CITY OF ROME WATER & SEWER DIVISION
ROME, GEORGIA

UPGRADES TO THE
ETOWAH RAW WATER PUMP STATION

CITY OF ROME BOARD OF COMMISSIONERS

JAMIE DOSS - MAYOR
MILTON O. SLACK III - MAYOR PRO-TEM
BILL COLLINS - COMMISSIONER
WENDY DAVIS - COMMISSIONER
BILL IRMSCHER - COMMISSIONER
SUE LEE - COMMISSIONER
CRAIG MCDANIEL - COMMISSIONER
EVIE MCNIECE - COMMISSIONER
SUNDAI STEVENSON - COMMISSIONER

SAMMY RICH - CITY MANAGER
PATRICK EIDSON - ASSISTANT CITY MANAGER
MIKE HACKETT - WATER & SEWER DIVISION DIRECTOR

(FUNDING SOURCE - PUBLIC)

GEORGIA REGISTERED No. 025279 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

PROJECT NO. E361
DRAWING NO. E361 - 0
ISSUED FOR PERMIT: January 15, 2016
ISSUED FOR BID: February 18, 2016
ISSUED FOR CONSTRUCTION: _____

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E361 - C.4	PUMP HOUSE ELEVATIONS
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E361 - E.4	ELECTRICAL ONE LINE & SCHEMATICS
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E361 - S.4	FLOOR SECTIONS
E361 - S.5	ROOF SECTIONS

Structural Engineer

ALPHA OMEGA
ENGINEERING, L.L.C
21 LANTERN CIRCLE
CARTERSVILLE, GA 30120

Civil Engineer

SES

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Rome, Georgia 30161
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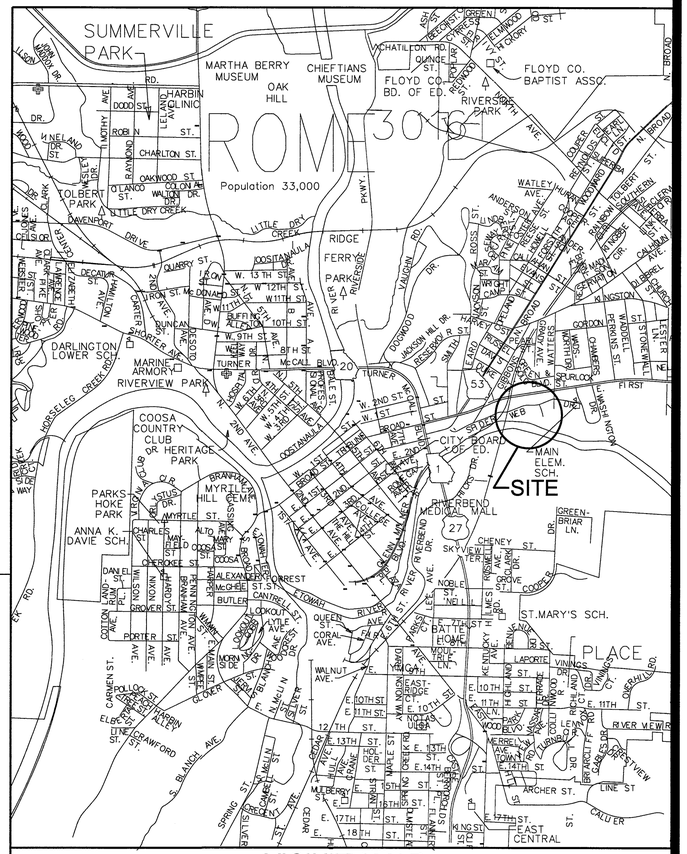
www.southernEandS.com

Electrical Engineer

WESLEY F. TURNER, P.E.
176 CHULIO ROAD S.E.
ROME, GA 30161



VICINITY MAP

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		

EXISTING GRAVEL DRIVE

CONC. PAD W/TRANSFORMER

LT. POLE W/UGP

BRICK CONTROL BLDG. FF = 602.23' TO REMAIN

CONC. S.W.

CONCRETE SIDEWALK

601+0

602+0

REMOVE PUMP CONTROLS AND DEMO PAD.

CONC. PAD W/ PUMP CONTROLS

24-INCH RAW WATER FORCE MAIN

100 YR. H.W.L. 599.0'

CATWALK

EXISTING 30-INCH R.C.P. SANITARY SEWER

EXISTING SS M.H. Rim = 598.35 I.E. = 587.05'

CONCRETE

REMOVE LIGHT POLE

REMOVE WALL

NEW FENCE TO MATCH EXISTING MAKE SECURE AT WALL

CONSTRUCT REINFORCED CONCRETE WALL

TIMBER RETAINING WALL W/ H-PILES

588.0+TW 585.0+BW

587.0+TW 584.0+BW

40'

REMOVE EXISTING WALL. CONSTRUCT REINFORCED CONCRETE WALL

PROPOSED STAIRS

DRAIN INLET INV.=577.5

582

LT. POLE W/UGP

CONC. WALK

PROPOSED CONCRETE SLAB

EXISTING WATERLINE RECONNECT TO NEW LINE

POST INDICATOR

REMOVE EXISTING PIPE MANIFOLD AND 24" D.I.P.

NEW PIPE MANIFOLD AND 24" D.I.P.

PROPOSED 21' X 19' PUMP HOUSE F.F.E. = 601.0

PROPOSED CONCRETE LOADING

581+5

12'

+581.2

PROVIDE 12' DOUBLE LOOKING CHAIN LINK GATES

EXISTING CONCRETE WETWELL BELOW

REMOVE LIGHT POLE

PROPOSED FENCE

PROPOSED CONCRETE HEADER CURB

44 L.F. 18" R.C.P.

CONC. INTAKE STRUCTURE

EXISTING INTAKE EL. = 564.0'

PROPOSED CONCRETE DRIVE

12'

594

592

590

588

586

584

582

580

578

576

574

572

570

568

566

564

562

FLOOD WAY LIMITS

GRID NORTH (GA WEST Zone)

SCALE IN FEET

0 10 20 40

SCALE: 1" = 10'

GEORGIA REGISTERED No. 25575 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

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UTILITY OWNER:

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WATER & SEWER DIVISION
100 VAUGHN ROAD
ROME, GEORGIA 30161

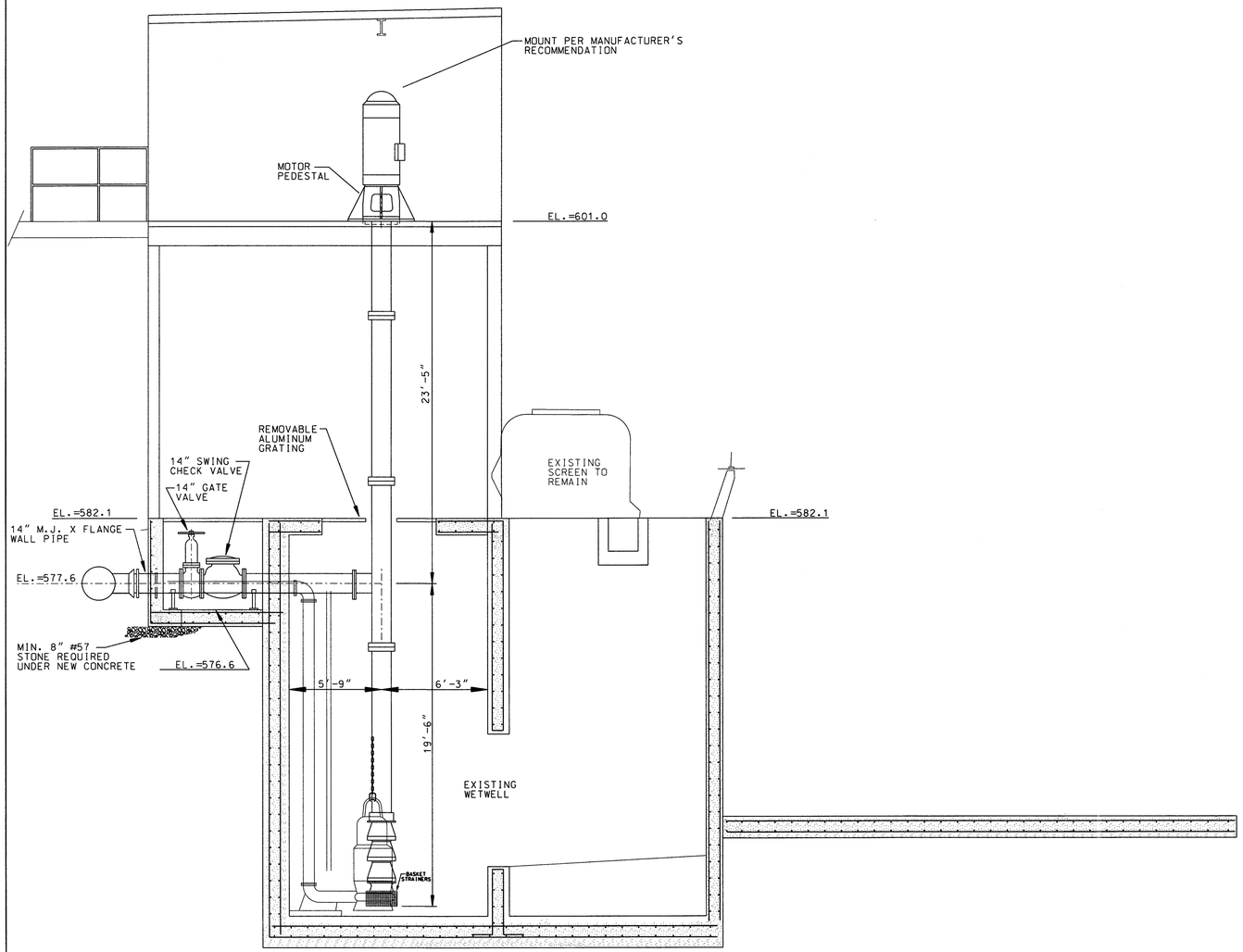
ISSUED FOR PERMIT:
1/15/2016
ISSUED FOR CONSTRUCTION:
REVISION DATES:

CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

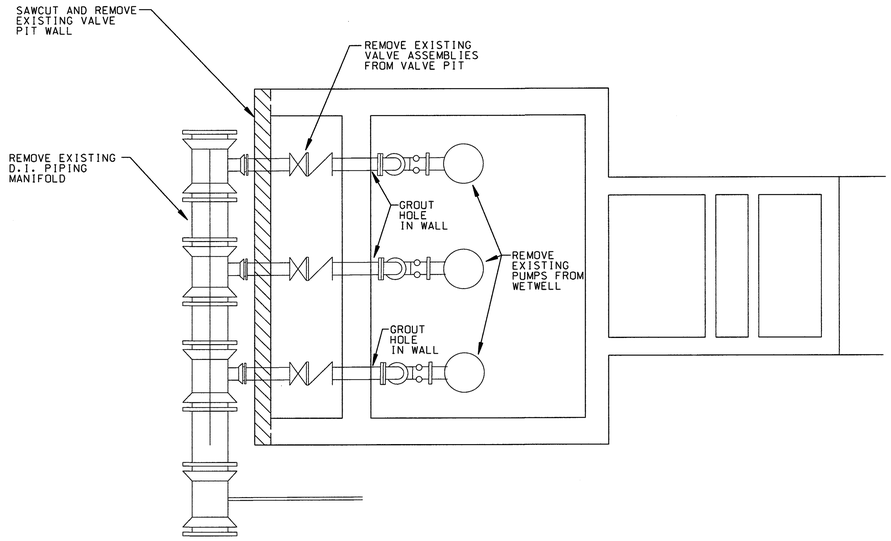
PUMP STATION SITE PLAN

DRAWING No. E361 - C.1

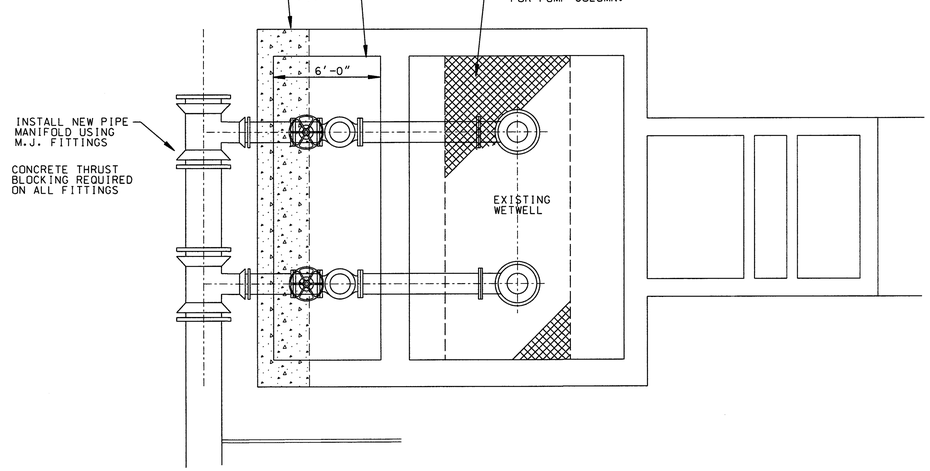
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



SECTION



PUMP STATION DEMOLITION PLAN



PUMP STATION PLAN @ EL.=581.0

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

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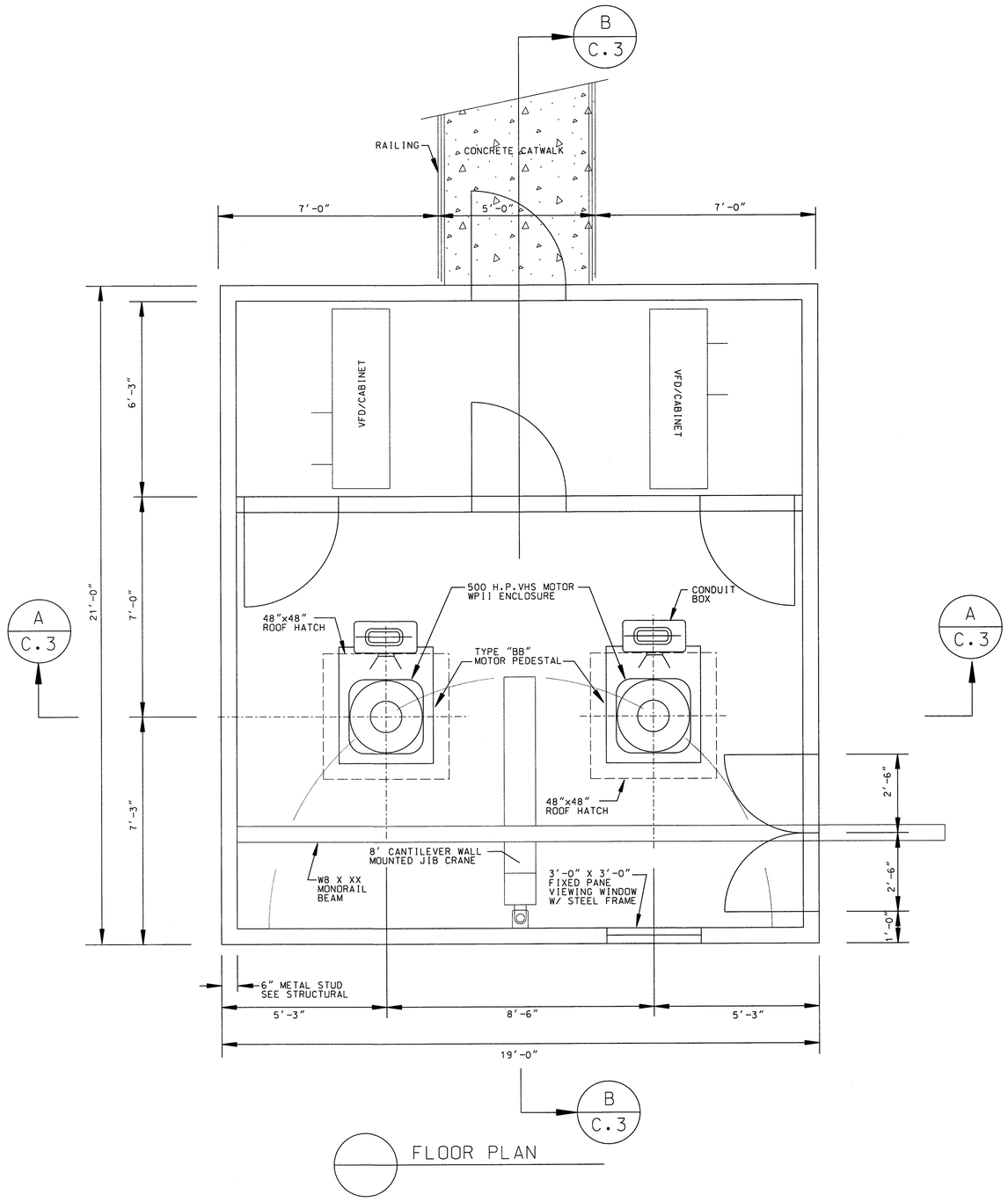
ETOWAH RAW WATER PUMP STATION

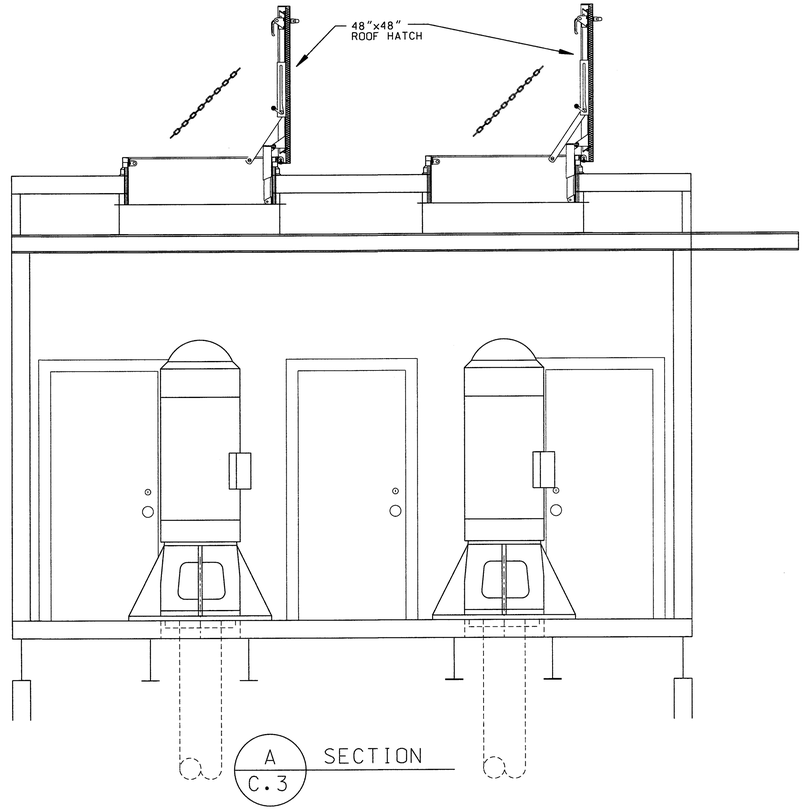
PUMP STATION DETAILS

DRAWING No.
E361 - C.2

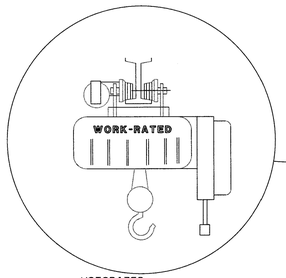
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



FLOOR PLAN



SECTION



MOTORIZED
MONORAIL
TROLLEY
ACCO C2W05D036-15M2D1

SECTION

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

GEORGIA REGISTERED No. 27279 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

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100 VAUGHN ROAD
ROME, GEORGIA 30161

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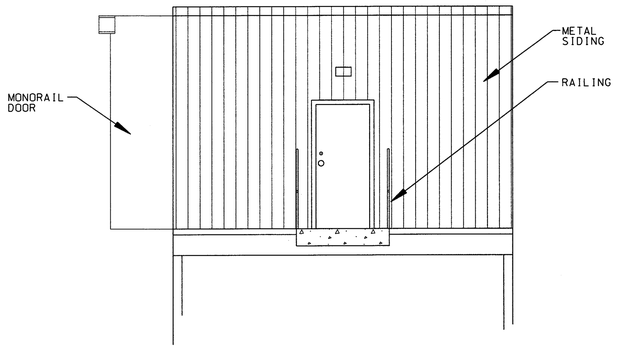
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

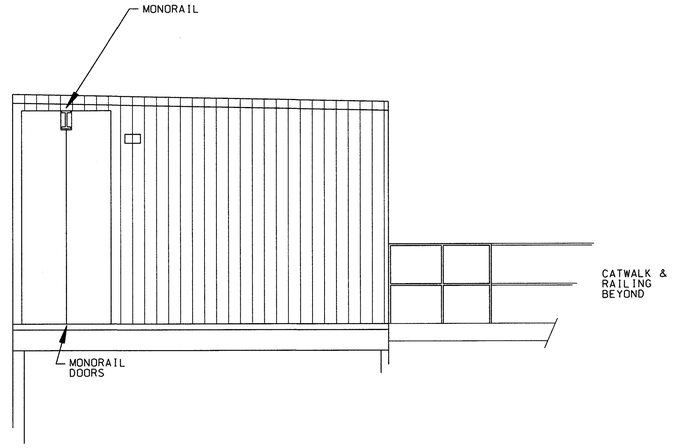
PUMP HOUSE FLOOR PLAN

DRAWING No.
E361 - C.3

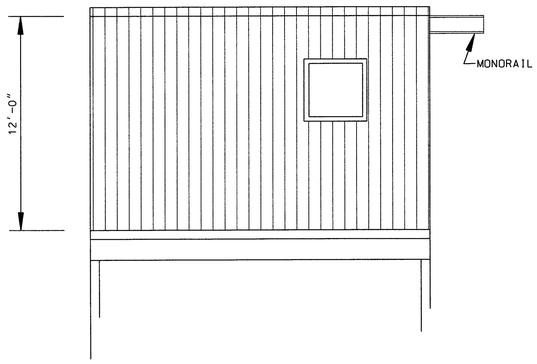
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



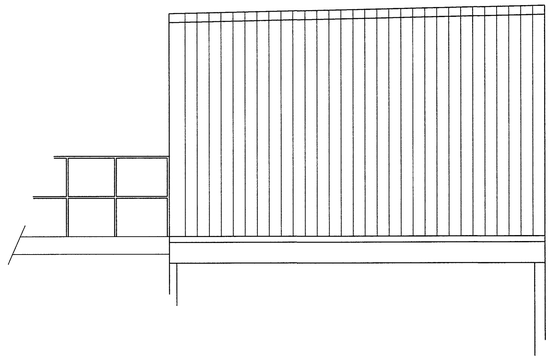
NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

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

GEORGIA REGISTERED No. 29529 PROFESSIONAL ENGINEER JAMES F. HARDIN, JR.

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UTILITY OWNER:

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WATER & SEWER DIVISION
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ROME, GEORGIA 30161

ISSUED FOR PERMIT:
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BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

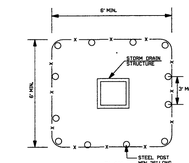
PUMP HOUSE ELEVATIONS

DRAWING No.
E361 - C.4

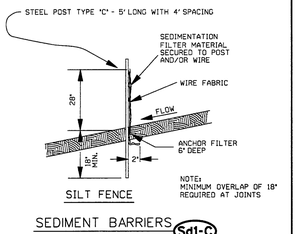
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		

NOTES:

1. A PORTION OF THIS PROPERTY DOES LIE IN AN AREA HAVING SPECIAL FLOOD HAZARDS ACCORDING TO FLOOD INSURANCE RATE MAP NUMBER 13115C0193E, MAP REVISED SEPTEMBER 25, 2009. THE 100 YEAR FLOODPLAIN ELEVATION IS APPROXIMATELY 598.5.
2. TOPOGRAPHIC MAPPING WAS PROVIDED BY THE CITY OF ROME.
3. THE PROJECT IS LOCATED IN LAND LOT 246 OF THE 23RD DISTRICT AND 3RD SECTION OF FLOYD COUNTY, GEORGIA AND THE 3RD WARD OF THE CITY OF ROME.
4. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, 2001 EDITION.
5. EXISTING UTILITIES SHOWN HEREON WERE TAKEN FROM THE BEST INFORMATION AVAILABLE AND MAY NOT BE COMPLETE OR ACCURATE. CONTRACTOR TO COORDINATE LOCATION OF UTILITIES WITH UTILITY OWNERS.
6. TOTAL PROJECT AREA = +/- 30 ACRES.
   TOTAL DISTURBED AREA = +/- 0.2 ACRE.
7. PROPERTY IS ZONED O-I.
8. WASTE MATERIALS SHALL NOT BE DISCHARGED INTO THE DRAINAGE SYSTEM FROM THIS SITE.
9. ANY REVISIONS TO THE ESPC PLAN THAT RESULT IN A SIGNIFICANT EFFECT ON THE BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
10. THE LOCATION OF THE SOIL SERIES SHOWN ON THIS PLAN WAS INTERPOLATED FROM SHEET NO. 43 OF THE PUBLICATION, SOIL SURVEY OF CHATTOOGA, FLOYD AND POLK COUNTIES, GEORGIA ISSUED NOVEMBER 1978. SOILS ON THE PROJECT SITE ARE: AaD AND ToE.
11. ALL EROSION AND SEDIMENT CONTROL DESIGNS SHALL CONFORM TO AND SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE PUBLICATION TITLED "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA", PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMITTEE OF GEORGIA.
12. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
13. EROSION CONTROL BARRIERS ARE TO BE PUT IN PLACE BEFORE GRADING OPERATIONS BEGIN AND SHALL BE LEFT IN PLACE UNTIL GRASSING IS COMPLETE AND THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE BARRIERS ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
14. STATE WATERS EXIST ON OR WITHIN 200' OF THIS SITE.

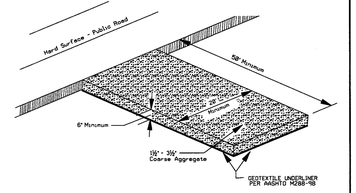


Sd2-F INLET SEDIMENT TRAP



SILT FENCE

SEDIMENT BARRIERS Sd1-C



GRAVEL CONSTRUCTION ENTRANCE Co

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT			A CRUSHED STONE BED LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Sd1-C	SILT FENCE SEDIMENT BARRIER			A SEDIMENT FENCE BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THE BARRIERS ARE USUALLY TEMPORARY AND INEXPENSIVE.
Sd2-F	SEDIMENT TRAP TEMPORARY			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.
St	STORM DRAIN OUTLET PROTECTION			A PAVED OR SHORT SECTION OF RIPRAP CHANNEL AT THE OUTLET OF A STORM DRAIN SYSTEM PREVENTING EROSION FROM THE CONCENTRATED RUNOFF.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	MONTH 1	2	3	4	5	6	7	8	9	10	11	12
1. INSTALL SEDIMENT CONTROLS	■											
2. CLEARING AND GRUBBING	■											
3. STORM DRAINAGE POND MODIFICATION	■	■										
4. INSTALL SEDIMENT TRAPS @ STRS		■										
5. BUILDING CONSTRUCTION			■	■	■	■	■	■	■			
6. GRASS (TEMP.) & (PERM)									■	■		
7. FINAL LANDSCAPING										■		
8. MAINTAIN EROSION CONTROL	■	■	■	■	■	■	■	■	■	■	■	■
9. CLEAN UP										■	■	■

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. IF AN AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, THEN PERMANENT PERENNIAL VEGETATION SHALL BE USED. MULCH USED FOR TEMPORARY STABILIZATION SHALL BE APPLIED TO A DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVER.

TYPE OF GRASS	PLANTING SEASON	MIN. LIME RATE	FERTILIZER RATE (6-12-12)	SEED RATE
BERMUDA	MAY 16 - JULY 31	1 TON / Ac.	1500 lb./Ac.	4 lb./Ac.
FESCUE	MAR. 1 - MAY 15 AUG. 1 - NOV. 15	1 TON / Ac.	1500 lb./Ac.	50 lb./Ac.

Ds3 STABILIZATION WITH PERMANENT VEGETATION

OWNER:
CITY OF ROME
MR. MIKE HACKETT
601 BROAD STREET
ROME, GEORGIA 30161
PHONE: 706-236-4402
FAX: 706-236-4548

SCALE IN FEET
0 10 20 40
SCALE: 1" = 10'

GEORGIA REGISTERED No. 25814 PROFESSIONAL ENGINEER JAMES F. HARDIN, JR.

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ROME, GEORGIA 30161

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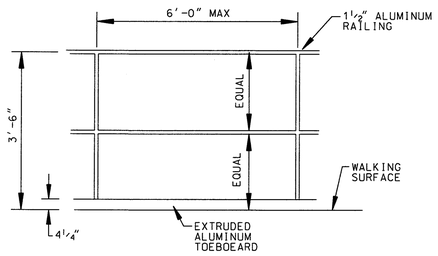
CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

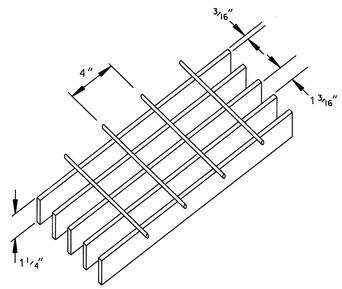
EROSION & SEDIMENT CONTROL PLAN

DRAWING No. E361 - C.5

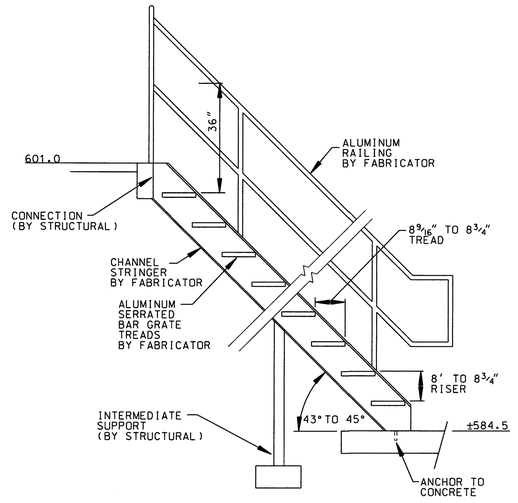
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



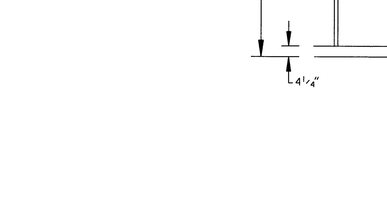
TYPICAL RAILING DETAIL



TYPICAL BAR GRATE DETAIL

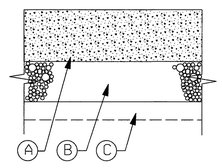


TYPICAL METAL STAIRS



CONCRETE HEADER CURB

N.T.S.



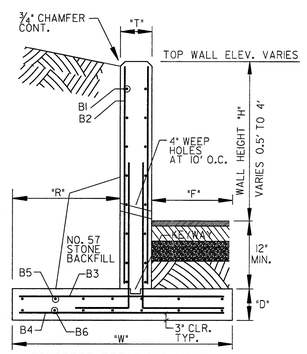
(A) 6" CONCRETE PAVING (3000 PSI) W/ SAWED CONTROL JOINTS @ 12' O.C. MAX

(B) 4" COMPACTED STONE

(C) SELECT SUBGRADE MAT'L. TOP 12" COMPACTED TO 100% DENSITY

HEAVY DUTY CONCRETE PAVING DETAIL

N.T.S.



CONCRETE RETAINING WALL SECTION "A - A"

N.T.S.

RETAINING WALL SCHEDULE											
DIMENSIONS						BAR SIZE & SPACING					
H	F	T	R	W	D	B1	B2	B3	B4	B5	B6
0-4	1'-0"	1'-0"	1'-3"	3'-3"	1'-0"	#4@12	#4@12	#4@12	#4@12	#4@12	#4@12
4-6	1'-3"	1'-0"	2'-0"	4'-3"	1'-0"	#4@12	#4@12	#4@12	#4@12	#4@12	#4@12

IF REINFORCING STEEL IS SPLICED, MIMINUM OVERLAP REQUIRED IS 30 DIAMETERS OF THE REBAR. CARE SHOULD BE TAKEN IF MORE THAN ONE POUR OF WALL IS NECESSARY.

3000 PSF BEARING CAPACITY

CONCRETE SHALL BE 3000 PSI.

REINFORCING TO BE ASTM A615 GRADE 60.

PROPOSED CONCRETE RETAINING WALL (HEIGHT=1' TO 6')

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

GEORGIA REGISTERED No. 28791 PROFESSIONAL ENGINEER CHARLES F. HARDIN, JR.

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100 VAUGHN ROAD
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ETOWAH RAW WATER PUMP STATION

MISCELLANEOUS SITE DETAILS

DRAWING No.
E361 - C.6

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, AMERICANS WITH DISABILITIES ACT AND ALL OTHER CODES ENFORCED BY THE AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL PROVIDE AND PAY FOR ALL MATERIAL, EQUIPMENT, LABOR, SUPERVISION, SERVICES, PERMITS AND INSPECTIONS REQUIRED TO PROVIDE A COMPLETE, SAFE AND FUNCTIONING ELECTRICAL SYSTEM.
3. CONTRACTOR SHALL PROVIDE ADDITIONAL SUPPORT FOR SWITCHES, STARTERS, FIXTURES, RACEWAYS AND OTHER ELECTRICAL EQUIPMENT WHEREVER THE BUILDING STRUCTURE IS NOT SUITABLE FOR DIRECT MOUNTING.
4. ALL EQUIPMENT AND MATERIAL SHALL BE LISTED BY A NATIONALLY RECOGNIZED LISTING AGENCY FOR THE INSTALLED USE.
5. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT THE CONTRACTOR SHALL PROVIDE AN ELECTRICAL INSTALLATION THAT IS COMPLETE WITH ALL ITEMS NECESSARY, INCIDENTAL AND CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY CALLED OUT OR SHOWN.
6. ALL WORK SHALL BE COORDINATED SO THAT INTERFERENCES ARE AVOIDED. PROVIDE ALL NECESSARY OFFSETS IN CONDUITS, RACEWAYS, ETC. REQUIRED TO PROPERLY INSTALL THE WORK. EXPOSED WORK MUST BE KEPT AS CLOSE AS POSSIBLE TO WALLS, CEILINGS, COLUMNS, ETC. SO AS TO TAKE MINIMUM AMOUNT OF SPACE. ALL OFFSETS, FITTINGS, ETC. REQUIRED SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WORK SHALL BE COORDINATED WITH OTHER TRADES.
7. CONDUIT RUNS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES ACCORDING TO THE N.E.C. AND COORDINATING WITH OTHER DISCIPLINES.
8. CONTRACTOR SHALL INSTALL ONE 3/4" CONDUIT FOR EACH SET OF THREE SPARE BREAKERS AND/OR BREAKER SPACES OR FRACTION THEREOF FROM EACH FLUSH MOUNTED PANELBOARD. THE SPARE CONDUITS SHALL BE STUBBED UP INTO THE NEAREST ACCESSIBLE CEILING CAVITY.
9. PENETRATIONS OF WALLS, FLOORS AND ROOFS FOR THE PASSAGE OF ELECTRICAL RACEWAYS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. ALL SUCH PENETRATIONS SHALL BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAY SO AS TO MAINTAIN THE STRUCTURAL, WATER PROOF AND FIRE PROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM.
10. ALL OUTDOOR ENCLOSURES SHALL HAVE A NEMA 3R RATING.
11. ALL WIRING, INCLUDING PANEL BUSES, SHALL BE COPPER.
12. ALL OUTLET BOXES SHALL BE METALLIC AND SHALL BE GROUNDED ACCORDING TO N.E.C. ARTICLE 250.
13. ALL INCOMING CONDUCTORS INTO PANELBOARDS AND TRANSFORMERS SHALL BE IDENTIFIED BY COLOR TAPING AS FOLLOWS: 480 VOLTS- PHASE "A" BROWN; PHASE "B" ORANGE; PHASE "C" YELLOW; NEUTRAL GRAY; 208 VOLTS - PHASE "A" BLACK; PHASE "B" RED; PHASE "C" BLUE; NEUTRAL WHITE. BRANCH CIRCUIT CONDUCTORS SHALL HAVE SIMILAR COLORED CONDUCTORS.
14. ALL POWER CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR ROUTED IN THE CONDUIT AND SIZED ACCORDING TO THE N.E.C. METAL RACEWAY, CABLE ARMOR OR SHEATH SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR.
15. PROVIDE A SEPARATE CONDUIT AND JUNCTION BOX SYSTEM FOR 120V AND 277V WIRING.
16. FOR UNDERGROUND INSTALLATIONS USE RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT OR THICKWALL NON-METALLIC CONDUIT.
17. FOR OUTDOOR ABOVE GROUND INSTALLATIONS USE RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT.
18. FOR IN SLAB ABOVE GRADE INSTALLATION USE RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT.
19. FOR WET OR DAMP INSTALLATIONS USE RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT.
20. FOR DRY CONCEALED INSTALLATIONS USE RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT OR ELECTRICAL METALLIC CONDUIT.
21. FOR DRY EXPOSED INSTALLATIONS USE RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT.
22. FLEXIBLE METAL CONDUIT AND LIQUID TIGHT METAL CONDUIT MAY BE USED FOR TAP CONNECTIONS TO FIXTURES ACCORDING TO N.E.C. ARTICLE 350 AND AS SPECIFIED.
23. ALL EQUIPMENT SHALL BE GROUNDED ACCORDING TO N.E.C.
24. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL HAVE INDEPENDENT NEUTRALS.
25. UNLESS OTHERWISE NOTED LIGHTING AND RECEPTACLE HOMERUNS SHALL BE LIMITED TO SEVEN CONDUCTORS, THREE PHASE WIRES, THREE NEUTRALS AND ONE GROUND.
26. ALL BRANCH CIRCUIT BREAKER POSITIONS IN SWITCHBOARDS AND PANELBOARDS SHALL BE LABELED PER N.E.C. ARTICLE 408-4.
27. CONTRACTOR SHALL PROVIDE ALL CONNECTIONS INCLUDING WIRE, CONDUIT AND SWITCHES NECESSARY TO CONNECT MECHANCIAL AND PLUMBING EQUIPMENT.
28. ALL SWITCHES AND BREAKERS SERVING EQUIPMENT SHALL HAVE HANDLE LOCKS.
29. ALL CIRCUIT BREAKERS SERVING MECHANICAL EQUIPMENT SHALL BE H.A.C.R RATING.
30. CONTRACTOR SHALL COORDINATE WITH TRADES AND PROVIDE CONTROL POWER FOR ALL VAV BOXES/DAMPERS/ETC AS REQUIRED TO ENSURE A COMPLETE AND FULLY FUNCTIONAL HVAC SYSTE. PROVIDE POWER FROM NEAREST 120V GENERAL PURPOSE CIRCUIT OR FROM BUILDING CONTROL POWER DISTRIBUTION SYSTEM.
31. CONTRACTOR SHALL COORDINATE MOTOR DISCONNECT AND CONTROL WITH MECHANICAL CONTRACTOR. PROVIDE STARTERS AND DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT THAT IS NOT PROVIDED INTEGRAL TO THE EQUIPMENT. PROVIDE MOTOR STARTERS FOR ALL MOTORS ONE HORSPOWER OF LARGER. PROVIDE MOTOR RATED SWITCHES FRO ALL MOTORS LESS THAN ONE HORSEPOWER. PROVIDE ALL NECESSARY WIRE, CONDUIT AND POWER FOR INTERLOCKED MOTOR CONTROLS.
32. PROVIDE 20A, 120V RECEPTACLE WITHIN 25' OF ALL HVAC EQUIPMENT.
33. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATION OF ALL ELEMENTS (CEILING HEIGHTS, SPRINKLERS, DIFFUSERS, ETC). ALL CEILING MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL DIMENSIONED DRAWINGS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIGY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL CEILING TYPES IN ALL AREAS. DO NOT SCALE DIMENSION LOCATION FROM THESE DRAWINGS.
34. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SUPPORTS FOR LIGHT FIXTURES. SUPPORTS SHALL BE INDEPENDENT OF THE CEILING GRID SUPPORT SYSTEM.
35. ALL LIGHT FIXTURES SHALL BE INSTALLED WITH APPROPRIATE LAMPS AS INDICATED. FIXTURES SHALL BE ALSO INSTALLED WITH BALLAST AS NECESSARY.
36. EMERGENCY LIGHTING SHALL BE PROVIDED WITH A LOCK-ON CLIP IN THE LIGHTING PANEL.
37. EMERGENCY LIGHTS AND EXIT SIGNS SHALL HAVE A BACKUP ENERGY SOURCE.
38. ALL SWITCHES SHALL BE 20AMP SPECIFICATION GRADE.
39. MOUNT WALL MOUNTED EMERGENCY LIGHTS AND EXIT SIGNS ONE FOOT BELOW CEILING OR BELOW LOWEST STRUCTURAL MEMBER FOR UNFINISHED AREAS. VERIFY PROPER VISIBILITY FROM ALL DIRECTIONS.
40. PROVIDE ZERO DEGREE BALLAST FOR FIXTURES IN EXTERIOR AND UNHEATED LOCATIONS.
41. WIRE ALL EMERGENCY LIGHT FIXTURES AHEAD OF SWITCHES AND LIGHTING CONTACTORS.
42. VERIFY DOOR SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH IN FOR ALL LIGHT SWITCHES.
43. PROVIDE SHATTER RESISTANT LAMPS FOR ALL FIXTURES OVER FOOD PREPARATION/SERVING AREAS.
44. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATION AND MOUNTING HEIGHT FOR ALL WALL AND FLOOR MOUNTED ELEMENTS (OUTLETS, LIGHT SWITCHES, CONTROLLERS, ETC) ALL WALL/FLOOR MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL DIMENSIONED DRAWINGS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL WALL/FLOOR TYPES IN AL AREAS. DO NOT SCALE OR DIMENSION LOCATION FROM THESE DRAWINGS.
45. CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION DETAIL OF OUTLETS IN MILLWORK WITH ARCHITECTURAL DRAWINGS (WALL ELEVATIONS, MILLWORK DETAIL, ETC.) AND WITH MILLWORK MANUFACTURER PRIOR TO ELECTRICAL ROUGH IN.
46. WALL AND FLOOR MOUNTED POWER RECEPTACLES SHOWN NEAR DATA OUTLETS SHALL BE LOCATED WITHIN SIX INCHES OF DATA OUTLET. LOCATE AT SAME MOUNTING HEIGHT UNLESS NOTED OTHERWISE.
47. CONTRACTOR SHALL VERIFY THE EXACT POWER CONNECTION TYPE AND NEMA CONFIGURATION OF THE RECEPTACLE FOR EQUIPMENT FURNISHED BY THE OWNER, OTHER TRADES OR UNDER A SEPARATE SECTION OF THIS CONTRACT PRIOR TO ELECTRICAL ROUGH IN.
48. ALL RECEPTACLES LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE HOUSED IN ENCLOSURES THAT ARE RATED "WEATHER-PROOF-WHILE-IN-USE" AND SHALL BE GFCI.
49. FINISH COLORS OF DEVICES AND CORRESPONDING COVER PLATES SHALL BE SELECTED AND APPROVED BY THE ARCHITECT.
50. ELECTRICAL OUTLET BOXES LOCATED ON THE OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET BY 24 ".

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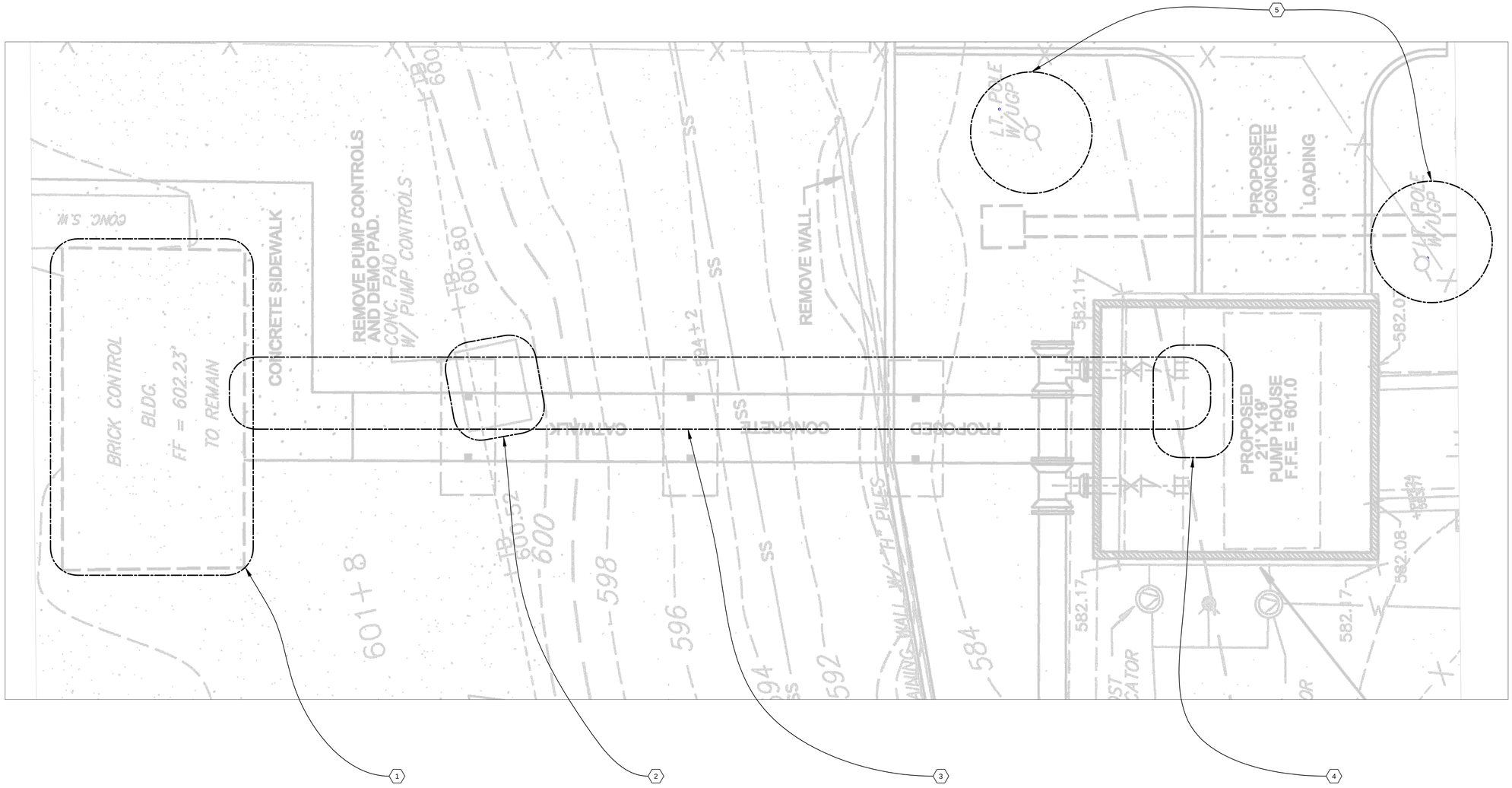
ETOWAH RAW WATER PUMP STATION

GENERAL ELECTRICAL NOTES

DRAWING No.
E361 - E.0

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



DEMOLITION NOTES:	
1	SEE E.4 FOR DEMOLITION INSIDE CONTROL BUILDING
2	REMOVE ALL ELECTRICAL EQUIPMENT AND CONCRETE
3	REMOVE AND/OR ABANDON UNDERGROUND FEEDERS TO EXISTING THREE PUMPS AND SCREEN. LEAVE POINT OF CONNECTION TO SCREEN IN PLACE FOR NEW FEEDER. CUT AND CAP ABANDONED CONDUITS AT SURFACE
4	REMOVE CABLES TO EXISTING PUMPS
5	REMOVE TWO EXISTING POLES AND LIGHT FIXTURES. REMOVE OR ABANDON CIRCUITS

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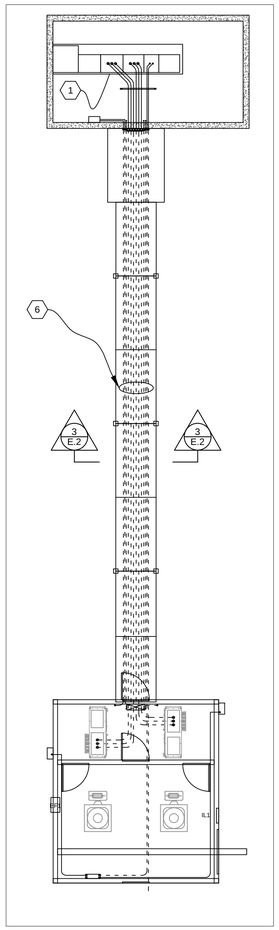
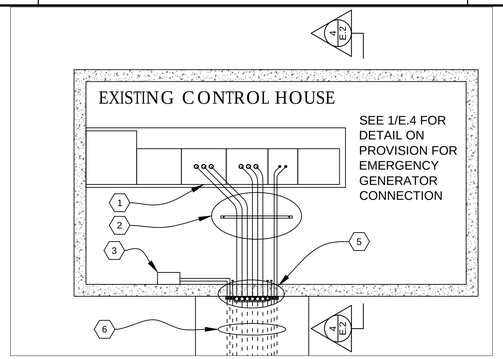
ELECTRICAL DEMOLITION PLAN

DRAWING No.
E361 - E.1

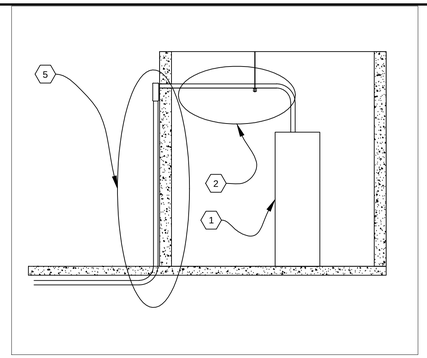
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



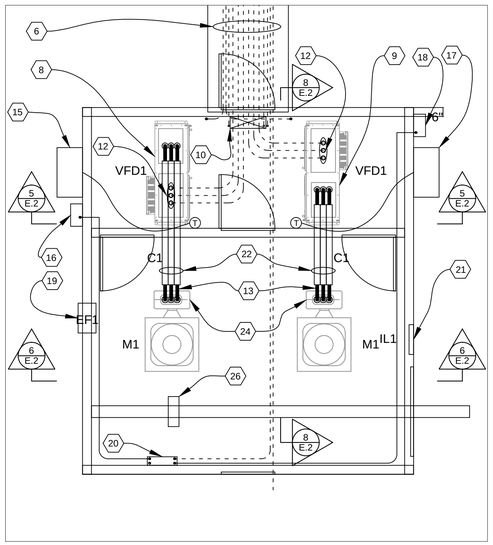
1 E.2 PUMP HOUSE FEEDERS
NO SCALE



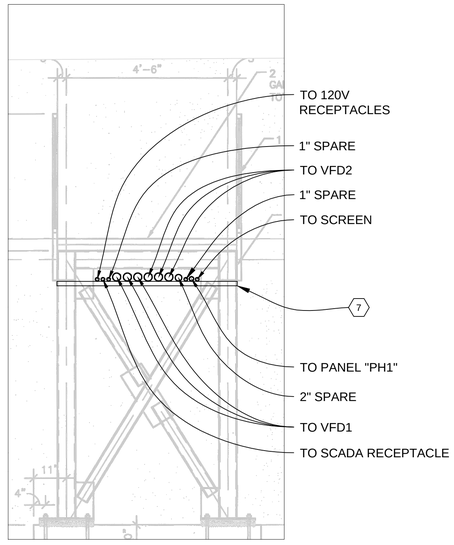
2 E.2 CONTROL HOUSE ELECTRICAL FLOORPLAN
NO SCALE



4 E.2 CONTROL HOUSE SECTION
NO SCALE



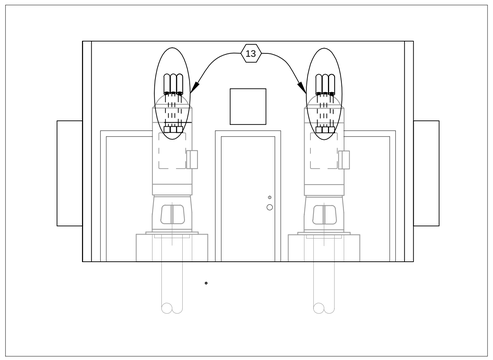
3 E.2 PUMP HOUSE ELECTRICAL FLOORPLAN
NO SCALE



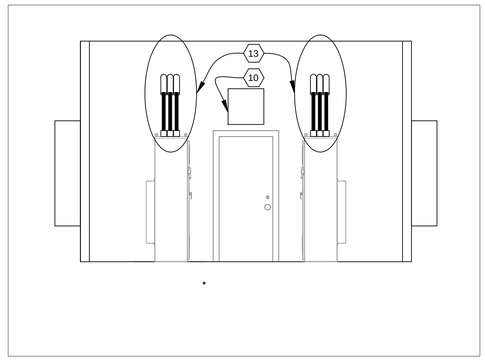
7 E.2 PUMP HOUSE FEEDER SECTION
NO SCALE

KEYED NOTES	
1	EXISTING SWITCHGEAR. SEE 1/E.4 FOR DETAIL
2	NEW FEEDERS TO NEW PUMP HOUSE. SEE 2/E.4, 1/E.2, 7/E.2 FOR DETAIL. USE EMT SUPPORTED BY UNITSTRUT TRAPEZES IN CONTROL HOUSE.
3	EXISTING 120/240V, 1ϕ, 3W PANEL. PROVIDE AND INSTALL NEW CIRCUITS TO PUMP HOUSE. SEE 2/E.3, 1/E.2, 3/E.2, 7/E.2 FOR DETAIL
4	NOT USED
5	CORE BORE WALL FOR CONDUIT AND SEAL WATERTIGHT. PROVIDE AND INSTALL CONDUIT BODIES AND HOT DIPPED GALVANIZED RIGID METAL CONDUIT DOWN WALL AND UNDER SIDEWALK
6	FEEDERS TO PUMP HOUSE UNDER SIDEWALK AND RAMP. SEE 1/E.2, 3/E.2, 7/E.2 FOR DETAIL
7	SEE STRUCTURAL DRAWING FOR DETAIL ON CONDUIT SUPPORT. CLAMP CONDUIT TO SUPPORT
8	VARIABLE FREQUENCY DRIVE "VFD1" SEE E.4 FOR DETAIL
9	VARIABLE FREQUENCY DRIVE "VFD2" SEE E.4 FOR DETAIL
10	24" X 24" X 8" SCADA BOX PROVIDED AND INSTALLED BY CONTRACTOR. SURFACE MOUNT ABOVE DOOR
12	CORE BORE FLOOR FOR CONDUITS ENTERING VFD'S AND SEAL WATER TIGHT
13	CABLES FROM VFD'S TO MOTORS. SEE E.4 FOR DETAIL. MAXIMUM UNSUPPORTED CABLE LENGTH EQUAL TO 6 FT.
15	HEAT PUMP HP1. PROVIDE STRUCTURAL SUPPORT AS NEEDED. SEE E.4 FOR DETAIL
16	DISCONNECT SWITCH FOR HP1. SEE E.4 FOR DETAIL
17	HEAT PUMP HP2. PROVIDE STRUCTURAL SUPPORT AS NEEDED. SEE E.4 FOR DETAIL
18	DISCONNECT SWITCH FOR HP2. SEE E.4 FOR DETAIL
19	EXHAUST FAN. SEE E.4 FOR DETAIL
20	PANEL PH1. SEE E.4 FOR DETAIL
21	MOTORIZED LOURVER SWITCHED WITH EXHAUST FAN EF1. SEE E.4 FOR DETAIL
22	4" EMT CONDUIT WITH 36" RADIUS BEND AND BUSHINGS SUPPORTED BY TRAPEZE UNISTUT AND THREADED ROD FROM ROOF STRUCTURE.
23	BELDEN VFD CABLE TERMINATOR MATCHED TO CABLE
24	MOTOR CONDUIT BOX
25	ROOF HATCH
26	TROLLEY CRANE. PROVIDE 480V, 3ϕ CIRCUIT AS REQUIRED FROM "PH1"

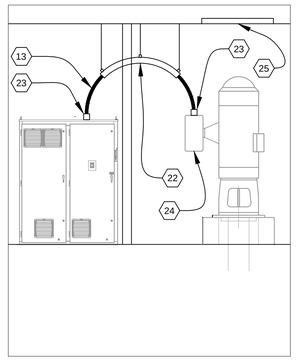
BOND AND GROUND ALL ENCLOSURES, RACEWAYS, EQUIPMENT, EQUIPMENT GROUNDING CONDUCTORS, SHIELDS AND BUILDING STRUCTURE ACCORDING TO MANUFACTURER INSTRUCTION, ALL APPLICABLE CODES AND QUIDELINES



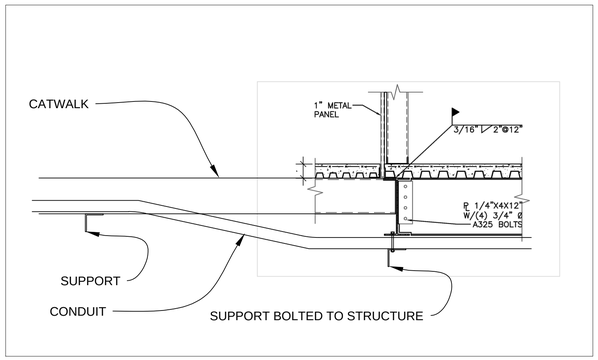
6 E.2 PUMP HOUSE MOTOR SECTION
NO SCALE



5 E.2 PUMP HOUSE VFD SECTION
NO SCALE



8 E.2 MOTOR CONNECTION
NO SCALE



9 E.2 CONDUIT ROUTE ENTERING UNDER PUMP HOUSE
NO SCALE

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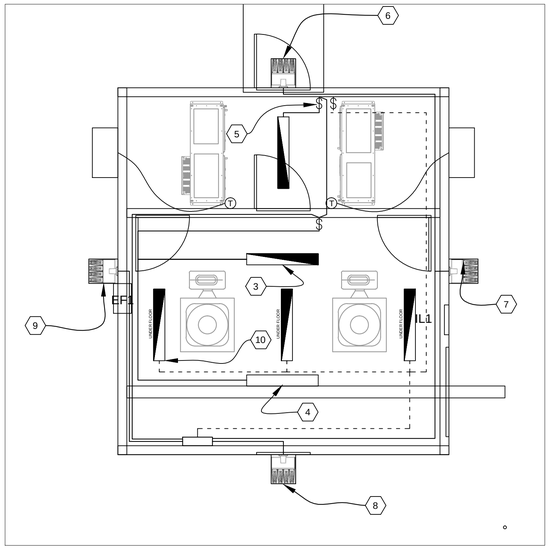
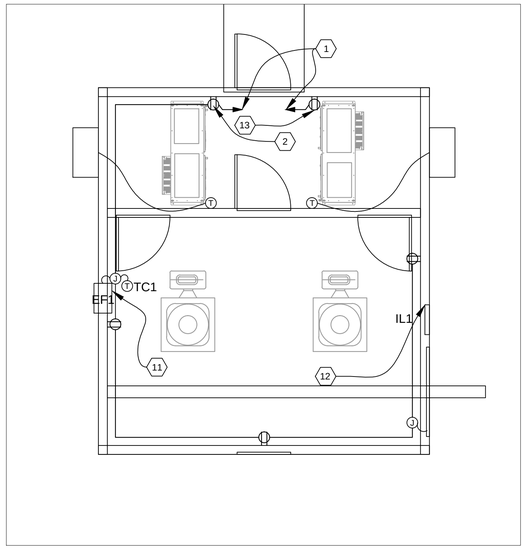
PUMP & CONTROL HOUSE
ELECTRICAL PLAN

DRAWING No.
E361 - E.2

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



1 E.3 PUMP HOUSE LIGHTING PLAN
NO SCALE



2 E.3 PUMP HOUSE POWER PLAN
NO SCALE

KEYED NOTES

1	2-#10 AWG & #10 EGC IN 1" CONDUIT HOMERUN TO NEW 20A, 1POLE BREAKER IN EXISTING 120/240V PANEL IN CONTROL HOUSE. SEE E.2 FOR ROUTING
2	125V, 20A DUPLEX RECEPTACLE IN SURFACE MOUNTED WALL BOX AT 48" AFF FED FROM HOME RUN WITH 2-#12 AWG & #12 EGC IN 1/2" IMC. TYPICAL OF 5
3	VANDAL AND IMPACT RESISTANT LINEAR LED FIXTURE SURFACE MOUNT ON CEILING WITH EMERGENCY BATTERY EQUAL TO WILLIAMS 96-4-L62/830-DFR-EM/BSL310-SSCMB-DRV-UNV. TYPICAL OF 2
4	SAME AS NOTE 3 BUT WITHOUT BATTERY
5	277V, 20A WALL SWITCH IN SURFACE MOUNTED WALL BOX AT 48" AFF
6	WALL MOUNTED LED, 111W, 277V TYPE 4 OPTICS WITH PHOTOCELL EQUAL TO BOW SX BSX-4-T4-32-1000-4000-UNV-WM-BZ-PC277. FED FROM PH1-2. LABEL CIRCUIT "NORTH FLOOD LIGHT"
7	WALL MOUNTED LEC, 222W, 277V TYPE 3 OPTICS WITH PHOTOCELL EQUAL TO BOW SX BSX-4-T3-64-1000-4000-UNV-WM-BZ-PC277. FED FROM PH1-4. LABEL CIRCUIT "EAST FLOOD LIGHT"
8	WALL MOUNTED LEC, 222W, 277V TYPE 3 OPTICS WITH PHOTOCELL EQUAL TO BOW SX BSX-4-T3-64-1000-4000-UNV-WM-BZ-PC277. FED FROM PH1-6. LABEL CIRCUIT "SOUTH FLOOR LIGHT"
9	WALL MOUNTED LEC, 222W, 277V TYPE 3 OPTICS WITH PHOTOCELL EQUAL TO BOW SX BSX-4-T3-64-1000-4000-UNV-WM-BZ-PC277. FED FROM PH1-8. LABEL CIRCUIT "WEST FLOOD LIGHT"
10	SAME FIXTURE AS NOTE 3 SURFACE MOUNTED ON BOTTOM OF FLOOR, TYPICAL OF THREE
11	EXHAUST FAN WITH THERMOSTAT CONTOL. SEE E.4 FOR DETAIL
12	INTAKE LOUVERS CONSTROLLED WITH FAN. SEE E.4 FOR DETAIL
13	SCADA RECEPTACLE

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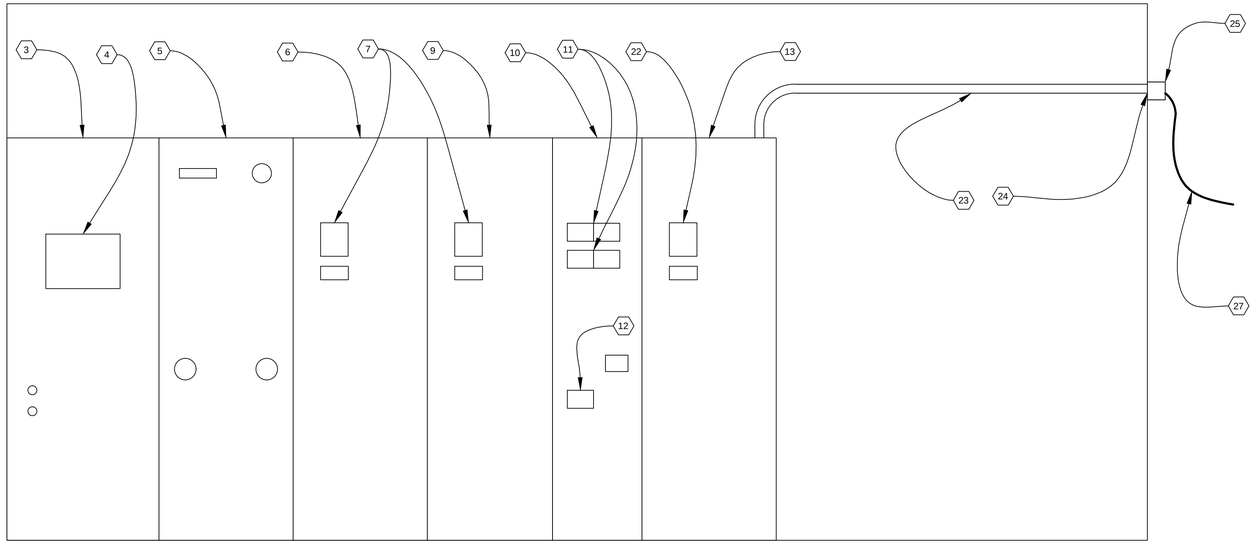
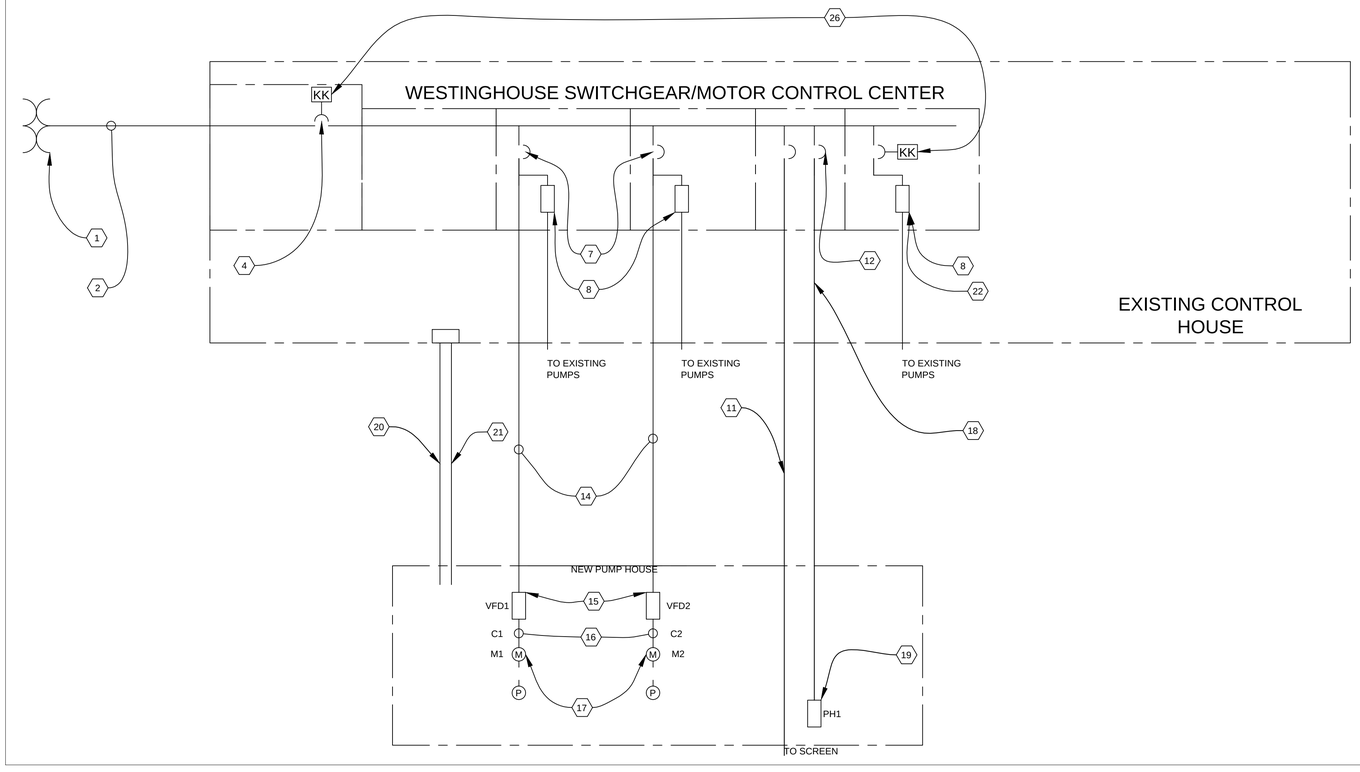
PUMP HOUSE LIGHTING
AND POWER PLAN

DRAWING No.
E361 - E.3



1 E.4 EXISTING CONTROL HOUSE SWITCHGEAR
NO SCALE



2 E.4 ELECTRICAL SCHEMATIC
NO SCALE

KEYED NOTES

1	UTILITY TRANSFORMER, 1000 KVA, 480Y/277V, 5.23 %Z, 22,609A SC
2	ASSUME 40' OF 4 RUNS 4-500KCM IN PVC CONDUIT
3	SWITCHGEAR SECTION "A" - 32"W X 36"D
4	WESTINGHOUSE SPB100 SYSTEM S POW-R BREAKER, 3 POLE, 1600A FRAME, 1600A TRIP. CHANGE SETTINGS AS REQUIRED FOR SELECTIVE COORDINATION WITH DOWNSTREAM EQUIPMENT
5	SWITCHGEAR SECTION "B" - 30"W X 24"D
6	SWITCHGEAR SECTION "C" - 28W X 24D
7	WESTINGHOUSE HMC3800F STYLE 1284C76G06 800A FRAME 600A TRIP. CHANGE TRIP TO 800A. HAVE BREAKERS FACTORY RECONDITIONED. SET INSTANTANEOUS TRIP AT HIGHEST VALUE TO COORDINATE WITH MAIN BREAKER AND VFD BREAKER
8	REMOVE EXISTING MOTOR STARTER, CIRCUIT, MOTOR AND ASSOCIATE EQUIPMENT. CUT AND CAP CONDUITS AT FLOOR
9	SWITCHGEAR SECTION "D" - 28W X 24D
10	SWITCHGEAR SECTION "E"
11	BREAKERS FOR SCREEN AND OTHER EQUIPMENT. REPLACE CONDUIT AND CONDUCTORS TO SCREEN WITH EQUAL TO EXISTING ON ROUTE SHOWN ON 1/E.2. INSTALL 100A, 3POLE BREAKER TO FEED PANEL PH1
12	INSTALL 100A, 3POLE BREAKER TO FEED PANEL PH1
13	SWITCHGEAR SECTION "F" - 28W X 24D
14	CIRCUIT TO NEW VFD - 3 RUNS OF 3-300 KCM WITH 1/0G IN 2-1/2" HOT DIPPED GALVANIZED RIGID METAL CONDUIT. SEE E.2 FOR ROUTE
15	VFD - SEE SPECIFICATIONS AND BASIS OF DESIGN BELOW
16	CIRCUIT TO MOTOR. SEE SPECIFICATIONS AND BASIS OF DESIGN BELOW
17	500 HP PUMP MOTOR - SEE SPECIFICATIONS AND BASIS OF DESIGN BELOW
18	4-#3AWG AND #8AWG EGC IN 1-1/4" HOT DIPPED GALVANIZED RIGID METAL CONDUIT TO PANEL PH1. SEE E.2 FOR ROUTE
19	PANEL PH1- 100A, 480Y/277V, 3ϕ, 4W MLO, 22KAIC, 18 SPACE, NEMA1, PANEL WITH 2-20A, 3POLE BREAKERS FOR HEAT PUMPS AND 5-20A, 1POLE BREAKERS FOR OUTSIDE LIGHTING AND BREAKER FOR TROLLEY CRANE
20	PROVIDE AND INSTALL 20A, 1POLE BREAKER IN EXISTING PANEL AND 2-#10 AND #10 EGC IN 1" HOT DIPPED GALVANIZED RIGID METAL CONCUIT TO GENERAL USE RECEPTACLES IN PUMP HOUSE
21	PROVIDE AND INSTALL 20A, 1POLE BREAKER IN EXISTING PANEL AND 2-#10 AND #10 EGC IN 1" HOT DIPPED GALVANIZED RIGID METAL CONCUIT TO SCADA RECEPTACLE IN PUMP HOUSE
22	WESTINGHOUSE HMC3800F STYLE 1284C76G06 800A FRAME 600A TRIP. CHANGE TRIP TO 800A. HAVE BREAKERS FACTORY RECONDITIONED. VERIFY LUGS WILL ACCOMMODATE 2-600KCM COPPER WIRE AND ARE IN GOOD CONDITION. REPLACE IF NECESSARY. VERIFY THAT BREAKER CAN BE FED FROM EITHER DIRECTION. NOTIFY ENGINEER IF IT CANNOT
23	PROVIDE AND INSTALL 3-4" IMC FROM LOCATION IN TOP OF ENCLOSURE SUITABLE TO EXTEND CONDUCTORS TO BOTTOM OF 800A BREAKER TO TROUGH ON EXTERIOR WALL
24	CORE BORE WALL FOR 3-4" CONDUITS AND SEAL WATER TIGHT AROUND CONDUITS
25	PROVIDE AND INSTALL 8"X8"X36" NEMA 3R TROUGH WITH 3-4"IMC TERMINATED IN BACK WITH GROUNDING BUSHINGS BONDED TO TROUGH
26	PROVIDE AND INSTALL KIRK KEY INTERLOCK SO MAIN BREAKER AND GENERATOR BREAKER CANNOT BE CLOSED AND THE SAME TIME
27	CONDUCTORS TO EMERGENCY GENERATOR TO BE INSTALLED WHEN AND IF NEEDED

BASIS OF DESIGN

THIS BASIS OF DESIGN IS FOR PURPOSES OF SIZING EQUIPMENT AND DETERMINING DIMENSIONS AND DOES NOT INCLUDE ALL THE REQUIREMENTS OF THE EQUIPMENT. ALL EQUIPMENT PROPOSED FOR INSTALLATION MUST MEET THE REQUIREMENTS IN THE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN MODIFICATIONS REQUIRED BY THE EQUIPMENT INCLUDED IN THE PROPOSAL.

M1, M2	NIDEC MOTOR CORPORATION MODEL FB94, CATALOGUE NUMBER HO500V2SLHX, 5008PH FRAME, 500 HORSEPOWER, 4 POLE, 1780 RPM, 3 PHASE, 60 CYCLE, 460 VOLTS, VARIABLE TORQUE, 541 FULL LOAD AMPS, VFD AMPS 568.1, VFD FREQUENCY RANGE 6-60, VFD SPEED RANGE 180-1800 RPM, OVERSIZE CONDUIT BOX WITH 3 UP-FACING CONDUIT OPENINGS SIZED TO MATCH CABLE
VFD1, VFD2	YASKAWA P1C1B590PC P1000 CONFIGURED NEMA 1 ENCLOSED DRIVE, WITH CIMR-PU4A0675AAA DRIVE AND 800A BREAKER RATED FOR 500-550 HORSEPOWER, 380 TO 480 VOLTS, 3 PHASE, 657 RATED INPUT AMPS, 675 RATED OUTPUT AMPS, 7000 TOTAL HEAT WATTS
C1, C2	BELDEN 250KCM, RHW-2, 2000V TC-ER RATED PART NUMBER 29533 WITH AMPACITY OF 255A AT 75°C PER NEC, OUTSIDE DIAMETER 1.91" WITH LISTED VDF CABLE TERMINATION ON ALL ENDS. MINIMUM BENDING RADIUS 34.4"
HP1, HP2	BORG 30,000 BTU/H, MODEL W30H2C6BP8XX, 460V, 3ϕ WITH 30A, 600V, 3POLE, NEMA 3R DISCONNECT SWITCH AND ALL MOUNTED THERMOSTAT AT 5" AFF. BLOCK OUTSIDE AIR DUCT
EF1, IL1, TC1	20". 120V 3000 CFM MINIMUM EXHAUST FAN MOUNTED ON INSIDE WALL AT 7' AFF WITH ALUMINUM LOURVERS AND AUTOMATIC TEMPERATURE ADJUSTING SPEED CONTROLLER WITH 32° TO 115° RANGE AND MATCHING MOTORIZED INTAKE LOUVERS SWITCHED WITH EXHAUST FAN

CONTRACTOR SHALL PROVIDE AND INSTALL ALL INTERFACE WIRING IN CONDUIT FROM VFD'S TO CITY'S SCADA SYSTEM IN ACCORDANCE WITH THE CITY'S REQUIREMENTS. CONTRACTOR SHALL PROVIDE ALL CONTROL PROGRAMING IN ACCORDANCE WITH THE CITY'S REQUIREMENT.

GEORGIA REGISTERED PROFESSIONAL ENGINEER WESLEY F. TURNER

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WATER & SEWER DIVISION
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ROME, GEORGIA 30161

ISSUED FOR PERMIT:

ISSUED FOR CONSTRUCTION:

REVISION DATES:

CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

ELECTRICAL ONE LINE & SCHEMATICS

DRAWING No.
E361 - E.4

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		

GENERAL NOTES:

DESIGN CRITERIA:

1. BUILDING CODE - INTERNATIONAL BUILDING CODE 2012 WITH 2014 & 2015 GEORGIA AMENDMENTS.

2. RISK CATEGORY & IMPORTANCE FACTORS:
   - A. RISK CATEGORY IV
   - B. WIND FACTOR 1.0
   - C. SNOW FACTOR 1.2
   - D. SEISMIC FACTOR 1.5

3. DESIGN DEAD LOADS:
   - A. FLOOR ..... 65 PSF
   - B. ROOF ..... 20 PSF

4. DESIGN LIVE LOADS*:
   - A. FLOOR:
     - MECHANICAL ..... 50 PSF
     - STAIRS ..... 100 PSF
     - WALKWAY ..... 100 PSF
   - B. ROOF ..... 20 PSF

4. WIND LOADS:
   - A. ULTIMATE WIND SPEED ..... 120 MPH
   - B. DIRECTIONALITY FACTOR (Kd) 0.85
   - C. EXPOSURE CATEGORY C
   - D. ENCLOSURE CLASSIFICATION ..... PARTIALLY ENCLOSED BUILDING
   - E. GUST EFFECT FACTOR (G) 0.85

5. EARTHQUAKE LOADS:
   - A. SITE CLASS ..... D
   - B. Ss = ... 0.312
   - C. S1 = ... 0.111
   - D. SDS = ... 0.322
   - E. SD1 = ... 0.174
   - F. SEISMIC DESIGN CATEGORY ..... D
   - G. BASIC SEISMIC FORCE RESISTING SYSTEM = ... STEEL NOT SPECIFICALLY DETAILED FOR SEISMIC DESIGN
   - H. RESPONSE MODIFICATION COEFFICIENT, R = ... 3.0
   - I. OVER-STRENGTH FACTOR (Ωo) 3.0
   - J. DEFLECTION AMPLIFICATION FACTOR (Cd) 3.0
   - K. SEISMIC RESPONSE COEFFICIENT (Cs) = ... 0.161
   - L. LONG PERIOD TRANSITION PERIOD (TL) 12
   - M. ANALYSIS PROCEDURE ..... EQUIVALENT LATERAL FORCE PROCEDURE
   - N. DESIGN BASE SHEAR = ... 6.0k

6. SNOW LOADS:
   - A. GROUND SNOW LOAD ..... 5.0 PSF
   - B. THERMAL FACTOR 1.0
   - C. EXPOSURE FACTOR 1.0
   - D. RAIN ON SNOW SURCHARGE ..... 5.0 PSF
   - E. UNIFORM ROOF SNOW LOAD ..... 8.5 PSF

7. RETAINING WALLS:
   - A. LATERAL PRESSURE METHOD ..... EQUIVALENT FLUID PRESSURE
   - B. ACTIVE SOIL PRESSURE ..... 45 PCF
   - C. PASSIVE SOIL PRESSURE ..... 60 PCF
   - D. COEFFICIENT OF FRICTION 0.4
   - E. SOIL DENSITY (HEEL) ..... 120 PCF

SUBMITTALS:

1. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWING SUBMITTAL DATES AT LEAST 30 DAYS PRIOR TO FIRST SUBMITTAL. FAILURE TO SUBMIT DRAWINGS ON DESIGNATED DATES MAY IMPACT REVIEW SCHEDULE.

2. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE CONSIDERED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
   - A. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
   - B. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE ICC-ES, AND THE ICC-ES REPORT IS SUBMITTED WITH THE REQUEST. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.

3. REVIEW OF SUBMITTALS AND/OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER OF RECORD DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS AND DIMENSIONS SPECIFIED IN METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION. SEE SPECIFIC PROVISIONS IN THE CONTRACT DOCUMENT DEALING WITH THE APPROPRIATE DESIGN RESPONSIBILITIES OF CONTRACTORS, SUBCONTRACTORS AND CONTRACT SUPPLIERS.

4. THE USE OF REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT AND OBLIGATES HIM TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING FROM ANY ERRORS THAT MAY OCCUR HEREIN.

MISCELLANEOUS:

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. STRUCTURAL DRAWINGS SHALL BE COORDINATED WITH CIVIL AND ELECTRICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING PERTINENT ASPECTS OF ALL DISCIPLINES INTO THEIR SHOP DRAWINGS AND WORK, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS.

3. NO OPENINGS OR MODIFICATIONS SHALL BE MADE IN OR TO ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE CIVIL ENGINEER.

4. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE CIVIL ENGINEER.

5. OPENINGS 1'-4" OR LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO CIVIL AND ELECTRICAL DRAWINGS FOR SUCH OPENINGS.

6. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

7. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL THE TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

8. DO NOT SCALE THESE DRAWINGS; USE DIMENSIONS. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, SEE ARCHITECTURAL DRAWINGS.

9. CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

10. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD, IN WRITING, OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD, REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE ARCHITECT HAS GIVEN THE WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.

11. WHERE A SECTION/DETAIL IS CUT ON THE PLAN, IT IS ASSUMED/UNDERSTOOD TO BE REPRESENTATIVE OF ALL LIKE OR SIMILAR CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.

12. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ARCHITECT'S OR ENGINEER'S PRESENCE AT THE JOB SITE OR REVIEW OF WORK DOES NOT IMPLY CONFIRMATION OF THE ADEQUACY OF THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH OSHA REGULATIONS.

13. CONSULT CIVIL AND ELECTRICAL DRAWINGS FOR LOCATION, SIZE AND EXTENT OF INSERTS, RECESSES, RIDGES, FINISHES, DEPRESSIONS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS.

14. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES.

15. THE CONTRACTOR SHALL VERIFY ALL FLOOR AND ROOF MOUNTED MECHANICAL EQUIPMENT WEIGHTS AS WELL AS FLOOR AND/OR ROOF OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

16. THE CONTRACTOR SHALL NOTIFY, IN WRITING, THE STRUCTURAL ENGINEER OF RECORD OF CONDITIONS ENCOUNTERED IN THE FIELD WHICH ARE CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.

17. STRUCTURAL CONTRACT DOCUMENTS SHALL NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR ANY MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR.

18. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. THE GENERAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND HE SHALL PROVIDE FOR ALL OPENINGS WHETHER SHOWN ON THE DRAWINGS OR NOT. HE SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL CONTRACTOR. ANY DEVIATION FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL.

FOUNDATIONS:

1. SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF FOR INDIVIDUAL COLUMN FOOTINGS AND 3.0 KSF FOR CONTINUOUS WALL FOOTINGS UNDER FULL SERVICE LIVE AND DEAD LOAD. THIS SOIL BEARING IS BASED ON THE SOIL DATA ON THE ORIGINAL WATER WELL DESIGN DRAWING BY ROBERT & COMPANY.

2. THE FOOTINGS HAVE BEEN POSITIONED AT THE ESTIMATED ELEVATION WHICH WILL PROVIDE SUITABLE BEARING. HOWEVER, IF ADEQUATE BEARING CAPACITY IS NON-EXISTENT AT THESE ESTIMATED ELEVATIONS, THE FOOTING SHALL BE LOWERED TO AN ELEVATION WHERE THE PRESCRIBED SAFE BEARING CAPACITY EXISTS.

3. FOOTINGS MAY BE CAST INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.

4. EXCAVATION FOR FOOTINGS SHALL BE CUT TO ACCURATE SIZES AND DIMENSIONS, AS SHOWN ON PLANS. ALL SOIL BELOW SLABS AND FOOTINGS SHALL BE PROPERLY COMPACTED AND SUBGRADE BROUGHT TO A REASONABLE TRUE AND LEVEL PLANE BEFORE PLACING CONCRETE.

5. IN THE AREA OF THE BUILDING, EXISTING ORGANIC MATERIAL, UNSUITABLE SOIL, ABANDONED FOOTINGS AND ANY OTHER EXISTING UNSUITABLE MATERIALS SHALL BE REMOVED. ANY FILL MATERIAL REQUIRED AT THE SITE SHALL BE OF A SIMILAR TYPE SOIL TO THAT WHICH IS PRESENT AT THIS SITE AND APPROVED BY A SOILS ENGINEER. ROCKS GREATER THAN 6 INCHES SHALL BE EXCLUDED FROM STRUCTURAL FILL LIFTS. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NO GREATER THAN 12 INCHES IN DEPTH AND SHALL BE COMPACTED TO AT LEAST 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED COMPACTION TEST (ASTM D1557). ADEQUATE FIELD DENSITY AND MOISTURE CONTENT TESTS SHALL BE PERFORMED TO ENSURE COMPLIANCE.

6. FOOTING CONCRETE SHALL BE CAST ON THE SAME DAY THE EXCAVATION IS APPROVED. IF THE BEARING SURFACE IS ALLOWED TO BECOME DISTURBED IN ANY WAY, IT SHALL BE REWORKED TO THE SATISFACTION OF THE TESTING ENGINEER PRIOR TO CASTING THE CONCRETE.

7. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.

8. BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 1'-0" BELOW FINAL GRADE FOR FROST PROTECTION.

9. WHEN UNSATISFACTORY OR UNCONTROLLED FILL IS ENCOUNTERED, REMOVAL AND REPLACEMENT WILL BE PAID ON THE BASIS OF UNIT PRICES SET FORTH IN THE CONTRACT.

10. DRAINAGE FILL SHALL BE AN EVENLY GRADED MIXTURE OF NATURAL OR CRUSHED STONE, CONFORMING TO THE REQUIREMENTS OF ASTM STANDARD C33, AND HAVING A GRADATION AS FOLLOWS:
    - 100 % PASSING..... A 3/4" SIEVE
    - 10-30 % PASSING..... A 1/2" SIEVE
    - 0-10 % PASSING..... A 3/8" SIEVE
    - 0-5 % PASSING..... A #4 SIEVE

11. ANY FILL WITHIN 10'-0" OF THE BUILDING LIMIT SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE UPPER 12" OF FILL BENEATH STRUCTURAL AREAS SHOULD BE COMPACTED TO 98% OF THE MAXIMUM STANDARD PROCTOR DENSITY.

12. NO EXCAVATION SHALL BE CLOSER THAN AT A SLOPE OF 2:1 (2 HORIZONTAL TO 1 VERTICAL) TO A FOOTING. PROVIDE SHORING AND PROTECTION FOR EXCAVATION BANKS AS NECESSARY TO PRESERVE SAFETY AND PREVENT CAVING.

13. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS PLACED.

14. BACKFILL AGAINST WALLS SHALL BE PLACED IN 8 INCH LIFTS AND SHALL BE DEPOSITED EVENLY AGAINST EACH SIDE OF THE WALL UNTIL THE LOWER FINAL GRADE IS REACHED. BACKFILL SHALL NOT BE PLACED AGAINST WALLS DEPENDENT UPON TOP AND BOTTOM SLABS/FOUNDATION FOR SUPPORT UNTIL SUCH SLABS HAVE ATTAINED MINIMUM DESIGN COMPRESSIVE STRENGTH. WALLS WITH SLAB-ON-GROUND AT THE TOP OF THE WALL SHALL BE SAFELY SHORED AND BRACED DURING BACKFILLING.

15. BACKFILL AROUND AND OVER FOUNDATION ELEMENTS SHALL BE OF SUITABLE MATERIAL, INSPECTED AND PRE-APPROVED BY THE TESTING ENGINEER.

16. COLUMN FOOTINGS AND WALL FOOTINGS SHALL BE POURED MONOLITHIC WITH TOPS OF ADJACENT FOOTINGS AT THE SAME ELEVATION.

17. THERE SHALL BE NO HORIZONTAL OR VERTICAL CONSTRUCTION JOINTS IN ANY FOOTING WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.

18. CONCRETE CAST ON SLOPING SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHER ELEVATION UNTIL THE INTENDED POUR IS COMPLETED.

STRUCTURAL STEEL:

1. CODE: LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSI/AISC 360.

2. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
   - WIDE FLANGE SHAPES ..... ASTM A992 (Fy=50ksi)
   - ALL CHANNELS, ANGLES, PLATES, ETC. (UNO) ..... A36 (Fy=36ksi)
   - STRUCTURAL TUBES ..... A500 (Fy=46ksi)
   - ANCHOR BOLTS ..... F1554, GRADE 36
   - STEEL PIPE ..... A53 (Fy=35ksi)
   - BOLTS A325
   - WELDING ELECTRODES E70xx
   - HARDENED STEEL WASHERS F436

3. STRUCTURAL STEEL DETAILING, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF STEEL CONSTRUCTION" OF THE AMERICAN INSTITUTE STEEL CONSTRUCTION. SHOP DRAWINGS SHALL SHOW COMPLETE WELDING INFORMATION, BOTH SHOP AND FIELD, USING AMERICAN WELDING SOCIETY SYMBOLS UNLESS OTHERWISE INDICATED OR SHOWN, BOLTED CONNECTION SHALL BE MADE USING ¾" DIAMETER BOLTS CONFORMING TO ASTM A325 UNLESS OTHERWISE NOTED. THEY SHALL BE INSTALLED AND INSPECTED IN STRICT CONFORMANCE WITH LATEST EDITION RSCS "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."

4. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS. CONNECTIONS SHOWN ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN, SEE SPECIFICATIONS.

5. SPLICING OF STEEL MEMBERS UNLESS SHOWN ON THE DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.

6. NO HOLES SHALL BE CUT IN ANY STEEL ELEMENT UNLESS THEY ARE DETAILED ON THE DRAWINGS.

7. WHERE BEAMS INTERSECT AT THE TERMINATING ELEVATION OF A COLUMN, THE BEAM WITH THE GREATEST REACTION SHALL BEAR ON TOP OF THE COLUMN. WHERE THE BEAMS INTERSECT AT THE INTERMEDIATE ELEVATION OF A COLUMN, THE FRAMING BEAMS SHALL BE CONNECTED TO THE COLUMNS WITH A WT. FIN PLATE CONNECTIONS ARE NOT PERMITTED.

8. CONNECTIONS FOR NON-COMPOSITE BEAMS WHICH CANNOT CONFORM TO AISC TYPICAL CONNECTION DETAILS SHALL BE DETAILED IN ACCORDANCE WITH THE FOLLOWING:
   - A. WHERE BEAM REACTIONS ARE NOT SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF THE MAXIMUM UNIFORM LOAD WHICH THE BEAM WILL SUPPORT (AS SIMPLE SPAN) FOR THE SPAN SHOWN ON THE DWGS.
   - B. WHERE CONNECTIONS ARE SUBJECT TO ECCENTRICITY, SUCH ECCENTRICITY SHALL BE TAKEN INTO ACCOUNT WHEN DESIGNING THE CONNECTION.
   - C. WHERE CONNECTIONS SUPPORT BEAMS WHICH ARE SUBJECT TO CONCENTRATED LOADS, SUCH CONCENTRATED LOADS SHALL BE TAKEN INTO ACCOUNT WHEN DESIGNING THE CONNECTION.
   - D. BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH A325 BOLTS. MINIMUM DIAMETER OF ALL BOLTS SHALL BE 3/4", MAX. DIA. 1 1/8". PROVIDE AT LEAST 2 BOLTS PER CONN. TIGHTENED BY THE "TURN-OF-THE-NUT" METHOD.
   - E. END CONNECTIONS OF FLOOR MEMBERS SHALL ACCOMMODATE END ROTATIONS SIMPLE, UNRESTRAINED BEAMS. FOR THIS PURPOSE, INELASTIC ACTION IN THE CONNECTION IS PERMITTED.
   - F. COPED OR CUT ENDS OF MEMBERS SHALL BE REINFORCED WHERE REQUIRED TO SUSTAIN THE SPECIFIED REACTIONS.

9. STEEL STAIRS SHALL BE DESIGNED AND DETAILED BY A SPECIALTY ENGINEER.

10. FABRICATE AND ERECT FLOOR MEMBERS WITH NATURAL CAMBER UP.

11. STRUCTURAL STEEL CONTRACTOR TO PROVIDE DECK SUPPORT ANGLES AS REQUIRED. (∠4x4x¼, UNLESS NOTED OTHERWISE)

12. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE SIZE OF WELDS SHALL NOT BE SMALLER THAN 1/4".

13. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.

14. OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR PROPER FABRICATION AND INSTALLATION OF WORK PRIOR TO DETAILING. PRECISE MEASUREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

15. PROVIDE STIFFENERS TO BEAR UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS, ON ALL MEMBERS FRAMING OVER COLUMNS, AT BEAM COLUMN JOINTS (AS REQUIRED BY THE AISC SPECIFICATIONS) AND WHERE SHOWN ON THE DRAWINGS.

16. CONTINUOUS ANGLES AT THE ROOF PERIMETER SHALL BE SPLICED SUCH THAT THE FULL TENSION FORCE THAT CAN BE DEVELOPED BY THE ANGLE WILL BE TRANSFERRED THROUGHOUT THE SPLICE.

17. THE FABRICATOR SHALL BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND FOR THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.

18. ALL HORIZONTAL TUBES REQUIRE AN END PLATE AT EACH END WITH A THICKNESS EQUAL TO OR GREATER THAN THE TUBE'S WALL THICKNESS.

SCALE: SEE PLAN

GEORGIA REGISTERED No. 032283 PROFESSIONAL ENGINEER JASON PAUL BARNES

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ISSUED FOR PERMIT:	2-18-16
ISSUED FOR CONSTRUCTION:	2-18-16
REVISION DATES:	

CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

GENERAL NOTES

DRAWING No. E361 - S.01

METAL FLOOR DECK:

1. METAL FLOOR DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE SPECIFICATIONS AND COMMENTARY FOR STEEL FLOOR DECK, CURRENT EDITION.
2. THE STEEL DECK WORK SHALL CONSIST OF FURNISHING EVERYTHING (LABOR, MATERIALS, ACCESSORIES, EQUIPMENT, ETC.) NECESSARY AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL STEEL DECK WORK, AS INDICATED AND SPECIFIED ON THE DRAWINGS.
3. SUBMIT PLACEMENT AND DETAILED (“SHOP”) DRAWINGS FOR REVIEW. NO STEEL DECK SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
4. STEEL DECK UNITS SHALL BE OF SUFFICIENT LENGTH TO ACCOMMODATE THREE SPAN INSTALLATION.
5. PROVIDE CLOSURES AT SIDES, ENDS, AROUND COLUMNS, AND AT ALL OTHER PLACES WHERE LOSS OF CONCRETE IS POSSIBLE. ALL CLOSURES SHALL BE CONSTRUCTED OF 16 GAGE STEEL, UNLESS NOTED OTHERWISE.
6. STEEL DECK AND CLOSURES SHALL BE GALVANIZED, HAVING A COATING OF 0.5 OUNCES/S.F. AND CONFORMING TO ASTM A-525.
7. THE DECK SHALL BE EQUIPPED WITH A SYSTEM OF HANGER DEVICES.
8. THE DECK SHALL BE CONNECTED BY THE SHEAR CONNECTORS, TYPICALLY, AND WHERE INSUFFICIENT CONNECTORS ARE SPECIFIED, WELDING WASHERS SHALL BE ADDED TO THOSE FLUTES.
9. WHERE ONE OR TWO SPAN UNITS OF STEEL DECK ARE USED, THEY SHALL BE SHORED AT THEIR MIDPOINTS PRIOR TO CASTING CONCRETE.
10. THE CONTRACTOR SHALL FURNISH 7% ADDITIONAL CONCRETE TO COMPENSATE FOR THE DEFLECTION OF THE METAL DECK.

METAL ROOF DECK:

1. METAL ROOF DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK, CURRENT EDITION.
2. THE STEEL DECK WORK SHALL CONSIST OF FURNISHING EVERYTHING (LABOR, MATERIALS, ACCESSORIES, EQUIPMENT, ETC.) NECESSARY AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL STEEL DECK WORK AS INDICATED AND SPECIFIED ON THE DRAWINGS.
3. SUBMIT PLACEMENT AND DETAILED (“SHOP”) DRAWINGS FOR REVIEW. NO STEEL DECK SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
4. STEEL DECK UNITS SHALL BE OF SUFFICIENT LENGTH TO ACCOMMODATE THREE SPAN INSTALLATION PER STANDARDS ESTABLISHED BY THE STEEL DECK INSTITUTE.
5. METAL ROOF DECK AND ITS ATTACHMENT TO THE STRUCTURE SHALL BE DESIGNED BY THE MANUFACTURER. THE MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN ADEQUACY AND SAFETY OF ALL METAL ROOF DECK. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE PROJECT STATE.
6. METAL ROOF DECK SHALL BE OF THE CONFIGURATION, DEPTH AND MINIMUM GAUGE SHOWN ON THE DRAWINGS. ATTACHMENT TO THE SUPPORTING STRUCTURE SHALL BE AS SHOWN ON THE DRAWINGS, AS A MINIMUM. SEE ROOF PLAN NOTES.
7. DO NOT HANG OR SUPPORT ANY LOADS FROM THE METAL DECK.
8. WHERE POSSIBLE, METAL DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS. TWO SPAN DECK SHALL BE USED ONLY WHERE DECK LAYOUT DOES NOT PERMIT THE USE OF THREE SPANS. SINGLE SPAN DECK IS NOT PERMITTED.
9. METAL DECK WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE QUALITY ASSURANCE GENERAL NOTES AND PROJECT SPECIFICATIONS.
10. ROOF OPENINGS LESS THAN 6” SQUARE OR DIAMETER REQUIRE NO REINFORCEMENT. OPENINGS 6” TO 10”, INCLUSIVE, SHALL BE REINFORCED WITH A 20 GAUGE GALVANIZED PLATE WELDED TO THE DECK AT EACH CORNER AND 6” MAXIMUM CENTERS WITH A 5/8” DIAMETER PUDDLE WELD OR SHEET METAL SCREWS. SEE DRAWINGS FOR REINFORCEMENT OF OPENINGS LARGER THAN 10”.

SUSPENSION FROM ROOF STRUCTURE:

1. SUBCONTRACTORS INSTALLING CONDUIT, PIPING, OR EQUIPMENT SUSPENDED FROM THE STRUCTURE SHALL ATTEND A PRE-CONSTRUCTION MEETING.
2. ATTACHMENT TO METAL DECK, BRIDGING OR JOIST STRUTS IS PROHIBITED.
3. HANGER ATTACHMENT TO STEEL BAR JOIST:
   A. PIPE HANGERS SHALL BE ATTACHED TO BOTTOM CHORDS OF JOISTS AT PANEL POINTS WITH APPROVED STEEL WASHER PLATES AND DOUBLE NUTS ONLY IF CONCENTRATED LOADS ARE SHOWN ON THE STRUCTURAL DRAWINGS.
   B. PIPE HANGERS SHALL BE ATTACHED TO TOP CHORDS OF BAR JOISTS AT PANEL POINTS WITH APPROVED UNDER DECK “C”-CLAMPS.
   C. IF HANGERS CANNOT BE INSTALLED WITH 3” OF PANEL POINTS, THE JOIST SHALL BE REINFORCED AS SHOWN ON STRUCTURAL DRAWINGS.
4. PIPE HANGERS SHALL BE ATTACHED TO BOTTOM FLANGES OF WIDE FLANGE BEAMS, I-BEAMS, AND CHANNELS WITH APPROVED “BEAM CLAMPS” AND “CHANNEL CLAMPS”.
5. ALL SINGLE OR MULTIPLE TIER CABLE TRAYS, PIPE RACKS OR GROUPS OF DUCTS PERPENDICULAR TO THE JOISTS SHALL BE SUPPORTED FROM EACH BAR JOIST AND BEAM. SUCH A SYSTEM PARALLEL TO JOISTS SHALL BE ATTACHED TO TWO ADJACENT JOISTS AT 8'-0" O.C.
6. INDIVIDUAL PIPES UP TO 6” IN DIAMETER SHALL BE SUPPORTED FROM ALTERNATE JOISTS WHEN PIPES ARE PERPENDICULAR TO THE JOIST AND AT 10'-0" O.C., MAXIMUM, WHEN PIPES ARE PARALLEL TO THE JOISTS. INDIVIDUAL PIPES LARGER THAN 6” SHALL BE SUPPORTED AT EACH BAR JOIST WHEN PIPES ARE PERPENDICULAR TO THE JOIST AND AT 10'-0" O.C., MAXIMUM, WHEN PIPES ARE PARALLEL TO THE JOISTS.
7. HANGERS SHALL BE ADDED AT PANEL POINTS AT ALL LOCATIONS WHERE VALVES OR FITTINGS OCCUR.
8. ROUTING OF PIPES AND CONDUIT SHALL BE COORDINATED BY THE CONTRACTOR.

METAL STUDS AND JOISTS (COLD FORM FRAMING):

1. CONTRACTOR SHALL SUBMIT THE FOLLOWING:
   A. SHOP DRAWINGS FOR ALL COMPONENTS AND INSTALLATIONS NOT FULLY DIMENSIONED OR DETAILED IN MANUFACTURER'S PRODUCT DATA.
   B. SHOP DRAWINGS AND CALCULATIONS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE FOR REVIEW BY ENGINEER OF RECORD.
   C. CALCULATIONS AND DRAWINGS WILL BE REVIEWED BY THE ARCHITECT FOR GENERAL COMPLIANCE WITH DESIGN INTENT.
   D. PRODUCT CATALOG WITH PROPERTIES OF ALL C STUDS
2. DESIGN FABRICATIONS AND ERECTION SHALL CONFORM TO LATEST ADDITION OF THE AISI "NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" INCLUDING SUBSEQUENT SUPPLEMENTS. ALL METAL STUDS SHALL BE GALVANIZED.
3. ALL STUDS, JOISTS, TRACK, BRIDGING, END CLOSURES AND ACCESSORIES SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE REQUIREMENTS OF AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" UNLESS NOTED OTHERWISE.
4. ALL PRODUCTS TO BE MANUFACTURED BY A CURRENT MEMBER OF THE STEEL MANUFACTURERS ASSOCIATION.
5. SELF-DRILLING TAPPING SCREW FASTENERS SHALL BE IN COMPLIANCE WITH ASTM C1513 OR AN APPROVED DESIGN OR RECOGNIZED DESIGN STANDARD. ALL SCREWS SHALL BE NON-CORROSIVE NO. 12-14 STANDARD SELF-DRILLING SCREWS UNLESS NOTED OTHERWISE ON DRAWINGS (DO NOT USE STAINLESS STEEL OR COPPER COATED FASTENERS).
6. ALL POWDER ACTUATED FASTENERS (PAF) SHALL BE 0.177" DIAMETER POWDER ACTUATED FASTENERS.
7. ALL SCREWS SHALL BE SPACED NO CLOSER THAN 1" ON CENTER UNLESS NOTED OTHERWISE ON DRAWINGS. MIN. EDGE DISTANCE FOR SCREWS SHALL BE 1".
8. UNLESS NOTED OTHERWISE, TRACKS SHALL BE SAME DEPTH AS STUDS OR JOISTS AND EQUAL OR THICKER GAUGE THAN STUDS OR JOISTS. TRACKS SHALL BE CONNECTED TO SUPPORTS WITH TWO SCREWS OR PINS AT 16" MAX. STUDS OR JOISTS SHALL BE CONNECTED TO TRACKS AT EACH SIDE.
9. ALL WALLS SHALL HAVE WALL BRIDGING @ 4'-0" O.C. MAX. IF FULL-HEIGHT SHEATHING IS NOT INSTALLED ON BOTH SIDES OF STUDS.
10. CONTINUOUS BRIDGING MAY CONSIST OF 1 1/2" -33 MILS. STRAPS, (2 1/2" -43 MILS AT WALLS USED AS SHEAR-WALLS OR WALLS WITH STRAP BRACING) SCREW ATTACHED TO BOTH FLANGES OF EACH STUD WITH SOLID BLOCKING REQUIRED AT 12'-0" O.C. MAX., EACH END OF WALL AND ADJACENT TO EACH OPENING. (FASTEN STRAPS W/ (1) #8 SCREW MIN. TO EA. STUD & (2) #8 SCREW MIN. TO EA. BLOCKING). BLOCKING MAY BE MADE FROM 33 MILS STUD MATERIAL ATTACHED WITH 54 MIL CLIP ANGLE WITH 2 SCREWS PER ANGLE FLANGE. AS AN ALTERNATE BRIDGING, FOR 3 5/8" OR 4" STUDS ONLY, PROVIDE 1 1/2" CRC CHANNEL BRIDGING (150U50-54) AT THE CENTERLINE OF STUDS WITH (2) SCREWS PER ANGLE FLANGE.
11. ALL BRIDGING MUST BE CONTINUOUS FOR FULL LENGTH OF WALL OR PROPERLY SPLICED WITH AN APPROVED SPLICE ELEMENT.
12. THE QUANTITY OF STUDS OR JOISTS DISPLACED OR CUT FOR OPENING SHALL BE PLACED HALF ON EACH SIDE OF OPENING, UNLESS NOTED OTHERWISE, (2) STUDS MIN. EACH SIDE OF OPENING.
13. FOR ALL FULL HEIGHT STUD WALLS (WALLS WITH BASE SUPPORT AT FOUNDATION OR FLOOR STRUCTURE), PROVIDE CLIP SUPPORT WITH VERTICAL SLIP CAPACITY OR SLIP TRACK AT TOP TRACK CONNECTION TO ALLOW FOR 3/4" LIVE LOAD DEFLECTIONS OF STRUCTURE ABOVE THE STUD WALLS.
14. ALL WELDING TO BE PERFORMED BY A QUALIFIED WIRE FEED WELDER PER ASTM A-108. FIELD WELDING SHALL BE DONE WITH E60 ELECTRODES. WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1.3, LATEST EDITION.
15. APPLY ZINC COATING TO ALL WELDS.
16. CONTRACTOR SHALL FURNISH COMPLETE FABRICATION AND ERECTION DRAWINGS PREPARED BY AN ENGINEER LICENSED IN THE PROJECT STATE FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF FABRICATION. INCLUDE PLACING DRAWINGS FOR FRAMING MEMBERS SHOWING SIZE AND GAGE DESIGNATIONS, NUMBER, TYPE, LOCATION AND SPACING, INDICATE SUPPLEMENTAL TRAPPING, BRACES, SPLICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
17. MULTIPLE STUD COLUMNS (INCLUDING JACK/FULL HT. STUD ASSEMBLIES EA. SIDE OF OPENINGS) SHALL BE WELDED TOGETHER AT BOTH FLANGES WITH 2" TOP AND BOTTOM AND 1" AT 24" O.C. BETWEEN. IF SCREWED CONNECTIONS REQUIRED TO FASTEN STUDS, PROVIDE (2) ROWS OF SCREWS AT SPACINGS NOTED FOR WELDS, FASTENED AT WEBS (NOTE: ADDITIONAL TRACK MEMBERS, SAME DEPTH AND GAGE AS STUD MEMBERS (MIN.), MAY BE REQUIRED. TO BUILD BOX MEMBERS TO PROVIDE WEB SCREW CONNECTIONS NOTED. FASTEN FLANGES OF TRACKS TO FLANGES OF STUDS WITH SCREWS EA. FLANGE AT SAME SPACING NOTED ABOVE).
18. MEMBER SIZE, GAGE AND SPACING OF EXTERIOR WALL STUDS AND ALL MEMBERS CONNECTIONS SHALL BE DESIGNED BY STUD MANUFACTURER. SUBMIT CALCULATIONS FOR MEMBERS AND CONNECTIONS WITH SHOP DRAWINGS (SIGNED AND STAMPED BY LICENSED STRUCTURAL ENGINEER IN THE STATE IN WHICH THE PROJECT WILL BE CONSTRUCTED) TO ENGINEER OF RECORD FOR REVIEW. DESIGN OF STUDS SHALL CONFORM TO LOAD CRITERIA NOTED ON DRAWINGS WITH MAXIMUM STUD DEFLECTION OF L/240 OF STUD LENGTH (L/360 FOR SIMULATED STONE WALLS OR STUCCO FINISHES, L/600 FOR BRICK OR STONE VENEER WALLS. SHOP DRAWINGS SHALL SHOW WALL SECTIONS COORDINATED WITH DRAWINGS SHOWING FRAMING, ACCESSORIES, ANCHORAGE AND CONNECTION DETAILS. REVIEW OF SHOP DRAWINGS SHALL BE FOR CONFORMANCE W/THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE DESIGN OF THE COLD-FORMED STEEL STRUCTURAL MEMBERS AND THEIR CONNECTIONS.

CONCRETE:

1. CODE: AMERICAN CONCRETE INSTITUTE (ACI) 318 (LATEST ADDITION)
2. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH AND DENSITY IN ACCORDANCE WITH THE FOLLOWING:

	STRENGTH PSI	DENSITY PCF
FOOTINGS, SLABS ON GRADE, COLUMNS/PIERS & WALLS	4000	145
ELEVATED SLABS	4000	145

3. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW WELL IN ADVANCE OF CONCRETE PLACEMENT. CONCRETE MIX DESIGN SHALL INCLUDE ALL STRENGTH DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS BY EITHER THE TRIAL BATCH OR FIELD EXPERIENCE METHOD, AND SHALL BE CERTIFIED BY AN ENGINEER REGISTERED IN THE PROJECT STATE.
4. REINFORCING SHALL CONFORM TO ASTM A615, GR60, UNLESS NOTED OTHERWISE.
5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, GRADE 60.
6. WELDED WIRE FABRIC SHALL BE PLACED 1” BELOW T/SLAB, UNLESS NOTED OTHERWISE. LAP FABRIC 6” ON SIDES AND ENDS.
7. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ADDITION OF THE ACI DETAILING MANUAL.
8. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE.
9. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ABOVE-GRADE CONCRETE POURS. ALL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS WITH VERTICAL BULKHEADS. WHEN A BEAM INTERSECTS A GIRDER AT THIS POINT, THE JOINTS OF THE GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE SPECIFIED BY THE ENGINEER OF RECORD.
10. ALL “CONTINUOUS” REINFORCEMENT SHALL HAVE A MINIMUM LAP OF “B” TYPE (ACI 318) AT SPLICES, UNLESS NOTED OTHERWISE.
11. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS, AS SHOWN ON TYPICAL BAR PLACING DETAILS.
12. PROVIDE STANDARD BAR CHAIRS WITH PROTECTIVE TIPS AND SPACERS AT 5'-0” CENTERS FOR ALL SLABS AND BEAMS ABOVE GRADE. PROVIDE 3” X 6” X 20 GAGE SHEET METAL BAR CHAIRS AT 4'-0” MAXIMUM CENTERS EACH WAY FOR ALL TOP REINFORCING FOR SLABS-ON-GRADE.
13. SUBMIT REINFORCING PLACEMENT AND DETAIL (SHOP) DRAWINGS FOR REVIEW. NO REINFORCING BARS SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
14. PRODUCTS AND MATERIALS:
   A. TYPE 1 PORTLAND CEMENT SHALL CONFORM TO ASTM-C150.
   B. AGGREGATES SHALL CONFORM TO ASTM C-33.
   C. REINFORCING BARS SHALL CONFORM TO ASTM A-615 (GRADE 60).
   D. FORMING SHALL BE OF WOOD, STEEL, OR FIBERGLASS OF SATISFACTORY QUALITY AND CONDITION.
   E. NO ADMIXTURES SHALL BE ADDED TO THE CONCRETE UNLESS APPROVED BY THE ENGINEER.
   F. NON-SHRINK GROUT SHALL BE READY TO USE NON-METALLIC AGGREGATE AND DEVELOP A 7-DAY COMPRESSIVE STRENGTH OF 5000 PSI.
15. ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH LATEST ADDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".
16. MINIMUM CONCRETE COVER (UNLESS NOTED OTHERWISE) SHALL BE:
   A. #11 BARS AND SMALLER ..... 3/4 INCHES
   B. UNFORMED SURFACE IN CONTACT WITH THE GROUND ..... 3 INCHES
      EXTERIOR BASEMENT WALLS ..... 2 INCHES
      INTERIOR BASEMENT WALLS ..... 3/4 INCHES
   C. FORMED SURFACES EXPOSED TO EARTH OR WEATHER
      #6 BARS AND LARGER ..... 2 INCHES
      #5 BARS AND SMALLER ..... 1 1/2 INCHES
   D. FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER
      BEAMS GIRDERS AND COLUMNS ..... 1 1/2 INCHES
      SLABS, WALLS, AND JOISTS ..... 3/4 INCHES
17. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS “B” SPLICES.

BAR SIZE	TENSION SPLICES (INCHES) TOP BARS A	TOP BARS B	OTHER BARS A	OTHER BARS B	COMPRESSION SPLICES (INCHES)
3	22	28	17	22	12
4	29	37	22	29	15
5	36	47	28	36	19
6	43	56	33	42	23
7	63	81	48	63	25

18. SCHEDULED OR DETAILED REINFORCING STEEL SHALL NOT BE TACK WELDED FOR ANY REASON. WELDED REINFORCING STEEL SPLICES ARE NOT PERMITTED WITHOUT ENGINEER'S APPROVAL. WHERE WELDING IS APPROVED IT SHALL CONFORM TO AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.
19. CORNER BARS SHALL BE OF EQUAL SIZE AND SPACING AS THE MAIN REINFORCING WITH LAP SPLICE LENGTHS EQUAL TO 44 BAR DIAMETERS, MINIMUM.
20. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 4” OF CONCRETE.
21. THE FLATNESS AND LEVELNESS OF THE SLAB-ON-GRADE SHALL BE DETERMINED ACCORDING TO ASTM E-1155 OR ACI 117, SLAB CLASS 5 (ACI 302) STANDARD TEST METHOD USING F NUMBERS. THE SPECIFIC FLATNESS AND LEVELNESS SHALL BE F/F-35 AND F/L-20.
22. WHERE FOOTINGS, WALLS, OR OTHER STRUCTURAL ELEMENTS INTERSECT, CORNER OR TEE, PROVIDE CORNER BARS WITH REQUIRED LAP LENGTHS TO PROVIDE CONTINUITY OF HORIZONTAL STEEL REINFORCING, UNLESS NOTED OTHERWISE.
23. PROVIDE A MINIMUM OF 3” COVER FOR ANCHOR BOLTS AND LOCATE HORIZONTAL REINFORCEMENT TO THE OUTSIDE FOR ANCHOR BOLT CONTAINMENT, UNLESS NOTED OTHERWISE.
24. WHERE DOWELS, BOLTS OR INSERTS ARE CALLED OUT TO BE ANCHORED TO CAST IN PLACE OR PRECAST CONCRETE ELEMENTS USING ADHESIVE ANCHORS, USE AN ANCHORAGE SYSTEM EQUAL TO “HILTI” HIT HY-200. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS. ALTERNATE ANCHORAGE SYSTEMS MAY BE USED WITH ENGINEER'S PRIOR APPROVAL.
25. PROVIDE TEMPORARY SHORING AND BRACING OF ALL STRUCTURAL AND MISCELLANEOUS ELEMENTS UNTIL CONCRETE HAS OBTAINED 80% OF DESIGN STRENGTH AND ALL PERMANENT BRACING ELEMENTS ARE INSTALLED.
26. PLACEMENT OF CONCRETE, COLD WEATHER AND HOT WEATHER PRECAUTIONS, MATERIAL AND PROPORTIONING REQUIREMENTS, REBAR COVER AND DETAILING SHALL CONFORM TO THE REQUIREMENTS OF THE ACI 318.
27. PROVIDE CONTROL/CONSTRUCTION JOINTS IN CONCRETE WALLS AT A MAXIMUM SPACING OF TWICE THE HEIGHT OF THE WALL ABOVE THE TOP OF FOOTING. MAXIMUM JOINT SPACING SHALL NOT EXCEED 24'-0". CONTROL JOINTS SHALL HAVE A ½” DEEP BY ⅛” WIDE TAPERED REVEAL AT EACH SIDE OF THE WALL. AT CONTROL JOINTS, EVERY OTHER HORIZONTAL BAR SHALL BE CUT BACK 1½” FROM THE CONTROL JOINT. CONSTRUCTION JOINTS SHALL BE FORMED SIMILARLY TO CONTROL JOINTS. AT CONSTRUCTION JOINTS, ALL HORIZONTAL STEEL SHALL BE DISCONTINUOUS AND A DOWEL BAR OF SIZE AND SPACING TO MATCH THE HORIZONTAL REINFORCING SHALL BE EMBEDDED A MINIMUM OF 40 BAR DIAMETERS AT EACH SIDE OF THE CONSTRUCTION JOINT. SEE ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL JOINT TREATMENT.

SCALE: SEE PLAN

GEORGIA REGISTERED No. 032183 PROFESSIONAL ENGINEER JASON PAUL BAINES

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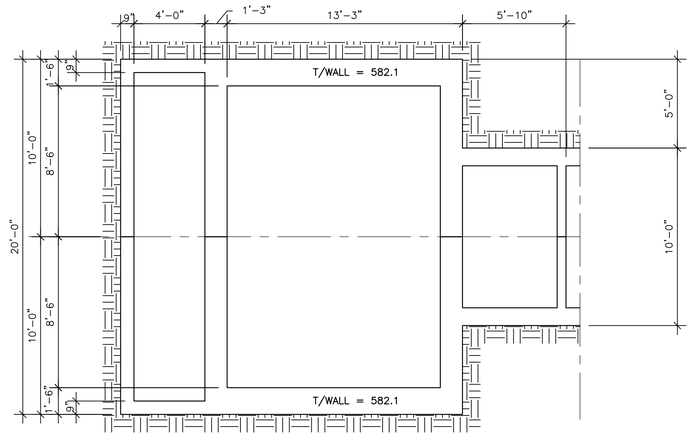
ISSUED FOR PERMIT:	2-18-16
ISSUED FOR CONSTRUCTION:	2-18-16
REVISION DATES:	

CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

GENERAL NOTES

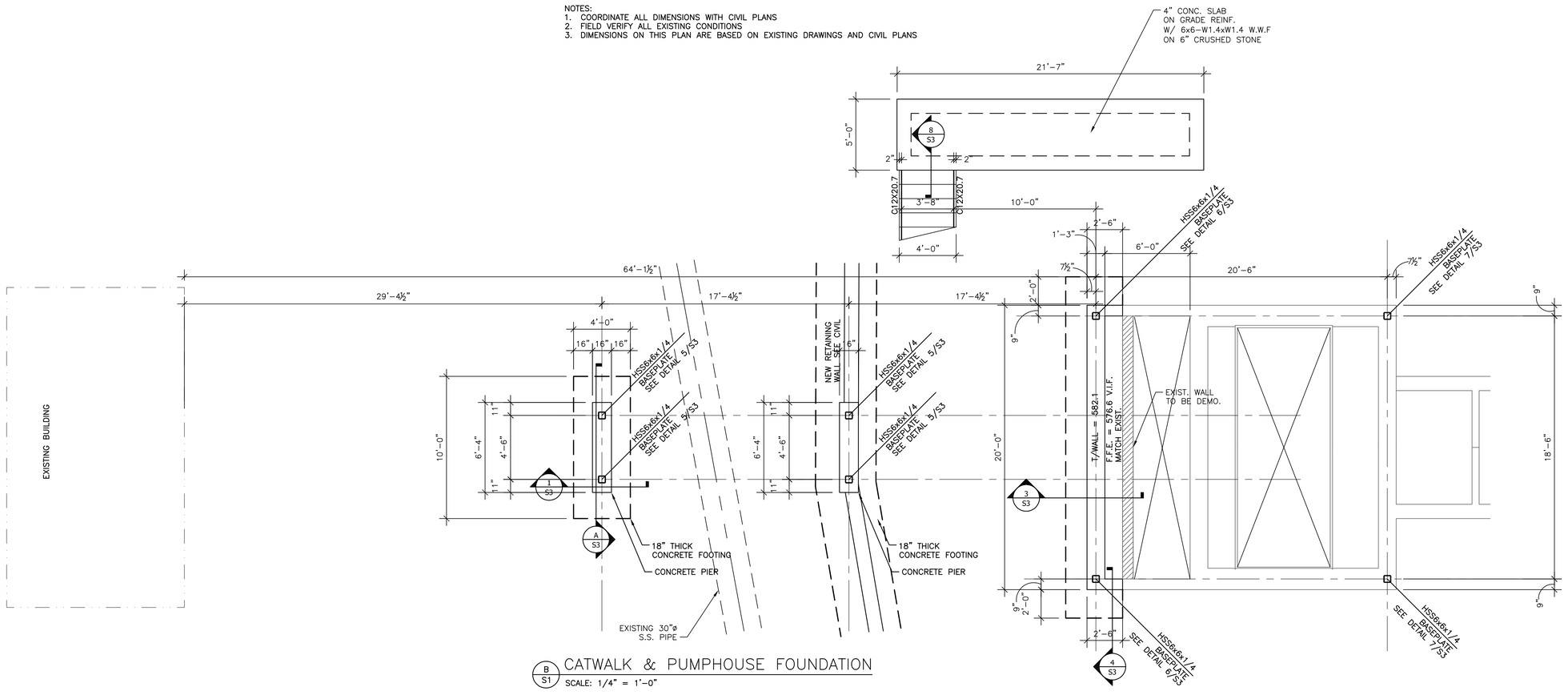
DRAWING No. E361 - S.02

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



A/S1 EXISTING PUMP WELL FOUNDATION
SCALE: 1/4" = 1'-0"

NOTES:
1. COORDINATE ALL DIMENSIONS WITH CIVIL PLANS
2. FIELD VERIFY ALL EXISTING CONDITIONS
3. DIMENSIONS ON THIS PLAN ARE BASED ON EXISTING DRAWINGS AND CIVIL PLANS



B/S1 CATWALK & PUMPHOUSE FOUNDATION
SCALE: 1/4" = 1'-0"

SCALE: SEE PLAN

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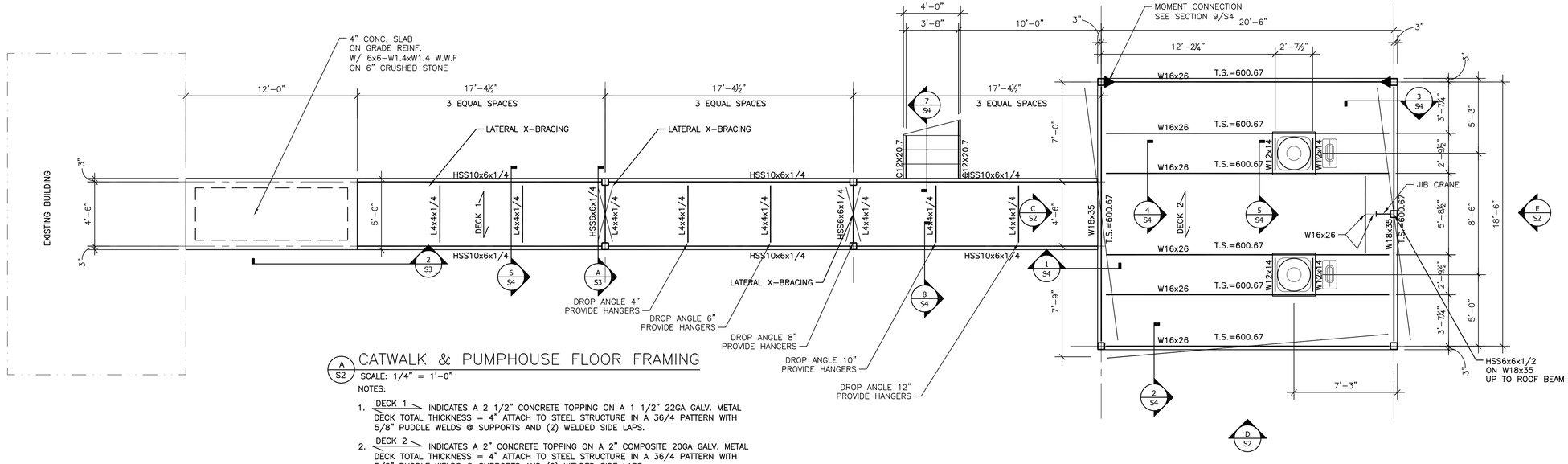
ETOWAH RAW WATER PUMP STATION

FOUNDATION PLAN

DRAWING No.
E361 - S.1

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		

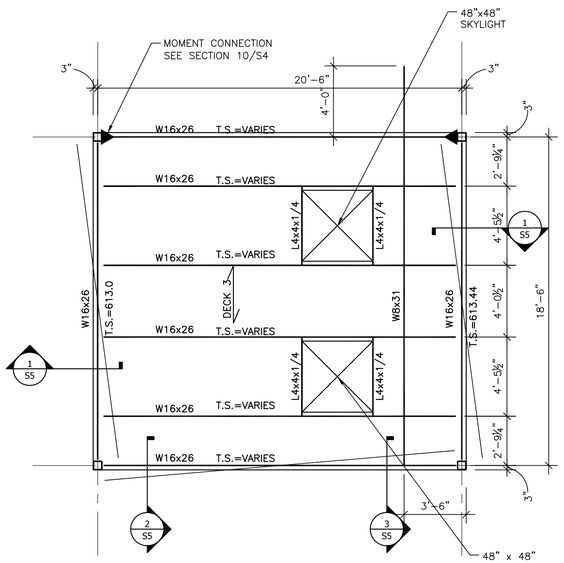


A S2 CATWALK & PUMPHOUSE FLOOR FRAMING

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

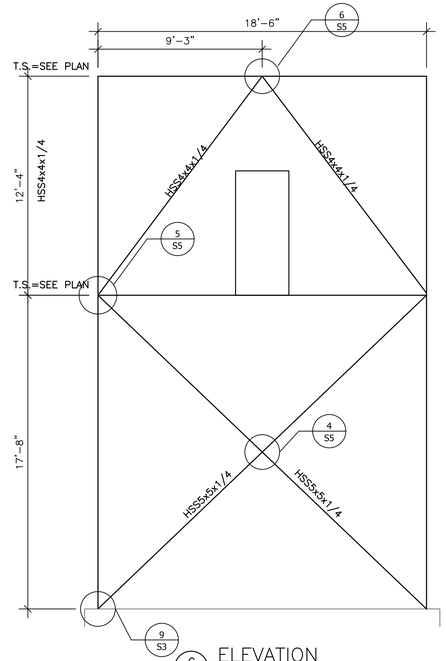
NOTES:

1. DECK 1 INDICATES A 2 1/2" CONCRETE TOPPING ON A 1 1/2" 22GA GALV. METAL DECK TOTAL THICKNESS = 4" ATTACH TO STEEL STRUCTURE IN A 36/4 PATTERN WITH 5/8" PUDDLE WELDS @ SUPPORTS AND (2) WELDED SIDE LAPS.
2. DECK 2 INDICATES A 2" CONCRETE TOPPING ON A 2" COMPOSITE 20GA GALV. METAL DECK TOTAL THICKNESS = 4" ATTACH TO STEEL STRUCTURE IN A 36/4 PATTERN WITH 5/8" PUDDLE WELDS @ SUPPORTS AND (2) WELDED SIDE LAPS
3. DECK 3 INDICATES A 1 1/2" 20GA WIDE RIB DECK GALV. METAL DECK. ATTACH TO STEEL STRUCTURE IN A 36/7 PATTERN WITH #12 TEK SCREWS @ SUPPORTS AND (3) #10 SIDE LAP SCREWS
4. ALL STEEL FRAMING SHALL BE PAINTED WITH A RUST INHIBITING PAINT.



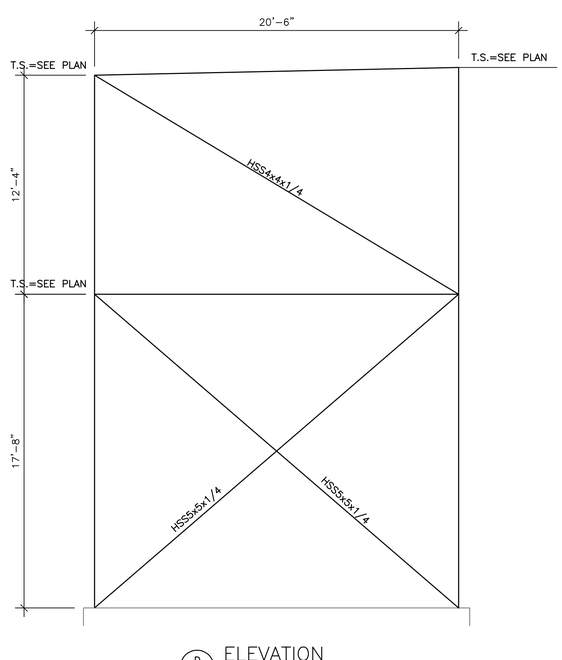
B S2 PUMP HOUSE ROOF FRAMING PLAN

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



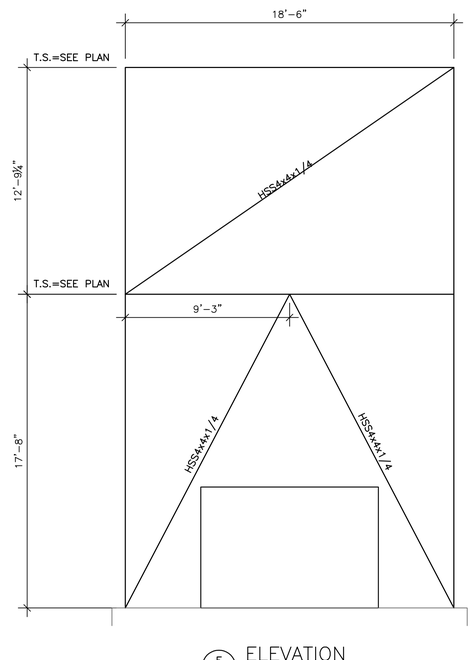
C S2 ELEVATION

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



D S2 ELEVATION

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



E S2 ELEVATION

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

SCALE: SEE PLAN

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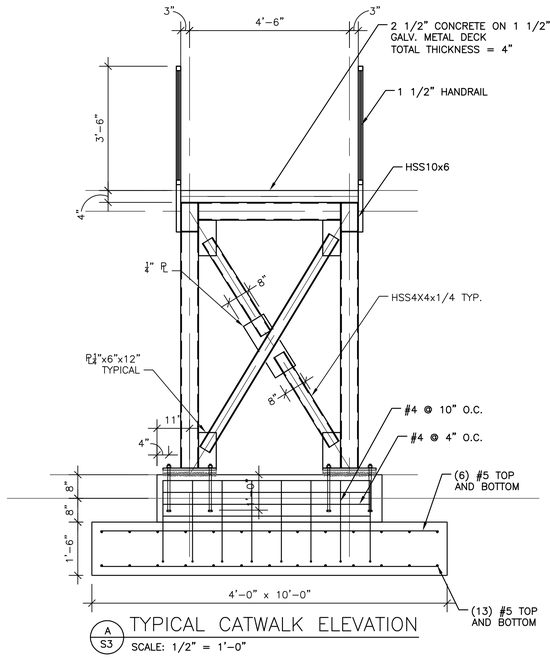
ETOWAH RAW WATER PUMP STATION

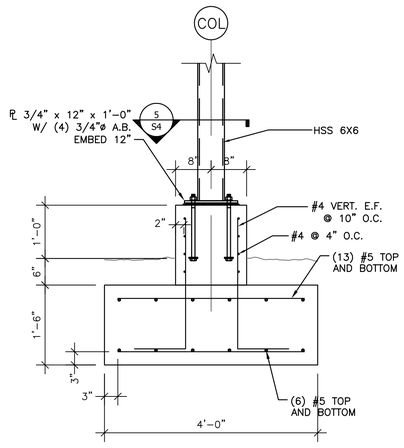
CATWALK & PUMP HOUSE FLOOR FRAMING & PUMP HOUSE ROOF FRAMING PLAN

DRAWING No. E361 - S.2

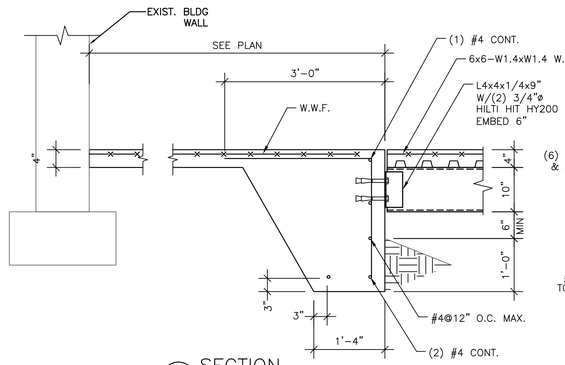
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



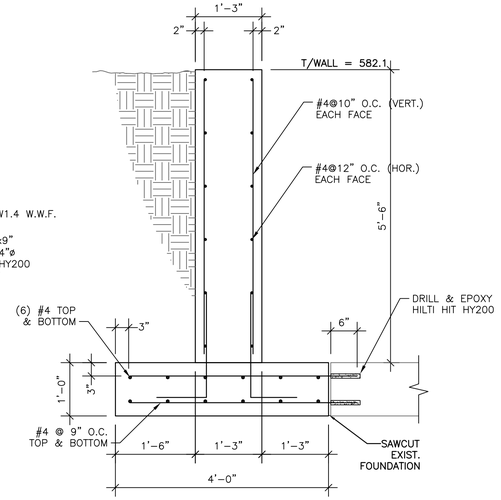
A S3 TYPICAL CATWALK ELEVATION
SCALE: 1/2" = 1'-0"



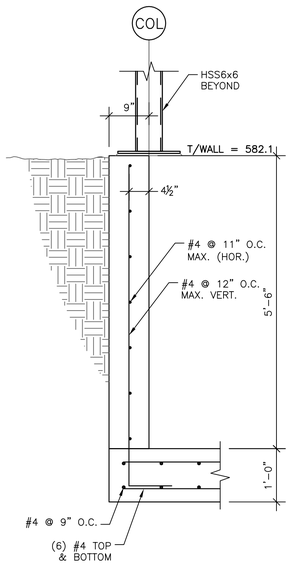
1 S3 SECTION
SCALE: 3/4"=1'-0"



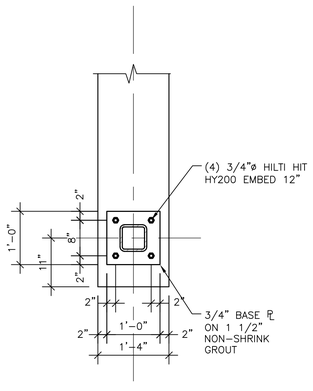
2 S3 SECTION
SCALE: 3/4"=1'-0"



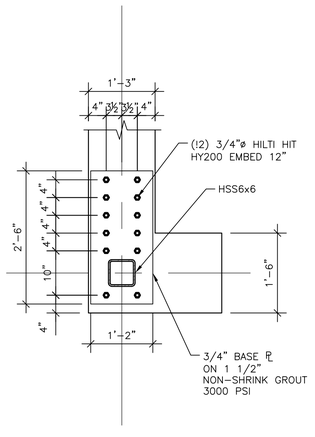
3 S3 SECTION
SCALE: 3/4"=1'-0"



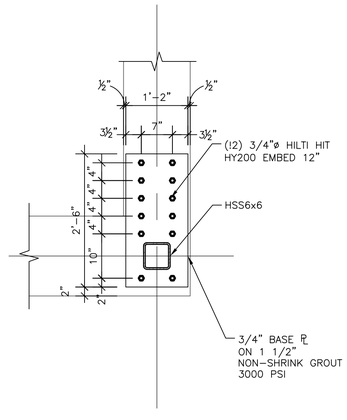
4 S3 SECTION
SCALE: 3/4"=1'-0"



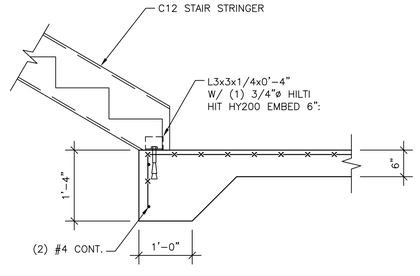
5 S3 SECTION
SCALE: 3/4"=1'-0"



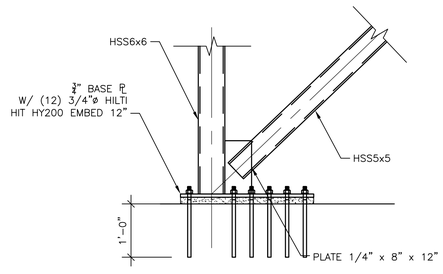
6 S3 SECTION
SCALE: 3/4"=1'-0"



7 S3 SECTION
SCALE: 3/4"=1'-0"



8 S3 SECTION
SCALE: 3/4"=1'-0"



9 S3 SECTION
SCALE: 3/4"=1'-0"

SCALE: SEE PLAN

GEORGIA REGISTERED No. 032283 PROFESSIONAL ENGINEER JASON PAUL BAINES

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ISSUED FOR PERMIT:	2-18-16
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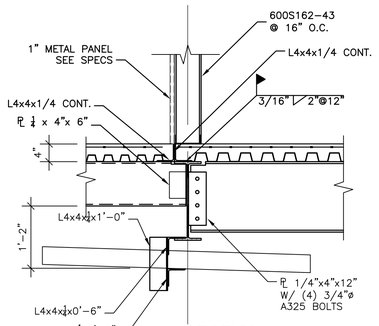
REVISION DATES:	

CITY OF ROME
BOARD OF COMMISSIONERS
ETOWAH RAW WATER PUMP STATION

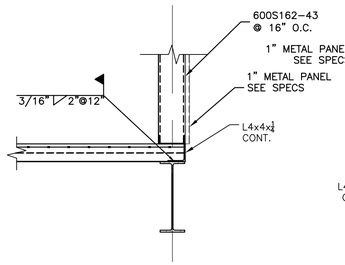
FOUNDATION SECTIONS

DRAWING No. E361 - S.3

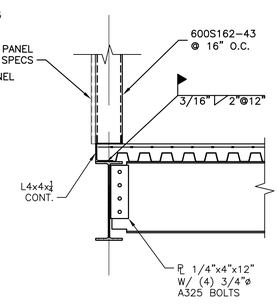
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



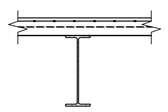
1 S4 SECTION
SCALE: 3/4"=1'-0"



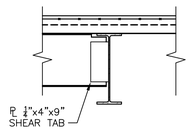
2 S4 SECTION
SCALE: 3/4"=1'-0"



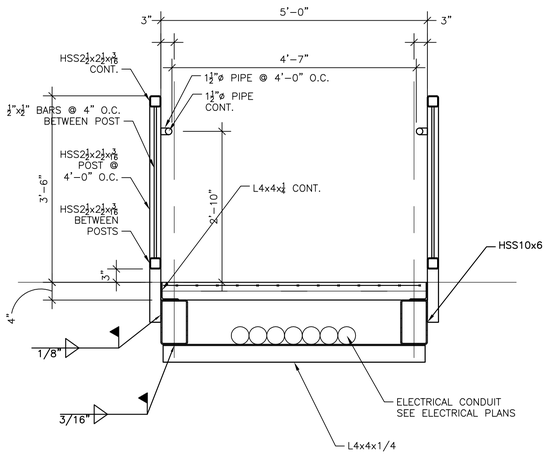
3 S4 SECTION
SCALE: 3/4"=1'-0"



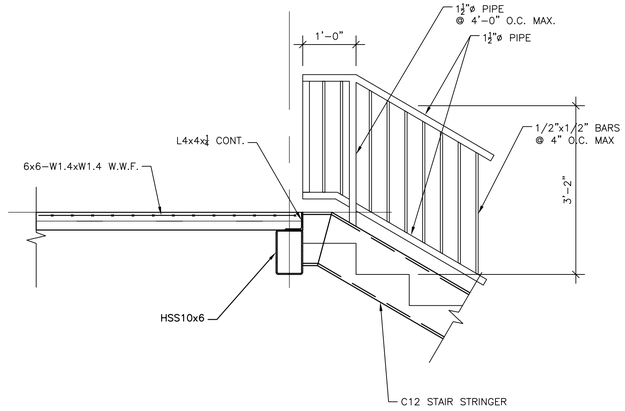
4 S4 SECTION
SCALE: 3/4"=1'-0"



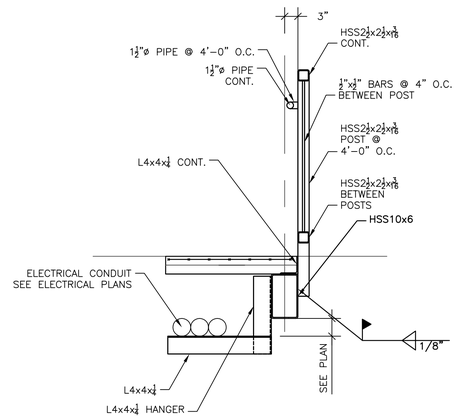
5 S4 SECTION
SCALE: 3/4"=1'-0"



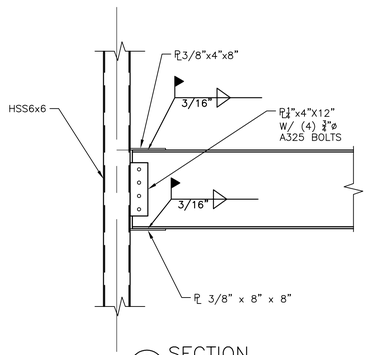
6 S4 SECTION
SCALE: 3/4"=1'-0"



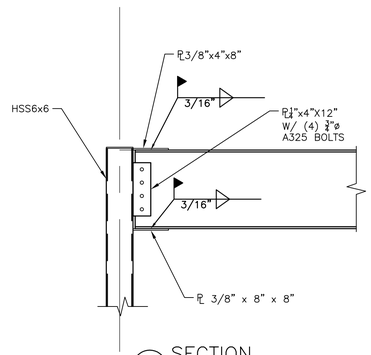
7 S4 SECTION
SCALE: 3/4"=1'-0"



8 S4 SECTION
SCALE: 3/4"=1'-0"



9 S4 SECTION
SCALE: 3/4"=1'-0"



10 S4 SECTION
SCALE: 3/4"=1'-0"

SCALE: SEE PLAN

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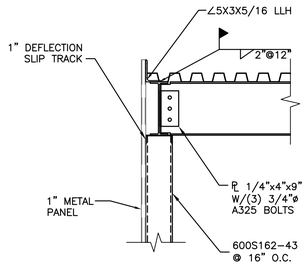
ETOWAH RAW WATER PUMP STATION

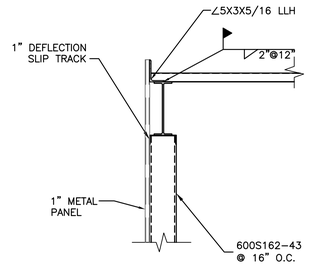
FLOOR SECTIONS

DRAWING No.
E361 - S.4

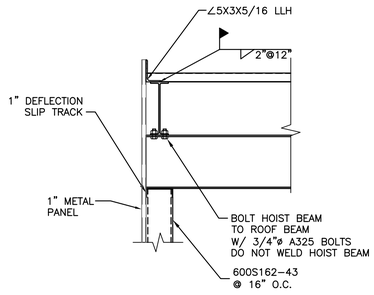
STATE	COUNTY	SHEET NO.	TOTAL SHEETS
GA	FLOYD		



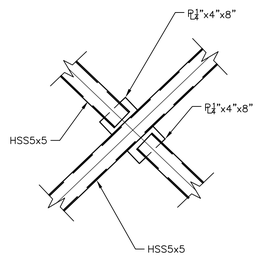
1 S5 SECTION
SCALE: 3/4"=1'-0"



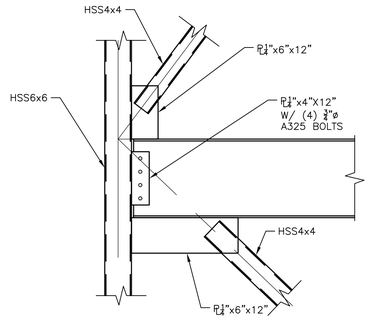
2 S5 SECTION
SCALE: 3/4"=1'-0"



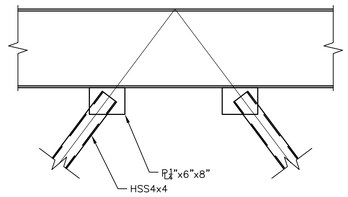
3 S5 SECTION
SCALE: 3/4"=1'-0"



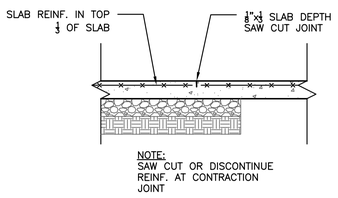
4 S5 SECTION
SCALE: 3/4"=1'-0"



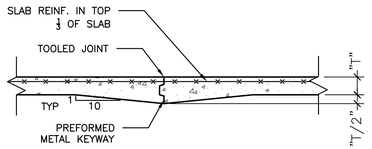
5 S5 SECTION
SCALE: 3/4"=1'-0"



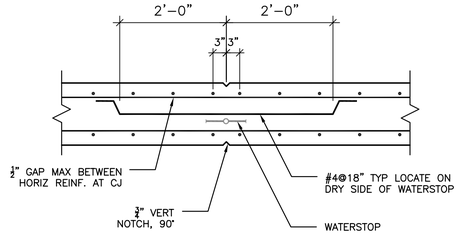
6 S5 SECTION
SCALE: 3/4"=1'-0"



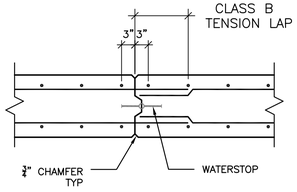
CONTRACTION JOINT



CONSTRUCTION JOINT

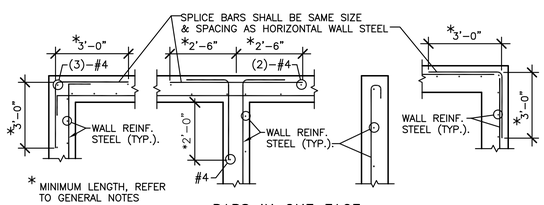


CONTRACTION JOINT



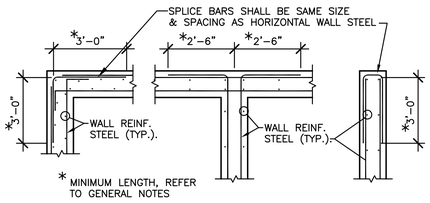
CONSTRUCTION JOINT

TYPICAL CONCRETE WALL AT JOINTS



BARS IN ONE FACE

STL. ARRANGEMENT AT WALLS AND FOOTINGS



BARS IN TWO FACES

STL. ARRANGEMENT AT WALLS AND FOOTINGS

SCALE: SEE PLAN

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ROOF SECTIONS

DRAWING No.
E361 - S.5