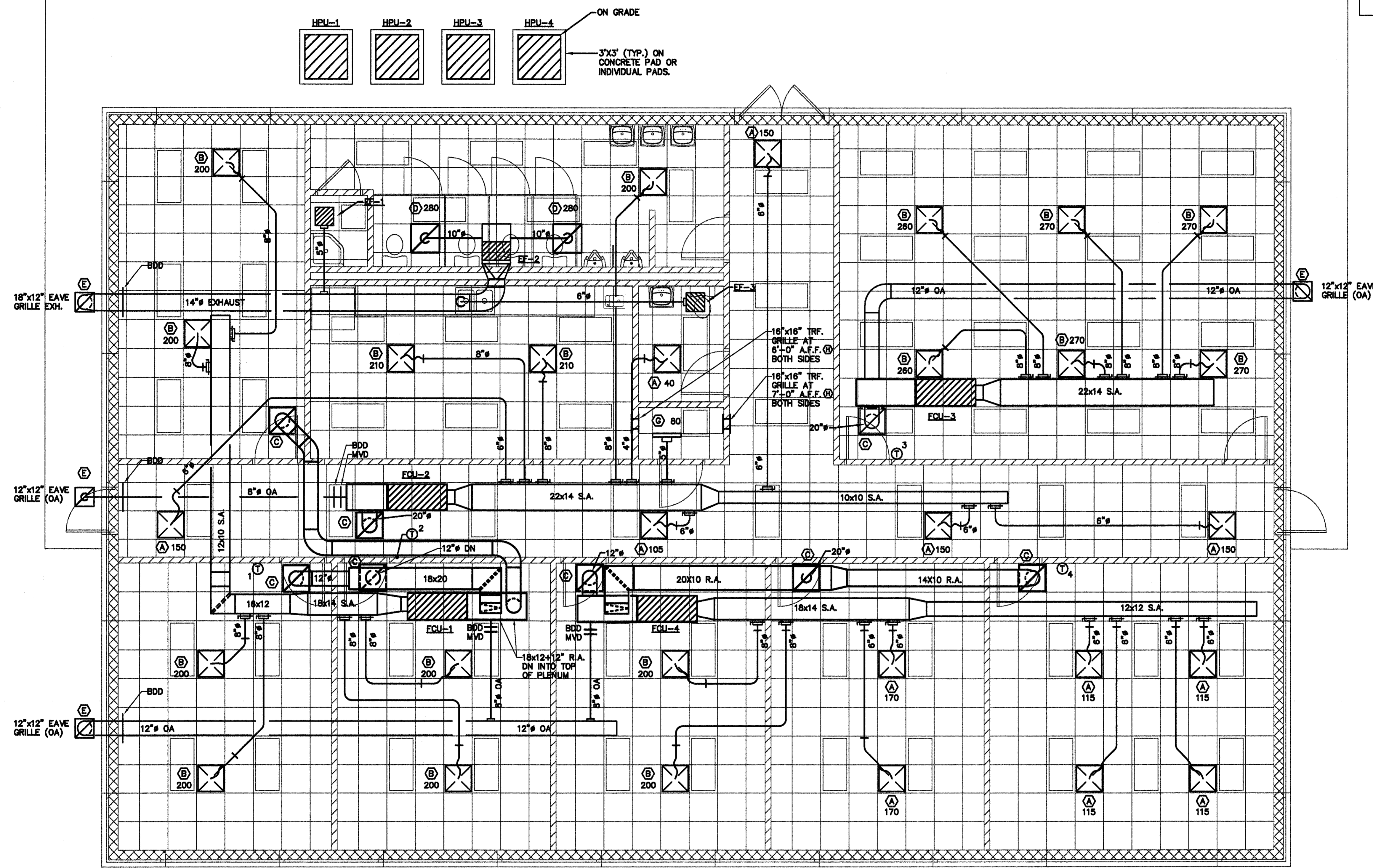
PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DSGN: GHF
DRWN: WJM
CHK: GHF

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATIVE BLDG. -
HVAC FLOOR PLAN

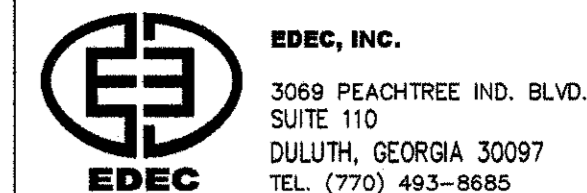
SHEET NO.
90-H-1



1 HVAC PLAN
90-H-1 SCALE: 1/4" = 1'-0"

NOTE:
1. DO NOT LOCATE ANY DAMPERS OVER GYP BOARD CEILINGS.
2. RUN RETURN AIR DUCTS HIGHER THAN SUPPLY AIR DUCTS.





07/15/16

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

FAN SCHEDULE

MARK NO.	DESCRIPTION	SERVES	CFM EA.	S.P. " W.G.	DRIVE TYPE	RPM	HP	ELECT. CHAR.	MFR./ MODEL NO.	REMARKS
EF-1	Centrifugal Ceiling Cabinet Exhaust Fan	Janitor	90	¼"	Direct Drive	1550	108	120v/ 1 ph	Penn Zephyr Z6H	See Notes 1-10
EF-2	Centrifugal Ceiling Inline Cabinet Exhaust Fan	Men's Restroom	560	¼"	Direct Drive	1050	263	120v/ 1 ph	Penn Zephyr Z102S-TDA	See Notes 1-10
EF-3	Centrifugal Ceiling Cabinet Exhaust Fan	Women's Restroom	110	¼"	Direct Drive	1550	108	120v/ 1 ph	Penn Zephyr Z6H	See Notes 1-10

NOTES:

- Provide the following accessories for fans:
 EF-1: Backdraft damper, disconnect switch, variable speed control, ceiling grille.
 EF-2: Backdraft damper, disconnect switch, variable speed control, in-line conversion kit.
 EF-3: Backdraft damper, disconnect switch, variable speed control, ceiling grille.
- Provide the following controls for fans:
 EF-1,2,3: Control fan with the restroom's light switch (on with room lights).
- Provide duct transition where duct size is different from fan connection size.
- Mount variable speed control (VSC) for each fan where accessible for maintenance and service. Mount VSC on side of fan or immediately adjacent to fan, in ceiling space.
- VARIABLE SPEED CONTROL IS INTENDED FOR BALANCING PURPOSES ONLY, AND IS NOT INTENDED TO BE USED AS THE DISCONNECT SWITCH FOR MAINTENANCE PURPOSES.
- Label each variable speed control, each disconnect switch, and each fan with fan's mark number.
- Refer to electrical drawings to confirm equipment voltages PRIOR TO ORDERING EQUIPMENT.
- Acceptable fan manufacturers: Acme, Cook, Greenheck, Penn
- Maximum allowable sone levels (noise) at scheduled CFM and static pressure:
 EF-1,3: 3.1 EF-2: 4.2
- Fans submitted exceeding the sone levels scheduled here ARE SUBJECT TO REJECTION OF THE MANUFACTURER. Fans discovered to have sone levels exceeding these values, even if installed, shall be removed from the site and replaced with fans which do comply.

HVAC EQUIPMENT SCHEDULE

MARK NO.	SERVES	S.A. CFM	MAX O.A. " W.G.	E.S.P. HP	FAN TOTAL	COOLING CAPACITY SENS.	HEATING CAPACITY NOM.	ELECT. CHAR.	CARRIER MODEL NO.
FCU-1/ HPU-1	Tech.Off / Lead	1,200	120	0.4	¼ hp	34.6 mbh	25.0 tons	3 33.1 mbh 10 kW	208/230/1/ 460/3 FV4CNF003/ 25HCD336
FCU-2/ HPU-2	Restrooms/Corrs./ Breakroom/IT Rm.	1,400	140	0.4	¼ hp	46.6 mbh	33.4 tons	3 44.0 mbh 15 kW	208/230/1/ 460/3 FV4CNB005/ 25HCD348
FCU-3/ HPU-3	Training Room	1,600	300	0.4	¼ hp	48.0 mbh	36.0 tons	4 44.6 mbh 15 kW	208/230/1/ 460/3 FV4CNF006/ 25HCD348
FCU-4/ HPU-4	Conf.Rm./Asst. Mgr./Maint.Mgr.	1,200	200	0.4	¼ hp	34.6 mbh	25.0 tons	3 33.1 mbh 10 kW	208/230/1/ 460/3 FV4CNF003/ 25HCD336

NOTES:

- Acceptable Manufacturers: Carrier, Lennox, or Trane.
- Cooling capacities are minimum MBH required at the following entering air conditions:
 Evaporator coil: 80° FDB / 67° FWB Condenser coil: 95° FDB
- Heating capacity (reverse cycle) is minimum MBH required at the following entering air conditions:
 Indoor coil: 60° FDB Outdoor coil: 47° FDB
- Provide matched cooling coil for split system to deliver minimum cooling and heating capacities shown.
- Provide factory-installed electric resistance heating coil in fan-coil unit.
- Provide single point wiring connection kit.
- Provide programmable cooling/heating thermostat for each HVAC system.
- See electrical drawings for electrical characteristics. CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT. (PROVIDE A LETTER TO ARCHITECT INDICATING THAT THIS COORDINATION HAS OCCURRED.)
- External static pressure includes supply ductwork, return ductwork, supply diffuser, and return grille.
- Provide a smoke detector for each HVAC system, located in the supply air ductwork. Smoke detector shall shut down the respective HVAC system upon detection of smoke. If there is a building fire alarm system, each smoke detector shall be fully compatible with the system, and the smoke detector shall also signal the fire alarm system upon the detection of smoke.
- Mount each fan-coil unit in ceiling space. Mount each heat pump unit on pad on grade.
- Provide a secondary drain pan under each fan-coil unit, with a water sensor to shut down the system upon detection of water in the secondary drain pan.
- Energy efficiencies of equipment shall be equal to or greater than those of Carrier model specified. (Heat pump units perform at 14 SEER when paired with the fan-coil units scheduled.)
- HVAC split systems are to use 410A refrigerant.

AIR DISTRIBUTION SCHEDULE

MARK NO.	DESCRIPTION	FACE SIZE IN.	NECK SIZE IN.	MATERIAL	DAMPER	FRAME TYPE	TITUS MODEL NO.	REMARKS
A	Louvered Face Ceiling Diffuser	24"x24"	6"Ø	Steel	None	Lay-In	TMS	See Notes 1 thru 5
B	Louvered Face Ceiling Diffuser	24"x24"	8"Ø	Steel	None	Lay-In	TMS	See Notes 1 thru 5
C	½"x½"x½" Eggcrate Ceiling Return Grille	24"x24"	As Noted on Plans	Aluminum	None	Lay-In	50F	See Notes 1 thru 7
D	½"x½"x½" Eggcrate Ceiling Exh. Grille	24"x24"	As Noted on Plans	Aluminum	Opp.Blade in Duct	Lay-In	50F	See Notes 1-5
E	½"x½"x½" Eggcrate Eave OA Intake Grille	13½"x13½"	12"x12"	Aluminum	Backdraft Dpr.in Duct	Surface Mount	50F	See Notes 1-8,10
F	½"x½"x½" Eggcrate Eave Exhaust Grille	19½"x13½"	18"x12"	Aluminum	Backdraft Dpr.in Duct	Surface Mount	50F	See Notes 1-8
G	Linear Slot Supply Diffuser w/ Plenum	One ¾" slot 24" long	As Noted on Plans	Aluminum	None	Lay-In	ML-38 with MPI-38	See Notes 1-5
H	35° Louvered Sidewall Transfer Grille	17½"x17½"	16"x16"	Steel	None	Wall Mount	Titus 350RL	See Notes 1-6,9,11

NOTES:

- Diffusers and grilles shall be type for mounting in respective surface type. Confirm and coordinate with architectural reflected ceiling plan and construction conditions prior to ordering.
- Finish for diffusers and grilles shall be manufacturer's standard off-white. Eave grill to match roof finish.
- Diffusers, registers, and grilles by Nailor, Price, or Titus shall be acceptable.
- Provide transition or adapter where required to adapt duct to neck size.
- All devices shall have noise criteria (NC Level) of 35 or less, as certified and published in manufacturer's literature.
- Behind each grille type, paint inside surface of visible plenum and/or duct flat black.
- Provide an air-tight plenum over each grille types C, D, E, F; grille shall be removable from below. Pleenums over grilles C, D, E, F, shall be 1" thick fiberglass duct board, 8" tall, sealed AIR-TIGHT, further insulated with 3" thick fiberglass insulation.
- For grille types E and F, provide frame style suitable for eave's construction.
- Dimensions scheduled for wall grilles are WIDTH x HEIGHT.
- At type E eave intake grilles, provide transition boot from grille dimensions to round sheet metal duct. All connections must be air-tight. Boot and O. A. ductwork must be insulated with 3" thick fiberglass insulation.
- Type H transfer grilles are to provide convective air flow through the IT Room. "Neck size" shall be wall opening dimensions. Provide a grille on each side of the wall opening, to hide the opening on both views.

DATE: AUGUST 2016

PROJECT NUMBER:

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

ADMINISTRATIVE BLDG. -
HVAC SCHEDULES

SHEET NO.
90-H-2



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



07/15/16

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

HVAC SPECIFICATIONS

1. PROVIDE FUNCTIONAL HVAC SYSTEMS WITH ALL ACCESSORIES REQUIRED FOR COMPLETE FABRICATION ACCORDANCE WITH THESE DOCUMENTS AND ALL APPLICABLE CODES, LAWS, AND ORDINANCES. THE SYSTEMS SHALL BE FREE FROM OBJECTIONABLE NOISE AND VIBRATION.
2. ALL HVAC WORK AND EQUIPMENT SHALL CONFORM TO THE CURRENT REQUIREMENTS OF THE LOCAL BUILDING INSPECTION DEPARTMENT. HVAC WORK SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
 - A. 2012 INTERNATIONAL BUILDING CODE WITH 2014 AND 2015 GEORGIA AMENDMENTS.
 - B. 2012 INTERNATIONAL MECHANICAL CODE WITH 2014 AND 2015 GEORGIA AMENDMENTS.
 - C. 2009 INTERNATIONAL ENERGY CONSERVATION CODE WITH 2011 AND 2012 GEORGIA SUPPLEMENTS AND AMENDMENTS.
 - D. STATE AND LOCAL FIRE MARSHALS' OFFICES.
 - E. APPLICABLE SECTIONS OF NFPA AND ANSI.
 - F. 2010 GEORGIA ACCESSIBILITY CODE FOR BUILDINGS AND FACILITIES.

FOR CONSTRUCTION CODES, REFER TO STATE OF GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS: <http://www.dca.state.ga.us/development/constructioncodes/programs/codes2.asp>
 FOR ACCESSIBILITY CODE, REFER TO STATE OF GEORGIA ADA COORDINATOR'S OFFICE: ada.georgia.gov/georgia-accessibility-code
3. WHERE REQUIREMENTS OF THESE DOCUMENTS EXCEED CODE REQUIREMENTS, THESE DOCUMENTS SHALL GOVERN. IN THE EVENT THAT QUESTIONS ARISE BETWEEN SPECIFICATIONS AND FLOOR PLANS, THE FLOOR PLANS SHALL TAKE PRECEDENT.
4. MECHANICAL SYSTEMS ARE SPECIFIED AND SCHEDULED USING "BASIS-OF-DESIGN" METHOD. IF EQUIPMENT BY OTHER THAN BASIS-OF-DESIGN MANUFACTURER IS FURNISHED, ALL COSTS ASSOCIATED WITH ACCOMMODATING THE PROPOSED MANUFACTURER'S EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATION HAS BEEN PERFORMED WITH ELECTRICAL ENGINEER BASED ON "BASIS-OF-DESIGN" HVAC EQUIPMENT MANUFACTURERS.
5. ELECTRICAL CHARACTERISTICS OF HVAC EQUIPMENT ARE SCHEDULED FOR SAKE OF COORDINATION. PRIOR TO ORDERING EQUIPMENT, THE CONTRACTOR SHALL COORDINATE INTERNALLY AMONG THE AFFECTED SUBCONTRACTORS, AND CONFIRM THAT THE ELECTRICAL CHARACTERISTICS OF THE PROPOSED EQUIPMENT ARE CONSISTENT WITH THE BUILDING ELECTRICAL SYSTEM. THIS COORDINATION SHALL BE CONFIRMED IN WRITING TO THE ENGINEER OF RECORD PRIOR TO ORDERING HVAC EQUIPMENT.
6. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS. ALL EQUIPMENT SHALL BE INSTALLED LEVEL AND PLUMB, RUNNING PARALLEL AND PERPENDICULAR TO BUILDING WALLS. CONFIRM THAT ADEQUATE CLEARANCES ARE LEFT AROUND EQUIPMENT, AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER(S).
7. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES (BY A LICENSED ELECTRICIAN) AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, EXISTING ELECTRICAL SYSTEMS AND CHARACTERISTICS, AND MANUFACTURERS' RECOMMENDATIONS.
8. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER, EXCEPT THAT COMPRESSORS SHALL BE WARRANTED AGAINST PARTS FAILURE FOR AN ADDITIONAL 4 YEARS.
9. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF EQUIPMENT, PIPING, DUCTWORK, AND AIR DISTRIBUTION DEVICES TO FIT WITHIN THE SPACE ALLOWED BY EXISTING AND PROPOSED ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED.
10. ALL DUCTWORK SHALL BE SUPPORTED BY THE BUILDING STRUCTURE USING HANGERS AND SUPPORTS AS RECOMMENDED BY SMACNA. NO OTHER CONSTRUCTION TRADE'S WORK SHALL BE SUPPORTED BY HVAC DUCT HANGERS OR EQUIPMENT HANGERS.
11. SUPPLY AND RETURN AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL, 2" PRESSURE CLASS, AS RECOMMENDED IN SMACNA DUCT CONSTRUCTION STANDARDS, LATEST EDITION.
 - A. NINETY-DEGREE TURNS IN DUCTWORK SHALL BE MADE USING SQUARE ELBOWS WITH TURNING VANES OR WITH RADIUS ELBOWS.
 - B. ALL DUCT JOINTS SHALL BE SEALED USING DUCT SEALER (NOT DUCT TAPE). EACH DUCT JOINT SHALL BE SEALED PRIOR TO INSULATING. DUCTWORK INSULATED PRIOR TO SEALING JOINTS SHALL BE SUBJECT TO REMOVAL, SEALING, AND RE-INSULATING AT NO COST TO THE OWNER.
 - C. ROUND DUCTWORK MAY BE SUBSTITUTED FOR RECTANGULAR, AND VICE VERSA, AS LONG AS DUCT HAS SAME OR GREATER AIR-CARRYING CAPACITY (AS DETERMINED BY TRANE DUCTULATOR), AS LONG AS RESIZING DOES NOT CREATE A CONFLICT, AND AS LONG AS THERE IS ADEQUATE PHYSICAL SPACE.
 - D. **DO NOT SUBSTITUTE FLEXIBLE DUCTWORK FOR SHEET METAL DUCTWORK**
 - E. SEE SPECIFICATION #14 FOR DUCT INSULATION REQUIREMENTS.
 - F. **DO NOT BLOCK ACCESS TO FAN-COIL UNITS WITH DUCTWORK. WHERE DUCTS RUN ALONGSIDE UNITS, RAISE DUCTS SO THEY ARE ABOVE THE MAINTENANCE SPACE OF THE UNITS. IF DUCTS ARE INSTALLED THAT VIOLATE THIS REQUIREMENT, THE DUCTS SHALL BE REDONE, AT THE EXPENSE OF THE CONTRACTOR.**
12. FLEXIBLE DUCTWORK SHALL BE MANUFACTURED BY ATCO (OR OTHER MANUFACTURER AS APPROVED IN WRITING BY ENGINEER OF RECORD). MAXIMUM LENGTH SHALL NOT EXCEED 5'-0". FLEXIBLE DUCTWORK SHALL HAVE MAX. FLAME SPREAD RATING OF 25 AND MAX. SMOKE-DEVELOPED RATING OF 50. ROUND AND FLEXIBLE DUCTWORK SHALL BE CONNECTED TO MAIN DUCTS WITH SPIN-IN FITTINGS WITH AIR EXTRACTORS AND BALANCING DAMPERS. PROVIDE TRANSITION BETWEEN FLEXIBLE DUCT AND DIFFUSER NECK WHEN DIFFERENT SIZES. MAXIMUM ACCUMULATED BEND FOR FLEXIBLE DUCTWORK SHALL NOT EXCEED 90°. FLEXIBLE DUCTWORK SHALL NOT REST ON STRUCTURAL MEMBERS, CONDUITS, OR PIPING. FLEXIBLE DUCTWORK SHALL NOT BE KINKED, CRIMPED, OR RESTRICTED IN ANY WAY. SUPPORT SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION LITERATURE. FLEXIBLE DUCTWORK SHALL NOT BE USED IN LIEU OF A DUCT ELBOW. IF THIS OCCURS, THE FLEX DUCT SHALL BE REMOVED, AN ELBOW INSTALLED, THE DUCTS RECONNECTED, AND ANY AFFECTED INSULATION REWORKED. CONFIRM THAT "SCOOPS" ARE TURNED CORRECTLY INSIDE THE DUCTS FOR MAXIMUM AIR EXTRACTION. AT FLEXIBLE DUCTWORK, ATTACH WITH TWO BANDS: ONE FOR DUCT AND ONE FOR INSULATION.
13. EXHAUST DUCTWORK AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED OF ROUND GALVANIZED SHEET METAL, 1" PRESSURE CLASS, AS RECOMMENDED IN SMACNA DUCT CONSTRUCTION STANDARDS, LATEST EDITION. ALL 90° TURNS IN ROUND DUCTWORK SHALL BE MADE WITH RADIUS ELBOWS. ALL DUCT JOINTS SHALL BE SEALED USING DUCT SEALER (NOT DUCT TAPE). EXHAUST DUCTWORK AND OUTSIDE AIR DUCTWORK IS TO BE INSULATED PER HVAC SPECIFICATION #14. IMMEDIATELY INSIDE THE BUILDING, PROVIDE A GRAVITY BACKDRAFT DAMPER (TO KEEP OUTSIDE AIR OUT OF THE BUILDING AND DUCTS WHEN EXHAUST FANS AND FAN-COIL UNITS ARE OFF). IN ADDITION TO THE BACKDRAFT DAMPER INTEGRAL TO EACH EXHAUST FAN AND THE BACKDRAFT DAMPER NEAR THE FAN-COIL UNIT).
14. DUCTWORK INSULATION: ALL DUCTWORK SHALL BE EXTERNALLY INSULATED USING FIBERGLASS INSULATION. THIS INCLUDES SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK. INSULATION SHALL BE FIBERGLASS DUCT WRAP WITH REINFORCED FOIL VAPOR BARRIER. TAPE ALL JOINTS AND PUNCTURES IN DUCT INSULATION WITH FOIL DUCT TAPE. AT COMPLETION OF PROJECT, THERE SHALL BE NO GAPS OR OPENINGS IN VAPOR BARRIER ON DUCTWORK INSULATION.
 - A. SUPPLY AND RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 2" THICK FIBERGLASS WITH REINFORCED FOIL VAPOR BARRIER.
 - B. EXHAUST AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1" THICK FIBERGLASS WITH REINFORCED FOIL VAPOR BARRIER.
 - C. OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 3" THICK FIBERGLASS WITH REINFORCED FOIL VAPOR BARRIER.
15. DUCT LINER: NO INTERNAL DUCT LINER IS TO BE USED ON THIS PROJECT.
16. FIBERGLASS DUCT BOARD SHALL NOT BE USED ON THIS PROJECT. EXCEPTION: PROVIDE AN 8" TALL FIBERGLASS DUCT BOARD PLENUM ABOVE RETURN CEILING RETURN GRILLE. SEAL THIS PLENUM AIR-TIGHT TO PREVENT ABOVE-CEILING AIR FROM ENTERING THE RETURN AIR SYSTEM.
17. REFRIGERANT PIPING FOR SPLIT SYSTEMS SHALL BE FACTORY-FABRICATED PRE-CHARGED TYPE.
 - A. CAP ENDS OF PIPING WHEN NOT CONNECTED TO MECHANICAL EQUIPMENT. PIPING SHALL NOT TOUCH FERROUS MATERIALS. FIRMLY SUPPORT PIPING USING NON-FERROUS MATERIALS.
 - B. INSULATE WITH 1/2" CLOSED CELL ELASTOMERIC INSULATION EXPOSED TO WEATHER SHALL BE COATED WITH 2 LAYERS OF SEALER RECOMMENDED AND APPROVED BY INSULATION MANUFACTURER.
 - C. PIPE INSULATION SHALL BE UL TESTED TO COMPLY WITH FLAME-SPREAD / SMOKE-DEVELOPED RATINGS OF 25/50 OR LESS.
 - D. ROUTE PIPES HIDDEN ABOVE CEILING AND DOWN IN EXTERIOR WALL, TO REACH THE OUTDOOR UNIT. PIPES SHALL ONLY BE EXPOSED BETWEEN THE BUILDING AND THE HEAT PUMP UNIT.
 - E. INSULATE REFRIGERANT SUCTION LINES.
 - F. SECURELY SUPPORT AND PROTECT ALL REFRIGERANT PIPING TO PREVENT SAGGING, MOVEMENT, AND DAMAGE.
 - G. WHERE REFRIGERANT PIPING IS SUBJECT TO DAMAGE FROM FOOT TRAFFIC, PROVIDE COVERS OR OTHER PROTECTIVE DEVICES TO PREVENT DAMAGE.
 - H. WHERE DISTANCE IS AN ISSUE, PROVIDE LONG LINE KITS AND FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR COMPENSATING FOR PROJECT CONDITIONS.
 - I. INSTALL REFRIGERANT IN A NEAT AND ORGANIZED MANNER, DEMONSTRATING SUPERIOR AND KNOWLEDGEABLE WORKMANSHIP.
 - J. THERE SHALL BE NO REFRIGERANT PIPING BELOW GRADE.

18. CONDENSATE DRAIN FROM EACH FAN-COIL UNIT SHALL BE PUMPED BY A CONDENSATE PUMP. PROVIDE 1/2" OR LARGER POLYETHYLENE TUBING, UNINSULATED. DO NOT COMBINE PUMPED CONDENSATE LINES; ROUTE EACH LINE INDEPENDENTLY TO MOP BASIN IN JANITOR'S CLOSET, BEING CAREFUL NOT TO INTERFERE WITH MOP BASIN OR MOP HANGERS. SECURE CONDENSATE LINES AGAINST ACCIDENTAL DAMAGE OR MOVEMENT.
19. UNDER EACH FAN-COIL UNIT, PROVIDE A 3" DEEP SHEET METAL SECONDARY DRAIN PAN, MINIMUM 26 GAUGE. PROVIDE A FLOAT SWITCH TO DE-ENERGIZE THE RESPECTIVE UNIT UPON THE DETECTION OF WATER IN THE SECONDARY DRAIN PAN.
20. FOR SPLIT SYSTEMS, SUBMIT A LETTER TO THE OWNER FROM THE HVAC EQUIPMENT MANUFACTURER OR FROM THE MANUFACTURER'S REPRESENTATIVE, WITH A REFRIGERANT PIPING DIAGRAM ATTACHED SHOWING THE REFRIGERANT PIPE SIZES, LENGTHS, COMPONENTS, AND ACCESSORIES REQUIRED. THE LETTER SHALL STATE THE FOLLOWING:
 - A. THAT THE REFRIGERANT PIPING HAS BEEN INSTALLED IN ACCORDANCE WITH THE DIAGRAM.
 - B. THAT THE MANUFACTURER ACCEPTS THE REFRIGERANT PIPING INSTALLATION, AND
 - C. THAT HIS EQUIPMENT WILL PERFORM AS INTENDED WITH THE INSTALLATION.
21. AIR DISTRIBUTION DEVICES SHALL BE AS NOTED ON DRAWINGS AND AS SPECIFIED. AIR DISTRIBUTION PRODUCTS SHALL BE MANUFACTURED BY NAILOR, PRICE, OR TITUS. **NO EXCEPTIONS.**
22. STARTERS, TRANSFORMERS, CONTROLS, AND CONTROL WIRING REQUIRED FOR MECHANICAL SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. ALL REQUIRED CONTROL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK REGARDLESS OF VOLTAGE.
23. PROVIDE A ROOM THERMOSTAT FOR EACH HVAC SYSTEM. THERMOSTAT SHALL BE SEVEN DAY, PROGRAMMABLE TYPE, BY THE EQUIPMENT MANUFACTURER. MOUNT THERMOSTAT 5'-0" A.F.F. (UNLESS LOCAL AUTHORITIES REQUIRE DIFFERENT HEIGHT).
24. PROVIDE ONE SUPPLY AIR SMOKE DETECTOR IN EACH DUCTED HVAC SYSTEM.
 - A. IF A FIRE ALARM SYSTEM IS IN THE PROJECT SCOPE, THE SMOKE DETECTORS SHALL BE FURNISHED, WIRED, AND INTERLOCKED BY THE ELECTRICAL SUBCONTRACTOR. THE SMOKE DETECTORS WILL BE MOUNTED BY THE MECHANICAL SUBCONTRACTOR. UPON DETECTION OF SMOKE, THE SMOKE DETECTOR SHALL SIGNAL THE FIRE ALARM SYSTEM.
 - B. IF THERE IS NO FIRE ALARM SYSTEM, SMOKE DETECTORS SHALL BE PROVIDED BY THE MECHANICAL SUBCONTRACTOR (FURNISHED, MOUNTED, WIRED, AND INTERLOCKED).
 - C. WHETHER THERE IS A FIRE ALARM SYSTEM OR NOT, SMOKE DETECTORS SHALL BE LOCATED IN THE SUPPLY DUCT, DOWNSTREAM OF THE FAN, TO SHUT DOWN THE RESPECTIVE UNIT UPON THE DETECTION OF SMOKE.
25. TEST AND BALANCE WORK SHALL BE BY ONE OF THE FOLLOWING:
 - AIR DATA, INC. (770-918-0918) - CONTACT DOUG SLAUGHTER.
 - ALFA AIR BALANCE COMPANY, INC. (770-426-7153) - CONTACT DON ALMAND.
 - ATLANTA TEST AND BALANCE, INC. (770-751-1229) - CONTACT DAN BRUNER.
 - GEORGIA BALANCE COMPANY, INC. (770-254-0515) - CONTACT STEVE GARNER.
 - HYDRO-AIR ASSOCIATES, INC. (770-997-1116) - CONTACT LARRY INGRAM.
 - SOUTHERN BALANCE COMPANY (770-850-1027) - CONTACT JONATHAN YOUNG.
 - TAB SERVICES, INC. (404-329-1001) - CONTACT JAMES ROBERTS.

PROVIDE A MINIMUM OF 4 COPIES OF EACH REPORT: ONE EACH FOR OWNER, THE GENERAL CONTRACTOR, THE ARCHITECT, AND THE ENGINEER OF RECORD. AFTER INSTALLATION AND START-UP, HVAC SYSTEMS SHALL BE BALANCED TO DELIVER THE AIR QUANTITIES SHOWN ON THE MECHANICAL DRAWINGS WITHIN + OR - 5%. TEST AND BALANCE AGENCY SHALL MEASURE PERFORMANCE, AND SHALL FURNISH A WRITTEN REPORT:

 - A. AIR FLOW (CFM) AND STATIC PRESSURE (IN, W.G.) ACROSS EACH COMPONENT OF EACH FAN-COIL UNIT (INCLUDING INLET AND OUTLET CONDITIONS).
 - B. OUTSIDE AIR TO EACH FAN-COIL UNIT (CFM).
 - C. AIR FLOW (CFM) AND STATIC PRESSURE (IN, W.G.) DEVELOPED BY EACH EXHAUST FAN.
 - D. VOLTAGE AND AMPERAGE READINGS AT EACH FAN-COIL UNIT, HEAT PUMP UNIT, AND EXHAUST FAN.
 - E. AIR FLOW IN CFM, AT EACH SUPPLY DIFFUSER, RETURN GRILLE, EXHAUST REGISTER, AND OUTSIDE AIR INTAKE GRILLE.
 - F. RECORD ALL NAMEPLATE DATA FROM EACH FAN-COIL UNIT, HEAT PUMP UNIT, AND EXHAUST FAN. MAIL OR E-MAIL ONE COPY OF TEST AND BALANCE REPORT DIRECTLY TO ENGINEER OF RECORD. FORWARD THE REMAINING COPIES OF THE TEST AND BALANCE REPORT THROUGH CHANNELS.
26. AT EACH CEILING RETURN AIR GRILLE, PAINT INSIDE OF PLENUM FLAT BLACK WHERE IT IS VISIBLE BY OCCUPANTS.
27. BUILDING HVAC CONTROLS:
 - A. EACH HVAC SYSTEM SHALL OPERATE BY ITS RESPECTIVE ROOM THERMOSTAT.
 - B. A DUCT-MOUNTED SUPPLY-AIR SMOKE DETECTOR SHALL SHUT DOWN ITS RESPECTIVE SYSTEM. IF THERE IS A BUILDING FIRE ALARM SYSTEM, THE SMOKE DETECTOR SHALL SIGNAL THE FIRE ALARM SYSTEM UPON DETECTION OF SMOKE, AS WELL AS SHUTTING DOWN ITS RESPECTIVE SYSTEM. PROVIDE SMOKE DETECTOR IN EACH DUCTED HVAC SYSTEM.
 - C. CONTROL EACH EXHAUST FAN AS DESCRIBED IN THE FAN SCHEDULE.
28. SPLIT SYSTEM HEAT PUMP SYSTEMS (DUCTED FAN-COIL UNIT WITH ELECTRIC RESISTANCE HEAT AND AIR-SOURCE HEAT PUMP UNIT). PROVIDE SYSTEM AS SCHEDULED. ACCEPTABLE MANUFACTURERS: CARRIER, LENNOX, TRANE. ELECTRICAL POWER CONNECTIONS SHALL BE TO A SINGLE POINT WHEREVER POSSIBLE. UNITS SHALL HAVE SAFETY CONTROLS AS AVAILABLE ON CARRIER MODEL NUMBERS SCHEDULED. EQUIPMENT EFFICIENCIES SHALL BE EQUAL TO OR GREATER THAN THOSE OF CARRIER EQUIPMENT SCHEDULED. ALL UNITS SHALL BE ARI CERTIFIED AND UL LISTED. DO NOT LOCATE DISCONNECT OR OTHER ITEMS TO HIDE EQUIPMENT NAMEPLATES.
 - A. AIR-SOURCE HEAT PUMP UNIT: PROVIDE UNIT, FACTORY ASSEMBLED AND TESTED, COMPLETE WITH REVERSIBLE CONTROLS, MOTOR, COMPRESSOR, COILS, FAN, REVERSING VALVE, DEFROST CONTROL, EXTERNAL SERVICE VALVES, AND THERMOSTATIC EXPANSION VALVE. UNIT SHALL BE ENCLOSED IN FACTORY-FINISHED, HEAVY GAUGE GALVANIZED STEEL CABINET. UNIT SHALL HAVE CAPACITIES AS SCHEDULED. COMPRESSOR SHALL BE SCROLL TYPE WITH POSITIVE PRESSURE LUBRICATION SYSTEM AND REVERSIBLE OIL FILLER, ISOLATORS, SUCTION AND DISCHARGE VALVES, OIL FILTER, CRANKCASE HEATER, DISCHARGE MUFFLER, SUCTION LINE STRAINER AND RELIEF VALVE. SPEED SHALL NOT EXCEED 1750 RPM. ANTI-RECYCLE TIMER SHALL PROVIDE 5 MINUTE DELAY BETWEEN COMPRESSOR SHUT-DOWN AND RESTART.
 - B. FAN-COIL UNIT WITH DX COOLING COIL AND ELECTRIC RESISTANCE HEAT: PROVIDE CONSTANT SPEED, CABINET TYPE UNIT, COMPLETE WITH CENTRIFUGAL FAN(S), ECM MOTOR, FILTER, AND FILTER RACK. ALL HOUSED IN FINISHED CASING(S) WITH THERMAL INSULATION. FUNCTIONAL COMPONENTS SHALL BE READILY ACCESSIBLE FOR INSPECTION AND MAINTENANCE. UNIT SHALL CONSIST OF BLOWER, COILS, AIR FILTER, AND OTHER COMPONENTS NECESSARY FOR OPERATION. PROVIDE DX COOLING COIL MATCHED WITH BLOWER AND OUTDOOR HEAT PUMP UNIT TO PROVIDE CAPACITIES SCHEDULED. COIL SHALL HAVE COPPER TUBES, NONFERROUS FINS, AND COIL DRAIN PAN. PROVIDE ELECTRIC RESISTANCE HEATING COIL TO MEET SCHEDULED CAPACITY. PROVIDE UNIT-MOUNTED DISCONNECT SWITCH, LOCATED WHERE IT DOES NOT HIDE EQUIPMENT NAMEPLATE.
 - C. OUTDOOR HEAT PUMP UNIT SHALL SIT EITHER ON INDIVIDUAL EQUIPMENT PAD OR ON CONCRETE APRON LARGE ENOUGH FOR ALL HEAT PUMP UNITS AND THEIR MAINTENANCE CLEARANCES. PADS SHALL BE ON GRADE WHERE SHOWN ON HVAC FLOOR PLAN.
 - D. PROVIDE LONG LINE KITS FOR SYSTEMS HAVING 100 FEET OR MORE OF SEPARATION BETWEEN INDOOR AND OUTDOOR UNITS. SEE REFRIGERANT PIPING SPECIFICATION FOR SPECIAL REQUIREMENTS.
 - E. ALL EQUIPMENT SHALL USE R-410a REFRIGERANT.
 - F. PROVIDE CONDENSATE PUMP FOR EACH FAN-COIL UNIT AS SPECIFIED IN SPECIFICATION #18.
 - G. LEAVE MINIMUM OF 36" CLEAR IN FRONT OF ELECTRICAL PANELS AND HEATER ACCESS.
 - H. SEE HVAC EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
29. EXHAUST FANS: PROVIDE EQUIPMENT AS SCHEDULED. ACCEPTABLE MANUFACTURERS ARE ACME, COOK, GREENHECK, PENN. PERFORMANCE SHALL BE EQUAL TO THAT OF FANS MANUFACTURED BY BASIS-OF-DESIGN MANUFACTURER, INCLUDING SOUND LEVELS. FANS WHICH ARE NOT DEEMED BY ENGINEER AS EQUAL TO SCHEDULED FANS, SHALL BE REPLACED WITH SCHEDULED FANS. SONE LEVELS SHALL NOT EXCEED SONE LEVELS OF BASIS-OF-DESIGN MODELS. DO NOT CONSIDER SUBMITTING FANS WHICH HAVE HIGHER SONE LEVELS. THE MANUFACTURER SHALL BE REJECTED FROM PROVIDING ANY PRODUCTS WHATSOEVER ON THIS PROJECT. REFER TO FAN SCHEDULE.
30. SEAL ALL EXTERIOR PENETRATIONS AIR-TIGHT AND WATER-TIGHT WITH PAINTABLE 25 YEAR SILICONE CAULK.
31. MAINTAIN 36" CLEARANCE IN FRONT OF ANY ELECTRICAL PANEL. DO NOT RUN PIPING OR DUCTWORK OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT. ALSO MAINTAIN 6'-0" ABOVE ELECTRICAL PANELS AND THE 36" CLEARANCE SPACE.
32. NO ROOF PENETRATIONS ARE REQUIRED FOR ADMINISTRATIVE BUILDING'S HVAC.
33. PROVIDE TWO SETS OF FILTERS FOR EACH HVAC FAN-COIL UNIT. INSTALL ONE SET FOR USE DURING CONSTRUCTION PHASE. REPLACE WITH SECOND SET NEAR END OF CONSTRUCTION, PRIOR TO TESTING AND BALANCING.
34. PROVIDE BAKELITE LABEL FOR EACH FAN-COIL UNIT, HEAT PUMP UNIT, AND EXHAUST FAN, SHOWING THE MARK NUMBER FOR EACH. THE LABEL SHALL BE 1" HIGH, WITH 1/2" LETTERS, WHITE ON RED. MOUNT IN A MOST VISIBLE LOCATION, WHERE IT CAN BE SEEN FROM THE MOST COMMON APPROACH. LABEL EACH FAN-COIL UNIT, HEAT PUMP UNIT, AND EXHAUST FAN. LABEL EACH THERMOSTAT WITH A BAKELITE LABEL, 1/2" HIGH, WITH 1/4" LETTERS, WHITE ON RED.

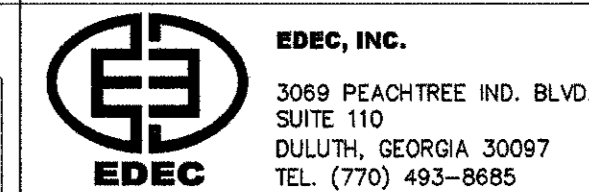
35. PROVIDE 4 COPIES OF AN OPERATING AND MAINTENANCE MANUAL, WHICH SHALL PROVIDE USEABLE, FULL INFORMATION ON ALL NEW MECHANICAL EQUIPMENT AND PRODUCTS. THE MANUAL SHALL BE IN A BLACK 3-RING BINDER, WITH TITLE SHEET, TABLE OF CONTENTS, AND INDEX TABS. CUT SHEETS, PERFORMANCE DATA, INSTALLATION AND MAINTENANCE PROCEDURES, REPLACEMENT PARTS LISTS, WARRANTIES, AND TEST AND BALANCE RESULTS SHALL BE INCLUDED.
36. HVAC SUBMITTALS SHALL BE FURNISHED PRIOR TO ORDERING HVAC EQUIPMENT, COMPONENTS, AND PRODUCTS.
 - A. SUBMITTALS SHALL INCLUDE AN INDEX SHOWING TAB NUMBER OR LETTER, ITEM NUMBER, MARK NUMBERS, PRODUCT DESCRIPTION, AND PAGE.
 - B. PRODUCT DATA SHALL CLEARLY INDICATE WHICH MANUFACTURERS, MODEL NUMBERS, OPTIONS, FEATURES, AND (WHERE APPLICABLE) ELECTRICAL CHARACTERISTICS ARE PROPOSED. UNMARKED SUBMITTALS WHICH ARE AMBIGUOUS, UNCLEAR, AND/OR UNORGANIZED ARE SUBJECT TO REJECTION.
 - C. ELECTRONICALLY PREPARED SUBMITTALS ARE ACCEPTABLE AND ENCOURAGED.
 - D. FOLLOW INSTRUCTIONS IN "GENERAL CONDITIONS" WHEN ISSUING SUBMITTALS FOR REVIEW.
 - E. SUBMIT CREDENTIALS OF PROPOSED TEST AND BALANCE CONTRACTOR, PER SPECIFICATION #25. TEST AND BALANCE CREDENTIALS MAY BE SUBMITTED SEPARATELY FROM REMAINDER OF HVAC SUBMITTALS.

DATE:	AUGUST 2016
PROJECT NUMBER:	INDIAN CREEK WRF EXPANSION TO 3 MGD
REVISION	DATE
Δ	

DSGN: GHF
 DRWN: WJM
 CHECK: GHF

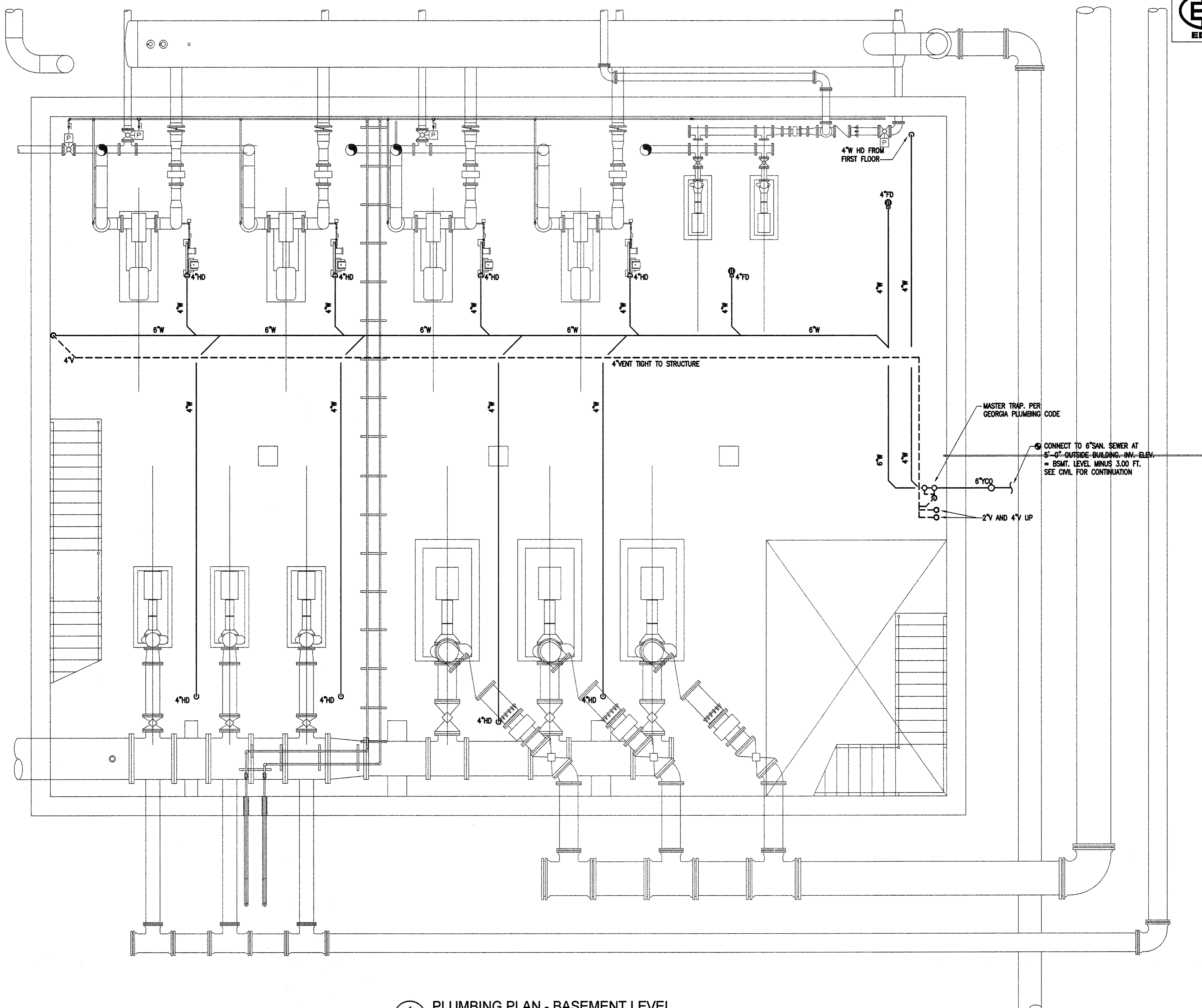
BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATIVE BLDG. -
 HVAC SPECIFICATIONS



07/15/16

ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001



DATE:	AUGUST 2016
PROJECT NUMBER:	
REVISION	DATE
Δ	

DSCN: GHF
DRWN: WJM
CHK: GHF

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BLDG. -
PLUMBING BASEMENT FLOOR PLAN

1 PLUMBING PLAN - BASEMENT LEVEL
45-P-1 SCALE: 1/4" = 1' - 0"

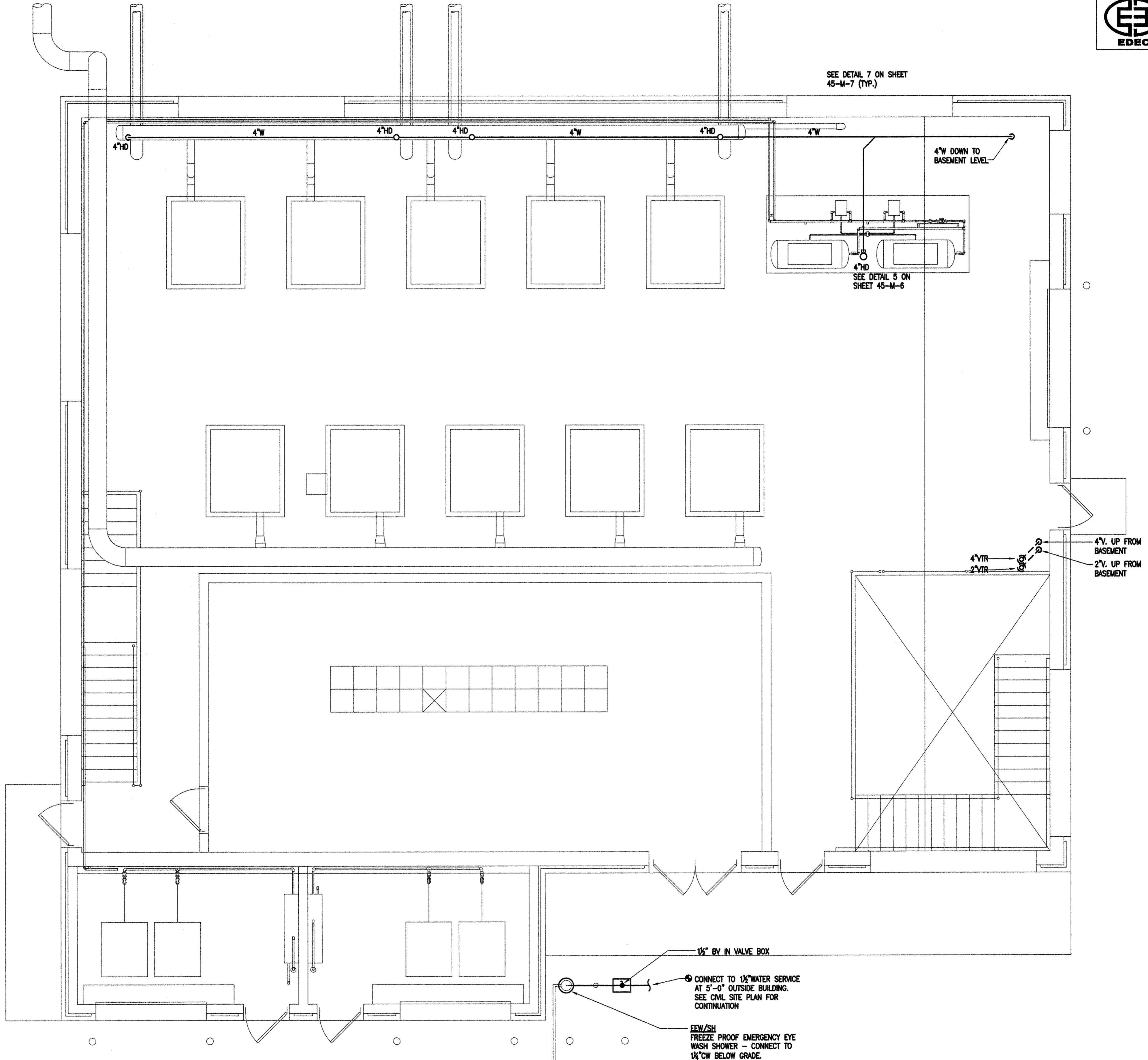
SHEET NO.
45-P-1

EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



07/15/16

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001



1 PLUMBING PLAN - MAIN LEVEL
 45-P-2 SCALE: 1/4" = 1' - 0"

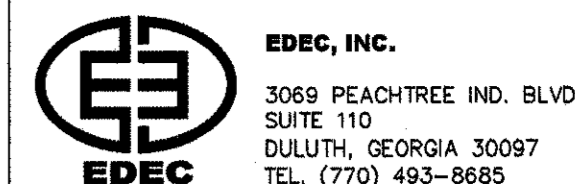
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: GHF
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BLDG. -
 PLUMBING FIRST FLOOR PLAN

SHEET NO.
 45-P-2



07/15/16

PLUMBING SPECIFICATIONS

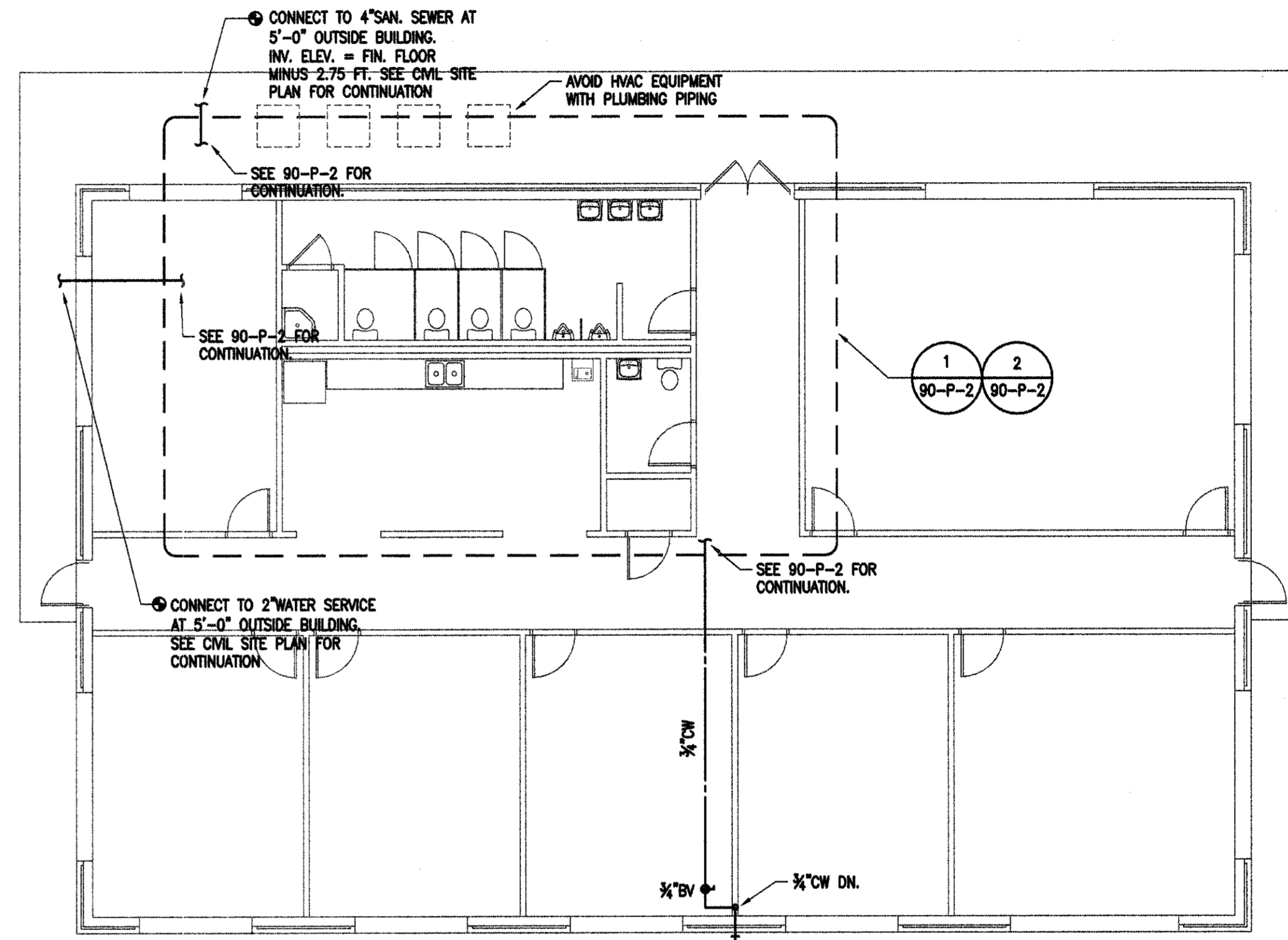
- THESE DRAWINGS ARE PARTIALLY SCHEMATIC IN CHARACTER AND SHOULD NOT BE SCALED. BUT THE CONTRACTOR SHALL FIT THE WORK TO THE JOB. CAREFULLY INVESTIGATING THE STRUCTURAL ARCHITECTURAL, SPACES, AND FINISH CONDITIONS AFFECTING THE WORK, ARRANGING THE WORK ACCORDINGLY AND FURNISHING NECESSARY BENDS, OFFSETS, FITTINGS, JUNCTIONS, ETC., WHETHER SPECIALLY SHOWN OR CALLED FOR OR NOT, AND SEEING THAT THERE ARE NO INTERFERENCES BETWEEN THIS WORK AND THE WORK OF ANY OTHER TRADE. THE PLUMBING SYSTEMS SHALL BE INSTALLED COMPLETE AND IN ACCORDANCE WITH ALL APPLICABLE CODES, LAWS, AND REGULATIONS, LOCAL HEALTH DEPARTMENT STANDARDS, AND OWNER'S REQUIREMENTS. THE SYSTEMS SHALL BE FREE FROM OBJECTIONABLE NOISE, VIBRATION, AND ANY STOPPAGES.
- ALL PLUMBING WORK AND EQUIPMENT SHALL CONFORM TO THE CURRENT REQUIREMENTS OF THE LOCAL BUILDING INSPECTION DEPARTMENT. PLUMBING WORK SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
 - A. 2012 INTERNATIONAL BUILDING CODE, WITH 2014 AND 2015 GEORGIA AMENDMENTS.
 - B. 2012 INTERNATIONAL PLUMBING CODE, WITH 2014 AND 2015 GEORGIA AMENDMENTS.
 - C. 2009 INTERNATIONAL ENERGY CONSERVATION CODE, WITH 2011 AND 2012 GEORGIA SUPPLEMENTS AND AMENDMENTS.
 - D. LOCAL HEALTH DEPARTMENT STANDARDS.
 - E. STATE AND LOCAL FIRE MARSHALS' OFFICES.
 - F. APPLICABLE SECTIONS OF NFPA AND ANSII.
 - G. 2010 GEORGIA ACCESSIBILITY CODE FOR BUILDINGS AND FACILITIES.
- FOR CONSTRUCTION CODES, REFER TO STATE OF GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS: <http://www.dca.state.ga.us/development/constructioncodes/programs/codes.asp>
- FOR ACCESSIBILITY CODE, REFER TO STATE OF GEORGIA ADA COORDINATOR'S OFFICE: ada.georgia.gov/georgia-accessibility-code
- WHERE REQUIREMENTS OF THESE DOCUMENTS EXCEED CODE REQUIREMENTS, THESE DOCUMENTS SHALL GOVERN. IN THE EVENT THAT QUESTIONS ARISE BETWEEN SPECIFICATIONS AND FLOOR PLANS, THE FLOOR PLANS SHALL TAKE PRECEDENT.
- ALL PLUMBING EQUIPMENT AND MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. ALL FIXTURES AND EQUIPMENT SHALL BE INSTALLED LEVEL AND PLUMB, RUNNING PARALLEL AND PERPENDICULAR TO BUILDING WALLS.
- CONTRACTOR SHALL SECURE ALL PERMITS, INSPECTION CERTIFICATES, AND AUTHORITY APPROVALS, AND PAY ALL ASSOCIATED CHARGES AND FEES.
- ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER. DEFECTS SHALL BE CORRECTED EXPEDITIOUSLY, INCLUDING ALL PATCHING, PAINTING, REPLACEMENT, AND OTHER REPAIRS.
- IT IS THE INTENT OF THESE SPECIFICATIONS TO OBTAIN FINISHED WORK, TESTED AND READY FOR OPERATION. ANY APPARATUS, APPLIANCE, OR MATERIAL WHICH MAY BE NECESSARY TO MAKE THE WORK COMPLETE AND FULLY OPERATIONAL, EVEN IF NOT EXPLICITLY STATED, SHALL BE PROVIDED BY THE CONTRACTOR.
- LOCATE AND CONNECT TO DOMESTIC WATER AND SANITARY SEWER, AS NOTED ON DRAWINGS. CONFIRM INVERT OF SANITARY SEWER TO ASSURE ADEQUATE DEPTH AND SLOPE.
- DOMESTIC WATER PIPING BELOW GRADE SHALL BE TYPE L SOFT COPPER TUBING (NO SUBSTITUTION). THERE SHALL BE NO JOINTS OR FITTINGS OF COLD OR HOT WATER BELOW GRADE INSIDE THE BUILDING, EXCEPT FOR THE INCOMING WATER SERVICE. "BELOW GRADE" INCLUDES WATER PIPING UNDERGROUND OR UNDER A FLOOR SLAB, SIDEWALK, OR PAVEMENT.
- DOMESTIC WATER PIPING (COLD AND HOT WATER) ABOVE GRADE SHALL BE TYPE L HARD COPPER TUBING (NO SUBSTITUTION). FITTINGS SHALL BE WROUGHT COPPER WITH LEAD-FREE SOLDER. PIPING SHALL NOT TOUCH FERROUS MATERIALS. FIRMLY SUPPORT PIPING USING NON-FERROUS PIPE SUPPORTS.
- WHERE COPPER WATER PIPING CONNECTS TO FERROUS PIPES OR TO PRODUCTS HAVING FERROUS CONNECTIONS, PROVIDE A DIELECTRIC FITTING.
- DOMESTIC COLD AND HOT WATER PIPING AND FITTINGS ABOVE GRADE SHALL BE INSULATED WITH RIGID FIBERGLASS WITH REINFORCED WHITE VAPOR BARRIER, WITH MATCHING WHITE FOIL TAPE. ALL INSULATION MATERIALS SHALL HAVE FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS. DO NOT USE STAPLES. INSULATION THICKNESSES SHALL BE:
 - A. COLD WATER - 1" THICK
 - B. HOT WATER - 1 1/2" THICK
- SANITARY WASTE AND VENT PIPING SHALL BE STANDARD WEIGHT DWV PVC (DRAINAGE/WASTE/VENT POLYVINYL CHLORIDE) PIPE AND FITTINGS. (ALL HVAC SYSTEMS ARE FULLY DUCTED. CEILING SPACES ARE NOT USED AS RETURN AIR PLENUMS.)
- VALVES SHALL BE BRASS WITH GLAND BOXES, NUTS, AND SCREWED BONNETS. VALVES SHALL BE RATED FOR MINIMUM 125# S.W.P. AS MANUFACTURED BY CRANE, JENKINS, NIBCO, STOCKHAM, OR EQUAL.
- PROVIDE A CHROME ESCUTCHEON PLATE WHERE ANY PIPE PENETRATES A CEILING, FLOOR, WALL, OR CABINET, ON ANY SURFACE EXPOSED TO VIEW.
- PROVIDE A STOP VALVE FOR EACH WATER SUPPLY LINE TO EACH PLUMBING FIXTURE. PROVIDE A BALL VALVE ON THE COLD WATER SIDE OF THE WATER HEATER, FOLLOWED BY THE EXPANSION TANK.
- PROVIDE A WALL-MOUNTED EQUIPMENT PLATFORM FOR THE WATER HEATER.
 - A. PLATFORM SHALL BE HOLDRITE MODEL #50-SWHP-W. PRODUCT WILL CONSIST OF 12 GAUGE GALVANIZED COLD-ROLLED STEEL PAN, FOUR 1 1/2" GAUGE GALVANIZED CORNER BRACKS, TWO C-BRACKETS FOUR 45° BRACKETS, AND STEEL ALL-THREAD ROD.
 - B. THE PLATFORM WILL ALSO FUNCTION AS THE EMERGENCY DRAIN PAN AND BE FURNISHED WITH A FACTORY-MOUNTED 1" PVC DRAIN.
 - C. THE PLATFORM SHALL BE ENGINEERED TO SUPPORT UP TO 600 POUNDS (WITH 2X SAFETY FACTOR).
 - D. MOUNTING AND DRAINS: LOCATE PLATFORM FOR JANITOR'S CLOSET WATER HEATER BELOW THE CEILING. PLATFORM SHALL BE MOUNTED TO THE WALL OVER THE MOP BASIN WITH BOTTOM AT 6'-10" ABOVE THE FLOOR. PROVIDE A 1" COPPER DRAIN LINE FROM THE DRAIN CONNECTION DOWN TO THE MOP BASIN. ROUTE PIPES DOWN INSIDE WALL, SO THEY DO NOT OBSTRUCT THE MOP BASIN OR MOP HANGERS. DRAIN LINE SHALL BE INDEPENDENT FROM WATER HEATER'S TEMPERATURE AND PRESSURE (T&P) COPPER RELIEF LINE, WHICH SHALL DISCHARGE INTO SAME MOP BASIN.
- PAINTING OF PLUMBING ITEMS WHICH PENETRATE ROOF OR EXTERIOR WALLS SHALL BE DONE BY THE PROJECT'S PAINTING SUBCONTRACTOR, NOT BY THE PLUMBING SUBCONTRACTOR. REFER TO ARCHITECTURAL SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. PAINT COLOR SHALL MATCH WALL COLOR OR ROOF COLOR.
- ROOF PENETRATIONS: ROOF PENETRATIONS SHALL BE MADE BY THE BUILDING OWNER'S DESIGNATED ROOFING CONTRACTOR, NOT BY THE PLUMBING SUBCONTRACTOR. FIRST, PLUMBING SUBCONTRACTOR SHALL MARK EACH PROPOSED PENETRATION ON ROOF. THEN, ROOFING CONTRACTOR SHALL MAKE ACTUAL ROOF PENETRATION. PLUMBING SUBCONTRACTOR SHALL THEN INSTALL DEVICE THRU ROOF. FINALLY, ROOFING CONTRACTOR SHALL COMPLETE FINAL FLASHING AND WATERPROOFING OF DEVICE.
- SEAL ALL EXTERIOR WALL OPENINGS WATER-TIGHT AND AIR-TIGHT, USING SEALANT AND/OR CAULK HAVING MINIMUM 20 YEAR GUARANTEED LIFE.
- LOCATE ALL DOMESTIC WATER PIPING ON HEATED SIDE OF BUILDING'S EXTERIOR INSULATION - NO EXCEPTIONS.
- TEST SANITARY WASTE AND VENT PIPING AT A HYDROSTATIC PRESSURE OF 10 FEET OF WATER. TEST WATER PIPING AT A HYDROSTATIC PRESSURE OF 130 PSIG.
- DISINFECT POTABLE WATER SYSTEMS AS REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION. AS A MINIMUM, FILL ALL OF NEW SYSTEM WITH DISINFECTANT AND MAINTAIN FOR 24 HOURS. THEN THOROUGHLY FLUSH THE SYSTEM.
- MAINTAIN 36" CLEARANCE IN FRONT OF ELECTRICAL PANELS. THIS CLEARANCE SPACE SHALL EXTEND FROM THE FLOOR UPWARD, WITHOUT VERTICAL LIMIT.
- PROVIDE 3 COPIES OF AN OPERATING AND MAINTENANCE MANUAL, WHICH SHALL PROVIDE USABLE, FULL INFORMATION ON ALL MECHANICAL EQUIPMENT AND PRODUCTS. THE MANUAL SHALL BE IN A BLACK 3-RING BINDER WITH TITLE SHEET, TABLE OF CONTENTS, AND INDEX TABS. CUT SHEETS, PERFORMANCE DATA, INSTALLATION AND MAINTENANCE PROCEDURES, REPLACEMENT PARTS LISTS, WARRANTIES, AND HEALTH DEPARTMENT APPROVALS SHALL BE INCLUDED. DELIVER TO ARCHITECT FOR DISTRIBUTION TO THE OWNER.
- PLUMBING SUBMITTALS SHALL BE FURNISHED PRIOR TO ORDERING PLUMBING FIXTURES, EQUIPMENT, COMPONENTS, AND PRODUCTS. SUBMITTALS SHALL INCLUDE AN INDEX SHOWING TAB NUMBER OR LETTER, ITEM NUMBER, MARK NUMBERS, PRODUCT DESCRIPTION, AND PAGE. PLUMBING FIXTURES SHALL USE THE NOMENCLATURE SHOWN BELOW IN THE PLUMBING FIXTURE SCHEDULE AND AS SHOWN ON THE PLUMBING PLANS. PRODUCT DATA SHALL CLEARLY INDICATE WHICH MANUFACTURERS, MODEL

NUMBERS, OPTIONS, FEATURES, AND (WHERE APPLICABLE) ELECTRICAL CHARACTERISTICS ARE PROPOSED UNMARKED SUBMITTALS WHICH ARE AMBIGUOUS, UNCLEAR, AND/OR UNORGANIZED ARE SUBJECT TO REJECTION. ELECTRONICALLY PREPARED SUBMITTALS ARE ACCEPTABLE AND ENCOURAGED. FOLLOW INSTRUCTIONS IN "GENERAL CONDITIONS" WHEN ISSUING SUBMITTALS FOR REVIEW.

PLUMBING FIXTURE SCHEDULE
Administrative Building

- HWC **WATER CLOSET - HANDICAP - FLUSH VALVE - FLOOR MOUNTED:** Kohler Highline ADA-compliant K-4405-0, 17 1/2" high rim, white vitreous china, elongated, 1.28 gallon flush. Bemis 1955-C, open front heavy duty solid plastic elongated seat, less cover. Provide Sloan Royal 113-SMO exposed, battery powered, sensor exposed flush valve, 1.28 gallon flush. Provide TP variation when trap primer is needed.
- WC **WATER CLOSET - REGULAR - FLUSH VALVE - FLOOR MOUNTED:** Kohler Highline ADA-compliant K-4405-0, 17 1/2" high rim, white vitreous china, elongated, 1.28 gallon flush. Bemis 1955-C, open front heavy duty solid plastic elongated seat, less cover. Provide Sloan Royal 113-SMO exposed, battery powered, sensor exposed flush valve, 1.28 gallon flush. Provide TP variation when trap primer is needed. Although WC fixture is not required to be handicap, provide ADA compliant fixture anyhow.
- HURUR **URINAL - HANDICAP/REGULAR - FLUSH VALVE - WALL MOUNTED:** Kohler Bardon K-4904-BT-0, ultra-low-flow, high efficiency urinal, 14" extended rim, white vitreous china, 1 gallon flush. Provide Sloan Regal 186-SMO exposed, battery powered, sensor exposed flush valve, 1.0 gallon flush. Provide TP variation when trap primer is needed. Mount handicap urinal with rim height of 17" maximum, to comply with ADA requirement.
- LAV **LAVATORY - HANDICAP/REGULAR - WALL MOUNTED - VITREOUS:** Kohler Kingston K-2005-0, size 21 1/2" x 18 1/2", white vitreous china wall hung lavatory, with concealed arms. Sloan Optima ETF-80 sensor-activated electronic hand wash faucet, 0.5 GPM. Provide Zurn Z8743-PC solid top, open grid P.O. plug, Zurn Z8700-PC semi-cast P-trap, and Zurn Z8808LRQ-PC quarter turn lavatory supply. Provide Tru-Bro ADA-compliant cover for trap and supplies.
- SK **SINK - COUNTERTOP DROP-IN - DOUBLE COMPARTMENT - 18 GAUGE STAINLESS STEEL:** Elkay Gourmet LRAD3321-6-5-4, overall size 35" x 21 1/2" x 20 1/2" deep, 18 gauge, type 304 stainless steel sink, self-rimming, ADA compliant, 4 hole. Delta Classe 400LHPD single control kitchen faucet with spray. Provide Keeney 1443S3 stainless steel basket strainer and Keeney 5307PC867C 1 1/2" x 17 gauge P-trap with cleanout. Provide quarter turn lavatory supply valves. Provide Tru-Bro ADA-compliant cover for trap and supplies where pipes are exposed.
- EWV **ELECTRIC WATER COOLER - HANDICAP - SINGLE LEVEL:** Oasis PG8AC Barrier-Free Versacooler II wall mounted drinking fountain with integral chiller, 8 gal./hr., standard cabinet finish - sandstone powder-coated paint on steel. Provide supply stop and 1/4" P-trap. MOUNT SECURELY TO WALL.
- MB **MOP BASIN:** Fiat MSB-2424 "Molded-Stone" mop service basin, 24" x 24" x 10", stainless steel drain body. E-77-AA vinyl bumper guard. Fiat 830-AA service faucet with vacuum breaker, integral stops, adjustable wall brace, pail hook, and 3/4" hose thread on spout. Fiat 832-AA 3/4" long 3/4" rubber hose with 3/4" brass coupling at one end, with hose bracket. Fiat 889-C2 2 1/2" long x 3" wide 5-mop hanger.
- EWH **ELECTRIC WATER HEATER (Janitor's Closet):** 20 gallon storage, 4,500 watts input, 480 volts, 3 phase. A. O. Smith DEL-20, side-connect, tank-type water heater. Provide Flexcon PH-5 expansion tank. Provide temperature and pressure (T&P) relief valve; pipe full size to mop basin. Provide combination platform-drain pan under water heater, to support the water heater. Pipe drain to mop basin separately from T&P line. Confirm voltage and phase with Electrical Subcontractor PRIOR TO ORDERING.
- VRV **VACUUM RELIEF VALVE:** Watts N36-M1. Provide at top of drop to water heater's cold water inlet.
- IMB **ICE MAKER BOX:** Oatey 38681 recessed wall box with one quarter-turn valve.
- TP-J **TRAP PRIMER (Sink Tailpiece Type):** J. R. Smith 2698.
- FD-R **FLOOR DRAIN (Restroom):** Josam 3000A-50. Connect trap primer to floor drain, below floor.
- WCO **WALL CLEANOUT:** Josam 5500-1.
- YCO **YARD CLEANOUT:** Josam 5500 series.
- NFWH **NON-FREEZE WALL HYDRANT:** Woodford B65C freezeless box hydrant.
- PRV **PRESSURE REDUCING VALVE:** Watts 2235B. Set for 70 psi.

- ACCEPTABLE MANUFACTURERS:**
WATER CLOSETS, LAVATORIES:
American Standard, Kohler.
SEATS FOR WATER CLOSETS:
Bemis, Centoco, Church, Olssonite, manufacturers of water closets.
STAINLESS STEEL SINK:
Advance Tabco, Elkay, Just
FAUCETS:
Delta, Moen, Sloan, Speakman, Symmons, manufacturers of lavatories/sinks
ELECTRIC WATER COOLER:
Eico (Oasis), Elkay, Halsey Taylor, Haws
MOP BASIN:
Fiat, Mustee, Stern-Williams
ELECTRIC WATER HEATER:
Bradford-White, A. O. Smith, State
ICE MAKER BOX:
Guy Gray, IPS, Oatey
TRAP PRIMERS:
Cash, Precision, Mifab, Josam, J. R. Smith, Sioux Chief, Zurn
FLOOR DRAINS, CLEANOUTS:
Josam, J. R. Smith, Mifab, Wade, Zurn
NON-FREEZE WALL HYDRANTS:
Nibco, Woodford
BALL VALVES:
Kitz, Nibco, Watts
VACUUM RELIEF VALVE, PRESSURE REDUCING VALVE:
Conbraco, Febo, Watts



1 PLUMBING FLOOR PLAN - ADMINISTRATIVE BLDG.
90-P-1 SCALE: 1/8" = 1' - 0"

ESI
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3885 SHALLOFORD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ADMINISTRATIVE BLDG. - PLUMBING
FLOOR PLAN, SPECS, AND FIXTURE SCHEDULE

SHEET NO.
90-P-1

PRODUCT SPECIFICATION DRAWING QUICK STAND™ #50-SWHP-W Wall Mounted Equipment Platform

ALL DIMENSIONS IN INCHES

The Wall Mounted Equipment Platform is engineered to support water heaters up to 50 U.S. gallons (or other equipment up to 600 pounds total weight) mounted to a wall. This item also serves as a drain pan. See Installation Instructions for detail.

Product Information:

- Material:
 - Pan: 12 gage CRS, galvanized
 - Corner Brackets (4): 14 gage CRS, galvanized
 - C-Brackets (2): 16 gage CRS, galvanized
 - 45° Brackets (4): 12 gage, CRS, galvanized
 - Threaded Rod (2): Low carbon steel, zinc plated, 3/8" x 37.10" long
- Wide platform allows water heaters up to 26-1/2" diameter
- Watertight corners and drain fittings eliminate need for additional drain pan
- Static load rating 600 pounds with 2X safety factor (depending on structural anchorage)
- Professional Engineer stamped documentation available
- Includes PVC drain body 1" MIPT x 1" FS
- Galvanized steel construction
- Suspends with user supplied 3/8" hardware to mount to wall, 4 places
- Installation instructions for mounting to concrete or framed wall structure available
- Patent Pending

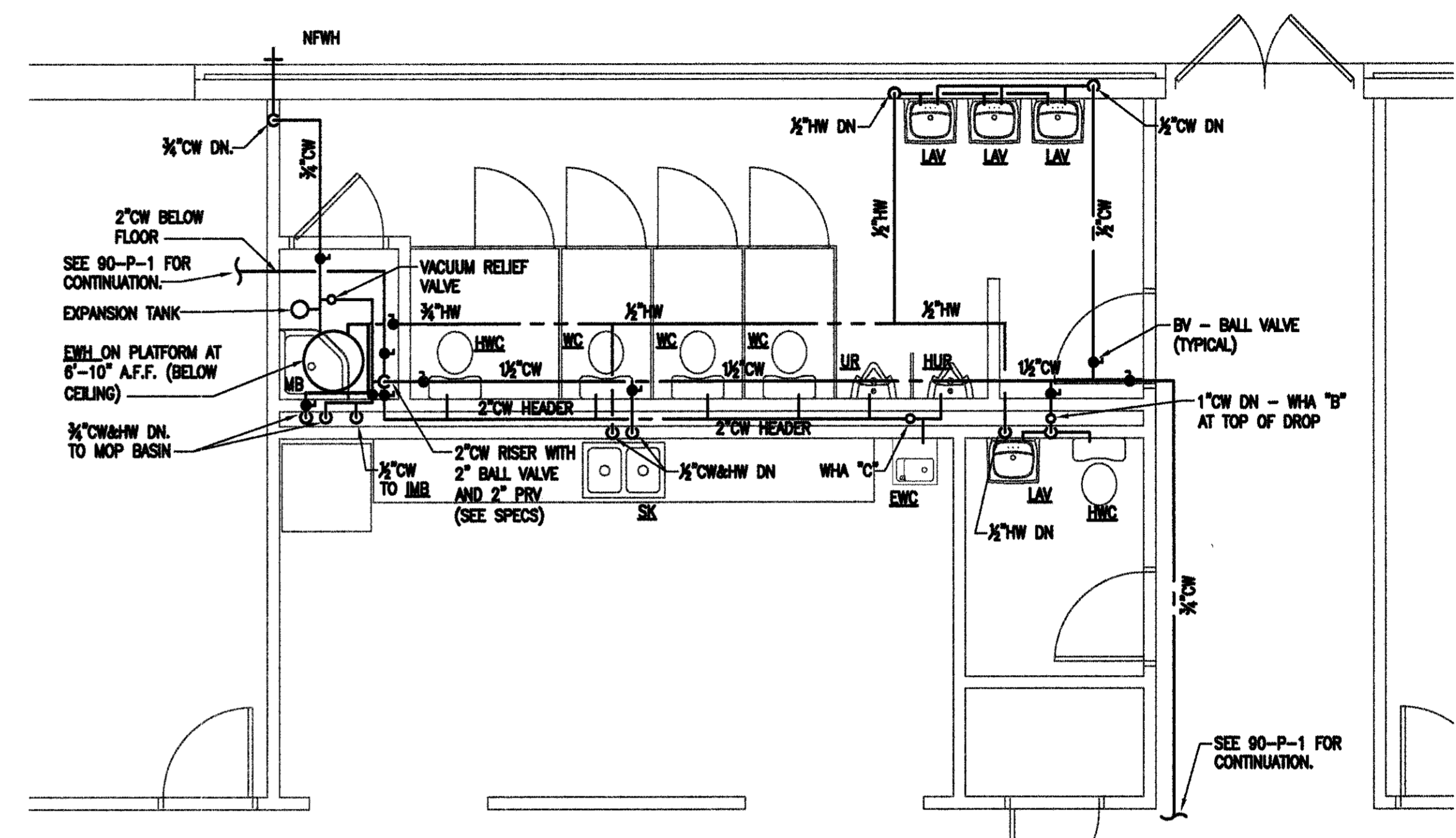
Product Submittal	
Job Name:	
Date:	
Part Number:	Qty:
Architect / Owner:	
Contractor:	
Notes:	

THIS INFORMATION IS PROPRIETARY TO HOLDRITE AND IS SUBJECT TO CHANGE WITHOUT NOTICE. IT MAY NOT BE REPRODUCED IN PART OR WHOLE WITHOUT WRITTEN AUTHORIZATION.

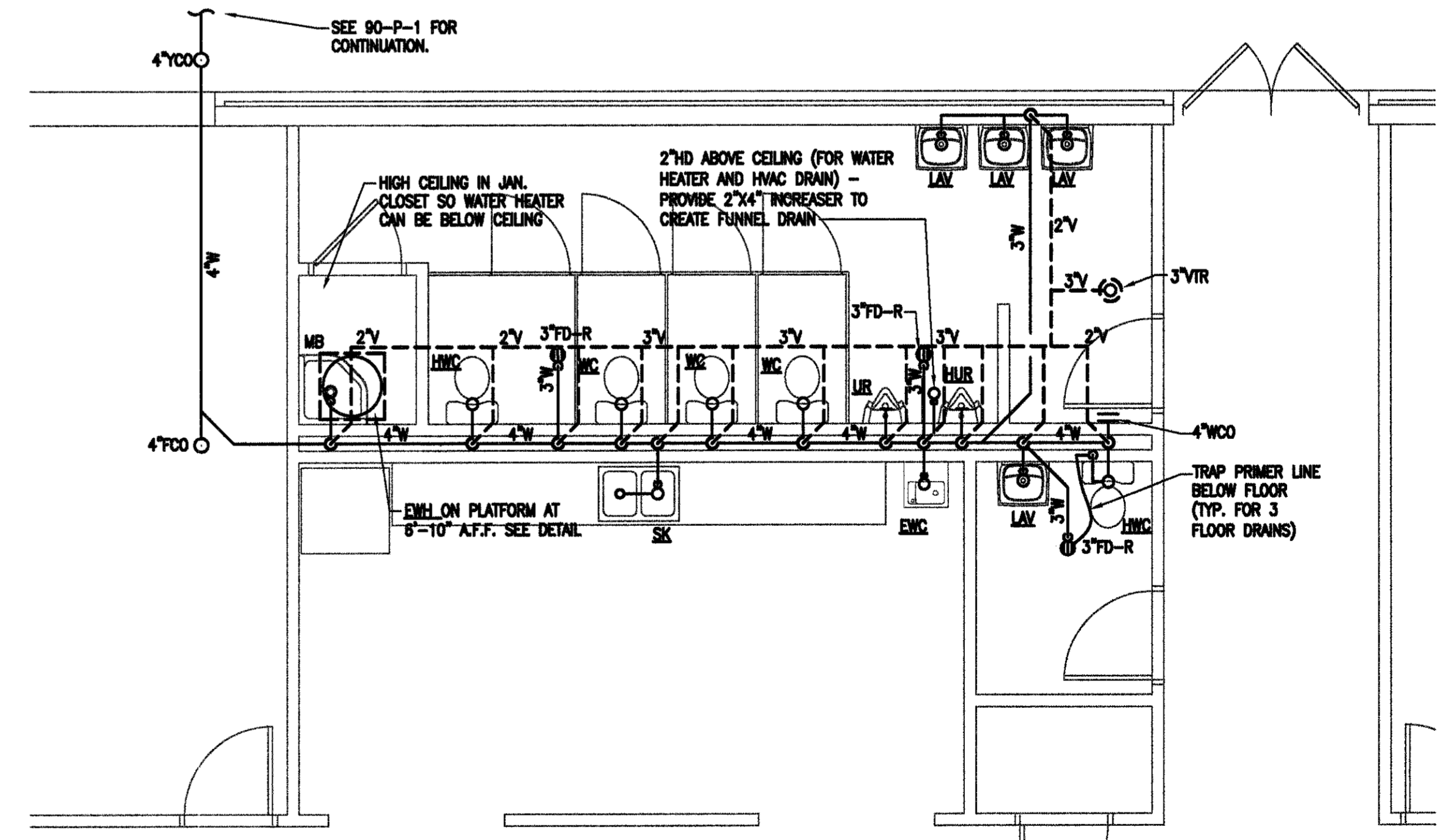
HOLDRITE®

CONVERTING MAKES MET METRIC INTO ENGINEERED SOLUTIONS™
 800-321-0316 OR 760-744-6944 / FAX: 760-744-0507 / WWW.HOLDRITE.COM
 spec_50-SWHP-W_RevG

3 WATER HEATER PLATFORM DETAIL
 P-1-2 NO SCALE:



1 WATER PLAN - ADMINISTRATIVE BLDG.
 90-P-2 SCALE: 1/4" = 1' - 0"



2 WASTE & VENT PLAN - ADMINISTRATIVE BLDG.
 90-P-2 SCALE: 1/4" = 1' - 0"

PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DESIGN: GHF
 DRAWN: WJM
 CHECK: GHF

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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATIVE BLDG. -
 ENLARGED PLUMBING PLANS AND DETAIL

SHEET NO.
 90-P-2



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: _____

DATE: AUGUST 2016	DATE
REVISION	REVISION
_____	_____

DRGN: AZ
DRWN: DV
CHK: AZ

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**INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY**

**INDIAN CREEK WRF
ELECTRICAL LEGEND AND NOTES**

SHEET NO. **E-001**

SCHEMATIC DIAGRAM SYMBOLS

	CONDUCTORS CONNECTED
	CONDUCTORS NOT CONNECTED
	CONNECTION POINT
	TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED.
	MAGNETIC-ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING
	CIRCUIT BREAKER, THERMAL-MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING
	FUSE WITH SIZE AND OPTIONAL IDENTIFICATION.
	DISCONNECT SWITCH, RATING OPTIONAL, 30 AMP, 600V RATED MINIMUM UNLESS OTHERWISE NOTED.
	FUSE DISCONNECT SWITCH, RATING OPTIONAL, 30 AMP, 600V MINIMUM UNLESS OTHERWISE NOTED.
	MOTOR (HP AS SHOWN, PHASES AS REQUIRED)
	MOTOR STARTER COIL
	THERMAL MOTOR OVERLOAD
	MOTOR CONTACT
	LIMIT SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	PRESSURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	TEMPERATURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	FLOW SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	LEVEL SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	PROXIMITY SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	PULLCORD SWITCH NORMALLY CLOSED AND NORMALLY OPEN
	SOLENOID VALVE
	MOMENTARY PUSHBUTTON NORMALLY CLOSED AND NORMALLY OPEN
	SELECTOR SWITCH NORMALLY NORMALLY CLOSED AND NORMALLY OPEN
	PILOT LIGHT A = AMBER B = BLUE G = GREEN R = RED W = WHITE X = LENS COLOR
	CONTROL RELAY
	CONTROL RELAY CONTACT NORMALLY CLOSED AND NORMALLY OPEN
	ALARM LIGHT
	ALARM HORN
	CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.
	CURRENT TRANSFORMER, PRIMARY/SECONDARY TURNS RATIO AS SHOWN.

ONE LINE DIAGRAM SYMBOLS

	CB-XXX LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAWOUT TYPE, FRAME TRIP SHOWN
	CB-XXX MOLDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN
	LIGHTNING ARRESTOR AND GROUND
	DS-XXX DISCONNECT OR ISOLATING SWITCH; CONTINUOUS RATING SHOWN
	MCP-XXX MAGNETIC-ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING
	FS-XXX FUSED SWITCH; FUSE AND SWITCH CONTINUOUS RATINGS SHOWN
	TFR-XXX POWER TRANSFORMER; PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN
	XF CURRENT TRANSFORMER; RATIO SHOWN (3 INDICATES NO. OF CT'S)
	METER METER SWITCH, xS: AS - AMMETER SWITCH VS - VOLTMETER SWITCH FS - FREQUENCY SWITCH
	PT POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS
	METER: A - AMMETER W - WATTMETER KWH - WATT-HOUR METER F - FREQUENCY METER VAR - VAR METER V - VOLTMETER
	FVNR SIZE X FULL VOLTAGE, NON-REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED
	FVR SIZE X FULL VOLTAGE, REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED
	XXHP VFD-XXX VARIABLE FREQUENCY DRIVE. NEMA SIZE INDICATED
	XXHP RVSS-XXX REDUCED VOLTAGE SOLID STATE DRIVE (SOFT START). NEMA SIZE INDICATED
	M-XXX MOTOR (HP AS SHOWN, PHASES AS REQUIRED)
	GENERATOR RECEPTACLE
	MTS-XXX MANUAL TRANSFER SWITCH
	P-XXX-X CABLE TAG: P-POWER CABLE C-CONTROL CABLE S-SHIELDED SIGNAL CABLE

CIRCUIT AND RACEWAY SYMBOLS

	RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED. (UNLESS OTHERWISE NOTED)
	HOME RUN - SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION
	EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5
	LIGHTING, RECEPTACLE, AND MISCELLANEOUS BRANCH CIRCUITING NOT SPECIFIED IN RACEWAY SCHEDULE: RUNS WITHOUT HATCH LINES SHALL CONTAIN TWO WIRES OF MINIMUM SIZE (#12) REQUIRED BY THE SPECS FOR THAT SYSTEM. OTHER CONDUCTOR QUANTITY SPECIFIED WITH HATCH LINES:
	NEUTRAL CONDUCTOR (#12), IF USED --- HALF STROKE
	PHASE CONDUCTORS #12, AS APPLICABLE -- FULL STROKE
	#12 MINIMUM EQUIPMENT GROUNDING CONDUCTOR ALWAYS REQUIRED. FOR MINIMUM SIZE PERMITTED REFER TO NEC TABLE 250-95. CONDUIT FILL PER NEC OR MINIMUM SIZE OF 3/4 INCH EXPOSED, 1 INCH ALL OTHER INSTALLATIONS, EXCEPT FLEX - 3/4 INCH.

GENERAL ABBREVIATIONS

AR	ALARM RELAY	MCC	MOTOR CONTROL CENTER
AS	AMMETER SELECTOR SWITCH	MCP	MOTOR CONTROL PANEL/ MOTOR CIRCUIT PROTECTOR
A, AMP	AMP(S), AMPERE(S)	MECH	MECHANICAL
AC	ALTERNATING CURRENT	MFR	MANUFACTURE(R)
AFF	ABOVE FINISHED FLOOR	MH	MANHOLE
AHAP	AS HIGH AS POSSIBLE	MIC	MICROPHONE
AIC	AMPS INTERRUPTING CAPACITY, SYMM.	MIN	MINIMUM
AL	ALUMINUM	MISC	MISCELLANEOUS
ALU	ALUMINUM	mM	MILLIMETER
AT	AMPERE TRIP	mV	MILLIVOLT
AF	AMPERE FRAME	MCM	MILLI CIRCULAR MILLS
AUTO	AUTOMATIC	MOP	MOTOR OPERATOR PANEL
AUX	AUXILIARY	MPR	MOTOR PROTECTION RELAY
AWG	AMERICAN WIRE GAUGE	MCB	MAIN CIRCUIT BREAKER
BC	BARE COPPER CONDUCTOR	MTR	MOTOR
BKR	BREAKER	MVS	MEDIUM VOLTAGE STARTER
C	CONDUCTOR/CONTACTOR	N/A	NOT APPLICABLE
C/B	CIRCUIT BREAKER	NC	NORMALLY CLOSED
CJB	CIRCUIT JUNCTION BOX	NEUT,N	NEUTRAL
CKT	CIRCUIT	NOT IN CONTRACT	NOT IN CONTRACT
CLG	CEILING	NO	NORMALLY OPEN
CR	CONTROL RELAY	NOM	NOMINAL
CND	CONDUIT	NP	NAMEPLATE
CONC	CONCRETE	NTS	NOT TO SCALE
CS	CONTROL SWITCH	OC	ON CENTER
CONT	CONTROL	OD	OUTSIDE DIAMETER
CPT	CONTROL POWER TRANSFORMER	OH	OVERHEAD
CT	CURRENT TRANSFORMER	OL's	OVERLOADS
CU	COPPER	OT	OIL TIGHT
D	DIAMETER	P	POLE
DB	DUCT BANK	PA	PUBLIC ADDRESS
DC	DIRECT CURRENT	PA	PUSHBUTTON, PULLBOX
DET	DETAIL	PE	PHOTO ELECTRIC CELL
DIAG	DIAGRAM	PF	POWER FACTOR
DPSH	DIFFERENTIAL PRESSURE SWITCH	PH	PHASE
DS	DISCONNECT SWITCH	PJB	POWER JUNCTION BOX
DWG	DRAWING	PLC	PROGRAMMABLE LOGIC CONTROLLER
EA	EACH	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	PP	POWER PANEL
EF	EXHAUST FAN	PAIR	PAIR
EL	ELEVATION	PRI	PRIMARY
ELEC	ELECTRIC(AL)	PS	PRESSURE SWITCH
EMER	EMERGENCY	PT	POTENTIAL TRANSFORMER
ENCL	ENCLOSURE/ENCLOSED	PVC	POLYVINYL CHLORIDE
EP	EXPLOSION PROOF EQUIP EQUIPMENT EXISTING	PWR	POWER
EX	EXISTING	QSH	SHEAR PIN LIMIT SWITCH
FCP	FURNISHED WITH EQUIPMENT PANEL	RC	REFLECTIVE CEILING
FDR	FEEDER	REC	RECEPTACLE
FLA	FULL LOAD AMPS	RCT	REACTOR
FPP	FIBER OPTIC DISTRIBUTION PANEL	REF	REFERENCE REQ'D REQUIRED
FS	FLOW SWITCH	RMS	ROOT MEAN SQUARE
FU	FUSE	RTD	RESISTANCE TEMPERATURE DETECTOR
FUT	FUTURE	SCH	SCHEDULE
FVNR	FULL VOLTAGE NON-REVERSING	SE	SPEED SENSOR
FVR	FULL VOLTAGE REVERSING	SEC	SECONDARY
GALV	GALVANIZED	SEL	SELECTOR
GEN	GENERATOR	SER	SERVICE ENTRANCE RATED
GFR	GROUND FAULT RELAY	SPDT	SINGLE POLE DOUBLE THROW
GRD	GROUND	SPEC	SPECIFICATION
GRS	GALVANIZED RIGID STEEL	SPHTR	MOTOR SPACE HEATER
H	HIGH	SPKR	SPEAKER
HGT	HEIGHT	SS	START/STOP
HH	HANDHOLE	SRL	SPEED SWITCH
HID	HIGH INTENSITY DISCHARGE	SUB	SUBSTATION
HP	HORSEPOWER	SW	SWITCH
HS	HAND STATION (SWITCH)	SYMM	SYMMETRICAL
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	SYS	SYSTEM
HZ	HERTZ (CYCLES PER SECOND)	SV	SOLENOID OPERATED VALVE
HOA	HAND/OFF/AUTO	SPB	SIGNAL PULL BOX
HMH	HIGH VOLTAGE MANHOLE	TB	TERMINAL BOX
ID	INSIDE DIAMETER	TEL	TELEPHONE
IMC	INDIVIDUAL MOTOR CONTROLLER	TEMP	TEMPERATURE
INTLK	INTERLOCK	TFR	TRANSFORMER
INST	INSTANTANEOUS	TH	THERMOSTAT
INSTR	INSTRUMENT	TJB	TERMINAL JUNCTION BOX
I/O	INPUT-OUTPUT	TSH	TEMPERATURE SWITCH HIGH
JB	JUNCTION BOX	TV	TELEVISION
KV	KILOVOLT	TYP	TYPICAL
KVA	KILOVOLT-AMPERE	TR	TIMING RELAY
KVAR	KILOVOLT-AMPERE REACTIVE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
KW	KILOWATT	TSVP	TWISTED SHIELDED PAIR
KWH	KILOWATT-HOUR	UG	UNDERGROUND
KAIC	KILO AMPERE INTERRUPTING CURRENT	UH	UNIT HEATER
L-O-R	LOCAL-OFF-REMOTE	UON	UNLESS OTHERWISE NOTED
L-O-A-R	LOWER-OFF-AUTO-RAISE	V	VOLT
L	LONG	VA	VOLT AMPERE
LC	LIGHTING CONTACTOR	VAR	VARIABLE FREQUENCY DRIVE
LCP	LOCAL CONTROL PANEL	VFD	VARIABLE FREQUENCY DRIVE
LP	LIGHTING PANEL	VSH	VIBRATION SWITCH
LOS	LOCK-OUT STOP	W	WATT, WIRE, WIDE
LSIG	LONG, SHORT, INSTANTANEOUS TRIP SETTING AND GROUND FAULT PROTECTION	W/O	WITHOUT
LST	LEVEL SWITCH LOW	WE	WEIGHT LOAD CELL
LSO	LIMIT SWITCH OPEN	WIP	WEATHERPROOF
LSC	LIMIT SWITCH CLOSED	XL	WARNING HORN/LIGHT
LTG	LIGHTING	XT	ANEMOMETER
LV	LOW VOLTAGE	ZS	POSITION (LIMIT) SWITCH
LSH	LEVEL SWITCH HIGH	ZSO	POSITION (LIMIT) SWITCH OPEN
M	MOTOR CONTACTOR	ZSC	POSITION (LIMIT) SWITCH CLOSED
MA	MILLIAMPERE	ZT	POSITION TRANSMITTER
MAX	MAXIMUM		
MCB	MAIN CIRCUIT BREAKER		

GROUNDING SYMBOLS

	GROUND ROD, 3/4" x 10'-0", COPPERCLAD (UNLESS OTHERWISE NOTED)
	GROUND ROD AND WELL
	COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT
	EXOTHERMIC TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT
	BARE COPPER GROUNDING CONDUCTOR - #2 UNLESS OTHERWISE NOTED. IF BURIED, MINIMUM 2'-6" BELOW GRADE.
	BURIED BARE COPPER GROUNDING CONDUCTOR - #4/0 UNLESS OTHERWISE NOTED. MINIMUM 2'-6" BELOW GRADE.

GENERAL NOTES:

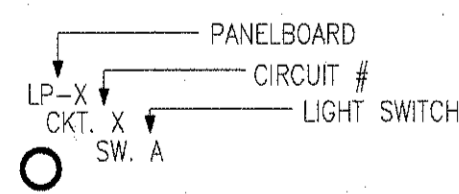
- SCOPE:
 - FURNISH ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, LIGHT FIXTURES, PANELS, SWITCHES, RECEPTACLES, DISCONNECTS, STARTERS, AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.
 - OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.
 - ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER AND SAFE OPERATION OR OTHERWISE REQUIRED BY CODE, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL CHARGE.
 - WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, NFPA 820, ANY OTHER LOCALLY ADOPTED CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.
- ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATED THE INSTALLATION ACCORDINGLY. THE EQUIPMENT WIRING SHALL INCLUDE ALL NECESSARY CABLES AND CONDUIT REQUIRED FOR THE PROPER AND SAFE EQUIPMENT OPERATION.
- ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR POWER AND LIGHTING WIRING. USE #14 AWG MINIMUM CONDUCTOR FOR SIGNAL WIRING. THE INSULATION FOR ALL CONDUCTORS SHALL BE THWN-2. SERVICE ENTRANCE CONDUCTORS SHALL BE XHHW. ALL CABLE INSTALLED IN CABLE TRAYS SHALL BE TC RATED.
- POWER WIRES SIZE #12 AWG AND #10 AWG SHALL BE SOLID TYPE. ALL OTHER SIZES SHALL BE STRANDED. CABLES BETWEEN THE VFD AND ASSOCIATED MOTOR SHALL BE SHIELDED POWER VFD RATED CABLES.
- ALL EXPOSED CONDUITS SHALL BE ALUMINUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM OF 3/4". ALL BURIED CONDUIT SHALL BE PVC-40, MINIMUM OF 1". ALL UNDERGROUND CONDUITS SHALL HAVE ALUMINUM ELBOWS. ALL UNDERGROUND CONDUITS CONTAINING SIGNAL CABLES SHALL BE ALUMINUM.
- ALL FITTINGS SHALL BE CAST WITH THREADED HUBS. ALL CONNECTIONS SHALL BE COMPRESSION TYPE.
- CONTRACTOR SHALL PROVIDE PULL STRING AND IDENTIFICATION LABELS AT EACH CONDUIT END FOR ALL SPARE CONDUITS.
- ALL DEMOLISHED ELECTRICAL MOTORS/INSTRUMENTS/EQUIPMENT/ETC. SHALL BE RETURNED TO THE OWNER FOR RE-USE OR AS SPARES.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED PULLBOXES AND/OR CONDUITS TO MEET NEC ARTICLE 314 FOR CABLE PULLS.
- ALL PHONE AND COMPUTER WIRING TO BE EMT CONDUIT.
- ELECTRICAL EQUIPMENT INSIDE THE ELECTRICAL ROOMS SHALL BE SIZED TO FIT THE AVAILABLE SPACE.
- CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND DISTANCES IN THE FIELD. IN CASE OF DISCREPANCY, CONTRACTOR SHALL INCLUDE A MORE EXPENSIVE OPTION.
- THE CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES, CABLES, AND CONDUITS FOR VENDOR SUPPLIED EQUIPMENT AT NO ADDITIONAL COST BASED ON THE ACTUAL APPROVED SHOP DRAWINGS.
- ALL EXPOSED PIPES 2" IN DIAMETER AND SMALLER SHALL BE ELECTRICALLY HEAT-TRACED. CONTRACTOR SHALL INCLUDE GFCI, 30ma, 120V, 20A RATED CIRCUIT BREAKERS AND ASSOCIATED CABLES AND CONDUITS FOR ALL REQUIRED HEAT TRACING.
- ALL SCHEMATIC WIRING DIAGRAMS ARE GENERAL IN NATURE. THE CONTRACTOR SHALL ADJUST NUMBER AND SIZE OF CABLES/CONDUITS BASED ON THE APPROVED VENDOR DRAWINGS.
- WHEN THE CABLES ARE LARGER THAN THE TERMINATING LUGS OR TERMINALS (DUE TO VOLTAGE DROP), THE CONTRACTOR SHALL PROVIDE A TERMINAL JUNCTION BOX FOR CABLE SIZE REDUCTION.

PLAN DRAWING SYMBOLS

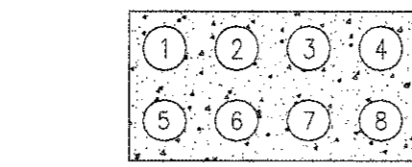
	MOTOR CONNECTION
	MOTOR STARTER, INDIVIDUAL - NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY
	COMBINATION MOTOR STARTER/DISCONNECT -- NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY
	DISCONNECT SWITCH. DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED. MOUNT AT 4'-8" TO CENTER OF DISCONNECT.
	FUSED DISCONNECT, NON-FUSED. PROVISION FOR CLASS R FUSES.
	FIELD INSTRUMENT CONNECTION
	START/STOP HAND STATION MOUNTED TO HANDRAIL (NEMA 4X UNLESS OTHERWISE NOTED)
	120V, 20A, 1P TOGGLE SWITCH [BLANK] = 1P TOGGLE SWITCH 2 = 2P TOGGLE SWITCH 3 = 3P TOGGLE SWITCH S = SLIDE DIMMER M = MOTOR RATED O = TOGGLE WITH OCCUPANCY SENSOR
	DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
	GFCI DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
	QUADPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
	ETHERNET (RJ-45) CONNECTION BOX. MOUNT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.
	TELEPHONE BOX. MOUNT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.
	JUNCTION BOX

LIGHTING/POLE SCHEDULE			
SYMBOL/TYPE	DESCRIPTION	LAMP/VOLTAGE	MOUNTING
A1	EMERGENCY INDOOR LIGHT FIXTURE LITHONIA #LEM2-LED-HO (OR APPROVED EQUAL)	LED 120V, 1PH 3WATT	CEILING/ WALL/ SURFACE
A2	EMERGENCY LIGHT COMBO FIXTURE, CORROSION RESISTANT LITHONIA #LH2618-S-1-R-H0806-SD (OR APPROVED EQUAL)	LED 120/277V, 1PH 18WATTS	CEILING/ WALL/ SURFACE
B1	LOW BAY INDOOR INDUSTRIAL LIGHT, CORROSION RESISTANT EVERMORE LED #EM-HB-B-150W (OR APPROVED EQUAL)	LED 120/277V, 1PH 160WATTS	CEILING
C1	WALLPACK FIXTURE, CORROSION RESISTANT WITHOUT PHOTOCELL LITHONIA #TWPLED-20C-T3M-MVOLT (OR APPROVED EQUAL)	LED 120/277V, 1PH 26WATTS	WALL/ SURFACE
C2	WALLPACK FIXTURE, CORROSION RESISTANT WITH PHOTOCELL LITHONIA #TWPLED-20C-T3M-MVOLT-PE(X) (OR APPROVED EQUAL)	LED 120/277V, 1PH 26WATTS	WALL/ SURFACE
D1	FLOOD LIGHT FIXTURE, CORROSION RESISTANT WITHOUT PHOTOCELL LITHONIA #DSXF3LED-8-A530/40K-WFL-MVOLT (OR APPROVED EQUAL)	LED 120V, 1PH 148WATTS	WALL/ SURFACE
D2	FLOOD LIGHT FIXTURE, CORROSION RESISTANT WITH PHOTOCELL LITHONIA #DSXF3LED-8-A530/40K-WFL-MVOLT-PE(X) (OR APPROVED EQUAL)	LED 120V, 1PH 148WATTS	WALL/ SURFACE
E1	8 FT AFF INDUSTRIAL STANCHION MOUNTED LIGHT, CORROSION RESISTANT WITHOUT PHOTOCELL CROUSE HINDS #MMV3LWUR3 WITH STANCHION POLE AND ATTACHMENTS (OR APPROVED EQUAL)	LED 120/277V, 1PH 29WATTS	STANCHION
E2	8 FT AFF INDUSTRIAL STANCHION MOUNTED LIGHT, CORROSION RESISTANT WITH PHOTOCELL CROUSE HINDS #MMV3LWUR3; #DZS20 WITH STANCHION POLE AND ATTACHMENTS (OR APPROVED EQUAL)	LED 120/277V, 1PH 29WATTS	STANCHION
F1	INDUSTRIAL INDOOR STRIP TYPE LIGHT FIXTURE (USED FOR ELECTRICAL ROOMS) LITHONIA #ZL1N-L48-5000LM-FST-MVOLT-40K-80CRI-WH (OR APPROVED EQUAL)	LED 120/277V, 1PH 42WATTS	CEILING/ SURFACE
F2	INDUSTRIAL 1' X 4' LIGHT FIXTURE, (FOR WET, DAMP, AND/OR COLD LOCATIONS) LITHONIA #FEM4LED/4L-IMAF-LWF (OR APPROVED EQUAL)	LED 120/277V, 1PH 60WATTS	CEILING/ SURFACE/ PENDANT
F3	2' X 4' LED INDOOR LIGHT FIXTURE LITHONIA #2TL4-46L-RW-A19-D50-LP840 (OR APPROVED EQUAL)	LED 120/277V, 1PH 50WATTS	CEILING/ RECESSED
F4	2' X 2' LED INDOOR LIGHT FIXTURE LITHONIA #2TL2-33L-RW-A19-D38-LP840 (OR APPROVED EQUAL)	LED 120/277V, 1PH 38WATTS	CEILING/ RECESSED
L1	25FT, 4" DIAMETER, ROUND STRAIGHT ALUMINUM POLE WITH ARM MOUNT LED FIXTURE WITHOUT PHOTOCELL LITHONIA (POLE): #RSA-25 (FIXTURE): #DSX1 LED 60C 700 40K T3M MVOLT MA DBLXD (OR APPROVED EQUAL)	LED 120V, 1PH 131WATTS	POLE
L2	25FT, 4" DIAMETER, ROUND STRAIGHT ALUMINUM POLE WITH ARM MOUNT LED FIXTURE WITH PHOTOCELL LITHONIA (POLE): #RSA-25 (FIXTURE): #DSX1 LED 60C 700 40K T3M MVOLT MA DBLXD (PHOTOCELL): #DLL 127F1.5JU (OR APPROVED EQUAL)	LED 120V, 1PH 131WATTS	POLE

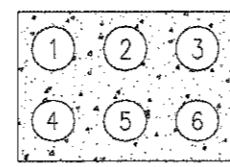
NOTE:
DESIGN IS BASED ON THE EQUIPMENT SHOWN IN THE ABOVE SCHEDULE. LIGHTS AND POLE SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PER SCHEDULE. ANY SUBSTITUTIONS SHALL BE APPROVED BY ENGINEER PRIOR TO PURCHASE/INSTALLATION.



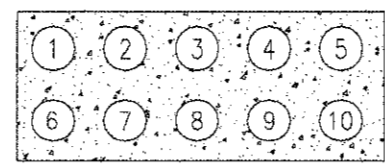
FIRE ALARM SYSTEM SYMBOLS	
	FIRE ALARM CONTROL PANEL
	PULL STATION
	FIRE ALARM STROBE (15 cd UNLESS NOTED)
	SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	SPEAKER/STROBE (CANDELA NOTED) WALL MOUNTED. (WP INDICATES WEATHERPROOF)
	FIRE ALARM ANNOUNCEMENT PANEL



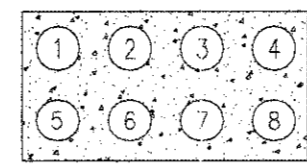
- DB-1**
 1 - 1.5" C. (120V POWER)
 2 - 1.25" C. (480V POWER)
 3 - 1.25" C. (480V POWER)
 4 - 1.5" C. (CONTROLS)
 5 - 1.5" C. (CONTROLS)
 6 - 1.5" C. (SPARE)
 7 - 1.25" C. (SIGNALS)
 8 - 1.5" C. (SPARE)



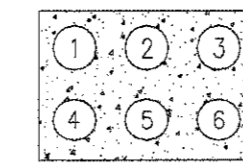
- DB-2**
 1 - 1.25" C. (LIGHTS & REC)
 2 - 1.25" C. (480V POWER)
 3 - 1.25" C. (480V POWER)
 4 - 2" C. (CONTROLS)
 5 - 2" C. (CONTROLS)
 6 - 2" C. (SPARE)



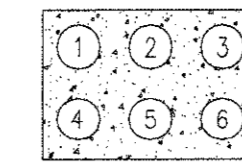
- DB-3**
 1 - 2" C. (LIGHTS & REC)
 2 - 1.25" C. (480V POWER)
 3 - 1.25" C. (480V POWER)
 4 - 1.25" C. (480V POWER)
 5 - 1.25" C. (480V POWER)
 6 - 3" C. (CONTROLS)
 7 - 3" C. (CONTROLS)
 8 - 1.25" C. (SIGNALS)
 9 - 3" C. (SPARE)
 10 - 1.25" C. (SPARE)



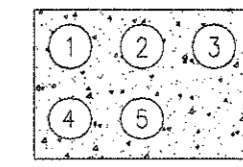
- DB-4**
 1 - 1.5" C. (120V POWER)
 2 - 1.5" C. (480V POWER)
 3 - 1.5" C. (480V POWER)
 4 - 1.5" C. (SPARE)
 5 - 3" C. (CONTROLS)
 6 - 3" C. (SPARE)
 7 - 3" C. (SIGNALS)
 8 - 3" C. (SPARE)



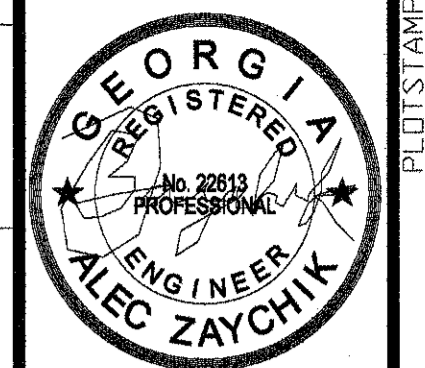
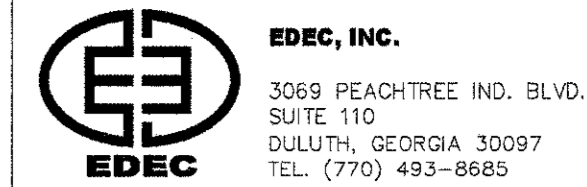
- DB-5**
 1 - 1.25" C. (120V POWER)
 2 - 1.25" C. (480V POWER)
 3 - 1.5" C. (480V POWER)
 4 - 2" C. (CONTROLS)
 5 - 2" C. (SPARE)
 6 - 1.5" C. (SIGNALS)



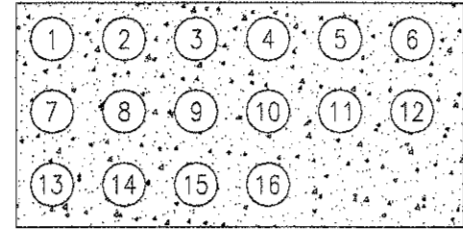
- DB-6**
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 2 - 1.25" C. (480V POWER)
 3 - 1.25" C. (SPARE)
 4 - 2" C. (CONTROLS)
 5 - 2" C. (SPARE)
 6 - 1.5" C. (SIGNALS)



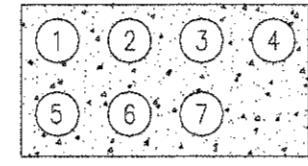
- DB-7**
 1 - 1.25" C. (LIGHTS & REC)
 2 - 1.5" C. (480V POWER)
 3 - 1.5" C. (SPARE)
 4 - 2.5" C. (CONTROLS)
 5 - 2.5" C. (SPARE)



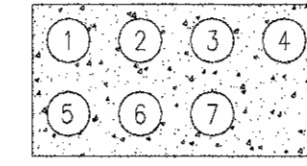
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30067
 (770) 429-0001



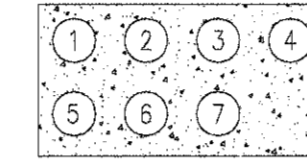
- DB-8**
 1 - 2" C. (LIGHTS & REC)
 2 - 2" C. (120V POWER)
 3 - 1.25" C. (480V POWER)
 4 - 1.25" C. (480V POWER)
 5 - 1.25" C. (480V POWER)
 6 - 1.25" C. (480V POWER)
 7 - 1.5" C. (480V POWER)
 8 - 1.5" C. (480V POWER)
 9 - 3" C. (CONTROLS)
 10 - 3" C. (CONTROLS)
 11 - 3" C. (CONTROLS)
 12 - 2" C. (SIGNALS)
 13 - 3" C. (SIGNALS)
 14 - 3" C. (SPARE)
 15 - 3" C. (SPARE)
 16 - 2" C. (SPARE)



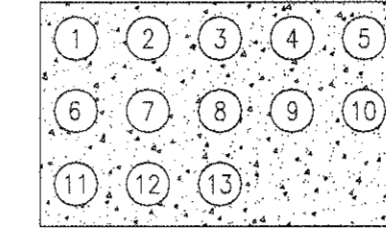
- DB-9**
 1 - 4" C. (480V POWER)
 2 - 4" C. (480V POWER)
 3 - 4" C. (480V POWER)
 4 - 4" C. (480V POWER)
 5 - 4" C. (480V POWER)
 6 - 1.25" C. (480V POWER)
 7 - 4" C. (SPARE)



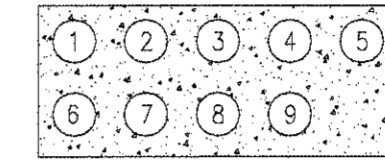
- DB-10**
 1 - 3" C. (120V POWER)
 2 - 2" C. (480V POWER)
 3 - 2" C. (480V POWER)
 4 - 3" C. (SIGNALS)
 5 - 3" C. (SIGNALS)
 6 - 2" C. (CONTROLS)
 7 - 3" C. (SPARE)



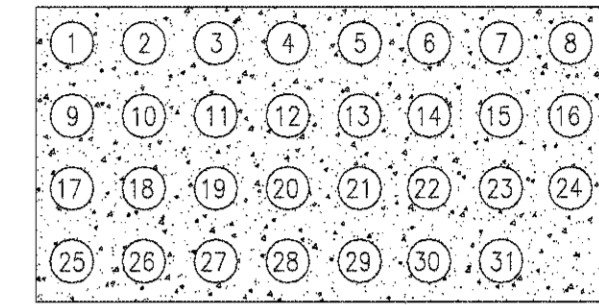
- DB-11**
 1 - 3" C. (120V POWER)
 2 - 2" C. (480V POWER)
 3 - 2" C. (480V POWER)
 4 - 3" C. (SIGNALS)
 5 - 3" C. (SIGNALS)
 6 - 2" C. (CONTROLS)
 7 - 3" C. (SPARE)



- DB-12**
 1 - 3" C. (120V POWER)
 2 - 3" C. (120V POWER)
 3 - 2" C. (480V POWER)
 4 - 2" C. (480V POWER)
 5 - 2" C. (480V POWER)
 6 - 2" C. (480V POWER)
 7 - 3" C. (CONTROLS)
 8 - 3" C. (CONTROLS)
 9 - 3" C. (SIGNALS)
 10 - 3" C. (SIGNALS)
 11 - 3" C. (SPARE)
 12 - 3" C. (SPARE)
 13 - 3" C. (SPARE)

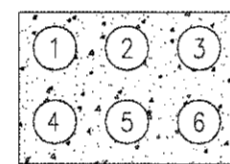


- DB-13**
 1 - 4" C. (480V POWER)
 2 - 4" C. (480V POWER)
 3 - 4" C. (480V POWER)
 4 - 4" C. (480V POWER)
 5 - 4" C. (480V POWER)
 6 - 4" C. (480V POWER)
 7 - 4" C. (SPARE)
 8 - 1.5" C. (FIBER)
 9 - 1.5" C. (SPARE)

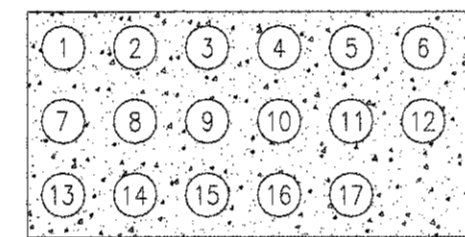


- DB-14**
 1 - 4" C. (120V POWER)
 2 - 4" C. (120V POWER)
 3 - 4" C. (SPARE)
 4 - 4" C. (SPARE)
 5 - 1.5" C. (480V POWER)
 6 - 2" C. (480V POWER)
 7 - 2" C. (480V POWER)
 8 - 4" C. (480V POWER)
 9 - 4" C. (480V POWER)
 10 - 4" C. (480V POWER)
 11 - 4" C. (480V POWER)
 12 - 4" C. (480V POWER)
 13 - 4" C. (480V POWER)
 14 - 2" C. (480V POWER)
 15 - 2" C. (480V POWER)
 16 - 2" C. (480V POWER)
 17 - 2" C. (480V POWER)

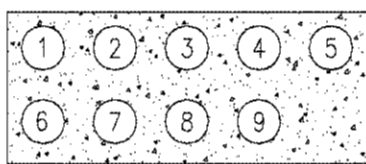
- 18 - 2" C. (480V POWER)
 19 - 4" C. (SPARE)
 20 - 2" C. (SPARE)
 21 - 3" C. (SPARE)
 22 - 4" C. (SIGNALS)
 23 - 4" C. (SIGNALS)
 24 - 4" C. (SIGNALS)
 25 - 4" C. (SPARE)
 26 - 4" C. (CONTROLS)
 27 - 4" C. (CONTROLS)
 28 - 4" C. (CONTROLS)
 29 - 4" C. (SPARE)
 30 - 2" C. (FIBER)
 31 - 2" C. (SPARE)



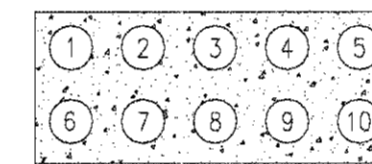
- DB-15**
 1 - 2" C. (120V POWER)
 2 - 2" C. (480V POWER)
 3 - 2" C. (SPARE)
 4 - 2" C. (SIGNALS)
 5 - 2" C. (CONTROLS)
 6 - 2" C. (SPARE)



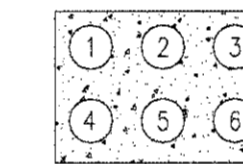
- DB-16**
 1 - 2" C. (120V POWER)
 2 - 1.5" C. (480V POWER)
 3 - 2" C. (480V POWER)
 4 - 2" C. (480V POWER)
 5 - 4" C. (480V POWER)
 6 - 4" C. (480V POWER)
 7 - 4" C. (480V POWER)
 8 - 4" C. (480V POWER)
 9 - 4" C. (480V POWER)
 10 - 4" C. (480V POWER)
 11 - 4" C. (SPARE)
 12 - 2" C. (SPARE)
 13 - 3" C. (CONTROLS)
 14 - 3" C. (SPARE)
 15 - 2" C. (FIBER)
 16 - 2" C. (SIGNALS)
 17 - 3" C. (SPARE)



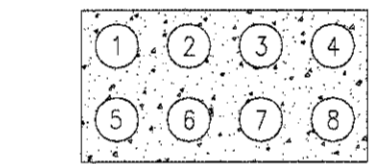
- DB-17**
 1 - 4" C. (480V POWER)
 2 - 4" C. (480V POWER)
 3 - 4" C. (480V POWER)
 4 - 2" C. (480V POWER)
 5 - 1.5" C. (SPARE)
 6 - 3" C. (CONTROLS)
 7 - 2" C. (SPARE)
 8 - 1.25" C. (FIBER)
 9 - 1.5" C. (SPARE)



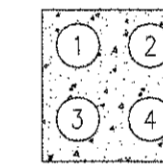
- DB-18**
 1 - 2" C. (120V POWER)
 2 - 1.5" C. (480V POWER)
 3 - 2" C. (480V POWER)
 4 - 2" C. (480V POWER)
 5 - 1.5" C. (SPARE)
 6 - 3" C. (CONTROLS)
 7 - 2" C. (SPARE)
 8 - 1.25" C. (FIBER)
 9 - 2" C. (SIGNALS)
 10 - 2" C. (SPARE)



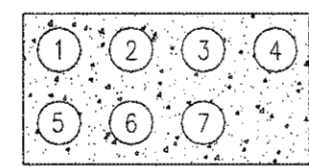
- DB-19**
 1 - 1.5" C. (120V POWER)
 2 - 1.5" C. (SPARE)
 3 - 1.5" C. (480V POWER)
 4 - 1.25" C. (FIBER)
 5 - 1.5" C. (TELEPHONE)
 6 - 1.5" C. (SPARE)



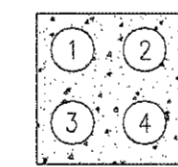
- DB-20**
 1 - 1.5" C. (120V POWER)
 2 - 2" C. (480V POWER)
 3 - 2" C. (480V POWER)
 4 - 2" C. (SPARE)
 5 - 3" C. (CONTROLS)
 6 - 2" C. (SPARE)
 7 - 1.5" C. (TELEPHONE)
 8 - 2" C. (SIGNALS)



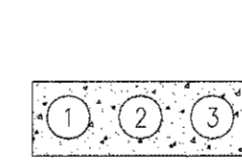
- DB-21**
 1 - 2" C. (CONTROLS)
 2 - 2" C. (480V POWER)
 3 - 1.25" C. (SIGNALS)
 4 - 2" C. (SPARE)



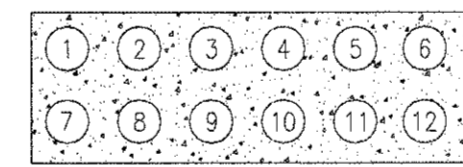
- DB-22**
 1 - 1.5" C. (120V POWER)
 2 - 2" C. (480V POWER)
 3 - 2" C. (SPARE)
 4 - 1.5" C. (SPARE)
 5 - 1.5" C. (TELEPHONE)
 6 - 1.5" C. (SIGNALS)
 7 - 1.5" C. (SPARE)



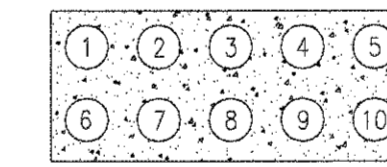
- DB-23**
 1 - 2" C. (480V POWER)
 2 - 2" C. (SPARE)
 3 - 2" C. (SPARE)
 4 - 1.5" C. (TELEPHONE)



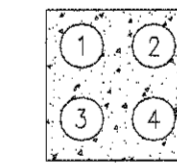
- DB-24**
 1 - 1.25" C. (120V POWER)
 2 - 1.25" C. (SPARE)
 3 - 1.25" C. (SIGNALS)



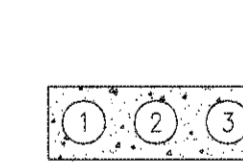
- DB-25**
 1 - 4" C. (480V POWER TO ATS-ERM)
 2 - 4" C. (480V POWER TO ATS-ERM)
 3 - 4" C. (480V POWER TO ATS-ERM)
 4 - 4" C. (480V POWER TO ATS-ERM)
 5 - 4" C. (480V POWER TO ATS-ERM)
 6 - 4" C. (480V POWER TO ATS-ERM)
 7 - 4" C. (SPARE)
 8 - 1.5" C. (480V FROM PP-ERM TO GEN. TFR)
 9 - 1.5" C. (CONTROLS TO SCADA)
 10 - 1.5" C. (GENERATOR START FROM ATS-ERM)
 11 - 1.5" C. (SPARE)
 12 - 1.5" C. (SPARE)



- DB-26**
 1 - 4" C. (480V POWER TO ATS-ERM)
 2 - 4" C. (480V POWER TO ATS-ERM)
 3 - 4" C. (480V POWER TO ATS-ERM)
 4 - 4" C. (480V POWER TO ATS-ERM)
 5 - 4" C. (480V POWER TO ATS-ERM)
 6 - 4" C. (480V POWER TO ATS-ERM)
 7 - 4" C. (480V POWER TO ATS-ERM)
 8 - 4" C. (480V POWER TO ATS-ERM)
 9 - 4" C. (SPARE)
 10 - 4" C. (SPARE)



- DB-27**
 1 - 1.5" C. (120V POWER)
 2 - 1.5" C. (CONTROLS)
 3 - 1.5" C. (LIGHTS/REC)
 4 - 1.5" C. (SPARE)



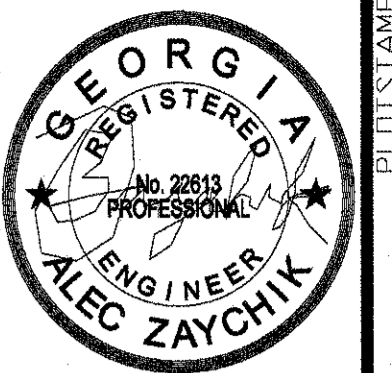
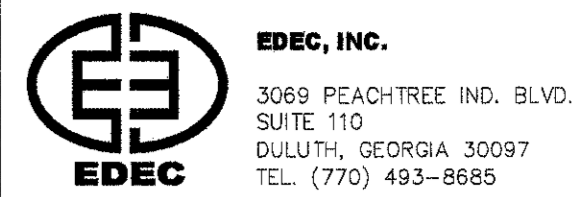
- DB-28**
 1 - 1.5" C. (FIBER/CAT 6)
 2 - 2" C. (TELEPHONE)
 3 - 1.5" C. (SPARE)

PROJECT NUMBER: _____ DATE: AUGUST 2016
 REVISION: _____ DATE: _____
 DESIGN: AZ DRAWN: DV CHECK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WRF
 LIGHTING FIXT. SCH. AND DUCTBANK SECT.

SHEET NO.
 E-002



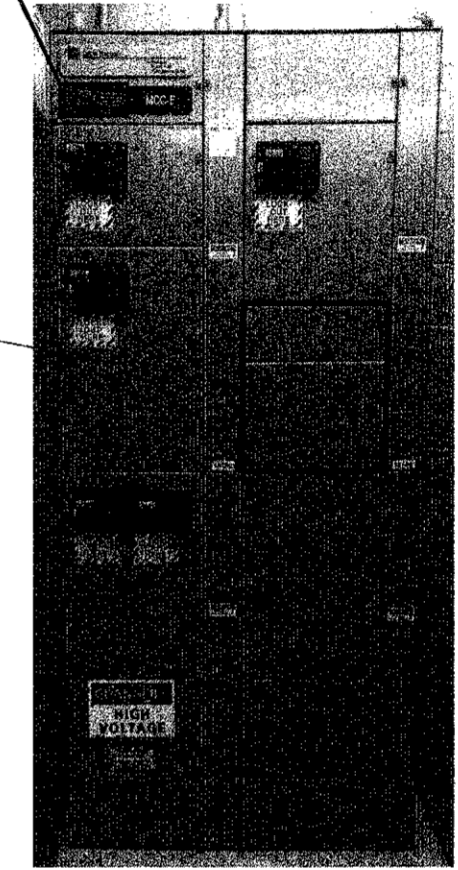
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

- NOTES:**
1. THE CIRCUIT BREAKER SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
 2. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 300A, 3P CIRCUIT BREAKER INTO THE EXISTING MCC-E. THE BREAKER SHALL BE OF THE SAME MANUFACTURER AS MCC-E (EATON) AND SHALL HAVE 42 KAIC RATING.
 3. CONTRACTOR SHALL CHANGE THE EXISTING MAIN BREAKER TRIP SETTING TO 3,200 AMP AND REARRANGE MAIN BREAKER LUGS FOR TOP ENTRY OR PROVIDE NEW LUGS IF NECESSARY TO ACCEPT THE INCOMING CABLES. THE CONTRACTOR SHALL PROVIDE TEMPORARY GENERATOR FOR ANY POWER OUTAGES REQUIRED FOR MAIN SWITCHGEAR MODIFICATIONS.
 4. CONTRACTOR SHALL PROVIDE AND INSTALL A NEW SECTION TO THE EXISTING MAIN SWITCHGEAR. THE SECTION SHALL CONTAIN A NEW 2,000 AMP, 3P, 480V CIRCUIT BREAKER WITH ALL ASSOCIATED PROTECTION AND ACCESSORIES. THE BREAKER SHALL BE BY "EATON" AND SHALL MATCH THE PROTECTION AND ACCESSORIES OF THE OTHER EXISTING FEEDER BREAKERS. THE EXISTING SWITCHGEAR IS "EATON" G.O. NUMBER: PAT02002
 5. THE CONTRACTOR SHALL RELOCATE EXISTING 1,500KW, 480V, 3PH DIESEL GENERATOR FROM SPRINGDALE WWTP TO THE INDIAN CREEK WWTP. THE CONTRACTOR IS RESPONSIBLE TO PAY FOR ALL EXPENSES ASSOCIATED WITH THE GENERATOR RELOCATION. THE CONTRACTOR SHALL SERVICE THE GENERATOR, INCLUDE LOAD TEST PERFORMED BY CUMMINS-ONAN AND A FULL TANK OF DIESEL FUEL.
 6. ALL CIRCUIT BREAKERS 1200AF OR LARGER SHALL HAVE ARC REDUCTION MAINTENANCE (ARM) SWITCH TO REDUCE ARC FLASH PER NEC. 240.87.
 7. MCC-BL SHALL BE PROVIDED WITH POWER METER CAPABLE OF MEASURING VOLTS, AMPS, KW AND POWER FACTOR. ALL METER PARAMETERS SHALL BE AVAILABLE FOR TRANSFERRING TO THE PLANT SCADA SYSTEM THROUGH INTEGRAL ETHERNET PORT. COORDINATE PORT REQUIREMENT WITH SCADA SYSTEM INTEGRATOR.
 8. CONTRACTOR SHALL INCLUDE ALL REQUIRED MODIFICATIONS TO THE GENERATOR AND NEW LUGS IF NECESSARY TO ACCOMMODATE POWER CABLES FROM ATS.
 9. CONTRACTOR SHALL PROVIDE AND INSTALL 480V/3PH PANELBOARD PP-ERM TO BE LOCATED IN EXISTING ELECTRICAL BUILDING (DWG. E-202).

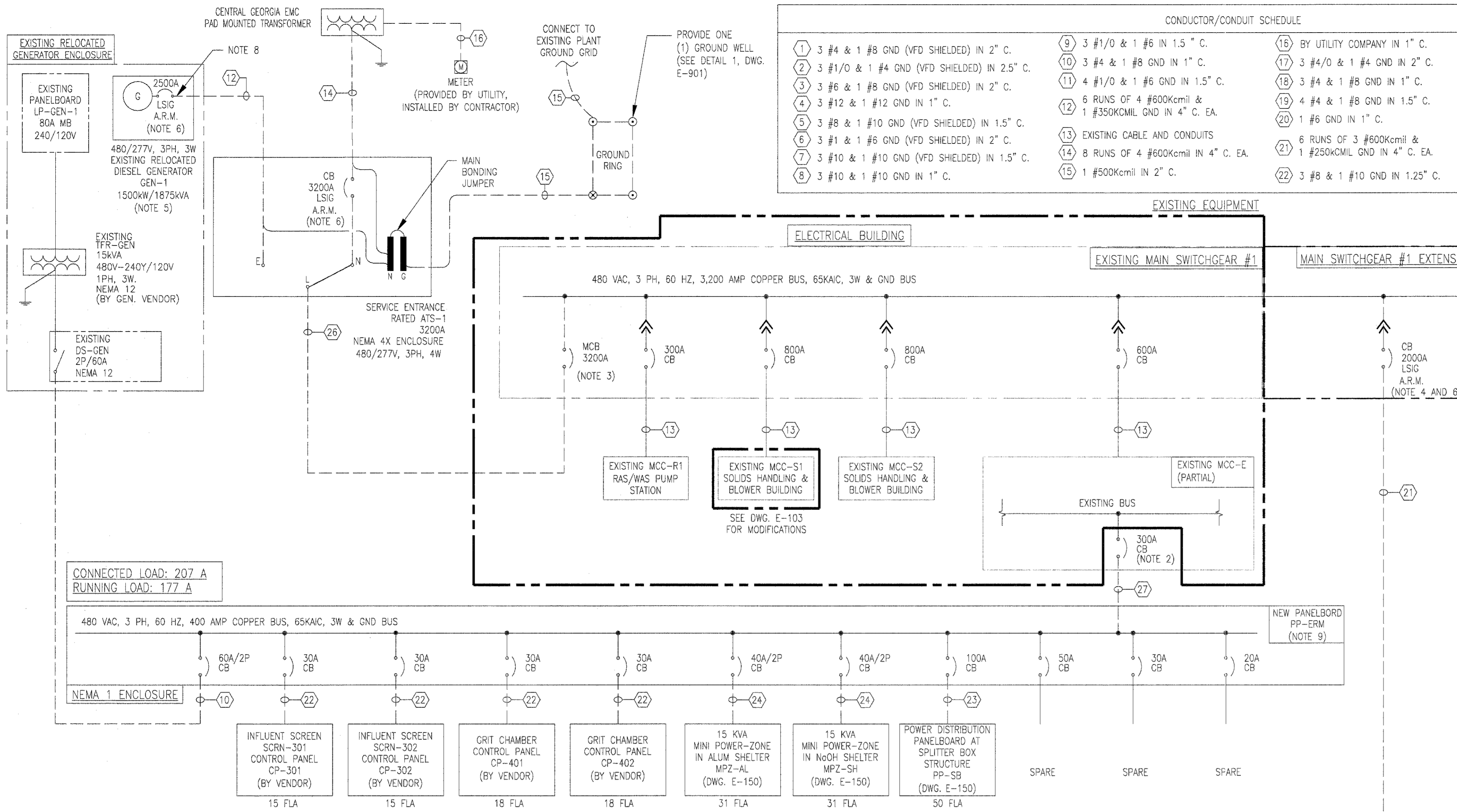
CONDUCTOR/CONDUIT SCHEDULE

1 3 #4 & 1 #8 GND (VFD SHIELDED) IN 2" C.	9 3 #1/0 & 1 #6 IN 1.5" C.	16 BY UTILITY COMPANY IN 1" C.	23 3 #1 & 1 #8 GND IN 1.5" C.
2 3 #1/0 & 1 #4 GND (VFD SHIELDED) IN 2.5" C.	10 3 #4 & 1 #8 GND IN 1" C.	17 3 #4/0 & 1 #4 GND IN 2" C.	24 2 #8 & 1 #10 GND IN 1" C.
3 3 #6 & 1 #8 GND (VFD SHIELDED) IN 2" C.	11 4 #1/0 & 1 #6 GND IN 1.5" C.	18 3 #4 & 1 #8 GND IN 1" C.	25 CABLE BY VENDOR IN 1.5" C.
4 3 #12 & 1 #12 GND IN 1" C.	12 6 RUNS OF 4 #600Kcmil & 1 #350Kcmil GND IN 4" C. EA.	19 4 #4 & 1 #8 GND IN 1.5" C.	26 8 RUNS OF 3 #600Kcmil & 1 #500Kcmil IN 4" C. EA.
5 3 #8 & 1 #10 GND (VFD SHIELDED) IN 1.5" C.	13 EXISTING CABLE AND CONDUITS	20 1 #6 GND IN 1" C.	27 3 #350Kcmil & 1 #4 GND IN 2.5" C.
6 3 #1 & 1 #6 GND (VFD SHIELDED) IN 2" C.	14 8 RUNS OF 4 #600Kcmil IN 4" C. EA.	21 6 RUNS OF 3 #600Kcmil & 1 #250Kcmil GND IN 4" C. EA.	
7 3 #10 & 1 #10 GND (VFD SHIELDED) IN 1.5" C.	15 1 #500Kcmil IN 2" C.	22 3 #8 & 1 #10 GND IN 1.25" C.	
8 3 #10 & 1 #10 GND IN 1" C.			

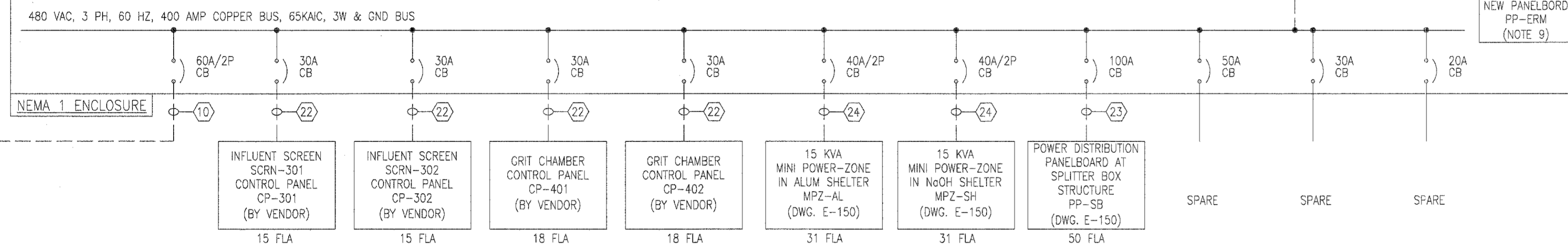
PAT02002 IT.015-FVC
AUG.00 H.BUS 600A 65
480V 3PH 3W 60HZ
SECT. 1-2-600A



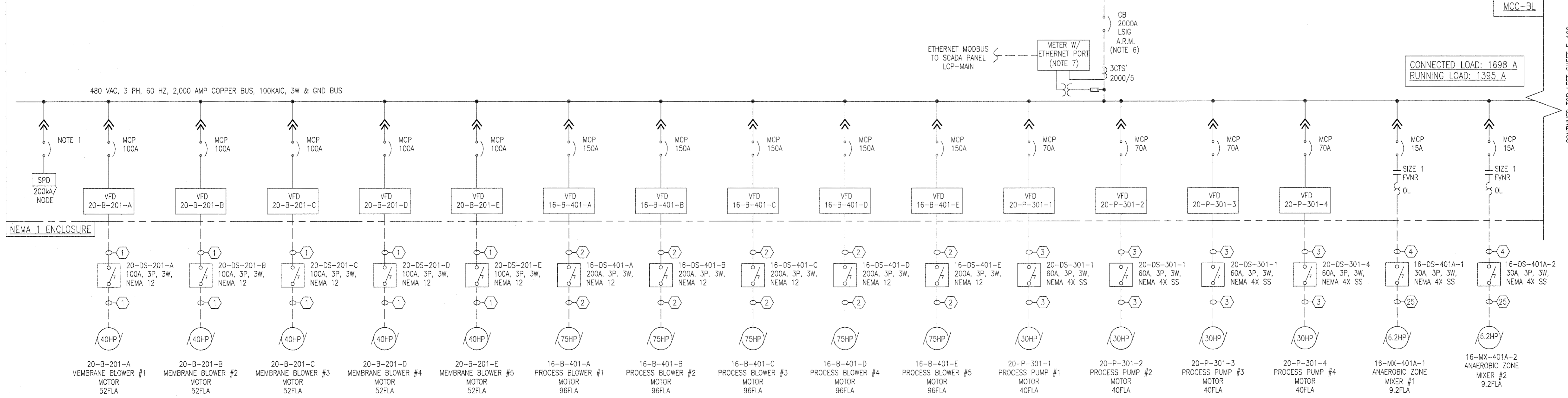
2 EXISTING MCC-E MODIFICATIONS



CONNECTED LOAD: 207 A
RUNNING LOAD: 177 A



PROCESS/BLOWERS BUILDING - ELECTRICAL ROOM



CONNECTED LOAD: 1698 A
RUNNING LOAD: 1395 A

1 INDIAN CREEK WWTP PARTIAL ONE LINE DIAGRAM

PROJECT NUMBER: --- DATE: AUGUST 2016

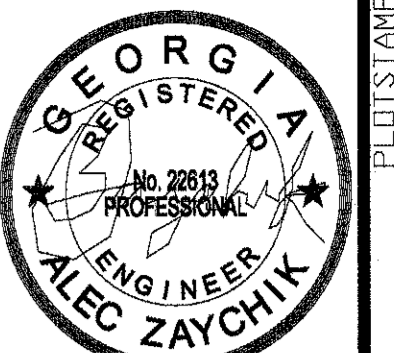
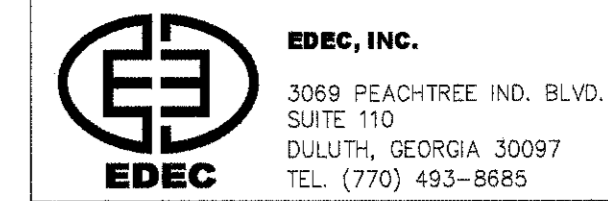
REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

ONE LINE DIAGRAM



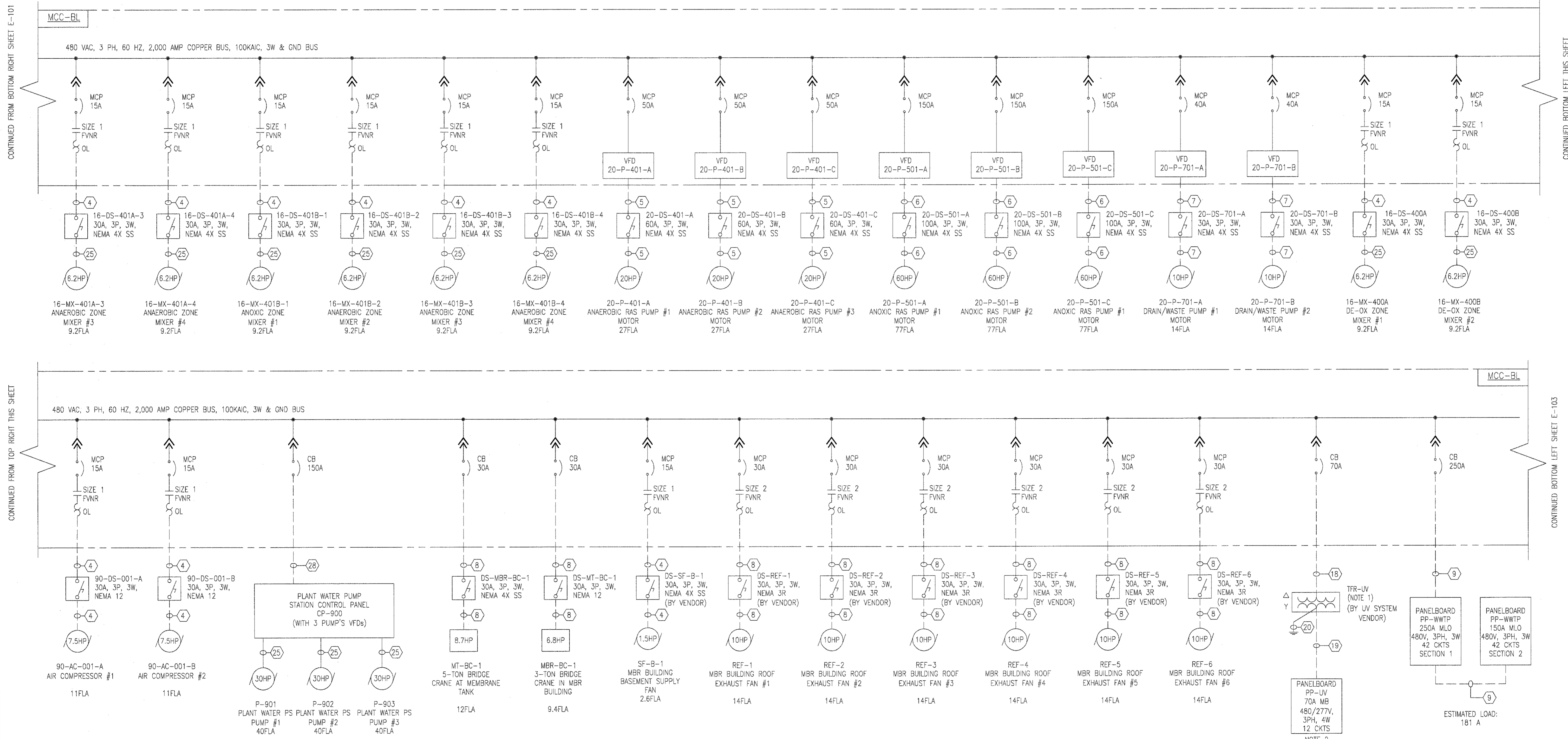
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

CONDUCTOR/CONDUIT SCHEDULE

1 3 #4 & 1 #8 GND (VFD SHIELDED) IN 2" C.	9 3 #250KCMIL & 1 #4 GND IN 2" C.	16 BY UTILITY COMPANY	23 3 #1 & 1 #8 GND IN 1.5" C.
2 3 #1/0 & 1 #4 GND (VFD SHIELDED) IN 2.5" C.	10 3 #4 & 1 #8 GND IN 1" C.	17 3 #4/0 & 1 #4 GND IN 2" C.	24 2 #10 & 1 #10 GND IN 1" C.
3 3 #6 & 1 #8 GND (VFD SHIELDED) IN 2" C.	11 4 #1/0 & 1 #6 GND IN 1.5" C.	18 3 #4 & 1 #8 GND IN 1" C.	25 CABLE BY VENDOR IN 1.5" C.
4 3 #12 & 1 #12 GND IN 1" C.	12 6 RUNS OF 4 #600Kcmil & 1 #350KCMIL GND IN 4" C. EA.	19 4 #4 & 1 #8 GND IN 1.5" C.	26 8 RUNS OF 3 #600Kcmil & 1 #500Kcmil IN 4" C. EA.
5 3 #8 & 1 #10 GND (VFD SHIELDED) IN 1.5" C.	13 EXISTING CABLE AND CONDUITS	20 1 #6 GND IN 1" C.	27 3 #350Kcmil & 1 #4 GND IN 2.5" C.
6 3 #1 & 1 #6 GND (VFD SHIELDED) IN 2" C.	14 8 RUNS OF 4 #600Kcmil IN 4" C. EA.	21 5 RUNS OF 3 #600Kcmil & 1 #250KCMIL GND IN 4" C. EA.	28 3 #1/0 & 1 #6 GND IN 1.5" C.
7 3 #10 & 1 #10 GND (VFD SHIELDED) IN 1.5" C.	15 1 #500Kcmil IN 2" C.	22 3 #8 & 1 #10 GND IN 1.25" C.	
8 3 #10 & 1 #10 GND IN 1" C.			

NOTES:

- TRANSFORMER TFR-UV TO BE PROVIDED BY UV VENDOR. TRANSFORMER RATING AND VOLTAGE SHALL BE AS REQUIRED BY UV SYSTEM SELECTED VENDOR.
- CONTRACTOR SHALL ADJUST PANELBOARD PP-UV VOLTAGE RATING AND ASSOCIATED CIRCUIT BREAKERS BASED ON THE SELECTED UV SYSTEM VENDOR REQUIREMENTS.



1 INDIAN CREEK WWTP PARTIAL ONE LINE DIAGRAM

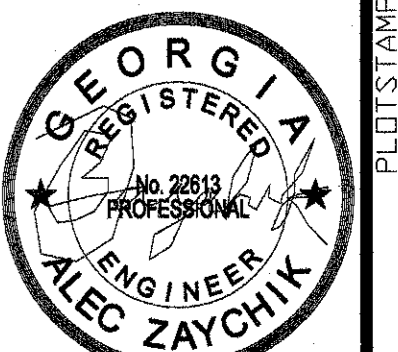
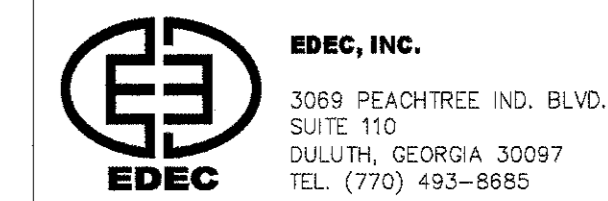
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION:	DATE:

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

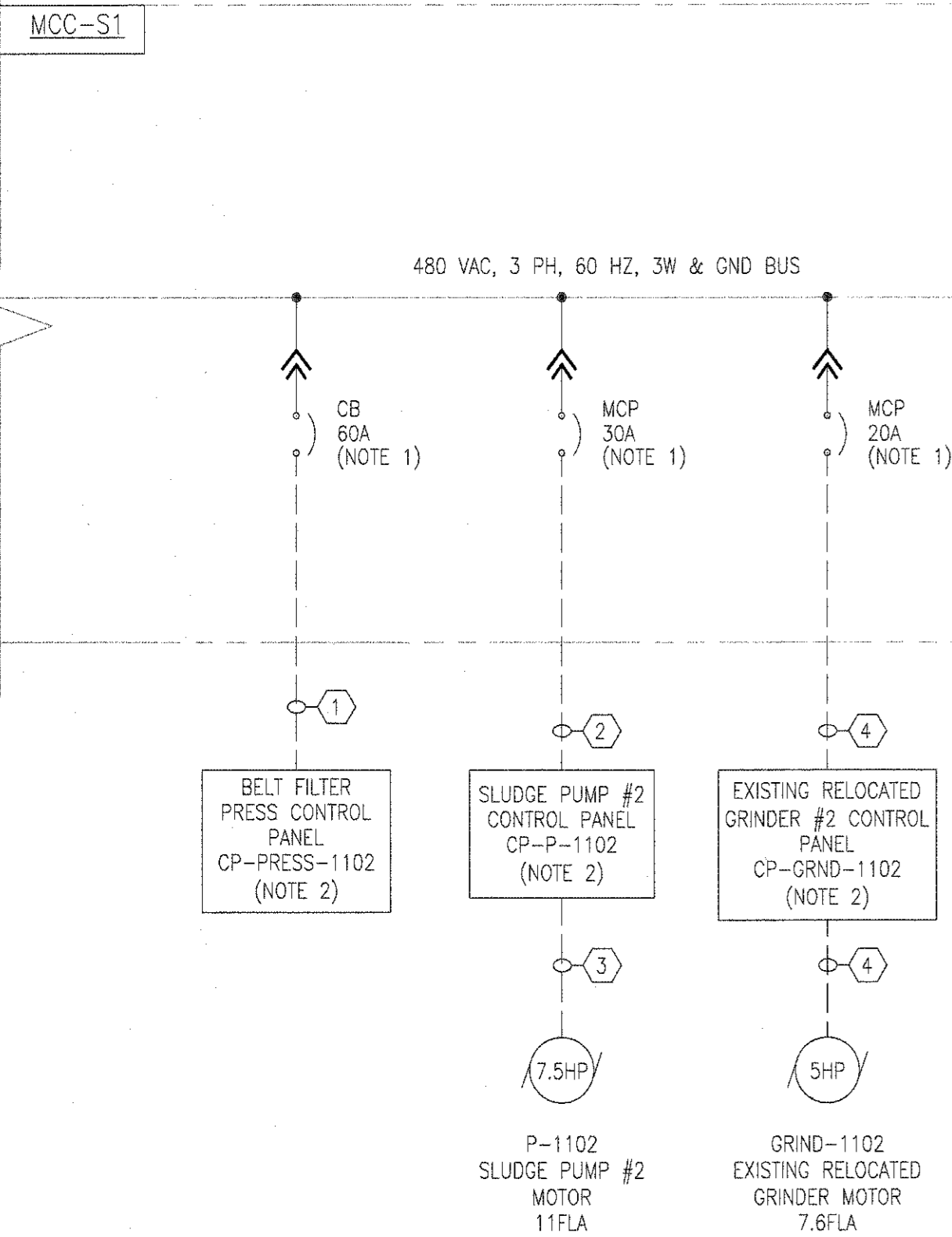
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

ONE LINE DIAGRAM



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

SOLIDS HANDLING & BLOWER BUILDING - ELECTRICAL ROOM



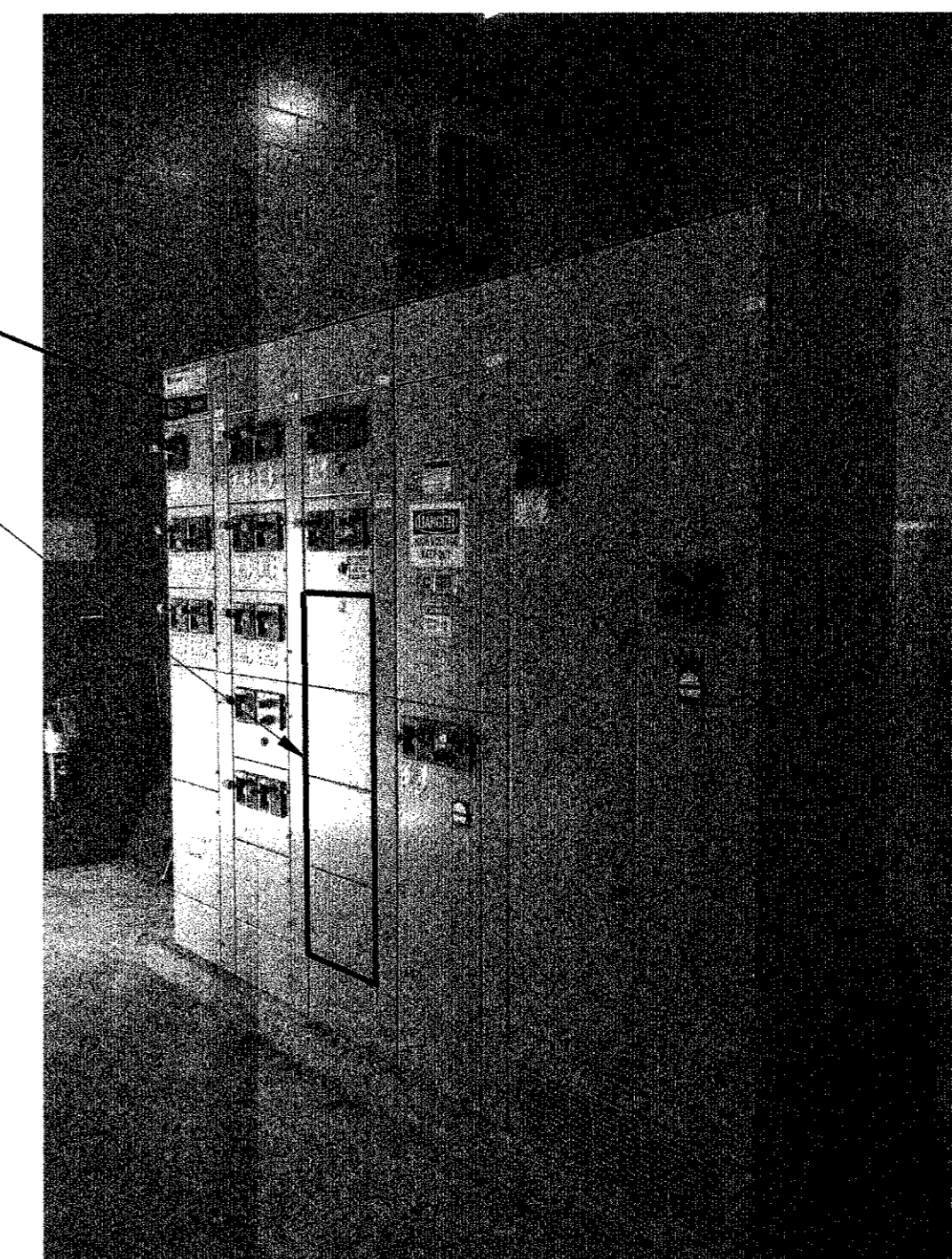
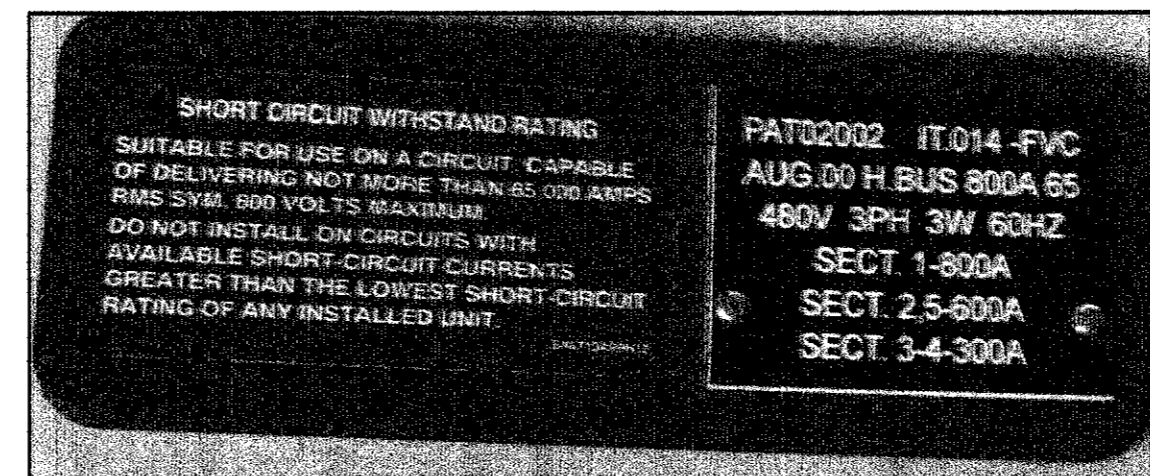
1 EXISTING MCC-1 PARTIAL ONE LINE DIAGRAM
LOCATED IN EXISTING SOLIDS HANDLING BUILDING

CONDUCTOR/CONDUIT SCHEDULE

- 1 3 #4 & 1 #10 GND IN 1" C.
- 2 3 #10 & 1 #10 GND IN 1" C.
- 3 3 #12 & 1 #12 GND (VFD SHIELDED) IN 1.5" C.
- 4 3 #12 & 1 #12 GND IN 1" C.
- 5 3 #600Kcmil & 1 #3 GND IN 3" C.
- 6 3 #4 & 1 #8 GND IN 1" C.
- 7 4 #1/0 & 1 #6 GND IN 1.5" C.
- 8 1 #2 GND IN 1" C.
- 9 4 #250Kcmil & 1 #4 GND IN 2.5" C.
- 10 3 #1 & 1 #6 GND IN 1.5" C.
- 11 3 #250Kcmil & 1 #4 GND IN 2" C.
- 12 1 #6 GND IN 1" C.

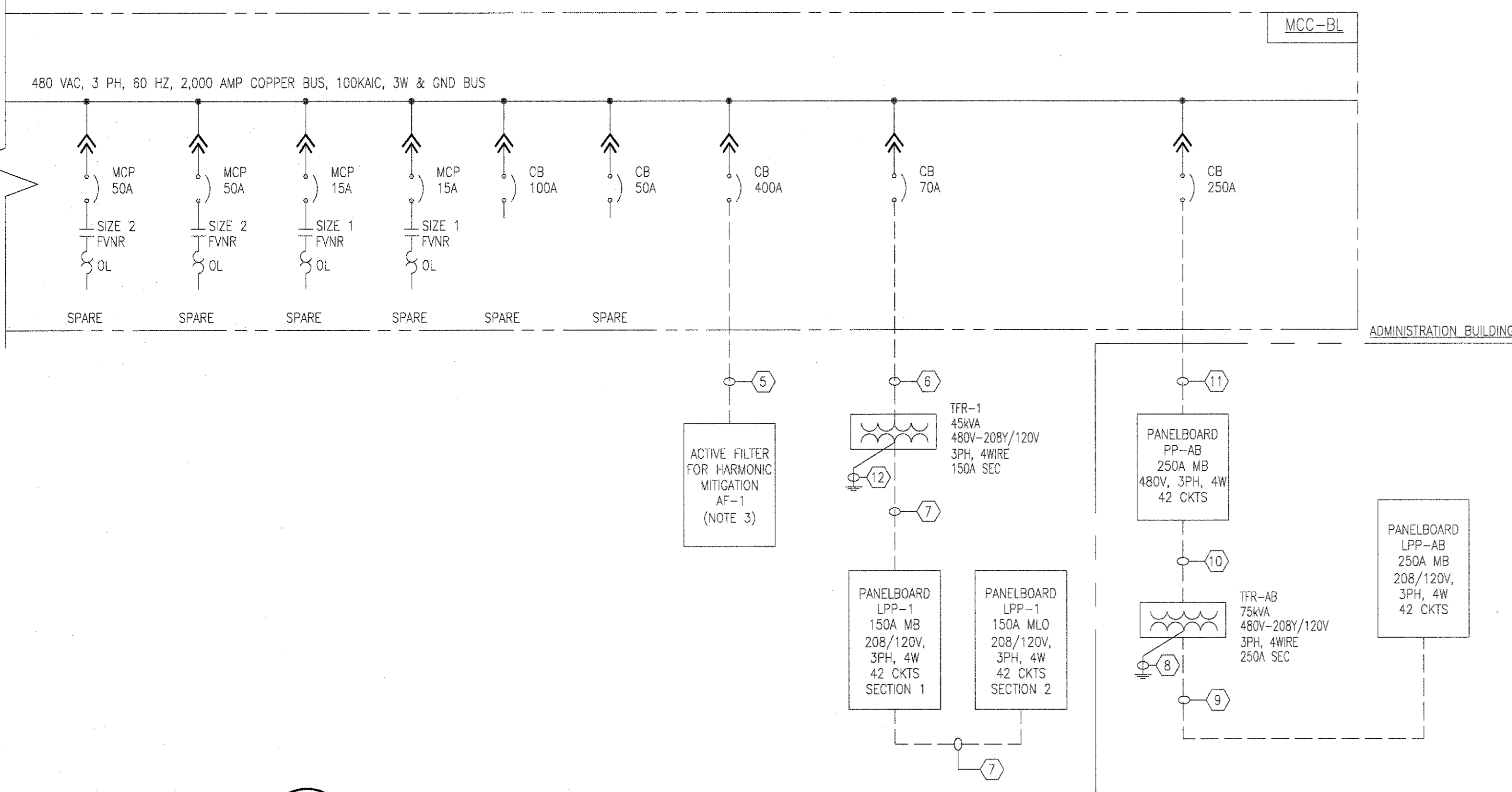
NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL 60A, 30A AND 20A CIRCUIT BREAKERS IN EXISTING MCC-S1 SPACE BUCKETS TO FEED BELT FILTER PRESS CONTROL PANEL "CP-PRESS-1102", SLUDGE PUMP #2 CONTROL PANEL "CP-P-1102" AND EXISTING RELOCATED GRINDER #2 CONTROL PANEL "CP-GRND-1102". THE BREAKERS SHALL BE OF THE SAME MANUFACTURER AS MCC-S1 (EATON) AND HAVE AIC RATING OF 65KAIC.
2. SEE SCHEMATIC WIRING DIAGRAMS E-422 AND E-423 FOR MORE DETAILS.
3. MCC MANUFACTURER SHALL PROVIDE CALCULATIONS FOR ACTIVE HARMONIC FILTER (AHF) SELECTION AND SHALL ADJUST AHF FEEDER BREAKER AND ASSOCIATED CABLES/CONDUITS AS REQUIRED WITHOUT ANY EXTRA COST TO THE OWNER.



2 EXISTING MCC-S1 MODIFICATIONS
LOCATED IN EXISTING SOLIDS HANDLING BUILDING

CONTINUED FROM BOTTOM RIGHT SHEET E-102



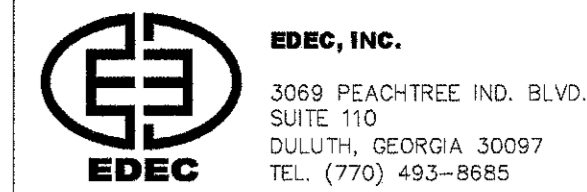
3 INDIAN CREEK WWTP PARTIAL ONE LINE DIAGRAM

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: AZ
DRWN: DV
CHKD: AZ
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
ONE LINE DIAGRAM

PLOT/STAMP



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685

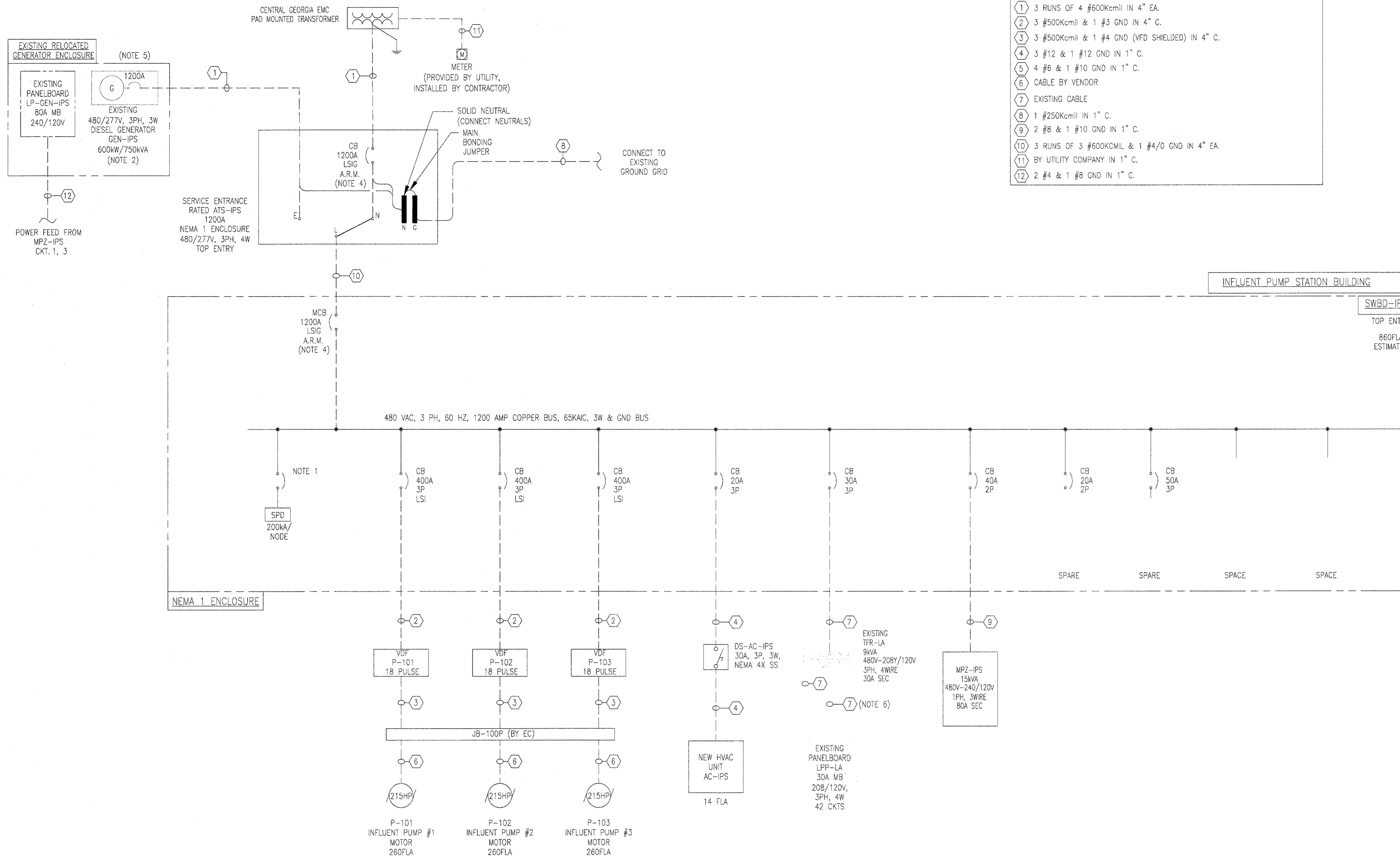


ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

CONDUCTOR/CONDUIT SCHEDULE	
1	3 RUNS OF 4 #600Kcmil IN 4" EA.
2	3 #500Kcmil & 1 #3 GND IN 4" C.
3	3 #500Kcmil & 1 #4 GND (VFD SHIELDED) IN 4" C.
4	3 #12 & 1 #12 GND IN 1" C.
5	4 #6 & 1 #10 GND IN 1" C.
6	CABLE BY VENDOR
7	EXISTING CABLE
8	1 #250Kcmil IN 1" C.
9	2 #8 & 1 #10 GND IN 1" C.
10	3 RUNS OF 3 #600KCMIL & 1 #4/0 GND IN 4" EA.
11	BY UTILITY COMPANY IN 1" C.
12	2 #4 & 1 #8 GND IN 1" C.

NOTES:

- COORDINATE THE REQUIRED CIRCUIT BREAKER FOR SPD WITH THE SWITCHBOARD MANUFACTURER.
- THE CONTRACTOR SHALL RELOCATE EXISTING 600KW, 480V, 3PH DIESEL GENERATOR FROM SPRINGDALE WWTP TO THE INDIAN CREEK INFLUENT PS. THE CONTRACTOR IS RESPONSIBLE TO PAY FOR ALL EXPENSES ASSOCIATED WITH THE GENERATOR RELOCATION. THE CONTRACTOR SHALL SERVICE THE GENERATOR, INCLUDE LOAD TEST PERFORMED BY CATERPILLAR AND A FULL TANK OF DIESEL FUEL. CONTRACTOR SHALL PROVIDE THE GENERATOR BREAKER LUGS AS REQUIRED TO ACCOMMODATE THE SPECIFIED POWER CABLES.
- CONTRACTOR SHALL PROVIDE AND INSTALL SWITCHBOARD SWBD-PS AS PER ONE LINE DRAWING AND SPECIFICATIONS.
- ALL CIRCUIT BREAKERS 1200AF OR LARGER SHALL HAVE ARC REDUCTION MAINTENANCE (ARM) SWITCH TO REDUCE ARC FLASH PER NEC. 240.87.
- GENERATOR IS SIZED TO RUN TWO (2) INFLUENT PUMPS AND MISCELLANEOUS LOW VOLTAGE LOADS. SCADA INTEGRATOR SHALL PROGRAM OPERATION SO THAT WHEN INFLUENT PS IS ON EMERGENCY POWER, DELAYS BETWEEN PUMPS STARTS SHALL APPLY AND MAXIMUM OF TWO (2) PUMPS SHALL RUN.
- CONTRACTOR SHALL PROVIDE AND INSTALL NEW CABLE AND CONDUIT FROM NEW SWBD-IPS TO EXISTING TFR-LA. CONTRACTOR SHALL REMOVE OLD CABLE/CONDUIT.



INFLUENT PUMP STATION BUILDING

SWBD-IPS
 TOP ENTRY
 860FLA
 ESTIMATED

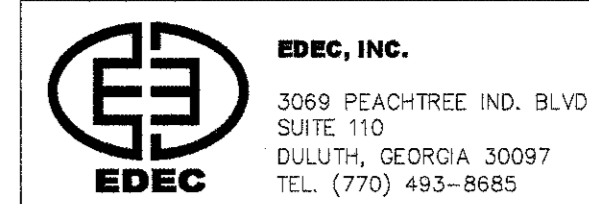
PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

INFLUENT PUMP STATION
 SWBD-IPS ONE LINE DIAGRAM



EXISTING PANELBOARD		LE		(LOCATED IN EXISTING EL. ROOM)						
VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 1							
VOLTAGE (L-L):	208V	MOUNTING:	SURFACE							
PHASES, WIRES:	3 φ 4 W	AIC RATING (A):								
MINIMUM BUS CAPACITY (A):		NOTES:								
MAIN O.C. DEVICE (A):										
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	EXISTING MAIN	50	3	0.0	0.0		1	20	SPARE	2
3	↓	↓	↓				1	20	SPARE	4
5	↓	↓	↓				1	20	SPARE	6
7	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	8
9	EXISTING LOAD	20	1		0.0	0.0	1	20	EXISTING LOAD	10
11	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	12
13	EXISTING LOAD	20	1	0.0	0.0		2	30	EXISTING LOAD	14
15	RELOCATED INFLUENT SAMPLER S-205	20	1		4.0	0.0	↓	↓	↓	16
17	SPARE	20	1		0.0	0.0	3	30	EXISTING LOAD	18
19	SPARE	20	1	0.0	0.0		↓	↓	↓	20
21	SPARE	20	1		0.0	0.0	↓	↓	↓	22
23	SPACE						1	20	INFLUENT STRUCTURE LIGHTING	24
25	SPACE			0.0	4.5		1	20 #	INFLUENT STRUCTURE RECEPTACLES	26
27	SPACE			0.0	5.5		1	20 #	GRIT SYSTEM LIGHTING	28
29	SPACE					0.0	1	20 #	GRIT SYSTEM RECEPTACLES	30
31	SPACE			0.0	1.1		1	20 #	MBR SPLITTER BOX LIGHTING	32
33	SPACE					0.0	1	20 #	MBR SPLITTER BOX RECEPTACLES	34
35	SPACE					0.0	1	20 #	INFL. SCREENS STRUCTURE HEAT TRACE	36
37	SPACE			0.0	0.0				SPACE	38
39	SPACE					0.0			SPACE	40
41	SPACE					0.0			SPACE	42
				CONNECTED LOAD PHASE TOTALS (AMP)						
				5.6	11.0	9.5				

USE #12 WIRES FOR 20A CB
 USE #10 WIRES FOR 30A CB
 USE #8 POWER AND #10 GND FOR 40A CB

SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

* - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.
 # - CIRCUIT BREAKER TO BE ADDED

PANELBOARD		MPZ-AL		(LOCATED IN ALUM SHELTER BUILDING)						
VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 4X							
VOLTAGE (L-L):	240V	MOUNTING:	SURFACE							
PHASES, WIRES:	1 φ 3 W	AIC RATING (A):	18000							
MINIMUM BUS CAPACITY (A):	125A	NOTES:	1. PANEL MPZ-AL SHALL BE EQUIPPED WITH 15KVA 480/120V TRANSFORMER							
MAIN O.C. DEVICE (A):	40A, 2P MB PRIMARY; 80A, 2P MB SECONDARY									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	ALUM METERING PUMP P-501	20	1	5.0	30.0		2	50	PREINSTALLED SHELTER PANELBOARD	2
3	ALUM METERING PUMP P-502	20	1			5.0	↓	↓	↓	4
5	ALUM METERING PUMP P-503	20	1	5.0	0.5		1	20	ALUM TANK AREA LIGHTING	6
7	ALUM BULK TANK HEAT TRACE #1	20*	1		3.0	1.5	1	20	ALUM AREA RECEPTACLES	8
9	ALUM BULK TANK HEAT TRACE #2	20*	1	3.0	0.0		1	20	SPARE	10
11	EYE/FACE WASH HEAT TRACE AT CHEMICAL STORAGE AREA	20*	1		1.0	0.0	1	20	SPARE	12
13	SPARE	20	1	0.0	0.0		1	20	SPARE	14
15	SPARE	20	1		0.0	0.0			SPARE	16
17	SPACE			0.0	0.0				SPARE	18
19	SPACE				0.0	0.0			SPARE	20
21	SPACE			0.0	0.0				SPARE	22
23	SPACE				0.0	0.0			SPARE	24
				CONNECTED LOAD PHASE TOTALS (AMP)						
				44	41					

USE 2 #12 & 1 #12 GND IN 3/4" C. FOR 20A CB
 USE 2 #6 & 1 #10 GND IN 1" C FOR 50A CB
 * - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.

PANELBOARD		MPZ-SH		(LOCATED IN NaOH SHELTER BUILDING)						
VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 4X							
VOLTAGE (L-L):	240V	MOUNTING:	SURFACE							
PHASES, WIRES:	1 φ 3 W	AIC RATING (A):	18000							
MINIMUM BUS CAPACITY (A):	125A	NOTES:	1. PANEL MPZ-SH SHALL BE EQUIPPED WITH 15KVA 480/120V TRANSFORMER							
MAIN O.C. DEVICE (A):	40A, 2P MB PRIMARY; 80A, 2P MB SECONDARY									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	NaOH METERING PUMP P-601	20	1	5.0	30.0		2	50	PREINSTALLED SHELTER PANELBOARD	2
3	NaOH METERING PUMP P-602	20	1			5.0	↓	↓	↓	4
5	NaOH BULK TANK HEAT TRACE #1	20*	1	3.0	0.5		1	20	NaOH TANK AREA LIGHTING	6
7	NaOH BULK TANK HEAT TRACE #2	20*	1		3.0	1.5	1	20	NaOH TANK AREA RECEPTACLES	8
9	SPARE	20	1	0.0	0.0		1	20	SPARE	10
11	SPARE	20	1		0.0	0.0	1	20	SPARE	12
13	SPARE	20	1	0.0	0.0		1	20	SPARE	14
15	SPACE				0.0	0.0			SPACE	16
17	SPACE			0.0	0.0				SPACE	18
19	SPACE				0.0	0.0			SPACE	20
21	SPACE			0.0	0.0				SPACE	22
23	SPACE				0.0	0.0			SPACE	24
				CONNECTED LOAD PHASE TOTALS (AMP)						
				39	40					

USE 2 #12 & 1 #12 GND IN 3/4" C. FOR 20A CB
 USE 2 #6 & 1 #10 GND IN 1" C FOR 50A CB
 * - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.

PANELBOARD		PP-SB		(LOCATED AT SPLITTER BOX STRUCTURE)						
VOLTAGE (L-N):	---	ENCLOSURE TYPE:	NEMA 4X SS							
VOLTAGE (L-L):	480V	MOUNTING:	SURFACE							
PHASES, WIRES:	3 φ 3 W	AIC RATING (A):	42000							
MINIMUM BUS CAPACITY (A):	125A	NOTES:								
MAIN O.C. DEVICE (A):	100A MB									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	SLIDE GATE M-SG-701	20	3	10.0	10.0		3	20	SLIDE GATE M-SG-711	2
3	↓	↓	↓				↓	↓	↓	4
5	↓	↓	↓				↓	↓	↓	6
7	SLIDE GATE M-SG-702	20	3	10.0	10.0		3	20	SLIDE GATE M-SG-712	8
9	↓	↓	↓				↓	↓	↓	10
11	↓	↓	↓				↓	↓	↓	12
13	SLIDE GATE M-SG-703	20	3	10.0	10.0		3	20	SLIDE GATE M-SG-713	14
15	↓	↓	↓				↓	↓	↓	16
17	↓	↓	↓				↓	↓	↓	18
19	SLIDE GATE M-SG-704	20	3	10.0	10.0		3	20	SLIDE GATE M-SG-714	20
21	↓	↓	↓				↓	↓	↓	22
23	↓	↓	↓				↓	↓	↓	24
25	SPARE	20	3	0.0	0.0		3	20	SPARE	26
27	↓	↓	↓				↓	↓	↓	28
29	↓	↓	↓				↓	↓	↓	30
31	SPACE			0.0	0.0				SPACE	32
33	SPACE					0.0			SPACE	34
35	SPACE					0.0			SPACE	36
37	SPACE			0.0	0.0				SPACE	38
39	SPACE					0.0			SPACE	40
41	SPACE					0.0			SPACE	42
				CONNECTED LOAD PHASE TOTALS (AMP)						
				80.0	80.0	80.0				

USE 3/8 #12 & 1/4 #12GND IN 3/4" C. FOR 20A CB
 USE 3/8 #10 & 1/4 #10GND IN 1" C. FOR 30A CB

SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

EXISTING PANELBOARD		LS		(LOCATED IN EXISTING SOLIDS HANDLING BUILDING EL. ROOM)						
VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 1							
VOLTAGE (L-L):	208V	MOUNTING:	SURFACE							
PHASES, WIRES:	3 φ 4 W	AIC RATING (A):								
MINIMUM BUS CAPACITY (A):		NOTES:								
MAIN O.C. DEVICE (A):										
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	EXISTING MAIN	50	3	0.0	0.0		1	20	SPARE	2
3	↓	↓	↓				1	20	SPARE	4
5	↓	↓	↓				1	20	SPARE	6
7	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	8
9	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	10
11	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	12
13	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	14
15	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	16
17	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	18
19	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	20
21	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	22
23	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	24
25	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	26
27	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	28
29	SPACE					0.0	1	20	EXISTING LOAD	30
31	EXISTING LOAD	20	1	0.0	0.0		1	20	EXISTING LOAD	32
33	EXISTING LOAD	20	1			0.0	1	20	EXISTING LOAD	34
35	SOLIDS HANDLING BUILDING WASH WATER LINE HEAT TRACE	20* #	1			0.0	1	20	DIGESTER TANK LIGHTING (NOTE 1)	36
37	POLYMER SYSTEM #1 RECEPTACLE	20 #	1	7.2	9.0		1	20	WASHWATER LINE HEAT TRACE AT SOLIDS HANDLING BUILDING	38
39	POLYMER SYSTEM #2 RECEPTACLE	20 #	1			7.2	1	20	DIGESTER TANK RECEPTACLES (NOTE 1)	40
41	SPACE					0.0			SPACE	42
				CONNECTED LOAD PHASE TOTALS (AMP)						
				16.2	11.2	3.0				

USE #12 WIRES FOR 20A CB
 USE #10 WIRES FOR 30A CB
 USE #8 POWER AND #10 GND FOR 40A CB

SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

* - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.
 # - CIRCUIT BREAKER TO BE ADDED

NOTES:
 1. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CIRCUIT BREAKERS FOR THE NEW LOADS AS SHOWN. THE BREAKERS SHALL BE OF THE SAME MANUFACTURER AND SHALL HAVE THE SAME AIC RATING AS THE EXISTING CIRCUIT BREAKERS.
 2. ALL CIRCUIT BREAKERS USED FOR SWITCHING THE LIGHTS SHALL BE RATED ACCORDINGLY.

PROJECT NUMBER: 1016
 DATE: AUGUST 2016
 REVISION: DATE: []
 PROJECT: INDIAN CREEK WRF EXPANSION TO 3 MGD HENRY COUNTY WATER AUTHORITY

DATE: []
 REVISION: []
 PROJECT: INDIAN CREEK WRF EXPANSION TO 3 MGD HENRY COUNTY WATER AUTHORITY

DESIGN: AZ
 DRAWN: DV
 CHECK: AZ
 BAR BEHIND IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 PANELBOARD SCHEDULES



EDEC, INC.
3069 PEACHTREE IND. BLVD.
SUITE 110
DULUTH, GEORGIA 30097
TEL. (770) 493-8685



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

PANELBOARD		LPP-1		SECTION 1 (LOCATED IN NEW MBR PROCESS BUILDING ELECTRICAL ROOM)											
VOLTAGE (L-N):		120V		ENCLOSURE TYPE:		NEMA 1									
VOLTAGE (L-L):		208V		MOUNTING:		SURFACE									
PHASES, WIRES:		3 φ 4 W		AIC RATING (A):		18000									
MINIMUM BUS CAPACITY (A):		250A		NOTES:		PROVIDE FEED THRU LUGS									
MAIN O.C. DEVICE (A):		150A MB													
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)						POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C									
1	AIR DRYER CABINET #1	20	1	10.0	1.0					1	20	BIOREACTOR RESERVOIR LIGHTING	2		
3	AIR DRYER CABINET #2	20	1		10.0	1.0				1	20	BIOREACTOR RESERVOIR LIGHTING	4		
5	EYE/FACE WASH HEAT TRACE AT MBR BUILDING	20 *	1				3.0	6.0		1	20	BIOREACTOR RESERVOIR RECEPTACLES	6		
7	SPARE	20	1	0.0	12.0					1	20	MEMBRANE TANK FLOOD LIGHTING	8		
9	SPARE	20	1		0.0	3.0				1	20	MEMBRANE TANK RECEPTACLES	10		
11	UV SYSTEM CONTROL CENTER SCC-700	30	1				20.0	1.1		1	20	DE-AERATION TANK LIGHTING	12		
13	DE-AERATION TANK HEAT TRACE	20 *	1	3.0	1.5					1	20	DE-AERATION TANK RECEPTACLES	14		
15	"GE" SCADA PANEL CP-01	20	1		15.0	1.0				1	20	LIGHTING CONTACTOR LC-PB	16		
17	"GE" SCADA PANEL CP-11	20	1				15.0	10.0		1	20	SITE LIGHTING THRU LC-PB	18		
19	"GE" SCADA PANEL CP-12	20	1	15.0	2.5					1	20	MBR BLD TOP FLOOR INDOOR LIGHTING	20		
21	"GE" SCADA PANEL CP-13	20	1		15.0	15.0				1	20	MBR BLD TOP FLOOR INDOOR LIGHTING	22		
23	"GE" SCADA PANEL CP-14	20	1				15.0	2.0		1	20	MBR BLD TOP FLOOR INDOOR LIGHTING	24		
25	PLANT SCADA PANEL "LCP-MAIN"	20	1	15.0	2.0					1	20	MBR BLD OUTDOOR LIGHTING THRU LC-PB	26		
27	MBR BLD AIR COMPRESSOR ASSEMBLY AUTO DRAIN VALVE 90-FV-001-A	20	1		1.0	2.0				1	20	CHEMICAL STORAGE LIGHTING	28		
29	MBR BLD AIR COMPRESSOR ASSEMBLY AUTO DRAIN VALVE 90-FV-001-B	20	1			1.0	0.0			1	20	SPARE	30		
31	MBR BLD REFRIGERATED AIR DRYER AUTO DRAIN VALVE 90-DR-001-A	20	1	1.0	6.0					1	20	MBR BLD RECEPTACLES	32		
33	MBR BLD REFRIGERATED AIR DRYER AUTO DRAIN VALVE 90-DR-001-B	20	1		1.0	3.0				1	20	CHEMICAL STORAGE RECEPTACLES	34		
35	MBR BLD COMPRESSED AIR PIPE AUTO DRAIN VALVE (NOTE 1)	20	1			1.0	9.0			1	20	EL ROOM RECEPTACLES	36		
37	SPARE	20	1	0.0	3.5					1	20	EL ROOM LIGHTING	38		
39	SODIUM HYPOCHLORITE STORAGE EXHAUST FAN EF-S-1	20	1		3.0	6.5				1	20	MBR BLD BOTTOM FLOOR LIGHTING	40		
41	CITRIC ACID STORAGE EXHAUST FAN EF-S-2	20	1			3.0	5.5			1	20	MBR BLD BOTTOM FLOOR LIGHTING	42		
				CONNECTED LOAD PHASE TOTALS (AMP)											
				72.5		76.5		91.6							

USE 2/C #12 & 1/C #12GND IN 3/4". FOR 20A CB
USE 2/C #10 & 1/C #10GND IN 1". FOR 30A CB
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

* - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.

PANELBOARD		MPZ-IPS		(LOCATED IN ELEC. ROOM AT INFLUENT PUMP STATION)											
VOLTAGE (L-N):		120V		ENCLOSURE TYPE:		Nema 1									
VOLTAGE (L-L):		240V		MOUNTING:		SURFACE									
PHASES, WIRES:		1 φ 3 W		AIC RATING (A):		18000									
MINIMUM BUS CAPACITY (A):		80A		NOTES:											
MAIN O.C. DEVICE (A):		80A													
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)						POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C									
1	GENERATOR AUXILIARY PANEL (DWG. E-311)	60	2	40.0	0.0					2	20	SPARE	2		
3	↓	↓	↓		40.0	0.0				↓	↓	↓	↓		
5	SPARE	20	1	0.0	0.0					1	20	SPARE	5		
7	SPARE	20	1		0.0	0.0				1	20	SPARE	8		
9	SPARE	20	1	0.0	0.0					1	20	SPARE	10		
11	SPARE				0.0	0.0						SPARE	12		
				CONNECTED LOAD PHASE TOTALS (AMP)											
				40.0		40.0									

USE #12 WIRES FOR 20A CB
USE #10 WIRES FOR 30A CB
USE #4 POWER AND #8 GND FOR 60A CB

PANELBOARD		PP-UV		(LOCATED AT PROCESS BLD. ELEC. ROOM)											
VOLTAGE (L-N):		277V		ENCLOSURE TYPE:		NEMA 1									
VOLTAGE (L-L):		480V		MOUNTING:		SURFACE									
PHASES, WIRES:		3 φ 4 W		AIC RATING (A):		42000									
MINIMUM BUS CAPACITY (A):		70A		NOTES:											
MAIN O.C. DEVICE (A):		70A MB													
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)						POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C									
1	UV POWER DISTRIBUTION CENTER PDC-801 (NOTE 2)	30	3	18.0	18.0					3	30	UV POWER DISTRIBUTION CENTER PDC-802 (NOTE 2)	2		
3	↓	↓	↓		18.0	18.0				↓	↓	↓	↓		
5	↓	↓	↓				18.0	18.0				↓	↓		
7	SPACE			0.0	0.0							SPACE	8		
9	SPACE				0.0	0.0						SPACE	10		
11	SPACE						0.0	0.0				SPACE	12		
				CONNECTED LOAD PHASE TOTALS (AMP)											
				36.0		36.0		36.0							

USE 3/C #12 & 1/C #12GND IN 3/4". FOR 20A CB
USE 3/C #10 & 1/C #10GND IN 1". FOR 30A CB

NOTES:
1. CONTRACTOR SHALL ADJUST PANELBOARD PP-UV VOLTAGE RATING AND ASSOCIATED CIRCUIT BREAKERS BASED ON THE SELECTED UV SYSTEM VENDOR REQUIREMENTS.
2. SEE SCHEMATIC WIRING DIAGRAM DWG. E-424 FOR POWER CABLES/CONDUITS CONSIDERING VOLTAGE DROP.

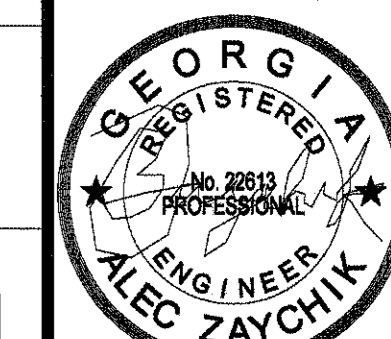
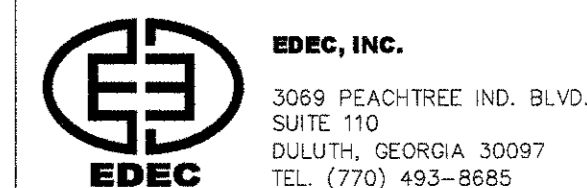
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

PANELBOARD		LPP-1		SECTION 2 (LOCATED IN NEW MBR PROCESS BUILDING ELECTRICAL ROOM)											
VOLTAGE (L-N):		120V		ENCLOSURE TYPE:		NEMA 1									
VOLTAGE (L-L):		208V		MOUNTING:		SURFACE									
PHASES, WIRES:		3 φ 4 W		AIC RATING (A):		18000									
MINIMUM BUS CAPACITY (A):		150A		NOTES:											
MAIN O.C. DEVICE (A):		M.L.O.													
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)						POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C									
43	PLANT WATER PS HEAT TRACE	20 *	1	3.0	7.5					1	20	MRB BLD BOTTOM FLOOR RECEPTACLES	44		
45	SPARE	20	1		0.0	2.5				1	20	UV DISINFECTION SYSTEM LIGHTING	46		
47	SPARE	20	1				0.0	1.5		1	20	UV DISINFECTION SYSTEM RECEPTACLES	48		
49	SPARE	20	1	0.0	1.5					1	20	PLANT WATER PS RECEPTACLES	50		
51	SPARE				0.0	3.0				1	20	PROCESS BUILDING ROOF RECEPTACLES	52		
53	SPACE						0.0	0.0		1	20	SPARE	54		
55	SPACE			0.0	0.0					1	20	SPARE	56		
57	SPACE				0.0	0.0						SPACE	58		
59	SPACE						0.0	0.0				SPACE	60		
61	SPACE			0.0	0.0							SPACE	62		
63	SPACE				0.0	0.0						SPACE	64		
65	SPACE						0.0	0.0				SPACE	66		
67	SPACE			0.0	0.0							SPACE	68		
69	SPACE				0.0	0.0						SPACE	70		
71	SPACE						0.0	0.0				SPACE	72		
73	SPACE			0.0	0.0							SPACE	74		
75	SPACE				0.0	0.0						SPACE	76		
77	SPACE						0.0	0.0				SPACE	78		
79	SPACE			0.0	0.0							SPACE	80		
81	SPACE						0.0	0.0				SPACE	82		
83	SPACE							0.0	0.0			SPACE	84		
				CONNECTED LOAD PHASE TOTALS (AMP)											
				12.0		5.5		1.5							

USE 2/C #12 & 1/C #12GND IN 3/4". FOR 20A CB
USE 2/C #10 & 1/C #10GND IN 1". FOR 30A CB
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A

* - GFCI, 30mA CIRCUIT BREAKER FOR HEAT TRACE.

PANELBOARD		PP-AB		(LOCATED IN ADMINISTRATION BUILDING)											
VOLTAGE (L-N):		---		ENCLOSURE TYPE:		NEMA 1									
VOLTAGE (L-L):		480V		MOUNTING:		SURFACE									
PHASES, WIRES:		3 φ 3 W		AIC RATING (A):		42000									
MINIMUM BUS CAPACITY (A):		300A		NOTES:											
MAIN O.C. DEVICE (A):		250A MB													
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)						POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C									
1	480V POWER TO HEAT PUMP UNIT #1 HPU-1	20	3	8.0	8.0					3	20	480V POWER TO HEAT PUMP UNIT #3 HPU-3	2		
3	↓	↓	↓		8.0	8.0				↓	↓	↓	↓		
5	↓	↓	↓				8.0	8.0				↓	↓		
7	480V POWER TO HEAT PUMP UNIT #2 HPU-2	20	3	8.0	8.0					3	20	480V POWER TO HEAT PUMP UNIT #4 HPU-4	8		
9	↓	↓	↓				8.0	8.0				↓	↓		
11	↓	↓	↓				8.0	8.0				↓	↓		
13	75 KVA TFR-AB	125	3	90.0	5.5					3	20	ELECTRIC WATER HEATER EWH-1	14		
15	↓	↓	↓		90.0	5.5						↓	↓		
17	↓	↓	↓				90.0	5.5				↓	↓		
19	SPACE			0.0	0.0					3	20	SPARE	20		
21	SPACE				0.0	0.0						↓	↓		
23	SPACE						0.0	0.0				↓	↓		
25	SPACE			0.0	0.0							↓	↓		
27	SPACE				0.0	0.0						↓	↓		
29	SPACE						0.0	0.0				↓	↓</		



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ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: _____ DATE: AUGUST 2016
REVISION: _____ DATE: _____

DSGN: AZ
DRAWN: DV
CHKD: AZ
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
PANELBOARD SCHEDULES

SHEET NO.
E-152

PANELBOARD		LPP-AB		(LOCATED IN ADMINISTRATION BUILDING)							
VOLTAGE (L-N):		120V		ENCLOSURE TYPE:		NEMA 1					
VOLTAGE (L-L):		208V		MOUNTING:		SURFACE					
PHASES, WIRES:		3 φ 4 W		AIC RATING (A):		22000					
MINIMUM BUS CAPACITY (A):		300A		NOTES:							
MAIN O.C. DEVICE (A):		250A MB									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A	B	C					
1	ADMINISTRATION BUILDING RECEPTACLES	20	1	7.5	6.5		1	20	ADMINISTRATION BUILDING LIGHTING	2	
3	ADMINISTRATION BUILDING RECEPTACLES	20	1		12.0	7.0	1	20	ADMINISTRATION BUILDING LIGHTING	4	
5	ADMINISTRATION BUILDING RECEPTACLES	20	1			3.0	1	20	ADMINISTRATION BUILDING LIGHTING	6	
7	ADMINISTRATION BUILDING RECEPTACLES	20	1	13.5	9.5		1	20	ADMINISTRATION BUILDING LIGHTING	8	
9	ADMINISTRATION BUILDING RECEPTACLES	20	1		3.0	7.0	1	20	MENS RESTROOM LIGHTING / EXHAUST FANS EF-1, EF-2	10	
11	ADMINISTRATION BUILDING RECEPTACLES	20	1			7.5	1	20	SPARE	12	
13	ADMINISTRATION BUILDING RECEPTACLES	20	1	7.5	2.0		1	20	WOMENS RESTROOM LIGHTING / EXHAUST FAN EF-3	14	
15	ADMINISTRATION BUILDING RECEPTACLES	20	1		7.5	50.0	2	60	FAN COIL UNIT #1 FCU-1	16	
17	ADMINISTRATION BUILDING RECEPTACLES	20	1			7.5	2	60	FAN COIL UNIT #2 FCU-2	18	
19	ADMINISTRATION BUILDING RECEPTACLES	20	1	7.5	50.0		2	60	FAN COIL UNIT #3 FCU-3	20	
21	SPARE	20	1		0.0	50.0	2	60	FAN COIL UNIT #3 FCU-3	22	
23	ADMINISTRATION BUILDING OUTSIDE LIGHTING	20	1			1.0	2	60	FAN COIL UNIT #3 FCU-3	24	
25	FRIDGE RECEPTACLE	20	1	0.0	50.0		2	60	FAN COIL UNIT #3 FCU-4	26	
27	HVAC RECEPTACLE	20	1		0.0	50.0	2	60	FAN COIL UNIT #3 FCU-4	28	
29	SPACE					0.0	1	20	SPACE	30	
31	SPACE			0.0	0.0		1	20	SPACE	32	
33	SPACE				0.0	0.0	1	20	SPACE	34	
35	SPACE				0.0	0.0	1	20	SPACE	36	
37	SPACE			0.0	0.0		1	20	SPACE	38	
39	SPACE				0.0	0.0	1	20	SPACE	40	
41	SPACE					0.0	1	20	SPACE	42	
				CONNECTED LOAD PHASE TOTALS (AMP)							
				154.0	186.5	174.0					
USE #12 WIRES FOR 20A CB											
USE #10 WIRES FOR 30A CB											
USE #4 POWER AND #10 GND FOR 60A CB											
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A											

PANELBOARD		PP-WWTP		SECTION 1 (LOCATED AT PROCESS BLD. ELEC. ROOM)							
VOLTAGE (L-N):		---		ENCLOSURE TYPE:		NEMA 1					
VOLTAGE (L-L):		480V		MOUNTING:		SURFACE					
PHASES, WIRES:		3 φ 3 W		AIC RATING (A):		42000					
MINIMUM BUS CAPACITY (A):		300A		NOTES:		PROVIDE FEED THRU LUGS					
MAIN O.C. DEVICE (A):		250A MLO									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A	B	C					
1	SLIDE GATE 20-FV-209-1	20	3	10.0	26.0		3	40	UNIT HEATER EUH-B-1	2	
3					10.0	26.0				4	
5						10.0	3	40	UNIT HEATER EUH-B-2	6	
7	SLIDE GATE 20-FV-209-2	20	3	10.0	26.0		3	40	UNIT HEATER EUH-B-2	8	
9					10.0	26.0				10	
11						10.0	3	20	UNIT HEATER EUH-1-1	12	
13	SLIDE GATE 20-FV-209-3	20	3	10.0	12.0		3	20	UNIT HEATER EUH-1-1	14	
15					10.0	12.0				16	
17						10.0	3	20	UNIT HEATER EUH-1-2	18	
19	SLIDE GATE 20-FV-209-4	20	3	10.0	12.0		3	20	UNIT HEATER EUH-1-2	20	
21					10.0	12.0				22	
23						10.0	3	20	UNIT HEATER EUH-S-1	24	
25	SPARE	20	3	0.0	6.0		3	20	UNIT HEATER EUH-S-1	26	
27	SPARE				0.0	6.0				28	
29						0.0	3	20	UNIT HEATER EUH-S-2	30	
31	SPARE			0.0	6.0		3	20	UNIT HEATER EUH-S-2	32	
33	SPACE				0.0	6.0				34	
35	SPACE				0.0	6.0				36	
37	SPACE			0.0	3.0		3	20	SUPPLY FAN SF-B-1	38	
39	SPACE				0.0	3.0				40	
41	SPACE					0.0	3	20		42	
				CONNECTED LOAD PHASE TOTALS (AMP)							
				131.0	131.0	131.0					
USE 3/C #12 & 1/C #12 GND IN 3/4" C. FOR 20A CB											
USE 3/C #10 & 1/C #10 GND IN 1" C. FOR 30A CB											
USE 3/C #8 & 1 #10 GND IN 3/4" C. FOR 40A CB											
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A											

PANELBOARD		PP-WWTP		SECTION 2 (LOCATED AT PROCESS BLD. ELEC. ROOM)							
VOLTAGE (L-N):		---		ENCLOSURE TYPE:		NEMA 1					
VOLTAGE (L-L):		480V		MOUNTING:		SURFACE					
PHASES, WIRES:		3 φ 3 W		AIC RATING (A):		42000					
MINIMUM BUS CAPACITY (A):		150A		NOTES:							
MAIN O.C. DEVICE (A):		150A MLO									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)			POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A	B	C					
43	SPACE			0.0	25.0		3	30	ROOFTOP UNIT RTU-1	44	
45	SPACE				0.0	25.0				46	
47	SPACE					0.0	3	30	ROOFTOP UNIT RTU-2	48	
49	SPACE			0.0	25.0		3	30	ROOFTOP UNIT RTU-2	50	
51	SPACE				0.0	25.0				52	
53	SPACE					0.0	1	20	SPACE	54	
55	SPACE			0.0	0.0		1	20	SPACE	56	
57	SPACE				0.0	0.0	1	20	SPACE	58	
59	SPACE				0.0	0.0	1	20	SPACE	60	
61	SPACE			0.0	0.0				SPACE	62	
63	SPACE				0.0	0.0			SPACE	64	
65	SPACE					0.0			SPACE	66	
67	SPACE			0.0	0.0				SPACE	68	
69	SPACE				0.0	0.0			SPACE	70	
71	SPACE					0.0			SPACE	72	
73	SPACE			0.0	0.0				SPACE	74	
75	SPACE				0.0	0.0			SPACE	76	
77	SPACE					0.0			SPACE	78	
79	SPACE			0.0	0.0				SPACE	80	
81	SPACE				0.0	0.0			SPACE	82	
83	SPACE					0.0			SPACE	84	
				CONNECTED LOAD PHASE TOTALS (AMP)							
				50.0	50.0	50.0					
USE 3/C #12 & 1/C #12 GND IN 3/4" C. FOR 20A CB											
USE 3/C #10 & 1/C #10 GND IN 1" C. FOR 30A CB											
SEE CABLE SCHEDULE FOR CABLE/CONDUIT SIZES IF FEEDER BREAKER SIZE IS GREATER THAN 30A											

NOTES:
1. ALL CIRCUIT BREAKERS USED FOR SWITCHING THE LIGHTS SHALL BE RATED ACCORDINGLY.



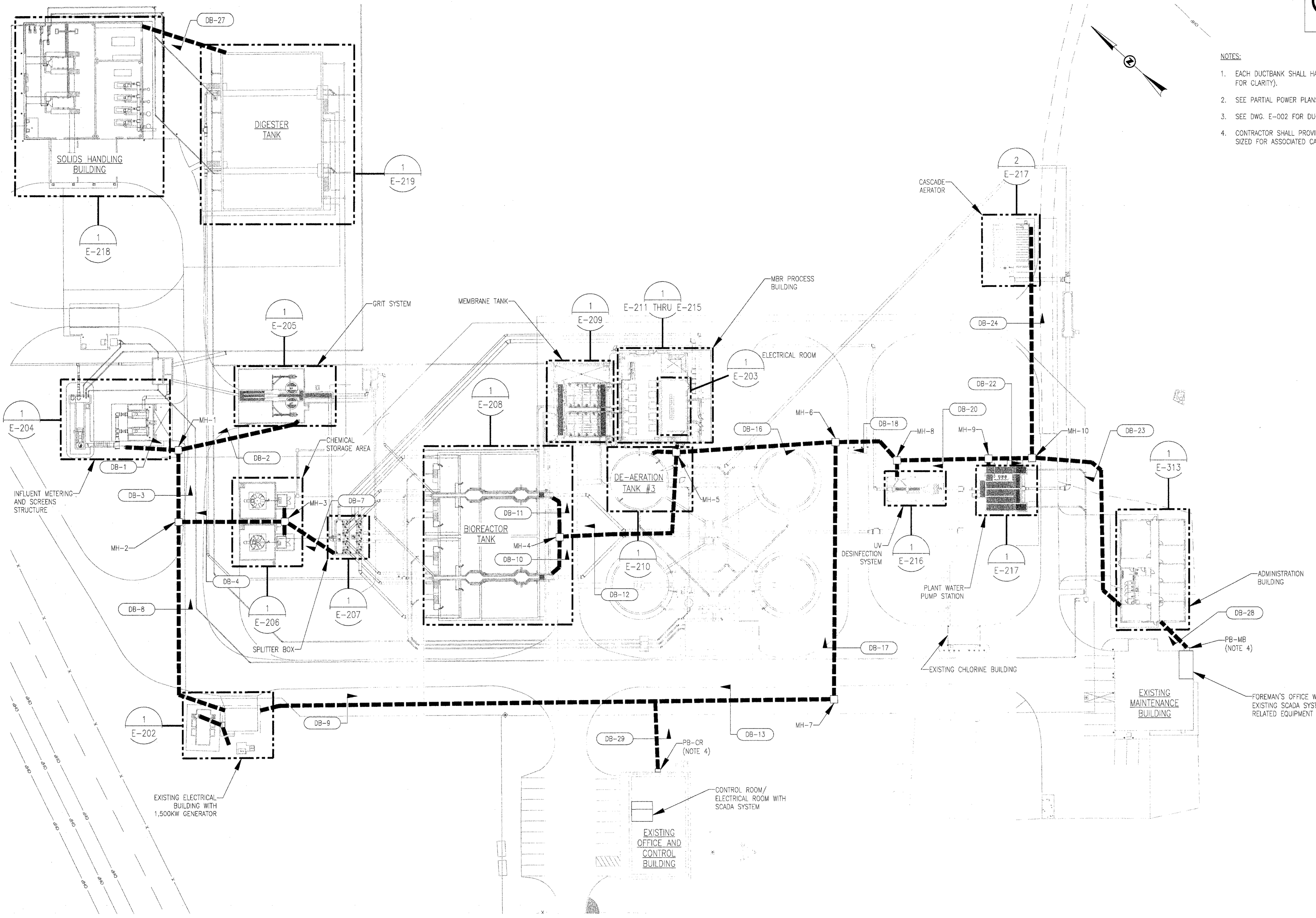
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



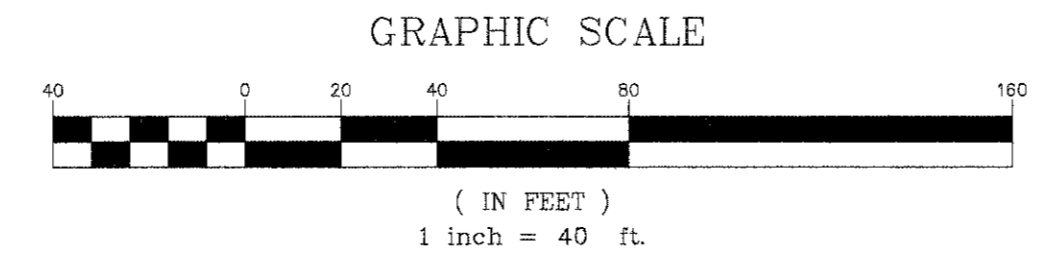
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ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. EACH DUCTBANK SHALL HAVE #4/0 BARE COPPER GROUND WIRE (NOT SHOWN FOR CLARITY).
2. SEE PARTIAL POWER PLANS FOR MORE DUCTBANKS AND MANHOLES LOCATIONS.
3. SEE DWG. E-002 FOR DUCTBANKS SECTIONS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS.



1 ELECTRICAL SITE PLAN
 SCALE: 1" = 40'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

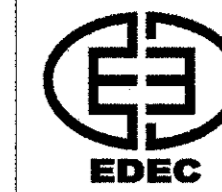
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

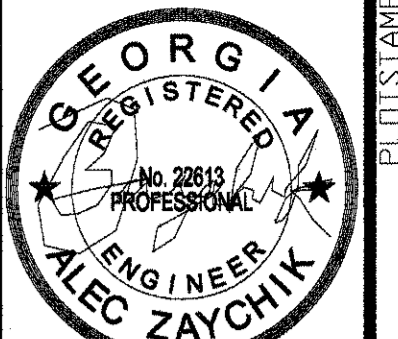
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WRF
ELECTRICAL SITE PLAN

SHEET NO.
E-201

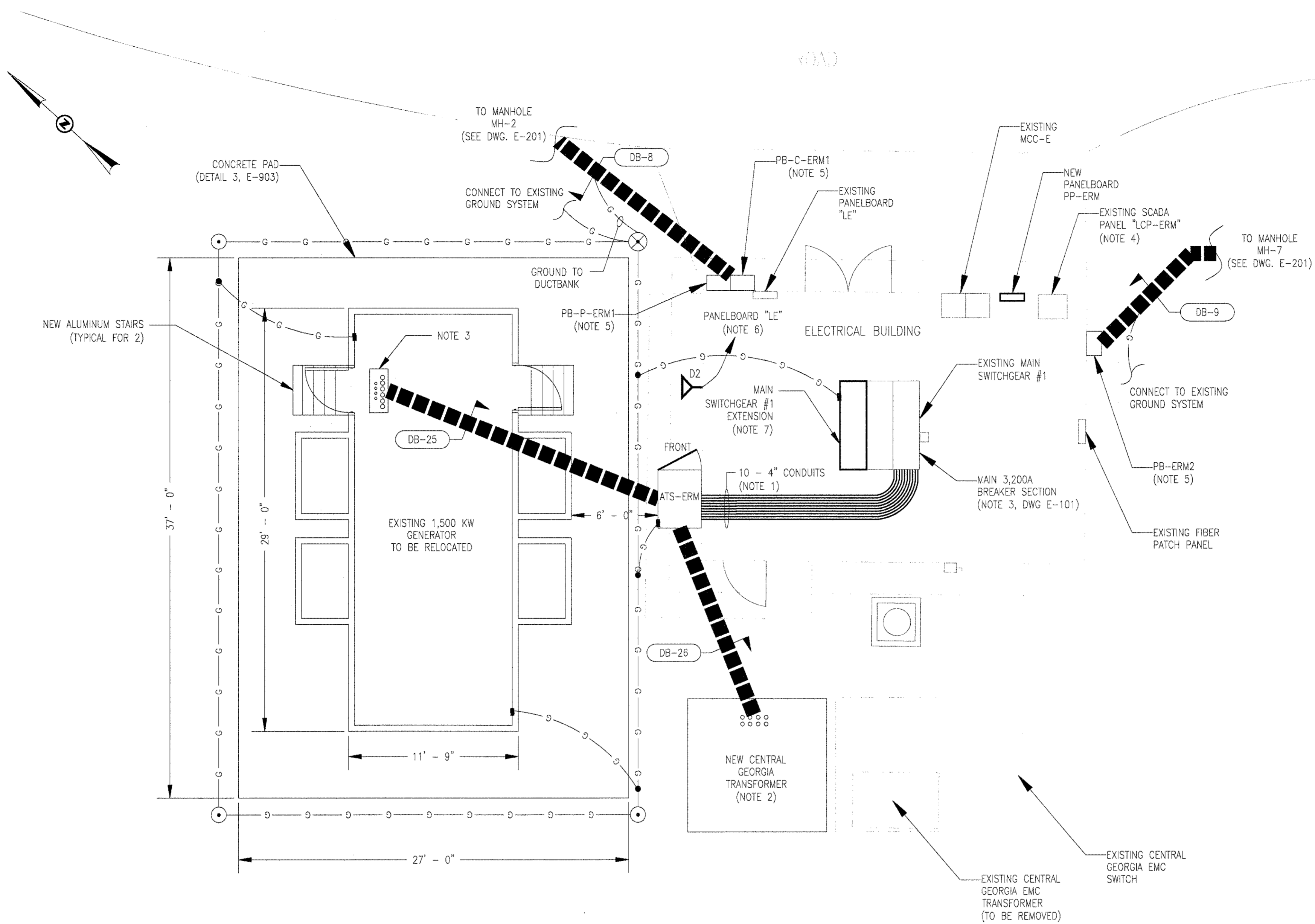
PLOT/STAMP



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 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685

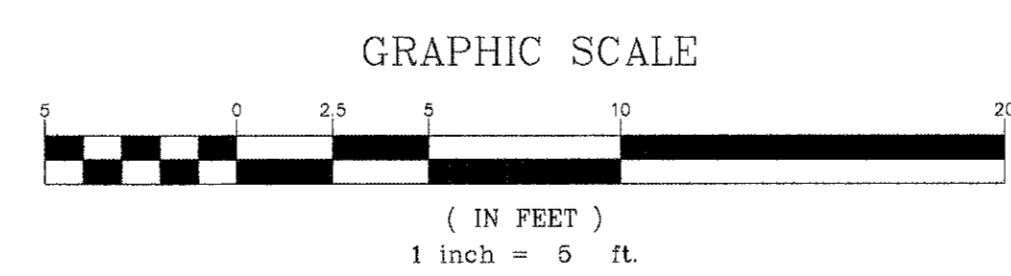


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 MARIETTA, GA 30062
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- NOTES:**
- CONTRACTOR SHALL PROVIDE AND INSTALL TEN (10) 4" OVERHEAD CONDUITS FROM ATS-ERM TO MAIN SWITCHGEAR #1 MAIN BREAKER SECTION.
 - CONTRACTOR SHALL COORDINATE THE EXACT TRANSFORMER LOCATION WITH WITH CENTRAL GEORGIA UTILITY COMPANY.
 - CONTRACTOR SHALL COORDINATE THE EXACT CONDUITS STUB-UP LOCATION IN THE FIELD TO FIT INTO THE CONDUITS OPENING WITHIN THE GENERATOR.
 - CONTRACTOR SHALL MAKE ALL NECESSARY MODIFICATIONS TO THE EXISTING SCADA PANEL "LCP-ERM" FOR THE ADDITION OF NEW 1/0's. PROVIDE AND INSTALL CABLES AND CONDUITS TO THE SCADA PANEL "LCP-ERM" AS REQUIRED TO ACCOMMODATE NEW 1/0's. SEE SCHEMATIC WIRING DIAGRAMS FOR DETAILS.
 - CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE. CONTRACTOR SHALL PROVIDE AND INSTALL SEPARATE PULL BOXES FOR CONTROLS (PB-C-ERM1) AND POWER (PB-P-ERM1) CABLES/CONDUITS.
 - CONTRACTOR SHALL USE EXISTING PANELBOARD "LE" CIRCUIT #8 (EXTERIOR LIGHTS) 20A, 1P, 120V CIRCUIT BREAKER FOR A NEW WALL MOUNTED FLOOD LIGHT "D2". RUN 2 #12 AND 1 #12 GND IN 3/4" C. FROM THE EXISTING PANELBOARD "LE" TO THE NEW LIGHT.
 - CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 480V SWITCHGEAR SECTION TO ACCOMMODATE A 2,000A CIRCUIT BREAKER FOR THE NEW PROCESS BUILDING. SEE DWG. E-101 FOR MORE DETAILS.
 - CONTRACTOR SHALL INSTALL OR EXTEND EXISTING 4" HIGH CONCRETE HOUSEKEEPING PADS FOR ALL FREE STANDING ELECTRICAL EQUIPMENT. EXTEND PAD FOR 4" ON EACH SIDE OF EQUIPMENT.
 - SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.

1 EXISTING ELECTRICAL BUILDING SITE PLAN
 SCALE: 1" = 5'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

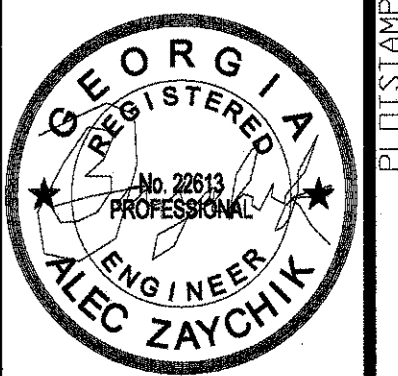
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 EXISTING ELECTRICAL BUILDING
 POWER AND GROUNDING PLAN



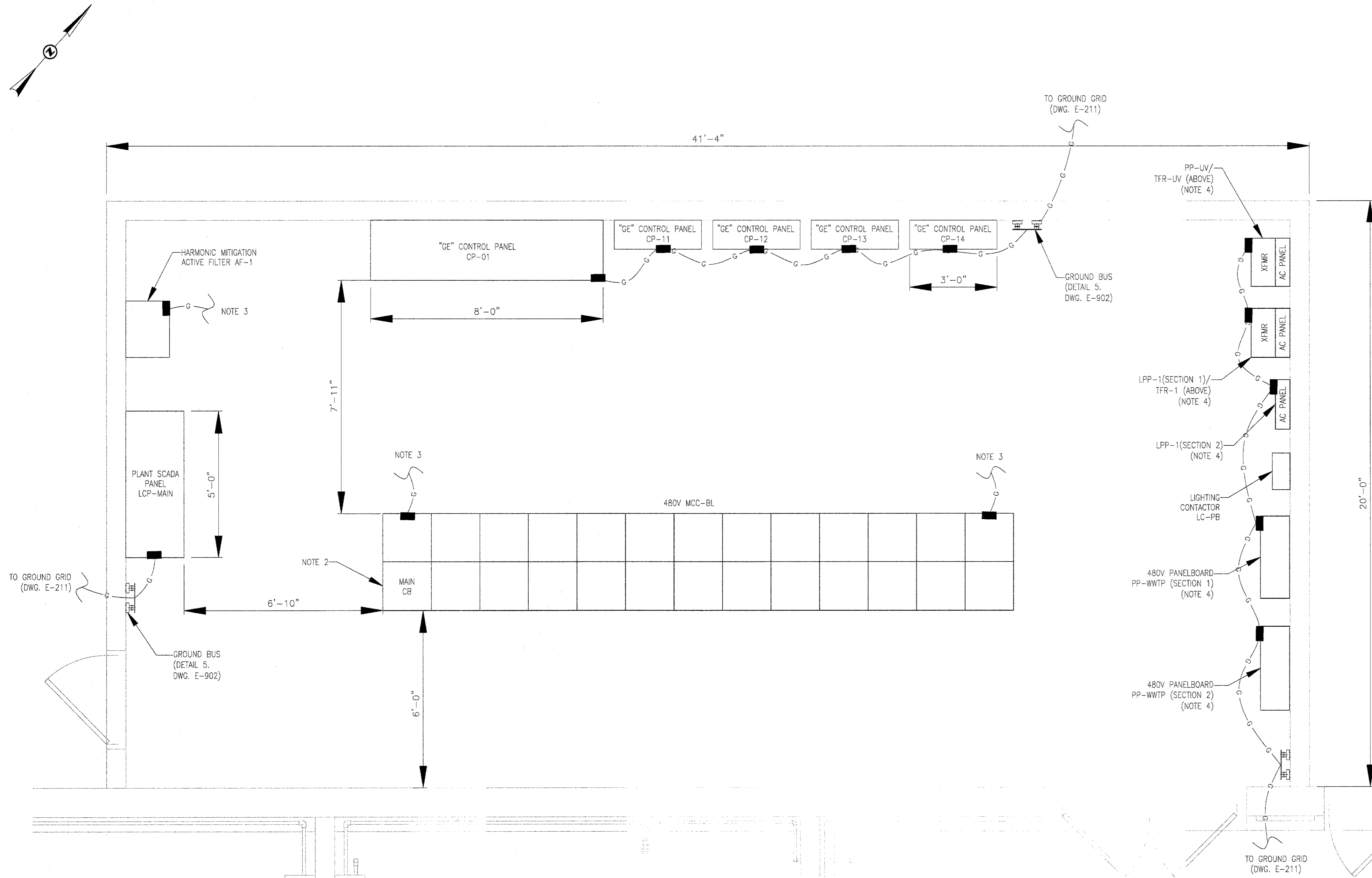
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



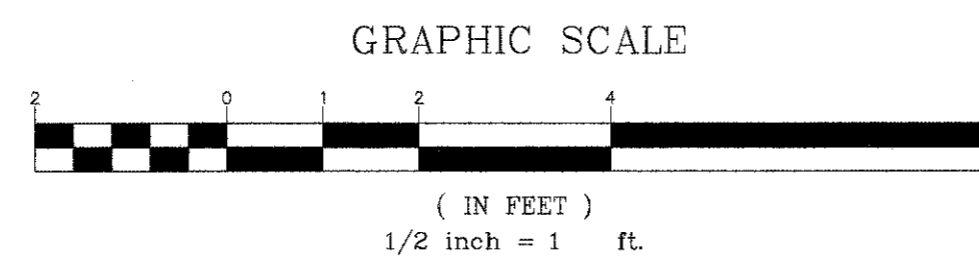
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. ALL FREE STANDING ELECTRICAL EQUIPMENT SHALL HAVE 4" HIGH CONCRETE HOUSEKEEPING PAD. EXTEND PAD FOR 4" ON EACH SIDE OF EQUIPMENT.
2. CONTRACTOR SHALL COORDINATE THE EXACT MAIN BREAKER LOCATION WITH THE APPROVED MCC SHOP DRAWINGS.
3. CONTRACTOR SHALL GROUND ALL ELECTRICAL EQUIPMENT ENCLOSURES (EQUIPMENT GROUND) WITHIN THE ELECTRICAL ROOM WITH #4/0 BARE COPPER CABLE TO THE NEAREST GROUND BUS. THE MCC SHALL BE GROUNDING AT TWO PLACES. SEE DWG. E-211 FOR MORE DETAILS.
4. SEE ONE LINE DIAGRAMS AND PANELBOARD SCHEDULES FOR MORE DETAILS.



1 PROCESS BUILDING ELECTRICAL ROOM LAYOUT
 SCALE: 1/2" = 1'-0"



PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

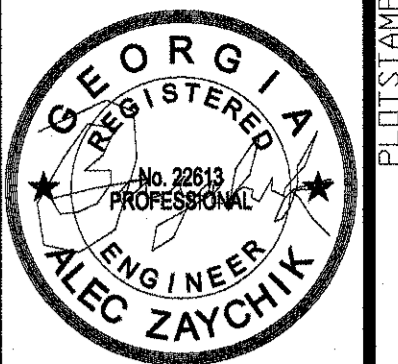
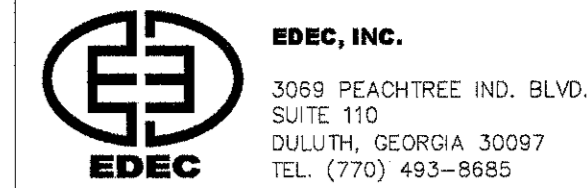
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PROCESS BUILDING
 ELECTRICAL ROOM LAYOUT

SHEET NO.
 E-203

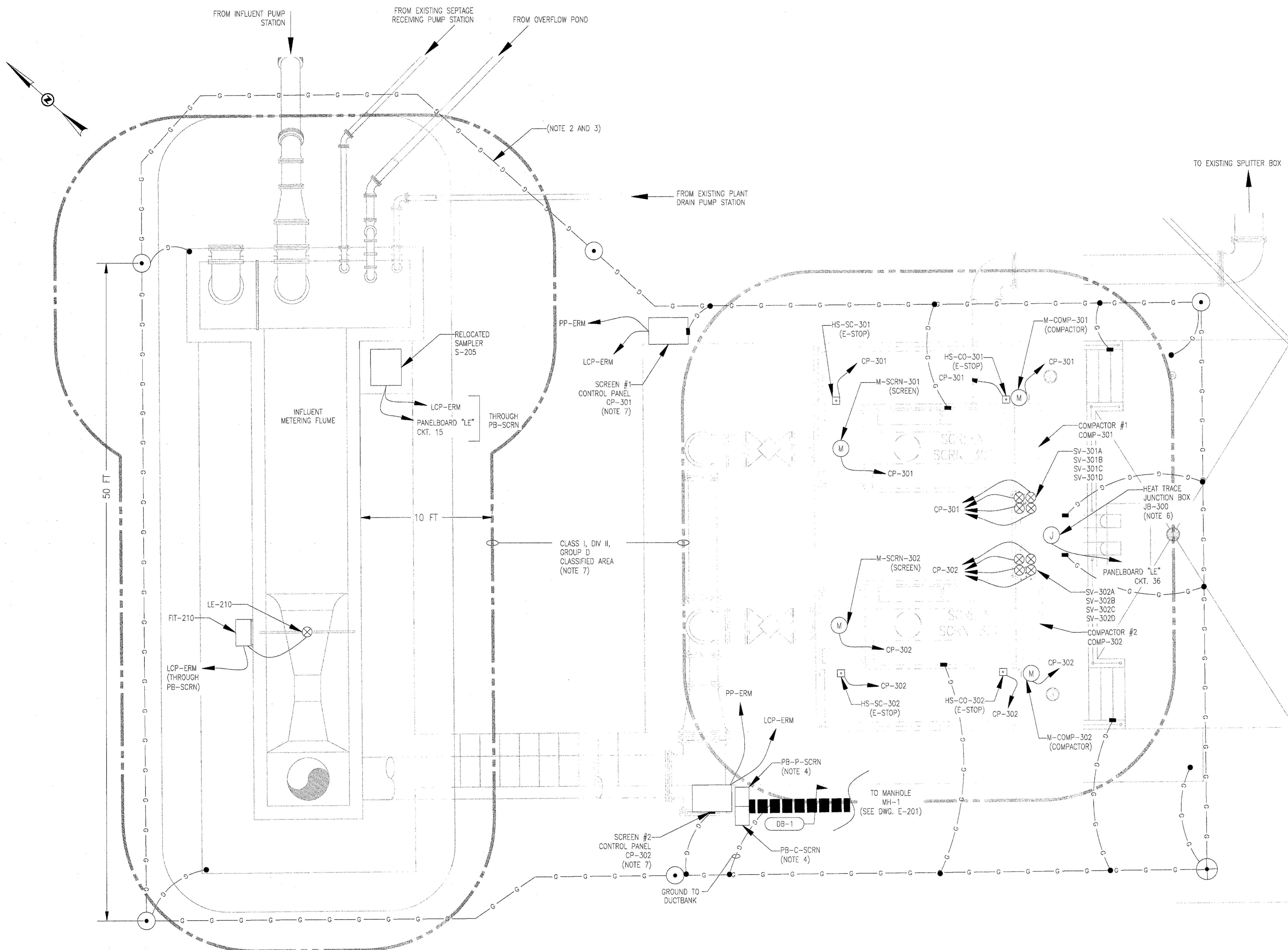
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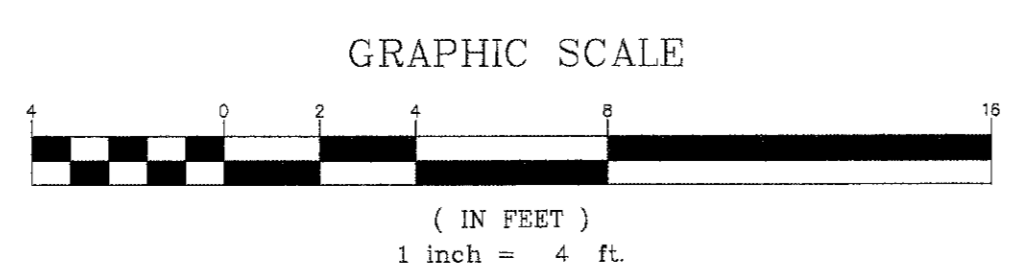
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 MARIETTA, GA 30067
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND INFLUENT STRUCTURE TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-SCRN) AND POWER (PB-P-SCRN) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS. PROVIDE AND INSTALL UNISTRUT SUPPORT AND ALL ASSOCIATED HARDWARE TO MOUNT PULL BOXES.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE WITH SUN/RAIN HOODS TO PROTECT THE EQUIPMENT FROM DIRECT SUN EXPOSURE. INSTALL UNISTRUT SUPPORTS TO MOUNT SCREEN SYSTEM CONTROL PANELS CP-301, CP-302 AND FLOW TRANSMITTER FIT-210.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR HEAT TRACE POWER CABLES.
7. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
8. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 INFLUENT METERING STRUCTURE AND INFLUENT SCREENS POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER:	DATE:
	AUGUST 2016
DESIGN: AZ	REVISION:
DRAWN: DV	DATE:
CHECK: AZ	

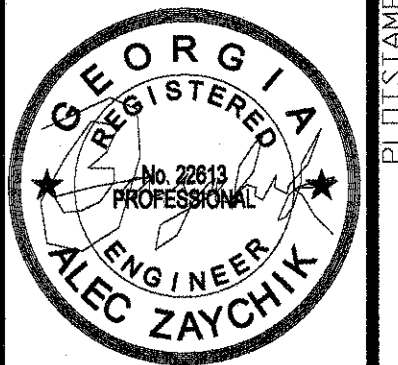
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 HEADWORKS STRUCTURE
 POWER AND GROUNDING PLAN

SHEET NO.
E-204

PLOT/STAMP



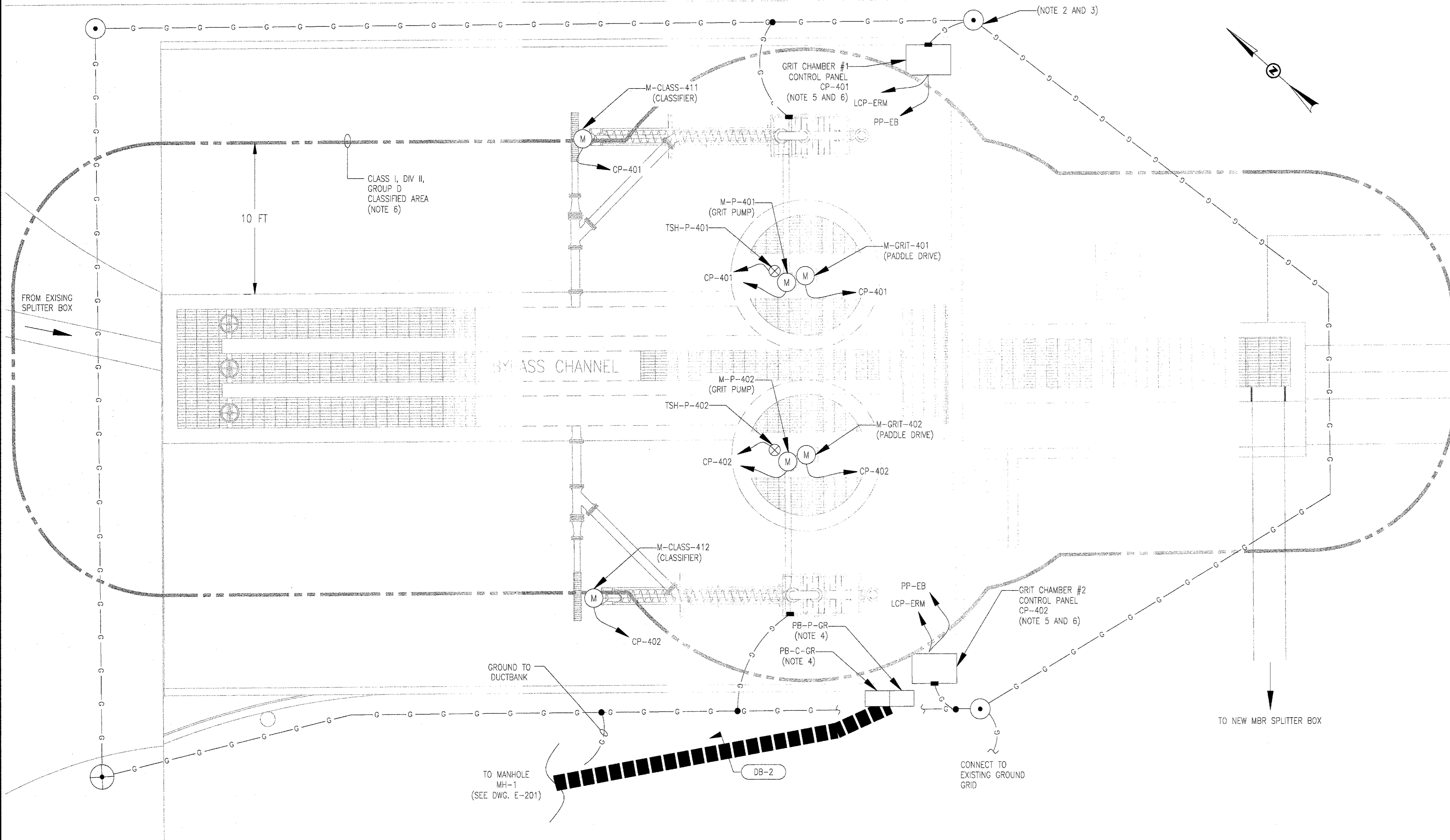
EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8885



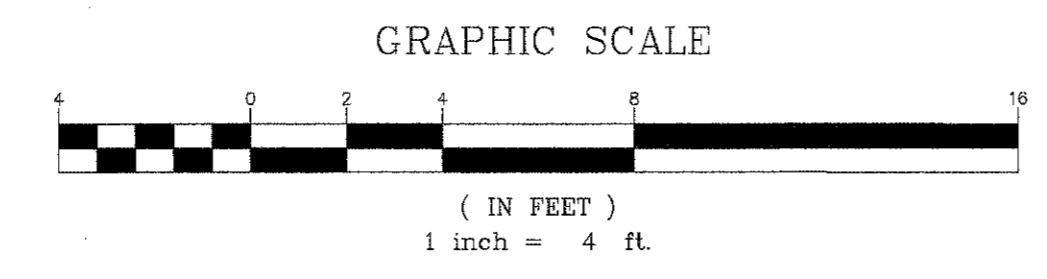
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARLBETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND GRIT SYSTEM TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-GR) AND POWER (PB-P-GR) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS. PROVIDE AND INSTALL UNISTRUT SUPPORT AND ALL ASSOCIATED HARDWARE TO MOUNT PULL BOXES.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE WITH SUN/RAIN HOODS TO PROTECT THE EQUIPMENT FROM DIRECT SUN EXPOSURE. INSTALL UNISTRUT SUPPORTS TO MOUNT GRIT SYSTEM CONTROL PANELS CP-401 AND CP-402.
6. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
7. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 GRIT SYSTEM POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: --- DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ	DRWN: DV
CHK: AZ	

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

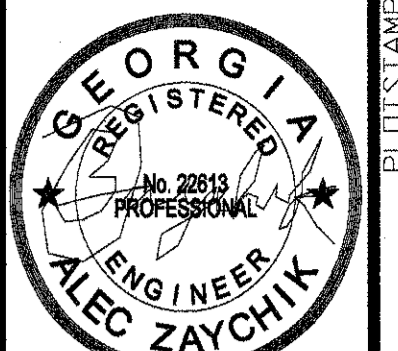
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 GRIT SYSTEM
 POWER AND GROUNDING PLAN

SHEET NO.
E-205

PLOT/STAMP



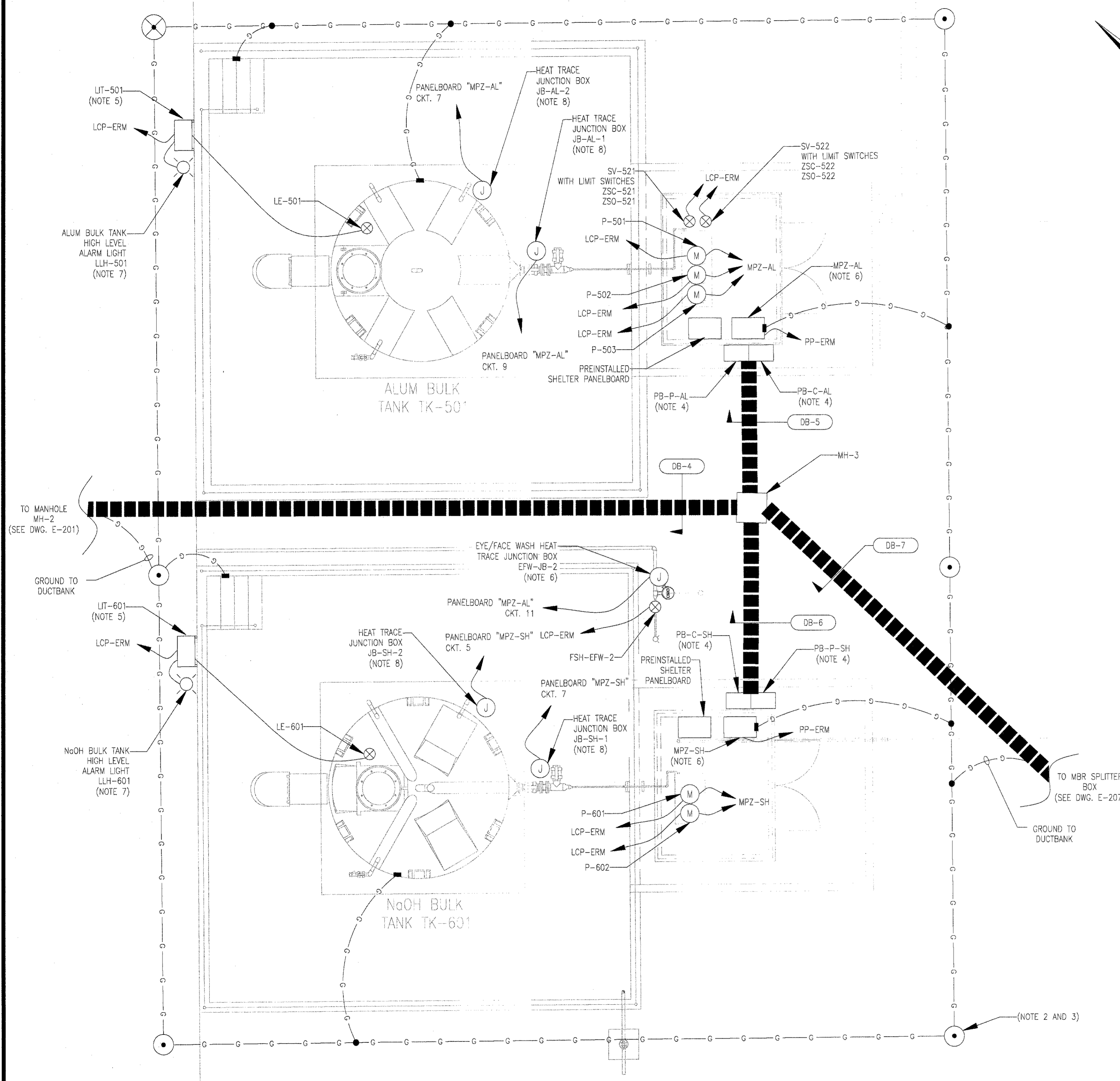
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



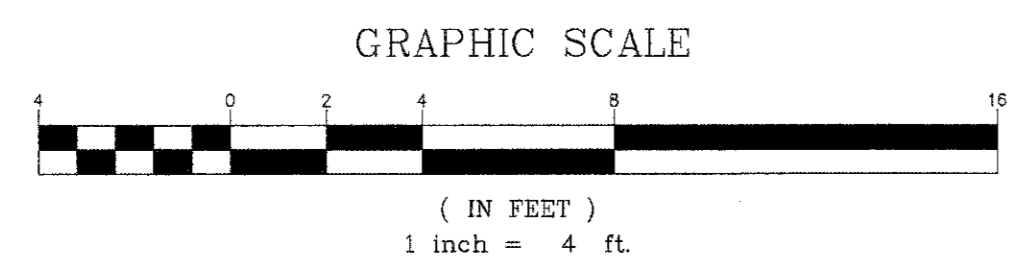
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30061
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND CHEMICAL STORAGE AREA TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-AL AND PB-C-SH) AND POWER (PB-P-AL AND PB-P-SH) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE WITH SUN/RAIN HOODS TO PROTECT THE EQUIPMENT FROM DIRECT SUN EXPOSURE. INSTALL UNISTRUT SUPPORTS TO MOUNT LEVEL TRANSMITTERS LIT-501 AND LIT-601.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS ENCLOSURE 120/240V, 1PH MINI POWER ZONES MPZ-AL AND MPZ-SH AT ALUM AND NaOH CHEMICAL SHELTERS RESPECTIVELY. SEE DWG. E-150 FOR PANELBOARD SCHEDULES.
7. CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) WEATHERPROOF RED STROBE LIGHTS RATED FOR 120VAC (ONE FOR EACH CHEMICAL TANK). THE LIGHT SHALL BE ACTIVATED WHEN THE HIGH LEVEL SET POINT CONTACT IN LEVEL TRANSMITTER IS ACTIVATED. THE STROBE LIGHT SHALL BE BY "FEDERAL SIGNAL", "EDWARDS" OR APPROVED EQUAL AND SHALL BE MOUNTED TO PROVIDE A CLEAR VIEW FROM THE CHEMICAL TANKS FILLING AREA.
8. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR HEAT TRACE POWER CABLES.
9. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 CHEMICAL STORAGE AREA POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

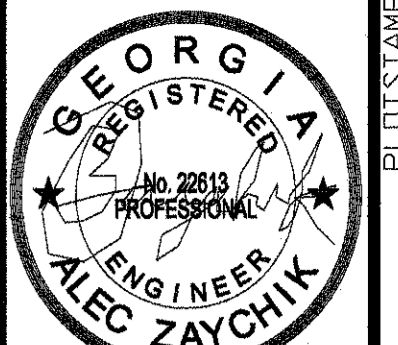
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 CHEMICAL STORAGE AREA
 POWER AND GROUNDING PLAN

SHEET NO.
 E-206

PLOTISTAMP



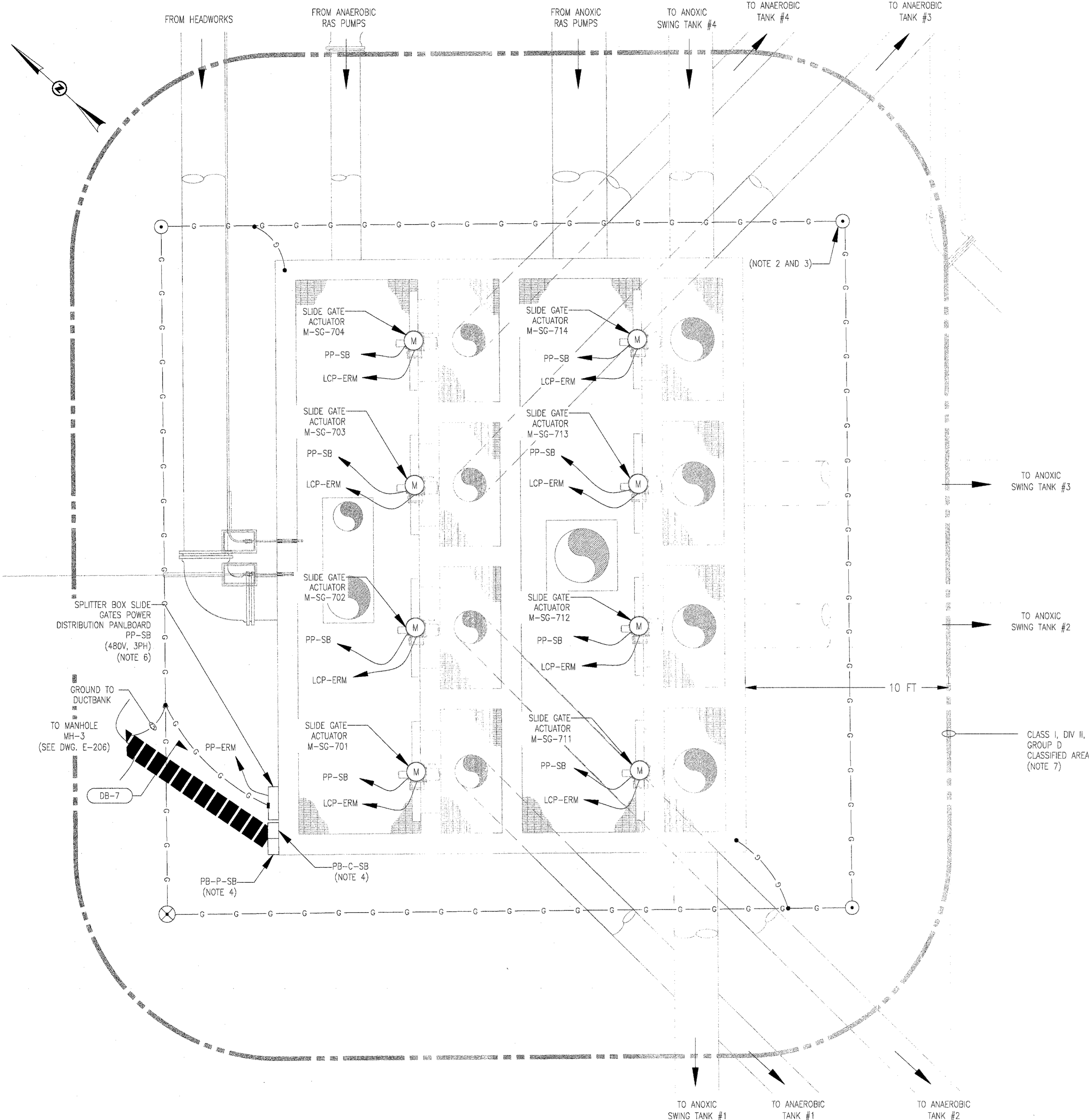
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-9685



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING MBR SPLITTER BOX STRUCTURE TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-SB) AND POWER (PB-P-SB) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS. THE BOTTOM OF THE BOX SHALL BE 24" ABOVE TOP OF THE TANK TO BE OUT OF THE CLASSIFIED AREA.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORT AND ALL ASSOCIATED HARDWARE. INSTALL UNISTRUT SUPPORT TO MOUNT POWER DISTRIBUTION PANELBOARD PP-SB AND PULL BOX PB-SB.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS ENCLOSURE 480V, 3PH PANELBOARD PP-SB. SEE DWG. E-150 FOR PANELBOARD SCHEDULE. THE BOTTOM OF THE PANEL SHALL BE 24" ABOVE TOP OF THE TANK TO BE OUT OF THE CLASSIFIED AREA.
7. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
8. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 MBR SPLITTER BOX POWER AND GROUNDING PLAN
 SCALE: 1" = 3'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 3 ft.

PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE
Δ	

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW US 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR SPLITTER BOX
 POWER AND GROUNDING PLAN

PLD151287



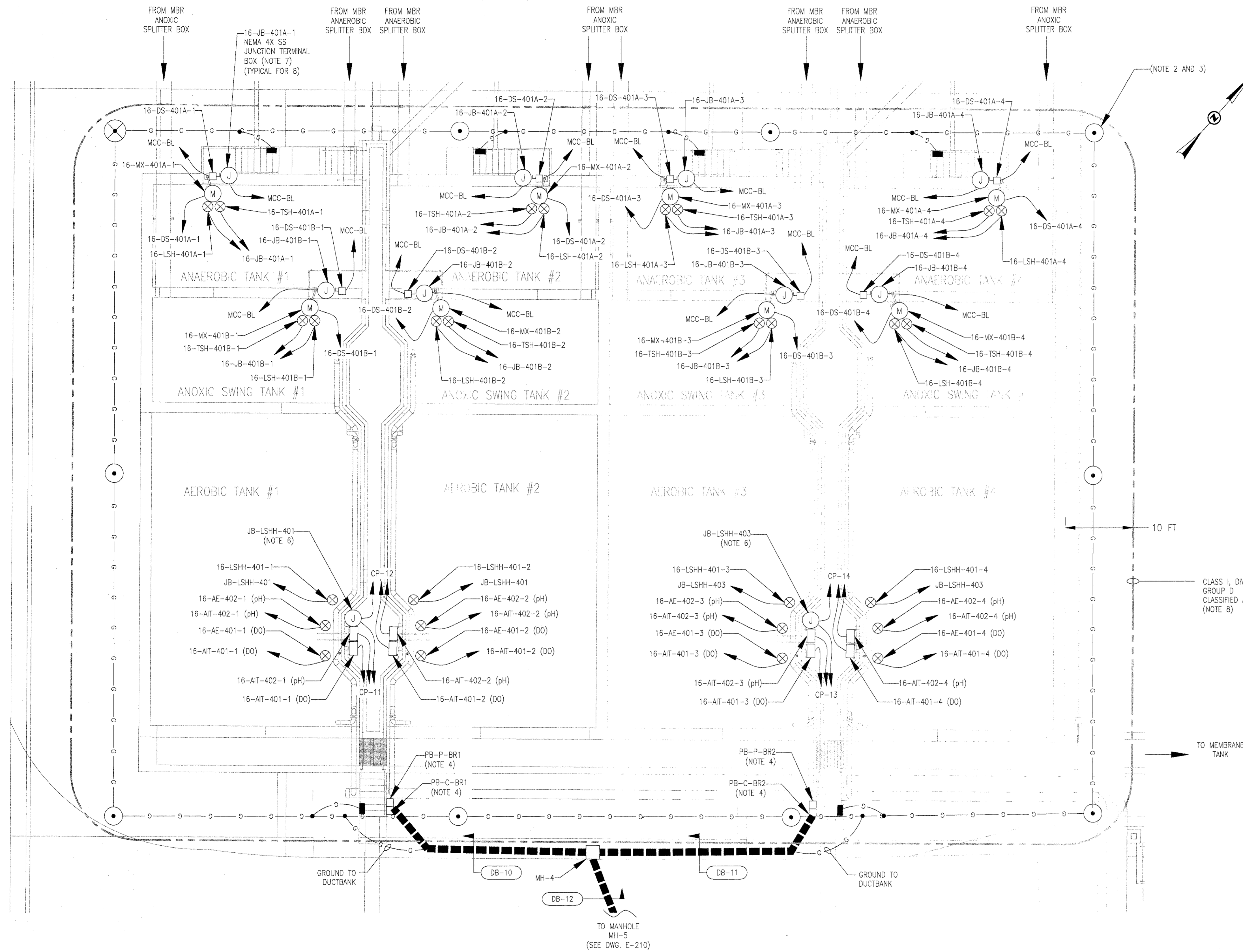
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND BIOREACTOR RESERVOIR TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-BR1 AND PB-C-BR2) AND POWER (PB-P-BR1 AND PB-P-BR2) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE WITH SUN/RAIN HOODS TO PROTECT THE EQUIPMENT FROM DIRECT SUN EXPOSURE. TO MOUNT DISSOLVED OXYGEN AND pH TRANSMITTERS AND JUNCTION BOXES AT EACH WALKWAY BETWEEN AEROBIC TANKS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOXES FOR LEVEL FLOAT SWITCHES CABLES SPLICING.
7. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION TERMINAL BOX FOR TERMINATION OF MIXER SIGNAL (TEMPERATURE AND MOISTURE SENSORS) CABLES.
8. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
9. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 BIOREACTOR RESERVOIR POWER AND GROUNDING PLAN
 SCALE: 1" = 8'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 8 ft.

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

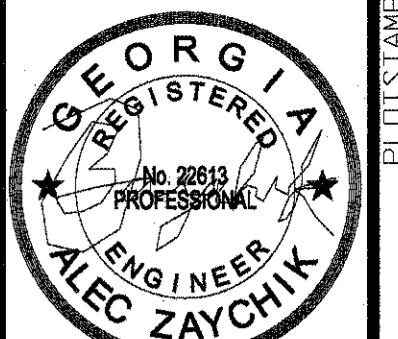
DSGN: AZ
 DRWN: JV
 CHCK: AZ
 ALL DIMENSIONS IN FEET UNLESS OTHERWISE SHOWN ON THIS SHEET. IF NOT 1" = 1' SCALE, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 BIOREACTOR RESERVOIR
 POWER AND GROUNDING PLAN

SHEET NO.
 E-208



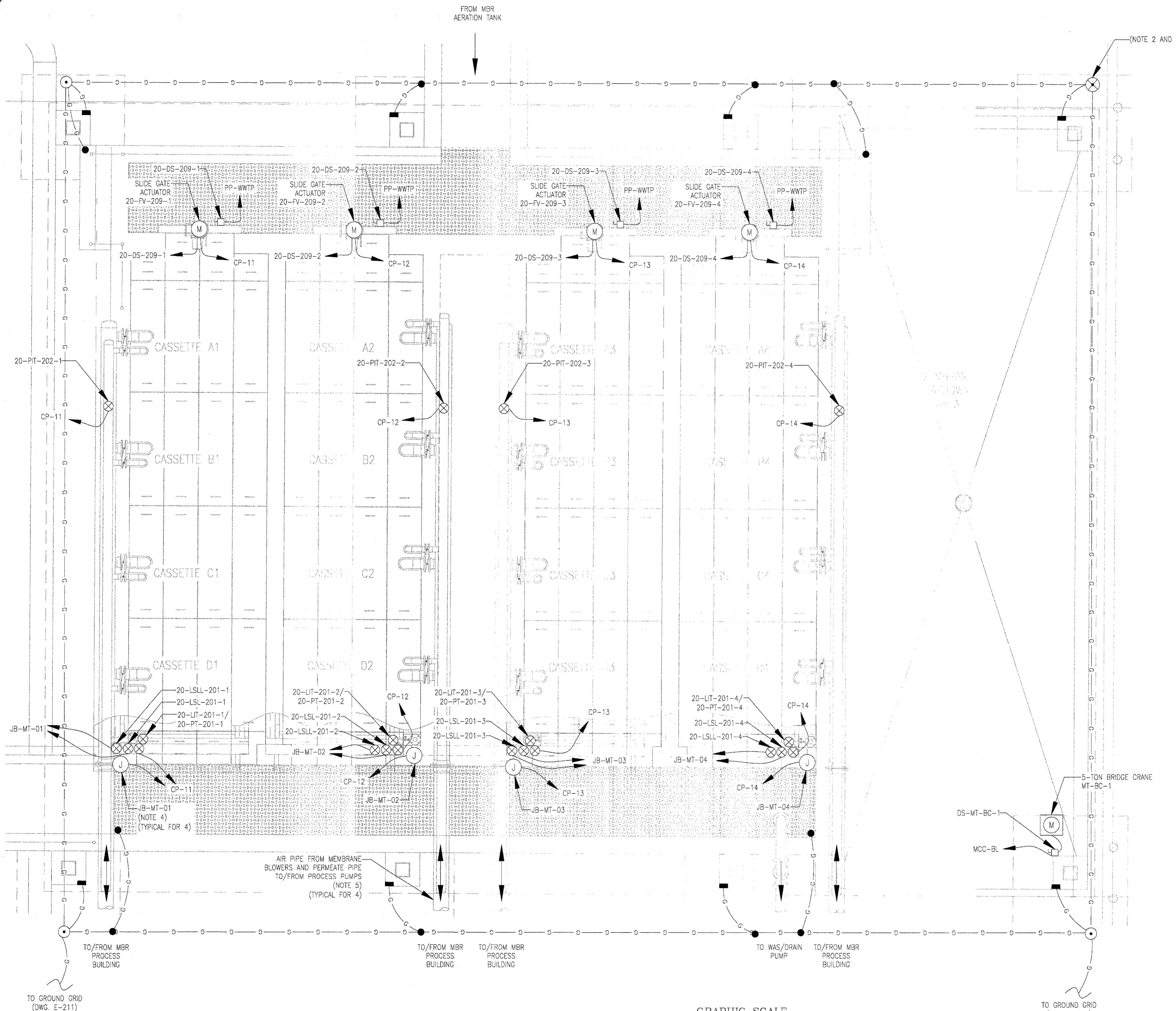
EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL: (770) 493-8685



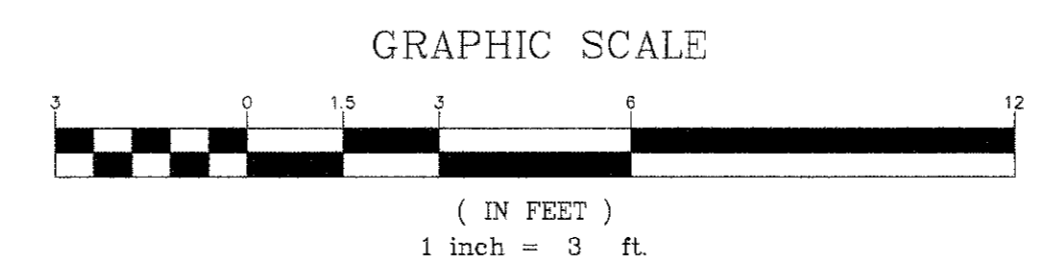
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND MEMBRANE TANK TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX FOR LEVEL FLOAT SWITCHES CABLES SPLICING.
5. CONTRACTOR SHALL PROVIDE AND INSTALL POWER, CONTROL AND SIGNAL CABLES ON THE SAME RACK ALONG WITH AIR AND PERMEATE PIPES.
6. SEE DWG. 95-M-1 FOR PROPOSED CONDUITS RACK SUPPORT.



1 MEMBRANE TANK POWER AND GROUNDING PLAN
 SCALE: 1" = 3'



PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MEMBRANE TANK
POWER AND GROUNDING PLAN

SHEET NO.
E-209



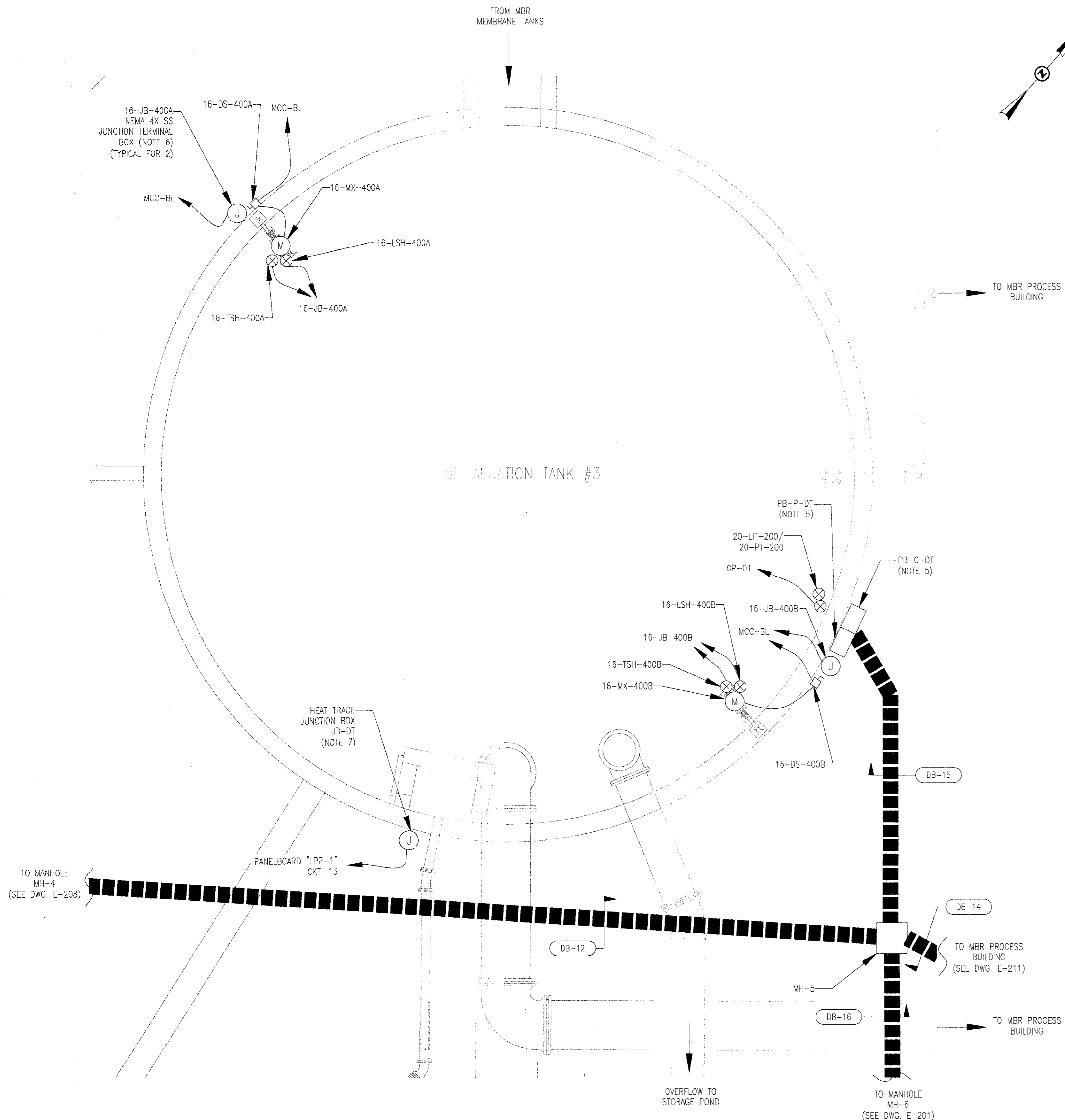
EDEC, INC.
 3089 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



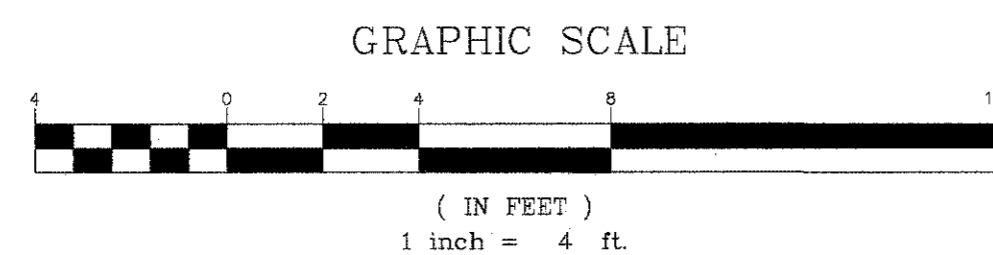
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND DE-AERATION TANK TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE, TO MOUNT PULL BOXES PB-P-DT AND PB-C-DT, JUNCTION BOXES 16-JB-400A/B AND DISCONNECT SWITCHES 16-DS-400A/B.
5. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-DT) AND POWER (PB-P-DT) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE UNISTRUT SUPPORT.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION TERMINAL BOXES FOR TERMINATION OF MIXER SIGNAL (TEMPERATURE AND MOISTURE SENSORS) CABLES.
7. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR HEAT TRACE POWER CABLES.
8. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 DE-AERATION TANK POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

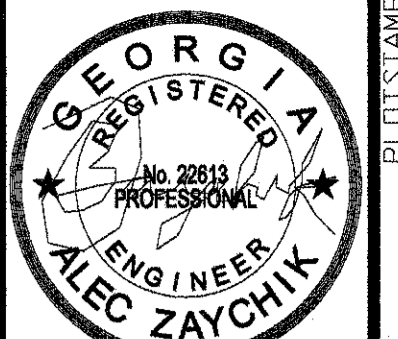
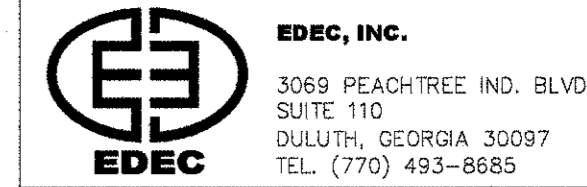
DSGN: AZ
 DRWN: JIV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 DE-AERATION TANK
 POWER AND GROUNDING PLAN

SHEET NO.
 E-210

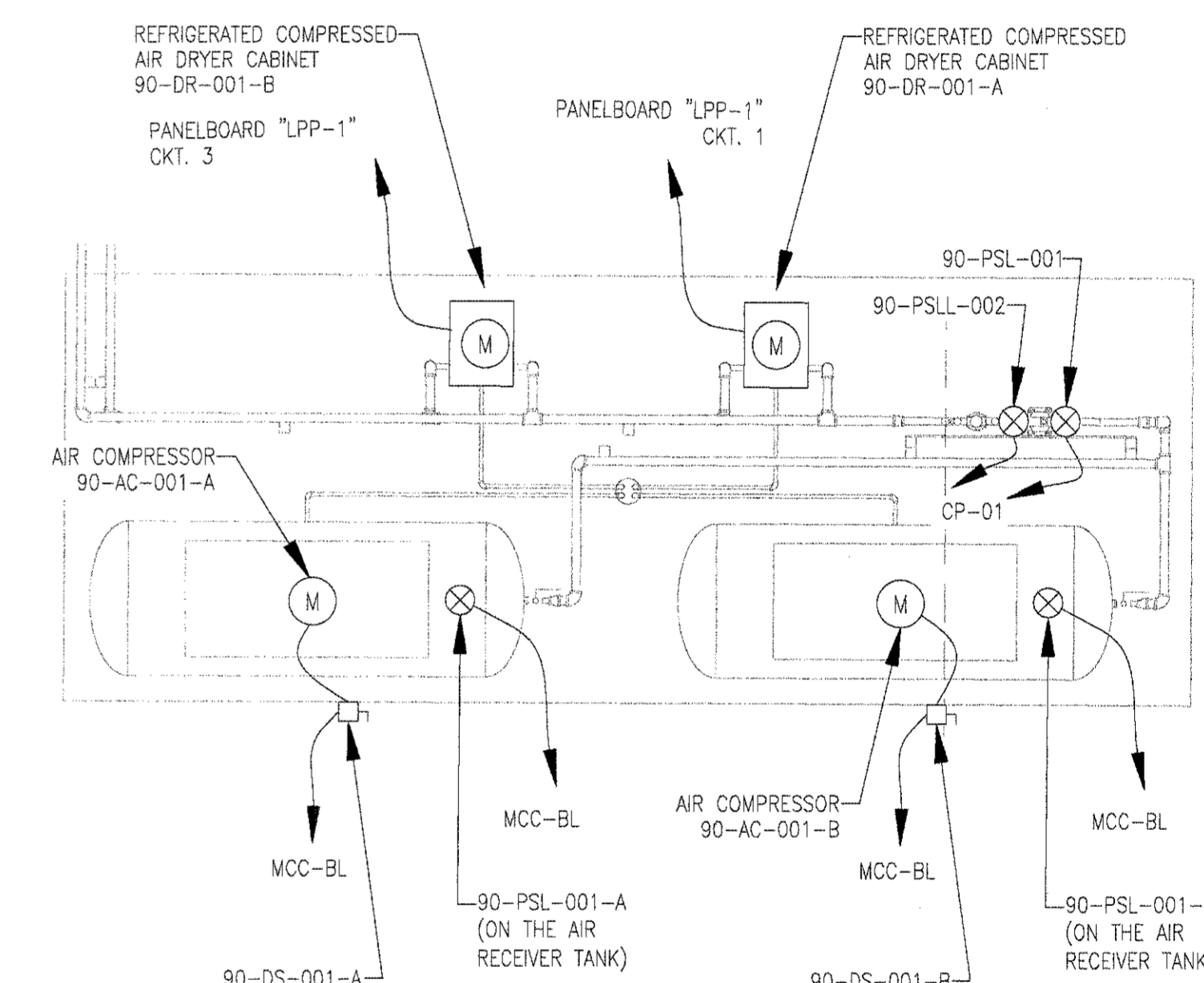
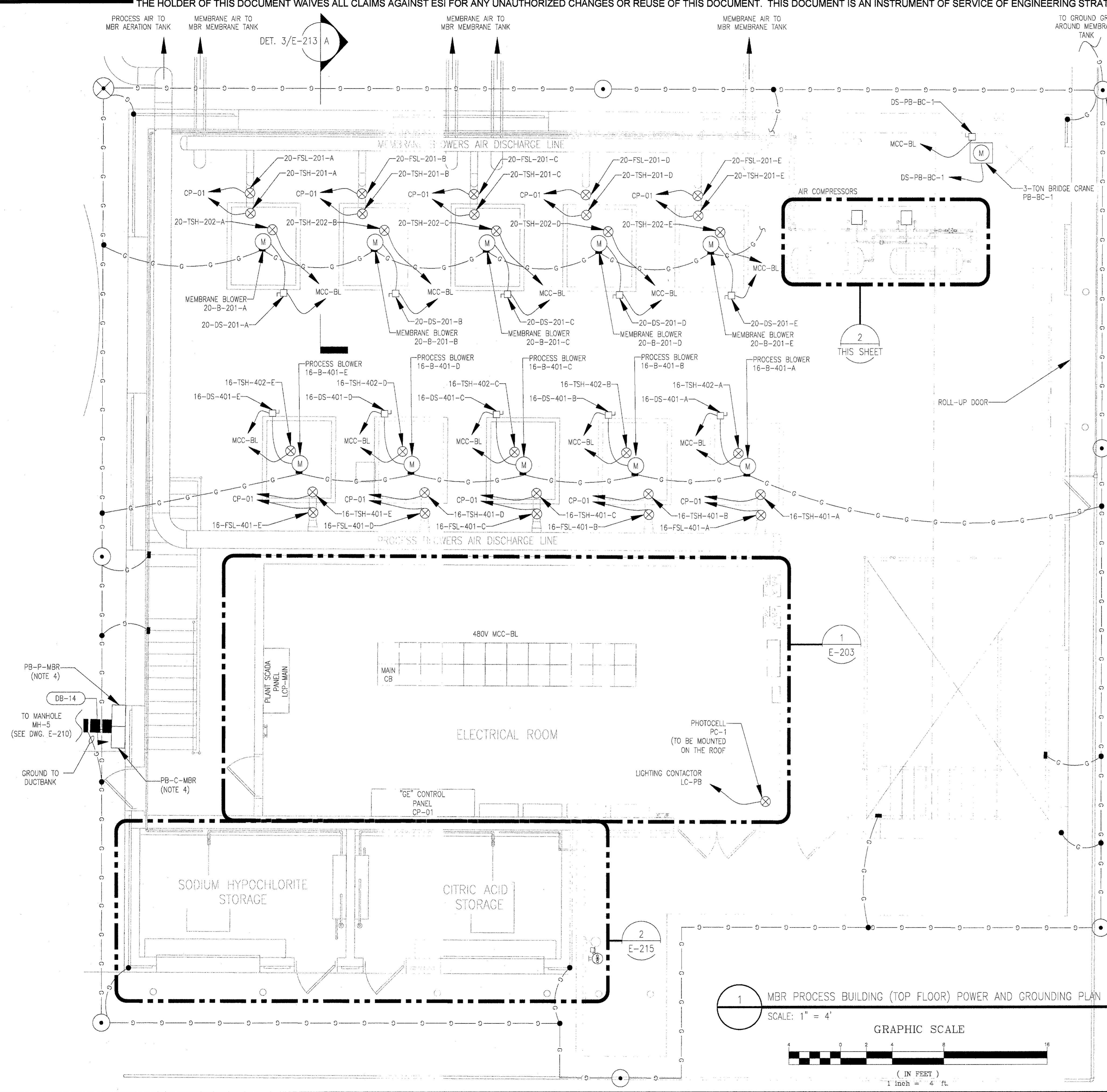
PLIOTSTAMP



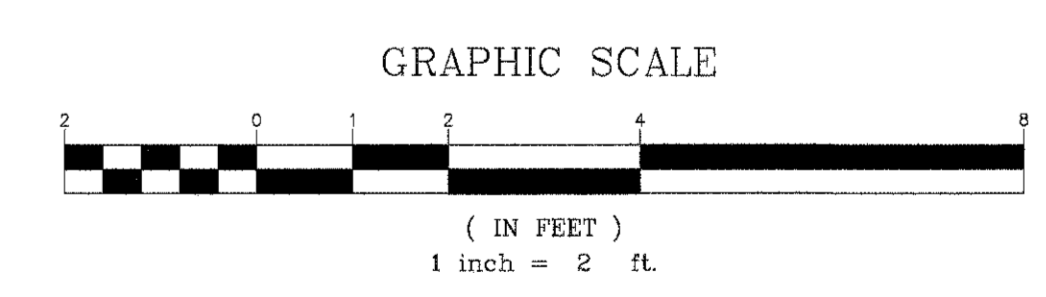
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30067
(770) 429-0001

NOTES:

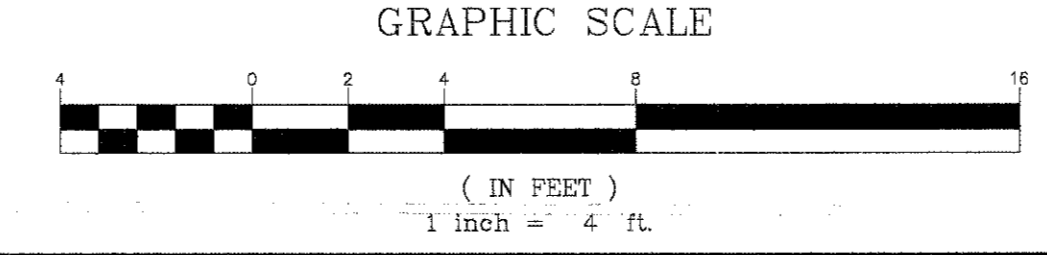
1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND MBR PROCESS BUILDING TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-MBR) AND POWER (PB-P-MBR) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE PROCESS BUILDING WALL AT 2'-0" ABOVE GRADE.
5. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE TO MOUNT TRANSMITTERS, DISCONNECT SWITCHES, JUNCTION BOXES AND ETC.



2 MBR PROCESS BUILDING TOP FLOOR (AIR COMPRESSOR ASSEMBLY)
SCALE: 1" = 2'



1 MBR PROCESS BUILDING (TOP FLOOR) POWER AND GROUNDING PLAN
SCALE: 1" = 4'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BEYOND 1' LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1' LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
MBR PROCESS BUILDING TOP FLOOR
POWER AND GROUNDING PLAN

SHEET NO.
E-211



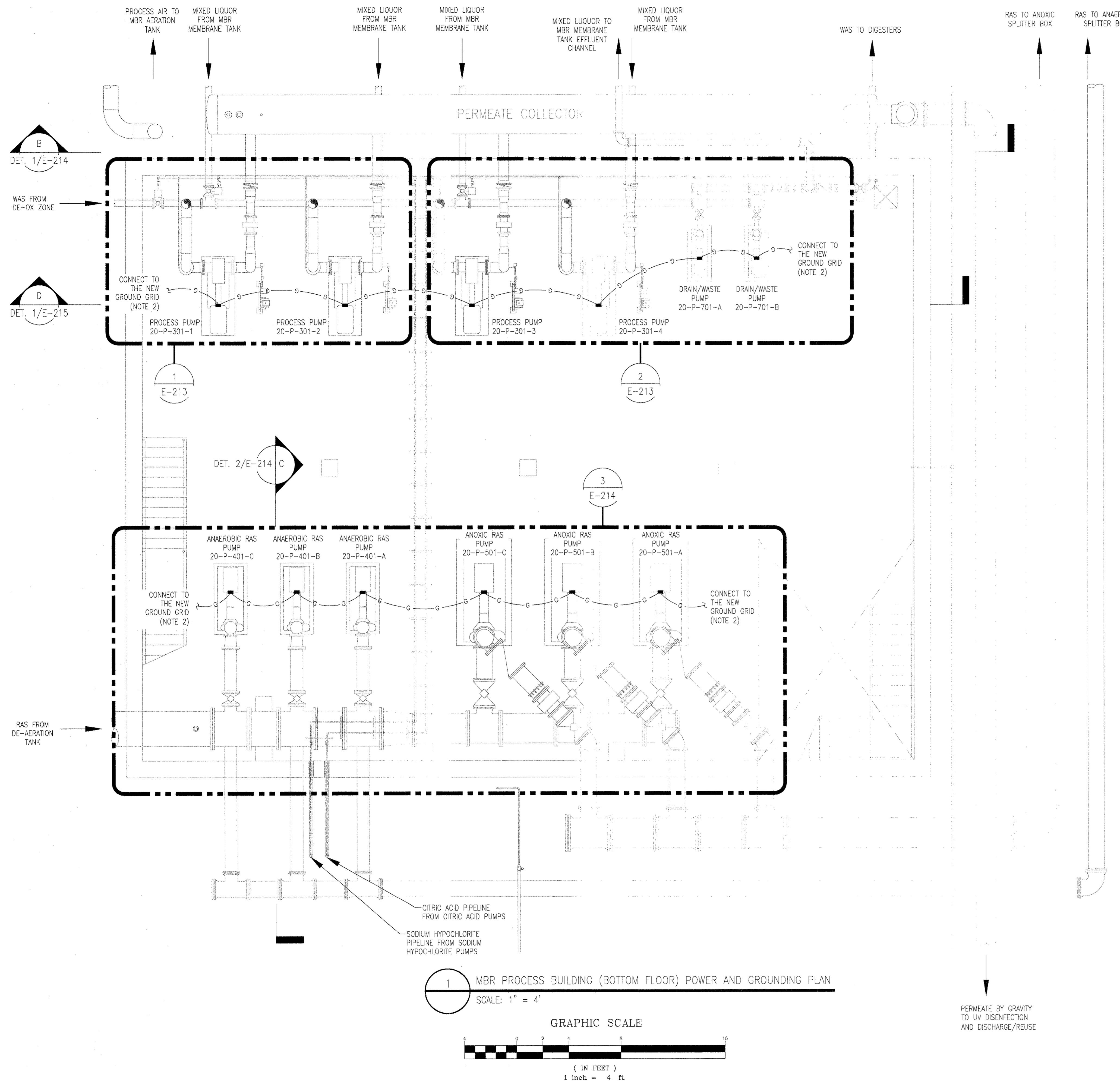
EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



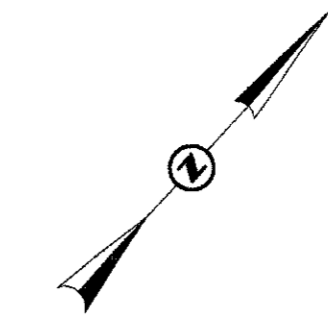
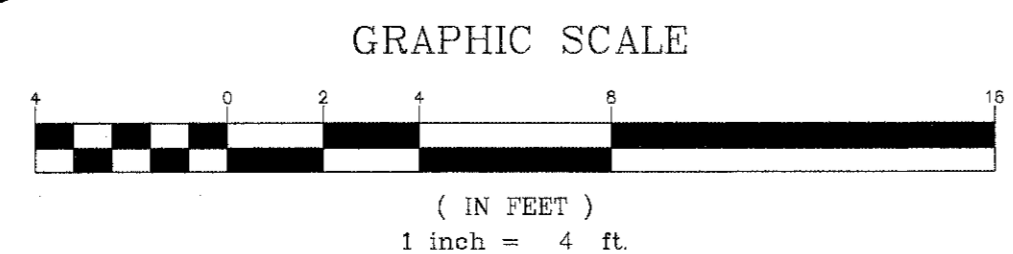
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW EQUIPMENT TO MBR PROCESS BUILDING GROUND GRID.



1 MBR PROCESS BUILDING (BOTTOM FLOOR) POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: -----	DATE: AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING BOTTOM FLOOR
 POWER AND GROUNDING PLAN

SHEET NO.
E-212

PLOTS/TAMP



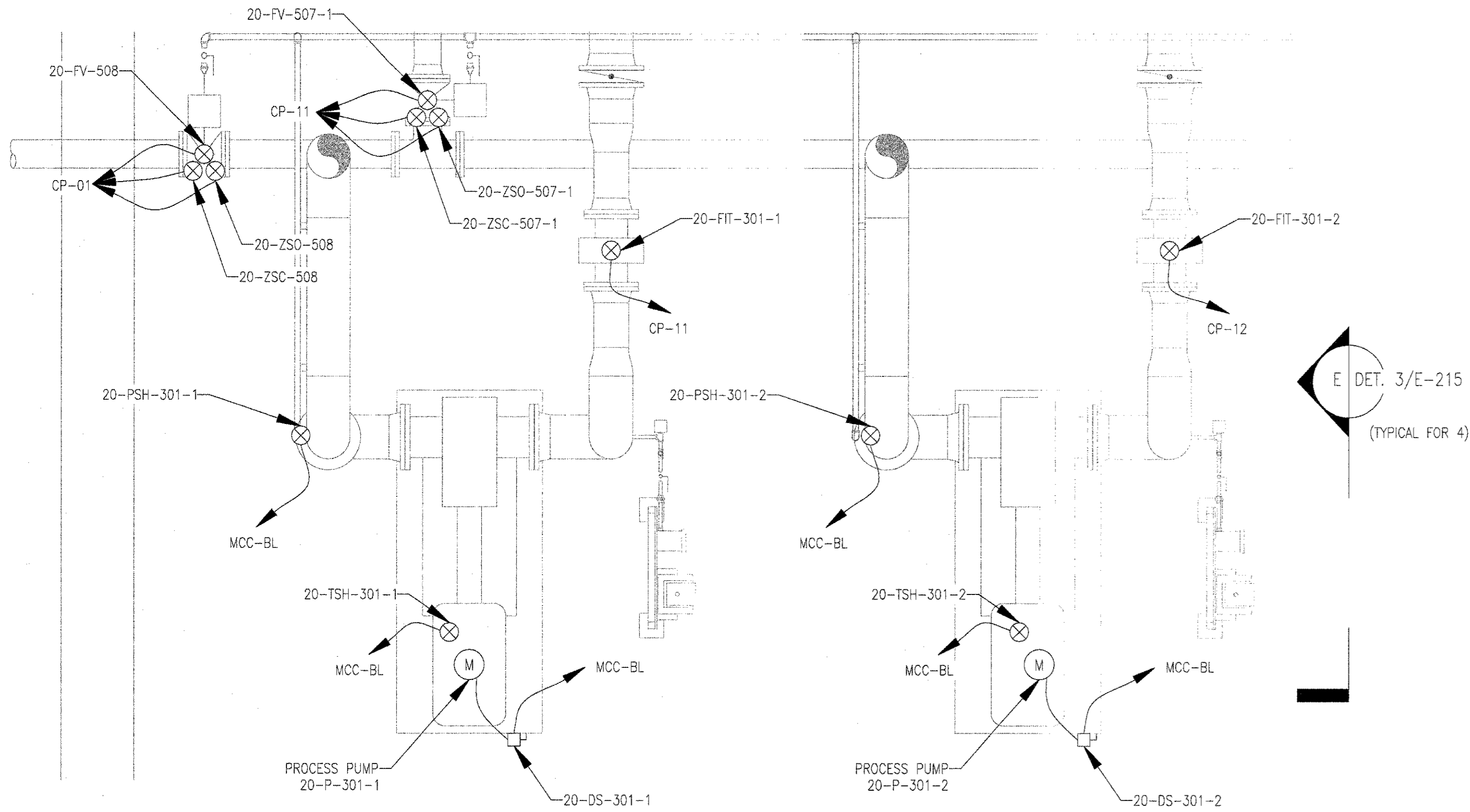
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE TO MOUNT TRANSMITTERS, DISCONNECT SWITCHES, JUNCTION BOXES AND ETC. IF REQUIRED.
3. SEE DWG. E-212 FOR EQUIPMENT GROUNDING PLAN.



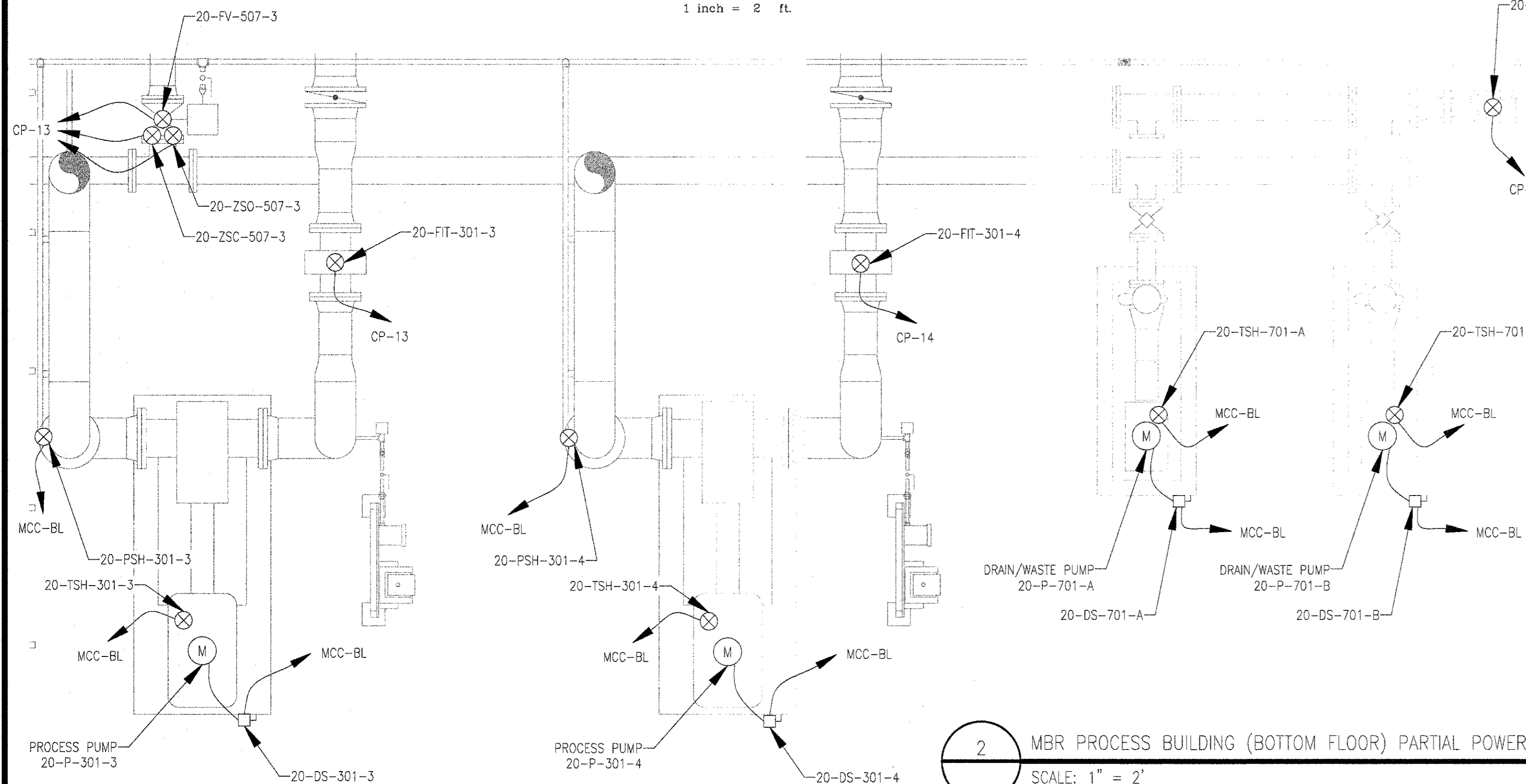
1 MBR PROCESS BUILDING (BOTTOM FLOOR) PARTIAL POWER PLAN

SCALE: 1" = 2'

GRAPHIC SCALE



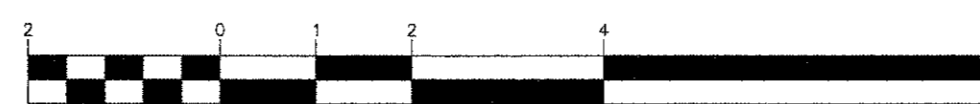
(IN FEET)
 1 inch = 2 ft.



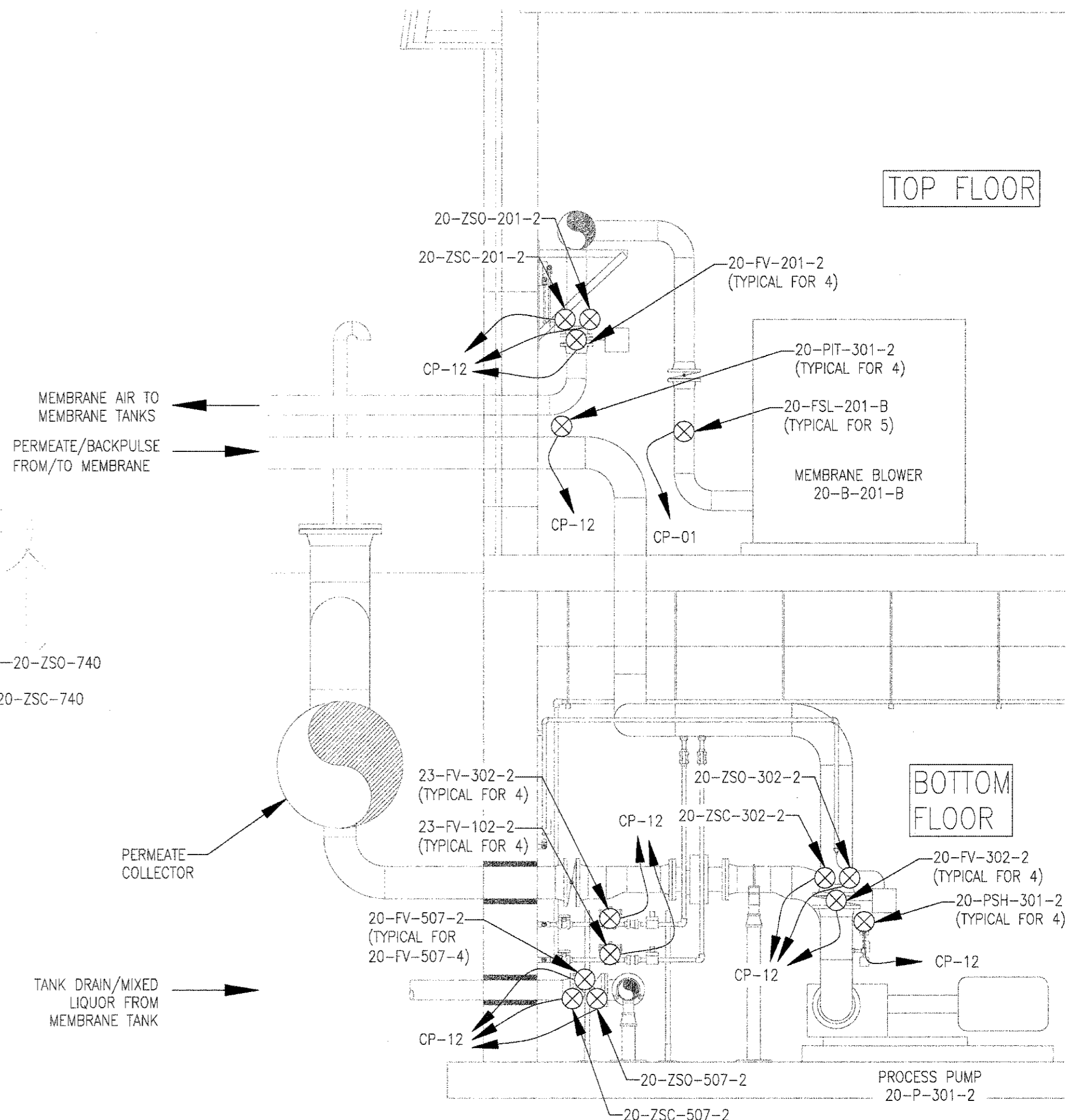
2 MBR PROCESS BUILDING (BOTTOM FLOOR) PARTIAL POWER PLAN

SCALE: 1" = 2'

GRAPHIC SCALE



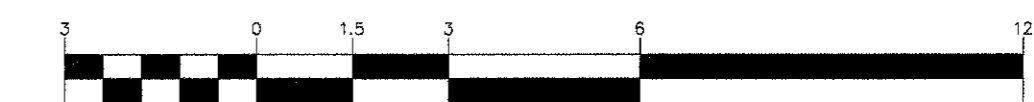
(IN FEET)
 1 inch = 2 ft.



3 MBR PROCESS BUILDING (BOTTOM FLOOR) POWER PLAN (SECTION A)

SCALE: 1" = 3'

GRAPHIC SCALE



(IN FEET)
 1 inch = 3 ft.

PROJECT NUMBER: 2016
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CKD: AZ

BASE DIMENSIONS LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING BOTTOM FLOOR
 POWER PLAN

SHEET NO.

E-213



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



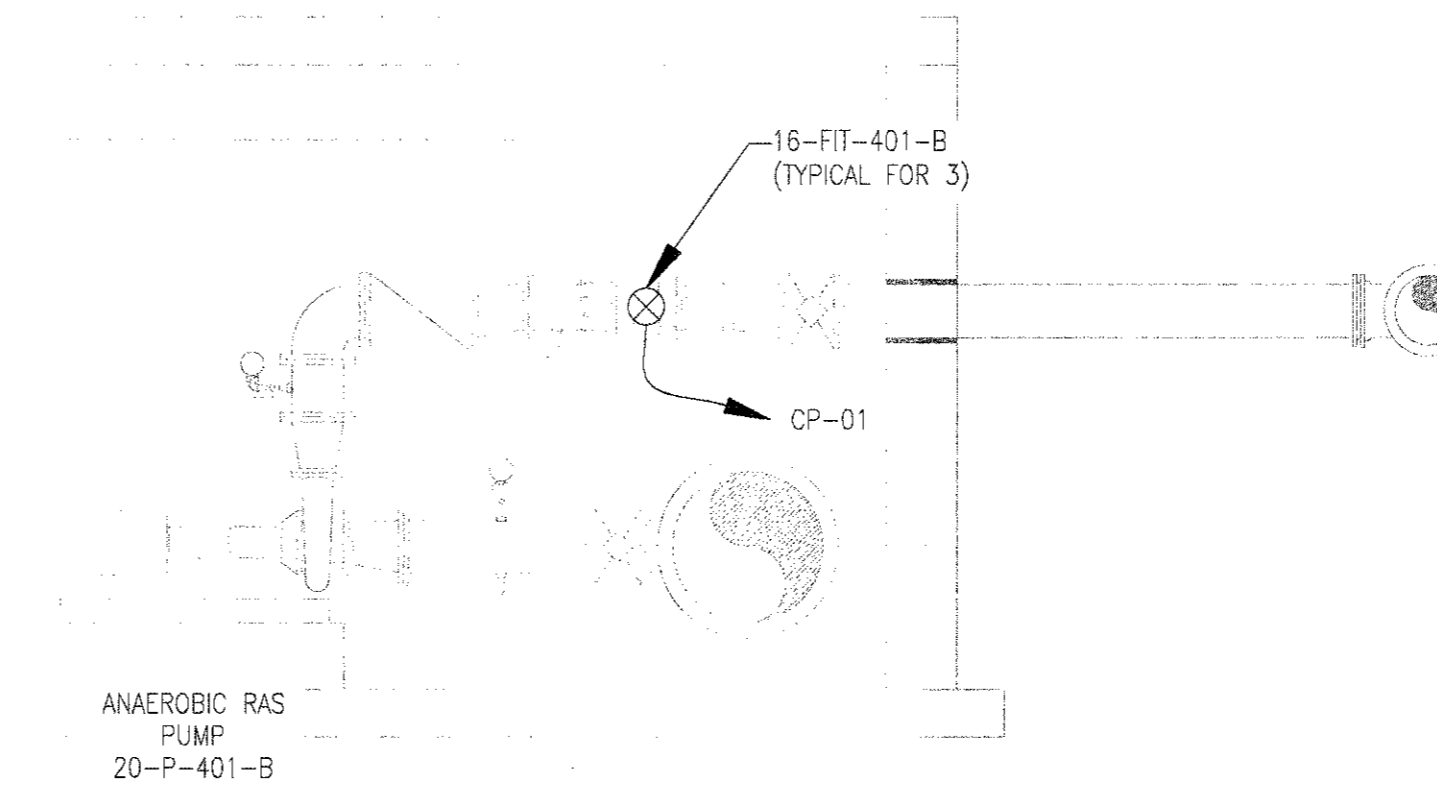
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

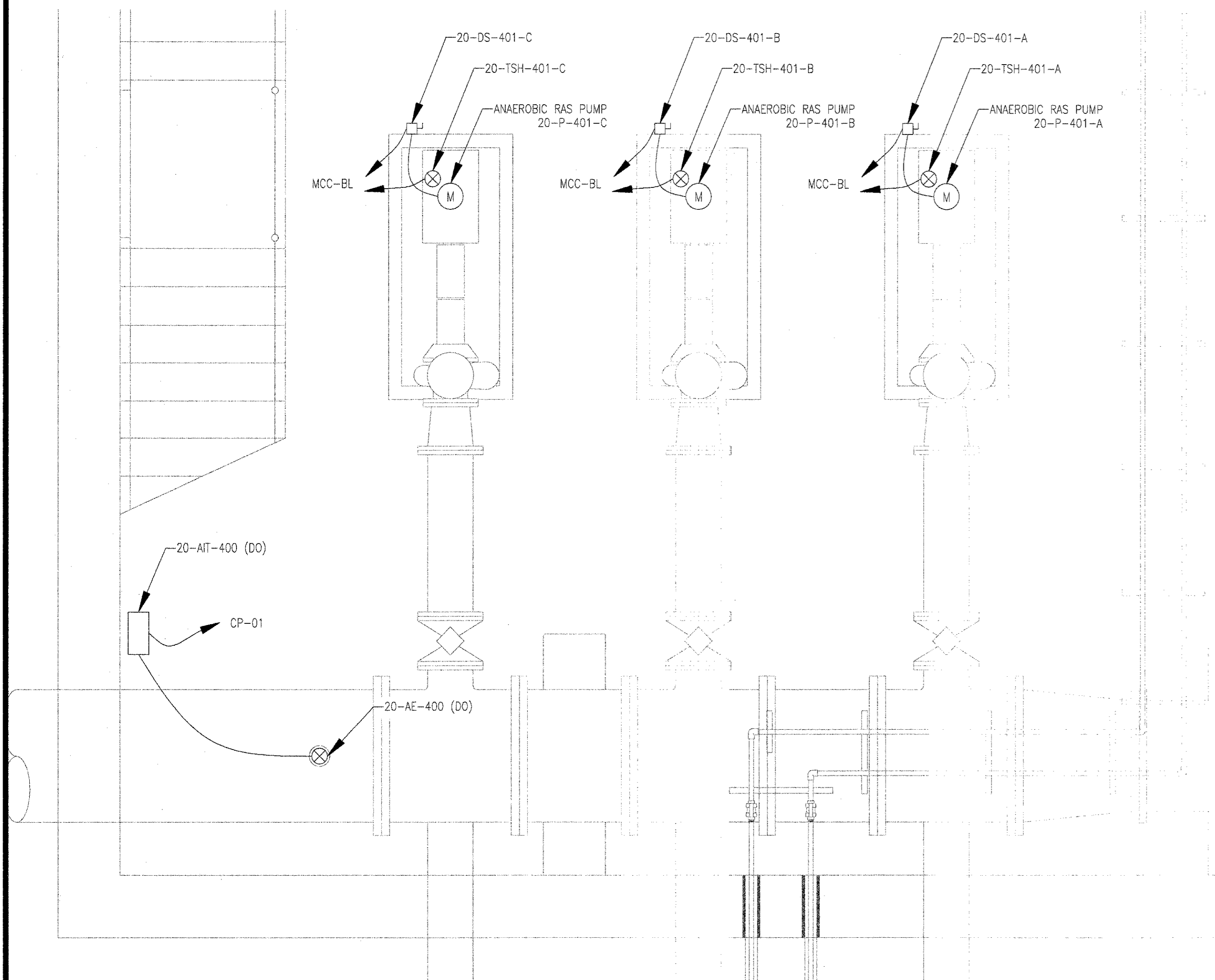
1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE TO MOUNT TRANSMITTERS, DISCONNECT SWITCHES, JUNCTION BOXES AND ETC. IF REQUIRED.
3. SEE DWG. E-212 FOR EQUIPMENT GROUNDING.



1 PERMEATE COLLECTOR POWER PLAN (SECTION B)
 SCALE: N.T.S.

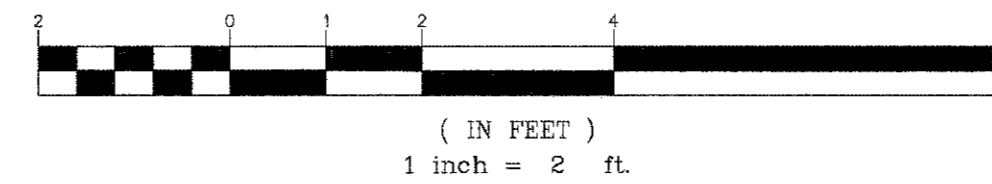


2 ANAEROBIC RAS PUMP (MBR PROCESS BUILDING BOTTOM FLOOR)
 POWER PLAN (SECTION C)
 SCALE: N.T.S.



3 ANAEROBIC AND ANOXIC RAS PUMPS (MBR PROCESS BUILDING BOTTOM FLOOR) POWER PLAN
 SCALE: 1" = 2'

GRAPHIC SCALE



PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 RAS BELOW IS AT ONE FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING BOTTOM FLOOR
 POWER PLAN

SHEET NO.
E-214

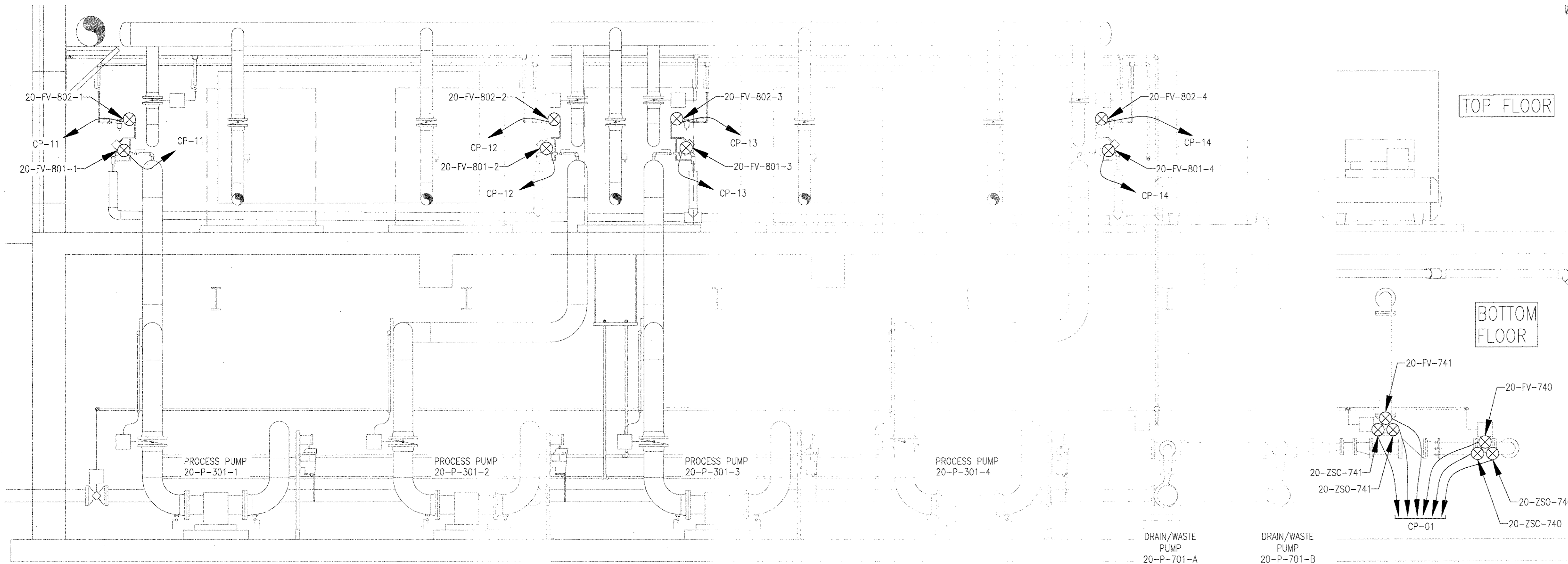
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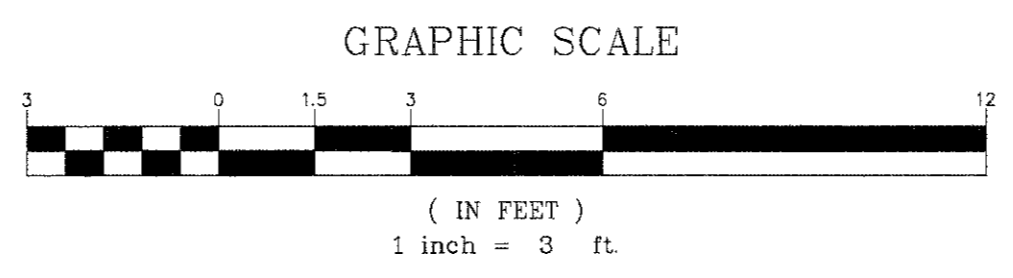
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



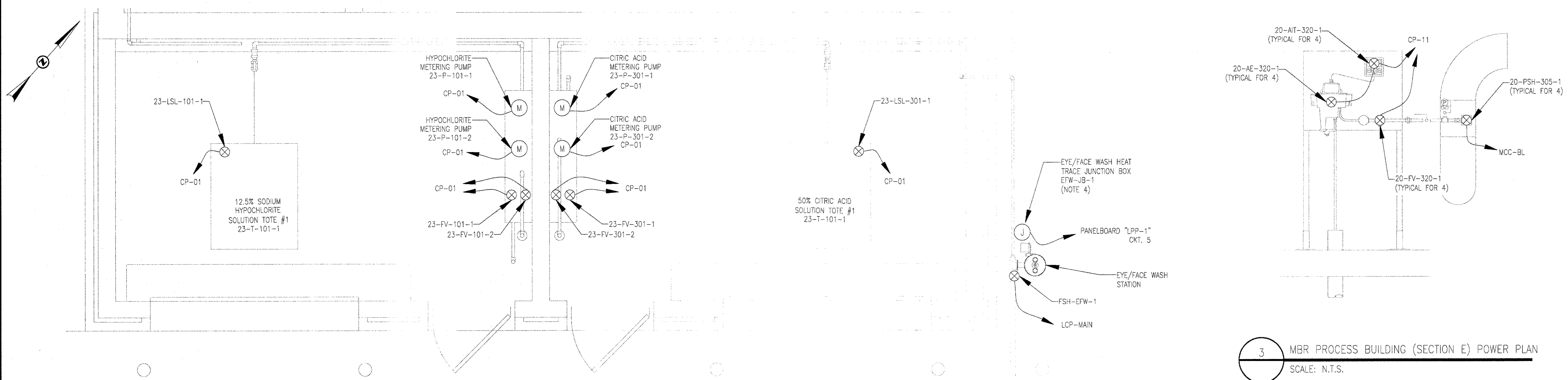
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001



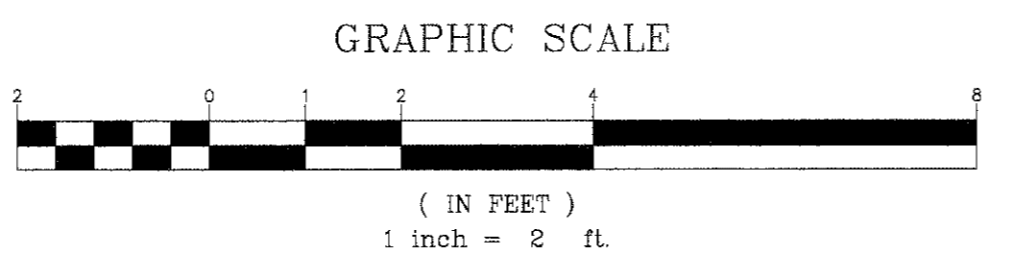
1 MBR PROCESS BUILDING (SECTION D) POWER PLAN
 SCALE: 1" = 3'



- NOTES:
1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
 2. CONTRACTOR SHALL PROVIDE AND INSTALL UNISTRUT SUPPORTS AND ALL ASSOCIATED HARDWARE TO MOUNT TRANSMITTERS, DISCONNECT SWITCHES, JUNCTION BOXES AND ETC. IF REQUIRED.
 3. CONTRACTOR SHALL PROVIDE AND INSTALL ALL DEVICES (HAND STATION, MOTOR STARTER, ETC.) ASSOCIATED WITH MOTORIZED ROLL-UP DOOR.
 4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR POWER CABLES FOR EYE/FACE WASH HEAT TRACE.
 5. SEE DWG. E-212 FOR GROUNDING PLAN.



2 CHEMICAL STORAGES AT MBR PROCESS BUILDING
 SCALE: 1" = 2'



3 MBR PROCESS BUILDING (SECTION E) POWER PLAN
 SCALE: N.T.S.

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BEYOND 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 POWER PLAN

SHEET NO.
 E-215



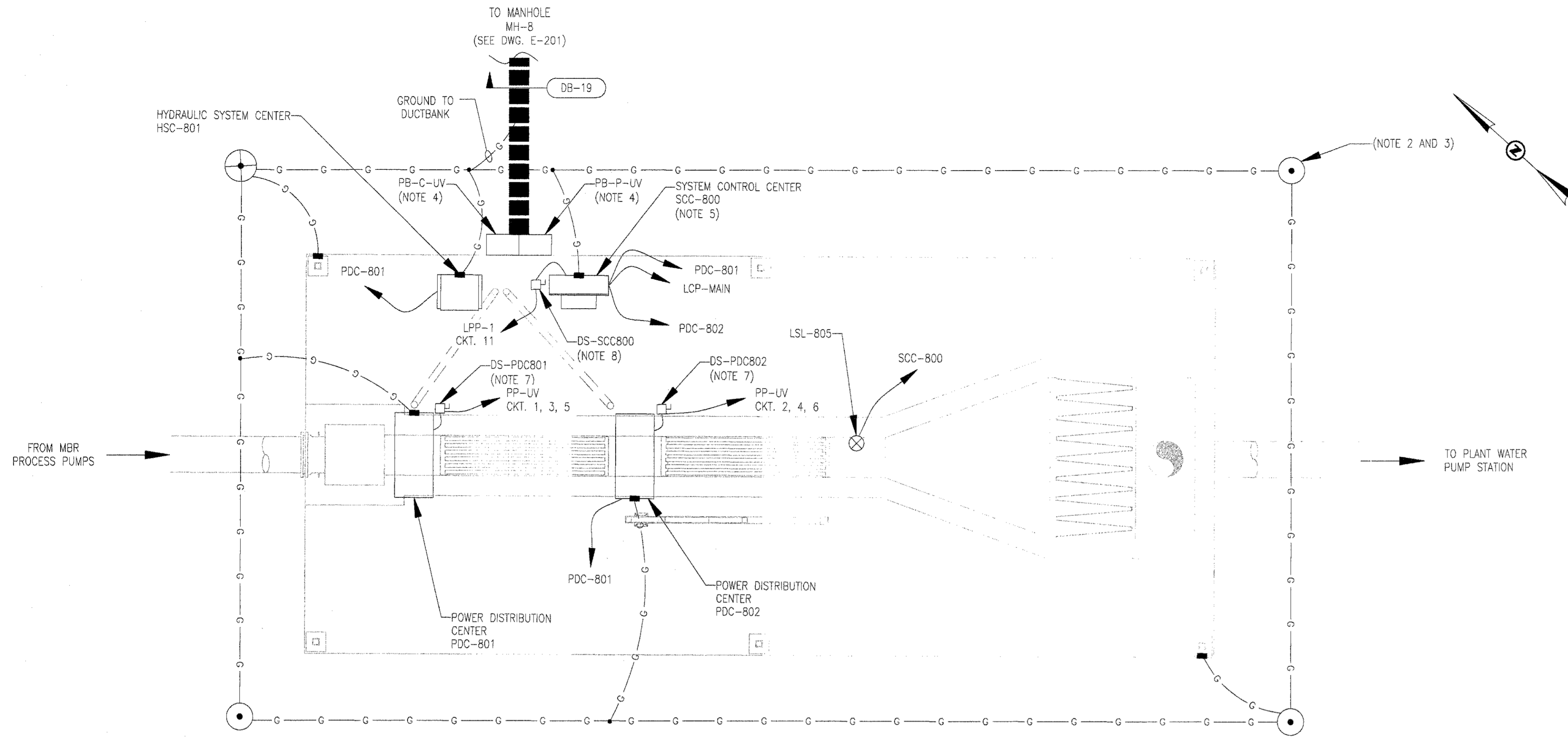
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



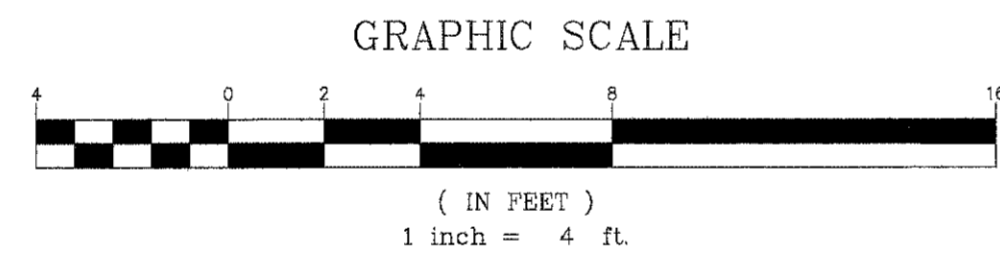
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RING AROUND UV DISINFECTION SYSTEM TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-UV) AND POWER (PB-P-UV) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS. PROVIDE AND INSTALL UNISTRUT SUPPORT TO MOUNT PULL BOXES.
5. CONTRACTOR SHALL LOCATE SYSTEM CONTROL CENTER SUCH THAT THE OPERATOR INTERFACE SIDE FACES AWAY FROM THE SUN.
6. EXACT EQUIPMENT LOCATIONS AND WIRING REQUIREMENTS SHALL BE COORDINATED WITH VENDOR SHOP DRAWINGS PRIOR TO INSTALLATION.
7. CONTRACTOR SHALL SUPPLY AND INSTALL TWO 480V, 3PH, 4W 30A NEMA 4X SS DISCONNECT SWITCHES.
8. CONTRACTOR SHALL SUPPLY AND INSTALL 120V, 1PH, 3W, 30A NEMA 4X SS DISCONNECT SWITCH.
9. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



1 UV DISINFECTION SYSTEM POWER AND GROUNDING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

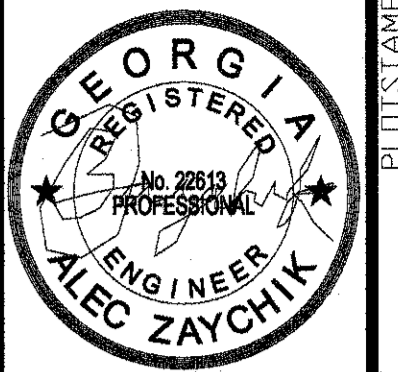
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 UV DISINFECTION SYSTEM
 POWER AND GROUNDING PLAN

SHEET NO.
 E-216

PLD1515AMP



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

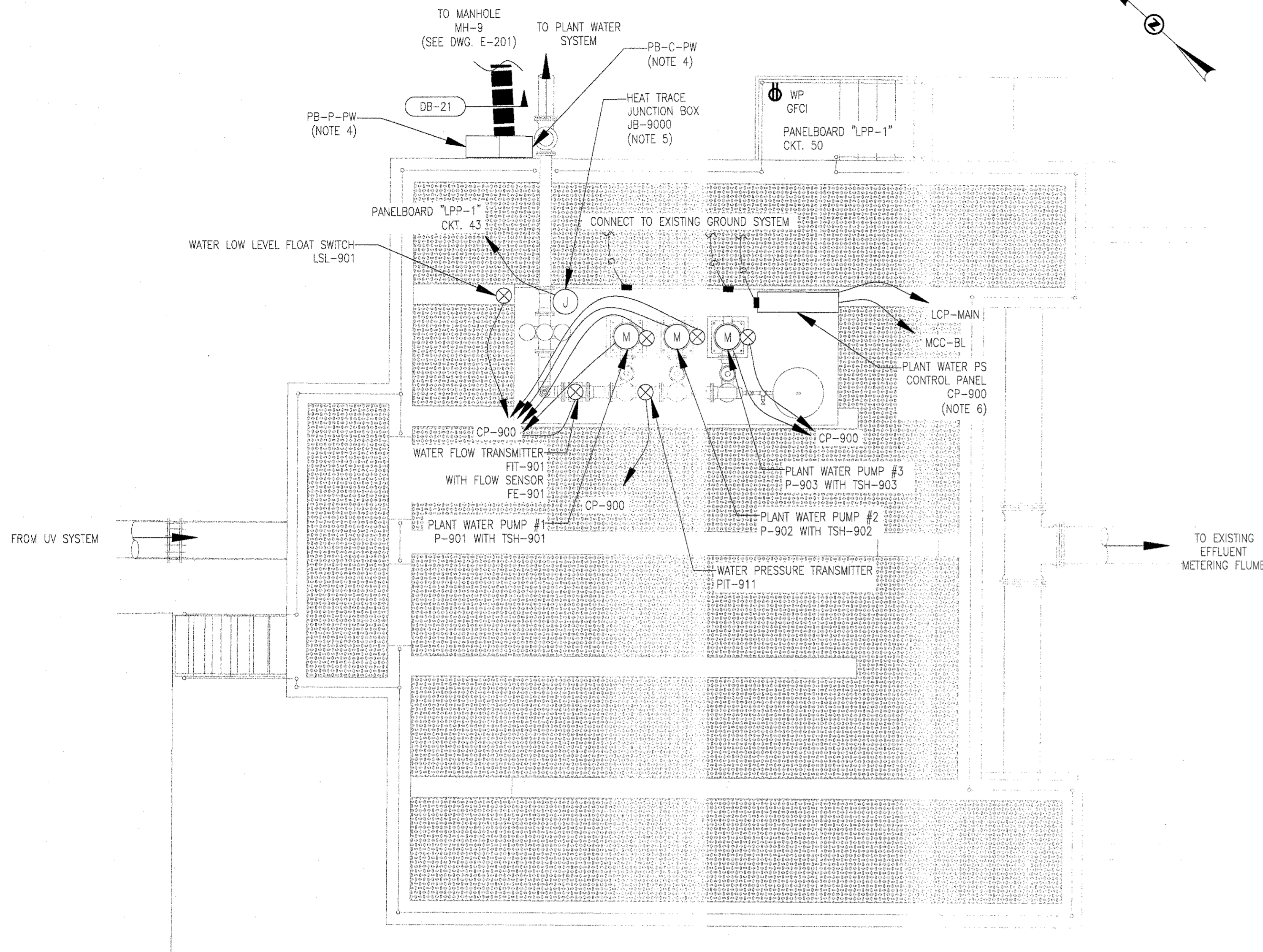
PROJECT NUMBER: _____
 DATE: AUGUST 2016

REVISION

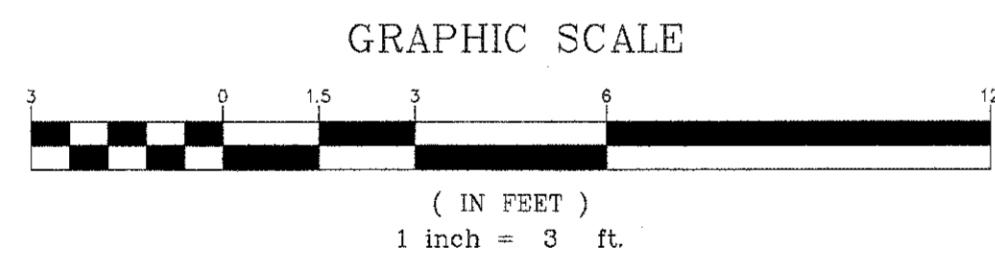
DATE: _____
 REVISION: _____

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT WATER PS □ CASCADE AERATOR
 POWER AND GROUNDING PLAN

SHEET NO.
 E-217

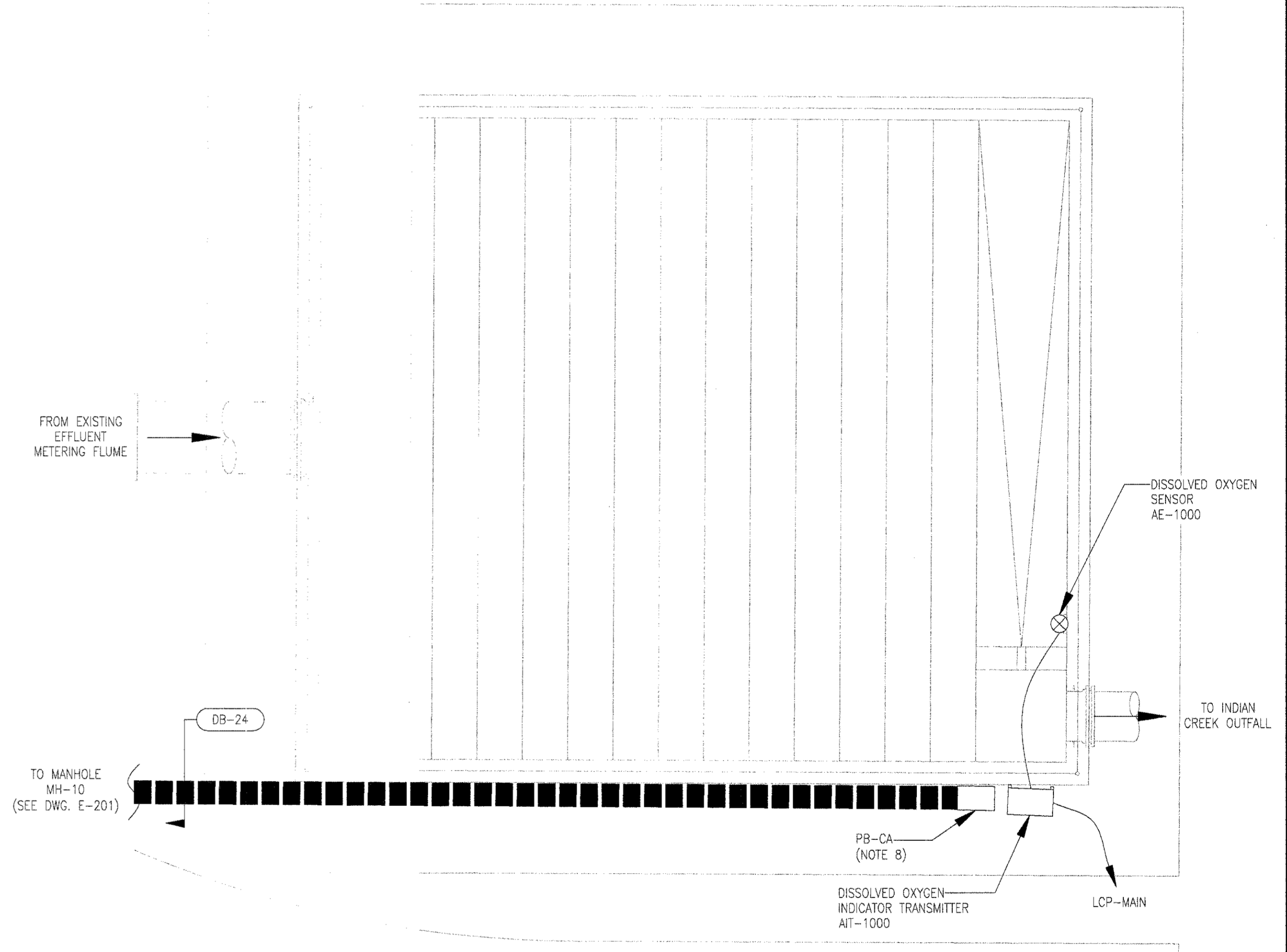


1 PLANT WATER PUMP STATION POWER AND GROUNDING PLAN
 SCALE: 1" = 3'

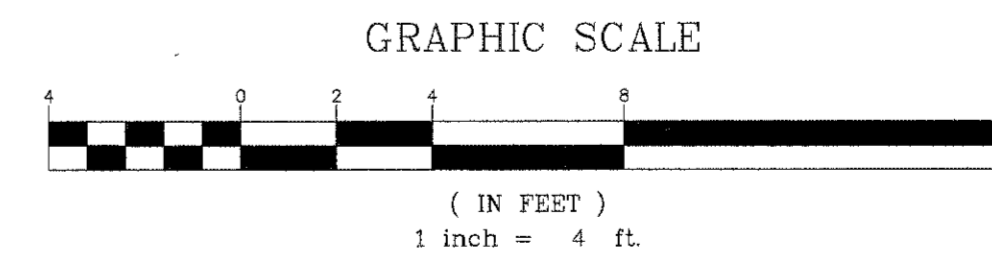


NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW GROUND RINGS AROUND PLANT WATER PS AND CASCADE AERATOR STRUCTURE TO THE PLANT EXISTING GROUND GRID.
3. THE MAXIMUM DISTANCE BETWEEN GROUND RODS SHALL BE 50 FT. THE CONTRACTOR SHALL ADD EXTRA GROUND RODS TO KEEP THE GROUNDING SYSTEM RESISTANCE BELOW 25 OHMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS SEPARATE PULL BOXES FOR CONTROLS (PB-C-PW) AND POWER (PB-P-PW) ADEQUATELY SIZED FOR ASSOCIATED CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.
5. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS JUNCTION BOX ADEQUATELY SIZED FOR HEAT TRACE POWER CABLES.
6. CONTRACTOR SHALL PROVIDE AND INSTALL RAIN/SUN HOOD FOR PLANT WATER CONTROL PANEL CP-900.
7. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.
8. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED POWER AND CONTROL CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.

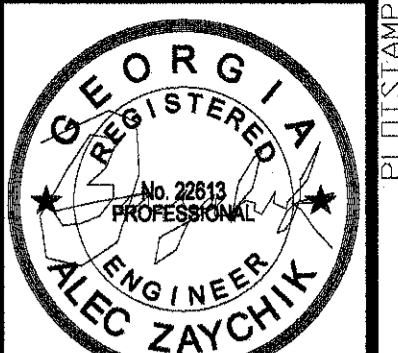


2 CASCADE AERATOR POWER AND GROUNDING PLAN
 SCALE: 1" = 4'





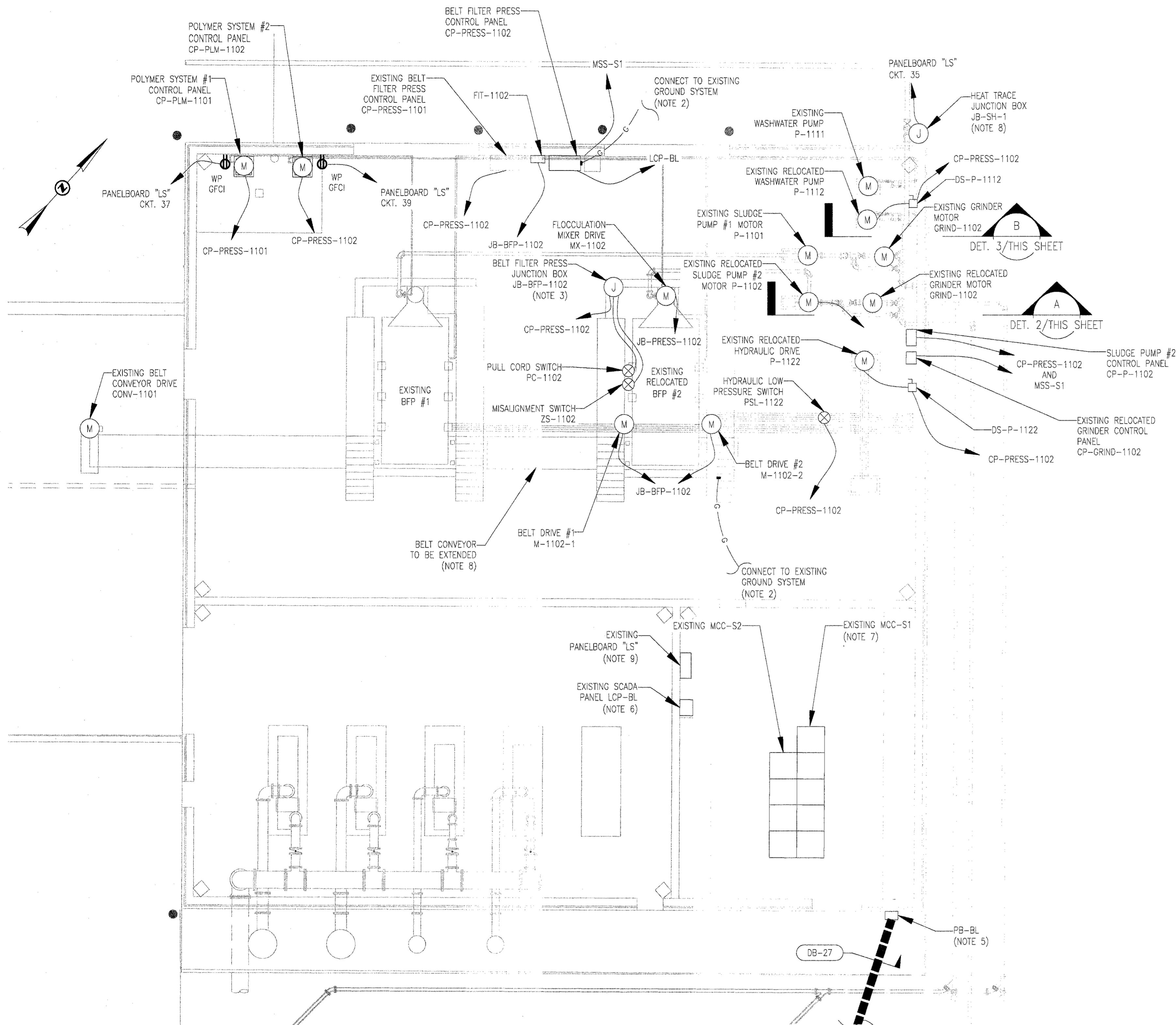
EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



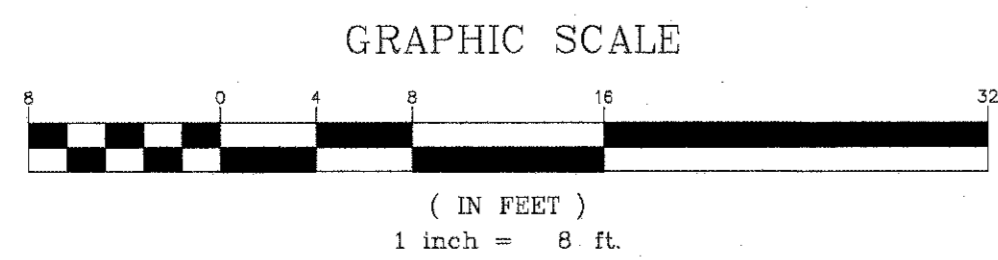
ESI
 ENGINEERING STRATEGIES, INC.
 3655 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30067
 (770) 429-0001

NOTES:

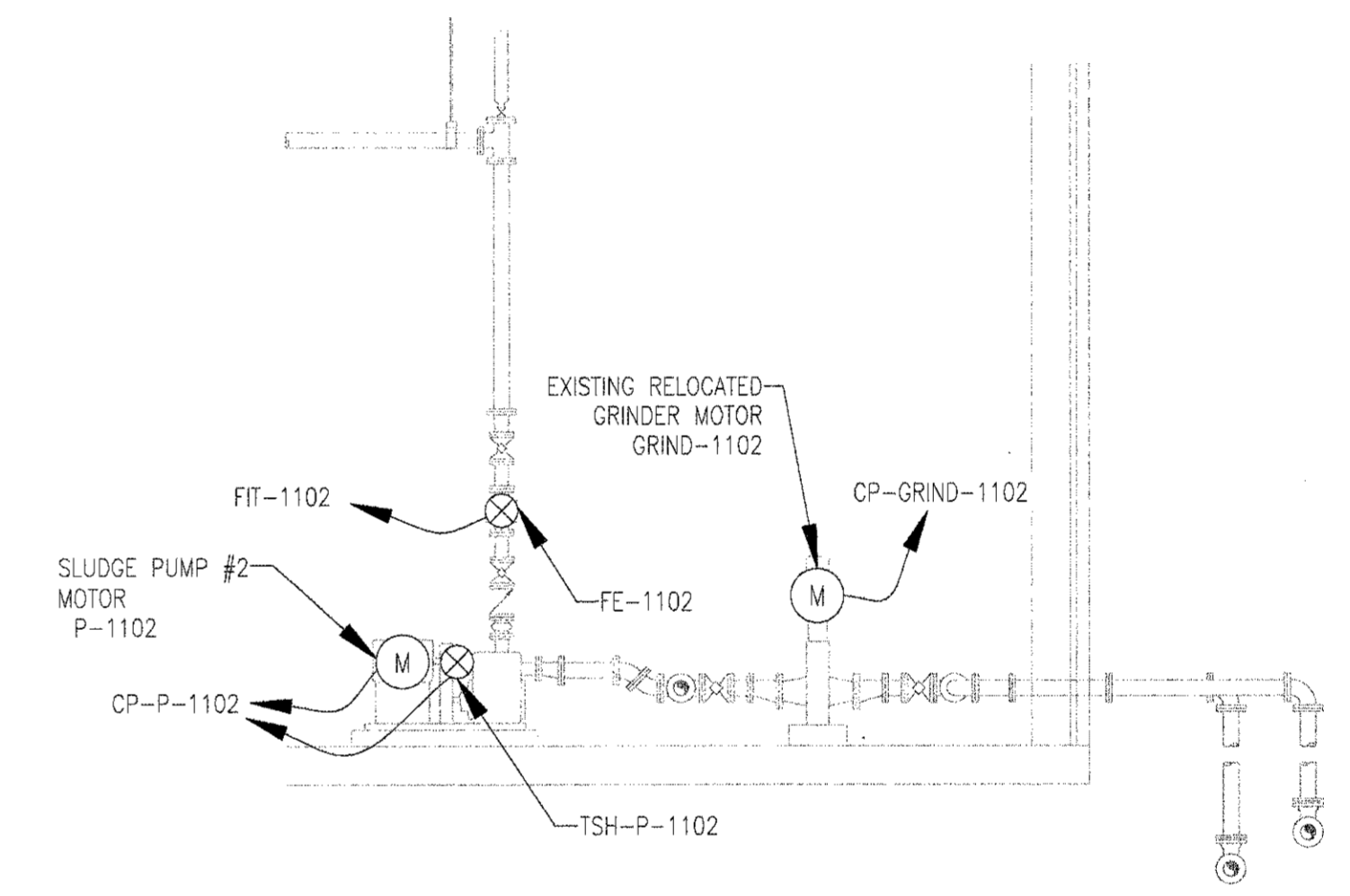
1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL #4/0 BARE COPPER GROUND WIRE TO CONNECT NEW EQUIPMENT TO THE EXISTING GROUND GRID AT SOLIDS HANDLING BUILDING.
3. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS BELT FILTER PRESS JUNCTION BOX JB-BFP-1302 ADEQUATELY SIZED FOR 480V POWER, CONTROL AND SIGNAL CABLES. SEE DWG. E-422 FOR MORE DETAILS.
4. CONTRACTOR MAY USE EXISTING SPARE CONDUITS WHICH WERE PROVIDED DURING INITIAL CONSTRUCTION OF THE WWTP TO RUN POWER, CONTROL AND SIGNAL CABLES FOR FUTURE BELT FILTER PRESS INSTALLATION. IF THE EXISTING CONDUITS ARE NOT AVAILABLE OR STUBBED UP AT THE WRONG LOCATION, CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUITS.
5. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CONTROL CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.
6. EXISTING SCADA PANEL LCP-BL SHALL BE MODIFIED TO ACCOMMODATE ALL NEW I/O'S AS SHOWN ON SCHEMATIC WIRING DIAGRAMS.
7. SEE ONE LINE DIAGRAM DWG. E-103 FOR MCC-S1 MODIFICATION DETAILS.
8. CONTRACTOR SHALL REINSTALL AND RECONNECT ALL EXISTING SWITCHES AND DEVICES AND EXTEND THE ASSOCIATED CABLES AND CONDUITS ON THE EXISTING CONVEYOR EXTENSION AS REQUIRED.
9. SEE DWG. E-150 FOR PANELBOARD "LS" MODIFICATIONS.
10. SEE DWG. E-002 FOR UNDERGROUND DUCT BANK SECTIONS.



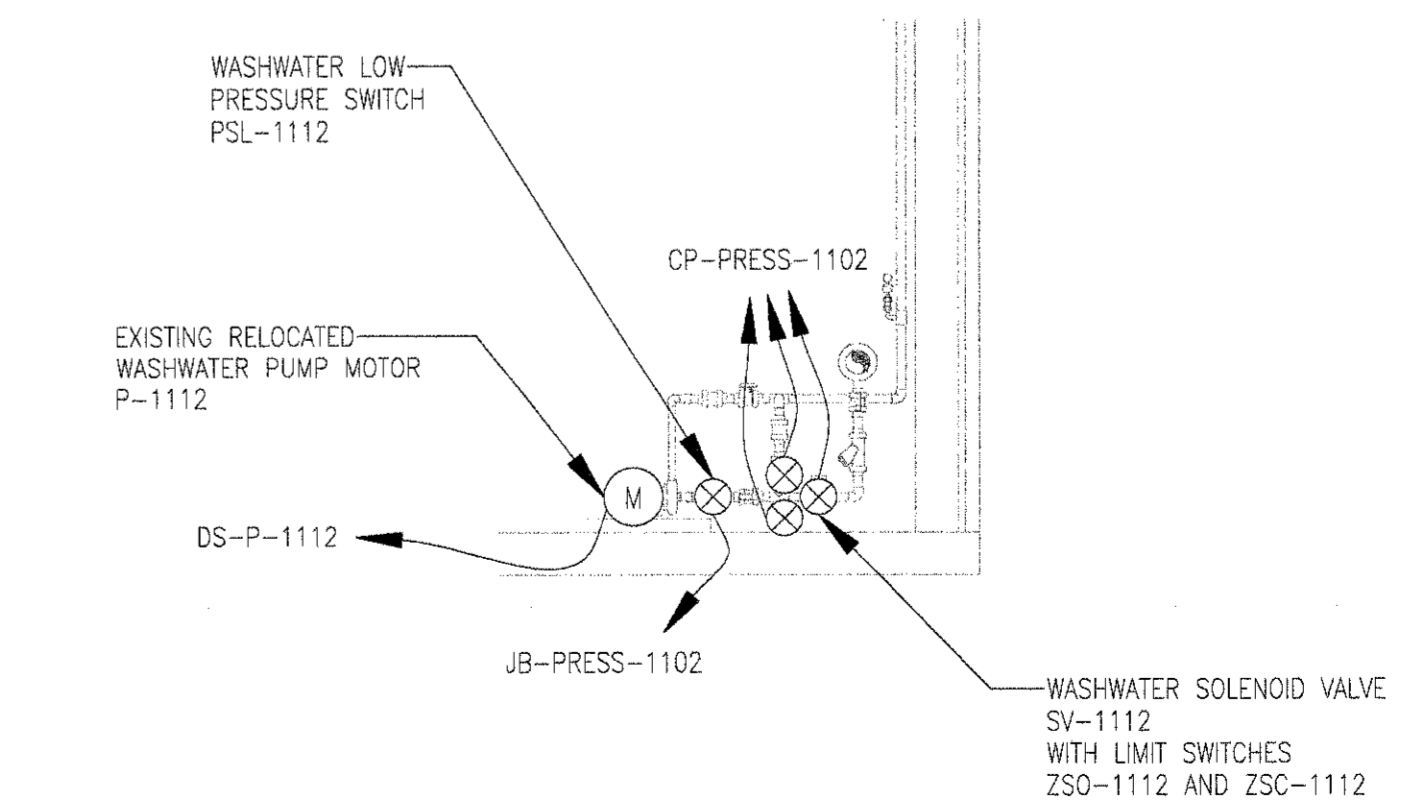
1 SOLIDS HANDLING BUILDING PARTIAL POWER AND GROUNDING PLAN
 SCALE: 1" = 8'



2 SLUDGE PUMP #2 AND EXISTING RELOCATED GRINDER POWER PLAN (SECTION A)
 SCALE: N.T.S.



3 EXISTING RELOCATED WASHWATER PUMP POWER PLAN (SECTION B)
 SCALE: N.T.S.



PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

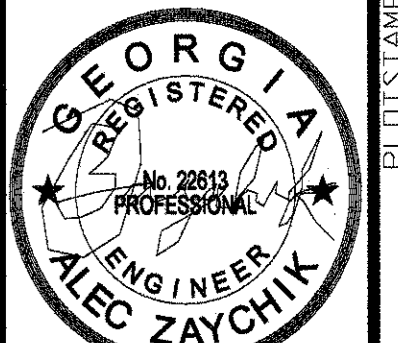
DSGN: AZ
 DRWN: DJV
 CHCK: AZ
 BAR BEYOND 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SOLIDS HANDLING BUILDING
POWER AND GROUNDING PLAN

SHEET NO.
E-218



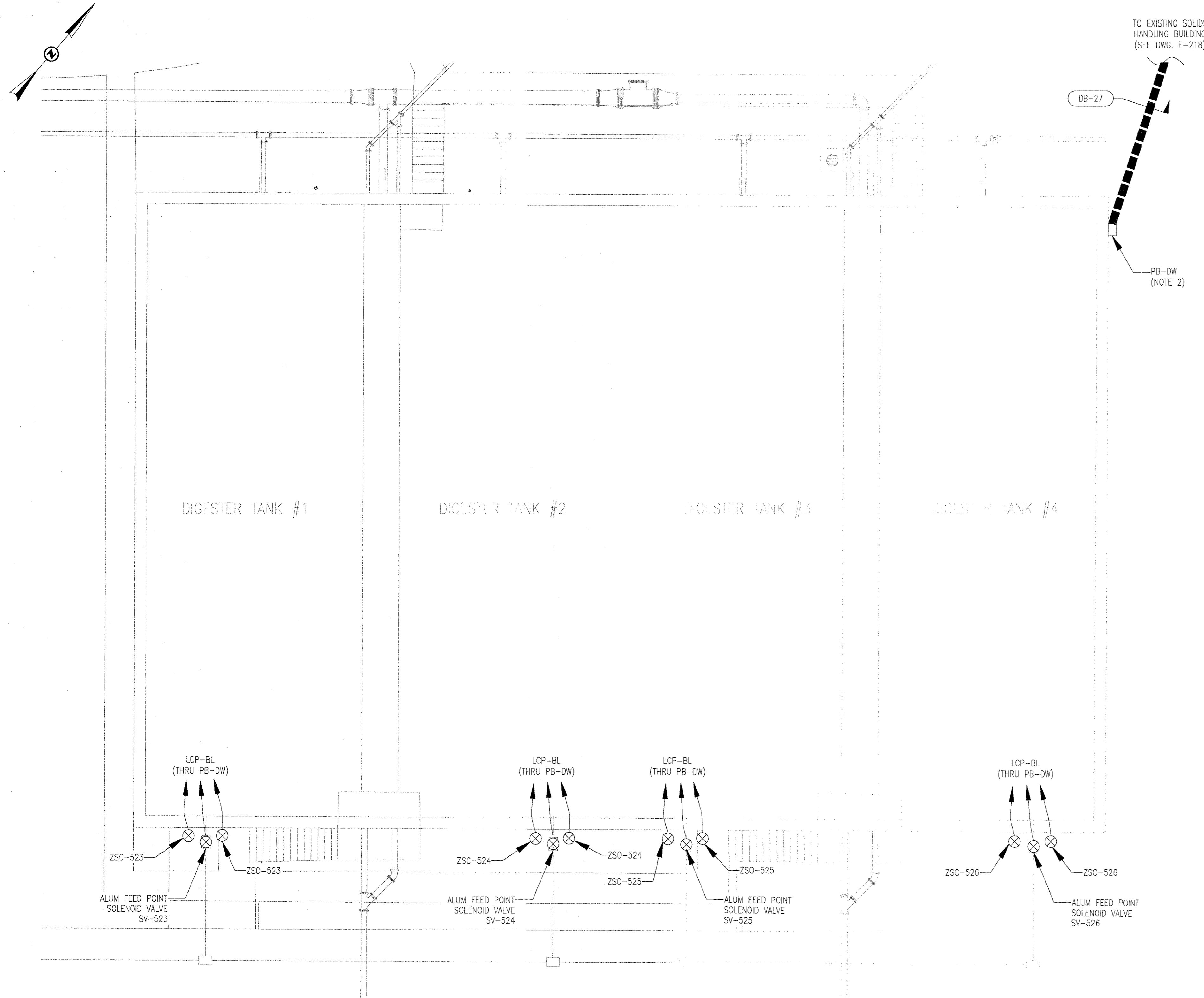
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



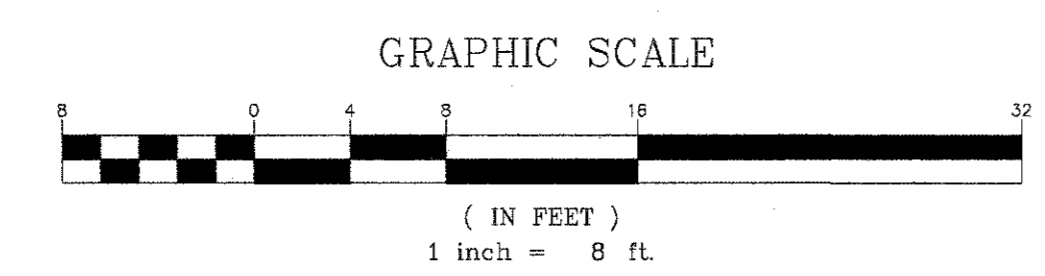
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE EXACT DEVICES LOCATIONS SHALL BE CONFIRMED WITH APPROVED VENDOR DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CONTROL CABLES/CONDUITS MOUNTED ON THE STRUCTURE'S WALL AT 2'-0" ABOVE GRADE.



1 DIGESTER TANKS POWER PLAN
 SCALE: 1" = 8'



PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE
Δ	

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 ALL DIMENSIONS IN LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT IN LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 DIGESTER TANKS
 POWER PLAN

SHEET NO.
 E-219

PLOTISTAMP



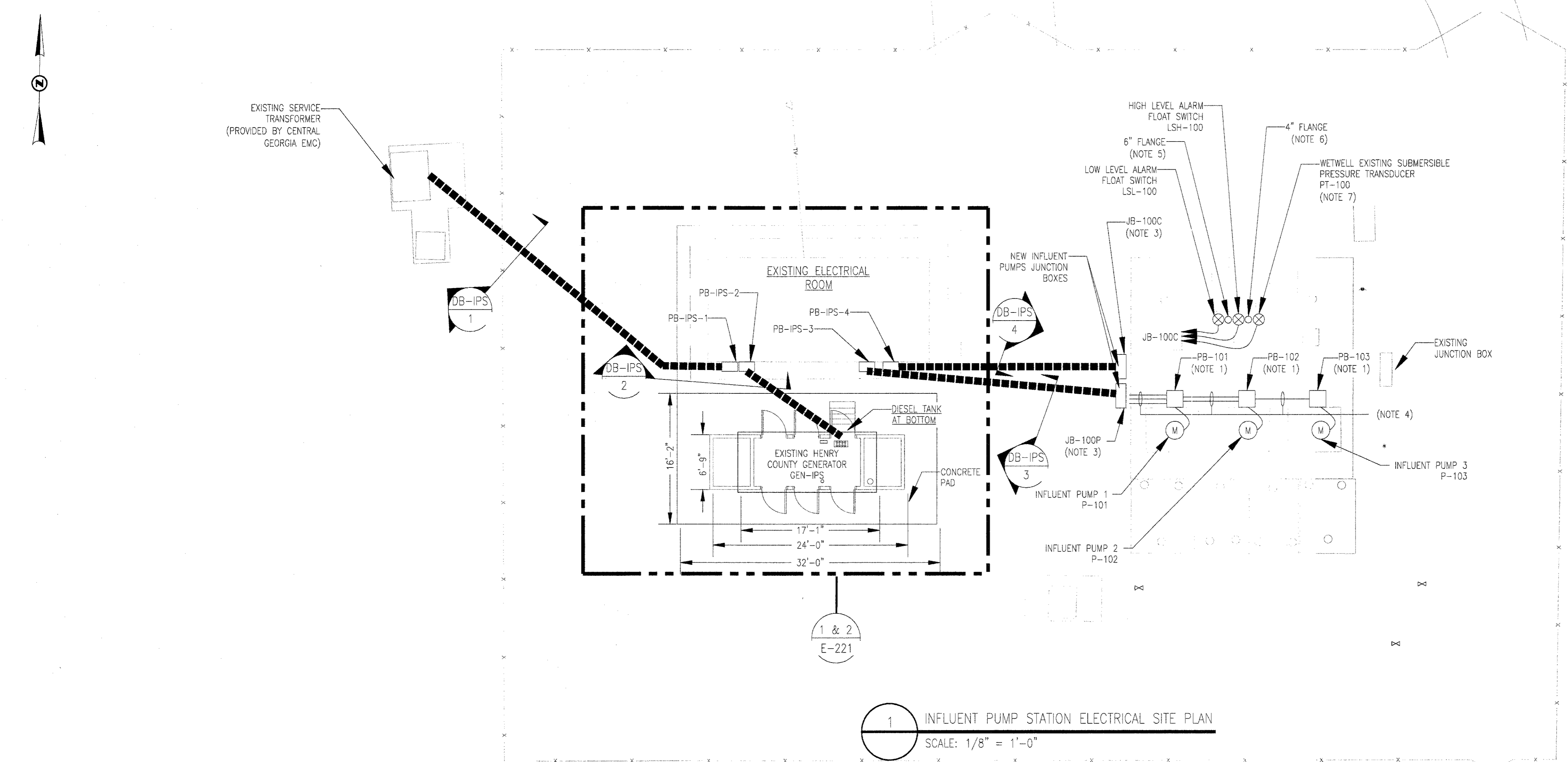
EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



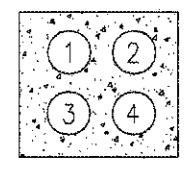
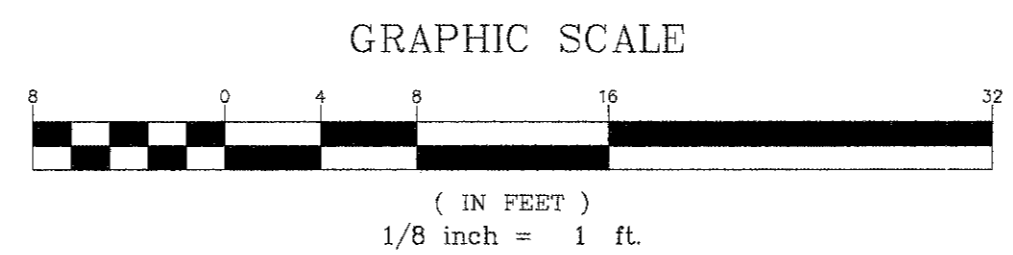
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

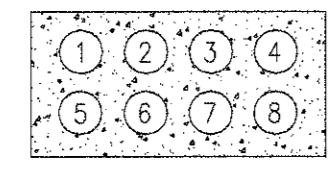
- CONTRACTOR SHALL PROVIDE AND INSTALL THREE (3) NEMA 4X STAINLESS STEEL PULLBOXES FOR EACH OF THE INFLUENT PUMP MOTORS. THE PULLBOXES SHALL BE SIZED TO ACCOMMODATE PUMP MOTOR CABLE BENDING RADIUS.
- EACH DUCTBANK SHALL HAVE #4/0 BARE COPPER GROUND WIRE (NOT SHOWN FOR CLARITY).
- CONTRACTOR SHALL PROVIDE AND INSTALL A NEMA 4X STAINLESS STEEL JUNCTION TERMINAL BOXES JB-100P AND JB-100C FOR INFLUENT PUMPS POWER, SIGNAL CABLES AND LEVEL MEASURING INSTRUMENTS CABLES TERMINATION.
- CONTRACTOR SHALL RUN THREE (3) 4" ALUMINUM CONDUITS ON TOP OF THE CONCRETE SLAB. EACH CONDUIT SHALL HAVE POWER CABLES CABLES FOR AN INFLUENT PUMP MOTOR. IN CASE THE PUMP MOTOR IS SUPPLIED WITH MULTIPLE CABLES, THE CONTRACTOR SHALL PROVIDE AND INSTALL THE NUMBER OF CONDUITS ACCORDING TO THE PUMP CABLES. PROVIDE GALVANIZED STEEL COVER OVER THE EXPOSED CONDUITS ROUTED ON TOP OF CONCRETE SLAB TO AVOID TRIPPING HAZARD.
- CONTRACTOR SHALL DRILL 6" HOLE IN EXISTING CONCRETE AND INSTALL 6" SLEEVE FOR FLOAT SWITCHES.
- CONTRACTOR SHALL DRILL 4" HOLE IN EXISTING CONCRETE AND INSTALL 4" SLEEVE FOR PRESSURE TRANSDUCER.
- CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THE EXISTING SUBMERSIBLE PRESSURE TRANSDUCER AND ADJUST THE CABLE/CONDUIT ROUTING ACCORDINGLY.



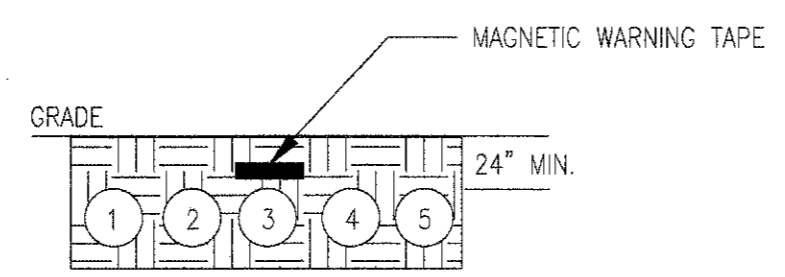
1 INFLUENT PUMP STATION ELECTRICAL SITE PLAN
 SCALE: 1/8" = 1'-0"



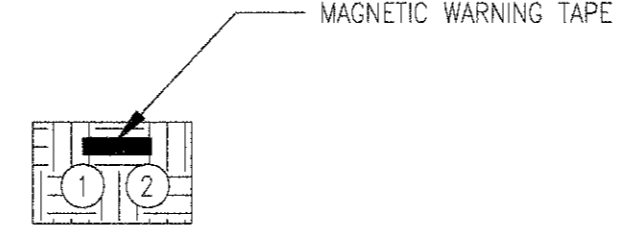
- DB-IPS-1**
- 1 - 4" C. (480V POWER FROM TFR-IPS TO ATS-IPS)
 - 2 - 4" C. (480V POWER FROM TFR-IPS TO ATS-IPS)
 - 3 - 4" C. (480V POWER FROM TFR-IPS TO ATS-IPS)
 - 4 - 4" C. (SPARE)



- DB-IPS-2**
- 1 - 4" C. (480V POWER FROM GEN-IPS TO ATS-IPS)
 - 2 - 4" C. (480V POWER FROM GEN-IPS TO ATS-IPS)
 - 3 - 4" C. (480V POWER FROM GEN-IPS TO ATS-IPS)
 - 4 - 4" C. (SPARE)
 - 5 - 1.5" C. (CONTROLS TO SCADA)
 - 6 - 1.5" C. (GENERATOR START FROM ATS-ERM)
 - 7 - 2" C. (240V AUXILIARY POWER)
 - 8 - 2" C. (SPARE)



- DB-IPS-3**
- 1 - 4" C. (460V POWER TO M P-101)
 - 2 - 4" C. (460V POWER TO M P-102)
 - 3 - 4" C. (460V POWER TO M P-103)
 - 4 - 4" C. (PUMPS MOISTURE/TEMP SENSORS CABLE)
 - 5 - 4" C. (SPARE)



- DB-IPS-4**
- 1 - 1.25" C. (SIGNALS FROM PT-100)
 - 2 - 1.25" C. (CONTROLS FROM LSH-100 AND LSL-100)

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
Δ	

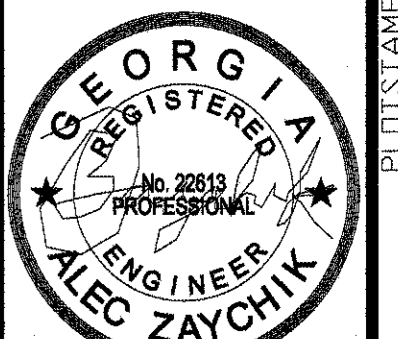
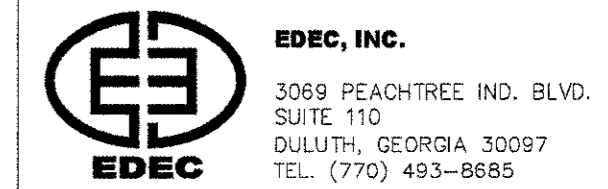
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

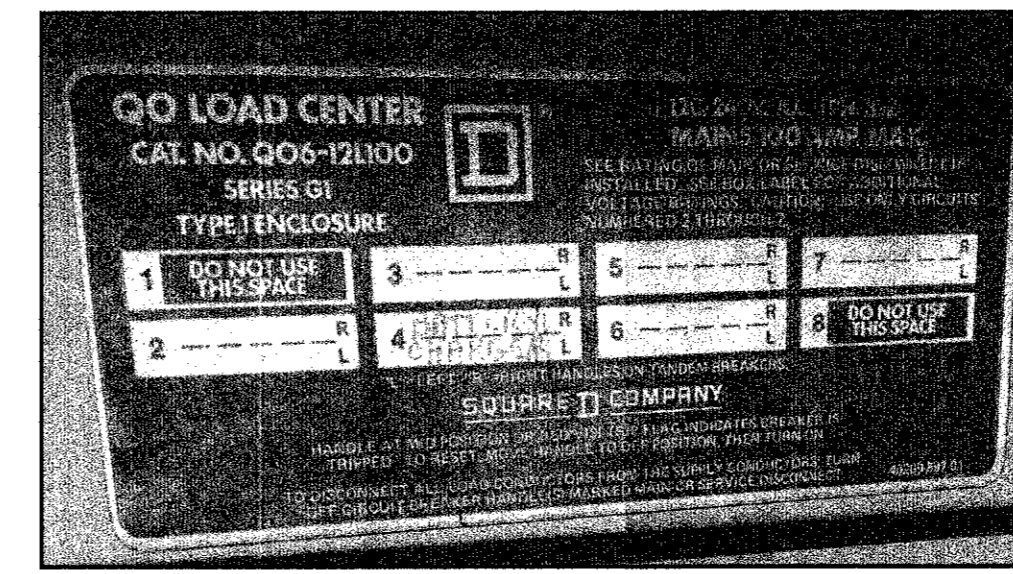
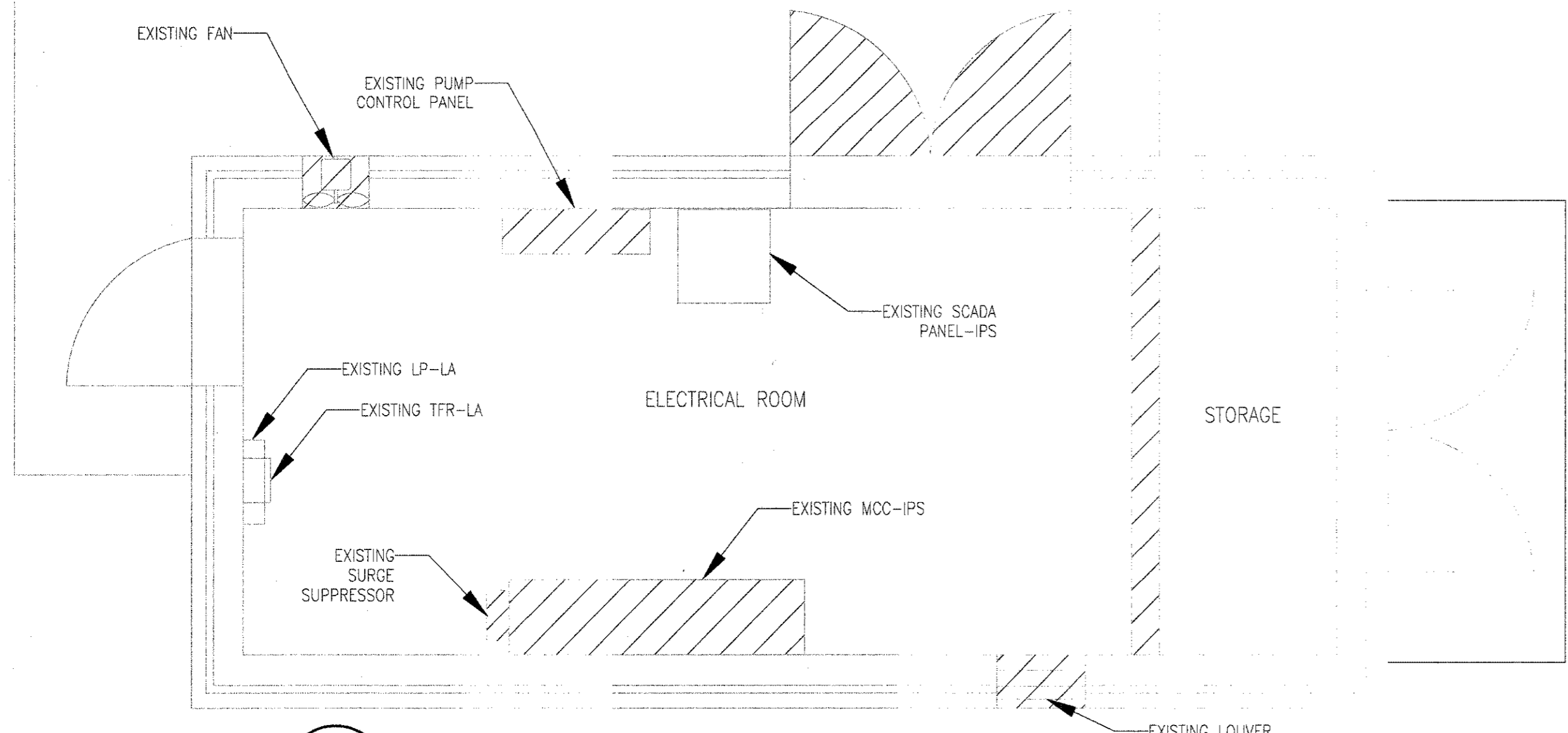
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INFLUENT PUMP STATION
ELECTRICAL SITE PLAN

SHEET NO.
E-220

PLOTS/TAMP

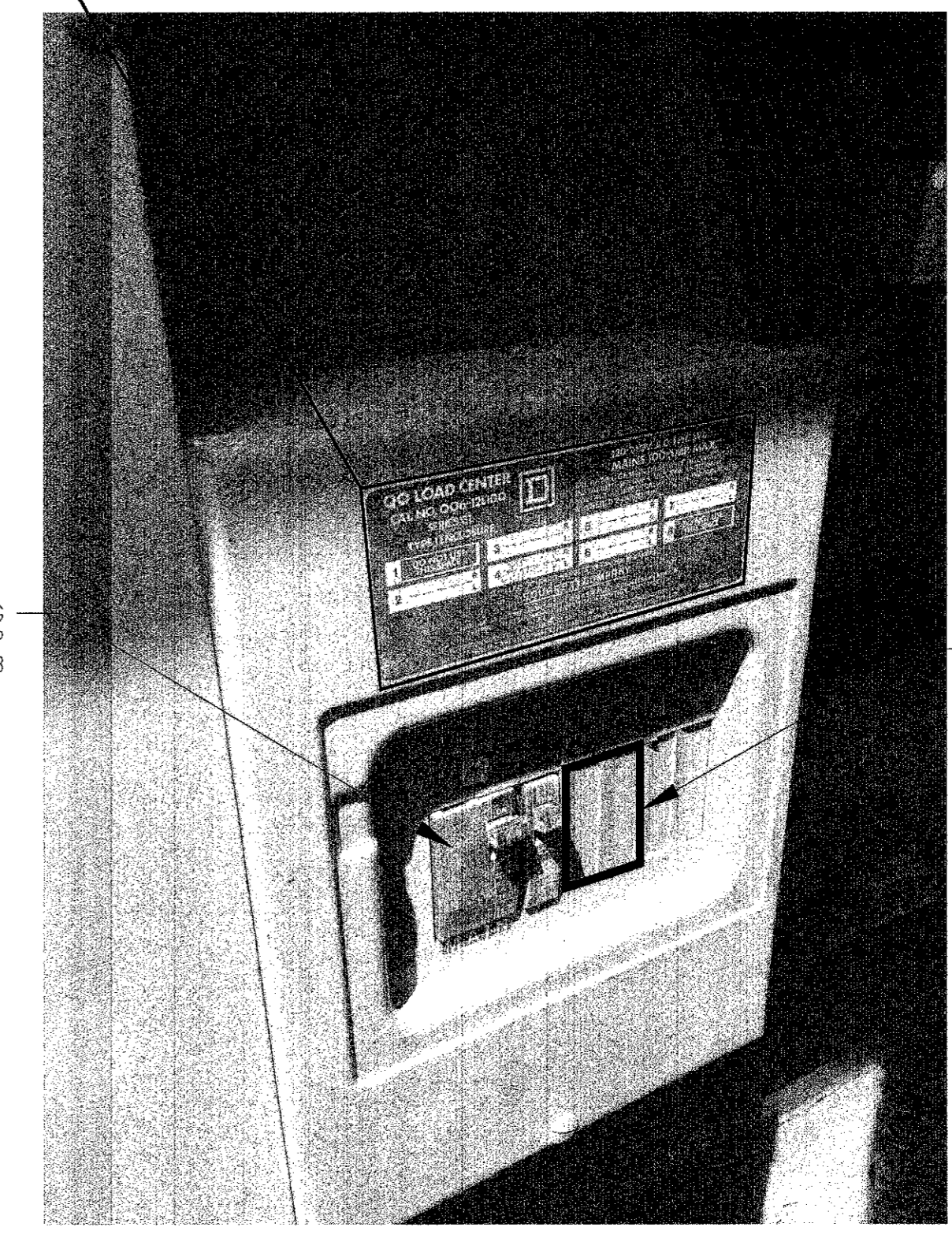
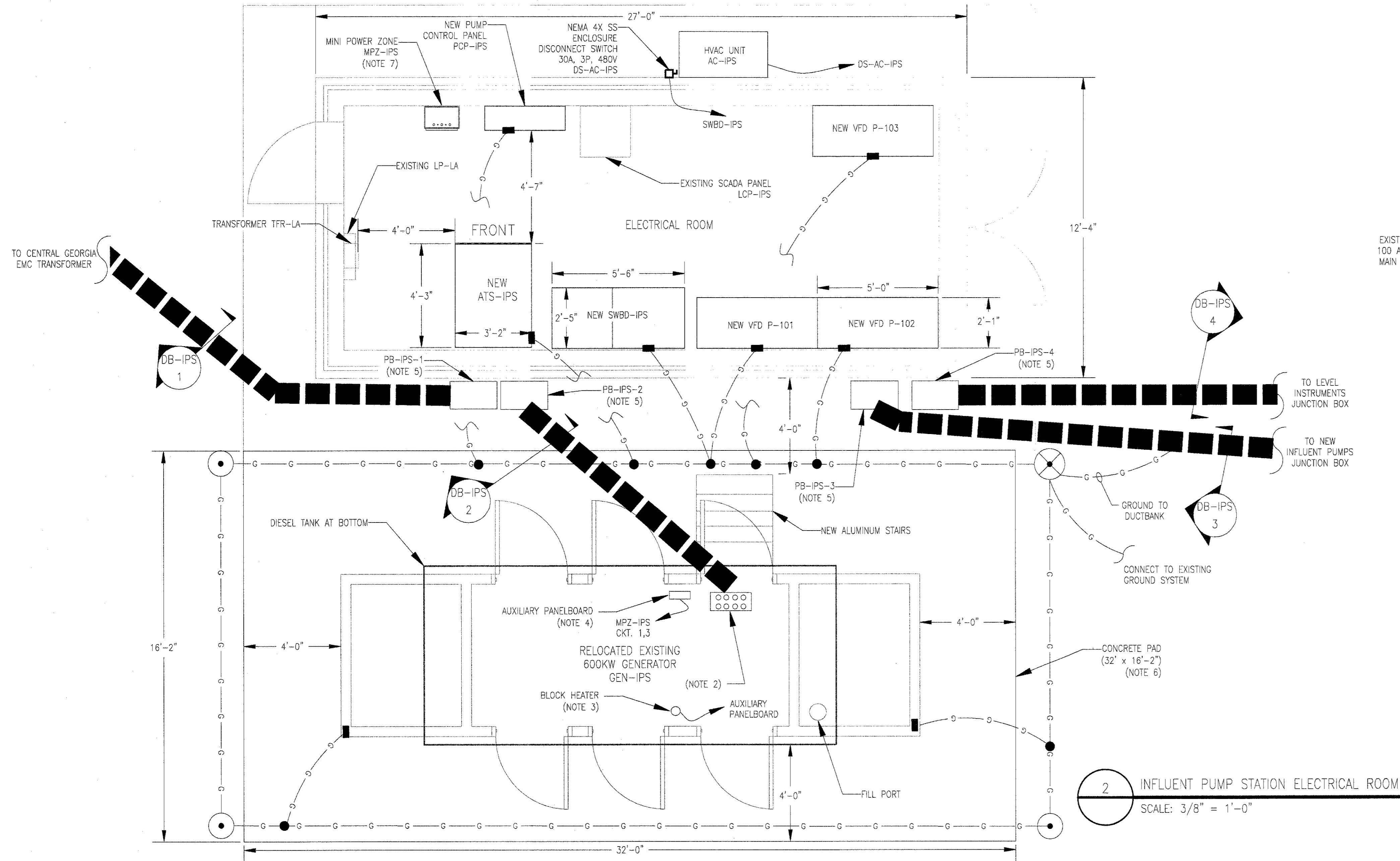


ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001



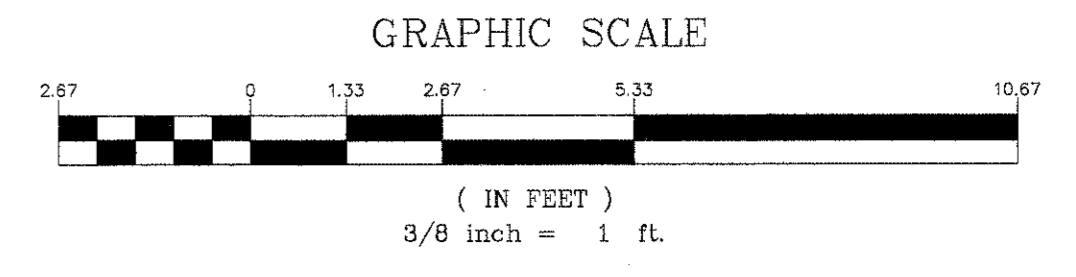
- NOTES:
- CONTRACTOR SHALL EXTEND THE EXISTING OR PROVIDE NEW 4" CONCRETE HOUSEKEEPING PAD FOR ALL NEW FLOOR MOUNTED EQUIPMENT.
 - CONTRACTOR SHALL COORDINATE THE EXACT CONDUITS STUB-UP LOCATION IN THE FIELD TO FIT INTO THE CONDUITS OPENING WITHIN THE GENERATOR.
 - CONTRACTOR SHALL REPLACE EXISTING 480V, 3PH GENERATOR BLOCK HEATER WITH NEW 240V, 1PH HEATER.
 - CONTRACTOR SHALL PROVIDE AND INSTALL 240V, 2P, 40A CIRCUIT BREAKER FOR NEW 240V GENERATOR BLOCK HEATER. BREAKER SHALL BE OF THE SAME TYPE AND MANUFACTURER AS THE EXISTING BREAKERS SEE DETAIL 3 THIS DRAWING. ADJUST THE BREAKER SIZE AND ASSOCIATED CABLES/CONDUITS TO THE BLOCK HEATER AS NEEDED BASED ON THE HEATER LOAD.
 - CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED POWER AND CONTROL CABLES/CONDUITS.
 - CONTRACTOR SHALL POUR THE CONCRETE PAD FOR THE GENERATOR AND ATTACH IT TO EXISTING WALKWAY AT THE ELECTRICAL ROOM.
 - CONTRACTOR SHALL PROVIDE AND INSTALL COMBINATION TRANSFORMER/PANELBOARD MPZ-IPS. SEE DWG. E-151 FOR PANELBOARD SCHEDULE AND DETAILS.
 - CONTRACTOR SHALL ENSURE THAT ALL NEW ELECTRICAL EQUIPMENT WILL FIT INTO THE EXISTING ROOM SPACE PROVIDING ADEQUATE WORKING CLEARANCE.

1 INFLUENT PUMP STATION ELECTRICAL ROOM - DEMOLITION
SCALE: 3/8" = 1'-0"



3 GENERATOR AUXILIARY PANELBOARD MODIFICATION

2 INFLUENT PUMP STATION ELECTRICAL ROOM AND GENERATOR LAYOUT
SCALE: 3/8" = 1'-0"



PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

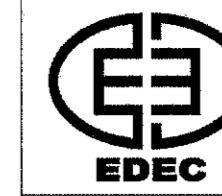
DSGN: AZ
DRAW: DV
CHK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

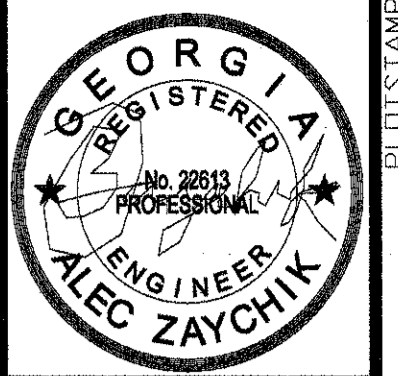
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

INFLUENT PUMP STATION
ELECTRICAL ROOM LAYOUT

SHEET NO.
E-221



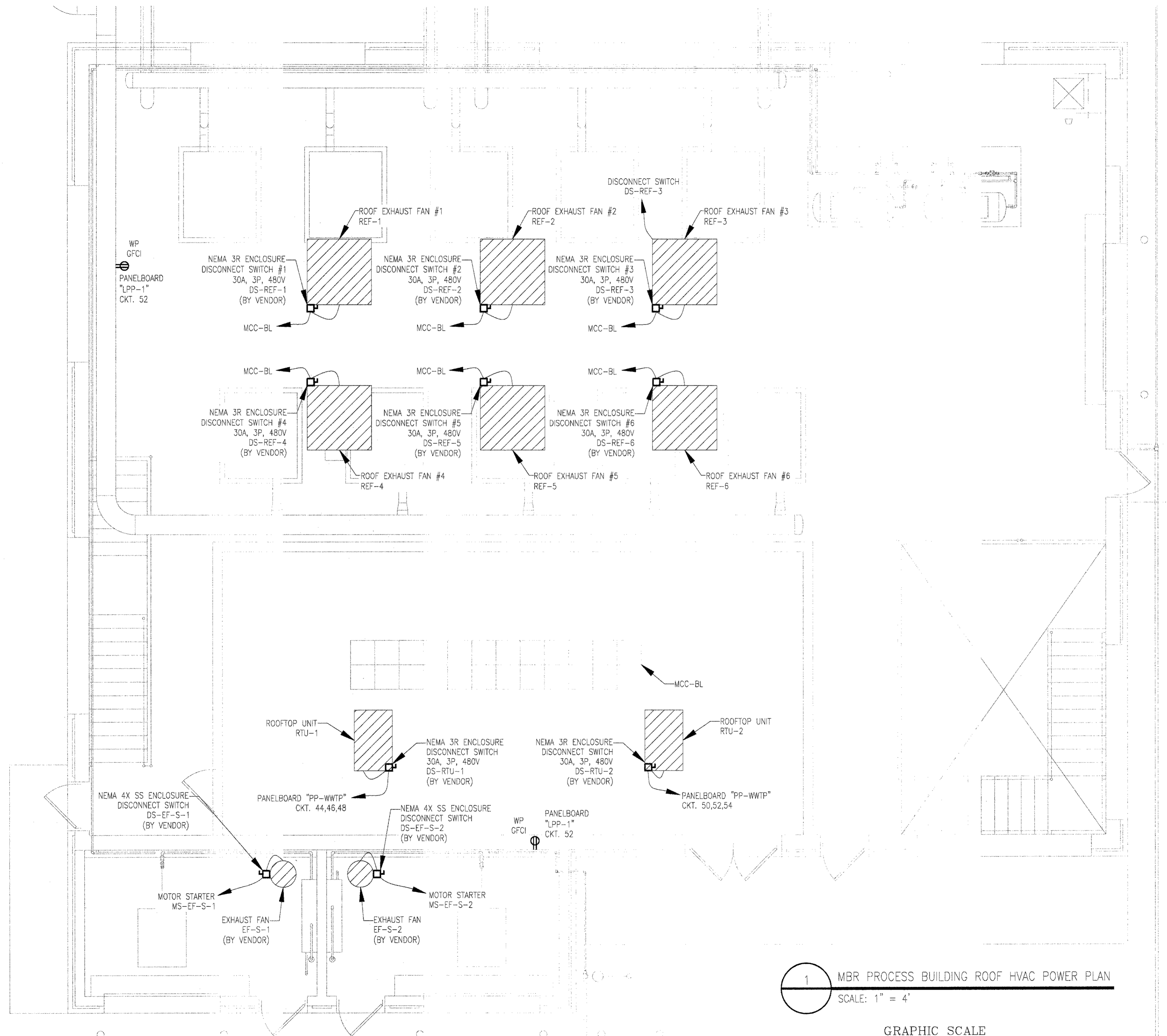
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



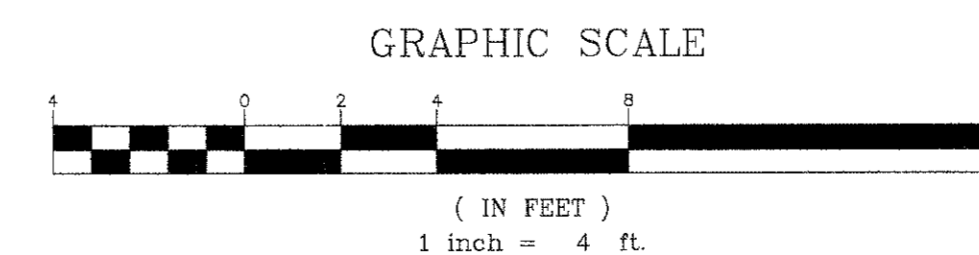
ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

- SEE HVAC DRAWINGS FOR MORE INFORMATION.



1 MBR PROCESS BUILDING ROOF HVAC POWER PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: _____
 DATE: AUGUST 2016

DATE: _____
 REVISION: _____

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

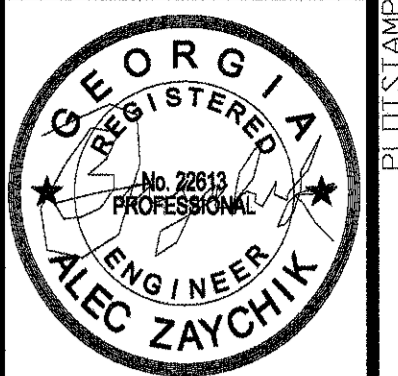
MBR PROCESS BUILDING
 HVAC ROOF POWER PLAN

SHEET NO.
 E-251

PLD1518AMP

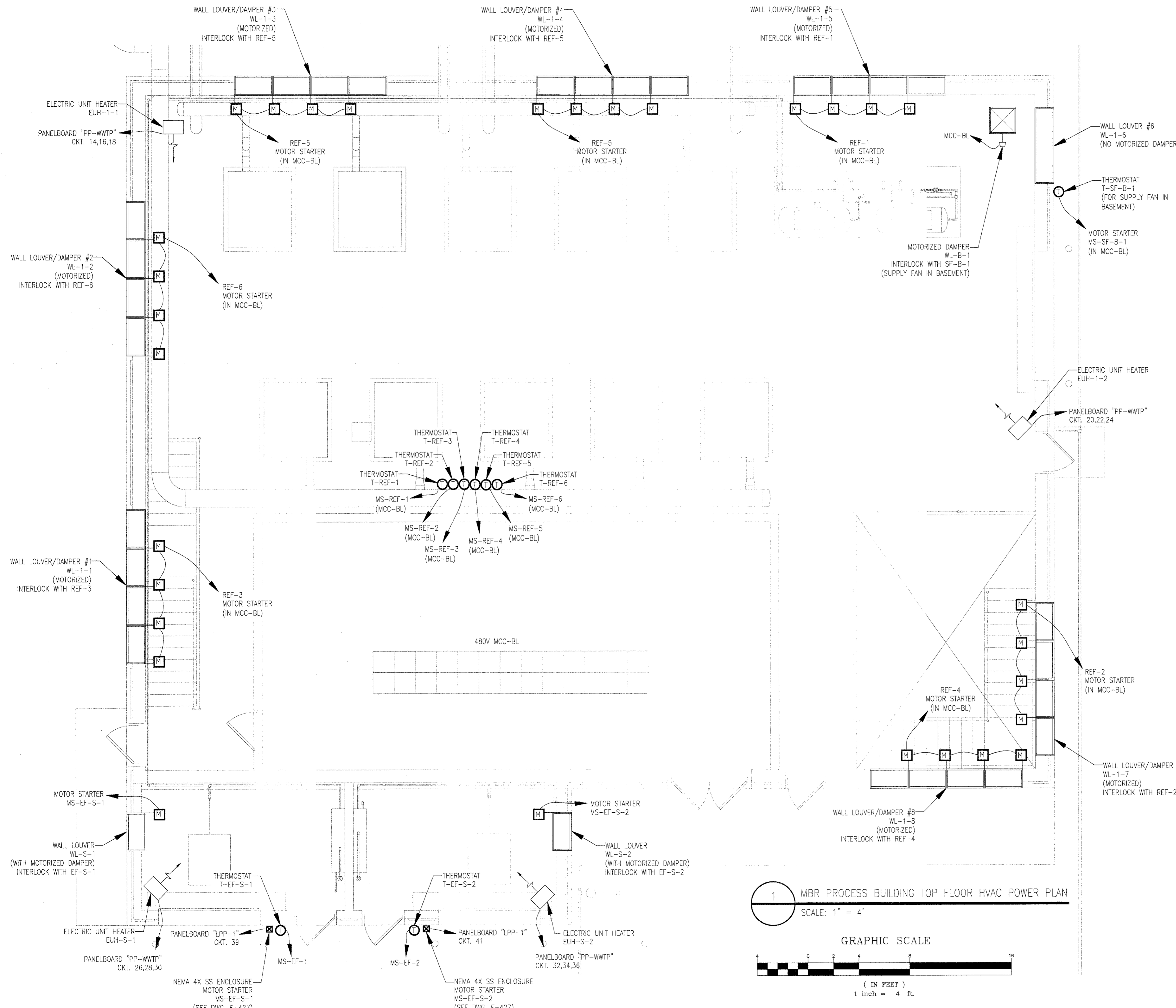


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 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

NOTES:
 1. SEE HVAC DRAWINGS FOR MORE INFORMATION.



1 MBR PROCESS BUILDING TOP FLOOR HVAC POWER PLAN
 SCALE: 1" = 4'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 4 ft.

PROJECT NUMBER: --- DATE: AUGUST 2016

REVISION	DATE

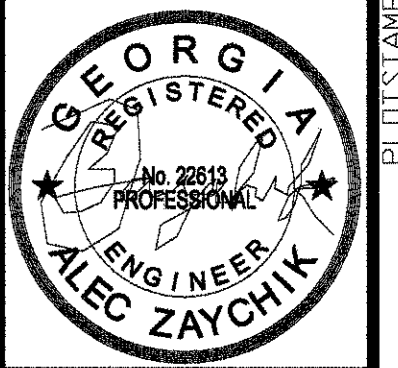
DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 HVAC TOP FLOOR POWER PLAN

SHEET NO.
 E-252



EDec, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
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 (770) 429-0001

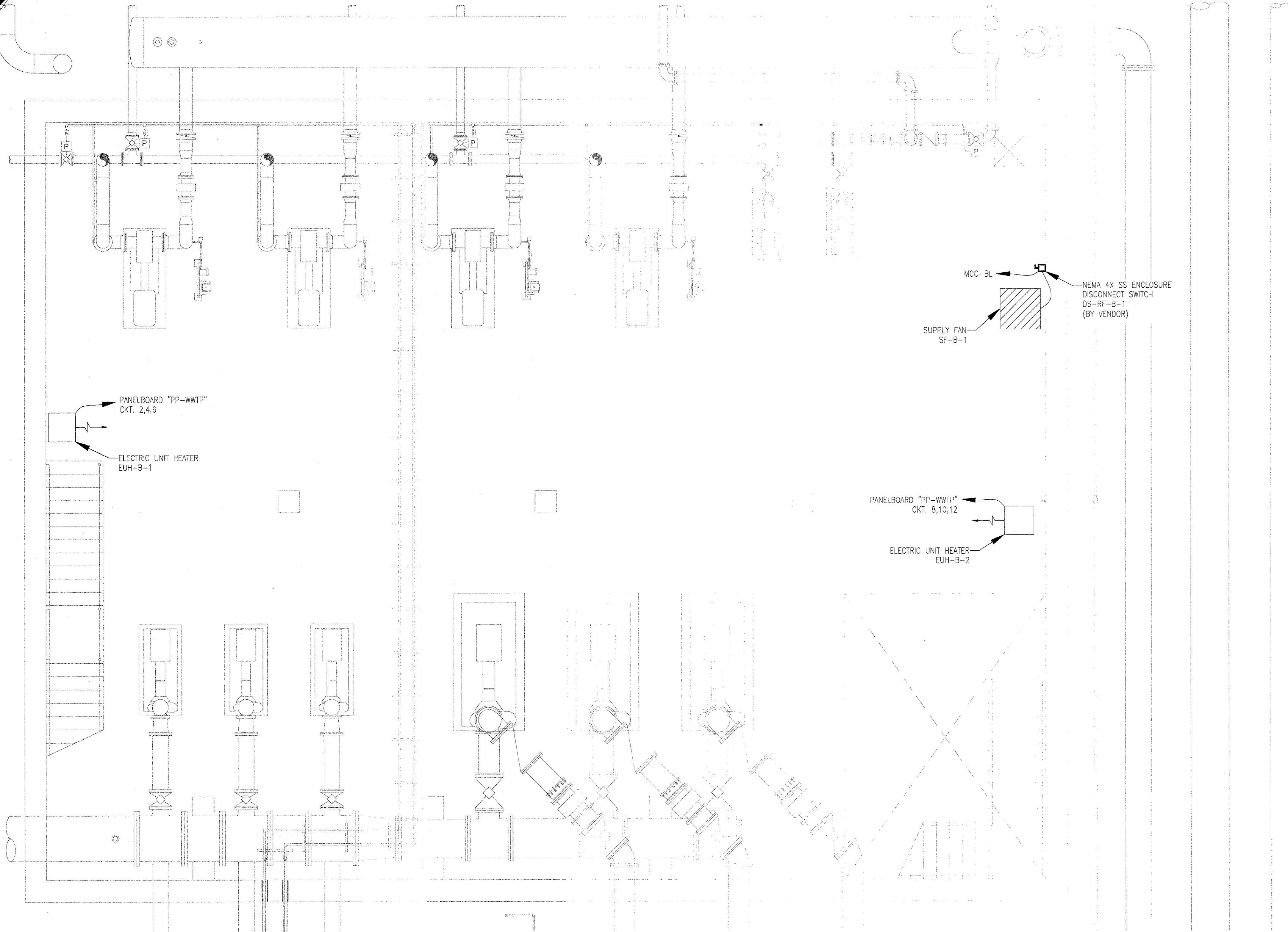
PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

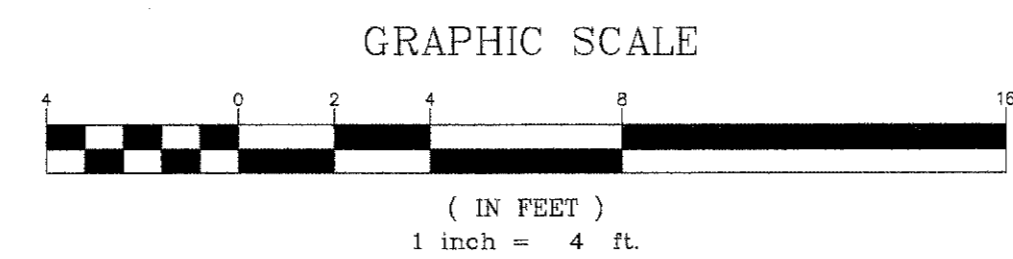
DSGN: AZ
 DRWN: DV
 CHCK: AZ
 DIMS BEYOND 4" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 MBR PROCESS BUILDING
 HVAC BOTTOM POWER PLAN

SHEET NO.
 E-253

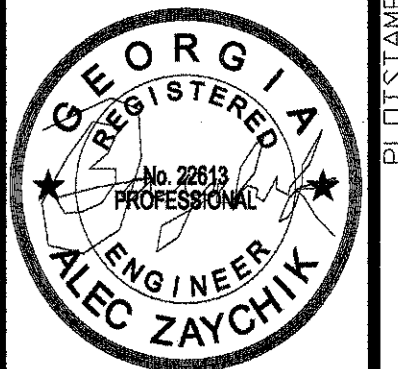


1 MBR PROCESS BUILDING BOT. FLOOR HVAC POWER PLAN
 SCALE: 1" = 4'





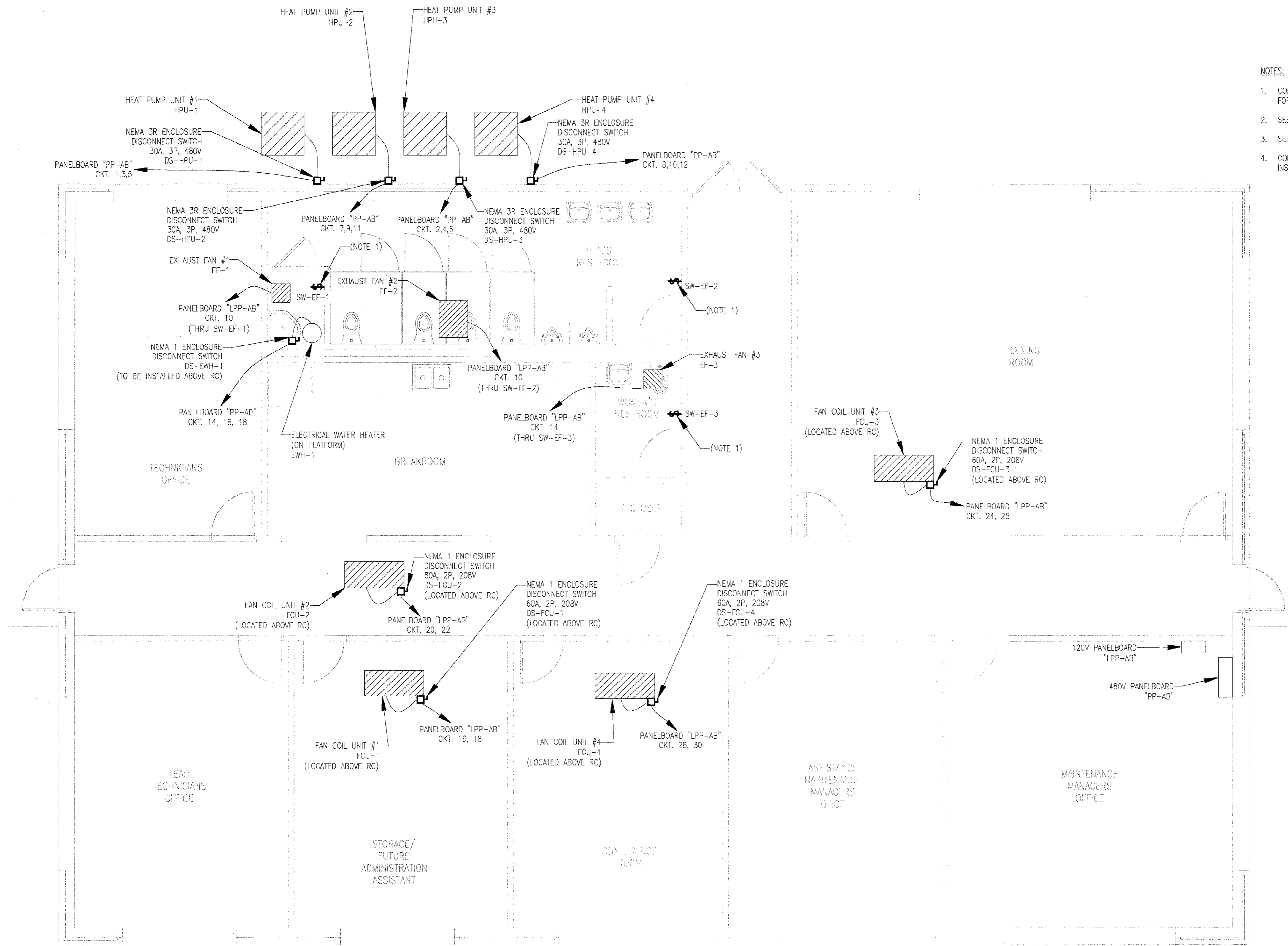
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8885



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ENGINEERING STRATEGIES, INC.
 3655 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL AN HP RATED TOGGLE SWITCH FOR EACH EXHAUST FAN.
2. SEE DWG. E-150 - E-152 FOR PANELBOARD SCHEDULES.
3. SEE HVAC DRAWINGS FOR MORE DETAILS.
4. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL EQUIPMENT IS INSTALLED MEETING NEC WORKING CLEARANCE REQUIREMENTS.



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

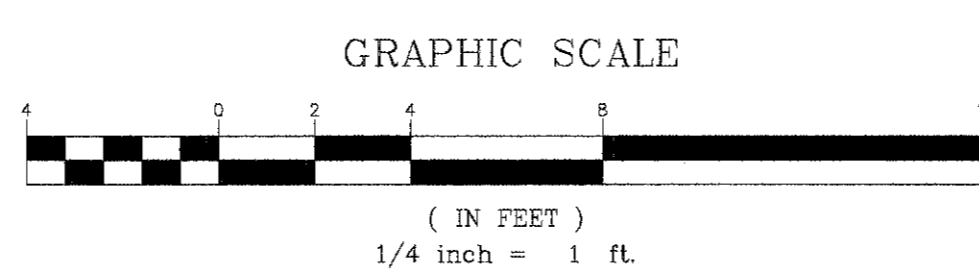
DSGN: AZ
 DRWN: DV
 CHCK: AZ

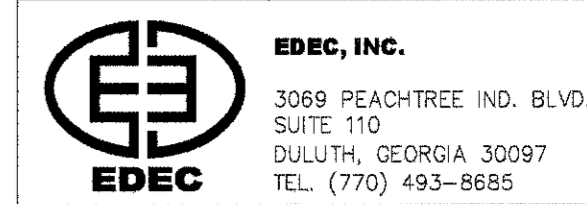
BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ADMINISTRATION BUILDING
 HVAC POWER PLAN

SHEET NO.
E-254

1 ADMINISTRATION BUILDING HVAC POWER PLAN
 SCALE: 1/4" = 1'





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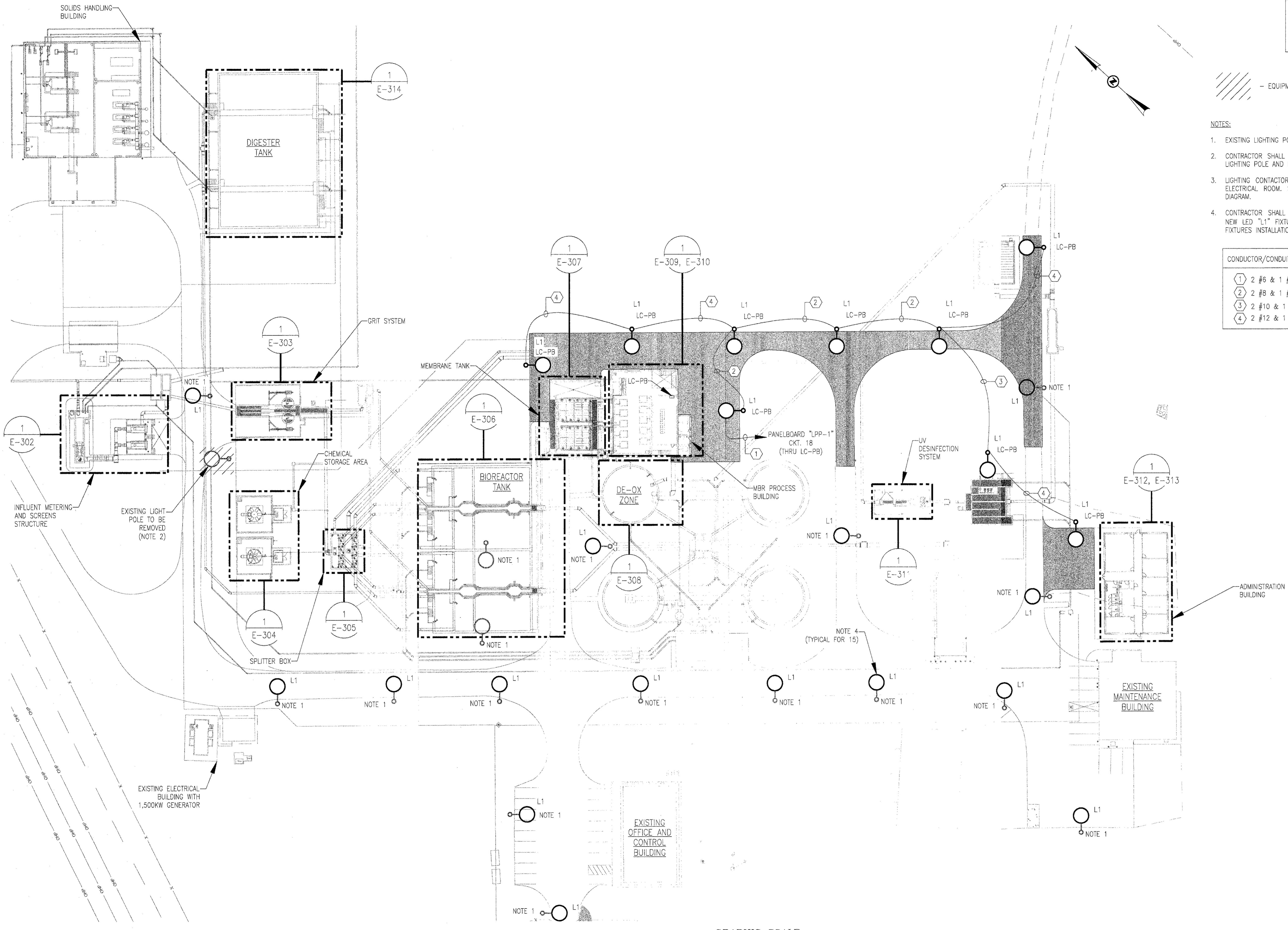
--- EQUIPMENT TO BE DEMOLISHED

NOTES:

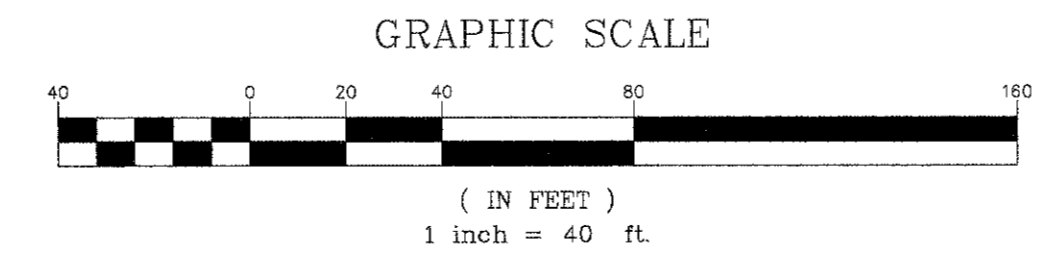
- EXISTING LIGHTING POLE.
- CONTRACTOR SHALL REMOVE AND RETURN TO THE OWNER THE EXISTING LIGHTING POLE AND FIXTURE WITH ASSOCIATED CABLES AND CONDUITS.
- LIGHTING CONTACTOR LC-PB SHALL BE LOCATED IN PROCESS BUILDING ELECTRICAL ROOM. SEE DWG. E-426 FOR LIGHTING CONTACTOR WIRING DIAGRAM.
- CONTRACTOR SHALL REPLACE ALL EXISTING POLE LIGHT FIXTURES WITH NEW LED "L1" FIXTURES. INCLUDE ALL NECESSARY HARDWARE FOR NEW FIXTURES INSTALLATION.

CONDUCTOR/CONDUIT SCHEDULE (CONSIDERING VOLTAGE DROP)

- ① 2 #6 & 1 #10 GND IN 1" C.
- ② 2 #8 & 1 #10 GND IN 1" C.
- ③ 2 #10 & 1 #10 GND IN 1" C.
- ④ 2 #12 & 1 #12 GND IN 1" C.



1 SITE LIGHTING PLAN
SCALE: 1" = 40'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
DSGN: AZ	DRWN: DV
CHK: AZ	

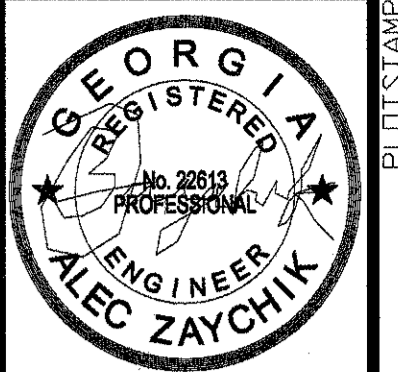
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
OVERALL SITE LIGHTING PLAN

SHEET NO.
E-301



EDEC, INC.
 3089 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

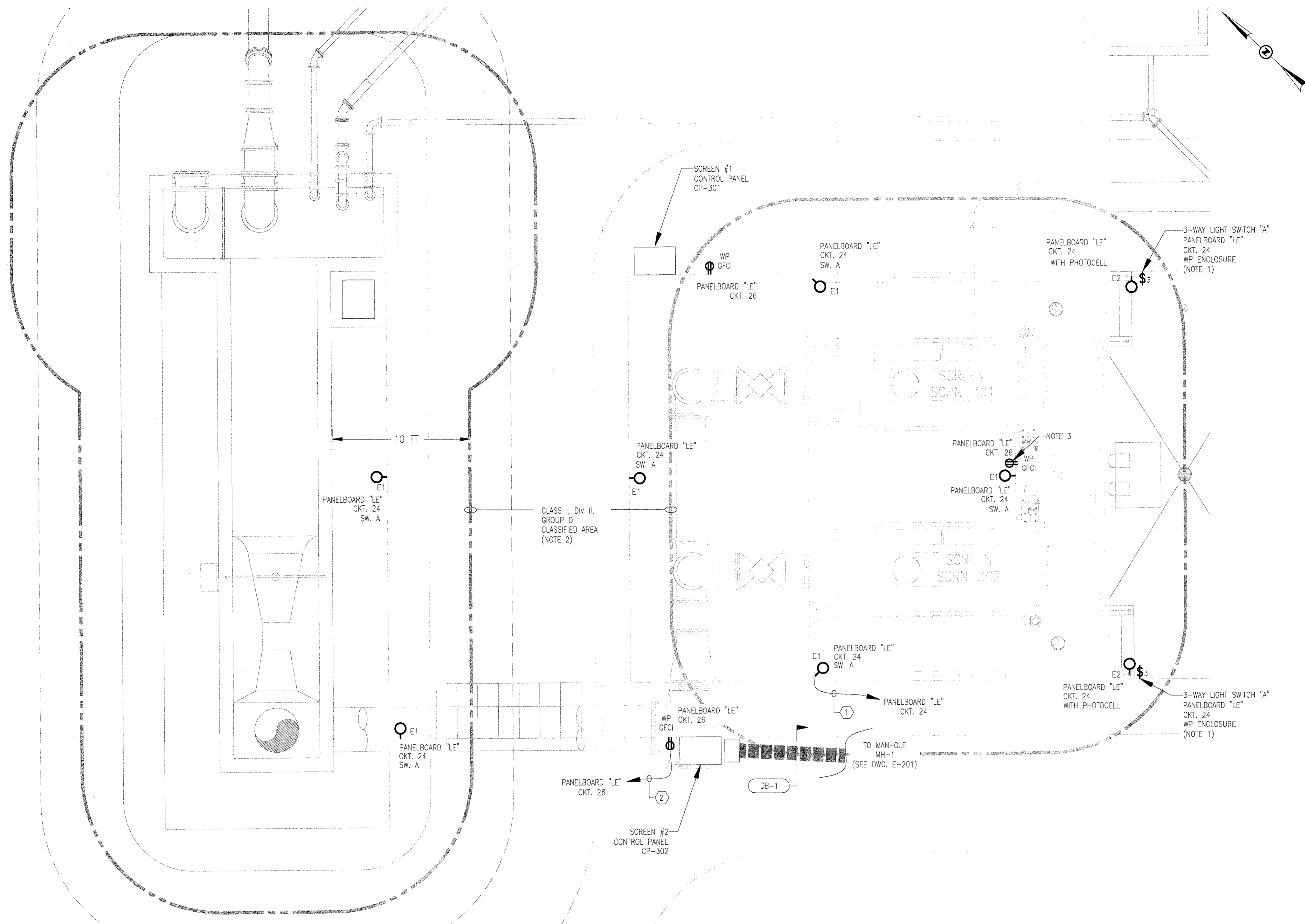
NOTES:

1. THE LIGHTING FIXTURES "E2" AT THE STAIRS SHALL BE WITH PHOTOCELL. ALL OTHER LIGHTS "E1" AT THE BAR SCREEN AND INFLUENT METERING AREA SHALL BE CONTROLLED OFF A LIGHT SWITCHES IN A NEMA 4X SS ENCLOSURE.
2. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS" REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
3. INSTALL RECEPTACLES 24" ABOVE GRADING TO BE ABOVE THE CLASSIFIED AREA.

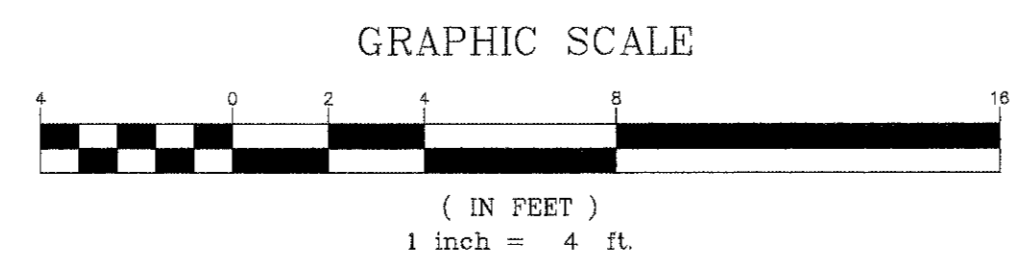
CONDUCTOR/CONDUIT SCHEDULE (CONSIDERING VOLTAGE DROP)

- ① 2 #10 & 1 #10 GND IN 1" C.
- ② 2 #8 & 1 #10 GND IN 1" C.

FOR LOCAL FIELD CONNECTIONS USE 2 #12 & 1 #12 GND IN 1" C.



1 INFLUENT METERING STRUCTURE AND INFLUENT SCREENS LIGHTING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: -----	DATE: AUGUST 2016
	DATE: _____
REVISION	DATE: _____
	DATE: _____

DSGN: AZ
 DRWN: DV
 CKCH: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

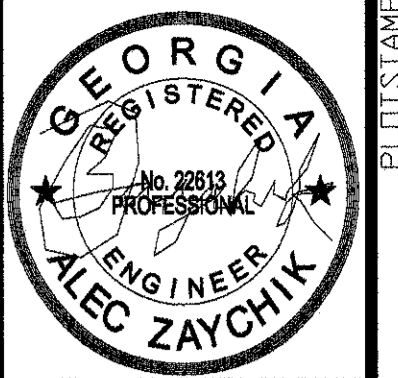
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 INFLUENT STRUCTURE LIGHTING PLAN

SHEET NO.
 E-302

PLOT STAMP



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
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 MARIETTA, GA 30062
 (770) 429-0001

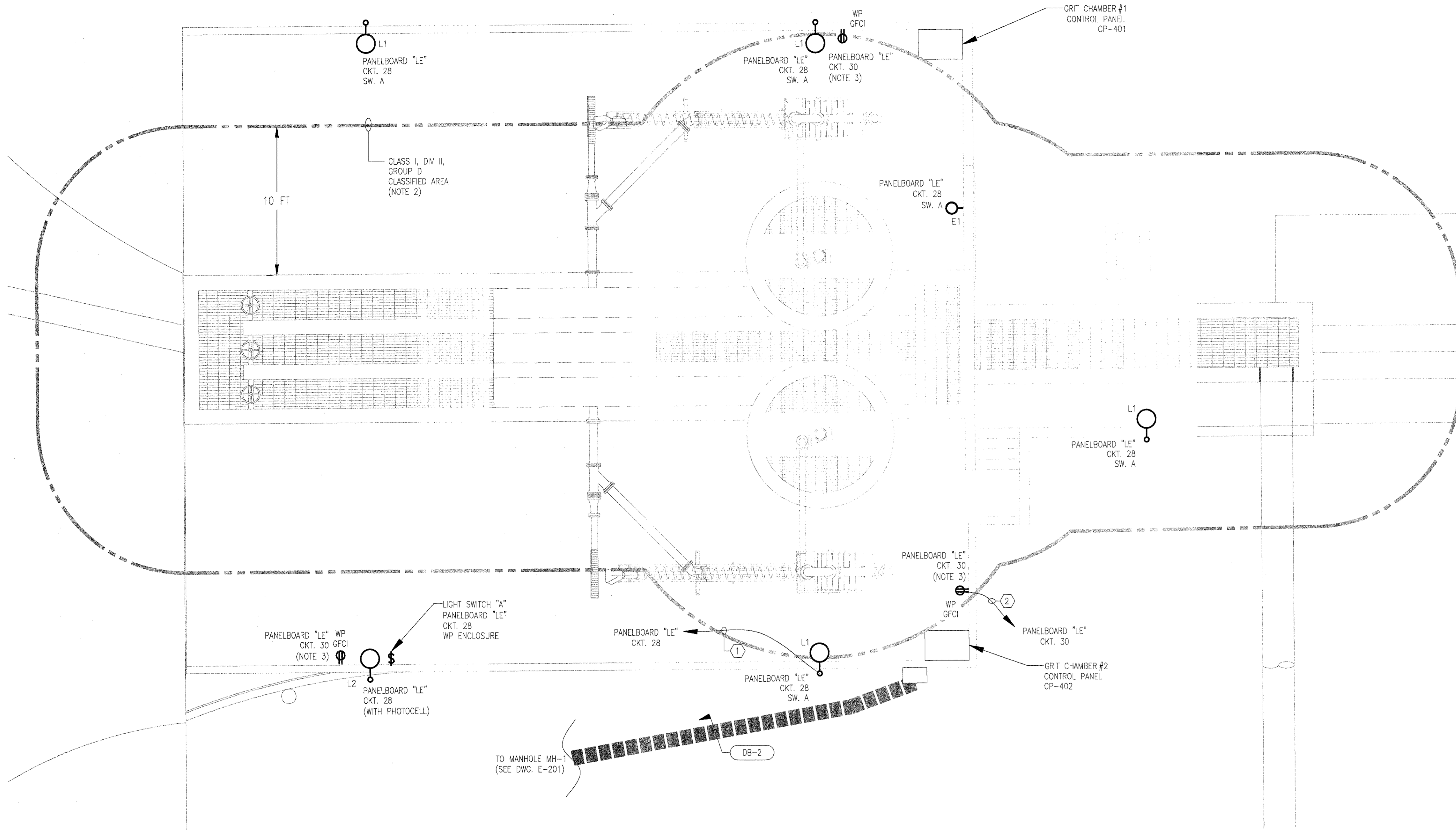
NOTES:

1. THE LIGHTING FIXTURE "E2" AT THE STRUCTURE ENTRANCE SHALL BE WITH PHOTOCELL. ALL OTHER LIGHTS "E1" AT THE GRID SYSTEM AREA SHALL BE CONTROLLED OFF A LIGHT SWITCH IN A NEMA 4X SS ENCLOSURE.
2. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE" TYPE AND INSTALLATION METHODS REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
3. INSTALL RECEPTACLES 24" ABOVE FINISHED GRADE TO BE ABOVE THE CLASSIFIED AREA.

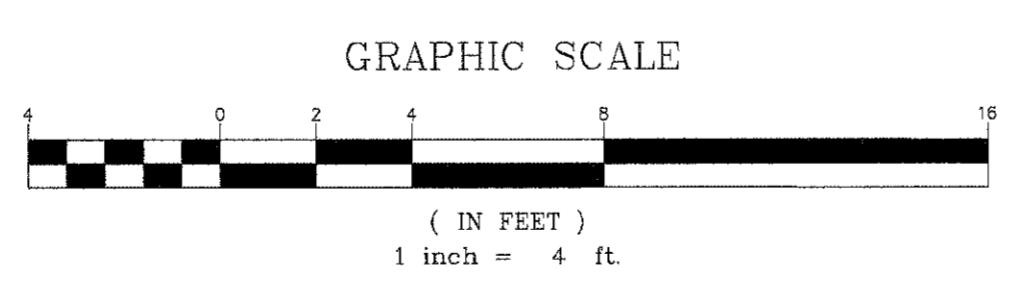
CONDUCTOR/CONDUIT SCHEDULE (CONSIDERING VOLTAGE DROP)

- ① 2 #6 & 1 #10 GND IN 1" C.
- ② 2 #8 & 1 #10 GND IN 1" C.

FOR LOCAL FIELD CONNECTIONS USE 2 #12 & 1 #12 GND IN 1" C.



1 GRIT SYSTEM LIGHTING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION
 DATE

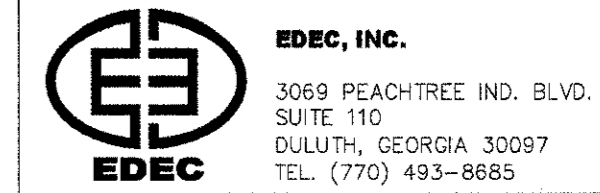
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR OR ON IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
GRIT SYSTEM LIGHTING PLAN

SHEET NO.
E-303

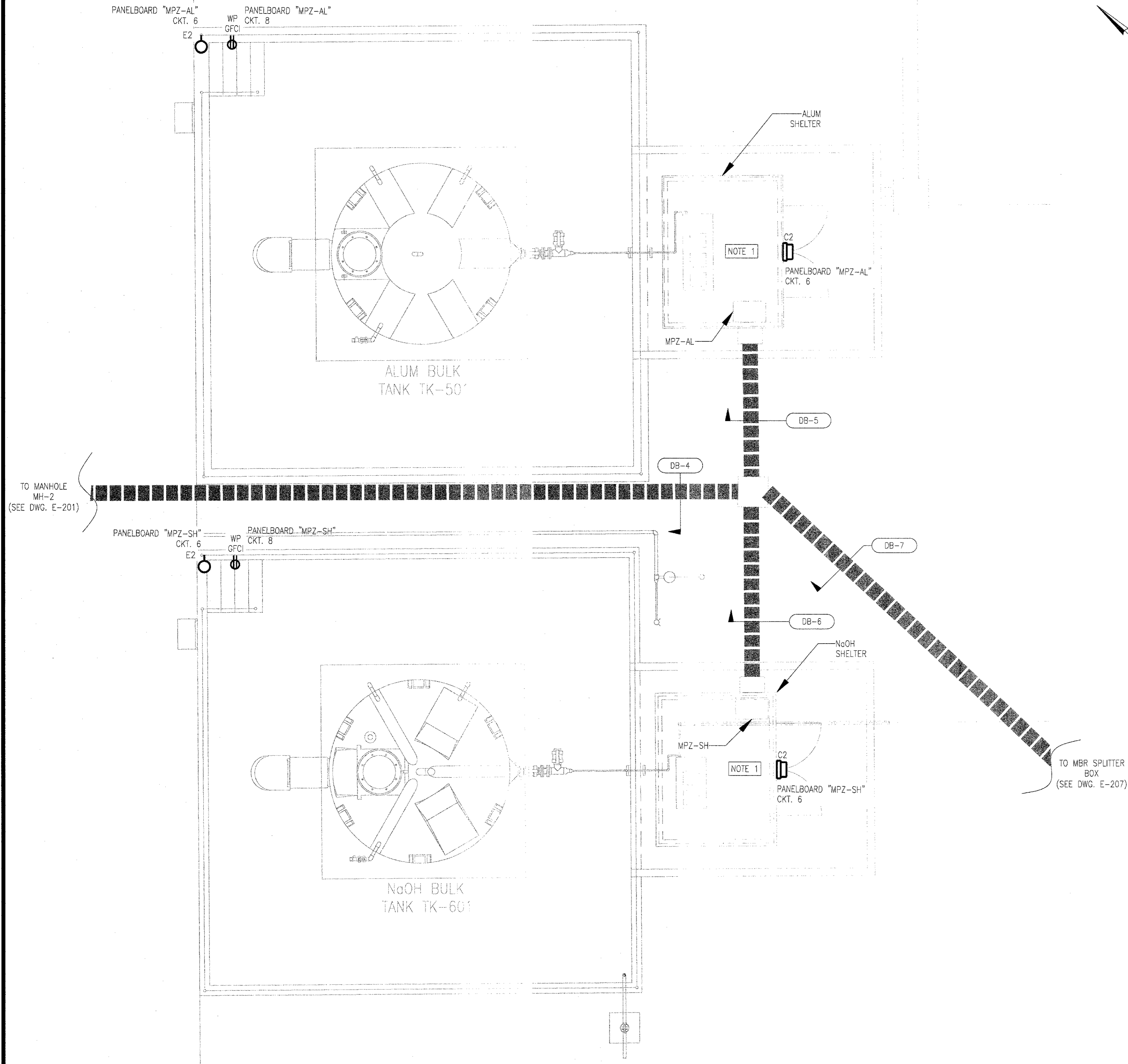
PLTSTAMP



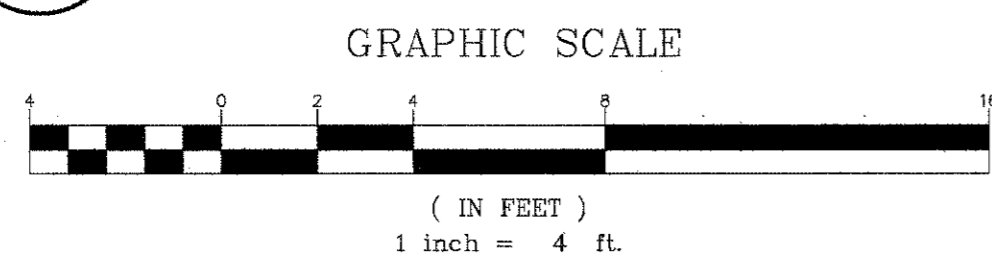
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

NOTES:

- LIGHTS, FANS, RECEPTACLES AND UNIT HEATERS SHALL BE PREINSTALLED AND PREWIRED TO THE ASSOCIATED PANELBOARD INSIDE EACH SHELTER BUILDING BY SHELTER VENDOR.
- THE LIGHTING FIXTURES "E2" AND "C2" AT THE STAIRS AND CHEMICAL SHELTERS CORRESPONDINGLY SHALL BE WITH PHOTOCELL.



1 CHEMICAL STORAGE AREA LIGHTING PLAN
SCALE: 1" = 4'



PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

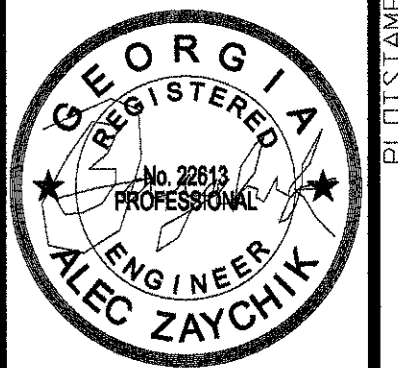
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
CHEMICAL STORAGE AREA LIGHTING PLAN

SHEET NO.
E-304

PLIOTS TAMP



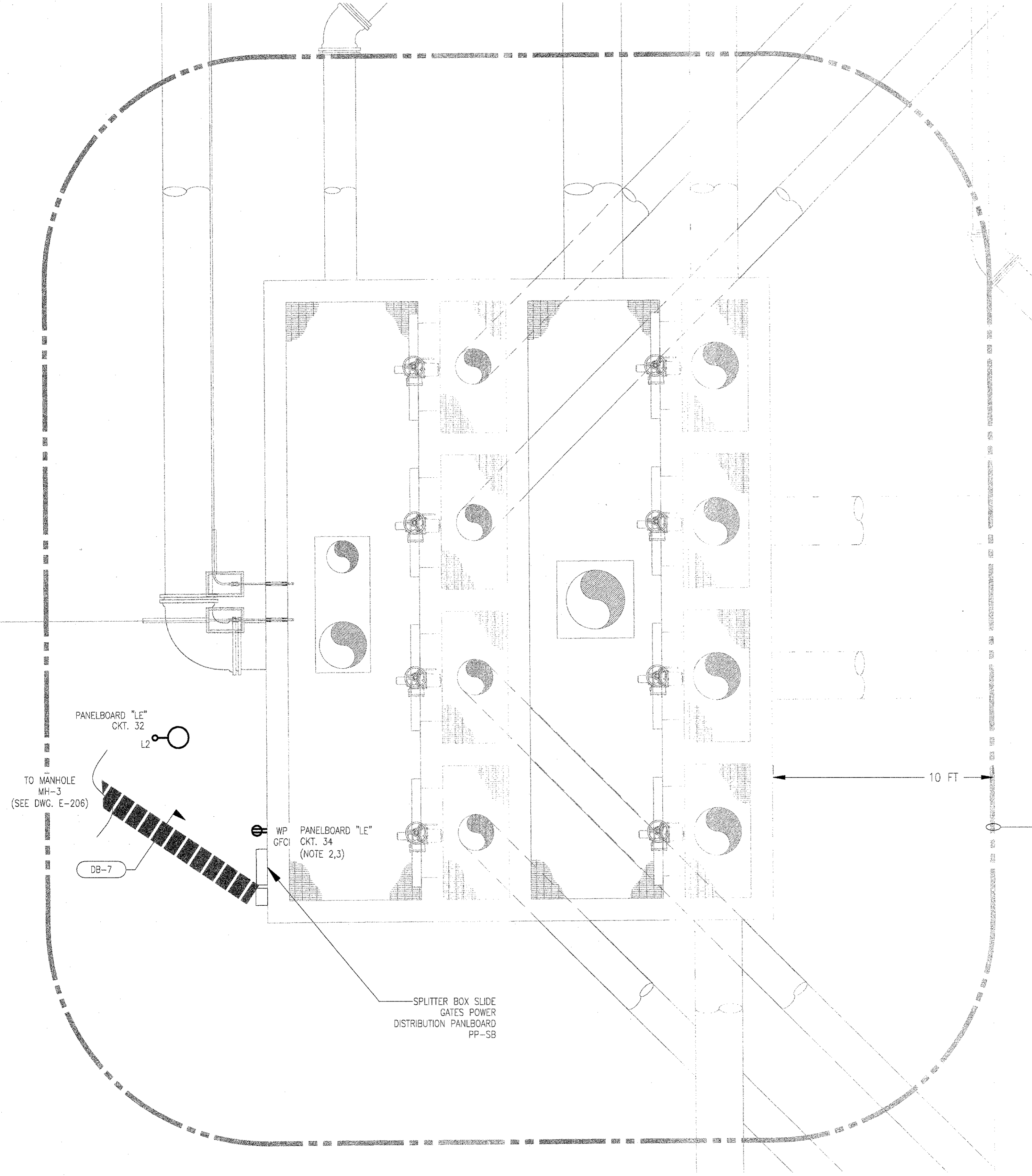
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE LIGHTING FIXTURE "E2" LOCATED AT THE PANELBOARD SHALL BE WITH PHOTOCELL. ALL OTHER LIGHTS "E1" AT THE SPLITTER BOX AREA SHALL BE CONTROLLED OFF A LIGHT SWITCH IN A NEMA 4X SS ENCLOSURE.
2. ALL EQUIPMENT AND INSTALLATION LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH ENCLOSURE TYPE AND INSTALLATION METHODS REQUIREMENTS SET IN NEC ARTICLE 500. CLASSIFIED AREA EXTENDS 18" ABOVE THE TOP OF THE CHANNELS AND TANKS.
3. INSTALL RECEPTACLES 24" ABOVE GRADING TO BE ABOVE THE CLASSIFIED AREA.



PANELBOARD "LE"
 CKT. 32
 L2

TO MANHOLE
 MH-3
 (SEE DWG. E-206)

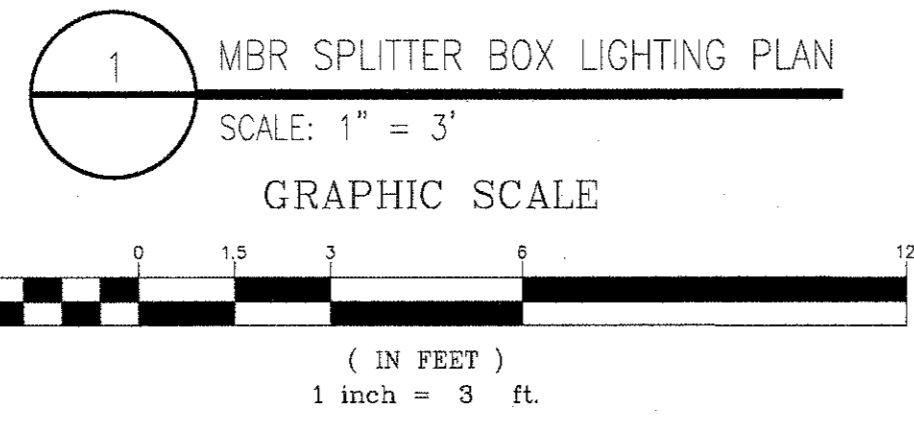
DB-7

WP
 GFCI
 PANELBOARD "LE"
 CKT. 34
 (NOTE 2,3)

SPLITTER BOX SLIDE
 GATES POWER
 DISTRIBUTION PANLBOARD
 PP-SB

10 FT

CLASS I, DIV II,
 GROUP D
 CLASSIFIED AREA
 (NOTE 2)



PROJECT NUMBER:	DATE:	REVISION	DATE
	AUGUST 2016		

DSGN: AZ
 DRWN: DV
 CHCK: AZ

DO NOT SCALE DIMENSIONS FROM THIS SHEET. IF NOT LONG ENOUGH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

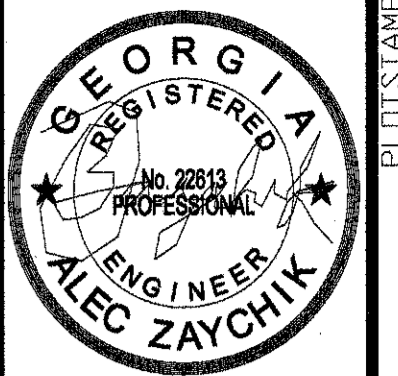
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 MBR SPLITTER BOX LIGHTING PLAN

SHEET NO.
 E-305

PLOT/STAMP



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 3069 PEACHTREE IND. BLVD.
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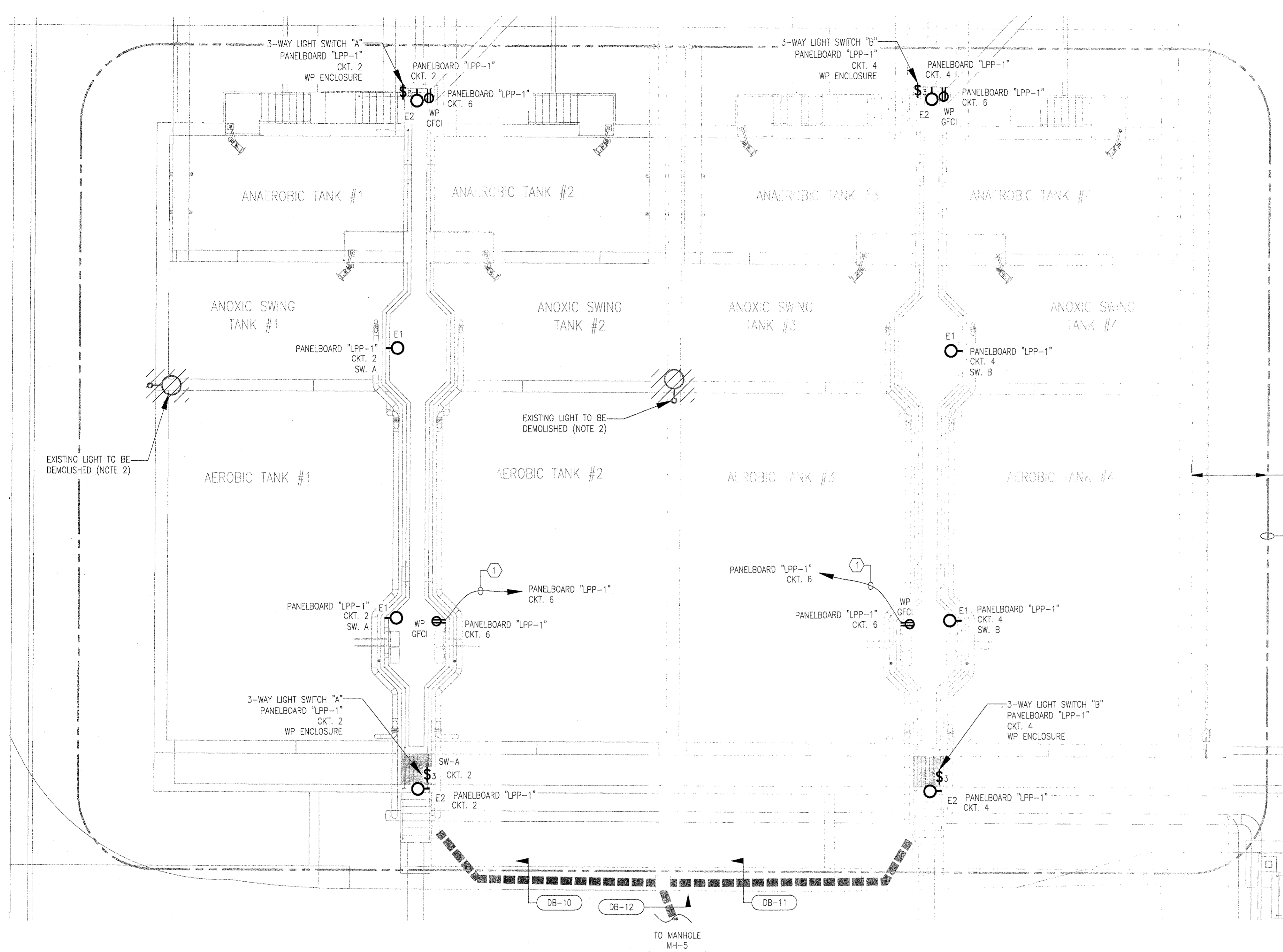
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW US 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 BIOREACTOR RESERVOIR LIGHTING PLAN

SHEET NO.
 E-306

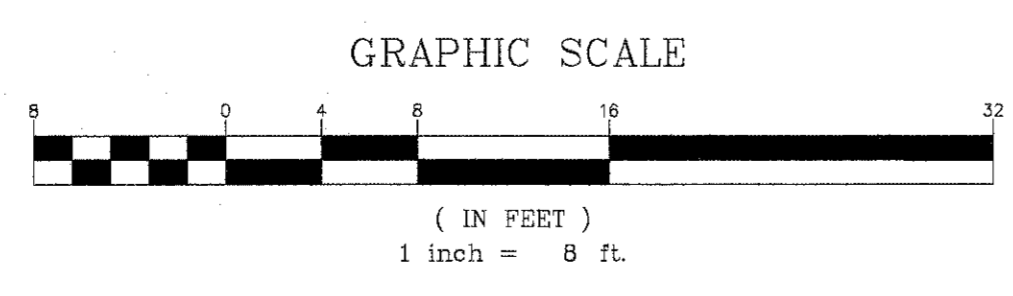


NOTES:

1. THE LIGHTING FIXTURE "E2" AT THE STAIRS SHALL BE WITH PHOTOCELL. ALL OTHER LIGHTS "E1" AT THE WALKWAYS SHALL BE CONTROLLED OFF A LIGHT SWITCHES IN A NEMA 4X SS ENCLOSURES.
2. CONTRACTOR SHALL REMOVE AND RETURN TO THE OWNER THE EXISTING LIGHTING POLE AND FIXTURE WITH ASSOCIATED CABLES AND CONDUITS.
3. ALL EQUIPMENT AND INSTALLATION, LOCATED WITHIN CLASSIFIED AREA SHALL CONFORM WITH "ENCLOSURE TYPE AND INSTALLATION METHODS REQUIREMENTS SET IN NEC ARTICLE 500.
4. CONTRACTOR SHALL PROVIDE AND INSTALL WEATHER PROOF RECEPTACLES 24" ABOVE TOP OF THE TANK TO BE OUT OF THE CLASSIFIED AREA.
5. ALL CABLES FOR LIGHTS AND RECEPTACLES SHOULD BE #12 UNLESS SHOWN OTHERWISE UPSIZED FOR VOLTAGE DROP.

CONDUCTOR/CONDUIT SCHEDULE (CONSIDERING VOLTAGE DROP)
① 2 #10 & 1 #10 GND IN 1" C.
FOR LOCAL FIELD CONNECTIONS USE 2 #12 & 1 #12 GND IN 1" C.

1 BIOREACTOR RESERVOIR LIGHTING PLAN
 SCALE: 1" = 8'





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 3068 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:

1. THE LIGHTING FIXTURE "D2" AT THE STAIRS SHALL BE WITH PHOTOCELL. ALL OTHER LIGHTS "D1" AT THE WALKWAYS AND MEMBRANE LAYDOWN AREA SHALL BE CONTROLLED OFF A LIGHT SWITCH IN A NEMA 4X SS ENCLOSURE.

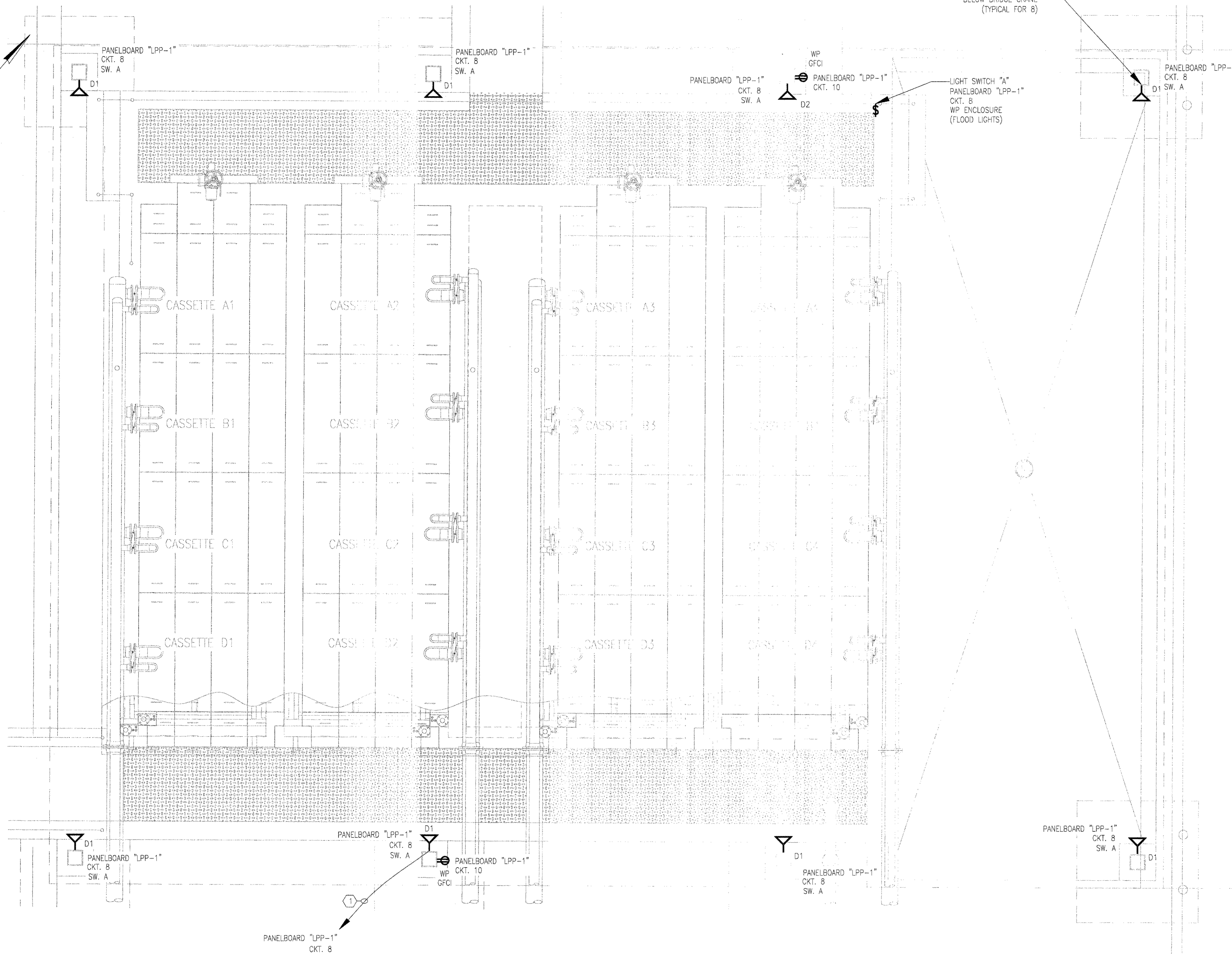
CONDUCTOR/CONDUIT SCHEDULE (CONSIDERING VOLTAGE DROP)

① 2 #6 & 1 #10 GND IN 1" C.

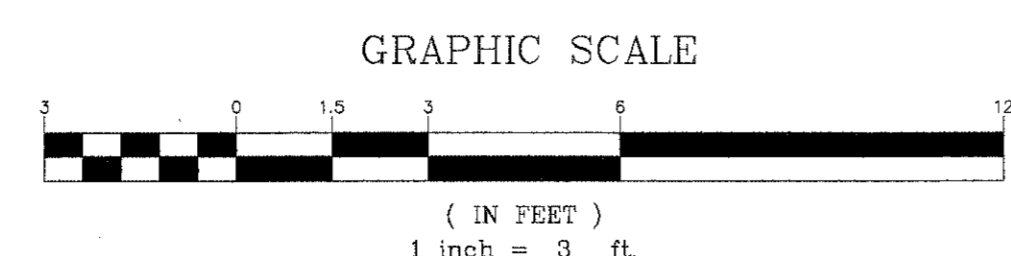
FOR LOCAL FIELD CONNECTIONS USE 2 #12 & 1 #12 GND IN 1" C.

TO BE MOUNTED
 BELOW BRIDGE CRANE
 (TYPICAL FOR 8)

LIGHT SWITCH "A"
 PANELBOARD "LPP-1"
 CKT. 8
 WP ENCLOSURE
 (FLOOD LIGHTS)



1 MEMBRAINE TANK LIGHTING PLAN
 SCALE: 1" = 3'



PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 MEMBRAINE TANK LIGHTING PLAN

SHEET NO.
 E-307



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
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 TEL. (770) 493-8685



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ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: _____
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 ALL DIMENSIONS ARE IN FEET UNLESS SHOWN OTHERWISE. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 DE-AERATION TANK LIGHTING PLAN

SHEET NO.
E-308

PANELBOARD "LPP-1"
 CKT. 12

L2

DE-AERATION TANK #3

PANELBOARD "LPP-1"
 CKT. 14

WP
 GFCI

DB-15

DB-14

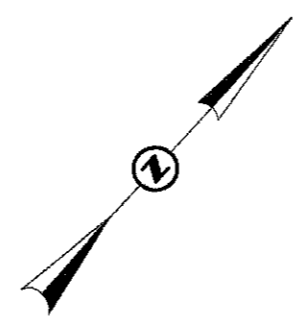
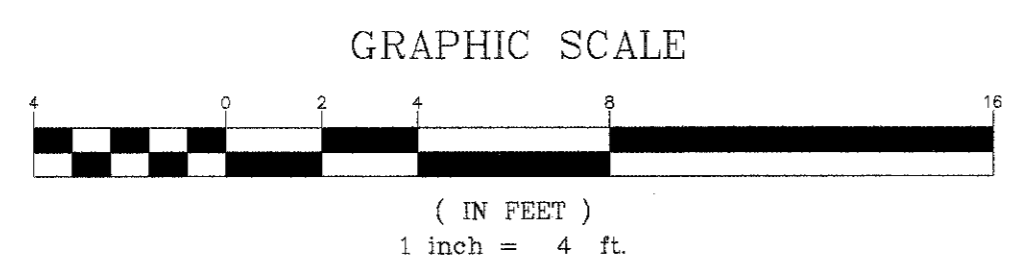
DB-16

TO MANHOLE MH-7
 (SEE DWG. E-201)

TO MRB PROCESS
 BUILDING
 (SEE DWG. E-211)

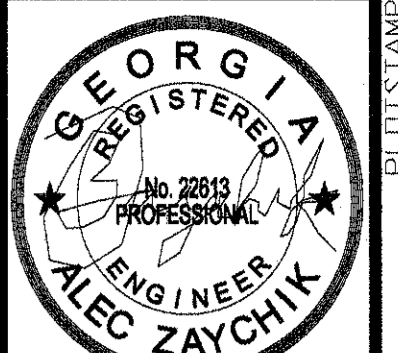
TO MANHOLE MH-4
 (SEE DWG. E-208)

1 DE-AERATION TANK LIGHTING PLAN
 SCALE: 1" = 4'





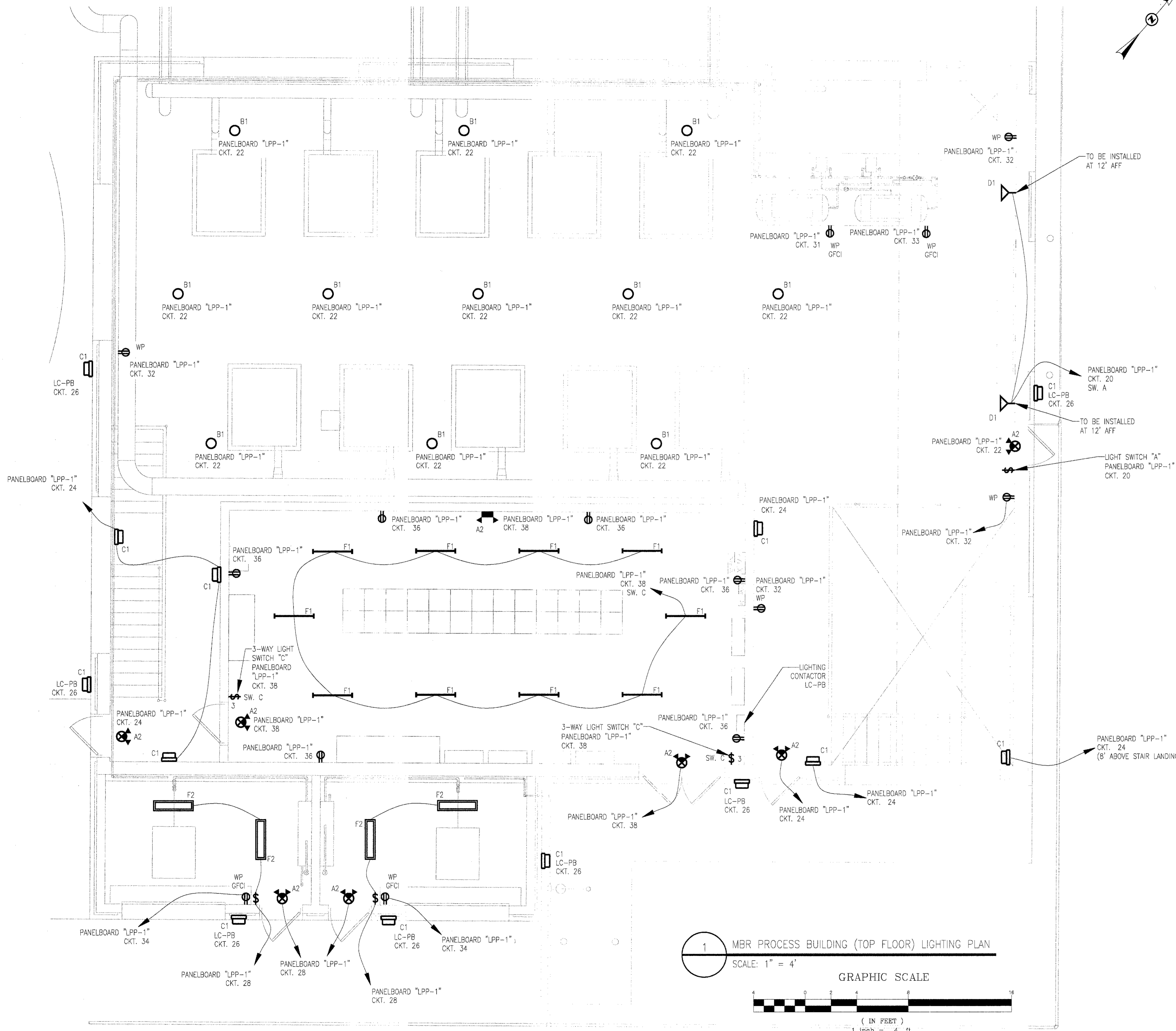
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NOTES:

1. LIGHTING CONTACTOR LC-PB SHALL BE LOCATED IN PROCESS BUILDING ELECTRICAL ROOM. SEE DWG. E-426 FOR LIGHTING CONTACTOR WIRING DIAGRAM.



PROJECT NUMBER: -----

DATE:	DATE:
AUGUST 2016	

REVISION	DATE

DSGN: AZ
 DRAWN: DV
 CHECK: AZ

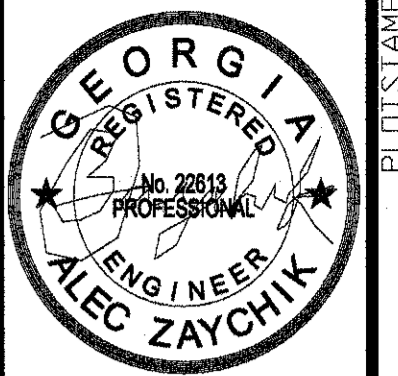
PLEASE DO NOT SCALE DIMENSIONS FROM THIS SHEET. DIMENSIONS SHOWN ON THIS SHEET, IF NOT SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
MBR BLD. TOP FLOOR LIGHTING PLAN

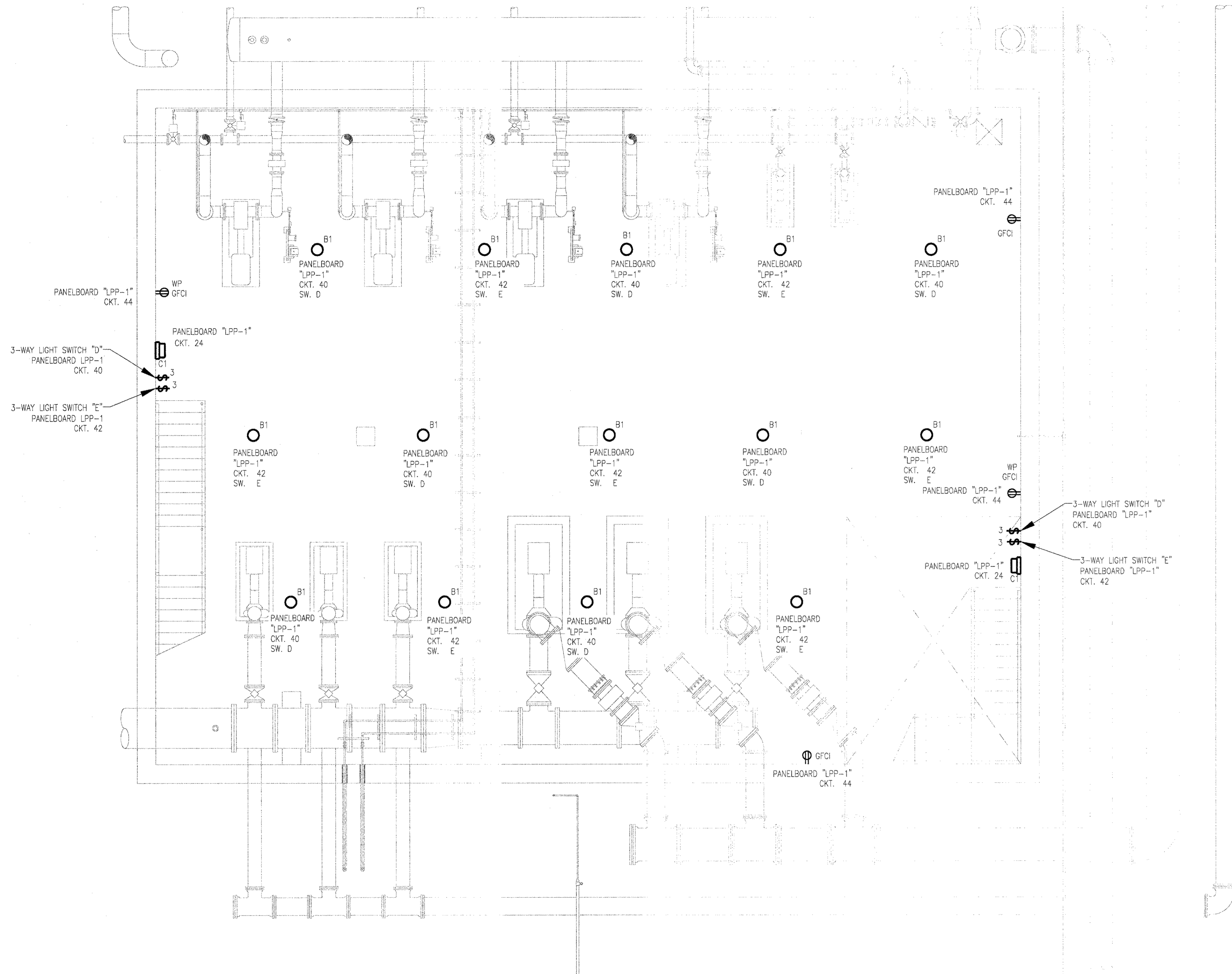
SHEET NO.
E-309



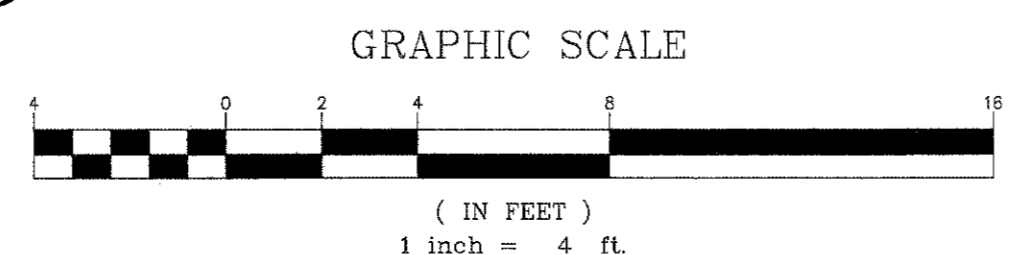
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 SUITE 110
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 (770) 499-0001



1 MBR PROCESS BUILDING (BOTTOM FLOOR) LIGHTING PLAN
 SCALE: 1" = 4'



PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 MBR BLD. BOTTOM FLOOR LIGHTING PLAN

SHEET NO.
 E-310

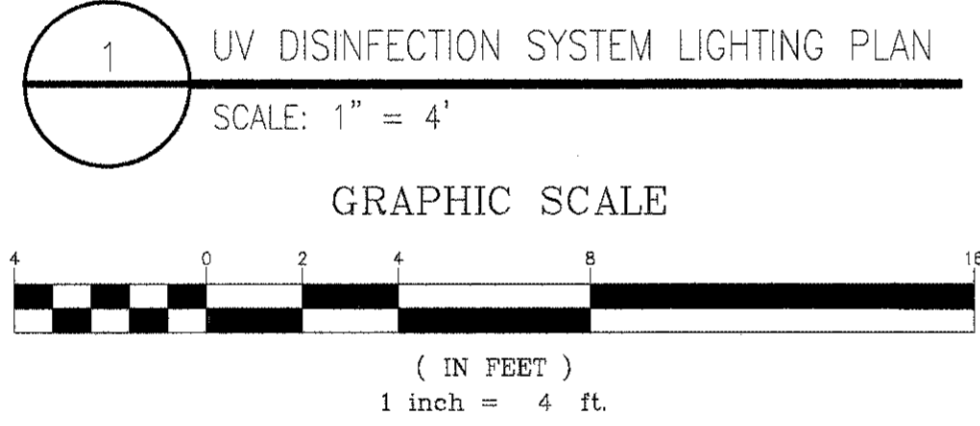
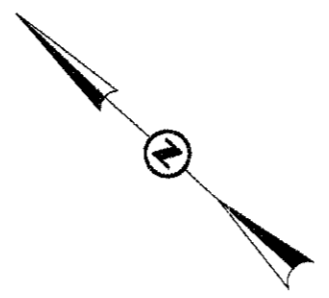
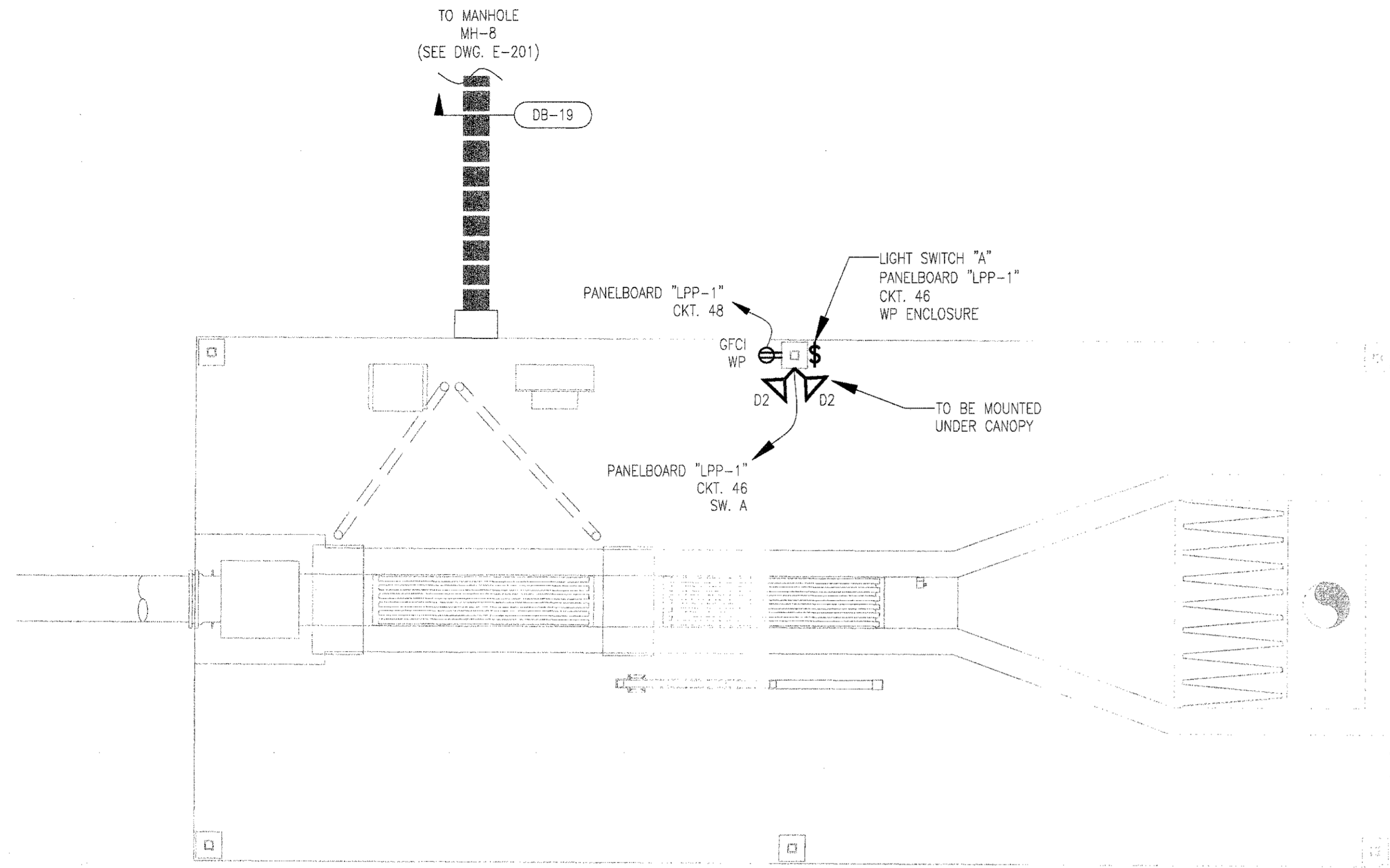
PLOTISTAMP



EDEC, INC.
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 SUITE 110
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 (770) 429-0001



PROJECT NUMBER: -----	DATE: AUGUST 2016
REVISION	DATE
Δ	

DSGN: AZ
 DRWN: DV
 CHCK: AZ

FOR REVISIONS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

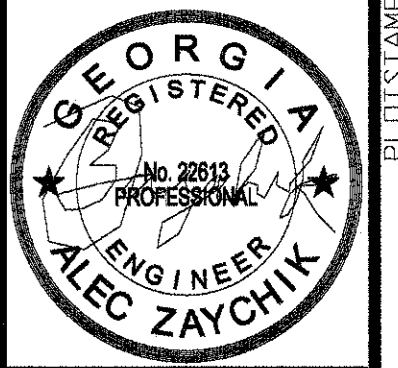
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 UV DISINFECTION SYSTEM LIGHTING PLAN

SHEET NO.
 E-311

PLIETS/TAMP



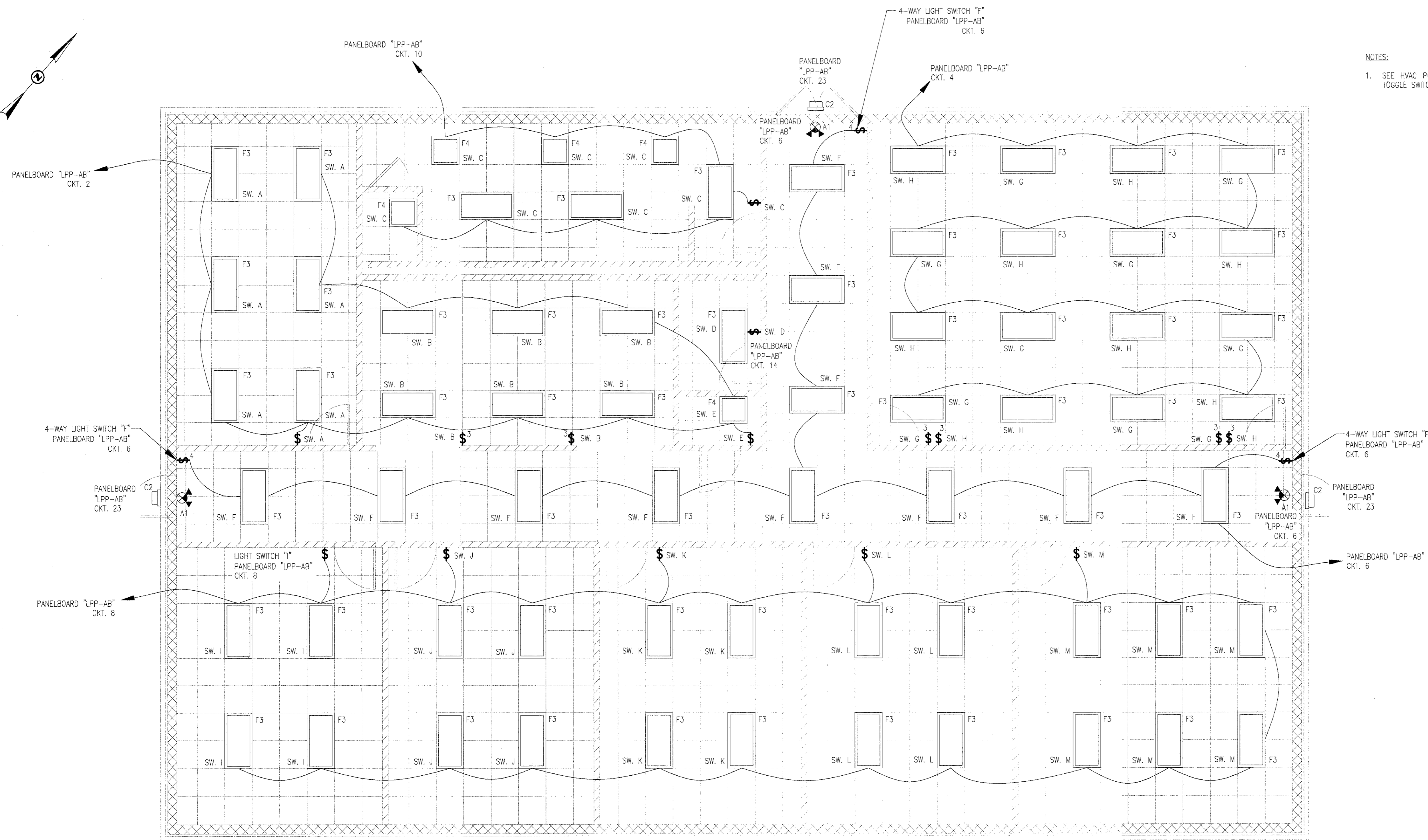
EDEC, INC.
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 SUITE 110
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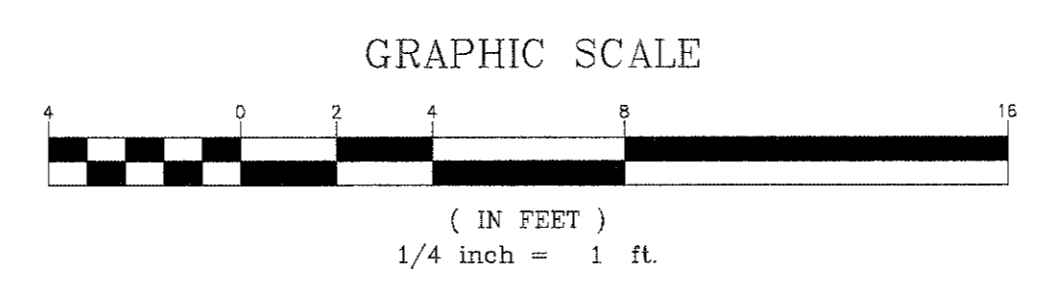
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30067
 (770) 499-0001

NOTES:

- SEE HVAC POWER PLAN DRAWING E-254 FOR MORE RECEPTACLES AND TOGGLE SWITCHES.



1 ADMINISTRATION BUILDING REFLECTED CEILING LIGHTING PLAN
 SCALE: 1/4" = 1'



PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DGN: AZ
 DRWN: DV
 CHK: AZ

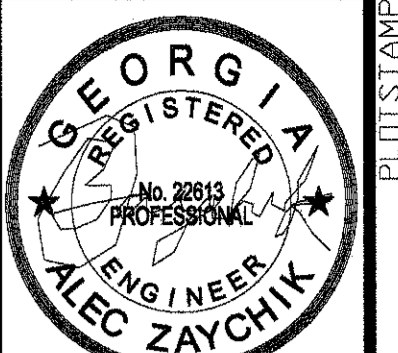
FOR REVISIONS 4" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 ADMINISTRATION BUILDING LIGHTING PLAN

SHEET NO.
 E-312



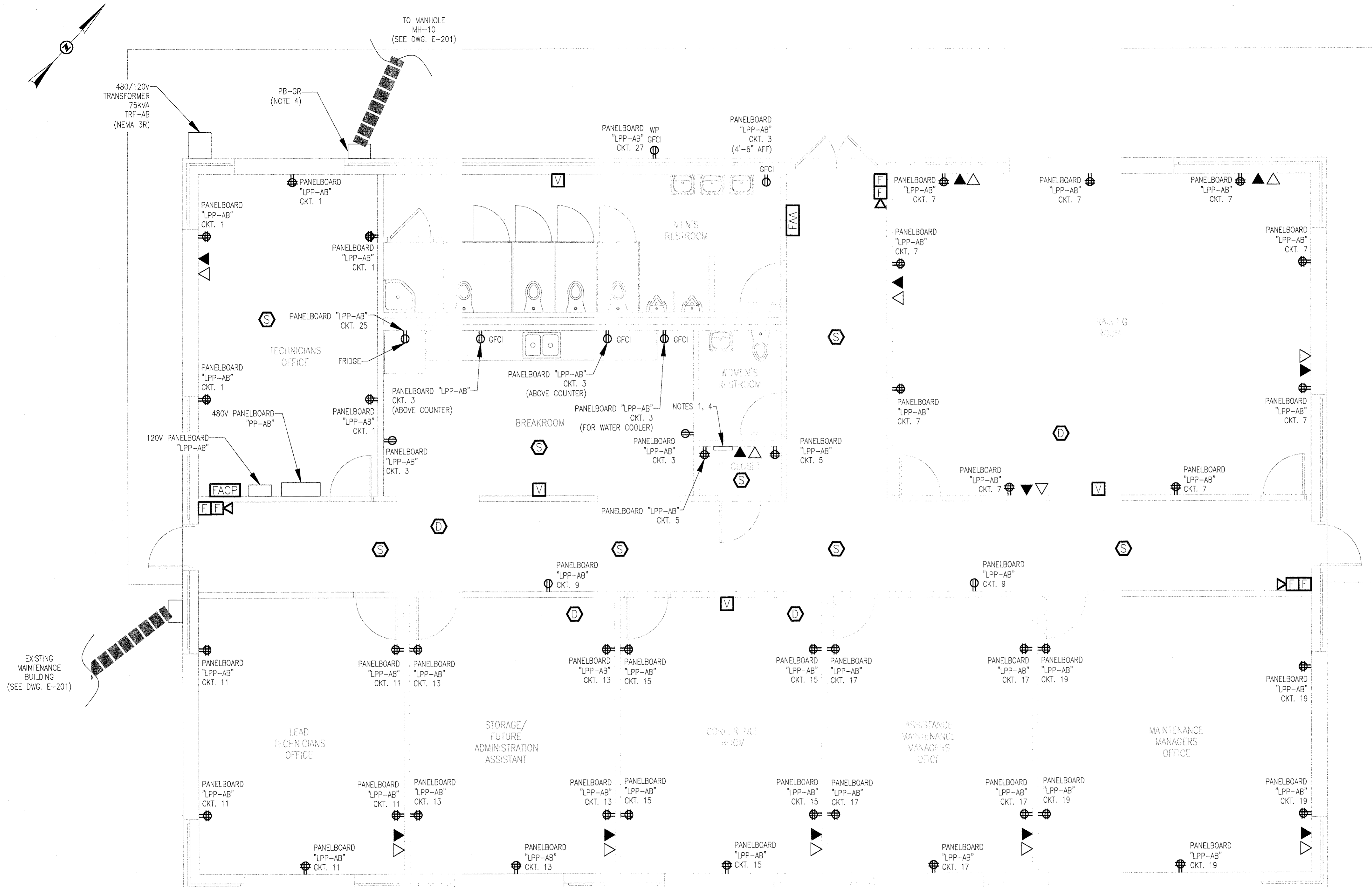
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 SUITE 110
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 (770) 429-0001

NOTES:

1. PROVIDE TWO 4" WIDE BY 8" HIGH PLYWOOD BACKBOARD FOR TELEPHONE AND THE OWNER'S LAN EQUIPMENT PER SPECIFICATION REQUIREMENTS. INSTALL 2 AWG (MIN.) GROUNDING CONDUCTOR FROM BACK BOARD TO GROUND GRID.
2. REFER TO DWG. H-1-1 FOR LOCATION OF HVAC EQUIPMENT IN THE ADMINISTRATION BUILDING. FURNISH DUCT MOUNTED SMOKE DETECTORS WHERE SHOWN. PROVIDE CONDUITS AND CONDUCTORS FOR HVAC CONTROL AND INTERLOCKING CIRCUITS IN ACCORDANCE WITH HVAC DWG. H-1-2.
3. CONDUIT RUNS ARE TO BE CONCEALED IN WALLS OR ABOVE CEILING, UNLESS SHOWN OTHERWISE.
4. CONTRACTOR SHALL PROVIDE AND INSTALL STEEL SHELF FOR FIBER/ETHERNET SWITCH AND LAN SWITCH. MOUNT THE QUADRUPLX RECEPTACLE 6" ABOVE SHELF FOR SWITCHES POWER SUPPLY CONNECTION.
5. SEE DWG. E-152 FOR PANELBOARD SCHEDULE.



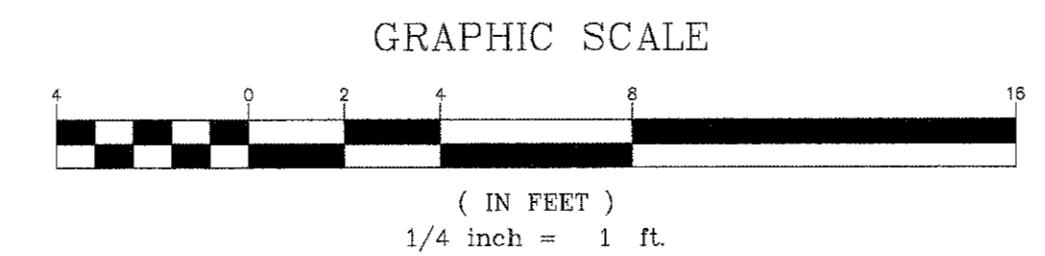
EXISTING MAINTENANCE BUILDING (SEE DWG. E-201)

PROJECT NUMBER: -----	DATE: AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
INDIAN CREEK WWTP
ADMIN. BLDG. POWER AND SYSTEMS PLAN

1 ADMINISTRATION BUILDING POWER AND SYSTEMS PLAN
 SCALE: 1/4" = 1'



NOTES:

1. CONTRACTOR SHALL SUPPLY AND INSTALL JUNCTION BOX FOR ACCESS SYSTEM. TO BE MOUNTED AT EACH EXTERIOR DOOR AT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.



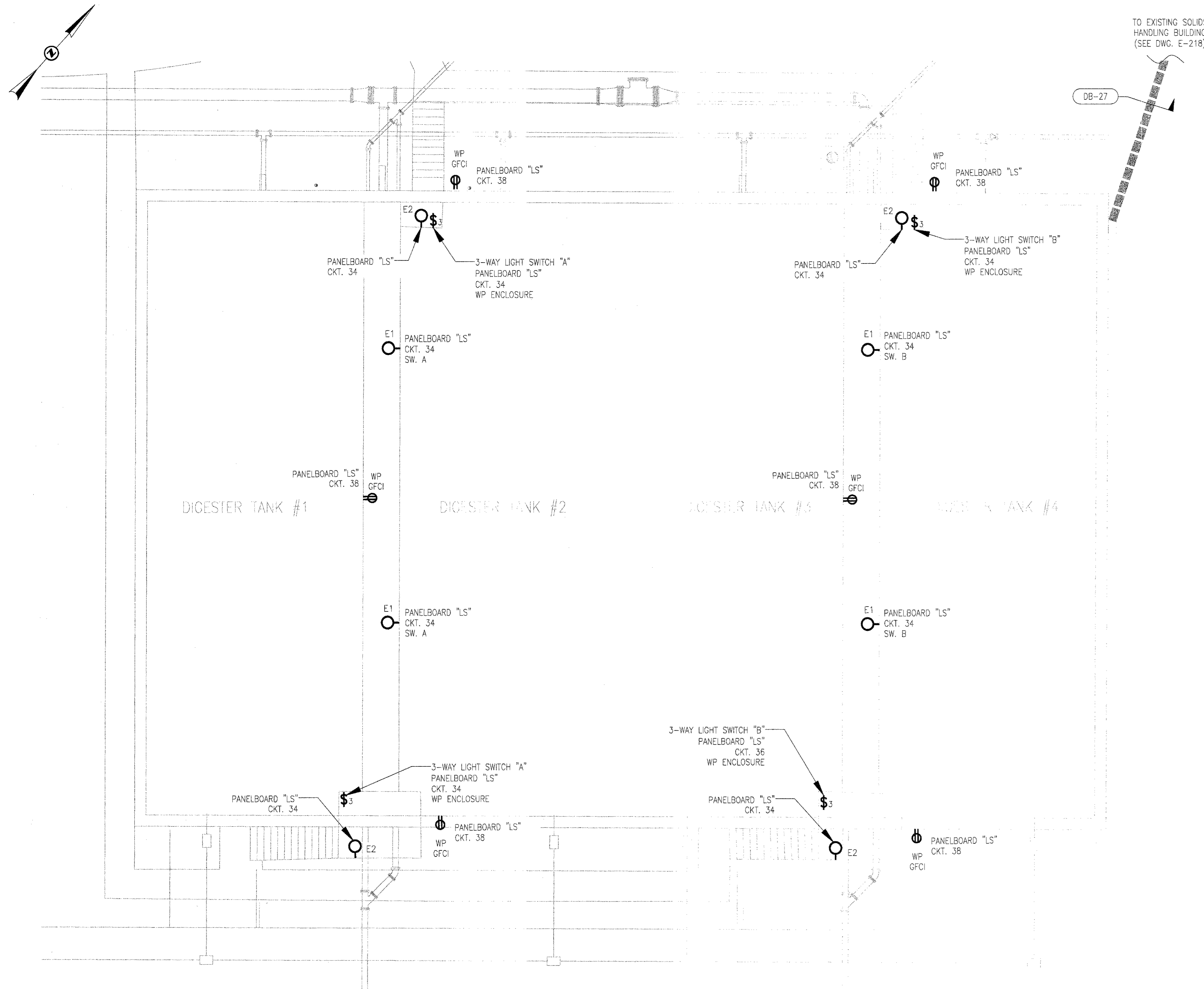
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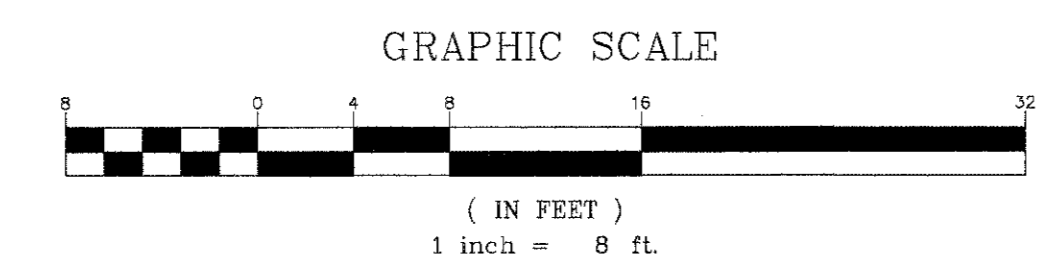
NOTES:

1. ALL RECEPTACLES SHOWN ON THIS DRAWING SHALL BE INSTALLED 24" ABOVE WALKWAYS.



DIGESTER TANK #1 DIGESTER TANK #2 DIGESTER TANK #3 DIGESTER TANK #4

1 DIGESTER TANK LIGHTING PLAN
 SCALE: 1" = 8'



PROJECT NUMBER: -----	DATE: AUGUST 2016
	DATE
REVISION	

DESIGN: AZ
 DRAWN: DV
 CHECK: AZ
 HAS BEEN REVIEWED FOR SCALES
 SHOWN ON THIS SHEET. IF NOT
 LONG ON THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

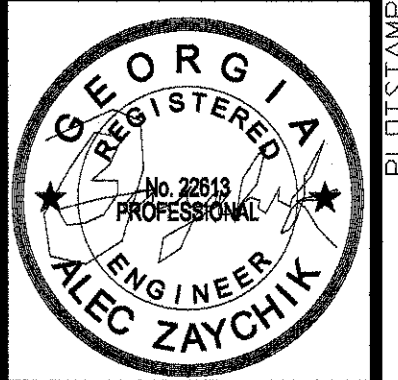
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INDIAN CREEK WWTP
 DIGESTER TANK LIGHTING PLAN

SHEET NO.
 E-314

PLOT/STAMP



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PROJECT NUMBER: ---
 DATE: AUGUST 2016

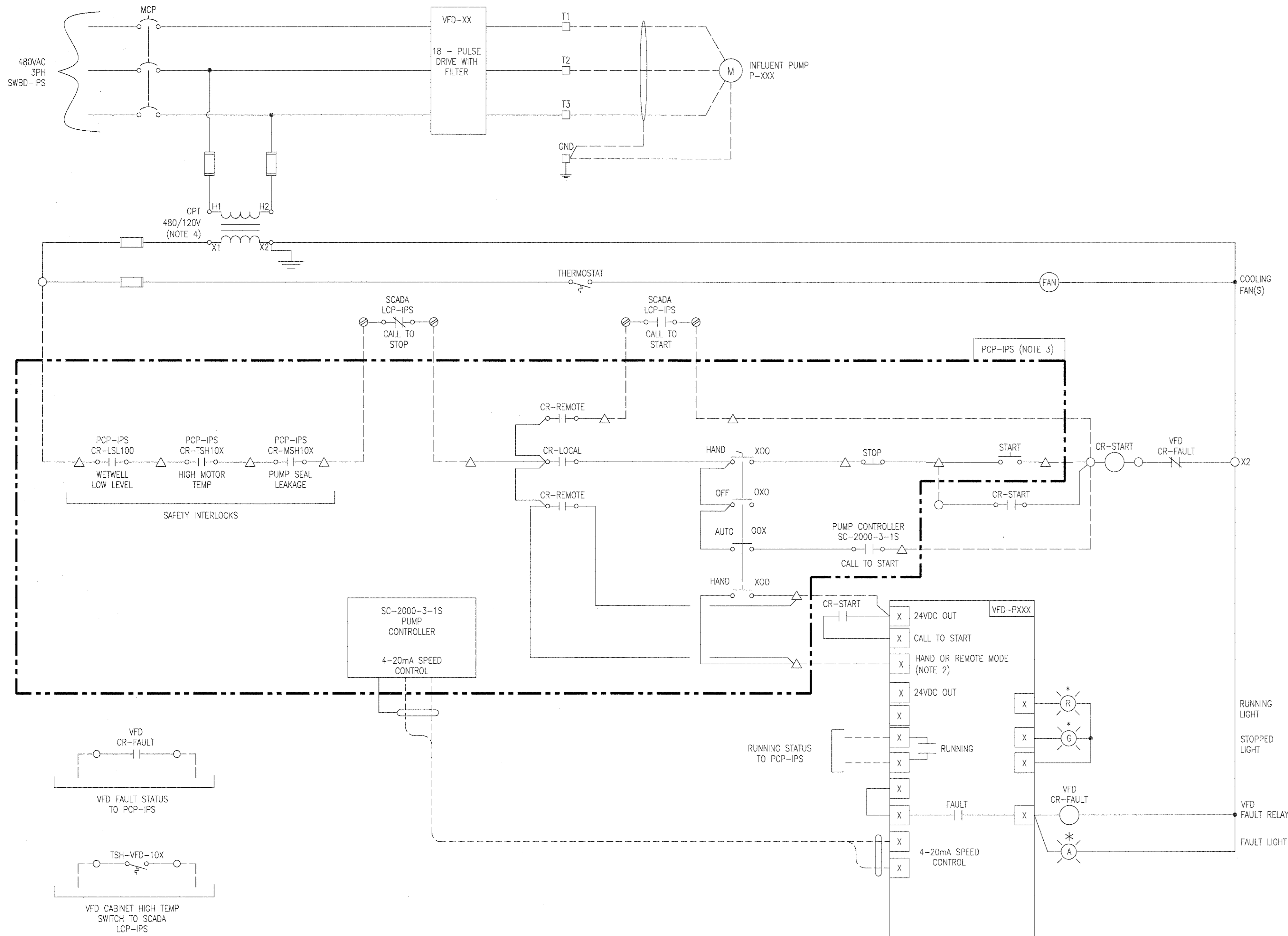
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
 LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

INFLUENT PS
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-401



1 INFLUENT PUMP VFD SCHEMATIC
 (TYPICAL FOR 3)

P-XXX	DESCRIPTION	HP	VFD-PXXX	TSH-PXXX	CR-TSHPXXX	CR-LSLXXX	TSH-VFD-10X
P-101	INFLUENT PUMP 1	215	VFD-P101	TSH-P101	CR-TSHP101	CR-LSL101	TSH-VFD-101
P-102	INFLUENT PUMP 2	215	VFD-P102	TSH-P102	CR-TSHP102	CR-LSL102	TSH-VFD-102
P-103	INFLUENT PUMP 3	215	VFD-P103	TSH-P103	CR-TSHP103	CR-LSL103	TSH-VFD-103

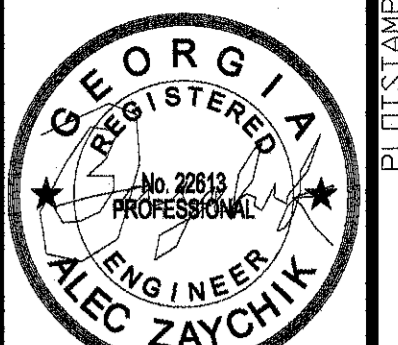
- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - PUMP CONTROL PANEL (PCP-IPS) TERMINAL
 - ⊗ - SCADA PANEL TERMINAL

NOTES:

- SEE DWG. E-402 FOR CABLES AND CONDUITS INFORMATION.
- WHEN HAND OR REMOTE MODE VFD INPUT IS ACTIVATED, THE VFD SHALL RUN AT DEFAULT SPEED OF 100%. REMOTE SPEED CONTROL IS NOT PROVIDED FOR HAND AND REMOTE MODES.
- SEE DWG. E-402 FOR PUMP CONTROL PANEL ADDITIONAL DETAILS.
- 480/120V CONTROL POWER TRANSFORMER (CPT) SHALL BE 1 KVA MINIMUM AND SHALL BE SIZED AS REQUIRED TO ACCOMMODATE ALL 120V VFD CABINET LOADS.



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 SUITE 110
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REVISION	DATE

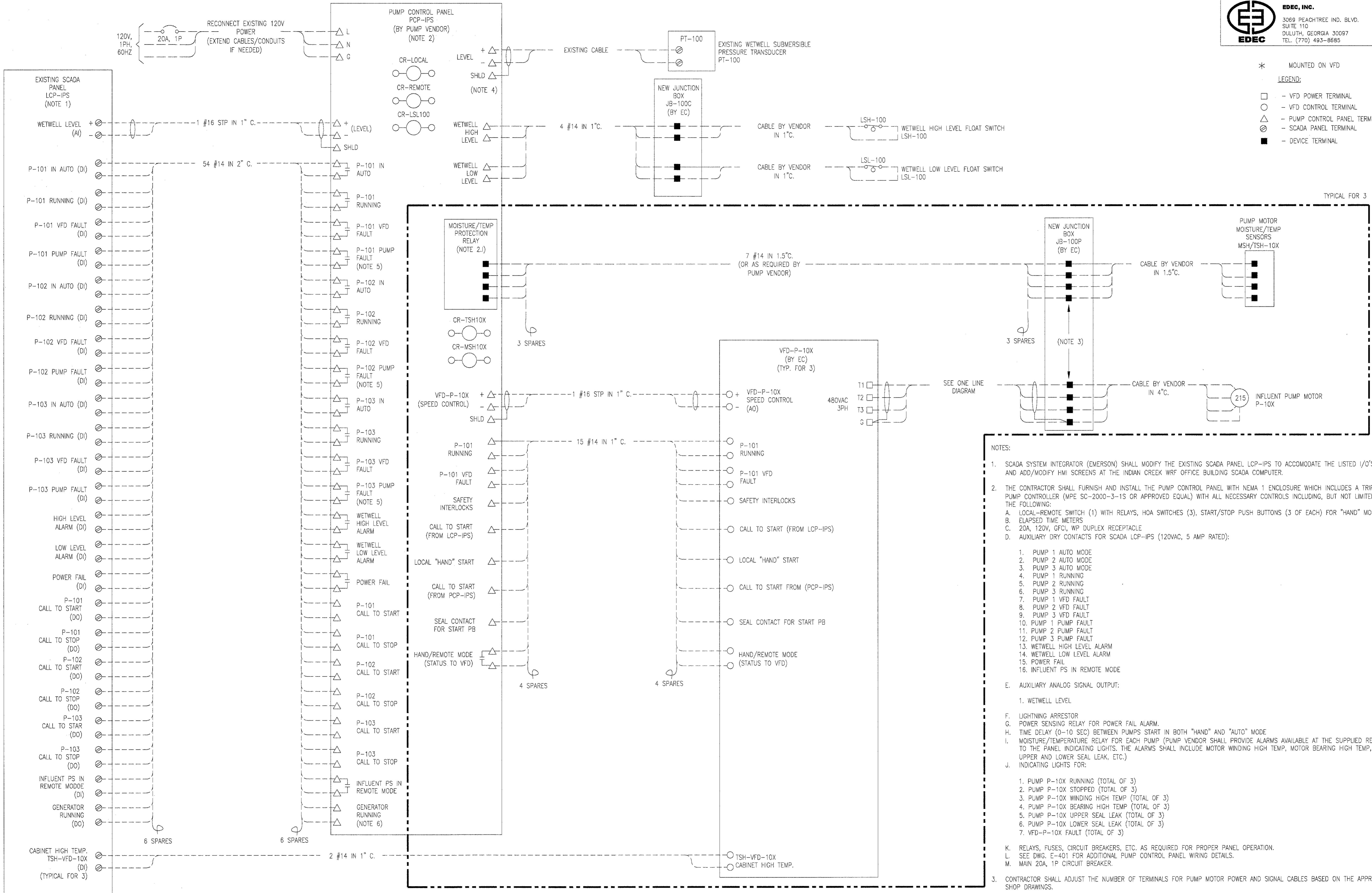
DESIGN: AZ
 DRAWN: DV
 CHECK: AZ

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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

INFLUENT PS
 SCHEMATIC WIRING DIAGRAMS

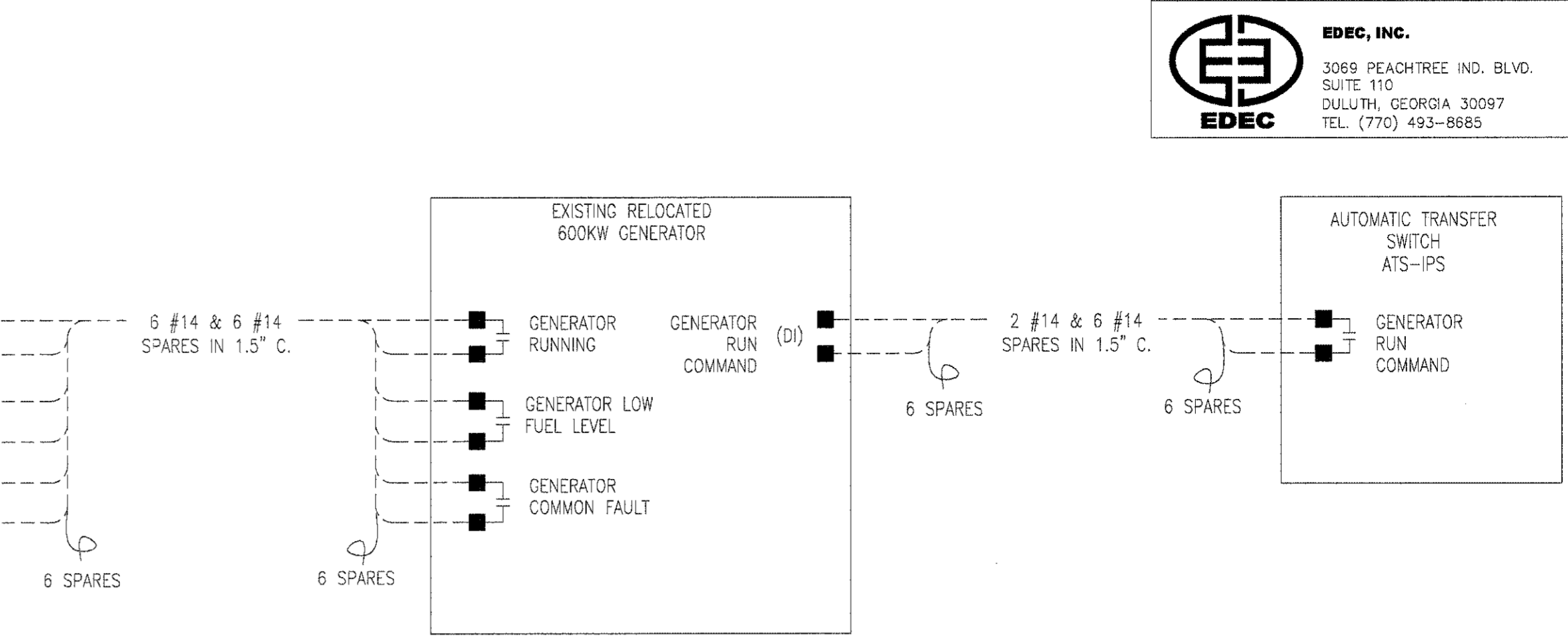
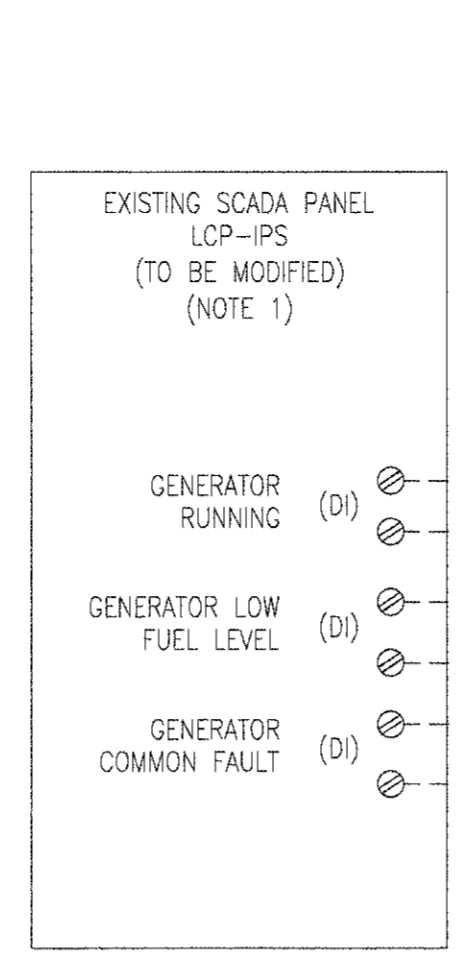
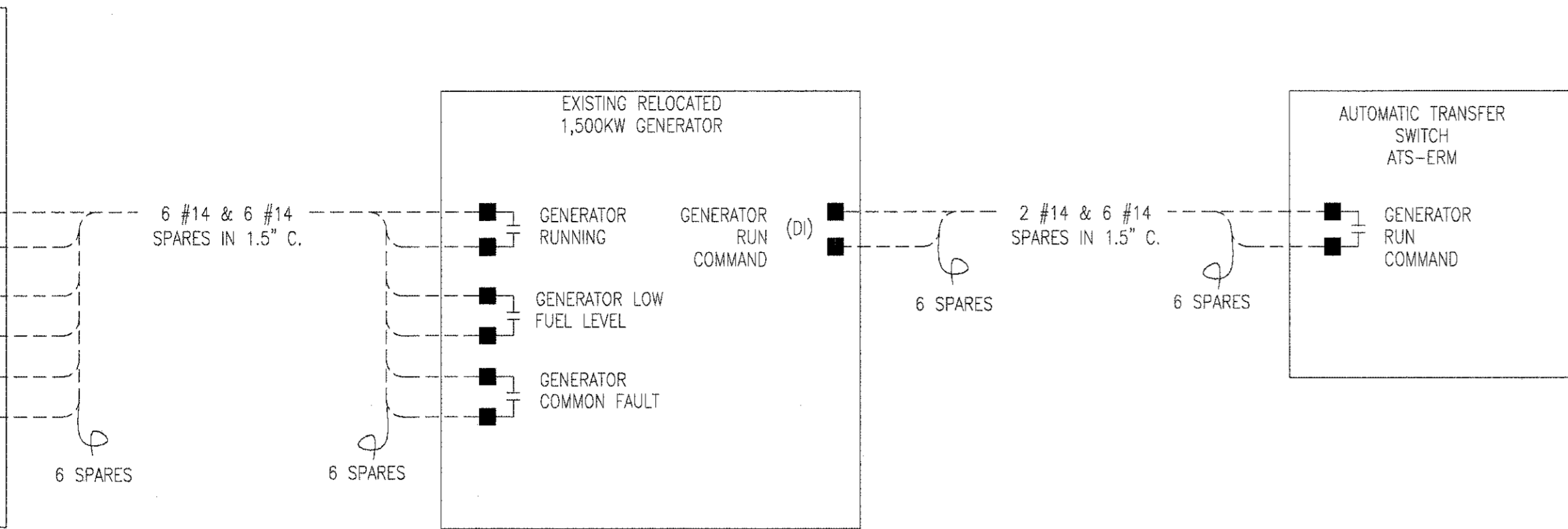
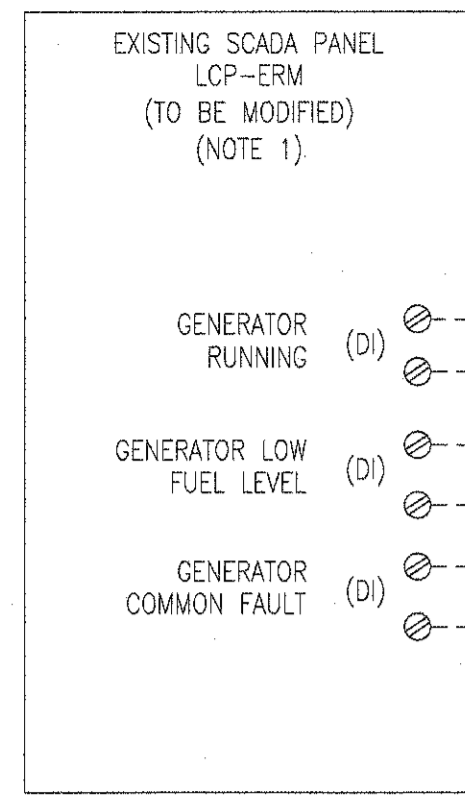
SHEET NO.
 E-402



- NOTES:
- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL LCP-IPS TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE INDIAN CREEK WRF OFFICE BUILDING SCADA COMPUTER.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL THE PUMP CONTROL PANEL WITH NEMA 1 ENCLOSURE WHICH INCLUDES A TRIPLEX PUMP CONTROLLER (MPE SC-2000-3-1S OR APPROVED EQUAL) WITH ALL NECESSARY CONTROLS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 - LOCAL-REMOTE SWITCH (1) WITH RELAYS, HOA SWITCHES (3), START/STOP PUSH BUTTONS (3 OF EACH) FOR "HAND" MODE.
 - ELAPSED TIME METERS
 - 20A, 120V, GFCI, WP DUPLEX RECEPTACLE
 - AUXILIARY DRY CONTACTS FOR SCADA LCP-IPS (120VAC, 5 AMP RATED):
 - PUMP 1 AUTO MODE
 - PUMP 2 AUTO MODE
 - PUMP 3 AUTO MODE
 - PUMP 1 RUNNING
 - PUMP 2 RUNNING
 - PUMP 3 RUNNING
 - PUMP 1 VFD FAULT
 - PUMP 2 VFD FAULT
 - PUMP 3 VFD FAULT
 - PUMP 1 PUMP FAULT
 - PUMP 2 PUMP FAULT
 - PUMP 3 PUMP FAULT
 - WETWELL HIGH LEVEL ALARM
 - WETWELL LOW LEVEL ALARM
 - POWER FAIL
 - INFLUENT PS IN REMOTE MODE
 - AUXILIARY ANALOG SIGNAL OUTPUT:
 - WETWELL LEVEL
 - LIGHTNING ARRESTOR
 - POWER SENSING RELAY FOR POWER FAIL ALARM.
 - TIME DELAY (0-10 SEC) BETWEEN PUMPS START IN BOTH "HAND" AND "AUTO" MODE
 - MOISTURE/TEMPERATURE RELAY FOR EACH PUMP (PUMP VENDOR SHALL PROVIDE ALARMS AVAILABLE AT THE SUPPLIED RELAY TO THE PANEL INDICATING LIGHTS. THE ALARMS SHALL INCLUDE MOTOR WINDING HIGH TEMP, MOTOR BEARING HIGH TEMP, UPPER AND LOWER SEAL LEAK, ETC.)
 - INDICATING LIGHTS FOR:
 - PUMP P-10X RUNNING (TOTAL OF 3)
 - PUMP P-10X STOPPED (TOTAL OF 3)
 - PUMP P-10X WINDING HIGH TEMP (TOTAL OF 3)
 - PUMP P-10X BEARING HIGH TEMP (TOTAL OF 3)
 - PUMP P-10X UPPER SEAL LEAK (TOTAL OF 3)
 - PUMP P-10X LOWER SEAL LEAK (TOTAL OF 3)
 - VFD-P-10X FAULT (TOTAL OF 3)
 - RELAYS, FUSES, CIRCUIT BREAKERS, ETC. AS REQUIRED FOR PROPER PANEL OPERATION.
 SEE DWG. E-401 FOR ADDITIONAL PUMP CONTROL PANEL WIRING DETAILS.
 - MAIN 20A, 1P CIRCUIT BREAKER.
- CONTRACTOR SHALL ADJUST THE NUMBER OF TERMINALS FOR PUMP MOTOR POWER AND SIGNAL CABLES BASED ON THE APPROVED SHOP DRAWINGS.
 - CONTRACTOR SHALL EXTEND THE EXISTING SIGNAL CABLE AS NEEDED FOR CONNECTION TO LEVEL CONTROLLER.
 - PROVIDE PUMP FAULT DRY CONTACT. THE CONTACT SHALL BE ACTIVATED UPON MOISTURE/TEMPERATURE RELAY ALARM ACTIVATION.
 - WHEN THE GENERATOR IS RUNNING, NO MORE THAN TWO (2) PUMPS SHALL BE RUNNING AT A TIME. PROVIDE TIME DELAY BETWEEN PUMP STARTS.

VFD-PXXX	DESCRIPTION	P-10X	TSH-VFD-10X
VFD-P101	INFLUENT PUMP 1 VFD	P-101	TSH-VFD-101
VFD-P102	INFLUENT PUMP 2 VFD	P-102	TSH-VFD-102
VFD-P103	INFLUENT PUMP 3 VFD	P-103	TSH-VFD-103

1 INFLUENT PS PUMP CONTROL PANEL SCHEMATIC



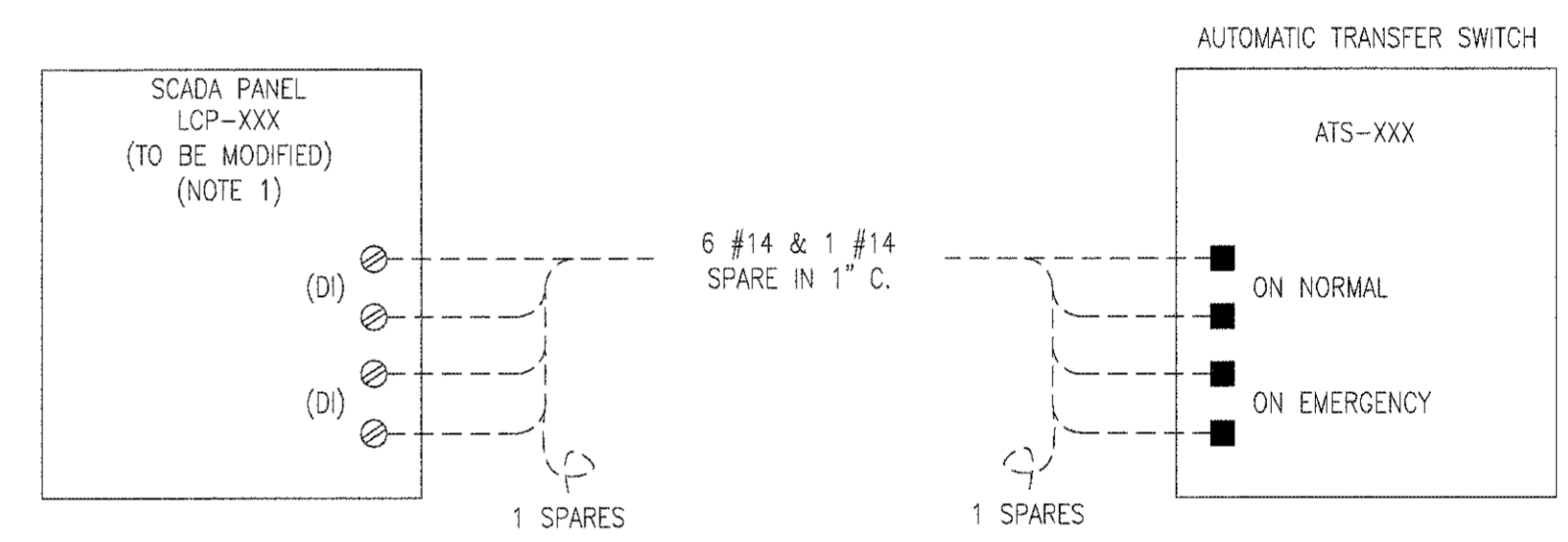
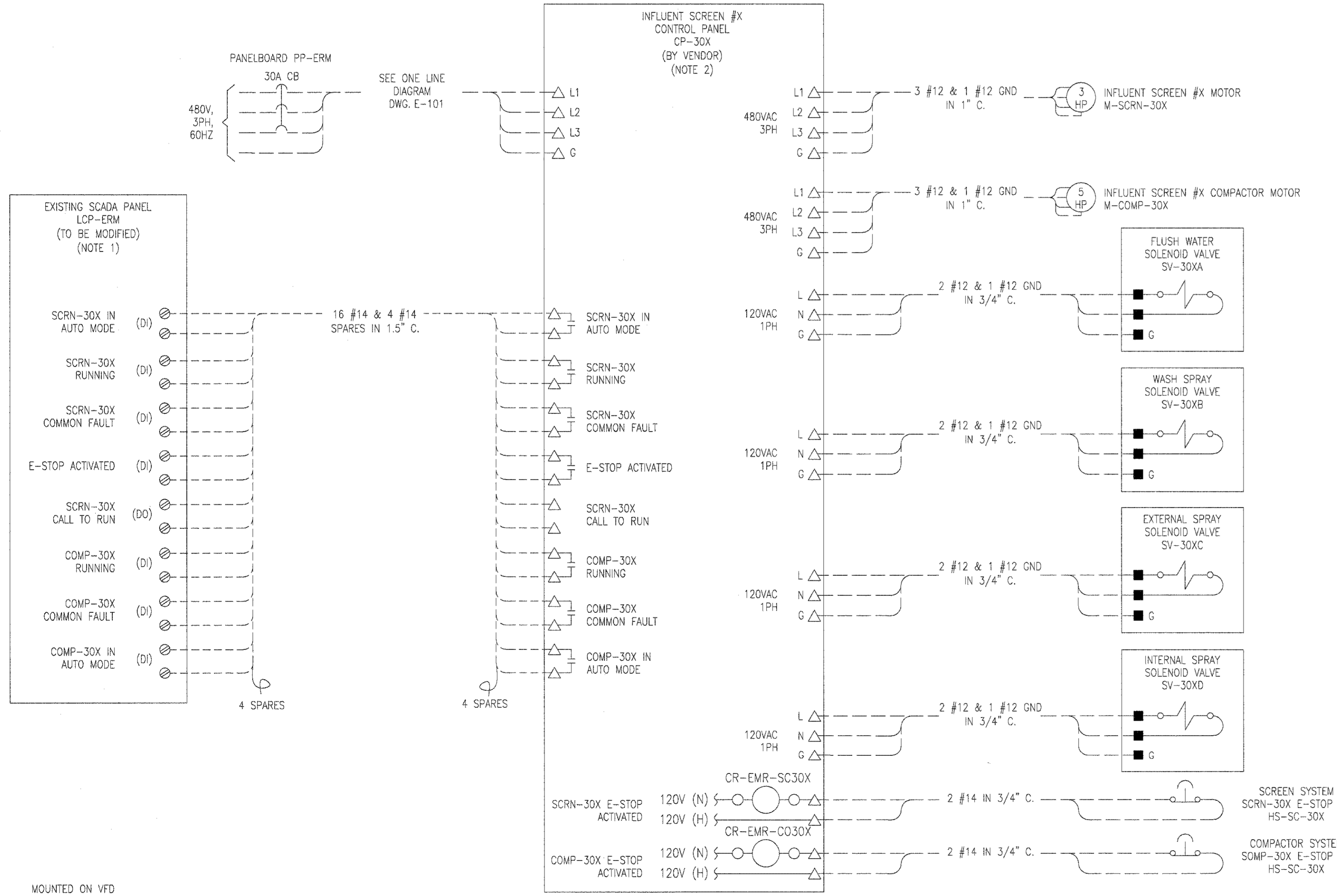
EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685

REGISTERED PROFESSIONAL ENGINEER
ALEC ZAYCHIK
 No. 22813

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

1 PLANT EXISTING RELOCATED 1,500KW GENERATOR SCHEMATIC

3 INFLUENT PS EXISTING RELOCATED 600KW GENERATOR SCHEMATIC



4 AUTOMATIC TRANSFER SWITCH SCHEMATIC TYP. FOR 2 (ATS-IPS AND ATS-ERM)

#	ATS-XXX	LCP-XXX	DESCRIPTION
1	ATS-IPS	LCP-IPS	INFLUENT PS AUTOMATIC TRANSFER SWITCH
2	ATS-ERM	LCP-ERM	MAIN WRF AUTOMATIC TRANSFER SWITCH

- NOTES:
- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE OFFICE BUILDING.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL SCREEN SYSTEM CONTROL PANELS CP-301 AND CP-302 IN NEMA 4X SS ENCLOSURES. EACH PANEL SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - LOCAL/REMOTE SWITCH, HOA SWITCHES, START/STOP PUSH BUTTONS FOR "HAND" MODE.
 - 2 KVA, 480/120V CONTROL POWER TRANSFORMER
 - SURGE PROTECTION DEVICE.
 - TWO (2) MOTOR STARTERS WITH MOTOR CIRCUIT PROTECTORS SIZED FOR BAR SCREEN RAKE AND COMPACTOR MOTORS.
 - MAIN 30A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SCREEN SYSTEM OPERATION.
 - AUXILIARY DRY CONTACTS (120VAC, 5 AMP RATED):
 - SCRN-30X IN AUTO MODE
 - SCRN-30X RUNNING
 - SCRN-30X COMMON FAULT
 - SCRN-30X E-STOP ACTIVATED
 - COMP-30X RUNNING
 - COMP-30X COMMON FAULT
 - COMP-30X E-STOP ACTIVATED
 - COMP-30X IN AUTO MODE
 - RELAYS, TERMINALS, TIME METERS, ADJUSTABLE TIMERS, RECEPTACLES ETC. AS REQUIRED
 - LIGHTNING ARRESTOR
 - CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

2 INFLUENT SCREEN #1 CONTROL PANEL SCHEMATIC TYP. FOR 2 (CP-301 AND CP-302)

#	CP-30X	DESCRIPTION
1	CP-301	INFLUENT SCREEN #1 CONTROL PANEL
2	CP-302	INFLUENT SCREEN #2 CONTROL PANEL

PROJECT NUMBER: _____

DATE: AUGUST 2016

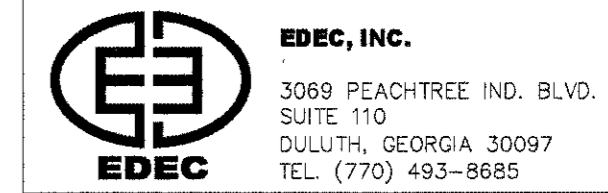
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELONGS TO ONE OF THE SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT SCHEMATIC WIRING DIAGRAMS



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: _____ DATE: AUGUST 2016

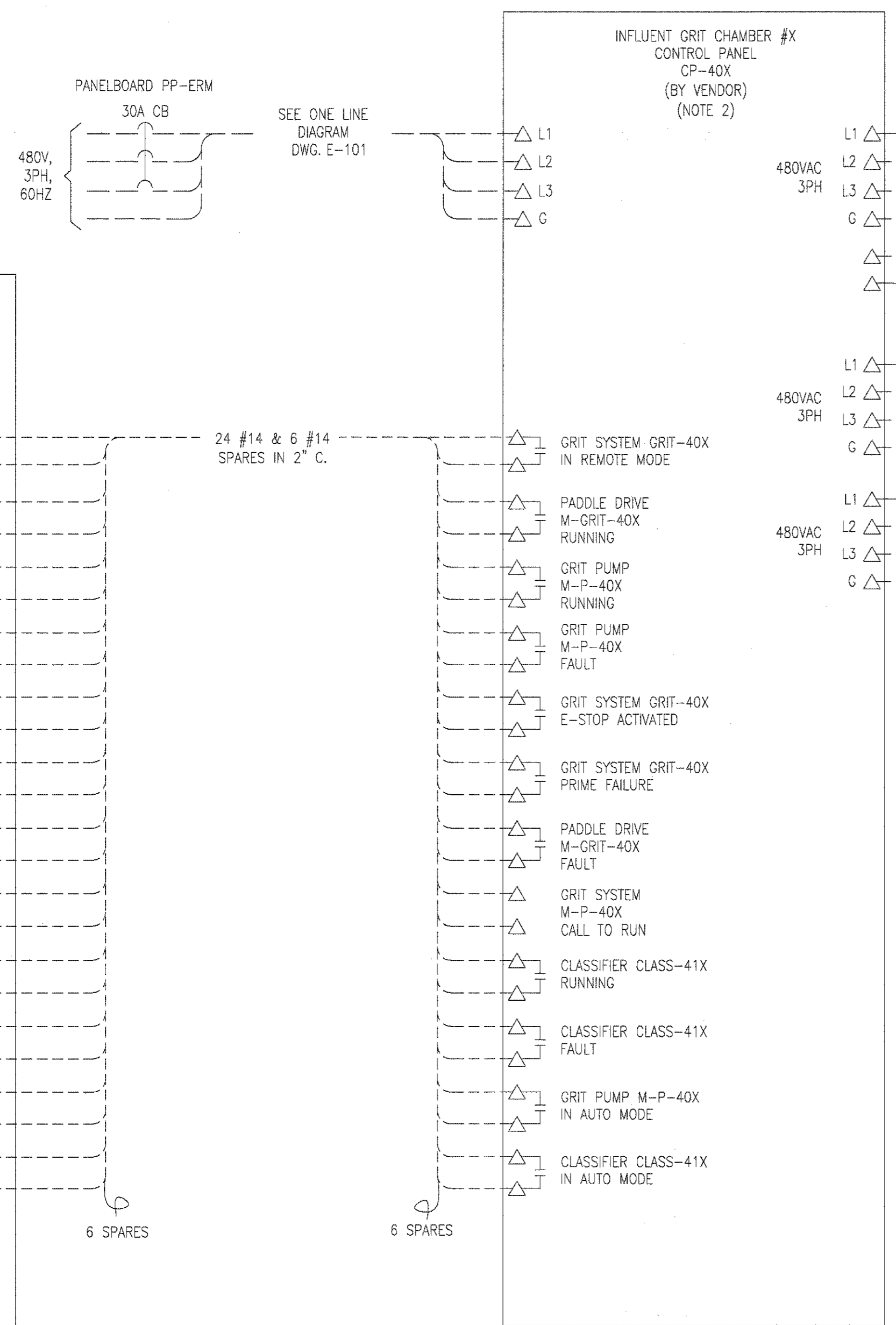
REVISION	DATE

DESIGN: AZ
DRAWN: DV
CHECK: AZ

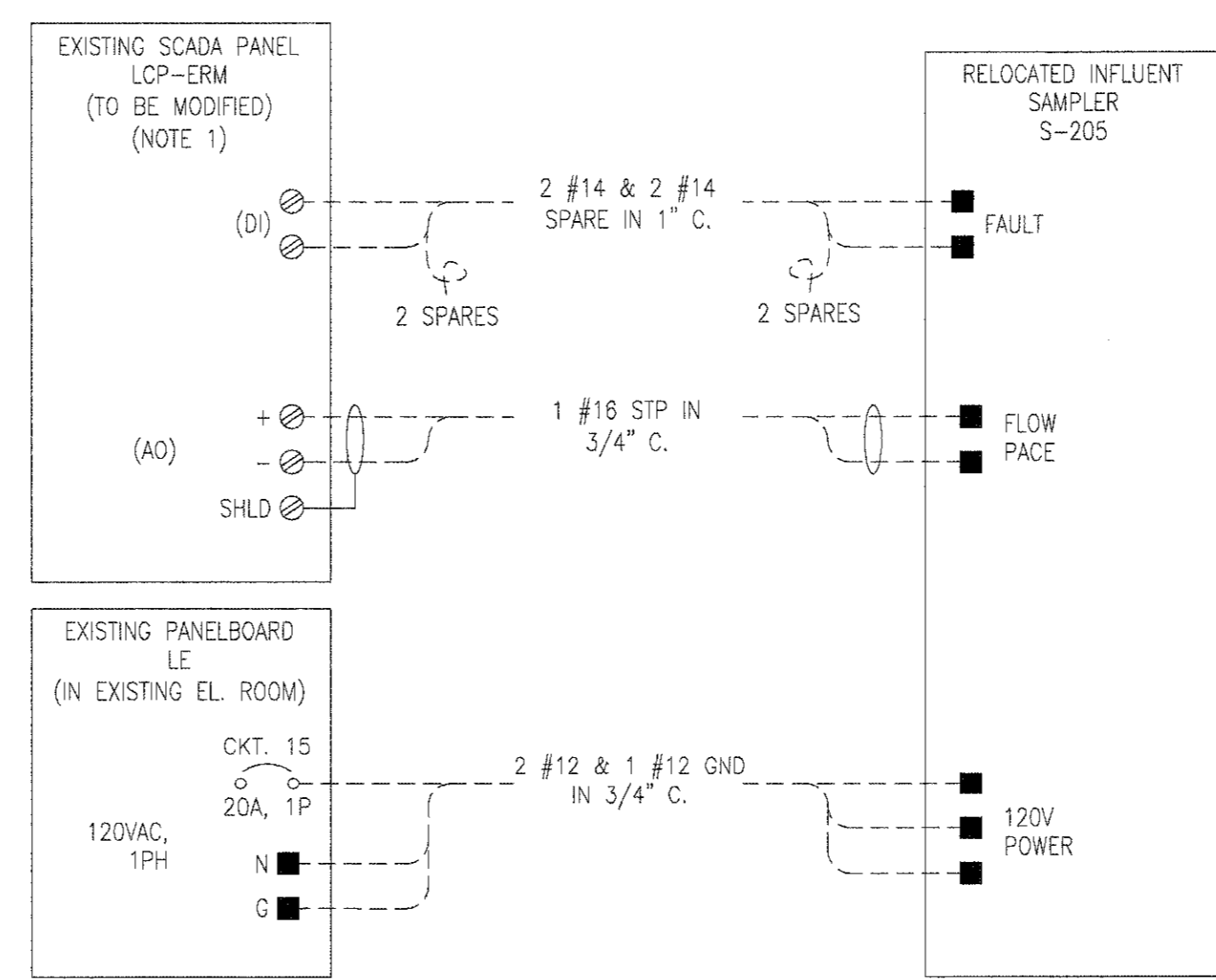
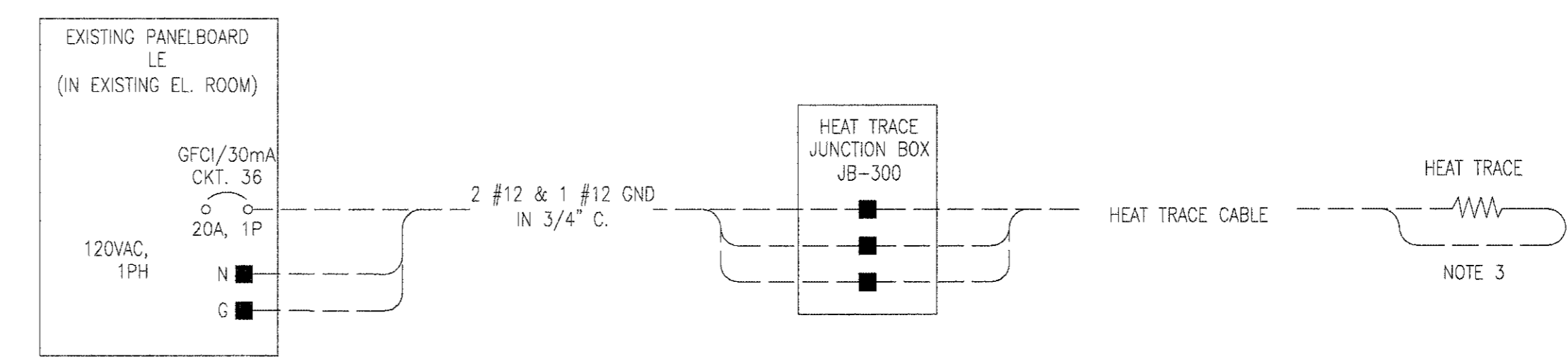
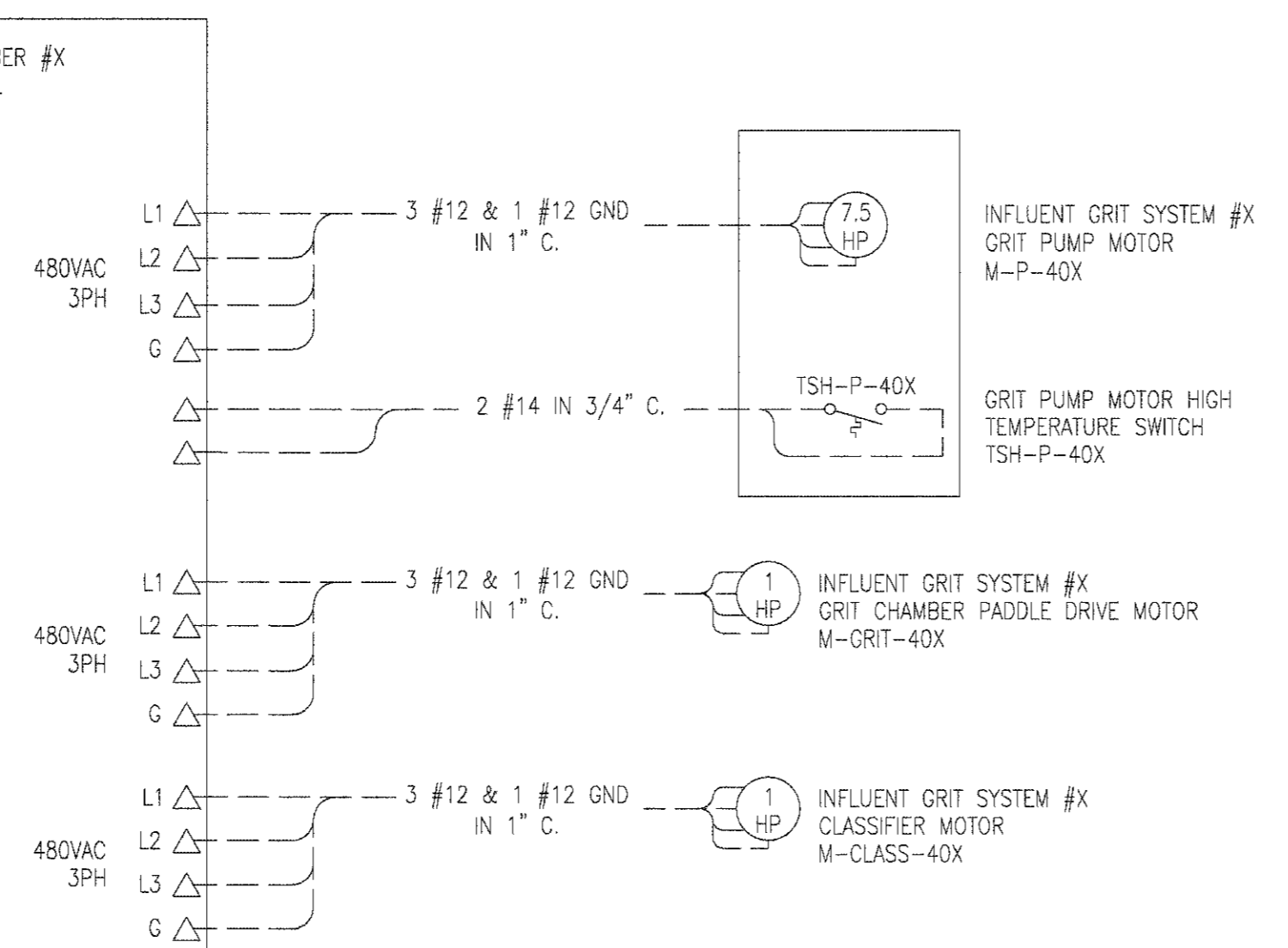
FOR REVISIONS AT LONGER SCALES SHOW ON THIS SHEET. ADJUST LONGS ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-404

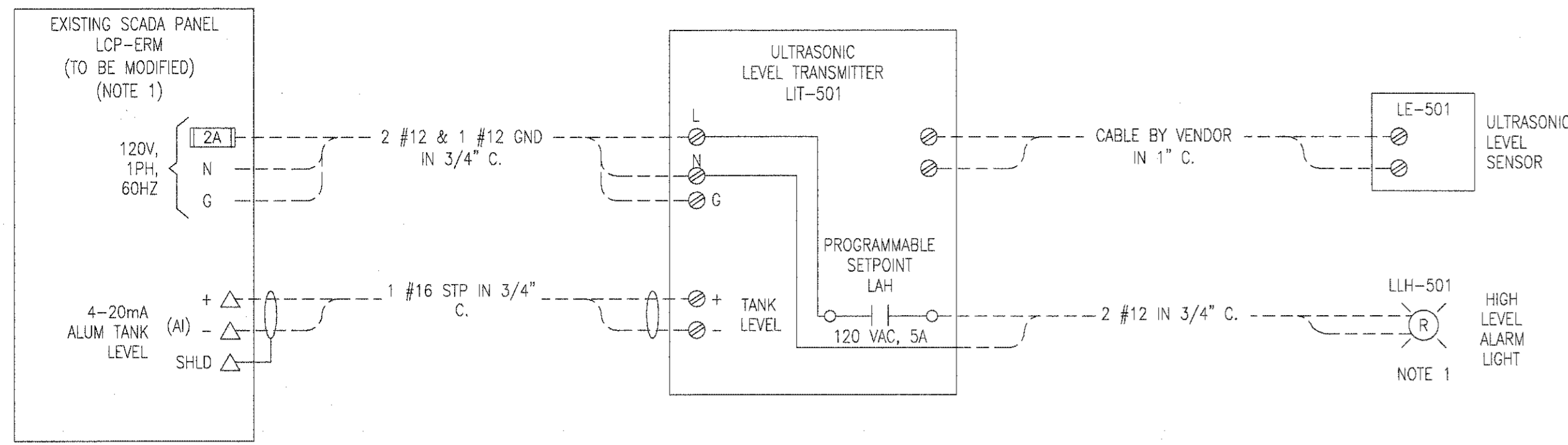


#	CP-40X	DESCRIPTION
1	CP-401	INFLUENT GRIT CHAMBER #1 CONTROL PANEL
2	CP-402	INFLUENT GRIT CHAMBER #2 CONTROL PANEL



- NOTES:
- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL LCP-ERM TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE OFFICE BUILDING.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL GRIT SYSTEM CONTROL PANELS CP-401 AND CP-402 IN NEMA 4X SS ENCLOSURES. EACH PANEL SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - HOA SWITCHES, START/STOP PUSH BUTTONS FOR "HAND" MODE.
 - 2 KVA, 480/120V CONTROL POWER TRANSFORMER
 - SURGE PROTECTION DEVICE.
 - THREE (3) MOTOR STARTERS WITH MOTOR CIRCUIT PROTECTORS SIZED FOR GRIT PUMP, GRIT DRIVE AND CLASSIFIER MOTORS.
 - MAIN 50A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SCREEN SYSTEM OPERATION.
 - AUXILIARY DRY CONTACTS (120VAC, 5 AMP RATED):
 - GRIT-40X IN REMOTE MODE
 - PADDLE DRIVE M-GRIT-40X RUNNING
 - GRIT PUMP M-P-40X RUNNING
 - GRIT PUMP M-P-40X FAULT
 - GRIT SYSTEM GRIT-40X E-STOP ACTIVATED
 - GRIT SYSTEM GRIT-40X PRIME FAILURE
 - PADDLE DRIVE M-GRIT-40X FAULT
 - GRIT SYSTEM M-P-40X CALL TO RUN
 - CLASSIFIER CLASS-41X RUNNING
 - CLASSIFIER CLASS-41X FAULT
 - GRIT PUMP M-P-40X IN AUTO MODE
 - CLASSIFIER CLASS-41X IN AUTO MODE
 - RELAYS, TERMINALS, TIME METERS, CONTROLLERS, RECEPTACLES ETC. AS REQUIRED
 - LIGHTNING ARRESTOR
 - CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.
 - ALL EXPOSED PIPES 2" DIAMETER AND SMALLER SHALL BE HEAT TRACED.

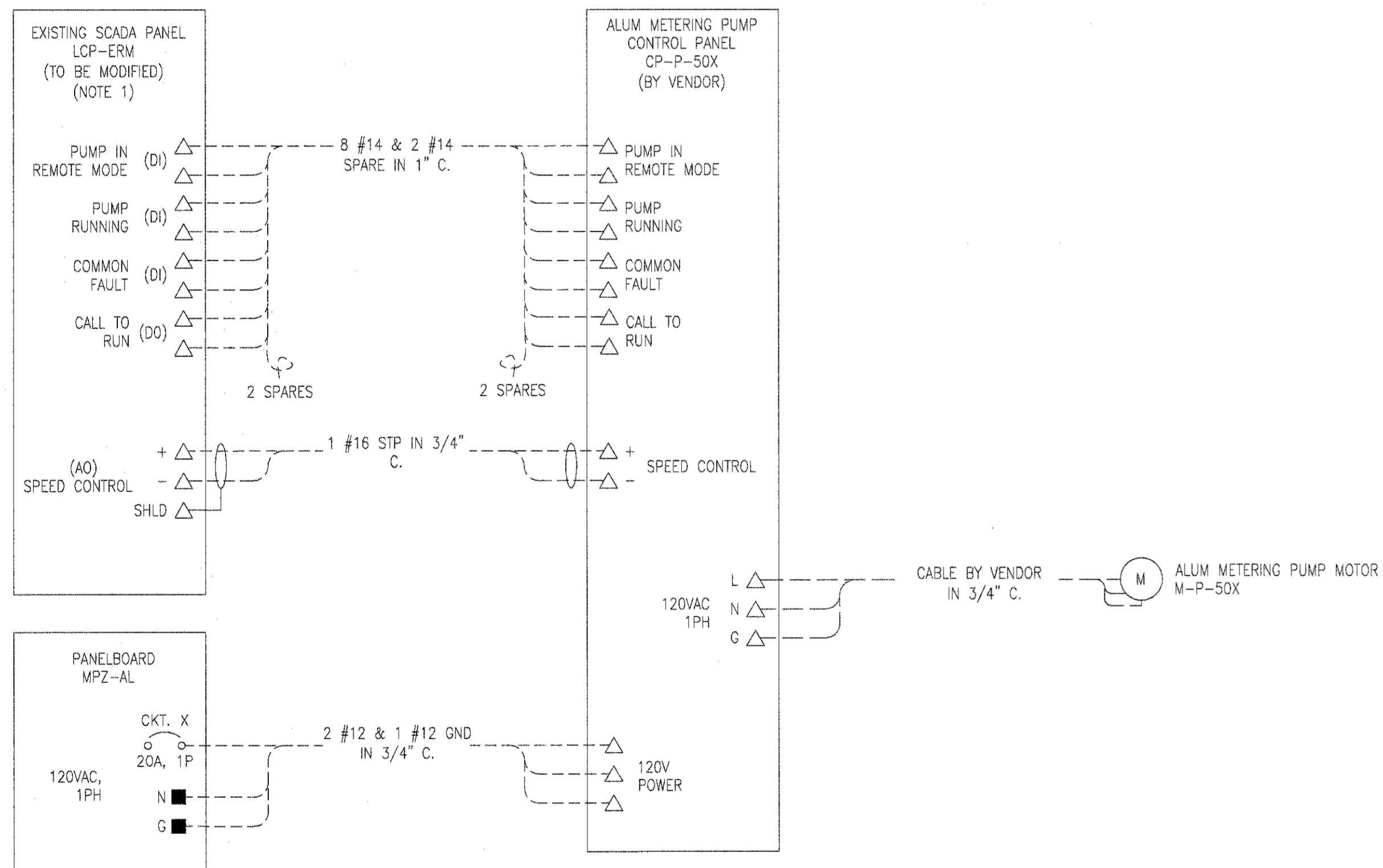
- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL



1 BULK ALUM TANK TK-501 LEVEL TRANSMITTER SCHEMATIC

NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL RED ALARM INDICATING LIGHT FOR TANK HIGH LEVEL INDICATION. THE LIGHT SHALL BE RATED FOR 120VAC, SHALL HAVE WEATHERPROOF ENCLOSURE AND SHALL BE BY "FEDERAL SIGNAL", "EDWARDS" OR APPROVED EQUAL.



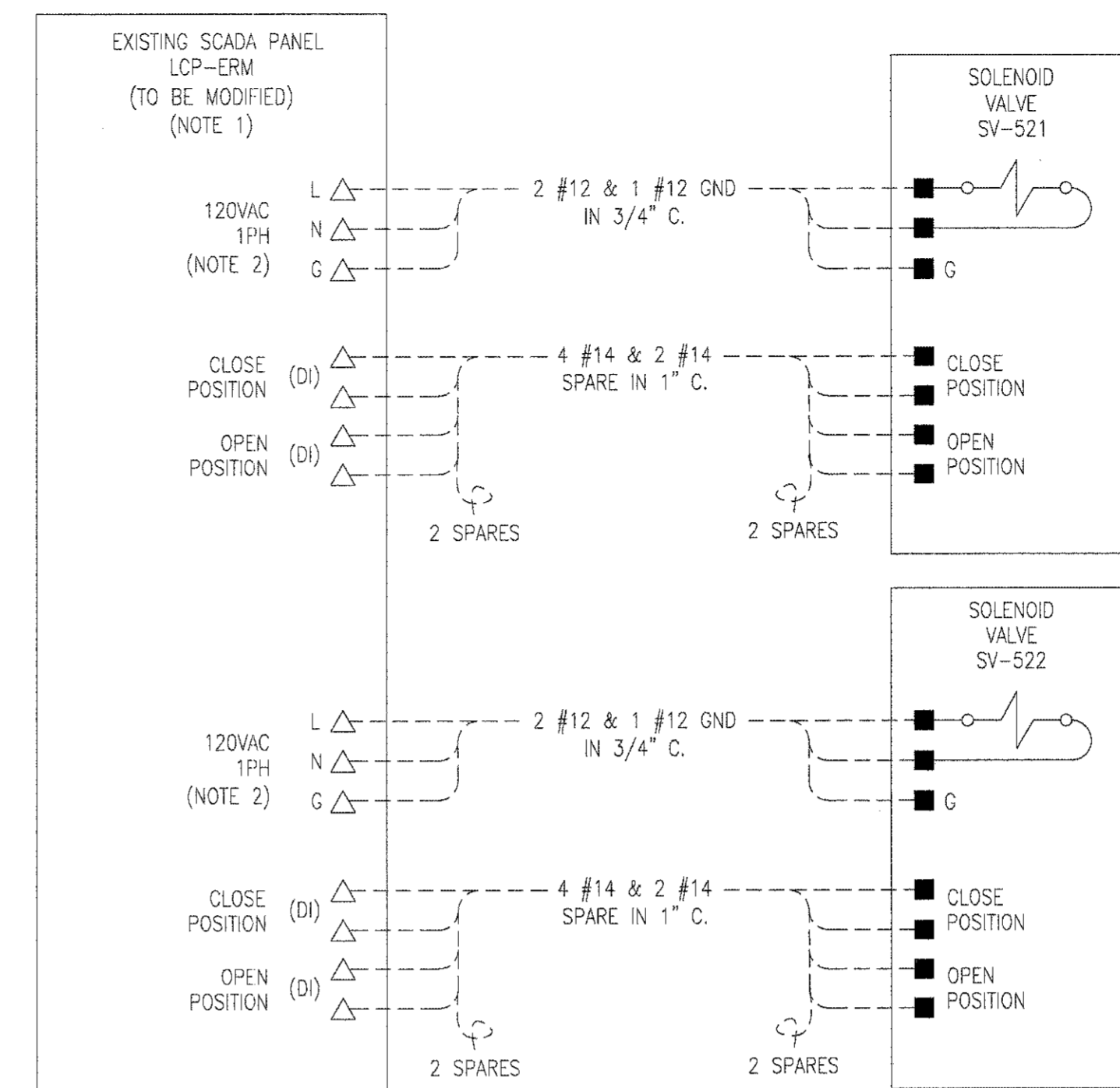
2 ALUM METERING PUMP CONTROL PANEL SCHEMATIC
TYPICAL FOR 3

#	MPZ-AL CKT. #	CP-P-50X	M-P-50X	DESCRIPTION
1	1	CP-P-501	M-P-501	ALUM METERING PUMP CONTROL PANEL #1
2	3	CP-P-502	M-P-502	ALUM METERING PUMP CONTROL PANEL #2
3	5	CP-P-503	M-P-503	ALUM METERING PUMP CONTROL PANEL #3

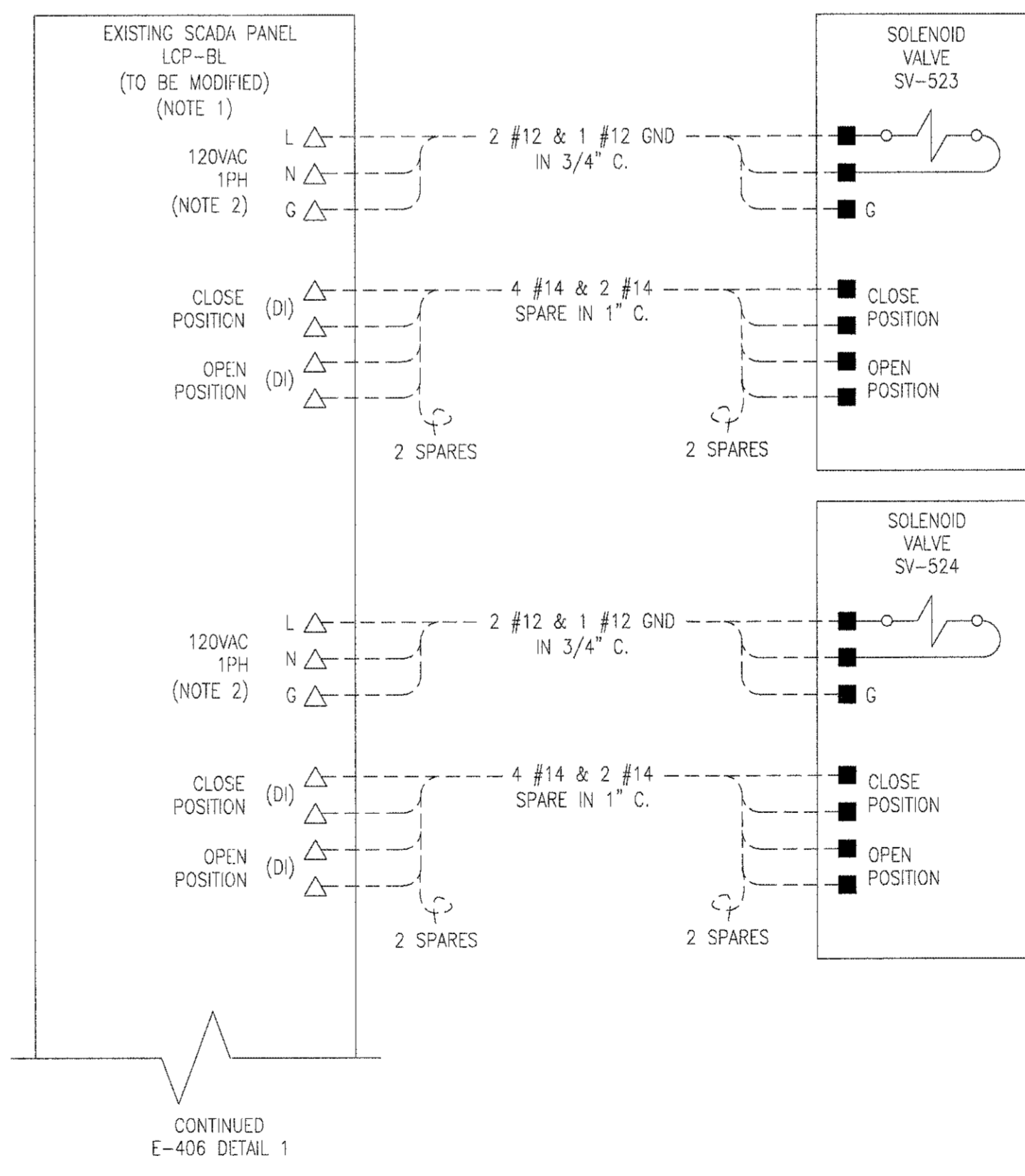
- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

NOTES:

- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE OFFICE BUILDING.
- SCADA SYSTEM INTEGRATOR SHALL PROVIDE AND INSTALL 120V, 1P CIRCUIT BREAKER TO PROTECT POWER CABLE TO EACH SOLENOID VALVE. THE BREAKER SHALL BE 3 AMP RATED UNLESS RECOMMENDED OTHERWISE BY SOLENOID VALVE SUPPLIER.



3 ALUM BIOLOGICAL FEED SOLENOID VALVES SCHEMATIC



4 ALUM DIGESTER FEED SOLENOID VALVES SCHEMATIC
(CONTINUED ON E-406)

EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL: (770) 493-8685

REGISTERED PROFESSIONAL ENGINEER
ALEC ZAYCHIK
 No. 22813

ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER: _____

DATE	REVISION
AUGUST 2016	

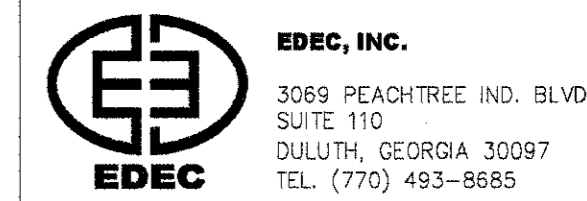
DSGN: AZ
 DRWN: DV
 CHCK: AZ

DO NOT SCALE DIMENSIONS FROM THIS SHEET. IF NOT 1" = 1' SCALE DIMENSIONS SHALL BE SHOWN ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

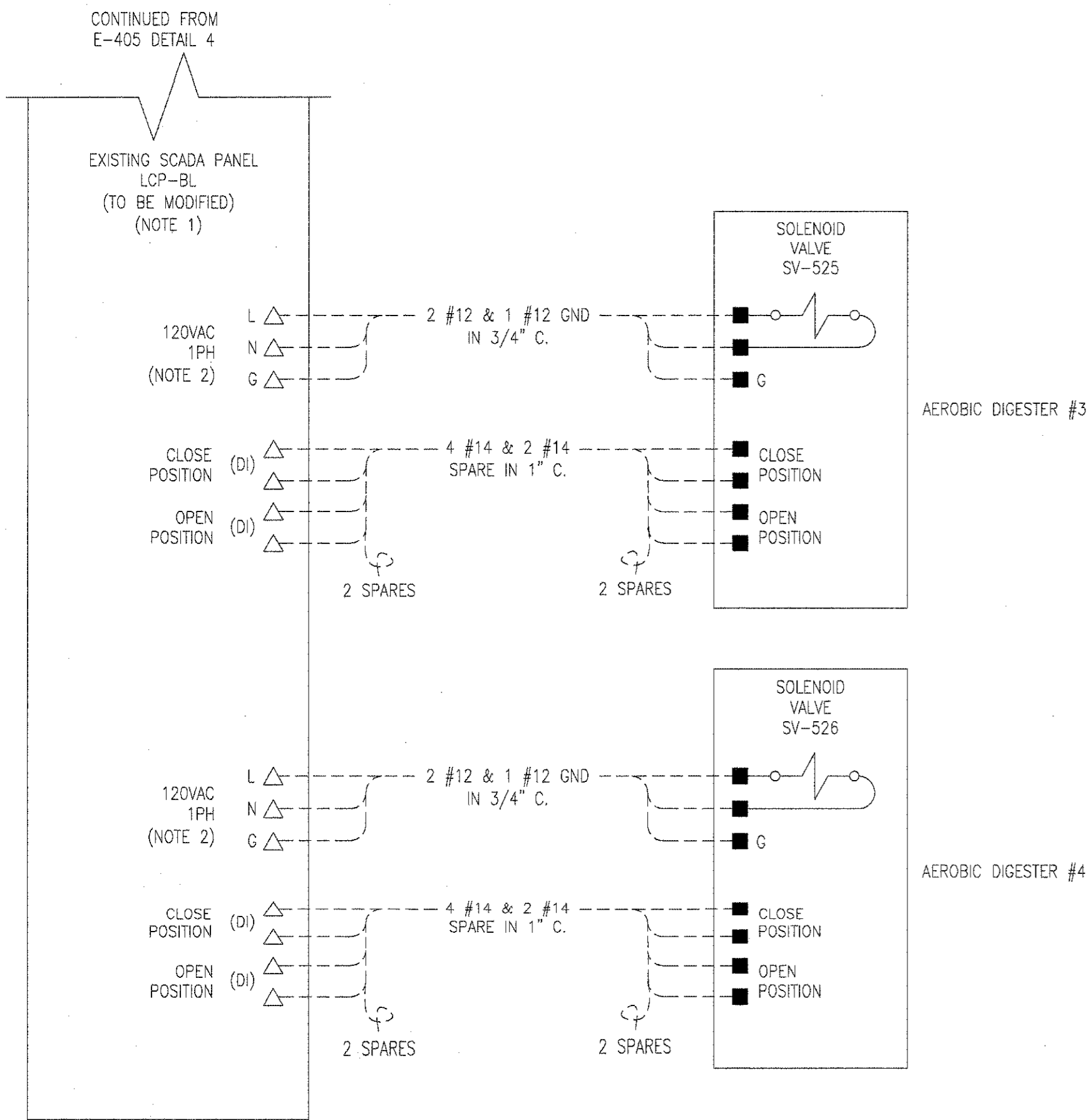
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

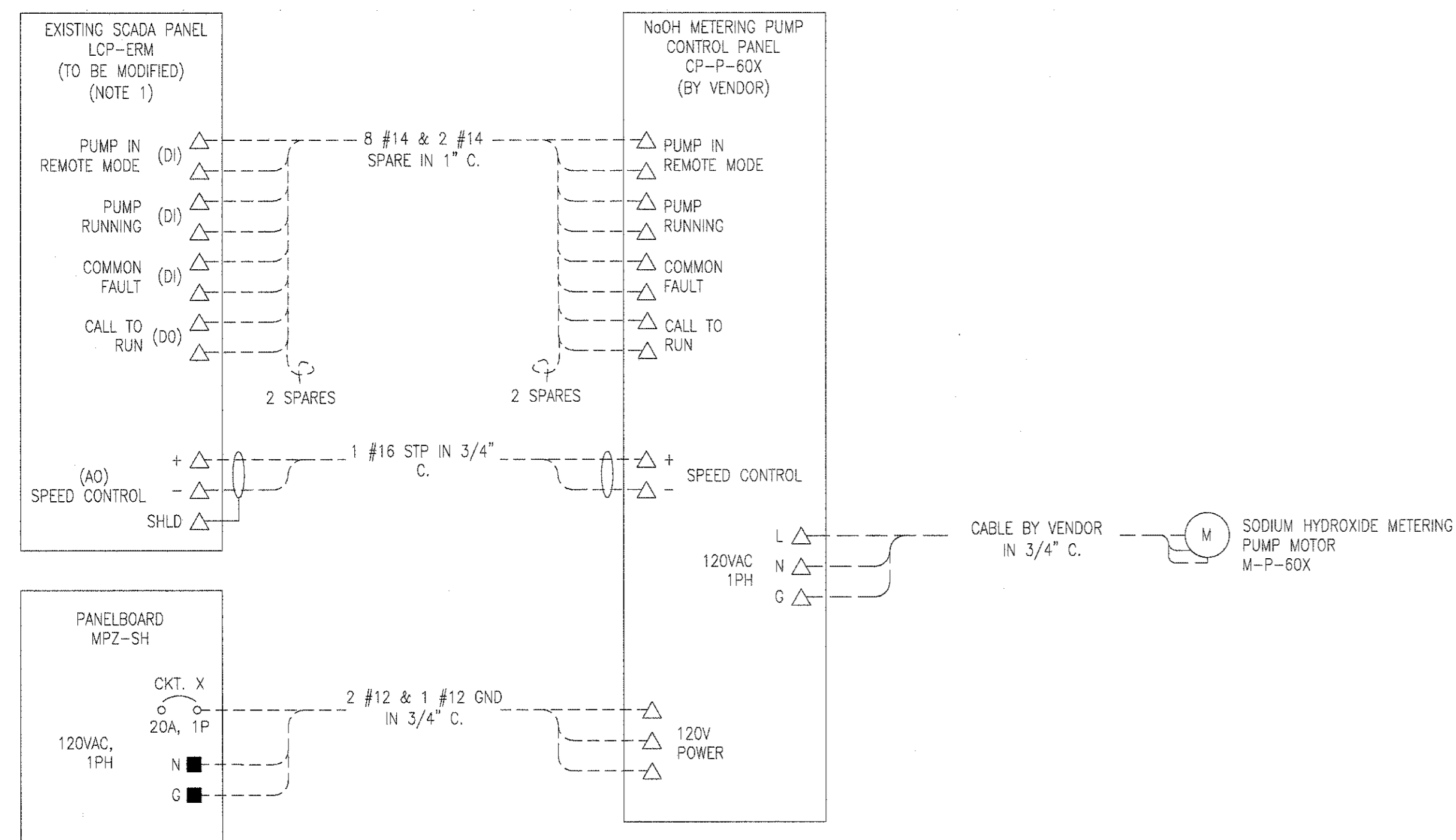
SHEET NO.
E-405



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

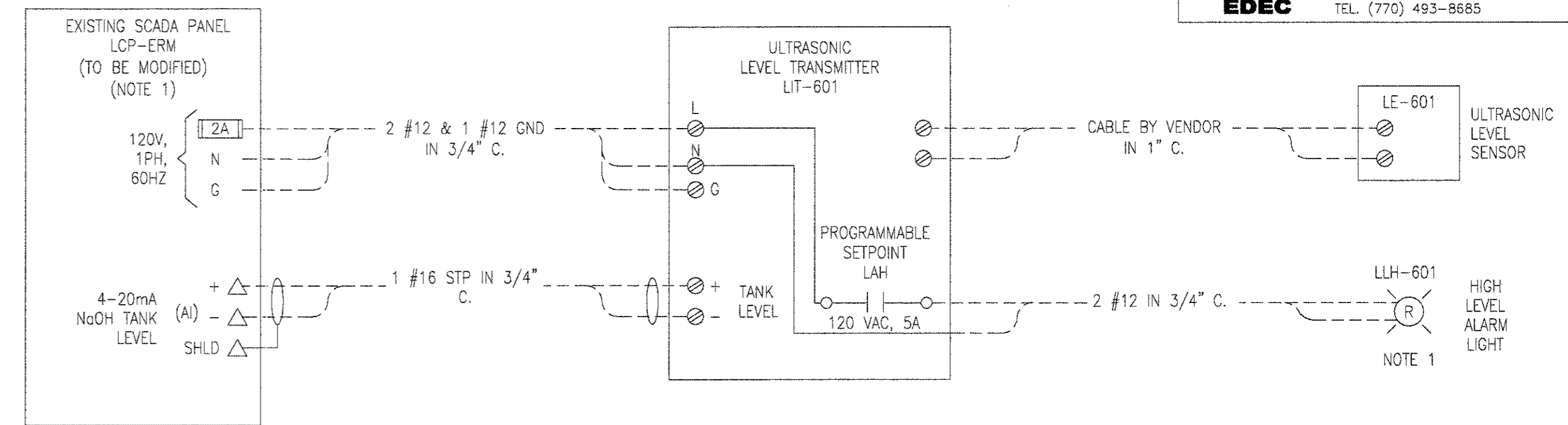


1 ALUM BIOLOGICAL AND DIGESTER FEED SOLENOID VALVES SCHEMATIC (CONTINUATION)



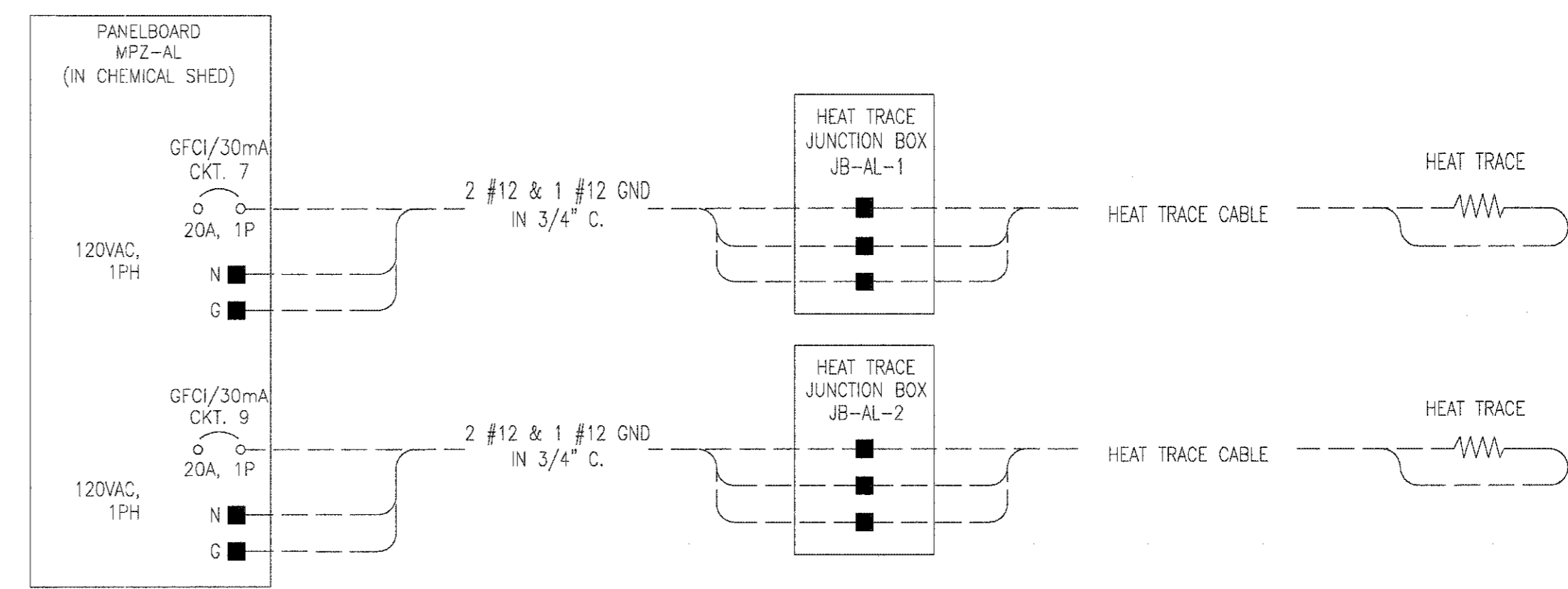
2 SODIUM HYDROXIDE METERING PUMP CONTROL PANEL SCHEMATIC TYPICAL FOR 2

#	MPZ-SH CKT. #	CP-P-60X	M-P-60X	DESCRIPTION
1	1	CP-P-601	M-P-601	SODIUM HYDROXIDE METERING PUMP CONTROL PANEL #1
2	3	CP-P-602	M-P-602	SODIUM HYDROXIDE METERING PUMP CONTROL PANEL #2

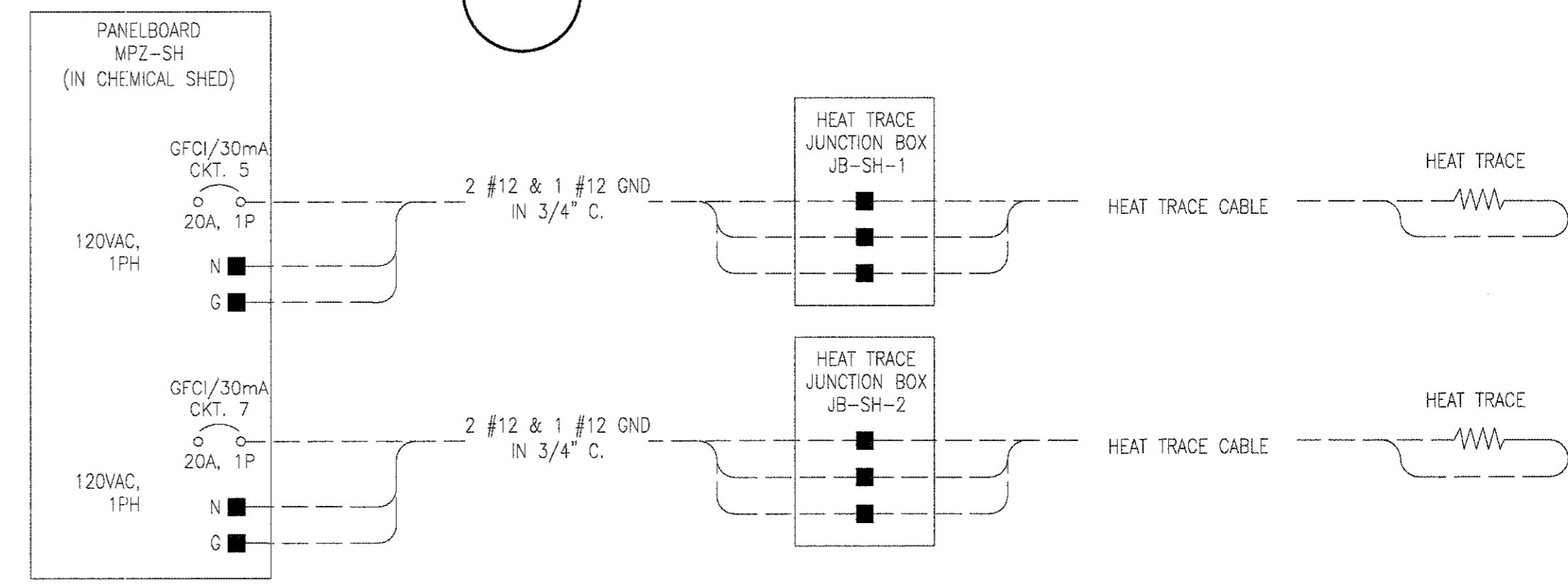


3 BULK SODIUM HYDROXIDE TANK TK-601 LEVEL TRANSMITTER SCHEMATIC

- NOTES:
- CONTRACTOR SHALL PROVIDE AND INSTALL RED ALARM INDICATING LIGHT FOR TANK HIGH LEVEL INDICATION. THE LIGHT SHALL BE RATED FOR 120VAC, SHALL HAVE WEATHERPROOF ENCLOSURE AND SHALL BE BY "FEDERAL SIGNAL", "EDWARDS" OR APPROVED EQUAL.



4 ALUM BULK TANK HEAT TRACE SCHEMATIC



5 SODIUM HYDROXIDE TANK HEAT TRACE SCHEMATIC

- NOTES:
- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE OFFICE BUILDING.
 - SCADA SYSTEM INTEGRATOR SHALL PROVIDE AND INSTALL 120V, 1P CIRCUIT BREAKER TO PROTECT POWER CABLE TO EACH SOLENOID VALVE. THE BREAKER SHALL BE 3 AMP RATED UNLESS RECOMMENDED OTHERWISE BY SOLENOID VALVE SUPPLIER.
- LEGEND:
- * MOUNTED ON VFD
 - - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ◇ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

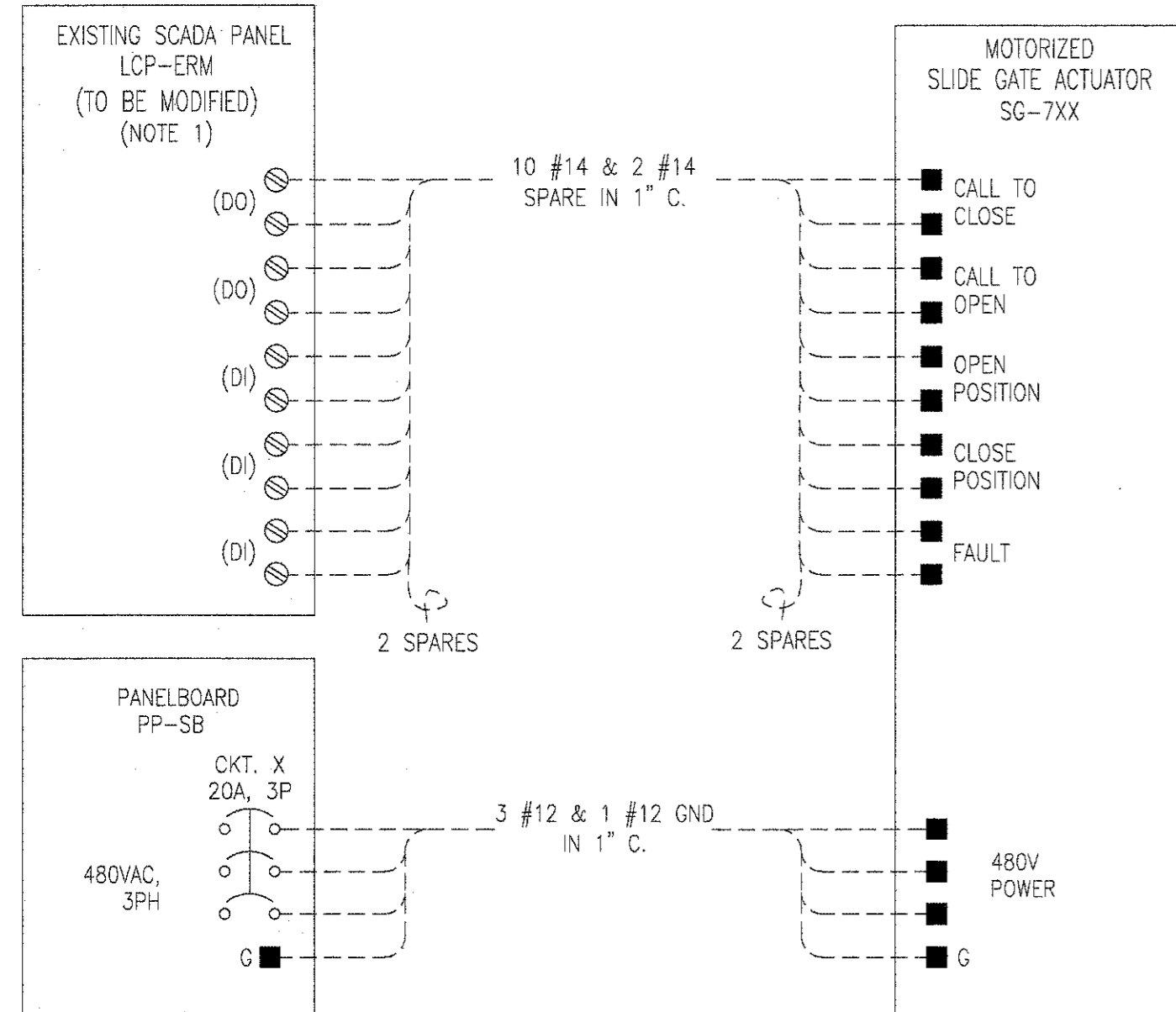
PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION: _____ DATE: _____

DESIGN: AZ DRAWN: DJV CHECK: AZ

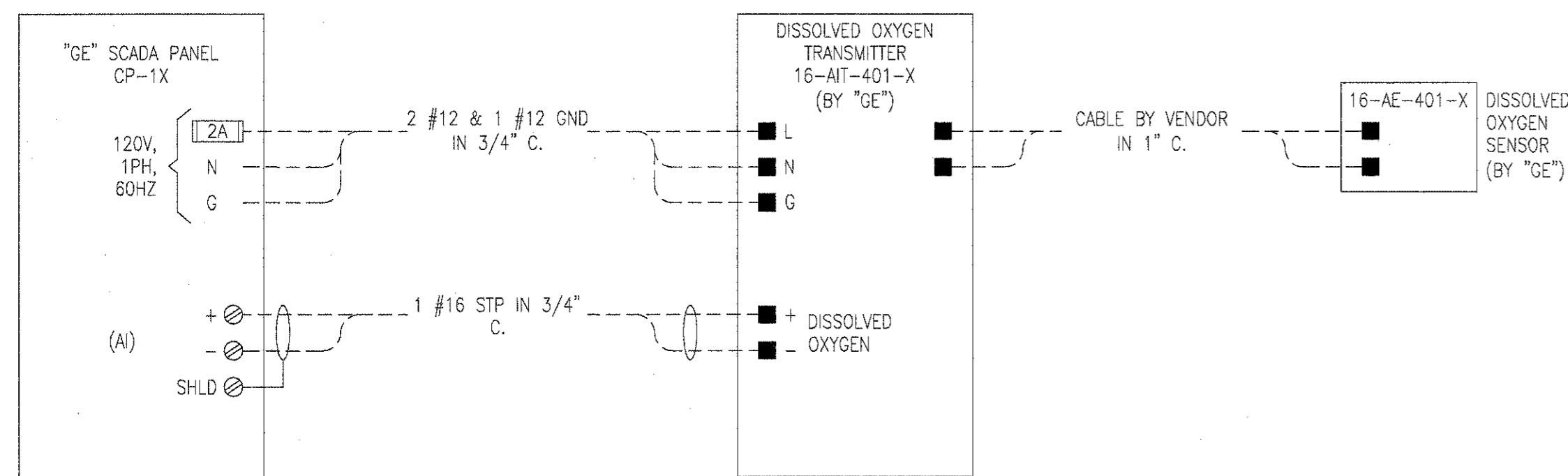
BASE RELATIONS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS



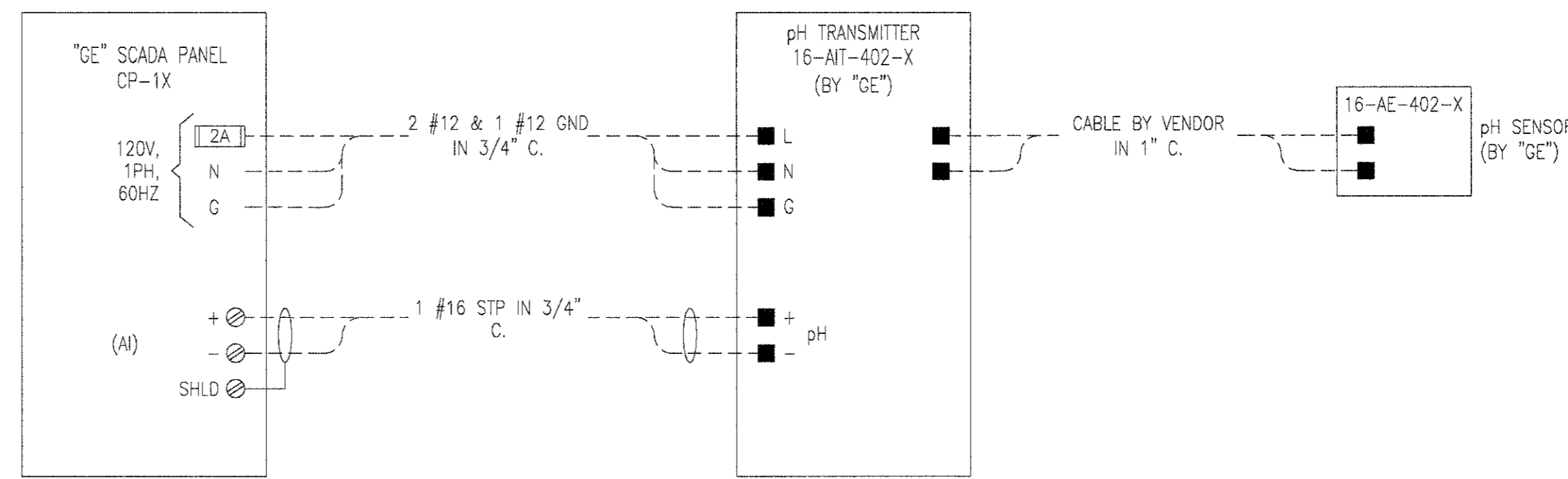
#	SG-7XX	PP-SB CKT. #	DESCRIPTION
1	SG-701	1, 3, 5	MBR SPLITTER BOX SLIDE GATE 1
2	SG-702	7, 9, 11	MBR SPLITTER BOX SLIDE GATE 2
3	SG-703	13, 15, 17	MBR SPLITTER BOX SLIDE GATE 3
4	SG-704	19, 21, 23	MBR SPLITTER BOX SLIDE GATE 4
5	SG-711	2, 4, 6	MBR SPLITTER BOX SLIDE GATE 5
6	SG-712	8, 10, 12	MBR SPLITTER BOX SLIDE GATE 6
7	SG-713	14, 16, 18	MBR SPLITTER BOX SLIDE GATE 7
8	SG-714	20, 22, 24	MBR SPLITTER BOX SLIDE GATE 8

1 MBR SPLITTER BOX SLIDE GATE ACTUATOR SCHEMATIC TYPICAL FOR 8



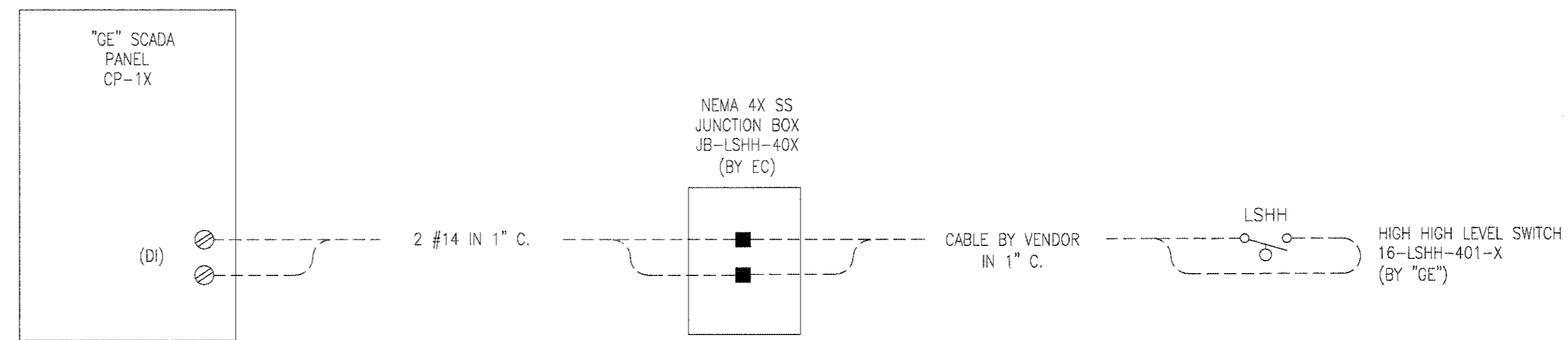
#	16-AE-401-X	16-AIT-401-X	CP-1X	DESCRIPTION
1	16-AE-401-1	16-AIT-401-1	CP-11	BIOREACTOR AEROBIC ZONE #1 DO TRANSMITTER
2	16-AE-401-2	16-AIT-401-2	CP-12	BIOREACTOR AEROBIC ZONE #2 DO TRANSMITTER
3	16-AE-401-3	16-AIT-401-3	CP-13	BIOREACTOR AEROBIC ZONE #3 DO TRANSMITTER
4	16-AE-401-4	16-AIT-401-4	CP-14	BIOREACTOR AEROBIC ZONE #4 DO TRANSMITTER

2 BIOREACTOR AEROBIC ZONE DISSOLVED OXYGEN TRANSMITTER SCHEMATIC



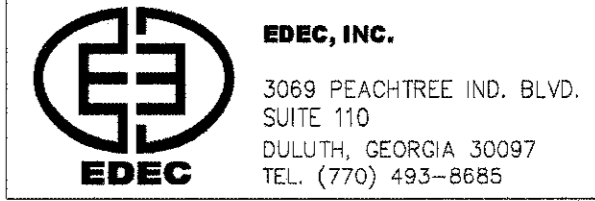
#	16-AE-402-X	16-AIT-402-X	CP-1X	DESCRIPTION
1	16-AE-402-1	16-AIT-402-1	CP-11	BIOREACTOR AEROBIC ZONE #1 pH TRANSMITTER
2	16-AE-402-2	16-AIT-402-2	CP-12	BIOREACTOR AEROBIC ZONE #2 pH TRANSMITTER
3	16-AE-402-3	16-AIT-402-3	CP-13	BIOREACTOR AEROBIC ZONE #3 pH TRANSMITTER
4	16-AE-402-4	16-AIT-402-4	CP-14	BIOREACTOR AEROBIC ZONE #4 pH TRANSMITTER

3 BIOREACTOR AEROBIC ZONE pH TRANSMITTER SCHEMATIC

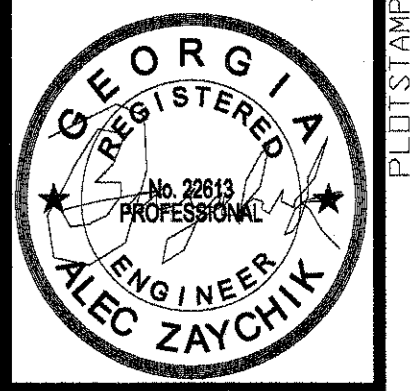


#	16-LSHH-401-X	JB-LSHH-40X	CP-1X	DESCRIPTION
1	16-LSHH-401-1	JB-LSHH-401	CP-11	BIOREACTOR AEROBIC ZONE #1 HIGH HIGH LEVEL FLOAT SWITCH
2	16-LSHH-401-2	JB-LSHH-401	CP-12	BIOREACTOR AEROBIC ZONE #2 HIGH HIGH LEVEL FLOAT SWITCH
3	16-LSHH-401-3	JB-LSHH-403	CP-13	BIOREACTOR AEROBIC ZONE #3 HIGH HIGH LEVEL FLOAT SWITCH
4	16-LSHH-401-4	JB-LSHH-403	CP-14	BIOREACTOR AEROBIC ZONE #4 HIGH HIGH LEVEL FLOAT SWITCH

4 BIOREACTOR AEROBIC ZONE FLOAT LEVEL SWITCHES SCHEMATIC



- NOTES:
- SCADA SYSTEM INTEGRATOR (EMERSON) SHALL MODIFY THE EXISTING SCADA PANEL LCP-ERM TO ACCOMMODATE THE LISTED I/O'S AND ADD/MODIFY HMI SCREENS AT THE OFFICE BUILDING.
 - SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

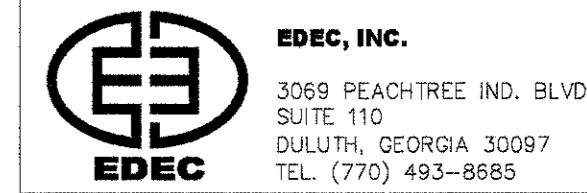
PROJECT NUMBER: _____
DATE: AUGUST 2016
REVISION: _____
DATE: _____

DSGN: AZ
DRWN: DV
CHK: AZ
BAS RELIABILITY 1% ONE FOR SCALES SHOWN ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

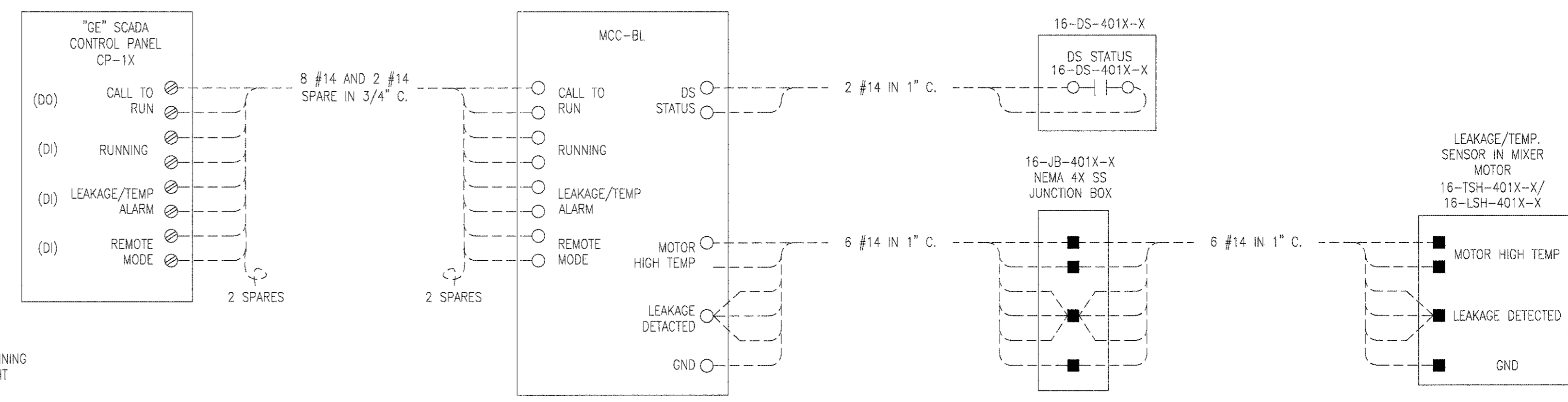
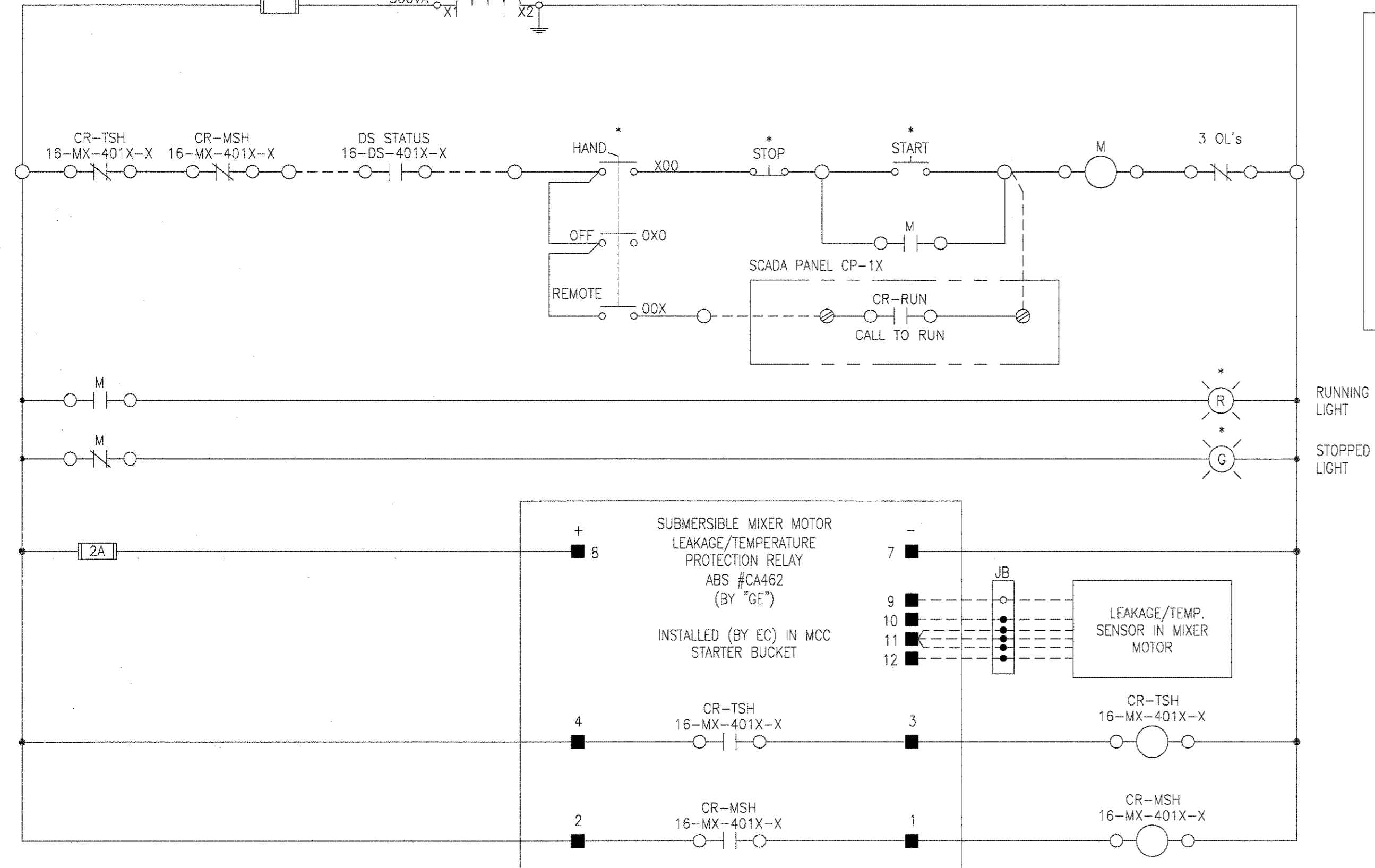
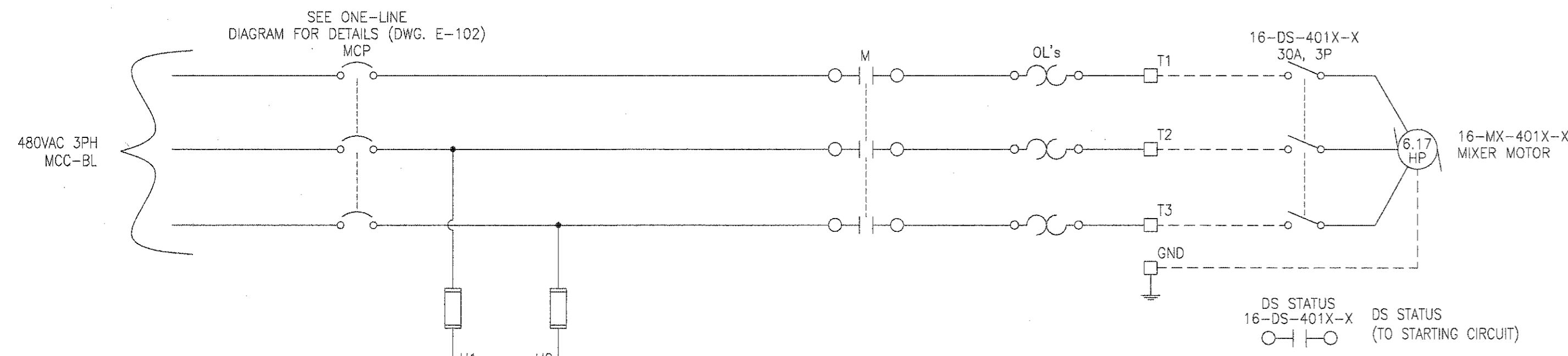
SHEET NO.
E-407

- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL



ESI
ENGINEERING STRATEGIES, INC.
3655 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.

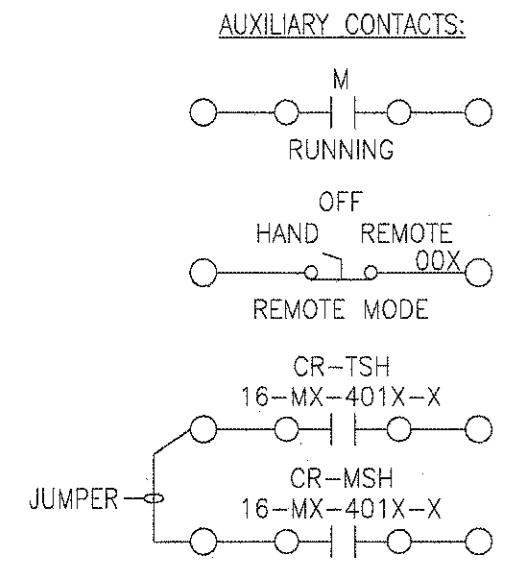


#	16-DS-401X-X	16-TSH-401X-X	16-LSH-401X-X	16-JB-401X-X	CP-1X
1	16-DS-401A-1	16-TSH-401A-1	16-LSH-401A-1	16-JB-401A-1	CP-11
2	16-DS-401A-2	16-TSH-401A-2	16-LSH-401A-2	16-JB-401A-2	CP-12
3	16-DS-401A-3	16-TSH-401A-3	16-LSH-401A-3	16-JB-401A-3	CP-13
4	16-DS-401A-4	16-TSH-401A-4	16-LSH-401A-4	16-JB-401A-4	CP-14
5	16-DS-401B-1	16-TSH-401B-1	16-LSH-401B-1	16-JB-401B-1	CP-11
6	16-DS-401B-2	16-TSH-401B-2	16-LSH-401B-2	16-JB-401B-2	CP-12
7	16-DS-401B-3	16-TSH-401B-3	16-LSH-401B-3	16-JB-401B-3	CP-13
8	16-DS-401B-4	16-TSH-401B-4	16-LSH-401B-4	16-JB-401B-4	CP-14

2 CONTROL RISER DIAGRAM
TYPICAL FOR 8

#	16-MX-401X-X	CP-1X	DESCRIPTION
1	16-MX-401A-1	CP-11	BIOREACTOR ANAEROBIC ZONE #1 MIXER
2	16-MX-401A-2	CP-12	BIOREACTOR ANAEROBIC ZONE #2 MIXER
3	16-MX-401A-3	CP-13	BIOREACTOR ANAEROBIC ZONE #3 MIXER
4	16-MX-401A-4	CP-14	BIOREACTOR ANAEROBIC ZONE #4 MIXER
5	16-MX-401B-1	CP-11	BIOREACTOR ANOXIC ZONE #1 MIXER
6	16-MX-401B-2	CP-12	BIOREACTOR ANOXIC ZONE #2 MIXER
7	16-MX-401B-3	CP-13	BIOREACTOR ANOXIC ZONE #3 MIXER
8	16-MX-401B-4	CP-14	BIOREACTOR ANOXIC ZONE #4 MIXER

1 BIOREACTOR SUBMERSIBLE MIXER MOTOR STARTER SCHEMATIC
TYPICAL FOR 8



* MOUNTED ON MCC

- LEGEND:
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ◇ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

PROJECT NUMBER: _____

DATE:	REVISION
AUGUST 2016	

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOWS IF LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

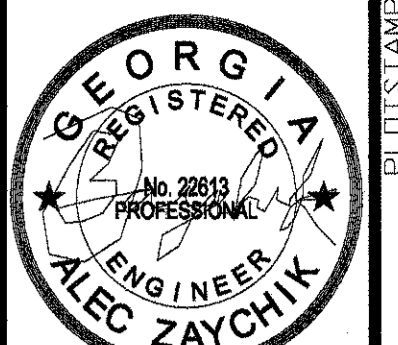
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-408

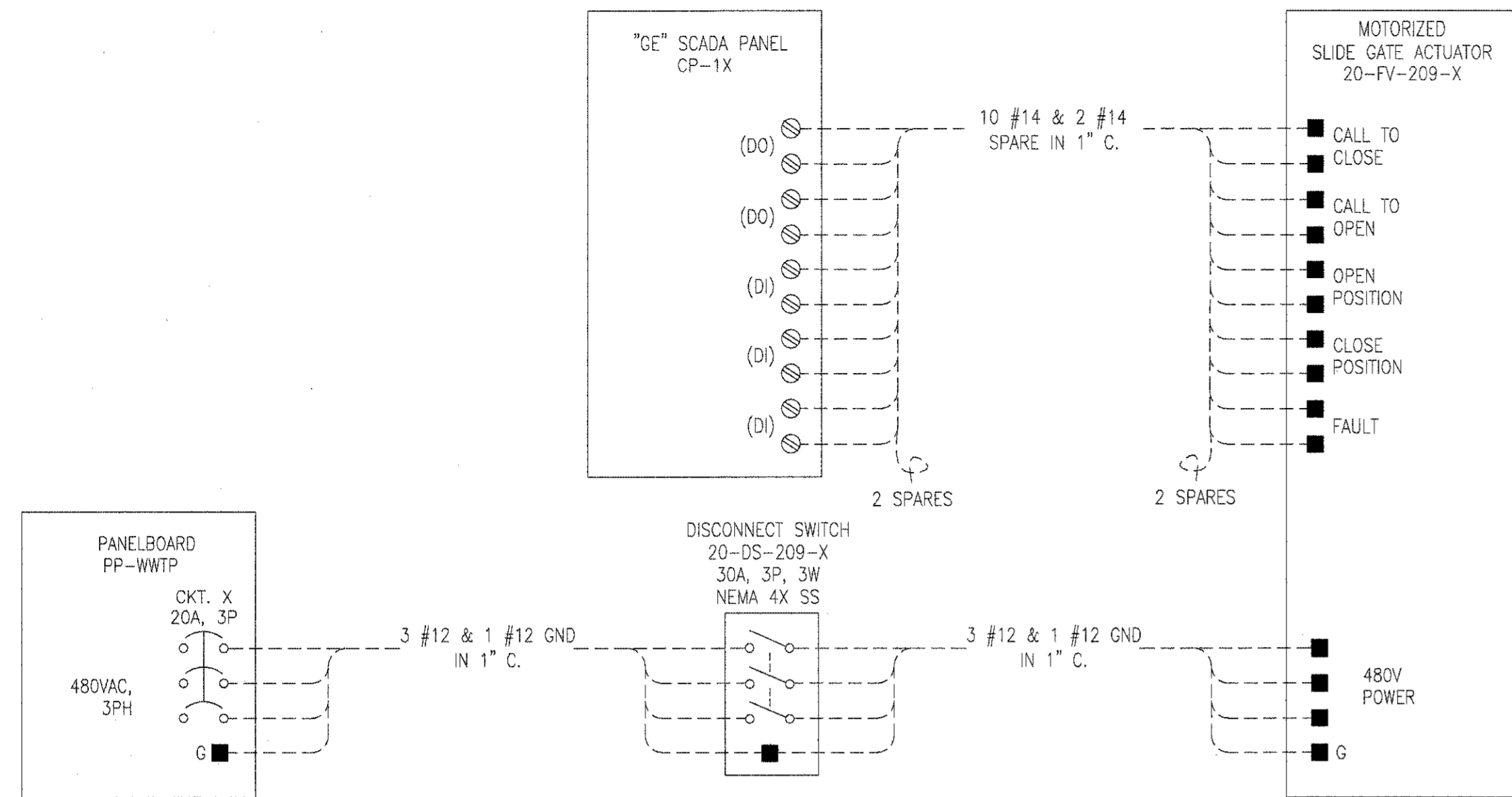


EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



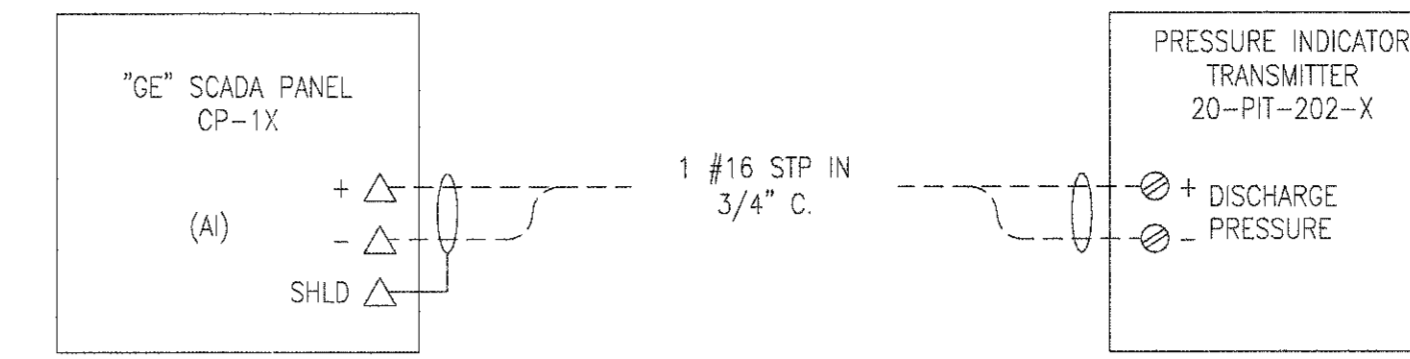
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:
 1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



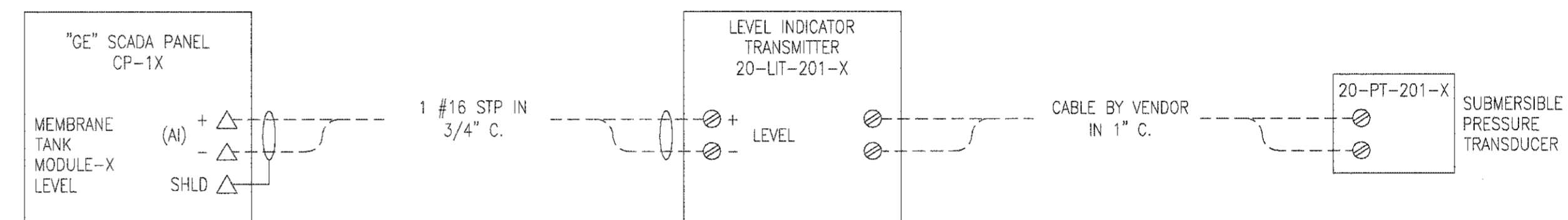
#	CP-1X	20-DS-209-X	20-FV-209-X	PP-WWTP CTK. #	DESCRIPTION
1	CP-11	20-DS-209-1	20-FV-209-1	1, 3, 5	MEMBRANE TANK DISTRIBUTION CHANNEL SLIDE GATE 1
2	CP-12	20-DS-209-2	20-FV-209-2	7, 9, 11	MEMBRANE TANK DISTRIBUTION CHANNEL SLIDE GATE 2
3	CP-13	20-DS-209-3	20-FV-209-3	13, 15, 17	MEMBRANE TANK DISTRIBUTION CHANNEL SLIDE GATE 3
4	CP-14	20-DS-209-4	20-FV-209-4	19, 21, 23	MEMBRANE TANK DISTRIBUTION CHANNEL SLIDE GATE 4

1 MEMBRANE TANK DISTRIBUTION CHANNEL SLIDE GATE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



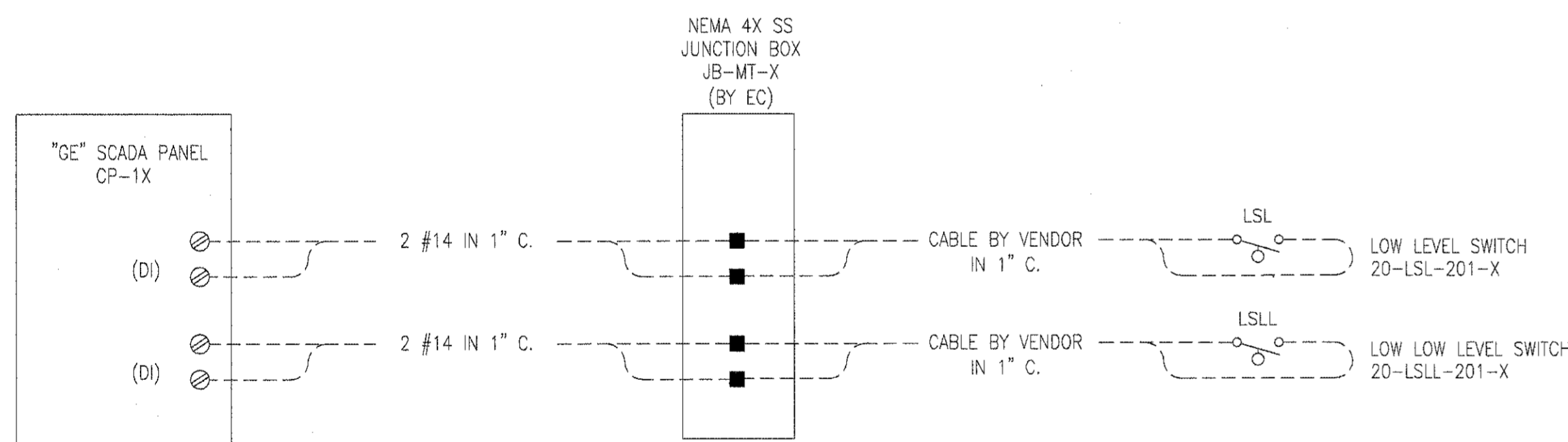
#	20-PIT-201-X	CP-0X	DESCRIPTION
1	20-PIT-202-1	CP-11	MEMBRANE TANK MODULE #1 AIR FROM MEMBRANE BLOWERS PRESSURE TRANSMITTER
2	20-PIT-202-2	CP-12	MEMBRANE TANK MODULE #2 AIR FROM MEMBRANE BLOWERS PRESSURE TRANSMITTER
3	20-PIT-202-3	CP-13	MEMBRANE TANK MODULE #3 AIR FROM MEMBRANE BLOWERS PRESSURE TRANSMITTER
4	20-PIT-202-4	CP-14	MEMBRANE TANK MODULE #4 AIR FROM MEMBRANE BLOWERS PRESSURE TRANSMITTER

3 MEMBRANE TANK AIR FROM MEMBRANE BLOWER PRESSURE TRANSMITTER SCHEMATIC
 TYPICAL FOR 4



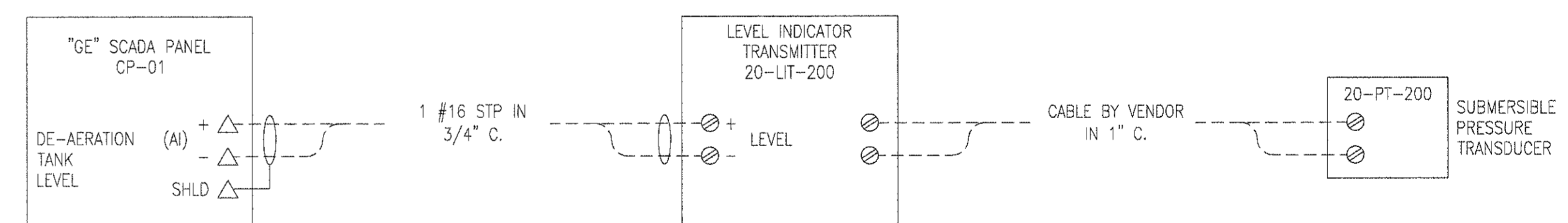
#	20-PT-201-X	20-LIT-201-X	CP-0X	DESCRIPTION
1	20-PT-201-1	20-LIT-201-1	CP-11	MEMBRANE TANK MODULE #1 LEVEL TRANSMITTER
2	20-PT-201-2	20-LIT-201-2	CP-12	MEMBRANE TANK MODULE #2 LEVEL TRANSMITTER
3	20-PT-201-3	20-LIT-201-3	CP-13	MEMBRANE TANK MODULE #3 LEVEL TRANSMITTER
4	20-PT-201-4	20-LIT-201-4	CP-14	MEMBRANE TANK MODULE #4 LEVEL TRANSMITTER

4 MEMBRANE TANK LEVEL TRANSMITTER SCHEMATIC
 TYPICAL FOR 4

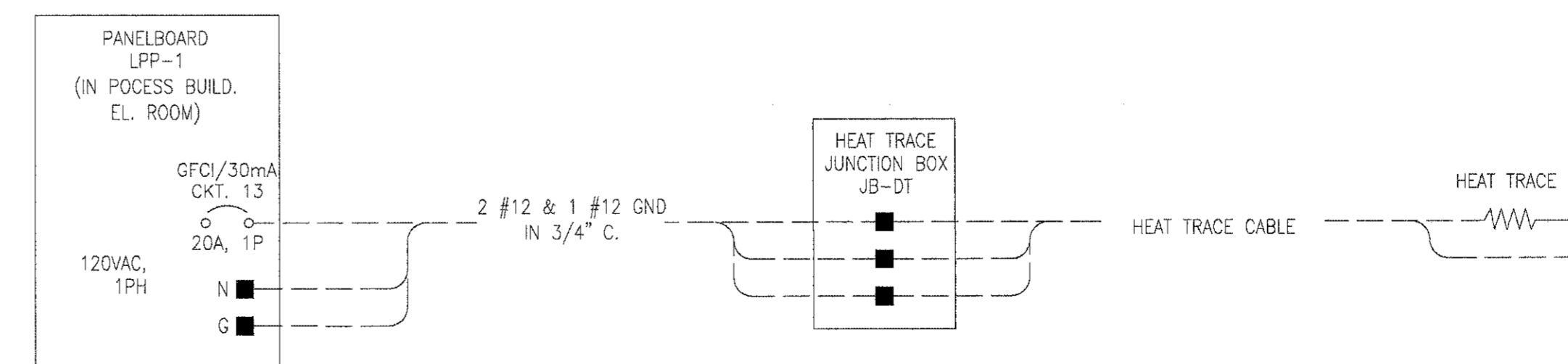


#	20-LSL-201-X	20-LSLL-201-X	JB-MT-X	CP-0X	DESCRIPTION
1	20-LSL-201-1	20-LSLL-201-1	JB-MT-1	CP-11	MEMBRANE MODULE #1 LOW/LOW LOW LEVEL FLOAT SWITCHES
2	20-LSL-201-2	20-LSLL-201-2	JB-MT-2	CP-12	MEMBRANE MODULE #2 LOW/LOW LOW LEVEL FLOAT SWITCHES
3	20-LSL-201-3	20-LSLL-201-3	JB-MT-3	CP-13	MEMBRANE MODULE #3 LOW/LOW LOW LEVEL FLOAT SWITCHES
4	20-LSL-201-4	20-LSLL-201-4	JB-MT-4	CP-14	MEMBRANE MODULE #4 LOW/LOW LOW LEVEL FLOAT SWITCHES

2 MEMBRANE TANK FLOAT LEVEL SWITCHES SCHEMATIC



5 DE-AERATION TANK LEVEL TRANSMITTER SCHEMATIC



3 DE-AERATION TANK HEAT TRACE SCHEMATIC

* MOUNTED ON VFD

LEGEND:

- - VFD POWER TERMINAL
- - VFD CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRAW: DV
 CHECK: AZ
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-409

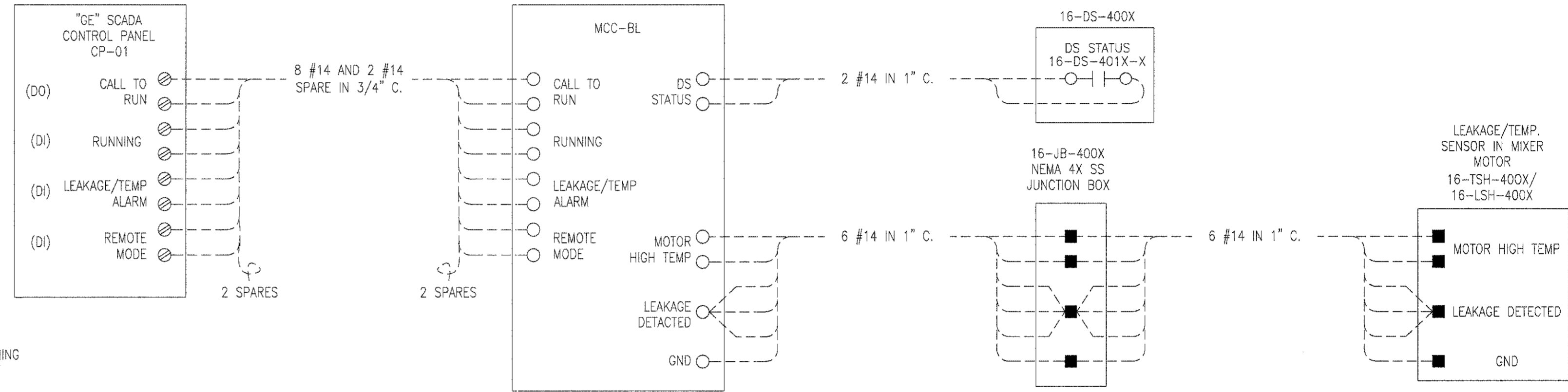
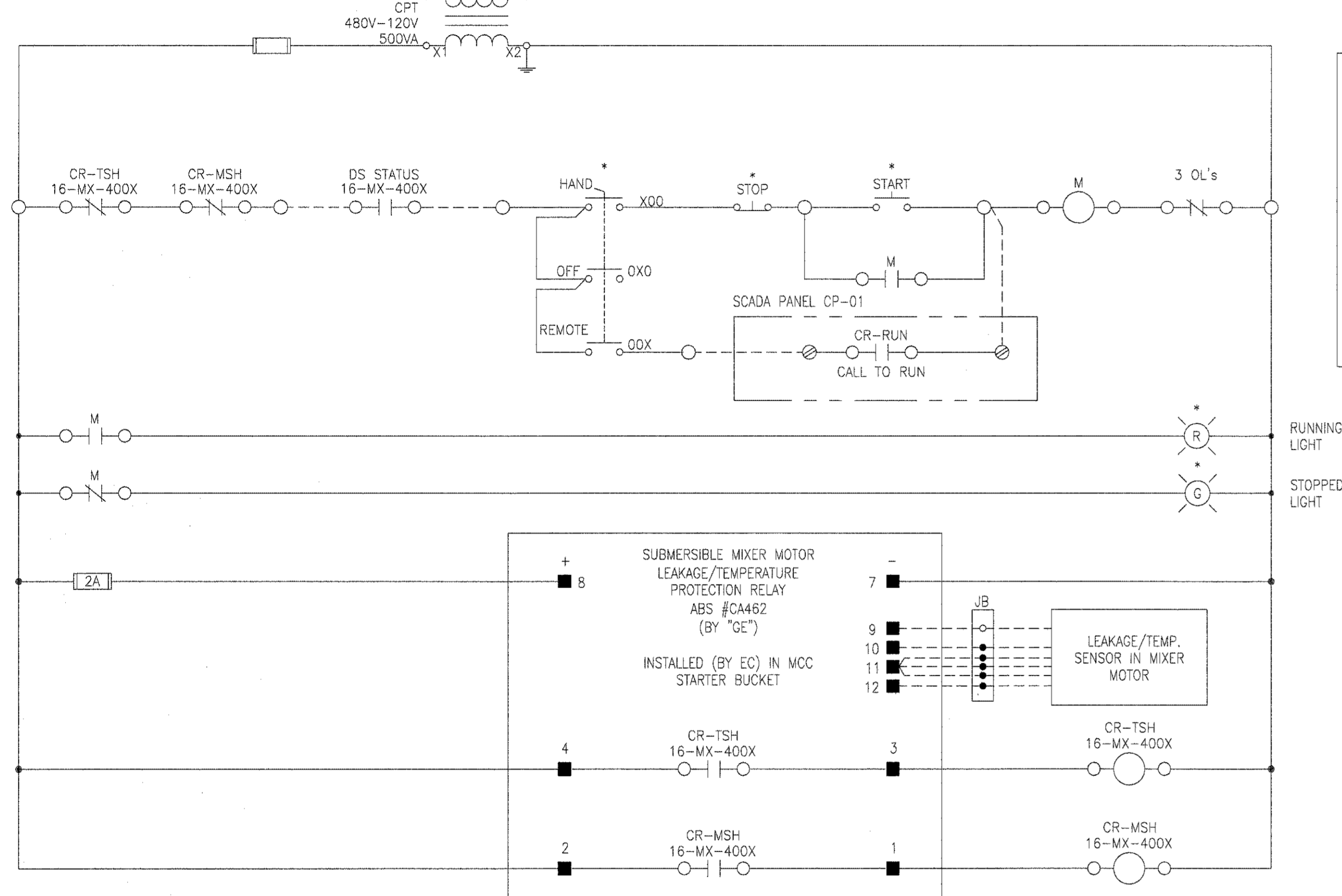
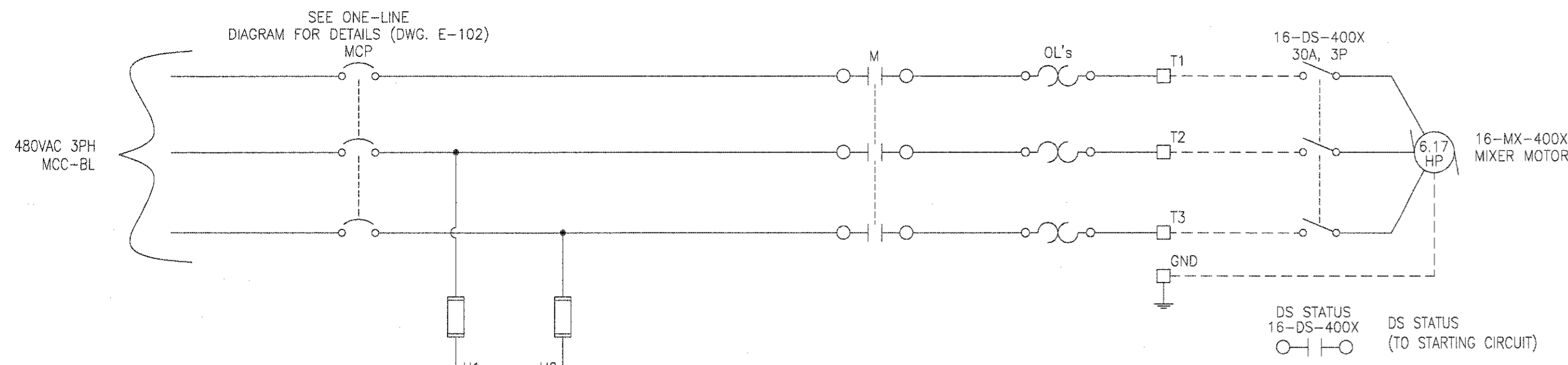


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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

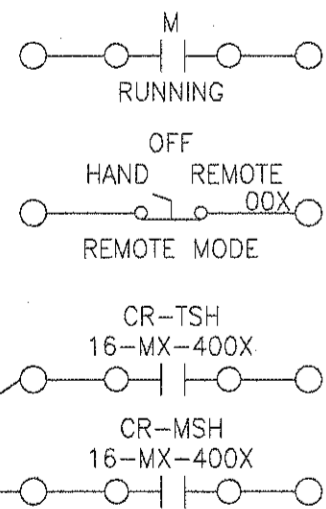
NOTES:
 1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	16-DS-400X	16-TSH-400X	16-LSH-400X	16-JB-400X
1	16-DS-400A	16-TSH-400A	16-LSH-400A	16-JB-400A
2	16-DS-400B	16-TSH-400B	16-LSH-400B	16-JB-400B

2 CONTROL RISER DIAGRAM
 TYPICAL FOR 2

AUXILIARY CONTACTS:



#	16-MX-400X	DESCRIPTION
1	16-MX-400A	DE-AERATION TANK MIXER #1
2	16-MX-400B	DE-AERATION TANK MIXER #2

1 DE-AERATION TANK SUBMERSIBLE MIXER MOTOR STARTER SCHEMATIC
 TYPICAL FOR 2

* MOUNTED ON MCC

LEGEND:

- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: ---
 DATE: AUGUST 2016
 REVISION

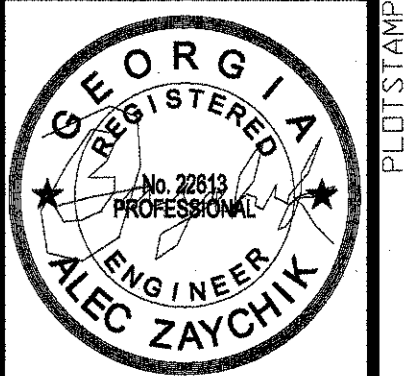
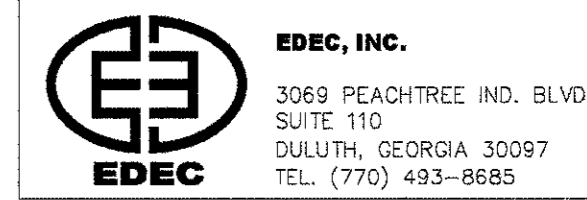
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-410

PLT/STAMP



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(770) 429-0001

PROJECT NUMBER: _____
DATE: AUGUST 2016

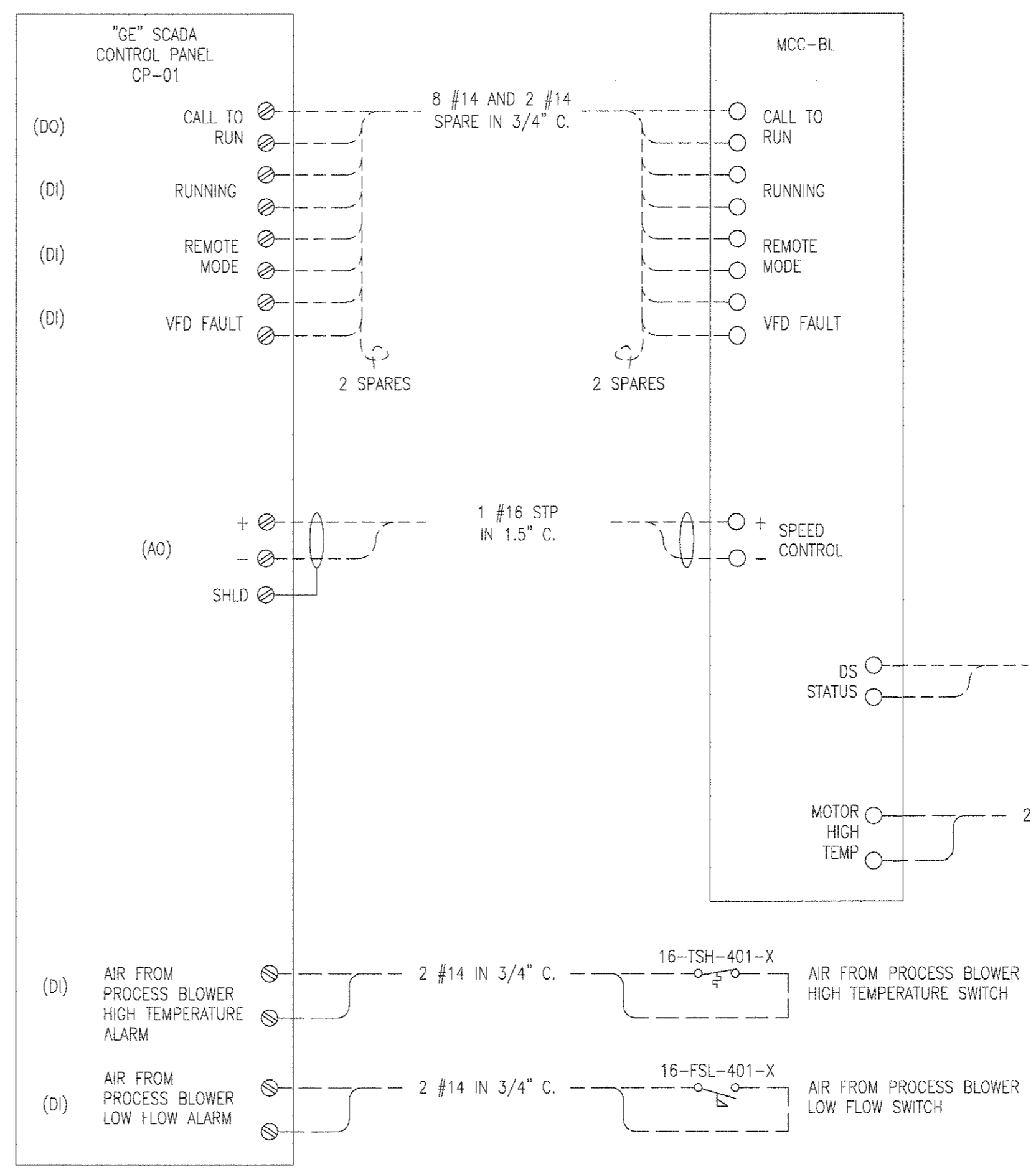
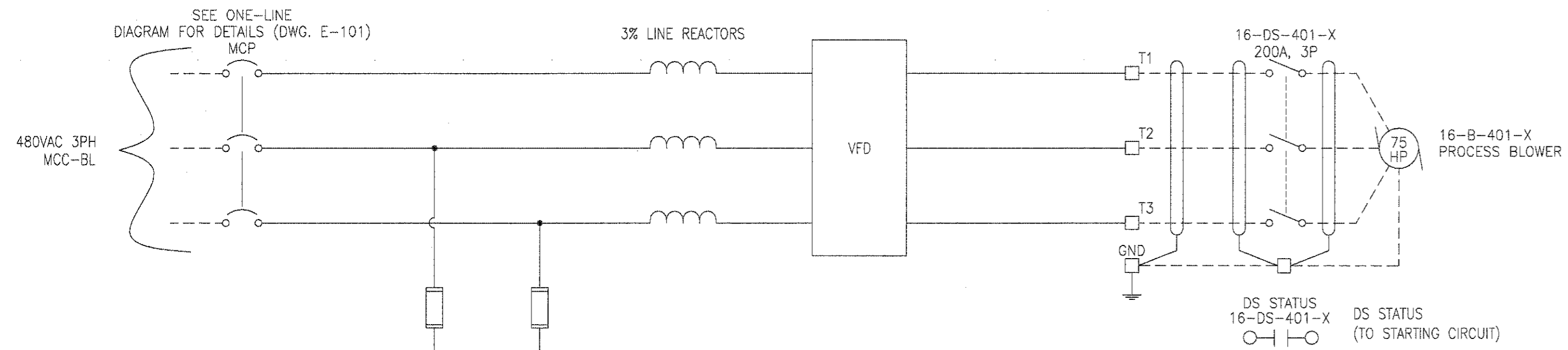
REVISION

DATE: _____
REVISION

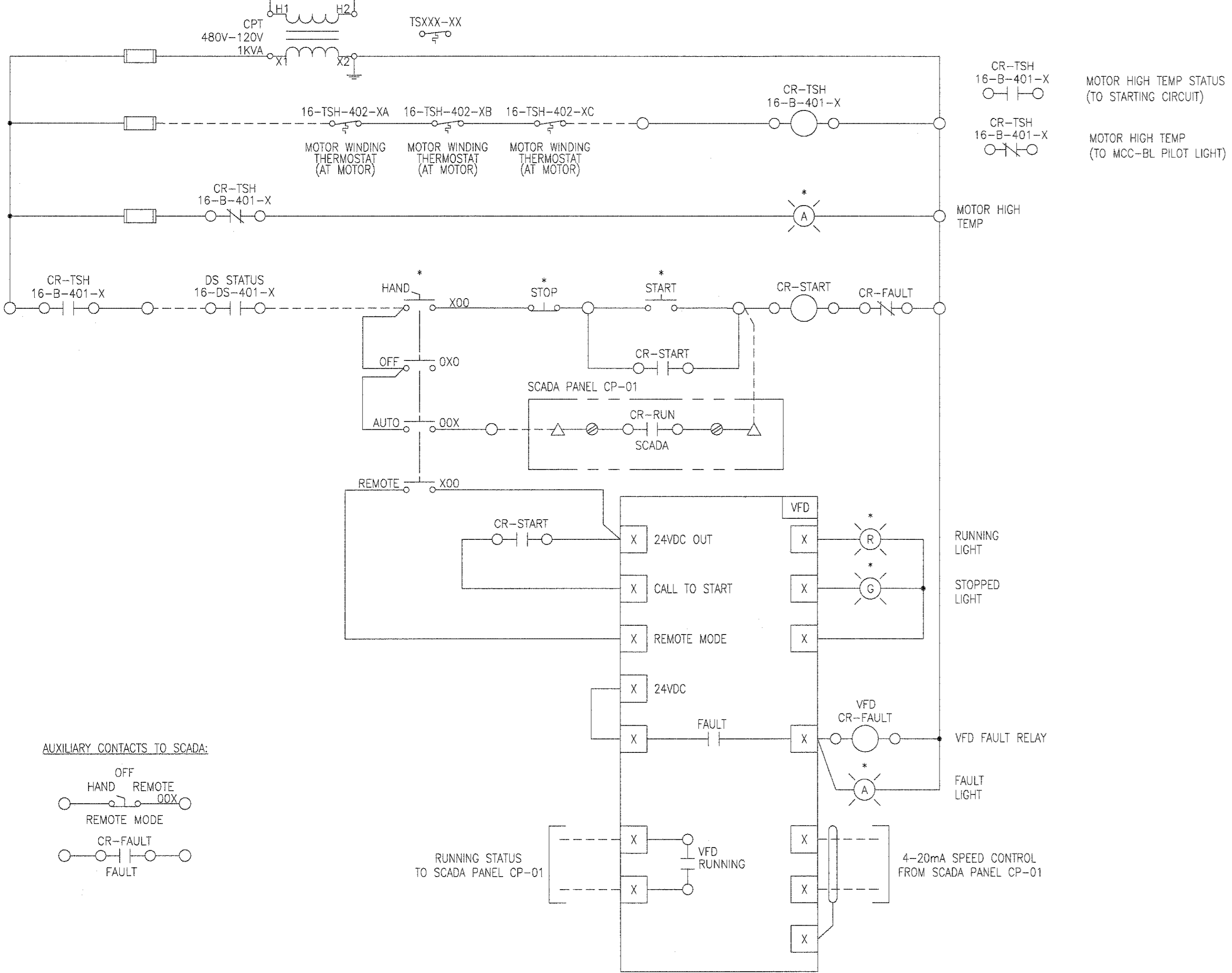
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-411



NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	16-DS-401-X	16-TSH-402-X	16-TSH-401-X	16-FSL-401-X
1	16-DS-401-A	16-TSH-402-A	16-TSH-401-A	16-FSL-401-A
2	16-DS-401-B	16-TSH-402-B	16-TSH-401-B	16-FSL-401-B
3	16-DS-401-C	16-TSH-402-C	16-TSH-401-C	16-FSL-401-C
4	16-DS-401-D	16-TSH-402-D	16-TSH-401-D	16-FSL-401-D
5	16-DS-401-E	16-TSH-402-E	16-TSH-401-E	16-FSL-401-E

2 PROCESS BLOWER CONTROL RISER DIAGRAM
TYPICAL FOR 5

#	16-B-401-X	DESCRIPTION
1	16-B-401-A	PROCESS BLOWER #1
2	16-B-401-B	PROCESS BLOWER #2
3	16-B-401-C	PROCESS BLOWER #3
4	16-B-401-D	PROCESS BLOWER #4
5	16-B-401-E	PROCESS BLOWER #5

1 PROCESS BLOWER VFD SCHEMATIC
TYPICAL FOR 5

- * MOUNTED ON MCC
- LEGEND:
- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ◇ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

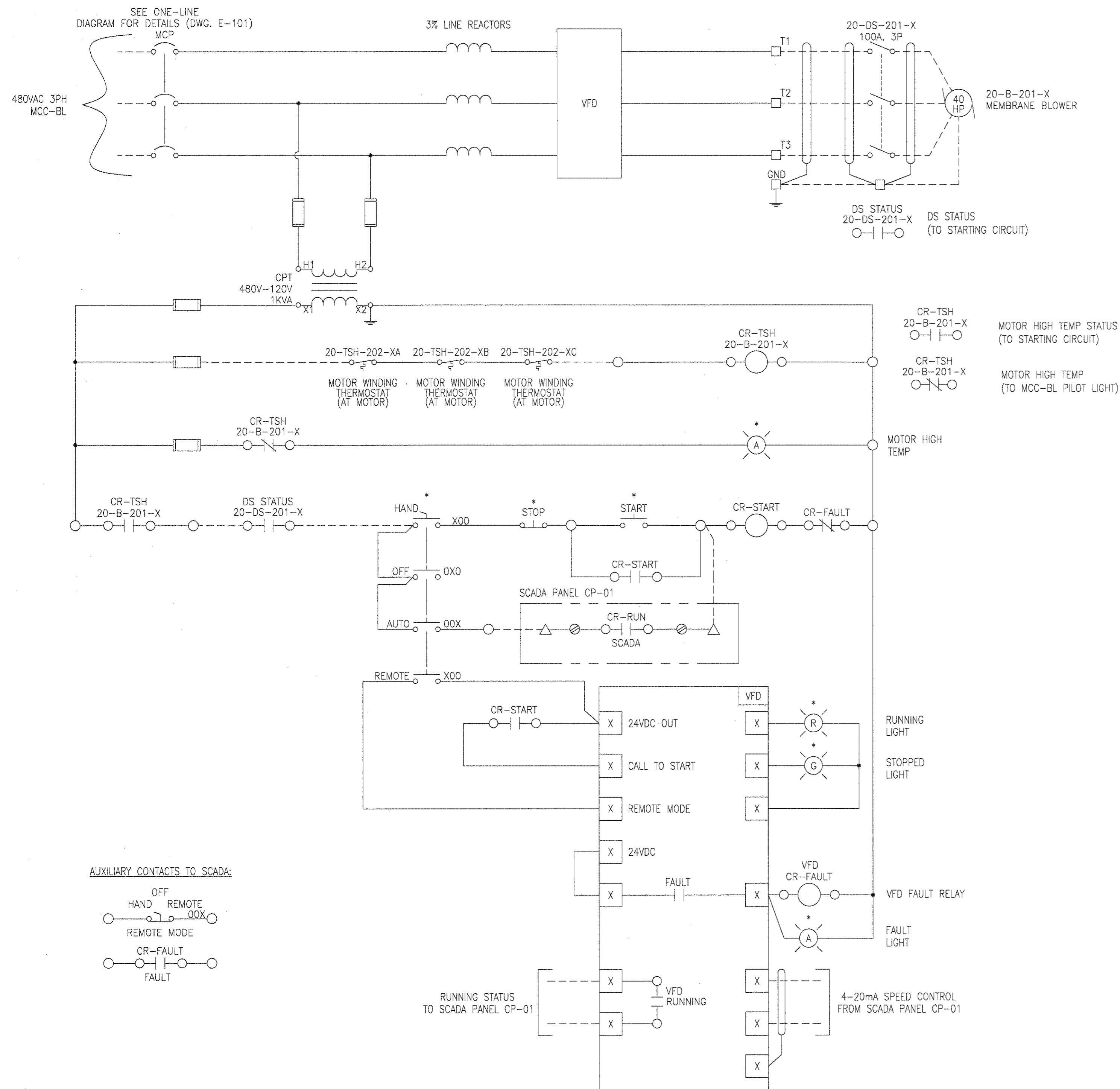


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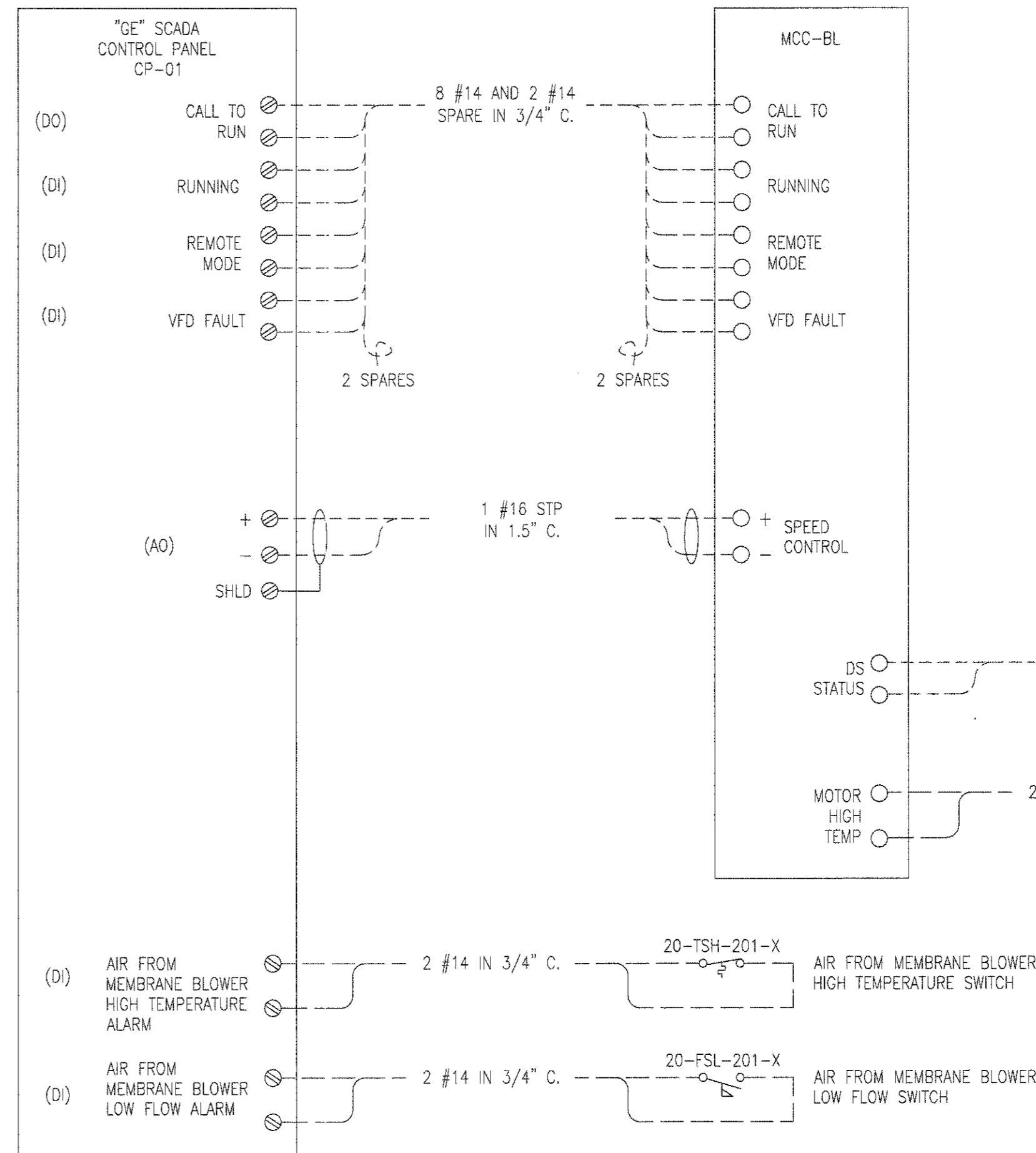
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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

NOTES:
 1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



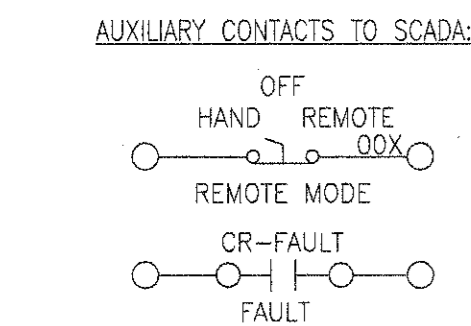
#	20-B-201-X	DESCRIPTION
1	20-B-201-A	MEMBRANE BLOWER #1
2	20-B-201-B	MEMBRANE BLOWER #2
3	20-B-201-C	MEMBRANE BLOWER #3
4	20-B-201-D	MEMBRANE BLOWER #4
5	20-B-201-E	MEMBRANE BLOWER #5

1 MEMBRANE BLOWER VFD SCHEMATIC
 TYPICAL FOR 5



#	16-DS-201-X	16-TSH-202-X	16-TSH-201-X	16-FSL-201-X
1	16-DS-201-A	16-TSH-202-A	16-TSH-201-A	16-FSL-201-A
2	16-DS-201-B	16-TSH-202-B	16-TSH-201-B	16-FSL-201-B
3	16-DS-201-C	16-TSH-202-C	16-TSH-201-C	16-FSL-201-C
4	16-DS-201-D	16-TSH-202-D	16-TSH-201-D	16-FSL-201-D
5	16-DS-201-E	16-TSH-202-E	16-TSH-201-E	16-FSL-201-E

2 MEMBRANE BLOWER CONTROL RISER DIAGRAM
 TYPICAL FOR 5



- * MOUNTED ON MCC
- LEGEND:
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

PROJECT NUMBER: -----
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DATE

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 CHCK: AZ

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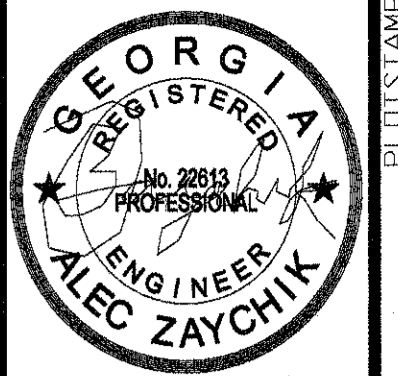
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

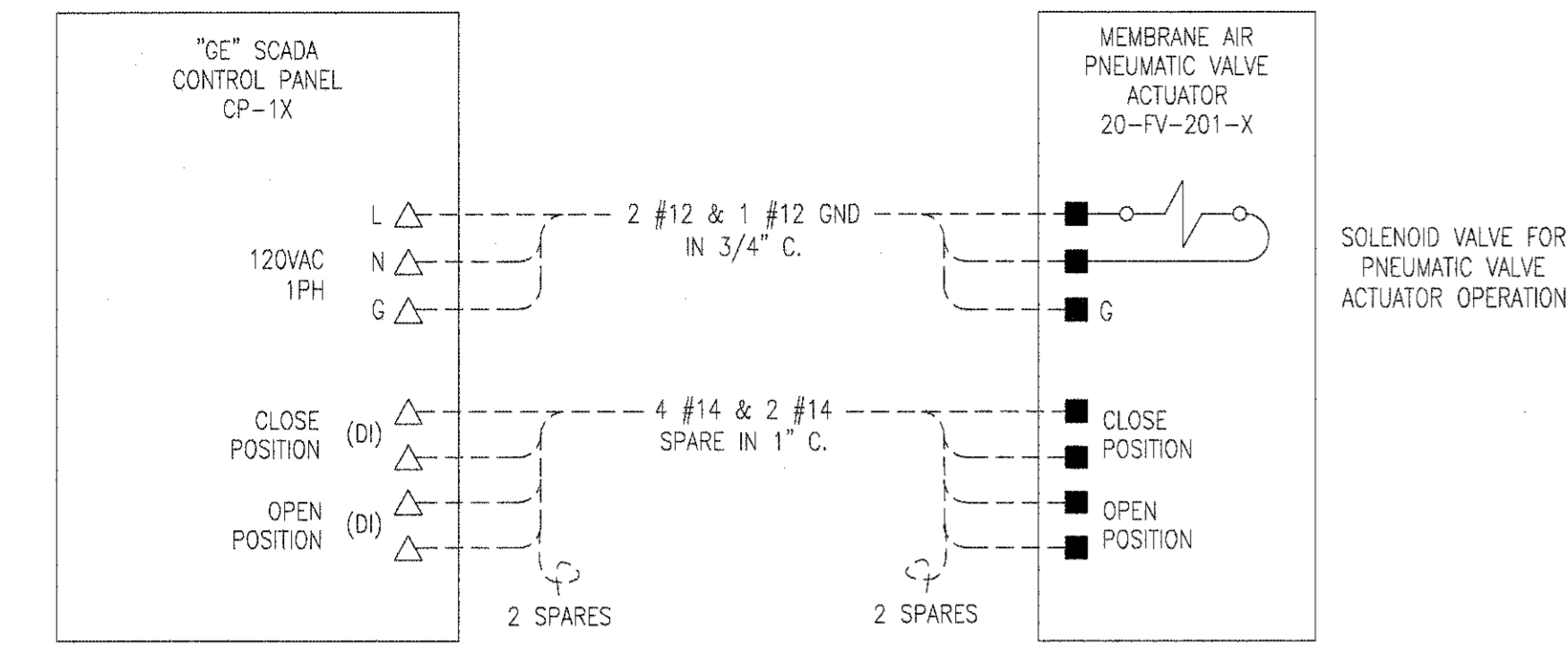
SHEET NO.
 E-412



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 3069 PEACHTREE IND. BLVD.
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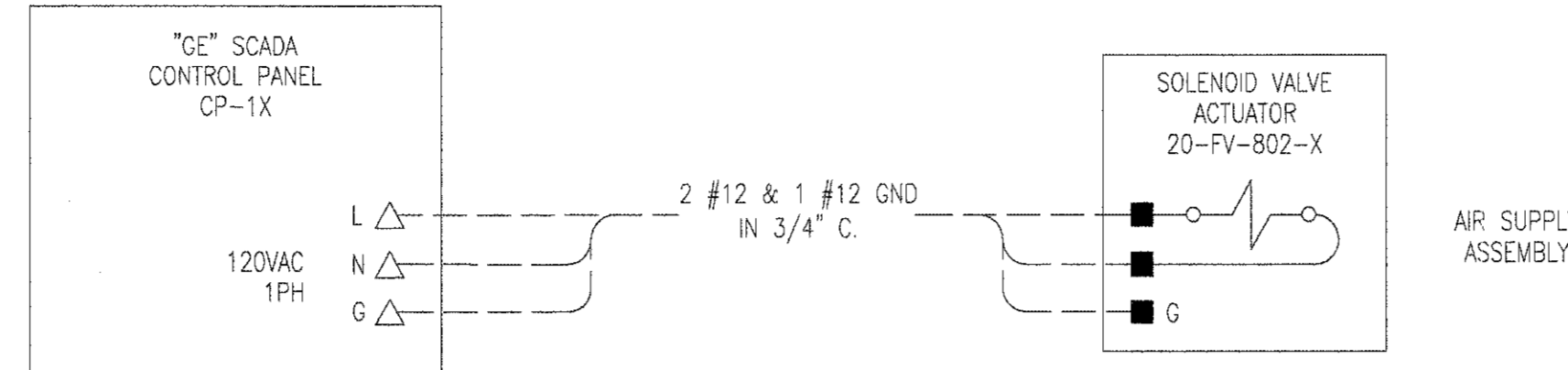


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 3855 SHALLOWFORD ROAD, SUITE 525
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 (770) 499-0001



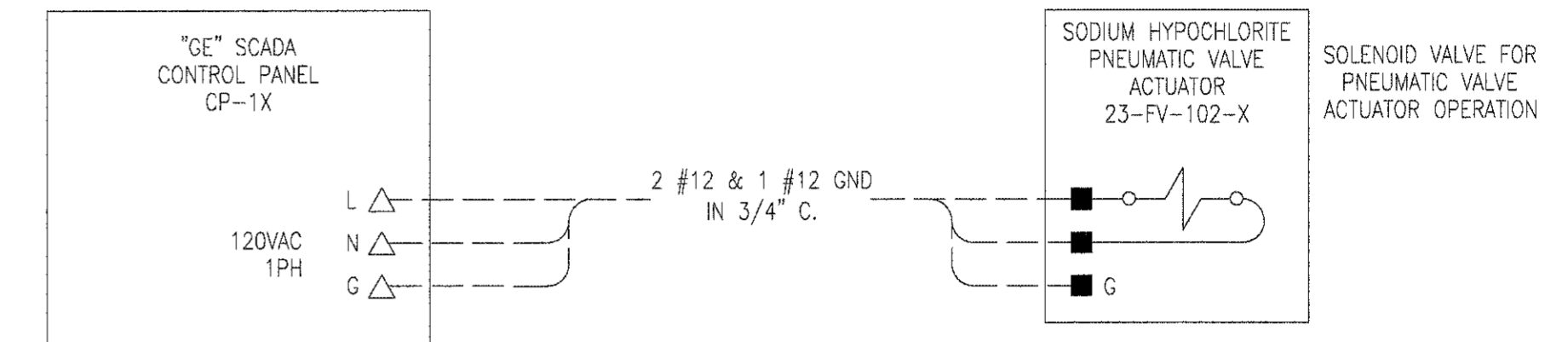
#	CP-1X	20-FV-201-X	DESCRIPTION
1	CP-11	20-FV-201-1	MAMBRANE TANK AIR FROM MEMBRANE BLOWERS PNEUMATIC VALVE ACTUATOR #1
2	CP-12	20-FV-201-2	MAMBRANE TANK AIR FROM MEMBRANE BLOWERS PNEUMATIC VALVE ACTUATOR #2
3	CP-13	20-FV-201-3	MAMBRANE TANK AIR FROM MEMBRANE BLOWERS PNEUMATIC VALVE ACTUATOR #3
4	CP-14	20-FV-201-4	MAMBRANE TANK AIR FROM MEMBRANE BLOWERS PNEUMATIC VALVE ACTUATOR #4

1 MEMBRANE AIR PNEUMATIC VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



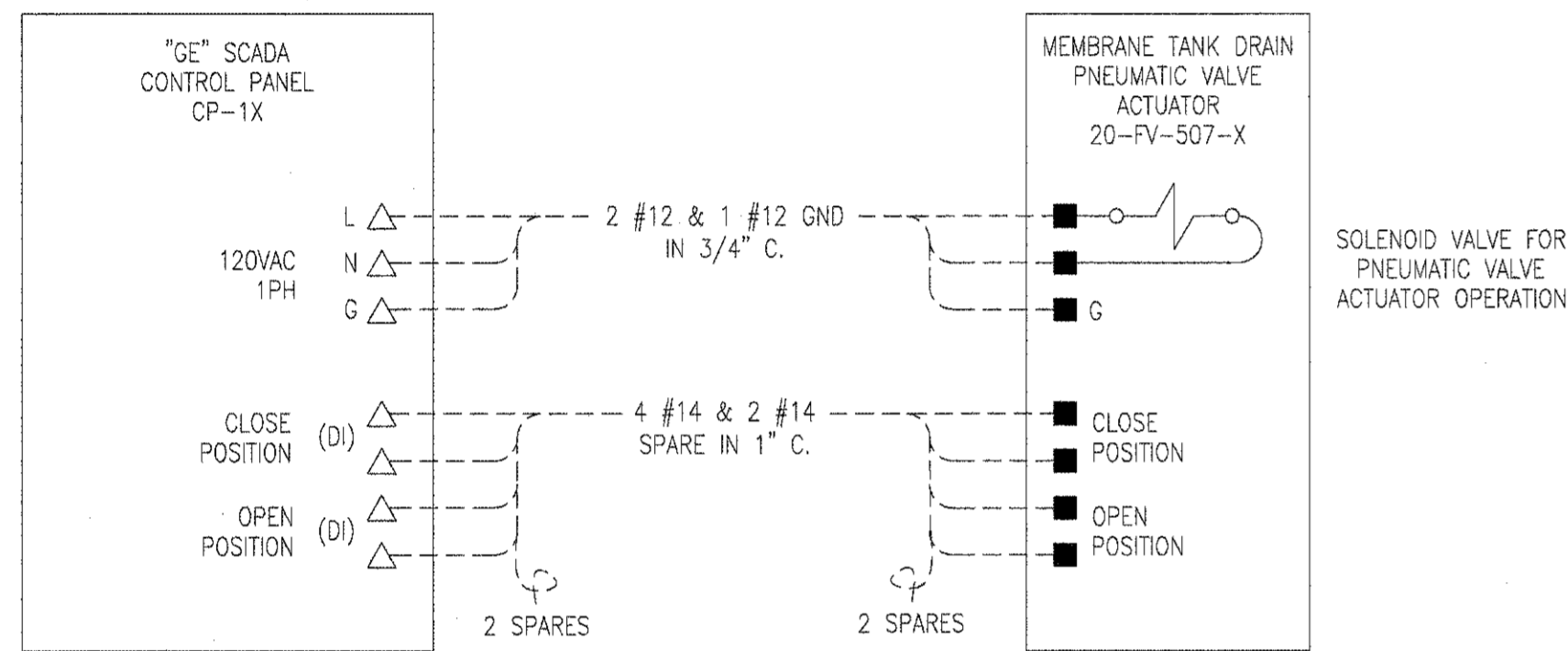
#	CP-1X	20-FV-802-X	DESCRIPTION
1	CP-11	20-FV-802-X	AIR EJECTOR #1 SOLENOID VALVE ACTUATOR
2	CP-12	20-FV-802-X	AIR EJECTOR #2 SOLENOID VALVE ACTUATOR
3	CP-13	20-FV-802-X	AIR EJECTOR #3 SOLENOID VALVE ACTUATOR
4	CP-14	20-FV-802-X	AIR EJECTOR #4 SOLENOID VALVE ACTUATOR

4 AIR EJECTOR SOLENOID VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



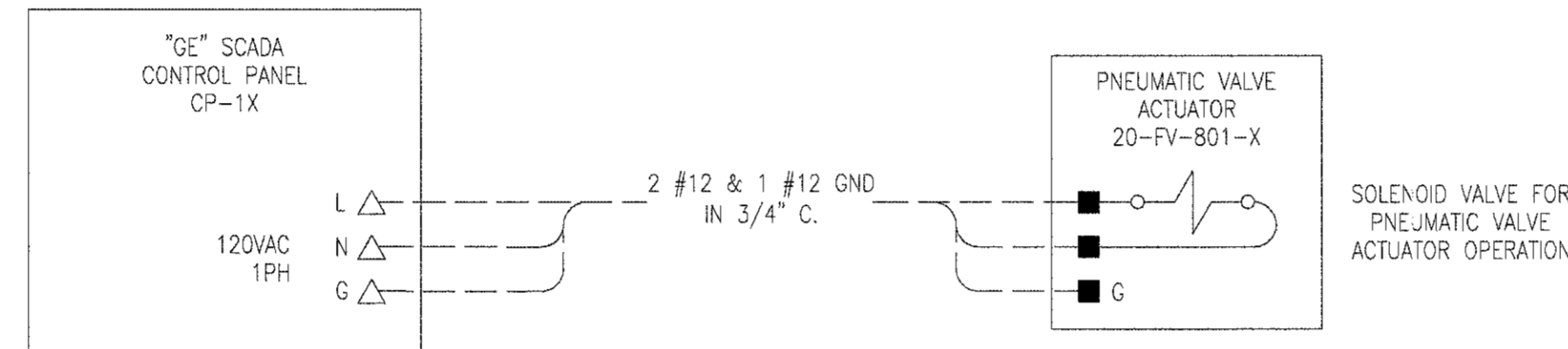
#	CP-1X	23-FV-102-X	DESCRIPTION
1	CP-11	23-FV-102-1	SODIUM HYPOCHLORITE PNEUMATIC VALVE ACTUATOR #1
2	CP-12	23-FV-102-2	SODIUM HYPOCHLORITE PNEUMATIC VALVE ACTUATOR #2
3	CP-13	23-FV-102-3	SODIUM HYPOCHLORITE PNEUMATIC VALVE ACTUATOR #3
4	CP-14	23-FV-102-4	SODIUM HYPOCHLORITE PNEUMATIC VALVE ACTUATOR #4

8 SODIUM HYPOCHLORITE PNEUMATIC VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



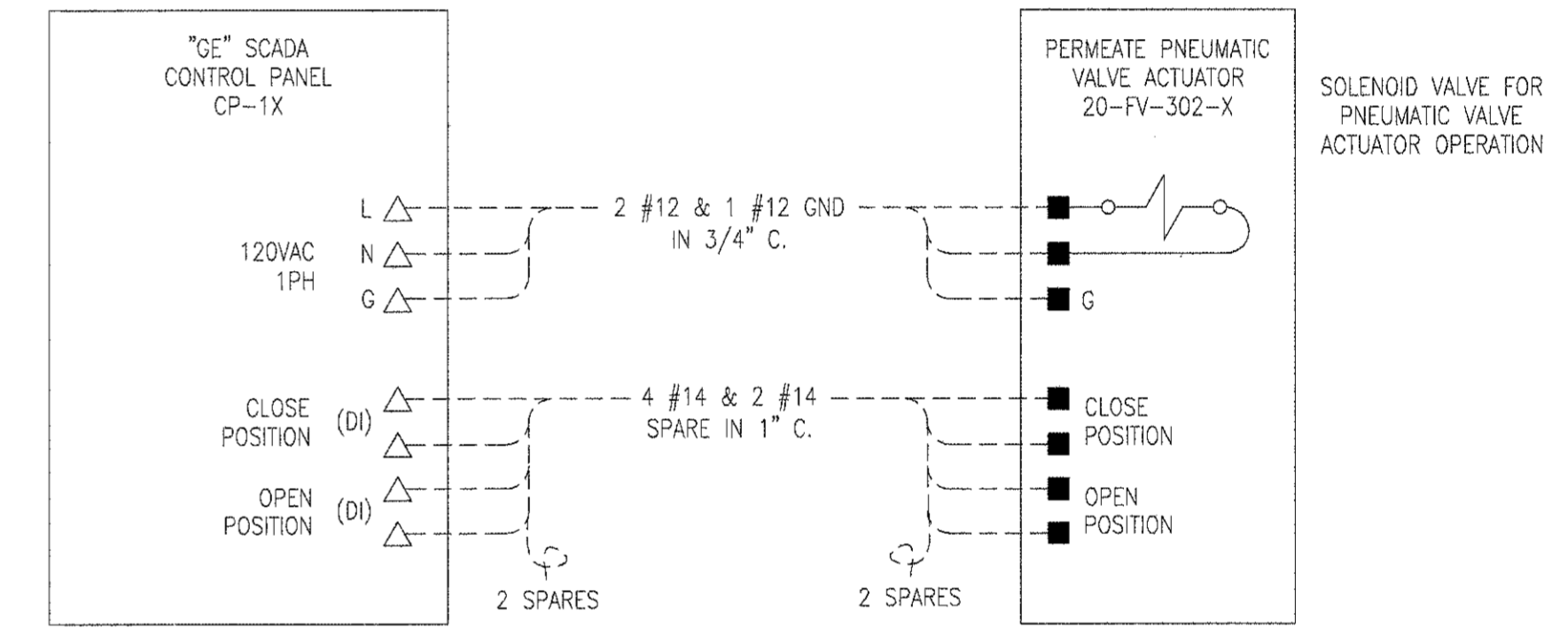
#	CP-1X	20-FV-507-X	DESCRIPTION
1	CP-11	20-FV-507-1	MAMBRANE TANK DRAIN TO DRAIN/WAS PUMPS PNEUMATIC VALVE ACTUATOR #1
2	CP-12	20-FV-507-2	MAMBRANE TANK DRAIN TO DRAIN/WAS PUMPS PNEUMATIC VALVE ACTUATOR #2
3	CP-13	20-FV-507-3	MAMBRANE TANK DRAIN TO DRAIN/WAS PUMPS PNEUMATIC VALVE ACTUATOR #3
4	CP-14	20-FV-507-4	MAMBRANE TANK DRAIN TO DRAIN/WAS PUMPS PNEUMATIC VALVE ACTUATOR #4

2 MEMBRANE TANK DRAIN PNEUMATIC VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



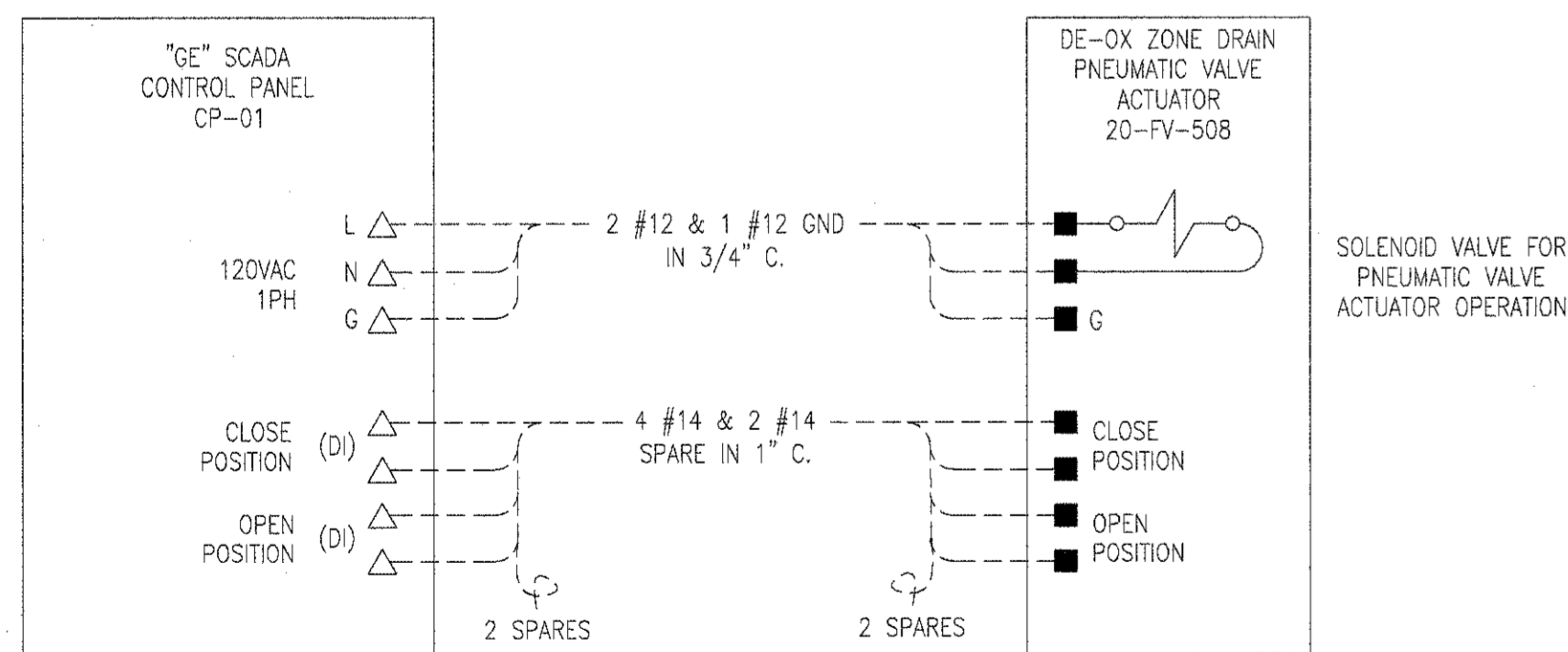
#	CP-1X	20-FV-801-X	DESCRIPTION
1	CP-11	20-FV-801-1	EJECTOR ASSEMBLY #1 SOLENOID VALVE ACTUATOR
2	CP-12	20-FV-801-2	EJECTOR ASSEMBLY #2 SOLENOID VALVE ACTUATOR
3	CP-13	20-FV-801-3	EJECTOR ASSEMBLY #3 SOLENOID VALVE ACTUATOR
4	CP-14	20-FV-801-4	EJECTOR ASSEMBLY #4 SOLENOID VALVE ACTUATOR

5 EJECTOR ASSEMBLY SOLENOID VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4

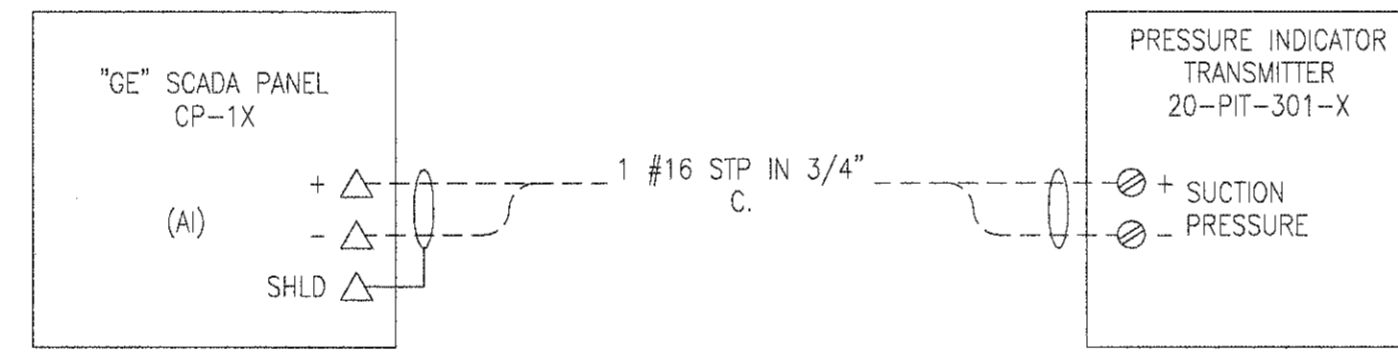


#	CP-1X	20-FV-302-X	DESCRIPTION
1	CP-11	20-FV-302-1	PERMEATE/BACKPULSE TO/FROM MEMBRANE PNEUMATIC VALVE ACTUATOR #1
2	CP-12	20-FV-302-2	PERMEATE/BACKPULSE TO/FROM MEMBRANE PNEUMATIC VALVE ACTUATOR #2
3	CP-13	20-FV-302-3	PERMEATE/BACKPULSE TO/FROM MEMBRANE PNEUMATIC VALVE ACTUATOR #3
4	CP-14	20-FV-302-4	PERMEATE/BACKPULSE TO/FROM MEMBRANE PNEUMATIC VALVE ACTUATOR #4

9 PERMEATE/BACKPULSE TO/FROM MEMBRANE PNEUMATIC VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4

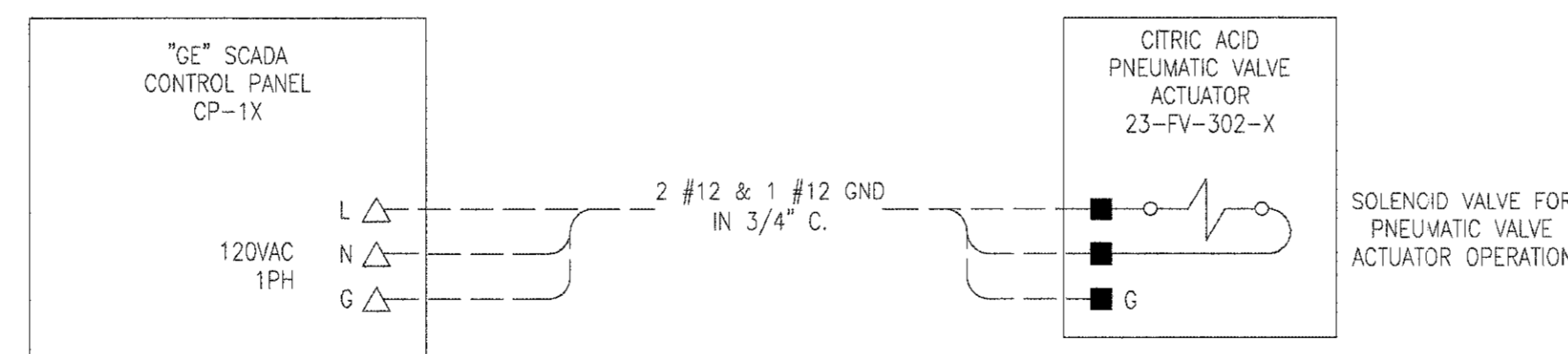


3 DE-OX ZONE DRAIN PNEUMATIC VALVE ACTUATOR SCHEMATIC



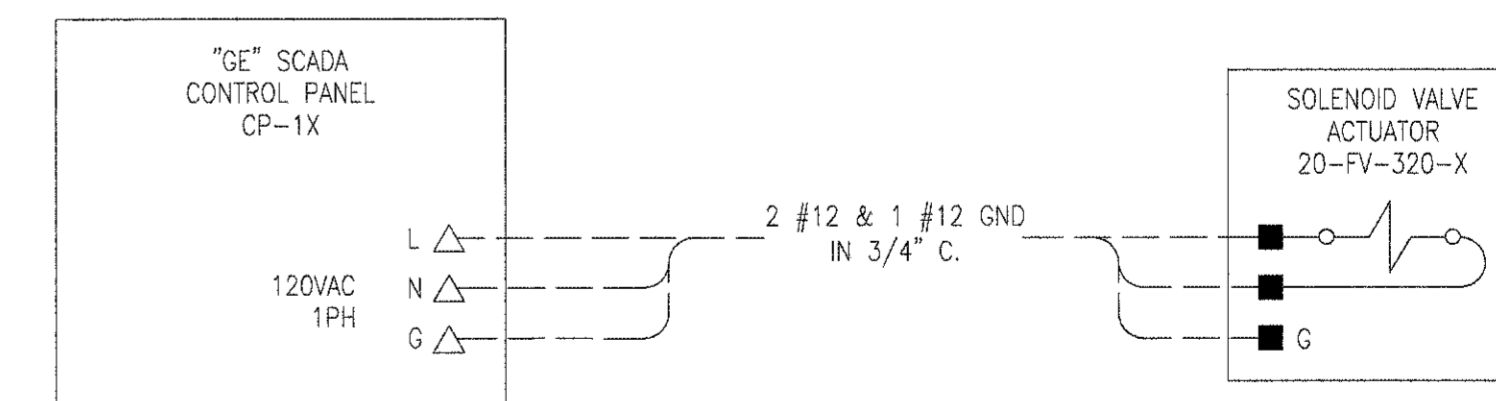
#	CP-0X	20-PIT-301-X	DESCRIPTION
1	CP-11	20-PIT-301-1	PERMEATE TO/FROM PROCEESS PUMP PRESSURE TRANSMITTER #1
2	CP-12	20-PIT-301-2	PERMEATE TO/FROM PROCEESS PUMP PRESSURE TRANSMITTER #2
3	CP-13	20-PIT-301-3	PERMEATE TO/FROM PROCEESS PUMP PRESSURE TRANSMITTER #3
4	CP-14	20-PIT-301-4	PERMEATE TO/FROM PROCEESS PUMP PRESSURE TRANSMITTER #4

6 PERMEATE TO/FROM PROCESS PUMP PRESSURE TRANSMITTER SCHEMATIC
 TYPICAL FOR 4



#	CP-1X	23-FV-302-X	DESCRIPTION
1	CP-11	23-FV-302-1	CITRIC ACID PNEUMATIC VALVE ACTUATOR #1
2	CP-12	23-FV-302-2	CITRIC ACID PNEUMATIC VALVE ACTUATOR #2
3	CP-13	23-FV-302-3	CITRIC ACID PNEUMATIC VALVE ACTUATOR #3
4	CP-14	23-FV-302-4	CITRIC ACID PNEUMATIC VALVE ACTUATOR #4

7 CITRIC ACID PNEUMATIC VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4



#	CP-1X	20-FV-320-X	DESCRIPTION
1	CP-11	20-FV-320-X	PERMEATE TURBIDITY SOLENOID VALVE ACTUATOR #1
2	CP-12	20-FV-320-X	PERMEATE TURBIDITY SOLENOID VALVE ACTUATOR #2
3	CP-13	20-FV-320-X	PERMEATE TURBIDITY SOLENOID VALVE ACTUATOR #3
4	CP-14	20-FV-320-X	PERMEATE TURBIDITY SOLENOID VALVE ACTUATOR #4

10 PERMEATE TURBIDITY SOLENOID VALVE ACTUATOR SCHEMATIC
 TYPICAL FOR 4

* MOUNTED ON VFD

LEGEND:

- - VFD POWER TERMINAL
- - VFD CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: _____
 DATE: AUGUST 2016
 REVISION: _____
 DATE: _____

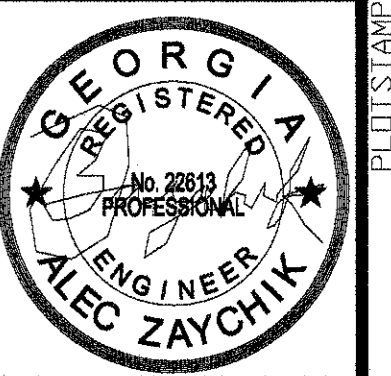
DSGN: AZ
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 CHECK: AZ
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INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-413

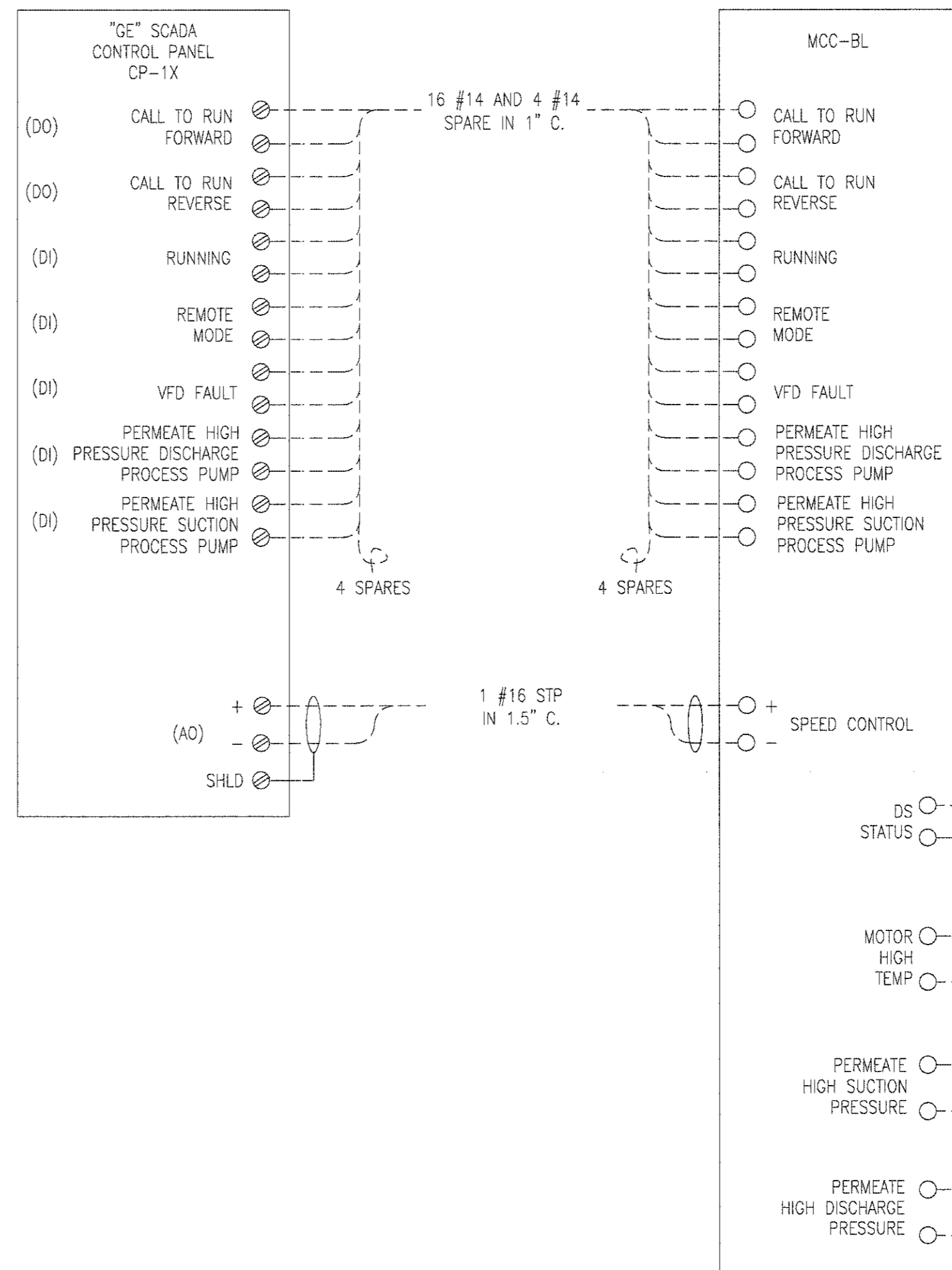
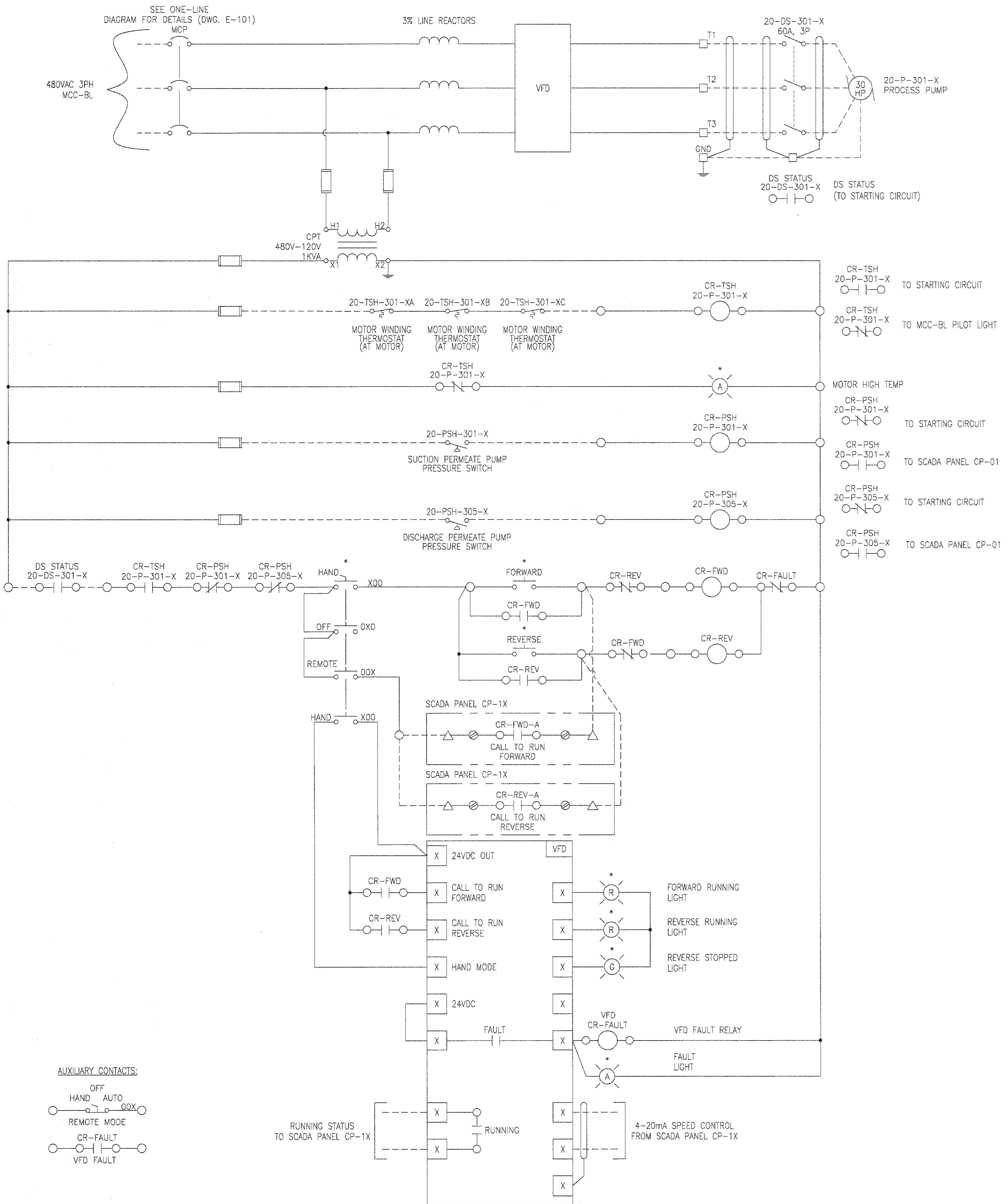


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3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 499-0001

NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	CP-1X	20-DS-301-X	20-TSH-301-X	20-PSH-301-X	20-PSH-305-X
1	CP-11	20-DS-301-1	20-TSH-301-1	20-PSH-301-1	20-PSH-305-1
2	CP-12	20-DS-301-2	20-TSH-301-2	20-PSH-301-2	20-PSH-305-2
3	CP-13	20-DS-301-3	20-TSH-301-3	20-PSH-301-3	20-PSH-305-3
4	CP-14	20-DS-301-4	20-TSH-301-4	20-PSH-301-4	20-PSH-305-4

2 PROCESS PUMP CONTROL RISER DIAGRAM
TYPICAL FOR 4

1 PROCESS PUMP VFD SCHEMATIC
TYPICAL FOR 4

#	CP-1X	20-P-301-X	DESCRIPTION
1	CP-11	20-P-301-1	PROCESS PUMP #1
2	CP-12	20-P-301-2	PROCESS PUMP #2
3	CP-13	20-P-301-3	PROCESS PUMP #3
4	CP-14	20-P-301-4	PROCESS PUMP #4

- LEGEND:
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - △ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL
- * MOUNTED ON MCC

PROJECT NUMBER: ---
DATE: AUGUST 2016
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DSGN: AZ
DRWN: DV
CHK: AZ

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-414



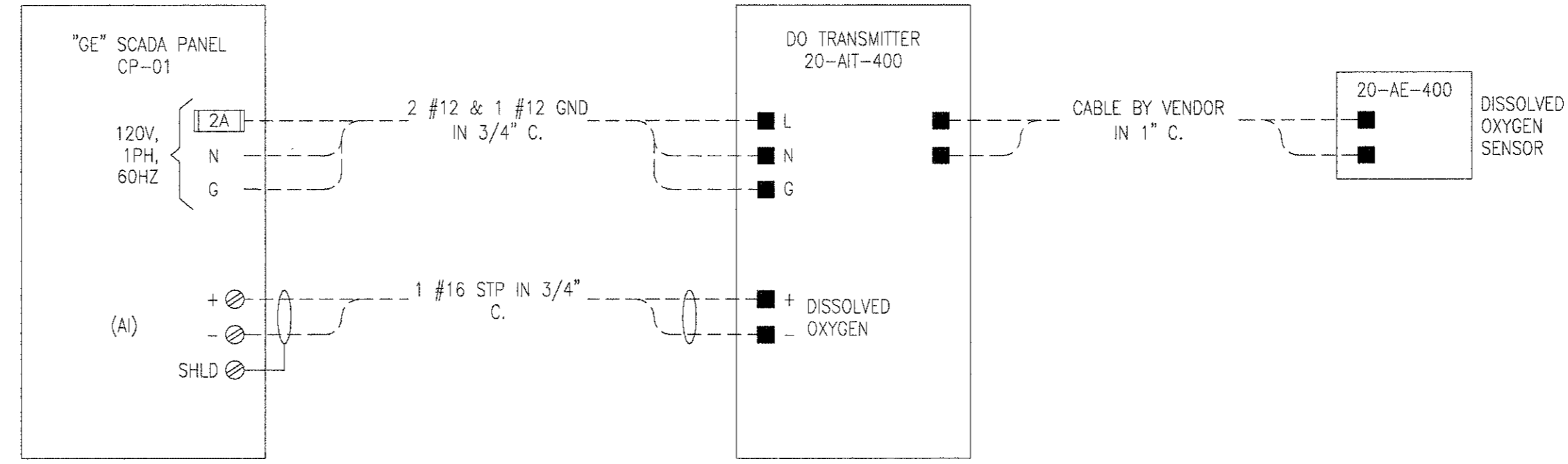
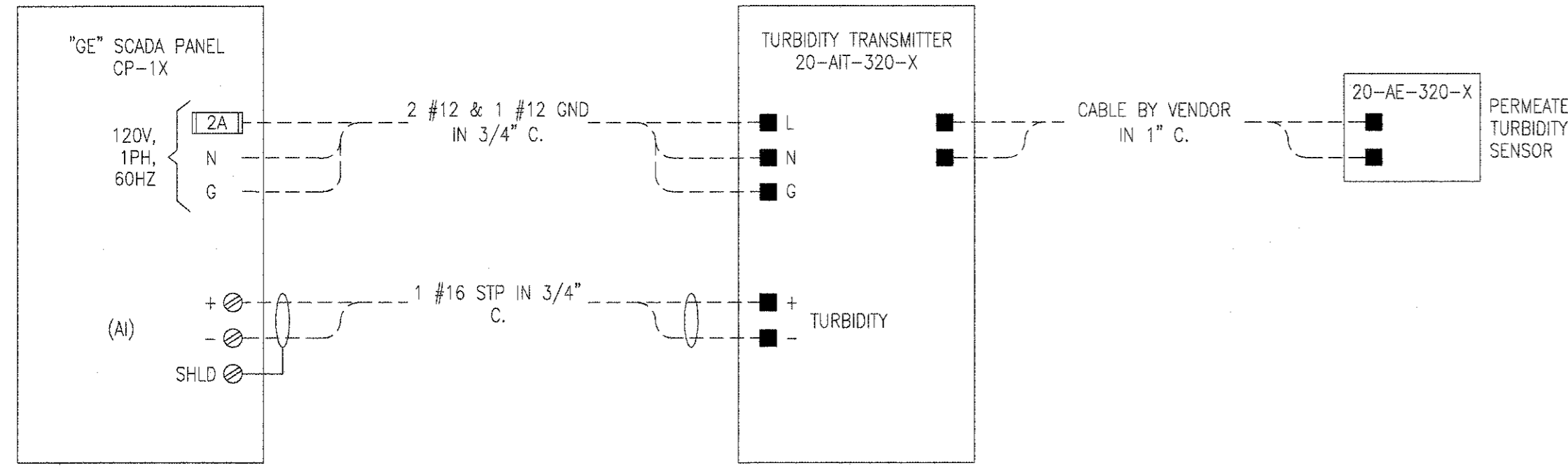
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 TEL. (770) 493-8885



PLOTS (AMP)

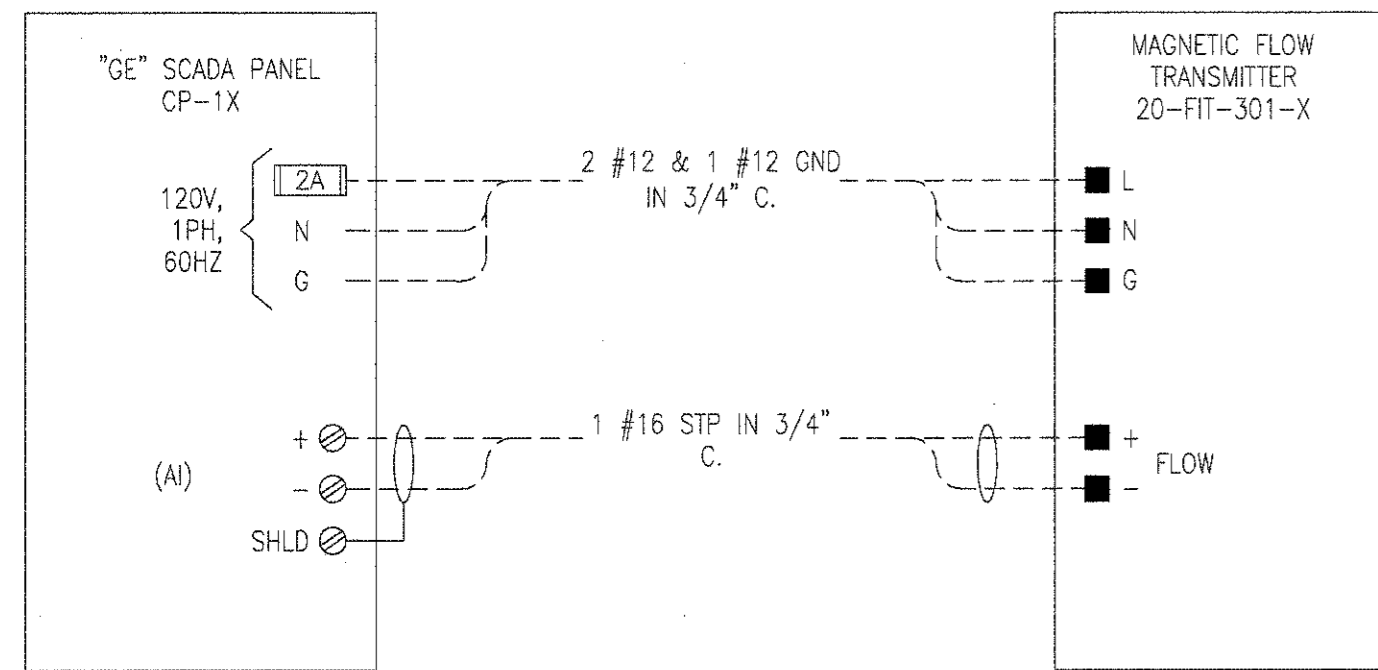
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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:
 1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	CP-1X	20-AE-320-X	20-AIT-320-X	DESCRIPTION
1	CP-11	20-AE-320-1	20-AIT-320-1	MEMBRANE TRAIN #1 PERMEATE TURBIDITY TRANSMITTER
2	CP-12	20-AE-320-2	20-AIT-320-2	MEMBRANE TRAIN #2 PERMEATE TURBIDITY TRANSMITTER
3	CP-13	20-AE-320-3	20-AIT-320-3	MEMBRANE TRAIN #3 PERMEATE TURBIDITY TRANSMITTER
4	CP-14	20-AE-320-4	20-AIT-320-4	MEMBRANE TRAIN #4 PERMEATE TURBIDITY TRANSMITTER

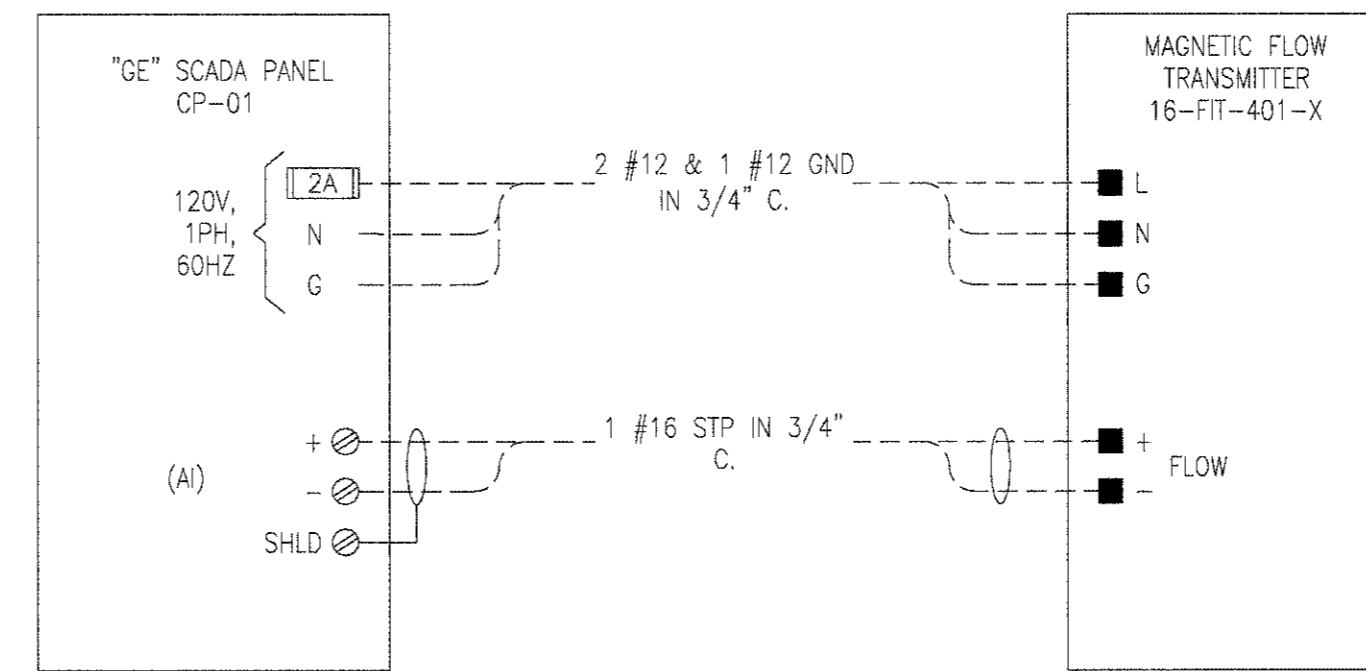
1 PERMEATE TURBIDITY TRANSMITTER SCHEMATIC



#	CP-1X	20-FIT-301-X	DESCRIPTION
1	CP-11	20-FIT-301-1	MEMBRANE TRAIN #1 MAGNETIC FLOW TRANSMITTER
2	CP-12	20-FIT-301-2	MEMBRANE TRAIN #2 MAGNETIC FLOW TRANSMITTER
3	CP-13	20-FIT-301-3	MEMBRANE TRAIN #3 MAGNETIC FLOW TRANSMITTER
4	CP-14	20-FIT-301-4	MEMBRANE TRAIN #4 MAGNETIC FLOW TRANSMITTER

2 PERMEATE MAGNETIC FLOW TRANSMITTER SCHEMATIC

3 MIXED LIQUOR FROM DE-OX ZONE DISSOLVED OXYGEN TRANSMITTER SCHEMATIC



#	16-FIT-401-X	DESCRIPTION
1	16-FIT-401-A	MIXED LIQUOR TO ANAEROBIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #1
2	16-FIT-401-B	MIXED LIQUOR TO ANAEROBIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #2
3	16-FIT-401-C	MIXED LIQUOR TO ANAEROBIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #3

4 MIXED LIQUOR TO ANAEROBIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER SCHEMATIC TYPICAL FOR 3

* MOUNTED ON VFD

LEGEND:

- - VFD POWER TERMINAL
- - VFD CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ◇ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION
 DATE

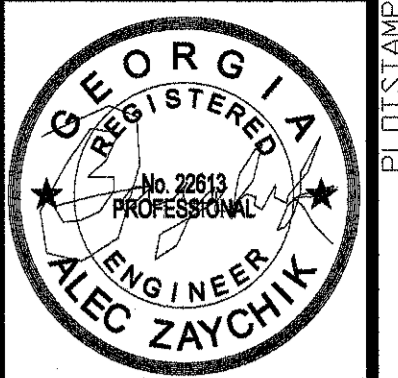
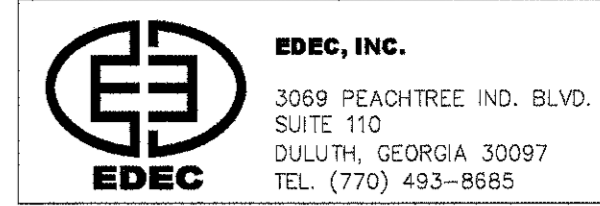
DGN: AZ
 DRWN: DV
 CHK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-415



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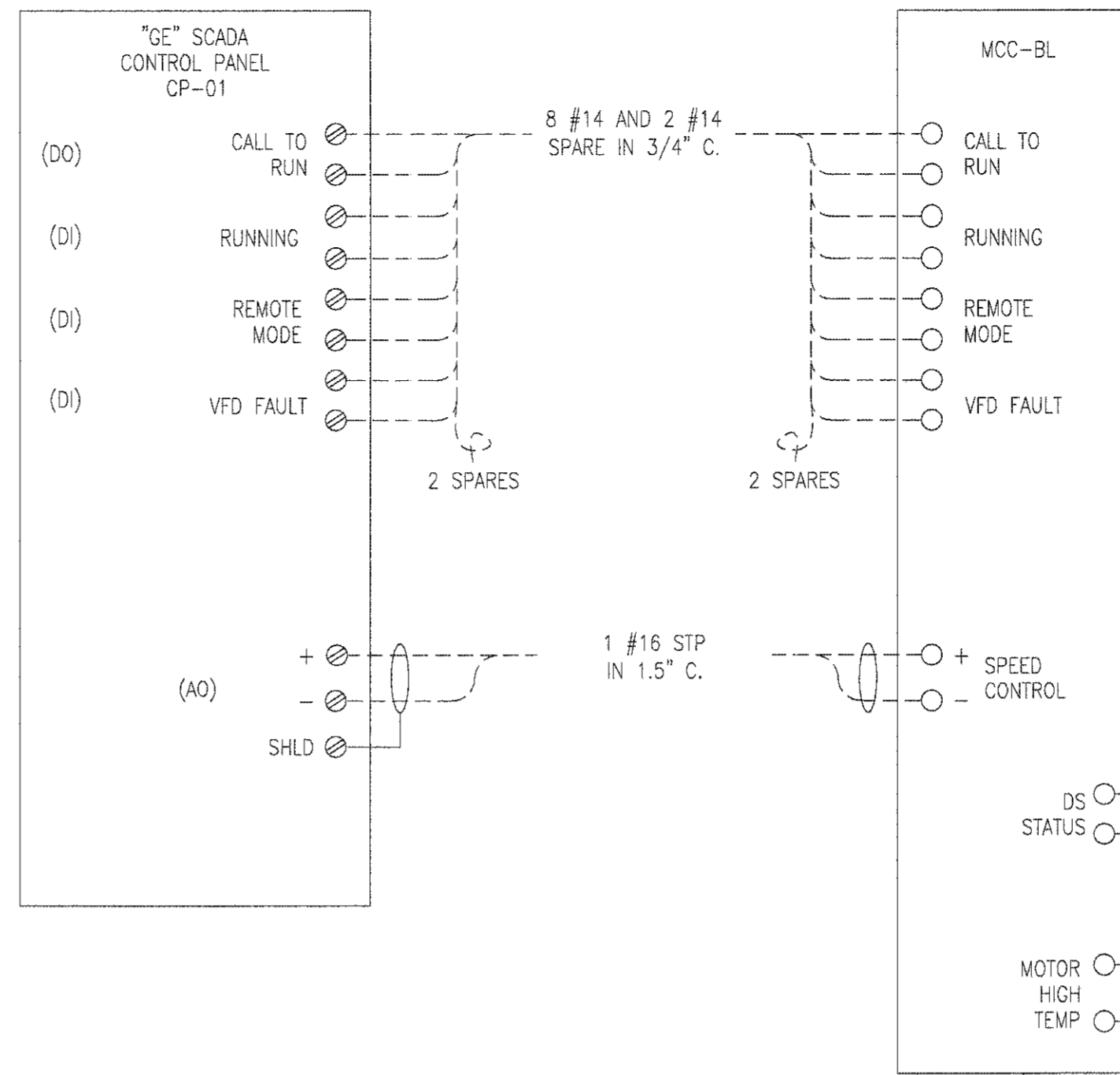
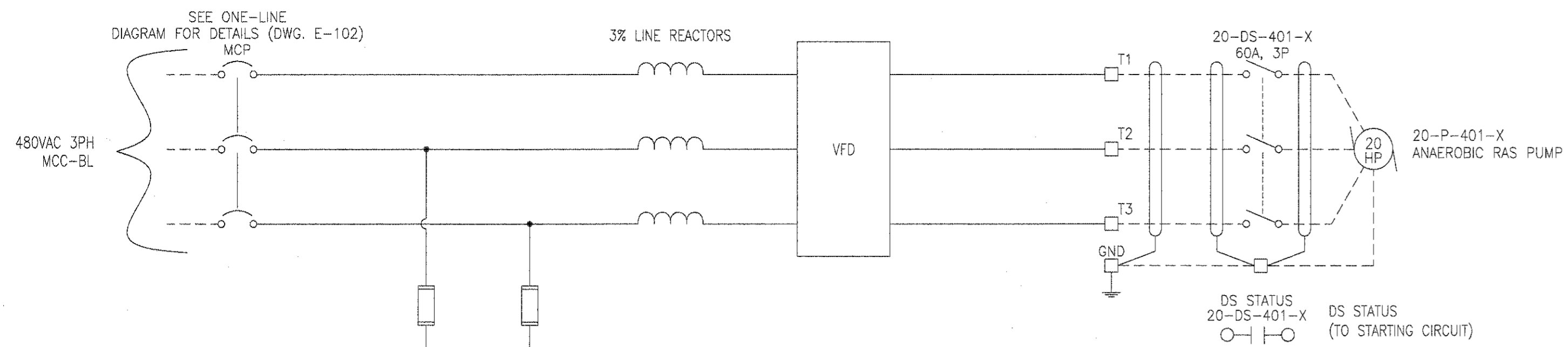
PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

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DRWN: DV
CHK: AZ

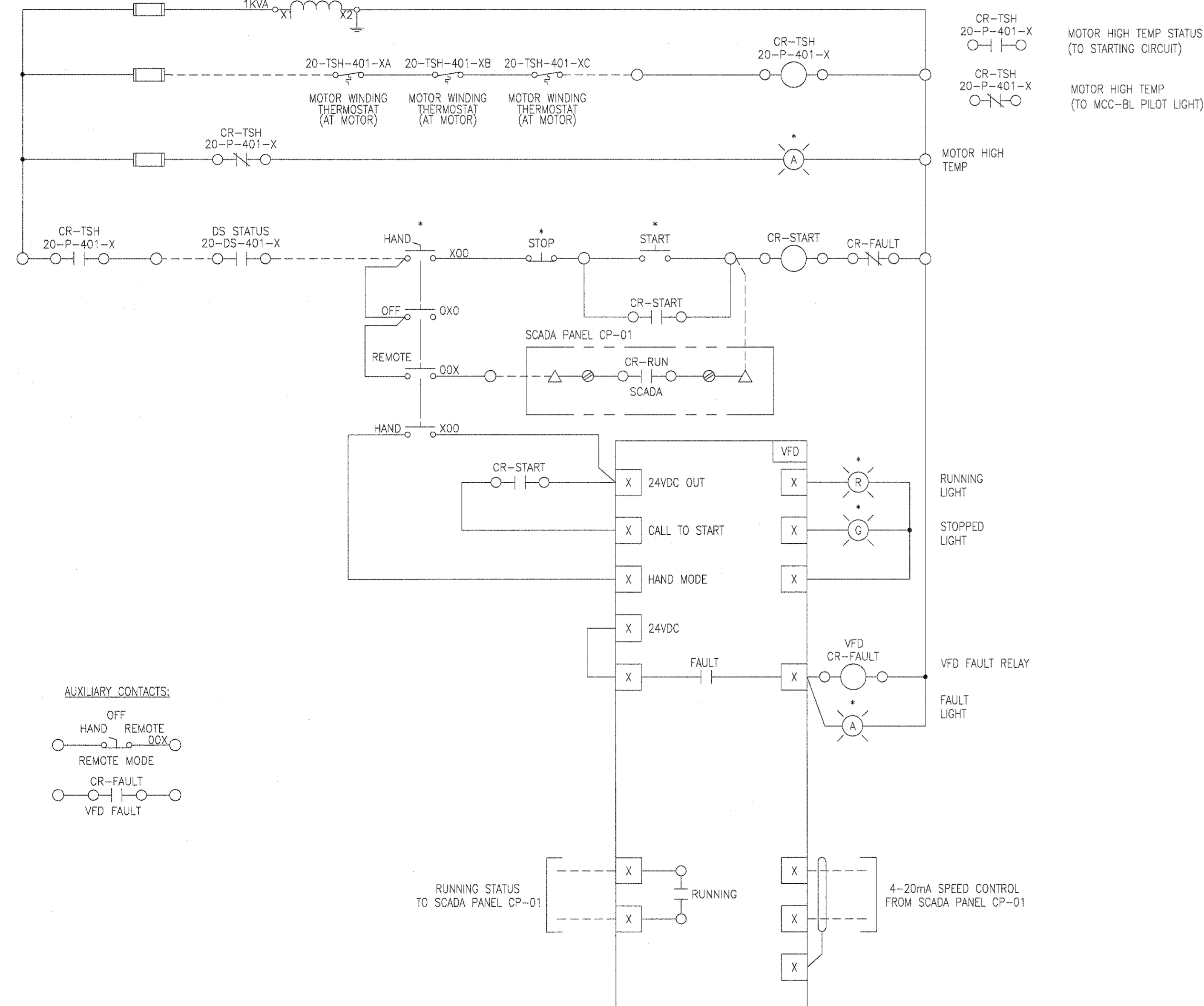
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-416



NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	20-DS-401-X	20-TSH-401-X
1	20-DS-401-A	20-TSH-401-A
2	20-DS-401-B	20-TSH-401-B
3	20-DS-401-C	20-TSH-401-C

2 ANAEROBIC RAS PUMP CONTROL RISER DIAGRAM
TYPICAL FOR 3

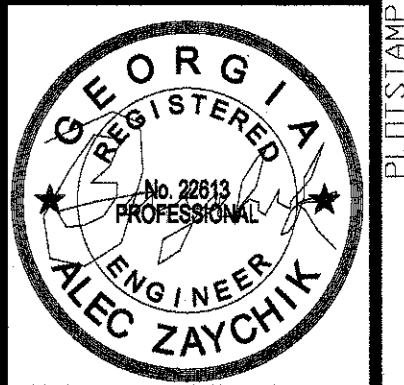
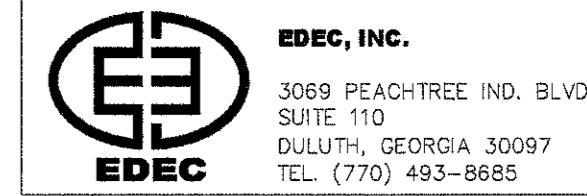
#	20-P-401-X	DESCRIPTION
1	20-P-401-A	ANAEROBIC RAS PUMP #1
2	20-P-401-B	ANAEROBIC RAS PUMP #2
3	20-P-401-C	ANAEROBIC RAS PUMP #3

1 ANAEROBIC RAS PUMP VFD SCHEMATIC
TYPICAL FOR 3

* MOUNTED ON MCC

LEGEND:

- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL



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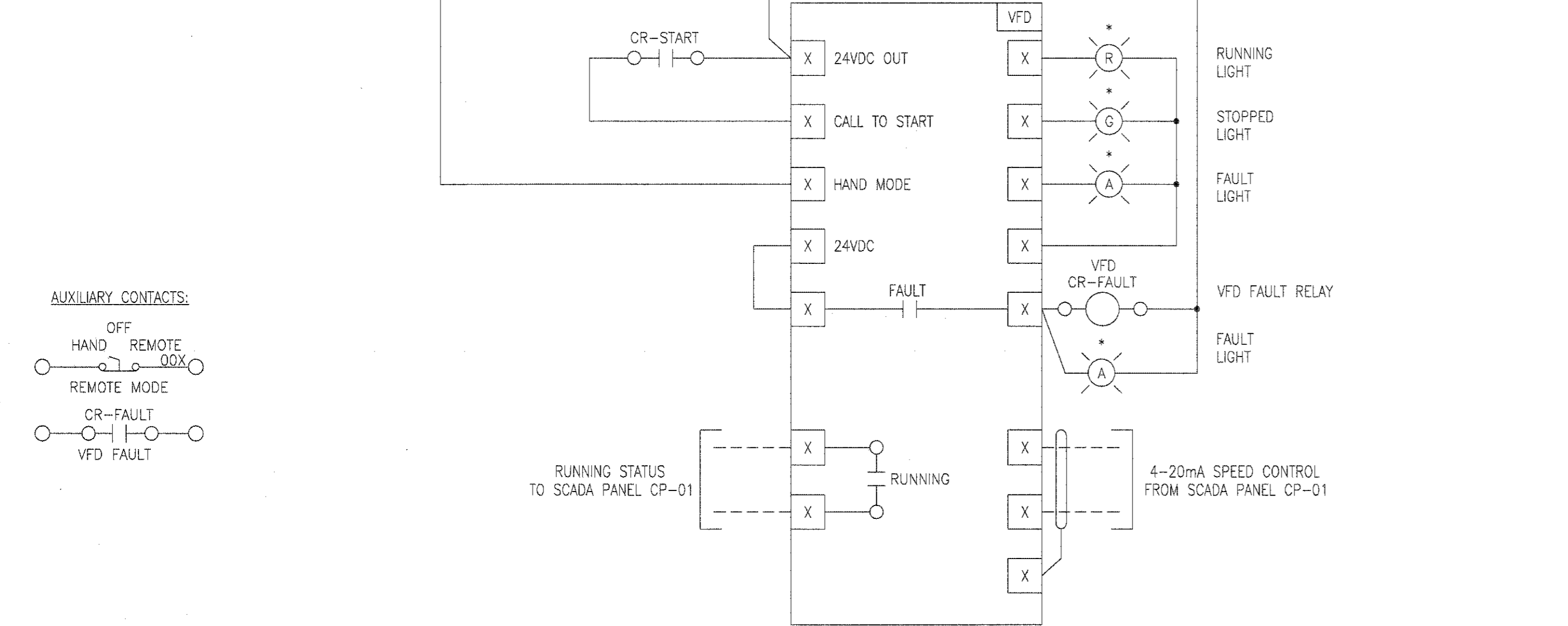
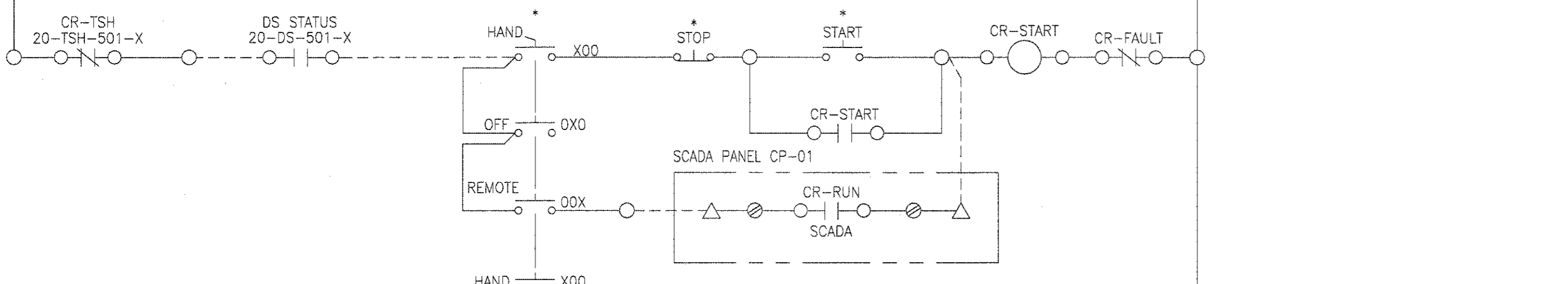
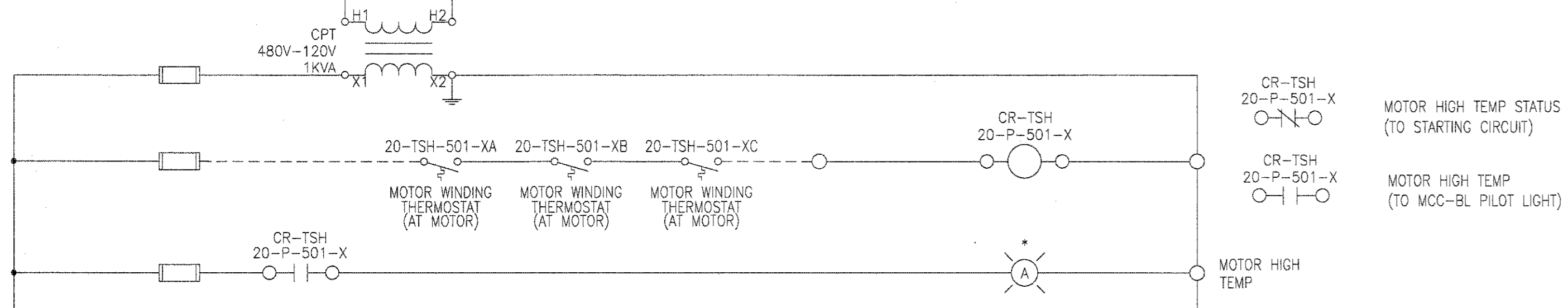
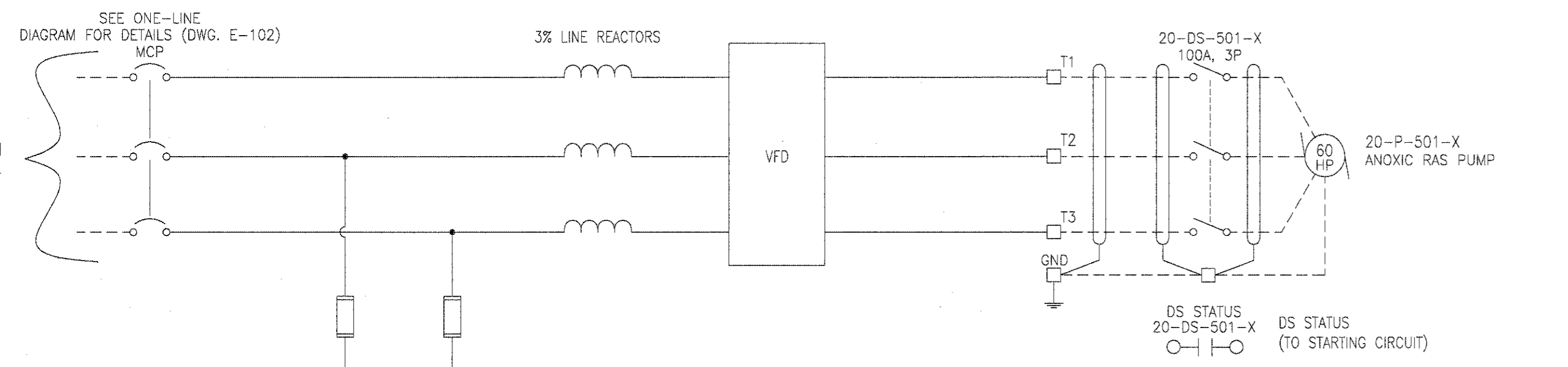
PROJECT NUMBER: ---
DATE: AUGUST 2016

REVISION	DATE

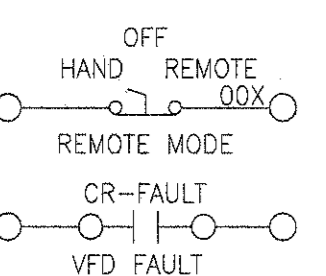
DSGN: AZ
DRWN: DV
CHK: AZ
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INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-417

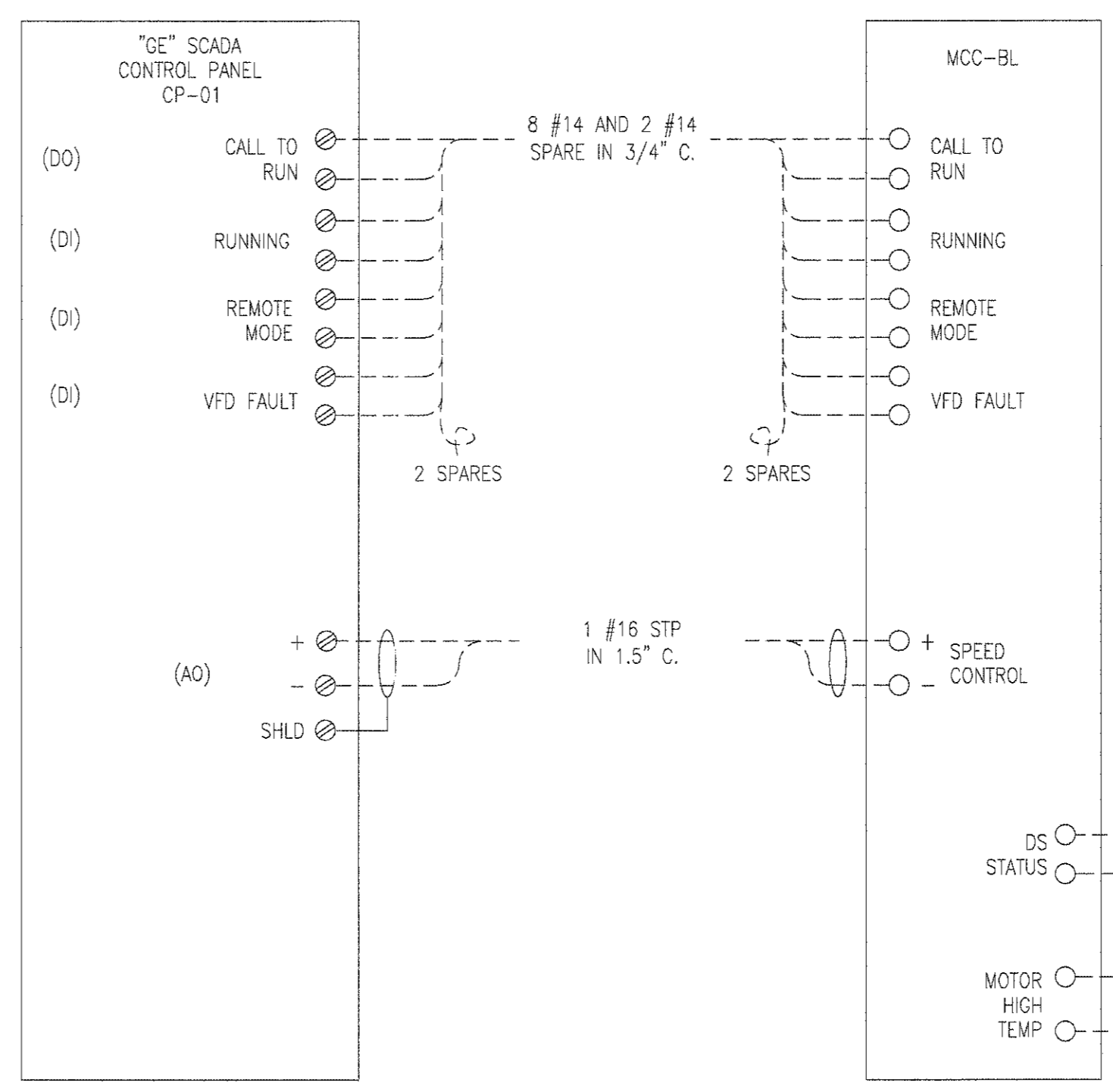


AUXILIARY CONTACTS:



#	20-P-501-X	DESCRIPTION
1	20-P-501-A	ANOXIC RAS PUMP #1
2	20-P-501-B	ANOXIC RAS PUMP #2
3	20-P-501-C	ANOXIC RAS PUMP #3

1 ANOXIC RAS PUMP VFD SCHEMATIC
TYPICAL FOR 3



#	20-DS-501-X	20-TSH-501-X
1	20-DS-501-A	20-TSH-501-A
2	20-DS-501-B	20-TSH-501-B
3	20-DS-501-C	20-TSH-501-C

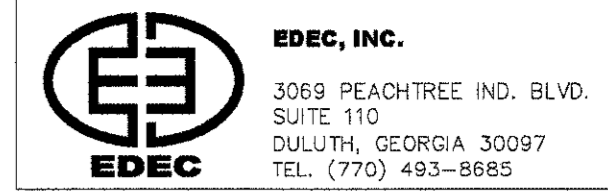
2 ANOXIC RAS PUMP CONTROL RISER DIAGRAM
TYPICAL FOR 3

NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.

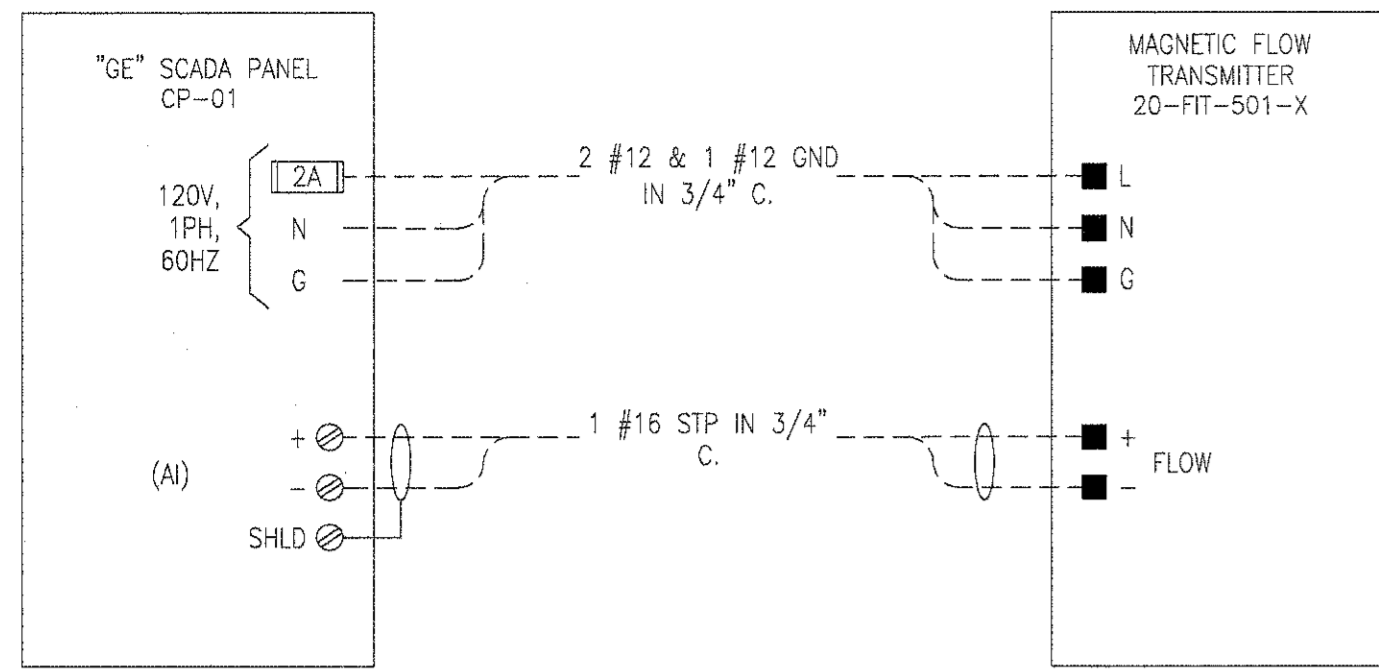
* MOUNTED ON MCC

LEGEND:

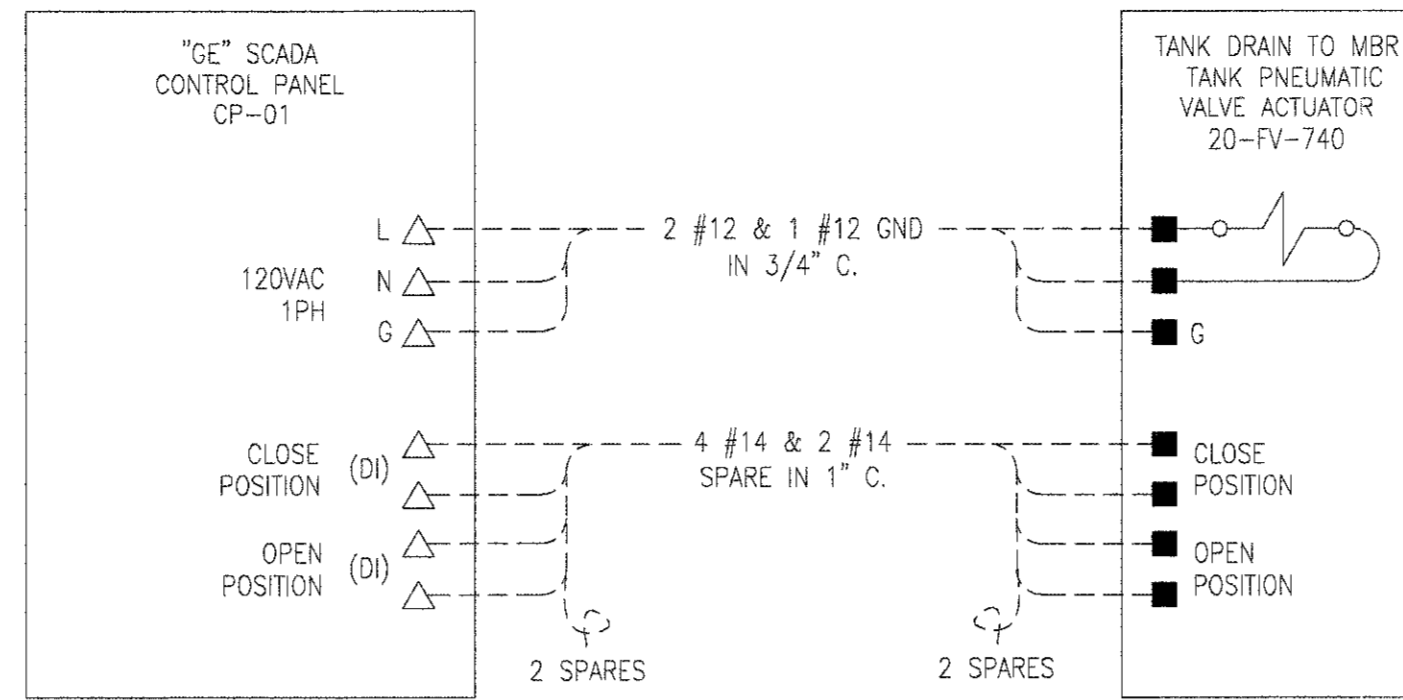
- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ◇ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL



NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



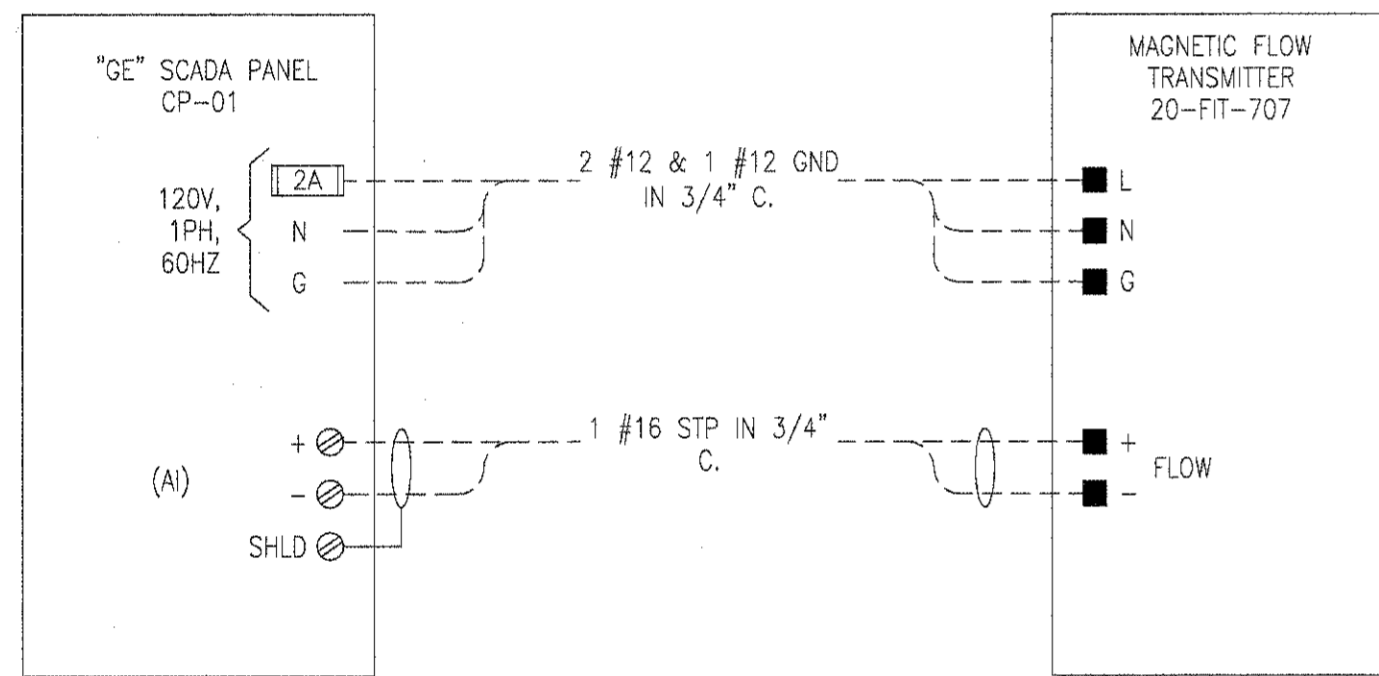
#	20-FIT-501-X	DESCRIPTION
1	20-FIT-501-A	MIXED LIQUOR TO ANOXIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #1
2	20-FIT-501-B	MIXED LIQUOR TO ANOXIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #2
3	20-FIT-501-C	MIXED LIQUOR TO ANOXIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER #3



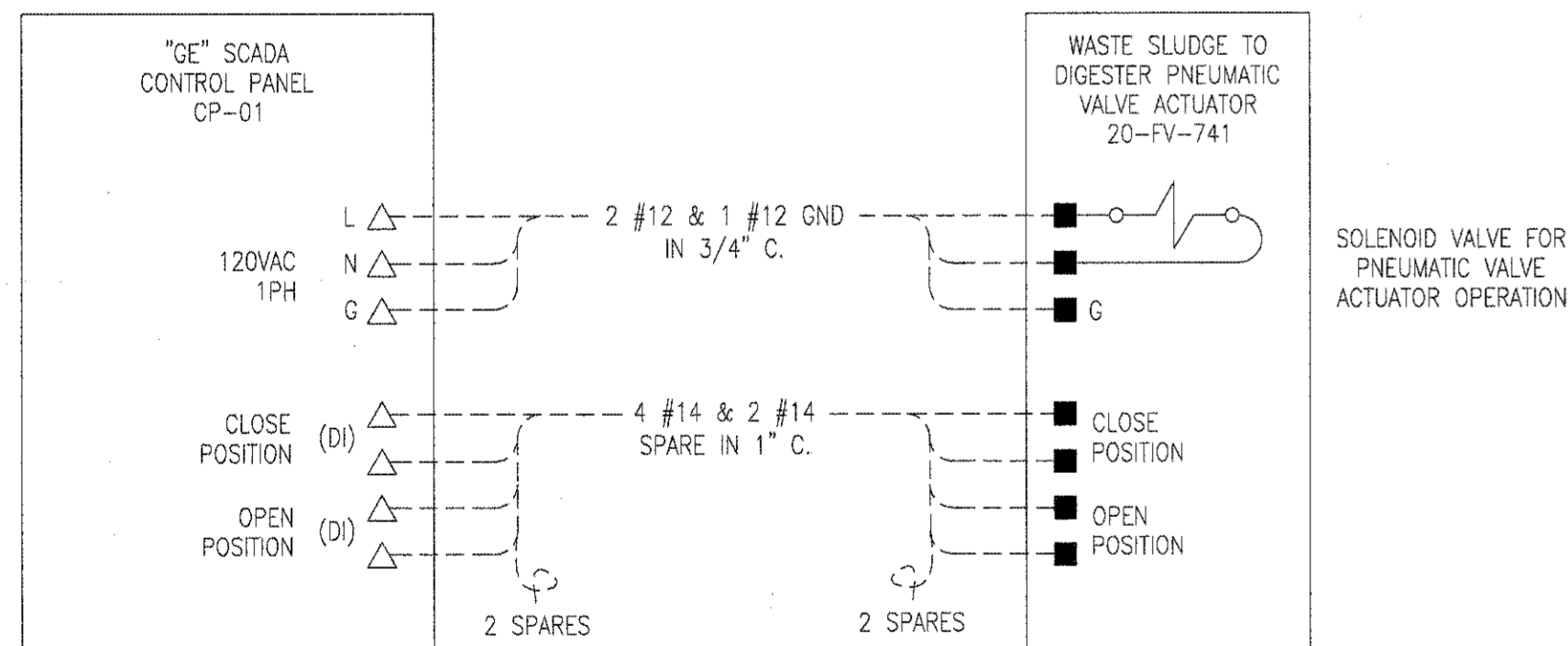
SOLENOID VALVE FOR PNEUMATIC VALVE ACTUATOR OPERATION

4 TANK DRAIN TO MEMBRANE TANK PNEUMATIC VALVE ACTUATOR SCHEMATIC

1 MIXED LIQUOR TO ANOXIC SPLITTER BOX MAGNETIC FLOW TRANSMITTER SCHEMATIC TYPICAL FOR 3



2 WASTE SLUDGE TO DIGESTER MAGNETIC FLOW TRANSMITTER SCHEMATIC



SOLENOID VALVE FOR PNEUMATIC VALVE ACTUATOR OPERATION

3 WASTE SLUDGE TO DIGESTER PNEUMATIC VALVE ACTUATOR SCHEMATIC

- * MOUNTED ON MCC
- LEGEND:
- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DSGN: AZ
DRWN: DV
CHK: AZ
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-418

PLOT STAMP

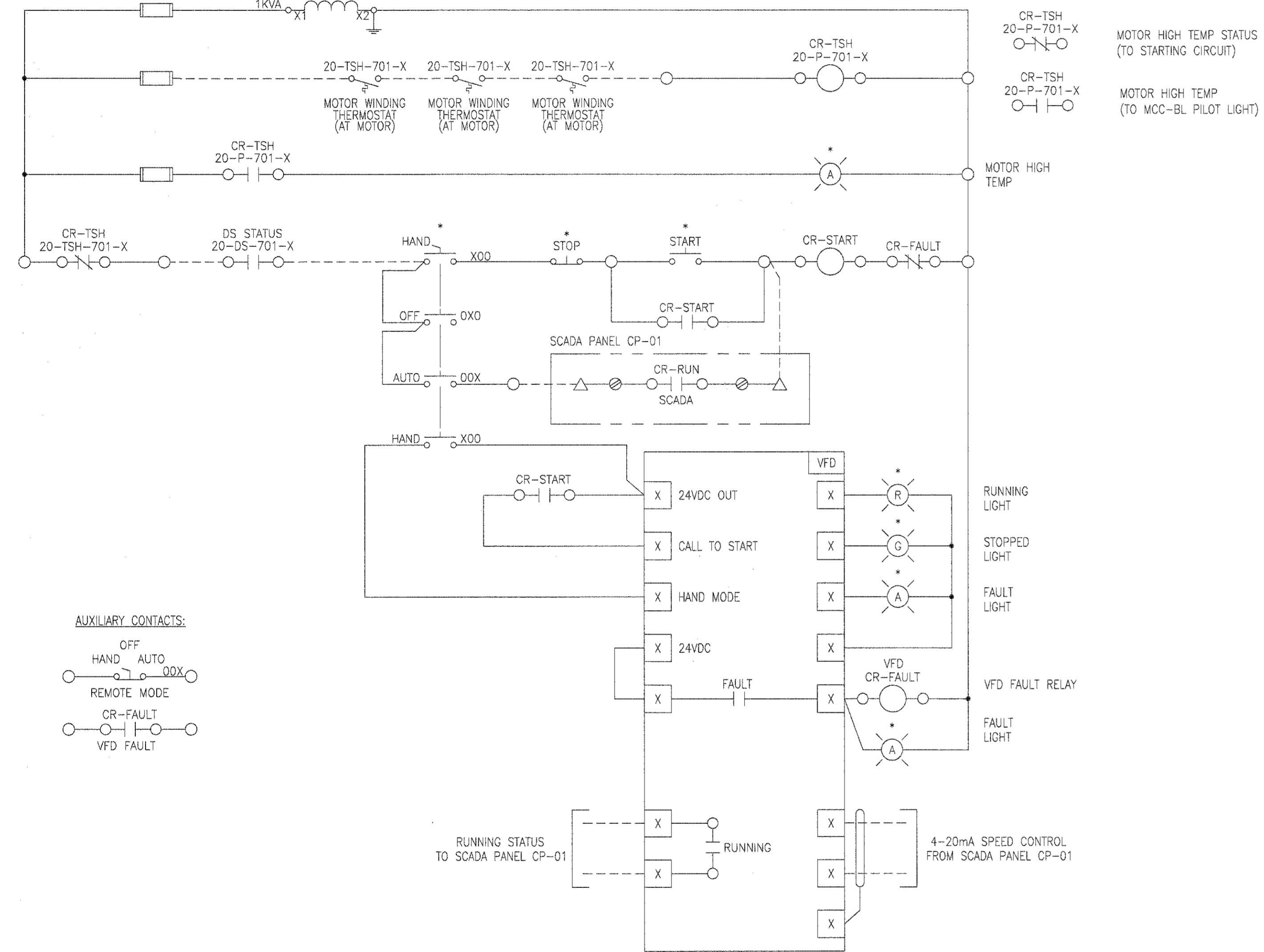
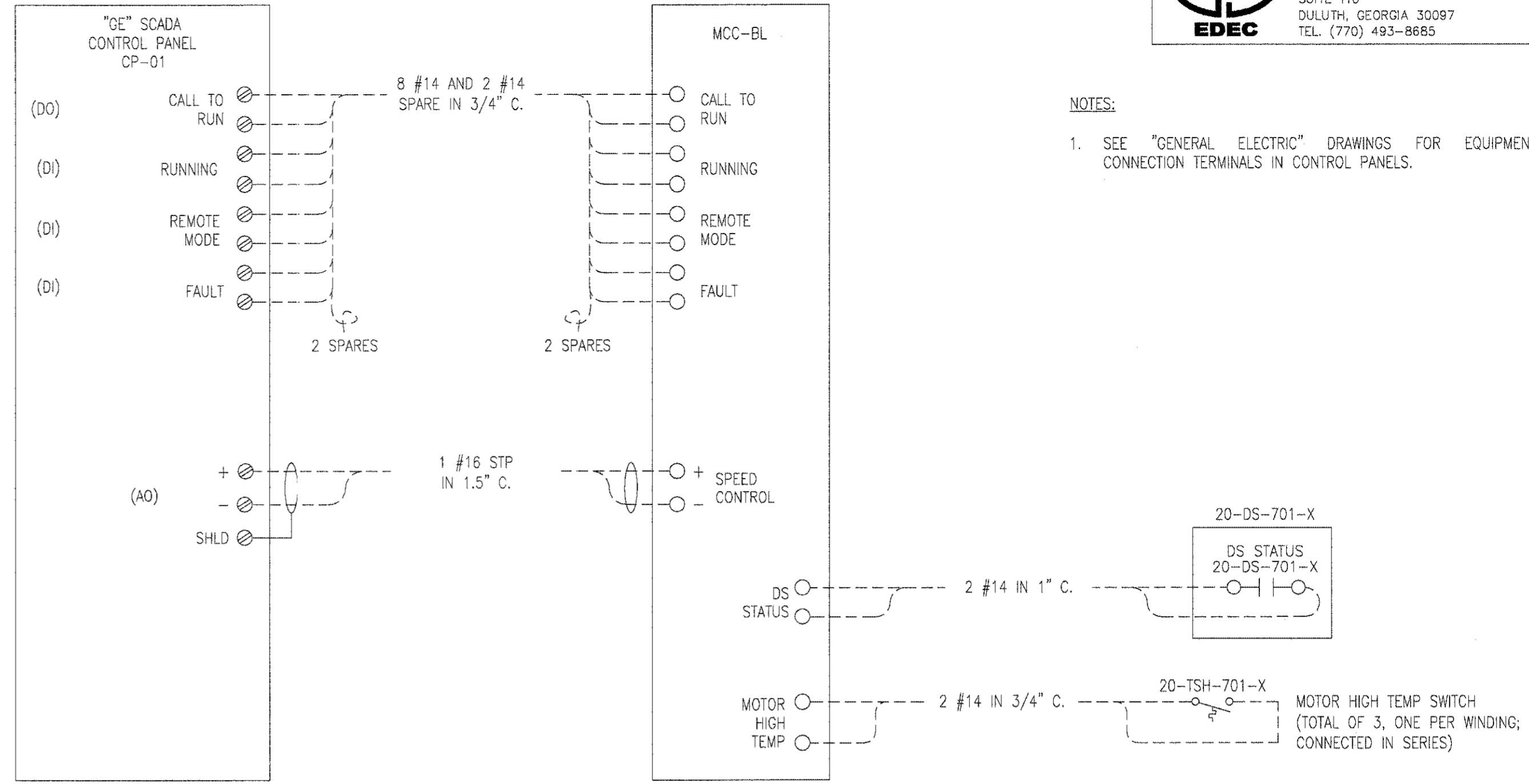
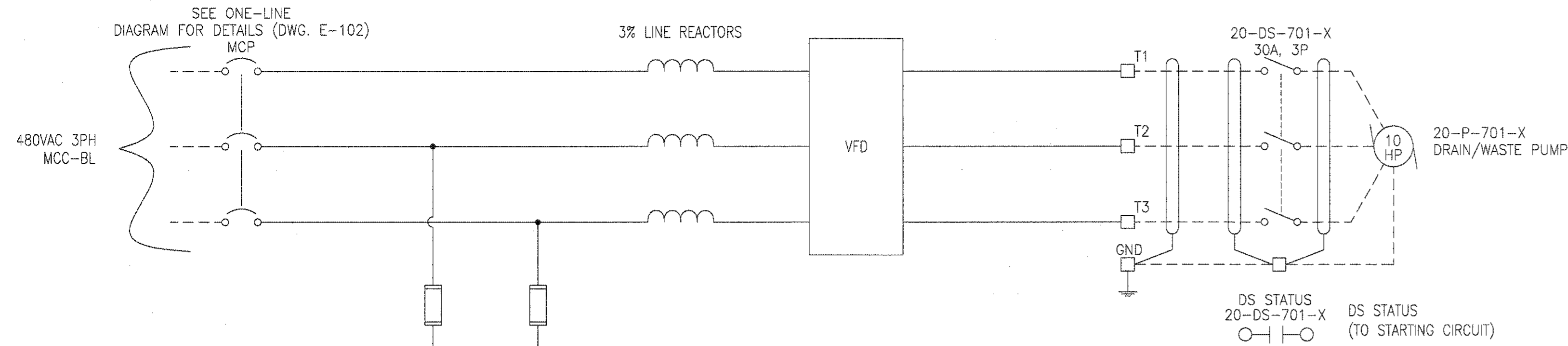


EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8665



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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

NOTES:
 1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	20-DS-701-X	20-TSH-701-X
1	20-DS-701-A	20-TSH-701-A
2	20-DS-701-B	20-TSH-701-B

2 DRAIN/WASTE PUMP CONTROL RISER DIAGRAM
 TYPICAL FOR 2

#	20-P-701-X	DESCRIPTION
1	20-P-701-A	DRAIN/WASTE PUMP #1
2	20-P-701-B	DRAIN/WASTE PUMP #2

1 DRAIN/WASTE PUMP VFD SCHEMATIC
 TYPICAL FOR 2

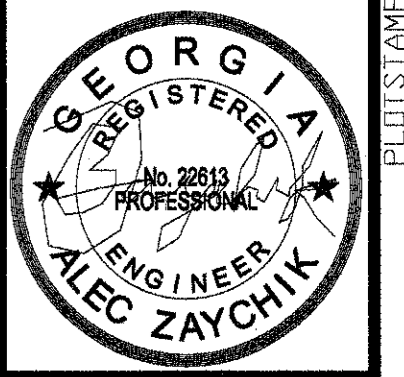
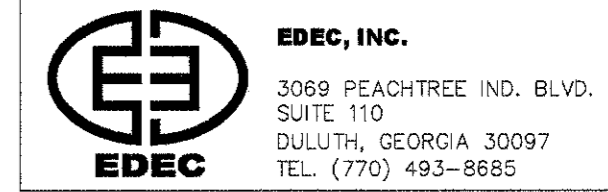
- * MOUNTED ON MCC
- LEGEND:
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DSGN: AZ
 DRWN: DV
 CHCK: AZ

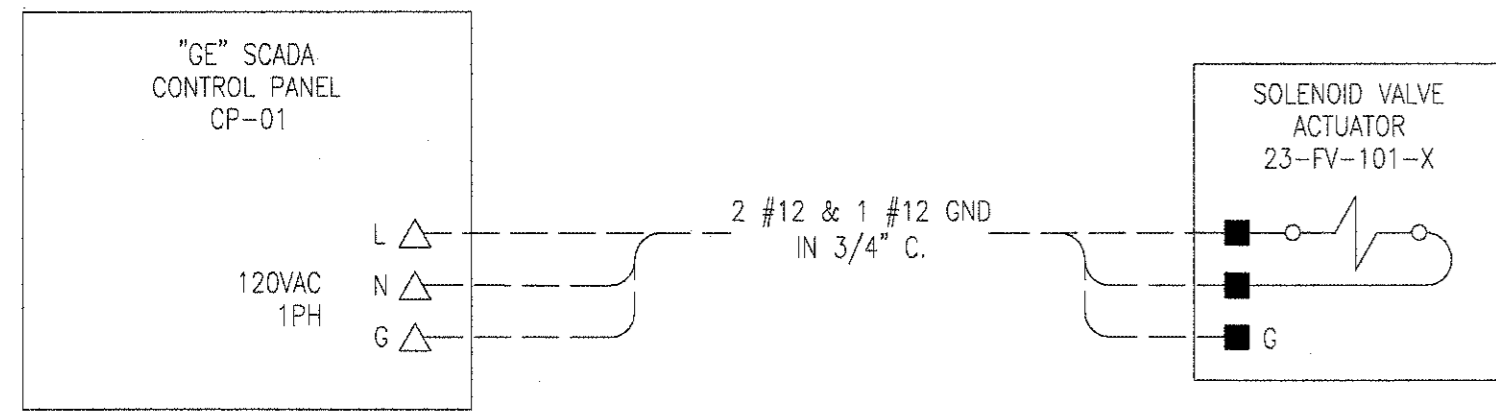
BAR BEYOND THIS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS



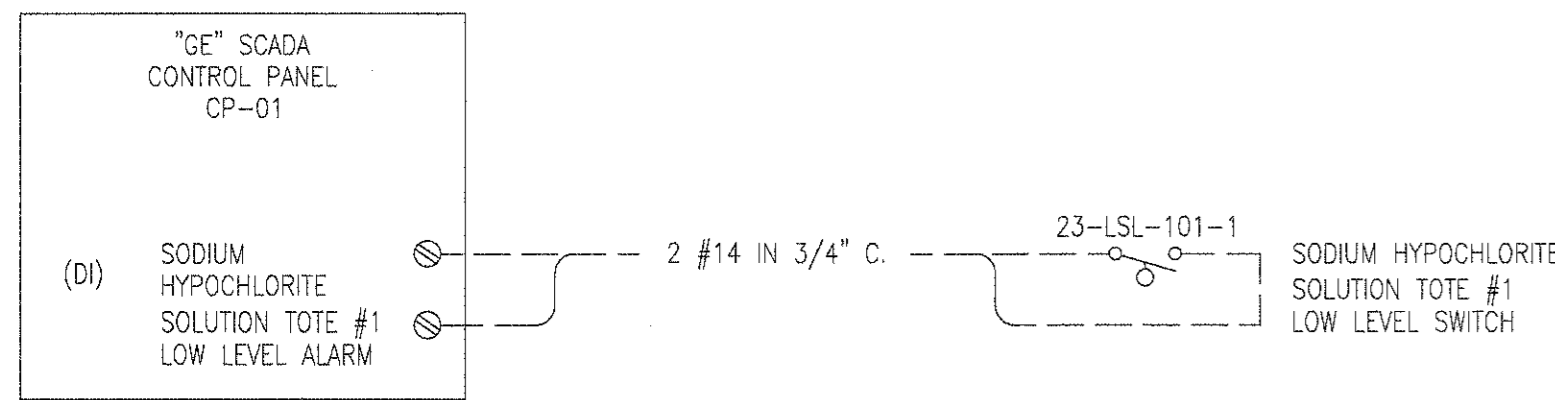
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.

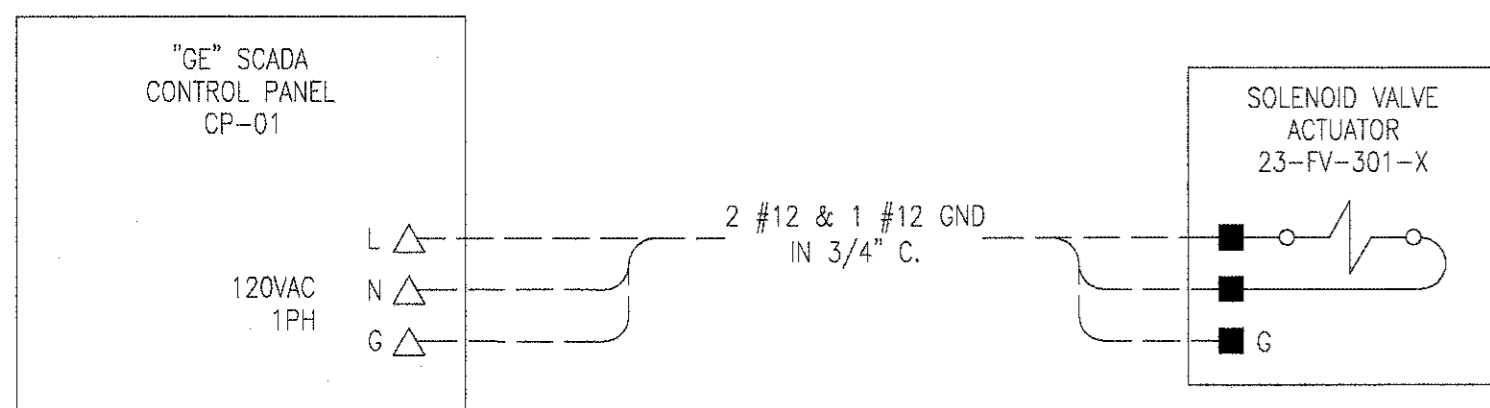


#	23-FV-101-X	DESCRIPTION
1	23-FV-101-1	COMPRESSER AIR TO SODIUM HYPOCHLORITE PUMP #1 SOLENOID VALVE ACTUATOR
2	23-FV-101-2	COMPRESSER AIR TO SODIUM HYPOCHLORITE PUMP #2 SOLENOID VALVE ACTUATOR

1 COMPRESSED AIR TO SODIUM HYPOCHLORITE PUMP SOLENOID VALVE ACTUATOR SCHEMATIC TYPICAL FOR 2

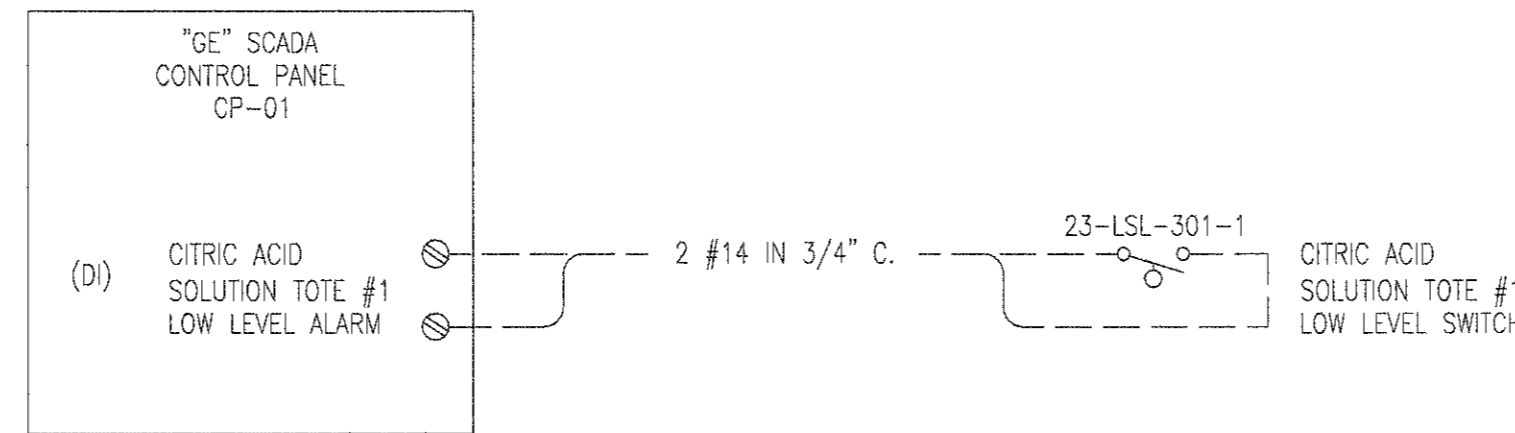


2 SODIUM HYPOCHLORITE SOLUTION TOTE FLOAT SWITCH SCHEMATIC

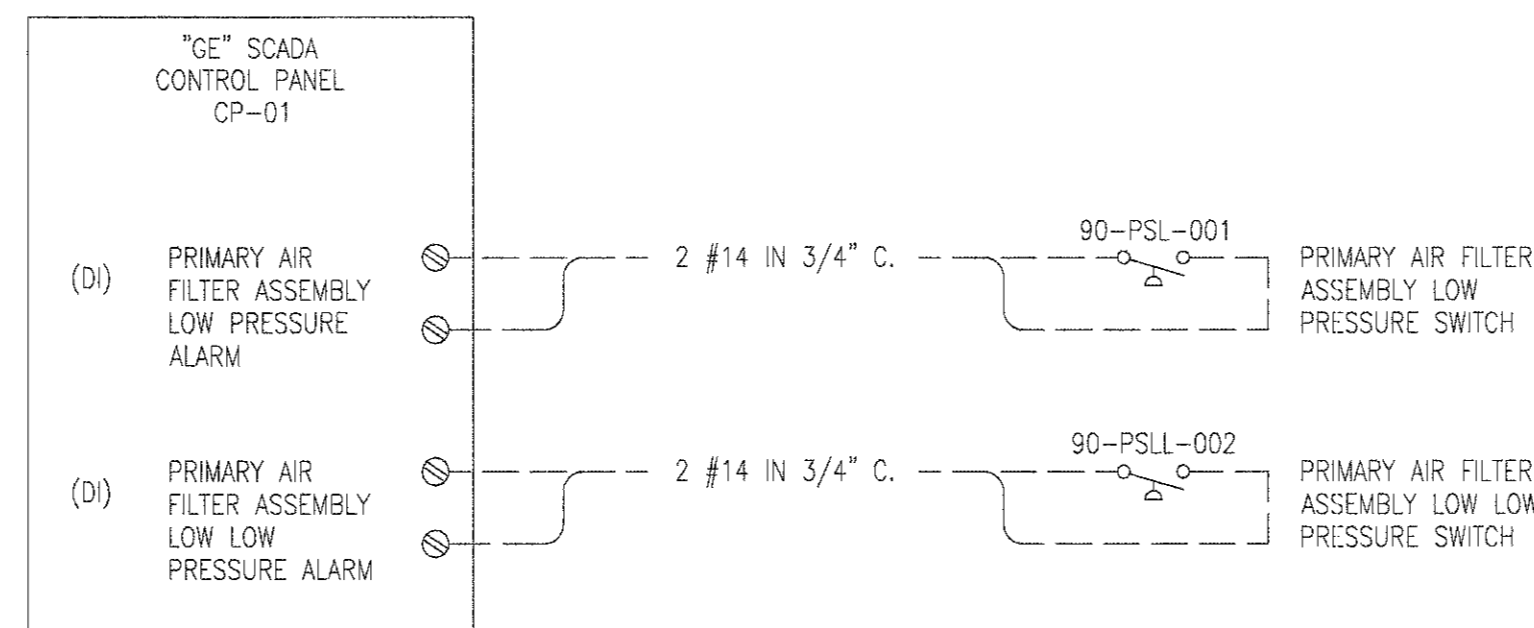


#	23-FV-301-X	DESCRIPTION
1	23-FV-301-1	COMPRESSER AIR TO CITRIC ACID PUMP #1 SOLENOID VALVE ACTUATOR
2	23-FV-301-2	COMPRESSER AIR TO CITRIC ACID PUMP #2 SOLENOID VALVE ACTUATOR

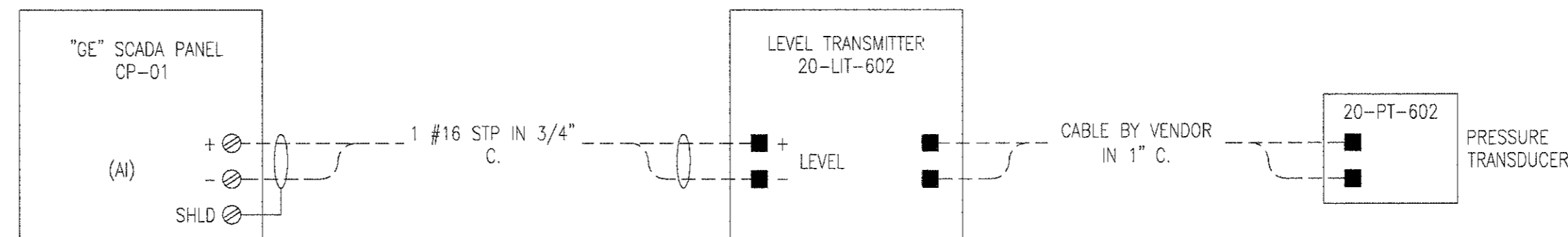
3 COMPRESSED AIR TO CITRIC ACID PUMP SOLENOID VALVE ACTUATOR SCHEMATIC TYPICAL FOR 2



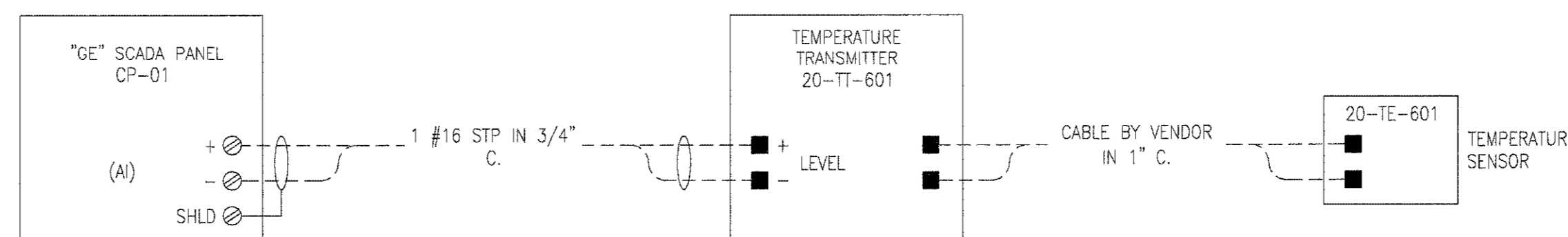
4 CITRIC ACID SOLUTION TOTE FLOAT SWITCH SCHEMATIC



4 PRIMARY AIR FILTER PRESSURE SWITCHES SCHEMATIC



5 PERMEATE LEVEL TRANSMITTER SCHEMATIC



6 PERMEATE TEMPERATURE TRANSMITTER SCHEMATIC

* MOUNTED ON VFD

LEGEND:

- - VFD POWER TERMINAL
- - VFD CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION DATE

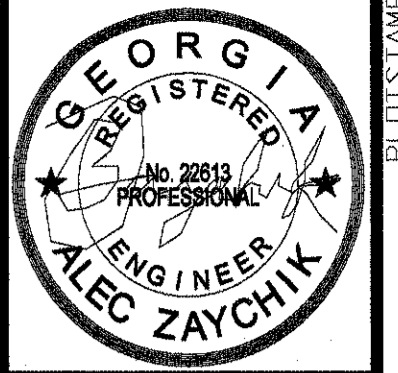
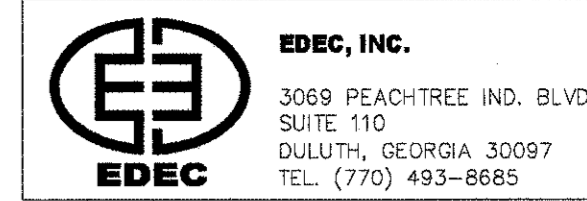
DSGN: AZ
DRWN: DV
CHK: AZ

FOR REVISIONS 4" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

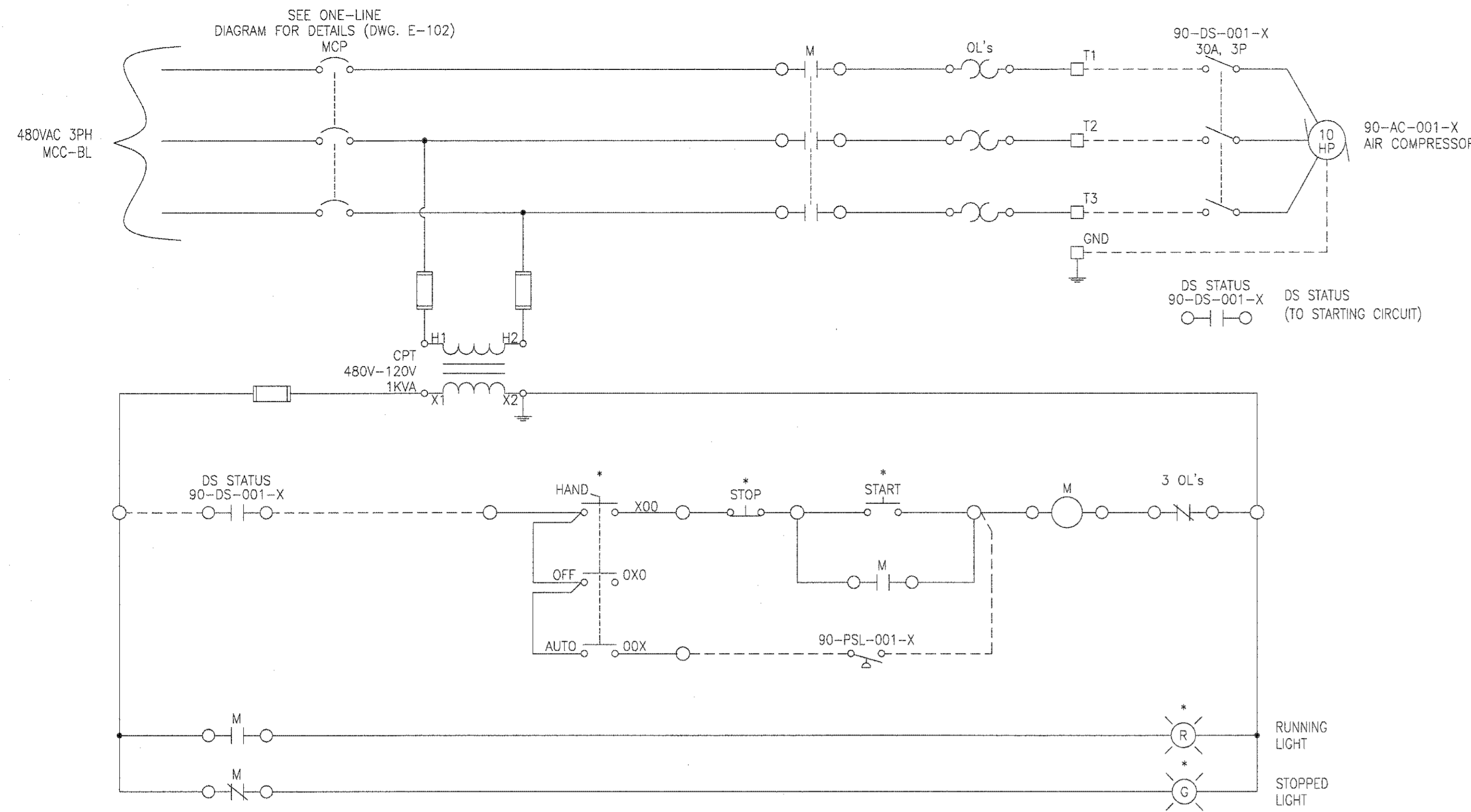
PLANT
SCHEMATIC WIRING DIAGRAMS

SHEET NO.
E-420



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MARIETTA, GA 30062
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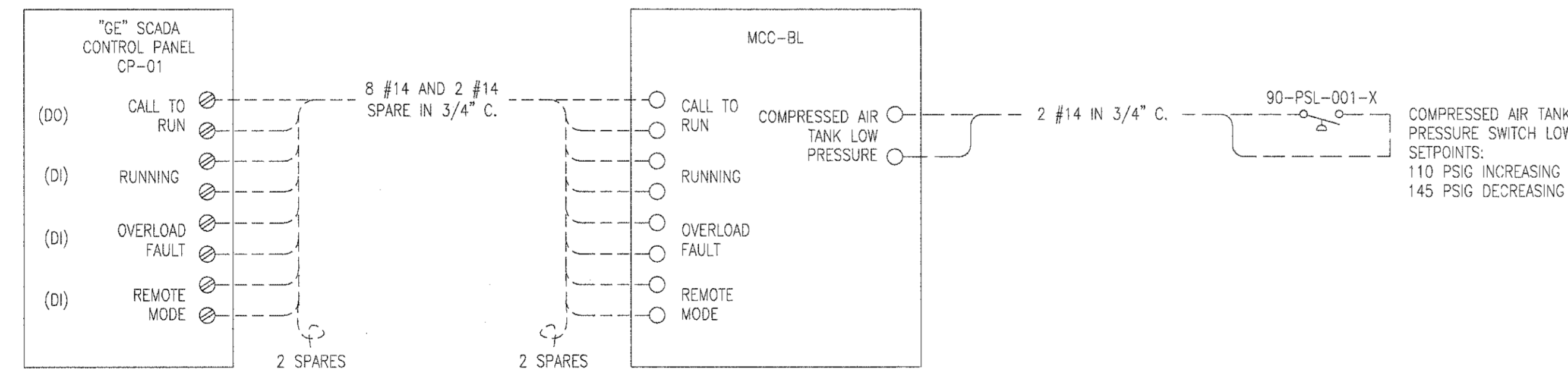
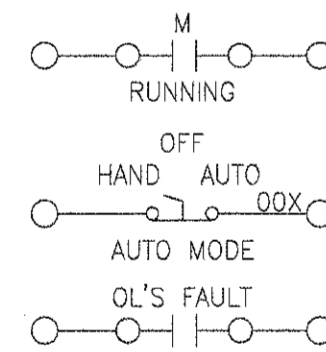
NOTES:
1. SEE "GENERAL ELECTRIC" DRAWINGS FOR EQUIPMENT CONNECTION TERMINALS IN CONTROL PANELS.



#	90-AC-001-X	90-PSL-001-X	DESCRIPTION
1	90-AC-001-A	90-PSL-001-A	AIR COMPRESSOR #1
2	90-AC-001-B	90-PSL-001-B	AIR COMPRESSOR #2

1 AIR COMPRESSOR MOTOR STARTER SCHEMATIC
TYPICAL FOR 2

AUXILIARY CONTACTS:



#	90-PSL-001-X
1	90-PSL-001-A
2	90-PSL-001-B

2 AIR COMPRESSOR CONTROL RISER DIAGRAM
TYPICAL FOR 2

* MOUNTED ON MCC

LEGEND:

- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

PROJECT NUMBER: -----
DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ
THIS DRAWING IS LONG SCALE
EXCEPT WHERE NOTED
LONG ON THIS SHEET, ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
PLANT
SCHEMATIC WIRING DIAGRAMS

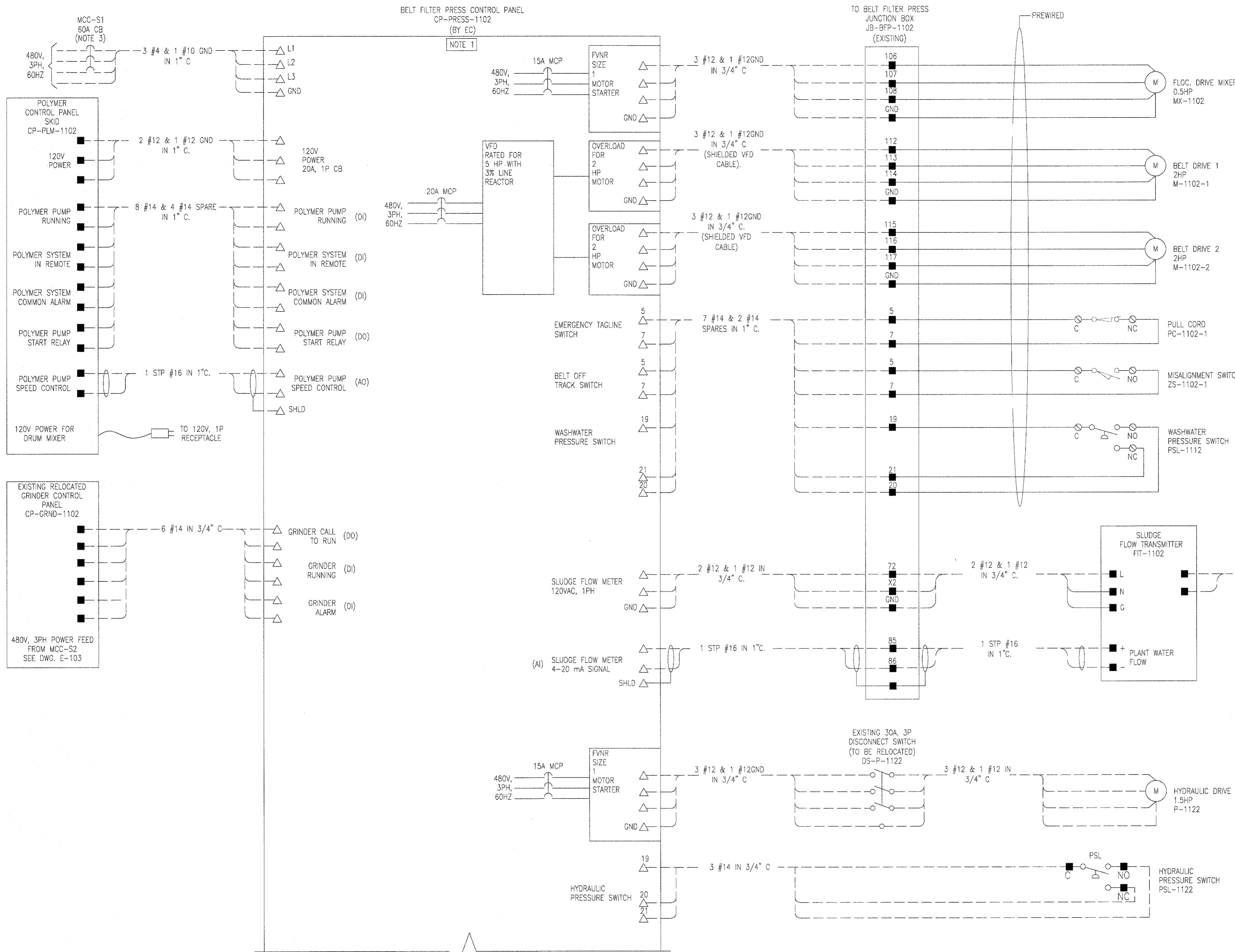
SHEET NO.
E-421



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 3089 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8665



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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30067
 (770) 499-0001



NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL NEW BELT FILTER PRESS CONTROL PANEL. THE PANEL SHALL CONTROL AND MONITOR BELT FILTER SYSTEM COMPONENTS AND SHALL INCLUDE AS A MINIMUM THE FOLLOWING:
 - NEMA 4X STAINLESS STEEL ENCLOSURE
 - DOOR INTERLOCKED MAIN 60A, 3P CIRCUIT BREAKER
 - CIRCUIT BREAKERS, MOTOR CIRCUIT PROTECTORS, MOTOR STARTERS AND VFDs AS SHOWN AND REQUIRED FOR PROPER SYSTEM OPERATION
 - ALLEN-BRADLEY COMPACTLOGIX PLC WITH I/O MODULES TO ACCOMMODATE ALL THE REQUIRED INPUTS AND OUTPUTS
 - 24 VDC POWER SUPPLY
 - 3 KVA 480/120V CONTROL POWER TRANSFORMER
 - CONTACTS AND SIGNALS FOR INTERFACE WITH THE PLANT SCADA SYSTEM
 - RELAYS, FUSES, TERMINALS, COOLING FANS, ETC.
 - HAND-OFF-AUTO SWITCHES FOR WASHWATER PUMP, BELT DRIVE, HYDRAULIC DRIVE, FLOC DRIVE, CONVEYOR, SLUDGE PUMP AND POLYMER SYSTEM.
 - OPEN-AUTO-CLOSE SWITCH FOR WASHWATER VALVE
 - SPEED POTS FOR BELT DRIVES AND SLUDGE PUMP
 - BELT SPEED AND SLUDGE FLOW INDICATORS
 - AUTO START AND AUTO STOP PUSHBUTTONS
 - EMERGENCY STOP, ALARM SILENCE AND ALARM RESET PUSHBUTTONS
 - RED BEACON ALARM LIGHT MOUNTED ON THE TOP OF PANEL ENCLOSURE
 - ALARM HORN
 - RUNNING AND STOP INDICATING LIGHTS FOR HYDRAULIC DRIVE, WASHWATER PUMP, BELT DRIVE, FLOC DRIVE, CONVEYOR, SLUDGE PUMP, AND POLYMER SYSTEM.
 - OPEN AND CLOSED INDICATING LIGHTS FOR WASHWATER VALVE.
 - INDICATING LIGHTS FOR CONTROL POWER ON, PRESS READY, PREWET ON AND POST WASH ON.
 - ALARM LIGHTS FOR BELT PRESS E-STOP ACTIVATED, LOW HYDRAULIC PRESSURE, LOW WASH PRESSURE, BELT OFF TRACK, CONVEYOR E-STOP AND CONVEYOR ZERO SPEED.
 - CONTACTS AND SIGNALS AS SHOWN FOR INTERFACE WITH THE SCADA PANEL "LCP-BL".
- THE PLC SHALL BE PREPROGRAMMED FOR PROPER BELT FILTER PRESS AND ALL AUXILIARY COMPONENTS OPERATION.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER, CONTROL AND SIGNAL CABLES FOR A COMPLETE BELT FILTER PRESS SYSTEM AS REQUIRED BY APPROVED SHOP DRAWINGS. AND TO ENSURE SAFE AND RELIABLE SYSTEM OPERATION.
- CONTRACTOR SHALL PROVIDE AND INSTALL A 60A, 3P CIRCUIT BREAKER IN THE MCC-S1 FOR A POWER FEEDER TO BELT FILTER PRESS #2 CONTROL PANEL. THE BREAKER SHALL BE OF THE SAME MANUFACTURER AND SHALL HAVE THE SAME AIC RATING AS THE EXISTING MCC-S1 BREAKERS.
- CONTRACTOR SHALL VERIFY ALL THE EXISTING COMPONENTS WIRING AND PROVIDE CABLES AND CONDUITS ACCORDINGLY AS REQUIRED.

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DSGN: AZ
 DRWN: DV
 CHCK: AZ

FOR BELT PRESS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS

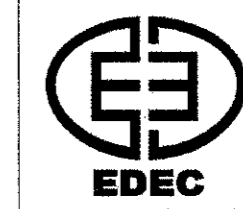
SHEET NO.
 E-422

- * MOUNTED ON MCC
- LEGEND:**
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

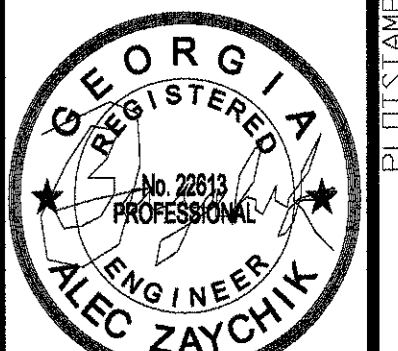
1 BELT FILTER PRESS CONTROL PANEL SCHEMATIC
 CONTINUED ON E-423

CONTINUED ON E-423

PLISTAMP

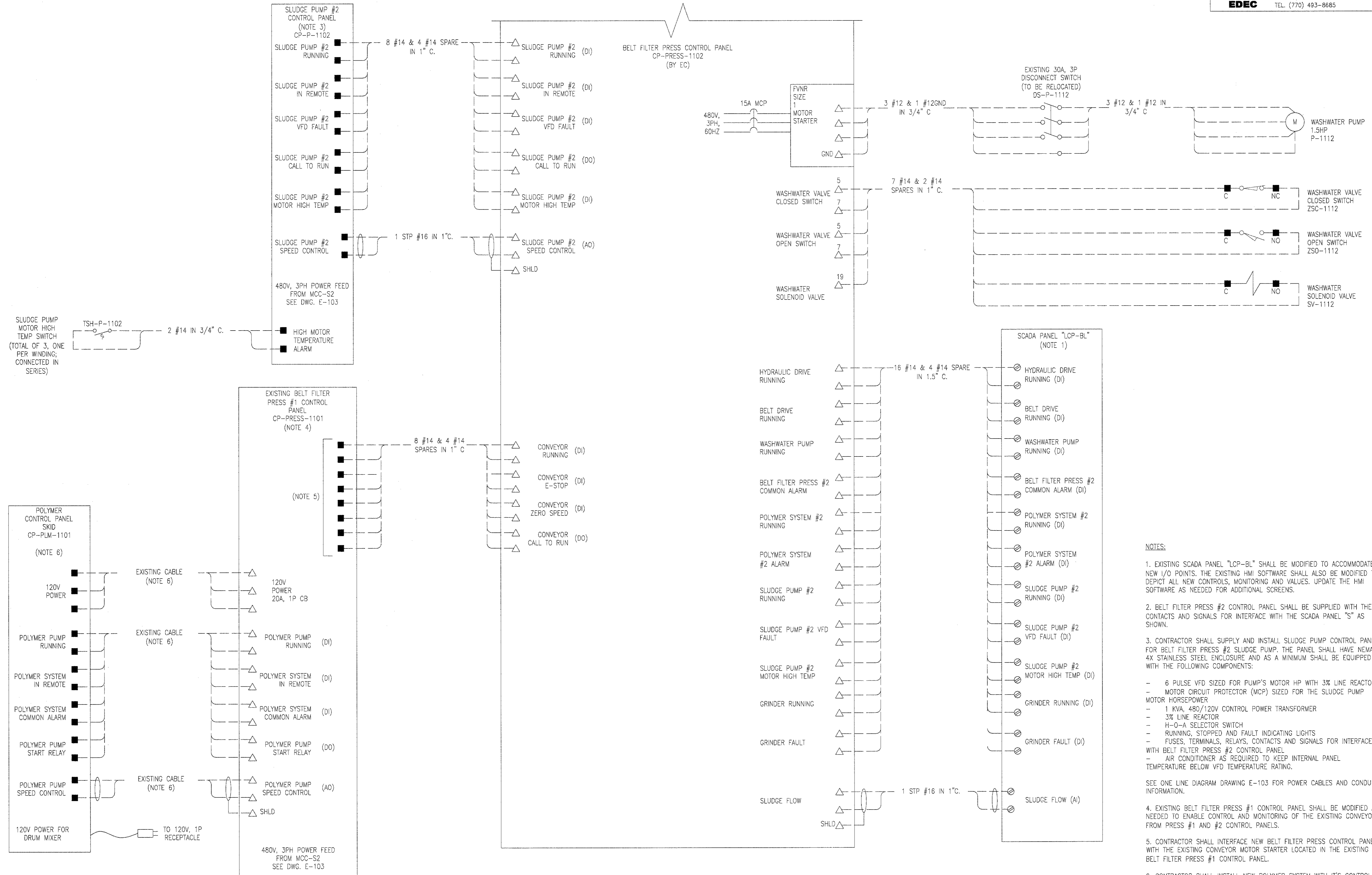


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CONTINUED FROM E-422



- NOTES:**
- EXISTING SCADA PANEL "LCP-BL" SHALL BE MODIFIED TO ACCOMMODATE NEW I/O POINTS. THE EXISTING HMI SOFTWARE SHALL ALSO BE MODIFIED TO DEPICT ALL NEW CONTROLS, MONITORING AND VALUES. UPDATE THE HMI SOFTWARE AS NEEDED FOR ADDITIONAL SCREENS.
 - BELT FILTER PRESS #2 CONTROL PANEL SHALL BE SUPPLIED WITH THE CONTACTS AND SIGNALS FOR INTERFACE WITH THE SCADA PANEL "S" AS SHOWN.
 - CONTRACTOR SHALL SUPPLY AND INSTALL SLUDGE PUMP CONTROL PANEL FOR BELT FILTER PRESS #2 SLUDGE PUMP. THE PANEL SHALL HAVE NEMA 4X STAINLESS STEEL ENCLOSURE AND AS A MINIMUM SHALL BE EQUIPPED WITH THE FOLLOWING COMPONENTS:
 - 6 PULSE VFD SIZED FOR PUMP'S MOTOR HP WITH 3% LINE REACTOR
 - MOTOR CIRCUIT PROTECTOR (MCP) SIZED FOR THE SLUDGE PUMP MOTOR HORSEPOWER
 - 1 KVA, 480/120V CONTROL POWER TRANSFORMER
 - 3% LINE REACTOR
 - H-O-A SELECTOR SWITCH
 - RUNNING, STOPPED AND FAULT INDICATING LIGHTS
 - FUSES, TERMINALS, RELAYS, CONTACTS AND SIGNALS FOR INTERFACE WITH BELT FILTER PRESS #2 CONTROL PANEL
 - AIR CONDITIONER AS REQUIRED TO KEEP INTERNAL PANEL TEMPERATURE BELOW VFD TEMPERATURE RATING.
 - SEE ONE LINE DIAGRAM DRAWING E-103 FOR POWER CABLES AND CONDUITS INFORMATION.
 - EXISTING BELT FILTER PRESS #1 CONTROL PANEL SHALL BE MODIFIED AS NEEDED TO ENABLE CONTROL AND MONITORING OF THE EXISTING CONVEYOR FROM PRESS #1 AND #2 CONTROL PANELS.
 - CONTRACTOR SHALL INTERFACE NEW BELT FILTER PRESS CONTROL PANEL WITH THE EXISTING CONVEYOR MOTOR STARTER LOCATED IN THE EXISTING BELT FILTER PRESS #1 CONTROL PANEL.
 - CONTRACTOR SHALL INSTALL NEW POLYMER SYSTEM WITH ITS CONTROL PANEL "CP-PLM-1101" IN PLACE OF EXISTING POLYMER SYSTEM. CONTRACTOR SHALL CONNECT NEW POLYMER SYSTEM CONTROL PANEL WITH EXISTING BFP CONTROL PANEL "CP-1101" USING EXISTING CABLES, CABLES SHALL BE EXTENDED, IF REQUIRED.
 - CONTRACTOR SHALL VERIFY ALL THE EXISTING COMPONENTS WIRING AND PROVIDE CABLES AND CONDUITS ACCORDINGLY AS REQUIRED.

- * MOUNTED ON MCC
- LEGEND:**
- - MCC POWER TERMINAL
 - - MCC CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

1 BELT FILTER PRESS CONTROL PANEL SCHEMATIC

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BEYOND THIS SCALE SHALL BE SHOWN ON THIS SHEET. IF NOT, LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

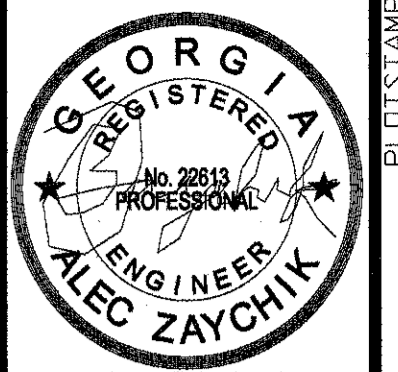
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-423



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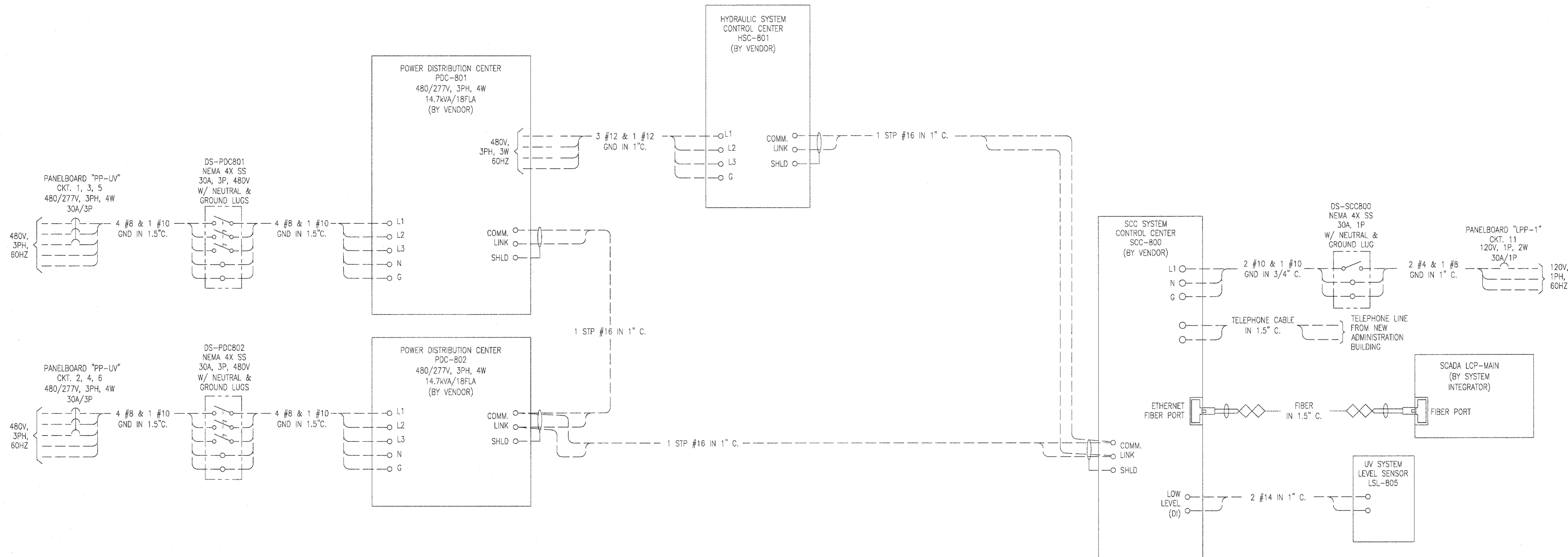
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ	DRWN: DJV
CHK: AZ	

DO NOT SCALE DIMENSIONS FROM THIS SHEET. DIMENSIONS SHOWN ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS

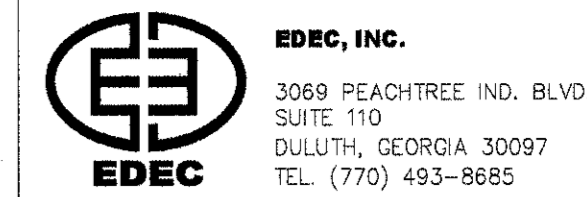
SHEET NO.
 E-424



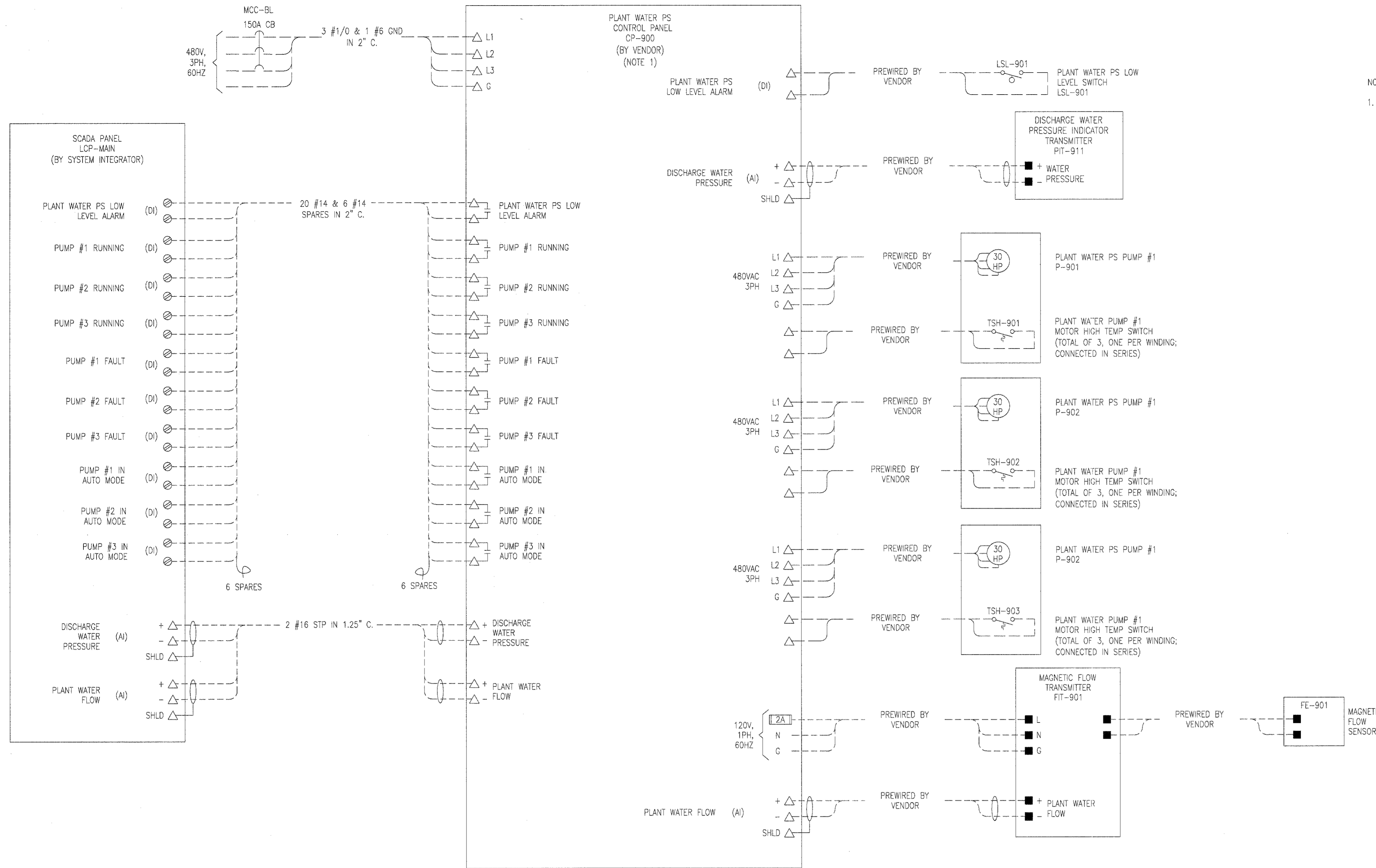
1 UV SYSTEM SCHEMATIC

NOTES:
 1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CABLES AND CONDUITS FOR UV SYSTEM COMPONENTS AS REQUIRED BY APPROVED VENDOR SHOP DRAWINGS.

PLISTAMP



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NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL PLANT WATER PS CONTROL PANEL WITH NEMA 4X SS ENCLOSURE WHICH INCLUDES, BUT NOT LIMITED TO THE FOLLOWING:
 - A. HOA SWITCHES (3), START/STOP PUSH BUTTONS (3 OF EACH) FOR "HAND" MODE.
 - B. ELAPSED TIME METERS
 - C. SURGE PROTECTION DEVICE
 - D. THREE (3) VFDs WITH MOTOR CIRCUIT PROTECTORS SIZED FOR 30HP PUMPS MOTORS. VFDs SHALL HAVE 3% INPUT LINE REACTORS.
 - E. MAIN 150A, 3P CIRCUIT BREAKER, POWER DISTRIBUTION BLOCKS, RELAYS, TERMINALS, ETC. AS REQUIRED FOR PROPER SYSTEM OPERATION.
 - F. ALLEN-BRADLEY COMPACTLOGIX PLC TO ACCOMMODATE ALL THE I/O'S SHOWN ON SCHEMATIC WIRING DIAGRAMS PLUS 20% SPARES
 - G. 24VDC POWER SUPPLY
 - H. 2 kVA, 480/120V CONTROL POWER TRANSFORMER
 - I. 20A, 120V, GFCI, WP DUPLEX RECEPTACLE
 - J. AIR CONDITIONER SIZED TO PROVIDE COOLING INSIDE THE PANEL FOR THE PANEL INTERNAL TEMPERATURE NOT TO EXCEED 90F.
 - K. AUXILIARY DRY CONTACTS (120VAC, 5 AMP RATED):
 1. PLANT WATER PS LOW LEVEL ALARM
 2. PLANT WATER PUMP #1 RUNNING
 3. PLANT WATER PUMP #2 RUNNING
 4. PLANT WATER PUMP #3 RUNNING
 5. PLANT WATER PUMP #1 FAULT
 6. PLANT WATER PUMP #2 FAULT
 7. PLANT WATER PUMP #3 FAULT
 8. PLANT WATER PUMP #1 IN AUTO MODE
 9. PLANT WATER PUMP #2 IN AUTO MODE
 10. PLANT WATER PUMP #3 IN AUTO MODE
 - L. AUXILIARY ANALOG SIGNAL OUTPUTS:
 1. DISCHARGE WATER PRESSURE
 2. PLANT WATER FLOW
 - M. LIGHTNING ARRESTOR
 - N. TIME DELAY (0-10 SEC) BETWEEN PUMPS START IN BOTH "HAND" AND "AUTO" MODE
 - O. VFD SPEED CONTROL KEYPADS SHALL BE MOUNTED ON THE INNER DOOR AND SHALL NOT REQUIRE OPENING THE INNER PANEL FOR LOCAL SPEED CONTROL ADJUSTMENTS.
 - P. CONTRACTOR SHALL SUBMIT THE DETAILED WIRING DIAGRAM AND BILL OF MATERIALS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

1 PLANT WATER PS CONTROL PANEL RISER DIAGRAM

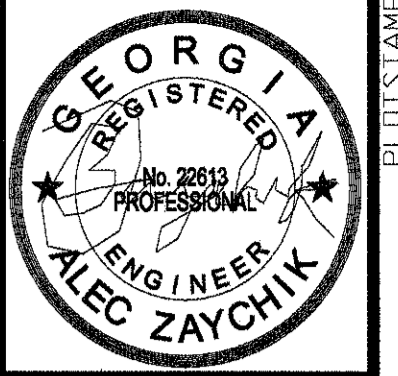
- * MOUNTED ON VFD
- LEGEND:
- - VFD POWER TERMINAL
 - - VFD CONTROL TERMINAL
 - △ - LOCAL CONTROL PANEL TERMINAL
 - ⊗ - SCADA PANEL TERMINAL
 - - DEVICE TERMINAL

PROJECT NUMBER:	DATE:	REVISION:
	AUGUST 2016	
DSGN: AZ	DATE:	
DRWN: DV	REVISION:	
CHK: AZ		

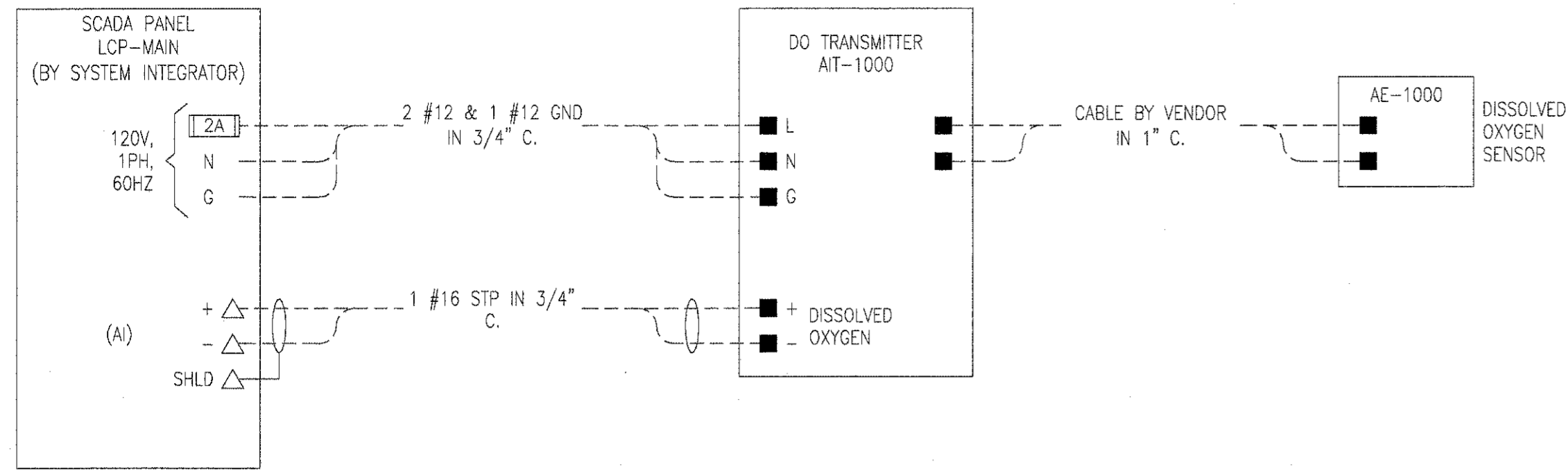
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
SCHEMATIC WIRING DIAGRAMS



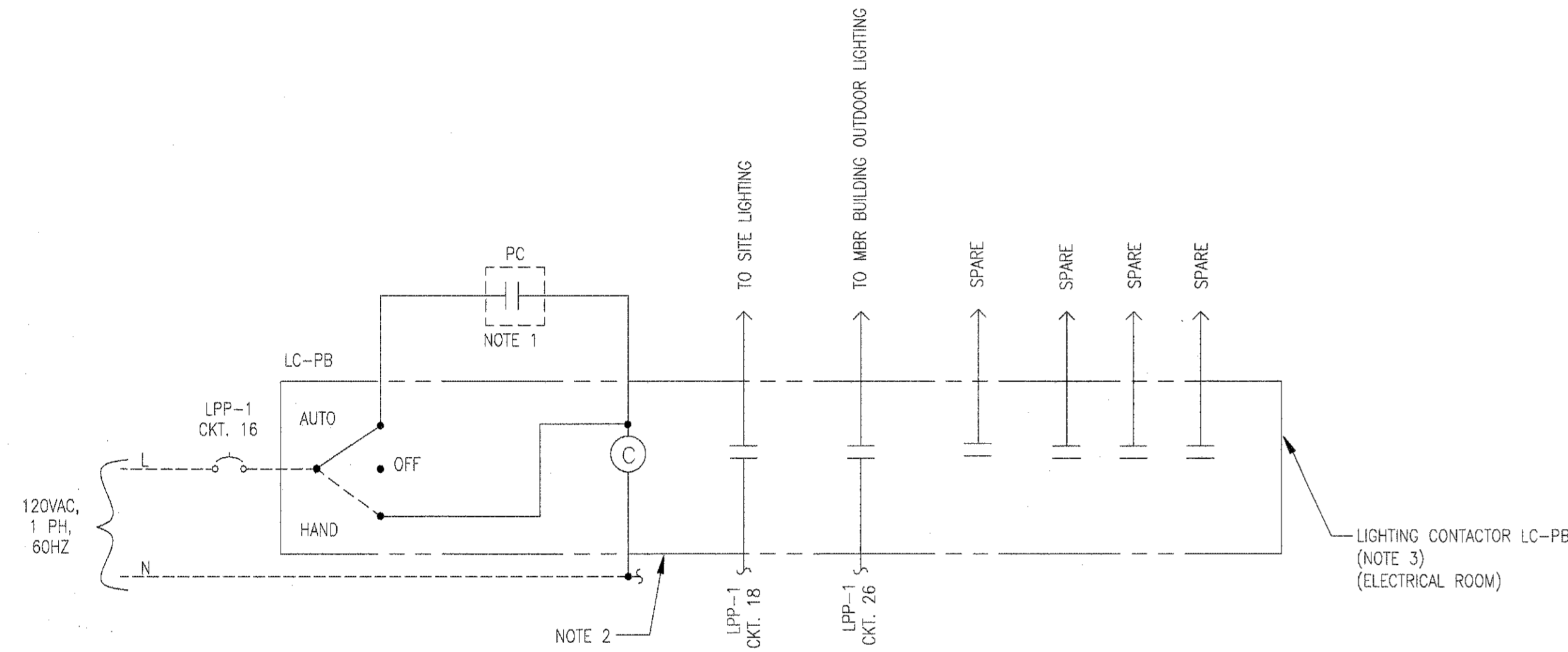
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1 CASCADE AERATOR DISSOLVED OXYGEN TRANSMITTER SCHEMATIC



NOTES:

1. "PC" - PHOTOCCELL, 120V. LOCATE ON THE ROOF FACING NORTH. "TS" - TIME SWITCH WITH MANUAL INTEGRAL OVERRIDE SWITCH.
2. ELECTRICALLY-HELD HEAVY-DUTY LIGHTING CONTACTOR. 6 POLES, 20A RATED CONTACTS. TAG THE CONDUCTORS ON THE LINE SIDE OF THE LIGHTING CONTACTOR WITH THEIR RESPECTIVE CIRCUIT NUMBER.
3. INSTALL LIGHTING CONTROL IN NEMA 1, 12 GAUGE GALVANIZED STEEL CABINET, FINISHED IN GRAY ENAMEL WITH HINGED DOOR AND LOCKING HANDLE. THE CONTACTOR SHALL BE 4 POLES, 120V COIL VOLTAGE EATON CLASS E0003 OR APPROVED EQUAL.

2 PHOTOCCELL LIGHTING CONTROL SCHEMATIC

* MOUNTED ON MCC

LEGEND:

- - MCC POWER TERMINAL
- - MCC CONTROL TERMINAL
- △ - LOCAL CONTROL PANEL TERMINAL
- ⊗ - SCADA PANEL TERMINAL
- - DEVICE TERMINAL

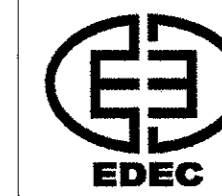
PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

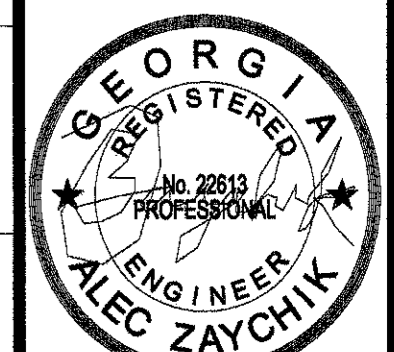
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT
 SCHEMATIC WIRING DIAGRAMS

SHEET NO.
 E-426

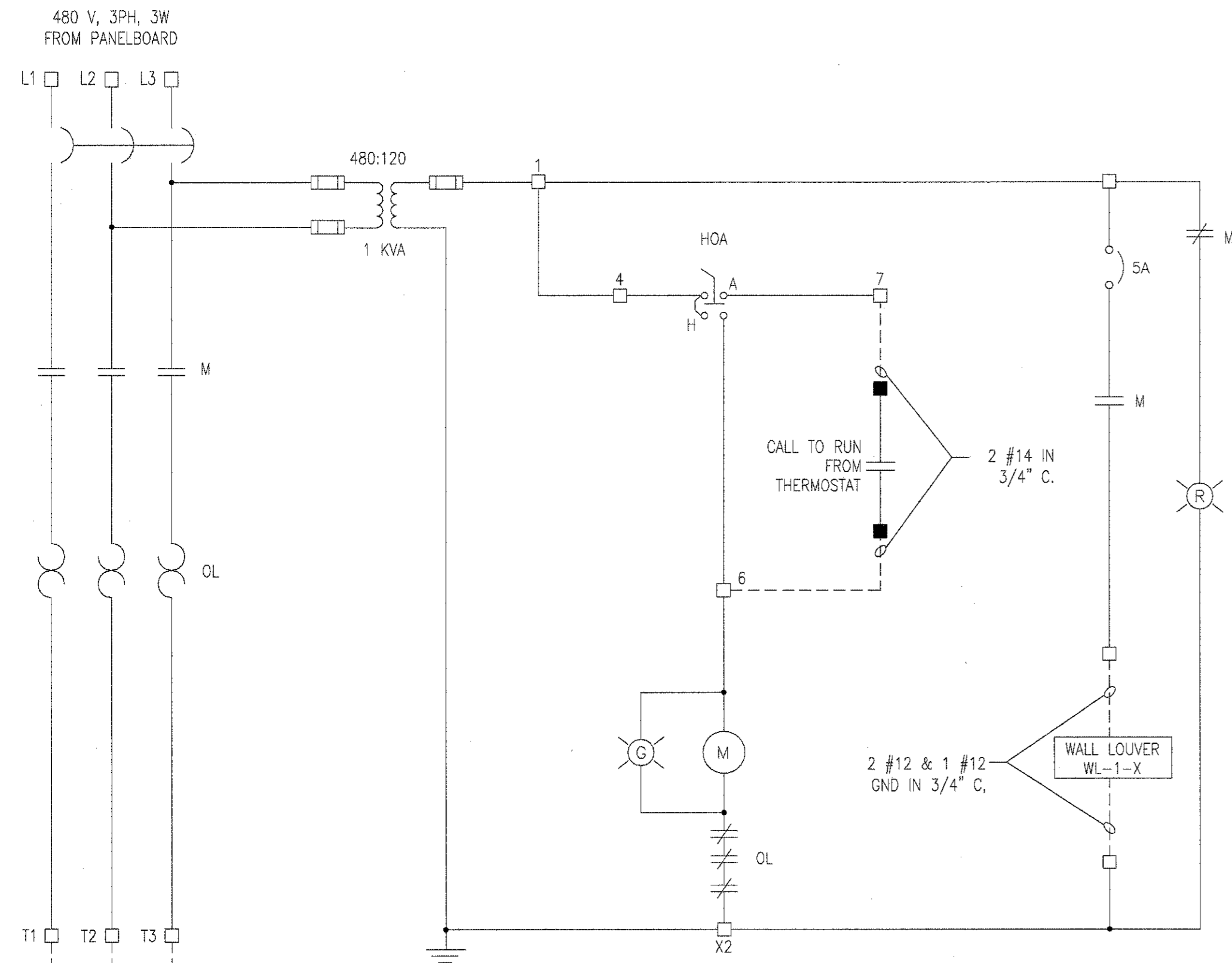
PLOT/STAMP



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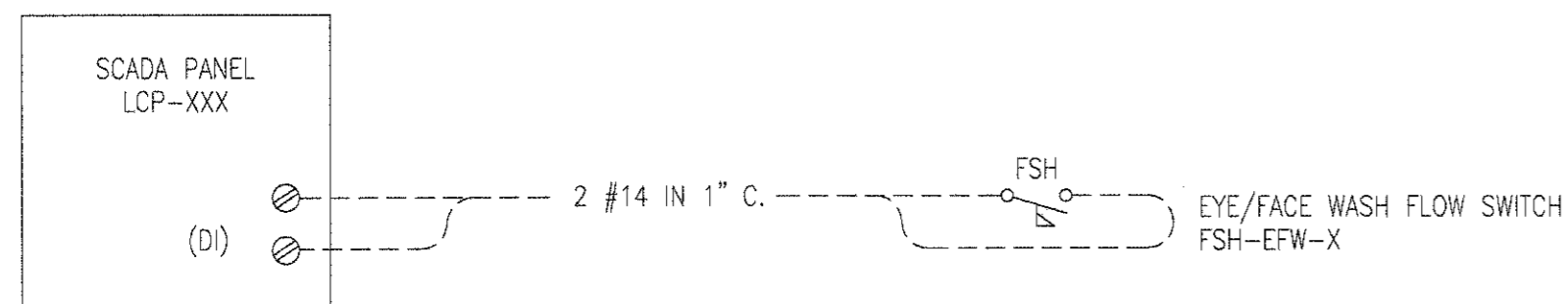


NOTES:

- CONTRACTOR SHALL FURNISH AND INSTALL A MOTOR STARTER IN THE MCC-BL RATED FOR EXHAUST FAN MOTOR. THE STARTER SHALL HAVE H-O-A AND OVERLOAD SIZED FOR THE MOTOR HORSEPOWER.
- MULTIPLE LOUVERS SHALL BE CONNECTED IN PARALLEL.

TAG	DESCRIPTION	HP	MCC	DS-XXX	INTERLOCK WITH WL-1-X	NOTES
REF-1	ROOF EXHAUST FAN #1	10	MCC-BL	DS-REF-1	WL-1-5	1
REF-2	ROOF EXHAUST FAN #2	10	MCC-BL	DS-REF-2	WL-1-7	1
REF-3	ROOF EXHAUST FAN #3	10	MCC-BL	DS-REF-3	WL-1-1	1
REF-4	ROOF EXHAUST FAN #4	10	MCC-BL	DS-REF-4	WL-1-8	1
REF-5	ROOF EXHAUST FAN #5	10	MCC-BL	DS-REF-5	WL-1-3, WL-1-4	1, 2
REF-6	ROOF EXHAUST FAN #6	10	MCC-BL	DS-REF-6	WL-1-2	1
SF-B-1	SUPPLY FAN (BASEMENT)	1.5	MCC-BL	DS-SF-B-1	WL-B-1	1

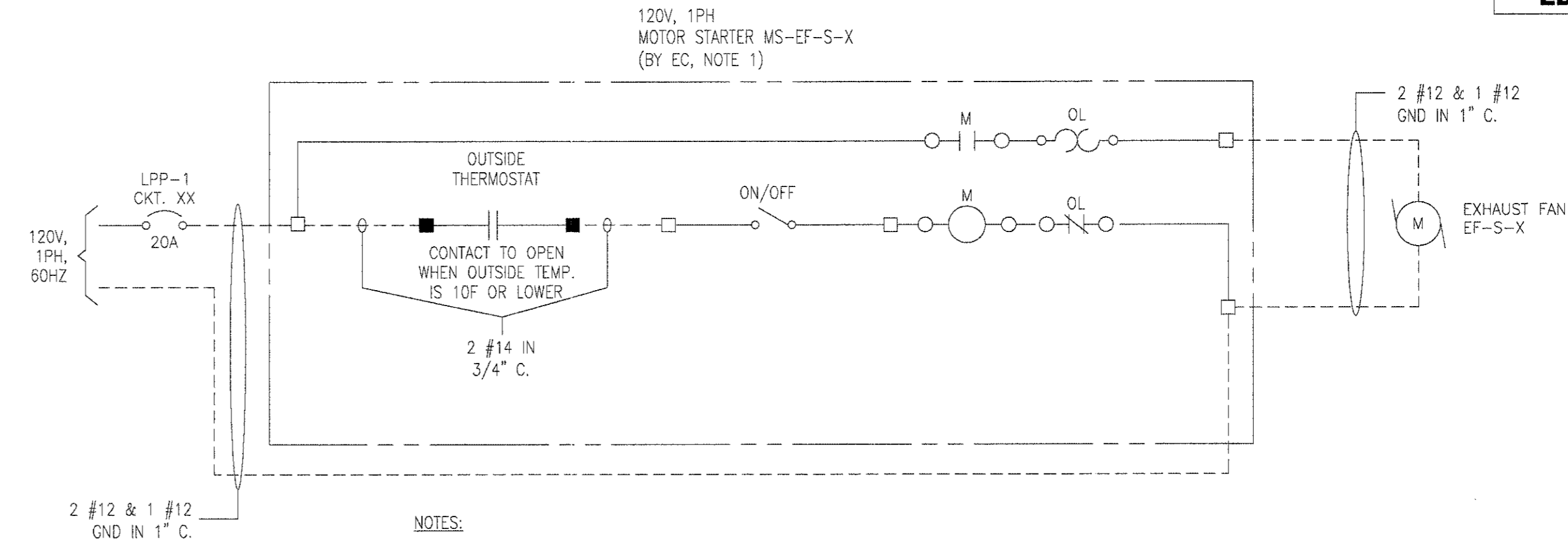
1 480V, 3 PHASE MBR BUILDING EXHAUST/SUPPLY FAN STARTER SCHEMATIC



#	FSH-EFW-X	LCP-XXX	DESCRIPTION
1	FSH-EFW-1	LCP-ERM	EYE/FACE WASH STATION FLOW SWITCH AT MBR PROCESS BUILDING
2	FSH-EFW-2	LCP-MAIN	EYE/FACE WASH STATION FLOW SWITCH AT CHEMICAL STORAGE

2 EYE/FACE WASH FLOW SWITCH SCHEMATIC
 TYPICAL FOR 2

- LEGEND:**
- - MOTOR STARTER TERMINALS
 - - THERMOSTAT TERMINALS

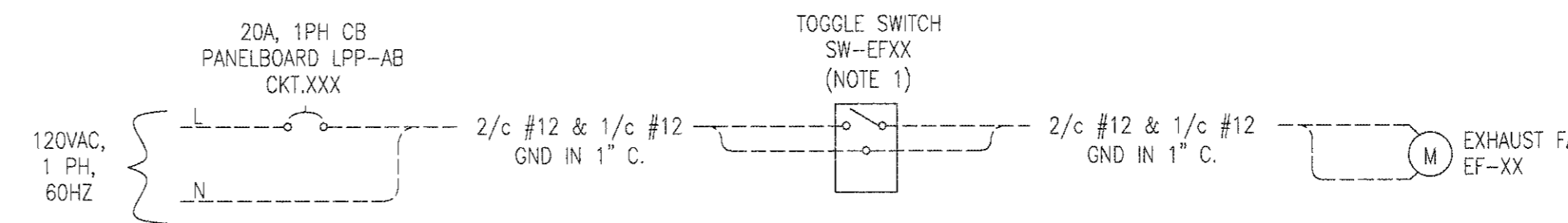


NOTES:

- CONTRACTOR SHALL FURNISH AND INSTALL A MANUAL MOTOR STARTER RATED FOR EXHAUST FAN MOTOR. THE STARTER SHALL HAVE ON/OFF SWITCH AND OVERLOAD SIZED FOR THE MOTOR HORSEPOWER. AND SHALL HAVE AN ENCLOSURE TYPE AS SHOWN ON HVAC POWER PLAN DRAWINGS.

EF-S-X	DESCRIPTION	HP	PANELBOARD	CKT.XX	MS-EF-S-X	NOTES
EF-S-1	SODIUM HYPOCHLORITE STORAGE EXHAUST FAN	0.083	"LPP-1"	CKT.39	MS-EF-S-1	1
EF-S-2	CITRIC ACID STORAGE EXHAUST FAN	0.083	"LPP-1"	CKT.41	MS-EF-S-2	1

3 MRB BUILDING EXHAUST FAN SCHEMATIC



NOTES:

- CONTRACTOR SHALL FURNISH AND INSTALL A TOGGLE SWITCH HP RATED FOR EXHAUST FAN MOTOR. SWITCH SHALL HAVE AN ENCLOSURE TYPE AS SHOWN ON POWER PLAN DRAWINGS.

EF-X	DESCRIPTION	WATTS	PANELBOARD	CKT.XX	SW. X	NOTES
EF-1	EXHAUST FAN #1	108	"LPP-AB"	CKT.10	SW. N	1
EF-2	EXHAUST FAN #2	263	"LPP-AB"	CKT.10	SW. C	1
EF-2	EXHAUST FAN #3	108	"LPP-AB"	CKT.14	SW. D	1

2 ADMINISTRATION BUILDING EXHAUST FAN SCHEMATIC (TYP.)

PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION DATE

REVISION DATE

DESIGN: AZ DRAWN: DV CHECK: AZ

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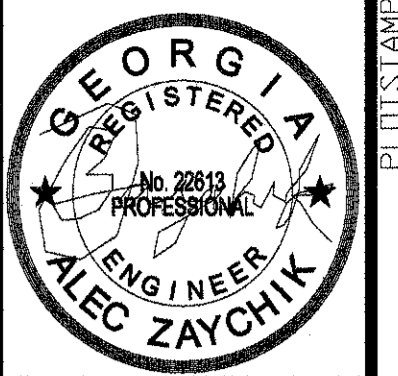
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

PLANT
 SCHEMATIC WIRING DIAGRAMS

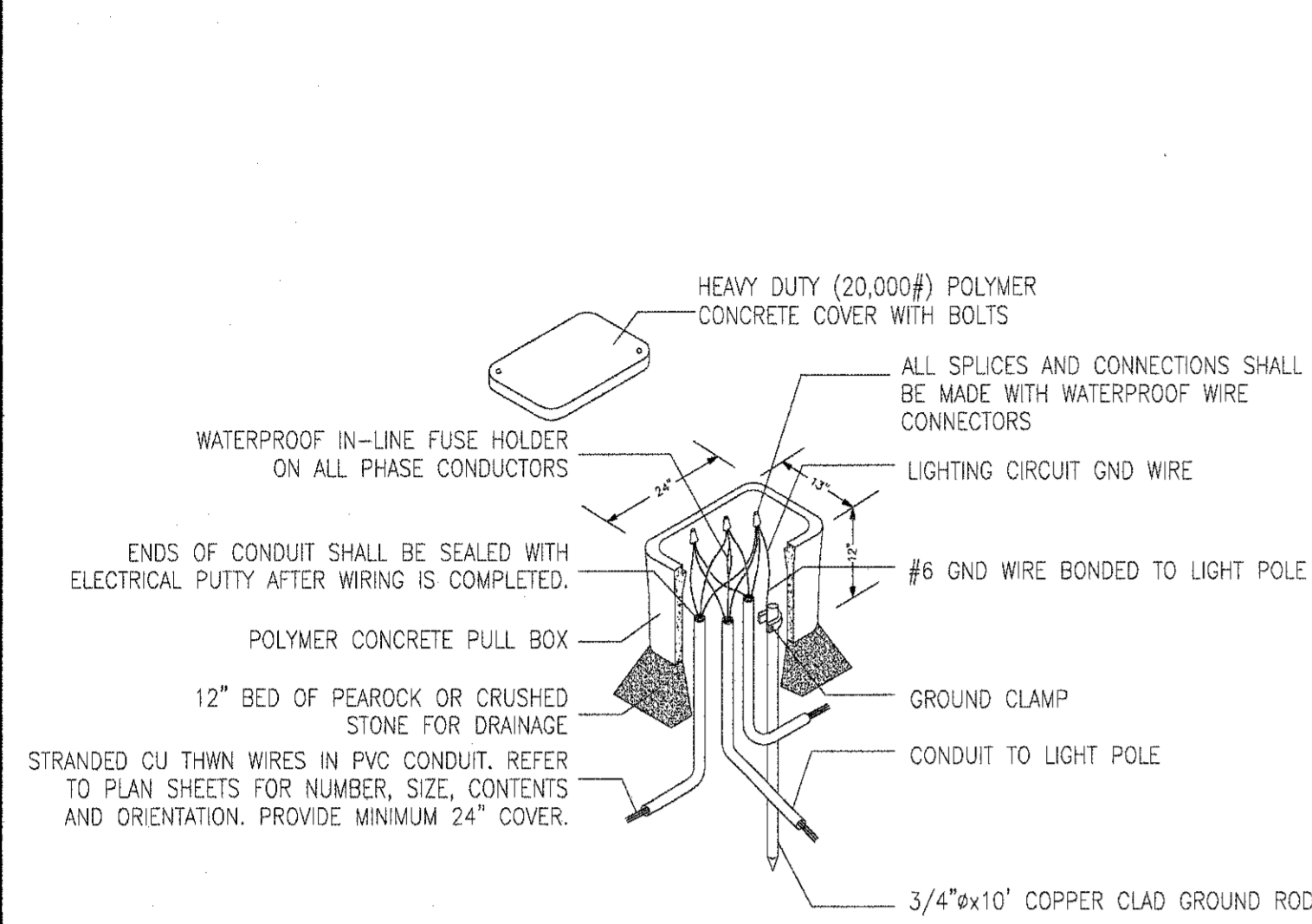
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 E-427



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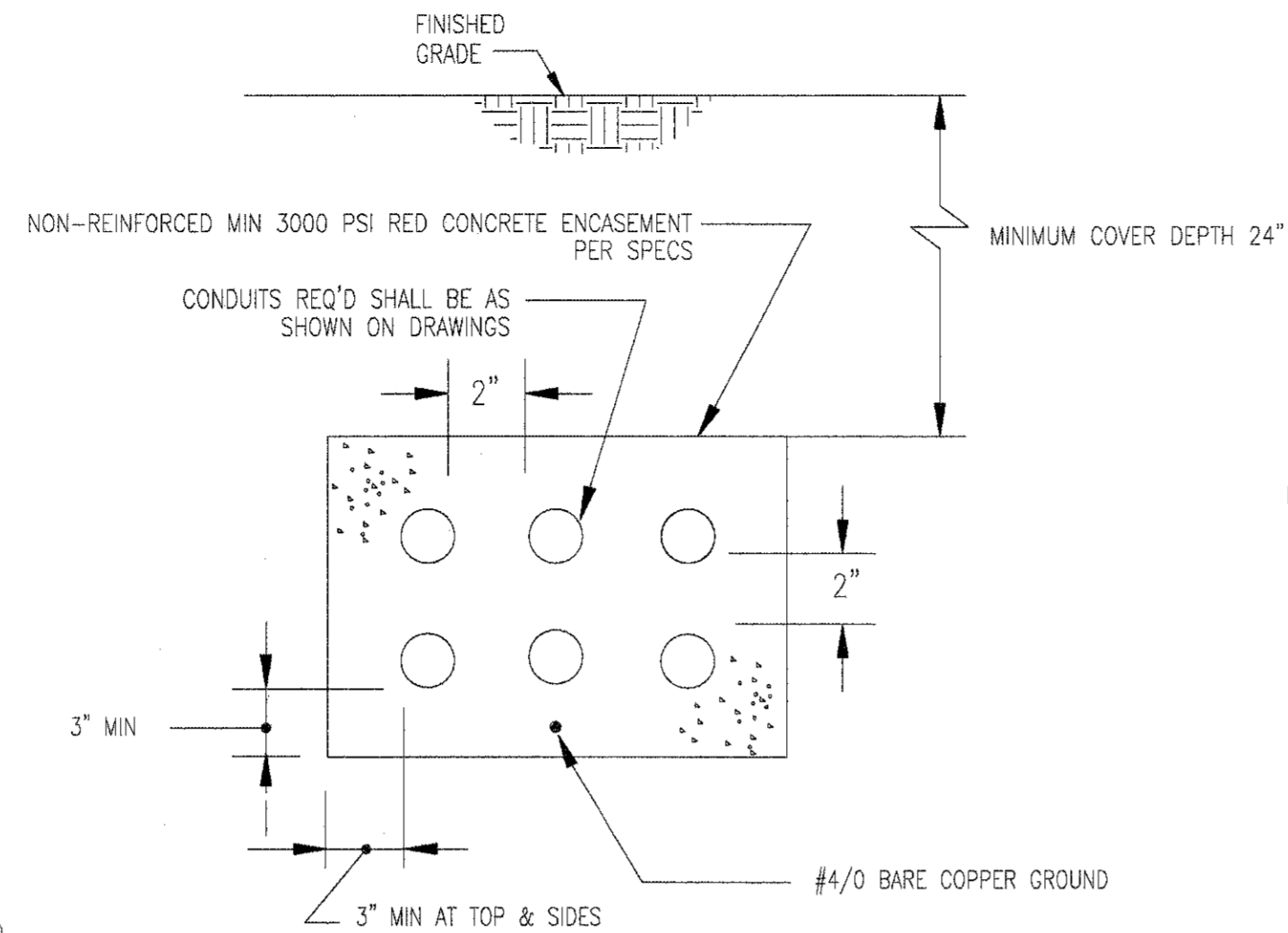


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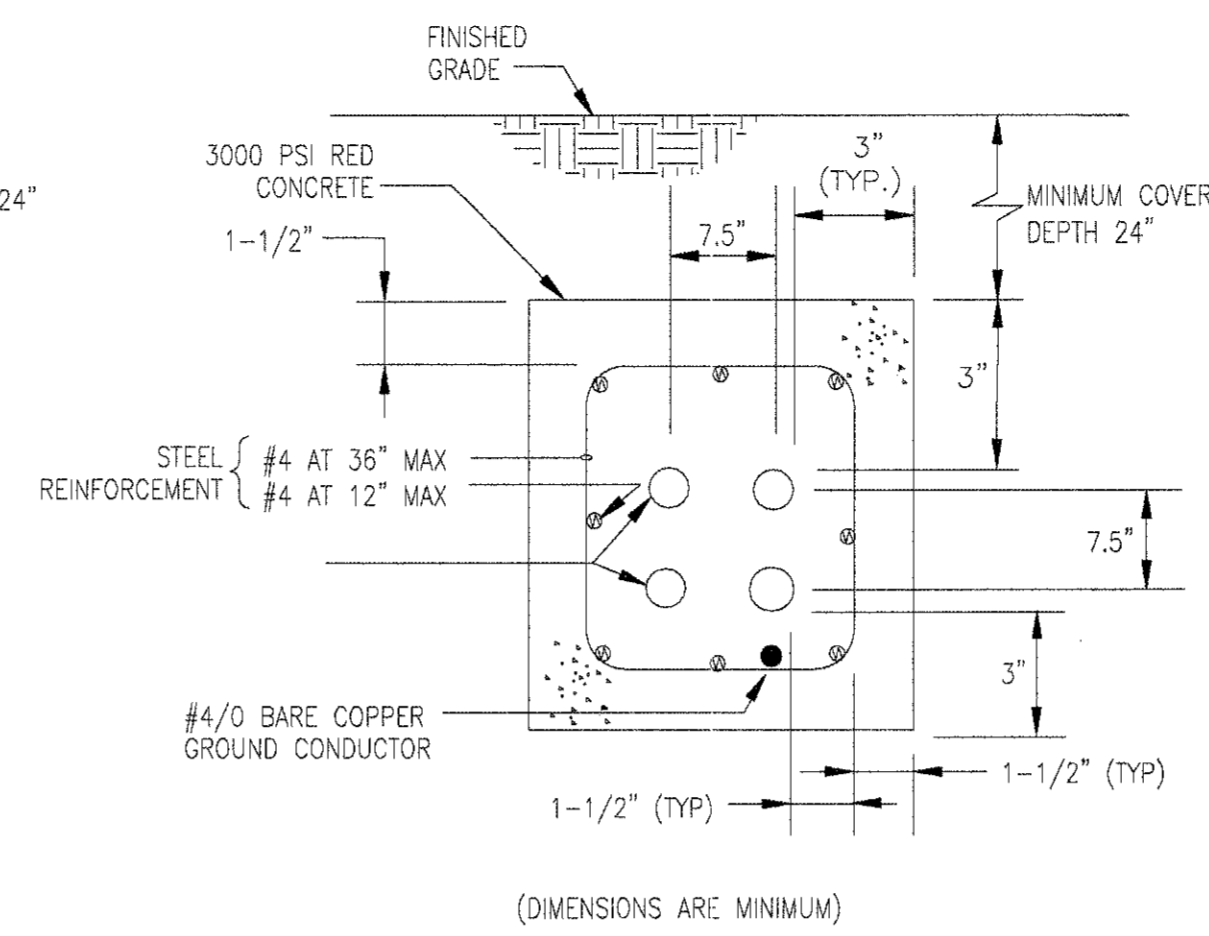
PULL BOX NOTE:
 PULL BOX TO BE OLD CASTLE PRECAST 13 X 24 MADE WITH POLYMER CONCRETE, W/BOLT DOWN CONCRETE COVER.

1 PULL BOX

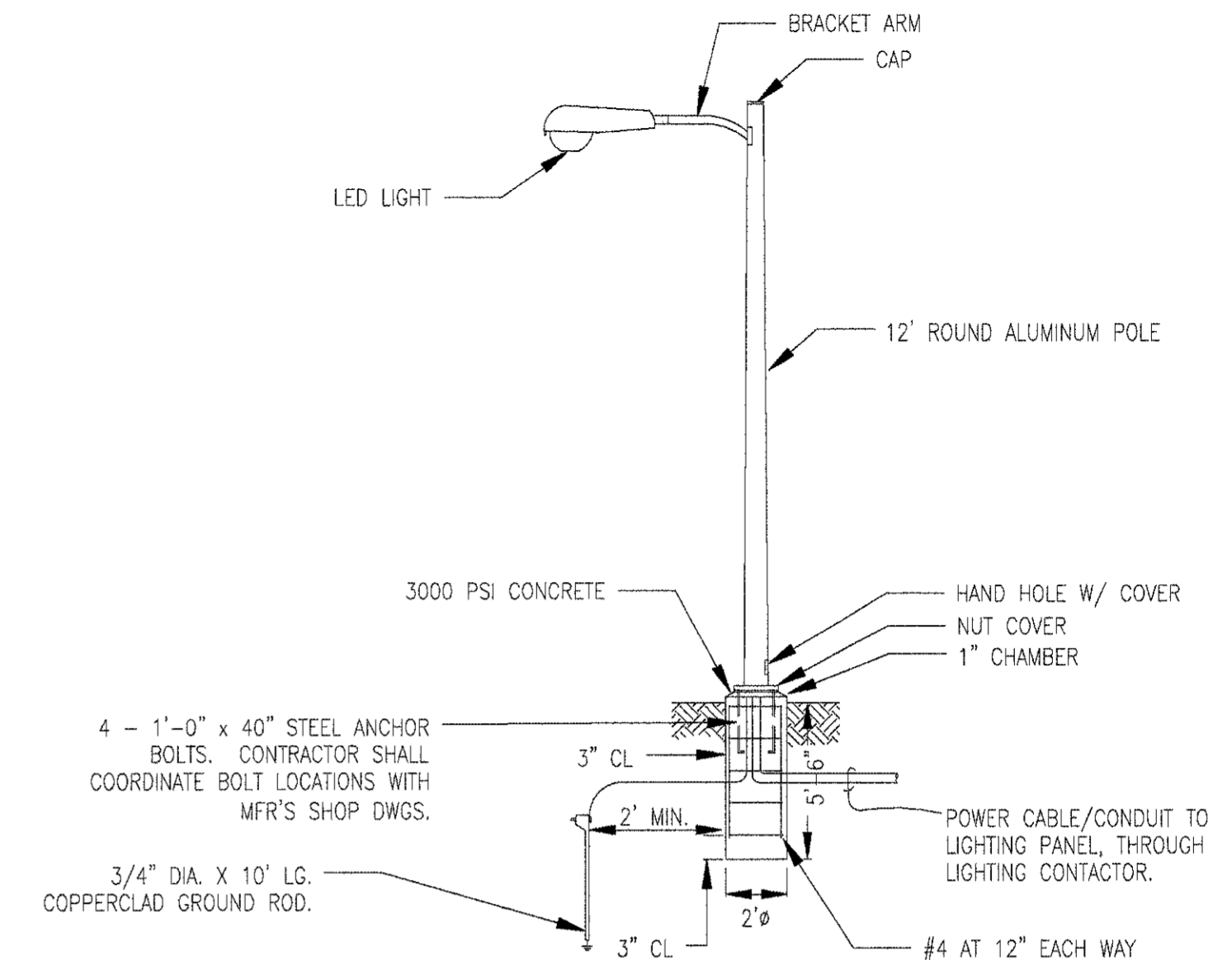


NOTES:
 1. ALL DUCT BANKS SHALL BE CONCRETE ENCASED. ALL DUCTBANKS CROSSING ROADS OR HEAVY TRAFFIC AREAS SHALL BE REINFORCED WITHIN 5 (FIVE) FEET OF TRAFFIC AREAS.
 2. CONTRACTOR SHALL FIELD COORDINATE EXACT DUCTBANK ROUTING WITH PROCESS PIPING.

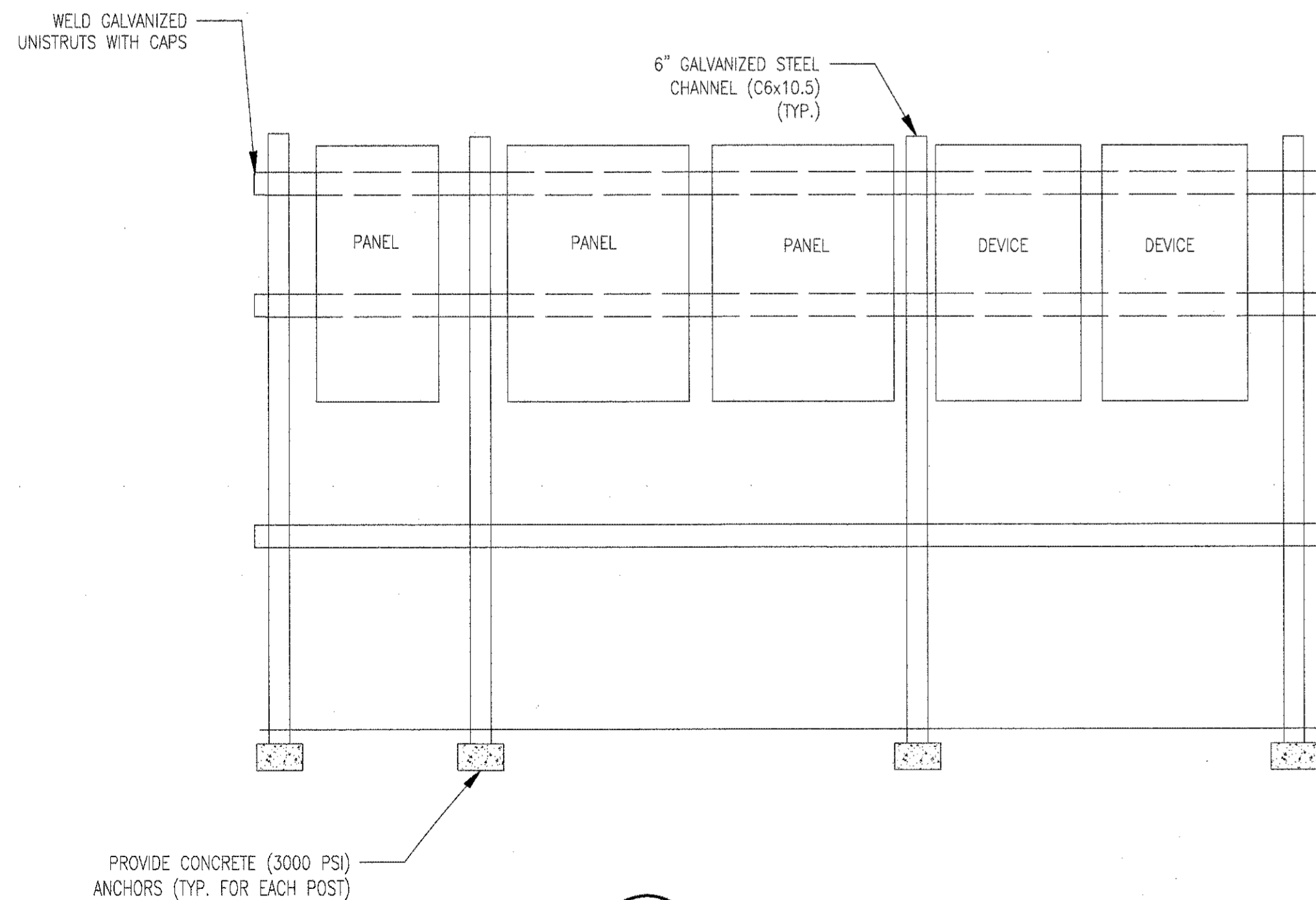
2 NON-REINFORCED DUCTBANK



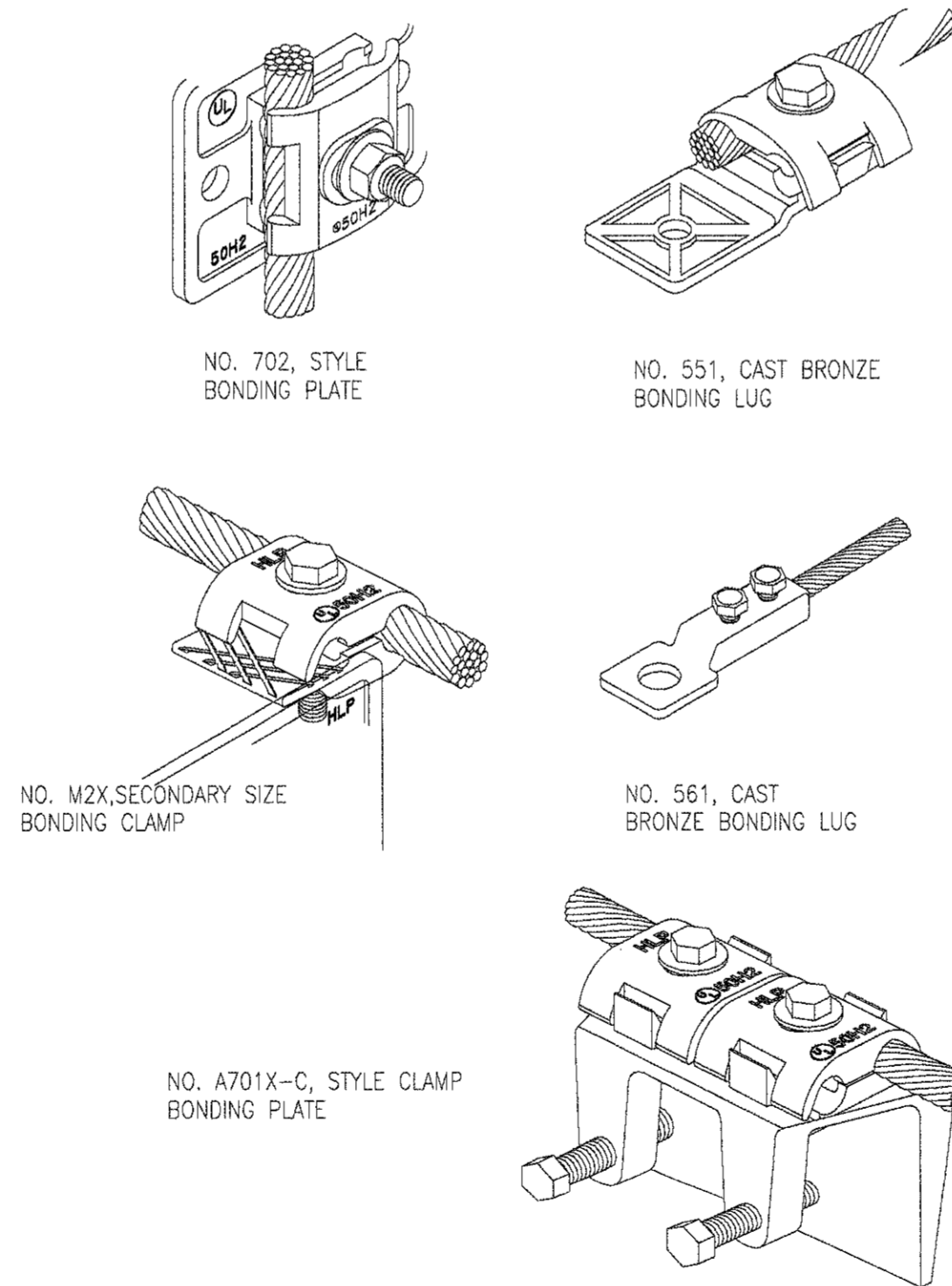
3 REINFORCED DUCTBANK



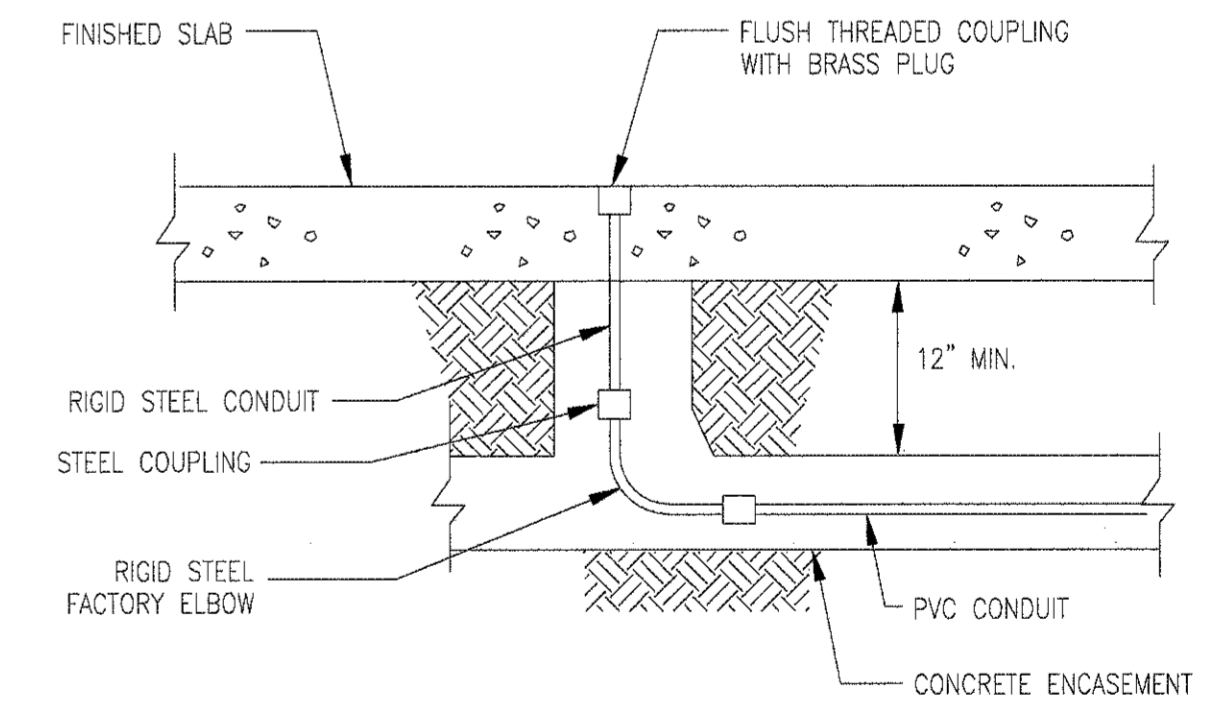
4 LIGHT POLE



5 TYPICAL UNISTRUT



6 TYPICAL BONDING LUGS AND PLATES



7 CONDUIT FLOOR TERMINATION

PROJECT NUMBER: ---
 DATE: AUGUST 2016
 REVISION
 DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY

ELECTRICAL
 INSTALLATION DETAILS

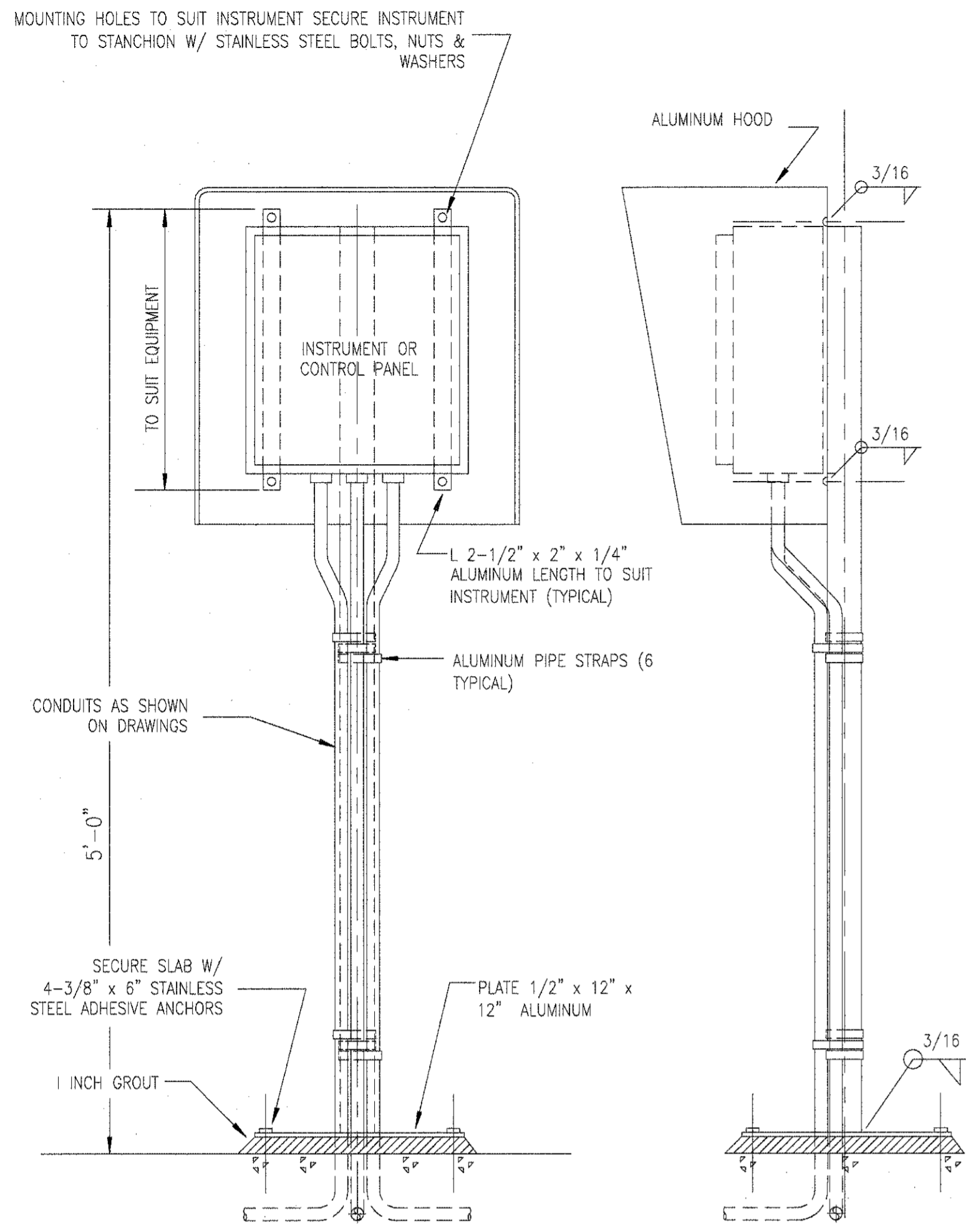
SHEET NO.
 E-901



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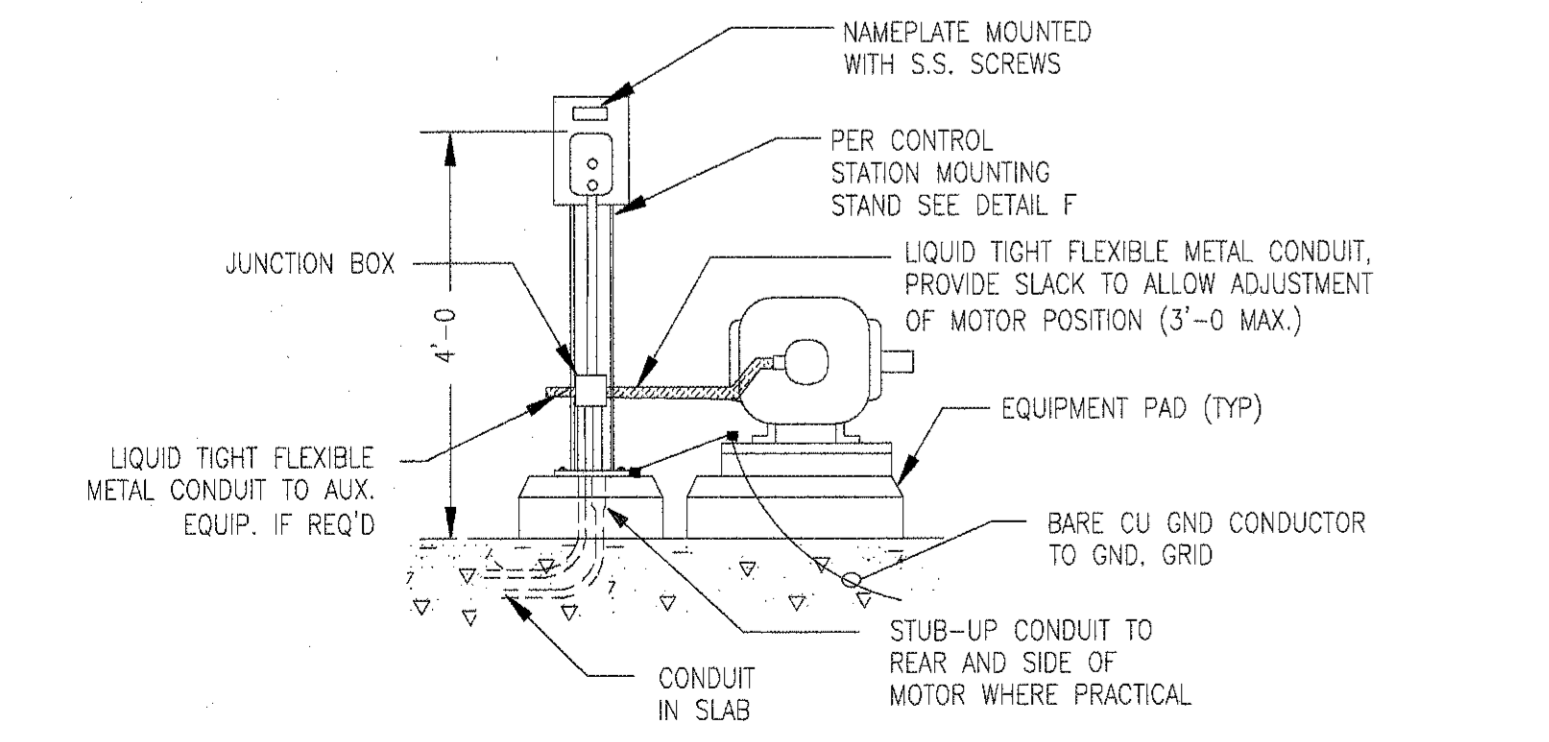


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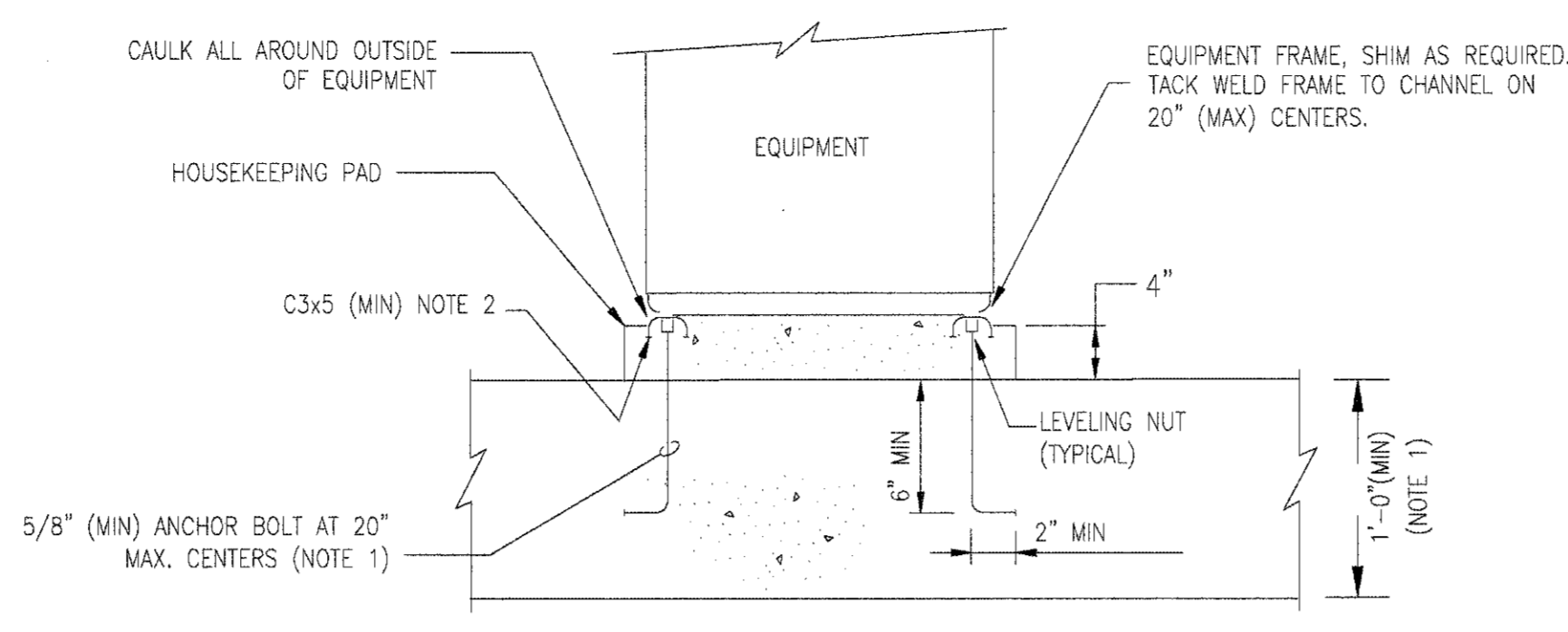


1 INSTRUMENT/CONTROL PANEL SUNSHIELD

- NOTE:**
1. ALL EXPOSED EDGES TO BE GRIND SMOOTH AND BURR FREE.
 2. PAINT ALL ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
 3. ALL OUTDOOR MOUNTED INSTRUMENTS SHALL BE PROVIDED WITH SUN SHIELD.

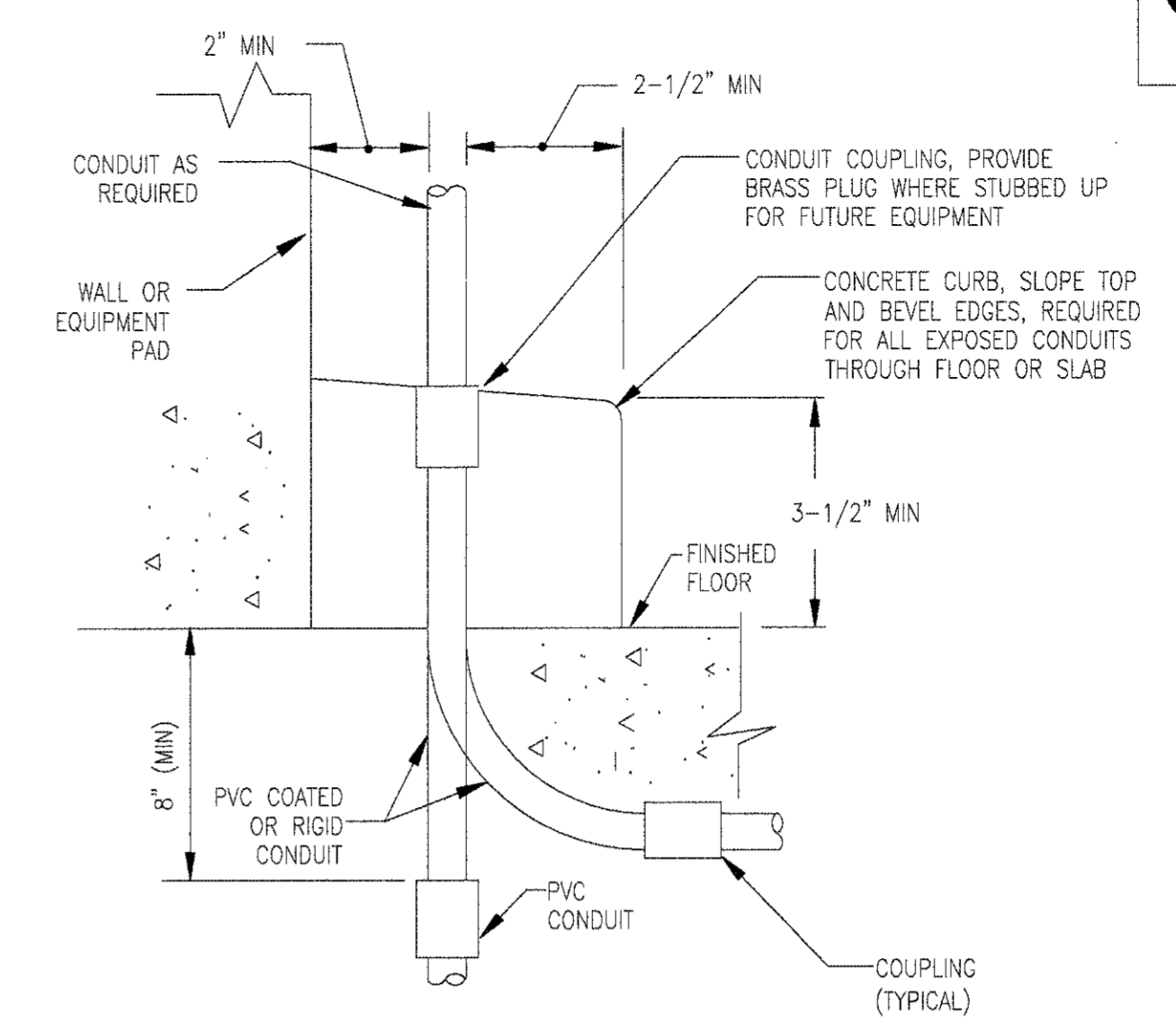


4 MOTOR FEED FROM BELOW

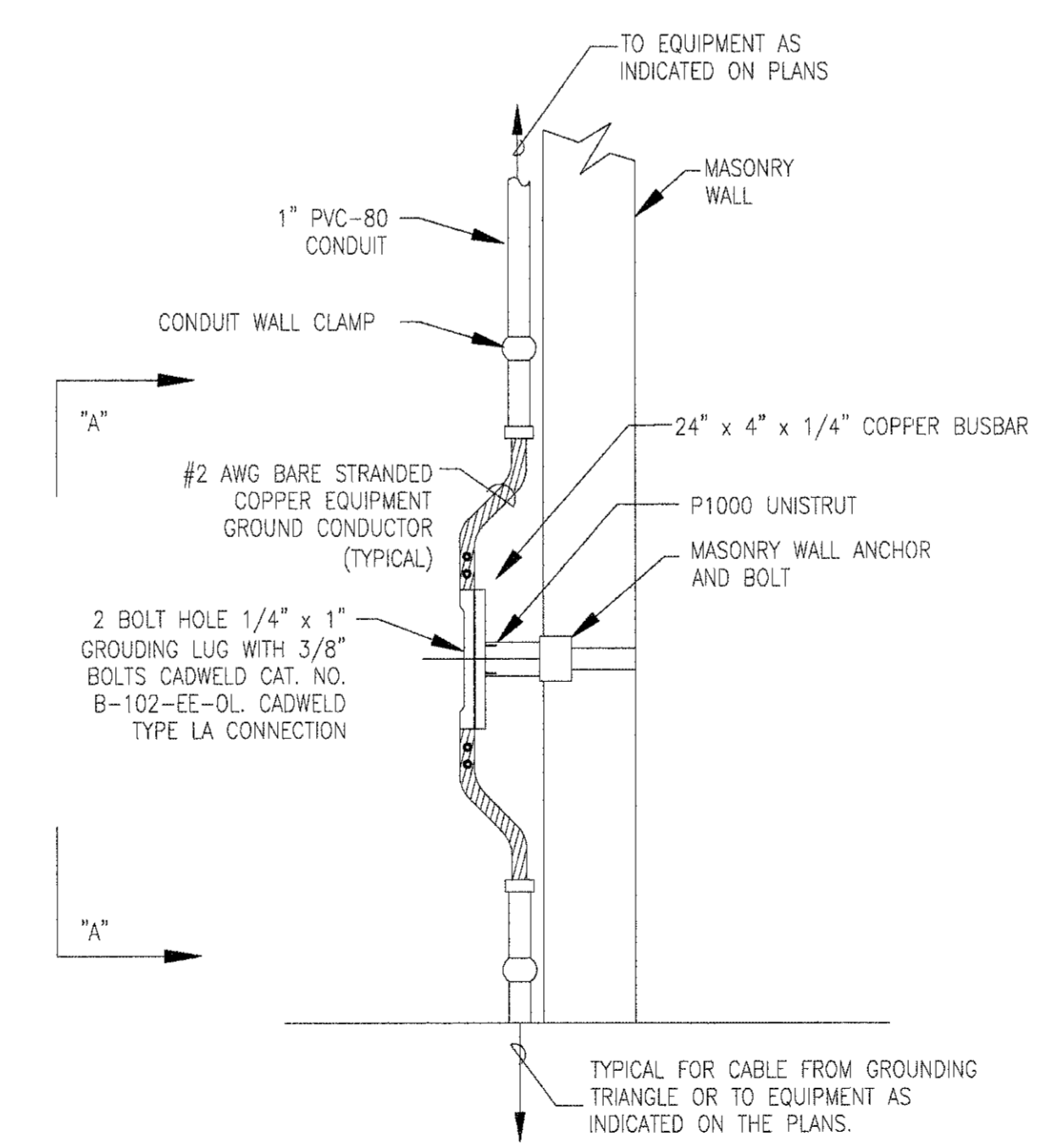


- NOTES:**
1. IF SLAB IS LESS THAN 12" THICK, ANCHOR BOLTS SHALL EXTEND THROUGH SLAB AND BE BACKED UP WITH 4" X 3/16" (MIN) SQUARE WASHERS.
 2. CHANNELS SHALL BE LEVELED AT TIME CONCRETE IS CAST.

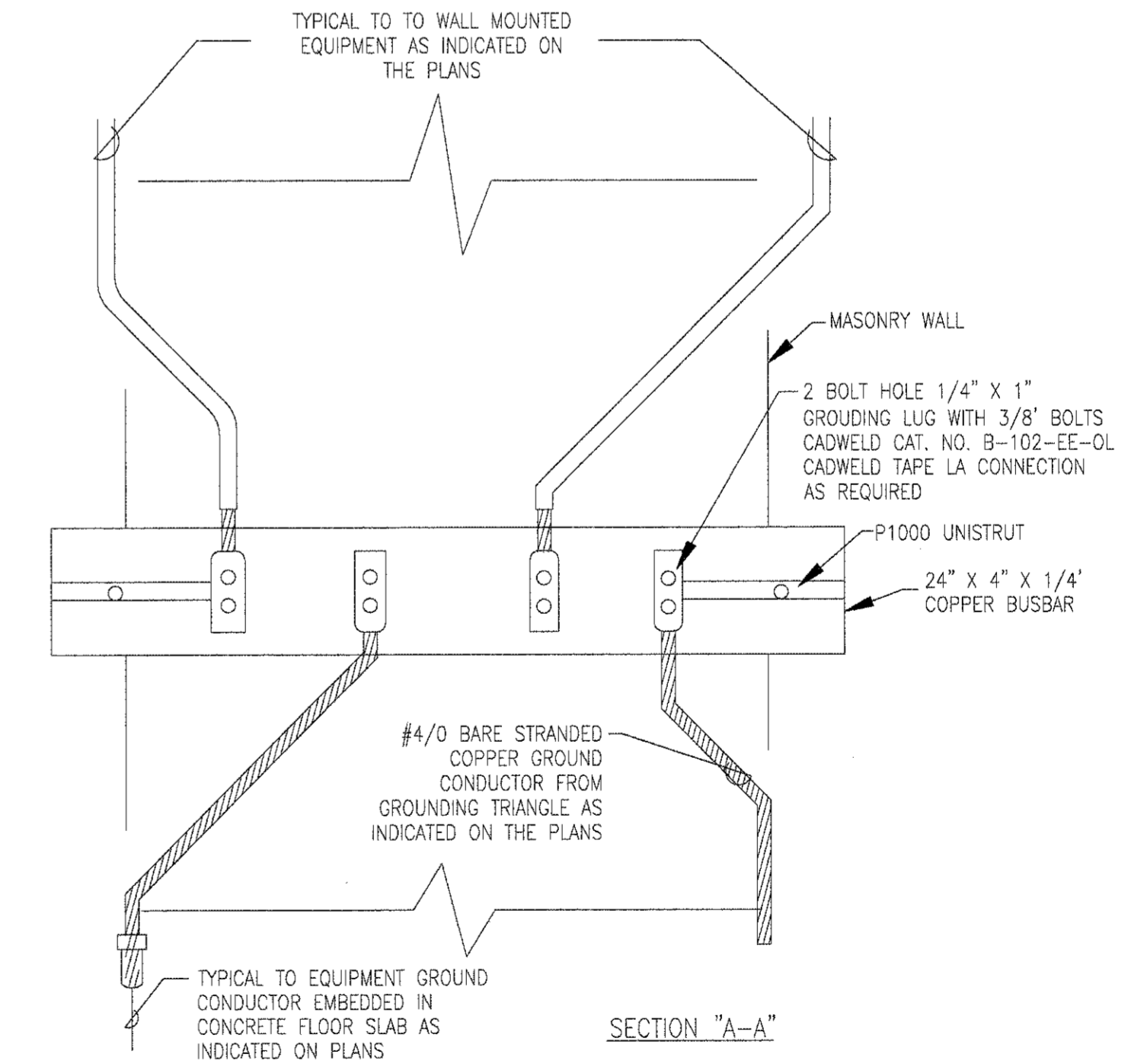
2 TYPICAL FLOOR MOUNTING FOR MOTOR CONTROL CENTERS, CONTROL PANELS, SWITCHGEAR



3 CONDUIT CURB STUB-UP



5 EQUIPMENT GROUND BUSBAR INSTALLATION



PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BEYOND 4' LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4' LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY**

**ELECTRICAL
 INSTALLATION DETAILS**

SHEET NO.
F-902

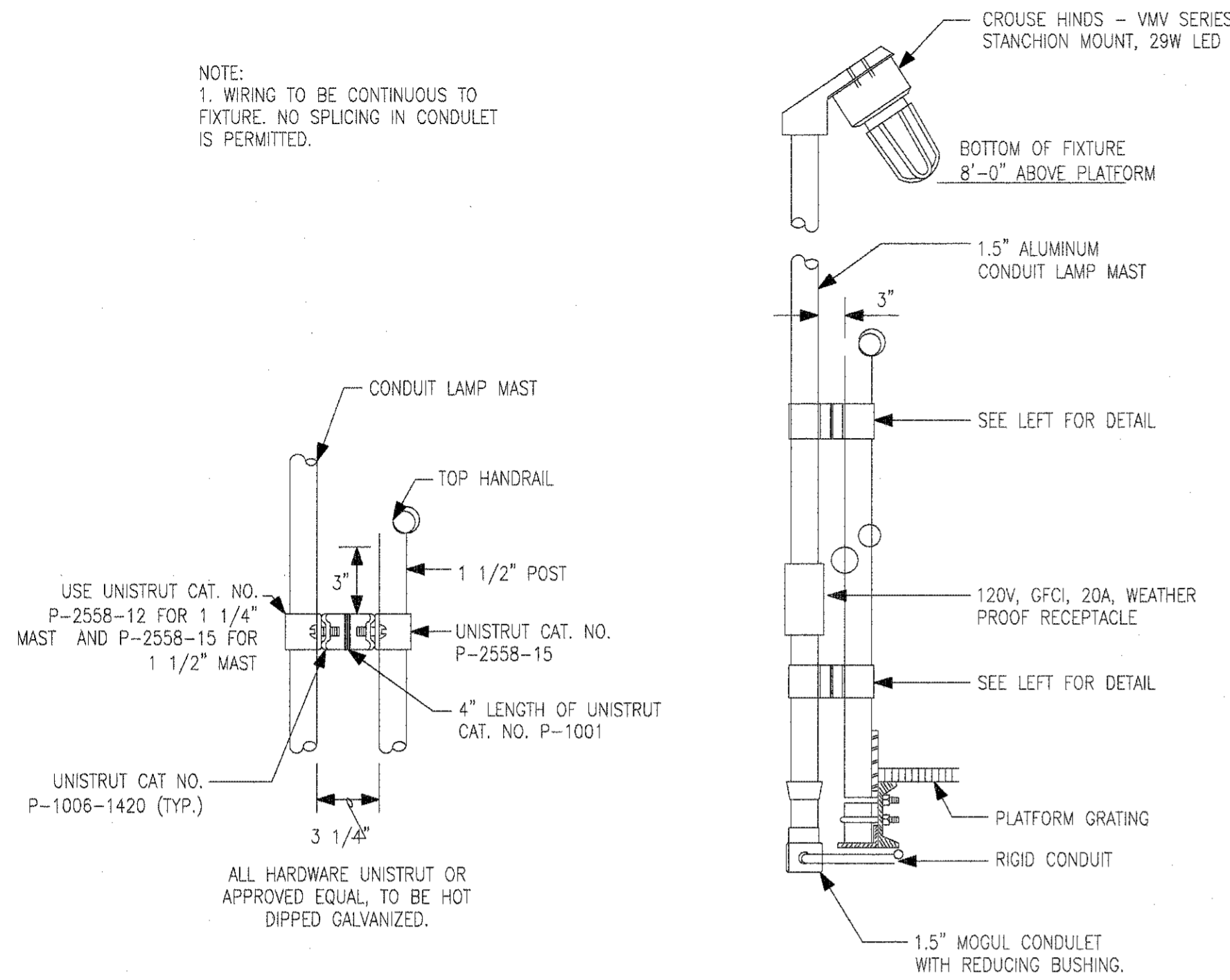


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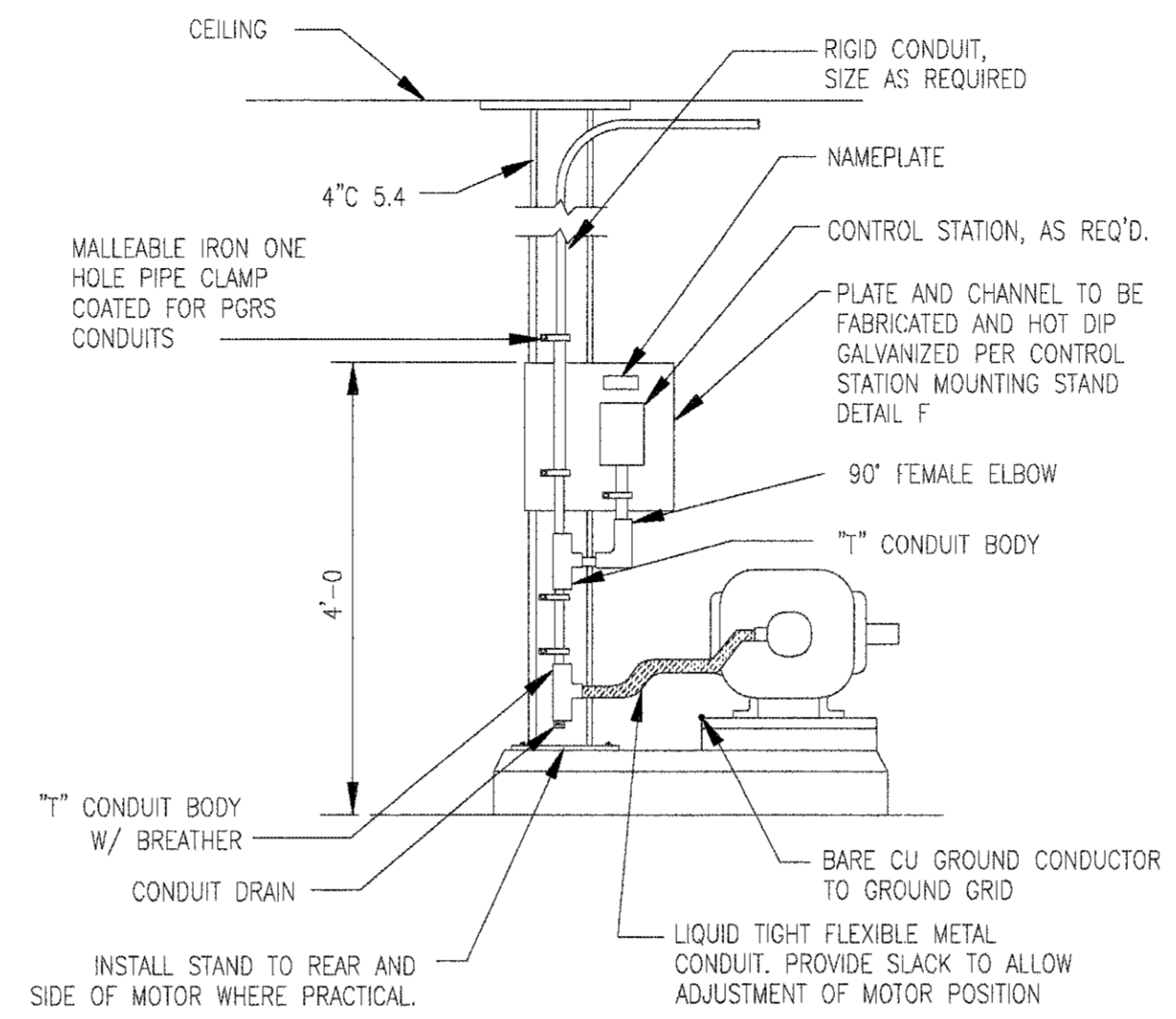


ESI
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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

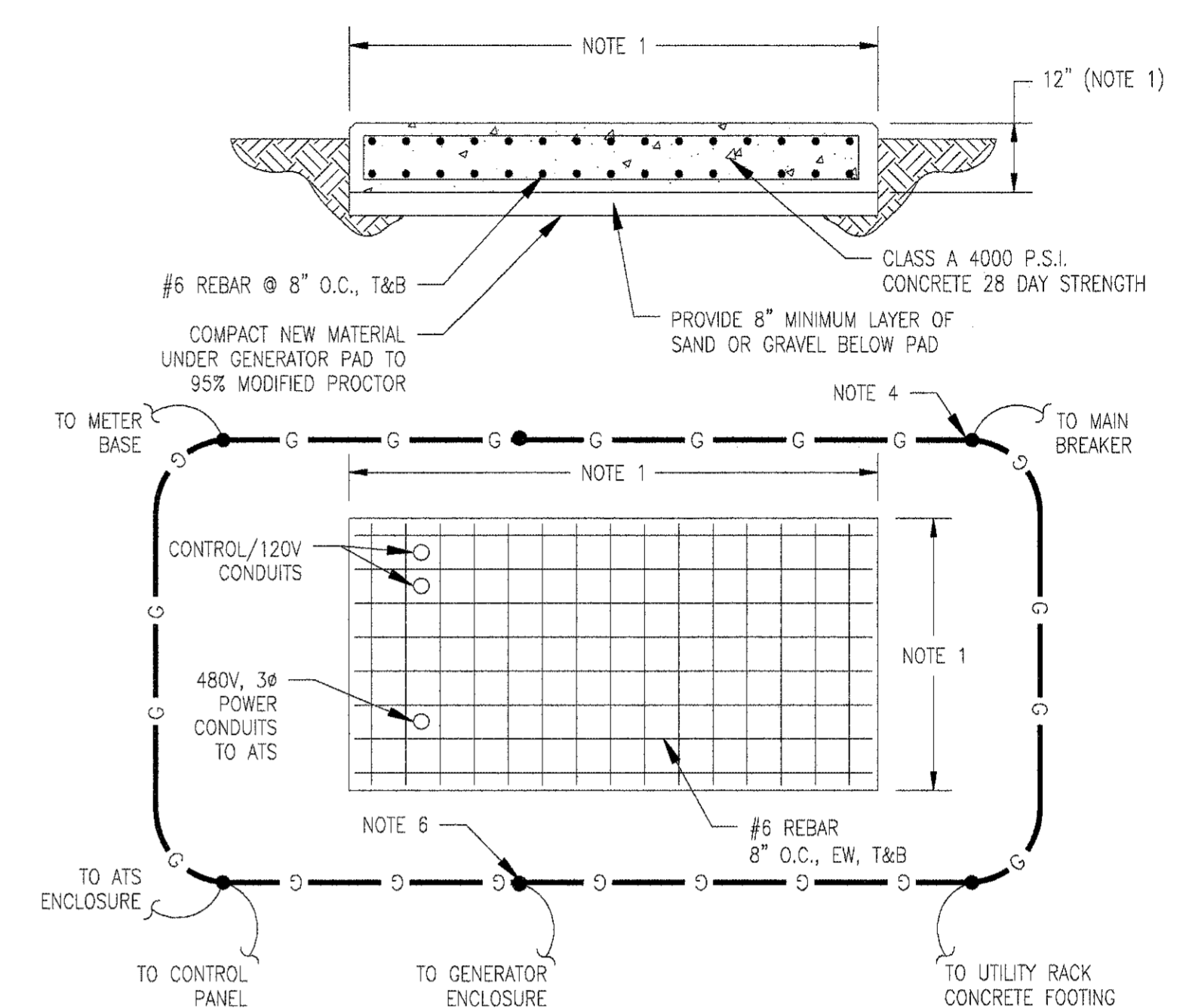
NOTE:
 1. WIRING TO BE CONTINUOUS TO
 FIXTURE. NO SPICING IN CONDUIT
 IS PERMITTED.



1 HANDRAIL MOUNTED FIXTURE WITH RECEPTACLE

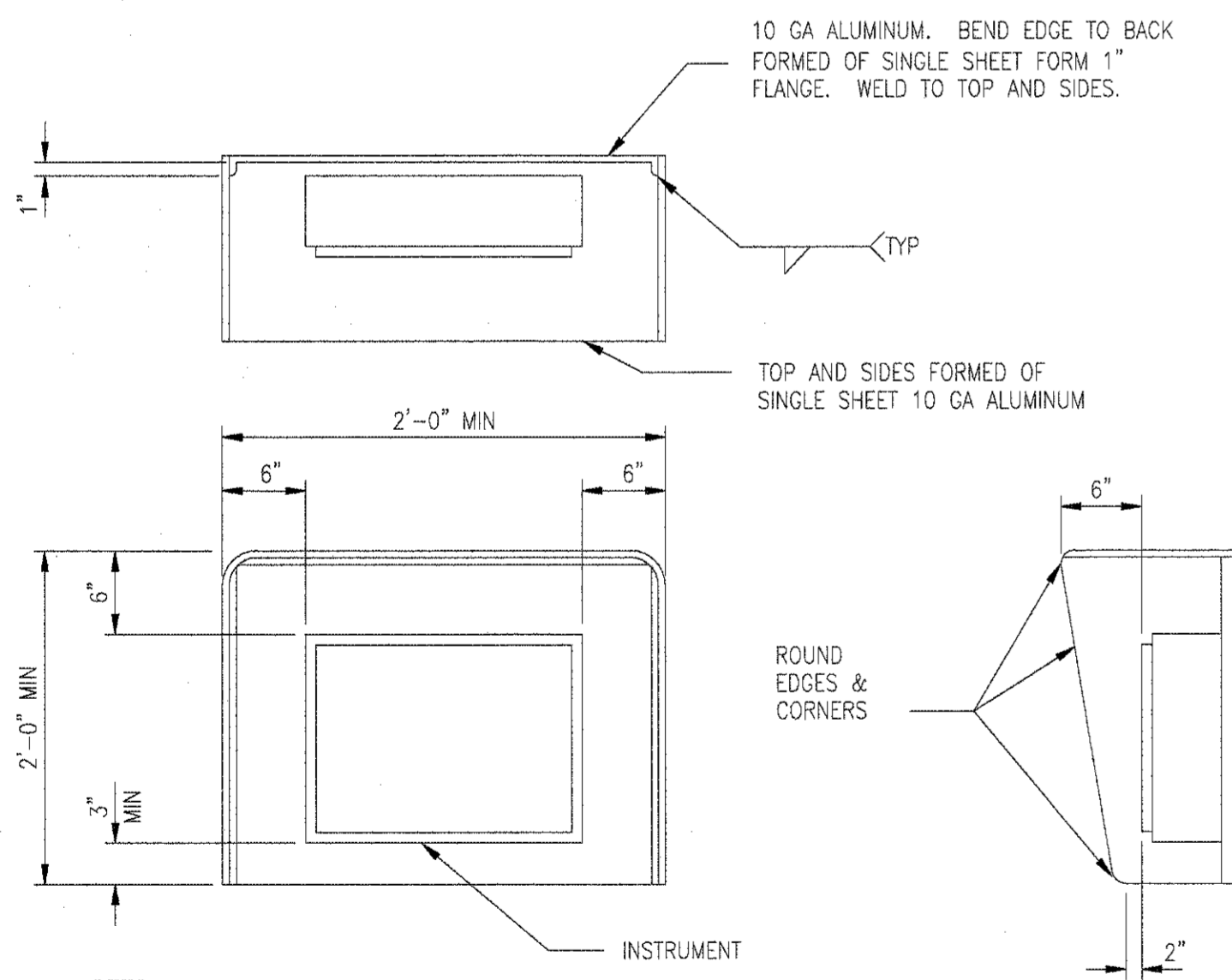


2 OVERHEAD MOTOR FEED



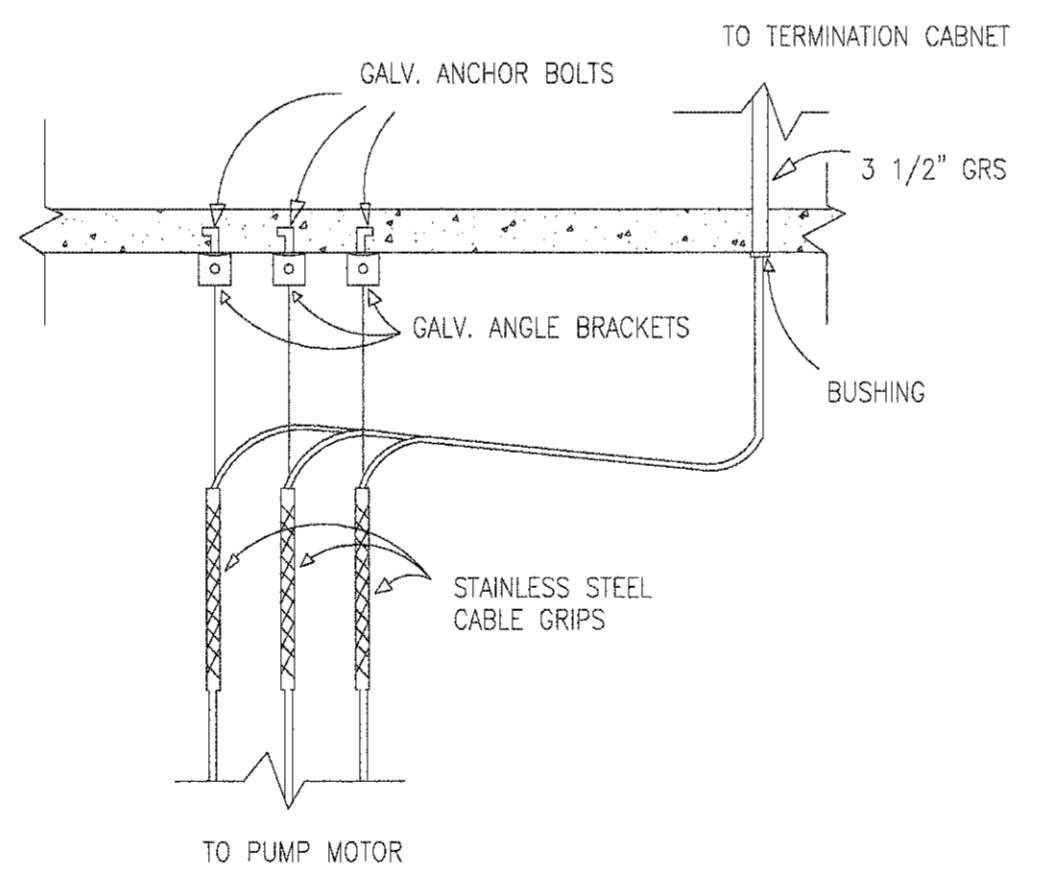
- NOTES:
1. REVIEW DIMENSIONS OF GEN. SET, INCLUDING W.P. HOUSING, TO DETERMINE ACTUAL DIMENSIONS OF GEN. PAD. PAD SHALL BE INSTALLED AS RECOMMENDED BY THE GENERATOR MANUFACTURER.
 2. PAD SHALL BE 0-8" LARGER ON ALL SIDES THAN THE GENERATOR BASE AND ENCLOSURE.
 3. VERIFY CONDUIT PENETRATIONS WITH GENERATOR MANUFACTURER.
 4. PROVIDE FOUR (4) 10"x3/8" COPPER CLAD STEEL GROUND RODS AS SHOWN WITH #4 BARE COPPER GROUND WIRE AROUND THE GENERATOR PAD. CONNECT GROUND WIRE TO THE GENERATOR ENCLOSURE.
 5. EXACT GENERATOR PAD SIZE SHALL BE DETERMINED BY THE GENERATOR MANUFACTURER'S SHOP DRAWING PRIOR TO INSTALLATION.
 6. GENERATOR HOUSING SHALL BE GROUND, NOT THE NEUTRAL.

3 GENERATOR GROUNDING



- NOTES:
1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
 2. MOUNT RAIN HOOD BETWEEN INSTRUMENT AND STANCHION. USE STAINLESS STEEL BOLTS AND INSULATING WASHERS AND SLEEVES.

4 SUN/RAIN HOOD



5 PUMP MOTOR CABLE SUPPORT

PROJECT NUMBER: _____ DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
**ELECTRICAL
 INSTALLATION DETAILS**



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



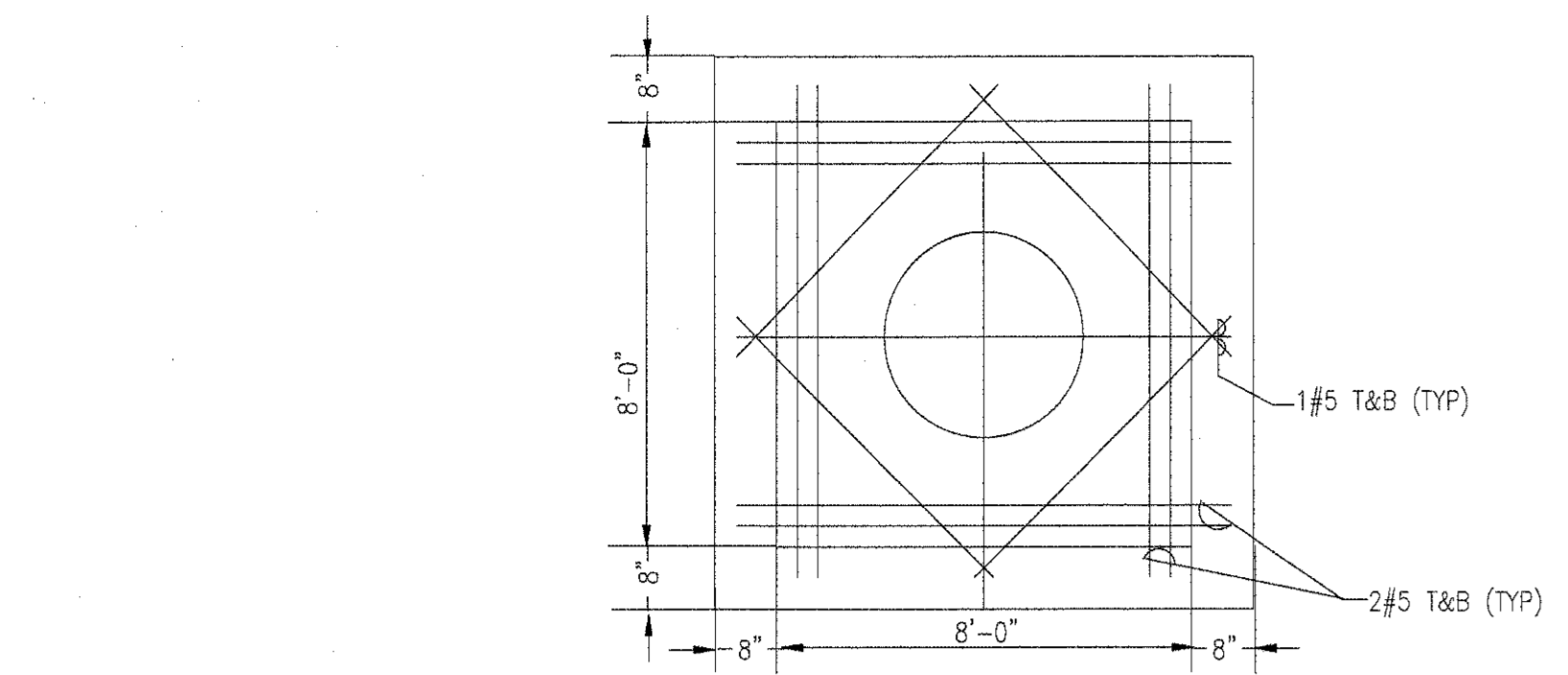
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:	REVISION
	AUGUST 2016	

DESIGN: AZ
 DRAWN: JIV
 CHECK: AZ

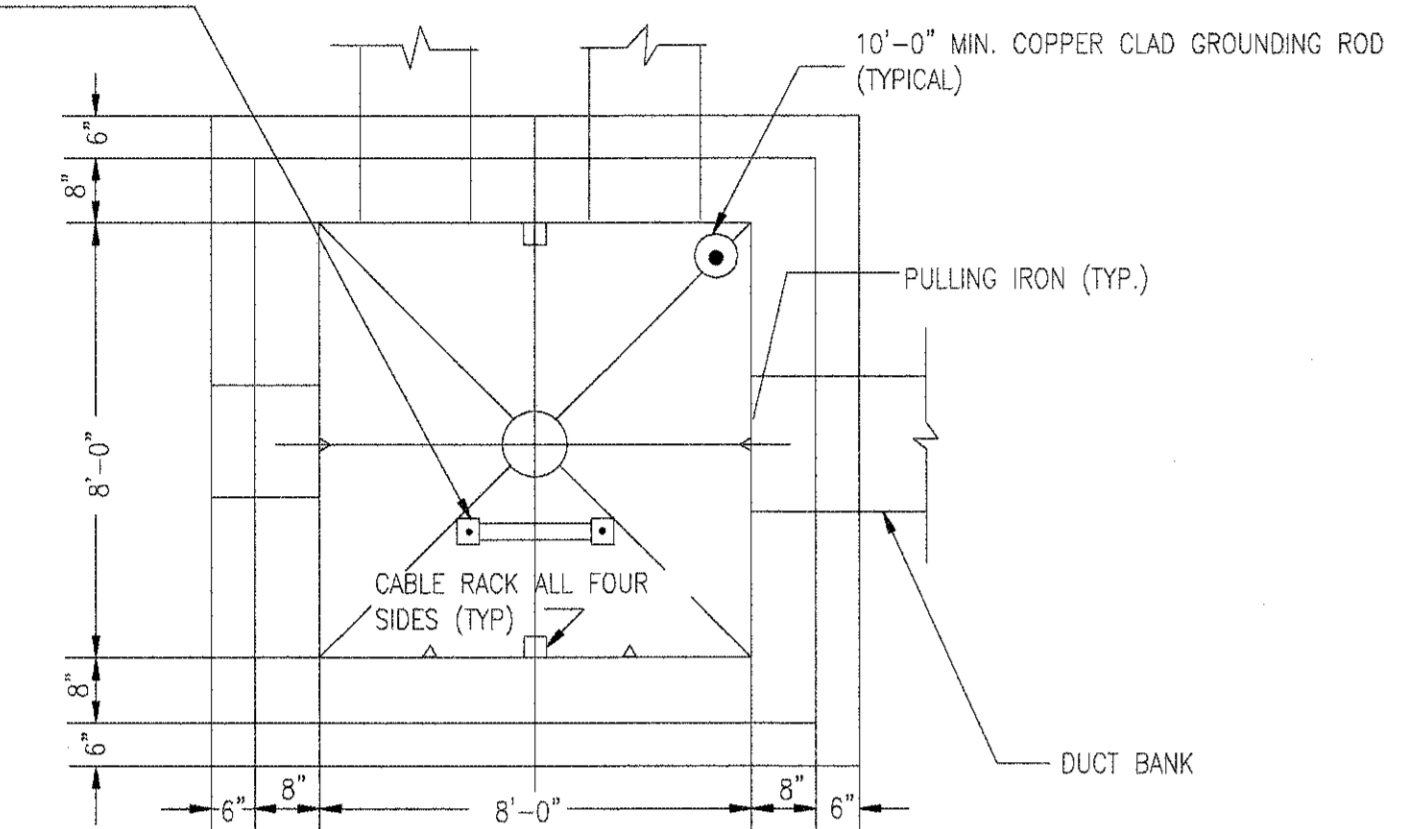
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 ELECTRICAL
 INSTALLATION DETAILS

SHEET NO.
 E-904

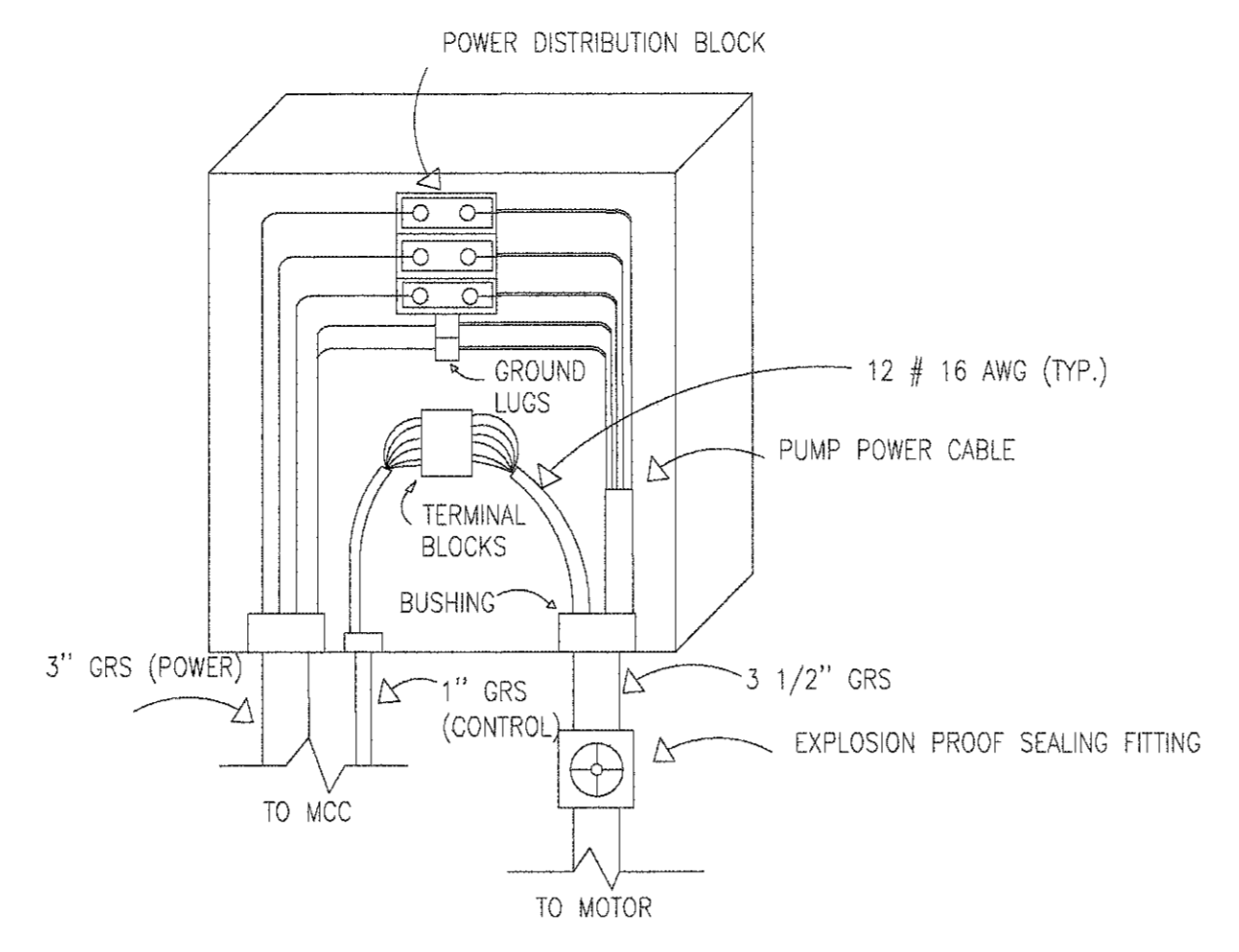


TOP PLAN

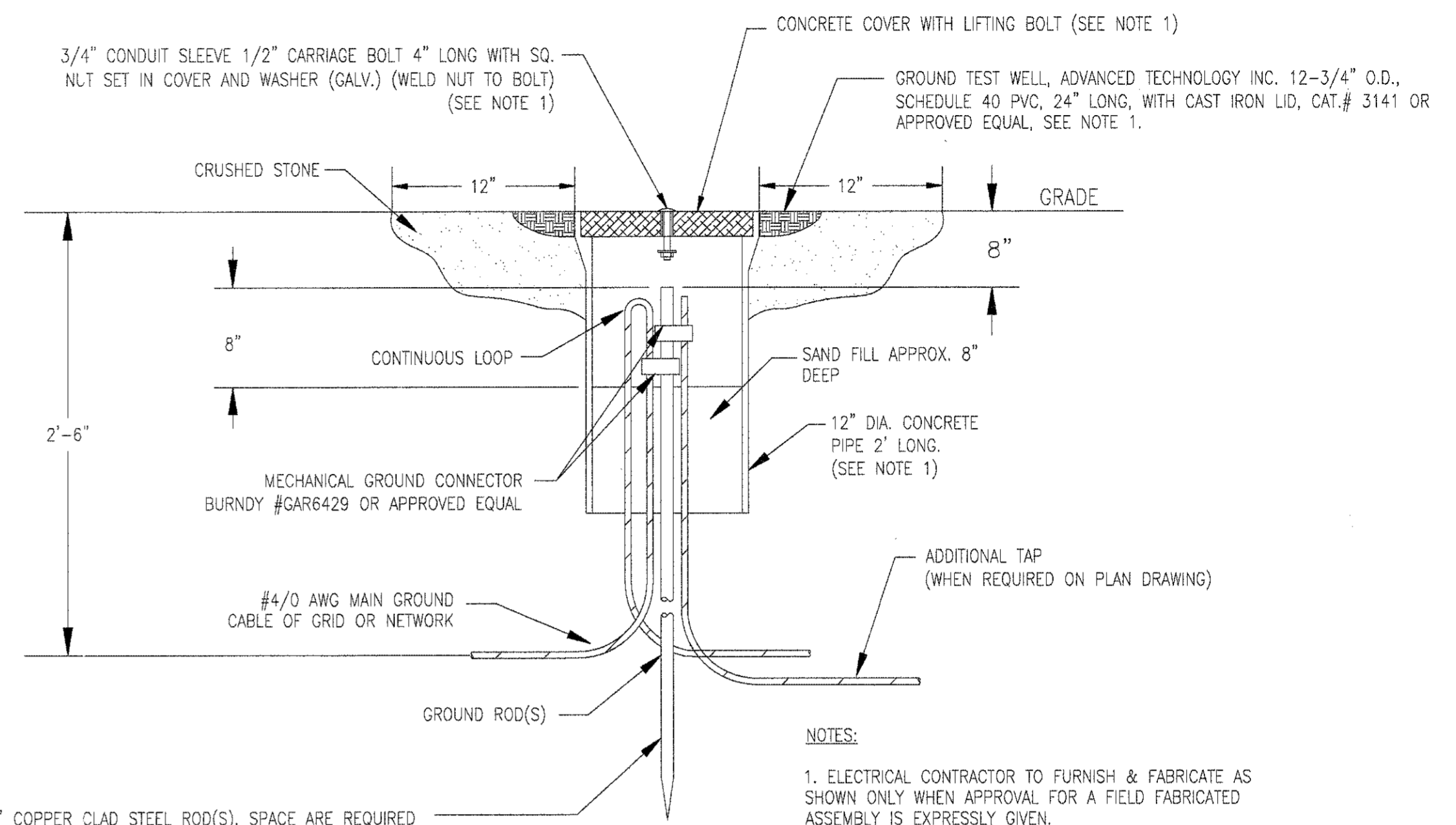
6 1/2" GALVANIZED STEEL LADDER (TYP) "ALHAMBRA FOUNDRY", A-3400 "GRAY BAR" 9111, OR EQUAL



BOTTOM PLAN



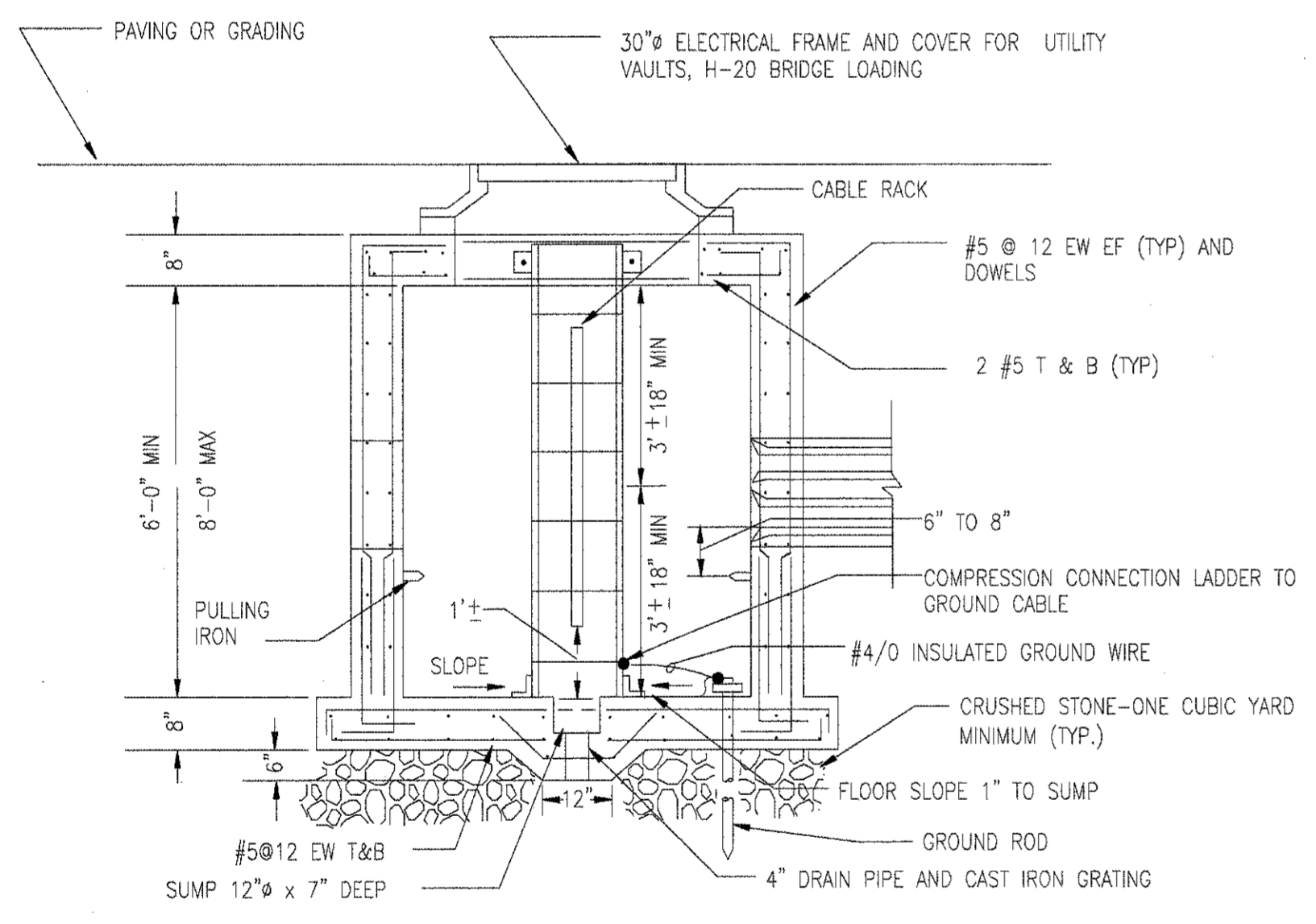
2 SUBMERSIBLE PUMP MOTOR JUNCTION BOX



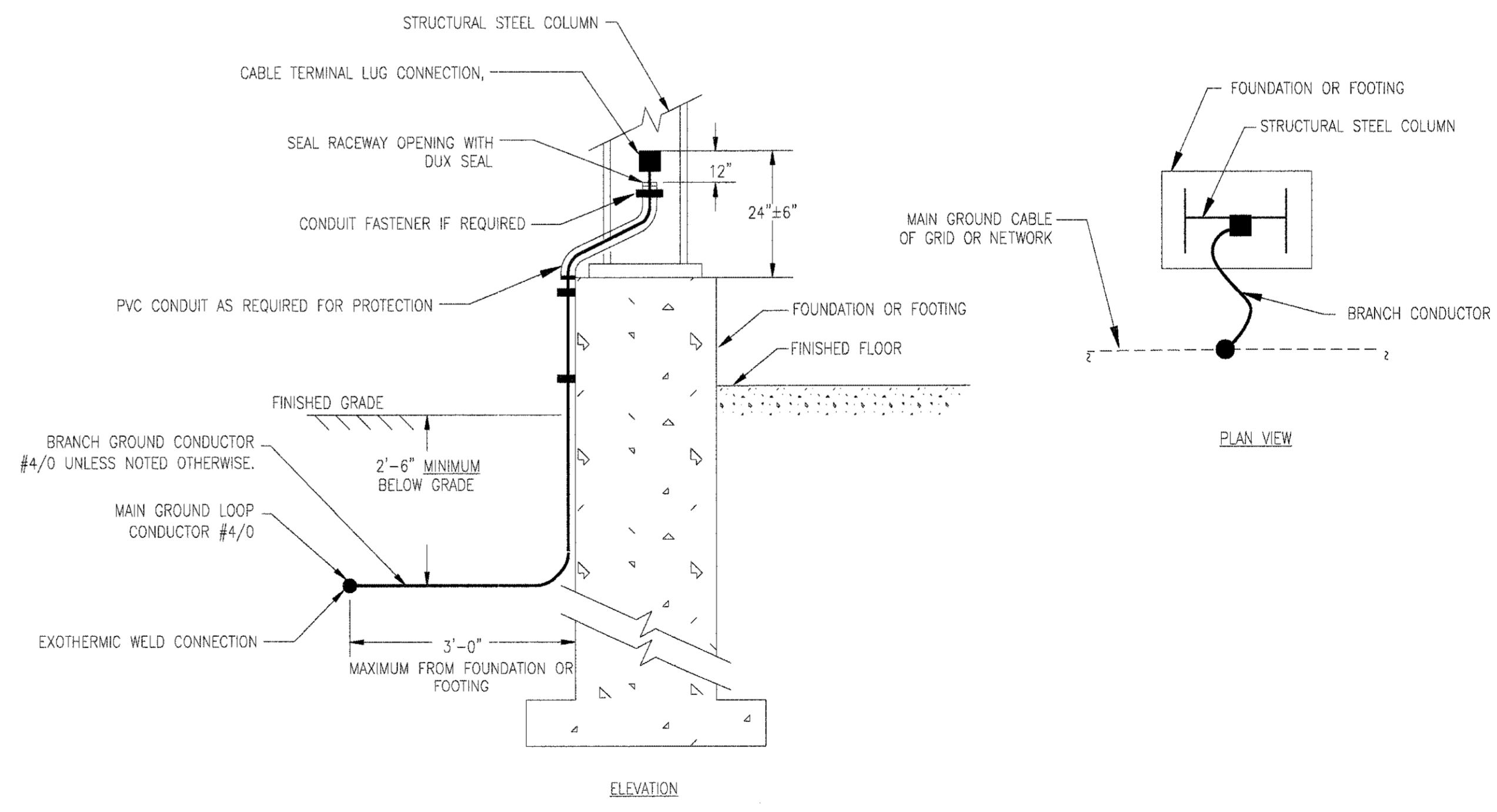
3/4" X 10' COPPER CLAD STEEL ROD(S). SPACE ARE REQUIRED TO ACHIEVE WHEN LONGER ROD(S) RESISTIVITY LEVELS, SECTIONAL ROD(S) MAY BE USED.

- NOTES:
1. ELECTRICAL CONTRACTOR TO FURNISH & FABRICATE AS SHOWN ONLY WHEN APPROVAL FOR A FIELD FABRICATED ASSEMBLY IS EXPRESSLY GIVEN.
 2. TEST WELLS ARE TYPICALLY PLACED AT EACH ELECTRICAL ROOM AND NEAR THE PLANT CENTRAL CONTROL ROOM

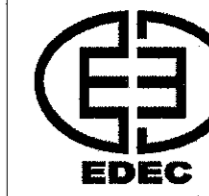
3 GROUND TEST WELL



1 MANHOLE



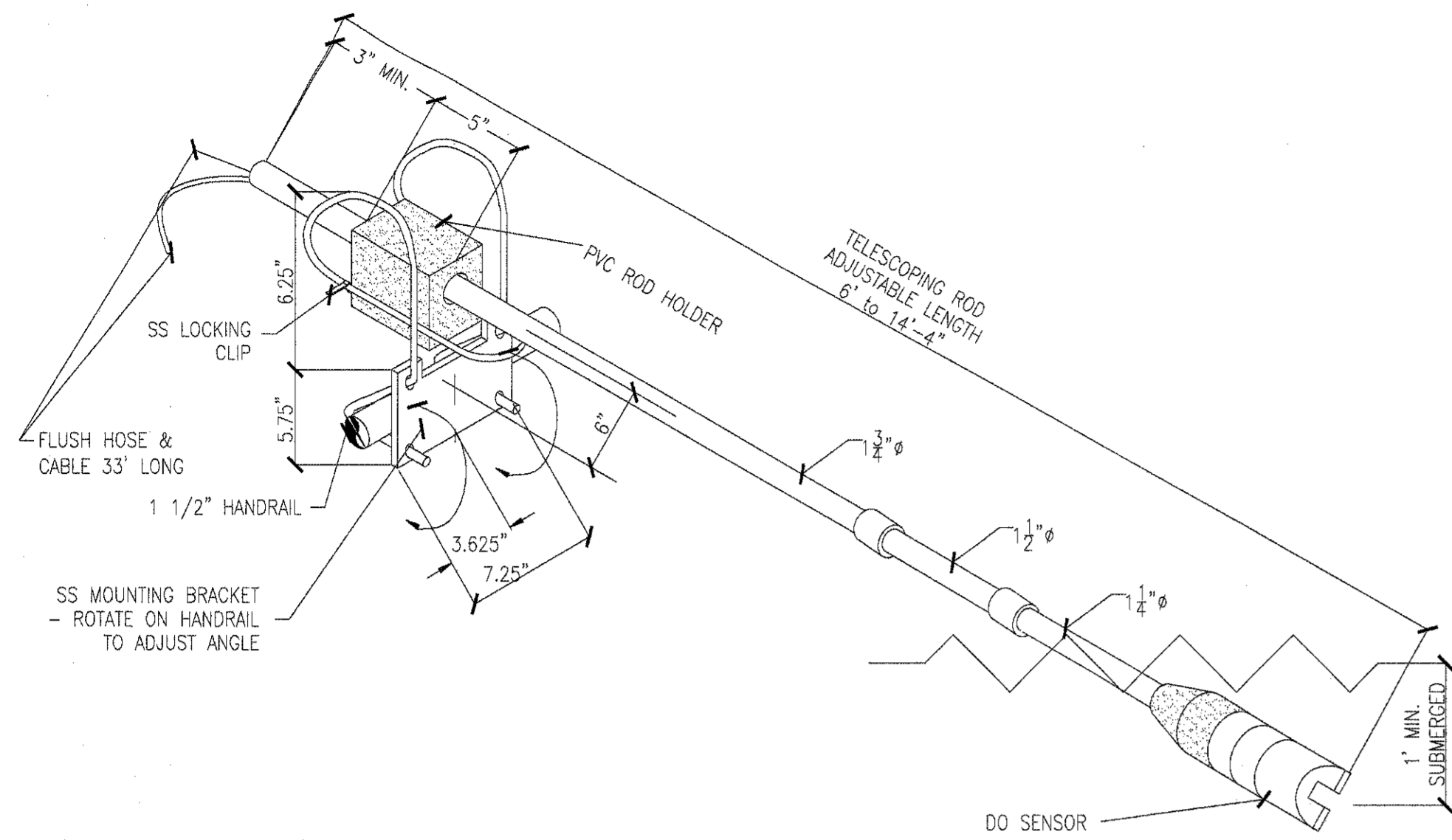
4 STEEL COLUMN GROUNDING CONNECTION



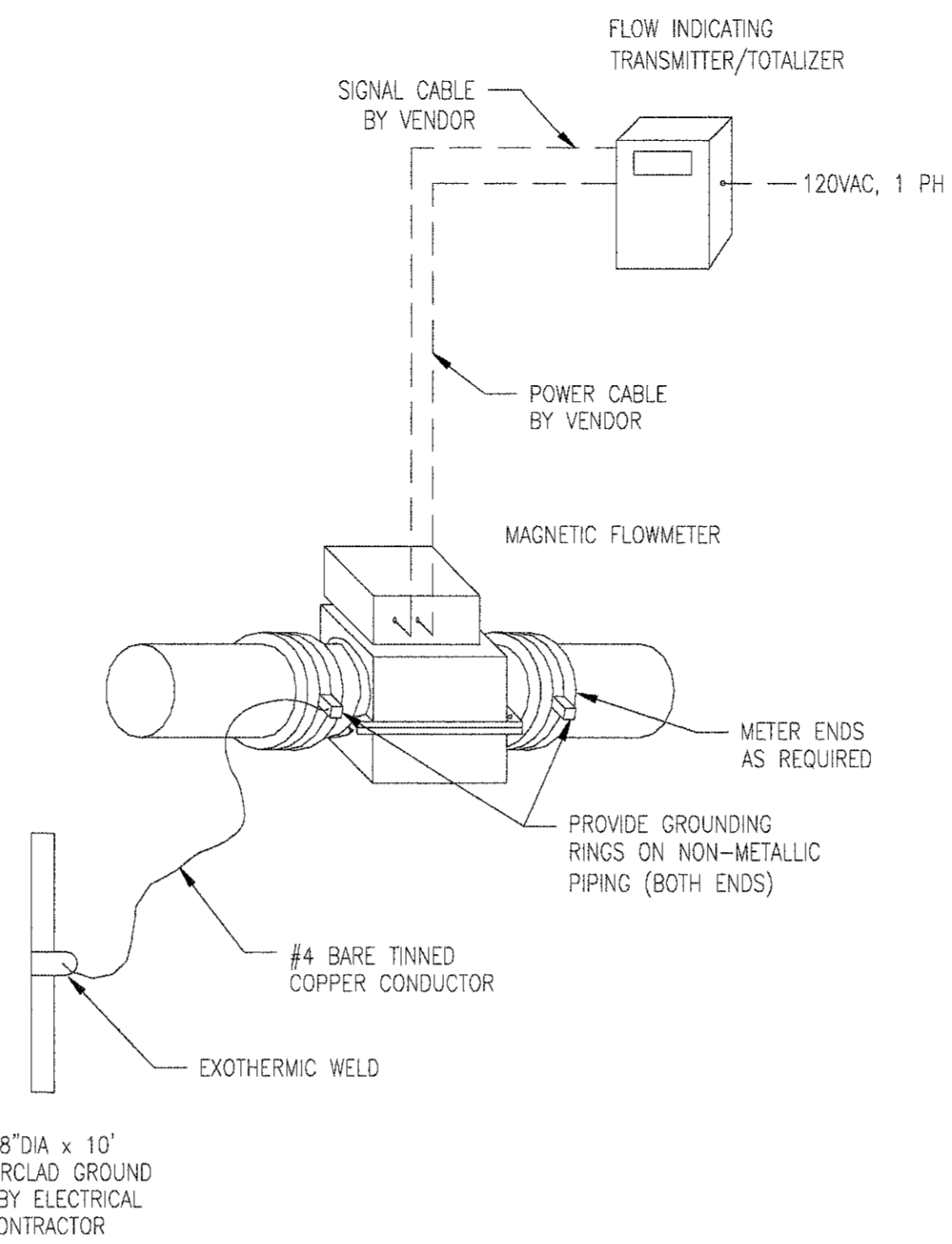
EDEC, INC.
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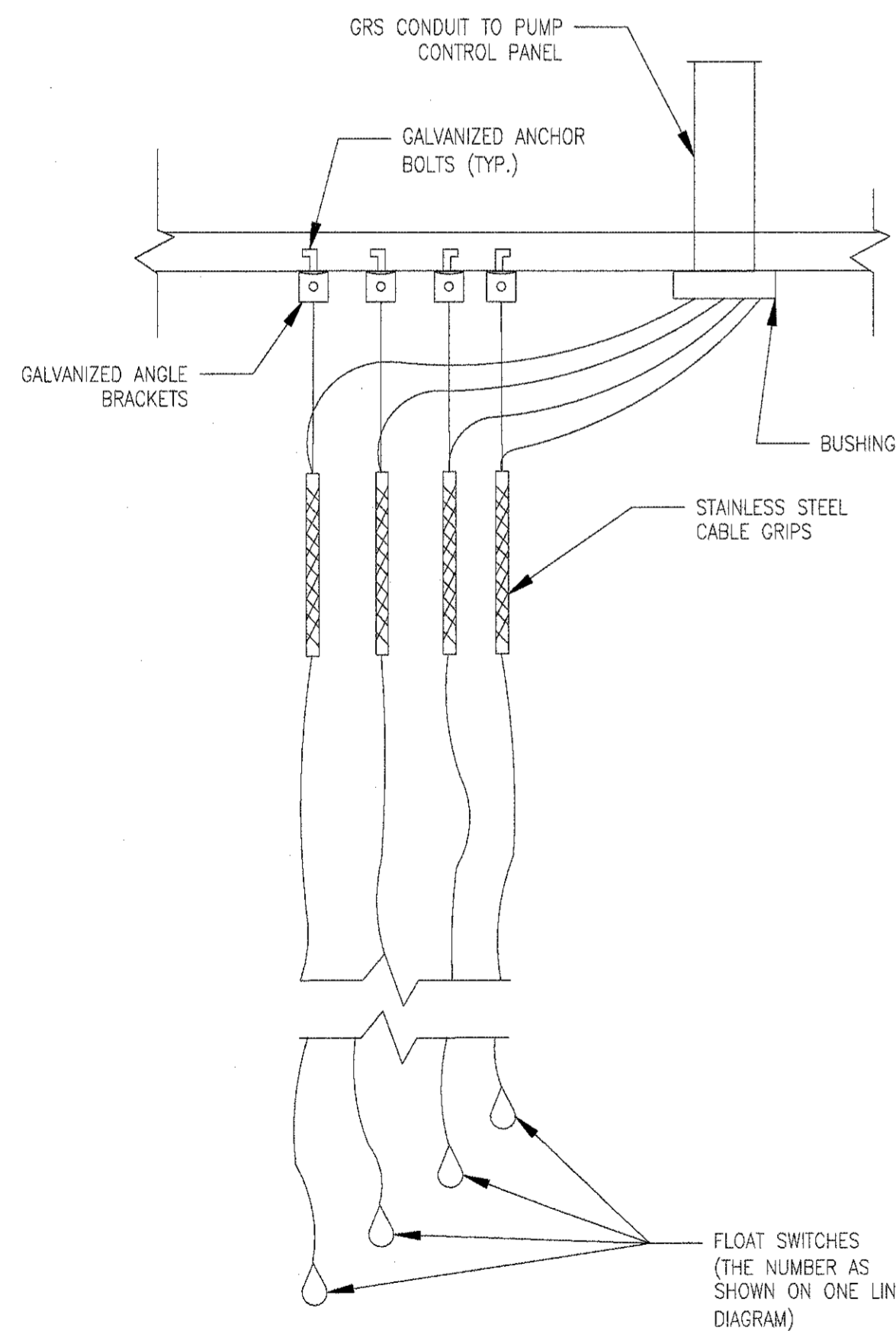


1 DO PROBE HANDRAIL MOUNT

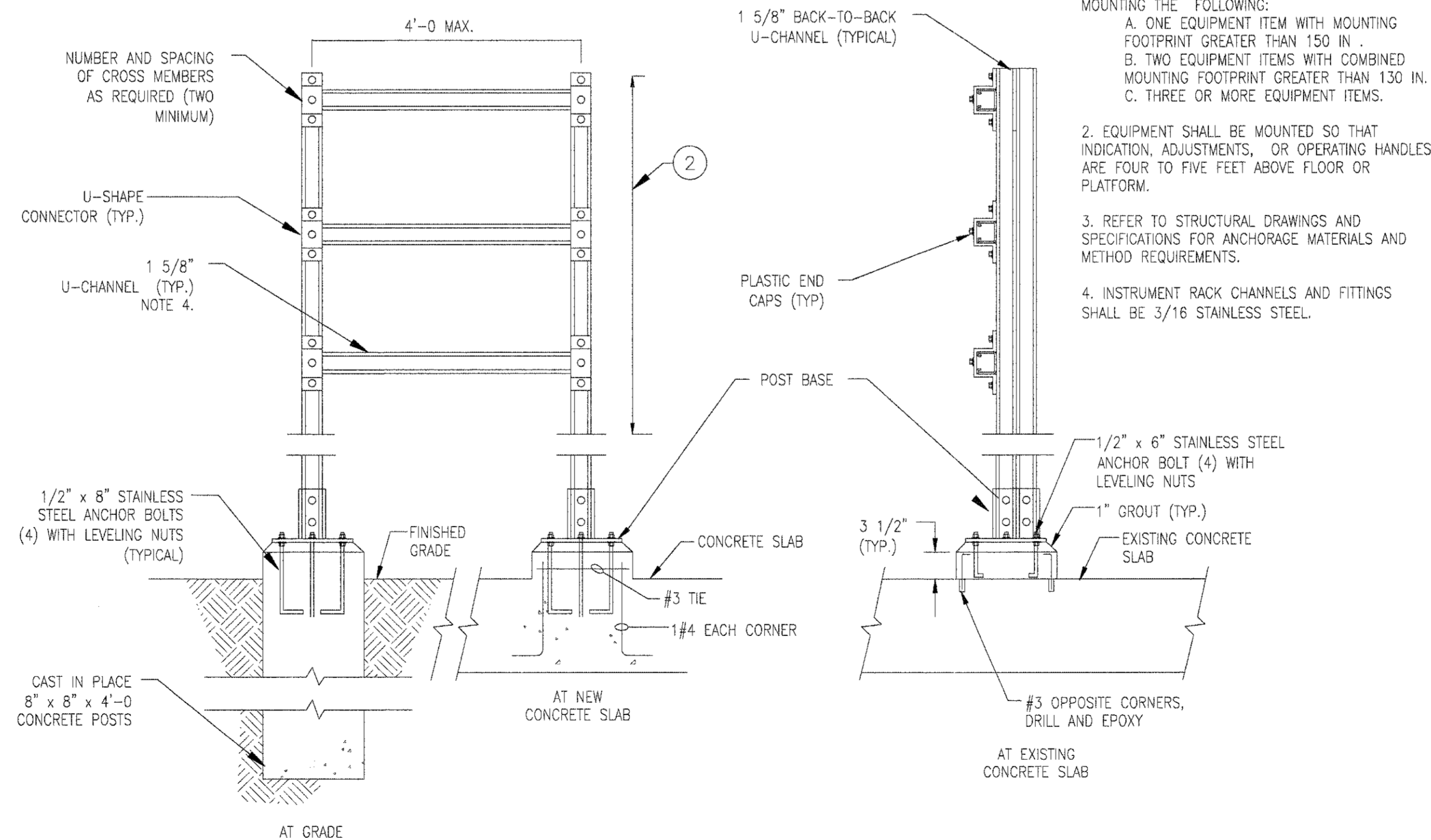


2 MAGNETIC FLOW SENSOR

NOTES:
 1. POWER SUPPLY TO MAGNETIC METER PRIMARY DEVICE & TRANSMITTER TO BE FROM SAME SOURCE WITH RESPECT TO VOLTAGE, FREQUENCY AND PHASE
 2. INSTALLATION OF METERS SHALL PROVIDE FOR 10 PIPE DIAMETERS UPSTREAM AND 5 PIPE DIAMETER DOWNSTREAM, WHERE POSSIBLE



3 FLOAT SWITCH SUSPENSION



4 INSTRUMENT RACK

NOTES:
 1. EQUIPMENT RACK SHALL BE UTILIZED FOR MOUNTING THE FOLLOWING:
 A. ONE EQUIPMENT ITEM WITH MOUNTING FOOTPRINT GREATER THAN 150 IN.
 B. TWO EQUIPMENT ITEMS WITH COMBINED MOUNTING FOOTPRINT GREATER THAN 130 IN.
 C. THREE OR MORE EQUIPMENT ITEMS.
 2. EQUIPMENT SHALL BE MOUNTED SO THAT INDICATION, ADJUSTMENTS, OR OPERATING HANDLES ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.
 3. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ANCHORAGE MATERIALS AND METHOD REQUIREMENTS.
 4. INSTRUMENT RACK CHANNELS AND FITTINGS SHALL BE 3/16 STAINLESS STEEL.

PROJECT NUMBER: _____
 DATE: AUGUST 2016

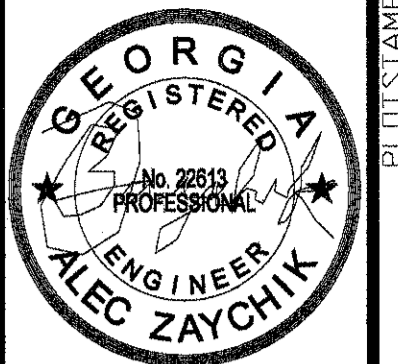
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 BAR BEYOND 1\"/>

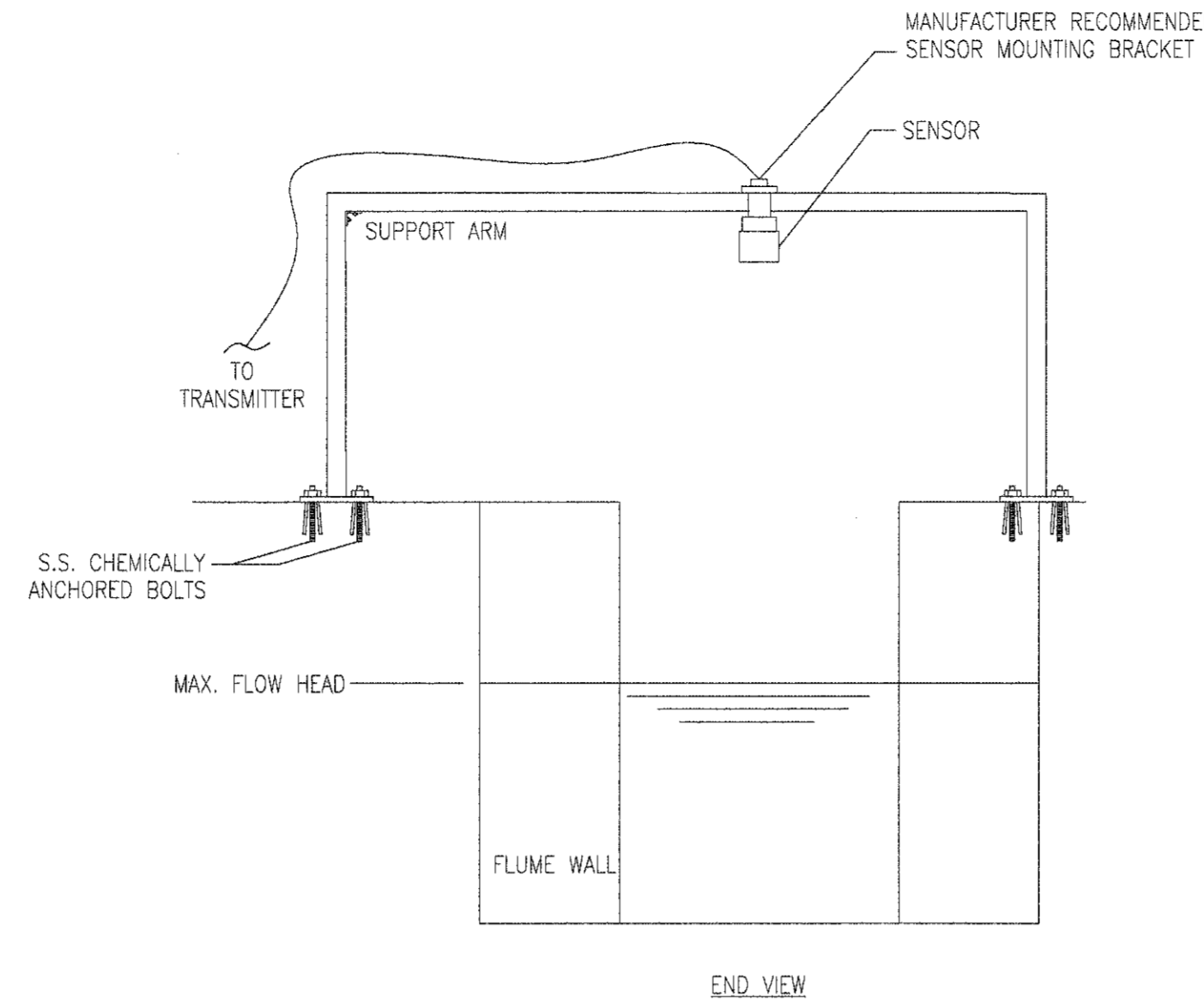
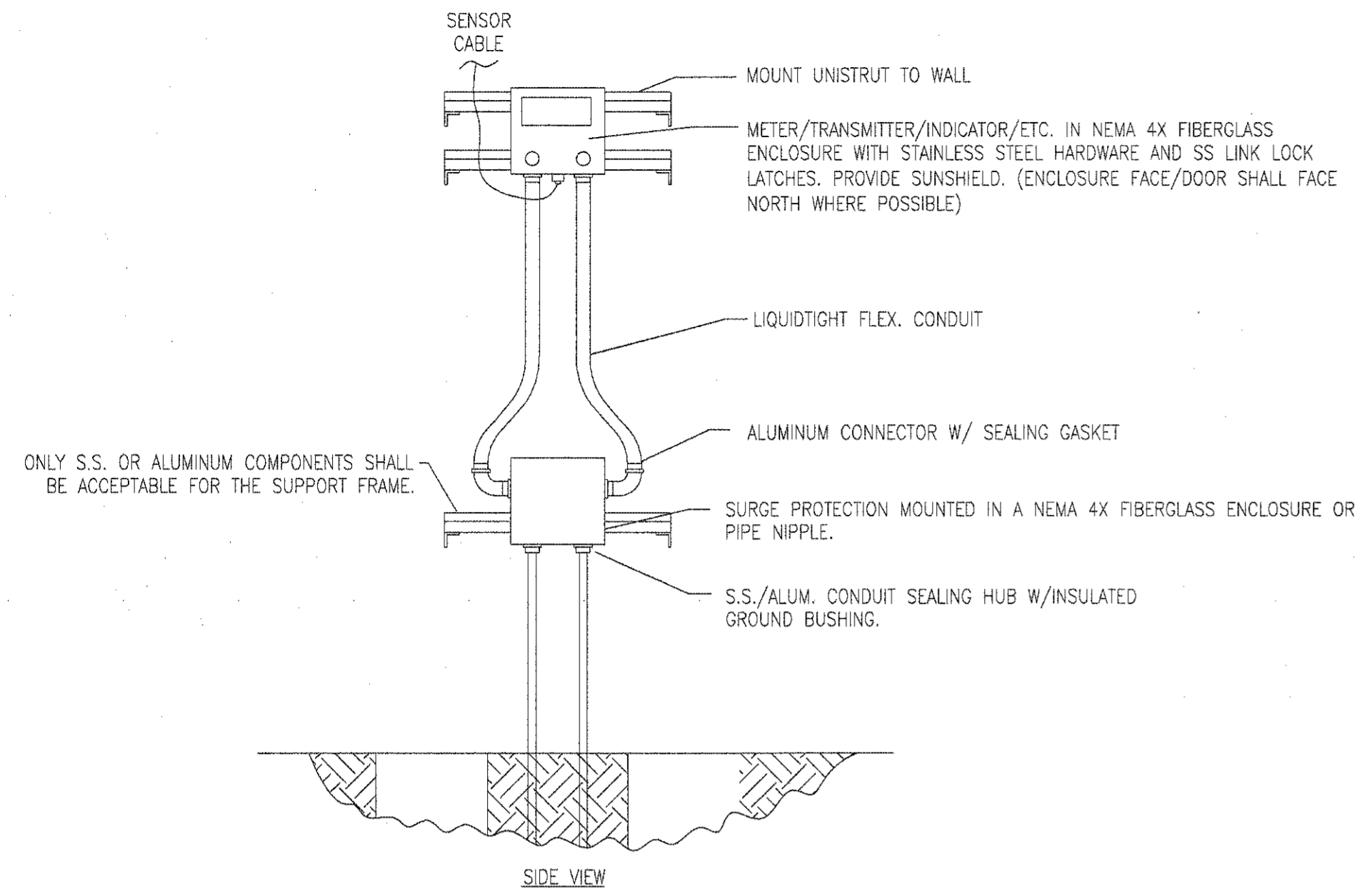
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INSTRUMENTS
 INSTALLATION DETAILS



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



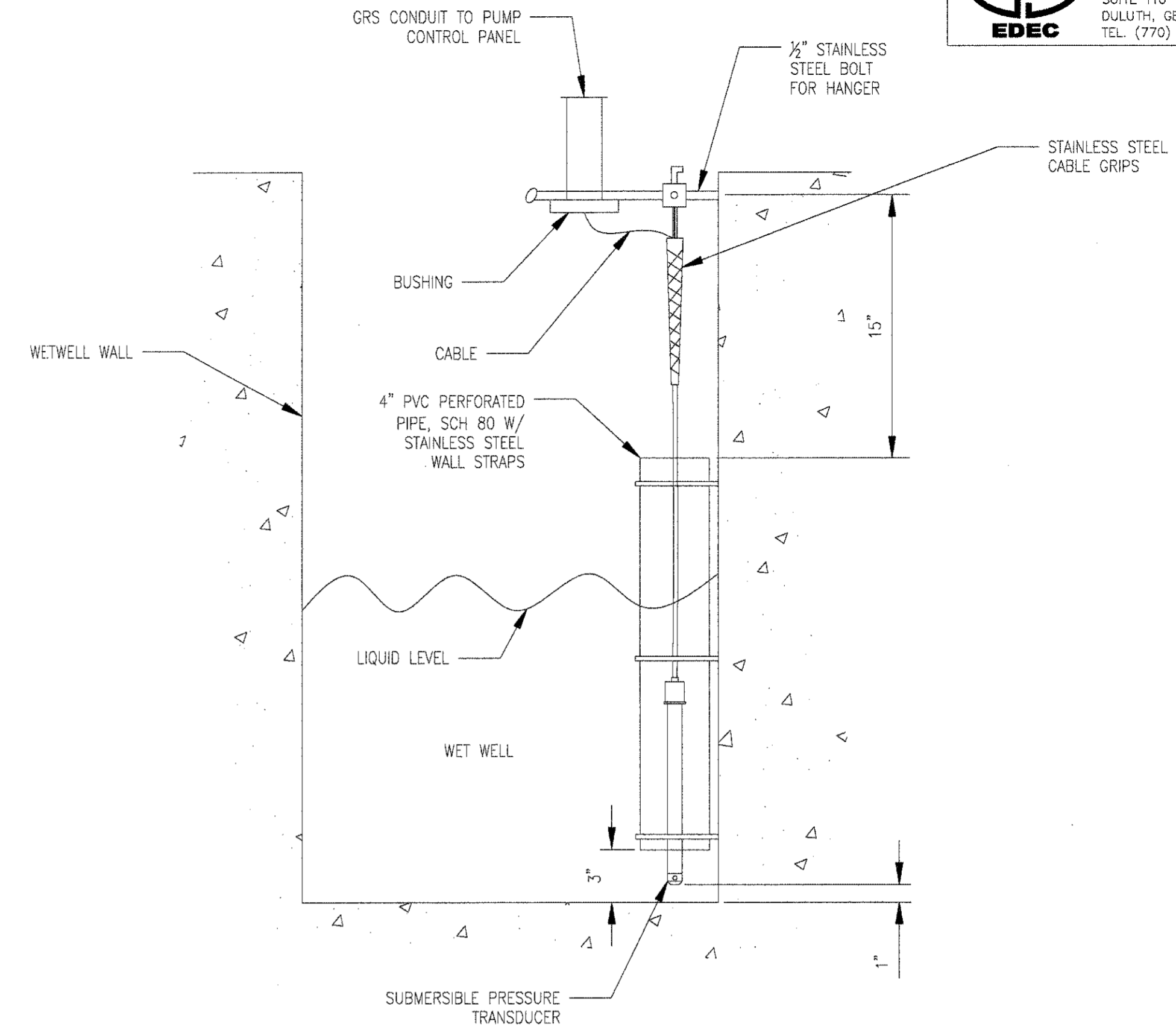
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ENGINEERING STRATEGIES, INC.
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 MARIETTA, GA 30062
 (770) 429-0001



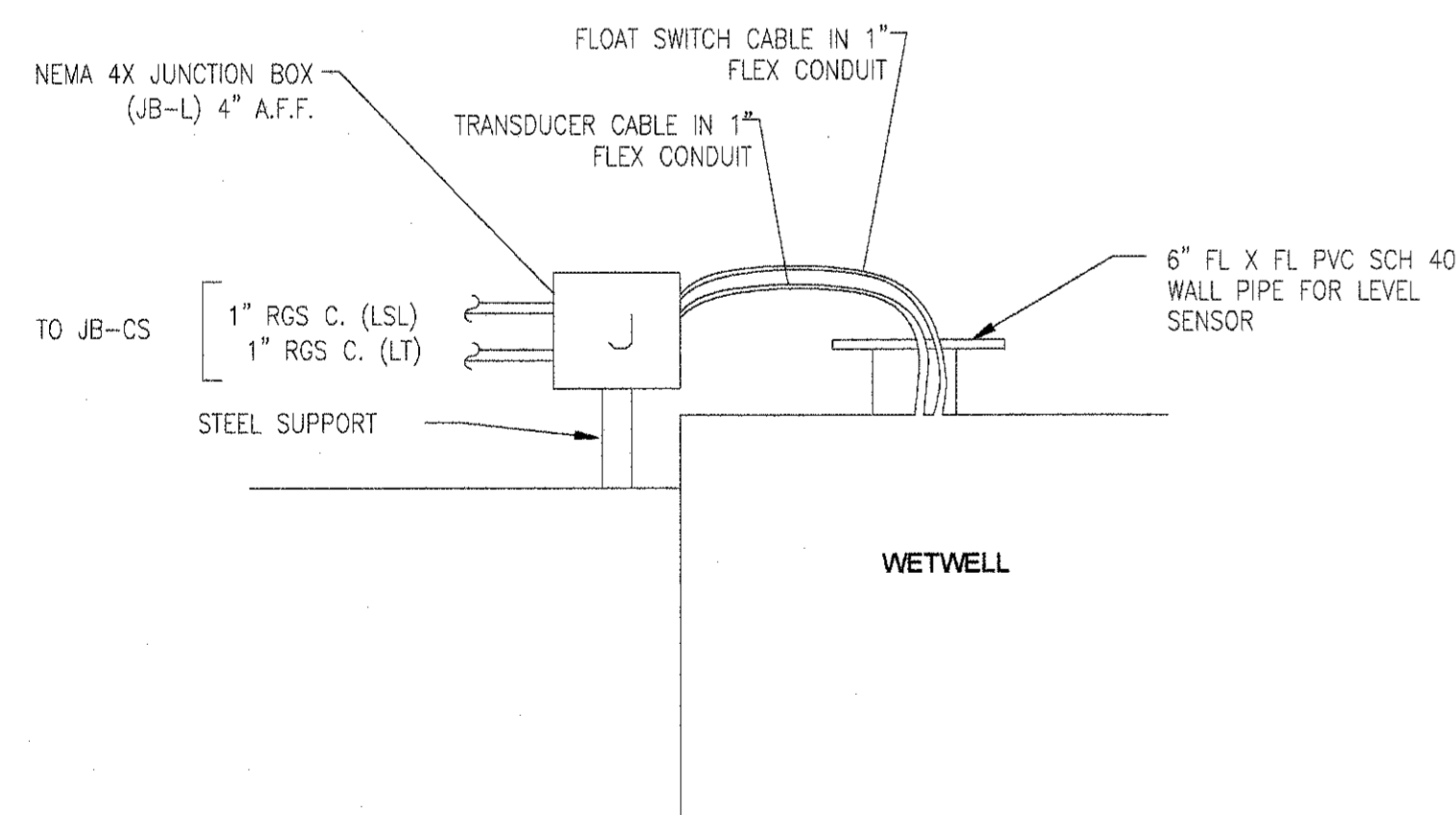
NOTES:

1. SUPPORT DEVICES AS REQUIRED BY CONDITIONS, i.e. 2" PIPE, STRUT, HANDRAIL, ETC. SUPPORTS SHALL BE ALUMINUM. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. INSTALL SENSOR AT A HEIGHT GREATER THAN THE CALIBRATED MAXIMUM FLOW HEAD PLUS THE METER'S MINIMUM DEADBAND (DB), PARALLEL TO THE FLOWING SURFACE. SECURE SENSOR CABLE TO SUPPORT CHANNEL WITHOUT MAKING SHARP BENDS, BUT AS NEEDED FOR PROPER STRAIN RELIEF. IF NOT SUBJECT TO SUBMERGENCE AND EASILY REMOVED FOR MAINTENANCE, SENSORS MAY BE MOUNTED BELOW GRATINGS. HOWEVER, THE SONIC PATH MUST BE FREE OF ALL OBSTRUCTIONS. CUTOUTS IN OBSTRUCTIONS ARE ACCEPTABLE IF THEY DO NOT COMPROMISE STRUCTURAL INTEGRITY AND HAVE SMOOTH, SEALED EDGES.

1 FLOW MEASUREMENT OVER PARTIAL FLUME DETAIL



2 SUBMERSIBLE PRESSURE TRANSDUCER IN WETWELL INSTALLATION DETAIL



3 CONTROL/SIGNAL CABLES AT WETWELL INSTALLATION DETAIL

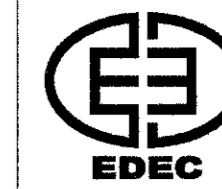
PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 849 BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
**INSTRUMENTS
 INSTALLATION DETAILS**

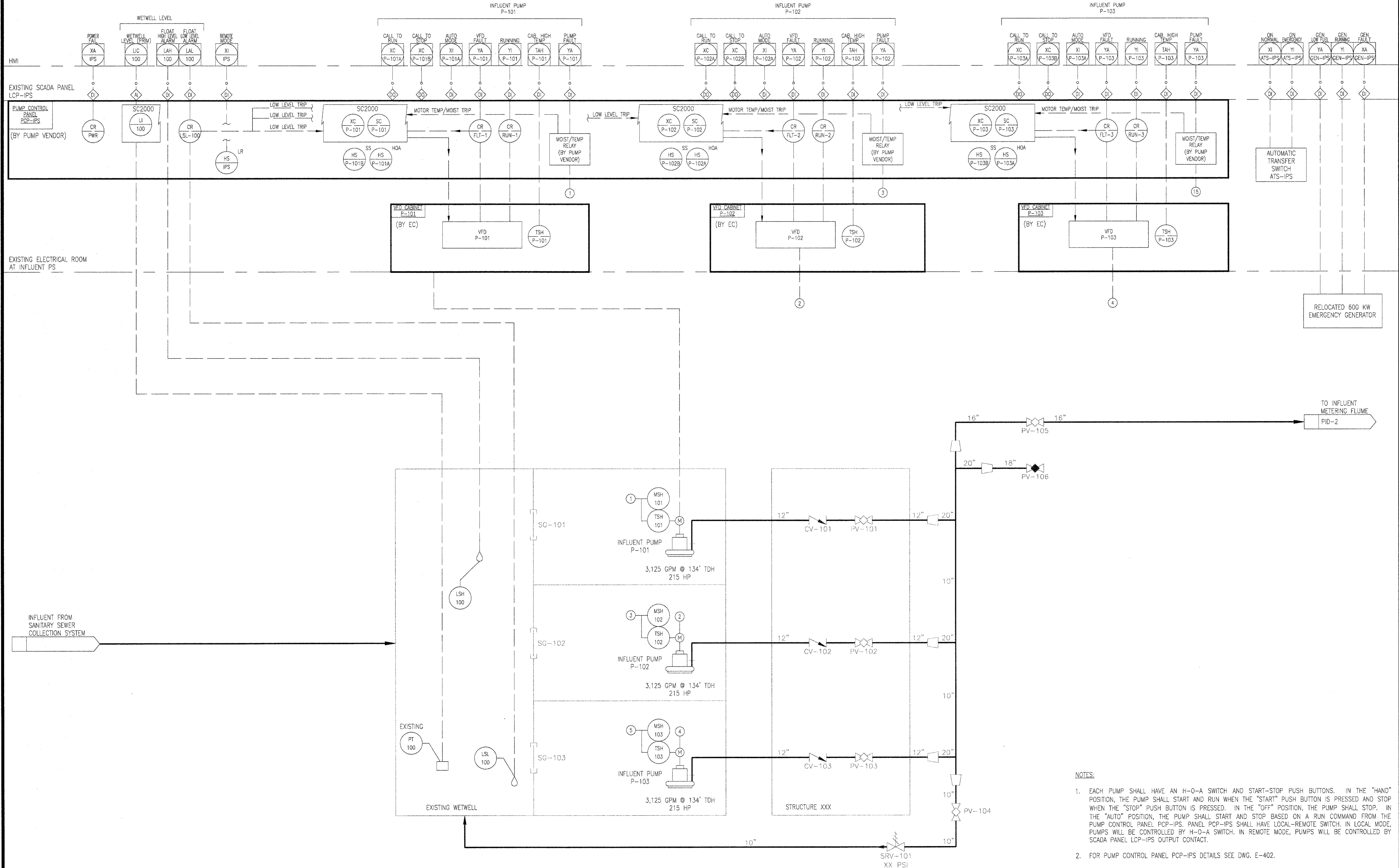
SHEET NO.
E-952



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 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-9685



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 (770) 429-0001



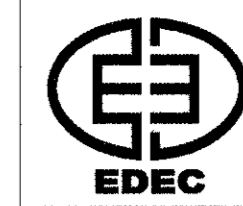
- NOTES:**
1. EACH PUMP SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE PUMP SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE PUMP SHALL STOP. IN THE "AUTO" POSITION, THE PUMP SHALL START AND STOP BASED ON A RUN COMMAND FROM THE PUMP CONTROL PANEL PCP-IPS. PANEL PCP-IPS SHALL HAVE LOCAL-REMOTE SWITCH. IN LOCAL MODE, PUMPS WILL BE CONTROLLED BY H-O-A SWITCH. IN REMOTE MODE, PUMPS WILL BE CONTROLLED BY SCADA PANEL LCP-IPS OUTPUT CONTACT.
 2. FOR PUMP CONTROL PANEL PCP-IPS DETAILS SEE DWG. E-402.

PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

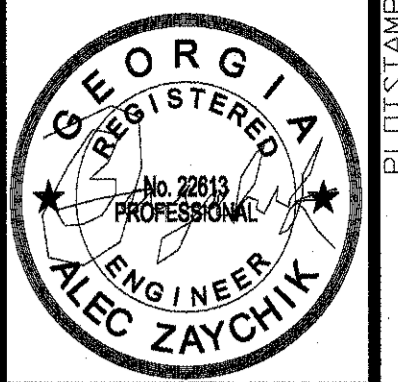
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW US 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

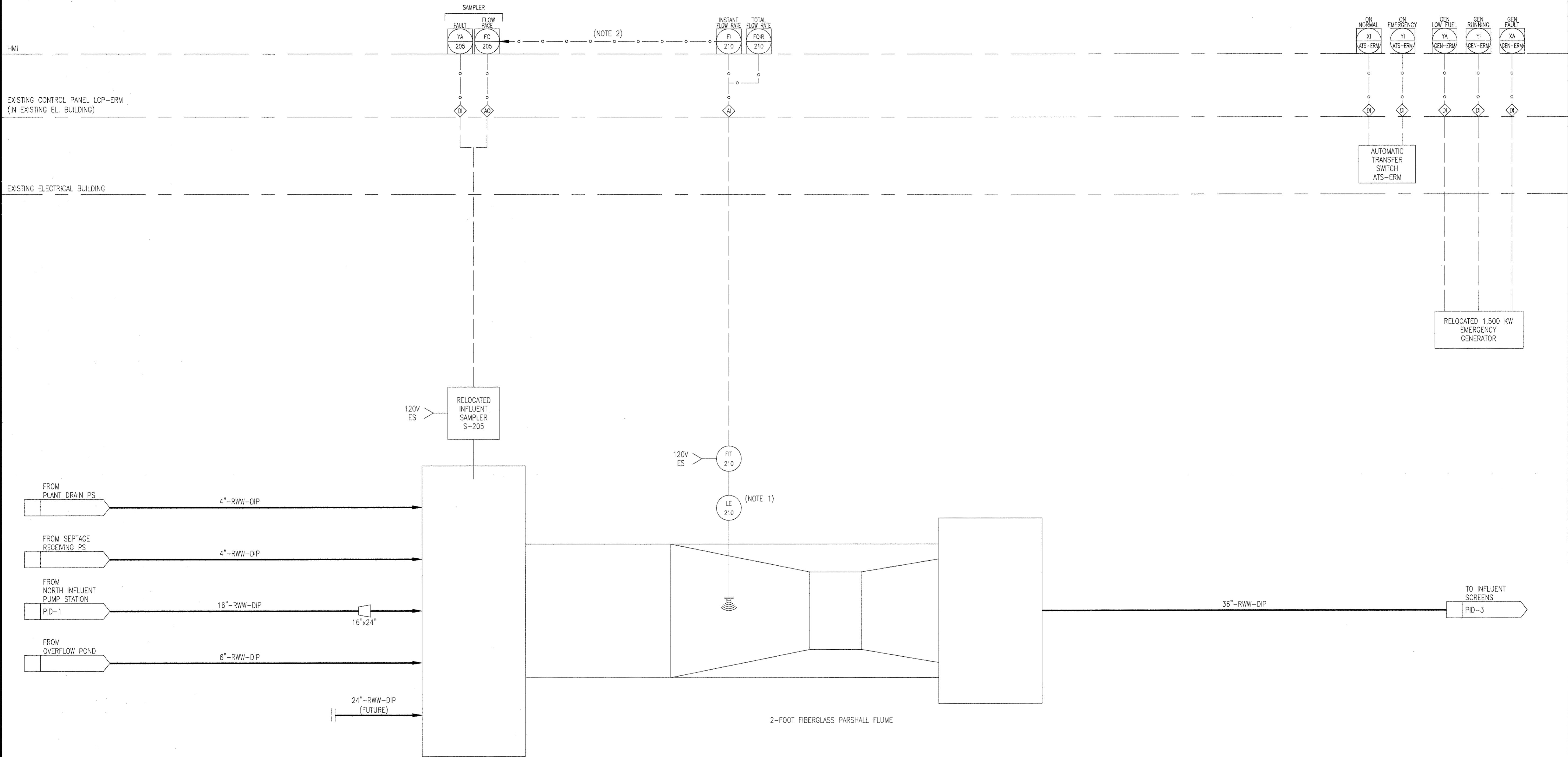
**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT PUMP STATION
 PROCESS AND FLOW DIAGRAM**



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NOTES:

1. ULTRASONIC LEVEL INSTRUMENT (LE-210) SHALL MEASURE THE WATER LEVEL IN THE PARSHALL FLUME AND DISPLAY THE INSTANTANEOUS FLOW RATE AND THE TOTALIZED FLOW RATE ON THE LOCAL FLOW INDICATING TRANSMITTER (FIT-210) AND ON THE PLANT SCADA SYSTEM. TOTALIZED FLOW RATE SHALL BE RESET EACH DAY AT 12:00 AM. INSTANTANEOUS FLOW RATE AND TOTALIZED FLOW RATE SHALL BE RECORDED AND STORED IN THE PLANT SCADA SYSTEM.
2. INFLUENT SAMPLER SHALL BE FLOW PAGED OFF THE INFLUENT FLOW METER (FIT-210).
3. INFLUENT SAMPLER ALARM SHALL BE DISPLAYED ON THE PLANT SCADA SYSTEM.

PROJECT NUMBER: -----	DATE: AUGUST 2016
REVISION	DATE

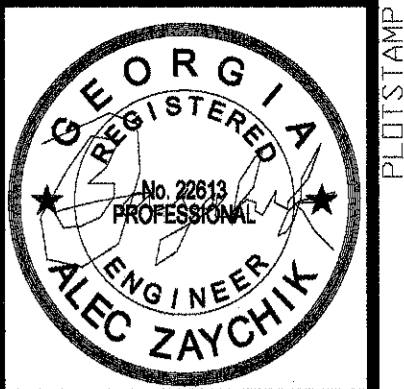
DSGN: AZ
 DRWN: DJV
 CHCK: AZ
 HAS BEEN ON A 4" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 4" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 INFLUENT METERING STRUCTURE
 PROCESS AND FLOW DIAGRAM**

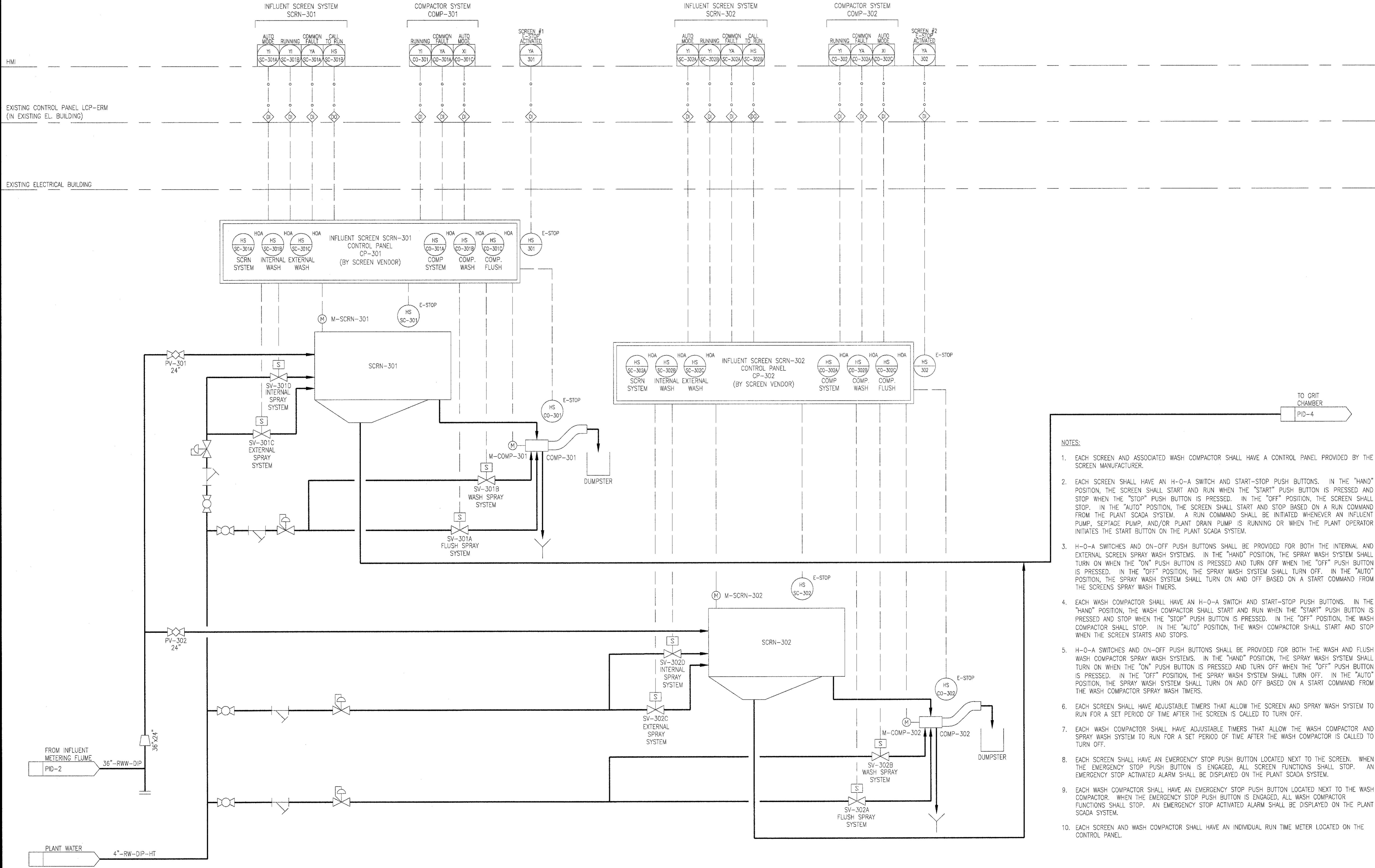
PLOT/STAMP



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 DULUTH, GEORGIA 30097
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 MARIETTA, GA 30067
 (770) 499-0001



NOTES:

1. EACH SCREEN AND ASSOCIATED WASH COMPACTOR SHALL HAVE A CONTROL PANEL PROVIDED BY THE SCREEN MANUFACTURER.
2. EACH SCREEN SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE SCREEN SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE SCREEN SHALL STOP. IN THE "AUTO" POSITION, THE SCREEN SHALL START AND STOP BASED ON A RUN COMMAND FROM THE PLANT SCADA SYSTEM. A RUN COMMAND SHALL BE INITIATED WHENEVER AN INFLUENT PUMP, SEPTAGE PUMP, AND/OR PLANT DRAIN PUMP IS RUNNING OR WHEN THE PLANT OPERATOR INITIATES THE START BUTTON ON THE PLANT SCADA SYSTEM.
3. H-O-A SWITCHES AND ON-OFF PUSH BUTTONS SHALL BE PROVIDED FOR BOTH THE INTERNAL AND EXTERNAL SCREEN SPRAY WASH SYSTEMS. IN THE "HAND" POSITION, THE SPRAY WASH SYSTEM SHALL TURN ON WHEN THE "ON" PUSH BUTTON IS PRESSED AND TURN OFF WHEN THE "OFF" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE SPRAY WASH SYSTEM SHALL TURN OFF. IN THE "AUTO" POSITION, THE SPRAY WASH SYSTEM SHALL TURN ON AND OFF BASED ON A START COMMAND FROM THE SCREENS SPRAY WASH TIMERS.
4. EACH WASH COMPACTOR SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE WASH COMPACTOR SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE WASH COMPACTOR SHALL STOP. IN THE "AUTO" POSITION, THE WASH COMPACTOR SHALL START AND STOP WHEN THE SCREEN STARTS AND STOPS.
5. H-O-A SWITCHES AND ON-OFF PUSH BUTTONS SHALL BE PROVIDED FOR BOTH THE WASH AND FLUSH WASH COMPACTOR SPRAY WASH SYSTEMS. IN THE "HAND" POSITION, THE SPRAY WASH SYSTEM SHALL TURN ON WHEN THE "ON" PUSH BUTTON IS PRESSED AND TURN OFF WHEN THE "OFF" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE SPRAY WASH SYSTEM SHALL TURN OFF. IN THE "AUTO" POSITION, THE SPRAY WASH SYSTEM SHALL TURN ON AND OFF BASED ON A START COMMAND FROM THE WASH COMPACTOR SPRAY WASH TIMERS.
6. EACH SCREEN SHALL HAVE ADJUSTABLE TIMERS THAT ALLOW THE SCREEN AND SPRAY WASH SYSTEM TO RUN FOR A SET PERIOD OF TIME AFTER THE SCREEN IS CALLED TO TURN OFF.
7. EACH WASH COMPACTOR SHALL HAVE ADJUSTABLE TIMERS THAT ALLOW THE WASH COMPACTOR AND SPRAY WASH SYSTEM TO RUN FOR A SET PERIOD OF TIME AFTER THE WASH COMPACTOR IS CALLED TO TURN OFF.
8. EACH SCREEN SHALL HAVE AN EMERGENCY STOP PUSH BUTTON LOCATED NEXT TO THE SCREEN. WHEN THE EMERGENCY STOP PUSH BUTTON IS ENGAGED, ALL SCREEN FUNCTIONS SHALL STOP. AN EMERGENCY STOP ACTIVATED ALARM SHALL BE DISPLAYED ON THE PLANT SCADA SYSTEM.
9. EACH WASH COMPACTOR SHALL HAVE AN EMERGENCY STOP PUSH BUTTON LOCATED NEXT TO THE WASH COMPACTOR. WHEN THE EMERGENCY STOP PUSH BUTTON IS ENGAGED, ALL WASH COMPACTOR FUNCTIONS SHALL STOP. AN EMERGENCY STOP ACTIVATED ALARM SHALL BE DISPLAYED ON THE PLANT SCADA SYSTEM.
10. EACH SCREEN AND WASH COMPACTOR SHALL HAVE AN INDIVIDUAL RUN TIME METER LOCATED ON THE CONTROL PANEL.

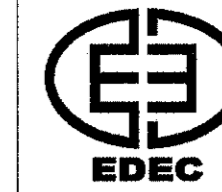
PROJECT NUMBER: -----
 DATE: AUGUST 2016
 REVISION: _____
 DATE: _____

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 HAS BEEN ON US 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

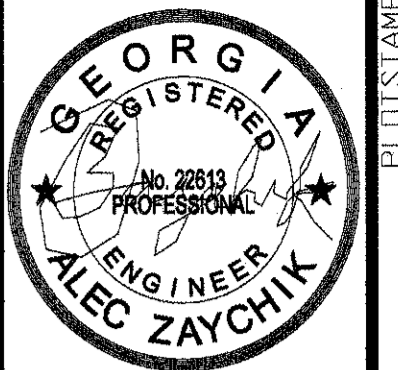
INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
**INFLUENT SCREENS
 PROCESS AND FLOW DIAGRAM**

SHEET NO.
PID-3

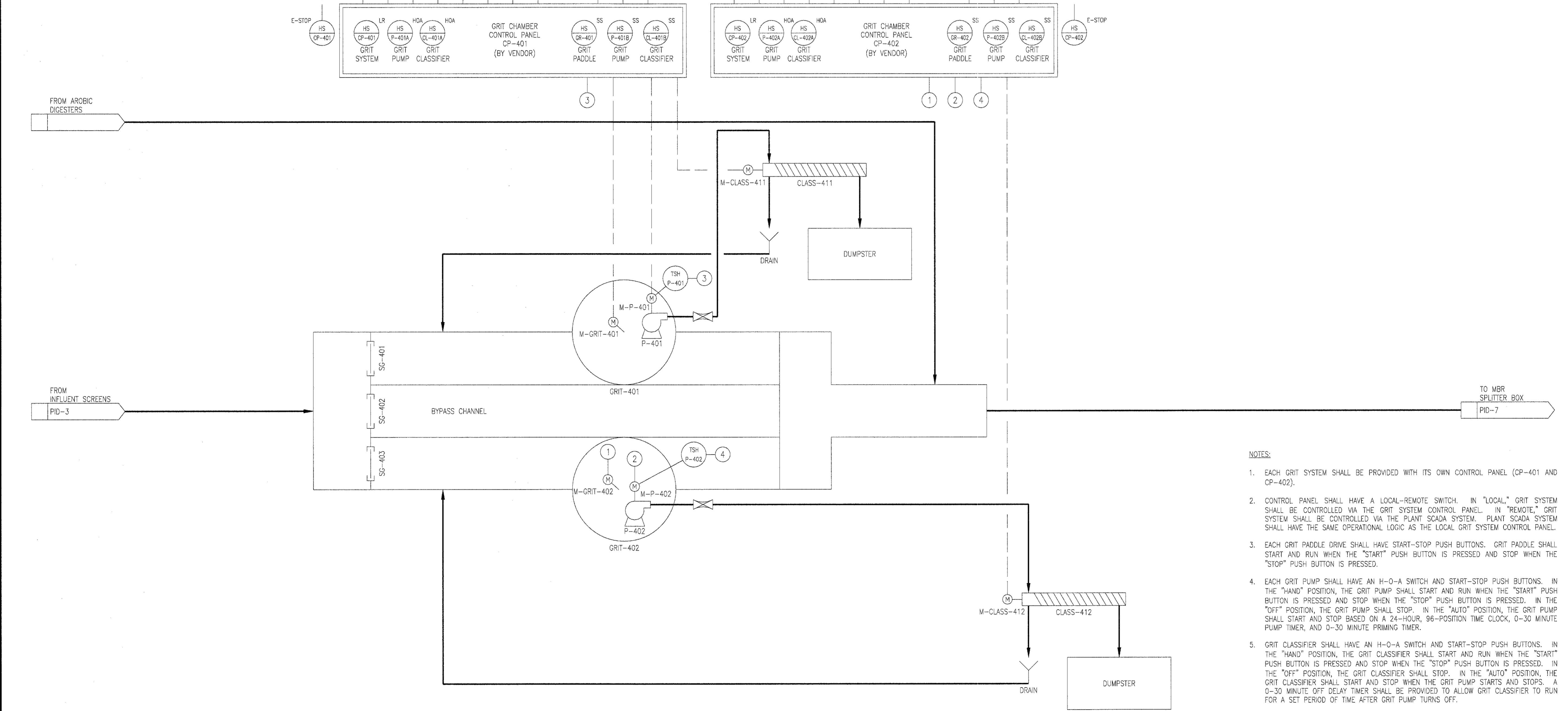
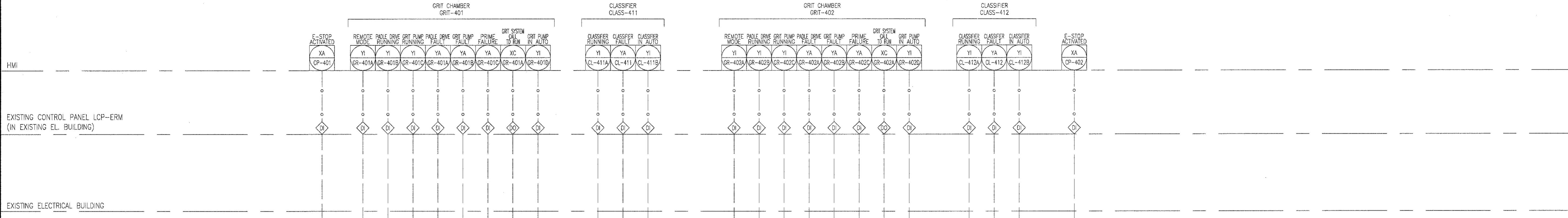
PLIESTAMP



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 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001



- NOTES:**
1. EACH GRIT SYSTEM SHALL BE PROVIDED WITH ITS OWN CONTROL PANEL (CP-401 AND CP-402).
 2. CONTROL PANEL SHALL HAVE A LOCAL-REMOTE SWITCH. IN "LOCAL," GRIT SYSTEM SHALL BE CONTROLLED VIA THE GRIT SYSTEM CONTROL PANEL. IN "REMOTE," GRIT SYSTEM SHALL BE CONTROLLED VIA THE PLANT SCADA SYSTEM. PLANT SCADA SYSTEM SHALL HAVE THE SAME OPERATIONAL LOGIC AS THE LOCAL GRIT SYSTEM CONTROL PANEL.
 3. EACH GRIT PADDLE DRIVE SHALL HAVE START-STOP PUSH BUTTONS. GRIT PADDLE SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED.
 4. EACH GRIT PUMP SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE GRIT PUMP SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE GRIT PUMP SHALL STOP. IN THE "AUTO" POSITION, THE GRIT PUMP SHALL START AND STOP BASED ON A 24-HOUR, 96-POSITION TIME CLOCK, 0-30 MINUTE PUMP TIMER, AND 0-30 MINUTE PRIMING TIMER.
 5. GRIT CLASSIFIER SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE GRIT CLASSIFIER SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE GRIT CLASSIFIER SHALL STOP. IN THE "AUTO" POSITION, THE GRIT CLASSIFIER SHALL START AND STOP WHEN THE GRIT PUMP STARTS AND STOPS. A 0-30 MINUTE OFF DELAY TIMER SHALL BE PROVIDED TO ALLOW GRIT CLASSIFIER TO RUN FOR A SET PERIOD OF TIME AFTER GRIT PUMP TURNS OFF.
 6. EACH PADDLE DRIVE, PUMP, AND CLASSIFIER SHALL HAVE A RUN TIME METER LOCATED ON THE PUMP CONTROL PANEL.
 7. EACH PUMP MOTOR SHALL BE PROVIDED WITH A HIGH TEMPERATURE SENSOR. ACTIVATION OF THIS SENSOR SHALL STOP THE PUMP AND INITIATE AN ALARM ON THE GRIT SYSTEM CONTROL PANEL AND ON THE PLANT SCADA SYSTEM.

PROJECT NUMBER: --- DATE: AUGUST 2016

REVISION	DATE

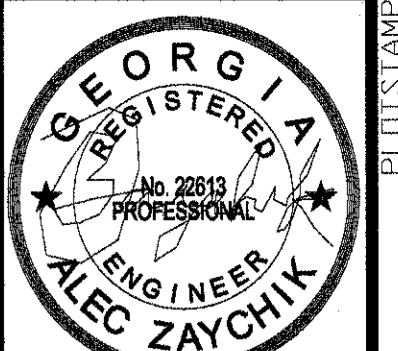
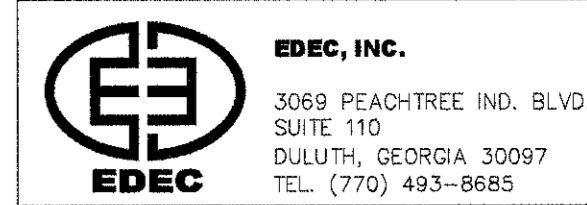
DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

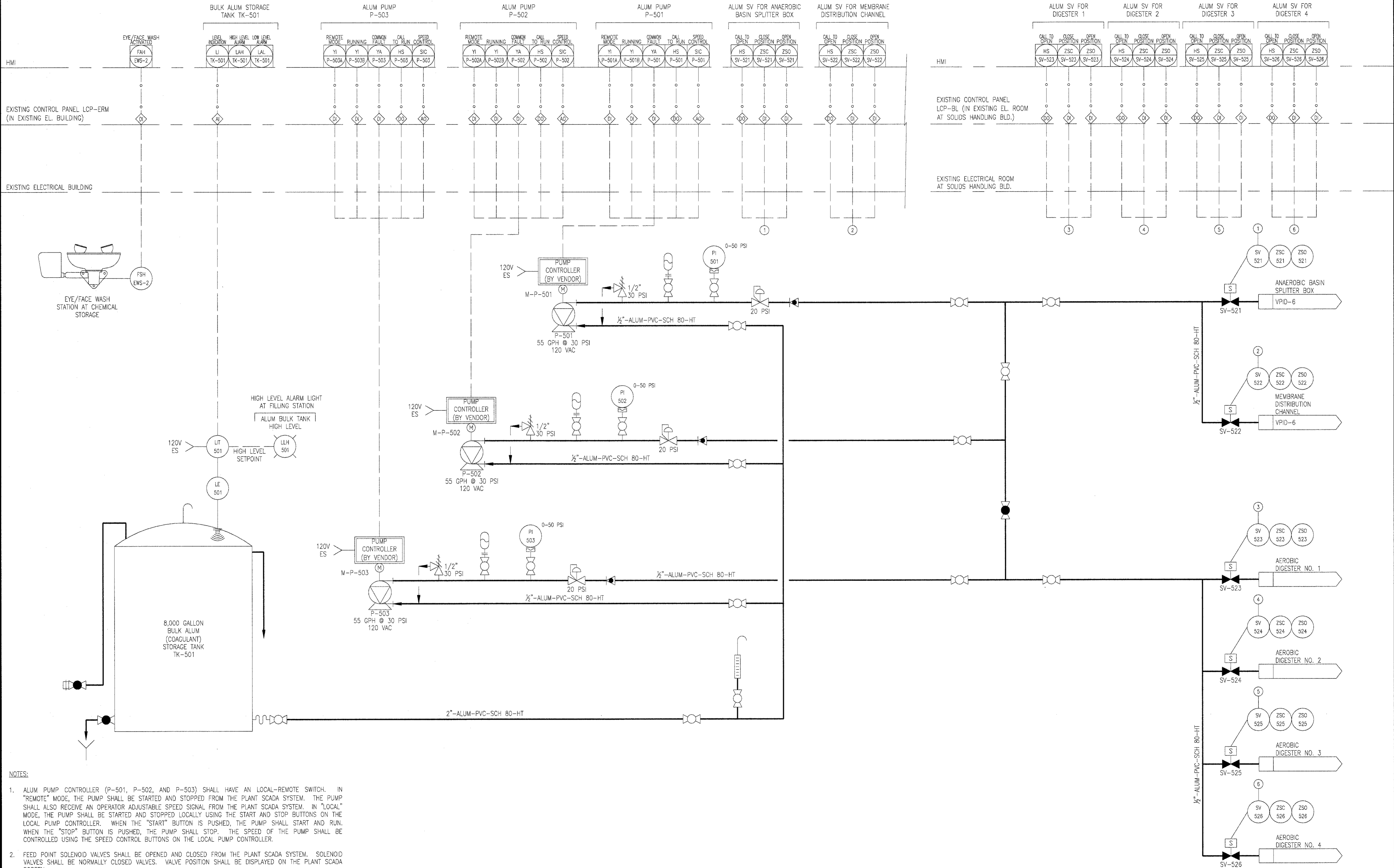
**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY**

**GRIT SYSTEM
 PROCESS AND FLOW DIAGRAM**

SHEET NO.
PID-4



ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001



- NOTES:
- ALUM PUMP CONTROLLER (P-501, P-502, AND P-503) SHALL HAVE AN LOCAL-REMOTE SWITCH. IN "REMOTE" MODE, THE PUMP SHALL BE STARTED AND STOPPED FROM THE PLANT SCADA SYSTEM. THE PUMP SHALL ALSO RECEIVE AN OPERATOR ADJUSTABLE SPEED SIGNAL FROM THE PLANT SCADA SYSTEM. IN "LOCAL" MODE, THE PUMP SHALL BE STARTED AND STOPPED LOCALLY USING THE START AND STOP BUTTONS ON THE LOCAL PUMP CONTROLLER. WHEN THE "START" BUTTON IS PUSHED, THE PUMP SHALL START AND RUN. WHEN THE "STOP" BUTTON IS PUSHED, THE PUMP SHALL STOP. THE SPEED OF THE PUMP SHALL BE CONTROLLED USING THE SPEED CONTROL BUTTONS ON THE LOCAL PUMP CONTROLLER.
 - FEED POINT SOLENOID VALVES SHALL BE OPENED AND CLOSED FROM THE PLANT SCADA SYSTEM. SOLENOID VALVES SHALL BE NORMALLY CLOSED VALVES. VALVE POSITION SHALL BE DISPLAYED ON THE PLANT SCADA SCREEN.
 - DURING NORMAL OPERATION, ALUM PUMPS P-501 AND P-502 WILL BE DEDICATED TO THE BIOLOGICAL FEED POINTS AND ALUM PUMP P-503 WILL BE DEDICATED TO THE DIGESTER FEED POINTS; HOWEVER, ANY PUMP SHALL BE CAPABLE OF PUMPING TO ANY FEED POINT.

PROJECT NUMBER: ---

DATE:	REVISION
AUGUST 2016	

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

**ALUM FEED SYSTEM
PROCESS AND FLOW DIAGRAM**

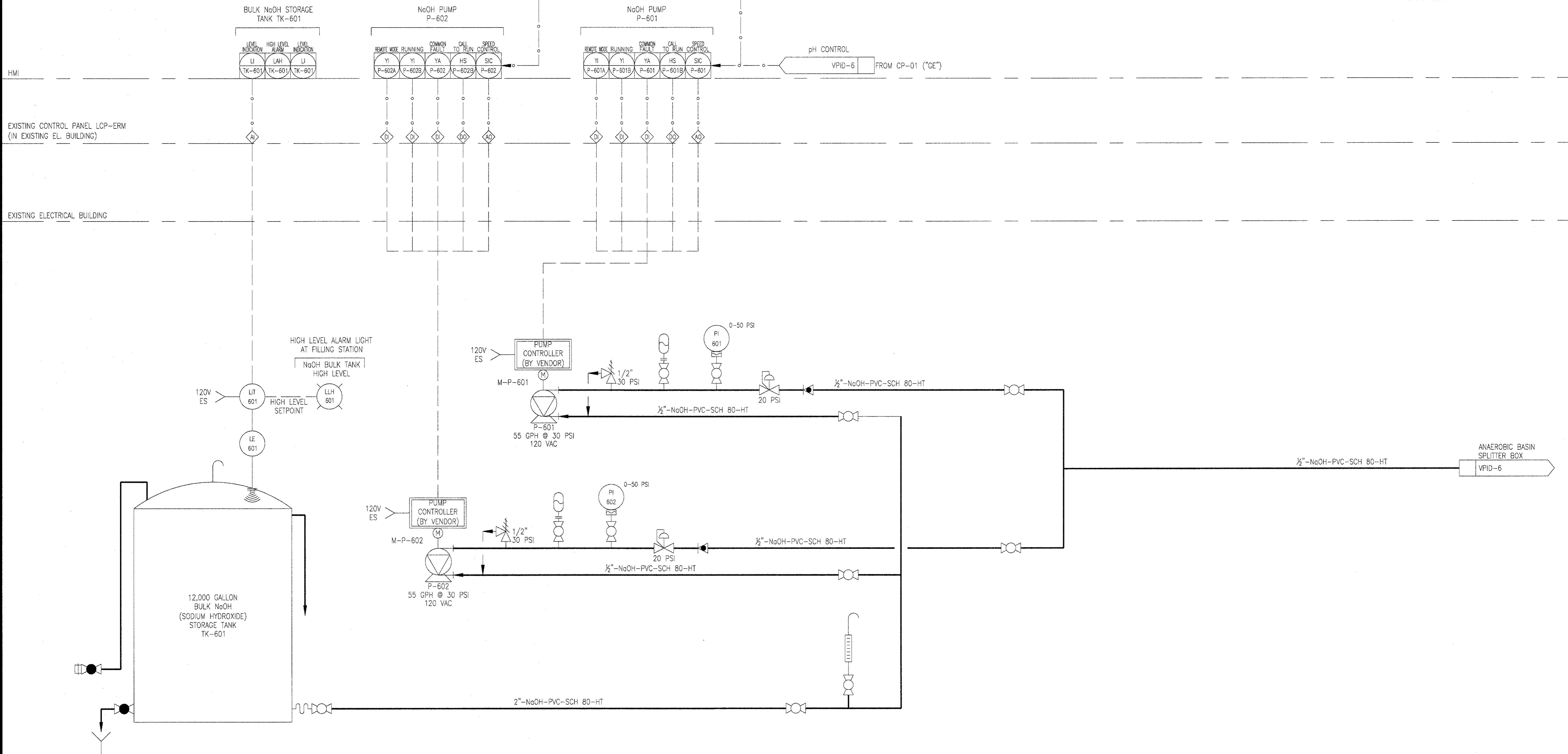
SHEET NO.
PID-5



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001



NOTES:

1. SODIUM HYDROXIDE PUMP CONTROLLER (P-701 AND P-702) SHALL HAVE AN LOCAL-REMOTE SWITCH. IN "REMOTE" MODE, THE PUMP SHALL BE STARTED AND STOPPED FROM THE PLANT SCADA SYSTEM. IN "LOCAL" MODE, THE PUMP SHALL BE STARTED AND STOPPED LOCALLY USING THE START AND STOP BUTTONS ON THE LOCAL PUMP CONTROLLER. WHEN THE "START" BUTTON IS PUSHED, THE PUMP SHALL START AND RUN. WHEN THE "STOP" BUTTON IS PUSHED, THE PUMP SHALL STOP. THE SPEED OF THE PUMP SHALL BE CONTROLLED USING THE SPEED CONTROL BUTTONS ON THE LOCAL PUMP CONTROLLER.
2. THE PLANT SCADA SYSTEM SHALL HAVE AN LOCAL-REMOTE SWITCH AND START-STOP SWITCHES FOR THE SODIUM HYDROXIDE PUMPS. IN "REMOTE" MODE, THE PUMP SHALL BE STARTED AND STOPPED USING THE START AND STOP SWITCHES ON THE PLANT SCADA SCREEN. WHEN THE "START" SWITCH IS ACTIVATED, THE PUMP SHALL START AND RUN. WHEN THE "STOP" SWITCH IS ACTIVATED, THE PUMP SHALL STOP. THE SPEED OF THE PUMP SHALL BE VARIED BASED ON THE pH IN THE PLANT EFFLUENT. AS THE pH RISES ABOVE AN OPERATOR ADJUSTABLE SET POINT, THE PUMP SPEED SHALL DECREASE AND AS THE pH FALLS BELOW AN OPERATOR ADJUSTABLE SET POINT, THE PUMP SPEED SHALL INCREASE.

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
 DRWN: DV
 CHCK: AZ
 HAS BEEN REVIEWED FOR SCALES
 SHOWN ON THIS SHEET. IF NOT
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**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 NAOH FEED SYSTEM
 PROCESS AND FLOW DIAGRAM**

SHEET NO.
PID-6

PLD/STAMP



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 TEL. (770) 493-8665

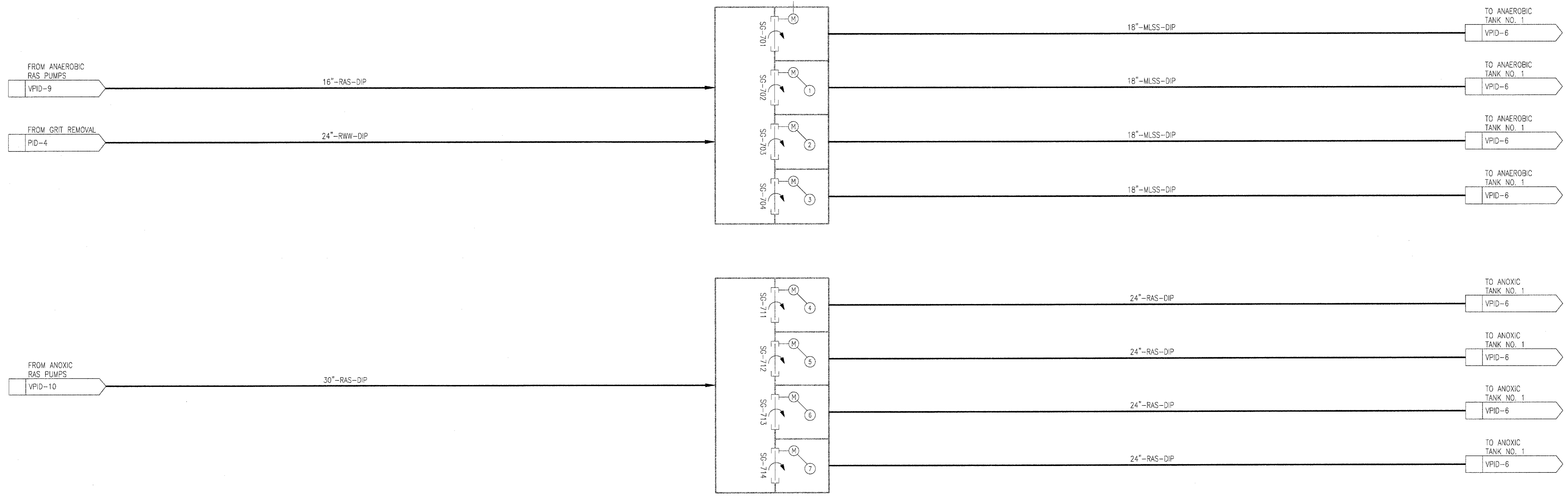
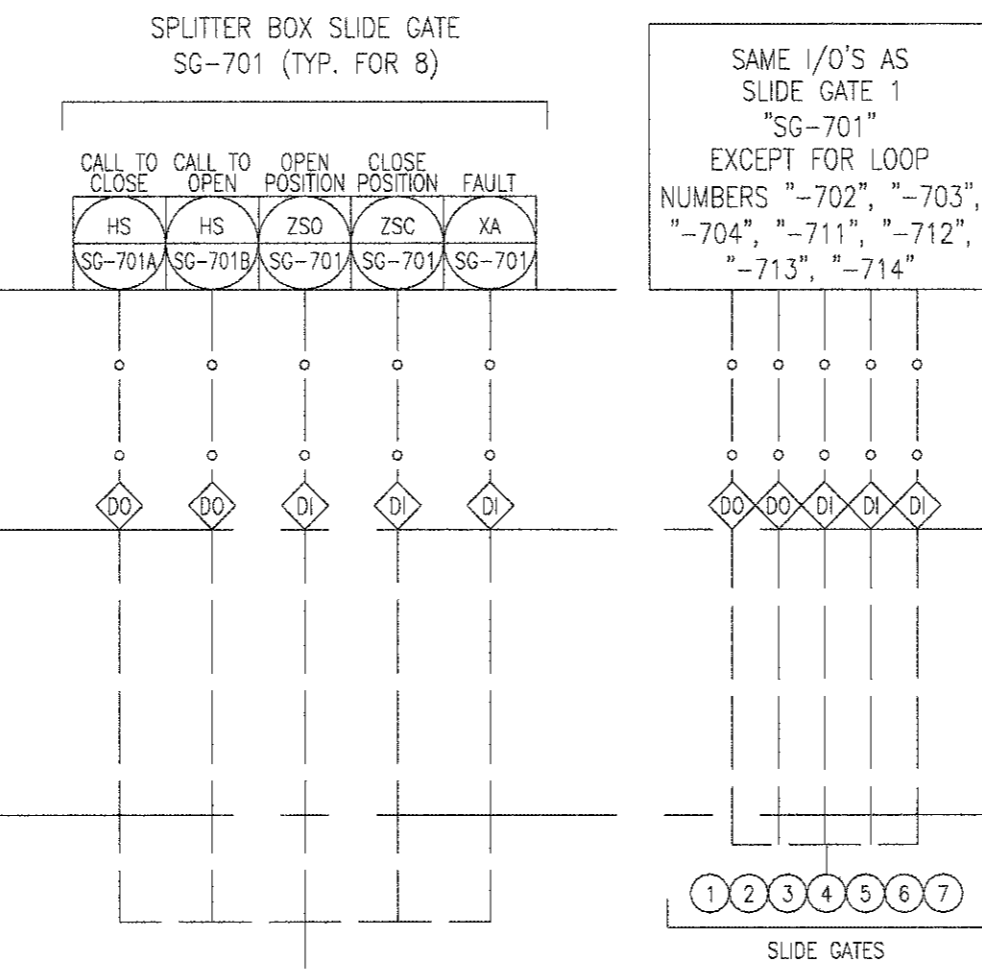


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HMI

EXISTING CONTROL PANEL LCP-ERM
 (IN EXISTING EL. ROOM)

ELECTRICAL ROOM



PROJECT NUMBER: -----
 DATE: AUGUST 2016

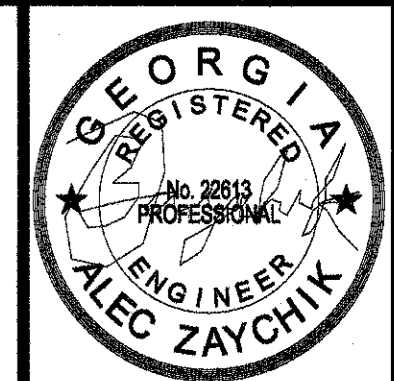
REVISION	DATE

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 DRWN: DV
 CHK: AZ
 BAR BEYOND 1" LONGS FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 SPLITTER BOX
 PROCESS AND FLOW DIAGRAM

SHEET NO.
 PID-7

PLOT/STAMP



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(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

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CHK: AZ

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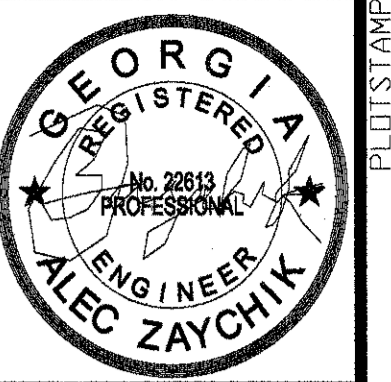
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

VENDOR'S PROCESS AND FLOW DIAGRAM
LEGEND AND SYMBOLS

SHEET NO.
VPID-1

8	7	6	5	4	3	2	1		
CONTROL VALVE ACTUATORS ACTUATED VALVE OPERATION IS NORMALLY CLOSED UNLESS MARKED OTHERWISE PISTON DOUBLE ACTING PISTON SPRING TO OPEN PISTON SPRING TO CLOSE DIAPHRAGM DOUBLE ACTING DIAPHRAGM SPRING TO OPEN DIAPHRAGM SPRING TO CLOSE DIAPHRAGM DOUBLE BALANCING BACK PRESSURE CONTROL (EXTERNAL REGULATING) BACK PRESSURE CONTROL (INTERNAL REGULATING) PRESSURE REDUCING (EXTERNAL REGULATING) PRESSURE REDUCING (INTERNAL REGULATING) ROTARY MOTOR ANALOG ROTARY MOTOR DIGITAL I/P CONVERTER POSITIONER TRAVEL STOP GEAR MANUAL GEAR WHEEL CHAIN MANUAL CHAIN WHEEL SOLENOID SOLENOID 3 WAY SOLENOID 4 WAY	VALVE SYMBOLS OPEN DURING NORMAL PROCESS OPERATION CLOSED DURING NORMAL PROCESS OPERATION GATE (OR GENERIC) BALL BUTTERFLY NEEDLE GLOBE DIAPHRAGM ANGLE PLUG PINCH V-BALL KNIFE GATE UPWARD OPENING SLIDING GATE DOWNWARD OPENING SLIDING GATE MANUAL BLAST GATE BACKFLOW PREVENTER CHECK INJECTION QUILL FOOT FLDAT MUD 3 WAY 4 WAY 5 WAY 6 WAY 2 VALVE MANIFOLD 3 VALVE MANIFOLD 5 VALVE MANIFOLD SAMPLE	RELIEF PRESSURE SAFETY VACUUM SAFETY MULTIFUNCTION PRESSURE RUPTURE DISK VACUUM RUPTURE DISK AIR RELEASE VACUUM BREAKER VENT VENT GROUND DRAIN	PUMPS, BLOWERS, & COMPRESSORS CENTRIFUGAL PUMP PROPELLER PUMP METERING PUMP AIR OPERATED DOUBLE DIAPHRAGM PUMP POSITIVE DISPLACEMENT PUMP VERTICAL TURBINE PUMP CAN PUMP WELL PUMP DRUM PUMP SUBMERSIBLE SUMP PUMP HYDRAULIC PRESSURE BOOSTER CENTRIFUGAL/REGENERATIVE BLOWER ROTARY LOBE COMPRESSOR BLOWER VACUUM PUMP (DRY) VACUUM PUMP LIQUID RING AIR COMPRESSOR PISTON AIR COMPRESSOR ROTARY SCREW REFRIGERATED AIR DRYER FAN HP LP ERI PRESSURE EXCHANGER MOTOR	FLOW ELEMENT PADDLE WHEEL ANNUBAR FLOW NOZZLE FLUME MAGNETIC PITOT SONIC/ULTRASONIC TURBINE VENTURI TUBE VORTEX MASS FLOW/CORIOLIS ROTAMETER IN-LINE FLOW GLASS FLOW STRAIGHTENER FIXED DRIFICE ADJUSTABLE DRIFICE RESTRICTED DRIFICE RESTRICTED DRIFICE ANGLE DRIFICE PLATE QUICK-CHANGE	CONNECTIONS FLANGE FLANGE BLIND MECHANICAL COUPLING OR VICTAULIC MECHANICAL COUPLING OR VICTAULIC PLUG SANITARY SANITARY PLUG THREADED THREADED PLUG SOCKET UNION CAMLOCK CAMLOCK PLUG HOSE BARB WELDED PIPE CAP PLAIN END PIPE COUPLING REDUCER COMPRESSION FITTING COMPRESSION FITTING PLUG SPECTACLE BLIND OPEN SPECTACLE BLIND CLOSED HEATING TANK HEATER HEAT EXCHANGER IN-LINE HEATER PLATE & FRAME HEAT EXCHANGER DESUPERHEATER	FILTERS FIXED SCREEN TOP HAT STRAINER BAR SCREEN HEPA FILTER Y STRAINER CONICAL STRAINER FILTER PLUMP SCREEN STEAM TRAP RESIN TRAP RO/UF FOUR PORT HOUSING TWO PORT HOUSING END PORT HOUSING MEMBRANE MODULE	VESSELS/TRIM CONICAL BOTTOM TANK TANK (CLOSED TOP) TANK (OPEN TOP) DOMED TANK PRESSURE VESSEL HORIZONTAL/VERTICAL OR RECEIVER PROPELLER AGITATOR VORTEX BREAKER VESSEL INSULATION LEVEL GLASS MANHOLE MANHOLE W/ DAVIT ARM VESSEL SIGHT GLASS WATER LEVEL LADDER/PLATFORM	MISCELLANEDUS MUFFLER REDUCTOR STATIC MIXER EXPANSION JOINT SILENCER VIBRATION ISOLATOR HIGH PRESSURE FLEXIBLE CONNECTOR INJECTION SPARGER DIAPHRAGM SEAL/GUAGE GUARD PULSATION DAMPENER SPRAYER NOZZLE DESICCANT AIR DRYER HYDROMETER POT COARSE BUBBLE DIFFUSER ELEVATION VIEW FINE BUBBLE DIFFUSER ELEVATION VIEW THERMOWELL TOP MOUNT LEVEL SWITCH ULTRASONIC LEVEL CALIBRATION COLUMN PIG TAIL ION EXCHANGE BOTTLE	SCOPE BREAK CLIENT/OTHER GEWPT MATERIAL BREAK MATERIAL A MATERIAL B PIPE INSULATION/DOUBLE CONTAINMENT PP ('PP' INDICATES PERSONNEL PROTECTION -OPTIONAL) LINE TYPES PRIMARY PROCESS SECONDARY PROCESS SAMPLE/DRAINS/VENTS/ETC PRIMARY PROCESS (BY OTHERS) SECONDARY PROCESS (BY OTHERS) FUTURE EQUIPMENT LIMIT OR BOUNDARY LINE EQUIPMENT EQUIPMENT (BY OTHERS) FLEX HOSE/TUBING SOFTWARE-LINK ELECTRICAL ELECTROMAGNETIC OR SONIC SIGNAL (WIRELESS) PNEUMATIC HYDRAULIC SIGNAL CAPILLARY TUBING HEAT-TRACING STEAM-TRACE ELECTRICAL-TRACE MISCELLANEDUS LINE OBJECTS SLOPE CONTINUATION SYMBOL CONTINUATION SYMBOL CROSSOVER LINE REVISION CLOUD REVISION TRIANGLE

REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED DECIMALS .XX XXX	ANGLES FRAC	DO NOT SCALE THIRD ANGLE	DRAWN BY SM DATE 02DEC15 CHECKED BY BM DATE 10DEC15 APPROVED BY BM DATE 10DEC15	 GE Water & Process Technologies GLOBAL HEADQUARTERS TRENTON, PA, USA 1-215-395-3300 WWW.GEWATER.COM	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
B	REVISED PER CLIENT COMMENTS			GSH	BM	01APR18					INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID LEGEND & SYMBOLS	D	502196-AA-02	B	
A	PRELIMINARY										FILE MICROSTATION		PROJECT 502196	SCALE NONE	SHEET 1 OF 2	



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 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

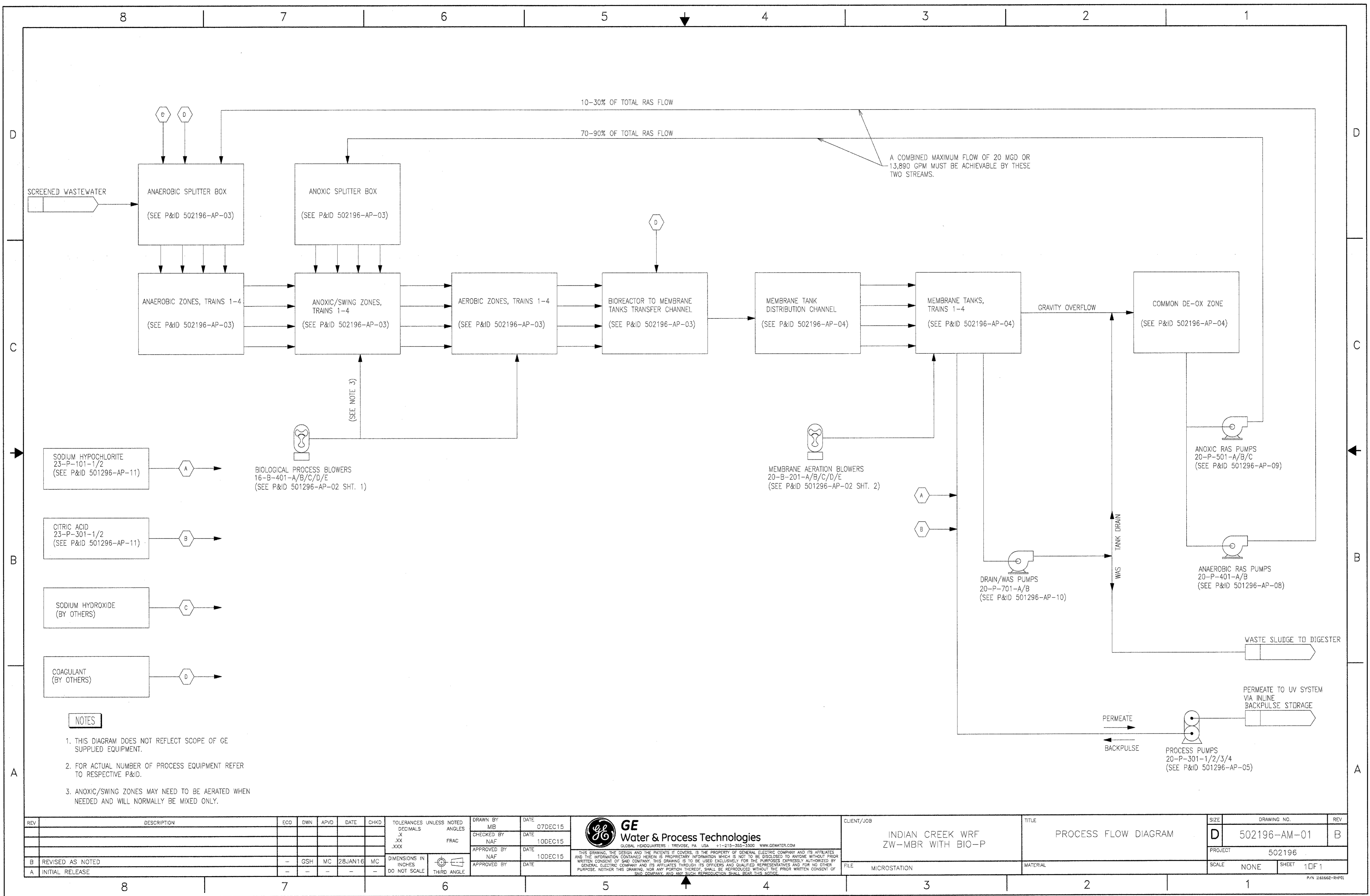
PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

DESIGN: AZ
 DRAWN: DV
 CHECK: AZ

BAR BEYOND 1/8" LONG FOR SCALES SHOWN ON THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 VENDOR'S PROCESS AND FLOW DIAGRAM
 PROCESS FLOW DIAGRAM

SHEET NO.
 VPID-3

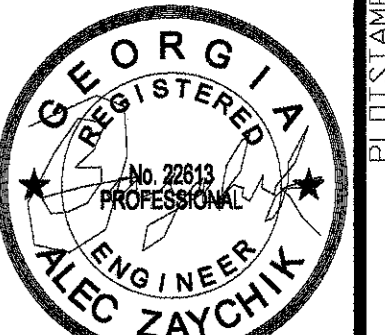


REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	ANGLES	NOTED	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
							.X .XX .XXX	FRAC		MB	07DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	PROCESS FLOW DIAGRAM	D	502196-AM-01	B
B	REVISED AS NOTED		GSH	MC	28JAN16	MC	DIMENSIONS IN INCHES	THIRD ANGLE		NAF	10DEC15					
A	INITIAL RELEASE						DO NOT SCALE									

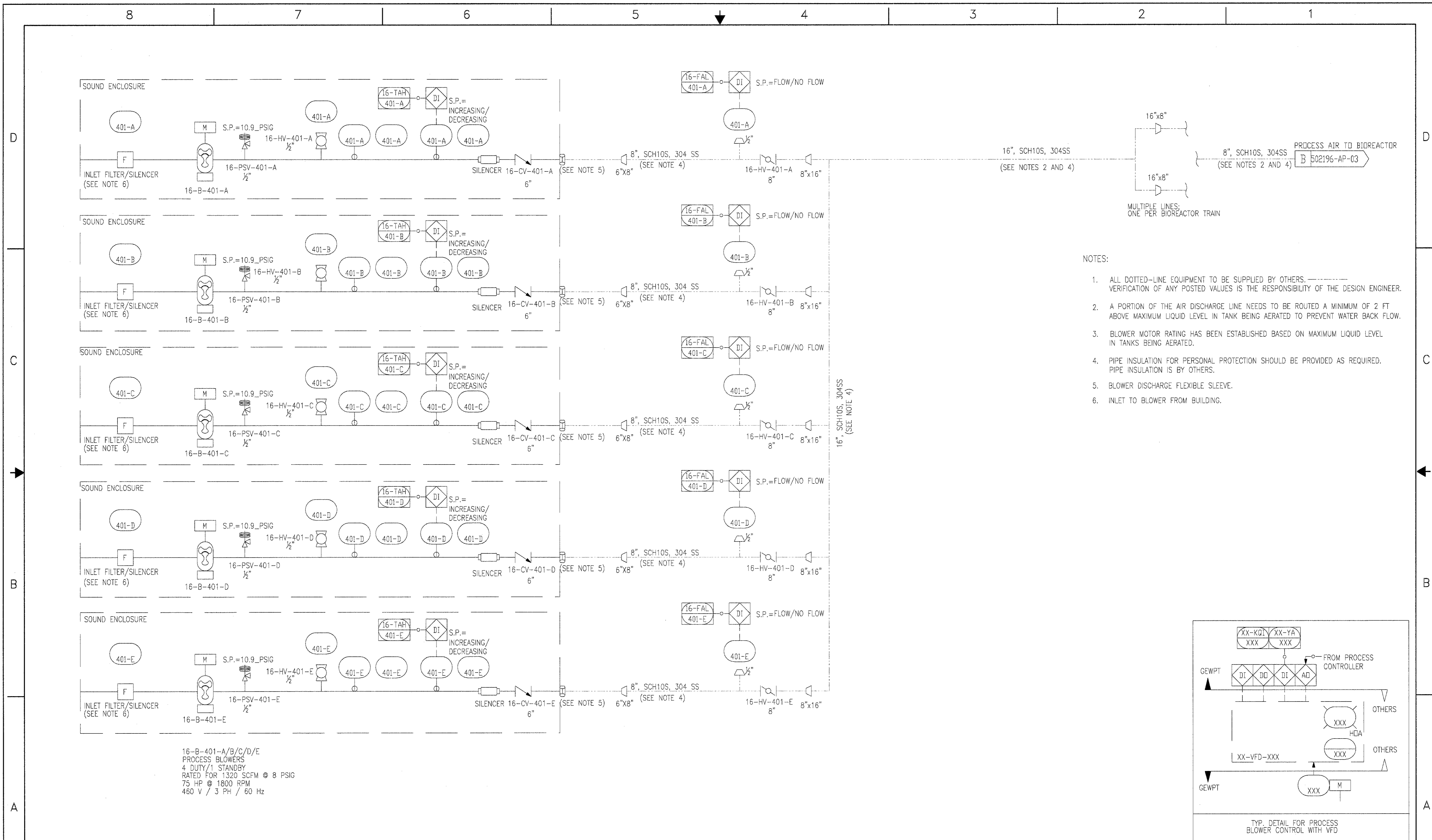
GE
 Water & Process Technologies
 GLOBAL HEADQUARTERS | TRENTON, PA, USA | +1-215-355-3300 | WWW.GEWATER.COM

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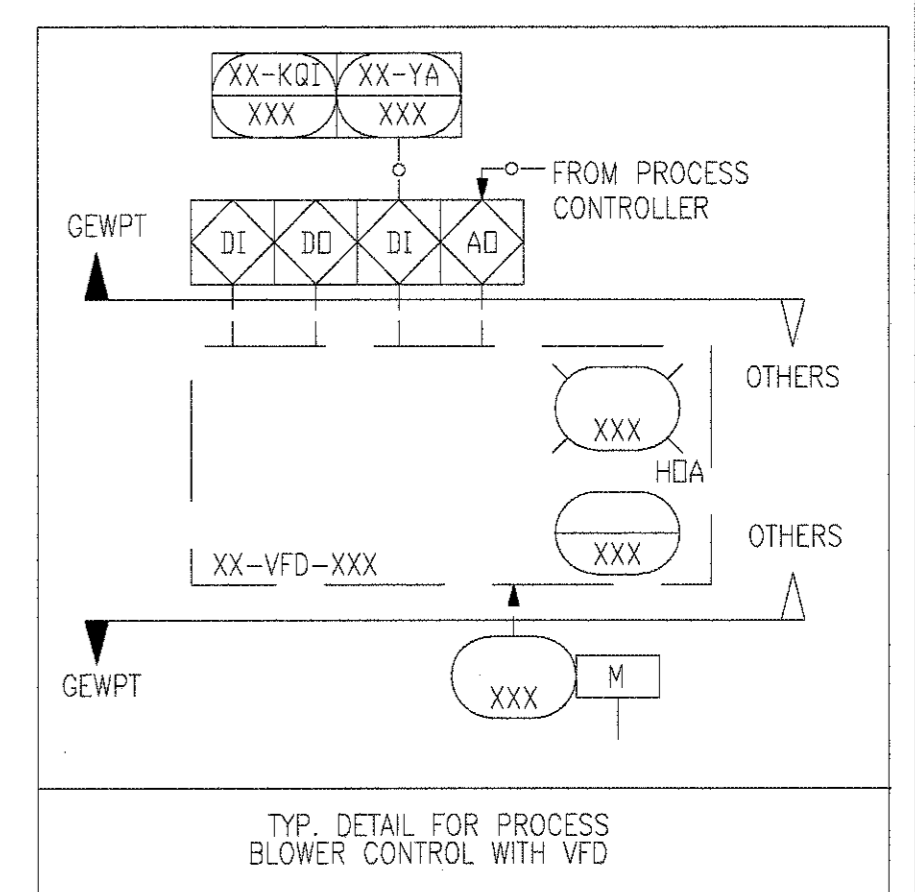
P/N 1216462-01P1



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3855 SHALLOWFORD ROAD, SUITE 525
MAKETTGA, GA 30062
(770) 429-0001



- NOTES:
- ALL DOTTED-LINE EQUIPMENT TO BE SUPPLIED BY OTHERS. VERIFICATION OF ANY POSTED VALUES IS THE RESPONSIBILITY OF THE DESIGN ENGINEER.
 - A PORTION OF THE AIR DISCHARGE LINE NEEDS TO BE ROUTED A MINIMUM OF 2 FT ABOVE MAXIMUM LIQUID LEVEL IN TANK BEING AERATED TO PREVENT WATER BACK FLOW.
 - BLOWER MOTOR RATING HAS BEEN ESTABLISHED BASED ON MAXIMUM LIQUID LEVEL IN TANKS BEING AERATED.
 - PIPE INSULATION FOR PERSONAL PROTECTION SHOULD BE PROVIDED AS REQUIRED. PIPE INSULATION IS BY OTHERS.
 - BLOWER DISCHARGE FLEXIBLE SLEEVE.
 - INLET TO BLOWER FROM BUILDING.



16-B-401-A/B/C/D/E
PROCESS BLOWERS
4 DUTY/1 STANDBY
RATED FOR 1320 SCFM @ 8 PSIG
75 HP @ 1800 RPM
460 V / 3 PH / 60 Hz

REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED DECIMALS .XX XXX	ANGLES FRAC	DRAWN BY SM	DATE 02DEC15	CLIENT/JOB INDIAN CREEK WRF ZW-MBR WITH BIO-P	TITLE P&ID PROCESS BLOWERS	SIZE D	DRAWING NO. 502196-AP-02	REV C
C	REVISED PER CLIENT COMMENTS		MSK	BM	01APR16	BM			CHECKED BY BM	DATE 10DEC15					
B	REVISED AS NOTED		VHA	MC	28JAN16	MC			APPROVED BY BM	DATE 10DEC15					
A	PRELIMINARY						DIMENSIONS IN INCHES DO NOT SCALE	THIRD ANGLE	APPROVED BY	DATE	FILE MICROSTATION	MATERIAL	SCALE NONE	SHEET 1 OF 2	

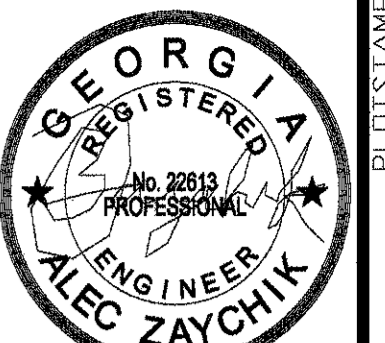
PROJECT NUMBER: ---	DATE: AUGUST 2016
REVISION	DATE

DGN: AZ
DRWN: DV
CHK: AZ

BAR BELONGS TO 1" LONG FOR SCALES
SHOW ON THIS SHEET. IF NOT 1"
LONG ON THIS SHEET, ADJUST
SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
PROCESS BLOWERS

SHEET NO.
VPID-4



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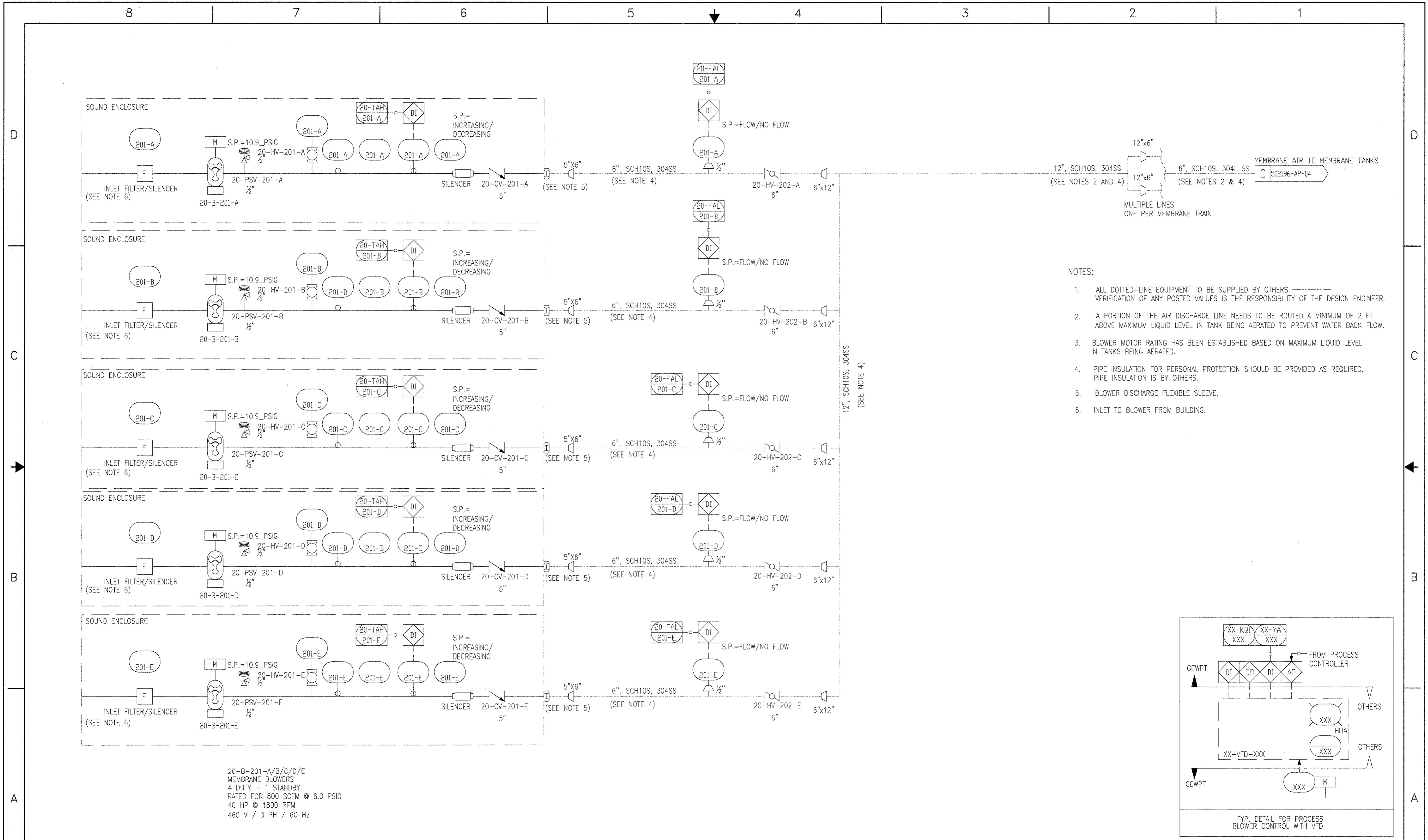
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
DRWN: DV
CHKD: AZ

DO NOT SCALE FROM THIS SHEET. ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
MEMBRANE BLOWERS

SHEET NO.
VPID-5

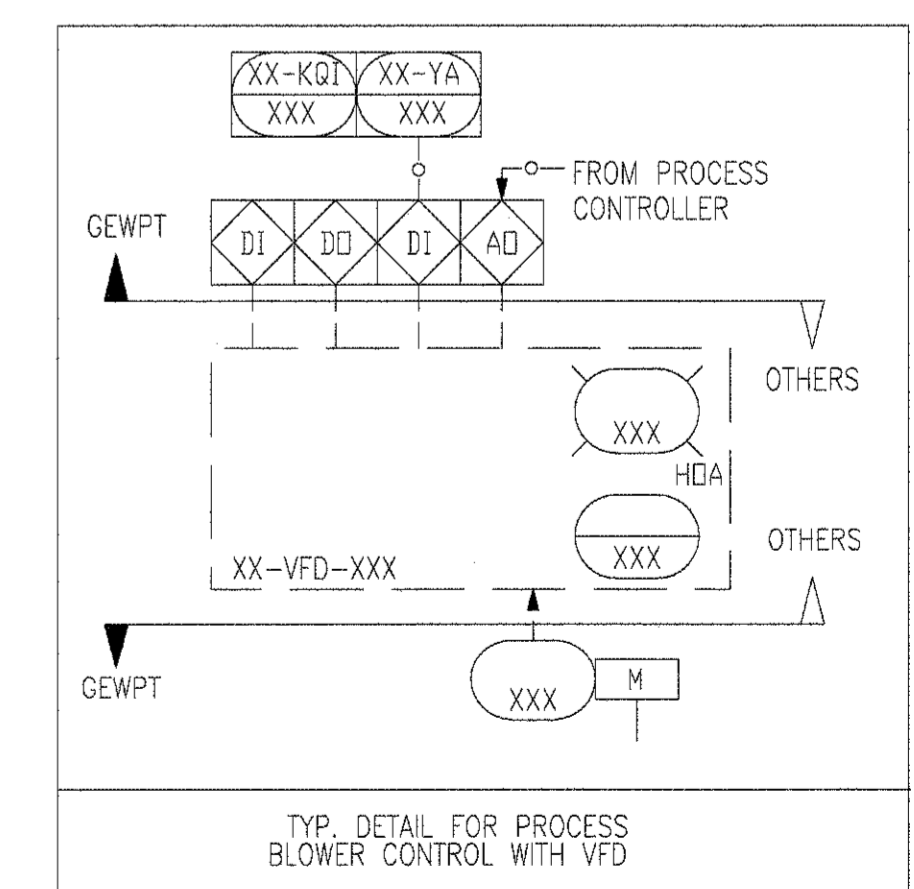


REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
							DECIMALS .XX XXX	SM	02DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID MEMBRANE BLOWERS	D	502196-AP-02	C
C	REVISED PER CLIENT COMMENTS			MSK	01APR16	BM	ANGLES XXX	BM	10DEC15					
B	REVISED AS NOTED			VHA	28JAN16	MC	DIMENSIONS IN INCHES DO NOT SCALE	BM	10DEC15					
A	PRELIMINARY						THIRD ANGLE							

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Water & Process Technologies

GLOBAL HEADQUARTERS: TREVOSE, PA USA +1-215-355-3300 www.gewater.com

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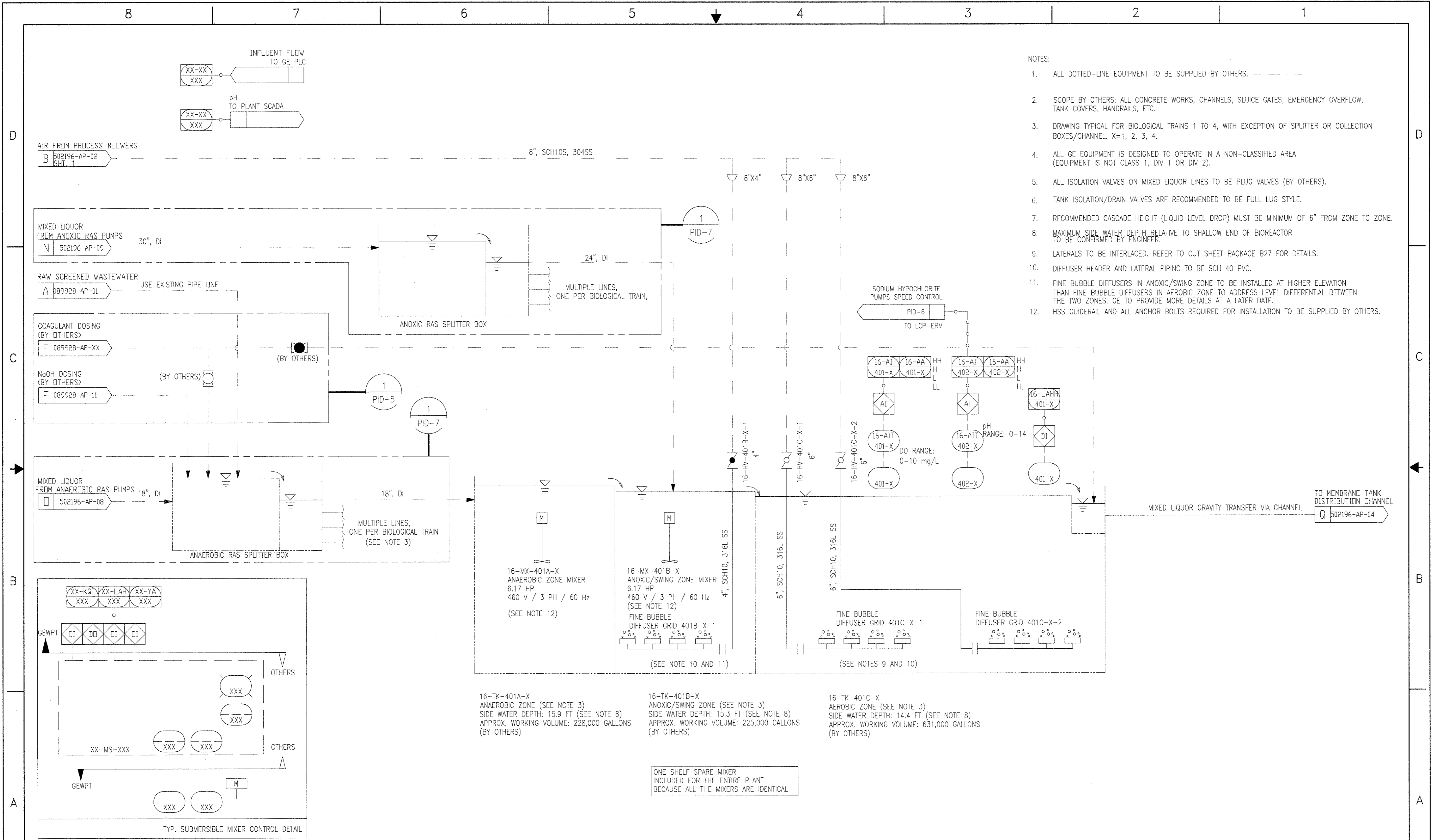
PROJECT NUMBER:	DATE:
---	AUGUST 2016
REVISION	DATE

DSGN: AZ
DRAWN: DV
CHECK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
BIOREACTOR □ ASSOC. E □ UIP.

SHEET NO.
VPID-6



- NOTES:
- ALL DOTTED-LINE EQUIPMENT TO BE SUPPLIED BY OTHERS. ---
 - SCOPE BY OTHERS: ALL CONCRETE WORKS, CHANNELS, SLUICE GATES, EMERGENCY OVERFLOW, TANK COVERS, HANDRAILS, ETC.
 - DRAWING TYPICAL FOR BIOLOGICAL TRAINS 1 TO 4, WITH EXCEPTION OF SPLITTER OR COLLECTION BOXES/CHANNEL. X=1, 2, 3, 4.
 - ALL GE EQUIPMENT IS DESIGNED TO OPERATE IN A NON-CCLASSIFIED AREA (EQUIPMENT IS NOT CLASS 1, DIV 1 OR DIV 2).
 - ALL ISOLATION VALVES ON MIXED LIQUOR LINES TO BE PLUG VALVES (BY OTHERS).
 - TANK ISOLATION/DRAIN VALVES ARE RECOMMENDED TO BE FULL LUG STYLE.
 - RECOMMENDED CASCADE HEIGHT (LIQUID LEVEL DROP) MUST BE MINIMUM OF 6" FROM ZONE TO ZONE.
 - MAXIMUM SIDE WATER DEPTH RELATIVE TO SHALLOW END OF BIOREACTOR TO BE CONFIRMED BY ENGINEER.
 - LATERALS TO BE INTERLACED. REFER TO CUT SHEET PACKAGE B27 FOR DETAILS.
 - DIFFUSER HEADER AND LATERAL PIPING TO BE SCH 40 PVC.
 - FINE BUBBLE DIFFUSERS IN ANOXIC/SWING ZONE TO BE INSTALLED AT HIGHER ELEVATION THAN FINE BUBBLE DIFFUSERS IN AEROBIC ZONE TO ADDRESS LEVEL DIFFERENTIAL BETWEEN THE TWO ZONES. GE TO PROVIDE MORE DETAILS AT A LATER DATE.
 - HSS GUIDERAIL AND ALL ANCHOR BOLTS REQUIRED FOR INSTALLATION TO BE SUPPLIED BY OTHERS.

16-TK-401A-X ANAEROBIC ZONE (SEE NOTE 3)
SIDE WATER DEPTH: 15.9 FT (SEE NOTE 8)
APPROX. WORKING VOLUME: 228,000 GALLONS (BY OTHERS)

16-TK-401B-X ANOXIC/SWING ZONE (SEE NOTE 3)
SIDE WATER DEPTH: 15.3 FT (SEE NOTE 8)
APPROX. WORKING VOLUME: 225,000 GALLONS (BY OTHERS)

16-TK-401C-X AEROBIC ZONE (SEE NOTE 3)
SIDE WATER DEPTH: 14.4 FT (SEE NOTE 8)
APPROX. WORKING VOLUME: 631,000 GALLONS (BY OTHERS)

ONE SHELF SPARE MIXER INCLUDED FOR THE ENTIRE PLANT BECAUSE ALL THE MIXERS ARE IDENTICAL

REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DEGMALS	ANGLES	FRAC	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS			MB	BM	02JUN16	.XX				SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID BIOREACTOR & ASSOC. EQUIP.	D	502196-AP-03	D
C	REVISED PER CLIENT COMMENTS			MAN	BM	01APR16	.XX				BM	10DEC15					
B	REVISED AS NOTED			GSH	MC	28JAN16					BM	10DEC15					
A	PRELIMINARY																



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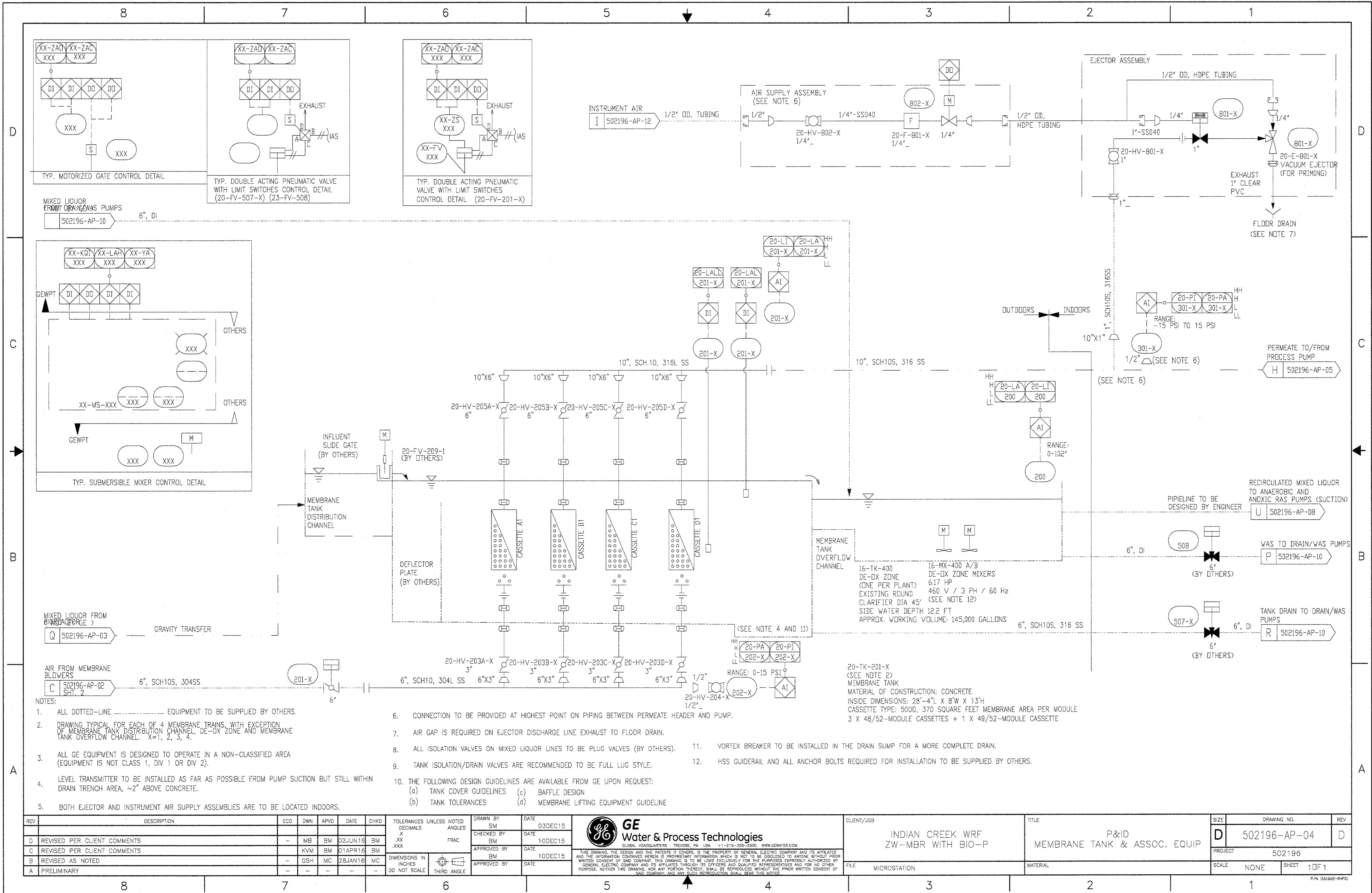
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MARIETTA, GA 30062
(770) 429-0001

PROJECT NUMBER: ---
DATE: AUGUST 2016
REVISION: ---

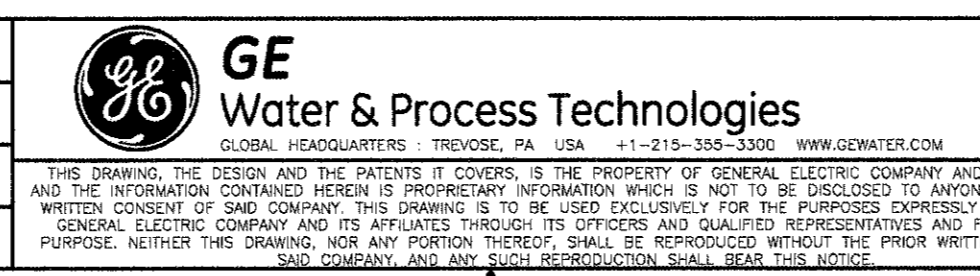
DSGN: AZ
DRWN: DV
CHK: AZ
BAR BELOWS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
MEMBRANE TANK □ ASSOC. EQUIP.

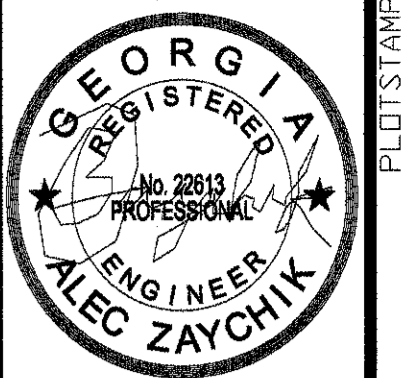
SHEET NO. VPID-7



REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DECIMALS	ANGLES	FRAC	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS	-	MB	BM	02JUN16	BM	3"	.XX			SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID MEMBRANE TANK & ASSOC. EQUIP	D	502196-AP-04	D
C	REVISED PER CLIENT COMMENTS	-	KVM	BM	01APR16	BM	.XX				BM	10DEC15					
B	REVISED AS NOTED	-	GSH	MC	28JAN16	MC	3"	.XX			BM	10DEC15					
A	PRELIMINARY	-	-	-	-	-	DO NOT SCALE				BM						



P/N 1161602-RP01



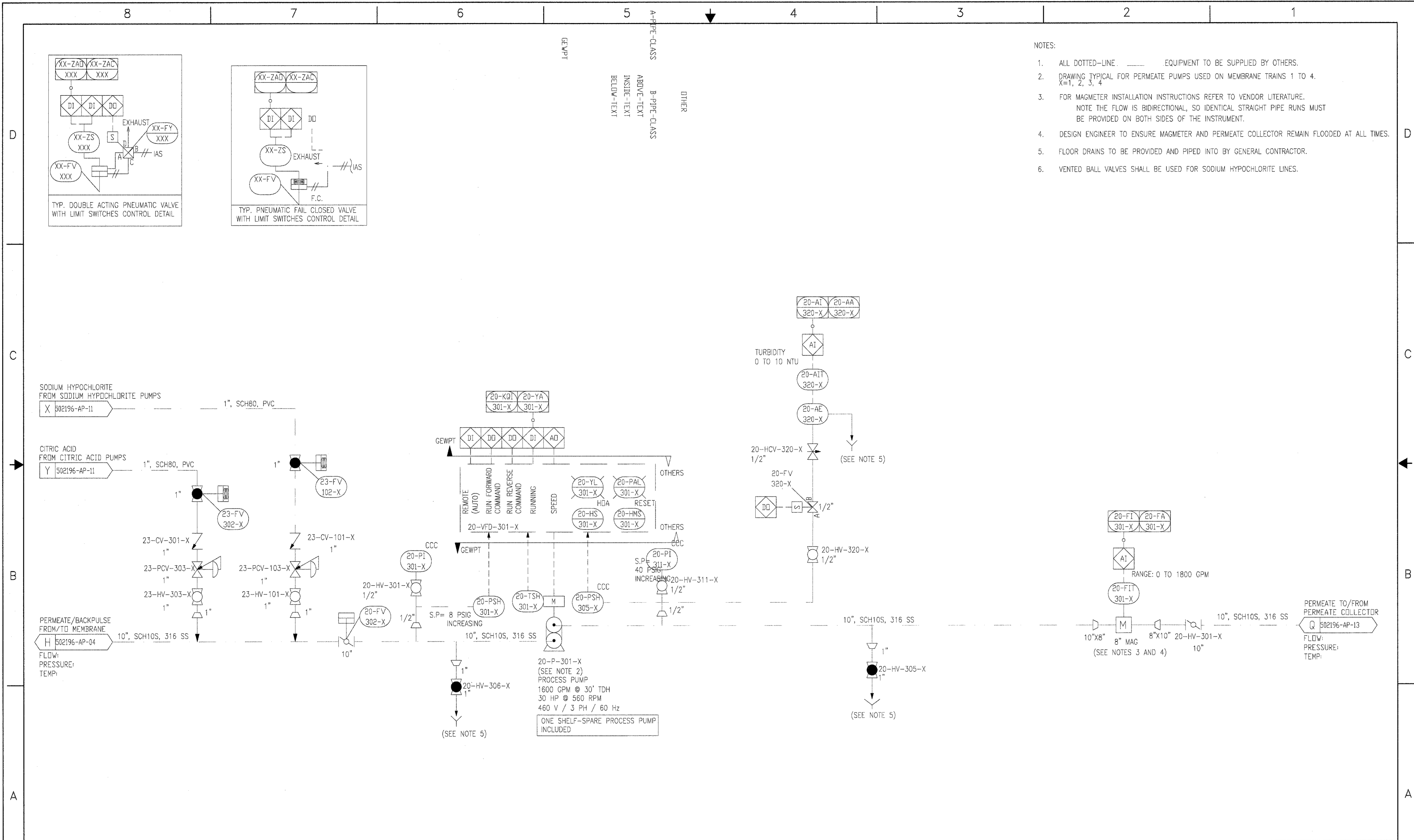
ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 499-0001

PROJECT NUMBER: 502196
DATE: AUGUST 2016

DESIGN: AZ
DRAWN: DJV
CHECK: AZ
REVISION: []
DATE: []

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
PROCESS PUMP □ ASSOC. EQUIP.

SHEET NO. VPID-8

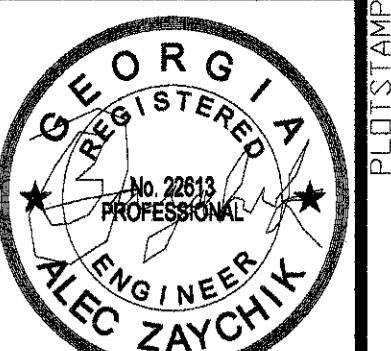


- NOTES:
- ALL DOTTED-LINE _____ EQUIPMENT TO BE SUPPLIED BY OTHERS.
 - DRAWING TYPICAL FOR PERMEATE PUMPS USED ON MEMBRANE TRAINS 1 TO 4. X=1, 2, 3, 4
 - FOR MAGMETER INSTALLATION INSTRUCTIONS REFER TO VENDOR LITERATURE. NOTE THE FLOW IS BIDIRECTIONAL, SO IDENTICAL STRAIGHT PIPE RUNS MUST BE PROVIDED ON BOTH SIDES OF THE INSTRUMENT.
 - DESIGN ENGINEER TO ENSURE MAGMETER AND PERMEATE COLLECTOR REMAIN FLOODED AT ALL TIMES.
 - FLOOR DRAINS TO BE PROVIDED AND PIPED INTO BY GENERAL CONTRACTOR.
 - VENTED BALL VALVES SHALL BE USED FOR SODIUM HYPOCHLORITE LINES.

REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS		MB	BM	02JUN16	BM	.X .XX XXX FRAC	SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID PROCESS PUMP & ASSOC. EQUIP	D	502196-AP-05	D
C	REVISED PER CLIENT COMMENTS		KVM	BM	01APR16	BM	DIMENSIONS IN INCHES DO NOT SCALE	BM	10DEC15	FILE MICROSTATION	MATERIAL	SCALE NONE	PROJECT 502196	SHEET 1 OF 1
B	REVISED AS NOTED		VHA	MC	28JAN16	MC	THIRD ANGLE							
A	PRELIMINARY													

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Water & Process Technologies
GLOBAL HEADQUARTERS: TROBIDE, PA, USA 41-315-3300-300 WWW.GEWATER.COM

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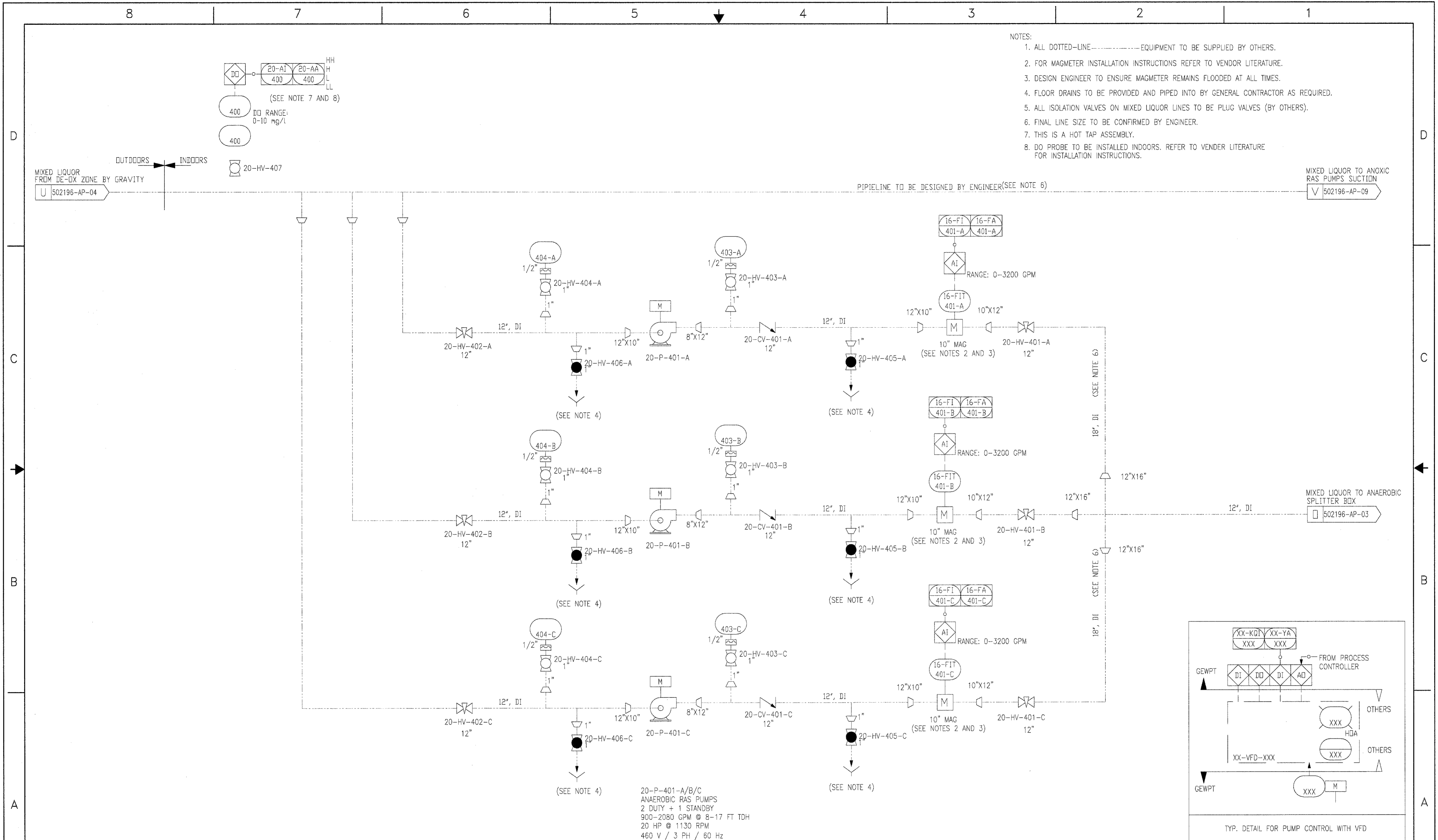
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
ANAEROBIC RAS PUMPS & AS. E.

SHEET NO.
VPID-9

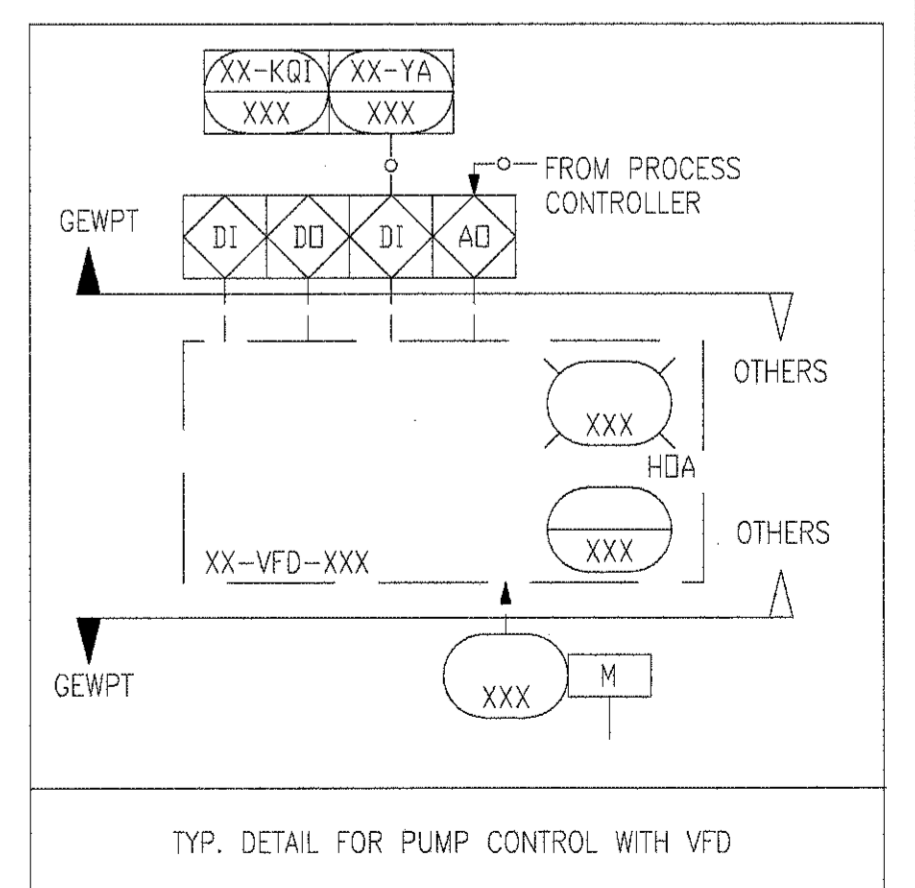


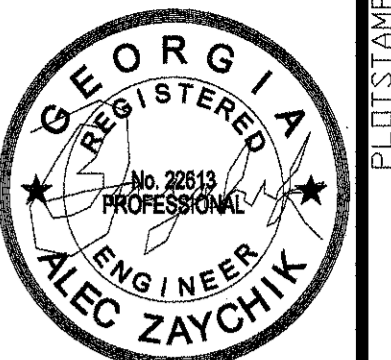
- NOTES:
1. ALL DOTTED-LINE-----EQUIPMENT TO BE SUPPLIED BY OTHERS.
 2. FOR MAGMETER INSTALLATION INSTRUCTIONS REFER TO VENDOR LITERATURE.
 3. DESIGN ENGINEER TO ENSURE MAGMETER REMAINS FLOODED AT ALL TIMES.
 4. FLOOR DRAINS TO BE PROVIDED AND PIPED INTO BY GENERAL CONTRACTOR AS REQUIRED.
 5. ALL ISOLATION VALVES ON MIXED LIQUOR LINES TO BE PLUG VALVES (BY OTHERS).
 6. FINAL LINE SIZE TO BE CONFIRMED BY ENGINEER.
 7. THIS IS A HOT TAP ASSEMBLY.
 8. DO PROBE TO BE INSTALLED INDOORS. REFER TO VENDER LITERATURE FOR INSTALLATION INSTRUCTIONS.

REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	ANGLES	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS		MB	BM	02JUN16	BM	DECIMALS	FRAC	SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P ZEEWEED MBR RETROFIT	P&ID ANAEROBIC RAS PUMPS & AS.EQ.	D	502196-AP-08	D
C	REVISED PER CLIENT COMMENTS		KVM	BM	01APR16	BM	.XX		BM	10DEC15					
B	REVISED AS NOTED		VHA	MC	28JAN16	MC	.XXX								
A	PRELIMINARY						DIMENSIONS IN INCHES DO NOT SCALE	THIRD ANGLE							

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GLOBAL HEADQUARTERS | TREVISO, PA USA | +1-215-355-3300 | WWW.GEWATER.COM

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(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

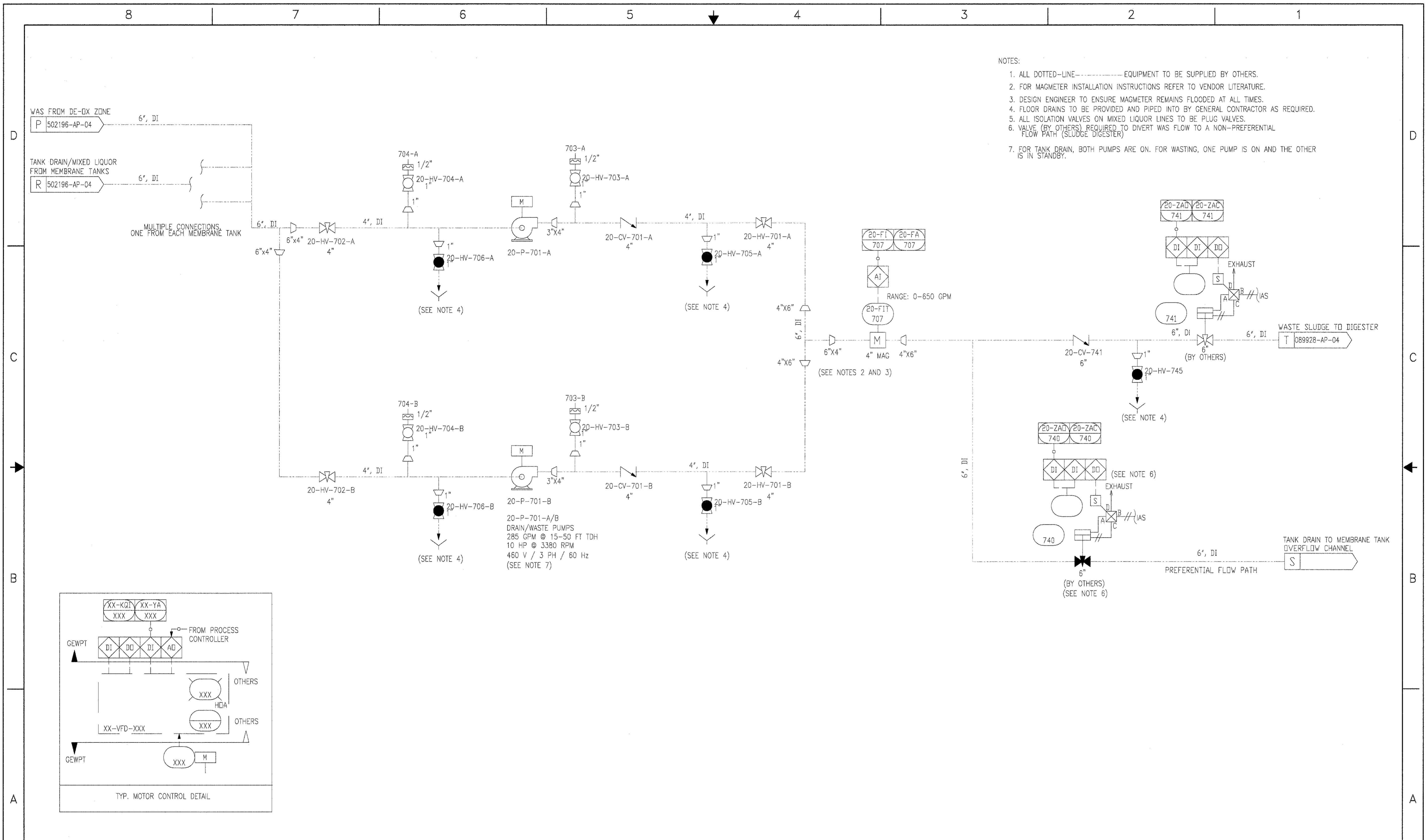
DSGN: AZ
DRWN: DV
CHK: AZ

BASE DIMENSIONS LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY

VENDOR'S PROCESS AND FLOW DIAGRAM
DRAIN, WASTE PUMPS □ ASSOC. EQUIP.

SHEET NO.
VPID-11

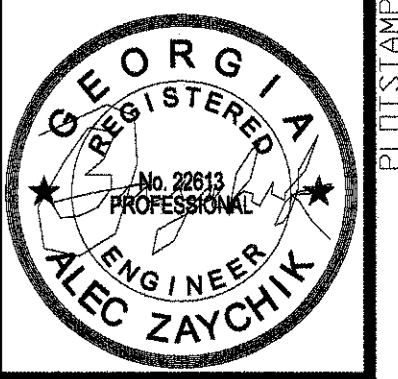


REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DRWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS		MB	BM	02JUN16	BM	DECIMALS .XX .XXX	SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID DRAIN/WASTE PUMPS & ASSO. EQ	D	502196-AP-10	D
C	REVISED PER CLIENT COMMENTS		MSK	BM	01APR16	BM	ANGLES FRAC	BM	10DEC15					
B	REVISED AS NOTED		VHA	MC	28JAN16	MC	DIMENSIONS IN INCHES DO NOT SCALE	BM	10DEC15					
A	PRELIMINARY						THIRD ANGLE							

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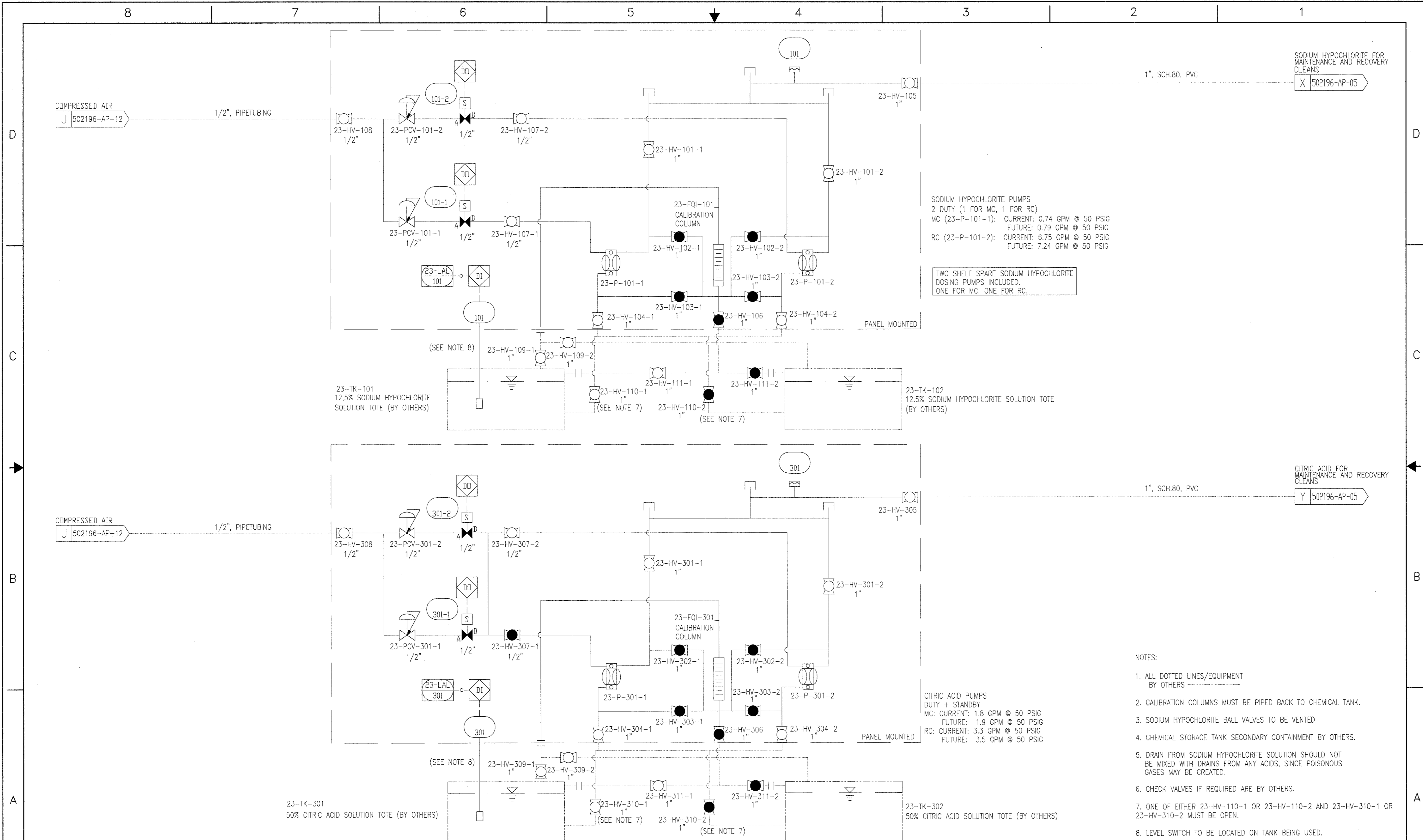
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

PROJECT NUMBER: _____
 DATE: AUGUST 2016

DATE: _____
 REVISION: _____
 DSGN: AZ
 DRWN: DV
 CHCK: AZ

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 VENDOR'S PROCESS AND FLOW DIAGRAM
 CHEMICAL CLEANING EQUIPMENT

SHEET NO.
 VPID-12



SODIUM HYPOCHLORITE PUMPS
 2 DUTY (1 FOR MC, 1 FOR RC)
 MC (23-P-101-1): CURRENT: 0.74 GPM @ 50 PSIG
 FUTURE: 0.79 GPM @ 50 PSIG
 RC (23-P-101-2): CURRENT: 6.75 GPM @ 50 PSIG
 FUTURE: 7.24 GPM @ 50 PSIG

TWO SHELF SPARE SODIUM HYPOCHLORITE
 DOSING PUMPS INCLUDED.
 ONE FOR MC, ONE FOR RC.

PANEL MOUNTED

CITRIC ACID PUMPS
 DUTY + STANDBY
 MC: CURRENT: 1.8 GPM @ 50 PSIG
 FUTURE: 1.9 GPM @ 50 PSIG
 RC: CURRENT: 3.3 GPM @ 50 PSIG
 FUTURE: 3.5 GPM @ 50 PSIG

PANEL MOUNTED

NOTES:

- ALL DOTTED LINES/EQUIPMENT BY OTHERS
- CALIBRATION COLUMNS MUST BE PIPED BACK TO CHEMICAL TANK.
- SODIUM HYPOCHLORITE BALL VALVES TO BE VENTED.
- CHEMICAL STORAGE TANK SECONDARY CONTAINMENT BY OTHERS.
- DRAIN FROM SODIUM HYPOCHLORITE SOLUTION SHOULD NOT BE MIXED WITH DRAINS FROM ANY ACIDS, SINCE POISONOUS GASES MAY BE CREATED.
- CHECK VALVES IF REQUIRED ARE BY OTHERS.
- ONE OF EITHER 23-HV-110-1 OR 23-HV-110-2 AND 23-HV-310-1 OR 23-HV-310-2 MUST BE OPEN.
- LEVEL SWITCH TO BE LOCATED ON TANK BEING USED.

REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD
C	REVISED PER CLIENT COMMENTS	-	MB	BM	02JUN16	BM
B	REVISED PER CLIENT COMMENTS	-	KVM	BM	01APR16	BM
A	PRELIMINARY	-	VHA	MC	28JAN16	MC

TOLERANCES UNLESS NOTED
 DECIMALS
 .XX
 .XXX
 .XXXX
 FRACTION
 1/8"
 1/16"
 1/32"
 3/16"
 1/4"
 3/8"
 1/2"
 5/8"
 3/4"
 1"
 1 1/4"
 1 1/2"
 2"
 3"
 4"
 6"
 8"
 12"
 DIMENSIONS IN INCHES
 DO NOT SCALE
 THIRD ANGLE

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CLIENT/JOB	INDIAN CREEK WRF ZW-MBR WITH BIO-P	TITLE	P&ID CHEMICAL CLEANING EQUIPMENT	SIZE	D	DRAWING NO.	502196-AP-11	REV	D
FILE	MICROSTATION	MATERIAL		PROJECT	502196		SHEET	1 OF 1	

P/N 161662-BI-P01



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(770) 429-0001

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

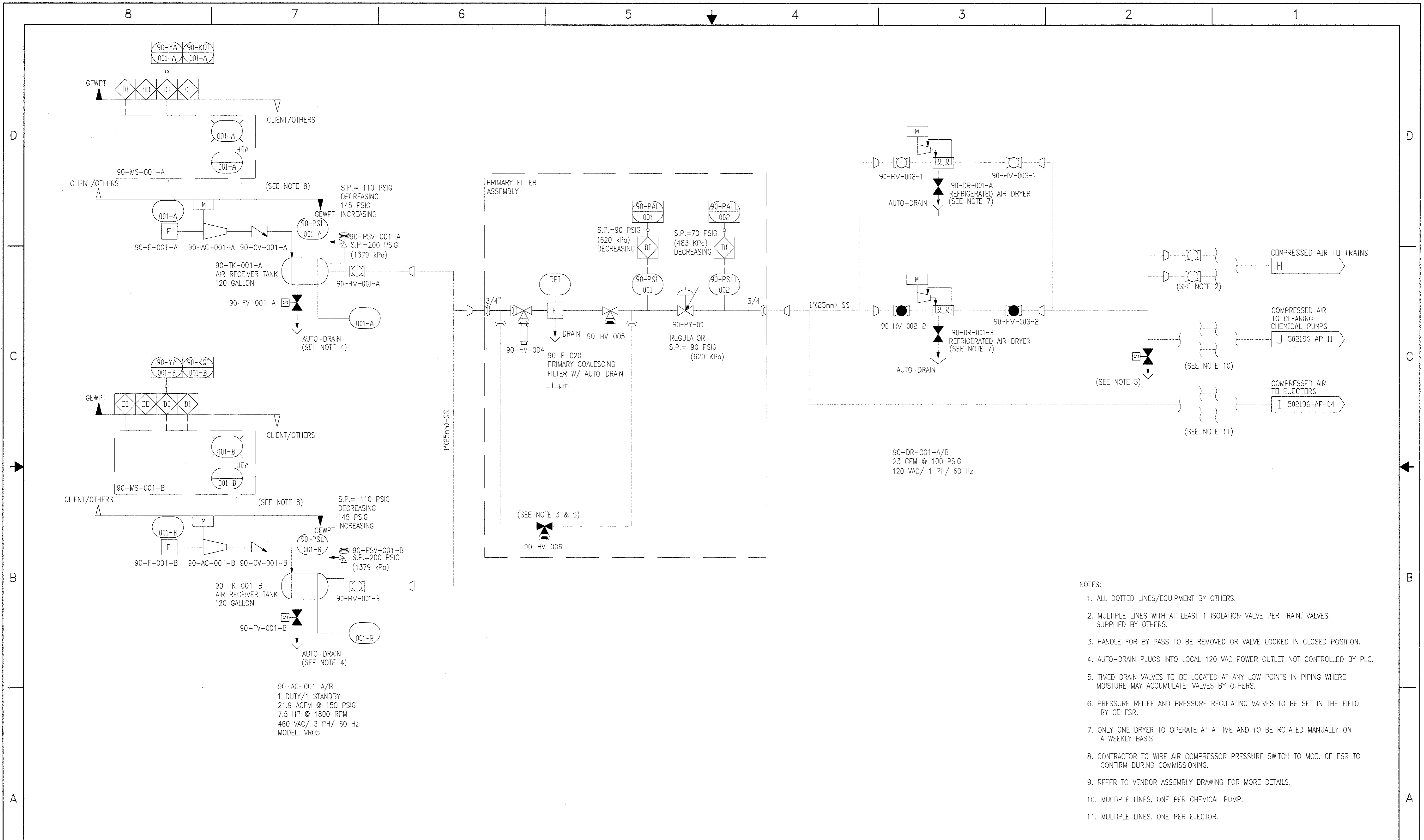
DSGN: AZ
DRWN: DV
CHK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY**

**VENDOR'S PROCESS AND FLOW DIAGRAM
AIR COMPRESSOR □ ASSOC. E □ UIP.**

SHEET NO.
VPID-13

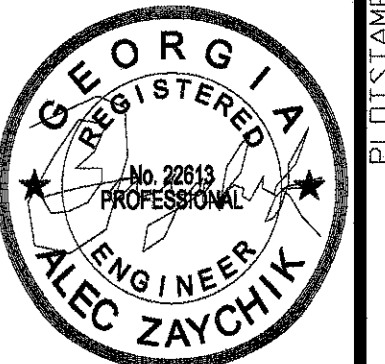


- NOTES:
- ALL DOTTED LINES/EQUIPMENT BY OTHERS.
 - MULTIPLE LINES WITH AT LEAST 1 ISOLATION VALVE PER TRAIN. VALVES SUPPLIED BY OTHERS.
 - HANDLE FOR BY PASS TO BE REMOVED OR VALVE LOCKED IN CLOSED POSITION.
 - AUTO-DRAIN PLUGS INTO LOCAL 120 VAC POWER OUTLET NOT CONTROLLED BY PLC.
 - TIMED DRAIN VALVES TO BE LOCATED AT ANY LOW POINTS IN PIPING WHERE MOISTURE MAY ACCUMULATE. VALVES BY OTHERS.
 - PRESSURE RELIEF AND PRESSURE REGULATING VALVES TO BE SET IN THE FIELD BY GE FSR.
 - ONLY ONE DRYER TO OPERATE AT A TIME AND TO BE ROTATED MANUALLY ON A WEEKLY BASIS.
 - CONTRACTOR TO WIRE AIR COMPRESSOR PRESSURE SWITCH TO MCC. GE FSR TO CONFIRM DURING COMMISSIONING.
 - REFER TO VENDOR ASSEMBLY DRAWING FOR MORE DETAILS.
 - MULTIPLE LINES, ONE PER CHEMICAL PUMP.
 - MULTIPLE LINES, ONE PER EJECTOR.

REV	DESCRIPTION	ECO	OWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS	-	MB	BM	02JUN16	BM	DECIMALS .XX .XXX	SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID AIR COMPRESSOR & ASSOC. EQU.	D	502196-AP-12	D
C	REVISED PER CLIENT COMMENTS	-	KVM	BM	01APR16	BM	ANGLES FRAC	BM	10DEC15					
B	REVISED AS NOTED	-	VHA	MC	28JAN16	MC	DIMENSIONS IN INCHES DO NOT SCALE	BM	10DEC15					
A	PRELIMINARY	-	-	-	-	-	THIRD ANGLE							

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(770) 429-0001

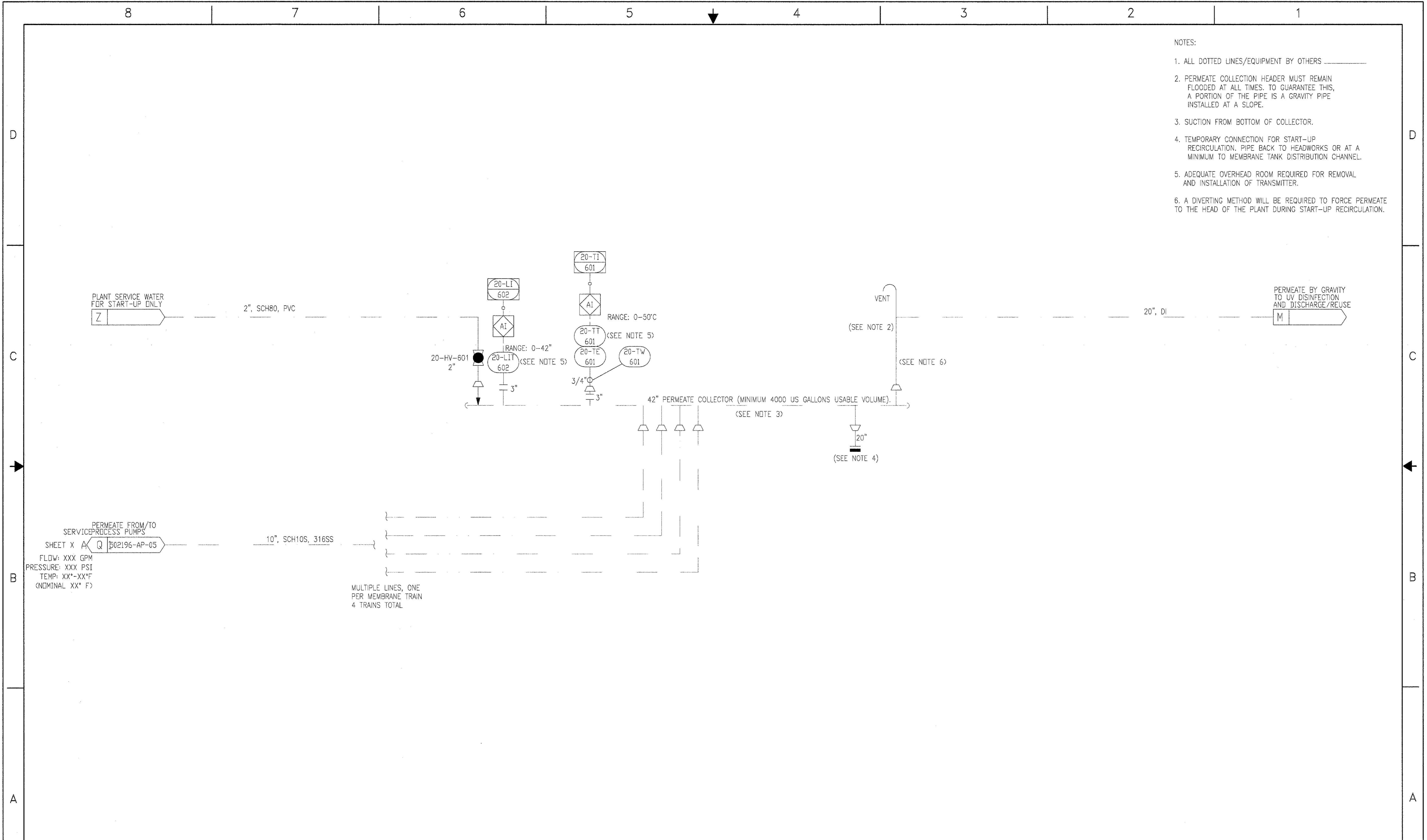
PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ
BE BELOW 1" LONG FOR SCALES SHOWN ON THIS SHEET. ADJUST LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
VENDOR'S PROCESS AND FLOW DIAGRAM
PERMEATE COLLECTOR

SHEET NO.
VPID-14

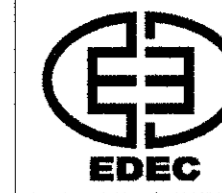
- NOTES:
1. ALL DOTTED LINES/EQUIPMENT BY OTHERS _____
 2. PERMEATE COLLECTION HEADER MUST REMAIN FLOODED AT ALL TIMES. TO GUARANTEE THIS, A PORTION OF THE PIPE IS A GRAVITY PIPE INSTALLED AT A SLOPE.
 3. SUCTION FROM BOTTOM OF COLLECTOR.
 4. TEMPORARY CONNECTION FOR START-UP RECIRCULATION. PIPE BACK TO HEADWORKS OR AT A MINIMUM TO MEMBRANE TANK DISTRIBUTION CHANNEL.
 5. ADEQUATE OVERHEAD ROOM REQUIRED FOR REMOVAL AND INSTALLATION OF TRANSMITTER.
 6. A DIVERTING METHOD WILL BE REQUIRED TO FORCE PERMEATE TO THE HEAD OF THE PLANT DURING START-UP RECIRCULATION.



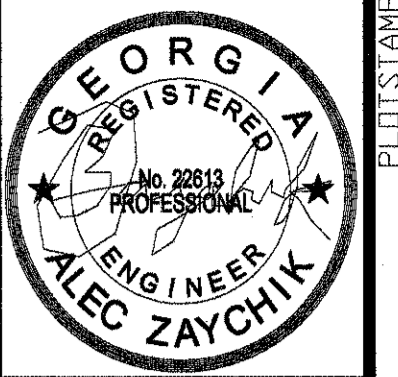
REV	DESCRIPTION	ECO	DWN	APVD	DATE	CHKD	TOLERANCES UNLESS NOTED	DECIMALS	ANGLES	FRAC	DRAWN BY	DATE	CLIENT/JOB	TITLE	SIZE	DRAWING NO.	REV
D	REVISED PER CLIENT COMMENTS	-	MB	BM	02JUN16	BM	.XX				SM	03DEC15	INDIAN CREEK WRF ZW-MBR WITH BIO-P	P&ID PERMEATE COLLECTOR	D	502196-AP-13	D
C	REVISED PER CLIENT COMMENTS	-	KVM	BM	01APR16	BM	.XX			BM	10DEC15						
B	REVISED AS NOTED	-	VHA	MC	28JAN16	MC	.XXX			BM	10DEC15						
A	PRELIMINARY	-	-	-	-	-				-	-						

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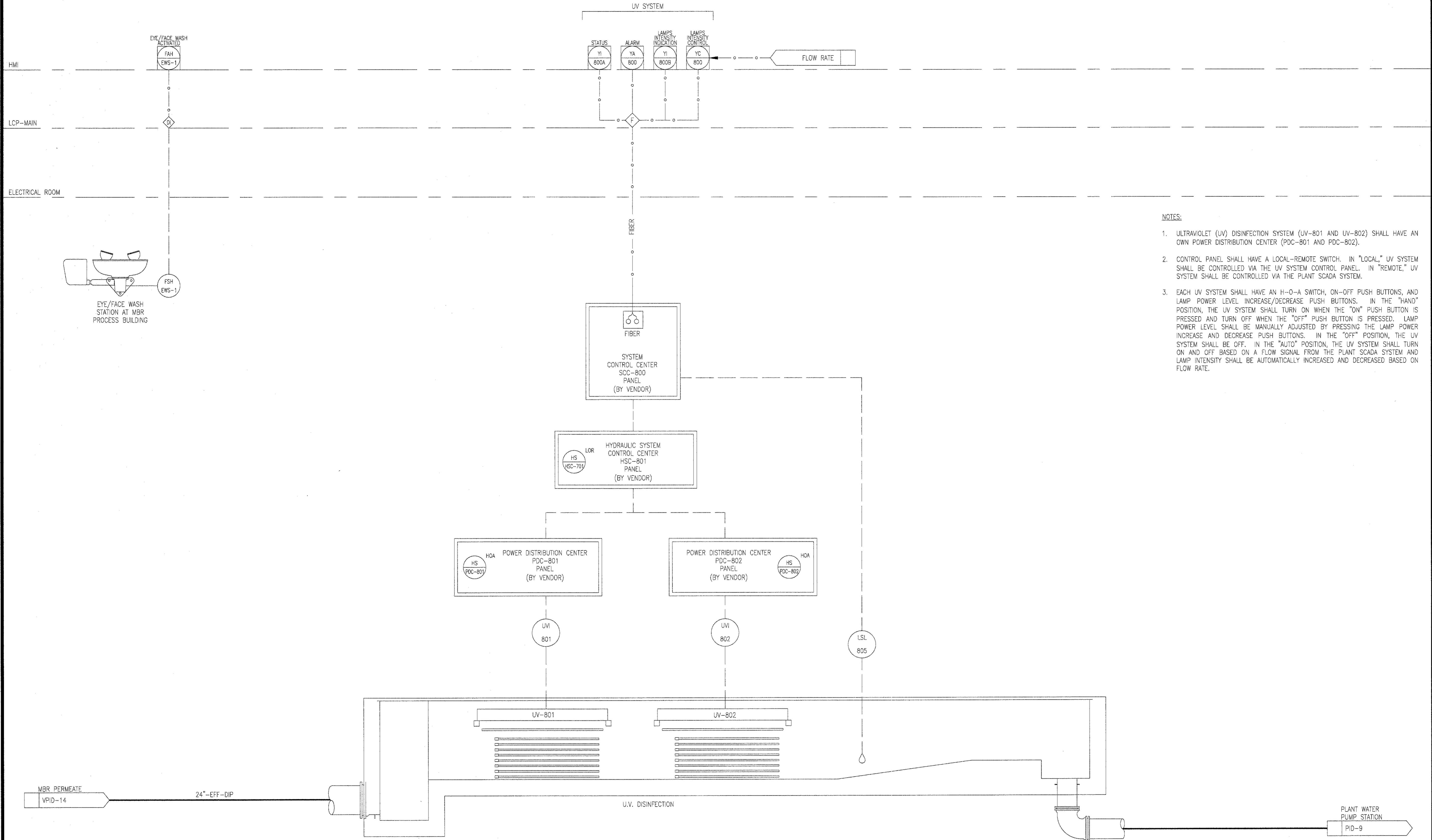
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 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 ENGINEERING STRATEGIES, INC.
 3655 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001



- NOTES:**
1. ULTRAVIOLET (UV) DISINFECTION SYSTEM (UV-801 AND UV-802) SHALL HAVE AN OWN POWER DISTRIBUTION CENTER (PDC-801 AND PDC-802).
 2. CONTROL PANEL SHALL HAVE A LOCAL-REMOTE SWITCH. IN "LOCAL," UV SYSTEM SHALL BE CONTROLLED VIA THE UV SYSTEM CONTROL PANEL. IN "REMOTE," UV SYSTEM SHALL BE CONTROLLED VIA THE PLANT SCADA SYSTEM.
 3. EACH UV SYSTEM SHALL HAVE AN H-O-A SWITCH, ON-OFF PUSH BUTTONS, AND LAMP POWER LEVEL INCREASE/DECREASE PUSH BUTTONS. IN THE "HAND" POSITION, THE UV SYSTEM SHALL TURN ON WHEN THE "ON" PUSH BUTTON IS PRESSED AND TURN OFF WHEN THE "OFF" PUSH BUTTON IS PRESSED. LAMP POWER LEVEL SHALL BE MANUALLY ADJUSTED BY PRESSING THE LAMP POWER INCREASE AND DECREASE PUSH BUTTONS. IN THE "OFF" POSITION, THE UV SYSTEM SHALL BE OFF. IN THE "AUTO" POSITION, THE UV SYSTEM SHALL TURN ON AND OFF BASED ON A FLOW SIGNAL FROM THE PLANT SCADA SYSTEM AND LAMP INTENSITY SHALL BE AUTOMATICALLY INCREASED AND DECREASED BASED ON FLOW RATE.

PROJECT NUMBER:	DATE:
	AUGUST 2016
REVISION	DATE
△	

DSGN: AZ
 DRWN: DV
 CHCK: AZ

BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 UV DISINFECTION SYSTEM
 PROCESS AND FLOW DIAGRAM

SHEET NO.
 PID-8

PLISTAMP



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 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8685



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 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 425-0001

PROJECT NUMBER: ---
 DATE: AUGUST 2016

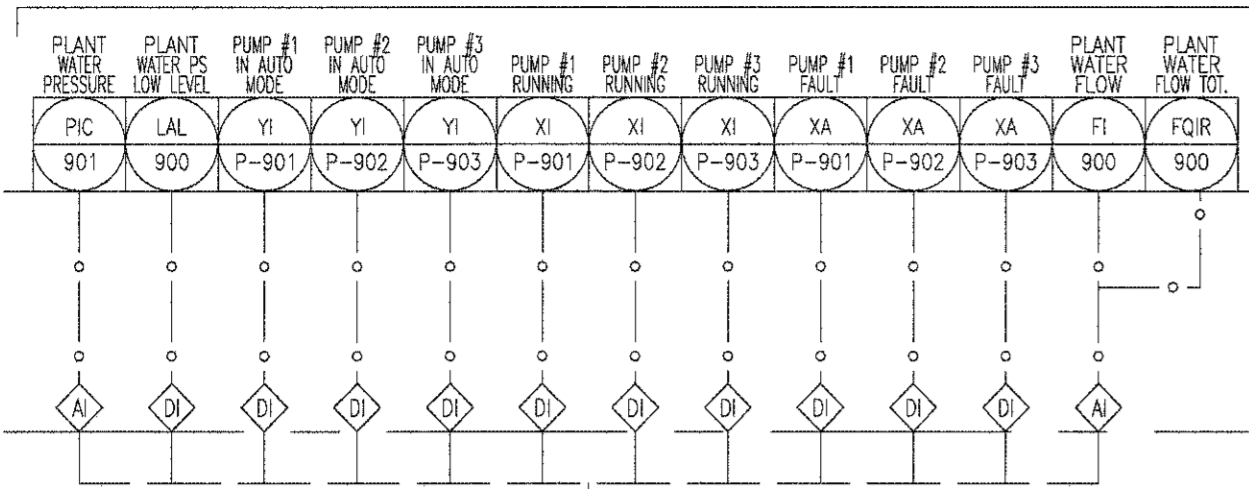
REVISION	DATE

DSGN: AZ
 DRWN: JV
 CHCK: AZ
 BAS BELOW IS * LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT * LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 PLANT WATER PUMP STATION
 PROCESS AND FLOW DIAGRAM

SHEET NO.
 PID-9

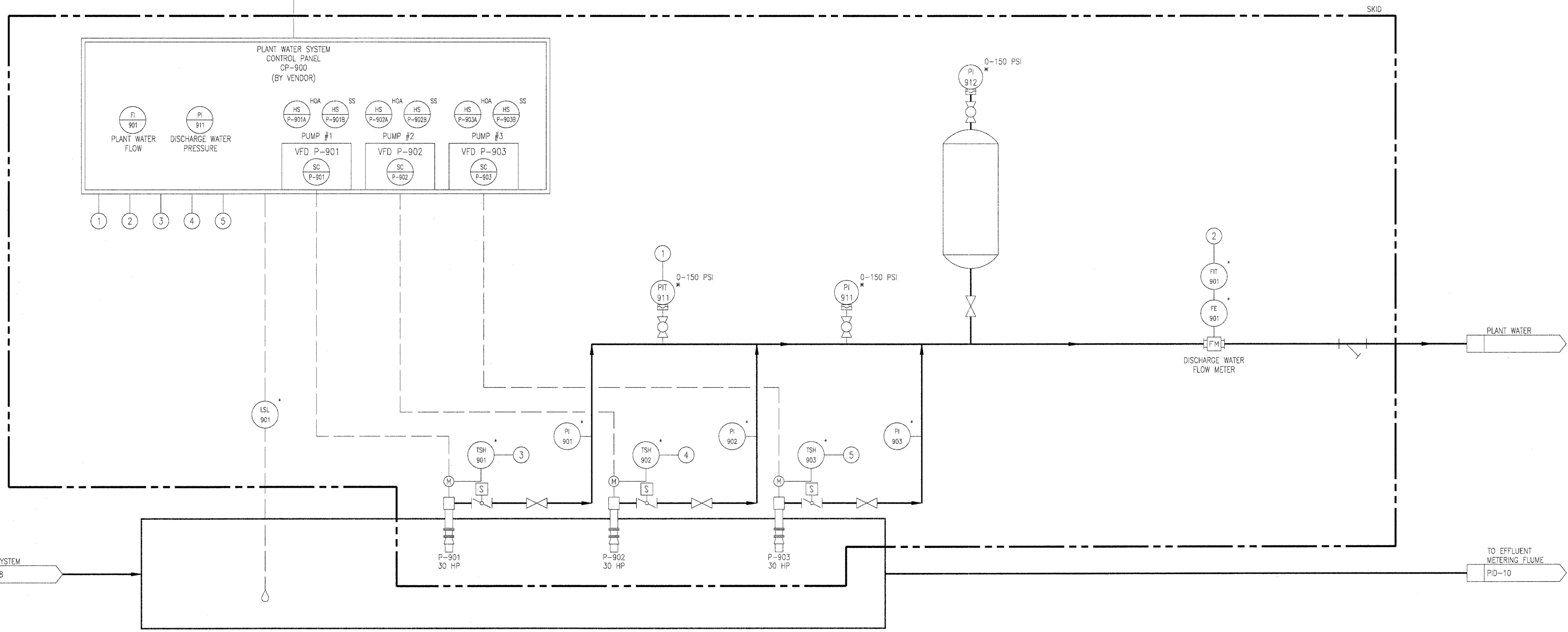
PLANT WATER PUMP STATION
 PW-900



HMI

CONTROL PANEL
 LCP-MAIN

ELECTRICAL ROOM

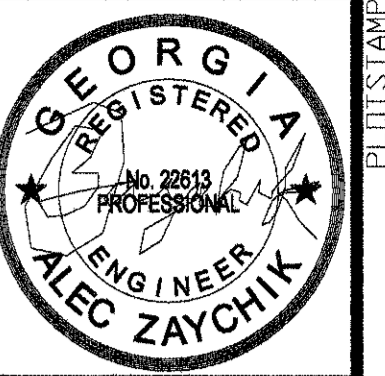


- NOTES:
- PLANT WATER SYSTEM SHALL BE PROVIDED WITH ITS OWN CONTROL PANEL CP-900.
 - EACH PUMP SHALL HAVE AN H-O-A SWITCH AND START-STOP PUSH BUTTONS. IN THE "HAND" POSITION, THE PUMP SHALL START AND RUN WHEN THE "START" PUSH BUTTON IS PRESSED AND STOP WHEN THE "STOP" PUSH BUTTON IS PRESSED. IN THE "OFF" POSITION, THE PUMP SHALL STOP. IN THE "AUTO" POSITION, THE PUMP SHALL START AND STOP BASED ON A RUN COMMAND FROM THE PUMP WATER SYSTEM CONTROL PANEL CP-900. SEE "PLANT WATER SYSTEM" SPECIFICATION FOR MORE OPERATION DETAILS.
 - FOR PUMP CONTROL PANEL CP-900 DETAILS SEE DWG. E-25.

LEGEND:
 * - EQUIPMENT/DEVICE SUPPLIED BY VENDOR



EDEC, INC.
3089 PEACHTREE IND. BLVD.
SUITE 110
DULUTH, GEORGIA 30097
TEL. (770) 493-8685

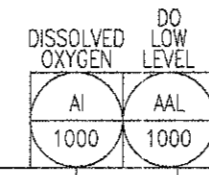


ESI
ENGINEERING STRATEGIES, INC.
3855 SHALLOWFORD ROAD, SUITE 525
MARIETTA, GA 30062
(770) 429-0001

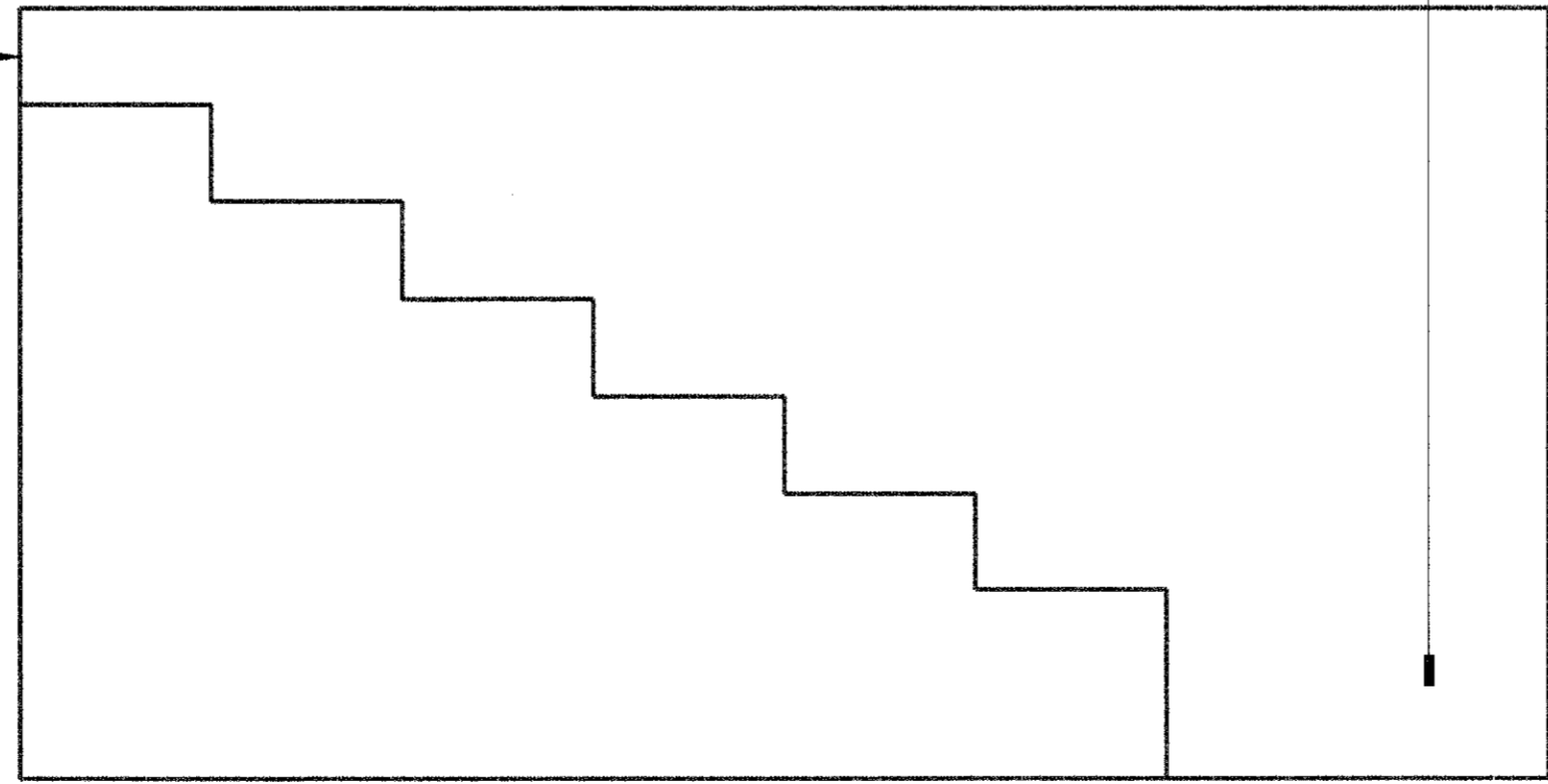
HMI

CONTROL PANEL
LCP-MAIN

ELECTRICAL ROOM



FROM EFFLUENT
METERING FLUME
PID-9



TO INDIAN CREEK
OUTFALL

PROJECT NUMBER:
DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
DRWN: DV
CHK: AZ
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

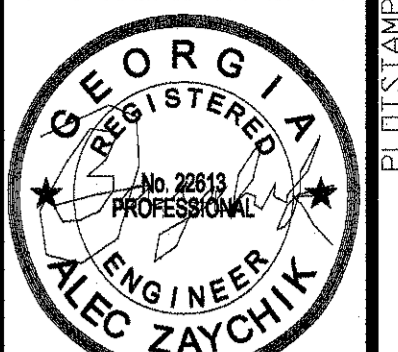
INDIAN CREEK WRF EXPANSION TO 3 MGD
HENRY COUNTY WATER AUTHORITY
CASCADE AERATOR
PROCESS AND FLOW DIAGRAM

SHEET NO.
PID-10

PLIESTAMP



EDEC, INC.
 3069 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8655



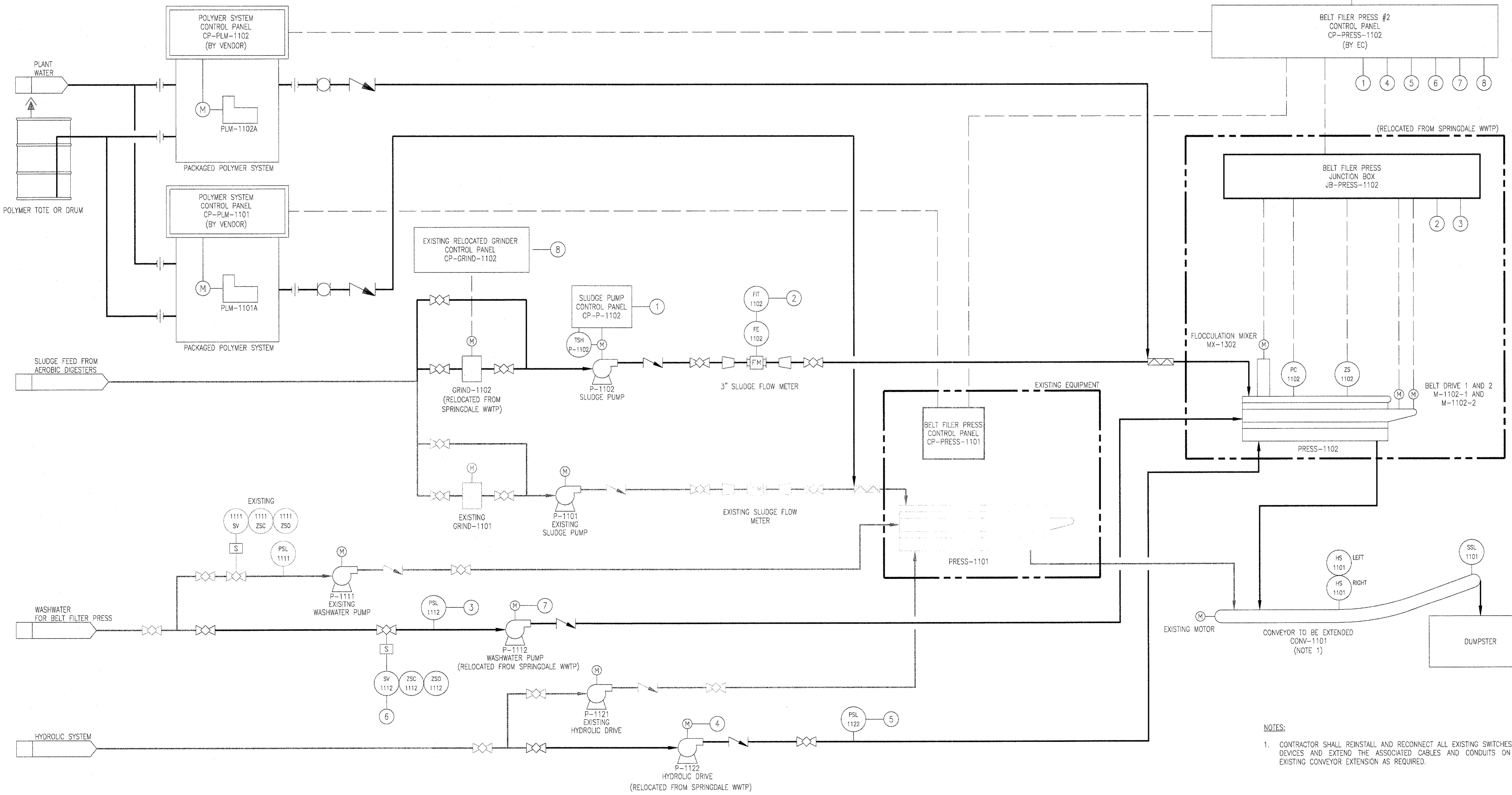
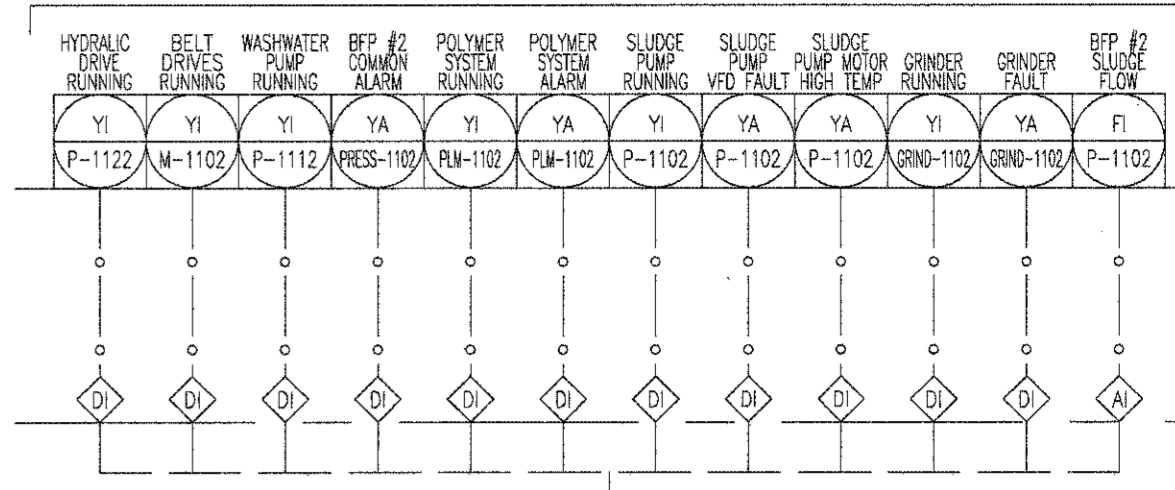
ESI
 ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 499-0001

HMI

EXISTING CONTROL PANEL
 CP-BL
 (IN SOLIDS HANDLING AND
 BLOWER BUILDING)

ELECTRICAL ROOM

BELT FILTER PRESS SYSTEM #2



- NOTES:
- CONTRACTOR SHALL REINSTALL AND RECONNECT ALL EXISTING SWITCHES AND DEVICES AND EXTEND THE ASSOCIATED CABLES AND CONDUITS ON THE EXISTING CONVEYOR EXTENSION AS REQUIRED.

PROJECT NUMBER: ---
 DATE: AUGUST 2016

REVISION	DATE

DSGN: AZ
 DRAWN: DV
 CHECK: AZ

BAR BELT OR 1" LONG FOR SCALES
 SHOWN ON THIS SHEET. IF NOT 1"
 LONG ON THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY
 BELT FILTER PRESS
 PROCESS AND FLOW DIAGRAM

SHEET NO.
 PID-11

PLOTISTAMP



EDEC, INC.
 3089 PEACHTREE IND. BLVD.
 SUITE 110
 DULUTH, GEORGIA 30097
 TEL. (770) 493-8665



ESI
ENGINEERING STRATEGIES, INC.
 3855 SHALLOWFORD ROAD, SUITE 525
 MARIETTA, GA 30062
 (770) 429-0001

PROJECT NUMBER:	DATE:
DESIGN: AZ	AUGUST 2016
DRWN: DV	REVISION
CHK: AZ	DATE

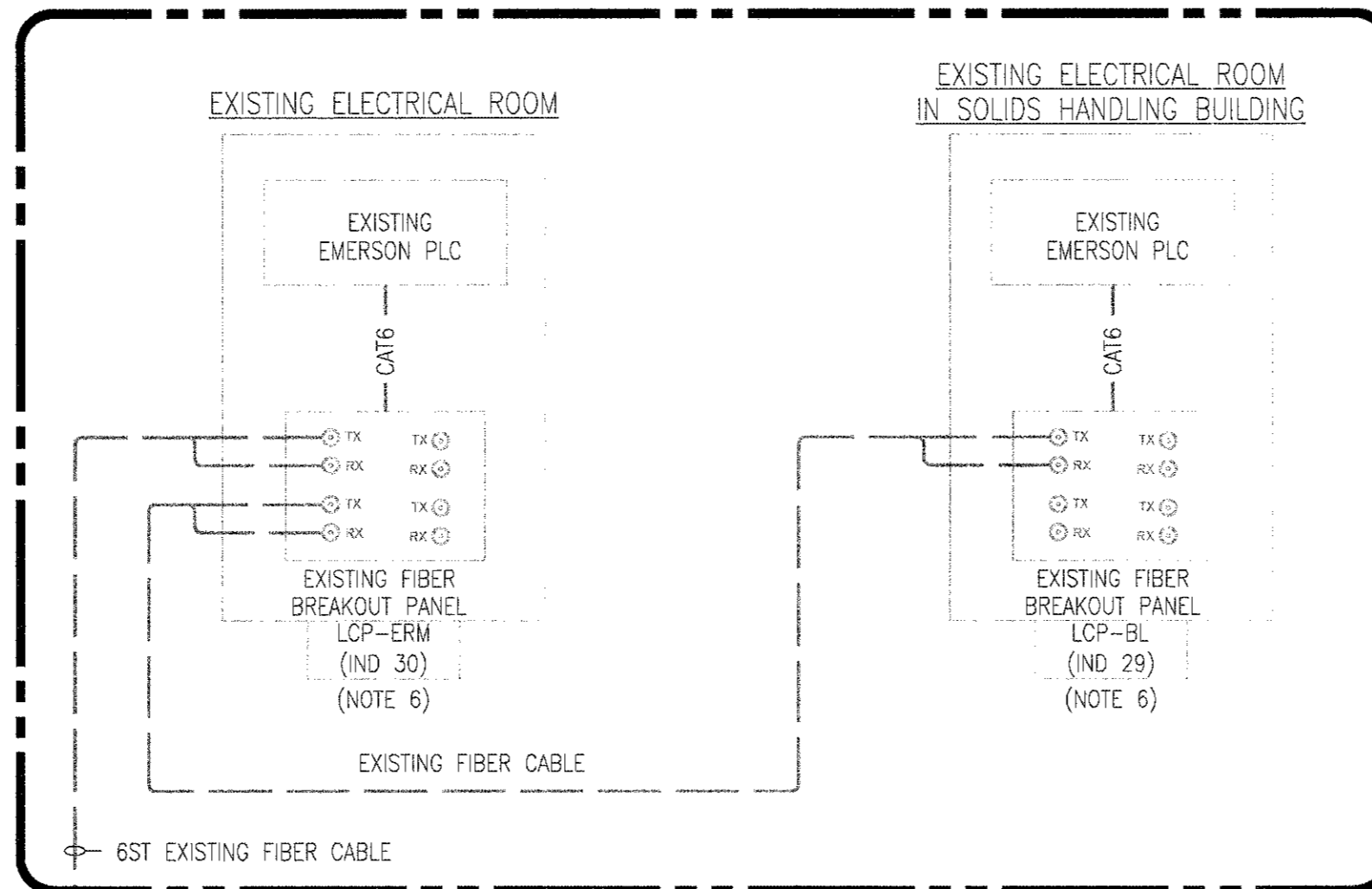
BAR BELOW IS 1" LONG FOR SCALES SHOWN ON THIS SHEET. IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**INDIAN CREEK WRF EXPANSION TO 3 MGD
 HENRY COUNTY WATER AUTHORITY**

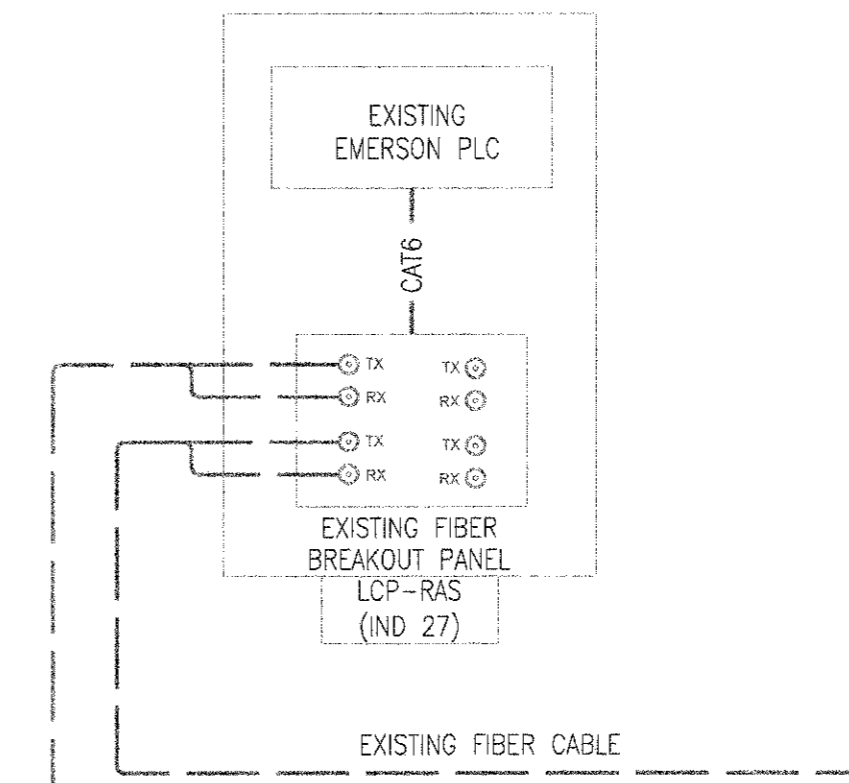
SCADA BLOCK DIAGRAM

SHEET NO.
 I-001

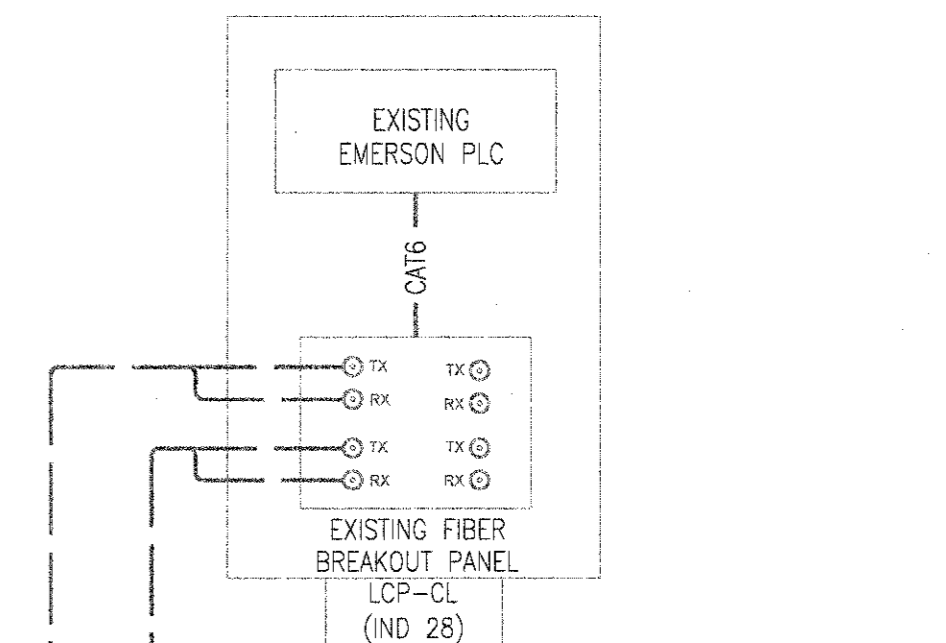
PANELS TO BE MODIFIED



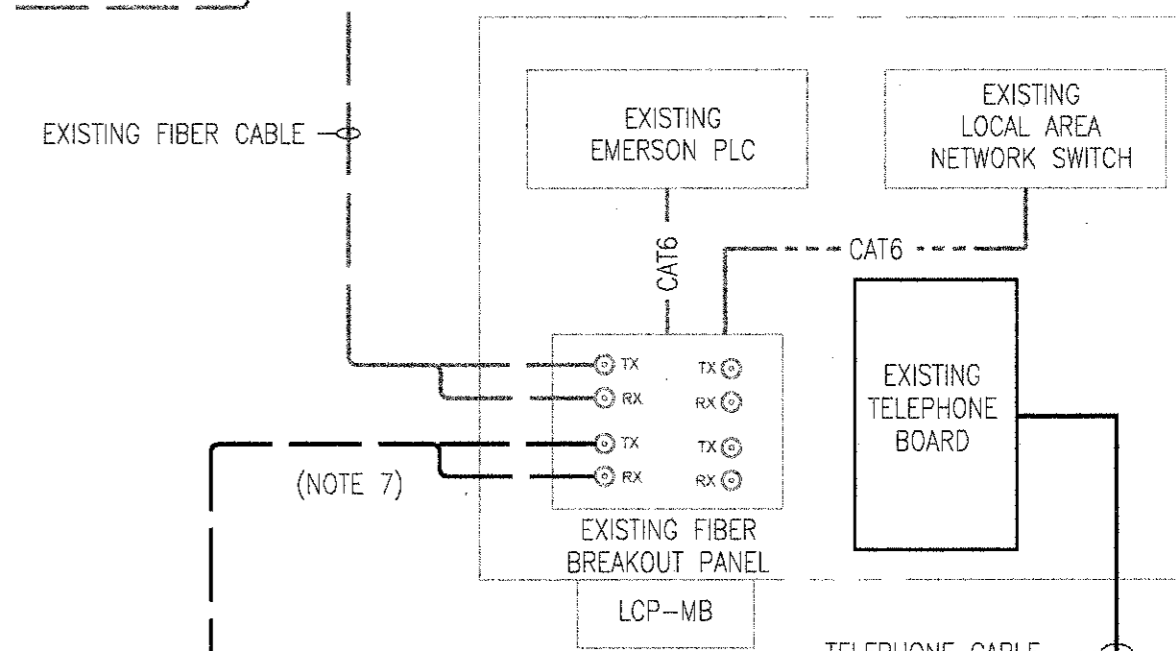
EXISTING RAS BUILDING



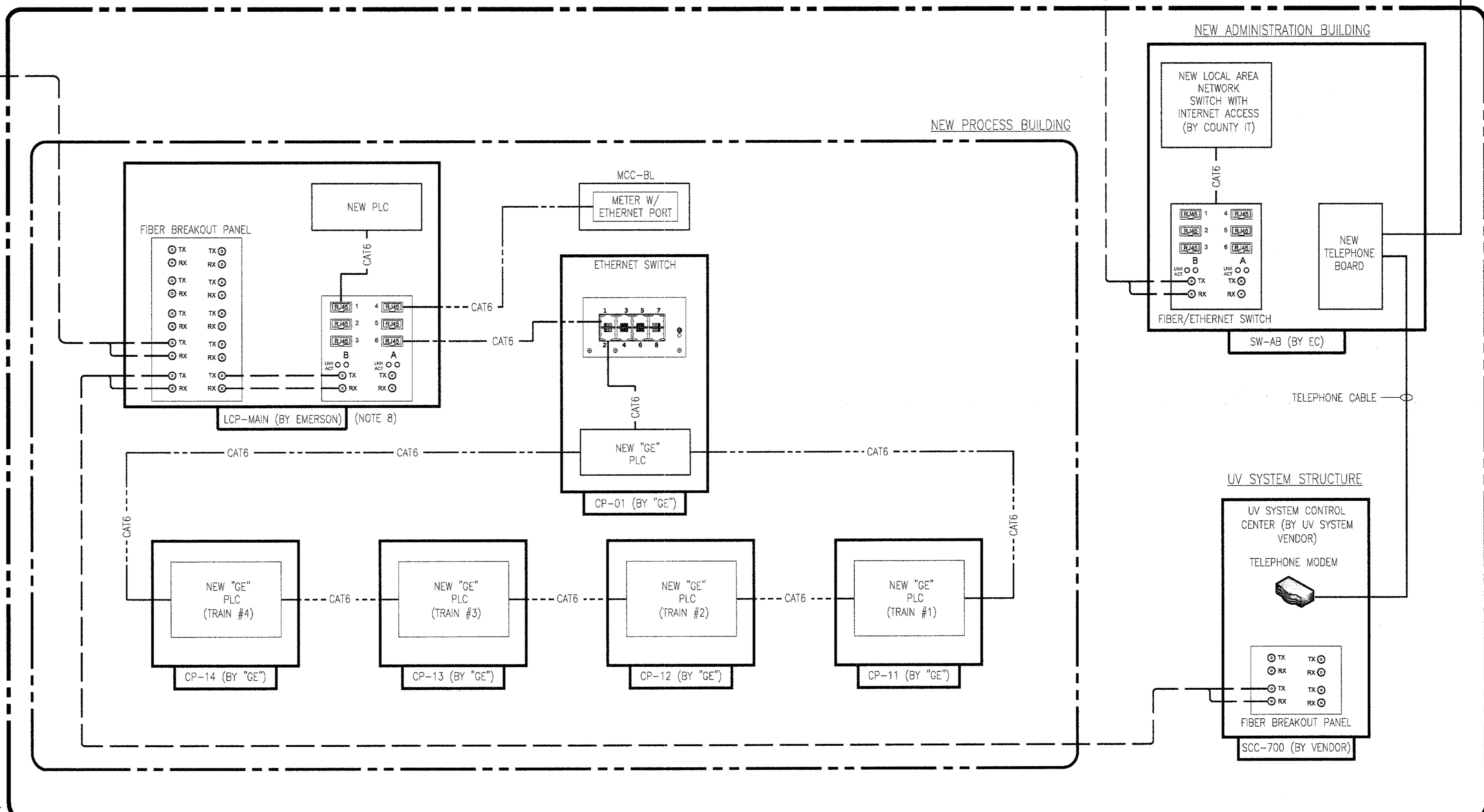
EXISTING CHLORINE BUILDING



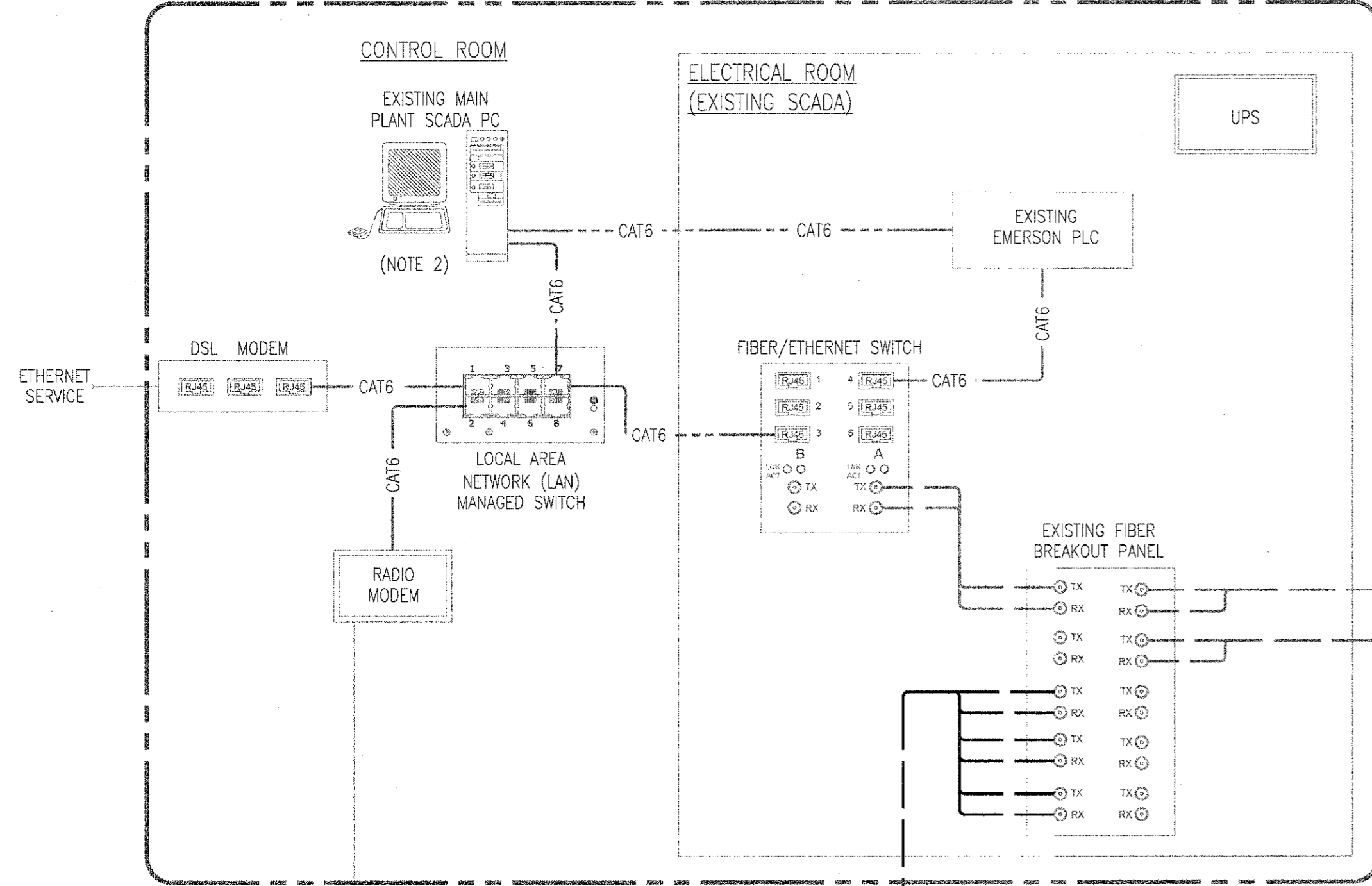
EXISTING MAINTENANCE BUILDING



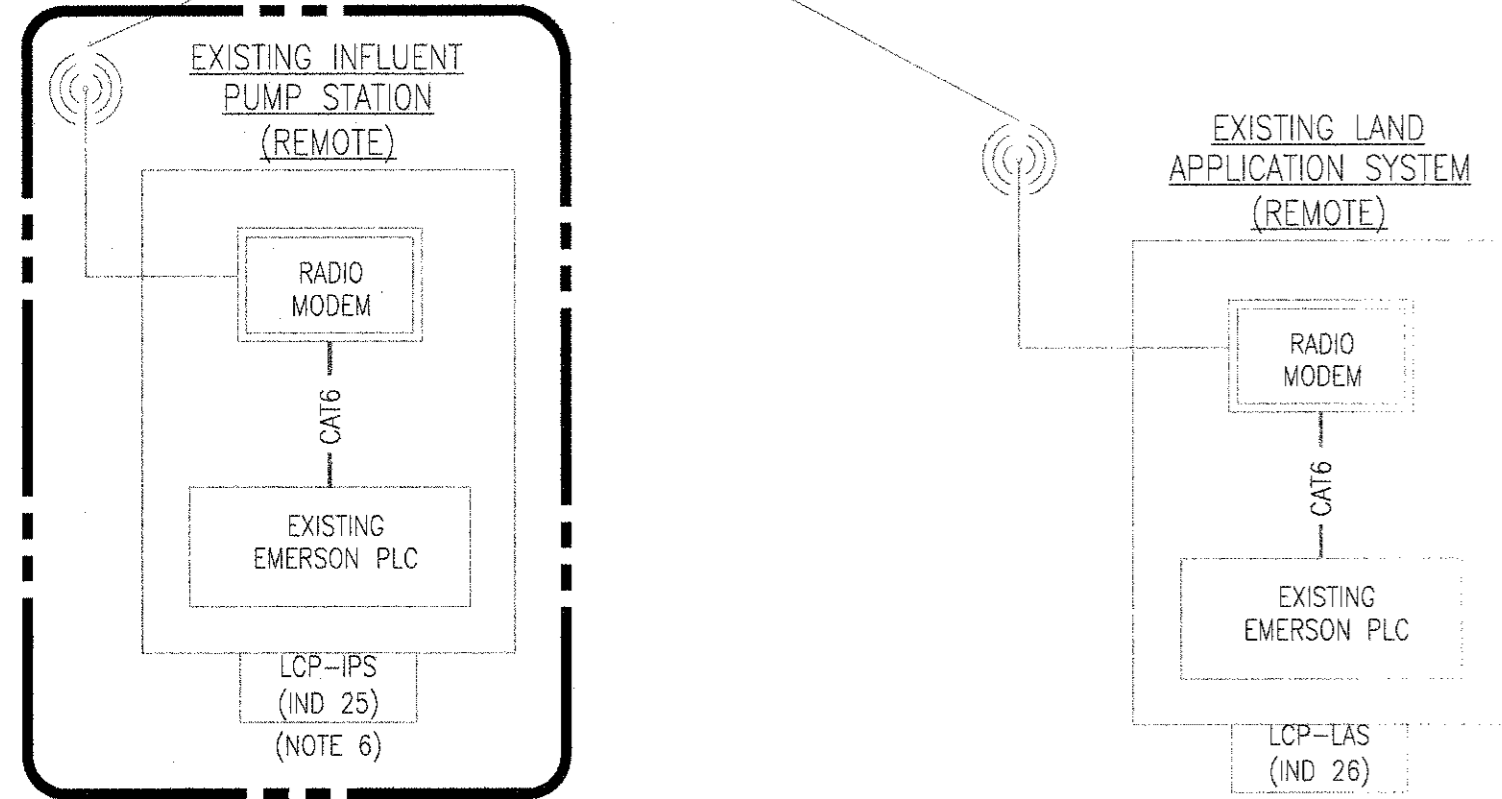
PLANT SCADA SYSTEM EXPANSION



EXISTING OFFICE BUILDING



PANEL TO BE MODIFIED



NOTES:

- ALL SCADA SYSTEM WORK TO BE PROVIDED BY EMERSON PROCESS EQUIPMENT. PLEASE CONTACT EMERSON REPRESENTATIVE ROBERT BENDER FOR MORE INFORMATION: 678-427-7418, ROBERT.BENDER@EMERSON.COM.
- SYSTEM INTEGRATOR SHALL UPDATE THE SOFTWARE AS REQUIRED TO ACCOMMODATE THE SCADA SYSTEM EXPANSION AND TO CREATE NEW HMI SCREENS AS REQUIRED.
- SEE P&IDS FOR EQUIPMENT I/O INTERFACE DETAILS.
- SEE POWER PLAN DRAWINGS FOR SCADA SYSTEM EQUIPMENT LOCATIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL ETHERNET AND FIBER CABLES FOR PANELS COMMUNICATION AND PROPER SYSTEM OPERATION.
- SYSTEM INTEGRATOR SHALL PERFORM ALL REQUIRED MODIFICATIONS TO THE EXISTING SCADA PANELS TO ACCOMMODATE NEW I/O'S. ADDITIONAL PLC I/O MODULES SHALL ACCOMMODATE ALL NEW I/O'S AND PROVIDE THE EXISTING SPARE CAPACITY. SEE P&ID'S AND SCHEMATICS FOR MORE INFORMATION.
- CONTRACTOR SHALL PROVIDE AND INSTALL FIBER OPTIC CABLE BETWEEN EXISTING MAINTENANCE BUILDING LAN SWITCH WITH INTERNET ACCESS AND NEW ADMINISTRATION BUILDING FIBER BREAKOUT PANEL AT IT CLOSET TO PROVIDE INTERNET SERVICE FOR THE NEW BUILDING. SEE DWG. E-201 FOR DUCTBANK ROUTING DETAILS AND DWG. E-313 FOR NEW ADMINISTRATION BUILDING LAYOUT.
- THE SYSTEM INTEGRATOR SHALL PROVIDE AND INSTALL PLANT SCADA PANEL LCP-MAIN IN NEMA 1 ENCLOSURE. PANEL SHALL INCLUDE AS A MINIMUM, THE FOLLOWING COMPONENTS:
 - ETHERNET SWITCH WITH FIBER PORTS
 - ALLEN-BRADLEY COMPACTLOGIX PLC TO ACCOMMODATE ALL THE I/O'S SHOWN ON SCHEMATIC WIRING DIAGRAM PLUS 20% SPARES.
 - 24VDC POWER SUPPLY
 - SURGE SUPPRESSORS FOR ALL 4-20MA SIGNALS.
 - RELAYS, TERMINALS, RECEPTACLE ETC. AS REQUIRED
 - 550VA UPS FOR PLC
 - ANY OTHER COMPONENTS REQUIRED FOR SAFE AND RELIABLE SCADA SYSTEM OPERATION.

THE SYSTEM INTEGRATOR SHALL SUBMIT THE LCP-MAIN DETAILED WIRING DIAGRAMS AND BILL OF MATERIAL FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

THE SYSTEM INTEGRATOR SCOPE SHALL INCLUDE SUPPLYING PLANT SCADA PANEL LCP-MAIN, PROGRAMMING LCP-MAIN PLC, CREATING ASSOCIATED HMI SCREENS AT THE PLANT SCADA SERVER HMI SOFTWARE, FACTORY TESTING PANEL LCP-MAIN AND PROVIDING TRAINING AND START-UP ASSISTANCE.

LEGEND:
 - - - - - CAT6 - - - - - CAT6 INDUSTRIAL TYPE ETHERNET CABLE
 - - - - - MULTIMODE FIBER OPTIC CABLE (6 STRANDS)

1 PLANT SCADA SYSTEM BLOCK DIAGRAM