

HODGEVILLE LIFT STATION #4 IMPROVEMENTS

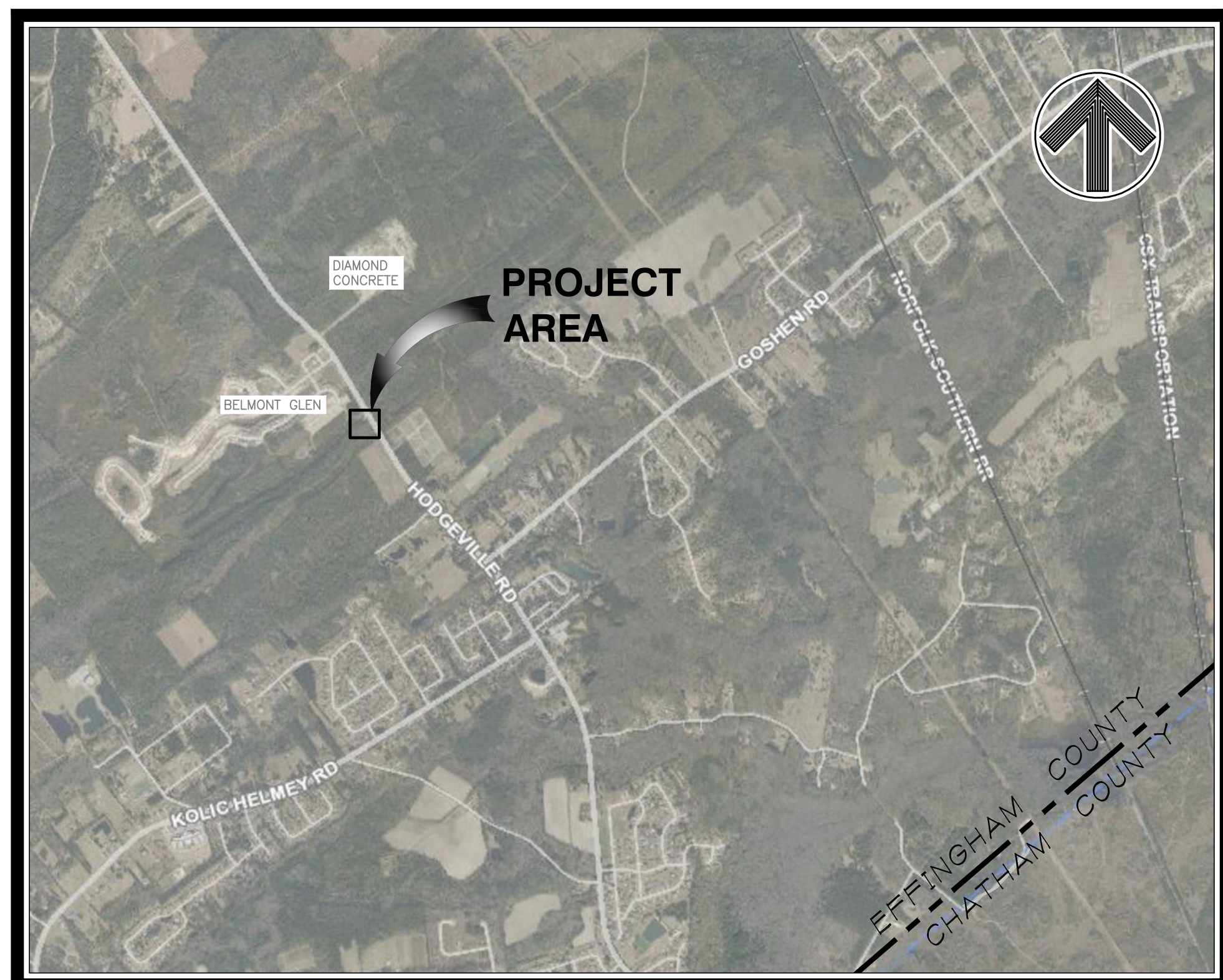
FOR THE EFFINGHAM COUNTY BOARD OF COMMISSIONERS

COUNTY MANAGER
TIM CALLANAN

COMMISSION

WESLEY CORBITT - CHAIRMAN AT LARGE
FORREST FLOYD - DISTRICT 1
ROGER BURDETTE - DISTRICT 2
JAMIE DELOACH - DISTRICT 3
REGGIE LOPER - DISTRICT 4
PHIL KIEFFER - DISTRICT 5

APRIL 2022



VICINITY MAP
SCALE: 1"=2000'



HUSSEY GAY BELL

Established 1958

329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626
SAVANNAH • ATLANTA • STATESBORO • CHARLESTON • COLUMBIA • NASHVILLE
www.husseygaybell.com

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05	SITE GRADING PLAN
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SCHEDULE OF DRAWINGS

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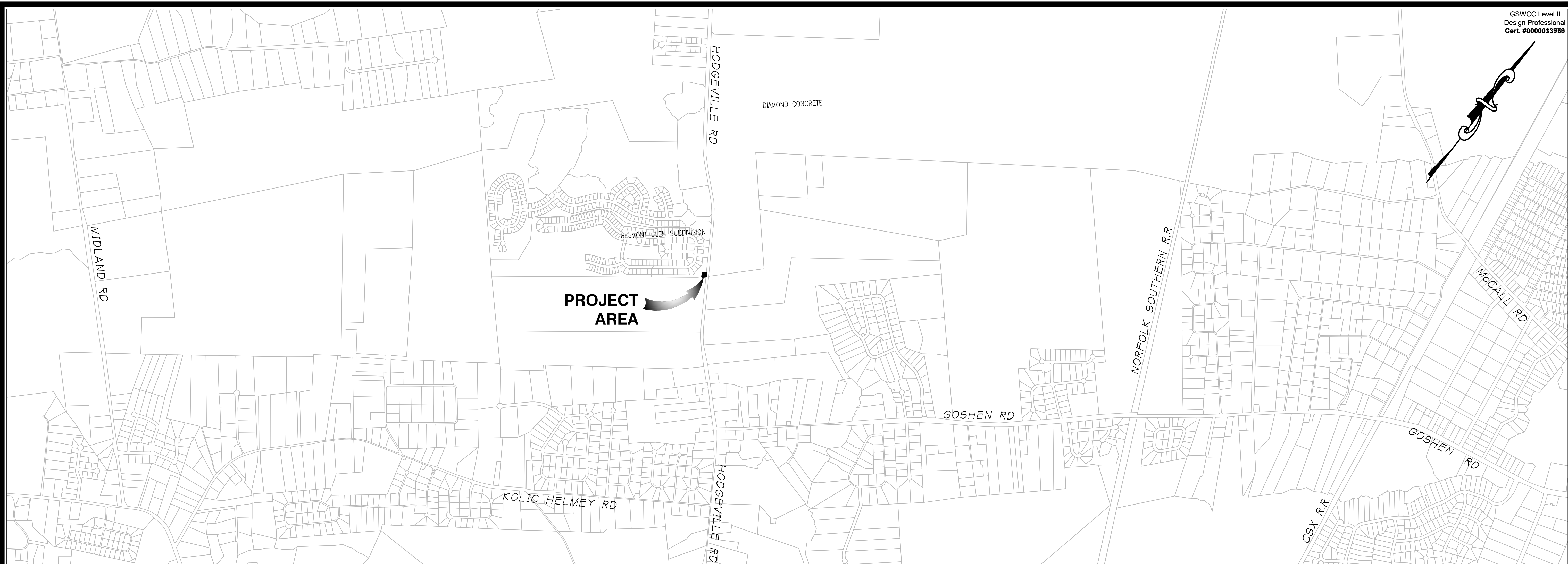
HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

REVISIONS:

DESIGNED JLO/JCB	DRAWN SKK	CHECKED JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
PROJECT MAP, LEGEND & GENERAL NOTES

DRAWING NUMBER
02
02 OF 16



PLAN
SCALE: 1" = 1000'

LEGEND

EXISTING	PROPOSED	EXISTING	PROPOSED
	GAS METER		IE 51.80
	MAILBOX		53.8
	TELEPHONE PEDESTAL		A-3
	LIGHT POLE		SOIL BORING
	SPOT LIGHT		REMOVE AND REPLACE EXISTING PAVEMENT AND BASE COURSE
	YARD LIGHT		ASPHALT PAVEMENT
	WATER VALVE INSIDE MANHOLE		CONCRETE
	ELECTRIC MANHOLE		GRAVEL
	POWER POLE		DITCH CENTERLINE
	TELEPHONE POLE		CHECK DAM-STONE
	TRAFFIC SIGN		TEMPORARY SEDIMENT BARRIER
	RIGHT OF WAY		TEMPORARY GRASSING
	RIGHT OF WAY MARKER		PERMANENT GRASSING
	DRAINAGE INLET		SILT FENCE
	BENCHMARK		Sd1-A 4'
	FENCE		Sd1-B 3'
	FIRE HYDRANT W/VALVE		Sd1-C 4' Single Row
	WATER LINE		Sd1-C 4' Double Row
	UNDERGROUND ELECTRIC		LOT BOUNDARY LINE
	UNDERGROUND GAS LINE		ROAD CENTERLINE
	UNDERGROUND TELEPHONE LINE		WETLANDS
	SANITARY SEWER LINE		
	STORM DRAIN LINE		
	MANHOLE		
	FORCE MAIN		
	GATE VALVE OR BUTTERFLY VALVE IN BOX		
	WATER METER		
	OVERHEAD POWER LINE		
	OVERHEAD TELEPHONE LINE		
	FIBER OPTIC CABLE		
	CURB AND GUTTER		
	IRON PIN		
	CORRUGATED METAL PIPE		
	REINFORCED CONCRETE PIPE		

GENERAL NOTES

- It is the requirement of the contractor to make his own interpretation of all surface and subsurface data that is presented as to the nature and extent of the materials to be excavated, graded and compacted. The information shown on these plans and within the specifications does not in any way guarantee the amount or the nature of the material which may be encountered.
- The contractor shall notify the engineer of any conflict with existing utilities not shown on these plans prior to laying any pipe.
- All property/right-of-way lines are approximate, unless monument or pin locations are shown.
- All property monuments and R/W monuments that are disturbed or damaged shall be replaced by a licensed surveyor. Concrete monument markers shall be a minimum 4" x 4" x 2'6".
- All signs, mailboxes, fences, posts, sheds, stored items, etc., moved to perform the work shall be replaced or moved back to the original location and any damage caused by removal and replacement shall be repaired so as to place the item in a condition equal to or better than existing at the start of the work.
- The contractor shall provide a legible set of as-built marked prints to the engineer for approval, prior to final payment, showing in detail all changes from the design drawings. The locations of all service lines shall be shown with dimensions to permanent structures or manholes.
- All work shall be performed in a manner as to permit traffic to operate with the least amount of inconvenience possible. For designated roads, at least one travel lane must remain open at all times. All traffic control devices, signs, striping, and flagging shall be furnished by the contractor.
- All existing driveways will be provided ingress/egress, except during prescheduled construction activities. The contractor must notify all property owners in advance of driveway closings.
- The contractor shall not leave drainage ditches blocked, except for a brief time during actual installation of pipe. Provide temporary bypass drainage as required to have properly functioning drainage at all other times. Regrade all ditches disturbed by installation of pipe.
- Remove and replace driveways and driveway culverts as necessary for pipe installation, unless otherwise noted on drawings.
- The contractor shall temporarily support all driveway culverts during installation of pipe or if necessary remove and replace culverts that are damaged during the pipe installation. Any CMP/CP culverts disturbed or damaged shall be replaced with RCP culverts.
- All ditch banks, existing grass shoulders, and other areas that are disturbed shall be reseeded.
- All items which are to be removed and are not shown to be reused shall become the property of the contractor and shall be removed from the site. The contractor shall be responsible for the proper final disposal of such material.
- The contractor is required to contact all utility companies and have utilities located before work begins. It is the contractor's responsibility to protect all utilities. Any damage to utilities shall be repaired at the expense of the contractor. If trench of pipe is within 5ft. of power poles, contractor must notify power company and take all precautions as required by power company Backfilling and compaction required the same day as excavation occurs.
- It is the contractor's responsibility to coordinate with utility company for any guy wire relocation or temporary utility line disconnections. All fees by utility company for conducting these services shall be paid by the contractor.
- The contractor shall pay special attention to any underground telephone fiber optic cables, and the underground gas mains and the overhead power cables. The contractor must comply with the requirements of the High Voltage Act of Georgia. The contractor shall take every precaution necessary for safety purposes. In areas where construction activities require such, the contractor shall have utility company wrap lines, support poles, etc. The contractor shall pay all fees to the utility company for their work.
- Required shutdown of utility lines and valve and hydrant operation shall be coordinated with Effingham County. All requests for disruption shall be made on minimum by 9:00AM the working day prior to the scheduled interruption.
- Information and locations of buildings, sheds, fences, walls, shrubs, etc. are approximate. Any damage to items not shown to be removed shall be repaired at the contractor's expense.
- Any significant field change to the water main location to provide improved clearances are subject to the engineer's approval.
- The engineer shall approve any dewatering plan prior to its implementation.
- The contractor shall schedule and accomplish the work so as to avoid damage to private property and to minimize any inconvenience to property owners, business and their customers.
- Lines shall be deflected to avoid trees where possible.
- Minimum cover over onsite piping shall be 3-feet, unless otherwise shown on drawings.
- Where work crosses un-paved driveways, subgrades shall be compacted to DOT Standards and these drives shall be restored from the highway pavement to the property line with a minimum of 4-inches of #57 or #67 compacted stone maintained throughout the contract period. The width of the restored drive shall match the width of the drive as it existed prior to its disturbance.
- Where work crossed paved driveways, the concrete or asphalt shall be removed, subgrades and base material shall be compacted to DOT Standards. Driveways shall be replaced, as indicated on drawings, with material like that removed. The width shall match the existing width of driveway pavement that was removed.
- Where work crosses paved roads, base course and pavement material shall be restored to its original condition in accordance with the Georgia DOT requirements for pavement and the details herein.
- Where road side culverts are to be removed and replaced, the following will be required: The existing pipe shall be removed and disposed of by the Contractor. The culverts shall be replaced with pipe of the same diameter as that which was removed; except pipe with diameters smaller than 18-inches shall be replaced with 18-inch diameter pipe, unless otherwise noted. The new pipe shall be gasketed reinforced concrete pipe(RCP) and each joint shall be double wrapped with filter fabric in accordance with the Effingham County road requirements.
- All fittings shall be ductile iron, mechanical joint, compact type, conforming to ANSI/AWWA C153/A21.53, latest revision, except plug, conforming to ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11, latest revision.
- Restrained Joints(RJ) shall be mechanical joints with ductile iron retainer glands equivalent to Ford 1390 series, EBBA MEGALUG series 1100, EBBA series 2000 PV for PVC pipe or push-on joints equivalent to "Lock Ring", TR-Flex, Super Lock or "Field Lock."
- Mylar marking tape shall be 2-inches wide, of blue color and have imprinted on the tape "Caution - Water Main Below". The tape shall be a printed warning tape encased in mylar. Mylar tape to be installed 18-inches below grade.
- A County ROW permit will be required for any work done in the Right-of-Way.
- If a lane of the road needs to be closed or is going to be affected during construction, the contractor must submit a traffic control plan to the County as part of their Right-of-Way Permit. This plan needs to be approved by the County and needs to be MUTCD guidelines.

DATUM:
NAD 1983 HORIZONTAL
NAVD 1988 VERTICAL

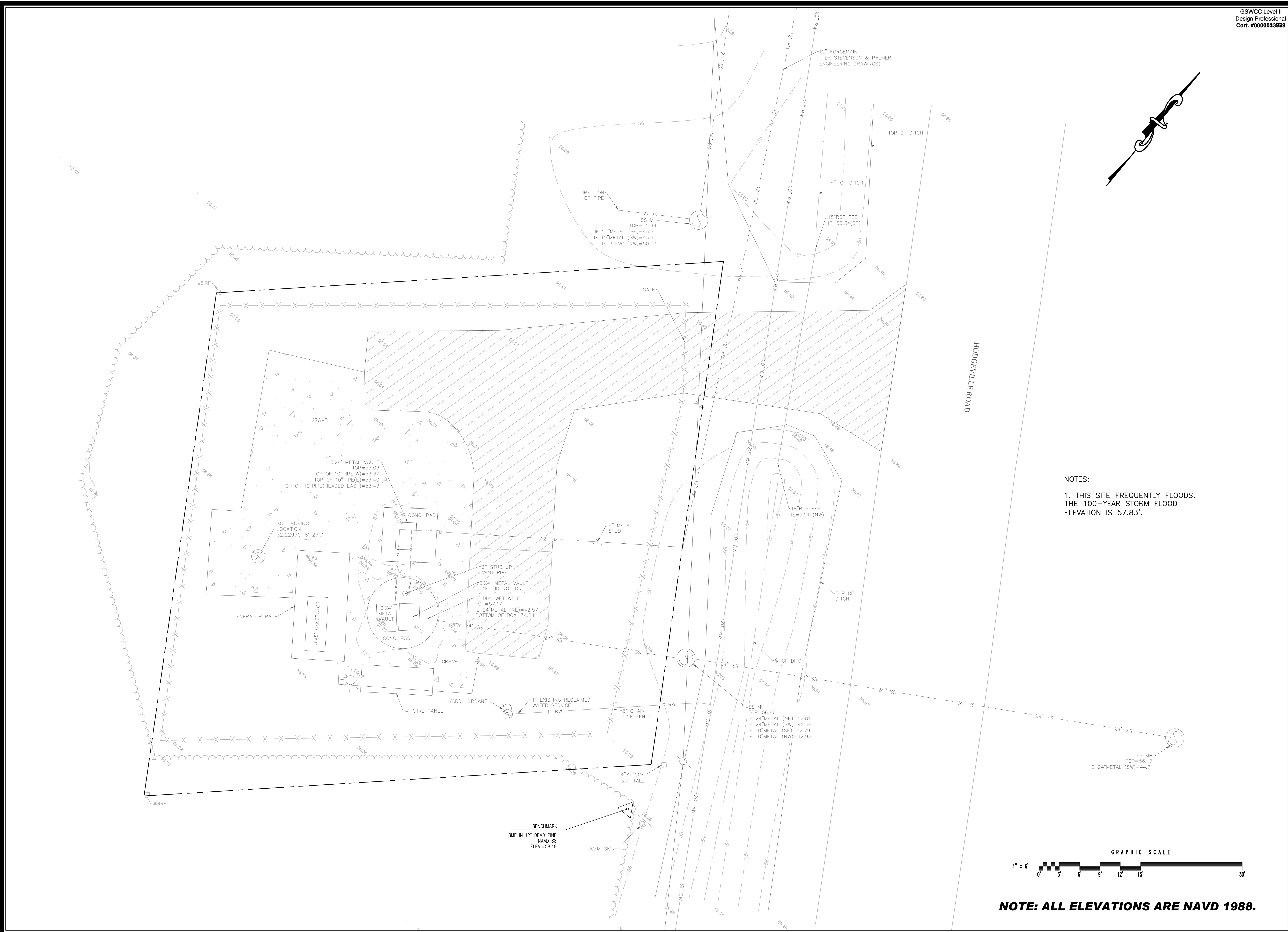
REVISIONS:

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

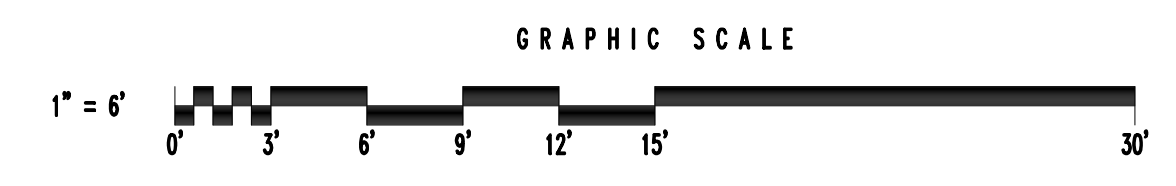
#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
EXISTING SITE PLAN

DRAWING NUMBER
03
03 OF 16

December 14, 2019 - 8:59 AM Printed By: jhargrove
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NOTES:
1. THIS SITE FREQUENTLY FLOODS.
THE 100-YEAR STORM FLOOD
ELEVATION IS 57.83'.



NOTE: ALL ELEVATIONS ARE NAVD 1988.

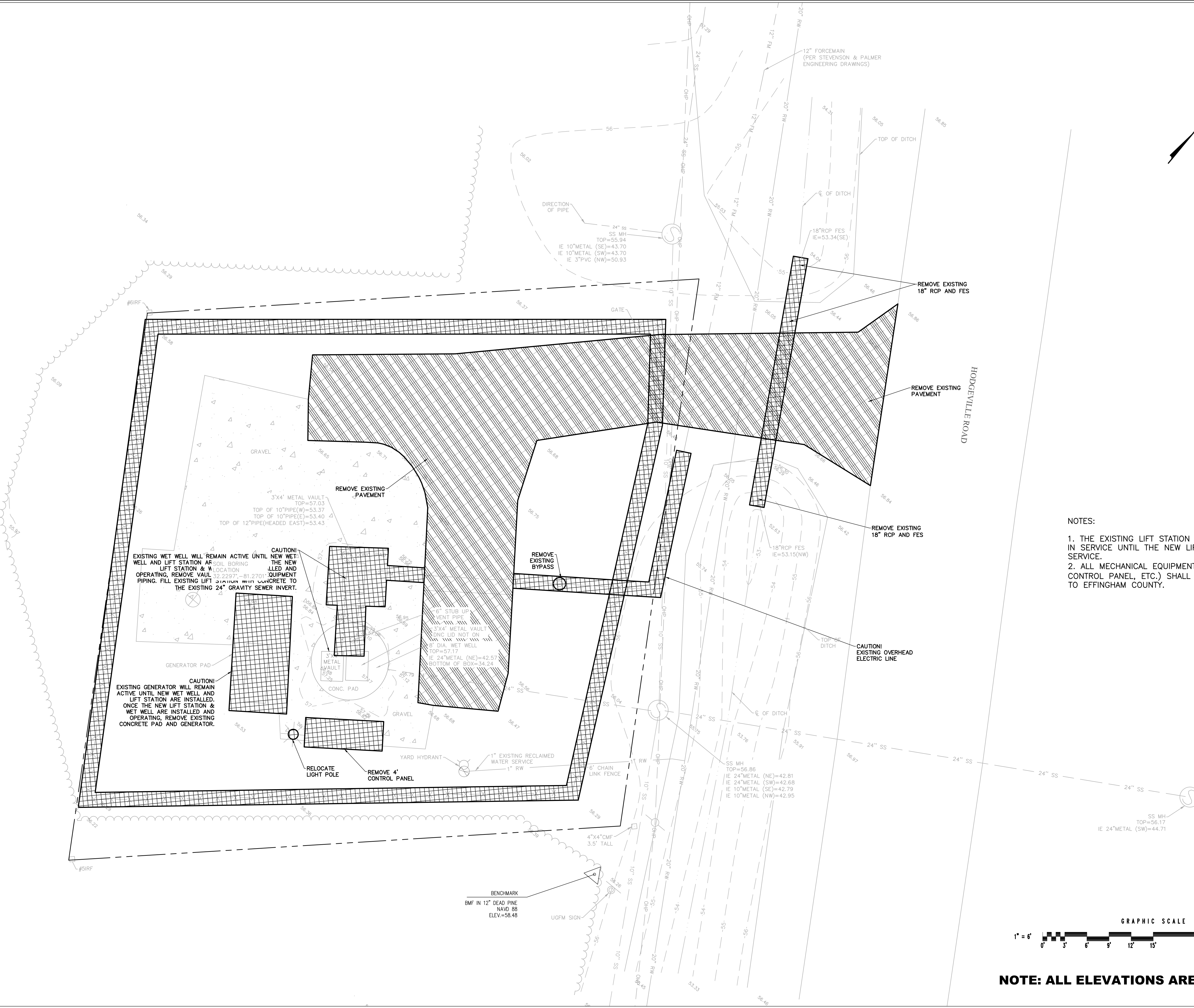
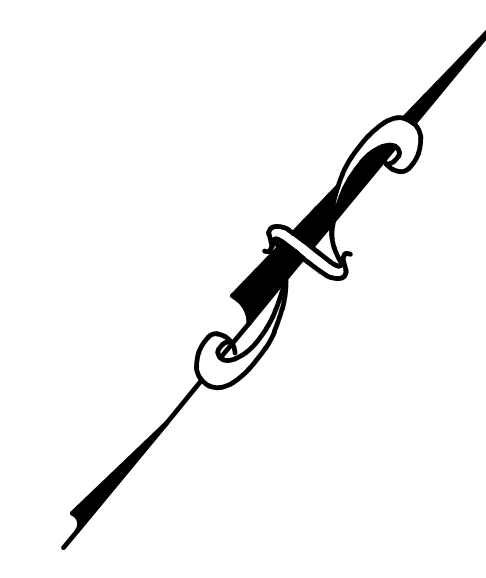
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DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

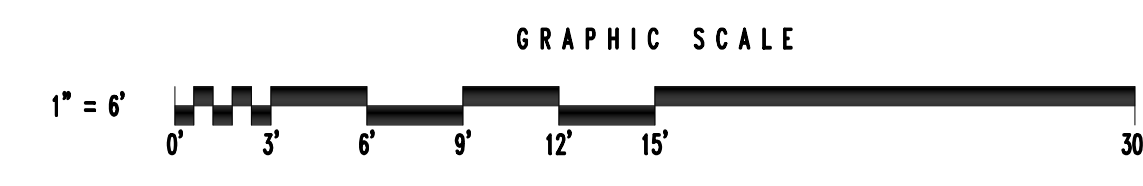
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HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
DEMOLITION PLAN

DRAWING NUMBER
04
04 16

December 14, 2018 - 8:56 AM Printed By: skendryna
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- NOTES:
1. THE EXISTING LIFT STATION MUST REMAIN IN SERVICE UNTIL THE NEW LIFT STATION IS IN SERVICE.
 2. ALL MECHANICAL EQUIPMENT (PUMPS, CONTROL PANEL, ETC.) SHALL BE DELIVERED TO EFFINGHAM COUNTY.



NOTE: ALL ELEVATIONS ARE NAVD 1988.

REVISIONS:

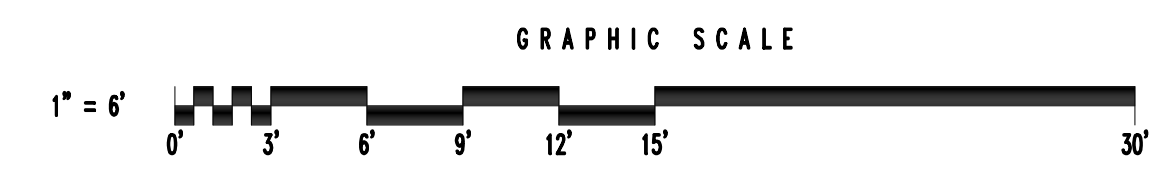
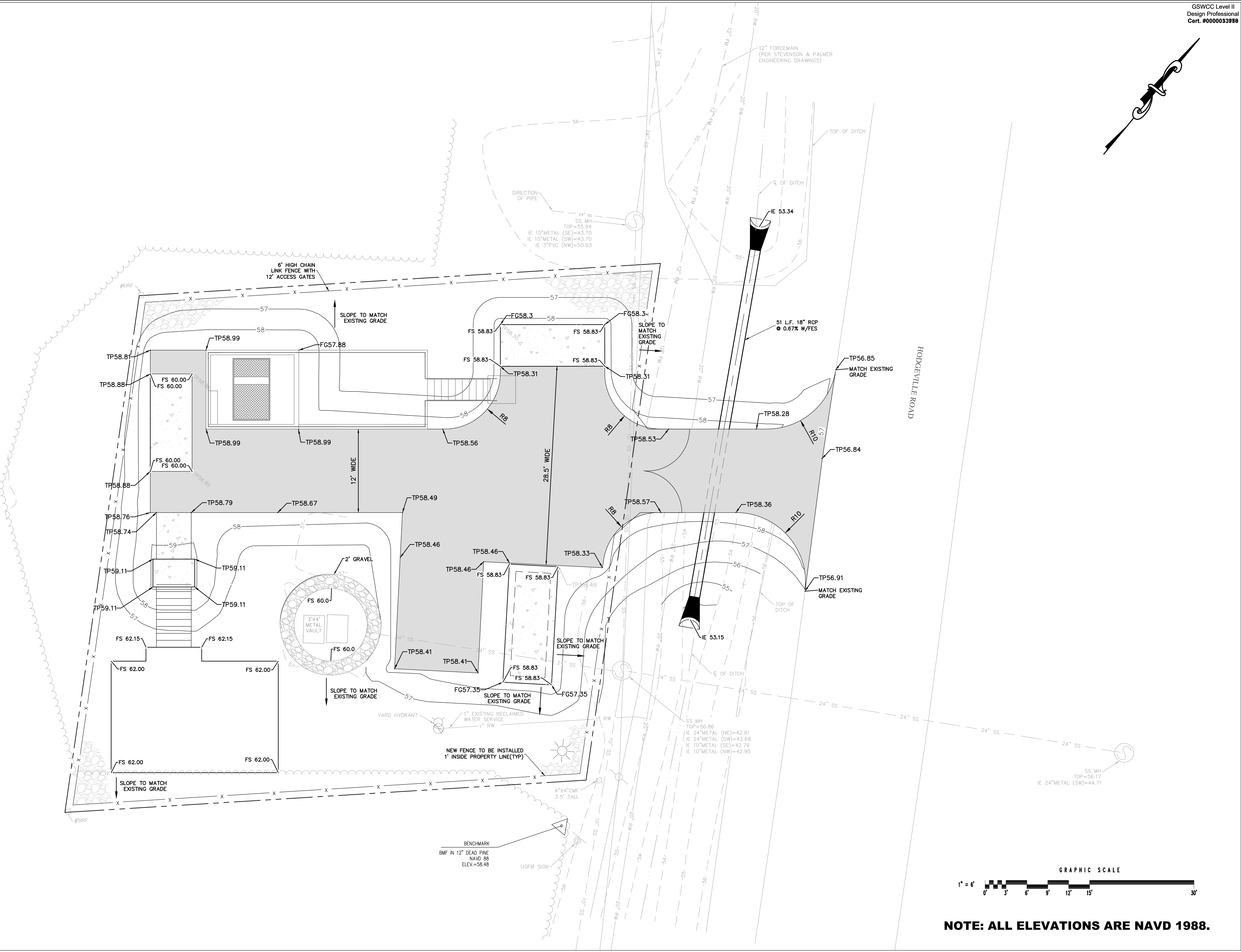
NO.	DATE	DESCRIPTION

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
SITE GRADING PLAN

DRAWING NUMBER
05
05 OF 16

December 14, 2018 - 8:56 AM Printed By: skendryna
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NOTE: ALL ELEVATIONS ARE NAVD 1988.

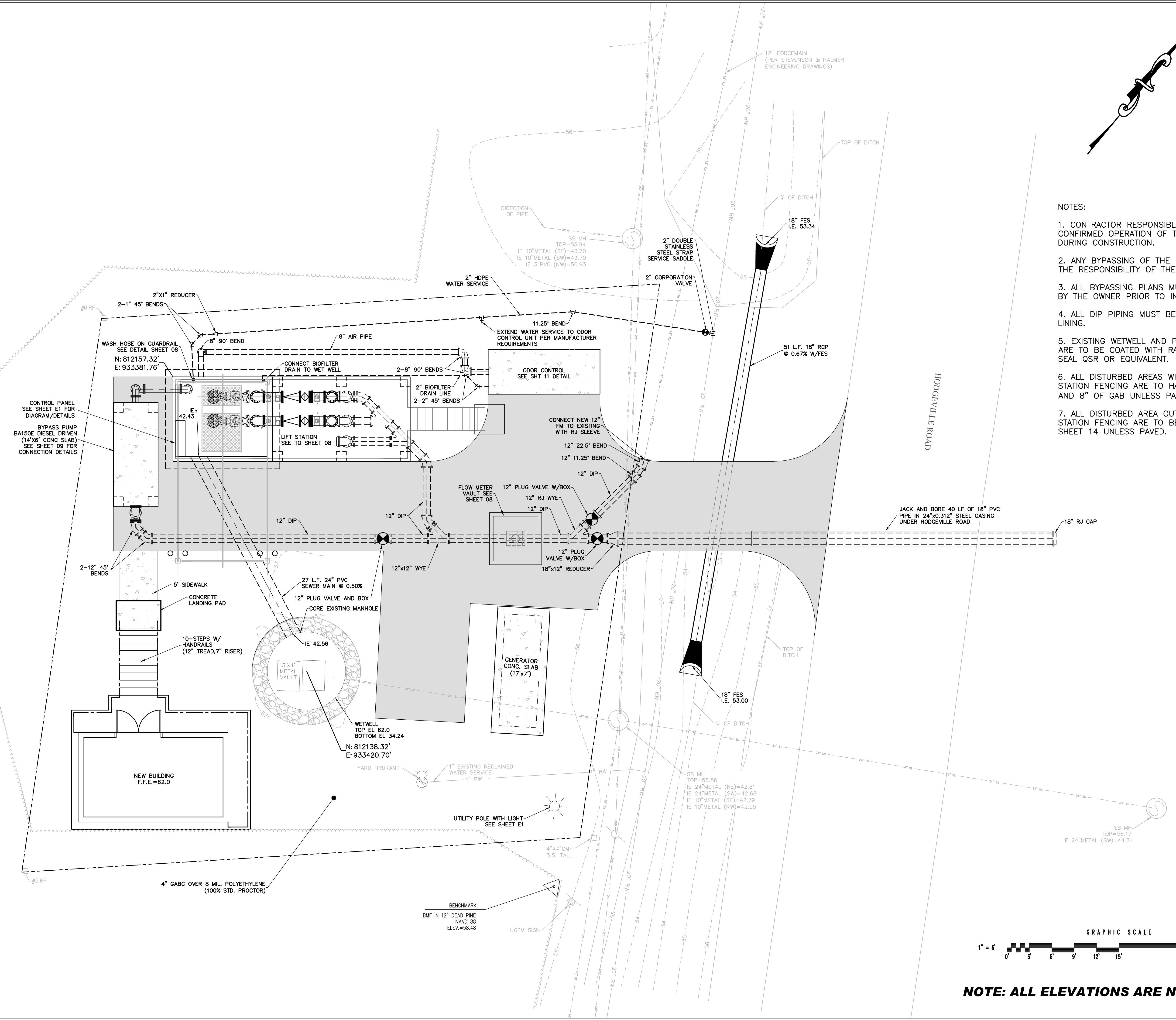
REVISIONS:

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JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

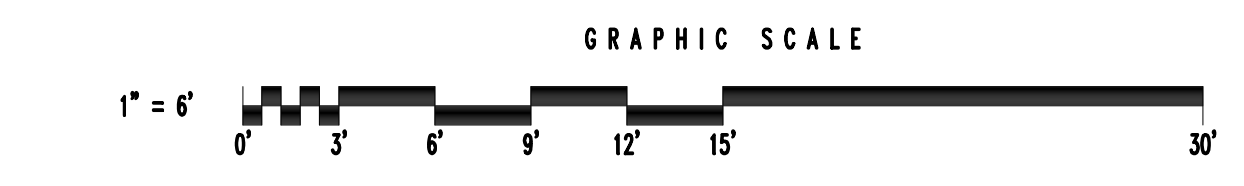
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HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
PROPOSED SITE PLAN

DRAWING NUMBER
06
06 OF 16

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- NOTES:
1. CONTRACTOR RESPONSIBLE FOR THE CONFIRMED OPERATION OF THE PUMP STATION DURING CONSTRUCTION.
 2. ANY BYPASSING OF THE PUMP STATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
 3. ALL BYPASSING PLANS MUST BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.
 4. ALL DIP PIPING MUST BE COATED WITH 401 LINING.
 5. EXISTING WETWELL AND PROPOSED WETWELL ARE TO BE COATED WITH RAVEN 400, STRONG SEAL QSR OR EQUIVALENT.
 6. ALL DISTURBED AREAS WITHIN THE LIFT STATION FENCING ARE TO HAVE WEED BLOCK AND 8" OF GAB UNLESS PAVED.
 7. ALL DISTURBED AREA OUTSIDE OF THE LIFT STATION FENCING ARE TO BE SEEDED PER SHEET 14 UNLESS PAVED.





HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

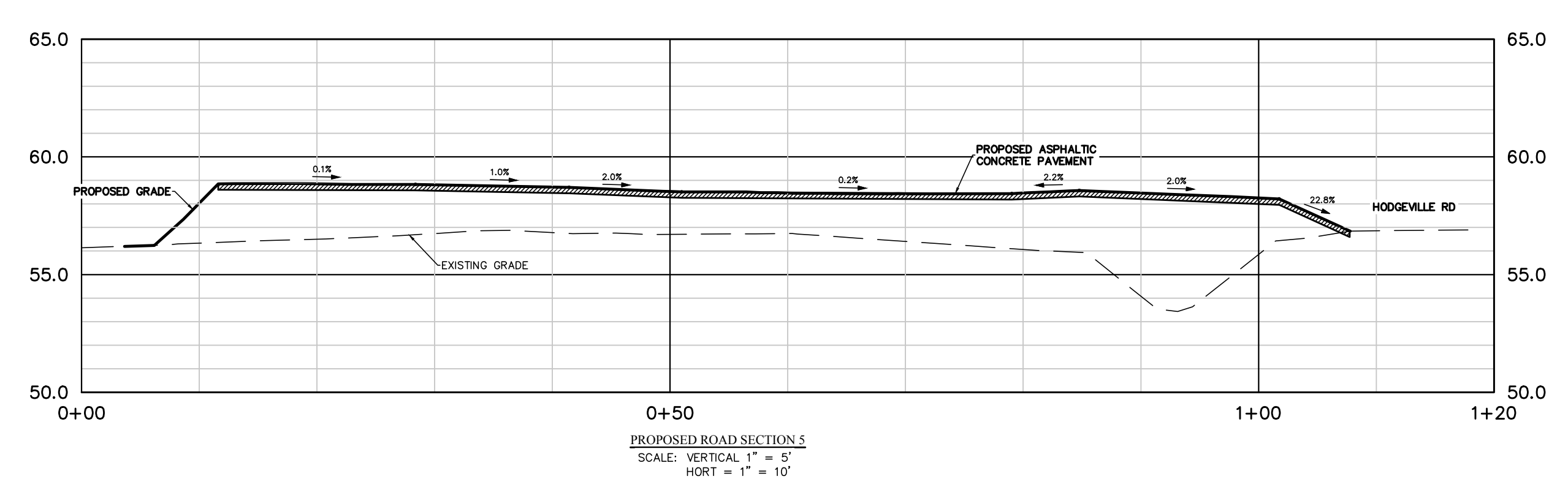
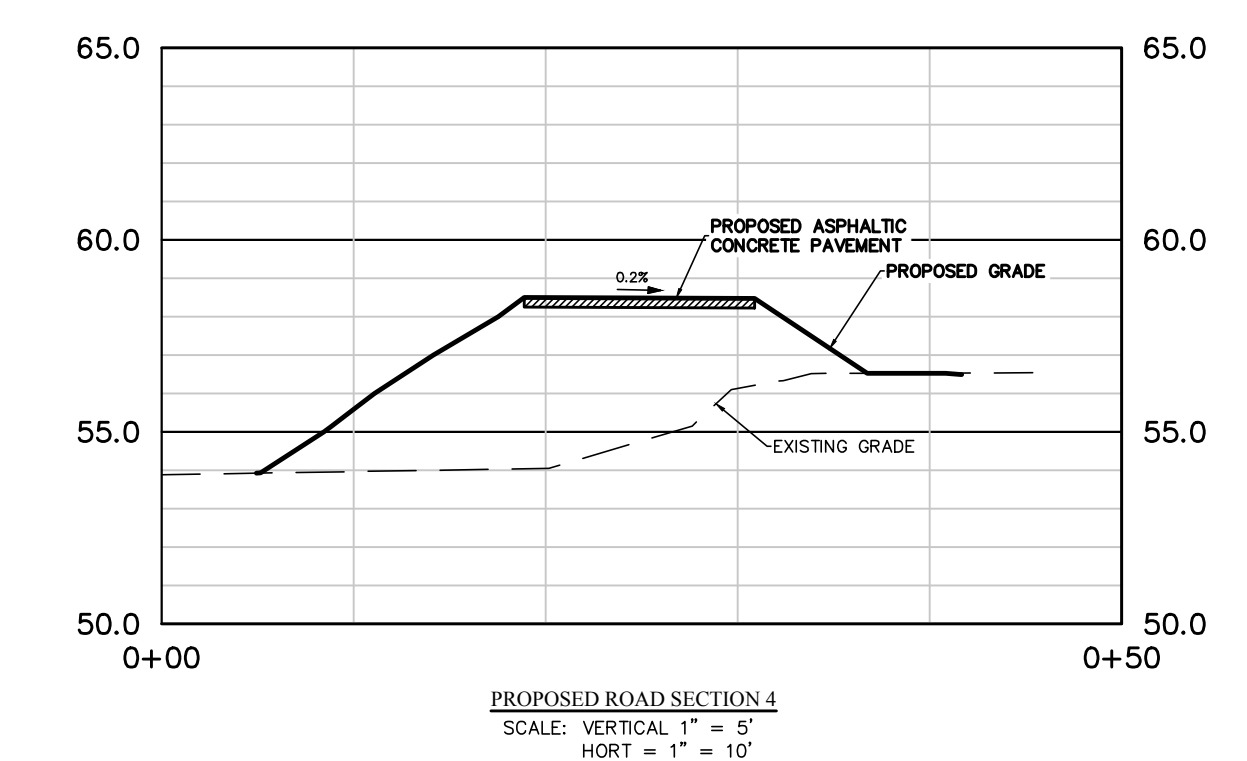
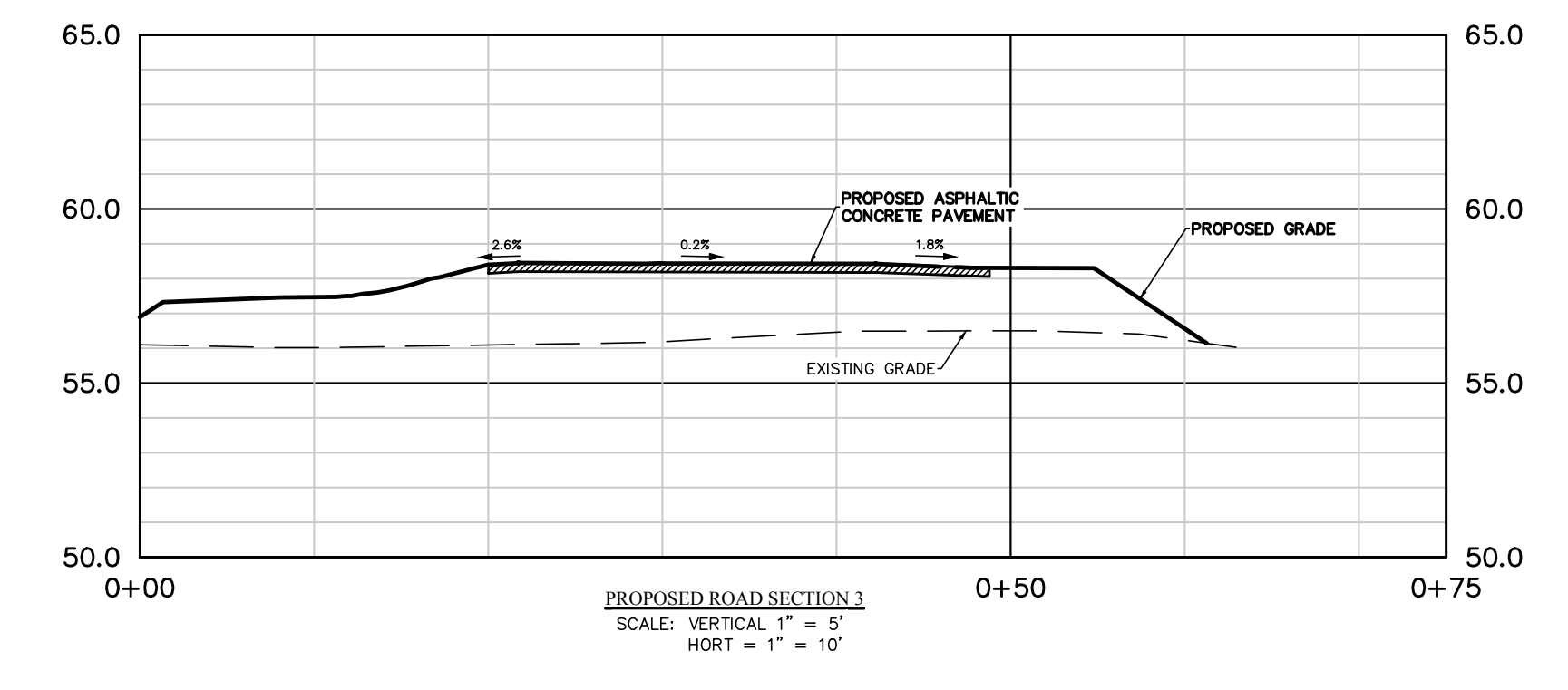
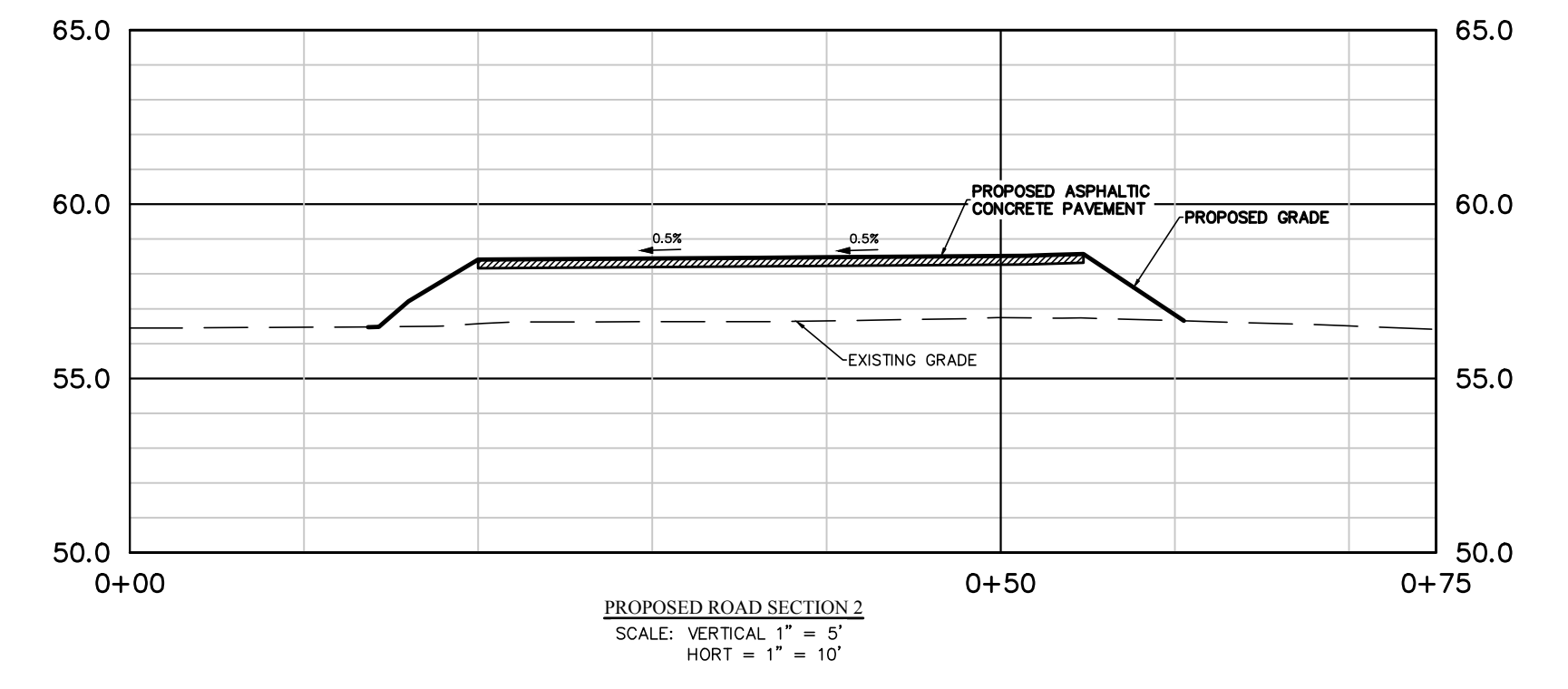
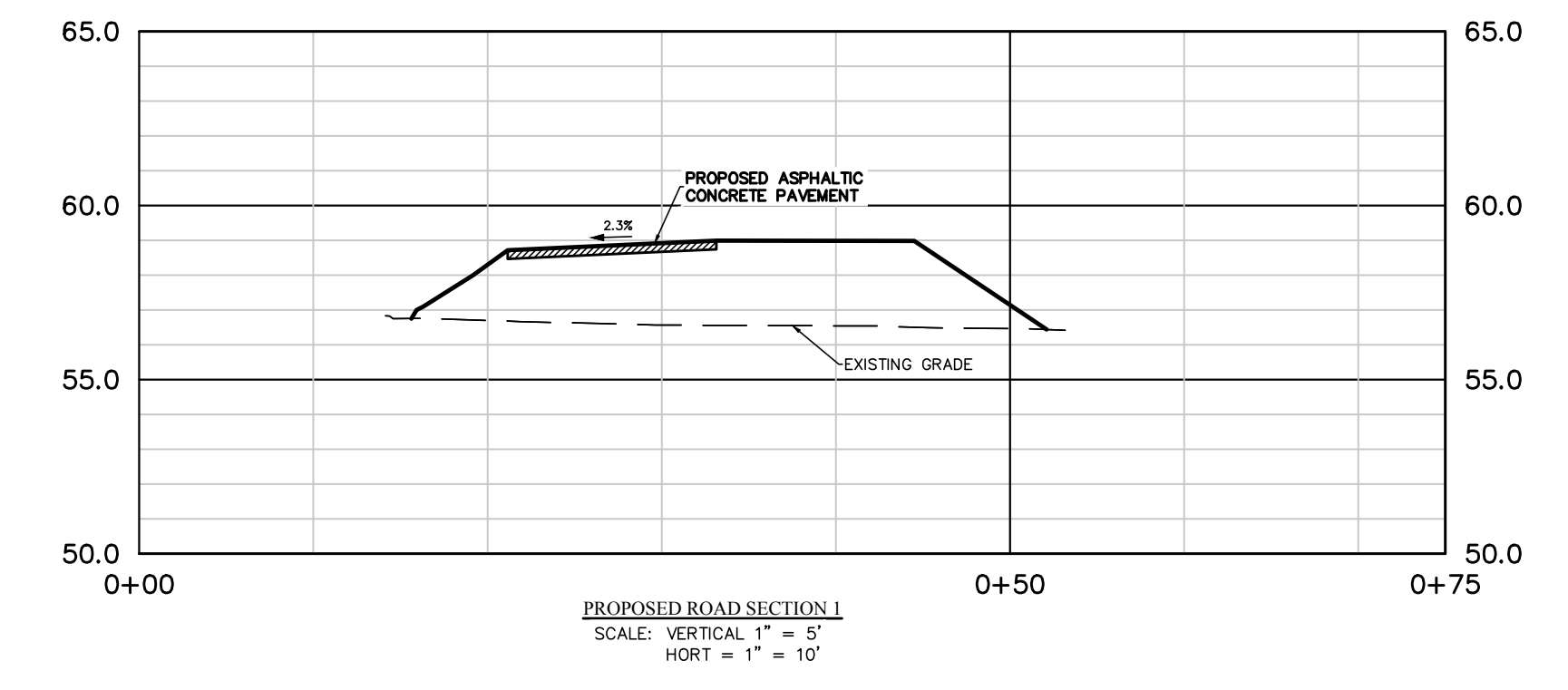
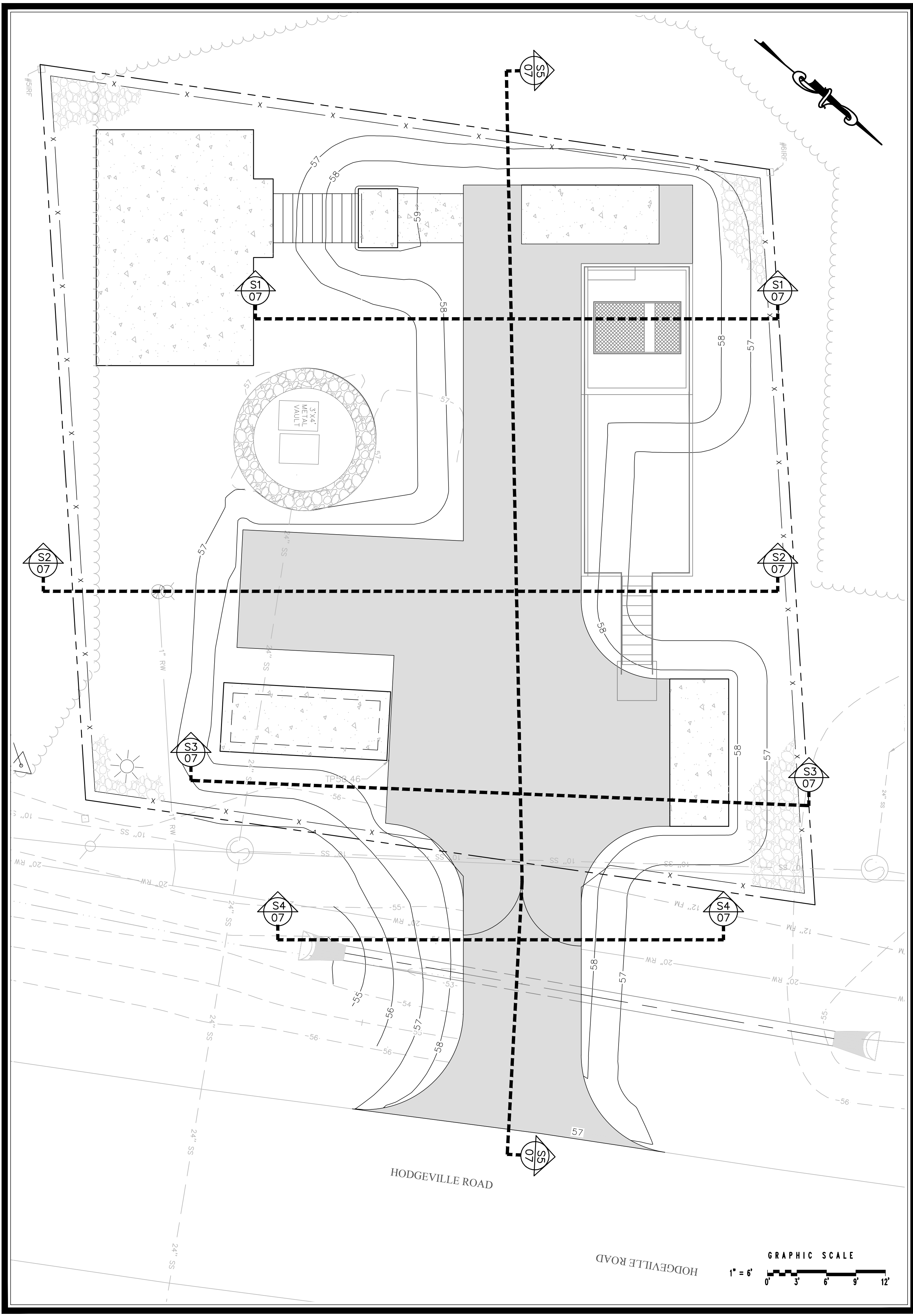
REVISIONS:

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: AS SHOWN		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
PROPOSED ROAD SECTIONS

DRAWING NUMBER
07
07 OF 16

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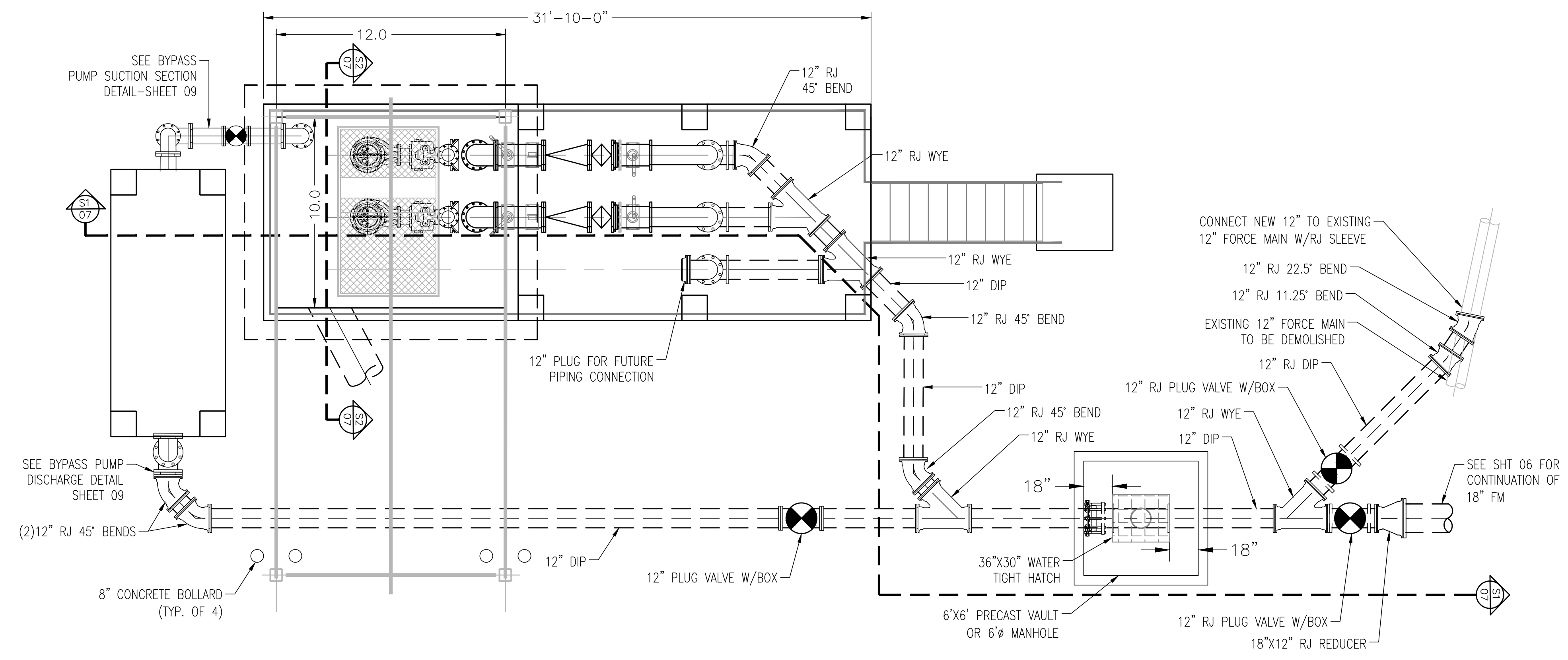


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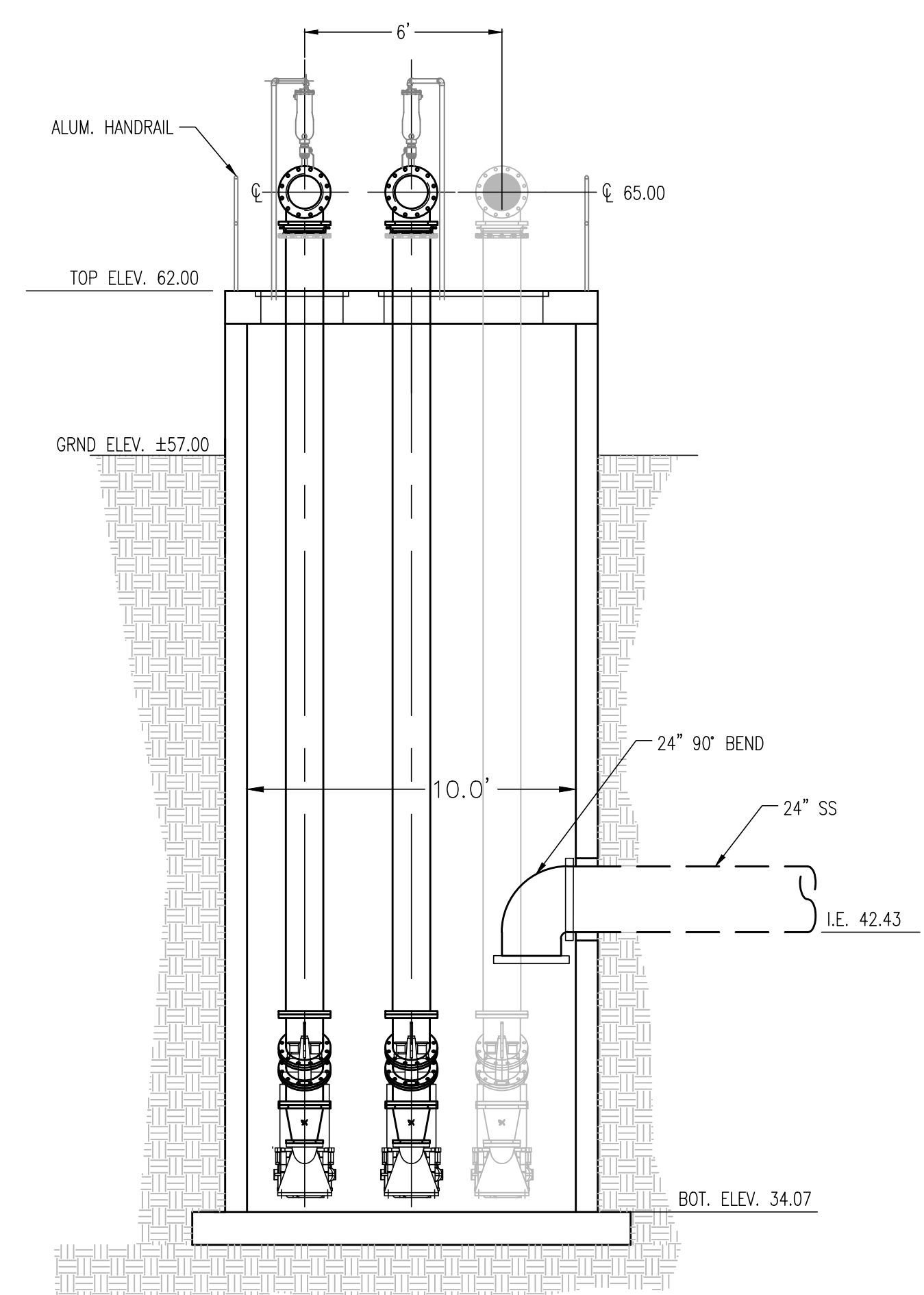
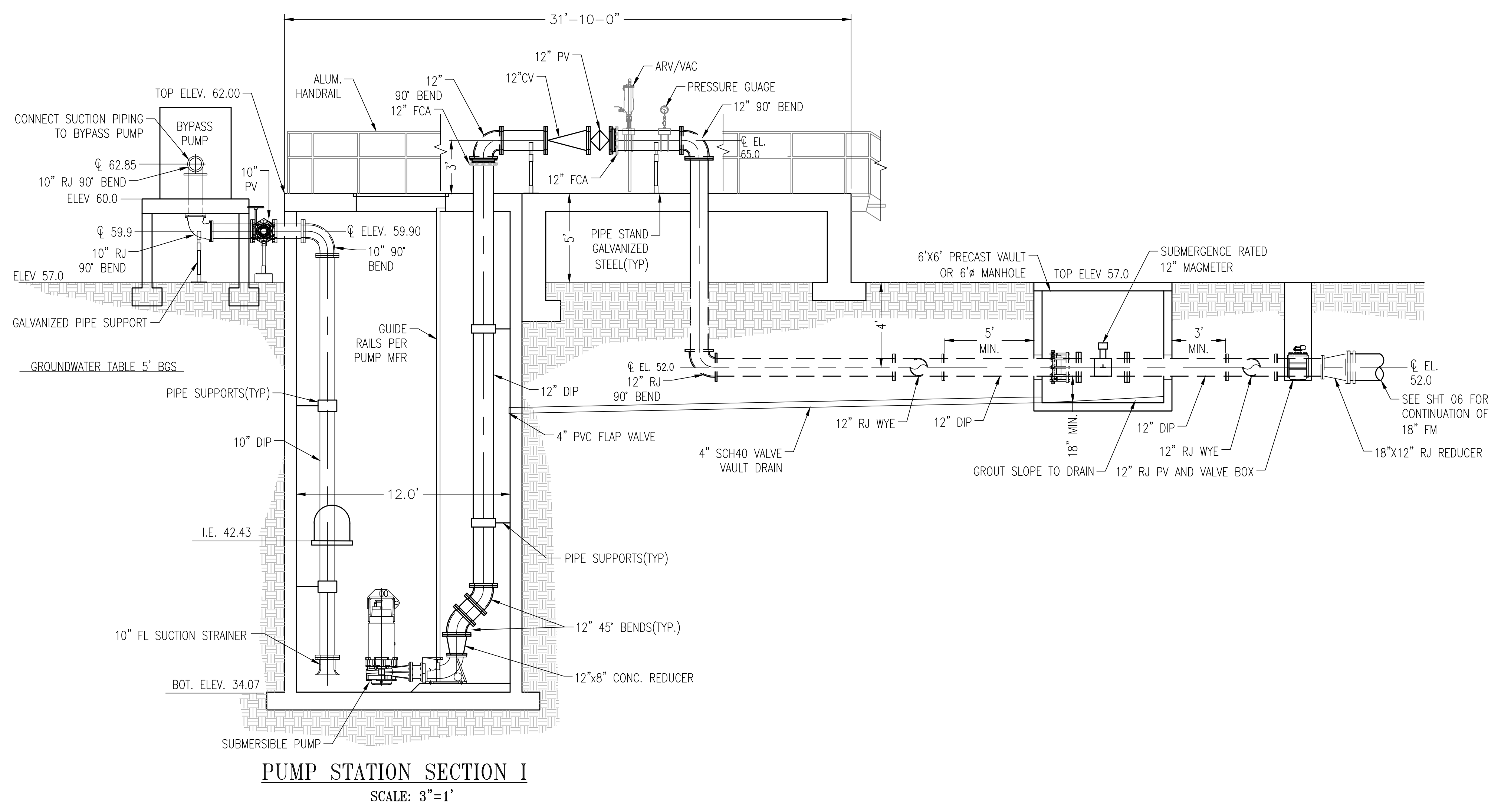
#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
LIFT STATION SECTIONS

DRAWING NUMBER
08
08 OF 16



GRUNDFOS MODEL
97660727 S2.35.A80.1270.4.70H.S.340.G.EX.D.611 60HZ
RPM: 1,778
PHASE: 3
VOLTAGE: 460V
HP: 127
SHUT OFF HEAD: 59.5

PHASE 1: (1) PUMP OPERATING W/ EXISTING 12" FM
1,250 gpm @ 125' TDH
PHASE 2: (1) PUMP OPERATING W/ NEW 18" FM
2,400 gpm @ 125' TDH
PHASE 3: (2) PUMPS OPERATING W/ NEW 18" FM
3,300 gpm @ 165' TDH



PUMP STATION SECTION I
SCALE: 3"=1'

REVISIONS:

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB

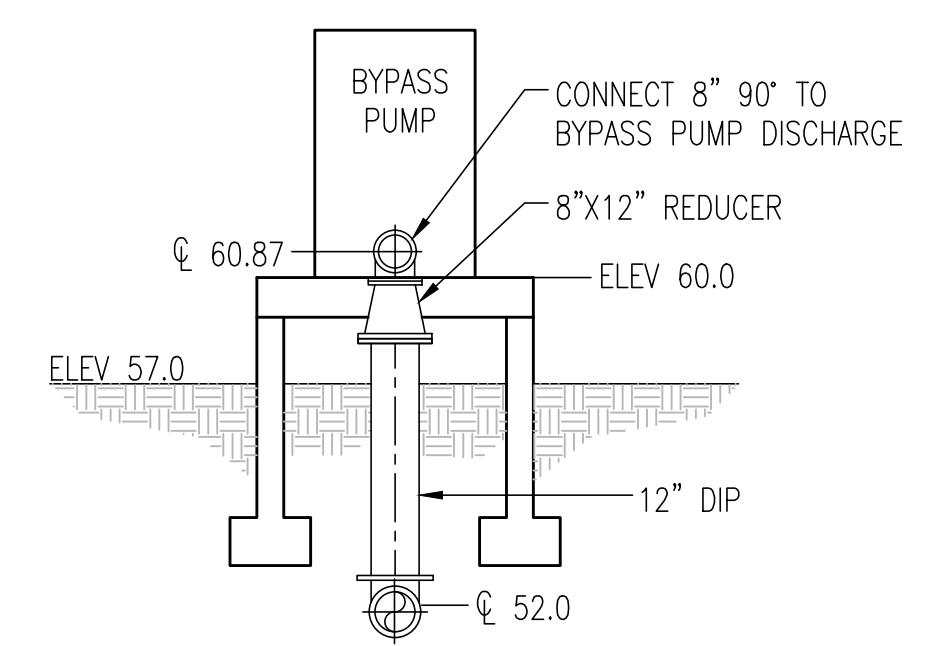
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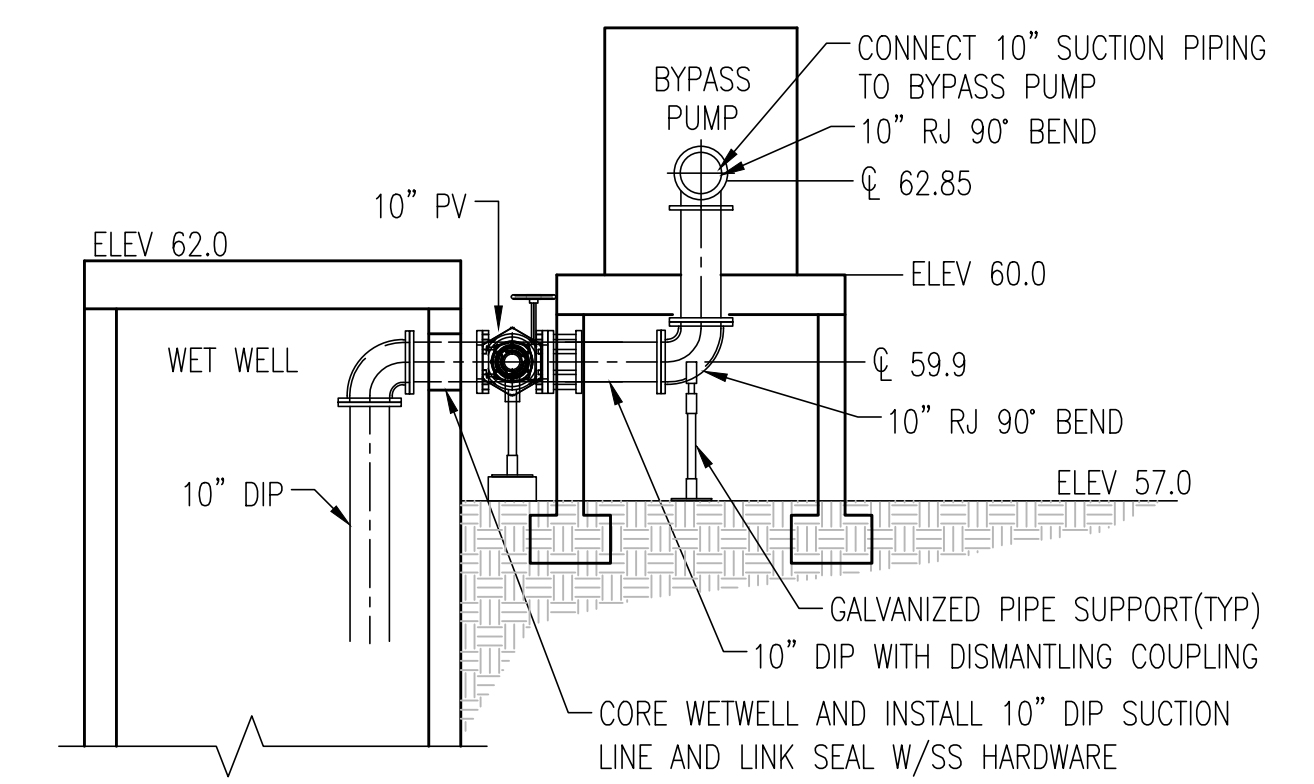
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SCALE: AS SHOWN

HODGEVILLE LIFT STATION #4
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
MISCELLANEOUS DETAILS

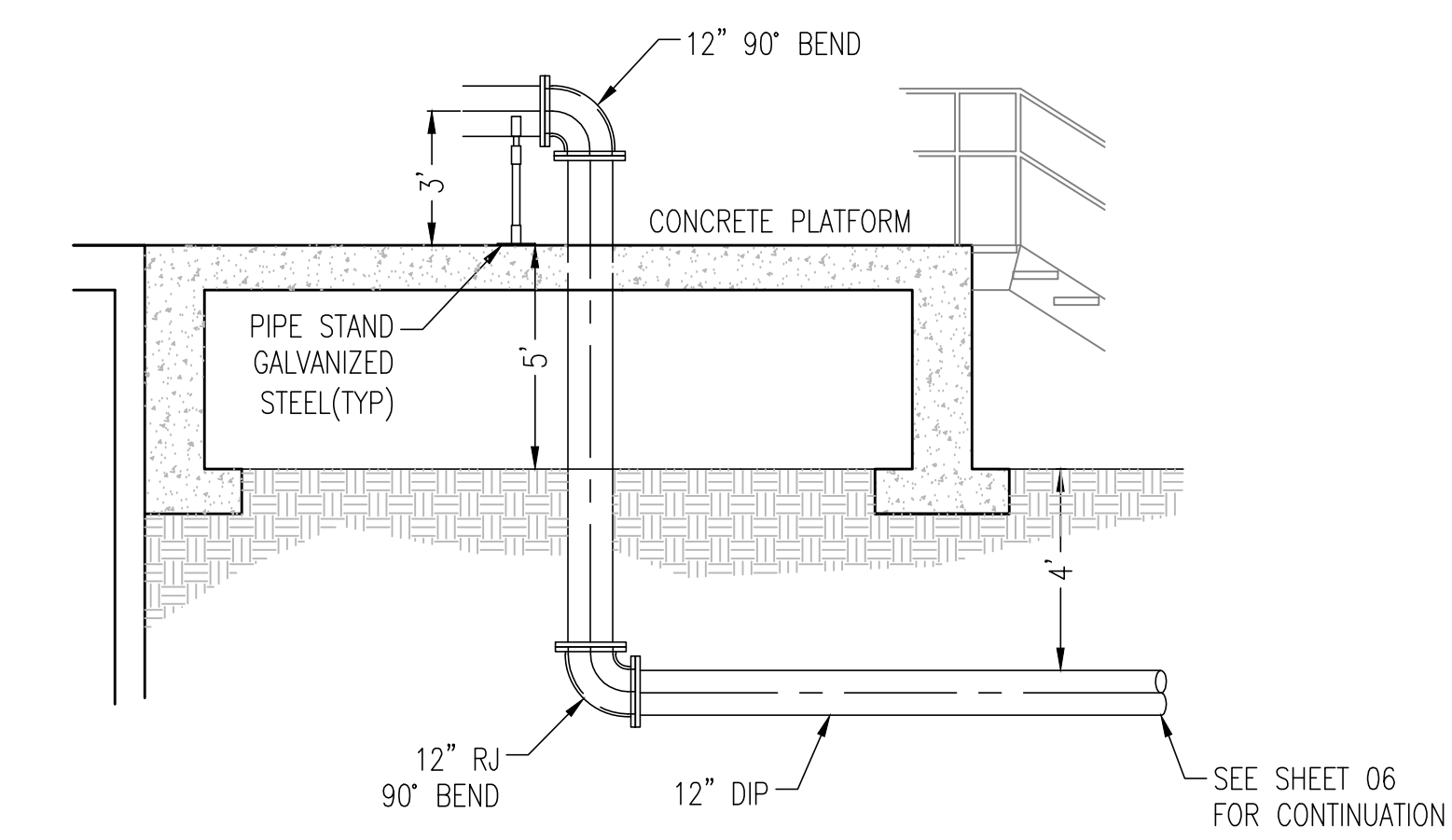
DRAWING NUMBER
09
09 OF 16



BYPASS PUMP DISCHARGE DETAIL
NOT TO SCALE

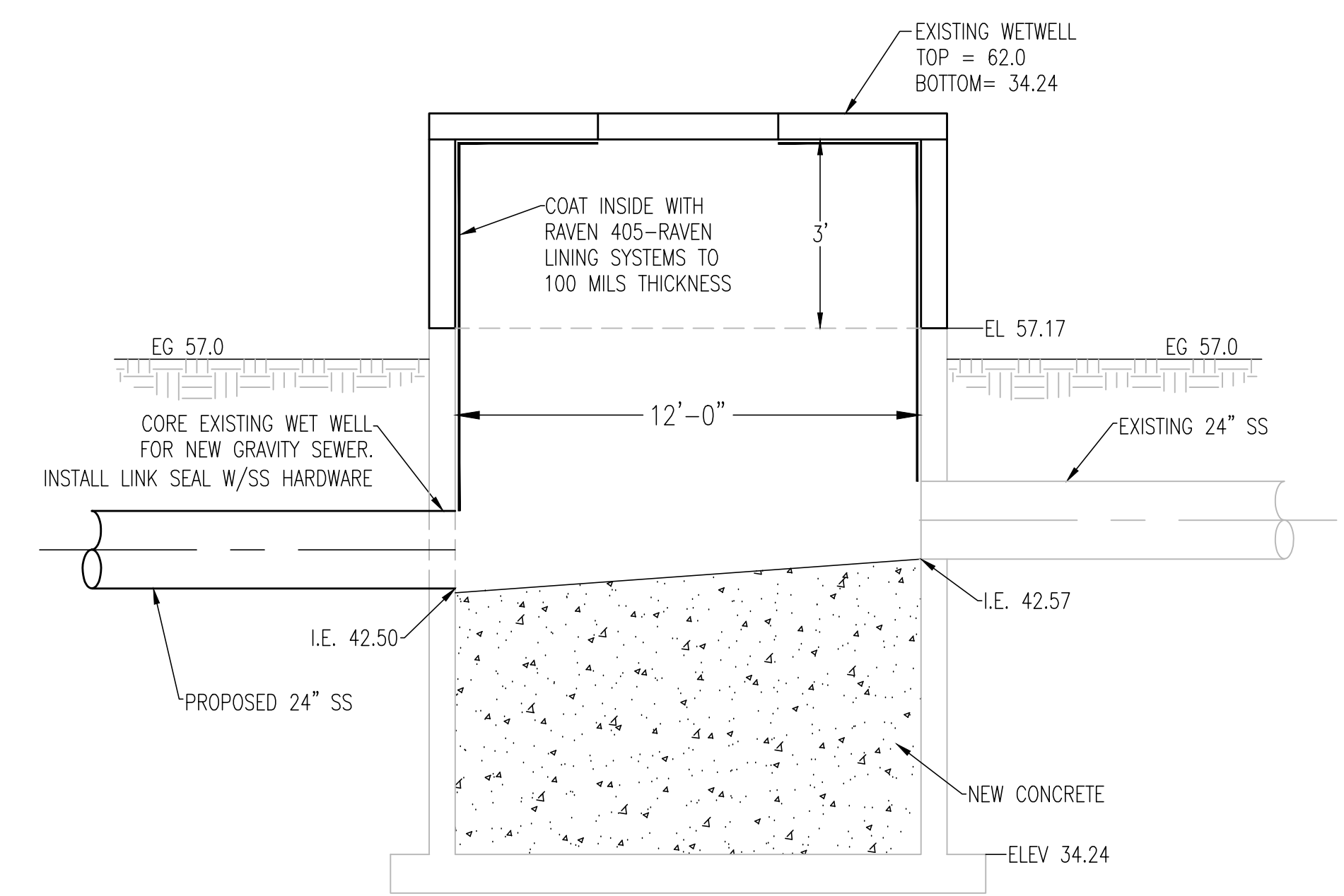


BYPASS PUMP SUCTION DETAIL
SCALE: 3"=1'

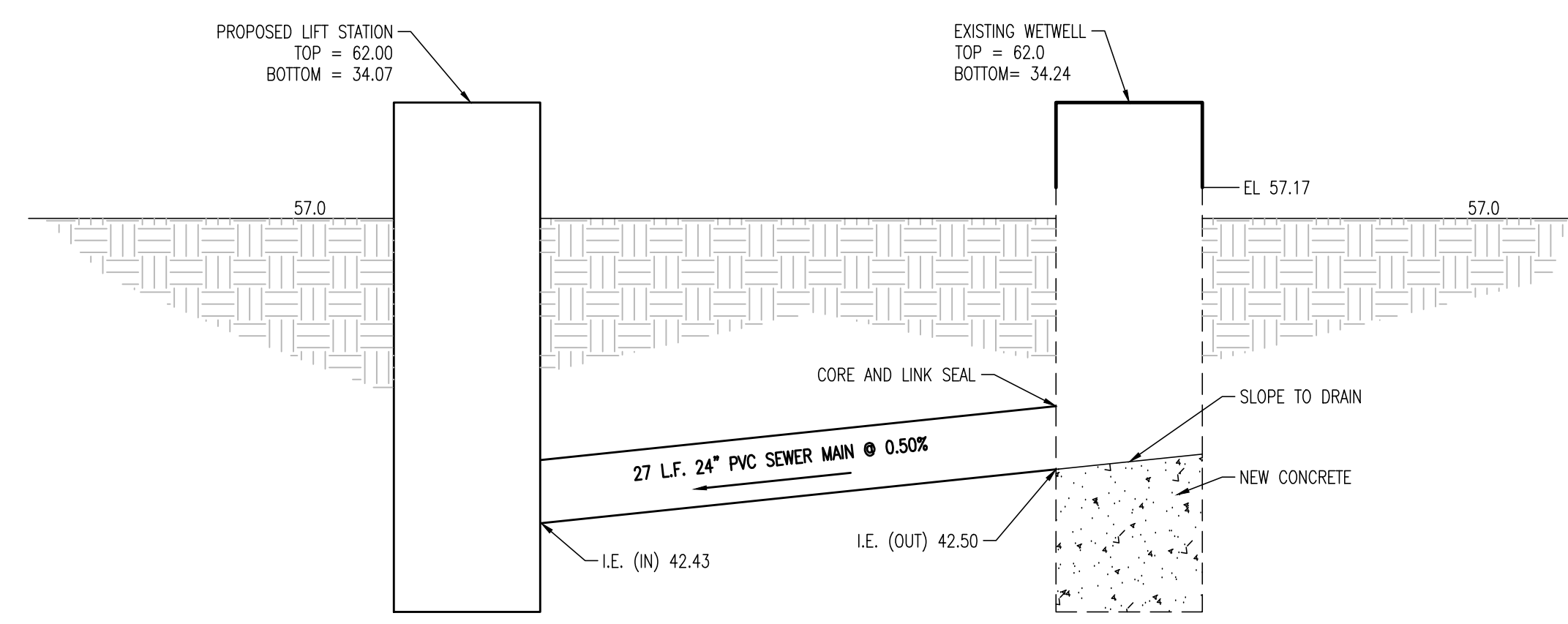


12" FORCE MAIN THRU PLATFORM DETAIL
SCALE: 3"=1'

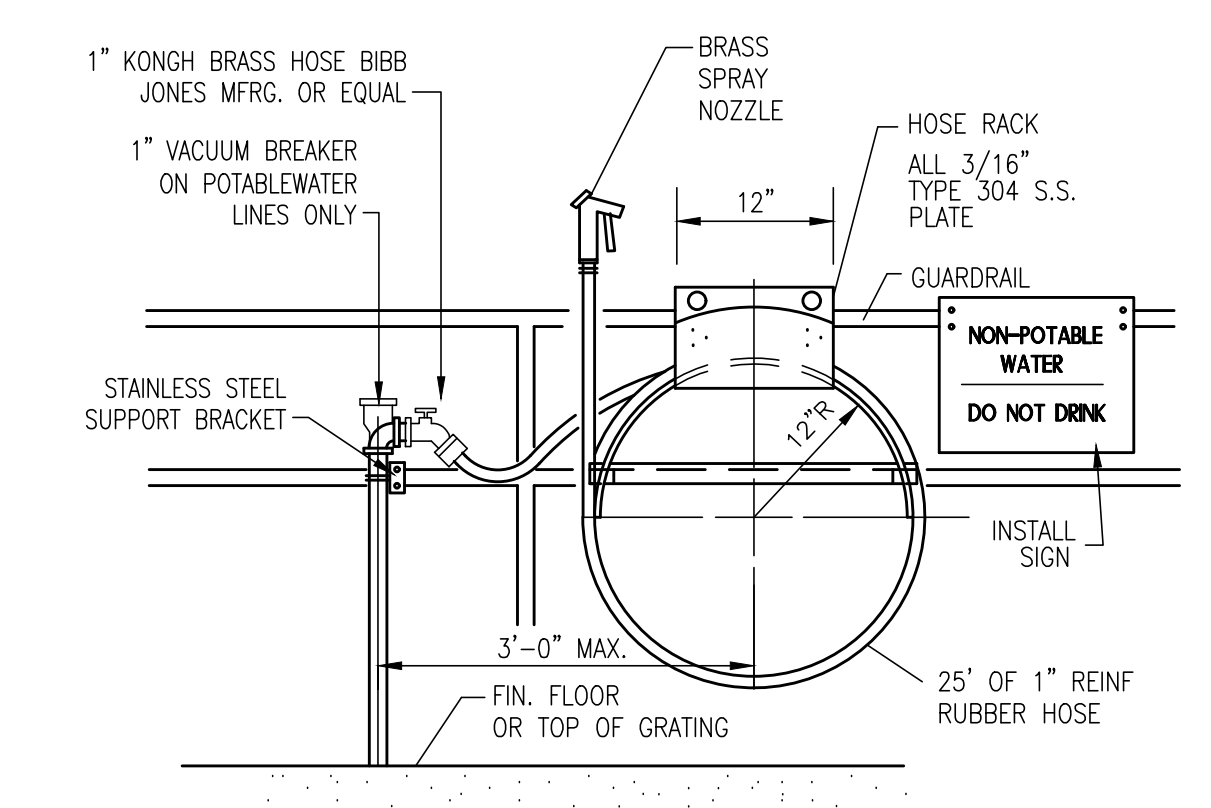
1. REMOVE LID ON EXISTING LIFT STATION WETWELL.
2. ADD 3' BARREL SECTION, 12" DIAMETER ON TOP OF EXISTING WETWELL WALLS.
3. SEAL EXISTING TOP OF WALLS WITH CONSEAL CS-75 SURFACE PRIMER.
4. SEAL BARREL SECTION TO EXISTING WETWELL WALLS WITH CONSEAL JOINT SEALANT.
5. INSTALL CONSEAL CS-212 EXTERIOR JOINT WRAP ON BARREL SECTION JOINT WITH EXISTING WETWELL AND BARREL SECTION JOINT WITH EXISTING LID.
6. REINSTALL LID ON EXISTING WETWELL.
7. SEAL LID WITH CONSEAL JOINT SEALANT.
8. PAINT EXTERIOR WALLS OF BARREL SECTION WITH CONSEAL CS-55 WATER BASED ACRYLIC COATING.
9. PAINT EXTERIOR AND TOP OF EXISTING LID WITH CS-55.



EXISTING WET WELL IMPROVEMENTS
NOT TO SCALE



24" GRAVITY SEWER PROFILE
NOT TO SCALE



- NOTES**
1. ANNEAL S.S. HOSE RACK AFTER FABRICATION.
 2. ANCHOR WASH HOSE STATION TO BOTH RAILS OF GUARDRAIL WITH STAINLESS STEEL HARDWARE AS SHOWN. ALL HOSE BIBBS SHALL INCLUDE A WASH HOSE STATION UNLESS OTHERWISE NOTED.

WASH HOSE STATION ON GUARDRAIL DETAIL
NOT TO SCALE



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SCALE: 1" = 6'		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
MISCELLANEOUS DETAILS

DRAWING NUMBER
10
10 OF 16

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PVC LINE

PIPE DIA.	BEND ANGLE		
	11 1/4"	22 1/2"	45"
4	2	4	8
6	3	5	11
8	4	7	14
10	4	8	16
12	5	9	19
16	5	9	19
20	6	11	23
24	8	16	26

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE		
	11 1/4"	22 1/2"	45"
4	3	5	9
6	3	6	12
8	4	8	16
10	5	9	19
12	6	11	22
16	7	14	28
20	8	16	33
24	9	19	38

MINIMUM RESTRAINED LENGTH (L)

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIAMETERS ARE IN INCHES.
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
- INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

HORIZONTAL BEND RESTRAINT

PVC LINE

PIPE DIA.	BEND ANGLE		
	11 1/4"	22 1/2"	45"
4	4	8	17
6	6	11	23
8	8	15	30
10	9	18	36
12	11	21	43
16	10	21	42
20	13	25	51
24	15	29	60

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE		
	11 1/4"	22 1/2"	45"
4	6	12	24
6	9	17	34
8	11	22	45
10	13	26	53
12	15	30	63
16	19	39	80
20	23	47	97
24	27	55	113

MINIMUM RESTRAINED LENGTH (L)

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIA. IS IN INCHES
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
- INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

VERTICAL BEND RESTRAINT

POLYETHYLENE WRAPPED DUCTILE IRON LINE

PIPE DIA.	L
4	58
6	82
8	107
10	128
12	151
16	193
20	234
24	273

PVC LINE

PIPE DIA.	L
4	39
6	55
8	72
10	87
12	102
16	131
20	159
24	185

MINIMUM RESTRAINED LENGTH (L)

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
- FOR LINE STUBS (SEE DETAIL W34), THE LENGTH OF RESTRAINT (L) SHALL BE FROM THE VALVE AND NOT THE CAP.
- INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

DEAD END RESTRAINT

PVC LINE

REDUCER	L
6X4	29
8X4	52
8X6	31
10X4	71
10X6	53
10X8	29
12X4	89
12X6	74
12X8	54
12X10	30
16X6	111
16X8	96
16X10	78
16X12	56
20X10	117
20X12	100
20X16	56
24X12	137
24X16	101
24X20	56

POLYETHYLENE WRAPPED DUCTILE IRON LINE

REDUCER	L
6X4	43
8X4	77
8X6	45
10X4	104
10X6	79
10X8	43
12X4	131
12X6	110
12X8	80
12X10	45
16X6	163
16X8	141
16X10	115
16X12	82
20X10	172
20X12	147
20X16	82
24X12	201
24X16	149
24X20	82

MINIMUM RESTRAINED LENGTH (L)

NOTES:

- LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.
- WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
- INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

REDUCER RESTRAINT

TYPICAL ASPHALTIC CONCRETE DRIVEWAY PAVEMENT REPLACEMENT

NOT TO SCALE

TYPICAL CONCRETE BOLLARD DETAIL

NOT TO SCALE



HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

REVISIONS:

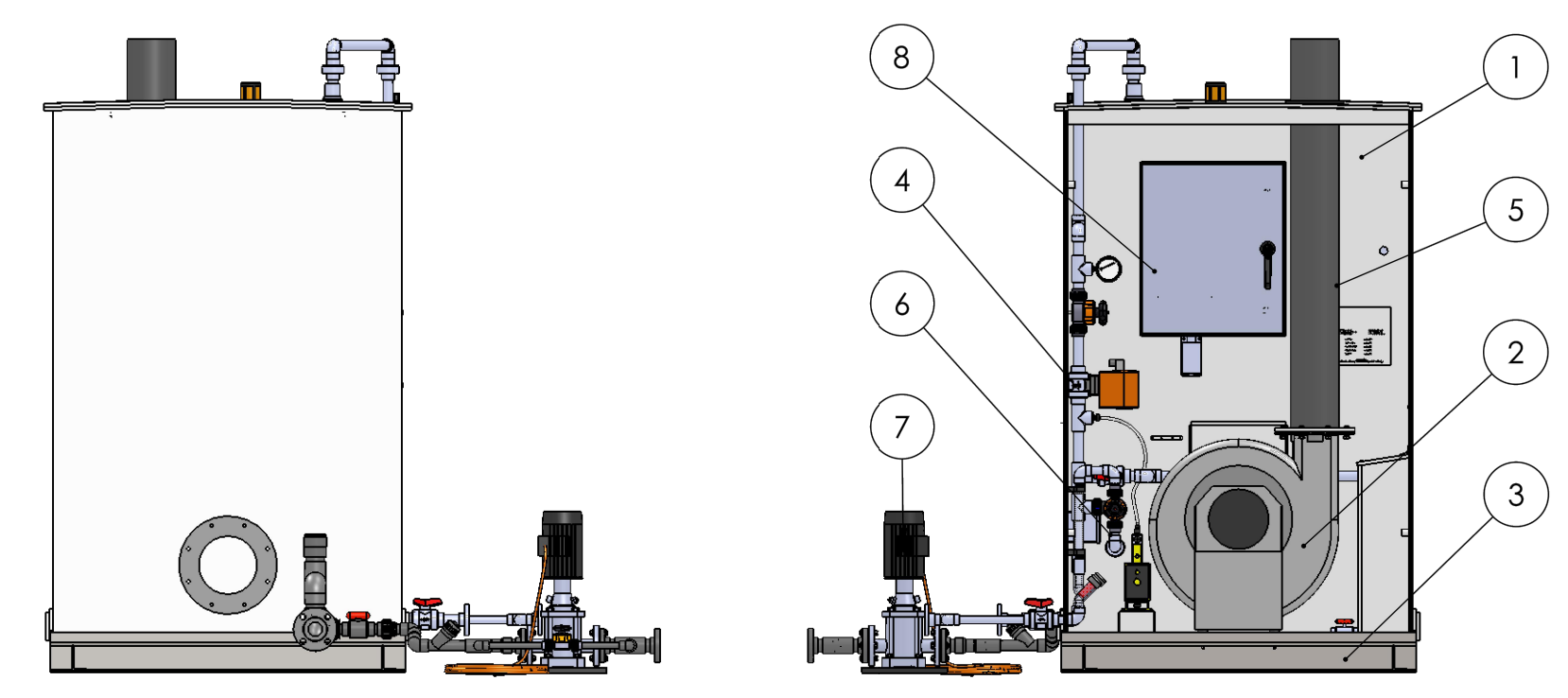
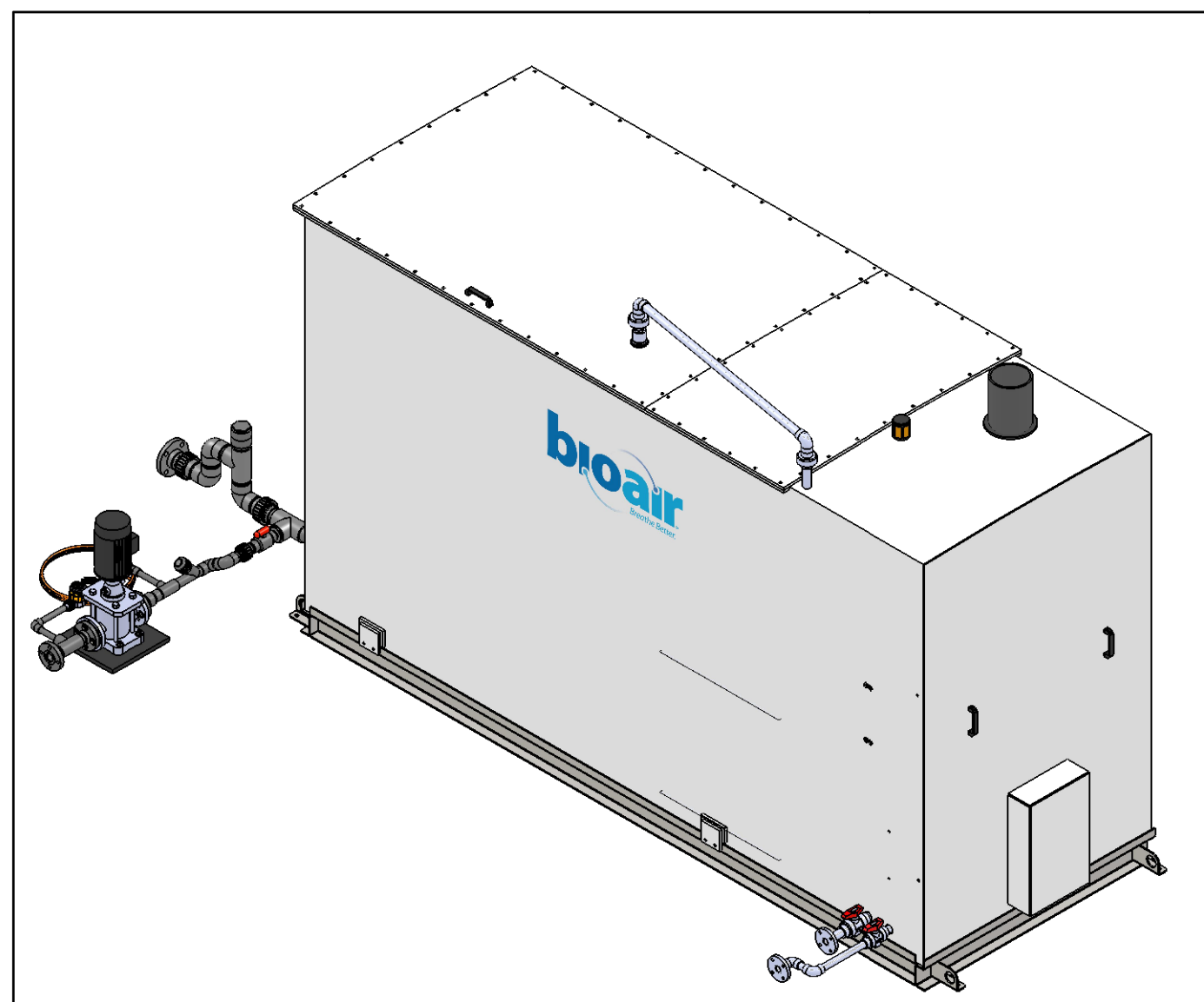
DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: AS SHOWN		

DESIGNED: JLO/JCB
DRAWN: SKK
CHECKED: JCB
DATE: APRIL 2022
JOB NO. 120004450
SCALE: AS SHOWN

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
BIOFILTER DETAILS

DRAWING NUMBER
11
11 OF 16

REV.	DATE	ECN#	REVISION RECORD	DR/CK
A	08/31/2012			RK
B	01/10/2013		UPDATED BOM	RK
C	12/12/2013		UPDATED PER STD	RK



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	OPERATING WEIGHT (LB)
1	RA461100	ECOPURE EP461 REACTOR ASSEMBLY, FRP	1	4760
2	BL000240	PB-18 (W18x4.3758C) CAST ALUMINUM BLOWER	1	120
3	SK442000	STAINLESS STEEL SKID ASSEMBLY	1	325
4	WP101210	Ø1", ANSI 150, IRRIGATION CONTROL, PVC-U	1	48
5	ST065400	Ø 6", EPM STACK, HDPE	1	18
6	MW000200	Ø¾", SCH80, MAKE-UP WATER ASSEMBLY, PVC-U	1	10
7	RS000225	Ø2", SCH80, EPM STARTUP SYSTEM, PVC-U	1	40
8	CD1000	ELECTRICAL CONTROL PANEL, 316SS	1	75

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
ANGULAR: ±1°
FRACTIONS: ±1/16"
TWO PLACE DECIMAL: ±0.00
THREE PLACE DECIMAL: ±0.000

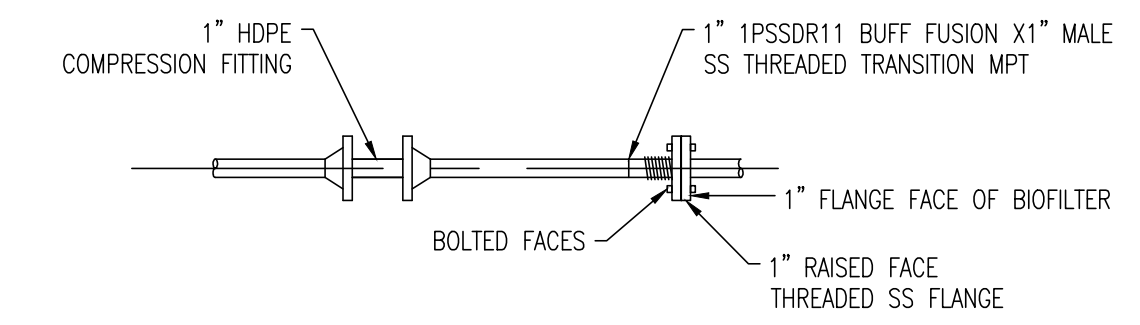
MATERIAL: SEE TABLE
FINISH: SEE TABLE

DRAWN BY: RK DATE: 08/31/2012 ENG. APPR. DATE: GC APPR. DATE:

PART NAME: **GENERAL ARRANGEMENT ECOPURE EPM1**

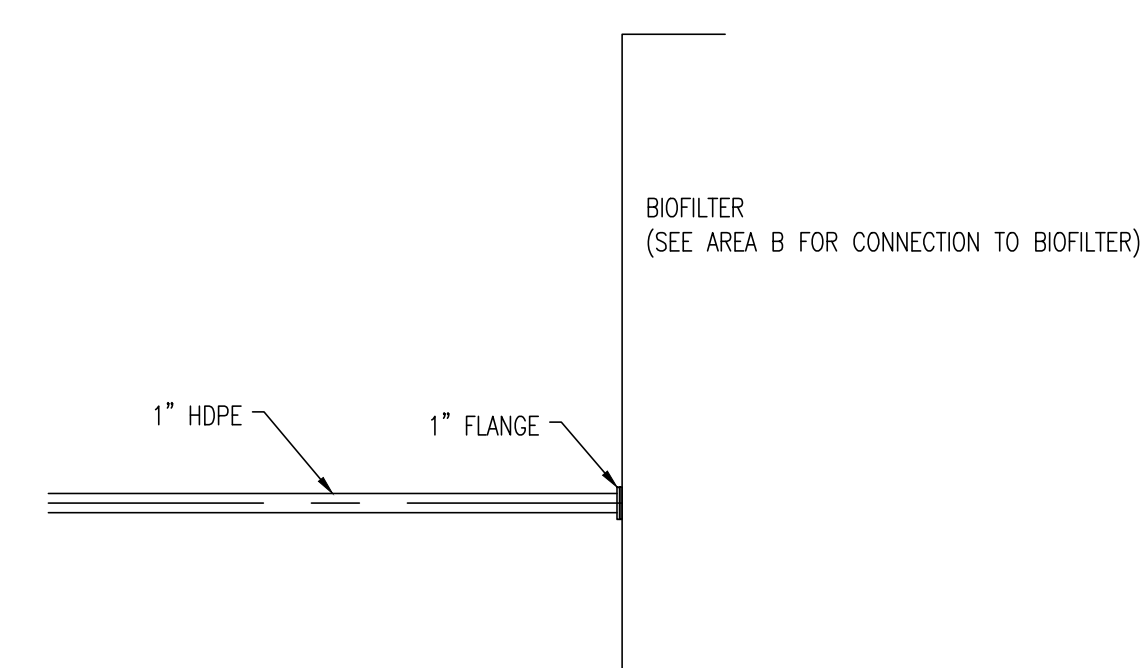
SIZE: **B** DWG. NO.: **EP461-GA** REV: **C**

SCALE: 1:48 SHEET 1 OF 2

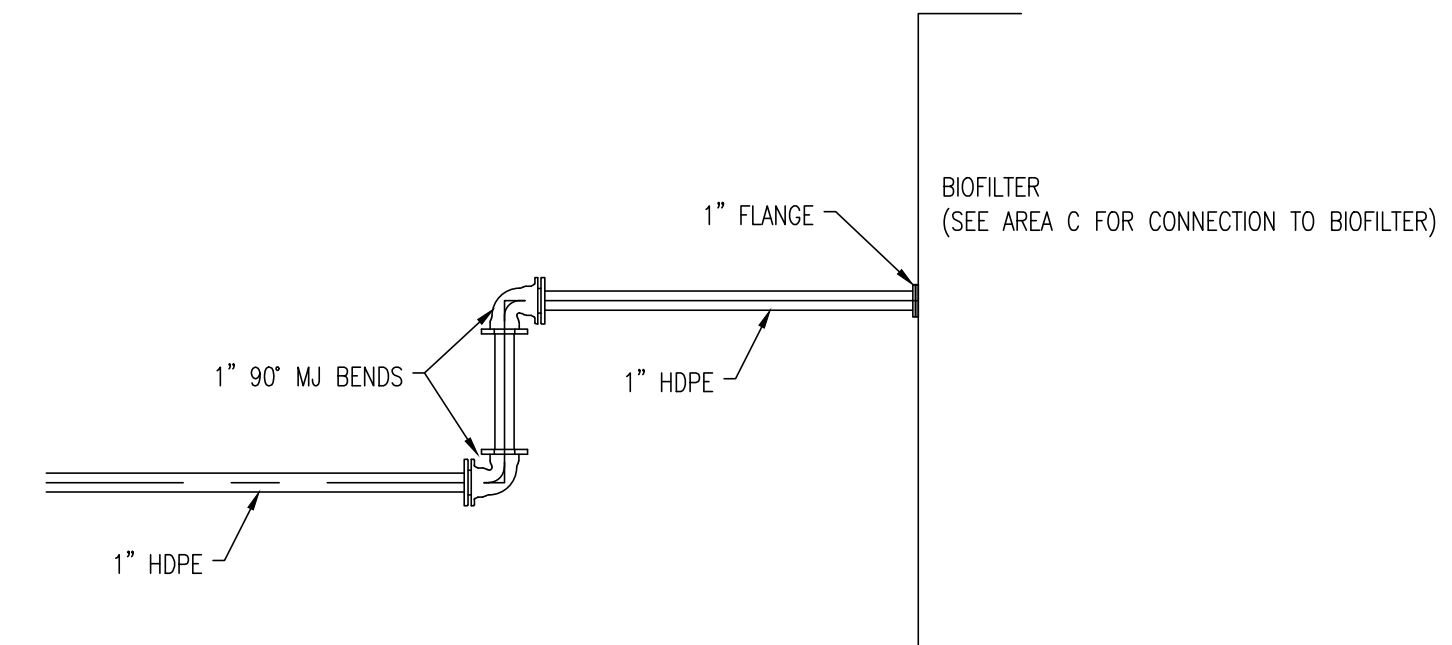


- THIS DETAIL WILL BE NEEDED FOR THE FOLLOWING:
- 1" DIA. ANSI 150 FLANGE MAKE UP WATER INLET FOR SYSTEM STARTUP
 - 1" DIA. ANSI 150 FLANGE START UP SYSTEM SUPPLY
 - 1" DIA. ANSI 150 FLANGE START UP SYSTEM OUTLET

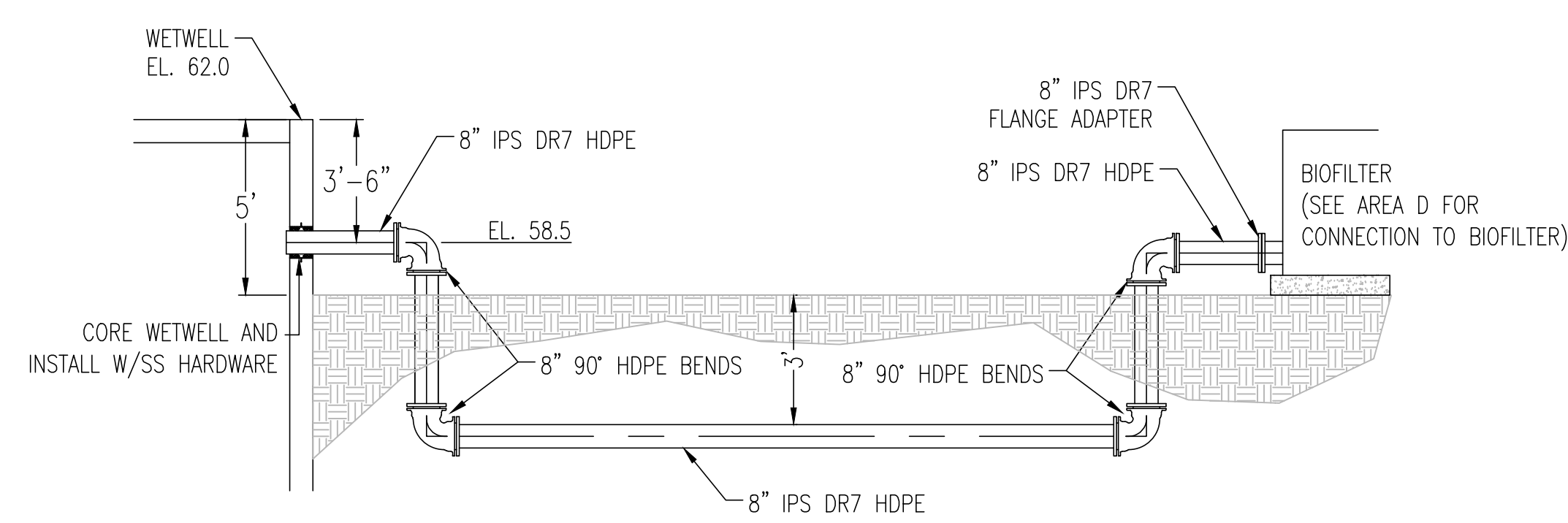
BIOFILTER WATER SERVICE CONNECTION DETAIL (TOP VIEW) A 09
NOT TO SCALE



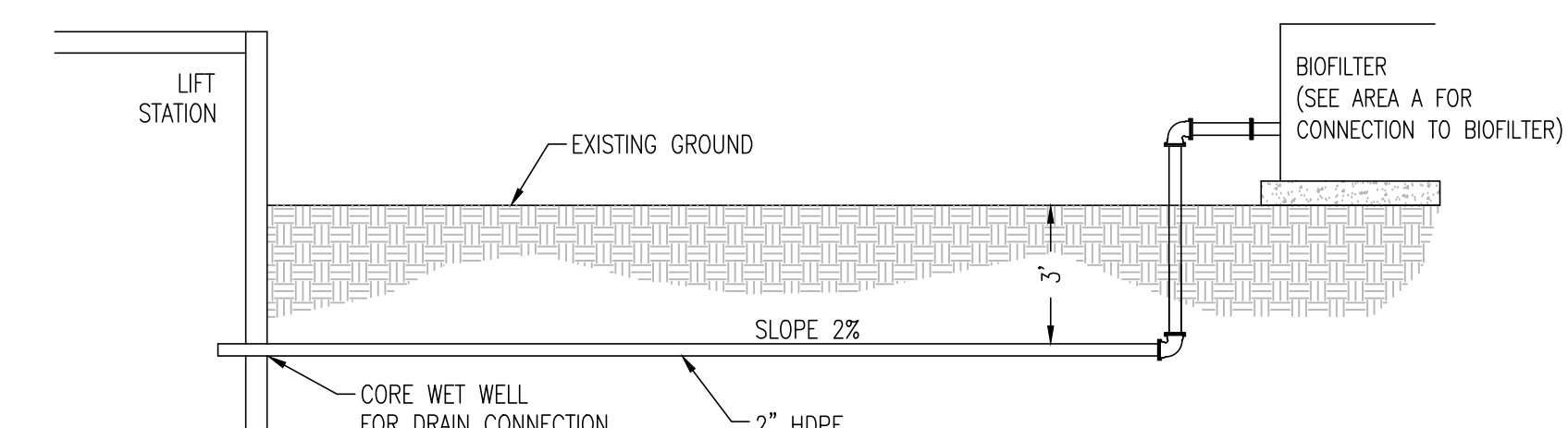
BIOFILTER CONNECTION DETAIL #1 (TOP VIEW) B 09
NOT TO SCALE



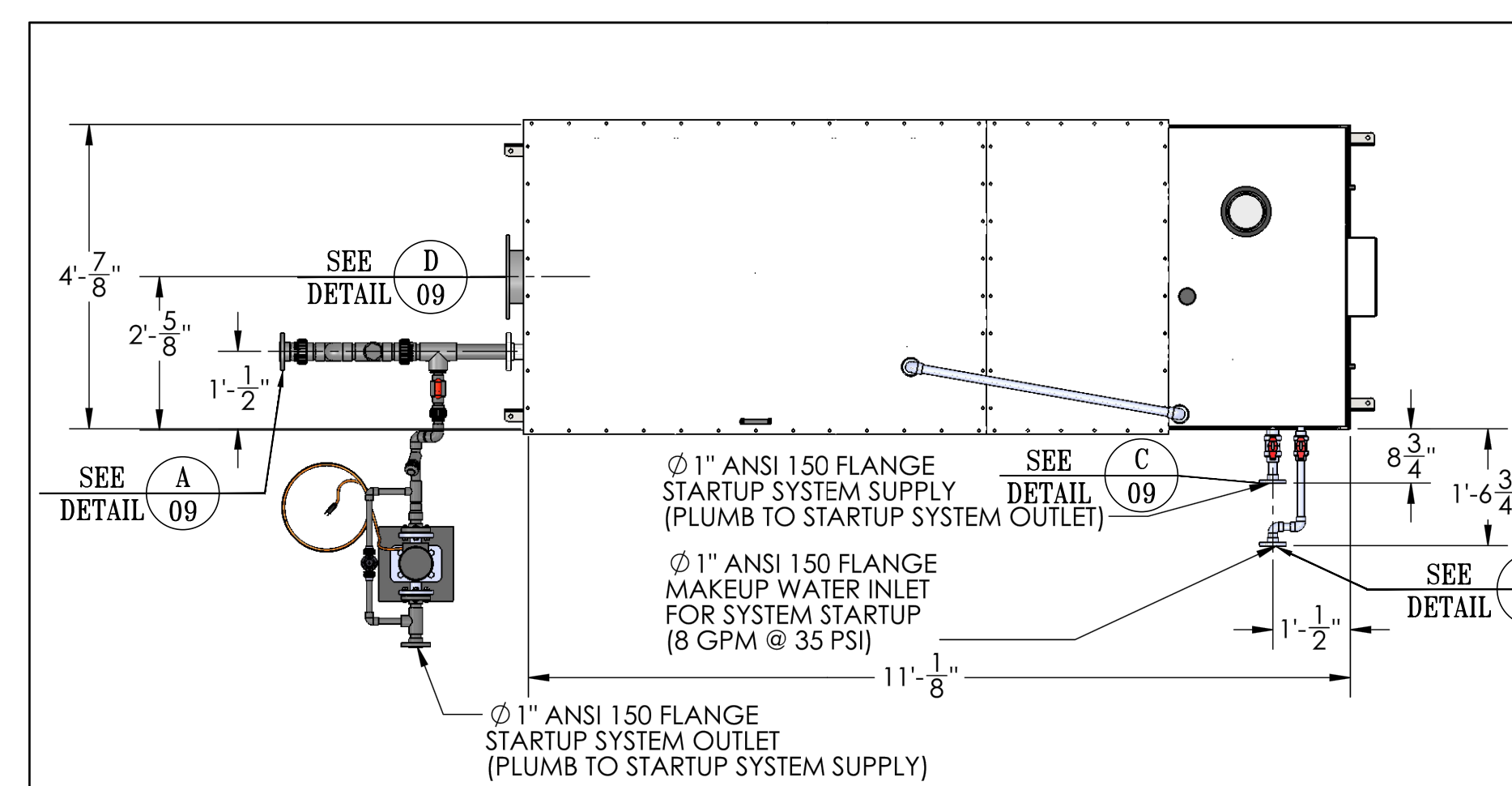
BIOFILTER CONNECTION DETAIL #2 (TOP VIEW) C 09
NOT TO SCALE



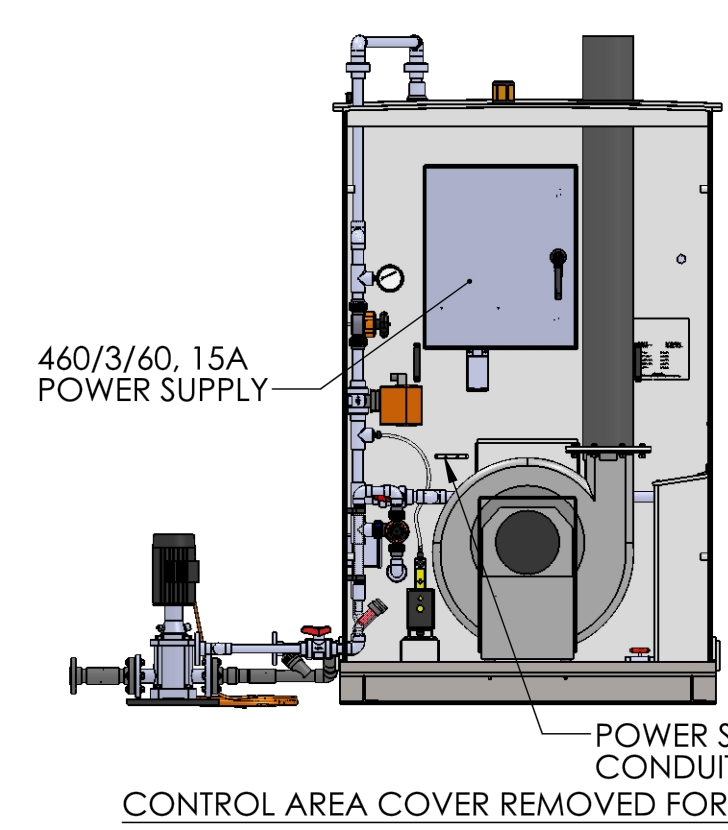
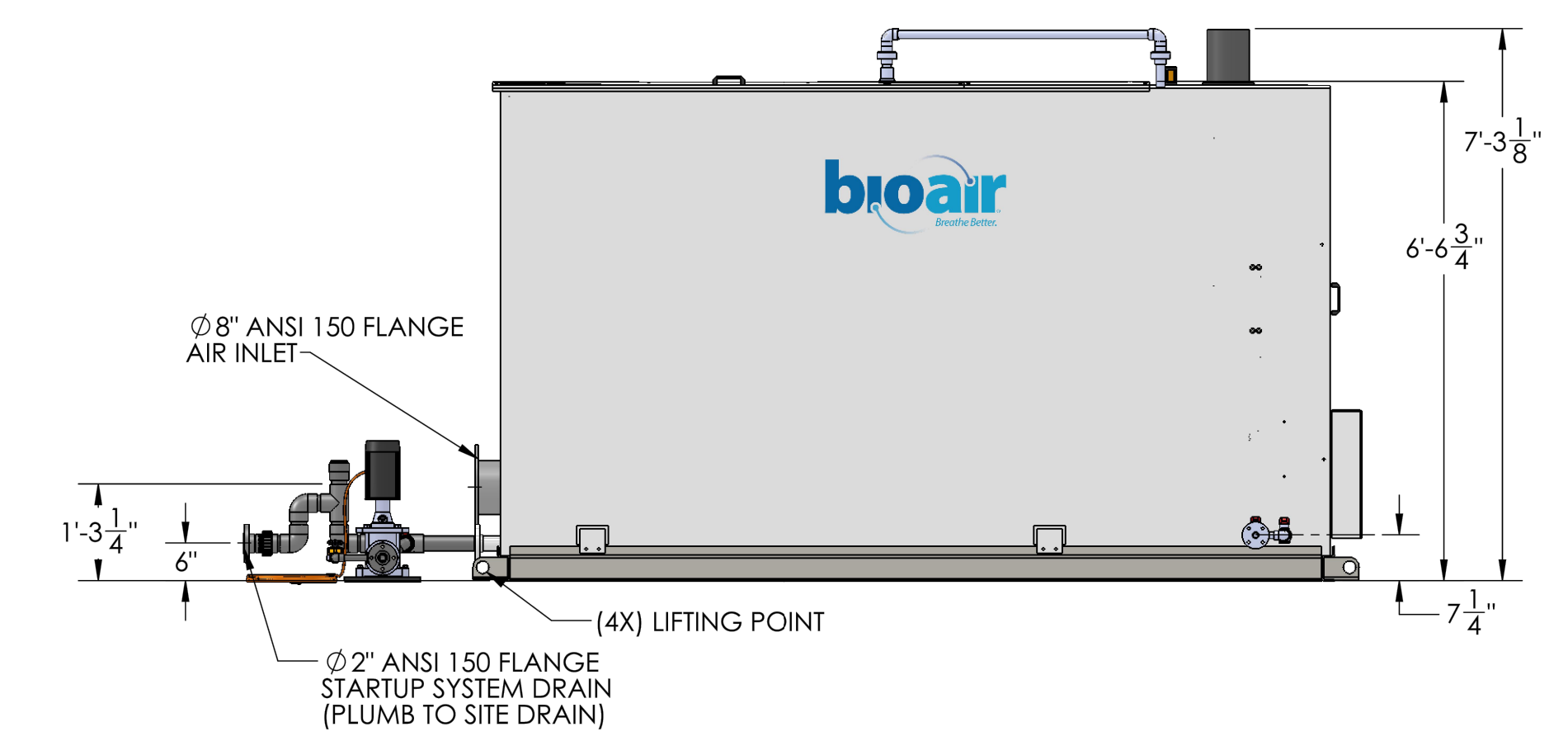
BIOFILTER AIR PIPING DETAIL (TOP VIEW) D 09
SCALE: 3"=1'



BIOFILTER DRAIN LINE DETAIL (TOP VIEW) E 09
NOT TO SCALE



- NOTES:
- FOUNDATION PAD MUST BE FABRICATED UNIFORM IN TEXTURE AND APPEARANCE AND MEET A SURFACE PLANE TOLERANCE OF 1/8" IN 10'
 - LOAD DISTRIBUTION AREA = 3310 in²
 - SHIPPING WEIGHT = 1900 LB, OPERATING WEIGHT = 4760 LB



CONTROL AREA COVER REMOVED FOR CLARITY

SIZE: **B** DWG. NO.: **EP461-GA** REV: **C**

SCALE: 1:24 SHEET 2 OF 2



HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

REVISIONS:

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: AS SHOWN		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
BYPASS PUMP DETAILS

DRAWING NUMBER

12



BA200E Diesel Driven
Dewatering and Sewage Pump
Max. 3365 US GPM, Max. 197 ft. / 85 PSI



Pump specifications:
Type.....BA200E D405
Max. flow.....3365 US GPM (765 m3/hour)
Max. pressure.....197 ft. / 85 PSI (60 mwc)
Discharge x suction.....8" x 10" flanges
Solids handling.....3" (76 mm)
Impeller type.....Open impeller
Priming system.....BBA MP50
Engine.....Volvo Penta TAD572VE
Emission standard.....Tier 4 final
Canopy.....M14-30
Sound level.....Approx. 69 dB(A) at 33 ft.
Dry weight.....8760 lbs. (3980 kg)

FEATURES

BA auto prime pump
The BA range of pumps has been designed with a clear focus on reliability, efficiency and durability. Featuring a fully automatic priming system, the BA series pumps quickly prime and re-prime, even from dry conditions. The heavy build style of both pump and canopy make the BA range perfect for use in the demanding construction market.

Complete package designed & built by BBA Pumps

- Complete in-house design & production
- Over 60 years of experience in the market
- Extensive testing facility in-house
- Contemporary & functional design
- Durable & eco-friendly materials
- Custom builds available

World-class performance
The BA range is built to be deployed on the most demanding applications. Using high efficiency pumps and state-of-the-art diesel engines, the pumps offer maximum performance at minimal cost, fully in-sync with the company philosophy of "Lowest cost of ownership".


Sustainability

- High efficiency pumps minimising fuel consumption
- Corrosion free hot dip galvanized canopy
- Corrosion free composite door panels and powder coated plating
- 100% Oil-spill free priming system
- Fully self contained unit featuring a double wall fuel containment tank and fluid containment system eliminating fuel/oil spills at all times

After sales service & product support

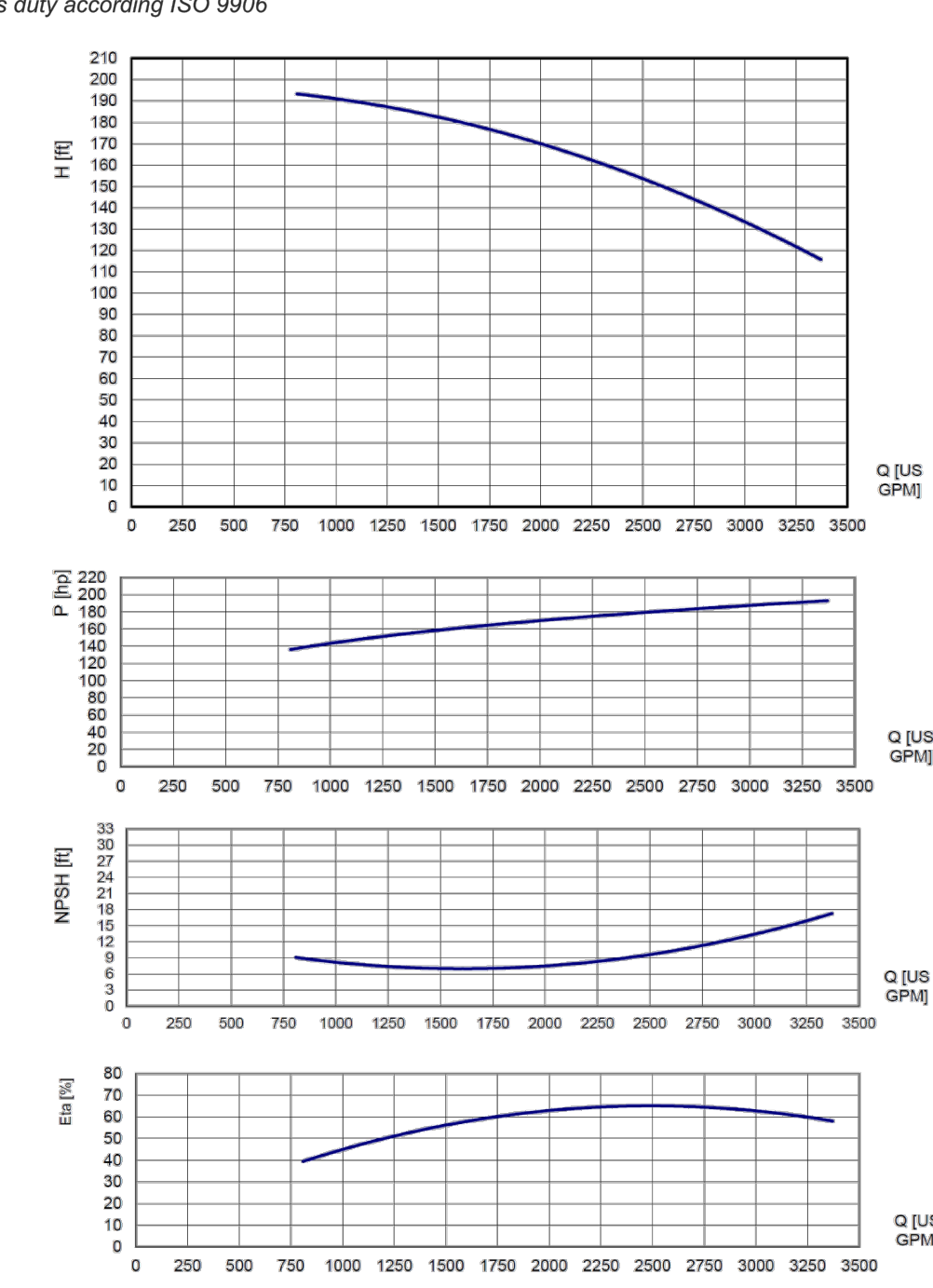
- Single supplier for parts, spares & accessories
- Dedicated customer help-desk (24h service)
- Dedicated service department in-house
- Global parts distribution network
- Optional global on-site servicing
- Extensive training options available (technical & commercial), on-site or in-house






BA200E Diesel Driven
Dewatering and Sewage Pump
Max. 3365 US GPM, Max. 197 ft. / 85 PSI

PERFORMANCE CURVES 1800 RPM
Continuous duty according ISO 9906







BA200E Diesel Driven
Dewatering and Sewage Pump
Max. 3365 US GPM, Max. 197 ft. / 85 PSI



Factory Acceptance Test
Extensive testing facility in-house. FAT must be conducted formally and be witnessed by the owner and/or project manager.



LED lights
Fully integrated in the canopy for easy operation throughout the evening and night.



Large inspection covers
Easy access to float box, impeller and non-return valve.



Safety
Extremely durable and lockable T-locks offering perfect grip.



4 Year limited warranty
The BBA limited warranty covers years or operating hours whichever occurs first. For more details please consult the BBA warranty book.



User Manual BA
Extensive user manual with important information concerning the pump unit, pump installation and safety warnings. Available in several languages.

Pictures used are for illustration purposes only.





BA200E Diesel Driven
Dewatering and Sewage Pump
Max. 3365 US GPM, Max. 197 ft. / 85 PSI

STANDARD TECHNICAL SPECIFICATIONS

BBA auto prime pump
Pump type.....BA200E D405
Max. flow.....3365 US GPM (765 m3/hour)
Max. head.....197 feet (60 mwc)
Impeller type.....Open impeller
Solids handling.....3 inch (76 mm)
Pump casing.....Ductile iron
Impeller.....Stainless steel GX4CrNi13-4 (1.4317)
Wear plate.....Stainless steel GX4CrNi13-4 (1.4317)
Pump shaft.....Stainless steel 316
Shaft seal.....Mechanical seal
Seal faces.....HM/HM
O-ring.....Viton



BBA priming system
Pump type.....BBA MP50 Diaphragm pump
Air handling capacity.....28 CFM (80 m3/h)
Max. vacuum.....29 inHg (8.5 m)
Drive.....Toothed belt (continuous drive)
Float box.....Aluminium
Non return valve.....Cast iron GG25
Check valve disc.....Buna-N



Engine
Engine brand.....Volvo Penta
Engine type.....TAD572VE
Flywheel power.....197 Hp (145 kW)
Engine speed.....1300 - 1800 RPM
Fuel consumption.....202 g/kWh
Displacement.....5.1 ltr
Number of cylinders.....4
Aftertreatment.....SCR (=AdBlue)
Exhaust emission US.....Tier 4 final



Lofa control panel LC30
- Auto start/stop system
- Two float switches included (10m cable)
- Switch Manual-0-Auto
- RAMP-UP/DOWN function
- Rpm control with push buttons
- Warning lights
- 4.3" LCD monitor



Fuel system

- Fuel tank steel 125 US Gallon net (475 L.)
- AdBlue® tank 48 US Gallon net (180 L.)
- Electronic fuel injection system

Electrical system & safety features

- Premium quality battery
- Low oil pressure shut down
- High temperature shut down





BA200E Diesel Driven
Dewatering and Sewage Pump
Max. 3365 US GPM, Max. 197 ft. / 85 PSI

CANOPY M14-30 (discharge roof pipe)

BBA sound attenuating canopy
Canopy type.....M14-30
Dimensions L x W x H.....157.5 x 57 x 98.4 inch
Dimensions L x W x H.....4000 x 1450 x 2500 mm
Basic frame.....Hot dip galvanized
Doors.....6 composite easy-access doors (lockable)
Fuel tank.....Steel net 125 US gallon (475 ltr)
Fuel tank autonomy.....14 hours (at 1800 rpm BEP)
Fuel tank cap.....4 inch (100 mm)
AdBlue® tank.....PE net 48 US Gallon (180 ltr)
Forklift pockets.....Fitted with 2 forklift pockets
Lifting point.....Fitted with lifting points
Connections.....Flange connections
Exhaust system.....Muffler mounted on front canopy
Aftertreatment.....Fully integrated in the canopy
Additional.....Fitted with oil-water separator
Documentation box.....BBA user manual and warranty book



SEE BYPASS PUMP SUCTION DETAIL—SHEET 09

SEE BYPASS PUMP DISCHARGE DETAIL—SHEET 09
ALSO SEE BYPASS PUMP CONNECTION DETAIL—SHEET 09

Actual dimensions (in mm and inches) may vary depending on selected quick couplings.



12 OF 16

REVISIONS:

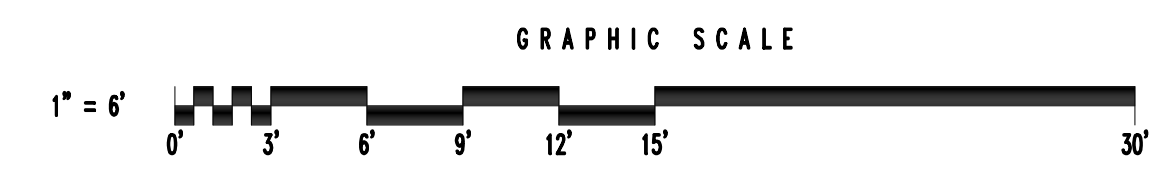
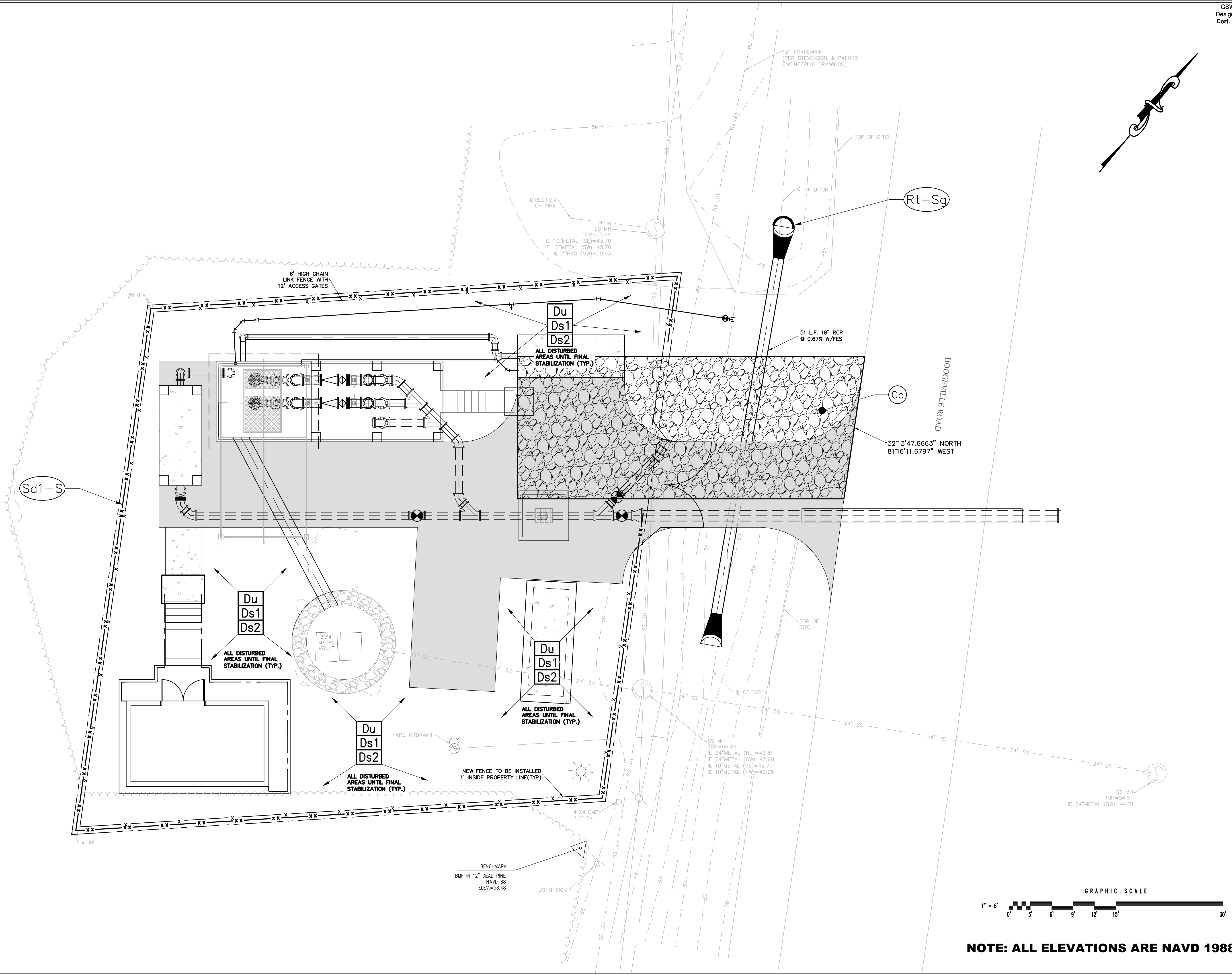
NO.	DATE	DESCRIPTION

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
EROSION SEDIMENT CONTROL PLAN

DRAWING NUMBER
13
13 OF 16

December 14, 2018 - 8:56 AM Printed By: skendryna
E:\effinghamco\120224450 hodgeville lift station #4\acad files\construction\SH13 ESCP.dwg



NOTE: ALL ELEVATIONS ARE NAVD 1988.

EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES:

GSWCC Level II
Design Professional
Cert. #0000033989

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST INFRASTRUCTURE CONSTRUCTION PROJECTS

Project Name: HODGEVILLE LIFT STATION #4 IMPROVEMENTS Address: HODGEVILLE ROAD
City/County: EFFINGHAM COUNTY Date on Plans: OCTOBER 2020
Name & email of person filling out checklist: MICHAEL S. MIEYR, P.E. mmieyr@husseygaybell.com

Plan Page #	Included Y/N
12	Y

TO BE SHOWN ON ES&PC PLAN

1	Y	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)
2	Y	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)
3	Y	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
4	Y	Provide the name, address, email address and phone number of primary permittee.
5	Y	Note total and disturbed acreage of the project or phase under construction.
6	Y	Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
7	Y	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
8	Y	Description of the nature of construction activity.
9	Y	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
10	Y	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
11	Y	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.
12	Y	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.*
13	Y	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.*
14	Y	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 and perimeter control BMPs within 7 days after installation." in accordance with Part IV A.5, page 20 of the permit.
15	Y	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 vested vegetation or within 25-foot of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
16	N/A	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
17	Y	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."
18	Y	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a section 404 permit."
19	Y	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."
20	Y	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."
21	Y	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
22	N/A	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 a Biotically 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 to those areas of the site which discharge to the Impaired Stream Segment."
23	N/A	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."
24	Y	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."
25	N/A	Provide BMPs for the remediation of all petroleum spills and leaks.
26	Y	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."
27	Y	Description of practices to provide cover for building materials and building products on site."
28	Y	Description of the practices that will be used to reduce the pollutants in storm water discharges."
29	Y	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 sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
30	Y	Provide complete requirements of inspections and record keeping by the primary permittee."
31	Y	Provide complete requirements of sampling frequency and reporting of sampling results."
32	Y	Provide complete details for retention of records as per Part IV F. of the permit."
33	Y	Description of analytical methods to be used to collect and analyze the samples from each location."
34	N/A	Appendix B rationale for NTU values at all outfall sampling points where applicable."
35	N/A	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."
36	Y	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 initial perimeter control BMPs into a single phase."
37	Y	Graphic scale and North arrow.
38	Y	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours USGS 1" = 200' Topographic Sheets Proposed Contours 1" = 400' Centerline Profile
39	N/A	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.gswcc.org.
40	N/A	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."
41	N/A	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.
42	N/A	Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
43	N/A	Delineation and acreage of contributing drainage basins on the project site.
44	N/A	Delineate on-site drainage and off-site watersheds using USGS 1"=200' topographical sheets.
45	Y	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
46	N/A	Storm drain pipe and wet velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/delineate all storm water discharge points.
47	Y	Soil series for the project site and their delineation.
48	Y	The limits of disturbance for each phase of construction.
49	Y	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 included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the bottom, 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.
50	Y	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.
51	Y	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.
52	Y	Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilize, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the 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, 2020

2 LEVEL II CERTIFICATION:
LEVEL II CERTIFICATION NUMBER ISSUED BY THE COMMISSION, SIGNATURE AND SEAL OF THE CERTIFIED DESIGN PROFESSIONAL. (SEE PROFESSIONAL SEAL)

3 24-HOUR LOCAL EROSION AND SEDIMENTATION CONTROL CONTACT:
CHARLES GEORGE (912) 754-8000

4 PRIMARY PERMITTEE INFORMATION:
CHARLES GEORGE, P.E.
DIRECTOR OF DEVELOPMENT SERVICES/COUNTY ENGINEER
601 N LAUREL ST, SPRINGFIELD, GA 31329
(912)754-8000
cgeorge@effinghamcounty.org

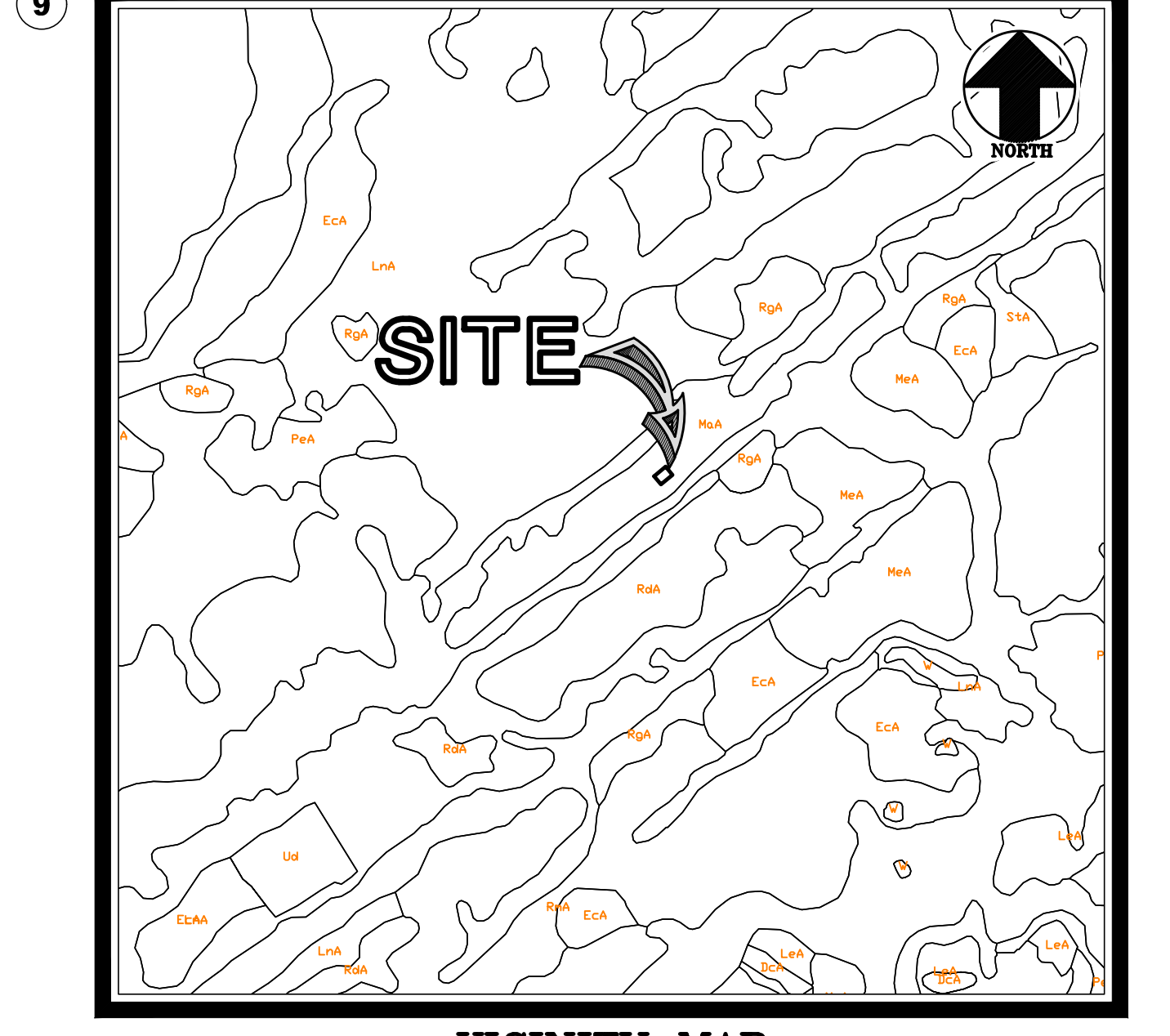
5 TOTAL ACREAGE / DISTURBED ACREAGE
ESTIMATED TOTAL SITE ACREAGE: 0.11 ACRES
TOTAL DISTURBED AREA DEVELOPMENT: 0.11 ACRES

6 PROJECT START LOCATION
LATITUDE: 32°13'47.6663" NORTH
LONGITUDE: 81°16'11.6797" WEST

7 PROJECT END LOCATION
LATITUDE: 32°13'47.6663" NORTH
LONGITUDE: 81°16'11.6797" WEST

8 DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY:
THE PROJECT INCLUDES INSTALLATION OF A 16-INCH WATER MAIN TO CONNECT TWO (2) EXISTING WATER MAINS. THE CONNECTION OF THE EXISTING WATER MAINS WILL IMPROVE WATER QUALITY AND THE AMOUNT OF FIRE FLOW AVAILABLE. THE PROJECT CONSISTS OF APPROXIMATELY 10,520 LF 16" PVC WATER MAIN INSTALLED BY OPEN-CUT, 966 LF OF 16" FPVC WATER MAIN INSTALLED BY HORIZONTAL DIRECTIONAL DRILL AND 50 LF OF 16" FPVC WATER MAIN INSTALLED IN STEEL CASING VIA JACK AND BORE. THERE WILL BE NO LATERAL CONNECTIONS TO THE PROPOSED WATER MAIN AT THIS TIME.

THE PROJECT SITE IS CURRENTLY DEVELOPED. SOIL EROSION AND SEDIMENT CONTROL WILL BE ACCOMPLISHED BY THE USE OF BEST MANAGEMENT PRACTICES FROM GEORGIA'S MANUAL FOR EROSION AND SEDIMENT CONTROL. THE TRACKING OF SOIL ONTO ADJACENT ROADWAYS WILL BE ADDRESSED BY THE USE OF A TEMPORARY CONSTRUCTION EXIT. RUNOFF FROM THE DISTURBED AREAS OF THE SITE WILL BE FILTERED BY THE USE OF TEMPORARY SEDIMENT BARRIERS (SILT FENCING). FINAL STABILIZATION WILL BE ACCOMPLISHED BY PERMANENT GRASSING.



9 VICINITY MAP
SCALE: 1" = 2,000'

10 THE PROJECTS RECEIVING WATERS INCLUDE DASHER CREEK. STATE WATERS, ARE LOCATED ON WITHIN 200' OF THE PROJECT SITE.

DESCRIPTION OF SENSITIVE AREAS:
THERE ARE TWO WETLAND SECTIONS (STATIONS 18+00 THRU 24+50 AND 49+80 THRU 58+00) AND THE NEW WATER MAIN WILL BE HORIZONTALLY BORED UNDERNEATH THE WETLANDS TO PREVENT ANY IMPACTS TO THE WETLANDS.

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

ENGINEER'S SIGNATURE _____ GSWCC CERTIFICATION NO. 0000013979 OCT 2020

12 "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 GEORGIA 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."

ENGINEER'S SIGNATURE _____ GSWCC CERTIFICATION NO. 0000013979 OCT 2020

13 "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 SAMPLLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGEMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 100002, 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."

ENGINEER'S SIGNATURE _____ GSWCC CERTIFICATION NO. 0000013979 OCT 2020

14 THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.

15 NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN ANY 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.

16 DESCRIPTION OF BUFFER ENCROACHMENT:
NO BUFFER ENCROACHMENTS ARE PROPOSED FOR THIS PROJECT.

17 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.

18 WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

19 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.

20 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.

21 ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

22 THIS PROJECT DOES NOT DISCHARGE INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT, ANY PROJECT DISCHARGING INTO A BIOTA IMPAIRED STREAM SEGMENT, OR WITHIN 1 MILE UPSTREAM AND WITHIN SAME WATERSHED MUST COMPLY WITH PART III, C, OF THE PERMIT.

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.

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.

25 SPILL CLEANUP AND CONTROL PRACTICES

1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND PROCEDURES SHALL BE MADE AVAILABLE TO SITE PERSONNEL.
2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAND/OUT AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES SHALL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
4. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS SHALL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
5. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), AND FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.
6. FOR SPILLS OF A GREATER THAN 55 GALLONS AND NO SURFACE WATER IMPACT, THE GEORGIA EPD SHALL BE CONTACTED WITHIN 24 HOURS.
7. FOR SPILLS LESS THAN 55 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL SHALL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL PREPARED THIS PLAN MORE THAN 300 GALLONS OF PETROLEUM IS STORED ON-SITE (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.

26 DESCRIPTIONS OF THE MEASURES THAT WILL BE INSTALLED DURING CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETE.
THE SITE WILL BE RETURNED TO ITS PRE-CONSTRUCTION CONDITION AFTER CONSTRUCTION IS COMPLETE. PERMANENT GRASSING WITH MULCH WILL BE THE ONLY STORM WATER POLLUTANT CONTROL REMAINING AFTER CONSTRUCTION.

27 DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE:
BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE WILL BE PROVIDED TEMPORARY COVER IN THE FORM OF PLASTIC SHEETING.

28 DESCRIPTION OF PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORMWATER DISCHARGES:
THE FOLLOWING POTENTIAL POLLUTANTS ARE EXPECTED ON-SITE DURING INFRASTRUCTURE CONSTRUCTION: SILT, SEDIMENT, CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUEL AND LUBRICANTS FOR EQUIPMENT, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, PLASTIC AND METAL. THE CONTROL OF THESE POLLUTANTS WILL BE ACCOMPLISHED WITH BEST MANAGEMENT PRACTICES AS SET FORTH IN THE GEORGIA'S MANUAL FOR EROSION AND SEDIMENT CONTROL.

- PRODUCT SPECIFIC PRACTICES**
- **PETROLEUM BASED PRODUCTS** - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS SHALL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS SHALL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. METHODS SHALL INCLUDE COLLECTION IN A SUITABLE CONTAINER FOR DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
 - **CONCRETE TRUCK WASHING** - NO CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON-SITE.
 - **FERTILIZER/HERBICIDES** - THESE PRODUCTS SHALL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS SHALL BE UNDER ROOF IN SEALED CONTAINERS.
 - **BUILDING MATERIALS** - NO BUILDING OR CONSTRUCTION MATERIALS SHALL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIAL SHALL BE DISPOSED OF OFFSITE USING APPROPRIATE AND LAWFUL WASTE DISPOSAL PROCEDURES.

TENTATIVE ACTIVITY SCHEDULE

	MONTH No. 1	MONTH No. 2	MONTH No. 3	MONTH No. 4	MONTH No. 5
INSTALLATION OF SEDIMENT CONTROLS AND TREE PROTECTION BARRICADES	█				
DEMOLITION, CLEARING, GRUBBING & STRIPPING TOPSOIL					
UTILITY INSTALLATION					
GRASSING / LANDSCAPING					
MAINTENANCE OF SEDIMENT CONTROLS & TEMPORARY GRASSING (AS REQUIRED)					
REMOVAL OF SEDIMENT CONTROLS					

30 PRIMARY PERMITTEE IS RESPONSIBLE FOR REGULAR INSPECTIONS AND RECORD KEEPING AS REQUIRED BY THE GEORGIA EPD NPDES PERMIT. INSPECTIONS (TO BE COMPLETED BY PRIMARY PERMITTEE)

PERMITTEE REQUIREMENTS

- (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 AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
- (3). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) 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 HAS BEEN SUBMITTED) 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 ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE 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 CERTIFICATION 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.



HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

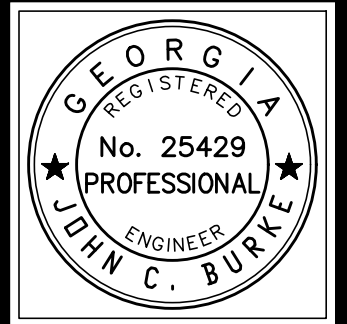
DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

#4 HODGEVILLE LIFT STATION IMPROVEMENTS FOR THE EFFINGHAM COUNTY BOARD OF COMMISSIONERS EROSION SEDIMENT CONTROL NOTES

December 14, 2018 - 8:56 AM Printed By: skentyma E:\effingham\120222\4450 hodgeville lift station #4\iscad files\construction\SH1-14-ES&PC.dwg

EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES:

GSWCC Level II
Design Professional
Cert. #000003398



HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB
DATE: APRIL 2022		
JOB NO. 120004450		
SCALE: 1" = 6'		

#4
HODGEVILLE LIFT STATION
IMPROVEMENTS
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
EROSION SEDIMENT CONTROL NOTES

DRAWING NUMBER
15
15 OF 16

31 STORMWATER SAMPLING SHALL BE CONDUCTED AT THE POINTS AS INDICATED WITHIN THIS ESPCC.
SAMPLING FREQUENCY

- (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 IN 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;
 - (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 COMPLETION OF MASS GRADING OPERATIONS, 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 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

REPORTING
THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD 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. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

1. 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.

- 32** **RETENTION OF RECORDS**
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 OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
 - C. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
 - D. A COPY OF ALL 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 PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

33 **STORMWATER SAMPLING**
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.

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATION. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING 75, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT NO. GAR 100002. THIS NTU IS BASED UPON THE TOTAL PROJECT ACRES (5.91) VS. DISTURBED ACREAGE (4.84) FOR THE PROJECT SITE AND THE SURFACE WATER DRAINAGE AREA OF 0.014 SQUARE MILES, AND RECEIVING WATER WHICH SUPPORTS WARM WATER FISHERIES.

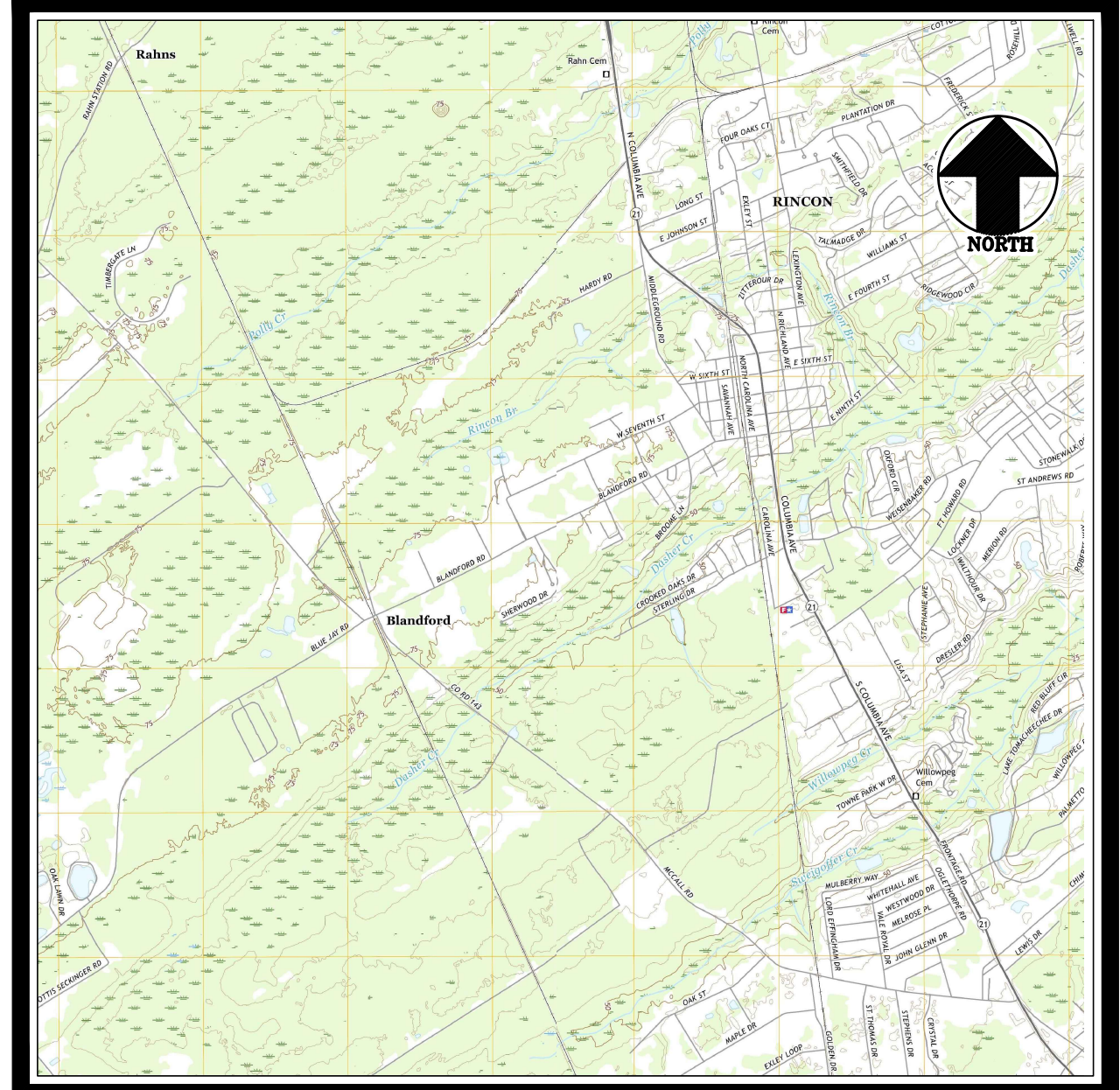
APPENDIX B
Nephelometric Turbidity Unit (NTU) Tables

Warm Water (Supporting Warm Water Fisheries)
Surface Water Drainage Area, Square Miles

Site Size Acres	0-4.99	5-9.99	10-24.99	24-49.99	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
24.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

To use these table, select the size (acres) of the facility or common development. Then, select the surface water drainage area (square miles). The NTU matrix value arrived at from the above tables is one to use in Part

- 35** SEE PAGE 07 FOR SAMPLING POINT LOCATIONS, PERENNIAL AND INTERMITTENT STREAM AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED.
- 36** SEE PLAN SHEETS AND SOIL EROSION CONTROL DETAIL SHEET FOR A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE.
- INITIAL PHASE: IMPLEMENTING SEDIMENT BARRIERS IN THE FORM OF SENSITIVE (WHERE APPLICABLE) AND NON-SENSITIVE SILT FENCE.
- INTERMEDIATE PHASE: MAINTENANCE OF SILT FENCES AND GRASSING, FERTILIZING, AND MULCHING AS LINEAR PROJECT PROGRESSES.
- FINAL PHASE: REMOVAL OF SILT FENCES AND MAINTENANCE OF PERMANENT GRASS.
- 39** N/A
- 40** SEE PAGES 3 - 12 FOR A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE.
- 41** APPLICABLE 25'-FOOT OR 50'-FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS AND ANY ADDITIONAL BUFFERS AS REQUIRED BY THE LOCAL ISSUING AUTHORITY ARE SHOWN IF APPLICABLE. AREAS OF IMPACT ARE SHOWN AND LABELED ON THE PLAN IF REQUIRED.
- 42** ON SITE WETLANDS AND WATERS OF THE STATE ARE LOCATED ON OR WITHIN 200 FEET OF THE PROJECT SITE.
- 43** NOT APPLICABLE FOR THIS PROJECT. DRAINAGE BASINS WILL NOT BE ALTERED DUE TO THE LINEAR NATURE OF THE PROJECT.
- 44**



DRAINAGE BASIN MAP
SCALE: 1" = 2,000'

45 THE SOIL HYDROLOGIC SOIL GROUP FOR THE SITE IS GROUP D. THE MAJORITY OF SOILS WITHIN THE PROJECT SITE ARE SANDY LOAM. THE ESTIMATED RUNOFF COEFFICIENT (C) BEFORE AND AFTER CONSTRUCTION ARE AS FOLLOWS BASED ON TOPOGRAPHY AND VEGETATION:

"PRE" (C) = 0.12
"POST" (C) = 0.12

46 DUE TO THE LINEAR NATURE OF THE PROJECT THERE WILL NOT BE ANY CONCENTRATED DISCHARGE AT ANY POINT ALONG THE PROJECT. THERE WILL BE NO STORM DRAIN OUTLETS INSTALLED ON THIS PROJECT.

- 47** SOIL TYPE:
- Ea - ECHAW-CENTENARY COMPLEX (HSG A)
 - La - LEEFIELD LOAMY SAND (HSG C/D)
 - La - LEON SAND (HSG A/D)
 - Ma - MASCOITE SAND (HSG C/D)
 - Pa - PELHAM LOAMY (HSG B/D)
 - Ra - RAINS LOAMY SAND (HSG B/D)
 - Rd - RIDGELAND-BOULOGNE COMPLEX (HSG A/D)
 - Rg - RIGDON SAND (HSG B/D)
 - Sa - SURRENCY MUCKY SAND (HSG C/D)

SEE PAGE 13 FOR DELINEATION.

48 REFER TO EROSION AND SEDIMENT CONTROL PLAN SHEETS FOR THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION.

49 **TEMPORARY SEDIMENT STORAGE.**
THE TOTAL ACRES DRAINED TO THE PROJECT IS 0.11 ACRES, THEREFORE, THE REQUIRED SEDIMENT STORAGE VOLUME IS 0.11 ACRES X 67 CY PER ACRE = 7.4 CY OF STORAGE REQUIRED.

THE PROJECT IS LINEAR IN NATURE, THEREFORE SEDIMENT STORAGE IS BETTER ACHIEVED BY THE USE OF SILT FENCE RATHER THAN A TEMPORARY SEDIMENT BASIN. A TEMPORARY SEDIMENT BASIN WOULD CAUSE ADDITIONAL LAND DISTURBANCE AND WOULD NOT ACHIEVE A COMPREHENSIVE METHOD OF CONTROLLING SEDIMENT FOR LINEAR PROJECTS

SEDIMENT STORAGE COMPUTATION (INITIAL PHASE)

STORAGE METHOD	RATE	QUANTITY	VOLUME
TEMPORARY SEDIMENT BARRIER	0.78 C.Y./FT.	278 LF.	= 217 C.Y.
PROVIDED (EXCEEDS REQUIRED)			217 C.Y.

THE PROVIDED STORAGE METHOD BEING UTILIZED FOR THIS PROJECT WILL BE 278 LF (NON-SENSITIVE/SINGLE) = A TOTAL OF 278 LF SILT FENCE/SEDIMENT BARRIER, THEREFORE THE VOLUME WILL BE 278 LF X 0.78 CY/LF = 217 CY OF STORAGE PROVIDED.

50 REFER TO EROSION AND SEDIMENT CONTROL PLAN SHEETS FOR SPECIFIED LOCATIONS OF BMPs.

LEGEND:

- CONSTRUCTION EXIT
- DUST CONTROL ON DISTURBED AREAS
- DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
- DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
- DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
- TEMPORARY SEDIMENT SINGLE BARRIER - SILT FENCE, TYPE "NON-SENSITIVE"
- TEMPORARY SEDIMENT DOUBLE BARRIER - SILT FENCE, TYPE "SENSITIVE"
- INLET SEDIMENT TRAP
- SLOTTED BOARD DAM WITH STONE FILTER
- STORM DRAINAGE OUTLET PROTECTION
- DIVERSIONS
- STONE CHECK DAM
- TEMPORARY SEDIMENT TRAP
- STORM WATER DISCHARGE SAMPLING POINT
- TREE PROTECTION BARRICADE
- SOILS
- LIMITS OF DISTURBANCE & STORMWATER MANAGEMENT AREA
- SILT FENCE PROTECTION (SINGLE)
- SILT FENCE PROTECTION (DOUBLE)

51 REFER TO EROSION AND SEDIMENT CONTROL DETAIL SHEETS FOR DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES.

52 **VEGETATIVE METHODS.**

- A. A VEGETATIVE COVER SHALL BE ESTABLISHED AND MAINTAINED OVER ALL FINAL GRADING AND OTHER DISTURBED AREAS OF THE SITE. SEE COASTAL PLAIN VEGETATIVE COVERS FOR AN OUTLINE OF THE ESTABLISHMENT OF VEGETATIVE COVERS.
- B. WEEKLY INSPECTION OF THE GRASS COVER SHALL BE PERFORMED TO IDENTIFY AREAS REQUIRING RE-ESTABLISHMENT OF GRASS.
- C. LIME RATE: 1 TO 2 TONS/ACRE.
FERTILIZER: 1500 LBS. OF 6-12-12 PER ACRE.

COASTAL PLAIN VEGETATIVE COVERS

MONTH OF PLANTING	TEMPORARY GRASS	RATE	MONTH OF PLANTING	PERMANENT GRASS	RATE
MARCH - JUNE	SUDANGRASS	60 Lbs./Ac	MARCH - JUNE	COMMON BERMUDA (HULLED)	10 Lbs./Ac
APRIL - AUGUST	BROWN TOP MILLET	40 Lbs./Ac	JULY - AUGUST	COMMON BERMUDA (HULLED) & BROWN TOP MILLET	6 Lbs./Ac 10 Lbs./Ac
SEPTEMBER - FEBRUARY	RYE GRASS	40 Lbs./Ac	SEPTEMBER - FEBRUARY	COMMON BERMUDA (UNHULLED) & TALL FESCUE	6 Lbs./Ac 30 Lbs./Ac

MULCH:

MULCH, IF REQUIRED, SHALL BE UNCHOPPED, UNROTTED, DRY STRAW, HAY, OR WOOD WASTE SHALL BE APPLIED TO A DEPTH OF 2-3 INCHES PROVIDING COMPLETE SOIL COVERAGE IN AREAS TO BE EVENTUALLY COVERED BY PERENNIAL VEGETATION THE CONTRACTOR SHALL APPLY 20-30 POUNDS OF NITROGEN/AC. IN ADDITION TO THE NORMAL AMOUNT.

MULCHING RATE FOR STRAW SHALL BE 2 TONS/AC. AND FOR HAY 2 1/2 TONS/AC. MULCH MATERIAL SHALL BE RELATIVELY FREE FROM ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITED NOXIOUS WEEDS WHICH ARE: CANADA THISTLE, JOHNSONGRASS AND QUACKGRASS. SPREAD MULCH MECHANICALLY OR UNIFORMLY BY HAND; MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER MULCH PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY PEG AND TWINE METHOD, MULCH ANCHORING TOOL, NETTING OR LIQUID MULCH BINDERS.

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REVISIONS:

DESIGNED	DRAWN	CHECKED
JLO/JCB	SKK	JCB

DATE: APRIL 2022

JOB NO. 120004450

SCALE: 1" = 6'

DESIGNED: JLO/JCB

DRAWN: SKK

CHECKED: JCB

DATE: APRIL 2022

JOB NO. 120004450

SCALE: 1" = 6'

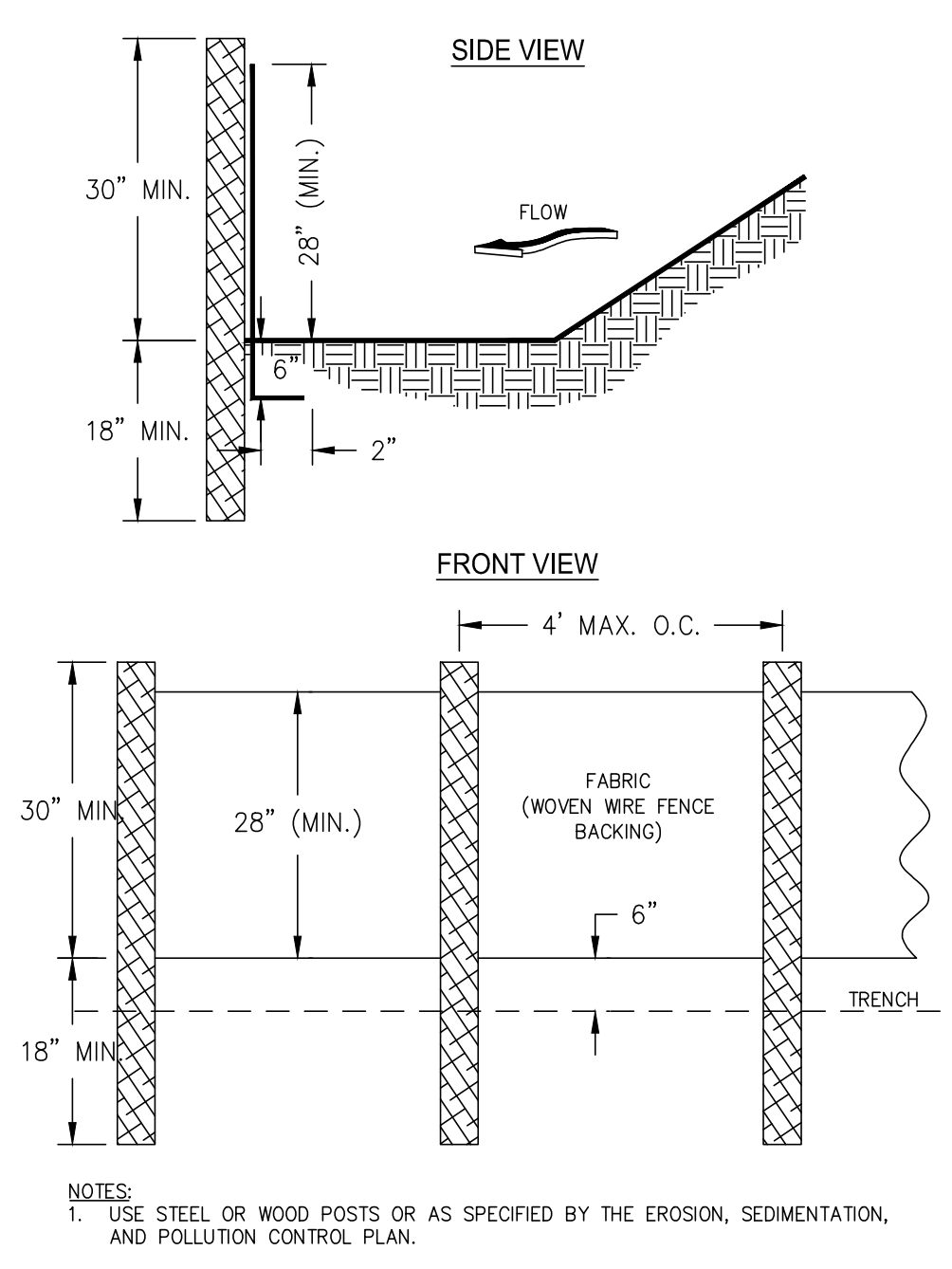
#4
HODGEVILLE LIFT STATION IMPROVEMENTS FOR THE EFFINGHAM COUNTY BOARD OF COMMISSIONERS
EROSION SEDIMENT CONTROL DETAILS

DRAWING NUMBER

16
16 OF 16

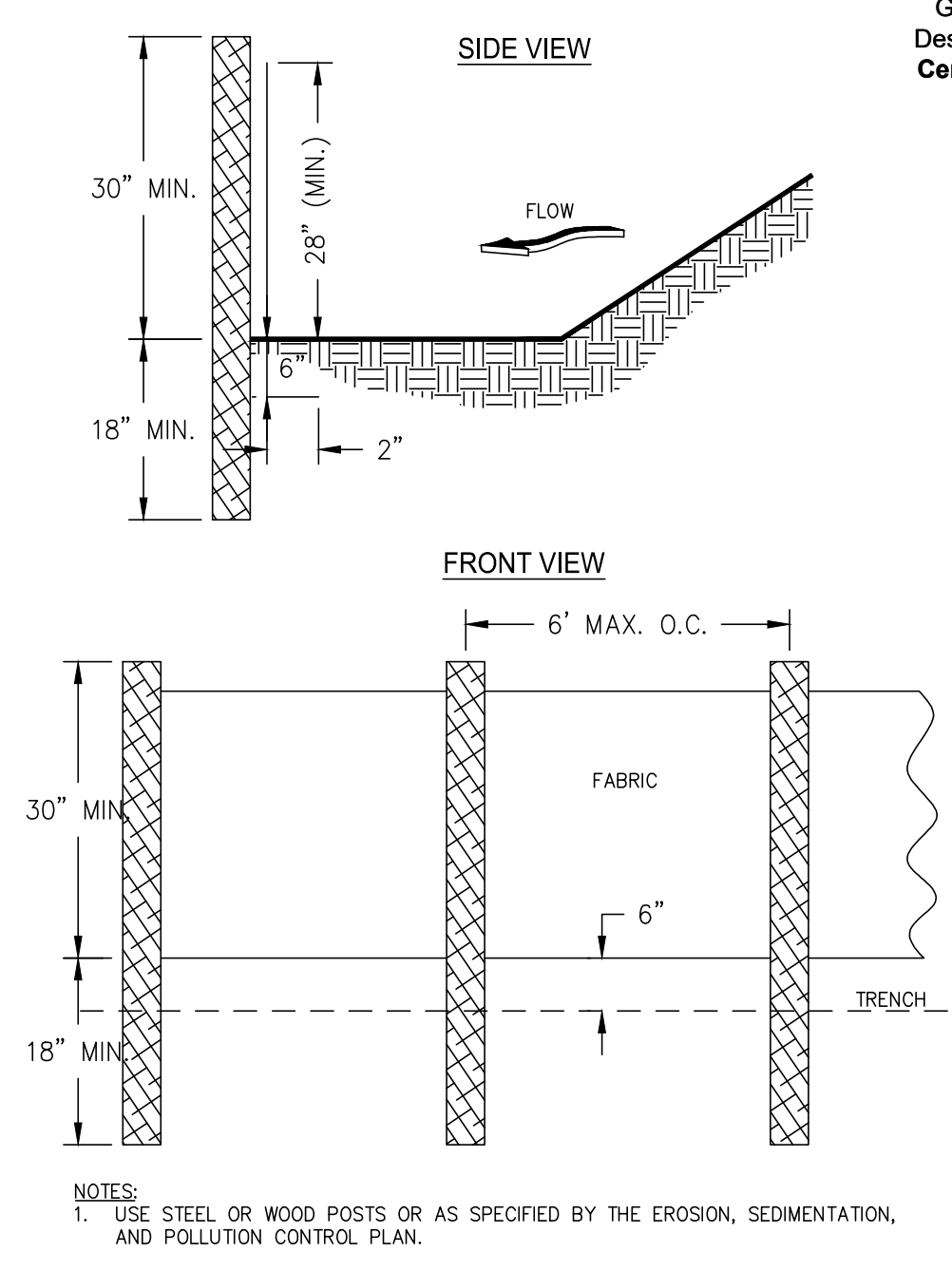
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SILT FENCE - TYPE SENSITIVE
N.T.S.

Sd1-S



SILT FENCE - TYPE NON-SENSITIVE
N.T.S.

Sd1-NS

DEFINITION

Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

CONDITIONS

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored, and have a continuous 90% cover or greater of the soil surface. Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months. If an area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed.

SPECIFICATIONS

MULCHING WITHOUT SEEDING
This standard applies to grades or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
1. Grade 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. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:
1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.

Ds1 **DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)**

DEFINITION

The establishment of temporary vegetative cover with fast growing seedlings for seasonal protection on disturbed or denuded areas.

CONDITIONS

Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established.

SEEDING RATES FOR TEMPORARY SEEDING

SPECIES	RATE Per 1,000 sq.ft.	RATE Per Acre *	PLANTING DATES **
Rye	3.9 pounds	3 bu.	9/1-3/1
Ryegrass	0.9 pound	40 lbs.	8/15-4/1
Annual Lespedeza	0.9 pound	40 lbs.	1/15-3/15
Weeping Lovegrass	0.1 pound	4 lbs.	2/15-6/15
Sudangrass	1.4 pounds	60 lbs.	3/1-8/1
Browntop Millet	0.9 pound	40 lbs.	4/1-9/15
Wheat	4.1 pounds	3 bu.	9/15-2/1

* Unusual site conditions may require heavier seeding rates
** Seeding dates may need to be altered to fit temperature variations and conditions.

Ds2 **DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)**

SPECIFICATIONS

Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or handseeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate of one ton per acre. Graded areas require lime application. Soils can be tested to determine if fertilizer is needed. On reasonably fertile soils or soil material, fertilizer is not required. For soils with very low fertility, 500 to 700 pounds of 10-10-10 fertilizer or the equivalent per acre (12-16 lbs./1,000 sq. ft.) shall be applied. Fertilizer should be applied before land preparation and incorporated with a disk, ripper or chisel.

Seeding
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, cultipacker seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand.

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch. Mulch without seeding should be considered for short term protection. Refer to Ds1 - Disturbed Area Stabilization (With Mulching Only).

Irrigation
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

Ds3 **DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)**

DEFINITION
THE PLANTING OF PERENNIAL VEGETATION SUCH AS TREES, SHRUBS, VINES, GRASSES, OR LEGUMES ON EXPOSED AREAS FOR FINAL PERMANENT STABILIZATION.

CONDITIONS
PERMANENT PERENNIAL VEGETATION IS USED TO PROVIDE A PROTECTIVE COVER FOR EXPOSED AREAS INCLUDING CUTS, FILLS, DAMS, AND OTHER DENUDED AREAS.

SPECIFICATIONS

GRADING AND SHAPING
GRADING AND SHAPING MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENT.

WHEN CONVENTIONAL SEEDING AND FERTILIZING ARE TO BE DONE, GRADE AND SHAPE WHERE FEASIBLE AND PRACTICAL, SO THAT EQUIPMENT CAN BE USED SAFELY AND EFFICIENTLY DURING SEEDING PREPARATION, SEEDING, MULCHING AND MAINTENANCE OF THE VEGETATION.

CONCENTRATIONS OF WATER THAT WILL CAUSE EXCESSIVE SOIL EROSION SHALL BE DIVERTED TO A SAFE OUTLET. DIVERSIONS AND OTHER TREATMENT PRACTICES SHALL CONFORM WITH THE APPROPRIATE STANDARDS AND SPECIFICATIONS.

SEEDBED PREPARATION

SEEDBED PREPARATION MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. WHEN CONVENTIONAL SEEDING IS TO BE USED, SEEDBED PREPARATIONS WILL BE DONE AS FOLLOWS:

- BROADCAST PLANTING**
- TILLAGE AT A MINIMUM, SHALL ADEQUATELY LOOSEN THE SOIL TO A DEPTH OF 4 TO 6 INCHES; ALLEVIATE COMPACTION; INCORPORATE LIME AND FERTILIZER; SMOOTH AND FIRM THE SOIL; ALLOW FOR THE PROPER PLACEMENT OF SEE, SPRIGS, OR PLANTS; AND ALLOW FOR THE ANCHORING OF STRAW OR HAY MULCH IF A DISK IS TO BE USED.
 - TILLAGE MAY BE DONE WITH ANY SUITABLE EQUIPMENT.
 - TILLAGE SHOULD BE DONE ON THE CONTOUR WHERE FEASIBLE.
 - ON SLOPES TOO STEEP FOR THE SAFE OPERATION OF TILLAGE EQUIPMENT, THE SOIL SURFACE SHALL BE PITTED OR TRENCHED ACROSS THE SLOPE WITH APPROPRIATE HAND TOOLS TO PROVIDE TWO PLACES 6 TO 8 INCHES APART IN WHICH SEED MAY LODGE AND GERMINATE. HYDRAULIC SEEDING MAY ALSO BE USED.

- INDIVIDUAL PLANTS**
- WHERE INDIVIDUAL PLANTS ARE TO BE SET, THE SOIL SHALL BE PREPARED BY EXCAVATING HOLES, OPENING FURROWS, OR DOUBLE PLANTING.
 - FOR NURSERY STOCK PLANTS, HOLES SHALL BE LARGE ENOUGH TO ACCOMMODATE ROOTS WITHOUT CROWDING.
 - WHERE PINE SEEDLINGS ARE TO BE PLANTED, SUBSOIL UNDER THE ROW 36 INCHES DEEP ON THE CONTOUR FOUR TO SIX MONTHS PRIOR TO PLANTING. SUBSOILING SHOULD BE DONE WHEN THE SOIL IS DRY, PREFERABLY IN AUGUST OR SEPTEMBER.

PLANTING FERTILIZER

AGRICULTURAL LIME IS REQUIRED AT THE RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING

PERMANENT PERENNIAL VEGETATION. ADDITIONAL LIME IS NOT REQUIRED. LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE." AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIP. SHALL BE "FINELY GROUND LIMESTONE."

HYDRAULIC SEEDING
MIX THE SEED (INOCULATED IF NEEDED), FERTILIZER, AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH WITH WATER AND APPLY IN A SLURRY UNIFORMLY OVER THE AREA TO BE TREATED. APPLY WITHIN ONE HOUR AFTER THE MIXTURE IS MADE.

CONVENTIONAL SEEDING
SEEDING WILL BE DONE ON A FRESHLY PREPARED AND FIRMED SEEDBED. FOR BROADCAST PLANTING, USE A CULTIPACKER SEEDER, DRILL, ROTARY SEEDER, OTHER MECHANICAL SEEDER, OR HAND SEEDING TO DISTRIBUTE THE SEED UNIFORMLY OVER THE AREA TO BE TREATED. COVER THE SEED LIGHTLY WITH 1/8 TO 1/4 INCH OF SOIL FOR SMALL SEED AND 1/2 TO 1 INCH FOR LARGE SEED WHEN USING A CULTIPACKER OR OTHER SUITABLE EQUIPMENT.

NO-TILL SEEDING
NO-TILL SEEDING IS PERMISSIBLE INTO ANNUAL COVER CROPS WHEN PLANTING IS DONE FOLLOWING MATURITY OF THE COVER CROP OR IF THE TEMPORARY COVER STAND IS SPARSE ENOUGH TO ALLOW ADEQUATE GROWTH OF THE PERMANENT (PERENNIAL) SPECIES. NO-TILL SEEDING SHALL BE DONE WITH APPROPRIATE NO-TILL SEEDING EQUIPMENT. THE SEED MAY BE UNIFORMLY DISTRIBUTED AND PLANTED AT THE PROPER DEPTH.

INDIVIDUAL PLANTS
SHRUBS, VINES AND SPRIGS MAY BE PLANTED WITH APPROPRIATE PLANTERS OR HAND TOOLS. PINE TREES SHALL BE PLANTED MANUALLY IN THE SUBSOIL FURROW. EACH PLANT SHALL BE SET IN A MANNER THAT WILL AVOID CROWDING THE ROOTS. NURSERY STOCK PLANTS SHALL BE PLANTED AT THE SAME DEPTH OR SLIGHTLY DEEPER THAN THEY GREW AT THE NURSERY. THE TIPS OF VINES AND SPRIGS MUST BE AT OR SLIGHTLY ABOVE THE GROUND SURFACE. WHERE INDIVIDUAL HOLES ARE DUG, FERTILIZER SHALL BE PLACED IN THE BOTTOM OF THE HOLE, TWO INCHES OF SOIL SHALL BE ADDED AND THE PLANT SHALL BE SET IN THE HOLE.

MULCHING
MULCH IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:

- DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED 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.
- WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
- ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 3/4-1 OR STEEPER.
- SERVICA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE.
- PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR SEEDING 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.
- WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.
- BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

WOOD CELLULOSE AND WOOD PULP FIBERS SHALL NOT CONTAIN GERMINATION OR GROWTH INHIBITING FACTORS. THEY SHALL BE EVENLY DISPERSED WHEN

AGITATED IN WATER. THE FIBERS SHALL CONTAIN A DYE TO ALLOW VISUAL METERING AND AID IN UNIFORM APPLICATION DURING SEEDING.

APPLYING MULCH
STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY WITHIN 24 HOURS AFTER SEEDING AND/OR PLANTING. THE MULCH MAY BE SPREAD BY BLOWER-TYPE SPREADING EQUIPMENT, OTHER SPREADING EQUIPMENT OR BY HAND. MULCH SHALL BE APPLIED TO COVER 75% OF THE SOIL SURFACE.

WOOD CELLULOSE OR WOOD FIBER MULCH SHALL BE APPLIED UNIFORMLY WITH HYDRAULIC SEEDING EQUIPMENT.

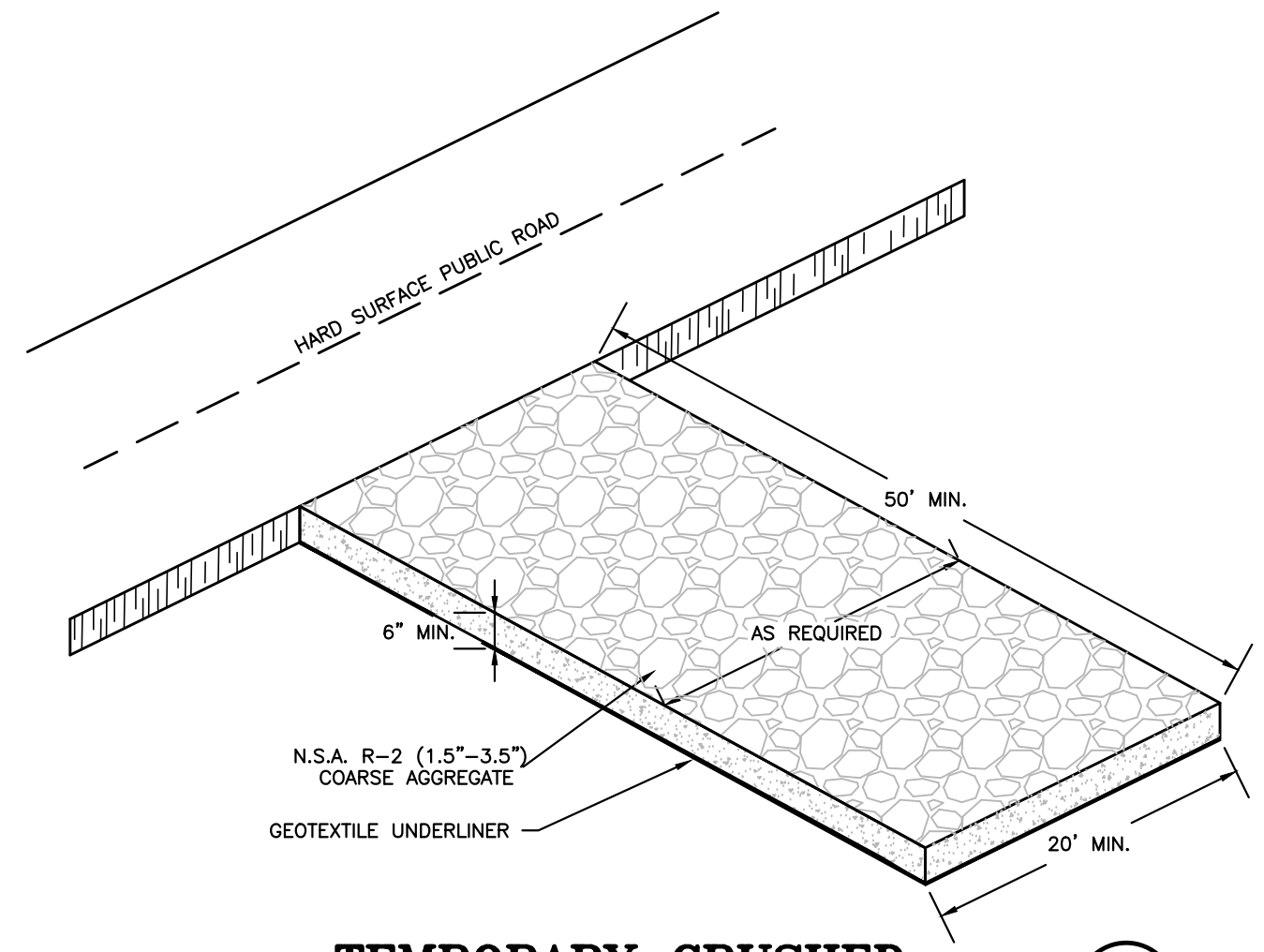
ANCHORING MULCH
ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING METHODS:
1. EMULSIFIED ASPHALT CAN BE (A) SPRAYED UNIFORMLY ONTO THE MULCH AS IT IS EJECTED FROM THE BLOWER MACHINE OR (B) SPRAYED ON THE MULCH IMMEDIATELY FOLLOWING MULCH APPLICATION WHEN STRAW OR HAY IS SPREAD BY METHODS OTHER THAN SPECIAL BLOWER EQUIPMENT.
2. HAY AND STRAW MULCH SHALL BE PRESSED INTO THE SOIL IMMEDIATELY AFTER THE MULCH IS SPREAD. A SPECIAL "PACKER DISK" OR DISK RATHER THAN THE DISKS SET STRAIGHT MAY BE USED. THE DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISKS SHALL BE DULL ENOUGH TO PRESS THE MULCH INTO THE GROUND WITHOUT CUTTING IT, LEAVING MUCH OF IT IN AN ERRECT POSITION. MULCH SHALL NOT BE FLOWED INTO THE SOIL.
3. SYNTHETIC TACKIFIERS OR BINDERS APPROVED BY GDOT SHALL BE APPLIED IN CONJUNCTION WITH OR IMMEDIATELY AFTER THE MULCH IS SPREAD. SYNTHETIC TACKIFIERS SHALL BE MIXED AND APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. REFER TO TACKIFIER AND BINDERS.
4. RYE OR WHEAT CAN BE INCLUDED WITH FALL AND WINTER PLANTINGS TO STABILIZE THE MULCH. THEY SHALL BE APPLIED AT A RATE OF ONE-QUARTER TO ONE HALF BUSHEL PER ACRE.
5. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH MAY BE NEEDED TO ANCHOR STRAW OR HAY MULCH ON UNSTABLE SOILS AND CONCENTRATED FLOW AREAS. THESE MATERIALS SHALL BE INSTALLED AND ANCHORED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

IRRIGATION
IRRIGATION SHALL BE APPLIED AT A RATE THAT WILL NOT CAUSE RUNOFF.

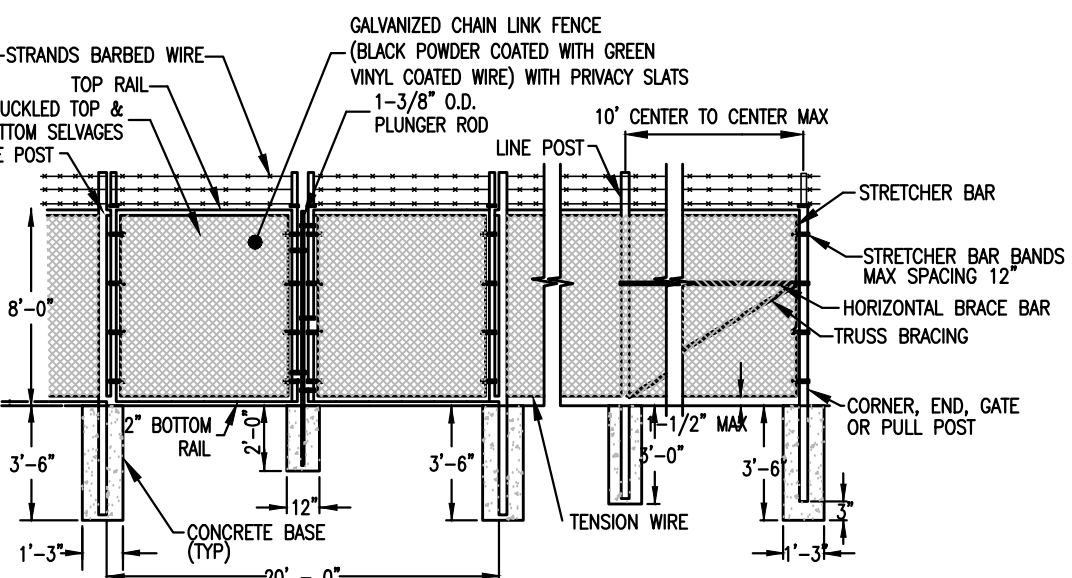
SEEDING RATES FOR PERMANENT SEEDING

SPECIES	RATE PER 1,000 SQ.FT.	RATE PER ACRE *	PLANTING DATES **
BAHIA	1.4 pounds	60 lbs.	1/1-12/31
BERMUDA	0.2 pounds	10 lbs.	2/15-7/1
CENTPEDE	BLOCK SOD ONLY	BLOCK SOD ONLY	4/1-7/1
LESPEDEZA	1.7 pounds	75 lbs.	1/1-12/31
WEEPING LOVE GRASS	0.1 pounds	4 lbs.	2/1-6/15
SWITCH GRASS	0.9 pounds	40 lbs.	3/15-6/1

* UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES
** SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND CONDITIONS



TEMPORARY CRUSHED STONE CONSTRUCTION EXIT
N.T.S.



NOTES:
1. FABRIC TO BE ATTACHED TO HORIZONTAL RAILS W/ THE WIRES AT 24\"/>

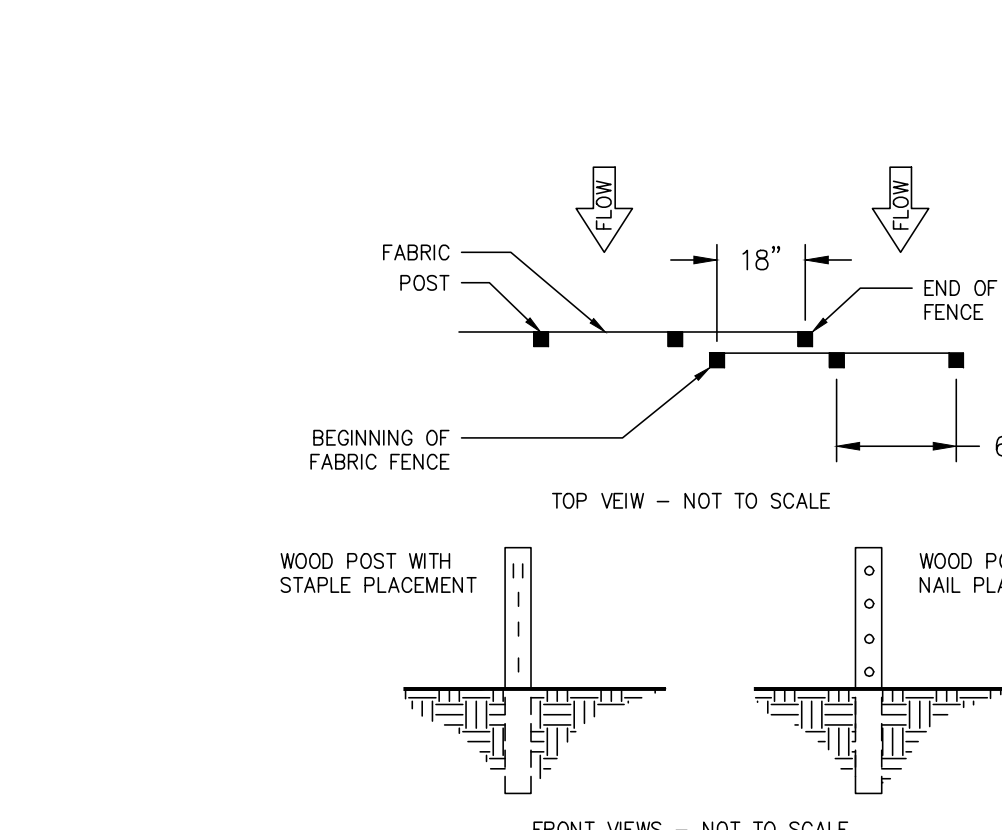
CHAIN LINK FENCE DETAIL
N.T.S.

SPRAY ON ADHESIVE REQUIREMENTS

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./AC)
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1	FINE SPRAY	300

- NOTES:**
- TEMPORARY METHODS**
 - MULCHES (Ds1-Ds2)-DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIAL. REFER TO STANDARD TACKIFIERS AND BINDERS. RESINS SUCH AS CURASOL OR TERRACK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - VEGETATIVE COVER-DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING.
 - SPRAY ON ADHESIVES- THESE ARE USED ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. REFER TO TACKIFIERS AND BINDERS.
 - TILLAGE- THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOW'S SPACED ABOUT 12 INCHES APART, SPRING TOOTHED HARROWS, AND SIMILAR PLOW'S ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
 - IRRIGATION- THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED. F. BARRIERS-SOLID BOARD FENCES, SNO FENCES, BURLAP FENCES, CRATE WALLS, SALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND. EROSION G. CALCIUM CHLORIDE-APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.
 - PERMANENT METHODS**
 - PERMANENT VEGETATION-DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
 - TOPSOILING- THIS ENTAILS COVERING THE SURFACE WITH LESS ERODIVE SOIL MATERIAL.
 - C. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

DUST CONTROL ON DISTURBED AREAS
N.T.S.



NOTES:
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18\"/>

FASTENERS FOR SILT FENCES
N.T.S.

PRIMARY CODES AND SPECIFICATIONS

- 1. REFERENCE TO CODES AND STANDARD SPECIFICATIONS OF ANY TECHNICAL ORGANIZATION OR ASSOCIATION...
2. GENERAL BUILDING CODE:
A. INTERNATIONAL BUILDING CODE, 2018 EDITION WITH GEORGIA AMENDMENTS.
3. CONCRETE CODES:
A. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
B. ACI 301-16, LATEST EDITION, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
C. LATEST EDITION OF CRSI MANUAL OF STANDARD PRACTICE & ALL SUPPLEMENTS.
4. STRUCTURAL STEEL CODES:
A. AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, JULY 7, 2016.
B. AISC 303-16 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, JUNE 15, 2016.
C. SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS, AUGUST 1, 2014.

DESIGN LOADS

- 1. GRAVITY LOADS (REFERENCE ASCE 7-16):
UNIFORMLY DISTRIBUTED DEAD LOADS
ROOF 15 PSF
ELEVATED FLOOR 100 PSF
GROUND FLOOR LEVEL 150 PSF
UNIFORMLY DISTRIBUTED LIVE LOADS
FLOOR MECHANICAL AREAS 150 PSF
GROUND FLOOR LEVEL 150 PSF
2. WIND LOAD (REFERENCE ASCE 7-16):
BASIC WIND SPEED, 3 SEC GUST
Vult = 139 MPH (FIGURE 26.5-1C)
Vasst = 108 MPH (IBC TABLE 1609.3.1)
RISK CATEGORY III (TABLE 1.5-1)
EXPOSURE CATEGORY C (SECTION 26.7.3)
INTERNAL PRESSURE COEFFICIENT GCpi = +/- 0.18 (TABLE 26.13-1)
3. SEISMIC LOAD (REFERENCE ASCE 7-16):
RISK CATEGORY III (TABLE 1.5-1)
SOIL SITE CLASSIFICATION D (SECTION 11.4.2)
IMPORTANCE FACTOR I = 1.25 (TABLE 1.5-2)
SPECTRAL RESPONSE AT SHORT PERIOD Sds = 0.315g
SPECTRAL RESPONSE AT 1 SEC. Sd1 = 0.177g
SEISMIC DESIGN CATEGORY SDc = C
SEISMIC FORCE RESISTING SYSTEM CANTILEVERED COLUMN SYSTEM DETAILED TO CONFORM TO THE REQUIREMENTS FOR INTERMEDIATE REINFORCED CONCRETE MOMENT FRAMES / STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
DETAILED RESPONSE MODIFICATION FACTOR R = 1.5 / 3.0
SEISMIC RESPONSE COEFFICIENT Cs = 0.212 / 0.105

GENERAL REQUIREMENTS

- 1. DRAWINGS SHOW TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. FOR DETAILS NOT SPECIFICALLY SHOWN PROVIDE DETAILS SIMILAR TO THOSE SHOWN.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, MEANS AND METHODS, ETC. THE STRUCTURAL ELEMENTS ARE NOT STABLE UNTIL THE STRUCTURE IS COMPLETE.
3. COORDINATE AND VERIFY ANY FLOOR AND ROOF OPENINGS, SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL DRAWINGS, AND OWNERS EQUIPMENT. FOR ADDITIONAL OPENINGS, INSERTS, SLEEVES, CURBS, PADS, ETC. NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
4. REVIEW OF SHOP DRAWINGS AND OTHER SUBMITTALS BY THE ARCHITECT AND ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE ENGINEER. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR IS ALSO RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
5. DO NOT SCALE DRAWINGS. FOLLOW DIMENSIONS SHOWN ON PLANS OR OBTAIN ADDITIONAL INFORMATION IN WRITING FROM THE ARCHITECT.
6. WHERE A SECTION, TYPICAL SECTION, DETAIL, TYPICAL DETAIL OR PLAN NOTE IS SHOWN FOR ONE CONDITION, IT SHALL APPLY TO ALL LIKE OR SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS.

SHOP DRAWINGS

- 1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING, MECHANICAL, ELECTRICAL AND SITE DRAWINGS. CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES THAT MAY AFFECT CONSTRUCTION OF THE STRUCTURE.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL FABRICATED MATERIALS TO THE ARCHITECT FOR REVIEW AS REQUIRED BY THE CONTRACT DRAWINGS.
3. CONTRACTOR SHALL REVIEW AND ADDRESS ALL INQUIRIES SHOWN ON SHOP DRAWINGS BY THE TRADE PREPARING THE SHOP DRAWINGS PRIOR TO SUBMITTING TO THE ARCHITECT FOR REVIEW. CONTRACTOR SHALL AFFIX HIS REVIEW STAMP ON SHOP DRAWINGS AND INDICATE ANY CORRECTIONS THAT MAY BE REQUIRED PRIOR TO SUBMITTING TO THE ARCHITECT. SHOP DRAWINGS NOT REVIEWED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ARCHITECT SHALL BE REJECTED AND RETURNED UNLESS PRIOR ARRANGEMENTS HAVE BEEN APPROVED IN WRITING BY THE ARCHITECT.
4. SHOP DRAWINGS REJECTED TWO CONSECUTIVE TIMES WILL RESULT IN ADDITIONAL COMPENSATION TO BE PAID TO THE STRUCTURAL ENGINEER OF RECORD FOR EACH ADDITIONAL REVIEW.
5. SHOP DRAWINGS REQUIRING SPECIAL ENGINEERING DESIGN BY THE FABRICATOR SHALL BEAR THE SEAL OF THE REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN AND LICENSED IN THE STATE WHERE THE CONSTRUCTION WILL OCCUR PRIOR TO SUBMITTING TO THE ARCHITECT FOR REVIEW.
6. REVIEW OF SHOP DRAWINGS BY THE ARCHITECT AND ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF THE SHOP DRAWINGS.
7. REPRODUCTION, REUSE OR DUPLICATION OF THE STRUCTURAL DRAWINGS FOR USE BY THE CONTRACTOR, ANY SUBCONTRACTOR, FABRICATOR OR MATERIAL SUPPLIER IS PROHIBITED UNLESS APPROVED IN WRITING. SHOULD THE CONTRACTOR OR HIS SUBCONTRACTORS ELECT TO PRODUCE SHOP DRAWINGS BY COPYING ELECTRONIC OR PAPER COPIES OF THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL REQUEST FROM THE ENGINEER OF RECORD A SHOP DRAWING WAIVER ALONG WITH THE SPECIFIC SHEETS REQUIRED. SIGNATURE OF THE WAIVER BY THE CONTRACTOR ALONG WITH PAYMENT OF A FEE OF \$500.00 TO THE ENGINEER OF RECORD SHALL BE REQUIRED. BY SIGNING THE WAIVER, THE CONTRACTOR ACCEPTS ALL INFORMATION SHOWN TO BE CORRECT AND OBLIGATES HIMSELF TO ANY JOB EXPENSE ARISING DUE TO ANY ERRORS OR OMISSIONS SHOWN THEREIN.

FOUNDATION SUBSURFACE PREPARATION

- 1. SPREAD AND STRIP FOOTINGS ARE DESIGNED FOR A MAXIMUM SAFE ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF BASED ON THE GEOTECHNICAL REPORT PREPARED BY TERRACON CONSULTANTS, INC., DATED APRIL 17, 2020, TERRACON PROJECT NUMBER ES195259. THIS REPORT IS AVAILABLE FOR INSPECTION AT THE OFFICE OF THE ENGINEER OR OWNER. THE RECOMMENDATIONS CONTAINED IN THIS REPORT ARE HEREIN MADE A PART OF THE REQUIREMENTS OF THESE CONTRACT DOCUMENTS.
2. UNLESS NOTED OTHERWISE IN THE DRAWINGS, THE LIMITS OF THIS SUBSURFACE PREPARATION ARE CONSIDERED TO BE THAT PORTION OF THE SITE DIRECTLY BENEATH AND 10 FEET BEYOND THE BUILDING AND ITEMS ATTACHED TO THE BUILDING PROPER.
4. ALL SUBSURFACE PREPARATION PROCEDURES SHALL BE PERFORMED UNDER THE OBSERVATION OF AN APPROVED TESTING LABORATORY SUPERVISED BY A LICENSED PROFESSIONAL ENGINEER.
5. CONTRACTOR SHALL REMOVE ALL EXISTING FOUNDATIONS, SLABS, PAVEMENTS AND BELOW-GRADE STRUCTURES THAT ARE LOCATED WITHIN THE LIMITS OF SUBSURFACE PREPARATION.
6. CONTRACTOR SHALL STRIP AND REMOVE ALL SURFACE VEGETATION, TOPSOIL, ROOT SYSTEMS, ORGANIC MATERIAL, AND SOFT OR OTHERWISE UNSUITABLE MATERIAL FROM THE BUILDING AREA. THE DEPTH OF STRIPPING SHALL BE THAT REQUIRED TO REMOVE SIGNIFICANT ROOT ZONES, TREE STUMPS AND OTHER UNACCEPTABLE MATERIALS, BUT IN NO CASE SHALL THE DEPTH OF STRIPPING BE LESS THAN 24".
7. COMPACT THE UPPER 24" OF EXPOSED SUBGRADE TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR (ASTM D 1557) BY PROOFROLLING THE EXPOSED SUBGRADE IN OVERLAPPING PASSES WITH A PNEUMATIC TIRE TANDEM AXLE DUMP TRUCK WEIGHING AT LEAST 20 TONS OR OTHER APPROVED DEVICE. REMOVE AND REPLACE UNSUITABLE AREAS WHICH DO NOT STABILIZE AFTER SUCCESSIVE PASSES OF PROOF-ROLLING EQUIPMENT AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
8. THE GEOTECHNICAL ENGINEER SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF ALL FOUNDATION AND/OR SLAB BEARING STRATA. USE OF STABILIZATION FABRIC MAY BE REQUIRED BY THE GEOTECHNICAL ENGINEER.
9. PLACE STRUCTURAL FILL IN THE PREPARED AREA IN 8" TO 10" LIFTS. COMPACT EACH LIFT TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR (ASTM D 1557). MATERIAL USED AS STRUCTURAL FILL SHALL BE NON-PLASTIC GRANULAR MATERIAL CONTAINING LESS THAN 15% FINES PASSING THROUGH THE NO. 200 SIEVE AND BE FREE OF ORGANICS, ROOTS, OR OTHER DELETERIOUS MATERIALS. MOISTURE CONTENT FOR GRANULAR FILL MATERIAL SHALL BE WITHIN +/- 3% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST AT THE TIME OF PLACEMENT AND COMPACTION.
10. SIDES OF FOUNDATIONS SHALL BE FORMED UNDER UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS POURED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS: SLOPE SIDES OF EXCAVATIONS AS APPROVED BY THE GEOTECHNICAL ENGINEER AND REQUIRED BY OSHA 1926.652. CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.
11. WHERE FOOTING STEPS ARE REQUIRED, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL.
12. SUPPORT SLAB REINFORCING WITH PLASTIC OR STAINLESS STEEL SUPPORTS AT 4'-0" O.C. EACH WAY IN THE TOP HALF OF THE SLAB. PROVIDE A 10 MIL (MINIMUM) POLYETHYLENE VAPOR BARRIER BENEATH THE FLOOR SLAB WITH JOINTS LAPPED NOT LESS THAN 6" AND TAPED.
13. SUPPORT BOTTOM REINFORCING IN FOOTINGS WITH PLASTIC OR STAINLESS STEEL CHAIRS SPACED A MAXIMUM OF 4'-0" EACH WAY.
14. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTHWORK OPERATIONS.
15. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADE AND FROM FLOODING THE PROJECT SITE AND SURROUNDING AREA.
16. NOTIFY THE ENGINEER AND THE OWNER'S REPRESENTATIVE IMMEDIATELY IF UNUSUAL SOIL CONDITIONS ARE FOUND.
17. DO NOT ALLOW STORED EXCAVATION MATERIAL TO DISRUPT PROPER DRAINAGE OF AREA.
18. DISPOSE OF EXCAVATED MATERIAL AS REQUIRED BY OWNER'S REPRESENTATIVE.

REINFORCED CONCRETE

- 1. ALL CONCRETE WORK SHALL CONFORM TO ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION. DESIGN IS BASED ON ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", LATEST EDITION.
2. UNLESS NOTED OTHERWISE ALL CONCRETE SHALL BE BATCHED WITH CLASS II CEMENT (MODERATE SULFATE RESISTANCE) AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH AND DENSITY AS FOLLOWS:
STRENGTH DENSITY % AIR
PSF PCF
FOUNDATIONS 3,500 145 3%
SLABS ON GRADE 4,000 145 3%
RETAINING WALLS 4,000 145 6%
ELEVATED SLABS AND BEAMS 4,500 145 4.5%
3. THE CONTRACTOR SHALL SUBMIT ALL CONCRETE MIX DESIGNS TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. CONCRETE MIX DESIGNS SHALL BE PREPARED BY AN APPROVED TESTING AGENCY AND COMPLY WITH ACI 318 SECTION 5.3. MIX DESIGN DATA SHALL INCLUDE AS A MINIMUM AVERAGE 28 DAY STRENGTH, NUMBER OF SAMPLES TESTED, AND STANDARD DEVIATION. TEST RESULTS SHALL NOT BE MORE THAN 24 MONTHS OLD AT THE TIME OF SUBMITTAL.
4. USE OF CALCIUM CHLORIDE IONS OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
5. REINFORCING SHALL CONFORM TO ASTM A618, GRADE 60 UNLESS NOTED OTHERWISE.
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, GRADE 60 AND SHALL BE PROVIDED IN FLAT SHEETS. ROLLED WELDED WIRE FABRIC IS NOT PERMITTED.
7. WELDED WIRE FABRIC SHALL BE PLACED 2" BELOW TOP OF SLAB. LAP WELDED WIRE FABRIC 6" MINIMUM ON SIDES AND ENDS. STAGGER EACH SPLICE.
8. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH LATEST EDITION OF THE ACI DETAILING MANUAL. SHOP DRAWINGS SHALL INDICATE ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DETAIL ALL CONCRETE WALLS AND BEAMS IN ELEVATION UNLESS SPECIFICALLY APPROVED OTHERWISE. CUT SECTIONS SHOWING BAR LOCATIONS AND CONCRETE COVER. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND APPROVED.
9. TIE ALL REINFORCING STEEL AND EMBEDDED ITEMS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING" DOWELS INTO WET CONCRETE IS NOT PERMITTED.
10. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE REINFORCEMENT ONLY AS SHOWN OR APPROVED. STAGGER SPLICES WHERE POSSIBLE. WHERE NO SPLICE CLASS IS INDICATED, USE CLASS "B" SPLICE.
BOTTOM BAR SIZE NORMAL WEIGHT CONCRETE, f'c (PSI)
#6 AND SMALLER 3,000 4,000 5,000
#7 AND LARGER 57 DIA. 49 DIA. 44 DIA.
71 DIA. 62 DIA. 55 DIA.
INCREASE THE ABOVE LAP LENGTHS BY 1.3 FOR TOP BARS AND 1.7 FOR LIGHTWEIGHT CONCRETE.

REINFORCED CONCRETE CONT'D

- 11. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:
UNFORMED CONCRETE CAST AGAINST EARTH 3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER #6 BARS AND LARGER 2"
#5 BARS AND SMALLER 1 1/2"
FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER SLABS, JOISTS AND WALLS 3/4"
BEAMS, GIRDEERS, AND COLUMNS 1 1/2"
12. DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.
13. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE.
14. PLACEMENT OF CONCRETE, COLD AND HOT WEATHER PRECAUTIONS, MATERIAL AND PROPORTIONING REQUIREMENTS, REBAR COVER AND DETAILING SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.
15. CONTROL JOINTS IN SLABS ON GRADE SHALL BE SAW CUT AS SOON AS CONCRETE HARDENS SUFFICIENTLY TO PREVENT RUTTING OR PULLING AGGREGATE FROM SLAB BUT IN NO CASE MORE THAN 8 HOURS AFTER PLACING THE CONCRETE. PREVENT SHRINKAGE CRACKING.
16. CONTROL JOINTS SHALL BE SAW CUT INTO THE SLAB AT A MINIMUM DEPTH OF 1/4 THE SLAB THICKNESS.
17. CONSTRUCTION JOINTS IN SLABS SHALL BE USED IN LIEU OF CONTROL JOINTS WHERE NEEDED TO INTERRUPT A CONTINUOUS POUR. SLAB CONSTRUCTION JOINTS SHALL BE KEVED.
18. PLUMBING LINES AND ELECTRIC CONDUITS SHALL BE PLACED BELOW THE SLAB AND NOT WITHIN THE SLAB. VERTICAL PENETRATIONS ARE ALLOWED.
19. COLUMN BOX-OUTS SHALL BE CLEAN AND FREE OF DEBRIS PRIOR TO FILLING WITH CONCRETE. PROVIDE A 1/2" PEJ AT PERIMETER OF BOX-OUT PRIOR TO FILLING WITH CONCRETE.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHAPES AND MATERIALS SHALL CONFORM TO THE FOLLOWING:
WIDE FLANGE SHAPES ASTM A-992, Fy = 50 KSI
ALL CHANNELS, ANGLES, PLATES, ETC. ASTM A-36, Fy = 36 KSI
STRUCTURAL TUBES ASTM A-500, GRADE B, Fy = 46 KSI
STEEL PIPE ASTM A-53, Fy = 35 KSI
HIGH STRENGTH BOLTS ASTM A-325, TYPE 1
HEX NUTS ASTM A-563, GRADE C FOR A-325 BOLTS
GRADE DH FOR GALVANIZED BOLTS
HARDENED WASHERS ASTM F-436, TYPE 1
ANCHOR RODS ASTM F-1554, Fy = 36 KSI
WELDING ELECTRODES E70 SERIES
2. THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO DESIGNATE ALL STEEL AND MISCELLANEOUS FRAMING REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR ADDITIONAL FRAMING NOT SHOWN HEREIN.
3. STRUCTURAL STEEL DETAILING, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "MANUAL OF STEEL CONSTRUCTION" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. SHOP DRAWINGS SHALL SHOW COMPLETE SHOP AND FIELD WELDING INFORMATION USING AMERICAN WELDING SOCIETY SYMBOLS. MINIMUM WELD SIZE SHALL BE 3/16".
4. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE MADE WITH 3/4" DIAMETER ASTM A-325 BOLTS. ALL BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH THE PROVISIONS OF THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS".
5. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS SHOWN ON THE DRAWINGS. CONNECTIONS SHOWN ARE SCHEMATIC ONLY AND ARE INTENDED TO SHOW THE RELATIONSHIP OF CONNECTED MEMBERS. SPECIFIC CONNECTIONS DETAILED ON THESE DRAWINGS SHALL BE INCORPORATED INTO THE FABRICATOR'S SHOP DRAWINGS.
6. ALL CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED WHERE POSSIBLE.
7. FRAMING CONNECTIONS NOT DETAILED, OR CONNECTIONS THAT ARE MODIFIED FROM THOSE DETAILED SHALL BE DESIGNED BY SUPPLIER. FOR THE END REACTION SHOWN ON THE PLAN, IF NO REACTION IS PROVIDED, CONNECTIONS SHALL BE DESIGNED FOR 1/2 THE BEAM MAXIMUM UNIFORM LOAD PER AISC MANUAL FOR STEEL CONSTRUCTION.
8. THE STEEL STRUCTURE SHOWN ON THESE DRAWINGS IS A NON-SELF-SUPPORTING STEEL FRAME ONLY IN ITS COMPLETED FORM. IT IS DEPENDENT UPON DIAPHRAGM ACTION OF THE FLOOR DECK AND ITS ATTACHMENT TO SHEAR WALLS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, PROVIDING, AND MAINTAINING ALL TEMPORARY ERECTION SUPPORTS REQUIRED TO RESIST CONSTRUCTION, WIND, AND SEISMIC FORCES UNTIL BRACING AND SHORING ATTACHMENTS TO FLOOR DIAPHRAGMS AND SHEAR WALLS ARE COMPLETE.
9. STEEL FRAMING INCLUDING ALL BOLTED AND WELDED CONNECTIONS, BRACING, AND ANCHORAGES SHALL BE COMPLETED AND PLUMB PRIOR TO PLACEMENT OF THE FLOOR FRAMING SYSTEM.
10. SPLICING OF STEEL MEMBERS NOT SPECIFICALLY DETAILED ON THESE DRAWINGS IS PROHIBITED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
11. NO HOLES SHALL BE CUT IN ANY STEEL MEMBER UNLESS DETAILED ON THE SHOP DRAWINGS.
12. ALL STRUCTURAL STEEL AND THOSE ELEMENTS NOTED TO BE GALVANIZED SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A-123 AFTER SANDBLAST CLEANING PER SSPC-SP10. USE ASTM A-325 BOLTS HOT DIPPED GALVANIZED WITH GALVANIZED HARDENED WASHERS AND GALVANIZED HEAVY HEX NUTS FOR BOLTING OF GALVANIZED ITEMS.
13. STEEL COLUMNS, BASE PLATES, AND ALL STEEL BELOW GRADE SHALL HAVE A MINIMUM 6" CONCRETE COVER PROTECTION.
14. NON-SHRINK, NON-METALLIC GROUT WITH A 28 DAY COMPRESSION STRENGTH OF 5,000 PSI SHALL BE USED UNDER ALL BASE PLATES.
15. THE STRUCTURAL ENGINEER OF RECORD SHALL BE CONTACTED FOR APPROVAL OF ANY FIELD MODIFICATIONS OF ANCHOR BOLTS OR RODS AND COLUMN BASE PLATES.

POST-INSTALLED ANCHORS

- 1. POST-INSTALLED ANCHORS SHALL BE USED ONLY WHERE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST IN PLACE ANCHORS.
2. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCING WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
3. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS PER ACI 318, APPENDIX D. MANUFACTURER APPROVAL LETTER SHALL BE REQUIRED FOR EARLIER INSTALLATION TIME SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
4. ALL POST-INSTALLED ANCHORS SHALL HAVE CURRENT PUBLISHED ICC-ES EVALUATION REPORT INDICATING THE ANCHOR IS APPROVED FOR THE INSTALLATION IN CRACKED CONCRETE.
5. ALL ADHESIVE ANCHOR INSTALLATIONS INTO HORIZONTAL OR OVERHEAD ORIENTATIONS SHALL BE CONDUCTED BY A CERTIFIED ADHESIVE INSTALLER AS CERTIFIED BY ACICRSI PER ACI 318. CURRENT AAI CERTIFICATES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY ADHESIVE ANCHOR INSTALLATIONS.
6. UNLESS NOTED OTHERWISE ON PLANS, ACCEPTABLE PRODUCTS SHALL BE AS FOLLOWS:
ADHESIVE ANCHORS-
I. FOR ANCHORING INTO CONCRETE
-SIMPSON STRONG-TIE AT-XP WITH ASTM A36 THREADED RODS
-HILTI HIT-HY 200 WITH STANDARD HAS-E THREADED RODS
-DEWALT/POWERS AC208+
II. FOR ANCHORING INTO GROUT FILLED CMU
-SIMPSON STRONG-TIE AT-XP WITH ASTM A36 THREADED RODS
-HILTI HIT-HY 70 WITH STANDARD HAS-E THREADED RODS
-DEWALT/POWERS AC100+GOLD WITH ASTM A36 THREADED RODS
III. FOR ANCHORING INTO HOLLOW BASE MATERIAL (HOLLOW CMU)
-SIMPSON STRONG-TIE SET-XP AND METAL SCREEN TUBES WITH ASTM A36 THREADED RODS
-HILTI HIT-HY 70 AND METAL SCREEN TUBES WITH STANDARD HAS-E THREADED RODS
-DEWALT/POWERS AC100+GOLD AND METAL SCREEN TUBES WITH ASTM A36 THREADED RODS
B. MECHANICAL ANCHORS-
I. FOR ANCHORING INTO CONCRETE
-SIMPSON STRONG-TIE TITEN HD (SCREW ANCHOR) OR STRONG-BOLT 2 (WEDGE ANCHOR)
-HILTI HUS-EZ (SCREW ANCHOR) OR KWIK BOLT 3 (WEDGE ANCHOR)
-DEWALT/POWERS POWER-STUD SD1+ (WEDGE ANCHOR) OR SCREW-BOLT+ (SCREW ANCHOR)
II. FOR ANCHORING INTO GROUT FILLED CMU
-SIMPSON STRONG-TIE TITEN HD (SCREW ANCHOR) OR STRONG-BOLT 2 (WEDGE ANCHOR)
-HILTI HUS-EZ (SCREW ANCHOR) OR KWIK BOLT-TZ (WEDGE ANCHOR)
-DEWALT/POWERS POWER-STUD SD1+ (WEDGE ANCHOR) OR SCREW-BOLT+ (SCREW ANCHOR)
III. FOR ANCHORING INTO HOLLOW BASE MATERIAL (HOLLOW CMU)
-ONLY ADHESIVE ANCHORS ARE APPROVED. REFER TO SECTION A-II FOR SUITABLE PRODUCTS.

ALUMINUM:

- 1. ALL ALUMINUM MATERIAL SHALL BE:
PLATE: 6061-T6 PER ASTM B209
SHAPES: EXTRUDED-AMERICAN STANDARD 6061-T6 PER ASTM B308
PIPE: 6061-T6, 6063-T52 OR 6063-T832 PER APPLICATION PER ASTM B221
GRATING: TYPE B AS MANUFACTURED BY IKG INDUSTRIES, A DIVISION OF HARSCO CORPORATION OR APPROVED EQUAL. MAIN BAR TO BE 1 1/2"x3/16" SPACED 1 3/16" CENTER TO CENTER. CROSS BARS TO BE RECTANGULAR CROSS SECTION, FLUSH TOP AND SPACED 4" CENTER TO CENTER. MATERIAL IS 6063 STANDARD PER ASTM B221.
STAIR TREAD: SHALL MATCH GRATING WITH 1 1/4" ABRASIVE NOSING, 9 3/4" DEPTH MINIMUM AND BOLT TO STRINGERS.
2. ALL WELDING SHALL FOLLOW AWS D1.2 - ALUMINUM.
3. ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS SHALL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT, MYLAR ISOLATORS OR OTHER APPROVED MATERIAL.
4. ALUMINUM SHALL BE BOLTED ONLY WITH STAINLESS STEEL BOLTS, NUTS, AND WASHERS, ASTM A-316.

SAFEGUARDS:

- 1. RAILINGS, STAIR-RAILINGS, HANDRAILS AND OTHER SIMILAR SAFEGUARDS SHALL BE DESIGNED PER THE 2018 INTERNATIONAL STANDARD BUILDING CODE AND THE LATEST OSHA STANDARDS BY THE CONTRACTOR WHERE A CONFLICT OCCURS BETWEEN REFERENCED STANDARDS THE GREATER REQUIREMENTS SHALL GOVERN.
2. SHOP DRAWINGS SHALL SHOW ALL DETAILS NECESSARY FOR PROPER ERECTION.
3. SHOP DRAWINGS AND MANUFACTURER'S LITERATURE SHALL IDENTIFY THE SPECIFIC PROJECT, SHALL LIST ALL DESIGN CRITERIA, SHALL IDENTIFY DESIGN STANDARDS USED AND SHALL SHOW ALL DETAILS NECESSARY FOR PROPER ERECTION. SHOP DRAWINGS SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF THE SPECIALTY ENGINEER WHO PREPARED THEM. SHOP DRAWINGS AND MANUFACTURER'S LITERATURE SHALL BE SUBMITTED TO THE ENGINEER FOR RECORD AND APPROVAL.

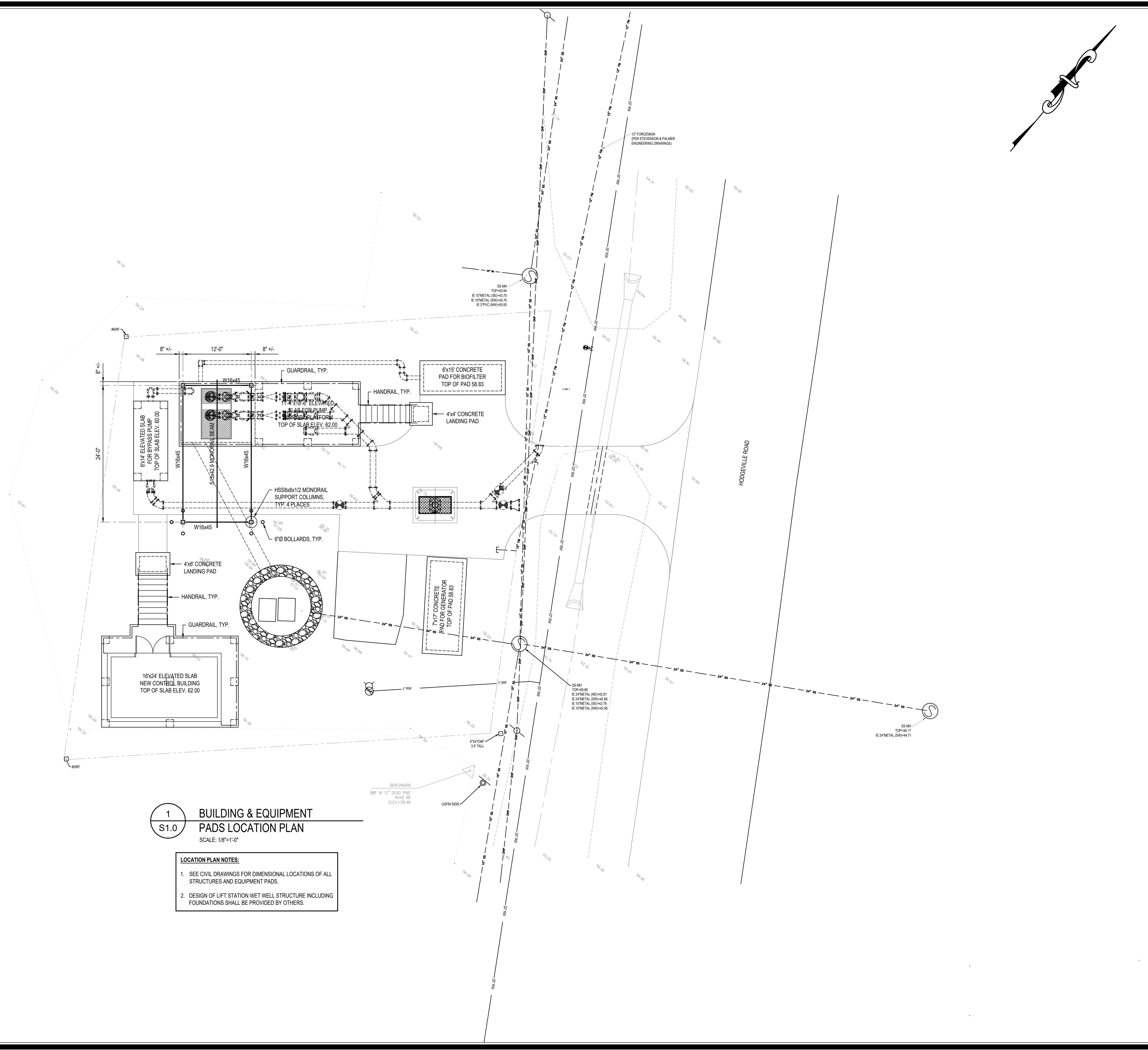


HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

Table with 3 columns: DESIGNED, DRAWN, CHECKED. Includes fields for DATE (APRIL 2022), JOB NO. (120004450), and SCALE (AS SHOWN).

HODGEVILLE LIFT STATION #4
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
GENERAL STRUCTURAL NOTES

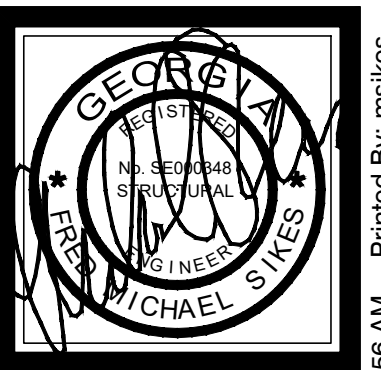
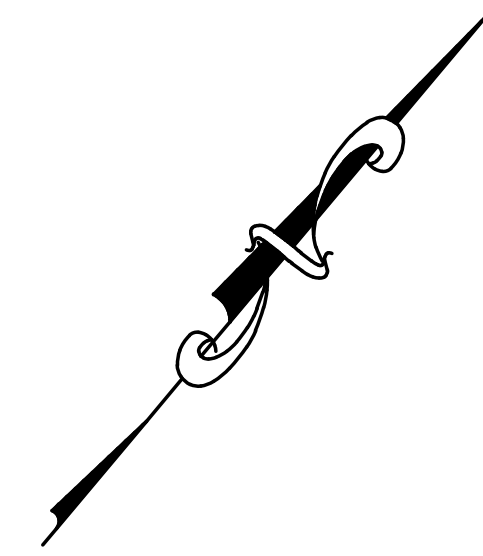
DRAWING NUMBER
S0.1
OF



1
S1.0

**BUILDING & EQUIPMENT
 PADS LOCATION PLAN**
 SCALE: 1/8"=1'-0"

LOCATION PLAN NOTES:
 1. SEE CIVIL DRAWINGS FOR DIMENSIONAL LOCATIONS OF ALL STRUCTURES AND EQUIPMENT PADS.
 2. DESIGN OF LIFT STATION WET WELL STRUCTURE INCLUDING FOUNDATIONS SHALL BE PROVIDED BY OTHERS.



HUSSEY GAY BELL
Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

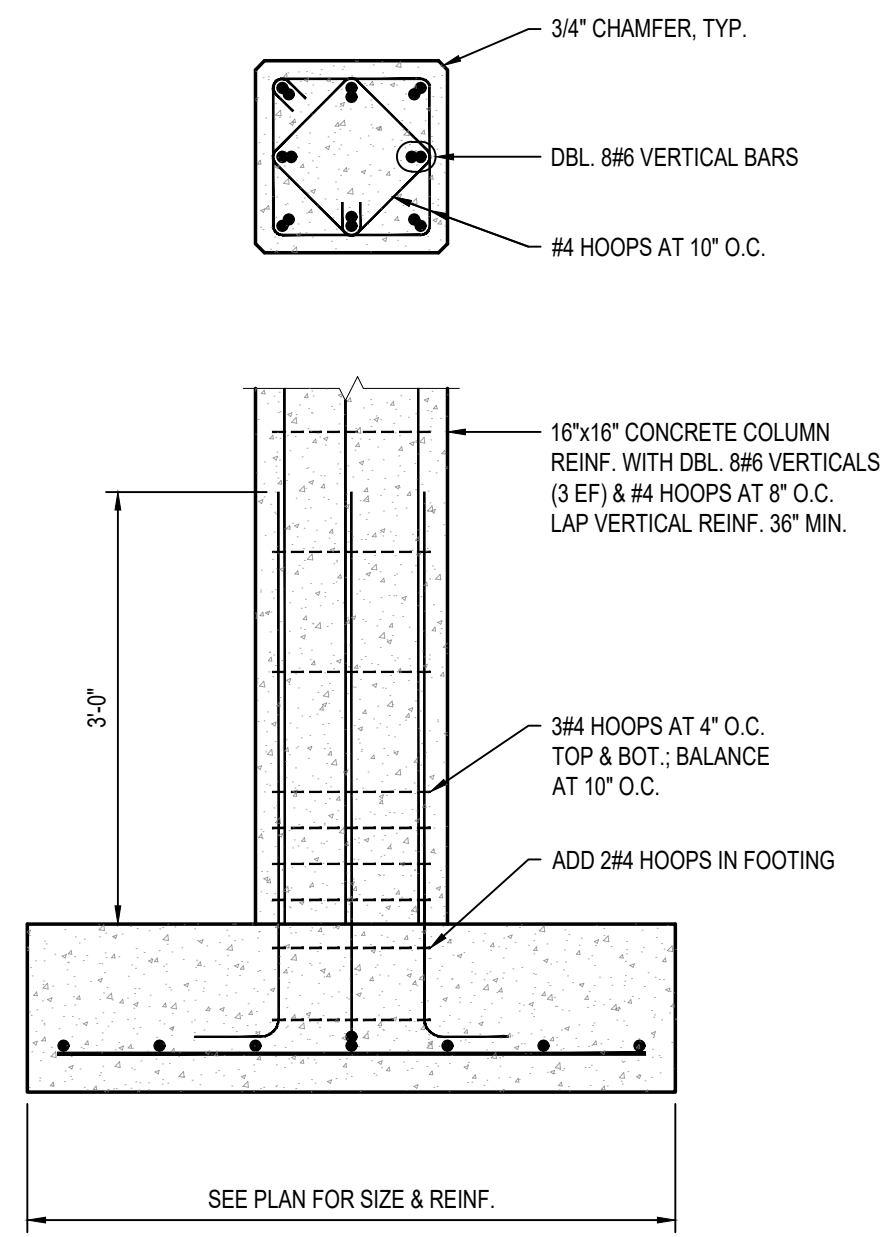
REVISIONS:

NO.	DATE	BY	DESCRIPTION

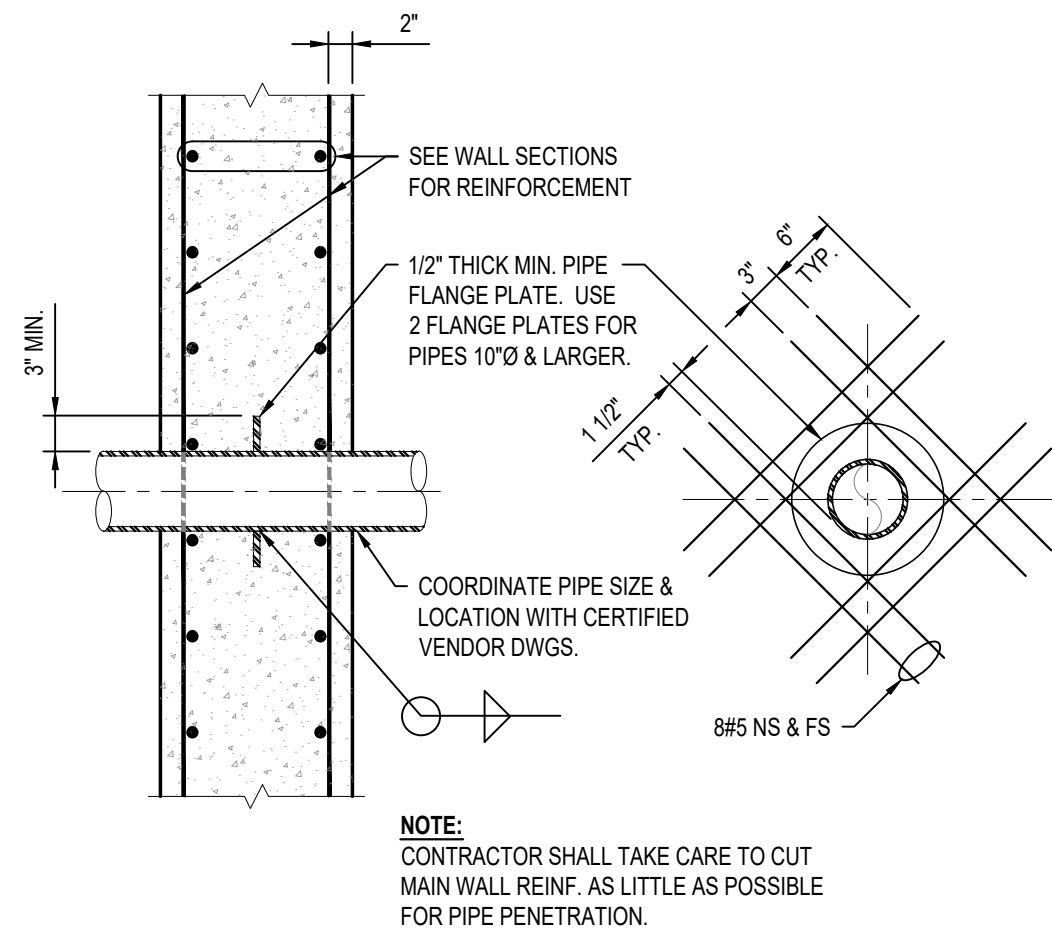
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 DATE: APRIL 2022
 JOB NO. 120004450
 SCALE: AS SHOWN

**HODGEVILLE LIFT STATION #4
 IMPROVEMENTS
 FOR THE
 EFFINGHAM COUNTY
 BOARD OF COMMISSIONERS**
BUILDING & EQUIPMENT PADS LOCATION PLAN

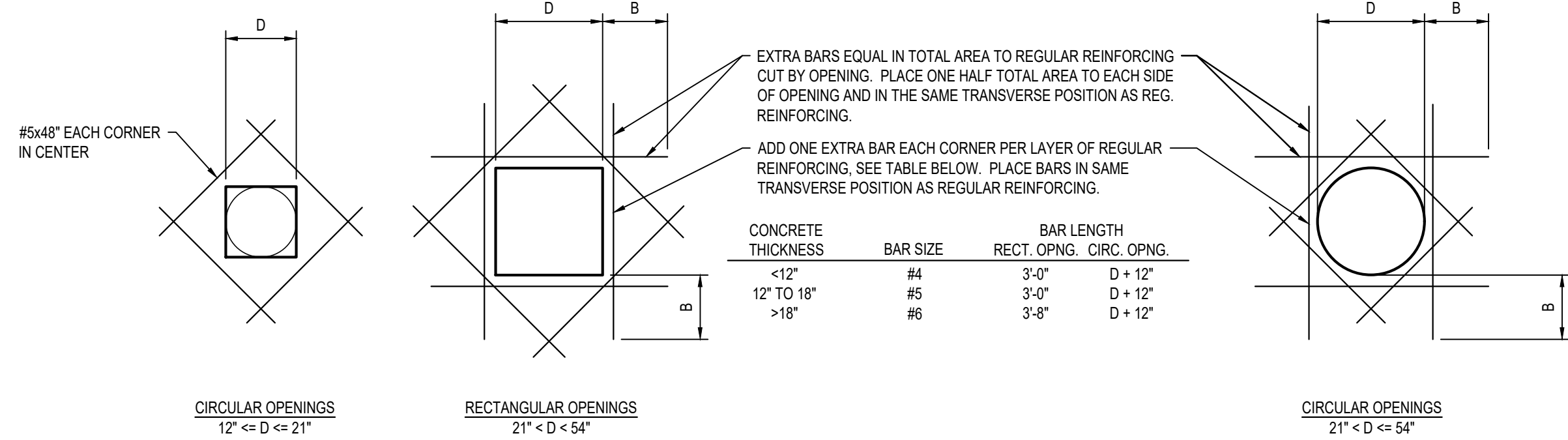
DRAWING NUMBER
S1.0
 OF



2 TYPICAL SECTION THRU COLUMN
 S2.1 SCALE: 3/4"=1'-0"

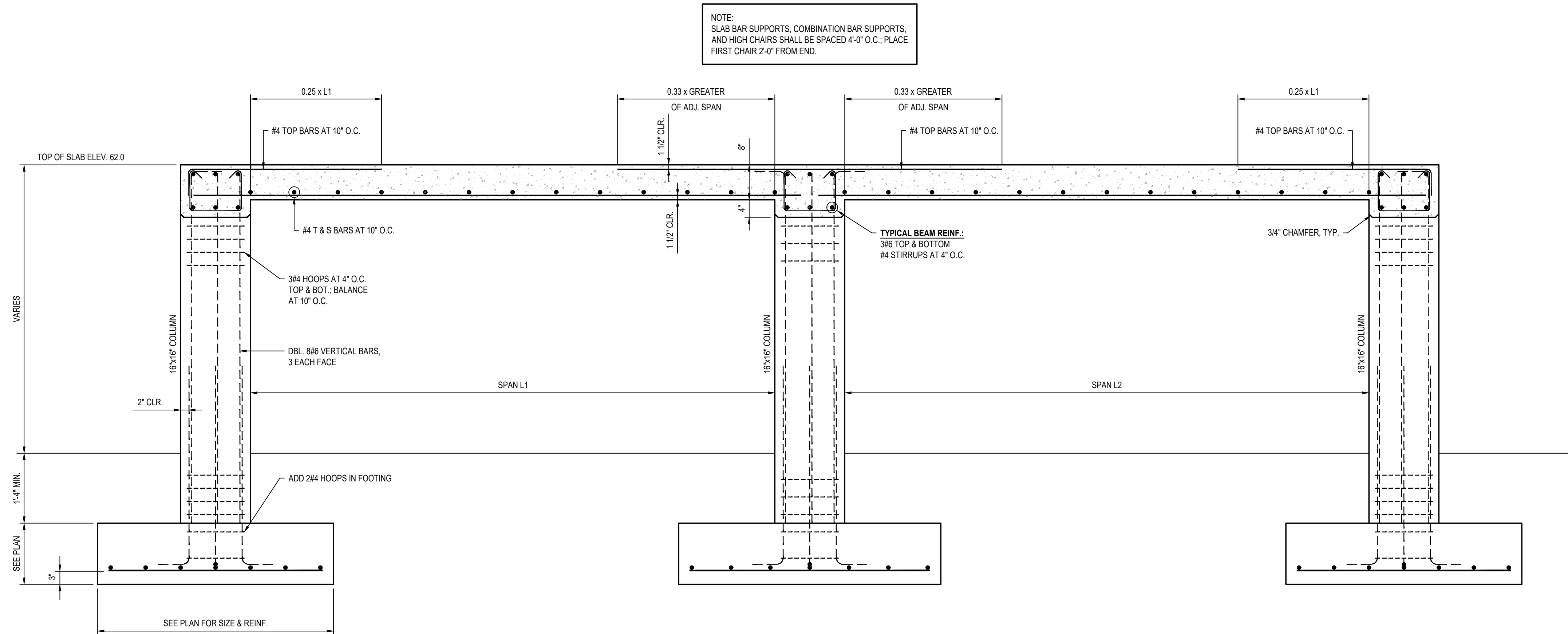


3 PIPE PENETRATION THRU WALL REINFORCING DETAIL
 S2.1 SCALE: 3/4"=1'-0"

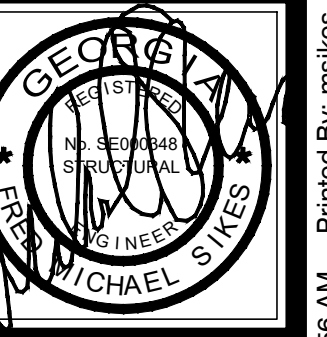


4 WALL OPENING REINFORCING DETAIL for OPENINGS 12" TO <= 54"
 S2.1 SCALE: 3/4"=1'-0"

TYPICAL REQUIRED ADDITIONAL REINFORCEMENT AT OPENINGS UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE AT OPENINGS ON DRAWINGS.



1 TYPICAL ELEVATED ONE-WAY SLAB and BEAM REINFORCING DETAIL
 S2.1 SCALE: 3/4"=1'-0"



HUSSEY GAY BELL
 Established 1958
 329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

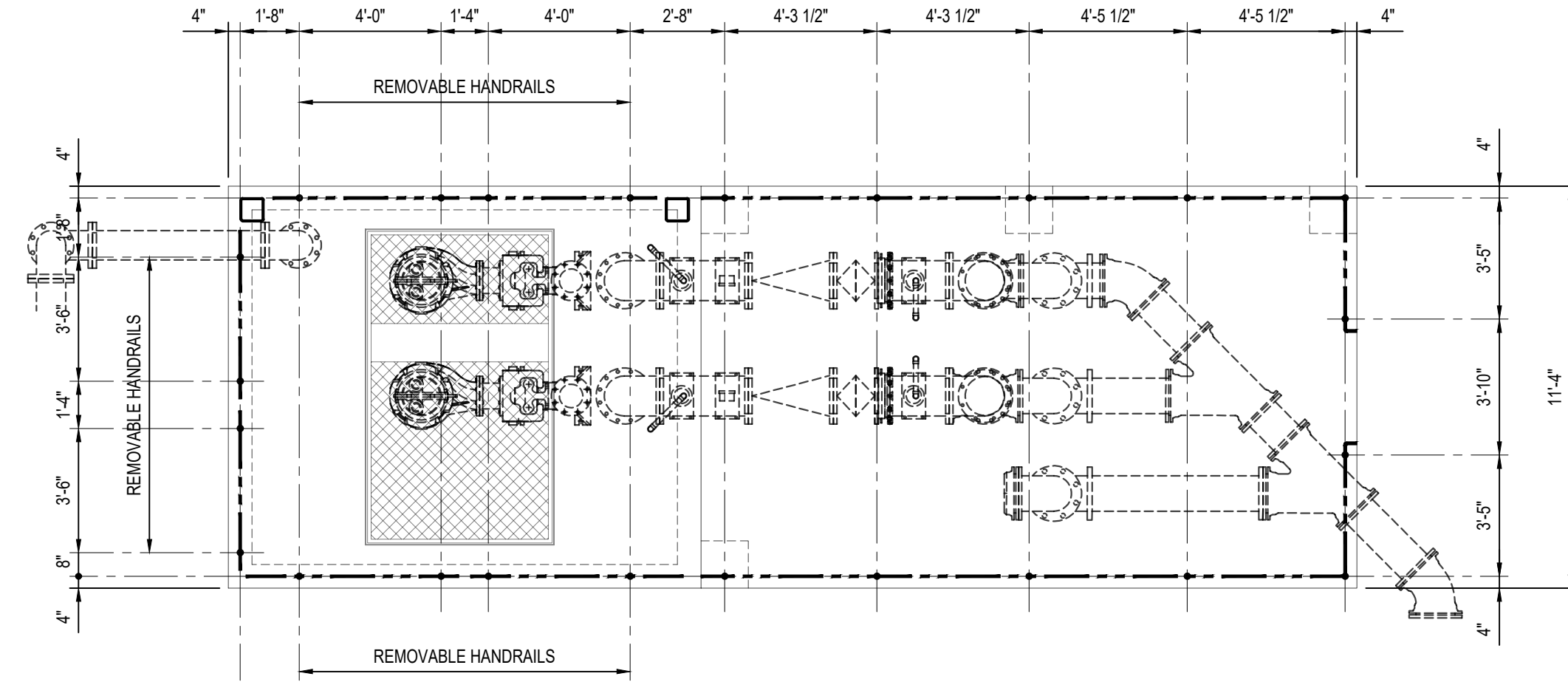
REVISIONS:

DESIGNED	DRAWN	CHECKED
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DATE: APRIL 2022
 JOB NO. 120004450
 SCALE: AS SHOWN

HODGEVILLE LIFT STATION #4 IMPROVEMENTS FOR THE EFFINGHAM COUNTY BOARD OF COMMISSIONERS
 SECTIONS and DETAILS

DRAWING NUMBER
S2.1
 OF

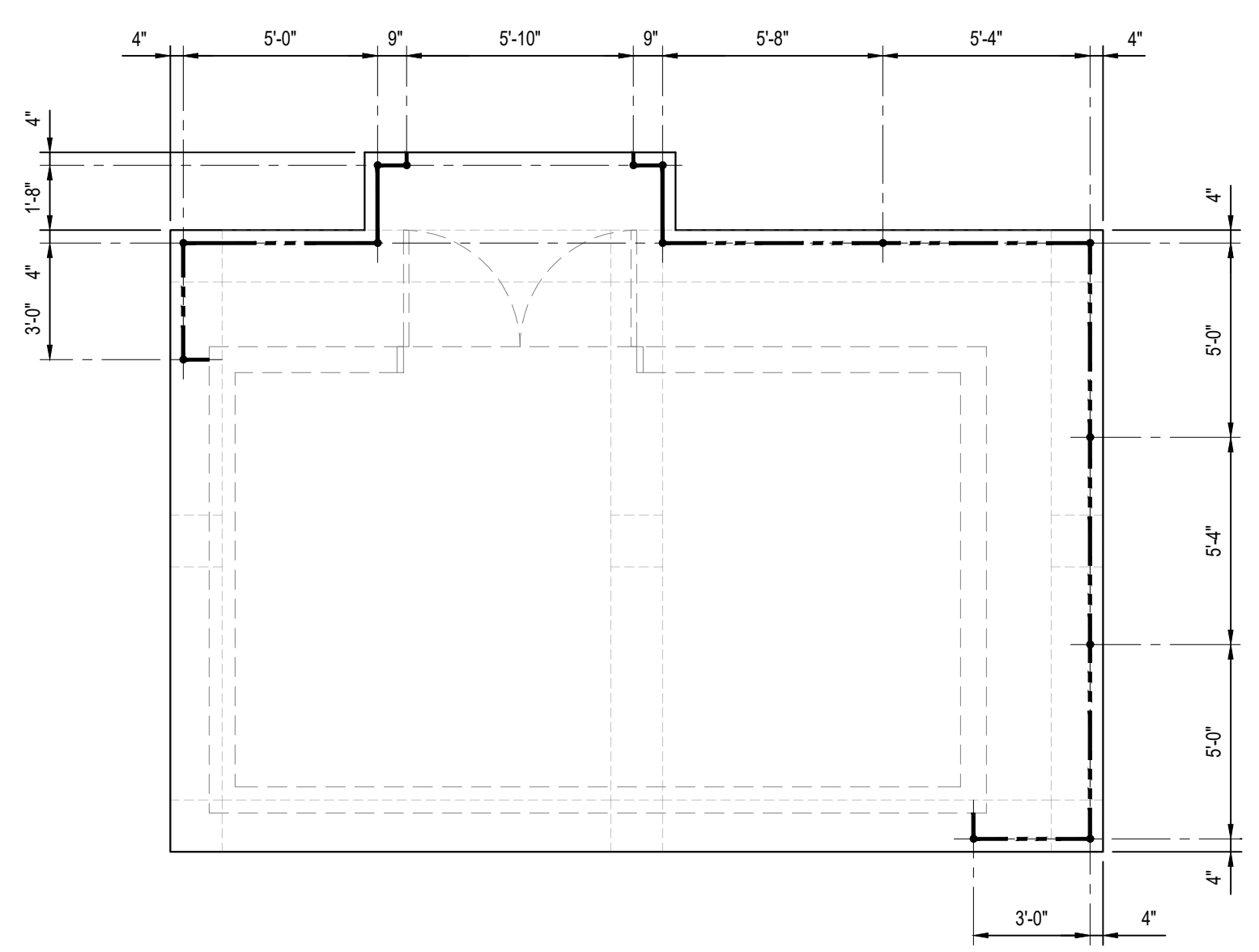


2
S3.0

**HANDRAIL LAYOUT
PUMP SUPPORT PLATFORM**

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

NOTE:
SEE SHEET S3.1 FOR HANDRAIL AND STAIR DETAILS.

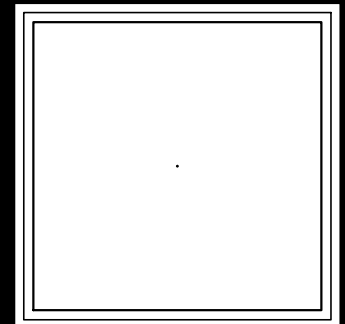
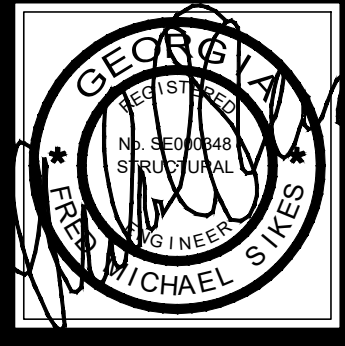


1
S3.0

**HAND RAIL LAYOUT
CONTROL BUILDING**

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

NOTE:
SEE SHEET S3.1 FOR HANDRAIL AND STAIR DETAILS.



HUSSEY GAY BELL
Established 1958

329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

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DATE: APRIL 2022		
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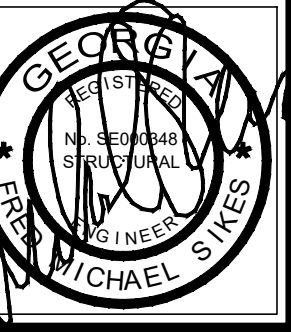
**HODGEVILLE LIFT STATION #4
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS**

STAIR & RAILING DETAILS

DRAWING NUMBER

S3.0

OF



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REVISIONS:

NO.	DATE	DESCRIPTION

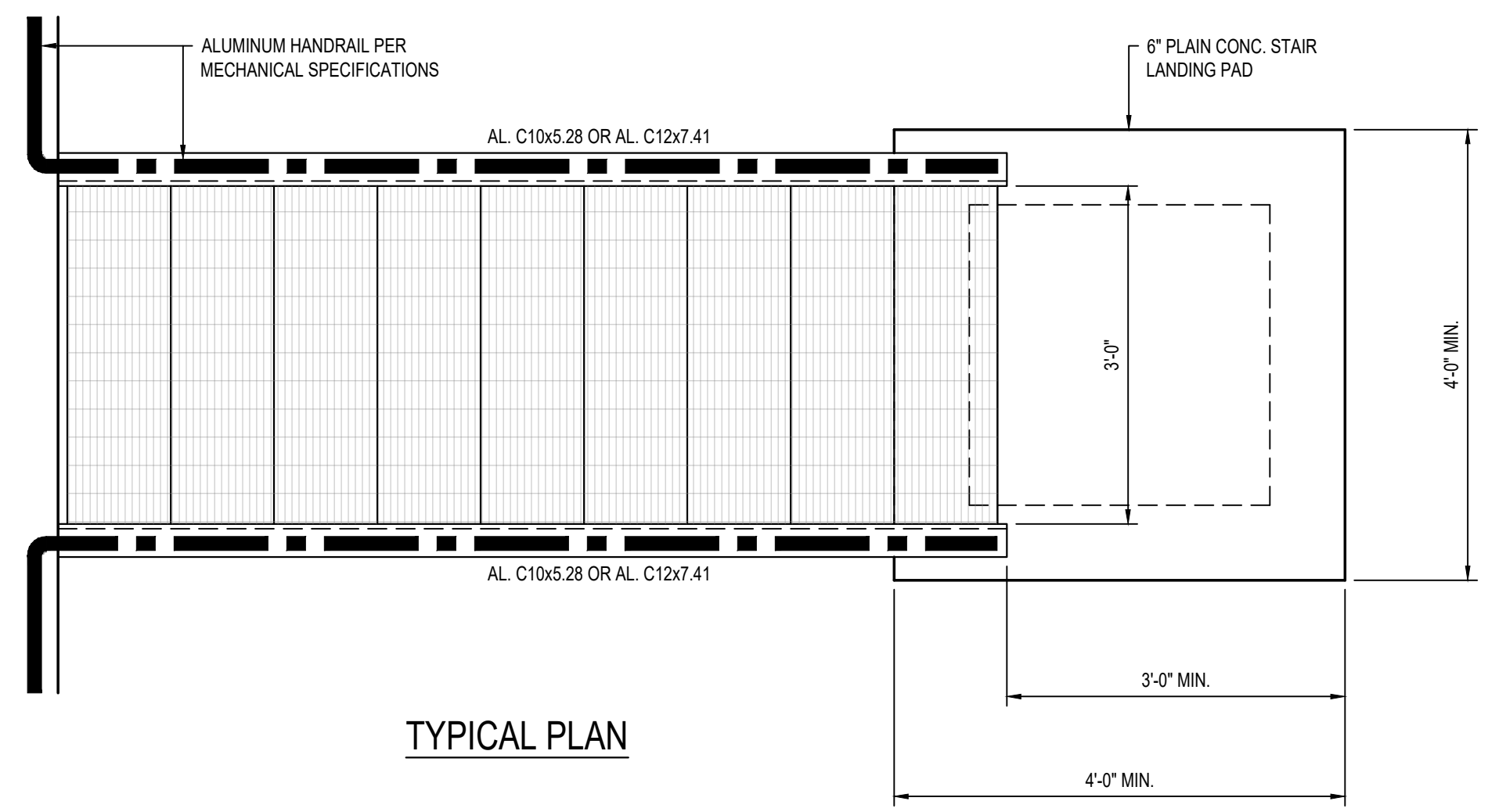
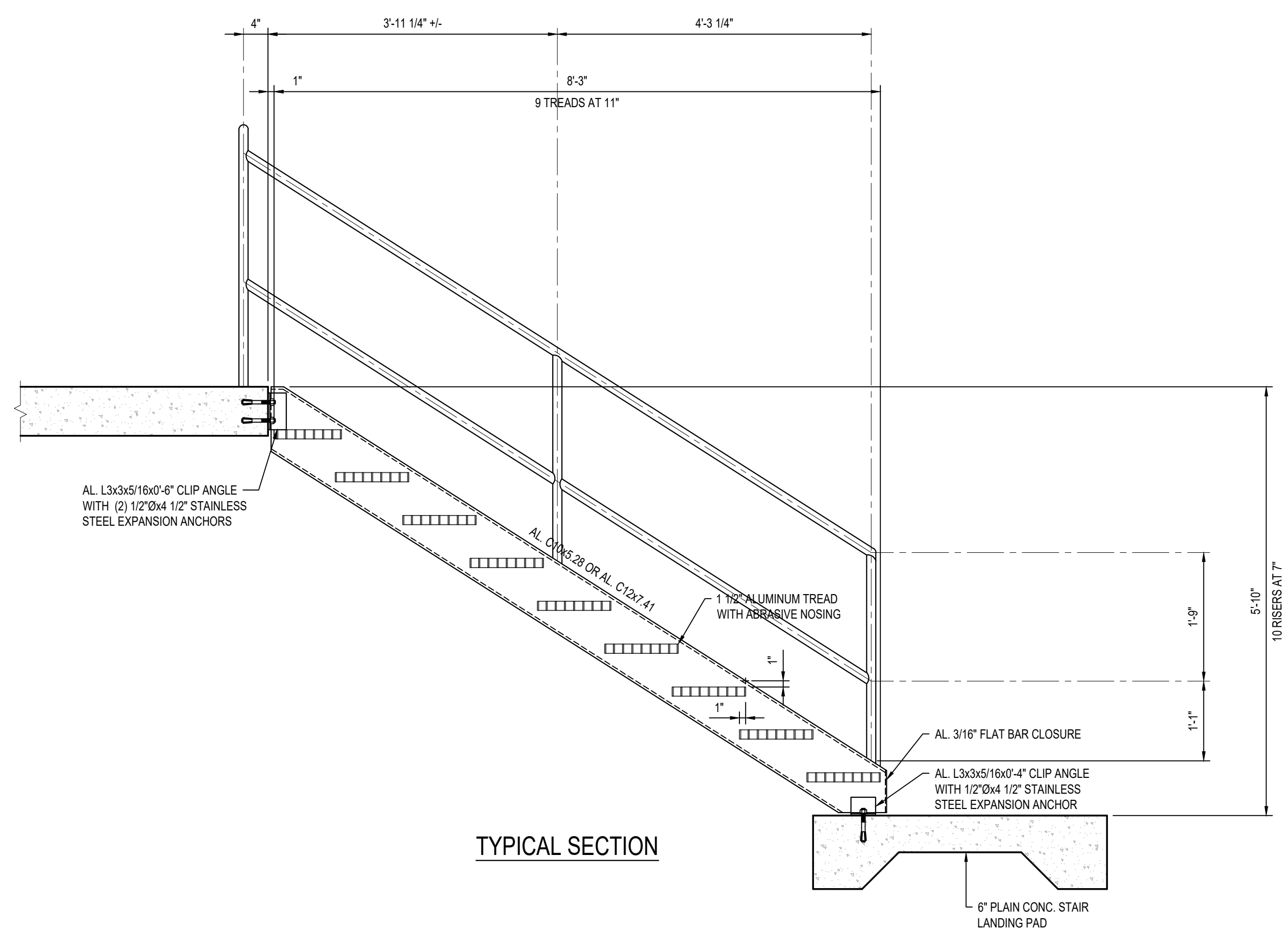
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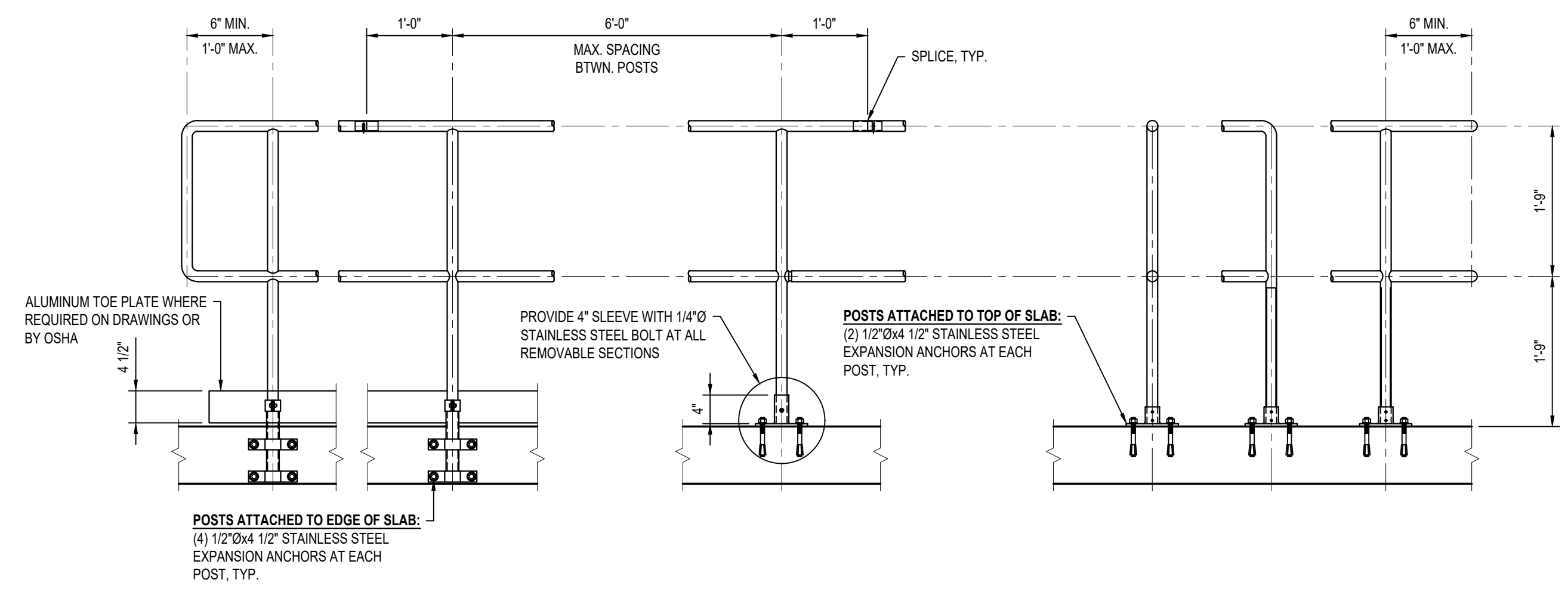
HODGEVILLE LIFT STATION #4
IMPROVEMENTS
 FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
STAIR & RAILING DETAILS

DRAWING NUMBER
S3.1
 OF

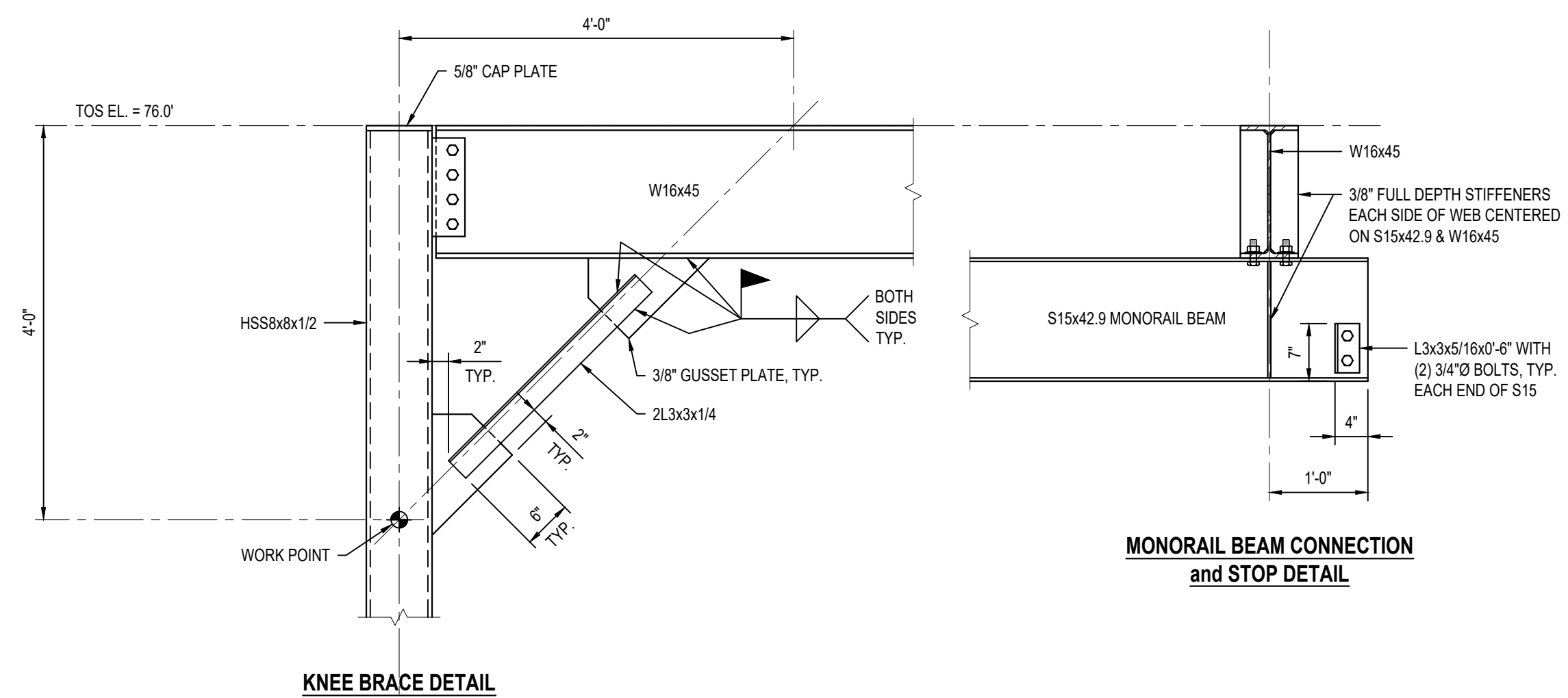
- GENERAL**
- DETAILS AND NOTES ON THIS SHEET SHALL APPLY TO ALL DRAWINGS UNLESS NOTED OR DETAILED OTHERWISE.
- ALUMINUM HANDRAILS AND STAIRS:**
- ALL ALUMINUM MATERIAL SHALL BE:
 - PLATE: 6061-T6 PER ASTM B209
 - SHAPES: EXTRUDED-AMERICAN STANDARD 6061-T6 PER ASTM B308
 - PIPE: 6061-T6, 6063-T52 OR 6063-T832 PER APPLICATION PER APPLICATION PER ASTM B221
 - GRATING: TYPE B AS MANUFACTURED BY IKG INDUSTRIES, A DIVISION OF HARSCO CORPORATION OR APPROVED EQUAL. MAIN BAR SHALL BE 1 1/2"x3/16" SPACED 1 3/16" O.C. CROSS BARS SHALL BE RECTANGULAR IN CROSS SECTION, FLUSH TOP AND SPACED 4" O.C. MATERIAL SHALL BE 6063 STANDARD PER ASTM B221.
 - STAIR TREAD: SHALL MATCH GRATING WITH 1 1/4" ABRASIVE NOSING, 9 3/4" MINIMUM DEPTH AND BOLTED TO STRINGERS.
 - ALL WELDING SHALL FOLLOW AWS D1.2 - ALUMINUM.
 - ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS SHALL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT, MYLAR ISOLATORS OR OTHER APPROVED MATERIAL.
 - ALUMINUM SHALL BE BOLTED ONLY WITH ASTM A-316 STAINLESS STEEL BOLTS, NUTS, AND WASHERS UNLESS NOTED OR DETAILED OTHERWISE.



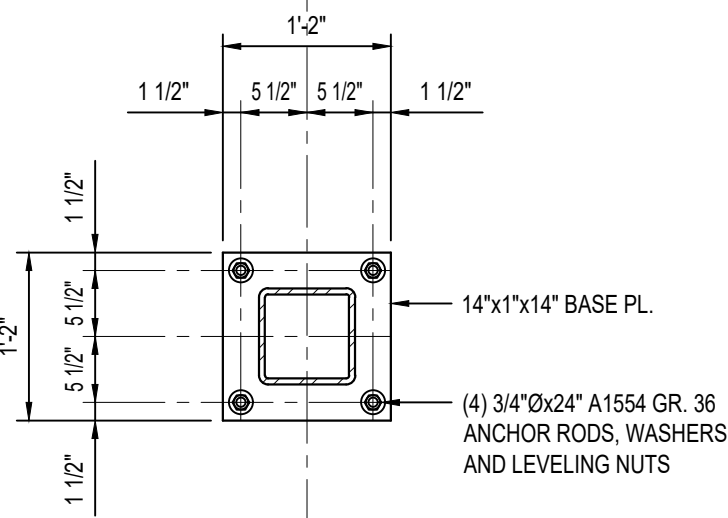
1 TYPICAL STAIR DETAIL
 S3.1 SCALE: 3/4"=1'-0"



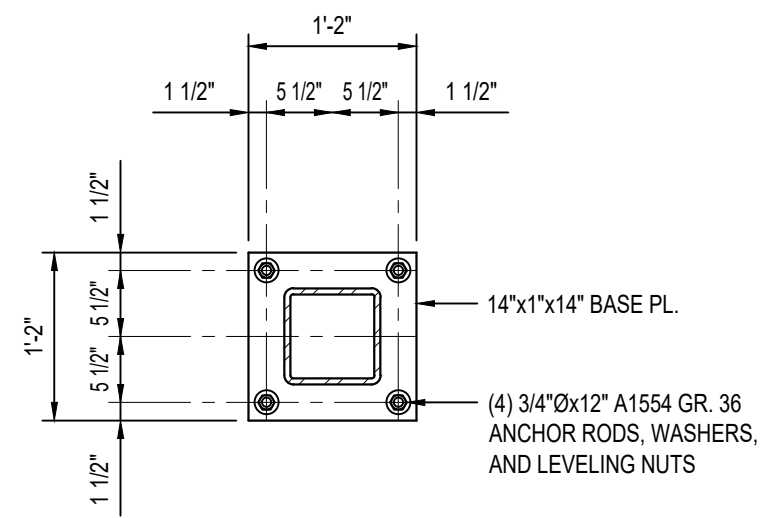
2 TYPICAL RAILING DETAIL
 S3.1 SCALE: 3/4"=1'-0"



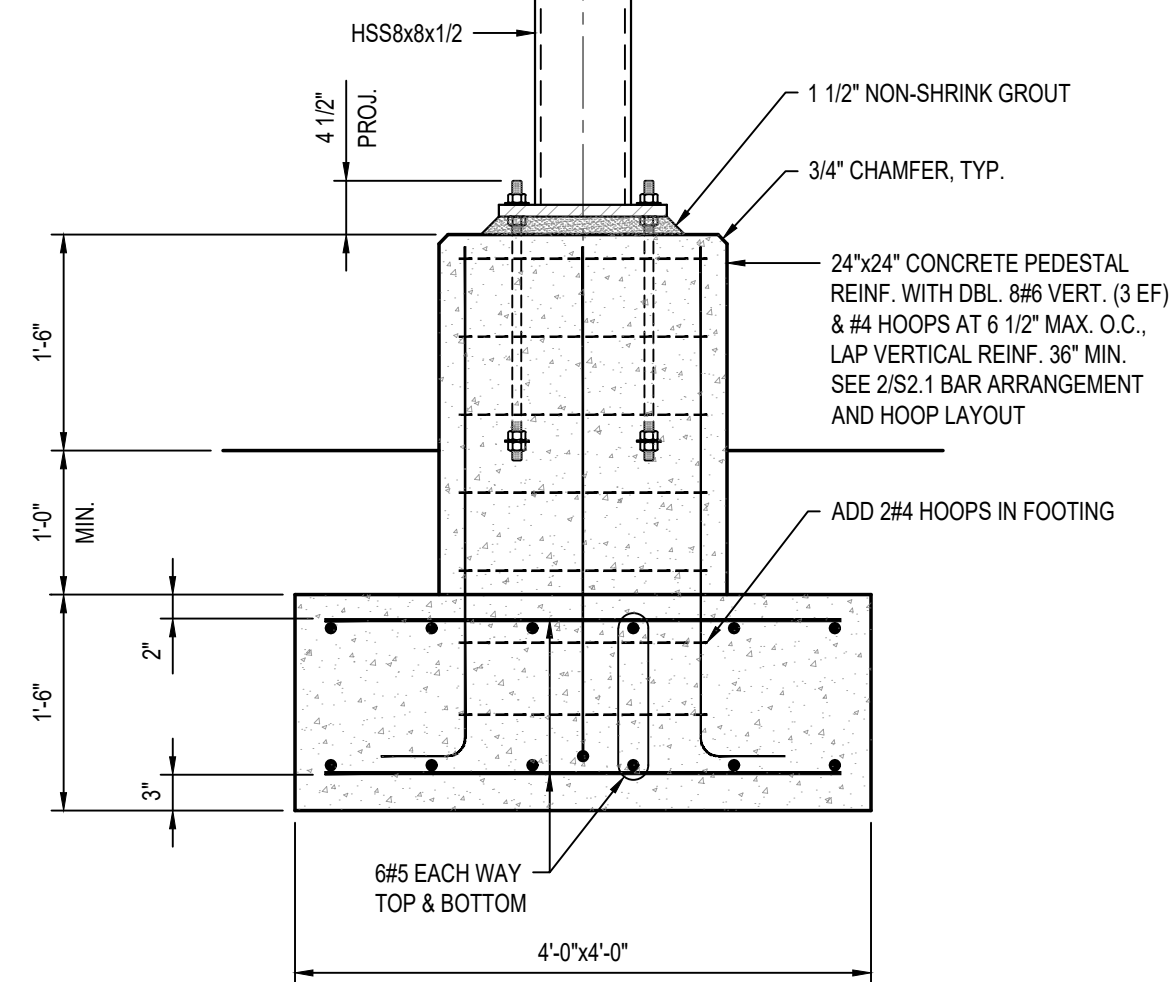
KNEE BRACE DETAIL



PEDESTAL BASE PLATE DETAIL

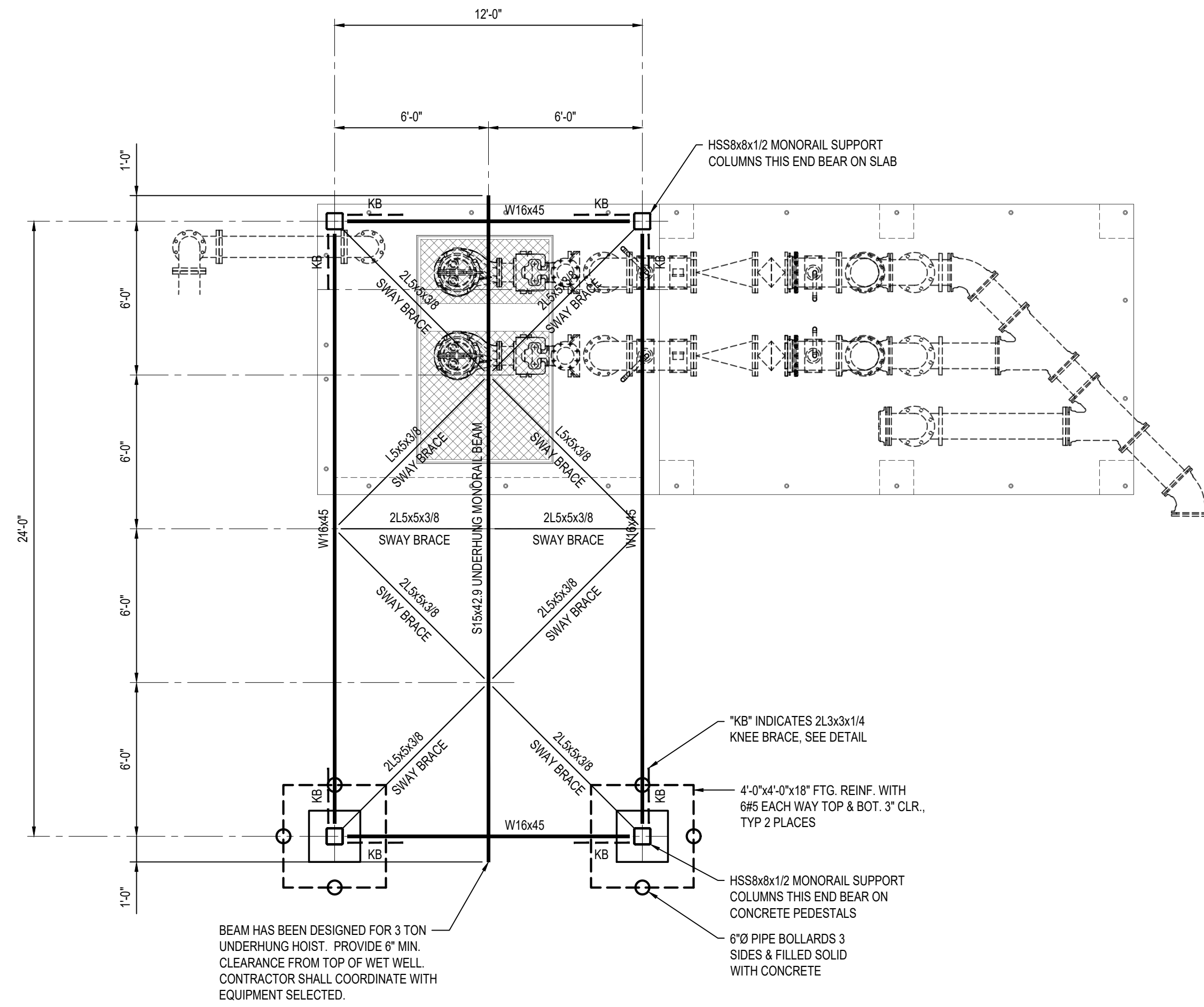


SLAB BASE PLATE DETAIL

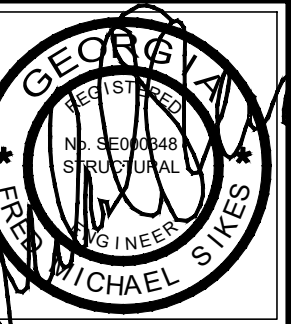


FOOTING & PEDESTAL DETAIL

A
S4.0 MONORAIL FRAMING DETAILS
SCALE: 3/4"=1'-0"



1
S4.0 MONORAIL LAYOUT PLAN
SCALE: 1/4"=1'-0"



HUSSEY GAY BELL
Established 1958
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626

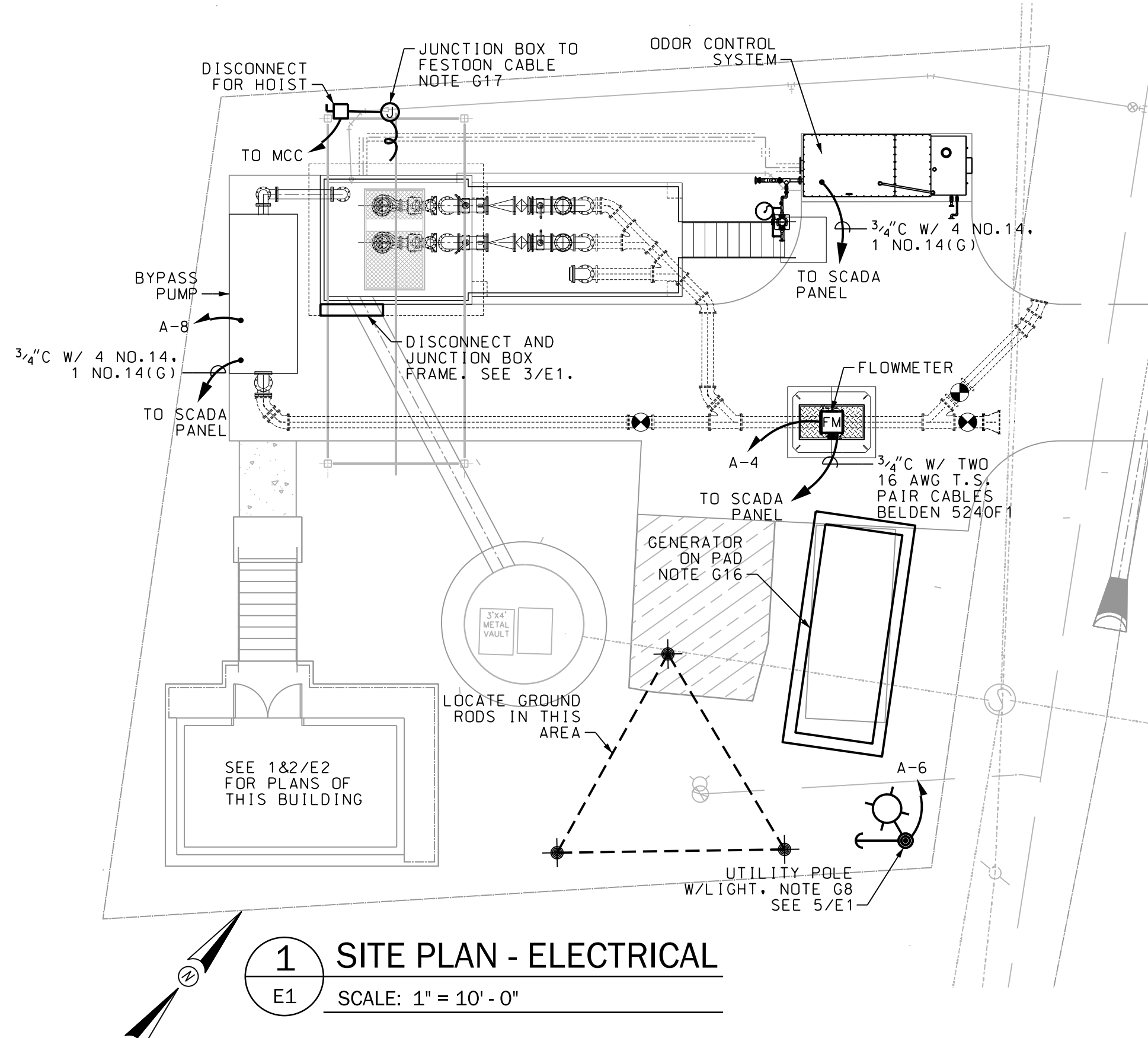
REVISIONS:

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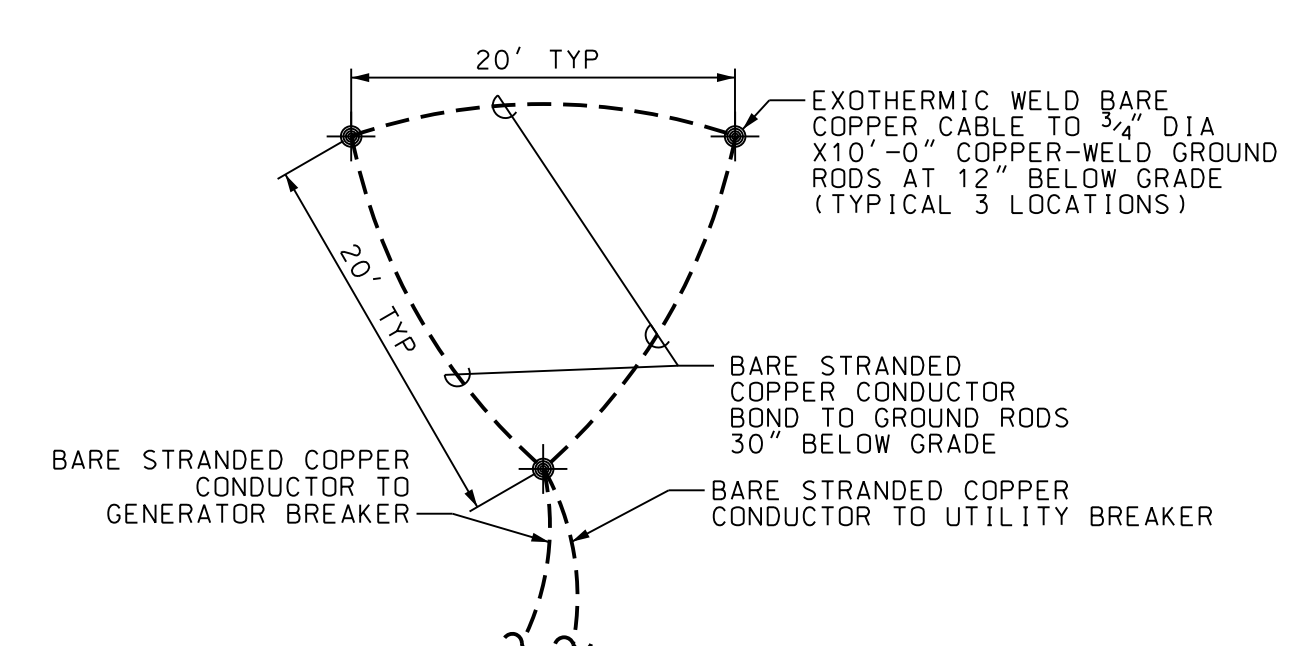
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DATE: APRIL 2022
JOB NO. 120004450
SCALE: AS SHOWN

HODGEVILLE LIFT STATION #4
IMPROVEMENTS
FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
MONORAIL PLAN & DETAILS

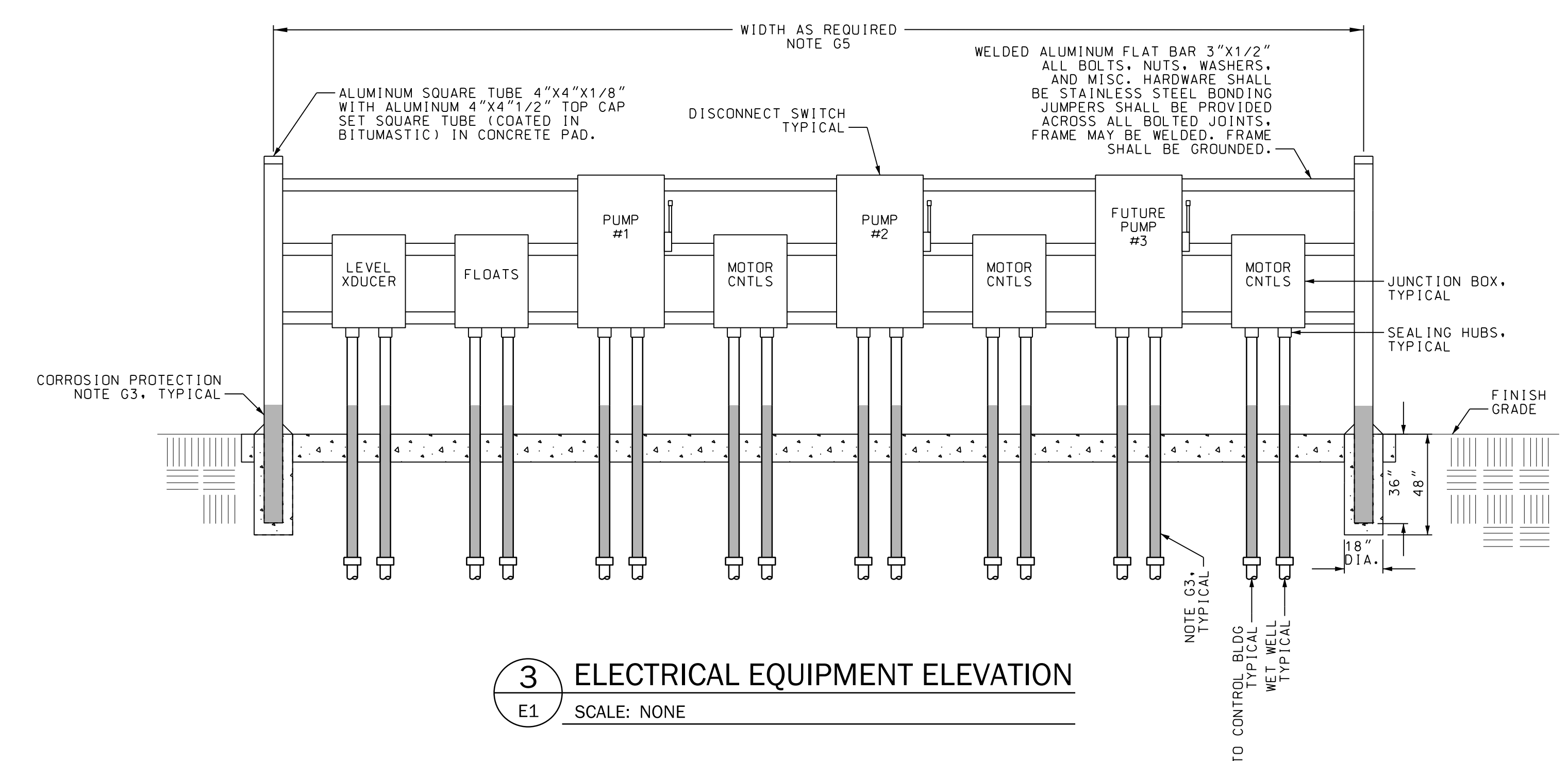
DRAWING NUMBER
S4.0
OF



1 SITE PLAN - ELECTRICAL
E1 SCALE: 1" = 10'-0"



2 SECONDARY ELECTRICAL GROUNDING
E1 SCALE: NONE



3 ELECTRICAL EQUIPMENT ELEVATION
E1 SCALE: NONE

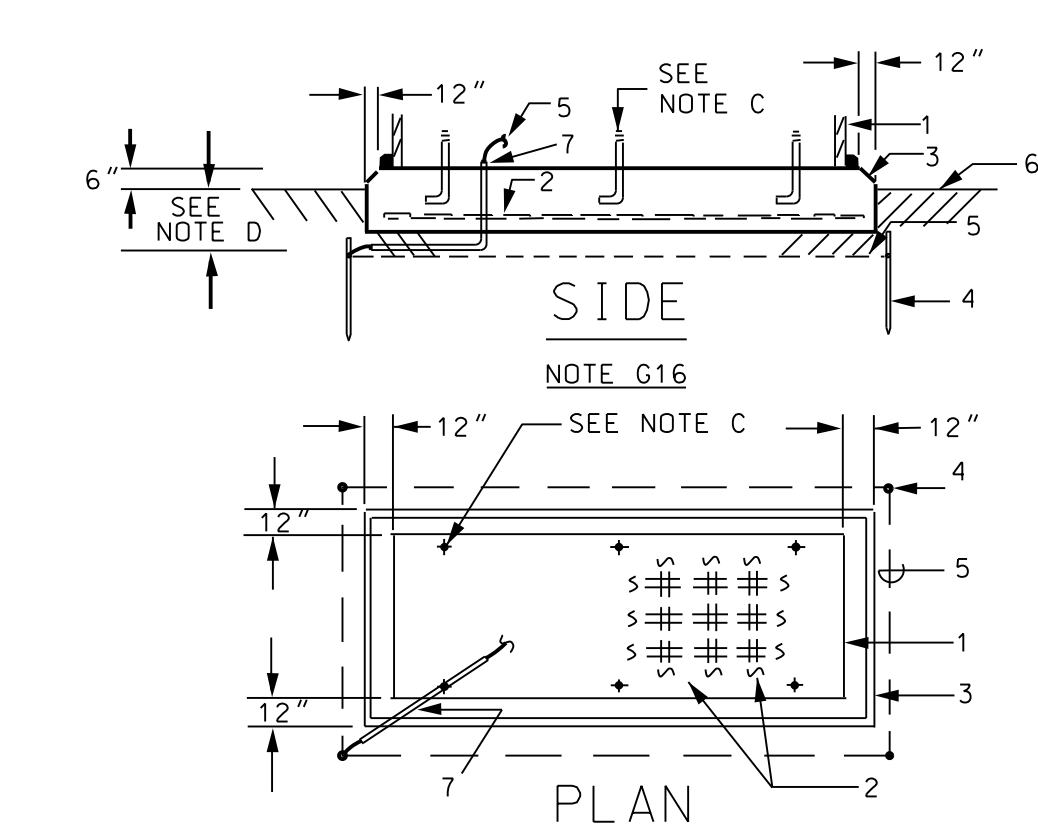
- ### LEGEND
- A LED INDUSTRIAL VAPORTITE LIGHT, LITHONIA FEM-L48-4000LM-LPPCL-MD-MVOLT-GZ10-40K-90CRI SURFACE MOUNT TO CEILING, NOTE G14
 - B LED WALL PACK: LITHONIA TWR1 LED-P3-40K-MVOLT-DBDXTD, WALL MOUNT 10' ABV FINISH GRADE, NOTE G14
 - C DISCONNECT SWITCH NEMA 4X STAINLESS STEEL RATINGS/POLES/ENCLOSURE/FUSING AS NOTED, NOTE G15
 - D NEMA 4X STAINLESS STEEL JUNCTION BOX, WITH ALUMINUM BACKPLATE AND QUARTER TURN LATCH, HAMMOND MANUFACTURING, 12"X12"X6", CAT NO. EJ212655
 - E MOTOR, HORSE POWER, VOLTAGE AND PHASE AS NOTED
 - F NEMA 5-20R RECEPTACLE, GROUND FAULT TYPE WITH WEATHERPROOF COVER, HUBBELL GFRST83
 - S SWITCH, 20A 120/277V, HUBBELL HBL1221
 - FLEXIBLE CONDUIT CONNECTION
 - UTILITY METER
 - PHOTOCELL, TORK MODEL 2101, 1800VA, FAIL CLOSED
 - EMERGENCY LIGHT, LITHONIA ELM2-LED-SD MOUNT 8' AFF, NOTE G14
 - FLOWMETER PROVIDED BY OTHERS, PROVIDE GROUNDING AS REQUIRED BY MANUFACTURER.

- ### DEMOLITION NOTES:
- THE EXISTING PUMP STATION ELECTRICAL SERVICE SHALL BE MAINTAINED UNTIL SUCH TIME AS THE GENERAL CONTRACTOR IS READY TO PUT THE STATION ON BYPASS PUMP.
 - ONCE ON BYPASS, THE ELECTRICAL CONTRACTOR SHALL DEMOLISH ALL OF THE EXISTING ELECTRICAL EQUIPMENT, THE EQUIPMENT AND MATERIAL SHALL BE THE PROPERTY OF THE OWNER UNLESS THE OWNER DEEMS THE EQUIPMENT AND MATERIAL TO BE REMOVED BY THE CONTRACTOR.
 - ANY MATERIAL OR EQUIPMENT THE OWNER IDENTIFIES AS BEING SALVAGE, THE CONTRACTOR SHALL DELIVER TO THE OWNER AT A LOCATION SPECIFIED BY THE OWNER.
 - MATERIAL AND EQUIPMENT TO BE REMOVED BY THE CONTRACTOR SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

GENERAL NOTES:

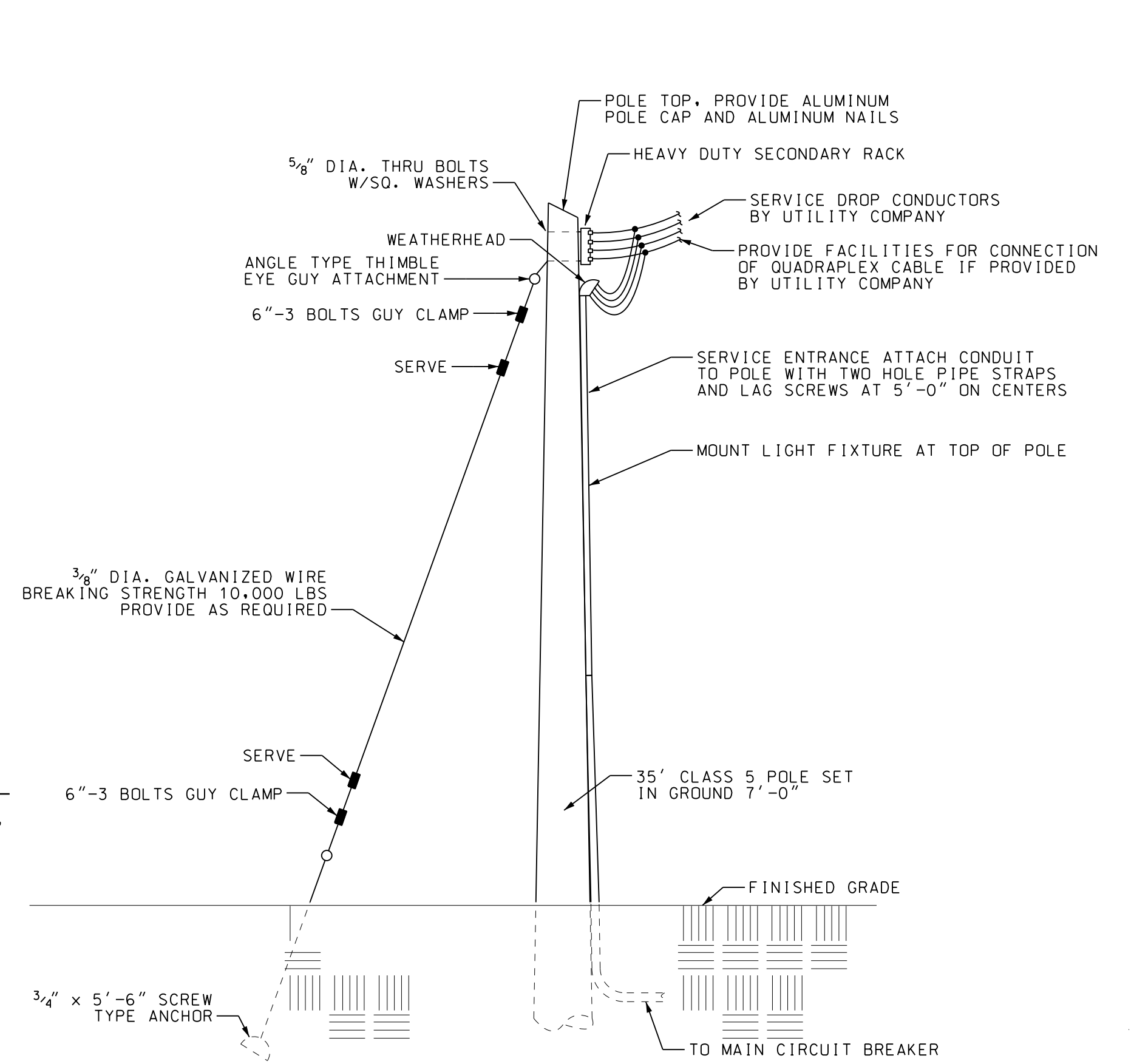
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OTHER TRADES, AND IT SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA 70, 2020 EDITION.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE BID TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AT THE SITE.
- ALL CONDUITS INSTALLED EXPOSED TO ATMOSPHERE SHALL BE ALUMINUM RIGID CONDUIT (ARC), ALL CONDUITS INSTALLED BELOW GRADE SHALL BE SCHEDULE 80 PVC, ALL ELBOWS TO BE ARC. PROTECT ARC CONDUITS FROM BELOW GRADE (END OF ARC AT PVC) TO 6" ABOVE GRADE WITH TWO COATS OF SCOTCHRAP PIPE PRIMER AND TWO OVERLAPPING LAYERS OF SCOTCHRAP 51 TAPE.
- SEAL ALL CONDUITS ENTERING PANELS AND ENCLOSURES FROM BELOW GRADE WITH DUCT SEAL, ALL CONDUITS ENTERING SHEET METAL ENCLOSURES SHALL BE TERMINATED WITH THREADED HUBS TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- SIZE THE EQUIPMENT FRAME TO FIT EQUIPMENT TO BE INSTALLED, CIRCUIT BREAKER AND SWITCH OPERATING HANDLES SHALL BE A MAXIMUM OF 66" ABOVE FINISHED GRADE, PROVIDE STAINLESS STEEL BOLTS, NUTS AND WASHERS.
- THE SCADA SYSTEM SHALL BE PROVIDED BY GRUNDFOS AS PART OF THE LEVEL CONTROL SYSTEM, THE CONTRACTOR SHALL COORDINATE WITH THE PUMP CONTROL PANEL SUPPLIER FOR REQUIRED LOCATION OF THE ANTENNA, FOR BIDDING PURPOSES, ASSUME THE ANTENNA MUST BE MOUNTED ON THE BUILDING EXTERIOR.
- THE SCADA SYSTEM SHALL MONITOR AND TRANSMIT THE FOLLOWING POINTS AND TELEMETRY:

DIGITAL INPUTS:	-PHASE FAIL
-POWER FAILURE	-GENERATOR ALARM
-GENERATOR FAIL	-ATS IN EMERGENCY
-ATS IN UTILITY	-GENERATOR NOT IN AUTO
-ATS SERVING LOAD	-PUMP 1 FAIL
-PUMP 1 RUN	-PUMP 2 FAIL
-PUMP 2 RUN	-PUMP 3 FAIL
-PUMP 3 RUN	-BYPASS PUMP FAIL
-BYPASS PUMP RUN	-ODOR CONTROL SYSTEM FAIL
-HIGH LEVEL	
ANALOG INPUT:	-PUMP NO.1 SPEED
-FLOWMETER	-PUMP NO.2 SPEED
-PUMP NO.2 SPEED	
ANALOG OUTPUT:	-PUMP NO.1 SPEED
-PUMP NO.1 SPEED	-PUMP NO.2 SPEED
-PUMP NO.3 SPEED	
- VERIFY ALL POINTS AND TELEMETRY WITH OWNER.
- COORDINATE THE ELECTRICAL SERVICE AND METERING WITH GEORGIA POWER, CONTACT KENNETH BURGSTINER, DISTRIBUTION ENGINEER, 912-306-2158.
- MOUNT SURGE PROTECTION WITHIN THE MCC AS SHOWN.
- EXTEND 3/4" C W/6NO.14, 1NO.14(G) TO THE PUMP STATION CONTROL PANEL PROVIDE A PRE-TRANSFER AND POST-TRANSFER SIGNAL TO THE STATION TO INITIATE A CONTROLLED SHUT-DOWN AND START-UP OF THE STATION.
- EXTEND TWO CIRCUITS: 3/4" C W/2NO.12, 1NO.12(G) EACH, FROM PANEL A TO THE BATTERY CHARGER RECEPTACLE AND TO THE COOLANT HEATER RECEPTACLE ON THE EQUIPMENT FRAME. REFER TO ONE LINE DIAGRAM 3/E2.
- ALL CONDUIT INSTALLED BELOW GRADE ON THIS SITE SHALL BE 24" MINIMUM BELOW FINISH GRADE, PROVIDE A DETECTABLE FOIL WARNING TAPE IN TRENCH ABOVE EVERY CONDUIT 12" BELOW FINISH GRADE.
- AS-BUILT DRAWINGS SHALL INDICATE ROUTING OF ALL UNDERGROUND CONDUITS.
- CATALOG NUMBERS INDICATED ON FIXTURES IN LEGEND ARE REPRESENTATIVE OF REQUIRED QUALITY, THE CONTRACTOR MAY SUBMIT FIXTURES FROM COOPER, LITHONIA OR HUBBELL THAT MEET THE REQUIRED LEVEL OF QUALITY, ALL SUBMITTALS SHALL BE SUBJECT TO REVIEW BY THE ENGINEER, FIXTURES DETERMINED TO BE OF INFERIOR QUALITY WILL BE REJECTED.
- DISCONNECT SWITCHES FOR PUMP MOTORS SHALL BE EQUIPPED WITH A NORMALLY CLOSED AUXILIARY CONTACT, THE AUXILIARY CONTACT SHALL BE WIRED INTO THE CONTROL VOLTAGE STOP/START CIRCUIT ON THE DRIVE, THE AUXILIARY CONTACT SHALL BE EARLY BREAK SO THAT THE VFD CONTROL CIRCUIT DROPS OUT BEFORE THE DISCONNECT SWITCH OPENS THE POWER CIRCUIT, AND LATE MAKE SO THAT THE DISCONNECT SWITCH CLOSING THE POWER CIRCUIT BEFORE THE VFD CONTROL CIRCUIT ON THE DRIVE IS CLOSED.
- THE GENERATOR FUEL TANK FOUNDATION SHALL BE CONSTRUCTED SUCH THAT THE TOP OF THE FUEL TANK IS 12" ABOVE THE 100 YR FLOOD ELEVATION, COORDINATE WITH THE CIVIL ENGINEER FOR FLOOD ELEVATION DATA AND REFERENCE POINTS.
- THE CONTRACTOR SHALL PROVIDE A COMPLETE FESTOON CABLE SYSTEM, TO PROVIDE POWER TO THE MOTORIZED TROLLEY/HOIST (LIFT MOTOR: 2HP 3.2FLA @ 480V 3PH), THE SYSTEM CONSISTS OF STAINLESS STEEL C-RAIL, STAINLESS STEEL CABLE TROLLEYS, FESTOON CABLE (SUNLIGHT RESISTANT/ OUTSIDE INSTALLATION RATED), THE C-RAIL SHALL BE MOUNTED TO THE HOIST FRAME ADJACENT TO THE HOIST SUPPORT BEAM, COORDINATE CABLE QUANTITY, C-CHANNEL LENGTH AND TROLLEY QUANTITY WITH BEAM LENGTH AS RECOMMENDED BY CONDUCTIX, INSTALL AND SUPPORT IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS, PROVIDE PRODUCTS OF CONDUCTIX/ WAMPFLER, NO SUBSTITUTIONS, CONTACT JERRY KOETTING, SOUTHEAST DISTRICT SALES, CONDUCTIX/WAMPFLER, 770-330-4608, REF: EFFINGHAM CO. HODGEVILLE RD PS #4 REHAB.



- ### NOTES:
- GENERATOR SET ENCLOSURE OUTLINE
 - REINFORCING STEEL, NOTE A
 - 1" CHAMFER
 - 3/4" X 10' COPPERCLAD GROUND ROD AND
 - #1/0 CU BARE GROUND CONDUCTOR
 - FINISHED GRADE
 - 3/4" PVC, SEE NOTE B
- #8 GA. STEEL WIRE MESH, 6" O.C. VERTICALLY OR #6 REBAR, 12" O.C. HORIZ.
 - CONNECT TO GENERATOR GROUND CONNECTION LUG, VERIFY STUB UP LOCATION WITH MANUFACTURER'S SHOP DRAWINGS, WATERPROOF CONDUIT END WITH SEALING COMPOUND.
 - ANCHOR BOLTS FURNISHED WITH GENERATOR SET, PROVIDE SIX MINIMUM, TIE TO REINFORCING STEEL.
 - DIMENSION SHALL BE 6" (12" OVERALL DEPTH) UP TO & INCLUDING 600 KW, 12" (18" OVERALL DEPTH) LARGER THAN 600 KW.

4 EMERGENCY GENERATOR SET EXTERIOR FOUNDATION DETAIL
E1 SCALE: NONE



5 SERVICE POLE
E1 SCALE: NONE

HUSSEY GAY BELL
Established 1958

HODGEVILLE LIFT STATION #4 IMPROVEMENTS FOR THE EFFINGHAM COUNTY BOARD OF COMMISSIONERS

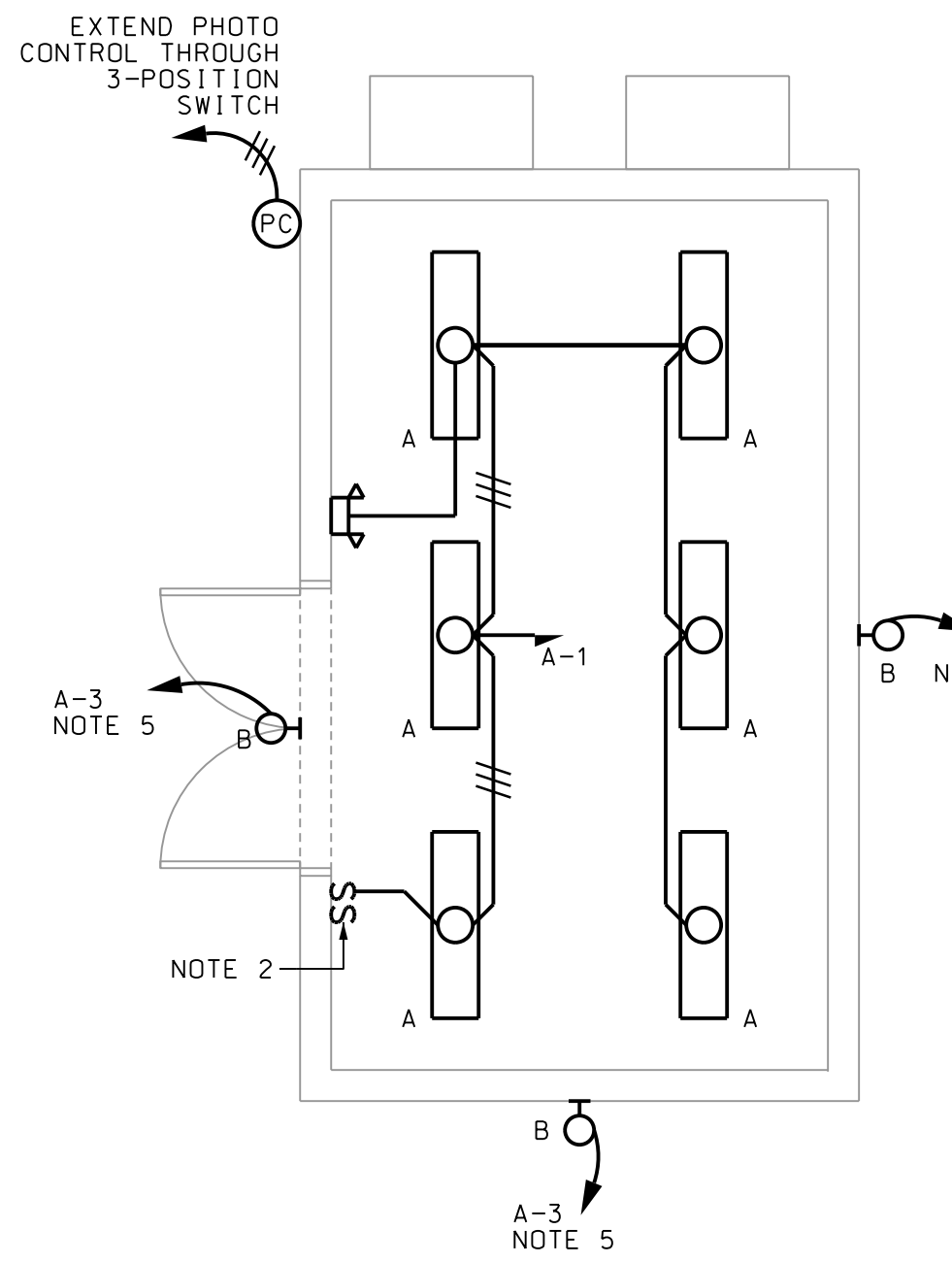
ELECTRICAL SITE PLAN & DETAILS

DESIGNED/	DRAWN/	CHECKED/	DATE: JUN 2021
CC	AL	CC	
JOB NO. 120004450			
SCALE: 1" = 10'			

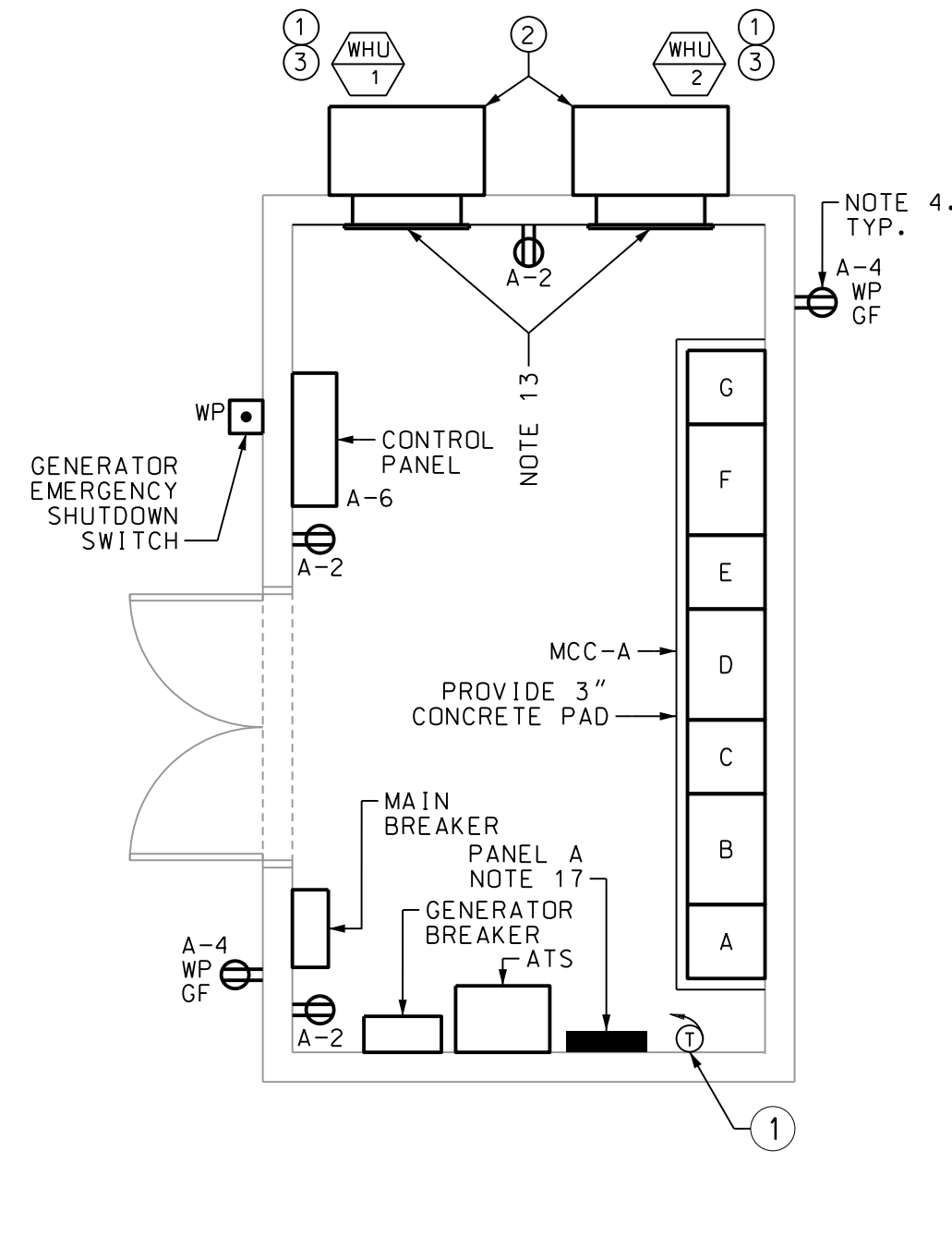
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March 9, 2020 - 2:11 PM Printed By: alawson
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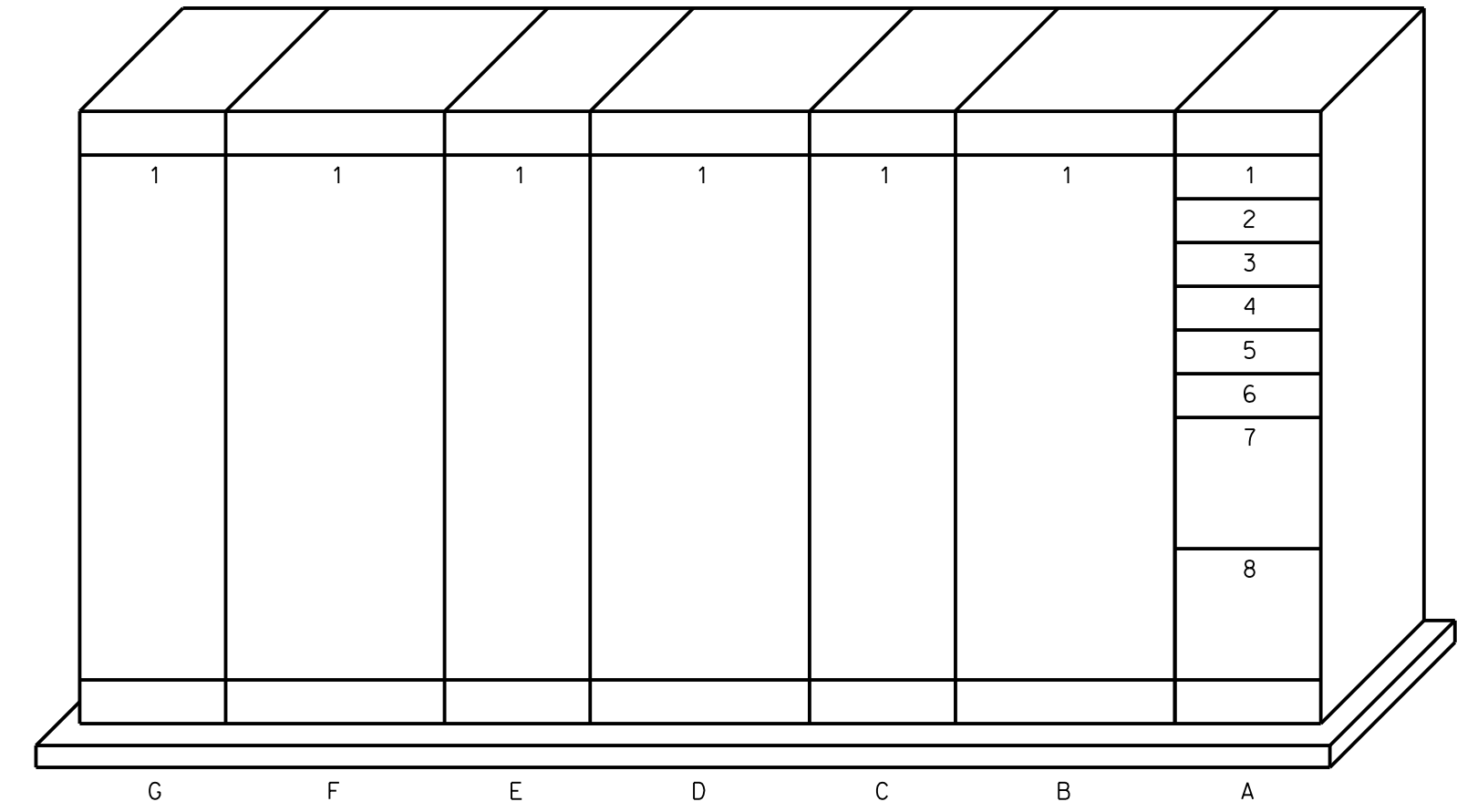
1 FLOOR PLAN - LIGHTING
E2 SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - POWER
E2 SCALE: 1/4" = 1'-0"

NOTES:

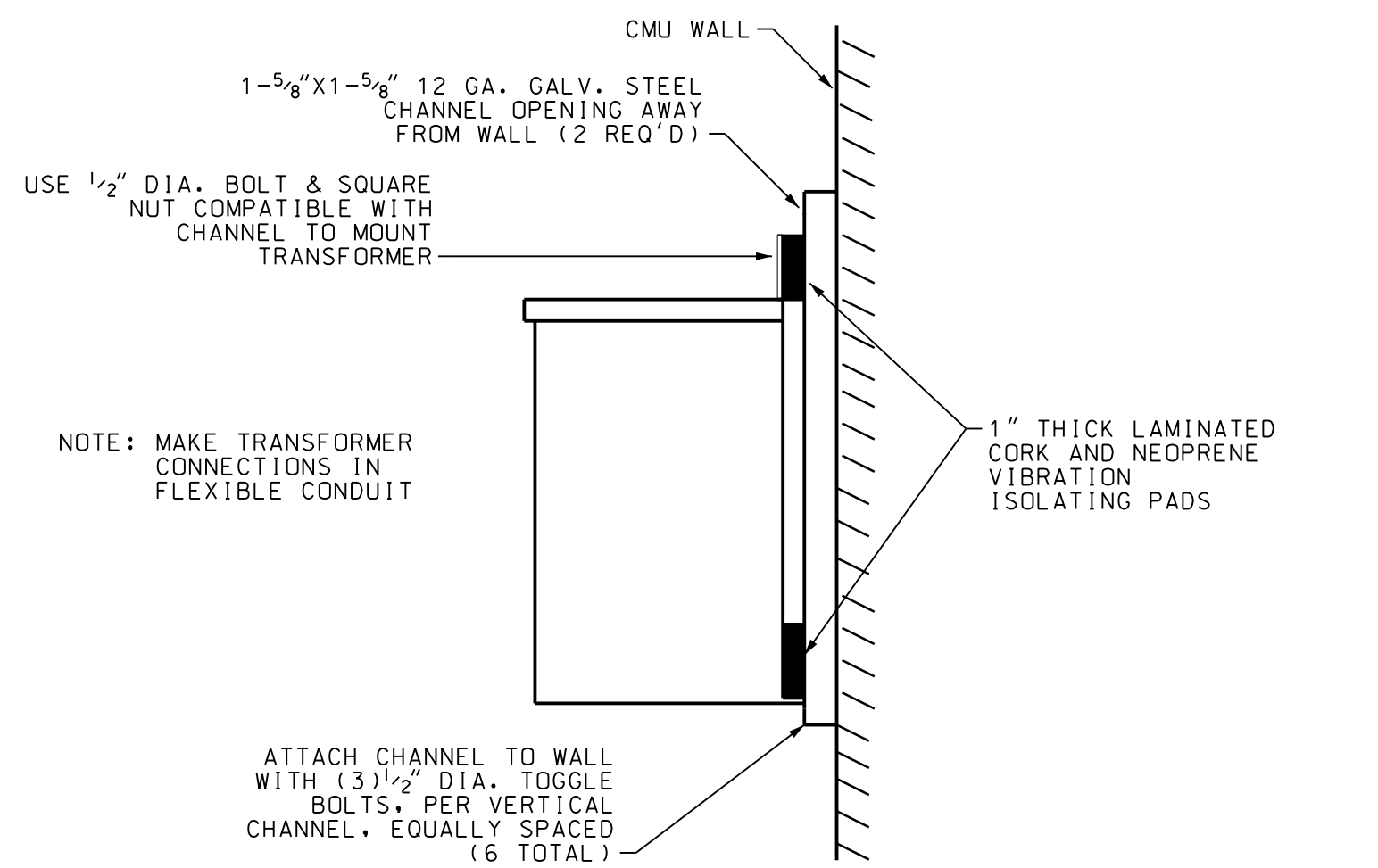
- THE AUTOMATIC TRANSFER SWITCH SHALL PROVIDE A PRE-TRANSFER SIGNAL TO THE PUMP CONTROL PANEL. THE PUMP CONTROL PANEL SHALL DE-ENERGIZE THE VFD'S BEFORE THE TRANSFER SWITCH CHANGES SOURCES. THIS SIGNAL SHALL BE TRANSMITTED FOR ALL TRANSFER SWITCH OPERATIONS. NOTE G10.
- FURNISH AND INSTALL A 20A 120/277V SINGLE POLE, THREE-POSITION SWITCH FOR CONTROL OF EXTERIOR BUILDING LIGHTS. UP - PHOTO CONTROL. CENTER - OFF. DOWN - MANUAL ON. LABEL SWITCH POSITIONS AND PROVIDE NAMEPLATE FOR SWITCH. PROVIDE HUBBELL HBL1385. THE POLE MOUNTED AREA LIGHT SHALL BE SEPARATELY SWITCHED.
- EXTEND GENERATOR COMMON ALARM WIRING IN 1" CONDUIT TO SCADA PANEL.
- PROVIDE WEATHER RESISTANT TYPE RECEPTACLES (HUBBELL GFWRST83) WITH WEATHER PROOF IN-USE COVER (CALBRITE S6000FVSC). TYPICAL OF ALL EXTERIOR RECEPTACLES.
- EXTEND CIRCUIT THROUGH 3-POSITION SWITCH IN ELECTRICAL ROOM. NOTE 2.
- SELF CONTAINED TRANSOCKET METER BASE AS REQUIRED BY GEORGIA POWER. INSTALLED BY DIV. 16. REFER TO REQUIREMENTS OF GEORGIA POWER BLUE BOOK SERVICE AND METERING INSTALLATIONS.
- FIELD COORDINATE THE ELECTRICAL SERVICE WITH KENNETH BURGSTINER, DISTRIBUTION ENGINEER, GEORGIA POWER, 912-306-2158.
- FOR THE CONDUITS BETWEEN THE CONTROL PANEL OR MCC AND THE DISCONNECT SWITCHES OR JUNCTION BOX(ES), PROVIDE THE FOLLOWING AT THE CONDUIT TERMINATION TO THE JUNCTION BOX(ES):
A. MOTOR/PUMP AND FLOAT CONDUITS:
1. PROVIDE TYPE ES SEALING HUB FOR THE CONDUIT TERMINATION TO THE JUNCTION BOX(ES).
2. PROVIDE TWO SEALING LOCKNUTS (INSIDE/OUTSIDE ENCLOSURE) TO MAINTAIN THE 4X RATING OF THE JUNCTION BOX(ES).
3. PROVIDE A NYLON BUSHING ON THE HUB.
4. PACK HUB WITH DUCT SEAL AROUND CABLES. LEAVE BETWEEN 1/4" AND 3/8" OF SPACE AT THE TOP OF THE HUB (NOT BUSHING).
5. POUR 1/2" AND 3/8" OF EPOXY SEALING COMPOUND INTO TOP OF SEALING HUB.
B. TRANSDUCER CONDUIT AND CONDUITS TO THE WET WELL:
1. PROVIDE TYPE ES SEALING HUB FOR THE CONDUIT TERMINATION TO THE JUNCTION BOX(ES).
2. PROVIDE TWO SEALING LOCKNUTS (INSIDE/OUTSIDE ENCLOSURE) TO MAINTAIN THE 4X RATING OF THE JUNCTION BOX(ES).
3. PROVIDE A NYLON BUSHING ON THE HUB.
4. PACK HUB WITH DUCT SEAL AROUND CABLES. LEAVE BETWEEN 1/4" AND 3/8" OF SPACE AT THE TOP OF THE HUB (NOT BUSHING).
5. POUR 1/2" AND 3/8" OF EPOXY SEALING COMPOUND INTO TOP OF SEALING HUB.
- 2 1/2" PVC (BELOW GRADE; RGS ELBOW AND RGS FROM BELOW TO ABOVE GRADE) WITH BELDEN 29531C (NO. 4/0 AWG SHIELDED) MULTI-CONDUCTOR FLEXIBLE MOTOR SUPPLY CABLE, 3 NO. 4(G).
- 3/4" PVC (BELOW GRADE; ARC ELBOW AND ARC FROM BELOW TO ABOVE GRADE) WITH BELDEN 5240F1(16 AWG TS PR), 1 NO. 16(G). EXTEND TO PUMP VFD FOR MOTOR SHUT-DOWN.
- ONE 2" PVC SCH. 80 CONDUIT PER PUMP STUBBED INTO THE WET WELL FOR POWER CABLES.
- 200A/3P/4XSS/NF DISCONNECT SWITCH WITH AUXILIARY CONTACT. NOTE G15.
- EXTEND INSULATED GALVANIZED DUCTWORK THROUGH WALL TO SUPPLY AND RETURN GRILLES.
- THE AUTOMATIC TRANSFER SWITCH SHALL BE A CUMMINS OTPC SERIES (OR ASCO 7000) SWITCH; IT SHALL INCLUDE OPEN/PROGRAMMED TRANSITION, LEVEL 2 (CO24) CONTROL, DIGITAL DISPLAY (M018), FRONT PANEL SECURITY (M017), RELAY SIGNAL MODULE (M023), COMPREHENSIVE 5-YEAR WARRANTY (G013). THE TRANSFER SWITCH SHALL BE 4-POLE, NEMA 12 ENCLOSURE.
- 3 1/2" PVC (BELOW GRADE; RGS ELBOW AND RGS FROM BELOW TO ABOVE GRADE) WITH BELDEN 28341AS(16AWG TS, 12 COND) CABLE.
- THREE 1" C W/CONDUITS AS REQUIRED FOR GENERATOR CONTROL AND ALARM ANNUNCIATION. EXTEND TO AUTOMATIC TRANSFER SWITCH. COORDINATE REQUIRED CONNECTIONS WITH GENERATOR VENDOR.
- WALL MOUNT TRANSFORMER T-A ABOVE PANEL A. PROVIDE SPACE BETWEEN TRANSFORMER AND WALL FOR CONDUITS. SEE DETAIL ON THIS PAGE.
- THE GENERATOR VENDOR AND THE VARIABLE SPEED DRIVE VENDOR SHALL COORDINATE ISOLATION OF THE HARMONIC MITIGATION SYSTEM WHEN GENERATOR IS CALLED TO RUN. PROVIDE ISOLATION CONTACTORS AND CONTROL WIRING AS REQUIRED.
- ONE 2" SCH. 80 PVC CONDUIT PER PUMP STUBBED INTO THE WET WELL FOR PILOT CABLE.
- PROVIDE ENGRAVED PLASTIC, WHITE W/ BLACK CORE, NAME PLATES FOR ALL ELECTRICAL EQUIPMENT. AND REFER TO SPECIFICATIONS.



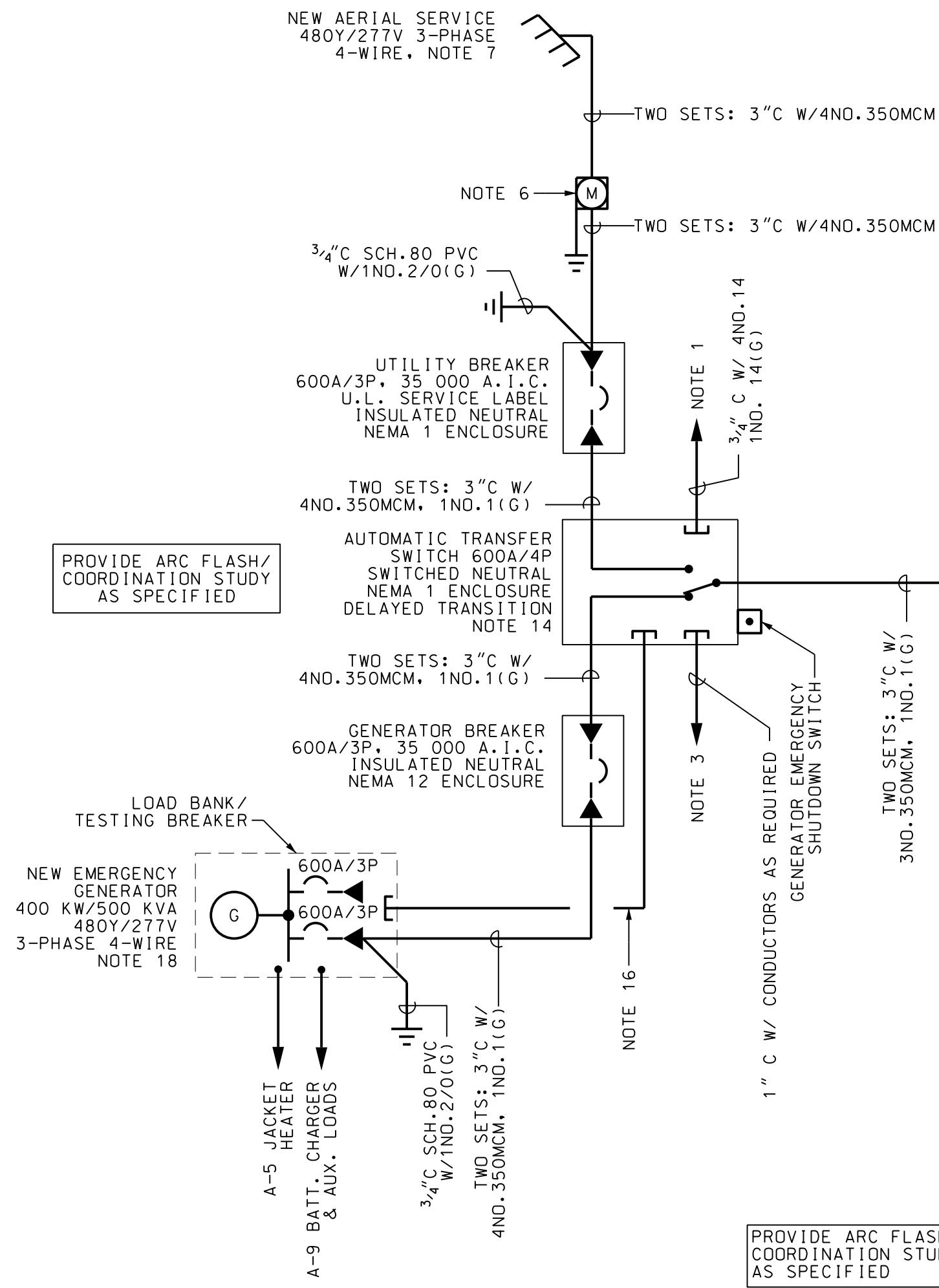
MOTOR CONTROL CENTER MCC-A NOTE 18

VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 800A	VERT BUS: 300			
BUS BRACING: 35 000		MAX. OVERALL LENGTH: 190"		DEMAND LOAD: 311.6KVA				
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER FRAME	TRIP	POLES	CONTROLS	REMARKS
A-1	MOTORIZED HOIST	2	N/A	150	15	3	-	6"
A-2	ODDR CONTROL	15A	N/A	150	15	3	-	6"
A-3	XFMR T-A	N/A	N/A	150	30	2	-	6"
A-4	WHU 1	N/A	N/A	-	25	3	-	6"
A-5	WHU 2	N/A	N/A	-	25	3	-	6"
A-6	SURGE PROTECTION	N/A	N/A	-	-	-	-	6"
A-7	SPACE	N/A	N/A	-	-	-	-	18"
A-8	MAIN LUGS	N/A	N/A	-	-	-	-	18"
B-1	PUMP #1	127	VFD	250	225	3	-	72"X30"W
C-1	HARMONIC REDUCTION	N/A	N/A	-	-	-	-	72"
D-1	PUMP #2	127	VFD	250	225	3	-	72"X30"W
E-1	HARMONIC REDUCTION	N/A	N/A	-	-	-	-	72"
F-1	FUTURE PUMP #3	127	VFD	250	225	3	-	72"X30"W
G-1	HARMONIC REDUCTION	N/A	N/A	-	-	-	-	72"

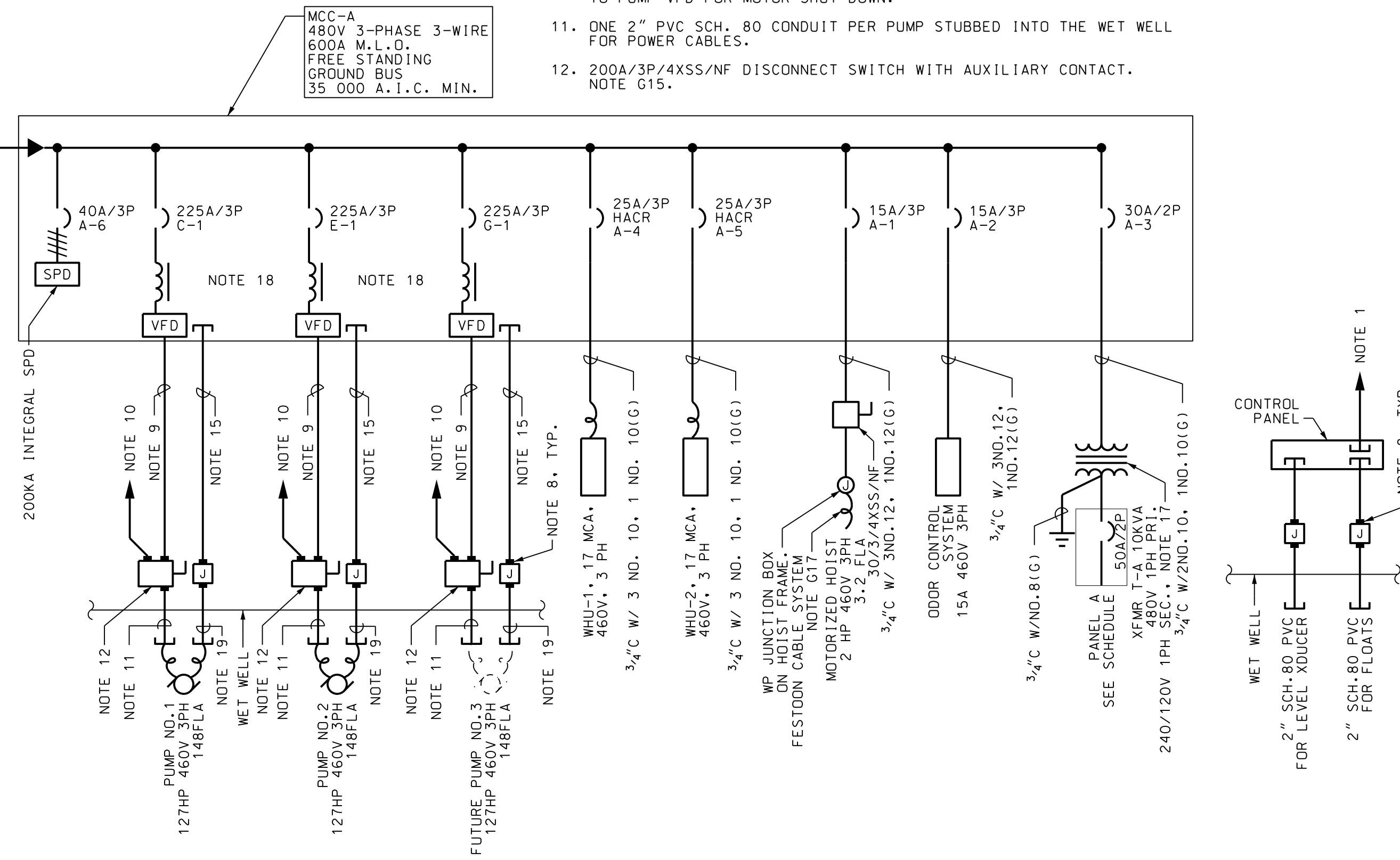
4 MCC-A ELEVATION & SCHEDULE
E2 SCALE: NONE



5 WALL MOUNTED DRY TYPE TRANSFORMER INSTALLATION
E2 SCALE: NONE



3 ONE-LINE DIAGRAM
E2 SCALE: NONE



SCHEDULE OF PANEL 'A'

VOLTAGE: 240 / 120		PHASE: 1		WIRE: 3					
BUS AMPS: 100 A		DEVICE AMPS: 50 A		MOUNTING: SURFACE					
A.L.C RATING: 10,000 A				NEMA: 1					
LOCATION DESCRIPTION	LOAD (KVA)	LOAD TYPE	TRIP POLE	#	PH	TRIP POLE	LOAD (KVA)	LOCATION DESCRIPTION	
LIGHTS INTERIOR	0.6	A	20A/1P	1	A	2	20A/1P	B 1.0	RECEPTACLES
LIGHTS EXTERIOR	0.3	A	20A/1P	3	B	4	20A/1P	H 0.1	FLOW METER
GENERATOR COOLANT HEATER	1.3	H	20A/2P	5	A	6	20A/1P	H 0.1	SCADA/CONTROL PANEL
2500KW 240V 1PH	1.3	H	-	7	B	8	20A/1P	H 1.0	BYPASS PUMP BATTERY CHARGER
GENERATOR BATTERY CHARGER	1.0	H	20A/1P	9	A	10	20A/1P		SPARE
SPARE			20A/1P	11	B	12	20A/1P		SPARE
SPARE			20A/1P	13	A	14	20A/1P		SPARE
SPARE			20A/1P	15	B	16	20A/1P		SPARE
SPARE			20A/1P	17	A	18	20A/1P		SPARE

PANEL LOAD ANALYSIS

Load Type	DESCRIPTION	Conn. kVA	Demand kVA	2017 NEC Reference	Load Type	DESCRIPTION	Conn. kVA	Demand kVA	2017 NEC Reference
A	Lighting	0.9	1.1	NEC Article 215.3	E	Heating	0.0	0.0	NEC Article 220.60
B	Receptacles	1.0	1.0	NEC Table 220.44	F	Largest Motor	0.0	0.0	NEC Article 440.7
C	Kitchen Equipment	0.0	0.0	NEC Table 220.56		Other Motors	0.0	0.0	NEC Article 440.7
D	Air-Conditioning	0.0	0.0	NEC Article 220.60	H	Other Loads	4.7	4.7	
Phase A Connected Load		4.0 kVA			TOTAL CONNECTED LOAD		6.6 kVA	27.5 AMPS	
Phase B Connected Load		2.7 kVA			TOTAL DEMAND LOAD		6.8 kVA	28.4 AMPS	
					MINIMUM SIZING AMPS		10.7 kVA	44.4 AMPS	

HUSSEY GAY BELL
Established 1958

HODGEVILLE LIFT STATION #4
IMPROVEMENTS FOR THE
EFFINGHAM COUNTY
BOARD OF COMMISSIONERS
BUILDING PLAN & ONE-LINE

E2

DRAWING NUMBER

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