

West Plant Pump Station Rehab. & Screen Addition

for The City of Villa Rica

Carroll County, Georgia

September 29, 2022

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GENERAL NOTES

1. ALL EXISTING UTILITIES SHOWN ARE LOCATED FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL FIELD LOCATION AND PROTECTION OF EXISTING UTILITIES. OVERHEAD LINES ARE NOT SHOWN FOR CLARITY.
2. ALL DISTURBED AREAS TO BE RE-VEGETATED IMMEDIATELY AFTER CONSTRUCTION, IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
3. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY PROPERTY CORNERS, RIGHT OF WAY MONUMENTS, SIGNS OR OTHER STRUCTURES DISTURBED DURING CONSTRUCTION.
5. ALL TRAFFIC AND SIGNAGE CONTROL SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL MANUAL GUCC, CURRENT EDITION.
6. ALL STREET AND INFRASTRUCTURE INSTALLATION TO BE IN ACCORDANCE WITH VILLA RICA CITY STANDARDS.

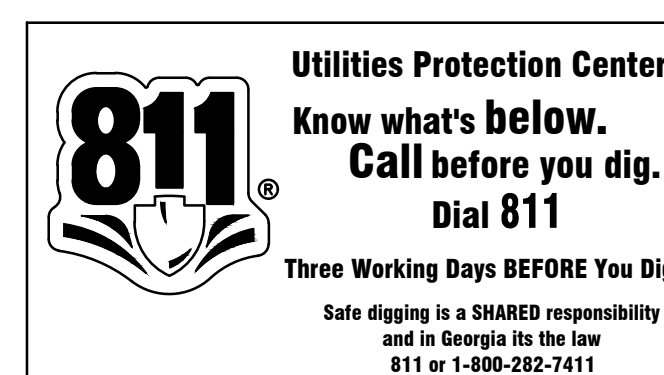
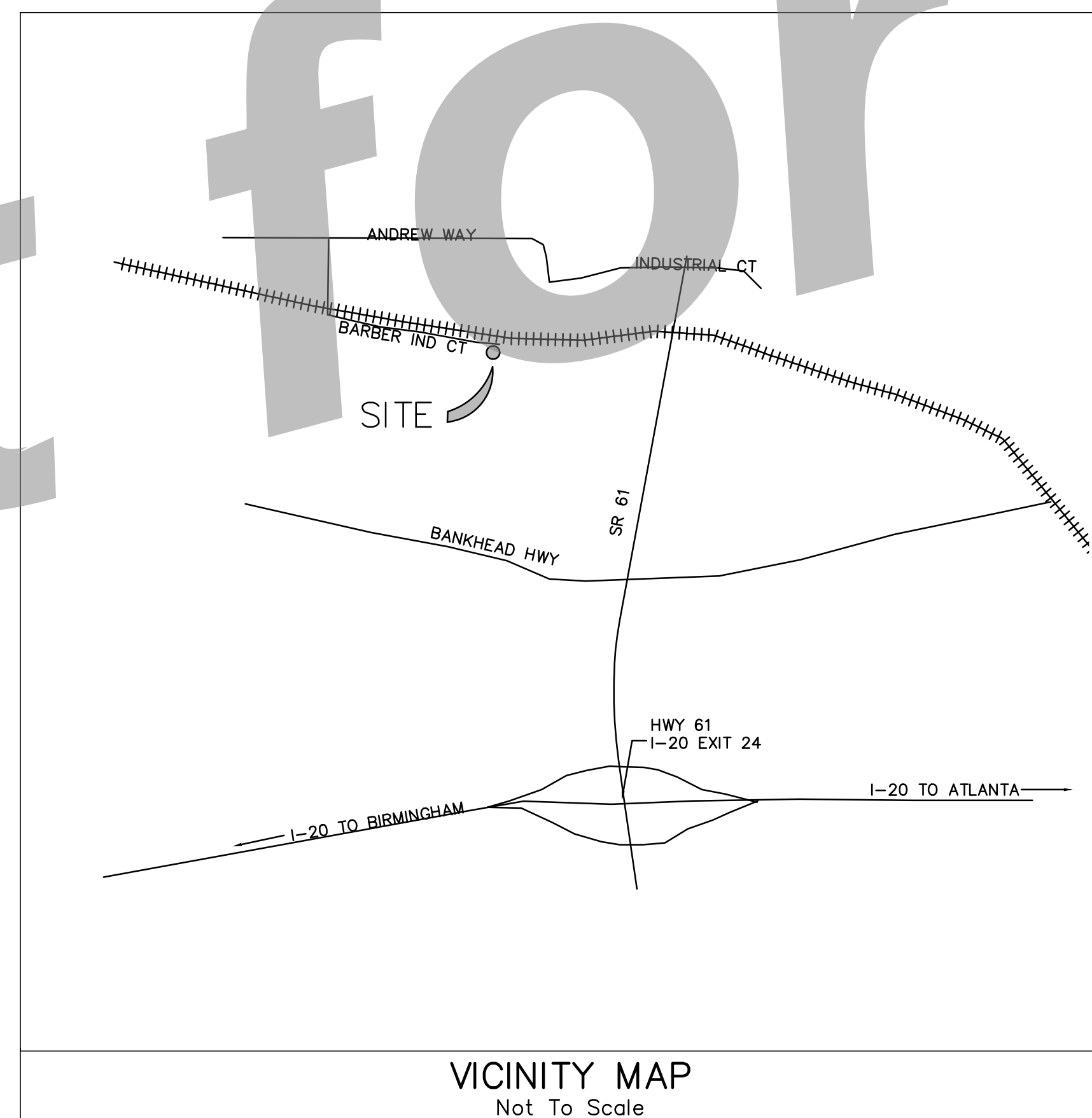
24 HOUR CONTACT

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SIMONTON ENGINEERING, LLC
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PRIMARY PERMITTEE

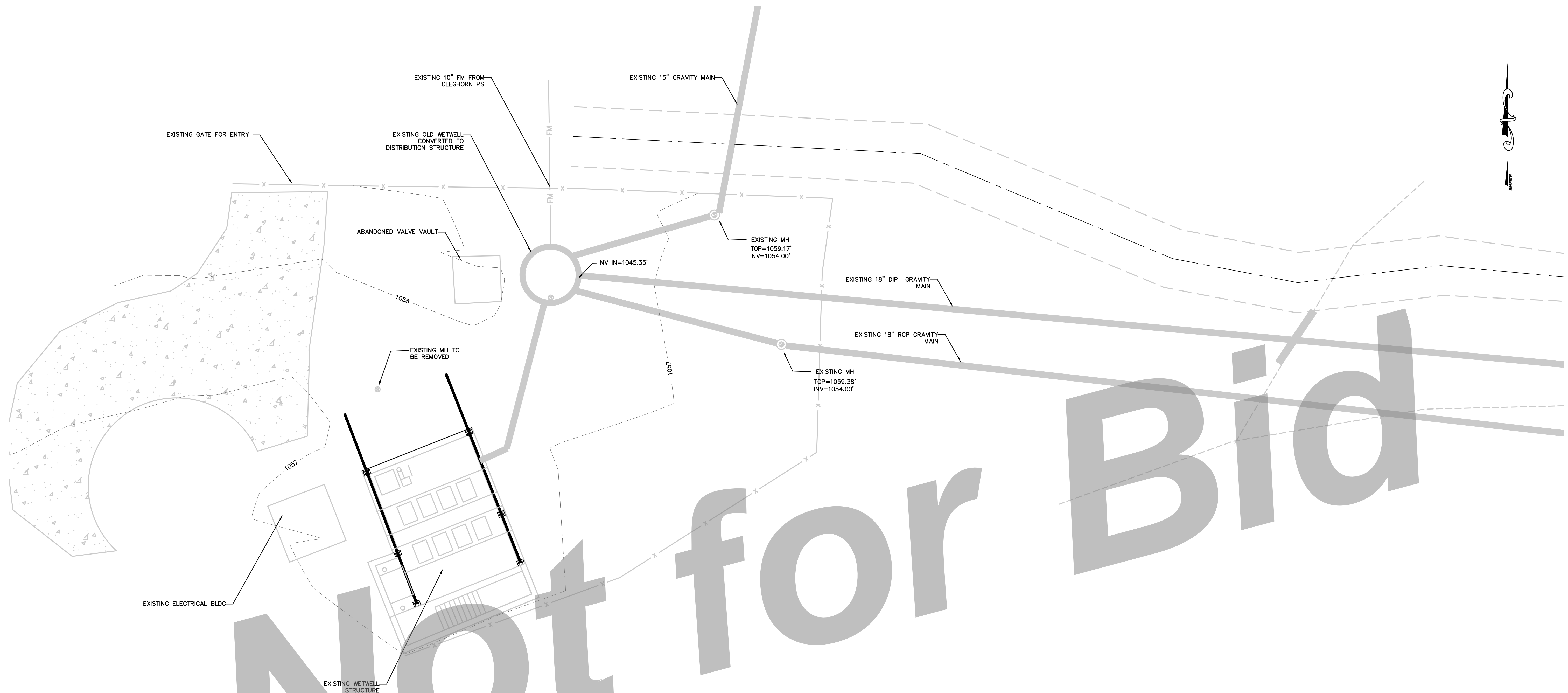
CITY OF VILLA RICA
CONTACT: JOHN BAIN
1571 W. BANKHEAD HWY
VILLA RICA, GA 30180
TEL: (470) 249-6723
JBAIN@VILLARICA.GOV

DRAWING LEGEND		
DESCRIPTION	PROPOSED	EXISTING
SANITARY SEWER	SS	SS
UNDERGROUND WATER LINE	W	W
FORCE MAIN	FM	FM
STORM DRAINAGE PIPE	SD	SD
UNDERGROUND TELEPHONE LINE	T	T
UNDERGROUND TELEPHONE CONDUIT	TC	TC
UNDERGROUND GAS LINE	12" G	12" G
DITCH CENTERLINE	---	---
TOP OF CURB & GUTTER ELEVATIONS	TC=90.00 G=89.50	EX TC=90.00 EX G=89.50
SPOT ELEVATION	X=90.00	X=90.00
FIRE HYDRANT	⊕	⊕
SEWER MANHOLE	⊕	⊕
WATER VALVE	⊕	⊕
TELEPHONE MANHOLE	⊕	⊕
LIGHT POLE	⊕	⊕
SIGN	⊕	⊕
WATER METER	⊕	⊕
BENCHMARK	⊕	⊕
CONCRETE MONUMENT FOUND	⊕	⊕
GUY POLE	⊕	⊕
IRON PIN FOUND	⊕	⊕
IRON PIN SET	⊕	⊕
TELEPHONE PEDESTAL	⊕	⊕
POWER POLE	⊕	⊕
HANDICAP SPACE	⊕	⊕
SEDIMENT BASIN MARKER W/NOTCH	⊕	⊕

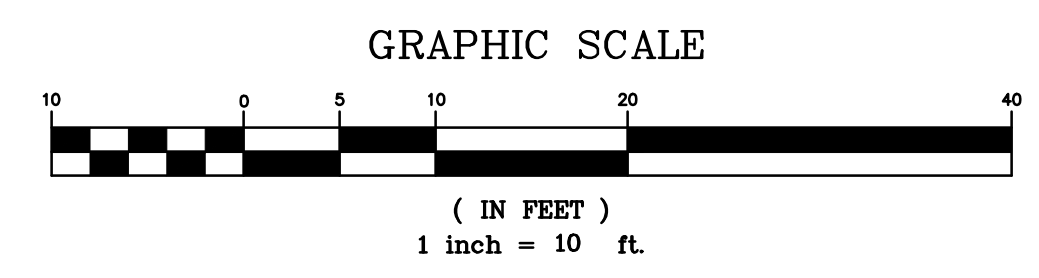


JOB NO. 2021-136PRJ

REVISION NO.	DATE	DESCRIPTION



Not for Bid



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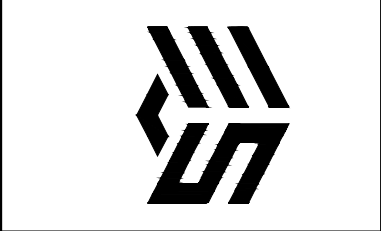
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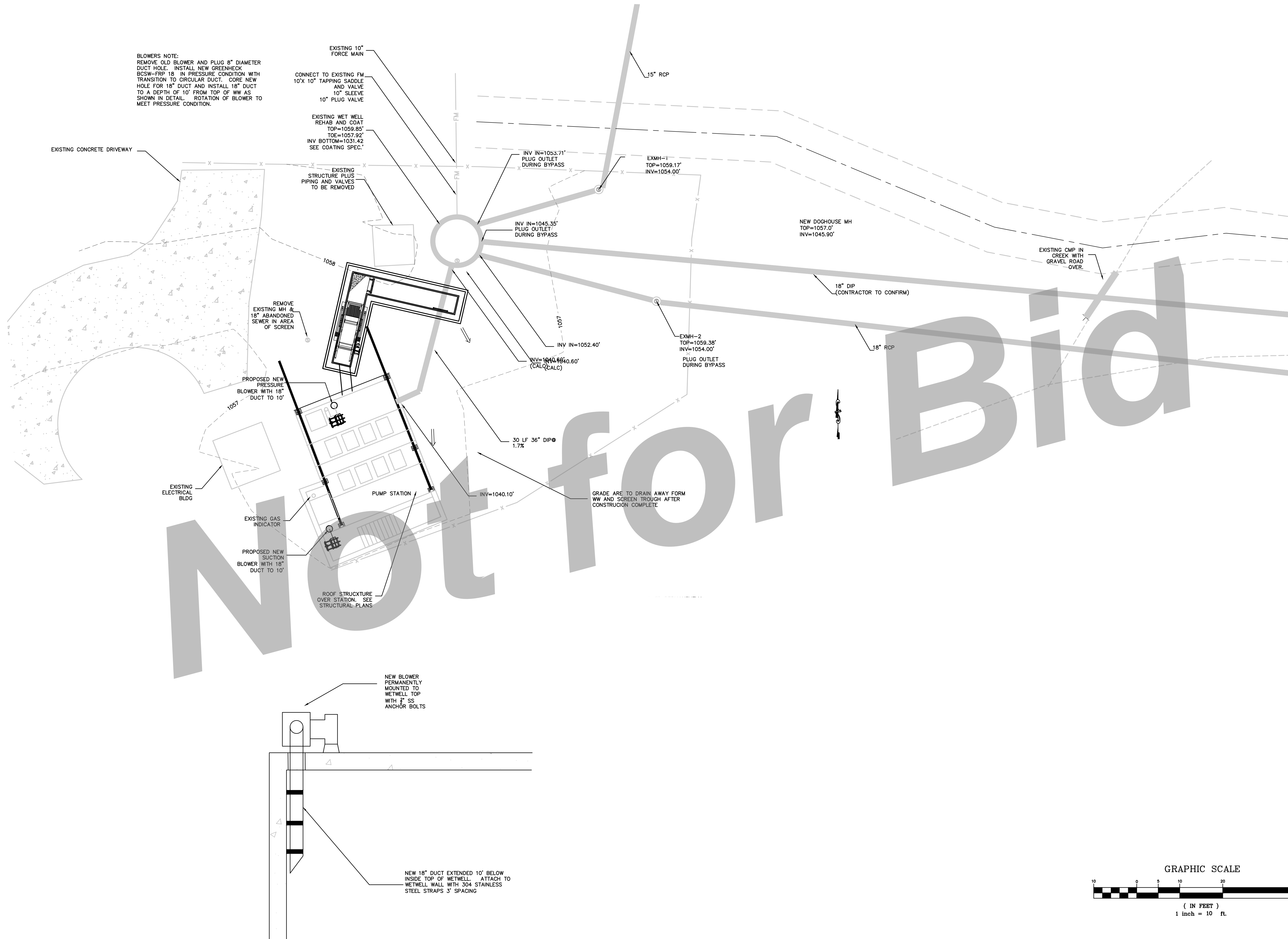


West Plant Influent Rehab
for
The City of Villa Rica
Carroll County, Georgia

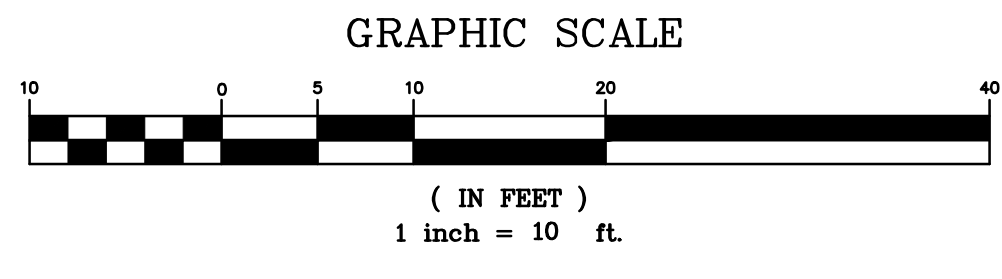
Existing Conditions

DATE: SEPTEMBER 29, 2022
FILE NO: 2019-59PRJ
SHEET: C 1.0

BLOWERS NOTE:
 REMOVE OLD BLOWER AND PLUG 8" DIAMETER DUCT HOLE. INSTALL NEW GREENHECK BCSW-FRP 18" IN PRESSURE CONDITION WITH TRANSITION TO CIRCULAR DUCT. CORE NEW HOLE FOR 18" DUCT AND INSTALL 18" DUCT TO A DEPTH OF 10' FROM TOP OF WW AS SHOWN IN DETAIL. ROTATION OF BLOWER TO MEET PRESSURE CONDITION.



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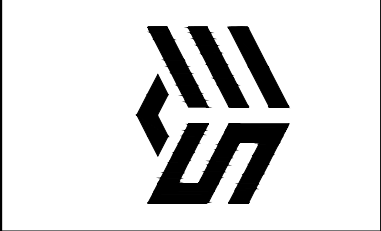
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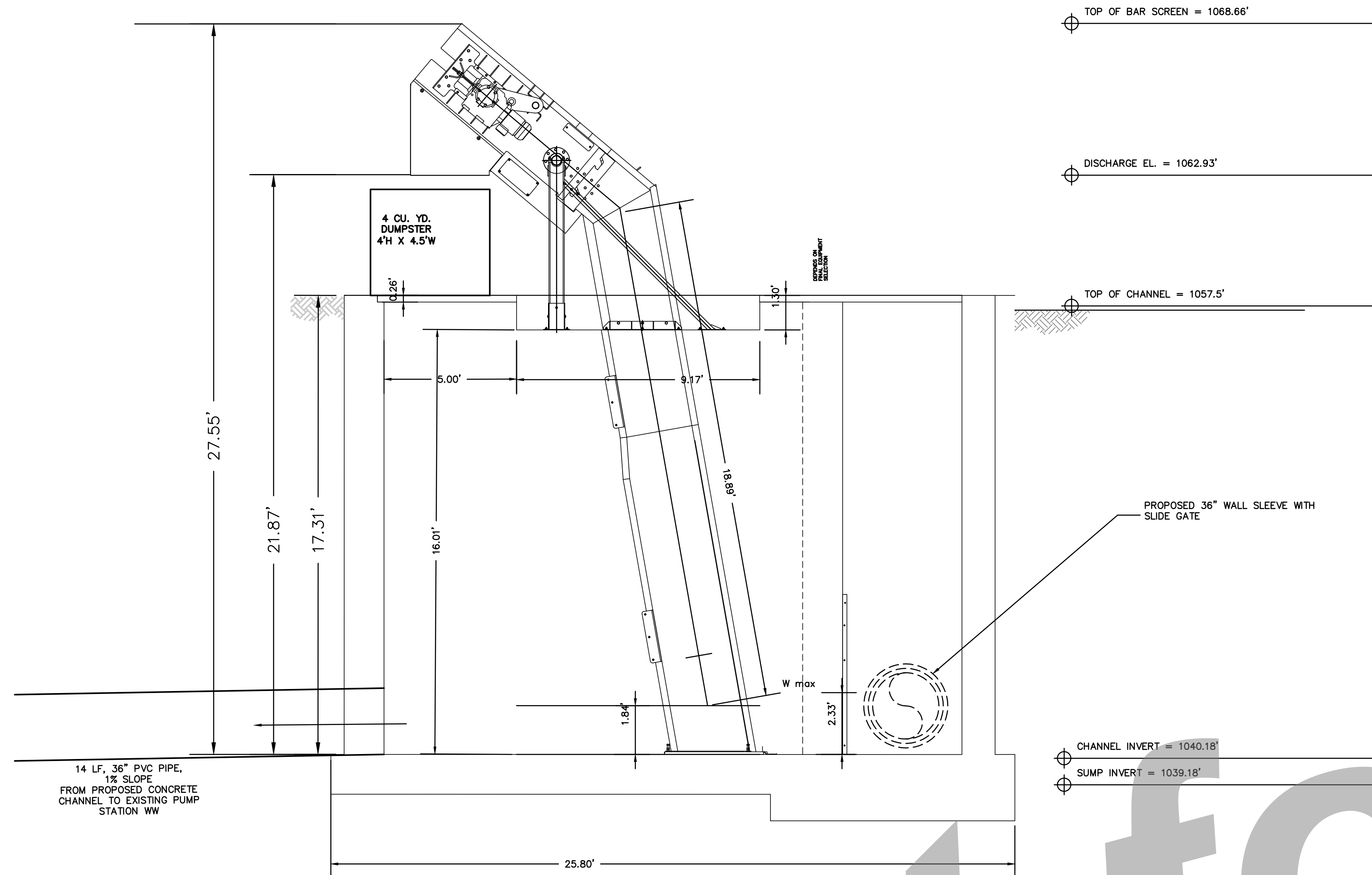


West Plant Influent Rehab
 for
The City of Villa Rica
 Carroll County, Georgia

Sewer Plan & Profile

DATE: SEPTEMBER 29, 2022
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TOP OF BAR SCREEN = 1068.66'

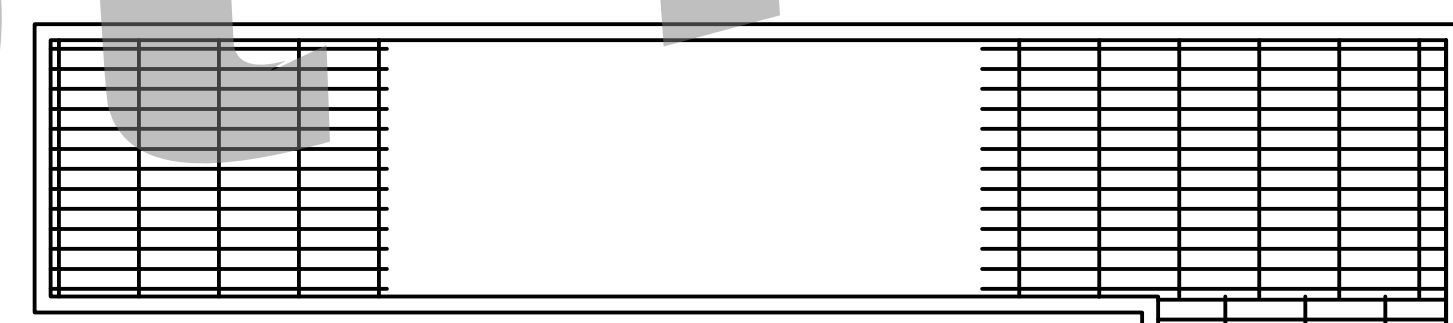
DISCHARGE EL. = 1062.93'

TOP OF CHANNEL = 1057.5'

CHANNEL INVERT = 1040.18'

SUMP INVERT = 1039.18'

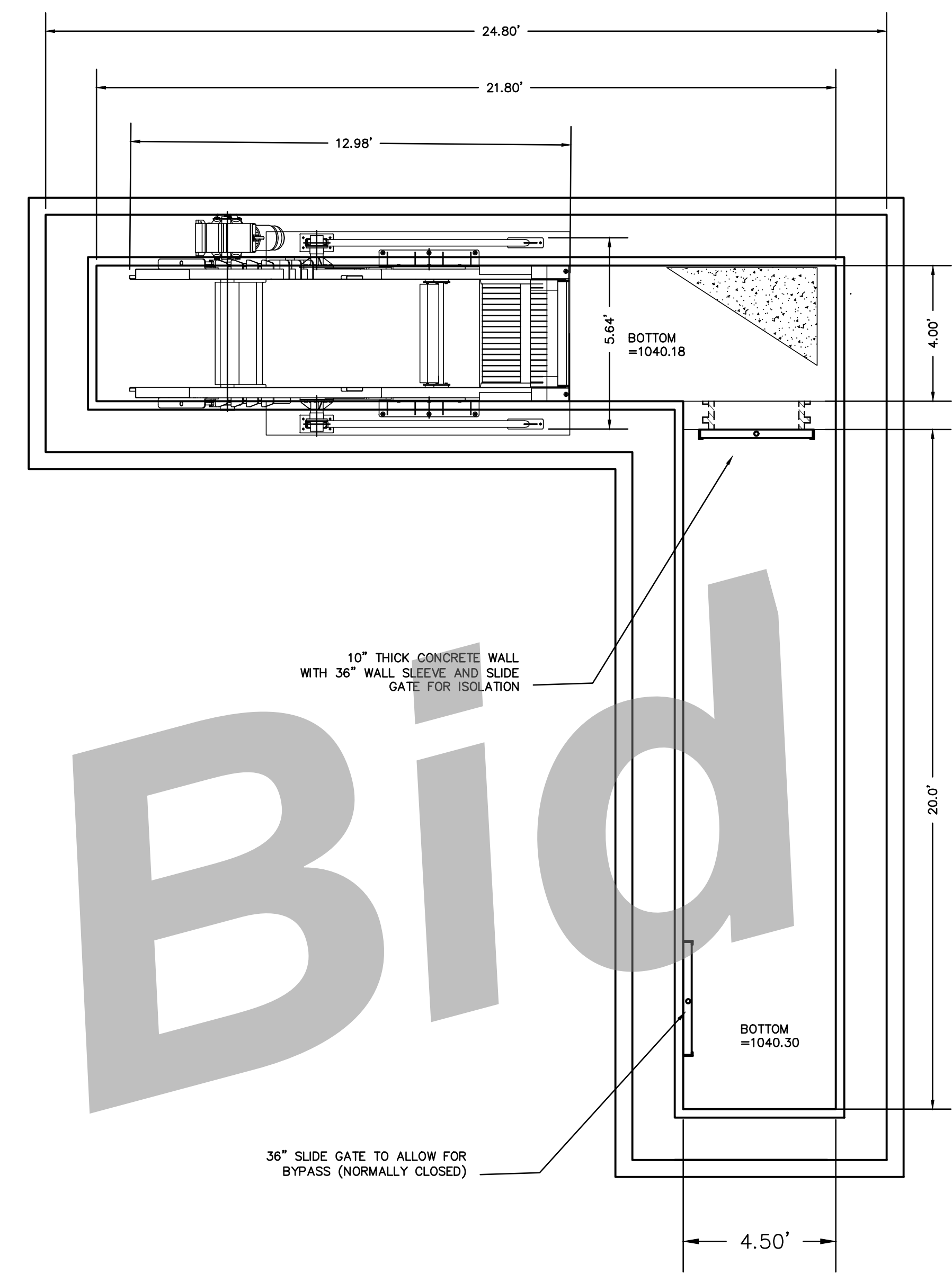
PROPOSED INFLUENT/BAR SCREEN CHANNEL
PROFILE
1" = 3'



ALUMINUM GRATING
AS PER
SPECIFICATIONS

NOTE: ALL GRATING DIMENSIONS SHOWN ON THIS SHEET SHOULD BE CONFIRMED AFTER CONSTRUCTION OF THE CONCRETE CHANNEL.

ALUMINUM GRATING DETAIL
SCALE 1"=3'



36\"/>

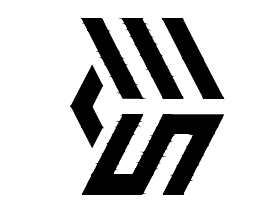
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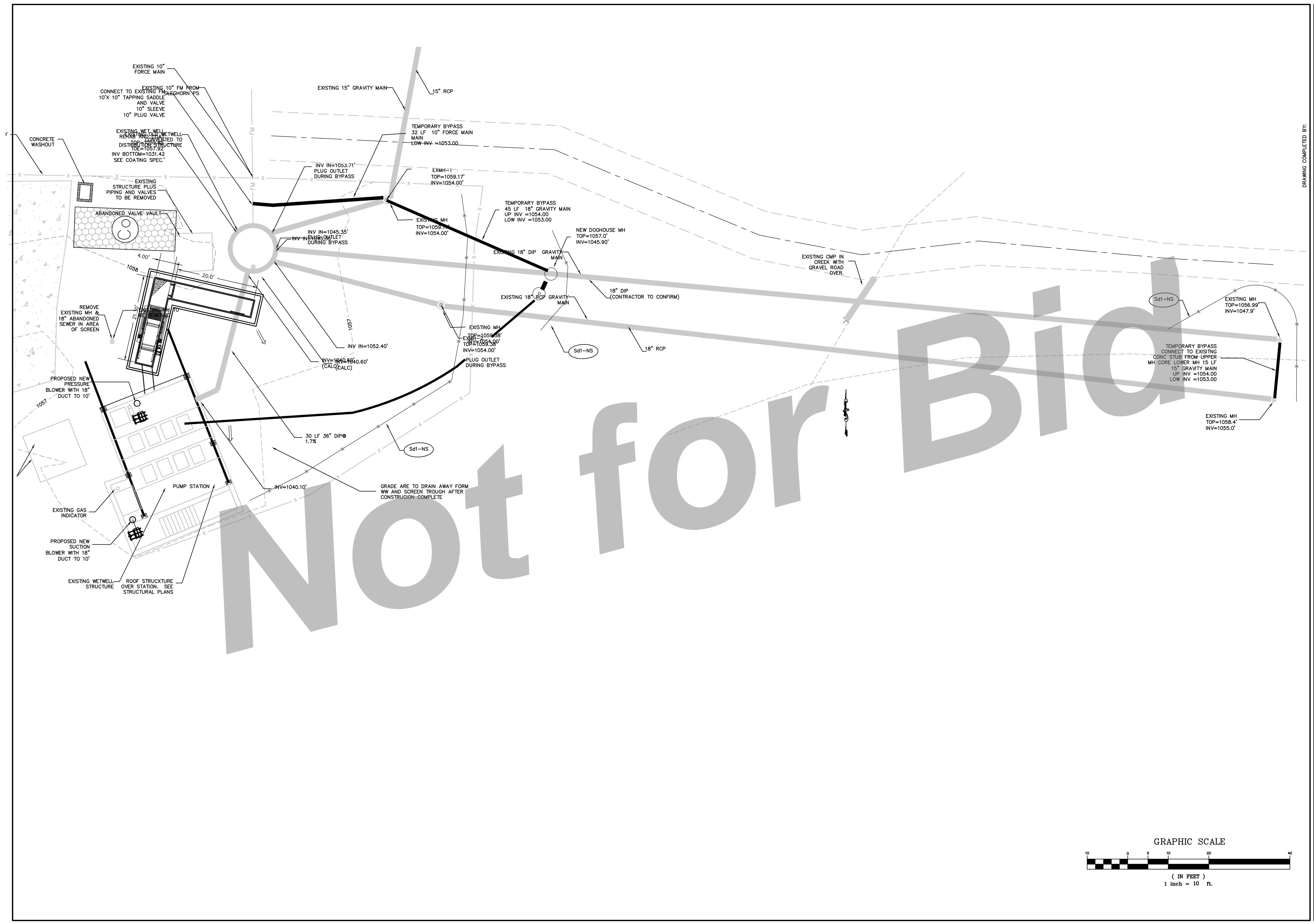


West Plant Influent Rehab
for
The City of Villa Rica
Carroll County, Georgia

Screen Detail

DATE: SEPTEMBER 29, 2022
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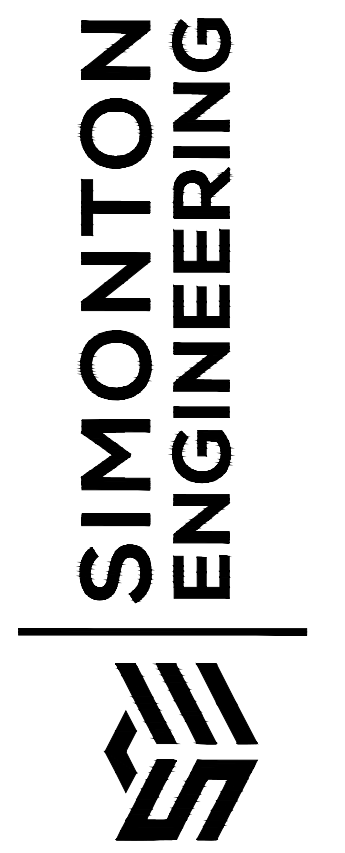
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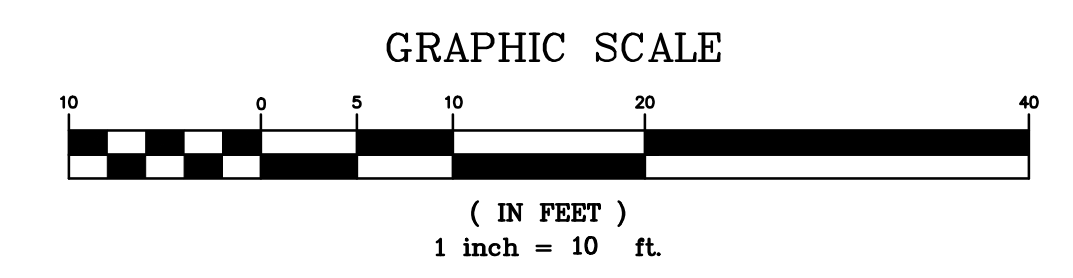
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West Plant Influent Rehab
 for
The City of Villa Rica
 Carroll County, Georgia

Erosion & Sediment Control

DATE: SEPTEMBER 29, 2022
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Ds1 DISTURBED AREA STABILIZATION (W/MULCHING ONLY)

SPECIFICATIONS

A. FOR TEMPORARY PROTECTION OF CRITICAL AREAS WITHOUT SEEDING. THIS STANDARD APPLIES TO GRADES OR CLEARED AREA WHICH MAY BE SUBJECTED TO EROSION FOR 6 MONTHS OR LESS, WHERE SEEDING MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT WHICH CAN BE STABILIZED WITH A MULCH COVER.

SITE PREPARATION

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

MULCHING MATERIALS

1. DRY STRAW OR HAY - SPREAD AT A RATE OF 2 1/2 TONS PER ACRE.
2. WOOD WASTE, CHIPS, SAWDUST OR BARK - SPREAD 2 TO 3 INCHES DEEP (ABOUT 6 TO 9 TONS PER ACRE).
3. EROSION CONTROL MATTING OR NETTING, SUCH AS EXCELSIOR, JUTE, TEXTILE AND PLASTIC MATTING AND NETTING - APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. CUTBACK ASPHALT, SLOW CURING - APPLIED AT 1200 GALLONS PER ACRE (OR 1/4 GALLON PER SQ. YD.).
5. POLYETHYLENE FILM - SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION.

APPLYING AND ANCHORING MULCH

1. APPLY STRAW OR HAY MULCH UNIFORMLY BY HAND OR MECHANICALLY. ANCHOR AS APPROPRIATE AND FEASIBLE. IT MAY BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK." THE DISK MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERRECT POSITION. STRAW HAY MULCH SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1). THE ASPHALT EMULSION MUST BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF WATER PER ACRE.
2. SPREAD WOOD WASTE UNIFORMLY ON SLPES THAT ARE 3:1 AND FLATTER. NO ANCHORING IS NEEDED.
3. COMMERCIAL MATTING AND NETTING - FOLLOW MANUFACTURER'S SPECIFICATION INCLUDED WITH THE MATERIAL.
4. APPLY ASPHALT SO AREA HAS UNIFORM APPEARANCE. (NOTE: USE IN AREAS OF PEDESTRIAN TRAFFIC COULD CAUSE PROBLEMS OR "TRACKING IN" OR DAMAGE TO SHOES, CLOTHING, ETC.).

B. TO CONSERVE MOISTURE AND CONTROL WEEDS IN NURSERIES, ORNAMENTAL BEDS, AROUND SHRUBS, AND ON BAR AREAS ON LAWNS.

MULCHING MATERIALS

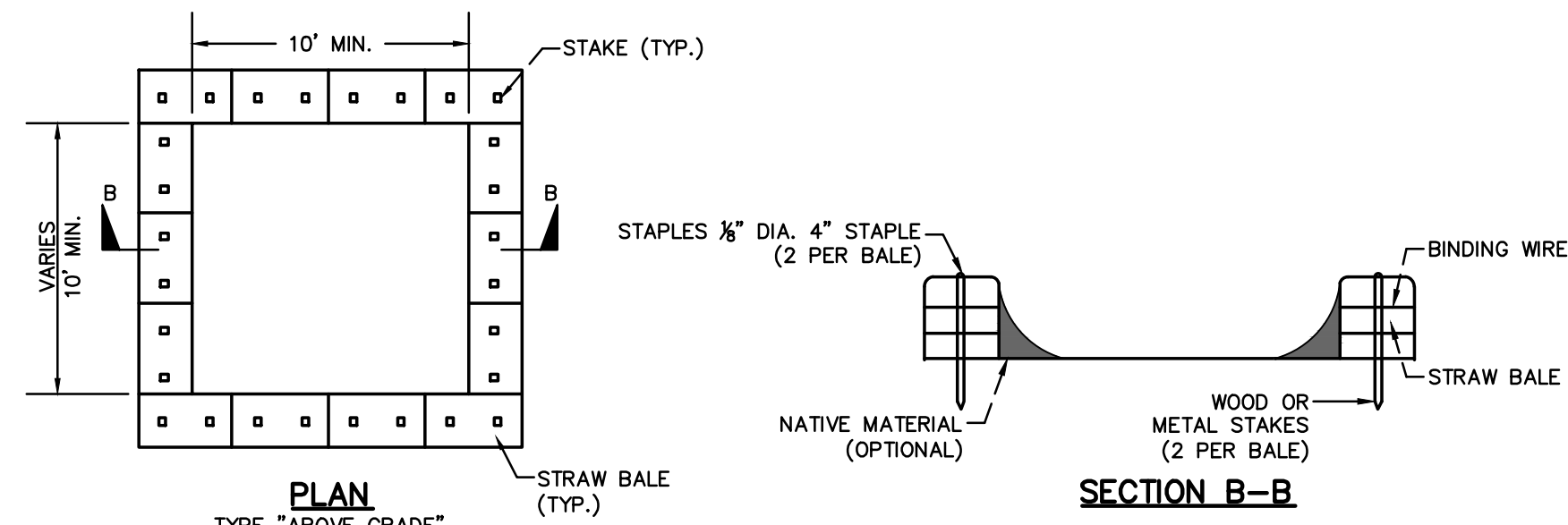
USE ONE OF THE MATERIALS LISTED BELOW AND APPLY AT THICKNESS INDICATED.

MATERIAL	DEPTH
1. GRAIN STRAW OR GRASS HAY	6" TO 10"
2. PINE NEEDLE	4" TO 6"
3. WOOD WASTE (SAWDUST, BARK, CHIPS)	4" TO 8"
4. SHREDDED RESIDUES (CROPS, LEAVES, ETC.)	4" TO 8"
5. COMPLETELY COVER AREA WITH BLACK POLYETHYLENE FILM AND HOLD IN PLACE BY PLACING SOIL ON THE OUTER EDGE. WHEN USING ORGANIC MULCHES, APPLY 20-30 POUNDS OF NITROGEN IN ADDITION TO THE NORMAL AMOUNT NEEDED FOR PLANT GROWTH TO OFFSET THE TIE UP OF NITROGEN BY DECOMPOSITION OF MULCH.	

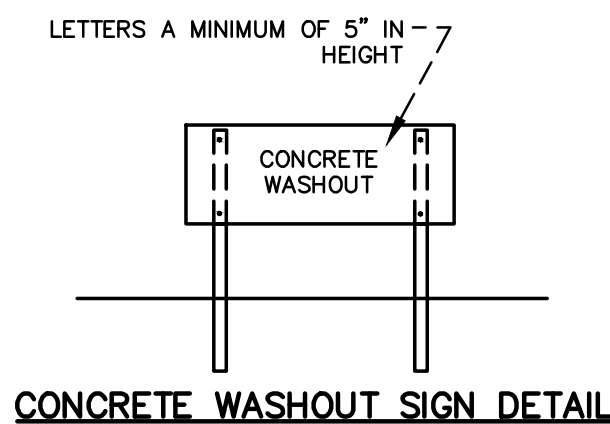
TYPES OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (LBS./ACRE)	N TOP DRESSING RATE (LBS./ACRE)	LIME APPLICATION (TONS/ACRE)
Cool Season Grasses	First	6-12-12	1500	50-100	1
	Second Maintenance	6-12-12 10-10-10	1000 400	- 30	
Cool Season Grasses and Legumes	First	6-12-12	1500	0-50	1
	Second Maintenance	0-10-10 6-12-12 10-10-10	1000 400	- -	
Temporary Cover Crops Seeded Alone	First	10-10-10	500	30	1
Warm Season Grasses	First	6-12-12	1500	50-100	1
	Second Maintenance	6-12-12 10-10-10	800 400	50-100 30	

SPECIES	BROADCAST RATES (1) PER ACRE	PER 1000 Sq.Ft.	PLANTING DATES BY RESOURCE AREAS (3)	REMARKS
LESPEDEZA, ANNUAL ALONE IN MIXTURES	40 lbs. 10 lbs.	0.9 lbs. 0.6 lbs.	P J J W A M J J A S O N D	200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE UNILANT DL.
LOVEGRASS, WEEPING ALONE IN MIXTURES	4 lbs. 2 lbs.	0.1 lbs. 0.05 lbs.	P J J W A M J J A S O N D	1,500,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA.
RYE ALONE IN MIXTURES	3 bu (168 lbs.) 1/2 bu (28 lbs.)	3.9 lbs. 0.6 lbs.	P J J W A M J J A S O N D	18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTERHARDY.
RYEGRASS, ANNUAL ALONE IN MIXTURES	40 lbs.	0.9 lbs.	P J J W A M J J A S O N D	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.
SUDANGRASS ALONE IN MIXTURES	60 lbs.	1.4 lbs.	P J J W A M J J A S O N D	25,000 SEED PER POUND. GOOD ON BROUGHTY SITES. NOT RECOMMENDED FOR MIXTURES.

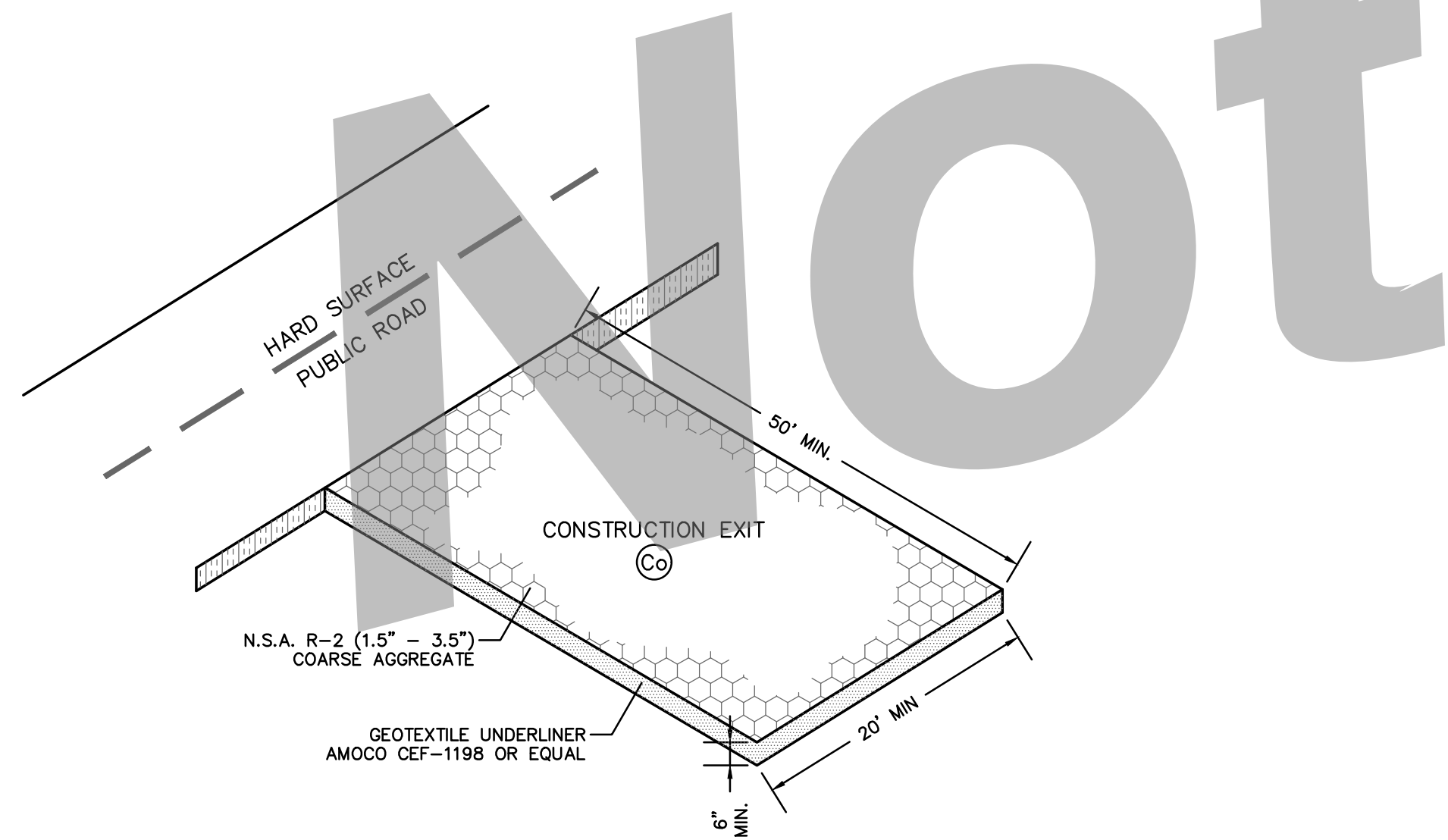
(1) BROADCAST RATES ARE IN PURE LIVE SEED (PLS)
 (2) M-L REPRESENTS THE MOUNTAIN, BLUE RIDGE, AND RIDGES AND VALLEYS MURA
 P REPRESENTS THE SOUTHERN PRELUDE MURA
 C REPRESENTS SOUTHERN COASTAL PLAIN, SAND HILLS, BLACK LANDS, AND ATLANTIC COAST FLATWOODS MURA'S
 (3) DARK LINES INDICATE OPTIMUM DATES, GRAY LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.



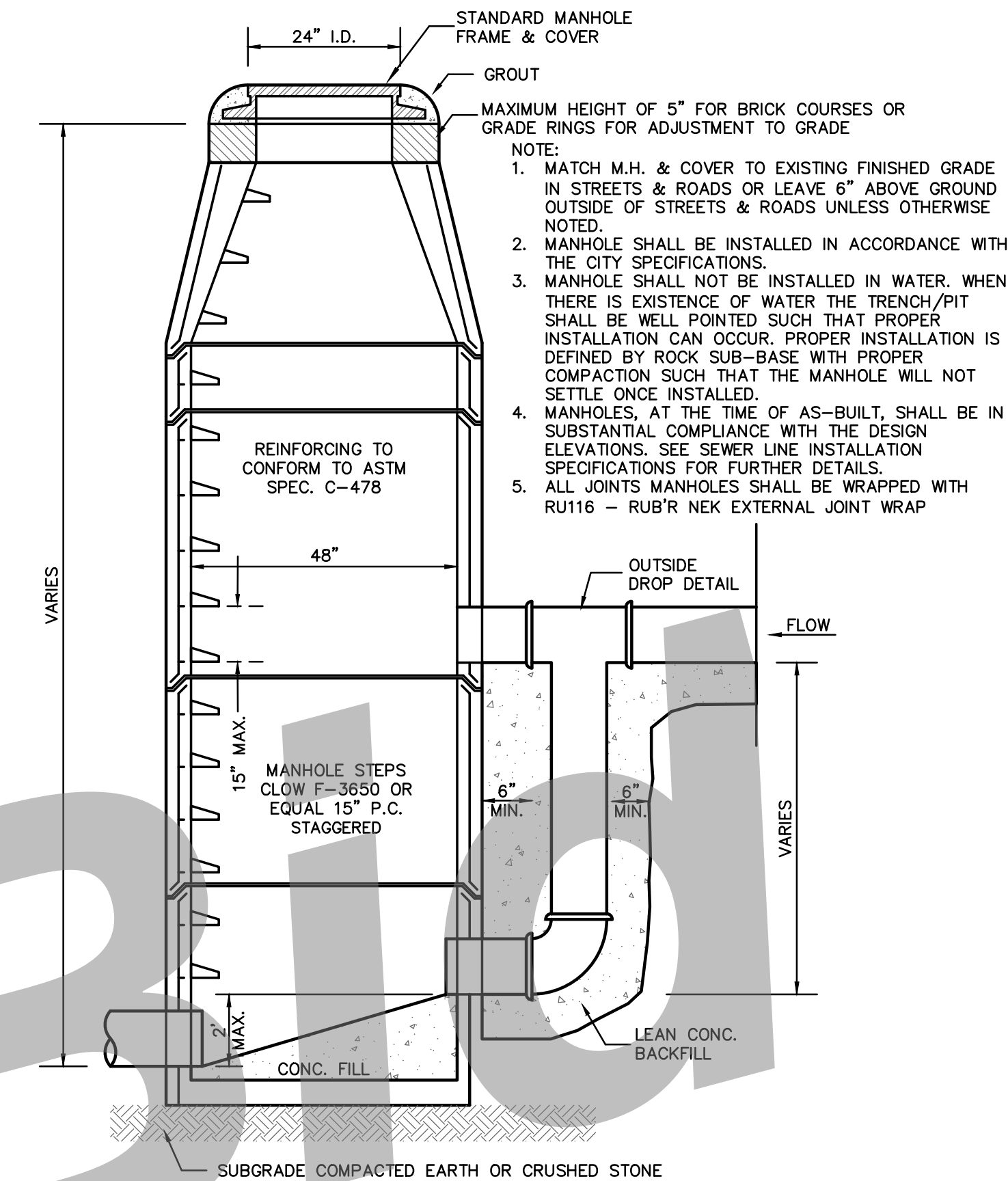
- NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
 2. INSTALL CONCRETE WASHOUT SIGN (24"x24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
 4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% 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.



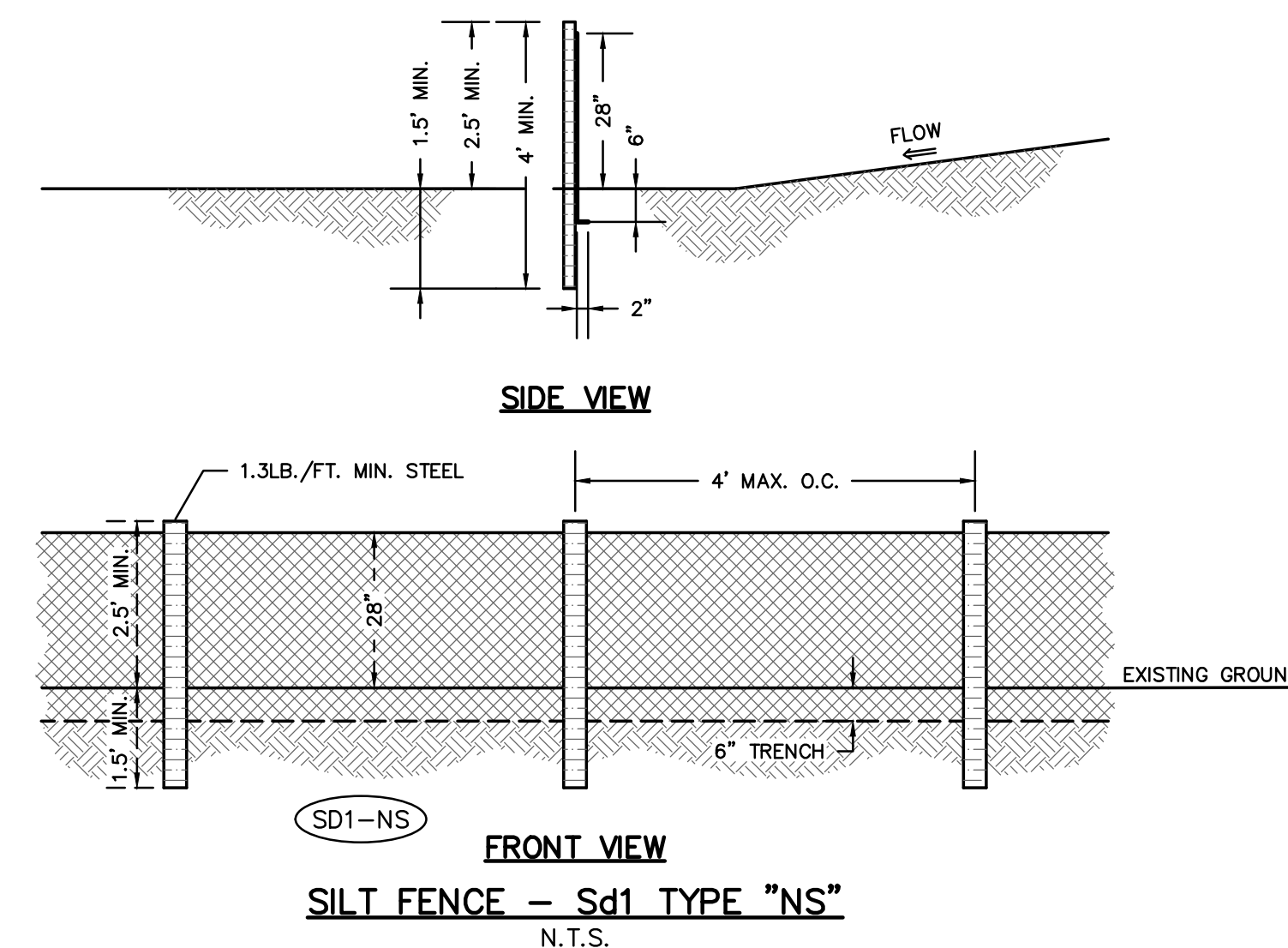
STRAW BALE BARRIER CONCRETE WASHOUT
N.T.S.



CRUSHED STONE CONSTRUCTION EXIT
N.T.S.



PRECAST CONCRETE MANHOLE
N.T.S.



SILT FENCE - Sd1 TYPE "NS"
N.T.S.

Ds3 MULCH NOTES:

- MULCH IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% TO 100% SOIL COVER.
1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED AND SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.
 2. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.

DRAWING COMPLETED BY:



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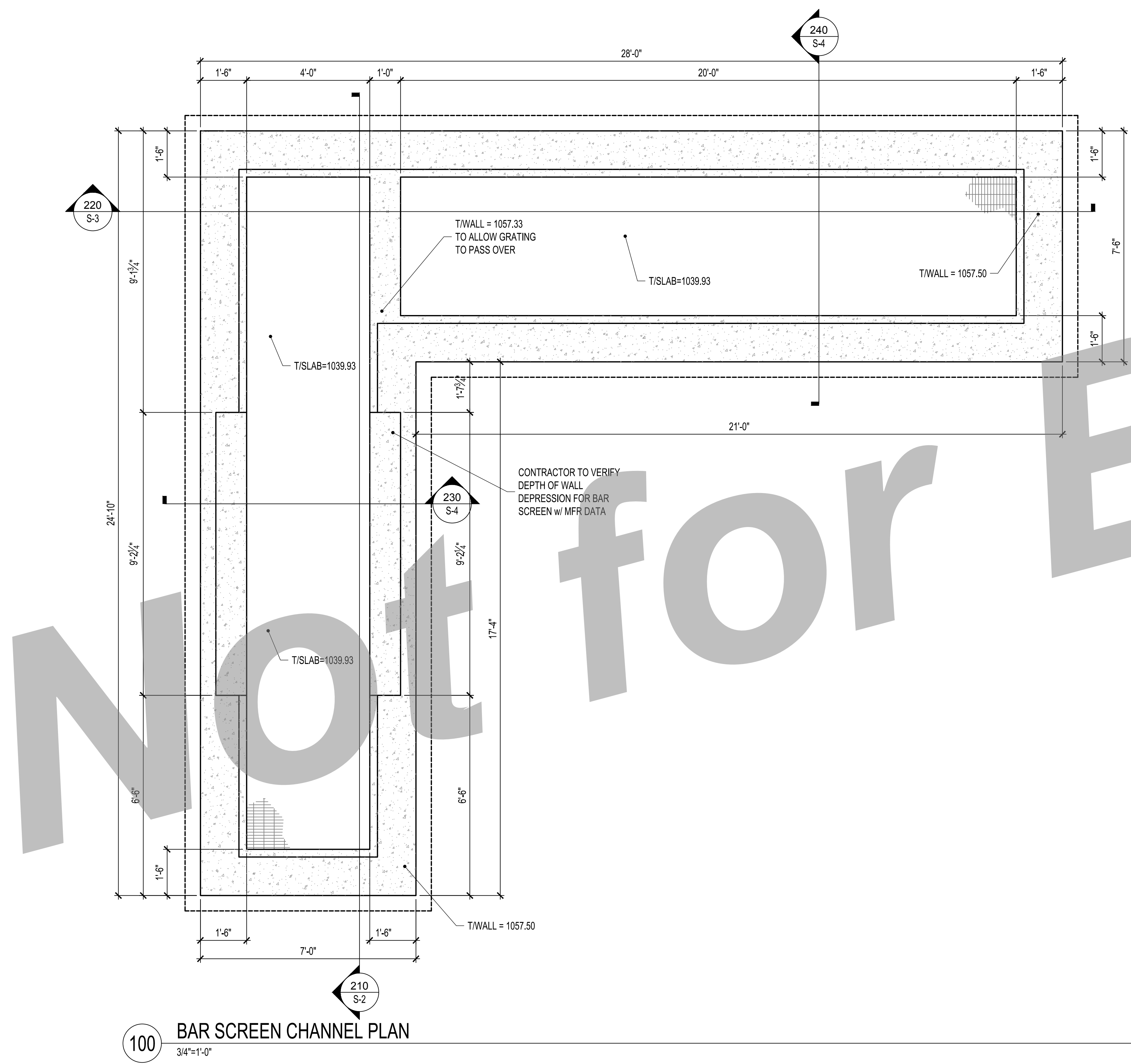
SIMONTON ENGINEERING



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for
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Carroll County, Georgia

Construction Details

DATE: SEPTEMBER 29, 2022
FILE NO: 2019-59PRJ
SHEET: 5.0



100 BAR SCREEN CHANNEL PLAN
3/4"=1'-0"

REINFORCING STEEL NOTES

- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:
 - REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.
 - WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
 - REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.
- CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:
 - CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"
 - FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
 - SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"
 - SLABS & JOISTS W/ #6 BARS & LARGER = 2"
 - BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"
 - FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
 - SLABS & JOISTS = 3/4"
 - BEAMS, PIERS, & COLUMNS = 1 1/2"
 - FOOTINGS & BASE SLABS = 2"

STRUCTURE NOTES

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ CIVIL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- SEISMIC DESIGN CRITERIA:
 - OCCUPANCY CATEGORY = IV
 - SEISMIC IMPORTANCE FACTOR (I_e) = 1.50
 - $S_s = 0.1994$ $S_1 = 0.0866$
 - SITE CLASS = D
 - $S_{DS} = 0.213$ $S_{D1} = 0.138$
 - BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-16 TABLE 15.4-2):
 - FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:
 - RESPONSE MODIFICATION FACTOR (R) = 2.0
 - SEISMIC RESPONSE COEFF. (C_s) = 0.1595
 - SEISMIC DESIGN CATEGORY = D
 - ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

FOUNDATION NOTES

- DESIGN SOIL BEARING PRESSURE = 3000 PSF. SOIL BEARING PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY CONTOUR ENGINEERING, LLC (PROJECT# G21SIE01).
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

CONCRETE NOTES

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 350-20.
- PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-11. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.
- CONTRACTOR SHALL PERFORM TIGHTNESS TESTING FOR LIQUID CONTAINING STRUCTURES. TIGHTNESS TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROCEDURES AT DESCRIBED IN ACI 350.1.

CONC REINF LAP LENGTH
4500 PSI (ACI 350-20)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	18"	
#4	24"	
#5	30"	
#6	35"	
#7	51"	
#8	59"	
#9	66"	
#10	73"	

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PROFESSIONAL ENGINEER
No. 27885
H. BOSWELL
9/19/2022

WEST PLANT INFLUENT REHAB
WASTEWATER RECLAMATION FACILITY
FOR:
THE CITY OF VILLA RICA
CARROLL COUNTY, GEORGIA

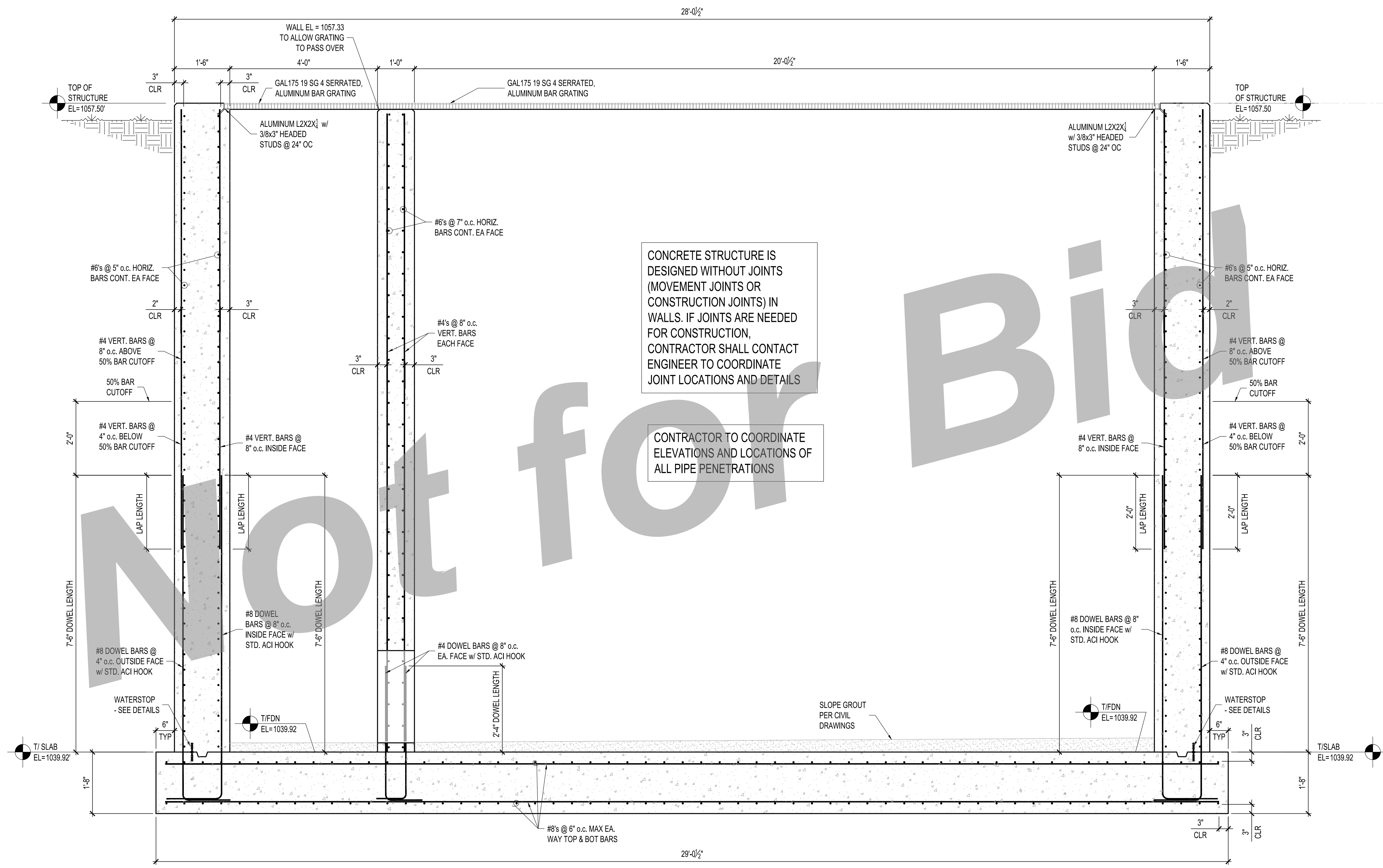
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BAR SCREEN CHANNEL
PLANS, NOTES, & SPECIFICATIONS
S - 1
SHEET 1 OF 12

NOTES:
1. SHEETS 0E22034-S-CORE-001 TO 0E22034-S-CORE-004
2. PRINTED BY: H&P (DORRILL) DATE: Tuesday, September 20, 2022 10:02 AM
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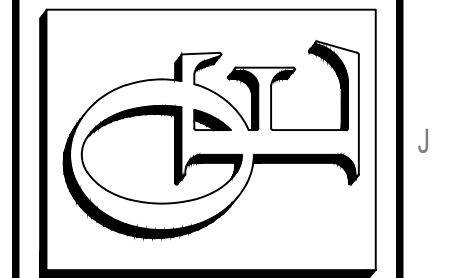


CONCRETE STRUCTURE IS DESIGNED WITHOUT JOINTS (MOVEMENT JOINTS OR CONSTRUCTION JOINTS) IN WALLS. IF JOINTS ARE NEEDED FOR CONSTRUCTION, CONTRACTOR SHALL CONTACT ENGINEER TO COORDINATE JOINT LOCATIONS AND DETAILS

CONTRACTOR TO COORDINATE ELEVATIONS AND LOCATIONS OF ALL PIPE PENETRATIONS

220 BAR SCREEN CHANNEL SECTION
3/4"=1'-0"

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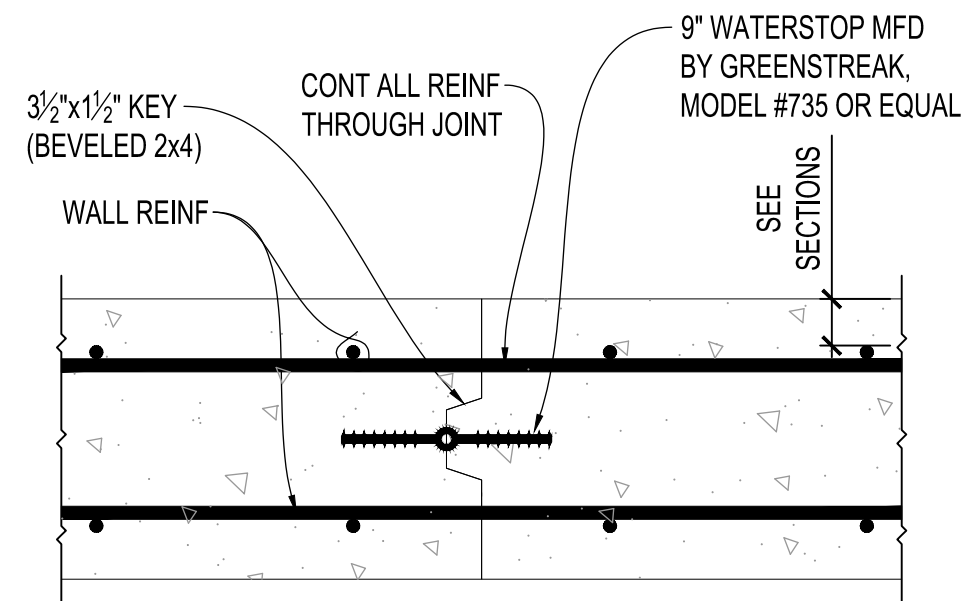
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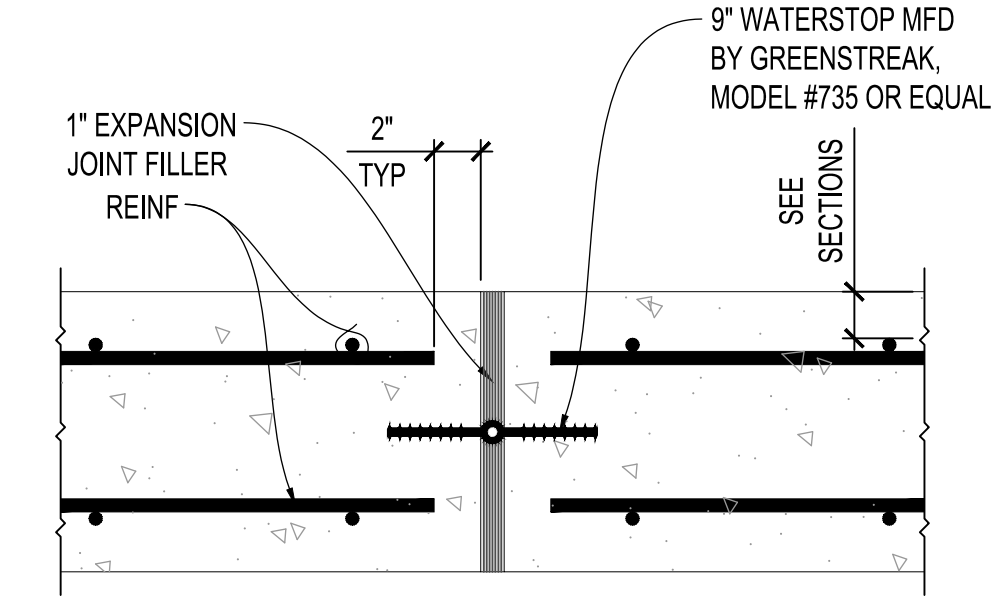
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BAR SCREEN CHANNEL
SECTIONS
S - 3
SHEET 3 OF 12

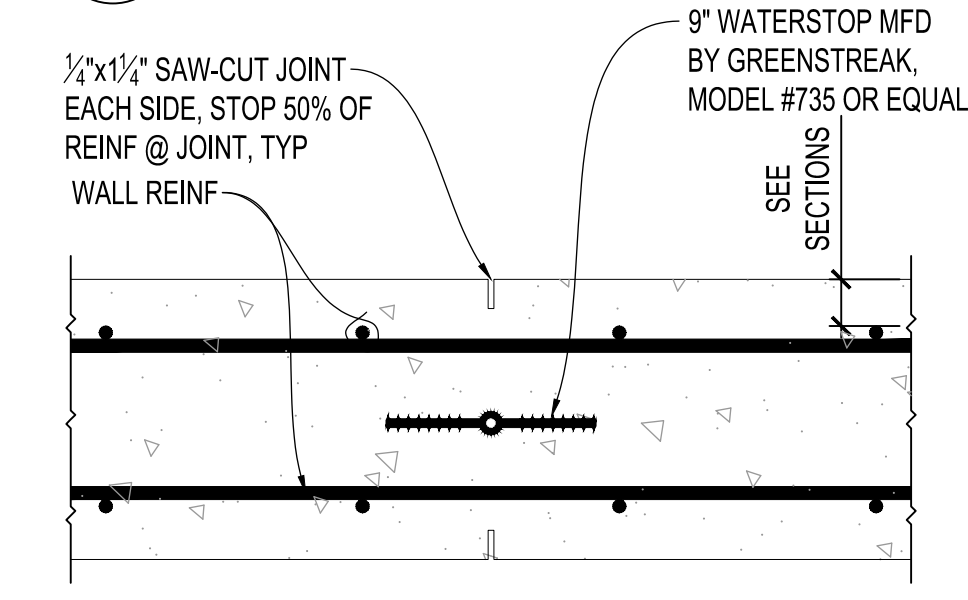
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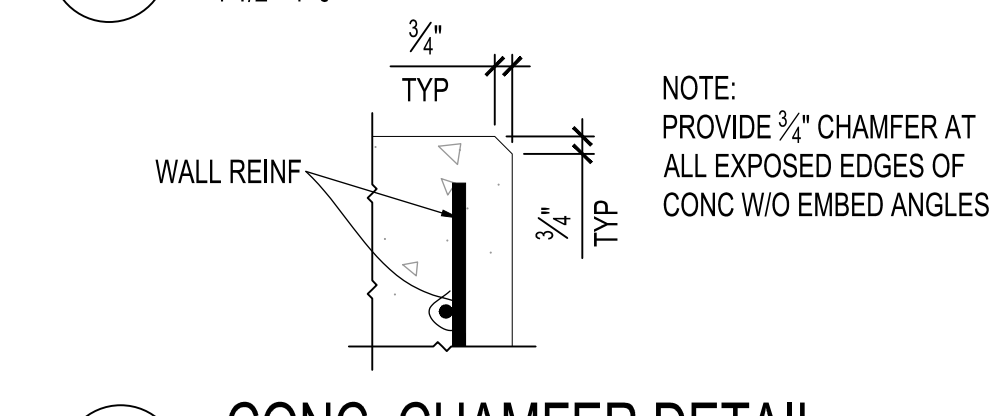
D1 CONC. CONST. JOINT DETAIL
1 1/2"=1'-0"



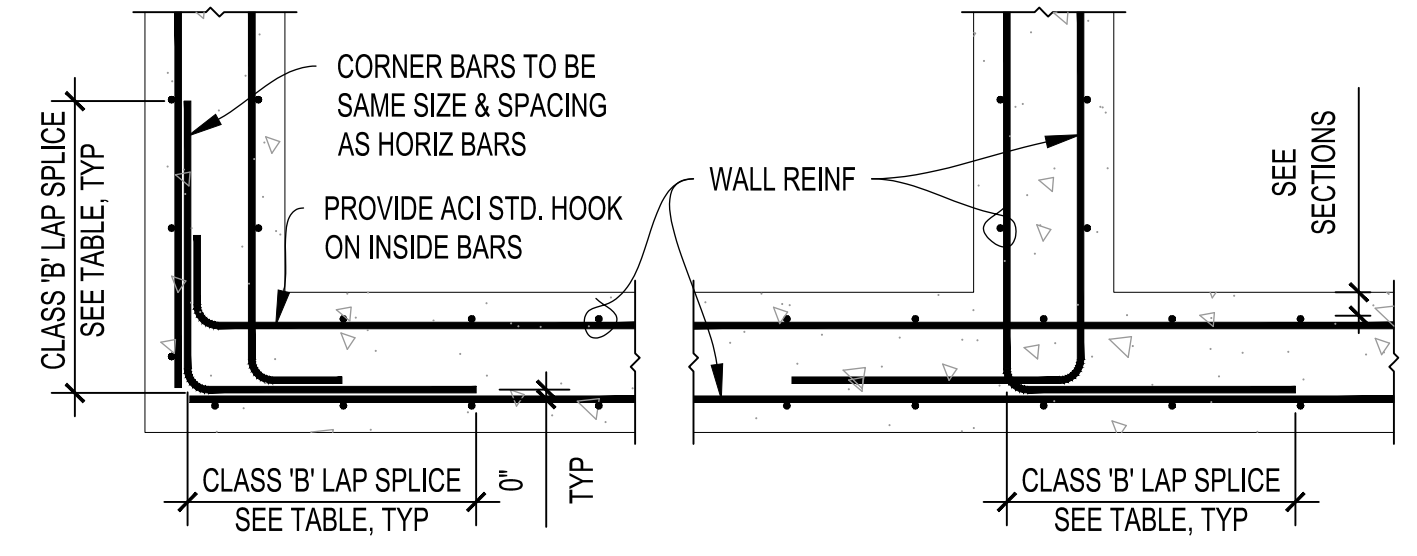
D3 CONC. EXP JOINT DETAIL
1 1/2"=1'-0"



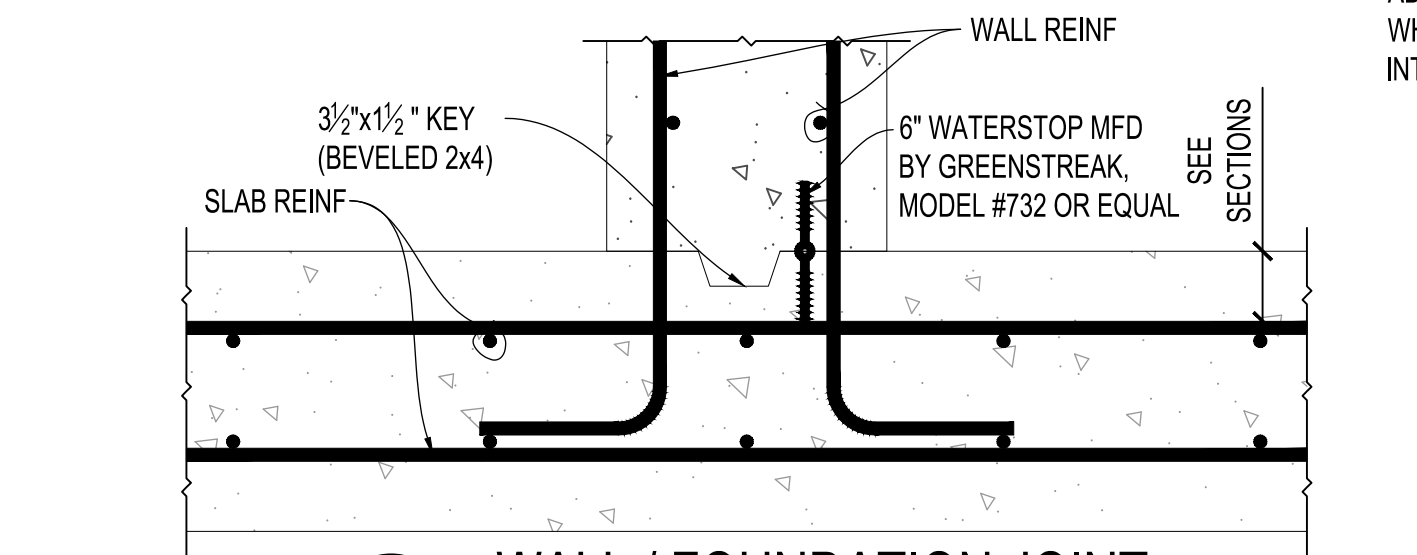
D2 CONC. CONTROL JOINT DETAIL
1 1/2"=1'-0"



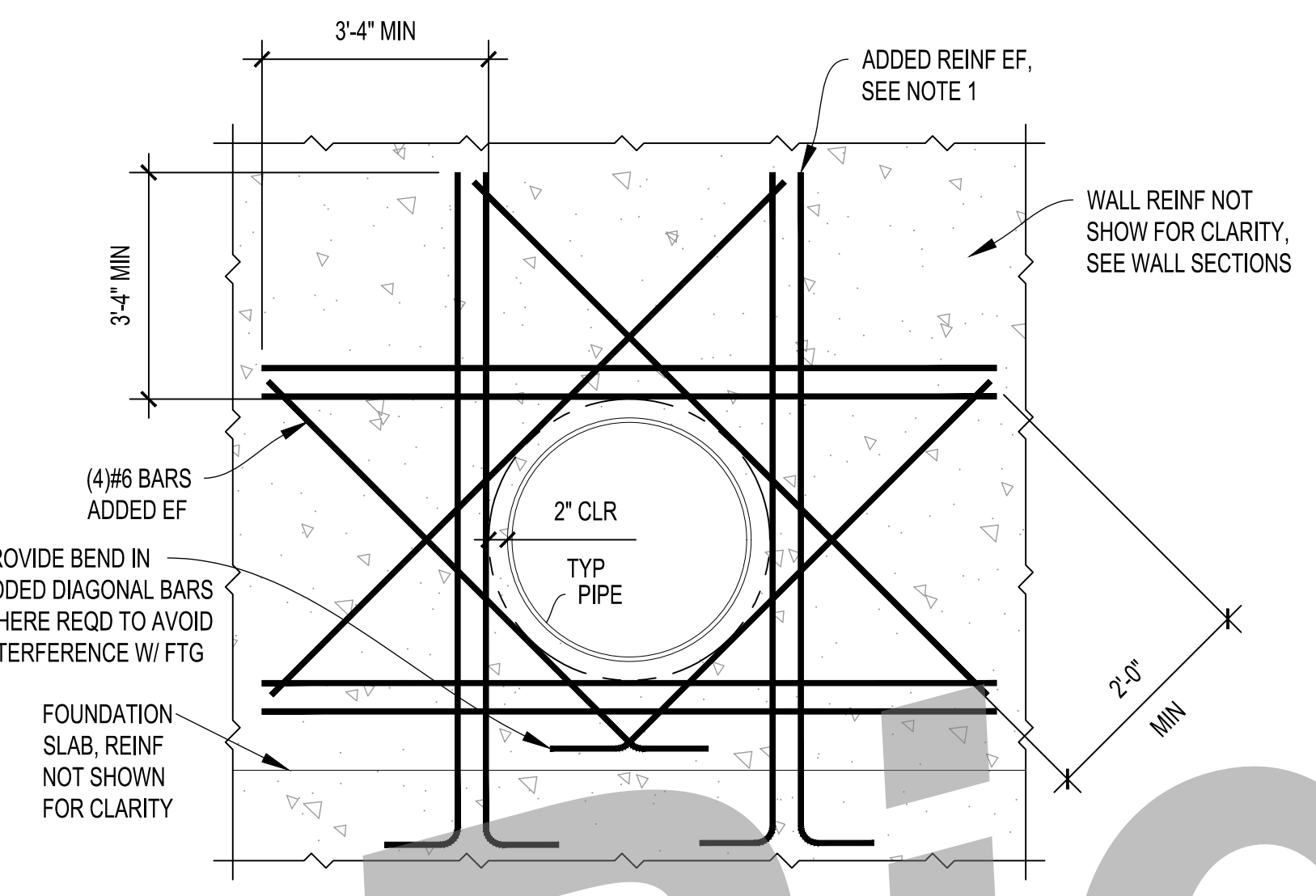
D4 CONC. CHAMFER DETAIL
1 1/2"=1'-0"



D5 TYP REINF @ WALL INTERSECTIONS
N.T.S.



D6 WALL / FOUNDATION JOINT
1 1/2"=1'-0"



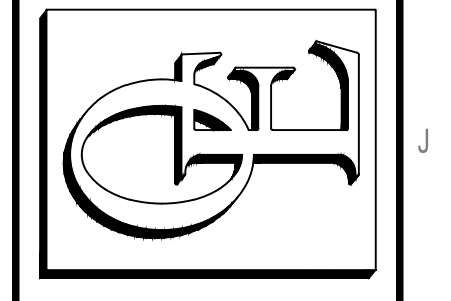
- NOTES:
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @ 3"OC.
 2. MAINTAIN NOT LESS THAN 1/4" CLEAR BETWEEN ADJACENT PARALLEL BARS.

D7 TYP WALL REINF @ PIPE OPENING
N.T.S.

Not for Bid

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 PLOTTED BY: HANH B. BOSTWELL DATE: Tuesday, September 24, 2024 10:11:44 AM
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REGISTERED PROFESSIONAL ENGINEER
 No. 27885
 B. L. H. BOSTWELL
 9/19/2022

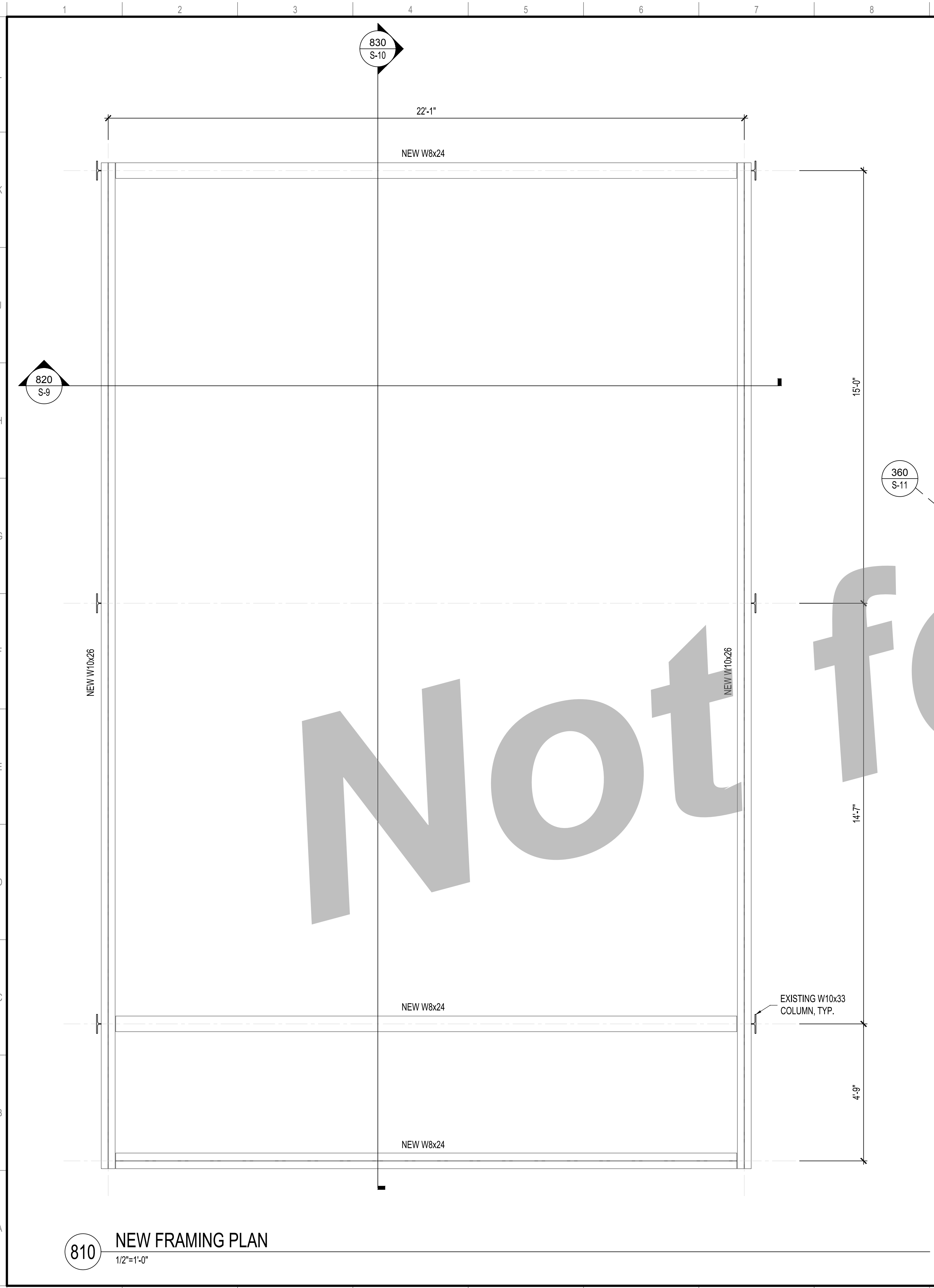
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 FOR:
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	09/19/2022	RHB	ISSUED FOR PERMIT

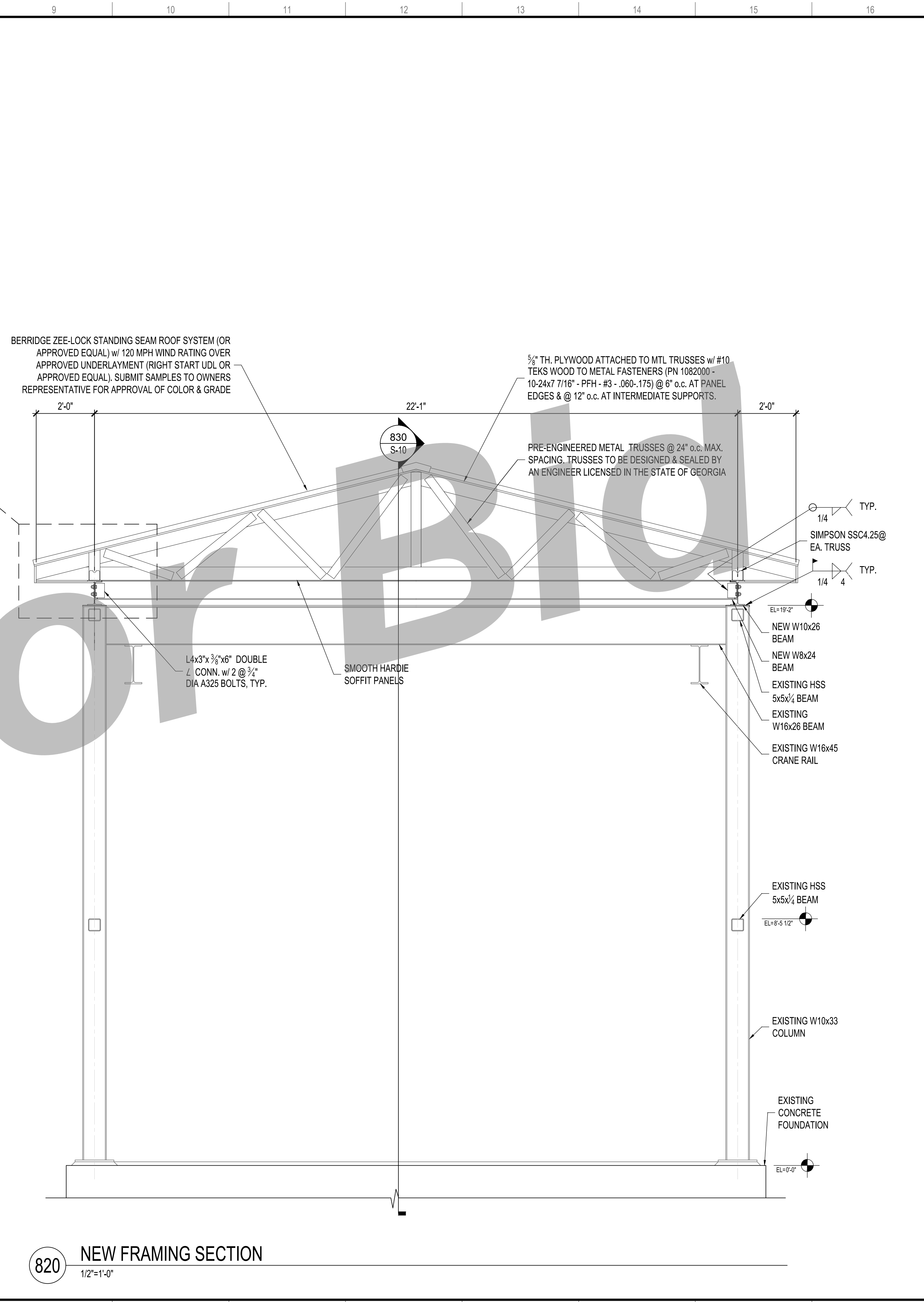
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BAR SCREEN CHANNEL
 DETAILS
S - 5
 SHEET 5 OF 12

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810 NEW FRAMING PLAN
1/2"=1'-0"



820 NEW FRAMING SECTION
1/2"=1'-0"

Not for Bid

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WEST PLANT INFLUENT REHAB
WASTEWATER RECLAMATION FACILITY

FOR:
THE CITY OF VILLA RICA
CARROLL COUNTY, GEORGIA

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CRANE ROOF

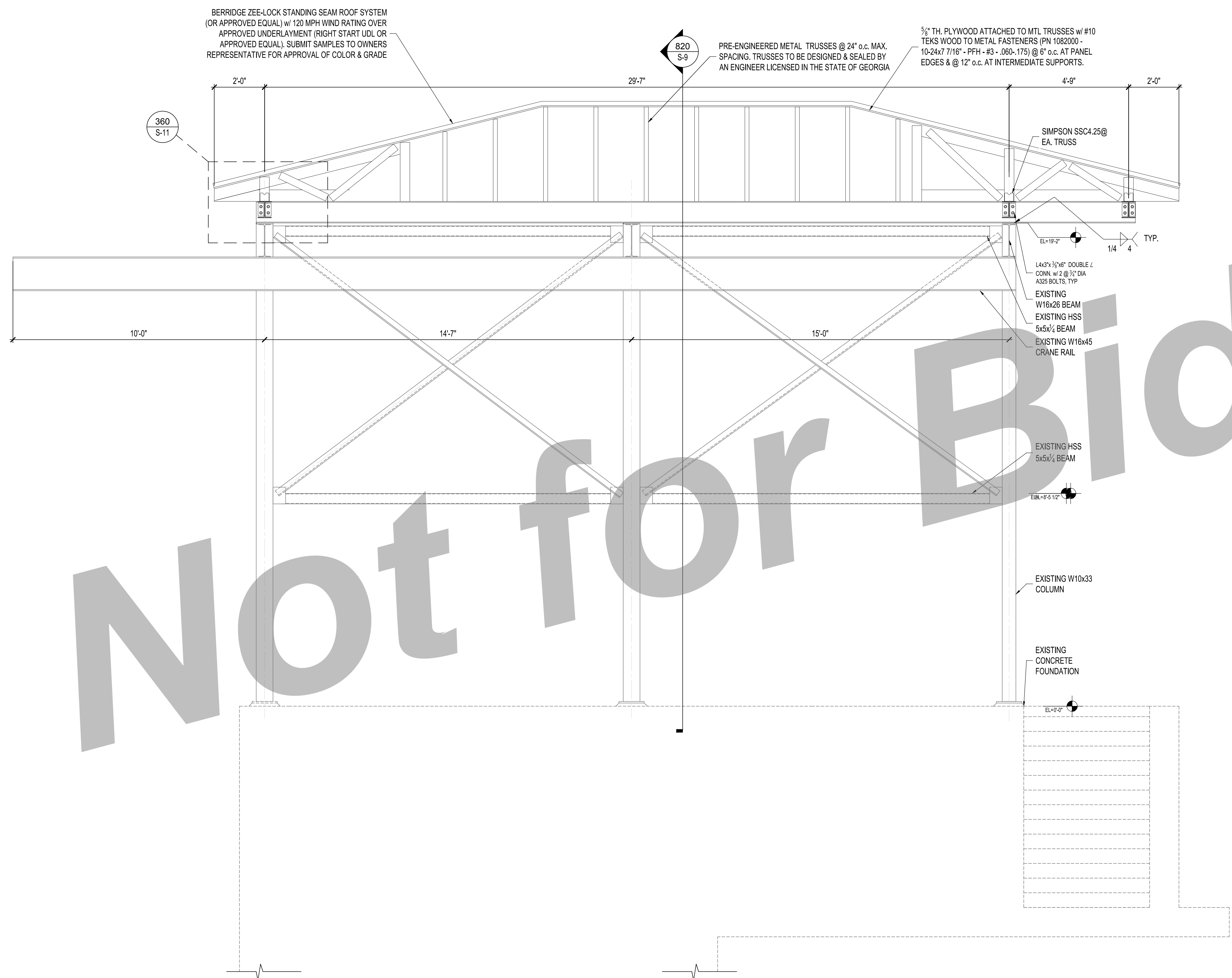
BUILDING FRAMING PLAN
AND SECTION

S - 9

SHEET 9 OF 12

NOTES:
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830 NEW FRAMING SECTION
1/2"=1'-0"



BERRIDGE ZEE-LOCK STANDING SEAM ROOF SYSTEM (OR APPROVED EQUAL) w/ 120 MPH WIND RATING OVER APPROVED UNDERLAYMENT (RIGHT START UDL OR APPROVED EQUAL). SUBMIT SAMPLES TO OWNERS REPRESENTATIVE FOR APPROVAL OF COLOR & GRADE

PRE-ENGINEERED METAL TRUSSES @ 24" o.c. MAX. SPACING. TRUSSES TO BE DESIGNED & SEALED BY AN ENGINEER LICENSED IN THE STATE OF GEORGIA

3/8" TH. PLYWOOD ATTACHED TO MTL TRUSSES w/ #10 TEAKS WOOD TO METAL FASTENERS (PN 1082000 - 10-24x7 7/16" - PFH - #3 - .060-.175) @ 6" o.c. AT PANEL EDGES & @ 12" o.c. AT INTERMEDIATE SUPPORTS.

SIMPSON SSC4.25@ EA. TRUSS

L4x3x 3/8" DOUBLE L CONN. w/ 2 @ 3/4" DIA A325 BOLTS, TYP

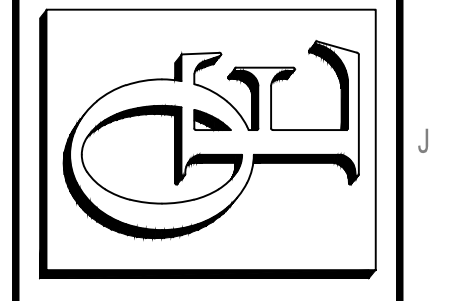
EXISTING W16x26 BEAM
EXISTING HSS 5x5x 1/4 BEAM
EXISTING W16x45 CRANE RAIL

EXISTING HSS 5x5x 1/4 BEAM

EXISTING W10x33 COLUMN

EXISTING CONCRETE FOUNDATION

OCONEE ENGINEERING L.L.C.
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WEST PLANT INFLUENT REHAB
 WASTEWATER RECLAMATION FACILITY
 FOR:
 THE CITY OF VILLA RICA
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MARK	DATE	BY	DESCRIPTION
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 O'CONNOR ENGINEERING, L.L.C.



Client Project Number: 2021-136PRJ

West Plant Influent Pump Station Screen

205 Barber Industrial Court
Villa Rica, GA 30180
Axia Project Number: 2115

Revisions	Description	Date
1		

Issue Date: 9 August 2022

Sheet Title: Electrical Notes, Single-Line, and Schedules

Sheet Number: E1

Panelboard: H		Supply: Station Control Panel	Poles: 30	Main Type: MLO
Location: Ctl Bldg	Mounting: Surface	Voltage: 480Y/277V 3Ø 3W	Feed-Thru Lugs: No	Mains Rating: 125A
Enclosure: NEMA 1	Neutral: None	Bus Amps: 125A	SE-Rated: No	Mains FN/Note: -
Special: -			Isolated Ground: No	SCCR: 35 kAIC
			New/Existing: -	

CKT	Description	Tip (A)	Poles	FN/ Note	Load (kVA)	Phase	Load (kVA)	FN/ Note	Poles	Tip (A)	Description	CKT
1	Wet Well Supply Fan 2-SF-1	15	3	-	0.91	A A	0.40	-	3	15	Rake Screen	2
3					0.91	B B	0.40					4
5					0.91	C C	0.40					6
7	Wet Well Exhaust Fan 2-EF-1	15	3	-	0.91	A A	0.00	-	1	20	Spare	8
9					0.91	B B	0.00	-	1	20	Spare	10
11					0.91	C C	0.00	-	1	20	Spare	12
13	Spare	20	1	-	0.00	A A	0.00	-	1	20	Spare	14
15	Spare	20	1	-	0.00	B B	0.00	-	1	20	Spare	16
17	Spare	20	1	-	0.00	C C	0.00	-	1	20	Spare	18
19	Spare	20	1	-	0.00	A A	0.00	-	1	20	Spare	20
21	Spare	20	1	-	0.00	B B	0.00	-	1	20	Spare	22
23	Spare	20	1	-	0.00	C C	0.00	-	1	20	Spare	24
25	Spare	20	1	-	0.00	A A	0.00	-	1	20	Spare	26
27	Spare	20	1	-	0.00	B B	0.00	-	1	20	Spare	28
29	Spare	20	1	-	0.00	C C	0.00	-	1	20	Spare	30

Load Classification	Connected (kVA)			Factor	Demand (kVA)		
	A	B	C		A	B	C
Motor	2.22	2.22	2.22	NEC	2.45	2.45	2.45

Phase Totals			
	A	B	C
Connected Load (kVA):	2.2	2.2	2.2
Connected Current (A):	8	8	8
Demand Load (kVA):	2.4	2.4	2.4
Demand Current (A):	9	9	9

Panel Totals			
	A	B	C
Connected Load (kVA):	6.7		
Connected Current (A):	8		
Demand Load (kVA):	7.3		
Demand Current (A):	9		

Abbreviations

Φ	Electrical Phase	KAIC	Kiloamps Interrupting Capacity
§	Section	KW	Kilowatt
A, AMP	Ampere	KVA	Kilovolt-Ampere
ADA	Americans With Disabilities Act	KVAR	Kilovolt-Ampere Reactive
AF	Amp Frame	LFNC	Liquid-Tight Flexible Non-Metallic Conduit
AFC	Available Fault Current	LRA	Locked-Rotor Amps
AFG	Above Finished Grade	LTS	Lights, Lighting
AFI/AFCI	Arc Fault Circuit Interrupter	LVL	Level (of building)
AHJ	Authority Having Jurisdiction	MANF, MFR	Manufacturer
AIC	Amps Interrupting Capacity	MBJ	Main Bonding Jumper
AL	Aluminum	MCA	Minimum Circuit Ampacity
AMSL	Above Mean Sea Level	MCB	Main Circuit Breaker
Arch	Architect/Architectural	MCC	Motor Control Center
ATS	Automatic Transfer Switch	MCP	Motor Circuit Protector
AV, AV	Audio/Visual	MH	Metal-Halide
AWG	American Wire Gauge	MLO	Main Lugs Only
BAS	Building Automation System	MSL	Mean Sea Level
Bldg	Building	N	Neutral
BFG	Below Finished Grade	NEC	National Electrical Code
BKR	Circuit Breaker	NECA	National Electrical Contractors Association
BMS	Building Management System	NEMA	National Electrical Manufacturer's Association
BOD	Basis of Design	NETA	National Electrical Testing Association
C	Conduit	NFPA	National Fire Protection Association
CAI	Controls and Indications	NRTL	Nationally Recognized Testing Laboratory
CB	Circuit Breaker	NTS	Not to Scale
CCT	Correlated Color Temperature	OC	On Center
CGD	Combustible Gas Detector	OC	Overcurrent Protection
CKT	Circuit	PC	Photocell
CMD	Command	PCP	Pump Control Panel
CPT	Control Power Transformer	PCRS	PVC-Coated Rigid Galvanized Steel Conduit
CT	Current Transformer	PM	Preventative Maintenance
CTR	Center	PR	Pair
CTRL	Control	PNL	Panel
CU	Copper	PVC	Polyvinyl Chloride Conduit
D	Deep	PVC40	PVC Schedule 40 Conduit
DEMO	Demolish, Demolition	PVC80	PVC Schedule 80 Conduit
DESC	Description	REC	Receptacle(s)
DHL	Delta High-Leg	REQD	Required
DISC	Disconnect	RGS	Rigid Galvanized Steel Conduit
DIST	Distribution, Distance	RM	Room
EQ	Electrical Contractor	RMC	Rigid Metal Conduit
EG, EGC	Equipment Grounding Conductor	RTU	Remote (or Radio) Telemetry Unit
ELEC	Electric, Electrical	RVAT	Reduced Voltage Autotransformer
ELU	Emergency Lighting Unit	RVSS	Reduced Voltage Solid State System Bonding Jumper
EM	Emergency	SBJ	System Bonding Jumper
EMT	Electrical Metallic Tubing	SBT	Solid Bare Timed Copper Schedule
EPO	Emergency Power-Off	SCADA	Supervisory Control and Data Acquisition
ETM	Elapsed Time Meter	SE	Service Entrance
ETR	Existing-To-Remain	SE	Starting kVA
EV	Electric Vehicle	SIC	Signaling Line Circuit (FA)
EVSE	Electric Vehicle Supply Equipment	SLD	Single-Line Diagram
EX	Existing	SPD	Surge Protective Device
FA	Fire Alarm	SSBJ	Supply-Side Bonding Jumper
FACP	Fire Alarm Control Panel	SST	Shielded Steel
FLA	Full-Load Amps	STP	Shielded Twisted Pair
FLR	Floor	TELECOM	Telecommunications Equipment
FMC	Flexible Metal Conduit	TYP	Typical
FN	Function	UL	Underwriters Laboratories
FVNR	Full-Voltage Non-Reversing	UNO	Unless Noted Otherwise
GC	General Contractor	UPS	Uninterruptible Power Supply
GEC	Grounding Electrode Conductor	UTP	Unshielded Twisted Pair
GEN	Generator	V	Volts, Voltage
GF, GFCL	Ground-Fault Protection for Equipment	VA	Volt-Amperes
GFPE	Ground-Fault Protection for Equipment	VFD	Variable Frequency Drive
GND	Ground, Grounding	W	Watt, Wire
GRS	Galvanized Rigid Steel (Conduit)	WP	Weatherproof
H	High	WWTB	Wet Well Terminal Box
HOA	Hand-Off-Automatic (Switch)	XFMR	Transformer
HP	Horsepower		
ID	Identification, Identity		
IG	Isolated Ground		
IMC	Intermediate Metal Conduit		
IO	Input/Output		
JB	Junction Box		
K	Kelvin		

Linetype Legend

UNO, the linetypes below apply to electrical elements within electrical drawings and diagrams. See architectural drawings for background linetypes, including for walls, furniture, casework, etc.

————— Solid Lines: New
 - - - - - Dashed Lines: Existing-to-Remain
 ········· Dotted Lines: Demolish

General Electrical Notes and Specifications

- See book specifications, Division 26, for additional requirements.
- UNO, all single-pole 15A and 20A circuits shall be 2-12 AWG, 12 AWG EGC, 3/4" C, circled per panel schedule.

Design Intent and Project Notes

- The project site is an existing wastewater treatment plant influent pump station. The purpose of the project is to:
 - Add a new rake screen.
 - Replace an existing wet well supply fan.
 - Add a new wet well exhaust fan.
- The Owner has contracted directly with the rake screen vendor and is furnishing the screen and its associated components, including the screen, control panel, level control panel, local controller, level sensors, and associated instrumentation. The Contractor's responsibility is to install the Owner-furnished equipment according to the design documents and screen manufacturer instructions.
- The existing wet well supply fan is being replaced and a new exhaust fan is being added.
- In order to accommodate the new load and circuits, a new 480V panel is being added.
- Areas surrounding wastewater treatment, collection, and pumping equipment contain hazardous classified areas according to NEC 501 and NFPA 820. These areas are defined and described within the design documents.
- The intent of the wet well ventilation is not to reduce the hazard classification of the space. Therefore, ventilation monitoring, hazardous gas detection, and alarms required by NFPA 820 are not provided.
- Full station outages are expected to be required to perform control panel work. The Contractor must coordinate outages with the Owner with minimum two weeks advance notice. The outages may need to occur overnight during low flow periods.

Distribution and SLD

- Design assumes an available fault current of not exceeding 35,000 amps. Prior to submitting shop drawings, contact the electric utility company and obtain in writing the maximum available fault current at the utility service point. Submit this documentation to the engineer along with equipment submittal. Provide max AFC signage as required per NEC 110.24 and 409.22.
- Design assumes existing equipment is suitable for the existing available fault current.
- Provide arc-flash hazard warning labels for equipment affected by this project per NEC 110.16.
- UNO, series combination ratings shall not be acceptable.

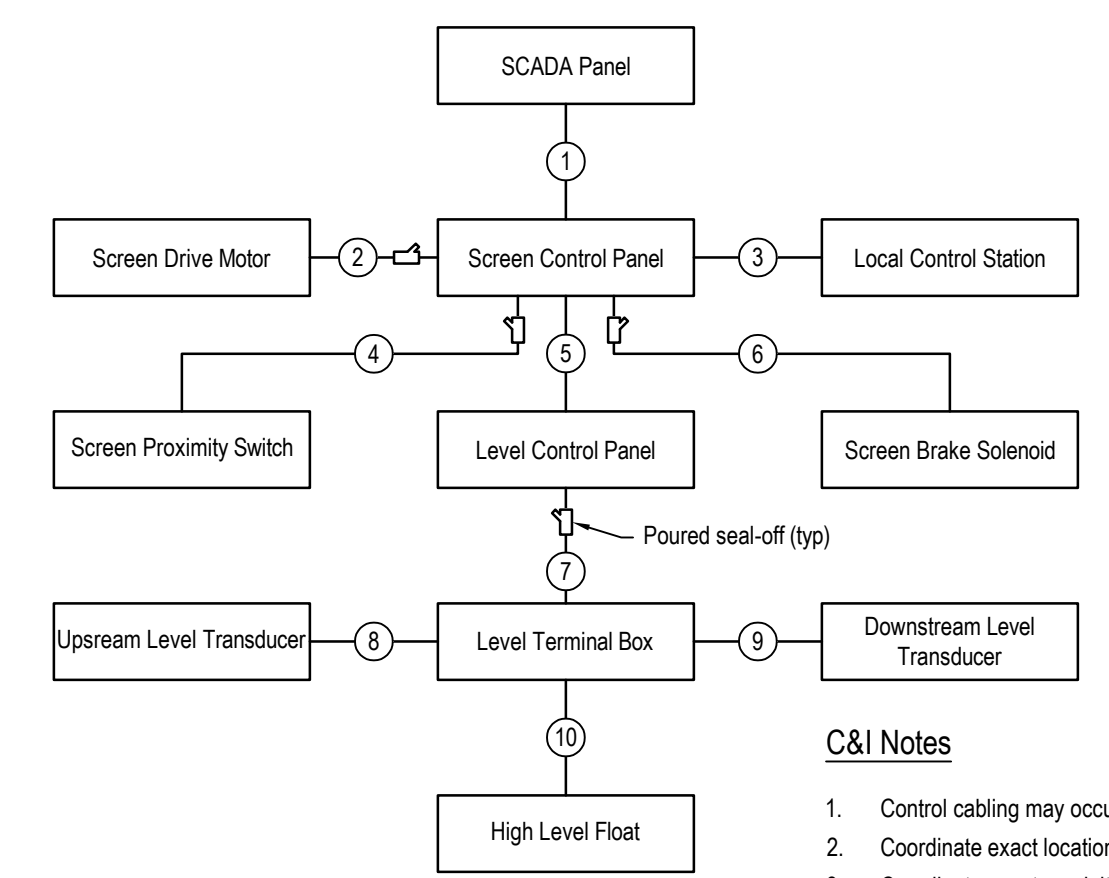
Electrical Sheet List

E1 Electrical Notes, Single-Line, and Schedules
 E2 Electrical Plan
 E3 Electrical Details

These electrical plans comprise a portion of the plans and specifications pertinent to this project. Refer to the full set of plans and specifications for all requirements.

C&I I/O List

ID	Description	Wire/Cable	Signal Type
A	Screen Motor Overtemp	2-14 AWG	Discrete
B	Brake Solenoid Overtemp	2-14 AWG	Discrete
C	Local Control Station	7-14 AWG	Misc
D	Upstream Level Transducer	Mfr Cable 18/2 STP	4-20 mA
E	Downstream Level Transducer	Mfr Cable 18/2 STP	4-20 mA
F	Level Start Diff	2-14 AWG	Discrete
G	Level High Diff	2-14 AWG	Discrete
H	High Level	2-14 AWG	Discrete
I	Screen Running	2-14 AWG	Discrete
J	Screen Fault	2-14 AWG	Discrete
K	Screen High Level	2-14 AWG	Discrete
L	Screen In Auto	2-14 AWG	Discrete
M	Screen Proximity Switch	2-14 AWG	Discrete
N	High Level Float	Mfr Cable 2-14 AWG	Discrete

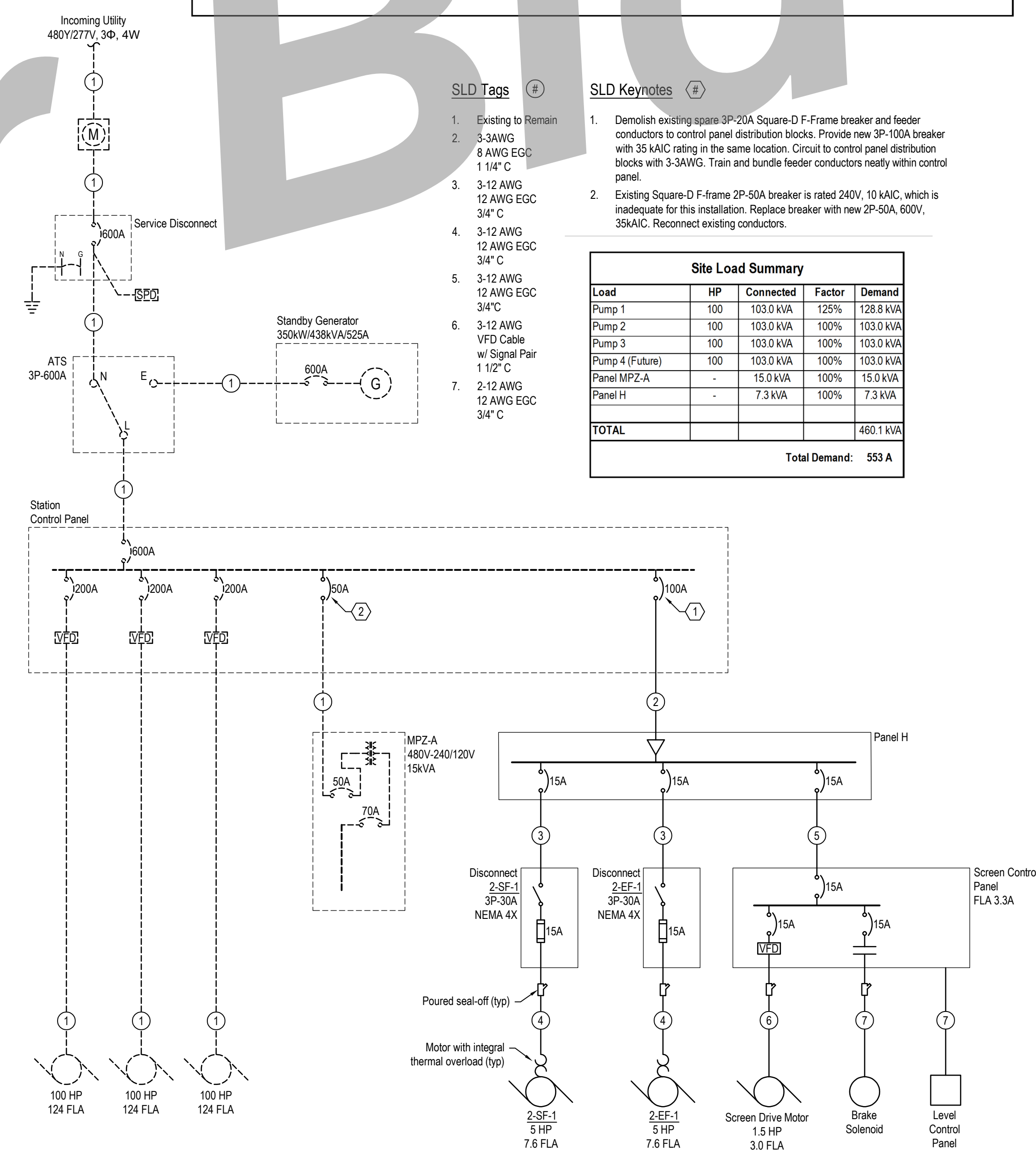


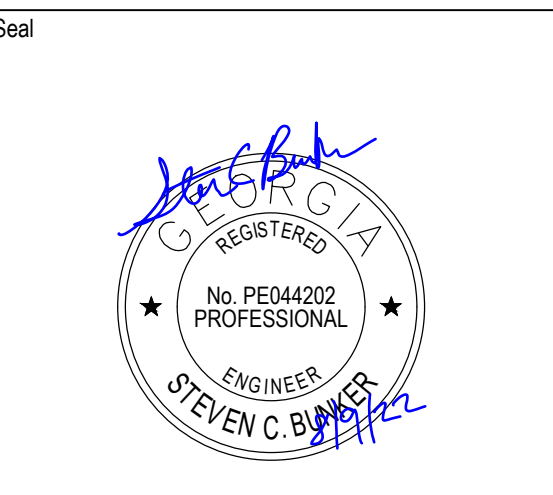
C&I Notes

- Control cabling may occupy the same conduit with functionally related power conductors per NEC 725.48(B)(1).
- Coordinate exact locations of each device and instrument in the field.
- Coordinate exact conduit routing in the field.
- Provide 1-12 AWG ground wire within each C&I conduit (in addition to the wires/cables indicated). Terminate each on equipment or device's ground terminal.
- For each conduit which contains more than one signal, provide 4-14 AWG spare conductors. If the conduit also includes one or more analog signals, provide one spare 18/2 STP. Provide 18" slack at each end; coil and place in bottom of box.
- Provide wire labels at each termination.
- Neatly bundle and train conductors within each enclosure.
- The Owner will provide the services of a system integrator for work within and involving the SCADA panel. Coordinate requirements with the system integrator.

C&I Diagram Tags

Tag	I/O	Wire/Cable	Min Conduit
1	I,J,K,L	8-14 AWG	1"
2	A	2-14 AWG in VFD Cable	With Power See SLD
3	C	7-14 AWG	1"
4	M	2-14 AWG	1"
5	F,G,H,N	8-14 AWG	1"
6	B	2-14 AWG	With Power See SLD
7	D,E,N	2-18/2 STP 2-14 AWG	1 1/4"
8	E	Mfr Cable	1"
9	D	Mfr Cable	1"
10	N	Mfr Cable	1"





Client Project Number: 2021-136PRJ

Project
**West Plant Influent
 Pump Station
 Screen**

205 Barber Industrial Court
 Villa Rica, GA 30180
 Axia Project Number: 2115

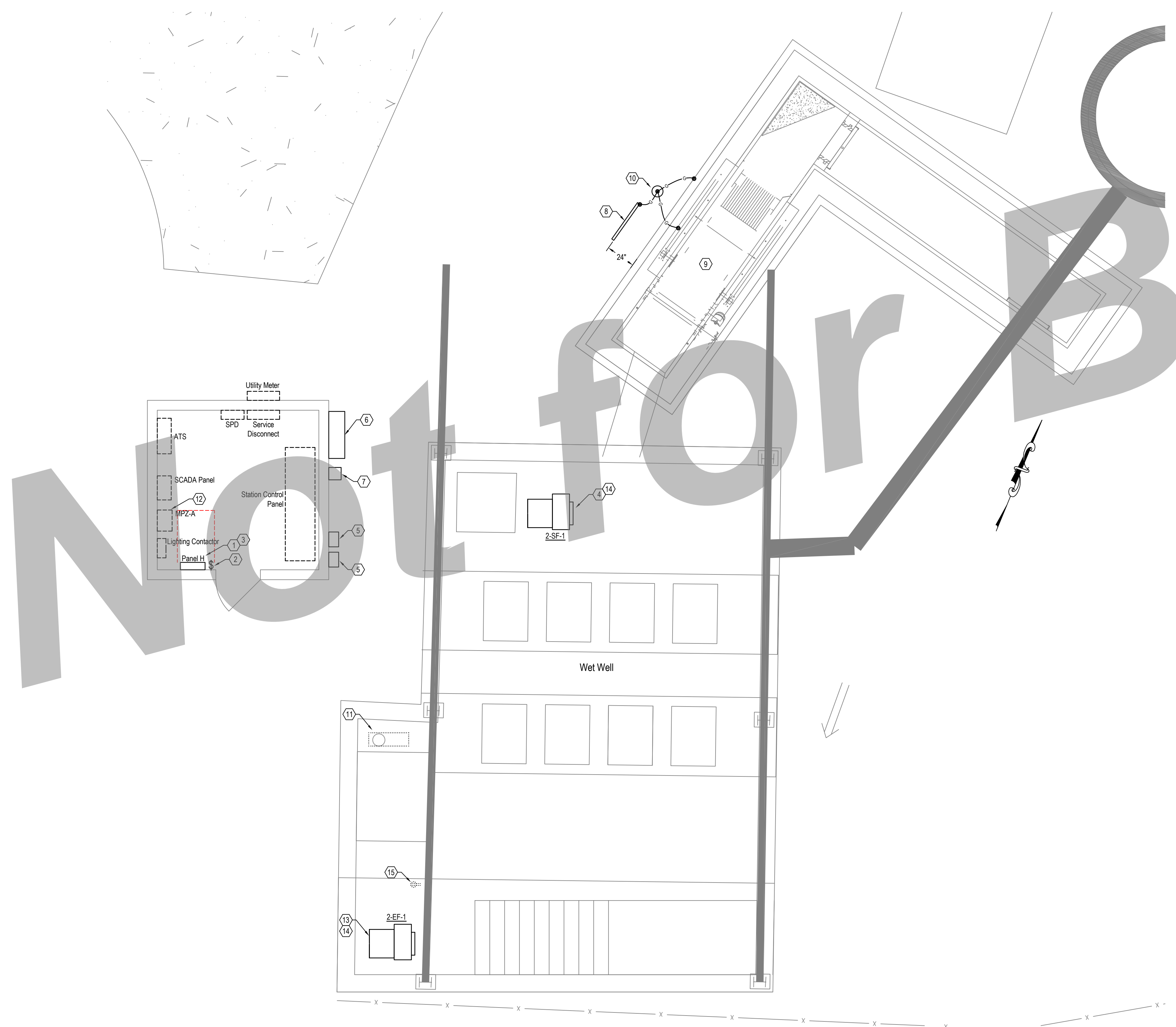
Revisions	Description	Date

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Issue Date
9 August 2022

Sheet Title
Electrical Plan

Sheet Number
E2



Keynotes #

- Existing lighting timeclock is in this approximate location, with one 3/4" conduit to the lighting contactor. Relocate timeclock to immediately above lighting contactor to provide space for Panel H. Provide new conduit and re-route existing conductors and reconnect as required.
- Lighting switch for two strip fixtures within the control building. Demolish existing flush-mounted switch and associated wire to provide space for new Panel H. Abandon flush box in wall behind new panel. Provide new light switch in surface-mounted box, with surface-mounted conduit to lighting fixture. Locate switch close to the door frame to avoid new Panel H location.
- Locate new Panel H to provide required working clearance.
- Demolish existing blower 2-SF-1 and associated starter and electrical rack. Demolish power and controls conductors to their sources in panel MPZ-A and the SCADA panel. Cut controls conduit flush with concrete and fill with grout. Locate and intercept existing underground power conduit to the control building and re-route to new starter location. Connect to new blower motor as required. Where existing underground conduit is not usable, provide new conduit.
- Provide new blower 2-SF-1 manual starter. See SLD.
- Install new Screen Control Panel, furnished by Owner. See SLD, C&I Diagram, and Mfr installation instructions.
- Install new Level Control Panel, furnished by Owner. See C&I Diagram, and Mfr installation instructions.
- Screen control electrical rack. See Screen Control Rack Layout detail.
- Rake screen. Connect all power and instrumentation according to the SLD, C&I Diagram, and Mfr instructions. Coordinate exact locations of each connection.
- Provide ground rod. Bond equipment rack, rake screen, and concrete encased rebar within channel structure to ground rod with 2 AWG SBT Cu.
- Existing combustible gas detector equipment consisting of transducers entering well, an indicator/transmitter, an enclosure, and rack. Power is circuitized from MPZ-A. Control conductors are routed to the SCADA panel. Demolish all per specifications. Seal well and concrete penetrations flush with grout.
- Within MPZ-A turn off breaker formerly feeding 2-SF-1 as spare. Circuit new receptacle at screen to 20A breaker. Provide new circuit breaker if required. Provide new typed circuit directory incorporating existing directory and modifications.
- Connect exhaust fan 2-EF-1 as required. See SLD.
- Verify existing electrical equipment nearby to the ventilation equipment within the hazardous areas (see hazardous location details) comply with NEC 501. Pull, junction, and terminal boxes without switches, breakers, or other arcing components are allowed within Division 2 areas. Standard receptacles and toggle switches are not allowed within Division 1 areas unless it is rated for the location. No box or equipment of any kind is allowed within Division 1 areas unless it is rated for the location.
- Demolish existing receptacle on vertical member of bridge crane within the hazardous location surrounding the exhaust fan. If the receptacle is at the end of a circuit, demolish conductors to next upstream junction and cap conduit. If circuit feeds through to other devices, replace receptacle box with explosionproof box and provide a poured seal-off on conduit to electrical building.

1 Electrical Site Plan
 1/4" = 1'



Client Project Number: 2021-136PRU

West Plant Influent Pump Station Screen

205 Barber Industrial Court
 Villa Rica, GA 30180
 Axia Project Number: 2115

Revisions	Description	Date
1		

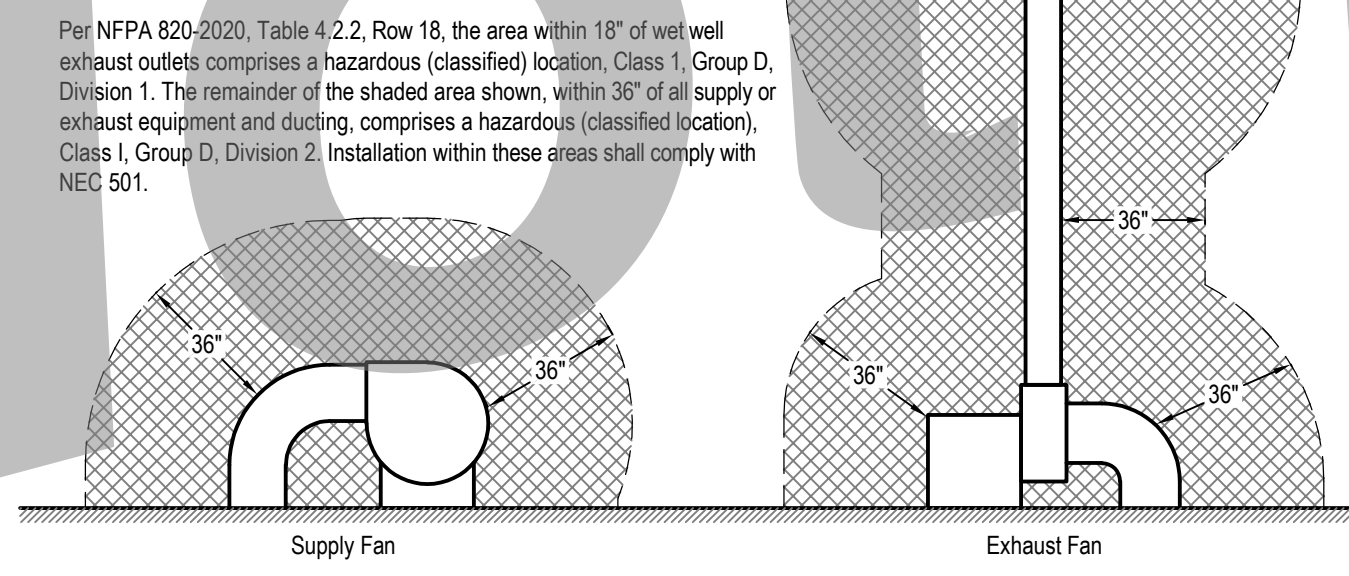
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Issue Date: 9 August 2022

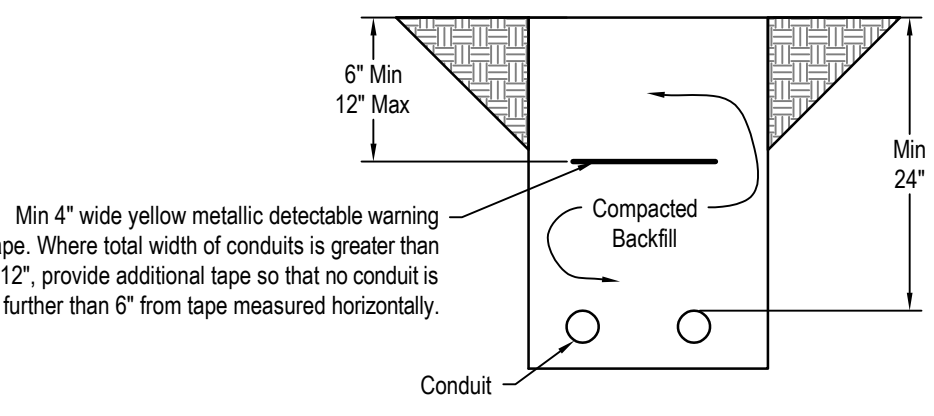
Sheet Title: Electrical Details

Sheet Number: E3

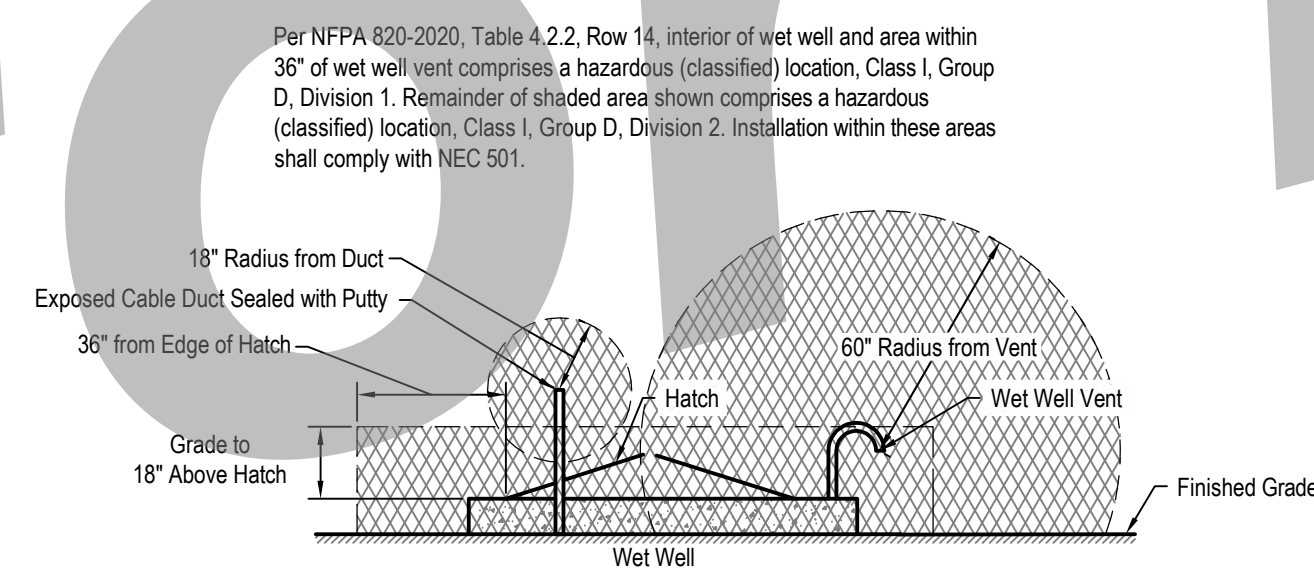
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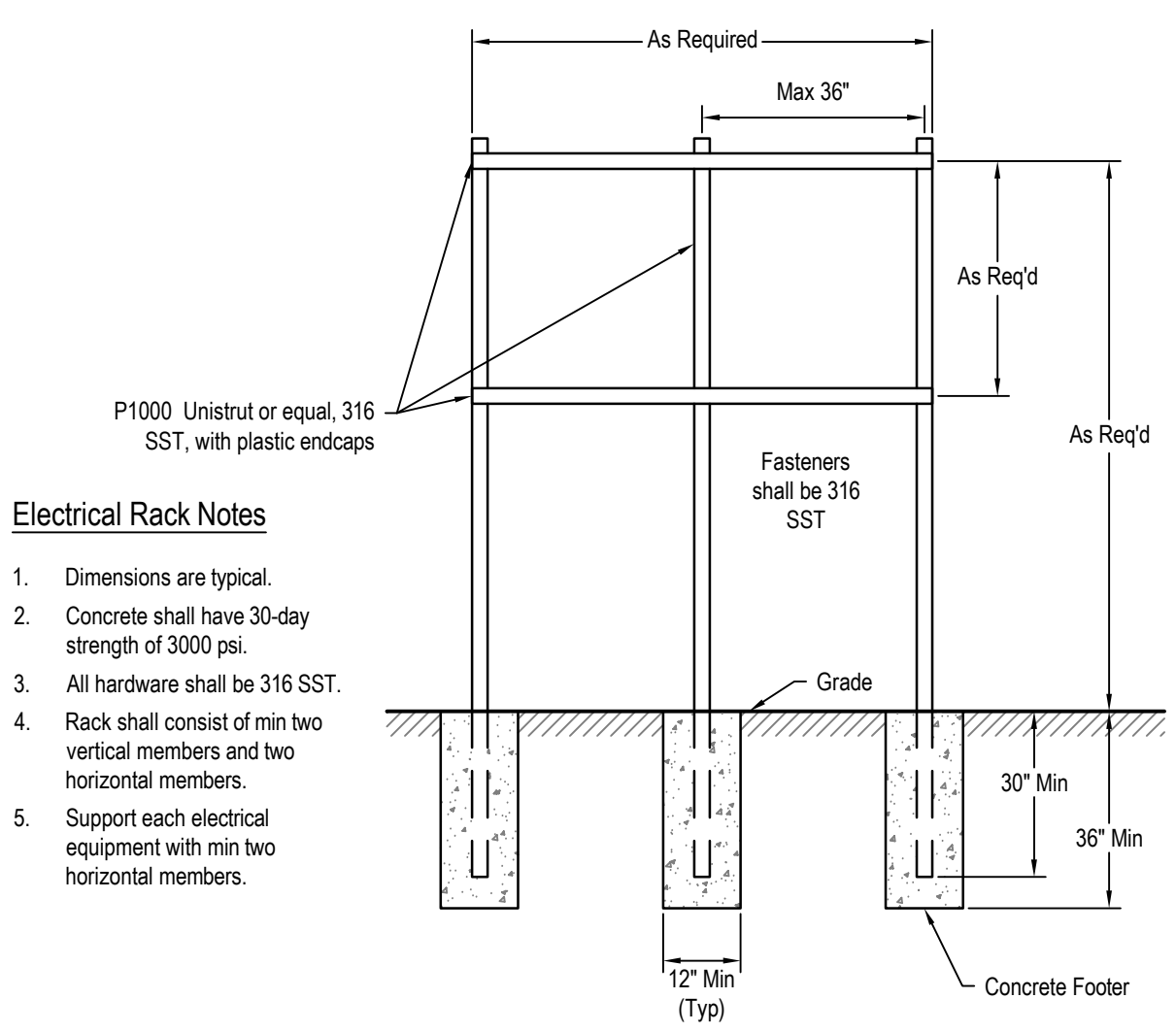
5 Hazardous Locations - Ventilation Equipment
 NTS



3 Conduit Trench
 NTS



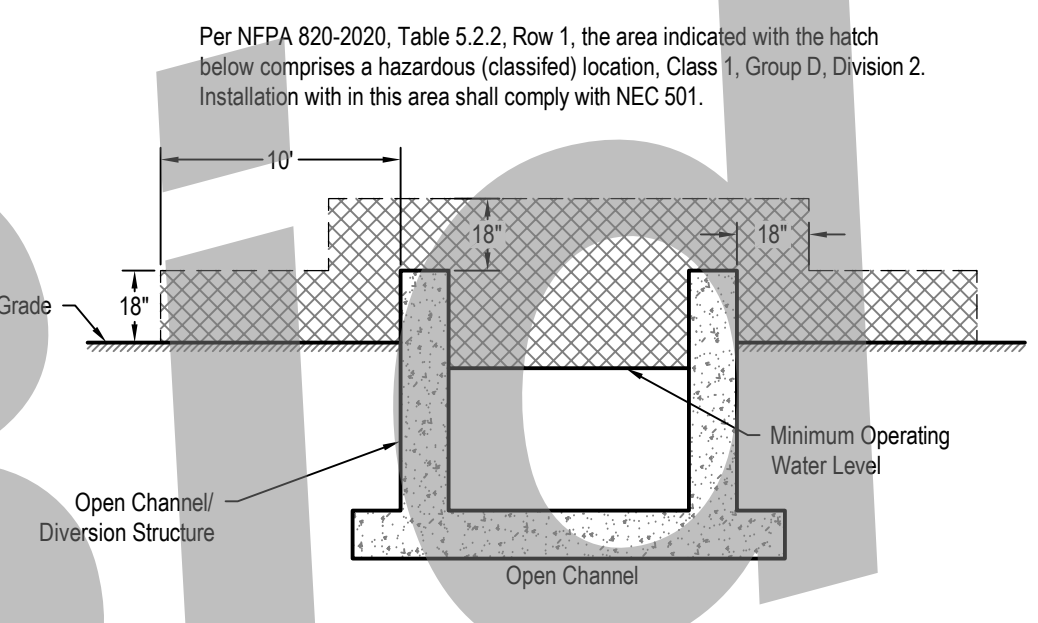
6 Hazardous Locations - Wet Well
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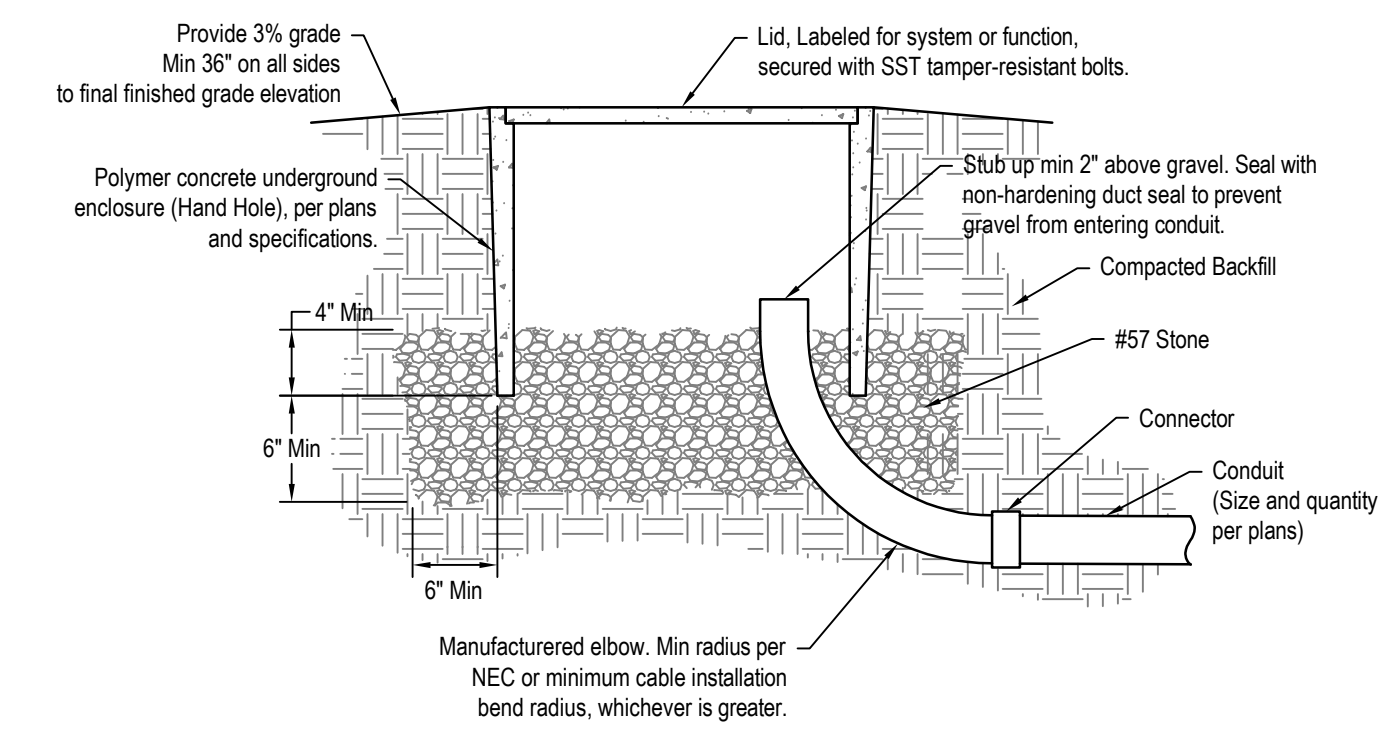
Electrical Rack Notes

- Dimensions are typical.
- Concrete shall have 30-day strength of 3000 psi.
- All hardware shall be 316 SST.
- Rack shall consist of min two vertical members and two horizontal members.
- Support each electrical equipment with min two horizontal members.

2 Electrical Equipment Rack
 NTS



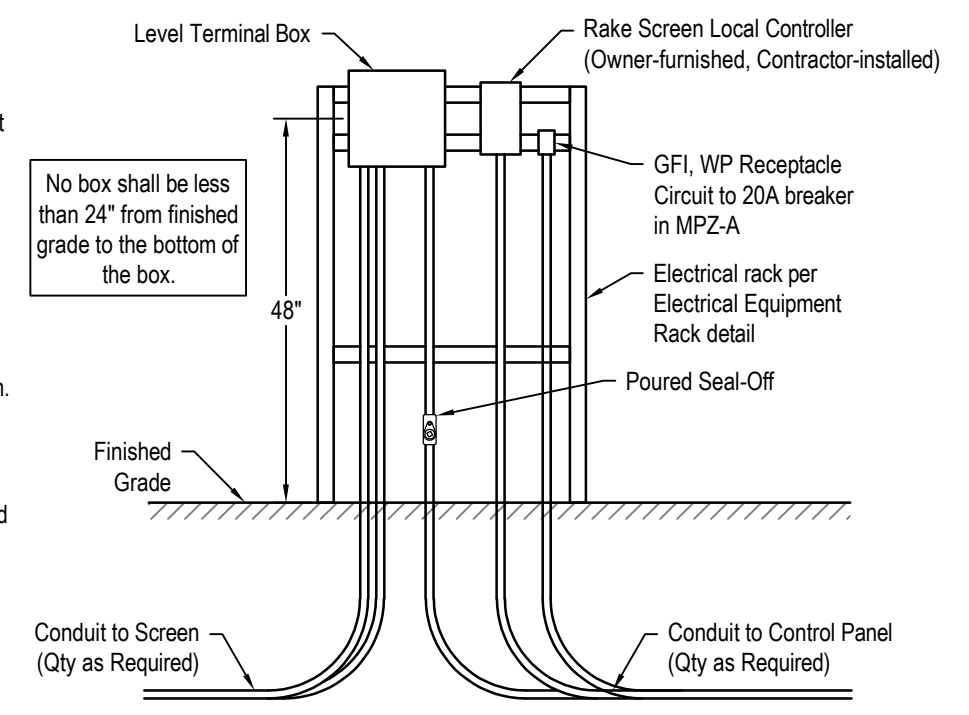
7 Hazardous Locations - Open Channel
 NTS



4 Hand Hole
 NTS

Level Terminal Box Notes

- Provide level terminal box with terminals to transition from manufacturer-provided integral cables for level sensors and floats to permanent wiring.
- Box shall be NEMA 4X SST, side-hinged with quarter-turn latches. Size as required for terminals and wire space.
- Terminals shall be finger-safe and shall be identified as corrosion resistant.
- Conduit sizes, quantity, and fill per C&I Diagram.
- Neatly train and securely tie all permanent conductors to back of box.
- Tightly seal conduit entry from level sensors and floats with non-hardening duct seal.



1 Screen Control Rack Layout
 NTS