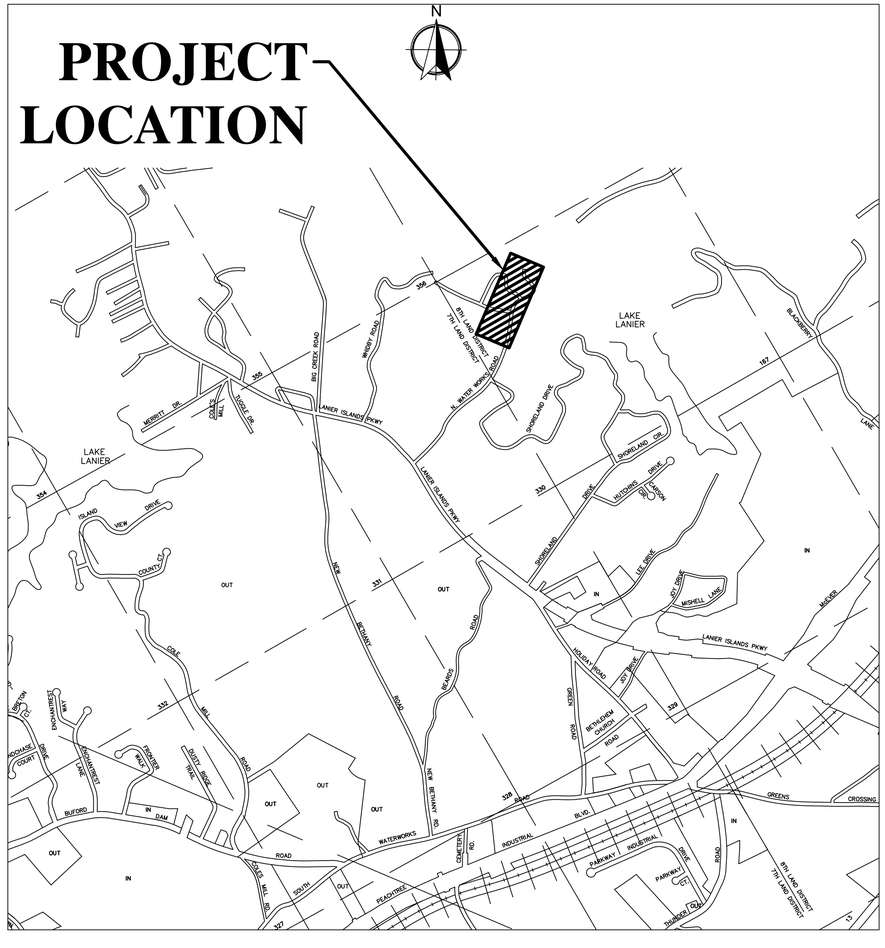
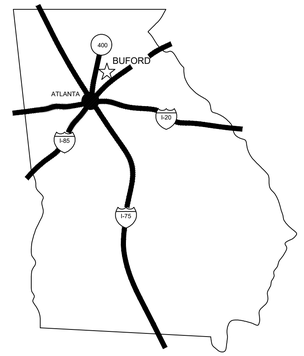
CONSTRUCTION DRAWINGS FOR THE

BUFORD WATER WORKS REPLACEMENT

For the City of Buford, Georgia
Site Location: 3370 North Waterworks Road
Buford, GA 30518



LOCATION MAP
SCALE: 1" = 1000'



AREA MAP

ELECTRICAL PROVIDER
CITY OF BUFORD
2300 BUFORD HIGHWAY
BUFORD, GA 30518
(770) 945-6761

TELEPHONE/INTERNET PROVIDER
CHARTER SPECTRUM BUSINESS
1925 BRECKINRIDGE PLAZA, SUITE 100
DULUTH, GA 30096
(800) 314-7105

GAS PROVIDER
ATLANTA GAS LIGHT
(800) 599-3770

WATER PROVIDER
CITY OF BUFORD
2300 BUFORD HIGHWAY
BUFORD, GA 30518
(770) 945-6761

SEWER PROVIDER
SITE IS ON SEPTIC SYSTEM

UTILITIES PROTECTION CENTER
CALL FREE
IN METRO ATLANTA
770-623-4344
THROUGHOUT GEORGIA
1-800-282-7411
THREE WORKING DAYS BEFORE YOU DIG

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

COVER SHEET

THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: G1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\General\COVER SHEET.dwg

DRAWING INDEX

Sheet Number	Sheet Title
	GENERAL
G1	COVER SHEET
G2	INDEX
G3	ABBREVIATIONS SYMBOLS AND LEGENDS
G4	NOTES
G5	BOUNDARY SITE SURVEY
	CIVIL
C1	PROCESS FLOW DIAGRAM
C2	HYDRAULIC PROFILE
C3-1	OVERALL EXISTING SITE PLAN
C3-2	EXISTING BUFORD WATER WORKS SITE PLAN
C3-3	EXISTING BUFORD RWPS & RAW WATER PIPE LINE SITE PLAN
C4-1	OVERALL SITE LAYOUT PLAN
C4-2	BUFORD WATER WORKS SITE LAYOUT PLAN
C4-3	OVERALL ZONING AND TEMPORARY CONTRACTOR FACILITIES AREA
C4-4	SITE GRADING PLAN
C4-5	SITE YARD PIPING PLAN
C4-6	SITE PIPING PROFILE, SHEET 1
C4-7	SITE PIPING PROFILE, SHEET 2
C4-8	SITE PIPING PROFILE, SHEET 3
C5-1	CIVIL DETAILS, SHEET 1
C5-2	CIVIL DETAILS, SHEET 2
C5-3	CIVIL DETAILS, SHEET 3
C5-4	CIVIL DETAILS, SHEET 4
C5-5	CIVIL DETAILS, SHEET 5
C5-6	CIVIL DETAILS, SHEET 6
C5-7	CIVIL DETAILS, SHEET 7
C6-1	STORMWATER PLAN
C6-2	STORMWATER DETAILS, SHEET 1
C6-3	STORMWATER DETAILS, SHEET 2
C6-4	STORM WATER DETAILS, SHEET 3
C6-5	STORM WATER DETAILS, SHEET 4
C6-6	STORM WATER DETAILS, SHEET 5
L1.0	LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS
ES-1	EROSION CONTROL NOTES, SHEET 1
ES-2	EROSION CONTROL NOTES, SHEET 2
ES-3	EROSION CONTROL NOTES, SHEET 3
ES-4	EROSION CONTROL NOTES, SHEET 4
ES-5	EROSION CONTROL DETAILS
ES-6	INITIAL EROSION CONTROL PLAN
ES-7	INTERMEDIATE EROSION CONTROL PLAN
ES-8	FINAL EROSION CONTROL PLAN
D1	SITE DEMOLITION PLAN
	MECHANICAL
M1-1	PASSIVE INTAKE SCREEN STRUCTURE
M1-2	PASSIVE INTAKE SCREEN STRUCTURE DETAILS
M2-1	FLOWMETER VAULTS PLANS, SHEET 1
M2-2	FLOWMETER VAULT PLANS, SHEET 2
M3-1	PROCESS LAYOUT PLAN, SHEET 1
M3-2	PROCESS LAYOUT PLAN, SHEET 2
M3-3	PROCESS LAUOUT PLAN, SHEET 3
M3-4	PROCESS LAUOUT PLAN, SHEET 4
M3-5	PROCESS LAYOUT SECTIONS, SHEET 1
M3-6	PROCESS LAYOUT SECTIONS, SHEET 2
M3-7	PROCESS LAYOUT SECTIONS, SHEET 3
M3-8	PIPE GALLERY A
M3-9	PIPE GALLERY B
M3-10	PIPE GALLERY C
M3-11	CHEMICAL OFFLOADING PLAN AND ELEVATION
M3-12	PROCESS LAYOUT DETAILS, SHEET 1
M3-13	PROCESS LAYOUT DETAILS, SHEET 2
M3-14	PROCESS CHEMICAL DETAILS, SHEET 1
M3-15	PROCESS CHEMICAL DETAILS, SHEET 2
M3L-1	LABORATORY PLAN AND SECTIONS
M3L-2	LABORATORY SECTIONS
M4-1	CLEARWELL SHEET 1
M4-2	CLEARWELL SHEET 2
M4-3	CLEARWELL PRV VAULT
M5-1	HIGH SERVICE PUMP STATION
M5-2	HIGH SERVICE PUMP DETAILS
M5-3	HIGH SERVICE PUMP STATION BUILDING DETAILS
M6-1	HSP METER VAULT PLAN
M6-2	HSP METER VAULT SECTIONS
	ARCHITECTURAL
A0.1	ARCHITECTURAL NOTES, CODES, STANDARDS
A1.1	LEVEL 1 FLOOR PLAN AND NOTES
A1.2	LEVEL 2 FLOOR PLAN AND NOTES
A1.3	ROOF PLAN AND NOTES, DETAILS
A1.4	PLAN DETAILS - STAIRS
A1.5	LEVEL TWO REFLECTED CEILING PLAN
A1.6	LEVEL TWO REFLECTED CEILING PLAN
A1.7	FIRST AND SECOND FLOOR FINISH PLAN AND DETAILS
A1.8	GENERIC FURNISHING PLAN, SCHEDULE AND NOTES
A2.1	FRONT AND SIDE ELEVATION
A2.2	REAR AND SIDE ELEVATION
A2.3	DETAIL ELEVATIONS
A2.4	BUILDING ELEVATIONS
A3.1	BUILDING SECTIONS
A3.2	EXTERIOR WALL SECTIONS, SHEET 1
A3.3	EXTERIOR WALL SECTIONS, SHEET 2
A3.4	EXTERIOR WALL DETAILS
A3.5	WALL SECTIONS
A3.6	CANOPY PLAN, SECTION AND DETAILS
A4.1	INTERIOR WALL ELEVATIONS
A5.1	PLAN AND ROOF DETAILS
A5.2	EXTERIOR STAIRS DETAILS, SHEET 1
A5.3	EXTERIOR STAIRS DETAILS, SHEET 2
A6.1	DOOR SCHEDULE AND DETAILS
A6.2	INTERIOR WINDOW PROFILES AND DETAILS
	STRUCTURAL
S0-1	GENERAL NOTES
S0-2	GENERAL NOTES
S0-3	COMPONENTS AND CLADDING
S1-1	PIT FOUNDATION PLAN
S1-2	FIRST FLOOR FOUNDATION PLAN
S1-3	SECOND FLOOR FRAMING PLAN
S1-4	ROOF FRAMING PLAN
S1-5	HIGH SERVICE PUMP STATION PLANS
S1-6	PASSIVE INTAKE SCREEN PLAN
S1-7	SLAB ON GRADE SLOPE PLAN
S1-8	GRATING PLANS
S1-9	DUMPSTER PLANS AND DETAILS
S3-1	FOUNDATION DETAILS
S3-2	FOUNDATION DETAILS
S3-3	FOUNDATION DETAILS
S3-4	FOUNDATION DETAILS
S3-5	FOUNDATION DETAILS
S3-6	FOUNDATION DETAILS
S3-7	FOUNDATION DETAILS
S3-8	FOUNDATION DETAILS
S4-1	MASONRY DETAILS
S5-1	FRAMING DETAILS
S5-2	FRAMING DETAILS
S5-3	FRAMING DETAILS
S5-4	FRAMING DETAILS
S5-5	FRAMING DETAILS
	FIRE PROTECTION
FP001	FIRE PROTECTION NOTES
FP101	FIRE PROTECTION SITE PLAN & DETAILS
FP102	FIRE PROTECTION PLANS
	HVAC
H1	OVERALL PLAN LEVEL ONE HVAC
H2	OVERALL PLAN LEVEL TWO HVAC
H3	ROOF PLAN HVAC
H4	ENLARGED BULK TANK AREA HVAC
H5	ENLARGED OFFICE LEVEL ONE HVAC
H6	ENLARGED OFFICE LEVEL TWO HVAC
H7	HVAC SCHEDULES
H8	HVAC NOTES
H9	HVAC DETAILS
H10	HVAC DETAILS & KITCHEN HOOD
H11	HVAC SEISMIC DETAILS
H12	HIGH SERVICE PUMP STATION HVAC
	PLUMBING
P1.1	LEVEL 1 WASTE AND VENT PLAN
P2.1	LEVEL 2 WASTE AND VENT PLAN
P3.1	LEVEL 1 DOMESTIC WATER PLAN
P4.1	LEVEL 2 DOMESTIC WATER PLAN
P5.1	PLUMBING RISER DIAGRAMS
P6.1	NOTES, SCHEDULES AND DETAILS
P7.1	PLUMBING SEISMIC DETAILS
	INSTRUMENTATION
I0-1	P&ID LEGEND, SHEET 1
I0-2	P&ID LEGEND, SHEET 2
I1	P&ID, RAW WATER PUMP STATION
I2	P&ID, PRESETTLING POND
I3	P&ID, FEED PUMPS
I4	P&ID, STRAINERS & STATIC MIXING
I5	P&ID, CONTROL PANELS
I6	P&ID, MEMBRANE SYSTEM
I7	P&ID, BACKWASH
I8	P&ID, DRAIN
I9	P&ID, SODIUM HYPOCHLORITE
I10	P&ID, HCL
I11	P&ID, NAOH
I12	P&ID, CITRIC ACID
I13	P&ID, CIP
I14	P&ID, CIP HEATING, PH CHLORINE ANALYZER
I15	P&ID, POST FILTRATION INJECTION
I16	P&ID, SODIUM BISULFITE
I17	P&ID, CORROSION INHIBITOR
I18	P&ID, FLUORIDE
I19	P&ID, CLEARWELLS
I20	P&ID, HIGH SERVICE PUMPS
I21	P&ID, FLOWMETERS
I22	P&ID, SLUDGE PONDS
I23	P&ID, AIR SUPPLY
I24	P&ID, FUTURE COAGULATION
	ELECTRICAL
E1-0	LEGEND, LIGHTING FIXTURE SCHEDULE AND KEY NOTES
E1-1	MCC LAYOUT
E1-2	POWER RISER DIAGRAM
E1-3	ELECTRICAL SITE PLAN - POWER
E1-4	ELECTRICAL SITE PLAN - CONTROLS
E2-1	LEVEL ONE POWER PLAN, SHEET 1
E2-2	LEVEL ONE POWER PLAN, SHEET 2
E2-3	LEVEL ONE POWER PLAN, SHEET 3
E2-4	UPPER LEVEL POWER PLAN
E2-5	HIGH SERVICE PUMP STATION POWER PLAN
E2-6	MECHANICAL ROOF POWER PLAN
E3-1	LEVEL ONE LIGHTING PLAN
E3-2	LEVEL TWO LIGHTING PLAN, SHEET 1
E3-3	LEVEL TWO LIGHTING PLAN, SHEET 2
E3-4	HIGH SERVICE PUMP STATION LIGHTING PLAN
E4-1	LEVEL ONE MISCELLANEOUS SYSTEMS PLAN
E4-2	LEVEL TWO MISCELLANEOUS SYSTEMS PLAN
E4-3	ROOF PLAN MISCELLANEOUS SYSTEMS
E5-1	LEVEL ONE CONTROLS PLAN, SHEET 1
E5-2	LEVEL ONE CONTROLS PLAN, SHEET 2
E5-3	LEVEL ONE CONTROLS PLAN, SHEET 3
E5-4	LEVEL TWO CONTROLS PLAN
E5-5	UPPER LEVEL CONTROLS PLAN
E5-6	HIGH SERVICE PUMP STATION CONTROLS PLAN
E6-1	ELECTRICAL ROOM ENLARGED PLAN
E6-2	LIGHTING CONTROLS
E7-1	ELECTRICAL DETAILS, SHEET 1
E7-2	ELECTRICAL DETAILS, SHEET 2
E7-3	ELECTRICAL DETAILS, SHEET 3
	RAW WATER PUMP STATION
RWC1	OVERALL SITE PIPING PLAN
RWC2	RAW WATER LINE PLAN & PROFILE STA. 0+00 TO STA. 5+00
RWC3	RAW WATER LINE PLAN & PROFILE STA. 5+00 TO STA. 9+00
RWC4	RAW WATER LINE PLAN & PROFILE STA. 9+00 TO STA. 13+14
RWES	EROSION CONTROL PLAN
RWD1	DEMOLITION PLAN AT RAW WATER PUMP STATION
RWD2	PUMP STATION & RAW WATER INTAKE STRUCTURE PLANS DEMOLITION
RWD3	PUMP STATION & RAW WATER INTAKE STRUCTURE SECTIONS DEMOLITION
RWM1-1	PUMP STATION & RAW WATER INTAKE STRUCTURE PLANS
RWM1-2	PUMP STATION & RAW WATER INTAKE STRUCTURE SECTIONS
RWS0	PUMP STATION AND RAW WATER INTAKE STRUCTURAL NOTES
RWS1	PUMP STATION AND RAW WATER INTAKE STRUCTURAL PLANS & DETAILS
RWS2	PUMP STATION AND RAW WATER INTAKE STRUCTURAL SECTIONS & DETAILS
RWS3	PUMP STATION AND RAW WATER INTAKE STRUCTURAL SECTIONS & DETAILS
RWE1	RWPS POWER RISER AND PANELBOARD SCHEDULES
RWE2	RWPS ENLARGED SITE PLAN AND DETAILS
RWE3	RWPS FLOOR PLAN - POWER, CONTROL, LIGHTING AND DETAILS
RWE4	RWPS SITE PLAN AND DETAILS
RWE5	FIBER OPTIC CABLE PARTIAL SITE PLAN AND DETAIL

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

INDEX

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: G2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\General\INDEX.dwg

SITE SYMBOLS LEGEND

EXISTING	NEW OR PROPOSED	DESCRIPTION
	F / R	FIXED BOLLARD / REMOVABLE BOLLARD
OE		OVERHEAD ELECTRIC POWER
UE		UNDERGROUND ELECTRIC POWER
		UTILITY POLE (POWER, TELE., ETC.)
		LIGHT POLE
T		BURIED TELEPHONE
SS	SS	SANITARY SEWER
Ⓢ		SANITARY SEWER MANHOLE
SD		STORM SEWER
Ⓢ		STORM SEWER MANHOLE
		STORM INLET
CF		CHEMICAL FEED PIPE
RW	RW	RAW WATER
W	W	WATER MAIN
WM		WATER METER
		WATER VALVE
		FIRE HYDRANT
		YARD HYDRANT
G	G	GAS MAIN
		R/W MARKER
R/W		R/W
		CENTER LINE
PL		PROPERTY LINE
	LOC	LIMITS OF DISTURBANCE
		DITCH
		IPF
		TBM
		EDGE OF PAVEMENT
X	X	FENCE LINE
1000	1000	ELEVATION CONTOUR
Cg / Lg — SB		SOIL TYPE BOUNDARY & TYPES
	Sd1-C	SILT FENCE
MH		ELECTRICAL MANHOLE
		CONCRETE PAVEMENT
		ASPHALT PAVEMENT
		GRAVEL DRIVE
		DEMOLISH
	X X	DEMOLISH PIPE
		FUTURE STRUCTURE
		TEMPORARY STRUCTURE
		YARD PIPING
FE		FLOW SENSOR
		Ø DIAMETER
		℄ CENTER LINE

ABBREVIATIONS

A/C	AIR CONDTIONING
AD	AREA DRAIN
ADJ	ADJUSTABLE, ADJUST
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
APPROX	APPROXIMATE (LY)
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BFP	BELT FILTER PRESS
BL	BASE LINE
BM	BENCHMARK
BOT	BOTTOM
BTWN	BETWEEN
BV	BALL VALVE
CAB	CABINET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CIP	CLEAN-IN-PLACE
CJ	CONTROL JOINT
CJT	CONSTRUCTION JOINT
CLPS	CLAY PIPE (SEWER)
CLR	CLEARANCE
C/L	CENTERLINE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONTD	CONTINUED
CP	CORRUGATED PLASTIC PIPE
CPS	CONCRETE PIPE (SEWER)
CPSD	CONCRETE PIPE STORM DRAIN
CS	CARBON STEEL
CTR	CENTER (ED)
CU	COPPER PIPE
CU FT	CUBIC FOOT (FEET)
CV	CHECK VALVE
CY	CUBIC YARD
D	DEEP
DE	DRAINAGE EASEMENT
DI	DUCTILE IRON PIPE
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON
DIPS	DUCTILE IRON PIPE (SEWER)
DIPW	DUCTILE IRON PIPE (WATER)
DISW	DISHWASHER
DWG	DRAWING
E	EAST
EA	EACH
ECC	ECCENTRIC
EDF	ELECTRIC DRINKING FOUNTAIN
EF	EACH FACE
EL	ELEVATION
ELEV	ELEVATION
ELEC	ELECTRIC(AL)
EOP	EDGE OF PAVEMENT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQUIV	EQUIVALENT
EW	EACH WAY
EX	EXISTING
EXIST	EXISTING
EXTD	EXTENDED
EXP	EXPANSION
FAC	FACILITY
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FINISHED GRADE ELEVATION
FE	FLARED END SECTION
FF	FINISHED FLOOR
FFE	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH
FL	FLOOR
FLG	FLANGE(D)
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET/FOOT
FTG	FOOTING
G	NATURAL GAS
GDOT	GEORGIA DEPARTMENT OF TRANSPORTATION
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRAV	GRAVITY
GRND	GROUND
GS	GALVANIZED STEEL PIPE
GV	GATE VALVE
H	HIGH
HCL	HYDROCHLORIC ACID
HDPE	HIGH DENSITY POLYETHYLENE
HOA	HAND OFF AUTOMATIC
HR	HOUR
HVA	HYDRAULIC VALVE ACTUATOR
HW	HEADWALL
HW	HOT WATER
HWA	HIGH WATER ALARM
HWL	HIGH WATER LEVEL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INCUB	INCUBATOR
IPF	IRON PIN FOUND
IR	IRRIGATION PIPING
INV	INVERT ELEVATION
JCT	JUNCTION
L	LONG
LB	POUND
LF	LINEAL FEET
LG	LENGTH
LWA	LOW WATER ALARM
LWL	LOW WATER LEVEL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MFD	MANUFACTURED
MFG	MANUFACTURING
MG/L	MILLIGRAMS PER LITER
MGD	MILLIONS GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MIT	MEMBRANE INTEGRITY TEST
MJ	MECHANICAL JOINT
MSL	MEAN SEA LEVEL
MW	MAINTENANCE WASH
NAOCL	SODIUM HYPOCHLORITE
NAOH	SODIUM HYDROXIDE
NO	NUMBER
NTS	NOT TO SCALE
NTU	NEPHELOMETRIC TURBIDITY UNIT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OE	OVERHEAD ELECTRIC
OPNG	OPENING
OPP	OPPOSITE
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PC	POINT OF CURVE(ATURE)
PE	PLAIN END
PE	POLYETHYLENE PIPE
PERF	PERFORATED
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PLV	PLUG VALVE
PP	POWER POLE
PPM	PARTS PER MILLION
PREFIN	PREFINISHED
PRES	PRESSURE
PRV	PRESSURE RELIEF VALVE
PS	PUMP STATION
PT	POINT
PUD	PERFORATED UNDERDRAIN
PVC	POLYVINYL CHLORIDE PIPE
PVCS	PVC PIPE (SEWER)
PVI	POINT OF VERTICAL INTERSECTION
PVMNT	PAVEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
REF	REFRIGERATOR
RJ	RESTRAINED JOINT
RPM	REVOLUTIONS PER MINUTE
RW	RAW WATER
S	SOUTH
SBS	SODIUM BISULFITE
SD	STORM DRAIN
SEC	SECTION
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
STD	STANDARD
SQ	SQUARE
SS	SANITARY SEWER
SSE	SANITARY SEWER EASEMENT
SST.	STAINLESS STEEL
STA	STATION
STL	STEEL
STRUC	STRUCTURE-(S, URAL)
SWD	SIDE WATER DEPTH
SWK	SIDEWALK
SY	SQUARE YARD
TAN	TANGENCY
TBA	TO BE ABANDONED
TBM	TEMPORARY BENCHMARK
TBR	TO BE REMOVED
TEL	TELEPHONE
TEMP	TEMPERATURE OR TEMPORARY
TF	TOP OF FLOOR
TKD	TANK DRAIN
TOB	TOP OF BERM/BANK
TOC	TOTAL ORGANIC CARBON
TV	TELESCOPING VALVE
TYP	TYPICAL
UN	UNION
UNO	UNLESS NOTED OTHERWISE
VAR	VARIOUS/VARIABLE
VC	VICTAULIC COUPLING
VCP	VITRIFIED CLAY PIPE
VFD	VARIABLE FREQUENCY DRIVE
W	WEST
W/	WITH
WBW	WASTE BACKWASH
WH	WATER HEATER
WJ	WELDED JOINT
WL	WATER LEVEL
WM	WATER MAIN/WATER METER
WS	WATER SURFACE OR WATER STOP
WSV	WALL SLEEVE
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XFER	TRANSFER
YD	YARD
YR	YEAR

SCHEMATIC VALVE SYMBOLS

- GATE VALVE (GV-10)
- GLOBE VALVE (GLV-10)
- CHECK VALVE (CV-10)
- BALL VALVE (BLV-10)
- WATER METER (WM-1)
- PLUG VALVE
- BUTTERFLY VALVE
- NEEDLE VALVE (NV-10)
- SOLENOID VALVE (SV-3)
- TRUE UNION
- STRAINER
- CONCENTRIC REDUCER
- 3-WAY VALVE

PIPING AND VALVE SYMBOLS

- FLANGED JOINT
- MECHANICAL JOINT
- GROOVED JOINT COUPLING
- WELDED JOINT
- GATE VALVE
- CONCENTRIC REDUCER
- BUTTERFLY VALVE
- MAGNETIC FLOW METER
- PLUG VALVE
- CHECK VALVE

DRAWING TITLE SYMBOLS

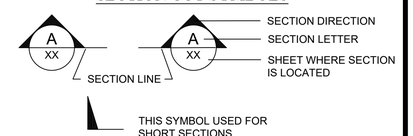
SECTION — 1/4" = 1'-0" — A / XX
- A: SECTION LETTER
- XX: DRAWING NO. WHERE SECTION IS LOCATED
- SCALE

DETAIL — 1/4" = 1'-0" — 1 / XX
- 1: DETAIL NUMBER
- XX: DRAWING NO. WHERE DETAIL IS LOCATED
- SCALE

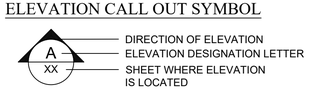
SCHEMATIC — 1/4" = 1'-0" — 1 / XX
- 1: SCHEMATIC NUMBER
- XX: DRAWING NO. WHERE SCHEMATIC IS LOCATED
- SCALE

DIAGRAM — 1/4" = 1'-0" — 1 / XX
- 1: DIAGRAM NUMBER
- XX: DRAWING NO. WHERE DIAGRAM IS LOCATED
- SCALE

SECTION CUT SYMBOLS



ELEVATION CALL OUT SYMBOL



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ABBREVIATIONS SYMBOLS AND LEGENDS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: G3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\General\ABBREVIATIONS SYMBOLS AND LEGENDS.dwg

GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATION & PROTECTION OF EXISTING ABOVE AND BELOW GRADE UTILITIES AND STRUCTURES. ANY AND ALL MAINS OR INDIVIDUAL SERVICES PRESENTLY IN SERVICE WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL EXPENSE TO THE OWNER OR UTILITY PROVIDER.
2. CONTRACTOR IS TO MAINTAIN UTILITY SERVICES, INCLUDING WATER, SANITARY SEWER, STORM SEWER, NATURAL GAS, ELECTRIC CABLE, AND TELEPHONE AT ALL TIMES DURING CONSTRUCTION.
3. CONTRACTOR IS TO KEEP ALL PARKING AREAS, ALLEYS, AND STREETS ADJACENT TO THE CONSTRUCTION SITE CLEAN AT ALL TIMES DURING CONSTRUCTION.
4. ALL SIGNS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED AS NEEDED FOR THE CONSTRUCTION AND REPLACED AS SOON AS PRACTICAL.
5. CONTRACTOR TO SET UP TEMPORARY SEDIMENT CONTROL MEASURES BEFORE WORK COMMENCES. ALL MEASURES SHALL BE INSPECTED DAILY (MONDAY THRU FRIDAY) FOR EXCESSIVE SILTATION. CONTRACTOR SHALL REMOVE EXCESSIVE SILT IMMEDIATELY BEFORE CONSTRUCTION COMMENCES ON THAT DAY. MAINTENANCE SHALL CONTINUE THROUGH PROJECT COMPLETION.
6. CONTRACTOR IS TO DRESS, SEED AND MULCH ALL AREAS DISTURBED DURING CONSTRUCTION. FINAL DRESSING, SEEDING & MULCHING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
7. CONTRACTOR TO NOTIFY KECK + WOOD INC. 48 HOURS PRIOR TO ANY TESTING.
8. BASE PLAN AND ELEVATION INFORMATION TAKEN FROM VARIOUS SOURCE, INCLUDING (1) SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND (2) HALL COUNTY, GA G-15 HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83 VERTICAL: NAD88, US SURVEY FOOT.
9. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE FIELD OR ON THE PLANS.
10. ALL CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE SAFETY STANDARDS AND REQUIREMENTS.
11. ALL EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON DRAWINGS "WATER TREATMENT PLANT IMPROVEMENTS" BY PIEDMONT OLSEN HENSLEY DATED 07/14/1993.
12. THE CONTRACTOR SHALL COORDINATE RELOCATION/REMOVAL OF EXISTING UTILITIES WITH THE UTILITY OWNER AS APPLICABLE.
13. THE CONTRACTOR SHALL REPAIR ALL EXISTING CONDITIONS DAMAGED BY CONSTRUCTION TO THE ORIGINAL CONDITION OR BETTER.
14. CONTRACTOR SHALL COORDINATE AND SEQUENCE ALL CONSTRUCTION ACTIVITIES WITH THE CITY OF BUFORD WTP PROJECT TEAM. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS FOR THE PROJECT AND THE REQUIREMENTS OF THE CITY OF BUFORD AND GEORGIA ENVIRONMENTAL PROTECTION DIVISION.
15. ALL CONSTRUCTION ACTIVITIES MUST BE CONFINED TO THE CONSTRUCTION AREA SHOWN ON THE DRAWINGS.
16. NO CONSTRUCTION SHALL BE PERFORMED BETWEEN 11:00 PM AND 7:00 AM PER THE NOISE ORDINANCE. NO WORK SHALL BE PERFORMED ON HOLIDAYS AND SUNDAYS WITHOUT PERMISSION FROM THE OWNER AND/OR ENGINEER.
17. MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
18. CONTRACTOR IS RESPONSIBLE FOR PERFORMING COMPACTION TESTS IN AREAS OF EXCAVATION, INCLUDING WITHIN GDOT RIGHTS-OF-WAY, TO VERIFY PROPER COMPACTION IS MET.
19. ALL BURIED VALVES AND FITTINGS SHALL BE MECHANICAL OR PUSH ON JOINTS.
20. CONCRETE THRUST BLOCKING, OR MECHANICALLY RESTRAINED JOINTS SHALL BE INSTALLED AT ALL UNDERGROUND FITTINGS UNLESS OTHERWISE NOTED.
21. CONTRACTOR SHALL PROVIDE, CONSTRUCT, MAINTAIN AND REMOVE EQUIPMENT ACCESS ROUTE AS NECESSARY FOR CONSTRUCTION EQUIPMENT ACCESS TO PROJECT LOCATION. ROUTE SHALL BE CONSTRUCTED TO PROTECT EXISTING EQUIPMENT AND BELOW GRADE PIPING FROM DAMAGE DURING WORK AND SHALL INCLUDE AT A MINIMUM, THE USE OF ENGINEERED CONSTRUCTION MATS TO SPREAD LOAD IMPACTS OVER EXISTING GROUND SURFACES.
22. PROVIDE WRITTEN NOTICE TO THE ENGINEER/OWNER AT LEAST 72 HOURS PRIOR TO THE REMOVAL OR DEMOLITION OF ANY PIPING OR FACILITY WHICH MIGHT AFFECT THE OPERATION OF THE PLANT.
23. CONTRACTOR TO PROVIDE LIST OF DRAWINGS OR RECORD DOCUMENTS DIFFERENT FROM A SITE SURVEY IF USED TO VERIFY DIMENSIONS.
24. CONTRACTOR TO PROVIDE OWNER AND ENGINEER NOTIFICATION AND HAVE WRITTEN APPROVAL PRIOR TO TAKING ANY PROCESS EQUIPMENT OFFLINE TEMPORARILY.

PROJECT NOTES:

1. PRIOR TO COMMENCING WORK, ACCURATELY LOCATE ABOVE AND BELOW GROUND UTILITIES WHICH MAY BE AFFECTED BY THE WORK. MARK THE LOCATION OF EXISTING UTILITIES AND PRESERVE AND PROTECT ALL UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT IN THE COURSE OF CONSTRUCTION. PROVIDE AT LEAST 72 HOURS ADVANCE NOTICE TO THE UTILITY OWNER PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY OF THE EXISTING UTILITY LINE. FOR EXISTING LOCATION ASSISTANCE, CONTACT THE 'UNDERGROUND UTILITIES PROTECTION CENTER' AT: 1-800-282-7411
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
3. OTHER EROSION CONTROL NOTES:
   A. ALL CUTS AND ALL SLOPES MUST BE SURFACE ROUGHENED AND VEGETATED WITHIN (7) DAYS OF THEIR CONSTRUCTION.
   B. ALL FILL SLOPES WILL HAVE SILT FENCE AT TOE OF SLOPES.
4. UTILITIES SHOWN ON PLANS ARE APPROXIMATELY LOCATED. ALL EXISTING UTILITIES MAY NOT HAVE BEEN FIELD LOCATED. UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF AND PRESERVING ALL UTILITIES INCLUDING THOSE NOT SHOWN OR INCORRECTLY SHOWN ON THE PLANS. UTILITIES IN THE AREA INCLUDE, BUT ARE NOT LIMITED TO: GAS, WATER, ELECTRICAL, CABLE AND TELEPHONE.
5. RELOCATE ALL MAIL BOXES, SIGNS, FENCES, BRICK PAVERS OR OTHER FEATURES, REMOVED DURING CONSTRUCTION, TO THE SATISFACTION OF THE PROPERTY OWNER.
6. OWNER: CITY OF BUFORD
   2300 BUFORD HIGHWAY
   BUFORD, GEORGIA 30518
   (770) 945-6761
7. ENGINEER: KECK & WOOD, INC.
   3090 PREMIERE PARKWAY,
   SUITE 200
   DULUTH, GA 30097
   678-417-4000
8. ALL STATIONING SHOWN IS ROAD CENTERLINE STATIONING.
9. ALL PIPELINE DISTANCES SHOWN ARE THE HORIZONTAL DISTANCE BETWEEN CENTER OF STRUCTURES.
10. ANY FENCING, DRAINAGE PIPES OR EXISTING IMPROVEMENTS REMOVED DURING CONSTRUCTION MUST BE RESTORED TO ORIGINAL CONDITION OR BETTER AS SOON AS POSSIBLE. PROVIDE TEMPORARY FENCING FOR ALL LANDS WITH LIVESTOCK OR OTHER ANIMALS.
11. THE CONTRACTOR SHALL BE REQUIRED TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE RIGHT-OF-WAY SHOWN ON THE PLANS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS. THE CONTRACTOR IS ALLOWED TO CLEAR ONLY THE AREA DEEMED NECESSARY FOR CONSTRUCTION ACTIVITIES.

SITE NOTES:

1. ALL ROAD DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED. WHERE CURB AND GUTTER ARE NOT APPLICABLE, DIMENSIONS ARE TO THE EDGE OF PAVED AREAS.
2. LOCATE ALL EXISTING STRUCTURES, PROPERTY BOUNDARIES, UTILITIES, FACILITIES, RE-BARS, PROPERTY CORNERS, BENCH MARKS, AND OTHER REFERENCE POINTS ON EXISTING SITE BEFORE COMMENCING CONSTRUCTION OPERATIONS. FLAG AND CLEARLY MARK LIMITS OF DISTURBANCE, CLEARING AND GRUBBING, PROPERTY BOUNDARIES, EASEMENTS, BUFFERS, AND LIMITS OF CONSTRUCTION ON SITE PRIOR TO CONSTRUCTION OPERATIONS.
3. ALL LOCATION DIMENSIONS FOR RECTANGULAR STRUCTURES ARE TO THE OUTSIDE FACE OR CORNER OF THE STRUCTURE. ALL LOCATION DIMENSIONS FOR THE CIRCULAR STRUCTURES ARE TO THE CENTER OF THE STRUCTURE. ALL LOCATION DIMENSIONS FOR PIPING AND PIPING STRUCTURES ARE SHOWN TO THE CENTER OF LINE OR PIPES AND STRUCTURES. DIMENSIONS PROVIDED ARE HORIZONTAL MEASUREMENTS, WITHOUT REGARD FOR VERTICAL CHANGES ALONG MEASURED DISTANCES.
4. SITE SHALL BE GRADED AS SHOWN, WITH MAX. 3:1 CUT AND FILL SLOPES OUTSIDE ROADWAYS, UNLESS OTHERWISE INDICATED. REMOVE FROM THE SITE ALL EXCESS EXCAVATED MATERIALS NOT USED FOR FINISHED GRADES, AND LEGALLY DISPOSE OF OFF OWNER'S PROPERTY.
5. ALL AREAS TO BE PAVED OR GRAVELED SHALL BE GRADED AS SHOWN, WITH MAX. 10% LONGITUDINAL AND 6% LATERAL ROADWAY SLOPES, UNLESS OTHERWISE INDICATED.
6. MAINTAIN MIN. 5 FEET OF CLEARANCE BETWEEN GRADING OPERATIONS AND PROPERTY BOUNDARIES AND 50' UNDISTURBED STREAM BUFFERS, UNLESS OTHERWISE NOTED.
7. GRADE ENTIRE SITE TO PROVIDE POSITIVE DRAINAGE OF STORMWATER RUNOFF, AND TO CONVEY RUNOFF AWAY FROM STRUCTURES AND/OR TOWARDS CHANNELS, SWALES, DROP INLETS, AREA DRAINS, GUTTERS, AND OTHER STORMWATER CONTROLS TO PREVENT POOLING OF WATER ON SITE.
8. GRADE NEW SITE FEATURES AND RE-GRADE EXISTING SITE FEATURES TO ELEVATIONS AND SLOPES INDICATED, INCLUDING ROADWAYS, DITCHES, SWALES, BERMS, MOUNDS, AND ALL OTHER SITE FEATURES.

UTILITIES PROTECTION CENTER
CALL FREE
IN METRO ATLANTA
770-623-4344
THROUGHOUT GEORGIA
1-800-282-7411
THREE WORKING DAYS BEFORE YOU DIG

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

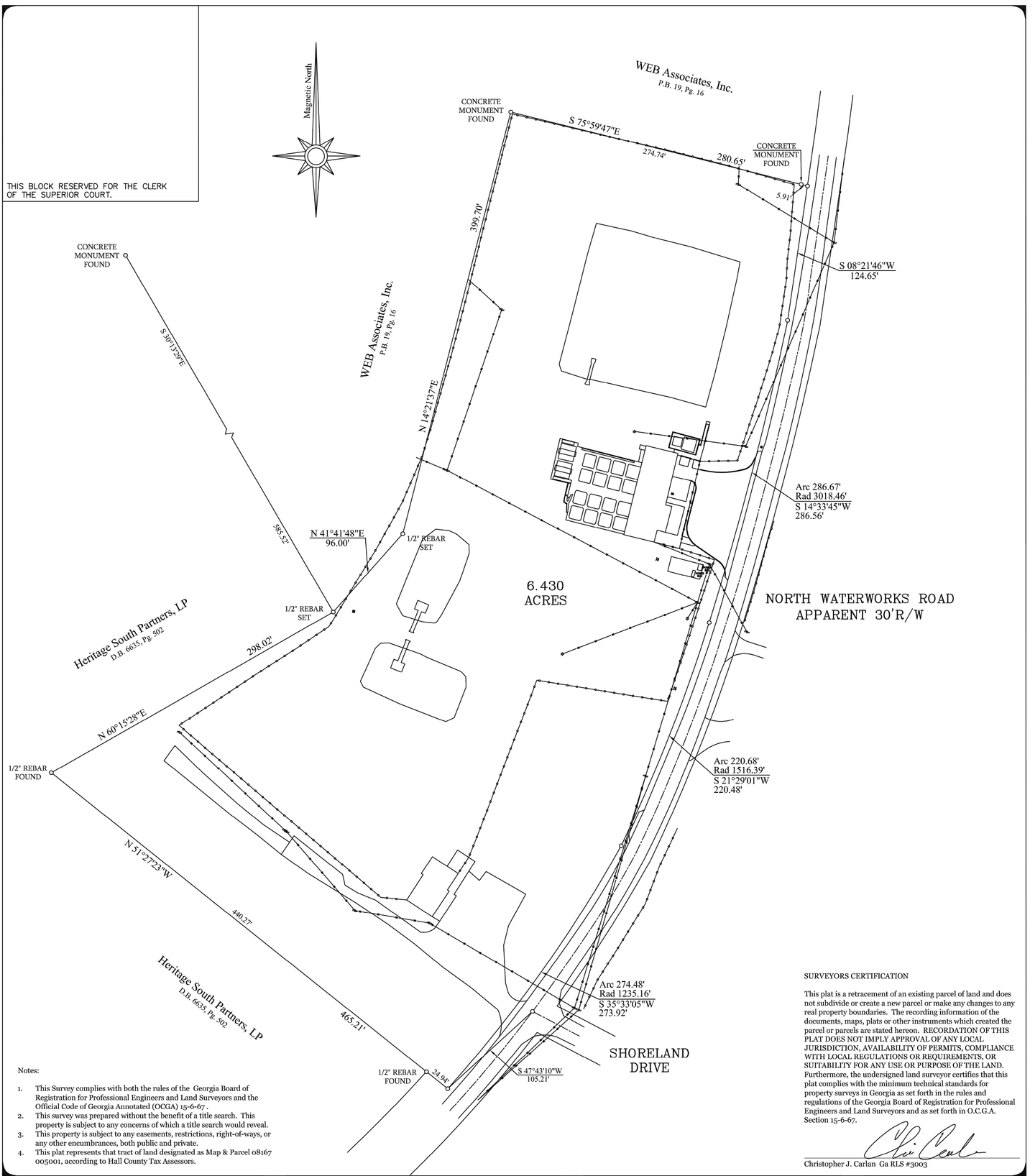
NOTES

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: G4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\General\NOTES.dwg

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\General\BOUNDARY SITE SURVEY.dwg



Notes:

1. This Survey complies with both the rules of the Georgia Board of Registration for Professional Engineers and Land Surveyors and the Official Code of Georgia Annotated (OCGA) 15-6-67 .
2. This survey was prepared without the benefit of a title search. This property is subject to any concerns of which a title search would reveal.
3. This property is subject to any easements, restrictions, right-of-ways, or any other encumbrances, both public and private.
4. This plat represents that tract of land designated as Map & Parcel 08167 005001, according to Hall County Tax Assessors.

SURVEYORS CERTIFICATION

This plat is a retracement of an existing parcel of land and does not subdivide or create a new parcel or make any changes to any real property boundaries. The recording information of the documents, maps, plats or other instruments which created the parcel or parcels are stated hereon. RECORDATION OF THIS PLAT DOES NOT IMPLY APPROVAL OF ANY LOCAL JURISDICTION, AVAILABILITY OF PERMITS, COMPLIANCE WITH LOCAL REGULATIONS OR REQUIREMENTS, OR SUITABILITY FOR ANY USE OR PURPOSE OF THE LAND. Furthermore, the undersigned land surveyor certifies that this plat complies with the minimum technical standards for property surveys in Georgia as set forth in the rules and regulations of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as set forth in O.C.G.A. Section 15-6-67.

Christopher J. Carlan Ga RLS #3003

BOUNDARY SURVEY
FOR
CITY OF BUFORD
LOCATED WITHIN
City of Buford
Land Lot 167, 8th District
Hall County, Georgia
Scale: 1" = 60' April 21, 2020

1. The field data upon which this plat is based has a closure precision of one foot in 27,168 foot and an angular error of 02" per angle point and was adjusted using the Compass Rule.
2. This plat has been calculated for closure and is found to be accurate within one foot in 224,707 feet.
3. The field equipment used in this survey was a Leica TS12-P Robotic Total Station.
4. The Field Work was completed 4/14/20 .

60 0 60 120 180
GRAPHIC SCALE – FEET

Carlan
Land Surveyors
970 SOUTH BROAD STREET
commerce, ga 30529
(706)336-5959

GEORGIA REGISTERED No. 3003 LAND SURVEYOR CHRISTOPHER J. CARLAN

JOB NO. 17-044 P.B. B-527

Project No.: 170110.00
Drawing No.: G5

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

THIS BAR IS 1 INCH LONG IF NOT PLOTTED FULL SCALE

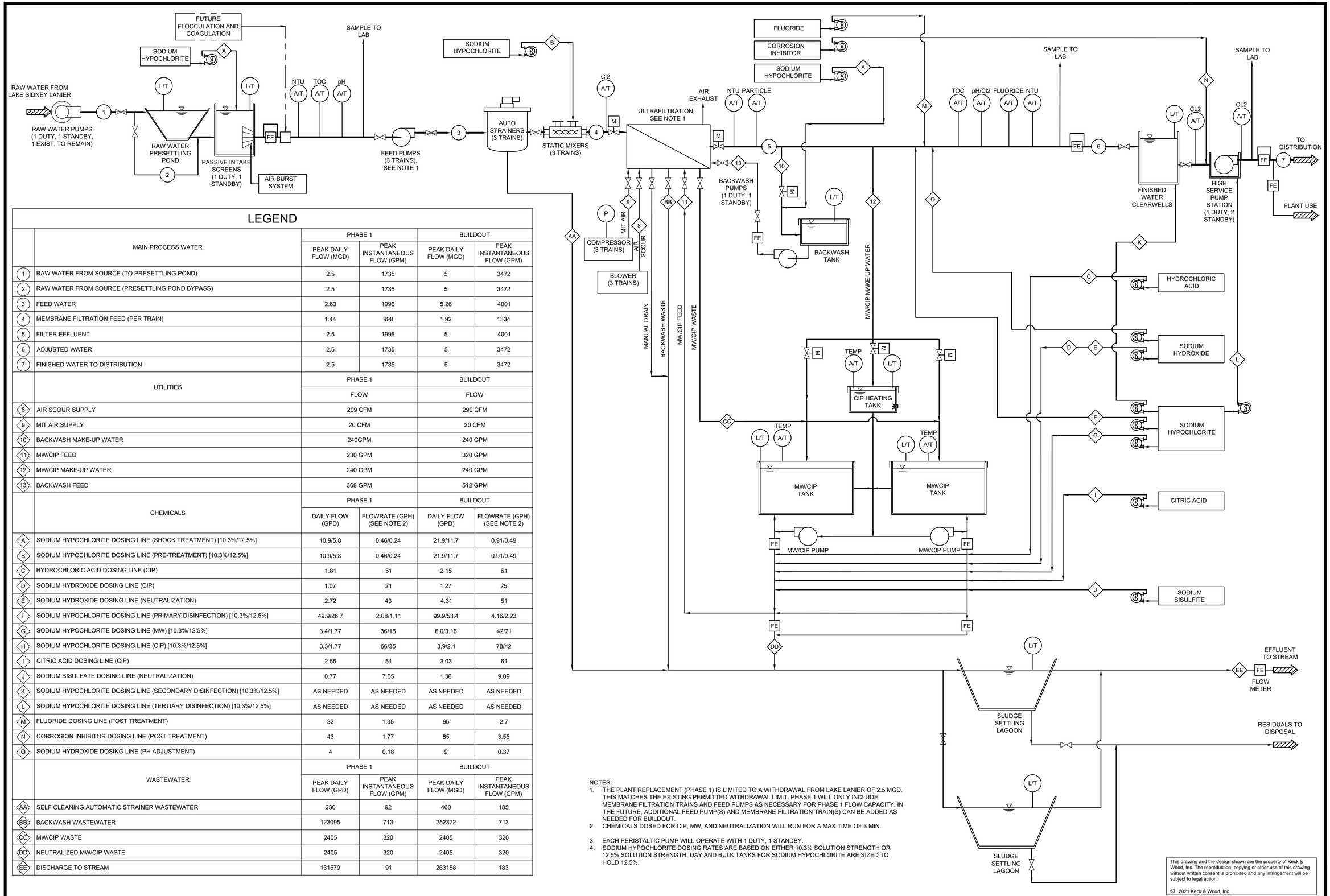
Buford Water Works Replacement
For the City of Buford, Georgia

BOUNDARY SITE SURVEY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

GEORGIA REGISTERED PROFESSIONAL No. 037813 ENGINEER JOLENE G. NORTHROP

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com



LEGEND

	MAIN PROCESS WATER	PHASE 1 PEAK DAILY FLOW (MGD)	PHASE 1 PEAK INSTANTANEOUS FLOW (GPM)	BUILDOUT PEAK DAILY FLOW (MGD)	BUILDOUT PEAK INSTANTANEOUS FLOW (GPM)
1	RAW WATER FROM SOURCE (TO PRESETTLING POND)	2.5	1735	5	3472
2	RAW WATER FROM SOURCE (PRESETTLING POND BYPASS)	2.5	1735	5	3472
3	FEED WATER	2.63	1996	5.26	4001
4	MEMBRANE FILTRATION FEED (PER TRAIN)	1.44	998	1.92	1334
5	FILTER EFFLUENT	2.5	1996	5	4001
6	ADJUSTED WATER	2.5	1735	5	3472
7	FINISHED WATER TO DISTRIBUTION	2.5	1735	5	3472

	UTILITIES	PHASE 1 FLOW	BUILDOUT FLOW
8	AIR SCOUR SUPPLY	209 CFM	290 CFM
9	MIT AIR SUPPLY	20 CFM	20 CFM
10	BACKWASH MAKE-UP WATER	240GPM	240 GPM
11	MW/CIP FEED	230 GPM	320 GPM
12	MW/CIP MAKE-UP WATER	240 GPM	240 GPM
13	BACKWASH FEED	368 GPM	512 GPM

	CHEMICALS	PHASE 1 DAILY FLOW (GPD)	PHASE 1 FLOWRATE (GPH) (SEE NOTE 2)	BUILDOUT DAILY FLOW (GPD)	BUILDOUT FLOWRATE (GPH) (SEE NOTE 2)
A	SODIUM HYPOCHLORITE DOSING LINE (SHOCK TREATMENT) [10.3%/12.5%]	10.9/5.8	0.46/0.24	21.9/11.7	0.91/0.49
B	SODIUM HYPOCHLORITE DOSING LINE (PRE-TREATMENT) [10.3%/12.5%]	10.9/5.8	0.46/0.24	21.9/11.7	0.91/0.49
C	HYDROCHLORIC ACID DOSING LINE (CIP)	1.81	51	2.15	61
D	SODIUM HYDROXIDE DOSING LINE (CIP)	1.07	21	1.27	25
E	SODIUM HYDROXIDE DOSING LINE (NEUTRALIZATION)	2.72	43	4.31	51
F	SODIUM HYPOCHLORITE DOSING LINE (PRIMARY DISINFECTION) [10.3%/12.5%]	49.9/26.7	2.08/1.11	99.9/53.4	4.16/2.23
G	SODIUM HYPOCHLORITE DOSING LINE (MW) [10.3%/12.5%]	3.4/1.77	36/18	6.0/3.16	42/21
H	SODIUM HYPOCHLORITE DOSING LINE (CIP) [10.3%/12.5%]	3.3/1.77	66/35	3.9/2.1	78/42
I	CITRIC ACID DOSING LINE (CIP)	2.55	51	3.03	61
J	SODIUM BISULFATE DOSING LINE (NEUTRALIZATION)	0.77	7.65	1.36	9.09
K	SODIUM HYPOCHLORITE DOSING LINE (SECONDARY DISINFECTION) [10.3%/12.5%]	AS NEEDED	AS NEEDED	AS NEEDED	AS NEEDED
L	SODIUM HYPOCHLORITE DOSING LINE (TERTIARY DISINFECTION) [10.3%/12.5%]	AS NEEDED	AS NEEDED	AS NEEDED	AS NEEDED
M	FLUORIDE DOSING LINE (POST TREATMENT)	32	1.35	65	2.7
N	CORROSION INHIBITOR DOSING LINE (POST TREATMENT)	43	1.77	85	3.55
O	SODIUM HYDROXIDE DOSING LINE (PH ADJUSTMENT)	4	0.18	9	0.37

	WASTEWATER	PHASE 1 PEAK DAILY FLOW (GPD)	PHASE 1 PEAK INSTANTANEOUS FLOW (GPM)	BUILDOUT PEAK DAILY FLOW (MGD)	BUILDOUT PEAK INSTANTANEOUS FLOW (GPM)
AA	SELF CLEANING AUTOMATIC STRAINER WASTEWATER	230	92	460	185
BB	BACKWASH WASTEWATER	123095	713	252372	713
CC	MW/CIP WASTE	2405	320	2405	320
DD	NEUTRALIZED MW/CIP WASTE	2405	320	2405	320
EE	DISCHARGE TO STREAM	131579	91	263158	183

NOTES:
1. THE PLANT REPLACEMENT (PHASE 1) IS LIMITED TO A WITHDRAWAL FROM LAKE LANIER OF 2.5 MGD. THIS MATCHES THE EXISTING PERMITTED WITHDRAWAL LIMIT. PHASE 1 WILL ONLY INCLUDE MEMBRANE FILTRATION TRAINS AND FEED PUMPS AS NECESSARY FOR PHASE 1 FLOW CAPACITY. IN THE FUTURE, ADDITIONAL FEED PUMP(S) AND MEMBRANE FILTRATION TRAIN(S) CAN BE ADDED AS NEEDED FOR BUILDOUT.
2. CHEMICALS DOSED FOR CIP, MW, AND NEUTRALIZATION WILL RUN FOR A MAX TIME OF 3 MIN.
3. EACH PERISTALTIC PUMP WILL OPERATE WITH 1 DUTY, 1 STANDBY.
4. SODIUM HYPOCHLORITE DOSING RATES ARE BASED ON EITHER 10.3% SOLUTION STRENGTH OR 12.5% SOLUTION STRENGTH. DAY AND BULK TANKS FOR SODIUM HYPOCHLORITE ARE SIZED TO HOLD 12.5%.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

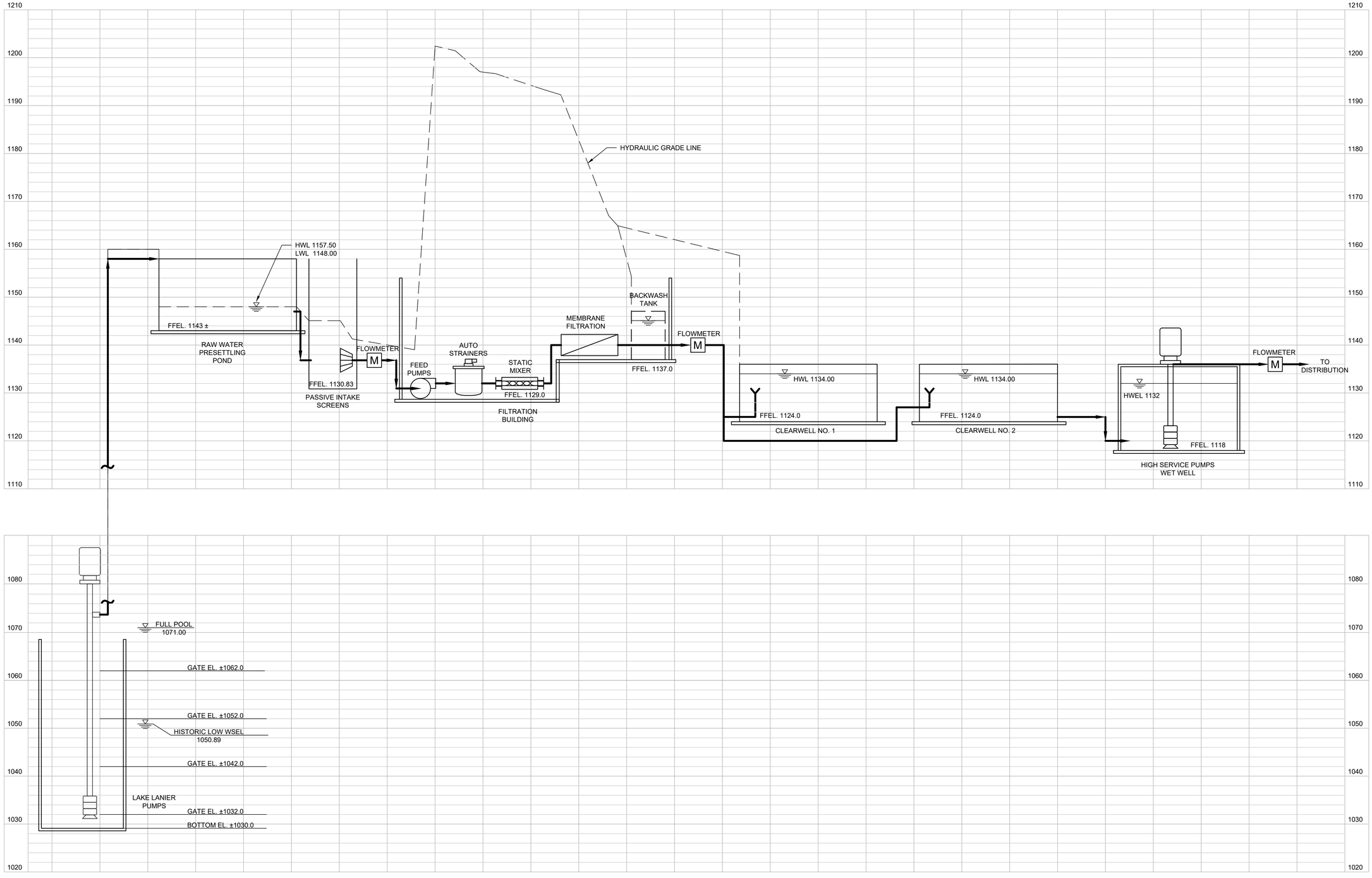
PROCESS FLOW DIAGRAM

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\PROCESS FLOW DIAGRAM.dwg



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

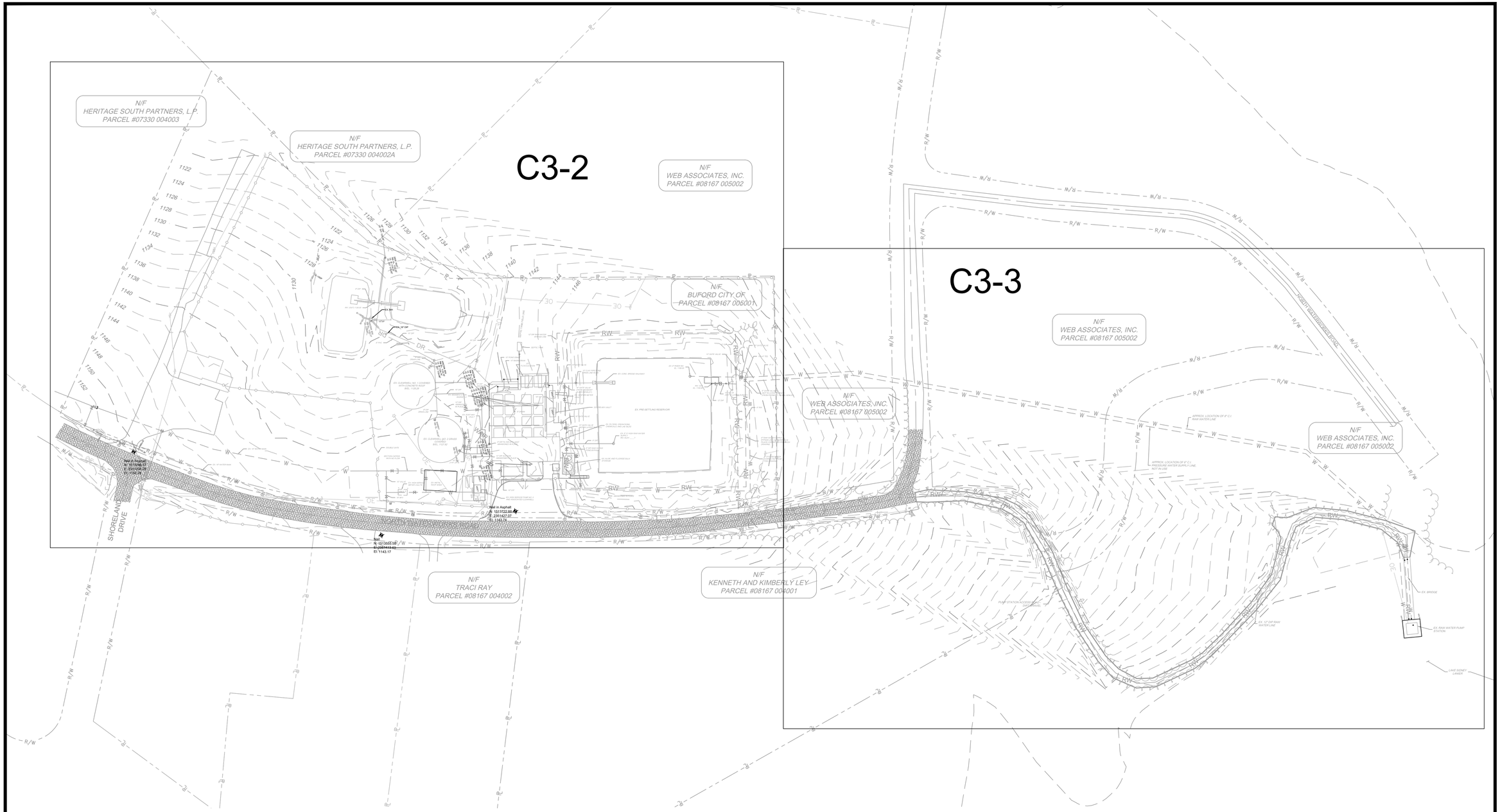
HYDRAULIC PROFILE

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\HYDRAULIC PROFILE.dwg



NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

0 60' 120'

SCALE: 1" = 60'

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

No. 037813
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

OVERALL EXISTING SITE PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:
Jolene Northrop, P.E.

Drawn By: TLC
Checked By: JGN

Date: 04/14/2021

Scale: As Shown

Project No.:
170110.00

Drawing No.:
C3-1


N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004003
N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004002A
N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002
N/F
BUFORD CITY OF
PARCEL #08167 005001
MATCH LINE, SEE DWG. C3-3
EX. CLEARWELL NO. 1 COVERED WITH CONCRETE ROOF B/EL. 1128.28
EX. CLEARWELL NO. 2 GRASS COVERED B/EL. 1127.82
EX. PRE-SETTLING RESERVOIR
EX. FILTERS, OPERATIONS, CHEMICALS, AND LAB. BLDG
EX. ALUM. AND FLUORIDE BULK STORAGE
EX. METAL ROOF SHED
EX. HIGH SERVICE METER VAULTS
EX. HIGH SERVICE PUMP NO. 5 AND ASSOCIATED CLEARWELL
EX. CONC. BRIDGE WALKWAY
EX. 10" WATER MAIN
DOUBLE GATE
SECTION CAPPED WITH NO FLOW
Nail in Asphalt
N: 1513286.57
E: 2351236.29
El: 1150.28
Nail in Asphalt
N: 1513722.88
E: 2351427.07
El: 1143.74
Nail
N: 1513555.55
E: 2351413.63
El: 1143.17
SHORELAND DRIVE
NORTH WATERWORKS ROAD
0
30'
60'
SCALE: 1" = 30'

NOTES:
1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EXISTING BUFORD WATER WORKS SITE PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: C3-2

MATCH LINE, SEE DWG. C3-2

SEYMOUR CIRCLE

NORTH WATERWORKS ROAD

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

APPROX. LOCATION OF 8" C.I. RAW WATER LINE

APPROX. LOCATION OF 6" C.I. PRESSURE WATER SUPPLY LINE, NOT IN USE

PUMP STATION ACCESS ROAD DIRT/GRAVEL

EX. 12" DIP RAW WATER LINE

EX. BRIDGE

EX. RAW WATER PUMP STATION

LAKE SIDNEY LANIER

NOTES:
1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

0 30' 60'
SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

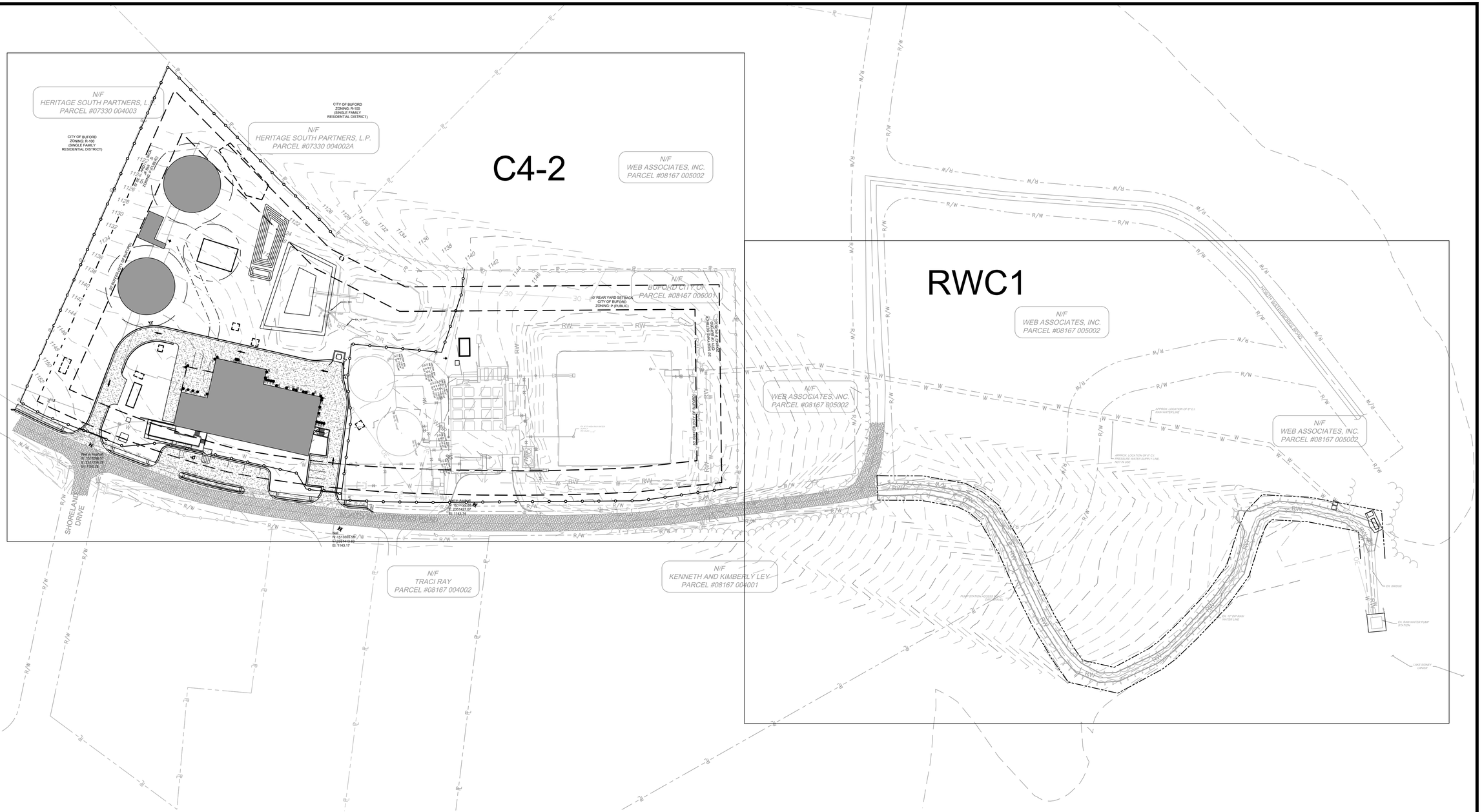
EXISTING BUFORD RWPS & RAW WATER PIPE LINE SITE PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C3-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



NOTES:
1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

0 20' 40'
SCALE: 1" = 20'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

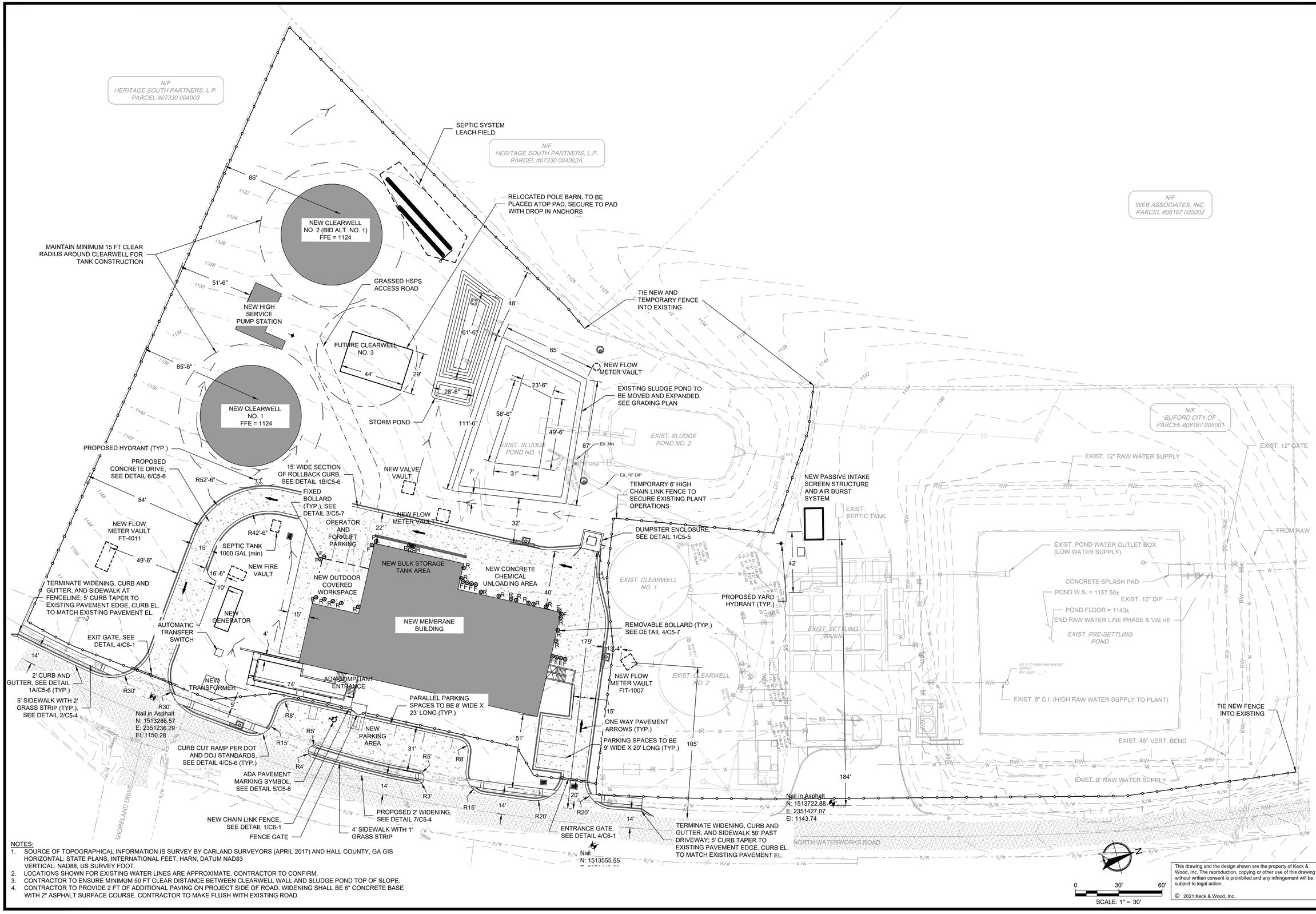
Buford Water Works Replacement
For the City of Buford, Georgia

OVERALL SITE LAYOUT PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:	Jolene Northrop, P.E.
Drawn By:	TLC
Checked By:	JGN
Date:	04/14/2021
Scale:	As Shown
Project No.:	170110.00
Drawing No.:	C4-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
3. CONTRACTOR TO ENSURE MINIMUM 50 FT CLEAR DISTANCE BETWEEN CLEARWELL WALL AND SLUDGE POND TOP OF SLOPE.
4. CONTRACTOR TO PROVIDE 2 FT OF ADDITIONAL PAVING ON PROJECT SIDE OF ROAD. WIDENING SHALL BE 6" CONCRETE BASE WITH 2" ASPHALT SURFACE COURSE. CONTRACTOR TO MAKE FLUSH WITH EXISTING ROAD.

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

BUFORD WATER WORKS SITE LAYOUT PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-2

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004003

POTENTIAL CONTRACTOR'S STORED MATERIALS AREA

CITY OF BUFORD
ZONING: R-100
(SINGLE FAMILY
RESIDENTIAL DISTRICT)

20' SIDE YARD SETBACK
CITY OF BUFORD
ZONING: P (PUBLIC)

50' BUFFER (CITY OF BUFORD)

POTENTIAL
CONTRACTOR'S STORED
MATERIALS AREA

CITY OF BUFORD
ZONING: R-100
(SINGLE FAMILY
RESIDENTIAL DISTRICT)

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004002A

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
BUFORD CITY OF
PARCEL #08167 005001

40' REAR YARD SETBACK
CITY OF BUFORD
ZONING: P (PUBLIC)

SOIL STOCKPILE
AREA

20' SIDE YARD SETBACK
CITY OF BUFORD
ZONING: P (PUBLIC)

50' BUFFER (CITY OF BUFORD)

RAW WATER SETTLING POND

POTENTIAL
CONTRACTOR'S FIELD
OFFICE AREA

EX. MH

EX. 16" DIP

CONCRETE EXPANSION
JOINT, SEE DETAIL
6/C5-01 (TYP.)

CONCRETE CONTROL
JOINT (TYP.)

Nail in Asphalt
N: 1513286.57
E: 2351236.29
El: 1150.28

Nail in Asphalt
N: 1513722.88
E: 2351427.07
El: 1143.74

Nail
N: 1513555.55
E: 2351413.63

SHORELAND DRIVE

NORTH WATERWORKS ROAD

NOTES:
1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. PROVIDE CONTROL JOINTS 16' APART. PLACE EXPANSION JOINTS 48' APART.
3. PROVIDE EXPANSION JOINTS AT ALL AREAS WHERE CONCRETE PAVING WILL BE ADJACENT TO NERTICAL FACES OF OTHER STRUCTURAL COMPONENTS AND WHERE ALL PAVING ABUTTS NEW CONCRETE CURB AND GUTTER.

SCALE: 1" = 30'

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

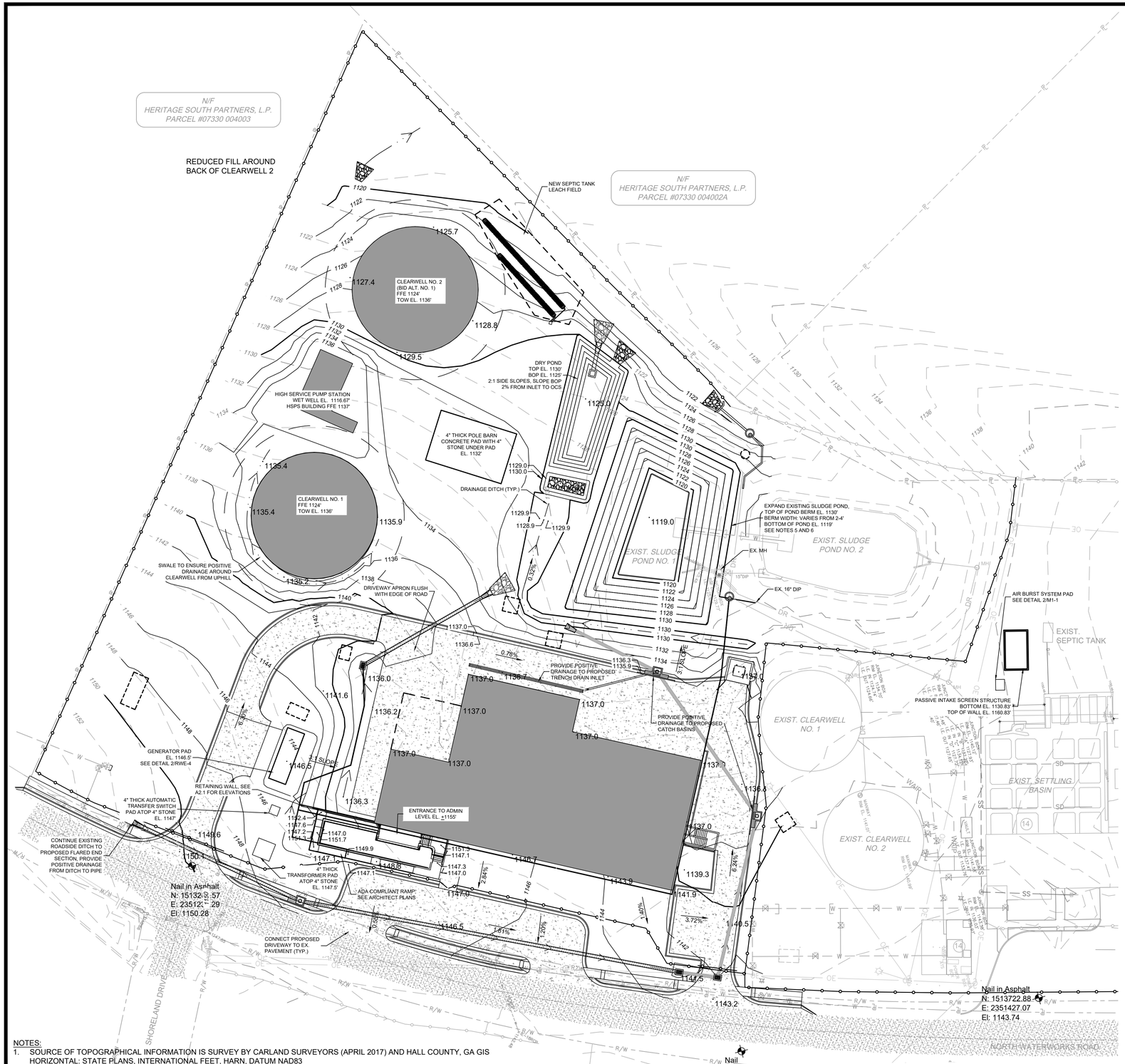
Buford Water Works Replacement
For the City of Buford, Georgia

OVERALL ZONING AND TEMPORARY CONTRACTOR FACILITIES AREA

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-3



NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
3. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING AT ALL POINTS OF FINISHED GRADE.
4. PROVIDE RAMP SLOPE DOES NOT EXCEED 1:12 MAX SLOPE. PROVIDE APPROPRIATE LANDING OF 60"Lx36"W AFTER NO MORE THAN 30" VERTICAL RISE.
5. OWNER HAS DIVERTED PROCESS FLOWS AWAY FROM SLUDGE POND NO. 1 AS OF NOV. 16, 2020. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF SOLIDS AND WORK ASSOCIATED WITH SLUDGE POND 1 WITH THE OWNER AND THE ENGINEER. THIS WORK SHALL NOT COMMENCE UNTIL APPROVAL BY ENGINEER IS RECEIVED.
6. WORK TO MODIFY SLUDGE POND NO. 1 SHALL BE COMPLETED SO THAT THE POND CAN BE PLACED BACK INTO SERVICE WITHIN 120 CALENDAR DAYS OF THE TIME APPROVAL TO BEGIN WORK ON THE POND IS ISSUED.

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

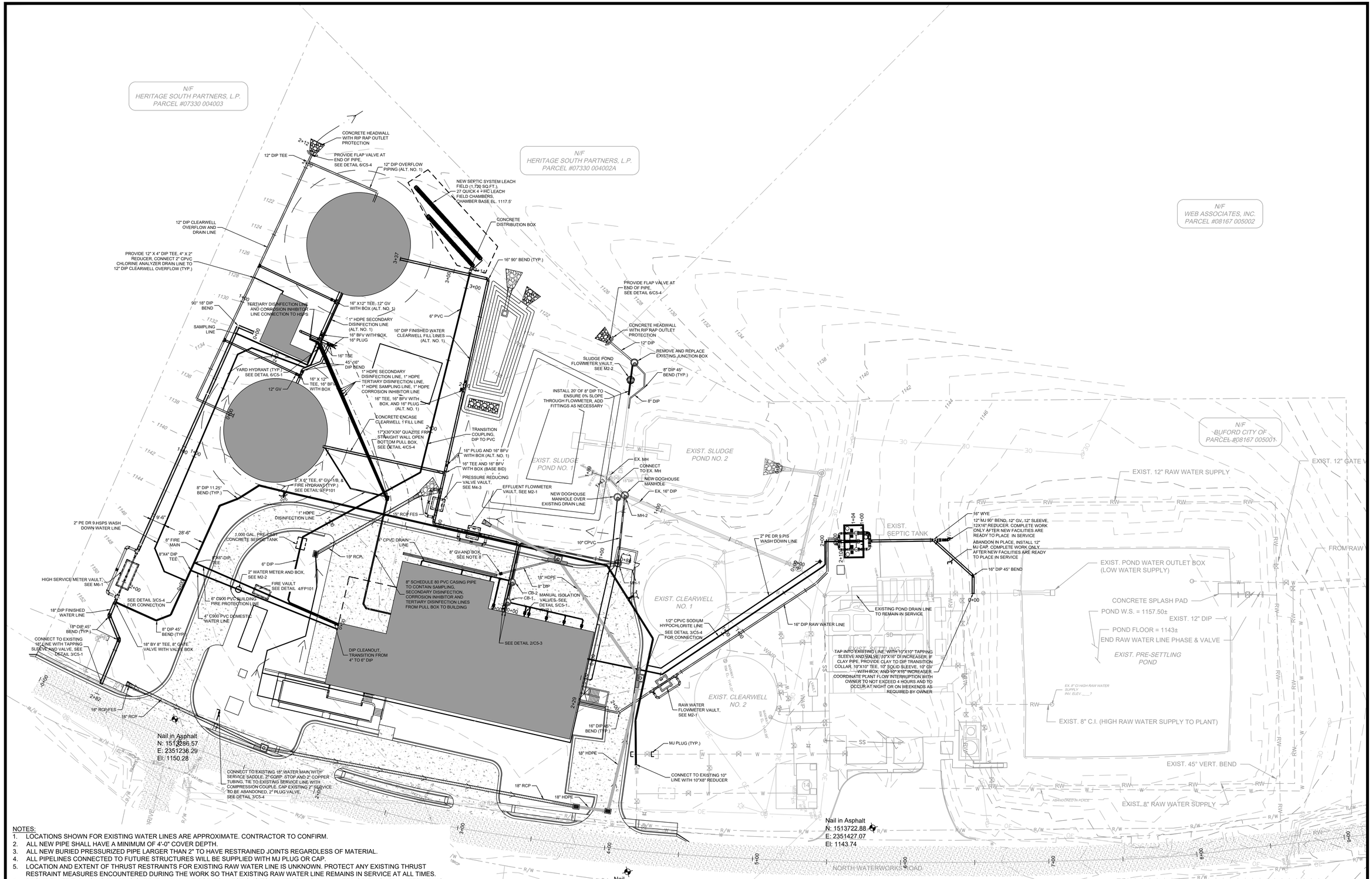
SITE GRADING PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



NOTES:

1. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
2. ALL NEW PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER DEPTH.
3. ALL NEW BURIED PRESSURIZED PIPE LARGER THAN 2" TO HAVE RESTRAINED JOINTS REGARDLESS OF MATERIAL.
4. ALL PIPELINES CONNECTED TO FUTURE STRUCTURES WILL BE SUPPLIED WITH MJ PLUG OR CAP.
5. LOCATION AND EXTENT OF THRUST RESTRAINTS FOR EXISTING RAW WATER LINE IS UNKNOWN. PROTECT ANY EXISTING THRUST RESTRAINT MEASURES ENCOUNTERED DURING THE WORK SO THAT EXISTING RAW WATER LINE REMAINS IN SERVICE AT ALL TIMES.
6. PROVIDE WET TAP USING TAPPING SLEEVE AND VALVE FOR CONNECTIONS TO ANY EXISTING RAW WATER OR FINISHED WATER PIPING.
7. ALL PIPING TO CLEARWELL 2 (ALT. NO. 1) PIPING SHOULD BE SUPPLIED WITH MJ CAP IF ALT NOT SELECTED.
8. GATE VALVE ANE TRAFFIC RATED.
9. ALL NON-METALLIC UNDERGROUND PIPE TO INCLUD BOX TO BDE PIPE DETECTION WIRE PER SPECIFICATION 460506.
10. CONTRACTOR TO COORDINATE YARD PIPING WITH PLUMBING DRAWINGS, MECHNICAL DRAWINGS, AND STRUCTURAL DRAWINGS FOR COORDINATION OF PIPING LOCATIONS AND WALL SLEEVES AS NECESSARY.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

SITE YARD PIPING PLAN

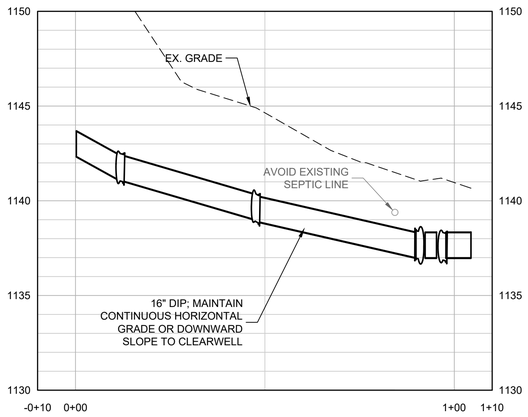
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: JGN
Date: 04/14/2021
Scale: As Shown

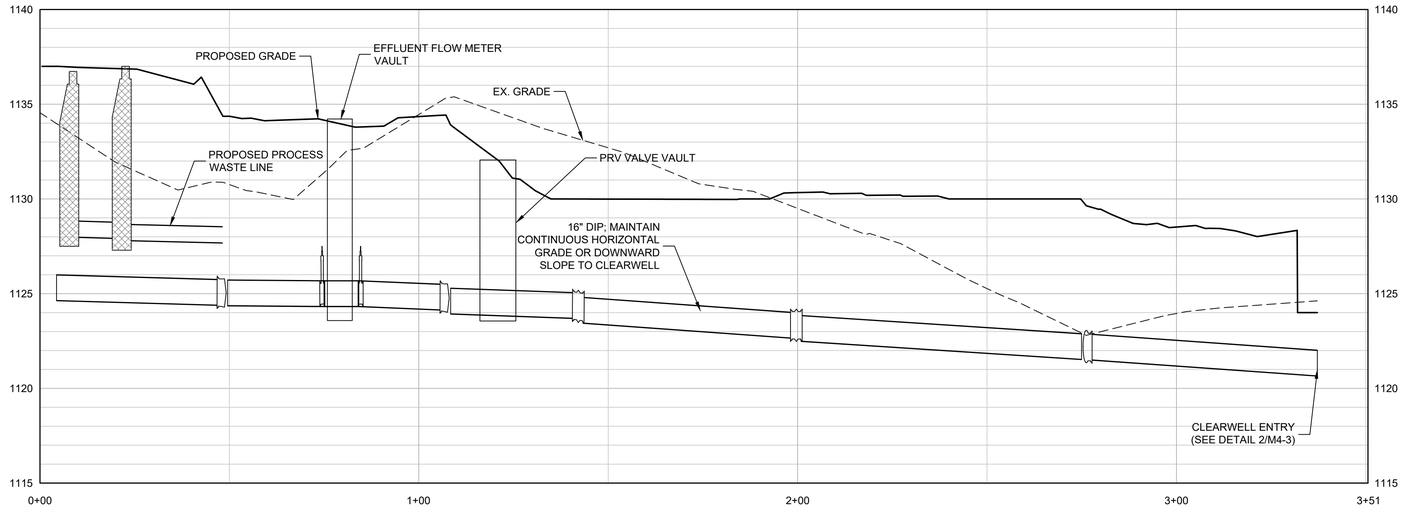
Project No.: 170110.00
Drawing No.: C4-5

SCALE: 1" = 30'

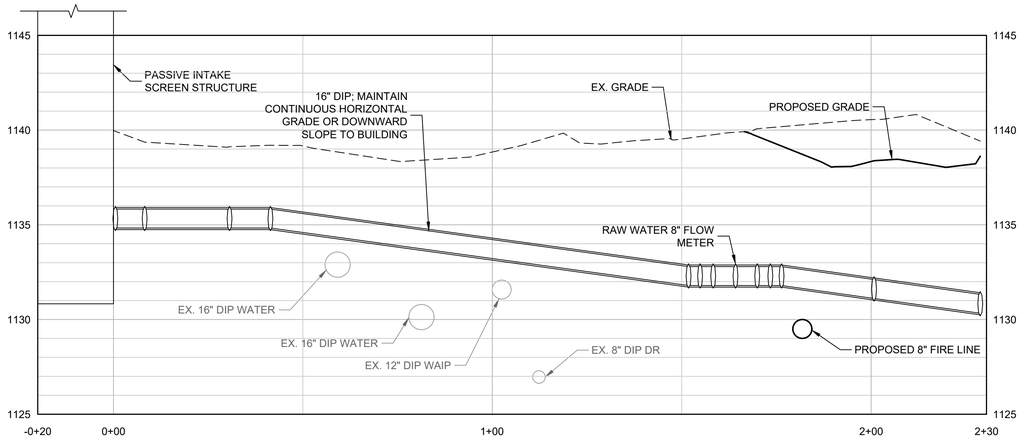
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



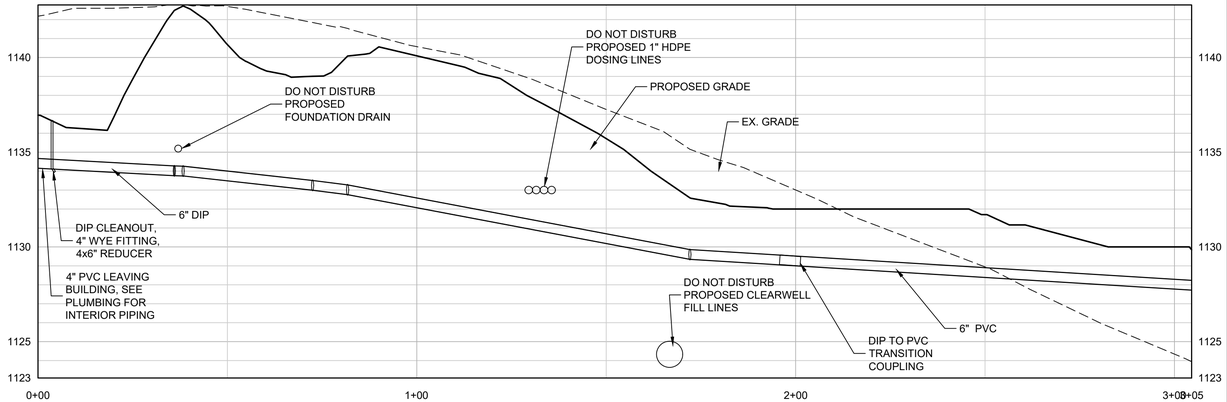
POND TO PASSIVE INTAKE SCREEN



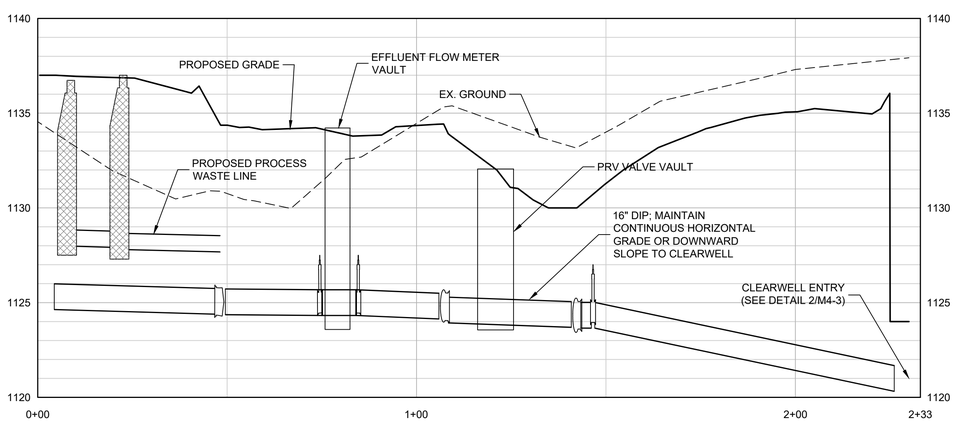
BUILDING TO CLEARWELL NO. 2



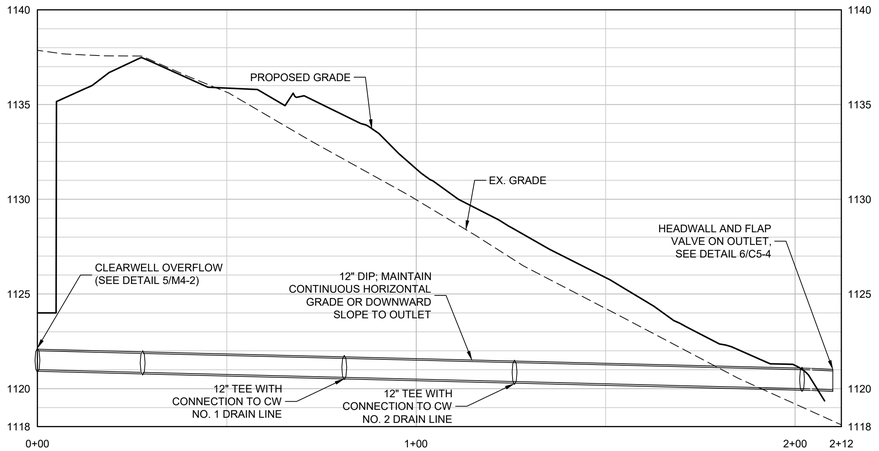
PASSIVE INTAKE SCREEN TO BUILDING



SEPTIC LINE



BUILDING TO CLEARWELL NO. 1



CLEARWELL OVERFLOW

NOTES:
1. ALL NEW DUCTILE IRON PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER DEPTH.

HORIZ. SCALE: 1" = 20'

VERT. SCALE: 1" = 4'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

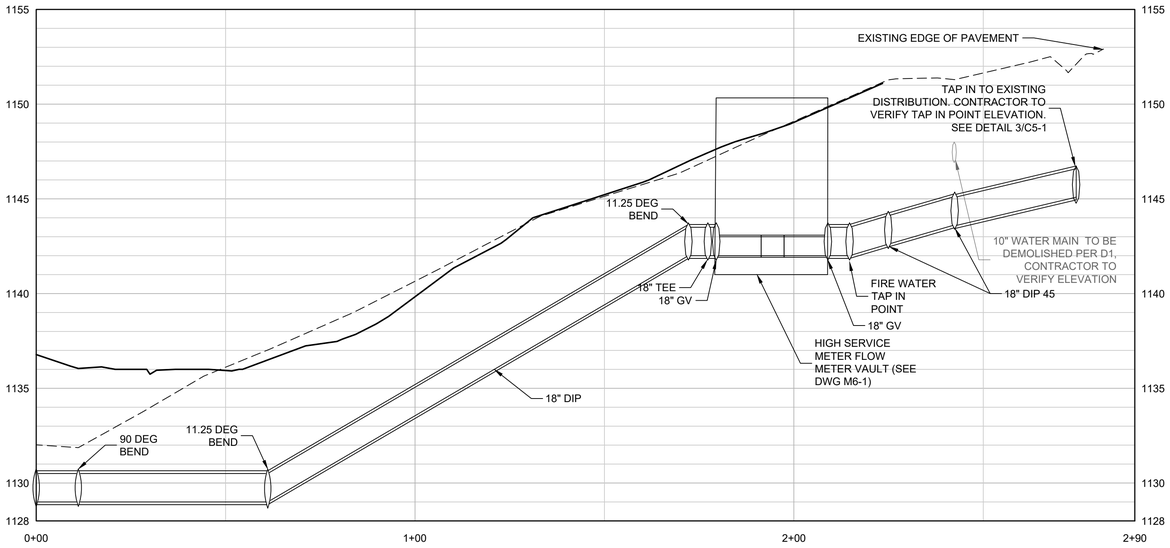
SITE PIPING PROFILE, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

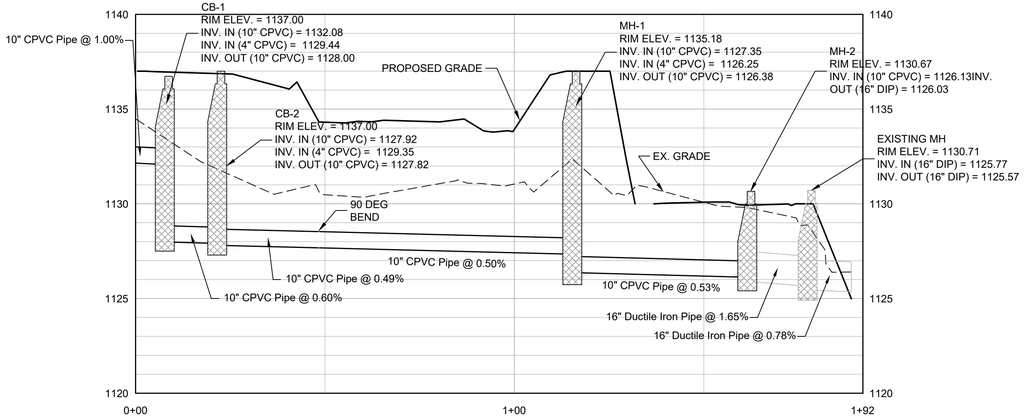
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-6

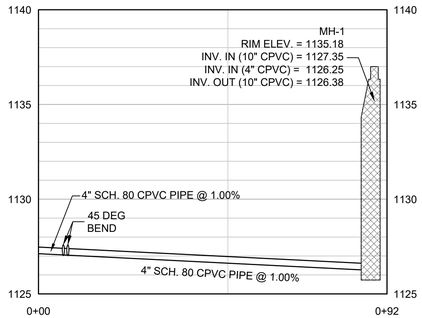
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



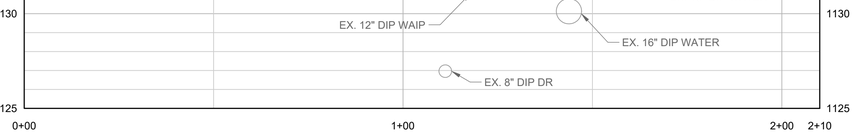
HSPS TO DISTRIBUTION



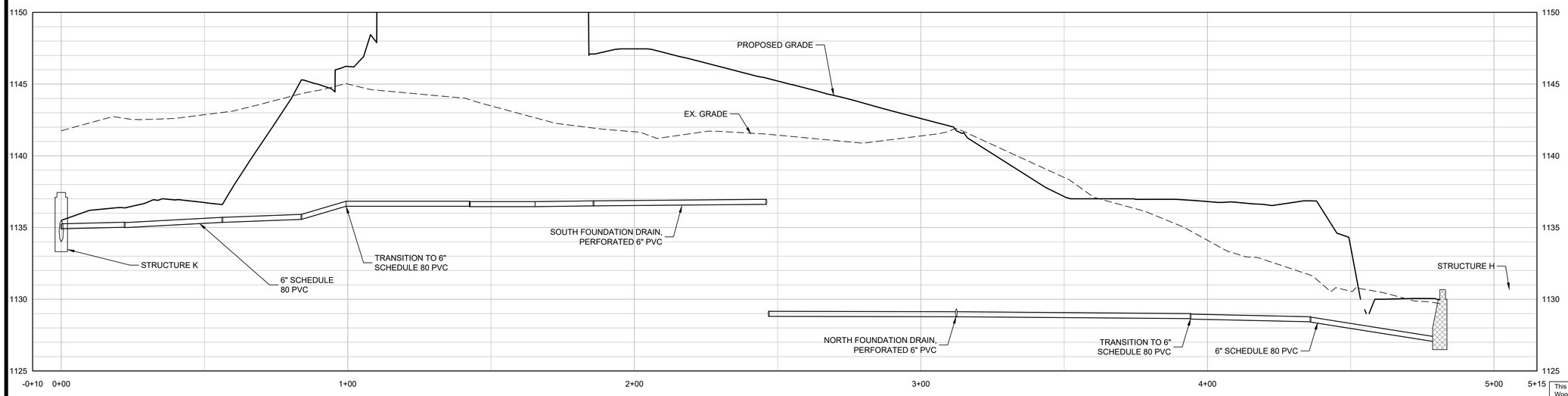
WASTEWATER TO SLUDGE PONDS



PROCESS PIT WASTEWATER TO MH1



SODIUM HYPOCHLORITE TO SCREEEN STRUCTURE



FOUNDATION DRAIN LINE

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

SITE PIPING PROFILE, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

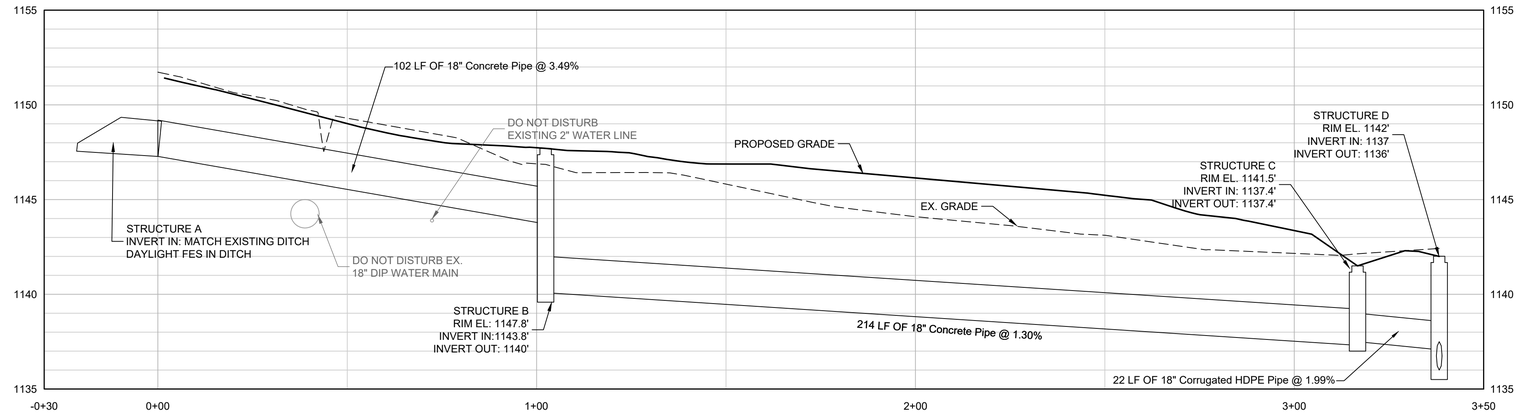
0 20' 40'
HORIZ. SCALE: 1" = 20'

0 4' 8'
VERT. SCALE: 1" = 4'

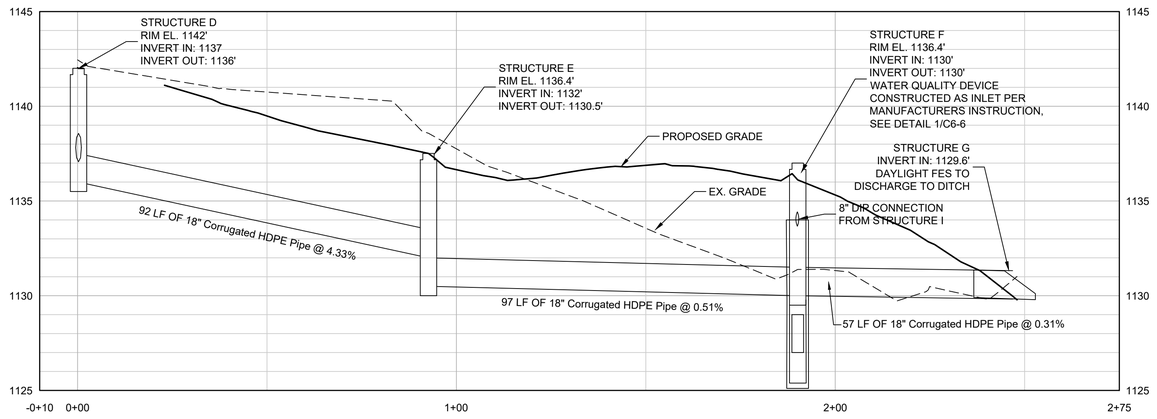
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-7

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redx.dwg



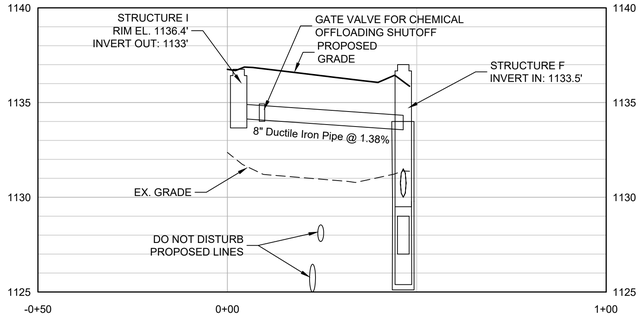
STORM PROFILE 1



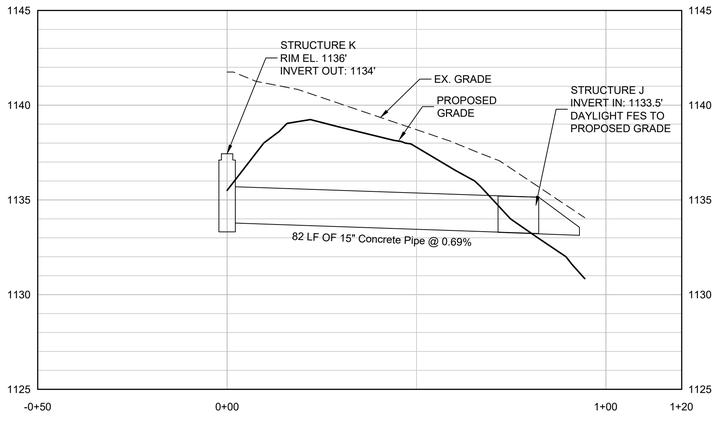
STORM PROFILE 2

25-YEAR PIPE CHART

Inlet ID	Pipe Size (in)	Q 25 yr (cfs)	Inv Elev Dn (ft)	HGL Dn (ft)	Depth Dn (ft)	Area Dn (sq ft)	Veloc Dn (ft/s)	Vel Hd Dn (ft/s)	EGL Dn (ft)	Line Length (ft)	Inv Elev Up (ft)	HGL Up (ft)	Depth Up (ft)	Area Up (sq ft)	Veloc Up (ft/s)	Vel Hd Up (ft/s)	EGL Up (ft)
A	18	3.47	1143.92	1144.33	0.41	0.39	8.85	0.28	1144.61	102.37	1147.49	1148.2	0.71	0.82	4.21	0.28	1148.48
B	18	3.90	1137.51	1138.32	0.81	0.89	4.00	0.30	1138.62	214.32	1140.29	1141.05	0.76	0.89	4.38	0.30	1141.34
C	18	4.59	1137.07	1137.62	0.55	0.59	7.84	0.33	1137.95	21.28	1137.50	1138.32	0.82	0.99	4.63	0.33	1138.66
D	18	4.76	1132.00	1132.46	0.46	0.46	10.47	0.34	1132.80	92.38	1136.00	1136.84	0.84	1.02	4.69	0.34	1137.18
E	18	4.96	1130.00	1131.17	1.17	1.04	3.36	0.35	1131.52	97.47	1130.50	1131.36	0.86	1.04	4.76	0.35	1131.71
F	18	5.10	1129.83	1130.87	1.04	1.31	3.94	0.24	1131.11	56.73	1130.00	1131.04	1.04	1.31	3.93	0.24	1131.28
K	15	1.15	1133.44	1133.84	0.4	0.38	3.04	0.14	1133.99	82.26	1134.00	1134.40	0.40	0.38	3.04	0.14	1134.55



STORM PROFILE 3



STORM PROFILE 4

0 20' 40'
HORIZ. SCALE: 1" = 20'

0 4' 8'
VERT. SCALE: 1" = 4'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

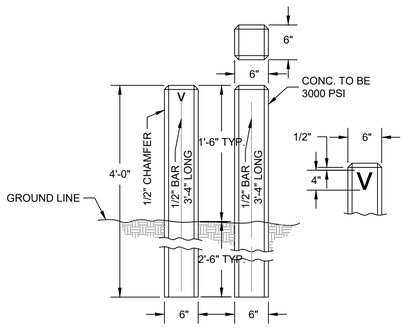
SITE PIPING PROFILE, SHEET 3

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

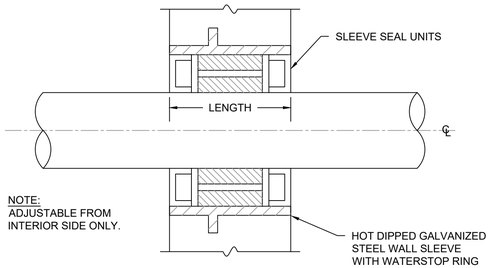
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C4-8

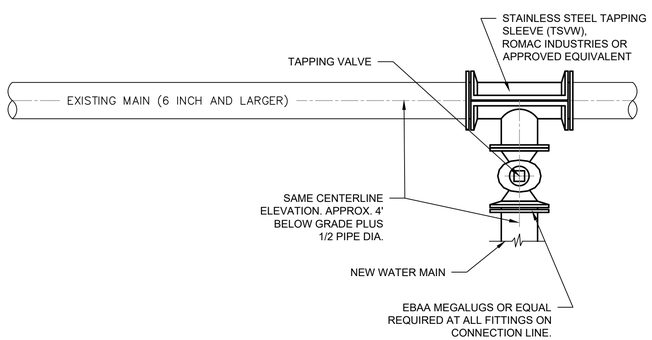
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



1 TYPICAL WATER VALVE MARKER - N.T.S.

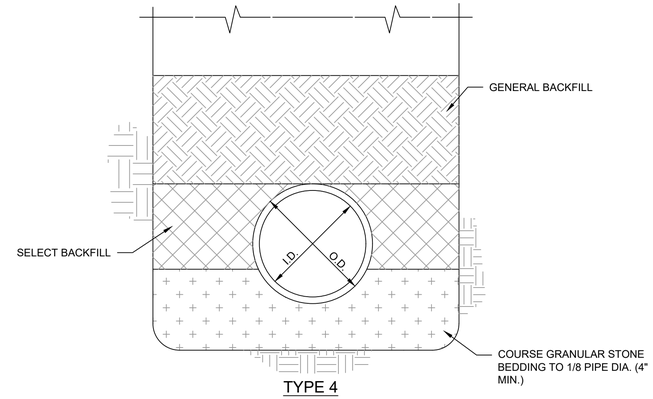


2 PIPE SLEEVE SEAL DETAIL - N.T.S.



NOTES:
1. MJ TEE AND SLEEVE MAY BE USED IN LIEU OF TAPPING SLEEVE AND VALVE IF APPROVED BY THE ENGINEER AND OWNER AND IF THERE ARE A SUFFICIENT AMOUNT OF EXISTING LINE VALVES.

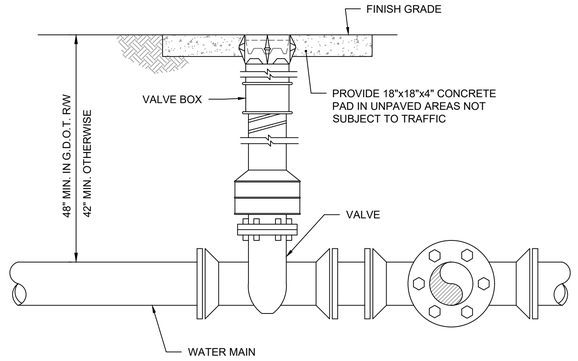
3 TYPICAL CONNECTION TO EXISTING MAIN - N.T.S.



TYPE 4

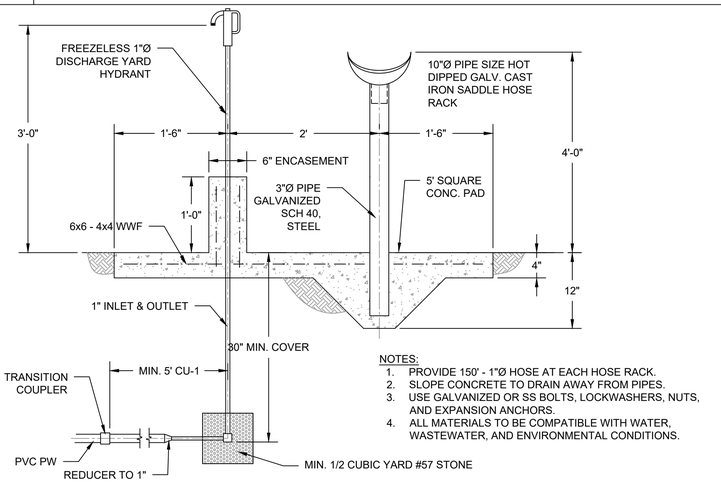
PIPE BEDDED IN COARSE GRANULAR STONE (#57 STONE) TO DEPTH OF 1/8 PIPE DIA. (4" MIN.) WITH BACKFILL COMPACTED TO TOP OF PIPE (APPROX. 80% STANDARD PROCTOR)

4 DUCTILE IRON PIPE BEDDING - N.T.S.



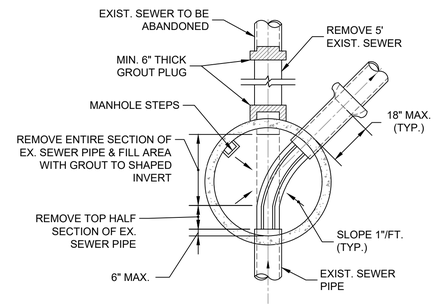
NOTE:
ALL VALVE BOXES UNDER THE DRIVEWAY TO BE TRAFFIC RATED

5 BURIED VALVE - N.T.S.

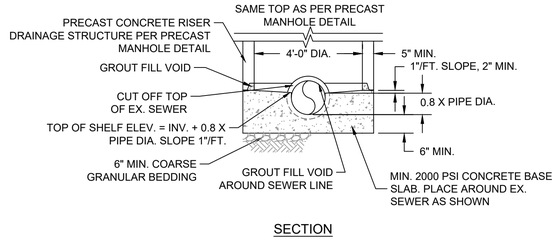


NOTES:
1. PROVIDE 150' - 1"Ø HOSE AT EACH HOSE RACK.
2. SLOPE CONCRETE TO DRAIN AWAY FROM PIPES.
3. USE GALVANIZED OR SS BOLTS, LOCKWASHERS, NUTS, AND EXPANSION ANCHORS.
4. ALL MATERIALS TO BE COMPATIBLE WITH WATER, WASTEWATER, AND ENVIRONMENTAL CONDITIONS.

6 YARD HYDRANT AND HOSE RACK DETAIL - N.T.S.

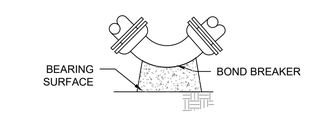


PLAN

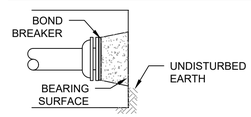


SECTION

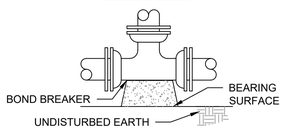
7 (DOGHOUSE) MANHOLE OVER EXISTING SEWER - N.T.S.



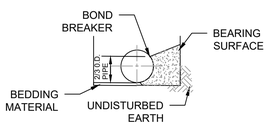
22 1/2°, 45° AND 90° BENDS



DEAD END



TEE



TYPICAL CROSS SECTION

MINIMUM BEARING SURFACE AREA (SQ. FT.)				
PIPE SIZE	BENDS			TEE OR DEAD END
	22.5°	45°	90°	
4"	1.00	1.00	2.00	1.50
6"	1.25	2.25	4.75	3.00
8"	2.00	4.00	8.20	5.25
12"	4.25	8.25	16.75	11.00
16"	6.50	12.50	23.00	16.50
20"	10.00	19.50	35.50	25.00

NOTES:
1. BEARING SURFACES IN CHART ARE MINIMUM REQUIRED AREAS BASED ON THE FOLLOWING:
   A. SOIL BEARING CAPACITY = 3000 PSF
   B. INTERNAL PIPE PRESSURE = 150 PSI + WATER HAMMER OF 120 PSI FOR 4" - 8" SIZE, 110 PSI FOR 12" SIZE, AND 70 PSI FOR 16" AND 20" SIZES.
2. ACTUAL SOIL AND INSTALLATION CONDITIONS VARY AND MAY REQUIRE ADDITIONAL ANCHORAGE. IT IS THE CONTRACTORS RESPONSIBILITY TO RECOGNIZE SUCH VARIANCES AND ADDITIONAL REQUIREMENTS AND TO PROVIDE APPROPRIATE ADDITIONAL ANCHORAGE.
3. PROVIDE CONCRETE REACTION OR THRUST BACKING OF A MIX NOT LEANER THAN 1 CEMENT, 2 - 1/2 SAND, 5 STONE, HAVING COMPRESSIVE STRENGTH OF NOT LESS THAN 2,000 PSI. PLACE BACKING BETWEEN SOLID GROUND AND THE FITTING TO BE ANCHORED. LOCATE THE BACKING SO THAT THE PIPE AND THE FITTING JOINT WILL BE ACCESSIBLE FOR REPAIRS. MECHANICAL JOINT RETAINER GLANDS OF ADEQUATE STRENGTH TO PREVENT MOVEMENT OR OTHER SUITABLE MEANS MAY BE USED INSTEAD OF CONCRETE BACKING.

8 CONCRETE THRUST RESTRAINT - N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

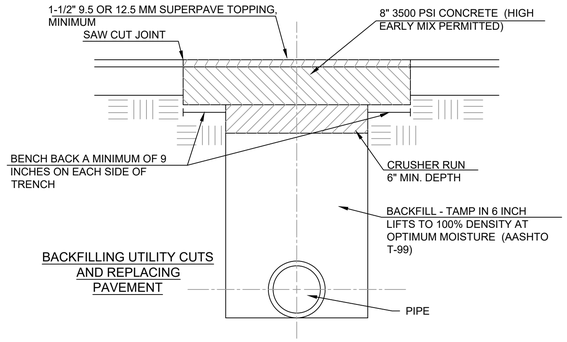
CIVIL DETAILS, SHEET 1

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

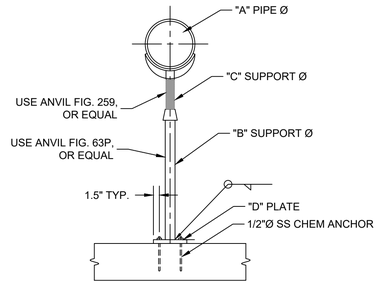
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C5-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\PIPING DETAILS.dwg

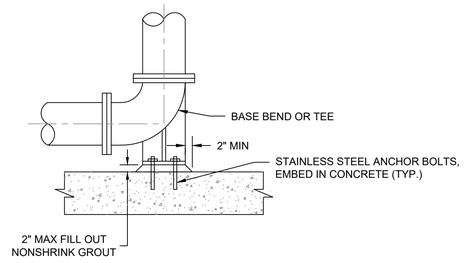


1 BACKFILLING UTILITY CUTS AND REPLACING PAVEMENT

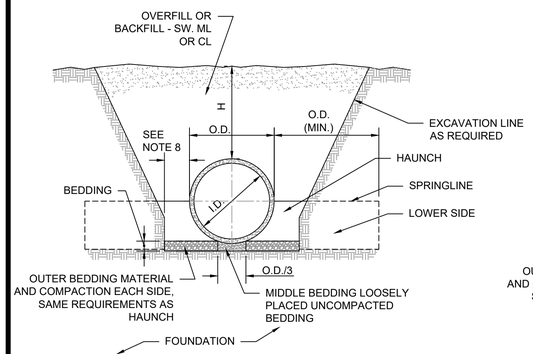


"A" PIPE SIZE	"B"	"C"	"D" PLATE SIZE
4" - 16"	3	3	3/8" x 8" x 8"
18" - 36"	4	4	3/8" x 8" x 8"

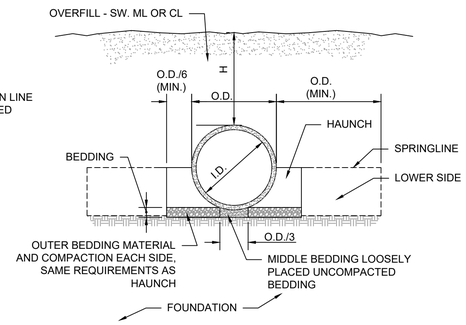
2 TYPICAL ADJUSTABLE PIPE SUPPORT - N.T.S.



4 TYPICAL BASE, CONCRETE SUPPORT - N.T.S.



TRENCH INSTALLATION



EMBANKMENT INSTALLATION

NOTES:
1. COMPACTION AND SOIL SYMBOLS - I. E. "95% CATEGORY I" - REFERS TO CATEGORY I SOIL MATERIAL WITH MINIMUM STANDARD PROCTOR COMPACTION OF 95%. SEE TABLE 1 FOR EQUIVALENT MODIFIED PROCTOR VALUES.
2. SOIL IN THE OUTER BEDDING, HAUNCH, AND LOWER SIDE ZONES, EXCEPT UNDER THE MIDDLE 1/3 OF THE PIPE, SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE MAJORITY OF SOIL IN THE OVERFILL ZONE.
3. FOR TRENCHES, TOP ELEVATION SHALL BE NO LOWER THAN 0.1 H BELOW FINISHED GRADE OR, FOR ROADWAYS, ITS TOP SHALL BE NO LOWER THAN AN ELEVATION OF 1 FOOT BELOW THE BOTTOM OF THE PAVEMENT BASE MATERIAL.
4. FOR TRENCHES, WIDTH SHALL BE WIDER THAN SHOWN IF REQUIRED FOR ADEQUATE SPACE TO ATTAIN THE SPECIFIED COMPACTION IN THE HAUNCH AND BEDDING ZONES.
5. FOR TRENCH WALLS THAT ARE WITHIN 10 DEGREES OF VERTICAL, THE COMPACTION OR FIRMNESS OF THE SOIL IN THE TRENCH WALLS AND LOWER SIDE ZONE NEED NOT BE CONSIDERED.
6. FOR TRENCH WALLS WITH GREATER THAN 10 DEGREE SLOPES THAT CONSIST OF EMBANKMENT, THE LOWER SIDE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS SPECIFIED FOR THE SOIL IN THE BACKFILL ZONE.
7. SUBTRENCHES
   - 7.1 A SUBTRENCH IS DEFINED AS A TRENCH WITH ITS TOP BELOW FINISHED GRADE BY MORE THAN 0.1 H OR, FOR ROADWAYS, ITS TOP IS AT AN ELEVATION LOWER THAN 1 FT BELOW THE BOTTOM OF THE PAVEMENT BASE MATERIAL.
   - 7.2 THE MINIMUM WIDTH OF A SUBTRENCH SHALL BE 1.33 O.D. OR WIDER IF REQUIRED FOR ADEQUATE SPACE TO ATTAIN THE SPECIFIED COMPACTION IN THE HAUNCH AND BEDDING ZONES.
   - 7.3 FOR SUBTRENCHES WITH WALLS OF NATURAL SOIL, ANY PORTION OF THE LOWER SIDE ZONE IN THE SUBTRENCH WALL SHALL BE AT LEAST AS FIRM AS AN EQUIVALENT SOIL PLACED TO THE COMPACTION REQUIREMENTS SPECIFIED FOR THE LOWER SIDE ZONE AND AS FIRM AS THE MAJORITY OF SOIL IN THE OVERFILL ZONE, OR SHALL BE REMOVED AND REPLACED WITH SOIL COMPACTED TO THE SPECIFIED LEVEL.
8. CLEARANCE BETWEEN PIPE AND TRENCH WALL SHALL BE ADEQUATE TO ENABLE SPECIFIED COMPACTION BUT NOT LESS THAN O.D./6.

TABLE 1. EQUIVALENT USCS AND AASHTO SOIL CLASSIFICATIONS FOR SIDD SOIL DESIGNATIONS

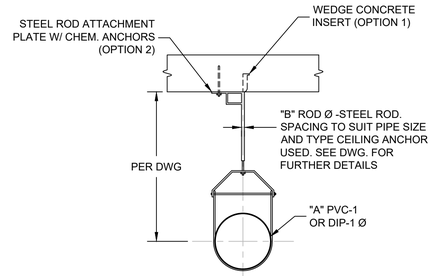
SIDD SOIL	REPRESENTATIVE SOIL TYPES		PERCENT COMPACTION	
	USCS	AASHTO	STANDARD PROCTOR	MODIFIED PROCTOR
GRAVELLY SAND (CATEGORY I)	SW, SP GW, GP	A1, A3	100 95 90 85 80 61	95 90 85 80 75 59
SANDY SILT (CATEGORY II)	GM, SM, ML ALSO GC, SC WITH LESS THAN 20% PASSING #200 SIEVE	A2, A4	100 95 90 85 80 49	95 90 85 80 75 46
SILTY CLAY (CATEGORY III)	CL, MH GC, SC	A5, A6	100 95 90 85 80 45	90 85 80 75 70 40

TABLE 2. STANDARD INSTALLATIONS SOILS AND MINIMUM COMPACTION REQUIREMENTS

INSTALLATION TYPE	BEDDING THICKNESS	HAUNCH AND OUTER BEDDING	LOWER SIDE
TYPE 1	O.D./24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE O.D./12 MINIMUM; NOT LESS THAN 6"	95% CATEGORY I	90% CATEGORY I, 95% CATEGORY II OR 100% CATEGORY III
TYPE 2	O.D./24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE O.D./12 MINIMUM; NOT LESS THAN 6"	90% CATEGORY I OR 95% CATEGORY II	85% CATEGORY I, 90% CATEGORY II OR 95% CATEGORY III
TYPE 3	O.D./24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE O.D./12 MINIMUM; NOT LESS THAN 6"	85% CATEGORY I 90% CATEGORY II OR 95% CATEGORY III	85% CATEGORY I, 90% CATEGORY II OR 95% CATEGORY III

3 RIGID PIPE BEDDING - N.T.S.

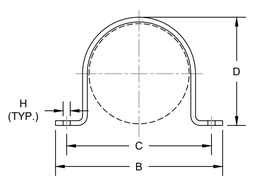
"A" PIPE SIZE	"B" ROD SIZE
4" PVC-1	1/2"
6" DIP-1	3/4"



NOTE:
"ALL THREAD ROD" NOT TO BE USED FOR ROD CONTRACTOR HAS OPTION TO USE EITHER OPTION 1 OR 2 TO SECURE TO CEILING. COMPLY WITH MSP-SP-58, 69, & 89.

5 PIPE HANGER SUPPORT - N.T.S.

PIPE SIZE	B	C	D	H
1	3 3/8	2 5/8	1 3/8	9/32
2	5	4 1/4	2 3/8	9/32



6 U-CLIP SUPPORT - N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

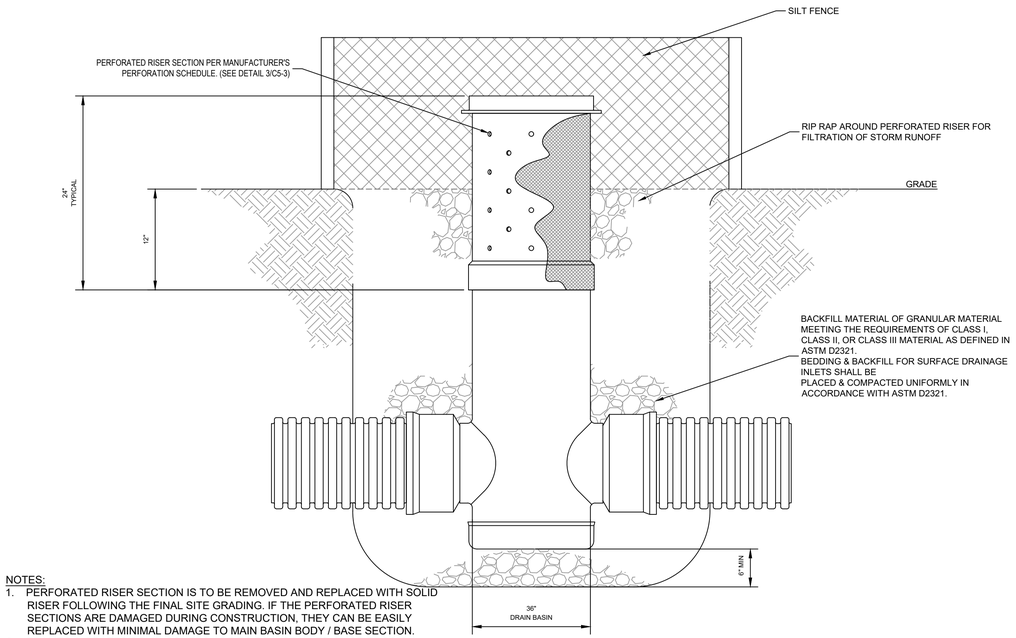
CIVIL DETAILS, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: JGN
Date: 04/14/2021
Scale: As Shown

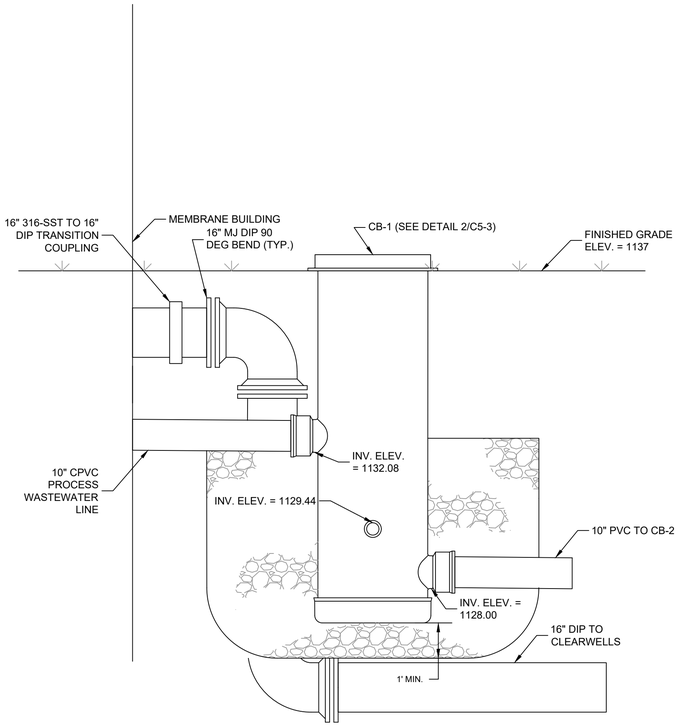
Project No.: 170110.00
Drawing No.: C5-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\PIPING DETAILS.dwg

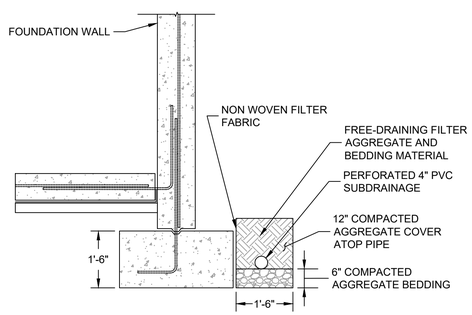


NOTES:
1. PERFORATED RISER SECTION IS TO BE REMOVED AND REPLACED WITH SOLID RISER FOLLOWING THE FINAL SITE GRADING. IF THE PERFORATED RISER SECTIONS ARE DAMAGED DURING CONSTRUCTION, THEY CAN BE EASILY REPLACED WITH MINIMAL DAMAGE TO MAIN BASIN BODY / BASE SECTION.
2. FRAMES & GRATES/SOLID COVERS ARE TO BE INSTALLED ONCE EROSION CONTROL STRUCTURE IS NO LONGER NEEDED.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. IN THE EVENT A BASIN IS DAMAGED DURING CONSTRUCTION, RISER SECTIONS CAN BE USED FOR FIELD REPAIRS.

1 DRAIN BASIN CONSTRUCTION PROTECTION DETAIL - N.T.S.



2 PROCESS WASTEWATER LINE AND PERMEATE LINE - N.T.S.



3 SUB DRAINAGE - N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

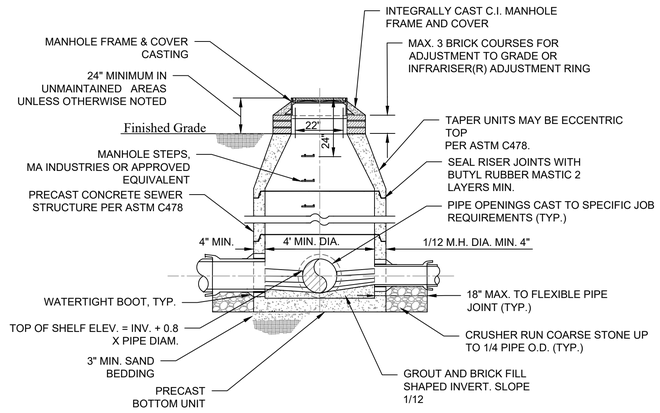
CIVIL DETAILS, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

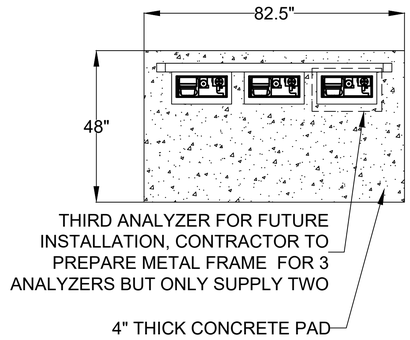
Project No.: 170110.00
Drawing No.: C5-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\PIPING DETAILS.dwg

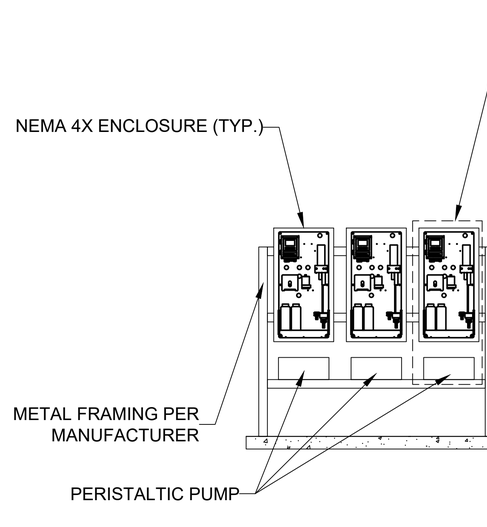


NOTES:
1. SEWER STRUCTURE STEP REQUIREMENTS:
   PROVIDE INDIVIDUAL STEPS, MORTARED OR CAST INTO WALLS AND CONICAL TOPS OF ALL MANHOLES AND SIMILAR STRUCTURES. ALIGN STEPS SO AS TO FORM A CONTINUOUS LADDER WITH STEPS EQUALLY SPACED VERTICALLY, NO MORE THAN 16 INCHES APART, USING STEPS HAVING A MINIMUM LENGTH OF 10-INCHES AND WHICH PROJECT A MINIMUM CLEAR DISTANCE OF FOUR INCHES FROM THE WALL. STEPS, FASTENINGS AND INSTALLATION MUST BE CAPABLE OF SUPPORTING A SINGLE CONCENTRATED LOAD OF 400 POUNDS. USE DESIGNS BASED ON IMPOSED LOADS BEING CONCENTRATED AT SUCH POINTS AS WILL CAUSE MAXIMUM STRESSES IN THE STRUCTURAL ELEMENT BEING CONSIDERED. CONSTRUCT INDIVIDUAL STEPS AS ONE PIECE, FERROUS CASTING OR PLASTIC COATED STEEL MEETING REQUIREMENTS OF ASTM D4101-95B AND A 615 GRADE 60.
2. PROVIDE WATERTIGHT BOOT SLEEVE OF HIGH QUALITY SYNTHETIC RUBBER. TERMINATE THE SLEEVE AT ONE END IN A SUBSTANTIAL SERRATED FLANGE OF THE SAME MATERIAL AND CAST INTO THE WALL OF THE MANHOLE BASE TO FORM A WATER STOP. EMBED THE FLANGE IN THE WALL NO LESS THAN 4-INCHES AROUND THE ENTIRE PIPE. FIT THE OTHER END OF THE SLEEVE AROUND THE OUTSIDE OF THE PIPE AND SECURE TO THE PIPE BY MEANS OF A STAINLESS STEEL STRAP CLAMP, DRAW BOLT AND NUT. FURNISH SYNTHETIC RUBBER SUITABLE FOR USE IN SEWAGE SERVICE.
3. MANHOLE STEPS SHALL NOT BE STAGGERED.

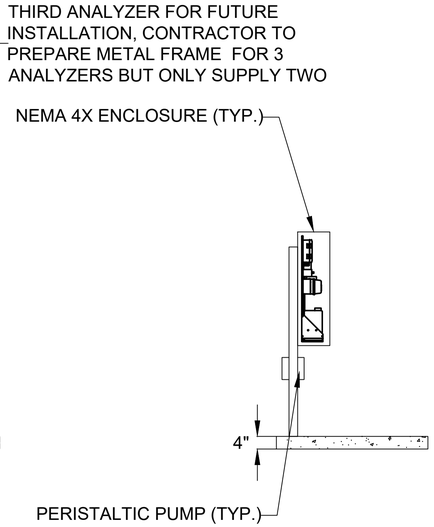
1 TYPICAL SEWER MANHOLE



PLAN

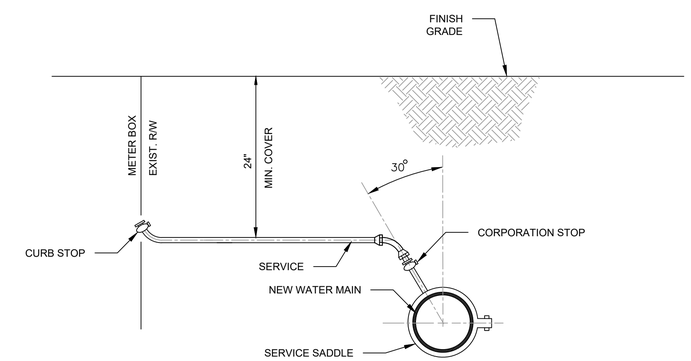


PROFILE

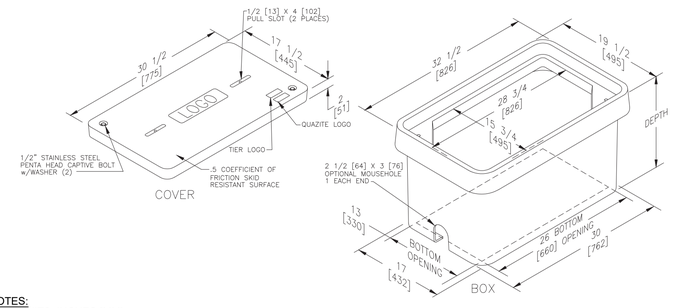


SECTION

2 CHLORINE ANALYZER

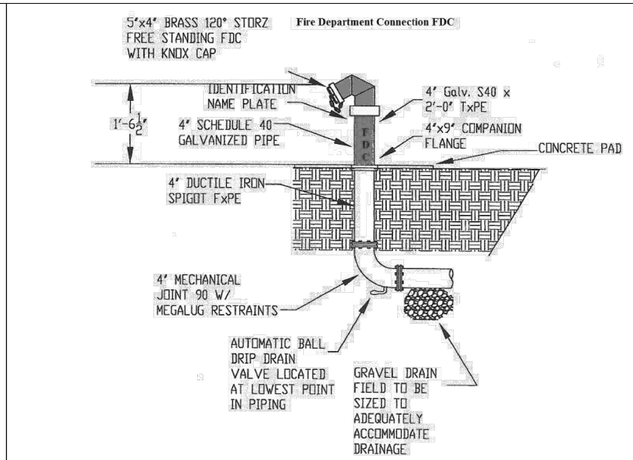


3 SERVICE CONNECTION DETAIL

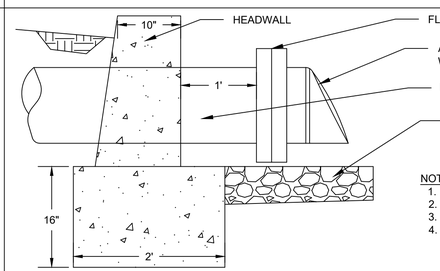


NOTES:
1. UNITS: INCHES [MM].
2. PROVIDE AND INSTALL QUAZITE FRP ENCLOSURE, MANUFACTURED BY HUBBELL POWER SYSTEMS, INC, PART NO. C10173002A*** AND PART NO. B13173030A, OR APPROVED EQUIVALENTS.

4 FRP PULL BOX

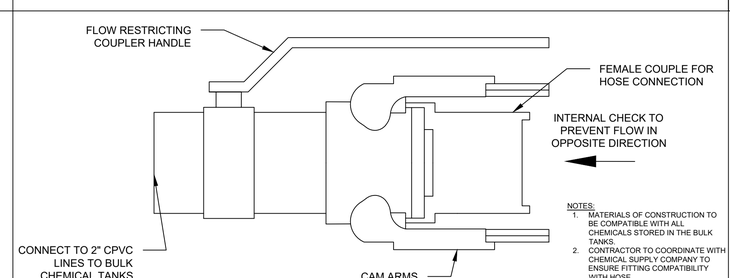


5 FIRE DEPARTMENT CONNECTION



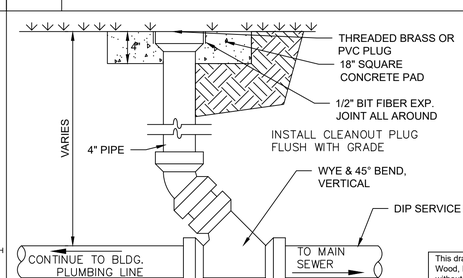
NOTES:
1. PROVIDE CONSTRUCTION JOINT BETWEEN WALL AND FOOTING
2. COMPLY WITH GDOT STRAIGHT HEADWALL 1001-B
3. DRAINLINES DISCHARGE TO RIP RAP OUTLET PROTECTION
4. MAINTAIN MIN. 12" VERTICAL CLEARANCE FROM 12" PIPE INVERT TO HEADWALL BASE SLAB.

6 CLEARWELL OVERFLOW OUTLET DETAIL



NOTES:
1. MATERIALS OF CONSTRUCTION TO BE COMPATIBLE WITH ALL CHEMICALS STORED IN THE BULK TANKS.
2. CONTRACTOR TO COORDINATE WITH CHEMICAL SUPPLY COMPANY TO ENSURE FITTING COMPATIBILITY WITH HOSE.

7 FEMALE DRY DISCONNECT COUPLER



8 SEWER SERVICE CLEANOUT

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

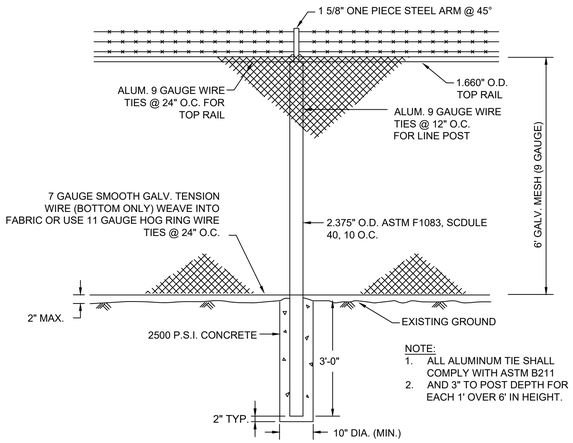
CIVIL DETAILS, SHEET 4

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

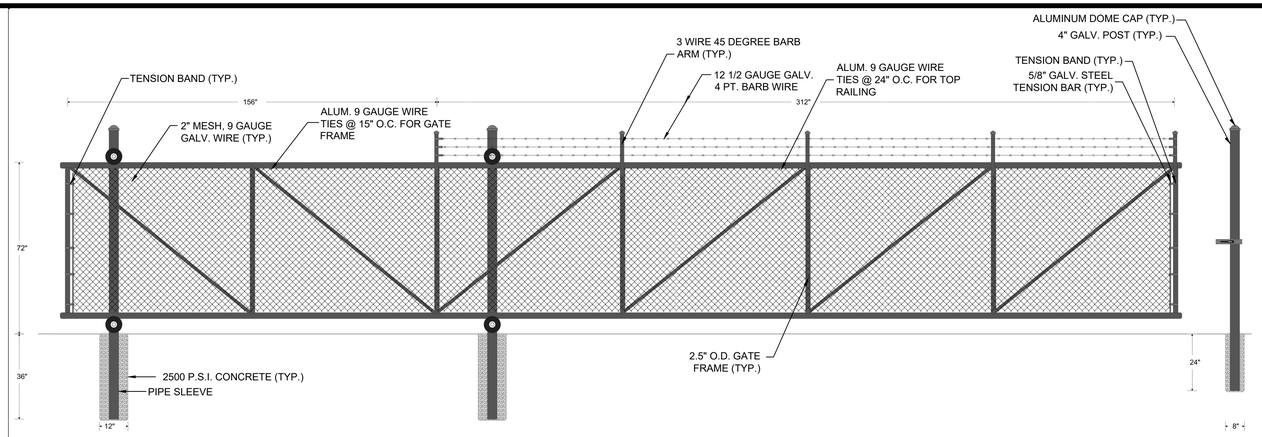
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C5-4

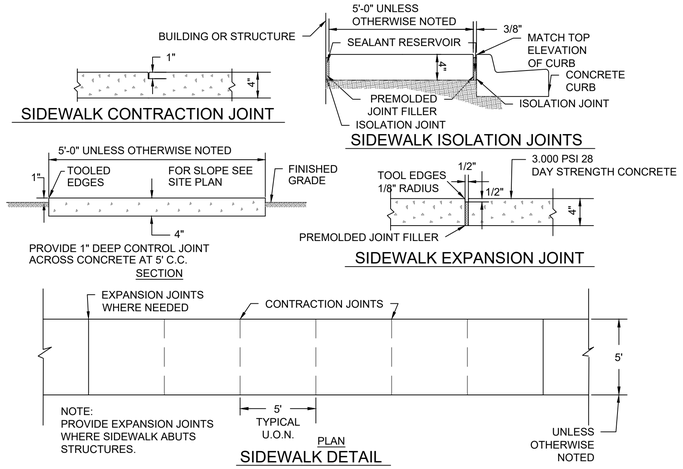
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\PIPING DETAILS.dwg



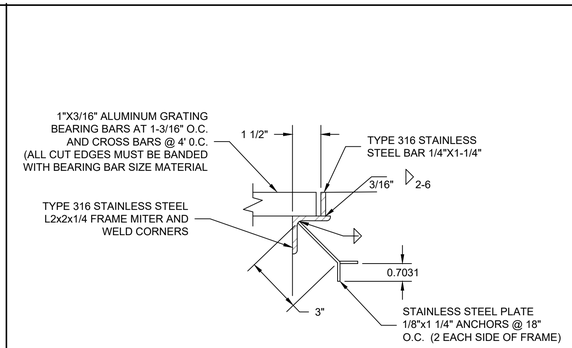
1 TYPICAL FENCE LINE DETAILS - N.T.S.



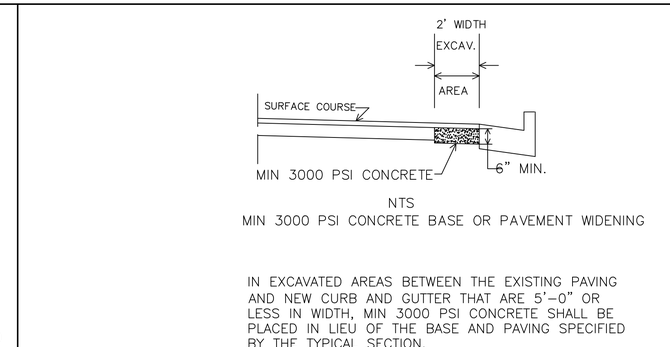
4 TYPICAL SLIDING GATE- N.T.S.



2 TYPICAL CONCRETE SIDEWALK DETAILS - N.T.S.



6 ALUMINUM GRATING DETAIL - N.T.S.



NTS

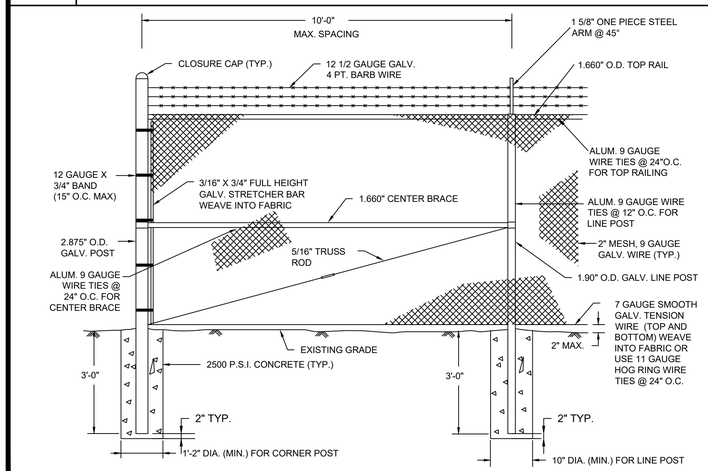
MIN 3000 PSI CONCRETE BASE OR PAVEMENT WIDENING

IN EXCAVATED AREAS BETWEEN THE EXISTING PAVING AND NEW CURB AND GUTTER THAT ARE 5'-0" OR LESS IN WIDTH, MIN 3000 PSI CONCRETE SHALL BE PLACED IN LIEU OF THE BASE AND PAVING SPECIFIED BY THE TYPICAL SECTION.

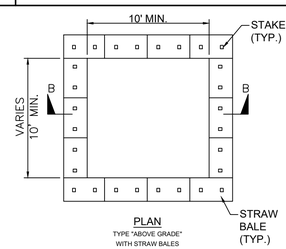
IN EXCAVATED AREAS GREATER THAN 5'-0" IN WIDTH, THE CONTRACTOR SHALL PLACE BASE AND PAVING AS SPECIFIED ON THE TYPICAL SECTION.

SEE PLANS FOR DETAILS OF CURB AND GUTTER CONSTRUCTION.

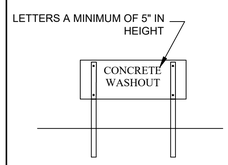
7 PAVEMENT WIDENING - N.T.S.



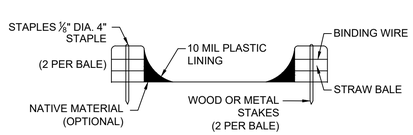
3 CORNER POST - N.T.S.



NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

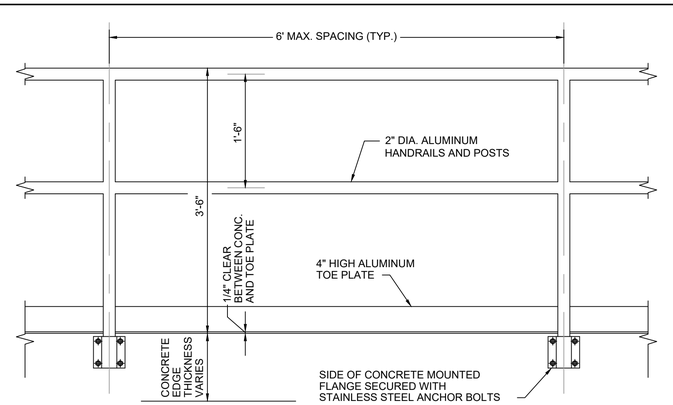


CONCRETE WASHOUT SIGN DETAIL



SECTION B-B

8 CONCRETE WASHOUT AREA - N.T.S.



8 ALUMINUM PIPE HANDRAIL DETAIL - N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

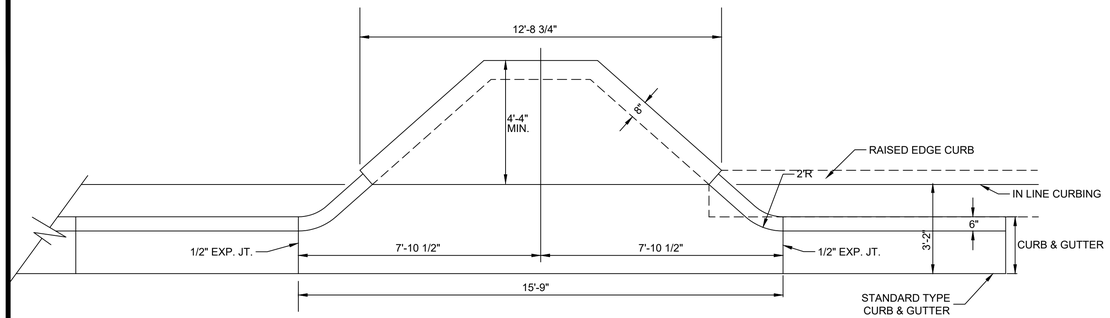
CIVIL DETAILS, SHEET 5

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

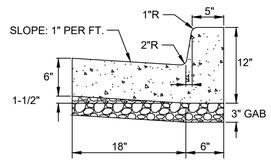
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C5-5

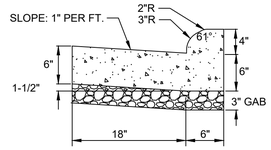
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE WORK DETAILS.dwg



NOTES:
1. EXPANSION JOINTS REQUIRED 1. AT ALL STRUCTURES AND CURB RETURNS.
2. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS = 250'.
3. CONCRETE: MINIMUM 28-DAY 3. COMPRESSIVE STRENGTH OF 3000 PSI.
4. 3" G.A.B. UNDER ALL CURB & GUTTER INSTALLATIONS PER 6.11.6 OF DEVELOPMENT REGULATIONS.

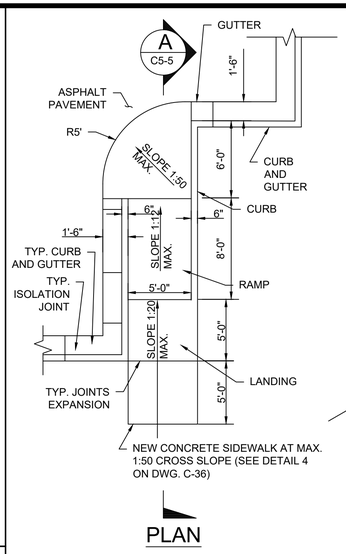


TYPICAL CURB SECTION A
STANDARD CURB AND GUTTER (RESIDENTIAL)

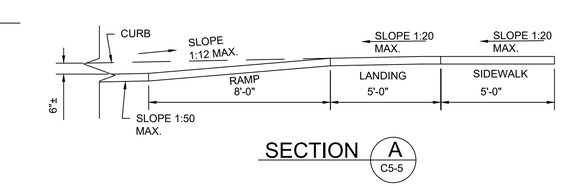


TYPICAL CURB SECTION B
STANDARD CURB AND GUTTER (RESIDENTIAL)

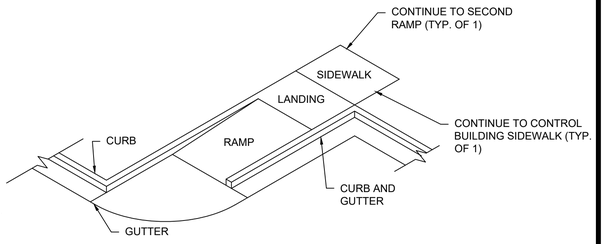
1 STANDARD CURB AND GUTTER - N.T.S.



PLAN



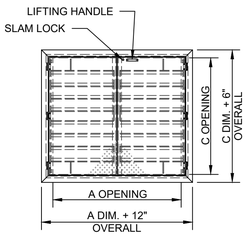
SECTION A C5-5

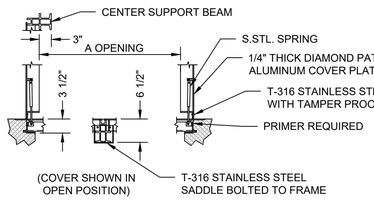


PERSPECTIVE

NOTES:
1. RAMP SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. RAMP SURFACE TO HAVE DETECTABLE WARNING TEXTURE IN COMPLIANCE WITH RULE 120-3-20-40.
2. THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP INCLUDING FLARES. [RULE 120-3-20-.18(7) GEORGIA ACCESIBILITY CODE.]
3. RAMP TO BE SURFACED WITH STONE SCAPE DETECTABLE WARNING ARCHITECTURAL PAVERS, OR EQUIVALENT PRODUCT. SIDES OF CURB RAMPS SHALL BE PROVIDED PER THE REQUIREMENT OF RULE 120-3-20-.18(5).
4. CURB TRANSITION OF SIDEWALK EXTENDS TO BACK OF CURB.

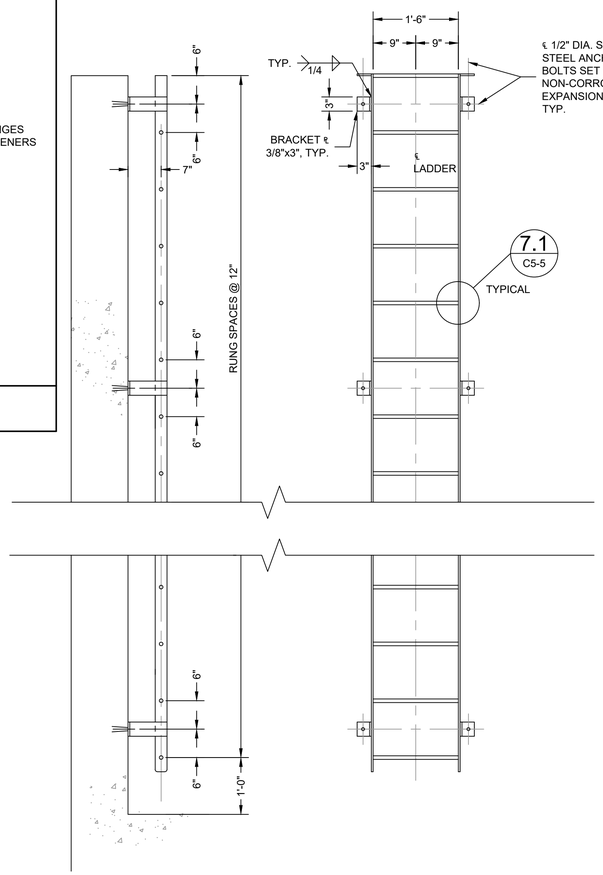
4 WHEELCHAIR RAMP DETAILS - N.T.S.

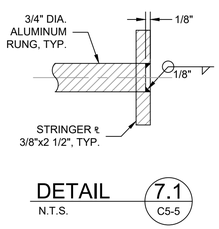




NOTES:
1. SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.
2. PROVIDE A FULL BED OF CLASS "A" CONCRETE UNDER FRAME AND SUPPORT ANGLES.
3. COAT ALUMINUM SURFACES CONTACTING CONCRETE WITH ASPHALTIC PAINT.
4. "A" AND "C" DIMENSIONS ARE PER DRAWING.

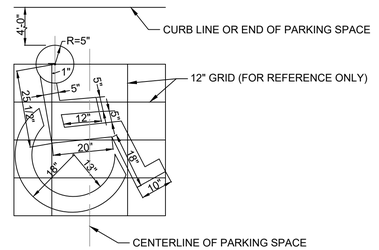
2 DOUBLE LEAF VERTICAL ACCESS DOOR DETAILS - N.T.S.



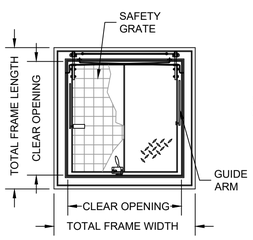


DETAIL 7.1 C5-5
N.T.S.

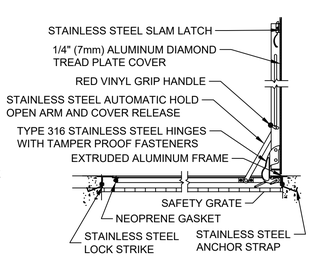
7 ALUMINUM LADDER DETAIL - N.T.S.



5 HANDICAPPED PARKING SPACE MARKING DETAIL - N.T.S.

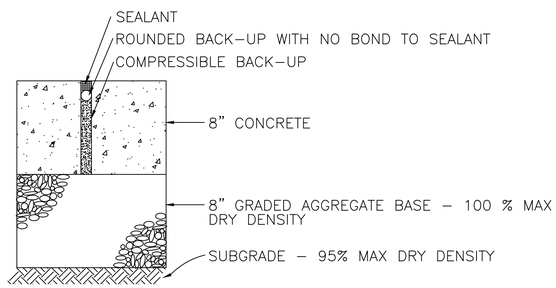


PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.

3 SINGLE LEAF VERTICAL ACCESS DOOR DETAILS - N.T.S.



6 CONCRETE DRIVEWAY PAVEMENT SECTIONS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

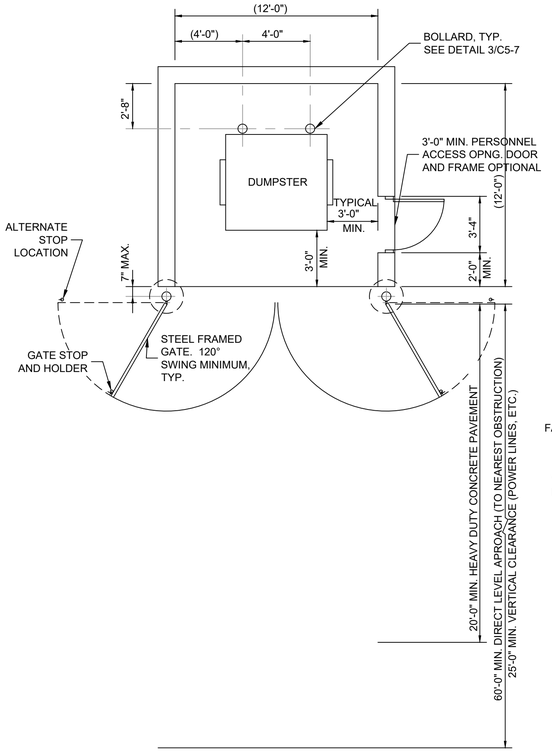
CIVIL DETAILS, SHEET 6

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

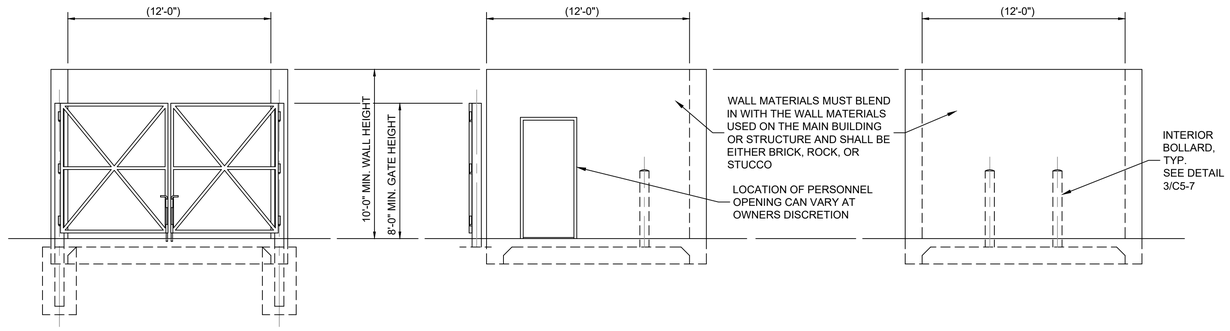
Project No.: 170110.00
Drawing No.: C5-6

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE WORK DETAILS.dwg



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

NOTES:
1. DESIGNERS ARE ENCOURAGED TO INCLUDE DUMPSTER ENCLOSURE AS A PART OF THE MAIN BUILDING OR STRUCTURE.
2. DIMENSIONS SHOWN IN PARENTHESIS ( ) MAY BE ADJUSTED TO REFLECT THE DUMPSTER SIZE SELECTED. CLEARANCE DIMENSIONS SHOWN IN PLAN MUST BE ADHERED TO AT ALL TIMES.

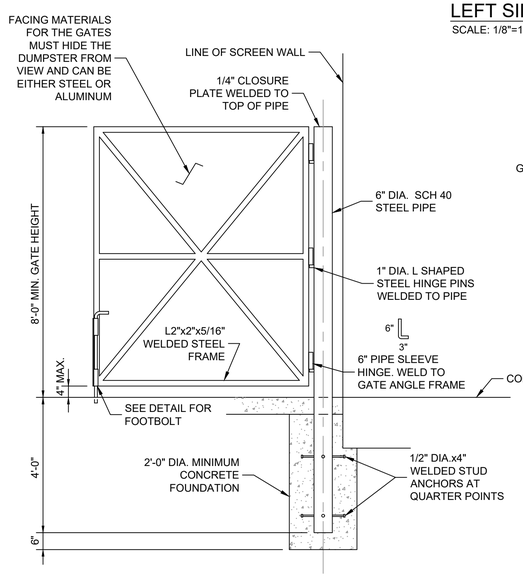


FRONT ELEVATION
SCALE: 1/8"=1'-0"

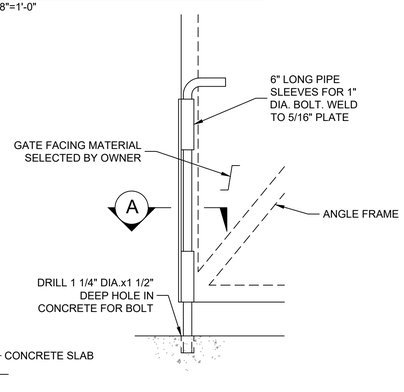
RIGHT SIDE ELEVATION
SCALE: 1/8"=1'-0"

LEFT SIDE ELEVATION OPP. HAND
SCALE: 1/8"=1'-0"

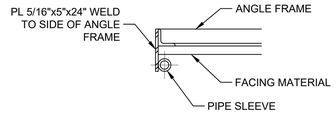
REAR ELEVATION
SCALE: 1/8"=1'-0"



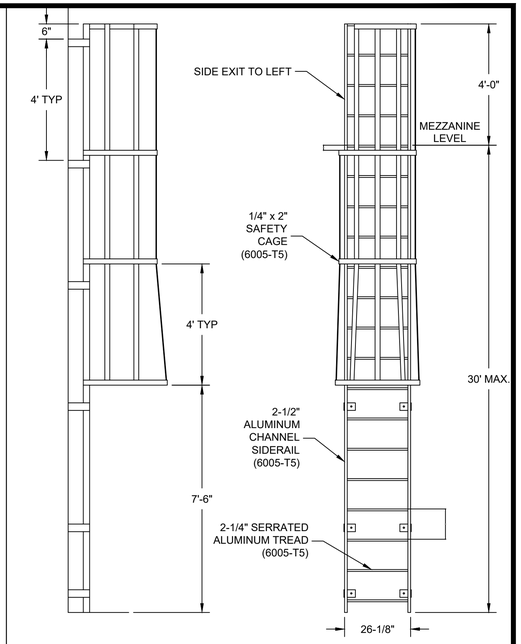
GATE FRAME DETAIL
SCALE: 1/4"=1'-0"

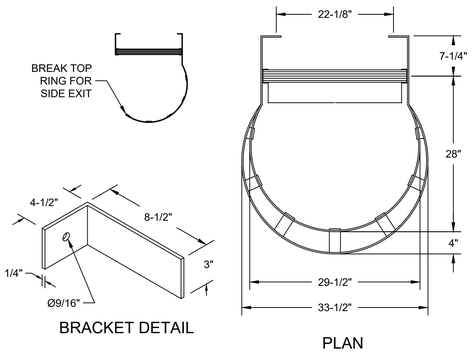


FOOTBOLT DETAIL
SCALE: 1"=1'-0"



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

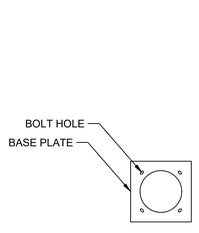




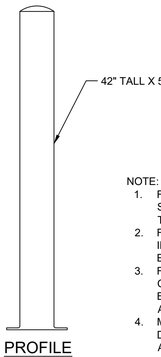
BRACKET DETAIL

PLAN

2 CAGE LADDER - N.T.S.



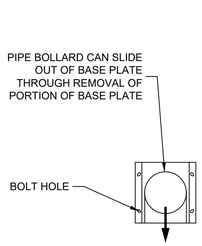
PLAN



PROFILE

NOTE:
1. FIXED BOLLARD IS ONE PIECE WHERE STEEL BOLLARD IS MANUFACTURED TOGETHER WITH BASE PLATE.
2. FOR FIXED BOLLARDS ON CONCRETE, INSTALL WITH MANUFACTURERS EQUIPMENT.
3. FOR FIXED BOLLARDS PLACED ON GRATING WITHIN THE MEMBRANE BUILDING, PROVIDE NYLON BOLTS FOR ATTACHMENT TO GRATING
4. MANUFACTURER TO BE ULINE HEAVY DUTY SAFETY BOLLARD, FIXED OR APPROVED EQUIVALENT

3 FIXED BOLLARD DETAIL



PLAN

PROFILE

NOTE:
1. REMOVABLE BOLLARD SHALL BE A TWO PIECE BOLLARD CONSISTING OF THE BASE PLATE AND THE PIPE BOLLARD. THE BASE PLATE SHALL BE FROM A MANUFACTURER THAT ALLOWS PIPE BOLLARD TO BE REMOVED THROUGH THE REMOVAL OF A PORTION OF THE BASE PLATE.
2. FOR REMOVABLE BOLLARDS ON CONCRETE, INSTALL WITH MANUFACTURERS EQUIPMENT.
3. MANUFACTURER TO BE ULINE HEAVY DUTY SAFETY BOLLARD, REMOVABLE OR APPROVED EQUIVALENT.

4 REMOVABLE BOLLARD DETAIL

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

CIVIL DETAILS, SHEET 7

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C5-7

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE WORK DETAILS.dwg

ADDED EXISTING CONTOURS

PROPOSED OUTLET CONTROL STRUCTURE, SEE DETAIL 3/C6-4

PROPOSED SPILLWAY EL. 1129'

CONCRETE HEADWALL WITH RIP RAP OUTLET PROTECTION

12" DIP, GROUT SEAL TO FES AND MANHOLE

PROPOSED DRY POND TOP EL. 1130' BOP EL. 1125' 2:1 SIDE SLOPES

POND FOREBAY

8" DIP, REROUTE EXISTING CLEARWELL DRAIN LINE

PROPOSED STORM SWALE 1' DEPTH, 1' BOTTOM WIDTH, 2:1 SIDE SLOPES (TYP.)

STRUCTURE J 15" RCP FES

15" RCP

STRUCTURE K GRATE INLET STRUCTURE ON SAG, PROVIDE POSITIVE DRAINAGE TO GRATE INLET FROM ALL DIRECTIONS

STRUCTURE G 18" RCP FES

18" HDPE

EX. MH

STRUCTURE H DOGHOUSE MANHOLE OVER EXISTING DRAIN LINE

EX. 16" DIP

TIE IN NORTH FOUNDATION DRAIN LINE TO STRUCTURE H

STRUCTURE I SLOTTED DRAIN INLET SEE DETAIL 1/C6-4

TIE SOUTH FOUNDATION DRAIN TO STRUCTURE K

8" TRAFFIC RATED GATE VALVE AND BOX

STRUCTURE F DOUBLE WING CATCH BASIN INLET WITH WATER TREATMENT DEVICE, SEE DETAIL 1/C6-6

TRANSITION TO 6" SCHEDULE 80 PVC 8' PAST EDGE OF BUILDING, 4"X6" SCHEDULE 80 PVC TEE

GENTLE SWALE, SEE GRADING PLAN

STRUCTURE A 18" RCP FES AT GRADE WITH EXISTING STORM DITCH, EXTENT EXISTING STORM DITCH GRADING TO FES IF NEEDED, SEE DETAIL 2/C6-4

POWDER COATED, OFF-SET DOWNSPOUT ADAPTER (36" HT)

TRANSITION TO 6" SCHEDULE 80 PVC

STRUCTURE E DOUBLE WING CATCH BASIN, SEE DETAIL 1/C6-5 (TYP.)

TIE IN PLANTER BED DRAIN TO FOUNDATION DRAIN

4" SCHEDULE 80 PVC FLOOR DRAIN LINE, TIE INTO FOUNDATION DRAIN AT TRANSITION TO NON-PERFORATED PIPE

DOWNSPOUTS TO DISCHARGE INTO PLANTER AT 2% SLOPE AND 6" ABOVE GRADE IN PLANTER

6" SCHEDULE 80 PERFORATED PVC FOUNDATION DRAIN COVERED IN STONE (SEE DETAIL 3/C5-3)

STRUCTURE C

STRUCTURE D DROP INLET, SEE DETAIL 2/C6-2 (TYP.)

STRUCTURE B SINGLE WING CATCH BASIN

Nail in Asphalt
N: 1513288.57
E: 2351230.29
El: 1150.28

Nail in Asphalt
N: 1513722.88
E: 2351427.07

NOTES:
1. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
2. PROVIDE POSITIVE DRAINAGE FROM BEGINNING OF DITCH TO END OF DITCH.
3. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.
4. MATCH DITCH AND DRIVEWAY CULVERT INVERT ELEVATIONS TO ENSURE POSITIVE DRAINAGE FROM DITCH TO CULVERT.
5. PROVIDE DRAINAGE INLETS LOCATED IN LOCAL LOW POINTS.
6. DOWNSPOUT ADAPTER BY PIEDMONT PIPE MANUFACTURING (OR APPROVED EQUIVALENT).

SCALE: 1" = 20'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

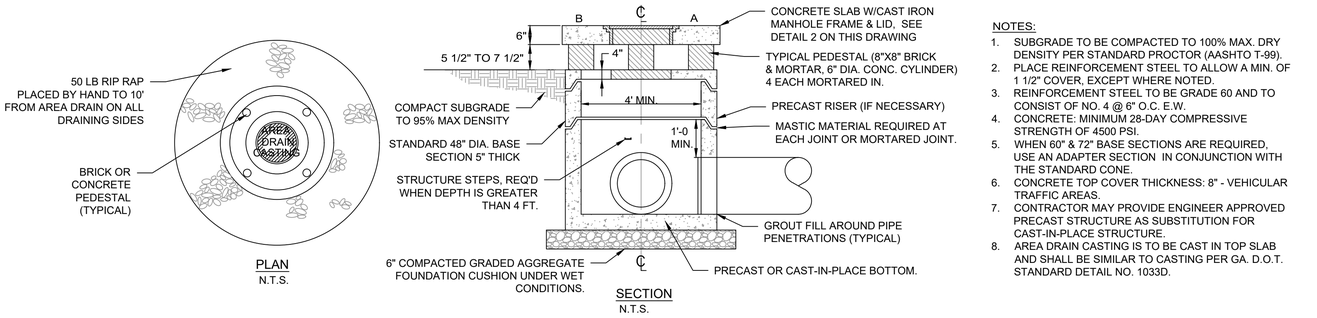
STORMWATER PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

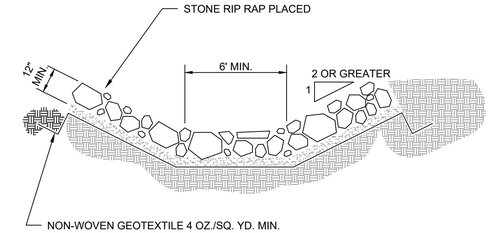
Project No.: 170110.00
Drawing No.: C6-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg

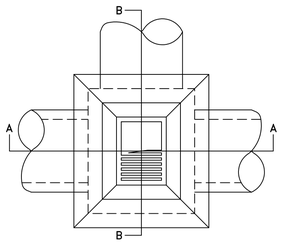


NOTES:
1. SUBGRADE TO BE COMPACTED TO 100% MAX. DRY DENSITY PER STANDARD PROCTOR (AASHTO T-99).
2. PLACE REINFORCEMENT STEEL TO ALLOW A MIN. OF 1 1/2" COVER, EXCEPT WHERE NOTED.
3. REINFORCEMENT STEEL TO BE GRADE 60 AND TO CONSIST OF NO. 4 @ 6" O.C. E.W.
4. CONCRETE: MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500 PSI.
5. WHEN 60" & 72" BASE SECTIONS ARE REQUIRED, USE AN ADAPTER SECTION IN CONJUNCTION WITH THE STANDARD CONE.
6. CONCRETE TOP COVER THICKNESS: 8" - VEHICULAR TRAFFIC AREAS.
7. CONTRACTOR MAY PROVIDE ENGINEER APPROVED PRECAST STRUCTURE AS SUBSTITUTION FOR CAST-IN-PLACE STRUCTURE.
8. AREA DRAIN CASTING IS TO BE CAST IN TOP SLAB AND SHALL BE SIMILAR TO CASTING PER GA. D.O.T. STANDARD DETAIL NO. 1033D.

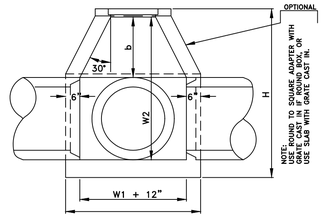
1 TYPICAL AREA DRAIN - N.T.S.



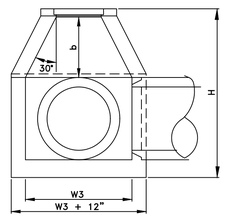
3 TYPICAL RIP-RAP DITCH SECTION - N.T.S.



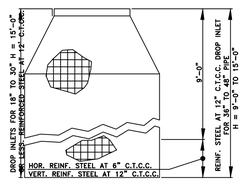
CAN BE BRICK OR PRECAST BOX.



SECTION A-A



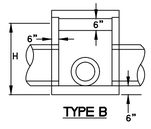
SECTION B-B



IN ALL DROP INLETS 1/2" O BAR REINFORCING STEEL TO BE PLACED NOT MORE THAN 12" C TO C AND COVERED NOT LESS THAN 2".

TYPE A

NOTES:
1. BRICK INVERTS REQUIRED AT ALL JUNCTION BOXES & DROP INLETS RAISE BOTTOM OF BOX TO OUTFLOW PIPE INVERT. MATCH DIFFERENT SIZE PIPES AT CROWNS.
2. MAXIMUM VERTICAL DEPTH FOR DROP INLET H = 15'-0"



TYPE B

1/2" Ø BARS AT 12" CENTER TO CENTER

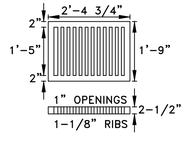
TYPE A							TYPE B		
D	W1	MIN.–W2	W3	a	b	MIN.–H	NORMAL W OR W1	MIN. b	MIN. H
15"	2'-0"	2'-6 1/2"	2'-7"	0'-3 1/2"	0'-6"	3'-3"	2'-0"	2'-7 1/2"	3'-9 1/2"
18"	2'-0"	2'-9 1/2"	2'-7"	0'-3 1/2"	0'-6"	3'-6"	2'-3"	2'-10"	4'-0"
24"	2'-6"	4'-1/2"	3'-3"	0'-7 1/2"	1'-1"	4'-9"	3'-0"	3'-6"	4'-10"
30"	3'-4"	5'-1 1/2"	3'-11"	0'-11 1/2"	1'-6"	5'-10"	3'-6 1/2"	4'-2 1/2"	5'-4 1/2"
36"	3'-10"	6'-1 1/2"	4'-5"	1'-2 1/2"	2'-1 1/4"	6'-10"	4'-2"	4'-10"	6'-0"
42"	4'-5"	7'-2 1/2"	5'-0"	1'-6"	2'-7 1/2"	7'-11"	4'-8 1/2"	5'-4 1/2"	6'-6 1/2"
48"	5'-0"	8'-3 1/2"	5'-7"	1'-9 1/2"	3'- 1 1/4"	9'-0"	5'-3 1/2"	5'-11 1/2"	7'-1 1/2"
54"	5'-7"	9'-4 1/2"	6'-2"	2'-1"	3'-7 1/4"	10'-1"	5'-10"	6'-6"	7'-6"
60"	6'-2"	10'-6 1/2"	6'-9"	2'-4 1/2"	4'-1 1/2"	11'-2"	6'-4 1/2"	7'-0 1/2"	8'-2 1/2"
66"	6'-9"	11'-6 1/2"	7'-4"	2'-6"	4'-7 1/2"	12'-3"	6'-11"	7'-7"	8'-9"
72"	7'-4"	12'-7 1/2"	7'-11"	2'-11 1/2"	5'-1 1/4"	13'-4"	7'-6 1/2"	8'-1 1/2"	9'-3"

CONCRETE D.I.

TYPE A							TYPE B		
D	W1	MIN.–W2	W3	a	b	MIN.–H	NORMAL W OR W1	MIN. b	MIN. H
15"	2'-2"	2'-11"	2'-9"	0'-4 1/2"	0'-6"	3'-9 1/2"	2'-0"	2'-7 1/2"	3'-7 1/2"
18"	2'-2"	3'-2 1/2"	2'-9"	0'-4 1/2"	0'-6"	4'-1"	2'-0"	2'-10"	3'-10"
24"	2'-8"	3'-8"	3'-3"	0'-7 1/2"	1'-1 1/4"	4'-9"	3'-0"	3'-6"	4'-6"
30"	3'-7 1/4"	4'-0"	3'-10"	1'-0"	1'-9"	5'-10"	3'-6 1/2"	4'-2 1/2"	5'-10"
36"	4'-2"	6'-0 1/2"	4'-5"	1'-4 1/2"	2'-1 1/4"	6'-11"	4'-2"	4'-10"	5'-10"
42"	4'-5"	7'-1 3/4"	5'-0"	1'-6"	2'-7 1/4"	8'-0 1/4"	4'-8 1/2"	5'-4 1/2"	6'-11 1/2"
48"	5'-0"	8'-2 3/4"	5'-7"	1'-9 1/2"	3'- 1 1/4"	9'-1 1/4"	5'-3 1/2"	5'-11 1/2"	6'-11 1/2"
54"	5'-7"	9'-4"	6'-2"	2'-1"	3'-7 1/2"	10'-2 1/2"	5'-10"	6'-6"	7'-6"
60"	6'-2"	10'-5"	6'-9"	2'-4 1/2"	4'-1 1/2"	11'-3 1/4"	6'-4 1/2"	7'-0 1/2"	8'-0 1/2"
66"	6'-9"	11'-6"	7'-4"	2'-6"	4'-7 1/2"	12'-4 1/2"	6'-11"	7'-7"	8'-7"
72"	7'-4"	12'-7"	7'-11"	2'-11 1/2"	5'-2"	13'-6 1/2"	7'-6 1/2"	8'-1 1/2"	9'-1 1/2"*

BRICK D.I.

APPROX. WT. 200 LB.
DETAIL OF CAST IRON GRATING



City of Buford, Georgia

STANDARD DRAWING

Standard Drop Inlet

DATE: SEPTEMBER 25, 2014 SHEET: 609

2 STANDARD DROP INLET - N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

STORMWATER DETAILS, SHEET 1

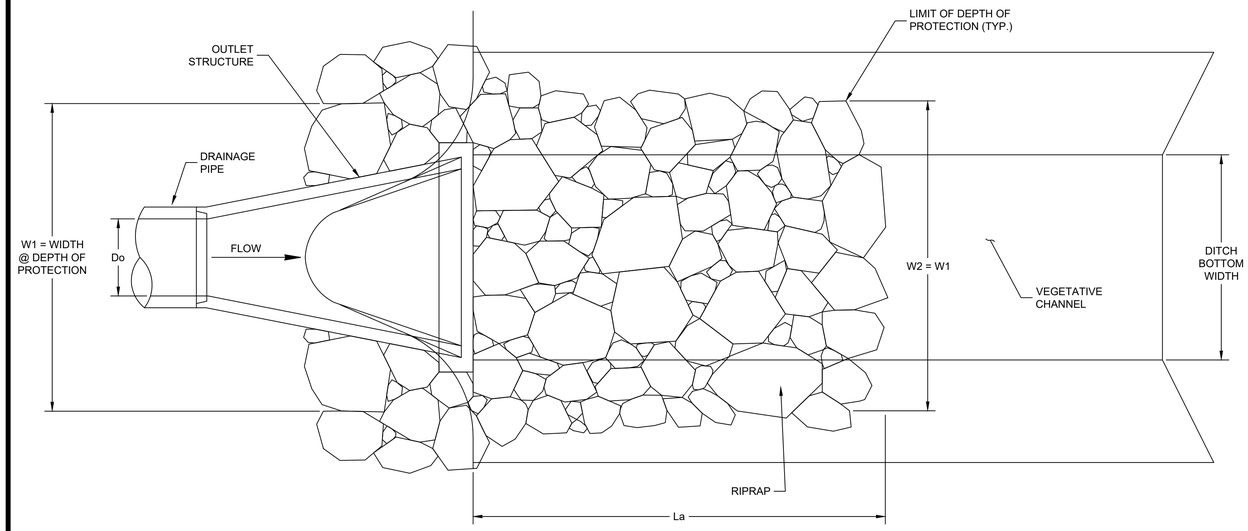
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C6-2

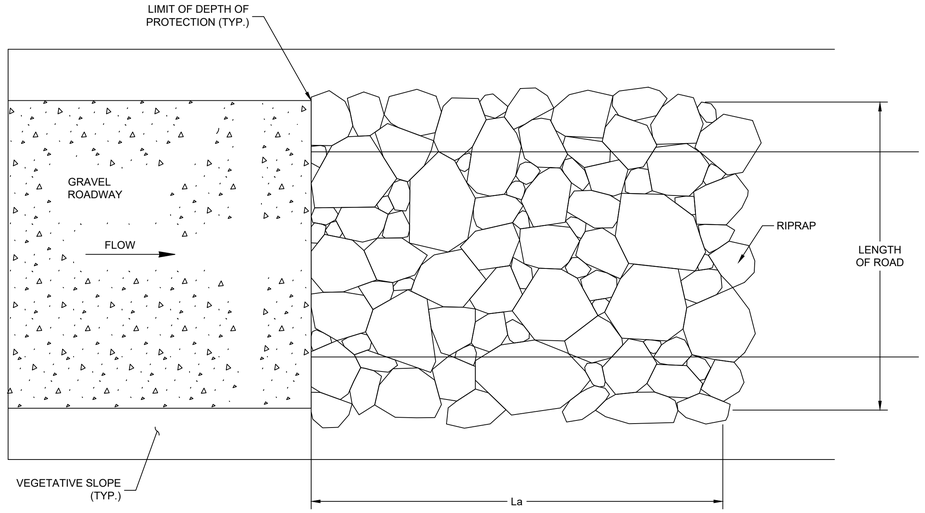
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\STORM WATER DETAILS.dwg

OUTLET PARALLEL TO WELL-DEFINED CHANNEL

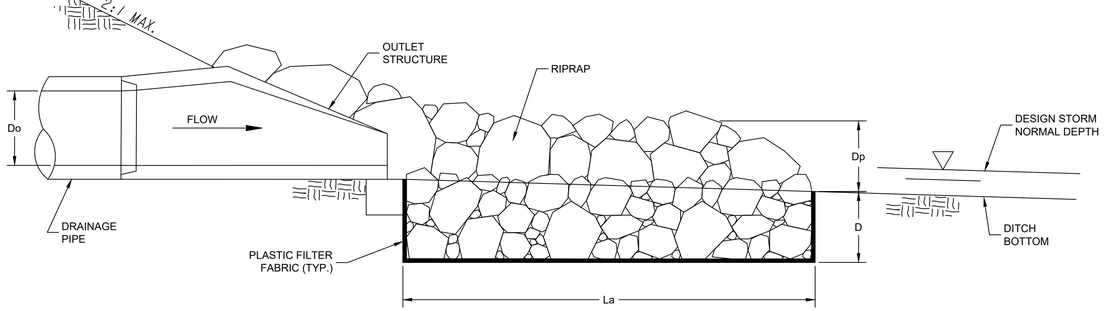


PLAN VIEW

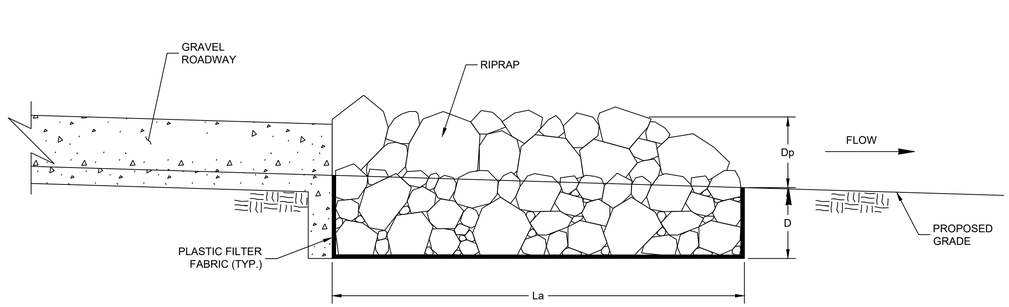
GRAVEL ROADWAY TO RIPRAP TRANSITION



PLAN VIEW



PROFILE VIEW



PROFILE VIEW

FLOW CHARACTERISTICS OF PIPE AT FULL FLOW			
Do	Q	V	Tw
18"	18.5 CFS	9.8 FT/S	<0.5 DIAMETER

RIPRAP TYPE	REQUIRED d50 (FT)	MIN. DEPTH "D" (IN)	La (FT)	W1 (FT)	W2 (FT)
3	<0.67	18	10.6	1.5	12.1

Do = PIPE DIAMETER
Q = DESIGN STORM FLOW RATE
V = DESIGN STORM VELOCITY
Tw = TAILWATER CONDITION/DESIGN STORM NORMAL DEPTH
La = APRON LENTH
W1 = APRON WIDTH UPSTREAM AT DEPTH OF PROTECTION
W2 = APRON WIDTH DOWNSTREAM AT DEPTH OF PROTECTION
d50 = AVERAGE STONE DIAMETER
D = INSTALLATION DEPTH
Dp = DEPTH OF PROTECTION

NOTES:
1. RIPRAP OUTLET PROTECTION SHOULD BE USED TO REDUCE A DRAINAGE STRUCTURE'S DISCHARGE VELOCITY.
2. PLASTIC FILTER FABRIC IS REQUIRED UNDERNEATH RIPRAP APRON.
3. Dp = 1.5 TIMES MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
4. RIPRAP SHOULD HAVE AT MAXIMUM A 2:1 SLOPE.

STORM DRAIN OUTLET PROTECTION

N.T.S.

1
C6-3

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

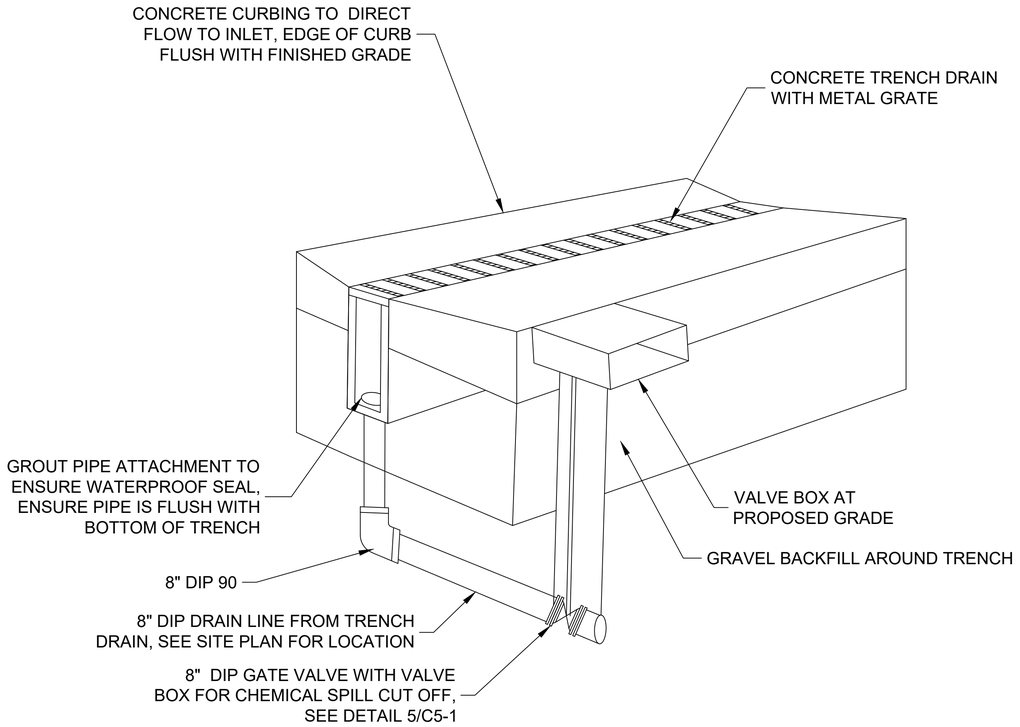
STORMWATER DETAILS, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C6-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\STORM WATER DETAILS.dwg

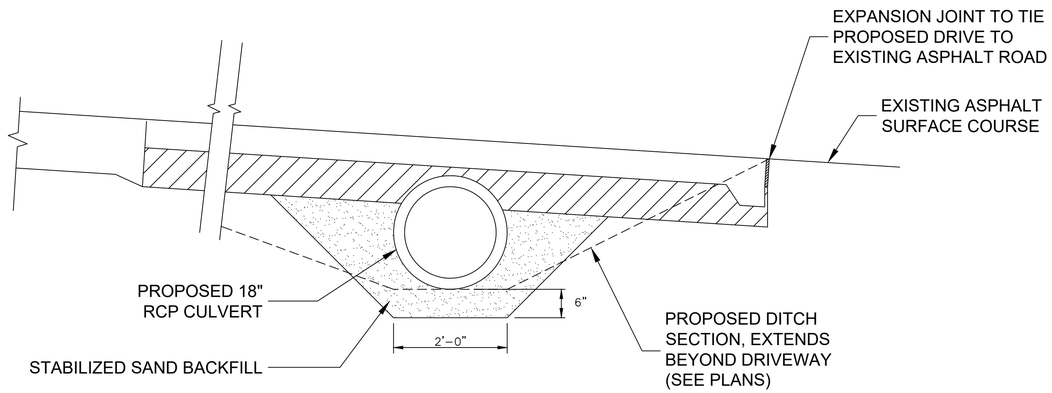


GENERAL NOTES:

- TOP SURFACE OF CONCRETE DRAIN TO BE FLUSH WITH FINISHED GRADE
- THIS STRUCTURE IS DESIGNED TO INTERCEPT SHEET FLOW FROM THE SITE AND CONVEY IT UNDER THE ROAD AND TO THE DOWNHILL SIDE OF THE SITE
- THE BOTTOM OF THE CONCRETE TRENCH SHOULD ALLOW POSITIVE DRAINAGE TO THE OUTLET PIPE, WHERE THE PIPE CONNECTION IS THE LOWEST POINT IN THE TRENCH BOTTOM
- VALVE STEM TO BE PLACED AS SHOWN IN THE SITE PLAN

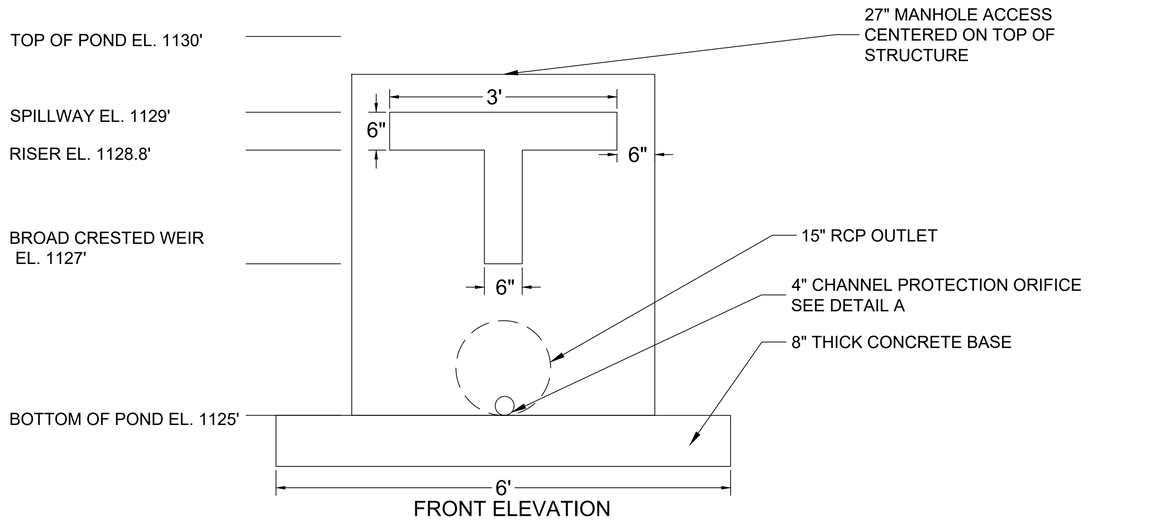
CONCRETE TRENCH DRAIN WITH SHUTOFF

N.T.S. — 1 / C6-4

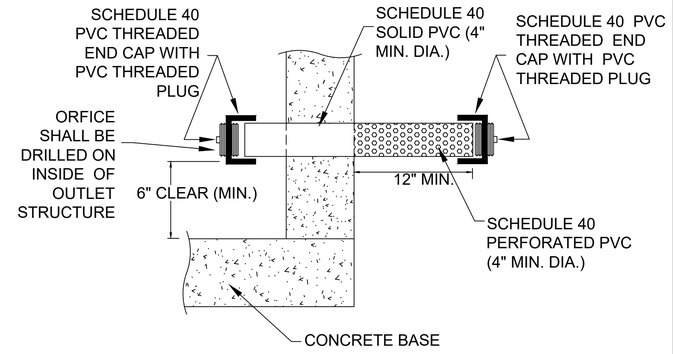


CONCRETE OR ASPHALT DRIVEWAY CULVERT

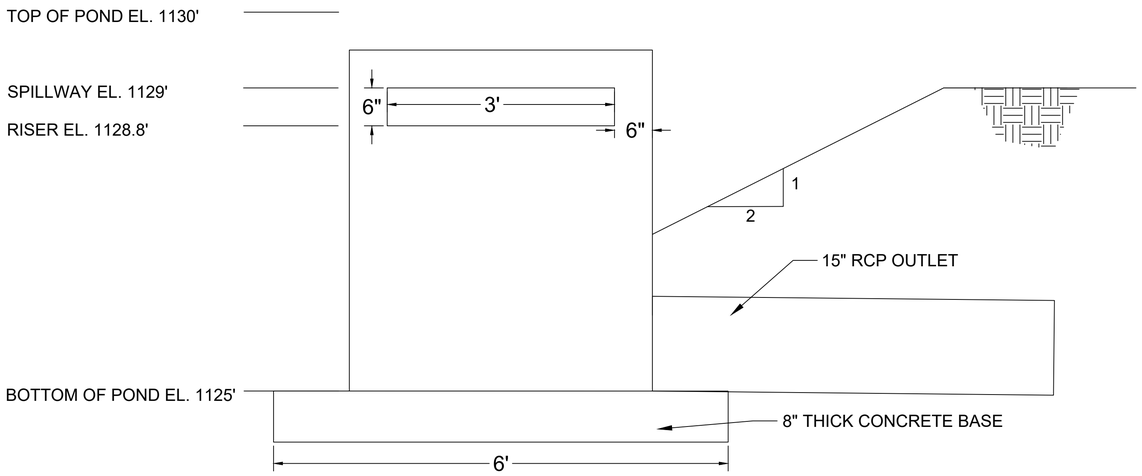
N.T.S. — 2 / C6-4



FRONT ELEVATION



DETAIL A



SIDE ELEVATION

OUTLET CONTROL STRUCTURE

N.T.S. — 3 / C6-4

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

STORM WATER DETAILS, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

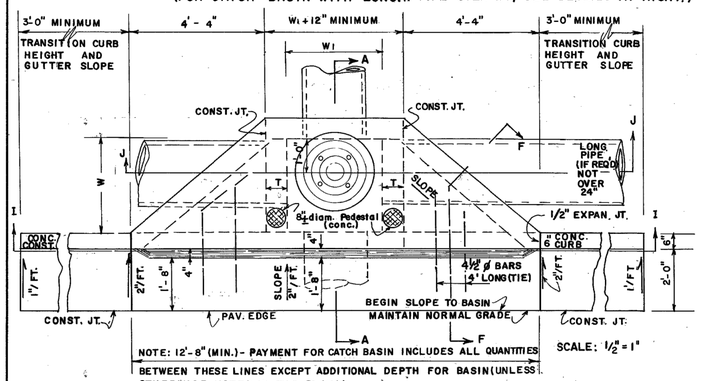
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

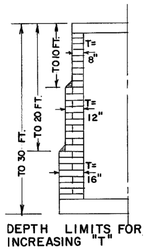
Project No.: 170110.00
Drawing No.: C6-4

AF 21868

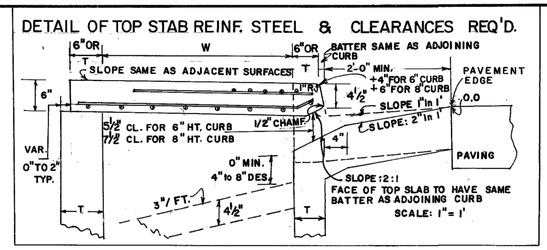
CATCH BASIN

(FOR CATCH BASIN WITH LONGIT. PIPE OVER 24", SEE DETAILS AT RIGHT.)

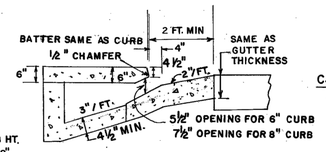




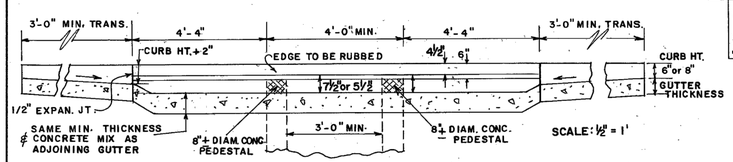
DEPTH LIMITS FOR INCREASING "T"



DETAIL OF TOP STAB REINF. STEEL & CLEARANCES REQ'D.

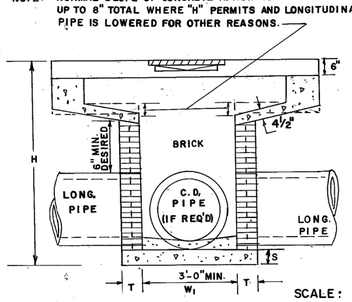


SECTION F-F

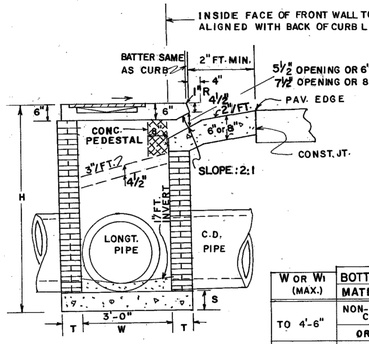


SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED UP TO 8" TOTAL WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS.

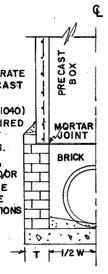


SECTION J-J SCALE: ½" = 1'



SECTION A-A

NOTE: SEE SEPARATE STDS. FOR PRECAST ALTERNATES, ADAPTERS (STD. 1040) WILL BE REQUIRED WITH CIRCULAR PRECAST UNITS. PRECAST BOX, CIRCULAR, AND/OR BUILT-IN-PLACE CONSTR. MAY BE USED IN COMBINATIONS

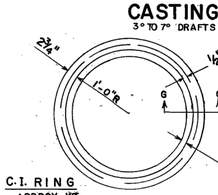


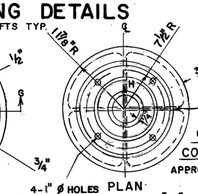
PRECAST BOX ON BRICK (HALF-SECTION)

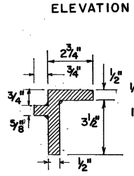
W or W1 (MAX.)	BOTTOM SLAB MATERIALS	"S"
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W1 4 BARS 12" O.C. BOTH WAYS 2" CL. FROM SLAB TOP	8"

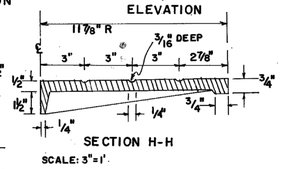
CASTING DETAILS

3" TO 7" DRAFTS TYP.

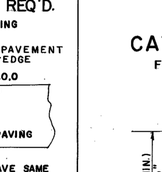








CATCH BASIN ON RADII

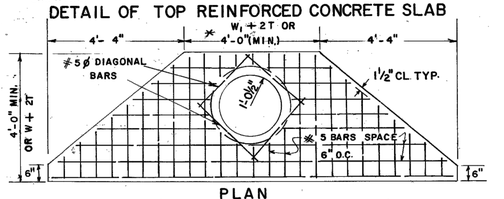


ALTERNATE TO INVERT

PIPE DIA.	H (MIN.)	W or W1	MIN. ΔE
12	4'-4"	3'-0"	3'-3"
15	4'-7"	3'-0"	3'-6"
18	4'-10"	3'-0"	3'-9"
24	5'-6"	3'-0"	4'-4"
30	6'-2"	3'-7"	5'-0"
36	6'-10"	4'-6"	5'-7"
42	7'-4"	5'-3"	5'-11"
48	8'-0"	6'-0"	6'-6"
54	8'-6"	6'-8"	7'-0"
60	9'-2"	7'-4"	7'-7"

ΔE = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

NOTE: THE MIN. H & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED, IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W & W. DIMENSIONS DO NOT HAVE TO BE EQUAL.

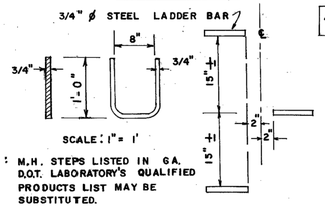


DETAIL OF TOP REINFORCED CONCRETE SLAB

NOTE: ALL BARS IN PLAN VIEW ARE SPACED AT 6" O.C.

NOTE: FOR PLAN DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB, SEE PART PLAN AT TOP RIGHT.

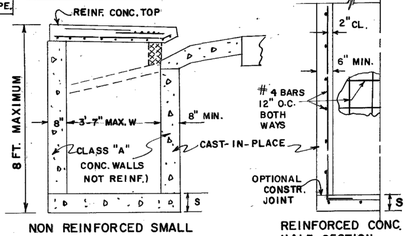
NOTE: TOP SLAB MAY BE CAST IN PLACE OR PRECAST. IF CAST IN PLACE, BUILDER'S PAPER IS TO BE PLACED BETWEEN THE CATCH BASIN AND TOP SLAB.



NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS. NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.

DETAIL OF LADDER BARS



NON REINFORCED SMALL BASIN (W1 NOT OVER 3'-7")

REINFORCED CONC. HALF-SECTION

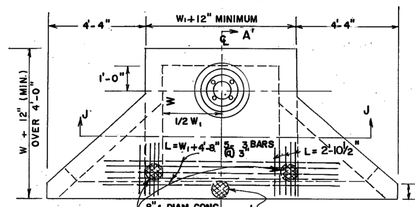
NOTE: CONSTRUCTION ALTERNATES

DETAILS NOT SHOWN ABOVE FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO BRICK CATCH BASIN DETAILS.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CATCH BASIN (WITH PROTUDED BACK)

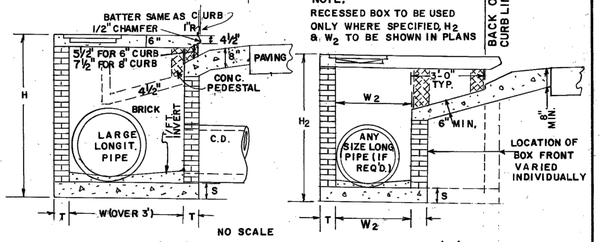
FOR USE WITH LONGITUDINAL PIPE OVER 24" OR FOR USE WITH RECESSED BOX



NOTE: DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT FAR LEFT FOR NORMAL CATCH BASINS.

PART PLAN

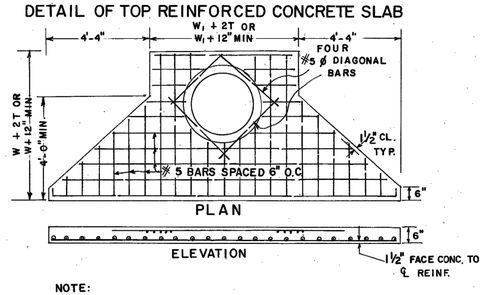
NOTE: RECESSED BOX TO BE USED ONLY WHERE SPECIFIED, H2 & W2 TO BE SHOWN IN PLANS



SECTION A'-A' (FOR LONGIT. PIPE OVER 24")

SECTION A'-A' (FOR RECESSED BOX)

DETAIL OF TOP REINFORCED CONCRETE SLAB



NOTE: TYPICAL TREATMENT FOR SKEWED PIPES ARE: CIRCULAR PRECAST UNITS; PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZES TO ACCOMODATE THE SKEWS.

SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

STANDARD CATCH BASINS

FOR USE WITH CURB (6" OR 8" HT.) & GUTTER (IN SAGS OR LOW POINTS)

SCALE AS SHOWN

REV. & RED. AUGUST, 1982

REV. & REDR. R.M.U.	(SUBMITTED) Lloyd E. Hardy STATE ROAD & AIRPORT DESIGN ENGR.	NUMBER 1034D
TRA G.M.E. CHK. R.K.C.	(APPROVED) Thomas D. Moseley STATE HIGHWAY ENGINEER	

FORM EF3

CATCH BASIN N.T.S. 1 C6-5

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

STORMWATER DETAILS, SHEET 4

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C6-5

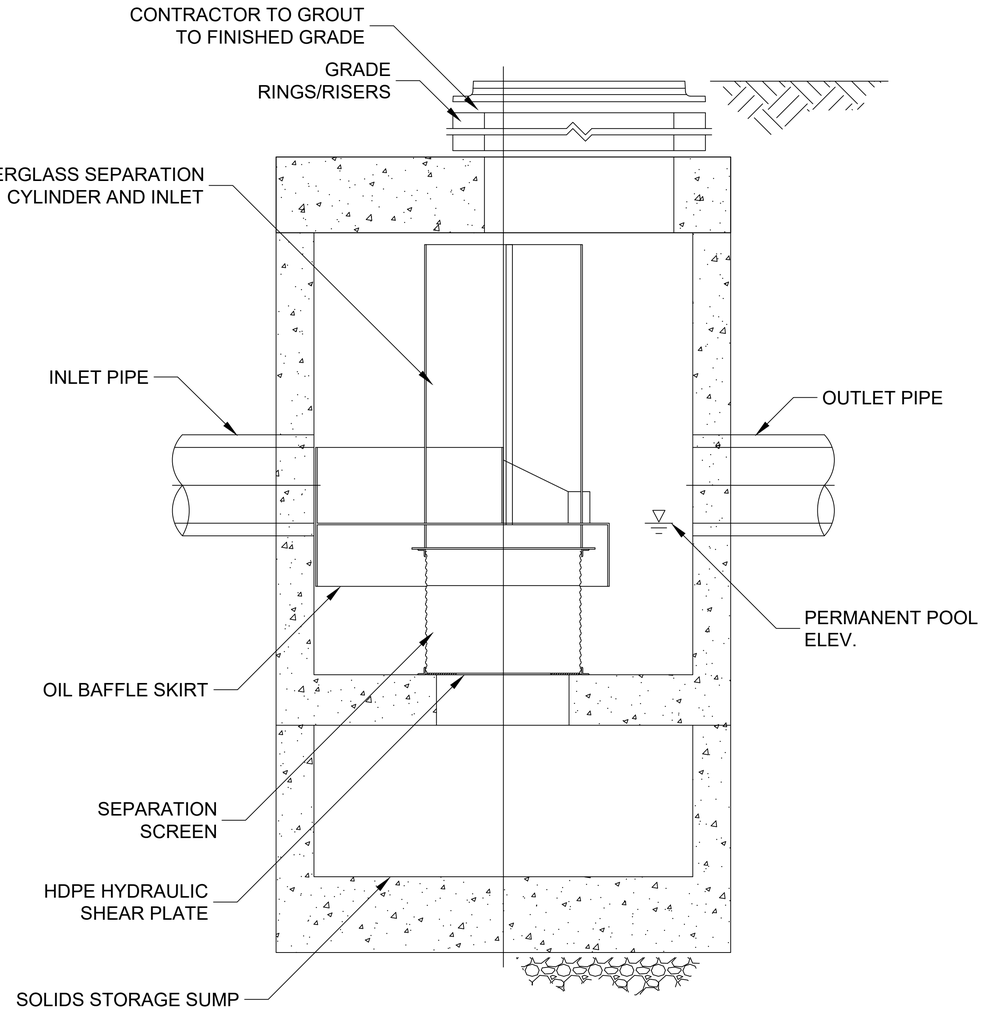
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\STORM WATER DETAILS.dwg

GENERAL NOTES

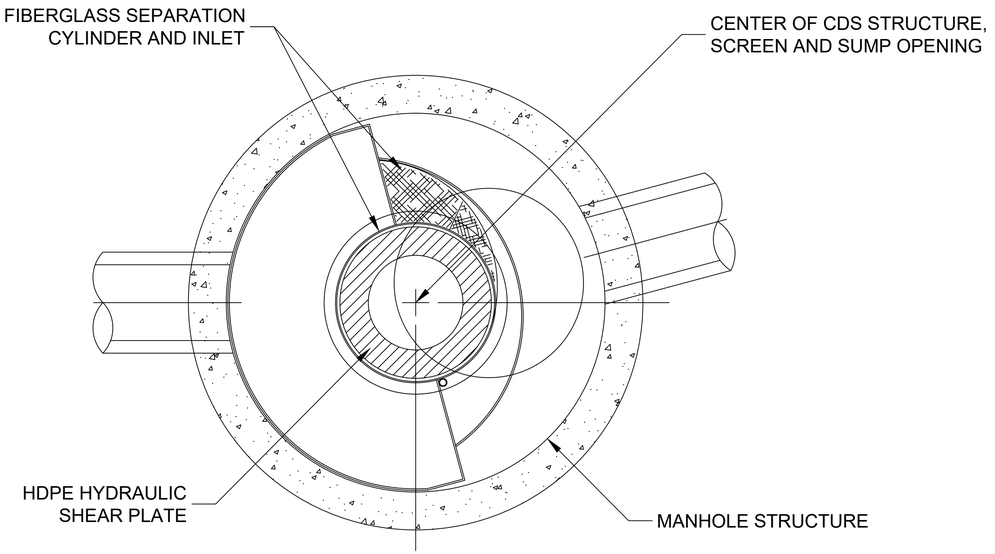
1. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
2. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
3. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
4. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.
F. CONSTRUCT AS CURB INLET. SEE STRUCTURE F IN SITE PLAN.



PROFILE



PLAN

WATER QUALITY UNIT

N.T.S.

1
C6-6

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

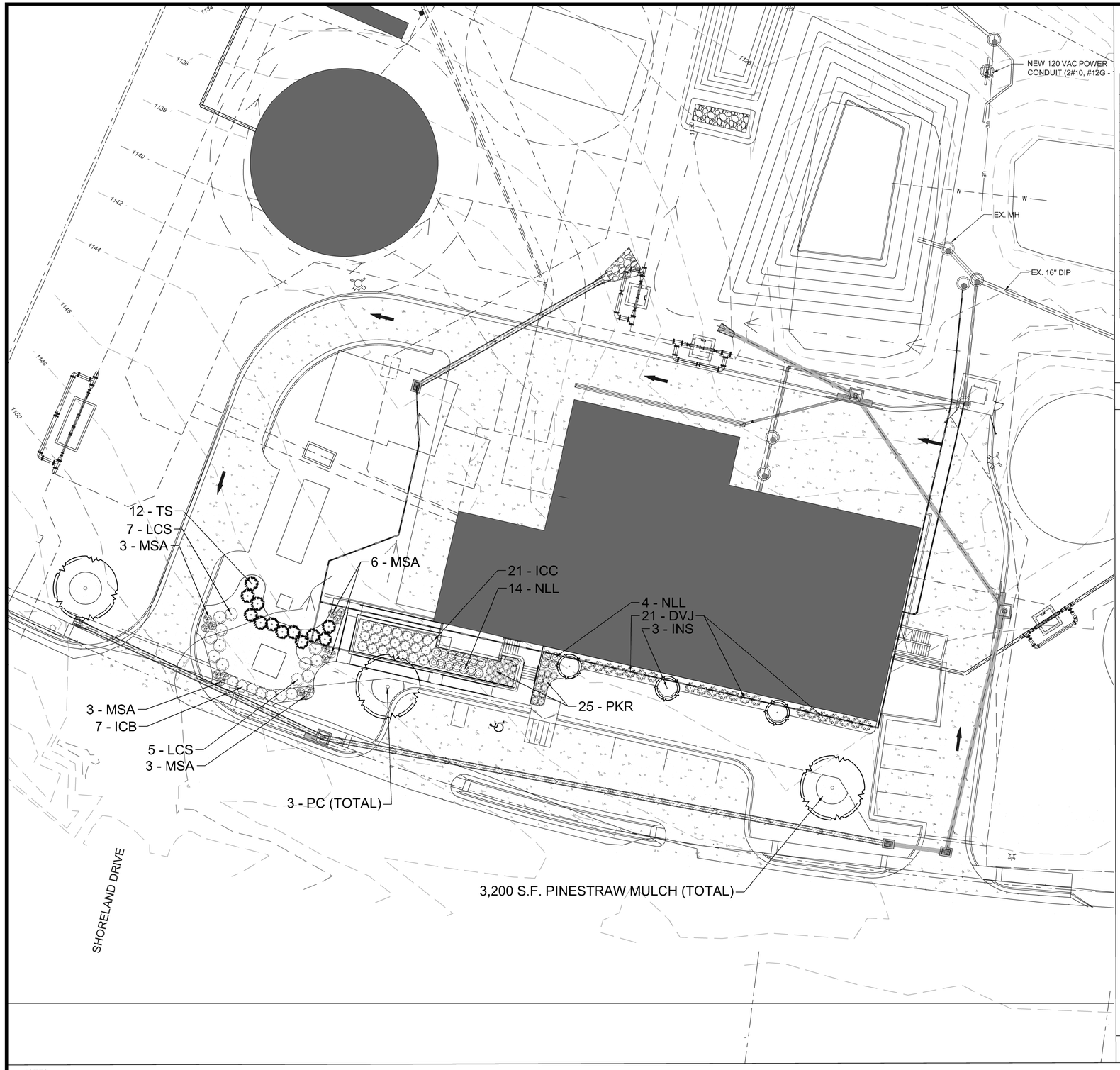
STORMWATER DETAILS, SHEET 5

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: C6-6

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\STORM WATER DETAILS.dwg



Buford Water Treatment Plant Planting Schedule

Qty.	Symbol	Scientific Name	Common Name	Size	Notes
Trees					
12	TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6' TALL	
3	PC	Pistacia chinensis	Chinese Pistache	2" CAL.	
Total	**15**				
Shrubs					
21	DVJ	Distylium 'Vintage Jade'	Distylium	3 GAL.	
7	ICB	Ilex cornuta 'burfordii nana'	Dwarf Burford Holly	7 GAL.	
21	ICC	Ilex cornuta 'Carissa'	Carissa Holly	3 GAL.	
3	INS	Ilex 'Nellie R. Stevens'	Nellie Stevens Holly	6' TALL	
18	NLL	Nandina domestica 'Lemon Lime'	Lemon Lime Nandina	3 GAL.	
12	LCS	Loropetalum chinense 'Rubrum'	Loropetalum	3 GAL.	
Total	**82**				
Grasses					
25	PKR	Pennisetum orientale 'Karley Rose'	Karley Rose Fountain Grass	3 GAL.	
15	MSA	Miscanthus Sinensis 'Adagio'	Adagio' Miscanthus	3 GAL.	
Total	**40**				
Mulch					
3,250	SF	Pine Straw Mulch			
Total	**3250**				

PLANT SCHEDULE

CHINESE PISTACHE

NELLIE R. STEVENS HOLLY

EMERALD GREEN ARBOVITAE

LOROPETALUM

DWARF BUFORD HOLLY

DISTYLIUM

CARISSA HOLLY

LEMON LIME NANDINA

ADAGIO MISCANTHUS

KARLEY ROSE FOUNTAIN GRASS

PINESTRAW MULCH

PLANT LEGEND

NOTES:
1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
3. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING AT ALL POINTS OF FINISHED GRADE.

SCALE: 1" = 20'

Keck+Wood
COLLABORATION BY DESIGN
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GA. 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED 04/14/2021 1727 LANDSCAPE ARCHITECT CLARENCE E. BARRINEAU III

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

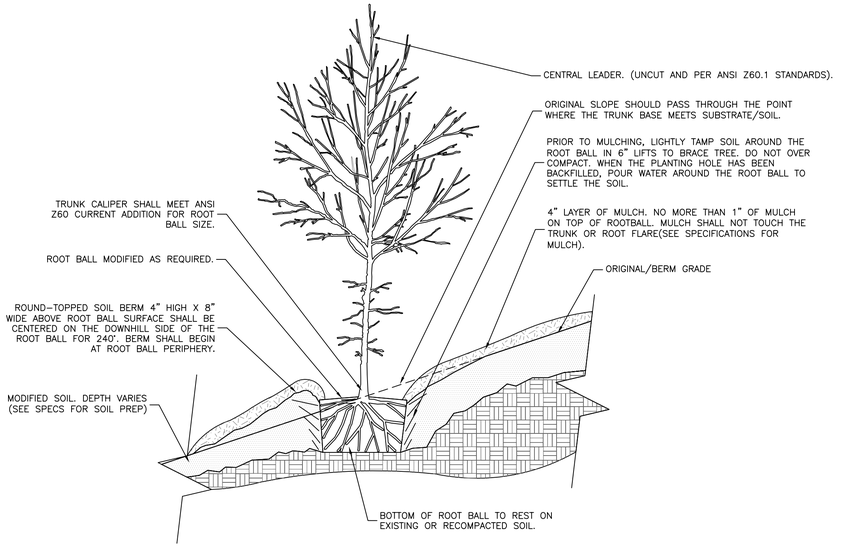
LANDSCAPE PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

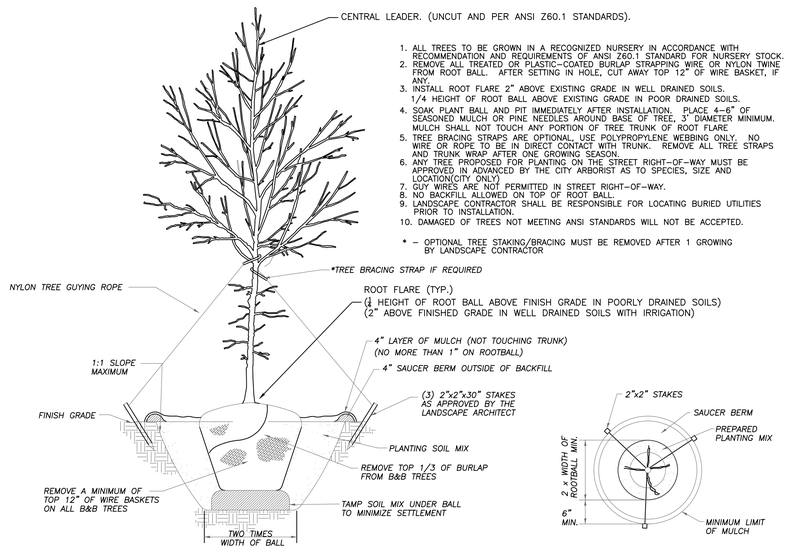
Project Manager: Jolene Northrop, P.E.
Drawn By: LMG
Checked By: CEB
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: L1.0

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Landscaping\Landscape_2.dwg



TREE ON SLOPE (20:1) TO (2:1)

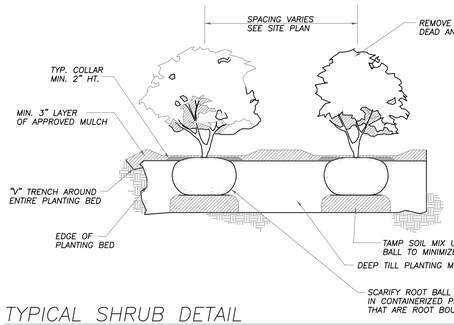


1. ALL TREES TO BE GROWN IN A RECOGNIZED NURSERY IN ACCORDANCE WITH RECOMMENDATION AND REQUIREMENTS OF ANSI Z60.1 STANDARD FOR NURSERY STOCK.
2. REMOVE ALL TREATED OR PLASTIC-COATED BURLAP STRAPPING WIRE OR NYLON TWINE FROM ROOT BALL. AFTER SETTING IN HOLE, CUT AWAY TOP 12" OF WIRE BASKET, IF ANY.
3. INSTALL ROOT FLARE 2" ABOVE EXISTING GRADE IN WELL DRAINED SOILS. 1/4 HEIGHT OF ROOT BALL ABOVE EXISTING GRADE IN POOR DRAINED SOILS.
4. SOAK PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION. PLACE 4-6" OF SEASONED MULCH OR PINE NEEDLES AROUND BASE OF TREE, 3' DIAMETER MINIMUM. MULCH SHALL NOT TOUCH ANY PORTION OF TREE TRUNK OF ROOT FLARE.
5. TREE BRACING STRAPS ARE OPTIONAL, USE POLYPROPYLENE WEBBING ONLY. NO WIRE OR ROPE TO BE IN DIRECT CONTACT WITH TRUNK. REMOVE ALL TREE STRAPS AND TRUNK WRAP AFTER ONE GROWING SEASON.
6. ANY TREE PROPOSED FOR PLANTING ON THE STREET RIGHT-OF-WAY MUST BE APPROVED IN ADVANCED BY THE CITY ARBORIST AS TO SPECIES, SIZE AND LOCATION(CITY ONLY)
7. GUY WIRES ARE NOT PERMITTED IN STREET RIGHT-OF-WAY.
8. NO BACKFILL ALLOWED ON TOP OF ROOT BALL.
9. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING BURIED UTILITIES PRIOR TO INSTALLATION.
10. DAMAGED OF TREES NOT MEETING ANSI STANDARDS WILL NOT BE ACCEPTED.

* - OPTIONAL TREE STAKING/BRACING MUST BE REMOVED AFTER 1 GROWING BY LANDSCAPE CONTRACTOR

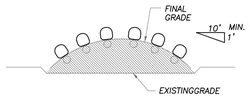
STANDARD TREE DETAIL

1 TREE PLANTING DETAILS — N.T.S.

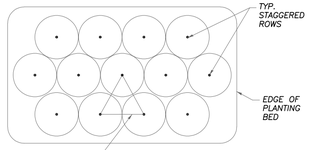


NOTES:
1. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
2. INSTALL TOP OF PLANT ROOTBALL 2-3" ABOVE ADJACENT GRADE.
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. SOAK EACH PLANT BALL AND PLANT BED IMMEDIATELY AFTER INSTALLATION.
5. SHRUBS SHALL HAVE SAME RELATIONSHIP TO FINISH GRADE AS TO PREVIOUS EXISTING GRADE.
6. PLANT AZALEAS, RHODODENDRONS AND CAMELLIAS HIGH, 1/2 TO 1/3 OF BALL ABOVE THE GROUND. BRING SOIL UP TO AND COVER THE EXPOSED BALL.
7. ENSURE ALL PLANTING AREAS HAVE POSITIVE DRAINAGE.
8. NOTIFY LANDSCAPE ARCHITECT OF ANY POORLY DRAINED SOIL FOUND ON SITE.

TYPICAL SHRUB DETAIL

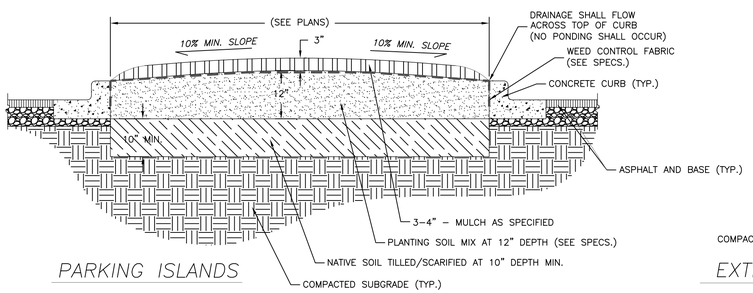


TYPICAL BED MOUNDING

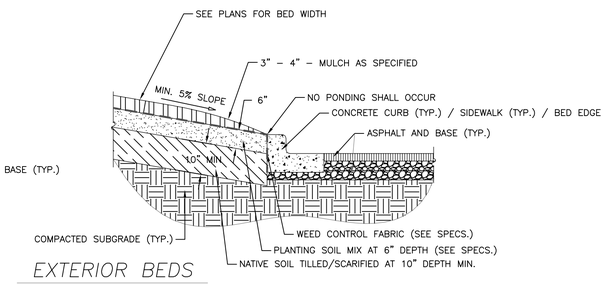


SHRUB SPACING AND BED MOUNDING

2 SHRUBS PLANTING DETAILS — N.T.S.



PARKING ISLANDS

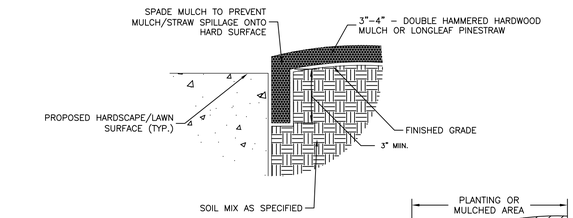


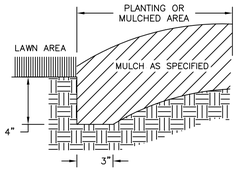
EXTERIOR BEDS

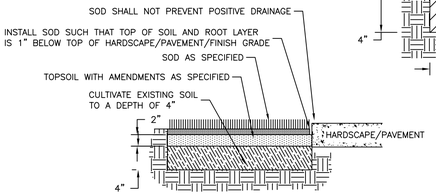
NOTES:
1. CONTRACTOR TO REMOVE ALL CONSTRUCTION DEBRIS, ROCKS, OR ANY FOREIGN OBJECTS FROM THE NATIVE SOIL.
2. SOIL AMENDMENTS SHALL ADDED TO AREAS OF PROPOSED PLANTINGS
3. ALL PLANING BEDS AND TURF AREAS SHALL HAVE POSITIVE DRAINAGE AND NO PONDING SHALL OCCUR.

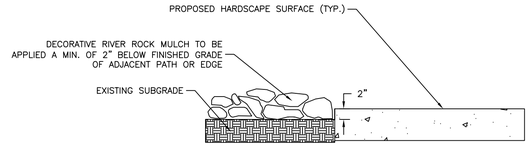
3 PLANTING BED ESTABLISHMENT DETAIL — N.T.S.

NOTE: TRENCH EDGE SHALL CREATE CLEAN SEPARATION BETWEEN HARD AND SOFT AREAS AND SHALL FOLLOW SMOOTH BEDLINES PER LANDSCAPE PLAN



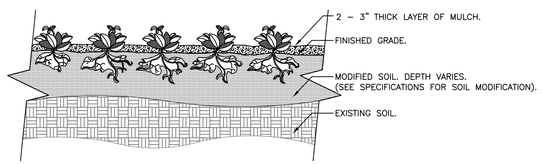




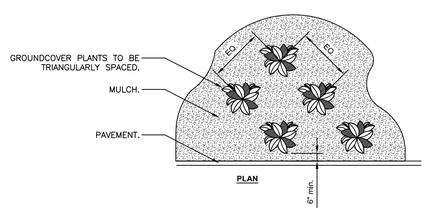


NOTE:
1.) PROVIDE PROPER DRAINAGE IN ALL DECORATIVE RIVER ROCK MULCHED AREAS.
2.) ROCK SHALL NOT BE INSTALLED IN A WAY WHICH CAUSES SPILLAGE ON TO TRAVEL PATH.

4 TURF SOD AND MULCH DETAILS — N.T.S.



SECTION VIEW



PLAN

NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
2- SMALL ROOTS (¼" OR LESS) THAT GROW AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPERHY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAWING CONTAINER DETAIL).
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

5 GROUNDCOVER PLANTING DETAILS — N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED 04/14/2021 1727 LANDSCAPE ARCHITECT CLARENCE E. BARRINEAU III

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LANDSCAPE DETAILS

THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: LMG
Checked By: CEB
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: L2.0

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Landscape\[Landscape_2.dwg

GENERAL NOTES

ITEM # 5
1. OWNER
CITY OF BUFORD
2300 BUFORD HIGHWAY
BUFORD, GA 30518

ITEM # 4
2. EMERGENCY 24-HOUR CONTACT
NAME: CLYDE BLACK
CITY OF BUFORD
(678)725-5284

CONTRACTOR: TO BE PROVIDED AFTER CONTRACT IS AWARDED

ITEM # 6
3. TOTAL SITE AREA: 6.30 **ACRES** DISTURBED AREA: **3.60 ACRES**
4. THE LAND DISTRICTS AND LAND LOTS FOR THE PROJECT ARE:
PARCEL 08167 05001, LAND LOT 330 AND 167, 8TH DISTRICT

ITEM # 9
5. DESCRIPTION: CONSTRUCTION ACTIVITIES CONSIST OF SITE WORK AT THE BUFORD WATER PLANT (34°09'39.5"N 83°59'09.0"W) AND LINEAR UTILITY WORK FROM THE BUFORD WATER PLANT TO THE ASSOCIATED PUMP STATION AT LAKE LANIER (34°09'50.1"N 83°59'02.3"W). LINEAR PLACEMENT OF PROPOSED 16" DIP RAW WATER LINE IS LOCATED WITHIN AN EXISTING EASEMENT. EXISTING VEGETATION CONSISTS OF A GRAVEL ROAD THROUGH WOODED AREAS. THE PROJECT IS LOCATED IN LAND LOT 167 WITHIN HALL COUNTY, GA.
6. EXISTING SITE CONDITIONS AND ADJACENT AREAS: THE MAJORITY OF THE EXISTING SITE IS VEGETATED AND/OR WOODED ALONG A COMBINATION OF ROADWAY RIGHT-OF-WAYS AND PRIVATE PROPERTY. SLOPES VARY FROM GENTLE TO STEEP AND THE VEGETATION VARIES FROM GRASS AND SOD TO MOSS AND DIRT SCATTERED WITH GRAVEL. EXISTING DRIVEWAY AND STRUCTURES WILL BE REMOVED AND REPLACED.
7. THIS SITE DOES NOT CONTAIN WETLANDS OR ANY KNOWN CEMETERIES.
8. NO UNIQUE VEGETATION, INCLUDING WETLAND VEGETATION, HAVE BEEN FOUND TO EXIST WITHIN THE LIMITS OF THIS PROJECT.

ITEM # 11
9. PROJECT SITE CONTAINS STATE WATERS REQUIRING UNDISTURBED BUFFERS, 25'.
10. LAKE SIDNEY-LANIER IS THE RECEIVING WATERS.
11. THIS PROJECT DOES NOT DISCHARGE STORM WATER INTO AN IMPAIRED STREAM SEGMENT AND IS NOT WITHIN 1 MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT.

ITEM # 18
12. NO EXISTING STORM DRAIN PIPES OR WEIRS WILL BE AFFECTED.
13. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
14. SITES ARE LOCATED IN THE CITY OF BUFORD UNLESS OTHERWISE NOTED.
15. ALL LAND DISTURBING ACTIVITY IS LOCATED WITHIN RESIDENTIAL AND RURAL AREAS.
16. ALL SPECIAL FLOOD HAZARD AREA INFORMATION TAKEN FROM PANEL 13139C0290G ON FIRM MAPS DATED 4/4/2018.
17. WORK ZONES WILL BE SET UP ACCORDING TO M.U.T.C.D. MANUAL.
18. RETAINING WALLS OVER 4' IN HEIGHT AND PART OF INITIAL INFRASTRUCTURE WILL BE REQUIRED TO BE INSPECTED BY DESIGN PROFESSIONAL OR REPRESENTATIVE AND INSPECTION REPORT WILL BE REQUIRED AT TIME OF C.O.
19. ALL MANHOLES OR CATCH BASINS MAY NOT BE COVERED DURING OR AFTER CONSTRUCTION AND SHALL BE VISIBLE AND CLEAN ON FINAL INSPECTION.
20. SHOULDER RESTORATION WILL BE LEVEL WITH EXISTING ASPHALT AND SLOPING TO DITCH LINE.
21. ALL DRIVEWAY APRONS MUST BE INSPECTED WHEN FORMED AND AFTER POURED.
22. CONTRACTOR MUST CALL CITY PUBLIC WORKS ENGINEERS OFFICE FOR INSPECTION OF ALL STORM DRAIN SYSTEMS (PIPES, BOXES, CATCH BASINS, ETC.) BEFORE BACKFILLING.
23. CONCRETE TRUCK DRUMS SHALL NOT BE WASHED OUT ONSITE AND SURPLUS CONCRETE WILL NOT BE DISCARDED ONSITE.
24. CONCRETE TRUCK SHOOTS AND TOOLS WILL BE WASHED OUT INTO THE WORKING TRENCH PRIOR TO BACKFILL. NO WATER FROM WASHING OFF TOOLS OR SHOOTS WILL LEAVE THE SITE OR DRAIN ONTO UNDISTURBED AREAS.

ITEM # 27
25. ANY SOIL OR DEBRIS ON ROAD WILL BE REMOVED DAILY OR IMMEDIATELY IF A HAZARDOUS ROAD CONDITION EXISTS.
26. PROVIDE COVER (E.G. PLASTIC SHEETING, TEMPORARY ROOFS) FOR BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON THE SITE. COVER WILL BE UTILIZED TO MINIMIZE THE EXPOSURE OF THESE PRODUCTS TO PRECIPITATION AND TO NEGATE STORMWATER DISCHARGE OF POLLUTANTS FROM THESE AREAS.
27. LIMIT OF DISTURBANCE SHALL BE NO GREATER THAN 50 ACRES AT ANY ONE TIME WITHOUT PRIOR WIRTTEN AUTHORIZATIONFROM THE EPD DISTRICT OFFICE.

PUBLIC UTILITIES NOTES

1. THE OWNER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY WATER OR SANITARY SEWER LINE CONSTRUCTION OR REPAIRS. ONLY CONTRACTORS APPROVED BY BUFORD PUBLIC UTILITIES DEPARTMENT WILL BE ALLOWED TO PERFORM CONSTRUCTION OR REPAIRS CONNECTED TO SAID WATER OR SANITARY SEWER MAINS. CALL ENGINEERING INSPECTOR'S OFFICE AT (770) 538-2470 PRIOR TO BEGINNING CONSTRUCTION OR TO BECOME AN APPROVED CONTRACTOR.
2. ALL WATER MAIN AND SANITARY SEWER MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CITY OF BUFORD "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER MAINS AND SANITARY SEWERS", (LATEST EDITION).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MARKED-UP SET OF CONTRACT DRAWINGS SHOWING "AS-BUILT" CONDITIONS. THESE "RECORD DRAWINGS" SHALL BE MADE AVAILABLE TO THE ENGINEER AND/OR THE CITY INSPECTOR UPON REQUEST. THE MARK-UPS SHALL BE AT THE SITE AT ALL TIMES AND SHALL BE UTILIZED TO DEVELOP FINAL RECORD DRAWINGS. FINAL ACCEPTANCE OF WATER AND/OR SEWER MAIN CONSTRUCTION WILL NOT BE GRANTED UNTIL AS-BUILT DRAWINGS HAVE BEEN RECEIVED BY CITY OF GAINESVILLE PUBLIC UTILITIES ENVIRONMENTAL COMPLIANCE AND PERMITTING OFFICE.
4. MAINTAIN A MINIMUM 10 FEET HORIZONTAL DISTANCE BETWEEN WATER & SEWER LINE.
5. MAINTAIN A MINIMUM 18 INCH VERTICAL DISTANCE BETWEEN WATER AND SEWER LINE.
6. WHERE WATER AND SANITARY SEWER LINES CROSS, THE WATER MAIN SHALL BE 18 INCHES ABOVE THE SEWER. IF THE SEWER MUST BE ABOVE THE WATER MAIN, THE SEWER SHALL BE AT LEAST 18 INCHES ABOVE AND ENCASED IN CONCRETE A MINIMUM OF 10 FEET ON EACH SIDE OF THE WATER MAIN. JOINTS SHALL BE SPACED TO PROVIDE MAXIMUM DISTANCE FROM CROSSING.
7. WHERE WATER OR SANITARY SEWER MAINS CROSS STORM DRAINS, MINIMUM 18 INCHES VERTICAL SEPARATION SHALL BE MAINTAINED.

EROSION CONTROL NOTES

ITEM # 19
1. **INSTALLATION: 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.**

ITEM # 20
2. **MAINTENANCE: 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.**

ITEM # 21
3. **ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.**
4. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENTS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE EMPLOYED BY THE CONTRACTOR WHERE DETERMINED NECESSARY BY LOCAL AUTHORITIES OR THE ENGINEER BASED UPON ACTUAL SITE CONDITIONS. CHECK DAMS (Cd) WILL BE USED AS NEEDED.
5. EROSION CONTROL MEASURES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE DRAWINGS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE DRAINAGE PATTERNS SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ADDITIONAL SEDIMENT BARRIERS WILL BE PLACED AS REQUIRED BY INSPECTOR.
6. MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION.
7. PROVISIONS TO PREVENT EROSION OF SOIL FROM SITE SHALL BE, AT A MINIMUM, IN CONFORMANCE WITH THE LATEST REVISION OF THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA."
8. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
9. IF FINES OR PENALTIES ARE LEVIED AGAINST THE PROPERTY OR THE PROPERTY OWNER BECAUSE OF A LACK OF EROSION OR SEDIMENTATION CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF SUCH FINES OR PENALTIES, OR THE COST OF SUCH FINES OR PENALTIES SHALL BE DEDUCTED FROM THE CONTRACT AMOUNT.

ITEM # 18
10. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
11. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAYS OR INTO STORM DRAINS SHALL BE KEPT TO A MINIMUM & REMOVED BY THE END OF THE DAY.

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC NOTES AND DETAILS.dwg

EROSION CONTROL NOTES (CONT.)

ITEM # 36
12. THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL TAKE PLACE PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
13. TEMPORARY MULCHING SHALL BE PROVIDED TO DISTURBED AREAS DAILY.
14. LIMITS OF CONSTRUCTION SHALL BE CONTAINED WITHIN THE RIGHT OF WAY OR ON SITE AND EASEMENTS OBTAINED BY THE PUBLIC UTILITIES DEPARTMENT.
15. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO DISTURBANCE ACTIVITY SHALL OCCUR OUTSIDE THE LIMITS INDICATED ON THE DRAWINGS.
16. ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) WILL BE INSPECTED DAILY, AND ANY DEFICIENCIES WILL BE CORRECTED BY THE END OF EACH DAY. ADDITIONAL EROSION CONTROL BMPS WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION BY THE ISSUING AUTHORITY.
17. SEDIMENT CONTROL MEASURES WILL BE MAINTAINED UNTIL ALL UPSTREAM DISTURBED GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/PARKING HAVE BEEN PAVED.
18. CONTRACTOR SHALL INSPECT AND REPAIR EROSION CONTROL MEASURES AT LEAST DAILY AND PRIOR TO EACH ANTICIPATED RAINFALL.
19. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT FROM SEDIMENT BARRIERS AND CHECK DAMS WHICH BECOME SILTED ABOVE ONE-HALF OF THEIR ORIGINAL HEIGHT.
20. ALL AREAS TO BE PAVED SHALL BE STABILIZED WITH BASE MATERIAL AS SOON AS PRACTICAL. TEMPORARY OR PERMANENT VEGETATIVE STABILIZATION SHALL BE PROVIDED IMMEDIATELY AFTER REACHING FINAL GRADE FOR ALL AREAS NOT TO BE PAVED.
21. THE CONSTRUCTION ACTIVITIES AT THESE SITES WILL NOT RESULT IN FLOODING OR CHANNEL DEGRADATION DOWNSTREAM.
22. NO CUT OR FILL SLOPES STEEPER THAN 2:1 ARE ALLOWED. SPECIAL ATTENTION WILL BE GIVEN TO FILLS OVER 5 FEET IN HEIGHT.
23. ALL FILL SLOPES WILL HAVE SILT FENCES AT THE TOE OF SLOPES.
24. SURFACE ROUGHENING (Su): ALL CUT AND FILL SLOPES SHALL BE SURFACE ROUGHENED AND VEGETATED WITHIN (3) THREE DAYS AFTER GRADING IS COMPLETED.
25. AT THE END OF EACH WORK DAY, ALL SLOPES 2:1 OR STEEPER AND HIGHER THAN 5 FEET SHALL RECEIVE SURFACE ROUGHENING, POLYMERS, AND MATTING.
26. DOUBLE ROW TYPE S SILT FENCE REQUIRED WHEN PLACED ALONG STATE WATERS AND AT THE TOE OF SLOPES EXCEEDING 10' VERTICAL.
27. CHECK DAMS SHALL HAVE A MAXIMUM SPACING OF 150 FEET IN DITCH LINE.
28. AN UNDISTURBED VEGETATIVE BUFFER (MEETING COUNTY & STATE REGULATIONS) AND THE APPROPRIATE IMPERVIOUS SETBACK ADJACENT TO ALL STATE WATERS WILL BE PRESERVED.
29. SIGN EVERY LOT OR EVERY 100', WHICHEVER IS LESS, STATING: "STREAMSIDE BUFFER - DO NOT REMOVE OR ALTER EXISTING NATIVE VEGETATION."
30. CRITICAL AREAS: RIP RAP AND/OR STONE CHECK DAMS SHALL BE PLACED AT ALL CRITICAL EROSION AREAS INCLUDING, BUT NOT LIMITED TO, STREAM CROSSINGS.
31. PERMANENT VEGETATION SHALL BE PROVIDED AT THE EARLIEST SUITABLE GROWING SEASON.
32. WHEN ANY CONSTRUCTION BORDERS A DRAINAGE COURSE, THE CONTRACTOR SHALL NOT DEPOSIT ANY BUILDING OR OTHER EXCAVATION SPOIL DIRT, CONSTRUCTION TRASH OR DEBRIS, ECT. IN THE DRAINAGE COURSE OR ASSOCIATED FLOOD PLAIN.
33. GRADING EQUIPMENT MUST CROSS FLOWING STREAMS BY THE MEANS OF BRIDGING OR CULVERTS, EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE; ALL STREAM CROSSINGS WILL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION OF THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA."
34. DISCHARGE OF STORM-WATER RUN-OFF FROM DISTURBED AREAS TO A STREAM SHALL BE CONTROLLED TO THE EXTENT THAT TURBIDITY OF THE STREAM DOWNSTREAM FROM THE DISCHARGE SHALL NOT EXCEED 25 NEPHELOMETRIC TURBIDITY UNITS HIGHER THAN THE TURBIDITY LEVEL OF THE RECEIVING STREAM IMMEDIATELY UPSTREAM FROM THE STORM-WATER RUN-OFF DISCHARGE AT THE TIME OF SUCH DISCHARGE.
35. DISPOSE OF WASTE SOILS AND CLEARED AND GRUBBED & CONSTRUCTION DEBRIS OFF-SITE AT AN APPROVED LANDFILL SECURED BY THE CONTRACTOR, AND IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
36. ALL SOLID WASTE IS TO BE HAULED OFF-SITE. STUMPS AND CONSTRUCTION DEBRIS SHALL BE DEPOSITED IN A PROPERLY PERMITTED LANDFILL.
37. CONSTRUCTION EXIT IS PROVIDED TO MINIMIZE THE AMOUNT OF OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENTS AND DUST GENERATION. THE CONSTRUCTION ENTRANCE/EXIT ALSO ACTS AS A FUELING AREA WHICH WILL PROVIDE REMEDIATION OF PETROLEUM SPILLS AND LEAKS.

ITEM # 15
38. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFER AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS, EXCEPT AS PERMITTED UNDER GEN. NPDES PERMIT # GAR100002 PART IV (i), (ii), AND (iii).

ITEM # 14
39. UPON NOTIFICATION BY THE PRIMARY PERMITTEE, THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN SHALL INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN SEVEN (7) DAYS AFTER INSTALLATION.

ITEM # 17
40. ANY AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
41. THESE PLANS HAVE BEEN PREPARED TO MEET THE REQUIREMENTS UNDER THE STATE OF GEORGIA, DEPT. OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION (EPD), GENERAL PERMIT NO. GAR 100002 FOR AUTHORIZATION TO DISCHARGE UNDER THE NPDES, STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FOR THIS PROJECT
42. RETAINING WALLS OVER 4' IN HEIGHT AND PART OF INITIAL INFRASTRUCTURE WILL BE REQUIRED TO BE INSPECTED BY DESIGN PROFESSIONAL OR REPRESENTATIVE AND AN INSPECTION REPORT WILL BE REQUIRED AT TIME OF C.O.
43. SEE DETAIL PAGES FOR CHART WITH SYMBOLS, DETAILS, AND DESCRIPTIONS OF FULL EROSION CONTROL MEASURES.

ITEM # 7
44. GPS LOCATION OF CONSTRUCTION EXIT: 34°09'35.5"N 83°59'09.7"W

SOIL CLEANUP AND CONTROL PRACTICES

1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
2. 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, MAPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
4. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
5. 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.
6. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
7. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACT, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
8. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACT, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.
9. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1,320 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.
10. SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE
11. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY REGARDLESS OF THE SIZE.
12. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
13. THE CONTRACTOR'S SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSON WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THIS INDIVIDUAL WILL BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE (OR DESIGNATED ONSITE JOB LOCATION).

PRODUCT SPECIFIC PRACTICES

ITEM # 25
1. PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL 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 WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
2. PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
3. CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.
4. FERTILIZER/HERBICIDES - THESE PRODUCTS WILL 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 WILL BE UNDER ROOF IN SEALED CONTAINERS.
5. BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF USING PROPER WASTE DISPOSAL PROCEDURES.

ITEM # 24

CONCRETE TRUCKS

1. CONCRETE TRUCK DRUMS WILL NOT BE WASHED OUT ONSITE.
2. SURPLUS CONCRETE WILL NOT BE DISCARDED ONSITE.
3. CONCRETE TRUCK SHOOTS AND TOOLS WILL BE WASHED OUT INTO THE WORKING TRENCH PRIOR TO BACKFILL.
4. NO WATER FROM WASHING OFF TOOLS OR SHOOTS WILL LEAVE THE SITE OR DRAIN ONTO UNDISTURBED AREAS.

SANITARY WASTE

1. A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.
2. ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMPS MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE TO PREVENT WASTE FROM CONTRIBUTING TO STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE.

ITEM # 30

INSPECTIONS

PRIMARY, SECONDARY, AND TERTIARY PERMITTEE RESPONSIBILITIES. THE DESIGN PROFESSIONAL WHO PREPARED THIS ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT REQUIREMENTS AND PERIMETER.

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 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 NON-WORKING 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, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATIVE 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.

SAMPLING REQUIREMENTS

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WIT THIS PERMIT. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

A. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:
  1. A USGA TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE INFRASTRUCTURE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS FOR EACH REPRESENTATIVE STORMWATER OUTFALL. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;
  2. A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;
  3. WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND
  4. ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CERTIFICATION:

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR THE CITY OF BUFORD, GA BUFORD WATERWORKS EXPANSION WERE DEVELOPED UNDER THE DIRECT SUPERVISION OF JOLENE NORTHROP, GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL, CERTIFICATION NO. 0000085206.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

No. 037813
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EROSION CONTROL NOTES, SHEET 1

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: ES-1

SAMPLING REQUIREMENTS

B. SAMPLE TYPE: ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 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.

ITEM # 33

1. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
2. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS 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. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. 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 OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

C. SAMPLING POINTS

1. FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR ALL OUTFALLS INTO SUCH STREAMS AND OTHER WATER BODIES, OR A COMBINATION THEREOF. HOWEVER, PROVIDED FOR IN AND IN ACCORDANCE WITH PART IV.D.6.C(2) OF THIS PERMIT, PRIMARY PERMITTEES ON AN INFRASTRUCTURE CONSTRUCTION PROJECT MAY SAMPLE THE REPRESENTATIVE PERENNIAL AND INTERMITTENT STREAMS, OTHER WATER BODIES OR OUTFALLS, OR A COMBINATION THEREOF. SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:
   A. THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.
   B. DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.
   C. IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S)
   D. CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.
   E. THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.
   F. THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.
   G. PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREA NOT COVERED BY PERMANENT STRUCTURES, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURE OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE.
   H. ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.
2. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, THE PERMITTEE IS NOT REQUIRED TO SAMPLE A PERENNIAL OR INTERMITTENT STREAM OR OTHER WATER BODIES (OR THE ASSOCIATED OUTFALL, IF APPLICABLE) IF THE DESIGN PROFESSIONAL PREPARING THE PLAN CERTIFIES THAT AN INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED RECEIVING WATER TO BE SAMPLED WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER. A WRITTEN JUSTIFICATION AND DETAILED ANALYSIS SHALL BE PREPARED BY THE DESIGN PROFESSIONAL JUSTIFYING SUCH PROPOSED SAMPLING. A SUMMARY CHART OF THE JUSTIFICATION AND ANALYSIS FOR THE REPRESENTATIVE SAMPLING MUST BE INCLUDED ON THE PLAN. THE JUSTIFICATION AND ANALYSIS SHALL INCLUDE THE LOCATION AND DESCRIPTION OF THE SPECIFIED SAMPLED AND UN-SAMPLED RECEIVING WATER AND SHALL CONTAIN A DETAILED COMPARISON AND DISCUSSION OF EACH SUCH RECEIVING WATER IN THE FOLLOWING AREAS:
   A. SITE LAND DISTURBANCES AND CHARACTERISTICS;
   B. RECEIVING WATER WATERSHED SIZES AND CHARACTERISTICS; AND
   C. SITE AND WATERSHED RUNOFF CHARACTERISTICS UTILIZING THE METHODS IN APPENDIX A-1 (UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE'S TR-55, URBAN HYDROLOGY FOR SMALL WATERSHEDS) OF THE MOST RECENT VERSION OF THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA" FOR THE VARIOUS PRECIPITATION EVENTS AND ANY OTHER SUCH CONSIDERATIONS NECESSARY TO SHOW THAT THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASES IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATERS.
3. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, WHEN THE PERMITTEE DETERMINES THAT SOME RECEIVING WATER(S) WILL NOT BE SAMPLED DUE TO REPRESENTATIVE SAMPLING, THE DESIGN PROFESSIONAL MAKING THIS DETERMINATION AND PREPARING THE PLAN MUST INCLUDE AND SIGN THE FOLLOWING CERTIFICATION IN THE PLAN:
   "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGEMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 1000002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER."
4. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A SELECTED RECEIVING WATER NO LONGER REPRESENTS ANOTHER RECEIVING WATER, THEN THE PERMITTEE SHALL SAMPLE THE LATTER RECEIVING WATER UNTIL SELECTION OF AN ALTERNATIVE REPRESENTATIVE RECEIVING WATER.
5. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A RECEIVING WATER IS DETERMINED NOT TO BE REPRESENTED AS CERTIFIED IN THE PLAN, THE PERMITTEE SHALL SAMPLE THAT RECEIVING WATER UNTIL A NOTICE OF TERMINATION IS SUBMITTED OR UNTIL THE APPLICABLE PHASE IS STABILIZED IN ACCORDANCE WITH THIS PERMIT.
6. FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, MONITORING OBLIGATIONS SHALL CEASE FOR ANY PHASE OF THE PROJECT THAT HAS BEEN STABILIZED IN ACCORDANCE WITH PART IV.D.6.C.(1).(G)

D. SAMPLING FREQUENCY

ITEM # 31

1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
2. HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
3. SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:
   A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT, AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;

SAMPLING REQUIREMENTS (CONT.)

   B. IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, 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 (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) 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. WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND
   E. 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 PERMITTEE 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 INCHES AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

NON-STORMWATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORM WATER LISTED IN PART III.A.2. OF THIS PERMIT THAT ARE COMBINED WIT STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORM WATER COMPONENT(S) OF THE DISCHARGE.

REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.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.

RETENTION OF RECORDS

ITEM # 32

1. 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 O 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 SAMPLING 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 (2). OF THIS PERMIT.
2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION), OR OTHER REPORTS REQUESTED BY THE EPD, 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 PERMITTEES 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.

APPENDIX B - NTU VALUE

1. THE SURFACE WATER DRAINAGE AREA IS LESS THAN 5 MILES FOR THE SITE AND THE SITE SIZE IS UNDER 10 ACRES. THIS SITE DRAINS TO WARM WATERS. THEREFORE, THE NTU VALUE FOR THE SITE IS 75.

Ds1 DISTURBED AREA STABLIZATION (WITH MULCHING ONLY)
ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.

Ds2 TEMPORARY

Ds3 PERMANENT

RATES PER 1,000 SQUARE FEET

AREA	SOWING SEASON	SPECIES	SEED	FERTILIZER	LIMESTONE	MAINTENANCE	MULCH
FLAT TO ROLLING TERRAIN WITH SLOPES LESS THAN 3:1	8/1 - 4/1 4/1 - 9/1	RYEGRASS SUNDANGRASS	4.0 LBS. 1.4 LBS.	12 LBS. (10-10-10) 12 LBS. (10-10-10)	92 LBS. 92 LBS.	7 LBS. (10-10-10) 7 LBS. (10-10-10)	115 LBS. 115 LBS.
EMBANKMENTS WITH SLOPES GREATER THAN 3:1	3/15 - 6/15	WEEPING LOVEGRASS	0.1 LB.	12 LBS. (10-10-10)	92 LBS.	7 LBS. (10-10-10)	115 LBS.
FLAT TO ROLLING TERRAIN WITH SLOPES LESS THAN 3:1	3/1 - 6/15 8/15 - 10/30	COMMON BERMUDA (HULLED SEED) FESCUE, TALL	1.4 LBS. 0.05 LBS. 1.1 LBS.	35 LBS. (6-12-12) 35 LBS. (6-12-12)	92 LBS. 92 LBS.	10 LBS. (10-10-10) 10 LBS. (10-10-10)	115 LBS. 115 LBS.
EMBANKMENTS WITH SLOPES GREATER THAN 3:1	3/1 - 6/30 9/1 - 3/30	COMMON BERMUDA (HULLED SEED) *LESPEDEZA SERICEA	0.2 LB. 1.7 LBS.	35 LBS. (6-12-12) 35 LBS. (6-12-12)	92 LBS. 92 LBS.	10 LBS. (10-10-10) 10 LBS. (10-10-10)	115 LBS. 115 LBS.

NOTE:OMIT LIME APPLICATION IN PERMANENT GRASS ESTABLISHMENT IF IT FOLLOWS TEMPORARY GRASS ESTABLISHED IN THE SAME AREA.
* INOCULATE SEED WITH EL INOCULATE.

SEEDING REQUIREMENTS

EROSION CONTROL CERTIFICATION:

"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STEAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER."

DESIGN PROFESSIONAL

EROSION CONTROL SITE VISIT CERTIFICATION:

"I HEREBY CERTIFY UNDER PENALTY OF THE LAW THAT THE EROSION AND SEDIMENTATION CONTROL PLANS FOR THIS PROJECT WERE PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

Jolene M Northrop 4/14/2021

DESIGN PROFESSIONAL

ITEM # 12

EROSION CONTROL CERTIFICATION:

"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 1 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."

Jolene M Northrop 4/14/2021

DESIGN PROFESSIONAL

ITEM # 13

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DATE OF INSPECTION: _____

I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE OF INSPECTION

_____ _____

GSWCC LEVEL II DESIGN PROFESSIONAL — CERTIFICATION #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN:

_____

_____

_____

THESE DEFICIENCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED

EROSION CONTROL 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.

Jolene M Northrop 4/14/2021

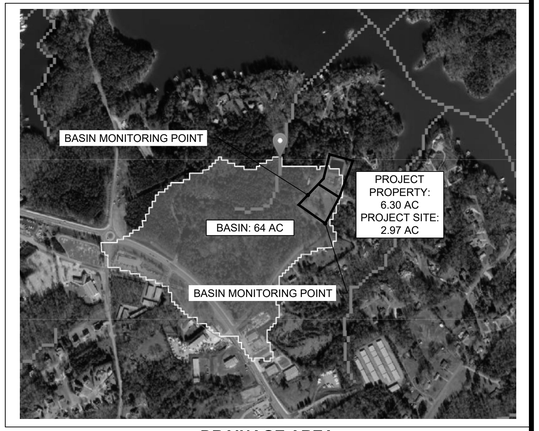
DESIGN PROFESSIONAL

ITEM # 2

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CERTIFICATION:

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR THE CITY OF BUFORD, GA BUFORD WATERWORKS EXPANSION WERE DEVELOPED UNDER THE DIRECT SUPERVISION OF JOLENE NORTHROP, GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL, CERTIFICATION NO. 0000085206.

SYMBOL	ITEM # 47 SOIL TYPE	SLOPE %
PaE	PACOLET SANDY LOAM	15 TO 25
CeC	CECIL SANDY LOAM	6 TO 10
MdB	MADISON SANDY LOAM	2 TO 6
PuD2	PACOLET SOILS	10 TO 15
MID2	MADISON SANDY CLAY LOAM	10 TO 15



DRAINAGE AREA
NTS

APPENDIX B: NEPHELOMETRIC TURBIDITY UNITS (NTU) TABLE — WARM WATER (SUPPORTING WARM WATER FISHERIES)

ITEM # 34

SITE SIZE, ACRES	SURFACE WATER DRAINAGE AREA, SQUARE MILES							
	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	(750)	750	750	750
10.01-25	50	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	150	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

ADDED DESIGN PROFESSIONAL'S SIGNITURE

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EROSION CONTROL NOTES, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-2

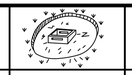
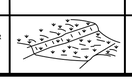
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\ES&SC\ESC NOTES AND DETAILS.dwg

ITEM # 50

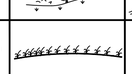
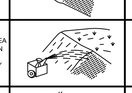
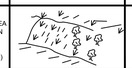
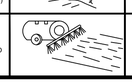
GEORGIA UNIFORM CODING SYSTEM

FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
STATE SOIL AND WATER CONSERVATION COMMISSION OF GEORGIA

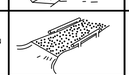
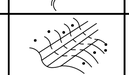
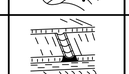
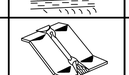
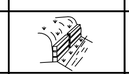
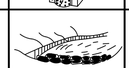
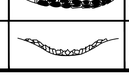
STRUCTURAL PRACTICES

Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain 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. The basin is usually temporary but may be designed as a permanent pond or stormwater retention device.
Sr	TEMPORARY STREAM CROSSING		 (LABEL)	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
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.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tp	TOPSOILING		 (Show Stripping & Storage Areas)	The practice of stripping off the more fertile top soil,storing it,then spreading it over the disturbed area after the completion of construction activities.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions,terraces,berms,dikes or similar structures.

VEGETATIVE MEASURES

Bf	BUFFER ZONE		 (LABEL)	An undisturbed natural"green belt" separating the land-disturbed site from surrounding property and bordering streams. It serves to reduce water velocity and remove some sediment. It is also at times a noise or"vision pollution"barrier.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded,artificially constructed,or renourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seeding may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2	Establishing temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3	Establishing permanent vegetative cover such as trees,shrubs,vines, grasses,sod,or legumes on disturbed areas.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction sites,roadways and similar sites.

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		 (LABEL)	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
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		 (LABEL)	A flexable 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		 (LABEL)	A paved chute,pipe,sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Ga	GABION			Rock filled baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE		 (LABEL)	Permanent structures installed to protect natural or artificial 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 drainageways.
Re	RETAINING WALL		 (LABEL)	A wall installed to stabilize cut and fill slopes where maximum permissable slopes are not obtainable. Each situation will require special design.
Rt	RETROFITTING		 (LABEL)	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		 (INDICATE TYPE)	A barrier to prevent sediment from leaving the construction site. It may be sandbags,bales or straw or hay, brush,logs and poles,gravel,or a sediment fence. The barriers are usually temporary and inexpensive.
Rp	Rip Rap			Improving, lining or stabilizing an open channel or ditch with a layer of Rip Rap to mitigate soil erosion.

ITEM # 29

ACTIVITIES SCHEDULE

ACTIVITY	MONTH NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
- LOCATE EXISTING UTILITIES																					
- INSTALL EROSION CTRL. MEASURES																					
- SITE CLEARING & GRUBBING																					
- SITE GRADING & DEMOLITION																					
- CONSTRUCTION OF SITE PIPING AND STRUCTURES INSTALLATION																					
- SURFACE RESTORATION & PAVING																					
- MAINTAIN EROSION CTRL. MEASURES																					
- INSTALL PERMANENT GRASSING																					
- REMOVE EROSION CTRL. MEASURES																					

NOTE:
THE ABOVE SCHEDULES INDICATE ESTIMATED SEQUENCE AND DURATION OF EVENTS IN CONSTRUCTION ACTIVITIES. IT HAS BEEN PREPARED WITHOUT THE ASSISTANCE OF THE CONTRACTOR. AFTER SELECTION OF THE CONTRACTOR BY THE OWNER, THE CONTRACTOR MAY PROPOSE ADJUSTMENT TO THIS SCHEDULE AS CONSIDERED NECESSARY TO SCHEDULE THE PROJECT.

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD:_____

Project Name: BUFORD WATERWORKS **Address:** 3370 N WATERWORKS RD, BUFORD, GA 30518
City/County: BUFORD, GA / HALL COUNTY **Date on Plans:** 10/22/2020
Name & email of person filling out checklist: PARKER SATTERFIELD, EIT psatterfield@kekcwood.com

Plan Page #	Included Y/N		TO BE SHOWN ON ES&PC PLAN
ES-3	Y	1	The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
ES-2	Y	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
ES-1	Y	3	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
ES-1	Y	4	Provide the name, address, email address, and phone number of primary permittee.
ES-1	Y	5	Note total and disturbed acreage of the project or phase under construction.
ES-1	Y	6	Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
ALL	Y	7	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
ES-1	Y	8	Description of the nature of construction activity.
ES-1	Y	9	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
ES-1	Y	10	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
ES-1	Y	11	Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 21 of the permit.
ES-2	Y	12	Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 20 of the permit.*
ES-2	Y	13	Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on Part IV.D.6.c.(3) page 37 of the permit as applicable.*
ES-1	Y	14	Clearly note the statement that "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 within 7 days after installation." in accordance with Part IV.A.5 page 26 of the permit *
ES-1	Y	15	Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
NA	N	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
ES-1	Y	17	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."*
ES-1	Y	18	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit."*

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CERTIFICATION:

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR THE CITY OF BUFORD, GA BUFORD WATERWORKS EXPANSION WERE DEVELOPED UNDER THE DIRECT SUPERVISION OF JOLENE NORTHROP, GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL, CERTIFICATION NO. 0000085206.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EROSION CONTROL NOTES, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC NOTES AND DETAILS.dwg

ES-1	Y	19 Clearly note statement that "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."
ES-1	Y	20 Clearly note statement that "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."
ES-1	Y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
NA	N	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.*
NA	N	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.*
ES-1	Y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.*
ES-1	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
ES-8	Y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.*
ES-1	Y	27 Description of practices to provide cover for building materials and building products on site.*
ES-5	Y	28 Description of the practices that will be used to reduce the pollutants in storm water discharges.*
ES-3	Y	29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
ES-1	Y	30 Provide complete requirements of inspections and record keeping by the primary permittee.*
ES-2	Y	31 Provide complete requirements of sampling frequency and reporting of sampling results.*
ES-2	Y	32 Provide complete details for retention of records as per Part IV.F. of the permit.*
ES-2	Y	33 Description of analytical methods to be used to collect and analyze the samples from each location.*
ES-2	Y	34 Appendix B rationale for NTU values at all outfall sampling points where applicable.*
ES-2	Y	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable.*
ES-1	Y	36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase.*
ES-6, ES-7 ES-8	Y	37 Graphic scale and North arrow.
ES-6, ES-7 ES-8	Y	38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Existing Contours	USGS 1": 2000' Topographical Sheets
Proposed Contours	1" : 400' Centerline Profile

C6-6	Y	39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.
C6-6	Y	40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.*
NA	N	41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
NA	N	42 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
ES-2	Y	43 Delineation and acreage of contributing drainage basins on the project site.
ES-1	Y	44 Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
STORM REPORT	Y	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
C4-8	Y	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
ES-2	Y	47 Soil series for the project site and their delineation.
ES-6, ES-7	Y	48 The limits of disturbance for each phase of construction.
C6-1	Y	49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
ES-3	Y	50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
ES-5	Y	51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
ES-5	Y	52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

*If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A.

Effective January 1, 2019

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CERTIFICATION:

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR THE CITY OF BUFORD, GA BUFORD WATERWORKS EXPANSION WERE DEVELOPED UNDER THE DIRECT SUPERVISION OF JOLENE NORTHROP, GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL, CERTIFICATION NO. 0000085206.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EROSION CONTROL NOTES, SHEET 4

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

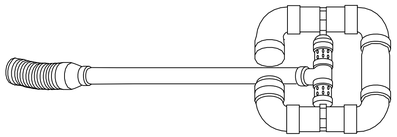
Project No.: 170110.00
Drawing No.: ES-4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC NOTES AND DETAILS.dwg

SEDIMENT POND SKIMMER

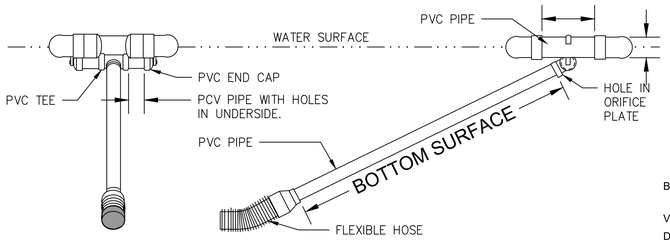
SKIMMER PERSPECTIVE

NOTE:
SKIMMER CONFIGURATION SHOWN IS TYPICAL. THE DESIGNER/ENGINEER MAY SUBMIT AN ALTERNATE SKIMMER DETAIL FOR REVIEW.



SKIMMER FRONTAL SECTION VIEW

SKIMMER SIDE SECTION VIEW



SKIMMER SIZING

BASIN SIZE: TOP 61.5' X 28.5', 5' DEPTH
BOTTOM 47' X 9'
VOLUME TO BE DRAINED: 6925 CU FT
DAYS TO DRAIN: 3 DAYS
FAIRCLOTH SKIMMER SIZE: 2.0 IN
ORIFICE RADIUS: 0.8 IN
ORIFICE DIAMETER: 1.6 IN

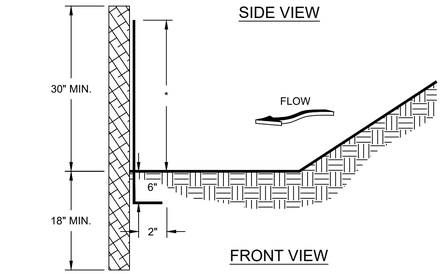
VEGETATIVE SCHEDULE

Month	Temporary (Ds2)	Rate/Acre Alone	Rate/Acre Mix	Permanent (Ds3)	Rate/Acre Alone	Rate/Acre Mix
January	Rye Annual Ryegrass	3 bu. 40 lbs.	.5 bu.	Unhulled Bermuda	10 lbs.	
February	Rye Annual Ryegrass Annual Lespedeza [2]	3 bu. 40 lbs. 40 lbs.	.5 bu. 10 lbs.	Fescue Tall Unhulled Bermuda	50 lbs. 10 lbs.	30 lbs. 6 lbs.
March	Annual Ryegrass	40 lbs.		Fescue Tall Hulled Bermuda	50 lbs. 10 lbs.	30 lbs. 6 lbs.
April	Sudangrass Brown Top Millet	60 lbs. 40 lbs.	10 lbs.	Same as March		
May	Same as April			Same as March		
June	Same as April			Hulled Bermuda	10 lbs.	6 lbs.
July	Sudengrass Pearl Millet	60 lbs. 50 lbs.				
August	Pearl Millet	50 lbs.				
September	Same as January			Fescue Tall	50 lbs.	
October	Wheat Annual Ryegrass Rye	3 bu. 40 lbs. 3 bu.	.5 bu. .5 bu.	Same as September		
November	Same as October			Same as January		
December	Same as October			Same as January		

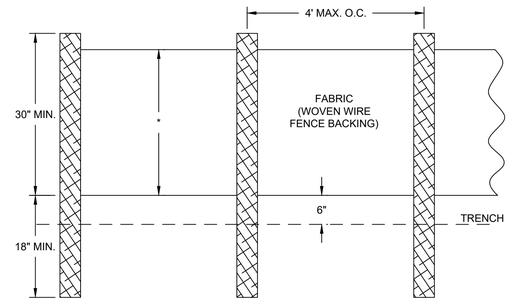
NOTES:
1. Seed should be scarified.
2. Innoculate seed.
3. For temporary vegetation, provide 700 lbs. of 10-10-10 fertilizer per acre.
4. For permanent vegetation, provide agricultural lime at 1.5 tons per acre and 6-12-12 fertilizer at 1500 lbs. per acre.
5. Apply dry hay mulch at a rate of 2 1/2 tons per acre.

SILT FENCE - TYPE SENSITIVE

SIDE VIEW



FRONT VIEW



POST SIZE			
TYPE	MIN. LENGTH	TYPE OF POST	SIZE OF POST
NS	4'	SOFT WOOD OAK STEEL	3" DIA. OR 2 X 4 1.5" X 1.5" 1.3 LB./FT. MIN.
S	4'	STEEL OAK	1.3 LB./FT. MIN. 2" X 2"

LAND SLOPE	MAXIMUM SLOPE LENGTH ABOVE FENCE
PERCENT	FEET
< 2	100
2 TO 5	75
5 TO 10	50
10 TO 20	25
> 20*	15

* IN AREAS WHERE THE SLOPE IS GREATER THAN 20%, A FLAT AREA LENGTH OF 10 FEET BETWEEN THE TOE OF SLOPE TO THE BARRIER SHOULD BE PROVIDED.

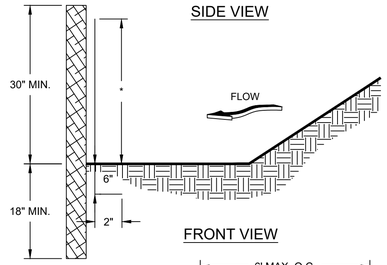
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

CONSTRUCTION OF A SILT FENCE (Sd1)

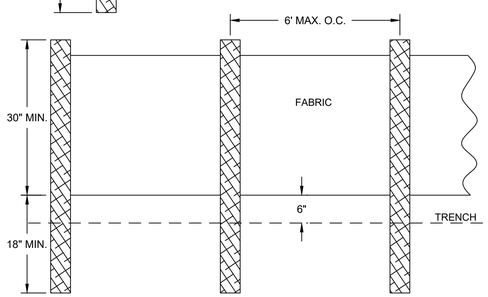
N.T.S.

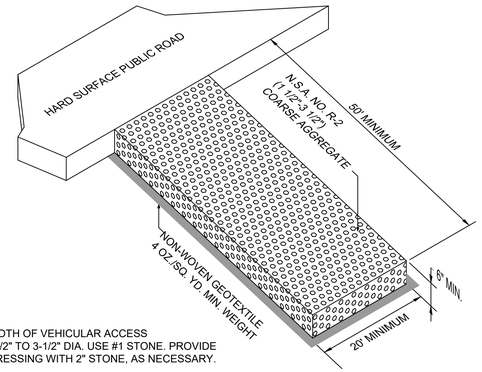
SILT FENCE - TYPE NON-SENSITIVE

SIDE VIEW



FRONT VIEW

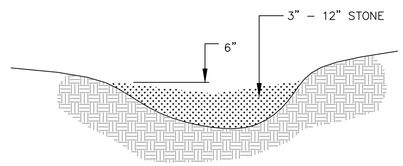




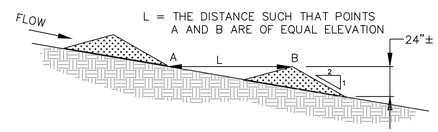
WIDTH = FULL WIDTH OF VEHICULAR ACCESS
STONE SIZE = 1-1/2" TO 3-1/2" DIA. USE #1 STONE. PROVIDE PERIODIC TOP DRESSING WITH 2" STONE, AS NECESSARY.

CONSTRUCTION EXIT (Co)

N.T.S.

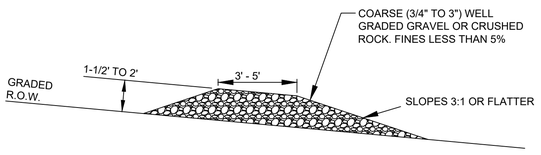


SECTION THROUGH DITCH



CHECK DAM (Cd)

N.T.S.



FILTER BERM

NOTES:
1. CONSTRUCTION PADS ARE REQUIRED. THE LENGTH AND WIDTH OF THE PAD WILL DEPEND ON THE TYPE OF ACTIVITY AND SITE CONDITIONS. PAD SIZE WILL BE DETERMINED BY THE DESIGNER OF RECORD IN THE FIELD.
2. A WOVEN GEO-TEXTILE SHALL BE PLACED UNDER THE 6" STONE PAD.
3. REMOVE TRAPPED SEDIMENT AFTER EACH STORM. CLEAN OR REPLACE FILTER MATERIAL AS NEEDED.

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CERTIFICATION:

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR THE CITY OF BUFORD, GA BUFORD WATERWORKS EXPANSION WERE DEVELOPED UNDER THE DIRECT SUPERVISION OF JOLENE NORTHROP, GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL, CERTIFICATION NO.0000085206 .

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

EROSION CONTROL DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-5

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC NOTES AND DETAILS.dwg

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004003

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004002A

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
BUFORD CITY OF
PARCEL #08167 005001

DOUBLE LAYER SILT FENCE ON DOWNHILL SIDE OF PROJECT

LIMITS OF DISTURBANCE
3.60 AC

PROPOSED SEDIMENT BASIN WITH OUTLET CONTROL STRUCTURE AND SPILLWAY

5" FAIRCLOTH SKIMMER WITH SKIMMER PIT

TEMPORARY MULCHING AND GRASSING OF SOIL STOCKPILE. COVER STOCKPILE WITH FABRIC WHEN POSSIBLE

CONCRETE WASHDOWN

CONSTRUCTION EXIT
N: 1513286.57
E: 2351236.29

Sd1-C

Fr

Sk

Ds1 | Ds2

Co

Cw

PuD2
MiD2
MiD2
PaE
CeC
MiD2
MdB
CeC

EXIST. SLUDGE POND NO. 1

EXIST. SLUDGE POND NO. 2

EXIST. CLEARWELL NO. 1

EXIST. CLEARWELL NO. 2

EXIST. SETTLING BASIN

EXIST. PRE-SETTLING POND

EXIST. SEPTIC TANK

EXIST. POND WATER OUTLET BOX (LOW WATER SUPPLY)

CONCRETE SPLASH PAD

POND W.S. = 1157.50±

EXIST. 12" DIP

POND FLOOR = 1143±

END RAW WATER LINE PHASE & VALVE

EXIST. 8" C.I. (HIGH RAW WATER SUPPLY TO PLANT)

EXIST. 45° VERT. BEND

EXIST. 8" RAW WATER SUPPLY

EXIST. 12" RAW WATER SUPPLY

EXIST. 12" GATE V

FROM RAW

MATCH LINE
SEE DWG. RWES

Nail in Asphalt
N: 1513722.88
E: 2351427.07
El: 1143.74

SHORELAND DRIVE

NORTH WATERWORKS ROAD

SCALE: 1" = 30'

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC PLAN.dwg

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

INITIAL EROSION CONTROL PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-6

DOUBLE LAYER SILT FENCE ON DOWNHILL SIDE OF PROJECT

LIMITS OF DISTURBANCE 3.60 AC

DIVERSION TO SEDIMENT BASIN

PROPOSED SEDIMENT BASIN WITH OUTLET CONTROL STRUCTURE AND SPILLWAY

5' FAIRCLOTH SKIMMER WITH SKIMMER PIT

TEMPORARY MULCHING AND GRASSING OF SOIL STOCKPILE COVER STOCKPILE WITH FABRIC WHEN POSSIBLE

PLACE EROSION CONTROL MATTING FOR FINISHED GRADE SLOPES 2:1 OR STEEPER

INLET SEDIMENT TRAP (TYP.)

CONCRETE WASHDOWN

CONSTRUCTION EXIT
N: 1513286.57
E: 2351236.29

MEMBRANE BUILDING
FFE 1137.0'

EXIST. SLUDGE POND NO. 1

EXIST. SLUDGE POND NO. 2

EXIST. CLEARWELL NO. 1

EXIST. CLEARWELL NO. 2

EXIST. SETTLING BASIN

EXIST. PRE-SETTLING POND

EXIST. SEPTIC TANK

EXIST. POND WATER OUTLET BOX (LOW WATER SUPPLY)

CONCRETE SPLASH PAD

POND W.S. = 1157.50±

EXIST. 12" DIP

POND FLOOR = 1143±

END RAW WATER LINE PHASE & VALVE

EXIST. 8" C.I. (HIGH RAW WATER SUPPLY TO PLANT)

EXIST. 45° VERT. BEND

EXIST. 8" RAW WATER SUPPLY

EXIST. 12" RAW WATER SUPPLY

EXIST. 12" GATE V

FROM RAW W

MATCH LINE
SEE DWG. RWES

Nail in Asphalt
N: 1513722.88
E: 2351427.07
El: 1143.74

SHORELAND DRIVE

NORTH WATERWORKS ROAD

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004003

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004002A

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
BUFORD CITY OF
PARCEL #08167 005001

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

INTERMEDIATE EROSION CONTROL PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-7

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC PLAN.dwg

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004003

N/F
HERITAGE SOUTH PARTNERS, L.P.
PARCEL #07330 004002A

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

N/F
BUFORD CITY OF
PARCEL #08167 005001

NEW CLEARWELL NO. 2 (BID ALT. NO. 1) FFE = 1124

NEW CLEARWELL NO. 1 FFE = 1124

NEW HIGH SERVICE PUMP STATION

NEW FLOW METER VAULT FT-4011

NEW FIRE VAULT

NEW GENERATOR

NEW TRANSFORMER

NEW OUTDOOR COVERED WORKSPACE

NEW CONCRETE CHEMICAL UNLOADING AREA

NEW MEMBRANE BUILDING

ADA RAMP AND ENTRANCE

NEW PARKING AREA

NEW FLOW METER VAULT

NEW FLOW METER VAULT FIT-1007

NEW FLOW METER VAULT

EXIST. SLUDGE POND NO. 1

EXIST. SLUDGE POND NO. 2

EXIST. CLEARWELL NO. 1

EXIST. CLEARWELL NO. 2

EXIST. SETTLING BASIN

EXIST. PRE-SETTLING POND

NEW PASSIVE INTAKE SCREEN STRUCTURE AND AIR BURST SYSTEM

EXIST. SEPTIC TANK

EXIST. POND WATER OUTLET BOX (LOW WATER SUPPLY)

CONCRETE SPLASH PAD

POND W.S. = 1157.50±

POND FLOOR = 1143±

EXIST. 12" DIP

END RAW WATER LINE PHASE & VALVE

EXIST. 8" C.I. (HIGH RAW WATER SUPPLY TO PLANT)

EXIST. 12" RAW WATER SUPPLY

EXIST. 12" GATE V

FROM RAW

EXIST. 45° VERT. BEND

EXIST. 8" RAW WATER SUPPLY

MATCH LINE
SEE DWG. RW

Nail in Asphalt
N: 1513722.88
E: 2351427.07
El. 1143.74

NORTH WATERWORKS ROAD

SHORELAND DRIVE

PuD2
MiD2
MiD2
PaE
CeC
MiD2
MdB
CeC
Ds3
Ds4

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

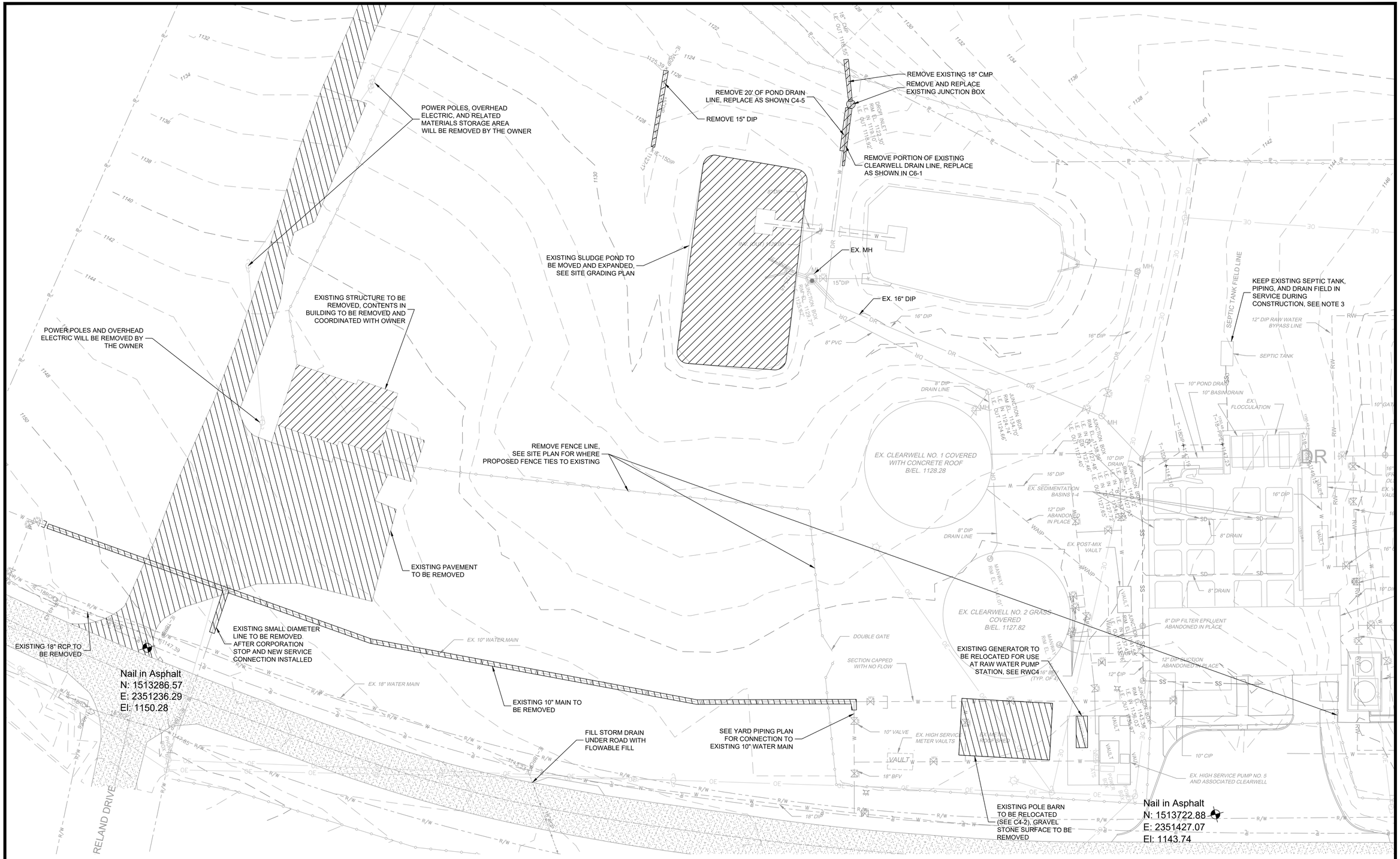
FINAL EROSION CONTROL PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: ES-8

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\ES&SCES&SC PLAN.dwg



NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.
3. PROTECT EXISTING SEPTIC SYSTEM AND DRAIN FIELD FROM DAMAGE DURING THE WORK TO KEEP SYSTEM IN SERVICE DURING ENTIRE CONSTRUCTION PERIOD. PROTECT EXISTING SEPTIC TANK INFLUENT PIPING DURING THE WORK OR PROVIDE TEMPORARY PIPE OR PIPE SUPPORTS DURING EXCAVATION FOR SCREEN STRUCTURE AND ASSOCIATED INLET PIPING.

SCALE: 1" = 20'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

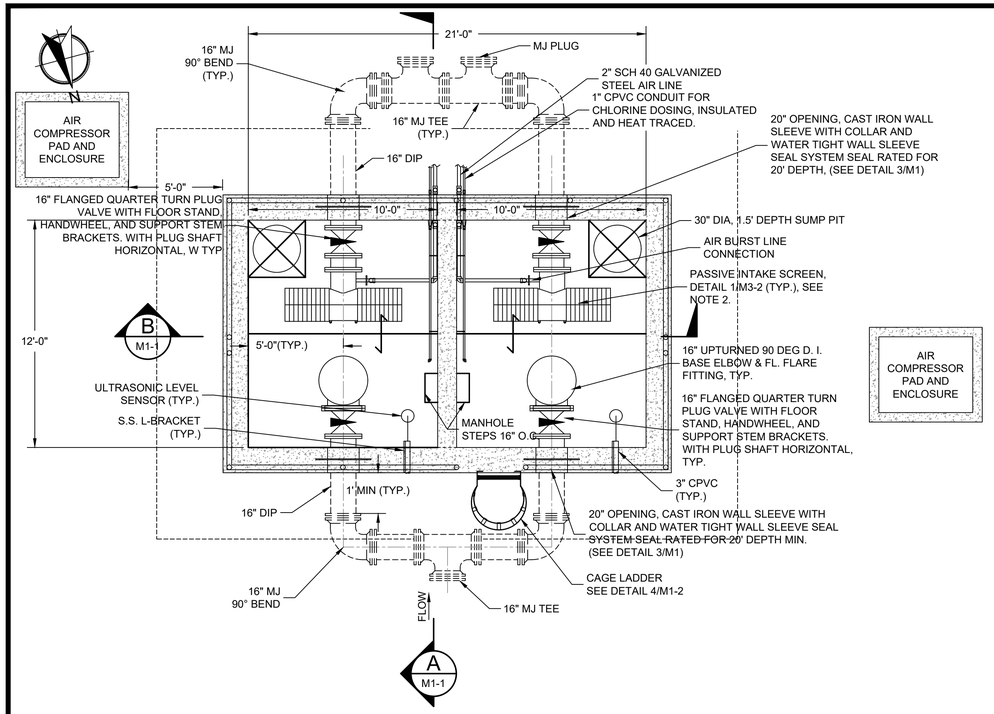
SITE DEMOLITION PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

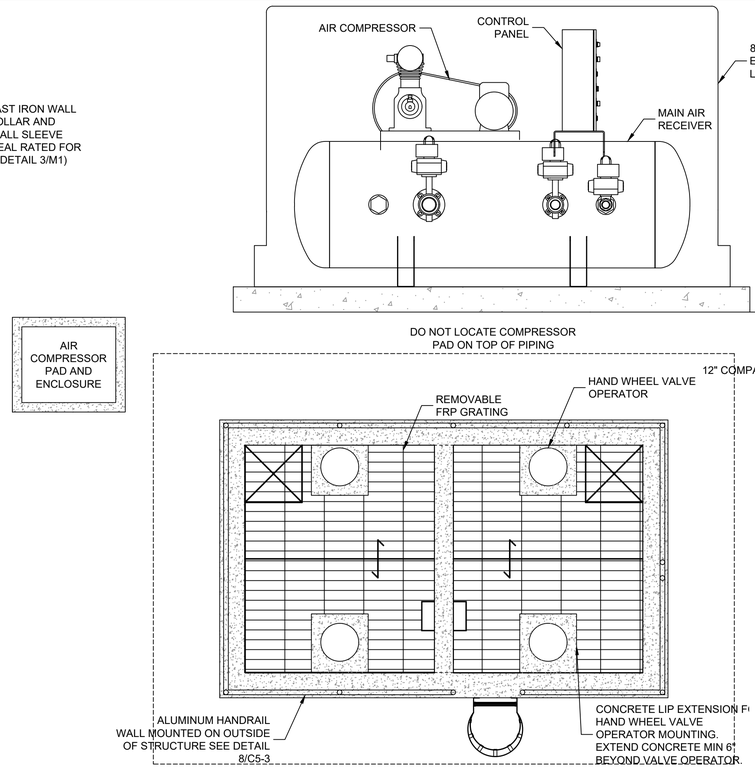
Project No.: 170110.00
Drawing No.: D1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



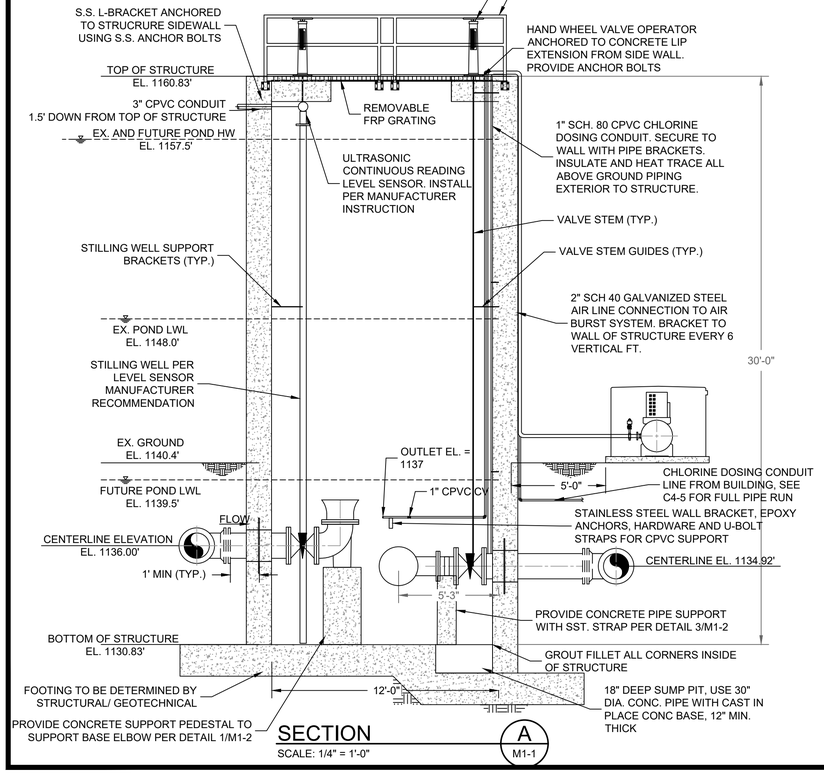
PASSIVE INTAKE SCREEN INTERMEDIATE PLAN

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



TOP PLAN

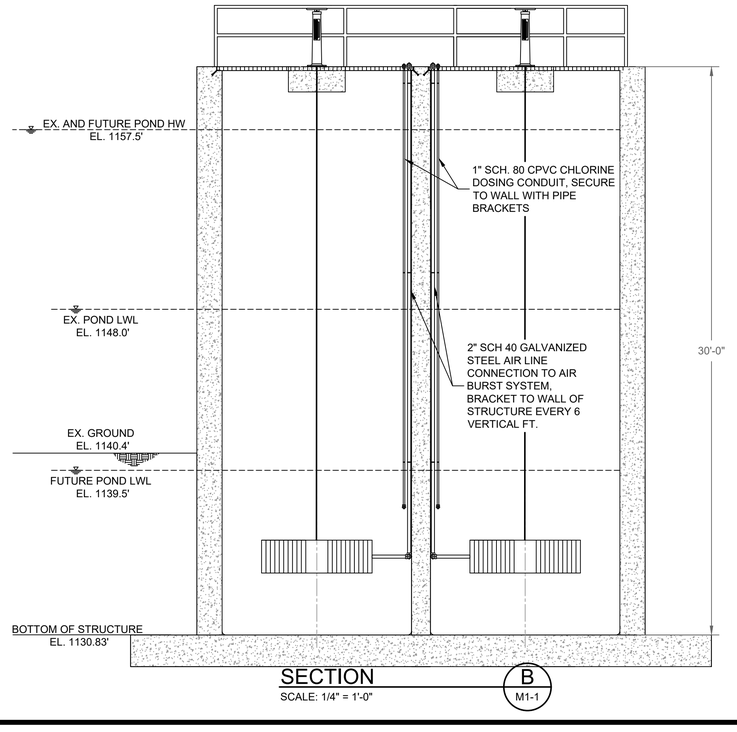
SCALE: 1/4" = 1'-0"



SECTION A

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

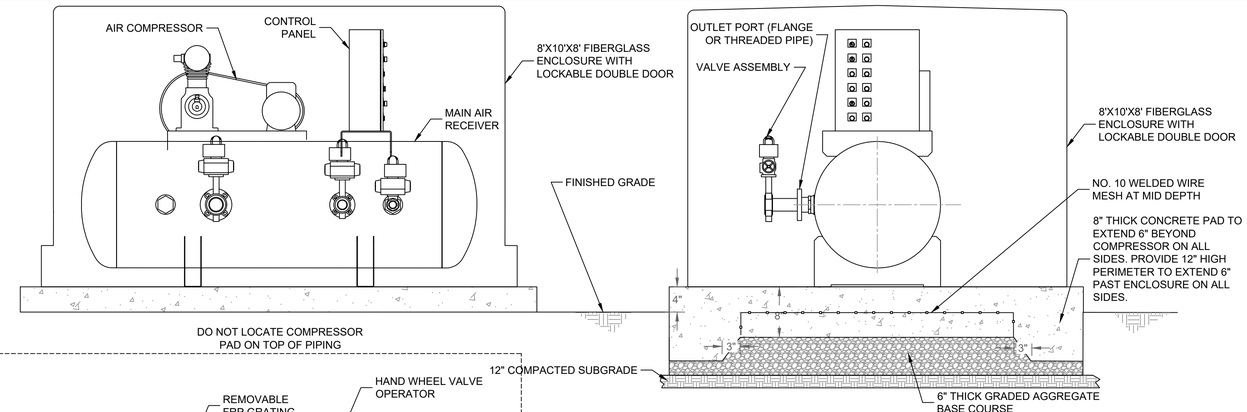
M1-1



SECTION B

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

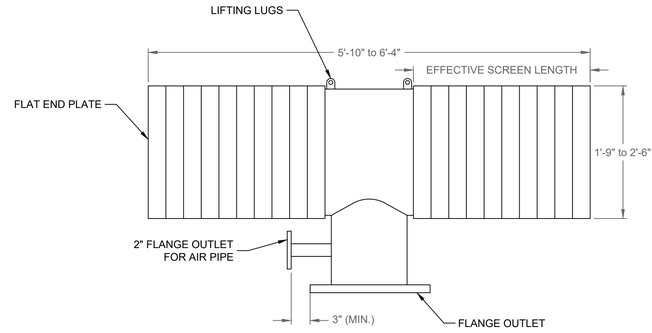
M1-1



AIR BURST SYSTEM

N.T.S.

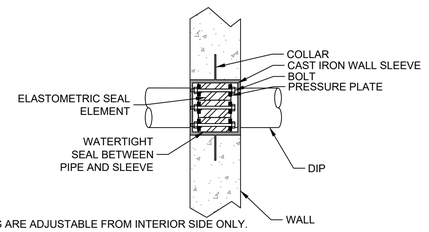
2 M1-1



PASSIVE INTAKE SCREEN

SCALE: 1" = 1' - 0"

1 M1-1



NOTES:
1. BOLTS ARE ADJUSTABLE FROM INTERIOR SIDE ONLY.
2. UTILIZE STAINLESS STEEL NUTS AND BOLTS.
3. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
4. CAST IRON WALL SLEEVES ARE TYPICAL FOR ALL WALL PENETRATIONS WHERE CARRIER PIPE WILL BE SUBMERGED.
5. SLEEVE PENETRATING CMU SHALL BE SCHEDULE 40 CARBON STEEL WITH WATER STOP AND HAVE A FUSION BONDED POLYMER COATING, BY ADVANCED PRODUCTS & SYSTEMS, OR APPROVED EQUIVALENT.
6. WALL SLEEVES FOR CAST IN PLACE CONCRETE, NOT IN CONTACT WITH WATER, SHALL BE MOLDED HDPE BY ADVANCED PRODUCTS & SYSTEMS, OR APPROVED EQUIVALENT.

WALL PENETRATION SLEEVE SEAL SYSTEM

SCALE: N.T.S.

3 M1-1

NOTES:
1. ALL PIPES, VALVES, SUPPORTS, AND FITTINGS INSIDE STRUCTURE TO BE PAINTED AND COATED WITH PAINTING SYSTEM FOR SUBMERGED SERVICE.
2. PASSIVE INTAKE SCREEN TO BE PLACED WITHIN STRUCTURE AND MAINTAIN A MINIMUM DISTANCE OF HALF THE SCREEN DIAMETER FROM CONCRETE WALLS, FLOORS, AND CONCRETE PIPE SUPPORTS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

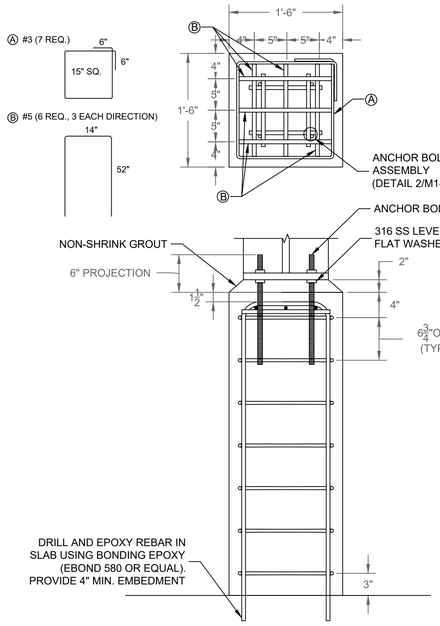
PASSIVE INTAKE SCREEN STRUCTURE

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

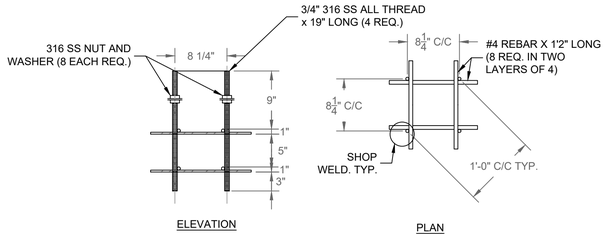
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M1-1

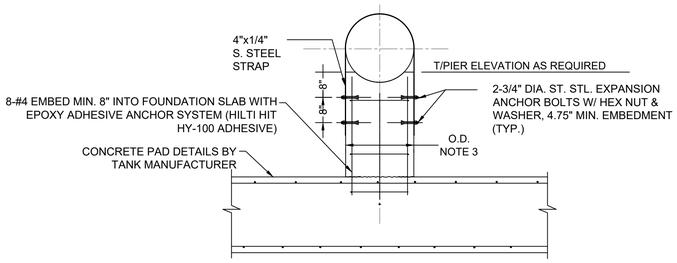
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\PASSIVE INTAKE SCREEN STR.dwg



CONCRETE PIPE SUPPORT 1 M1-2

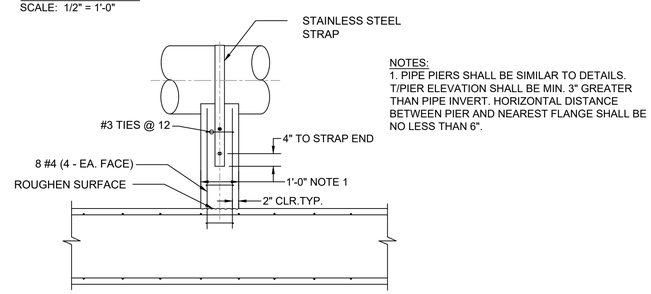


ANCHOR BOLT ASSEMBLY 2 M1-2



ELEVATION

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

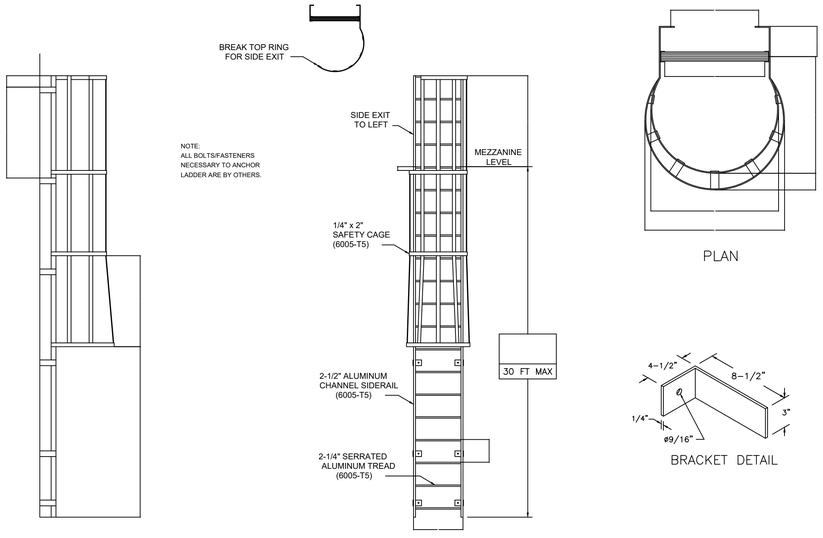


NOTES:
1. PIPE PIERS SHALL BE SIMILAR TO DETAILS. T/PIER ELEVATION SHALL BE MIN. 3" GREATER THAN PIPE INVERT. HORIZONTAL DISTANCE BETWEEN PIER AND NEAREST FLANGE SHALL BE NO LESS THAN 6".

SECTION

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

CONCRETE PIPE SUPPORT WITH STRAP 3 M1-2



FIXED LADDER WITH CAGE AND OVERSHOOT 4 M1-2

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

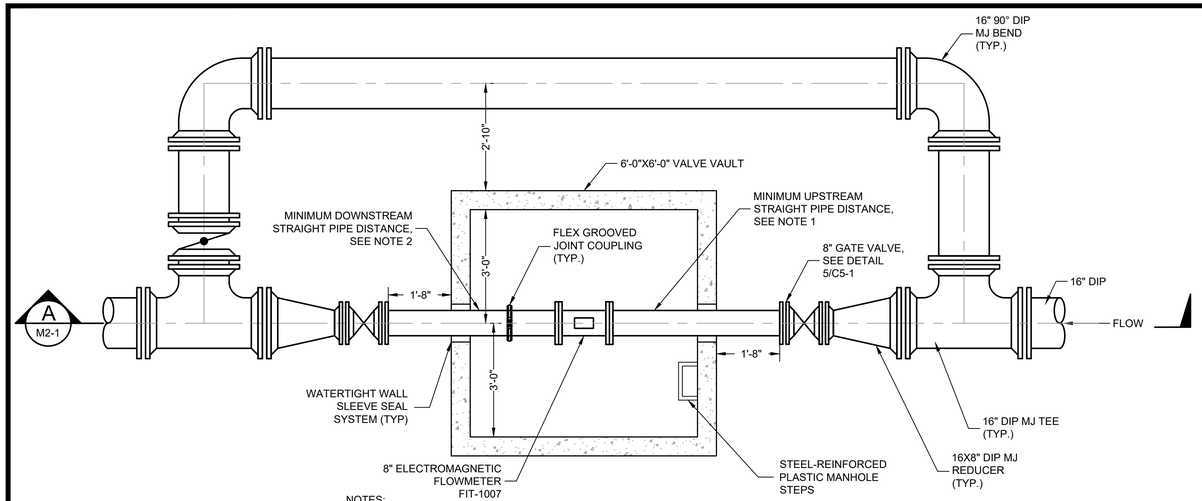
PASSIVE INTAKE SCREEN STRUCTURE DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M1-2

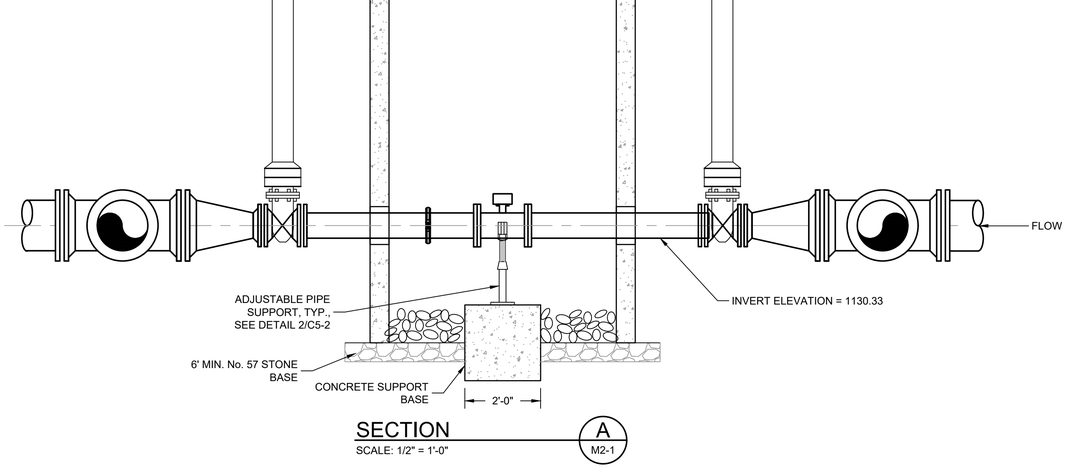
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\PASSIVE INTAKE SCREEN STR.dwg



NOTES:
1. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 40 INCHES.
2. MINIMUM DOWNSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 40 INCHES.

RAW WATER FLOWMETER VAULT

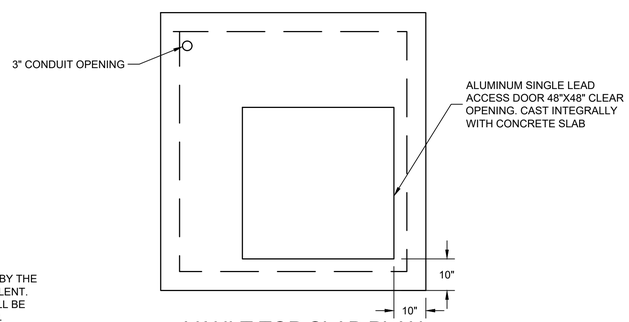
SCALE: 1/2" = 1'-0"



SECTION A

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

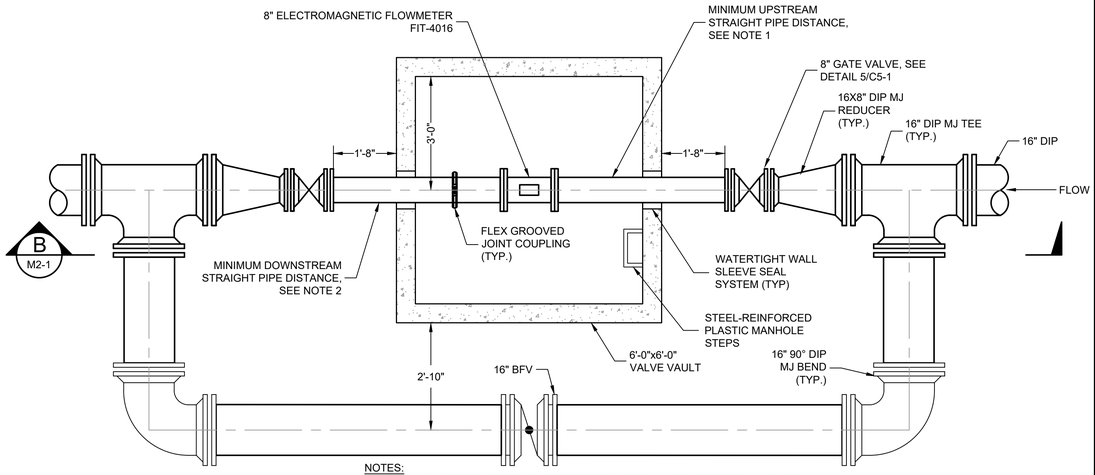
M2-1



VAULT TOP SLAB PLAN

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

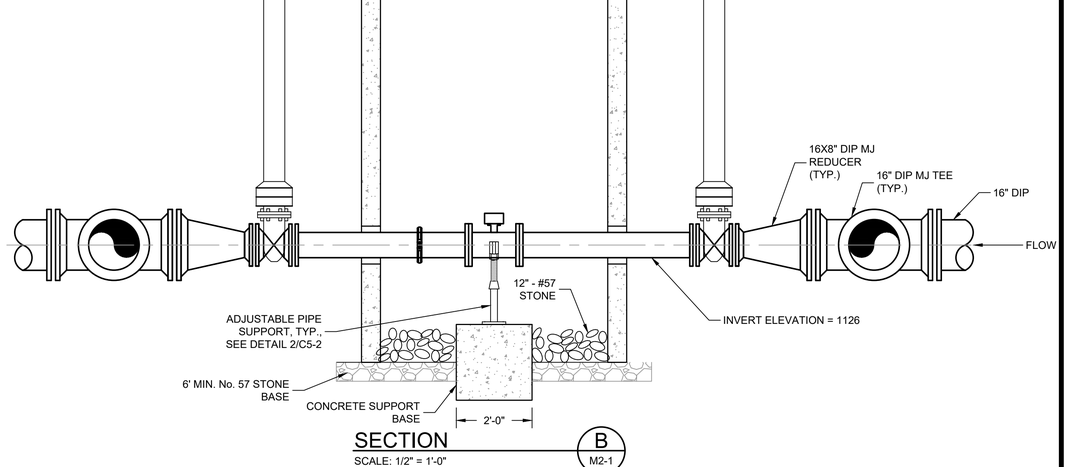
NOTES:
1. ACCESS DOORS TO BE MANUFACTURED BY THE BILCO COMPANY, OR APPROVED EQUIVALENT.
2. VAULT AND METER ACCESS DOORS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.



NOTES:
1. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 84 INCHES.
2. MINIMUM DOWNSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 84 INCHES.

EFFLUENT FLOWMETER VAULT

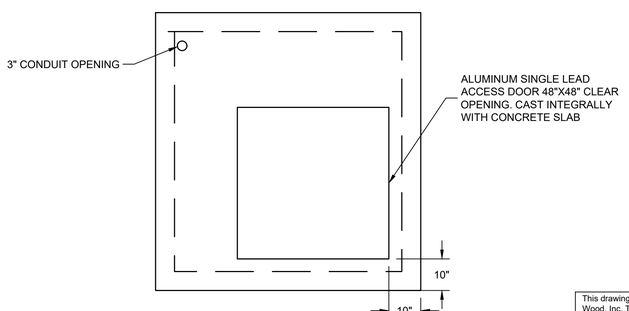
SCALE: 1/2" = 1'-0"



SECTION B

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

M2-1



VAULT TOP SLAB PLAN

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

FLOWMETER VAULTS PLANS, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: TLC | Checked By: JGN

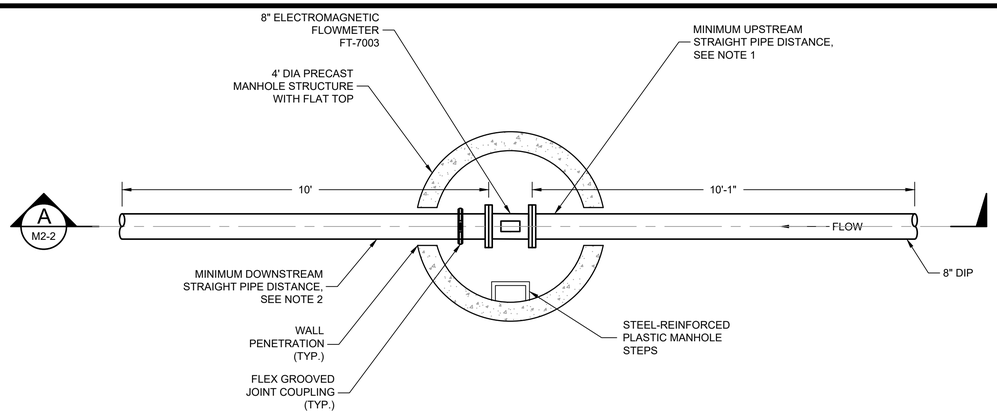
Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

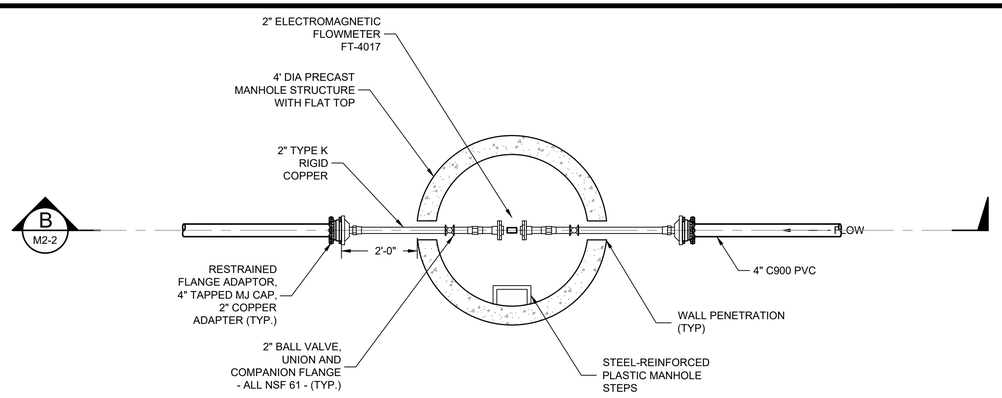
Drawing No.: M2-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\FLOW METER VAULT PLAN.dwg



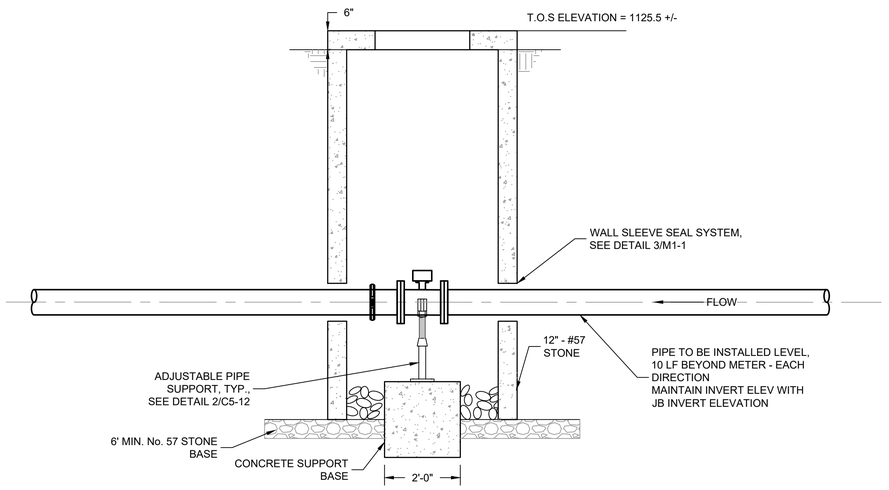
SLUDGE PONDS FLOWMETER VAULT

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



PLANT FLOWMETER VAULT

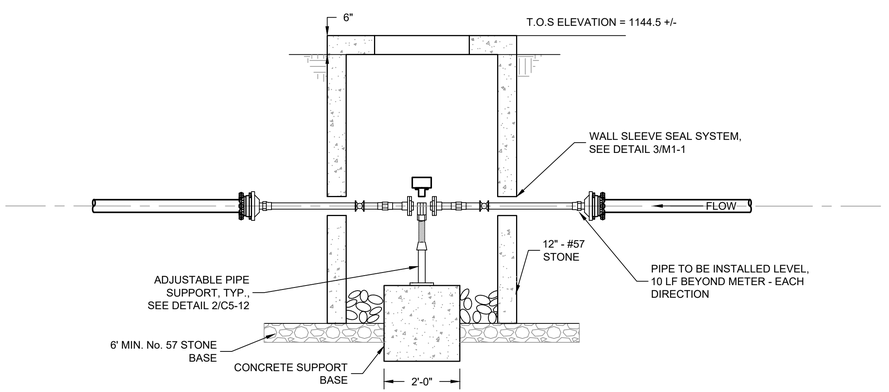
SCALE: 1/2" = 1'-0"



SECTION A

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

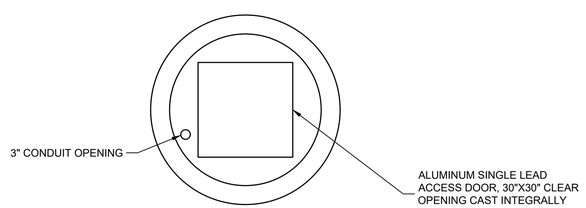
M2-2



SECTION B

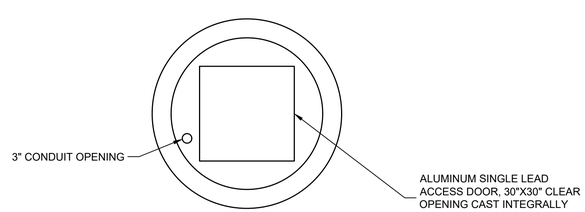
SCALE: 1/2" = 1'-0"

M2-2



VAULT TOP SLAB PLAN

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



VAULT TOP SLAB PLAN

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

NOTES:

1. MINIMUM UPSTREAM STRAIGHT & LEVEL PIPE DISTANCE SHALL BE AT LEAST 10 FEET.
2. MINIMUM DOWNSTREAM STRAIGHT & LEVEL PIPE DISTANCE SHALL BE AT LEAST 10 FEET.
3. CONTRACTOR SHALL PROVIDE TO THE CITY A FLG X FLG SPOOL PIECE WITH THE SAME LAY LENGTH AND DIAMETER AS THE METER.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

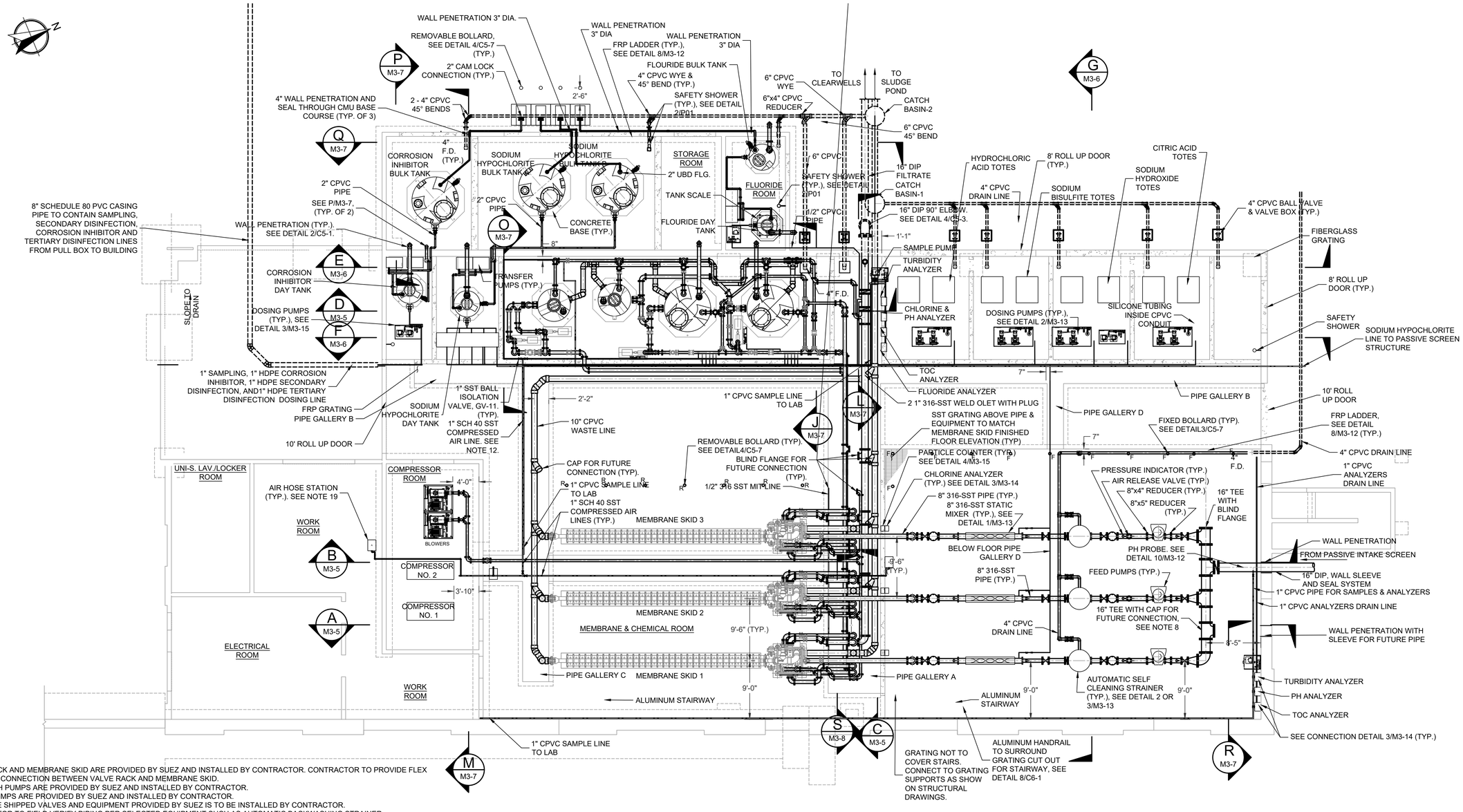
FLOWMETER VAULT PLANS, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M2-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\FLOW METER VAULT PLAN.dwg



NOTES:

1. VALVE RACK AND MEMBRANE SKID ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR. CONTRACTOR TO PROVIDE FLEX JOINT FOR CONNECTION BETWEEN VALVE RACK AND MEMBRANE SKID.
2. BACKWASH PUMPS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
3. CIP/MW PUMPS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
4. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
5. CONTRACTOR TO FIELD VERIFY PIPING PER SELECTED EQUIPMENT SUCH AS AUTOMATIC BACKWASHING STRAINER.
6. BLOCK AND BLEED DRAIN LINES SHOULD BE INSTALLED BETWEEN BLOCK VALVES ON PERMEATE LINE, CIP RETURN LINE, BACKWASH LINE, AND CIP FEED LINE PER P&ID. INSTALL USING WELD-O-LET OR SIMILAR AND INSTALL SUEZ-PROVIDED BALL VALVE. BLEED LINES SHALL EXTEND DOWNWARD, INCLUDE FITTING(S) REQUIRED TO TRANSITION TO HORIZONTAL ALIGNMENT. EXTEND TO BEYOND THE NEAREST EDGE OF GRATE BOUNDARY BEFORE TRANSITIONING TO VERTICAL. ADD FITTING(S) AND EXTEND VERTICAL LEG 3 INCHES DOWNWARD.
7. FLOOR OF PIPE GALLERY OR TRENCH DRAIN SHALL BE SLOPED AT 1% TOWARDS DRAINS.
8. INCLUDE TEMPORARY 16"x6" REDUCER AND 6-INCH CAMLOCK FITTING FOR GLYCERIN REMOVAL PER SUEZ. CAMLOCK TO BE STAINLESS STEEL AND COORDINATED WITH SUEZ. AFTER GLYCERIN REMOVAL, REMOVE REDUCER AND CAMLOCK FITTING. INSTALL BLIND FLANGE BEFORE FINAL COMMISSIONING.
9. PARTICLE COUNTERS TO BE HACH L4599 OR EQUAL. SAMPLE PORT SHALL BE A WELD-O-LET OR SIMILAR ON CENTERLINE OF PERMEATE LINE AND INCLUDE BALL VALVE AND TRANSITIONS AS NECESSARY TO PIPE TO ANALYZER.
10. CONTRACTOR TO PROVIDE HOSES BETWEEN ALL TOTES AND THEIR RESPECTIVE PERISTALTIC PUMPS ON SKID.
11. ADD MOUNTING RACK FOR 2 VALVE OPERATOR TEE WRENCHES, S.S. MOUNTING BRACKETS, COORDINATE LOCATION WITH OWNER.
12. AIR PIPING HEADERS ARE SHOWN. AIR PIPING BRANCHES TO BE SCHEDULE 40 STAINLESS STEEL PIPE AND FITTINGS. PTFE HOSE FROM BRANCHES TO VALVES TO MEET SPECIFICATION. INCLUDE TRANSITION FITTING FROM STAINLESS STEEL TO TUBING AT BRANCH CONNECTION AND AT VALVE AS REQUIRED. AIR PIPING TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
13. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.
14. COAT ALUMINUM SURFACES CONTACTING CONCRETE WITH ASPHALTIC PAINT.
15. ALL DRAIN LINES OF 1" OR LESS ARE TO BE CONNECTED TO RESPECTIVE MAIN LINE VIA A WELD-O-LET OR TAPPING SADDLE.
16. CONTRACTOR SHALL PROVIDE 1/2" X 4-1/2" STAINLESS STEEL WEDGE FOR ALL ANCHORS FOR EQUIPMENT AND BOLLARDS SECURED TO CONCRETE (SIMPSON STRONG-TIE OR APPROVED EQUIVALENT).
17. CONTRACTOR SHALL PROVIDE 5/8" X 2-1/2" STAINLESS STEEL DROP IN ANCHORS FOR EQUIPMENT WITHIN THE CHEMICAL TOTE AREA (SIMPSON STRONG-TIE OR APPROVED EQUIVALENT).
18. CONTRACTOR SHALL FURNISH AND INSTALL A 5-1/4" (MIN) SHAFT, TWO-PIECE, CAST IRON ROADWAY VALVE BOX AND DROP TYPE LID TO ALL BURIED VALVES, REGARDLESS OF SIZE.
19. AIR HOSE STATION SHALL INCLUDE HANNAY 1100 OR COXREELS SS 110 STAINLESS STEEL HOSE REEL. STATION AND REEL SHALL INCLUDE 100 LF OF CONTINENTAL FRONTIER EPDM 200 PSIG 3/8" AIR HOSE INCLUDED 3/8" STAINLESS STEEL CRIMPED HOSE FITTINGS FOR ALL STATIONS.

FIRST FLOOR PLAN

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

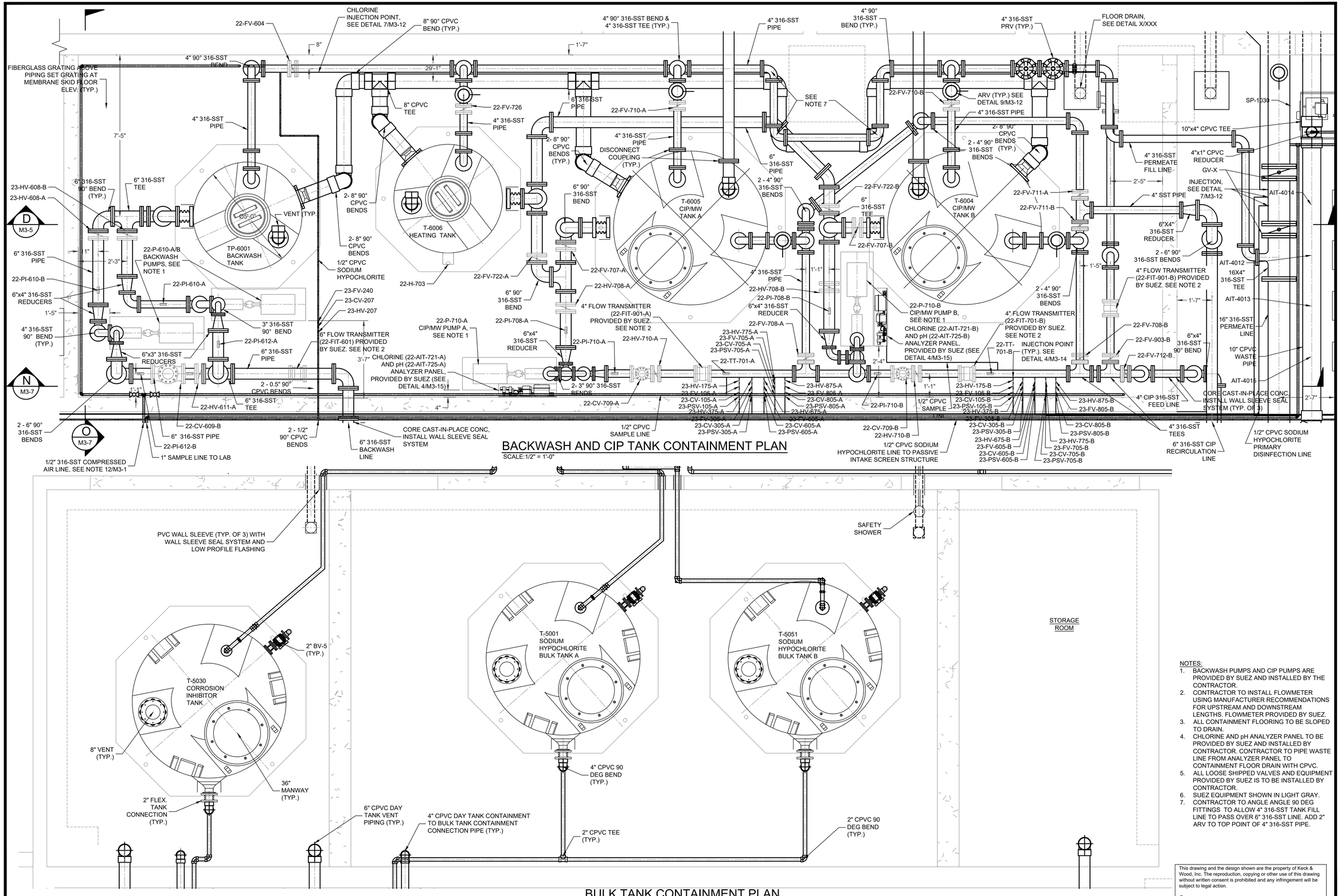
PROCESS LAYOUT PLAN, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



BACKWASH AND CIP TANK CONTAINMENT PLAN

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

BULK TANK CONTAINMENT PLAN

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

NOTES:

1. BACKWASH PUMPS AND CIP PUMPS ARE PROVIDED BY SUEZ AND INSTALLED BY THE CONTRACTOR.
2. CONTRACTOR TO INSTALL FLOWMETER USING MANUFACTURER RECOMMENDATIONS FOR UPSTREAM AND DOWNSTREAM LENGTHS. FLOWMETER PROVIDED BY SUEZ.
3. ALL CONTAINMENT FLOORING TO BE SLOPED TO DRAIN.
4. CHLORINE AND pH ANALYZER PANEL TO BE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR. CONTRACTOR TO PIPE WASTE LINE FROM ANALYZER PANEL TO CONTAINMENT FLOOR DRAIN WITH CPVC.
5. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
6. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.
7. CONTRACTOR TO ANGLE ANGLE 90 DEG FITTINGS TO ALLOW 4" 316-SST TANK FILL LINE TO PASS OVER 6" 316-SST LINE. ADD 2" ARV TO TOP POINT OF 4" 316-SST PIPE.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

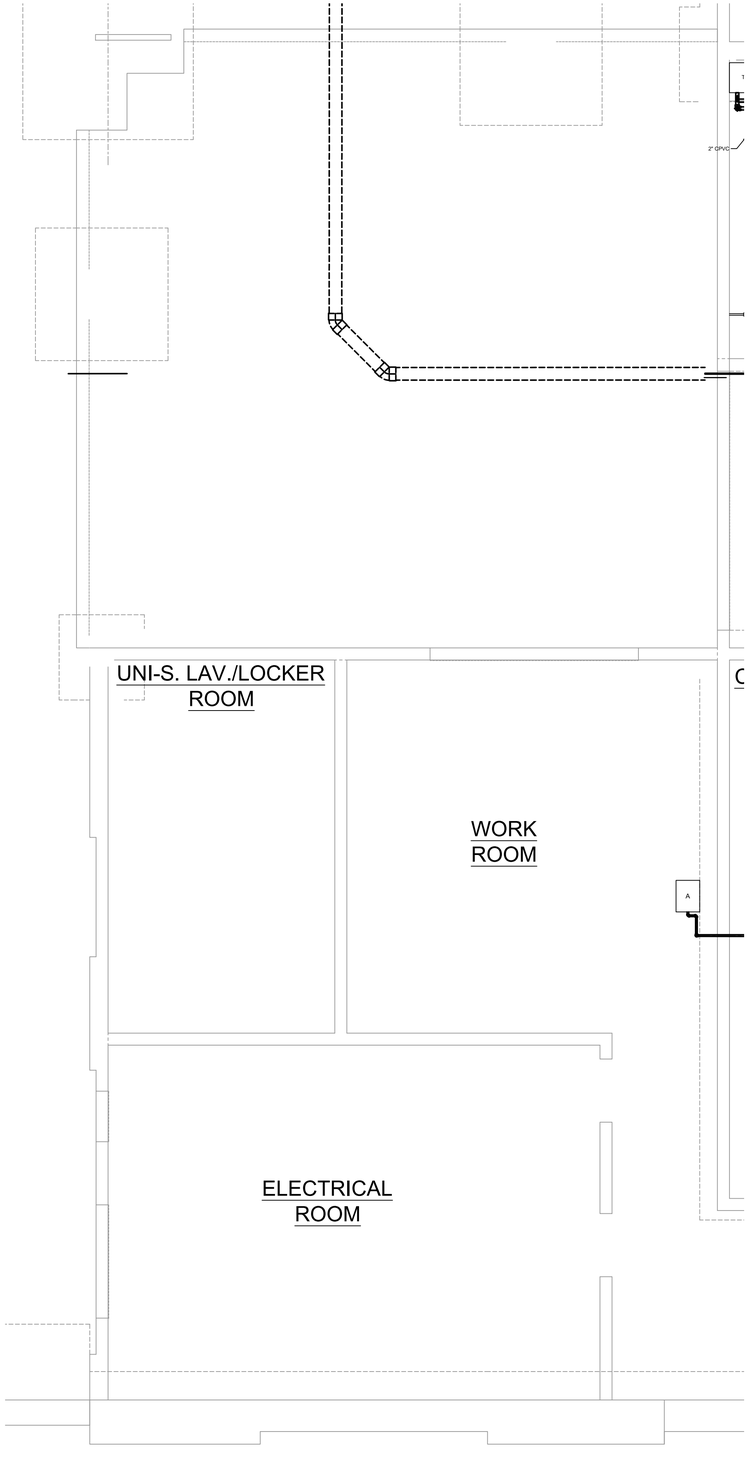
PROCESS LAYOUT PLAN, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

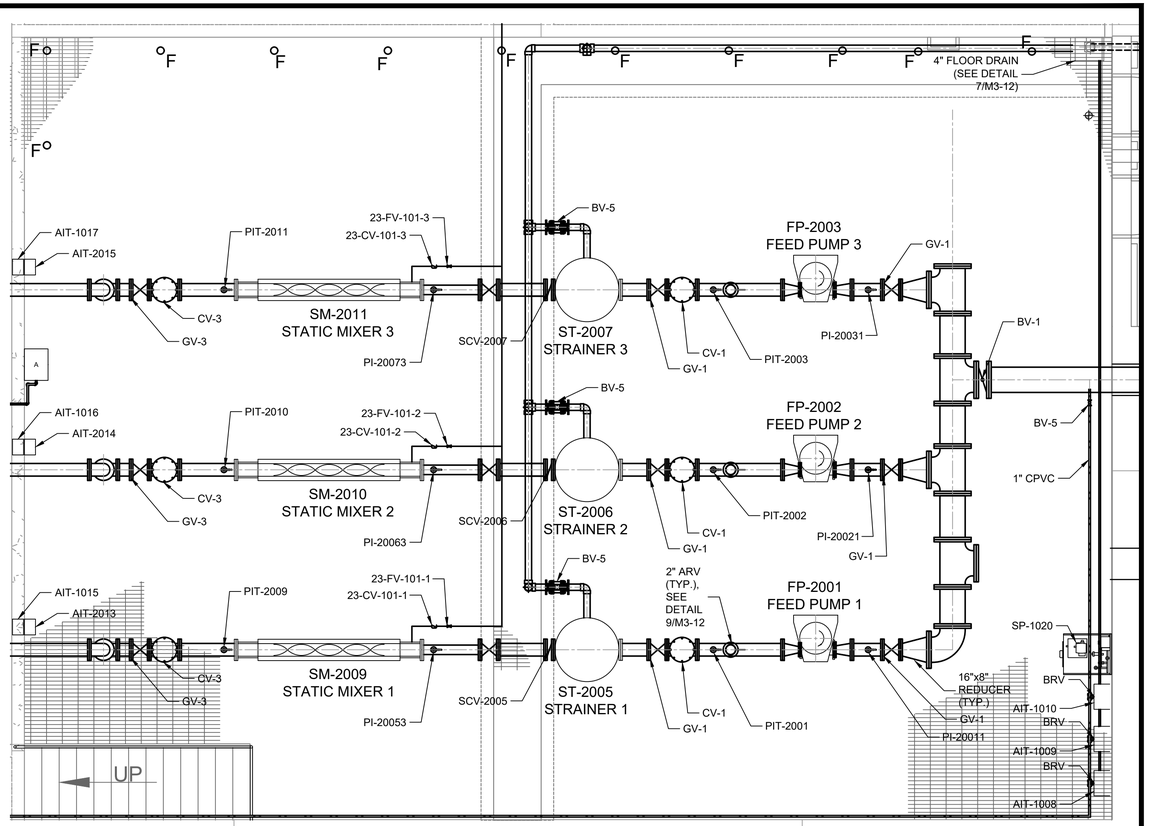
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-2

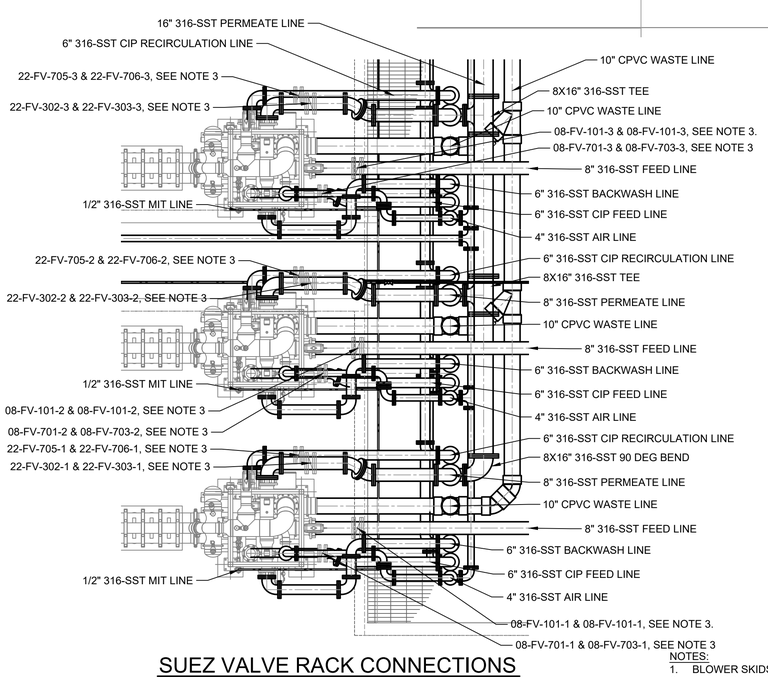
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



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



EQUIPMENT PIT PLAN
SCALE: 1/4" = 1'-0"



SUEZ VALVE RACK CONNECTIONS
SCALE: 1/4" = 1'-0"

NOTES:
1. BLOWER SKIDS AND COMPRESSORS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
2. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
3. BLOCK AND BLEED DRAIN LINES SHOULD BE INSTALLED BETWEEN BLOCK VALVES ON PERMEATE LINE, CIP RETURN LINE, AND CIP FEED LINE PER P&ID. INSTALL USING WELD-O-LET OR SIMILAR AND INSTALL SUEZ-PROVIDED BALL VALVE. BLEED LINES SHALL EXTEND DOWNWARD, INCLUDE FITTING(S) REQUIRED TO TRANSITION TO HORIZONTAL ALIGNMENT. EXTEND TO BEYOND THE NEAREST EDGE OF GRATE BOUNDARY BEFORE TRANSITIONING TO VERTICAL. ADD FITTING(S) AND EXTEND VERTICAL LEG 3 INCHES DOWNWARD.
4. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

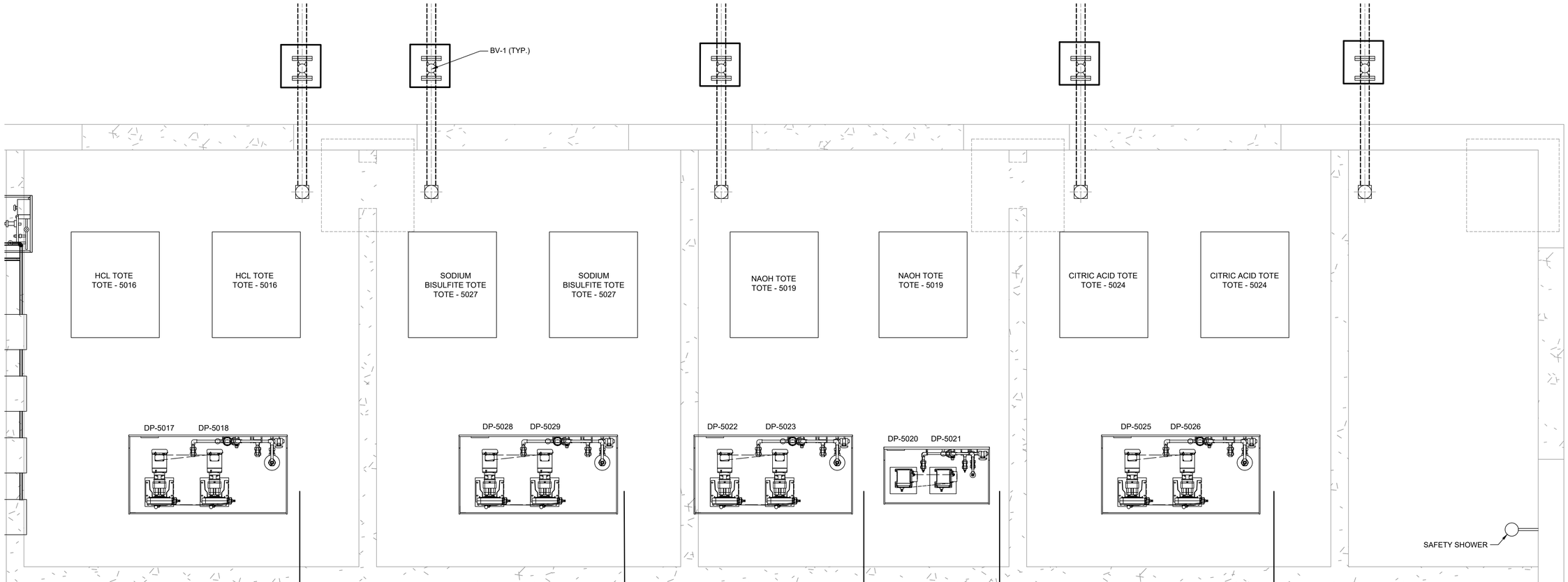
PROCESS LAUOUT PLAN, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

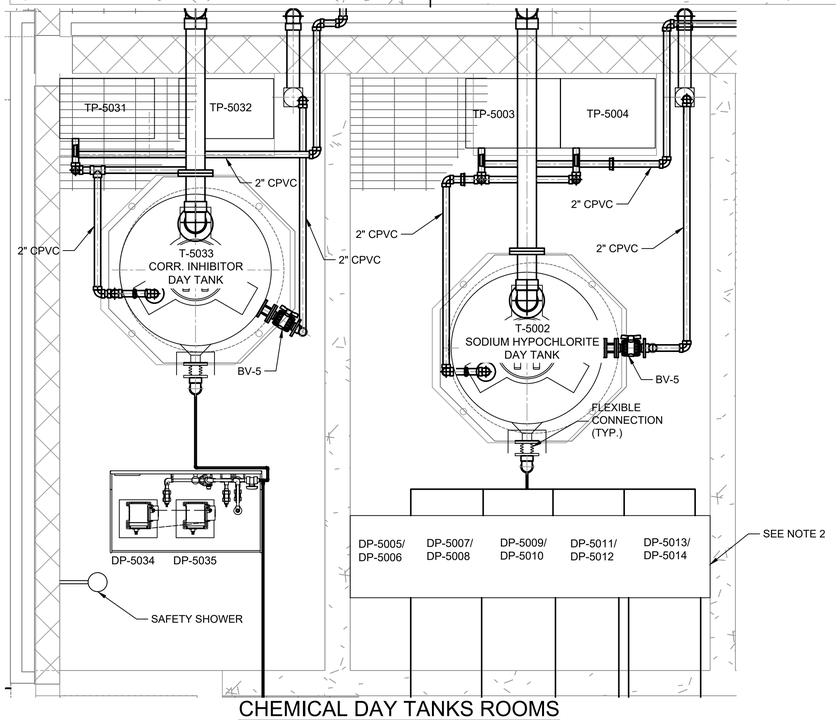
Project No.: 170110.00
Drawing No.: M3-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



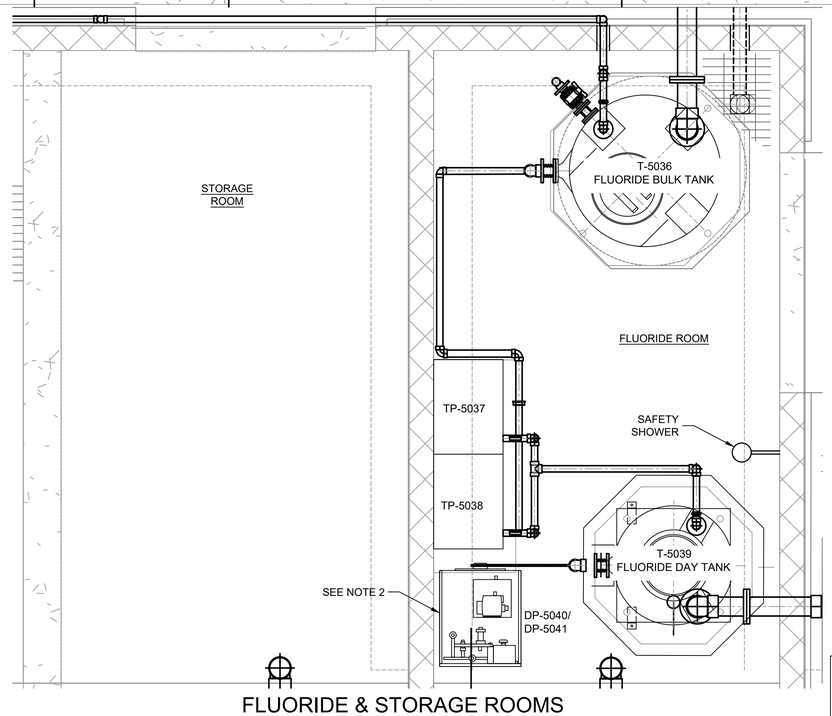
CHEMICAL TOTE AREA PLAN

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



CHEMICAL DAY TANKS ROOMS

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



FLUORIDE & STORAGE ROOMS

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

NOTES:

1. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
2. PUMP SKIDS WILL HAVE DOSING PUMPS STACKED
3. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

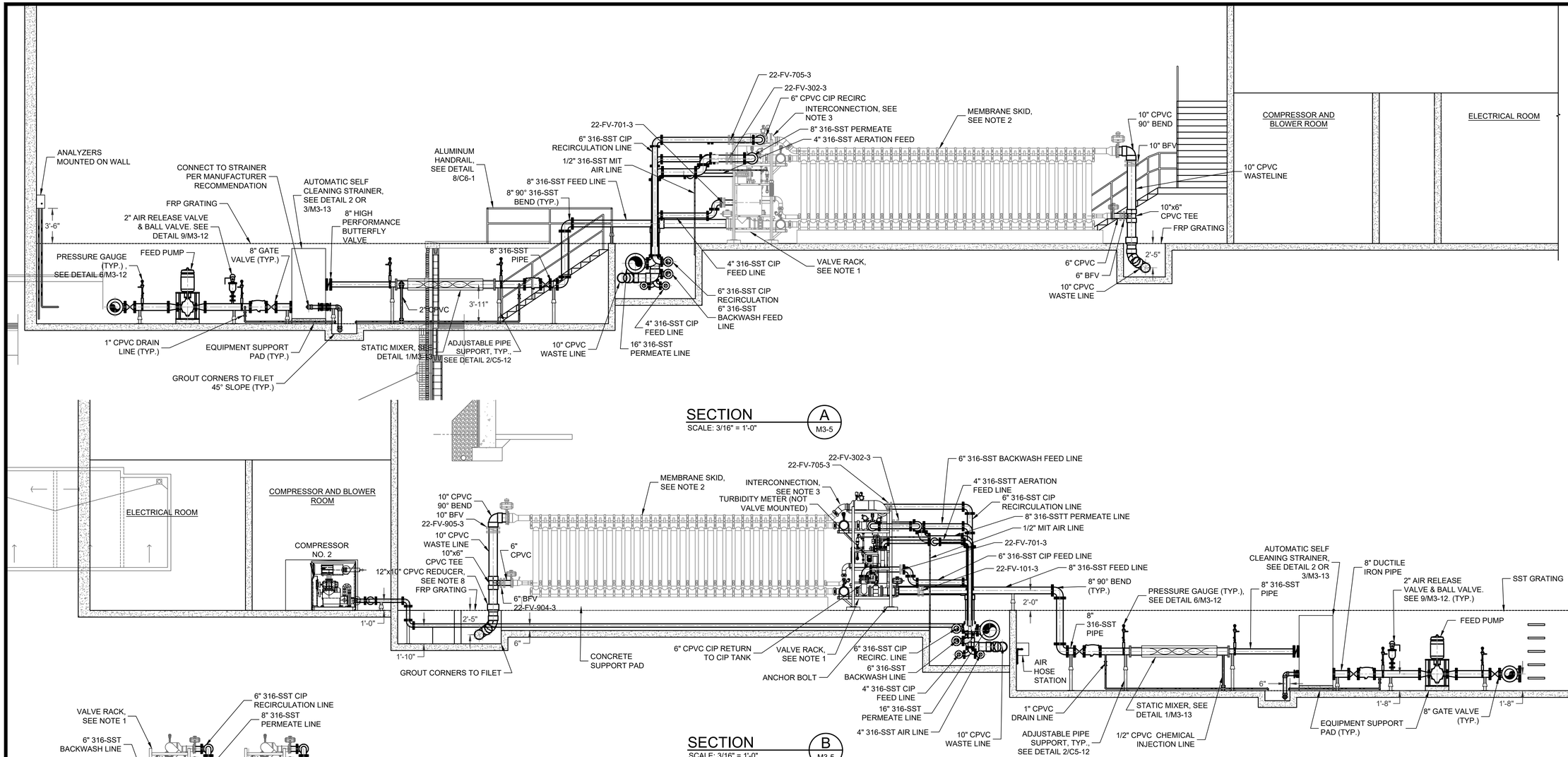
PROCESS LAUOUT PLAN, SHEET 4

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

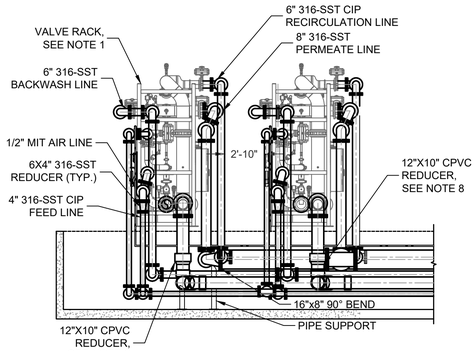
Project No.: 170110.00
Drawing No.: M3-4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg

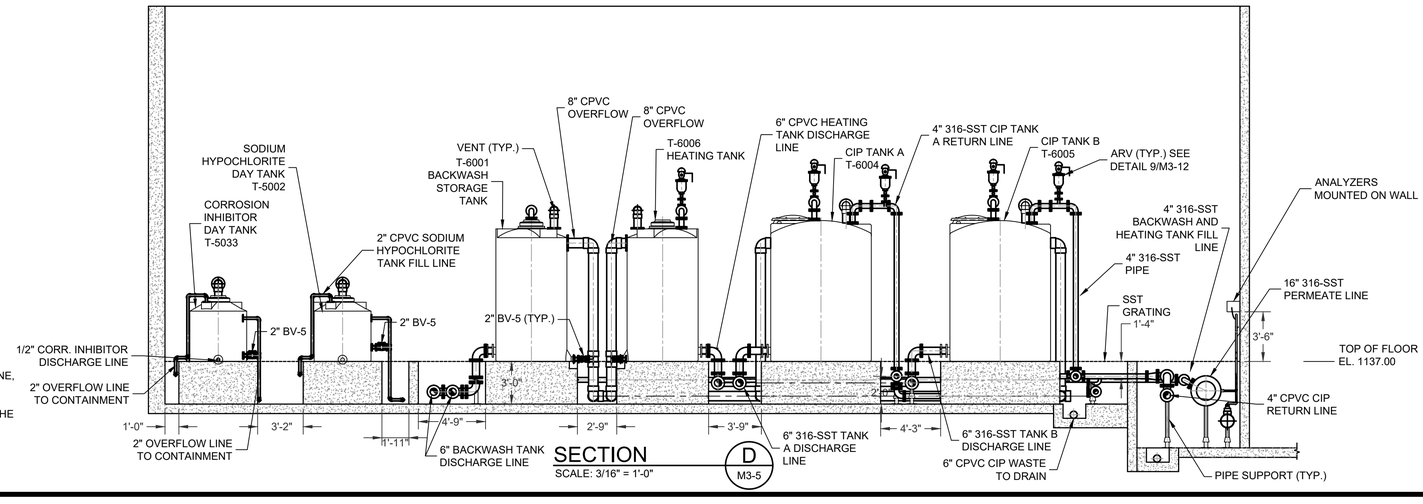


SECTION A
SCALE: 3/16" = 1'-0"
M3-5

SECTION B
SCALE: 3/16" = 1'-0"
M3-5



SECTION C
SCALE: 3/16" = 1'-0"
M3-5



SECTION D
SCALE: 3/16" = 1'-0"
M3-5

NOTES:
1. VALVE RACK IS PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
2. MEMBRANE SKID IS PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
3. INTERCONNECTIONS FROM SUEZ VALVE RACK TO SUEZ MEMBRANE SKID ARE PROVIDED AND INSTALLED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASURING AND INSTALLATION. PIPING MATERIAL TO BE STAINLESS STEEL.
4. BLOCK AND BLEED DRAIN LINES SHOULD BE INSTALLED BETWEEN BLOCK VALVES ON PERMEATE LINE, CIP RETURN LINE, BACKWASH LINE, AND CIP FEED LINE PER P&ID. INSTALL USING WELD-O-LET OR SIMILAR AND INSTALL SUEZ-PROVIDED BALL VALVE. BLEED LINES SHALL EXTEND DOWNWARD, INCLUDE FITTING(S) REQUIRED TO TRANSITION TO HORIZONTAL ALIGNMENT. EXTEND TO BEYOND THE NEAREST EDGE OF GRATE BOUNDARY BEFORE TRANSITIONING TO VERTICAL. ADD FITTING(S) AND EXTEND VERTICAL LEG 3 INCHES DOWNWARD.
5. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.
6. PROVIDE AIR GAP BETWEEN 12"X10" CPVC REDUCER ON ALL PROCESS WASTE LINES.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

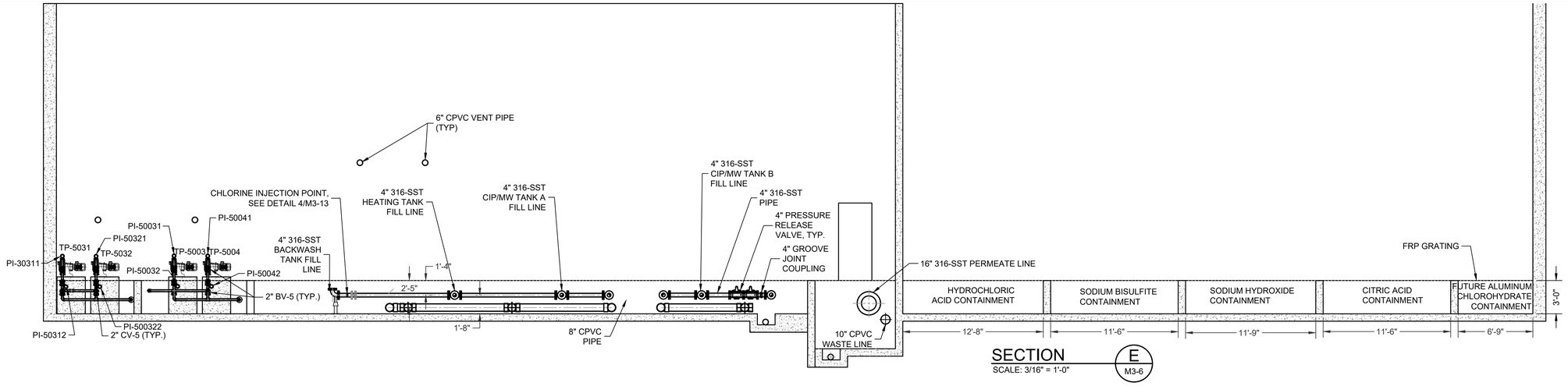
PROCESS LAYOUT SECTIONS, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

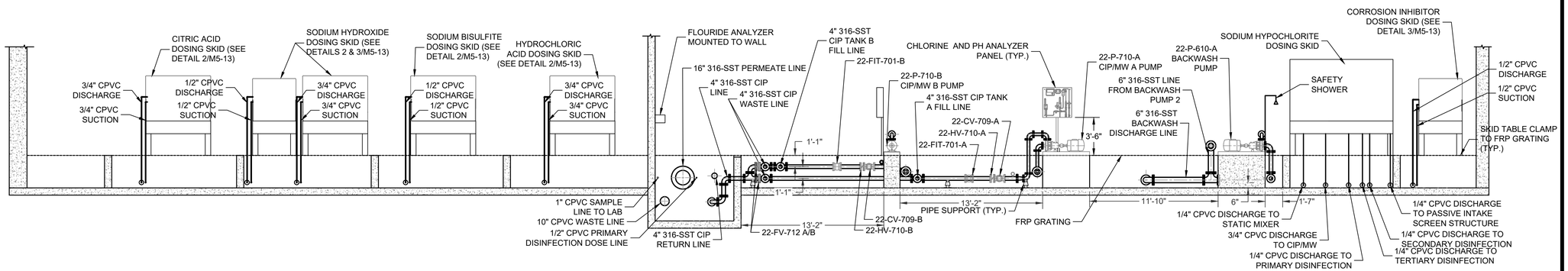
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-5

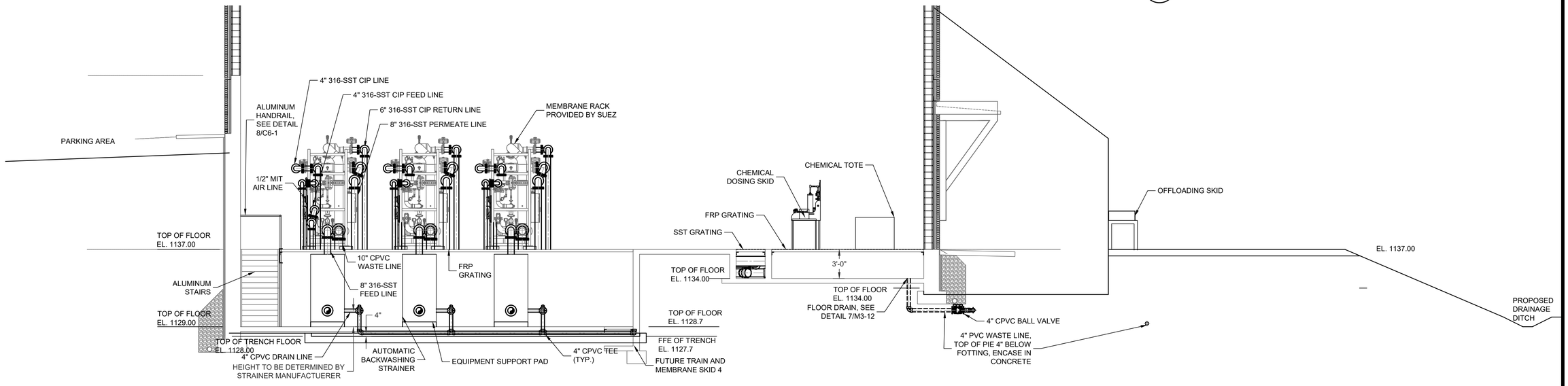
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



SECTION E
SCALE: 3/16" = 1'-0"
M3-6



SECTION F
SCALE: 3/16" = 1'-0"
M3-6



SECTION G
SCALE: 3/16" = 1'-0"
M3-6

NOTES:
1. VALVE RACK IS PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
2. MEMBRANE SKID IS PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
3. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
4. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

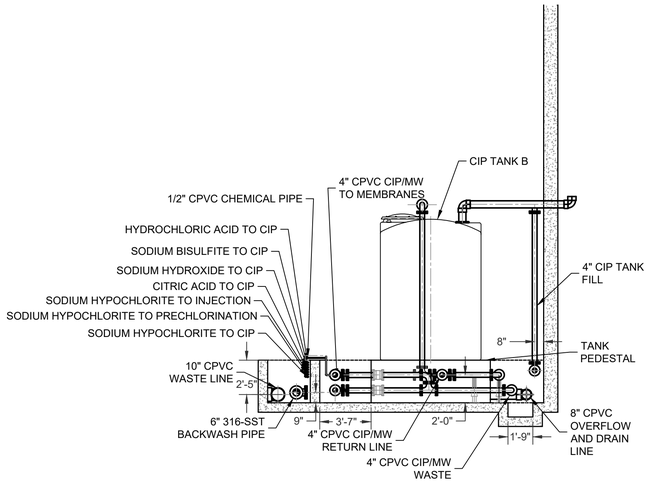
PROCESS LAYOUT SECTIONS, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

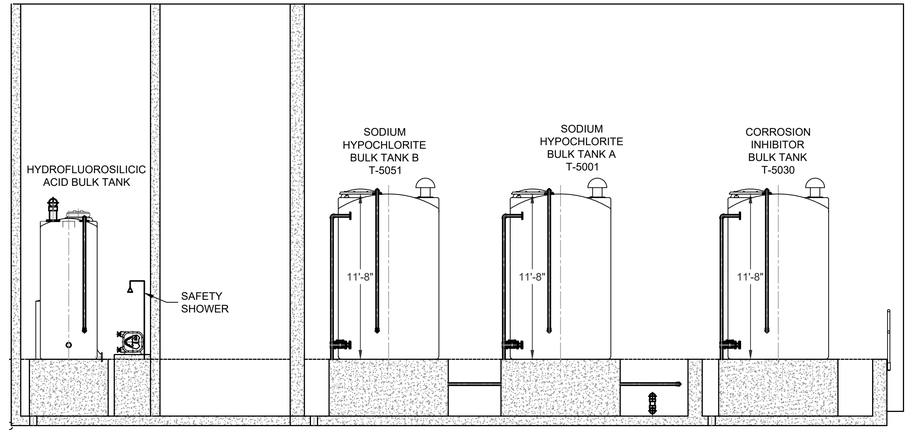
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-6

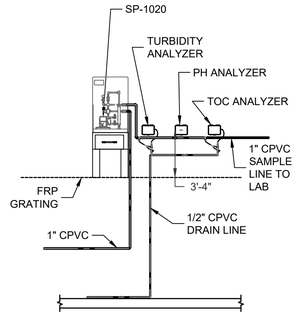
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



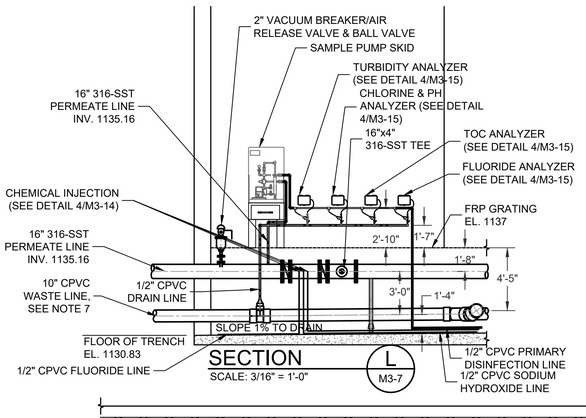
SECTION J
SCALE: 3/16" = 1'-0"
M3-7



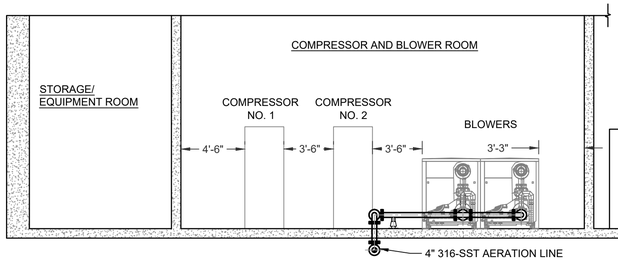
SECTION Q
SCALE: 3/16" = 1'-0"
M3-7



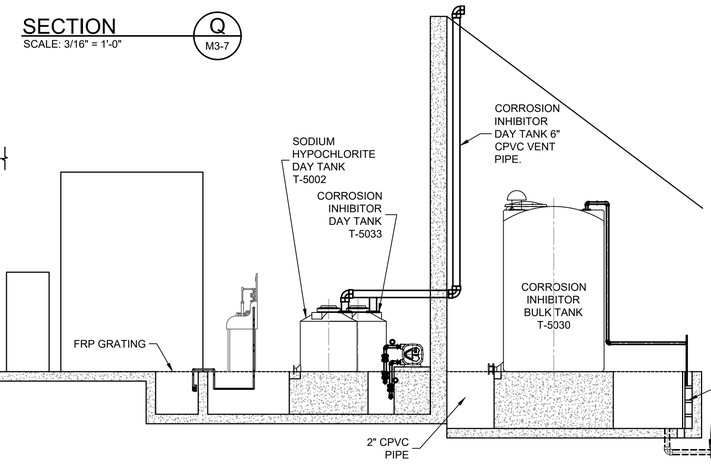
SECTION R
SCALE: 3/16" = 1'-0"
M3-7

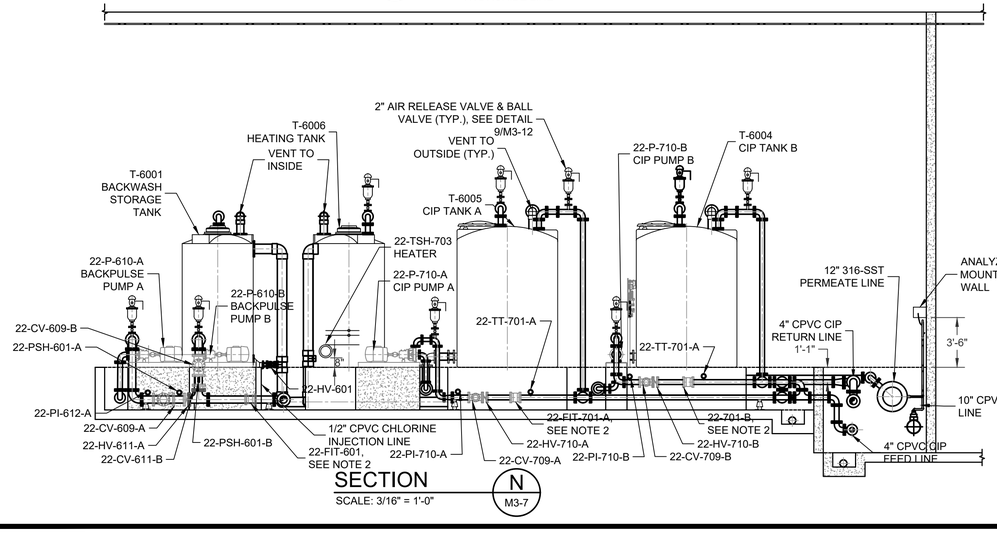


SECTION L
SCALE: 3/16" = 1'-0"
M3-7

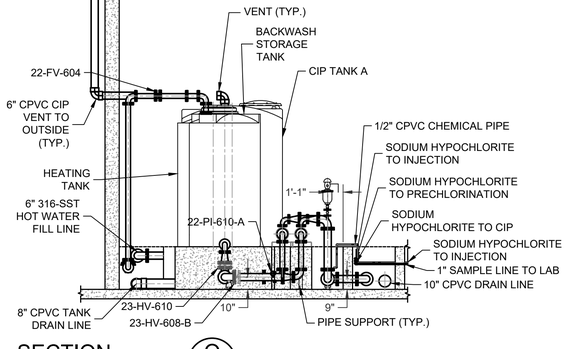


SECTION M
SCALE: 3/16" = 1'-0"
M3-7

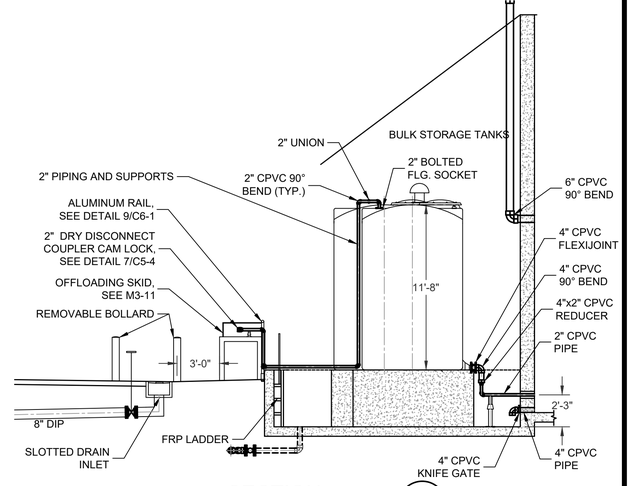




SECTION N
SCALE: 3/16" = 1'-0"
M3-7



SECTION O
SCALE: 3/16" = 1'-0"
M3-7



SECTION P
SCALE: 3/16" = 1'-0"
M3-7

NOTES:
1. BACKWASH PUMPS AND CIP/MW PUMPS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
2. FOLLOW MANUFACTURER'S RECOMMENDATION FOR UPSTREAM AND DOWNSTREAM CLEAR DISTANCES FOR ALL FLOWMETERS.
3. BLOWER UNITS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
4. COMPRESSORS ARE PROVIDED BY SUEZ AND INSTALLED BY CONTRACTOR.
5. ALL LOOSE SHIPPED VALVES AND EQUIPMENT PROVIDED BY SUEZ IS TO BE INSTALLED BY CONTRACTOR.
6. SUEZ EQUIPMENT SHOWN IN LIGHT GRAY.
7. 10" CPVC INVCERT TO BE 18" MIN ABOVE FLOOR AT WALL PENETRATION. PIPE TO MAINTAIN 1% RISING SLOPE WITHIN THE TRENCH.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

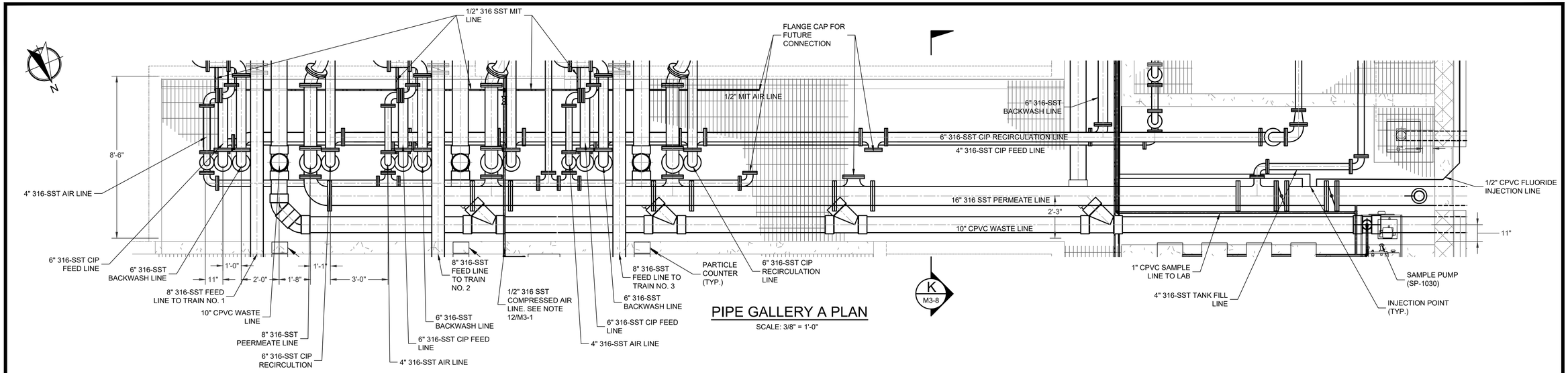
PROCESS LAYOUT SECTIONS, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

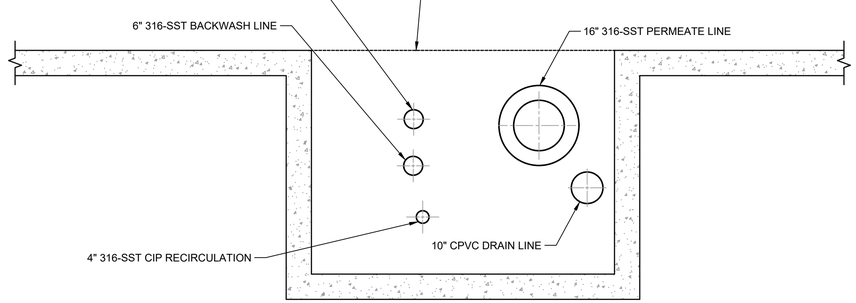
Project No.: 170110.00
Drawing No.: M3-7

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



PIPE GALLERY A PLAN

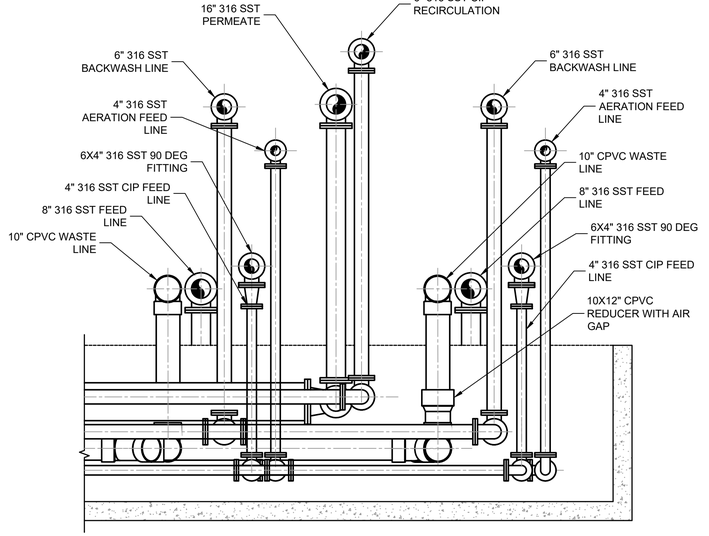
SCALE: 3/8" = 1'-0"



SECTION

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

K
M3-8



SECTION

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

S
M3-8

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

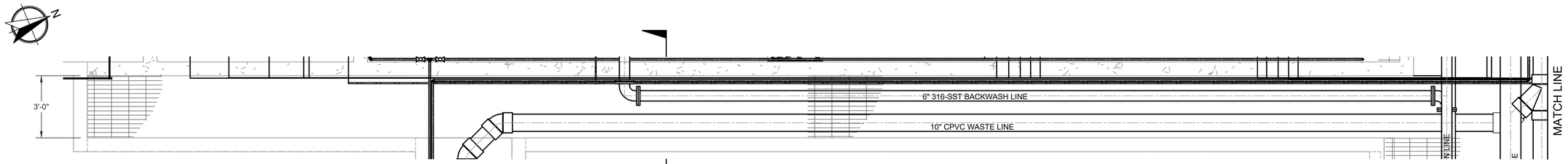
PIPE GALLERY A

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-8

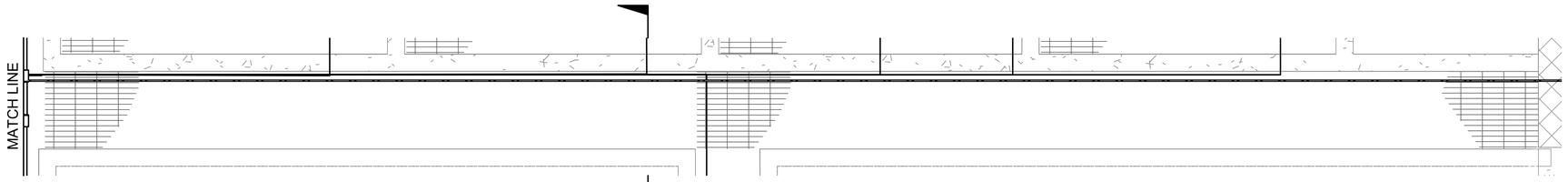
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



H
M3-9

PIPE GALLERY B PLAN

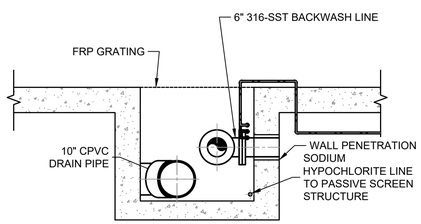
SCALE: 3/8" = 1'-0"



I
M3-9

PIPE GALLERY B PLAN

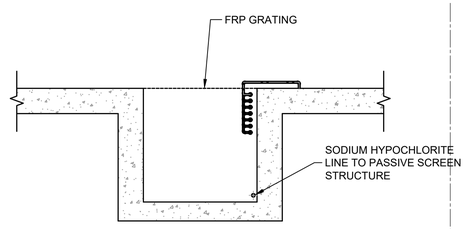
SCALE: 3/8" = 1'-0"



SECTION

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

H
M3-9



SECTION

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

I
M3-9

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

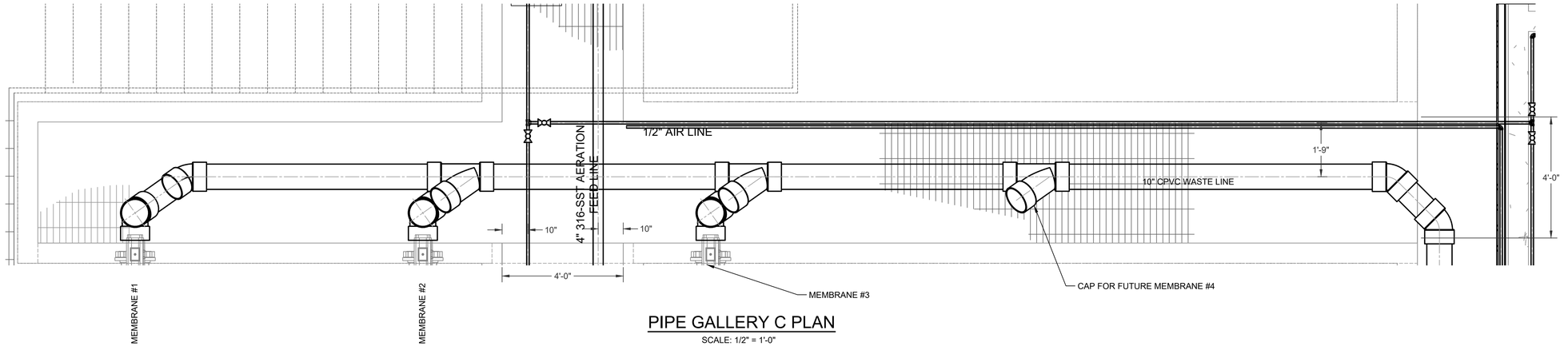
PIPE GALLERY B

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-9

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



PIPE GALLERY C PLAN

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

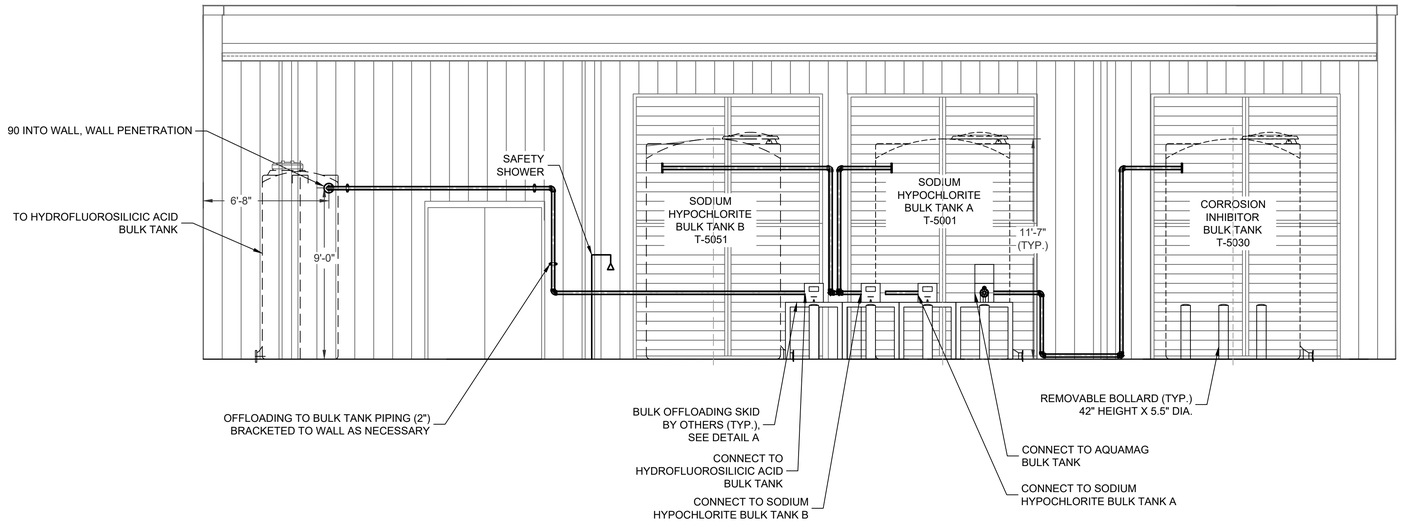
PIPE GALLERY C

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

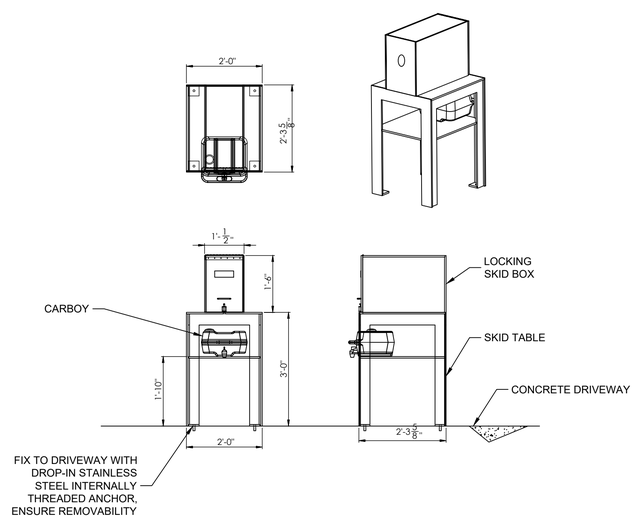
Project No.: 170110.00
Drawing No.: M3-10

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



CHEMICAL OFFLOADING ELEVATION

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



CHEMICAL OFFLOADING SKID A

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

M3-11

NOTES:
1.SEE SECTION P FOR PIPE PROFILES.
2. WALL PENETRATIONS THROUGH THE BULK TANK STORAGE AREA SHALL BE THOUGH CMU BASE COURSE ONLY.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

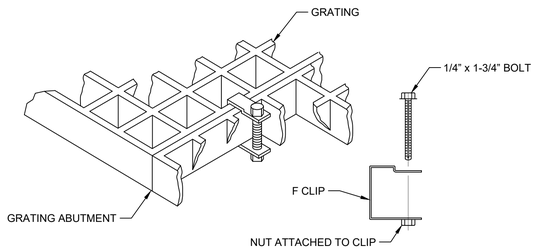
CHEMICAL OFFLOADING PLAN AND ELEVATION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

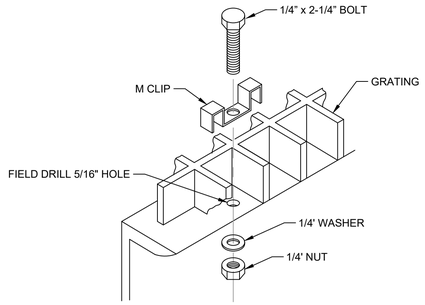
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-11

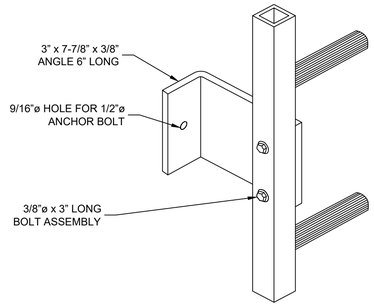
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\Membrane Building.dwg



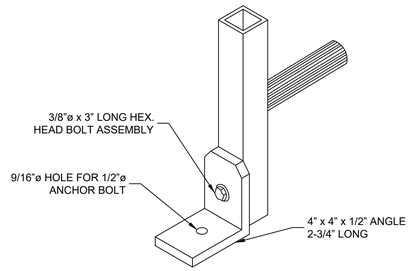
F CLIP ASSEMBLY
N.T.S. — 1 M3-12



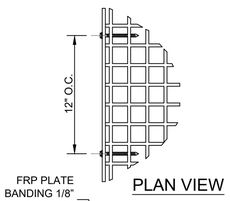
M CLIP ASSEMBLY
N.T.S. — 2 M3-12



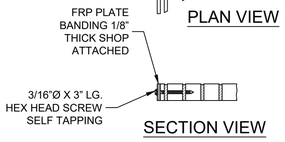
LADDER WALL MOUNT
N.T.S. — 3 M3-12



LADDER FLOOR MOUNT
N.T.S. — 4 M3-12

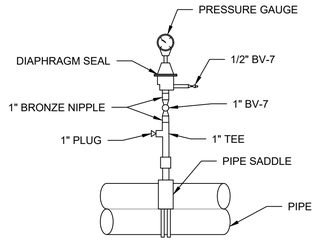


PLAN VIEW



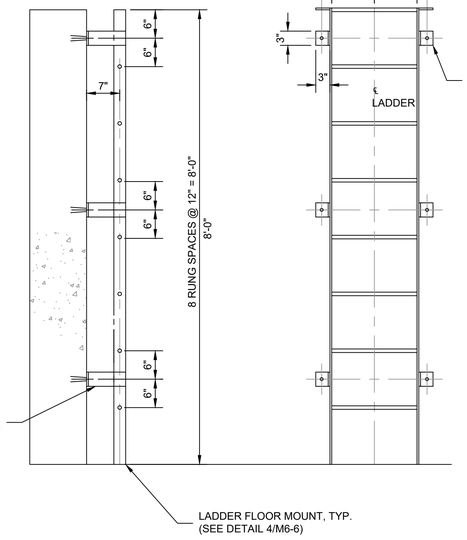
SECTION VIEW

FRP EDGEBANDING
N.T.S. — 5 M3-12

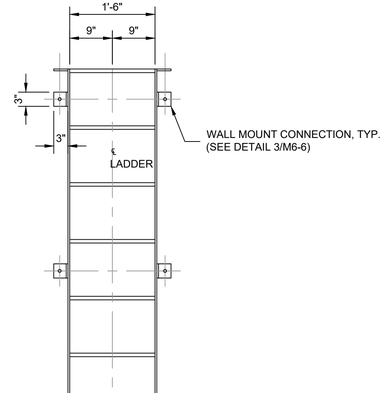


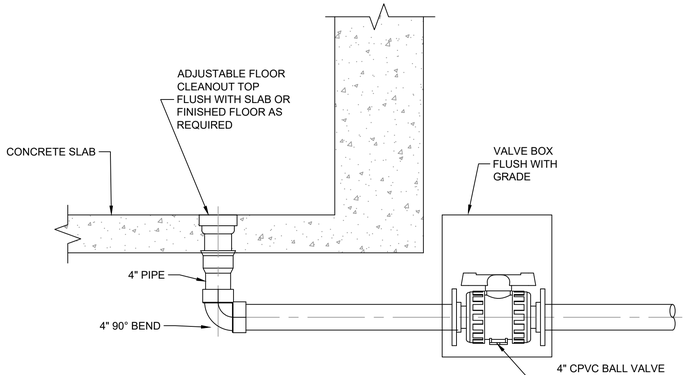
PRESSURE GAUGE MOUNTING DETAIL
N.T.S. — 6 M3-12

NOTES:
PRESSURE GUAGE MOUNTING DETAIL IS TYPICAL FOR ALL PRESSURE GUAGE INSTALLATION UNLESS OTHERWISE INDICATED ON DRAWINGS.

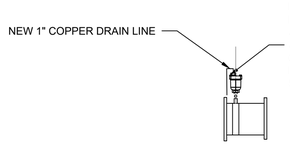


FRP LADDER
N.T.S. — 8 M3-12



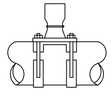


CHEMICAL CONTAINMENT FLOOR DRAIN
N.T.S. — 7 M3-12



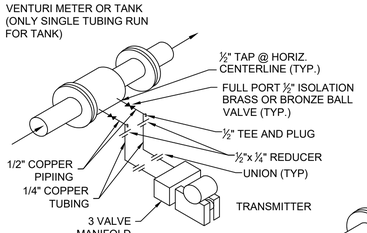
NOTES:
1. ARV ASSY TO INCLUDE ROMAC 305 SS SADDLE OR APPROVED EQUIVALENT.
2. ARV AT 90° BEND SHALL INCLUDE 4" BOSS ADJACENT TO FLANGE, 'R' POSITION - MCWANE PIPE ECONOMY
3. AIR RELEASE VALVE ASSEMBLY DETAIL IS TYPICAL FOR ALL PRESSURE GUAGE INSTALLATION UNLESS OTHERWISE INDICATED ON DRAWINGS.

AIR RELEASE VALVE ASSEMBLY
N.T.S. — 9 M3-12

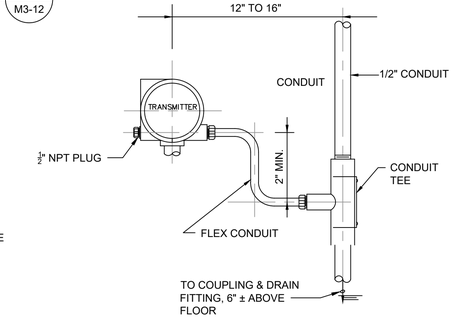


NOTES:
THREADING TO BE FEMALE. THREADING TO BE DETERMINED BASED ON PH PROBE MANUFACTURER RECOMMENDATION

PH PROBE SADDLE CONNECTION
N.T.S. — 10 M3-12



TYPICAL INSTALLATION SCHEMATICS TRANSMITTER PROCESS PIPING
N.T.S. — 11 M3-12



TYPICAL TRANSMITTER ELECTRICAL CONDUIT INSTALLATION - ELEVATION
N.T.S. — 12 M3-12

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

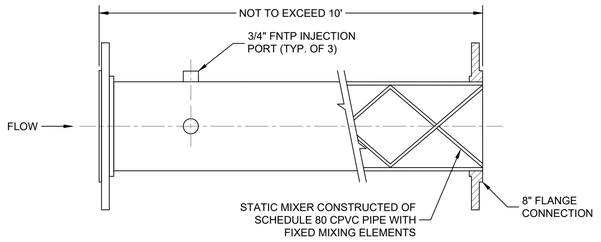
Buford Water Works Replacement
For the City of Buford, Georgia

PROCESS LAYOUT DETAILS, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

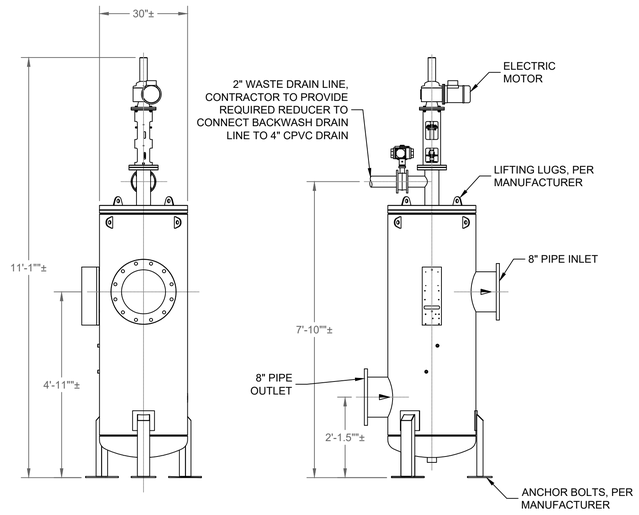
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-12



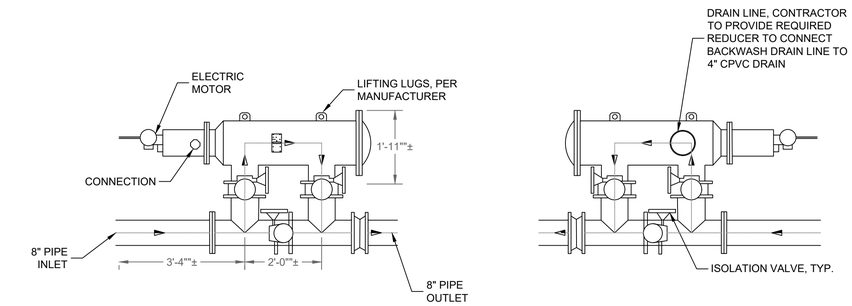
NOTES:
1. ONE 3/4" FNTP SAMPLING PORT SHALL BE INSTALLED AT TOP OF MIXER A MINIMUM 1 DIAMETER DOWNSTREAM FROM END OF MIXING ELEMENTS.
2. 3/4" INJECTION PORTS SHALL BE ARRANGED RADIALLY AT 0°, 90°, AND 270° FROM THE TOP OF MIXER TO REDUCE OVERALL LENGTH OF MIXER.
3. PROVIDE AND INSTALL STATIC MIXER PER MANUFACTURER REQUIREMENTS.

STATIC MIXER
N.T.S. — 1 / M3-13



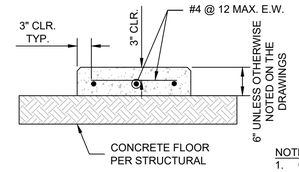
NOTE
1. PROVIDE AND INSTALL STRAINER PER MANUFACTURER REQUIREMENTS WITH ALL MOUNTING HARDWARE, SUPPORTS, BRACING, AND ANCOR BOLTS AS STAINLESS STEEL.

OPTION 1: 8" IN-LINE STRAINER
N.T.S. — 2 / M3-13



NOTE
1. PROVIDE AND INSTALL STRAINER PER MANUFACTURER REQUIREMENTS WITH ALL MOUNTING HARDWARE, SUPPORTS, BRACING, AND ANCHOR BOLTS AS STAINLESS STEEL.

OPTION 2: 8" PIPE MOUNTED STRAINER
N.T.S. — 3 / M3-13



NOTES:
1. CONTRACTOR TO COORDINATE CONDUIT LOCATIONS PER ELECTRICAL AND MANUFACTURER SHOP DRAWING AND APPROVED BY ENGINEER PRIOR TO POURING CONCRETE; DIMENSIONS PER MANUFACTURER SHOP DRAWINGS.

TYPICAL EQUIPMENT PAD
N.T.S. — 4 / M3-13

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

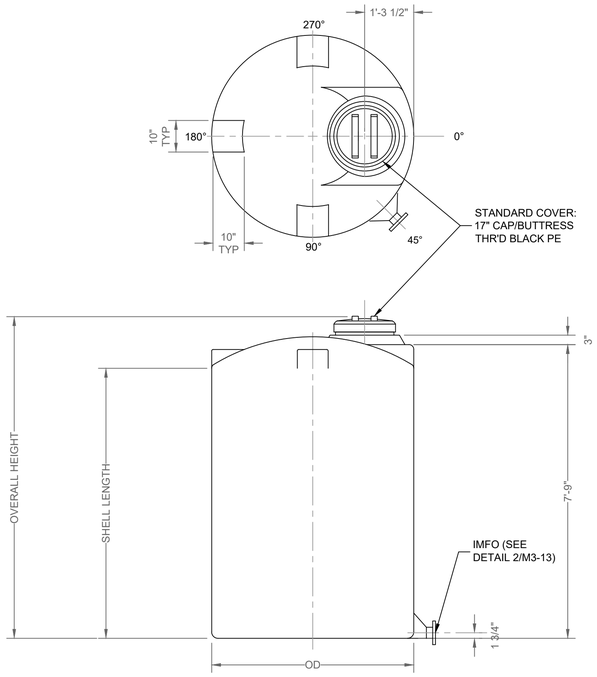
PROCESS LAYOUT DETAILS, SHEET 2

THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

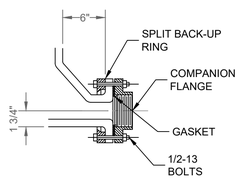
Project No.: 170110.00
Drawing No.: M3-13

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\DETAILS.dwg

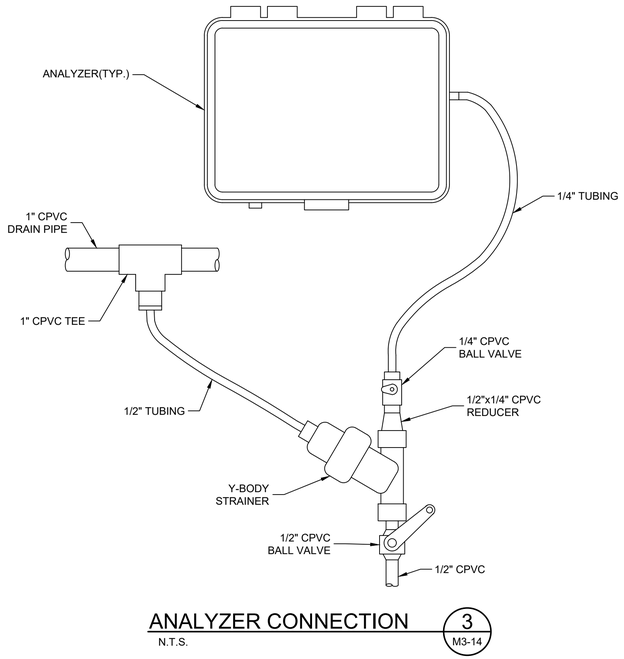


NOTES:
1. MUST USE FLEXIBLE CONNECTIONS ALL LOWER SIDEWALL FITTINGS.
2. REFER TO TANK DATASHEET FOR TANK DETAILS BY APPLICATION.

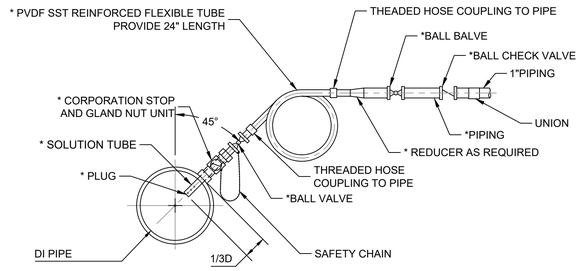
TANK DETAIL 1
SCALE: 1/2" = 1'-0"

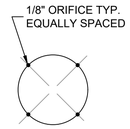


IMFO 1 DETAIL 2
N.T.S. M3-14



ANALYZER CONNECTION 3
N.T.S. M3-14



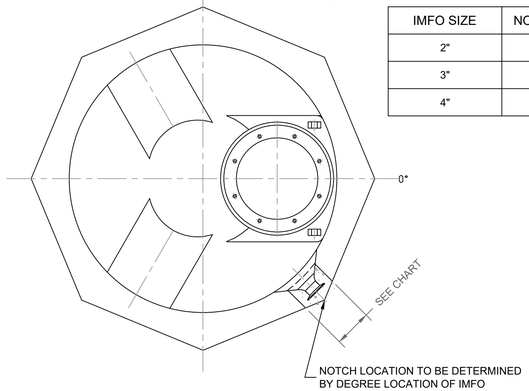


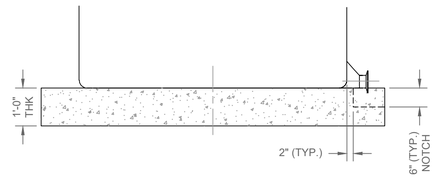
SOLUTION TUBE
N.T.S.

NOTE:
*DIMENSIONS AND MATERIAL VARY FOR DIFFERENT CHEMICAL FEEDS.
1) SODIUM HYPOCHLORITE (1/2" CPVC, 1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2"-CORPORATION STOP, TUBING, AND PLUG)
2) AQUA MAG (3/4" CPVC, 3/4" CHECK VALVE, 3/4" BALL VALVE, 3/4"-CORPORATION STOP, TUBING, AND PLUG.)
3) SODIUM HYDROXIDE (1/2" CPVC, 1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2"-CORPORATION STOP, TUBING, AND PLUG, NO REDUCER)
4) HYDROFLUORSILICIC ACID (1/2" CPVC,1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2" CORPORATION STOP, TUBING, AND PLUG, NO REDUCER)
5) SODIUM BISULFITE (1/2" CPVC,1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2" CORPORATION STOP, TUBING, AND PLUG, NO REDUCER)
6) HYDROCHLORIC ACID (1/2" CPVC,1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2" CORPORATION STOP, TUBING, AND PLUG, NO REDUCER)
7) CITRIC ACID (1/2" CPVC,1/2" CHECK VALVE, 1/2" BALL VALVE, 1/2" CORPORATION STOP, TUBING, AND PLUG, NO REDUCER)

CHEMICAL ADDITION POINT 4
N.T.S. M3-14

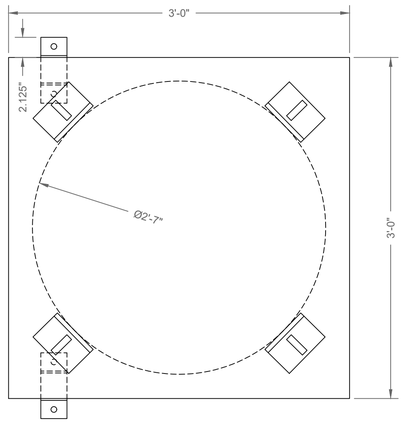
IMFO SIZE	NOTCH WIDTH
2"	8"
3"	12"
4"	13"



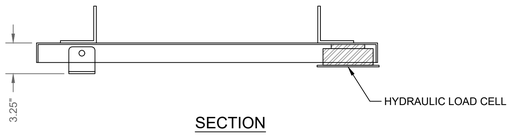


NOTES:
1. ELEVATED CONCRETE PAD TO BE 24" LARGER THAN TANK DIAMETER.
2. NOTCH STARTS 2" FROM TANK STRAIGHT WALL.

IMFO PAD BLOCKOUT DETAIL 5
N.T.S. M3-14

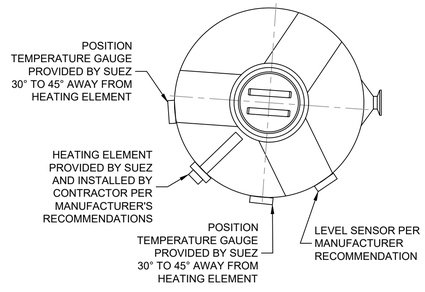


PLAN



SECTION

CHEMICAL SCALE DETAIL 6
N.T.S. M3-14



NOTE:
1. HEATING ELEMENT TO BE INSTALLED A MINIMUM OF 8 INCHES ABOVE TANK FLOOR PER MANUFACTURER RECOMMENDATION.
2. ALLOW 8 INCHES VERTICALLY BETWEEN HEATING ELEMENT AND TEMPERATURE GAUGE.
3. ALLOW 12 INCHES VERTICALLY BETWEEN HEATING ELEMENT AND LEVEL SENSOR.

HEATER DETAIL 7
N.T.S. M3-14

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

PROCESS CHEMICAL DETAILS, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3-14

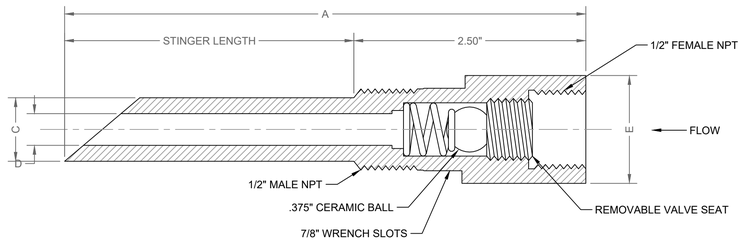
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\CHEMICAL TANK.dwg

CHEMICAL TANK SCHEDULE

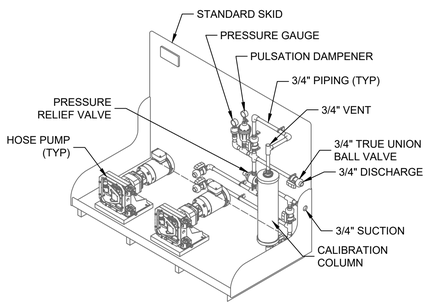
TANK LABEL	TANK TYPE	TANK VOLUME	TANK DIAMETER	CHEMICAL	SIZE OF PAD
1	POLYETHYLENE			CORROSION INHIBITOR	
2	POLYETHYLENE			CORROSION INHIBITOR	
3	POLYETHYLENE			SODIUM HYPOCHLORITE	
4	POLYETHYLENE			SODIUM HYPOCHLORITE	
5	POLYETHYLENE			SODIUM HYPOCHLORITE	
6	POLYETHYLENE			HYDROFLUOROSILICIC ACID	
7	POLYETHYLENE			HYDROFLUOROSILICIC ACID	

CHEMICAL PUMP SCHEDULE

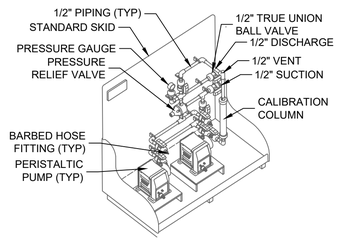
LABEL	TYPE OF PUMP	SIZE OF PUMP	CHEMICAL
1	PERISTALTIC		ALUMINUM CHLOROHYDRATE
2	PERISTALTIC		ALUMINUM CHLOROHYDRATE
3	HOSE		SODIUM HYPOCHLORITE
4	HOSE		SODIUM HYPOCHLORITE
5	PERISTALTIC		SODIUM HYPOCHLORITE
6	PERISTALTIC		SODIUM HYPOCHLORITE
7	PERISTALTIC		SODIUM HYPOCHLORITE
8	PERISTALTIC		SODIUM HYPOCHLORITE
9	PERISTALTIC		SODIUM HYPOCHLORITE
10	PERISTALTIC		SODIUM HYPOCHLORITE
11	PERISTALTIC		SODIUM HYPOCHLORITE
12	PERISTALTIC		SODIUM HYPOCHLORITE
13	PERISTALTIC		SODIUM HYDROXIDE
14	PERISTALTIC		SODIUM HYDROXIDE
15	PERISTALTIC		SODIUM HYDROXIDE
16	PERISTALTIC		SODIUM HYDROXIDE
17	PERISTALTIC		CITRIC ACID
18	PERISTALTIC		CITRIC ACID
19	PERISTALTIC		HYDROCHLORIC ACID
20	PERISTALTIC		HYDROCHLORIC ACID
21	PERISTALTIC		HYDROCHLORIC ACID
22	PERISTALTIC		HYDROCHLORIC ACID
23	HOSE		HYDROFLUOROSILICIC ACID
24	HOSE		HYDROFLUOROSILICIC ACID
25	PERISTALTIC		HYDROFLUOROSILICIC ACID
26	PERISTALTIC		HYDROFLUOROSILICIC ACID
27	HOSE		CORROSION INHIBITOR
28	HOSE		CORROSION INHIBITOR
29	PERISTALTIC		CORROSION INHIBITOR
30	PERISTALTIC		CORROSION INHIBITOR
31	PERISTALTIC		SODIUM BISULFATE
32	PERISTALTIC		SODIUM BISULFATE



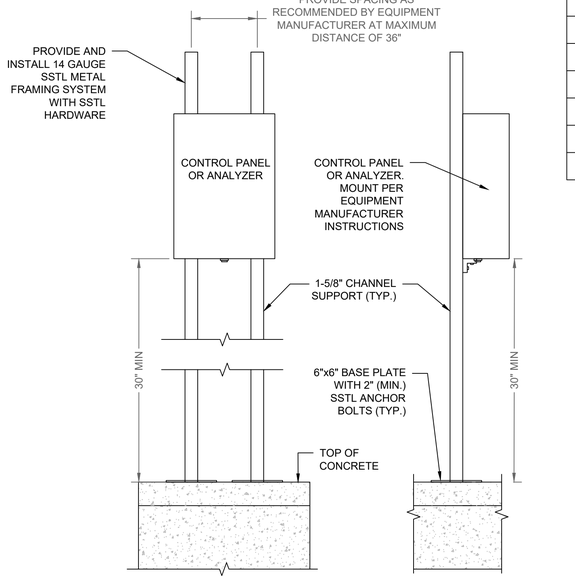
INJECTION QUILL — 1 / M3-15
N.T.S.



HOSE PUMP SKID — 2 / M3-15
N.T.S.



PERISTALTIC PUMP SKID — 3 / M3-15
N.T.S.



PEDESTAL MOUNTED CONTROL PANEL OR ANALYZER — 4 / M3-15
N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

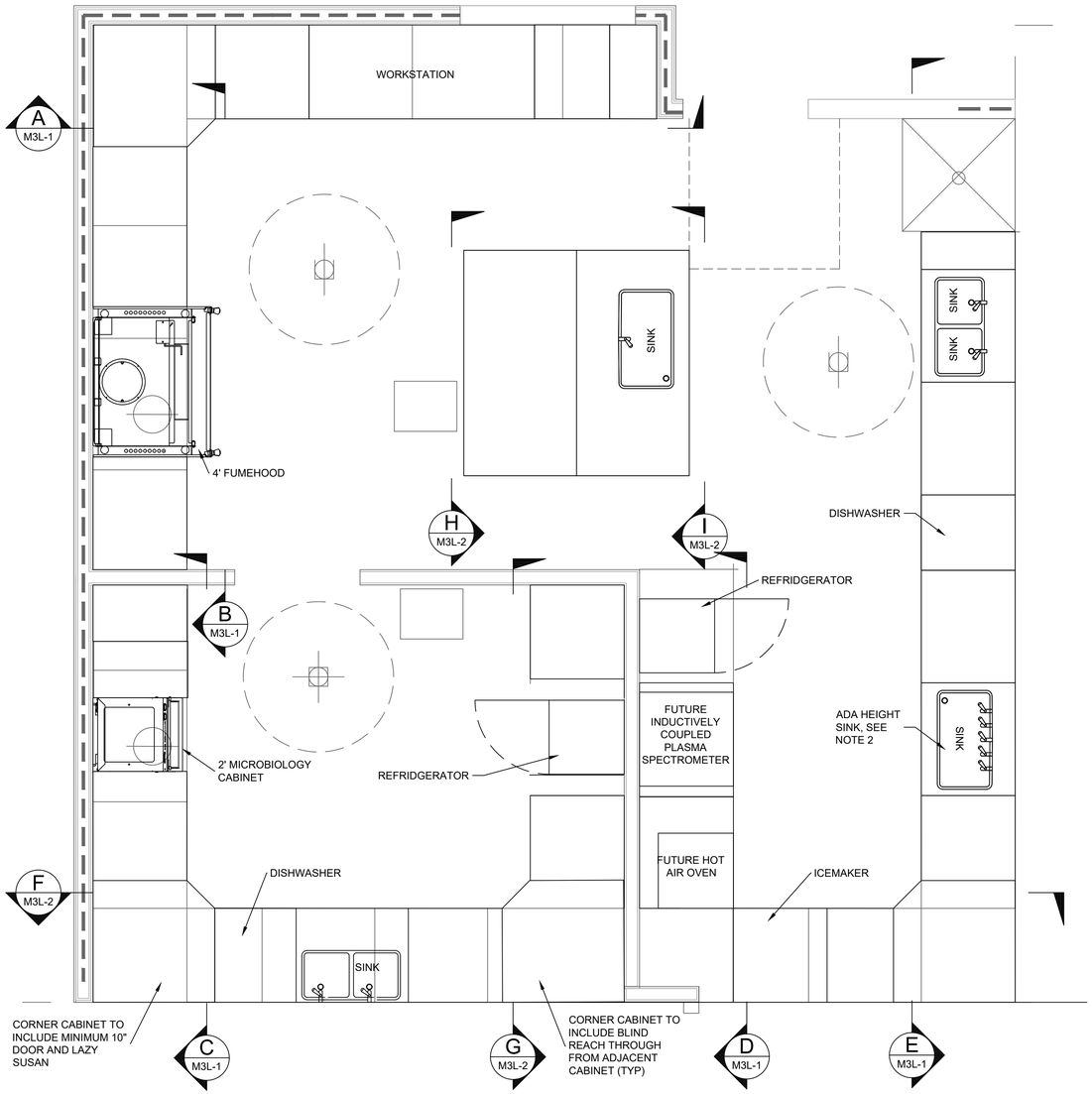
PROCESS CHEMICAL DETAILS, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

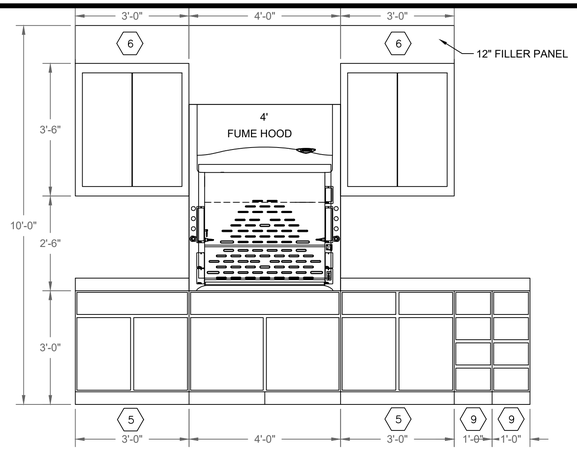
Project No.: 170110.00
Drawing No.: M3-15

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\CHEMICAL TANK.dwg



LABORATORY PLAN VIEW

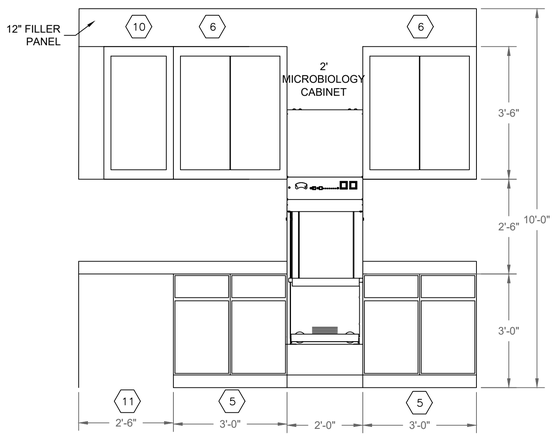
SCALE: 1/2" = 1'-0'



SECTION B

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

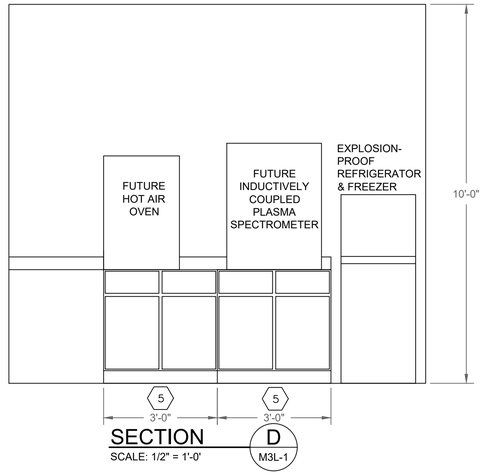
M3L-1



SECTION C

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

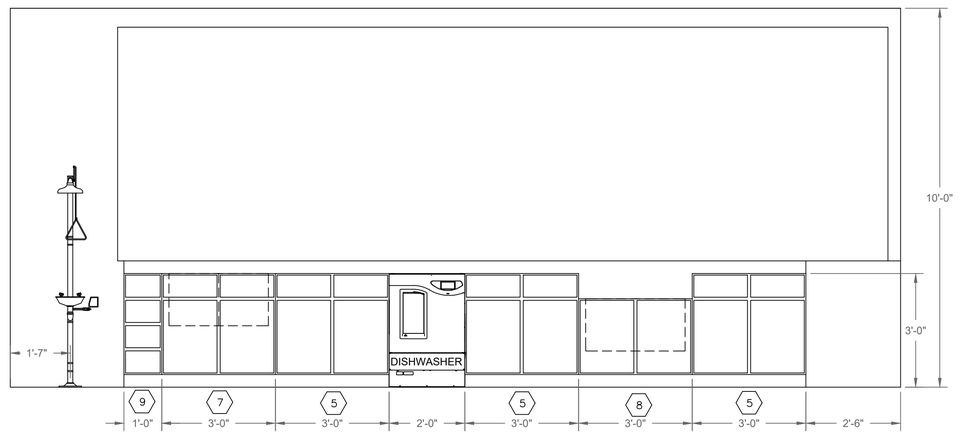
M3L-1



SECTION D

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

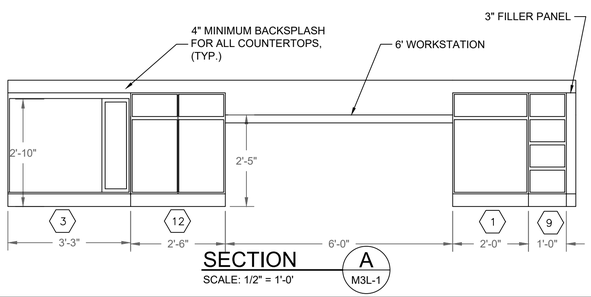
M3L-1



SECTION E

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

M3L-1



SECTION A

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

M3L-1

NOTES:

1. TRASH CANS TO BE SST MECHANICAL TRASH RECEPTACLE WITH LID AND PLASTIC INSERT.
2. ADA HEIGHT SINK TO BE 34" MAXIMUM FROM FLOOR. TO BE INSTALLED WITH A WHEEL-CHAIR ACCESSIBLE BASE CABINET.
3. ALL CABINETRY TO BE INSTALLED ATOP PRESSURE TREATED BASE FRAME. BASE FRAME CONSTRUCTION SHALL BE PRESSURE TREATED 2X4 LUMBER. BASE FRAME SHALL HAVE THE 4" DIMENSION (NOM) ALIGNED VERTICALLY. FRAME DIMENSIONS SHALL BE 3" SHALLOWER THAN CABINET DEPTH CREATING TOE BOARD AND 1" FROM ALL EXPOSED SIDE FACE(S) OF CABINET. EXPOSED BASE FRAME SHALL BE CLAD WITH CEMENT BOARD.
4. FLOOR AREA BENEATH WORKSTATION AND ADA SINK SHALL RECEIVE SAME FLOORING TREATMENT AS ALL OTHER AREAS IN THE LAB. CONTRACTOR SHALL ENSURE CABINET AND COUNTERS ARE SUPPORTED AND THAT BASE FRAME DOES NOT EXTEND TO WITHIN THE OPEN AREA UNDERNEATH WORKSTATION OR ADA SINK.

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

0 24" 48"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

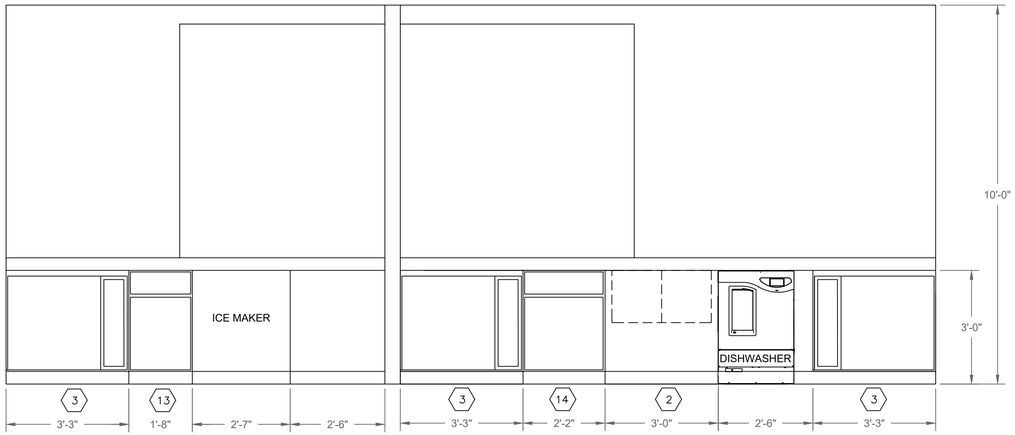
LABORATORY PLAN AND SECTIONS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

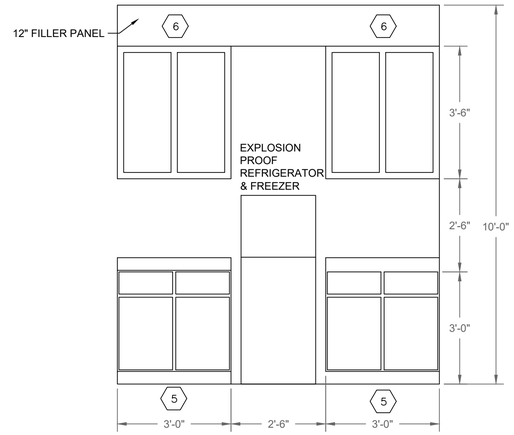
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M3L-1

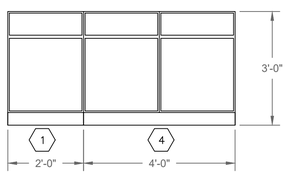
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\LABORATORY.dwg



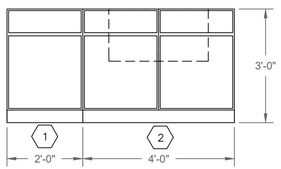
SECTION F
SCALE: 1/2" = 1'-0"
M3L-2



SECTION G
SCALE: 1/2" = 1'-0"
M3L-2



SECTION H
SCALE: 1/2" = 1'-0"
M3L-2



SECTION I
SCALE: 1/2" = 1'-0"
M3L-2

LAB. CABINET SCHEDULE

CABINET TYPE (X)	CABINET DESCRIPTION
1	BASE 36"(H)24"(W) – 1 DRAWER & 1 DOOR
2	BASE 36"(H)48"(W) – 2 DOORS (SINK BASE)
3	BASE 36"(H)39"(W) – CORNER UNIT WITH REACHTHRU
4	BASE 36"(H)48"(W) – 2 DRAWERS & 2 DOORS
5	BASE 36"(H)36"(W) – 2 DRAWERS & 2 DOORS
6	UPPER 42"(H)36"(W) – 2 DOORS
7	BASE 36"(H)36"(W) – 2 DOORS (SINK BASE)
8	BASE 30"(H)36"(W) – 2 DOORS (ADA SINK BASE)
9	BASE 36"(H)12"(W) – 4 DRAWERS
10	UPPER 42"(H)24"(W) – 1 DOOR
11	BASE 36"(H)39"(W) – CORNER UNIT WITH LAZY SUSAN
12	BASE 36"(H)30"(W) – 2 DRAWERS & 2 DOORS
13	BASE 36"(H)20"(W) – 1 DRAWER & 1 DOOR
14	BASE 36"(H)22"(W) – 1 DRAWER & 1 DOOR

0 24" 48"
SCALE: 1/2" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

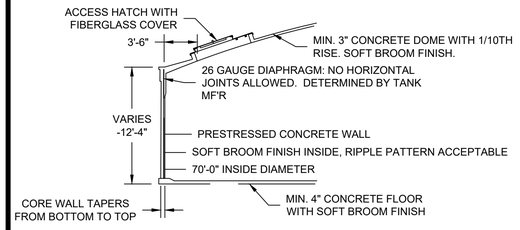
LABORATORY SECTIONS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

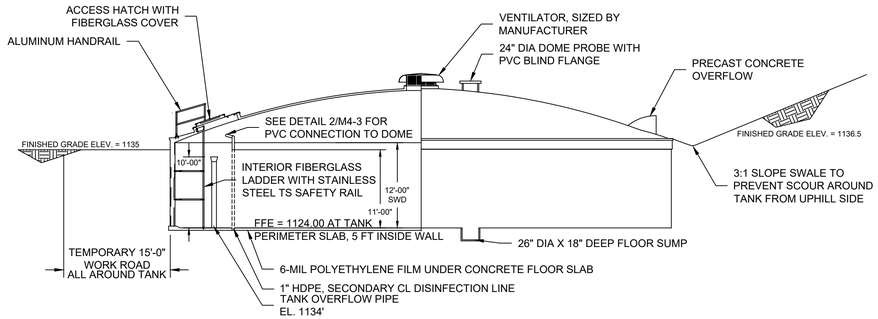
Project No.: 170110.00
Drawing No.: M3L-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Building\LABORATORY.dwg



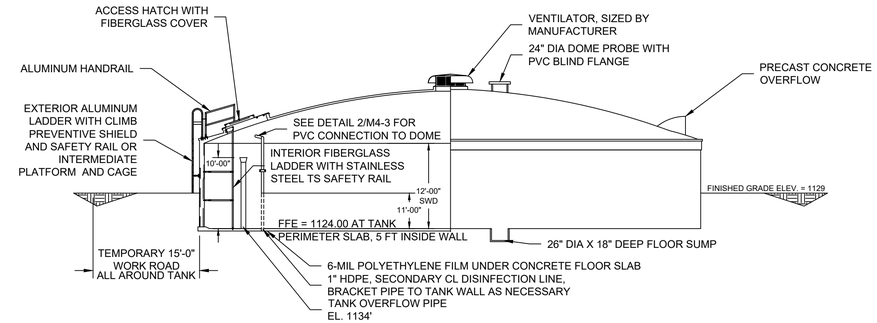
CLEARWELL WALL DETAIL

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



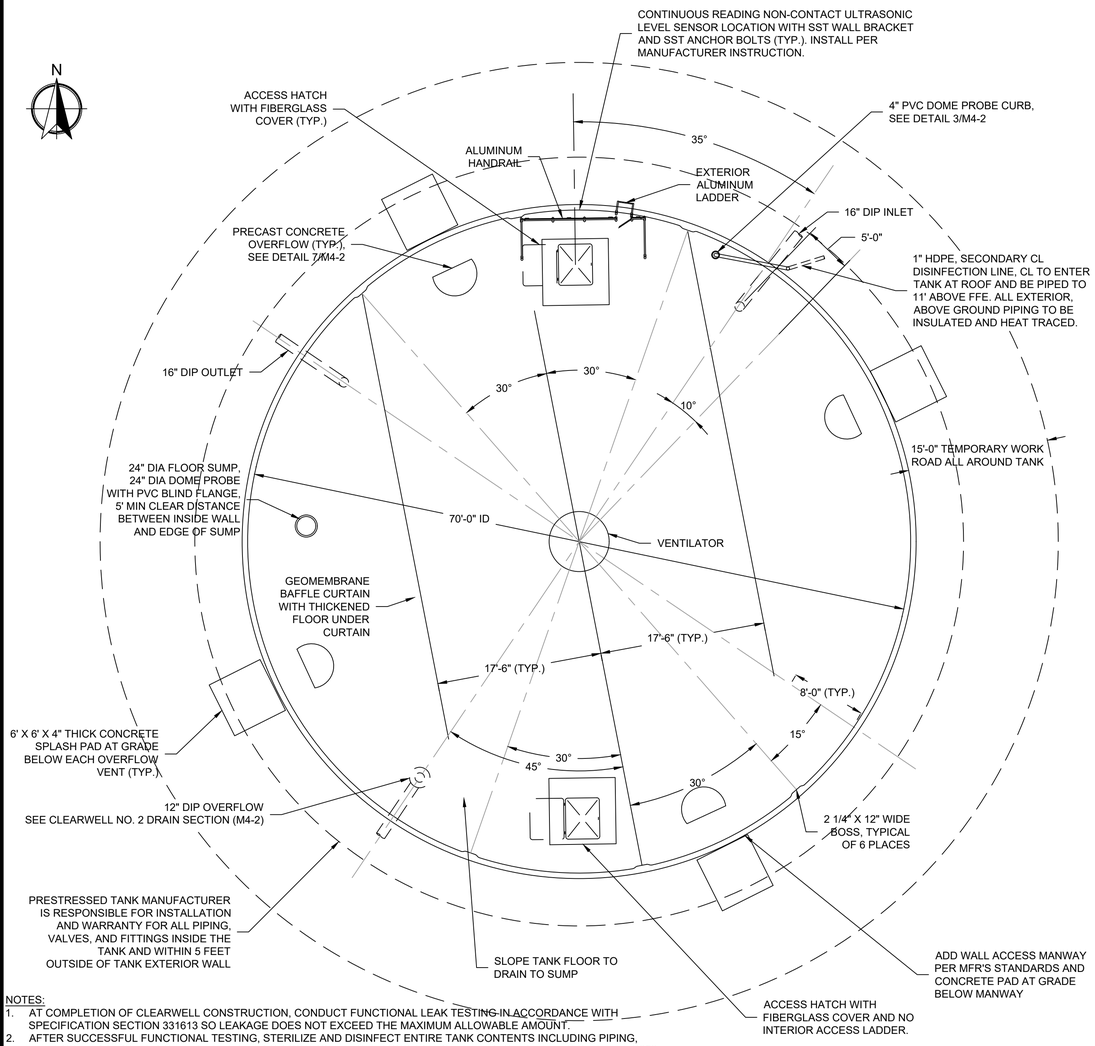
CLEARWELL NO. 1 ELEVATION

SCALE: 3/32" = 1'-0"



CLEARWELL NO. 2 ELEVATION (ALT. NO. 1)

SCALE: 3/32" = 1'-0"

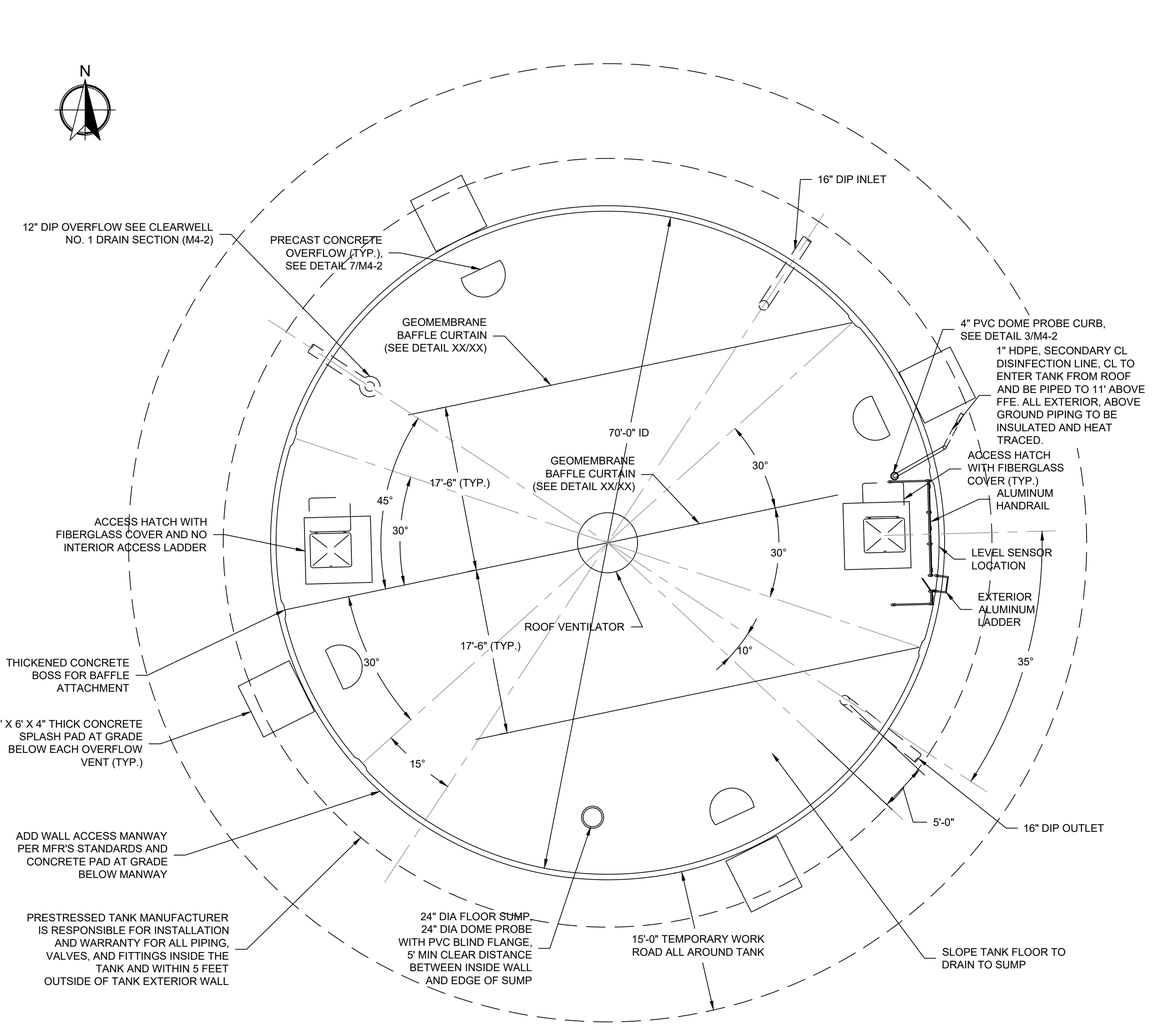


NOTES:

1. AT COMPLETION OF CLEARWELL CONSTRUCTION, CONDUCT FUNCTIONAL LEAK TESTING IN ACCORDANCE WITH SPECIFICATION SECTION 331613 SO LEAKAGE DOES NOT EXCEED THE MAXIMUM ALLOWABLE AMOUNT.
2. AFTER SUCCESSFUL FUNCTIONAL TESTING, STERILIZE AND DISINFECT ENTIRE TANK CONTENTS INCLUDING PIPING, FITTINGS, LADDERS, AND OTHER TANK INTERIOR COMPONENTS IN ACCORDANCE WITH REQUIREMENTS OF AWWA C652.
3. BASE BID: CONSTRUCT CLEARWELL NO. 1 AND ALL ASSOCIATED PIPING AND APPURTENANCES.
4. ALTERNATE NO. 2: CONSTRUCT CLEARWELL NO. 2AND ALL ASSOCIATED PIPING AND APPURTENANCES.
5. ALL PIPES, VALVES, SUPPORTS, AND FITTINGS INSIDE STRUCTURE TO BE PAINTED AND COATED WITH PAINTING SYSTEM FOR SUBMERGED SERVICE.
6. ALL EXPOSED, ABOVE GRADE EXTERIOR CONCRETE OF CLEARWELLS TO BE COATED PER SPECIFICATION 099600.
7. THE MAXIMUM GROUND WATER ELEVATION AT EITHER TANK IS 1124.00 DESIGN THE TANKS TO PROVIDE UPLIFT FORCE SAFETY FACTOR OF 2.0 WITHOUT USING ANY TYPE OF PIPED UNDERDRAIN SYSTEM TO DRAIN GROUNDWATER AWAY.

CLEARWELL NO. 1 PLAN

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



CLEARWELL NO. 2 (ALT. NO. 1) PLAN

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

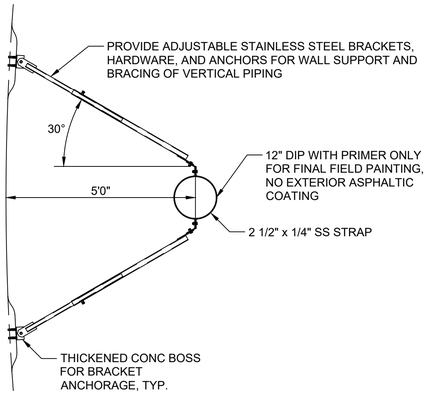
CLEARWELL SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

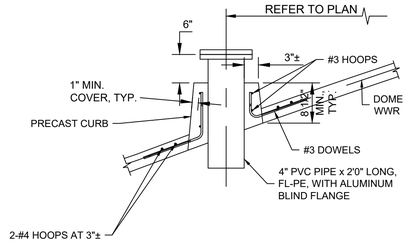
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M4-1

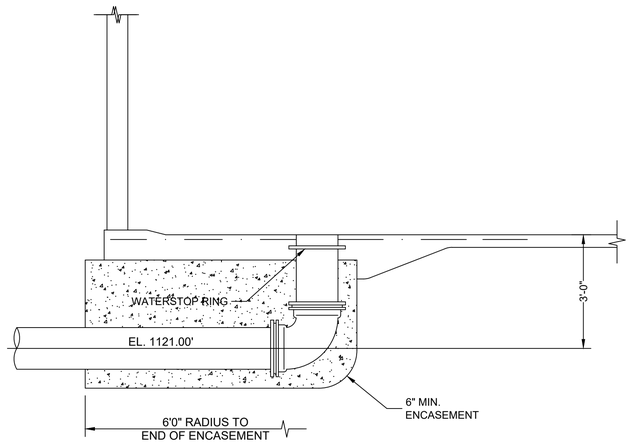
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\CLEARWELL.dwg



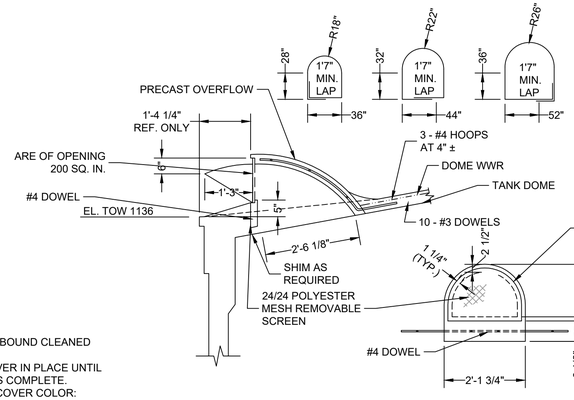
PIPE BRACKET DETAIL 1
SCALE: 1/2" = 1'-0"
M4-2



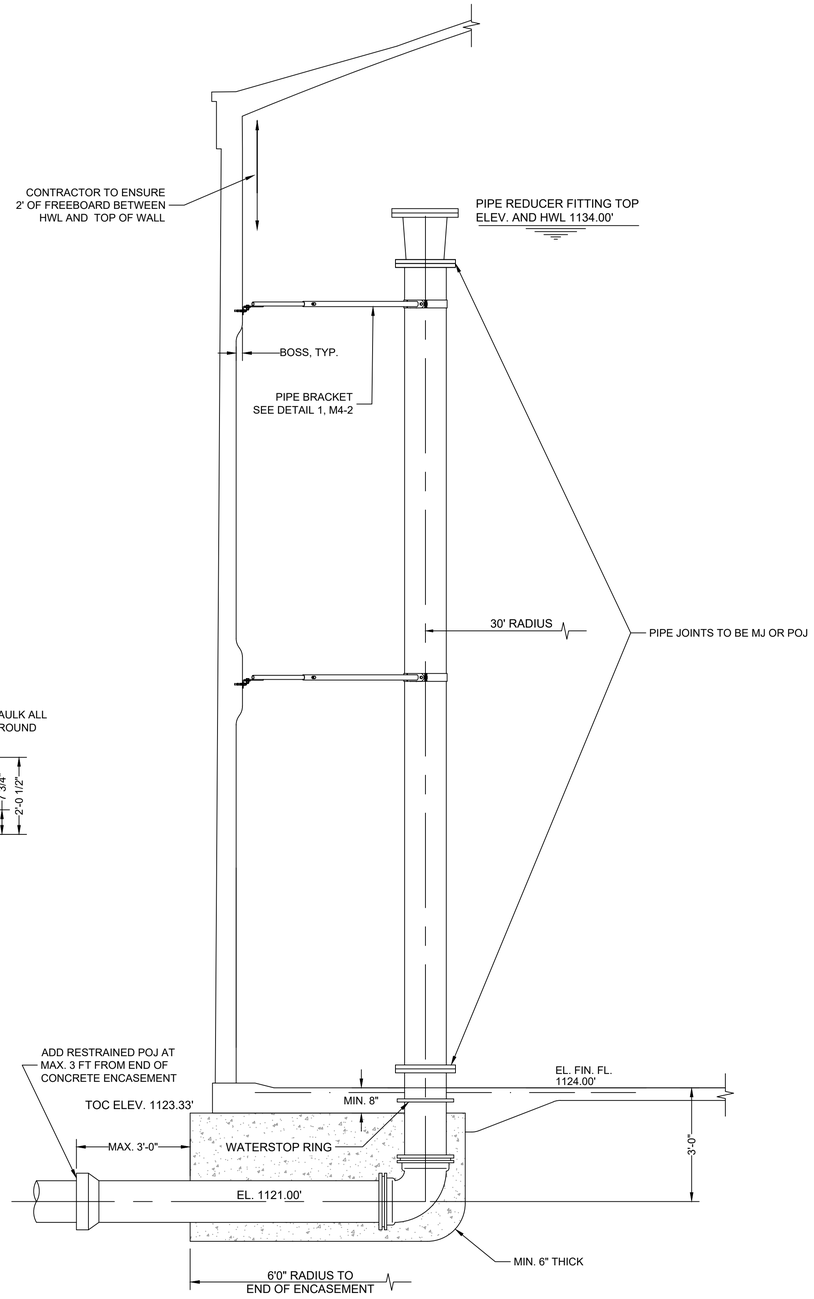
4" PVC DOME PROBE CURB 3
NTS
M4-2



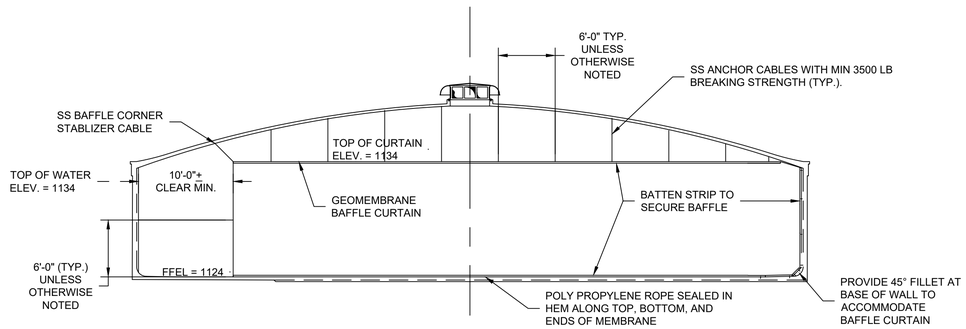
INLET AND OUTLET DETAIL 2
SCALE: 1/2" = 1'-0"
M4-2



NOTES:
1. KEEP SHOTCRETE REBOUND CLEANED OFF OF OVERFLOW.
2. LEAVE PLYWOOD COVER IN PLACE UNTIL ALL SHOTCRETING OS COMPLETE.
3. FIBERGLASS EYELID COVER COLOR: WHITE.



CLEARWELL NO. 1 & NO. 2 OVERFLOW SECTION 5
SCALE: 1/2" = 1'-0"
M4-2



TYPICAL BAFFLE CURTAIN INSTALLATION 6
SCALE: 1/16" = 1'-0"
M4-2

PAINT NOTE:
1. ALL PIPES, VALVES, SUPPORTS, AND FITTINGS INSIDE STRUCTURE TO BE PAINTED AND COATED WITH PAINTING SYSTEM FOR SUBMERGED SERVICE.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

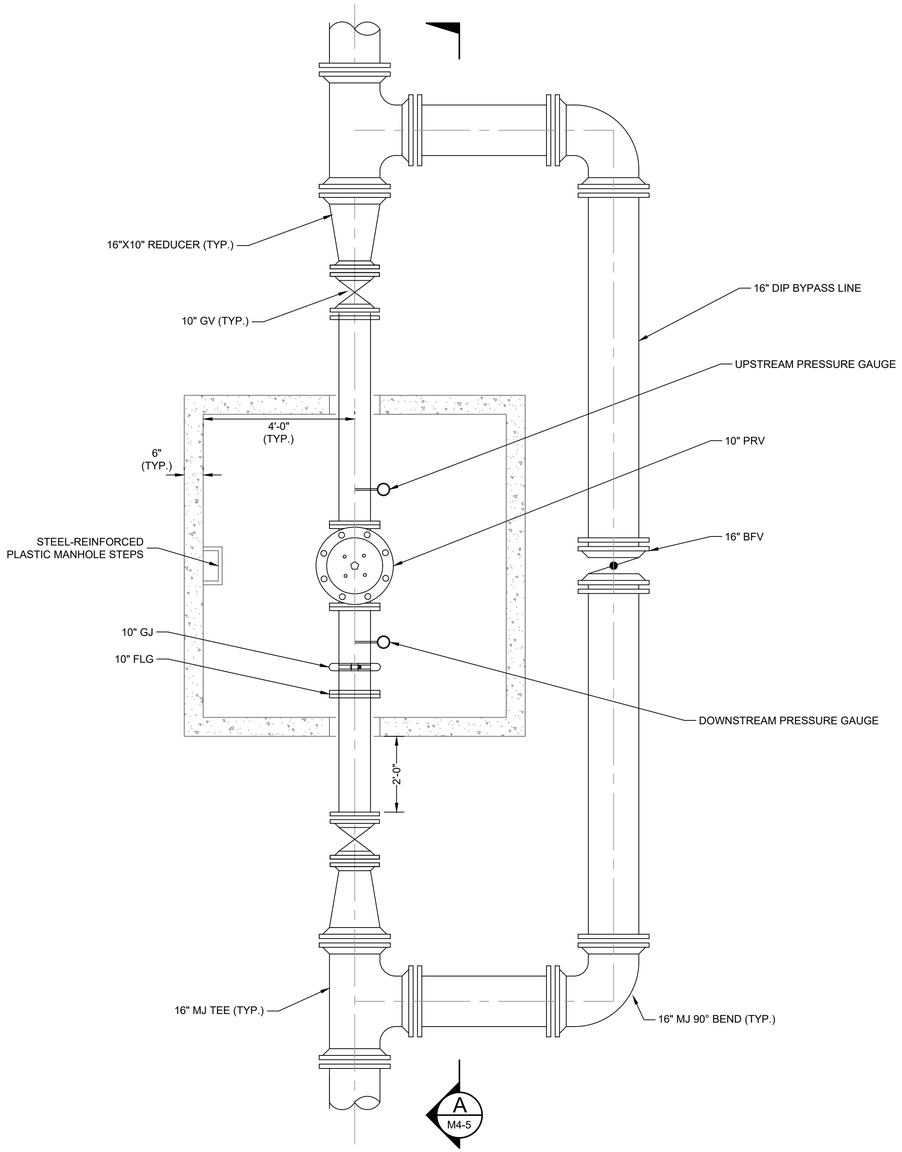
CLEARWELL SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

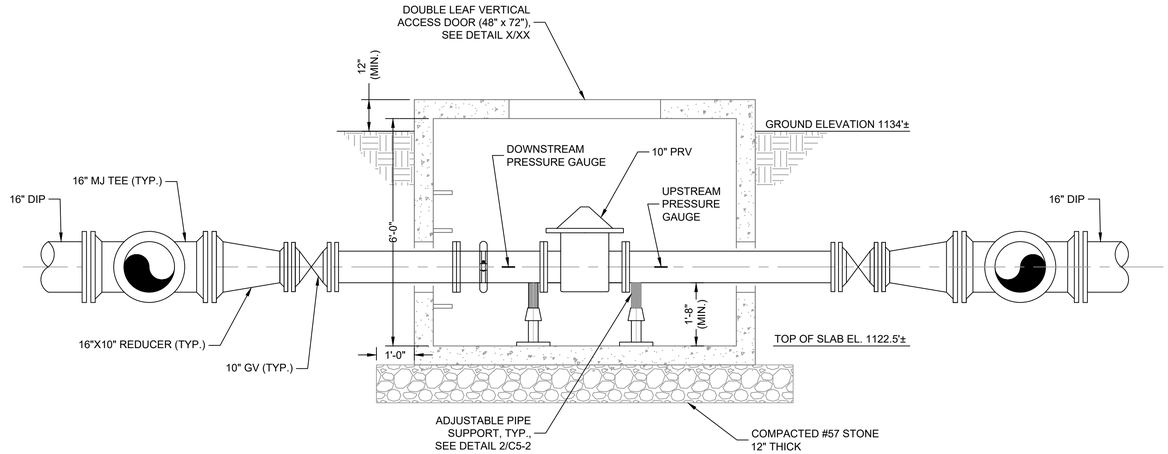
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M4-2

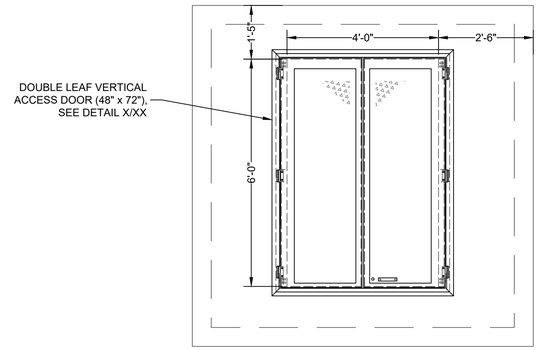
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\CLEARWELL.dwg



PRESSURE REDUCING VALVE VAULT 1
SCALE: 1/2" = 1'-0"
M4-3



SECTION A
SCALE: 1/2" = 1'-0"
M4-3



TOP ELEVATION 2
SCALE: 1/2" = 1'-0"
M4-3

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

CLEARWELL PRV VAULT

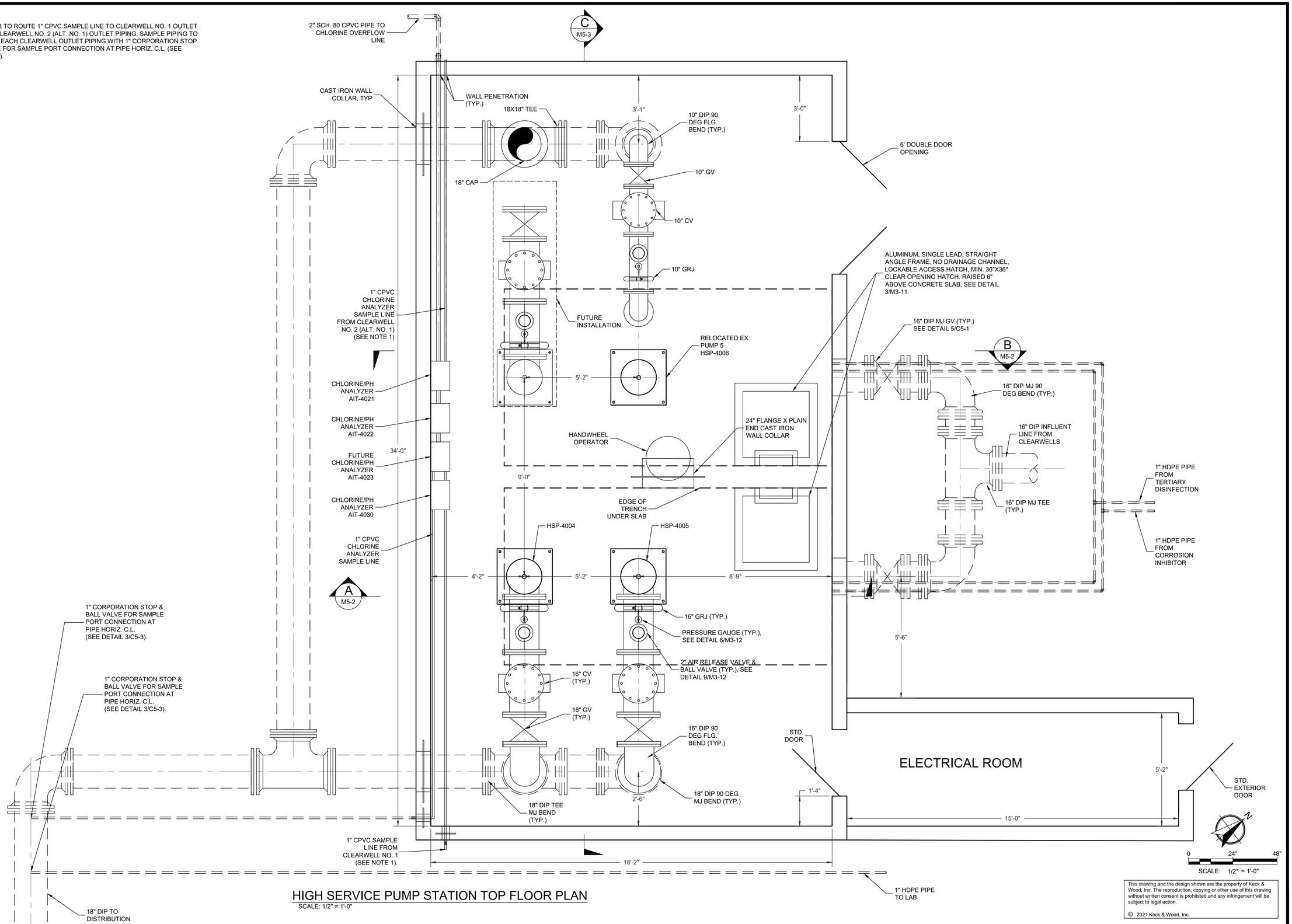
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M4-3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\CLEARWELL.dwg

NOTES:
1. CONTRACTOR TO ROUTE 1" CPVC SAMPLE LINE TO CLEARWELL NO. 1 OUTLET PIPING AND CLEARWELL NO. 2 (ALT. NO. 1) OUTLET PIPING. SAMPLE PIPING TO CONNECT TO EACH CLEARWELL OUTLET PIPING WITH 1" CORPORATION STOP & BALL VALVE FOR SAMPLE PORT CONNECTION AT PIPE HORIZ. C.L. (SEE DETAIL 3/C5-3).



HIGH SERVICE PUMP STATION TOP FLOOR PLAN
SCALE: 1/2" = 1'-0"

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

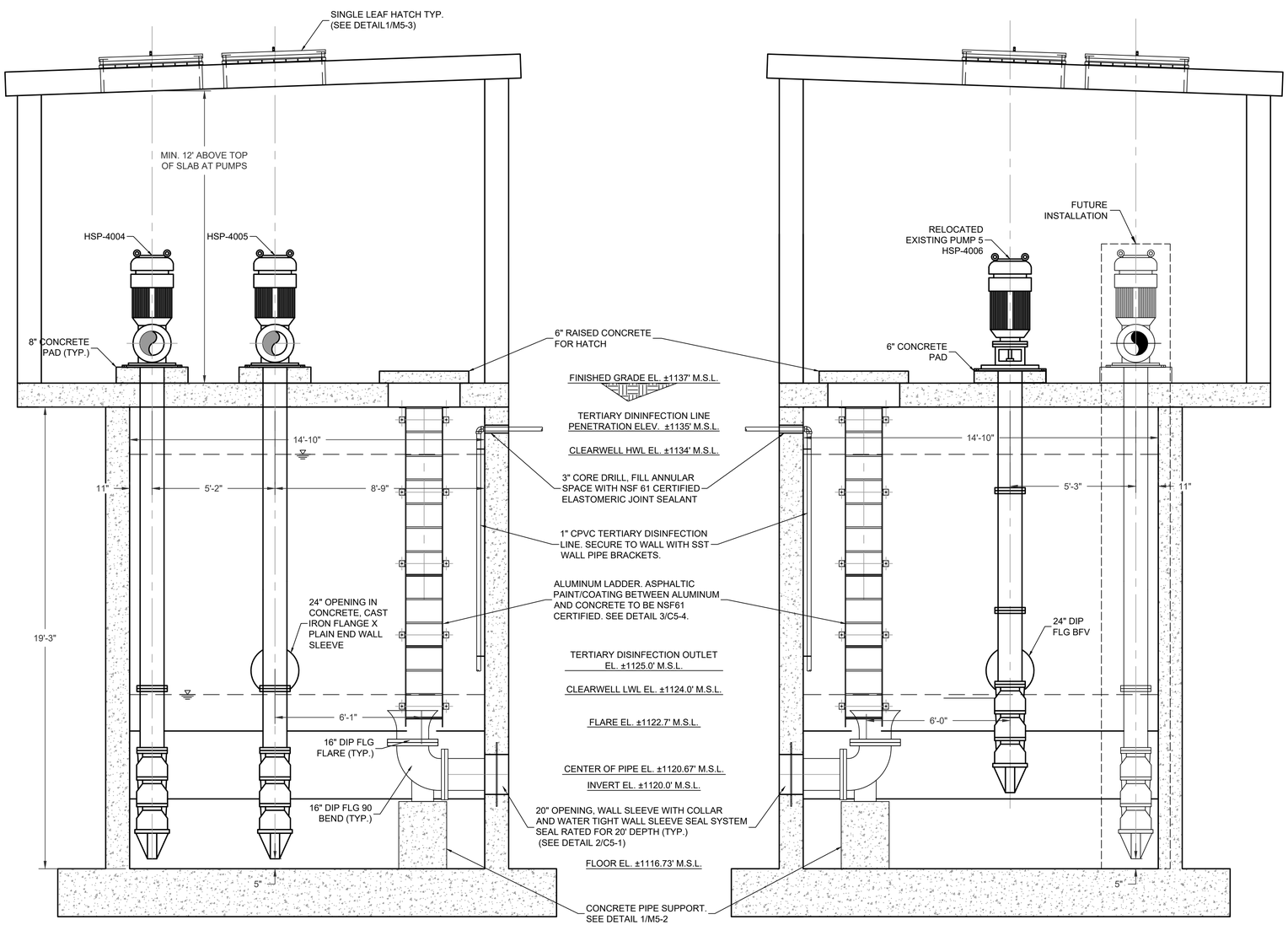
HIGH SERVICE PUMP STATION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

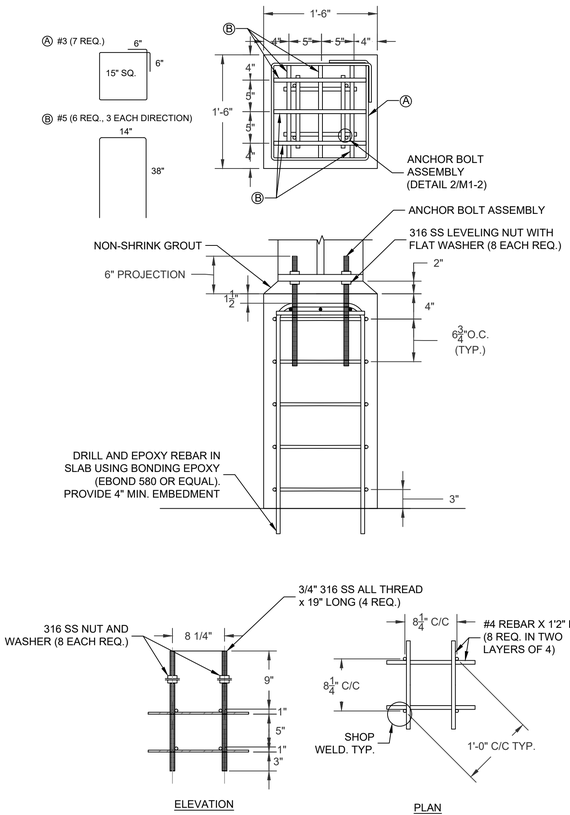
Project No.: 170110.00
Drawing No.: M5-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\HSP METER VAULT DETAILS.dwg



SECTION A
SCALE: 3/8" = 1'-0"
M5-2

SECTION B
SCALE: 3/8" = 1'-0"
M5-2



DETAIL 1
N.T.S.
M5-2

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

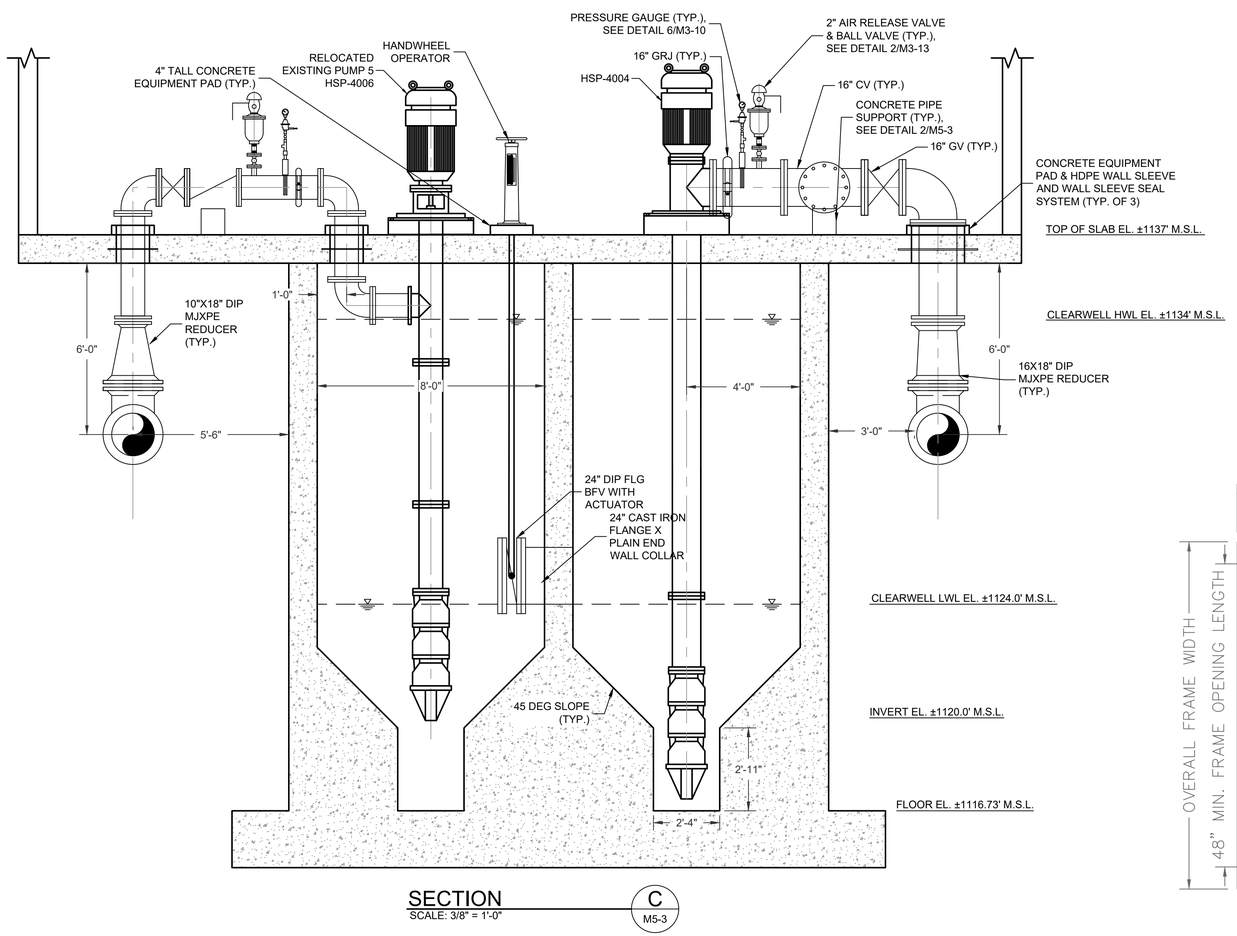
HIGH SERVICE PUMP DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

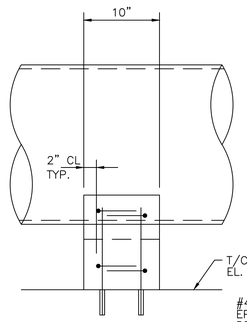
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M5-2

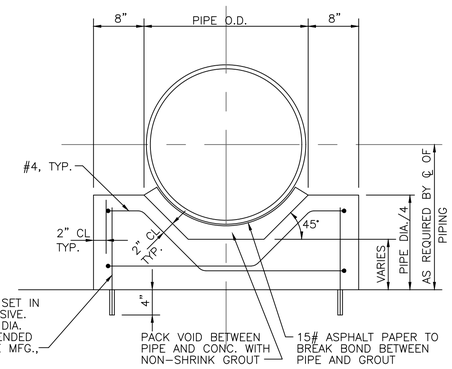
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\HSP METER VAULT DETAILS.dwg



SECTION C
SCALE: 3/8" = 1'-0"
M5-3

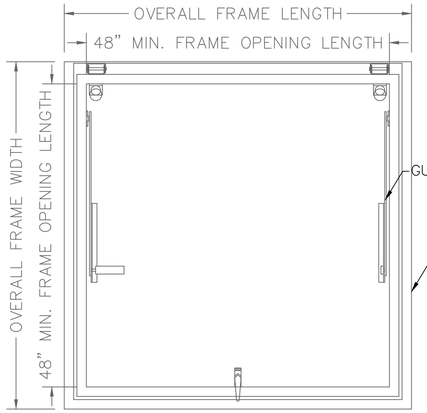


SIDE VIEW

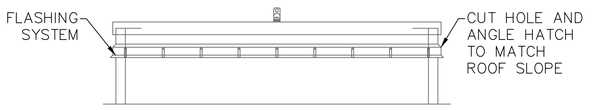


FRONT VIEW

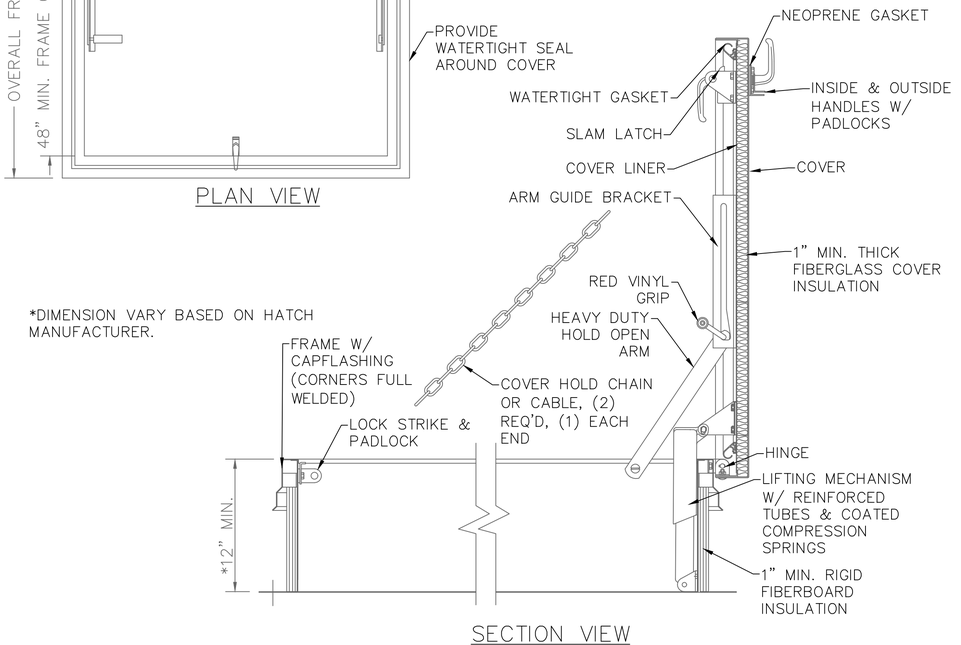
CONCRETE PIPE SUPPORT
SCALE: N.T.S.
2
M5-3



PLAN VIEW



SIDE VIEW



SECTION VIEW

DETAIL
N.T.S.
1
M5-3

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

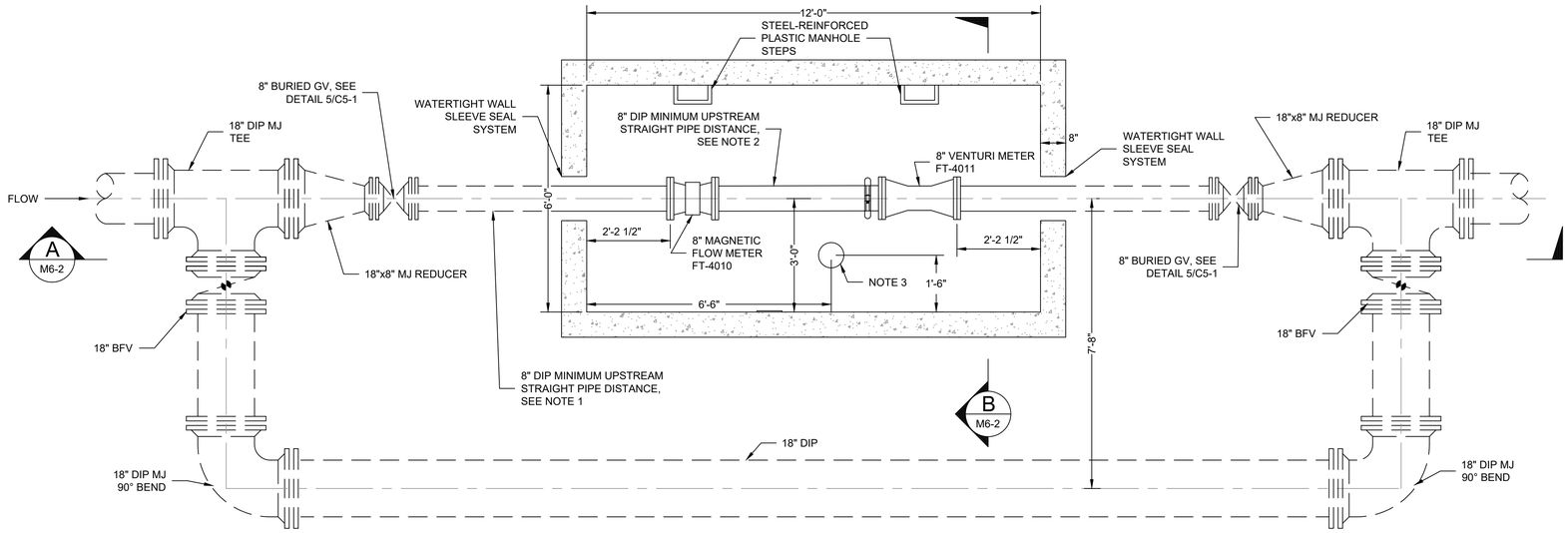
Buford Water Works Replacement
For the City of Buford, Georgia

HIGH SERVICE PUMP STATION
BUILDING DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

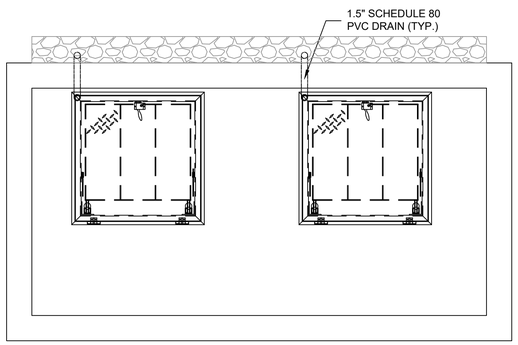
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M5-3



METER VAULT PLAN

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



METER VAULT TOP SLAB PLAN

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

NOTES:
1. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 8X PIPE DIAMETER FOR VENTURI FLOWMETER.
2. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 6X PIPE DIAMETER FOR MAGNETIC FLOWMETER.
3. PROVIDE 8" DIAMETER DRAIN. SLOPE VAULT FLOOR TO DRAIN.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

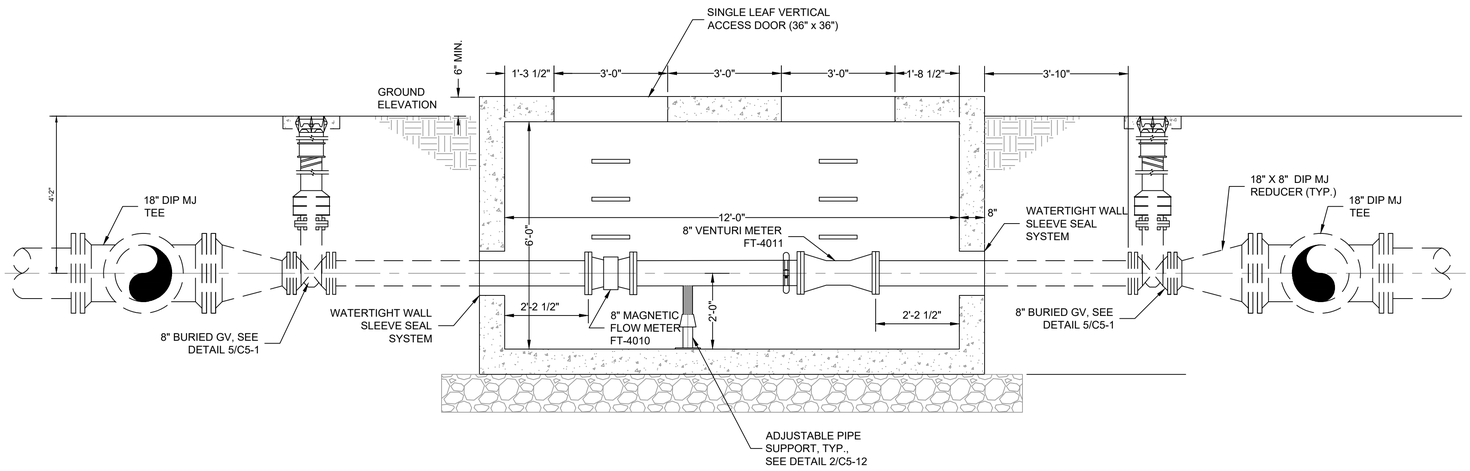
HSP METER VAULT PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

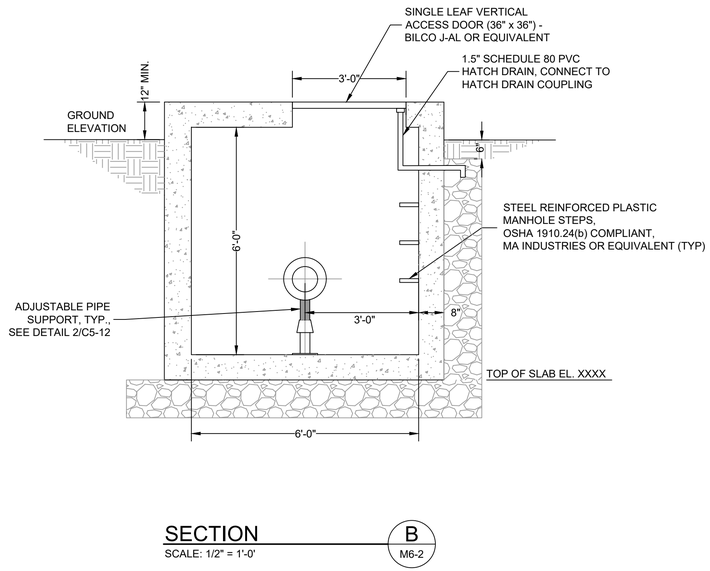
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M6-1

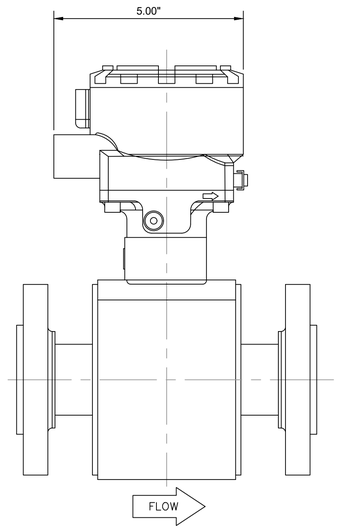
G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\HSP METER VAULT DETAILS.dwg



SECTION A
SCALE: 1/2" = 1'-0"
M6-2



SECTION B
SCALE: 1/2" = 1'-0"
M6-2



MAGNETIC FLOWMETER DETAIL 1
SCALE = 6" = 1'-0"
M6-2

NOTES:
1. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 8X PIPE DIAMETER FOR VENTURI FLOWMETER.
2. MINIMUM UPSTREAM STRAIGHT PIPE DISTANCE SHALL BE AT LEAST 6X PIPE DIAMETER FOR MAGNETIC FLOWMETER.
3. PROVIDE 8" DIAMETER DRAIN. SLOPE VAULT FLOOR TO DRAIN.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

HSP METER VAULT SECTIONS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: M6-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\HSP METER VAULT DETAILS.dwg

GENERAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH THE REQUIREMENTS OF ALL CONSTRUCTION DOCUMENTS WHICH INCLUDES DRAWINGS, SPECIFICATIONS & THE CONTRACT FOR CONSTRUCTION, GENERAL CONDITIONS OF THE CONTRACT AND ALL ADDENDUM. A SET OF EXISTING PLANS IS PROVIDED FOR REFERENCE, BUT THESE DRAWINGS ARE NOT AS BUILT DWGS AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR IS TO THOROUGHLY INSPECT THE BUILDING PRIOR TO BID.

2. ALL DRAWINGS AND SPECIFICATIONS ARE INTERDEPENDENT ON ONE ANOTHER AND CANNOT BE SEPARATED BY DISCIPLINE SINCE INFORMATION IMPORTANT TO ALL TRADES CAN BE FOUND THROUGHOUT THE DOCUMENTS.

3. THE CONTRACTOR SHALL CONSULT AND COORDINATE WITH THE OWNER REGARDING LIMITATIONS FOR SITE ACCESS, MOBILIZATION, CONSTRUCTION WORK HOURS, AND IF ADDITIONAL WORK IS BEING DONE BY THE OWNER WITH OR WITHOUT SEPARATE CONTRACTORS. THE PORTION OF THIS FACILITY NOT BEING RENOVATED SHALL REMAIN OPEN TO OTHER TENANTS.

4. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ARCHITECT REGARDING EXISTING AREAS THAT WILL REMAIN OPERATIONAL DURING CONSTRUCTION.

5. THE ARCHITECT IS THE SOLE INTERPRETER OF THE CONTRACT DOCUMENTS INCLUDING ANY APPARENT CONFLICTS or OMISSIONS. THE CONTRACTOR SHALL REPORT ANY CONFLICTS, ETC. TO THE ARCHITECT PRIOR TO BID AND CONSTRUCTION, OTHERWISE IT SHALL BE ASSUMED HE UNDERSTANDS FULLY THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

6. REFER TO PRODUCT ENGINEERING SPECIFICATIONS, SUBMITTALS AND SHOP DRAWINGS BY PRODUCT MANUFACTURERS FOR ADDITIONAL COORDINATION REQUIREMENTS.

7. ALL DIMENSIONS ARE TO FINISH FACE OF MATERIALS AND COLUMN CENTER LINE UNLESS NOTED OTHER-WISE.

8. CONTRACTOR TO COORDINATE INSTALLATION OF MANUFACTURED ITEMS, PRODUCTS, AND SYSTEMS TO FIT IN SPACES SHOWN. ADJUSTMENTS TO CONSTRUCTION TO ALLOW INSTALLATION ARE INCLUDED IN THE CONTRACTOR'S SCOPE OF WORK SINCE THE DIMENSIONS OF THE ITEMS ACTUALLY PURCHASED MAY VARY FROM THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

9. GENERAL CONTRACTOR TO INSTALL ITEMS IN ACCORDANCE W/ THESE DOCUMENTS, CODE & MANUFACTURER SPECIFICATIONS. ALL EQUIPMENT, MEP FIXTURES, APPLIANCES SHOWN OR SPECIFIED MUST BE PROVIDED WITH THE NORMAL COMPLETE UTILITY CONNECTIONS TO FUNCTION, WHETHER IT IS SHOWN OR SPECIFIED. ALL INSTALLATIONS MUST MEET CODE AND MANUF. SPECS.

10. CONTRACTOR TO COORDINATE WITH SEPARATE CONTRACTORS CONTRACTED TO DO RELATED WORK FOR THIS PROJECT IF THE OWNER ELECTS TO USE SEPARATE CONTRACTORS FOR PORTIONS OF THIS PROJECT. THIS INCLUDES FF&E, SITE AND OTHER WORK THAT MAY BE INVOLVED.

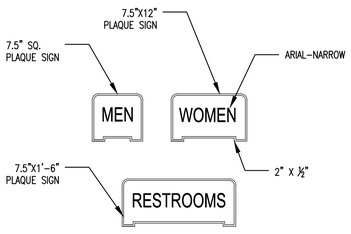
11. IN CASE OF CONFLICT THE MOST STRINGENT REQUIREMENT WILL GOVERN. STRINGENT MEANING MOST EXPENSIVE. IN CASE OF REDUNDANCY PROVIDE ALL ITEMS. CONFLICTS AND REDUNDANT INFO CAN BE CLARIFIED BY THE ARCHITECT PRIOR TO SUBMISSION OF BIDS IF REQUESTED. CLARIFICATIONS AFTER THE BID CAN BE OBTAINED BUT WILL NOT RESULT IN A MONETARY CHANGE ORDER IN FAVOR OF THE CONTRACTOR OR OWNER. TIME ADJUSTMENTS CAN BE APPROVED IF ON THE CRITICAL PATH.

12. INFORMATION SHOWN ON THESE DOCUMENTS CAN BE A GRAPHIC ILLUSTRATION ONLY, SPECIFICATION ONLY, GRAPHIC DWG.WITH NOTES ONLY OR ALL FORMS OF COMMUNICATION. IN EACH CASE THE CONTRACTOR IS EXPECTED TO PROVIDE ALL OF THESE ITEMS. INFORMATION ON SOME ITEMS IS BRIEF AND OTHER IS MORE DETAILED AND COMPREHENSIVE. CONTRACTOR CAN CLARIFY INFORMATION OR PROVIDE ITEM BASED UPON INFORMATION GIVEN. EVERY ITEM MUST BE PROVIDED.

13. STANDARD CONSTRUCTION AND DESIGN TERMINOLOGY IS UTILIZED THROUGHOUT THE DRAWINGS AND SPECIFICATIONS. IF A TERM IS NOT STANDARD, CONFLICTING OR UNDEFINED, THE ARCHITECTS DEFINITION WILL GOVERN AS THE AUTHOR OF THESE DOCUMENTS.

14. ENGINEERING SERVICES ARE NOT A PART OF THE ARCHITECTS SCOPE OF WORK ONLY COORDINATION WITH.

ADA COMPLIANT INTERIOR SIGNAGE:



NOTES: ALL SIGNS ARE SINGLE PIECE SOLID SYNTHETIC MATERIAL WITH 2 COLORS. COLORS TO BE SELECTED BY OWNER FROM MANUF. STANDARD COLOR CHART. TOP CORNERS ARE 1" RADIUS. EDGE IS BEVELED ¼". SEE SPEC.S FOR ADD'L INFO. RAISED 2" LETTERING, ADA COMPLIANT--ADD BRAILLE. SIGN DIMENSION CAN BE ADJUSTED SO LETTERING WILL FIT AND SIGN WILL FIT ALONG SIDE DOOR AT HGT. IN ACCORD WITH ADA REQUIREMENTS. STACKED NAMES IS ACCEPTABLE. SUBMIT SHOP DWGS, PRODUCT DATA AND SAMPLES FOR OWNER APPROVAL. PROVIDE SIGNS FOR ALL INTERIOR MAN DOORS EXCEPT EXIT DOORS AND SUBMIT LIST WITH MESSAGING TO OWNER FOR APPROVAL.

BUILDING INFORMATION:

A. BUILDING AREA:

- LEVEL ONE: 12,442 S.F. - EXIT DOORS PROVIDED = 4
- LEVEL TWO: 3,540 S.F. - EXITS PROVIDED = 2
- TOTAL AREA BOTH LEVELS: 15, 982 S.F. GROSS

BUILDING DESCRIPTION:

A SINGLE TENANT, TWO STORY NON COMBUSTIBLE MASONRY AND CONCRETE BUILDING WITH FIRE SPRINKLER SYSTEM.

OCCUPANCY TYPE:

INDUSTRIAL (CITY WATER TREATMENT PLANT) W/ ADMINISTRATIVE AREA SEPARATED WITH 2 HR WALL AND FLOOR CONSTRUCTION.

OCCUPANCY LOAD: I

INDUSTRIAL-LSC/H4 IBC = 1 PER 100 S.F. AND OFFICE AREA = 1 PER 100 S.F.

OCCUPANTS LEVEL ONE = 12,442 PER 200 S.F. = 63 PERSONS.

OCCUPANTS LEVEL TWO = 3,540 PER 100 S.F. = 36 PERSONS

TOTAL BUILDING OCCUPANTS = 99 PERSONS (ACTUAL PLANNED OCCUPANCY IS TOTAL OF 6 PERSONS)

TYPE OF CONSTRUCTION: II-B (NON COMBUSTIBLE - sprinklered and unprotected with fire alarm system)

ALLOWABLE AREAS:

HAZARD CLASS 4; CONST. TYPE 11-B = 17,500 S.F. PER FLOOR , MAX 3 STORY BUILDING - ACTUAL BUILDING ONLY 2 STORY AND AREA IS LESS.

REQUIRED PLUMBING FIXTURES:

- SECOND FLOOR OFFICE AREA = 36 PERSONS TOTAL
  - = 2 TOILETS REQUIRED AND 2 ARE PROVIDED
  - = 1- LAVATORY IS REQUIRED AND 2 ARE PROVIDED.
  - = 1 DRINKING FOUNTAIN REQUIRED AND 1 IS PROVIDED.
  - = 1 JANITORS SINK IS REQUIRED AND 1 IS PROVIDED.

- FIRST FLOOR INDUSTRIAL AREAS = 63 PERSONS

= 1 TOILET REQUIRED AND 1 IS PROVIDED.
= 1 LAVATORY IS REQUIRED AND 1 IS PROVIDED
= 1 DRINKING FOUNTAIN IS REQUIRED AND 1 IS PROVIDED
= 1 JANITORS SINK IS REQUIRED AND 1 IS PROVIDED.

FIRE RATED PARTITION / FLOOR INFORMATION

PARTITION TYPE:	DESCRIPTION:
2HR RATED GWB	UL DES U411 OR U419 - NON LOAD BEARING, DOUBLE LAYER OF ⅝" FIRE CODE "C" GWB ON BOTH SIDES OF 3⅝" MET. STUDS @ 24" O.C. BASE AND FACE LAYERS ARE SCREW ATTACHED AND WALL PERIMETER IS CAULKED WITH FIRE RATED SEALANT. SEE SPECIFICATIONS MANUAL FOR REQUIREMENTS.
2 HR RATED CMU	UL DES U905 - LOAD BEARING, 8" CMU, D2 CLASSIFICATION, SEE ALSO SPECIFICATIONS MANUAL.

2 HR RATED FLOOR CONSTRUCTION:

-CONCRETE HOLLOW CORE CONSTRUCTION - SEE STRUCTURAL DWGS. - UL DES. J957

ENVELOPE "R" VALUES

COMPONENT:	DESCRIPTION:	
EXTERIOR WALL -	-BRICK VENEER:	R = .72
	- 2.5" POLYISO BD.	R = 15.5
	- 8" CMU (MASS):	R = 1.1
	TOTAL WALL "R" VALUE:	R = 17.32
ROOF -	- 6" POLYISO ROOF INSULATION BD.S	R = 37.2
	- PRECAST CONCRETE TEES:	R = 1.04
	TOTAL ROOF "R" VALUE:	R = 38.24

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

ARCHITECTURAL DRAWING LIST:

ARCHITECTS SCOPE OF WORK:

THE ARCHITECTURAL SCOPE OF WORK FOR THIS PROJECT IS LIMITED TO THE MAIN WATER WORKS BUILDING ENCLOSURE STRUCTURE AND DUMPSTER ENCLOSURE STRUCTURE. SEE SITE PLANS FOR LOCATIONS. SEE ENGINEERING DRAWINGS FOR ADDITIONAL SCOPE OF WORK RELATED TO THESE ARCHITECTURAL PLANS AND SPECIFICATIONS. SEE ALSO ARCHITECTURAL SPECIFICATION SECTIONS. SEE KECK AND WOOD DRAWINGS FOR WATER TREATMENT SYSTEMS IN AND AROUND THIS BUILDING AND SITE DRAWINGS AND OTHER MISC STRUCTURES ON SITE.

THE OVERALL COORDINATING PROJECT MANAGER FOR THIS PROJECT IS: KECK AND WOOD.

APPLICABLE CODES:

- 2018 INTERNATIONAL BUILDING CODE w/ 2020 GA AMENDMENTS
- 2006 INTERNATIONAL MECHANICAL CODE WITH 2007 & 2008 GA. AMENDMENTS.
- 2018 INTERNATIONAL PLUMBING CODE W/2020 GA AMENDS.
- 2017 NATIONAL ELECTRICAL CODE
- 2018 INTERNATIONAL FIRE CODE
- STANDARD GAS CODE (INTL FUEL GAS CODE), 2000 W/ 2001, 2002 & 2003 & 2005 GA. AMENDS.
- 2018 INTERNATIONAL FUEL GAS CODE WITH 2020 GA. AMENDMENTS
- GEORGIA ACCESSIBILITY CODE 120-3-20 (A)
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH 2020 GA. AMENDMENTS.
- 2018 NFPA 101 LIFE SAFETY CODE - WITH GEORGIA AMENDMENTS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 002822
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

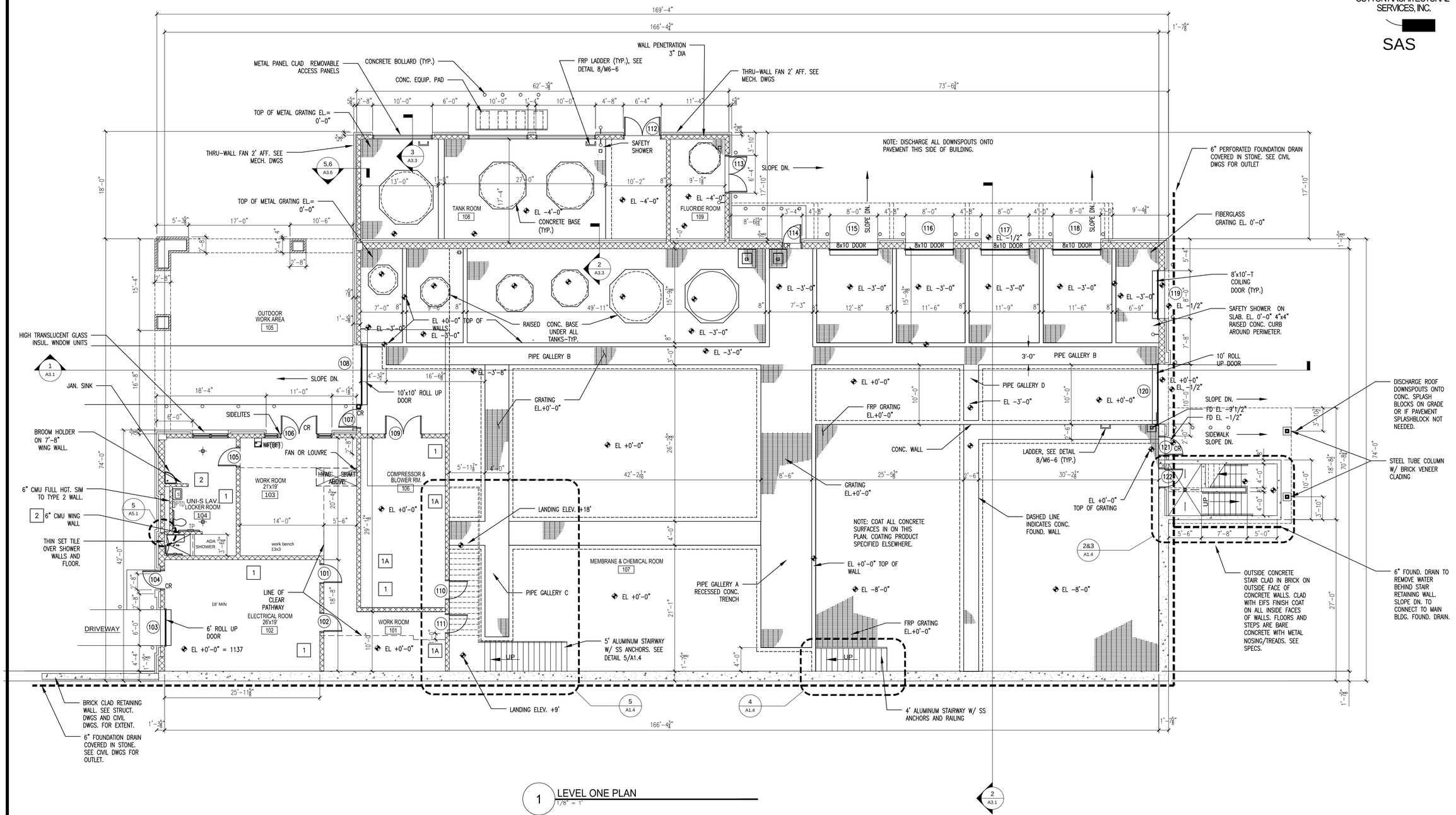
Buford Water Works Replacement
For the City of Buford, Georgia

ARCHITECTURAL NOTES, CODES, STANDARDS

BUILDING INFO

Project Manager: Jolene Northrop, P.E.
Drawn By: PS Checked By: PS
Date: 04/14/21
Scale: 1/8"=1'-0"

Project No.: 170110.00
Drawing No.: A0.1



1 LEVEL ONE PLAN
1/8" = 1'

GENERAL NOTES:

1. INFORMATION ON THIS SHEET IS PRIMARILY ARCHITECTURAL BUT WILL IMPACT OTHER TRADES.
2. SEE A1.8 FURNISHINGS PLAN FOR ALL FURNITURE, FIXTURES, EQUIPMENT, TV SCREENS, WHITE MARKER BOARDS, WINDOW SHADES, DISPLAY KIOSK ETC.
3. SEE CIVIL DRAWINGS FOR AREAS OUTSIDE BUILDING FOOTPRINT EXCEPT FOR EXTERIOR STAIRS.
4. SEE STRUCTURAL DWGS FOR FLOOR AND TRENCH SLOPES AND ELEVATIONS AND ADDITIONAL REQUIREMENTS.
5. SEE MEP DRAWINGS FOR ELECTRICAL POWER AND LIGHTING, HVAC, PLUMBING AND OTHER REQUIREMENTS.
6. AUDIO VISUAL, DATA, TELEPHONE AND SECURITY SYSTEMS BY OTHERS.
7. BLOCK WALLS SHOWN ARE NOMINAL 8" AND 12".
8. INSTALL FLEXIBLE WATERSTOPS IN 90 DEGREE CONCRETE WALL AND SLAB INTERSECTIONS WHERE SHOWN ON THE STRUCTURAL DRAWINGS. BASIS OF DESIGN WATER STOP PRODUCT IS: "WESTEC TPER" CHEMICALLY RESISTANT WATERSTOP. EQUIVALENT PRODUCTS CAN BE SUBMITTED.

TECHNICAL NOTES :

1. IDENTIFY FIRE RATED WALLS ABOVE CEILINGS AS PER LOCAL FIRE DEPT. REQUIREMENTS.
2. DETECTABLE WARNINGS SHALL COMPLY WITH THE REQUIREMENTS OF RULE 120-3-20-40 OF THE GEORGIA ACCESSIBILITY CODE. SEE CIVIL PLANS.
3. FIRE EXTINGUISHERS SHALL BE LOCATED PER THE REQUIREMENTS OF NFPA 10, THE EXTINGUISHERS SHALL BE A MINIMUM OF 2 A 10 BC, 10 IS/ARE REQUIRED AND SHALL BE INSTALLED AT A MAXIMUM OF 48" ABOVE THE FINISHED FLOOR TO THE TOP OF THE HANDLE. CK. W/ FIRE MARSHAL.
4. PROTRUDING OBJECTS PROJECTING FROM WALLS, FREESTANDING, OVERHEAD, OVERHANGING OBJECTS, AND OBJECTS MOUNTED ON POSTS AND PYLONS SHALL BE INSTALLED IN COMPLIANCE WITH RULE 120-3-20-15 OF THE GA. ACCESS. CODE.
5. ALL EXIT DOORS SHALL NOT BE SUBJECT TO USE OF A KEY OR REQURE SPECIAL KNOWLEDGE TO OPERATE, NFPA 101 LIFE SAFETY CODE, CHAPTER 7, SEC. 7.2.1.5.1 2000 EDITION.
6. SELF CLOSING DEVICES ON DOORS SHALL MEET THE REQUIREMENTS OF NFPA 101 LIFE SAFETY CODE, CHAPTER 7 , SEC. 7.2.1.4 2000 EDITION.
7. PANIC HARDWARE SHALL BE PROVIDED FOR ALL EXIT DOORS PER THE REQUIREMENTS OF NFPA 101 LIVE SAFETY CODE, CHAPTER 7, SEC. 7.2.1.7, 2000 EDITION.

INTERIOR PARTITION LEGEND: 1

#	DESCRIPTION:	HGT.	NOTES:
1.	8" CMU WALL	TO FLR. STRUCT. ABOVE	SEE STRUCTURAL DWGS FOR REINFORCEMENT
1A.	2 HR 8" CMU WALL	TO FLR. STRUCT. ABOVE	SEAL WALL AT FLOOR AND FLR. STRUCTURE ABOVE W/ FIRE SEALANTS. RATED FLR. SUPPORT WALL.
2.	6" CMU WALL	7'-8"AFF(FULL HGT AT CHASE)	TOP COURSE IS 4" SOLID CAP BLOCK

NOTE: SEE A0.1 FOR RATED PARTITION INFORMATION. SEE ALSO SPECIFICATIONS.

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 030972
REGISTERED ARCHITECT

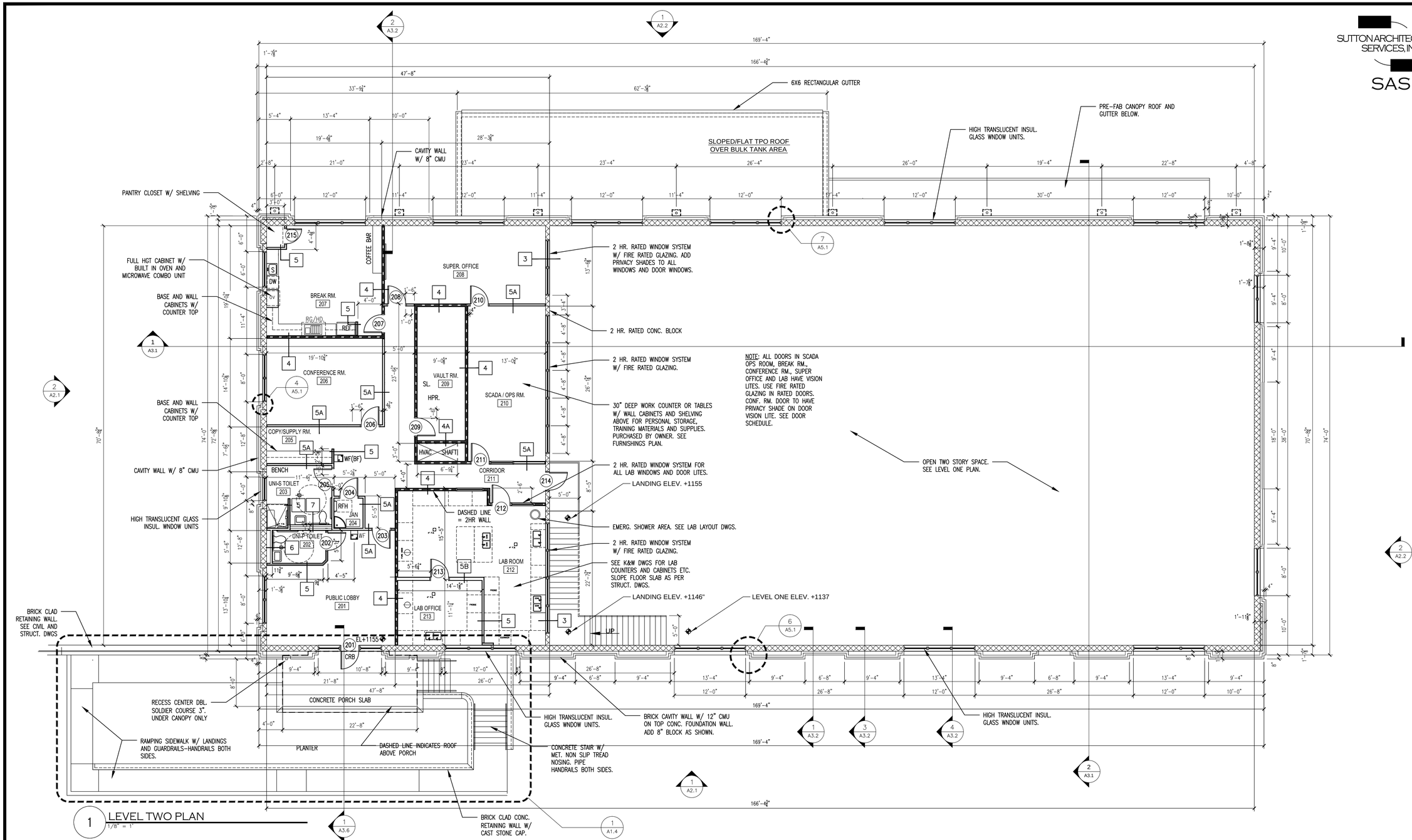
NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL 1 PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: PS | Checked By: PS
Date: 04/14/21
Scale: 1/8"=1'-0"

Project No.: 170110.00
Drawing No.: A1.1



1 LEVEL TWO PLAN
1/8" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 009522
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL 2 FLOOR PLAN AND NOTES

GENERAL NOTES:

1. INFORMATION ON THIS SHEET IS PRIMARILY ARCHITECTURAL BUT WILL IMPACT OTHER TRADES.
2. SEE A1.8 FURNISHINGS PLAN FOR ALL FURNITURE, FIXTURES, EQUIPMENT, TV SCREENS, WHITE MARKER BOARDS, WINDOW SHADES, DISPLAY KIOSK ETC.
3. SEE CIVIL DRAWINGS FOR AREAS OUTSIDE BUILDING FOOTPRINT EXCEPT FOR EXTERIOR STAIRS.
4. SEE STRUCTURAL DWGS FOR ADDITIONAL REQUIREMENTS.
5. SEE MEP DRAWINGS FOR ELECTRICAL POWER AND LIGHTING, HVAC, PLUMBING AND OTHER REQUIREMENTS.
6. AUDIO VISUAL, DATA, TELEPHONE AND SECURITY SYSTEMS BY OTHERS.
7. ALL RATED WALL BASE AND TOP OF WALL JOINTS AND PENETRATIONS THRU FIRE RATED WALLS OR FLOORS WILL REQUIRE UL APPROVED INSTALLATIONS OF FIRE RATED SEALANTS AND FOAMS. SUBMIT UL REQUIREMENTS WITH SUBMITTALS. USE SLIP TRACK AT TOP OF ALL STUD WALLS GOING TO ROOF.

ITEM DESCRIPTION:	UL SYS. NO.	ITEM DESCRIPTION:	UL. SYS. NO.
1. FLOOR JOINT	F-F-S-0028	2HR. FLOOR PENETRATION	C-AJ-2295
2. HEAD OF WALL OR ROOF	HW-D-0001	2 HR WALL PENETRATION	W-L-1064
3. WALL JOINT	WW-S-0036		

TOILET ACCESSORIES:

1.	TOILET PAPER DISP:	BOBRICK B-2740	ONE PER TOILET, IN ALL TOILET ROOMS
2.	PAPER TOWEL/TRASH COMBO:	BOBRICK B-43699	ONE PER TOILET RM AND SHOWER RM & BREAK RM.
3.	SOAP DISPENSOR:	BOBRICK B-4112	WALL MOUNTED, TOILET RM.S, LOCKER RM & BREAK RM
4.	WALL MIRROR	BOBRICK B-165 2436	OVER EA. SINK IN TOILET RMS AND LOCKER RM.
5.	FEM. NAPKIN DISP.	ASI 0852	SURFACE MOUNT. INCLUDE AT EA. UNI-SEX TOILET/LOCKER RM
6.	SS GRAB BARS:	BOBRICK B-6806-42, 36 & 18.	FOR HC TOILETS AND B-68616 IN SHOWER.
7.	HC SHOWER SEAT	BOBRICK B-5181	
8.	SHOWER SOAP HOLDER:	ASI-0346 WALL MOUNT	
9.	TOWEL BAR AND HOOKS:	BOBRICK B-530-18 BAR AND B-6777 HOOK (ONE EA. AT SHOWER, HOOK @ TOILETS	
10.	JANITORS ACCESSORIES:	BOBRICK B-224-36 BROOM/MOP HOLDER - ONE EACH JAN. CLOSET/AREA.	
11.	SHOWER CURTAIN AND ROD:	BOBRICK B-204-2 VINYL CURTAIN AND BOBRICK SS ROD. FIELD VERIFY WIDTH.	

NOTE: PROVIDE ALL OF THESE ACCESSORIES FOR EACH TOILET ROOM AND LOCKER ROOM AREA. SHOWER ACCESSORIES ONLY GO BOTH SHOWERS. PROVIDE THESE BASIS OF DESIGN PRODUCTS OR AN EQUIVALENT PRODUCT. INSTALL AS PER ADA REQUIREMENTS. ALL ACCESSORIES ARE STAINLESS STEEL. SEE SHEET A4.3/A1.7 FOR LOCATIONS.

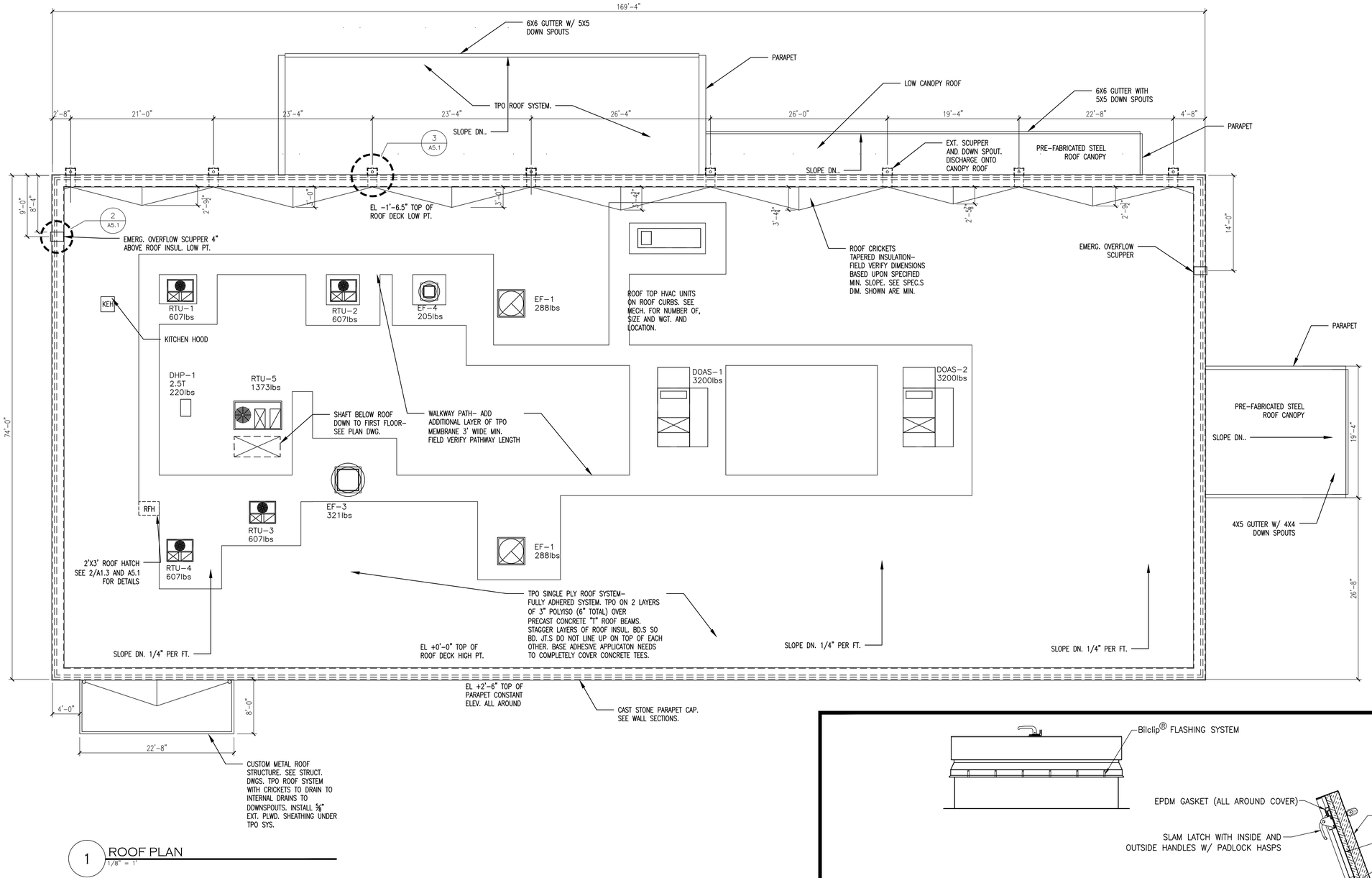
INTERIOR PARTITION LEGEND:

NOTE: STUD SPACING IS 2' O.C. TYPICAL. 3" MINERAL FIBER ACOUS. INSUL. IN ALL PARTITIONS.

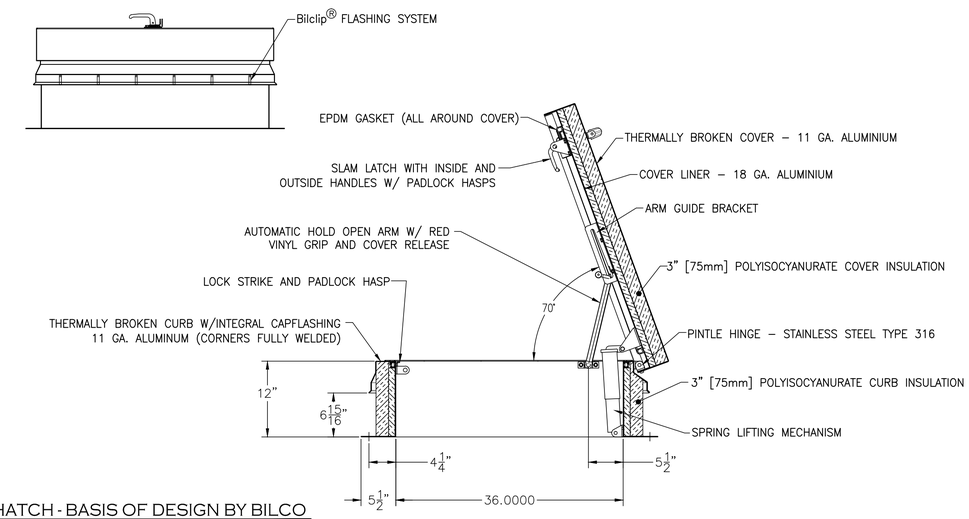
#	DESCRIPTION:	HGT.	NOTES/UL NO.S:
1.	8" CMU WALL	TO FLR. STRUCT. ABOVE	SEE STRUCTURAL DWGS FOR REINFORCEMENT
2.	6" CMU WALL	6'-8" AFF	TOP COURSE IS SOLID BLOCK
3.	8" CMU WALL	TO ROOF STRUCT. ABOVE	2 HR RATED BLOCK. UL-U-905. FIRE SEAL AT ROOF. FIRE SEAL VERT. CONTROL JT.S
4.	3 5/8" MET. STUD WALL	TO ROOF STRUCT. ABOVE	2 HR(UL-411 OR 419). 2- LAYERS TYPE X GWB EA. SIDE. USE SHAFT WALL UL-U415 4¼"* SYS. FOR MECH. CHASE 4A
5.	3 5/8" MET. STUD WALL 5B -USE 6" MET. STUD.	TO 6" ABOVE CEILING	1 LAYER ⅝" GWB ONE SIDE, /CEMENT BOARD SHOWER SIDE, BRACE WALLS ABOVE CLG. AS REQUIRED. 5A WALL HGT, TO ROOF.
6.	3⅝" MET. STUD WALL	TO 6" ABOVE CEILING	1 LAYER ⅝" GWB ON ONE SIDE.
7.	2-35/8" MET. STUD WALL	TO ROOF STRUCT.	1 LAYER ⅝" GWB EA. SIDE

LEVEL 2 PLAN

Project Manager:	Jolene Northrop, P.E.
Drawn By:	PS
Checked By:	PS
Date:	04/14/21
Scale:	As Shown
Project No.:	170110.00
Drawing No.:	A1.2



1 ROOF PLAN
1/8" = 1'



2 ROOF HATCH - BASIS OF DESIGN BY BILCO
1" = 1'

GENERAL NOTES:

1. INFORMATION ON THIS SHEET IS PRIMARILY ARCHITECTURAL BUT WILL IMPACT OTHER TRADES.
2. PRE-FABRICATED ROOF CANOPY'S ARE DESIGN BUILD RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DWGS WITH STATE OF GA. ENGINEER STAMP. DESIGN CRITERIA IS A SHOWN ON THE DWGS AND AS REQUIRED TO MEET APPLICABLE CODES.
3. ROOF SYSTEM IS AN ADHERED TPO SYSTEM. USE LIGHT GREY COLOR MEMBRANE. EXTEND TPO SYSTEM UP PARPETS AND UNDER PARAPET CAP.
4. ROOF INSULATION IS 6" OF POLYISO RIGID ROOF BOARDS ADHERED TO CONCRETE TEE ROOF STRUCTURE.
5. FLASH AND SEAL ALL ROOF PENETRATIONS.
6. PROVIDE ROOF CURBS FOR MECHANICAL UNITS.
7. INSTALL 2'X3' ROOF HATCH WITH CURB. FLASH AND SEAL AROUND PENETRATION.
8. FLASH AROUND ALL ROOF SCUPPERS.
9. PROVIDE ADDITIONAL LAYER OF TPO 4' WIDE EXTENDING FROM ROOF HATCH TO ALL MECH. UNITS ON ROOF. SEE MECH. DWGS FOR LOCATIONS.
10. ROOF CANOPY PAINT COLOR TO MATCH WINDOW MULLION COLOR.
11. SEE MECH DWGS FOR ADDITIONAL ROOF PENETRATIONS.

GENERAL NOTES:

12.. GUTTER AND DOWNSPOUT COLOR TO MATCH WINDOW MULLIONS.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER D. SUTTON
CERTIFICATE NO. 035027
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

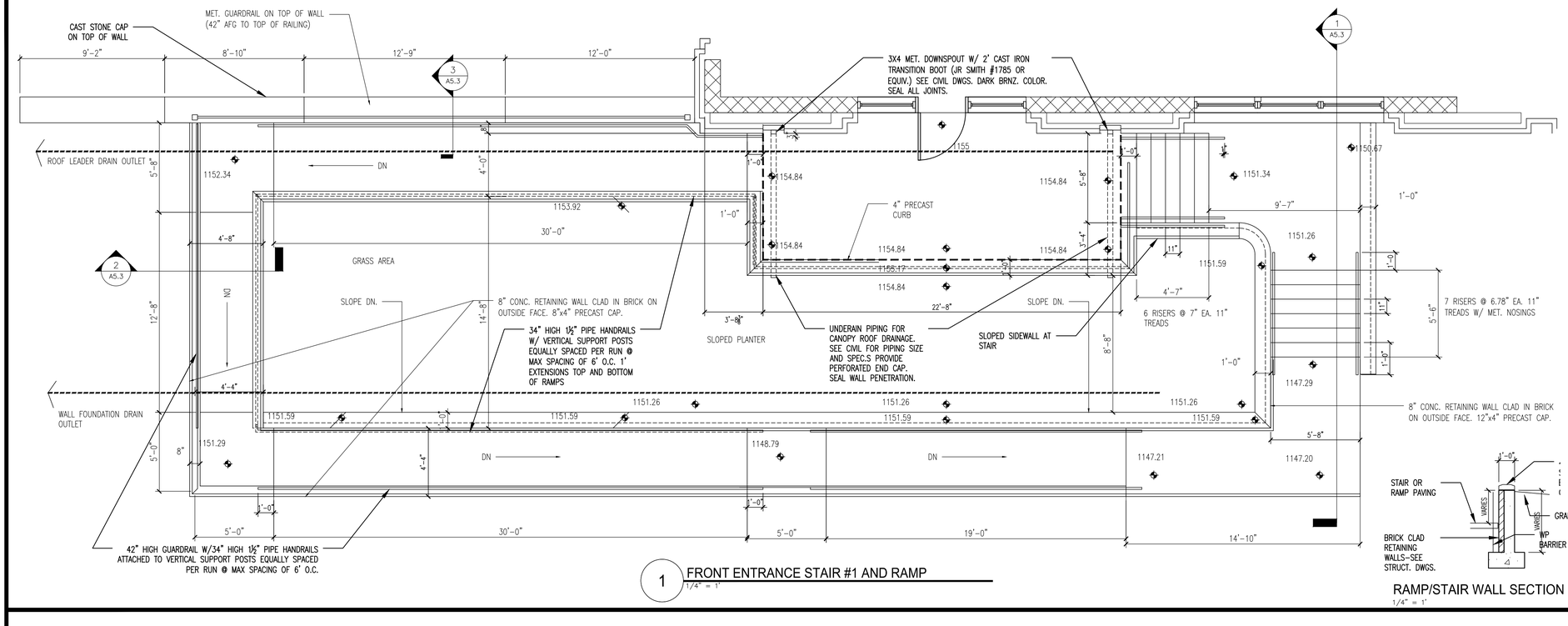
Buford Water Works Replacement
For the City of Buford, Georgia

ROOF PLAN AND NOTES, DETAIL

ROOF PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: PS Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A1.3



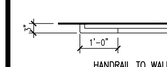
1 FRONT ENTRANCE STAIR #1 AND RAMP
1/4" = 1'

RAMP/STAIR WALL SECTION
1/4" = 1'

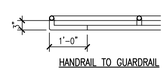
SUTTON ARCHITECTURAL SERVICES, INC.

SAS

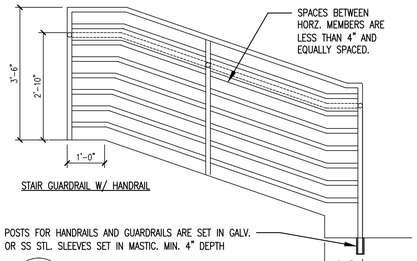
RAILING NOTES:
1. ALL INTERIOR RAILINGS ARE BRUSHED STAINLESS STEEL.
2. ALL EXTERIOR RAILINGS ARE PRIMED AND FIELD PAINTED STEEL
3. ALL CONNECTIONS ARE WELDED AND GRINDED SMOOTH.
4. ANCHOR RAILINGS TO STAIR STRINGERS, WALLS OR FLOORS.
5. WALL ANCHORS REQUIRE ESCUTCHEON PLATES.
6. SPACE VERT. SUPPORT POSTS MAX 6' APART W/ EQ. SPACING.
7. PROVIDE CURVED RADIUS AT ALL 90 DEGREE PIPE INTERSECTIONS
8. DISSIMILAR METAL CONFLICTS NOT ACCEPTABLE.



HANDRAIL TO WALL



HANDRAIL TO GUARDRAIL



6 TYP. RAILING DETAILS
1/4" = 1'

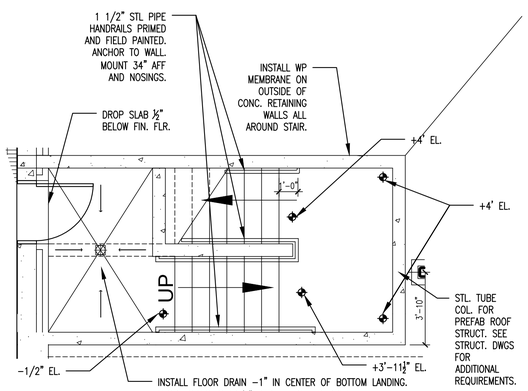
Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 000827
REGISTERED ARCHITECT

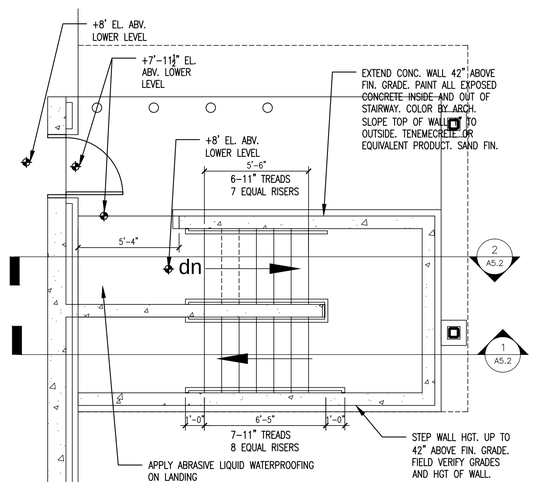
NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

GENERAL NOTES:

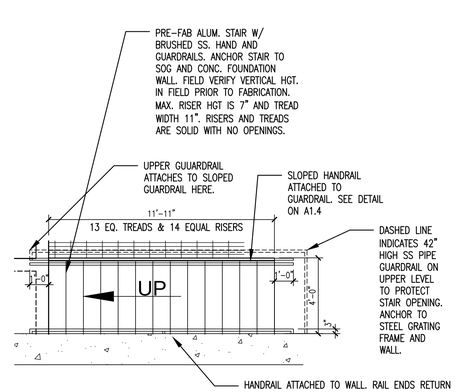
1. ALL HANDRAILS ARE 1 ½" OD STL. PIPE RAILING, PRIMED AND PAINTED(2-FINISH COATS), COLOR TO MATCH WINDOW MULLIONS. WELD ALL CONNECTIONS AND GRIND SMOOTH. RETURN RAILS DOWN TO CONCRETE WALKWAY (UNLESS INDICATED OTHERWISE) AND SET IN STL. SLEEVES AND MASTIC. RAILING HGT. = 34" AFF. ALL HANDRAILS HAVE 1' EXTENSIONS AT TOP AND BOTTOM OF RAMPS AND STAIRS. EXTENSION TURN DOWN TO SOG.
2. GUARDRAILS ARE 42" AFF AND ARE CONSTRUCTED OF 1 ½" OD PIPE RAILING ON TOP AND BOTTOM INCLUDING POSTS EQUALLY SPACED BUT LESS THAN 6' O.C. INSTALL VERTICAL SQUARE STEEL PICKETS AT 4" O.C. WELDED TO TOP AND BOTTOM OF RAILING. FINISH SAME AS HANDRAILS. ANCHOR SAME AS HANDRAILS.
3. CONCRETE WALKWAYS ARE LIGHT BROOM FINISH UNLESS NOTED OTHERWISE.
4. PROVIDE WALL WEEPS IN FRONT ENTRY BRICK WALL. CAST STONE CAP IS RECTANGULAR SECTION 4" H X 1' DEEP. ANCHOR TO WALL WITH REBAR CAST INTO WALL AND CAST STONE.



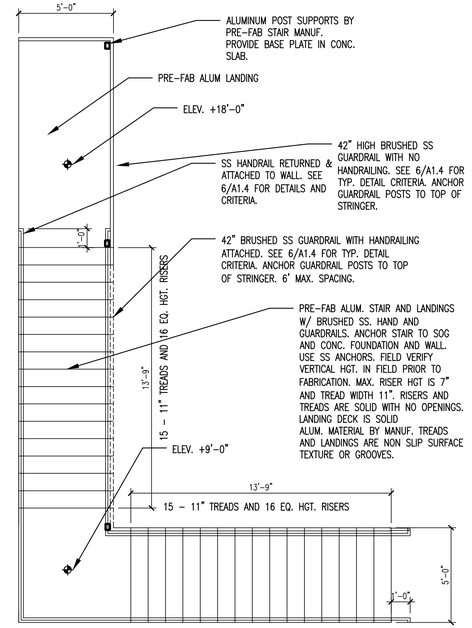
2 LOWER LEVEL EXTERIOR STAIR #2
1/4" = 1'



3 UPPER LEVEL EXTERIOR STAIR #2
1/4" = 1'



4 LOWER LEVEL INTERIOR STAIR #3
1/4" = 1'



5 UPPER LEVEL INTERIOR STAIR #4
1/4" = 1'

Buford Water Works Replacement
For the City of Buford, Georgia

PLAN DETAILS - STAIRS

STAIR PLANS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A1.4

NOTES

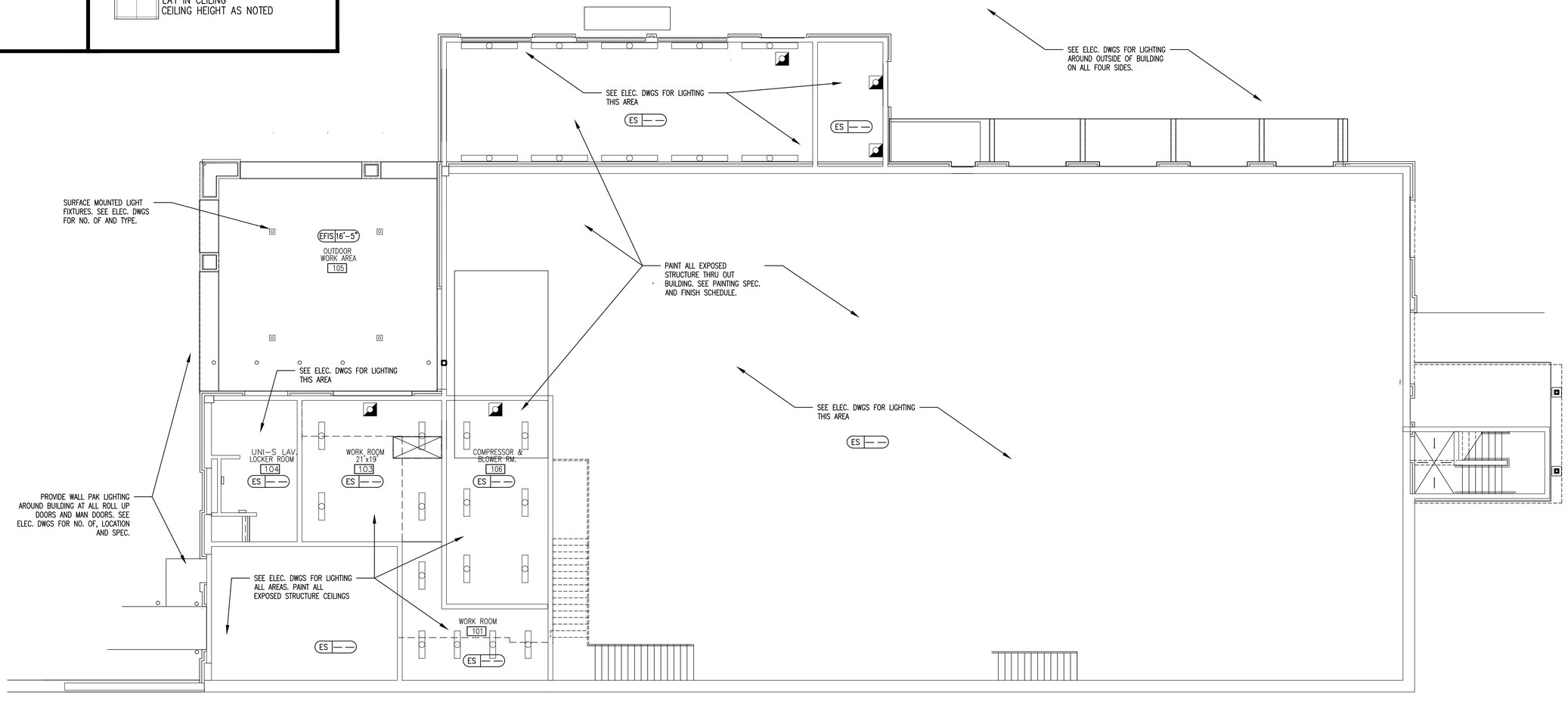
1– SEE ELEC. DWGS FOR LIGHT FIXTURE SPECIFICATIONS.
2– DOWN LIGHTS BE CENTERED IN CEILING GRID IF POSSIBLE
3– INSTALL LIGHTS IN PATTERN AND LOCATIONS AS SHOWN
4–INSTALL CLG. GRID PER SEISMIC REQUIREMENTS SEE STRUCT. DWGS FOR CLASSIFICATION– SEISMIC ZONE C

CEILING TYPES

AT	2x2 ACOUSTICAL CEILING TILE
ES	EXPOSED STRUCTURE
CP	CEILING PANEL
EIFS	EXT. INSULATION FINISH SYSTEM

LEGEND

- 8'–0" A — CEILING HEIGHT / CEILING TYPE
- INDUSTRIAL FLUORESCENT FIXTURE
- 2X2 FLUORESCENT LAYIN FIXTURE
- 2X2 FLUORESCENT LAYIN FIXTURE
- RECESS LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- EMERGENCY EXIST SIGN
- LINEAR DIFFUSER
- 2'x2' DIFFUSER
- EXHAUST FAN
- RETURN AIR GRILL
- 2x2 ACCOUSTICAL LAY IN CEILING CEILING HEIGHT AS NOTED



SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 005222
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO REFLECTED CEILING PLAN

R. CLG PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A1.5

NOTES

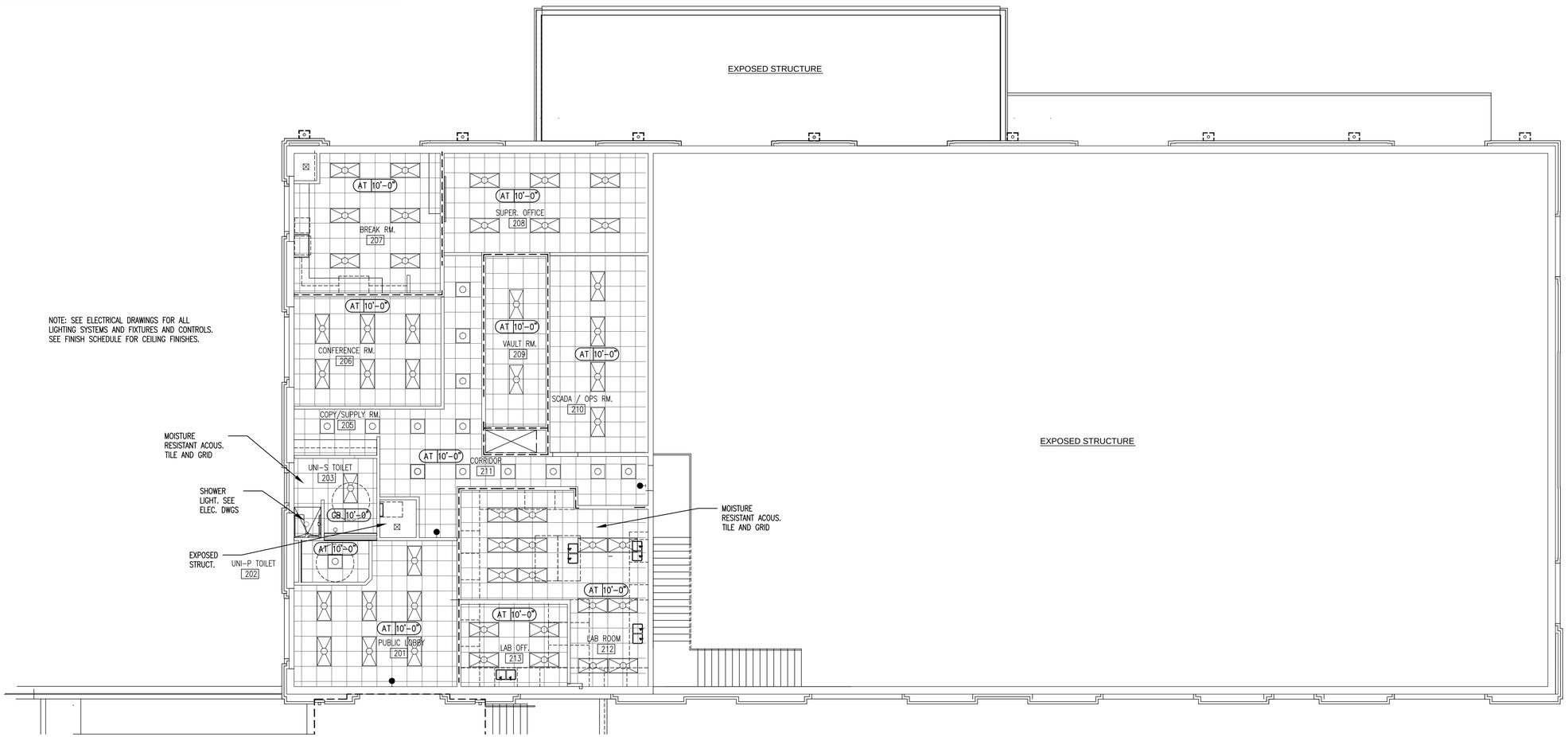
1– SEE ELEC. DWGS FOR LIGHT FIXTURE SPECIFICATIONS.
2– DOWN LIGHTS BE CENTERED IN CEILING GRID IF POSSIBLE
3– INSTALL LIGHTS IN PATTERN AND LOCATIONS AS SHOWN
4–INSTALL CLG. GRID PER SEISMIC REQUIREMENTS SEE STRUCT. DWGS FOR CLASSIFICATION– SEISMIC ZONE C
5–SEE A1.7 FOR CEILING TILE SPEC

CEILING TYPES

AT	2x2 ACOUSTICAL CEILING TILE
ES	EXPOSED STRUCTURE
CP	CEILING PANEL

LEGEND

- CEILING HEIGHT / CEILING TYPE (8'–0" A)
- INDUSTRIAL FLUORESCENT FIXTURE
- 2X2 FLUORESCENT LAYIN FIXTURE
- 2X2 FLUORESCENT LAYIN FIXTURE
- RECESS LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- EMERGENCY EXIST SIGN
- LINEAR DIFFUSER
- 2'x2' DIFFUSER
- EXHAUST FAN
- RETURN AIR GRILL
- 2x2 ACCOUSTICAL LAY IN CEILING CEILING HEIGHT AS NOTED



NOTE: SEE ELECTRICAL DRAWINGS FOR ALL LIGHTING SYSTEMS AND FIXTURES AND CONTROLS. SEE FINISH SCHEDULE FOR CEILING FINISHES.

1 LEVEL TWO REFLECTED CEILING PLAN
1/8" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 020972
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

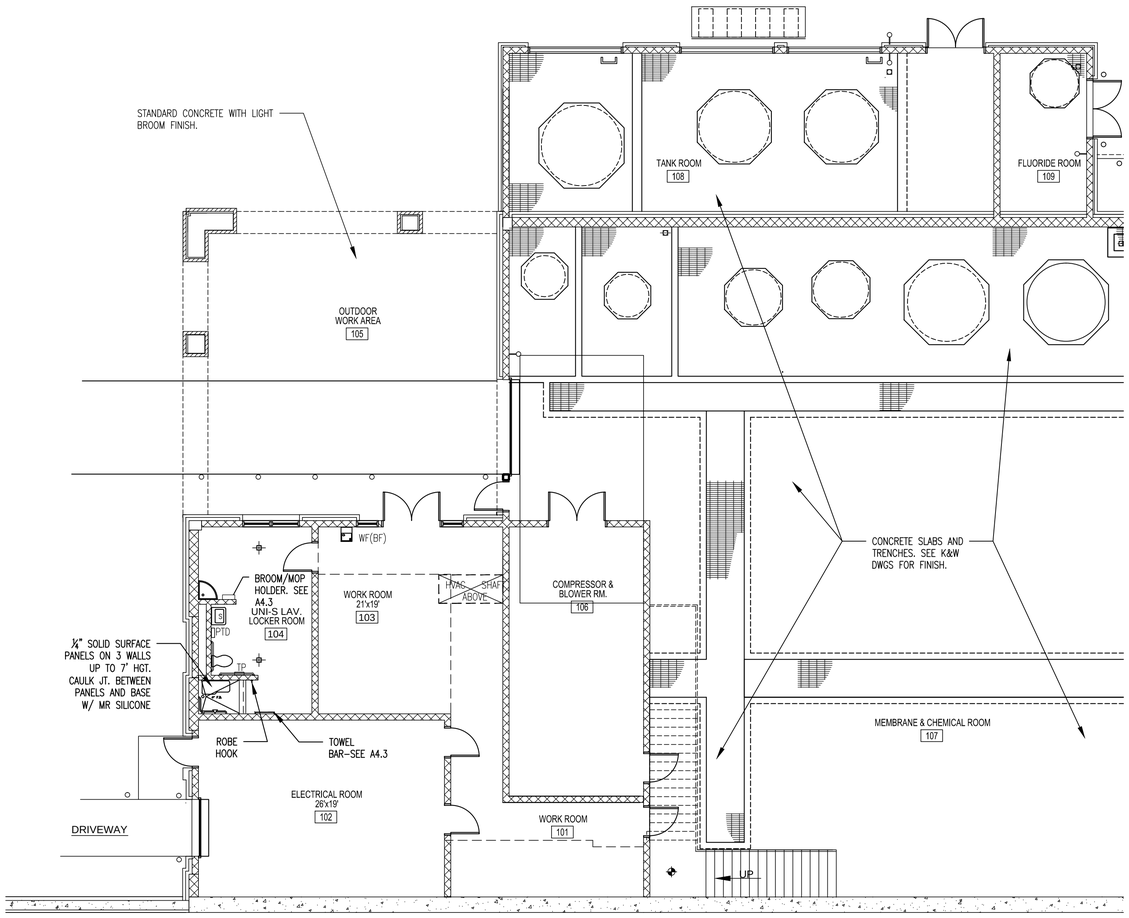
Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO REFLECTED CEILING PLAN

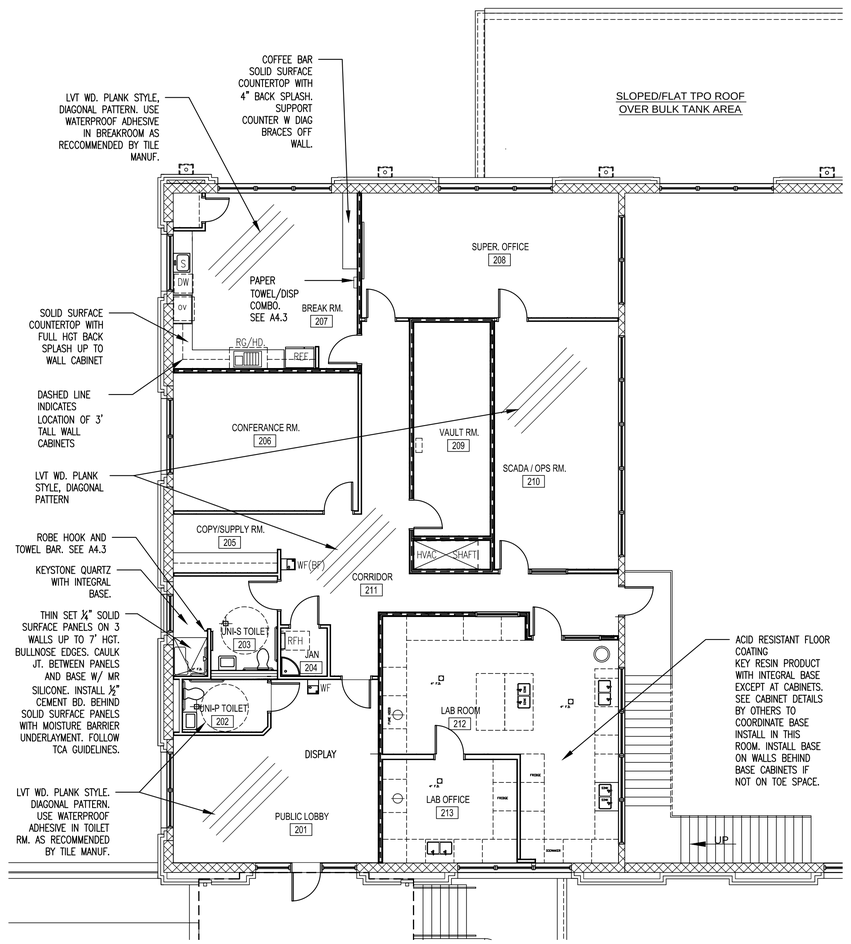
R. CLG. PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A1.6



1 LEVEL ONE FINISHES PLAN
1/8" = 1'



2 LEVEL TWO FINISHES PLAN
1/8" = 1'

FINISHES LEGEND

SEALED CONCRETE COLORS: (SOLID COLOR)

SC-1: GREY - SELECTED FROM MANUF. STAND. COLORS.

Q-1: QUARTZ FLOOR SYSTEM: KEY RESIN QUARTZ NO.B-125 (COLOR "FOG" #B-125). INSTALL KEY #580 MEMBRANE. USE B-125 HP IN LAB.

CARPET TILE: (WITH 4" RUBBER BASE)

CPT-1: FLOR - HIGHLAND HILLS LINE - FLANNEL BLUE. (MONOLITHIC INSTALL) RBR. TRANSITION STRIPS- MATCH BASE

LVT PLANK TILE: (WITH 4" RUBBER BASE -B-1)

LVT: METROFLORUSA.COM COLOR: DN124104 - CRETE. INSTALL IN 45 DEGREE ANGLE PATTERN THRU OUT.

4" RUBBER BASE: B-1 ROPPE - TBD W/ FORMED INSIDE AND OUTSIDE CORNERS. CARPET TRANSITION STRIPS: SAME COLOR: CHARCOAL NO. 123

INTERIOR PAINT COLORS: SEE PAINT SPEC FOR PAINT TYPES.

P-1: WALL COLOR: SW7018 -"DOVE TAIL"
P-2: WALL AND CONC. CLG. COLOR: SW7029 - "AGREEABLE GREY"
P-3: DOOR FRAME COLOR: CUSTOM TO MATCH B-1

SOLID SURFACE FOR COUNTERS AND SPLASHES:

SS1-WILSONART: "NORTHERN MELANGE" #9195 ML

CABINET AND SHELVING PLASTIC LAMINATE:

PL-1: WILSONART - "5TH AVE ELM" - SC FT GRAIN FINISH #7966K12

INTERIOR DOOR PLASTIC LAMINATE:

PL-1: WILSONART - "5TH AVE ELM" - SC FT GRAIN FINISH #7966K-12 (SEE DOOR SCHEDULE FOR LOCATION OF P-LAM CLAD DOORS)

ACOUSTICAL CEILING TILE: - USG 2X2X3/4" - FL SANDRIFT ACOUSTICAL PANELS -COLOR: FLAT WHITE. GRID - B CENTRICITEE DXT. BREAK ROOM & LAB: USE SAME GRID AND TILE BUT WITH FIRECODE TILE OPTION.

P-LAM DOOR FRAME PAINT COLOR:

P3: CUSTOM COLOR TO MATCH BASE COLOR - SEMI GLOSS.

CEILING STRUCTURE PAINT COLOR: (ALL ES CEILINGS)

P-2: FLAT COLOR

NOTE: ALL COLOR SELECTIONS ARE TO BE COMPLETED BY AND APPROVED BY THE ARCHITECT AND OWNER. SUBMIT SAMPLES FOR FINAL APPROVAL DURING SHOP DWG. PHASE.

GENERAL NOTES:

1. INSTALL ALL FINISHES IN ACCORDANCE WITH MANUF. SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
2. INSPECT SUB STRATES BEFORE INSTALLATION OF FINISHES.
3. CONDUCT DRYNESS TESTING PRIOR TO INSTALLATION OF FINISHES
4. ALL PAINTED SURFACES ARE PRIMED PRIOR TO FINISH COATS.
5. CAULK JOINTS AND SEALANTS SHALL MATCH COLOR OF ADJACENT SURFACES.
6. PROVIDE PERIMETER SEALANT JOINTS FOR ALL WALL TO FLOOR TILE SURFACES.
7. INSTALL WATER PROOFING MEMBRANES UNDER ALL TILE. ALL TILE IS THIN SET.
8. SEALANT COLORS AT WALL TO WINDOW INTERSECTIONS SHALL MATCH WALL COLOR.
9. ALL DRYWALL FINISHING SHALL INCLUDE CORNER BEADS AT OUTSIDE CORNERS.
10. ALL DRYWALL PAINT SHALL BE INTERIOR EGG SHELL FINISH UNLESS NOTED OTHERWISE.
11. ALL CMU PAINT SHALL BE SEMI-GLOSS FINISH.
12. ALL METALS PAINT SHALL BE SEMI-GLOSS FINISH.
13. HOLLOW METAL DOORS AND FRAMES SHALL MATCH WINDOW MULLION COLOR AND IS SEMI-GLOSS FIN. FRP DOOR COLOR WILL BE SELECTED FROM MANUF. STANDARD COLORS.
14. KITCHEN BASE AND WALL CABINETS ARE P-LAM CLAD WOOD W/ SELF CLOSING DRAWERS AND SS HARDWARE. USE CONCEALED HINGES. ALL SHELVING IS ADJUSTIBLE. PROVED 3 SHELFS IN WALL CABINETS AND ONE IN BASE CABINETS. PROVIDE ONE 2' WIDE BASE CABINET WITH 4 PULL OUT DRAWERS.
15. COLORS AND FINISHES FOR FURNISHINGS AND EQUIP. SHOWN ON A1.8 SHALL BE SELECTED FROM MANUF. STANDARD COLORS AND FINISHES BY OWNER.

FINISH SCHEDULE

NOTE: EQUIVALENT PRODUCTS AND MANUF. ARE ACCEPTABLE

ROOM NO.	SPACE NAME	FLOOR MAT'L.	FLOOR COLOR	WALLS MAT'L.	WALLS COLOR	BASE	ES/CEILINGS MAT'L.	ES/CEILINGS COLOR	COMMENTS
101	WORK ROOM	SEALED CONCRETE	TBD	CMU	P-2	YES	ES P-2	NA	COLORED OPAQUE SEALER
102	ELECTRICAL RM.	SEALED CONCRETE	TBD	CMU	P-2	NO	ES P-2	NA	COLORED OPAQUE SEALER
103	WORK ROOM	SEALED CONCRETE	TBD	CMU	P-2	YES	ES P-2	NA	COLORED OPAQUE SEALER
104	LOCKER ROOM	KEY QUARTZ SYS.	TBD	CMU	P-1	KEY Q.	ES P-2	NA	INSTALL KEY-Q ON SHOWER FLR & WALLS 7' AFF.
105	OUTDOOR WK AREA	SEALED CONCRETE	TBD	BRICK	RED	NONE	EIFS	TBD	STO PRODUCT OR EQUIVALENT W/ SAME FINISH
106	COMP/BLWR RM.	SEALED CONCRETE	TBD	CMU	P-2	NONE	ES P-2	NA	COLORED OPAQUE SEALER
107	MEMBRANE RM	SPECIAL COATING	TBD	CMU	P-2	NONE	ES P-2	NA	SEE KECK AND WOOD DWGS FOR FLOOR FINISH
108	TANK ROOM	SPECIAL COATING	TBD	CMU	P-2	NONE	ES P-2	NA	SEE KECK AND WOOD DWGS FOR FLOOR FINISH
109	FLUORIDE ROOM	SPECIAL COATING	TBD	CMU	P-2	NONE	ES P-2	NA	SEE KECK AND WOOD DWGS FOR FLOOR FINISH
201	PUBLIC LOBBY	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	#
202	PUBLIC TOILET	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	CAULK RUBBER BASE TO LVT -CONCEALED.
203	UNI S. TOILET	KEY QUARTZ SYS.	TBD	GWB	P-1	KEY Q.	ACT	WHITE	EXTEND KEY QUARTZ UP SHOWER WALLS 7'
204	JAN. CLOSET	KEY QUARTZ SYS.	TBD	GWB	P-1	KEY Q.	ES	NA	
205	COPY/SUPPLY	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	#
206	CONFERENCE RM	CARPET TILE	TBD	GWB	P-1	B-1	ACT	WHITE	#
207	BREAK ROOM	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	#
208	SUPER OFFICE	CARPET TILE	TBD	GWB	P-1	B-1	ACT	WHITE	#
209	VAULT ROOM	SEALED CONCRETE	TBD	GWB	P-1	B-1	ACT	WHITE	COLORED OPAQUE SEALER
210	SCADA/OPS	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	#
211	CORRIDOR	LVT	TBD	GWB	P-1	B-1	ACT	WHITE	#
212	LAB ROOM	KEY HP QUARTZ SYS.	TBD	GWB	P-1	KEY Q.	ACT	WHITE	EXPOXY TYPE WALL PAINT- ACID RESISTANT
213	LAB ROOM	KEY HP QUARTZ SYS.	TBD	GWB	P-1	KEY Q.	ACT	WHITE	EXPOXY TYPE WALL PAINT - ACID RESISTANT

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 030027
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

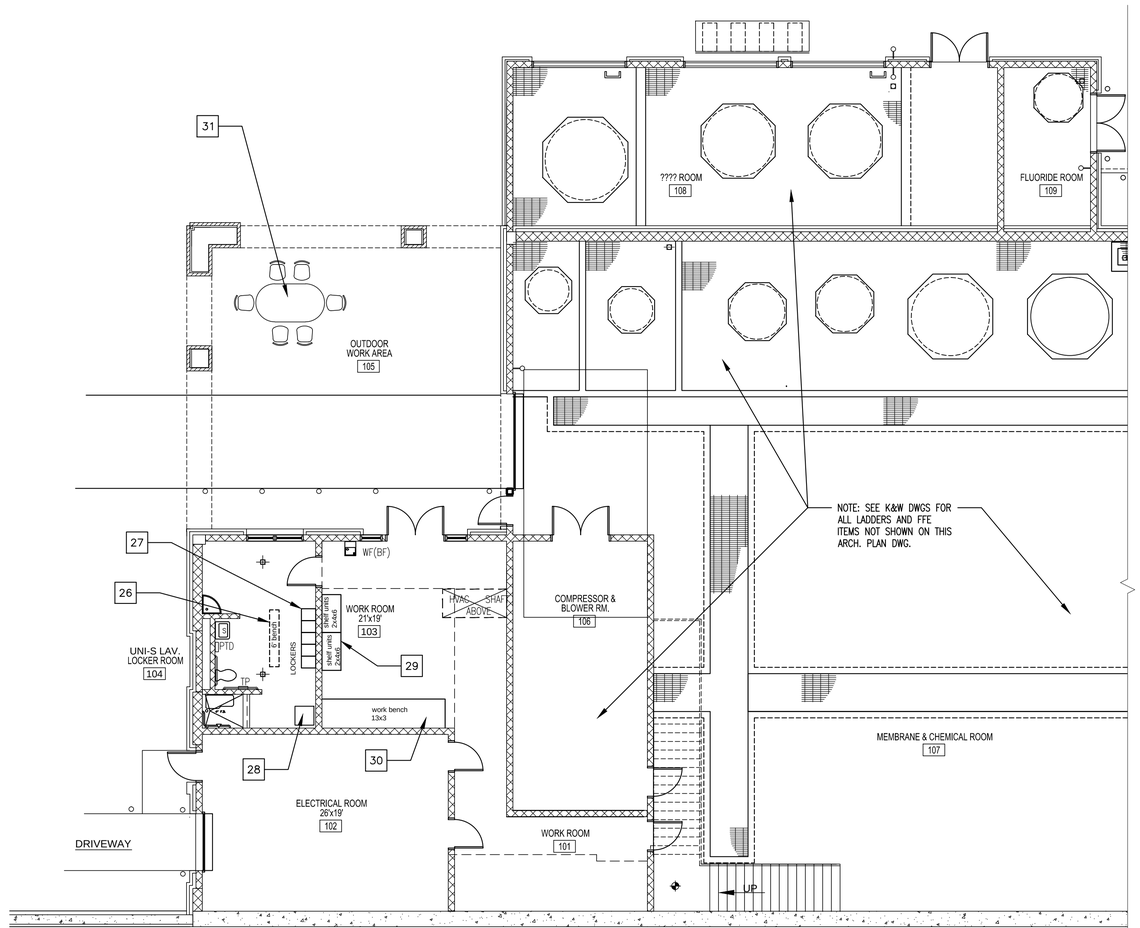
Buford Water Works Replacement
For the City of Buford, Georgia

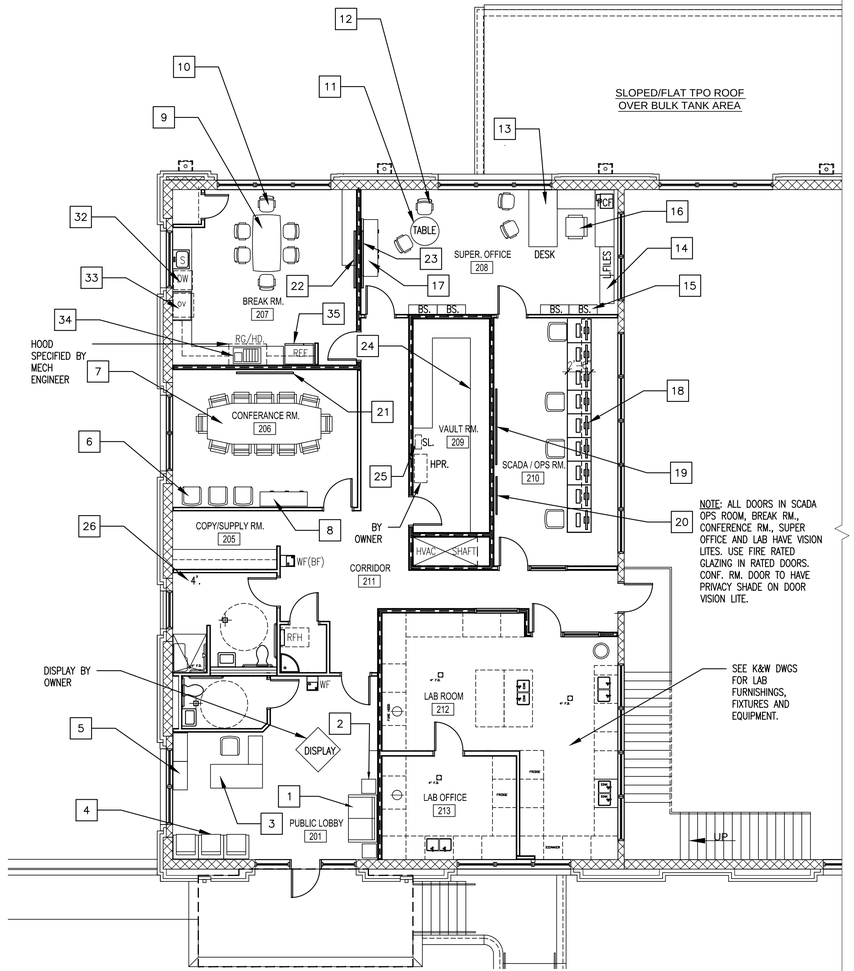
FIRST AND SECOND FLOOR FINISH PLAN AND DETAILS

FINISHES PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: PS Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A1.7





INTERIOR SIGNAGE REQUIREMENTS:

1. PROVIDE ADA COMPLIANT SIGNAGE FOR ALL INTERIOR DOORS. MOUNT ALONG SIDE OF DOORS AS PER ADA REQUIREMENTS.
2. BASIS OF DESIGN: ASI "INFORM" -.125" THICNESS. ROOM NAMES ONLY. MANUF. STANDARD SOLID COLORS. FRAMELESS. 3 COLOR- COLOR SCHEME- TRIM, FIELD AND LETTERING.
3. EQUIVALENT PRODUCTS ARE ACCEPTABLE.
4. SEE SHEET A0. 1 FOR ADDITIONAL INTERIOR SIGNAGE CRITERIA.

GENERAL NOTES:

1. EQUIVALENT PRODUCTS MAY BE SUBMITTED WITH BACKUP DATA.
2. FURNITURE ITEMS ARE NOT IN CONTRACT. OWNER WILL PURCHASE AND INSTALL FURNITURE ITEMS. PRICE AND PROVIDE ALL OTHER ITEMS NOTED ON THIS SHEET.
3. PROVIDE WINDOW SHADES FOR ALL SECOND FLOOR OFFICE AREA/LAB VISION WINDOWS. MECHO SHADE OR EQUIVALENT. MANUAL OPERATION. INSIDE MOUNT. NO SHADES FOR ENTRY DOOR AND SIDELITES IN LOBBY. INCLUDE SHADES FOR INTERIOR WINDOWS IN S. OFFICE, SCADA/OPS AND LAB ROOMS. SHADE FAB, AND COLOR TBD. LOOKING INTO MEMBRANE AREA FROM SUPER OFFICE AND FROM SCADA/OPS RM.
5. OUTDOOR FURNISHINGS EXCEPT FOR TABLE AND CHAIRS UNDER OFFICE OVERHANG ARE BY CIVIL/LA, SEE THEIR DWGS FOR SPEC IF ANY. SEE ALLOWANCES SECTION OF THE SPECIFICATIONS.
6. SECURITY SYSTEMS BY OWNER'S VENDOR - COORDINATE WITH VENDOR
7. DATA, VOICE, AV AND PHONE BY OWNER'S VENDOR- COORDINATE WITH VENDOR

FURNISHINGS SCHEDULE:

ITEM NO.	DESCRIPTION.	NO. OF:	LOCATION:	DESCRIPTION:
1.	SOFA -	1	LOBBY	TO BE PURCHASED BY OWNER
2.	SIDE TABLE	2	LOBBY	TO BE PURCHASED BY OWNER
3.	RECEP. DESK	1	LOBBY	TO BE PURCHASED BY OWNER
4.	CHAIRS	3	LOBBY	TO BE PURCHASED BY OWNER
5.	LATERAL FILES	2	LOBBY	TO BE PURCHASED BY OWNER
6.	CONF. CHAIRS	15	CONF. RM.	TO BE PURCHASED BY OWNER
7.	CONF. TABLE	1	CONF. RM.	TO BE PURCHASED BY OWNER
8.	CREDENZA	1	CONF. RM.	TO BE PURCHASED BY OWNER
9.	TABLE	1	BREAK RM.	TO BE PURCHASED BY OWNER
10.	CHAIRS	6	BREAK RM.	TO BE PURCHASED BY OWNER
11.	TABLE -	1	S. OFFICE	TO BE PURCHASED BY OWNER
12.	CHAIRS	4	S. OFFICE	TO BE PURCHASED BY OWNER
13.	EXEC. DESK	1	S. OFFICE	TO BE PURCHASED BY OWNER
14.	LATERAL FILES	2	S. OFFICE	TO BE PURCHASED BY OWNER
15.	BOOK SHELFS	4	S. OFFICE	TO BE PURCHASED BY OWNER
16.	EXEC. CHAIR	1	S. OFFICE	TO BE PURCHASED BY OWNER
17.	CREDENZA	1	S. OFFICE	TO BE PURCHCHASED BY OWNER
18.	WORK TABLES	9	SCADA/OPS	TO BE PURCHASED BY OWNER
19.	8X4 WHITE BD.	1	SCADA/OPS	BY CONTRACTOR
20.	4X4 WHITE BD.	1	SCADA/OPS	BY CONTRACTOR
21.	TV MONITOR	1	CONF. RM.	BY CONTRACTOR
22.	TV MONITOR	1	BREAK RM.	BY CONTRACTOR
23.	TV MONITOR	1	S. OFFICE	BY CONTRACTOR
24	SHELF UNITS	10	VAULT	4X2X6 TALL MET. -PURCHASED BY OWNER
25	LADDER	1	VAULT	PURCHASED BY OWNER
26	6' WOOD BENCH	1	LOCKER RM.	PURCHASED BY OWNER
27	LOCKERS	5	LOCKER RM.	FULL HGT., 15X18 SIZE -BY CONTRACTOR
28	HAMPER	1	LOCKER RM.	PURCHASED BY OWNER
29	SHELF UNITS	2	WORK RM.	2X4X6 HIGH MET. UNITS - PURCHASED BY OWNER
30	WORK TABLE	1	WORK RM.	CUSTOM DIMENSION, WD. TOP - BY OWNER
31	EXT. TABLE/CH.	1	OUTDOOR	FIXED MET TABLE AND CHAIR SET- BY OWNER
32	DISHWASHER	1	BREAK RM.	BOSCH 300 SERIES 24" X 32" HIGH NO. SGE53X52UC
33	WALL OVEN/MW	1	BREAK RM.	GE Model #: PT7800SHSS OVEN/MW COMBO- BY GC
34	COOK TOP	1	BREAK RM.	GE Model #: PP7030SJSS 30" BUILT IN ELEC.-BY GC
35	REFRIGERATOR	1	BREAK RM.	GE Model #:PWE23KYNFS 36" W COUNTER DEPTH- BY GC

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER D. SUTTON
CERTIFICATE NO. 020527
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FF & E

Project Manager: Jolene Northrop, P.E.

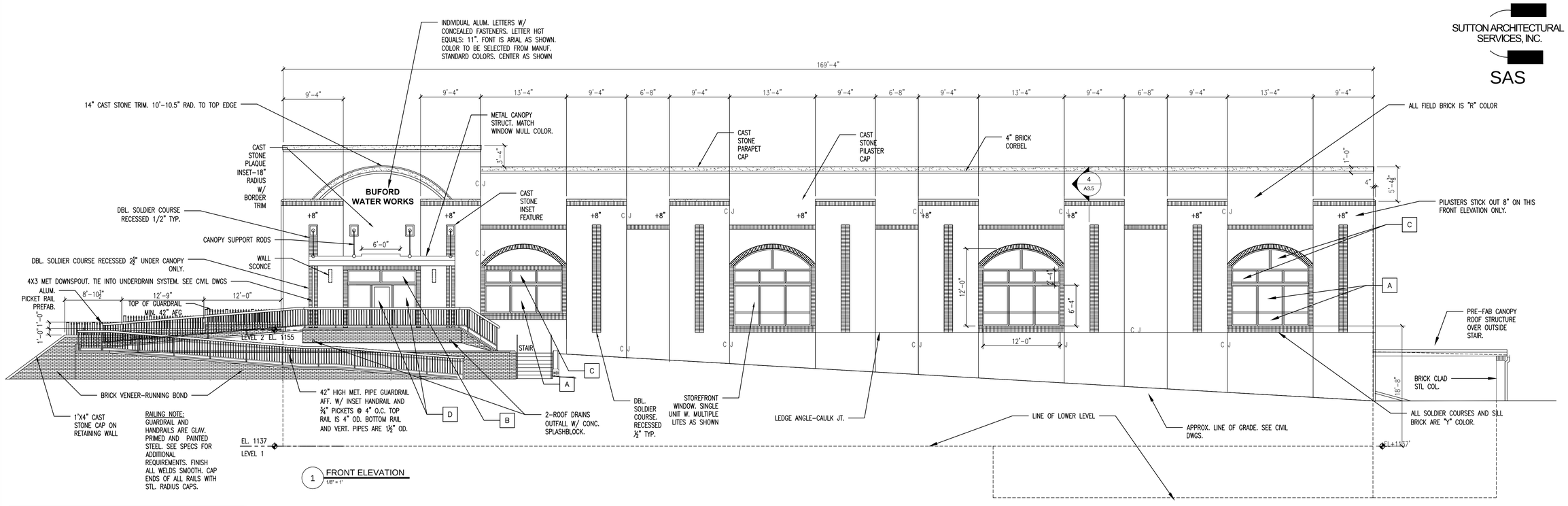
Drawn By:	Checked By:
PS	PS

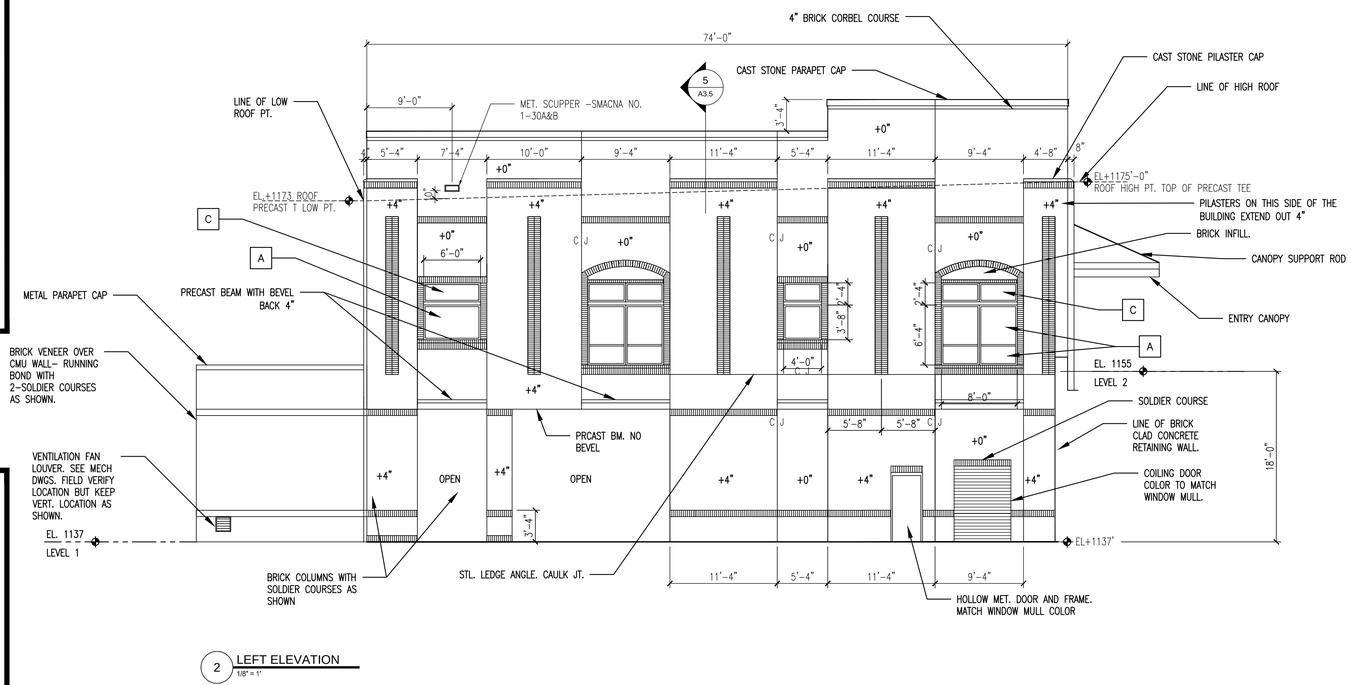
Date: 04/14/21

Scale: As Shown

Project No.: 170110.00

Drawing No.: A1.8





EXTERIOR COLOR SCHEME

1. WINDOW MULLIONS: DARK BRONZE - YKK ANODIZED PLUS FIN
2. WINDOW GLASS: GREY TINT SEE SCHEDULE
3. ROOF CANOPY STRUCTURES: DARK BRONZE
4. GUARDRAILS AND HANDRAILS: DARK BRONZE
5. BRICK: AS SCHEDULED
6. CAULKING: TO BE SELECTED BY ARCHITECT.
7. MORTAR: TO BE SELECTED BY ARCHITECT.
8. COILING ROLL UP DOORS: STAINLESS STEEL BY MANUF.
9. EXTERIOR DOORS AND FRAMES: DARK BRONZE
10. REAR REMOVABLE ACCESS PANEL MET. PANELS DARK BRONZE MATCHING WINDOW MULLIONS.
11. PARAPET CAPS, SCUPPERS, DOWN SPOUTS, GUTTERS ARE DARK BRONZE
12. ROOF MEMBRANE: LIGHT GREY

NOTE: DARK BRONZE COLORS TO MATCH WINDOW MULL COLOR.

GENERAL NOTES:

1. STOREFRONT ALUMINUM WINDOW SYSTEMS: BASIS OF DESIGN PRODUCT MANUFACTURER IS "YKK". FINISH FOR BOTH OUTSIDE AND INSIDE IS YKK "ANODIZED PLUS FINISH" WITH 1" INSULATED GLAZING PANELS. 2" PERIMETER AND INTERIOR MULLIONS TYPICAL AS SHOWN ON ELEVATION DWGS UNLESS NOTED OTHERWISE. COLOR TO MATCH ARCHITECTS METAL SAMPLE. PAINT ROOF VENT PIPES, EXTERIOR WALL LOUVERS AND REGISTERS TO MATCH WINDOW MULL COLOR.
2. SEE SHEET A2.3 FOR COURSING PATTERNS ON EACH ELEVATION
3. SUBMIT PAINT COLOR SAMPLES FOR MATCH APPROVALS.

BRICK KEY:

Y - YELLOW BRICK MATCHING BUFORD GYM- CHEROKEE BRICK "VELOUR OATMEAL".

R - RED COLOR MATCHING BUFORD GYM - CHEROKEE BRICK "PROVIDENCE".

CAST STONE COLOR: MATCH BUFORD GYM

MORTAR COLOR: TO BE SELECTED, IN COLOR RANGE OF VELOUR OATMEAL BRICK.

NOTE: ALL MORTAR SHALL HAVE WATER PROOFING ADDITIVE TO MIXTURE.

-NOTE: ALL INTERIOR AND EXTERIOR MASONRY WALL OUTSIDE CORNERS ARE SINGLE 8x4 CORNER UNITS ALTERNATING TO AVOID STACKED APPEARANCE. THIS INCLUDES WINDOW JAMBS

GLAZING SCHEDULE: A

TYPE:	DESCRIPTION:
A	-GREY REFLECTIVE & GREY TINTED VISION GLASS- SNR 43 ON GRAY BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 22%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 13%; U-VALUE = .29; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.31 - USE SAFETY GLASS WHERE NOTED OR LABELED "SG".
B	-VISION GLASS- SUPER NEUTRAL 68 ON CLEAR BY GUARDIAN SUNGUARD (1" INSULATED UNIT)TRANSMITTANCE = 68%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 12%; U-VALUE = .29; SOLAR HEAT GAIN = .38; AND LIGHT TO SOLAR GAIN 1.80
C	-GREY TINTED AND ACID ETCHED GLASS- SNR 43 ON #2; SATIN DECO ACID ETCHED ON #3 BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 21%; REFLECTANCE OUT = 10%; REFLECTANCE IN = 13%; U-VALUE = .29; SHADING COEFFICIENT = .19; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.29
D	-CLEAR VISION GLASS TEMPERED SAFETY GLASS 1" INSULATED UNITS IN DOORS- GUARDIAN.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 030627
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

BUILDING ELEVATIONS

B. ELEVATIONS

Project Manager: Jolene Northrop, P.E.

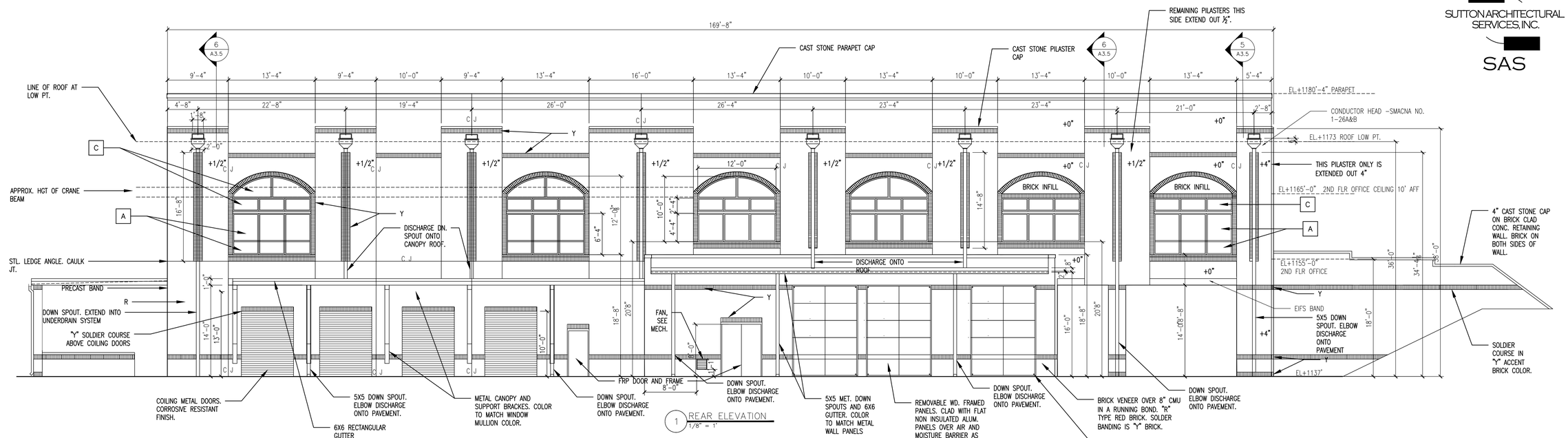
Drawn By: PS | Checked By: PS

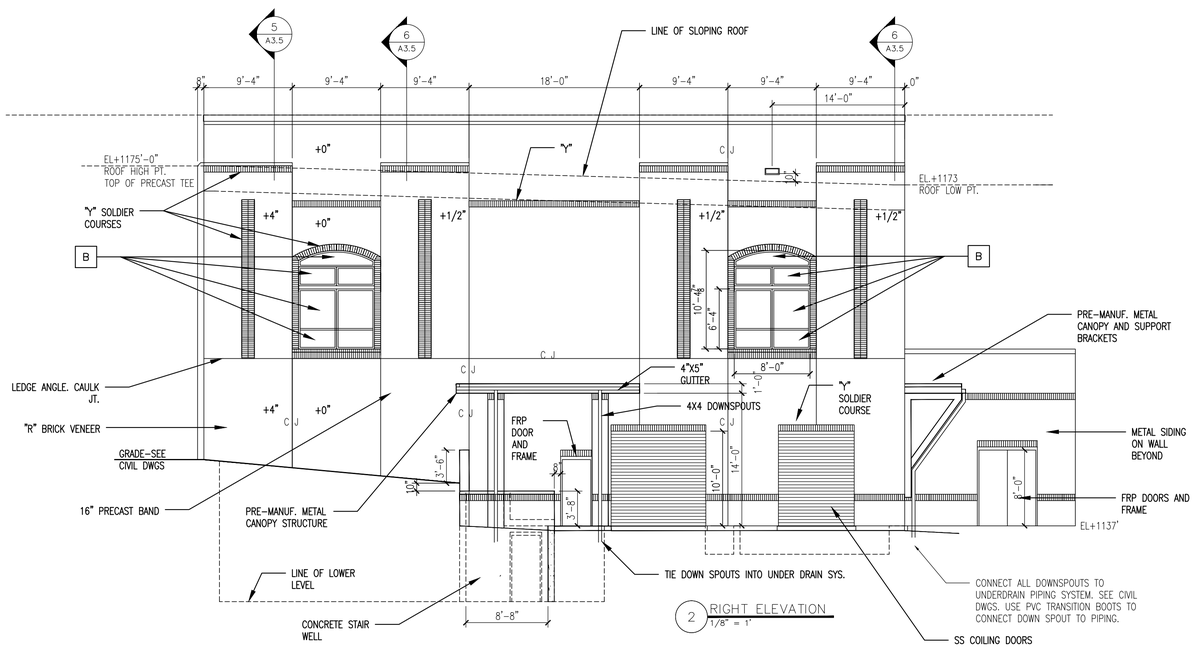
Date: 04/14/21

Scale: As Shown

Project No.: 170110.00

Drawing No.: A2.1





GENERAL NOTES:

1. STOREFRONT ALUMINUM WINDOW SYSTEMS: BASIS OF DESIGN PRODUCT MANUFACTURER IS "YKK". FINISH FOR BOTH OUTSIDE AND INSIDE IS YKK "ANODIZED PLUS FINISH" WITH 1" INSULATED GLAZING PANELS. 2" PERIMETER AND INTERIOR MULLIONS TYPICAL AS SHOWN ON ELEVATION DWGS UNLESS NOTED OTHERWISE. COLOR TO MATCH ARCHITECTS METAL SAMPLE. PAINT ROOF VENT PIPES, EXTERIOR WALL LOUVERS AND REGISTERS TO MATCH WINDOW MULL COLOR.
2. SEE SHEET A2.3 FOR COURSING PATTERNS ON EACH ELEVATION

EXTERIOR COLOR SCHEME

1. WINDOW MULLIONS: DARK BRONZE- YKK ANOD. PLUS FINISH.
2. WINDOW GLASS: GREY TINT SEE SCHEDULE
3. ROOF CANOPY STRUCTURES: DARK BRONZE
4. GUARDRAILS AND HANDRAILS: DARK BRONZE
5. BRICK: AS SCHEDULED
6. CAULKING: TO BE SELECTED BY ARCHITECT.
7. MORTAR: TO BE SELECTED BY ARCHITECT.
8. COILING ROLL UP DOORS: STAINLESS STEEL BY MANUF.
9. EXTERIOR DOORS AND FRAMES: DARK BRONZE
10. REAR REMOVABLE ACCESS PANEL MET. PANELS DARK BRONZE.
11. PARAPET CAPS, SCUPPERS, DOWN SPOUTS, GUTTERS ARE DARK BRONZE
12. ROOF MEMBRANE: LIGHT GREY
13. EIFS SOFFIT/TRIM: STO - STOCREATIV GRANITE (#80173)- COLOR: "DENALI" 30203

NOTE: DARK BRONZE COLORS TO MATCH WINDOW MULL COLOR. PAINT EXPOSED CMU JAMBS CUSTOM COLOR TO MATCH BRICK.

BRICK KEY:

Y - YELLOW BRICK MATCHING BUFORD GYM- CHEROKEE BRICK "VELOUR OATMEAL".

R - RED COLOR MATCHING BUFORD GYM - CHEROKEE BRICK "PROVIDENCE".

CAST STONE COLOR: MATCH BUFORD GYM

MORTAR COLOR: TO BE SELECTED

NOTE: ALL MORTAR SHALL HAVE WATER PROOFING ADDITIVE TO MIXTURE.

-NOTE: ALL INTERIOR AND EXTERIOR MASONRY WALL OUTSIDE CORNERS ARE SINGLE 8x4 CORNER UNITS ALTERNATING TO AVOID STACKED APPEARANCE. THIS INCLUDES WINDOW JAMBS

GLAZING SCHEDULE: A

TYPE: DESCRIPTION:

A -GREY REFLECTIVE & GREY TINTED VISION GLASS- SNR 43 ON GRAY BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 22%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 13%; U-VALUE = .29; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.31 - USE SAFETY GLASS WHERE NOTED OR LABELED "SG".

B -VISION GLASS- SUPER NEUTRAL 68 ON CLEAR BY GUARDIAN SUNGUARD (1" INSULATED UNIT)TRANSMITTANCE = 68%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 12%; U-VALUE = .29; SOLAR HEAT GAIN = .38; AND LIGHT TO SOLAR GAIN 1.80

C -GREY TINTED AND ACID ETCHED GLASS- SNR 43 ON #2; SATIN DECO ACID ETCHED ON #3 BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 21%; REFLECTANCE OUT = 10%; REFLECTANCE IN = 13%; U-VALUE = .29; SHADING COEFFICIENT = .19; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.29

D -CLEAR VISION GLASS TEMPERED SAFETY GLASS 1" INSULATED UNITS IN DOORS- GUARDIAN.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 020022
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

REAR AND SIDE ELEVATIONS

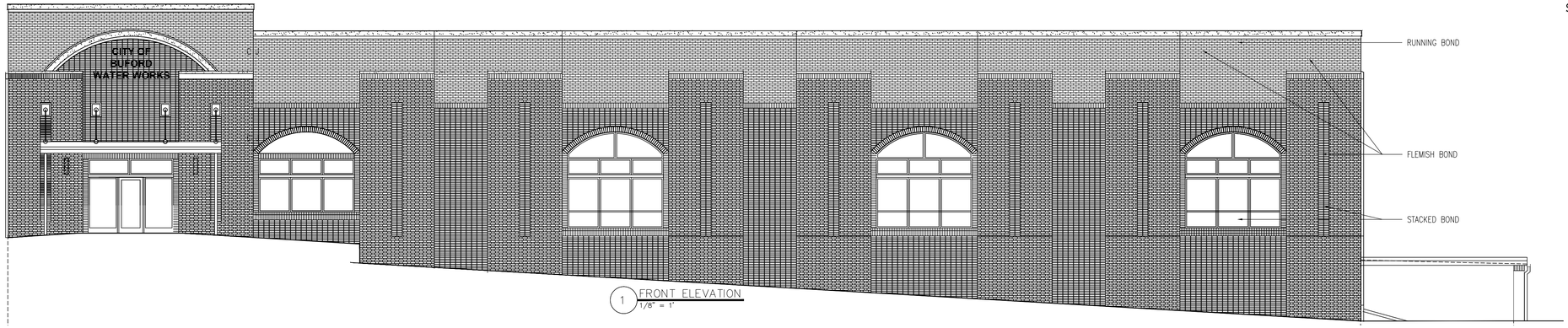
B. ELEVATIONS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS Checked By: PS
Date: 04/14/21
Scale: As Shown

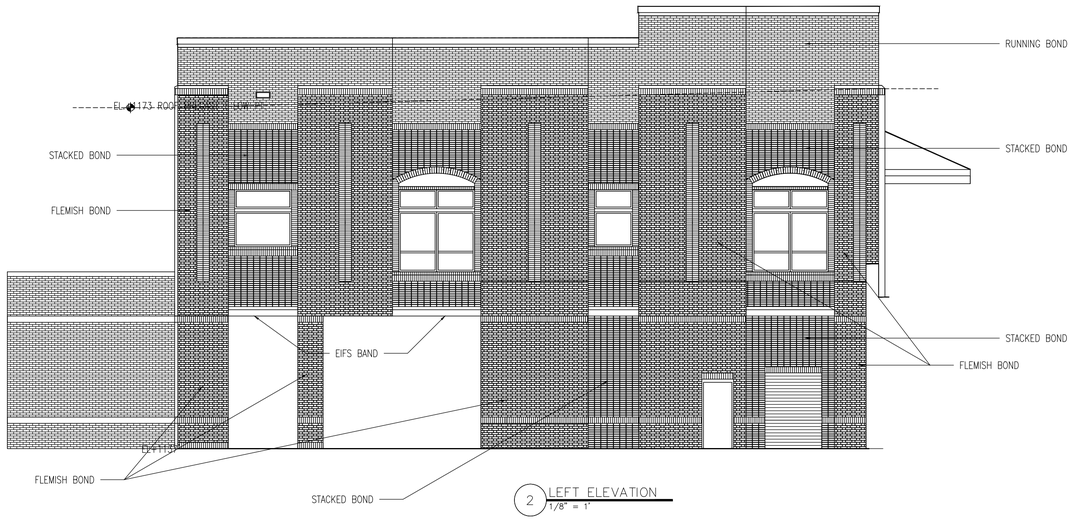
Project No.: 170110.00
Drawing No.: A2.2

SUTTON ARCHITECTURAL SERVICES, INC.

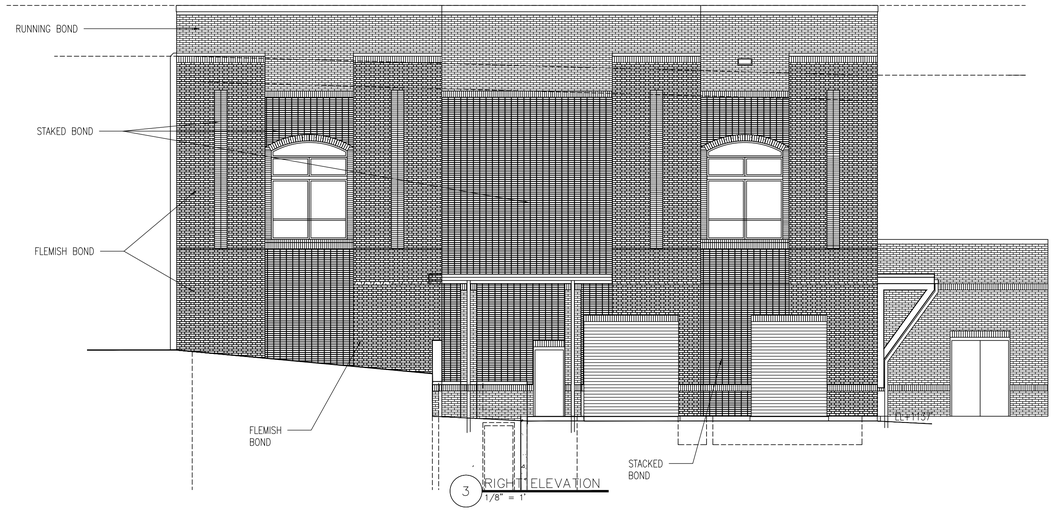
SAS



1 FRONT ELEVATION
1/8" = 1'



2 LEFT ELEVATION
1/8" = 1'



3 RIGHT ELEVATION
1/8" = 1'

4 REAR ELEVATION
1/8" = 1'

NOTES:

1. THIS DWG IS FOR COURSING PATTERNS ONLY. ALL FIELD BRICK IS "R" OR RED AND ALL SOLDIER COURSES IS "Y" OR YELLOW BRICK.
2. FIELD BRICK IS SHOWN IN RUNNING BOND, STACKED BOND AND FLEMISH BOND.
3. REFER TO SHEETS A2.1 AND A2.2 FOR DIMENSIONS ETC.
4. THE RED BRICK IS: PROVIDENCE BY CHEROKEE BRICK.
5. THE LIGHT BRICK IS "VELOUR OATMEAL" BY CHEROKEE BRICK.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER D. SUTTON
CERTIFICATE NO. 026527
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

DETAILS ELEVATIONS

ELEVATIONS COURSING

Project Manager: Jolene Northrop, P.E.

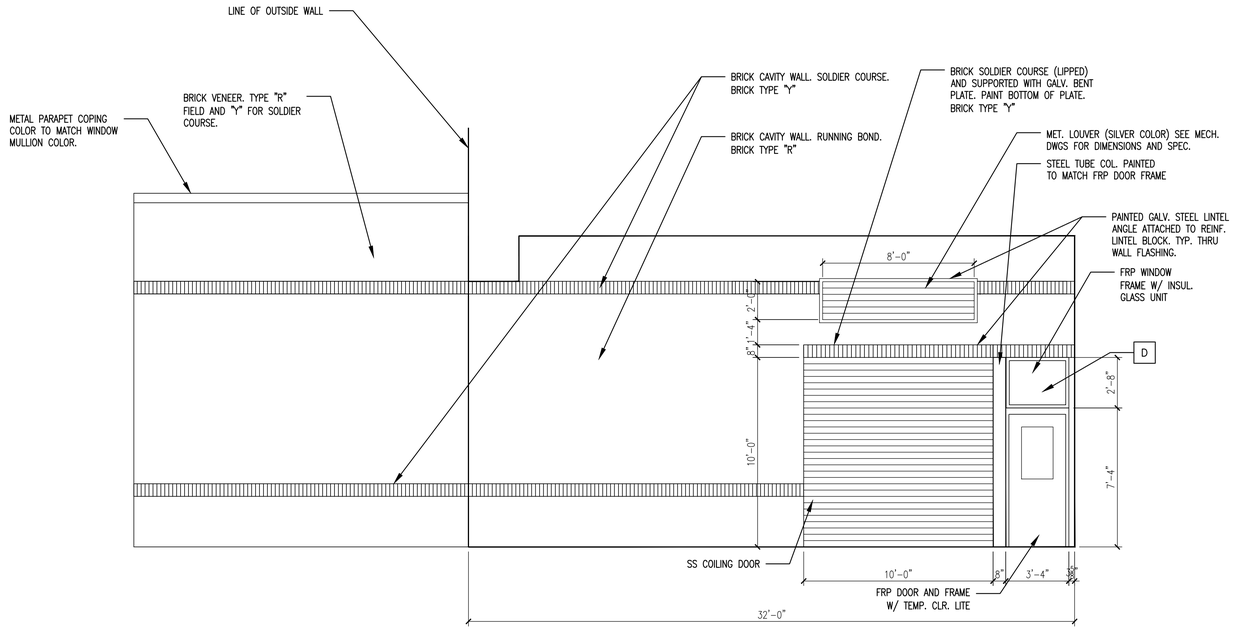
Drawn By: PS | Checked By: PS

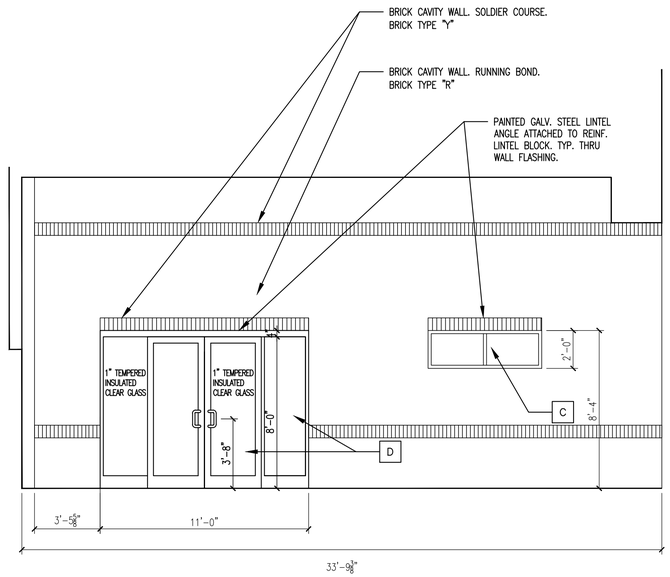
Date: 04/14/21

Scale: As Shown

Project No.: 170110.00

Drawing No.: A2.3





2 RIGHT ELEVATION
1/8" = 1'

GENERAL NOTES:

1. STOREFRONT ALUMINUM WINDOW SYSTEMS: BASIS OF DESIGN PRODUCT MANUFACTURER IS "YKK". FINISH FOR BOTH OUTSIDE AND INSIDE IS YKK "ANODIZED PLUS FINISH" WITH 1" INSULATED GLAZING PANELS. 2" PERIMETER AND INTERIOR MULLIONS TYPICAL AS SHOWN ON ELEVATION DWGS UNLESS NOTED OTHERWISE. COLOR TO MATCH ARCHITECTS METAL SAMPLE. PAINT ROOF VENT PIPES, EXTERIOR WALL LOUVERS AND REGISTERS TO MATCH WINDOW MULL COLOR.
2. SEE SHEET A2.3 FOR COURSING PATTERNS ON EACH ELEVATION

BRICK KEY:

Y - YELLOW BRICK MATCHING BUFORD GYM - CHEROKEE BRICK "MS-VELOUR OATMEAL"

R - RED COLOR MATCHING BUFORD GYM - CHEROKEE BRICK " MS-PROVIDENCE C/R"

CAST STONE COLOR: MATCH BUFORD GYM

MORTAR COLOR: TO BE SELECTED

NOTE: ALL MORTAR SHALL HAVE WATER PROOFING ADDITIVE TO MIXTURE. (recess all joints ¼" that are exposed to view).

-NOTE: ALL INTERIOR AND EXTERIOR MASONRY WALL OUTSIDE CORNERS ARE SINGLE CORNER UNITS. THIS INCLUDES WINDOW JAMBS

GLAZING SCHEDULE: A

TYPE:	DESCRIPTION:
A	-GREY REFLECTIVE & GREY TINTED VISION GLASS- SNR 43 ON GRAY BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 22%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 13%; U-VALUE = .29; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.31 - USE SAFETY GLASS WHERE NOTED OR LABELED "SG".
B	-VISION GLASS- SUPER NEUTRAL 68 ON CLEAR BY GUARDIAN SUNGUARD (1" INSULATED UNIT)TRANSMITTANCE = 68%; REFLECTANCE OUT = 11%; REFLECTANCE IN = 12%; U-VALUE = .29; SOLAR HEAT GAIN = .38; AND LIGHT TO SOLAR GAIN 1.80
C	-GREY TINTED AND ACID ETCHED GLASS- SNR 43 ON #2; SATIN DECO ACID ETCHED ON #3 BY GUARDIAN SUNGUARD (1" INSULATED UNIT). TRANSMITTANCE = 21%; REFLECTANCE OUT = 10%; REFLECTANCE IN = 13%; U-VALUE = .29; SHADING COEFFICIENT = .19; SOLAR HEAT GAIN = .17; AND LIGHT TO SOLAR GAIN 1.29
D	-CLEAR VISION GLASS TEMPERED SAFETY GLASS 1" INSULATED UNITS IN DOORS- GUARDIAN.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 026972
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

BUILDING ELEVATIONS

B. ELEVATIONS

Project Manager: Jolene Northrop, P.E.

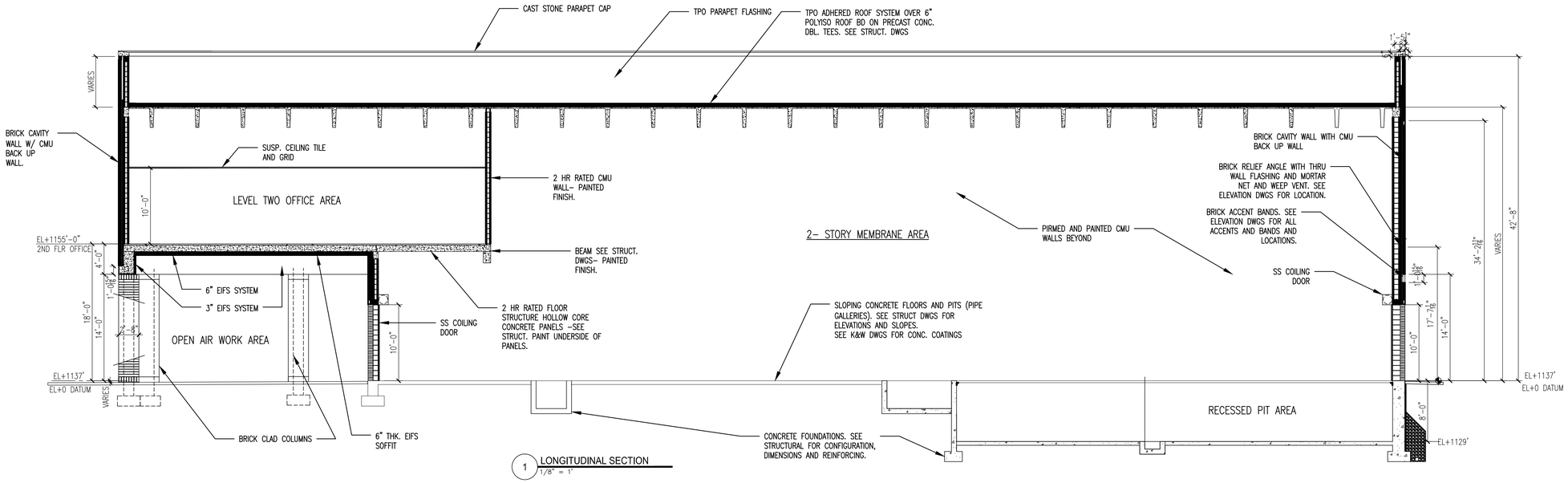
Drawn By: PS | Checked By: PS

Date: 04/14/21

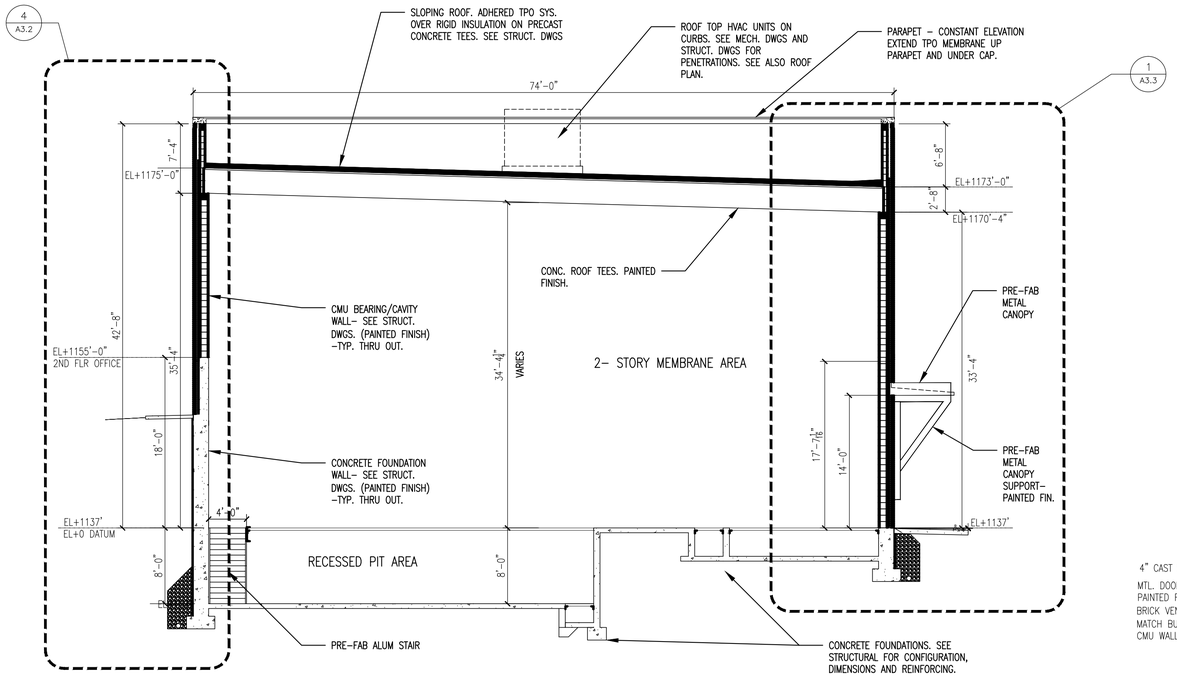
Scale: As Shown

Project No.: 170110.00

Drawing No.: A2.4

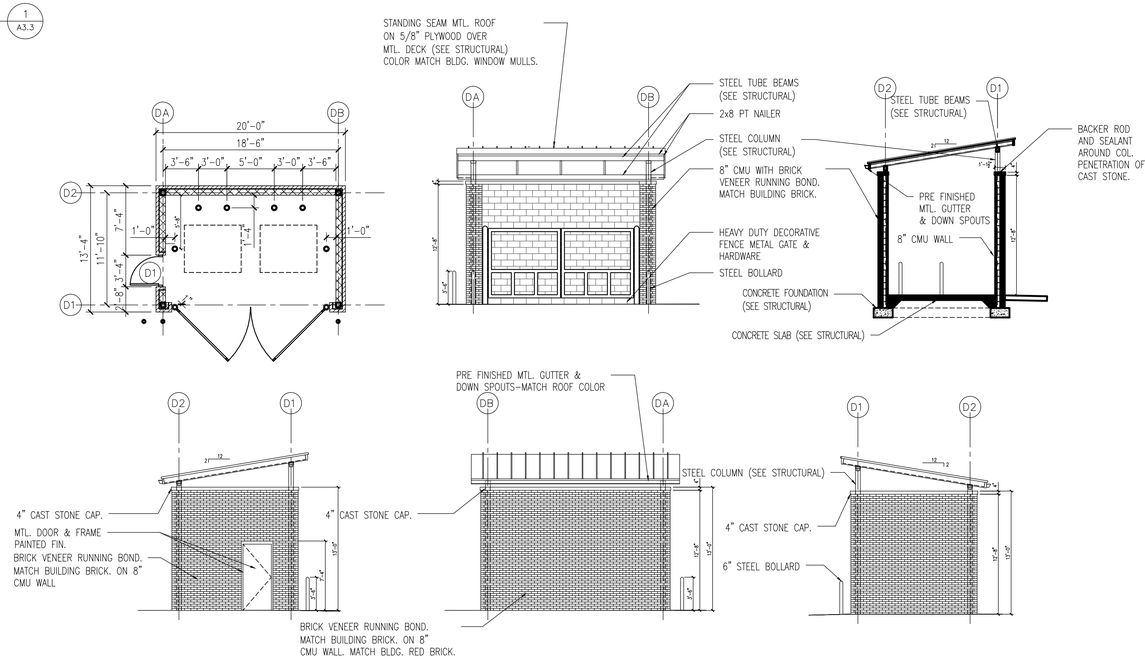


1 LONGITUDINAL SECTION
1/8" = 1'



2 TRANSVERSE SECTION
1/8" = 1'

NOTE: SEE CIVIL DRAWINGS FOR LOCATION OF DUMPSTER ENCLOSURE BELOW.



3 DUMPSTER ENCLOSURE DETAILS
1/8" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

GENERAL NOTES:

1. SEE STRUCTURAL DWGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. SEE STRUCTURAL DWGS FOR ALL CONCRETE WORK CONFIGURATIONS, DIMENSIONS, DETAILS, SLAB SLOPES AND ELEVATION. ALSO FLOOR GRATES AND DETAILS.
3. SEE PLUMBING DWGS FOR FLOOR DRAINS.
4. SEAL ALL PENETRATIONS THROUGH ALL FLOORS AND WALLS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO 029322
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

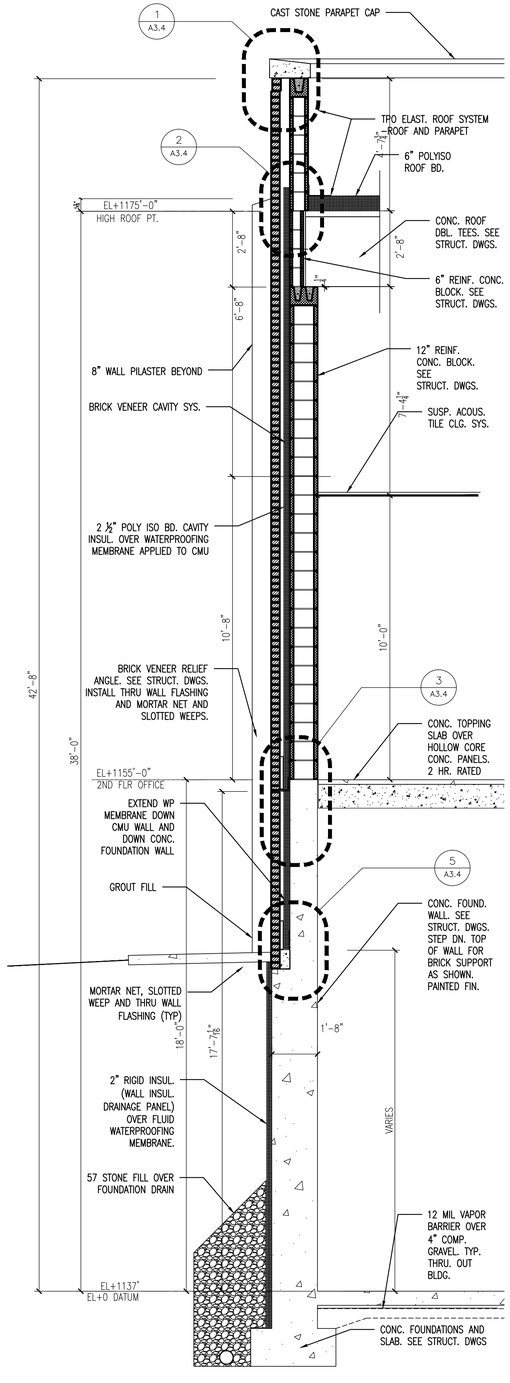
Buford Water Works Replacement
For the City of Buford, Georgia

BUILDING SECTIONS

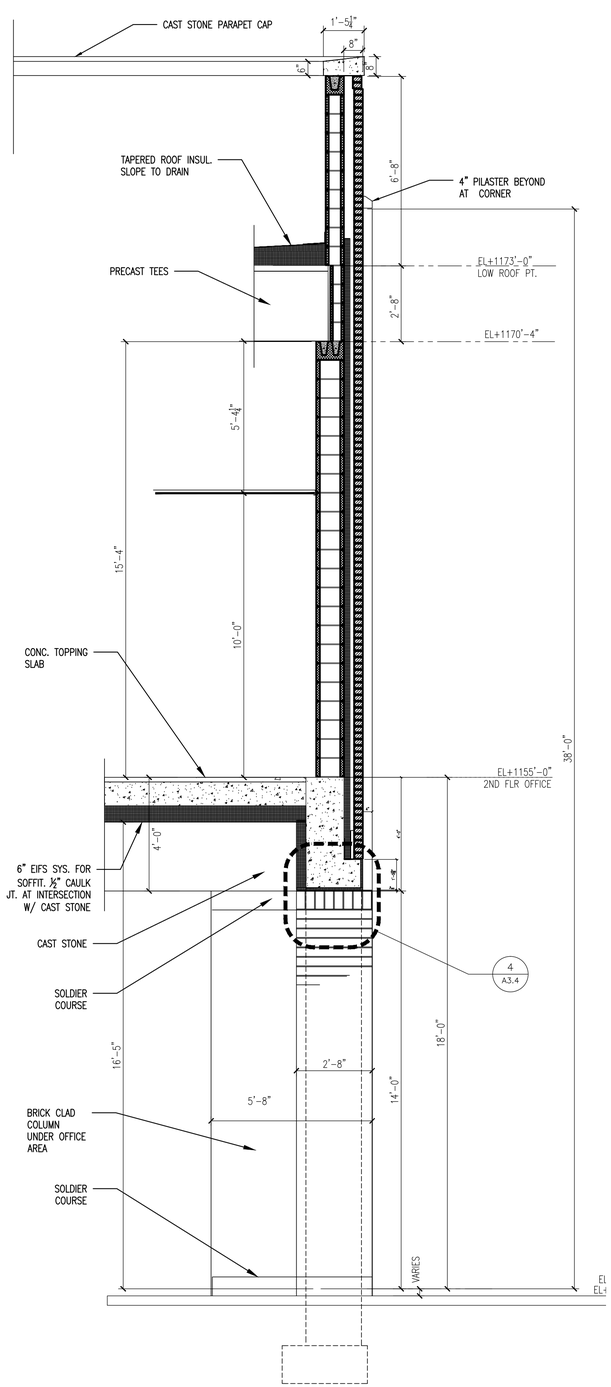
SECTIONS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

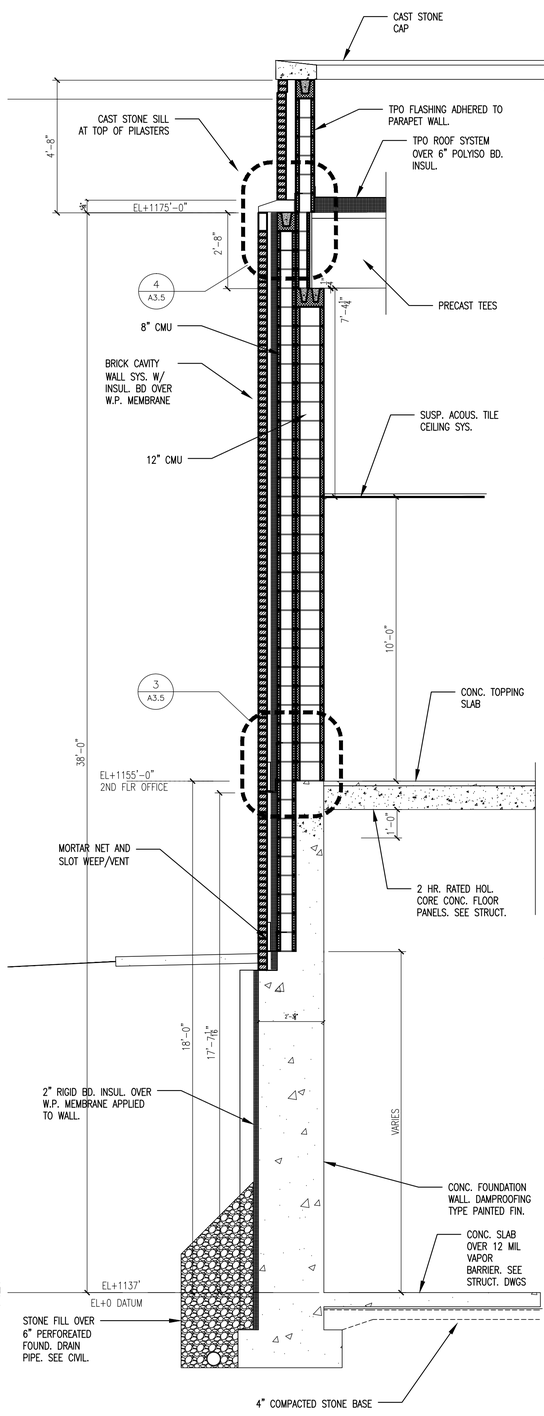
Project No.: 170110.00
Drawing No.: A3.1



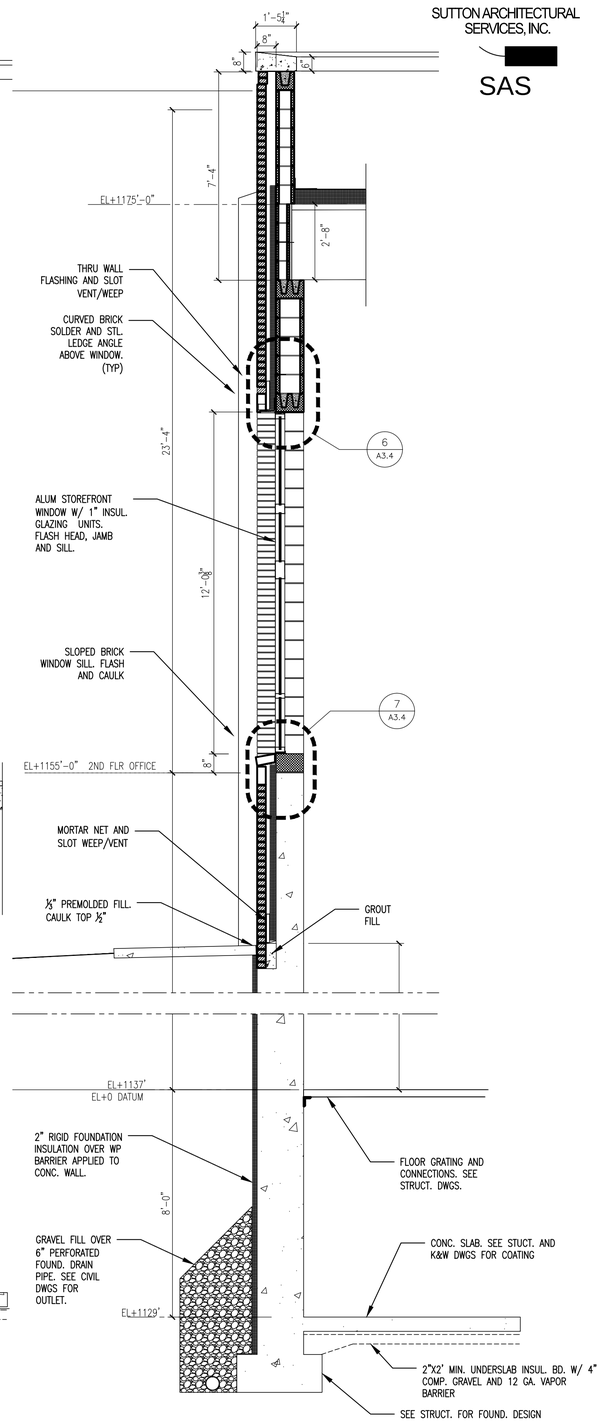
1 WALL SECTION -FRONT WALL- NON PILASTER
3/8" = 1'



2 WALL SECTION -REAR WALL- OFFICE OVERHANG
3/8" = 1'



3 WALL SECTION -FRONT WALL- PILASTER
3/8" = 1'



4 WALL SECTION -FRONT WALL- AT LOWER LEVEL
3/8" = 1'

NOTE: SEE ELEVATION DRAWING FOR LOCATION OF WINDOWS AND PILASTERS AND BRICK ACCENT BANDS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 030572
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

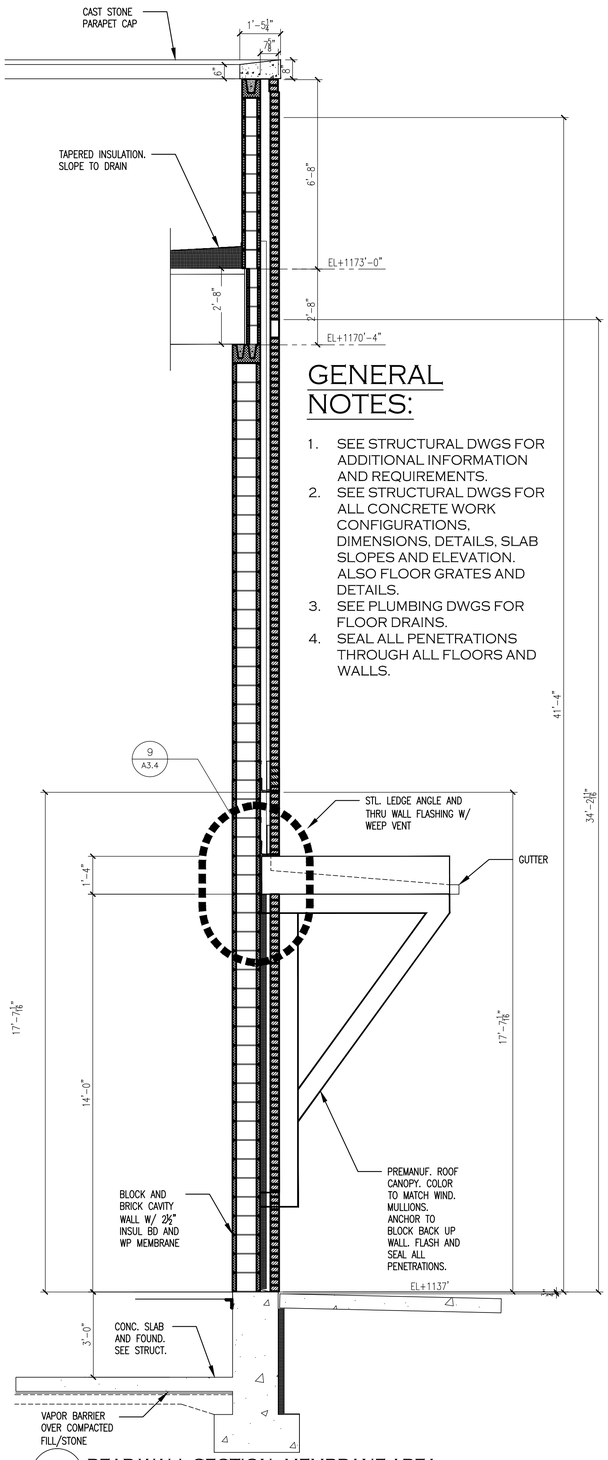
EXTERIOR WALL SECTIONS

W. SECTIONS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A3.2

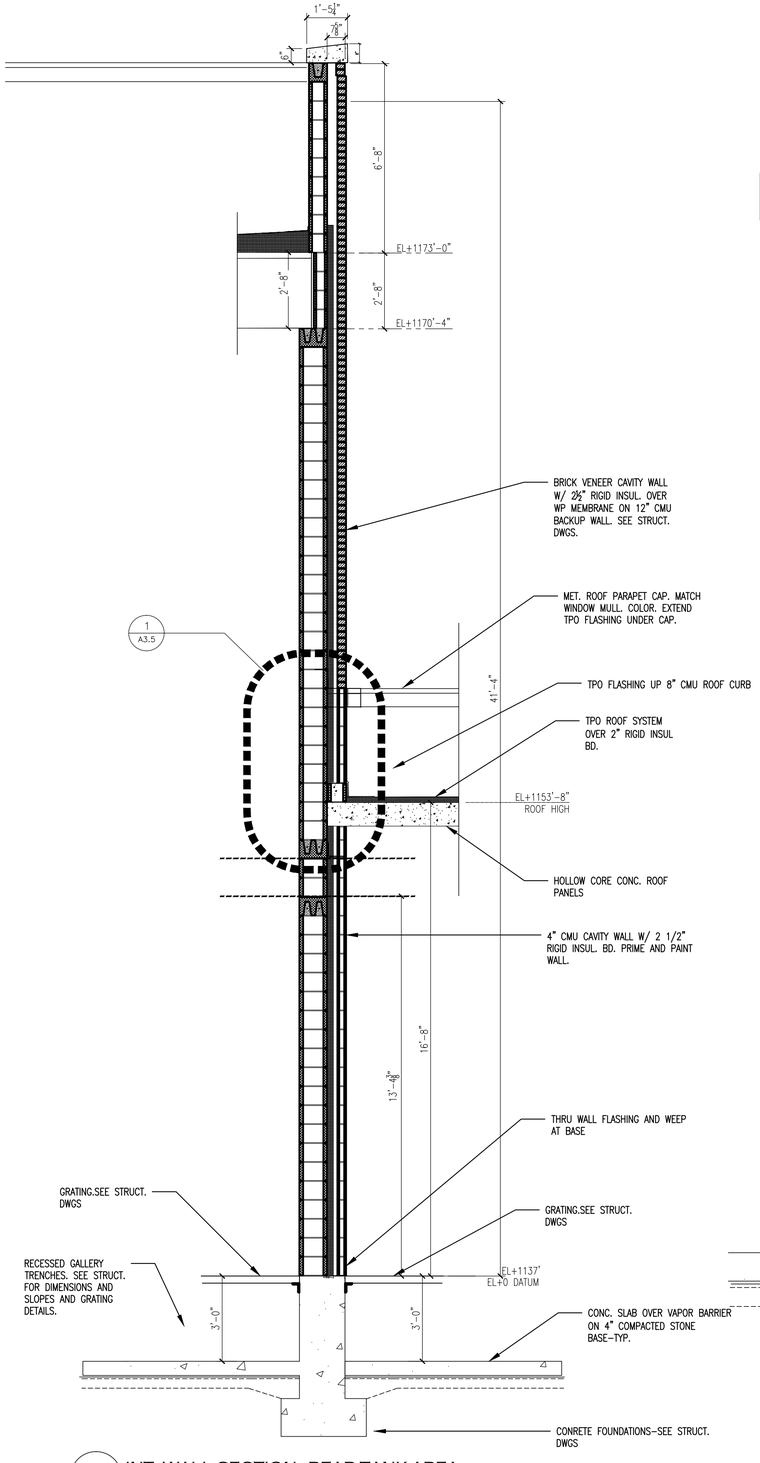
NOTE: SEE ELEVATION DRAWING FOR LOCATION OF WINDOWS AND PILASTERS



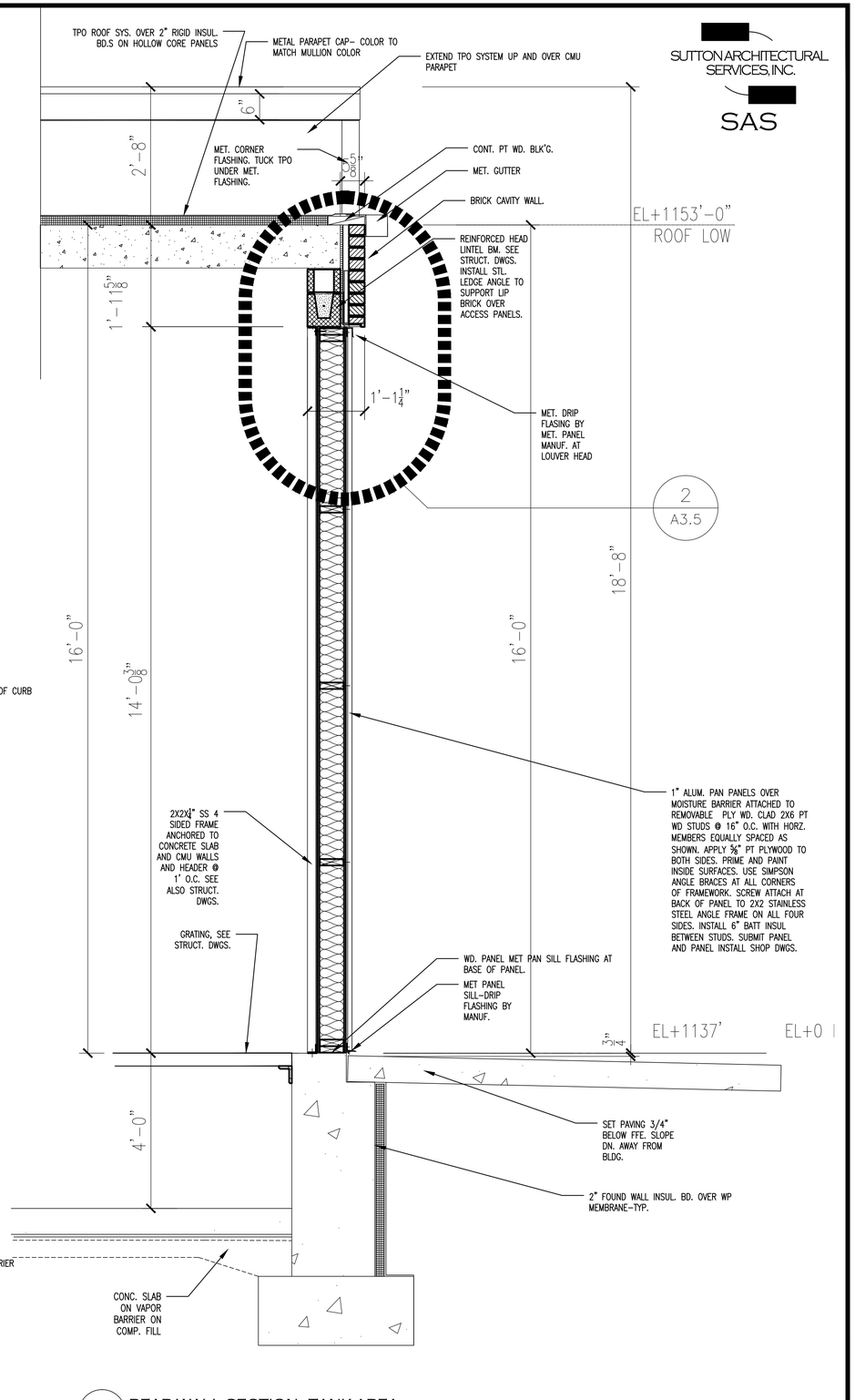
GENERAL NOTES:

1. SEE STRUCTURAL DWGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. SEE STRUCTURAL DWGS FOR ALL CONCRETE WORK CONFIGURATIONS, DIMENSIONS, DETAILS, SLAB SLOPES AND ELEVATION. ALSO FLOOR GRATES AND DETAILS.
3. SEE PLUMBING DWGS FOR FLOOR DRAINS.
4. SEAL ALL PENETRATIONS THROUGH ALL FLOORS AND WALLS.

1 REAR WALL SECTION - MEMBRANE AREA
3/4" = 1'



2 INT. WALL SECTION - REAR TANK AREA
3/4" = 1'



3 REAR WALL SECTION - TANK AREA
3/4" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 000027
REGISTERED ARCHITECT

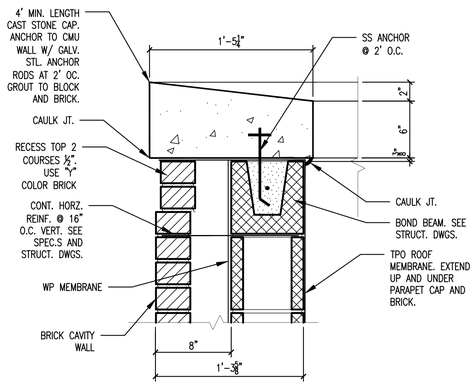
NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

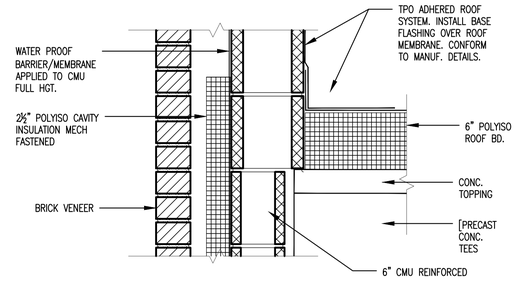
WALL SECTIONS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

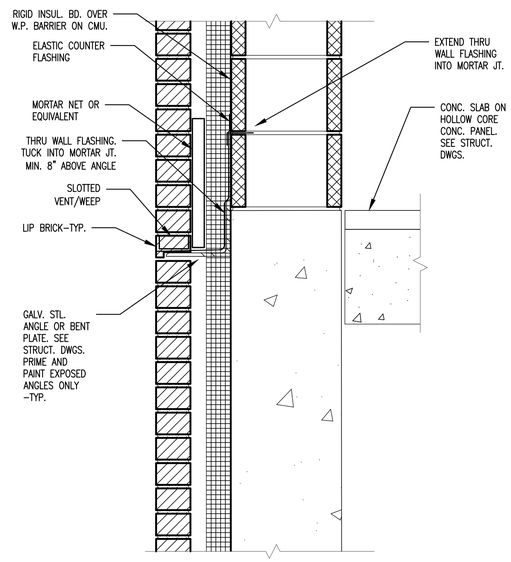
Project No.: 170110.00
Drawing No.: A3.3



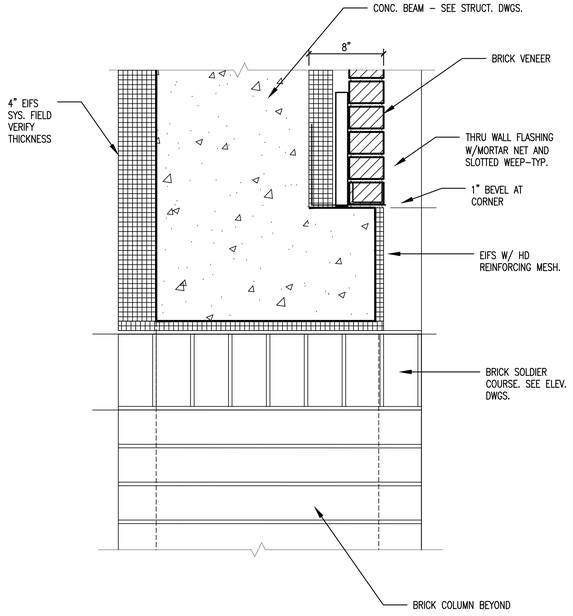
1 WALL SECTION -FRONT WALL- NON PILASTER PARAPET
1 1/2" = 1'



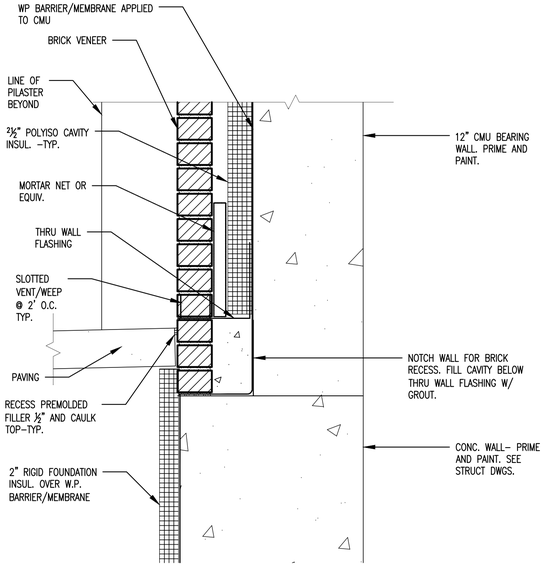
2 WALL SECTION -FRONT WALL- NON PILASTER PARAPET
1 1/2" = 1'



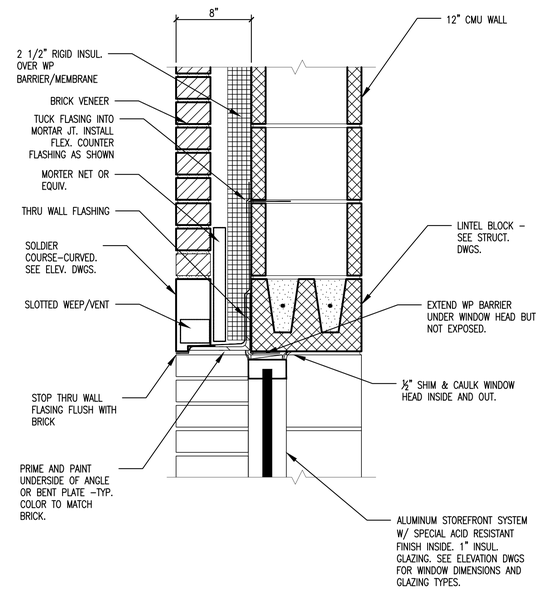
3 TYPICAL LEDGE ANGLE DETAIL
1 1/2" = 1'



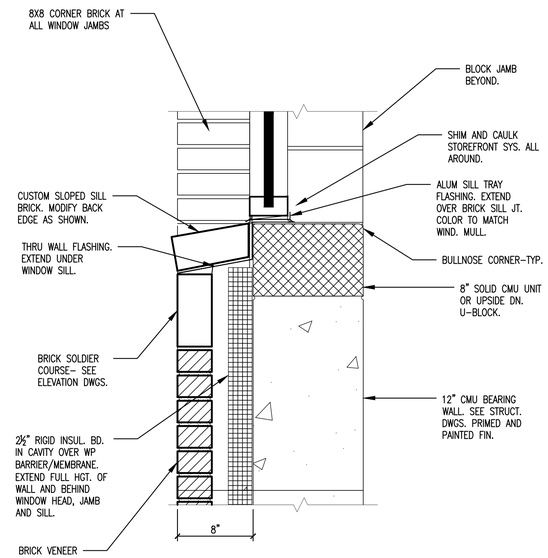
4 WALL SECTION -REAR WALL-AT COLUMN
1 1/2" = 1'



5 WALL SECTION -FRONT WALL- BASE DETAIL
1 1/2" = 1'



6 WALL SECTION -WINDOW HEAD DETAIL
1 1/2" = 1'

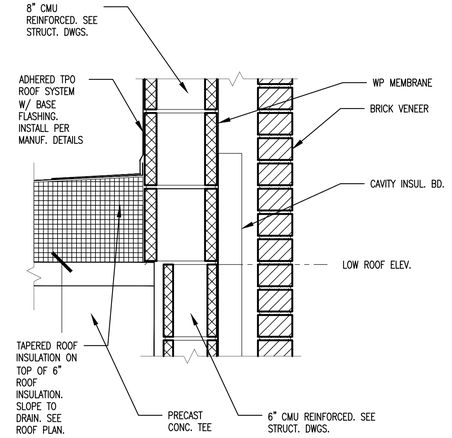


7 WALL SECTION -WINDOW SILL DETAIL
1 1/2" = 1'

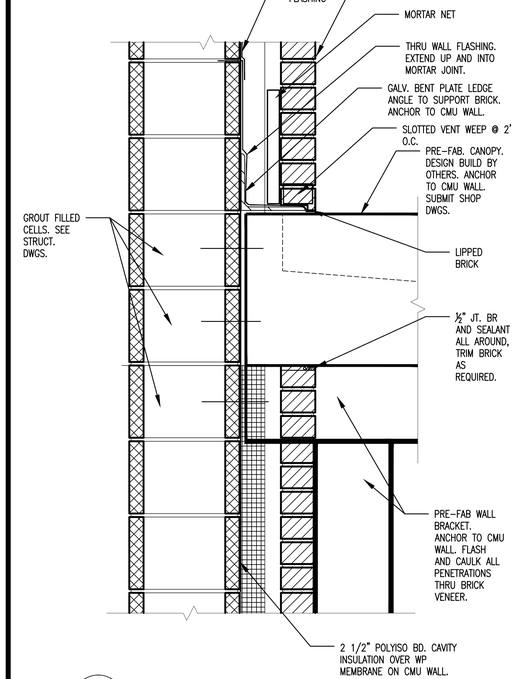
GENERAL NOTES:

1. SEE STRUCTURAL DWGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. SEE STRUCTURAL DWGS FOR ALL CONCRETE WORK CONFIGURATIONS, DIMENSIONS, DETAILS, SLAB SLOPES AND ELEVATION. ALSO FLOOR GRATES AND DETAILS.
3. SEE PLUMBING DWGS FOR FLOOR DRAINS.
4. SEAL ALL PENETRATIONS THROUGH ALL FLOORS AND WALLS.

[redacted]
SUTTON ARCHITECTURAL SERVICES, INC.
[redacted]
SAS



8 WALL SECTION -PARAPET BASE DETAIL
1 1/2" = 1'



9 WALL SECTION -CANOPY WALL CONNECTION
1 1/2" = 1'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO 000372
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

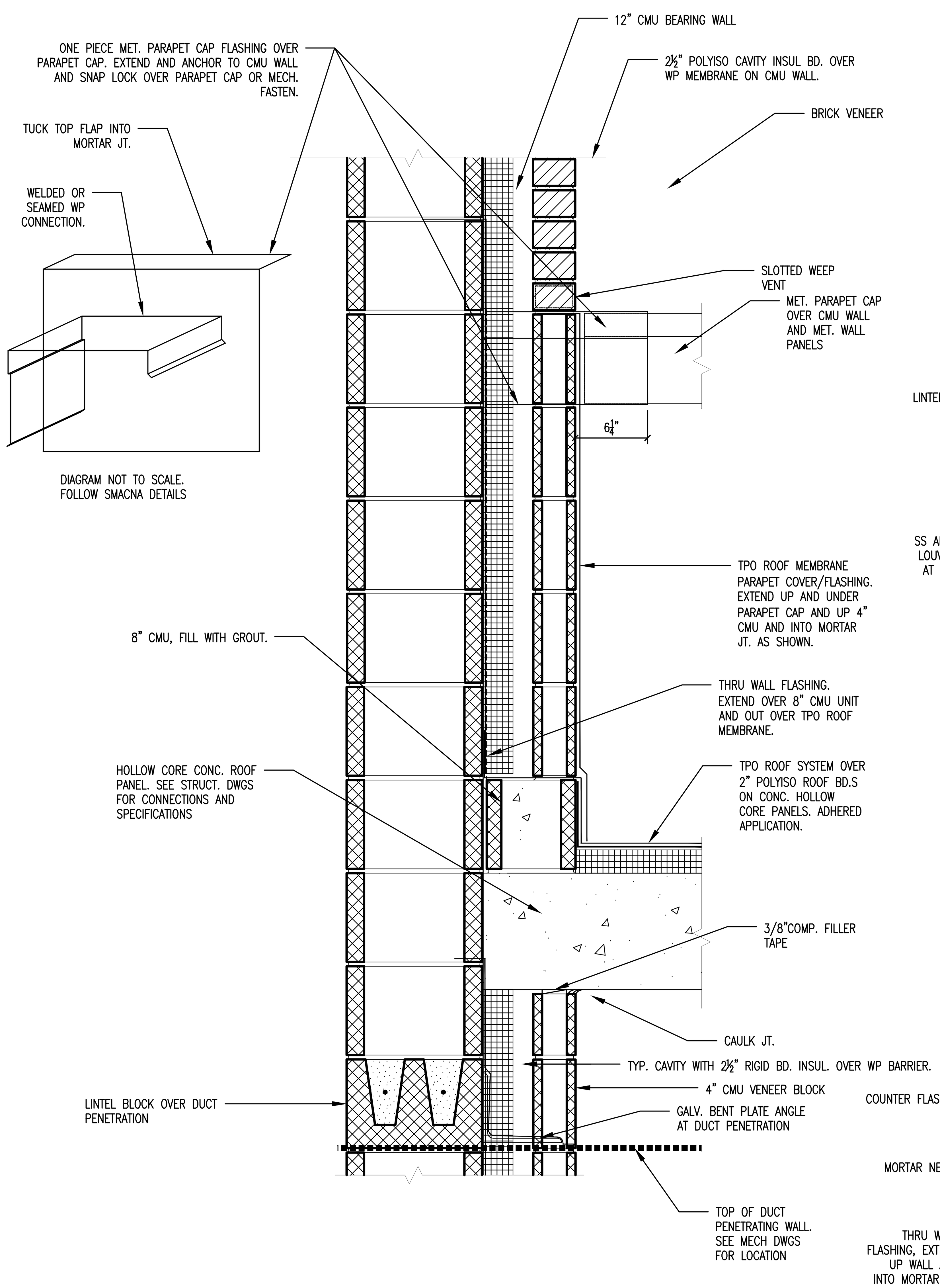
EXTERIOR WALL DETAILS

W. SECTIONS

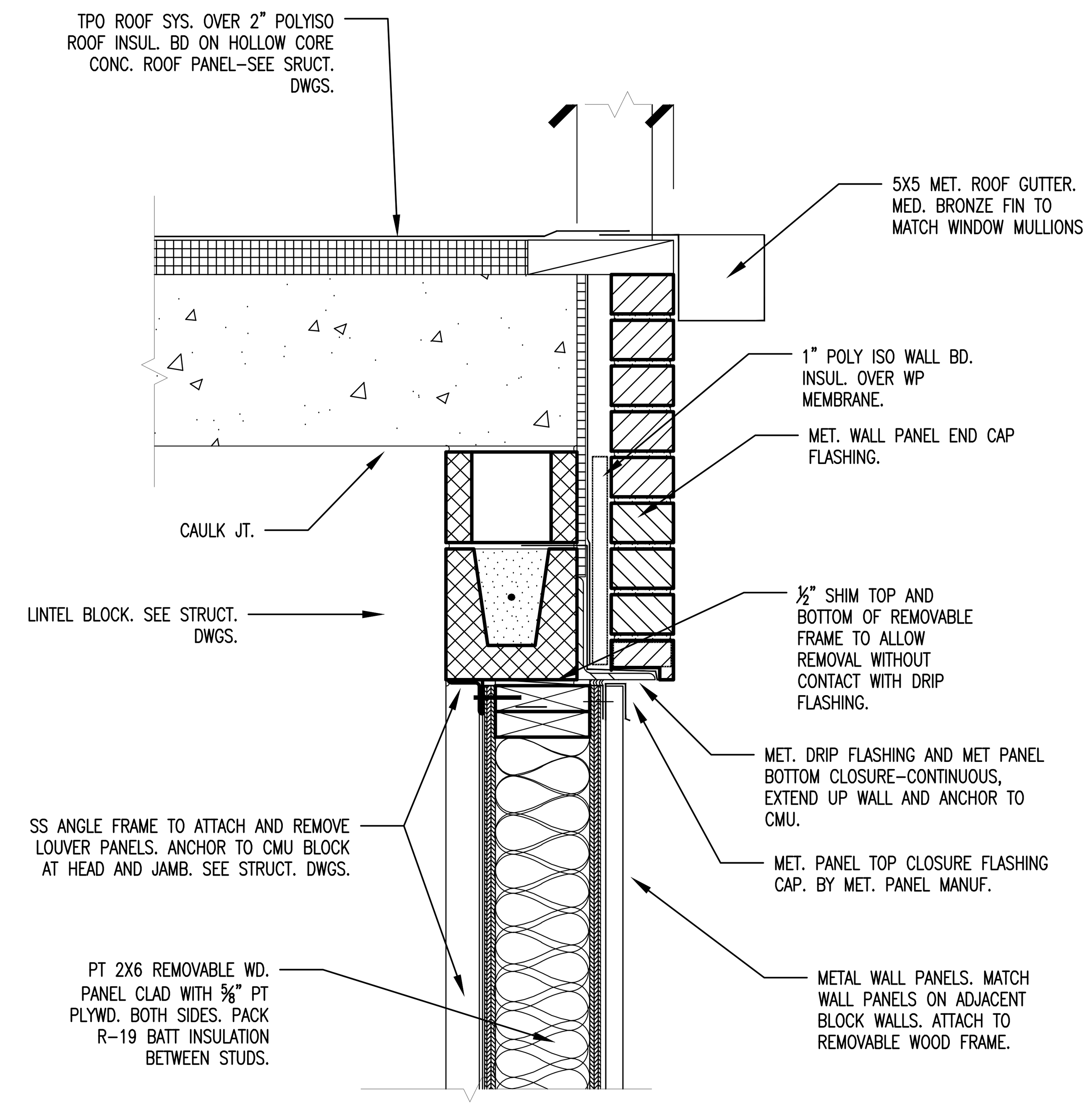
Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 4/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A3.4

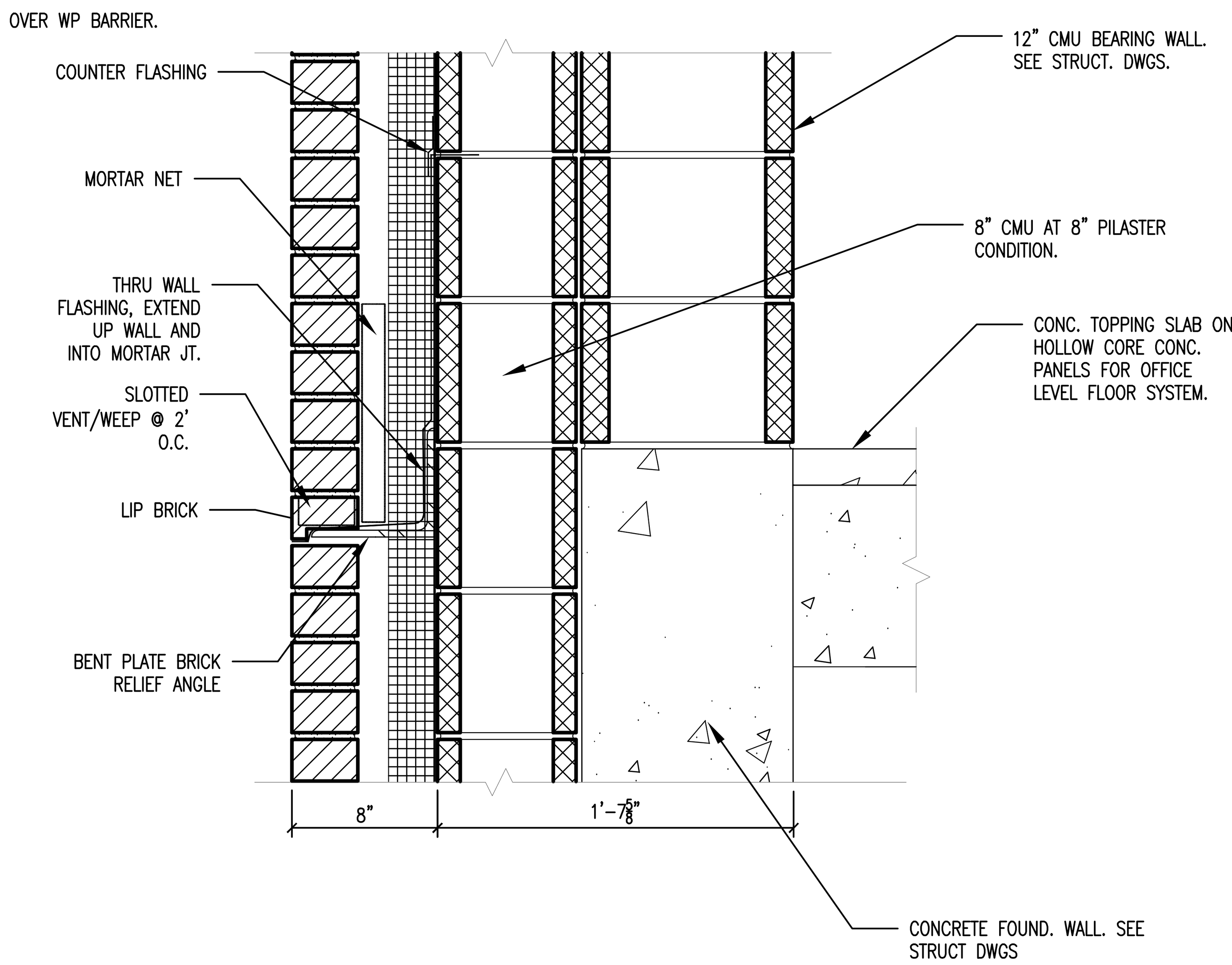
[redacted]
SUTTON ARCHITECTURAL SERVICES, INC.
[redacted]
SAS



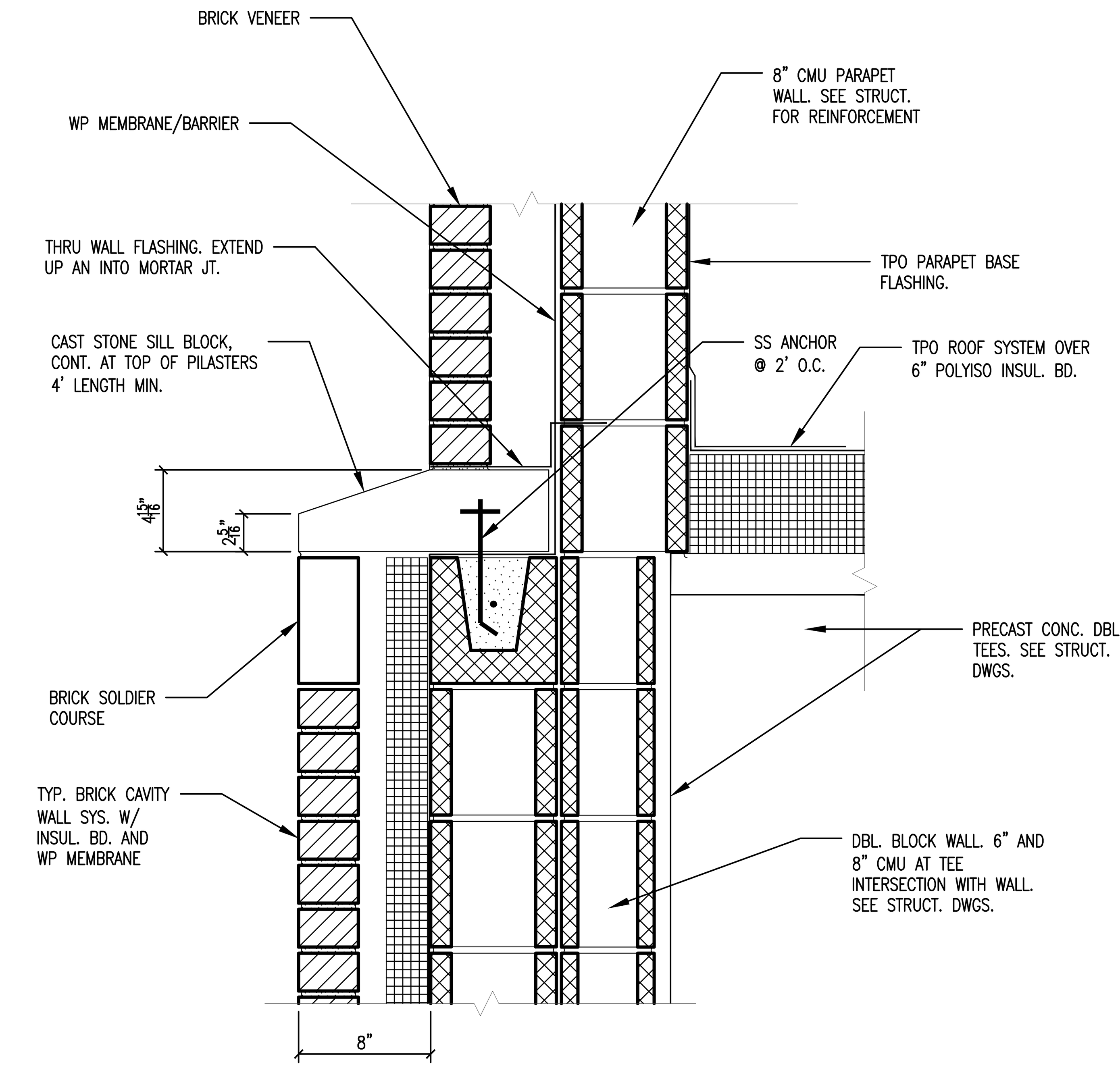
1 WALL SECTION -REAR WALL- AT LOW ROOF OVER TANK AREA
1 1/2" = 1'



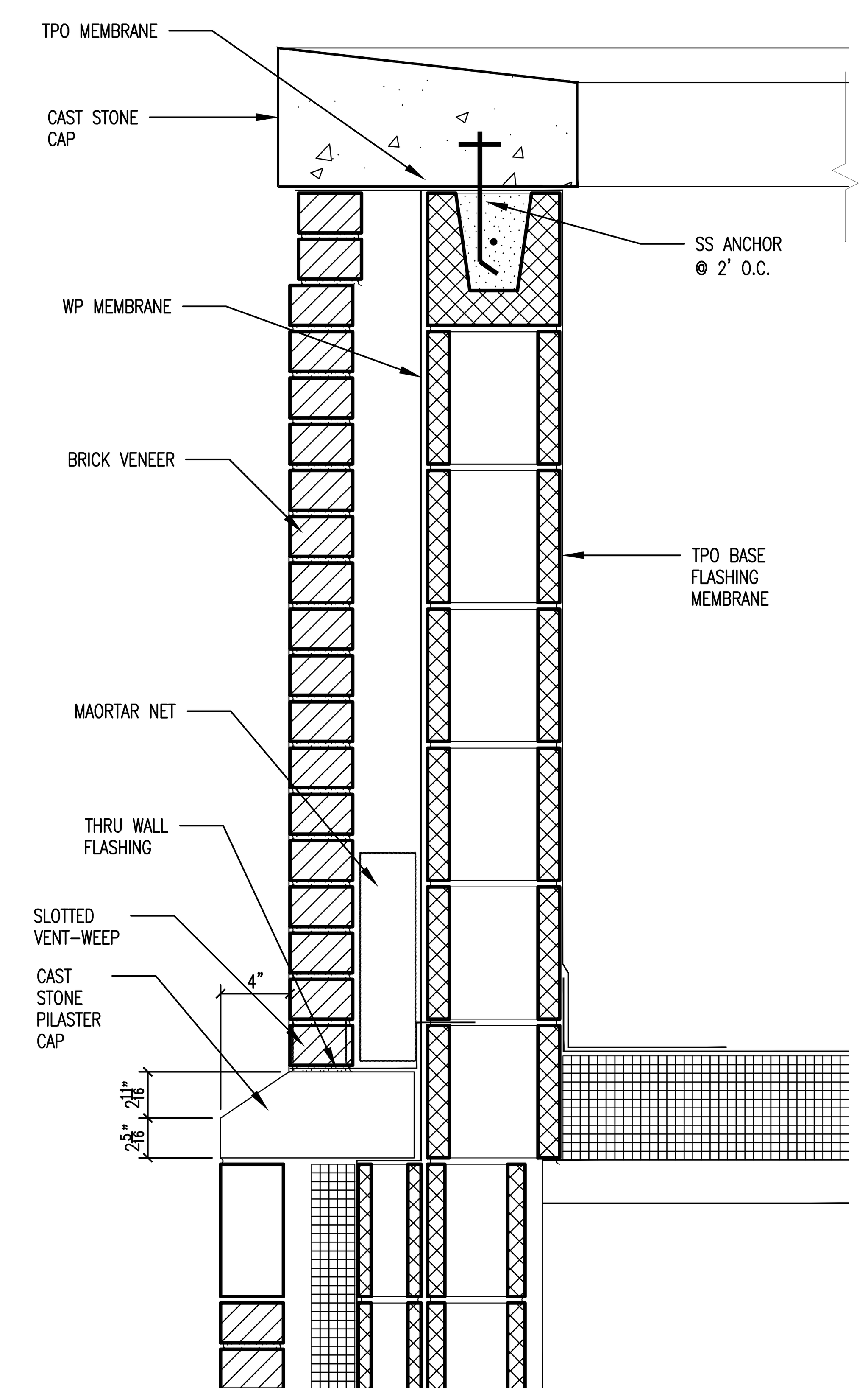
2 WALL SECTION -REAR WALL- AT LOUVER
1 1/2" = 1'



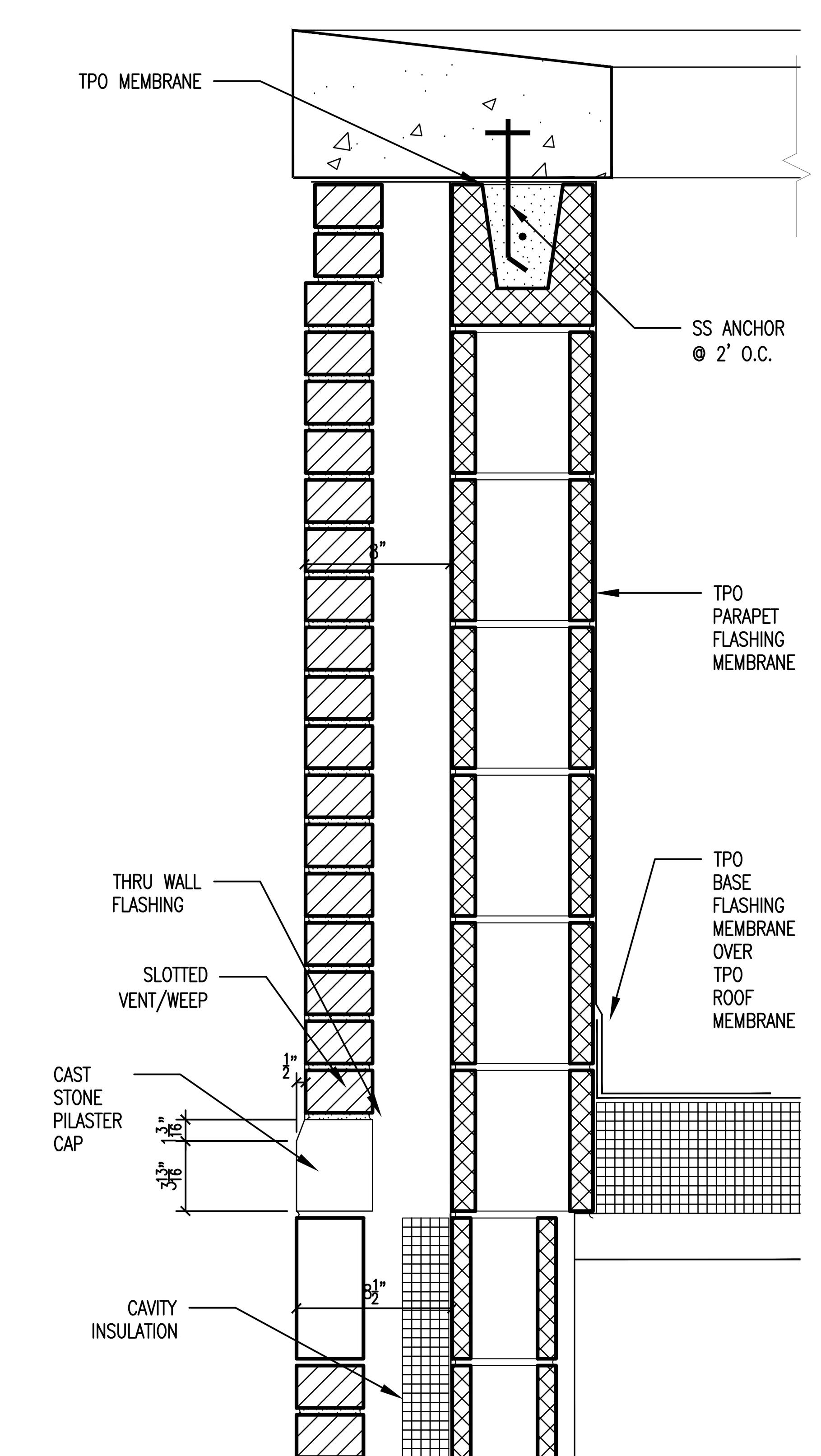
3 WALL SECTION -PILASTER RELEIF ANGLE DETAIL
1 1/2" = 1'



4 WALL SECTION -8" PILASTER CAP DETAIL
1 1/2" = 1'



5 WALL SECTION -4" PILASTER CAP DETAIL
1 1/2" = 1'



6 WALL SECTION -1/2" PILASTER CAP DETAIL
1 1/2" = 1'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 009892
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

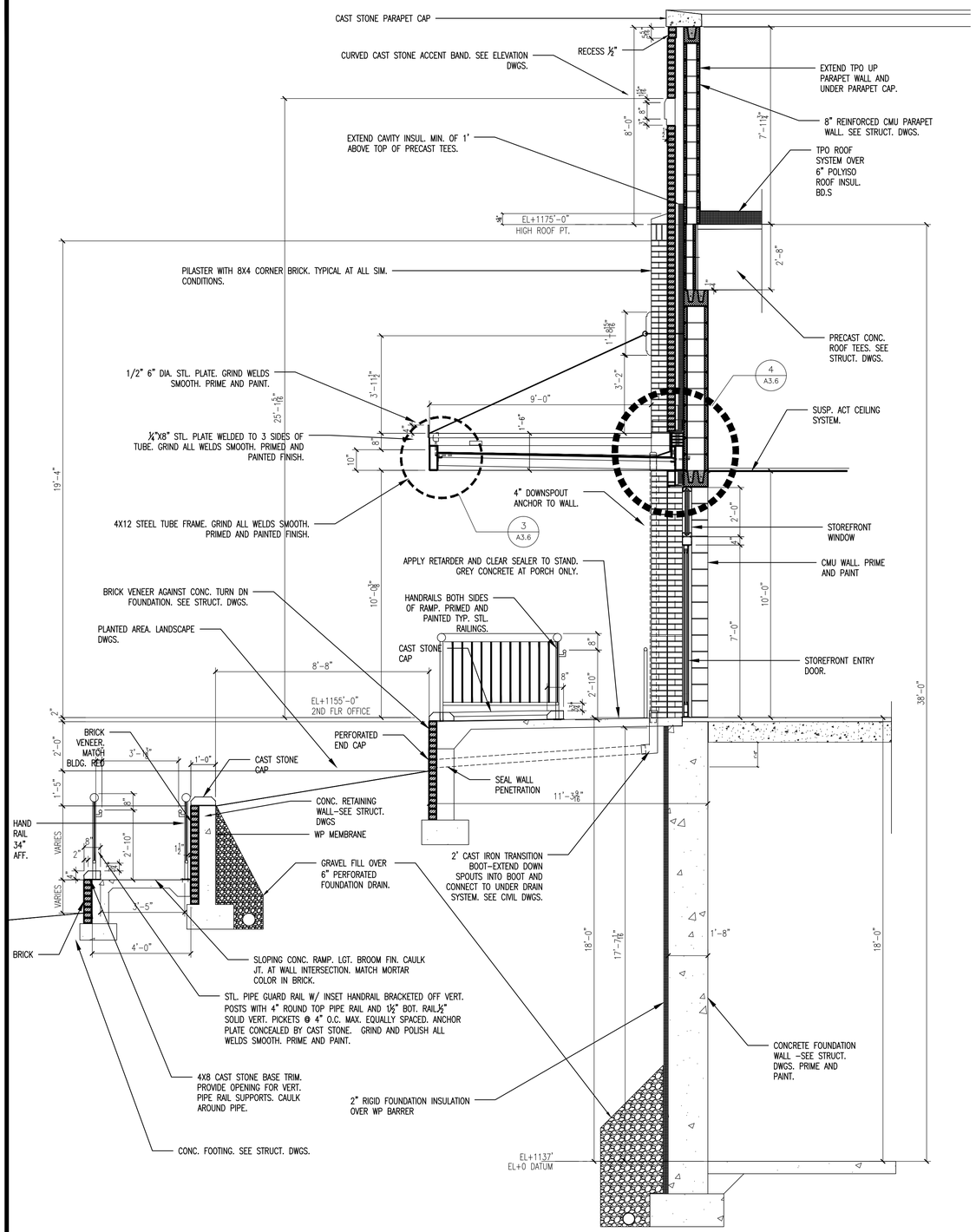
Buford Water Works Replacement
For the City of Buford, Georgia

WALL SECTIONS

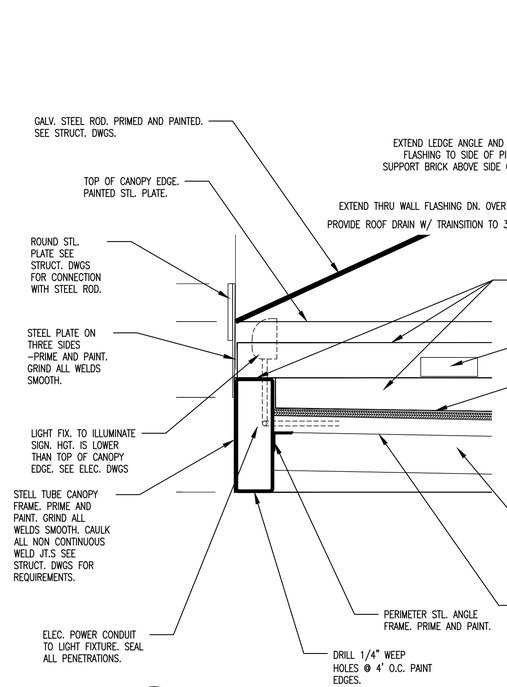
EXT. DETAILS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

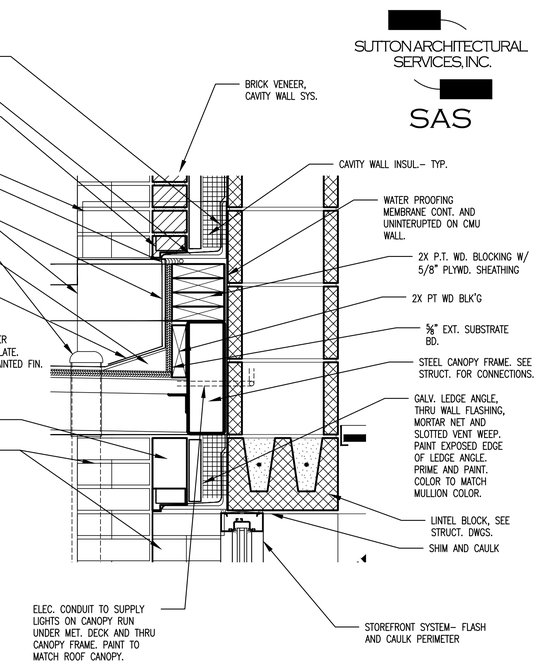
Project No.: 170110.00
Drawing No.: A3.5



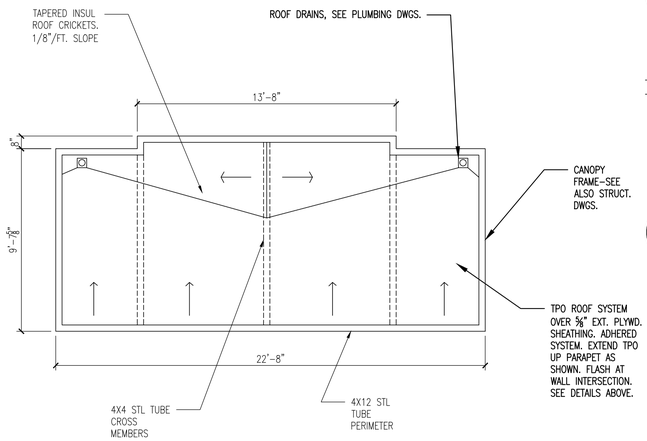
1 FRONT ENTRY CANOPY SECTION
3/8" = 1'



3 FRONT CANOPY DETAIL
3/8" = 1'

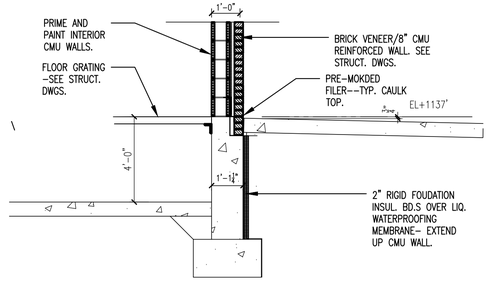


4 FRONT CANOPY DETAIL
3/8" = 1'

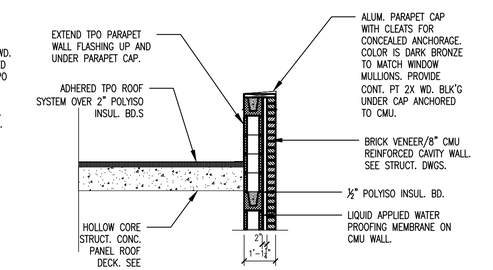


;NOTES:
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. PRIME AND PAINT ALL EXPOSED STEEL.
3. SEE STRUCT. DWGS FOR ADDITIONAL REQUREMENTS.
4. GRIND ALL WELDS SMOOTH.
5. CONCEAL ALL ELECTRICAL CONDUIT
6. ANCHOR LIGHT FIXTURES WITHOUT PENETRATING ROOF MEMBRANE.

2 FRONT CANOPY ROOF PLAN
3/8" = 1'



5 TANK AREA WALL BASE
3/8" = 1'



6 TANK AREA SIDE WALL
3/8" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 029522
REGISTERED ARCHITECT

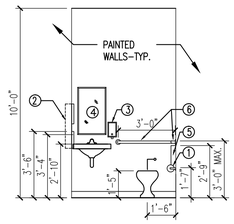
NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

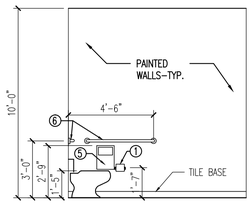
FRONT ENTRY SECTION

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

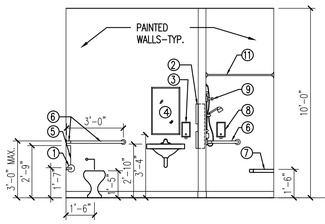
Project No.: 170110.00
Drawing No.: A3.6



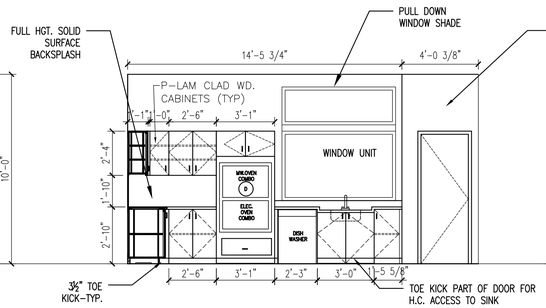
1 ELEVATION AT UNISEX PUBLIC TOILET
1/4" = 1'



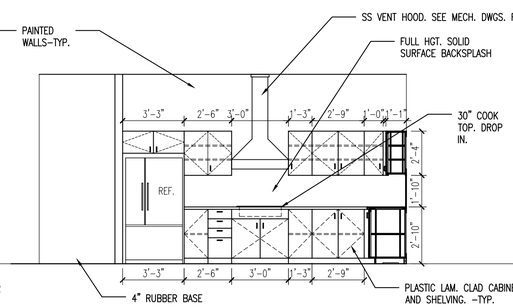
2 ELEVATION AT UNISEX PUBLIC TOILET
1/4" = 1'



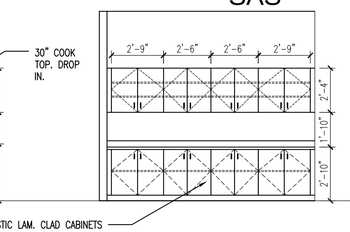
3 ELEVATION AT UNISEX TOILET
1/4" = 1'



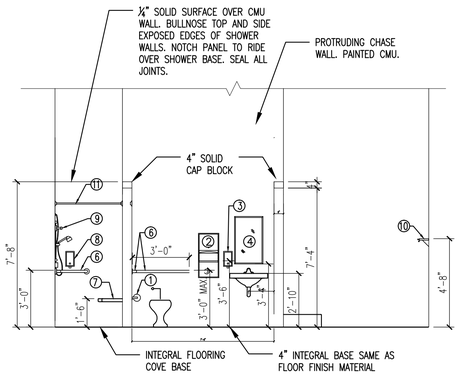
4 ELEVATION AT BREAK ROOM
1/4" = 1'



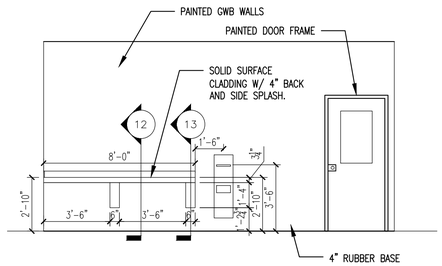
5 ELEVATION AT BREAK ROOM
1/4" = 1'



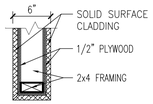
6 ELEVATION AT COPY/SUPPLY ROOM
1/4" = 1'



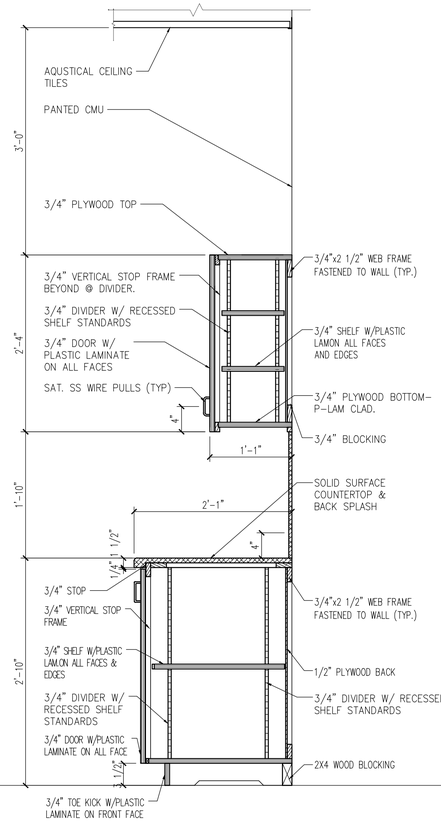
9 ELEVATION AT UNISEX LAV. & LOCKER RM.
1/4" = 1'



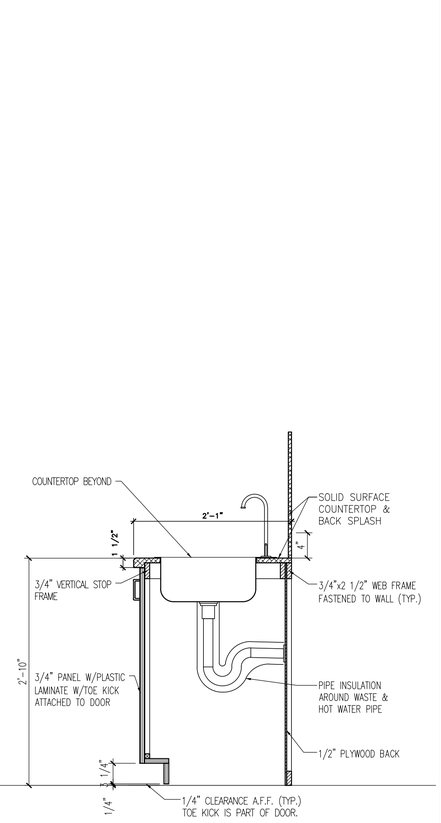
10 ELEVATION AT BREAK RM. COFFEE BAR
1/4" = 1'



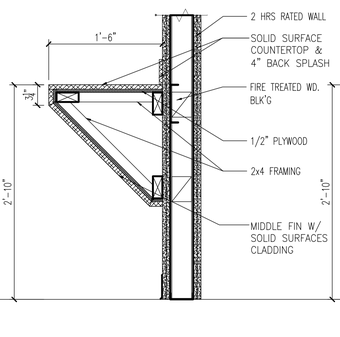
11 SECTION AT FIN
1" = 1"



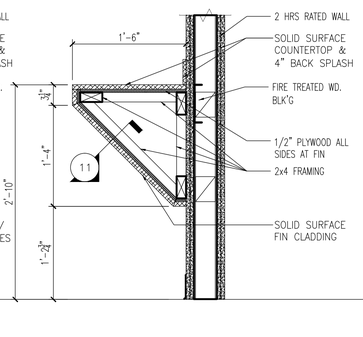
7 SECTION AT BASE & WALL CABINET
1" = 1"



8 SECTION AT BASE CABINET W/ SINK
1" = 1"



12 SECTION AT COFFEE BAR END CAP
1" = 1"



13 SECTION AT COFFEE BAR
1" = 1"

TOILET ACCESSORIES:

1.	TOILET PAPER DISP:	BOBRICK B-2740	ONE PER TOILET, IN ALL TOILET ROOMS
2.	PAPER TOWEL/TRASH COMBO:	BOBRICK B-43699	ONE PER TOILET RM AND SHOWER RM & BREAK RM.
3.	SOAP DISPENSOR:	BOBRICK B-4112	WALL MOUNTED, TOILET RMS, LOCKER RM & BREAK RM
4.	WALL MIRROR	BOBRICK B-165 2436	OVER EA. SINK IN TOILET RMS AND LOCKER RM.
5.	FEM. NAPKIN DISP.	ASI 0852	SURFACE MOUNT. INCLUDE AT EA. UNI-SEX TOILET/LOCKER RM
6.	SS GRAB BARS:	BOBRICK B-6806-42, 36 & 18.	FOR HC TOILETS AND B-68616 IN SHOWER.
7.	HC SHOWER SEAT	BOBRICK B-5181	
8.	SHOWER SOAP HOLDER:	ASI-0346 WALL MOUNT	
9.	TOWEL BAR AND HOOKS:	BOBRICK B-530-18 BAR AND B-6777 HOOK (ONE EA. AT SHOWER, HOOK @ TOILETS	
10.	JANITORS ACCESSORIES:	BOBRICK B-224-36 BROOM/MOP HOLDER - ONE EACH JAN. CLOSET/AREA.	
11.	SHOWER CURTAIN AND ROD:	BOBRICK B-204-2 VINYL CURTAIN AND BOBRICK SS ROD. FIELD VERIFY WIDTH.	

NOTE: PROVIDE ALL OF THESE ACCESSORIES FOR EACH TOILET ROOM AND LOCKER ROOM AREA.
SHOWER ACCESSORIES ONLY GO BOTH SHOWERS. PROVIDE THESE BASIS OF DESIGN PRODUCTS
OR AN EQUIVALENT PRODUCT. INSTALL AS PER ADA REQUIREMENTS. ALL ACCESSORIES ARE STAINLESS STEEL.

GENERAL NOTES:

1. ALL SURROUNDING WALLS ARE PRIMED AND PAINTED.
2. INSTALL FLOOR BASE AS PER FINISH SCHEDULE.
3. ALL CABINETS ARE P-LAM CLAD INCLUDING SHELVING.
4. P-LAM ON CABINETS SHALL MATCH DOOR P-LAM
5. ALL WD. BLOCKING IN WALLS IS FIRE TREATED.
6. SOLID SURFACE THICKNESS IS AS FOLLOWS: ½" FOR HORZ. SURFACES AND ¼" FOR VERTICAL SURFACES. BACK UP ALL SOLID SURFACE WITH ½" PLYWD. MIN. BULLNOSE ALL SOLID SURFACE OUTSIDE CORNERS UNLESS NOTED OTHERWISE.
7. USE ONLY SELF CLOSING CONCEALED HINGES FOR CABINETS
8. PULLS ARE SS WIRE TYPE. 5" IN LENGTH.
9. EXTEND FLOOR FINISH UNDER SINKS. INCLUDE BASE UNDER SINKS.
10. ANCHOR CABINETS TO WALL SECURELY. USE MASONRY TYPE ANCHORS AT CMU WALLS.
11. PROVIDE UTILITY CONNECTIONS TO ALL APPLIANCES. COORDINATE CABINET DIMENSIONS AND CUT OUTS WITH APPLIANCES ACTUALLY PURCHASED.
12. SEE A1.8 FOR APPLIANCE SPECIFICATIONS
13. SEE MECH DWGS FOR KITCHEN HOOD.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 020522
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

INTERIOR WALL ELEVATIONS

INTERIOR ELEV.
& MILLWORK DTLS

Project Manager:
Jolene Northrop, P.E.

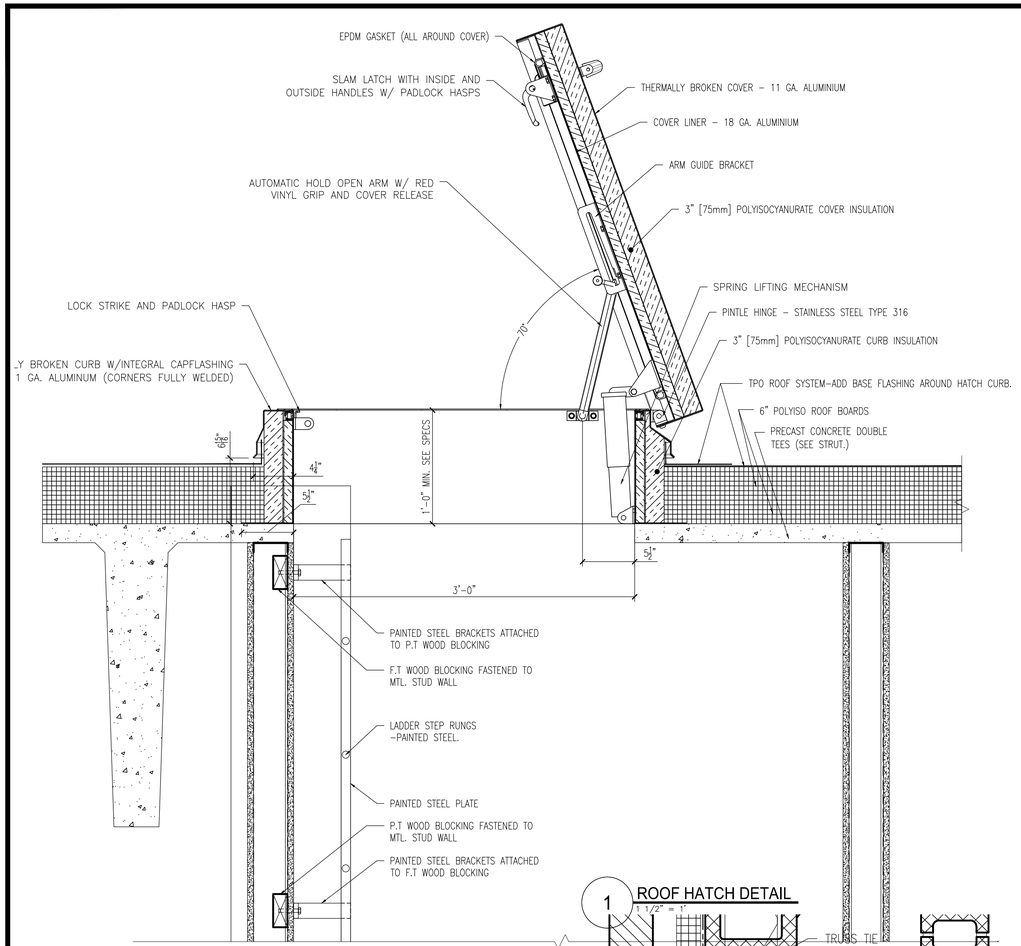
Drawn By:	Checked By:
PS	PS

Date: 04/14/21

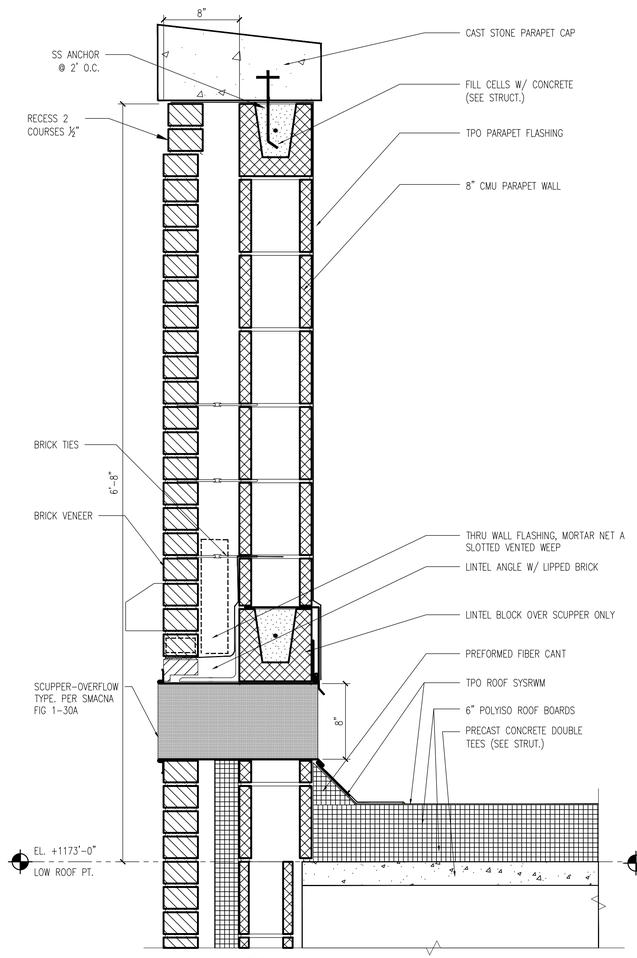
Scale: As Shown

Project No.:
170110.00

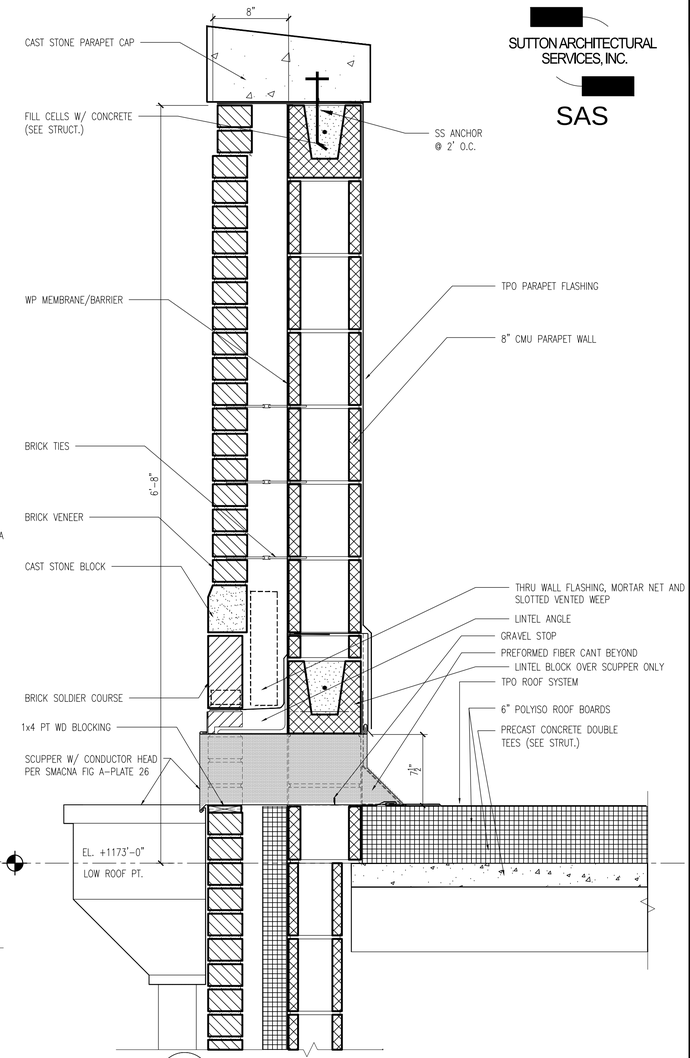
Drawing No.:
A4.1



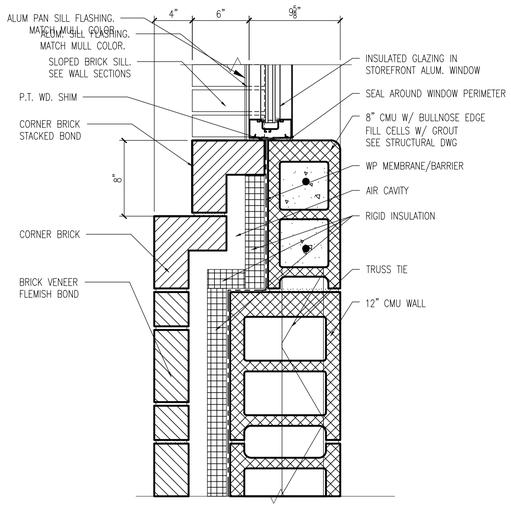
1 ROOF HATCH DETAIL
1 1/2" = 1'



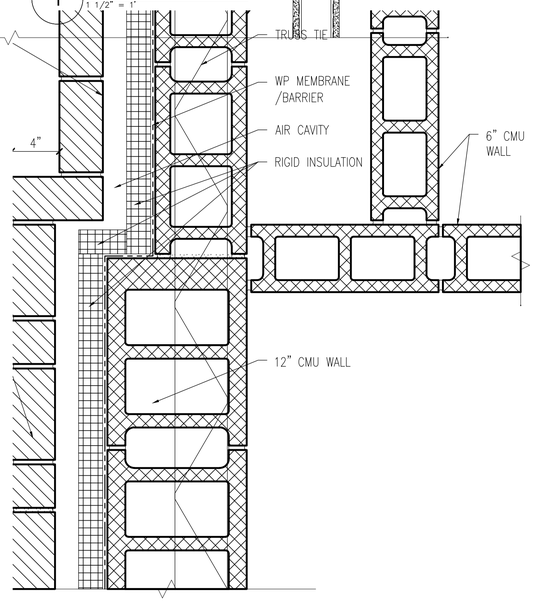
2 ROOF SCUPPER OVER FLOW DETAIL
1 1/2" = 1'



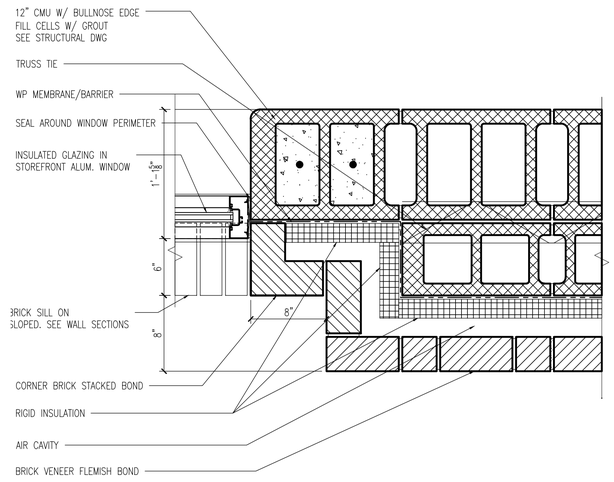
3 ROOF SCUPPER W/ CONDUCTOR HEAD DETAIL
1 1/2" = 1'



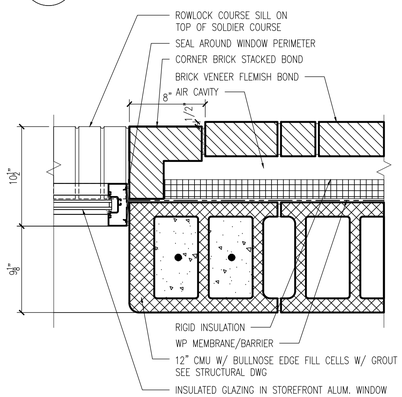
4 PLAN DETAIL AT WINDOW ON LEFT SIDE WALL
1 1/2" = 1'



5 PLAN DETAIL AT WALL RECESS ON LOCKER ROOM
1 1/2" = 1'



6 PLAN DETAIL AT WINDOW ON FRONT ELEVATION
1 1/2" = 1'



7 PLAN DETAIL AT WINDOW ON BACK ELEVATION
1 1/2" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.
[redacted]
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 029021
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

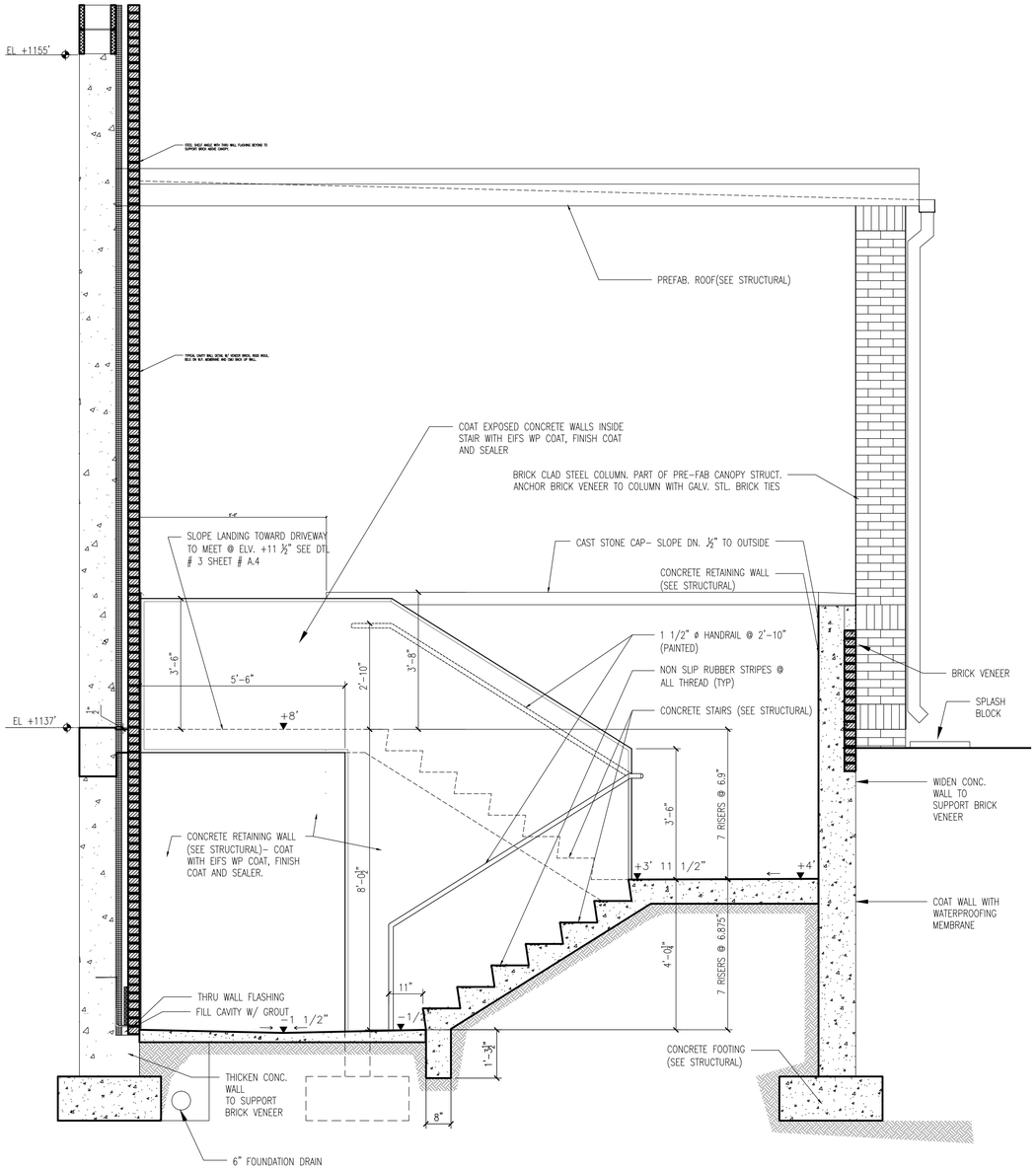
Buford Water Works Replacement
For the City of Buford, Georgia

PLAN AND ROOF DETAILS

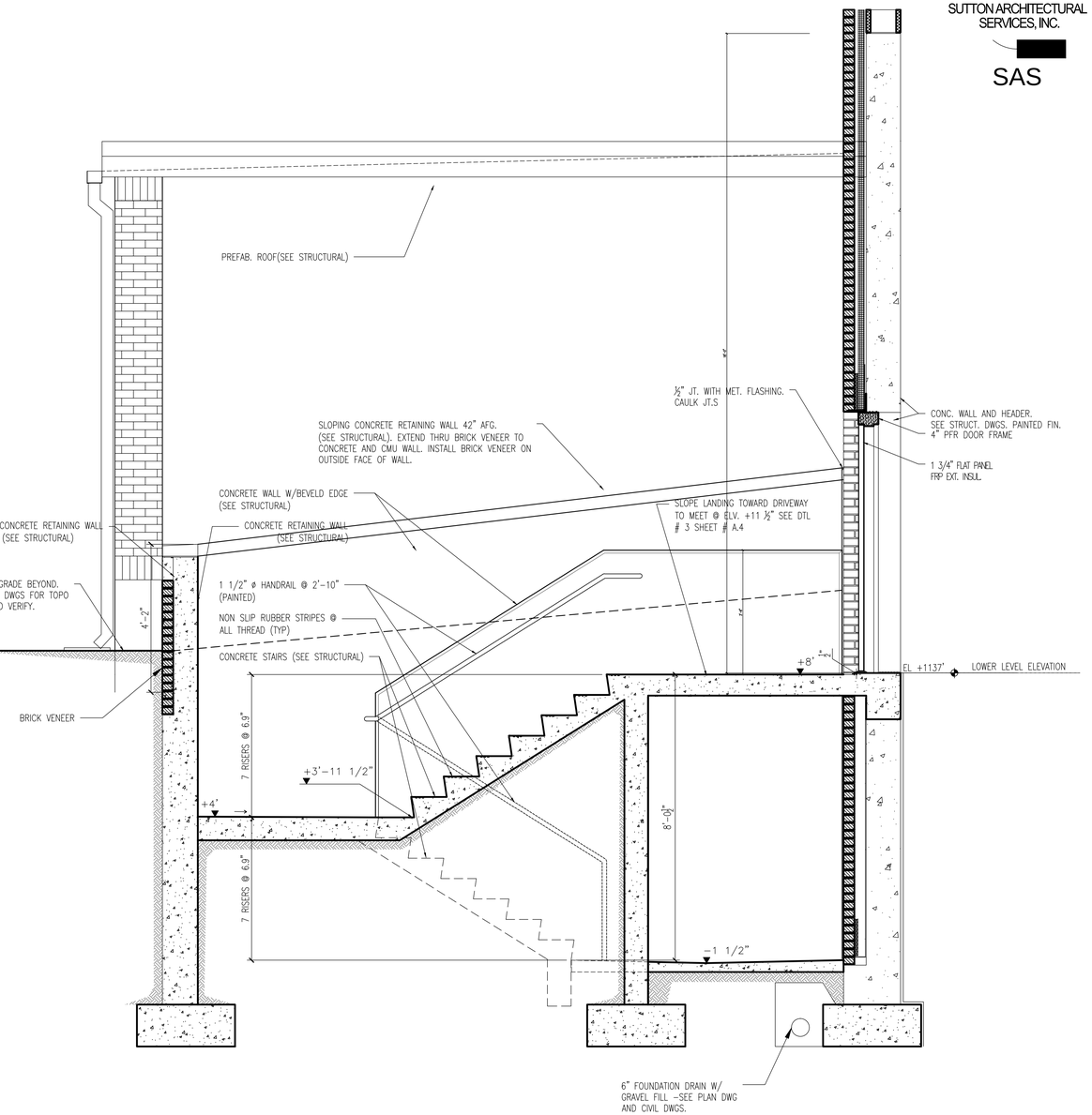
PLAN / ROOF DETAILS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A5.1



1 SECTION AT EXTERIOR STAIRS
1/2" = 1'



2 SECTION AT EXTERIOR STAIRS
1/2" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 026022
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

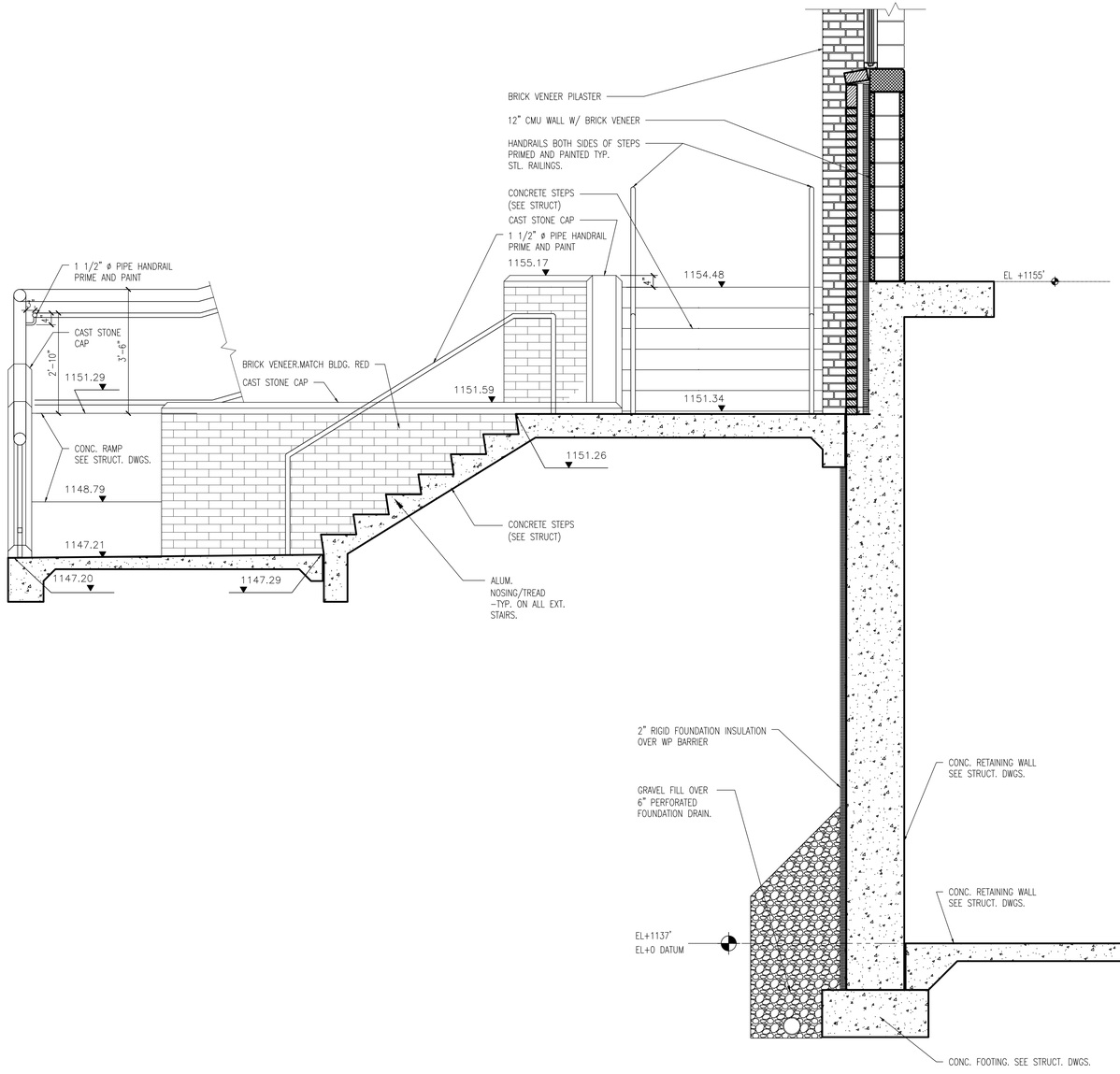
Buford Water Works Replacement
For the City of Buford, Georgia

WALL SECTIONS

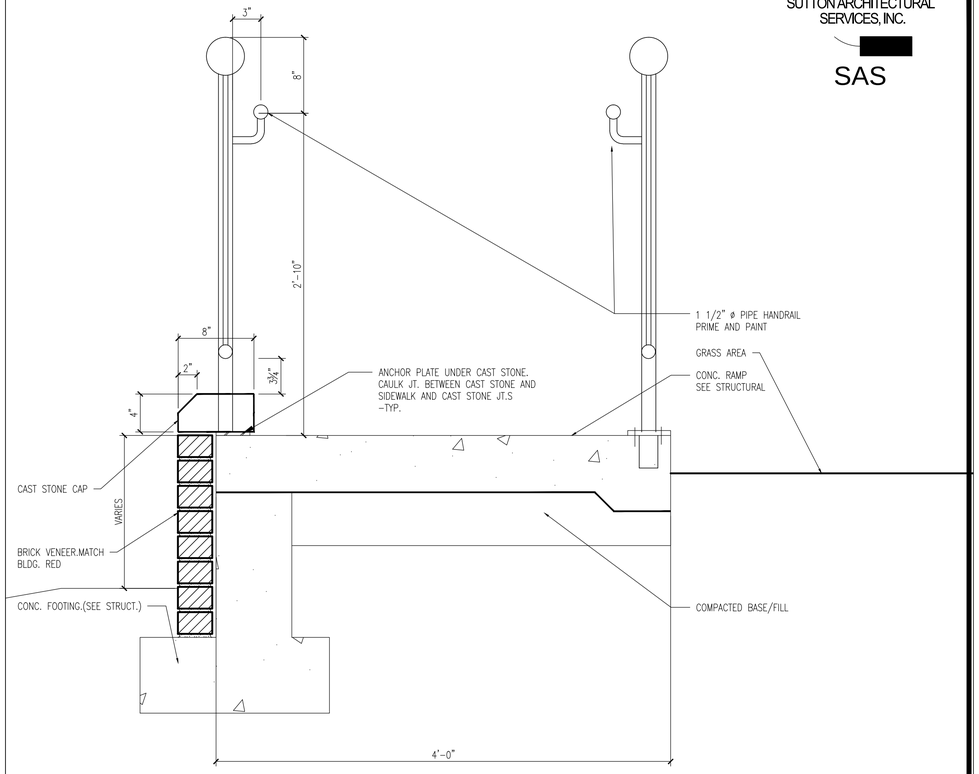
EXTERIOR STAIRS DETAILS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

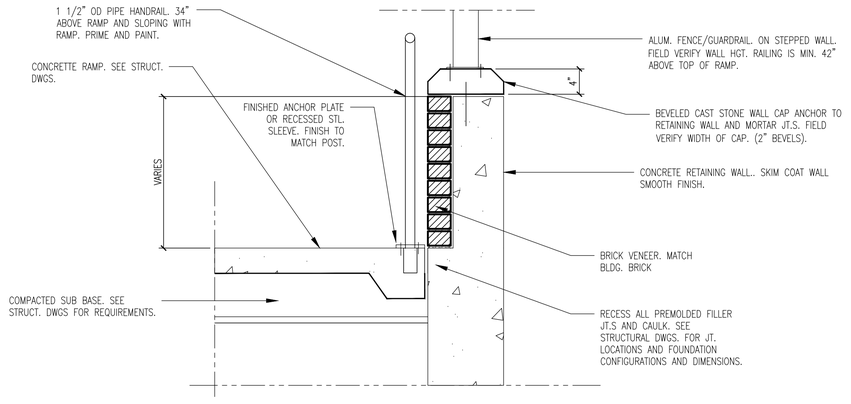
Project No.: 170110.00
Drawing No.: A5.2



1 SECTION AT FRONT ENTRANCE STAIR #1 AND RAMP
1/2" = 1'



2 SECTION AT RAMP
1/2" = 1'



3 SECTION AT RAMP
1/2" = 1'

SUTTON ARCHITECTURAL SERVICES, INC.

SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 008572
REGISTERED ARCHITECT

NO.	DATE	REVISION
	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

WALL SECTIONS

EXTERIOR STAIRS DETAILS

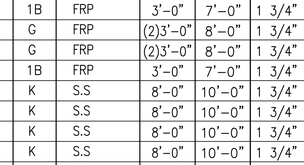
Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A5.3

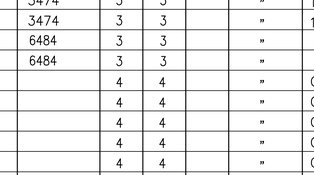
DOOR SCHEDULE

DOOR						FRAME (FOR DTLS. SEE SHEET A*.* UNLESS NOTED OTHERWISE)					HDWR SET	REMARKS
DOOR NO.	TYPE	MATERIAL	WIDTH	HEIGHT	THICK.	TYPE	SIZE	HEAD	JAMB	SILL		
101	E3	HM	3'-0"	7'-0"	1 3/4"	1	3474	3	3		See Specs	
102	E3	HM	3'-0"	7'-0"	1 3/4"	1	3474	3	3		"	
103	J	S.S	6'-0"	8'-0"				4	4		"	OVERHEAD COILING DOOR
104	E3	H.M.	3'-0"	7'-0"	1 3/4"	1	3474	6			"	EXT. INSUL. DOOR W CARD READER
105	E3	HM	3'-0"	7'-0"	1 3/4"	1	3474	3	3		"	
106	B	STOREFRONT	(2)3'-0"	8'-0"	1 3/4"	SEE INTER ELEV.	SEE INTER ELEV.	5	5		"	ALUM. STOREFRONT WITH CARD READER
107	C	FRP	3'-0"	7'-0"	1 3/4"	3	3474	6	6,7		"	WITH CARD READER
108	H	S.S	10'-0"	10'-0"	1 3/4"			4	4,7		"	OVERHEAD COILING DOOR
109	G	FRP	(2)3'-0"	8'-0"	1 3/4"	6B	6484	3	3		"	
110	1B	FRP	3'-0"	7'-0"	1 3/4"	1B	3474	3	3		"	1½ HR. B-LABEL DOOR
111	1B	FRP	3'-0"	7'-0"	1 3/4"	1B	3474	3	3		"	1½ HR. B-LABEL DOOR
112	G	FRP	(2)3'-0"	8'-0"	1 3/4"	6B	6484	3	3		"	
113	G	FRP	(2)3'-0"	8'-0"	1 3/4"	6B	6484	3	3		"	
114	1B	FRP	3'-0"	7'-0"	1 3/4"			4	4		"	CARD READER
115	K	S.S	8'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
116	K	S.S	8'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
117	K	S.S	8'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
118	K	S.S	8'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
119	K	S.S	8'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
120	H	S.S	10'-0"	10'-0"	1 3/4"			4	4		"	OVERHEAD COILING DOOR
121	E2	F.R.P.	3'-0"	7'-0"	1 3/4"	1B	3474	6	6			WITH CARD READER
122	E2	F.R.P.	3'-0"	7'-0"	1 3/4"	1B	3474	4	4			
201	A	STOREFRONT	3'-0"	7'-0"	1 3/4"	SEE ELEV.	SEE ELEV.	5	5		"	STOREFRONT W/ CARD READER & BUZZER
202	E	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1			
203	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1		"	
204	E	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1		"	
205	E	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1		"	
206	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1			
207	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	2	2		"	1-1/2 HR. B LABEL/RATED GLAZING
208	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	2	2		"	
209	E	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	2	2		"	1-1/2 HR. B LABEL
210	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1		"	
211	——	ALUM/GL.	3'-0"	7'-0"	1 3/4"	4-ALUM	3472	SEE	A6.2		"	NON RATED ALUM DOOR AND FRAME
212	——	MET./GL.	3'-0"	7'-0"	1 3/4"	4-MET.	3472	SEE	A6.2		"	2 HR. RATED MET. DOOR AND FRAME
213	D	S.C.W.	3'-0"	7'-0"	1 3/4"	2	3472	1	1		"	
214	——	MET.	3'-0"	7'-0"	1 3/4"	SEE A6.2	3474	SEE	A6.2		"	2 HR. FIRE RATED. SEE DETAILS ON A6.2
215	F	S.C.W.	2'-6"	7'-0"	1 3/4"	8	21072	1	1		"	KITCHEN CLOSET DOOR
D1	ES	MET.	3'-0"	7'-0"	1 3/4"	1	3474	3	3		"	DUMPSTER ENCLOSURE DOOR

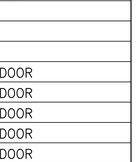
NOTE; PROVIDE ALL ELECTRICAL, DOOR AND FRAME MODIFICATIONS REQUIRED FOR CARD READERS.
ALL SCW DOOR TO RECEIVE A P-LAM VENEER

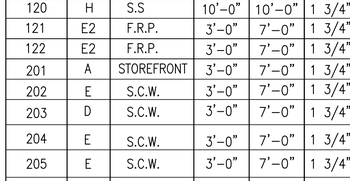


H1

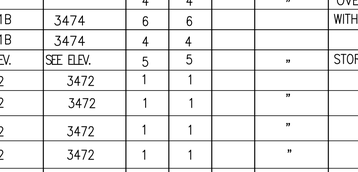


H2


H5

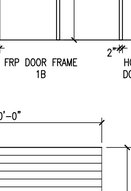


J1

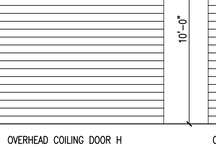


J2

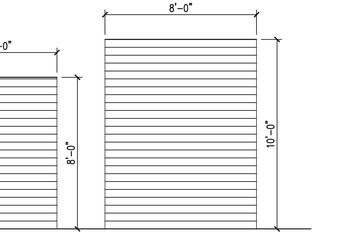

J5



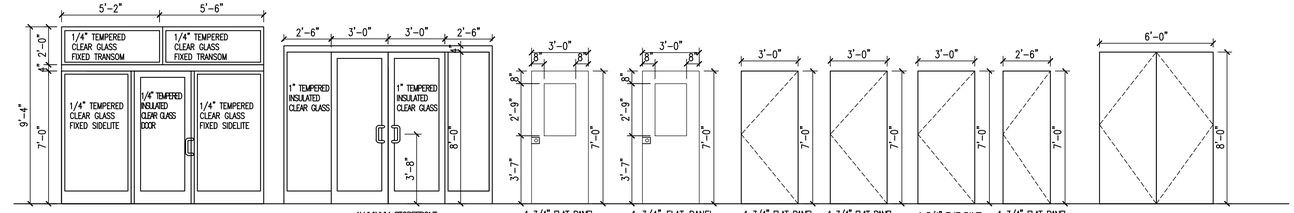
H3

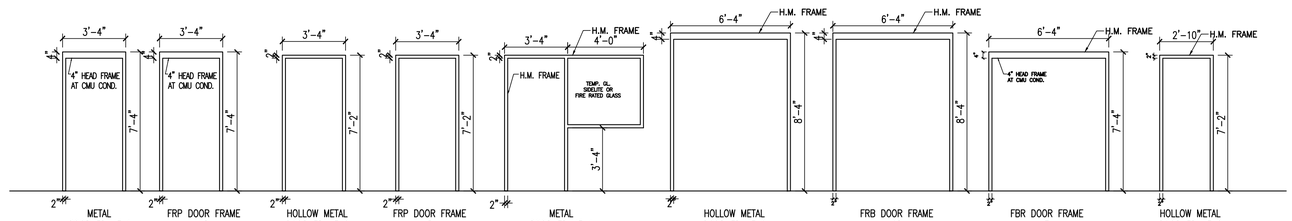


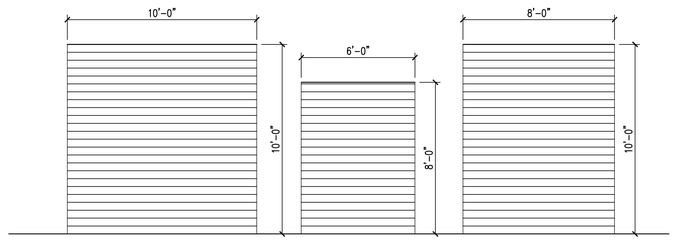
J3

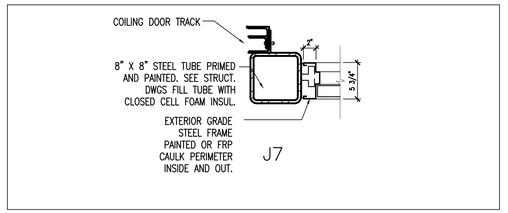


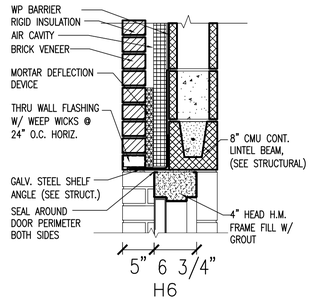
J6



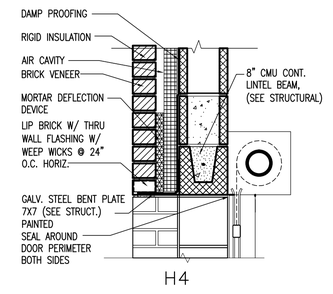




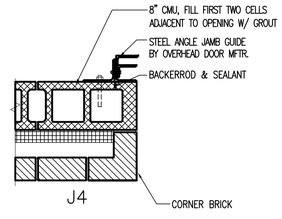




H6



H4



J4

GENERAL NOTES:

1. PAINT EXPOSED CMU AND STEEL LINTEL ANGLES AT OPEING HEADS AND JAMBS CUSTOM COLOR TO MATCH RED BRICK COLOR. SUBMIT PAINT SAMPLES FOR APPROVAL.
2. CAULK ALL JOINTS AND GAPS TO ENSURE AIR AND WATER TIGHT CONSTRUCTION.
3. SEE SPECS FOR REQUIREMENTS REGARDING GROUT FILL INSIDE DOOR FRAMES.

SUTTON ARCHITECTURAL SERVICES, INC.
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER O. SUTTON
CERTIFICATE NO. 030212
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

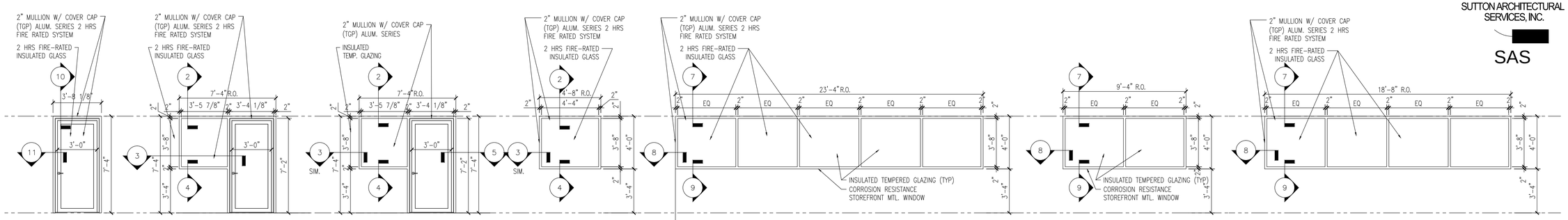
Buford Water Works Replacement
For the City of Buford, Georgia

DOOR SCHEDULE AND DETAILS

DOOR SCHEDULE

Project Manager: Jolene Northrop, P.E.
Drawn By: PS | Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A6.1

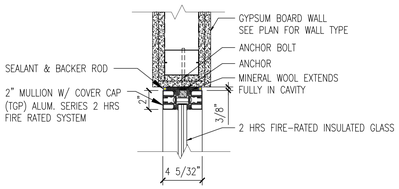


1 WINDOWS INTERIOR ELEVATIONS
1/4" = 1'

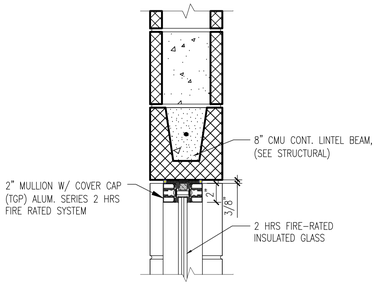
120 MIN. FIRE RATED GLAZING SYSTEM ALTERNATES:

1. USE TGP FIRE RATED STEEL CURTAIN WALL SYSTEM WITH ALUM FACE CAP IN LIEU OF SYSTEM SPECIFIED HEREIN. EQUIVALENT PRODUCTS FROM OTHER MANUFACTURERS IS ACCEPTABLE. PRICING ALTERNATE: USE FRP 2HR RATED WINDOW SYSTEMS OF SAME PROFILE.
2. USE 2 HR RATED FRP WINDOW SYSTEMS.

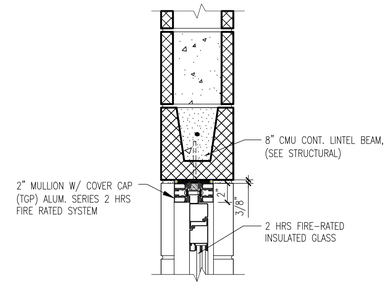
NOTE: COLOR OF FRP OR PAINTED FRAMES INSIDE TO MATCH RUBBER BASE COLOR. SUBMIT PAINT SAMPLES FOR APPROVAL. COLOR FOR ALUM. SYSTEMS TO BE SELECTED FROM MANUF. STANDARD COLORS.



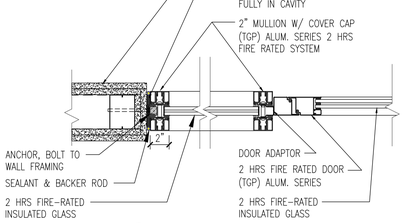
2 HEAD DETAIL
1 1/2" = 1'



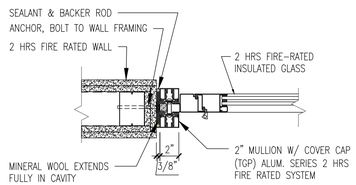
7 HEAD DETAIL
1 1/2" = 1'



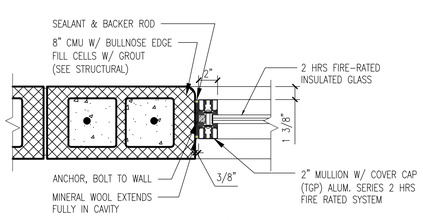
10 HEAD DETAIL
1 1/2" = 1'



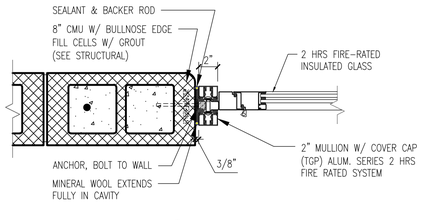
3 JAMB DETAIL
1 1/2" = 1'



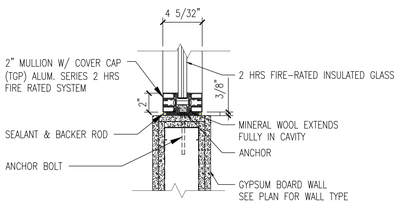
5 JAMB DETAIL
1 1/2" = 1'



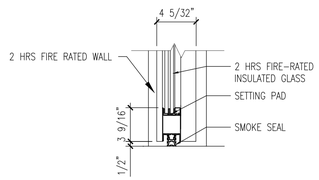
8 JAMB DETAIL
1 1/2" = 1'



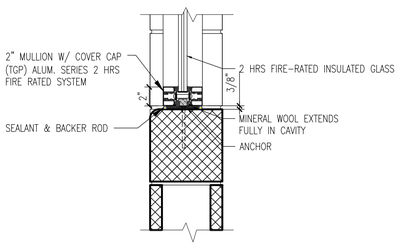
11 JAMB DETAIL
1 1/2" = 1'



4 SILL DETAIL
1 1/2" = 1'



6 SILL DETAIL
1 1/2" = 1'



9 SILL DETAIL
1 1/2" = 1'

GENERAL NOTE:

ALL FIRE RATED WINDOWS AND DOORS ARE TO RECEIVE FIRE RATED SEALANT AND BACKER ROD AROUND THE OPENING.

ALL WINDOWS AND DOORS IN MEMBRANE & CHEMICAL ROOM AND LAB. ROOM ARE TO RECEIVE CORROSION AND ACID RESISTANCE FINISH.

SUTTON ARCHITECTURAL SERVICES, INC.
[redacted]
SAS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

STATE OF GEORGIA
PETER C. SUTTON
CERTIFICATE NO. 020027
REGISTERED ARCHITECT

NO.	DATE	REVISION
-	04/14/21	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

INTERIOR WINDOW PROFILES AND DETAILS

INTERIOR WINDOWS PROFILE & DTLS

Project Manager: Jolene Northrop, P.E.
Drawn By: PS
Checked By: PS
Date: 04/14/21
Scale: As Shown

Project No.: 170110.00
Drawing No.: A6.2

GENERAL

1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF OWNER, CONTRACTOR, DESIGN PROFESSIONAL, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS. NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE DESIGN PROFESSIONAL OF RECORD OR ANY OF THE DESIGN PROFESSIONAL OF RECORD'S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.

2. CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR.

3. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.

4. CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, SJI OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.

5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.

6. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DOCUMENTS. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS SEE THE ARCHITECTURAL DRAWINGS.

7. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY.

8. CONTRACTOR SHALL VERIFY THE STRUCTURALLY SUPPORTED MECHANICAL EQUIPMENT WEIGHTS, OPENING SIZES AND LOCATIONS IDENTIFIED ON THE STRUCTURAL DRAWINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

9. CONTRACTOR SHALL VERIFY THAT MISCELLANEOUS FRAMING SHOWN ON THE STRUCTURAL DRAWINGS FOR MECHANICAL EQUIPMENT, OWNER-FURNISHED ITEMS, PARTITIONS, ETC. IS CONSISTENT WITH THE REQUIREMENTS OF SUCH ITEMS.

10. CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

11. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.

12. CONTRACTOR HAS SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS.

13. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.

14. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE DESIGN PROFESSIONAL DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE DESIGN PROFESSIONAL. 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 THE CONTRACT DOCUMENTS.

15. DETAILS LABELED "TYPICAL" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THE TYPICAL DETAILS UNLESS THOSE LOCATIONS ARE SPECIFICALLY DETAILED OTHERWISE.

16. STRUCTURAL DESIGN PROFESSIONAL IS NOT RESPONSIBLE FOR THE DESIGN OF CURTAIN WALL/WINDOW WALL SYSTEMS, COLD-FORMED METAL FRAMING, ALUMINUM STAIRS, LADDERS, AND HANDRAILS, PRE-ENGINEERED CANOPIES, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.

17. SUBMITTALS

    17.1 SUBMITTALS BY THE CONTRACTOR ARE NOT A PART OF THE CONTRACT DOCUMENTS. PRIOR TO THE INITIAL SUBMITTAL, CONTRACTOR SHALL SUBMIT TO THE DESIGN PROFESSIONAL A SCHEDULE OF SUBMITTED INFORMATION.

    17.2 SUBMITTALS SHALL BE ACCOMPANIED BY A TRANSMITTAL LETTER WITH THE FOLLOWING INFORMATION:

    PROJECT NAME
    CONTRACTOR'S NAME
    DATE SUBMITTED
    DESCRIPTION OF ITEMS SUBMITTED. IDENTIFY WORK AND PRODUCT BY SPECIFICATION SECTION
    NUMBER OF DRAWINGS AND OTHER PERTINENT DATA.

    17.3 CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION ON THE SUBMITTAL TO ANY DEVIATION FROM THE CONTRACT DOCUMENTS. CONTRACTOR SHALL STAMP AND SIGN EACH SHEET OF SHOP DRAWINGS AND PRODUCT DATA, AND SIGN OR INITIAL EACH SAMPLE TO CERTIFY COMPLIANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS. SUBMITTALS RECEIVED WITHOUT THE CONTRACTOR'S STAMP OF REVIEW WILL BE RETURNED TO THE CONTRACTOR FOR REVIEW AND RESUBMITTAL.

    17.4 WORK REQUIRING SHOP DRAWINGS, WHETHER CALLED FOR BY THE CONTRACT DOCUMENTS OR REQUESTED BY THE CONTRACTOR, SHALL NOT COMMENCE UNTIL THE SUBMISSION HAS BEEN REVIEWED BY THE DESIGN PROFESSIONAL. WORK MAY COMMENCE IF THE CONTRACTOR VERIFIES THE ACCURACY OF THE DESIGN PROFESSIONAL'S CORRECTIONS AND NOTATIONS AND COMPLIES WITH THEM WITHOUT EXCEPTION AND WITHOUT REQUESTING CHANGE IN CONTRACT SUM OR CONTRACT TIME AT COPY OF THE MARKED STRUCTURAL SHOP DRAWINGS WITH THE DESIGN PROFESSIONAL'S REVIEW STAMP IS TO BE MAINTAINED AT THE JOB SITE.

CODE/DESIGN CRITERIA

1. STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE FOLLOWING:

    - INTERNATIONAL BUILDING CODE, 2018 EDITION WITH GEORGIA AMENDMENTS.

2. GRAVITY LOADS

    2.1 UNIFORM FLOOR LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):

    - SLAB ON GRADE 3000 PSF
    - OFFICES 50 PSF
    - PUBLIC ROOMS 100 PSF
    - CORRIDORS - ABOVE FIRST FLOOR 80 PSF
    - MECHANICAL ROOMS 125 PSF
    - STAIRS 100 PSF
    - STORAGE 125 PSF
    - PARTITIONS 15 PSF
    - MICROBIOLOGY CLEAN ROOM 100 PSF
    - HIGH SERVICE PUMP STATION 150 PSF
    - GRATING SEE GRATING PLAN

    2.2 UNIFORM ROOF LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):

    - ROOF, L_r 20 PSF
    - GROUND SNOW LOAD, P_g 5 PSF
        - SNOW EXPOSURE FACTOR, C_e = 0.9
        - SNOW LOAD IMPORTANCE FACTOR, I = 1.0
        - THERMAL FACTOR, C_t = 1.0
    - RAIN LOAD, R 18.2 PSF

    PONDING AND DRIFT EFFECTS HAVE BEEN INCLUDED IN THE DESIGN.

    2.3 CONCENTRATED FLOOR LOADS: DISTRIBUTED OVER AN AREA OF 2-1/2 SQUARE FEET, UNLESS NOTED OTHERWISE:

    - OFFICE 2000 LB

    2.4 DEAD LOADS (IN ADDITION TO STRUCTURE SELF-WEIGHT):

    FLOOR:
    - MISCELLANEOUS 5 PSF
    - CEILING/MEP 8 PSF

    ROOF:
    - ROOFING 3 PSF
    - INSULATION 5 PSF
    - MISCELLANEOUS 5 PSF
    - CEILING/MEP 8 PSF

3. WIND LOADS:

    - BASIC DESIGN WIND SPEED, V = 113 MPH
    - ALLOWABLE DESIGN WIND SPEED, V_{ASD} = 88 MPH
    - RISK CATEGORY: III
    - EXPOSURE C
    - INTERNAL PRESSURE COEFFICIENT = +/-0.18

    SEE COMPONENT AND CLADDING DESIGN WIND PRESSURE DIAGRAM ON SHEET S0-2.

4. EARTHQUAKE LOADS:

    - RISK CATEGORY: III
    - SEISMIC IMPORTANCE FACTOR: I = 1.25
    - SHORT PERIOD MAPPED SPECTRAL RESPONSE COEFFICIENT, S_S = 0.206
    - 1 SECOND PERIOD MAPPED SPECTRAL RESPONSE COEFFICIENT, S_1 = 0.089
    - SITE CLASS D
    - SHORT PERIOD DESIGN SPECTRAL RESPONSE COEFFICIENT, S_{DS} = 0.22
    - 1 SECOND PERIOD DESIGN SPECTRAL RESPONSE COEFFICIENT, S_{D1} = 0.142
    - SEISMIC DESIGN CATEGORY: C
    - BASIC SEISMIC-FORCE RESISTING SYSTEM:
      MEMBRANE BUILDING: SPECIAL REINFORCED MASONRY SHEAR WALLS
      HIGH SERVICE PUMP STATION: ORDINARY REINFORCED MASONRY SHEAR WALLS
    - DESIGN BASE SHEAR:
      MEMBRANE BUILDING: 170.6 KIPS
      HIGH SERVICE PUMP STATION: 17.7 KIPS
    - SEISMIC RESPONSE COEFFICIENT
      MEMBRANE BUILDING: C_S = 0.055
      HIGH SERVICE PUMP STATION: C_S = 0.137
    - RESPONSE MODIFICATION FACTOR
      MEMBRANE BUILDING: R = 5
      HIGH SERVICE PUMP STATION: R = 2
    - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

5. UNLESS NOTED OTHERWISE CALCULATED INDIVIDUAL MEMBER DEFLECTIONS (IN INCHES) DO NOT EXCEED THE FOLLOWING:

	DEAD LOAD	LIVE LOAD	DEAD + LIVE LOAD
ROOF MEMBERS:	L/360	L/360	L/240
FLOOR MEMBERS:	L/360	L/360	L/240

    - WHERE, L = SPAN LENGTH (IN INCHES) BETWEEN SUPPORTS. (FOR CANTILEVERS, L IS TWICE THE LENGTH OF THE CANTILEVER.) NOTE THAT THE TOTAL MAXIMUM CALCULATED FLOOR SYSTEM DEFECTION WILL BE THE SUM OF THE DEFLECTIONS OF THE SUPPORTED ELEMENTS IN A BAY.

    - THE CALCULATED DEFLECTION FOR INDIVIDUAL MEMBERS SUPPORTING MASONRY DO NOT EXCEED L/600 FOR DESIGN LOADS APPLIED AFTER THE INSTALLATION OF THE MASONRY.

6. SPECIAL INSPECTIONS:

    6.1 THE STRUCTURAL TESTING/INSPECTION AGENCY, SEE SPECIFICATION SECTION 014525, WILL PERFORM SPECIAL INSPECTIONS AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE. MATERIALS AND WORK TO BE INSPECTED INCLUDE SOILS, CONCRETE, MASONRY, PRECAST AND STEEL CONSTRUCTION. SEE SPECIFICATION SECTIONS FOR A COMPLETE LIST OF WORK REQUIRING SPECIAL INSPECTIONS.

    6.2 SPECIAL INSPECTION AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE ARE REQUIRED FOR STRUCTURAL COMPONENTS AND ASSEMBLIES WHICH ARE NOT FABRICATED AT THE CONSTRUCTION JOB SITE INCLUDING BUT NOT LIMITED TO PRECAST CONCRETE BEAMS, JOISTS AND SLABS, AND STRUCTURAL STEEL FRAMING.

    6.3 SPECIAL INSPECTION AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE MAY BE WAIVED FOR ITEMS WHICH ARE PRODUCED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND BY PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY. THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE WHICH STATES THAT THE FABRICATION WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

    6.4 THE PROJECT OWNER WILL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PERFORM INSPECTIONS AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE DURING CONSTRUCTION OF THE PROJECT. DOCUMENTATION THAT SUMMARIZES THE QUALIFICATION AND CREDENTIALS OF EACH SPECIAL INSPECTOR AND DEMONSTRATES COMPETENCE FOR INSPECTION OF EACH PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION SHALL BE SUBMITTED TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

    6.5 APPROVED SPECIAL INSPECTORS SHALL FURNISH INSPECTION REPORTS TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE AND TO THE DESIGN PROFESSIONAL WHICH INDICATE THAT THE WORK INSPECTED WAS DONE IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. A FINAL REPORT WHICH DOCUMENTS THE RESULTS OF THE SPECIAL INSPECTIONS PERFORMED INCLUDING CORRECTION OF ANY DISCREPANCIES IDENTIFIED DURING INSPECTION SHALL BE SUBMITTED PERIODICALLY AT A FREQUENCY APPROVED BY CHIEF COMMERCIAL BUILDING INSPECTOR PRIOR TO CONSTRUCTION.

7. NO PROVISIONS HAVE BEEN MADE FOR FUTURE HORIZONTAL OR VERTICAL EXPANSION.

FOUNDATION

1. FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT PREPARED BY ECS SOUTHEAST, LLP REPORT NUMBER 10:10650 DATED JULY 31, 2020. DESIGN PROFESSIONAL IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD DIFFERENT TO THOSE ASSUMED FOR DESIGN.

2. STRUCTURAL TESTING/INSPECTION AGENCY SHALL CERTIFY THE BEARING MEDIUM.

3. INDIVIDUAL SPREAD FOOTINGS AND CONTINUOUS FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUPPORTING THE ALLOWABLE SOIL BEARING CAPACITIES LISTED BELOW:

    - HIGH SERVICE PUMP STATION 2,000 PSF
    - PASSIVE INTAKE SCREEN STRUCTURE 2,000 PSF
    - PROCESS/ADMINISTRATION BUILDING 3,000 PSF
    - AQUAMAG BULK TANK 2,000 PSF
    - BACKWASH TANK 2,000 PSF
    - FLUORIDE BULK TANK 2,000 PSF
    - MW/CIP TANK 2,000 PSF
    - NaOCl BULK TANK 2,000 PSF

    3.1 NO FOOTINGS SHALL BEAR ON ROCK. UNDERCUT ROCK A MINIMUM OF 2 FEET BELOW BOTTOM OF FOOTING AND REPLACE WITH STRUCTURAL FILL.

4. FOUNDATION WALLS ARE DESIGNED FOR LATERAL PRESSURES DUE TO THE FOLLOWING EQUIVALENT FLUID DENSITIES:

    - WALLS SUPPORTED AT TOP (AT-REST CONDITION): 68 PCF
    - WALLS FREE TO DISPLACE AT TOP (ACTIVE CONDITION): 48 PCF
    - PASSIVE EARTH PRESSURE: 307 PCF
    - COEFFICIENT OF FRICTION: 0.31

5. BACKFILL PLACED AGAINST EXTERIOR OR RETAINING WALLS SHALL NOT EXCEED 120 PCF WEIGHT.

6. PROOF ROLL BUILDING AREAS WITH TWO COMPLETE COVERAGES OF A LOADED DUMP-TRUCK OR SCRAPER (MINIMUM AXLE LOAD EQUAL TO 10 TONS). REPLACE SOFT AREAS WITH COMPACTED STRUCTURAL FILL AS REQUIRED BY THE SPECIFICATIONS.

7. IF SOFT OR UNSUITABLE SOILS ARE OBSERVED AT THE FOOTING BEARING ELEVATIONS, THE UNSUITABLE SOILS SHALL BE UNDERCUT AND REMOVED. ANY UNDERCUT SHALL BE BACKFILLED WITH NEW STRUCTURAL FILL.

8. WET SUBGRADE SOILS MAY BE ENCOUNTERED AT THE PLANNED SLAB ELEVATIONS FOR THE PROCESS/ADMINISTRATIVE BUILDING, HIGH SERVICE PUMP STATION AND CLEARWELLS. IN THE EVENT WATER IS ENCOUNTERED WITHIN THE EXCAVATIONS, CONTRACTOR SHALL STOP FURTHER EXCAVATION UNTIL PROPER GROUNDWATER CONTROL MEASURES ARE INSTALLED. TEMPORARY GROUNDWATER CONTROL MEASURES SHALL BE DESIGNED BY OTHERS AND INSTALLED TO LOWER THE GROUNDWATER LEVEL AT LEAST TWO FEET BELOW THE LOWEST ANTICIPATED SUBGRADE ELEVATION.

9. IN THE EVENT THE EXPOSED SUBGRADE AT THE BOTTOM OF EXCAVATIONS IS WET, UNDERCUTTING AND STABILIZING THE SUBGRADE SURFACE SHALL BE REQUIRED. THE SUBGRADE SHALL BE STABILIZED WITH GEOTEXTILE REINFORCING FABRIC AND AGGREGATE FILL TO PROVIDE A WORKING PLATFORM FOR CONSTRUCTION AND FILL PLACEMENT. REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

10. DEWATERING WILL LIKELY BE REQUIRED TO EXCAVATE AND PREPARE THE BEARING SUBGRADES FOR THE PROCESS/ADMINISTRATIVE BUILDING, HIGH SERVICE PUMP STATION, AND CLEARWELLS. REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

11. STRUCTURAL FILL SHALL CONTAIN NO ORGANIC MATERIAL AND BE APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. STRUCTURAL FILL UNDER SLABS AND WITHIN 10'-0" OF THE BUILDING FOOTPRINT SHALL BE PLACED IN LIFTS OF THICKNESS DETERMINED BY THE INDEPENDENT TESTING AGENCY AND COMPACTED TO AT LEAST 95% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698. THE TOP 12" SUB-BASE UNDER SLABS ON GRADE SHALL BE COMPACTED TO AT LEAST 98% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY. ALL BACKFILL, COMPACTION AND PROOF ROLLING OPERATIONS SHALL BE OBSERVED BY AN INDEPENDENT TESTING LABORATORY. STRUCTURAL FILL SOIL DENSITY SHALL BE 120 PCF.

12. SLABS-ON-GRADE SHALL BE PLACED ON A 6" GRANULAR BASE, COMPACTED TO 98% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698, AND COVERED WITH A 10 MIL CONTINUOUSLY SEALED VAPOR BARRIER. THE BASE FOR SLABS-ON-GRADE SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER PRIOR TO EACH PLACEMENT OF CONCRETE.

13. BACKFILL SHALL NOT BE PLACED AGAINST EXTERIOR OR RETAINING WALLS UNTIL THE WALLS HAVE ACHIEVED THEIR DESIGN STRENGTH AND THEIR LATERAL SUPPORT ELEMENTS ARE INSTALLED. PROVIDE ADEQUATE DRAINAGE AT BASEMENT AND RETAINING WALLS (SEE ARCHITECTURAL).

14. FOOTINGS SHALL BE CENTERED ABOUT COLUMN LINES UNLESS NOTED OTHERWISE.

15. ALL FOOTINGS AND TURN DOWN SLAB EDGES SHALL PENETRATE TO A MINIMUM DEPTH OF 12" BELOW FINISHED GRADE.

REINFORCEMENT

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.

2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064 AND HAVE MINIMUM SIDE AND END LAPS OF 8".

3. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. WRITTEN DESCRIPTION OF REINFORCEMENT WITHOUT ADEQUATE SECTIONS, ELEVATIONS, AND DETAILS IS NOT ACCEPTABLE.

4. SPLICES SHALL BE CLASS B IN ACCORDANCE WITH ACI 318, UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL BE SPLICED ONLY AT LOCATIONS SHOWN OR NOTED IN THE STRUCTURAL DOCUMENTS, EXCEPT REINFORCEMENT MARKED "CONTINUOUS" CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED IN WRITING BY THE DESIGN PROFESSIONAL.

5. PROVIDE DOWELS FROM FOUNDATIONS THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.

6. PLACE REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE:

    6.1 CONCRETE REINFORCEMENT COVER

    EXPOSED TO EARTH OR WEATHER:
    - UNFORMED CAST AGAINST EARTH 3" CLEAR
    - FORMED #6 AND LARGER 2" CLEAR
    - FORMED #5 AND SMALLER 1-1/2" CLEAR

    NOT EXPOSED TO EARTH OR WEATHER:
    - WALLS 1" CLEAR
    - COLUMNS (TIES) 1-1/2" CLEAR
    - SLABS 3/4" CLEAR

    6.2 MASONRY REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS NOTED OTHERWISE.

7. REINFORCING STEEL DESIGNATED CONTINUOUS SHALL BE LAPPED AS FOLLOWS:

    - CONCRETE REINFORCEMENT: CLASS B TENSION LAP
    - MASONRY REINFORCEMENT: 48 BAR DIAMETERS

8. ADHESIVE FOR REINFORCING DOWELS IN EXISTING CONCRETE SHALL CONFORM TO ASTM C881-02, TYPE IV, GRADE 3, CLASS A, B, & C EXCEPT GEL TIMES AND EPOXY CONTENT. ADHESIVE SHALL CONSIST OF A TWO COMPONENT ADHESIVE SYSTEM CONTAINED IN SIDE BY SIDE PACKAGING CONNECTED TO A MIXING NOZZLE WHICH THOROUGHLY MIXES THE COMPONENTS AS IT IS INJECTED INTO THE HOLE. ADHESIVE SHALL HAVE PASSED ICC EVALUATION SERVICES, INC (ICC-ES) ACCEPTANCE CRITERIA 308 FOR LONG TERM CREEP. REINFORCING INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 308 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT LENGTH SHALL BE 12 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

9. ALL DOWELS AND TERMINATING BARS SHALL HAVE A STANDARD 90 DEGREE HOOK.

10. ALL HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL AND/OR CONSTRUCTION JOINTS AND AROUND CORNERS.

CAST-IN-PLACE CONCRETE

1. CONCRETE WORK SHALL CONFORM TO ACI 318 AND CRSI STANDARDS.

2. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH:

    2.1 NORMAL WEIGHT STRUCTURAL CONCRETE:

    - FOOTINGS/PIERS 3000 PSI
    - SLABS-ON-GRADE 4000 PSI
    - RETAINING/FOUNDATION WALLS 4500 PSI
    - CONCRETE BEAMS 4000 PSI
    - CONCRETE COLUMNS 4000 PSI
    - HOLLOW CORE SLABS 5000 PSI
    - PASSIVE SCREEN INTAKE STRUCTURE 4500 PSI

3. PIPES OR DUCTS SHALL NOT EXCEED ONE-THIRD THE SLAB OR WALL THICKNESS INCLUDING CROSSING UNLESS SPECIFICALLY DETAILED IN THE STRUCTURAL DOCUMENTS. ALL PIPES AND DUCTS SHALL BE PLACED IN THE MIDDLE THIRD OF THE SLAB OR WALL THICKNESS UNLESS SPECIFICALLY DETAILED OTHERWISE IN THE STRUCTURAL DOCUMENTS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.

4. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS OR GROUNDS REQUIRED TO BE ENCASED IN CONCRETE AND FOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.

5. CONSTRUCTION JOINT LOCATIONS SHALL BE APPROVED BY THE DESIGN PROFESSIONAL. NO HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED EXCEPT THOSE SHOWN ON THE STRUCTURAL DRAWINGS.

6. DEFECTIVE AREAS IN CONCRETE INCLUDING, BUT NOT LIMITED TO, HONEY-COMBING, SPALLS, AND CRACKS WITH WIDTHS EXCEEDING 0.016 INCH SHALL BE REPAIRED. EXTENT OF DEFECTIVE AREA TO BE DETERMINED BY THE DESIGN PROFESSIONAL.

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SEC001214 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

GENERAL NOTES

THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S0-1

G:\My Drive\Shear Structural\Projects\097 Keck & Wood\097.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_edited.dwg

STRUCTURAL STAINLESS STEEL

1. STRUCTURAL STAINLESS STEEL SHALL CONFORM TO ASTM A276 (F_y = 30 KSI MINIMUM), UNS S31600L, UNLESS NOTED OTHERWISE.
   - STRUCTURAL STAINLESS STEEL TUBING SHALL CONFORM TO ASTM A554.
   - STRUCTURAL STAINLESS STEEL MISCELLANEOUS PLATES AND WASHERS SHALL CONFORM TO ASTM A240.
2. BOLTS AND ANCHORS:
   2.1 BOLTED CONNECTIONS SHALL BE TYPE N (BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE) WITH MINIMUM 3/4" DIAMETER A325 BOLTS. SUBMIT PROPOSED BOLT TIGHTENING PROCEDURE FOR REVIEW.
   2.2 ANCHOR BOLTS SHALL BE HEADED BOLTS CONFORMING TO ASTM F593 AND SHALL BE HEADED RODS OR THREADED RODS WITH HEAVY HEXAGONAL NUT WELDED TO THE BOTTOM OF THE THREADED ROD, GRADE F593, UNLESS NOTED OTHERWISE.
   2.3 EXPANSION ANCHORS SHALL HAVE BEEN EVALUATED BY THE ICC EVALUATION SERVICES, INC (ICC-ES) WITH A PUBLISHED EVALUATION REPORT. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 193 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. ALL ANCHORS SHALL BE APPROVED FOR RESISTING WIND AND SEISMIC LOADS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
   2.4 ADHESIVE ANCHORS SHALL CONSIST OF AN ALL-THREAD STEEL ANCHOR WITH ADHESIVE CONFORMING TO ASTM C881-02, TYPE IV, GRADE 3, CLASS A, B, & C EXCEPT GEL TIMES AND EPOXY CONTENT. ADHESIVE SHALL CONSIST OF A TWO COMPONENT ADHESIVE SYSTEM CONTAINED IN SIDE BY SIDE PACKAGING CONNECTED TO A MIXING NOZZLE WHICH THOROUGHLY MIXES THE COMPONENTS AS IT IS INJECTED INTO THE HOLE. ADHESIVE SHALL HAVE PASSED ICC EVALUATION SERVICES, INC (ICC-ES) ACCEPTANCE CRITERIA 308 FOR LONG TERM CREEP. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 308 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
3. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO BOTH THE AISC "STEEL DESIGN GUIDE 27: STRUCTURAL STAINLESS STEEL" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
4. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DETAILED BASED ON THE DESIGN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DESIGNED FOR THE SERVICE LOAD REACTION VALUES SHOWN ON THE STRUCTURAL DRAWINGS. FOR STEEL MEMBERS WHOSE REACTIONS ARE NOT SHOWN, THE DESIGN REACTION SHALL BE A MINIMUM OF 10 KIPS. DEVIATION FROM THE CONNECTION DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE DESIGN PROFESSIONAL. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. DESIGN PROFESSIONAL SHALL BE COMPENSATED BY THE CONTRACTOR FOR THE COST INVOLVED IN THE REDESIGN OF CONNECTIONS FOR THE CONVENIENCE OF THE CONTRACTOR. SINGLE ANGLE CONNECTIONS ARE NOT ACCEPTABLE.
5. USE PRE-QUALIFIED WELDED JOINTS IN ACCORDANCE WITH AISC AND THE STRUCTURAL WELDING CODE - STAINLESS STEEL OF THE AMERICAN WELDING SOCIETY D1.6. "NON-PRE-QUALIFIED JOINTS" SHALL BE QUALIFIED PRIOR TO FABRICATION. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
6. ALL STRUCTURAL STEEL SHALL BE STAINLESS STEEL, UNLESS NOTED OTHERWISE.
7. STAINLESS STEEL BAR GRATING SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE:
   7.1 STEEL BAR GRATING SHALL BE RECTANGULAR TYPE WITH WELDED CROSS BARS.
   7.2 BEARING BARS SHALL CONFORM TO ASTM A569.
   7.3 GRATING SURFACE SHALL BE PLAIN.
   7.4 FASTEN GRATING TO STEEL SUPPORTS WITH SADDLE CLIP AND SELF-DRILLING FASTENER AT EVERY SIXTH BEARING BAR ALONG SUPPORT (MIN. OF 2 CLIPS PER PANEL).
   7.5 SEE S1-6 FOR GRATING TYPE AND DESIGN LOAD INFORMATION.

CONCRETE MASONRY

1. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL BE F'M = 1500 PSI.
2. MORTAR SHALL COMPLY WITH THE BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY AND SHALL BE OF THE FOLLOWING TYPE:
   - WALLS BELOW GRADE — TYPE M
   - BEARING WALLS — TYPE M OR S
3. CONCRETE MASONRY UNITS SHALL BE GROUTED WITH 2500 PSI COARSE GROUT AS SHOWN IN THE STRUCTURAL DOCUMENTS. GROUT FOR REINFORCED AND NONREINFORCED MASONRY SHALL CONFORM TO ASTM C476.
4. PROVIDE HORIZONTAL JOINT REINFORCEMENT WITH NO. 9 GAGE LONGITUDINAL WIRES AT 16" C/C VERTICALLY, UNLESS NOTED OTHERWISE. PROVIDE SPECIAL ACCESSORIES FOR CORNERS, INTERSECTIONS, ETC.
5. PROVIDE OPEN BOTTOM BEAM BLOCK UNITS WITH 3" DEEP MINIMUM WEB OPENINGS AT HORIZONTAL REINFORCEMENT LOCATIONS. A MINIMUM CLEAR SPACE OF ONE BAR DIAMETER SHALL BE PROVIDED BETWEEN THE REINFORCING BARS AND THE FACE OF MASONRY UNITS.
6. PROVIDE CONTROL JOINTS IN ALL CONCRETE MASONRY WALLS AT LOCATIONS APPROVED BY THE DESIGN PROFESSIONAL AT A MAXIMUM SPACING OF 3 TIMES THE WALL HEIGHT OR 40'-0", WHICHEVER IS LESS.
7. PROVIDE DOVETAIL ANCHORS AT 16" C/C, UNLESS NOTED OTHERWISE, WHERE MASONRY WALLS ABUT CONCRETE SURFACES.
8. SUBMIT WRITTEN CONSTRUCTION PROCEDURES PRIOR TO THE START OF MASONRY CONSTRUCTION.
9. MINIMUM VERTICAL WALL REINFORCEMENT SHALL BE #5@32" C/C, UNLESS NOTED OTHERWISE.
10. SUBMIT SHOP DRAWINGS FOR MASONRY REINFORCEMENT IN ACCORDANCE WITH SPECIFICATION SECTION 032000.

METAL DECK

1. DECK DESIGN IS BASED ON THE STEEL DECK INSTITUTE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS.
2. PROVIDE ROOF DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
   - 1-1/2 INCH — DEPTH
   - 22 GAGE — THICKNESS
   - 0.186 IN3/FT — SECTION MODULUS
   - 0.155 IN4/FT — MOMENT OF INERTIA
   - 33,000 PSI — YIELD STRESS
5. DECK IS SPECIFIED BASED ON A THREE SPAN CONDITION. FURNISH HEAVIER GAGE DECK IF REQUIRED FOR ONE OR TWO SPAN CONDITIONS.
6. FASTEN ROOF DECK TO RESIST A NET UPLIFT AS INDICATED ON THE DRAWINGS.
7. FASTEN ROOF DECK TO RESIST A DIAPHRAGM SHEAR FORCE OF 20 POUNDS PER LINEAR FOOT.

COLD-FORMED STEEL

1. DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS AND THEIR CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DRAWINGS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW OF SHOP DRAWINGS SHALL BE FOR CONFORMANCE WITH 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.
2. COLD-FORMED STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISI "SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" OR "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR COLD-FORMED STEEL STRUCTURAL MEMBERS".
3. COLD-FORMED STEEL STUDS, JOISTS AND ACCESSORIES SHALL BE AS SHOWN IN THE STRUCTURAL DOCUMENTS.
4. COLD-FORMED STEEL STRUCTURAL MEMBERS MAY BE ATTACHED BY EITHER WELDS OR SCREWS SIZED BY THE MANUFACTURER FOR THE SPECIFIED DESIGN LOADS. SEE THE SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH COMPLETE FABRICATION AND ERECTION DRAWINGS 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 STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
6. AXIALLY LOADED BEARING STUDS SHALL BE POSITIONED SUCH THAT STUD LOCATION IS DIRECTLY UNDER JOIST BEARING POINT UNLESS NOTED OTHERWISE IN THE STRUCTURAL DOCUMENTS.
7. SPLICES IN AXIALLY LOADED STUDS SHALL NOT BE PERMITTED.
8. WELDING OF COLD-FORMED STEEL SHALL BE IN ACCORDANCE WITH THE STANDARD CODE OF ARC AND GAS WELDING IN BUILDING CONSTRUCTION.

HOLLOW CORE

1. HOLLOW CORE SLABS SHALL BE 8" AND 10" UNLESS NOTED OTHERWISE.
2. ALL HOLLOW CORE PLANK KEYWAYS AND JOINTS SHALL BE FULLY GROUT FILLED WITH A GROUT POSSESSING A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
3. ERECTION AND TEMPORARY SUPPORT OF PLANKS DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CARE SHALL BE TAKEN TO ENSURE THAT ALL RECOMMENDATIONS OF THE HOLLOW CORE PLANK MANUFACTURER AND THE PRECAST/PRESTRESSED CONCRETE INSTITUTE ARE FOLLOWED.
4. ALL HEADERS AND CLIPS REQUIRED TO SUPPORT HOLLOW CORE PLANKS WITH OPENINGS OR FOR THE SUPPORT OF PLANKS TERMINATED BY OPENINGS SHALL BE THE RESPONSIBILITY OF THE HOLLOW CORE MANUFACTURER.
5. DETAILS AND CALCULATIONS FOR THE SUGGESTED SUPPORT SHALL BE FURNISHED BY THE HOLLOW CORE PLANK MANUFACTURER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

STRUCTURAL PRECAST CONCRETE

1. PRECAST CONCRETE DESIGN, MANUFACTURE AND ERECTION SHALL CONFORM TO ACI 318 AND PCI MANUAL 116.
2. PRECAST DESIGN LOADS:
   2.1 PRECAST MEMBERS SHALL BE CAPABLE OF SUPPORTING THE SUPERIMPOSED LOADS AS GIVEN IN THE CONTRACT DOCUMENTS, IN ADDITION TO THE SELF-WEIGHT OF THE PRECAST MEMBER, TOPPINGS, ETC.
   2.2 EFFECTS TO BE CONSIDERED BY THE PRECAST DESIGN ENGINEER IN THE DESIGN OF THE PRECAST ELEMENTS AND CONNECTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   - GRAVITY
   - WIND
   - SEISMIC
   - DIFFERENTIAL TEMPERATURE BETWEEN PANEL FACES
   - ECCENTRICITY OF APPLIED LOADS FROM MATERIALS SUPPORTED BY PANELS
   - VOLUMETRIC CHANGES DUE TO TEMPERATURE, CREEP, & SHRINKAGE
   - ERECTION LOADS

   LOAD COMBINATIONS SHALL BE IN ACCORDANCE WITH THE BUILDING CODE.
3. DESIGN OF STRUCTURAL PRECAST ELEMENTS AND THEIR CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DRAWINGS, DESIGN LOAD DATA, AND SUPPORT REACTIONS OF PRECAST ELEMENTS AND THEIR CONNECTIONS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW SHALL BE FOR CONFORMANCE WITH 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 THE FULL RESPONSIBILITY FOR THE DESIGN OF THE PRECAST AND PRECAST CONNECTIONS NOT SPECIFIED IN THE CONTRACT DOCUMENTS.
4. SUBMIT REACTIONS OF ALL PRECAST ELEMENTS SUPPORTED BY STRUCTURAL ELEMENTS SHOWN ON THE DRAWINGS.
5. CONCRETE FOR PRECAST MEMBERS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI.
6. FOR OPENINGS AND EMBEDDED ITEMS, CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING CONTRACT DOCUMENTS.
7. HILTI HDI-P DROP-IN ANCHORS OR APPROVED EQUAL SHALL BE USED FOR ANCHORAGE OF MECHANICAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS TO PRECAST HOLLOW CORE PLANKS AND DOUBLE TEES. CARE SHALL BE TAKEN TO AVOID PRESTRESS CABLES WITHIN PRECAST.

FIBERGLASS REINFORCED PLASTIC (FRP) GRATING AND SHAPES

1. PULTRUDED SHAPES SHALL BE CLASSIFIED BY COMPOSITION USING ASTM D3647.
2. PULTRUDED SHAPES AND GRATING SHALL MEET TYPE III: CHEMICAL RESISTANT. SHAPES AND GRATING SHALL INCORPORATE AN APPROPRIATE RESIN TO IMPROVE CORROSION RESISTANCE SUCH AS VINYL ESTER, BISPHENOL, OR CHLORENDIC ANHYDRIDE OR EPOXY RESINS.
3. TOLERANCES ON STANDARD PULTRUDED SHAPES SHALL BE AS DEFINED PER ASTM D3917.
4. PULTRUDED SHAPES SHALL BE FREE FROM DEFECTS PER ASTM D4385.
5. PULTRUDED SHAPES SHALL MEET THE FOLLOWING PROPERTIES:
   - TENSILE STRENGTH
     - LENGTHWISE — 30,0000 PSI
     - CROSSWISE — 6,500 PSI
   - FLEXURAL STRENGTH
     - LENGTHWISE — 30,000 PSI
     - CROSSWISE — 10,000 PSI

PRE-ENGINEERED METAL CANOPY SYSTEM

1. THE PRE-ENGINERED CANOPIES SHOWN ARE SINGLE-SPAN, CONTINUOUS FRAME-TYPE METAL CANOPIES OF THE NOMINAL LENGTH, WIDTH, EAVE HEIGHT, AND ROOF PITCH INDICATED.
2. SUBMIT COMPLETE STRUCTURAL ANALYSIS AND DESIGN CALCULATIONS, AND FRAME REACTION LOADS FOR THE DESIGN OF FOUNDATIONS.
3. PREPARE SHOP DRAWINGS AND CALCULATIONS UNDER SEAL OF A PROFESSIONAL ENGINEER.
4. CERTIFICATION: SUBMIT WRITTEN CERTIFICATION PREPARED AND SIGNED BY A PROFESSIONAL ENGINEER VERIFYING THAT BUILDING DESIGN MEETS INDICATED LOADING REQUIREMENTS AND CODES OF AUTHORITIES HAVING JURISDICTION.
5. STRUCTURAL FRAMING: DESIGN PRIMARY AND SECONDARY STRUCTURAL MEMBERS AND EXTERIOR COVERING MATERIALS FOR APPLICABLE LOADS AND COMBINATIONS OF LOADS IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
6. STRUCTURAL STEEL: FOR DESIGN OF STRUCTURAL STEEL MEMBERS, COMPLY WITH REQUIREMENTS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S (AISC) "SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.
7. LIGHT GAUGE STEEL: FOR DESIGN OF LIGHT GAUGE STEEL MEMBERS, COMPLY WITH REQUIREMENTS OF THE AMERICAN IRON AND STEEL INSTITUTE'S (AISI) "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND "DESIGN OF LIGHT GAUGE STEEL DIAPHRAGMS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.
8. WELDED CONNECTIONS: ALL STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1-10, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY. THE PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
9. BOLTED CONNECTION: ALL BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2009 (SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS).

STRUCTURAL CARBON STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 WHERE NOTED AS CARBON STEEL.
   - STRUCTURAL CHANNELS, MISCELLANEOUS PLATES AND CONNECTION MATERIAL SHALL CONFORM TO ASTM A36 WHERE NOTED AS CARBON STEEL.
2. BOLTS AND ANCHORS:
   2.1 BOLTED CONNECTIONS SHALL BE TYPE N (BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE) WITH MINIMUM 3/4" DIAMETER A325 BOLTS. SUBMIT PROPOSED BOLT TIGHTENING PROCEDURE FOR REVIEW.
   2.2 ANCHOR BOLTS SHALL BE HEADED BOLTS CONFORMING TO ASTM F1554 AND SHALL BE HEADED RODS OR THREADED RODS WITH HEAVY HEXAGONAL NUT WELDED TO THE BOTTOM OF THE THREADED ROD, GRADE A36, WHERE NOTED AS CARBON STEEL. BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2009 (SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS).
   2.3 EXPANSION ANCHORS SHALL HAVE BEEN EVALUATED BY THE ICC EVALUATION SERVICES, INC (ICC-ES) WITH A PUBLISHED EVALUATION REPORT. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 193 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. ALL ANCHORS SHALL BE APPROVED FOR RESISTING WIND AND SEISMIC LOADS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
   2.4 ADHESIVE ANCHORS SHALL CONSIST OF AN ALL-THREAD STEEL ANCHOR WITH ADHESIVE CONFORMING TO ASTM C881-02, TYPE IV, GRADE 3, CLASS A, B, & C EXCEPT GEL TIMES AND EPOXY CONTENT. ADHESIVE SHALL CONSIST OF A TWO COMPONENT ADHESIVE SYSTEM CONTAINED IN SIDE BY SIDE PACKAGING CONNECTED TO A MIXING NOZZLE WHICH THOROUGHLY MIXES THE COMPONENTS AS IT IS INJECTED INTO THE HOLE. ADHESIVE SHALL HAVE PASSED ICC EVALUATION SERVICES, INC (ICC-ES) ACCEPTANCE CRITERIA 308 FOR LONG TERM CREEP. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 308 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
3. STRUCTURAL CARBON STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO BOTH THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
4. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DETAILED BASED ON THE DESIGN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DESIGNED FOR THE SERVICE LOAD REACTION VALUES SHOWN ON THE STRUCTURAL DRAWINGS. FOR STEEL MEMBERS WHOSE REACTIONS ARE NOT SHOWN, THE DESIGN REACTION SHALL BE A MINIMUM OF 10 KIPS. DEVIATION FROM THE CONNECTION DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE DESIGN PROFESSIONAL. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. DESIGN PROFESSIONAL SHALL BE COMPENSATED BY THE CONTRACTOR FOR THE COST INVOLVED IN THE REDESIGN OF CONNECTIONS FOR THE CONVENIENCE OF THE CONTRACTOR. SINGLE ANGLE CONNECTIONS ARE NOT ACCEPTABLE.
5. USE PRE-QUALIFIED WELDED JOINTS FOR CARBON STEEL IN ACCORDANCE WITH AISC AND THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY D1.1-10. "NON-PRE-QUALIFIED JOINTS" SHALL BE QUALIFIED PRIOR TO FABRICATION. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
6. ALL STRUCTURAL CARBON STEEL SHALL BE GALVANIZED.

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664 8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 56201714 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

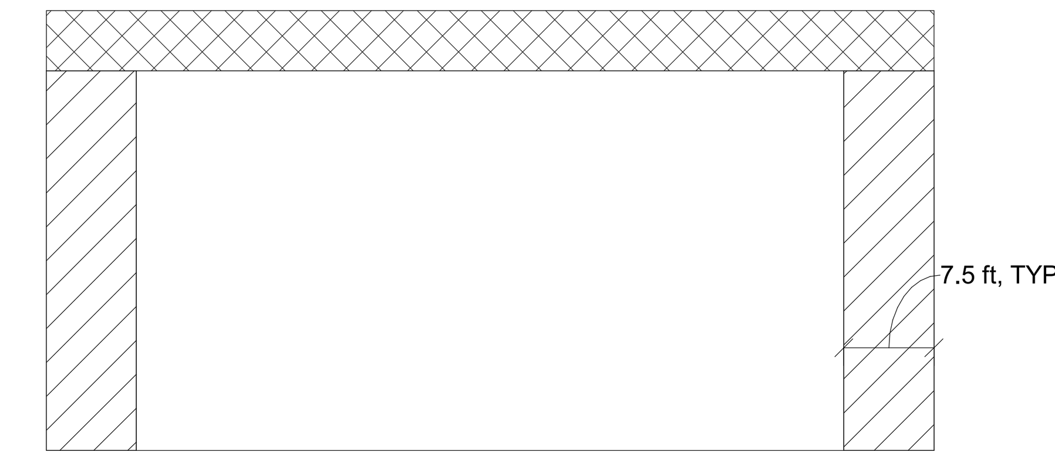
Buford Water Works Replacement
For the City of Buford, Georgia

GENERAL NOTES

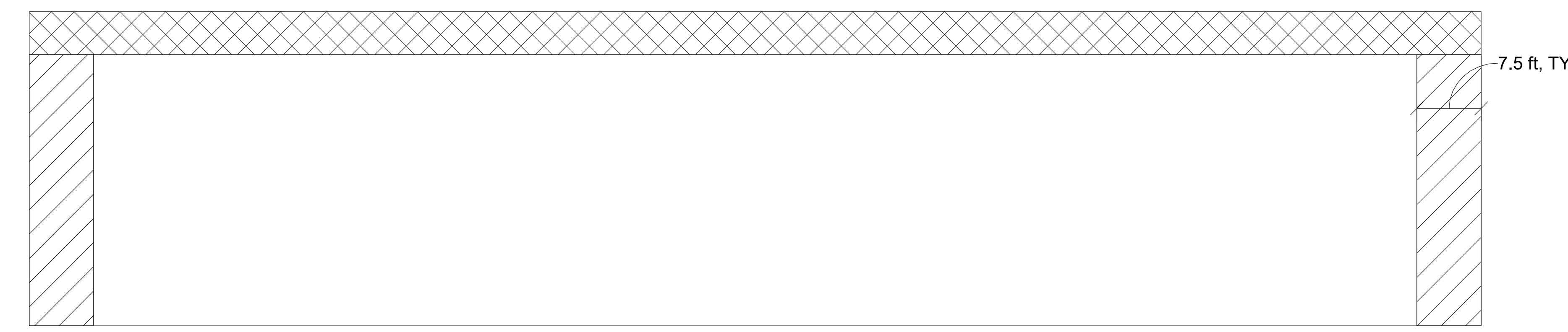
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S0-2



NORTH AND SOUTH WALL ELEVATIONS



EAST AND WEST WALL ELEVATIONS

HIGH SERVICE PUMP STATION WALL ELEVATION COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE DIAGRAM

= -27 PSF / +24 PSF

= -31 PSF / +24 PSF

NOTE: WIND PRESSURE BASED ON 25 SQUARE FOOT AREA.
NEGATIVE INDICATES PRESSURE AWAY FROM SURFACE

MEMBRANE BUILDING WALL ELEVATION COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE DIAGRAM

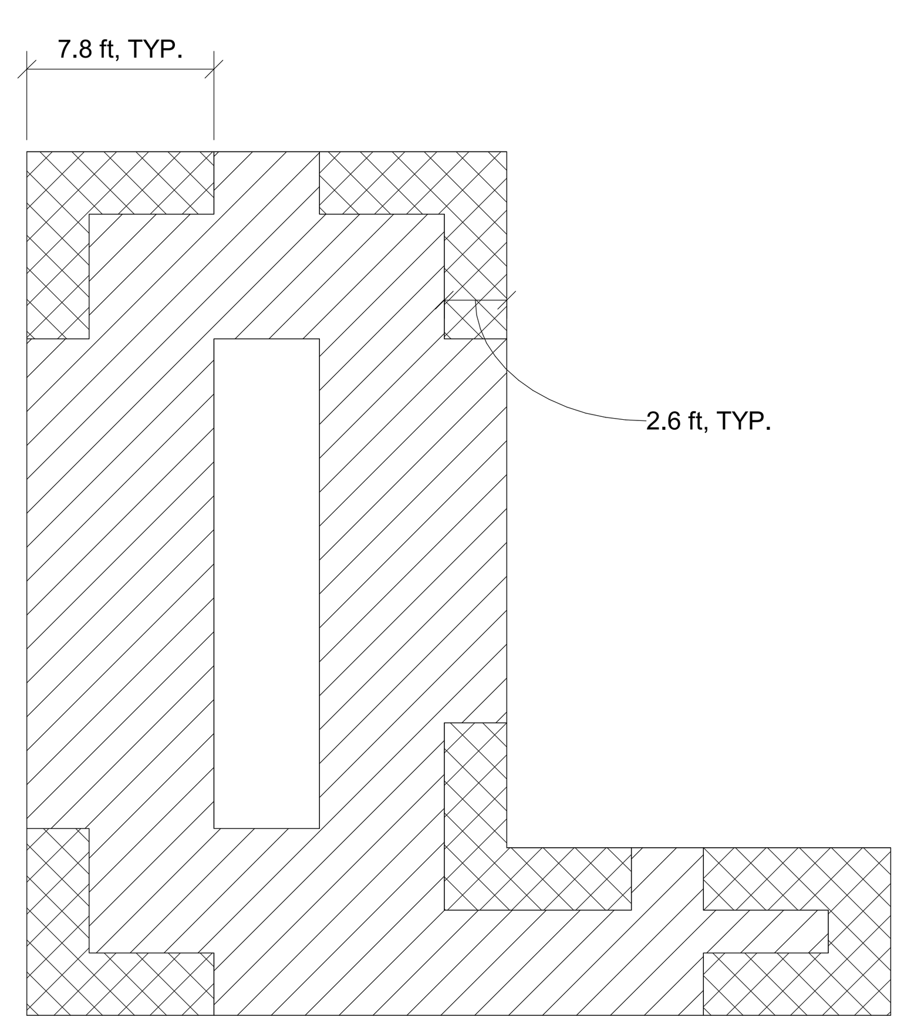
= -31 PSF / +29 PSF

= -37 PSF / +29 PSF

PARAPET

= -57 PSF / +85 PSF

NOTE: WIND PRESSURE BASED ON 25 SQUARE FOOT AREA.
NEGATIVE INDICATES PRESSURE AWAY FROM SURFACE



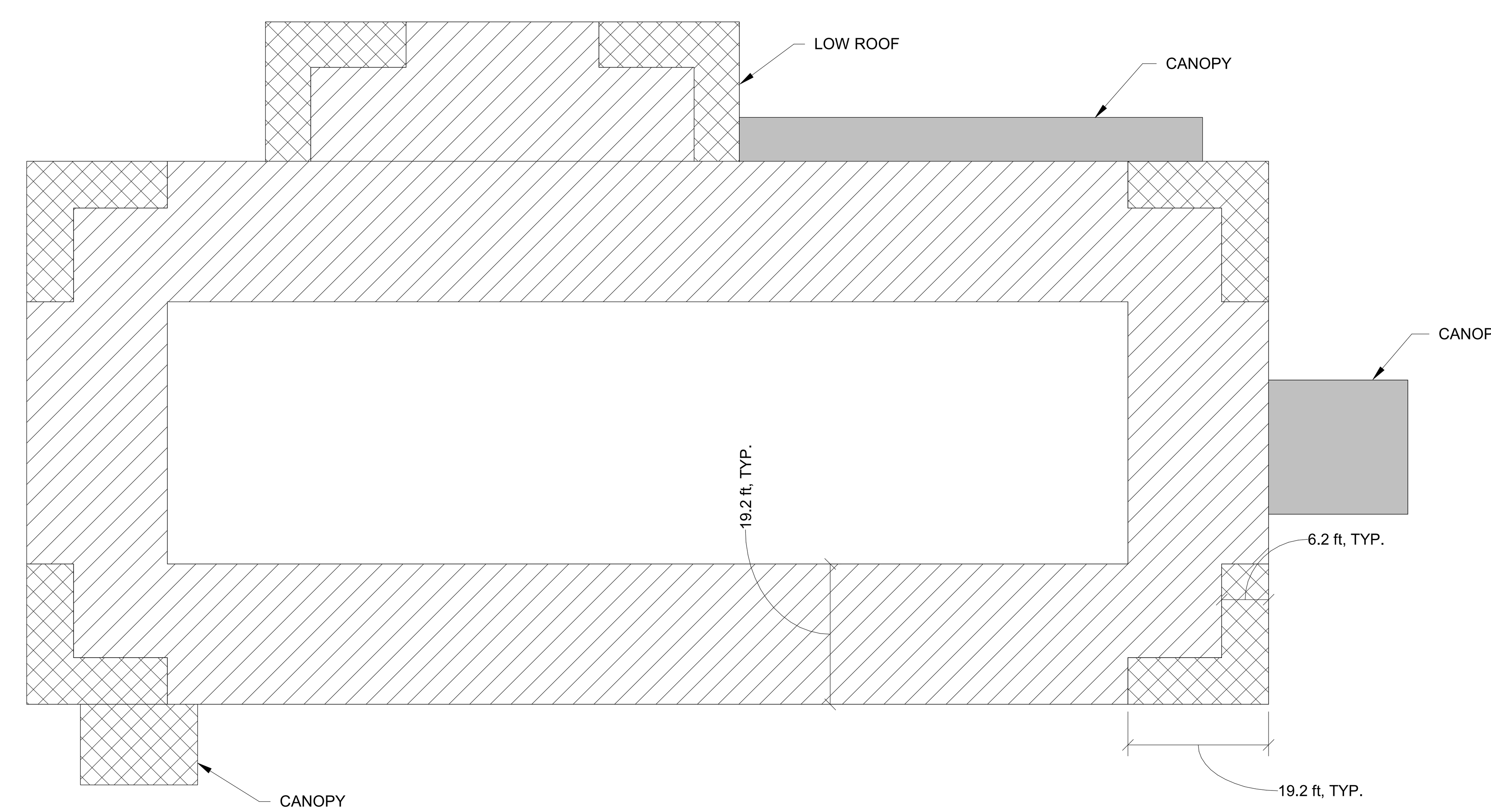
HIGH SERVICE PUMP STATION ROOF PLAN COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE DIAGRAM

= -38 PSF / +16 PSF

= -50 PSF / +16 PSF

= -63 PSF / +16 PSF

NOTE: WIND PRESSURE BASED ON 50 SQUARE FOOT AREA.
NEGATIVE INDICATES PRESSURE AWAY FROM SURFACE



MEMBRANE BUILDING ROOF PLAN COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE DIAGRAM

= -44 PSF / +16 PSF

= -59 PSF / +16 PSF

= -73 PSF / +16 PSF

= -40 PSF / +42 PSF

NOTE: WIND PRESSURE BASED ON 50 SQUARE FOOT AREA.
NEGATIVE INDICATES PRESSURE AWAY FROM SURFACE

SHEAR STRUCTURAL
503 MONROE DRIVE SUITE A102-491 ATLANTA, GA 30308
(678) 664 8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SE000174 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

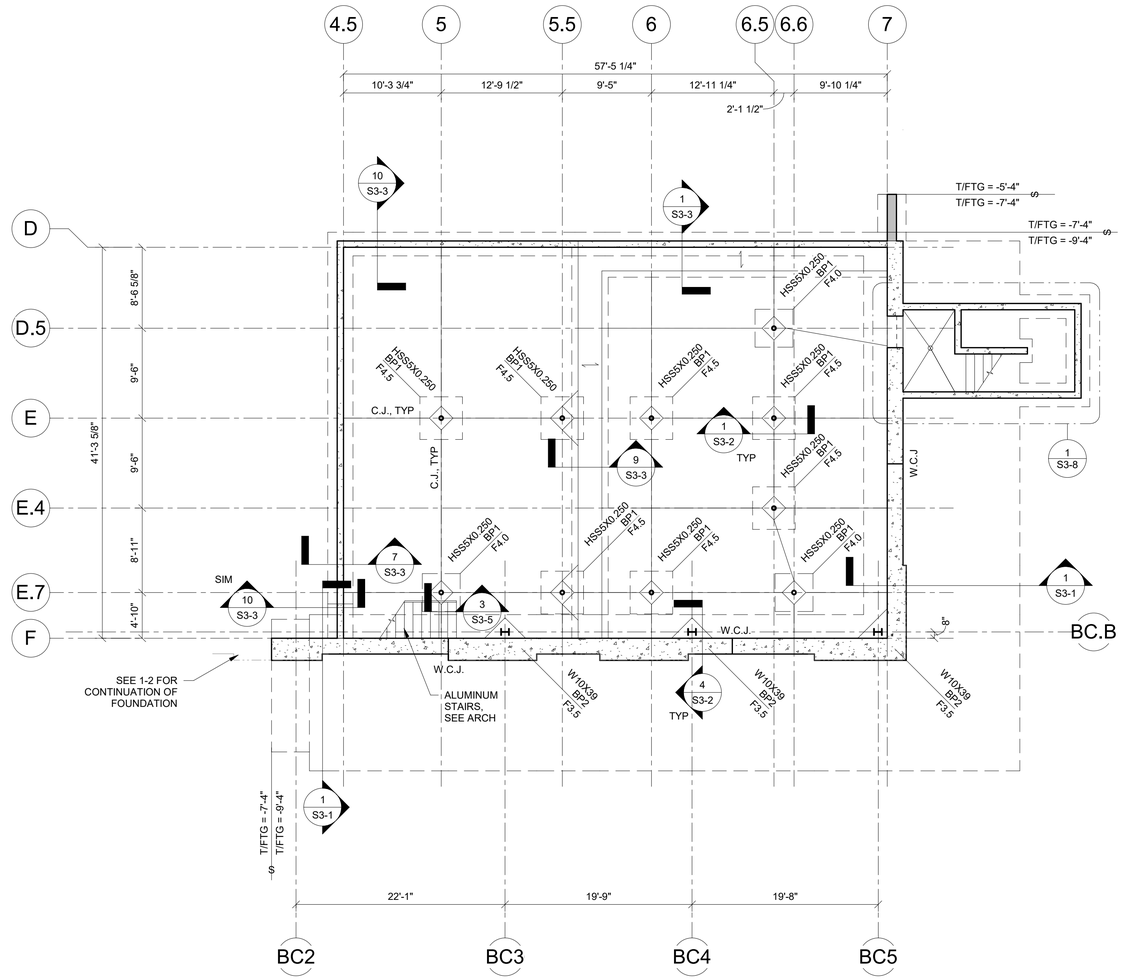
COMPONENTS AND CLADDING

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00

Drawing No.: S0-3



1 S1-1 PIT FOUNDATION PLAN
1/8" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. Fx INDICATES COLUMN FOOTING. T/FTG = -9'-4" RELATIVE TO A FIRST FLOOR REFERENCE ELEVATION = 0'-0" (1137.00'), UNO. SEE 2/S3-2.
4. BPx INDICATES COLUMN BASE PLATE. SEE 1 AND 4/S5-1.
5. INDICATES STEP IN FOOTING. SEE 10/S3-1.
6. SEE SHEET S1-7 FOR SLAB ON GRADE THICKNESSES, ELEVATIONS AND SLOPES.
7. C.J. INDICATES SLAB CONTROL JOINT. SEE 7/S3-5.
8. PROVIDE REINFORCEMENT AT RE-ENTRANT CORNERS, SEE 3/S3-2.
9. PROVIDE ISOLATION JOINT AT COLUMN. SEE 6 AND 9/S3-2.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY AND PLUMBING LINES. SEE 12/S3-2.
11. W.C.J. INDICATES WALL CONTROL JOINT, SEE 3/S3-1.
12. SEE 11 AND 12/S3-1 FOR REINFORCEMENT AT CONCRETE WALL OPENINGS.
13. INDICATES DIRECTIONAL SPAN OF FRP OR STAINLESS STEEL GRATING. SEE S1-8 FOR GRATING TYPE, LAYOUT, PIECE PLAN, AND DESIGN CRITERIA.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001114 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

PIT FOUNDATION PLAN

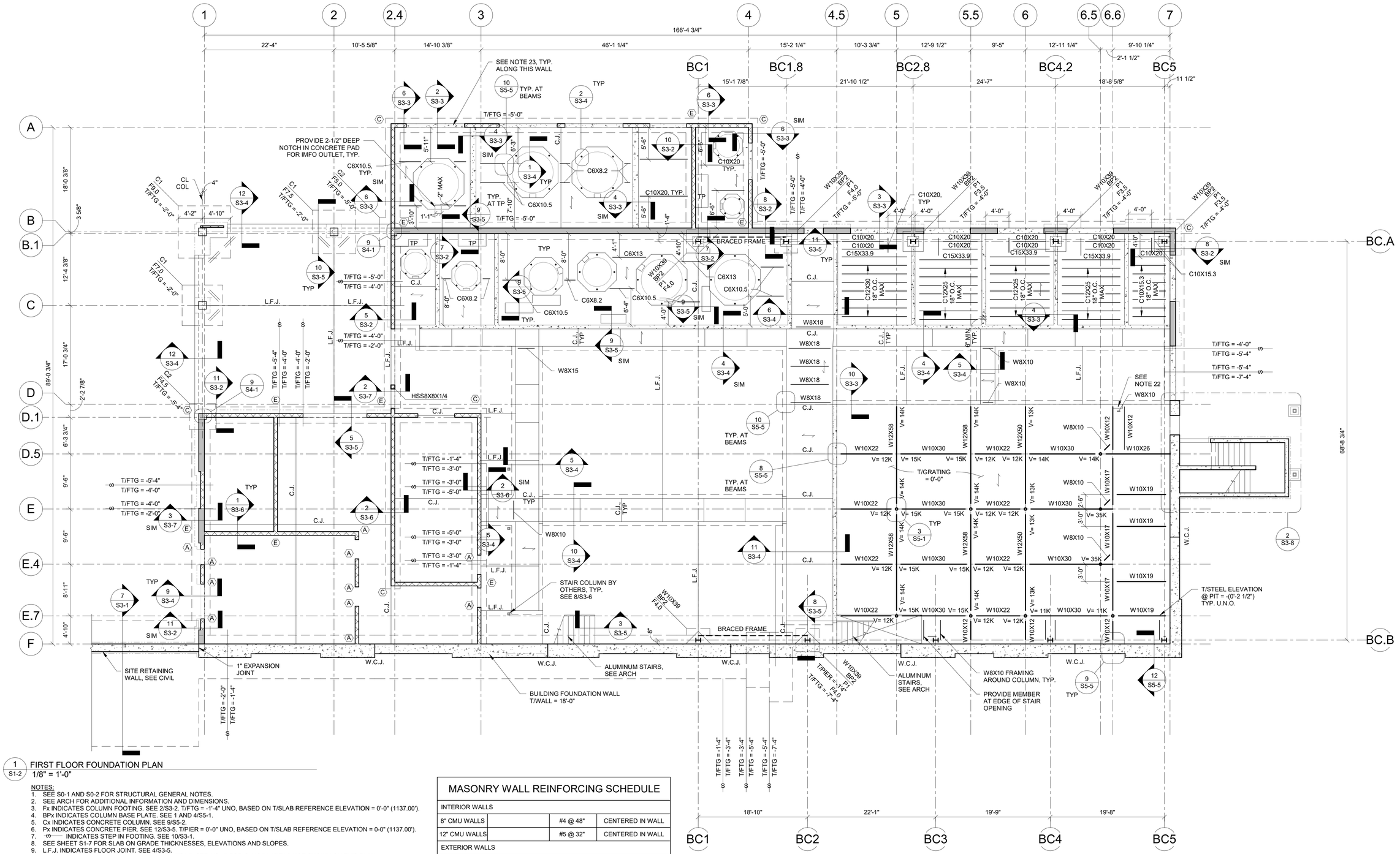
THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S1-1

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-691
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structure\Projects\097 Keck & Wood\097.18000 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_added.dwg



1 S1-2 FIRST FLOOR FOUNDATION PLAN
1/8" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. Fx INDICATES COLUMN FOOTING. SEE 2/S3-2. T/FTG = -1'-4" UNO, BASED ON T/SLAB REFERENCE ELEVATION = 0'-0" (1137.00').
4. BPx INDICATES COLUMN BASE PLATE. SEE 1 AND 4/S5-1.
5. Cx INDICATES CONCRETE COLUMN. SEE 9/S5-2.
6. Px INDICATES CONCRETE PIER. SEE 12/S3-5. T/PIER = 0'-0" UNO, BASED ON T/SLAB REFERENCE ELEVATION = 0-0" (1137.00').
7. ⟋S⟋ INDICATES STEP IN FOOTING. SEE 10/S3-1.
8. SEE SHEET S1-7 FOR SLAB ON GRADE THICKNESSES, ELEVATIONS AND SLOPES.
9. L.F.J. INDICATES FLOOR JOINT. SEE 4/S3-5.
10. C.J. INDICATES SLAB CONTROL JOINT. SEE 7/S3-5. SEE 1/S1-7 FOR C.J.'S IN AREAS NOT SHOWN ON THIS PLAN.
11. PROVIDE REINFORCEMENT AT RE-ENTRANT CORNERS, SEE 3/S3-2.
12. PROVIDE ISOLATION JOINT AT COLUMN. SEE 6 AND 9/S3-2.
13. – – – INDICATES TIE-ROD BRACING. SEE 10/S5-1.
14. ▨ INDICATES 8" MASONRY WALL, SEE REINFORCEMENT SCHEDULE ON THIS SHEET AND DETAIL 1/S4-1.
15. ▭ INDICATES 12" MASONRY WALL, SEE REINFORCEMENT SCHEDULE ON THIS SHEET AND DETAIL 1/S4-1.
16. (S) INDICATES MASONRY WALL REINFORCEMENT. SEE 4 AND 7/S4-1.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY AND PLUMBING LINES. SEE 12/S3-2.
18. W.C.J. INDICATES WALL CONTROL JOINT, SEE 3/S3-1.
19. SEE 11 AND 12/S3-1 FOR REINFORCEMENT AT CONCRETE WALL OPENINGS.
20. ⟶ INDICATES DIRECTIONAL SPAN OF FRP OR STAINLESS STEEL GRATING. PROVIDE GRATING IN AREAS WHERE T/SLAB IS BELOW 0'-0". SEE S1-8 FOR GRATING TYPE, LAYOUT, PIECE PLAN, AND DESIGN CRITERIA.
21. V=x INDICATES MAXIMUM ALLOWABLE SHEAR REACTION IN KIPS. REACTION SHALL BE 10 KIPS MINIMUM IF NOT SHOWN.
22. PROVIDE OPENING IN GRATING FOR LADDER FROM PIT. COORDINATE LOCATION WITH ARCH.
23. REMOVABLE WALL PANELS WITH METAL PANEL EXTERIOR TO BE PROVIDED AT OPENINGS, SEE ARCH.

MASONRY WALL REINFORCING SCHEDULE

INTERIOR WALLS			
8" CMU WALLS		#4 @ 48"	CENTERED IN WALL
12" CMU WALLS		#5 @ 32"	CENTERED IN WALL
EXTERIOR WALLS			
8" CMU WALLS	AT OUTDOOR WORK AREA	#6 @ 16"	CENTERED IN WALL
	OTHER LOCATIONS	#5 @ 32"	
12" CMU WALLS	HT < 24'	#5 @ 32"	CENTERED IN WALL
	HT > 24'	#5 @ 16"	DOUBLE LAYER
PARAPETS			
8" CMU WALLS		#5 @ 32"	CENTERED IN WALL

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 56001114 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

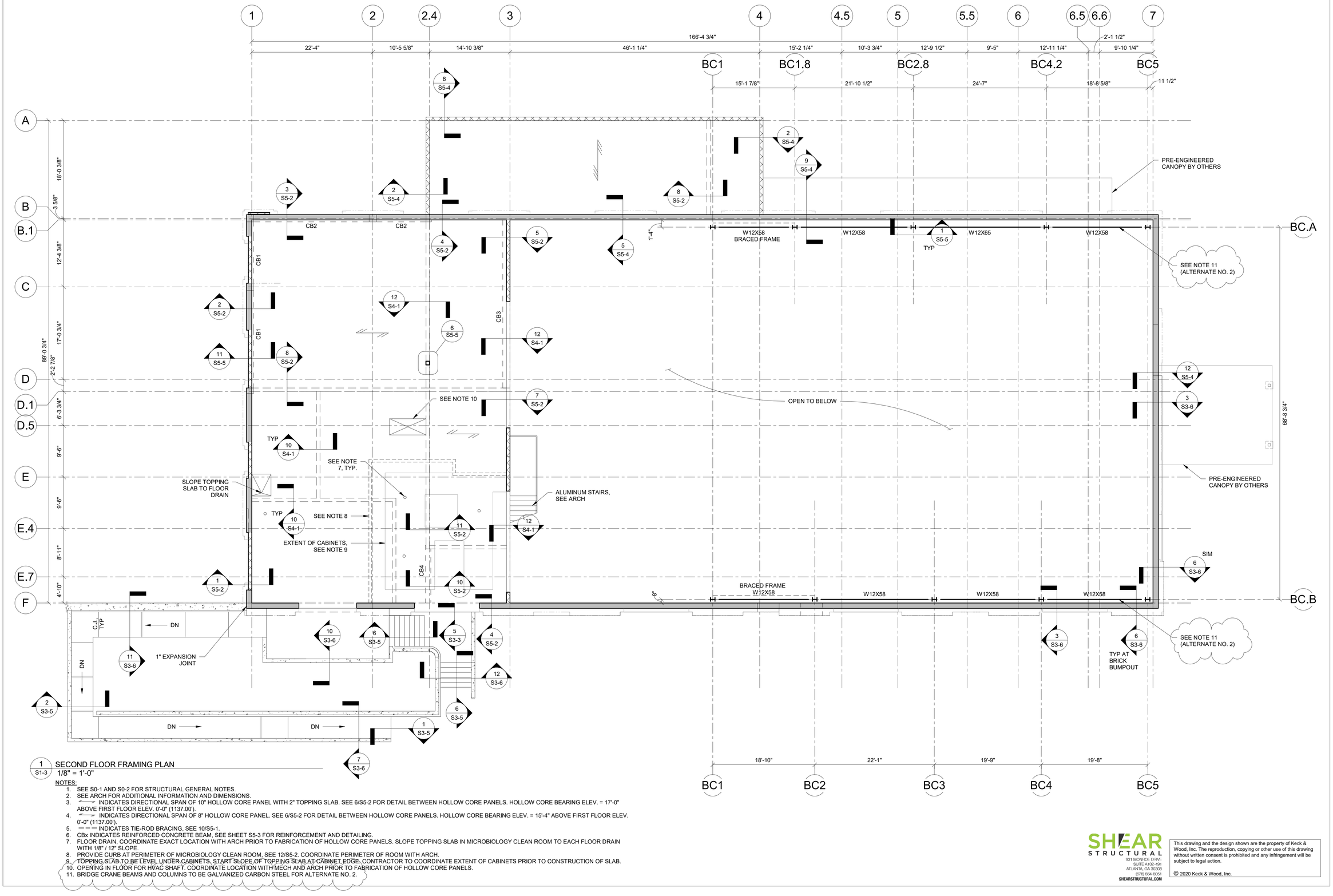
FIRST FLOOR FOUNDATION PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S1-2

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 864 9061
SHEARSTRUCTURAL.COM



1 S1-3 SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"

NOTES:

1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. ⟶ INDICATES DIRECTIONAL SPAN OF 10" HOLLOW CORE PANEL WITH 2" TOPPING SLAB. SEE 6/S5-2 FOR DETAIL BETWEEN HOLLOW CORE PANELS. HOLLOW CORE BEARING ELEV. = 17'-0" ABOVE FIRST FLOOR ELEV. 0'-0" (1137.00').
4. ⟶ INDICATES DIRECTIONAL SPAN OF 8" HOLLOW CORE PANEL. SEE 6/S5-2 FOR DETAIL BETWEEN HOLLOW CORE PANELS. HOLLOW CORE BEARING ELEV. = 15'-4" ABOVE FIRST FLOOR ELEV. 0'-0" (1137.00').
5. — — — INDICATES TIE-ROD BRACING, SEE 10/S5-1.
6. CBx INDICATES REINFORCED CONCRETE BEAM, SEE SHEET S5-3 FOR REINFORCEMENT AND DETAILING.
7. FLOOR DRAIN, COORDINATE EXACT LOCATION WITH ARCH PRIOR TO FABRICATION OF HOLLOW CORE PANELS. SLOPE TOPPING SLAB IN MICROBIOLOGY CLEAN ROOM TO EACH FLOOR DRAIN WITH 1/8" / 12" SLOPE.
8. PROVIDE CURB AT PERIMETER OF MICROBIOLOGY CLEAN ROOM, SEE 12/S5-2. COORDINATE PERIMETER OF ROOM WITH ARCH.
9. TOPPING SLAB TO BE LEVEL UNDER CABINETS. START SLOPE OF TOPPING SLAB AT CABINET EDGE. CONTRACTOR TO COORDINATE EXTENT OF CABINETS PRIOR TO CONSTRUCTION OF SLAB.
10. OPENING IN FLOOR FOR HVAC SHAFT. COORDINATE LOCATION WITH MECH AND ARCH PRIOR TO FABRICATION OF HOLLOW CORE PANELS.
11. BRIDGE CRANE BEAMS AND COLUMNS TO BE GALVANIZED CARBON STEEL FOR ALTERNATE NO. 2.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 56201714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

SECOND FLOOR FRAMING PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By:	Checked By:
DCR	HCJ

Date: 04/14/2021

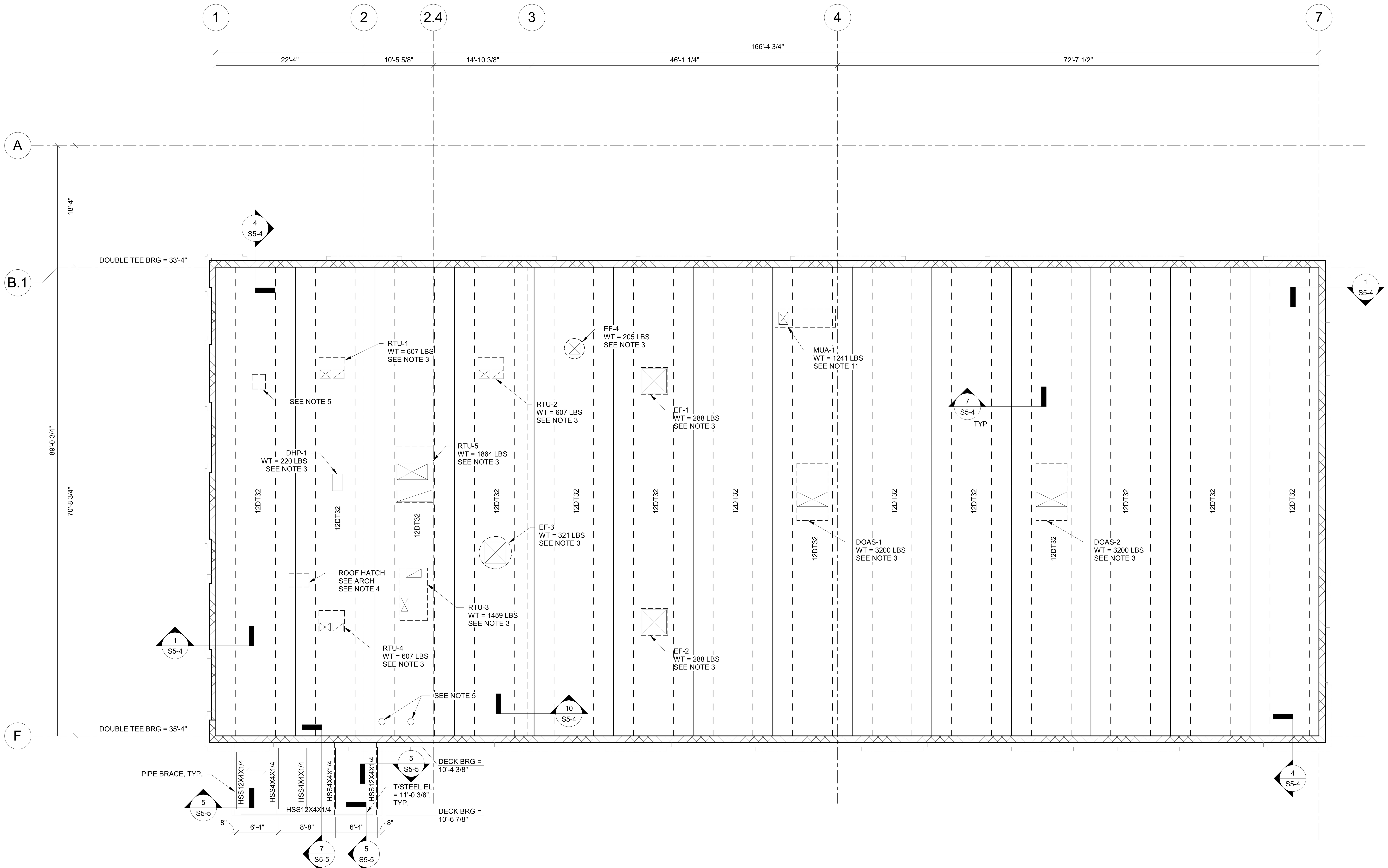
Scale: As Shown

Project No.: 170110.00

Drawing No.: S1-3

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664 8051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structural\Projects\097 Keck & Wood\097.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_edited.dwg



1 S1-4 ROOF FRAMING PLAN
1/8" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. CONTRACTOR AND PRECAST MANUFACTURER TO COORDINATE UNIT WEIGHTS AND PENETRATIONS WITH MECH PRIOR TO CONSTRUCTION.
4. COORDINATE LOCATION WITH PRECAST MANUFACTURER TO AVOID TEES PRIOR TO FABRICATION.
5. EXHAUST VENT PENETRATION. CONTRACTOR TO COORDINATE LOCATION WITH PRECAST MANUFACTURER PRIOR TO FABRICATION.
6. DOUBLE TEE BEARING ELEVATION RELATIVE TO FIRST FLOOR REFERENCE ELEVATION = 0'-0" (1137.00').
7. ⟵⟶ INDICATES DIRECTION SPAN OF 1-1/2" 22 GA GALVANIZED METAL ROOF DECK, SEE 12/S5-1. DECK BRG ELEVATION RELATIVE TO SECOND FLOOR ELEVATION = 0'-0" (1155.00').
8. SEE 10/S4-1 FOR LINTEL SECTION AT ARCHED WINDOWS.

SHEAR STRUCTURAL
shearstructural.com

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

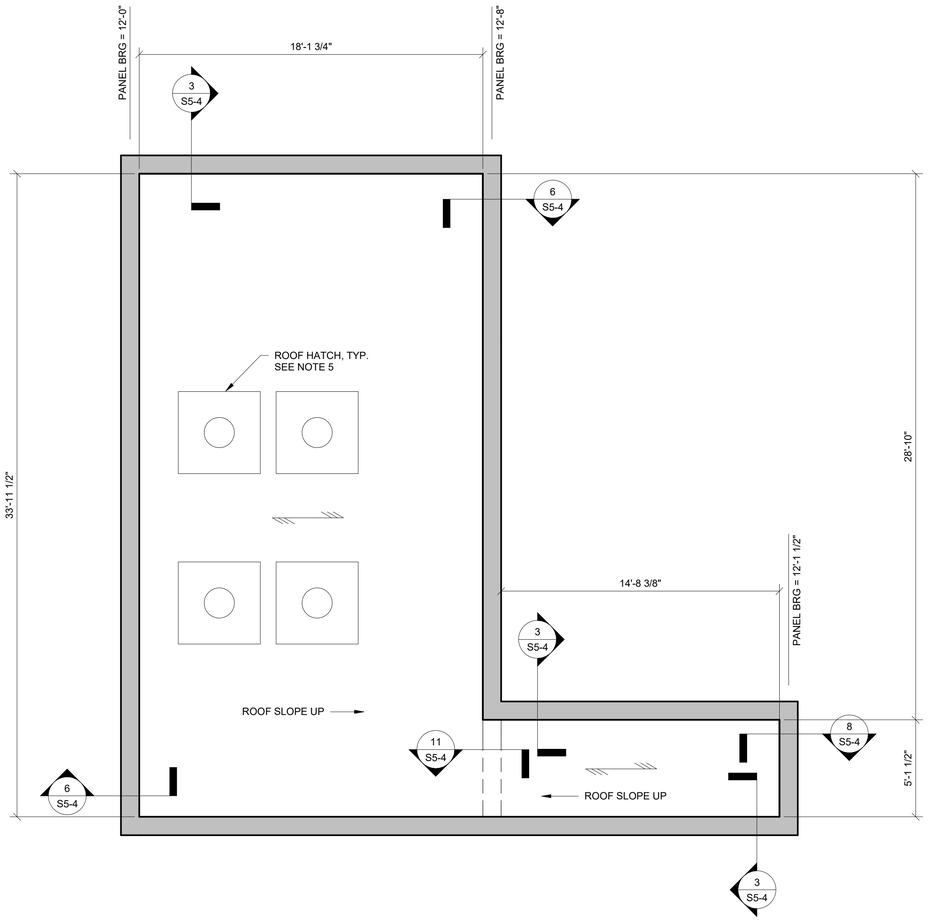
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ROOF FRAMING PLAN

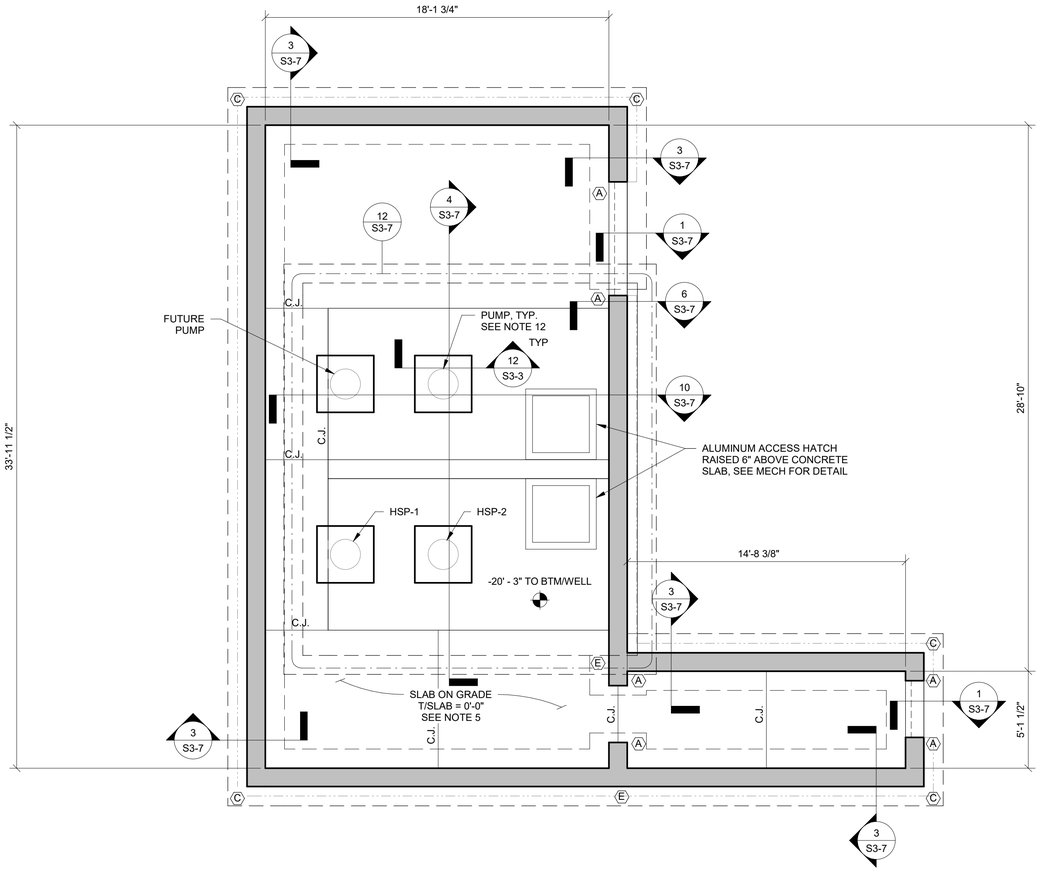
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: S1-4



2 HIGH SERVICE PUMP STATION ROOF FRAMING PLAN
S1-5 1/4" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. ⟷ INDICATES DIRECTIONAL SPAN OF 8" HOLLOW CORE PANEL. SEE 6/S5-2 FOR DETAIL BETWEEN HOLLOW CORE PANELS.
4. HOLLOW CORE PANEL BEARING ELEVATION RELATIVE TO FIRST FLOOR REFERENCE ELEVATION = 0'-0" (1137.00').
5. COORDINATE LOCATION OF ROOF HATCH PRIOR TO FABRICATION OF HOLLOW CORE PANELS. SEE MECH FOR ROOF HATCH DETAIL AND LOCATION.



1 HIGH SERVICE PUMP STATION FOUNDATION PLAN
S1-5 1/4" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. T/FTG = -1'-4" UNO, BASED ON T/SLAB REFERENCE ELEVATION = 0'-0" (1137.00').
4. INDICATES STEP IN FOOTING. SEE 10/S3-1.
5. PROVIDE 12" SLAB ON GRADE REINFORCED WITH #5@12" O.C. EACH WAY TOP AND BOTTOM ON VAPOR BARRIER AND 6" GRANULAR BASE.
6. C.J. INDICATES SLAB CONTROL JOINT. SEE 7/S3-5.
7. PROVIDE REINFORCEMENT AT RE-ENTRANT CORNERS, SEE 3/S3-2.
8. INDICATES 12" MASONRY WALL REINF. W/ #5@32" O.C. SEE DETAIL 1/S4-1.
9. (S) INDICATES MASONRY WALL REINFORCEMENT. SEE 7/S4-1.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL UTILITY AND PLUMBING LINES. SEE 12/S3-2.
11. COORDINATE WALL PIPE PENETRATIONS WITH MECH. SEE 11 AND 12/S3-1 FOR REINFORCEMENT AT CONCRETE WALL OPENINGS AND SEE MECH FOR DETAIL AT WALL PIPE PENETRATIONS.
12. COORDINATE LOCATION OF PUMP WITH MECH PRIOR TO CONSTRUCTION.
13. SEE 3 AND 5/S4-01 FOR MASONRY LINTEL SCHEDULE.

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

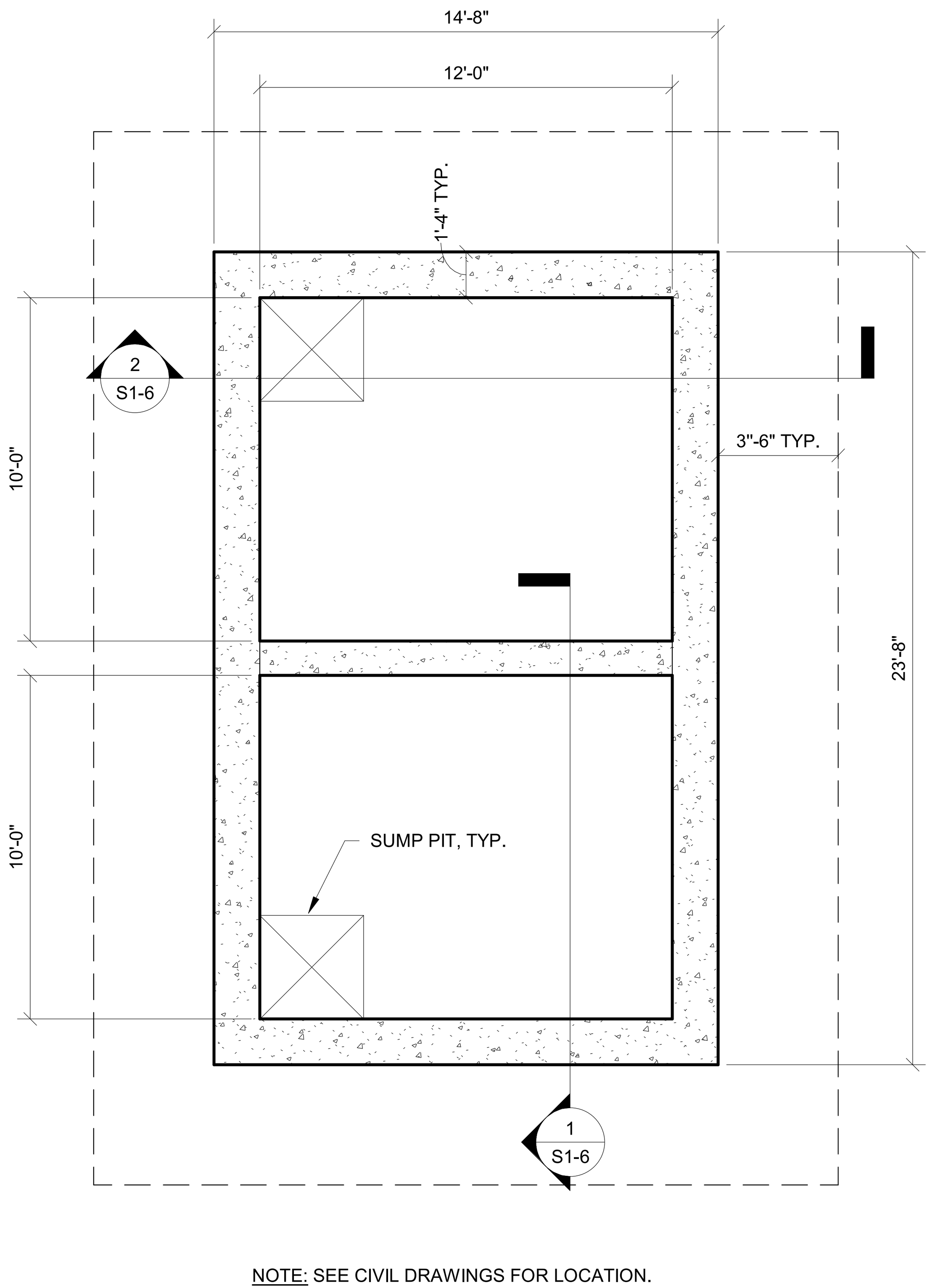
HIGH SERVICE PUMP STATION PLANS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR | Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

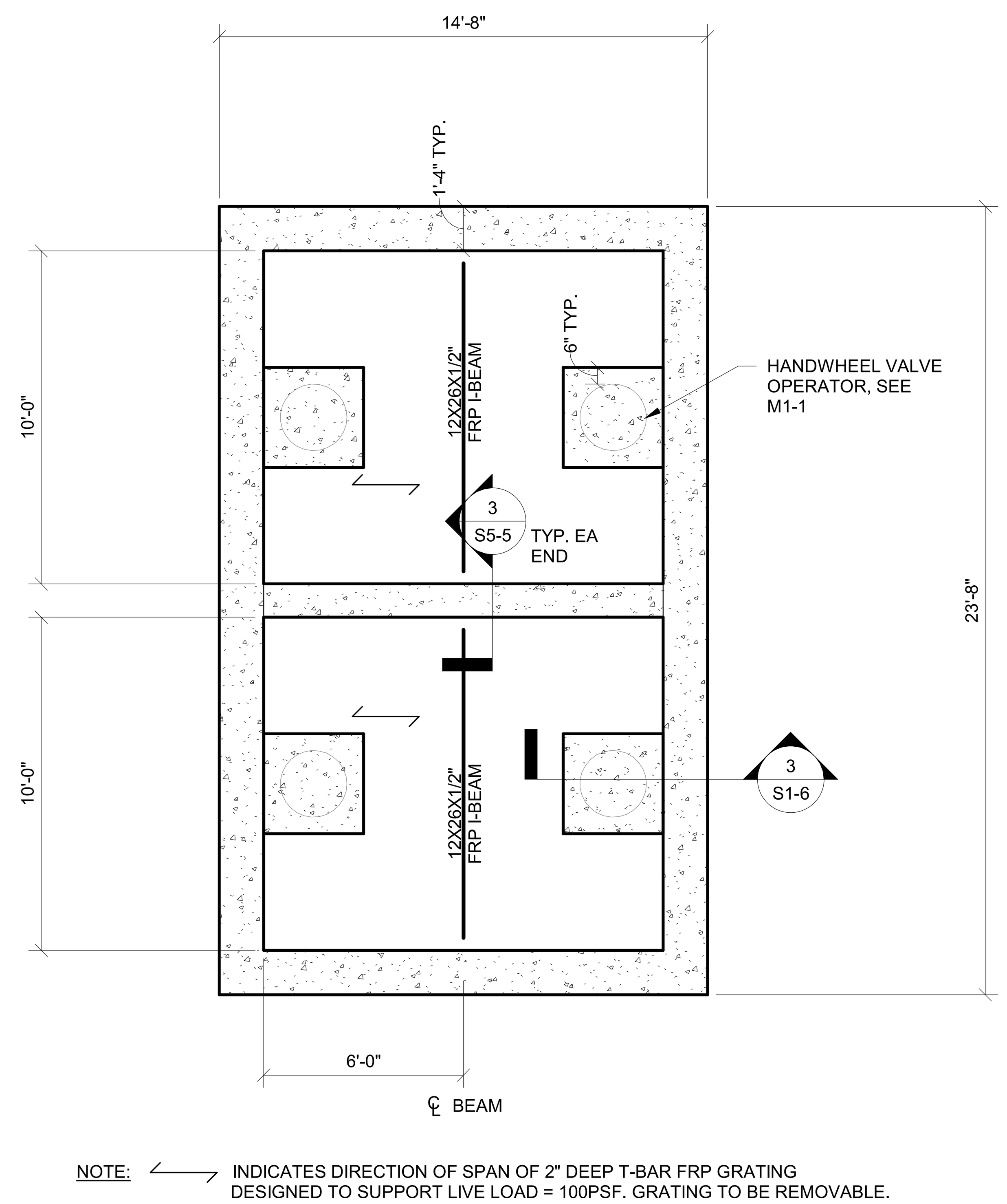
Project No.: 170110.00
Drawing No.: S1-5

G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007.1 B001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_e06d.dwg



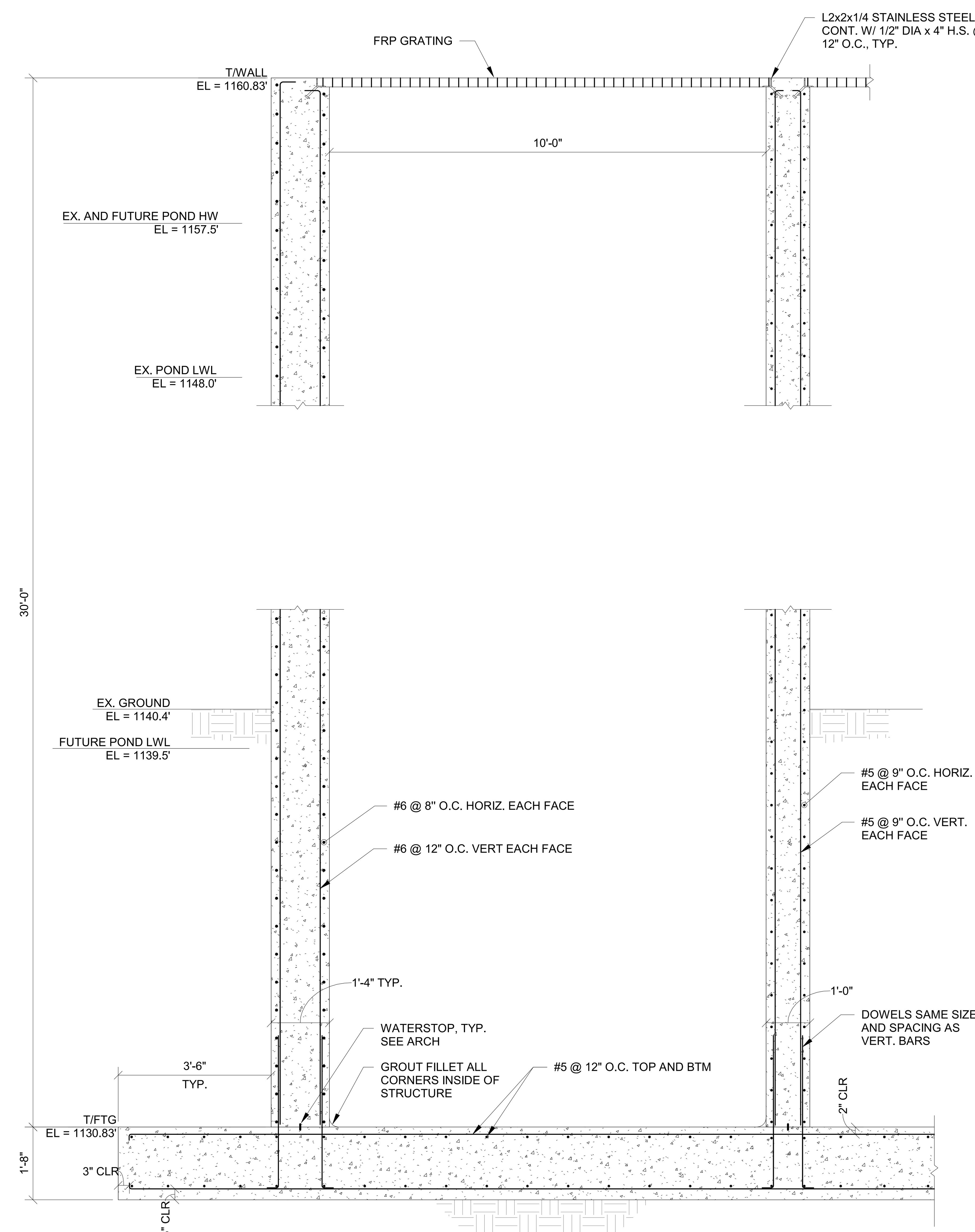
NOTE: SEE CIVIL DRAWINGS FOR LOCATION.

5 PASSIVE INTAKE SCREEN FOUNDATION PLAN
S1-6 1/4" = 1'-0"

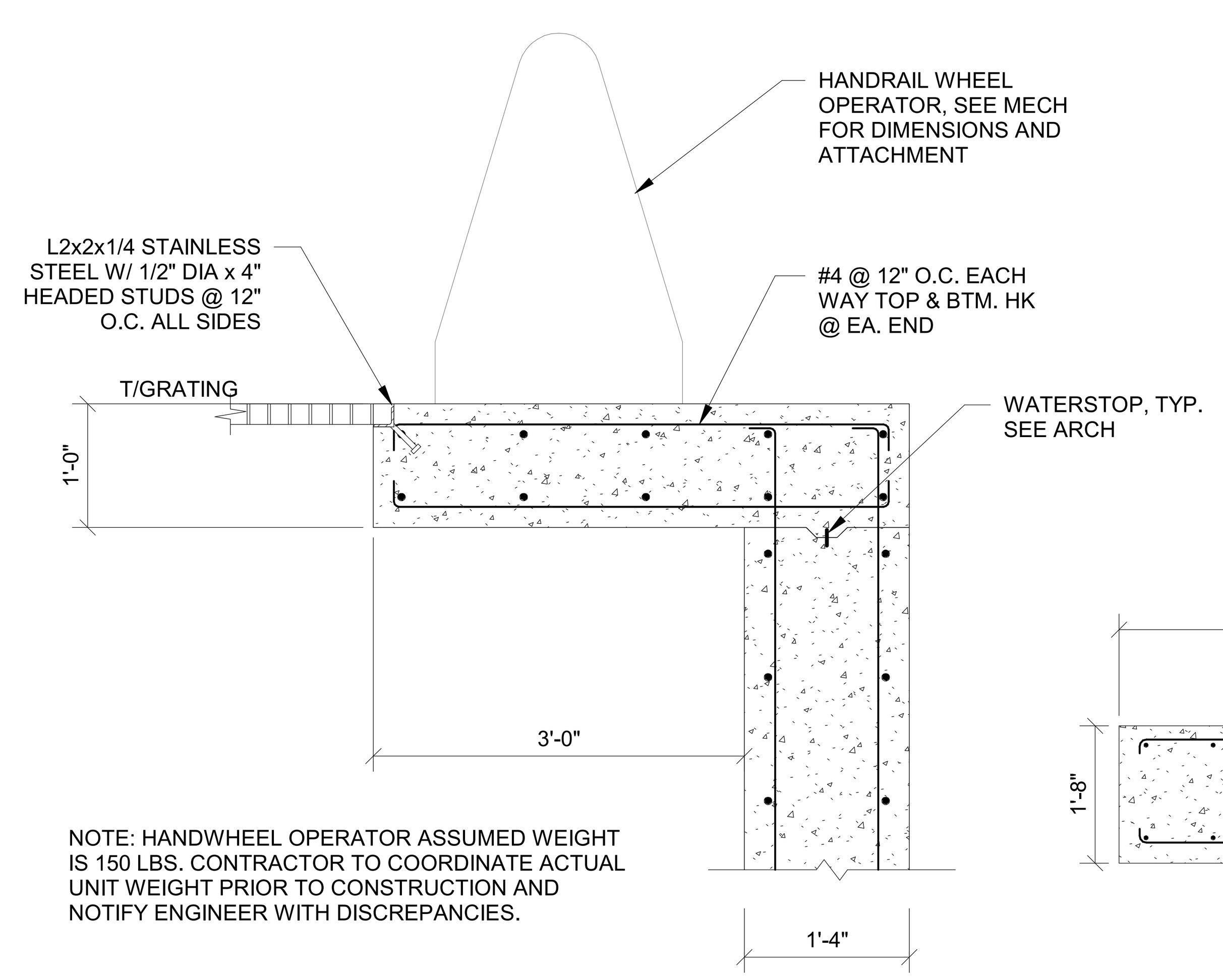


NOTE: ⟵ INDICATES DIRECTION OF SPAN OF 2" DEEP T-BAR FRP GRATING DESIGNED TO SUPPORT LIVE LOAD = 100PSF. GRATING TO BE REMOVABLE.

4 PASSIVE INTAKE SCREEN PLAN AT TOP
S1-6 1/4" = 1'-0"

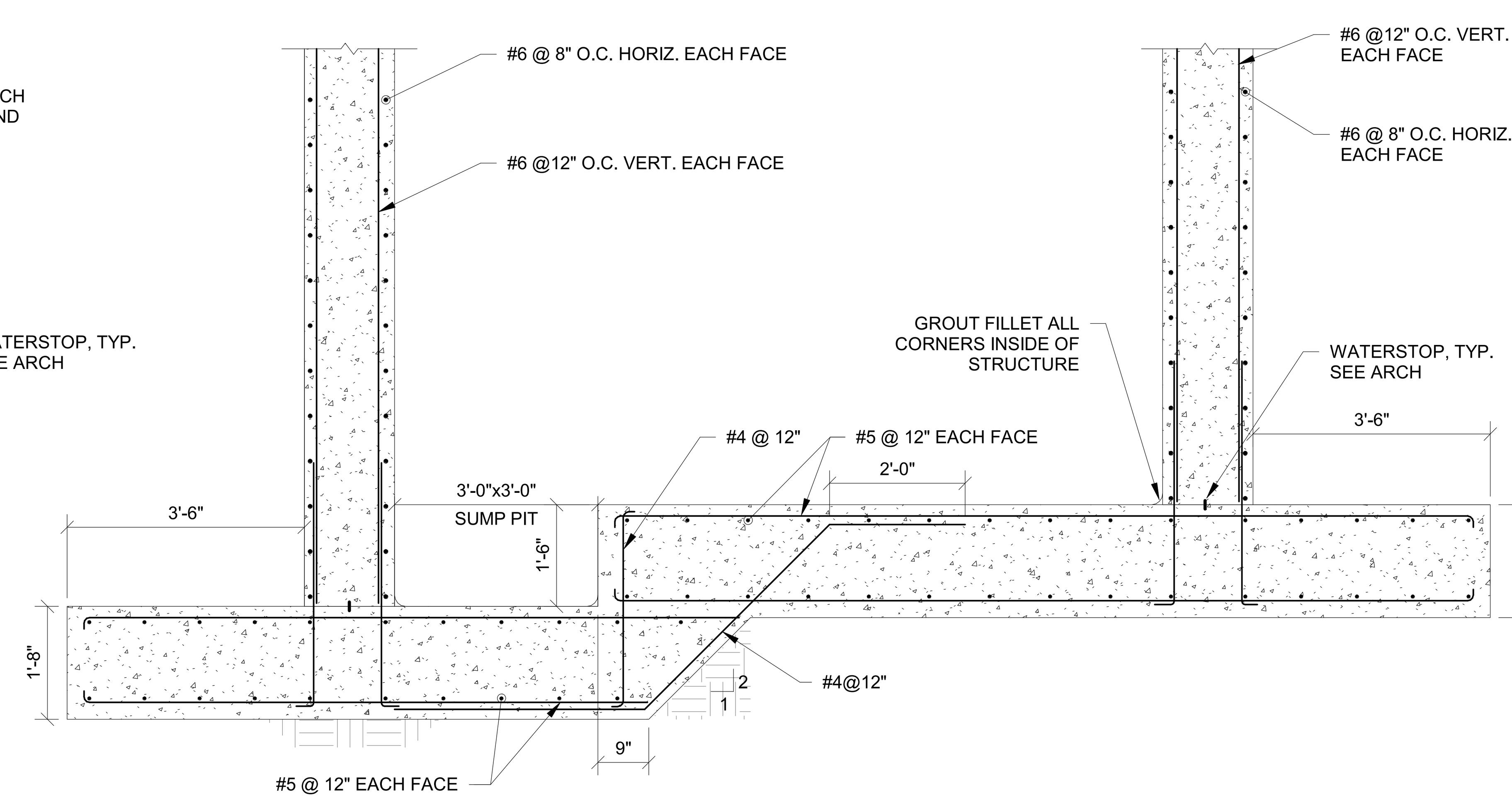


NOTE:
1. SEE DETAIL 11/S3-1 FOR ADDITIONAL REINFORCEMENT AT PIPE PENETRATIONS.
2. SEE DETAIL 6/S3-1 FOR ADDITIONAL REINFORCEMENT AT WALL CORNERS AND INTERSECTIONS.



NOTE: HANDWHEEL OPERATOR ASSUMED WEIGHT IS 150 LBS. CONTRACTOR TO COORDINATE ACTUAL UNIT WEIGHT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER WITH DISCREPANCIES.

3 SECTION AT HANDWHEEL VALVE OPERATOR
S1-6 3/4" = 1'-0"



2 SECTION AT INTAKE STRUCTURE AT SUMP PIT
S1-6 1/2" = 1'-0"

1 SECTION AT INTAKE STRUCTURE
S1-6 1/2" = 1'-0"

Keck+Wood COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SE000174 PROFESSIONAL STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

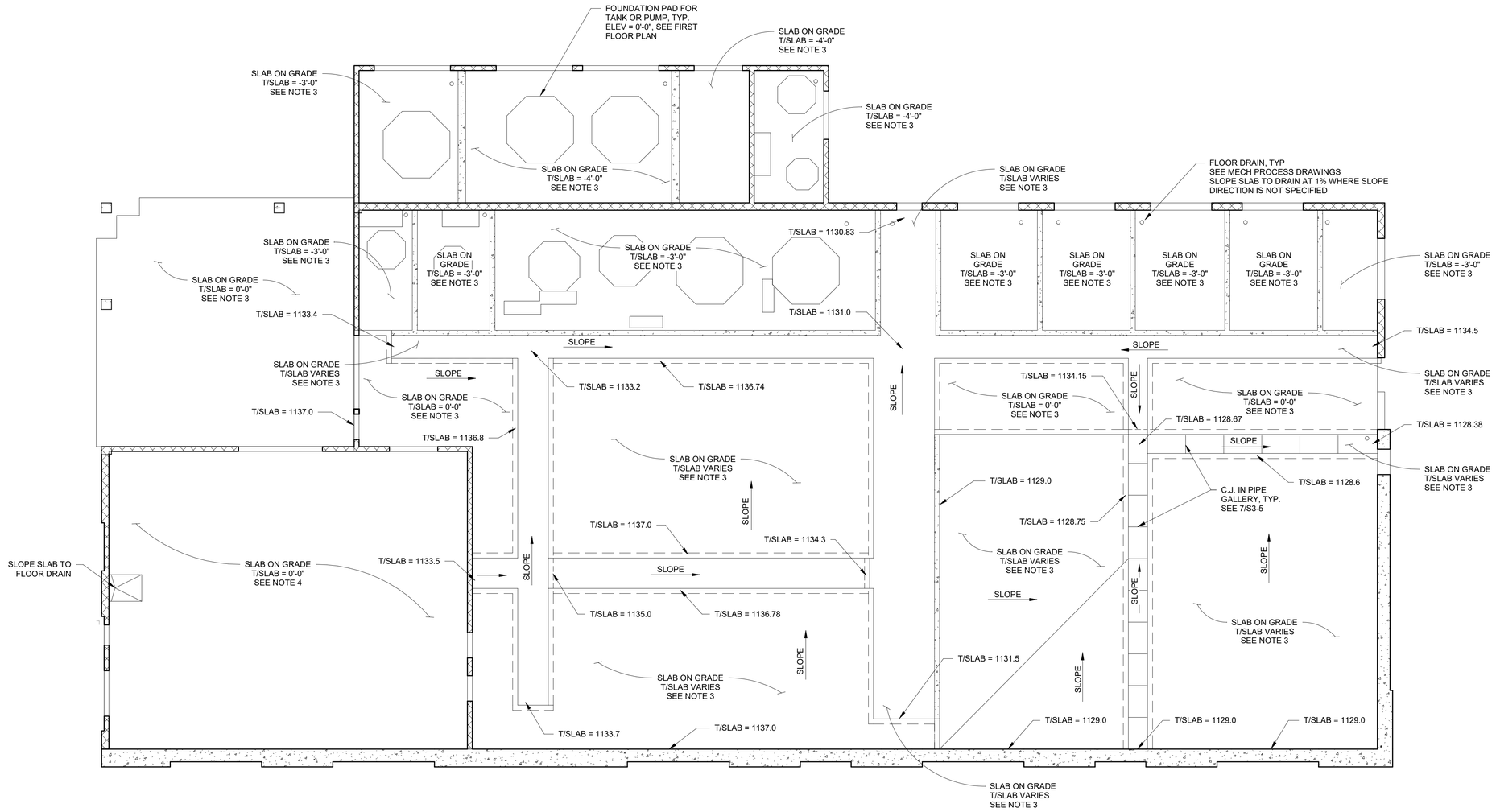
PASSIVE INTAKE SCREEN PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S1-6

SHEAR STRUCTURAL
533 MONROE DRIVE SUITE A102-491 ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM



1 / S1-7 SLAB ON GRADE SLOPE PLAN
1/8" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. SEE ARCH FOR ADDITIONAL INFORMATION AND DIMENSIONS.
3. PROVIDE 8" SLAB ON GRADE REINFORCED WITH #5@12" O.C. EACH WAY TOP AND BOTTOM ON VAPOR BARRIER AND 6" GRANULAR BASE. NO VAPOR BARRIER IS REQUIRED FOR EXTERIOR SLAB ON GRADE.
4. PROVIDE 4" SLAB ON GRADE REINFORCED WITH WWF 6x6 W2.1xW2.1 ON VAPOR BARRIER AND 6" GRANULAR BASE.
5. ⟵ INDICATES DIRECTION OF SLAB SLOPE DOWNWARD AT 1%.
6. SLAB ELEVATIONS SHOWN IN FEET. REFERENCE ELEVATION OF 0'-0" = 1137.00 FT.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

SLAB ON GRADE SLOPE PLAN

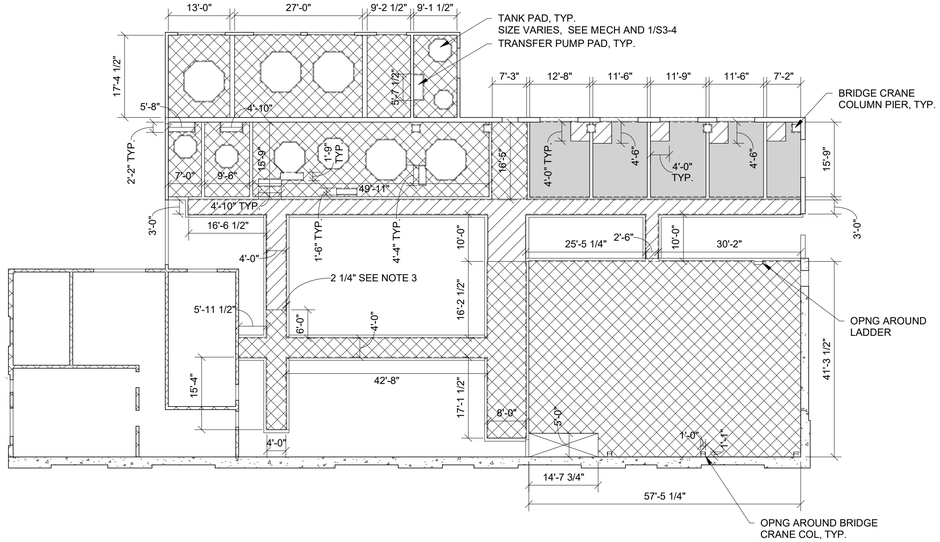
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S1-7

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007 1800 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_edited .dwg



FIRST FLOOR GRATING PLAN (T/GRATING = 0'-0")

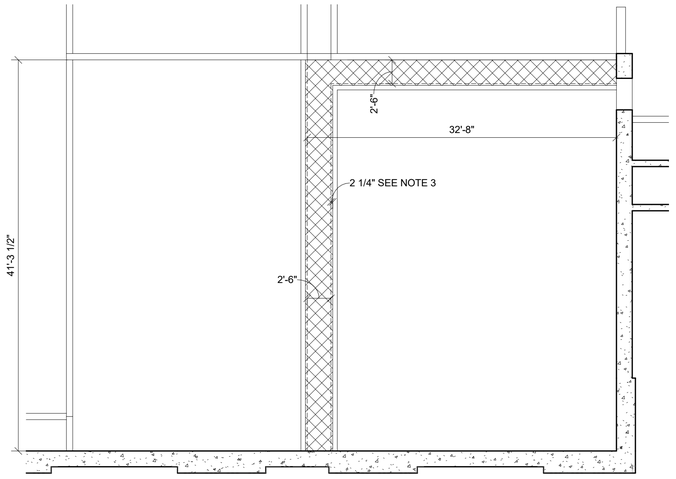
= CONCRETE SLAB ON GRADE

= STAINLESS STEEL GRATING, BEARING BARS SHALL BE 2 1/2" DEEP X 3/16" THICK SPACED AT 7/16" C/C WITH CROSS BARS SPACED AT 4" C/C

= STAINLESS STEEL GRATING, BEARING BARS SHALL BE 2 1/2" DEEP X 3/16" THICK SPACED AT 15/16" C/C WITH CROSS BARS SPACED AT 4" C/C

= 2-1/2" DEEP HIGH LOAD CAPACITY MOLDED GRATING DESIGNED BY OTHERS TO SUPPORT LOADING AS INDICATED

NOTES:
1. SEE TABLE FOR DESIGN LOADS FOR GRATING.
2. ALL GRATING TO BE REMOVEABLE.
3. PROVIDE BEARING FOR GRATING ON WALLS, PADS, AND PIERS TO WHICH GRATING SPANS. SEE S1-2 AND CORRESPONDING DETAIL SHEETS.
4. COORDINATE OPENINGS IN GRATING NOT SHOWN OR DIMENSIONED ON PLAN WITH ARCH OR MECHANICAL DRAWINGS.
5. SEE DETAIL 1/S1-8 FOR LAYOUT OF GRATING AROUND PIPE PENETRATIONS.
6. SEE DETAIL 2/S1-8 FOR LAYOUT OF GRATING AT CHANGES IN SPAN DIRECTIONS.
7. SEE S1-2 FOR GRATING SPAN DIRECTIONS.



PIT FLOOR GRATING PLAN (T/GRATING = -8'-0")

= CONCRETE SLAB ON GRADE

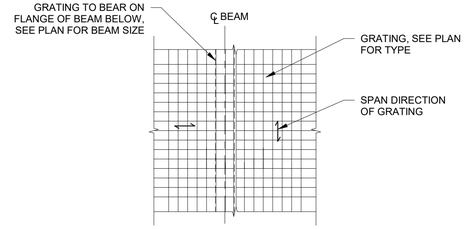
= STAINLESS STEEL GRATING, BEARING BARS SHALL BE 2 1/2" DEEP X 3/16" THICK SPACED AT 15/16" C/C WITH CROSS BARS SPACED AT 4" C/C

NOTES:
1. SEE TABLE FOR DESIGN LOADS FOR GRATING.
2. ALL GRATING TO BE REMOVEABLE.
3. PROVIDE BEARING FOR GRATING ON WALLS, PADS, AND PIERS TO WHICH GRATING SPANS. SEE S1-2 AND CORRESPONDING DETAIL SHEETS.
4. COORDINATE OPENINGS IN GRATING NOT SHOWN OR DIMENSIONED ON PLAN WITH ARCH OR MECHANICAL DRAWINGS.
5. SEE DETAIL 1/S1-8 FOR LAYOUT OF GRATING AROUND PIPE PENETRATIONS.
6. SEE DETAIL 2/S1-8 FOR LAYOUT OF GRATING AT CHANGES IN SPAN DIRECTIONS.
7. SEE S1-2 FOR GRATING SPAN DIRECTIONS.

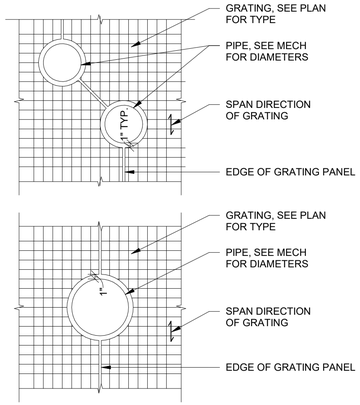
GRATING DESIGN CRITERIA

GRATING	LIVE LOAD	DEAD LOAD	VEHICLE LOAD (LBS)
	100 PSF	305 PSF	7,400 LBS (FORKLIFT WHEEL LOAD)
	100 PSF	25 PSF	7,400 LBS (FORKLIFT WHEEL LOAD)
	100 PSF	25 PSF	2,500 LBS (SCISSOR LIFT WHEEL LOAD)

NOTES:
1. ALL GRATING TO BE REMOVABLE
2. SEE GRATING NOTES ON SHEET S0-2.



2 S1-8 GRATING LAYOUT AT CHANGE IN SPAN DIRECTION
3/4" = 1'-0"



1 S1-8 GRATING LAYOUT AT PIPE PENETRATIONS
3/4" = 1'-0"

SHEAR STRUCTURAL
501 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 56201714 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

GRATING PLANS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: DCR | Checked By: HCJ

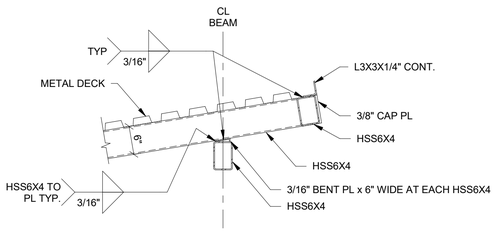
Date: 04/14/2021

Scale: As Shown

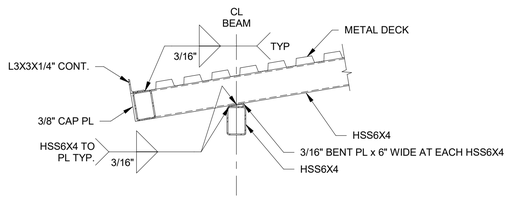
Project No.: 170110.00

Drawing No.: S1-8

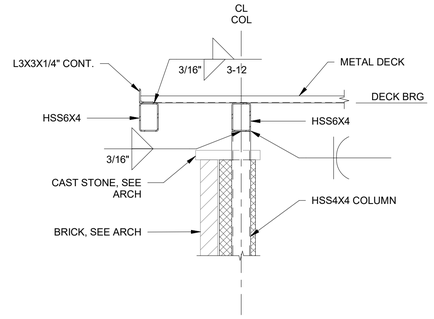
G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_s08a5.dwg



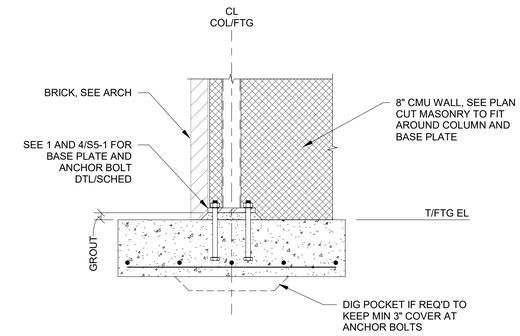
6 S1-9 DUMPSTER ROOF EDGE SECTION BACK
3/4" = 1'-0"



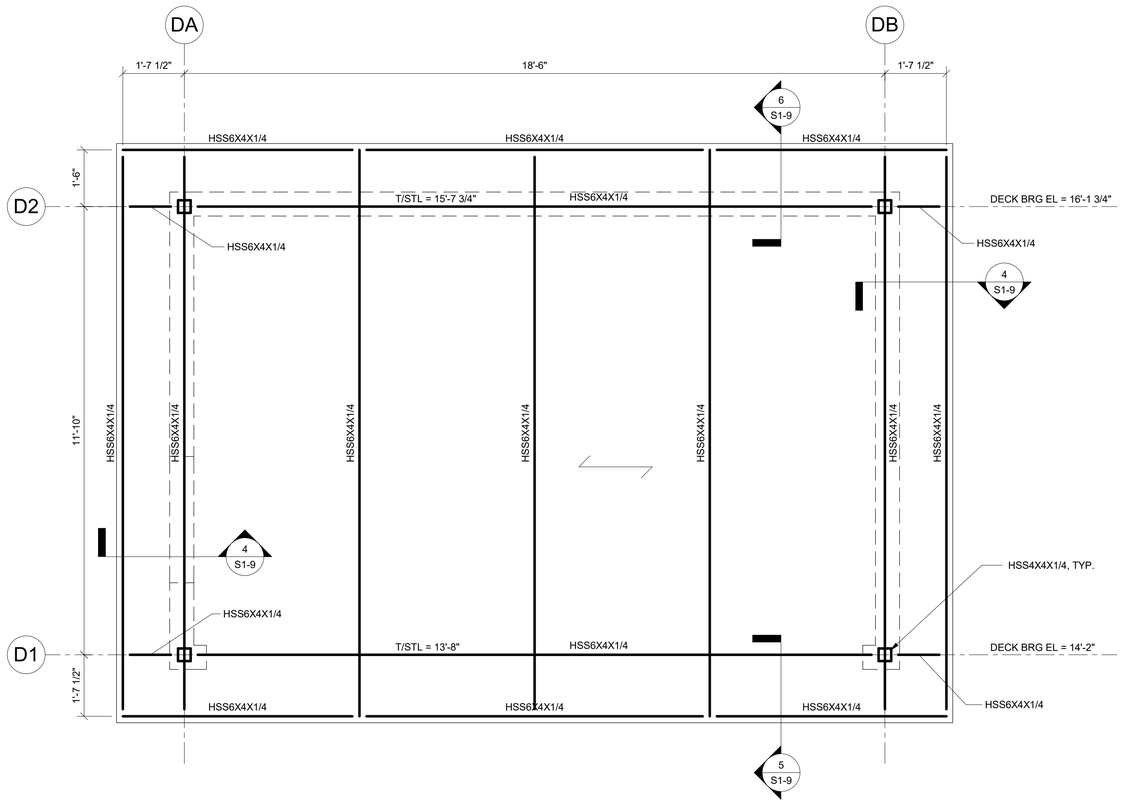
5 S1-9 DUMPSTER ROOF EDGE SECTION FRONT
3/4" = 1'-0"



4 S1-9 DUMPSTER WALL SECTION AT ROOF
3/4" = 1'-0"



3 S1-9 TYPICAL INTERIOR STEEL COLUMN FOOTING
3/4" = 1'-0"



NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. ⟷ INDICATES DIRECTIONAL SPAN OF 1-1/2" 22 GA GALVANIZED METAL DECK, SEE 12/S5-1. DECK BRG ELEVATION RELATIVE TO T/SLAB ELEVATION = 0'-0".

2 S1-9 DUMPSTER FRAMING PLAN
1/2" = 1'-0"

NOTES:
1. SEE S0-1 AND S0-2 FOR STRUCTURAL GENERAL NOTES.
2. PROVIDE 6" CONCRETE SLAB ON GRADE REINF. W/ #4@12" EACH WAY. SEE CIVIL FOR T/SLAB ELEVATION.
3. Fx INDICATES COLUMN FOOTING. T/FTG = -1'-4" BASED ON A T/SLAB REFERENCE ELEVATION = 0'-0". SEE 2/S3-2 FOR FOOTING SCHEDULE.
4. BPx INDICATES COLUMN BASE PLATE. SEE 1/S5-1 FOR BASE PLATE AND ANCHOR BOLT DETAIL.
5. SEE ARCH AND CIVIL FOR DIMENSIONS AND INFORMATION NOT SHOWN ON PLAN.

1 S1-9 DUMPSTER FOUNDATION PLAN
1/2" = 1'-0"

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-691
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

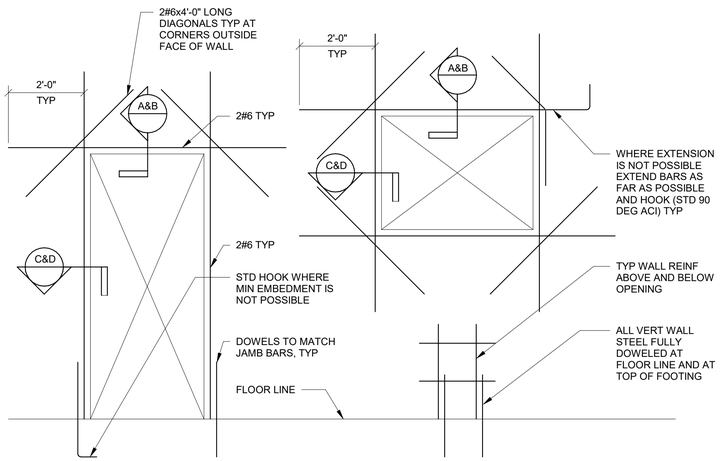
DUMPSTER PLANS AND DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

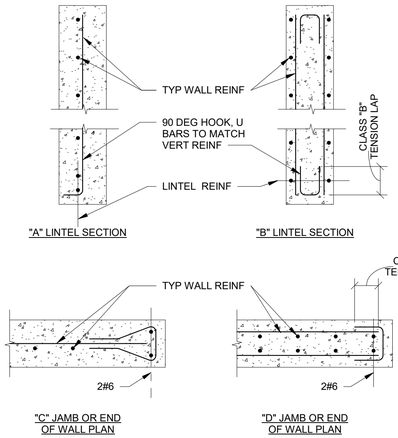
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

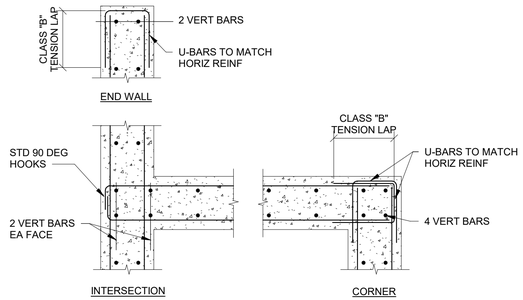
Project No.: 170110.00
Drawing No.: S1-9

G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_ed18d.dwg

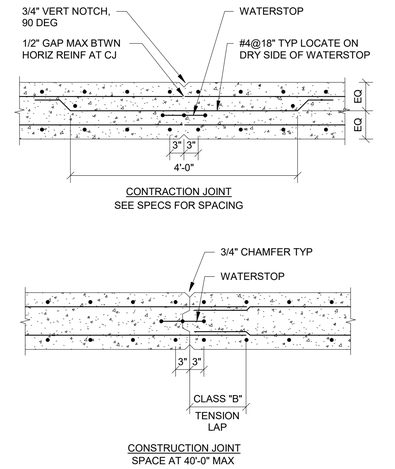


12 S3-1 TYPICAL REINFORCING AT CONCRETE WALL AT OPENINGS
1/2" = 1'-0"





6 S3-1 TYPICAL REINFORCING AT CONCRETE WALL AT INTERSECTIONS (DOUBLE LAYER)
3/4" = 1'-0"



3 S3-1 TYPICAL CONCRETE WALL AT JOINTS (DOUBLE LAYER)
3/4" = 1'-0"

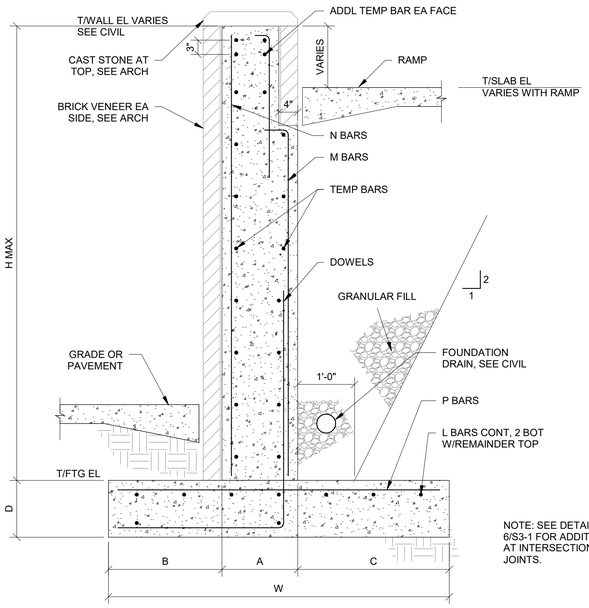
NOTE:
ALL OPNG TO BE SPACED A MIN OF 3 TIMES THE DIA FOR ROUND OPNG AND 3 TIMES THE HORIZ OR VERT DIMENSION OF SQ OR RECTANGULAR OPNG

11 S3-1 TYPICAL CONCRETE WALL AT OPENING (AREA <= 8 SF)
3/4" = 1'-0"

SITE WALL REINFORCING SCHEDULE

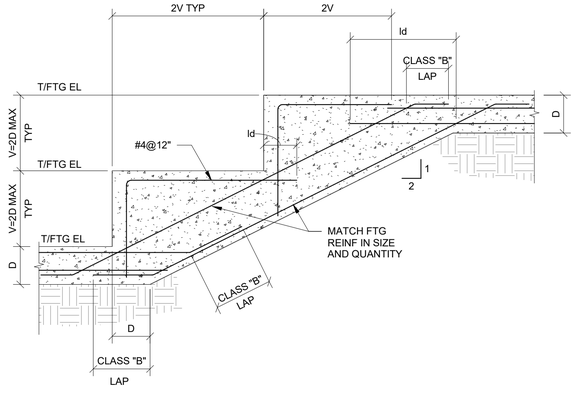
HEIGHT	BASE					REINFORCING BARS					
	W	A	B	C	D	DOWELS	M	N	TEMP	P	L
20'-6"	20'-6"	1'-4"	4'-0"	15'-2"	1'-6"	#9@6"	#9@6"	#5@12"	#5@12"	#9@6"	19#6
18'-6"	18'-6"	1'-4"	4'-0"	13'-2"	1'-6"	#8@7"	#8@7"	#5@12"	#5@12"	#8@7"	17#6
16'-6"	16'-6"	1'-4"	4'-0"	11'-2"	1'-6"	#8@10"	#8@10"	#5@12"	#5@12"	#8@10"	15#6

NOTE: FOR INFORMATION NOT SHOWN, SEE ARCH AND CIVIL



NOTE: SEE DETAILS 3 AND 6/S3-1 FOR ADDITIONAL REINF. AT INTERSECTIONS AND JOINTS.

7 S3-1 TYPICAL RETAINING WALL
3/4" = 1'-0"

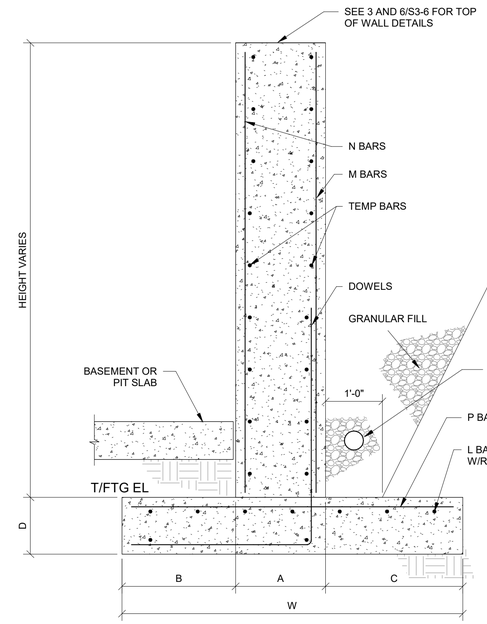


10 S3-1 TYPICAL STEPPED FOOTING
3/4" = 1'-0"

BUILDING WALL REINFORCING SCHEDULE

HEIGHT	BASE					REINFORCING BARS					
	W	A	B	C	D	DOWELS	M	N	TEMP	P	L
27'-4"	16'-6"	1'-8"	2'-6"	12'-4"	2'-0"	#8@8"	#8@8"	#5@12"	#5@12"	#7@8"	#6@10"
25'-4"	14'-0"	1'-8"	2'-0"	10'-4"	2'-0"	#8@9"	#8@9"	#5@12"	#5@12"	#6@9"	#5@9"
23'-4"	12'-0"	1'-8"	2'-0"	8'-4"	1'-6"	#7@10"	#7@10"	#5@12"	#5@12"	#6@10"	#5@9"
21'-4"	9'-6"	1'-8"	2'-0"	5'-10"	1'-6"	#7@12"	#7@12"	#5@12"	#5@12"	#6@12"	#5@9"
19'-4"	7'-6"	1'-8"	1'-6"	4'-4"	1'-6"	#6@12"	#6@12"	#5@12"	#5@12"	#6@12"	#5@9"

NOTES:
1. SEE TYPICAL DETAILS AND PLANS FOR ADDITIONAL REINF. AT COLUMN FOOTINGS. COLUMN FOOTING TO BE POURED MONOLITHIC WITH RETAINING WALL FOOTINGS.
2. SEE ARCH FOR WATER PROOFING AND DRAINAGE SYSTEMS. BACKFILL BEHIND WALL PRIOR TO THE CONSTRUCTION OF THE UPPER LEVEL FRAMED FLOOR.
3. SEE 3&6/S3-1 FOR REINFORCEMENT AT WALL INTERSECTIONS AND JOINTS.



1 S3-1 TYPICAL BUILDING RETAINING WALL
3/4" = 1'-0"

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 984-9051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SE001114 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

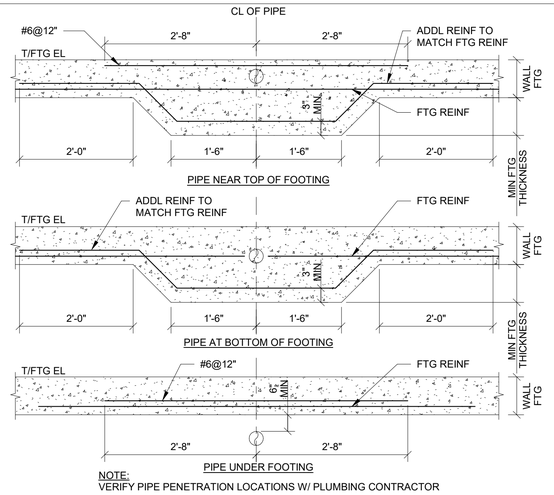
FOUNDATION DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

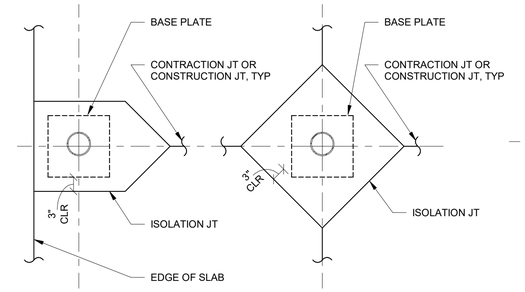
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S3-1

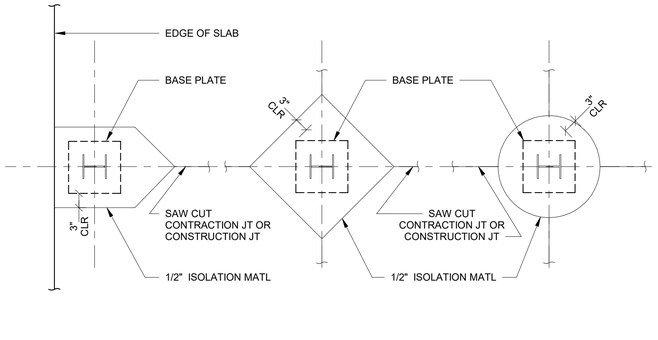
G:\My Drive\Shear Structural\Projects\597 Keck & Wood\597.1800 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_edited.dwg



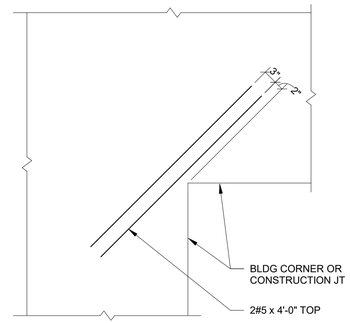
12 S3-2 TYPICAL THICKENED FOOTING AT UNDERGROUND PIPING
3/4" = 1'-0"



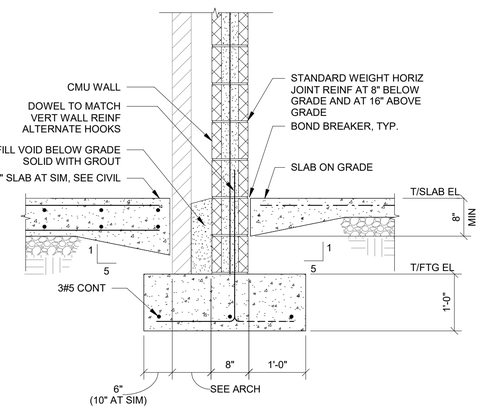
9 S3-2 TYPICAL ISOLATION JOINT AT HSS STEEL COLUMN
3/4" = 1'-0"



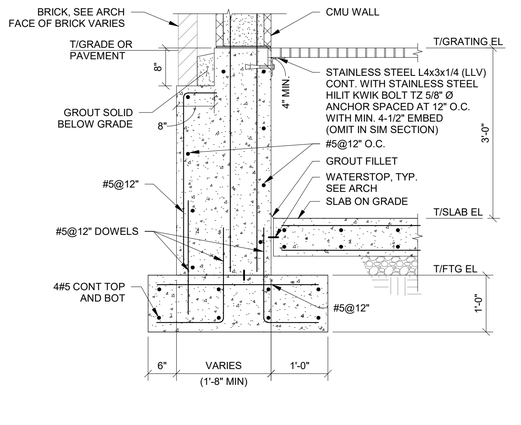
6 S3-2 TYPICAL ISOLATION JOINT AT WF STEEL COLUMNS
3/4" = 1'-0"



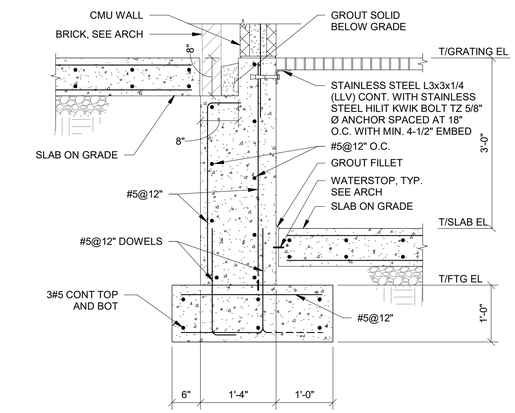
3 S3-2 TYPICAL REINFORCEMENT AT SLAB RE-ENTRANT CORNER
3/4" = 1'-0"



11 S3-2 EXTERIOR 8" CMU WALL FOOTING AT ADMIN
3/4" = 1'-0"



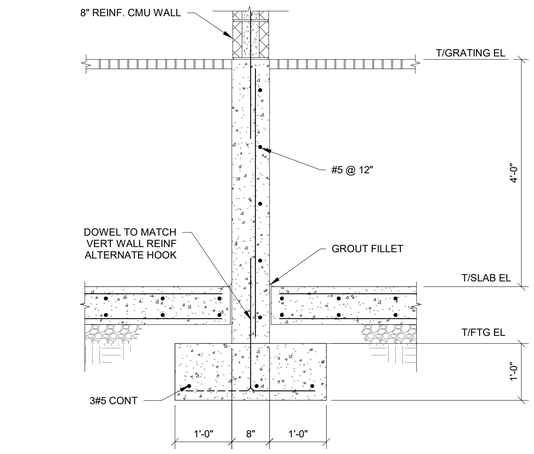
8 S3-2 TYPICAL EXTERIOR 12" CMU WALL FOOTING
3/4" = 1'-0"



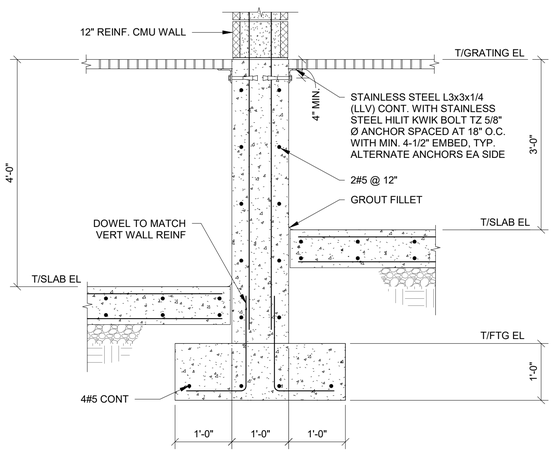
5 S3-2 EXTERIOR 8" CMU WALL FOOTING AT PROCESS AREA
3/4" = 1'-0"

MARK	SIZE (WxLxT)	REINF	REMARKS
F3.5	3'-6"x3'-6"x12"	5#4 E.W.	BOTTOM
F4.0	4'-0"x4'-0"x12"	4#5 E.W.	BOTTOM
F4.5	4'-6"x4'-6"x12"	4#5 E.W.	BOTTOM
F5.0	5'-0"x5'-0"x16"	5#5 E.W.	TOP AND BOTTOM
F7.0	7'-0"x7'-0"x18"	7#6 E.W.	BOTTOM
F7.5	7'-6"x7'-6"x20"	8#6 E.W.	BOTTOM
F9.0	9'-0"x9'-0"x22"	8#7 E.W.	BOTTOM

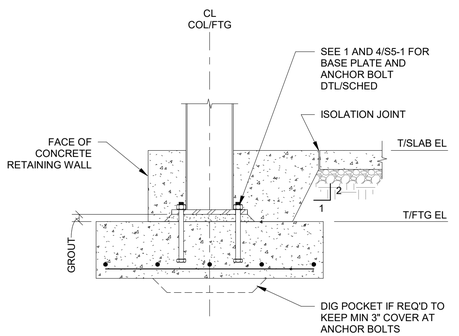
2 S3-2 FOOTING SCHEDULE
3/4" = 1'-0"



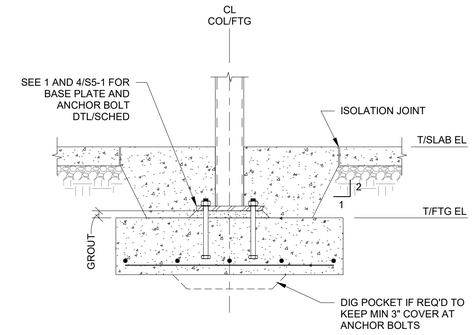
10 S3-2 INTERIOR 12" CMU WALL AT LOWER SLAB
3/4" = 1'-0"



7 S3-2 TYPICAL INTERIOR 12" CMU WALL FOOTING
3/4" = 1'-0"



4 S3-2 TYPICAL BRIDGE CRANE COLUMN FOOTING
3/4" = 1'-0"



1 S3-2 TYPICAL INTERIOR STEEL COLUMN FOOTING
3/4" = 1'-0"

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 954 8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FOUNDATION DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S3-2

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

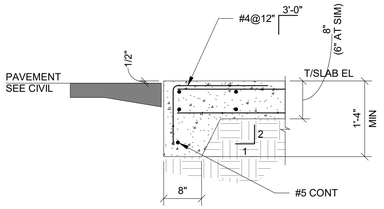
FOUNDATION DETAILS

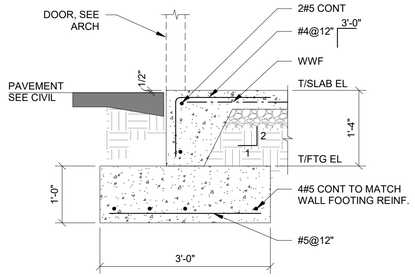
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

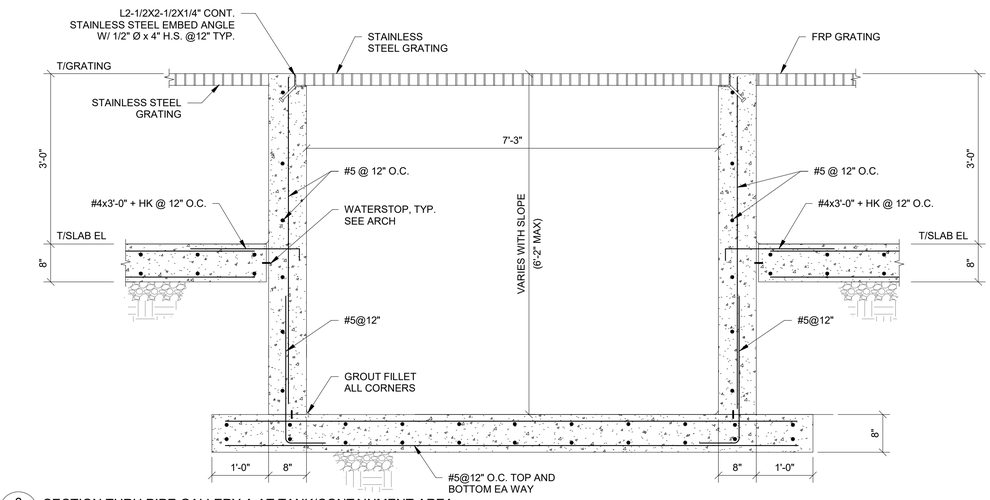
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

SHEAR STRUCTURAL
SHEARSTRUCTURAL.COM

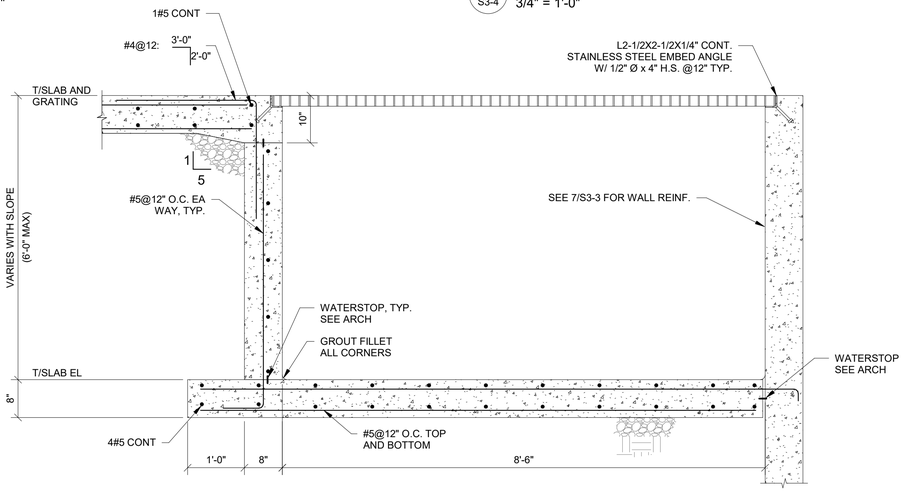
Project No.: 170110.00
Drawing No.: S3-3







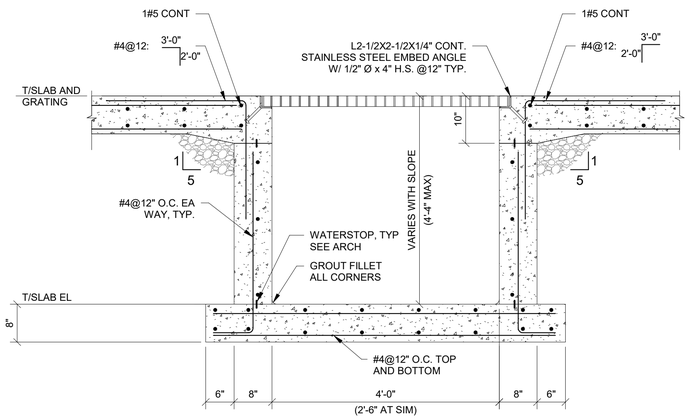
12 S3-4 TYPICAL TURNDOWN SLAB
3/4" = 1'-0"



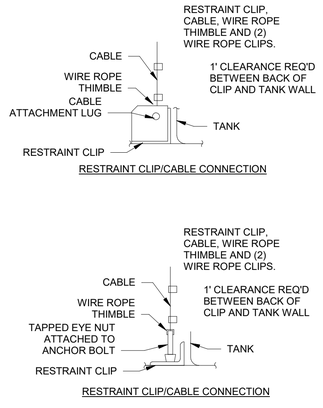
11 S3-4 SECTION THRU PIPE GALLERY A AT MEMBRANE/PIT AREA
3/4" = 1'-0"

9 S3-4 TYPICAL TURNDOWN SLAB ON FOOTING
3/4" = 1'-0"

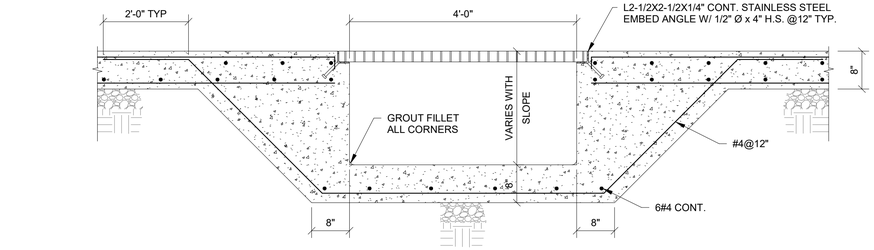
6 S3-4 SECTION THRU PIPE GALLERY A AT TANK/CONTAINMENT AREA
3/4" = 1'-0"



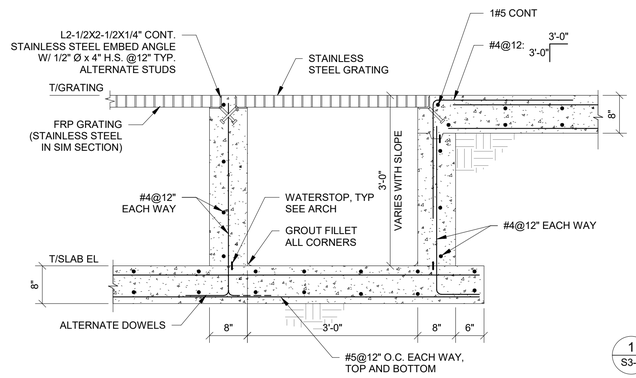
5 S3-4 SECTION THRU PIPE GALLERY C
3/4" = 1'-0"



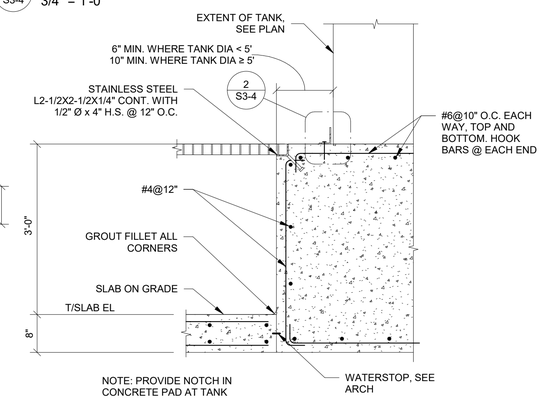
2 S3-4 TANK RESTRAINT CLIP DETAIL
3/4" = 1'-0"



10 S3-4 SECTION THRU TRENCH IN MEMBRANE ROOM
3/4" = 1'-0"



4 S3-4 SECTION THRU PIPE GALLERY B
3/4" = 1'-0"



1 S3-4 TANK FOUNDATION PAD
3/4" = 1'-0"

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36201714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

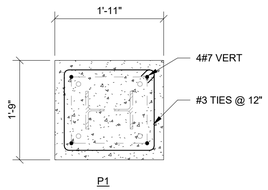
FOUNDATION DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

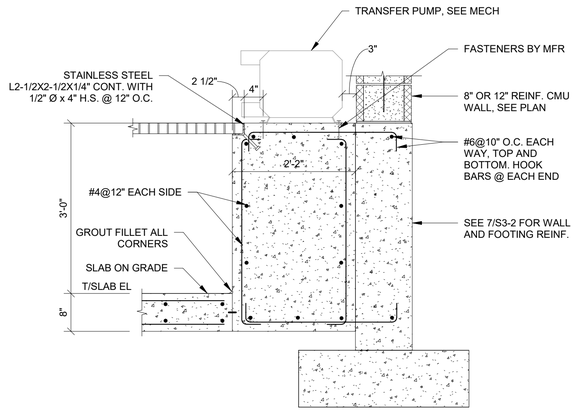
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S3-4

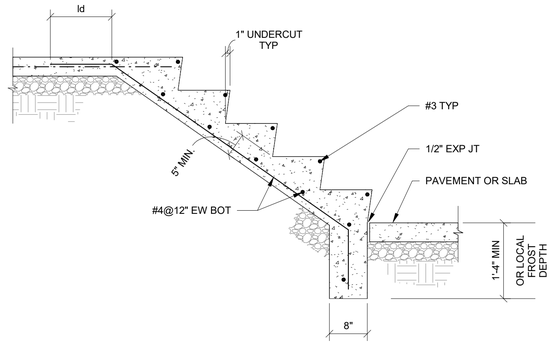
G:\My Drive\Shear Structural\Projects\097 Keck & Wood\097.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_edited.dwg

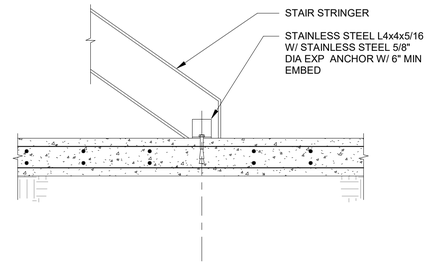


P1

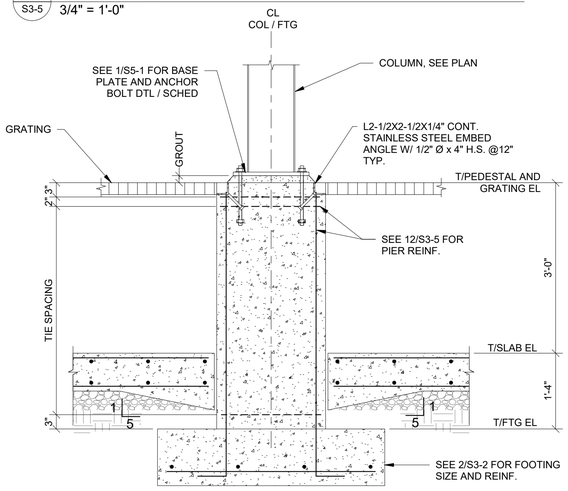


NOTE:
SEE ARCH FOR SIZE AND QUANTITY OF RISERS AND TREADS

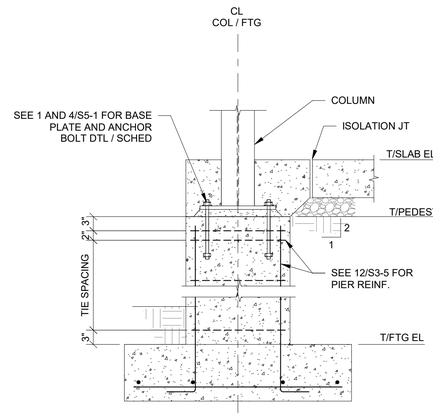




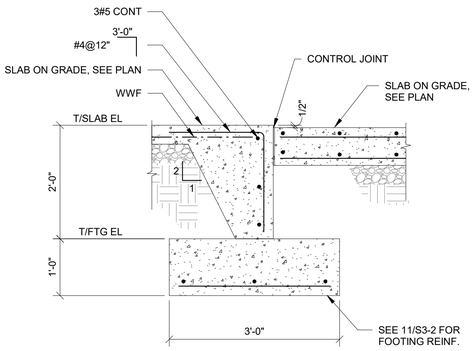
12 S3-5 CONCRETE PIER
3/4" = 1'-0"



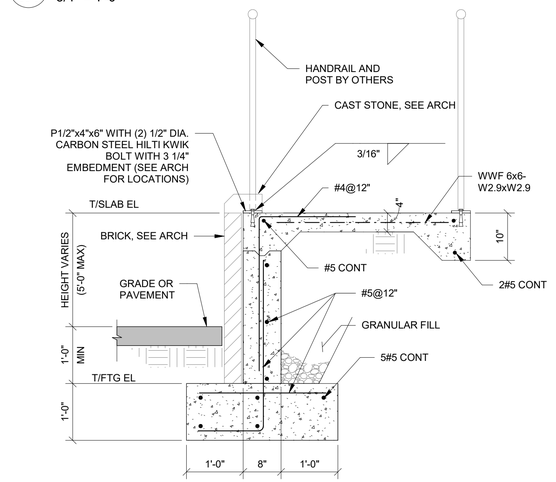
9 S3-5 TRANSFER PUMP FOUNDATION PAD
3/4" = 1'-0"



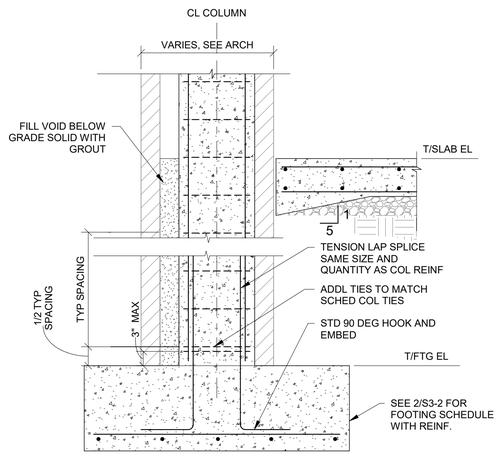
6 S3-5 TYPICAL REINFORCING AT CONCRETE STAIR
3/4" = 1'-0"



3 S3-5 TYPICAL THICKENED GRADE SUPPORTED SLAB AT STEEL STAIR
3/4" = 1'-0"

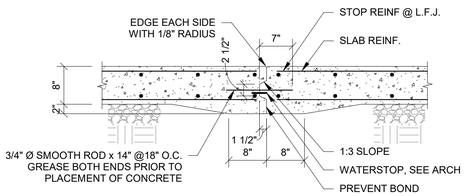


11 S3-5 TYPICAL BRIDGE CRANE COLUMN FOOTING WITH PIER
3/4" = 1'-0"

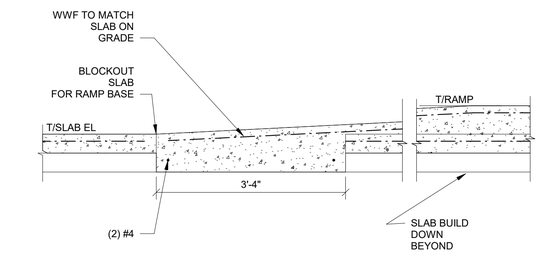


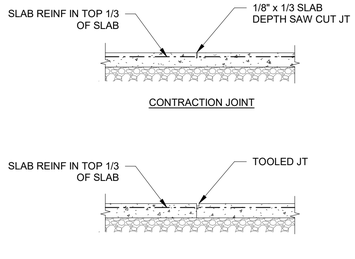
8 S3-5 EXTERIOR BRIDGE CRANE COLUMN FOOTING WITH PIER
3/4" = 1'-0"

5 S3-5 SECTION AT SLAB TRANSITION
3/4" = 1'-0"



2 S3-5 RAMP WALL SECTION AT SIDE
3/4" = 1'-0"





NOTE:
SAW CUT OR DISCONTINUE REINF AT CONTRACTION JT.

10 S3-5 TYPICAL EXTERIOR COLUMN FOOTING
3/4" = 1'-0"

7 S3-5 TYPICAL GRADE SUPPORTED SLAB AT JOINTS
3/4" = 1'-0"

4 S3-5 TYPICAL LOAD FLOOR JOINT DETAIL
3/4" = 1'-0"

1 S3-5 RAMP DETAIL
3/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001114 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

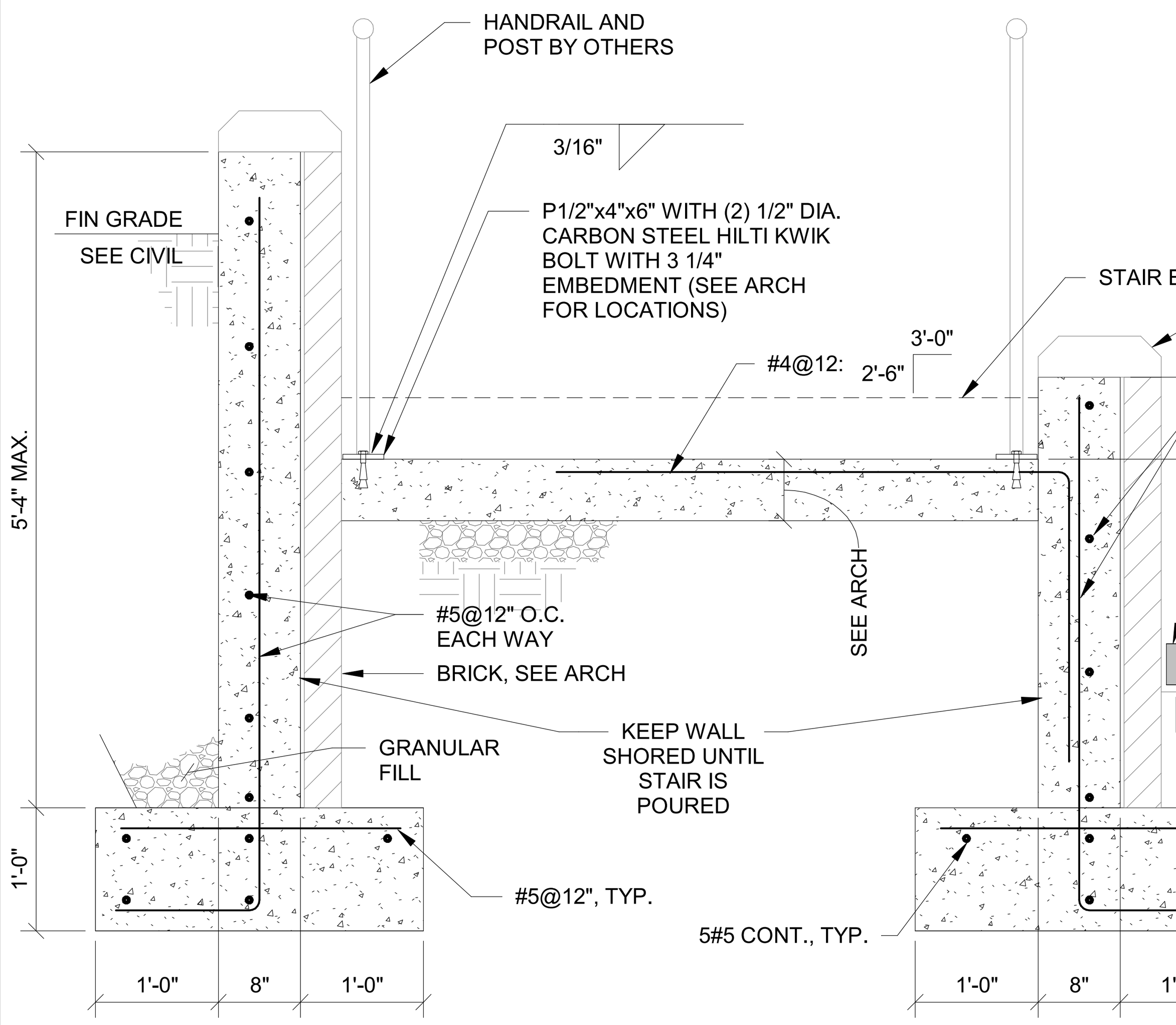
FOUNDATION DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

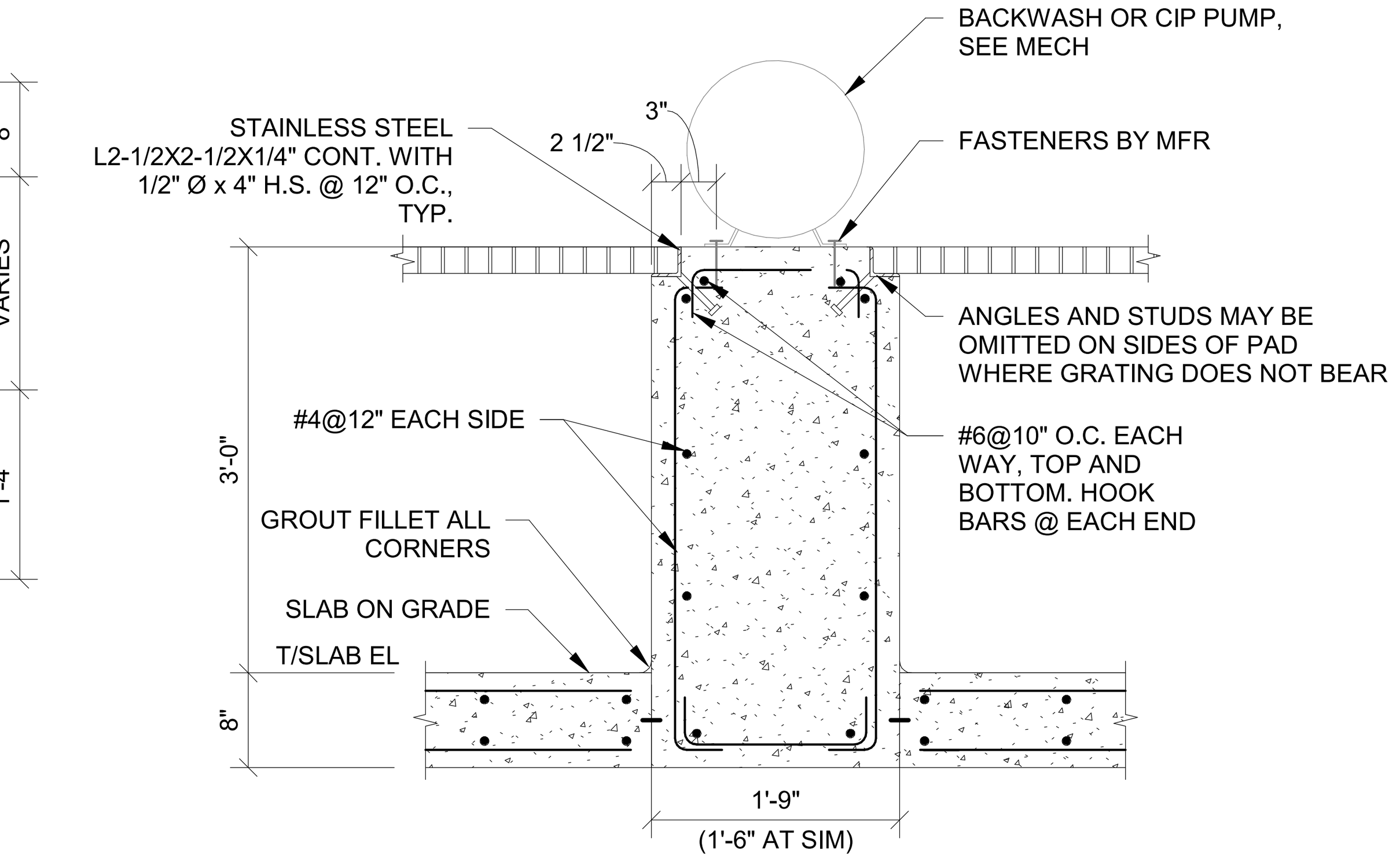
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S3-5

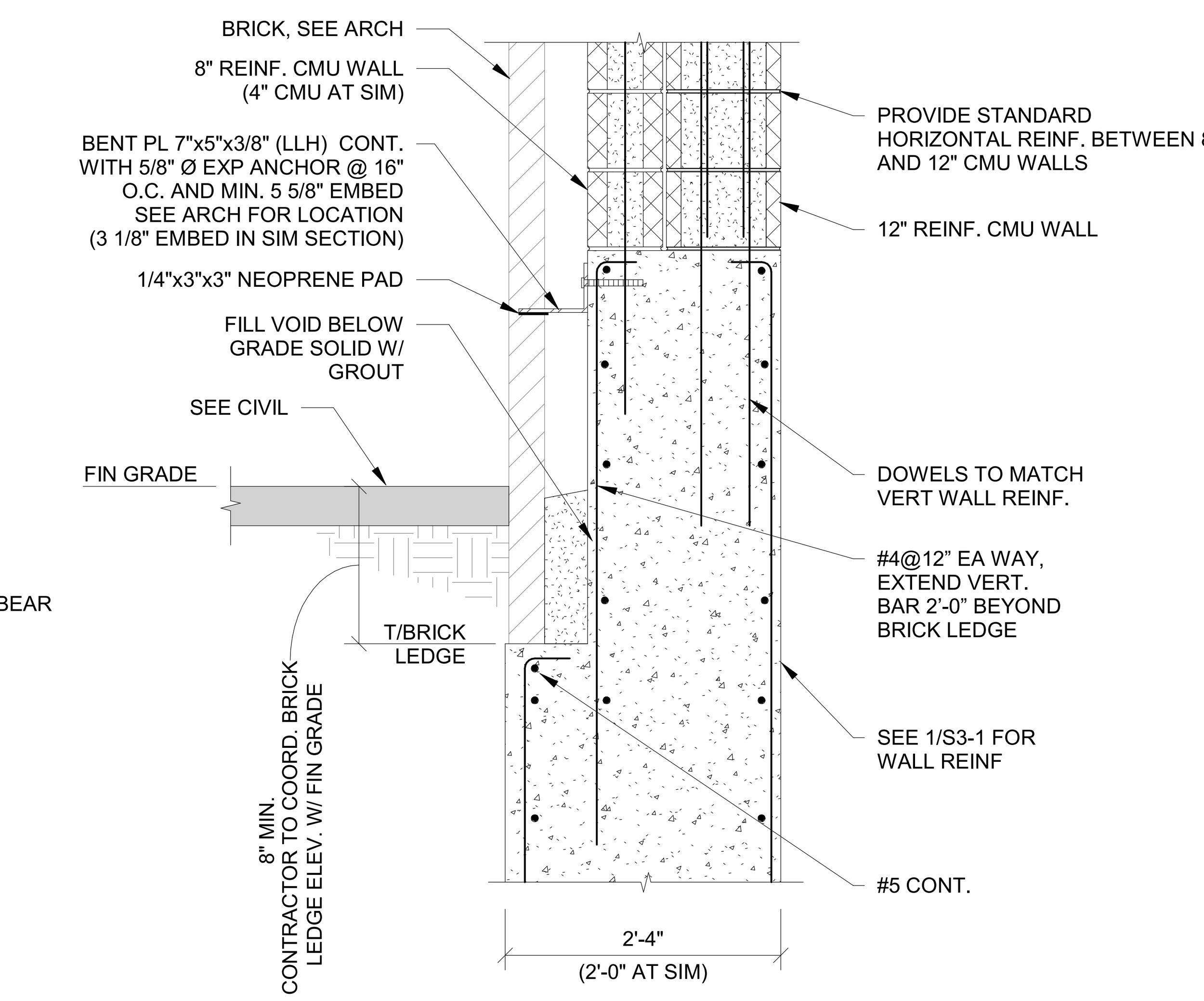
SHEAR STRUCTURAL
501 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 984-9051
SHEARSTRUCTURAL.COM



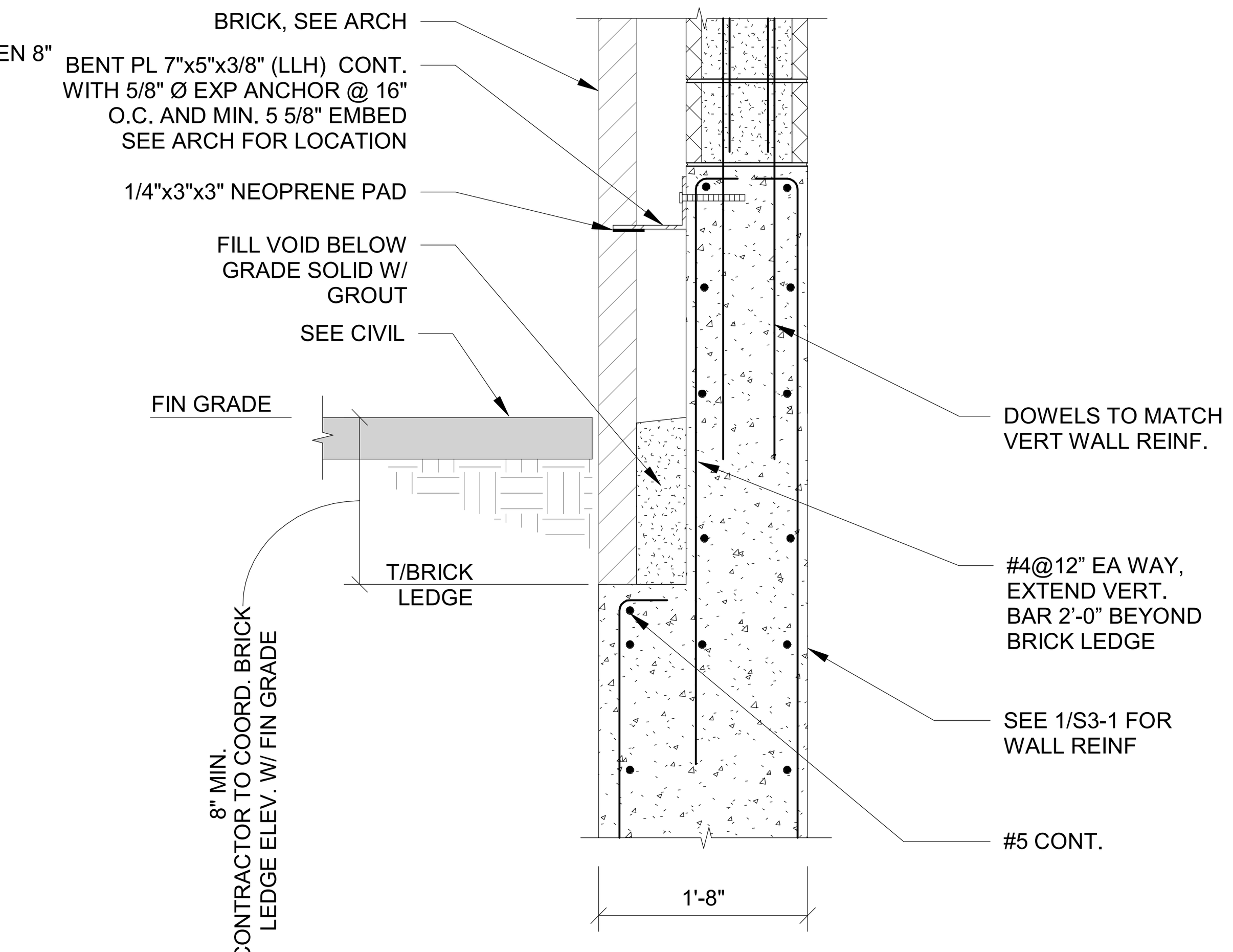
12 SECTION AT CONCRETE ENTRANCE STAIR
S3-6 3/4" = 1'-0"



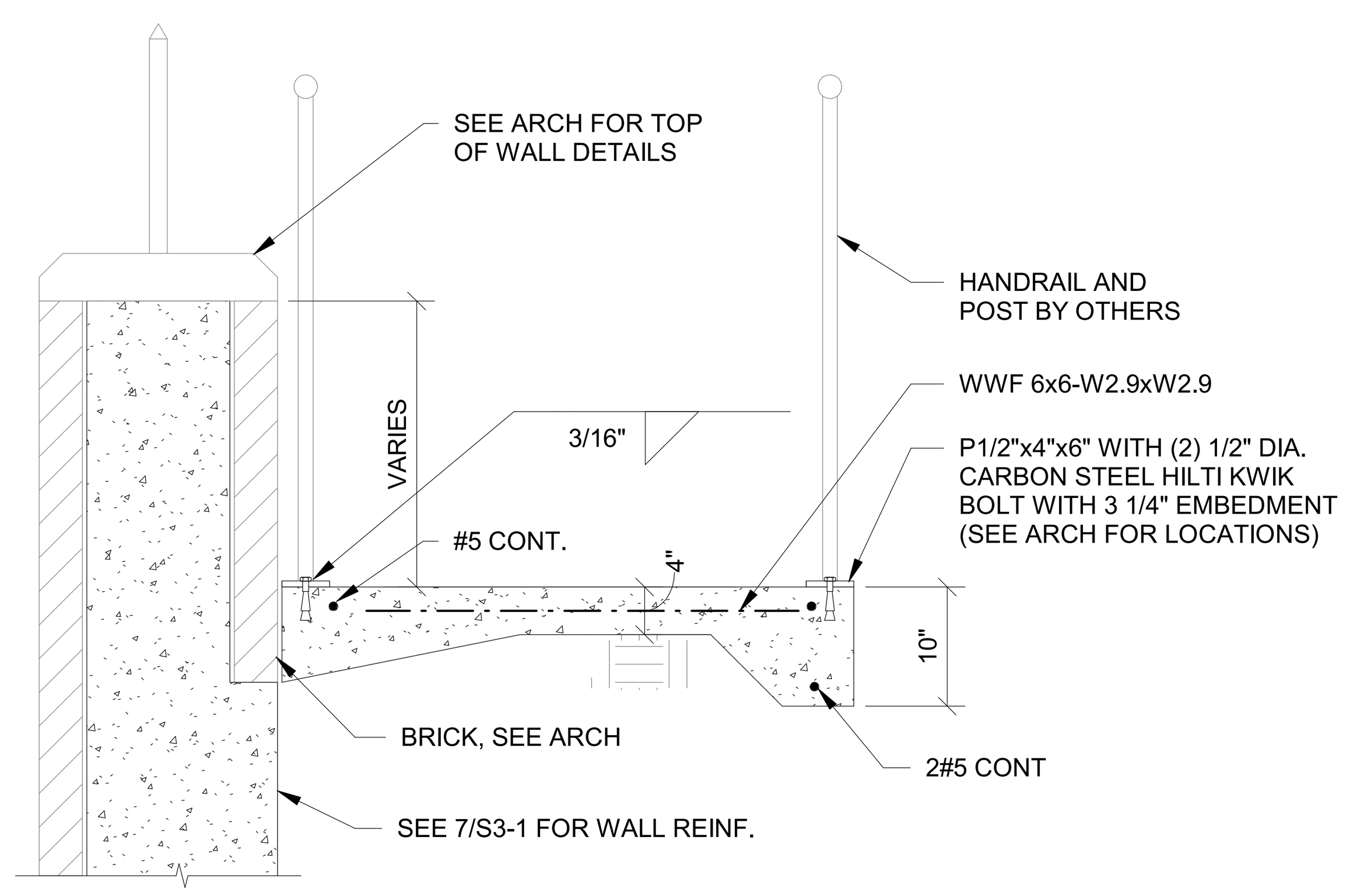
9 FOUNDATION PAD FOR BACKWASH AND CIP PUMPS
S3-6 3/4" = 1'-0"



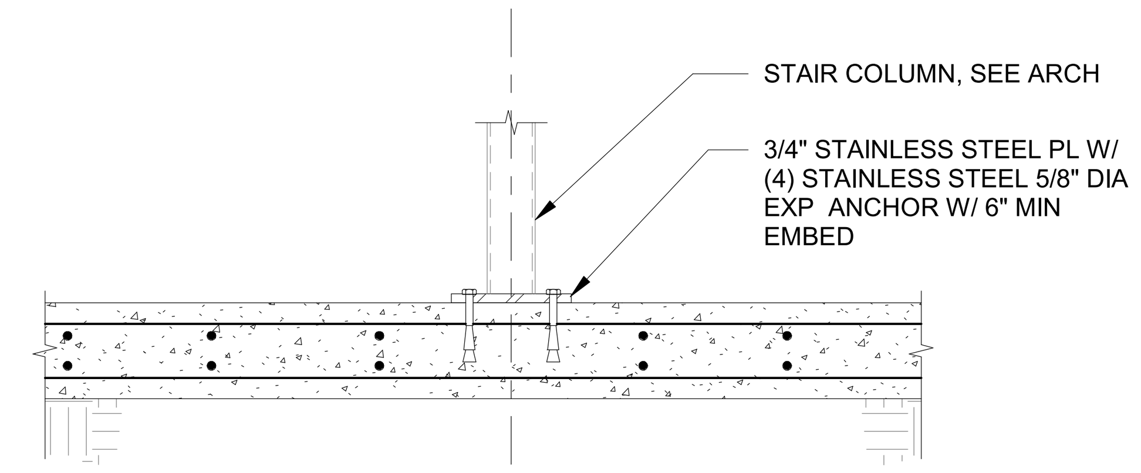
6 RETAINING WALL SECTION WITH BRICK AT 12" CMU AT BUMPOUT
S3-6 3/4" = 1'-0"



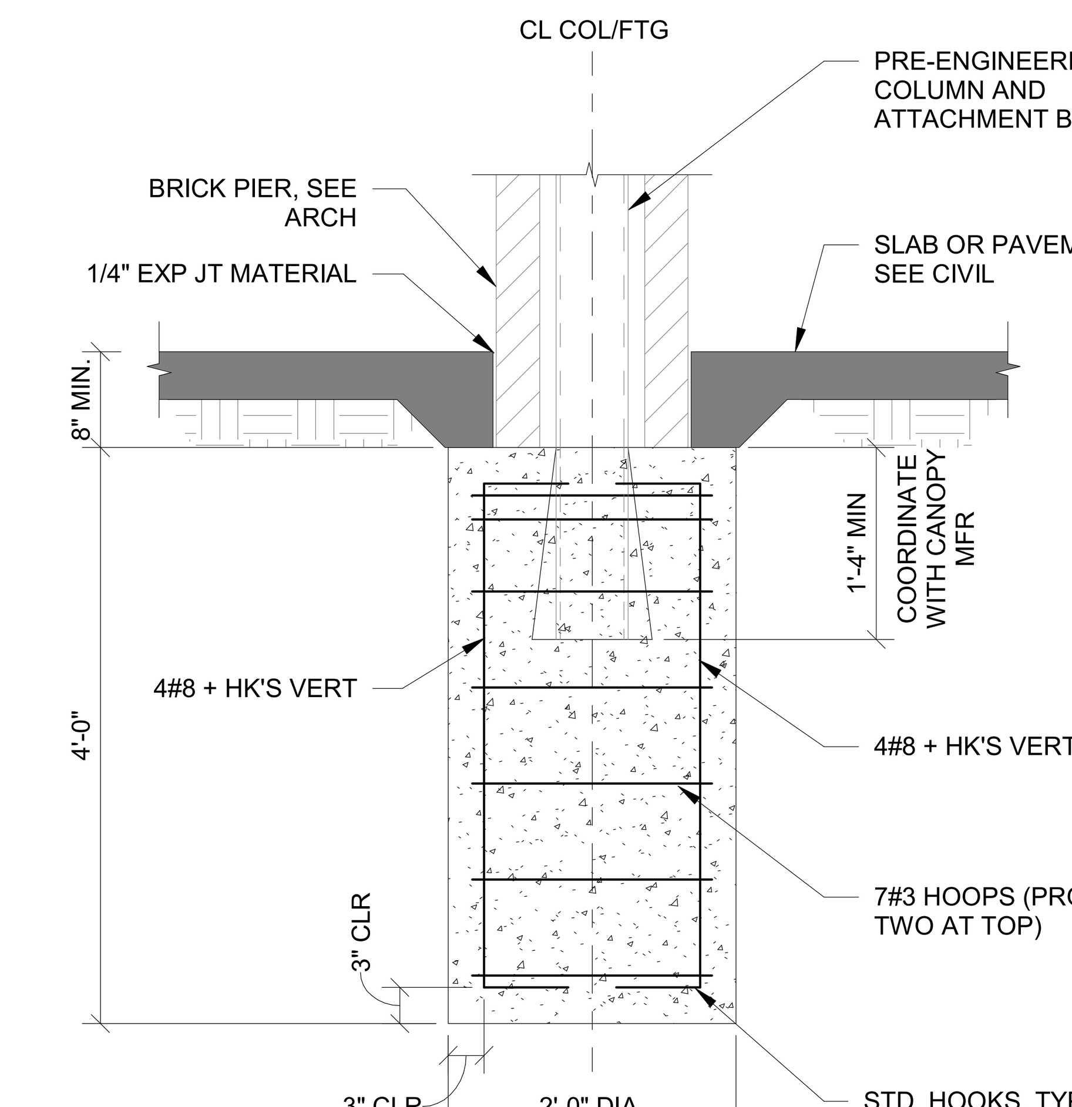
3 RETAINING WALL SECTION WITH BRICK AT 12" CMU
S3-6 3/4" = 1'-0"



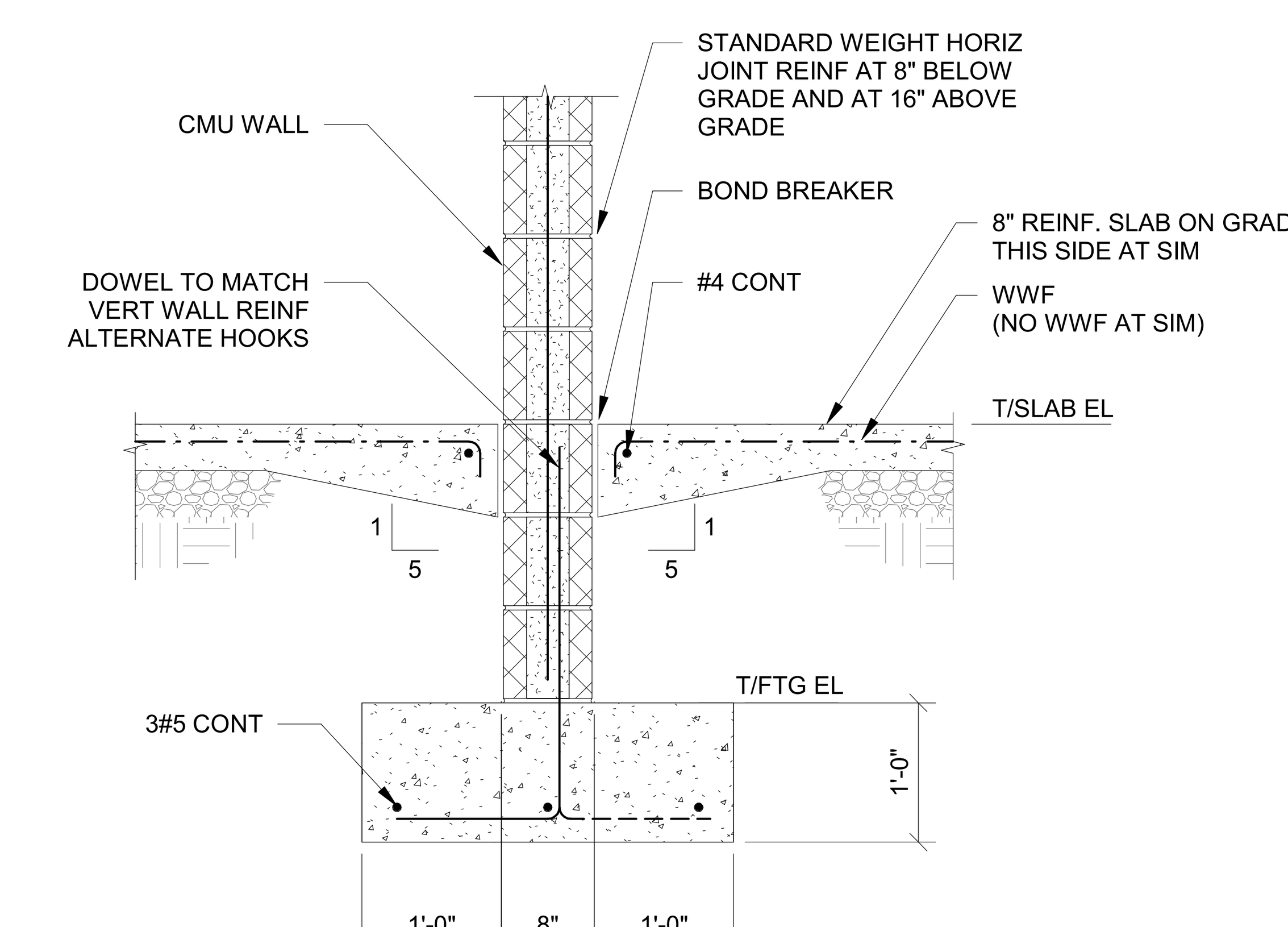
11 RAMP WALL SECTION AT SIDE
S3-6 3/4" = 1'-0"



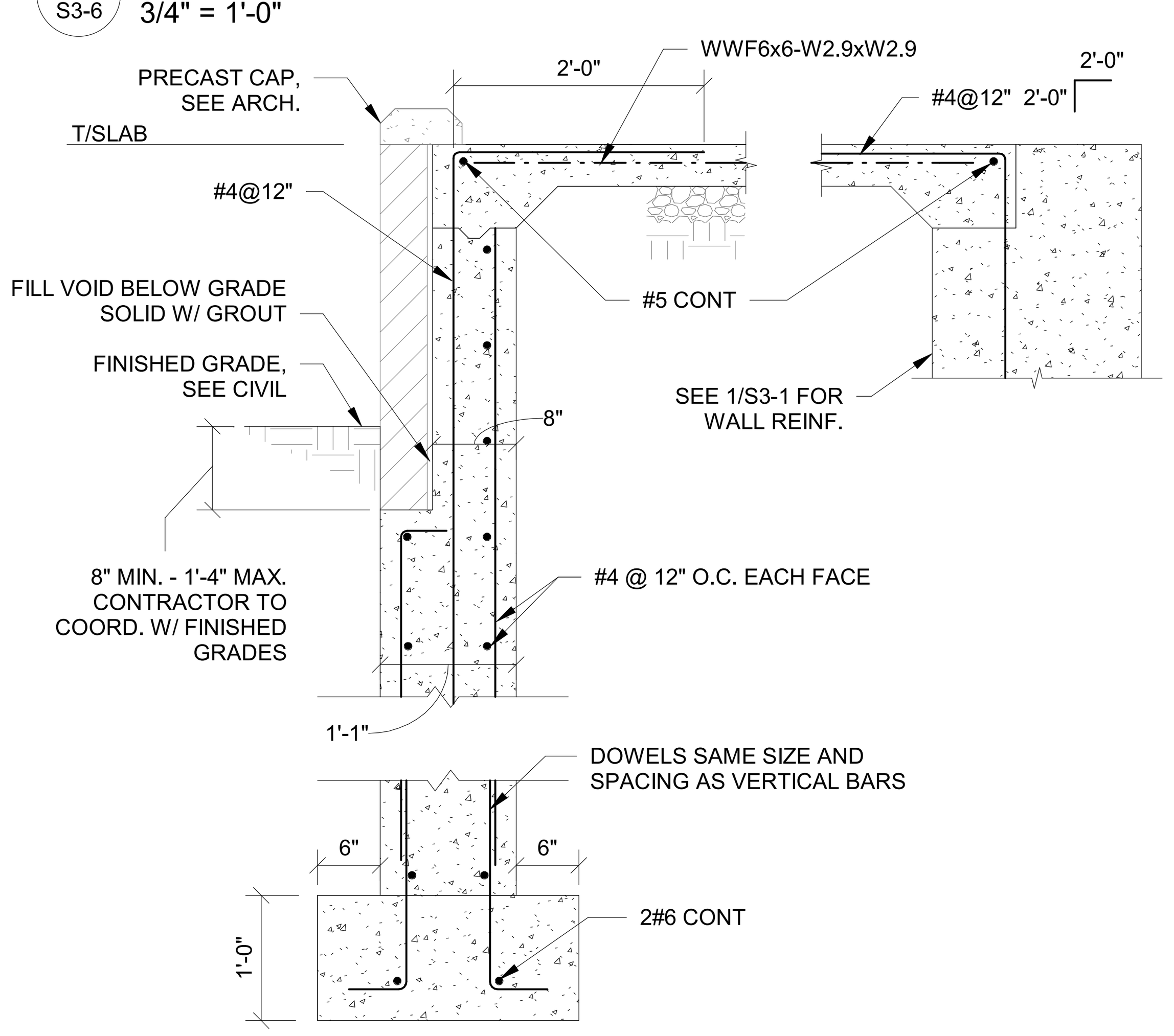
8 TYPICAL THICKENED GRADE SUPPORTED SLAB AT STEEL STAIR
S3-6 3/4" = 1'-0"



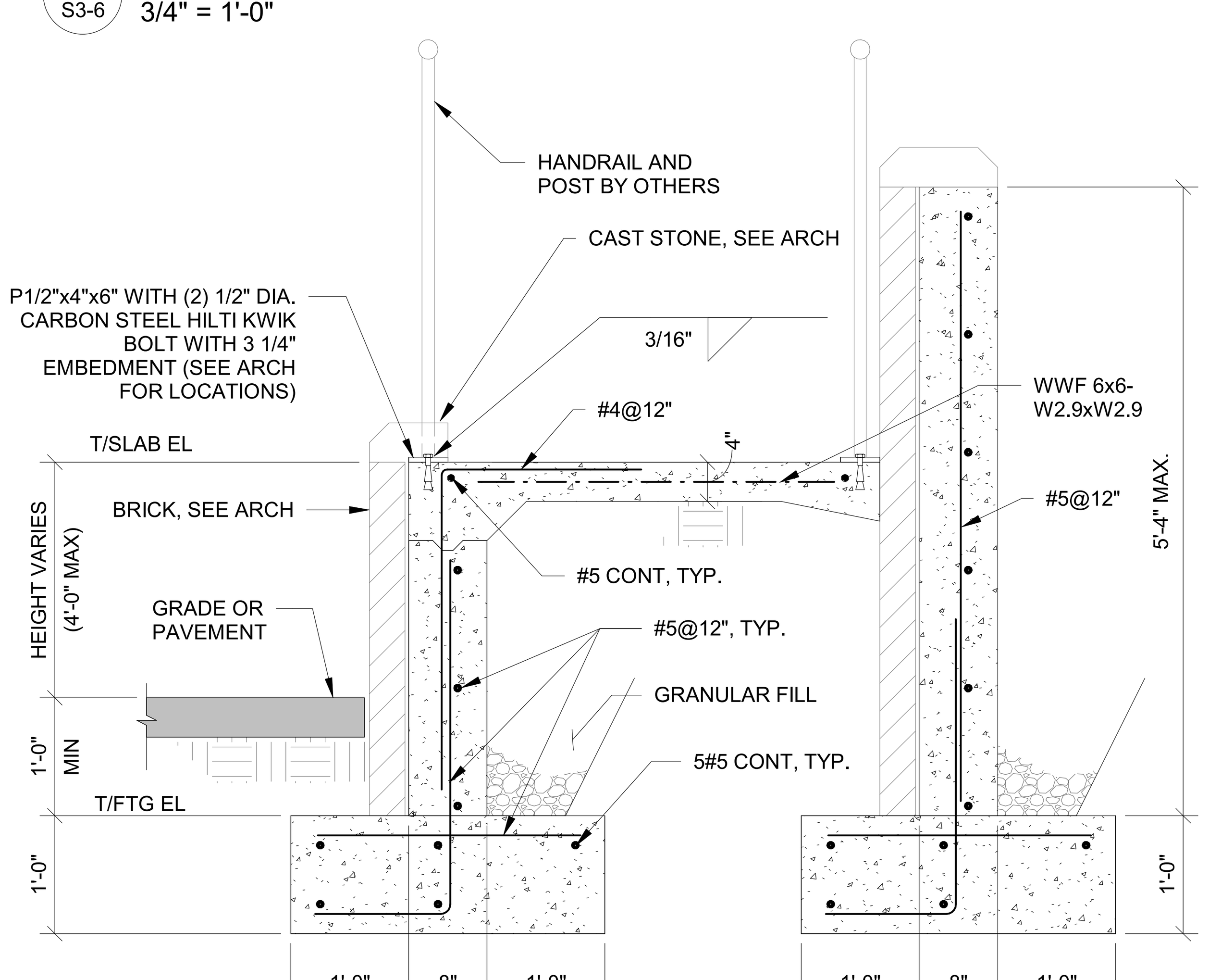
5 TYPICAL PRE-ENGINEERED CANOPY COLUMN FOOTING
S3-6 3/4" = 1'-0"



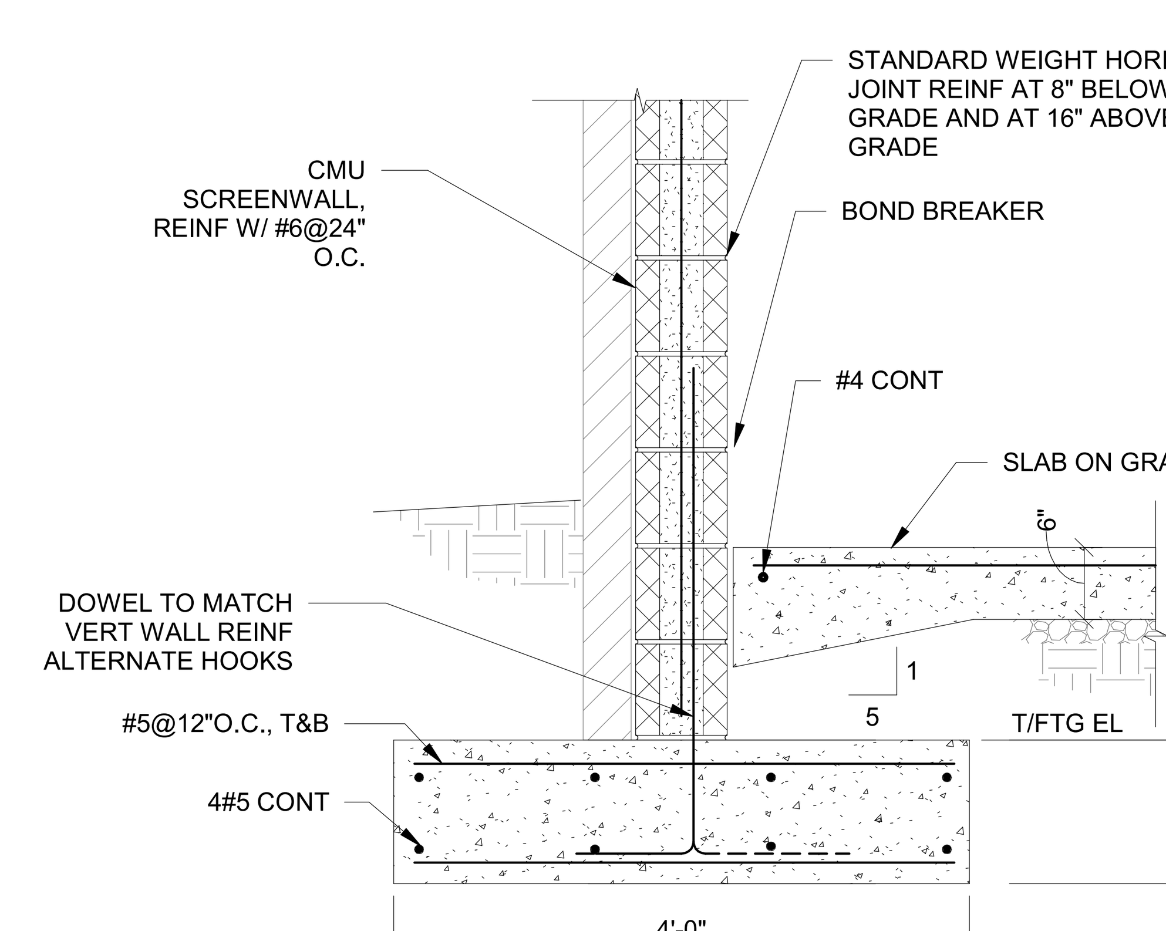
2 TYPICAL INTERIOR 8" CMU WALL FOOTING
S3-6 3/4" = 1'-0"



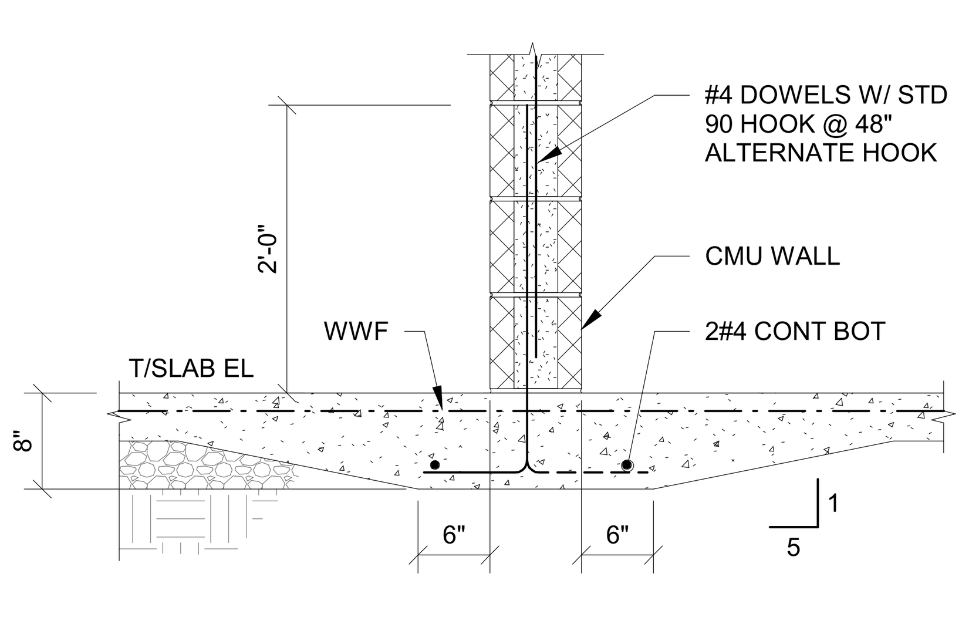
10 WALL AT ENTRANCE SLAB
S3-6 3/4" = 1'-0"



7 RAMP WALL SECTION AT SIDE
S3-6 3/4" = 1'-0"



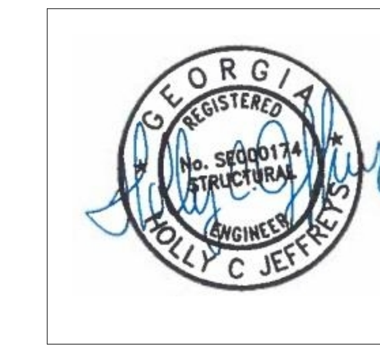
4 DUMPSTER WALL SECTION
S3-6 3/4" = 1'-0"



1 TYPICAL GRADE SUPPORTED SLAB AT CMU WALL
S3-6 3/4" = 1'-0"

SHEAR STRUCTURAL
503 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com



NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FOUNDATION DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:
Jolene Northrop, P.E.

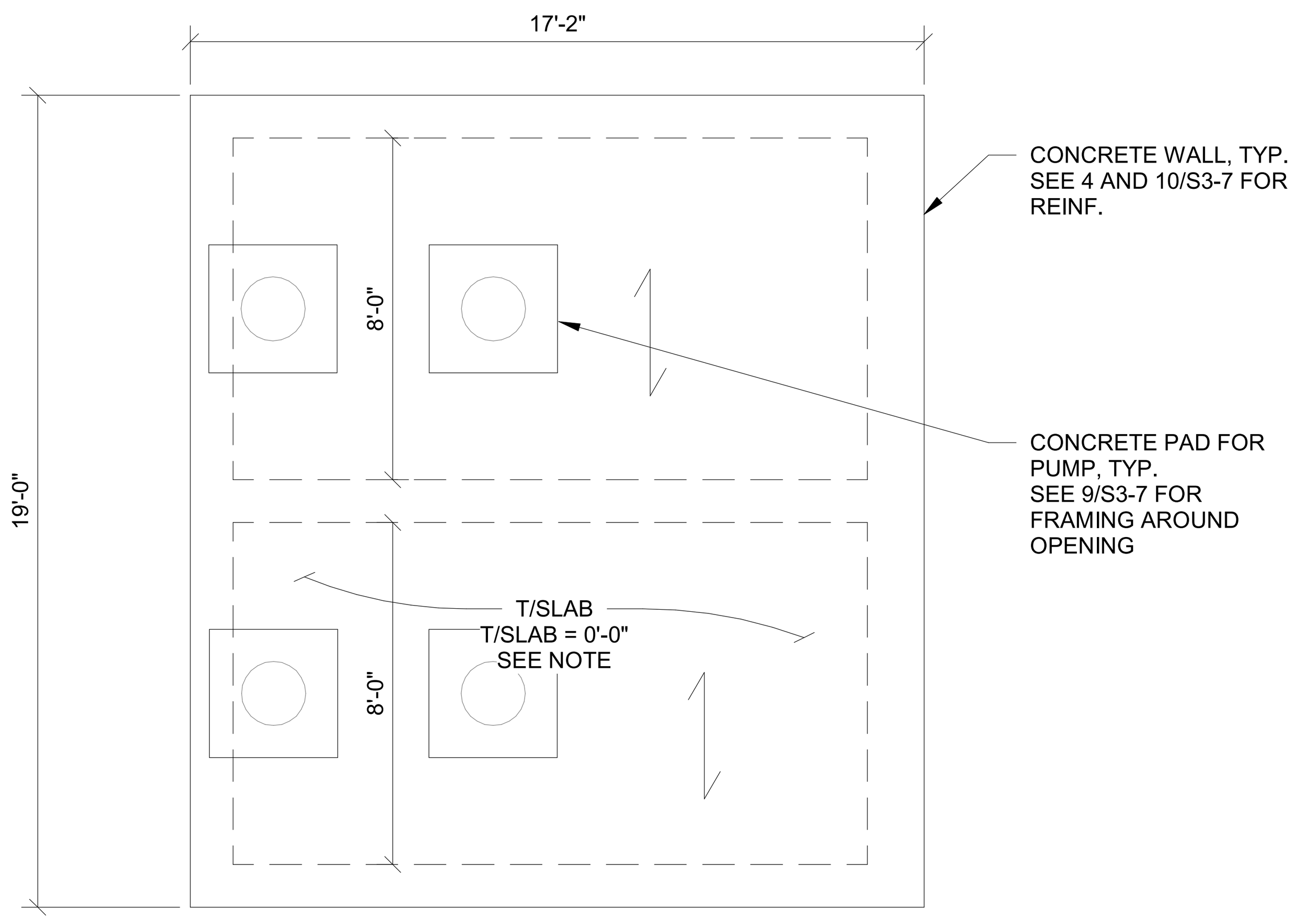
Drawn By:	Checked By:
DCR	HCJ

Date: 04/14/2021

Scale: As Shown

Project No.:
170110.00

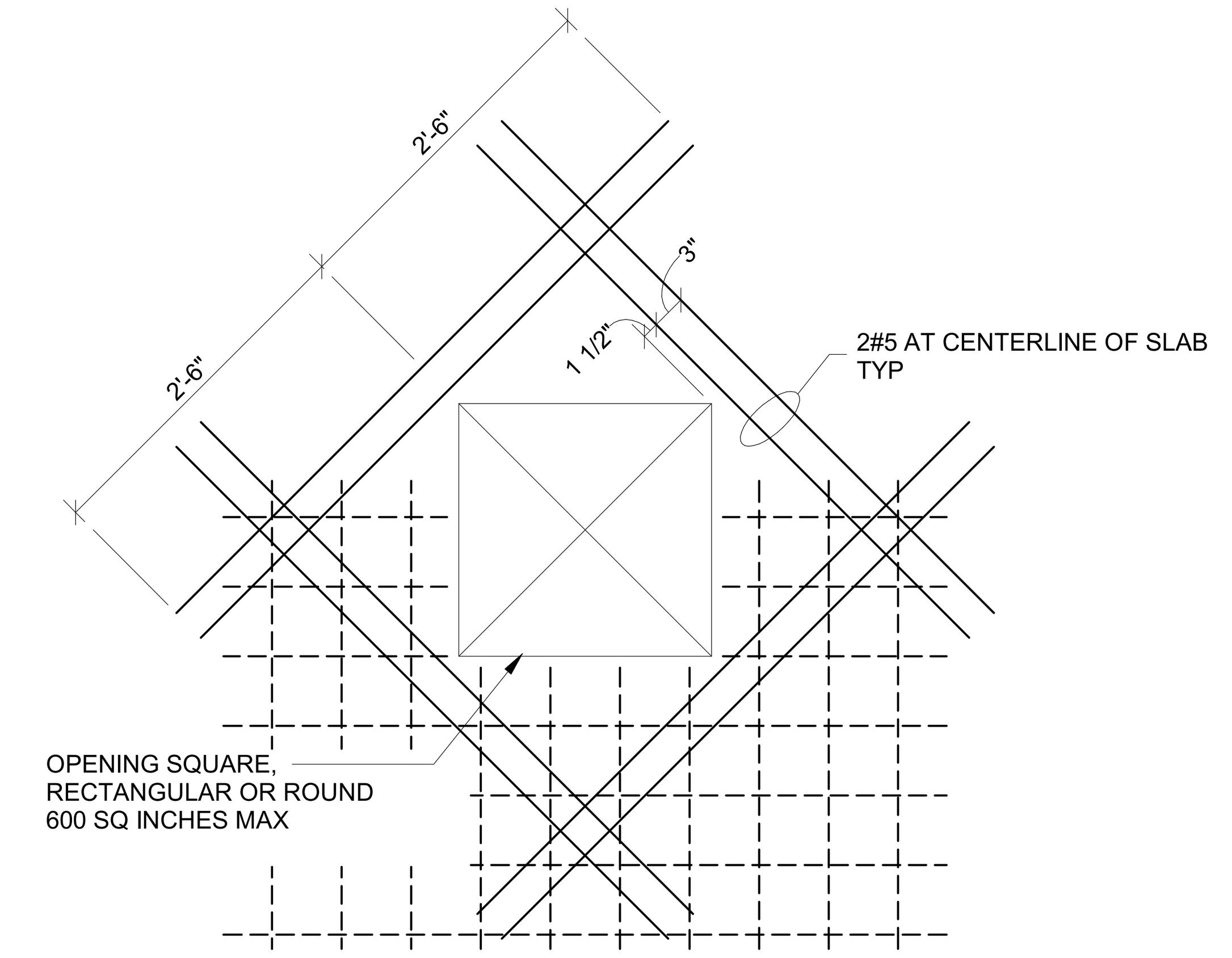
Drawing No.:
S3-6



NOTES:

1. PROVIDE 12" FRAMED SLAB REINFORCED WITH #5@12" O.C. EACH WAY TOP AND BOTTOM.
2. ⟷ INDICATES DIRECTIONAL SPAN OF ONE-WAY CONCRETE SLAB.

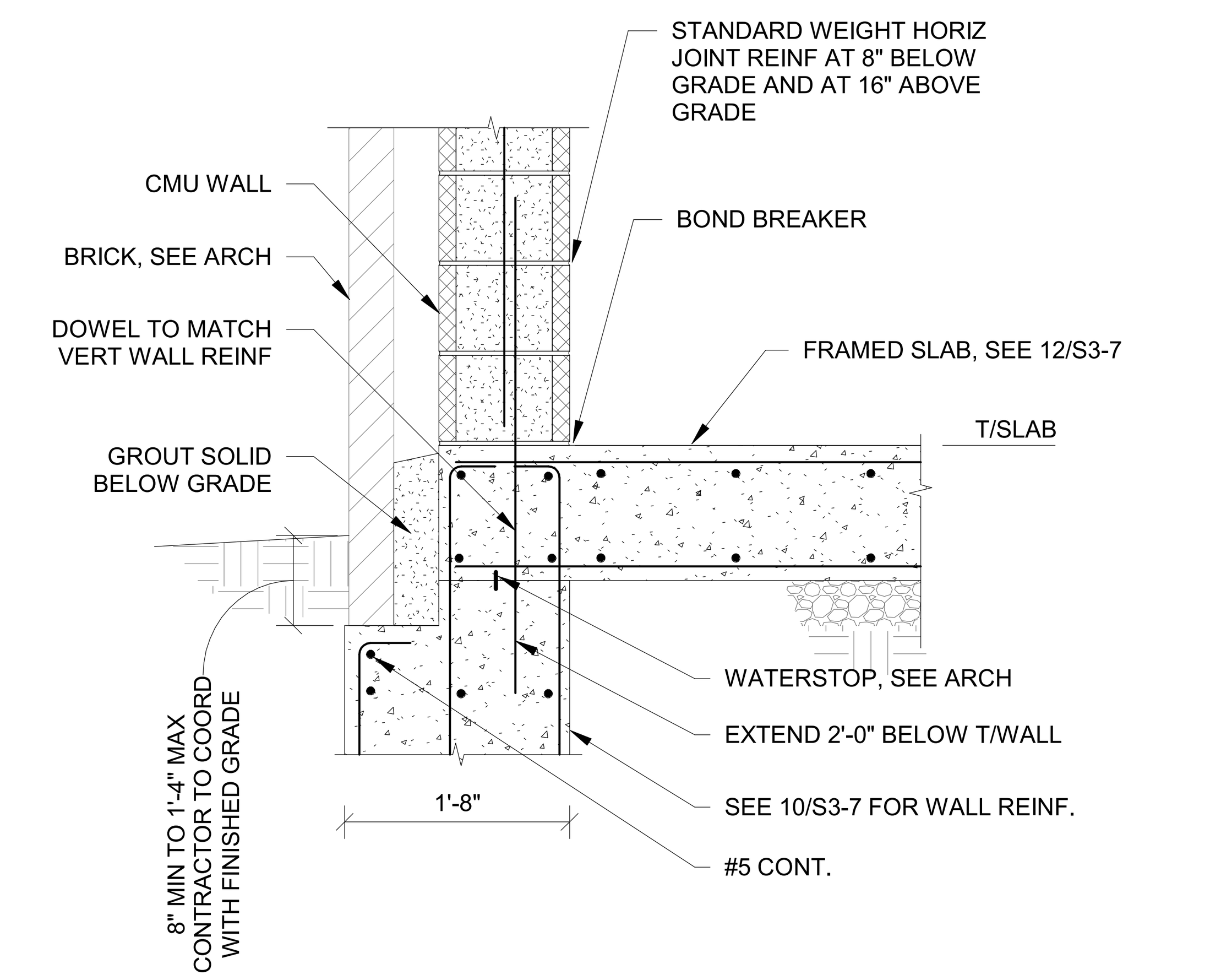
12 S3-7 FRAMED SLAB PLAN AT HIGH SERVICE PUMP STATION
1/4" = 1'-0"



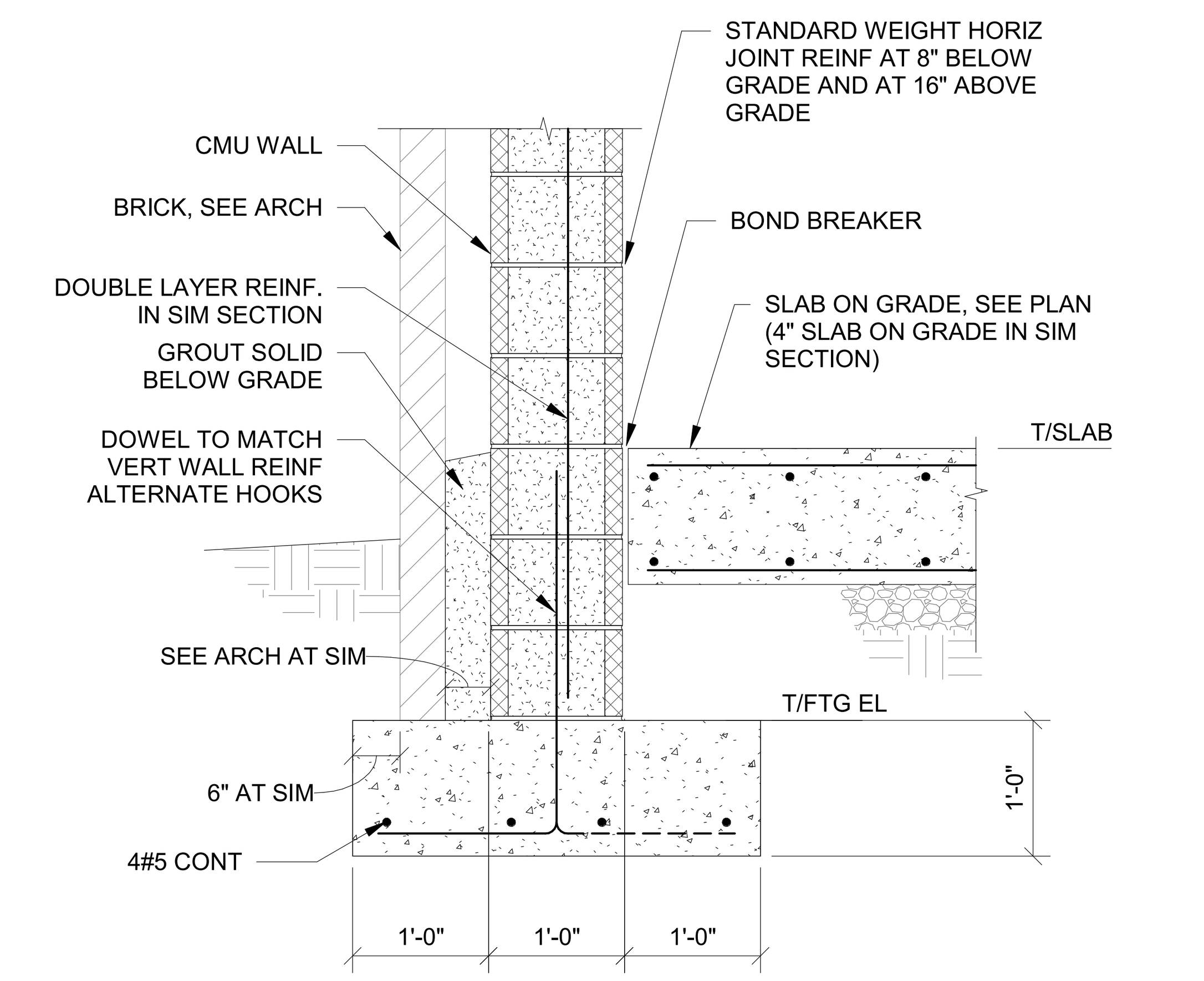
NOTES:

1. TOP AND BOT SLAB REINF INTERRUPTED BY THE OPNG SHALL BE REPLACED WITH ADDL REINF EQUAL TO THAT INTERRUPTED. PLACE HALF OF THE ADDL REINF EACH SIDE OF OPNG AND EXTEND IT SAME LENGTH AS REQD FOR THE INTERRUPTED REINF.
2. BOXED OUT OPNG, RECESSED BOXES AND PIPE SLEEVE CLUSTERS SHALL BE TREATED AS SLAB OPNG.
3. SEE PLAN FOR OPNG GREATER THAN 600 SQ INCHES.

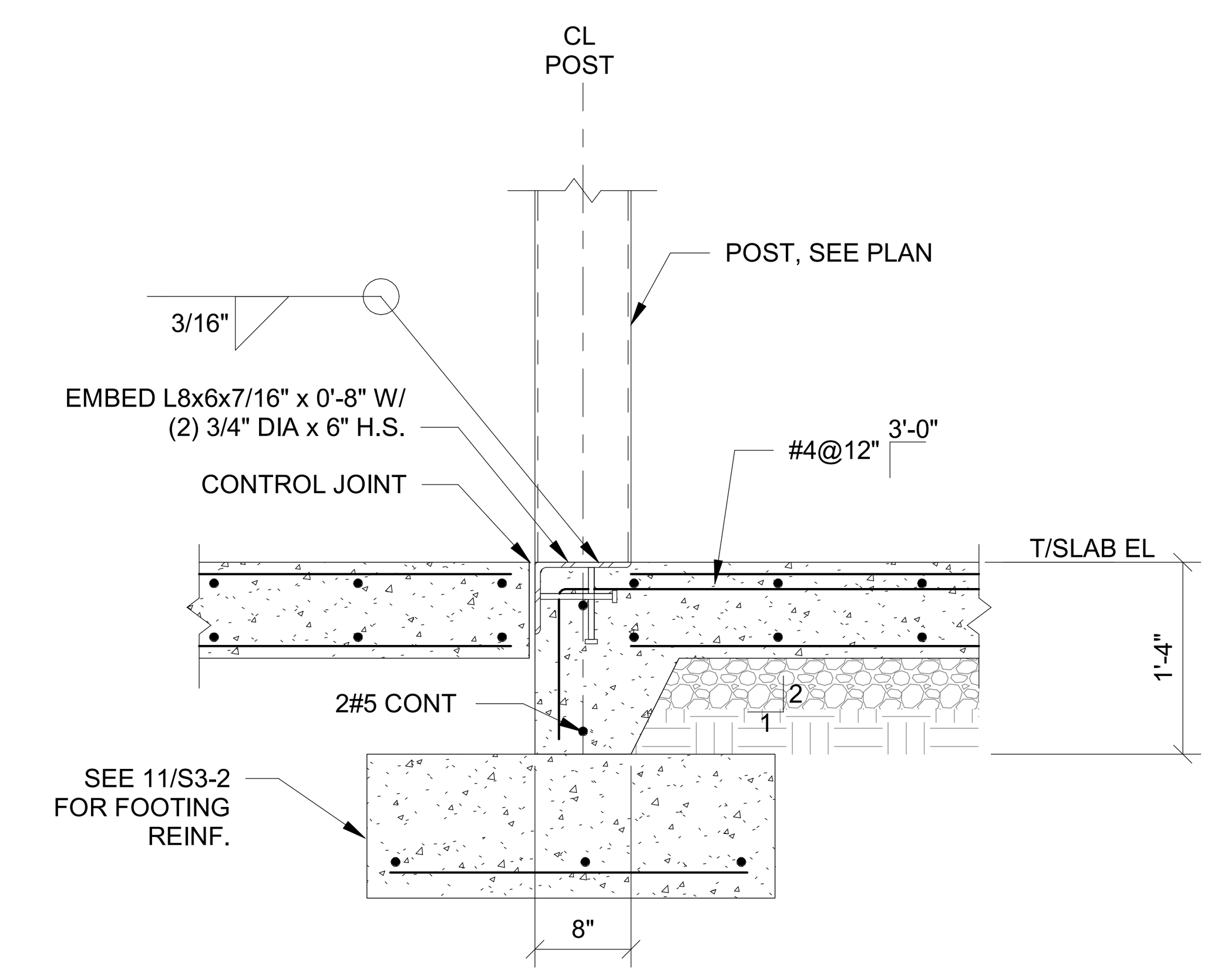
9 S3-7 TYPICAL REINFORCING AT ONE WAY CONCRETE SLAB OPENING
3/4" = 1'-0"



6 S3-7 EXTERIOR 12" CMU WALL ON CONCRETE WALL AT PUMP STATION
3/4" = 1'-0"



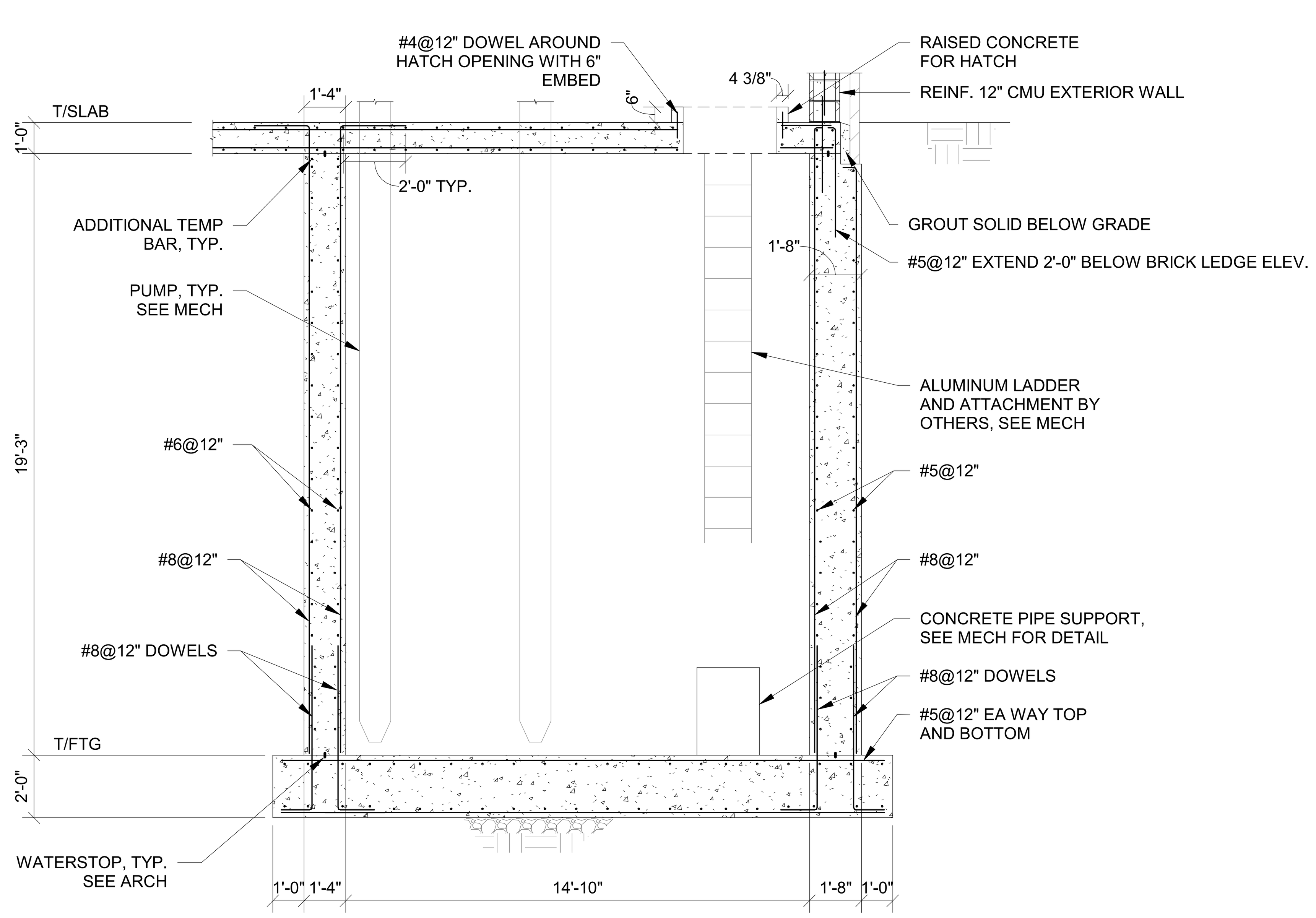
3 S3-7 EXTERIOR 12" CMU WALL FOOTING AT PUMP STATION
3/4" = 1'-0"



2 S3-7 SECTION AT HSS8x8 POST
3/4" = 1'-0"

NOTES:

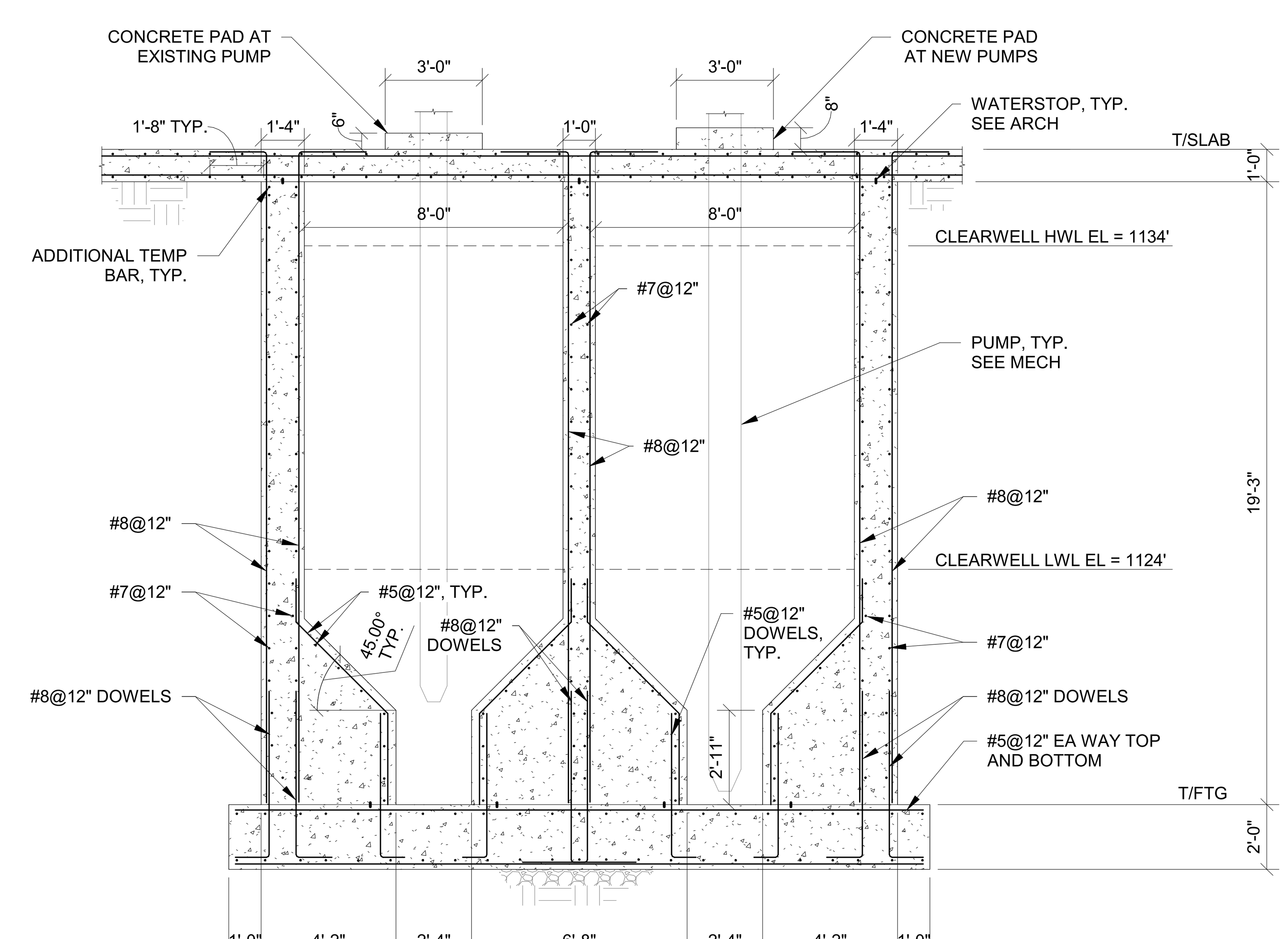
1. KEEP ALL WALLS SHORED UNTIL SLAB IS CONSTRUCTED.
2. COORDINATE WALL PIPE PENETRATIONS WITH MECH.
3. SEE 6/S3-1 FOR REINFORCEMENT AT JOINTS AND INTERSECTIONS.



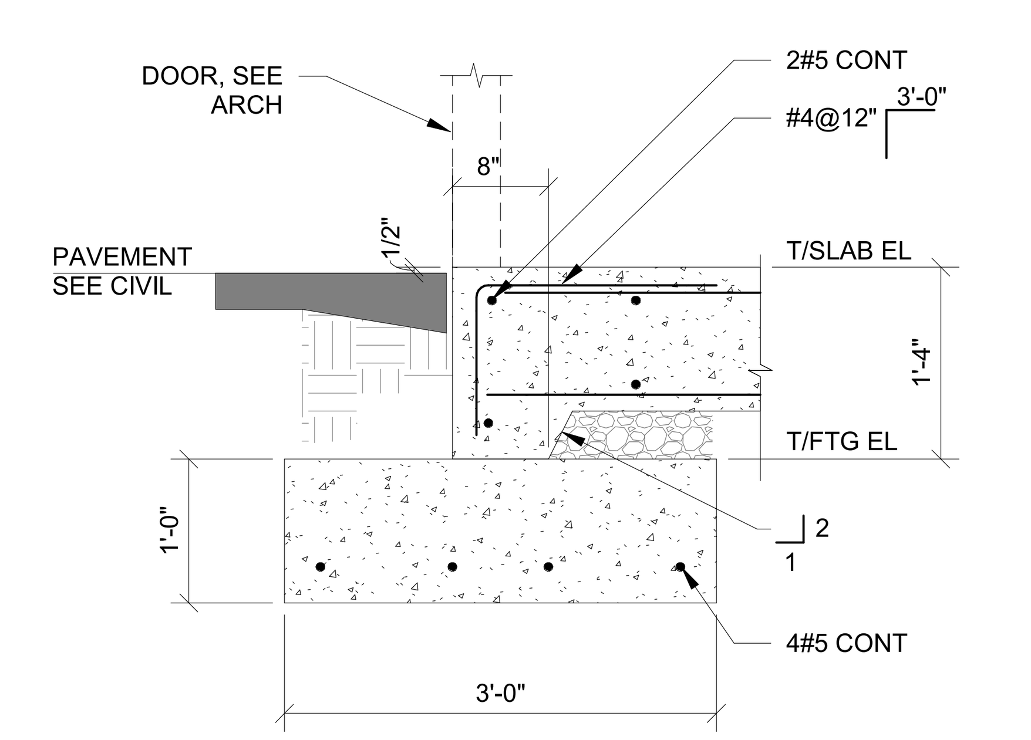
10 S3-7 PUMP STATION SECTION AT PUMPS
1/4" = 1'-0"

NOTES:

1. KEEP ALL WALLS SHORED UNTIL SLAB IS CONSTRUCTED.
2. COORDINATE WALL PIPE PENETRATIONS WITH MECH.
3. SEE 6/S3-1 FOR REINFORCEMENT AT JOINTS AND INTERSECTIONS.



4 S3-7 PUMP STATION SECTION THRU CLEARWELLS
1/4" = 1'-0"



1 S3-7 TURNDOWN SLAB ON FOOTING AT PUMP STATION
3/4" = 1'-0"

SHEAR STRUCTURAL
503 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SE000174 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

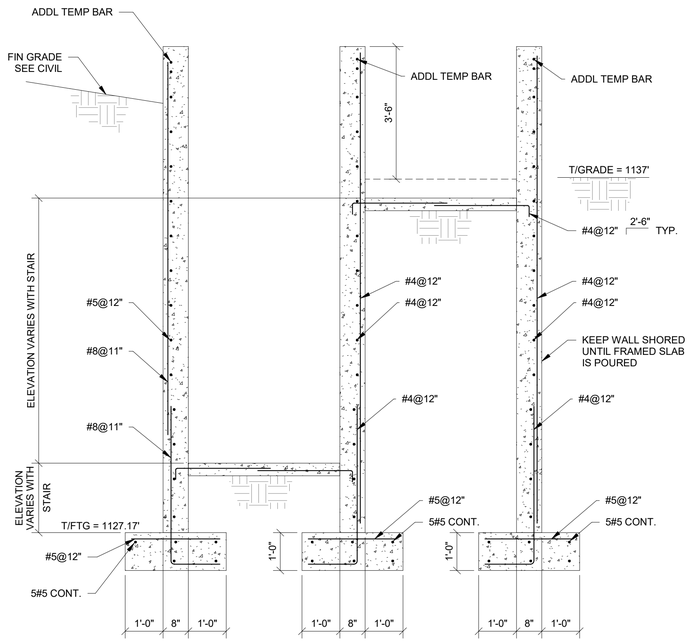
Buford Water Works Replacement
For the City of Buford, Georgia

FOUNDATION DETAILS

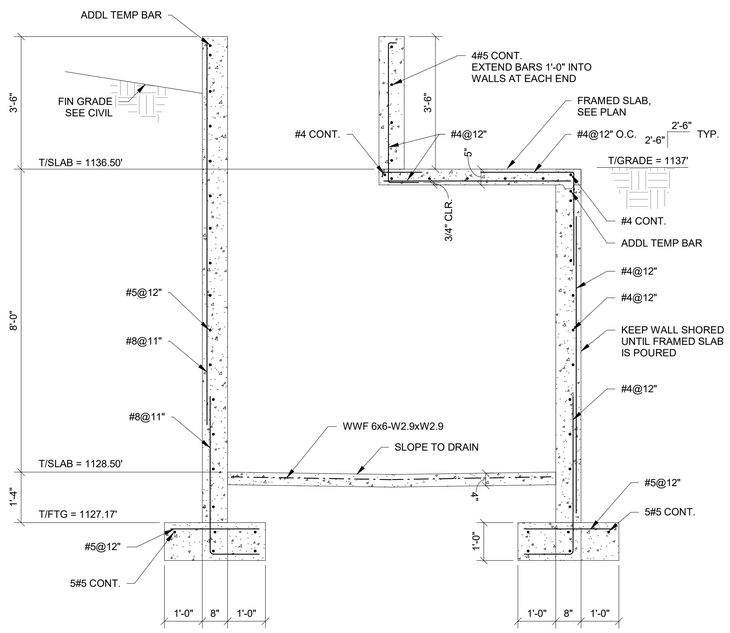
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

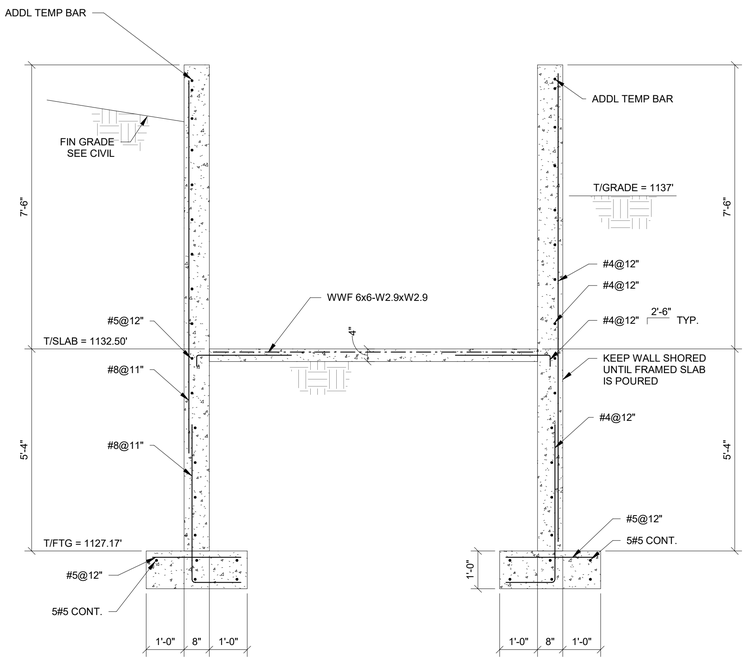
Project No.: 170110.00
Drawing No.: S3-7



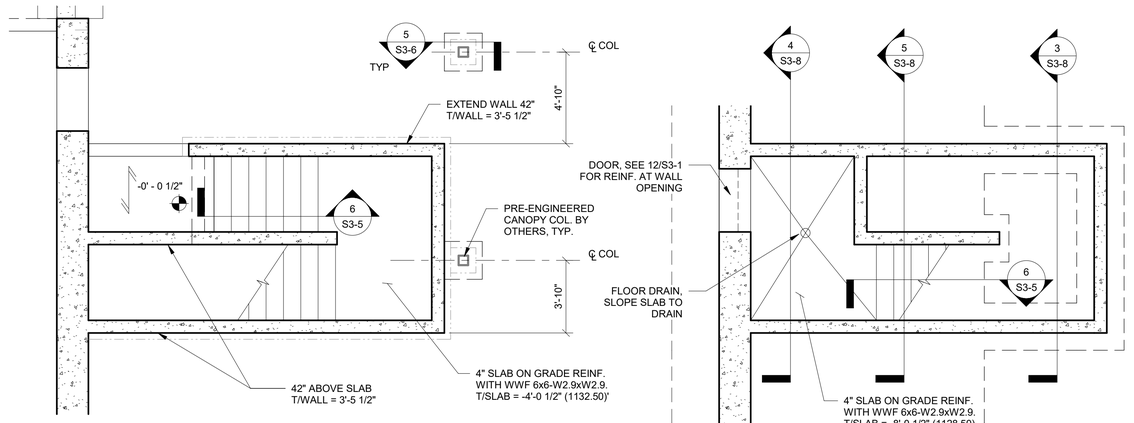
5 S3-8 SECTION THROUGH STAIRWELL
1/2" = 1'-0"



4 S3-8 SECTION THROUGH STAIRWELL AT TOP AND BOTTOM LANDINGS
1/2" = 1'-0"



3 S3-8 SECTION THROUGH STAIRWELL AT INTERMEDIATE LANDING
1/2" = 1'-0"



NOTES:
1. INDICATES DIRECTION OF SPAN FOR 5" CONCRETE ELEVATED SLAB REINF. WITH #5@9" O.C. PROVIDE #4@12" O.C. TEMPERATURE BARS. FINISH FLOOR EL = -0'-1/2" (1136.50).
2. SEE CIVIL FOR FINISH GRADES AROUND STAIR WALLS.

2 S3-8 STAIR PLAN AT FIRST FLOOR
1/4" = 1'-0"

1 S3-8 STAIR PLAN AT PIT
1/4" = 1'-0"

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FOUNDATION DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:
Jolene Northrop, P.E.

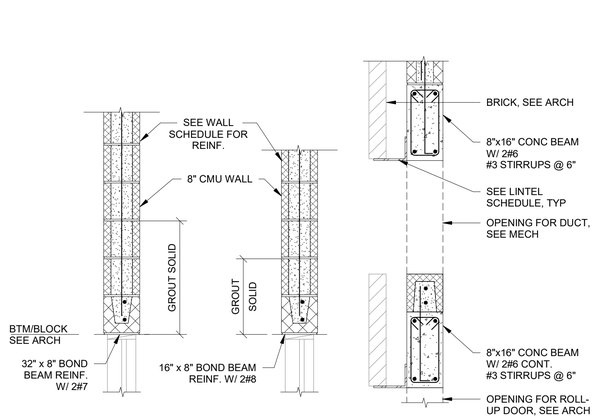
Drawn By: DCR | Checked By: HCJ

Date: 04/14/2021

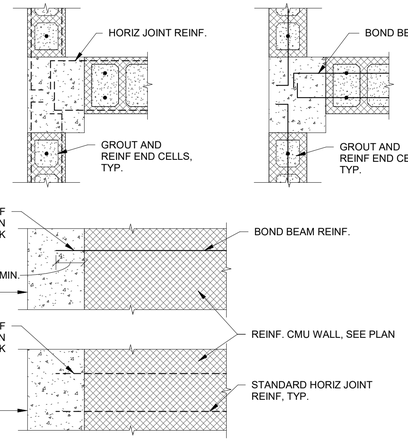
Scale: As Shown

Project No.:
170110.00

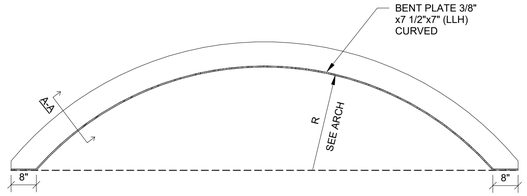
Drawing No.:
S3-8



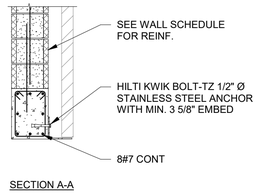
AT 23'-4" OPENING AT 18'-8" OPENING AT ROLL-UP DOOR AND DUCT



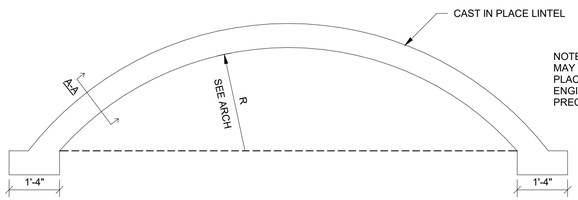
12 S4-1 SECTION AT STEEL LINTEL AT OPENING
3/4" = 1'-0"



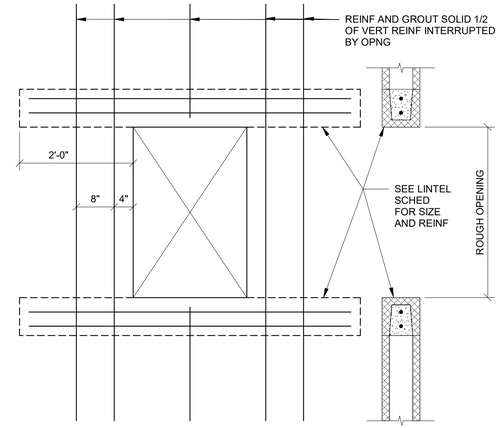
9 S4-1 CONCRETE COLUMN AT MASONRY WALL
3/4" = 1'-0"



SECTION A-A



NOTE: PRECAST CONCRETE LINTEL MAY BE USED INSTEAD OF CAST IN PLACE CONCRETE. NOTIFY ENGINEER IF PROCEEDING WITH PRECAST LINTEL.

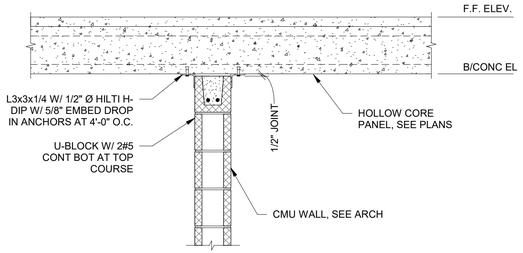


3 S4-1 TYPICAL REINFORCING AT CMU WALL OPENING
3/4" = 1'-0"

STANDARD LINTEL SCHEDULE		
WALL SIZE	LINTEL TYPE	REMARKS
OPENINGS UP TO 6'-0"		
4" BRICK	BENT PL 7 1/2"x5"x5/16", LLH	COORDINATE HORIZONTAL LEG DIMENSION WITH ARCH
8" BLOCK	8"x8" CONC W/ 2#4 T&B 8"x8" U-BLOCK W/ 1#5 T&B	
12" BLOCK	12"x8" CONC W/ 2#4 T&B 12"x8" U-BLOCK W/ 2#5 T&B	
OPENINGS 6'-0" TO 8'-0"		
4" BRICK	3/8"x7 1/2"x6" BENT PL, LLH	COORDINATE HORIZONTAL LEG DIMENSION WITH ARCH
8" BLOCK	8"x8" CONC W/ 2#4 T&B 8"x16" U-BLOCK W/ 1#6 T&B	
12" BLOCK	12"x8" CONC W/ 2#4 T&B 12"x16" U-BLOCK W/ 2#5 T&B	
OPENINGS 8'-0" TO 10'-0"		
4" BRICK	3/8"x7 1/2"x6" BENT PL, LLH	COORDINATE HORIZONTAL LEG DIMENSION WITH ARCH
8" BLOCK	8"x8" CONC W/ 2#4 T&B	#3 STIR @ 7" CONT
12" BLOCK	12"x8" CONC W/ 2#4 T&B	#3 STIR @ 7" CONT
OPENINGS 10'-0" TO 12'-0"		
4" BRICK	3/8"x7 1/2"x7" BENT PL, LLH	COORDINATE HORIZONTAL LEG DIMENSION WITH ARCH
8" BLOCK	CAST IN PLACE CONCRETE	
12" BLOCK	CAST IN PLACE CONCRETE	

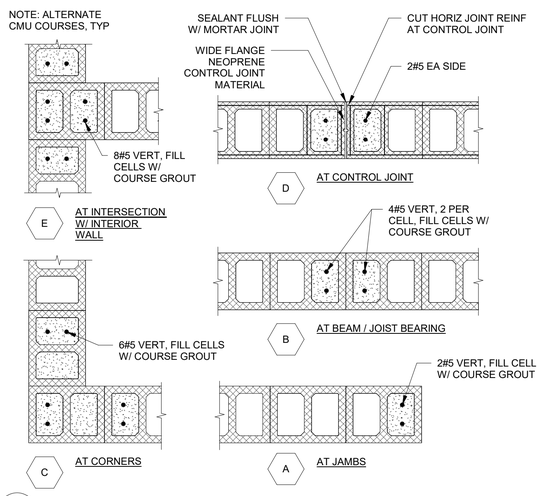
NOTE: ALL LOOSE LINTELS FOR BRICK TO BE GALVANIZED CARBON STEEL.

11 S4-1 SECTION AT LINTEL OVER ARCHED WINDOW
1/2" = 1'-0"



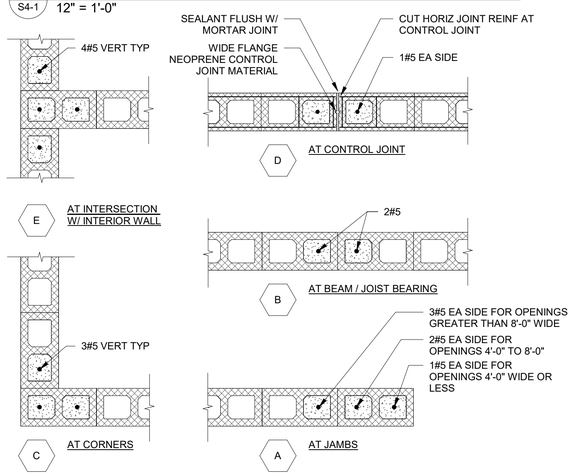
NOTE:
PROVIDE CMU WALL BRACING AT TOP OF WALL WHEN DISTANCE BETWEEN INTERSECTING WALLS EXCEED 36 TIMES THE WALL THICKNESS. LOCATION AND INSTALLATION OF BRACING FOR INTERIOR WALLS SHALL BE PER THE GOVERNING BUILDING CODE AND THE ARCHITECT'S DIRECTION. INTERSECTING WALLS MUST BE ANCHORED OR BONDED TOGETHER.

10 S4-1 TYPICAL BRACING AT INTERIOR CMU WALL AT CONCRETE FRAMING (STRAP ANCHORS)
3/4" = 1'-0"

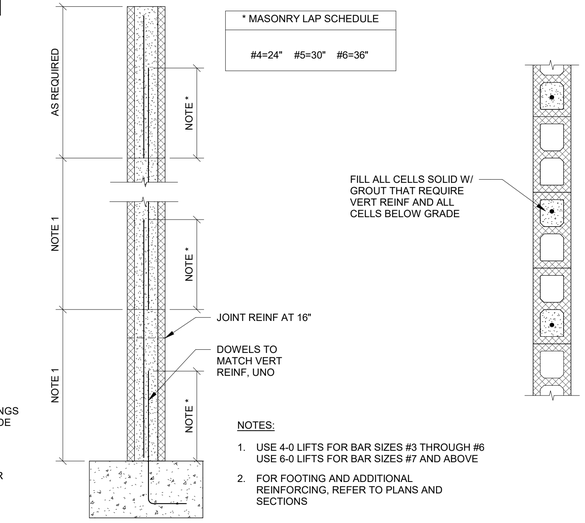


7 S4-1 TYPICAL REINFORCING AT 12" LOAD BEARING CMU WALL
3/4" = 1'-0"

5 S4-1 STANDARD LINTEL SCHEDULE
12" = 1'-0"



4 S4-1 TYPICAL REINFORCING AT 8" LOAD BEARING CMU WALL
3/4" = 1'-0"



* MASONRY LAP SCHEDULE
#4=24" #5=30" #6=36"

NOTES:

1. USE 4-0 LIFTS FOR BAR SIZES #3 THROUGH #6
   USE 6-0 LIFTS FOR BAR SIZES #7 AND ABOVE
2. FOR FOOTING AND ADDITIONAL REINFORCING, REFER TO PLANS AND SECTIONS

1 S4-1 TYPICAL REINFORCED CMU WALL
3/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

MASONRY DETAILS

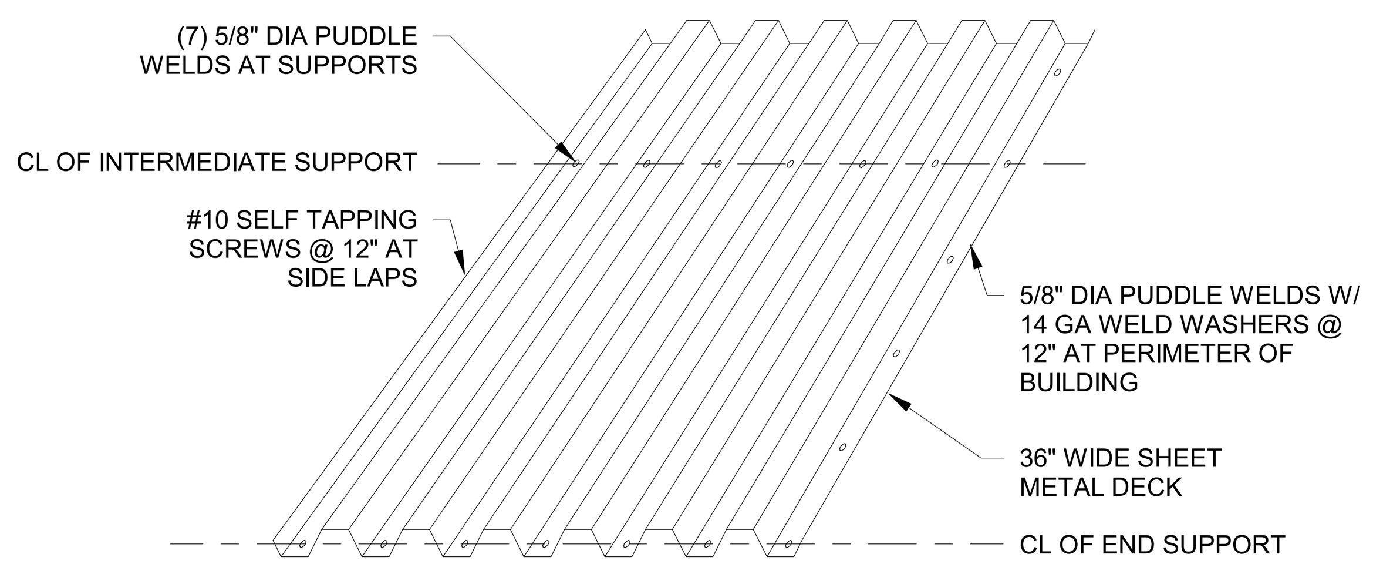
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: DCR Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

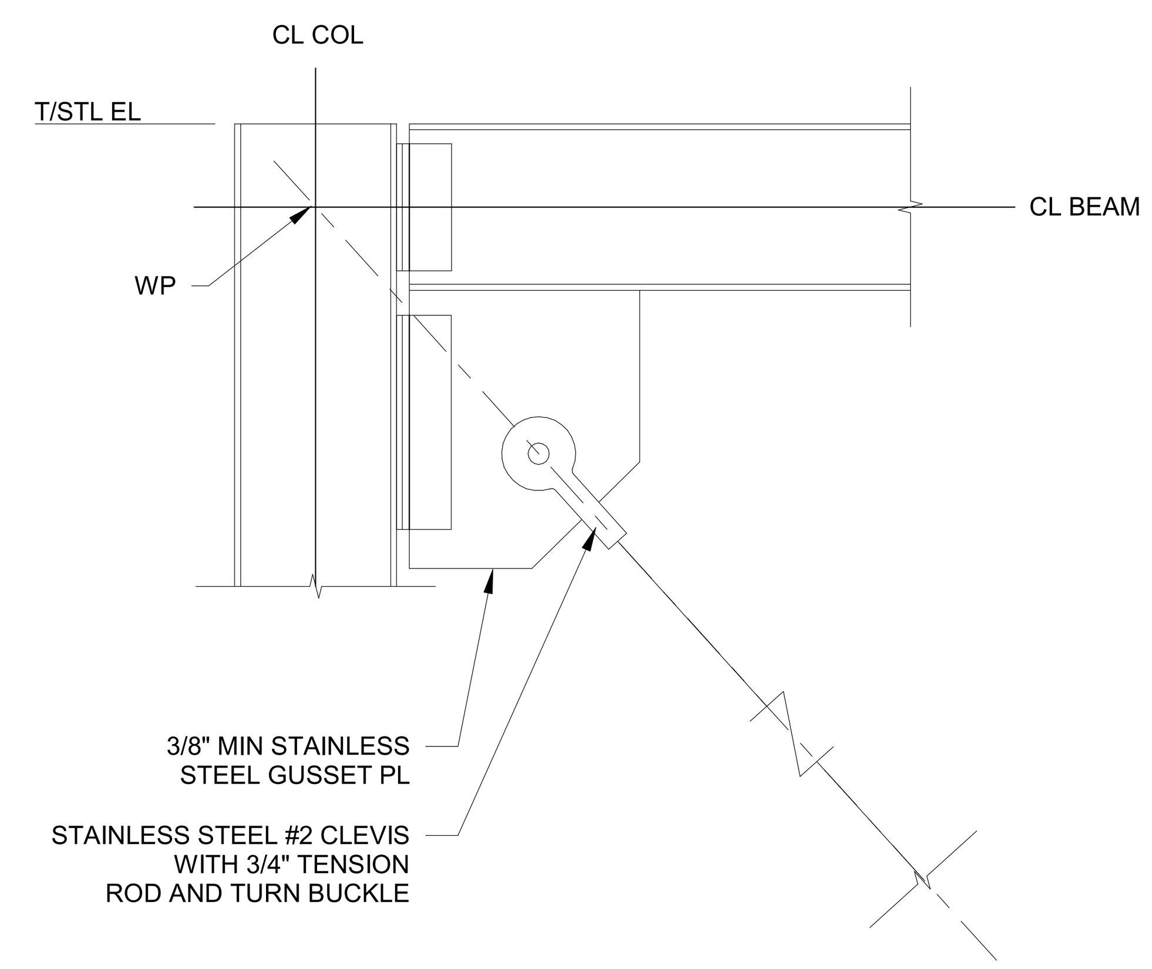
Project No.: 170110.00
Drawing No.: S4-1

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-9051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007-1800 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_stitled.dwg

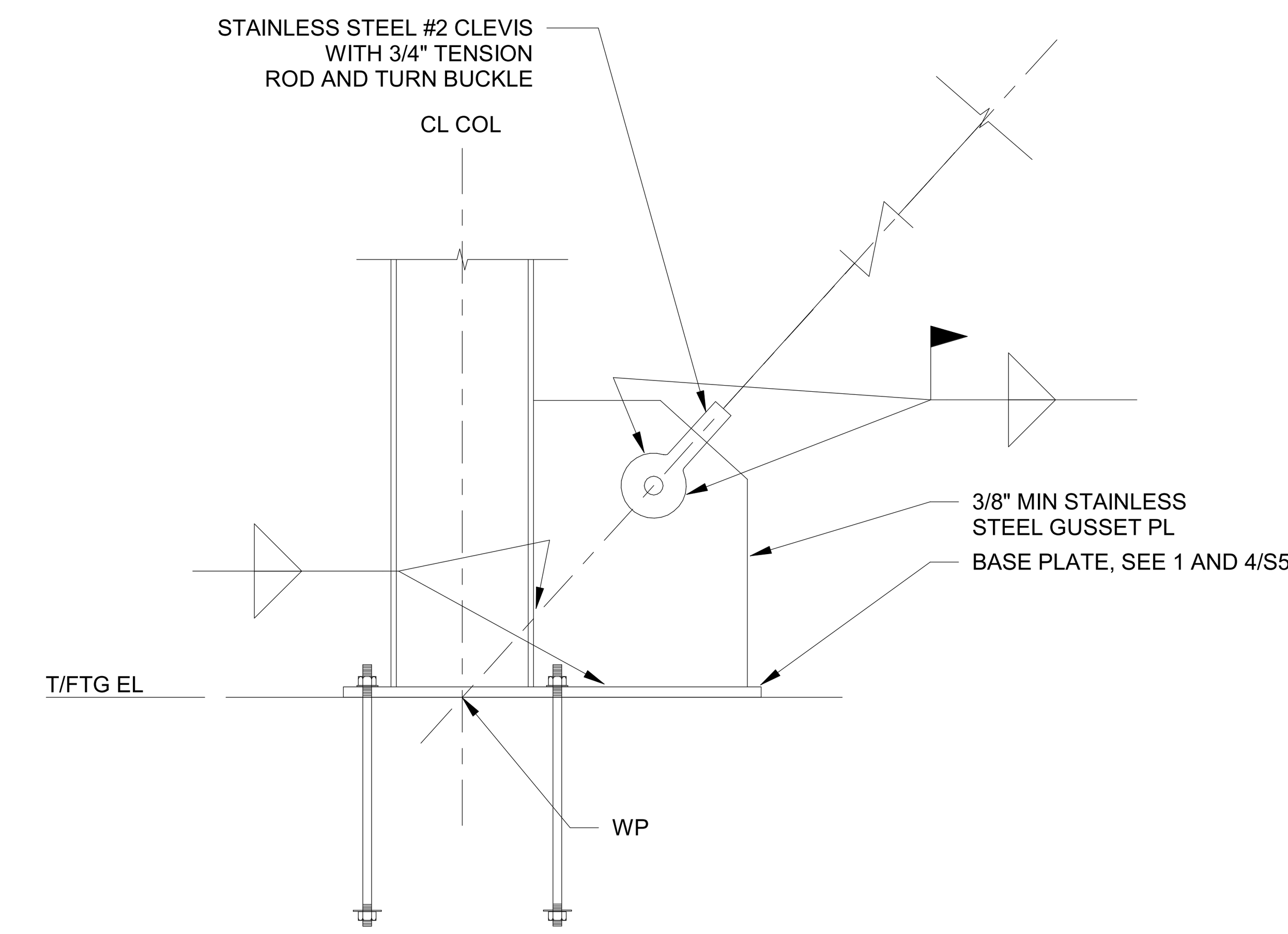


12 S5-1 TYPICAL ROOF DECK ATTACHMENT (36" WIDE SHEET)
3/4" = 1'-0"



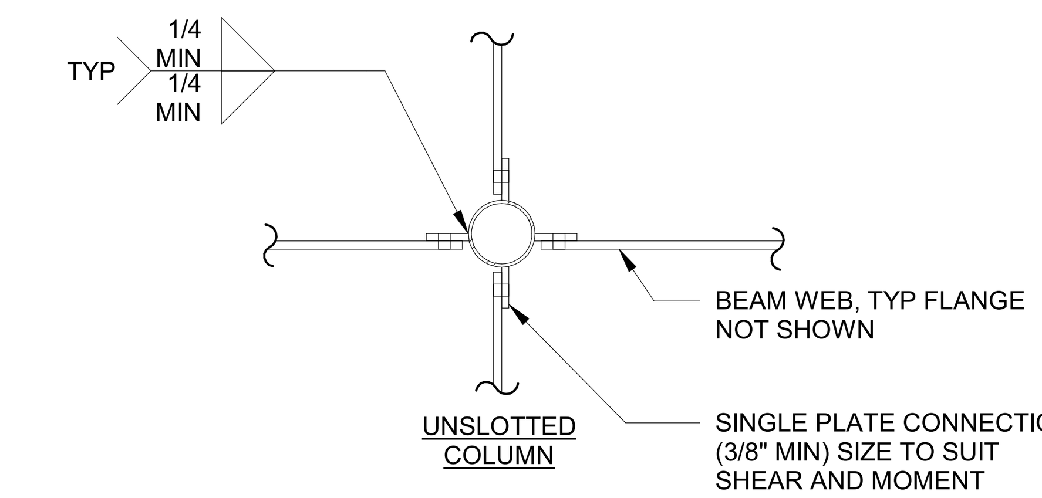
NOTE:
GUSSET PL, SHEAR CONNECTION AND WELDS TO BE SIZED BY SUPPLIER

9 S5-1 TYPICAL TURN BUCKLE TOP BRACE
3/4" = 1'-0"



NOTE:
GUSSET PLATE AND WELDS TO BE SIZED BY SUPPLIER

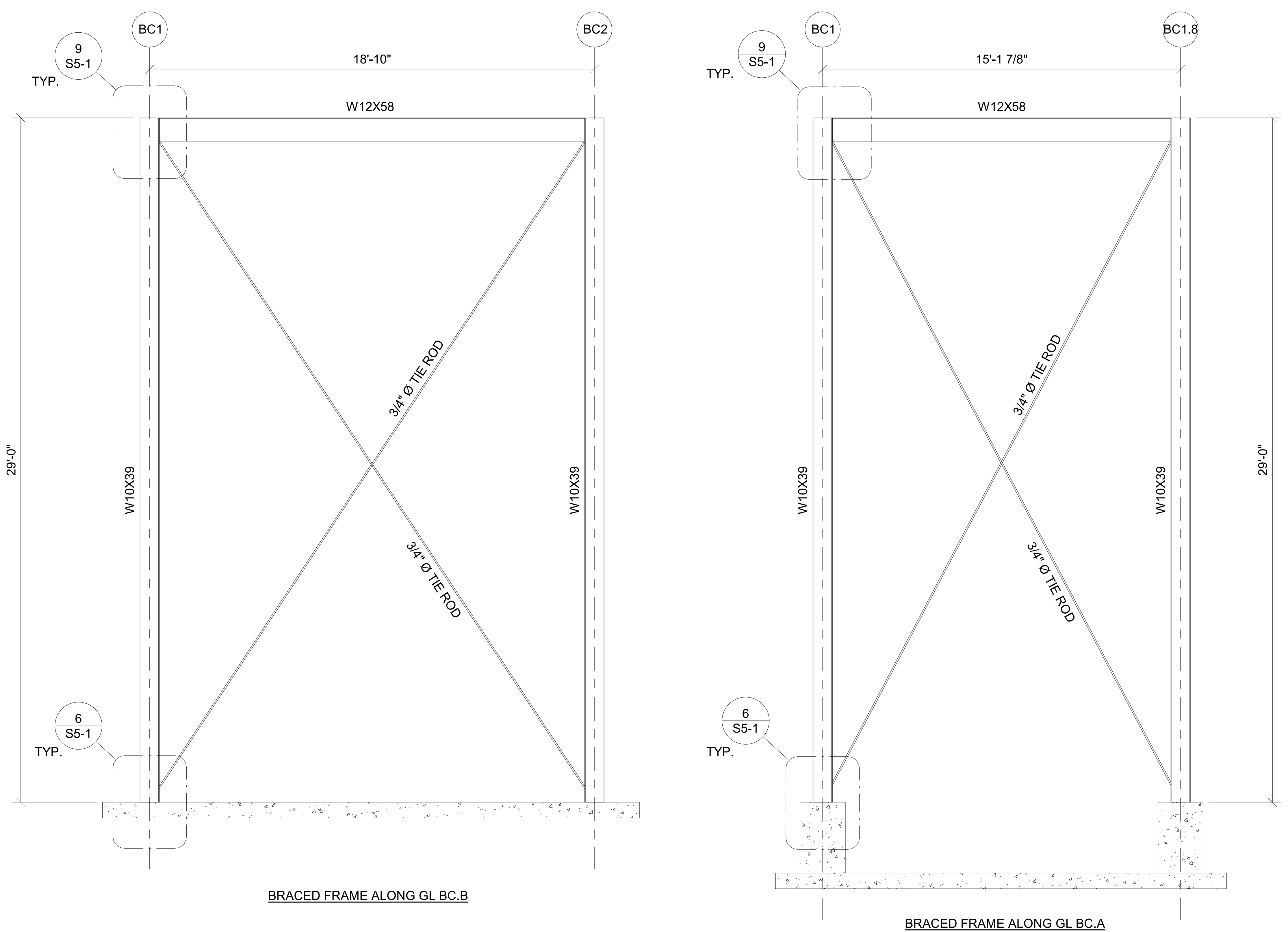
6 S5-1 TYPICAL VERTICAL BRACE AT FOUNDATION
3/4" = 1'-0"



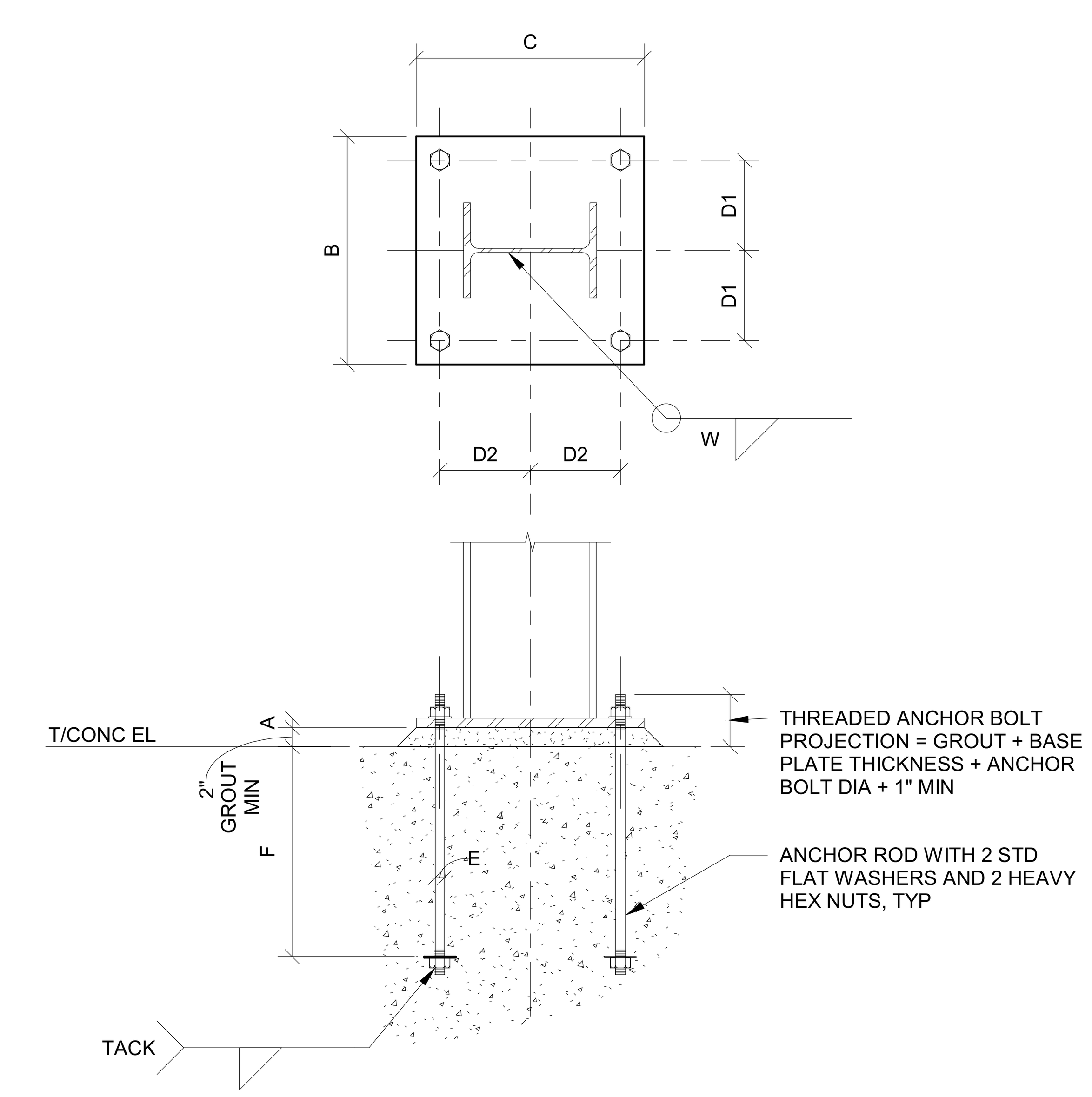
NOTE:
CLOSE COLUMN WITH 1/2" CAP PLATE, TYP

3 S5-1 TYPICAL TUBE COLUMN CONNECTIONS
3/4" = 1'-0"

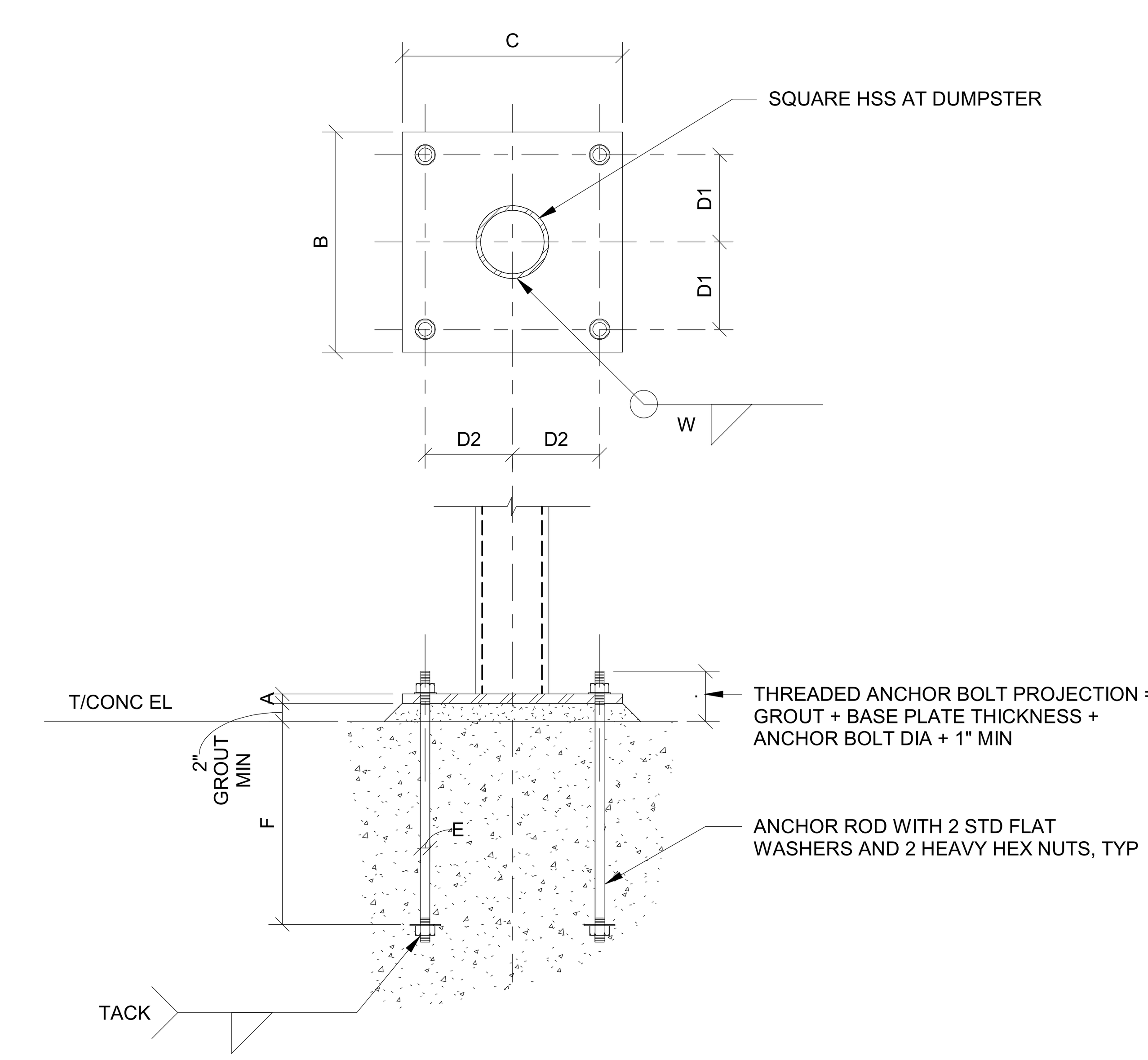
BASE PLATE AND ANCHOR BOLT SCHEDULE									
COLUMN SIZE	BASE PLATE					ANCHOR BOLTS			WELD
	A	B	C	D1	D2	E	F	NO	W
BP1	3/4"	14"	16"	5 1/2"	6 1/2"	3/4"	9"	4	3/16"
BP2	3/4"	11"	11"	4"	4"	3/4"	9"	4	3/16"
BP3	3/4"	10"	10"	3 1/2"	3 1/2"	3/4"	9"	4	3/16"



10 S5-1 BRIDGE CRANE BRACE ELEVATION
1/4" = 1'-0"

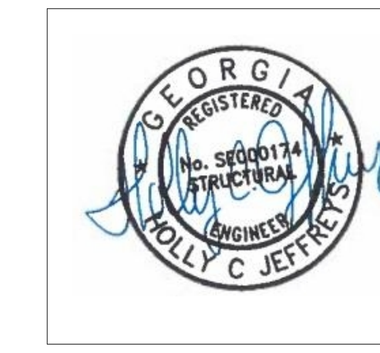


4 S5-1 TYPICAL BASE PLATE AND ANCHOR BOLT (WF)
3/4" = 1'-0"



1 S5-1 TYPICAL BASE PLATE AND ANCHOR BOLT (PIPE)
3/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com



NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

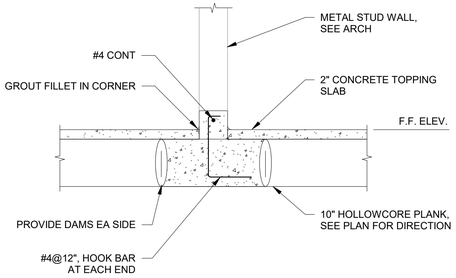
FRAMING DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

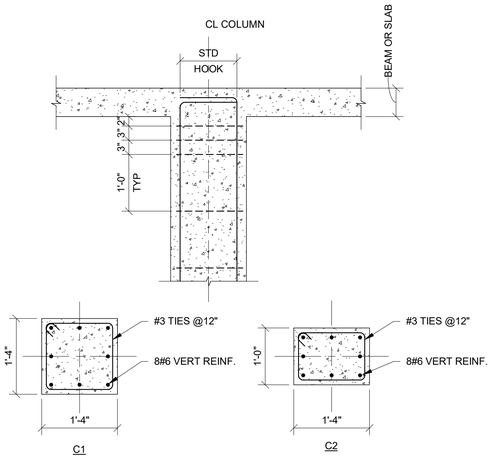
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

SHEAR STRUCTURAL
503 MONROE DRIVE SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Project No.: 170110.00
Drawing No.: S5-1

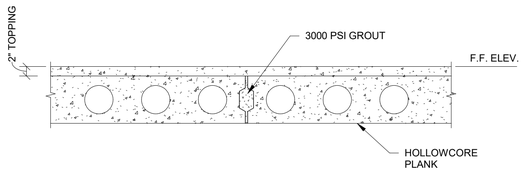


12 S5-2 CURB AT MICROBIOLOGY ROOM
3/4" = 1'-0"

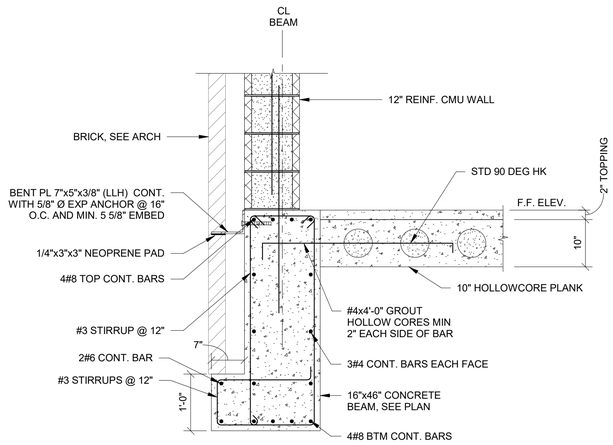


NOTE: ALTERNATE TIE LOCATION AT ASYMMETRIC TIE ARRANGEMENTS

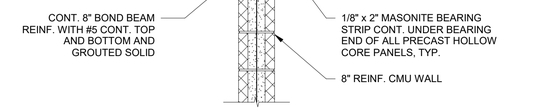
9 S5-2 TYPICAL CONCRETE COLUMN
3/4" = 1'-0"



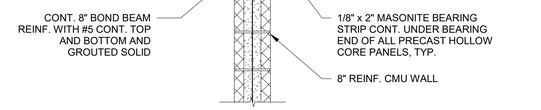
6 S5-2 TYPICAL DETAIL BETWEEN HOLLOW CORE PANELS
3/4" = 1'-0"



3 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT EXTERIOR CONCRETE BEAM - PARALLEL
3/4" = 1'-0"

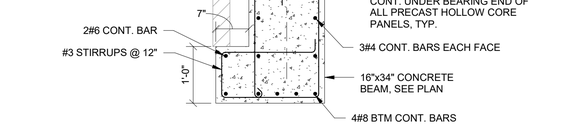


11 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT INTERIOR LOAD BEARING 8" CMU - PERPENDICULAR
3/4" = 1'-0"

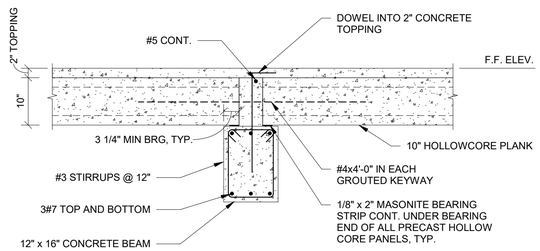


8 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT INTERIOR LOAD BEARING 8" CMU - PARALLEL
3/4" = 1'-0"

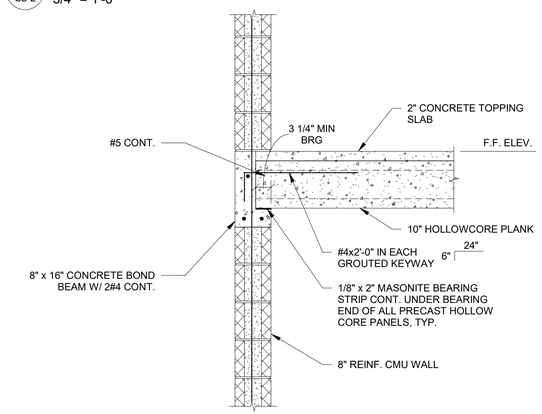
5 S5-2 SECTION AT HOLLOW CORE PRECAST PANEL SUPPORT AT INTERIOR CONCRETE BEAM
3/4" = 1'-0"



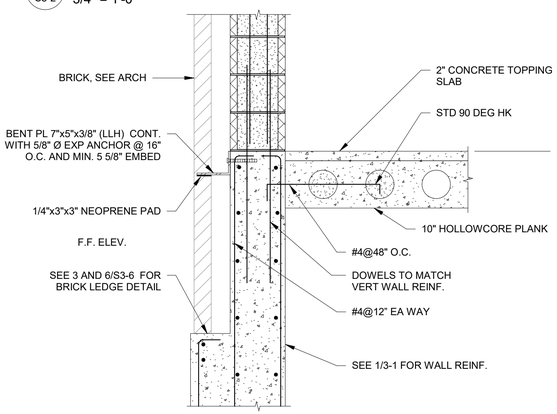
2 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT EXTERIOR CONCRETE BEAM - PERPENDICULAR
3/4" = 1'-0"



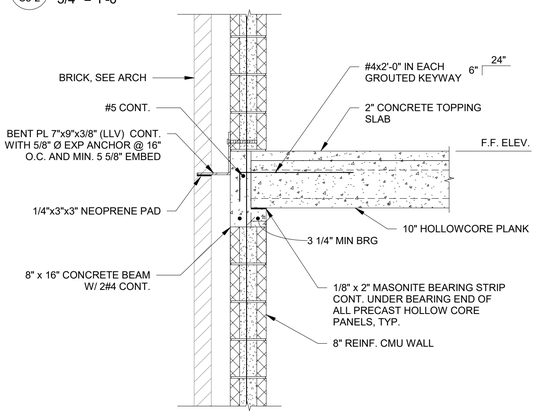
10 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT INTERIOR CONCRETE BEAM
3/4" = 1'-0"



7 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT 12" CMU - PERPENDICULAR
3/4" = 1'-0"



4 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT 12" CMU - PARALLEL
3/4" = 1'-0"



1 S5-2 TYPICAL HOLLOW CORE PRECAST PANEL AT 8" CMU - PERPENDICULAR
3/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001134 STRUCTURAL ENGINEER HOLLY C JEFFREYS

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION
	11/30/2020	ADDENDUM 4
	12/03/2020	ADDENDUM 5
	12/04/2020	PERMIT SET

Buford Water Works Replacement
For the City of Buford, Georgia

FRAMING DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: DCR | Checked By: HCJ

Date: 04/14/2021

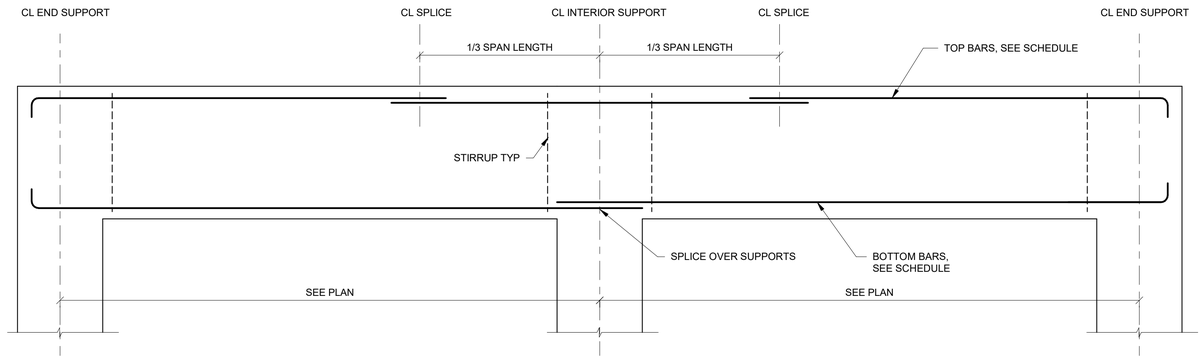
Scale: As Shown

Project No.: 170110.00

Drawing No.: S5-2

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structural\Projects\007 Keck & Wood\007.1 B001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00_TB_e5bd.dwg



9 / S5-3 CONCRETE BEAM DIAGRAM
3/4" = 1'-0"

CONCRETE BEAM SCHEDULE

BEAM MARK	BEAM SIZE (INCHES)		TOP BARS	BOTTOM BARS	FACE BARS (EF)	STIRRUPS	
	WIDTH	DEPTH	T1	B1		SIZE	SPACING
CB1	12" / 16"	34"	3#8 / 4#8	3#8 / 4#8	3#4	#3	12"
CB2	16"	46"	4#8	4#8	3#4	#3	12"
CB3	16"	27"	4#8	6#8	N/A	#3	12"
CB4	12"	16"	3#7	3#7	N/A	#3	12"

NOTES:
1. SEE DETAILS 2, 3, 5 AND 10/S5-2 FOR ADDL CONCRETE AND REINF REQUIRED AROUND BEAMS AT BRICK LEDGES AND HOLLOW CORE PANEL BEARING.
2. SEE 9/S5-3 FOR CONCRETE BEAM DIAGRAMS

8 / S5-3 CONCRETE BEAM SCHEDULE
3/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36201714 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

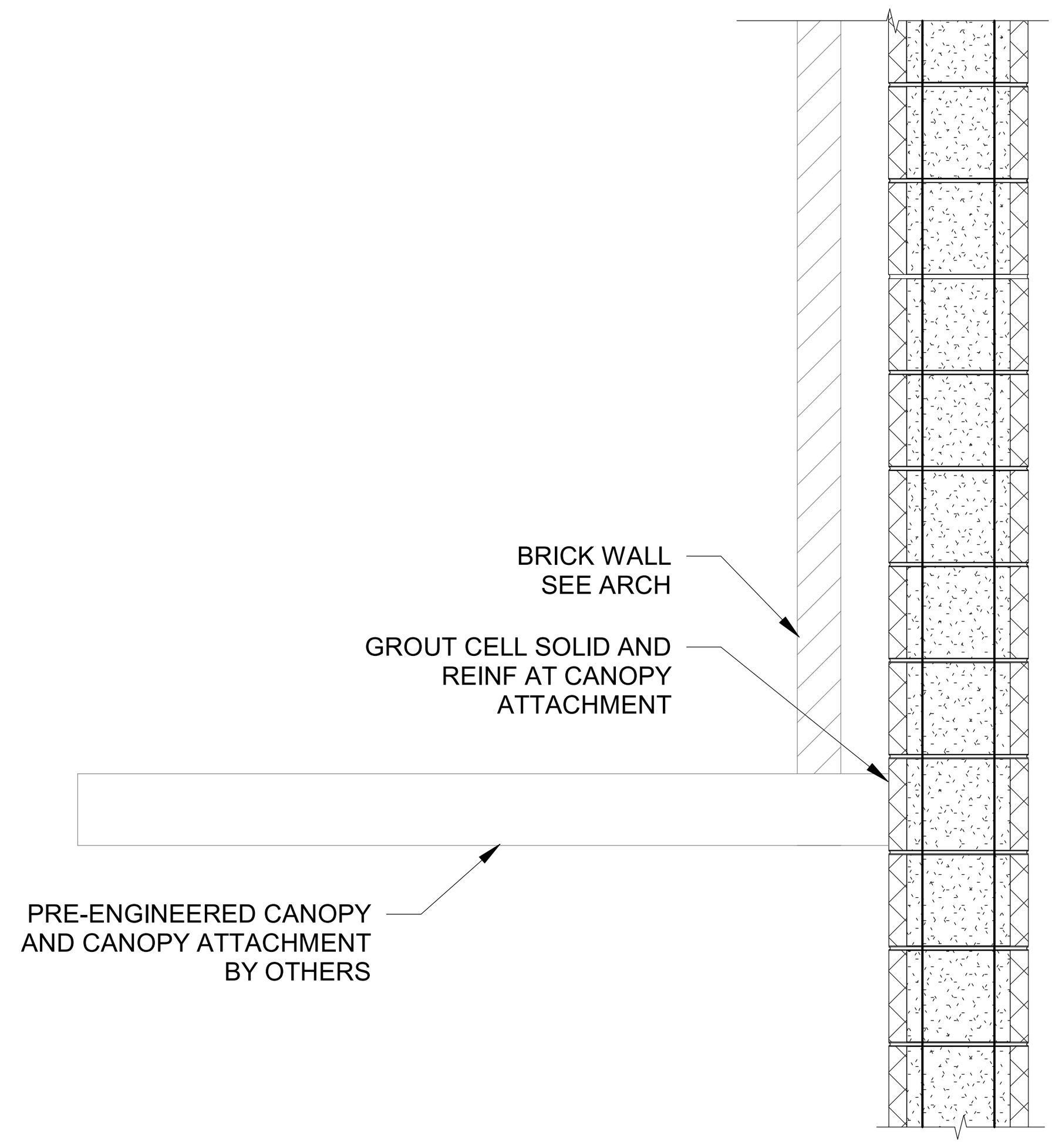
FRAMING DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

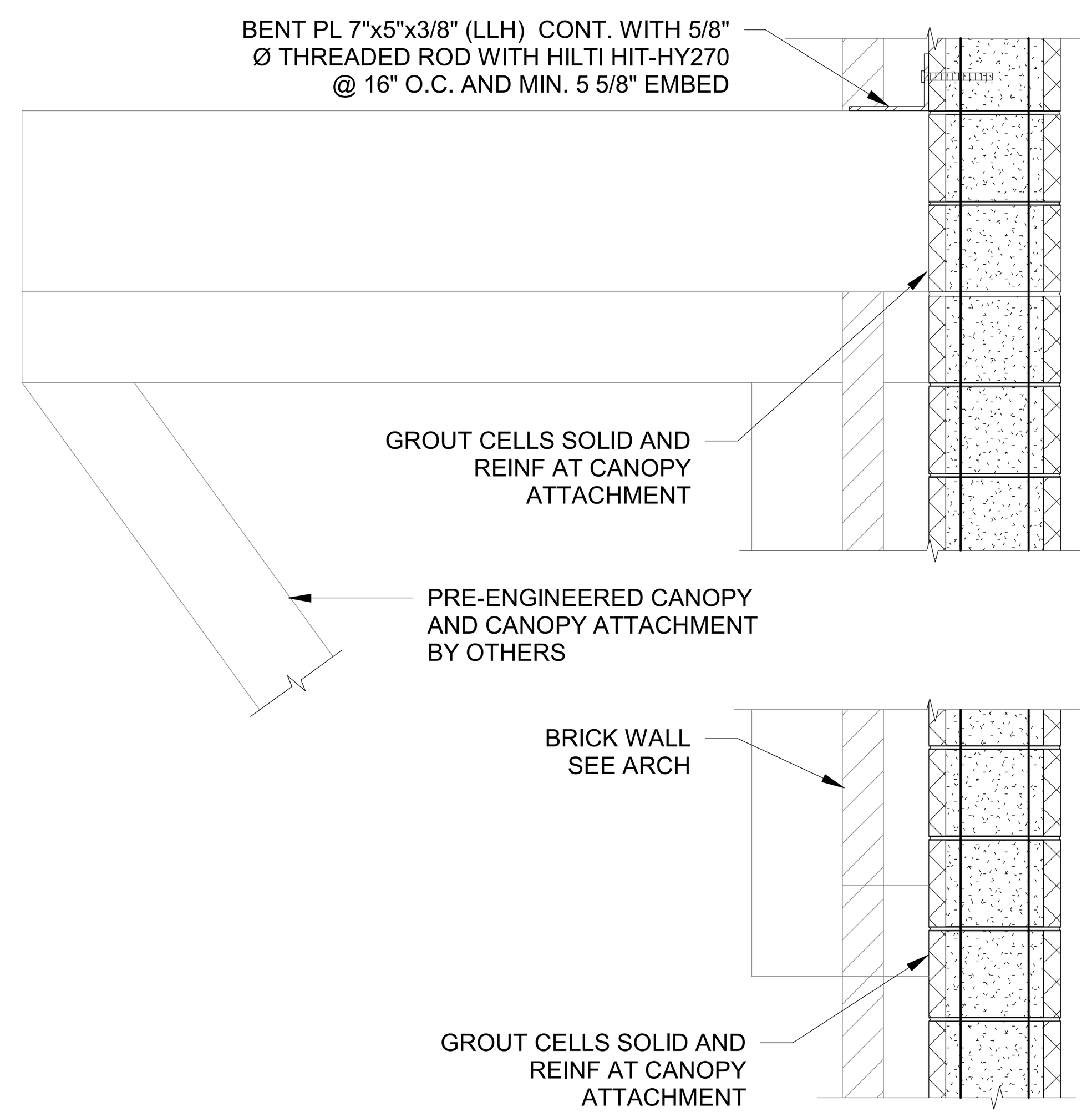
Project Manager: Jolene Northrop, P.E.
Drawn By: DCR
Checked By: HCJ
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: S5-3

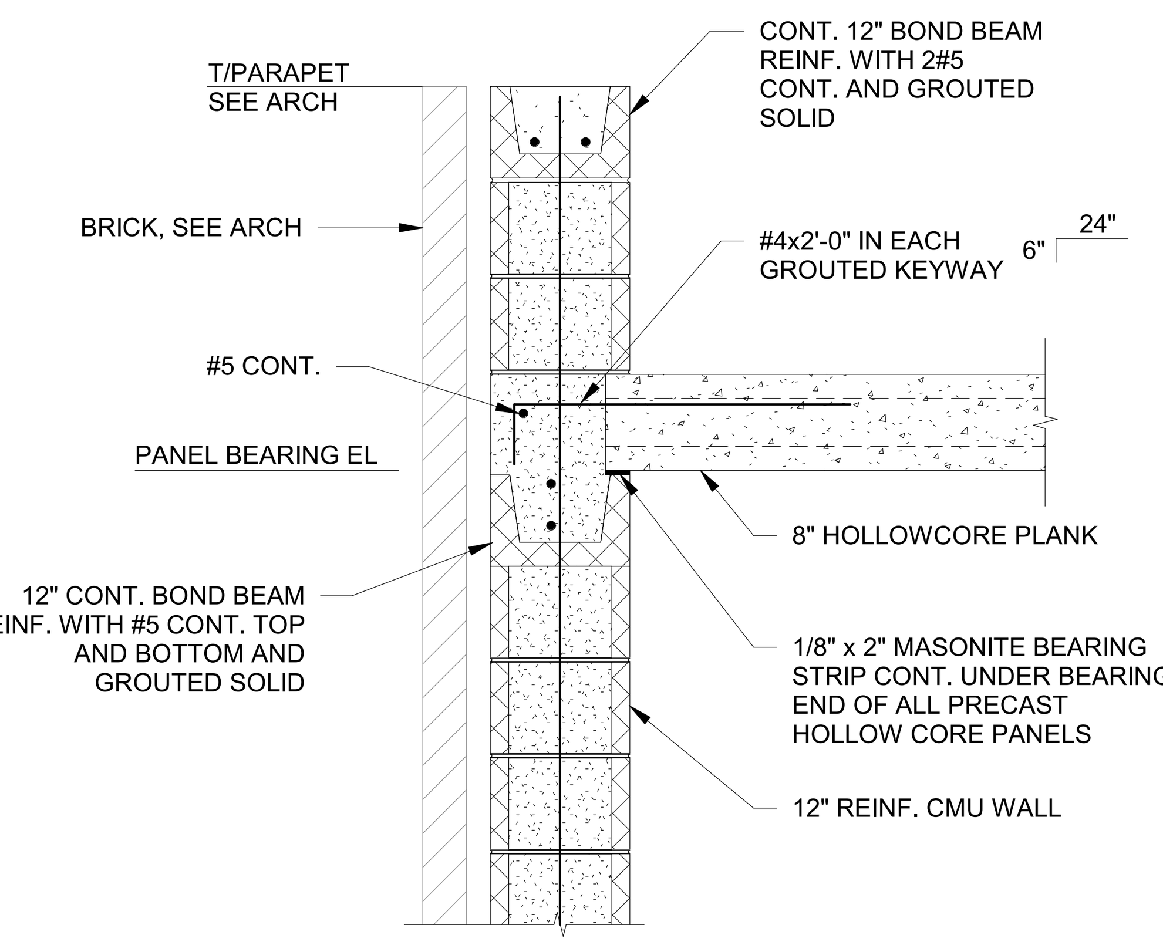
SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM



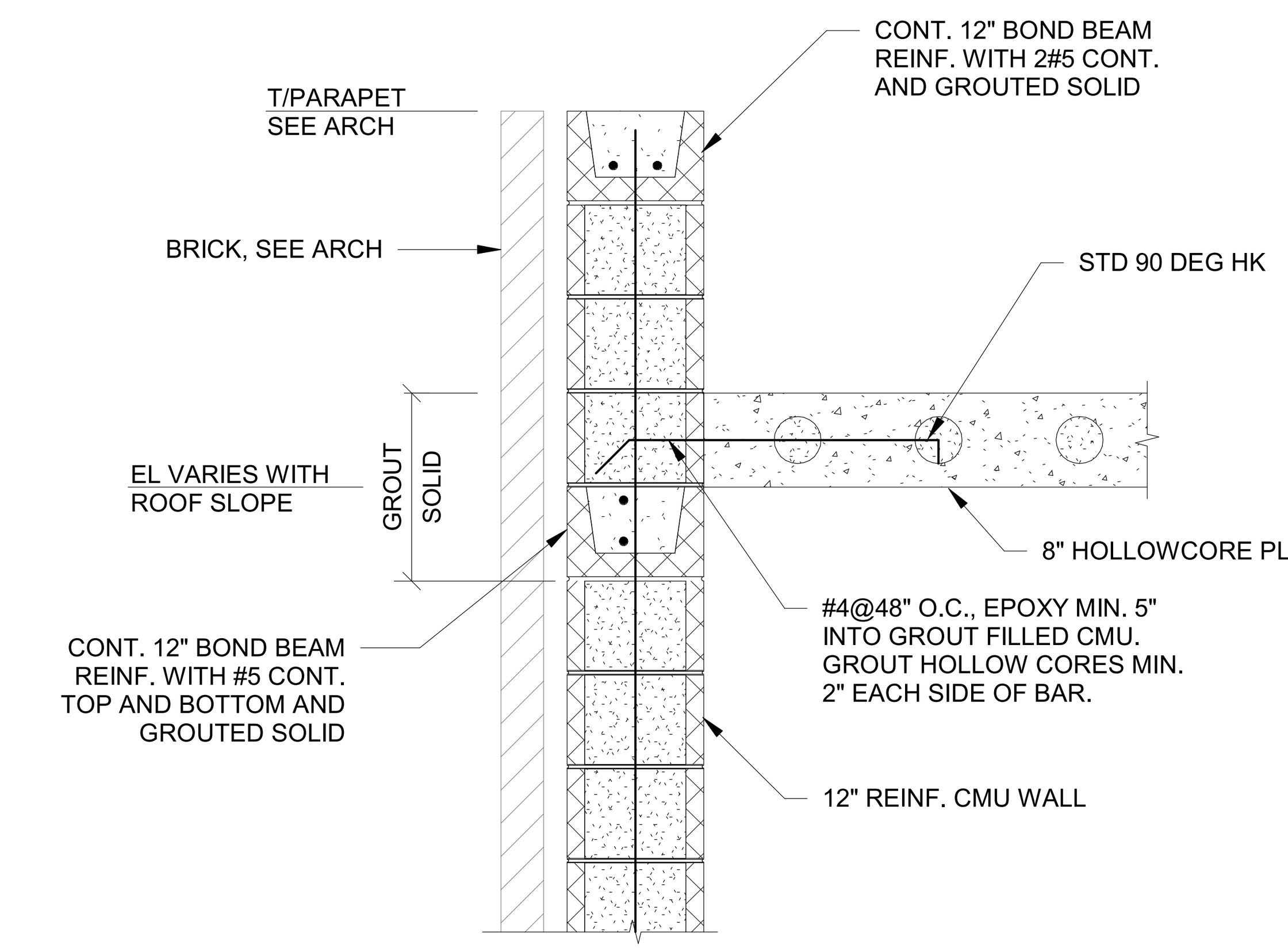
12 S5-4 EXTERIOR WALL SECTION AT PRE-ENGINEERED CANOPY AT SIDE
3/4" = 1'-0"



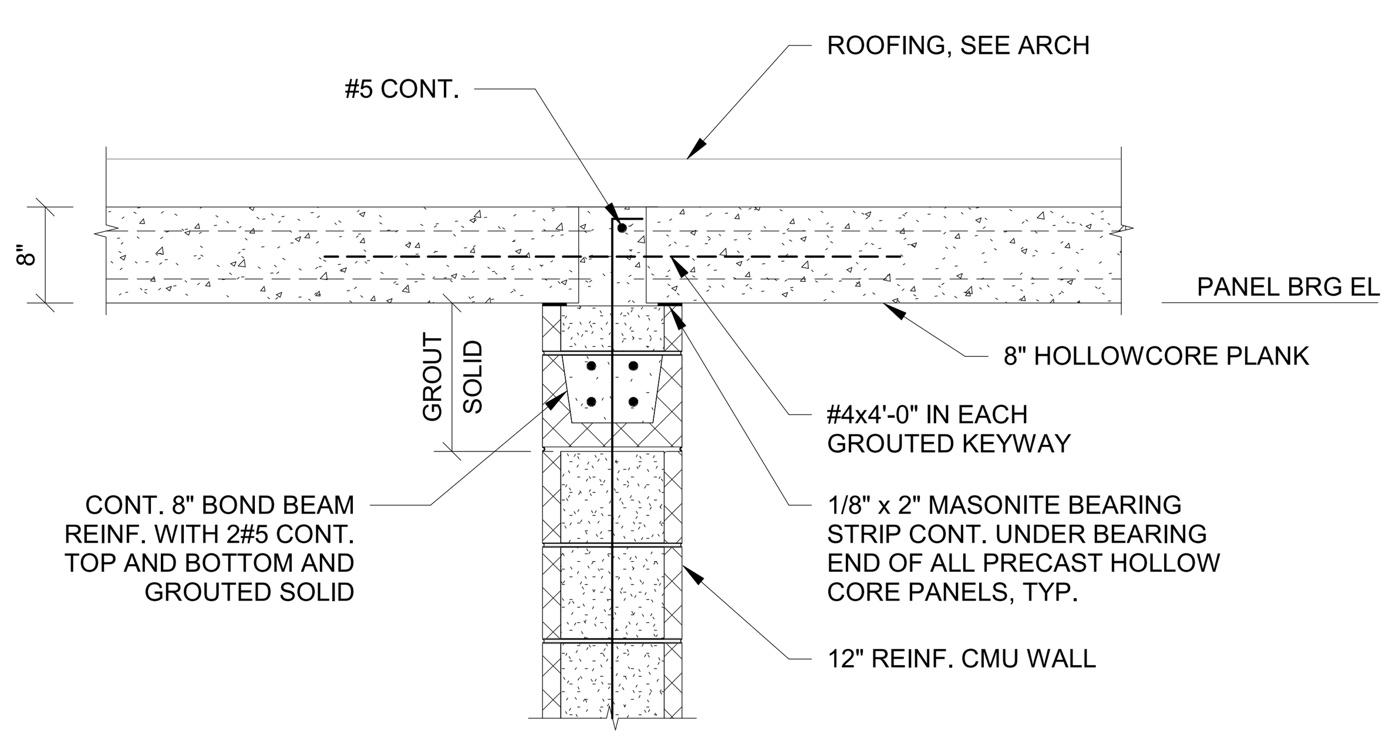
9 S5-4 EXTERIOR WALL SECTION AT PRE-ENGINEERED CANOPY AT BACK
3/4" = 1'-0"



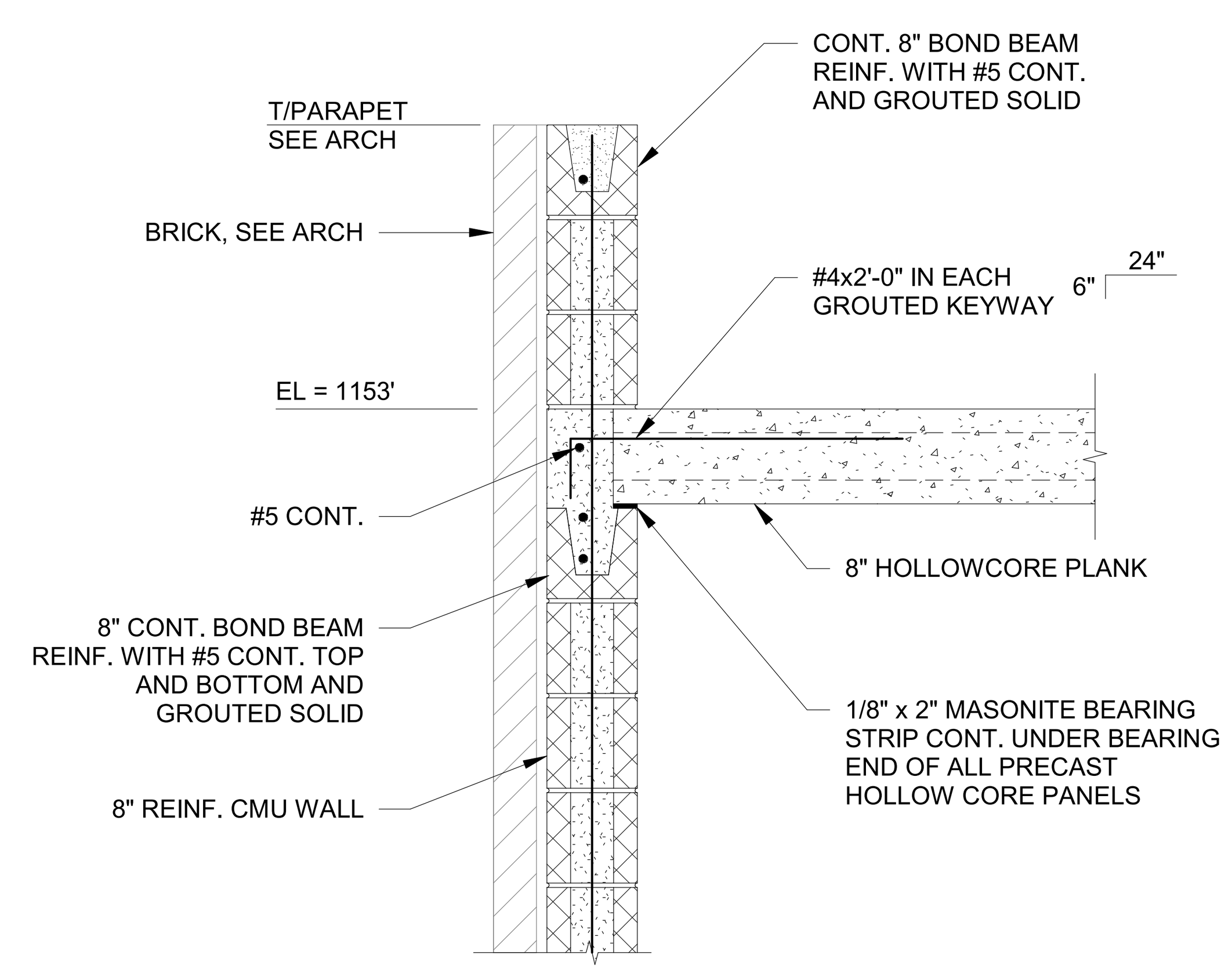
6 S5-4 TYPICAL HOLLOW CORE PRECAST ROOF PANEL AT 12" CMU - PERPENDICULAR
3/4" = 1'-0"



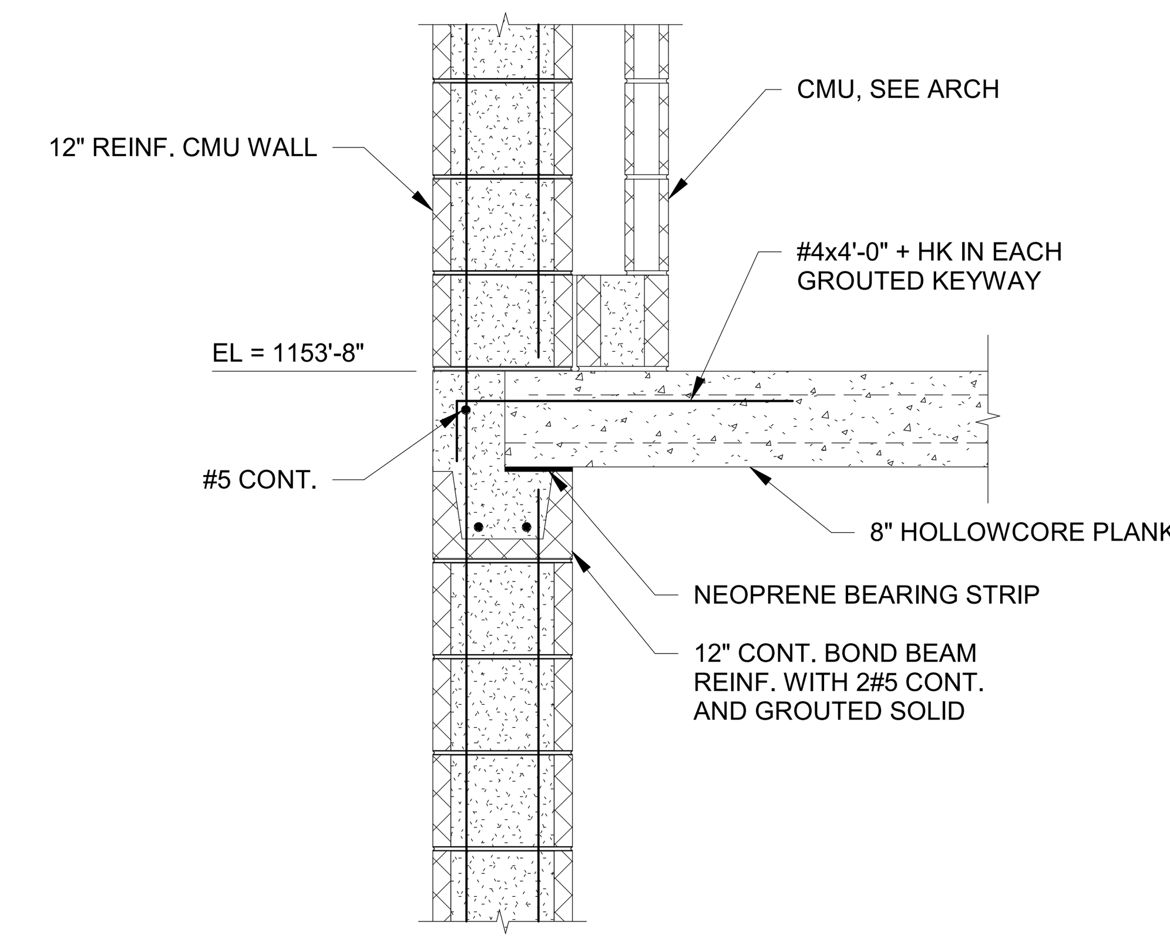
3 S5-4 TYPICAL HOLLOW CORE PRECAST ROOF PANEL AT 12" - PARALLEL
3/4" = 1'-0"



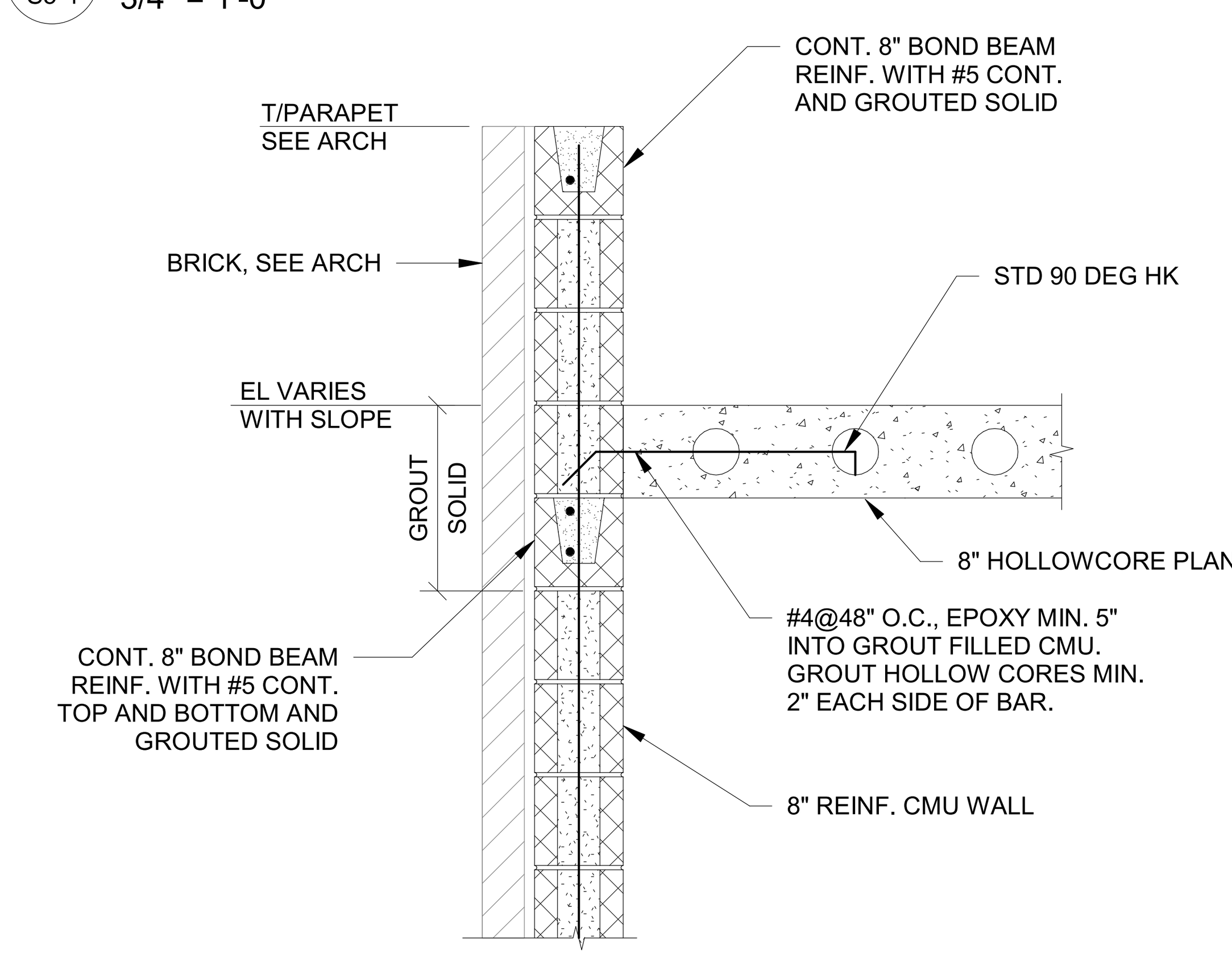
11 S5-4 HOLLOW CORE PRECAST PANEL AT INTERIOR 12" CMU WALL
3/4" = 1'-0"



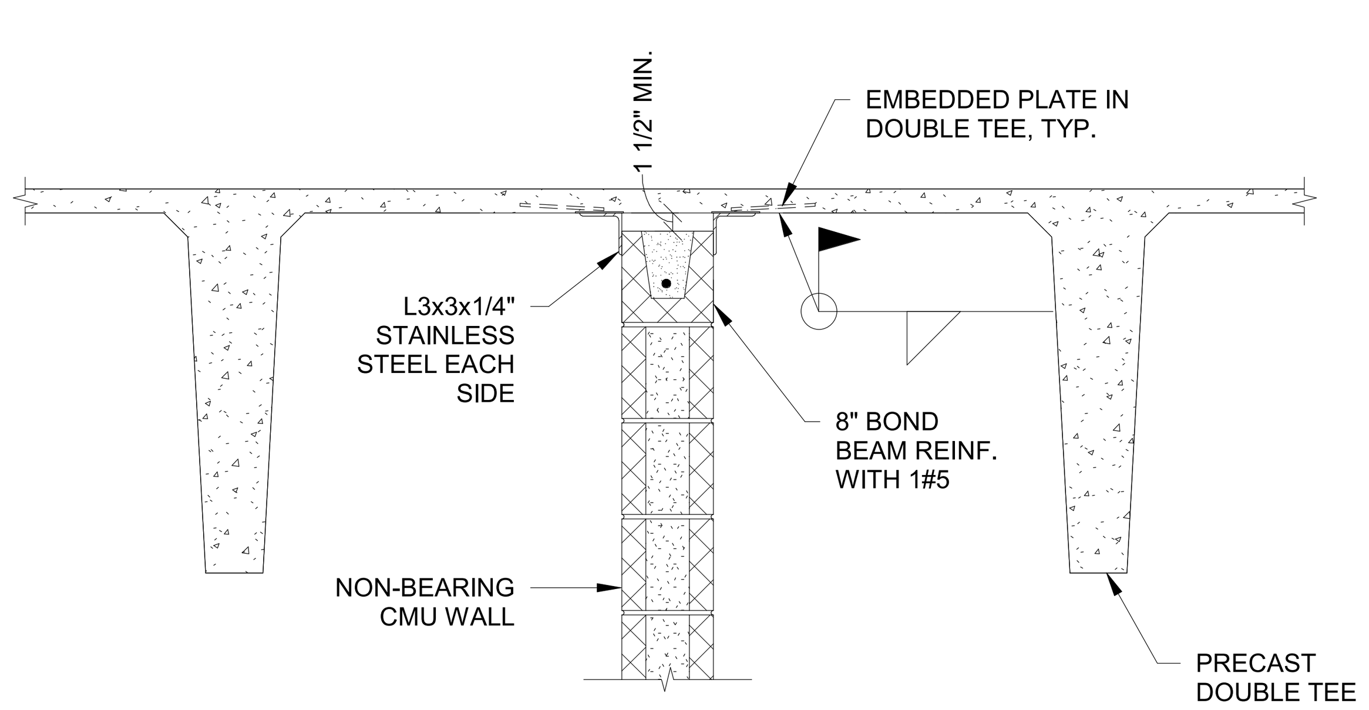
8 S5-4 TYPICAL HOLLOW CORE PRECAST ROOF PANEL AT LOW ROOF AT 8" CMU - PERPENDICULAR
3/4" = 1'-0"



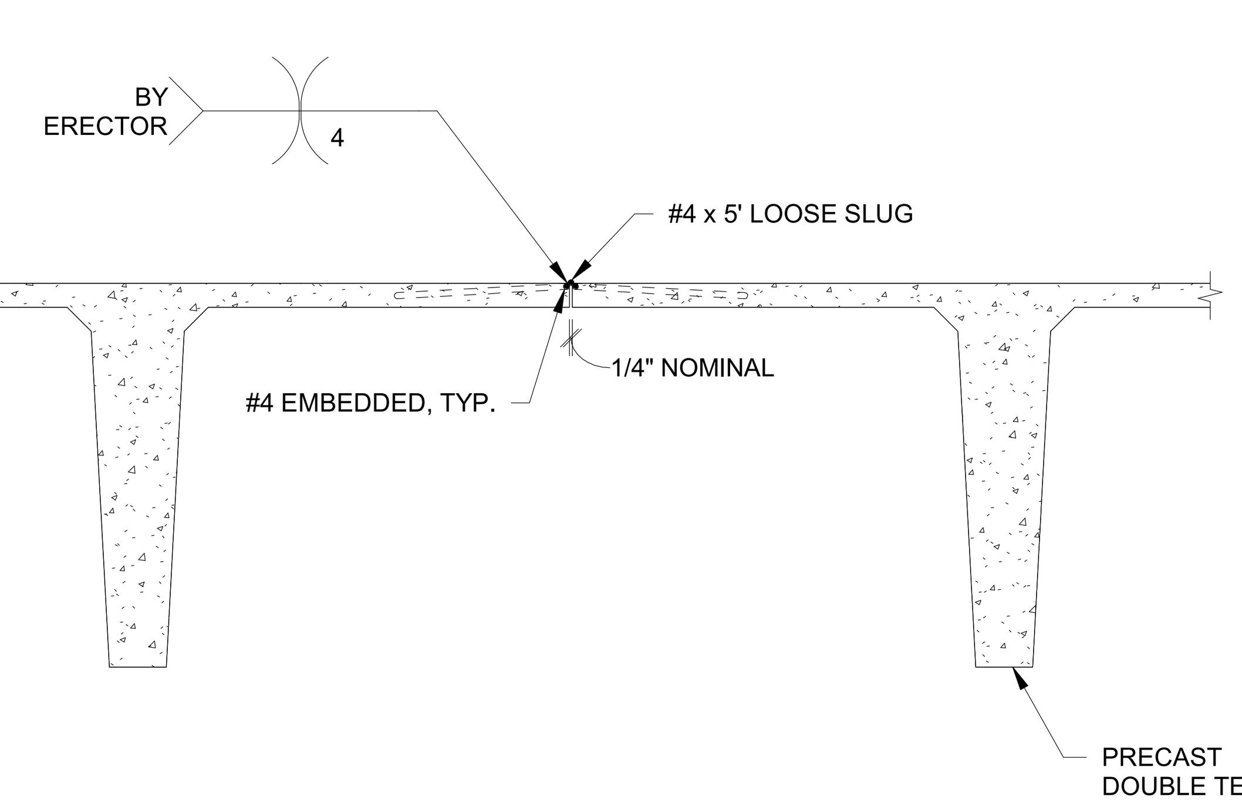
5 S5-4 TYPICAL HOLLOW CORE PRECAST ROOF PANEL AT LOW ROOF - PERPENDICULAR
3/4" = 1'-0"



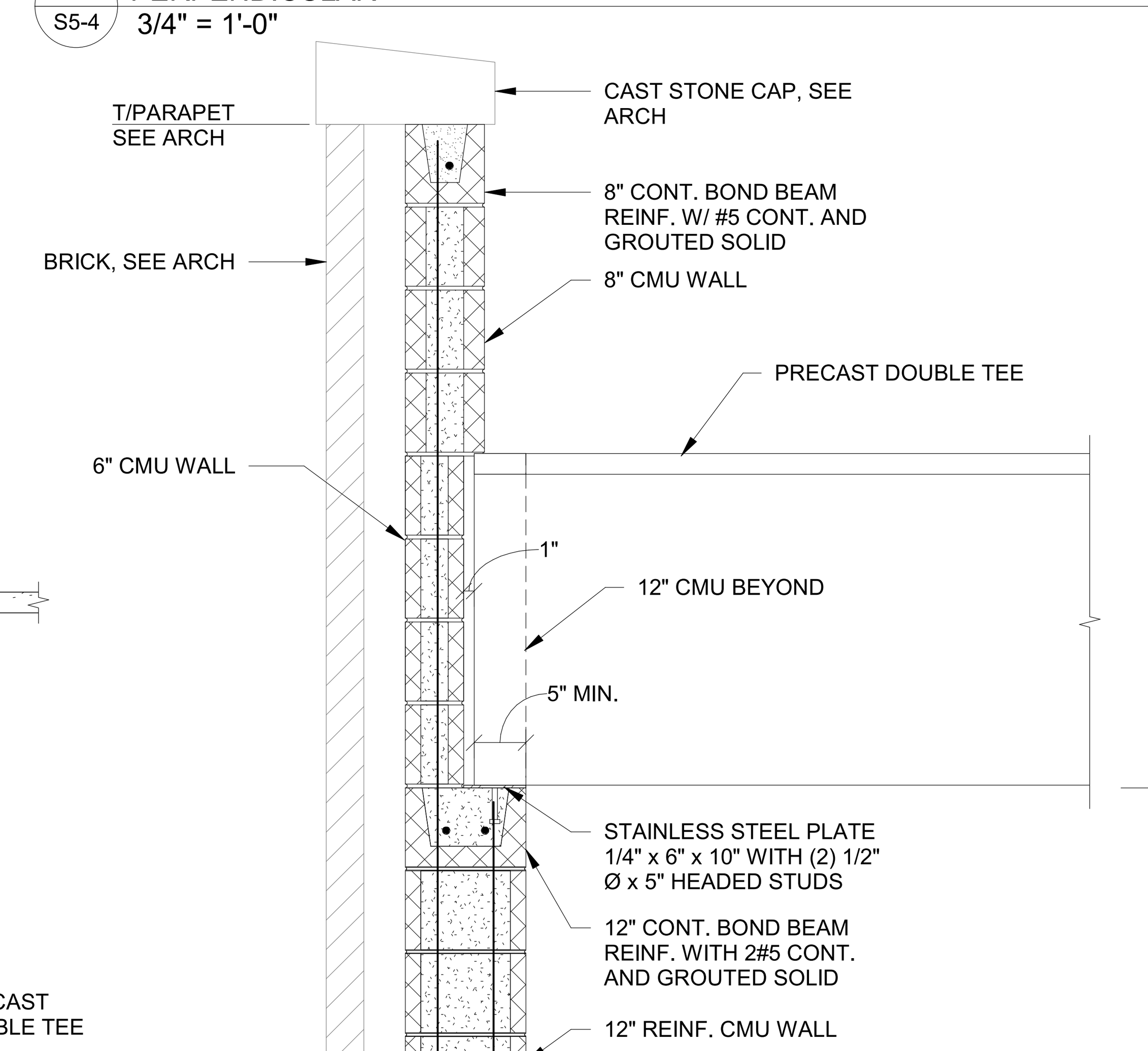
2 S5-4 TYPICAL HOLLOW CORE PRECAST ROOF PANEL AT LOW ROOF - PARALLEL
3/4" = 1'-0"



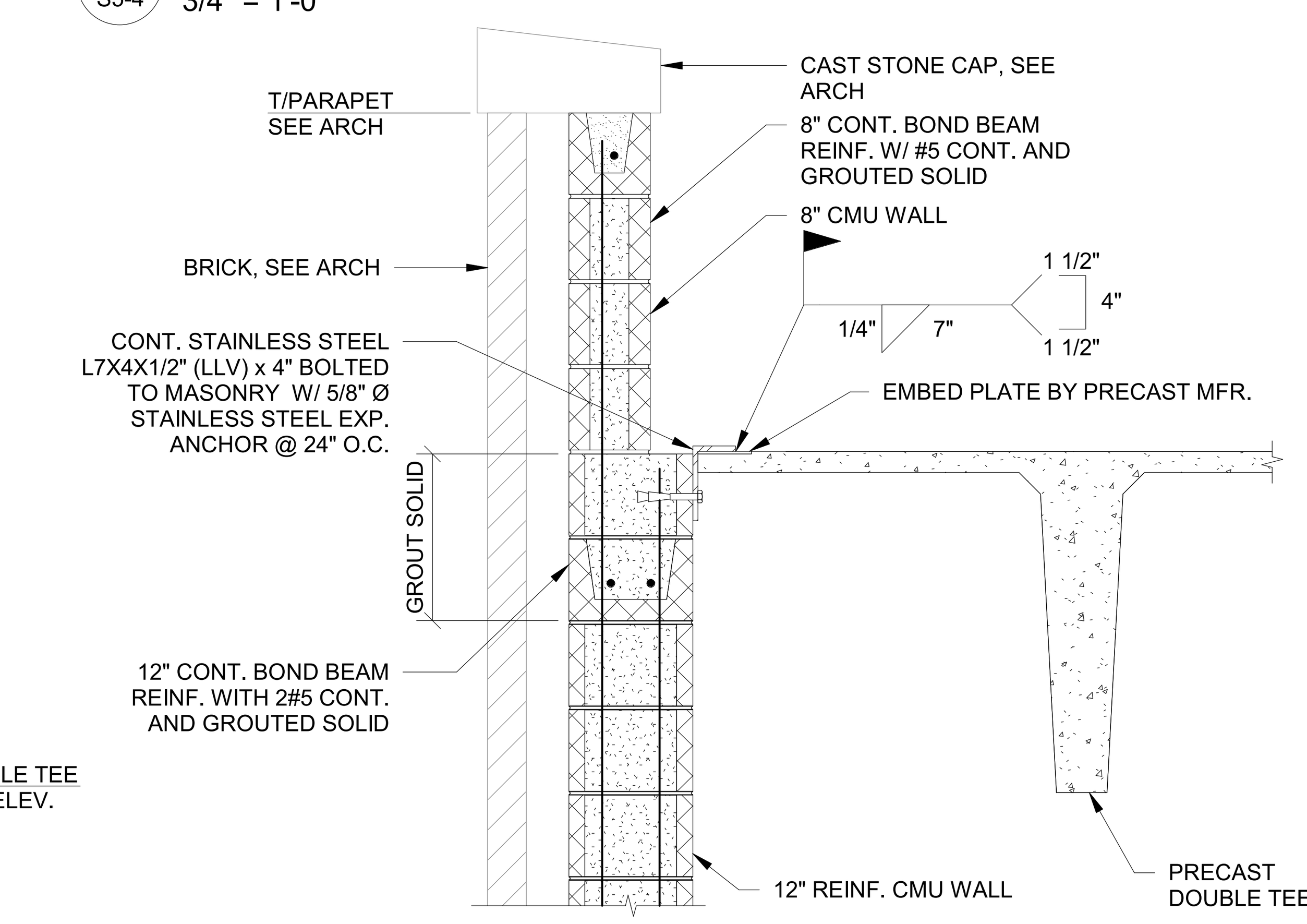
10 S5-4 DOUBLE TEE AT NON-BEARING WALL
3/4" = 1'-0"



7 S5-4 DOUBLE TEE FLANGE SHEAR CONNECTION DETAIL
3/4" = 1'-0"



4 S5-4 WALL SECTION AT DOUBLE TEE ROOF - PERPENDICULAR
3/4" = 1'-0"



1 S5-4 WALL SECTION AT DOUBLE TEE ROOF - PARALLEL
3/4" = 1'-0"

SHEAR STRUCTURAL
503 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. SE000174 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FRAMING DETAILS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:
Jolene Northrop, P.E.

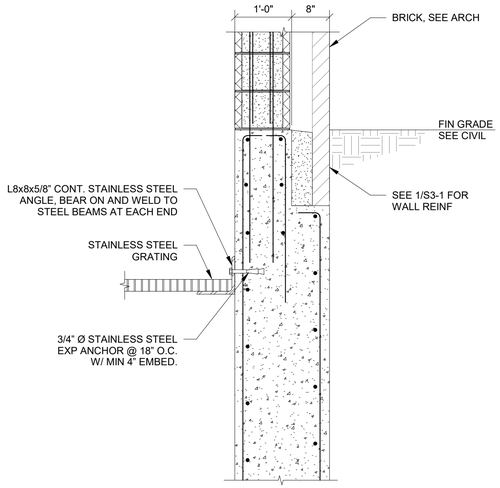
Drawn By: DCR
Checked By: HCJ

Date: 04/14/2021

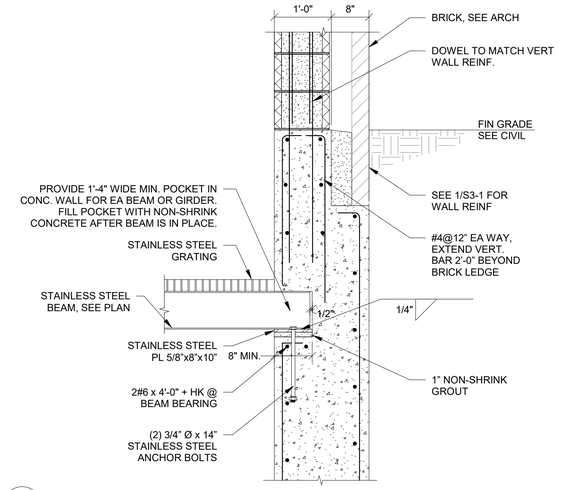
Scale: As Shown

Project No.: 170110.00

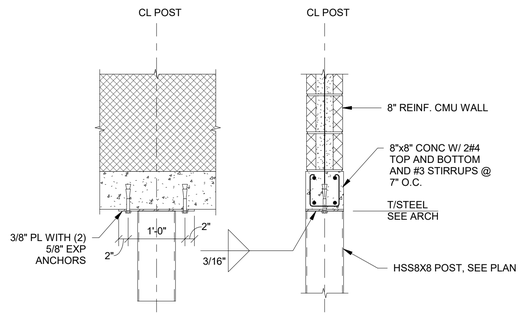
Drawing No.: S5-4



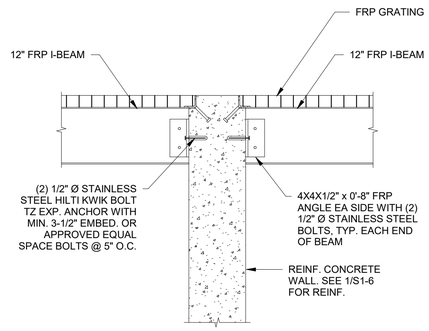
12 S5-5 SECTION AT GRATING AT PIT SUPPORT
3/4" = 1'-0"



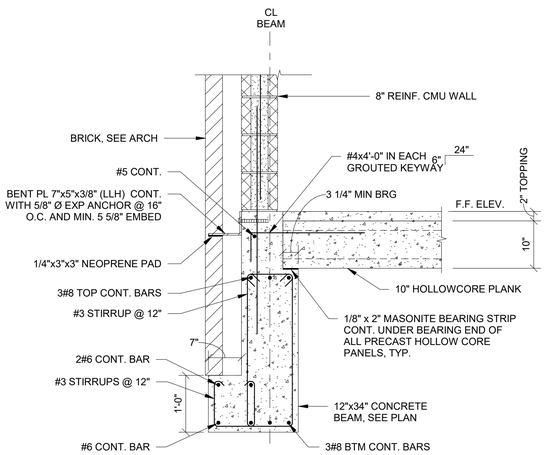
9 S5-5 TYPICAL DETAIL AT BEAM OR GIRDER BEARING ON CONCRETE WALL
3/4" = 1'-0"



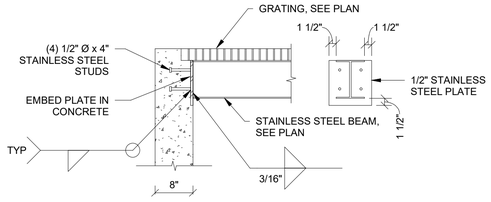
6 S5-5 SECTION AT TOP OF POST
3/4" = 1'-0"



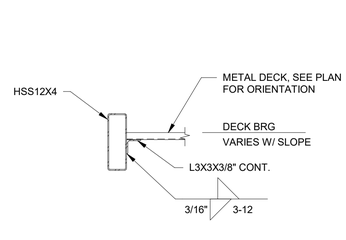
3 S5-5 SECTION AT PASSIVE INTAKE SCREEN STRUCTURE WITH GRATING
3/4" = 1'-0"



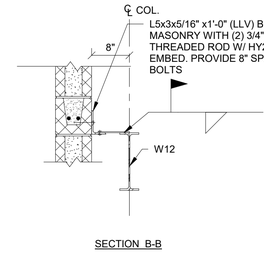
11 S5-5 TYPICAL HOLLOW CORE PRECAST PANEL AT EXTERIOR CONCRETE BEAM - PERPENDICULAR AT 8" CMU
3/4" = 1'-0"



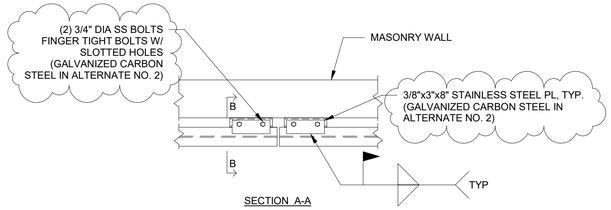
8 S5-5 TYPICAL BEAM TO 8" CONCRETE WALL CONNECTION AT PIT
3/4" = 1'-0"



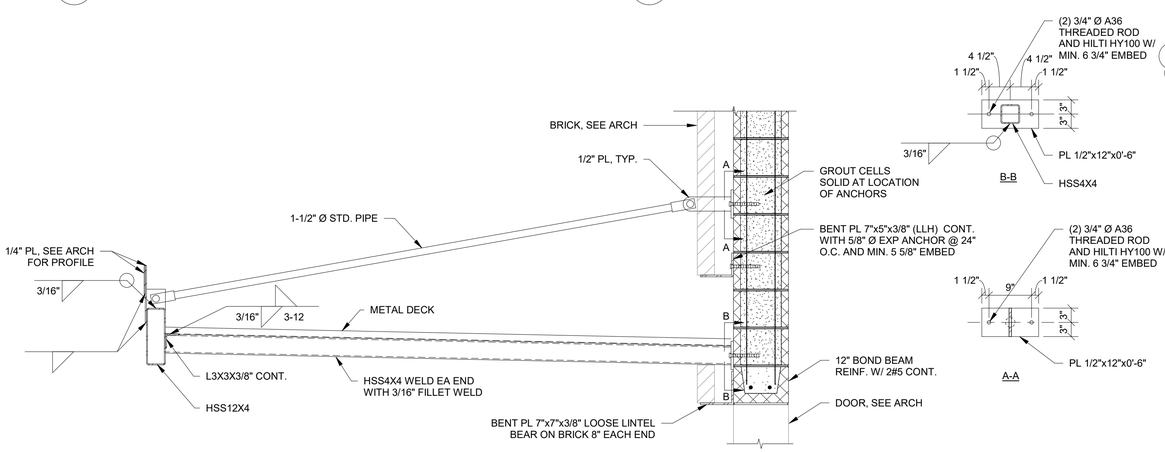
5 S5-5 FRONT ENTRANCE CANOPY SECTION
3/4" = 1'-0"



SECTION B-B



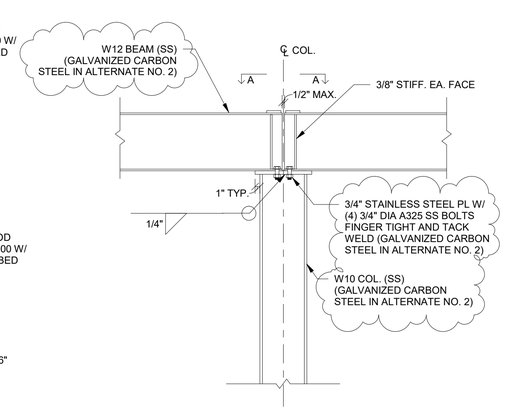
SECTION A-A



7 S5-5 EXTERIOR WALL SECTION AT FRONT CANOPY
3/4" = 1'-0"

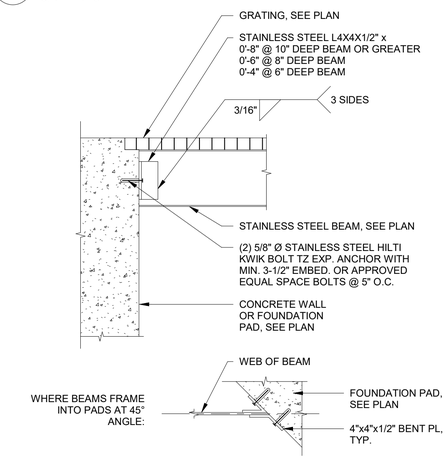
B-B

A-A



1 S5-5 BRIDGE CRANE DETAIL
3/4" = 1'-0"

10 S5-5 TYPICAL BEAM CONNECTION TO CONCRETE WALLS AND FOUNDATION PADS
3/4" = 1'-0"



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 36001134 STRUCTURAL ENGINEER HOLLY C JEFFREY

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FRAMING DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: DCR | Checked By: HCJ

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: S5-5

SHEAR STRUCTURAL
931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

G:\My Drive\Shear Structure\Projects\097 Keck & Wood\097.18001 Buford Water Treatment Plant\Construction Documents\CAD\170110.00 TB_added.dwg

SEISMIC LOAD ANALYSIS

IBC (2018) SECTION 1613

SEISMIC IMPORTANCE FACTOR	I_E	1.25
OCCUPANCY CATEGORY		III
MAPPED SPECTRAL RESPONSE ACCELERATION	S_S	0.206 g
	S_1	0.089 g
SITE CLASS	CLASS	D
SPECTRAL RESPONSE COEFFICIENTS	S_{DS}	0.220 g
	S_{D1}	0.142 g
SEISMIC DESIGN CATEGORY	CATEGORY	C
RESPONSE MODIFICATION FACTOR	R_P	4.5
SEISMIC DESIGN FORCE	F_P =	0.15 x W_P

W_P = 1.15 * THE WEIGHT OF WATER-FILLED PIPE (ACCOUNTS FOR FITTINGS)

* SEISMIC BRACING REQUIRED

SCOPE OF WORK

1. THE FIRE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE REQUIRED FIRE SPRINKLER SYSTEM. THESE CRITERIA DRAWINGS REPRESENT THE OWNER'S MINIMUM REQUIREMENTS, AND RELAY THE DESIGN INTENT OF THE SYSTEM AS SPECIFIED BY THE FIRE PROTECTION ENGINEER. THE FIRE SPRINKLER CONTRACTOR SHALL GENERATE THEIR OWN SHOP DRAWINGS AS REQUIRED BY NFPA 13, AND THESE PROJECT CRITERIA DRAWINGS AND SPECIFICATIONS.

GENERAL NOTES

1 ALL HOLES IN WALLS AND FLOORS SHALL BE CORE DRILLED OR HAVE METALLIC PIPE SLEEVES INSTALLED.

2 ALL PENETRATIONS IN FIRE RESISTIVE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY APPROVED MEANS AND THE ASSEMBLY SHALL BE RESTORED TO ITS REQUIRED FIRE RESISTANCE RATING.

3 SEE ARCHITECTURAL PLANS FOR ADDITIONAL CEILING HEIGHT INFORMATION.

4 WATER DAMAGE CANNOT BE TOLERATED. TAKE ANY NECESSARY MEASURES TO KEEP THE PREMISES DRY AT ALL TIMES. REPAIR WATER DAMAGE RESULTING FROM THE WORK, WHETHER INTENTIONAL OR NOT, AT NO COST TO AND TO THE SATISFACTION OF THE OWNER.

5 PRIOR TO THE OPERATION (OPEN OR CLOSE) OF ANY VALVE CONTROLLING WATER TO THE DOMESTIC OR FIRE SYSTEMS, NOTIFICATION SHALL BE GIVEN TO, AND APPROVAL OBTAINED FROM, THE GENERAL CONTRACTOR.

6 NEITHER THE ARCHITECT, OWNER, NOR ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING A SAFE WORKING PLACE FOR THE CONTRACTOR, SUBCONTRACTORS, OR THEIR EMPLOYEES, OR ANY INDIVIDUAL RESPONSIBLE TO THEM FOR THE WORK. THIS RESPONSIBILITY RESTS WITH THE CONTRACTOR.

FIRE SPRINKLERS

1 CONTRACTOR SHALL PROVIDE A COMPLETE AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS, AND NFPA 13.

2 CONTRACTOR SHALL HYDRAULICALLY PROVE THE REMOTE AREA OF EACH SEPARATE HAZARD GROUP OF EACH SYSTEM WITHOUT EXCEPTION.

3 CONTRACTOR SHALL BE RESPONSIBLE FOR AVOIDING ALL CONFLICTS WITH LIGHTING FIXTURES, SKYLIGHTS, UNIT HEATERS, DIFFUSERS, GRILLES, DUCTS, CONDUIT, PIPING, CONVEYORS AND ALL OTHER OBSTRUCTIONS ENCOUNTERED. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL, ELECTRICAL, AND MECHANICAL WORK. ANY DEVIATIONS FROM APPROVED SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.

4 CONTRACTOR SHALL COORDINATE THE POSITION AND HANGING METHOD OF ALL SPRINKLER PIPING 4 IN. AND LARGER WITH THE STRUCTURAL DRAWINGS.

5 CONTRACTOR SHALL ENSURE ALL HORIZONTAL PIPING RUNS ARE LOCATED ABOVE THE BOTTOM CHORD OF ROOF JOIST GIRDERS.

6 CONTRACTOR SHALL PROVIDE ALL NECESSARY MAIN AND/OR AUXILIARY DRAINS IN THE SPRINKLER SYSTEMS AND ON RISERS AS REQUIRED BY NFPA 13. TO THE MAXIMUM EXTENT POSSIBLE, ALL DRAINS SHALL TERMINATE ON EXTERIOR WALLS WITHIN 8 IN. OF GRADE. CONCRETE SPLASH BLOCKS SHALL BE PROVIDED UNDER EACH DRAIN OUTLET WHERE NECESSARY TO PREVENT SOIL EROSION.

7 ALL GROOVED FITTINGS SHALL BE HELD IN PLACE WITH GROOVED COUPLINGS OF THE SAME MANUFACTURER.

8 SPRINKLER HANGERS SHALL BE DESIGNED, LOCATED, AND INSTALLED IN ACCORDANCE WITH NFPA 13.

9 FIRE SPRINKLER CONTRACTOR SHALL PROVIDE AND INSTALL WATERFLOW ALARM DEVICES ON ALL SPRINKLER SYSTEMS FOR MONITORING BY THE FACU. THE FIRE SPRINKLER CONTRACTOR SHALL COMMUNICATE AND COORDINATE AS NECESSARY WITH THE FIRE ALARM CONTRACTOR TO ENSURE ALL DEVICES ARE MONITORED.

10 FIRE SPRINKLER CONTRACTOR SHALL PROVIDE AND INSTALL VALVE SUPERVISORY TAMPER DEVICES ON ALL POST INDICATOR AND INTERIOR FIRE PROTECTION CONTROL VALVES FOR MONITORING BY THE FACU. THE FIRE SPRINKLER CONTRACTOR SHALL COMMUNICATE AND COORDINATE AS NECESSARY WITH THE FIRE ALARM CONTRACTOR TO ENSURE THAT ALL DEVICES ARE PROPERLY MONITORED.

11 FIRE SPRINKLER CONTRACTOR SHALL PROVIDE NO OTHER FIRE ALARM-ASSOCIATED DEVICES, COMPONENTS, PANELS, ETC.

12 SPRINKLERS FOR EACH AUXILIARY AREA (I.E., SMALL OFFICES, SUPPORT AREAS, ETC.) ARE TO BE SUPPLIED FROM THE NEAREST CEILING SYSTEM CROSS MAIN. EACH AUXILIARY AREA SHALL HAVE A SEPARATE, LISTED, ACCESSIBLE, SUPERVISED, AND INDICATING CONTROL VALVE.

13 ALL SPRINKLERS SHALL BE INSTALLED AFTER THE PIPING HAS BEEN INSTALLED AT CEILING LEVEL, AND NOT WHILE THE PIPING IS ON GROUND LEVEL.

14 GALVANIZED PIPE AND FITTINGS ARE TO BE UTILIZED IN ALL INTERIOR PROCESS/EQUIPMENT AREAS (AREA DESIGNATIONS A AND B ON THE SPRINKLER DESIGN SCHEDULE) THESE AREAS ARE ALSO TO BE PROVIDED WITH STANLESS STEEL SPRINKLERS.

15 GALVANIZED PIPE AND FITTINGS ARE TO BE UTILIZED FOR THE DRY PIPE SYSTEM PROTECTING THE OUTDOOR WORK AREA. ALL PIPING OF THE DRY PIPE SYSTEM IS TO BE SCHEDULE 40. THE SYSTEM IS TO BE PROVIDED WITH STANLESS STEEL SPRINKLERS.

16 ALL PIPING OF THE WET PIPE SYSTEM IS TO BE SCHEDULE 40 IF THREADED FITTINGS ARE TO BE UTLIZED, AND SCHEDULE 10 OR 40 IF GROOVED FITTINGS ARE TO BE UTLIZED.

SPRINKLER DESIGN SCHEDULE
(REFERENCE SPECIFICATION SECTION[S])

AREA DESIGNATION (A)	AREA DESCRIPTION	AREA CEILING HEIGHT	AREA MIN. CLEAR HEIGHT	TOP OF PRODUCT	HAZARD DESCRIPTION	CEILING SYSTEM								IN-RACK SPRINKLERS							INSIDE/ OUTSIDE HOSE (GPM)	DURATION (MINUTES)	NOTES
						SYSTEM NO.	SYSTEM TYPE	DENSITY (GPM/ SQ. FT.)	REMOTE AREA (SQ. FT.)	NO. SPKRS.	PRESSURE OR FLOW	SPKR. TYPE	SPKR. SPACING (SQ. FT.)	SYSTEM NO.	NO. SPKRS.	PRESSURE OR FLOW	SPKR. TYPE	MMR # LEVELS & TYPE	DRR # LEVELS & TYPE	SRR # LEVELS & TYPE			
A	EQUIPMENT AREAS	38' - 0"	-	-	ORDINARY COMBUSTIBLES, PLASTIC AND METAL TANKS, PUMPS, PIPING AND RELATED COMPONENTS	1	WET CONTROL	0.20	1500	-	-	UPRIGHT, PENDENT, K=8.0 (MIN.) S.R., ORD. TEMP.	130 MAX.	--	--	--	--	--	--	--	250		REFERENCE: NFPA 13 AND SPRINKLER LISTING. ORDINARY HAZARD - GROUP 2. ALL PIPE AND FITTINGS TO BE GALVANIZED. ALL SPRINKLERS TO BE STAINLESS STEEL.
B	RECESSED PIT AREA	8' - 0"	-	-	ORDINARY COMBUSTIBLES, PLASTIC AND METAL TANKS, PUMPS, PIPING AND RELATED COMPONENTS	1	WET CONTROL	0.20	1500	-	-	UPRIGHT, PENDENT, K=8.0 (MIN.) S.R., ORD. TEMP.	130 MAX.	--	--	--	--	--	--	--	250		REFERENCE: NFPA 13 AND SPRINKLER LISTING. ORDINARY HAZARD - GROUP 2. ALL PIPE AND FITTINGS TO BE GALVANIZED. ALL SPRINKLERS TO BE STAINLESS STEEL.
C	FIRST FLOOR SUPPORT AREAS	17' - 6"	-	-	ORDINARY COMBUSTIBLES, MISC. EQUIPMENT AND STORAGE	1	WET CONTROL	0.20	1500	-	-	UPRIGHT, PENDENT, K=8.0 (MIN.) S.R./Q.R., ORD. TEMP.	130 MAX.	--	--	--	--	--	--	--	250		REFERENCE: NFPA 13 AND SPRINKLER LISTING. ORDINARY HAZARD - GROUP 2.
D	SECOND FLOOR SUPPORT AREAS	10' - 0"	-	-	ORDINARY COMBUSTIBLES, MISC. EQUIPMENT AND STORAGE	1	WET CONTROL	0.10 & 0.20	1500	-	-	PENDENT, K=8.0 (MIN.) S.R./Q.R., ORD. TEMP.	130 MAX.	--	--	--	--	--	--	--	250		REFERENCE: NFPA 13 AND SPRINKLER LISTING. ORDINARY HAZARD - GROUP 2 IN THE VAULT ROOM (209), LAB ROOM (212), AND LAB OFFICE (213). LIGHT HAZARD IN ALL OTHER AREAS.
E	OUTSIDE WORK AREA	17' - 6"	-	-	ORDINARY COMBUSTIBLES, MISC. EQUIPMENT AND STORAGE	2	DRY CONTROL	0.20	ENTIRE	-	-	UPRIGHT, K=8.0 (MIN.) S.R., INT. TEMP.	130 MAX.	--	--	--	--	--	--	--	250		REFERENCE: NFPA 13 AND SPRINKLER LISTING. ORDINARY HAZARD - GROUP 2. ALL PIPE AND FITTINGS TO BE GALVANIZED. ALL SPRINKLERS TO BE STAINLESS STEEL.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE22580 JAMES M. RUCCI 04/14/2021

HGI Project No.: 20KECK001
harrington group
Fire Protection Engineering
Forensic Fire Engineering
Property Loss Control
3237 Satellite Boulevard
Suite 525
Duluth, GA 30096
770-564-3505
www.hgi-fire.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FIRE PROTECTION NOTES

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: JFK | Checked By: JMR

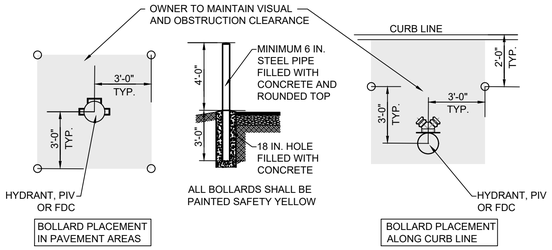
Date: 04/14/2021

Scale: As Shown

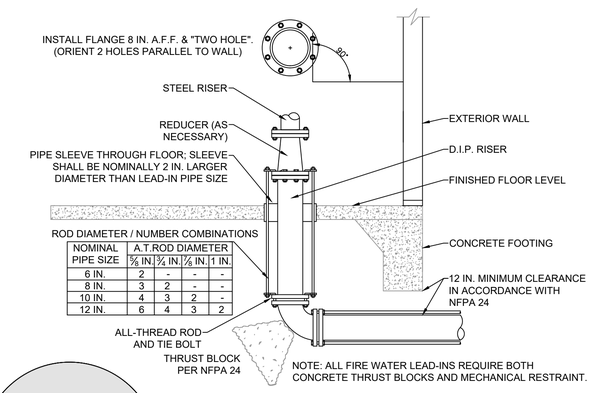
Project No.: 170110.00

Drawing No.: FP001

20KECK001-FP001.DWG
4/19/2021 10:12:27 AM

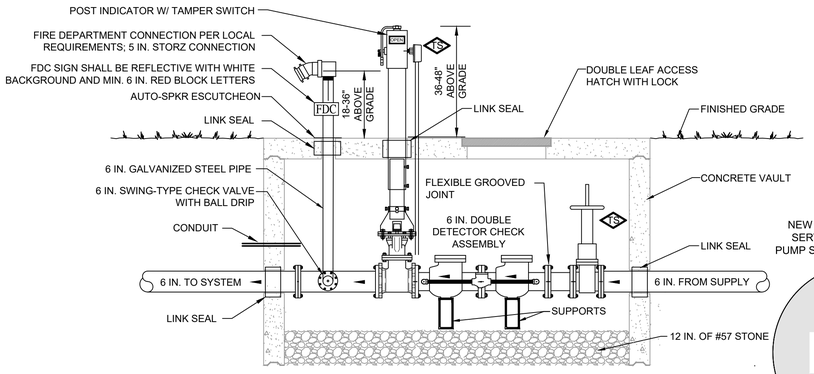


5 TYPICAL BOLLARD PLACEMENT
SCALE: NTS

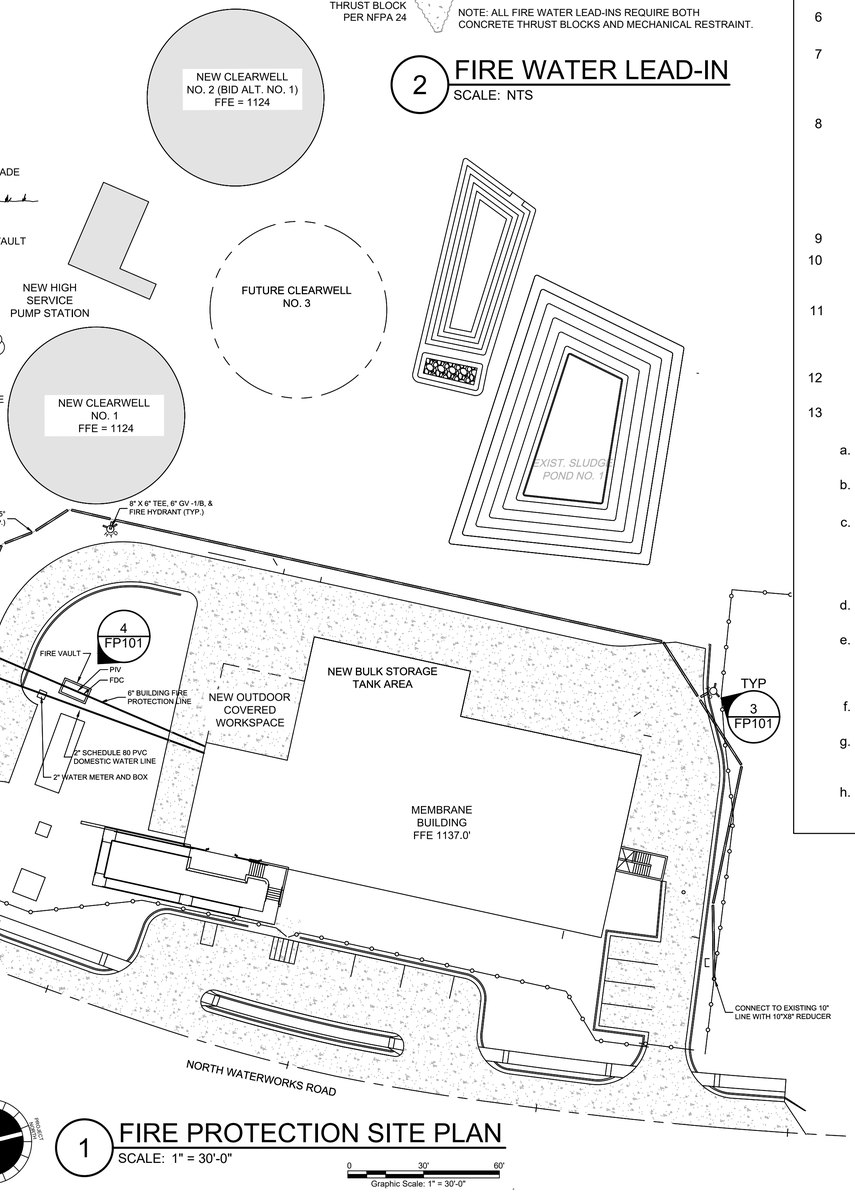


NOMINAL PIPE SIZE	A.T.ROD DIAMETER ⅝ IN.	¾ IN.	⅞ IN.	1 IN.
6 IN.	2	-	-	-
8 IN.	3	2	-	-
10 IN.	4	3	2	-
12 IN.	6	4	3	2

2 FIRE WATER LEAD-IN
SCALE: NTS

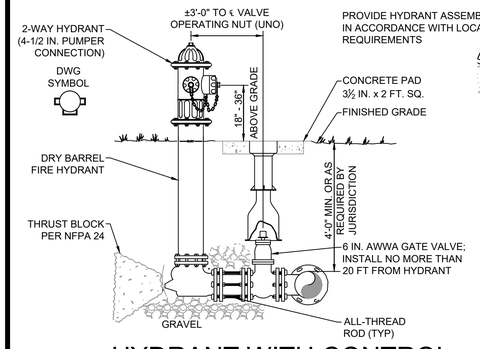


4 FIRE VAULT WITH PIV AND FDC
SCALE: NTS



1 FIRE PROTECTION SITE PLAN
SCALE: 1" = 30'-0"

0 30' 60'
Graphic Scale: 1" = 30'-0"



PROVIDE HYDRANT ASSEMBLY IN ACCORDANCE WITH LOCAL REQUIREMENTS

3 HYDRANT WITH CONTROL VALVE AND ROADWAY BOX
SCALE: NTS

GENERAL NOTES

1. ALL UNDERGROUND PIPING, VALVES, AND APPURTENANCES SHALL BE RATED FOR A MINIMUM WORKING PRESSURE OF 175 PSI.
2. THE TOP OF ALL UNDERGROUND MAINS SHALL HAVE A MINIMUM DEPTH OF COVER BELOW EARTH GRADE AS REQUIRED BY LOCAL BUILDING CODES OR NFPA 24, WHICHEVER IS GREATER. LOCAL REQUIREMENT IS MINIMUM 48 IN. BURY.
3. THE UNDERGROUND MAIN FROM THE 8-INCH CITY WATER MAIN SHALL BE MECHANICALLY RESTRAINED AGAINST MOVEMENT AT THE FITTINGS AND SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED AT ALL CHANGES IN DIRECTION. BOTH MECHANICAL JOINT RESTRAINTS AND THRUST BLOCKS SHALL BE USED TO RESTRAIN THE LEAD-IN . MECHANICAL JOINT RESTRAINTS AND/OR THRUST BLOCKS SHALL BE DESIGNED IN ACCORDANCE WITH NFPA 24 BASED UPON A TEST PRESSURE OF 200 PSI AND THE SOIL RESISTANCE DETERMINED BY THE SOILS ENGINEER, USING A MINIMUM SAFETY FACTOR OF 1.5.
4. THE PORTION OF THE LEAD-IN BENEATH THE BUILDING SHALL BE PROVIDED WITH BOTH MECHANICAL JOINT RESTRAINTS AND A CONCRETE THRUST BLOCK. EACH THRUST RESTRAINT METHOD SHALL BE INDIVIDUALLY PROVIDED IN ACCORDANCE WITH NFPA 24 AS IF IT WERE THE ONLY RESTRAINT METHOD BEING UTILIZED FOR THE FIRE WATER LEAD-IN.
5. ALL UNDERGROUND RODS, NUTS, BOLTS AND WASHERS SHALL BE COATED WITH AN ACCEPTABLE CORROSION-RETARDING MATERIAL. CORROSION PROTECTION SHALL MEET THE REQUIREMENTS OF NFPA 24.
6. FIRE DEPARTMENT CONNECTION (FDC) SHALL BE PROVIDED WHERE INDICATED ON THIS DRAWING (FP-101).
7. ALL UNDERGROUND PIPING SHALL BE HYDROSTATICALLY TESTED FOR 2 HOURS IN ACCORDANCE WITH NFPA 24. PIPING SHALL BE TESTED AT 225 PSI. BEFORE TESTING, THE TRENCH SHALL BE BACKFILLED BETWEEN JOINTS. ALL JOINTS AND THRUST BLOCKS SHALL BE LEFT EXPOSED DURING THE TEST [NFPA 24 §10.10.2.2.4].
8. GUARD POSTS SHALL BE PROVIDED AROUND ALL ABOVEGROUND FIRE SPRINKLER WATER SUPPLY COMPONENTS SUBJECT TO VEHICULAR DAMAGE. COMPONENTS TO BE PROTECTED INCLUDE, BUT ARE NOT LIMITED TO, ON-SITE HYDRANTS, AND POST INDICATOR VALVES. THE POSTS SHALL BE A MINIMUM OF 6 IN. SCHEDULE 40 STEEL PIPE FILLED WITH CONCRETE. THE TOP OF EACH POST SHALL BE 4 FT ABOVE GRADE LEVEL AND SHALL EXTEND A MINIMUM OF 3 FT BELOW GRADE. POSTS SHALL BE ANCHORED IN CONCRETE. A MINIMUM CLEAR SPACE OF 3 FT SHALL BE PROVIDED BETWEEN EACH POST AND THE COMPONENT BEING PROTECTED.
9. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT RISER LEAD-IN/STUB-UP LOCATION.
10. REFER TO THE CIVIL UTILITY DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. IN THE EVENT OF CONFLICTS, SUBMIT RFI TO THE ATTENTION OF BOTH THE CIVIL AND FIRE PROTECTION ENGINEERS FOR RESOLUTION.
11. ALL UNDERGROUND PRIVATE FIRE SERVICE MAIN PIPING SHALL BE COMPLETELY FLUSHED IN ACCORDANCE WITH NFPA 24 PRIOR TO CONNECTION TO ABOVEGROUND FIRE SPRINKLER PIPING. FLUSHING PROCEDURES ARE SUBJECT TO THE APPROVAL OF THE FIRE PROTECTION ENGINEER AND THE AUTHORITIES HAVING JURISDICTION.
12. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE THEIR CONTRACTORS FOR THE FLUSHING PROCEDURE.
13. THE INSTALLING CONTRACTOR SHALL SUBMIT THEIR FLUSHING PROCEDURES FOR REVIEW. THE PROCEDURE SHALL INCLUDE THE FOLLOWING CRITERIA (FROM NFPA 24):
    a. UNDER NO CIRCUMSTANCES SHALL THE PRESSURE ON THE PUBLIC WATER SUPPLY BE ALLOWED TO DROP BELOW 20 PSI.
    b. THE FLOW RATE (GPM) DURING EACH FLUSHING OPERATION SHALL BE MEASURED. AN INDIRECT MEASUREMENT OF THE FLOW BASED ON A CURRENT (DAY OF FLUSHING) FLOW TEST IS SUFFICIENT.
    c. THE MINIMUM FLUSHING DURATION SHALL BE BASED ON THE LENGTH OF THE PIPING TO BE FLUSHED DIVIDED BY THE MINIMUM FLUSHING VELOCITY OF 10 FPS. A SAFETY FACTOR OF AT LEAST 2 SHALL BE APPLIED TO THE MINIMUM FLUSHING DURATION TO ACCOUNT FOR LARGER OBJECTS THAT MAY BE ROLLING ALONG THE BOTTOM OF THE PIPE RATHER THAN TRAVELING WITHIN THE WATER STREAM.
    d. THE 8 IN. UNDERGROUND LOOP SHALL BE FLUSHED AT A MINIMUM FLOW RATE OF 1,560 GPM. THE 6 IN. FIRE SPRINKLER SYSTEM LEAD-INS SHALL BE FLUSHED AT A MINIMUM FLOW RATE OF 680 GPM.
    e. THE UNDERGROUND PARTIAL LOOP AROUND THE BUILDING SHALL BE FLUSHED IN SUCH A MANNER SO AS TO ACHIEVE FULL FLUSHING WITH AN OVERLAP OF THE FLUSHED SEGMENTS - WITH AN ISOLATION VALVE CLOSED, FLUSH CLOCKWISE, THEN WITH A DIFFERENT ISOLATION VALVE CLOSED, FLUSH COUNTERCLOCKWISE PAST THE PREVIOUS OUTLET.
    f. AFTER THE PARTIAL LOOP HAS BEEN FLUSHED, THE SPRINKLER SYSTEM LEAD-IN SHALL BE FLUSHED.
    g. EACH FIRE HYDRANT SHALL BE FULLY OPENED AND CLOSED UNDER FULL SYSTEM PRESSURE AND CHECKED FOR PROPER DRAINAGE. THE 6 IN. FIRE HYDRANT LATERALS SHALL BE FLUSHED AT A MINIMUM FLOW RATE OF 880 GPM.
    h. CONTRACTOR SHALL PROVIDE A COPY OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING (REFER TO NFPA 24) IN ADDITION TO ANY PHOTOS OR OTHER DOCUMENTATION OF THE FLUSHING FOR THE PROJECT RECORD.

FLOW DATA (PROJECTED)

STATIC PRESSURE (PSI)	RESIDUAL PRESSURE (PSI)	WATER FLOW (GPM)
72	65	1,000
EFFECTIVE LOCATION IS 6-INCH CONNECTION POINT TO NEW 8-INCH LOOP		

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. PE22589 PROFESSIONAL ENGINEER JAMES M. RUCCI 04/14/2021

HGI Project No.: 20KECK001
harrington group
Fire Protection Engineering
Forensic Fire Engineering
Property Loss Control
3237 Satellite Boulevard
Suite 525
Duluth, GA 30096
770-564-3505
www.hgi-fire.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

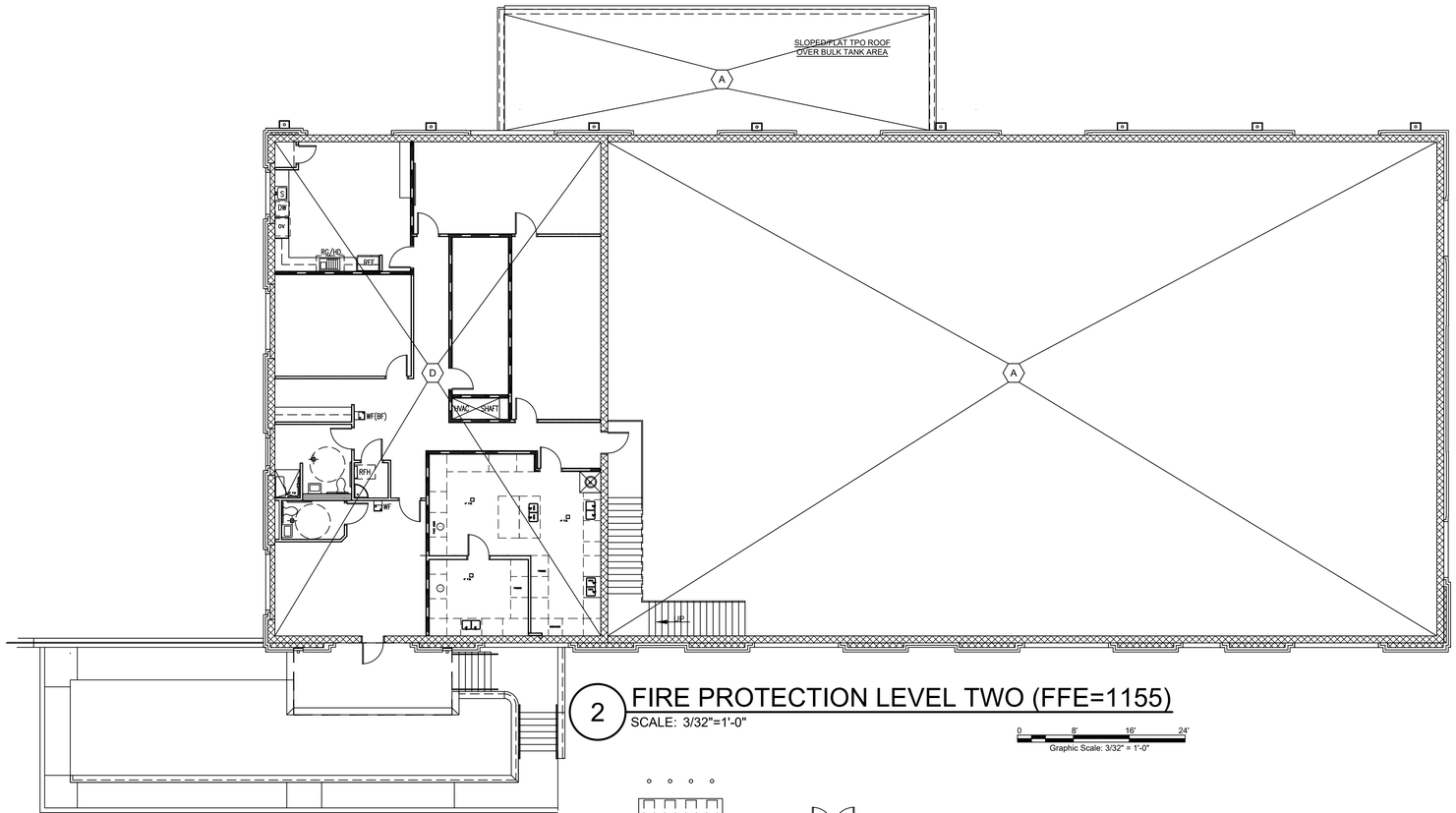
FIRE PROTECTION SITE PLAN & DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: JFK | Checked By: JMR
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: FP101

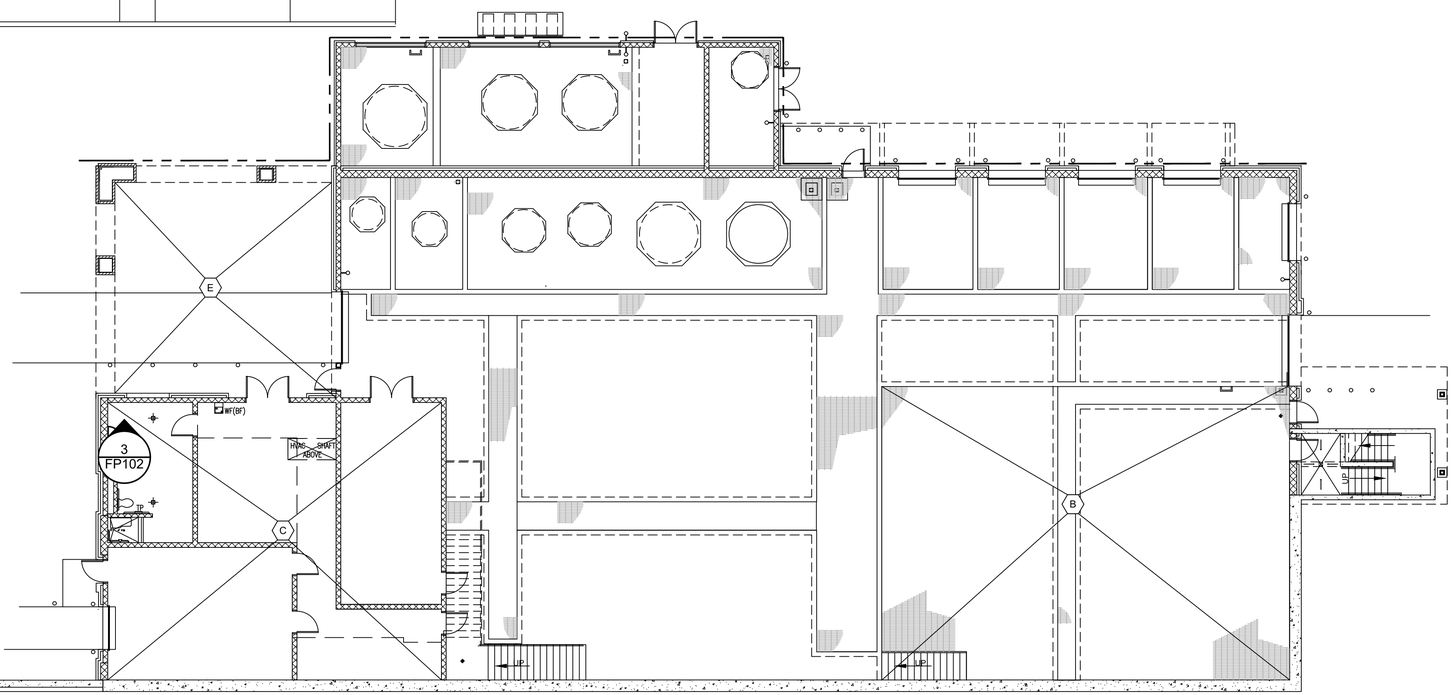
20KECK001-FP101.DWG
4/19/2021 10:22:45 AM



2 FIRE PROTECTION LEVEL TWO (FFE=1155)

SCALE: 3/32"=1'-0"

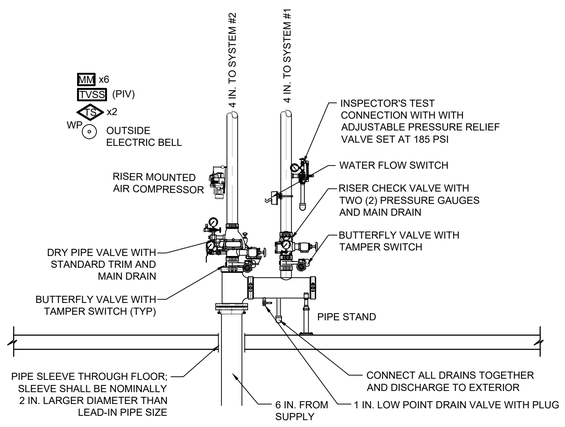
0 8' 16' 24'
Graphic Scale: 3/32" = 1'-0"



1 FIRE PROTECTION LEVEL ONE (FFE=1137)

SCALE: 3/32"=1'-0"

0 8' 16' 24'
Graphic Scale: 3/32" = 1'-0"



3 RISER MANIFOLD

SCALE: NTS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. PE22580 PROFESSIONAL ENGINEER JAMES M. RUCCI 04/14/2021

HGI Project No.: 20KECK001

harrington group
Fire Protection Engineering
Forensic Fire Engineering
Property Loss Control
3237 Satellite Boulevard
Suite 525
Duluth, GA 30096
770-564-3505
www.hgi-fire.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FIRE PROTECTION PLANS

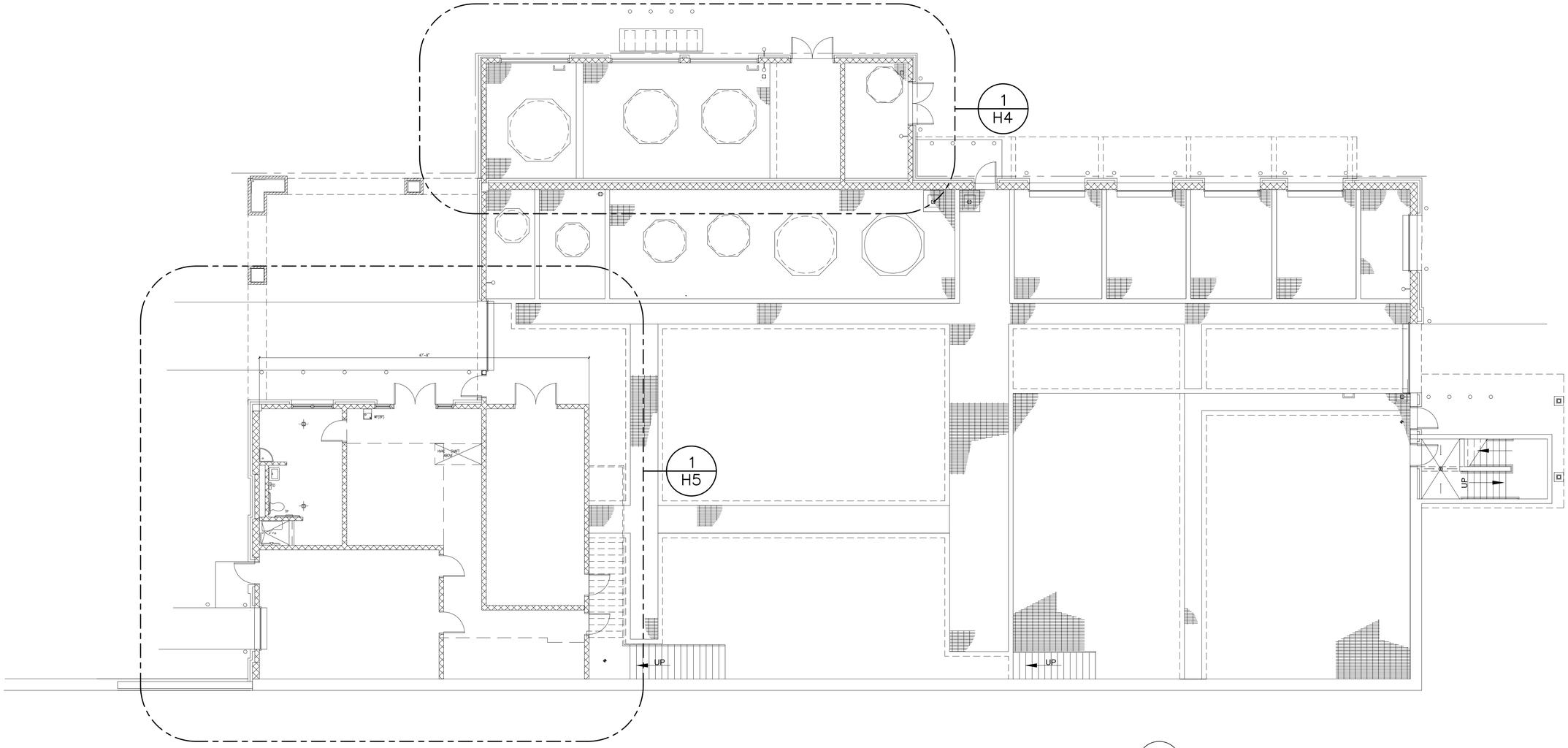
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: JFK
Checked By: JMR
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: FP102

R:\KECK\001-FP102.DWG
4/19/2021 10:13:00 AM

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 349
MARIETTA, GA 30060
770/703-8842



1 H1 OVERALL LEVEL 1 HVAC PLAN
SCALE: 1/8"=1'0"

LEVEL ONE PLAN

AREA OF LOWER LEVEL = 12,464 s.f.
FFE = 1037 OR 0'-0" DATUM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No: PE038561
LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

OVERALL PLAN LEVEL ONE HVAC

HVAC
LEVEL 1 PLAN

Project Manager:
Jolene Northrop, P.E.

Drawn By: LS/KS
Checked By: LS/KS

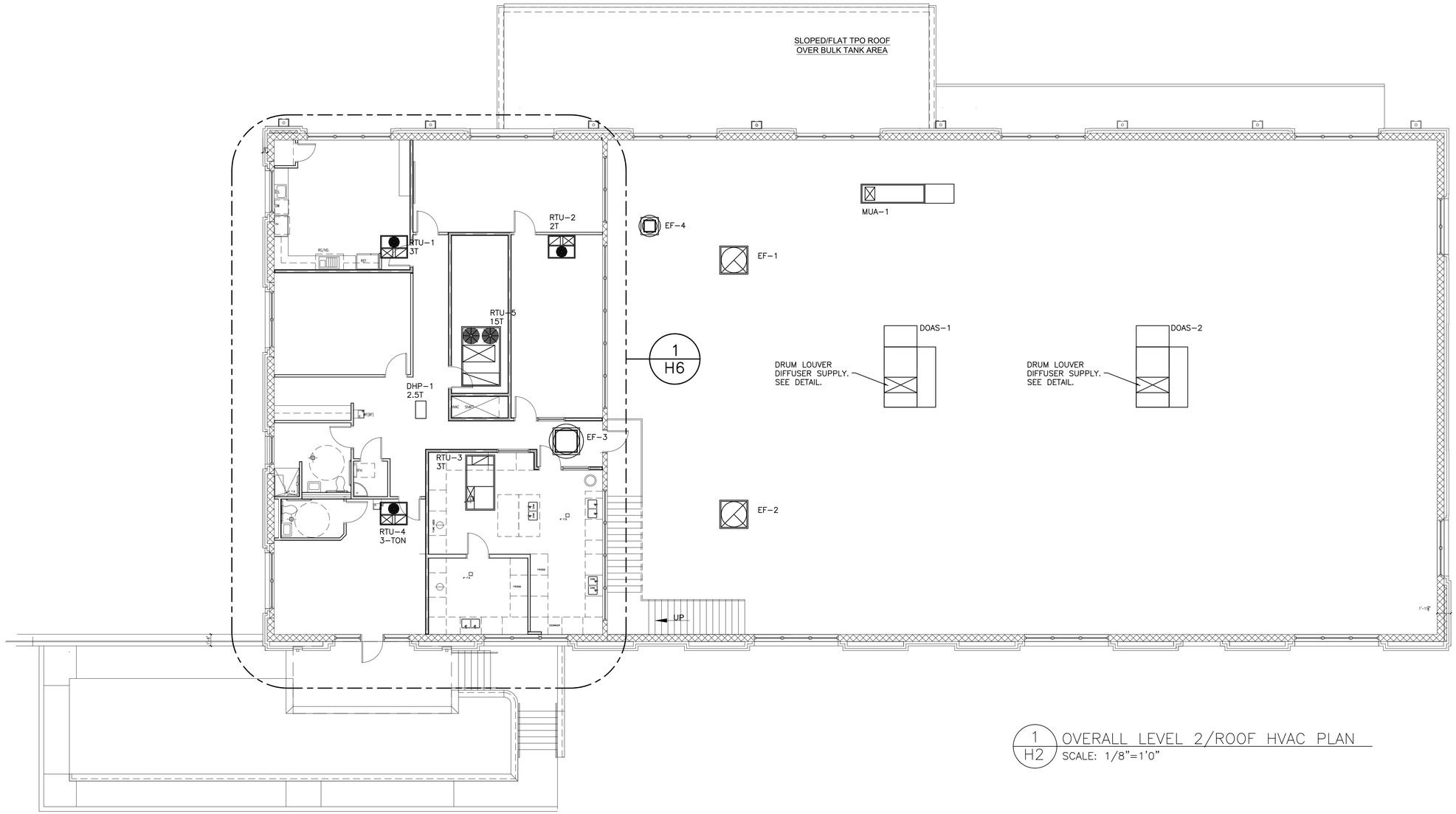
Date: 04/14/2021

Scale: As Shown

Project No.:
170110.00

Drawing No.:
H1

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 349
MARIETTA, GA 30060
770/953-8842



1/H2 OVERALL LEVEL 2/ROOF HVAC PLAN
SCALE: 1/8"=1'0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

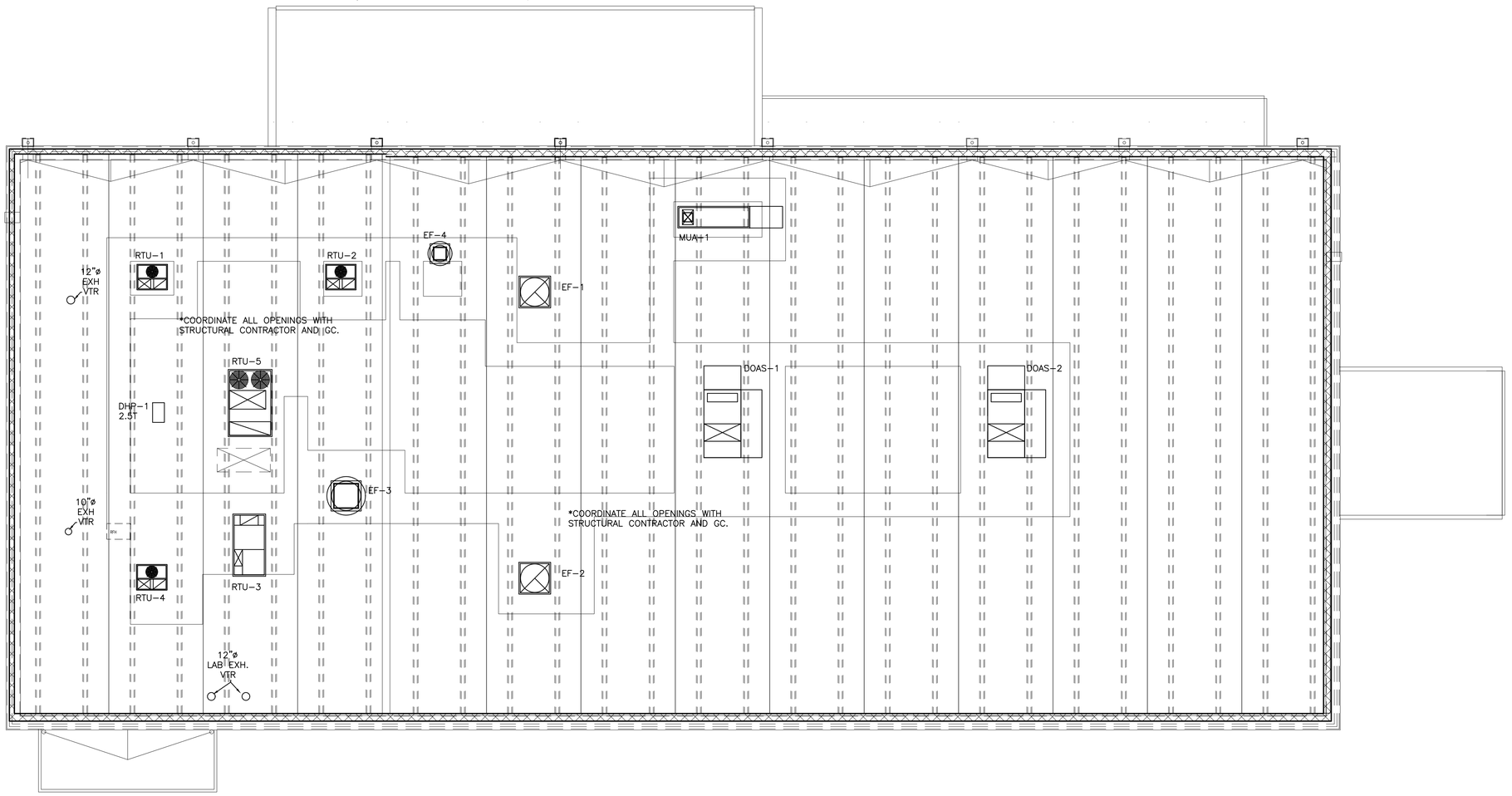
OVERALL PLAN LEVEL TWO/ROOF HVAC

HVAC
LEVEL 2 PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H2

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 349
MARIETTA, GA 30060
770/953-8842



1 H3 OVERALL ROOF HVAC PLAN
SCALE: 1/8"=1'0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No: PE038561
LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

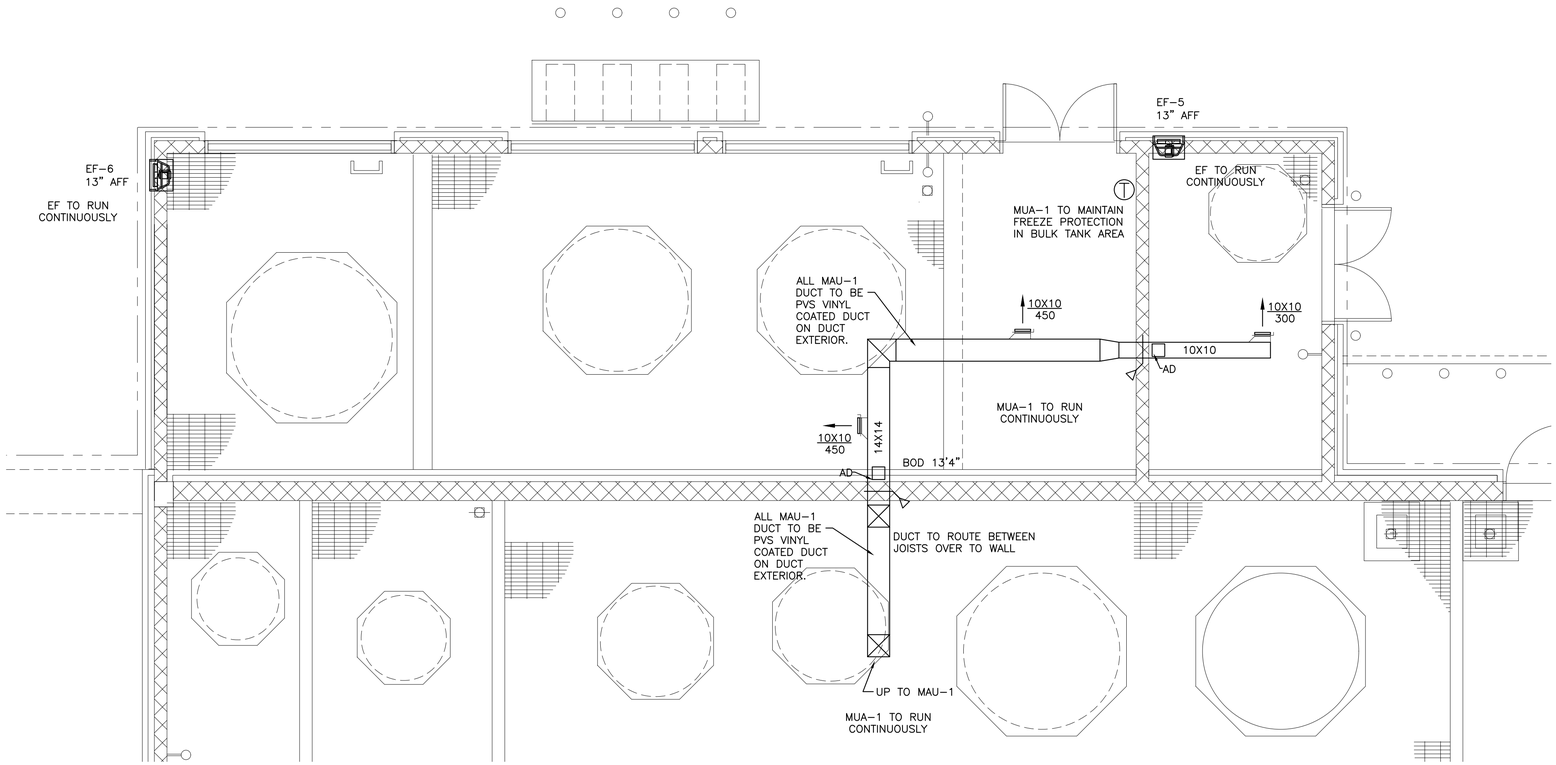
ROOF PLAN HVAC

HVAC
ROOF PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H3

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 349
MARIETTA, GA 30060
770/953-8842



1 / H4 ENLARGED BULK TANK HVAC PLAN
SCALE: 1/4"=1'0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ENLARGED BULK TANK AREA HVAC

HVAC
ENLARGED BULK
TANK

Project Manager:
Jolene Northrop, P.E.

Drawn By: LS/KS
Checked By: LS/KS

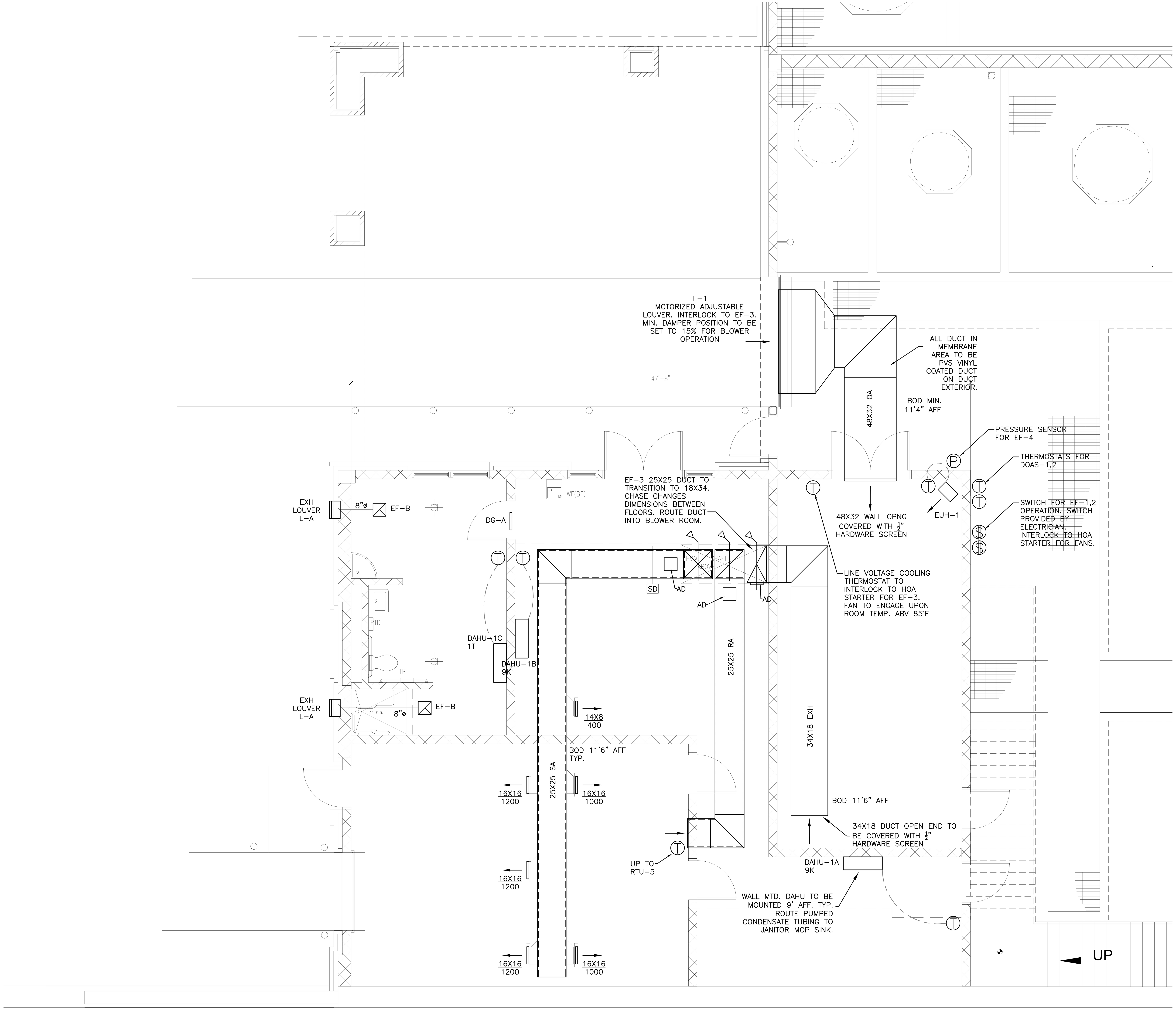
Date: 04/14/2021

Scale: As Shown

Project No.:
170110.00

Drawing No.:
H4

S&S ENGINEERS


L-1
MOTORIZED ADJUSTABLE LOUVER. INTERLOCK TO EF-3. MIN. DAMPER POSITION TO BE SET TO 15% FOR BLOWER OPERATION
47'-8"
ALL DUCT IN MEMBRANE AREA TO BE PVS VINYL COATED DUCT ON DUCT EXTERIOR.
48X32 OA
BOD MIN. 11'4" AFF
PRESSURE SENSOR FOR EF-4
THERMOSTATS FOR DOAS-1,2
SWITCH FOR EF-1,2 OPERATION. SWITCH PROVIDED BY ELECTRICIAN. INTERLOCK TO HOA STARTER FOR FANS.
48X32 WALL OPNG COVERED WITH ½" HARDWARE SCREEN
EUH-1
EF-3 25X25 DUCT TO TRANSITION TO 18X34. CHASE CHANGES DIMENSIONS BETWEEN FLOORS. ROUTE DUCT INTO BLOWER ROOM.
EXH LOUVER L-A
8"ø
EF-B
DG-A
WF(BF)
SD
AD
LINE VOLTAGE COOLING THERMOSTAT TO INTERLOCK TO HOA STARTER FOR EF-3. FAN TO ENGAGE UPON ROOM TEMP. ABV 85'F
DAHU-1C 1T
DAHU-1B 9K
25X25 RA
34X18 EXH
14X8 400
BOD 11'6" AFF TYP.
25X25 SA
16X16 1200
16X16 1000
BOD 11'6" AFF
34X18 DUCT OPEN END TO BE COVERED WITH ½" HARDWARE SCREEN
DAHU-1A 9K
UP TO RTU-5
WALL MTD. DAHU TO BE MOUNTED 9' AFF. TYP. ROUTE PUMPED CONDENSATE TUBING TO JANITOR MOP SINK.
UP

1
H5
ENLARGED OFFICE LEVEL 1 HVAC PLAN
SCALE: 1/4"=1'0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER

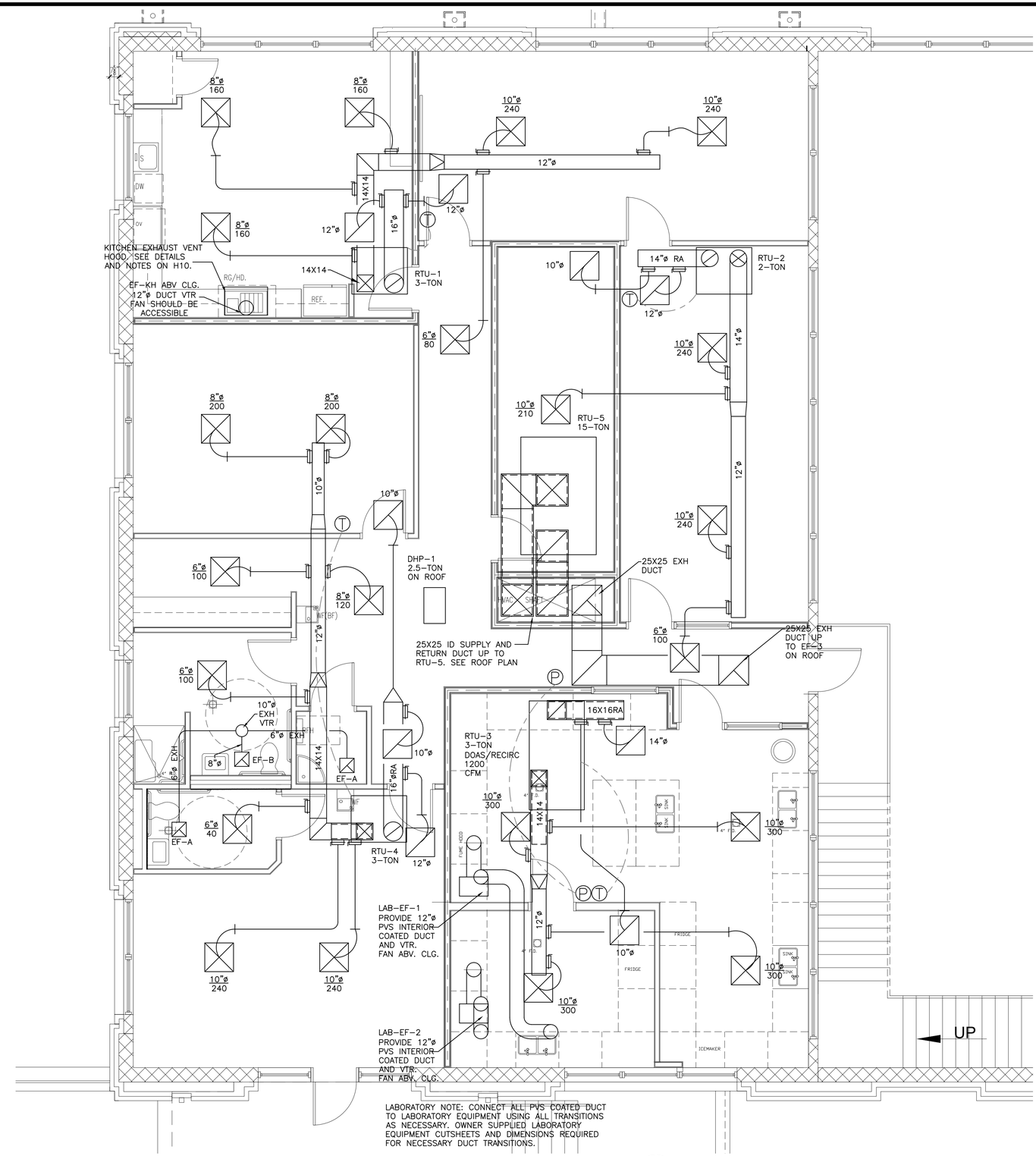
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ENLARGED OFFICE LEVEL ONE HVAC

HVAC
ENLARGED OFFICE
LEVEL 1

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: H5



LABORATORY NOTE: CONNECT ALL PVS COATED DUCT TO LABORATORY EQUIPMENT USING ALL TRANSITIONS AS NECESSARY. OWNER SUPPLIED LABORATORY EQUIPMENT CUTSHEETS AND DIMENSIONS REQUIRED FOR NECESSARY DUCT TRANSITIONS.

1 / H6 ENLARGED OFFICE LEVEL 2 HVAC PLAN

SCALE: 1/4"=1'0"

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953-8842

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ENLARGED OFFICE LEVEL TWO HVAC

HVAC
ENLARGED OFFICE
LEVEL 2

Project Manager: Jolene Northrop, P.E.

Drawn By: LS/KS | Checked By: LS/KS

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: H6

COMBINATION LOUVER/DAMPER SCHEDULE

MARK	MAKE	MODEL	SIZE W"XH"	FREE AREA (FT^2)	MOTOR OPERATED	VOLT/PH	MCA	SERVES LOCATION	NOTES
L-1	GREENHECK	EAD-635	96X24	7.9	YES	120/1	1	BLOWER ROOM EF-3	1,2,3

NOTES:
1. SEE INTERLOCKING SCHEDULES AND DETAILS
2. INCLUDE BIRD SCREEN
3. FINISH: BAKED ENAMEL, SEE ARCHITECTURAL FOR COLOR

STATIONARY LOUVER SCHEDULE

MARK	MAKE	MODEL	SIZE W"XH"	FREE AREA (FT^2)	MOTOR OPERATED	VOLT/PH	MCA	SERVES LOCATION	NOTES
L-A	GREENHECK	ESJ-202	16X8	0.2	NO	-	-	1ST FL RR	1,2

NOTES:
1. INCLUDE BIRD SCREEN
2. FINISH: BAKED ENAMEL, SEE ARCHITECTURAL FOR COLOR

RTU SUPPLY DRUM DIFFUSER SCHEDULE

MAKE	MODEL	NOMINAL CFM	TONS	THROW (FT)	N.C.
UNITED ENERTECH	DPD1806-7.5	3,000	7.5	43-53-74	44

NOTE:
1. DRUM DIFFUSER TO INCLUDE 1" DUCT LINER AND POWDER COATED GRAY COLOR FOR CORROSION RESISTANCE.

TYPICAL AIR DISTRIBUTION SCHEDULE

SYMBOL	TYPE	MAKE	MODEL	ACCESSORIES
☒	24X24 SUPPLY LAY-IN	TITUS	TMS	1
◰ ◱	24X24, 24X12 EGG CRATE RETURN	TITUS	50F	4
☒	24X24 SUPPLY SURFACE MOUNT	TITUS	TMS	1,2
◱	24X24 RETURN SURFACE MOUNT	TITUS	50F	2
—▯—	SURFACE MOUNT SUPPLY GRILLE	TITUS	300RS	3
—▯—	SURFACE MOUNT RETURN GRILLE	TITUS	350RL	
DG-A	DOOR GRILLE 16"X16"	TITUS	T-700L	2

ACCESSORIES:
1. INSULATED BACK
2. SURFACE MOUNT WITH BORDER
3. OPPOSABLE BLADE DAMPER
4. INSULATED BOX, ROUND DUCT TRANSITION

ELECTRIC UNIT HEATER SCHEDULE

MARK	MAKE	MODEL	HEAT	VOLT/PH	MCA	MOCP	WEIGHT (lbs)	MOUNT	LOCATION	NOTES
EUH-1	TPI	UH SERIES	5 kW	460/3	6	15	44	HANGING	BLOWER RM	1

NOTES:
1. 24V CONTROL VOLTAGE. THERMOSTAT AS SHOW ON PLANS, POWDER COATED EPOXY FINISH, MOUNT 9' AFF.

EQUIPMENT NOTES

NOTE: ALL APPROVED EQUALS MUST MEET BASIC MATERIALS AND COMPONENTS OF THE BASIS OF DESIGN MODEL IN THE SCHEDULES. ALL APPROVED EQUALS TO SPECIFIED EQUIPMENT WILL BE ACCEPTED.

1. EXHAUST FAN APPROVED EQUALS:
   GREENHECK, PENNBARRY, COOK, SOLAR AND PALAU, TWIN CITY FAN
2. ROOFTOP UNIT APPROVED EQUALS:
   CARRIER, TRANE, LENNOX, DAIKIN
3. MINI SPLIT-SYSTEM UNIT APPROVED EQUALS:
   MITSUBISHI, LG, DAIKIN, SANYO, TRANE, CARRIER
4. OUTDOOR AIR UNIT APPROVED EQUALS:
   AAON RN, GREENHECK RV, DAIKIN REBEL, TRANE OADG, CARRIER 62X
5. CEILING EXHAUST FAN APPROVED EQUALS:
   GREENHECK, BROAN, PENNBARRY
6. ELEC. UNIT HEATER APPROVED EQUALS:
   TPI, MODINE, REZNOR
7. LOUVER APPROVED EQUALS:
   GREENHECK, RUSKIN, ARROW, NAILOR, UNITED ENERTEC
8. AIR DISTRIBUTION APPROVED EQUALS:
   TITUS, NAILOR, KREUGER, METAL-AIRE
9. RTU THERMOSTATS TO BE EQUAL TO HONEYWELL 8000 SERIES WITH REMOTE SENSOR CAPABILITIES - SEE THERMOSTAT NOTES

THERMOSTATS

OFFICE THERMOSTATS TO BE EQUAL TO HONEYWELL COMMERCIAL VISIONPRO 8000 PROGRAMMABLE THERMOSTAT WITH WI-FI CAPABILITIES. PROVIDE INSTRUCTION FOR SCHEDULING THERMOSTATS TO OWNER. OFFICE TEMPERATURES ARE TO BE SET FOR 68°F HEAT AND 72°F COOLING WITH CONTINUOUS FAN. DOAS-1,2 TEMPERATURES ARE TO BE SET FOR 65°F HEAT AND 80°F COOLING WITH CONTINUOUS FAN. MOUNT THERMOSTATS 48" AFF.

SEISMIC DESIGN NOTE

1. BUILDING HAS BEEN CATEGORIZED AS A SEISMIC CLASS "C" BUILDING.
2. MECHANICAL CONTRACTOR IS TO PROVIDE SEISMIC RESTRAINT CURBS AND SYSTEMS FOR EQUIPMENT AND DUCTWORK AS SHOWN ON DETAILS ON H11 OR AS PROVIDED BY MECHANICAL SEISMIC EQUIPMENT VENDOR.

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953-8402

ROOF TOP UNIT SCHEDULE

MARK	MAKE	MODEL	COOLING CAP. TONS	CLG. STAGES	HEAT PUMP CAP. @ 47°F (BTUH)	HEATING CAP. ELEC HEAT (kW)	ESP (in.WC)	CFM	SEER/EER/COP	VOLT/PH	MCA	MOCP	O.A. REQ	SMOKE DETECTOR	WEIGHT LBS	NOTES
RTU-1	TRANE	4WCZ6036B4	3	2	31,000	7.5	0.5"	1125	16/12.2/3.43	480/3	13	15	120	NO	468	1,2,4
RTU-2	TRANE	4WCZ6024A1	2	2	20,200	7.5	0.5"	800	16/12.0/3.6	208/1	45	45	100	NO	442	1,2,4
RTU-4	TRANE	4WCZ6036B4	3	2	31,000	7.5	0.5"	1125	16/12.2/3.43	480/3	13	15	120	NO	468	1,2,4
RTU-5	TRANE	TSD180	15	2	-	-	1.0"	6,000	-/11.2/-	480/3	37	45	500	YES	1864	1,3,5

NOTES:
1. PROVIDE INSULATED 14" ROOF CURB, 2" FILTER RACK, SINGLE POINT POWER ENTRY,
2. PROVIDE MANUAL OUTDOOR AIR DAMPER
3. PROVIDE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF
4. PROVIDE ELECTRIC HEATER KIT
5. PROVIDE LOW-AMBIENT COOLING

DEDICATED OUTDOOR AIR SYSTEM UNIT SCHEDULE

	FAN					COOLING MODE									HEATING MODE								
						COOLING COIL		E.A.T. °F		COIL LAT DB	COIL LAT WB	DEHUM.	HGRH LAT DB	HGRH LAT WB	ELECTRIC HEAT	E.A.T. °F	L.A.T. °F					
MARK	SUPPLY CFM	OUTDOOR CFM	RETURN CFM	FAN MOTOR HP	EXT. S.P. INCHES W.C.	TOTAL CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH)	DB	WB	APPROX. °F	APPROX. °F	MOISTURE REMOVAL (LB/HR)	APPROX. °F	APPROX. °F	HEATING CAPACITY (kW)	DB	DB	WEIGHT (LBS)	VOLT/PH	MCA	MOCP	BASIS OF DESIGN
DOAS-1,2	3,000	3,000	-	1	1.0"	223,200	126,200	93	76	55	54	87	NA	NA	68	17	88	3,310	480/3	111	125	TRANE OADG017A3
RTU-3	1,200	200-1,200	0-1,200	6	1.0"	98,700	54,500	93	76	52	51	40	82	63	28	17	90	1,459	480/3	53.9	60	TRANE OABD108A4

NOTES:
1. PROVIDE 14" INSULATED ROOF CURB, NON-FUSED DISCONNECT SWITCH, UNIT POWERED 115V CONVENIENCE OUTLET, MERV 8 FILTER BANK, SCR MODULATING ELECTRIC HEAT, HAILGUARDS, MOUNTED PROGRAMMABLE CONTROLLER CONTROLS DISPLAY, MODULATING HGRH, 6-ROW DX COIL, VFD DIRECT DRIVE SUPPLY FAN MOTOR, SMOKE DETECTOR
2. DOAS-1,2: PROVIDE (2) COMPRESSORS: (1) DIGITAL SCROLL, (1) FIXED SCROLL. DOAS-1,2 ARE TO OPERATE 24/7 AND CONTROL COOLING/HEATING BASED ON ROOM TEMPERATURE
3. RTU-3: PROVIDE ECONOMIZER CONTROL, (1) DIGITAL SCROLL, MODULATING DAMPER CONTROL SYSTEM TO MODULATE THE OUTDOOR AIR AND RETURN AIR BASED ON ROOM PRESSURE - SEE CONTROLS NOTES.

MULTI-ZONE DUCTLESS HEAT PUMP UNIT SCHEDULE

MARK	MAKE	MODEL	TYPE	SEER	TONNAGE	COOLING BTU TOTAL	HEATING BTU TOTAL (47°F)	CFM	VOLT/PH	MCA	MOCP	NOTES
DHP-1	MITSUBISHI	MXZ-3B30NA-1	3-PORT	-	2.5	28,400	28,600	-	208/1	18	20	
DAHU-1A,1C	MITSUBISHI	MSZ-GE09NA-8	WALL MOUNT	-	0.75	9,000	10,900	399	208/1	1	-	1,2,3
DAHU-1B	MITSUBISHI	MSZ-GE12NA-8	WALL MOUNT	-	1	12,000	14,400	399	208/1	1	-	1,2,3

NOTES:
1. PROVIDE WIRED WALL MOUNT 7-DAY PROGRAMMABLE THERMOSTAT, PROVIDE INLINE CONDENSATE PUMP TO CARRY CONDENSATE TO MOP SINK.
2. INSTALL LINESETS VIA MANUFACTURER'S INSTRUCTIONS. INDOOR UNIT POWERED FROM OUTDOOR UNIT.
3. WALL MOUNT INDOOR DUCTLESS SYSTEMS DO NOT REQUIRE ADDITIONAL SEISMIC BRACING.

EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	CFM	EXT. SP	FAN RPM	TYPE	SERVES LOCATION	DRIVE	POWER	VOLT/PH	WEIGHT(lbs)	NOTES
EF-1	GREENHECK	RBUMO-2L36	15,000	0.1	587	ROOF UPBLAST	MEMBRANE ROOM	BELT	2 HP	480/3	288	2,5
EF-2	GREENHECK	RBUMO-2L36	15,000	0.1	587	ROOF UPBLAST	MEMBRANE ROOM	BELT	2 HP	480/3	288	2,5
EF-3	GREENHECK	GB-360HP-VGD	8,000	2.0	755	DOMED CENTRIFUGAL	BLOWER ROOM	BELT	5 HP	480/3	321	1,5
EF-4	GREENHECK	CUE-200-B	6,000	0.1	1140	UPBLAST CENTRIFUGAL	MEMBRANE ROOM	DIRECT	2 HP	480/3	233	3,5
EF-5	TWIN CITY FAN	TCWPF - 12	300	0.1	465	FIBERGLASS PANEL FAN	FLUORIDE ROOM	DIRECT	1/4 HP	120/1	48	4,5
EF-6	TWIN CITY FAN	TCWPF - 12	900	0.1	1397	FIBERGLASS PANEL FAN	BULK TANK ROOM	DIRECT	1/4 HP	120/1	48	4,5

NOTES:
1. PROVIDE 14" INSULATED ROOF CURB, TOGGLE NEMA-1 DISCONNECT SWITCH, UNCOATED BACKDRAFT DAMPER, VFD, VARIABLE SPEED MOTOR, BIRDSCREEN, PERMATECTOR COATING, LINE VOLTAGE COOLING THERMOSTAT
2. PROVIDE 14" INSULATED ROOF CURB, TOGGLE NEMA-3R DISCONNECT SWITCH, INLET GUARD, PERMATECTOR COATING
3. PROVIDE 14" INSULATED ROOF CURB, TOGGLE NEMA-1 DISCONNECT SWITCH, BACKDRAFT DAMPER, COATED GRAVITY BACKDRAFT DAMPER, BIRDSCREEN, STAINLESS STEEL FASTENERS, MOTOR VFD RATED, VFD FOR MOTOR, FAN AND BDD COATED WITH HI-PRO POLYESTER CONCRETE GRAY RAL 7023 COATING, INCLUDE VARI-GREEN CONSTANT PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION FOR EF-4 ON PG H8 FOR SPECIFICS OF CONTROLLER.
4.
5. SPEED CONTROLLED BY VFD IN ELECTRICAL ROOM MOTOR CONTROL CENTER.

MAKE UP AIR UNIT SCHEDULE

MARK	MAKE	MODEL	ELEC HEAT (kW)	CFM	BLOWER MOTOR (HP)	EAT/LAT (°F)	VOLT/PH	MCA	MOCP	WEIGHT (lbs)	NOTES
MUA-1	GREENHECK	MSX-P109-H12-MF	25	1,200	3/4 HP	5°F/70°F	460/3	41.4	45	1141	1

NOTES:
1. PROVIDE 14" INSULATED ROOF CURB, WEATHERHOOD WITH BIRDSCREEN, MERV 8 2" FILTERS, BOTTOM DISCHARGE, PERMATECTOR COATING (CONCRETE GRAY RAL 7023), VFD SUPPLY FAN FOR BALACING - FAN TO BE CONSTANT VOLUME, HINGED ACCESS DOORS, DIRTY FILTER SWITCH, DISCHARGE TEMPERATURE CONTROL, HEAT SOURCE ON INSULATION, INDUSTRIAL CONTROLLER TO MAINTAIN 45°F.

CEILING/CABINET EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	CFM	POWER	ESP ("W.C)	SONES	TYPE	LOCATION	VOLT/PH	WEIGHT (lbs)	NOTES
EF-A	GREENHECK	SP-B110	75	80W	0.5"	2.0	CEILING	RESTROOMS/JANITORS	115/1	10	1
EF-B	GREENHECK	SP-B150	150	129W	0.5"	3.5	CEILING	RESTROOMS	115/1	10	1
LAB-EF-1	LABCONCO	7061110	450	1HP	0.5"	NA	CABINET	ABV. LAB CEILING-FUME HOOD	115/1	90	2
LAB-EF-2	LABCONCO	7061110	500	1HP	0.5"	NA	CABINET	ABV. LAB CEILING-MICROBIOLOGY	115/1	90	2

NOTES:
1. FAN TO BE INTERLOCKED TO LIGHT SWITCH OR ON SEPARATE SWITCH ADJACENT TO LIGHT SWITCH FOR OPERATION DURING OCCUPIED HOURS
2. INTELLI-SENSE MULTI-SPEED COATED STEEL ECM BLOWER, SET FAN SPEED AND CFM TO OWNER'S DESIRED QUANTITY BASED ON FUME HOOD REQUIREMENTS. MOUNT PROVIDED SPEED CONTROL BOX ON TOP OF FUME HOOD.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

HVAC SCHEDULES

HVAC SCHEDULES

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00

Drawing No.: H7

DESIGN CONDITIONS

1. DESIGN BASED ON OUTSIDE AMBIENT ASHRAE CONDITIONS FOR ATLANTA, GA:
   93°F DRY BULB, 75°F WET BULB – SUMMER (ASHRAE 0.4%)
   18°F DRY BULB – WINTER (ASHRAE 99.6%)
2. INDOOR CONDITIONS ARE DESIGNED FOR:
   AS NOTED IN THE CONTROLS NOTES
3. CALCULATIONS BASED ON CRITERIA FOUND IN ASHRAE HANDBOOK OF FUNDAMENTALS FOR NONRESIDENTIAL HEATING AND COOLING LOAD APPLICATIONS
4. SYSTEM DESIGN IS BASED ON BUILDING AS SHOWN IN THESE CONSTRUCTION DOCUMENTS. HVAC DESIGN DOES NOT INCLUDE EXTRA CAPACITY FOR FUTURE EXPANSION.
5. HVAC DESIGN AND EQUIPMENT SELECTION IS BASED ON THE 2015 INTERNATIONAL ENERGY CODE AND THE 2018 INTERNATIONAL MECHANICAL CODE.

OUTDOOR AIR VENTILATION RATE CALCULATIONS

USING IMC 2018 403.3

FORMULA: $V_{bz}=R_pP_z+R_aA_z$

	UNIT	Rp (cfm/per)	Pz	Ra (cfm/sq.ft)	Az (sq.ft.)	Vbz (CFM)
Vbz – Breathing Zone (Req'd air) in CFM	1	5	6	0.06	734	75
Rp – Outdoor Airflow Rate Per Person	2	5	6	0.06	684	72
Pz – Zone Population	3	5	4	0.06	617	58
Ra – Outdoor Airflow Rate Per Unit Area	4	5	6	0.06	1,121	98
Az – Zone Floor Area (sq.ft.)	DOAS–1,2	–	–	0.5	8,421	4211

GENERAL PIPING NOTES

1. FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED FOR A COMPLETE PIPING SYSTEM IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES.
2. ALL PIPING SHOULD BE SUPPORTED FROM STRUCTURAL MEMBERS. DO NOT REST PIPING ON CEILING TILES OR SUSPENDED GRID. PIPING HUNG FROM ROOF JOISTS SHALL BE SECURED AT THE TOP CHORD OF THE JOIST. PIPING SHOULD BE SUPPORTED IN INTERVALS AS LISTED IN THE MECHANICAL CODE TABLES AND AT EVERY CHANGE IN DIRECTION. PIPING SHALL BE NEAT AND STRAIGHT.
3. ALL MATERIALS SHALL BE NEW, CLEAN, AND WITHOUT DEFECTS. ANY DEFECTIVE MATERIALS SHALL BE REMOVED FROM JOB SITE.
4. ALL PIPING SHALL BE CONNECTED TO EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.
5. DIELECTRIC UNIONS SHOULD BE USED TO CONNECT ALL DISSIMILAR METALS.
6. REFER TO VRF MANUFACTURER'S INSTALLATION GUIDELINES FOR THICKNESS AND TYPE OF CLOSED CELL INSULATION REQUIREMENTS. ALL OUTDOOR PIPING INSULATION SHALL BE COMPLETELY SEALED AND COATED WITH NO LESS THAN 2 LAYERS OF WHITE ELASTOMERIC COATING EQUAL TO HENRY – 287 SF SOLAR FLEX. COPPER PIPING SHOULD NOT BE IN DIRECT CONTACT WITH METAL ITEMS AS TO PREVENT WEAR FROM PIPE VIBRATION.
7. SUPPORT PIPING ON ROOF (IF REQUIRED) WITH PIPE STANDS EQUAL TO COOPER B–LINE RUBBER BASE ROOFTOP SUPPORT. SPACE AS PER CODE. SECURE PIPE WITH PIPE CLAMPS.
8. CONDENSATE PIPING
   8.1. ON THE ROOF, IN CONCEALED AREAS OR OPEN AREAS MAY BE SCH. 40 PVC. CONDENSATE PIPING IN A RETURN AIR PLENUM SPACE MUST BE COPPER TYPE M WITH INSULATION AND JACKET THAT MEETS REQUIREMENTS FOR INSULATION WITHIN A RETURN AIR PLENUM. PIPING SHALL BE TRAPPED PER MANUFACTURER'S REQUIREMENTS DEPENDING ON STATIC PRESSURE OF THE SYSTEM AND ROUTED TO THE NEAREST DRAIN. CONDENSATE PIPING MUST INSULATED IF THE CONDENSATE TEMPERATURE IS MORE THAN 15°F BELOW THE AMBIENT AIR TEMPERATURE OR LESS THAN 55°F. CONDENSATE TUBING FROM CONDENSATE PUMPS SHOULD BE SIZED PER THE PUMP BUT MUST BE BRAIDED VINYL TUBING.
9. PIPE TESTING:
   9.1. REFRIGERATION/GAS COPPER PIPE: 450 PSIG NITROGEN TEST. HOLD NITROGEN TESTS FOR A MINIMUM OF ONE HOUR WITHOUT LOSS OF PRESSURE.
10. RETESTING: RETEST PIPING FAILING INITIAL TESTS FOLLOWING CORRECTION OF DEFECTIVE WORK. REQUIREMENTS OF INITIAL TESTS SHALL APPLY.
11. MECHANICAL CONTRACTOR TO WORK CLOSELY AND SEAMLESSLY WITH ALL OTHER TRADES.
12. ANY DISCREPANCIES BETWEEN THE HVAC PLANS AND THE DIVISION 23 HVAC BOOK SPECIFICATIONS SHALL DEFER TO THE HVAC PLANS.

PIPING SUPPORT SPACING

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
ALUMINUM PIPE AND TUBING	10	15
BRASS PIPE	10	10
BRASS TUBING, 1 1/4 INCH DIAMETER AND SMALLER	6	10
BRASS TUBING, 1 1/4 INCH DIAMETER AND LARGER	10	10
CAST–IRON PIPE	5	15
COPPER OR COPPER–ALLOY PIPE	12	10
COPPER OR COPPER–ALLOY TUBING, 1 1/4 INCH DIAMETER AND SMALLER	6	10
COPPER OR COPPER–ALLOY TUBING 1 1/2 INCH DIAMETER AND LARGER	10	10
CPVC PIPE OR TUBING, 1 INCH AND SMALLER	3	10
PEX TUBING	2 2/3 (32 INCHES)	10
PVC PIPE	4	10
STEEL TUBING	8	10
STEEL PIPE: SCH40, SCH80	12	15

HVAC SPECIFICATIONS AND NOTES

1. THE CONTRACTOR SHALL PROVIDE A COMPLETE HVAC SYSTEM TO INCLUDE ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT FOR A COMPLETE AND FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY APPURTENANCES CUSTOMARILY INCLUDED IF NOT SPECIFICALLY CALLED OUT.
2. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL CODES, LAWS AND ORDINANCES.
3. INSTALL ALL EQUIPMENT AND MATERIALS PER MANUFACTURER'S RECOMMENDATIONS.
4. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL DETAILS OF THE WORK AND THE EXISTING CONDITIONS AND SHALL VERIFY DIMENSIONS AND CLEARANCES AND BE ASSURED THAT THE EQUIPMENT PURCHASED WILL FIT INTO THE AVAILABLE SPACE.
5. DUCT
   5.1. THE CONTRACTOR SHALL REVIEW STRUCTURAL DRAWINGS BEFORE FABRICATING OR INSTALLING DUCTWORK OR EQUIPMENT TO AVOID ANY CONFLICTS. FIELD FABRICATE DUCTWORK TO JOB CONDITIONS.
   5.2. ALL DUCTWORK SHALL BE FABRICATED OF GALVANIZED STEEL OF THICKNESS AND GAUGES TO CONFORM TO SMACNA DUCT CONSTRUCTION STANDARDS.
   5.3. ALL LOW PRESSURE FLEXIBLE DUCT SHALL BE CONNECTED TO LOW PRESSURE DUCT WITH SPIN–IN FITTINGS AND MANUAL DAMPERS.
   5.4. LOW PRESSURE FLEX DUCT SHALL BE A MAXIMUM OF 5 FEET LONG AND SHALL BE SIZED AS FOLLOWS:

CFM	FLEXDUCT DIAMETER
0 – 100	6"
101 – 200	8"
201 – 300	10"
301 – 500	12"

   5.5. ALL SUPPLY DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 2" THICK R–6 FIBERGLASS DUCT INSULATION WITH ALUMINUM FOIL BACKING UNLESS DUCT SHOWN AS LINED IN PLANS OR IN DETAILS. OUTDOOR DUCTWORK SHALL BE INTERNALLY INSULATED WITH 2" R–8 INTERIOR DUCT LINER. EXTERIOR OF DUCT SHALL BE COATED WITH NO LESS THAN 2 COATS OF SOLARFLEX, COOLSEAL OR APPROVED ELASTOMERIC WHITE COATING. INTERIOR LINED DUCT SHALL BE 1" THICK.
   5.6. EXHAUST DUCT THROUGH A CONDITIONED SPACE DOES NOT NEED TO BE INSULATED. EXHAUST DUCT BELOW THE ROOF LINE FOR EF–3 SHOULD BE EXTERNALLY INSULATED.
   5.7. ALL ELBOWS SHALL BE PROVIDED WITH SINGLE WALL TURNING VANES.
   5.8. PVS (POLY VINYL) COATED DUCT COATING SHOULD BE MINIMUM 4 MIL. OSEE PLANS FOR DESIGNATION OF INSIDE OR OUTSIDE COATING. ALL JOINTS SHOULD BE COATED OR SEALED.
6. INSTALL ALL ROOM THERMOSTATS 48" AFF.
7. PROVIDE PLASTIC AND PERMANENT NAMEPLATES WITH THE UNIT/TAG NUMBER ON ALL MECHANICAL EQUIPMENT. TAG SHOULD BE IN CONTRAST TO THE BACKGROUND AND SHOULD BE MECHANICALLY FASTENED TO THE EQUIPMENT, NOT VIA ADHESIVE ONLY.
8. MECHANICAL CONTRACTOR TO BALANCE ALL AIR SYSTEMS TO PRODUCE THE VOLUMES AND QUANTITIES SHOWN ON DRAWINGS OR SPECIFIED USING NEBB OR AABC CERTIFIED TEST AND BALANCE CONTRACTOR.
9. PROVIDE AIR EXTRACTORS AS REQUIRED FOR AIR BALANCING.
10. SPIN–IN FITTINGS OR STICK ON FITTINGS WITH DAMPERS SHALL BE APPLIED TO ALL SUPPLY DUCTWORK. NO SCOOPS ARE ALLOWED IN FITTINGS.
11. THE CONTRACTOR SHALL VERIFY ALL ELECTRICAL CHARACTERISTICS WITH ELECTRICAL DRAWINGS BEFORE PURCHASING EQUIPMENT.
12. INSTALL FIRE DAMPERS IN ALL DUCTS PASSING THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FIRE WALLS.
13. MAINTAIN A MINIMUM OF 10' CLEARANCE BETWEEN ANY OUTDOOR AIR INTAKES AND EXHAUST OUTLETS.
14. FILTERS
   14.1. MECHANICAL CONTRACTOR TO PROVIDE (1) SET OF CLEAN NEW FILTERS FOR ALL HVAC SYSTEMS AT TIME OF OWNER TRAINING OR CO.
15. ANY DISCREPANCIES BETWEEN THE HVAC PLANS AND THE DIVISION 23 HVAC BOOK SPECIFICATIONS SHALL DEFER TO THE HVAC PLANS.

HVAC LEGEND

SYMBOL	DESCRIPTION
	RETURN AIR GRILLE 24X12 OR 24X24
	SUPPLY AIR DIFUSER, 24X24
SIZE / CFM	SIZE OF DIFFUSER / CFM VALUE
	SURFACE/DUCT MOUNT SUPPLY/RETURN DIFF.
	DUCT OR EQUIPMENT (SHOWN AS SOLID)
	DUCT LINED (LINER SHOWN AS DASHED)
	FLEX DUCT
RTU–1	HVAC EQUIPMENT DESIGNATION
	SPIN–IN WITH MANUAL VOLUME DAMPER
	MANUAL VOLUME DAMPER, MVD
	CONDENSATE PUMP
T	THERMOSTAT
	RECT. DUCT ELBOW WITH TURNING VANES
	FIRE DAMPER, FD
M	MOTORIZED DAMPER
SD	SMOKE DETECTOR
	SQUARE TO ROUND TRANSITION
AD	ACCES DOOR/PANEL
BDD	BACKDRAFT DAMPER
CA	COMPRESSED AIR LINE
CD	CONDENSATE DRAIN
DG	DOOR GRILLE
G	GAS LINE
MOD	MOTOR OPERATED DAMPER
OA	OUTSIDE AIR
RA	RETURN AIR
RAG	RETURN AIR GRILLE
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
UC	UNDERCUT DOOR 1" ABOVE FLOOR COVERING
VTR	VENT THROUGH THE ROOF

CONTROLS NOTES

1. ALL BUILDING HVAC SYSTEMS UTILIZES STAND ALONE CONTROLS FOR EACH SYSTEM. THERE IS NO BUILDING MANAGEMENT SYSTEM ON THIS PROJECT.
2. IT IS THE RESPONSIBILITY OF THE MECHANICAL/HVAC CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES FOR THE FULL FUNCTION AND PROVISION OF ALL CONTROL ITEMS.
3. THE PURPOSE OF THE SEQUENCE OF OPERATION BELOW IS TO PROVIDE DESIGN INFORMATION AS WELL AS INFORM THE CONTRACTOR OF THE REQUIREMENTS OF THE PROPOSED SYSTEMS.
4. CONTRACTOR TO PROVIDE AND MOUNT ALL CONTROLS (AND NECESSARY CONDUIT) INCLUDING ROOM THERMOSTATS AND ROOM PRESSURE SENSORS AND CONTROLLERS AS DESCRIBED OR INFERRED IN THE SEQUENCE OF OPERATION BELOW TO PROVIDE A FULLY FUNCTIONING SYSTEM.
5. CONTRACTOR WILL INSTALL AND WIRE ALL DUCT SMOKE DETECTORS FOR SYSTEMS OVER 2000 CFM OR AS SHOWN ON DRAWINGS.
6. PROGRAM ALL THERMOSTATS PER OWNER'S REQUIREMENTS FOR SCHEDULES.
7. INCLUDE 8 HRS OWNER TRAINING FOR ALL HVAC SYSTEMS.

SEQUENCE OF OPERATION

8. OFFICE ROOFTOP UNITS RTU–1,2,4:
   8.1. MAINTAIN OCCUPIED/UNOCCUPIED SCHEDULES
   8.2. RECOMMENDED SETPOINTS OCCUPIED: 68°F HEAT / 72°F COOL
   8.3. RECOMMENDED SETPOINTS UNOCCUPIED: 65°F HEAT / 78°F COOL

9. RTU–3 DOAS LABORATORY UNIT:
   9.1. MAINTAIN OCCUPIED/UNOCCUPIED SCHEDULES – CONTROL TO ROOM TEMPERATURE
   9.2. RECOMMENDED SETPOINTS OCCUPIED: 68°F HEAT / 72°F COOL
   9.3. RECOMMENDED SETPOINTS UNOCCUPIED: 65°F HEAT / 78°F COOL
   9.4. LABORATORY ROOM PRESSURE MAY DROP DUE TO INTERMITTENT USE OF LAB HOOD EXHAUST SYSTEMS. ROOM SHOULD NOT GO INTO A MAJOR NEGATIVE PRESSURE RELATIVE TO OTHER SPACES WHEN THE HOODS ARE USED.
   9.5. LABORATORY ROOM PRESSURIZATION CONTROL: ROOM IS TO MAINTAIN A 0.0"WC DIFFERENCE TO THE ADJACENT HALLWAY PRESSURE SENSOR (SEE PLANS). IF ROOM PRESSURIZATION DROPS BELOW 0.0"WC RELATIVE TO HALLWAY, THE MODULATING OUTDOOR AIR DAMPER SHOULD OPEN UNTIL APPROPRIATE PRESSURE IS ACHIEVED.
   9.6. RTU–3 IS TO SELF–CONTROL ALL DISCHARGE AIR TEMPERATURE AND HUMIDITY TO REACH ROOM TEMPERATURE AND 50% RH. RTU–3 IS TO SELF–CONTROL ALL ROOM PRESSURIZATION VALUES.

10. OFFICE DUCTLESS SPLIT UNITS DHP–1, DAHU–1A,1B,1C:
    10.1. MAINTAIN OCCUPIED/UNOCCUPIED SCHEDULES
    10.2. RECOMMENDED SETPOINTS OCCUPIED: 68°F HEAT / 76°F COOL
    10.3. RECOMMENDED SETPOINTS UNOCCUPIED: 65°F HEAT / 80°F COOL

11. ELECTRICAL ROOM ROOFTOP UNIT RTU–5:
    11.1. UNIT TO RUN 24/7/365. UNIT TO MAINTAIN ROOM TEMPERATURE.
    11.2. RECOMMENDED SETPOINT: 78°F COOL

12. MEMBRANE ROOM DOAS–1,2 UNITS:
    12.1. UNITS TO RUN 24/7/365. UNITS TO MAINTAIN ROOM TEMPERATURES.
    12.2. RECOMMENDED SETPOINTS: 65°F HEAT / 80°F COOL

13. MUA–1:
    13.1. UNIT TO RUN 24/7/365. CONSTANT VOLUME SUPPLY AIR. UNIT TO MAINTAIN FREEZE PROTECTION.
    13.2. RECOMMENDED SETPOINT: 45°F HEAT

14. EF–1,2:
    14.1. LARGE UPBLAST EXHAUST FANS EF–1,2 ARE FOR RAPID VENTILATION OF THE MEMBRANE ROOM IF REQUIRED. FANS SHOULD BE ENGAGED BY SWITCHES ON WALL PROVIDED BE ELECTRICIAN.
    14.2. DOORS WOULD NEED TO BE OPENED AT OPPOSITE END OF THE BUILDING.
    14.3. FANS ARE NOT INTENDED FOR EMERGENCY USE.

15. EF–3:
    15.1. FAN IS TO BE ENGAGED BY LINE VOLTAGE COOLING THERMOSTAT SET AT 80°F IN BLOWER ROOM.
    15.2. FAN IS TO BE INTERLOCKED TO L–1.

16. EF–4:
    16.1. CONTROL TO BE A PACKAGED CONSTANT PRESSURE CONTROL DESIGNED TO REGULATE FAN SPEED BASED ON DEMAND. CONTROL SHALL INCLUDE A PROPORTIONAL INTEGRAL DERIVATIVE (PID) FEEDBACK LOOP AND SHALL HAVE ALL COMPONENTS PREWIRED TO LABELED TERMINAL STRIPS FOR EASY WIRING. SYSTEM SHALL INCLUDE THE APPROPRIATE PRESSURE TAP AND PRESET PRESSURE TRANSDUCER. FAN SHALL BE DIRECT DRIVE INCLUDING AN ELECTRONIC COMMUTATION (EC) VFD MOTOR. CONTROL PACKAGE SHALL BE VARI–GREEN CONSTANT PRESSURE CONTROL OR EQUAL. INDOOR INSTALLATIONS SHALL INCLUDE ROOM PRESSURE TAP AND CONTROL BOX WITH INTEGRAL PRESSURE TRANSDUCER.
    16.2. FAN IS TO MAINTAIN A –0.02" WC STATIC RELATIVE TO THE OUDOORS. MEMBRANE ROOM AIR SHOULD NOT BE CAPABLE OF INFILTRATING THE OFFICE AREA. MODULATE FAN SPEED VIA PRESSURE CONTROLLER TO MAINTAIN ROOM PRESSURE.

17. EF–5,6:
    17.1. FANS ARE TO RUN CONTINUOUSLY.

18. LABORATORY LAB–EF–1,2 FANS:
    18.1. FANS TO OPERATE BASED VENT HOOD REQUIREMENTS. FANS AND CONTROLLERS ARE TO BE INSTALLED BY CONTRACTOR BUT INITIATED AND BALANCED BY VENT HOOD EQUIPMENT VENDOR.

19. UNIT HEATERS
    19.1. ELECTRIC UNIT HEATERS TO BE SET TO 50°F.

20. HIGH SERVICE PUMP STATION HSP–EF–1 FAN:
    20.1. FAN IS TO BE ENGAGED BY LINE VOLTAGE COOLING THERMOSTAT SET AT 85°F.
    20.2. FAN IS TO BE INTERLOCKED TO HSP–L–1.

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE – SUITE 340
MARIETTA, GA 30060
770/953-8842

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

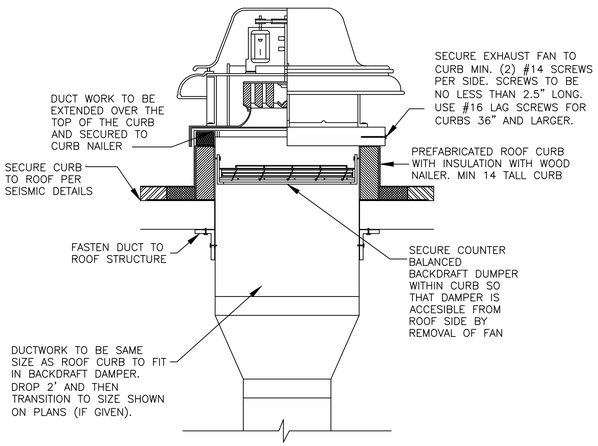
Buford Water Works Replacement
For the City of Buford, Georgia

HVAC NOTES

HVAC NOTES

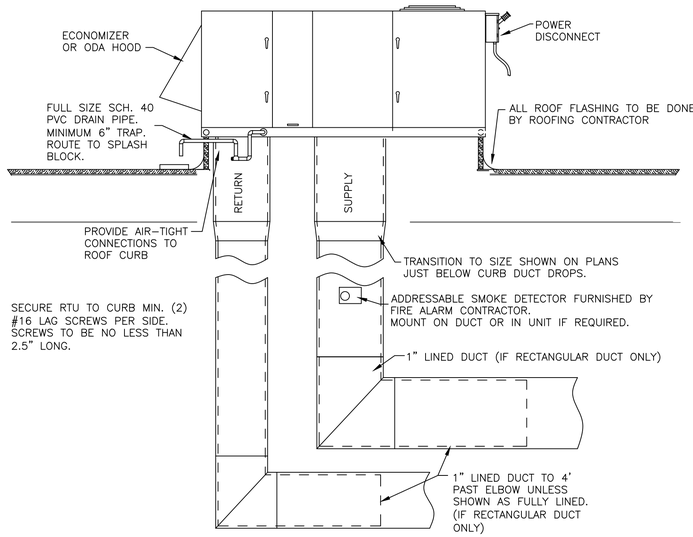
Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H8



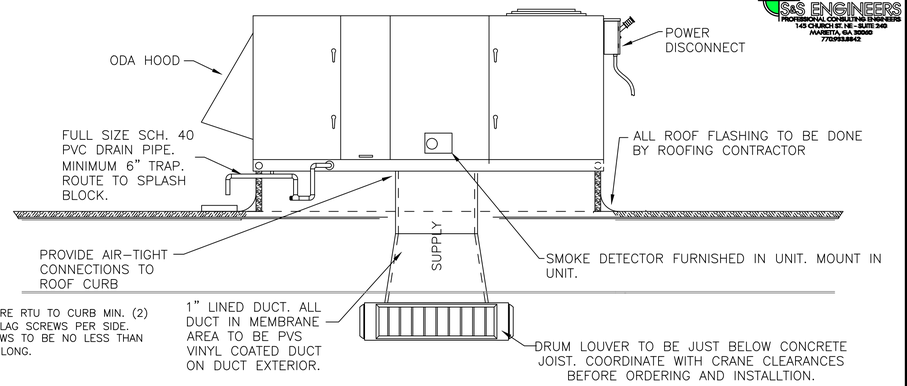
ROOF MOUNTED DUCTED EXHAUST FAN

NOT TO SCALE



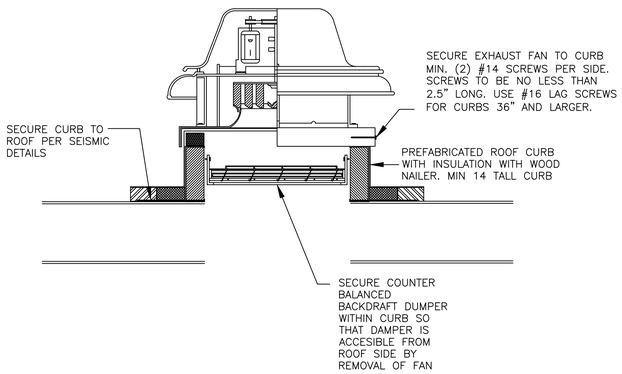
TYPICAL ROOF TOP UNIT INSTALLATION

NOT TO SCALE – RTU-1,2,3,4



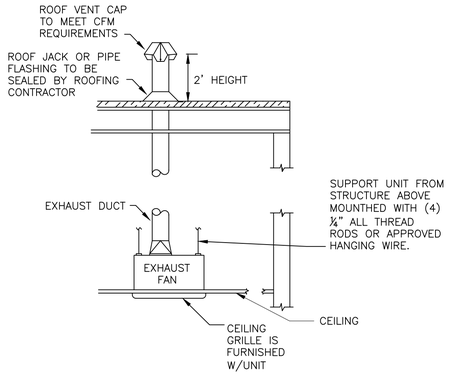
DOAS-1,2 ROOF TOP UNIT INSTALLATION

NOT TO SCALE



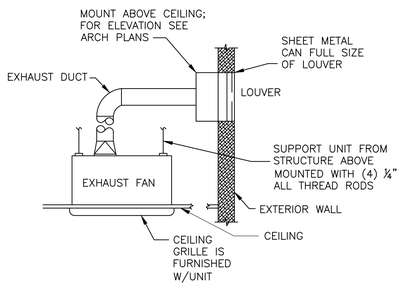
ROOF MOUNTED CENTRIFUGAL EXHAUST FAN

NOT TO SCALE



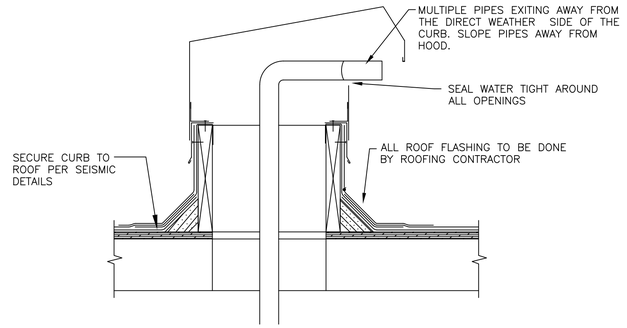
CEILING EXHAUST FAN DETAIL

NOT TO SCALE



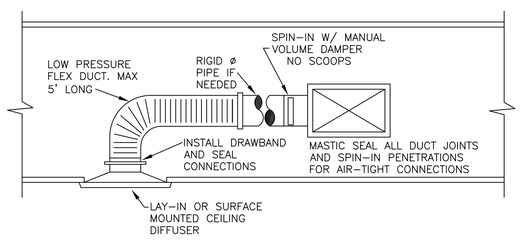
CEILING EXHAUST FAN DETAIL

NOT TO SCALE



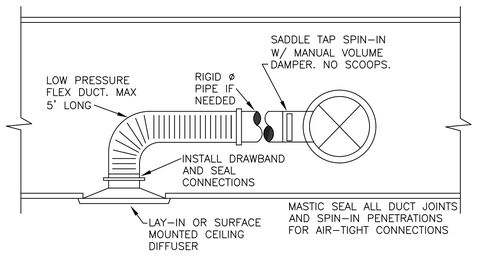
REF. PIPING SHEET METAL HOOD CURB

NOT TO SCALE



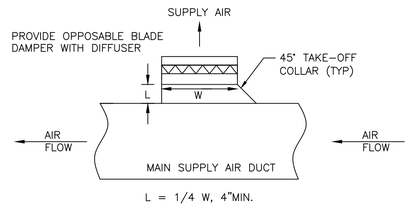
TYPICAL SIDE SPIN-IN CONNECTION

NOT TO SCALE



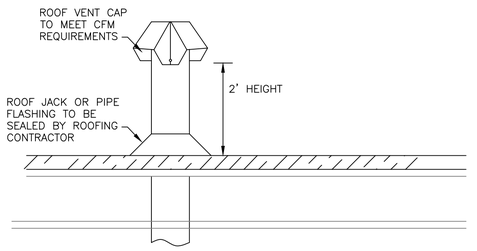
TYPICAL SIDE SPIN-IN CONNECTION

NOT TO SCALE



DIFFUSER WITH 45° TAKE-OFF DETAIL

NOT TO SCALE



TYPICAL FLAT ROOF VENT CAP

NOT TO SCALE

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953-8842

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

HVAC DETAILS

HVAC DETAILS

Project Manager: Jolene Northrop, P.E.

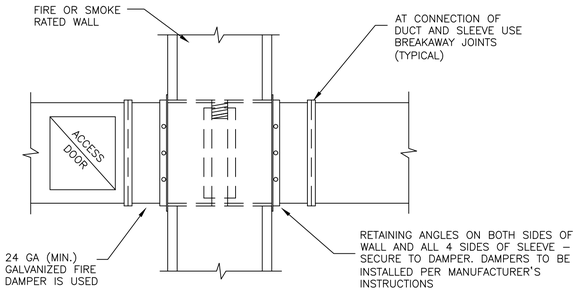
Drawn By: LS/KS | Checked By: LS/KS

Date: 04/14/2021

Scale: As Shown

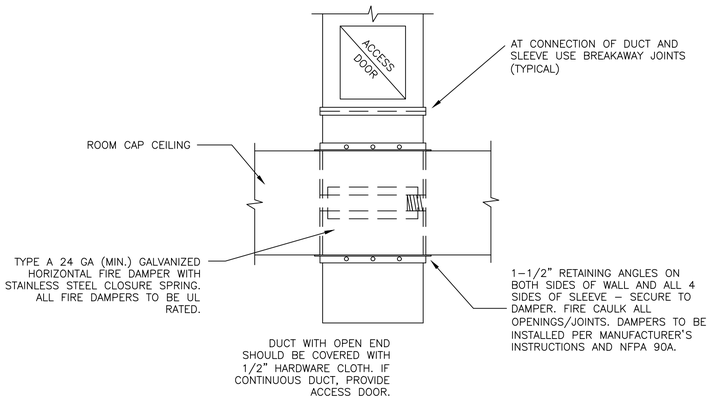
Project No.: 170110.00

Drawing No.: H9



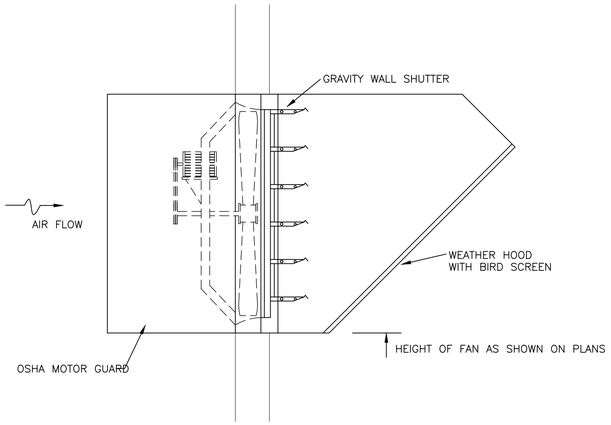
FIRE DAMPER AND SLEEVE DETAIL

NOT TO SCALE



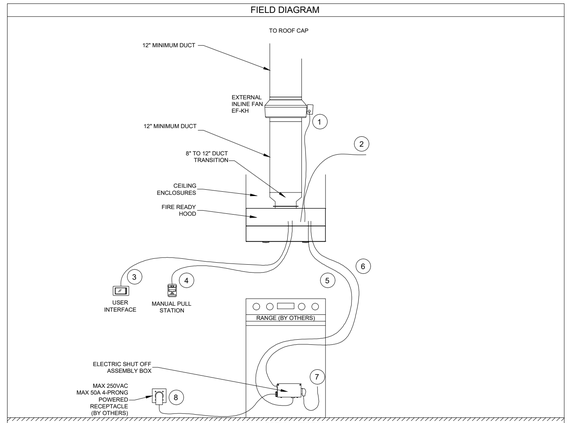
HORIZONTAL FIRE DAMPER (FD) DETAIL

NOT TO SCALE



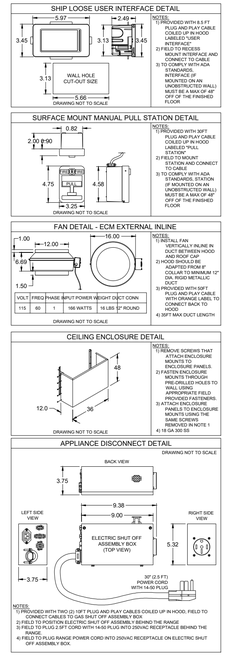
WALL MOUNTED EXHAUST FAN

NOT TO SCALE

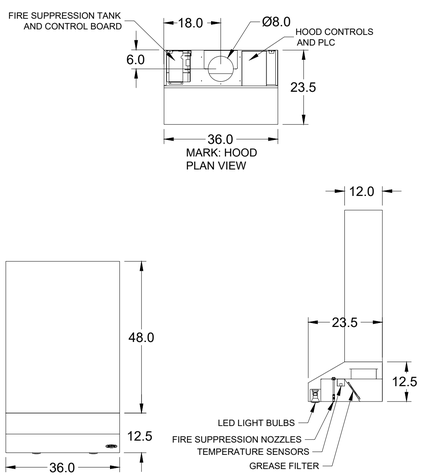


CONNECTION LEGEND

ID	ITEM	ITEM DETAILS
1	EXTERNAL INLINE FAN	50FT PLUG AND PLAY CABLE WITH ORANGE LABEL PROVIDED. FIELD TO RUN BETWEEN HOOD AND FAN, AND CONNECT TO ORANGE HARNESSES.
2	HOOD POWER	FIELD TO PROVIDE 115VAC POWER FROM 15A BREAKER TO TERMINAL BLOCKS H1 AND N1 INSIDE HOOD (GROUND TO GROUNDING TERMINAL).
3	SHIP LOOSE USER INTERFACE	8.5 FT PLUG AN PLAY CABLE WITH LIGHT BLUE LABEL COILED UP AND ATTACHED TO HOOD. FIELD TO CONNECT PLUG TO BACK OF USER INTERFACE INSIDE INTERFACE J-BOX.
4	MANUAL PULL STATION	30 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO HOOD. FIELD TO CONNECT TO MANUAL PULL STATION VIA QUICK CONNECTOR IN STATION J-BOX.
5	GAS/ELECTRIC DISCONNECT CABLE 1	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 9PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
6	GAS/ELECTRIC DISCONNECT CABLE 2	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 4PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
7	RANGE POWER CORD	PLUG RANGE POWER CORD (IF PROVIDED WITH RANGE) INTO 14-50R RECEPTACLE ON ELECTRIC SHUT OFF ASSEMBLY BOX.
8	SHUT OFF ASSEMBLY BOX POWER	PLUG 2.5 FT ELECTRIC SHUT OFF ASSEMBLY BOX POWER CORD INTO NEARBY 4-PRONG 14-50R 250VAC RECEPTACLE.



*APPROVED EQUALS ACCEPTED FOR ALL ABOVE SYSTEMS



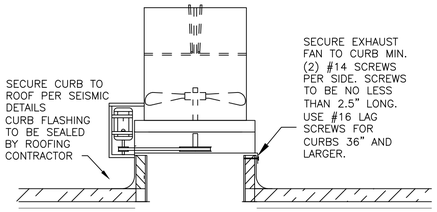
KITCHEN EXHAUST HOOD SCHEDULE

MARK	MAKE	MODEL	DIMENSIONS (INCHES)	CFM	EXT. SP	TYPE	LOCATION	OPERATING CURRENT (AMPS)	MOCP	VOLT/PH	WEIGHT(lbs)	NOTES
HOOD	GREENHECK	GRRS–W–36–T–E–D–N	36X23.5X12.5	500	0.56	INLINE	KITCHEN	1.7	15	115/1	93	ALL

EXTERNAL FAN – TOP DISCHARGE WITH INLINE FAN
AUTOMATIC RANGER DEACTIVATION
FIRE TEST KIT (EMPTY TEST CYLINDER ONLY) COMPRESSED AIR TEST CYLINDER FOR PUFF TEST
48" HIGH CEILING ENCLOSURE FOR HIDING VENT DUCT

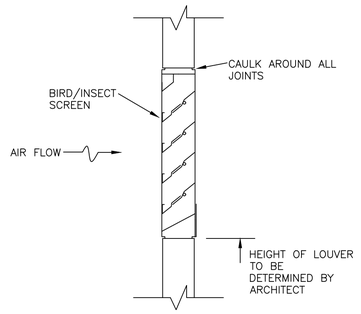
HOOD OPTIONS/ACCESSORIES:
MATERIAL: 300 SS WHERE EXPOSED
LISTED TO UL SUBJECT 300A
SELF–CONTAINED FIRE SUPPRESSION SYSTEM
ELECTRONIC DETECTION
FULLY PLUG AND PLAY DESIGN
NSF APPROVED SEALANT
FULL COLOR LCD TOUCH SCREEN USER INTERFACE – SHIPPED LOOSE FOR ADA COMPLIANCE
MANUAL PULL STATION
NFPA 101 COMPLIANT

INTEGRATE FOR EF–KH AS SHOWN ON PLANS
APPROVED EQUALS ACCEPTED



ROOF MOUNTED UPBLAST EXHAUST FAN

NOT TO SCALE



WALL LOUVER DETAIL

NOT TO SCALE

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE – SUITE 340
MARIETTA, GA 30060
770/795.8842

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

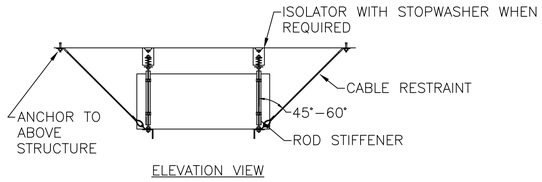
HVAC DETAILS & KITCHEN HOOD

HVAC DETAILS & KITCHEN HOOD

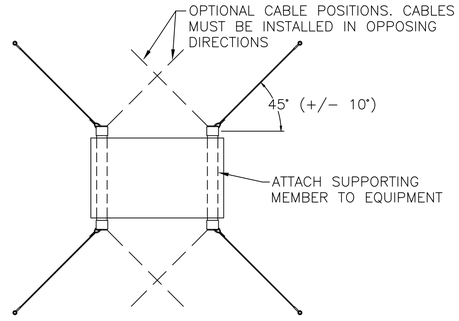
Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H10

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE – SUITE 349
MARIETTA, GA 30060
770/953-8842



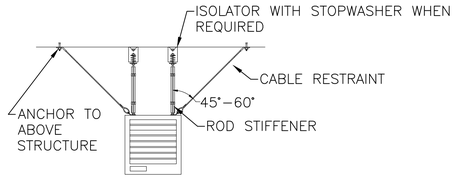
ELEVATION VIEW



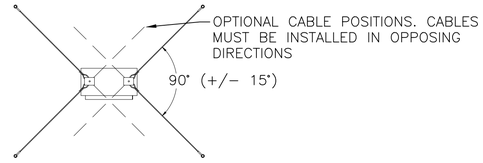
PLAN VIEW

SEISMIC BRACING – SUSPENDED EQUIPMENT

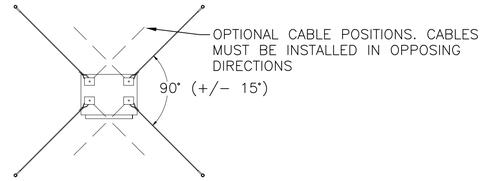
NOT TO SCALE



ELEVATION VIEW



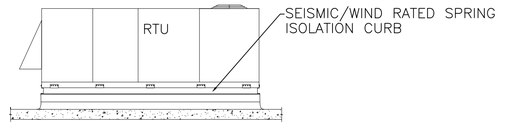
PLAN VIEW (2 ROD ATTACHMENT)

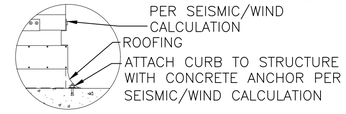


PLAN VIEW (4 ROD ATTACHMENT)

SEISMIC BRACING – SUSPENDED UNIT HEATER

NOT TO SCALE

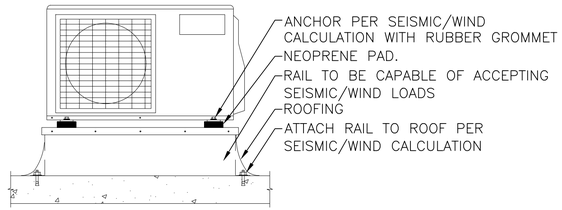




CONCRETE ATTACHMENT

VIBRATION & SEISMIC CONTROL – RTU

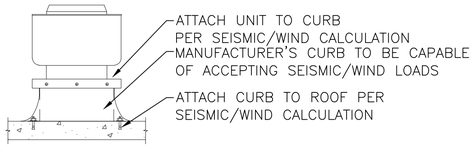
NOT TO SCALE



OPTION #1 – NEOPRENE ISOLATORS

VIBRATION & SEISMIC CONTROL – CONDENSING UNIT

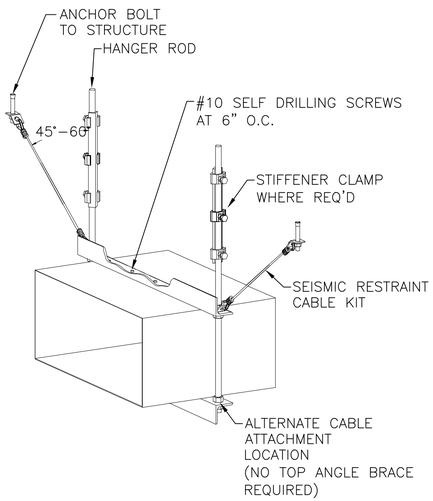
NOT TO SCALE

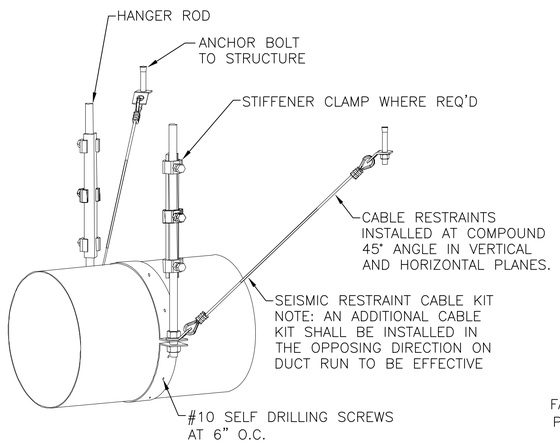


EXHAUST FAN

VIBRATION & SEISMIC CONTROL – ROOF MOUNTED FANS

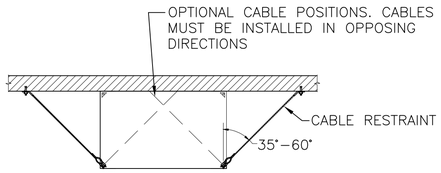
NOT TO SCALE



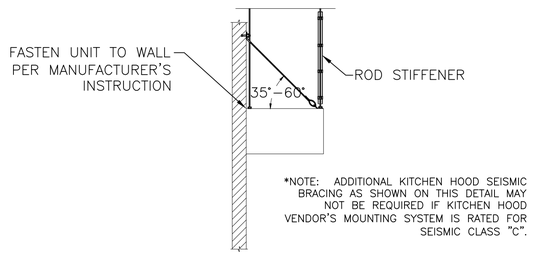


SEISMIC BRACING DETAILS – DUCT – TRANSVERSE CABLE RESTRAINT

NOT TO SCALE



PLAN VIEW



SIDE VIEW

SEISMIC BRACING – SUSPENDED KITCHEN HOOD

NOT TO SCALE

SEISMIC DESIGN NOTE

1. BUILDING HAS BEEN CATEGORIZED AS A SEISMIC CLASS "C" BUILDING.
2. MECHANICAL CONTRACTOR IS TO PROVIDE SEISMIC RESTRAINT SYSTEMS FOR EQUIPMENT AND DUCTWORK AS SHOWN ON DETAILS OR AS PROVIDED BY MECHANICAL SEISMIC EQUIPMENT VENDOR.
3. FOR ALL CONCRETE EXPANSION ANCHORING REFER TO STRUCTURAL PLANS S0–2 NOTE #7 STRUCTURAL PRECAST NOTES. ANCHOR TO BE EQUAL TO HILTI HDI–P DROP–IN ANCHOR OR APPROVED EQUAL.
4. MECHANICAL CONTRACTOR IS EXPECTED TO ADHERE TO ALL SMACNA STANDARDS FOR INSTALLATIONS AS IT REFERS TO THIS APPROPRIATE BUILDING SEISMIC CLASS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

HVAC SEISMIC DETAILS

HVAC
SEISMIC DETAILS

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H11

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953-8842

EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	CFM	EXT. SP	FAN RPM	TYPE	SERVES LOCATION	DRIVE	POWER	VOLT/PH	WEIGHT(lbs)	NOTES
HSP-EF-1	GREENHECK	SBE-2L48	25,000	0.1	425	WALL MOUNT	HSP STATION	BELT	3 HP	208/3	261	1

NOTES:
1. PROVIDE HOA MOTOR STARTER, OSHA MOTOR GUARD, 45° WEATHERHOOD, GRAVITY BACKDRAFT DAMPER

ELECTRIC UNIT HEATER SCHEDULE

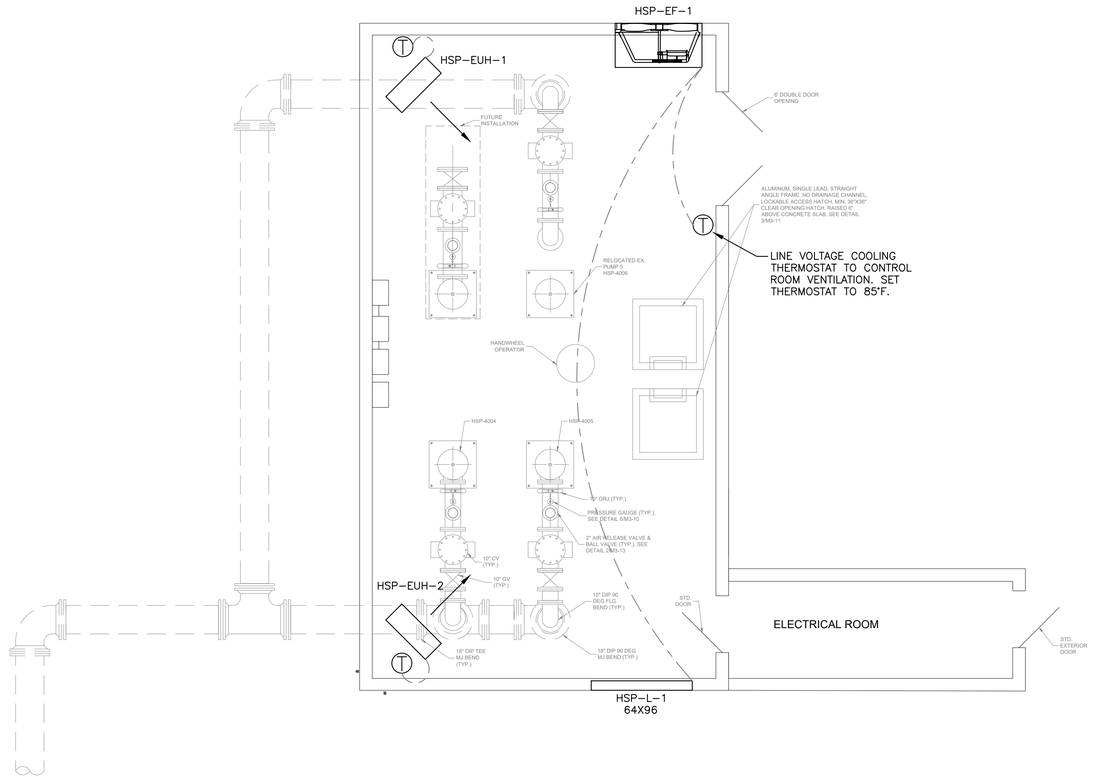
MARK	MAKE	MODEL	HEAT	VOLT/PH	MCA	MOCP	WEIGHT (lbs)	MOUNT	LOCATION	NOTES
HSP-EUH-1,2	TPI	UH SERIES	5 kW	208/3	14	15	44	HANGING	HSP STATION VAULT	1

NOTES:
1. 24V CONTROL VOLTAGE. THERMOSTAT AS SHOW ON DETAILS

COMBINATION LOUVER/DAMPER SCHEDULE

MARK	MAKE	MODEL	SIZE W"XH"	FREE AREA (FT^2)	MOTOR OPERATED	VOLT/PH	MCA	SERVES LOCATION	NOTES
HSP-L-1	GREENHECK	EAD-635	64X96	25	YES	120/1	1	HIGH SERVICE PUMP STATION	1,2,3

NOTES:
1. SEE INTERLOCKING SCHEDULES AND DETAILS
2. INCLUDE BIRD SCREEN
3. FINISH: BAKED ENAMEL, SEE ARCHITECTURAL FOR COLOR



1 / H11 HIGH SERVICE PUMP STATION HVAC PLAN
SCALE: 1/4"=1'0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

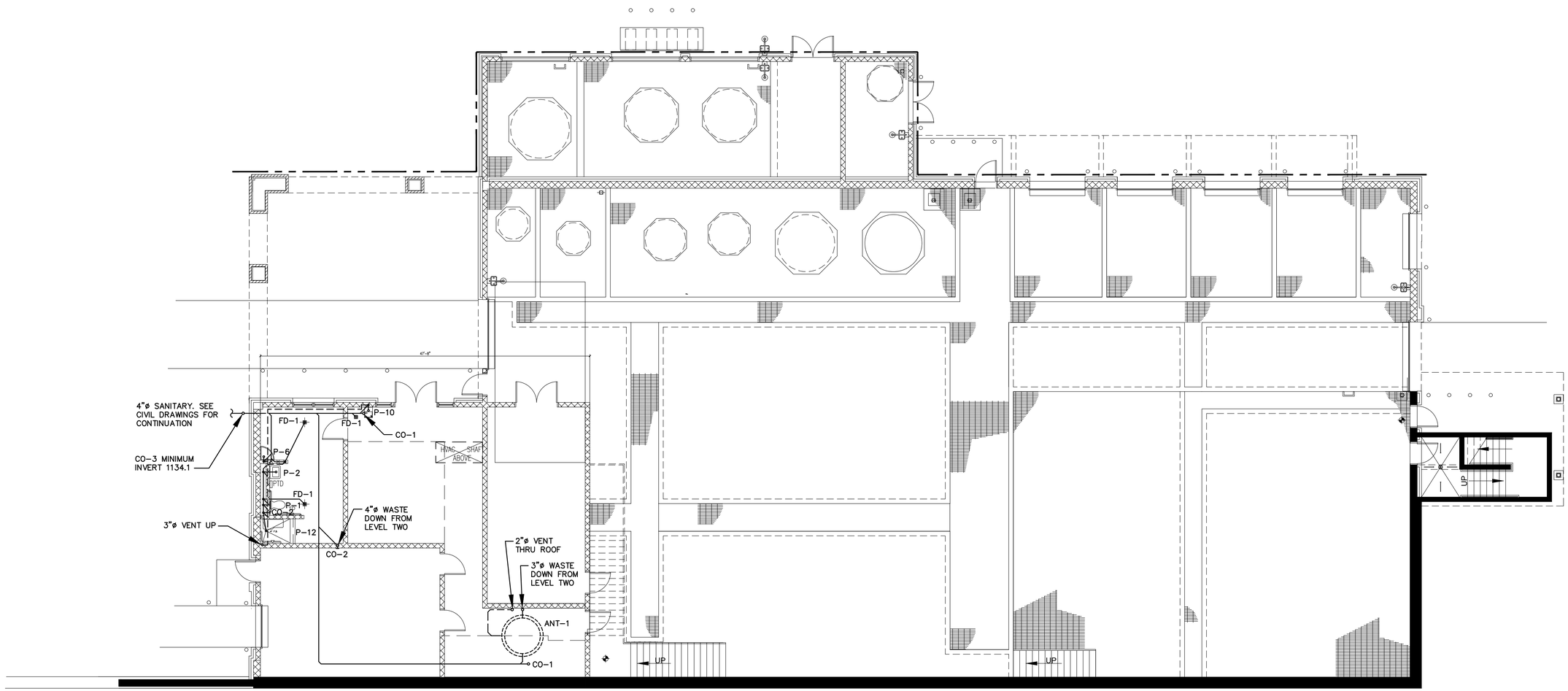
HIGH SERVICE PUMP STATION HVAC

HVAC
HIGH SERVICE PUMP STATION

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: H12

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



LEVEL ONE WASTE AND VENT PLAN

SCALE: 1/8" = 1'-0"
FFE = 1037 OR 0'-0" DATUM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

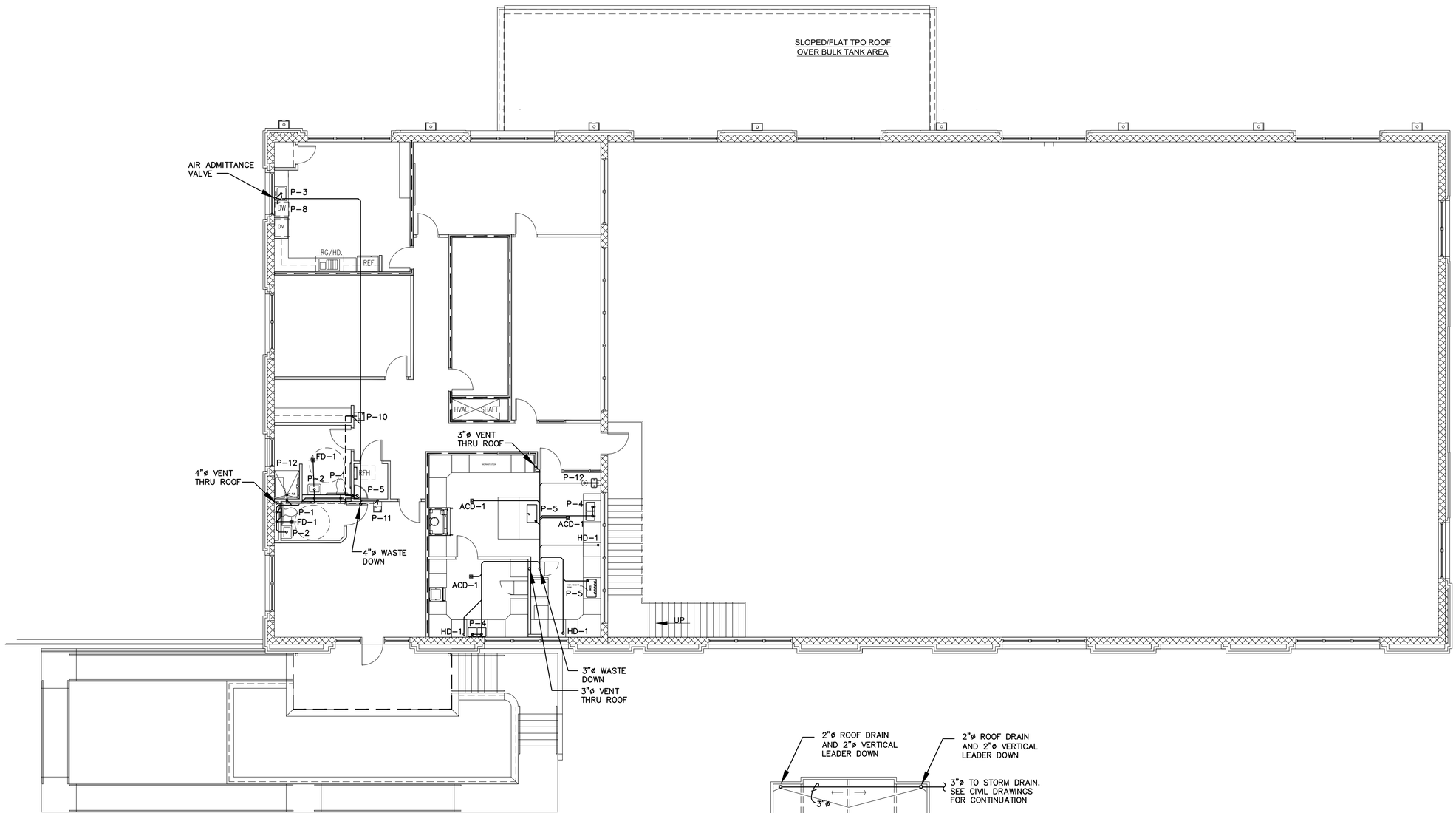
LEVEL 1 WASTE AND VENT PLAN

LEVEL 1 WASTE AND VENT PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

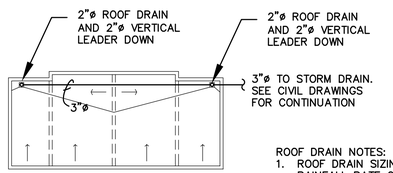
Project No.: 170110.00
Drawing No.: P1.1

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



LEVEL TWO WASTE AND VENT PLAN

SCALE: 1/8" = 1'-0"
FFE = +1155'-0"



PARTIAL ROOF DRAIN PLAN

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

ROOF DRAIN NOTES:
1. ROOF DRAIN SIZING BASED ON A 100 YEAR, 1 HOUR RAINFALL RATE OF 3.75 INCHES PER HOUR.
2. HORIZONTAL PIPE SIZES BASED ON 1/8" PER FOOT SLOPE.
3. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ROOF DRAINS AND LOCATION OF OVERFLOW SCUPPERS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

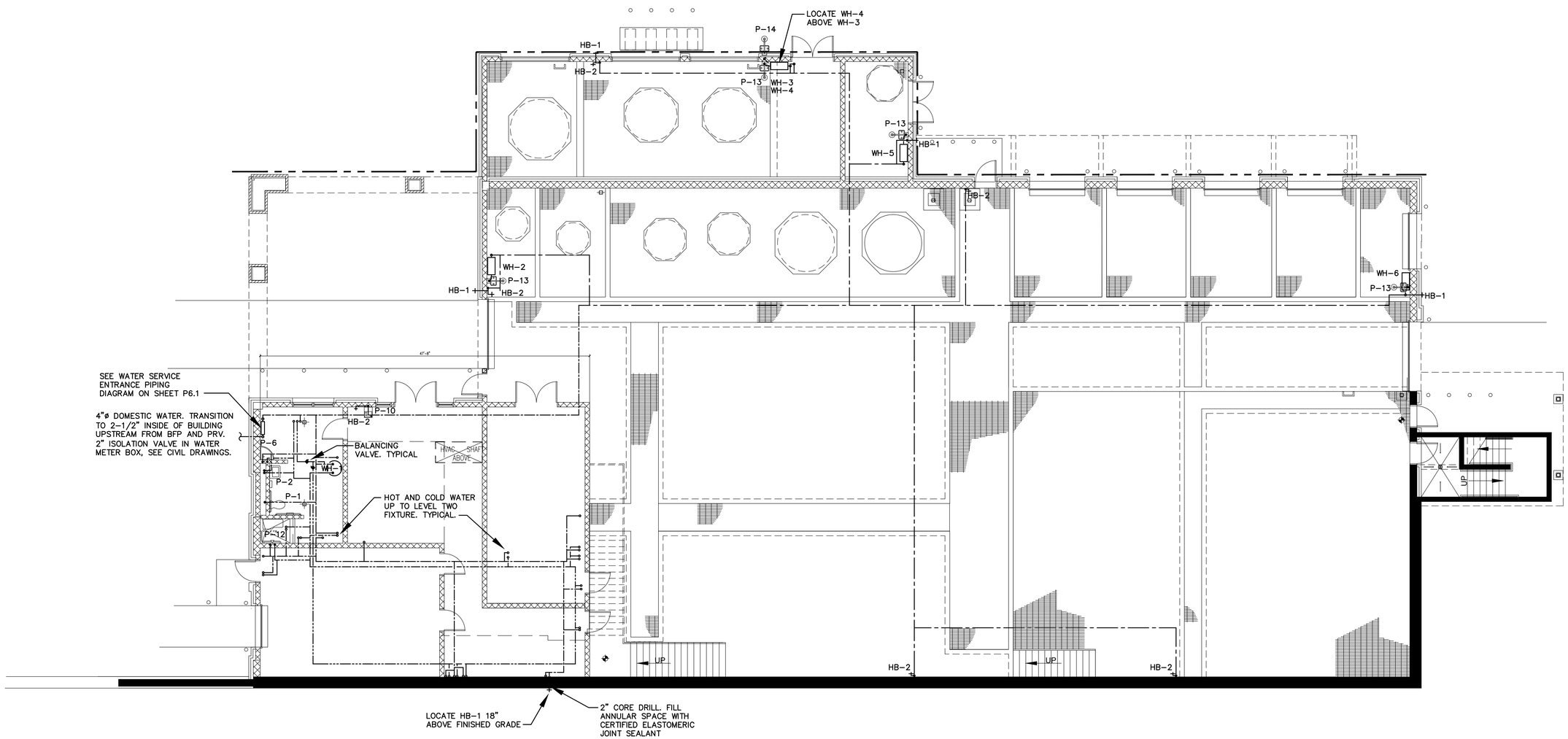
LEVEL 2 WASTE AND VENT PLAN

LEVEL 2 WASTE AND VENT PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: P2.1

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



LEVEL ONE DOMESTIC WATER PLAN

SCALE: 1/8" = 1'-0"
FFE = 1037 OR 0'-0" DATUM

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

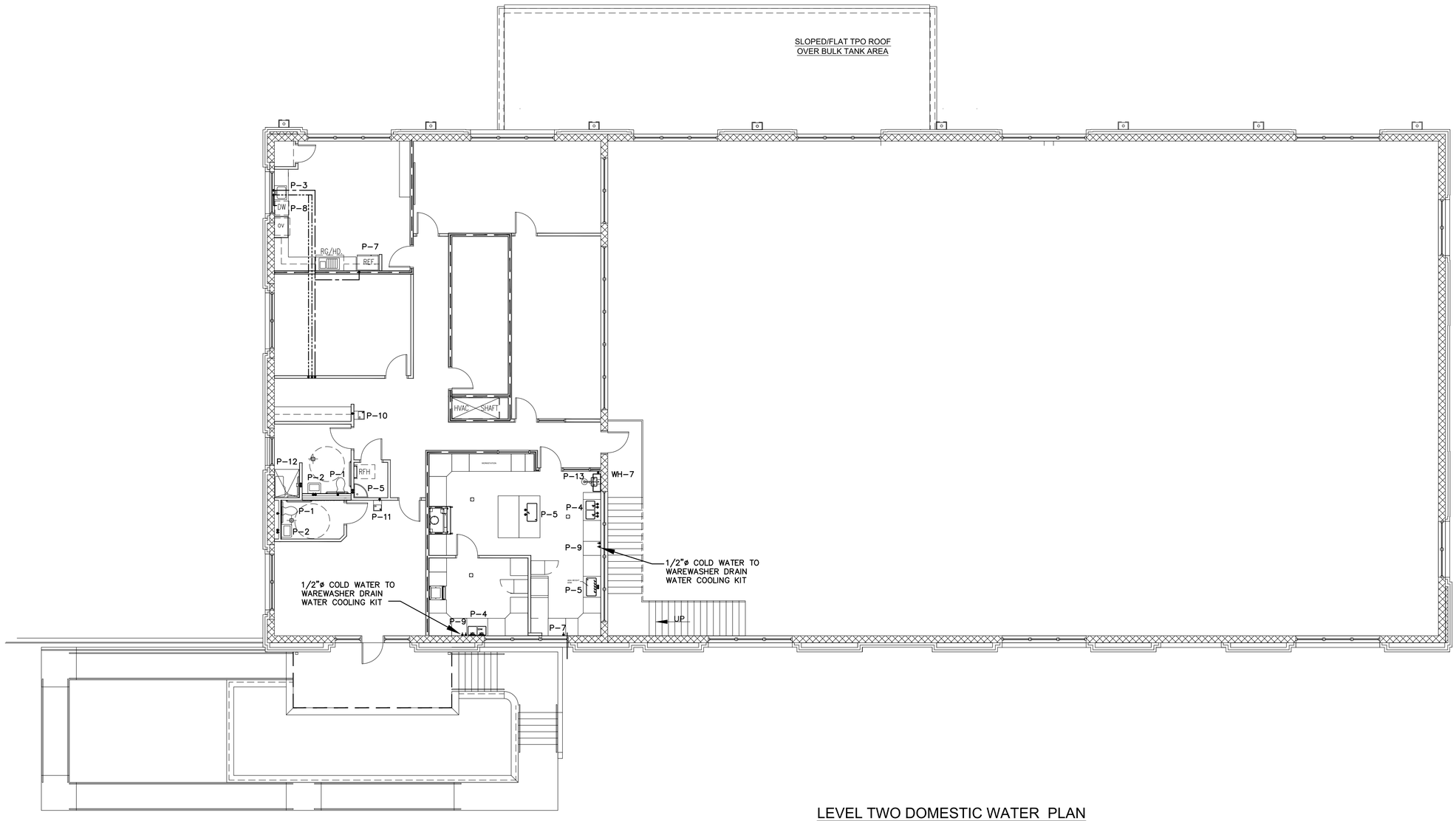
LEVEL 1 DOMESTIC WATER PLAN

LEVEL 1 DOMESTIC WATER PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: P3.1

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



LEVEL TWO DOMESTIC WATER PLAN

SCALE: 1/8" = 1'-0"
FFE = +1155'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

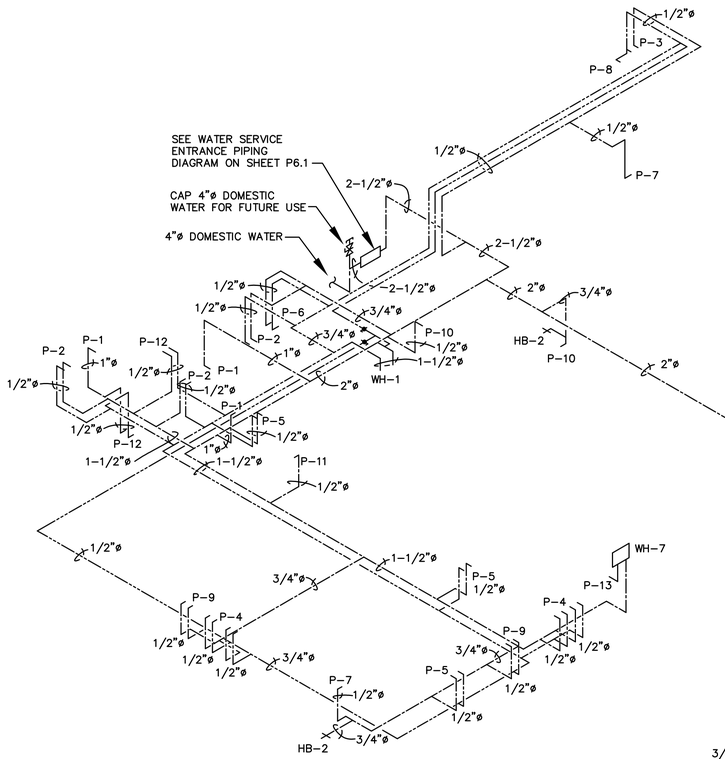
LEVEL 2 DOMESTIC WATER PLAN

LEVEL 2 DOMESTIC WATER PLAN

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

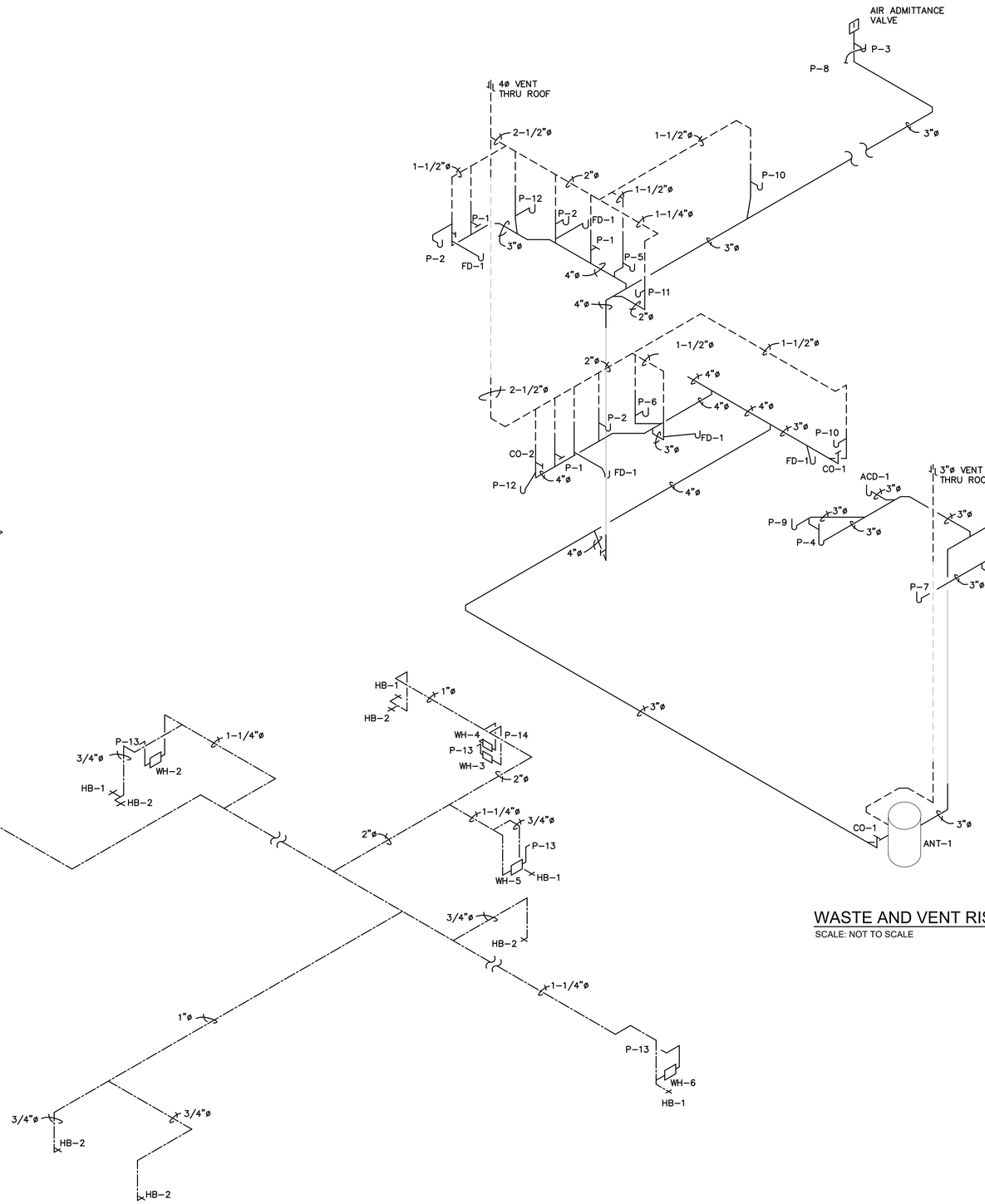
Project No.: 170110.00
Drawing No.: P4.1

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



DOMESTIC WATER RISER DIAGRAM

SCALE: NOT TO SCALE



WASTE AND VENT RISER DIAGRAM

SCALE: NOT TO SCALE

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LES M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

PLUMBING RISER DIAGRAMS

PLUMBING RISER DIAGRAMS

Project Manager: Jolene Northrop, P.E.

Drawn By: LS/KS | Checked By: LS/KS

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: P5.1

GENERAL PLUMBING NOTES AND SPECIFICATIONS

1. FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED FOR A COMPLETE PLUMBING SYSTEM IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES.
2. FURNISH AND INSTALL ALL SYSTEMS OF SOIL, WASTE, AND VENT PIPING, HOT WATER PIPING, COLD WATER PIPING AND DRAINAGE PIPING INCLUDING ALL FITTINGS, VALVES, ETC. AS REQUIRED.
3. FURNISH AND INSTALL ALL PLUMBING FIXTURES AND EQUIPMENT AS SHOWN ON THE DRAWINGS.
4. ALL PLUMBING WORK SHALL BE DONE UNDER THE SUPERVISION OF AND BY LICENSED AND QUALIFIED PLUMBERS PER ALL LOCAL, STATE, AND NATIONAL CODES AND TO THE COMPLETE SATISFACTION OF THE LOCAL PLUMBING INSPECTOR.
5. ALL MATERIALS SHALL BE NEW, CLEAN, AND WITHOUT DEFECTS. ANY DEFECTIVE MATERIALS SHALL BE REMOVED FROM JOB SITE.
6. ALL HOT AND COLD WATER PIPING SHALL BE COPPER TYPE "L" WITH SOLDERED JOINTS.
7. ALL HOT WATER PIPING SHALL BE INSULATED WITH 1" THICK FIBERGLASS PIPE INSULATION.
8. SANITARY, WASTE AND VENT PIPING BURIED WITHIN 5 FEET OF BUILDING SHALL BE ASTM D2665, SOLID CORE PVC SCH. 40 PIPE.
9. SANITARY, WASTE, AND VENT PIPING ABOVE GRADE SHALL BE ASTM D2665, SOLID CORE, PVC SCHEDULE 40 PIPE.
10. CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS AT EACH CHANGE IN DIRECTION. CLEANOUTS SHALL BE PLACED IN READILY ACCESSIBLE LOCATIONS.
11. INSTALL AN ISOLATION VALVE FOR EACH FIXTURE CONNECTED.
12. UPON COMPLETION OF THE WORK, TEST ALL PIPING SYSTEM AS FOLLOWS:
    - A. DRAINAGE SYSTEMS INCLUDING SANITARY SEWERS, ROOF DRAINAGE, AND SANITARY VENTS: PLUG LOW POINTS OF SYSTEM AND FILL WITH WATER TO UPPERMOST OUTLET OR TO 12 FEET HIGH, WHICHEVER IS LOWER. LET SYSTEM STAND FULL OF WATER WITH NO INDICATIONS OF LEAKS.
    - B. DOMESTIC HOT AND COLD WATER: 150 PSIG HYDROSTATIC TEST. HOLD HYDROSTATIC TESTS FOR A MINIMUM OF EIGHT HOURS WITHOUT LOSS OF PRESSURE. HOLD AIR TESTS FOR A MINIMUM OF ONE HOUR WITHOUT SIGNIFICANT LOSS OF PRESSURE. WITH APPROVAL OF ARCHITECT, AIR TESTING MAY BE SUBSTITUTED FOR HYDROSTATIC TESTING IN FREEZING WEATHER.
13. RETESTING: RETEST PIPING FAILING INITIAL TESTS FOLLOWING CORRECTION OF DEFECTIVE WORK. REQUIREMENTS OF INITIAL TESTS SHALL APPLY.
14. BACK FLOW PREVENTER TO BE EQUAL TO WATTS SERIES 007.
15. WATER PRESSURE REDUCING VALVE TO BE EQUAL TO WATTS 223-S (SET AT 50 PSIG).
16. ALL FLOOR DRAINS ON THE SANITARY SYSTEM ARE TO HAVE AUTOMATIC TRAP PRIMERS. SURE SEAL #22X009 TRAP SEAL ONE WAY VALVES OR EQUAL MAY BE USED IF ALLOWED BY LOCAL CODE.
17. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES. SIZE AND LOCATE PER MANUFACTURER'S RECOMMENDATION.

GENERAL CONSTRUCTION NOTES

1. REPLACE OR REPAIR ANY EXISTING EQUIPMENT DISTURBED OR DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION.
2. DISPOSE OF ALL WASTE MATERIALS IMMEDIATELY AND KEEP PREMISES CLEAN AT ALL TIMES.
3. THE CONTRACTOR SHALL ACCEPT THE PROJECT SITE IN "AS IS" CONDITION. HE SHALL VERIFY ALL THE EXISTING CONDITIONS AND THOSE FOR THE EXISTING WORK TO BE REUSED OR ALTERED. CONTRACTOR SHALL INCLUDE COSTS OF ALL REQUIRED MODIFICATIONS OR REPLACEMENTS IN ACCORDANCE WITH APPLICABLE PLANS AND SPECIFICATION SECTIONS.
4. THE DIMENSIONS AND COUNTS PROVIDED IN THE DRAWINGS AND SPECIFICATIONS ARE FIELD MEASURED AND MAY NOT BE EXACT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE, TAKE NECESSARY MEASUREMENTS, COUNTS AND FAMILIARIZE HIMSELF WITH ALL THE JOB CONDITIONS PRIOR TO PROCEEDING WITH THE WORK.
5. CONFINE OPERATIONS AT THE SITE TO AREAS PERMITTED BY LAW, ORDINANCES, PERMITS, CONTRACT DOCUMENTS AND THE OWNER.
6. DO NOT UNREASONABLY ENCUMBER PREMISES WITH MATERIALS OR EQUIPMENT.
7. DO NOT LOAD STRUCTURES WITH WEIGHT THAT WILL ENDANGER STRUCTURE. ASSUME FULL RESPONSIBILITY FOR PROTECTION AND SAFEKEEPING OF PRODUCTS AND EQUIPMENT STORED ON PREMISES.
8. MAINTAIN THE PREMISES IN CLEAN AND SAFE CONDITION AT ALL TIMES.
9. THE CONTRACT OPERATIONS SHOULD NOT CAUSE ANY HINDRANCE, NUISANCE, LACK OF SAFETY, BLOCKED MEANS OF ENTRANCE AND EXIT, DAMAGE TO PROPERTY AND PERSON, DISRUPTION OF UTILITIES, EXCESSIVE AND OFFENSIVE NOISE AND DUST TO ANY OF THE ADJOINING PROPERTIES AND PERSONS. REMOVE SUCH CONDITION FORTHWITH, SHOULD THEY OCCUR AND REPAIR OR REPLACE THE DAMAGE AT OWN COST TO THE APPROVAL OF THE ENGINEER.
10. PROVIDE ACCESS TO OWNER'S AUTHORIZED PERSONS AND THE POLICE, FIRE OR OTHER DEPARTMENTS HAVING LEGAL JURISDICTION TO THE SITE AT ALL TIMES AND PROVIDE COOPERATION IN THEIR WORK.

PLUMBING FIXTURE SCHEDULE ①②

NAME	ITEM	MANUFACTURER & MODEL NUMBER		FITTINGS	REMARKS
P-1	WATER CLOSET (WALL HUNG, ADA)	KOHLER	KINGSTON K-4325	FLUSH VALVE: SLOAN G2 8111-1.28	ADA, OPEN FRONT SEAT, LESS COVER
P-2	LAVATORY (WALL HUNG)	KOHLER	HUDSON K-2805	FAUCET: DELTA 590T1150	INSULATE EXPOSED PIPING UNDER LAV, MAX. 0.5 GPM
P-3	SINGLE SINK	ELKAY	LRAD 252265	FAUCET: DELTA 400LF-HDF	INSULATE EXPOSED PIPING UNDER LAV, MAX. 0.5 GPM
P-4	DOUBLE LAB SINK	BY OTHERS	–	BY OTHERS	–
P-5	SINGLE LAB SINK	BY OTHERS	–	BY OTHERS	–
P-6	MOP SINK	FIAT	TSBCR1000 28"X28"	SEE NOTE ③	–
P-7	ICE MAKER SUPPLY BOX	GUY GRAY MFG.	BIM875	WITH SHUT-OFF VALVE AND WATTS SD-2 BACKFLOW PREVENTER	ICE MAKER/REFRIGERATOR BY OTHERS
P-8	DISHWASHER (BREAKROOM)	BY OTHERS	–	–	INSTALLED BY THE PLUMBING CONTRACTOR
P-9	DISHWASHER (LAB GLASSWARE WASHER)	BY OTHERS	–	PROVIDE COLD WATER FOR DRAIN WATER COOLING KIT	INSTALLED BY THE PLUMBING CONTRACTOR
P-10	WATER COOLER	ELKAY EZH2O	EZS8WSLK	NON-FILTERED, CHILLED WATER WITH BOTTLE FILLER	–
P-11	WATER COOLER	ELKAY EZH2O	EZS8LF	SINGLE LEVEL CHILLED WATER	–
P-12	SHOWER	TILE SHOWER BY OTHERS		FAUCET: SYMMONS TEMPTROL C-96-300-B30-V-X	SHOWER DRAIN. JAY R. SMITH 216
P-13	EYE WASH/SHOWER	ULINE	H-6697	–	–
P-14	EYE WASH/SHOWER (NON-FREEZE)	GUARDIAN	GFR3100	–	–
FD-1	FLOOR DRAIN	JAY R. SMITH	2005	–	SURE SEAL #SSX009 TRAP SEALER ONE WAY VALVE
ACD-1	ACID DRAIN	JAY R. SMITH	3021	ACID RESISTANT COATING, SEDIMENT BUCKET	SURE SEAL #SSX009 TRAP SEALER ONE WAY VALVE
HD-1	HUB DRAIN	JAY R. SMITH	2641	–	SURE SEAL #SSX009 TRAP SEALER ONE WAY VALVE
CO-1	FLOOR CLEANOUT	JAY R. SMITH	4020	–	–
CO-2	WALL CLEANOUT	JAY R. SMITH	4710	–	–
CO-3	EXTERIOR CLEANOUT	SIOUX CHIEF	834-4PNR	WITH PRECAST COLLAR	–
ANT-1	ACID NEUTRALIZATION TANK	TOWN & COUNTRY	NT-150	LIME CHIPS CAPACITY – APPROX. 1750 POUNDS	
HB-1	WALL HYDRANT (NON-FREEZE)	JAY R. SMITH	5609QT	FREEZE RESISTANT, INTEGRAL VACUUM BREAKER	–
HB-2	WALL HYDRANT (NARROW WALL)	JAY R. SMITH	5618	NARROW WALL, WARM CLIMATE, INTEGRAL VACUUM BREAKER	

① EQUAL MANUFACTURERS ACCEPTED.
② ALL PORCELAIN FIXTURES ARE TO BE WHITE AND ARE TO BE PROVIDED BY THE SAME MANUFACTURER.
③ FAUCET: FIAT 830AA, HOSE & BRACKET: FIAT 832AA, MOP BRACKET: FIAT 889CC, WALL GUARD: FIAT MSG28 (2 REQ'D)

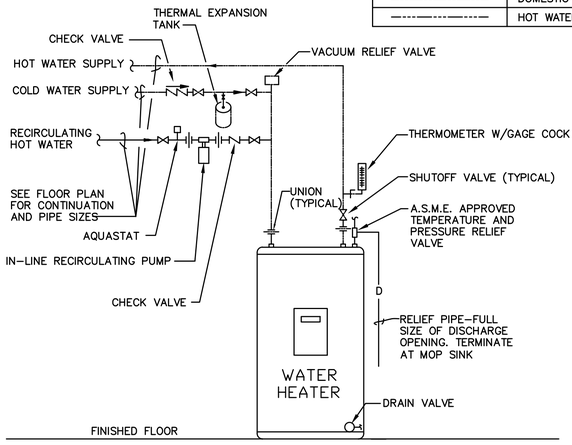
WATER HEATER SCHEDULE

NO.	MANUFACTURE & MODEL NO.	CAPACITY (GALLONS)	ELEMENT	REMARKS
WH-1	A.O. SMITH DRE-52-9	50	9KW, 480V, 3ø	①②③④
WH-2	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤
WH-3	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤
WH-4	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤
WH-5	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤
WH-6	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤
WH-7	EEMAX AP048480 EFD N4	TANKLESS	48KW, 480V, 3ø	①④⑤

① EQUAL MANUFACTURERS ACCEPTED
② EXPANSION TANK EQUAL TO AMTROL ST-5.
③ IN-LINE CIRCULATOR EQUAL TO TACO 006-B4.
④ COORDINATE WITH ELECTRICAL.
⑤ 65°F OUTLET TEMPERATURE.

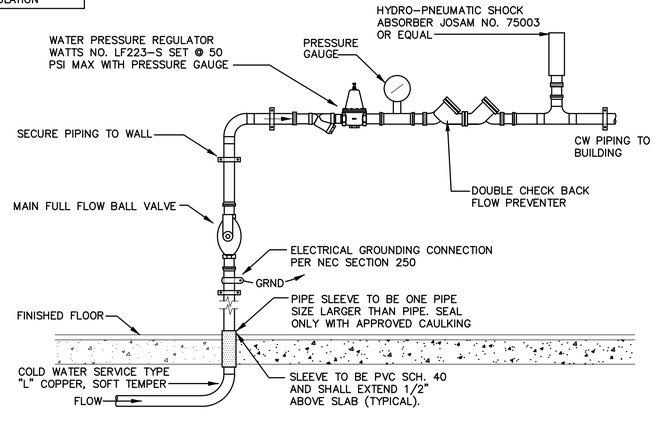
PLUMBING LEGEND

————	SANITARY WASTE PIPING
- - - - - -	SANITARY VENT PIPING
—·—·—·—	DOMESTIC COLD WATER
—··—··—··	DOMESTIC HOT WATER
—·—·—·—	HOT WATER CIRCULATION

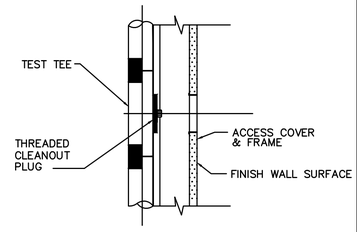


WATER HEATER PIPING DIAGRAM
NO SCALE

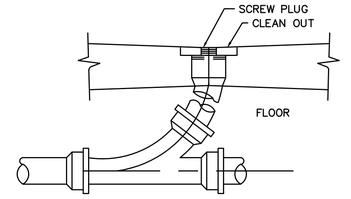
PIPE HANGERS AND SUPPORTS DETAIL
NOT TO SCALE



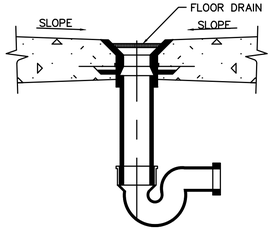
WATER SERVICE ENTRANCE DIAGRAM
NO SCALE



WALL CLEANOUT DETAIL
NO SCALE



FLOOR CLEANOUT DETAIL
NO SCALE



FLOOR DRAIN DETAIL
NO SCALE

S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

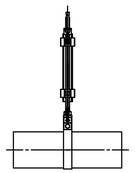
NOTES, SCHEDULES AND DETAILS

NOTES, SCHEDULES AND DETAILS

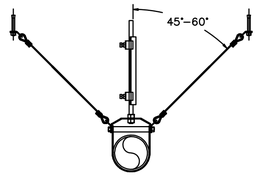
Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: P6.1

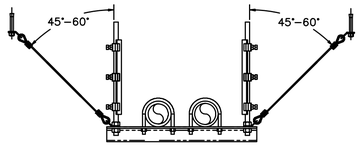
S&S ENGINEERS
PROFESSIONAL CONSULTING ENGINEERS
143 CHURCH ST. NE - SUITE 340
MARIETTA, GA 30060
770/953.8842



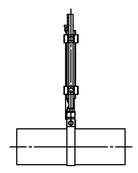
SIDE VIEW



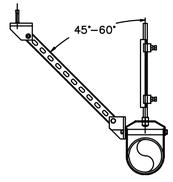
END VIEW



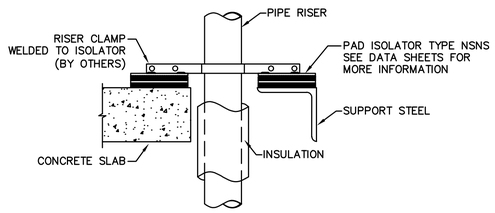
END VIEW



SIDE VIEW



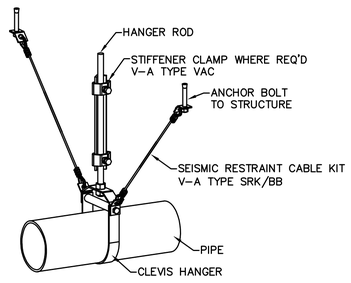
END VIEW



PIPE RISER WITH PAD TYPE ISOLATORS SUPPORT DETAIL

PIPE RISER SUPPORT DETAIL – PAD ISOLATORS

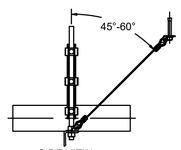
NOT TO SCALE



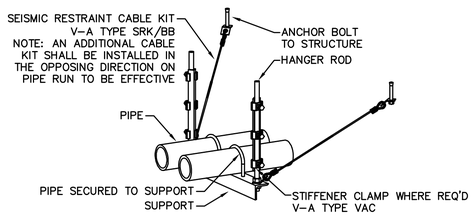
ISOMETRIC VIEW

SEISMIC BRACING DETAILS – PIPING – TRANSVERSE CABLE RESTRAINT

NOT TO SCALE



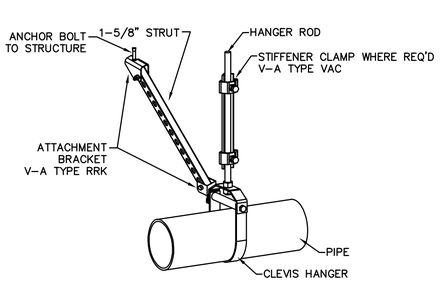
SIDE VIEW



ISOMETRIC VIEW

SEISMIC BRACING DETAILS – PIPING – COMBINATION CABLE RESTRAINT (TRAPEZE)

NOT TO SCALE



ISOMETRIC VIEW

SEISMIC BRACING DETAILS – PIPING – TRANSVERSE RIGID RESTRAINT

NOT TO SCALE

SEISMIC DESIGN NOTE

1. BUILDING HAS BEEN CATEGORIZED AS A SEISMIC CLASS "C" BUILDING.
2. PLUMBING CONTRACTOR IS TO PROVIDE SEISMIC RESTRAINT SYSTEMS FOR EQUIPMENT AND PIPING AS SHOWN ON DETAILS OR AS PROVIDED BY SEISMIC EQUIPMENT VENDOR.
3. FOR ALL CONCRETE EXPANSION ANCHORING REFER TO STRUCTURAL PLANS S0–2 NOTE #7 STRUCTURAL PRECAST NOTES. ANCHOR TO BE EQUAL TO HILTI HDI–P DROP–IN ANCHOR OR APPROVED EQUAL.
4. PLUMBING CONTRACTOR IS EXPECTED TO ADHERE TO ALL PLUMBING STANDARDS FOR INSTALLATIONS AS IT REFERS TO THIS APPROPRIATE BUILDING SEISMIC CLASS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No: PE038561 PROFESSIONAL ENGINEER LEE M. SAUNDERS JR.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

PLUMBING SEISMIC DETAILS

PLUMBING RISER DIAGRAMS

Project Manager: Jolene Northrop, P.E.
Drawn By: LS/KS
Checked By: LS/KS
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: P7.1

QUICK CONNECT, CAMLOCK TYPE

FLEXIBLE HOSE

CAPPED FLANGE CONNECTION

FLANGE CONNECTION

HOSE CONNECTION, FLUSH

VENT

CALIBRATION COLUMN

POSITIVE DISPLACEMENT METERING PUMP

PD
PULSATION DAMPENER

LEVEL SENSOR, FLOAT TYPE

I
INLINE FILTER

DRAIN

AIR INTAKE FILTER

AUTO STRAINER

VERTICAL TURBINE PUMP

CENTRIFUGAL PUMP

M
SUBMERSIBLE PUMP

GEAR PUMP

PERISTALTIC PUMP

PRESSURE VESSEL

ROTARY LOBE COMPRESSIVE BLOWER

F
INLET FILTER

HEATER

AIR COMPRESSOR PISTON

REFRIGERATED AIR DRYER

LEVEL TRANSMITTER

M
MOTORIZED OPERATOR

S
SOLENOID OPERATOR

PNEUMATIC OPERATOR

Z
M
MOTORIZED OPERATOR WITH POSITIONER

Z
PNEUMATIC OPERATOR WITH POSITIONER

DIAPHRAGM OPERATOR (SINGLE ACTING)

DIAPHRAGM OPERATOR (DOUBLE ACTING)

MANUAL OPERATOR

PISTON SPRING TO OPEN

PISTON SPRING TO CLOSE

CHEMICAL FEED INJECTOR W/ CORPORATION STOP

REDUCING CONNECTION

WYE STRAINER

PIPE PLUG

CHEMICAL SEAL

PRESSURE SNUBBER

MUD LEG

INLET STRAINER

STRAINER, FILTER OR COALESER

M
MOTOR

STATIC MIXER

SILENCER

ROTARY SCREW COMPRESSOR

FLOW INDICATOR

AIR RELEASE VALVE

TEE JOINT FOR FUTURE CONNECTIONS

CONTAINMENT AREA

VACUUM BREAKER

THREADED CONNECTION

DIFFERENTIAL CONTROL VALVE

FOUR WAY VALVE

TELESCOPING VALVE

ADJUSTABLE WEIR

WEIR

GATE VALVE

BALL VALVE

PLUG VALVE

GLOBE VALVE

PINCH VALVE

BUTTERFLY VALVE

CHECK VALVE

NEEDLE VALVE

MUD VALVE

THREE WAY VALVE

SLIDE GATE

ANGLE VALVE

PRESSURE RELIEF VALVE

VACUUM RELIEF VALVE

PRES/VAC RELIEF VALVE

DIAPHRAGM VALVE

BACK PRESSURE VALVE

RUPTURE DISC (PRESSURE)

RUPTURE DISC (VACUUM/PRESSURE)

RUPTURE DISC (VACUUM)

EXPANSION JOINT

SWC
SEAL WATER CONTROLLER

ORIFICE TYPE

TURBINE OR PROPELLER TYPE PRIMARY ELEMENT

M
MAGNETIC FLOWMETER

AVERAGING PITOT TUBE

TARGET TYPE SENSOR

VORTEX SENSOR

SINGLE PORT PITOT TUBE OR PITOT-VENTURI TUBE

FLOW ELEMENT VENTURI / EJECTOR TYPE

FLUME

NOTE:
1. ALL VALVES WITH NO ACTUATOR SHOWN ARE ASSUMED TO BE HAND OPERATED.
2. FOR MORE INFORMATION ON NORMALLY OPEN AND NORMALLY CLOSED VALVE POSITIONS FOR ALL VALVES PROVIDED BY SUEZ, SEE SUEZ PROVIDED P&IDS.

INSTRUMENT SYMBOL DESCRIPTION

T1 / T2 — PILOT LIGHT

T1 / T2 — LOCAL FIELD INSTRUMENT

T1 — PANEL MOUNTED INSTRUMENT

T1 / T2 — BEHIND-THE-PANEL MOUNTED INSTRUMENT

T1 / T2 — AUXILIARY LOCATION PANEL MOUNTED INSTRUMENT

T1 / T2 — AUXILIARY LOCATION MOUNTED BEHIND PANEL

T1 / T2 — PLC SOFTWARE FUNCTION

T1 / T2 — PLC DISPLAY OPERATOR INTERFACE

T1 / T2 — DCS SOFTWARE FUNCTION

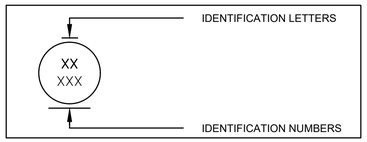
T1 / T2 — DCS DISPLAY OPERATOR INTERFACE

I — INTERLOCK

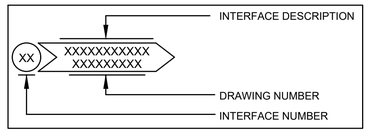
A — ANALOG INPUT/OUTPUT

D — DISCRETE INPUT/OUTPUT

PROCESS INSTRUMENT TAG/CODE NUMBERING



IDENTIFICATION, GENERAL



PIPING & INFORMATION LINE SYMBOLS

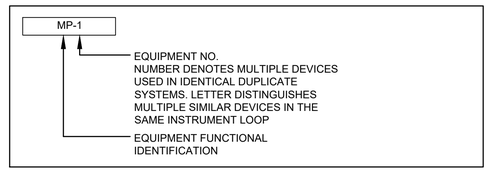
LINE	DESCRIPTION
	PROCESS LINE - PRIMARY
	PROCESS LINE - SECONDARY
	PROCESS LINE - TERTIARY
	PROCESS LINE - FUTURE
	PROCESS EQUIPMENT BY SUEZ
# #	PNEUMATIC SIGNAL
\ \	ELECTRIC BINARY SIGNAL
	ELECTRIC SIGNAL
	PACKAGE BOUNDARY
L L	HYDRAULIC SIGNAL
O O	SOFTWARE OR DATA LINK
	ULTRASONIC SIGNAL (UNGUIDED)
X	AIR PIPING
	SECONDARY CONTAINED PIPING
A A	ANALOG SIGNAL
	ARROW INDICATES DIRECTION OF FLOW OR INFORMATION
	LINE BREAK

IDENTIFICATION LETTERS

	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAIL
G	GAUGE		GLASS, VIEWING DEVICE	GATE	
H	HAND (MANUAL)				HIGH/HIGH-HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW/OFF
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE				MIDDLE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR EVENT	INTERGRATE, TOTALIZE	TOTALIZE		
R	RADIATION		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY	SPEED, FREQUENCY	SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTES:
1. WHEN THE TERMS "HIGH" AND "LOW" ARE APPLIED TO POSITIONS OF VALVES AND OTHER OPEN-CLOSE DEVICES, "HIGH" SHALL DESIGNATE THE FULLY OPEN POSITION, AND "LOW" SHALL DESIGNATE THE FULLY CLOSED POSITION.

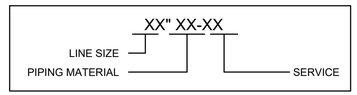
EQUIPMENT TAG



EQUIPMENT NUMBERING

1000	RAW WATER
2000	FEED WATER
3000	FILTRATE WATER
4000	FINISHED WATER
5000	CHEMICAL
6000	SERVICE WATER
7000	WASTE WATER
8000	UTILITY WATER
9000	OTHER

LINE NUMBERING



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID LEGEND, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I0-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

SERVICE DESIGNATIONS

AQUAMAG	AQUAMAG CORROSION INHIBITOR
AS	AIR SCOUR
BWS	BACKWASH SUPPLY
BWW	BACKWASH WASTE
CA	COMPRESSED AIR
CIPS	CIP SOLUTION
CIPM	CIP MAKE UP WATER
CIPW	CIP WASTE
CIT	CITRIC ACID
COAG	COAGULANT
DR	DRAIN
EFF	MEMBRANE EFFLUENT
EXH	EXHAUST
FEED	MEMBRANE FEED
FLUORIDE	HYDROFLUOROSILICIC ACID
HCL	HYDROCHLORIC ACID
LIME	LIQUID LIME SLURRY
MIT	MEMBRANE INTEGRITY FEED
NaOCL	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE
OF	OVERFLOW
PA	PROCESSED AIR
RAW	RAW WATER
SBW	STRAINER BACKWASH
SBWS	STRAINER BACKWASH SUPPLY
VAC	VACUUM
WASTE	NEUTRALIZED WASTEWATER

PIPE MATERIAL CODES

CPVC	SCHEDULE 80 CPVC PIPE
CU	COPPER TUBING
DIP	DUCTILE IRON PIPE
HT	HEAT TRACE
HDPE	150 PSI PRESSURE CLASS POLYPROPYLENE PIPE
PP	150 PSI PRESSURE CLASS HIGH-DENSITY POLYETHYLENE PIPE
PVC	SCHEDULE 80 PVC PIPE
PVDF	230 PSI PRESSURE CLASS PVDF PIPE
RCP	REINFORCED CEMENT PIPE
SS	TYPE 316/316L STAINLESS STEEL PIPE
SST	STAINLESS STEEL TUBING
STL	FABRICATED STEEL PIPE
STL-EL	EPOXY LINED FABRICATED STEEL PIPE

PROCESS NOMENCLATURE

CIP	CLEAN-IN-PLACE
CP	CONTROL PANEL
FCV	POWER-OPERATED FLOW CONTROL VALVE
MF	MEMBRANE FILTRATION
OIT	OPERATOR INTERFACE TERMINAL
PC	PNEUMATIC CONTROLLER
PLC	PROGRAMMABLE LOGIC CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE

EQUIPMENT FUNCTIONAL IDENTIFICATION

BFV	BUTTERFLY VALVE
BT	BULK TANK
BV	BALL VALVE
BWP	BACKWASH PUMP
BWR	BLOWER
CC	CALIBRATION COLUMN
CL	CLEARWELL
CMP	COMPRESSOR
CV	CHECK VALVE
DP	DOSING PUMP
DT	DAY TANK
F	FILTER
GV	GATE VALVE
HSP	HIGH SERVICE PUMP
MFP	MEMBRANE FEED PUMP
PD	PULSATION DAMPENER
PDS	PRESSURE DIAPHRAGM SEAL
PSP	PRESETTLING POND
RMX	RAPID MIXER
RWP	RAW WATER PUMP
SC	SCREEN
SMX	STATIC MIXER
SP	SLUDGE PUMP
ST	STRAINER
T	TANK
TP	TRANSFER PUMP

INSTRUMENT/DEVICE FUNCTION OR CONTROL DESCRIPTORS

ANALYTICAL DESCRIPTORS		SWITCH/DEVICE DESCRIPTORS	
		J/O/R	JOG-OFF-REMOTE
CL2	FREE CHLORINE	AK	ACKNOWLEDGE
COND	CONDUCTIVITY	ANN	ANNUNCIATOR
DCL2	DECHLORINATION ANALYZER	ES	EMERGENCY STOP
DP	DIFFERENTIAL PRESSURE	H/O/A	HAND-OFF-AUTOMATIC
LEAK	LEAK DETECTION	J/O/R	JOG-OFF-REMOTE
NH3	AMMONIA	LO/S	LOCKOUT-STOP
ORP	OXIDATION REDUCTION POTENTIAL	L/R	LOCAL-REMOTE
pH	HYDROGEN ION CONCENTRATION	M/A	MANUAL-AUTOMATIC
TCL2	TOTAL CHLORINE	O/C	OPEN-CLOSE
TEMP	TEMPERATURE	O/C/R	OPEN-CLOSE-REMOTE
TOC	TOTAL ORGANIC CARBON	O/O	ON-OFF
TURB	TURBIDITY	O/O/A	ON-OFF-AUTO
		O/O/R	ON-OFF-REMOTE
		O/S/C	OPEN-STOP-CLOSE
		PB	PUSHBUTTON
		POS	POSITIONER OR POSITION
		POT	POTENTIOMETER
		SEL	SELECTOR
		S/S	START-STOP
		L/O/R	LOCAL-OFF-REMOTE
		NO	NORMALLY OPEN
		NC	NORMALLY CLOSED

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

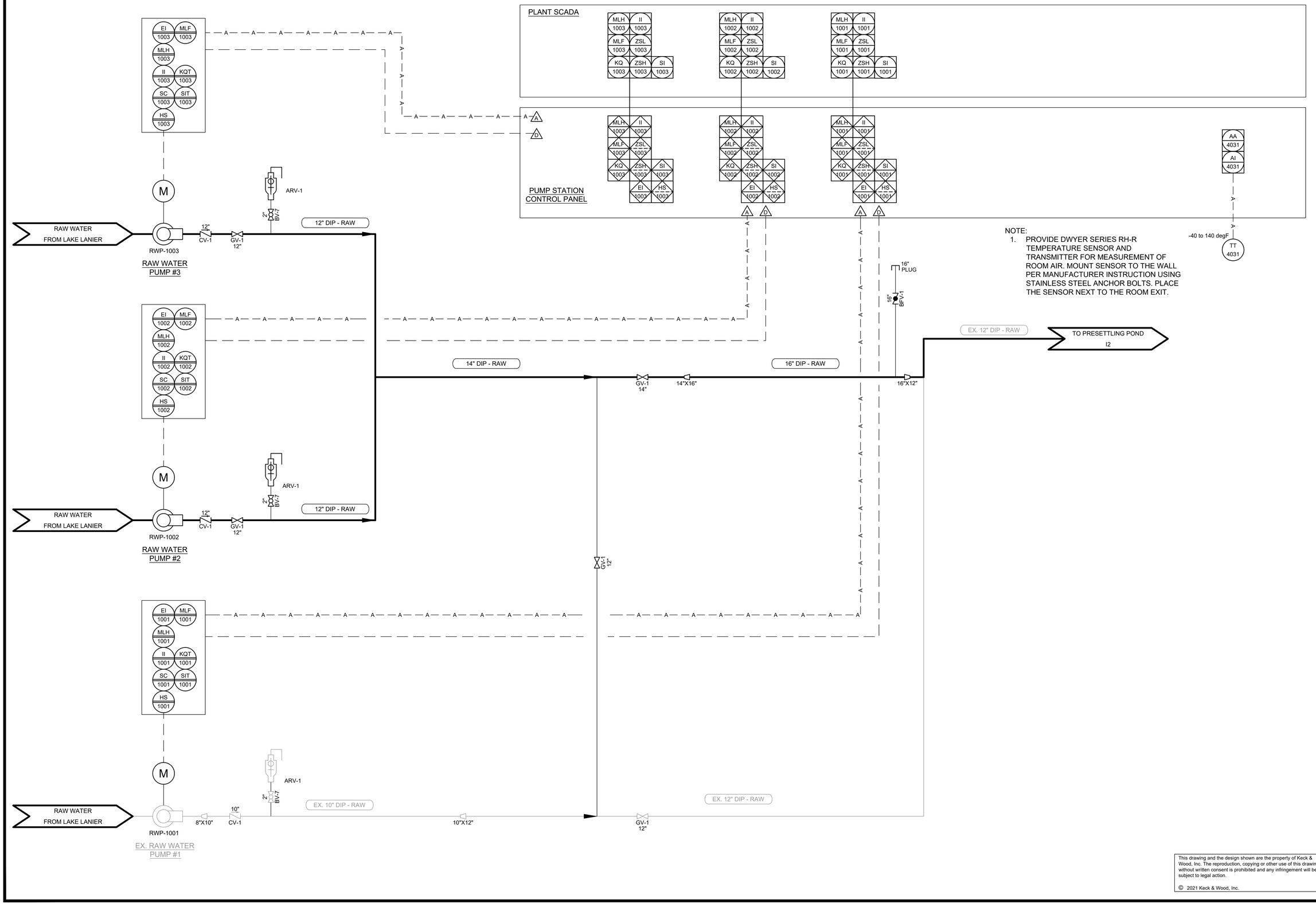
P&ID LEGEND, SHEET 2

THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I0-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



NOTE:
1. PROVIDE DWYER SERIES RH-R TEMPERATURE SENSOR AND TRANSMITTER FOR MEASUREMENT OF ROOM AIR. MOUNT SENSOR TO THE WALL PER MANUFACTURER INSTRUCTION USING STAINLESS STEEL ANCHOR BOLTS. PLACE THE SENSOR NEXT TO THE ROOM EXIT.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, RAW WATER PUMP STATION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\I170110.00 P&ID.dwg

PLANT SCADA

LAH 1004 | LI 1004 | LAL 1004 | LSH 1004 | LSL 1004

LAH 1005 | LI 1005 | LAL 1005 | LSH 1005 | LSL 1005

LAH 1006 | LI 1006 | LAL 1006 | LSH 1006 | LSL 1006

FI 1007 | ZIC 1007

HS 1020 | YA 1020

AA 1008 | AI 1008

AA 1009 | AI 1009

AA 1010 | AI 1010

AI 1015 | AA 1015

AI 1016 | AA 1016

AI 1017 | AA 1017

AI 1018 | AA 1018

SUEZ PLC

08-AI 101 | 08-AA 101

PERM VL-PMP

PERM VL-PMP

FROM PARTICLE COUNTER I6

FROM PARTICLE COUNTER I6

FROM PARTICLE COUNTER I6

FROM PARTICLE COUNTER I6

0-25 ppm TOC

AIT 1008

0-100 NTU

AIT 1010

1/4" BV-5

1/4" BV-5

TO SLUDGE POND I22

1" CPVC - WASTE

1/2" BV-5

1/2" BV-5

HS 1020

TO LABORATORY

0-30 FT

LIT 1004

0-30 FT

LIT 1005

PASSIVE INTAKE SCREEN #1

PV-1 12"

SC-1005

PV-1 12"

16" PLUG

0-3,800 GPM

FIT 1007

SP-1020

1/2" BV-5

0-14 PH

AIT 1009

FROM RAW WATER PUMPS I1

EX. 12" DIP - RAW

EX. GV 12"

LOW WATER SUPPLY

EX. 10"X16"

EX. GV 16"

EX. 10"X16"

EX. GV 12"

PRESETTLING POND PSP-1004

EX. GV 10"

EX. 8"X10"

HIGH WATER SUPPLY

EX. 10"X8"

EX. GV 8"

0-30 FT

LIT 1006

16"X8"

GV-1 8"

M

GV-1 8"

8"X16"

16" DIP - RAW

TO FEED PUMPS I3

16" BFV-1

16" DIP - BYPASS

PV-1 12"

SC-1006

PV-1 12"

PASSIVE INTAKE SCREEN #2

EX. 12" DIP - BYPASS

FUTURE FLOCCULATION

AIR BURST SYSTEM AC-8001

FROM SODIUM HYPOCHLORITE I9

FROM COAGULANT I24

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

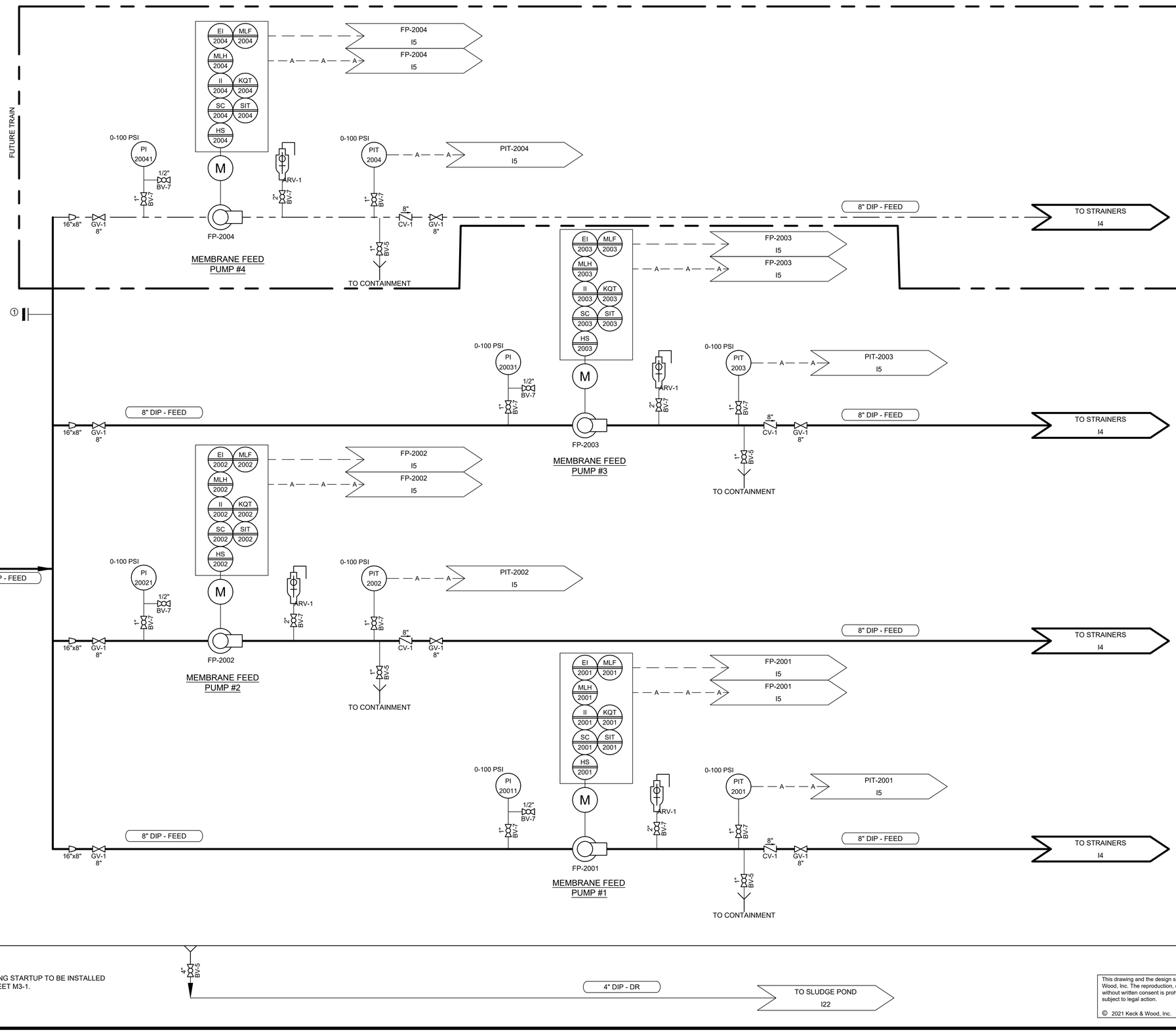
P&ID, PRESETTLING POND

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



NOTES:
① CAPPED CONNECTION FOR TEMPORARY RECIRCULATION DURING STARTUP TO BE INSTALLED TEMPORARILY AT 16" TEE FOR FUTURE PIPE AS SHOWN ON SHEET M3-1.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 037813 JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, FEED PUMPS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

FROM SODIUM HYPOCHLORITE
I9

PLANT SCADA
AA 2013 / AI 2013
AA 2014 / AI 2014
AA 2015 / AI 2015
AA 2016 / AI 2016

FUTURE TRAIN

FROM FEED PUMPS
I3

PIT 20081 / M / PIT 20082
ST-2008
STRAINER #4
4" BV-5 GV-4
ZIT

ST-2008
I5

ANALOG
I5

0-100 PSI
PI 20083
1/2" BV-7
1" BV-7

8" SST - FEED
M
SCV-2008
GV-3 8"

FC
ANALOG
SUEZ CONTROL
1/2"
23-FV-101-4
23-CV-101-4
SM-2012
STATIC MIXER #4

0-100 PSI
PIT 2012
ANALOG
I5
1" BV-7
8" SST - FEED
1" BV-5
8" CV-3
GV-3 8"

0-10 mg/L Cl2
AIT 2016
1/4" BV-5
1/2" BV-5
1" CPVC - WASTE
TO SLUDGE POND
I22

TO MEMBRANE SYSTEM
I6

FROM FEED PUMPS
I3

PIT 20071 / M / PIT 20072
ST-2007
STRAINER #3
4" BV-5 GV-4
ZIT

ST-2007
I5

ANALOG
I5

0-100 PSI
PI 20073
1/2" BV-7
1" BV-7

8" SST - FEED
M
SCV-2007
GV-3 8"

FC
ANALOG
SUEZ CONTROL
1/2"
23-FV-101-3
23-CV-101-3
SM-2011
STATIC MIXER #3

0-100 PSI
PIT 2011
ANALOG
I5
1" BV-7
8" SST - FEED
1" BV-5
8" CV-3
GV-3 8"

0-10 mg/L Cl2
AIT 2015
1/4" BV-5
1/2" BV-5
1" CPVC - WASTE
TO SLUDGE POND
I22

TO MEMBRANE SYSTEM
I6

FROM FEED PUMPS
I3

PIT 20061 / M / PIT 20062
ST-2006
STRAINER #2
4" BV-5 GV-4
ZIT

ST-2006
I5

ANALOG
I5

0-100 PSI
PI 20063
1/2" BV-7
1" BV-7

8" SST - FEED
M
SCV-2006
GV-3 8"

FC
ANALOG
SUEZ CONTROL
1/2"
23-FV-101-2
23-CV-101-2
SM-2010
STATIC MIXER #2

0-100 PSI
PIT 2010
ANALOG
I5
1" BV-7
8" SST - FEED
1" BV-5
8" CV-3
GV-3 8"

0-10 mg/L Cl2
AIT 2014
1/4" BV-5
1/2" BV-5
1" CPVC - WASTE
TO SLUDGE POND
I22

TO MEMBRANE SYSTEM
I6

FROM FEED PUMPS
I3

PIT 20051 / M / PIT 20052
ST-2005
STRAINER #1
4" BV-5 GV-4
ZIT

ST-2005
I5

ANALOG
I5

0-100 PSI
PI 20053
1/2" BV-7
1" BV-7

8" SST - FEED
M
SCV-2005
GV-3 8"

FC
ANALOG
SUEZ CONTROL
1/2"
23-FV-101-1
23-CV-101-1
SM-2009
STATIC MIXER #1

0-100 PSI
PIT 2009
ANALOG
I5
1" BV-7
8" SST - FEED
1" BV-5
8" CV-3
GV-3 8"

0-10 mg/L Cl2
AIT 2013
1/4" BV-5
1/2" BV-5
1" CPVC - WASTE
TO SLUDGE POND
I22

PH
AIT 1009

TO MEMBRANE SYSTEM
I6

4" DIP - BWW

TO DRAIN
I8

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

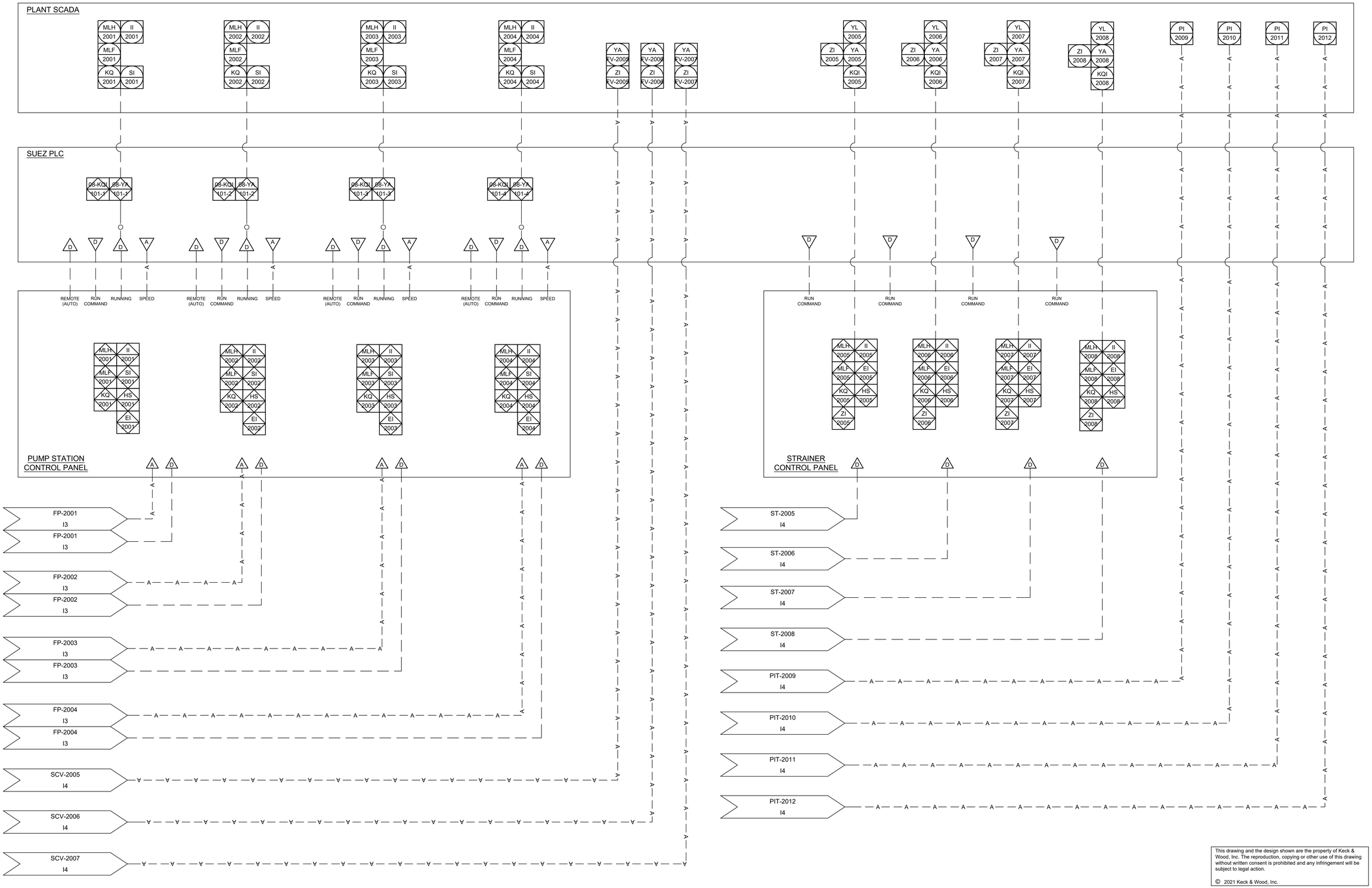
P&ID, STRAINERS & STATIC MIXING

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, CONTROL PANELS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I5

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

FUTURE TRAIN

FROM STATIC MIXING I4

8" SS - FEED

BLOCK & BLEED VALVES ②

08-FV-101-4 8" | 08-FV-103-4 1/2"

VALVE RACK & MEMBRANE TRAIN 4 ①

22-FV-701-4 6" | 22-FV-703-4 1/2"

② BLOCK & BLEED VALVES

22-FV-904-4 6" | 22-FV-905-4 10"

TO MEMBRANE DRAIN I8

22-FV-705-4 6" | 22-FV-706-4 1/2"

BLOCK & BLEED VALVES②

TO MW/CIP TANK I13

0-1000 mNTU AIT 1014 | ANALOG I2 | PARTICLE AIT 1018 | ANALOG I2

BLOCK & BLEED VALVES ②

1/4" BV-5 | 1/2" 22-HV-301-4 | 8" 22-FV-302-4 | 1/2" 22-FV-303-4 | 12"x8"

TO POST FILTRATION INJECTION I15

FROM STATIC MIXING I4

8" SS - FEED

BLOCK & BLEED VALVES ②

08-FV-101-3 8" | 08-FV-103-3 1/2"

VALVE RACK & MEMBRANE TRAIN 3 ①

22-FV-701-3 6" | 22-FV-703-3 1/2"

BLOCK & BLEED VALVES ②

22-FV-904-3 6" | 22-FV-905-3 10"

TO MEMBRANE DRAIN I8

22-FV-705-3 6" | 22-FV-706-3 1/2"

BLOCK & BLEED VALVES②

0-1000 mNTU AIT 1013 | ANALOG I2 | PARTICLE AIT 1017 | ANALOG I2

BLOCK & BLEED VALVES ②

1/4" BV-5 | 1/2" 22-HV-301-3 | 8" 22-FV-302-3 | 1/2" 22-FV-303-3 | 12"x8"

TO POST FILTRATION INJECTION I15

FROM STATIC MIXING I4

8" SS - FEED

BLOCK & BLEED VALVES ②

08-FV-101-2 8" | 08-FV-103-2 1/2"

VALVE RACK & MEMBRANE TRAIN 2 ①

22-FV-701-2 6" | 22-FV-703-2 1/2"

BLOCK & BLEED VALVES ②

22-FV-904-2 6" | 22-FV-905-2 10"

TO MEMBRANE DRAIN I8

22-FV-705-2 6" | 22-FV-706-2 1/2"

BLOCK & BLEED VALVES②

0-1000 mNTU AIT 1012 | ANALOG I2 | PARTICLE AIT 1016 | ANALOG I2

BLOCK & BLEED VALVES ②

1/4" BV-5 | 1/2" 22-HV-301-2 | 8" 22-FV-302-2 | 1/2" 22-FV-303-2 | 12"x8"

TO POST FILTRATION INJECTION I15

FROM STATIC MIXING I4

8" SS - FEED

BLOCK & BLEED VALVES ②

08-FV-101-1 8" | 08-FV-103-1 1/2"

VALVE RACK & MEMBRANE TRAIN 1 ①

22-FV-701-1 6" | 22-FV-703-1 1/2"

BLOCK & BLEED VALVES ②

22-FV-904-1 6" | 22-FV-905-1 10"

TO MEMBRANE DRAIN I8

22-FV-705-1 6" | 22-FV-706-1 1/2"

BLOCK & BLEED VALVES②

0-1000 mNTU AIT 1011 | ANALOG I2 | PARTICLE AIT 1015 | ANALOG I2

BLOCK & BLEED VALVES ②

1/4" BV-5 | 1/2" 22-HV-301-1 | 8" 22-FV-302-1 | 1/2" 22-FV-303-1 | 12"x8"

TO POST FILTRATION INJECTION I15

1"x3/4"

FROM BLOWER I23 — 4" SST - AS

FROM COMPRESSOR I23 — 3/4" SST - MIT

FROM BACKWASH I7 — 6" SS - BW

FROM CIP SOLUTION I13 — 4" SS - CIP

NOTES:

① MEMBRANE SUPPLIER TO PROVIDE MEMBRANE FILTRATION SYSTEM, INCLUDING AUTOMATION AND SCADA CONNECTION. ALL EQUIPMENT AND VALVES ON VALVE RACK NOTED ON SUEZ P&ID.

② BLOCK AND BLEED VALVES PROVIDED BY SUEZ AND SHIPPED LOOSE TO BE INSTALLED BY CONTRACTOR.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

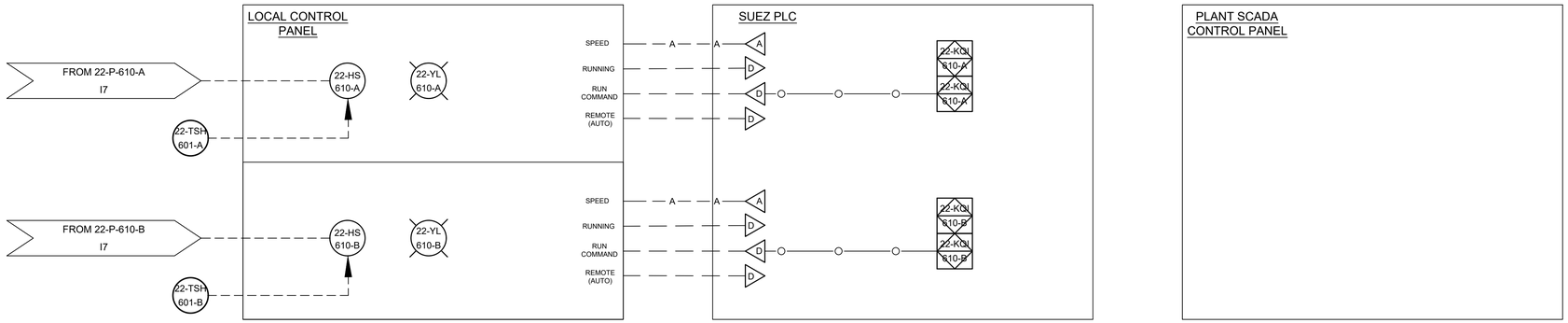
P&ID, MEMBRANE SYSTEM

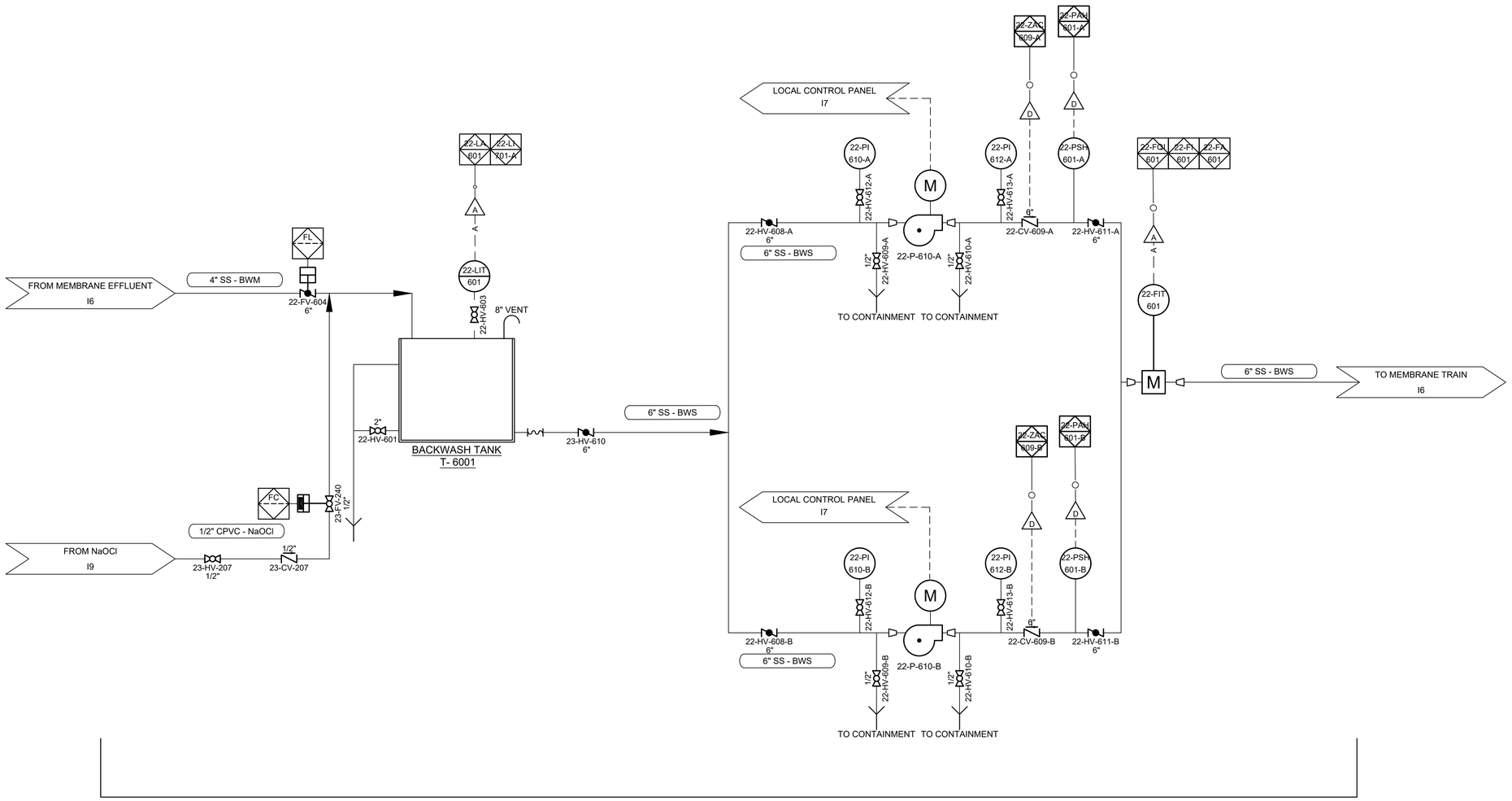
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I6

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg





NOTES:
1. MEMBRANE SUPPLIER TO PROVIDE BACKWASH SYSTEM, INCLUDING SCADA CONNECTION.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

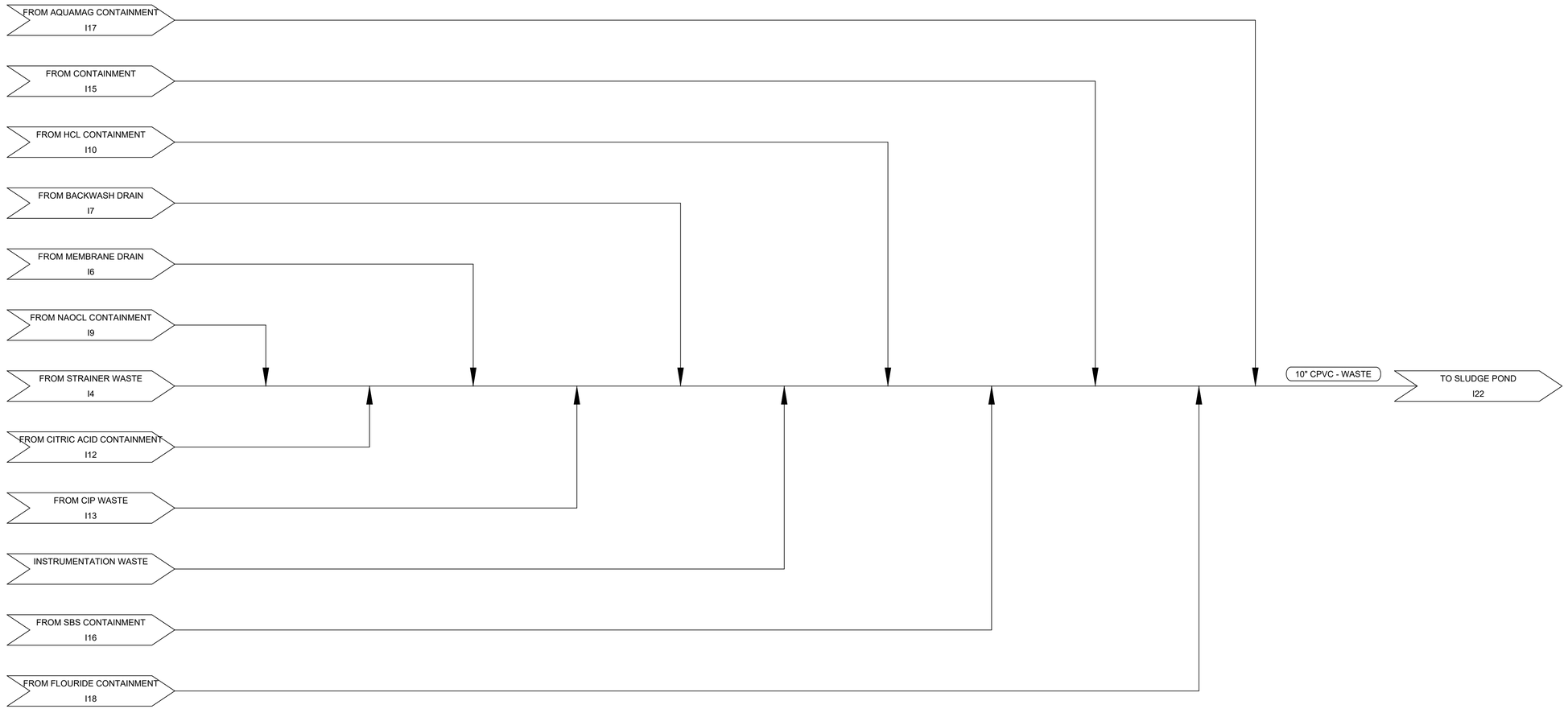
P&ID, BACKWASH

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I7

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, DRAIN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I8

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

PLANT SCADA CONTROL PANEL

SUEZ PLC MAIN CONTROL PANEL

NaOCl BULK DELIVERY

2" CV-5

8" VENT

0-20 FT LIT 5001

BULK NaOCl TANK A T-5001

2" BV-5 TO CONTAINMENT

0-20 FT LIT 5051

NaOCl BULK DELIVERY

2" CV-5

8" VENT

BULK NaOCl TANK B T-5051

2" BV-5 TO CONTAINMENT

4" BV-5

HS 5003

M

0-100 PSI PI 50031

0-100 PSI PI 50032

1" BV-7

2" BV-5

TP-5003

1/2" BV-5 TO CONTAINMENT

2" CV-5

2" BV-5

HS 5004

0-100 PSI PI 50041

0-100 PSI PI 50042

TP-5004

1/2" BV-5 TO CONTAINMENT

0-10 FT LIT 5002

6" VENT

2" CPVC - NaOCl

DAY NaOCl TANK T-5002

2" BV-5 TO CONTAINMENT

4" CPVC - DR

TO DRAIN I8

TO PLANT SCADA CONTROL

0-100 PSI

HS 5005 PI 50051 DP-5005

HS 5006 PI 50061 DP-5006

1/4" CPVC - NaOCl

TO STATIC MIXING I4

HS 5007 PI 50071 DP-5007

HS 5008 PI 50081 DP-5008

3/4" CPVC - NaOCl

TO CIP I13

HS 5009 PI 50091 DP-5009

HS 5010 PI 50101 DP-5010

1/4" CPVC - NaOCl

TO PRIMARY DISINFECTION I15

HS 5013 PI 50131 DP-5013

HS 5014 PI 50141 DP-5014

1/4" CPVC - NaOCl

PASSIVE INTAKE SCREEN I2

BACKWASH TANK I7

HS 5011 PI 50111 DP-5011

HS 5012 PI 50121 DP-5012

1/4" CPVC - NaOCl

TO SECONDARY DISINFECTION I19

TO TERTIARY DISINFECTION I20

NOTES:

1. CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, SODIUM HYPOCHLORITE

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I9

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

SUEZ PLC MAIN CONTROL PANEL

MC 6017 | SC 6017 | HS 6017 | MF 6017 | YA 6017

MC 6018 | SC 6018 | HS 6018 | MF 6018 | YA 6018

A

VENT

HCI TOTE
TOTE - 5016

2" SILICONE - HCI

3/4" BV-5

0-100 PSI
PI 50171

HS 5017

DP-5017

0-100 PSI
PI 50181

HS 5018

DP-5018

3/4" CV-5

3/4" CPVC - HCI

TO CIP
I13

4" BV-5

4" DIP - DR

TO DRAIN
I8

NOTES:
1. CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

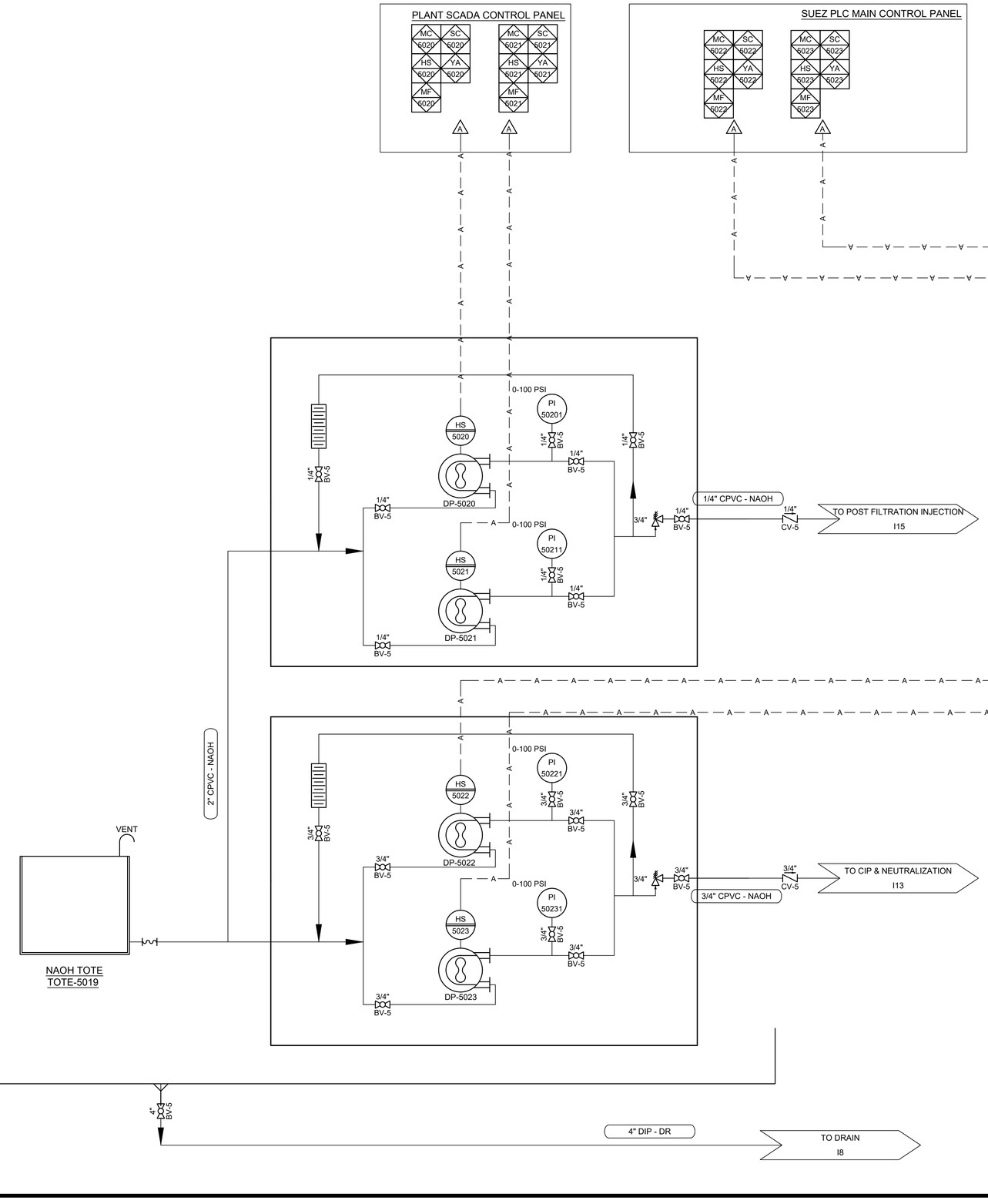
Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, HCL

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I10



NOTES:
CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

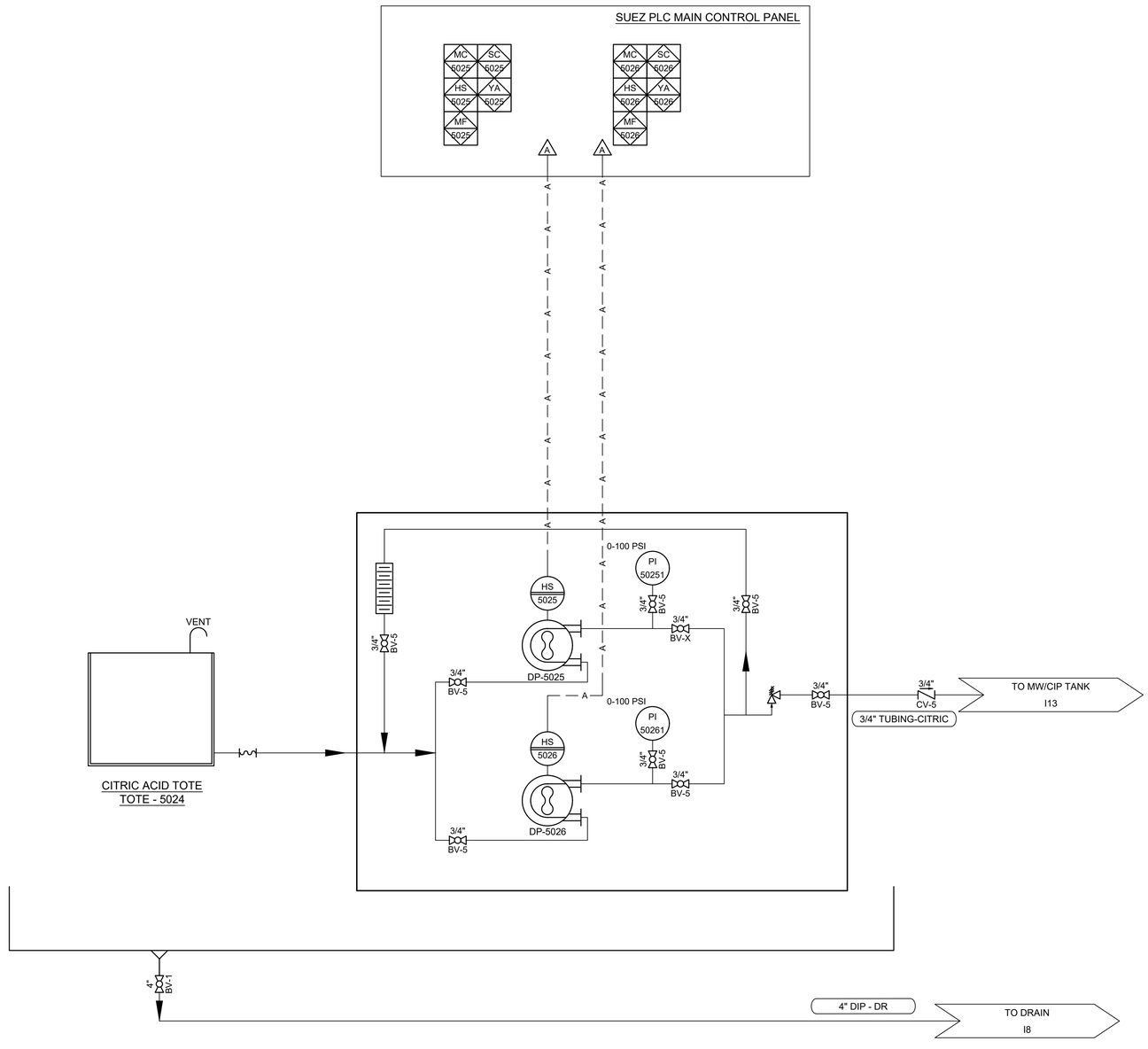
P&ID, NAOH

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I11

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110-00 P&ID.dwg



NOTES:
CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, CITRIC ACID

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I12

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

FROM SBS
I16

FROM SODIUM HYDROXIDE
I11

FROM HYDROCHLORIC ACID
I10

FROM SODIUM HYPOCHLORITE
I9

FROM CITRIC ACID
I12

CIP RECIRCULATION FROM TRAINS
I6

CIP TANK FILL
I6

FROM HOT WATER TANK
I14

PH/CL ANALYZER SAMPLE A
I14

PH/CL ANALYZER SAMPLE B
I14

TO DRAIN
I8

TO MEMBRANE TRAIN
I6

TO MEMBRANE TRAIN
I6

TO DRAIN
I8

22-FV-711-A 4"
22-FV-708-A 4"
22-FV-710-A 4"
4" SS - CIPM
1.5" 22-HV-701-A
6" VENT
MW/CIP TANK T-6004
2" 22-HV-706-A
TO CONTAINMENT
22-FV-707-A 6"
22-HV-708-A 6"
1/2" 22-HV-715-A
1/2" 22-HV-716-A
TO CONTAINMENT
TO CONTAINMENT
6"x4"
4"x3"
22-P-710-A ①
22-CV-709-A 4"
22-HV-710-A 4"
22-TW-701-A
22-FV-722-A 6"
22-FV-722-B 6"
22-FV-710-B 4"
4" SS - CIPM
1.5" 22-HV-701-B
6" VENT
MW/CIP TANK T-6005
2" 22-HV-706-B
TO CONTAINMENT
4" 22-FV-711-B
22-FV-707-B 6"
22-HV-708-B 6"
1/2" 22-HV-715-B
1/2" 22-HV-716-B
TO CONTAINMENT
TO CONTAINMENT
6"x4"
4"x3"
22-P-710-B ①
22-CV-709-B 4"
22-HV-710-B 4"
22-FV-708-B 4"
6" SS - CIPS
COMMON CONTAINMENT

SUEZ PLC
RUN COMMAND
SPEED
REMOTE (AUTO)
RUNNING
VFD
22-YA 710-A
22-KOL 710-A
22-YL 710-A
22-HS 710-A
22-TSH 710-A
22-ZAC 709-A
22-PI 708-A
22-PI 710-A
22-FIT 701-A
22-LIT 701-A
22-LA 701-A
22-LL 701-A
22-FA 701-A
22-FQL 701-A
22-FI 701-A
22-TA 701-A
22-TI 701-A

SUEZ PLC
RUN COMMAND
SPEED
REMOTE (AUTO)
RUNNING
VFD
22-YA 710-B
22-KOL 710-B
22-YL 710-B
22-HS 710-B
22-TSH 710-B
22-ZAC 709-B
22-PI 708-B
22-PI 710-B
22-FIT 701-B
22-LIT 701-B
22-LA 701-B
22-LL 701-B
22-FA 701-B
22-FQL 701-B
22-FI 701-B
22-TA 701-B
22-TI 701-B

23-PSV-305-A
23-CV-305-A
23-FV-305-A
1/2" 23-HV-375-A
23-PSV-105-A
23-CV-105-A
23-FV-105-A
1/2" 23-HV-175-A
23-PSV-805-A
23-CV-805-A
23-FV-805-A
1/2" 23-HV-875-A
23-PSV-605-A
23-CV-605-A
23-FV-605-A
1/2" 23-HV-675-A
23-PSV-705-A
23-CV-705-A
23-FV-705-A
1/2" 23-HV-775-A

23-PSV-305-B
23-CV-305-B
23-FV-305-B
1/2" 23-HV-375-B
23-PSV-105-B
23-CV-105-B
23-FV-105-B
1/2" 23-HV-175-B
23-PSV-805-B
23-CV-805-B
23-FV-805-B
1/2" 23-HV-875-B
23-PSV-605-B
23-CV-605-B
23-FV-605-B
1/2" 23-HV-675-B
23-PSV-705-B
23-CV-705-B
23-FV-705-B
1/2" 23-HV-775-B

22-FA 901-A
22-FQL 901-A
22-FI 901-A
22-FIT 901-A
22-FV-903-A 4"
22-FV-712-A 4"
22-FA 901-B
22-FQL 901-B
22-FI 901-B
22-FIT 901-B
22-FV-712-B 4"
22-FV-903-B 4"

NOTES:
① SUEZ TO PROVIDE MW/CIP SYSTEM, INCLUDING SCADA CONNECTION, PER SUEZ P&IDS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, CIP

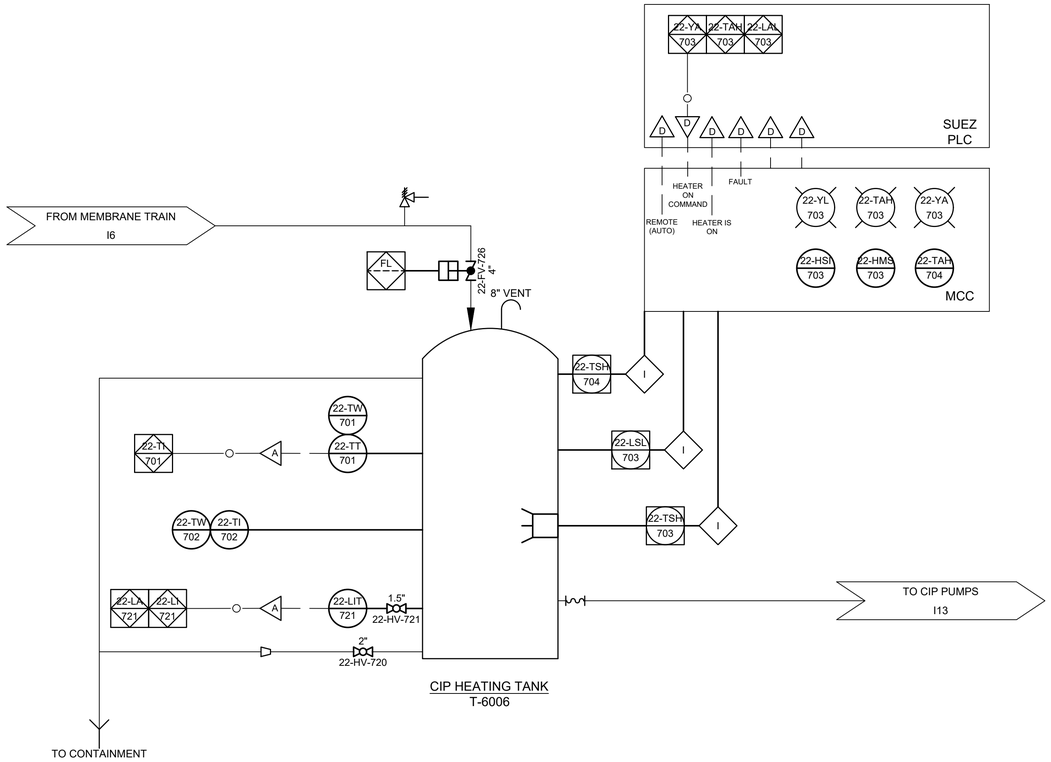
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

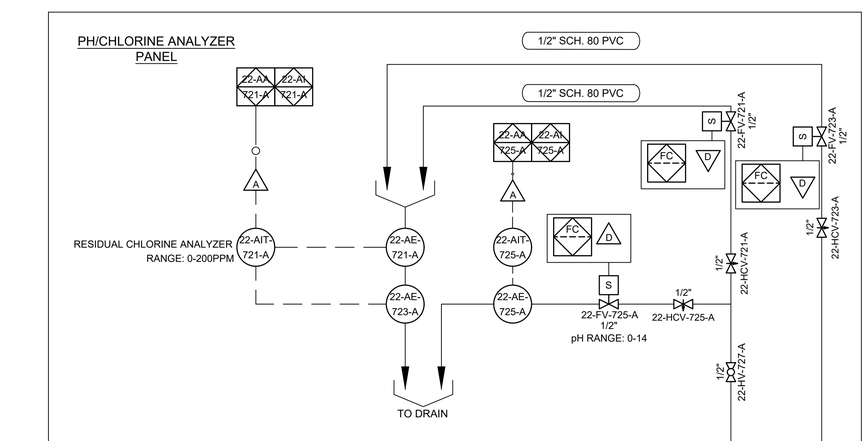
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

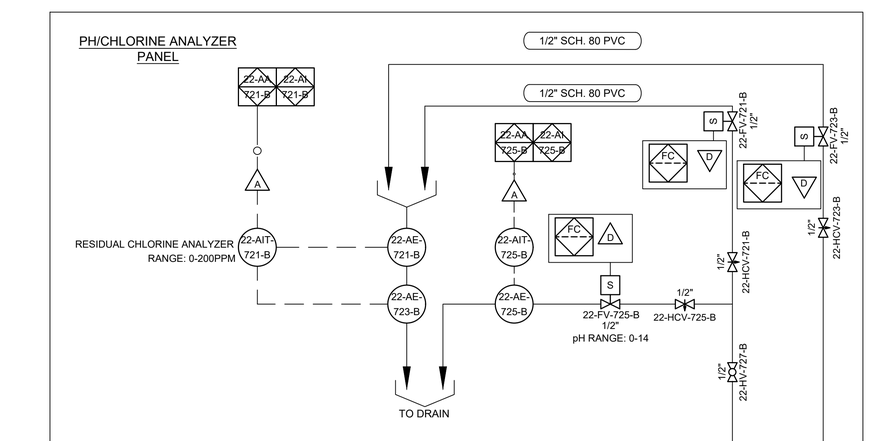
Project No.: 170110.00
Drawing No.: I13

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

PLANT SCADA
CONTROL PANEL







Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, CIP HEATING, PH CHLORINE ANALYZER

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I14

PLANT SCADA CONTROL PANEL

MP 1030 | HS 1030 | YA 1030 | A

ALA 4012 | AHA 4012 | AI 4012

AHA 4013 | AI 4013

AHA 4014 | AI 4014

AHA 4015 | ALA 4015 | AI 4015

FHA 4016 | FLA 4016 | FI 4016

FROM SODIUM HYPOCHLORITE I9

FROM NAOH I11

FROM FLOURIDE I18

FROM MEMBRANE TRAIN I6

FROM MEMBRANE TRAIN I6

FROM MEMBRANE TRAIN I6

FROM MEMBRANE TRAIN I6

0-10 mg/L CL2 AIT 4012

0-25 ppm TOC AIT 4013

0-100 NTU AIT 4014

FLUORIDE AIT 4015

1/4" BV-5

1/2" BV-5

1" CPVC - WASTE

TO SLUDGE POND I22

TO LABORATORY

HS 1030

SP-1030

0-3,800 GPM FIT 4016

1/2" CPVC - FLUORIDE

1/4" CPVC - NAOH

1/4" CPVC - NAOCL

CV-5 1/2" | 1/2" BV-5

CV-5 1/4" | 1/4" BV-5

CV-5 1/4" | 1/4" BV-5

2" BV-7

16" SS - EFF

16" BFV-1

POST FILTRATION INJECTION

16" SS - EFF

16" DIP - EFF ①

NO GV-1 8"

M

NO GV-1 8"

16" BFV-1

TO CLEARWELLS I19

4" BV-5

4" CPVC - WASTE

TO DRAIN I8

TO BACKWASH TANK I7

TO CIP HEATING TANK I14

TO CIP TANK I13

NOTES:
① EFFLUENT PIPING TO SWITCH FROM STAINLESS STEEL TO DUCTILE IRON LEAVING THE PROCESS BUILDING AS SHOWN IN MECHANICAL DRAWINGS.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, POST FILTRATION INJECTION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I15

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\I170110.00 P&ID.dwg

SUEZ PLC MAIN CONTROL PANEL

MC 6028 | SC 6028 | HS 6028 | YA 6028 | MF 6028

MC 6029 | SC 6029 | HS 6029 | YA 6029 | MF 6029

A

0-100 PSI

PI 50281

HS 5028

3/4" BV-5

DP-5028

0-100 PSI

PI 50291

HS 5029

DP-5029

VENT

2" CPVC - SBS

SODIUM BISULFITE TOTE
TOTE - 5027

3/4" CV-5

TO MW/CIP TANK
I13

4" BV-5

4" CPVC - DR

TO DRAIN
I8

NOTES:
CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

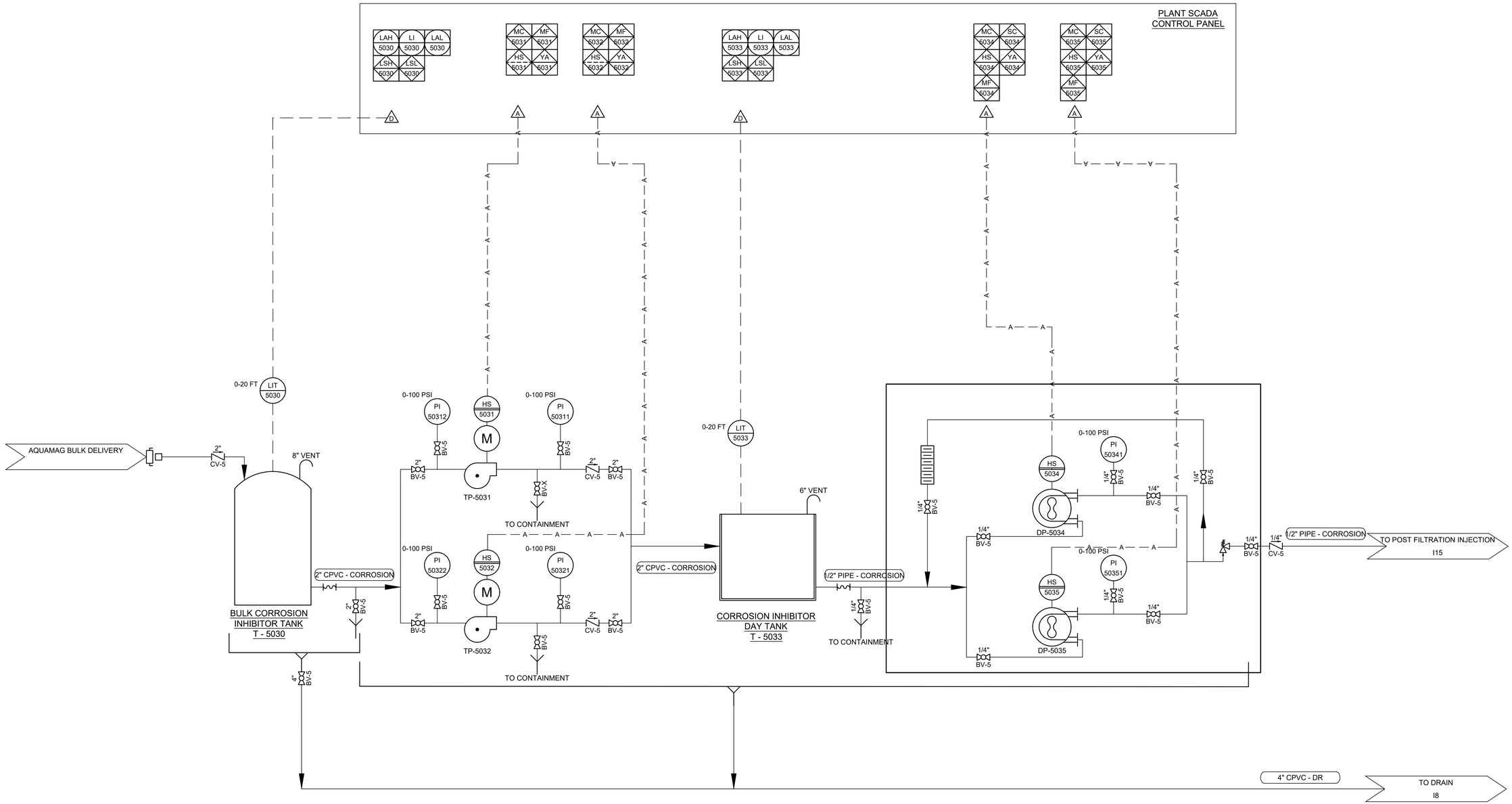
P&ID, SODIUM BISULFITE

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I16

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



NOTES:

1. CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

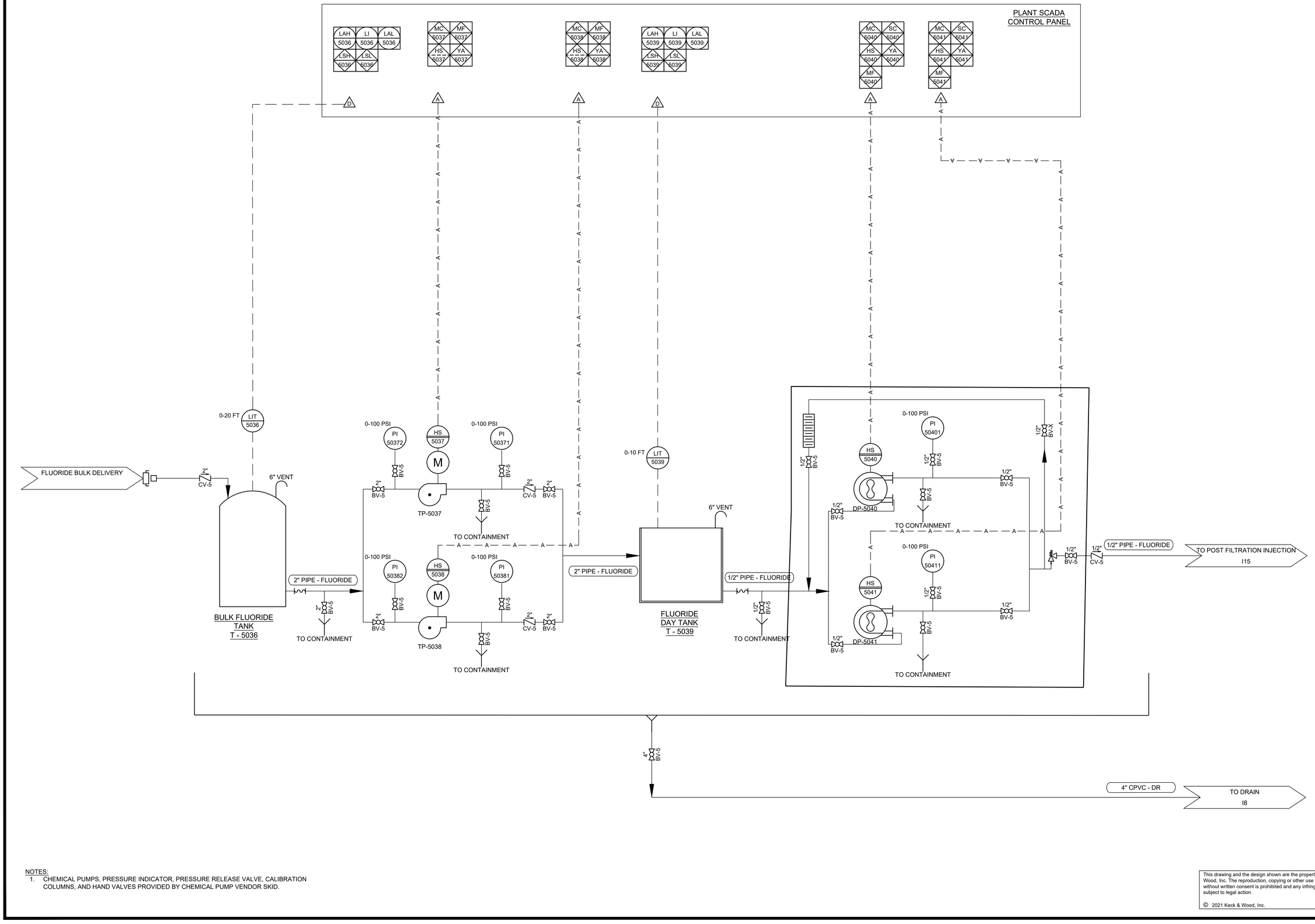
P&ID, CORROSION INHIBITOR

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I17

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



NOTES:
1. CHEMICAL PUMPS, PRESSURE INDICATOR, PRESSURE RELEASE VALVE, CALIBRATION COLUMNS, AND HAND VALVES PROVIDED BY CHEMICAL PUMP VENDOR SKID.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

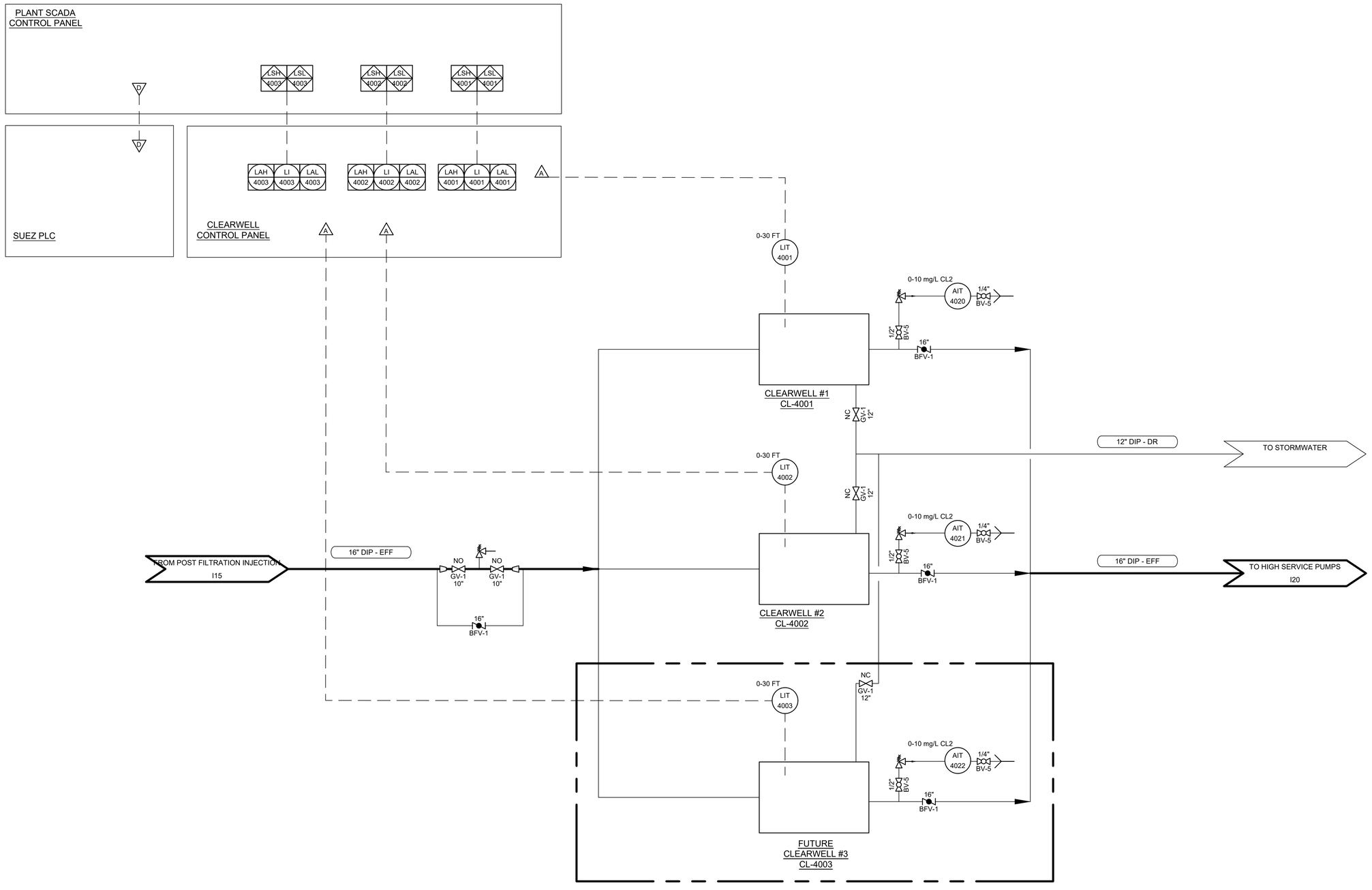
P&ID, FLUORIDE

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I18

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, CLEARWELLS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager:	Jolene Northrop, P.E.
Drawn By:	TLC
Checked By:	JGN
Date:	04/14/2021
Scale:	As Shown
Project No.:	170110.00
Drawing No.:	I19

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

NOTE:
1. PROVIDE DWYER SERIES RH-R TEMPERATURE SENSOR AND TRANSMITTER FOR MEASUREMENT OF ROOM AIR. MOUNT SENSOR TO THE WALL PER MANUFACTURER INSTRUCTION USING STAINLESS STEEL ANCHOR BOLTS. PLACE THE SENSOR NEXT TO THE ROOM EXIT.

PLANT SCADA CONTROL PANEL

-40 to 140 degF
TT 4031
AA 4031
AI 4031
AA 4030
AI 4030

FROM SODIUM HYPOCHLORITE
I20

FROM AQUAMAG
I17

1" HDPE - NaOCl

1" HDPE - CORROSION

1" HDPE - NaOCl

1" HDPE - CORROSION

0-10 mg/L CL2
AIT 4030
1/4" BV-7
1/2" BV-7
18" DIP - DIST
TO FLOW METER
I21
1" BV-7
ARV
1" BV-7
TO LAB

EI 4004 | MLF 4004
MLH 4004
II 4004 | KQT 4004
SC 4004 | SIT 4004
HS 4004
SCADA SC 4004
SCADA SI, 4004
KQI, MLH, MLF

EI 4005 | MLF 4005
MLH 4005
II 4005 | KQT 4005
SC 4005 | SIT 4005
HS 4005
SCADA SC 4005
SCADA SI, 4005
KQI, MLH, MLF

EI 4006 | MLF 4006
MLH 4006
II 4006 | KQT 4006
SC 4006 | SIT 4006
HS 4006
SCADA SC 4006
SCADA SI, 4006
KQI, MLH, MLF

EI 4007 | MLF 4007
MLH 4007
II 4007 | KQT 4007
SC 4007 | SIT 4007
HS 4007
SCADA SC 4007
SCADA SI, 4007
KQI, MLH, MLF

0-150 PSI
PI 40041
M
ARV
2" BV-7
1" BV-7
1/2" BV-7
16" CV-1
GV-1 16"
HSP-4004
1" BV-1
TO CONTAINMENT

HIGH SERVICE PUMP #1

0-150 PSI
PI 40051
M
ARV
2" BV-7
1" BV-7
1/2" BV-7
16" CV-1
GV-1 16"
HSP-4005
1" BV-1
TO CONTAINMENT

HIGH SERVICE PUMP #2

0-150 PSI
PI 40061
M
ARV
2" BV-7
1" BV-7
1/2" BV-7
10" CV-1
GV-1 10"
HSP-4006
1" BV-1
TO CONTAINMENT

EX. HIGH SERVICE PUMP #5

0-150 PSI
PI 40071
M
ARV
2" BV-7
1" BV-7
1/2" BV-7
16" CV-1
GV-1 16"
HSP-4007
1" BV-1
TO CONTAINMENT

FUTURE HIGH SERVICE PUMP #3

FROM CLEARWELLS
I19
GV-1 16"
GV-1 16"

HIGH SERVICE PUMP WET WELL

HIGH SERVICE PUMP WET WELL

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, HIGH SERVICE PUMPS

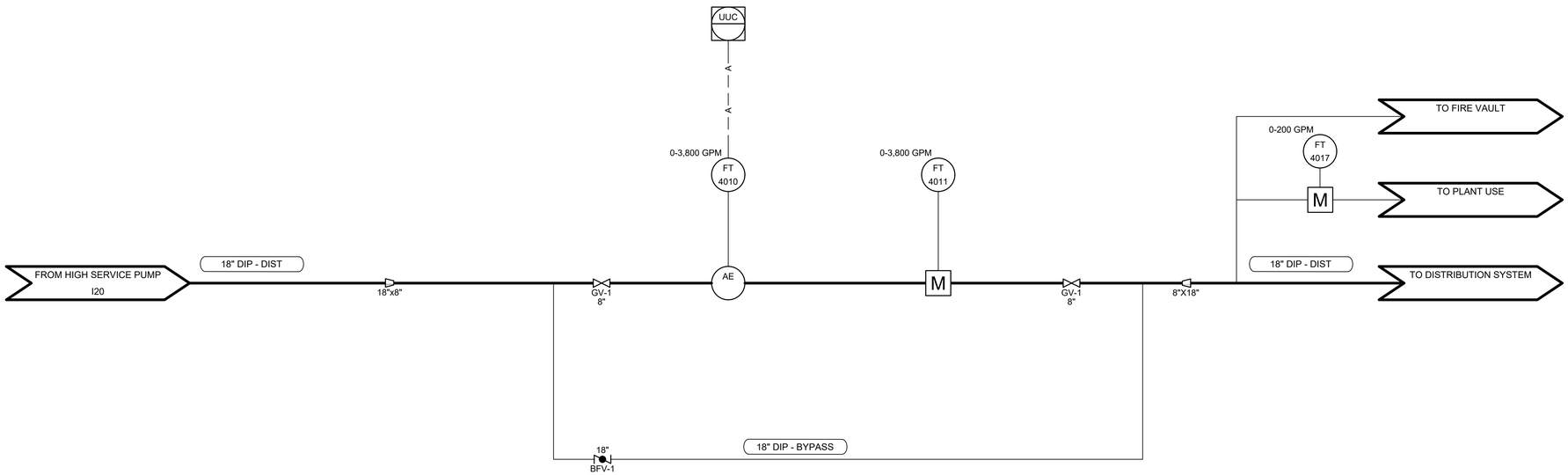
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I20

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

PLANT SCADA
CONTROL PANEL



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, FLOWMETERS

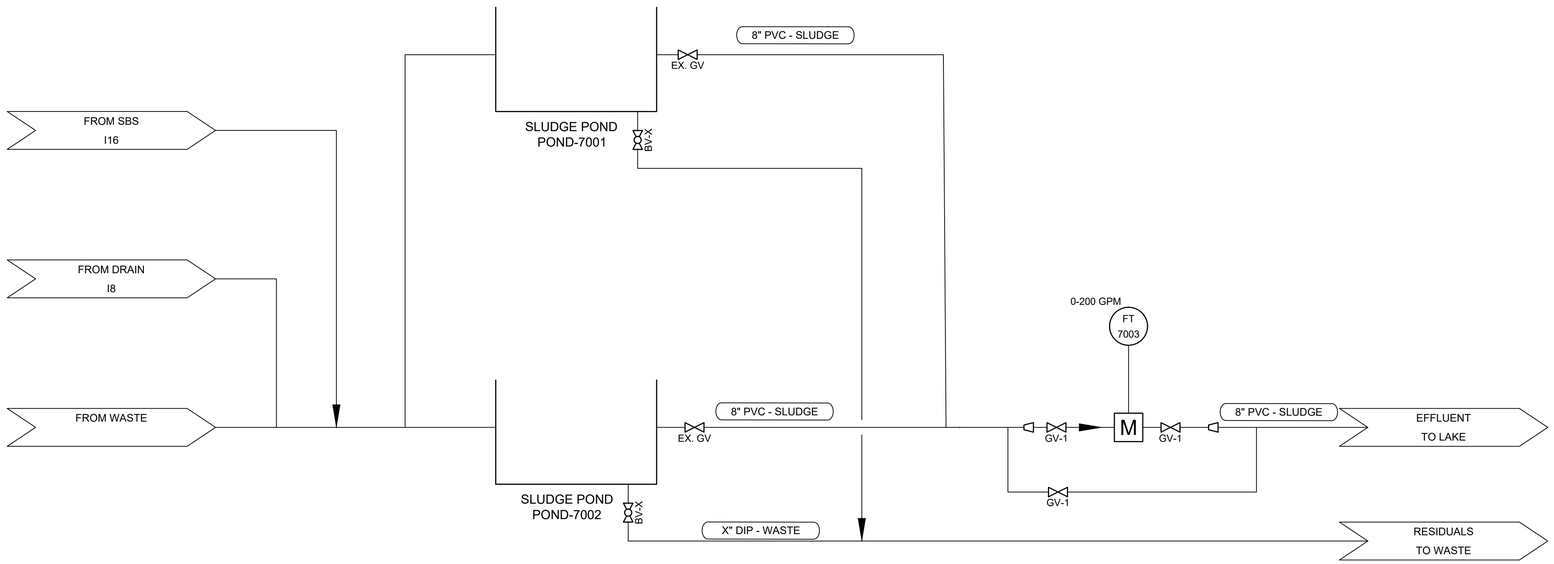
THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I21

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

PLANT SCADA
CONTROL PANEL



Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

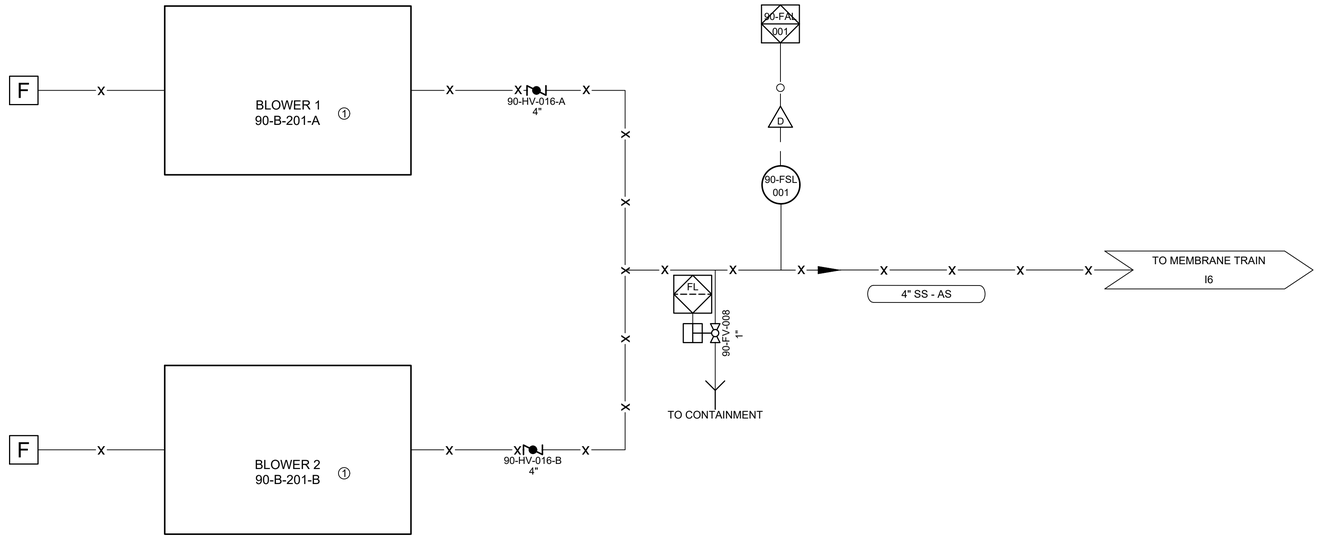
P&ID, SLUDGE PONDS

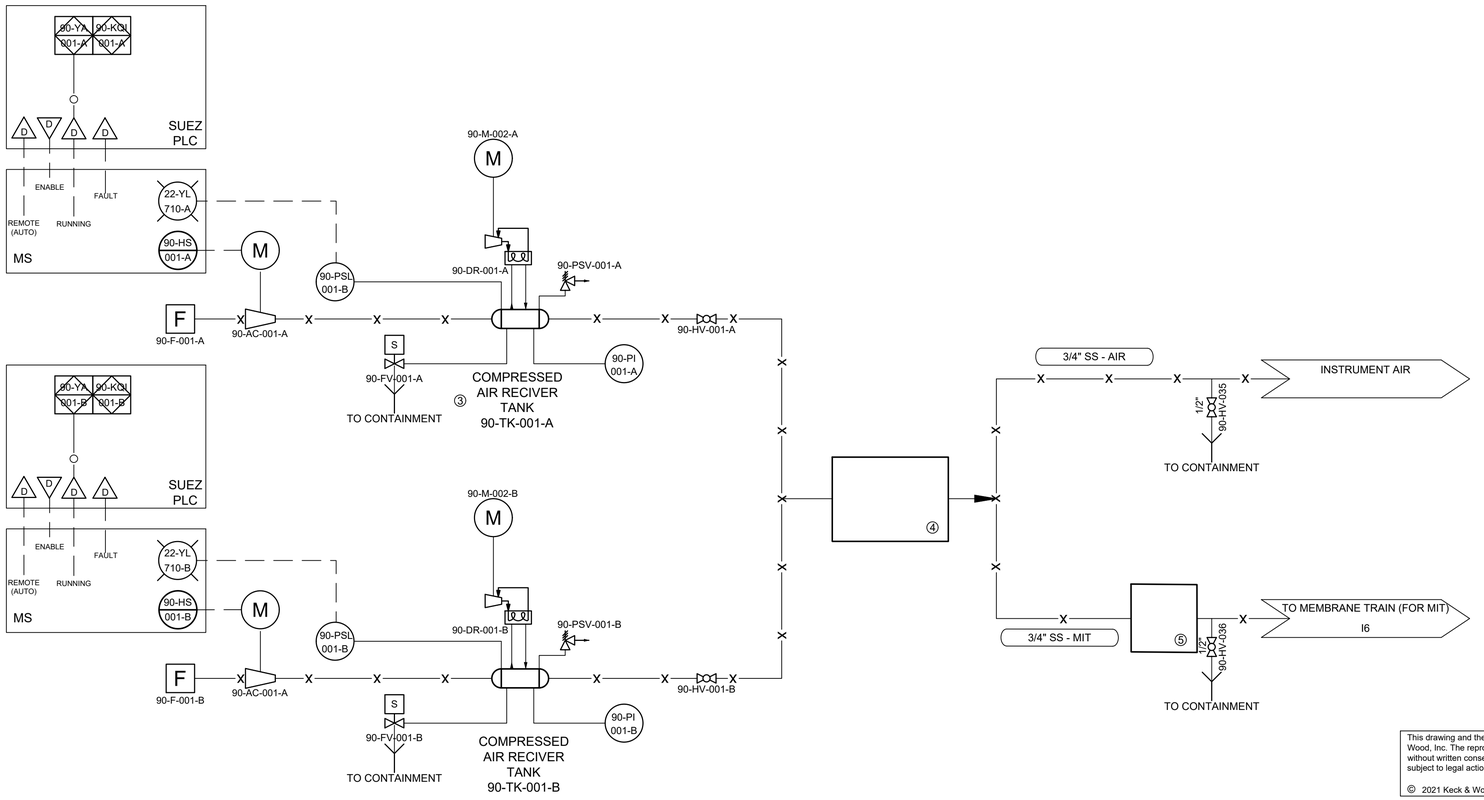
THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I22

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg





NOTES:
① ALL EQUIPMENT INSIDE BLOWER PACKAGE ACOUSTIC ENCLOSURE PROVIDED AS SKID BY SUEZ.
② SUEZ TO PROVIDE BLOWER SYSTEM, INCLUDING SCADA CONNECTION, PER SUEZ P&IDS.
③ SUEZ TO PROVIDE COMPRESSOR SYSTEM, PER SUEZ P&IDS.
④ PREASSEMBLED UNIT PROVIDED BY SUEZ.
⑤ PREASSEMBLED UNIT PROVIDED BY SUEZ.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

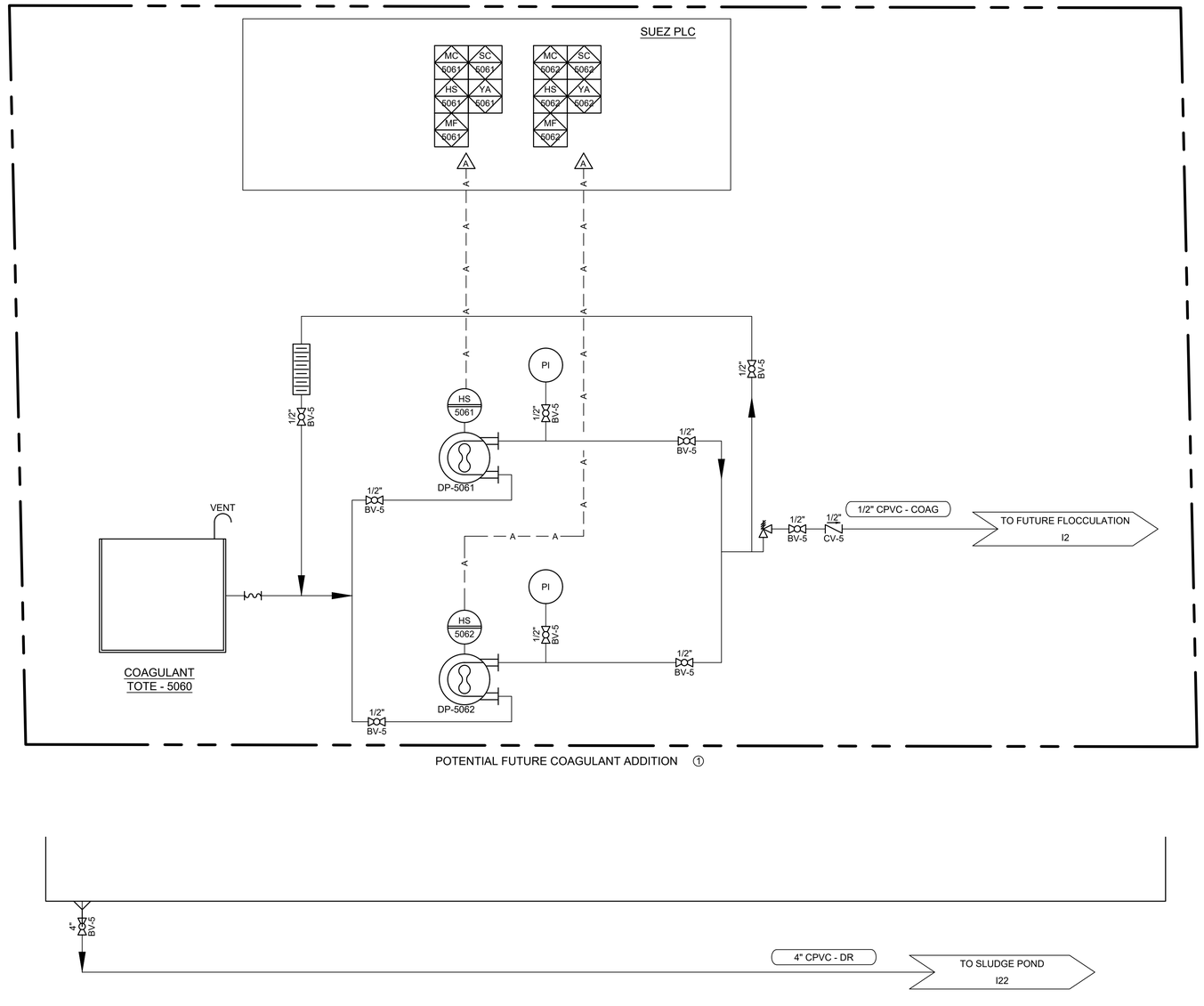
P&ID, AIR SUPPLY

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I23

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg



POTENTIAL FUTURE COAGULANT ADDITION ①

NOTES:
① COAGULANT EQUIPMENT TO BE INSTALLED IN A FUTURE PROJECT.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

P&ID, FUTURE COAGULATION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: I24

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Instrumentation\170110.00 P&ID.dwg

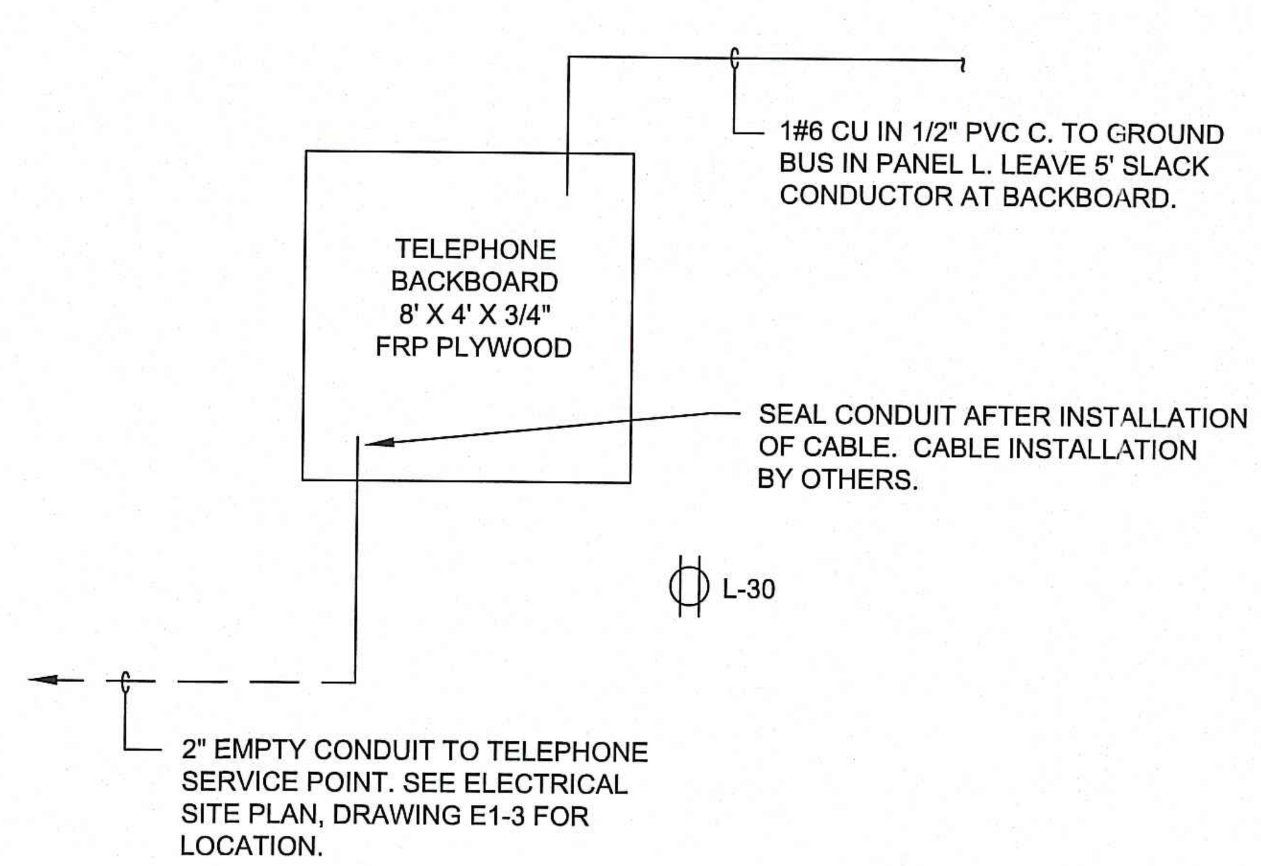
LEGEND

Symbol	Description
	CONCEALED CONDUIT. SEE NOTE BELOW
	EXPOSED CONDUIT. SEE NOTE BELOW
	UNDERGROUND OR UNDERFLOOR CONDUIT. SEE NOTE BELOW.
	CONDUIT UNDER BRIDGE
	FLEX CONDUIT, SIZE AND CONDUCTORS SAME AS HOMERUN.
	20AMP 125V. STRAIGHT BLADE 3 WIRE GROUNDING DUPLEX OUTLET. NUMBER INDICATES CIRCUIT. WP - INDICATES WEATHERPROOF DUPLEX OUTLET IN NON-METALLIC FD BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVERPLATE GFCI - GROUND FAULT CIRCUIT INTERRUPTER
	SINGLE OUTLET, SAME DESCRIPTION AS ABOVE.
	QUAD OUTLET (DOUBLE DUPLEX), SAME DESCRIPTION AS ABOVE.
	COUNTERTOP MOUNTED OUTLET, SAME DESCRIPTION AS ABOVE.
	FLOOR MOUNTED DUPLEX OUTLET. SEE DESCRIPTION ABOVE FOR OUTLET.
	250 VOLT, STRAIGHT BLADE, 3 WIRE GROUNDING, SINGLE OUTLET, SPECIFICATION GRADE. NUMBER INDICATES CIRCUITS, AMPACITY INDICATED ON THE DRAWINGS.
	VOICE/DATA OUTLET WITH 3/4" C. TO ABOVE THE CEILING. CT - COUNTER TOP F - FLOOR MOUNT
C	SECURITY CAMERA - DOUBLE GANG OUTLET BOX WITH 1" CONDUIT RUN TO SECURITY SYSTEM CONTROLLER IN OPS ROOM, UNLESS OTHERWISE NOTED
$_3S_b$, S_a	20AMP 120/277V TOGGLE TYPE A.C. SWITCH. LETTER INDICATES SWITCHING. 3 - 3 WAY, 4 - 4 WAY. WP - PROVIDE WITH NON-METALLIC TYPE FD BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVER.
B 2 a	LIGHT FIXTURE, CAPITAL LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCHING, NUMBER INDICATES CIRCUIT.
	EMERGENCY LIGHT FIXTURE, SAME DESCRIPTION AS ABOVE
	EXIT LIGHT / EXIT LIGHT WITH EMERGENCY HEADS
	J-BOX WITH BLANK COVER, UNLESS OTHERWISE NOTED.
IG	INGROUND JUNCTION BOX. SEE DETAIL 3/RWE4
	PANELBOARD.
T	TRANSFORMER.
10 S	MOTOR. NUMBER INDICATES HORSEPOWER. "S" INDICATES FRACTIONAL HORSEPOWER MOTOR WITH 120/277 V. TOGGLE SWITCH AS DISCONNECT.
S_m	MOTOR RATED SWITCH
10A/30A/3/1	FUSIBLE DISCONNECT SWITCH, FUSE SIZE OVER FRAME SIZE, NUMBER OF POLES, AND ENCLOSURE TYPE NOTED.
60A/3/1	NON FUSIBLE DISCONNECT SWITCH, AMP SIZE, NUMBER OF POLES, AND ENCLOSURE TYPE NOTED.
	FUSIBLE DISCONNECTING COMBINATION MOTOR STARTER, NEMA SIZE, FUSE SIZE AND ENCLOSURE TYPE NOTED.
	ENCLOSED CIRCUIT BREAKER, SIZE AND NUMBER OF POLES INDICATED
SD	SMOKE DETECTOR.
DD	DUCT SMOKE DETECTOR.
HD	HEAT DETECTOR
R	FIRE ALARM RELAY.
F	FIRE ALARM PULL STATION, MOUNT 48" AFF.
F	FIRE ALARM HORN/STROBE DEVICE, MOUNT DEVICE A MINIMUM OF 80" A.F.F. TO BOTTOM OF DEVICE AND 96" A.F.F. TO TOP OF DEVICE.
S	FIRE ALARM SPEAKER/STROBE DEVICE, MOUNT SAME AS ABOVE
F	FIRE ALARM SPRINKLER FLOW SWITCH.
T	FIRE ALARM SPRINKLER TAMPER SWITCH.
TFROC	TYPICAL FOR REMAINDER OF CIRCUIT.
38,781 A AVAILABLE	AVAILABLE SYMMETRICAL SHORT CIRCUIT CURRENT AT THE EQUIPMENT AS CALCULATED BY THE ENGINEER. THE ELECTRICAL DISTRIBUTION SYSTEM SHALL BE A FULLY RATED SYSTEM.
30'	LENGTH OF FEEDER IN FEET.

NOTE: HASH MARKS INDICATE NUMBER OF #12 CU. HOT CONDUCTORS, #12 CU. NEUTRAL CONDUCTOR, RESPECTIVELY. GROUND CONDUCTOR NOT SHOWN. NO HASH MARKS INDICATE 3#12 CU. CONDUCTORS (A HOT, NEUTRAL AND GROUND), UNLESS OTHERWISE NOTED. 3/4" CONDUIT MINIMUM, UNLESS OTHERWISE NOTED..

KEYNOTES:

1. CONTRACTOR TO STUP UP CONDUIT (SCHEDULE 80 PVC) APPROXIMATELY 12" AFF AND CAP FOR FUTURE. PROVIDE PULL STRING IN CONDUIT. PAINT THE STUP-UP RED FOR IDENTIFICATION FOR THE FUTURE.
2. CONTRACTOR TO PROVIDE AND INSTALL 20 AMP, 125 VOLT DUPLEX OUTLET IN NON-METALLIC TYPE FD BOX AND PROVIDE NON-METALLIC IN-USE EXTRA DUTY WEATHERPROOF COVERPLATE. CONTRACTOR TO DUAL WIRE THE DUPLEX OUTLET SUCH THAT EACH RECEPTACLE IS ON A SEPARATE CIRCUIT AS INDICATED IN THE DRAWINGS.
3. CONTRACTOR TO PROVIDE AND INSTALL MELTRIC DSN20, SWITCH RATED PLUG AND RECEPTICLE AT THE MOTOR AS REQUIRED. PLUG AND RECEPTICLE ARE TO BE RATED 20 AMP, 480 VOLT, 3 PHASE + GROUND WITH A HORSEPOWER RATING OF 7.5 HP, 460 VOLT, THREE PHASE. CONTRACTOR TO PROVIDE AND INSTALL NON-METALLIC FLEX CONDUIT OUT OF THE CONDUIT STUB-UP TO THE RECEPTACLE (FEMALE) AND NON-METALLIC FLEX CONDUIT OUT OF THE MOTOR PECKERHEAD TO THE PLUG (MALE). THE FLEX CONDUIT SHALL BE LONG ENOUGH FOR THE CONNECTIONS TO BE MADE WITHOUT STRESS ON THE FLEX CONDUITS AND ALLOW FOR MAINTANANCE OF THE MOTOR. RECEPTICLE TO BE MELTRIC #63-14043-843-354-511P0N10 AND INLET (PLUG) TO BE MELTRIC # 63-18043-511P0N10-61-1A426 OR APPROVED EQUAL.
4. CONTRACTOR TO PROVIDE AND INSTALL MELTRIC DSN150, SWITCH RATED PLUG AND RECEPTICLE AT THE MOTOR AS REQUIRED. PLUG AND RECEPTICLE ARE TO BE RATED 150 AMP, 480 VOLT, 3 PHASE + GROUND WITH A HORSEPOWER RATING OF 75 HP, 460 VOLT, THREE PHASE. CONTRACTOR TO PROVIDE AND INSTALL NON-METALLIC FLEX CONDUIT OUT OF THE CONDUIT STUB-UP TO THE RECEPTACLE (FEMALE) AND NON-METALLIC FLEX CONDUIT OUT OF THE MOTOR PECKERHEAD TO THE PLUG (MALE). THE FLEX CONDUIT SHALL BE LONG ENOUGH FOR THE CONNECTIONS TO BE MADE WITHOUT STRESS ON THE FLEX CONDUITS AND ALLOW FOR MAINTANANCE OF THE MOTOR. RECEPTICLE TO BE MELTRIC #69-94043-843-354-515P0N15 AND INLET (PLUG) TO BE MELTRIC # 63-98043-515P0N15-31-9A426 OR APPROVED EQUAL.
5. CONTRACTOR TO PROVIDE AND INSTALL MELTRIC DSN20, SWITCH RATED PLUG AND RECEPTICLE AT THE MOTOR AS REQUIRED. PLUG AND RECEPTICLE ARE TO BE RATED 20 AMP, 480 VOLT, 3 PHASE + GROUND WITH A HORSEPOWER RATING OF 7.5 HP, 460 VOLT, THREE PHASE. CONTRACTOR TO PROVIDE AND INSTALL NON-METALLIC FLEX CONDUIT OUT OF THE CONDUIT STUB-UP TO THE RECEPTACLE (FEMALE) AND NON-METALLIC FLEX CONDUIT OUT OF THE MOTOR PECKERHEAD TO THE PLUG (MALE). THE FLEX CONDUIT SHALL BE LONG ENOUGH FOR THE CONNECTIONS TO BE MADE WITHOUT STRESS ON THE FLEX CONDUITS AND ALLOW FOR MAINTANANCE OF THE MOTOR. RECEPTICLE TO BE MELTRIC #63-14043-843-354-511P0N10 AND INLET (PLUG) TO BE MELTRIC # 63-18043-511P0N10-61-1A426 OR APPROVED EQUAL.
6. CONTRACTOR TO PROVIDE AND INSTALL MELTRIC DSN150, SWITCH RATED PLUG AND RECEPTICLE AT THE MOTOR AS REQUIRED. PLUG AND RECEPTICLE ARE TO BE RATED 150 AMP, 480 VOLT, 3 PHASE + GROUND WITH A HORSEPOWER RATING OF 75 HP, 460 VOLT, THREE PHASE. CONTRACTOR TO PROVIDE AND INSTALL NON-METALLIC FLEX CONDUIT OUT OF THE CONDUIT STUB-UP TO THE RECEPTACLE (FEMALE) AND NON-METALLIC FLEX CONDUIT OUT OF THE MOTOR PECKERHEAD TO THE PLUG (MALE). THE FLEX CONDUIT SHALL BE LONG ENOUGH FOR THE CONNECTIONS TO BE MADE WITHOUT STRESS ON THE FLEX CONDUITS AND ALLOW FOR MAINTANANCE OF THE MOTOR. RECEPTICLE TO BE MELTRIC #69-94043-843-354-515P0N15 AND INLET (PLUG) TO BE MELTRIC # 63-98043-515P0N15-31-9A426 OR APPROVED EQUAL.
7. CONTRACTOR TO PROVIDE AND INSTALL 4" X 4" X 4" NON-METALLIC SCRW COVER JUNCTION BOX WITH BLANK COVER AT EACH STUP-UP LOCATION FOR THE CONNECTIONS TO THE VARIOUS PIECES OF EQUIPMENT AS INDICATED.
8. CONTRACTOR TO PROVIDE AND INSTALL 6" X 6" X 6" NON-METALLIC SCRW COVER JUNCTION BOX WITH BLANK COVER AT EACH STUP-UP LOCATION FOR THE CONNECTIONS TO THE VARIOUS PIECES OF EQUIPMENT AS INDICATED.
9. CONTRACTOR TO PROVIDE AND INSTALL COPPER INSULATED GROUND BAR IN THE ELECTRICAL ROOM. GROUND BAR TO BE BURNDY # BBB14420J INCLUDING MOUNTING HARDWARE AND STANDOFF INSULATORS. MOUNT ONTO WALL AS REQUIRED.
10. CONTRACTOR TO PROVIDE AND INSTALL 20 AMP, 125 VOLT, GFCI DUPLES OUTLET IN NON-METALLIC SINGLE GANG TYPE FD BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVER. INSTALL AT THE EQUIPMENT CURB AS REQUIRED. MAINTAIN WATERTIGHTNESS OF THE CURB.



TELEPHONE RISER DIAGRAM
N.T.S.
1 / E1-0

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & CATALOG NUMBER	MOUNTING	NO./LAMPS	LOAD
A	COLUMBIA LIGHTING # LXEW-4-40-X-FA-W-E-U-DWH-LHVQM10 (STAINLESS STEEL)	SUSPENDED TO 30' AFF	LED	330 W
B	COLUMBIA LIGHTING # LXEW-4-40-M-FA-W-E-U-DWH-XEWFSBSS	SURFACE	LED	125 W
C	NOT USED			
D	COLUMBIA LIGHTING # LXEM-8-40-HL-RFA-E-U-DWH-2 EA-E45MBSS	SURFACE	LED	100 W
E	DUAL LITE #SEWL-S-R-W	SURFACE	LED	5 W
E1	COMPASS # CAR-277 V	SURFACE	LED	5 W
F	COLUMBIA LIGHTING # CBT22-LS35 (SET AT 4400 LUMENS)	RECESSED	LED	40 W
G	COLUMBIA LIGHTING # CBT24-LS35 (SET AT 5500 LUMENS)	RECESSED	LED	50 W
H1	HUBBELL # TRP1-12L-30-4K7-2-UNV-BLT-SCP-20F - SEE OWNER FOR SETTINGS	SURFACE AT 12' 0" AFG	LED	30 W
H2	HUBBELL # TRP2-D-50-4K7-WT-UNV-BL-SCP-20F - SEE OWNER FOR SETTING SEE NOTE 1 BELOW.	SURFACE AT 15' 0" AFG	LED	50 W
J	HUBBELL # LSQ2-55-4K7-UNV-BLT	SURFACE	LED	55 W
K	COLUMBIA LIGHTING # LXEM-4-40-ML-RFP-E-U-DWH	SURFACE	LED	45 W
M	COLUMBIA LIGHTING # CWM-2-35-ML-SM-FR-FA-E-U	SURFACE OVER MIRROR	LED	40 W
N	PRESCOLITE # LBSLEDA10L-35K-8-WH	RECESSED	LED	20 W
P	ECLIPSE # LI-SM-XL2-20W-4K-277-BZ-CTB	SURFACE AT 8' 0" AFF	LED	20 W
R	COLUMBIA LIGHTING # LXEM-4-35-ML-RFA-E-U-DWH	SURFACE	LED	42 W
S	HUBBELL # VWGL-1	WALL	LED	11 W
T	DUAL LITE # SEWL-S-R-W	SURFACE	LED	3 W
U	BEACON # VPS-36L-65-4K7-4W-UNV-A-BLT-BC WITH HUBBELL # SSS-B-25-60-B-1-B3-BLT-VM1-CO7 AT 48", FIXTURE TO BE MOUNTED AT 20' AFG AND 2- C07 AT 24' AFG FOR TWO CAMERAS AT 180 DEGREE APART WITH ANCHOR BOLTS AND BASE COVER	25' POLE	LED	65 W
V	BEACON # VPS-60L-136-4K7-4W-UNV-A-BLT-BC-SWPM40F WITH HUBBELL # SSS-B-20-50-B-1-B3-BLT-VM1 WITH ANCHOR BOLTS AND BASE COVER	20' POLE	LED	136 W
V1	BEACON # VPS-60L-136-4K7-4W-UNV-A-BLT-BC-SWPM40F WITH HUBBELL # SSS-B-25-50-B-1-B3-BLT-VM1 (FIXTURE MOUNTED AT 20' AFG) WITH CO7 AT 24' 0" AFG (FOR CAMERA) AND ANCHOR BOLTS AND BASE COVER	25' POLE	LED	136 W
V2	2 EACH - BEACON # VPS-60L-136-4K7-4W-UNV-A-BLT-BC-SWPM40F WITH HUBBELL # SSS-B-20-50-B-2-B3-BLT-VM1 WITH ANCHOR BOLTS AND BASE COVER	20' POLE	LED	272 W
W	HUBBELL RATIO # RFL5-360L-265-4K7-M-480-K-BLT-SP-7PR-NXOFM-1R1D-UNV WITH HUBBELL # SSS-B-30-60-B-TA-BLT-VM1 WITH ANCHOR BOLTS AND BASE COVER	30' POLE	LED	265 W
W1	HUBBELL RATIO # RFL5-360L-265-4K7-M-480-K-BLT-SP-7PR-NXOFM-1R1D-UNV WITH HUBBELL # SSS-B-35-60-B-OT-BLT-VM1 WITH MPB AT 30' 0" AFG FOR FIXTURE AND CO7 AT 34' 0" AFG (FOR CAMERA) WITH ANCHOR BOLTS AND BASE COVER	35' POLE	LED	265 W
X	KIM # EL218-W-5-8L-3K-UV-DB-BD215DB MOUNT ONTO METAL SINGLE GANG FD BOX	SURFACE ON CANOPY	LED	16 W
Y	KIM # SL1-18L-4K-UV-DB-42" OVERALL HEIGHT	AT GRADE	LED	26 W

NOTE:
1. PROVIDE OWNER WITH 2 EACH - HUBBELL # SCP-REMOTE.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11956 WILLIAM B. M. WOMACK
04-14-2021

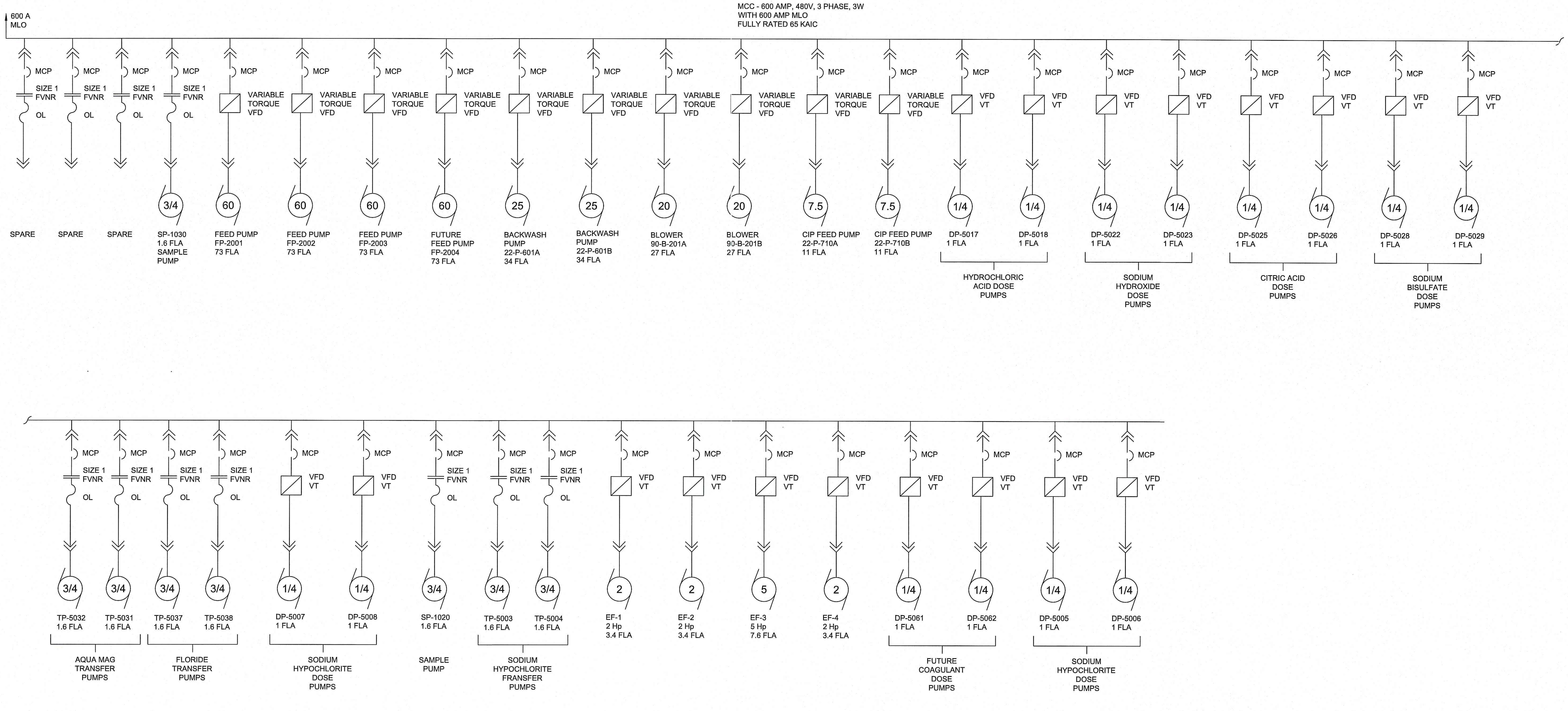
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEGEND, LIGHTING FIXTURE SCHEDULE AND KEY NOTES

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E1-0



MCC LAYOUT

N.T.S.

NOTE:

1. MCC TO BE BACK TO BACK CONSTRUCTION WITH ONE ELECTRICAL CONNECTION. MANUFACTURER TO MAKE CONNECTIONS BETWEEN SECTIONS. MAXIMUM LENGTH OF THE COMPLETE UNIT IS TO BE 13'-4" (8 - 20" SECTIONS).

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

MCC LAYOUT

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

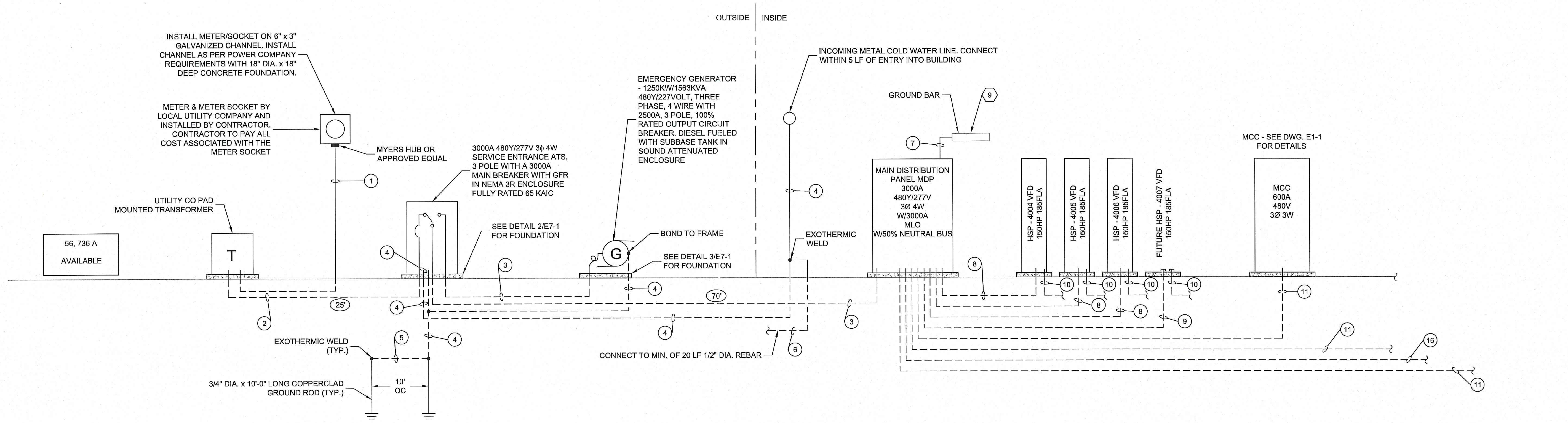
Drawn By: TLC
Checked By: XXX

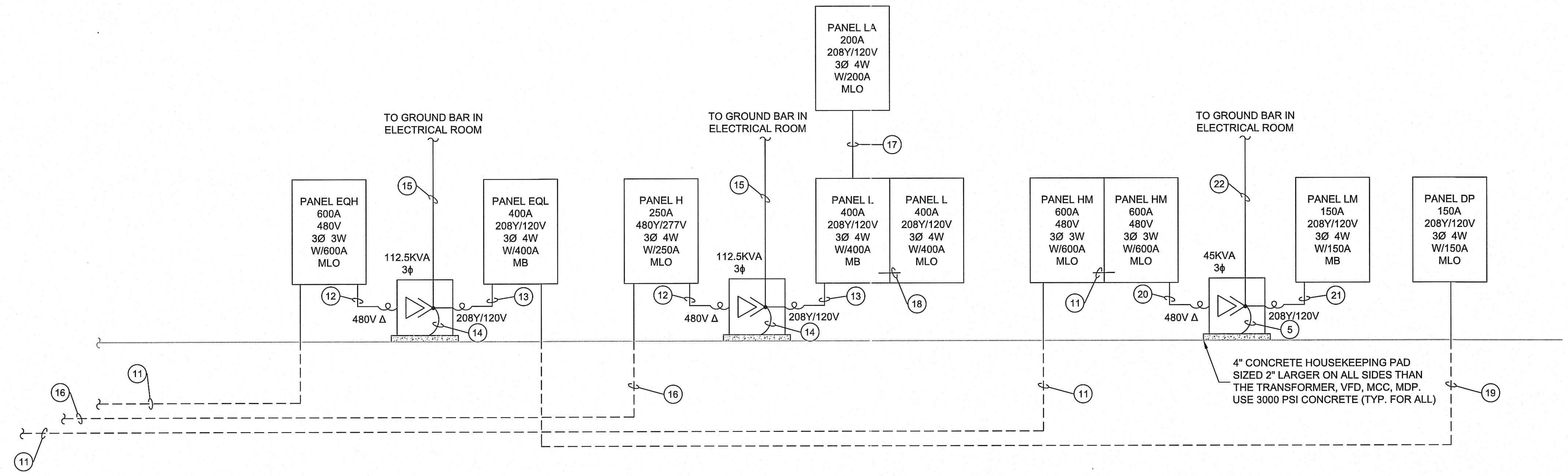
Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: E1-1





POWER RISER DIAGRAM
N.T.S.

WIRING SCHEDULE

1. EMPTY 1 1/2"C FOR UTILITY CO. METER LEADS
2. 8 RUNS - 3-500 KCMIL + 1#3/0N IN 3 1/2"C (EA)
3. 8 RUNS - 3-500 KCMIL + 1#3/0N + 1-400 KCMIL G IN 3 1/2"C (EA)
4. #3/0
5. #6
6. #4 THWN - CONNECT TO MIN. 20 LF - 1/2" DIA. REBAR
7. 400 KCMIL
8. 3-350 KCMIL + 1#4G IN 3"C
9. EMPTY 3"C
10. SEE DRAWINGS FOR REQUIREMENTS
11. 2 RUNS - 3-350 KCMIL + 1#1G IN 3"C (EA)
12. 3#2/0 + 1#6G IN 2"C
13. 4-600 KCMIL + 1#1/0G IN 4"C
14. #1/0
15. 1#1/0 IN 3/4" PVC C
16. 4-250 KCMIL + 1#4G IN 3"C
17. 4#3/0 + 1#3G IN 2 1/2"C
18. 4-600 KCMIL + 1#3G IN 4"C
19. 4#3/0 + 1#4G IN 2 1/2"C
20. 3#4 + 1#8G IN 1 1/4"C
21. 4#1/0 + 1#6G IN 2"C
22. 1#6 IN 3/4" PVC C

NOTES:
1. ALL 480 VOLT PANELBOARDS, STANDALONE VFD'S AND MCC ARE TO BE FULLY RATED 65 KAIC.
2. ALL 208 VOLT PANELBOARDS ARE TO BE FULLY RATED 10 KAIC.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

POWER RISER DIAGRAM

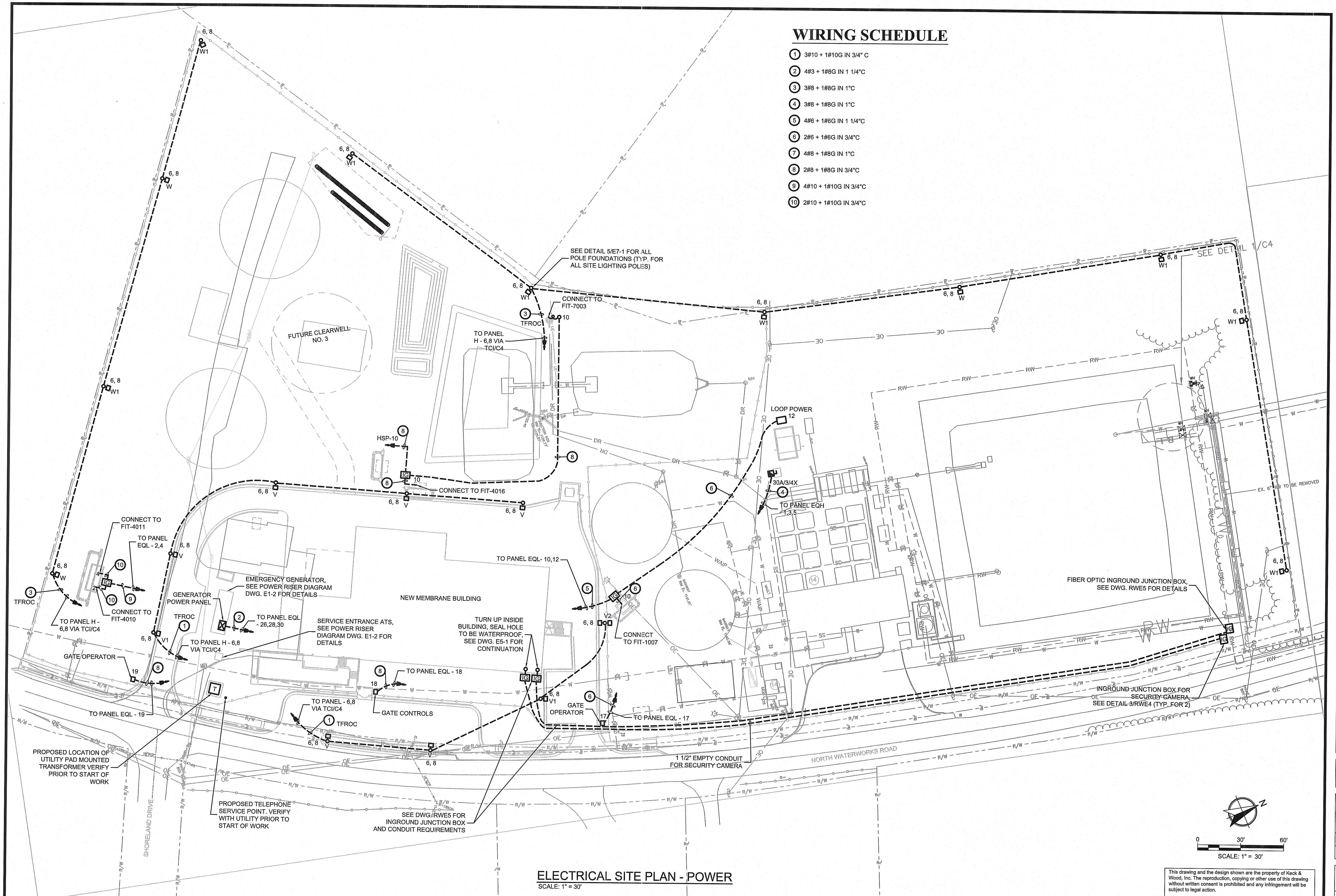
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E1-2

WIRING SCHEDULE

1. 3#10 + 1#10G IN 3/4" C
2. 4#3 + 1#8G IN 1 1/4"C
3. 3#8 + 1#8G IN 1"C
4. 3#8 + 1#8G IN 1"C
5. 4#6 + 1#6G IN 1 1/4"C
6. 2#6 + 1#6G IN 3/4"C
7. 4#8 + 1#8G IN 1"C
8. 2#8 + 1#8G IN 3/4"C
9. 4#10 + 1#10G IN 3/4"C
10. 2#10 + 1#10G IN 3/4"C



SEE DETAIL 5/E7-1 FOR ALL POLE FOUNDATIONS (TYP. FOR ALL SITE LIGHTING POLES)
CONNECT TO FIT-7003
TFROC
TO PANEL H - 6,8 VIA TCI/C4
FUTURE CLEARWELL NO. 3
HSP-10
CONNECT TO FIT-4016
LOOP POWER
30A/3/4X
TO PANEL EQH 1,3,5
SEE DETAIL 1/C4
CONNECT TO FIT-4011
TO PANEL EQL - 2,4
TO PANEL H - 6,8 VIA TCI/C4
CONNECT TO FIT-4010
EMERGENCY GENERATOR, SEE POWER RISER DIAGRAM DWG. E1-2 FOR DETAILS
GENERATOR POWER PANEL
TO PANEL EQL - 26,28,30
NEW MEMBRANE BUILDING
TO PANEL EQL- 10,12
CONNECT TO FIT-1007
FIBER OPTIC INGROUND JUNCTION BOX, SEE DWG. RWE5 FOR DETAILS
TO PANEL H - 6,8 VIA TCI/C4
GATE OPERATOR
SERVICE ENTRANCE ATS, SEE POWER RISER DIAGRAM DWG. E1-2 FOR DETAILS
TURN UP INSIDE BUILDING, SEAL HOLE TO BE WATERPROOF, SEE DWG. E5-1 FOR CONTINUATION
TO PANEL EQL - 18
GATE CONTROLS
TO PANEL EQL - 19
TO PANEL - 6,8 VIA TCI/C4
TO PANEL EQL - 17
INGROUND JUNCTION BOX FOR SECURITY CAMERA, SEE DETAIL 3/RWE4 (TYP. FOR 2)
1 1/2" EMPTY CONDUIT FOR SECURITY CAMERA
NORTH WATERWORKS ROAD
PROPOSED LOCATION OF UTILITY PAD MOUNTED TRANSFORMER VERIFY PRIOR TO START OF WORK
PROPOSED TELEPHONE SERVICE POINT. VERIFY WITH UTILITY PRIOR TO START OF WORK
SEE DWG. RWE5 FOR INGROUND JUNCTION BOX AND CONDUIT REQUIREMENTS
SHORELAND DRIVE
EX. 6" W TO BE REMOVED
0 30' 60'
SCALE: 1" = 30'

ELECTRICAL SITE PLAN - POWER

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

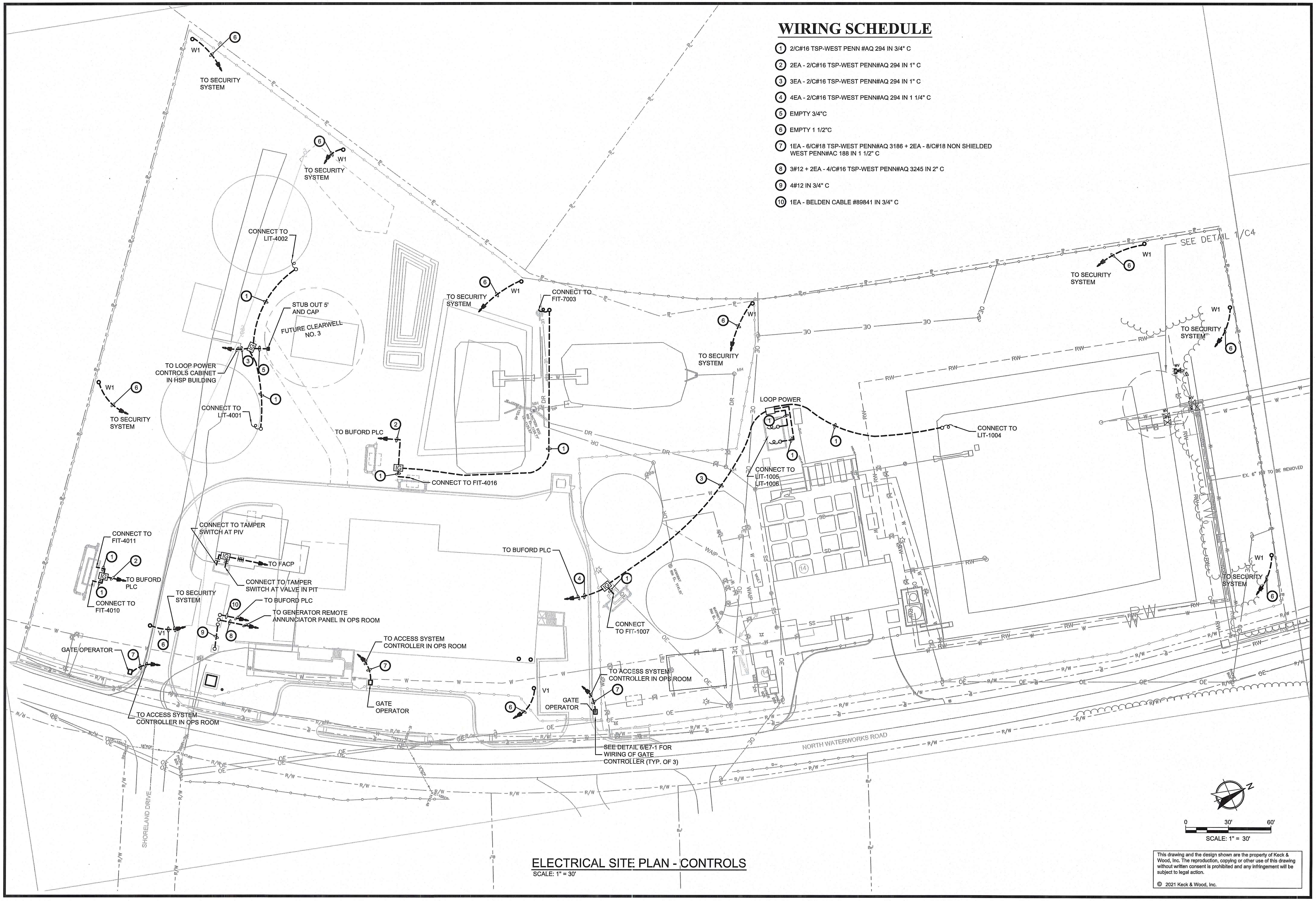
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL SITE PLAN - POWER

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E1-3



W1
TO SECURITY SYSTEM
CONNECT TO LIT-4002
STUB OUT 5' AND CAP
FUTURE CLEARWELL NO. 3
TO LOOP POWER CONTROLS CABINET IN HSP BUILDING
CONNECT TO LIT-4001
TO BUFORD PLC
CONNECT TO FIT-4016
CONNECT TO FIT-7003
LOOP POWER
CONNECT TO LIT-1004
CONNECT TO LIT-1005 LIT-1006
SEE DETAIL 1/C4
CONNECT TO FIT-4011
CONNECT TO FIT-4010
TO BUFORD PLC
CONNECT TO TAMPER SWITCH AT PIV
TO FACP
CONNECT TO TAMPER SWITCH AT VALVE IN PIT
TO GENERATOR REMOTE ANNUNCIATOR PANEL IN OPS ROOM
TO ACCESS SYSTEM CONTROLLER IN OPS ROOM
GATE OPERATOR
V1
CONNECT TO FIT-1007
SEE DETAIL 6/E7-1 FOR WIRING OF GATE CONTROLLER (TYP. OF 3)
EX. 6" RW TO BE REMOVED
NORTH WATERWORKS ROAD
SHORELAND DRIVE
0 30' 60'
SCALE: 1" = 30'

WIRING SCHEDULE

1. 2/C#16 TSP-WEST PENN #AQ 294 IN 3/4" C
2. 2EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1" C
3. 3EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1" C
4. 4EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4" C
5. EMPTY 3/4"C
6. EMPTY 1 1/2"C
7. 1EA - 6/C#18 TSP-WEST PENN#AQ 3186 + 2EA - 8/C#18 NON SHIELDED WEST PENN#AC 188 IN 1 1/2" C
8. 3#12 + 2EA - 4/C#16 TSP-WEST PENN#AQ 3245 IN 2" C
9. 4#12 IN 3/4" C
10. 1EA - BELDEN CABLE #89841 IN 3/4" C

ELECTRICAL SITE PLAN - CONTROLS

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

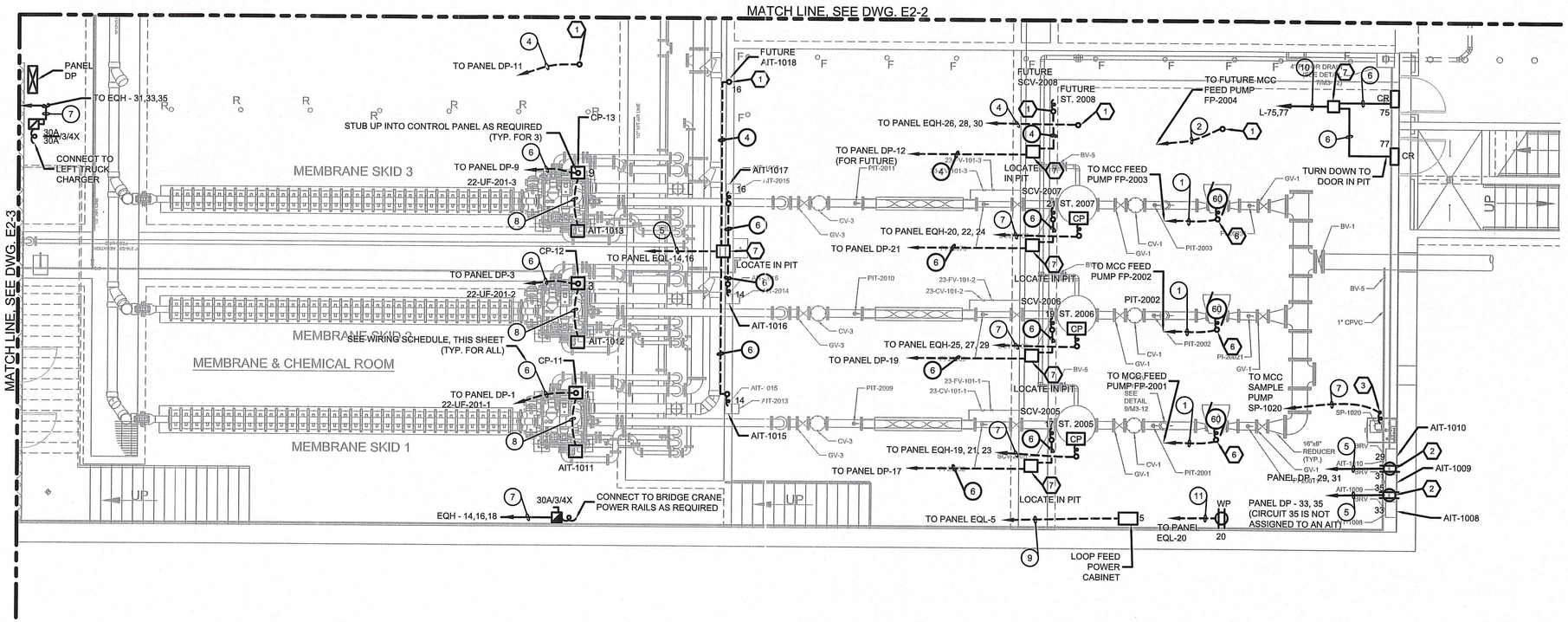
Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL SITE PLAN - CONTROLS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E1-4

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE PARTIAL POWER PLAN
SCALE: 3/16" = 1'-0"

WIRING SCHEDULE

1. 3/C#1/0 TYPE TC-ER VFD CABLE IN 2"C
2. 2" EMPTY C
3. 3#12 + 1#12G IN 3/4"C
4. 3/4" EMPTY C
5. 4#8 + 1#8G IN 1"C
6. 2#10 + 1#10G IN 3/4"C
7. 3#10 + 1#10G IN 3/4"C
8. 2#12 + 1#12G IN 1/2"C
9. 2#6 + 1#6G IN 1"C
10. 4#8 + 1#10G IN 1"C
11. 2#8 + 1#8G IN 3/4"C

ALL CONDUCTORS ARE COPPER

0 64" 128"
SCALE: 3/16" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA. 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM E. M. 06-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE POWER PLAN, SHEET 1

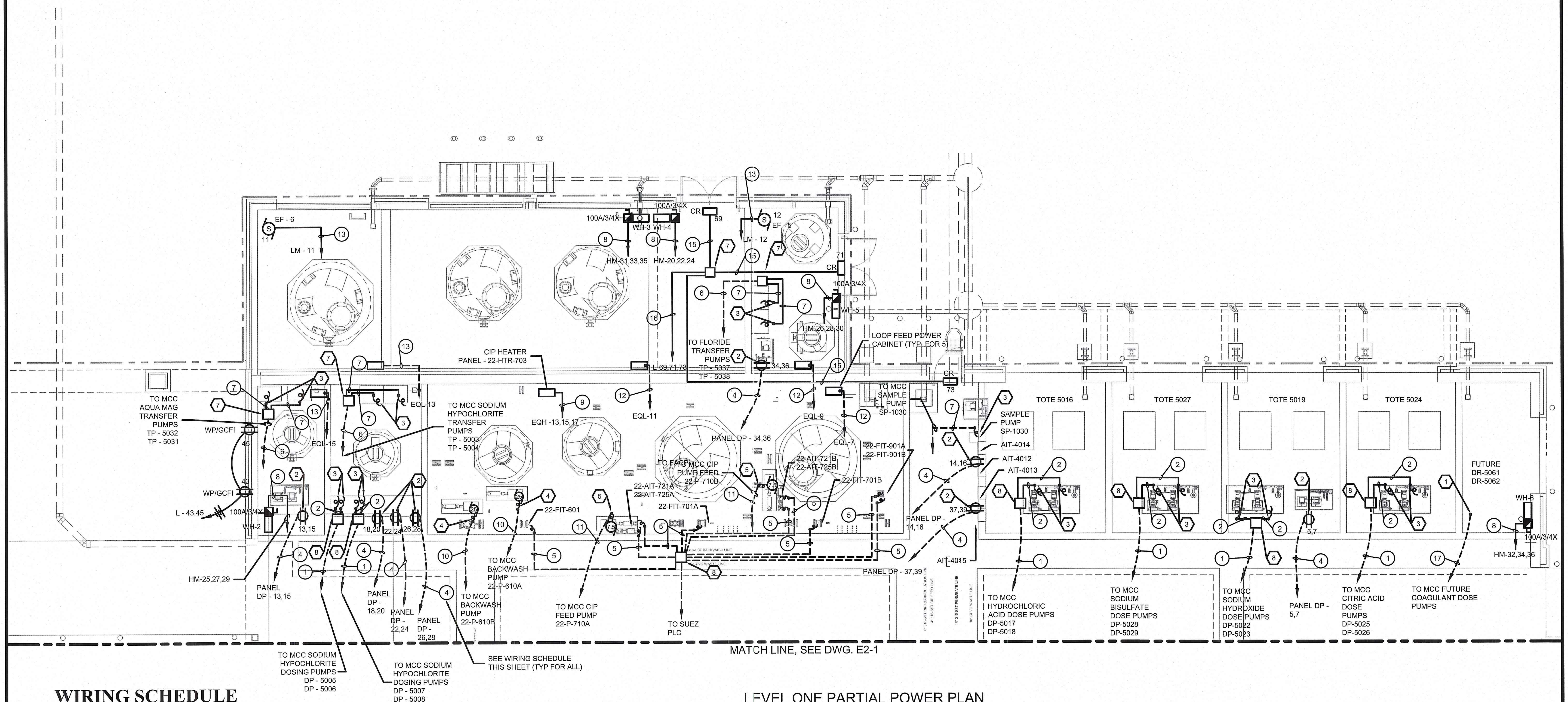
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E2-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE PARTIAL POWER PLAN

SCALE: 3/16" = 1'-0"

WIRING SCHEDULE

1. 2 EA - 3/C#12 TC-ER VFD CABLE IN 1 1/2"C
2. 3/C#12 TC-ER VFD CABLE IN 1"C
3. EMPTY 1"C
4. 4#10 + 1#10G IN 3/4"C
5. 2#12 + 1#12G IN 3/4"C
6. 6#12 + 1#12G IN 3/4"C
7. 3#12 + 1#12G IN 3/4"C
8. 3#4 + 1#8G IN 1 1/4"C
9. 3#3 + 1#8G IN 1 1/4"C
10. 3/C#4 TC-ER VFD CABLE IN 1 1/2"C
11. 3/C#10 TC-ER VFD CABLE IN 1"C
12. 2#6 + 1#6G IN 1"C
13. 2#8 + 1#8G IN 3/4"C
14. 18#10 + 1#10G IN 1 1/4"C
15. 2#10 + 1#10G IN 3/4"C
16. 6#10 + 1#10G IN 1"C
17. EMPTY 1 1/2"C

0 64" 128"

SCALE: 3/16" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

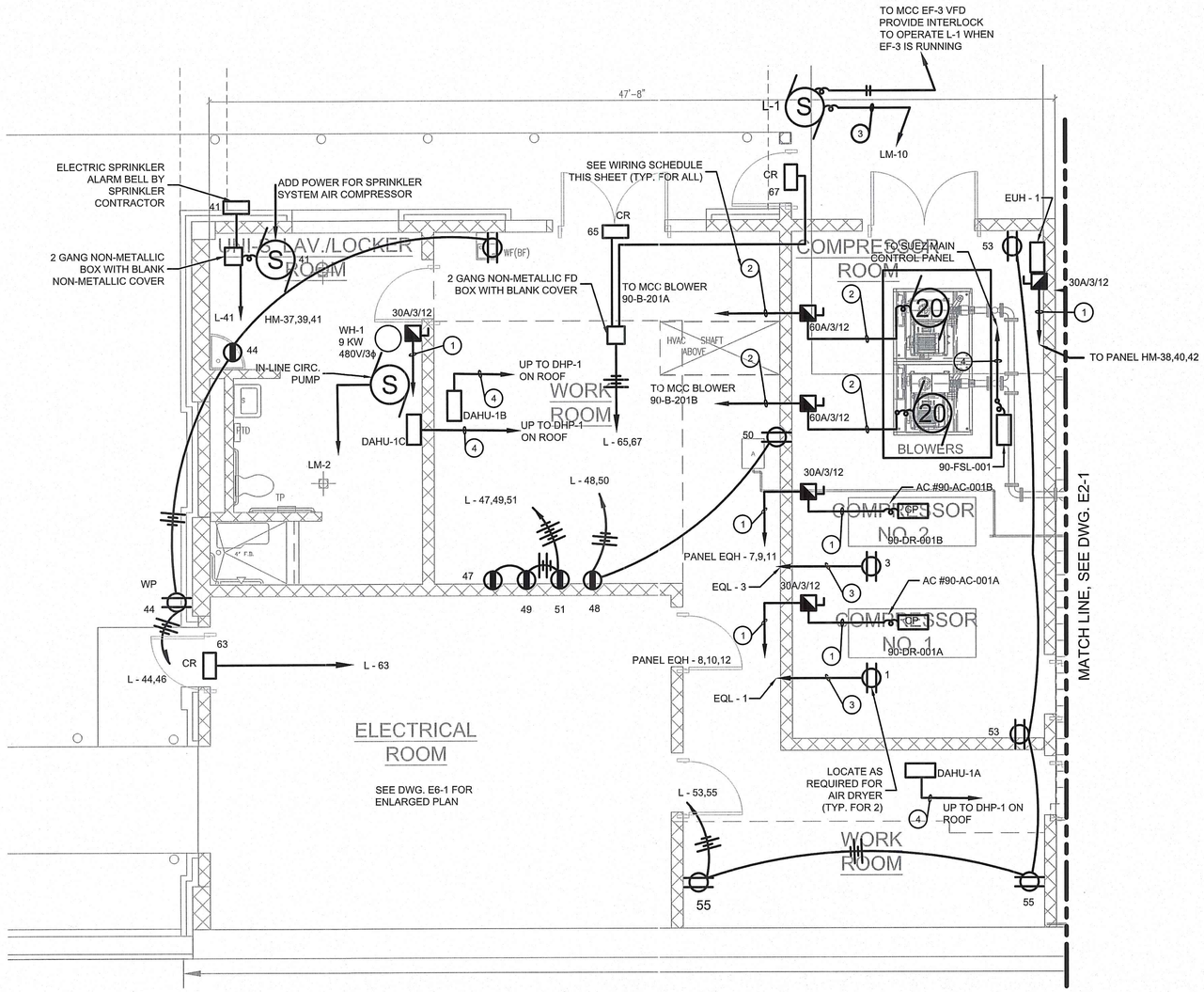
Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE POWER PLAN, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E2-2

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE PARTUAL POWER PLAN
SCALE: 1/4" = 1'-0"

WIRING SCHEDULE

1. 3#12 + 1#12G IN 3/4"C
2. 3/C#8 TC-ER VFD CABLE IN 1 1/4"C
3. 2#12 + 1#12G IN 3/4"C
4. 3#12 + 1#12G IN 3/4"C

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM B. M. WOMACK

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

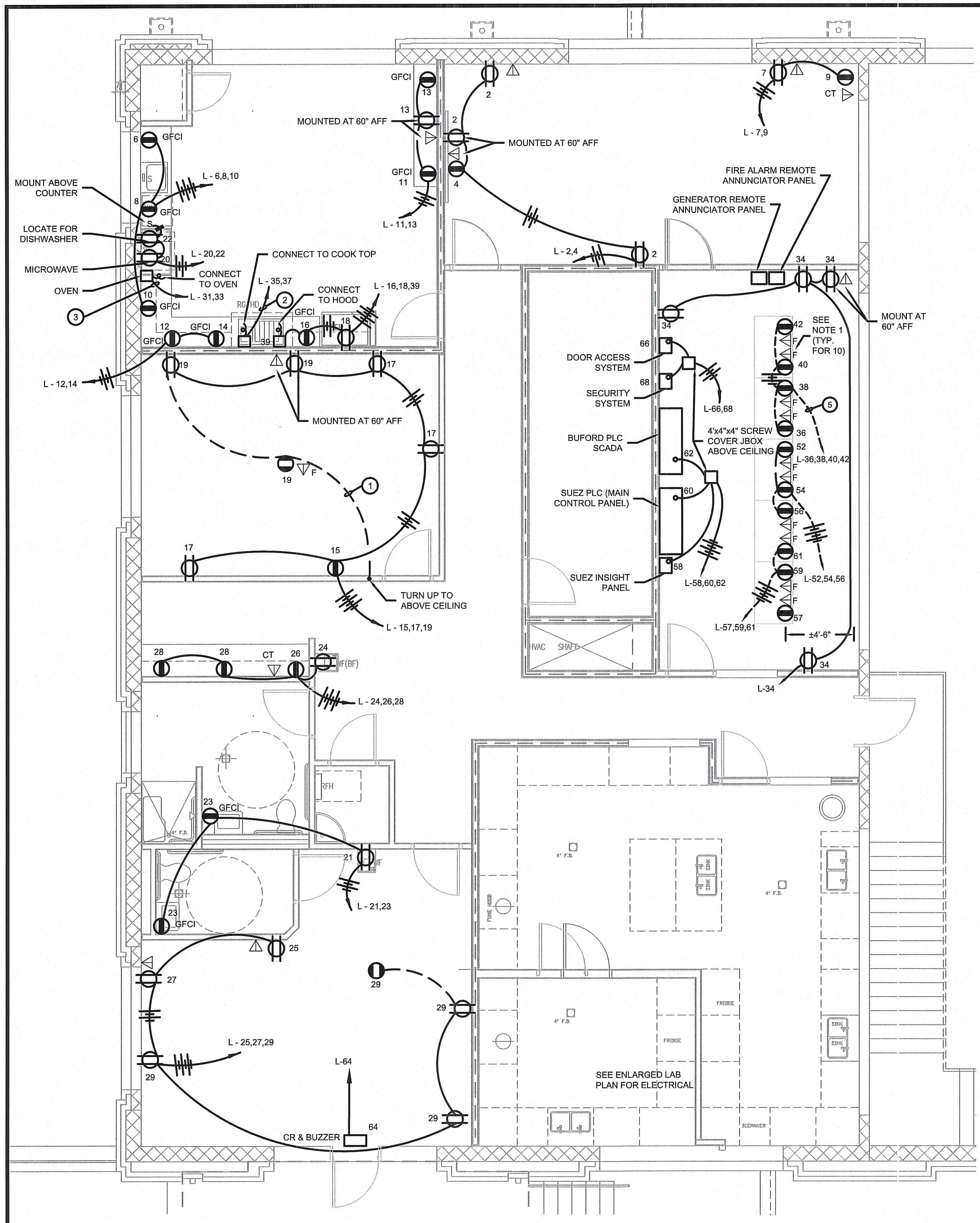
LEVEL ONE POWER PLAN, SHEET 3

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

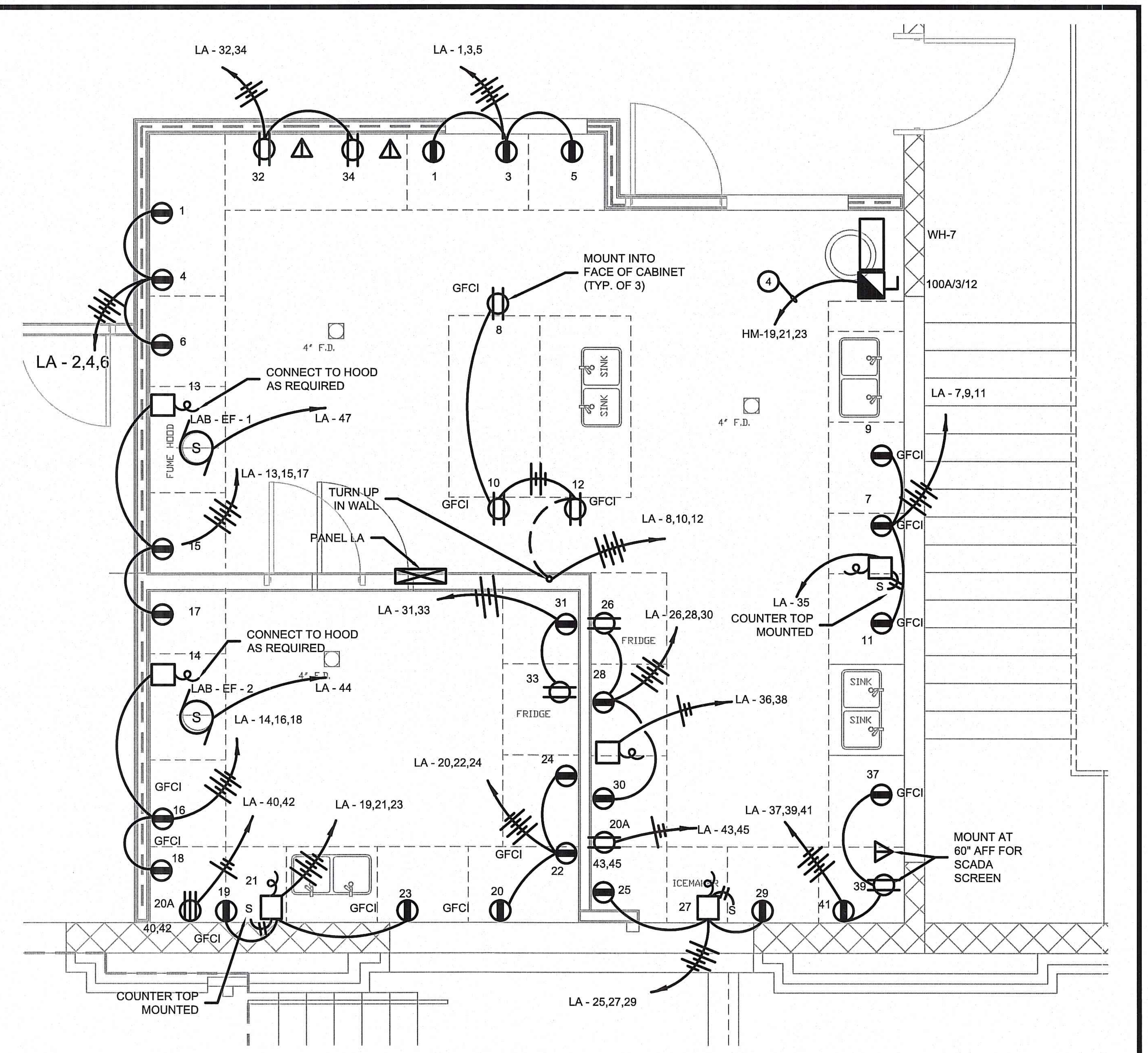
0 48" 96"
SCALE: 1/4" = 1'-0"

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E2-3



UPPER LEVEL POWER PLAN
SCALE: 1/4" = 1'-0"



ENLARGED LAB PLAN
SCALE: 3/8" = 1'-0"

WIRING SCHEDULE

1. 1" EMPTY C FOR PHONE/DATA CABLE (BY OTHERS)
2. 3#8 + 1#10G IN 3/4"C
3. 3#10 + 1#10G IN 3/4"C
4. 3#4 + 1#8G IN 1 1/4"C
5. 8#10 + 1#10G IN 3/4"C

NOTES:
1. CONTRACTOR TO RUN 1" EMPTY C TO BELOW FLOOR FOR CABLING BY OTHERS.

0 48" 96"
SCALE: 1/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

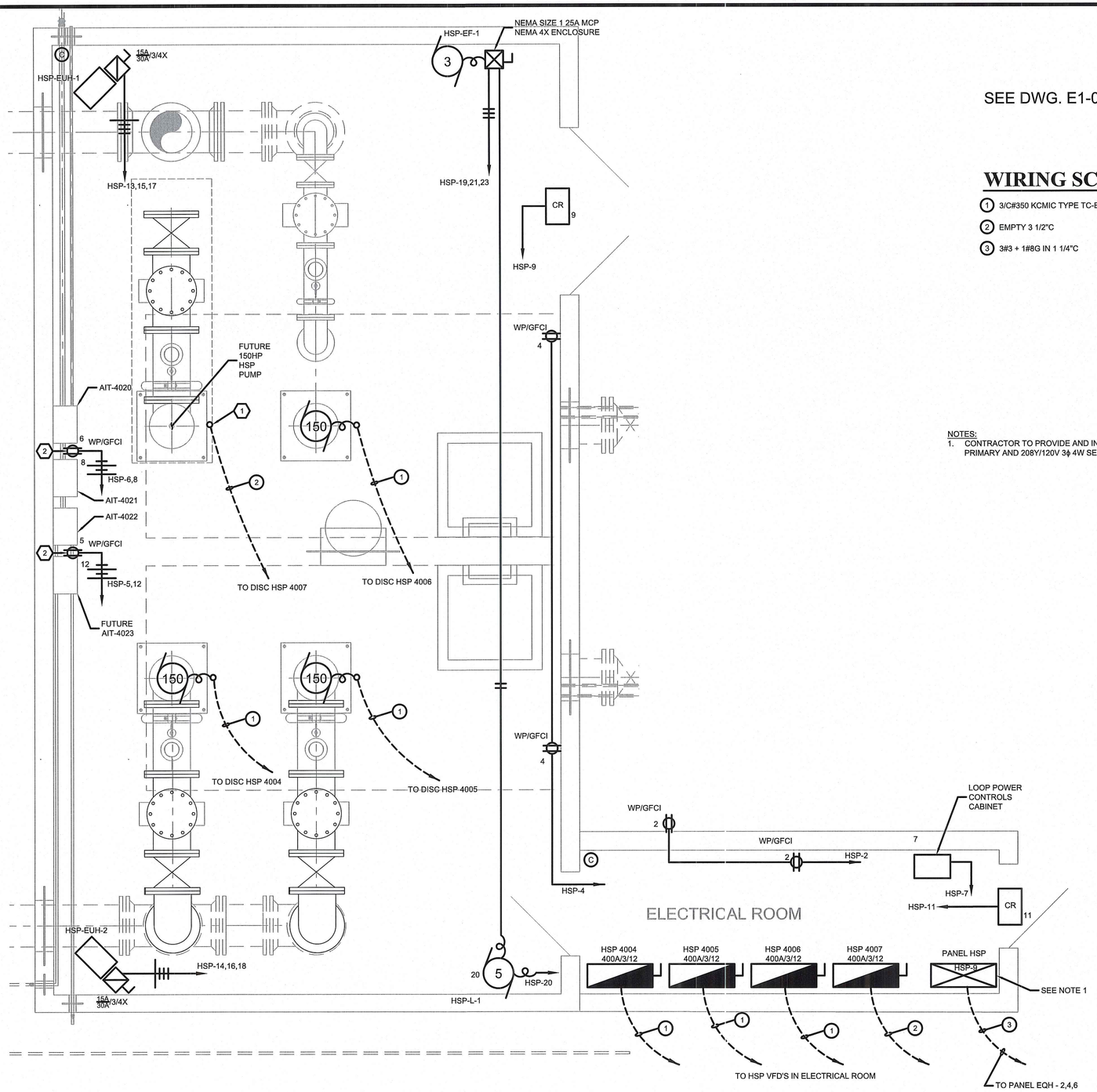
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

UPPER LEVEL POWER PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E2-4



HIGH SERVICE PUMP STATION POWER PLAN

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

SEE DWG. E1-0 FOR KEY NOTES.

WIRING SCHEDULE

1. 3/C#350 KCMIC TYPE TC-ER VFD CABLE IN 3 1/2"C
2. EMPTY 3 1/2"C
3. 3#3 + 1#8G IN 1 1/4"C

NOTES:
1. CONTRACTOR TO PROVIDE AND INSTALL MINI-POWER ZONE SEALED UNIT SUBSTATION. UNIT TO BE 30KVA 3ϕ, 480V PRIMARY AND 208Y/120V 3ϕ 4W SECONDARY. TO BE SQUARE D #7400-MPZB30T2F25K OR PRIOR APPROVED EQUAL.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA. 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM B. MONAHAN 04/14/2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

HIGH SERVICE PUMP STATION
POWER PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

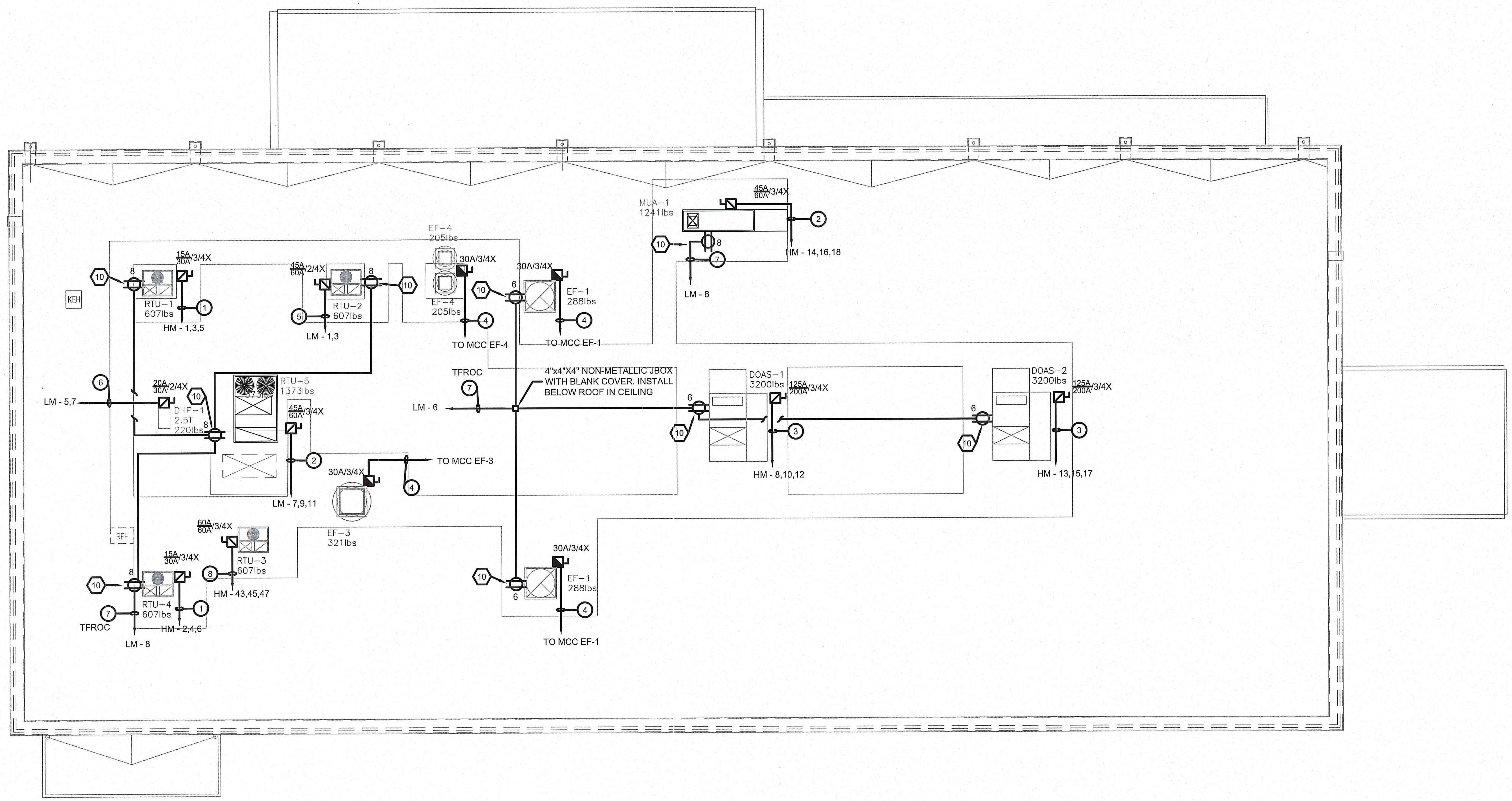
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC | Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E2-5

0 24" 48"
SCALE: 1/2" = 1'-0"

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\HSPS Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



MECHANICAL ROOF POWER PLAN

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

NOTE:

1. ALL CONDUITS FOR MECHANICAL EQUIPMENT AND OUTLETS ARE TO BE RUN BELOW ROOF IN PROCESS/OFFICE AREA. PENETRATE ROOF AND SEAL AS REQUIRED BY ARCHITECT/STRUCTURAL.

WIRING SCHEDULE

1. 3#12 + 1#12G IN 3/4"C
2. 3#8 + 1#10G IN 3/4"C
3. 3#1 + 1#6G IN 1 1/2"C
4. 3/C#12 TYPE TC-ER VFD CABLE IN 1"C
5. 2#4 + 1#4G IN 1 1/4"C
6. 2#8 + 1#8G IN 3/4"C
7. 2#10 + 1#10G IN 3/4"C
8. 3#6 + 1#8G IN 1"C

N

0 96" 192"

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER — 04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

MECHANICAL ROOF POWER PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: TLC

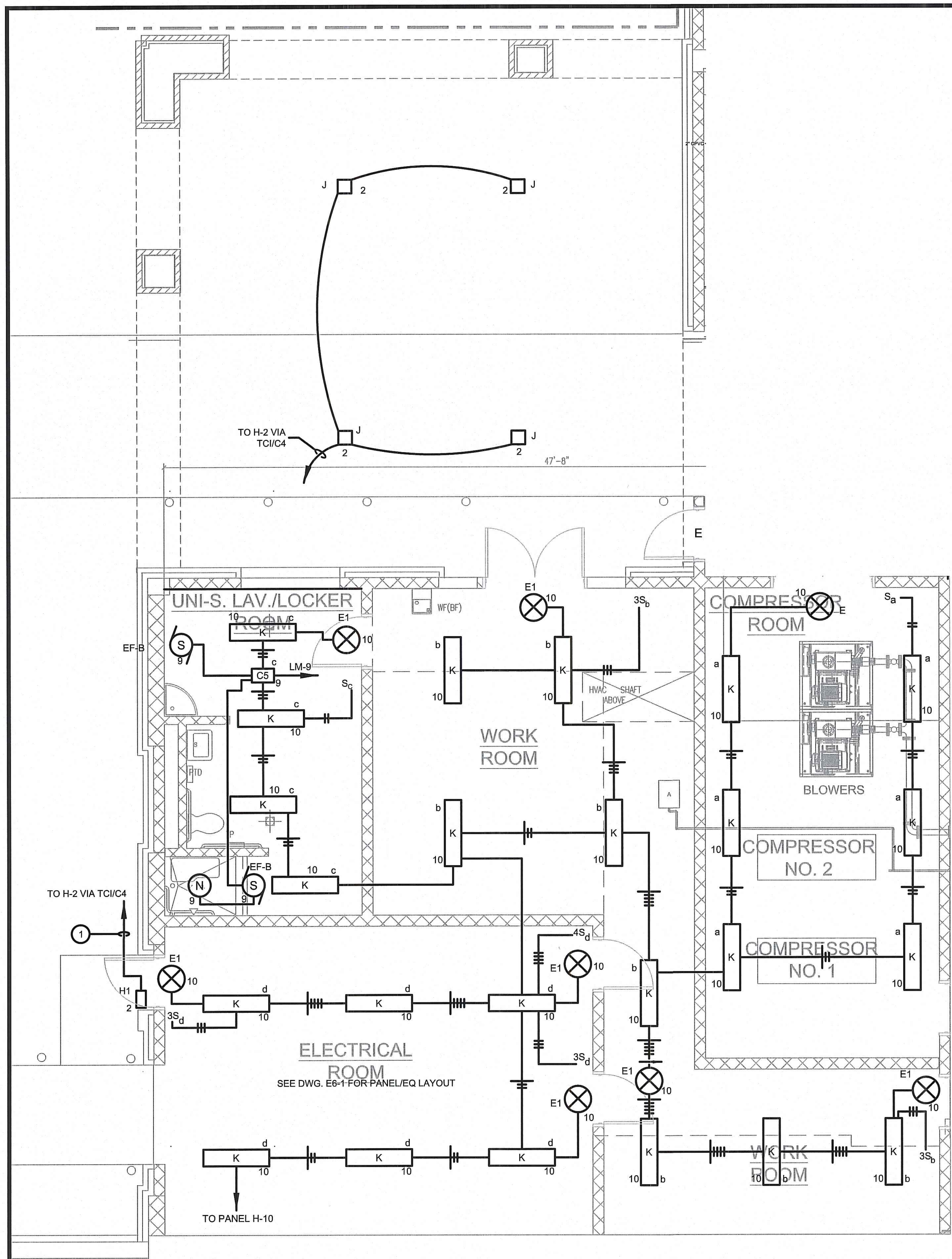
Checked By: XXX

Date: 04/14/2021

Scale: As Shown

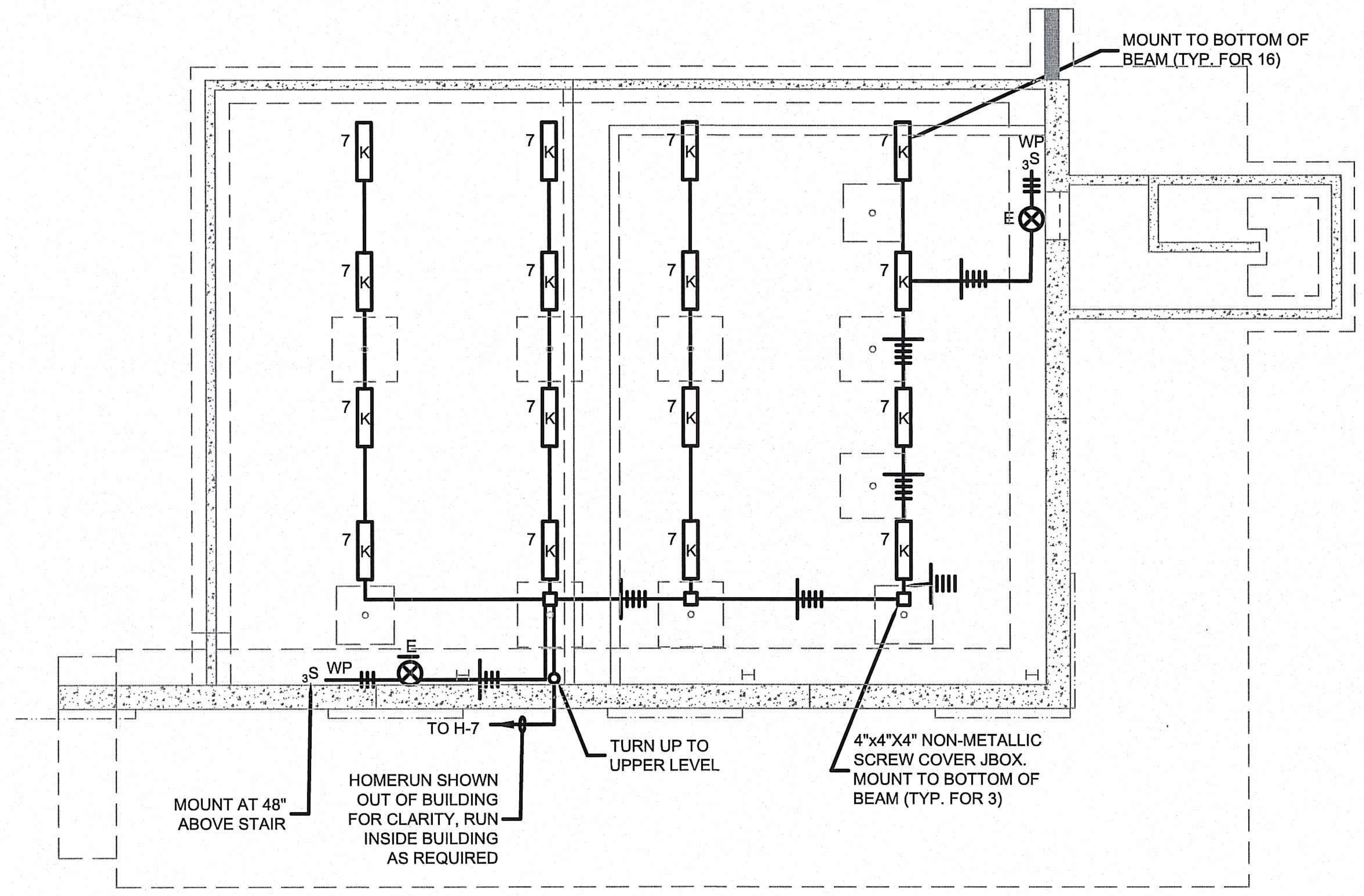
Project No.: 170110.00

Drawing No.: E2-6



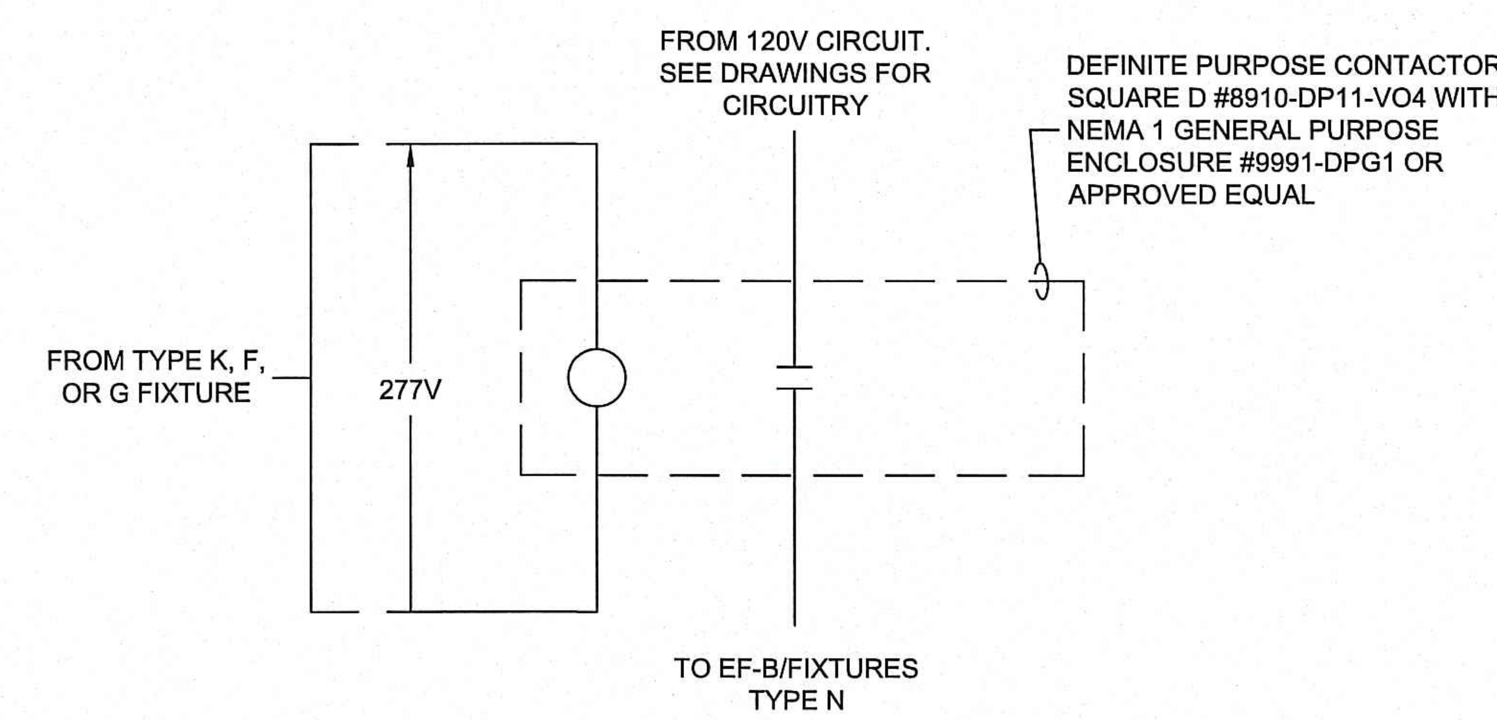
LEVEL ONE LIGHTING AND SECURITY LIGHTING PLAN (1 / E3-1)

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



PIT LIGHTING PLAN (2 / E3-1)

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



CONTROL SCHEMATIC - C5/C6/C7 (3 / E3-1)

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

0 48" 96"

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE LIGHTING PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

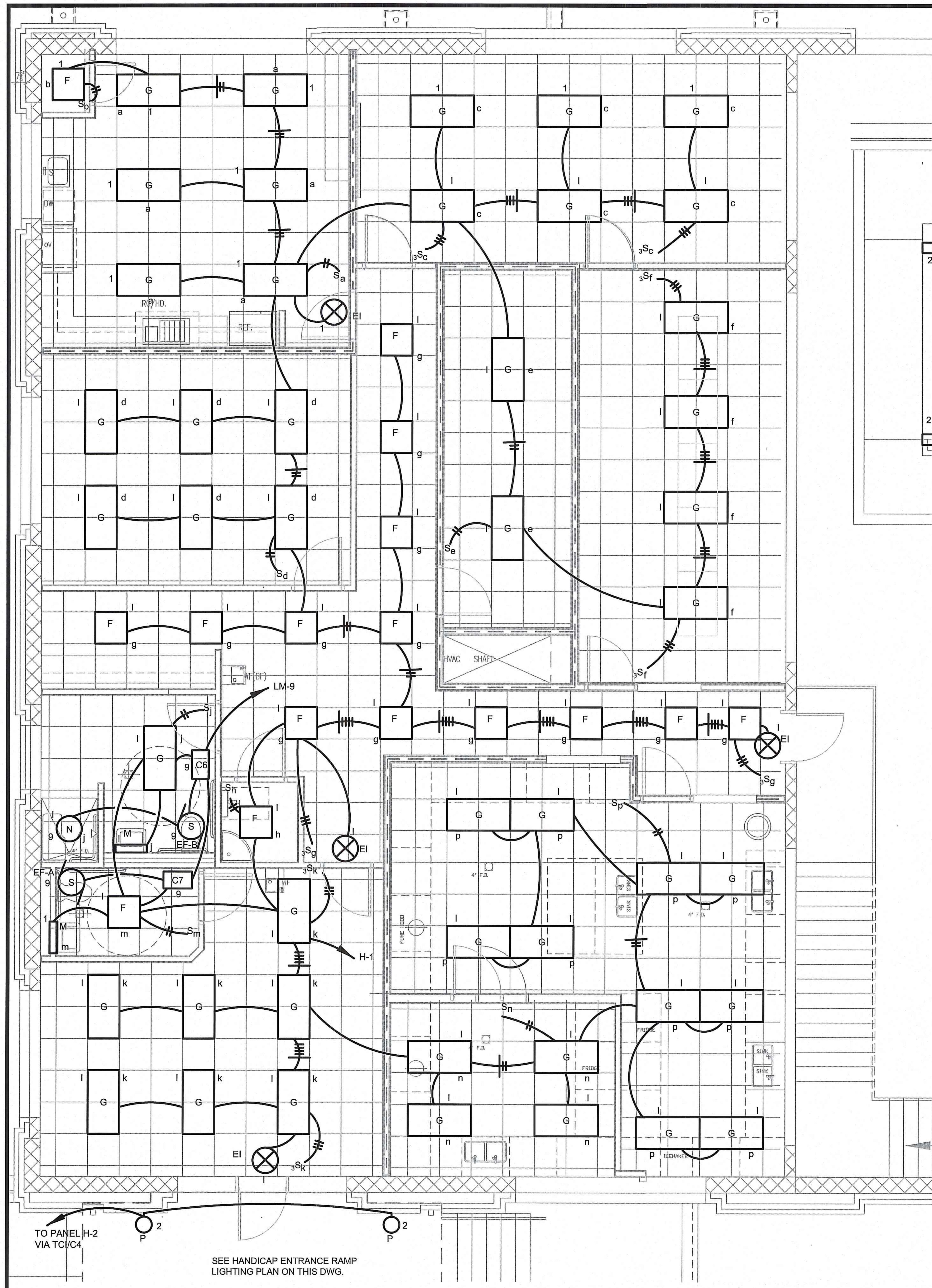
Drawn By: TLC Checked By: XXX

Date: 04/14/2021

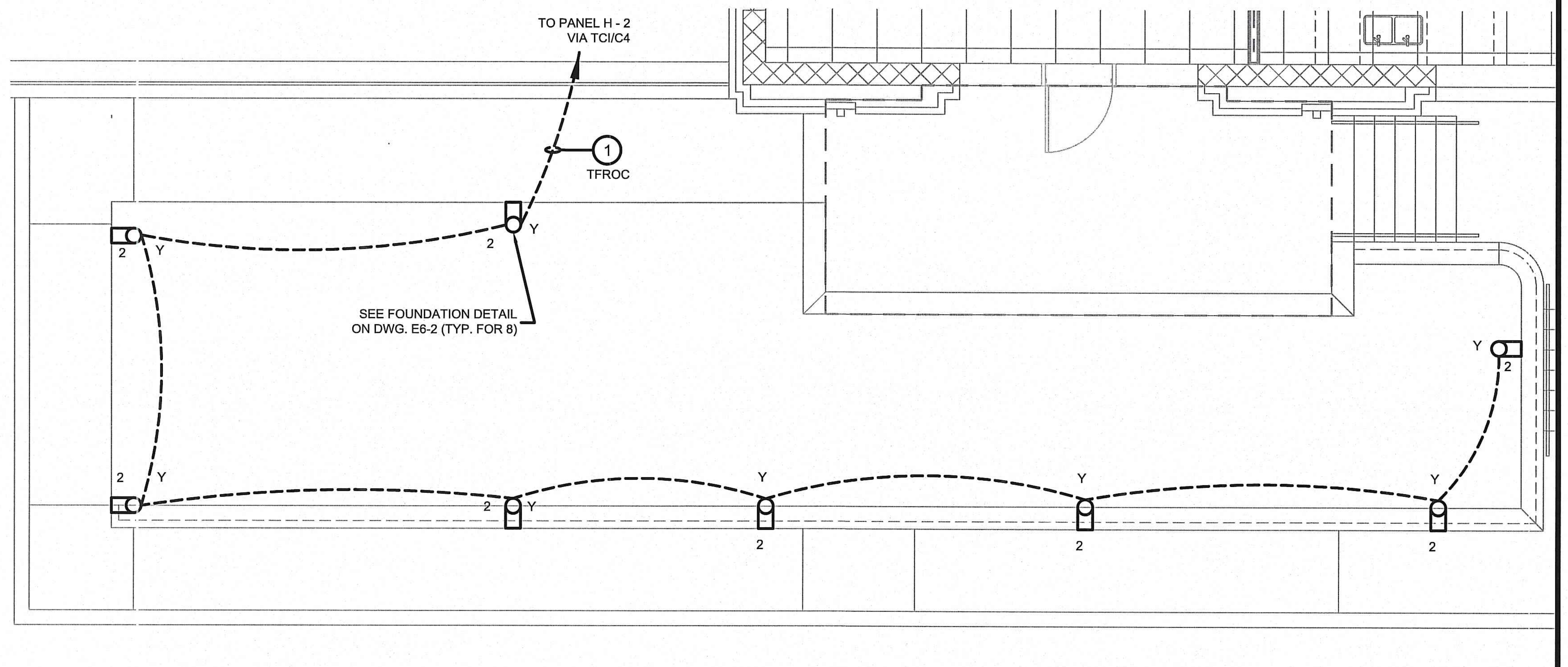
Scale: As Shown

Project No.: 170110.00

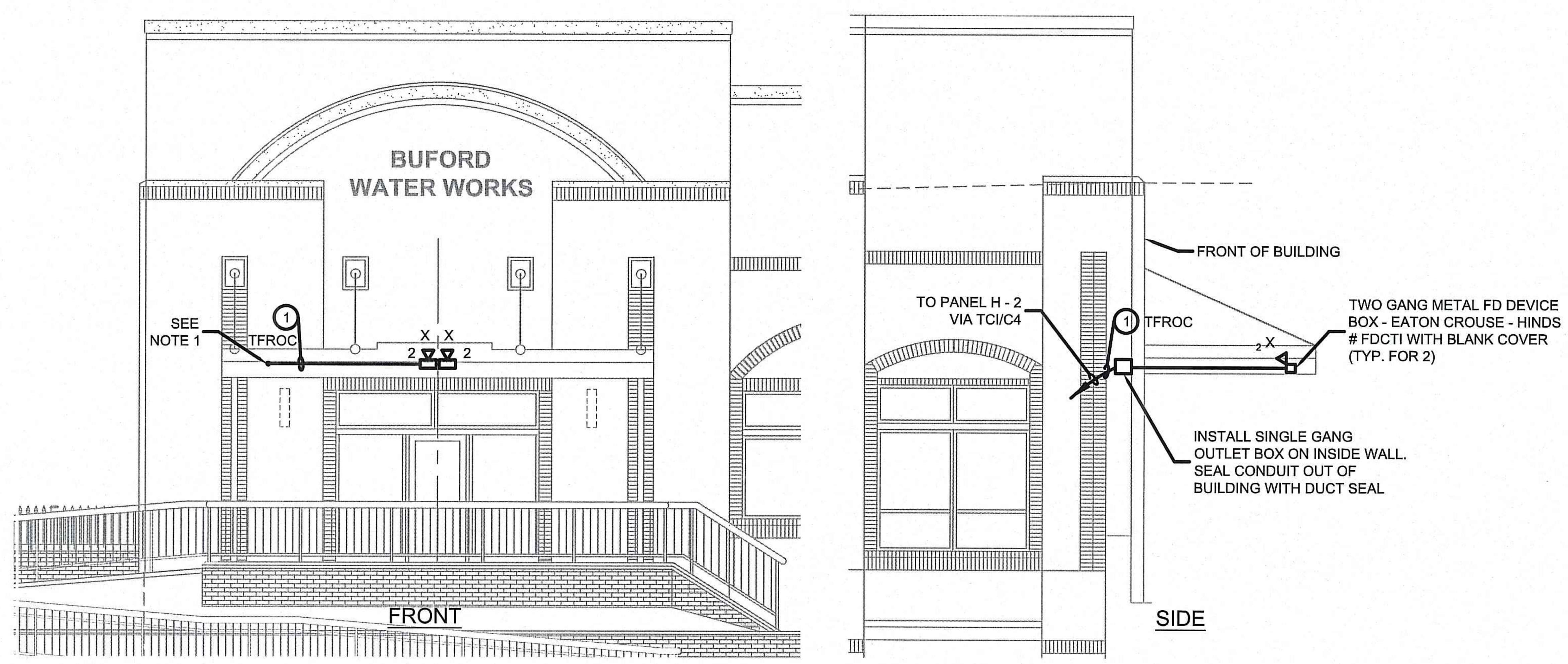
Drawing No.: E3-1



LEVEL TWO LIGHTING PLAN
SCALE: 1/4" = 1'-0"



HANDICAP ENTRANCE RAMP LIGHTING PLAN
SCALE: 1/4" = 1'-0"



BUILDING SIGN LIGHTING PLAN
SCALE: 3/16" = 1'-0"

WIRING SCHEDULE

(1) 2#12 + 1#12G IN 1/2" C

NOTES:

1. CONTRACTOR TO ENTER BUILDING THRU FRONT WALL. SEAL PENETRATION AFTER INSTALLATION OF CONDUIT BACK TO ITS ORIGINAL CONDITION (WATERPROOF). COORDINATE WITH ARCHITECT FOR SEALING OF CONDUIT PENETRATION.
2. SEE CONTROL SCHEMATIC DRAWING E3-1 DETAIL 3 FOR CONTACTORS C6 AND C7.
3. SEE DRAWING E6-2 FOR TCI/C4 CONTROL SCHEMATIC.

0 48" 96"
SCALE: 1/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM B. M... No. PE...
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO LIGHTING PLAN, SHEET 1

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager:
Jolene Northrop, P.E.

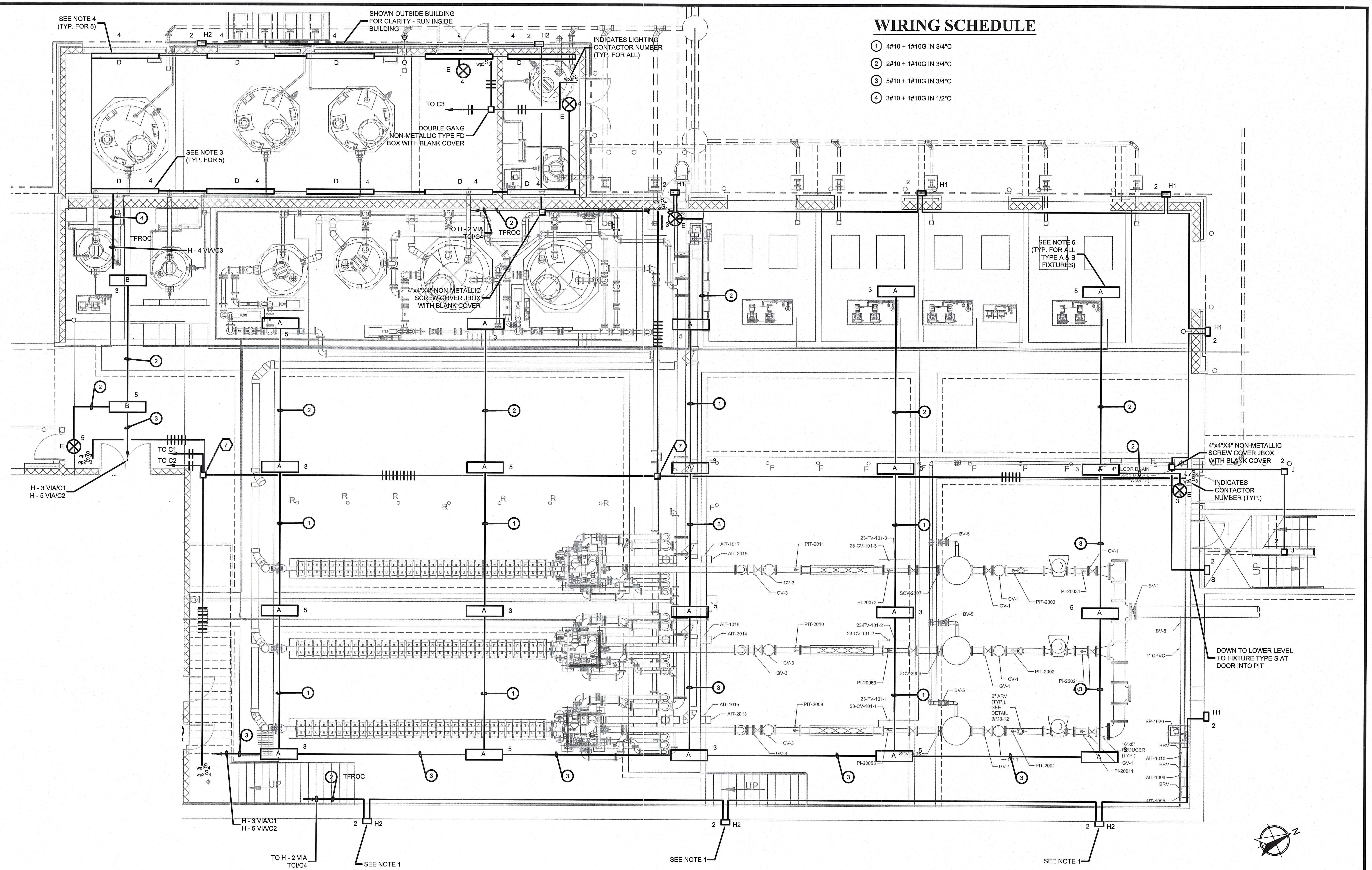
Drawn By: TLC
Checked By: XXX

Date: 04/14/2021

Scale: As Shown

Project No.:
170110.00

Drawing No.:
E3-2


SEE NOTE 4
(TYP. FOR 5)
SHOWN OUTSIDE BUILDING
FOR CLARITY - RUN INSIDE
BUILDING
INDICATES LIGHTING
CONTACTOR NUMBER
(TYP. FOR ALL)
TO C3
DOUBLE GANG
NON-METALLIC TYPE FD
BOX WITH BLANK COVER
SEE NOTE 3
(TYP. FOR 5)
TO H - 2 VIA
TCI/C4
TFROC
H - 4 VIA/C3
4"x4"X4" NON-METALLIC
SCREW COVER JBOX
WITH BLANK COVER
SEE NOTE 5
(TYP. FOR ALL
TYPE A & B
FIXTURES)
TO C1
TO C2
H - 3 VIA/C1
H - 5 VIA/C2
4"X4"X4" NON-METALLIC
SCREW COVER JBOX
WITH BLANK COVER
INDICATES
CONTACTOR
NUMBER (TYP.)
DOWN TO LOWER LEVEL
TO FIXTURE TYPE S AT
DOOR INTO PIT
TO H - 2 VIA
TCI/C4
SEE NOTE 1
SEE NOTE 1
SEE NOTE 1

WIRING SCHEDULE

1. 4#10 + 1#10G IN 3/4"C
2. 2#10 + 1#10G IN 3/4"C
3. 5#10 + 1#10G IN 3/4"C
4. 3#10 + 1#10G IN 1/2"C

NOTES:
1. CONTRACTOR SHALL MOUNT TYPE H2 FIXTURE CENTER OVER WINDOW AT 6'-0" BELOW TOP OF PARAPET.
2. SEE DRAWING E6-2 FOR LIGHTING CONTROL SCHEMATICS.
3. CONTRACTOR TO MOUNT TYPE D FIXTURES AT 8'-0" AFF AS REQUIRED.
4. CONTRACTOR TO MOUNT TYPE D FIXTURES AT 14'-0" AFF AS REQUIRED.
5. CONTRACTOR TO MOUNT TYPE A AND B FIXTURES AS PER DETAIL ON DRAWING E6-2.

LEVEL TWO LIGHTING AND SECURITY LIGHTING PLAN

SCALE: 3/16" = 1'-0"

0 64" 128"
SCALE: 3/16" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA — WILLIAM B. M. ... — 04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO LIGHTING PLAN, SHEET 2

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

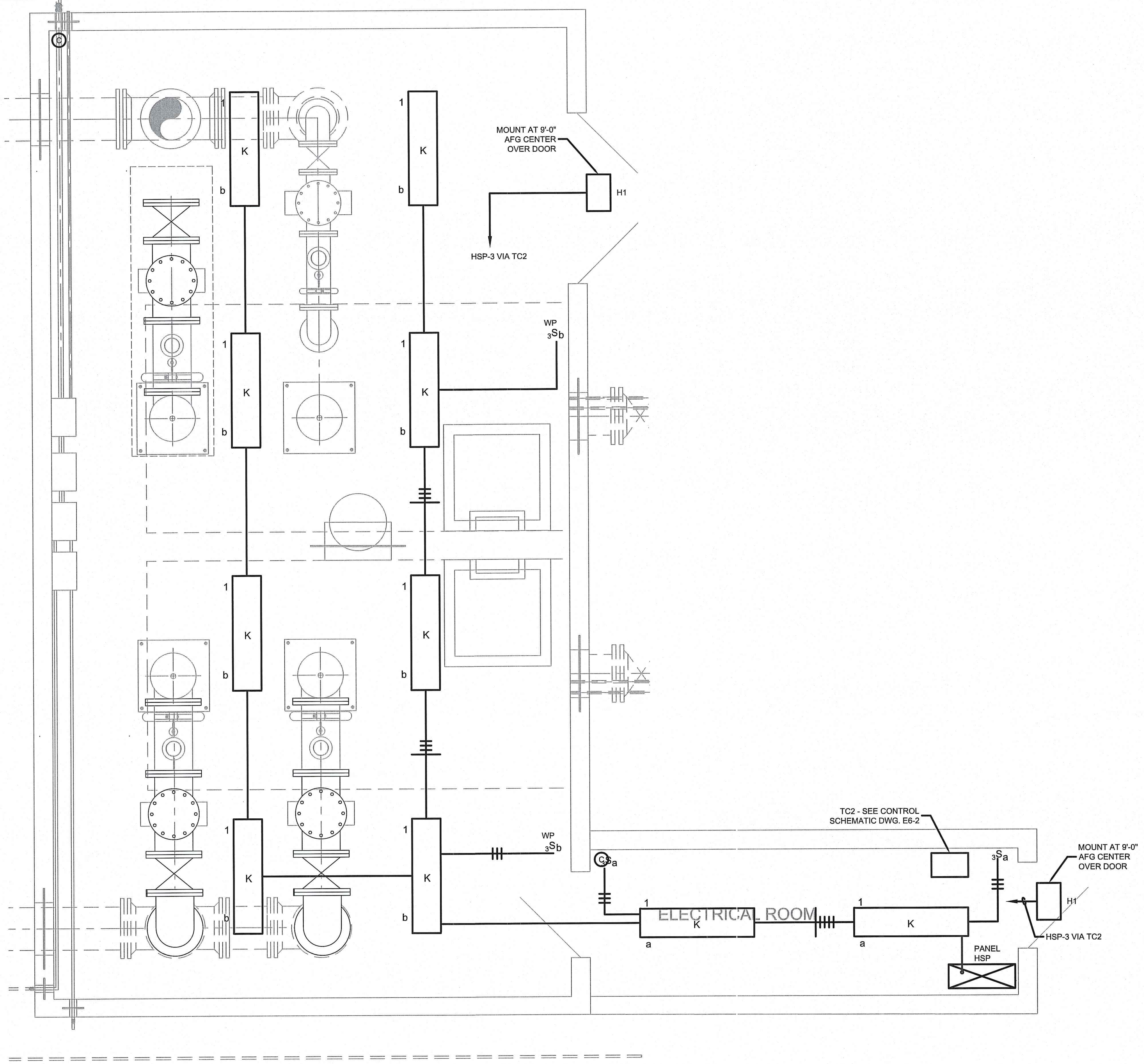
Drawn By: TLC
Checked By: XXX

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: E3-3



HIGH SERVICE PUMP STATION LIGHTING PLAN

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

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

0 24" 48"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

HIGH SERVICE PUMP STATION LIGHTING PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: TLC

Checked By: XXX

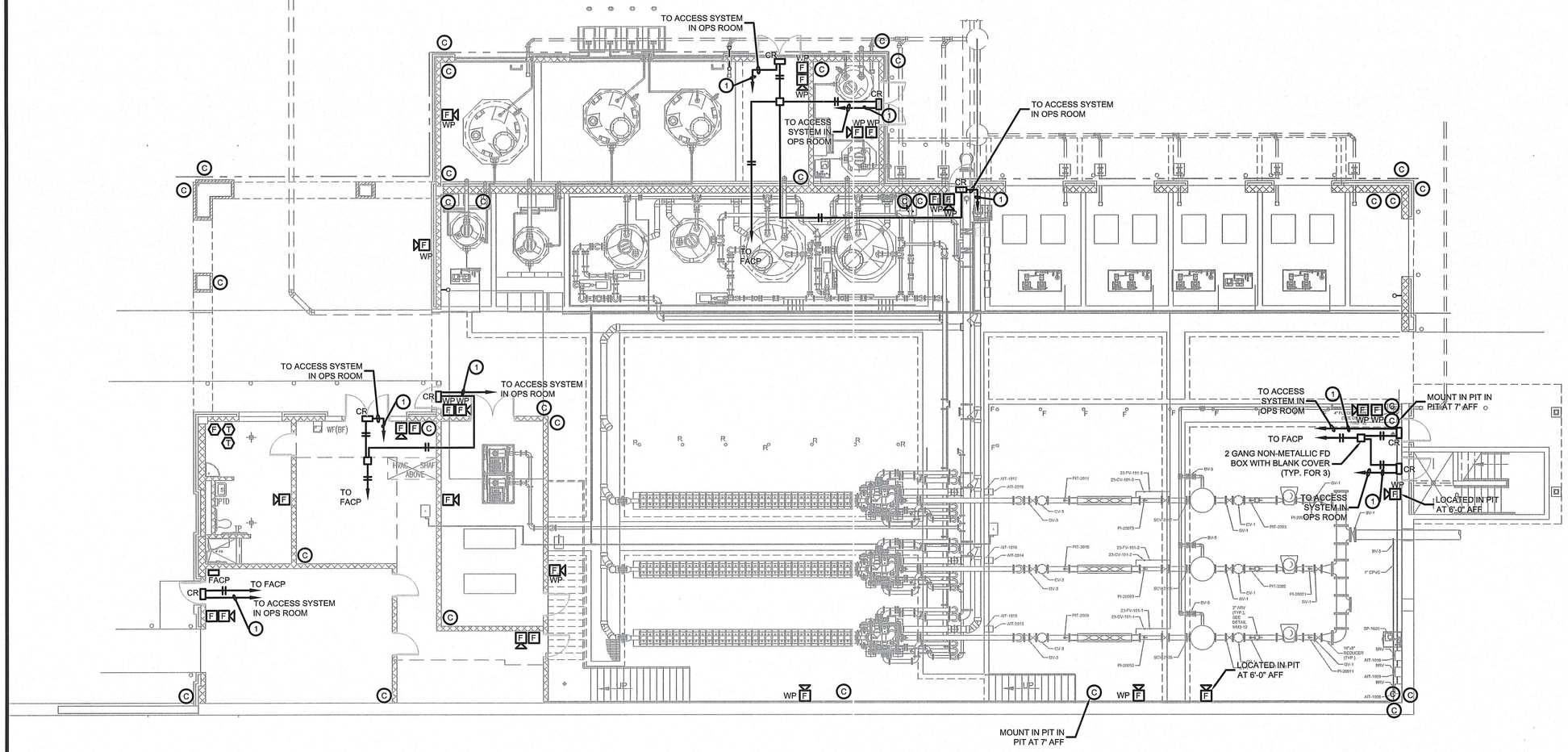
Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

Drawing No.: E3-4

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE MISCELLANEOUS SYSTEMS

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

WIRING SCHEDULE

(1) 1 EA - WEST PENN #AQC1822 IN 1"C

NOTE:
1. MOUNT ALL CAMERA BOXES AT 15' AFF OR AFG OR AS HIGH AS POSSIBLE IF LESS THAN 15'.

0 96" 192"

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM B. M... 04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE MISCELLANEOUS SYSTEMS PLAN

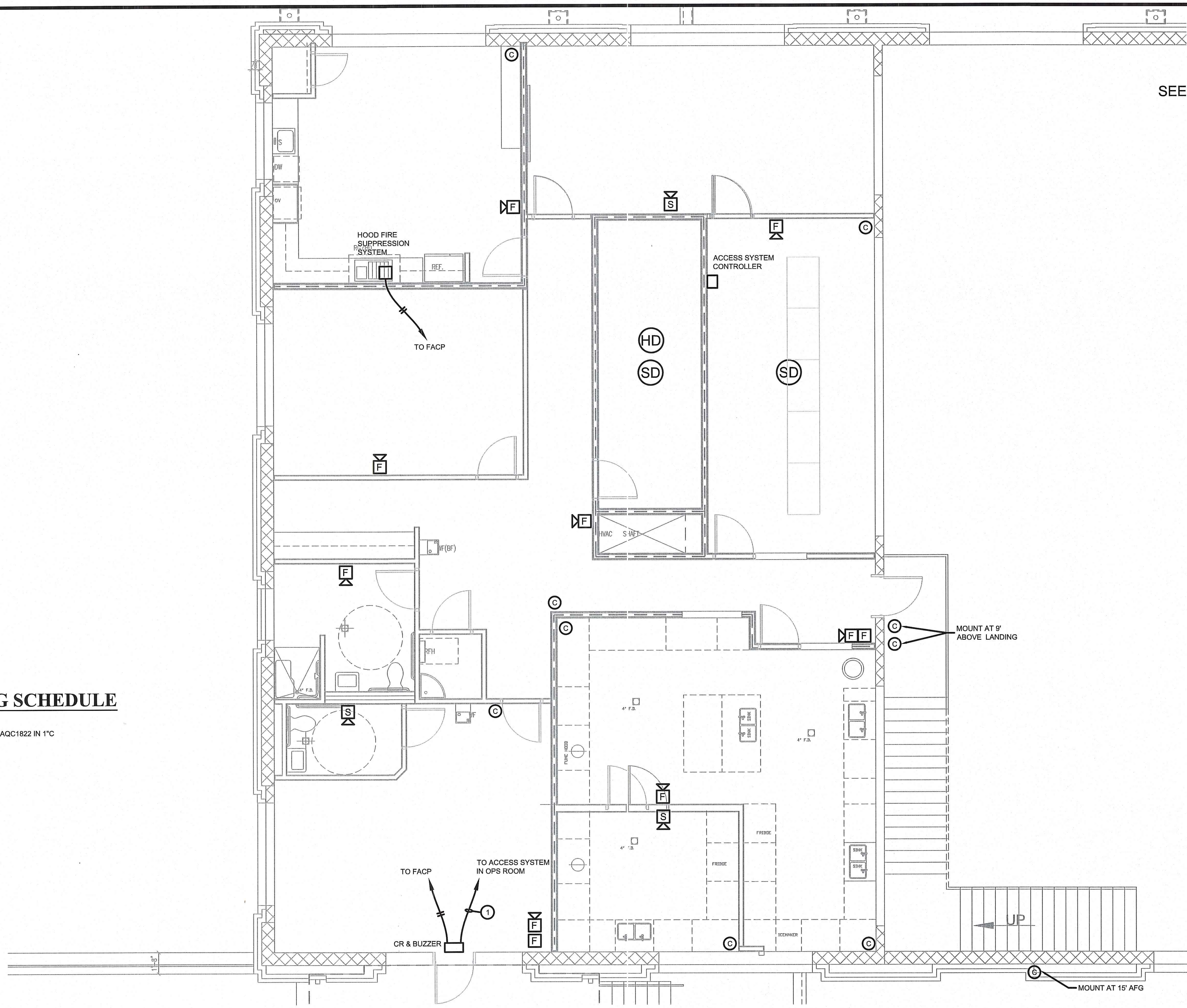
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E4-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



WIRING SCHEDULE

(1) 1 EA - WEST PENN #AQC1822 IN 1"C

NOTE:
1. MOUNT ALL CAMERA BOXES AT 8' AFF, UNLESS OTHERWISE NOTED.

LEVEL TWO MISCELLANEOUS SYSTEMS

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

0 48" 96"
SCALE: 1/4" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11956 WILLIAM B. M. WOMACK
04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

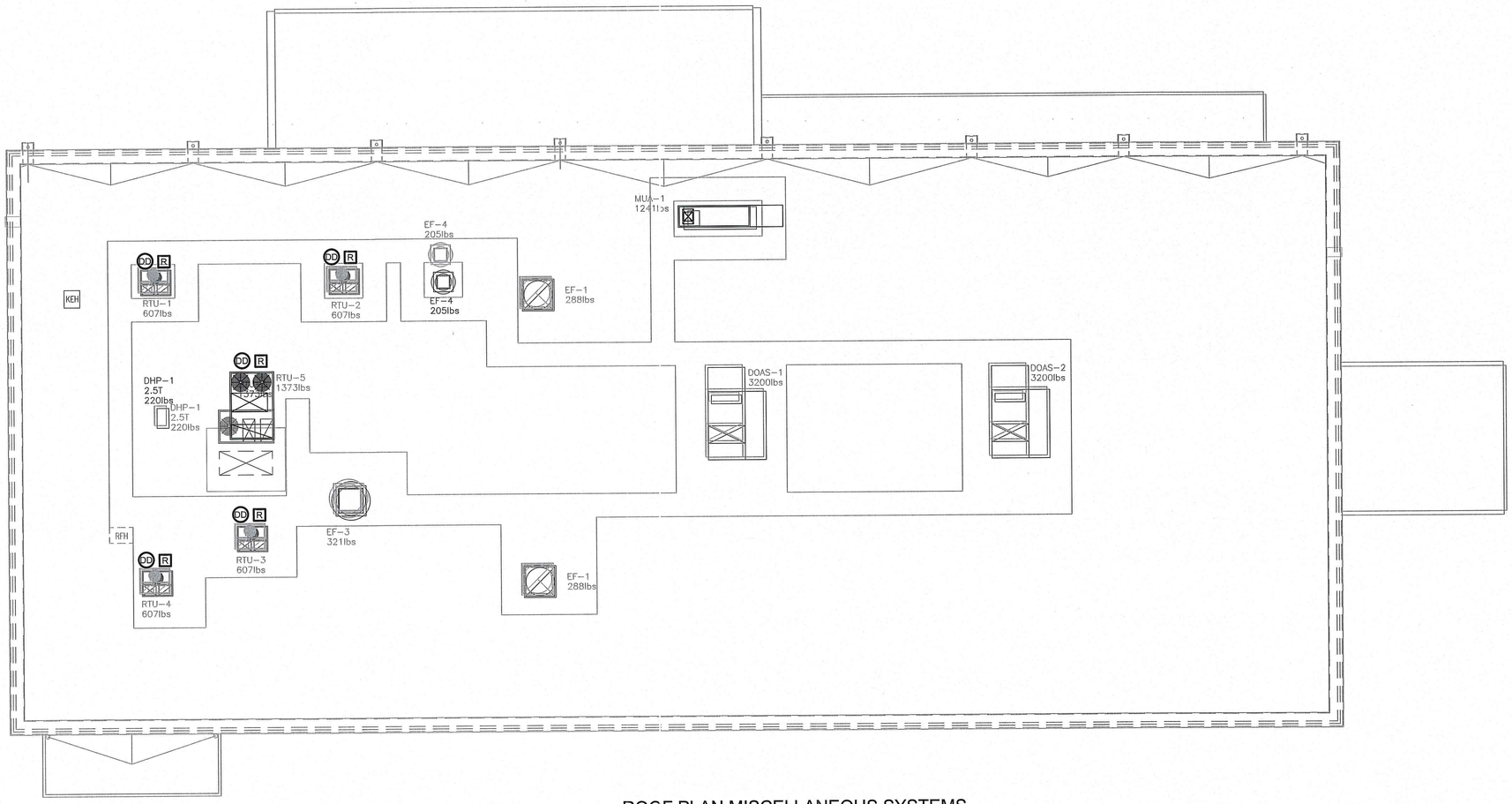
Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO MISCELLANEOUS SYSTEMS PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E4-2



ROOF PLAN MISCELLANEOUS SYSTEMS

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
PROFESSIONAL
ENGINEER
WILLIAM B. M. WOOD
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ROOF PLAN MISCELLANEOUS SYSTEMS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By:	Checked By:
TLC	XXX

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

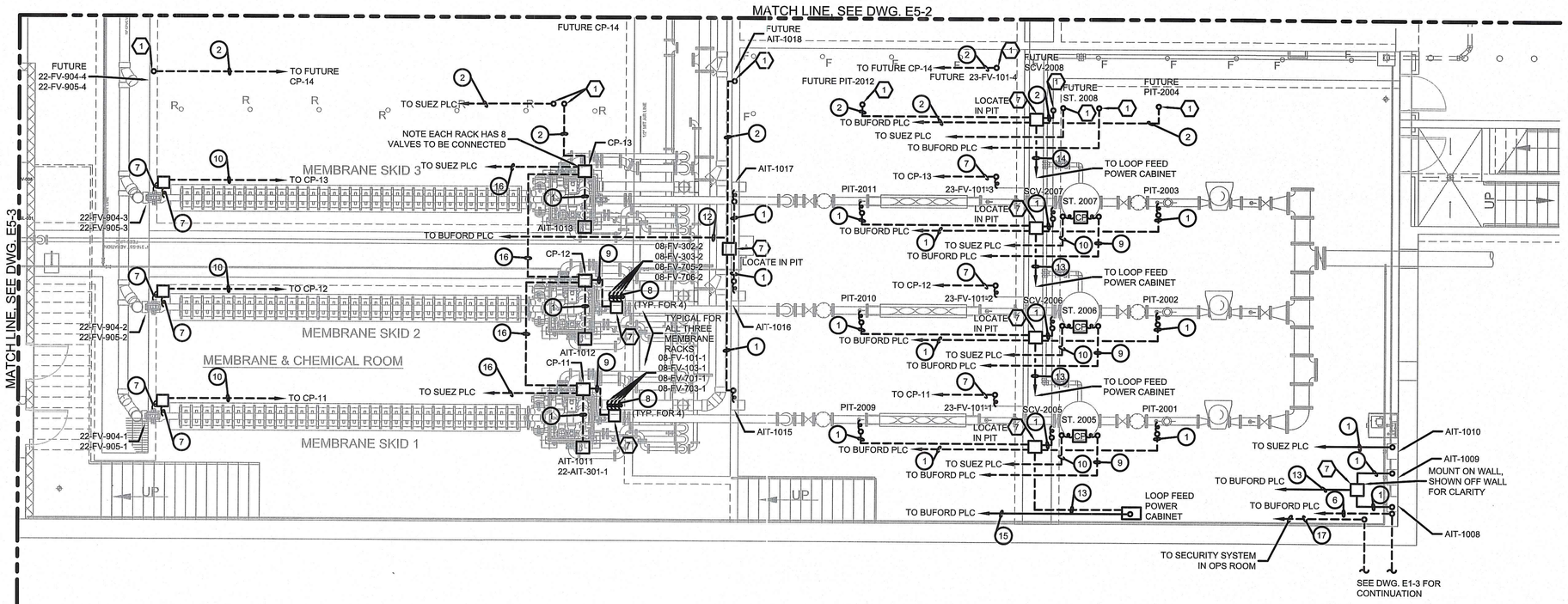
Drawing No.: E4-3

0 96" 192"

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

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE PARTIAL CONTROLS PLAN

SCALE: 3/16" = 1'-0"

WIRING SCHEDULE

1. 2/C#16 TSP-WEST PENN#AQ 294 IN 3/4"C
2. EMPTY 3/4"C
3. 3 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
4. EMPTY 2"
5. 3 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
6. 1 EA - 6 STRAND FIBER OPTIC CABLE IN 2"C (PROVIDE LONG SWEEP BENDS IN CONDUIT SYSTEM)
7. 2#14 IN 3/4"C
8. 2#14 IN 1/2" FLEX C
9. 10#14 IN 3/4"C
10. 6#14 IN 3/4"C
11. EMPTY 1"
12. 4 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4"C
13. 2 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
14. EMPTY 1" C
15. 8 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/2"C
16. 1 EA - CAT 5E CABLE BELDEN #1583A IN 3/4"C
17. EMPTY 1 1/2" C

0 64" 128"

SCALE: 3/16" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED PROFESSIONAL ENGINEER
WILLIAM B. M. NORTHROP
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

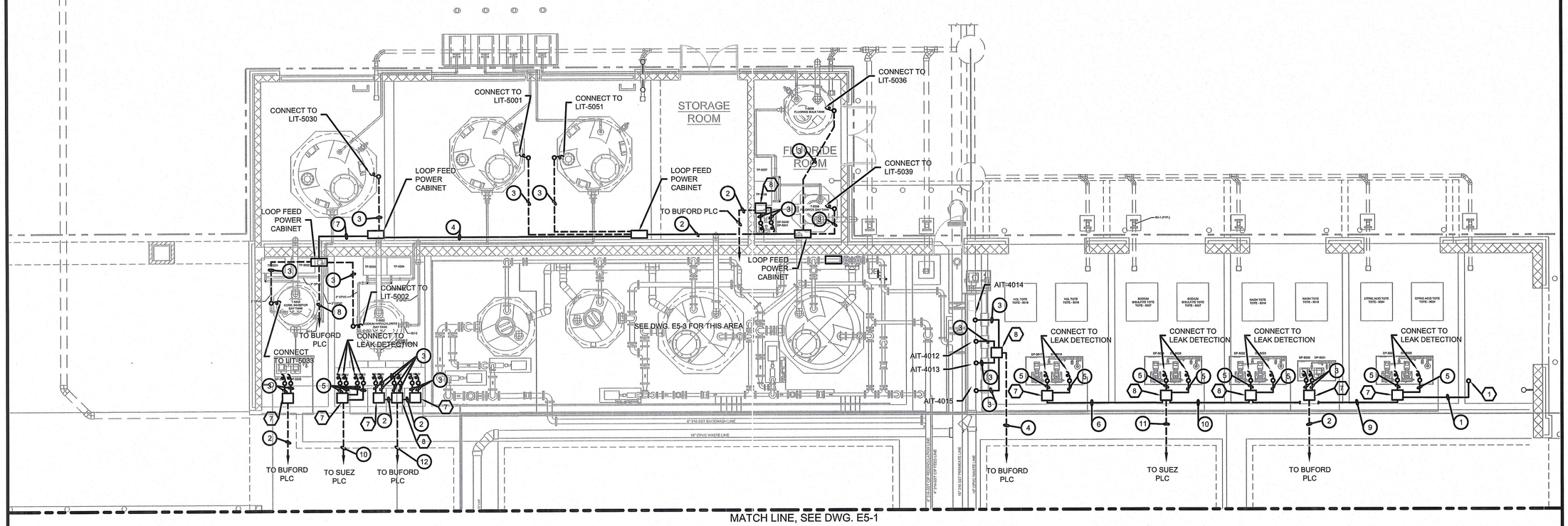
LEVEL ONE CONTROLS PLAN, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager:	Jolene Northrop, P.E.
Drawn By:	TLC
Checked By:	XXX
Date:	04/14/2021
Scale:	As Shown
Project No.:	170110.00
Drawing No.:	E5-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



MATCH LINE, SEE DWG. E5-1

LEVEL ONE PARTIAL CONTROLS PLAN

SCALE: 3/16" = 1'-0"

WIRING SCHEDULE

1. 3/4" EMPTY C
2. 2 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
3. 1 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 3/4"C
4. 4 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4"C
5. 2#14 IN 1/2"C
6. 4#14 IN 3/4"C
7. 5 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4"C
8. 7 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/2"C
9. 8#14 IN 3/4"C
10. 12#14 IN 3/4"C
11. 28#14 IN 1"C
12. 6 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/2"C

0 64" 128"

SCALE: 3/16" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. PE11952 PROFESSIONAL ENGINEER WILLIAM B. III

04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE CONTROLS PLAN, SHEET 2

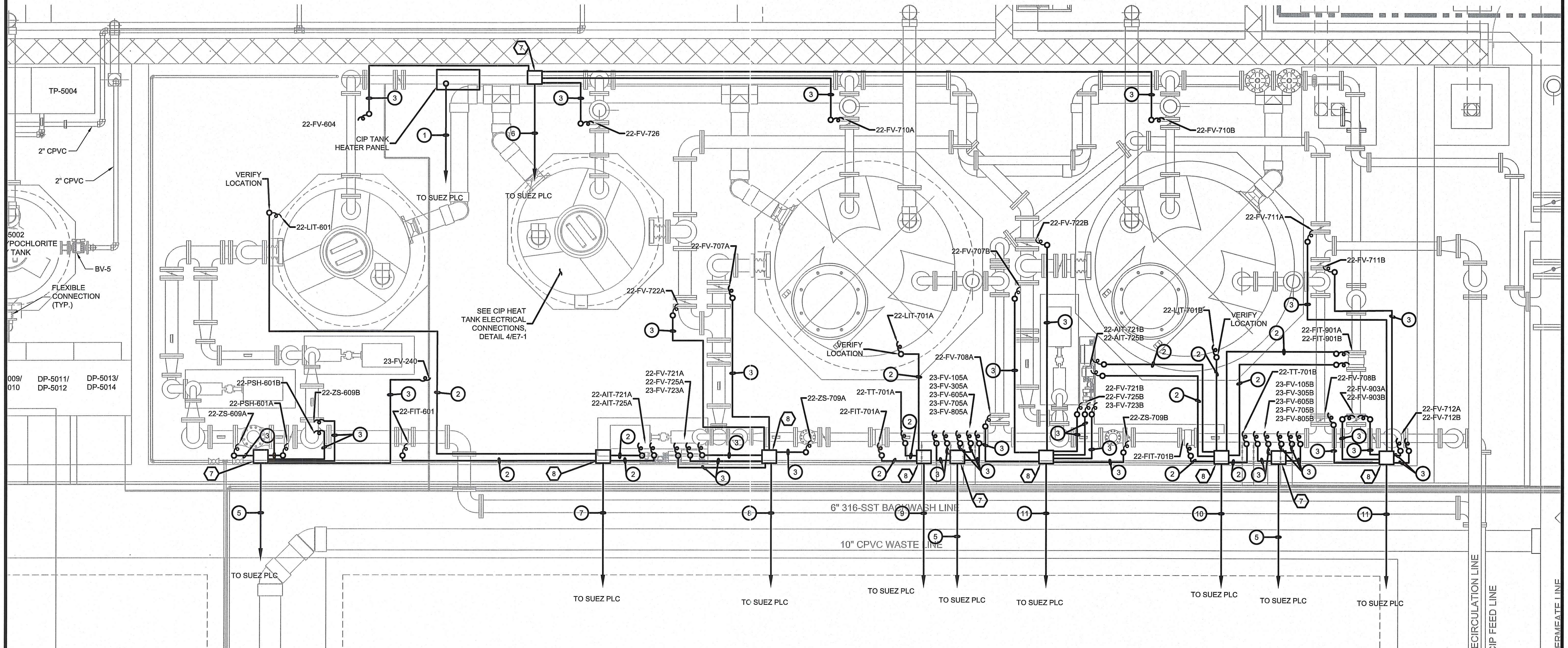
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E5-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE PARTIAL CONTROLS PLAN

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

WIRING SCHEDULE

1. 10#14 IN 3/4"C
2. 2/C#16 TSP-WEST PENN#AQ 294 IN 3/4"C
3. 2#14 IN 3/4"C
4. 2 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
5. 10#14 IN 3/4"C
6. 8#14 IN 3/4"C
7. 4 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4"C
8. 14#14 IN 3/4"C
9. 3 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C
10. 8 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/2"C
11. 20#14 IN 1"C

0 24" 48"
SCALE: 1/2" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA ... WILLIAM B. ...
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

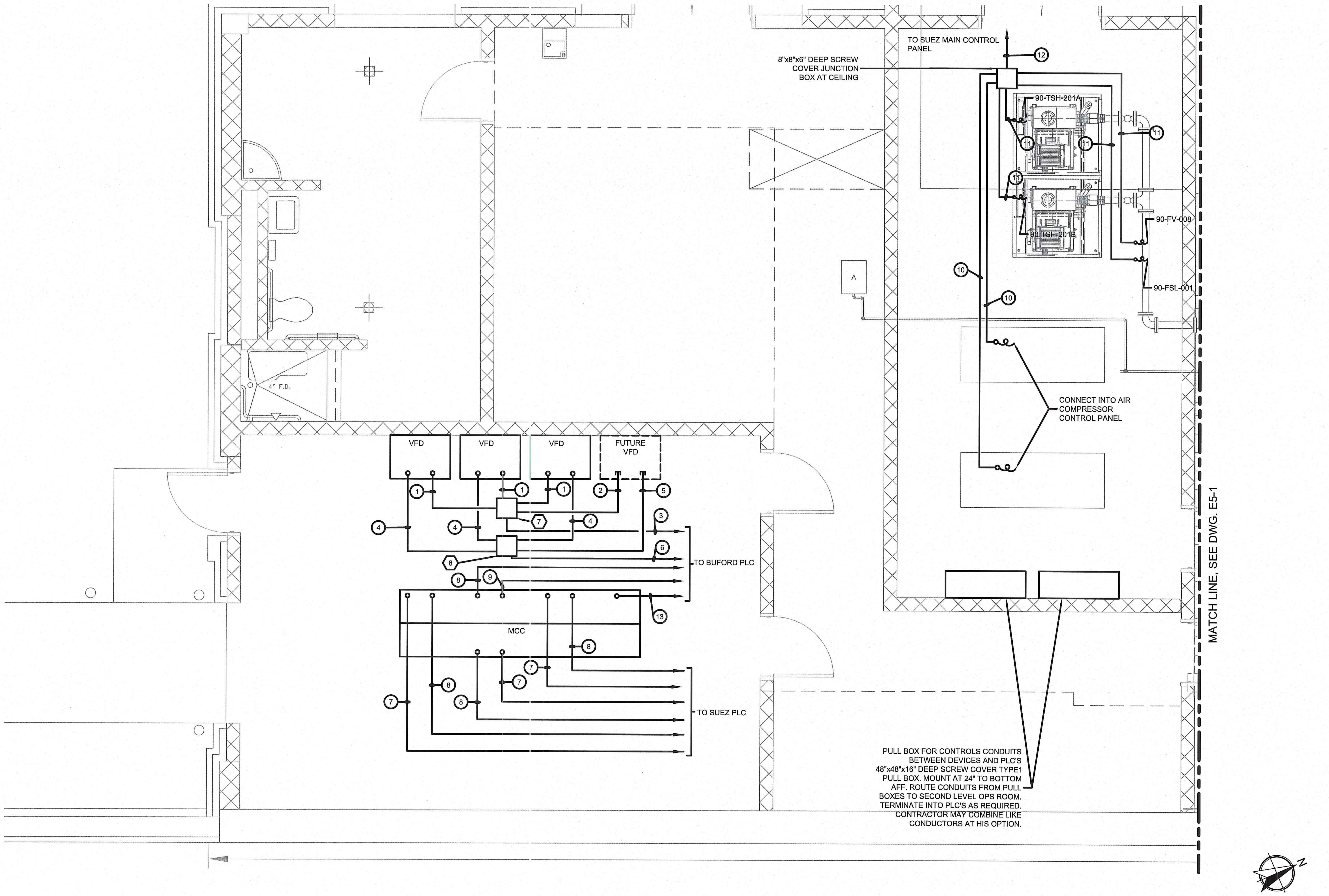
Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL ONE CONTROLS PLAN, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E5-3

SEE DWG. E1-0 FOR KEY NOTES



LEVEL ONE CONTROLS PLAN

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

0 32" 64"

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

WIRING SCHEDULE

1. 2/C#16 TSP-WEST PENN#AQ 294 IN 3/4"C
2. EMPTY 3/4" C
3. 4 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/4"C
4. 18#14 IN 1" C
5. EMPTY 1"C
6. 72#14 IN 2" C
7. 10 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 2"C
8. 60#14 IN 1 1/2" C
9. 8 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1 1/2"C
10. 10#14 IN 3/4"C
11. 2#14 IN 3/4" C
12. 36#14 IN 1 1/4"C
13. 1 EA - CAT 5E CABLE BELDEN #1583A IN 3/4"C

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11956 WILLIAM B. WOMACK

04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

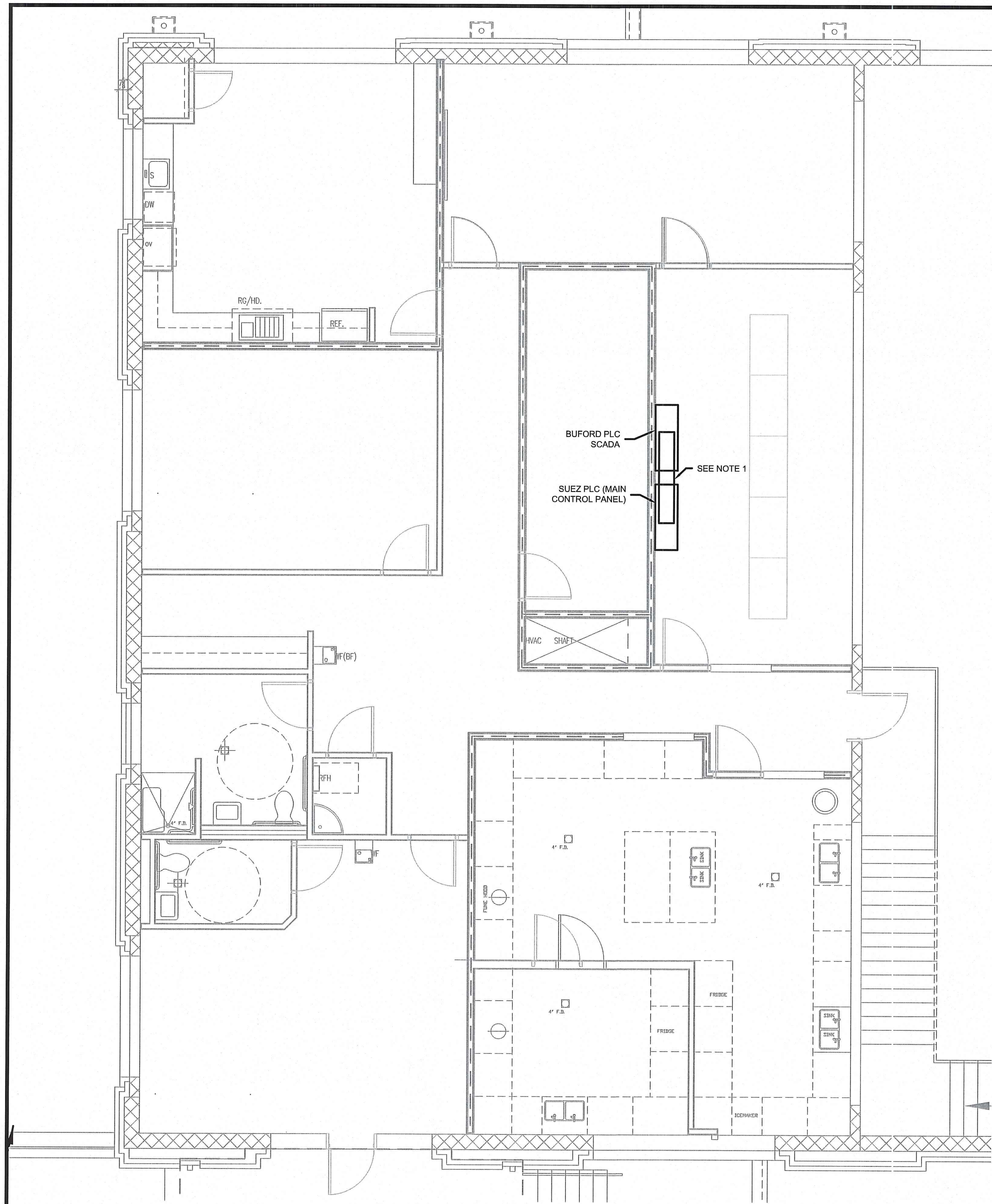
Buford Water Works Replacement
For the City of Buford, Georgia

LEVEL TWO CONTROLS PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

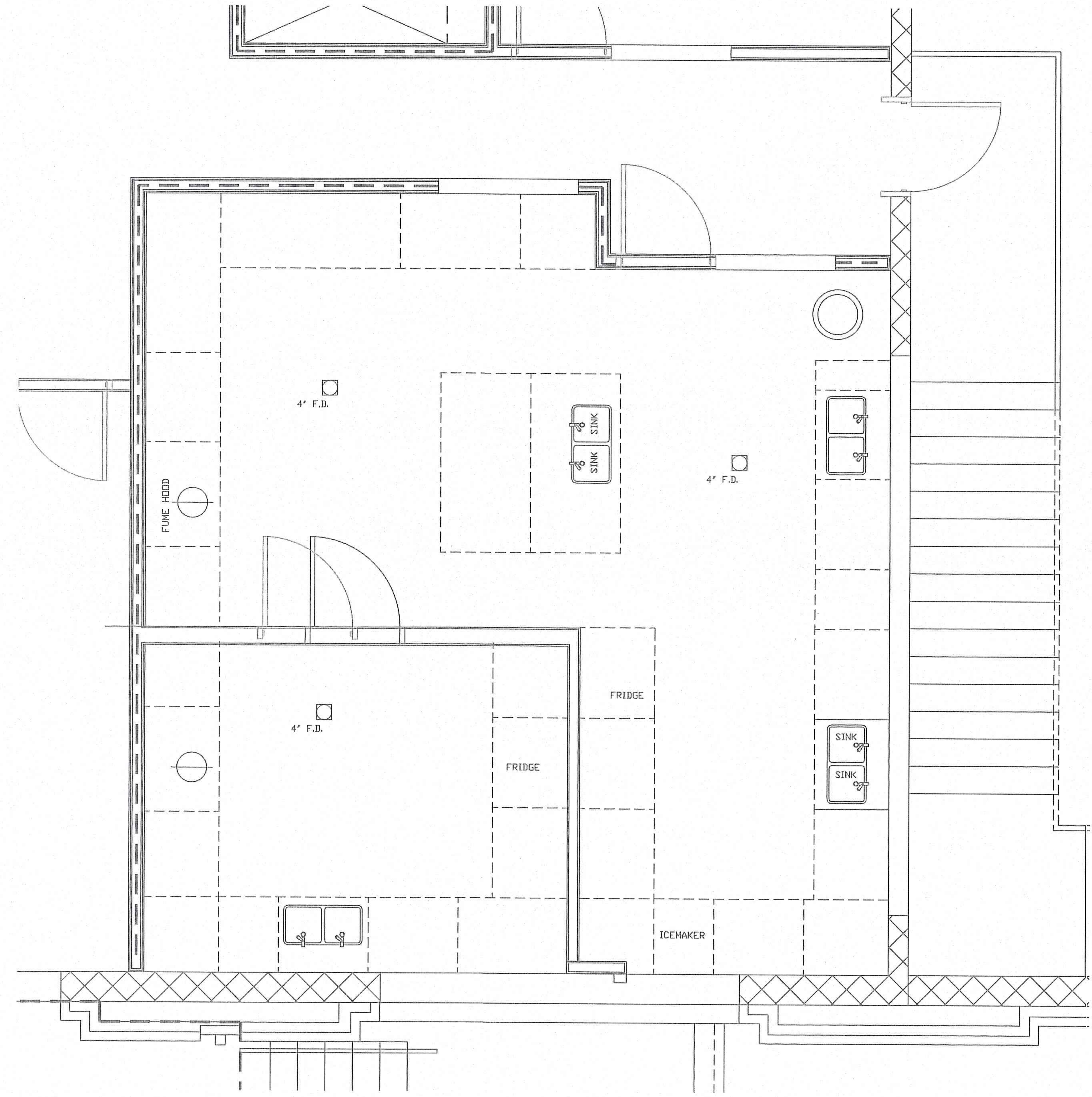
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E5-4



UPPER LEVEL CONTROLS PLAN

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



LAB PLAN

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

NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL 12"X12"X6' LONG SCREW COVER NEMA TYPE 1, GALVANIZED WIREWAY ON TOP OF EACH CONTROL PANEL FOR INTERCONNECT WIRING. PROVIDE GASKETED OPENING IN EACH PANEL FOR THE INTERCONNECT WIRING. WIRING TO BE DETERMINED AT A LATER DATE.

0 48" 96"

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

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

GEORGIA REGISTERED No. PE11956 PROFESSIONAL ENGINEER WILLIAM B. M. WOMACK

04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

UPPER LEVEL CONTROLS PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.

Drawn By: TLC

Checked By: XXX

Date: 04/14/2021

Scale: As Shown

Project No.: 170110.00

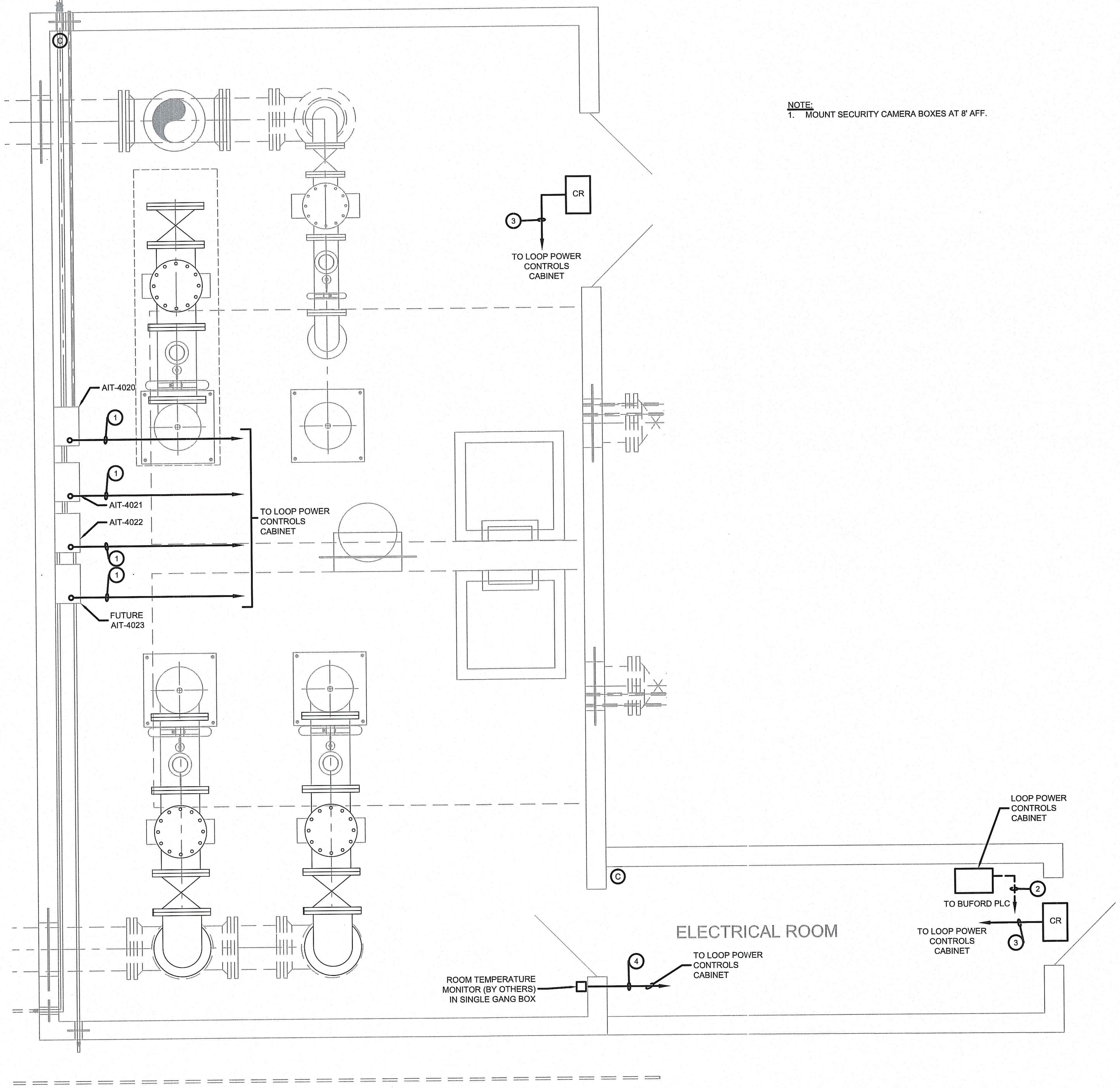
Drawing No.: E5-5

SEE DWG. E1-0 FOR KEY NOTES.

NOTE:
1. MOUNT SECURITY CAMERA BOXES AT 8' AFF.

WIRING SCHEDULE

1. 2/C#16 - TSP - WEST PENN#AQ 294 IN 3/4"C
2. 1EA - 6 STRAND FIBER OPTIC CABLE IN 2"C WITH ALL LONG SWEEP BENDS
3. 1EA - 6/C #18 SHIELDED WEST PENN #AQC 3186 IN 3/4" C
4. 4 #14 IN 3/4" C



HIGH SERVICE PUMP STATION CONTROLS PLAN
SCALE: 1/2" = 1'-0"

0 24" 48"
SCALE: 1/2" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

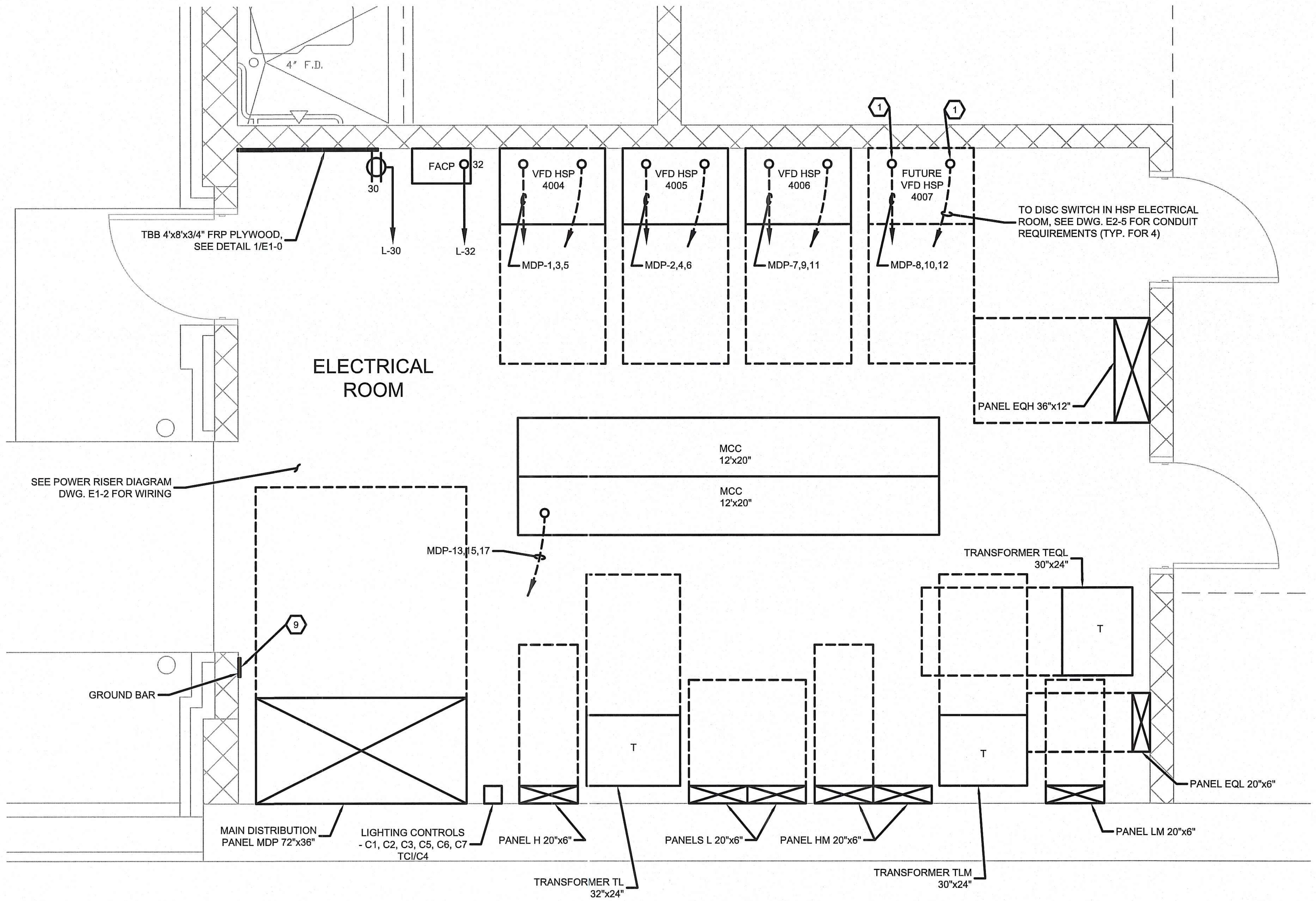
Buford Water Works Replacement
For the City of Buford, Georgia

HIGH SERVICE PUMP STATION CONTROLS PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E5-6

SEE DWG. E1-0 FOR KEY NOTES



ELECTRICAL ROOM ENLARGED PLAN

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

0 24" 48"
SCALE: 1/2" = 1'-0"

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE 31556 WILLIAM B. M... MONROE
04.14.2021

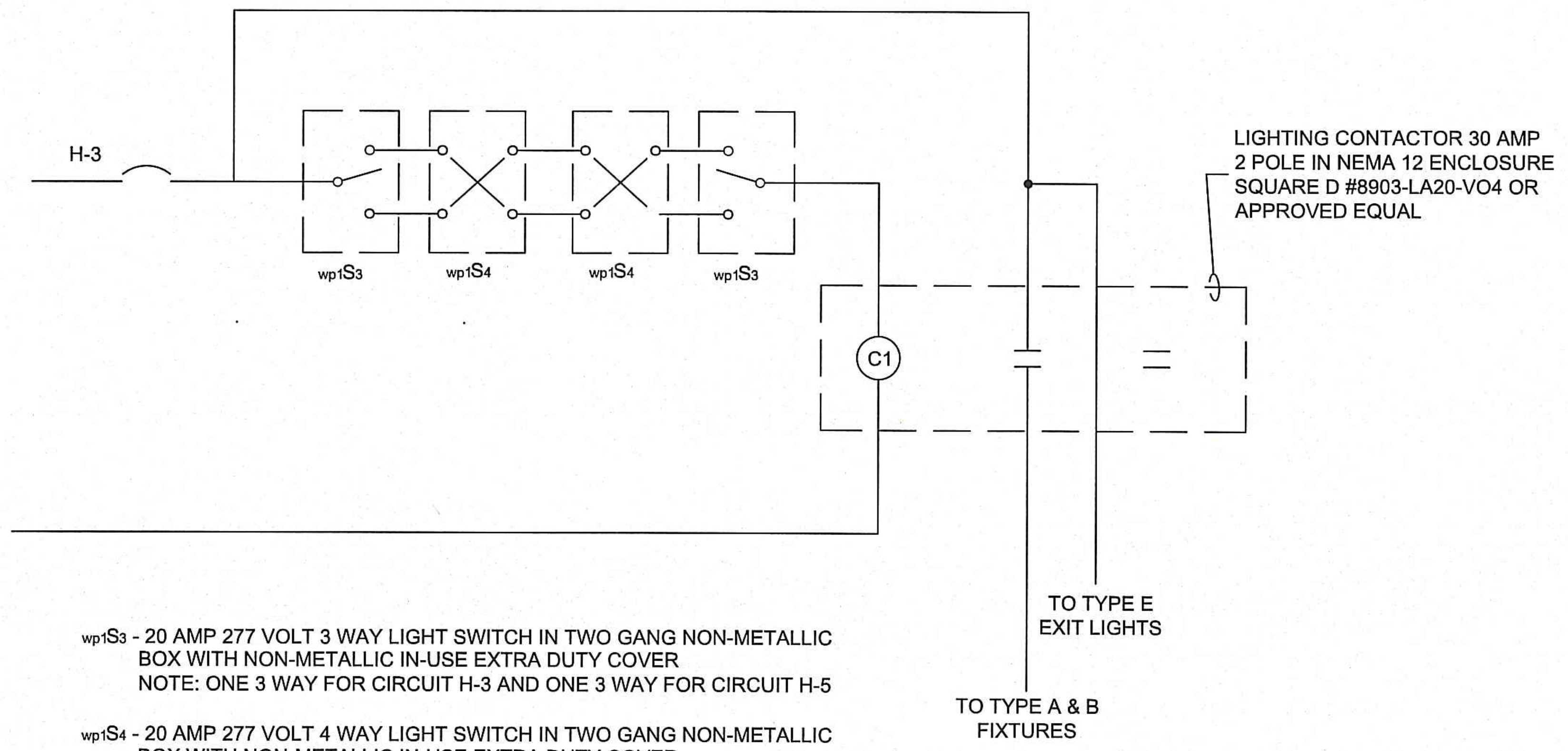
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL ROOM ENLARGED PLAN

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E6-1

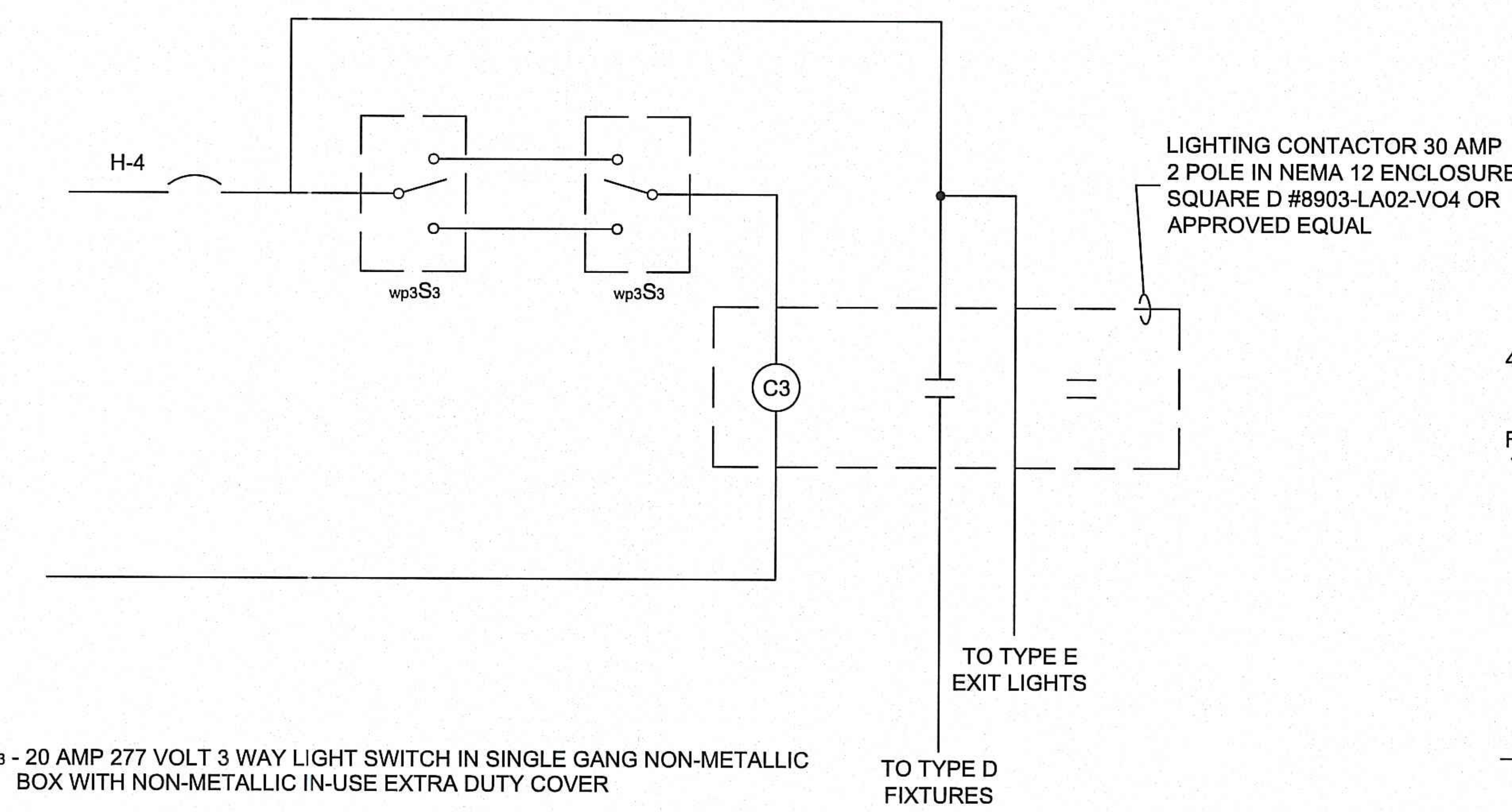


wp1S3 - 20 AMP 277 VOLT 3 WAY LIGHT SWITCH IN TWO GANG NON-METALLIC BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVER
NOTE: ONE 3 WAY FOR CIRCUIT H-3 AND ONE 3 WAY FOR CIRCUIT H-5

wp1S4 - 20 AMP 277 VOLT 4 WAY LIGHT SWITCH IN TWO GANG NON-METALLIC BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVER
NOTE: ONE 4 WAY FOR CIRCUIT H-3 AND ONE 4 WAY FOR CIRCUIT H-5

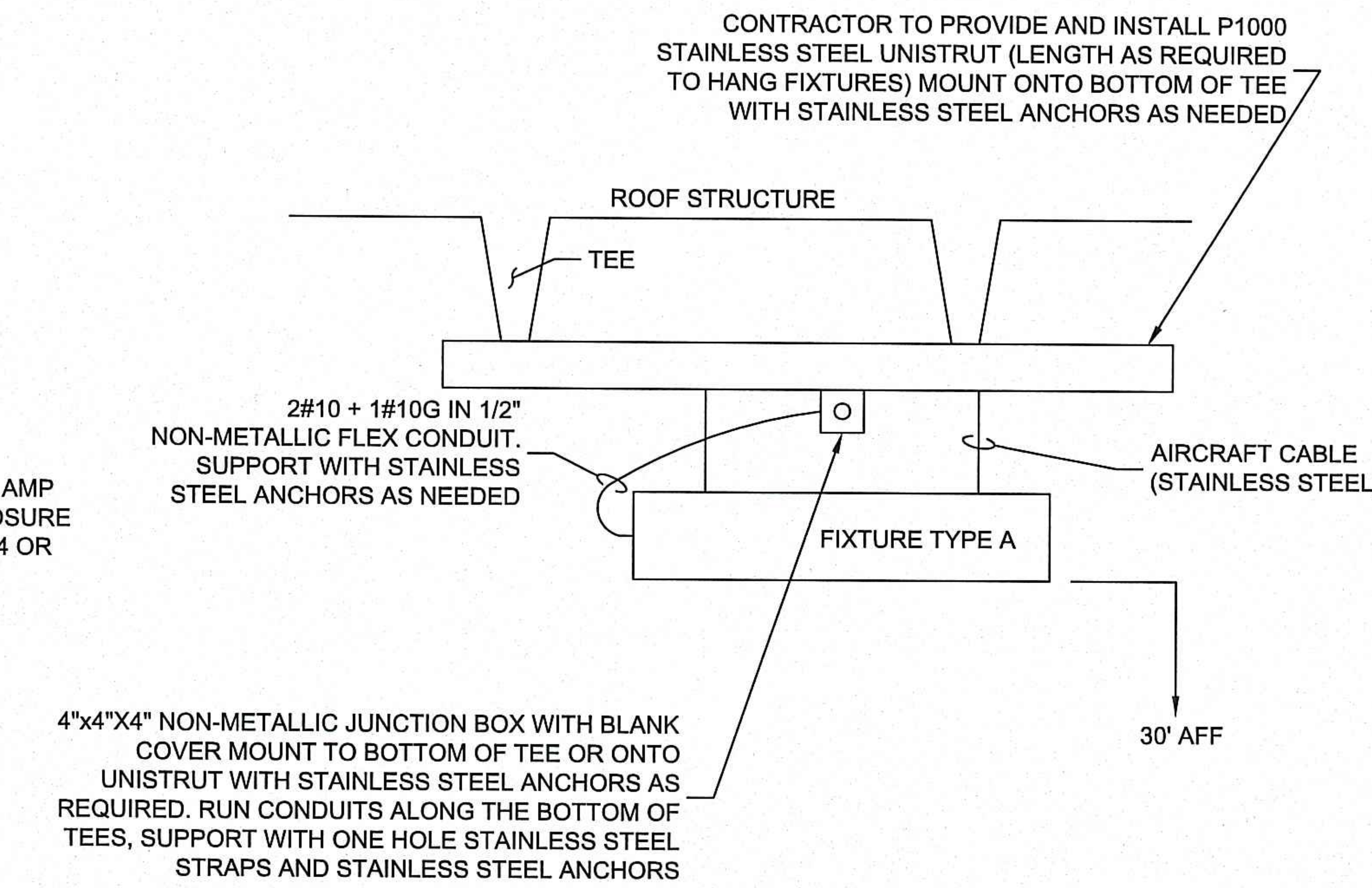
NOTE:
TYPICAL FOR LIGHTING CONTACTOR C2 EXCEPT ON CIRCUIT H-5.

LIGHTING CONTROL - CONTACTOR C1 (1, E6-2)
SCALE: N.T.S.

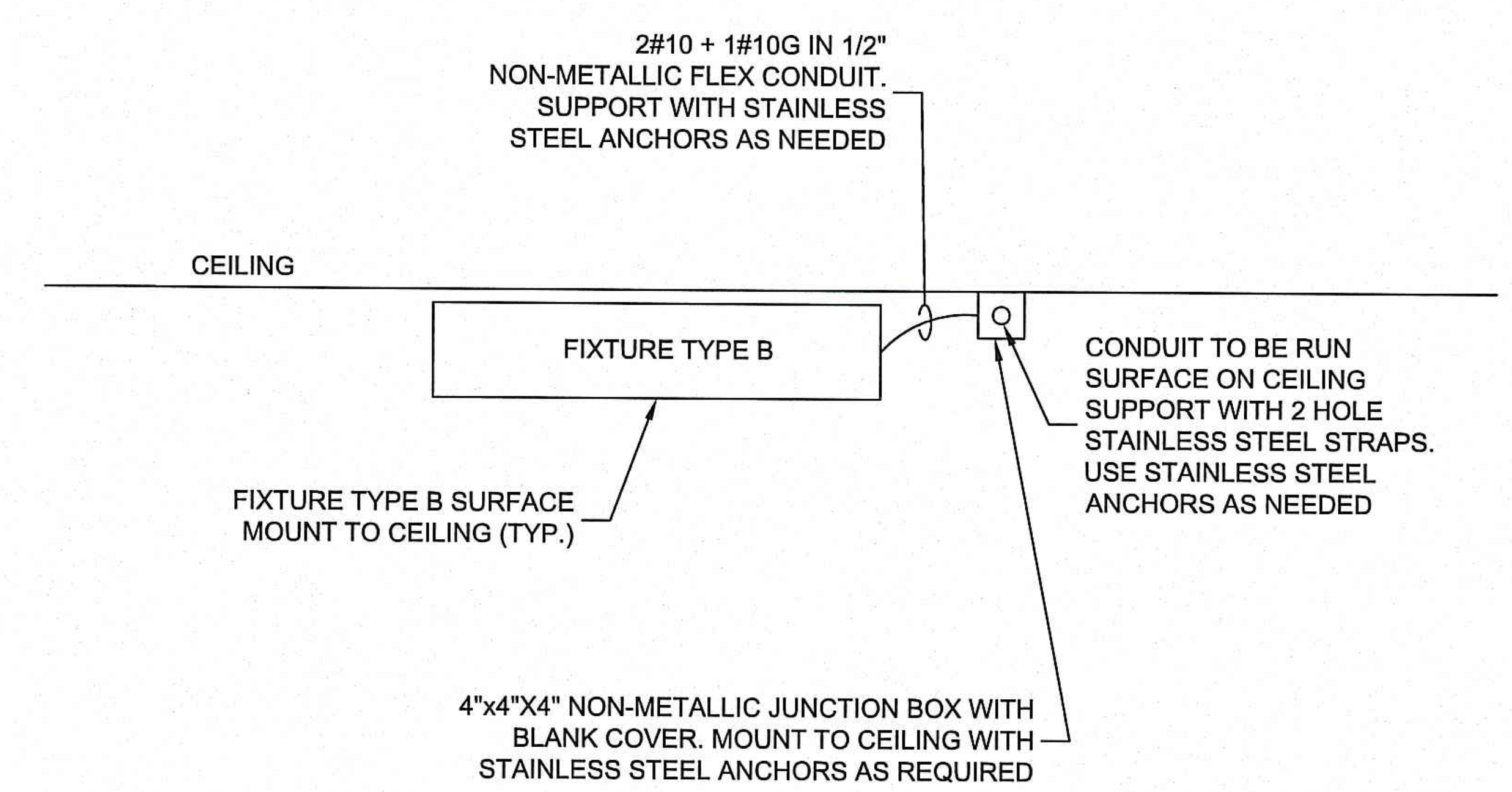


wp3S3 - 20 AMP 277 VOLT 3 WAY LIGHT SWITCH IN SINGLE GANG NON-METALLIC BOX WITH NON-METALLIC IN-USE EXTRA DUTY COVER

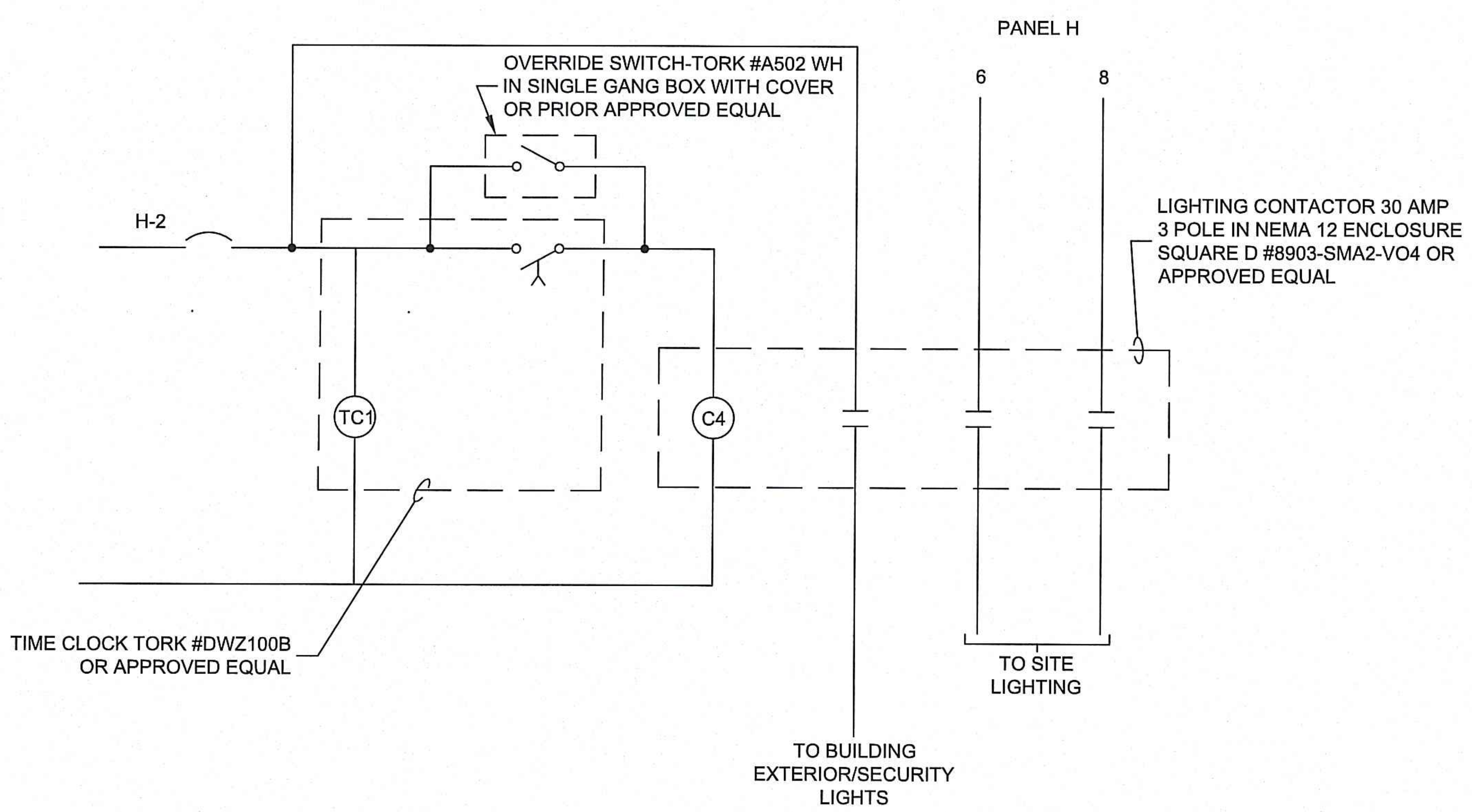
LIGHTING CONTROL - CONTACTOR C3 (2, E6-2)
SCALE: N.T.S.



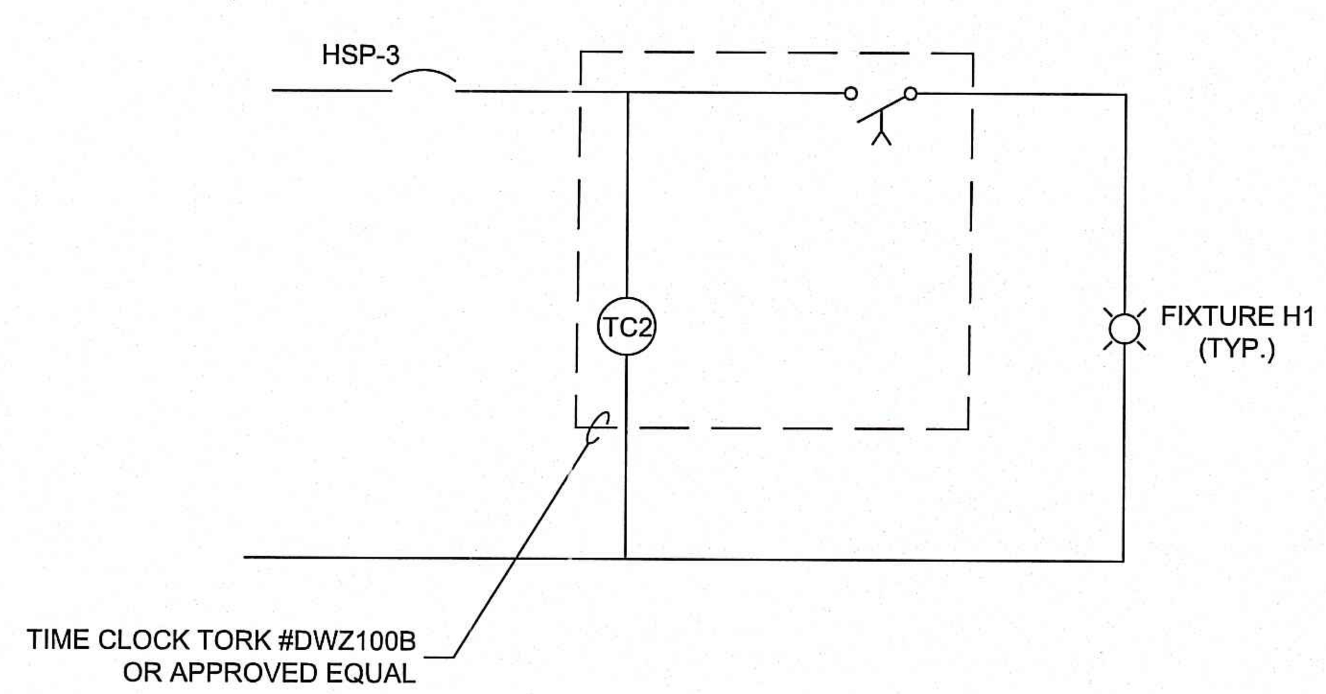
TYPICAL SUPPORT DETAIL TYPE A FIXTURE (5, E6-2)
SCALE: N.T.S.



TYPICAL SUPPORT DETAIL TYPE B FIXTURE (6, E6-2)
SCALE: N.T.S.



LIGHTING CONTROL - TC1/CONTACTOR C4 (3, E6-2)
SCALE: N.T.S.



LIGHTING CONTROLS - TC2 (4, E6-2)
SCALE: N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

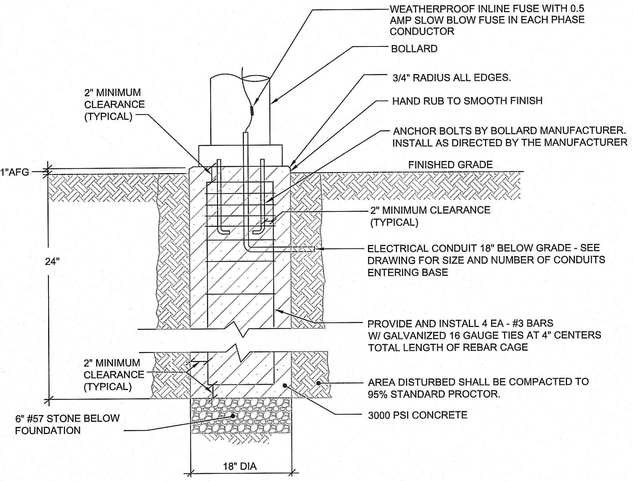
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

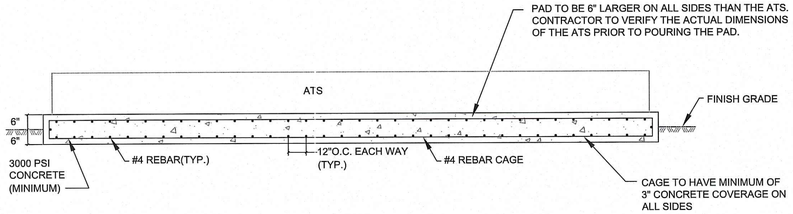
LIGHTING CONTROLS

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

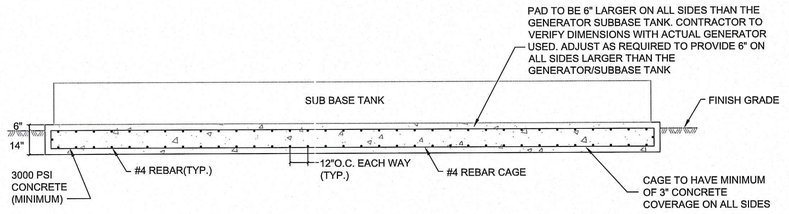
Project Manager:
Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: E6-2



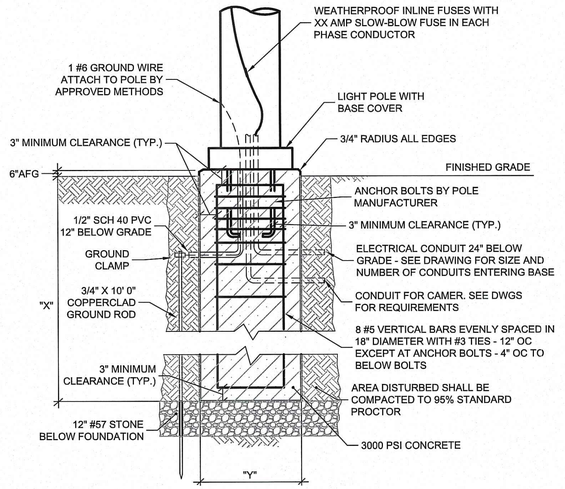
FIXTURE TYPE Y FOUNDATION DETAIL 1
SCALE: N.T.S. — E7-1



ATS PAD DETAIL 2
SCALE: N.T.S. — E7-1

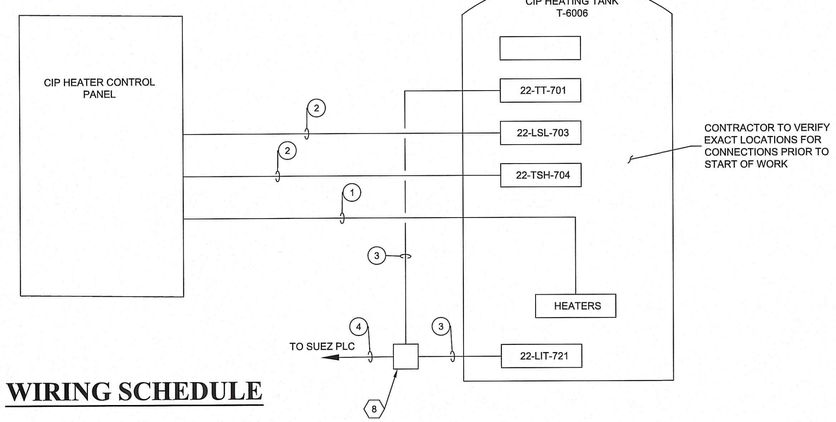


GENERATOR PAD DETAIL 3
SCALE: N.T.S. — E7-1



POLE FOUNDATIONS			
POLE TYPE	X - LENGTH	Y - DIA.	XX - FUSE
V	60"	24"	1 AMP
V1	60"	24"	1 AMP
V2	60"	24"	3 AMP
W	72"	30"	5 AMP
W1	72"	30"	5 AMP

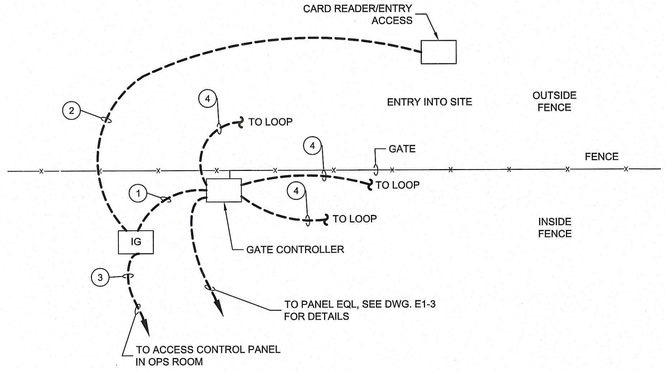
FIXTURE TYPES V, V1, V2, W & W1 POLE FOUNDATION DETAIL 5
SCALE: N.T.S. — E7-1



WIRING SCHEDULE

1. 6#6 + 1#8G IN 11/4"C
2. 4#14 IN 3/4"C
3. 2/C#16 TSP-WEST PENN#AQ 294 IN 3/4"C
4. 2 EA - 2/C#16 TSP-WEST PENN#AQ 294 IN 1"C

CIP HEATER TANK ELECTRICAL CONNECTIONS 4
SCALE: N.T.S. — E7-1



WIRING SCHEDULE

1. 8/C#18 NON SHIELDED CABLE WEST PENN #AC188 IN 3/4"C
2. 1 EA - 6/C#18 SHIELDED CABLE WEST PENN #AQ3186 + 1 EA - 8/C#18 NON SHIELDED CABLE - WEST PENN #AC188 IN 1"C
3. 1 EA - 6/C#18 SHIELDED CABLE WEST PENN #AQ3186 + 2 EA - 8/C#18 NON SHIELDED CABLE - WEST PENN #AC188 IN 1 1/2"C
4. 3/4"C FOR LOOP CONDUCTOR BY GATE MANUFACTURE

ALL CONDUCTORS ARE TO BE COPPER

TYPICAL GATE OPERATOR WIRING 6
SCALE: N.T.S. — E7-1

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA — REGISTERED PROFESSIONAL ENGINEER — WILLIAM B. M. — 04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL DETAILS, SHEET 1

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E7-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical.dwg

MAIN DISTRIBUTION SWITCHBOARD - MDP

VOLTAGE: 480Y/277V AMPS: 3000 A MLO MOUNTING: SURFACE 50% Rated Neutral Bus
3 PHASE, 4 WIRE TOTAL LOAD: 1736.1 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1				55.40						110.80					55.40							2
3	HSP-4004			55.40				300	3		110.80		3	300	55.40						HSP-4005	4
5				55.40								110.80			55.40							6
7				55.40						110.80					55.40							8
9	HSP-4006			55.40				300	3		110.80		3	300	55.40						Future HSP-4007	10
11				55.40								110.80			55.40							12
13				110.00						156.20					46.20							14
15	MCC			110.00				600	3		155.53		3	250	45.53						Panel H	16
17				110.00								155.99			45.99							18
19							118.49			201.50					83.01							20
21	Panel HM						118.49	600	3		200.80		3	600	82.31						Panel EQH	22
23							118.49					201.28			82.79							24
25										0.00												26
27	Space for 225 A 3 Pole								3		0.00		3								Space for 400 A 3 Pole	28
29												0.00										30
										579.30	577.93	578.87			1073.70	0.00	0.00	662.40	0.00	0.00	CONNECTED KVA 1736.1	

PANEL HM - SECTION NO. 1

VOLTAGE: 480 Volt Delta AMPS: 600 A MLO MOUNTING: SURFACE
3 PHASE, 3 WIRE TOTAL LOAD: 573.3 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1					3.60					7.20							3.60					2
3	RTU-1				3.60			20	3		7.20		3	20			3.60				RTU-4	4
5					3.60							7.20					3.60					6
7					10.25					41.01					30.76							8
9	RTU-5				10.25			50	3		41.01		3	125	30.76						DOAS-1	10
11					10.25							41.01			30.76							12
13					30.76					42.23					11.47							14
15	DOAS-2				30.76			125	3		42.23		3	50	11.47						MAU-1	16
17					30.76							42.23			11.47							18
19							16.00			32.00					16.00							20
21	WH-7						16.00	80	3		32.00		3	80	16.00						WH-4	22
23							16.00					32.00			16.00							24
25							16.00			32.00					16.00							26
27	WH-2						16.00	80	3		32.00		3	80	16.00						WH-5	28
29							16.00					32.00			16.00							30
31							16.00			32.00					16.00							32
33	WH-3						16.00	80	3		32.00		3	80	16.00						WH-6	34
35							16.00					32.00			16.00							36
37							3.00			4.67					1.67							38
39	WH-1						3.00	20	3		4.67		3	20	1.67						EUH-1	40
41							3.00					4.67			1.67							42
										191.11	191.11	191.11			428.70	0.00	144.63	0.00	0.00	0.00	CONNECTED KVA 573.33	

PANEL HM - SECTION NO. 2

VOLTAGE: 208Y/120V AMPS: 600 A MLO MOUNTING: SURFACE
3 PHASE, 4 WIRE TOTAL LOAD: 62.9 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
43					14.40					23.39					8.99							44
45	RTU-3				14.40			60	3		21.33		3	70	6.93						Transformer TLM	46
47					14.40							18.18			3.78							48
49										0.00												50
51	Space								3		0.00		3								Space	52
53												0.00										54
55	Space								1	0.00			1	20							Spare	56
57	Space								1		0.00		1	20							Spare	58
59	Space								1			0.00	1	20							Spare	60
61	Space								1	0.00			1	20							Spare	62
63	Space								1		0.00		1	20							Spare	64
65	Space								1			0.00	1	20							Spare	66
67	Space								1	0.00			1	20							Spare	68
69	Space								1		0.00		1	20							Spare	70
71	Space								1			0.00	1								Spare	72
										23.39	21.33	18.18			19.70	0.00	43.20	0.00	0.00	0.00	CONNECTED KVA 62.9	

PANEL LM

VOLTAGE: 208Y/120 V AMPS: 150 A MB MOUNTING: SURFACE
3 PHASE, 4 WIRE TOTAL LOAD: 19.7 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	RTU-2				5.40			50	2	6.65			1	20				1.25			WH-1 In-Line Circ Pump	2
3					5.40						5.40		1	20							Spare	4
5	DHP-1				2.16			20	2			2.34	1	20					0.18		Service Outlet	6
7					2.16					2.34			1	20					0.18		Service Outlet	8
9	EF-B / Lts	0.04		0.49				20	1		1.53		1	20				1.00			L-1	10
11	EF-5			0.72				20	1			1.44	1	20				0.72			EF-6	12
13	Spare							20	1	0.00			1								Space	14
15	Spare							20	1		0.00		1								Space	16
17	Spare							20	1			0.00	1								Space	18
19	Spare							20	1	0.00			1								Space	20
21	Spare							20	1		0.00		1								Space	22
23	Spare							20	1			0.00	1								Space	24
25	Spare							20	1	0.00			1								Space	26
27	Spare							20	1		0.00		1								Space	28
29	Spare							20	1			0.00	1								Space	30
										8.99	6.93	3.78			0.00	0.00	15.12	4.18	0.36	0.04	CONNECTED KVA 19.7	

PANEL LDP

VOLTAGE: 208Y/120V AMPS: 400A MLO MOUNTING: SURFACE
3 PHASE, 4 WIRE TOTAL LOAD: 0.0 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1										0.00												2
3	SPACE								3		0.00		3	225							EXISTING	4
5												0.00										6
7										0.00												8
9	SPARE							175	3		0.00		3	70							EXISTING	10
11												0.00										12
13										0.00												14
15	EXISTING							35	3		0.00		3	100							EXISTING	16
17												0.00										18
19								20	1	0.00												20
21	EXISTING							20	1		0.00		3	30							EXISTING	22
23	SPACE								1			0.00										24
25	EXISTING							20	1	0.00												26
27											0.00		3	20							EXISTING	28
29	PANEL LDPB							100	3			0.00										30
31										0.00												32
33	EXISTING							20	1		0.00		2	40							EXISTING	34
35	EXISTING							20	1			0.00	1	15							EXISTING	36
37	EXISTING							20	1	0.00			1	20							EXISTING	38
39	EXISTING							20	1		0.00		1	20							EXISTING	40
41	EXISTING							20	1			0.00	1	20							EXISTING	42
										0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	CONNECTED KVA 0	

PANEL EQH

VOLTAGE: 480 Volt AMPS: 600 A MLO MOUNTING: SURFACE
3 PHASE, 3 WIRE TOTAL LOAD: 255.9 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1				2.11						10.03					7.92							2
3	AC-8001 - 5 Hp			2.11				20	3		9.15		3	90	7.04						Panel HSP - 30 KVA	4
5				2.11								10.22			8.11							6
7							2.10			4.20					2.10							8
9	Air Compressor 90- AC-001-B						2.10	20	3		4.20		3	20	2.10						Air Compressor 90- AC-001-A	10
11							2.10					4.20			2.10							12
13							21.00			24.32					3.32							14
15	CIP Heater Panel 22- HTR-703						21.00	100	3		24.32		3	30	3.32						Bridge Crane	16
17							21.00					24.32			3.32							18
19							3.16			6.32					3.16							20
21	Strainer ST-2005						3.16	30	3		6.32		3	30	3.16						Strainer ST-2007	22
23							3.16					6.32			3.16							24
25							3.16			6.32					3.16							26
27	Strainer ST-2006						3.16	30	3		6.32		3	30	3.16						Future Strainer ST-2008	28
29							3.16					6.32			3.16							30
31							4.90			4.90												32
33	Fork Truck Charger						4.90	30	3		4.90		3								Space	34
35							4.90					4.90										36
37							29.74			29.74												38
39	Transformer TEQL						29.04	175	3		29.04		3								Space	40
41							29.52					29.52										42
										85.83	84.25	85.80			249.55	0.00	0.00	6.33	0.00	0.00	CONNECTED KVA 255.88	

PANEL EQL

VOLTAGE: 208Y/120 V AMPS: 400 A MLO MOUNTING: SURFACE
3 PHASE, 4 WIRE TOTAL LOAD: 90.1 KVA

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Air Dryer - 90-DR-001-A						1.20	20	1	1.92			1	20	0.72						FIT-4010	2
3	Air Dryer - 90-DR-001-B						1.20	20	1		1.92		1	20	0.72						FIT - 4011	4
5	Loop Feed Power Cab.						1.80	20	1			2.52	1	20	0.72						Spare	6
7	Loop Feed Power Cab.						1.80	20	1	2.52			1	20	0.72						Spare	8
9	Loop Feed Power Cab.						1.80	20	1		2.52		1	20	0.72						FIT-1007	10
11	Loop Feed Power Cab.						1.80	20	1			3.60	1	20	1.80						Loop Feed Power Cab.	12
13	Loop Feed Power Cab.						1.80	20	1	2.80			1	20	1.00						AIT-1015/AIT-1016	14
15	Loop Feed Power Cab.						1.80	20	1		2.80		1	20	1.00						AIT-1017/AIT-1018	16
17	Gate Access			1.20				20	1			2.20	1	20	1.00						Fence Access	18
19	Gate Access			1.20				20	1	3.00			1	20	1.80						Scissor Lift Charger	20
21	Spare						0.50	20	1		0.50		1								Space	22
23	Spare						0.50	20	1			0.50	1								Space	24
25							12.90			21.30					8.40							26
27	Panel DP						12.90	150	3		21.30		3	100	8.40						Generator Power Pnl.	28
29							12.30					20.70			8.40							30
										31.54	29.04	29.52			87.70	0.00	0.00	2.40	0.00	0.00	CONNECTED KVA 90.1	

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11955 WILLIAM B. WOMACK
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL DETAILS, SHEET 2

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E7-2

PANEL DP

VOLTAGE: 208Y/120 Volt — 3 PHASE, 4 WIRE — AMPS: 150 A MLO — TOTAL LOAD: 38.1 KVA — MOUNTING: SURFACE - NEMA 4X Stainless Steel Enclosure

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Membrane 22-UF-201-1						1.20	20	1	2.40			1	20				1.20			Future Coagulant Pump	2
3	Membrane 22-UF-201-2						1.20	20	1		2.40		1	20				1.20			Future Coagulant Pump	4
5	Sodium Hydroxide DP-5020			1.20				20	1			1.70	1	20				0.50			Spare	6
7	Sodium Hydroxide DP-5021			1.20				20	1	1.70			1	20				0.50			Spare	8
9	Membrane 22-UF-201-3						1.20	20	1		1.70		1	20				0.50			Spare	10
11	Future Mambrane 22-UF-201-4						1.20	20	1			2.40	1	20				1.20			Future SCV-2008	12
13	AquaMag DP-5034			1.20				20	1	2.40			1	20				1.20			AIT-4014	14
15	AquaMag DP-5035			1.20				20	1		2.40		1	20				1.20			AIT-4012	16
17	SCV-2005			0.60				20	1			1.80	1	20				1.20			Sodium Hypochlorite DP-5009	18
19	SCV-2006			0.60				20	1	1.80			1	20				1.20			Sodium Hypochlorite DP-5010	20
21	SCV-2007			0.60				20	1		1.80		1	20				1.20			Sodium Hypochlorite DP-5011	22
23	Fluoride Analyzer AIT-4015			0.60				20	1			1.80	1	20				1.20			Sodium Hypochlorite DP-5012	24
25	Spare			0.50				20	1	1.70			1	20				1.20			Sodium Hypochlorite DP-5013	26
27	Spare			0.50				20	1		1.70		1	20				1.20			Sodium Hypochlorite DP-5014	28
29	AIT-1010			0.60				20	1			1.80	1	20				1.20			Sodium Hypochlorite DP-5005	30
31	AIT-1009			0.60				20	1	1.80			1	20				1.20			Sodium Hypochlorite DP-5006	32
33	AIT-1008			0.60				20	1		1.80		1	20				1.20			Fluoride DP-5040	34
35	Outlet			0.60				20	1			1.80	1	20				1.20			Fluoride DP-5041	36
37	AIT-4013			0.60				20	1	1.10			1	20				0.50			Spare	38
39	AIT-4015			0.60				20	1		1.10		1	20				0.50			Spare	40
41	Spare			0.50				20	1			1.00	1	20				0.50			Spare	42
										12.90	12.90	12.30			4.80	0.00	0.00	33.30	0.00	0.00	CONNECTED KVA 38.1	

PANEL HSP

VOLTAGE: 480 V PRI — 3 PHASE, 4 WIRE — AMPS: 90 A MB — TOTAL LOAD: 23.1 KVA — MOUNTING: SURFACE - MINI-POWER CENTER - 30 KVA THREE PHASE, 480 VOLT PRIMARY - 208Y/120 VOLT SECONDARY

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Lighting	0.45						20	1	0.81			1	20					0.36		Outlets	2
3	Security Lights	0.07						20	1		0.43		1	20					0.36		Outlets	4
5	AIT-4022						1.00	20	1			2.00	1	20	1.00						AIT-4020	6
7	Loop Power Cabinet						1.00	20	1	2.00			1	20	1.00						AIT-4021	8
9	Door Card Reader						0.50	20	1		1.50		1	20	1.00						FIT-4016/FIT-7003	10
11	Door Card Reader						0.50	20	1			1.00	1	20	0.50						Future AIT-4023	12
13	HSP-EUH-1						1.67	20	3	3.34			3	20	1.67						HSP-EUH-2	14
15							1.67				3.34				1.67							16
17							1.67					3.34			1.67							18
19	HSP-EF-1						1.27	20	3	1.77			1	20	0.50						HSP-L1	20
21							1.27				1.77		1	20	0.50						Spare	22
23							1.27					1.77	1	20	0.50						Spare	24
										7.92	7.04	8.11			21.83	0.00	0.00	0.00	0.72	0.52	CONNECTED KVA 23.07	

PANEL LA

VOLTAGE: 208Y/120 V — 3 PHASE, 4 WIRE — AMPS: 200 A MLO — TOTAL LOAD: 76.6 KVA — MOUNTING: SURFACE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Lab Outlet		1.50					20	1	3.00			1	20					1.50		Lab Outlet	2
3	Lab Outlet		1.50					20	1		3.00		1	20					1.50		Lab Outlet	4
5	Lab Outlet		1.50					20	1			3.00	1	20					1.50		Lab Outlet	6
7	Lab Outlet		1.50					20	1	3.00			1	20					1.50		Lab Outlet	8
9	Lab Outlet		1.50					20	1		3.00		1	20					1.50		Lab Outlet	10
11	Lab Outlet		1.50					20	1			3.00	1	20					1.50		Lab Outlet	12
13	Fume Hood						1.50	20	1	3.00			1	20	1.50						Fume Hood	14
15	Lab Outlet		1.50					20	1		3.00		1	20					1.50		Lab Outlet	16
17	Lab Outlet		1.50					20	1			3.00	1	20					1.50		Lab Outlet	18
19	Lab Outlet		1.50					20	1	3.00			1	20					1.50		Lab Outlet	20
21	Dish Washer						1.50	20	1		3.00		1	20					1.50		Lab Outlet	22
23	Lab Outlet		1.50					20	1			3.00	1	20					1.50		Lab Outlet	24
25	Lab Outlet		1.50					20	1	3.00			1	20					1.50		Lab Outlet	26
27	Icemaker						1.50	20	1		3.00		1	20					1.50		Lab Outlet	28
29	Lab Outlet		1.50					20	1			3.00	1	20					1.50		Lab Outlet	30
31	Lab Outlet		1.50					20	1	3.00			1	20					1.50		Lab Outlet	32
33	Lab Outlet		1.50					20	1		3.00		1	20					1.50		Lab Outlet	34
35	Dish Washer						1.50	20	1			2.54	1	20 **	1.04						Drying Oven	36
37	Lab Outlet		1.50					20	1	2.54					1.04							38
39	Lab Outlet		1.50					20	1		3.18		1	20	1.68						Autoclave	40
41	Lab Outlet		1.50					20	1			3.18			1.68							42
43	Inductivity Coupled Plasma						1.68	20	2	3.60			1	20				1.92			Lab-EF-2	44
45							1.68				2.18		1	20					0.50		Spare	46
47	Lab-EF-1			1.92				20	1			2.42	1	20					0.50		Spare	48
49	Spare		0.50					20	1	1.00			1	20					0.50		Spare	50
51	Spare		0.50					20	1		1.00		1	20					0.50		Spare	52
53	Spare		0.50					20	1			1.00	1	20					0.50		Spare	54
55	Spare		0.50					20	1	1.00			1	20					0.50		Spare	56
57	Spare		0.50					20	1		1.00		1	20					0.50		Spare	58
59	Spare		0.50					20	1			1.00	1	20					0.50		Spare	60
	** - Provide Lock Off Devcice									26.14	25.36	25.14			16.30	0.00	0.00	3.84	56.50	0.00	CONNECTED KVA 76.64	

PANEL H

VOLTAGE: 480Y/277V — 3 PHASE, 4 WIRE — AMPS: 250 A MLO — TOTAL LOAD: 137.7 KVA — MOUNTING: SURFACE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Office Lighting	3.06						20	1	3.87			1	20						0.81	Building Security Lts	2
3	Plant Lighting	3.44						20	1		4.45		1	20						1.01	Tank Area Lighting	4
5	Plant Lighting	3.44						20	1			5.99	2	20						2.55	Site Lighting	6
7	Pit Lighting	0.78						20	1	3.33										2.55		8
9	Spare						1.00	20	1		2.08		1	20						1.08	First Level Lighting	10
11	Spare						1.00	20	1			1.00	1								Space	12
13	Spare						1.00	20	1	1.00			1								Space	14
15	Spare						1.00	20	1		1.00		1								Space	16
17	Spare						1.00	20	1			1.00	1								Space	18
19	Transformer TL						38.00	175	3	38.00			1								Space	20
21							38.00				38.00		1								Space	22
23							38.00					38.00	1								Space	24
										46.20	45.53	45.99			119.00	0.00	0.00	0.00	0.00	18.72	CONNECTED KVA 137.72	

PANEL L - Section 1

VOLTAGE: 208Y/120 V — 3 PHASE, 4 WIRE — AMPS: 400 A MB — TOTAL LOAD: 142.3 KVA — MOUNTING: SURFACE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	Panel LA						27.22	200	3	28.72			1	20					1.50		Outlets	2
3							27.86				29.36		1	20					1.50		Outlets	4
5							26.72					28.22	1	20					1.50		Outlets	6
7	Outlets		1.50					20	1	3.00			1	20					1.50		Outlets	8
9	Outlets		1.50					20	1		3.00		1	20					1.50		Outlets	10
11	Outlets		1.50					20	1			3.00	1	20					1.50		Outlets	12
13	Outlets		1.50					20	1	3.00			1	20					1.50		Outlets	14
15	Outlets		1.50					20	1		3.00		1	20					1.50		Outlets	16
17	Outlets		1.50					20	1			3.00	1	20*					1.50		Refrig	18
19	Outlets		1.50					20	1	2.50			1	20	1.00						Microwave	20
21	Drinking Fountain		1.00					20*	1		2.23		1	20	1.23						Dishwasher	22
23	Outlets		1.50					20	1			2.50	1	20*					1.00		Drinking Fountain	24
25	Outlets		1.50					20	1	3.00			1	20					1.50		Copier	26
27	Outlets		1.50					20	1		3.00		1	20					1.50		Outlets	28
29	Outlets		1.50					20	1			3.00	1	20					1.50		Telephone Backboard	30
31	Oven					3.12		30**	2	4.12			1	20	1.00						FACP	32
33						3.12					3.92		1	20					0.80		Outlets	34
35	Cooktop					4.10		40**	2			5.10	1	20					1.00		Outlets	36
37						4.10				5.10			1	20					1.00		Outlets	38
39	Hood					1.00		20	1		2.00		1	20					1.00		Outlets	40
41	Spare		0.50					20	1			1.50	1	20					1.00		Outlets	42
	* - Provide GFCI 5 ma Circuit Breaker ** - Provide Lock Off Device									49.44	46.51	46.32			85.03	15.44	0.00	0.00	41.80	0.00	CONNECTED KVA 142.27	

PANEL L - Section 2

VOLTAGE: 208Y/120 V — 3 PHASE, 4 WIRE — AMPS: 400 A MLO — TOTAL LOAD: 39.8 KVA — MOUNTING: SURFACE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
43	Outlet		1.50					20	1	3.00			1	20*					1.50		Outlet	44
45	Outlet		1.50					20	1		3.00		1	20*					1.50		Outlet	46
47	Outlet		1.50					20	1			3.00	1	20					1.50		Outlet	48
49	Outlet		1.50					20	1	3.00			1	20					1.50		Outlet	50
51	Outlet		1.50					20	1		2.50		1	20					1.00		Outlet	52
53	Outlet		1.50					20	1			2.50	1	20					1.00		Outlet	54
55	Outlet		1.50					20	1	2.50			1	20					1.00		Outlet	56
57	Outlet		1.00					20	1		2.20		1	20	1.20						Suez Insite	58
59	Outlet		1.00					20	1			2.80	1	20	1.80						Suez PLC	60
61	Outlet		1.00					20	1	2.80			1	20	1.80						Buford PLC	62
63	Door Access		0.50					20	1		1.00		1	20					0.50		Door Access	64
65	Door Access		0.50					20	1			1.50	1	20	1.00						Door Access System	66
67	Door Access		0.50					20	1	2.00			1	20	1.50						Camera System	68
69	Door Access		0.50					20	1		1.00		1	20					0.50		SPARE	70
71	Door Access		0.50					20	1			1.00	1	20					0.50		SPARE	72
73	Door Access		0.50					20	1	1.00			1	20					0.50		SPARE	74
75	Door Access		0.50					20	1		1.00		1	20					0.50		SPARE	76
77	Door Access		0.50					20	1			1.00	1	20					0.50		SPARE	78
79	SPARE		0.50					20	1	1.00			1	20					0.50		SPARE	80
81	SPARE		0.50					20	1		1.00		1	20					0.50		SPARE	82
83	SPARE		0.50					20	1			1.00	1	20					0.50		SPARE	84
	* - Provide GFCI 5 ma Circuit Breaker									15.30	11.70	12.80			7.30	0.00	0.00	0.00	32.50	0.00	CONNECTED KVA 39.8	

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11056 WILLIAM B. M. WOMACK — 04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

ELECTRICAL DETAILS, SHEET 3

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC — Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: E7-3

SURVEY POINTS
REMOVED, EXISTING
VALVES SHOWN AS GRAY

N/F
BUFORD CITY OF
PARCEL #08167 005001

SOIL STOCKPILE AREA

KEEP EXISTING 12"
BYPASS LINE ACTIVE

N/F
WEB ASSOCIATES, INC.
PARCEL #08167 005002

RAW WATER
SETTLING POND

RWC2

EXIST. 6" RW TO BE REMOVED AS PART OF CURRENT PROJECT, SEE NOTE 4

PROP. 16" DIP RAW
WATER LINE

POTENTIAL
CONTRACTOR'S FIELD
OFFICE AREA

N/F
KENNETH AND KIMBERLY LEY
PARCEL #08167 004001

PUMP STATION ACCESS ROAD - DIRT/GRAVEL

RWC3

100 YEAR FLOOD PLAIN ELEVATION @ 1084'±

RWC4

EXIST. BRIDGE

EXIST. 12" DIP RAW WATER LINE

EXIST. RAW WATER PUMP STATION

LAKE SIDNEY LANIER

NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. ALL LATERAL STREET CUTS MUST BE COVERED WITH STEEL PLATES OF SUFFICIENT THICKNESS TO SPAN THE CUT WITHOUT NOTICEABLE DEFLECTION. PLATES TO REMAIN IN PLACE UNTIL THE CONCRETE BASE HAS GAINED SUFFICIENT STRENGTH TO WITHSTAND TRAFFIC LOADS (24 HOUR MINIMUM).
3. ON LONGITUDINAL CUTS EXCEEDING 50 FEET IN LENGTH AND AT THE DIRECTION OF THE CITY, CONCRETE IN THE TRENCH WILL BE BROUGHT FLUSH WITH THE EXISTING PAVEMENT AND THE ENTIRE WIDTH OF THE ROADWAY RESURFACED WITH A MINIMUM OF 1-1/2" OF 12.5MM SUPERPAVE ASPHALT SURFACE COURSE.
4. CONFIRM LOCATION OF RAW WATER SUPPLY LINE AND REMOVE PORTION BETWEEN 8" GATE VALVE AND INTERSECTION WITH EXISTING 12" DIP LINE, AS INDICATED IN C5-4. CLOSE 8" VALVE AND CAP BOTH ENDS WITH A MJ PLUG OR CAP.
5. ALL PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER. ALL TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED BY TAMPING IN 6" LAYERS. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY AND THE BACKFILL FINISHED FLUSH WITH SURROUNDING GROUND.

0 40' 80'
SCALE: 1" = 40'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

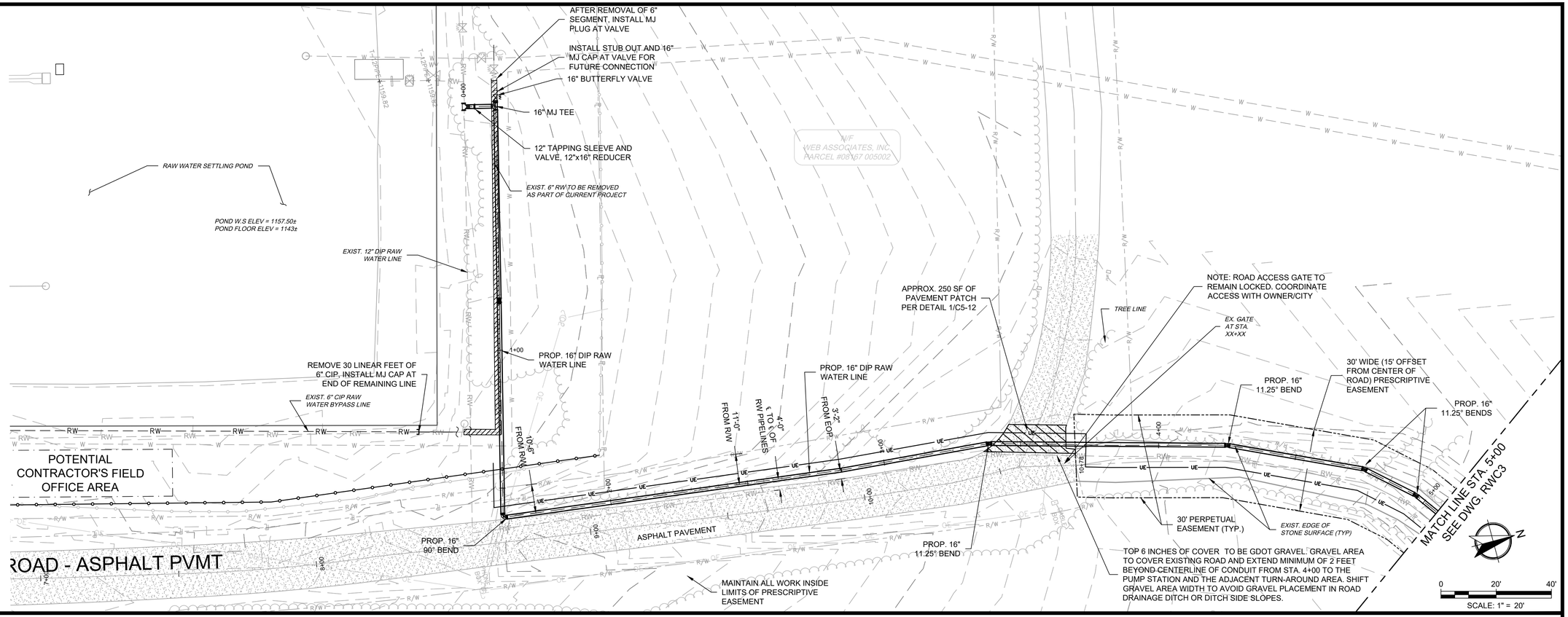
OVERALL SITE PIPING PLAN

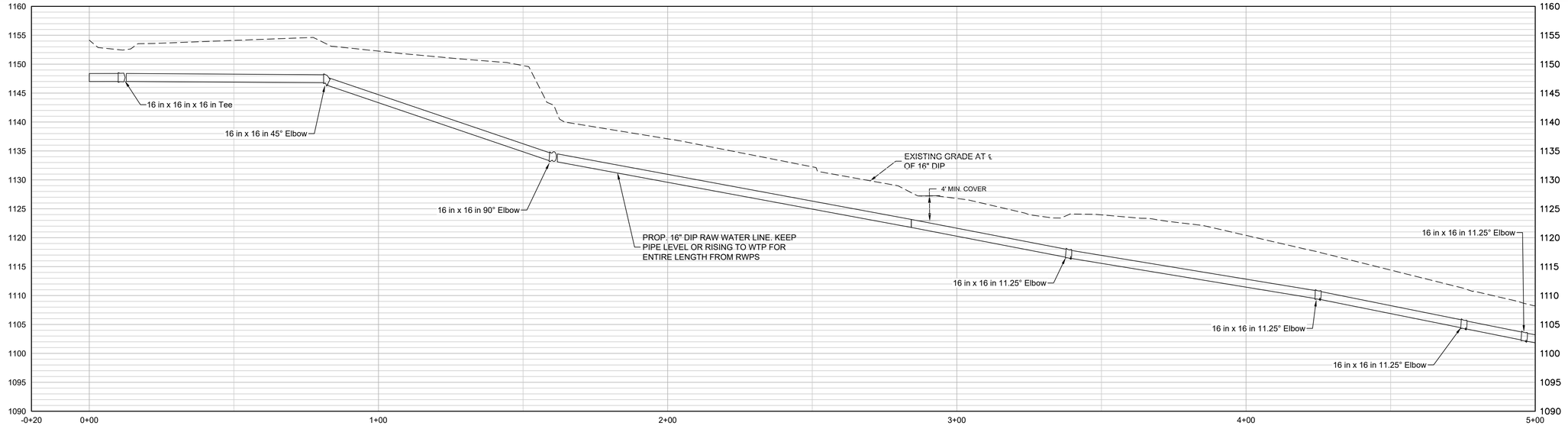
THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWC1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\RW PLAN & PROFILE.dwg





SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTES:
1. ALL NEW PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER DEPTH. ALL TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED BY TAMPING IN 6" LAYERS. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY AND THE BACKFILL FINISHED FLUSH WITH SURROUNDING GROUND.
2. PROVIDE RESTRAINED JOINT PIPE FOR ALL PIPE FITTINGS AND FOR MINIMUM 40' EACH SIDE OF FITTINGS FOR ALL NEW BURIED RAW WATER PIPE, UNLESS NOTED OTHERWISE.
3. NEW BURIED PIPES AND FITTINGS TO HAVE EITHER MJ OR PUSH-ON JOINTS.
4. ALL PIPELINES CONNECTED TO FUTURE WORK WILL BE SUPPLIED WITH MJ PLUG OR CAP.
5. LOCATION AND EXTENT OF THRUST RESTRAINTS FOR EXISTING RAW WATER LINE IS UNKNOWN. PROTECT ANY EXISTING THRUST RESTRAINT MEASURES ENCOUNTERED DURING THE WORK SO THAT EXISTING RAW WATER LINE REMAINS IN SERVICE AT ALL TIMES.
6. MAINTAIN 34" WALL TO WALL SEPARATION BETWEEN 16" DIP LINE AND EXISTING 12" DIP LINE.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

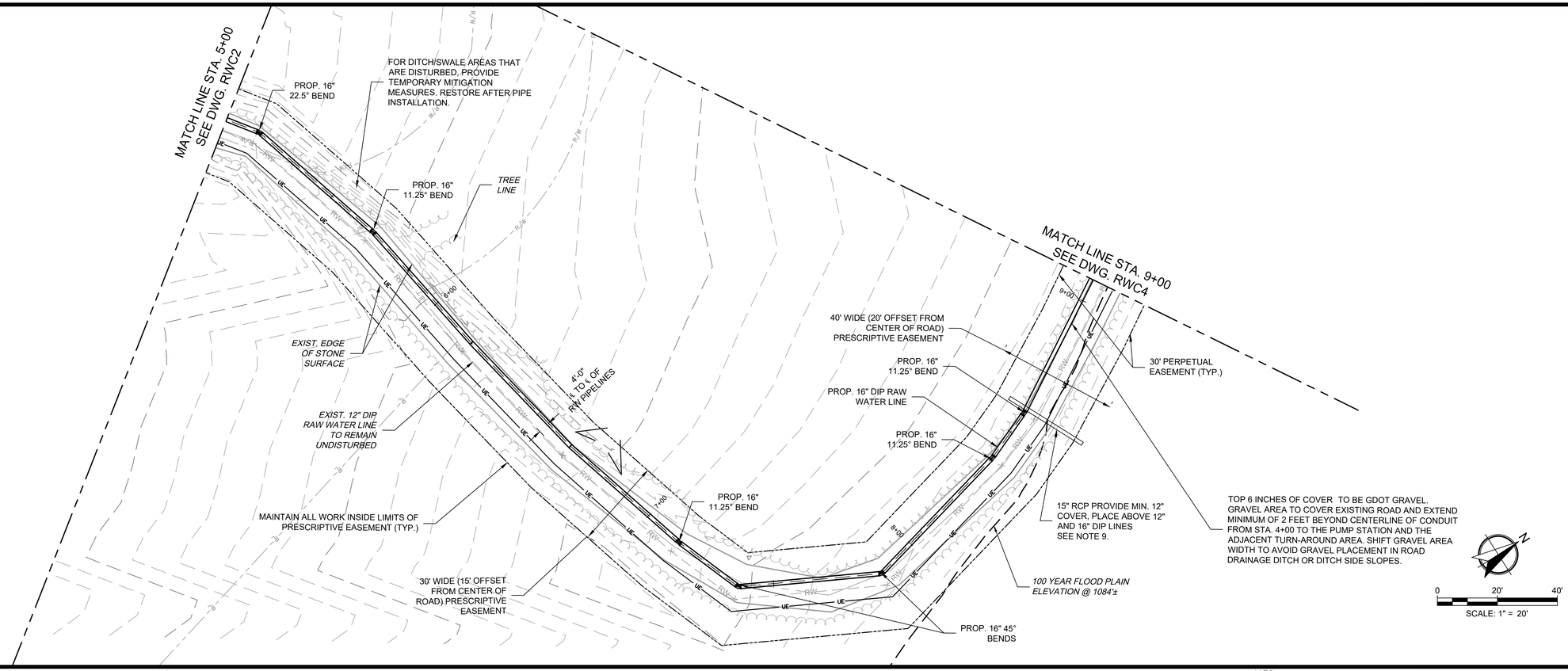
RAW WATER LINE PLAN & PROFILE STA. 0+00 TO STA. 5+00

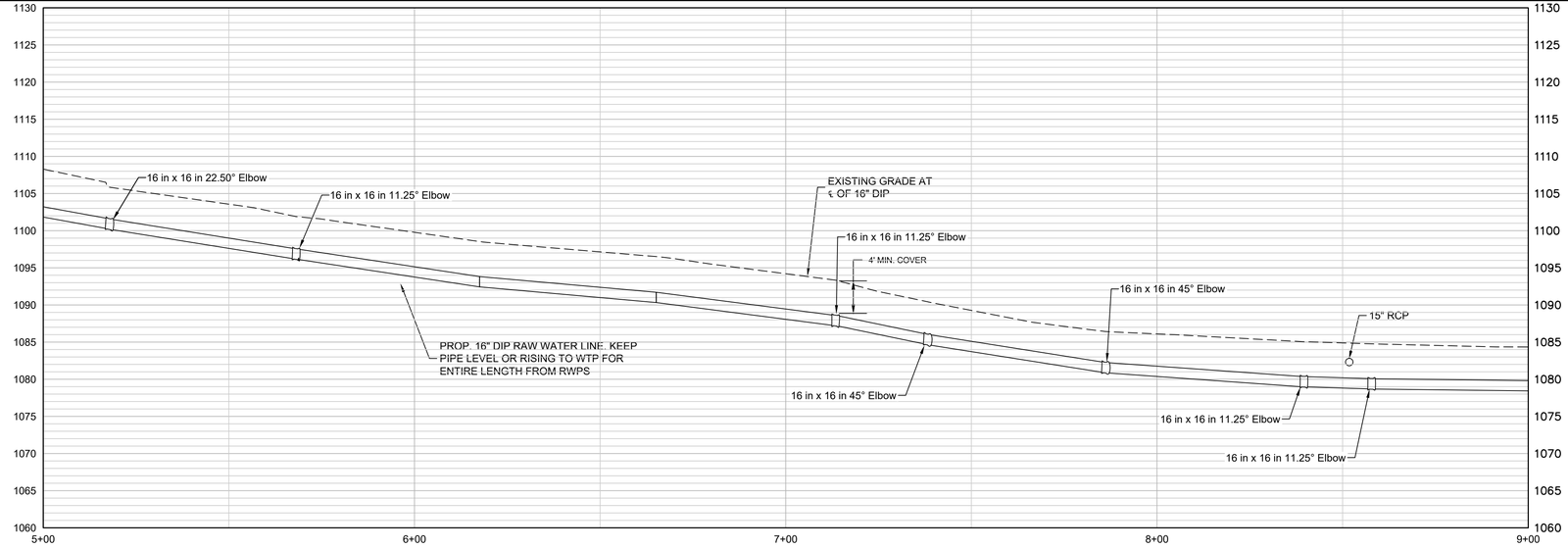
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWC2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\Civil\Drawings\Civil\RW PLAN & PROFILE.dwg





NOTES:
1. ALL NEW PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER DEPTH. ALL TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED BY TAMPING IN 6" LAYERS. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY AND THE BACKFILL FINISHED FLUSH WITH SURROUNDING GROUND.
2. PROVIDE RESTRAINED JOINT PIPE FOR ALL PIPE FITTINGS AND FOR MINIMUM 40' EACH SIDE OF FITTINGS FOR ALL NEW BURIED RAW WATER PIPE, UNLESS NOTED OTHERWISE.
3. NEW BURIED PIPES AND FITTINGS TO HAVE EITHER MJ OR PUSH-ON JOINTS.
4. ALL PIPELINES CONNECTED TO FUTURE WORK WILL BE SUPPLIED WITH MJ PLUG OR CAP.
5. LOCATION AND EXTENT OF THRUST RESTRAINTS FOR EXISTING RAW WATER LINE IS UNKNOWN. PROTECT ANY EXISTING THRUST RESTRAINT MEASURES ENCOUNTERED DURING THE WORK SO THAT EXISTING RAW WATER LINE REMAINS IN SERVICE AT ALL TIMES.
6. MAINTAIN 34" WALL TO WALL SEPARATION BETWEEN 16" DIP LINE AND EXISTING 12" DIP LINE.
7. THE EXACT LOCATION OF THE 15" RCP SHOULD BE COORDINATED WITH THE ENGINEER.

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

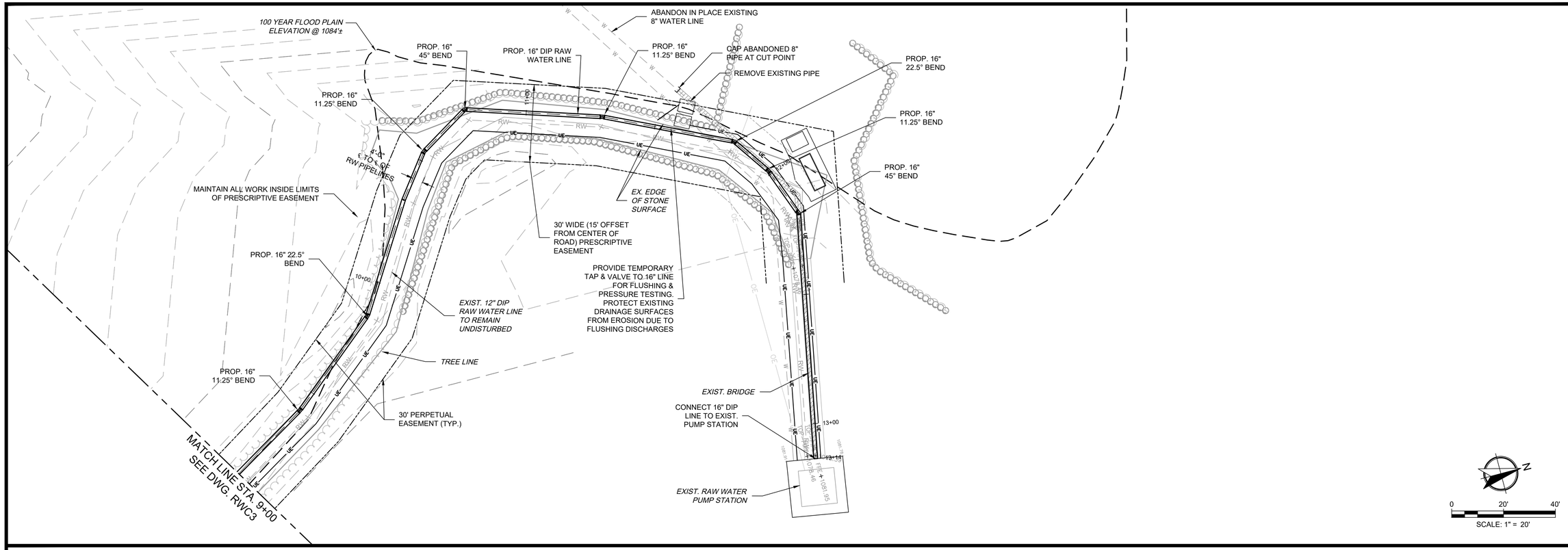
RAW WATER LINE PLAN & PROFILE STA. 5+00 TO STA. 9+00

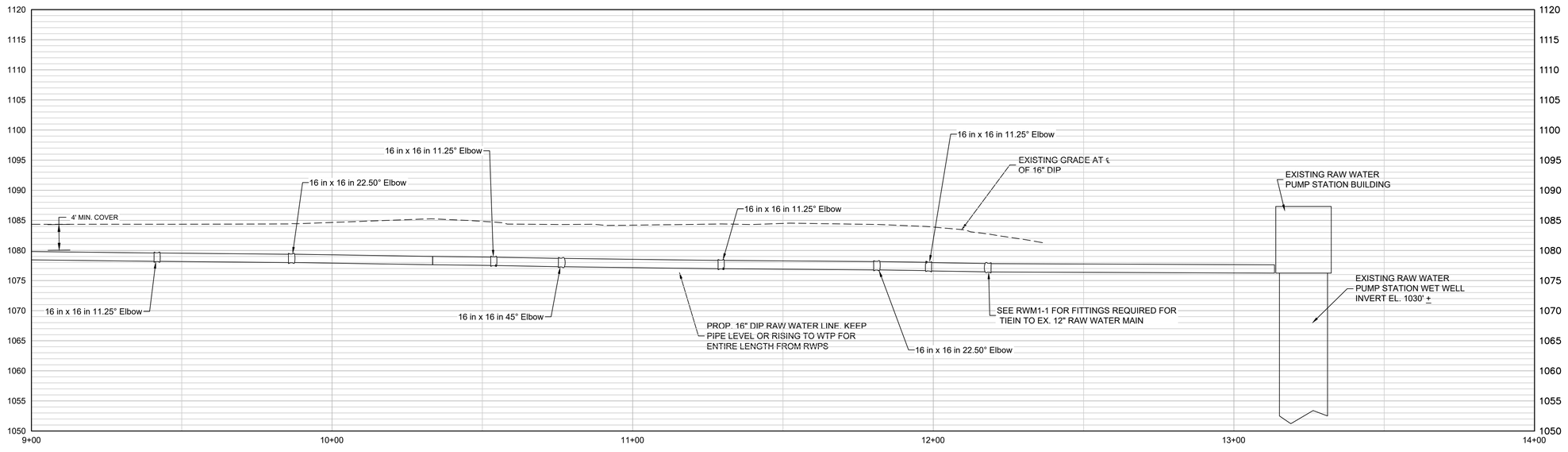
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWC3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\RW PLAN & PROFILE.dwg





SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTES:
1. ALL NEW PIPE SHALL HAVE A MINIMUM OF 4'-0" COVER DEPTH. ALL TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED BY TAMPING IN 6" LAYERS. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY AND THE BACKFILL FINISHED FLUSH WITH SURROUNDING GROUND.
2. PROVIDE RESTRAINED JOINT PIPE FOR ALL PIPE FITTINGS AND FOR MINIMUM 40' EACH SIDE OF FITTINGS FOR ALL NEW BURIED RAW WATER PIPE, UNLESS NOTED OTHERWISE.
3. NEW BURIED PIPES AND FITTINGS TO HAVE EITHER MJ OR PUSH-ON JOINTS.
4. ALL PIPELINES CONNECTED TO FUTURE WORK WILL BE SUPPLIED WITH MJ PLUG OR CAP.
5. LOCATION AND EXTENT OF THRUST RESTRAINTS FOR EXISTING RAW WATER LINE IS UNKNOWN. PROTECT ANY EXISTING THRUST RESTRAINT MEASURES ENCOUNTERED DURING THE WORK SO THAT EXISTING RAW WATER LINE REMAINS IN SERVICE AT ALL TIMES.
6. MAINTAIN 34" WALL TO WALL SEPARATION BETWEEN 16" DIP LINE AND EXISTING 12" DIP LINE.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

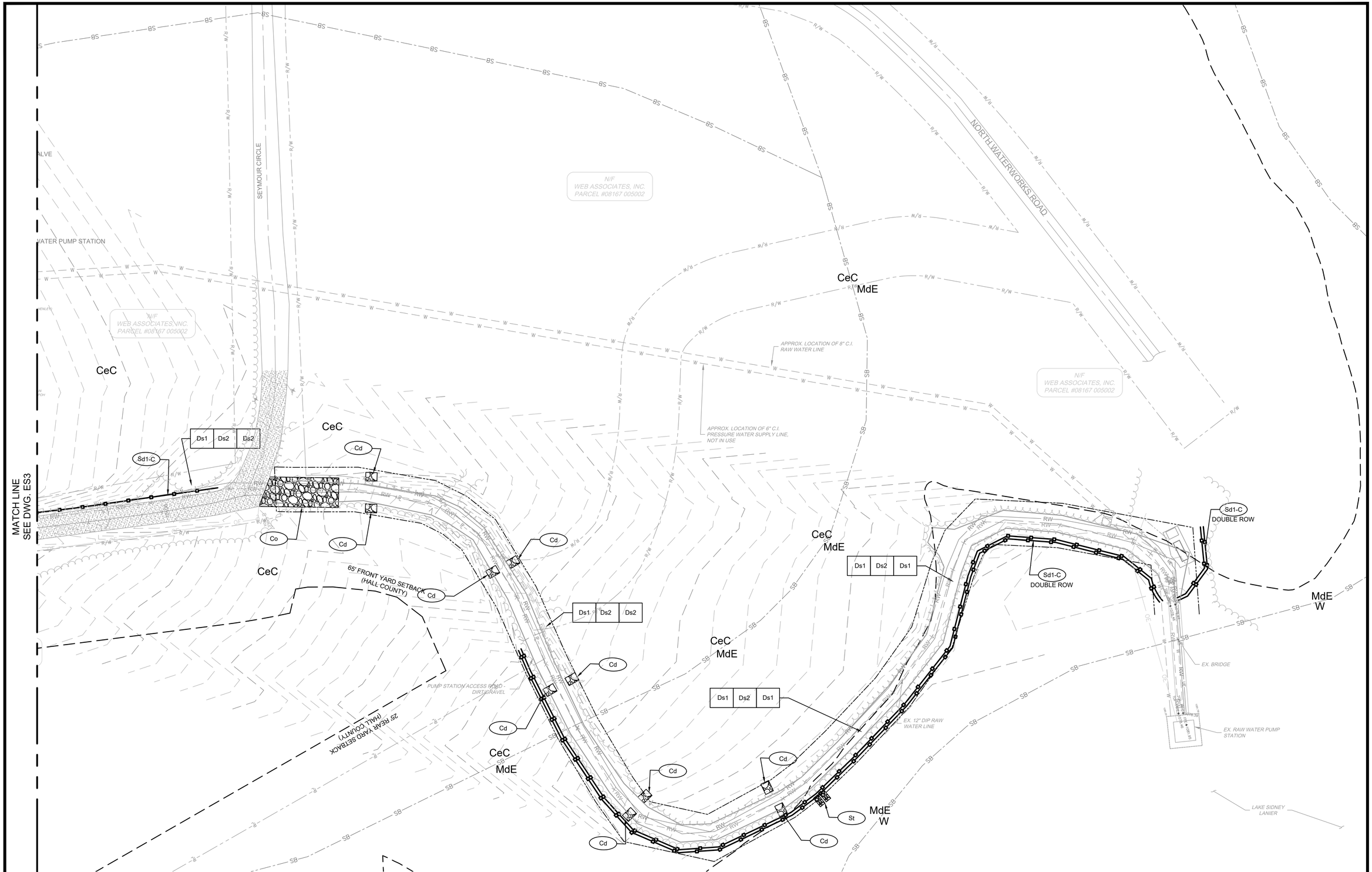
RAW WATER LINE PLAN & PROFILE STA. 9+00 TO STA. 13+14

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWC4

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\RW PLAN & PROFILE.dwg



NOTES:

1. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
2. LOCATIONS SHOWN FOR RAW WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

N

0 30' 60'

SCALE: 1" = 30'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA
REGISTERED
No. 037813
PROFESSIONAL
ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

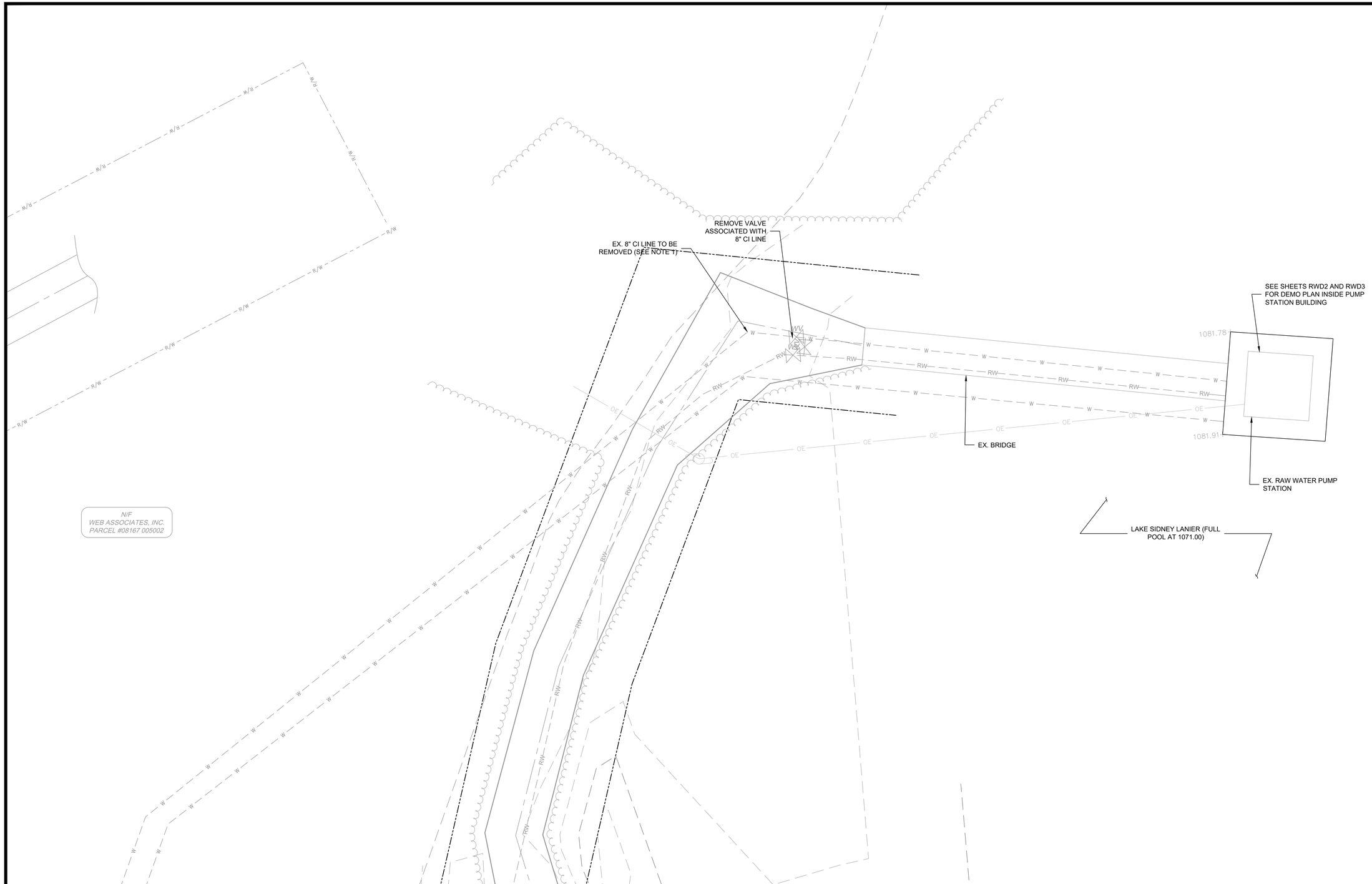
EROSION CONTROL PLAN

THIS BAR IS
1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWES

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\E&SC\E&SC PLAN.dwg



NOTES:

1. ONLY SPECIFIC SECTIONS OF THE EX. 8" CI RAW WATER LINE ARE TO BE DEMOLISHED/REMOVED. THE REST OF THIS LINE IS TO BE ABANDONED IN PLACE.
2. SOURCE OF TOPOGRAPHICAL INFORMATION IS SURVEY BY CARLAND SURVEYORS (APRIL 2017) AND HALL COUNTY, GA GIS
   HORIZONTAL: STATE PLANS, INTERNATIONAL FEET, HARN, DATUM NAD83
   VERTICAL: NAD88, US SURVEY FOOT.
3. LOCATIONS SHOWN FOR RAW WATER LINES ARE APPROXIMATE. CONTRACTOR TO CONFIRM.

N

0 10' 20'

SCALE: 1" = 10'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

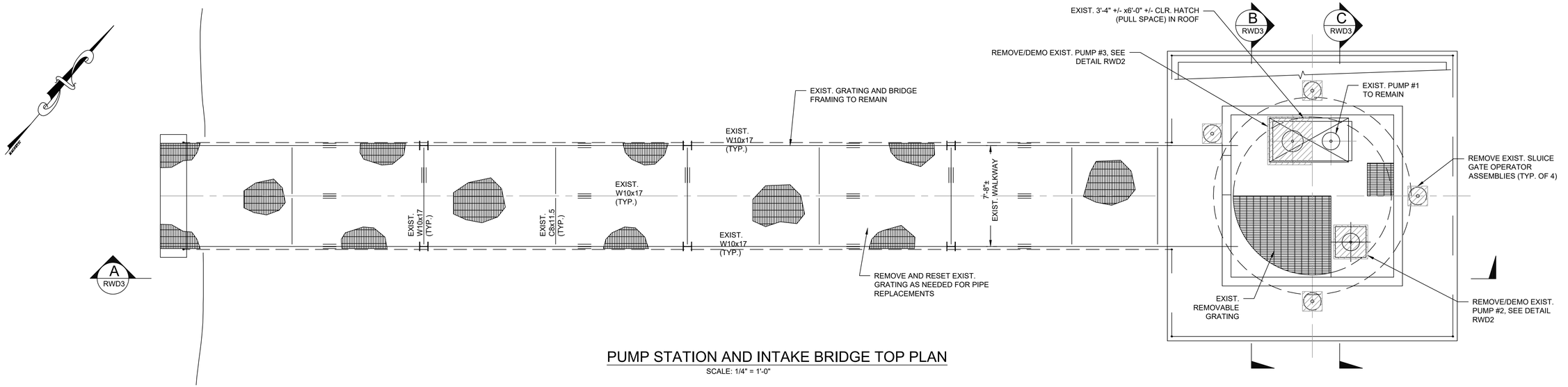
DEMOLITION PLAN AT RAW WATER PUMP STATION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

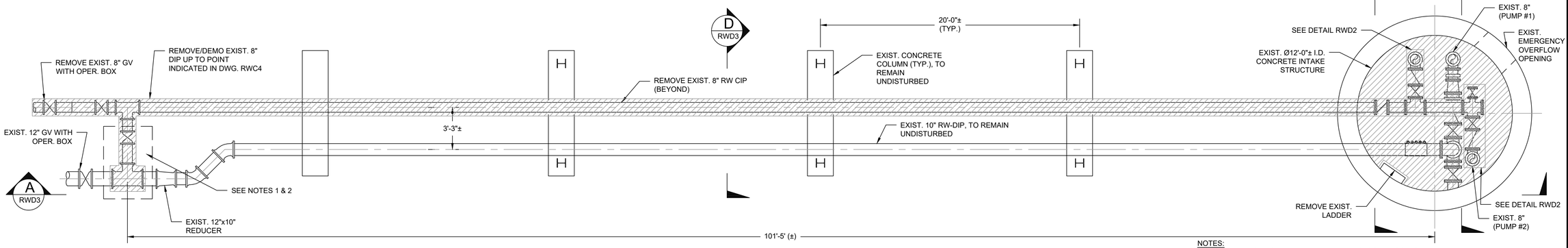
Project No.: 170110.00
Drawing No.: RWD1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Civil\SITE PLAN - Redo.dwg



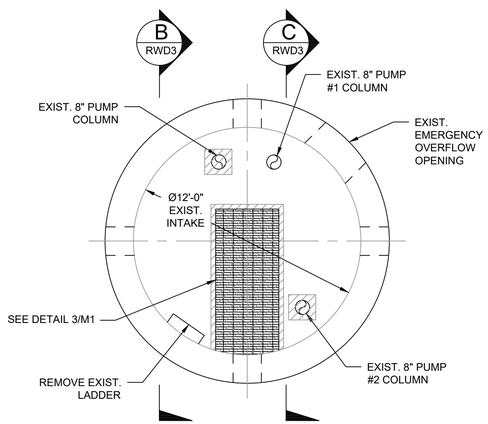
PUMP STATION AND INTAKE BRIDGE TOP PLAN

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



PUMP STATION AND INTAKE BRIDGE INTERMEDIATE PLAN EL. = 1080±

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



LOWER PLAN

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

DETAIL 1 RWD2 — N.T.S.

DETAIL 2 RWD2 — N.T.S.

DETAIL 3 RWD2 — N.T.S.

NOTES:

1. RETAIN EXISTING 12" TEE AND VALVE IN CLOSED POSITION UNTIL NEW RAW WATER MAIN IS INSTALLED, TESTED, AND READY FOR SERVICE.
2. AFTER OWNER AND ENGINEER APPROVE NEW RAW WATER MAIN ON BRIDGE TO BE PLACED INTO SERVICE; REPLACE TEE, PIPE, AND VALVE AT INTERCONNECTION WITH NEW WORK SHOWN ON DWG. RWM1-1.
3. AN ANALYSIS OF STRUCTURAL LOAD CAPACITY WAS COMPLETED IN OCTOBER 2020. COPIES OF THIS REPORT ARE AVAILABLE UPON REQUEST.
4. IN ORDER TO KEEP TWO RAW WATER PUMPS IN SERVICE AT THE STATION FOR AS LONG AS POSSIBLE, COMPLETE THE REPLACEMENT OF THE EXISTING 8 INCH RAW WATER PIPING ON THE BRIDGE WITH NEW PIPING WITHIN A MAXIMUM TIME PERIOD OF 72 CONTINUOUS HOURS SO THAT THE NEW LINE IS BACK IN SERVICE WITHIN THAT TIME. COORDINATE INTERRUPTION TIME AND SCHEDULE FOR THE WORK WITH THE OWNER AND COMPLETE SUCH WORK AFTER NOVEMBER 1ST OF ONE YEAR AND BEFORE MARCH 30TH OF THE FOLLOWING YEAR.
5. ANY PROPOSED OUTAGES WILL HAVE TO BE COORDINATED IN ADVANCE WITH THE OWNER AND THE ENGINEER.
6. CONTRACTOR SHALL PROVIDE A TEMPORARY POWER SUPPLY, SEE ELECTRICAL FOR SIZING.
7. EXISTING PUMP #1 SHALL REMAIN FULLY OPERATION, UNTIL SUCH TIME AS PUMPS #2 AND #3 ARE PUT INTO SERVICE.
8. THE CONTRACTOR SHALL DEVELOP A WORK PLAN FOR THE INSTALLATION OF THE RWPS NEW ELECTRICAL SERVICE AND RELATED COMPONENTS, THE REMOVAL OF THE EXIST 8" RW AND THE INSTALLATION OF THE 14" RW-DIP, AND THE INSTALLATION OF NEW PUMPS AND ASSOCIATED VALVES, PIPING AND FITTINGS WITHIN THE RWPS.
9. THE PLAN WILL IDENTIFY DISTINCT WORK ACTIVITIES AND INCLUDE TIME INVOLVED FOR EACH OF THE ACTIVITIES. THE PLAN WILL BE REVIEWED BY THE OWNER AND ENGINEER PRIOR TO ACCEPTANCE.
10. THE CONTRACTOR CAN ELECT TO BRING ONE OF THE NEW PUMPS INTO SERVICE, PRIOR TO COMPLETING THE INSTALLATION OF THE SECOND NEW PUMP. THIS SHALL INCLUDE THE REMOVAL OF THE EXIST 8" RW CIP, AND THE INSTALLATION OF THE NEW 14" RW-DIP, TO INCLUDE EITHER THE TIE-IN TO THE EXISTING 12" RW-DIP, OR THE INSTALLATION OF THE NEW 16" DIP RW LINE.
11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL TEMPORARY AND PERMANENT BRACING AND RESTAINTS NEEDED FOR NEW VALVES AND FITTINGS, IN THE EVENT THE CONTRACTOR ELECTS TO BRING THE NEW PUMPS INTO SERVICE ONE AT A TIME. THE NEW GATE VALVES SHALL BE USED AS THE ISOLATION POINTS.
12. WORK ON THE REMOVAL OF THE EXIST 8" RW CIP, THE ASSOCIATED PUMPS, FITTINGS AND VALVES SHALL NOT COMMENCE UNTIL SUCH TIME AS ALL THE NEW REQUIRED COMPONENTS HAVE BEEN DELIVERED TO THE CONTRACTOR ON THE SITE.
13. THE INSTALLATION OF THE NEW 16" DIP RW LINE AND PARALLEL DUCTBANK CAN COMMENCE, INDEPENDENTLY OF THIS WORK PLAN.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

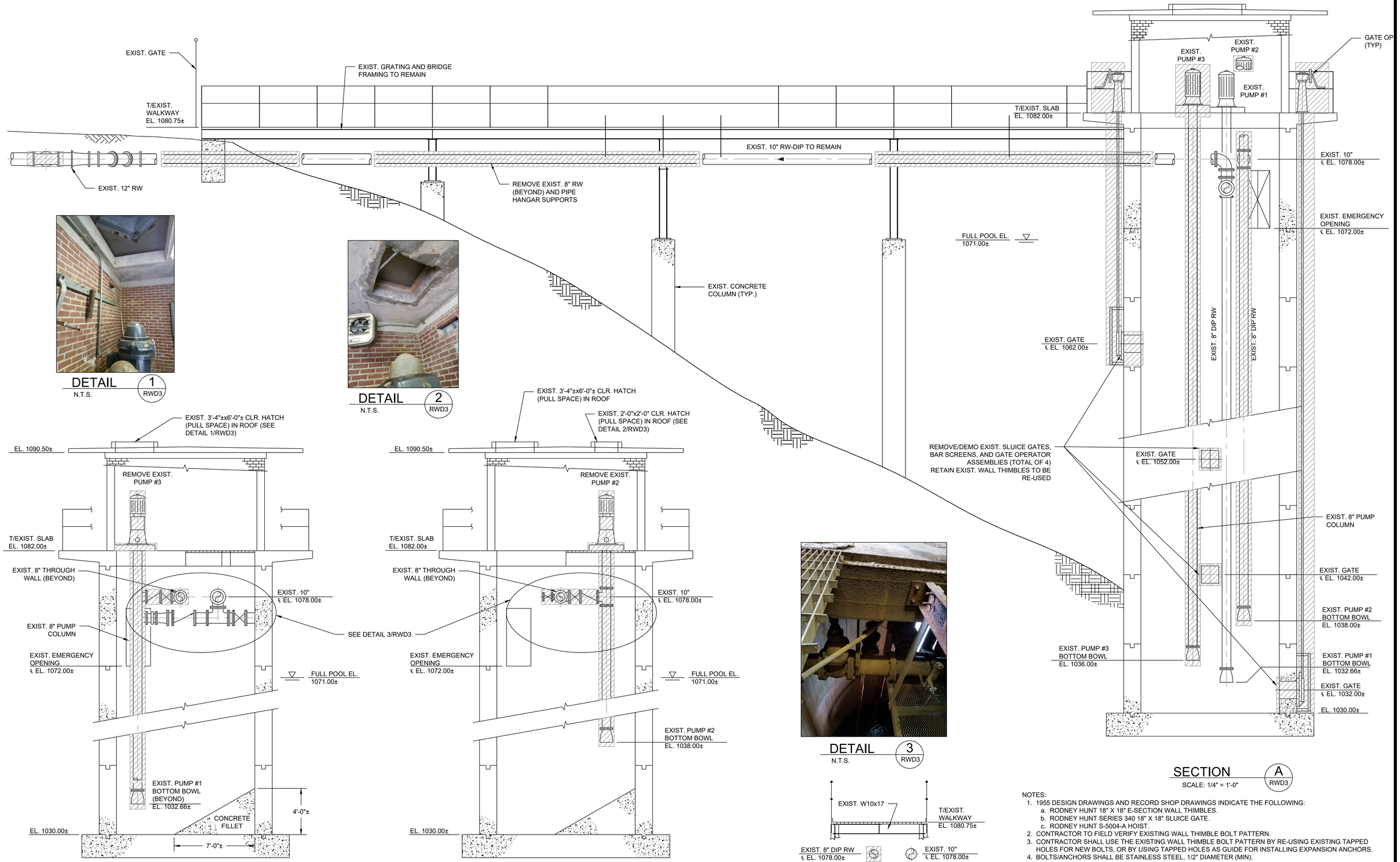
PUMP STATION & RAW WATER INTAKE STRUCTURE PLANS DEMOLITION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWD2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\RAW WATER PS PLAN.dwg



DETAIL 1 RWD3
N.T.S.

DETAIL 2 RWD3
N.T.S.

SECTION B RWD3
SCALE: 1/4" = 1'-0"

SECTION C RWD3
SCALE: 1/4" = 1'-0"

DETAIL 3 RWD3
N.T.S.

SECTION D RWD3
SCALE: 1/4" = 1'-0"

SECTION A RWD3
SCALE: 1/4" = 1'-0"

NOTES:
1. 1955 DESIGN DRAWINGS AND RECORD SHOP DRAWINGS INDICATE THE FOLLOWING:
   a. RODNEY HUNT 18" X 18" E-SECTION WALL THIMBLES.
   b. RODNEY HUNT SERIES 340 18" X 18" SLUICE GATE.
   c. RODNEY HUNT S-5004-A HOIST.
2. CONTRACTOR TO FIELD VERIFY EXISTING WALL THIMBLE BOLT PATTERN.
3. CONTRACTOR SHALL USE THE EXISTING WALL THIMBLE BOLT PATTERN BY RE-USING EXISTING TAPPED HOLES FOR NEW BOLTS, OR BY USING TAPPED HOLES AS GUIDE FOR INSTALLING EXPANSION ANCHORS.
4. BOLTS/ANCHORS SHALL BE STAINLESS STEEL, 1/2" DIAMETER (MIN).
5. IF EXPANSION ANCHOR ARE NECESSARY, CONTRACTOR SHALL USE THOSE RECOMMENDED BY NEW SLUICE GATE PROVIDER.
6. CONTRACTOR TO PROVIDE AND INSTALL 2" X 1/2" EPDM SOFT FOAM STRIP BETWEEN THIMBLE AND NEW SLUICE GATE FRAME.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

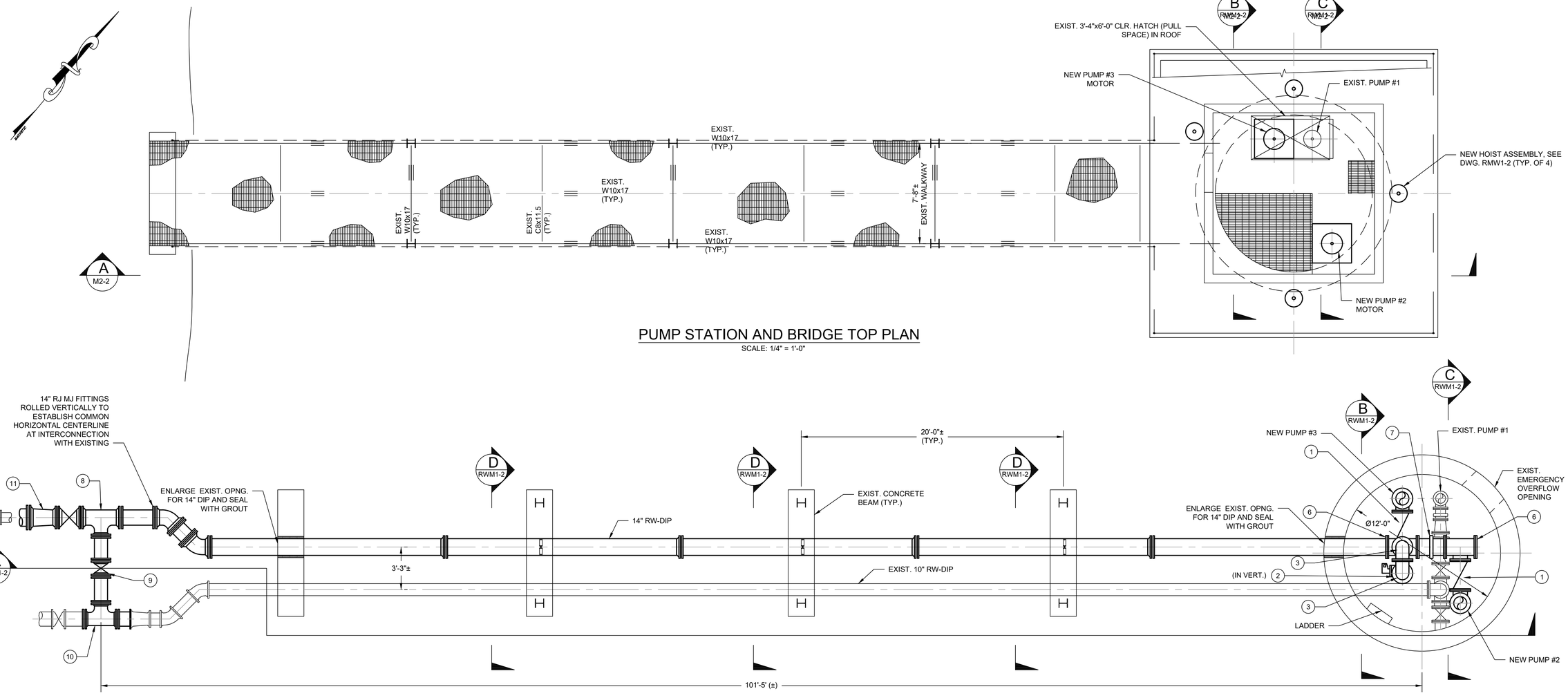
PUMP STATION & RAW WATER INTAKE
STRUCTURE SECTIONS DEMOLITION

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWD3

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\RAW WATER PS PLAN.dwg

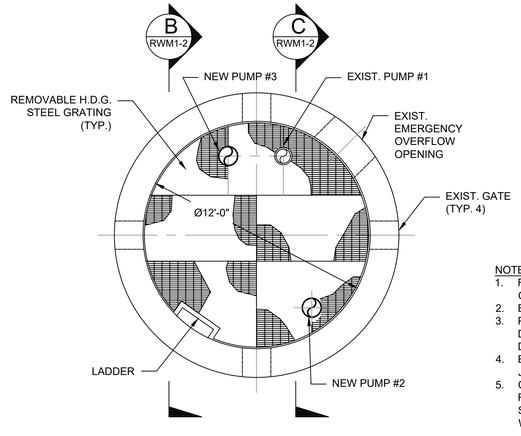


PUMP STATION AND BRIDGE TOP PLAN

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

PUMP STATION AND BRIDGE INTERMEDIATE PLAN EL. = 1080±

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



LOWER PLAN

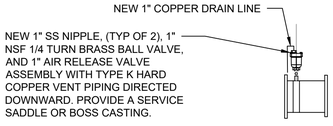
SCALE: 1/4" = 1'-0"

NOTES:

1. FOR DETAILS OF GRATING SUPPORTS AND GRATING, SEE DWGS S1 AND S2.
2. BURIED PIPES AND FITTINGS SHALL BE MJ.
3. PIPE ALIGNMENT, WITHOUT CHANGE OF DIRECTION GREATER THAN ALLOWABLE DEFLECTION, MAY BE PUSH-ON JOINTS.
4. EXPOSED MJ PIPE SHALL BE RESTRAINED JOINT.
5. CONTRACTOR MAY INCORPORATE RESTRAINED FLANGE ADAPTORS ON PIPE SECTION WHERE PIPE EXTENDS TO FITTINGS WITHIN THE RWPS STRUCTURE.

VALVE AND FITTINGS SCHEDULE

1	12" CHECK VALVE, CV-1
2	12" GATE VALVE W/SIDE OPER. (FLG.), GV-1/2
3	12" 90° BEND (FLG.)
4	12" GROOVED JT (GJ) COUPLING
5	12" TEE (FLG.)
6	14"x12" TEE (FLG.) AND BLIND FLANGE
7	14" GROOVED JT (GJ) COUPLING
8	14"x14"x12" TEE
9	12" GATE VALVE AND VALVE BOX
10	12" TEE AND SLEEVE
11	16"x14" REDUCER
12	12" 90° BASE BEND (FLG.)



AIR RELEASE VALVE ASSEMBLY

SCALE: NTS

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

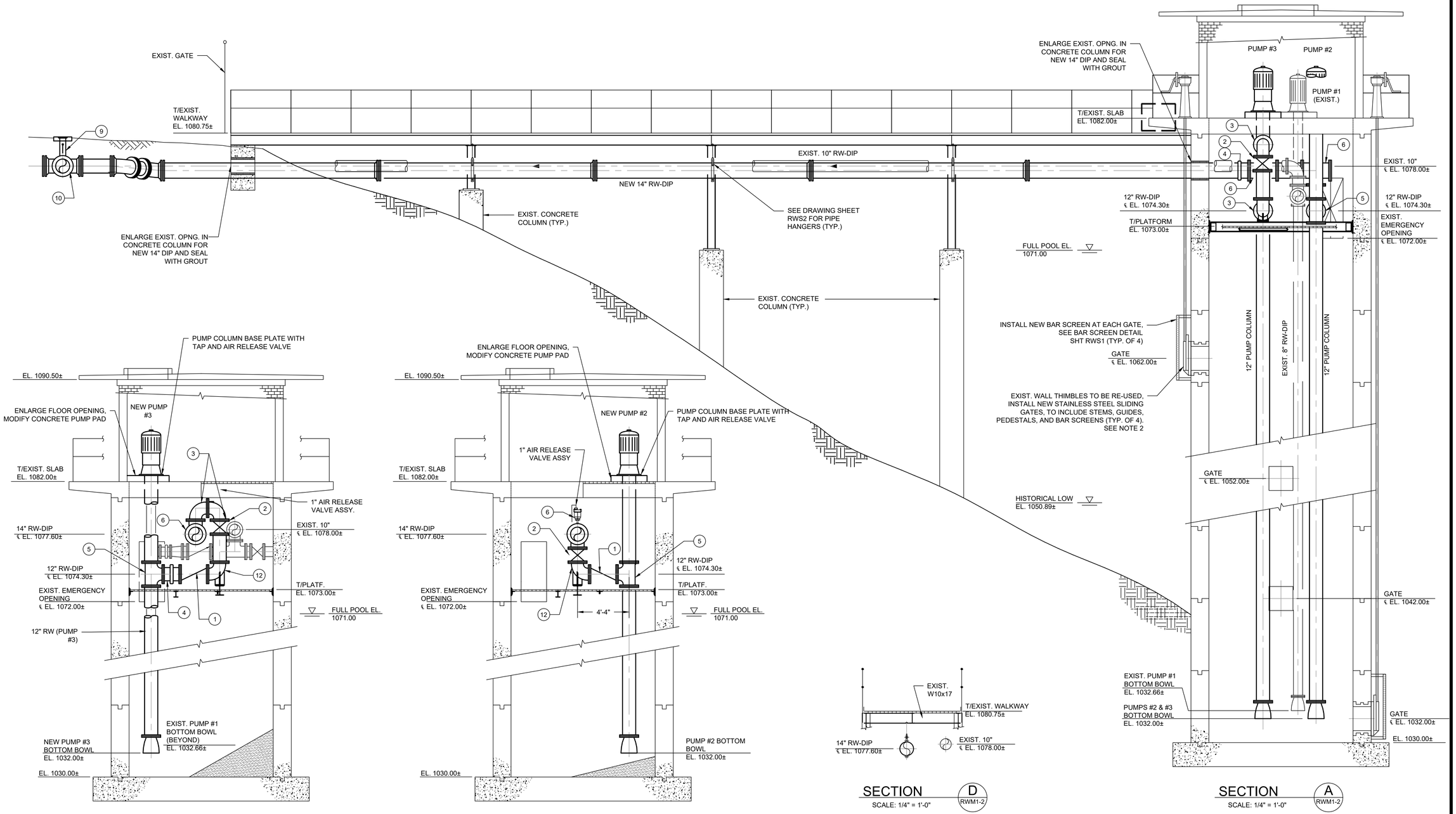
PUMP STATION & RAW WATER INTAKE STRUCTURE PLANS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWM1-1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\RAW WATER PS PLAN.dwg



SECTION B RWM1-2
SCALE: 1/4" = 1'-0"

SECTION C RWM1-2
SCALE: 1/4" = 1'-0"

SECTION D RWM1-2
SCALE: 1/4" = 1'-0"

SECTION A RWM1-2
SCALE: 1/4" = 1'-0"

NOTES:
1. GATE VALVES INSTALLED ON VERTICAL PIPE RUNS, WITH THE VALVE STEM ALIGNED HORIZONTALLY, SHALL INCLUDE BEVEL GEARING WITH GREASE CASE.
2. EXISTING ORIGINAL CONTROL GATES ARE REPORTEDLY MANUFACTURED BY RODNEY HUNT, BUT THAT INFORMATION HAS NOT BEEN CONFIRMED

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED No. 037813 PROFESSIONAL ENGINEER
JOLENE G. NORTHROP

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

PUMP STATION & RAW WATER INTAKE STRUCTURE SECTIONS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: JGN
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWM1-2

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Mechanical\RAW WATER PS PLAN.dwg

GENERAL NOTES:

1. THE GENERAL CONTRACTOR SHALL COORDINATE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS, INCLUDING THE SIZE AND LOCATION OF MISCELLANEOUS ITEMS AFFECTING THE STRUCTURAL WORK SUCH AS SMALL OPENINGS, PIPE SLEEVES, RECESSES, BENT PLATES, ETC. PROMPTLY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR OMISSIONS. OPENINGS THROUGH BEAMS, GIRDERS AND/OR COLUMNS SHALL BE VERIFIED BY ENGINEER.

2. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING SITE CONDITIONS PRIOR TO COMMENCING WORK. PROMPTLY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE CONTRACT DOCUMENTS.

3. THE CONTRACTOR SHALL VERIFY ALL FLOOR AND ROOF MOUNTED MECHANICAL EQUIPMENT DIMENSIONS AND WEIGHTS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND REVIEWED SHOP DRAWINGS.

4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. THE ERECTION PROCEDURE AND SEQUENCE INCLUDING THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, RE-SHORING, TEMPORARY SUPPORTS, ETC., ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

5. DO NOT SCALE DRAWINGS. ALL WORK REQUIRING MEASURING SHALL BE DONE ACCORDING TO FIGURES ON DRAWING. ANY MISSING DIMENSIONS WILL BE FURNISHED UPON REQUEST.

6. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL ALSO APPLY FOR ALL LIKE OR SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.

7. THESE GENERAL NOTES APPLY WHERE OTHER PROVISIONS ARE NOT PROVIDED BY THE DRAWINGS, SPECIFICATIONS OR TYPICAL DETAILS. IN CASE OF SPECIAL CONDITIONS INDICATED ON DRAWINGS, THE DRAWINGS SHALL GOVERN OVER THE SPECIFICATIONS.

8. THE CONTRACTOR SHALL PROVIDE ALL CENTERLINE-TO-CENTERLINE DIMENSIONS TO THE STEEL FABRICATOR PRIOR TO SHOP DRAWING SUBMITTAL AND FABRICATION OF STRUCTURAL STEEL.

9. CONSTRUCTION SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ORDINANCES, AND THE INTERNATIONAL BUILDING CODE 2012.

STRUCTURAL DESIGN LOAD INFORMATION:

(PER IBC 2012 WITH GA AMENDMENTS & ASCE7-10)

1. LIVE LOAD:
   CATWALK = 40 PSF UNFORM, 300 LBS CONCENTRATED

STRUCTURAL STEEL:

1. STRUCTURAL STEEL MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS UNLESS OTHERWISE NOTED:
   STRUCTURAL STEEL ..... ASTM A992 GRADE 50 U.N.
   STEEL ANGLES, CHANNELS & PLATES ..... ASTM A36 U.N.
   STEEL PIPES ..... ASTM A53, GRADE B
   STEEL TUBES (HSS) ..... ASTM A500, GRADE C
   HIGH STRENGTH BOLTS ..... ASTM A325
   NUTS ..... ASTM A563
   WELDING ELECTRODES ..... AWS CLASS E70

2. THE STRUCTURAL STEEL FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS NOT DETAILED HEREIN. SHOP DRAWINGS SHALL BE FULLY APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION. DESIGN OF SPECIAL CONNECTIONS BETWEEN STEEL FRAMING COMPONENTS BY OTHER THAN THE PROJECT STRUCTURAL ENGINEER-OF-RECORD SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PROJECT. CONNECTION DESIGN INCLUDING BUT NOT LIMITED TO BRACE END CONNECTIONS, MOMENT-RESISTING CONNECTIONS, MODIFIED BEAM SEAT CONNECTIONS, AND MEMBER SPLICE CONNECTIONS. INDICATE DESIGN FORCES AND REACTIONS FOR EACH APPLICABLE CONNECTION.

3. SHOP CONNECTIONS MAY BE WELDED OR BOLTED.

4. FIELD CONNECTIONS SHALL BE BOLTED USING HIGH STRENGTH BOLTS EXCEPT WHERE FIELD WELDING IS SHOWN ON THE DRAWINGS. WHERE FIELD WELDS ARE UTILIZED, ALL EXPOSED WELDS SHALL BE FINISHED WITH ZINC-RICH PAINT.

5. BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE AND SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2009, "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS".

6. HIGH STRENGTH BOLTS SHALL BE ¾" DIAMETER MINIMUM UNLESS OTHERWISE NOTED.

7. THE STRUCTURAL STEEL FRAME SHALL BE BRACED IN TWO DIRECTIONS DURING CONSTRUCTION.

8. ALL STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY.

9. ALL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 (OR A153 FOR FASTENERS) TO A MINIMUM THICKNESS OF 8 MILS, PREPARED PER ASTM D7803 AND POWDER COATED TO A MINIMUM THICKNESS OF 6 MILS. COORDINATE W/ ARCH. FOR FINISH.

10. THE FASTENER SCHEDULE FOR BEAMS SHALL BE:

BEAM SIZES	# OF BOLTS
W8	= 2

BAR GRATING:

1. ALL BAR GRATING SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/NAAMM MBG 531.

2. ALL BAR GRATING SHALL BE STEEL BAR TYPE W-19-4. PROVIDE WITH EDGE BANDS. GALVANIZE IN ACCORDANCE WITH ASTM A123.

3. MISCELLANEOUS STEEL BAR GRATING WELDING SHALL BE IN ACCORDANCE WITH ANSI/NAAM MBG 533.

REPAIR, PROTECT, AND STRENGTHENING NOTES:

THE FOLLOWING PRODUCTS ARE THE DESIGN BASIS FOR THIS PROJECT. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CONTACT A MANUFACTURE'S REPRESENTATIVE (800-999-5099) WITH PRODUCT RELATED QUESTIONS. SUBSITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEERING-OF-RECORD (EOR) FOR REVIEW AND APPROVAL. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS HAVING INDEPENDENT TEST RESULTS OR OTHER DOCUMENTATION INDICATING THE PRODUCT IS APPROPRIATE FOR THE INTENDED APPLICATION.

A. REBAR PRIMER: REBAR PRIMER SHALL BE USED TO PROTECT EXISTING STEEL REINFORCING AND ENCOURAGE POSITIVE BOND FROM EXISTING STEEL REINFORCING TO NEW REPAIR MATERIAL.
   PRE-APPROVED PRODUCTS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-406"

B. BONDING AGENTS: BONDING AGENTS SHALL BE USED TO ENCOURAGE A POSITIVE BOND OF NEW REPAIR MATERIAL TO EXISTING CONCRETE.
   PRE-APPROVED PRODUCTS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-762"

C. REPAIR MOARTERS: REPAIR MOARTER SHALL BE USED TO REPAIR AREAS OF DAMAGED CONCRETE.
   PRE-APPROVED PRODUCTS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-263" (FOR USE IN OVERHEAD AND VERTICAL APPLICATIONS)
   2. SIMPSON STRONG-TIE "FX-261" (FOR USE IN HORIZONTAL AND FORM & POUR APPLICATIONS)

D. CRACK REPAIR SYSTEM: CRACK REPAIR SYSTEM SHALL CONSIST OF CRACK INJECTION MATERIAL AND PASTE OVER ADHESIVE, AND SHALL BE USED TO PRESSURE INJECT CRACKS.
   PRE-APPROVED SYSTEMS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-751 LV" INJECTION MATERIAL WITH "FX-763" PASTE OVER ADHESIVE

E. NON-SHRINK GROUT MATERIAL: NON-SHRINK GROUT MATERIAL SHALL BE USED TO GROUT BENEATH BASEPLATES, BEARING PLATES, AND EQUIPMENT BASES.
   PRE-APPROVED PRODUCTS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-228"

F. RUST-INHIBITIVE COATING: RUST INHIBITIVE COATING SHALL BE USED TO PROTECT STRUCTURAL STEEL SURFACES FROM CORROSION AND TO SLOW EXISTING CORROSION PROCESSES ON TIGHTLY ADHERED RUST.
   PRE-APPROVED PRODUCTS INCLUDE:

   1. SIMPSON STRONG-TIE "FX-501"

POST-INSTALLED ANCHOR NOTES:

THE FOLLOWING PRODUCTS ARE THE DESIGN BASIS FOR THIS PROJECT. PRODUCT DIAMETER AND EMBEDMENT SHALL BE AS SHOWN IN THE DETAILS. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII). SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD (EOR) FOR REVIEW. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS HAVING A CODE REPORT RECOGNIZING THE PRODUCT FOR THE APPROPRIATE APPLICATION. SUBSTITUTION REQUESTS SHALL INCLUDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE EQUIVALENT PERFORMANCE VALUES OF THE DESIGN BASIS PRODUCT. CONTRACTORS SHALL CONTACT A MANUFACTURER'S REPRESENTATIVE (800-999-5099) FOR PRODUCT INSTALLATION TRAINING. SPECIAL INSPECTIONS ARE REQUIRED PER THE IBC AND ICC-ES REPORTS.

A. FOR ANCHORING INTO CONCRETE

   I. MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED CONCRETE AND SEISMC APPLICATIONS.
      PRE-APPROVED MECHANICAL ANCHORS INCLUDE:

      (1) SIMPSON STRONG-TIE "STRONG-BOLT 2" (IAPMO-UES ESR ER-240)
      (2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-1056)

   II. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE.
      PRE-APPROVED ADHESIVE ANCHORS INCLUDE:

      (1) SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)
      (2) SIMPSON STRONG-TIE "AT-XP" (IAPMO-UES ESR-263)

ABBREVIATION (ALPHABETIZED):

A.B.	=	ANCHOR BOLTS
ARCH.	=	ARCHITECT
C.J.	=	CONTROL JOINT
C.I.P.	=	CAST IN PLACE
CONC.	=	CONCRETE
CONT.	=	CONTINUOUS
CONX.	=	CONNECTION
COORD.	=	COORDINATE
D.I.P.	=	DUCTILE IRON PIPE
E.O.C.	=	EDGE OF CONCRETE
E.W.	=	EACH WAY
EXP.	=	EXPANSION
EXT.	=	EXTERIOR
F.F.E.	=	FINISH FLOOR ELEVATION
FLR.	=	FLOOR
FTG.	=	FOOTING
GYP.	=	GYPSUM BOARD
H.R.	=	HANDRAIL
HDR.	=	HEADER
HORZ.	=	HORIZONTAL
INT.	=	INTERIOR
MAX.	=	MAXIMUM
MANF.	=	MANUFACTURER
M.C.	=	MOMENT CONNECTION
MIN.	=	MINIMUM
O.C.	=	ON CENTER
P.A.F.	=	POWDER ACTUATED FASTENER
REINF.	=	REINFORCEMENT
REQ.	=	REQUIRED
SIM.	=	SIMILAR
S.O.G.	=	SLAB ON GRADE
STD.	=	STANDARD
STL.	=	STEEL
SQ.	=	SQUARE
T&B	=	TOP & BOTTOM
TYP.	=	TYPICAL
U.N.	=	UNLESS NOTED
U.N.O.	=	UNLESS NOTED OTHERWISE
VERT.	=	VERTICAL
W.W.M.	=	WELDED WIRE MESH

Se STABILITY ENGINEERING
431 Ponce de Leon Av, Ste 4, Decatur, GA 30030 Ph/Fax: 404-377-9316
SE #17242

KECK & WOOD, INC.
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GEORGIA 30097
Phone: 678-417-4000
Fax: 678-417-4055
www.keckwood.com

GEORGIA REGISTERED NY, GA PROFESSIONAL 4/14/2021 ENGINEER PIERRE D. COIRON

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

RAW WATER PUMP STATION AND PIPELINE UPGRADES
FOR THE CITY OF BUFORD, GEORGIA

PUMP STATION AND RAW WATER INTAKE STRUCTURAL NOTES

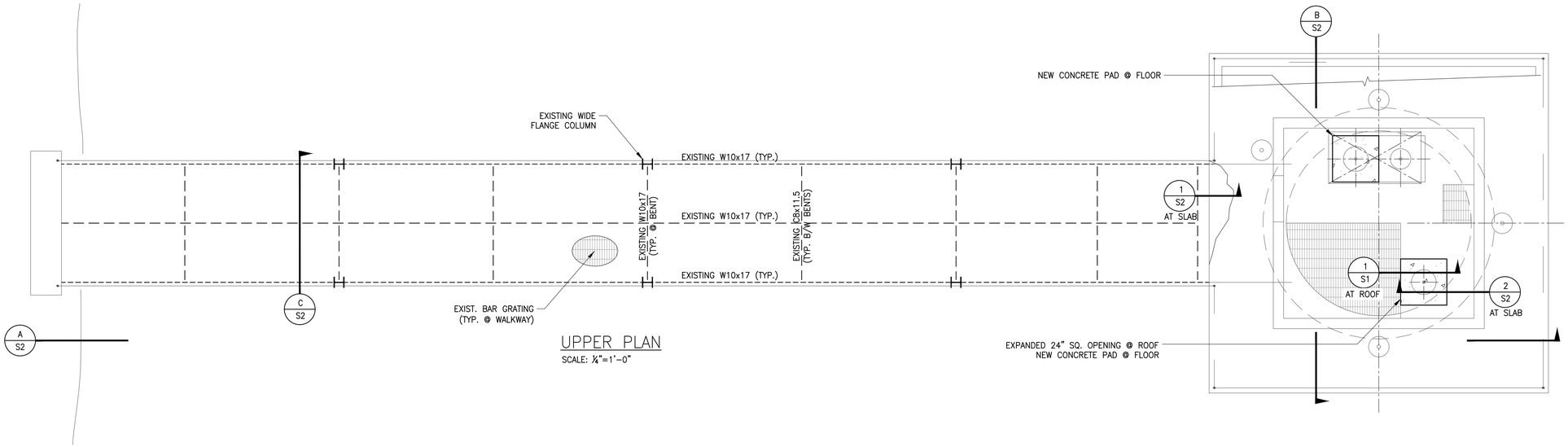
THIS BAR IS 1 INCH LONG
PLOTTED FULL SCALE

Project Manager: Pierre Coiron
Drawn By: JS | Checked By: PDC
Date: 04/14/2021
Scale: As Shown

Project No.: 170116.00
Drawing No.: RWS0

Se STABILITY ENGINEERING
431 Ponce de Leon Av, Ste 4, Decatur, GA 30030 Ph/Fax: 404-377-9316
SE #17242

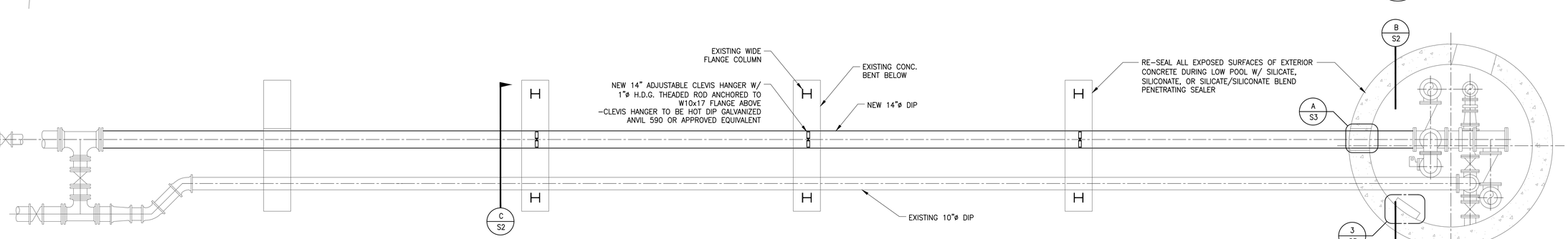
KECK & WOOD, INC.
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GEORGIA 30097
Phone: 678-417-4000
Fax: 678-417-4055
www.keckwood.com



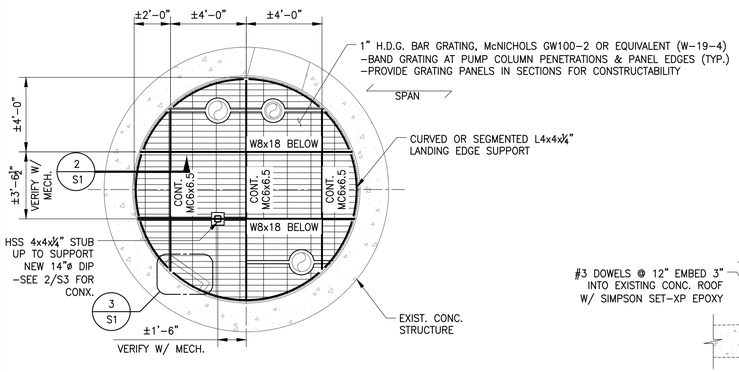
UPPER PLAN
SCALE: ¼"=1'-0"

EXISTING PENETRATION DETERMINED TO BE LARGE ENOUGH FOR PROPOSED 14" PIPE

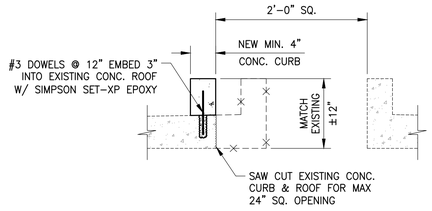
A S1 PENETRATION @ 14" DIP
SCALE: N.T.S.



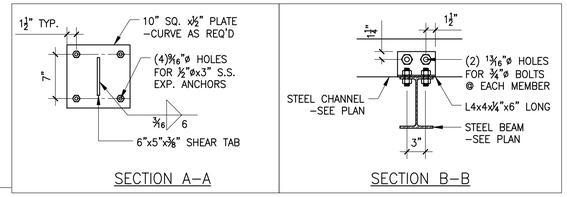
INTERMEDIATE PLAN
SCALE: ¼"=1'-0"

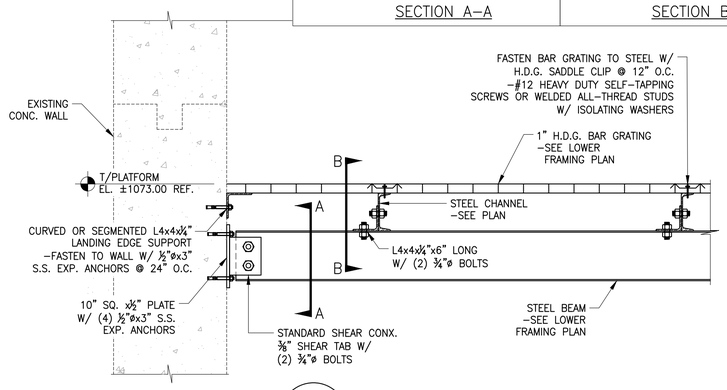


LOWER FRAMING PLAN @ NEW PLATFORM
SCALE: ¼"=1'-0"

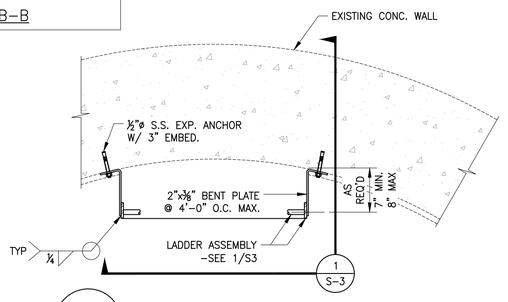


1 S1 SECTION @ EXPANDED ROOF OPENING
SCALE: 1"=1'-0"
NOTE: EXISTING EXPOSED ELECTRICAL CONDUIT SHALL BE RELOCATED.





2 S1 CONNECTIONS @ NEW PLATFORM
SCALE: 1"=1'-0"
NOTE: ALL BOLTED/ANCHORED CONNECTIONS TO BE ISOLATED FROM CONNECTING ELEMENTS WITH ISOLATING SLEEVES AND ISOLATING



3 S1 NEW LADDER CONNECTION @ WALL
SCALE: 1"=1'-0"
NOTE: ALL BOLTED/ANCHORED CONNECTIONS TO BE ISOLATED FROM CONNECTING ELEMENTS WITH ISOLATING SLEEVES AND ISOLATING WASHERS, PSI LINEBACKER AS MANUFACTURED BY GPT OR EQUIVALENT.

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

RAW WATER PUMP STATION AND PIPELINE UPGRADES
FOR THE CITY OF BUFORD, GEORGIA

PUMP STATION AND RAW WATER INTAKE STRUCTURAL PLANS & DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

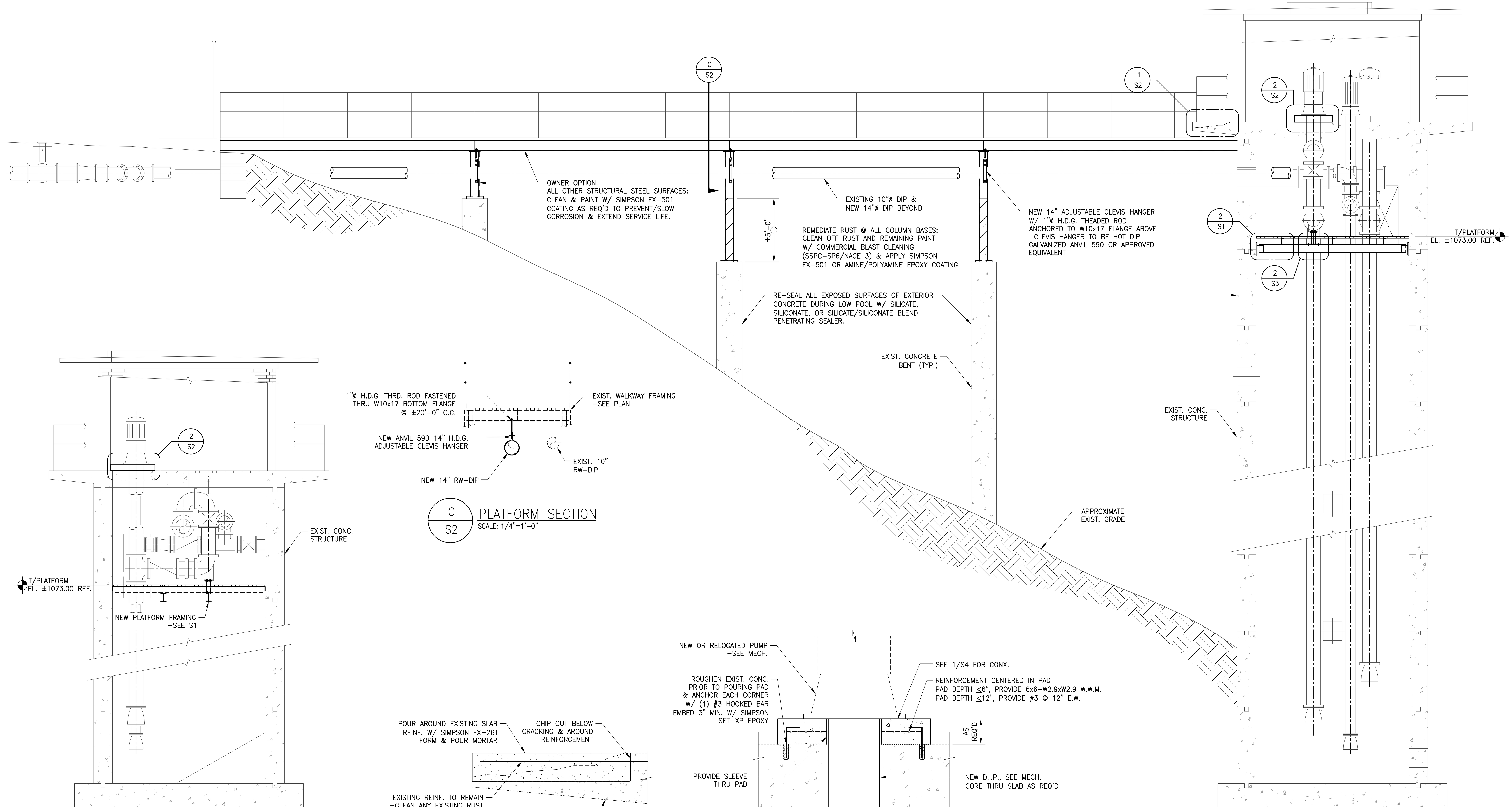
Project Manager: Pierre Coiron
Drawn By JS | Checked By PDC
Date: 04/14/2021
Scale: As Shown

Project No.: 170116.00
Drawing No.: RWS1

S^e STABILITY ENGINEERING

431 Ponce de Leon Av, Ste 4, Decatur, GA 30030 Ph/Fax: 404-377-9316

SE #17242



C / S2 PLATFORM SECTION
SCALE: 1/4"=1'-0"

B / S2 TRANSVERSE SECTION
SCALE: 1/4"=1'-0"

1 / S2 CRACKED SLAB REPAIR
SCALE: 1"=1'-0"
ALLOW NEW GROUT TO CURE FOR A MINIMUM OF 7 DAYS BEFORE SEALING.

2 / S2 NEW CONCRETE EQUIPMENT PAD
SCALE: 1"=1'-0"

A / S2 WALKWAY & TOWER SECTION
SCALE: 1/4"=1'-0"

KECK & WOOD, INC.
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GEORGIA 30097
Phone: 678-417-4000
Fax: 678-417-4055
www.keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE 034... PIERRE D. COIRON 4/14/2021

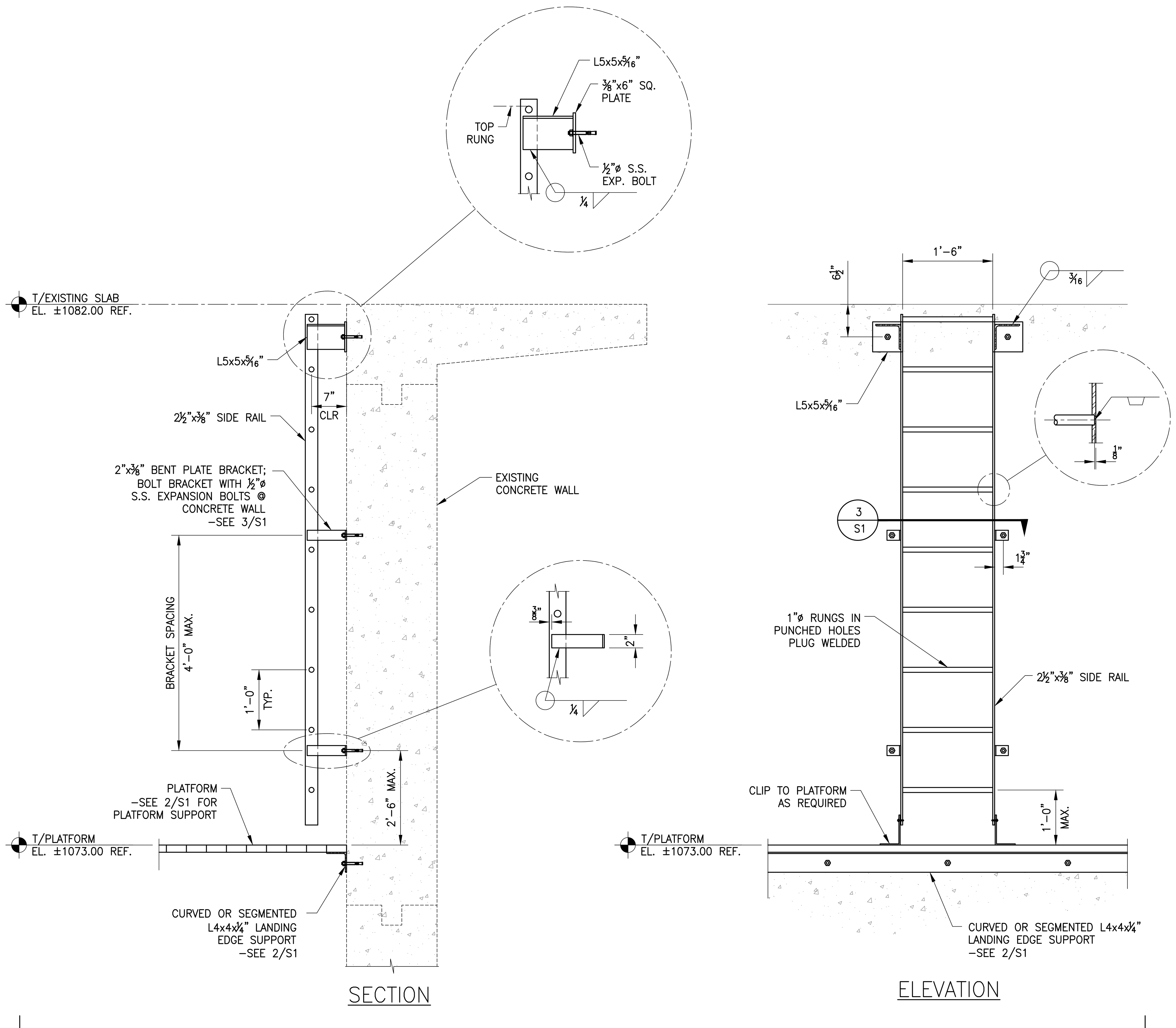
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

RAW WATER PUMP STATION AND PIPELINE UPGRADES
FOR THE CITY OF BUFORD, GEORGIA

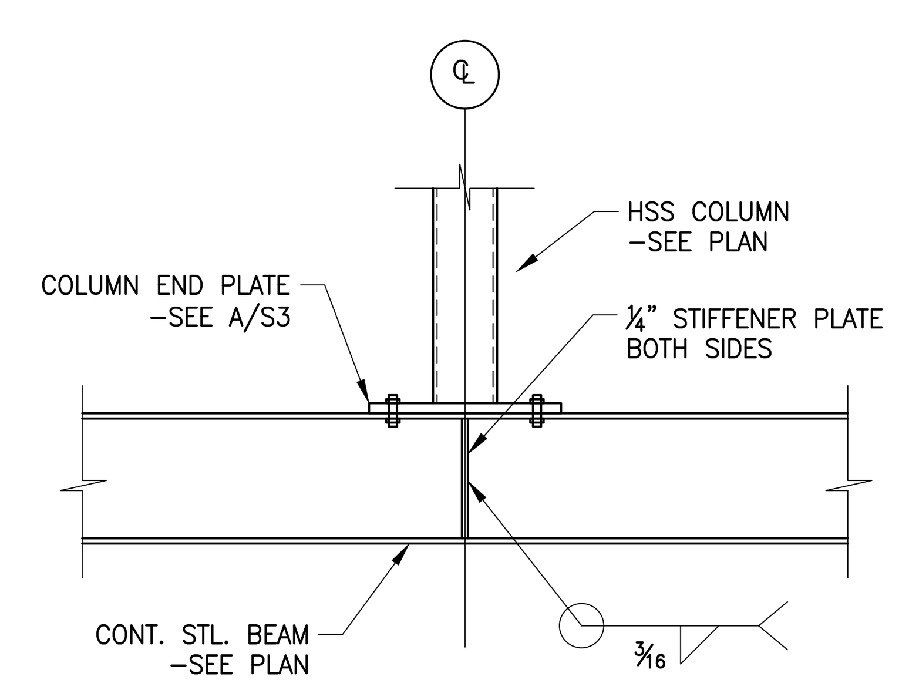
PUMP STATION AND RAW WATER INTAKE STRUCTURAL SECTIONS & DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Pierre Coiron
Drawn By: JS
Checked By: PDC
Date: 04/14/2021
Scale: As Shown
Project No.: 170116.00
Drawing No.: RWS2

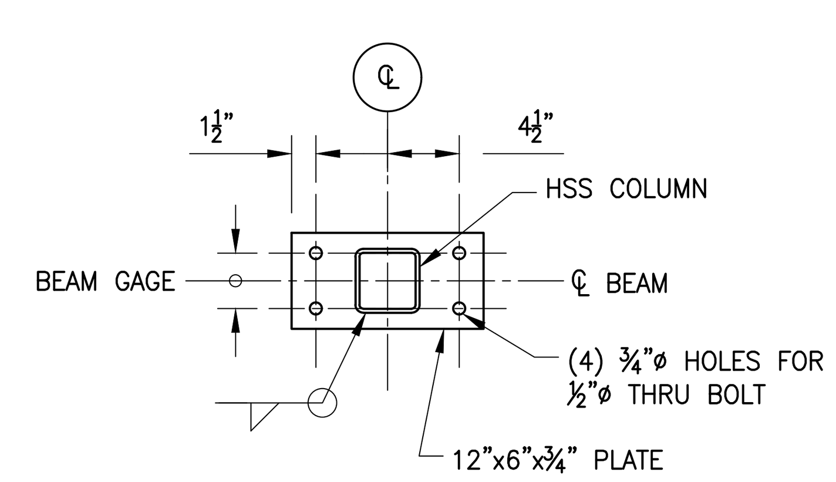


1 / S3 **LADDER DETAILS**
SCALE: 3/4"=1'-0"



2 / S3 **TYP. COLUMN CONNECTION @ CONTINUOUS BEAM**
SCALE: 1"=1'-0"

NOTE: ALL BOLTED/ANCHORED CONNECTIONS TO BE ISOLATED FROM CONNECTING ELEMENTS WITH ISOLATING SLEEVES AND ISOLATING WASHERS, PSI LINEBACKER AS MANUFACTURED BY GPT OR EQUIVALENT.



A / S3 **END PLATE FOR COLUMN CONNECTION @ CONTINUOUS BEAM**
SCALE: 1"=1'-0"

S^e STABILITY ENGINEERING
431 Ponce de Leon Av, Ste 4, Decatur, GA 30030 Ph/Fax: 404-377-9316
SE #17242

KECK & WOOD, INC.
3090 PREMIERE PARKWAY, SUITE 200
DULUTH, GEORGIA 30097
Phone: 678-417-4000
Fax: 678-417-4055
www.keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER PIERRE D. COIRON

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

RAW WATER PUMP STATION AND PIPELINE UPGRADES
FOR THE CITY OF BUFORD, GEORGIA

PUMP STATION AND RAW WATER INTAKE STRUCTURAL SECTIONS & DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Pierre Coiron
Drawn By: JS
Checked By: PDC
Date: 04/14/2021
Scale: As Shown
Project No.: 170116.00
Drawing No.: RWS3

NOTES

1. RUN CONDUIT UNDER BRIDGE TO PANEL H. SEE DRAWINGS RWE2 AND RWE4 FOR DETAILS.
2. CONTRACTOR SHALL MOVE THE EXISTING 200 KW / 250 KVA DIESEL FUELED EMERGENCY GENERATOR PRESENTLY INSTALLED AT THE HIGH SERVICE PUMP NO. 5 AT THE EXISTING WATER TREATEMENT PLANT. RE-INSTALL AS INDICATED IN THE RWE SERIES DRAWINGS. CONTRACTOR TO COORDINATE WITH THE OWNER TO DETERMINE THE EXACT TIMING FOR THIS MOVE. CONTRACTOR TO ALSO REMOVE THE EXISITING 400 AMP ATS AND RETURN TO THE OWNER AT A LOCATION TO BE DETERMINED BY THE OWNER. CONTRCTOR TO SAFE OFF ALL ELECTRICAL CONDUCTORS AT THE EXISTING HIGH SERVICE PUMP NO. 5 AFTER THE REMOVAL OF THE EXISTING EMERGENCY GENERATOR AND ATS.

PANEL H - RAW WATER PUMP STATION

VOLTAGE: 480Y/277V 3 PHASE, 4 WIRE | AMPS: 600 A MB | TOTAL LOAD: 325.86 KVA | MOUNTING: SURFACE | WITH 50% NEUTRAL PROVIDE IN NEMA 4X STAINLESS STEEL ENCLOSURE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
1	100 HP VFD						36.01	200	3	72.02			3	200	36.01						100 HP VFD	2
3							36.01				72.02				36.01							4
5							36.01					72.02			36.01							6
7	75 HP SOFT STARTER						26.60	175	3	36.60			3	50	10.00						30 KVA TRANSFORMER	8
9							26.60				36.60				10.00							10
11							26.60					36.60			10.00							12
13	SPACE								1	0.00			1								SPACE	14
15	SPACE								1		0.00		1								SPACE	16
17	SPACE								1			0.00	1								SPACE	18
										108.62	108.62	108.62			325.86	0.00	0.00	0.00	0.00	0.00	CONNECTED KVA 325.86	

PANEL L RAW WATER PUMP STATION

VOLTAGE: 208Y/120V 3 PHASE, 4 WIRE | AMPS: 100 A MB | TOTAL LOAD: 11.25 KVA | MOUNTING: SURFACE | PROVIDE IN NEMA 4X STAINLESS STEEL ENCLOSURE

No.	SERVES	LOAD (KVA)						BRKR		PH			BRKR		LOAD (KVA)						SERVES	No.
		LTG	RCPT	MTR	A/C	KITCH	MISC	TRIP	P	A	B	C	P	TRIP	MISC	KITCH	A/C	MTR	RCPT	LTG		
(3) (1) 1	LIGHTING	0.37						20	1	0.57			1	20					0.20		OUTLET	2 (3)
3	SCADA PANEL						1.00	20	1		2.15		2	20	1.15						GEN BLOCK HEATER	4
5	HEATER						2.89	40	2			4.04			1.15							6
7							2.89			3.19			1	20					0.20	0.10	OUTSIDE LT/OUTLET	8
9	EF-1						1.00	20	1		1.30		1	20	0.30						GEN ANTI CONDEN HTR	10
11	DOOR ACCESS						0.50	20	1			0.00	1	20							SPARE	12
13	SPARE							20	1	0.00			1	20							SPARE	14
15	SPARE							20	1		0.00		1	20							SPARE	16
17	SPARE							20	1			0.00	1	20							SPARE	18
										3.76	3.45	4.04			10.38	0.00	0.00	0.00	0.40	0.47	CONNECTED KVA 11.25	

(1) PAINT CIRCUIT BREAKER FRAME YELLOW TO DENOTE "DO NOT SWITCH"

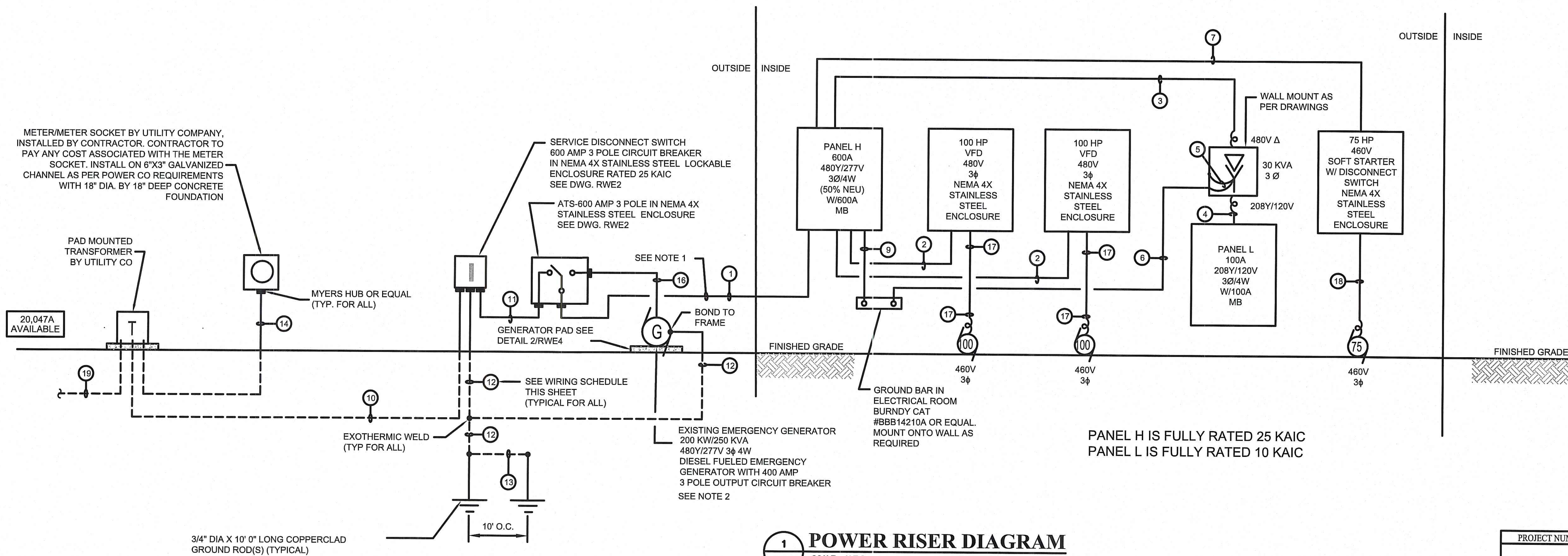
(2) PROVIDE LOCK OFF SERVICE ON CIRCUIT BREAKER

(3) PROVIDE GFCI CIRCUIT BREAKER - 5ma

WIRING SCHEDULE

1. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) + 1#1G IN 3" C (EA)
2. 3#3/0 + 1#6G IN 2" C
3. 3#8 + 1#10G IN 3/4" C
4. 4#3 + 1#6G IN 1 1/4" C
5. #6
6. 1#6 IN 3/4" PVC C
7. 3#2/0 + 1#6G IN 2" C
8. 3#1 + 1#6G IN 1 1/2" C
9. 1#1 IN 3/4" PVC C
10. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) IN 3" C (EA)
11. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) + 1#2/0 G IN 3" C (EA)
12. 1#2/0 IN 1" PVC C
13. #6
14. 1 1/2" EMPTY C FOR UTILITY Co METER LEADS
15. NOT USED
16. 4 - 600 KCMIL + 1#3G IN 4" C
17. 1 - 3/C #4/0 WITH GROUND TYPE TC VFD POWER CABLE IN 3" C
18. 3#2/0 + 1#6G IN 2" C
19. 2 EA - 4" EMPTY C FOR UTILITY CO H.V. CABLES

ALL CONDUCTORS ARE TO BE COPPER
ALL CONDUITS TO BE GALVANIZED RIGID STEEL



1 RWE1 **POWER RISER DIAGRAM**
SCALE: N.T.S.

PROJECT NUMBER -20007

William B. M. Womack, P. E.
5032 Vernon Oaks Drive
Dunwoody, Georgia 30338
770-378-4743

PLOT SCALE: 1 = 1

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE11956 WILLIAM B. M. WOMACK
07.14.2021

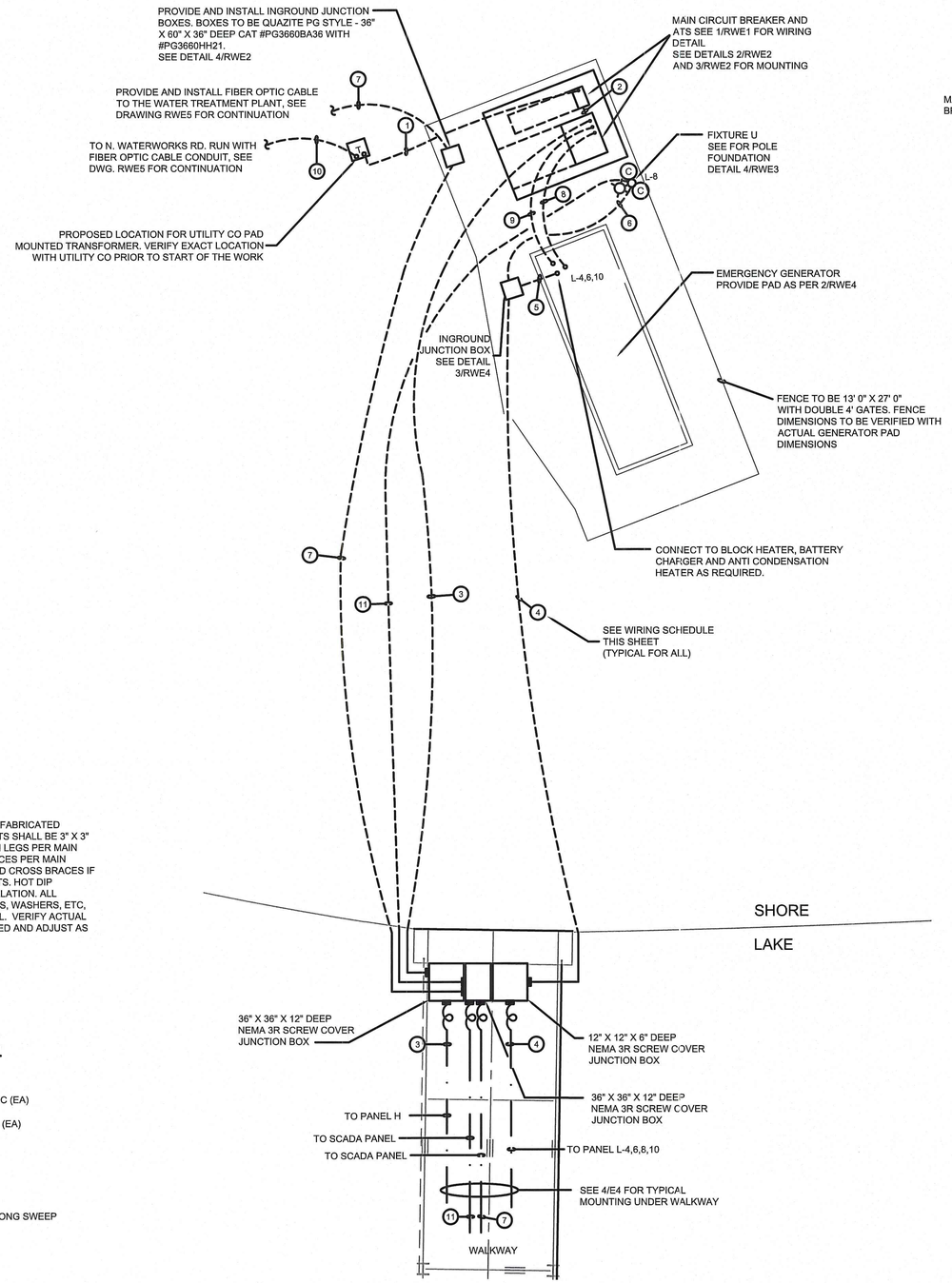
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

RWPS POWER RISER AND PANELBOARD SCHEDULES

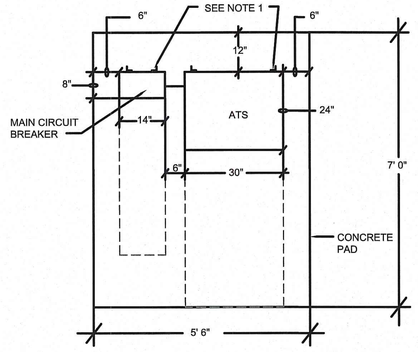
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: RWE1



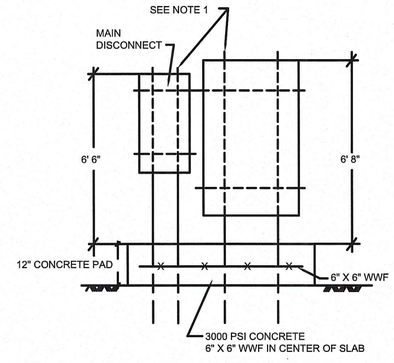
ENLARGED SITE PLAN PLAN - ELECTRICAL

1 / RWE2 SCALE: 1/4"=1'-0"



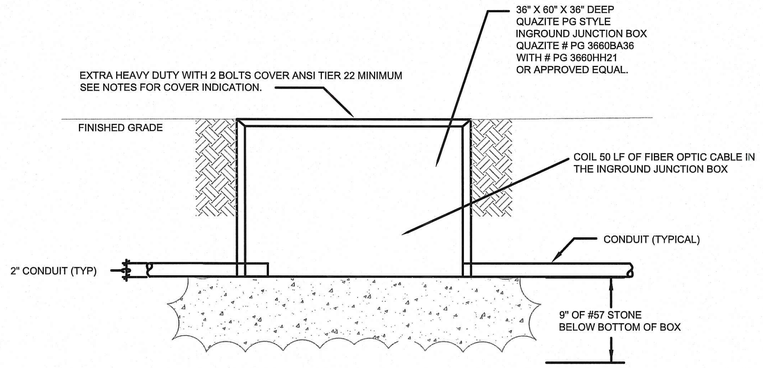
SERVICE PAD LAYOUT

2 / RWE2 SCALE: N.T.S.



MAIN / ATS ELEVATION

3 / RWE2 SCALE: N.T.S.



TYPICAL IN GROUND JUNCTION BOX INSTALLATION DETAIL

4 / RWE2 SCALE: N.T.S.

NOTES

1. CONTRACTOR SHALL PROVIDE AND INSTALL FIELD FABRICATED SUPPORTS FOR MAIN BREAKER AND ATS. SUPPORTS SHALL BE 3" X 3" X 3/8" THICK ANGLE IRON I FRAMES, MIN. OF 2 DOWN LEGS PER MAIN BREAKER AND ATS AND MINIMUM OF 2 CROSS BRACES PER MAIN BREAKER AND ATS. PROVIDE ADDITIONAL LEGS AND CROSS BRACES IF REQUIRED TO STABILIZE THE MAIN BREAKER OR ATS. HOT DIP GALVANIZE COMPLETED FRAMES PRIOR TO INSTALLATION. ALL REQUIRED HARDWARE INCLUDING ALL NUTS, BOLTS, WASHERS, ETC, SHALL BE GALVANIZED STEEL OR STAINLESS STEEL. VERIFY ACTUAL DIMENSIONS WITH THE EQUIPMENT BEING PROVIDED AND ADJUST AS NEEDED.

WIRING SCHEDULE

1. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) IN 3" C (EA)
2. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) + 1#2/0 G IN 3" C (EA)
3. 2 RUNS - 3 - 350 KCMIL + 1#1/0 (N) + 1#1 G IN 3" C (EA)
4. 6#8 IN 1#8 G IN 1 1/4" C
5. 4#8 + 1#8G IN 1" C
6. 2#8 + 1#8G IN 3/4" C
7. 1 - 6 STRAND FIBER OPTIC CABLE IN 2" C WITH LONG SWEEP 90° BENDS
8. 4#10 IN 3/4" C
9. 4 - 600 KCMIL + 1#3G IN 4" C
10. 2 EA - 4" EMPTY C FOR UTILITY CO H.V. CABLES
11. 1 1/2" EMPTY C FOR SECURITY CABLES

ALL CONDUCTORS ARE TO BE COPPER

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

REGISTERED PROFESSIONAL ENGINEER No. PE11858 STATE OF GEORGIA WILLIAM B. M. WOMACK
04-14-2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

RWPS ENLARGED SITE PLAN AND DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown

Project No.: 170110.00
Drawing No.: RWE2

PROJECT NUMBER -20007

William B. M. Womack, P. E.
5032 Vernon Oaks Drive
Dunwoody, Georgia 30338
770-378-4743

PLOT SCALE: 1 = 1

N

0 48" 96"
SCALE: 1/4" = 1'-0"

G:\Shared Drives\2017 Projects\170110 - RuBird - Water Plant Expansion\CAD\Drawings\Electrical\Electrical RWPS.dwg

127(6

1. PROVIDE AND INSTALL HORIZONTAL FAN FORCED AIR UNIT HEATER. 5 KW 208V 1ϕ. MARKEL #F1FUH05003 W/ CA1/E/T/UHB-1 OR APPROVED EQUAL. WALL/CEILING MOUNT AS REQUIRED.

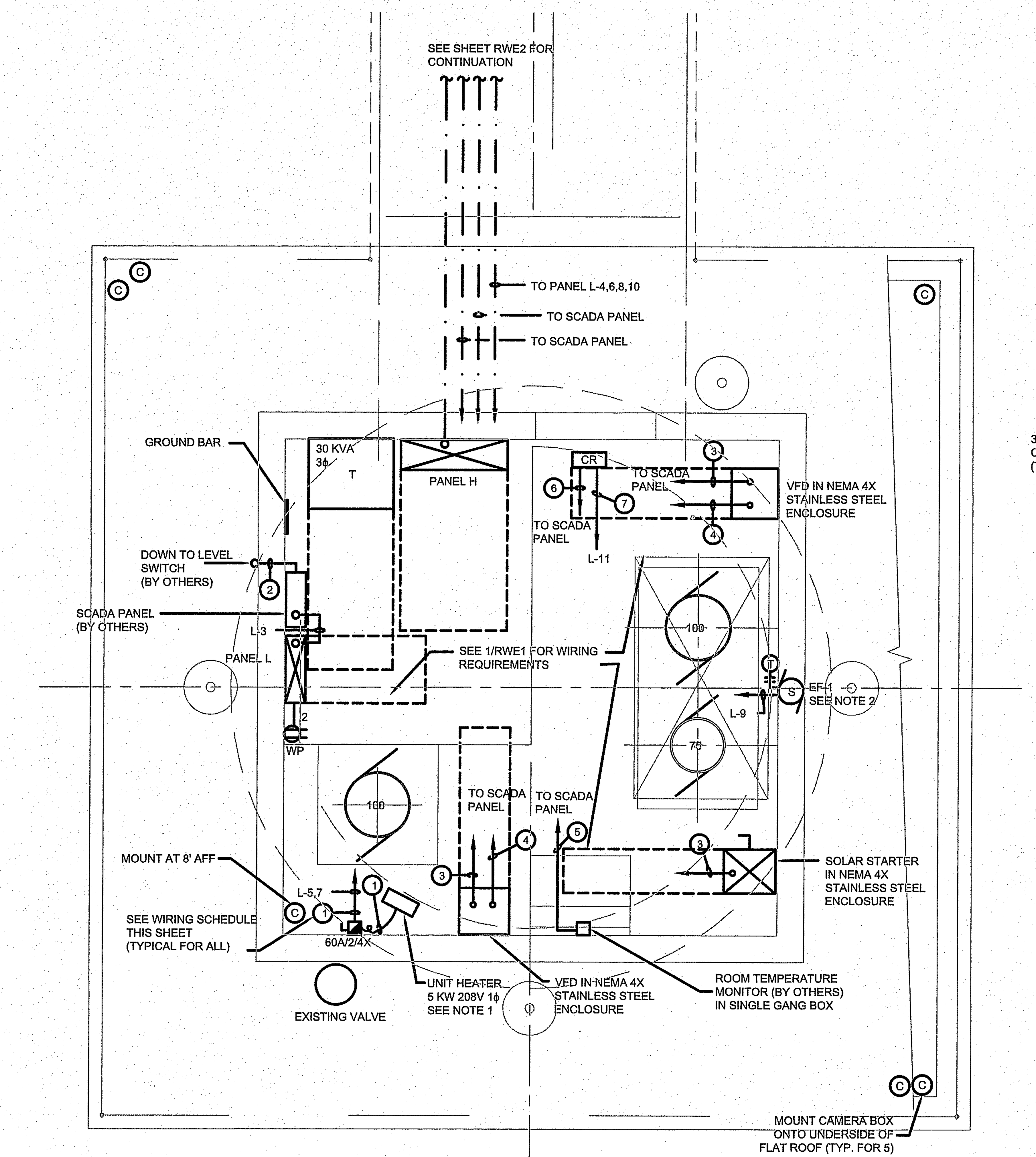
2. PROVIDE AND INSTALL WALL MOUNTED PROPELLER WALL FAN WITH LINE VOLTAGE THERMOSTAT. UNIT TO BE GREENHECK MODEL #SE1-12-436, 1/10 HP 120V WITH VARI-GREEN MOTOR AND SPEED DIAL, GRAVITY WALL SHUTTERS AND WALL MOUNTED FLUSH EXTERIOR WITH MOTOR SIDE GUARD. PROVIDE DAYTON #2NNT2 THERMOSTAT, OR APPROVED EQUAL.

3. RUN SECURITY CAMERA CONDUIT TO SCADA PANEL IN BUILDING.

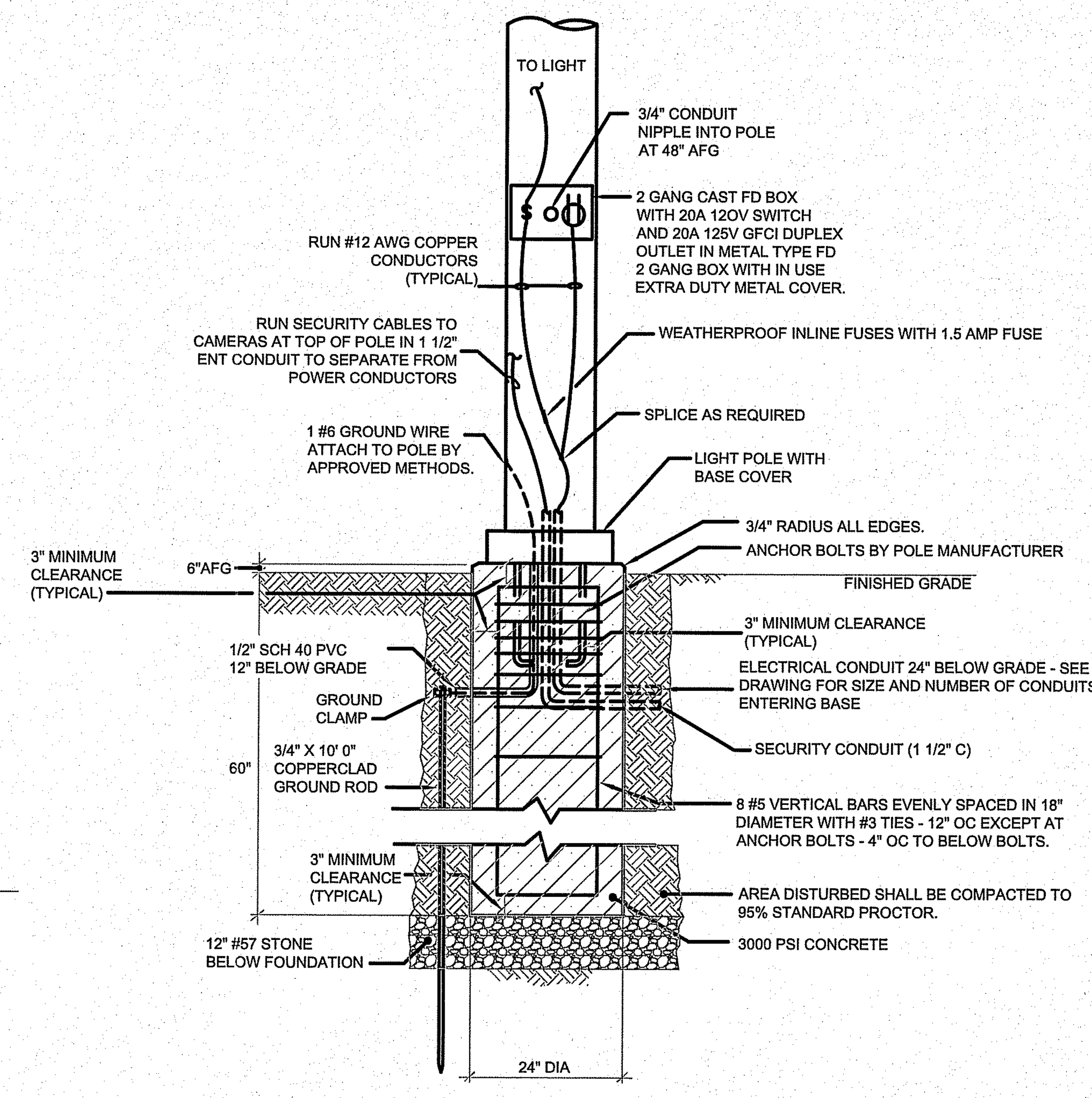
:,5,* 6&+('8/(

1. 3#8 + 1#10G IN 3/4" C
2. 4#12 IN 3/4" C
3. 12#14 IN 1" C
4. 2 EA - 2/C#16 TWISTED SHIELDED CABLE WEST PENN# AQ294 + 1 - CAT 6 CABLE IN 2" C
5. 4#14 IN 3/4" C
6. 1 EA - 6/C#18 SHIELDED CABLE WEST PENN# AQC3186 IN 3/4" C
7. 2#12 + 1#12G IN 3/4" C

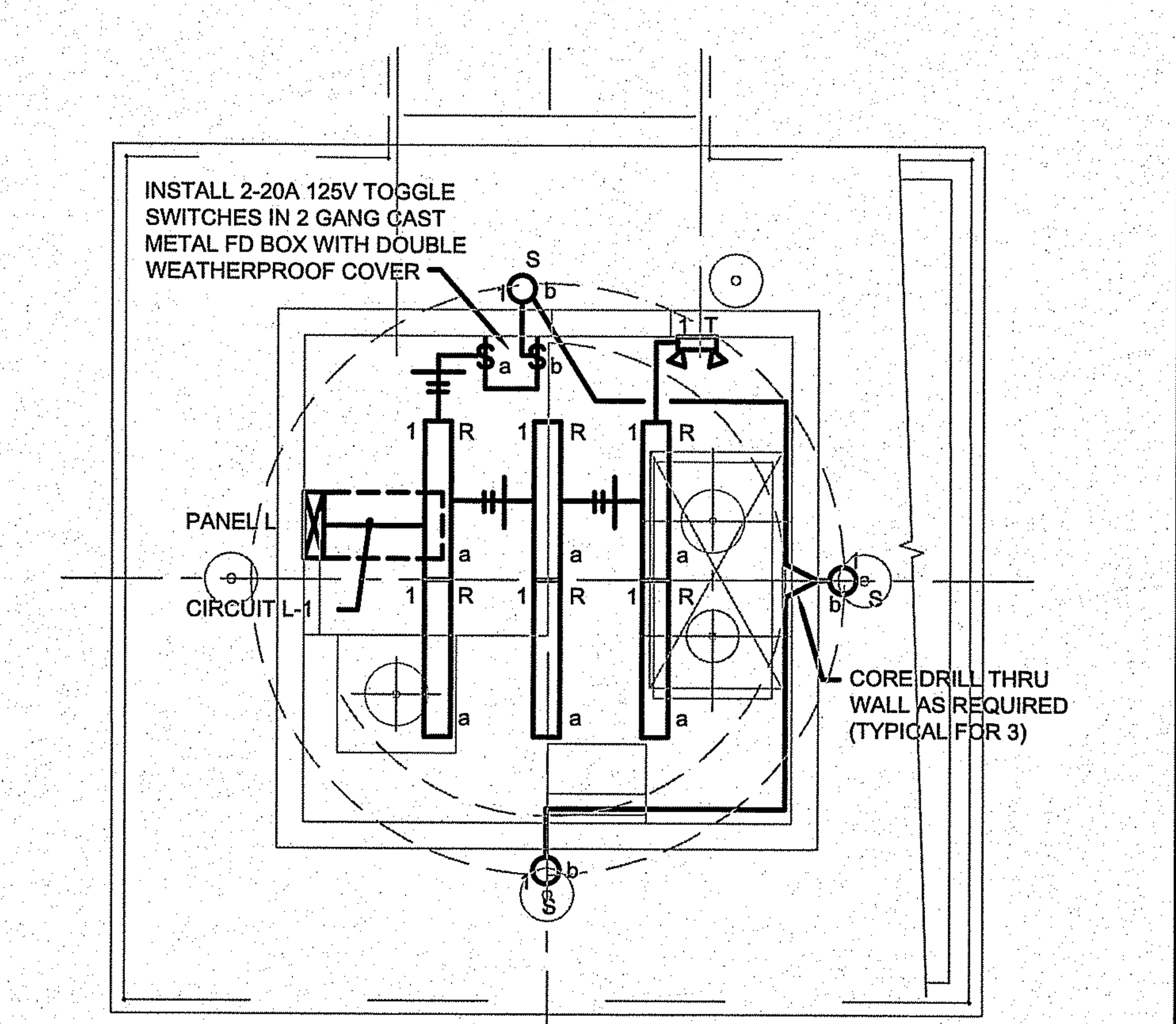
ALL CONDUCTORS ARE TO BE COPPER



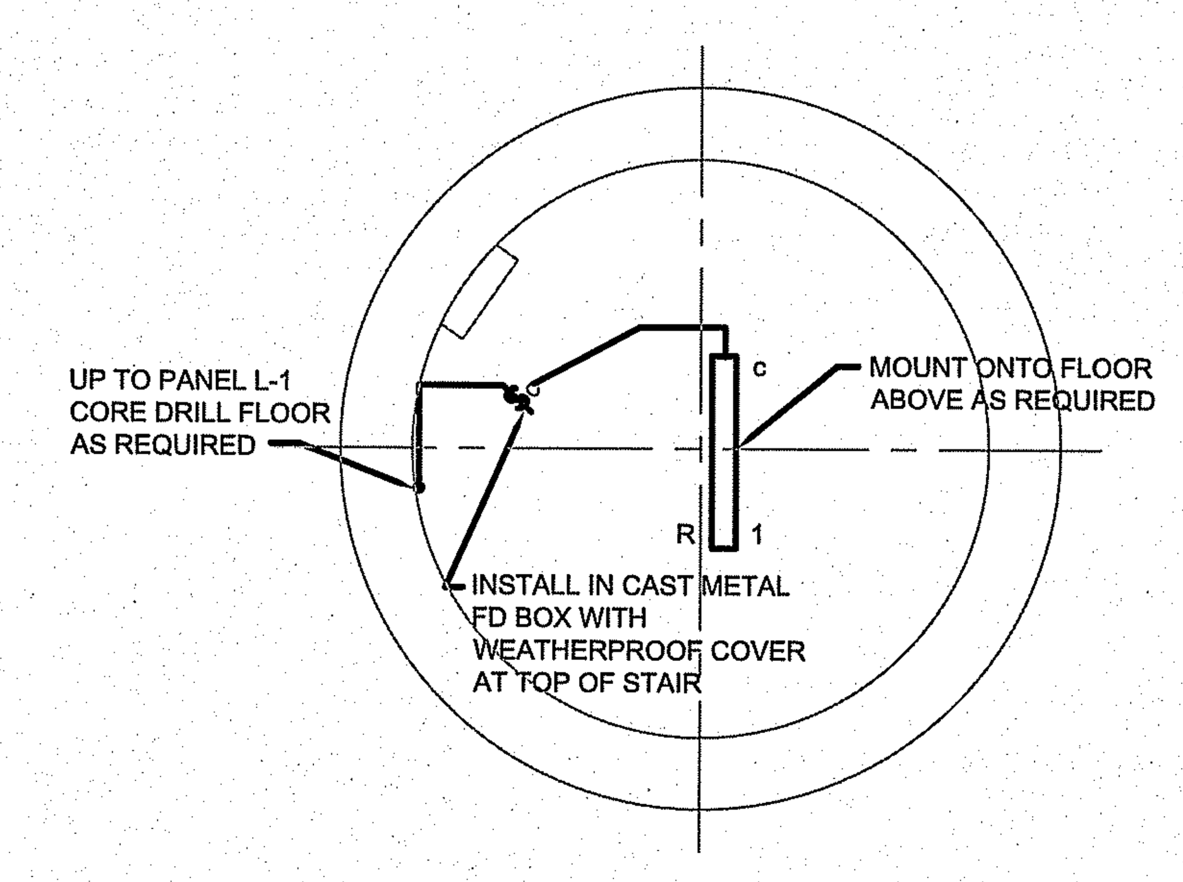
3 RWE3 **833(5)/225 3/$1 32:(5 $1' &21752/6**
SCALE: 1/2"=1'-0"



4 RWE3 **),;785(7<3(8**
32/( )281'$7,21 '(7$,/
SCALE: NTS



1 RWE3 **833(5)/225 3/$1 /,*+7,1***
SCALE: 1/4"=1'-0"



2 RWE3 **3,7)/225 3/$1 /,*+7,1***
SCALE: 1/4"=1'-0"

PROJECT NUMBER -20007
William B. M. Womack, P. E.
5032 Vernon Oaks Drive
Dunwoody, Georgia 30338
770-378-4743
PLOT SCALE: 1 = 1

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE1990 WILLIAM B. M. WOMACK
04.14.2021

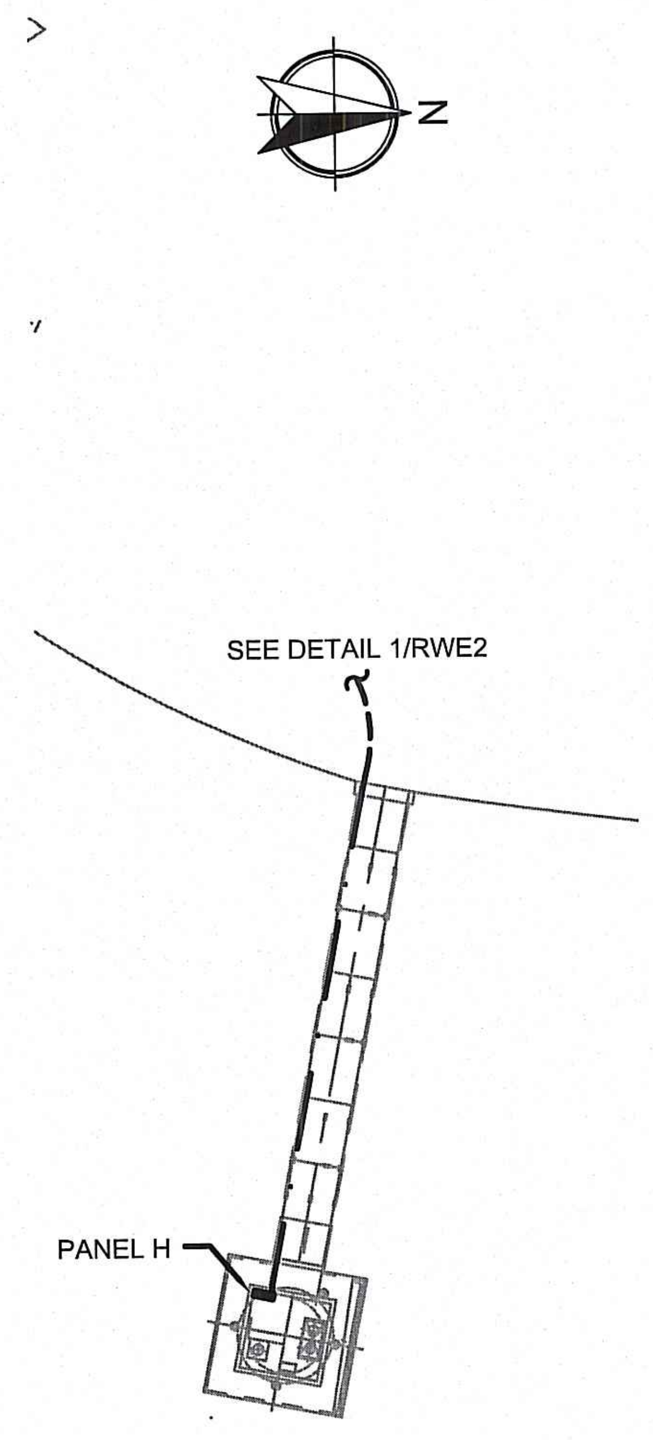
NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

RWPS FLOOR PLAN - POWER, CONTROL, LIGHTING AND DETAILS

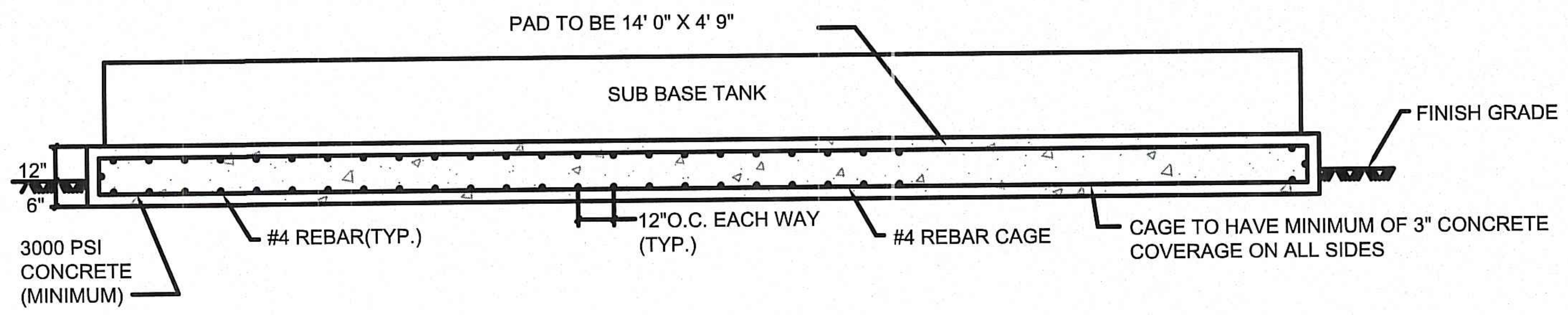
THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: RWE3



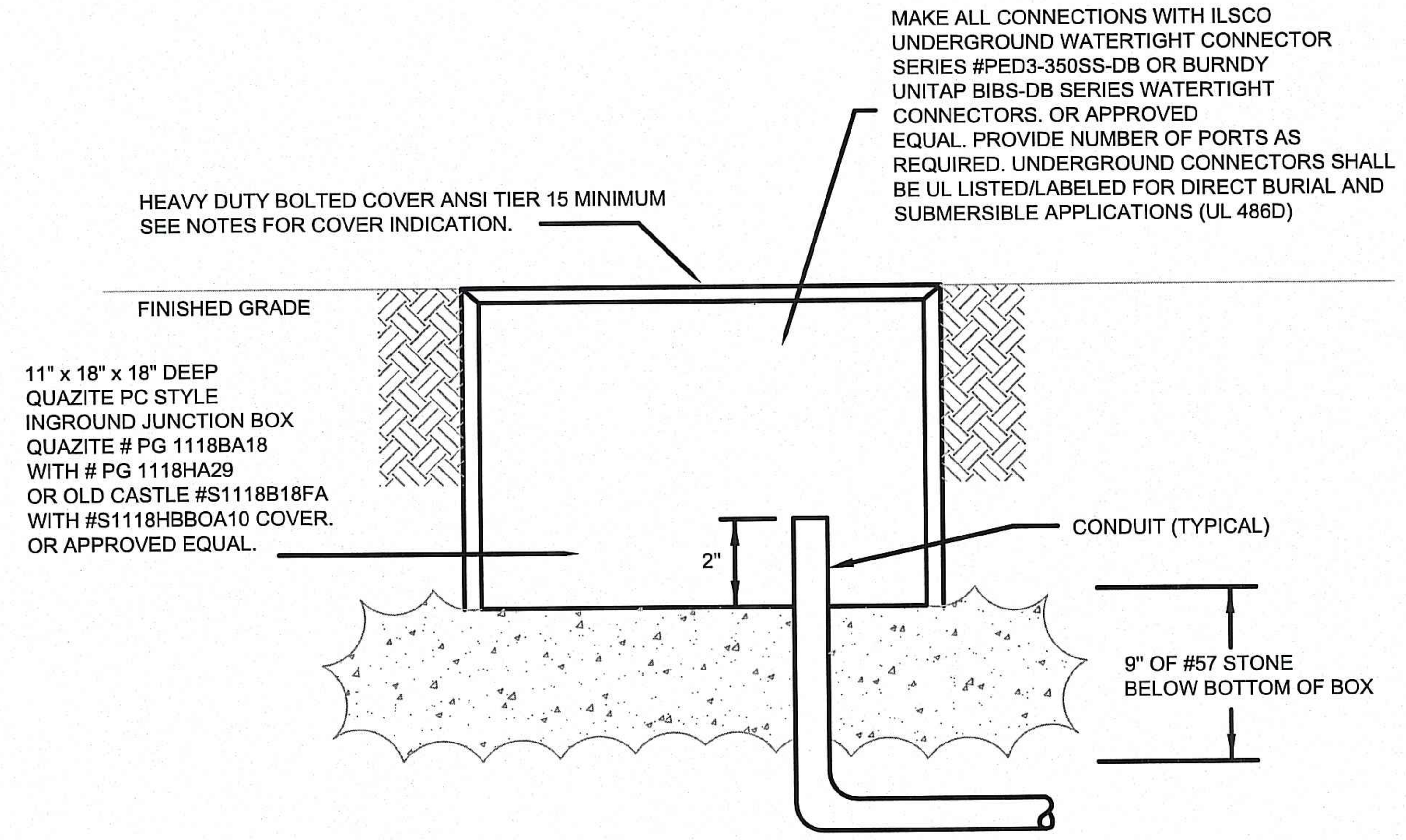
SITE PLAN - ELECTRICAL

1 / RWE4 SCALE: 1"=30' 0"



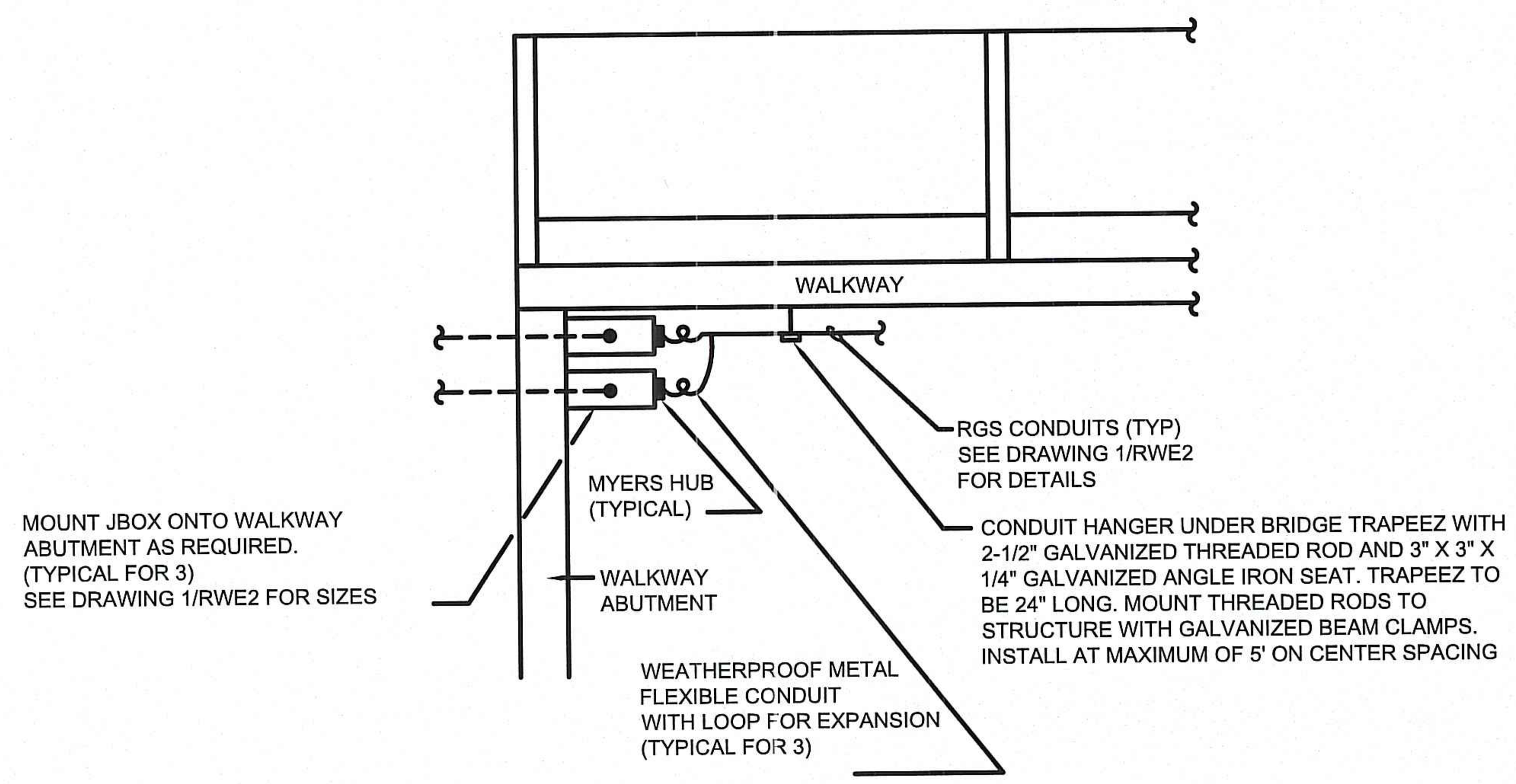
GENERATOR PAD DETAIL

2 / RWE4 SCALE: N.T.S.



TYPICAL IN GROUND JUNCTION BOX INSTALLATION DETAIL

3 / RWE4 SCALE: N.T.S.



TYPICAL EXPANSION DETAIL AT WALKWAY

4 / RWE4 SCALE: N.T.S.

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000 keckwood.com

GEORGIA REGISTERED PROFESSIONAL ENGINEER WILLIAM B. M. WOMACK 04.14.2021

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement

For the City of Buford, Georgia

RWPS SITE PLAN AND DETAILS

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

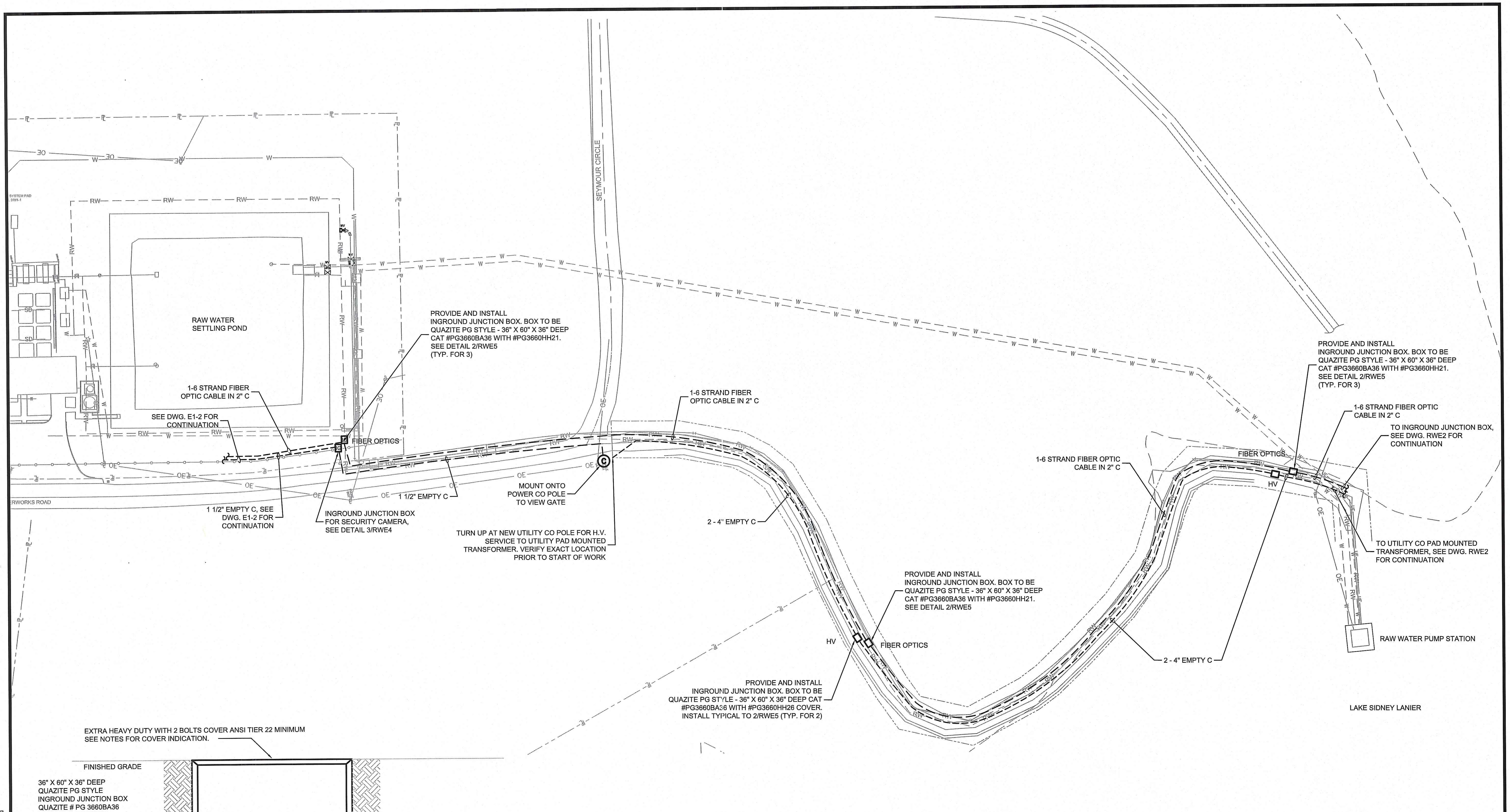
Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: RWE4

PROJECT NUMBER -20007

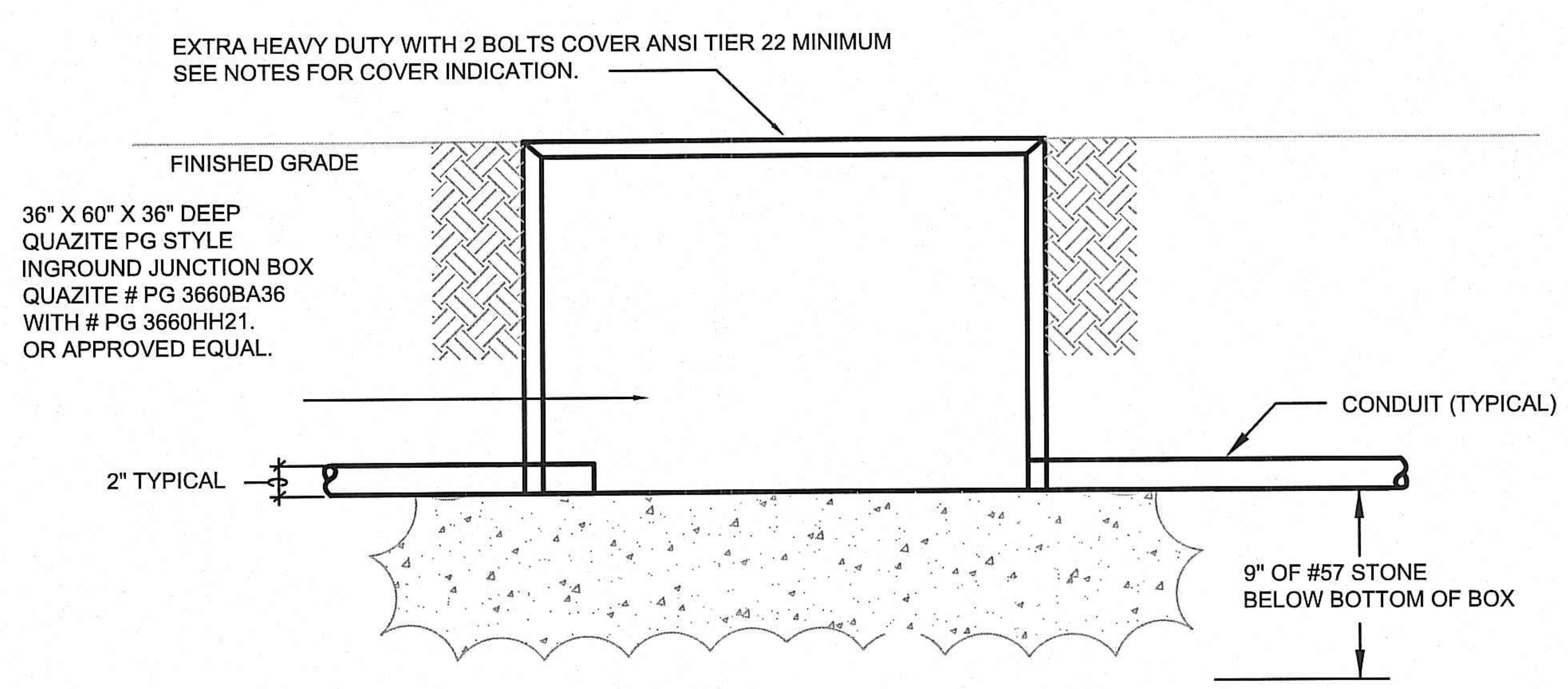
William B. M. Womack, P. E.
5032 Vernon Oaks Drive
Dunwoody, Georgia 30338
770-378-4743

PLOT SCALE: 1 = 1

G:\Shared Drives\2017 Projects\170110 - Buford - Water Plant Expansion\CAD\Drawings\Electrical\Electrical RWPS.dwg



1 RWE-5 **FIBER OPTIC CABLE PARTIAL SITE PLAN**
SCALE: 1"=40'-0"



2 RWE5 **TYPICAL IN GROUND JUNCTION BOX INSTALLATION DETAIL**
SCALE: N.T.S.

SCALE: 1" = 40'

Keck+Wood
COLLABORATION BY DESIGN
3090 Premiere Parkway, Suite 200
Duluth, GA 30097
(678) 417-4000
keckwood.com

NO.	DATE	REVISION
	04/14/2021	ISSUED FOR CONSTRUCTION

Buford Water Works Replacement
For the City of Buford, Georgia

FIBER OPTIC CABLE PARTIAL SITE PLAN AND DETAIL

THIS BAR IS 1 INCH LONG PLOTTED FULL SCALE

Project Manager: Jolene Northrop, P.E.
Drawn By: TLC
Checked By: XXX
Date: 04/14/2021
Scale: As Shown
Project No.: 170110.00
Drawing No.: RWE5

PROJECT NUMBER -20007

William B. M. Womack, P. E.
5032 Vernon Oaks Drive
Dunwoody, Georgia 30338
770-378-4743

PLOT SCALE: 1 = 1