

**SUPPLEMENTAL INFORMATION
ADDENDUM NO. 1**

PROJECT: ITB No 17-002 - Old Augusta Rd - Water Sewer Extension Construction
CONTACT: Fiona Charleton, Purchasing Agent
912-754-2159 fcharleton@effinghamcounty.org
DATE ISSUED: September 12,, 2016

ITB No. 17-002 dated August 15, 2016 is hereby amended as noted herein : BIDDER TO ACKNOWLEDGE RECEIPT OF ADDENDUM BY SIGNING ON THE SIGNATURE LINE BELOW AND INCLUDING A COPY WITH SUBMITTED BID. FAILURE TO DO SO MAY, AT THE OWNER'S DISCRETION, SUBJECT THE BIDDER TO DISQUALIFICATION

- 1) QUESTION: Is it required that we buy the plans from the county or the engineer in order to be able to bid on the project?
ANSWER: There is no charge for the plans –they are located on our website together with the ITB <https://vrapp.vendorregistry.com/Bids/View/Bid/56e0818e-ea33-4179-b37f-cc6aa3866e33>

- 2) QUESTION: Is there a pre bid meeting?
ANSWER: No, there is no pre bid meeting.

- 3) QUESTION: We are coming up with different quantities on the FPVC – please confirm or clarify the schedule of value quantity:
16in: 50ft under gas line and 818ft under wetlands
8in: 50ft under gas line and 818ft under wetlands
12in: casing of 90ft with 8 in carrier
ANSWER:
16in Water:
120ft under gas line
818ft under wetlands
8in FM:
120ft under gas line
818ft under wetlands
90ft under Old Augusta Road
12in Casing:
90ft under Old Augusta Road

Please note that 1” HDPE – HDD has been removed from the bid schedule.

Please **REPLACE** Article 5 – BASIS OF BID table on pages 01250-3 and 01250-4 and Article 5 – CONTRACT PRICE table on pages 01350-2 and 01350-3 with the revised bid schedule included below.

Please note that the Final Signed Construction Plans have been included below and also be found on the county website as a separate document:
<https://vrapp.vendorregistry.com/Bids/View/BidsList?BuyerId=4e9bf0f9-3ffd-4b71-9e5e-334287e596e8>

Item	Description	Est. Qty.	Unit	Unit Price	Total Price
SECTION I - GENERAL					
1	Mobilization	JOB	LS		
2	Traffic Control	JOB	LS		
3	Bonding, Misc.	JOB	LS		
4	Clearing and Grubbing	0.5	AC		
5	Cut & Patch Drives, Remove & Replace misc. items	JOB	LS		
6	Remove Unsuitable Material	90	CY		
7	Stone Bedding	90	CY		
8	Select Backfill	700	CY		
SUBTOTAL					
SECTION II - EROSION AND SEDIMENTATION CONTROL					
1	Silt Fence - Sensitive	2,130	LF		
2	Silt Fence - Non Sensitive	8,880	LF		
3	Haybale Check Dam	25	EA		
4	Permanent Grassing / Mulching	24,000	SY		
SUBTOTAL					
SECTION III - WATER DISTRIBUTION SYSTEM					
1	1" HDPE Water Service Lateral - Direct Bury	110	LF		
2	1" Valve in Box	1	EA		
3	1" RPZ Backflow Preventer	1	EA		
4	8" PVC Watermain	85	LF		
5	8" FPVC Watermain w/ Spacers in Existing Steel Casing	150	LF		
6	8" Valve in Box	2	EA		
7	16" FPVC Watermain - Horizontal Directional Drill	940	LF		
8	16" FPVC Watermain w/ Spacers in Existing Steel Casing	65	LF		
9	16" PVC Watermain	6,530	LF		
10	16" Valve in Box	10	EA		
11	Connect to Existing 16" Watermain	JOB	LS		
12	Fire Hydrant Assembly	8	EA		
13	Watermain Markers	16	EA		
SUBTOTAL					
SECTION IV - SANITARY SEWER SYSTEM					
1	10" DI SS Gravity Main (6'-12') w/ Lock Joints & Spacers	50	LF		
2	10" DI SS Gravity Main (12'-18') w/ Lock Joints & Spacers	60			
3	Jack and Bore 20" Steel Casing	110	LF		
4	10" PVC SS Gravity Main (6'-12')	690	LF		
5	10" PVC SS Gravity Main (12'-18')	1,940	LF		
6	4' Dia - Precast SS Manhole (6'-12')	4	EA		
7	4' Dia - Precast SS Manhole (12'-18')	11	EA		
8	Forcemain Termination Manhole	1	EA		
9	Air Release Valve in Manhole	4	EA		
10	8" PVC SS Forcemain	1,880	LF		
11	8" PVC SS Forcemain - Horizontal Directional Drill	1,030	LF		
12	12" FPVC Casing - Horizontal Directional Drill	90	LF		
13	Pump Station Complete	JOB	LS		
14	Forcemain Markers	8	EA		
SUBTOTAL					
GRAND TOTAL					

CONSTRUCTION PLANS

FOR

OLD AUGUSTA ROAD

UTILITY EXTENSION

EFFINGHAM COUNTY, GEORGIA

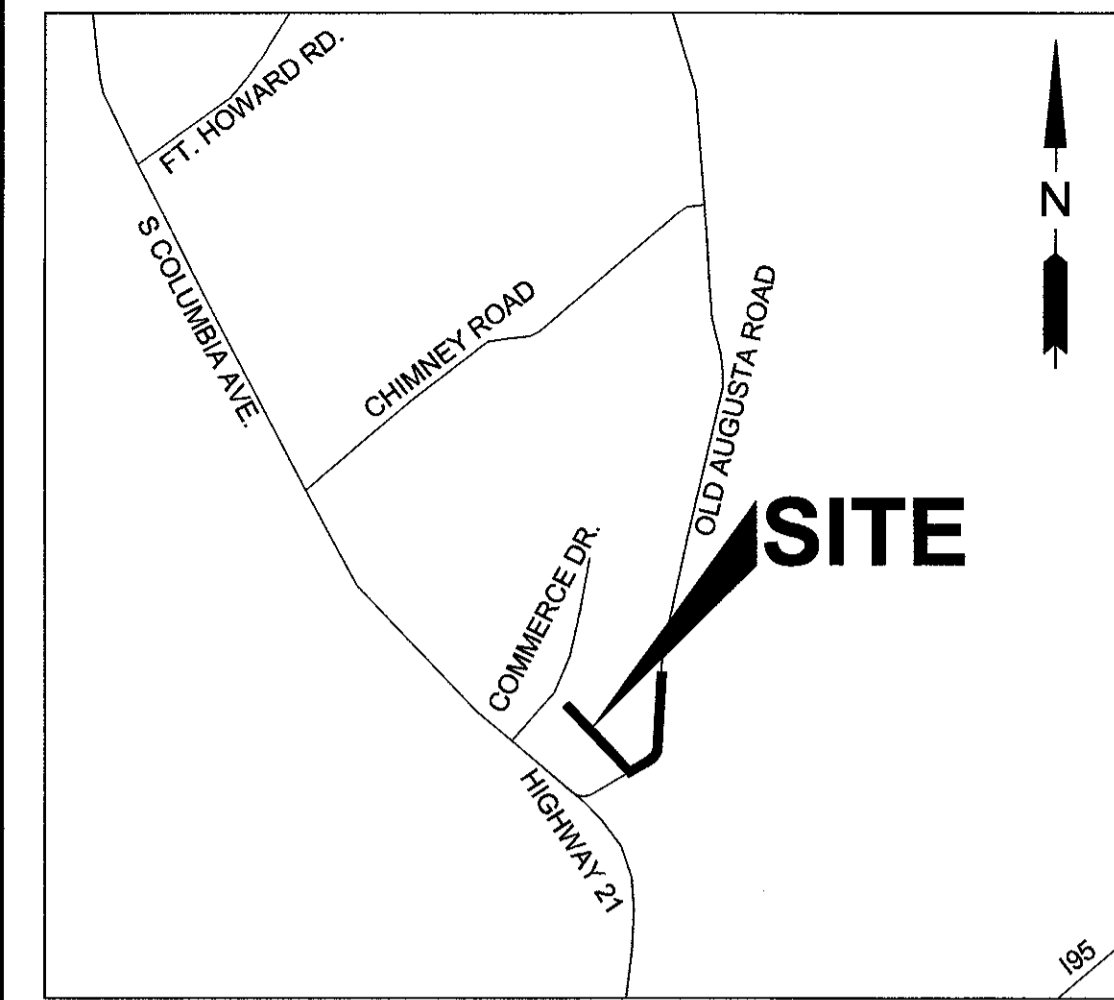
MAY 2016

EMC PROJECT NO. 16-0004

DEVELOPER/RESPONSIBLE PARTY:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS
601 NORTH LAUREL STREET
SPRINGFIELD, GA, 31329
PHONE#: 912-754-2123



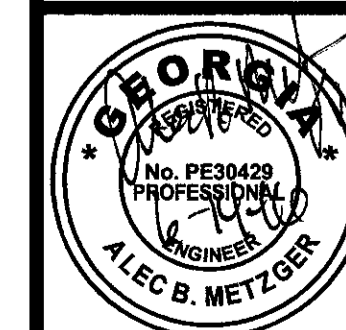
EMC ENGINEERING SERVICES, INC.
ENVIRONMENTAL - MARINE - CIVIL - SURVEY



VICINITY MAP
NOT TO SCALE

INDEX OF DRAWINGS

SHT NO.	DESCRIPTION
1	COVER
2	GENERAL NOTES & LEGEND
3	KEY MAP
4-17	PLAN & PROFILE
18-20	SEWER PROFILES
21	PUMP STATION PLAN
22	ELECTRICAL PLAN
23-24	EROSION & SEDIMENTATION CONTROL NOTES
25-27	CONSTRUCTION DETAILS



EMC ENGINEERING SERVICES, INC.
 POST OFFICE BOX 8101,
 SAVANNAH, GA 31412
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405)
 PHONE: (912) 232-6533
 FAX (912) 233 - 4580
 www.emc-eng.com

GENERAL NOTES

- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL REQUIRED PERMITS ARE OBTAINED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH EFFINGHAM COUNTY SPECIFICATIONS.
- PRIOR TO INSTALLATION OF ANY UTILITY LINES, THE CONTRACTOR SHALL GIVE THE UTILITY COMPANIES THREE (3) WORKING DAYS NOTICE TO ALLOW TIME FOR EXISTING UTILITIES TO BE STAKED. BEFORE CALLING (1-800-282-7411) THE CONTRACTOR SHALL HAVE THE FOLLOWING INFORMATION READY: COUNTY, TOWN, LOCATION, NEAREST STREET INTERSECTIONS, TYPE OF WORK (SEWER, WATER, PAVING, ETC.), YOUR COMPANY NAME, TELEPHONE NUMBER, OWNER'S NAME, DATE AND TIME YOU EXPECT TO COMMENCE CONSTRUCTION, AND WHERE AND HOW YOU CAN BE REACHED AND THE BEST TIME TO CONTACT YOU. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLAN OR LOCATED BY THE UTILITY COMPANY. ALL UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANIES, AND THE CONTRACTOR SHALL COOPERATE WITH THEM DURING RELOCATION OPERATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY VARIANCES PRIOR TO COMMENCEMENT OF WORK OR PURCHASING ANY MATERIALS.
- ALL KNOWN UTILITY FACILITIES ARE SHOWN SCHEMATICALLY ON THE PLANS AND ARE NOT NECESSARILY ACCURATE AS TO PLAN OR ELEVATION. UTILITY FACILITIES SUCH AS SERVICE LINES OR UNKNOWN UTILITIES NOT SHOWN ON THE PLANS WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES, EXCEPT AS NOTED BELOW. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGED UTILITY FACILITIES OTHER THAN SERVICE LINES FROM STREET MAINS TO ABUTTING PROPERTY WHEN SUCH FACILITIES ARE NOT SHOWN ON THE PLANS AND THEIR EXISTENCE IS UNKNOWN TO THE CONTRACTOR PRIOR TO THE DAMAGES OCCURRING PROVIDING THE ENGINEER DETERMINES THE CONTRACTOR HAS OTHERWISE FULLY COMPLIED WITH THE SPECIFICATIONS.
- IT IS THE OBLIGATION OF THE CONTRACTOR TO MAKE HIS OWN INTERPRETATION OF ALL SURFACE AND SUBSURFACE DATA AS TO THE NATURE AND EXTENT OF THE MATERIALS TO BE EXCAVATED. THE INFORMATION SHOWN ON THESE PLANS AND SPECIFICATIONS DOES NOT IN ANY WAY GUARANTEE THE AMOUNT OR NATURE OF THE MATERIAL WHICH MAY BE ENCOUNTERED.
- ALL REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF AASHTO M170 (GDOT STANDARD SPECIFICATIONS - SECTION 843).
- FILL MATERIAL SHALL BE CLEAN AND FREE OF ALL DEBRIS AND ORGANIC MATERIAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND FURNISHING THE BORROW MATERIAL NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT.
- ALL ITEMS REMOVED FROM THE PROJECT WHICH ARE NOT TO BE REUSED SHALL BE MOVED TO A LOCATION APPROVED BY THE OWNER.
- DURING CONSTRUCTION IN THE AREA OF AN INTERSECTION, WORK WILL BE PERFORMED IN SUCH A MANNER AS TO PERMIT TRAFFIC TO OPERATE WITH THE LEAST AMOUNT OF INCONVENIENCE POSSIBLE. ADDITIONAL CHANNELIZATION AND SIGNING SHALL BE INSTALLED, AS DIRECTED BY THE ENGINEER, TO ALLOW TRAFFIC TO FLOW AS FREELY AS POSSIBLE. WHEN AN INTERSECTION IS INOPERABLE, FLAGGERS WILL BE UTILIZED TO CONTROL TRAFFIC.
- ALL SIGNING SHALL BE PER DOT STANDARDS AND M.U.T.C.D.
- ALL TREES TO REMAIN WITHIN THE CONSTRUCTION AREA ARE TO BE PROTECTED DURING CONSTRUCTION; SEE TREE PROTECTION DETAIL.

CONSTRUCTION NOTES

- COORDINATION WITH EFFINGHAM COUNTY - THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH THE COUNTY ADMINISTRATOR SO AS TO MINIMIZE DISRUPTION TO THE RESIDENTS ALONG THE PROJECT ROUTE. TO THIS PURPOSE, THE CONTRACTOR WILL BE REQUIRED TO MAKE THE FOLLOWING ADJUSTMENTS TO THE PROJECT:
 - TEMPORARY ACCESS: - THE CONTRACTOR SHALL MAINTAIN ACCESS TO PROPERTIES DURING CONSTRUCTION.
 - ORDER OF CONSTRUCTION: - THE CONTRACTOR SHALL PROCEED IN A LINEAR FASHION ALONG THE PROJECT ROUTE UNLESS OTHERWISE APPROVED BY THE ENGINEER. PRIOR TO BEGINNING CONSTRUCTION CONTRACTOR WILL DEVELOP A STAGE CONSTRUCTION PLAN AND SUBMIT IT TO THE ENGINEER FOR APPROVAL.
 - LIMITS OF CONSTRUCTION: - CONSTRUCTION SHALL BE LIMITED TO THE RIGHT-OF-WAY OR EASEMENT AREAS. CONTRACTOR SHALL STAY WITHIN THE PROJECT AREA WITH ALL HEAVY EQUIPMENT. CONTRACTOR SHALL CLEAR AND CUT ONLY TREES LOCATED WITHIN THE PROJECT CORRIDOR NEEDED FOR CONSTRUCTION OF THIS PROJECT. STUMPS SHALL BE REMOVED EITHER BY EXCAVATION OR GRINDING. CONTRACTOR SHALL WORK AROUND AND PROTECT TREES LOCATED OUTSIDE OF THE PROJECT AREA.
 - MATERIAL STORAGE: - FIELD STORAGE OF MATERIALS NOT IN IMMEDIATE USE IS RESTRICTED TO AREAS DESIGNATED OR APPROVED BY EFFINGHAM COUNTY.
 - EQUIPMENT STORAGE: - END OF THE DAY STORAGE OF EXCAVATION EQUIPMENT ALONG THE PROJECT ROUTE WILL BE ALLOWED ONLY AS APPROVED BY EFFINGHAM COUNTY, OTHERWISE ALL EQUIPMENT SHALL BE STORED IN THE DESIGNATED MATERIALS STORAGE AREAS.
 - PROTECTION OF EXISTING UTILITIES: - THE PROJECT CORRIDOR MAY HAVE EXISTING TELEPHONE, FIBER, GAS, POWER, WATER, SEWER, AND STORM DRAINAGE SYSTEMS. THE CONTRACTOR SHALL BE AWARE OF THE PRESENCE OF THESE SYSTEMS AT ALL TIMES DURING CONSTRUCTION AND SHALL PROTECT THEM FROM DAMAGE. IF DAMAGED BY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL IMMEDIATELY REPAIR THESE SYSTEMS AT HIS OWN EXPENSE.
 - PROTECTION OF EXCAVATED AREAS: - TEMPORARY FENCING SHALL BE USED AROUND OPEN EXCAVATIONS AT ALL TIMES, EXCEPT AS NECESSARY FOR IMMEDIATE CONSTRUCTION. WHEN WORK IS NOT IN PROGRESS, FENCING SHALL ENCLOSE EXCAVATED AREAS. UTILITY TRENCHES SHALL BE BACKFILLED TO GRADE AT THE END OF THE DAY, ALLOWING FOR A MAXIMUM OF 10' (FENCE-PROTECTED) TRENCH TO REMAIN OPEN.
 - RESTORATION PROJECT: - THE CONTRACTOR SHALL RESTORE THE PROJECT AREA TO ITS EXISTING CONDITION AFTER PROJECT CONSTRUCTION IS COMPLETED.
- CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING EXISTING WATER & SEWER SERVICE DURING THE CONSTRUCTION OF THIS PROJECT.

WATER MAIN NOTES

- PIPES, FITTINGS, VALVES AND OTHER MATERIAL SHALL, UNLESS OTHERWISE DIRECTED, BE UNLOADED AT THE POINT OF DELIVERY, AND STORED WHERE THEY WILL BE PROTECTED AND WILL NOT BE HAZARDOUS TO TRAFFIC. THEY SHALL AT ALL TIMES BE HANDLED WITH CARE TO AVOID DAMAGE. THE INTERIOR OF ALL PIPE, FITTINGS AND OTHER ACCESSORIES SHALL BE KEPT FREE FROM ALL FOREIGN MATTER AT ALL TIMES.
 - ANY DEFECTIVE, DAMAGED, OR UNSOUND PIPES SHALL BE REJECTED. ALL FOREIGN MATTER SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING. CARE SHALL BE TAKEN TO PREVENT FOREIGN MATTER FROM ENTERING THE JOINT SPACE. AT TIMES WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF THE PIPE SHALL BE PLUGGED OR COVERED BY APPROVED MEANS, AND NO TRENCH WATER SHALL BE PERMITTED TO ENTER THE PIPE.
 - ALL MATERIALS, WORKMANSHIP, AND TESTING FOR WATER SYSTEM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE EFFINGHAM COUNTY STANDARD SPECIFICATIONS, LATEST EDITION.
 - ALL PHASES OF CONSTRUCTION SHALL COMPLY WITH THE GEORGIA RULES FOR SAFE DRINKING WATER, CHAPTER 391-3-5, THE GAEPD MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS, LATEST EDITION, THE AMERICAN WATER WORKS ASSOCIATION, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 - ALL MATERIALS USED AND THAT COME INTO CONTACT WITH DRINKING WATER DURING ITS DISTRIBUTION SHALL NOT ADVERSELY AFFECT DRINKING WATER QUALITY AND PUBLIC HEALTH AND MUST BE CERTIFIED FOR CONFORMANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE / NATIONAL SANITARY FOUNDATION STANDARD 61 (ANSI/NSF STANDARD 61).
 - END OF THE DAY STORAGE OF EXCAVATION EQUIPMENT ALONG THE PROJECT ROUTE WILL BE ALLOWED ONLY AS APPROVED BY EFFINGHAM COUNTY REPRESENTATIVE, OTHERWISE ALL EQUIPMENT SHALL BE STORED IN THE DESIGNATED MATERIALS STORAGE AREAS.
 - TEMPORARY FENCING SHALL BE USED AROUND OPEN EXCAVATIONS AT ALL TIMES, EXCEPT AS NECESSARY FOR IMMEDIATE CONSTRUCTION. WHEN WORK IS NOT IN PROGRESS, FENCING SHALL ENCLOSE EXCAVATED AREAS. UTILITY TRENCHES SHALL BE BACKFILLED TO GRADE AT THE END OF THE DAY, ALLOWING FOR A MAXIMUM OF 10' (FENCE-PROTECTED) TRENCH TO REMAIN OPEN.
 - THE MINIMUM HORIZONTAL AND VERTICAL SEPERATION BETWEEN WATER LINES, SEWER LINES, AND STORM DRAINS SHALL CONFORM TO THE LATEST GEORGIA EPD REQUIREMENTS.
 - MAXIMUM JOINT DEFLECTION AND BENDING OF PVC PIPE SHALL NOT EXCEED MANUFACTURER'S SPECIFICATIONS AND INSTALLATION RECOMMENDATIONS.
 - AFTER DISINFECTION IS COMPLETED THE CHLORINATED DISINFECTED WATER SHALL NOT BE DISCHARGED INTO THE STORM WATER SYSTEM.
- SPECIAL NOTES:
- MEGA-LUG JOINT RESTRAINTS TO BE USED WHERE MECHANICALLY RESTRAINED JOINTS ARE NEEDED FOR PIPES, FITTINGS, AND VALVES
 - ALL PVC PIPE TO BE CLASS 235 C905 DR 18.
 - MIN. COVER OF WATERMAIN SHALL BE 36" FROM FINISH GRADE.
 - MAINTAIN ACCESS TO PROPERTIES ALONG PROJECT ROUTE AT ALL TIMES DURING CONSTRUCTION.
 - ALL ITEMS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THE THEIR ORIGINAL CONDITION.

SURVEY CONTROL		
	FOUND	SET
CONTROL NAIL		
IRON PIPE		
IRON REBAR		
HUB & TACK		
CONCRETE MONUMENT		
RIGHT-OF-WAY MARKER		
BENCHMARK		

FENCE LINE		
	EXISTING	PROPOSED
CHAIN LINK		
BARBED WIRE		
HOG WIRE		
WROUGHT IRON		
WOODEN		
SILT FENCE (SINGLE)		
SILT FENCE (DOUBLE)		

BUILDING		
	EXISTING	PROPOSED
BUILDING LINE		
BUILDING OVERHANG		
FINISHED FLOOR ELEVATION		

GROUND/DITCH		
	EXISTING	PROPOSED
SPOT ELEVATION		
CONTOURS		
CENTERLINE OF DITCH		
WATERS EDGE		

WATER		
	EXISTING	PROPOSED
WATERMAIN LINE		
BACKFLOW PREVENTER		
BLOW-OFF		
FIRE HYDRANT		
HOSE BIBB (SPIGOT)		
WELL		
WATER METER		
WATER MANHOLE		
WATER VALVE		

SANITARY SEWER		
	EXISTING	PROPOSED
CLEANOUT		
CENTER SANITARY MANHOLE		
GREASE TRAP		
SANITARY SEWER LINE		
FORCEMAIN LINE		

STORM		
	EXISTING	PROPOSED
PIPES		
DRAINAGE MANHOLE		
FLARED END SECTION		
INVERT ELEVATION		
CURB INLET TYPE A		
CURB INLET TYPE B		
CURB INLET TYPE C		
ROOF INLET		
GRATE INLET		
RIP RAP		

GAS		
	EXISTING	PROPOSED
GAS LINE		
GAS METER		
GAS MANHOLE		
GAS VALVE		

ELECTRIC		
	EXISTING	PROPOSED
POWER POLE		
GUY POLE		
LIGHT POLE		
GROUND LIGHT		
ELECTRICAL MANHOLE		
ELECTRICAL CONTROL BOX		
ELECTRICAL SERVICE METER		
ELECTRICAL TRANSFORMER		
UNDERGROUND POWER CABLE		
OVERHEAD POWER CABLE		

TELEPHONE		
	EXISTING	PROPOSED
TELEPHONE BOOTH		
TELEPHONE PEDISTAL		
TELEPHONE MANHOLE		
UNDERGROUND TELEPHONE		

ROADWAY		
	EXISTING	PROPOSED
CENTERLINE OF ROAD		
EDGE OF ASPHALT		
CURB & GUTTER		
EDGE OF CONCRETE		
EDGE OF GRAVEL		
EDGE OF DIRT		
EDGE OF DRIVEWAY		
GUARDRAIL		



Know what's below.
Call before you dig.

NO	REVISION DESCRIPTION	BY	DATE



EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405) 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 232-4580
 www.emc-eng.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

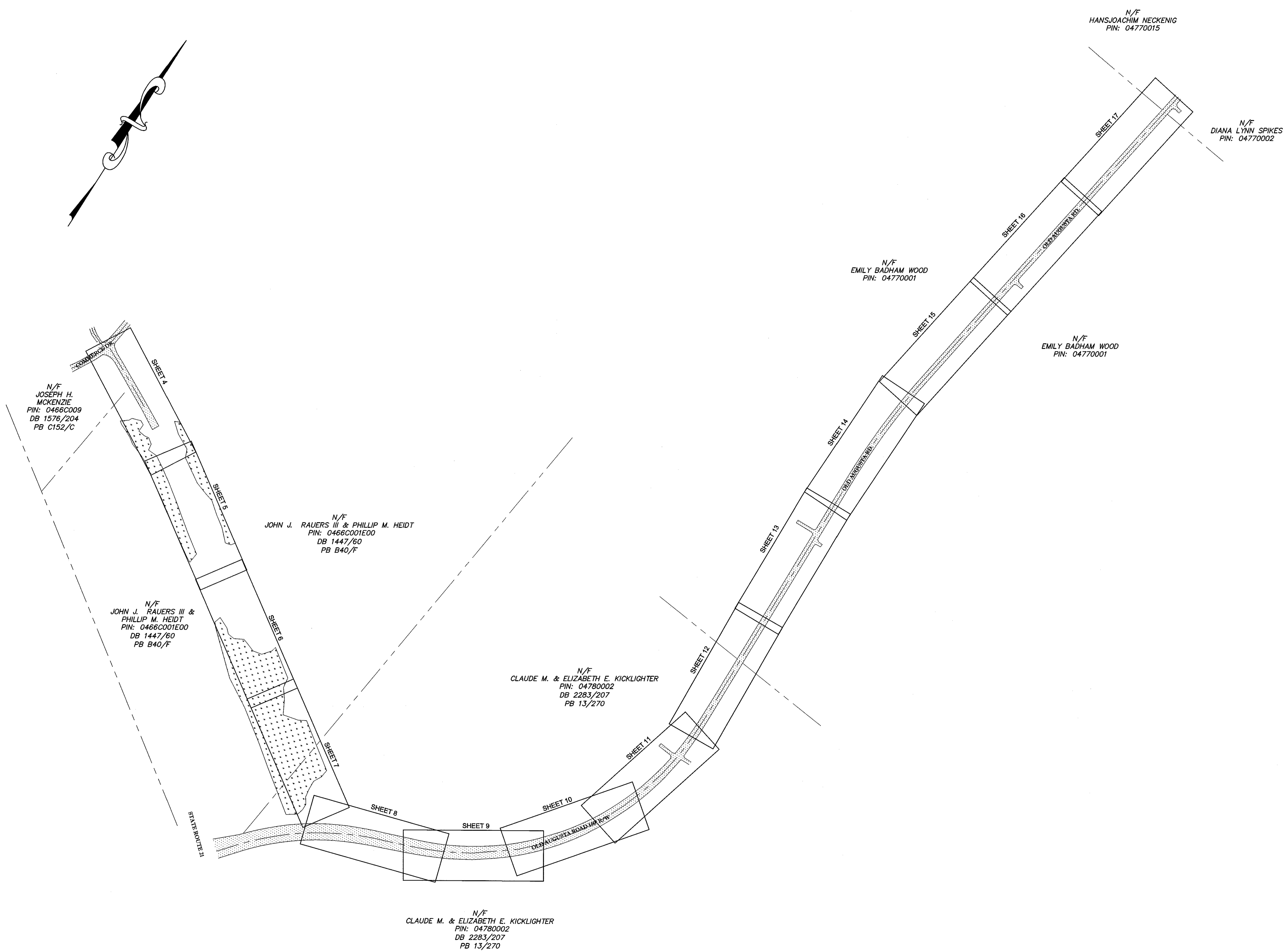
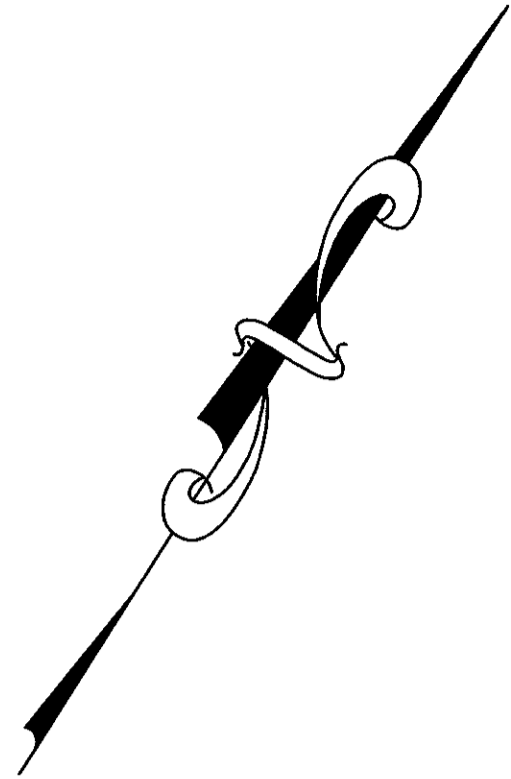
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

GENERAL NOTES & LEGEND

OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY:
 SURVEY DATE:
 CHECKED BY: ABM
 SCALE: N/A
 DATE: MAY 2016

SHEET
2
 OF 27



N/F
JOSEPH H.
MCKENZIE
PIN: 0466C009
DB 1576/204
PB C152/C

N/F
JOHN J. RAUERS III &
PHILLIP M. HEIDT
PIN: 0466C001E00
DB 1447/60
PB B40/F

N/F
JOHN J. RAUERS III & PHILLIP M. HEIDT
PIN: 0466C001E00
DB 1447/60
PB B40/F

N/F
CLAUDE M. & ELIZABETH E. KICKLIGHTER
PIN: 04780002
DB 2283/207
PB 13/270

N/F
CLAUDE M. & ELIZABETH E. KICKLIGHTER
PIN: 04780002
DB 2283/207
PB 13/270

N/F
EMILY BADHAM WOOD
PIN: 04770001

N/F
EMILY BADHAM WOOD
PIN: 04770001

N/F
HANS-JOACHIM NECKENIG
PIN: 04770015

N/F
DIANA LYNN SPIKES
PIN: 04770002



EMC SERVICES, INC.
10 CHATHAM CENTER SOUTH DR.
SUITE 200
COLUMBUS, GA 31906
PHONE: (912) 232-6533
FAX: (912) 233-4990
www.emc-eng.com

EMC ENGINEERING
CIVIL
MARINE
ENVIRONMENTAL
SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

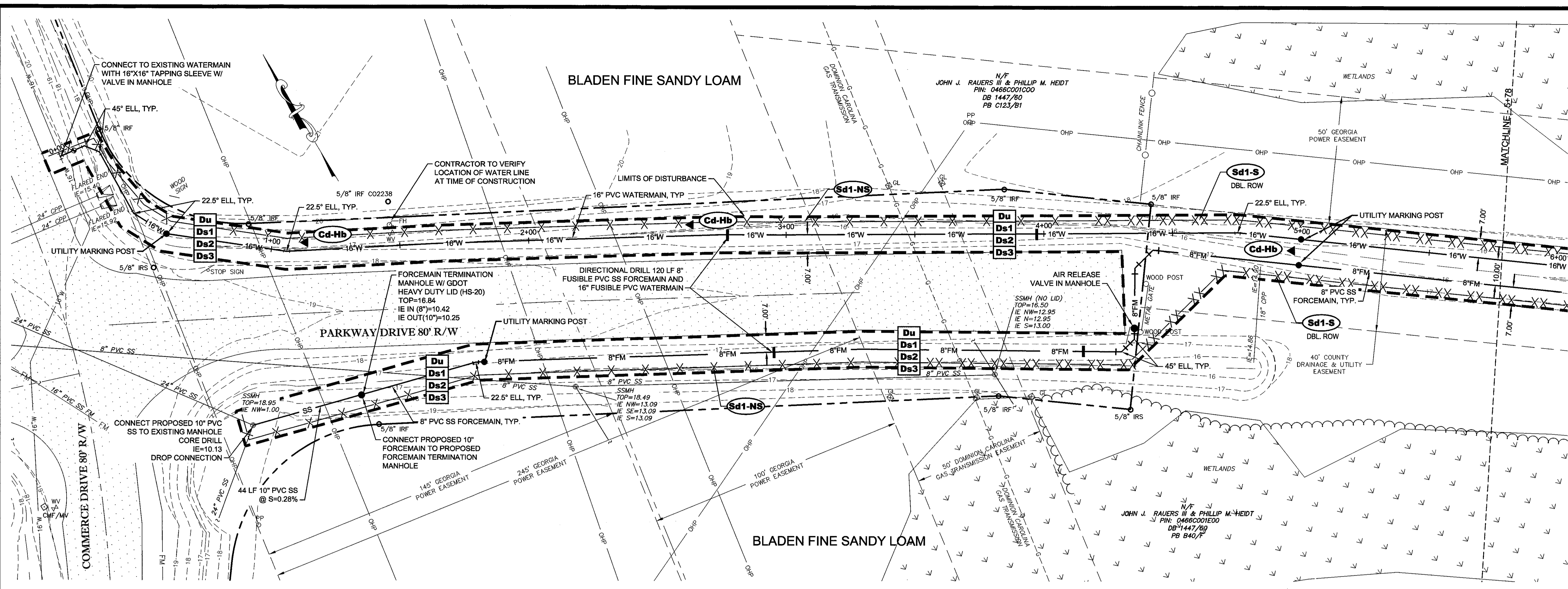
KEY MAP

OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GA
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

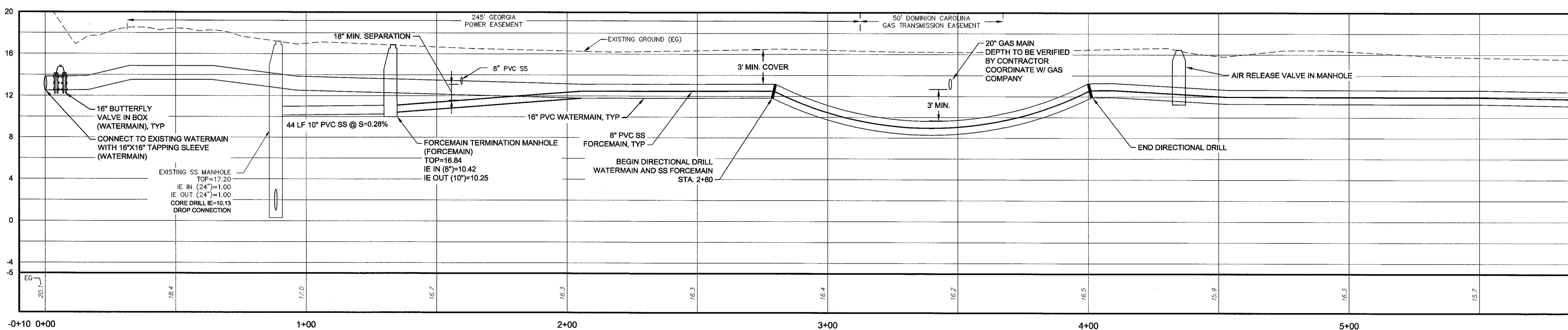
PROJECT NO.: 16-0004
DRAWN BY: CPR
DESIGNED BY: ABM
SURVEYED BY:
SURVEY DATE:
CHECKED BY: ABM
SCALE: N/A
DATE: MAY 2016

SHEET
3
OF 27

C:\2016\PAV\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004-CO.DWG 6/13/2016 5:33 PM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Alec B Metzger
 Level II Certified Design Professional
 C CERTIFICATION NUMBER: 000000252
 ISSUED: 04/11/2016 E-FILES: 04/11/2016



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405)
 POST OFFICE BOX 8101
 MARIETTA, GA 30067-4112
 PHONE: (770) 233-4633
 PHONE: (912) 233-4690
 FAX: (912) 233-4690
 www.emc-eng.com

CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

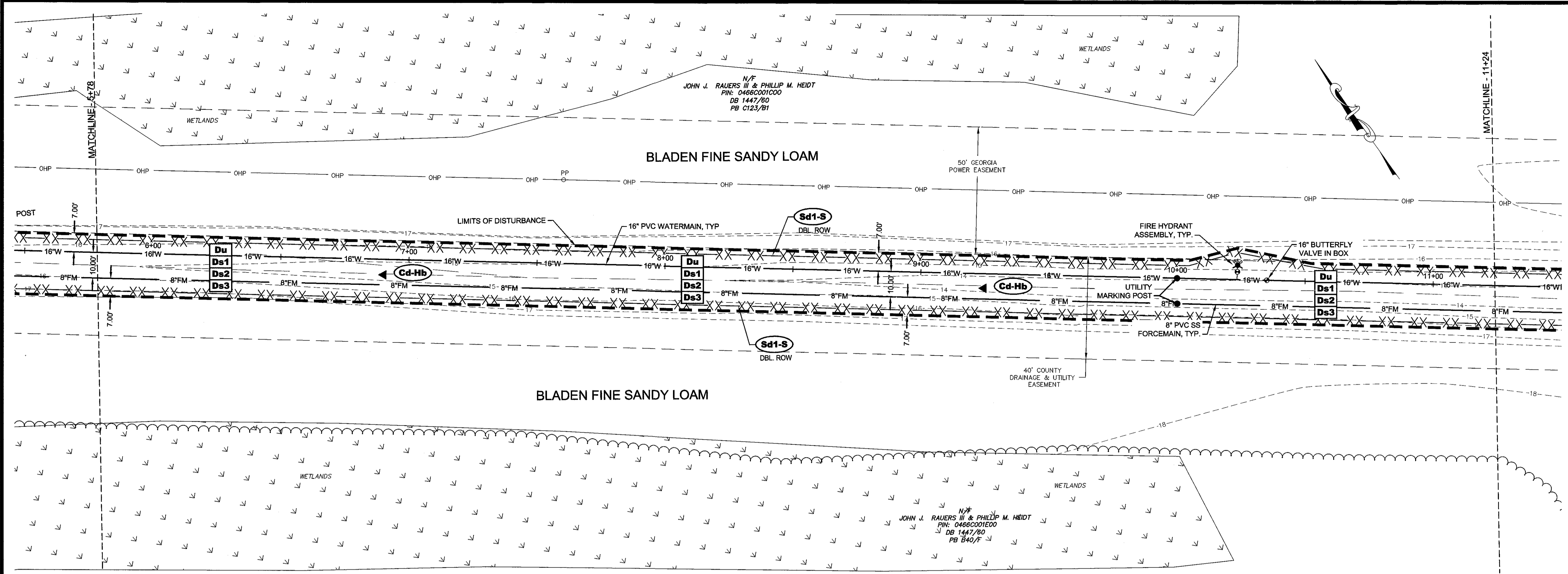
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK
 COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

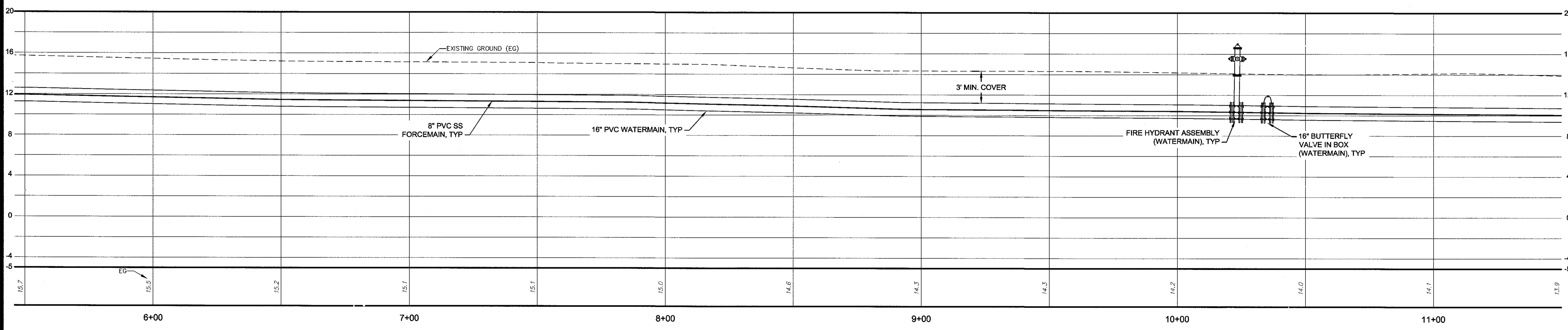
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
4
 OF 27

O:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 7/28/2016 8:27 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Level II Certified Design Professional
 Certification Number: 000008727
 Issued: 04/12/2016 Expiry: 04/12/2018



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 OFFICE BOX 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 233-4580
 www.emc-eng.com

CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
 COLUMBUS, SAVANNAH STATESBORO & VALDOSTA

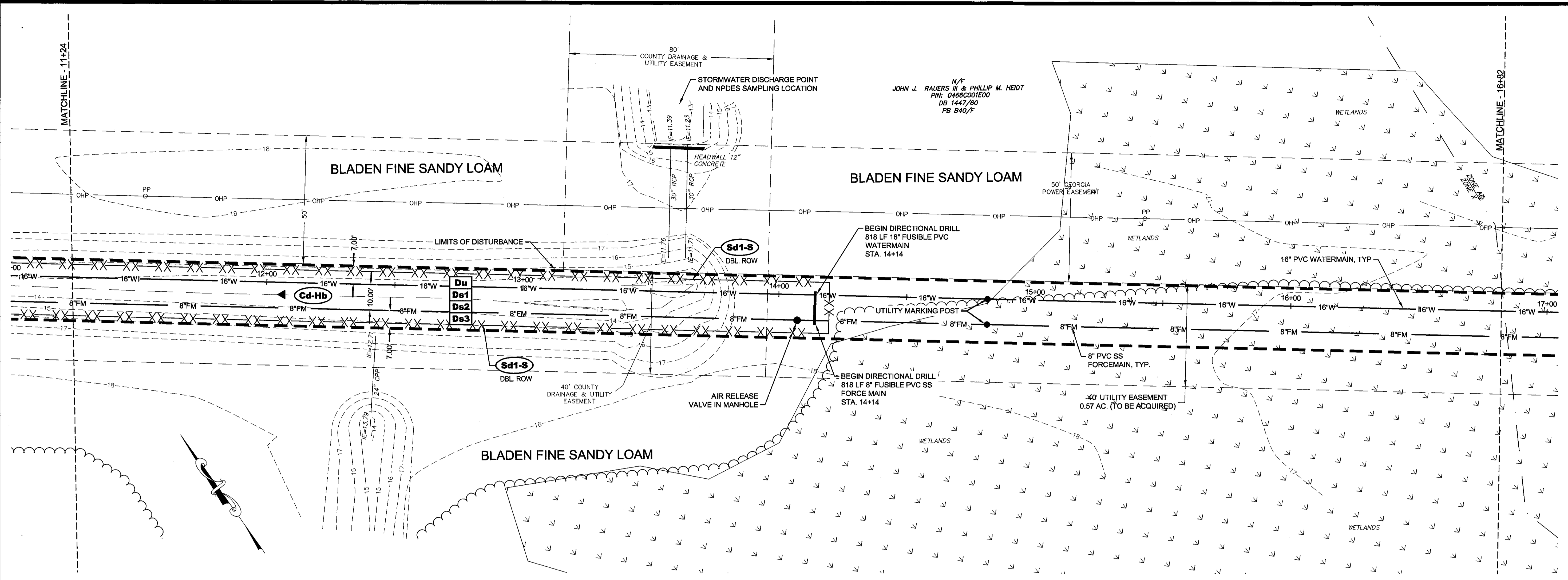
PLAN & PROFILE

OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA

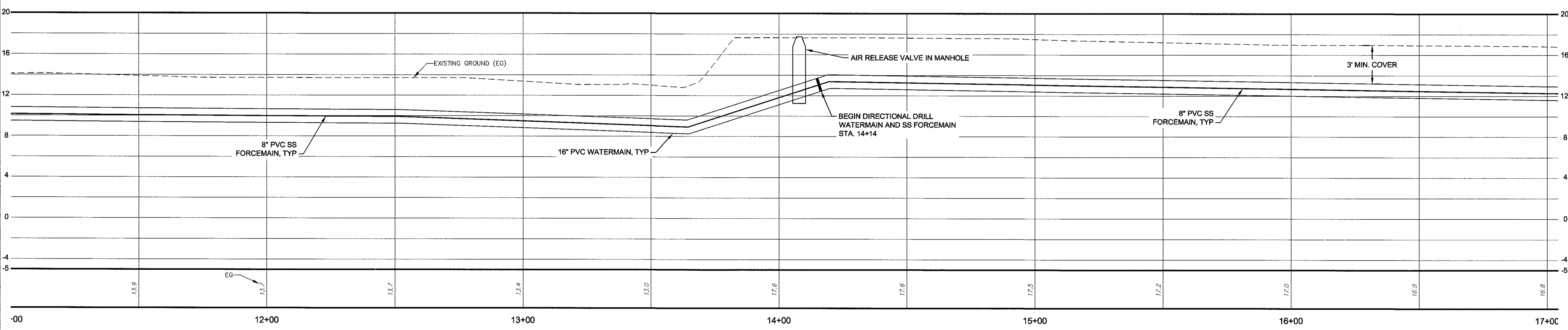
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY: EMC
 SURVEY DATE: MARCH 2016
 CHECKED BY: ABM
 SCALE: 1"=20'
 DATE: MAY 2016

O:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC GEORGIA SOLID AND WATER CONSTRUCTION CONTRACTORS ASSOCIATION
 Alec B Metzger
 Level II Certified Design Professional
 Certification Number: 0000000917
 License: 04112916 Expires: 04/12/2016



20' 10' 0'
 GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405)
 POST OFFICE BOX 810
 EFFINGHAM COUNTY, GA 31742
 PHONE: (912) 232-6533
 PHONE: (912) 233-4560
 FAX: (912) 233-4560
 www.emc-eng.com

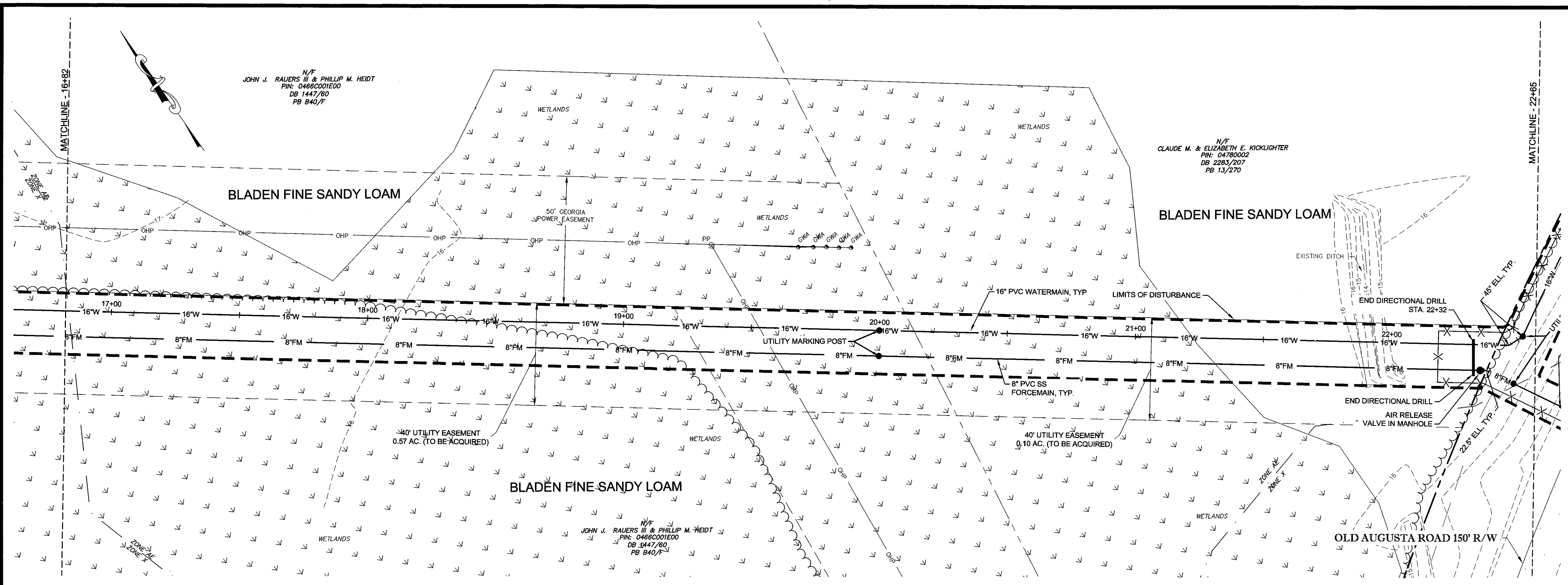
CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK
 COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

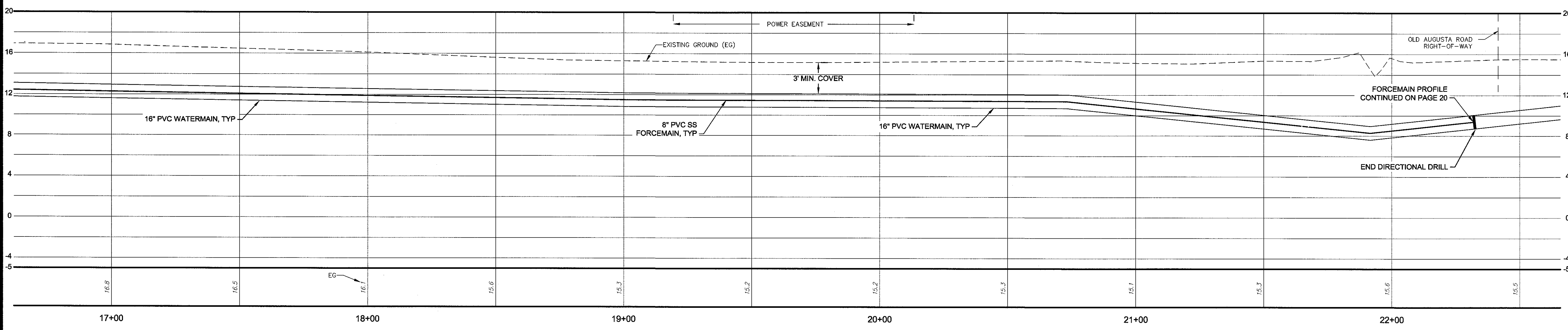
PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY: EMC
 SURVEY DATE: MARCH 2016
 CHECKED BY: ABM
 SCALE: 1"=20'
 DATE: MAY 2016

SHEET
6
 OF 27

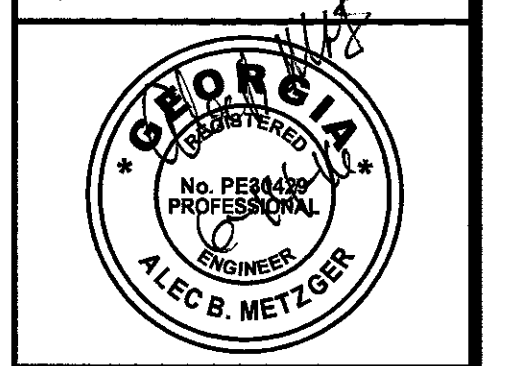


WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 GEORGIA SURVEYING AND MAPPING CORPORATION
 ALEC B. METZGER
 Level II Certified Design Professional
 CERTIFICATION NUMBER: 000008752
 I.S.E.R. # 04112915 EXP. DATE 04/12/2014



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CATHAN CENTER SOUTH DR.
 SUITE 100 (31405) 8101
 SAVANNAH, GEORGIA 31412
 CIVIL MARINE ENVIRONMENTAL SURVEY
 PHONE: 912.232.5533
 FAX: 912.232.5680
 WWW.EMC-ENG.COM

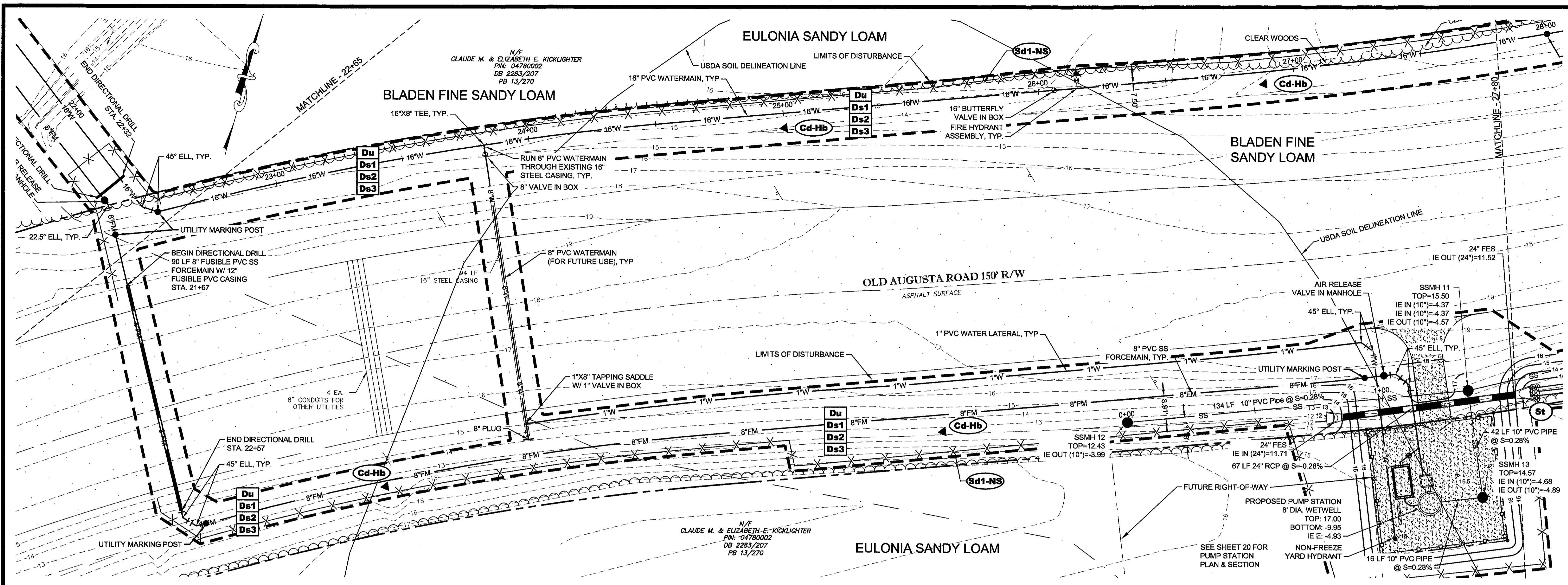
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

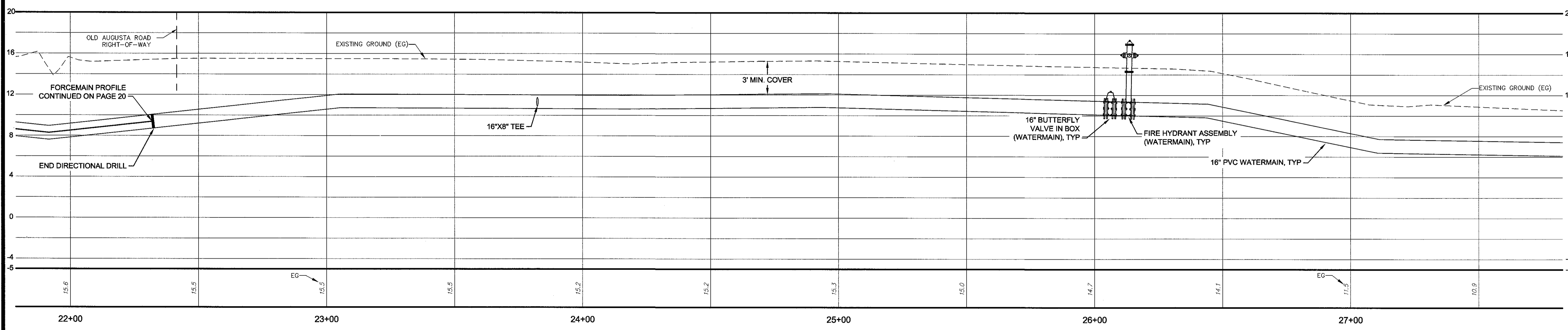
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
7
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Level II Certified Design Professional
 Signature: _____
 Date: _____

EMC ENGINEERING SERVICES, INC.
 CIVIL ENGINEER
 ALEC B. METZGER

GRAPHIC SCALE: 1"=20'-0"

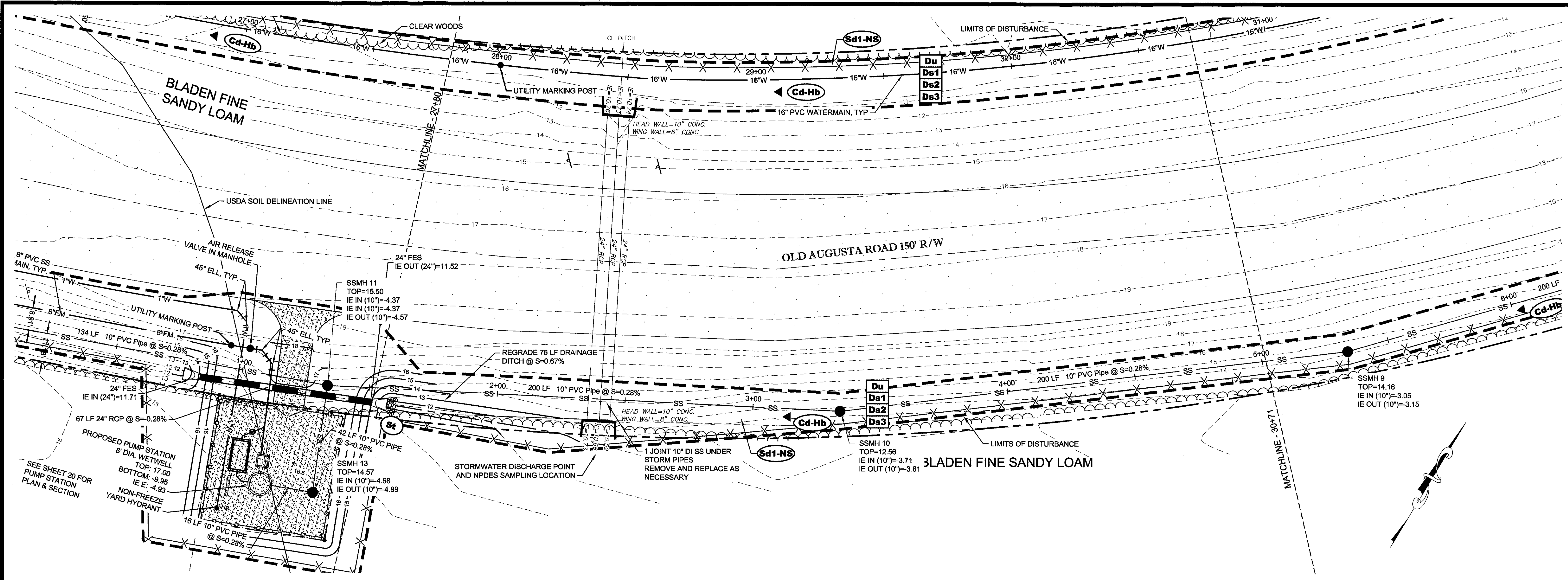
EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 POST OFFICE BOX 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 232-4560
 www.emc-eng.com

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

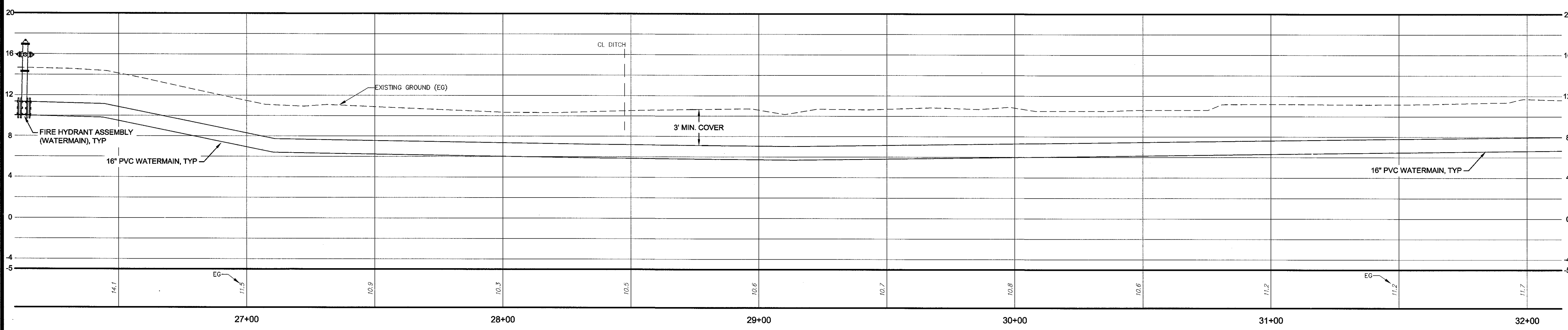
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
8
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY.DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Level II Certified Design Professional
 Certification Number: 000000727
 Issued: 04/12/2016 Expires: 04/12/2021



EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 200
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 332-6533
 FAX: (912) 332-4690
 www.emc-eng.com

CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
 COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

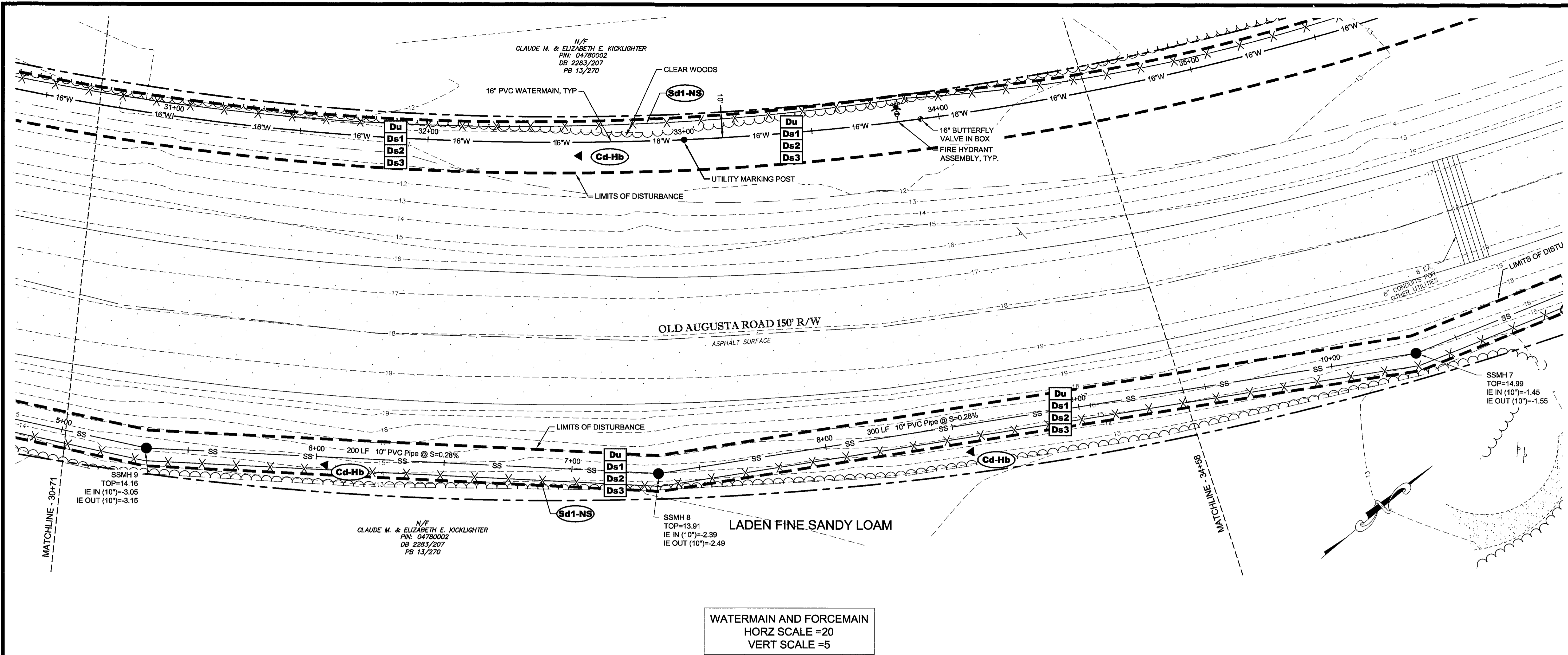
PLAN & PROFILE

OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA

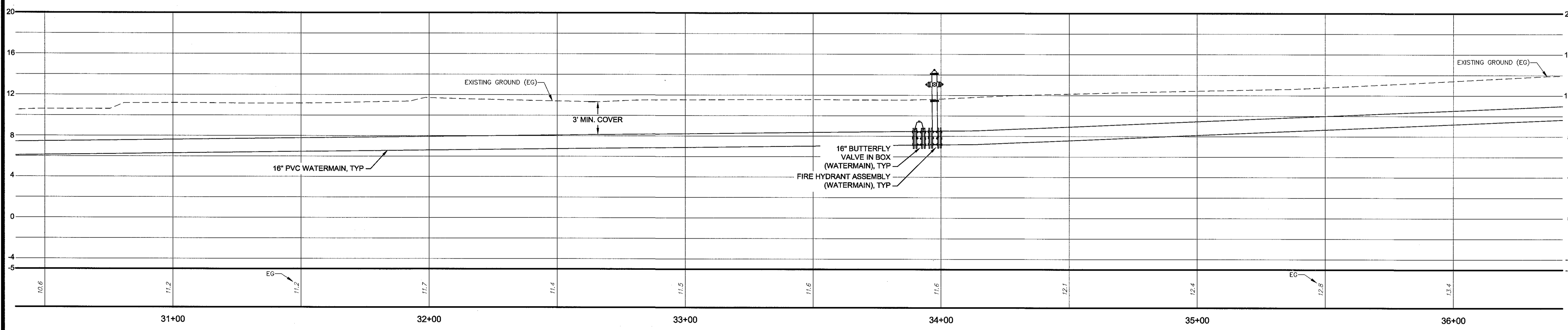
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C-B01.DWG 6/14/2016 11:38 AM

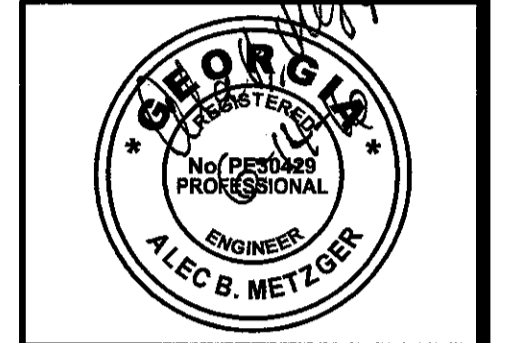


WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Georgia State Water Control Commission
 Alec B Metzger
 Level II Certified Design Professional
 Certification Number: 000002932
 Issued: 04/11/2015 Expires: 04/11/2021
 Signature: _____



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 POST OFFICE BOX 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6833
 FAX: (912) 233-4590
 www.emc-eng.com

EMC
 CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

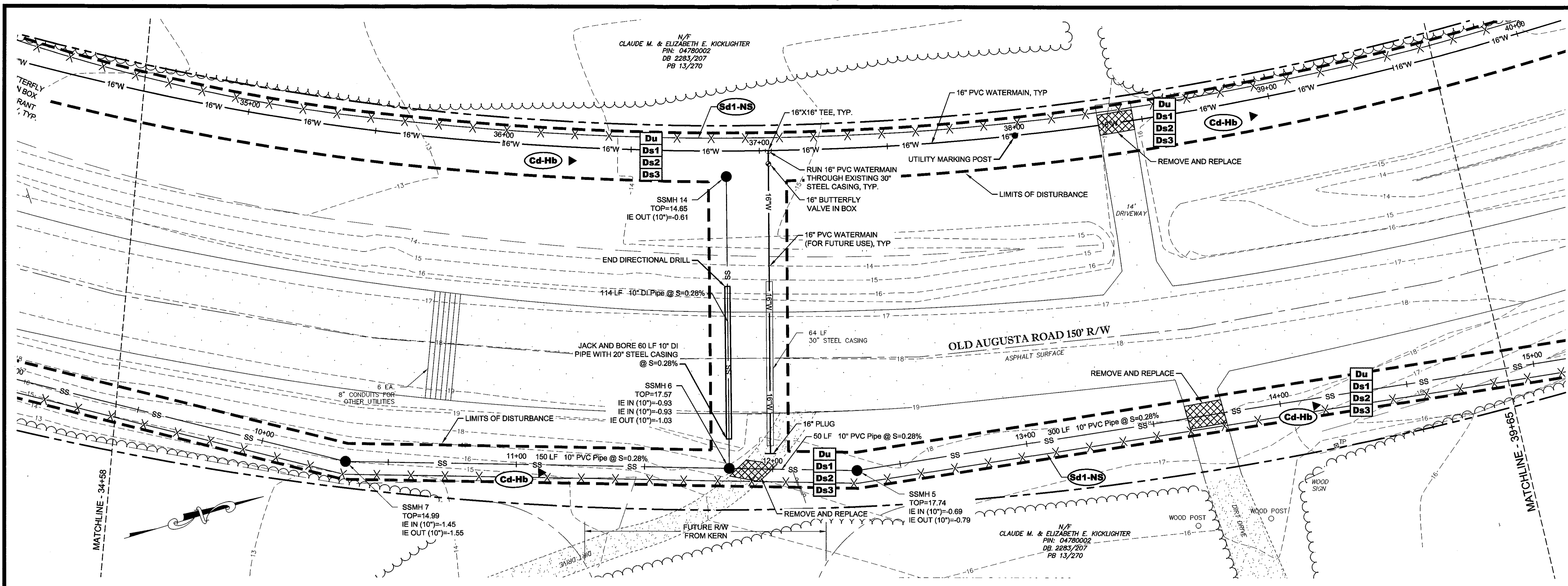
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
 COLUMBUS, SAVANNAH STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

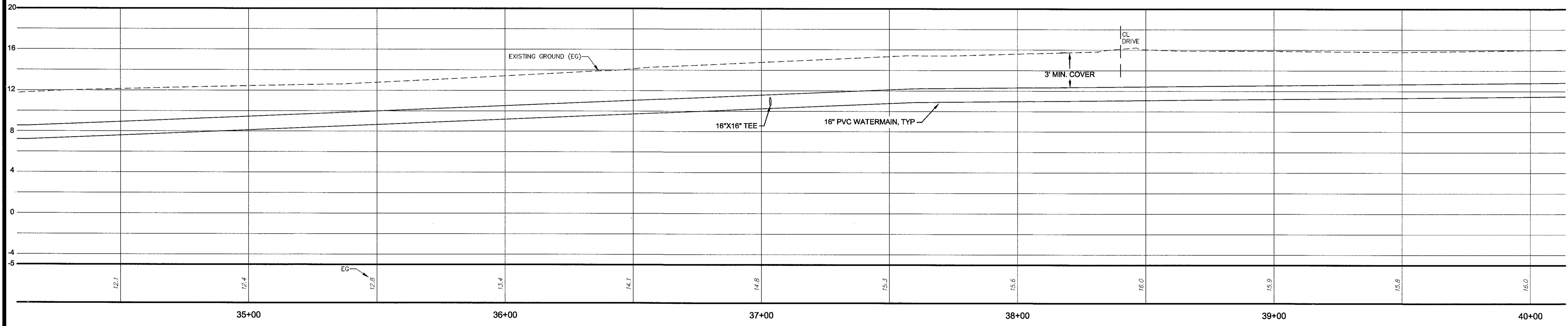
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
10
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC GEORGIA SURVEYING AND WATER CONSTRUCTION CONSTRUCTION COMPANY

Alec B Metzger
Level II Certified Design Professional

CERTIFICATION NUMBER: 00000097
ISSUED: 04/11/2015 EXPIRES: 04/11/2018

Signature: _____



GRAPHIC SCALE: 1"=20'-0"

EMC SERVICES, INC.

10 GATHAM CENTER SOUTH DR.
SUITE 100 (31405) 81 81
30300 WOODBRIDGE BLVD
SAVANNAH, GEORGIA 31412
PHONE: (912) 233-6533
FAX: (912) 233-4860
www.emc-eng.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

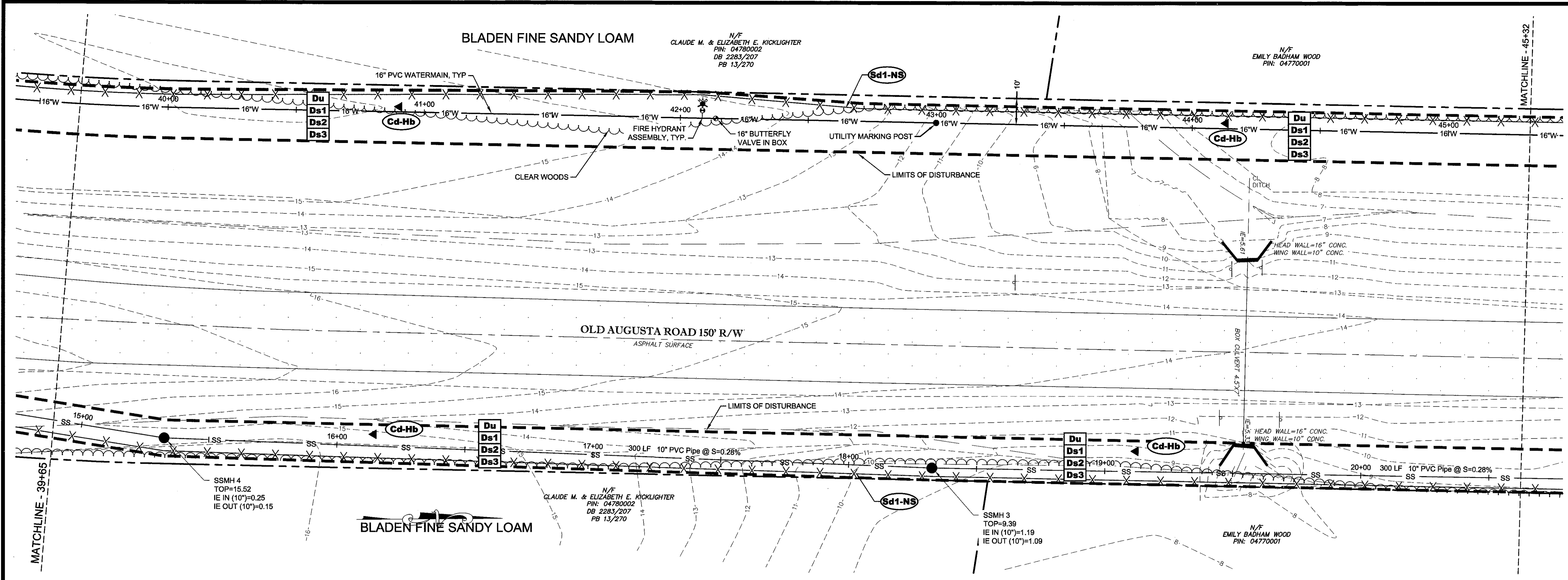
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE

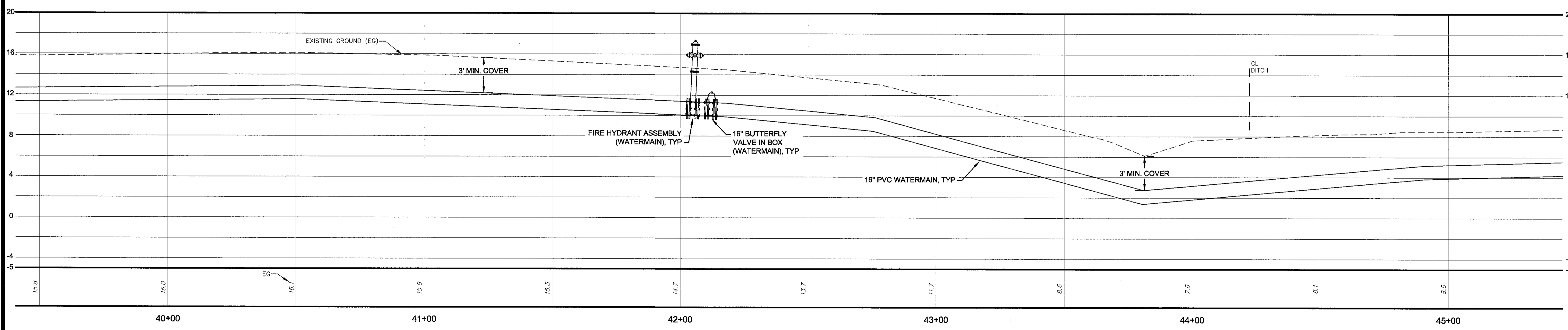
OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GEORGIA
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
11
OF 27

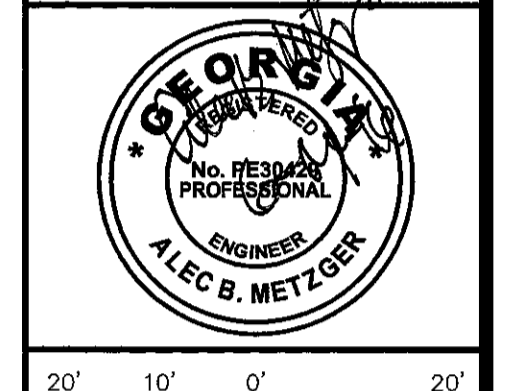


WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC GEORGIA SOCIETY OF PROFESSIONAL ENGINEERS
 ALEC B. METZGER
 Level II Certified Design Professional
 Certification Number: 000008757
 Issued: 04/11/2016 Expires: 04/11/2021



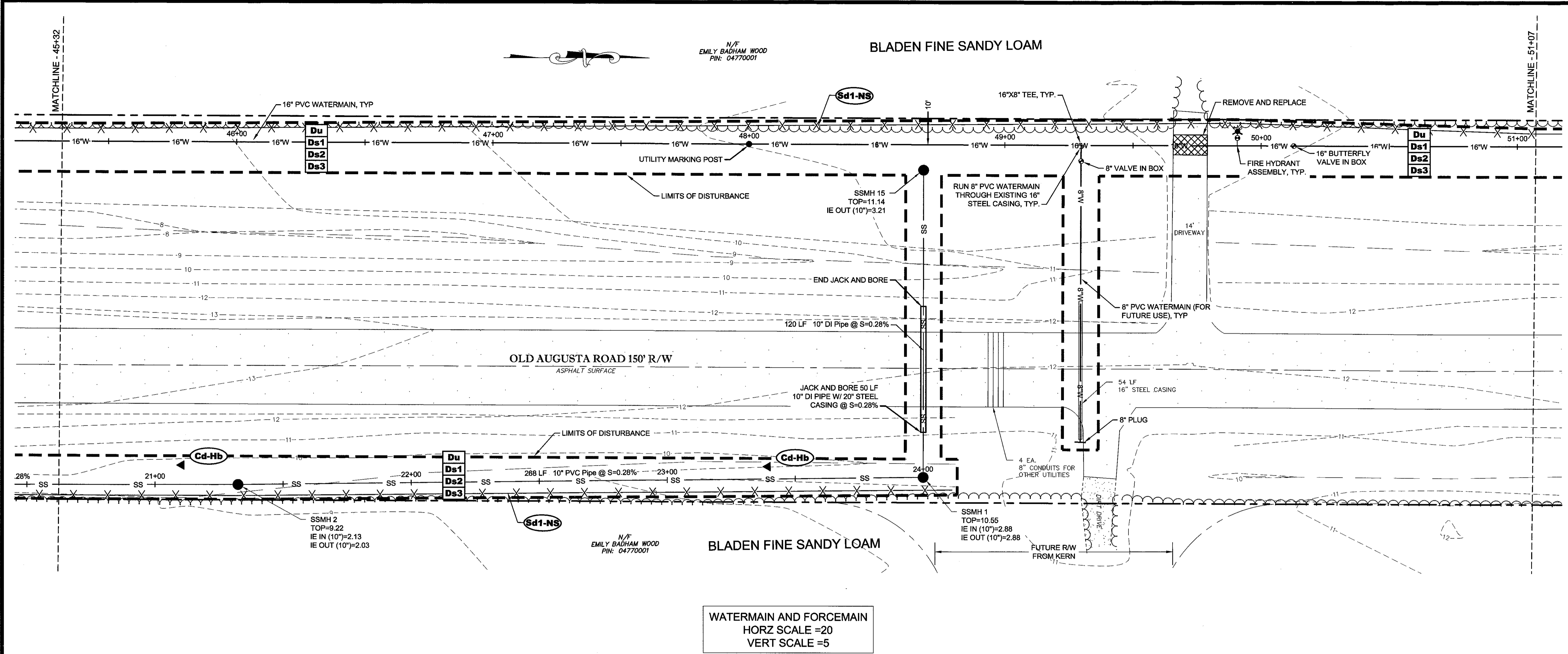
EMC ENGINEERING SERVICES, INC.
 CIVIL ENGINEERING
 MARINE SURVEY
 ENVIRONMENTAL SURVEY
 10 OAKTHAM CENTER SOUTH DR.
 SUITE 100 (CROSSING 8101)
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 233-4590
 www.emc-eng.com
 ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
 COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

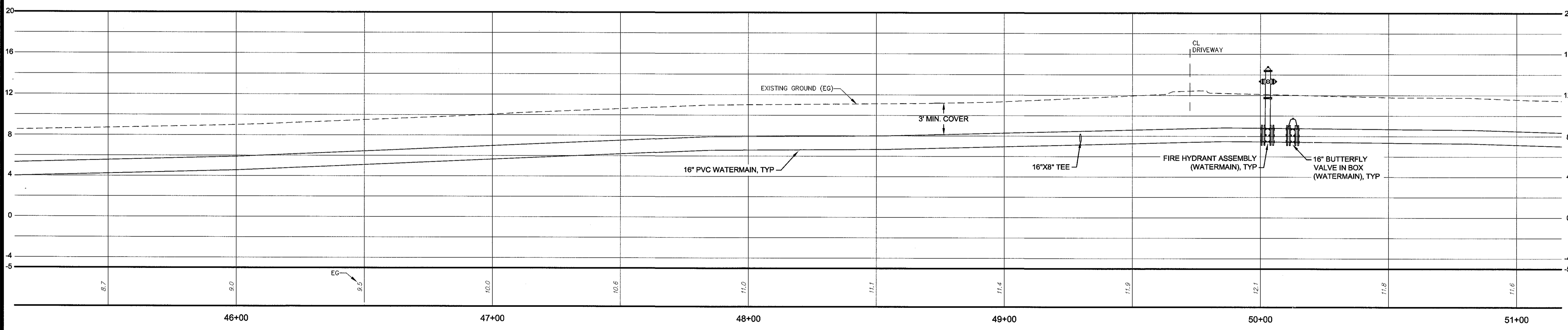
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
12
OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 GEORGIA SURVEYING AND MAPPING
 COOPERATION COMMISSION
 Alac B Metzger
 Level II Certified Design Professional
 CERTIFICATION NUMBER: 000000287
 ISSUED: 04/12/2015 EXPIRES: 04/12/2018
 Signature: _____



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 POST OFFICE BOX 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-5533
 FAX: (912) 232-5580
 www.emc-eng.com

CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

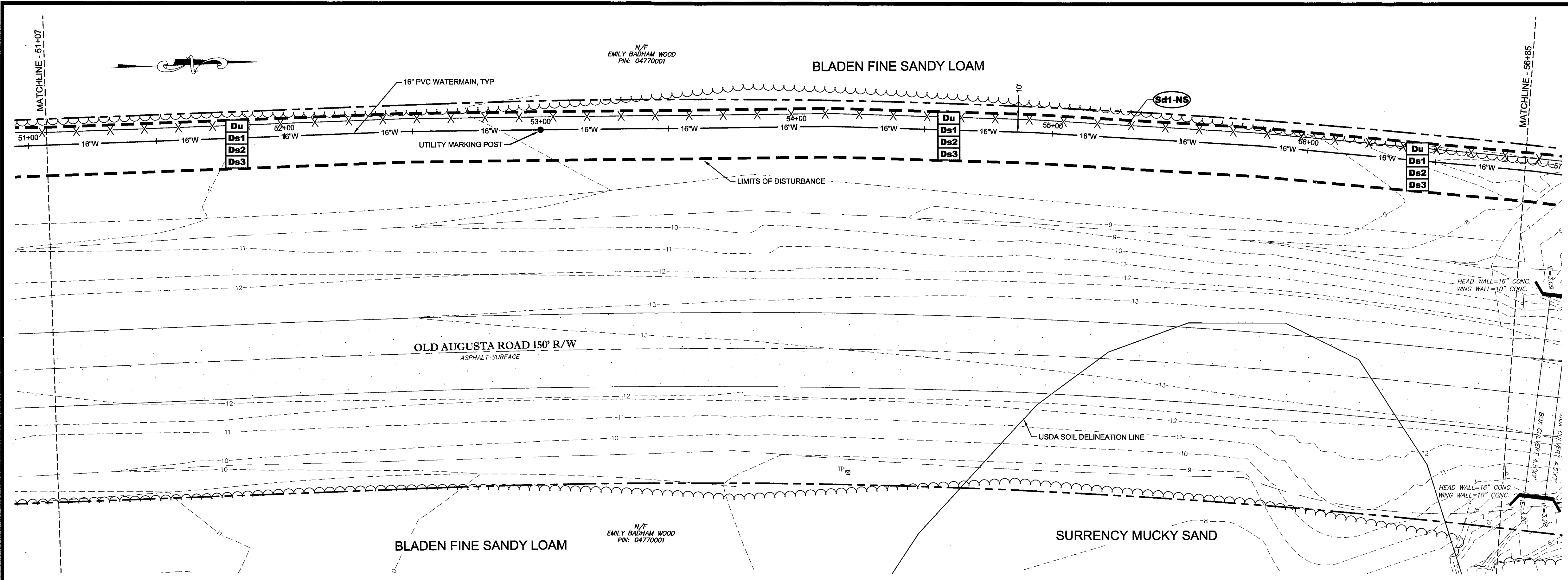
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
 COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

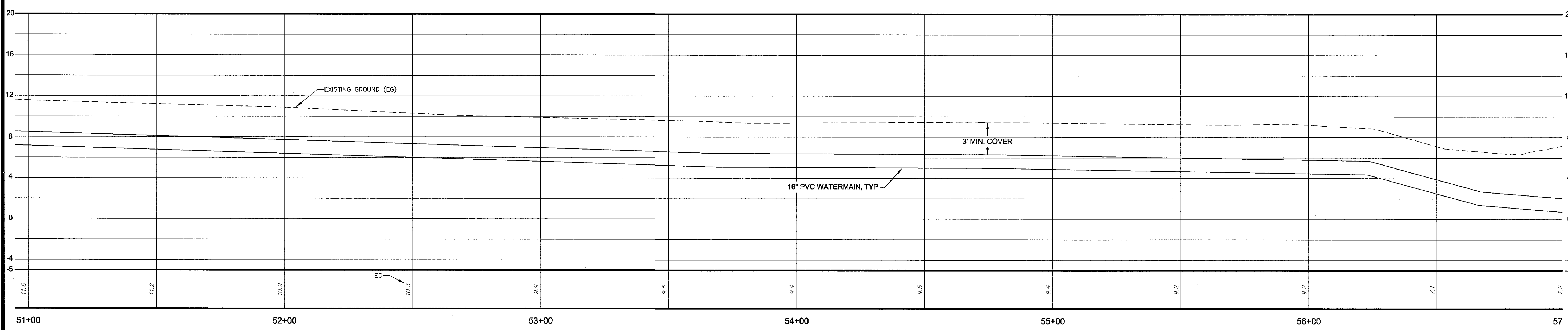
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
13
 OF 27

O:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:39 AM



WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



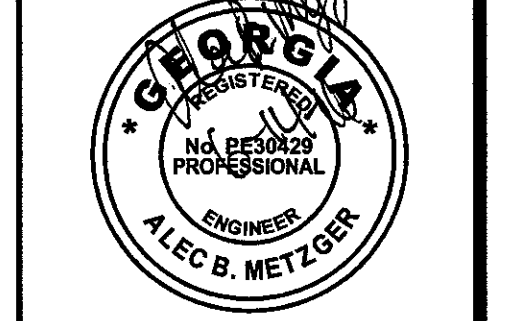
NO.	REVISION DESCRIPTION	BY	DATE

GSWCC GEORGIA SOLID AND WATER CONSERVATION COMMISSION

Alec B Metzger
Level II Certified Design Professional

Certification Number: 000008732
Issued: 04/11/2015 Expires: 04/11/2019

Signature: _____



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.

10 CHEROKEE CENTER SOUTH DR.
POST OFFICE BOX 8101
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 232-4560
www.emc-inc.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH STATESBORO & VALDOSTA

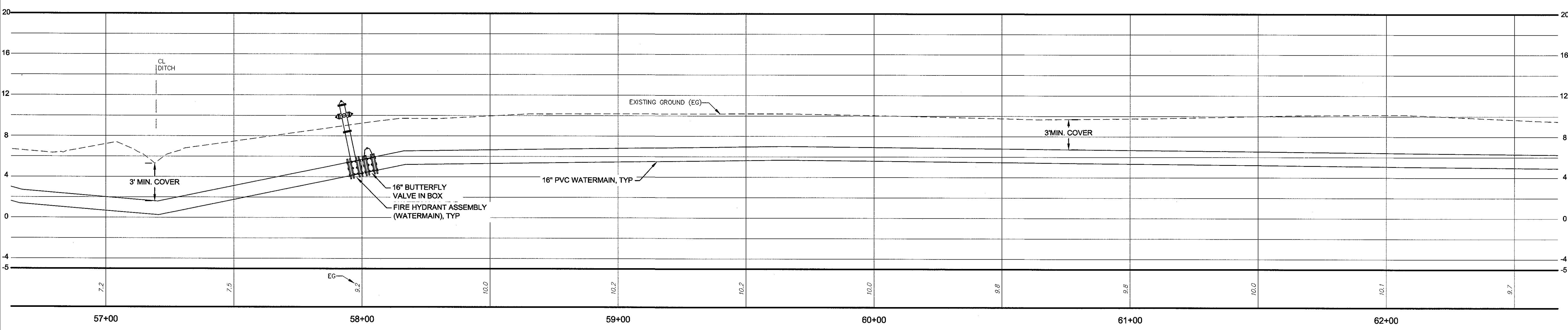
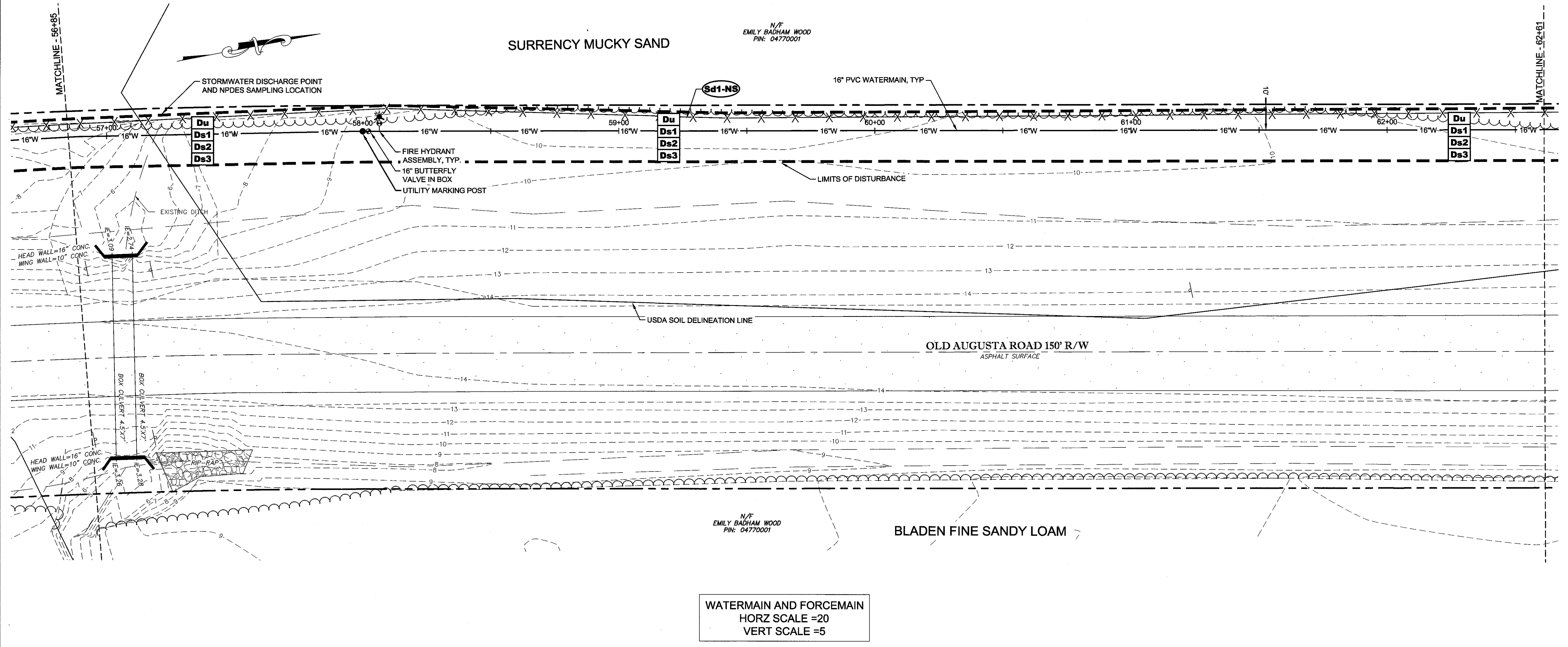
PLAN & PROFILE

OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GEORGIA

Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
14
OF 27



WATERMAIN AND FORCEMAIN
 HORZ SCALE =20
 VERT SCALE =5

SURRENCY MUCKY SAND

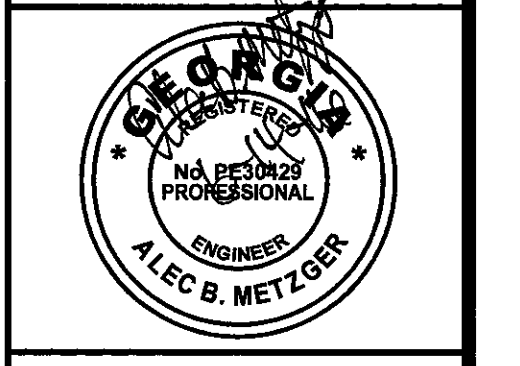
BLADEN FINE SANDY LOAM

N/F
 EMILY BADHAM WOOD
 PIN: 04770001

N/F
 EMILY BADHAM WOOD
 PIN: 04770001

NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 GEORGIA SOCIETY OF WATER AND WASTEWATER ENGINEERS
 Alec B Metzger
 Level II Certified Design Professional
 C CERTIFICATION NUMBER: 0000003757
 ISSUED: 04/11/2016 EXPIRES: 04/11/2016



GRAPHIC SCALE: 1"=20'-0"

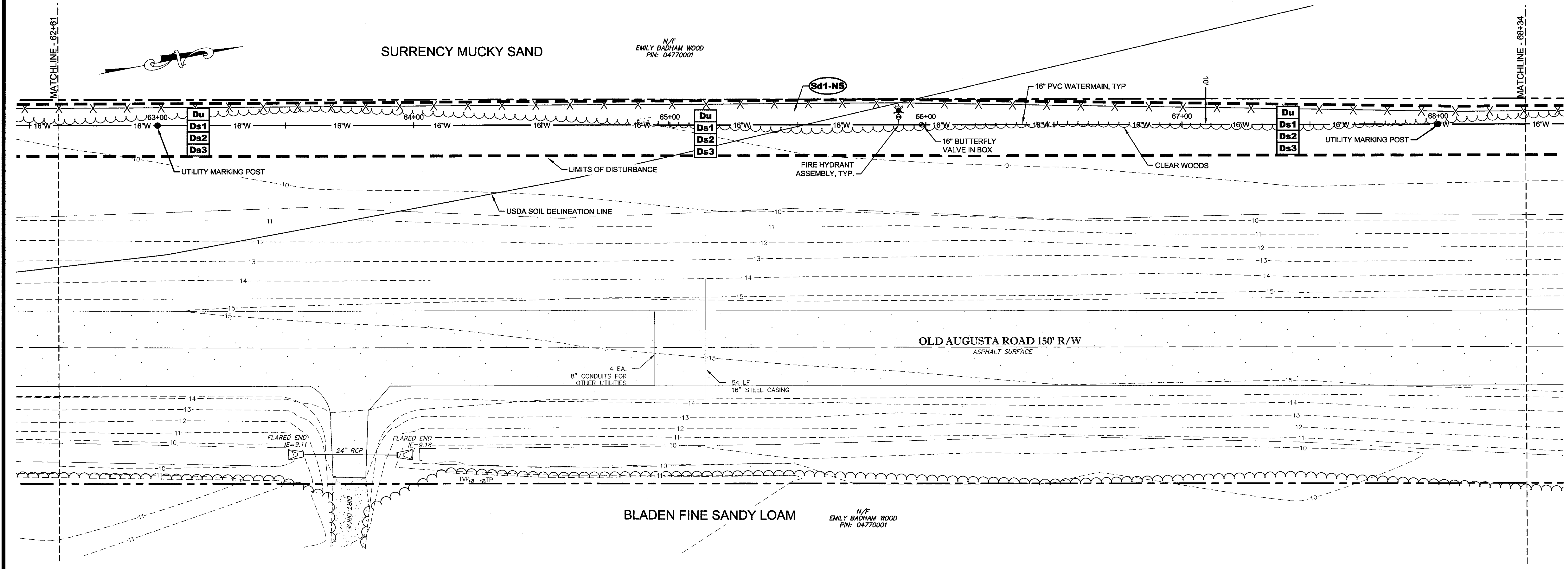
EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405)
 POST OFFICE BOX 8101
 SAVANNAH, GEORGIA 31412
 CIVIL MARINE ENVIRONMENTAL SURVEY
 FAX: (912) 233-4890
 www.emc-eng.com
 ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

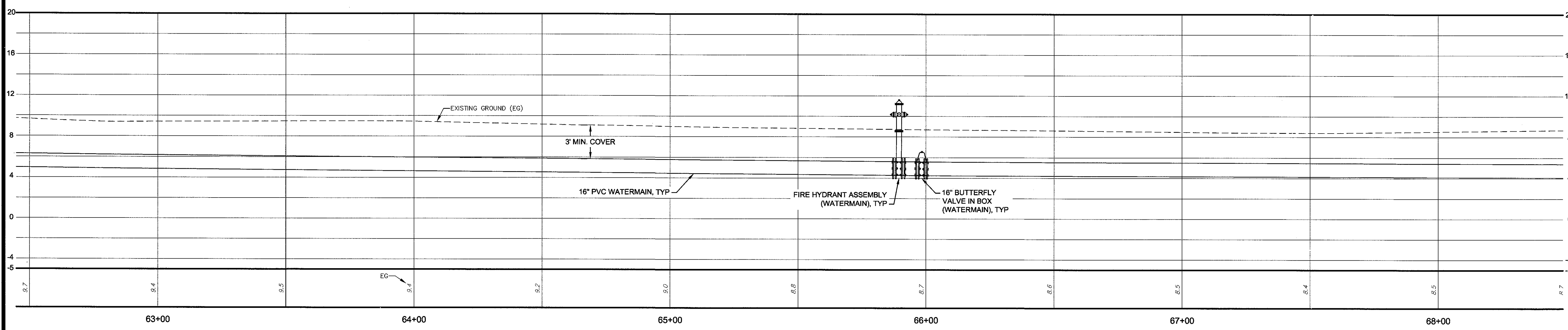
PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

SHEET
15
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_BRI.DWG 6/14/2016 11:38 AM

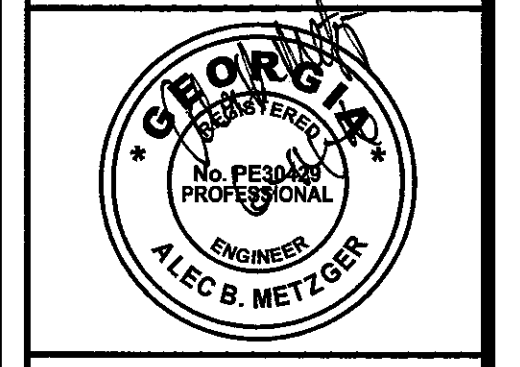


WATERMAIN AND FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION
 Alec B Metzger
 Level II Certified Design Professional
 Certification Number: 000000257
 Issued: 04/11/2016 Expires: 04/11/2018
 Signature: _____



20' 10' 0' 20'
 GRAPHIC SCALE: 1"=20'-0"

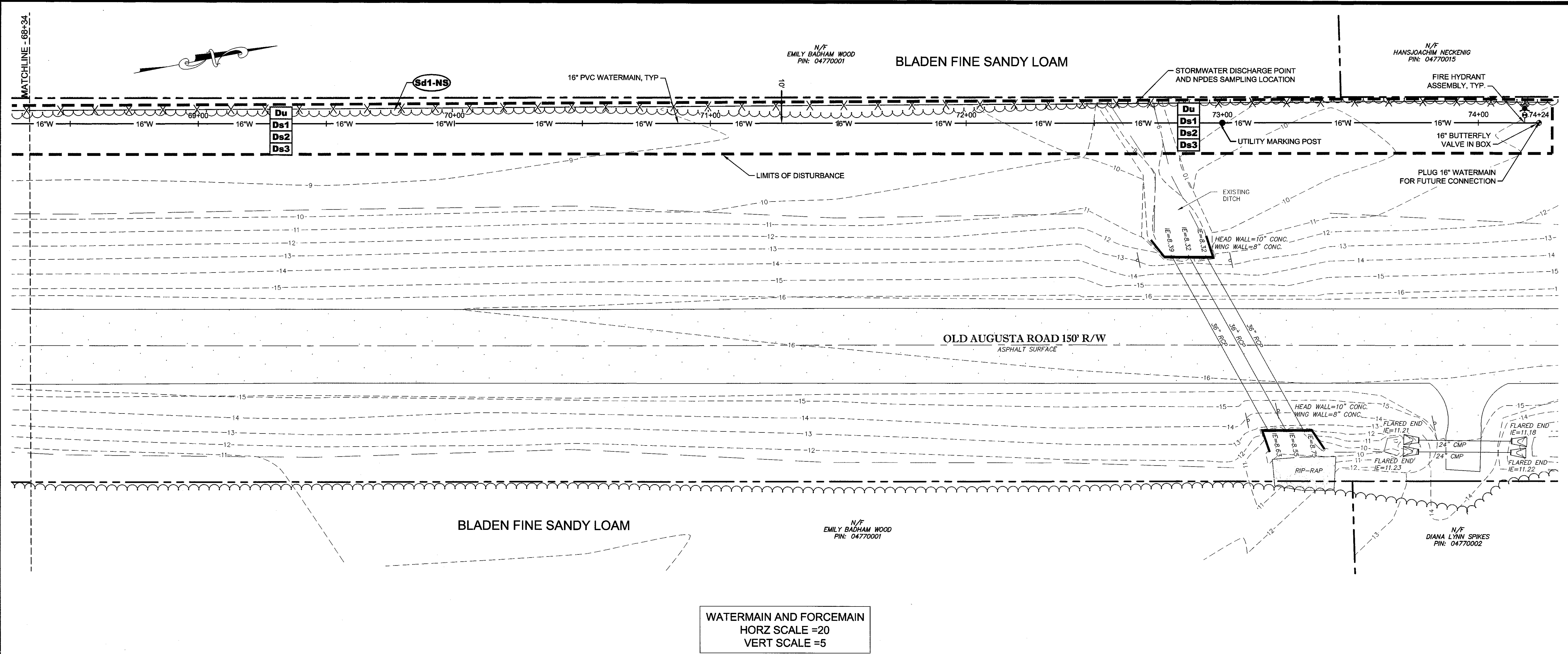
EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (3rd FLOOR) 8101
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 232-4590
 www.emc-eng.com
 CIVIL MARINE ENVIRONMENTAL SURVEY
 ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

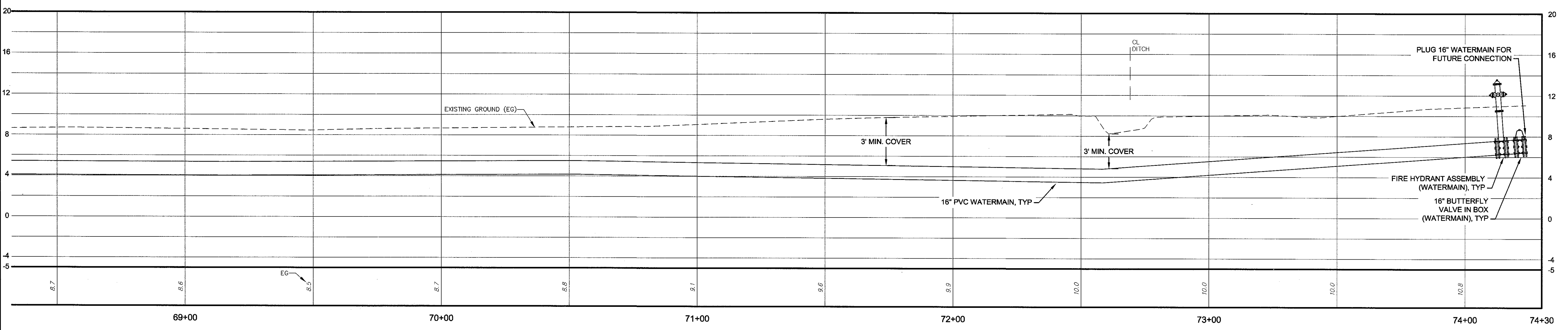
PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY: EMC
 SURVEY DATE: MARCH 2016
 CHECKED BY: ABM
 SCALE: 1"=20'
 DATE: MAY 2016

SHEET
16
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004-C_B01.DWG 6/14/2016 11:38 AM

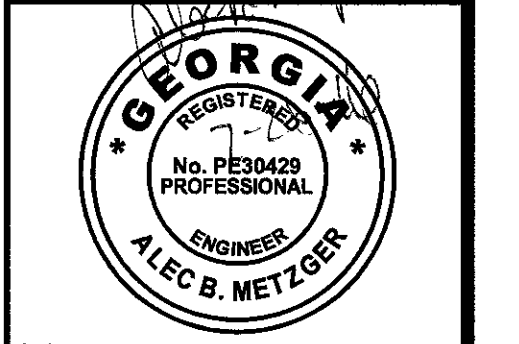


WATERMAIN AND FORCEMAIN
 HORZ SCALE =20
 VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
 Level II Certified Design Professional
 Certification Number: 0000002182
 Issued: 04/12/2015 Expires: 04/12/2018
 Signature: _____



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHATHAM CENTER SOUTH DR.
 SUITE 100 (31405)
 POST OFFICE BOX 6101 14142
 WADSWORTH, GEORGIA 30150
 PHONE: (770) 973-3333
 FAX: (770) 233-4580
 www.emc-eng.com

CIVIL
 MARINE
 ENVIRONMENTAL
 SURVEY

ALBANY ATLANTA AUGUSTA BRUNSWICK
 COLUMBUS SAVANNAH STATESBORO & VALDOSTA

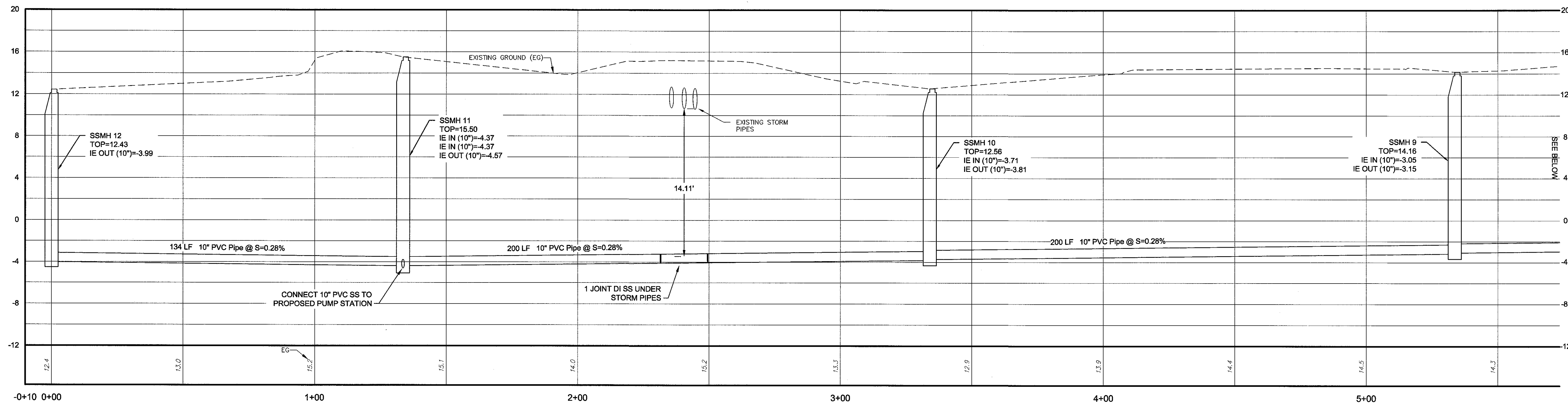
PLAN & PROFILE
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
 EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

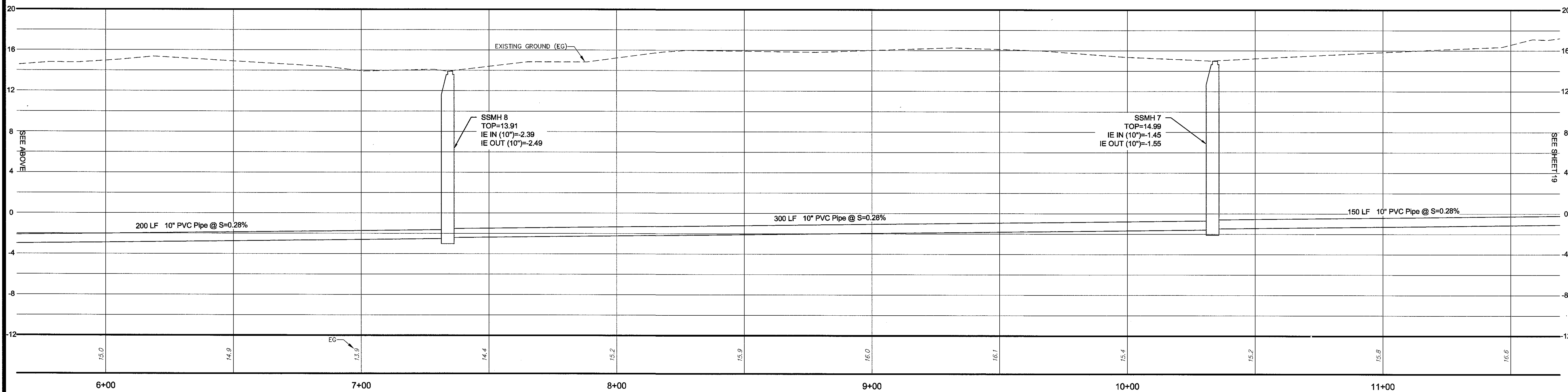
SHEET
17
 OF 27

O:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 7/26/2016 9:27 AM

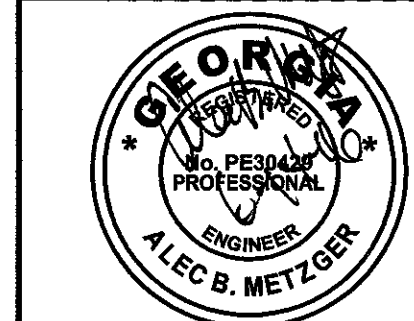
SANITARY SEWER
HORZ SCALE =20
VERT SCALE =5



SANITARY SEWER
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHERRY CENTER SOUTH DR.
 SUITE 100
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 232-6580
 www.emc-eng.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

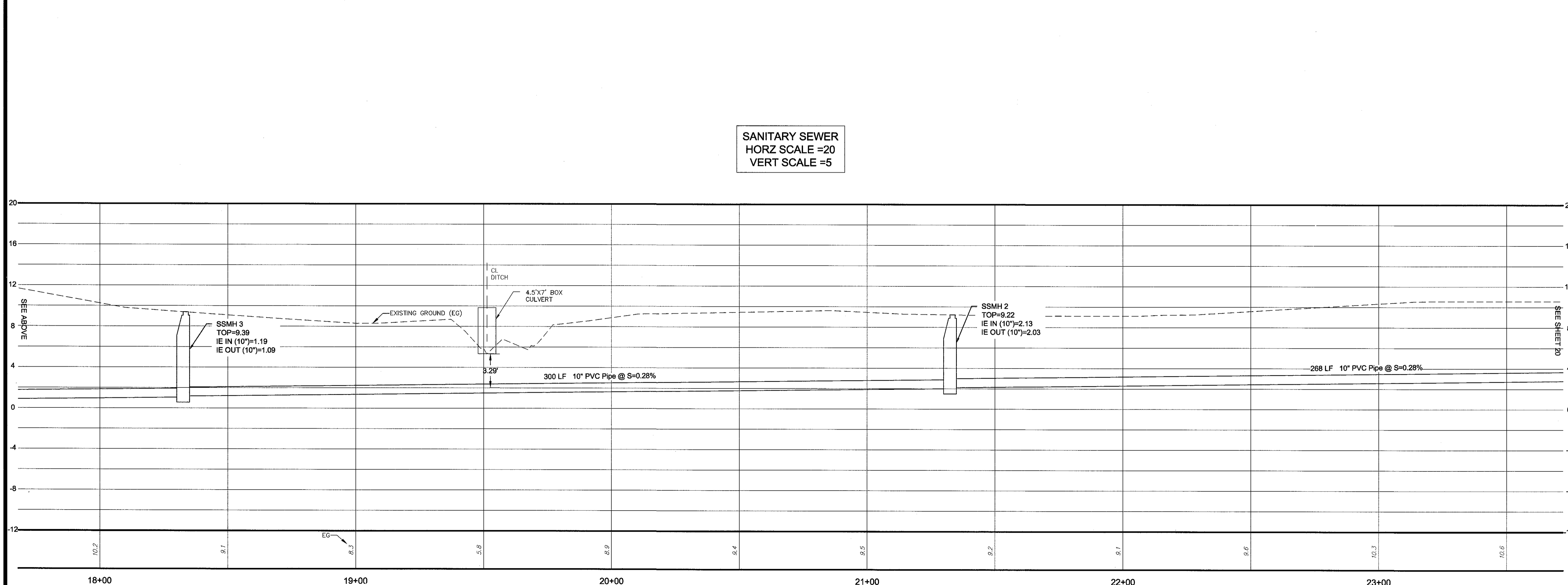
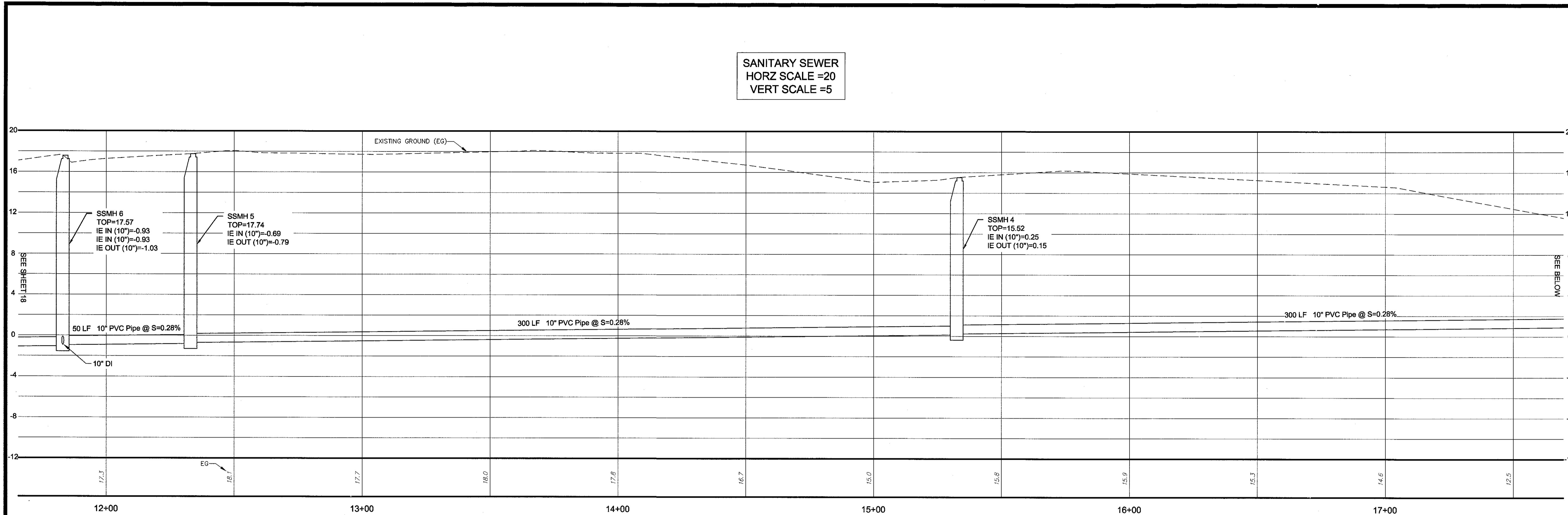
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

SEWER PROFILES
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY: EMC
 SURVEY DATE: MARCH 2016
 CHECKED BY: ABM
 SCALE: 1"=20'
 DATE: MAY 2016

SHEET 18 OF 27

D:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



NO.	REVISION DESCRIPTION	BY	DATE

20' 10' 0' 20'
GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
10 CHATHAM CENTER SOUTH DR.
SUITE 100
POST OFFICE BOX 8101
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 233-4890
www.emc-eng.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

SEWER PROFILES

OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GEORGIA

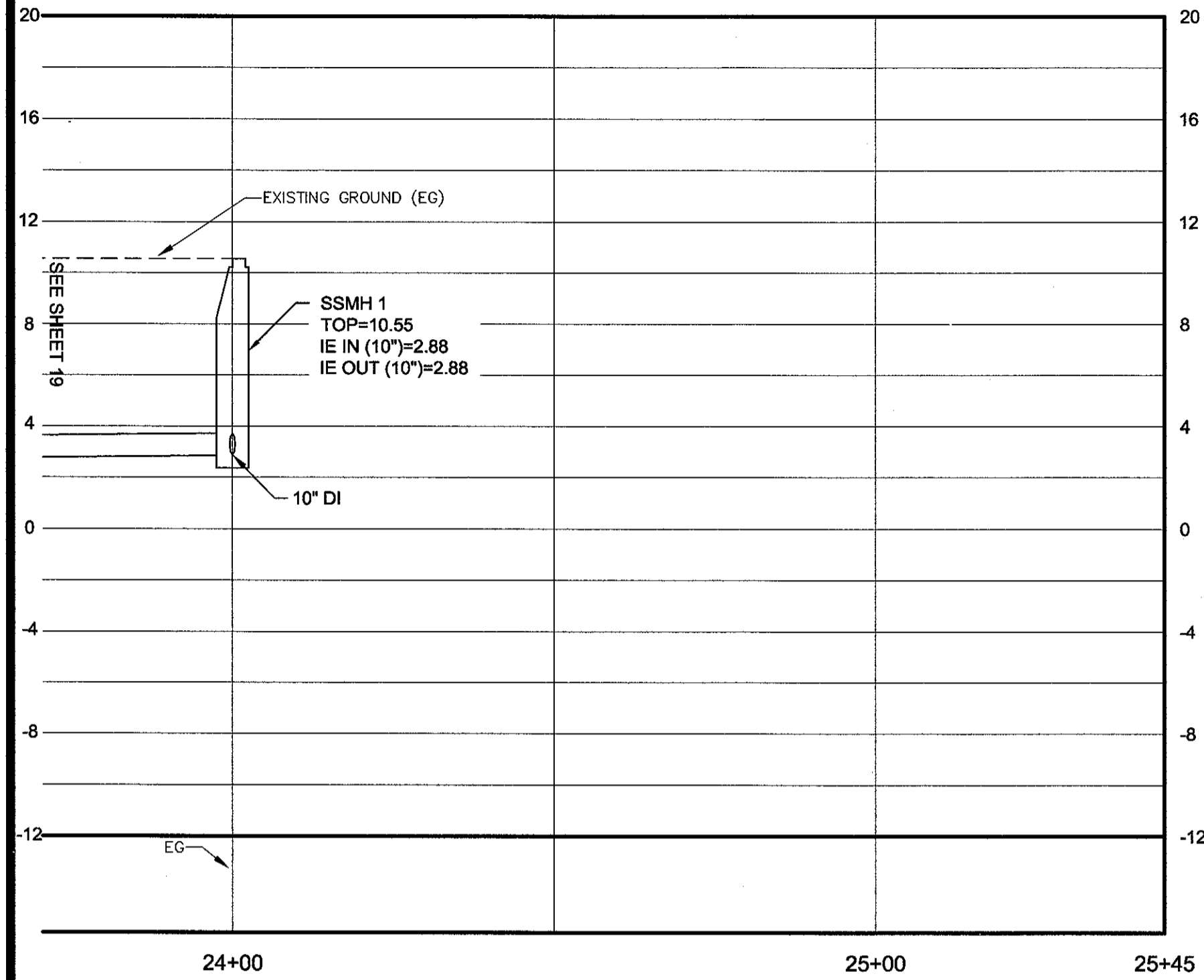
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

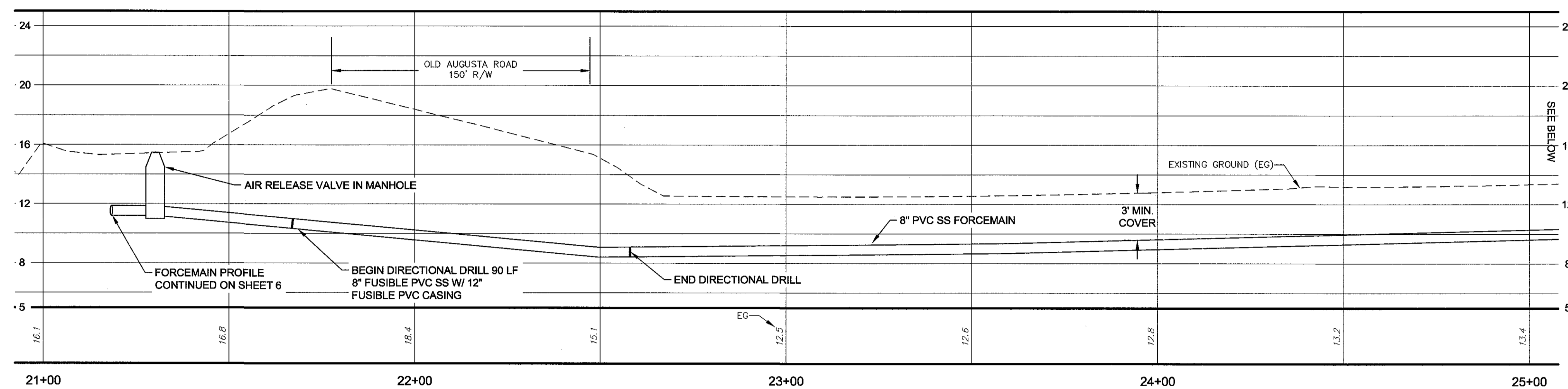
SHEET
19
OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_E01.DWG 6/14/2016 11:39 AM

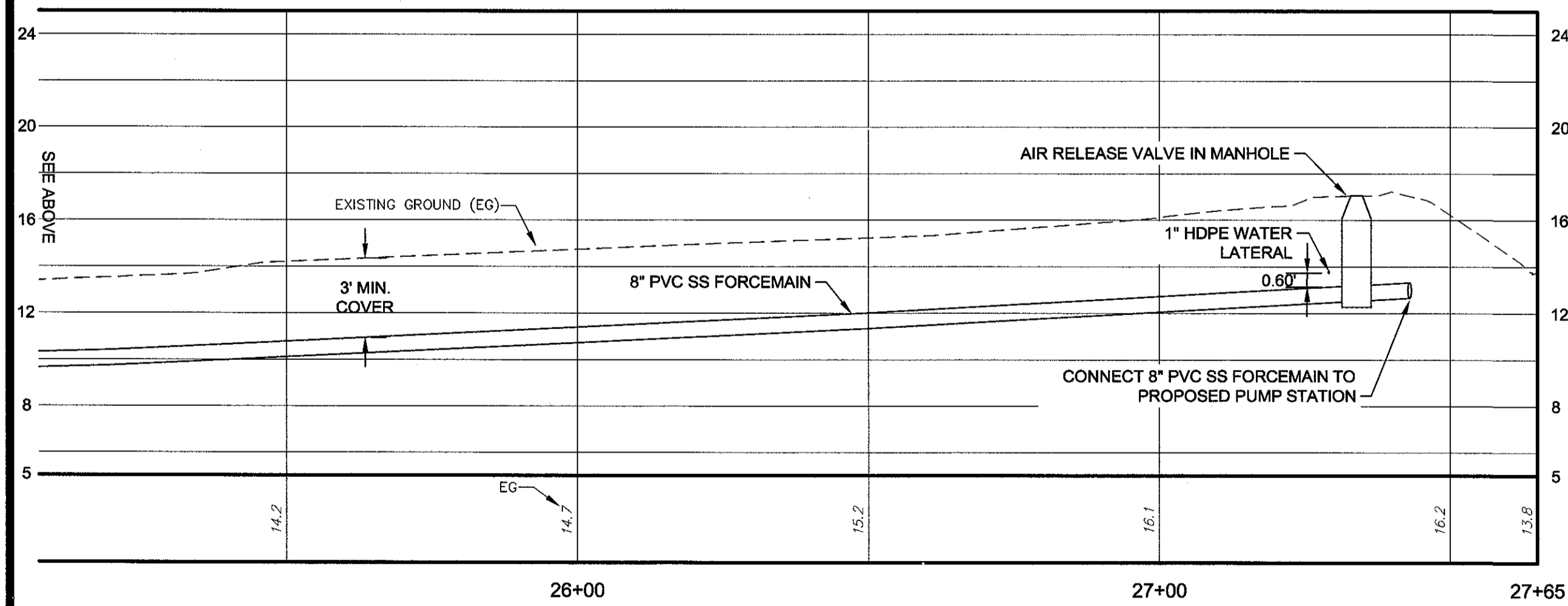
SANITARY SEWER
HORZ SCALE =20
VERT SCALE =5



FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



FORCEMAIN
HORZ SCALE =20
VERT SCALE =5



NO.	REVISION DESCRIPTION	BY	DATE



GRAPHIC SCALE: 1"=20'-0"

EMC ENGINEERING SERVICES, INC.
 10 CHURCH STREET CENTER SOUTH DR.
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 232-6533
 FAX: (912) 233-4960
 www.emc-esi.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

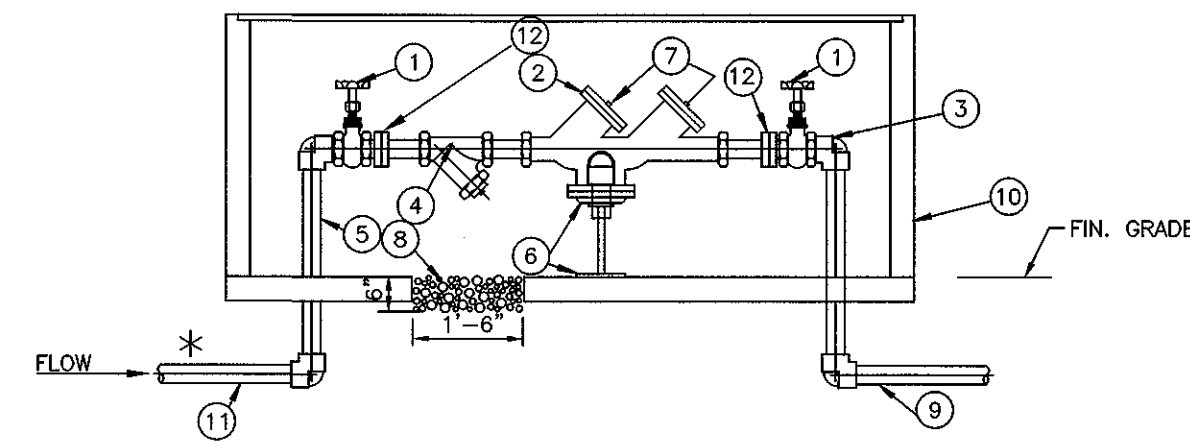
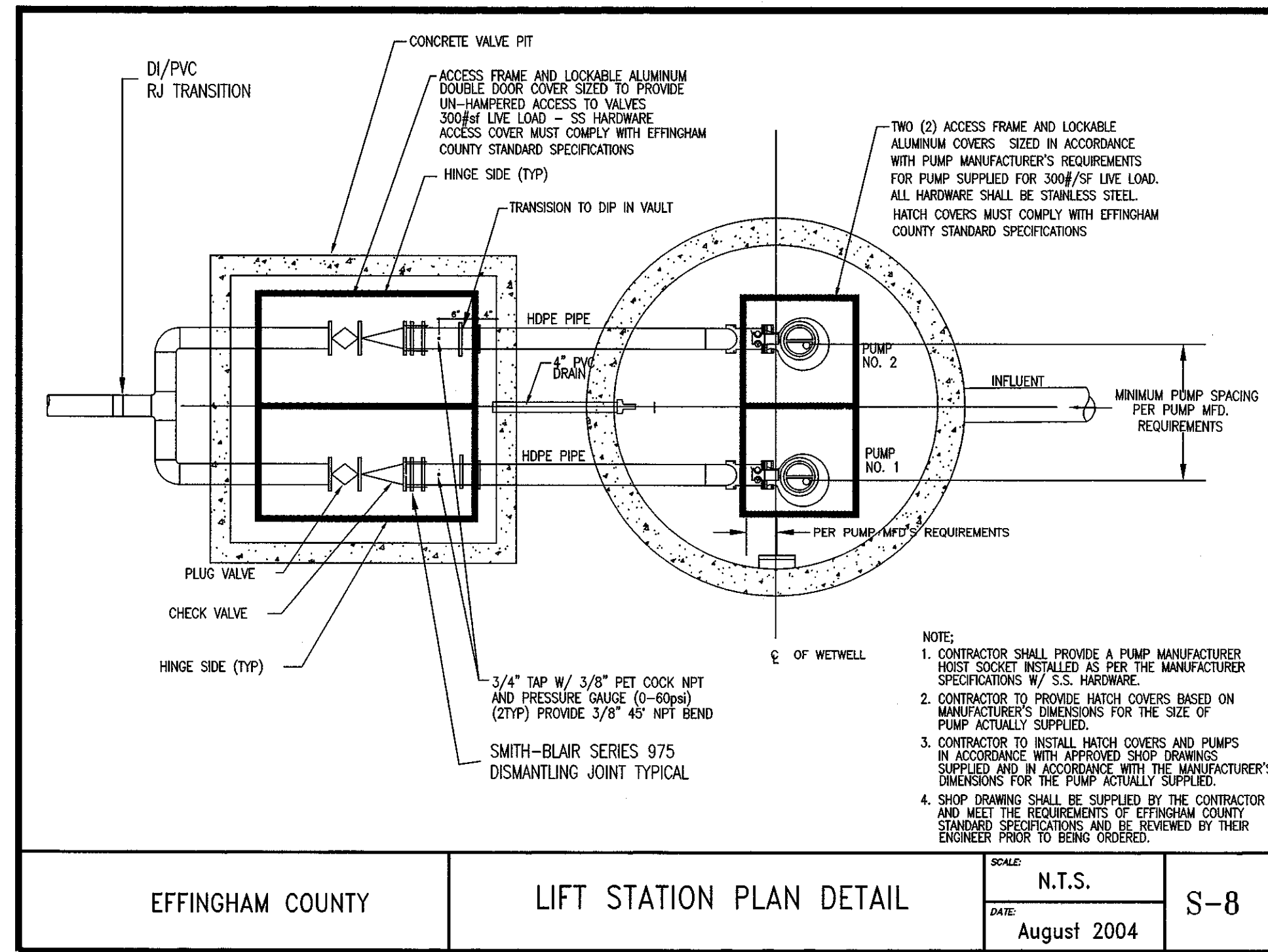
SEWER PROFILES

OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
 EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CPR
DESIGNED BY:	ABM
SURVEYED BY:	EMC
SURVEY DATE:	MARCH 2016
CHECKED BY:	ABM
SCALE:	1"=20'
DATE:	MAY 2016

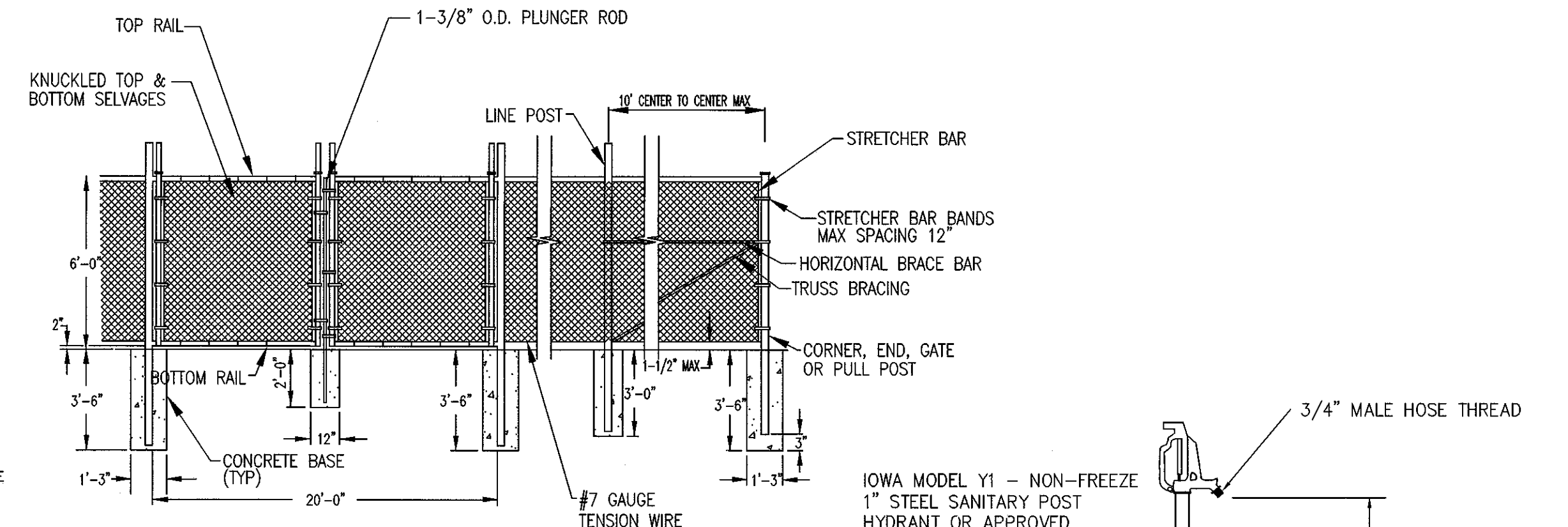
SHEET
20
 OF 27

C:\2016\16-0004 OLD AUGUSTA ROAD UTILITY\DWG\16-0004C_B01.DWG 6/14/2016 11:38 AM



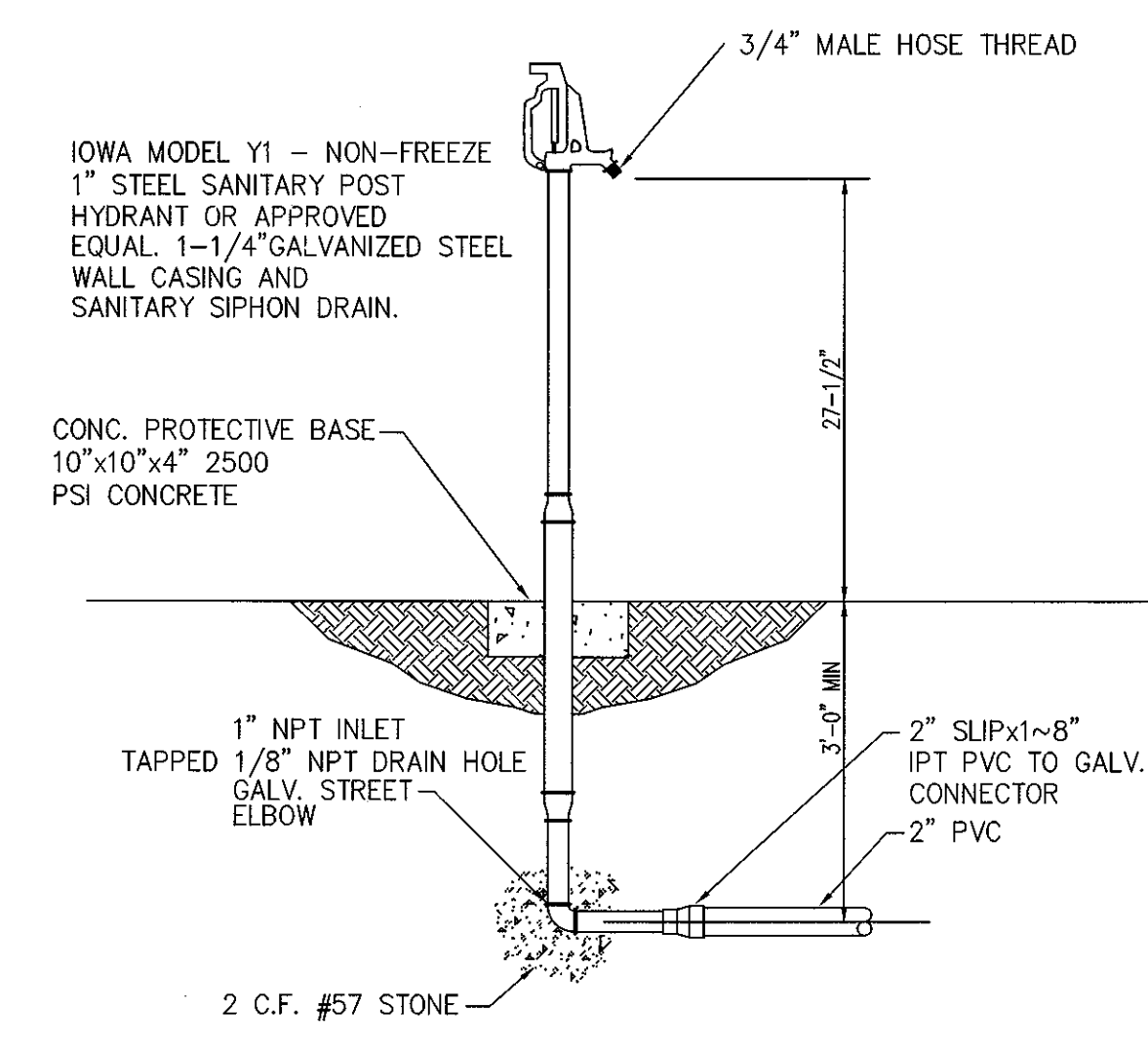
MATERIALS		
ITEM	QUAN.	DESCRIPTION
1	2	RESILIENT TYPE GATE VALVES OS&Y (FOR 2\"/>
2	1	REDUCED PRESSURE ZONE DEVICE/DOUBLE CHECK VALVE
3	4	BRASS 90° (DOMESTIC MADE)
4	1	STRAINER
5	2	BRASS NIPPLE (DOMESTIC MADE)
6		MINIMUM 12\"/>
7	2	BRASS PLUGS INSERTED IN TEST COCKS
8		6\"/>
9		POLYETHYLENE PIPE WITH COMPRESSION FITTINGS
10	*	COUNTY APPROVED ENCLOSURE WITH HATCH COVER FOR BFP
11		CUT BRASS (DOMESTIC MADE)
12		UNION

* RECOMMENDED FOR FREEZE PROTECTION
 BACKFLOW PREVENTER DETAIL
 3/4", 1", 1-1/2", 2"
BACKFLOW PREVENTER
 NOT TO SCALE:

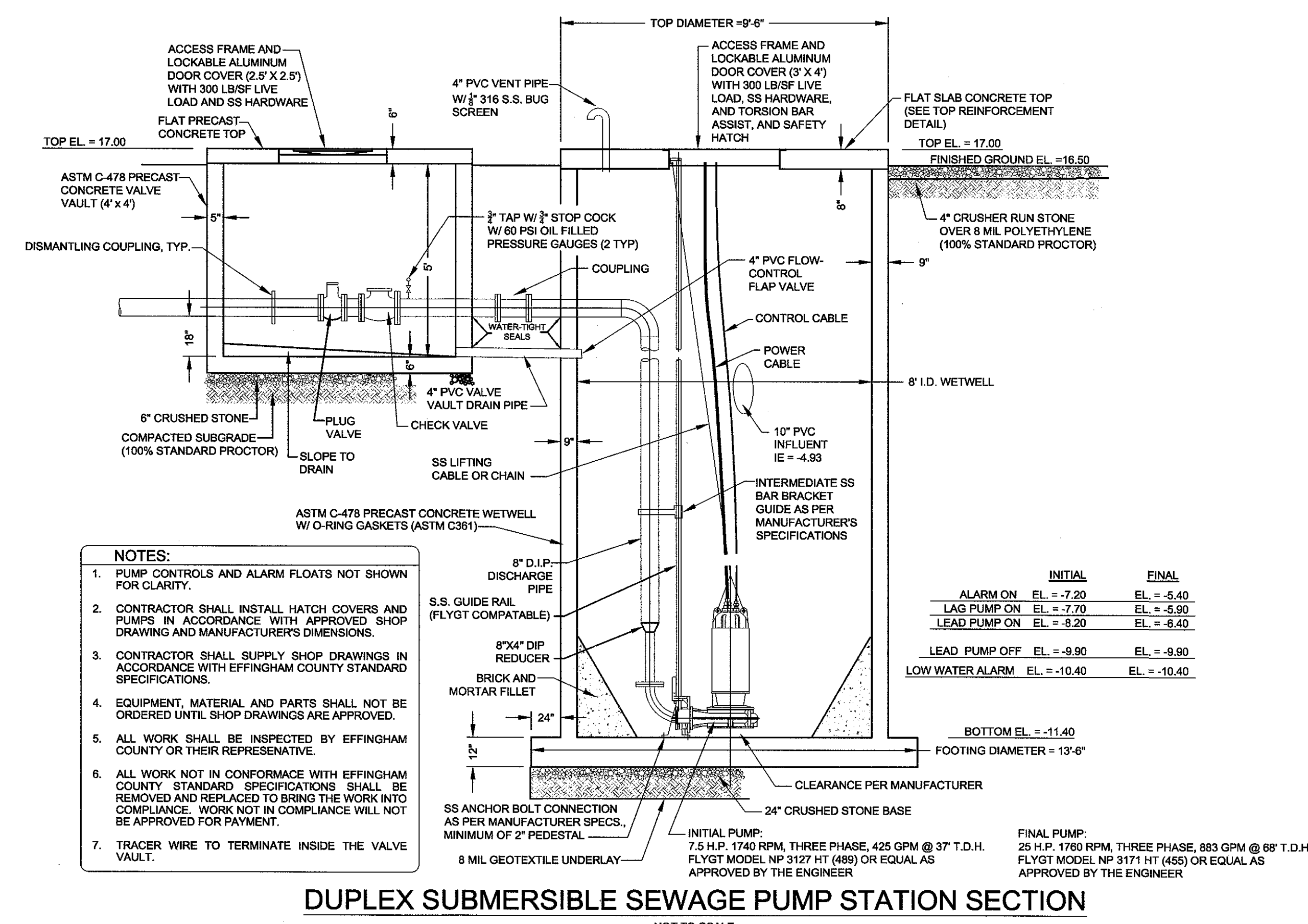


- NOTES:
- FABRIC TO BE ATTACHED TO HORIZONTAL RAILS W/ TIE WIRES AT 16" MAX SPACING MADE ON INSIDE OF FENCE AND NOT ACCESSIBLE FROM OUTSIDE
 - FABRIC TO BE ATTACHED TO TENSION WIRES W/ HOG RINGS AT 24" MAX SPACING
 - FABRIC TO BE ATTACHED TO LINE POSTS W/ SELF-LOCKING BANDS AT 12" MAX SPACING
 - TOP RAIL TO TOP OF FABRIC SHALL BE 2" MAX
 - GATE POST SHALL BE 6" MINIMUM GALVANIZED STEEL
 - FABRIC SHALL BE 12 GAUGE

CHAIN LINK FENCE DETAIL
 NOT TO SCALE:

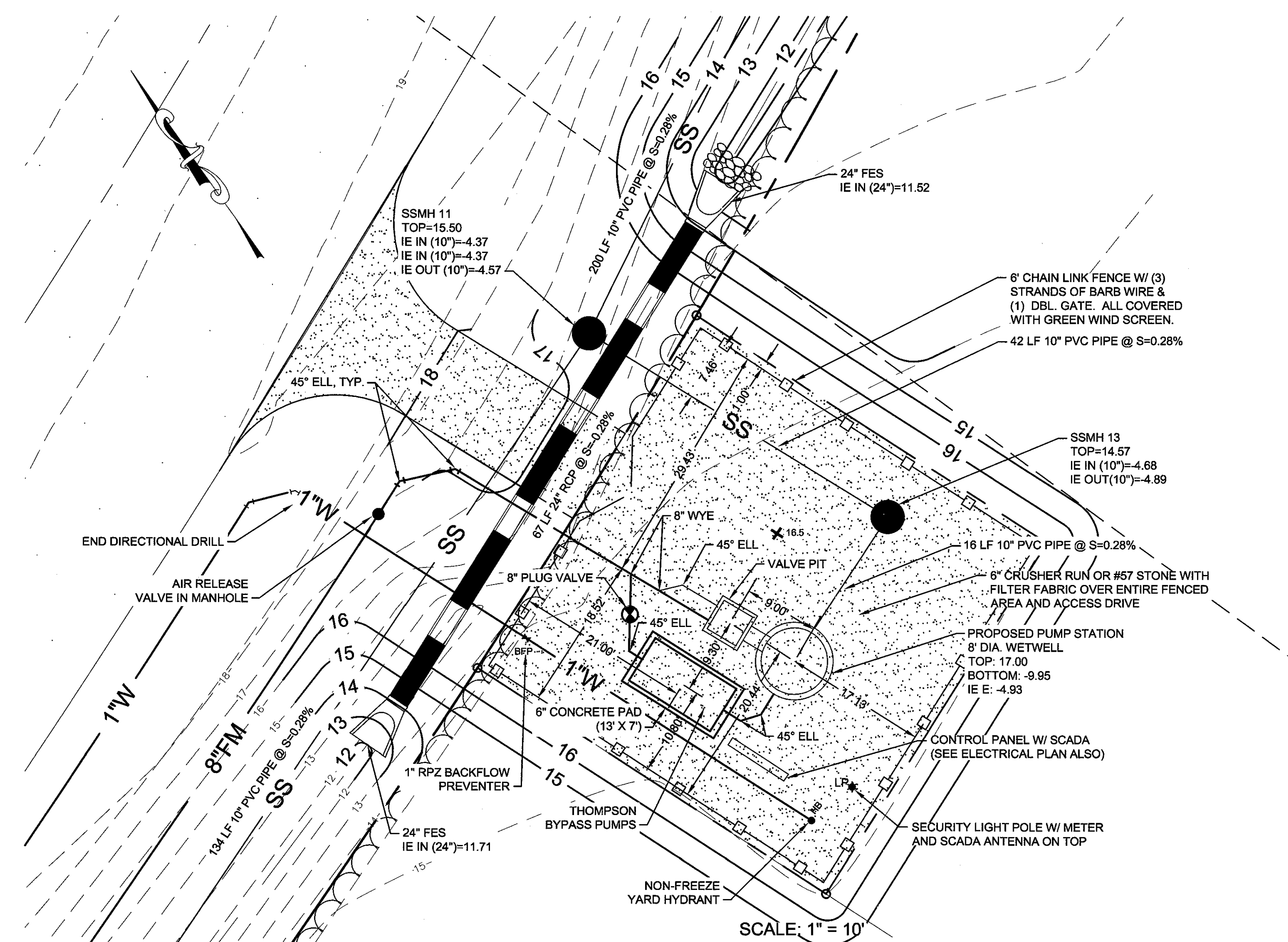


NON FREEZE YARD HYDRANT DETAIL
 NOT TO SCALE:



- NOTES:
- PUMP CONTROLS AND ALARM FLOATS NOT SHOWN FOR CLARITY
 - CONTRACTOR SHALL INSTALL HATCH COVERS AND PUMPS IN ACCORDANCE WITH APPROVED SHOP DRAWING AND MANUFACTURER'S DIMENSIONS.
 - CONTRACTOR SHALL SUPPLY SHOP DRAWINGS IN ACCORDANCE WITH EFFINGHAM COUNTY STANDARD SPECIFICATIONS.
 - EQUIPMENT, MATERIAL AND PARTS SHALL NOT BE ORDERED UNTIL SHOP DRAWINGS ARE APPROVED.
 - ALL WORK SHALL BE INSPECTED BY EFFINGHAM COUNTY OR THEIR REPRESENTATIVE
 - ALL WORK NOT IN CONFORMANCE WITH EFFINGHAM COUNTY STANDARD SPECIFICATIONS SHALL BE REMOVED AND REPLACED TO BRING THE WORK INTO COMPLIANCE. WORK NOT IN COMPLIANCE WILL NOT BE APPROVED FOR PAYMENT.
 - TRACER WIRE TO TERMINATE INSIDE THE VALVE VAULT.

DUPLIX SUBMERSIBLE SEWAGE PUMP STATION SECTION
 NOT TO SCALE:



SCALE: 1" = 10'

REVISION DESCRIPTION BY DATE

NO.	REVISION DESCRIPTION	BY	DATE

10' 5' 0' 10'
 GRAPHIC SCALE: 1"=10'-0"

EMC ENGINEERING SERVICES, INC.
 10 GATHAM CENTER SOUTH DR.
 SUITE 100 (31405) 811
 SAVANNAH, GEORGIA 31412
 PHONE: (912) 233-6533
 FAX: (912) 233-6550
 www.emc-eng.com

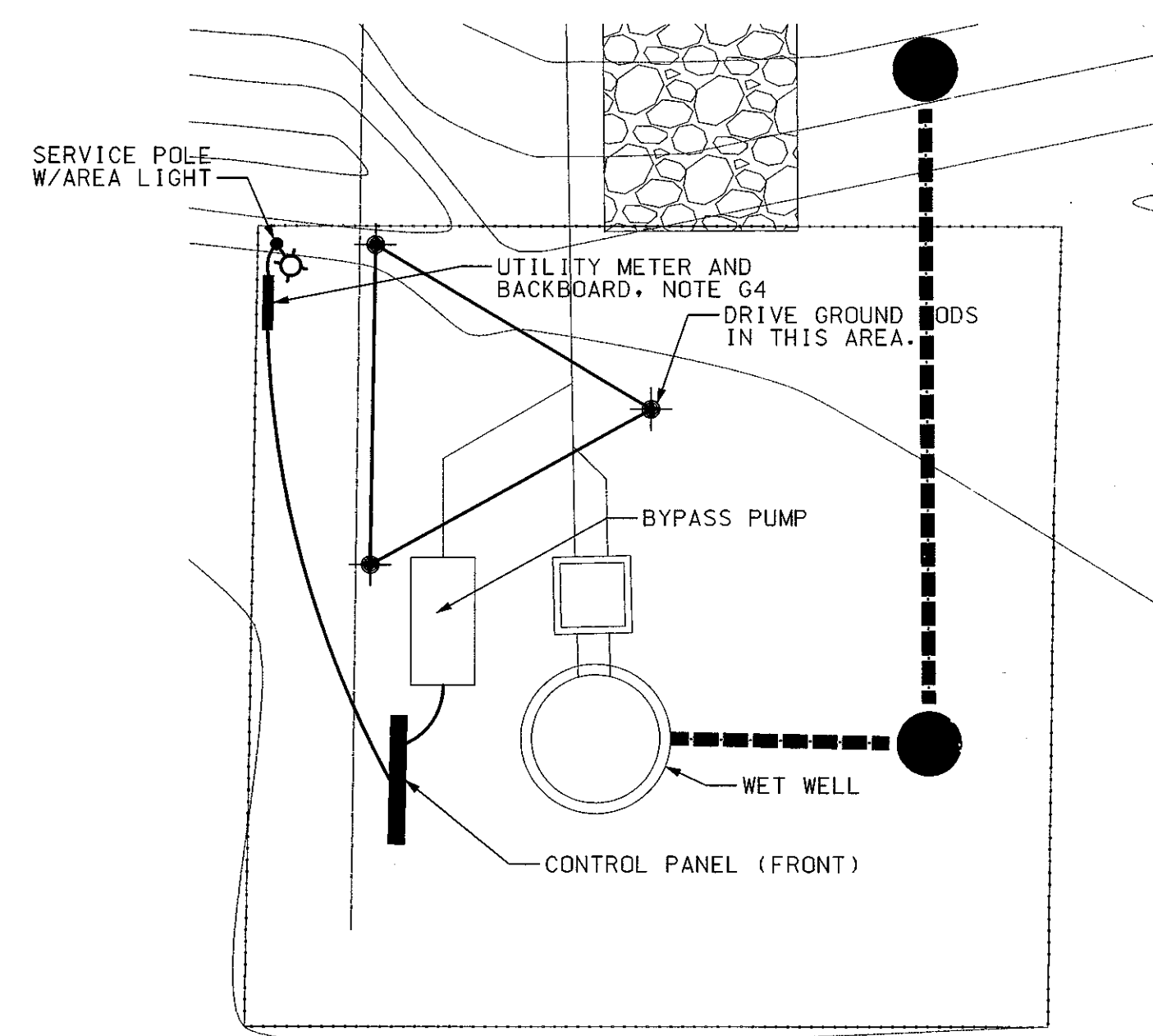
CIVIL MARINE ENVIRONMENTAL SURVEY
 ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PUMP STATION PLAN

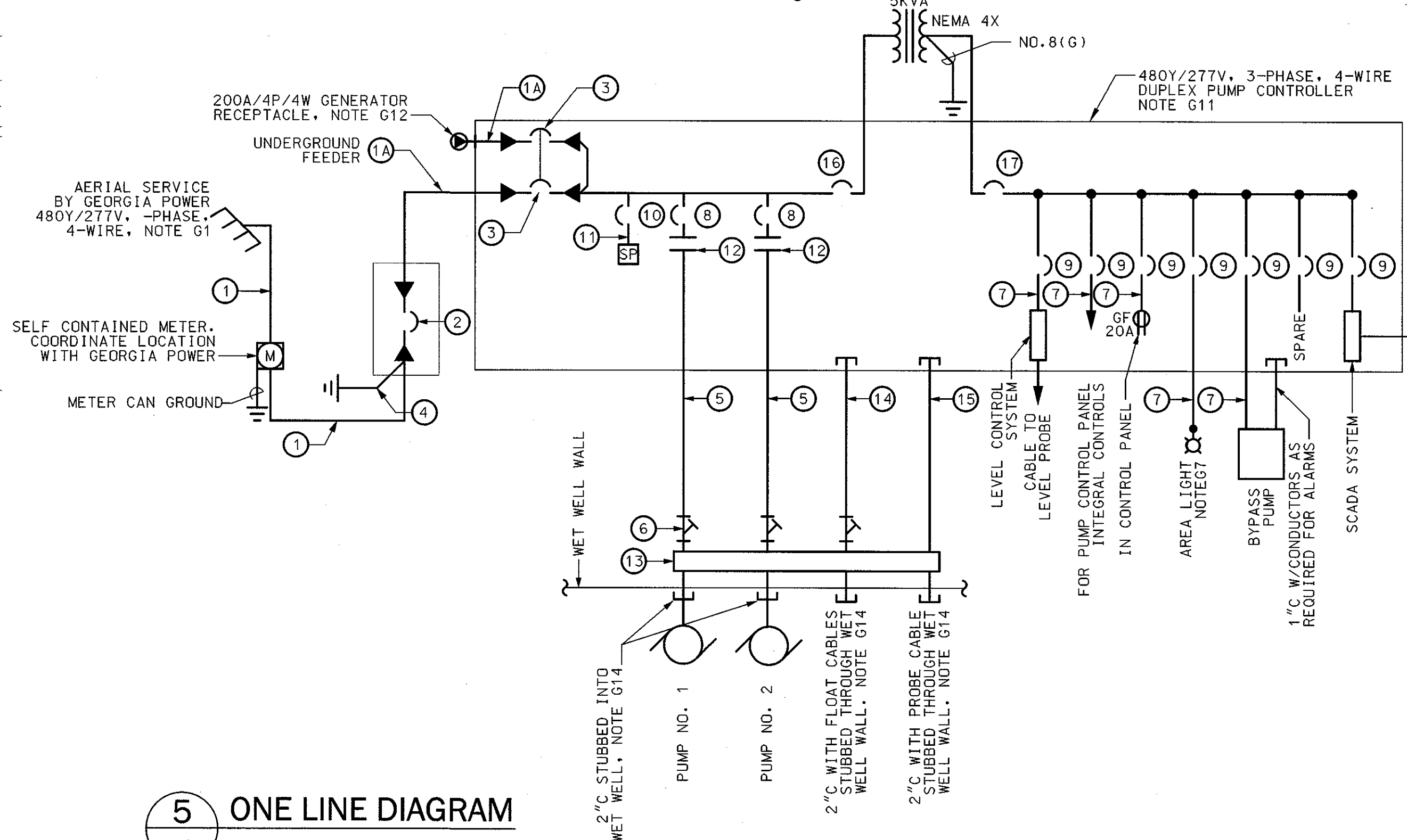
OLD AUGUSTA ROAD UTILITY EXTENSION
 9TH G.M. DISTRICT
 EFFINGHAM COUNTY, GEORGIA
 Prepared for:
 EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
 DRAWN BY: CPR
 DESIGNED BY: ABM
 SURVEYED BY: EMC
 SURVEY DATE: MARCH 2016
 CHECKED BY: ABM
 SCALE: 1"=10'
 DATE: MAY 2016

SHEET 21
 OF 27



1 SITE PLAN
E1 SCALE: 1" = 10'

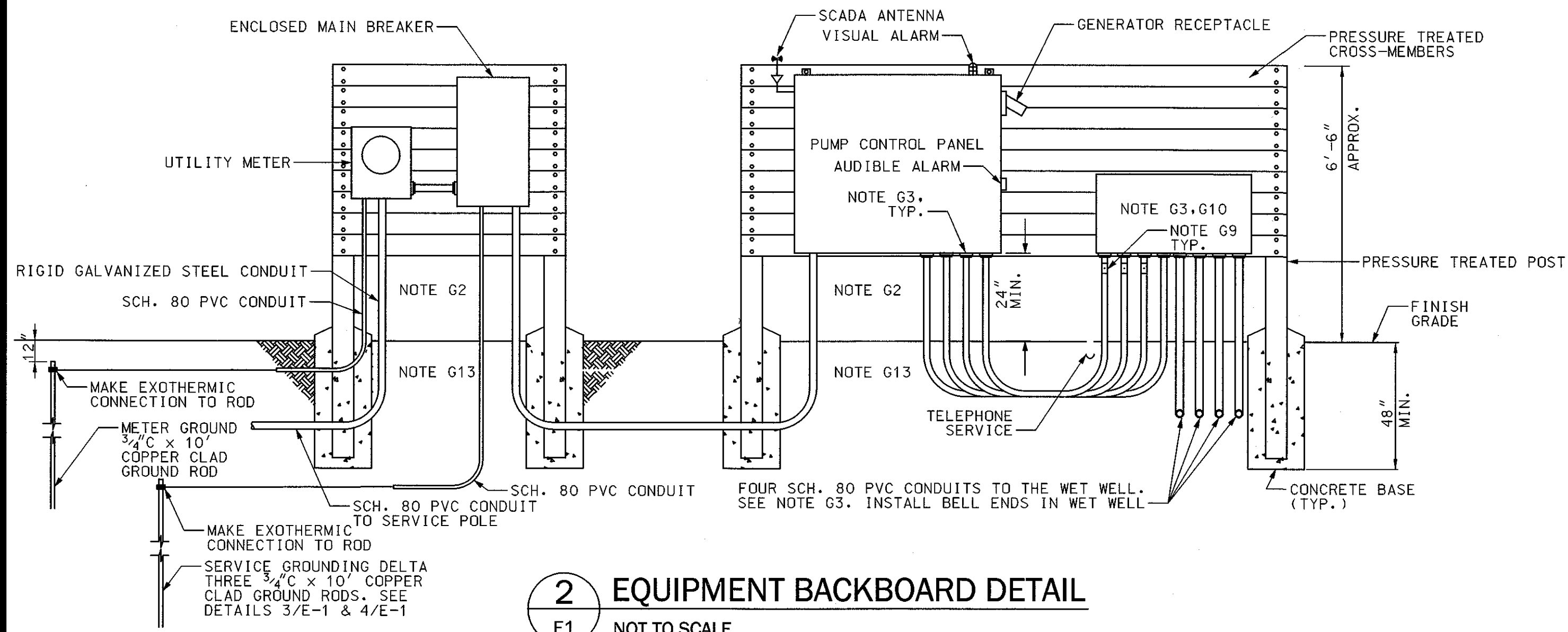


5 ONE LINE DIAGRAM
E1 NOT TO SCALE

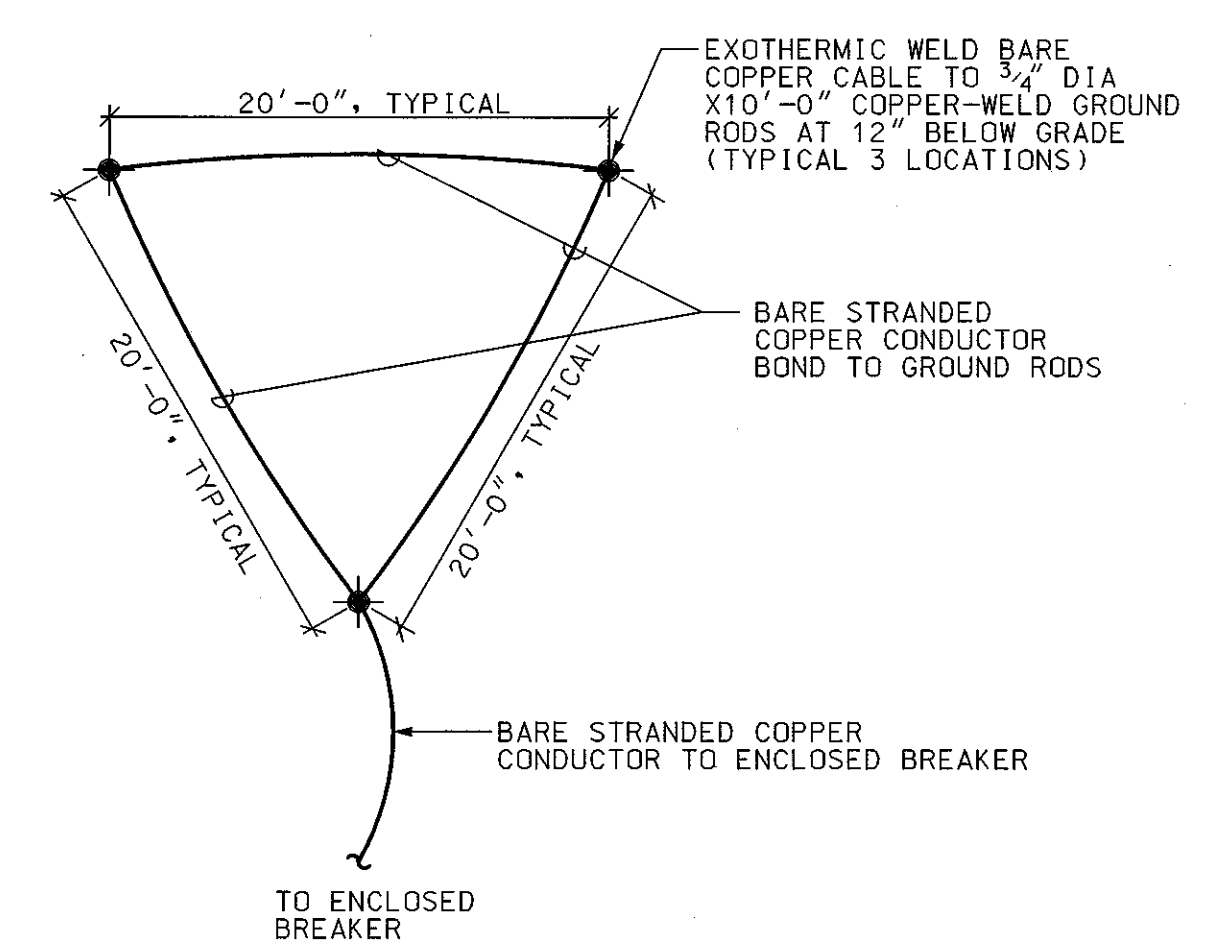
DUPLIX PUMP STATION ONE LINE SCHEDULE	
ITEM#	PUMPS 460V 3PH: 7.5HP 9.9FLA / 25HP 31FLA
1	2" C W/4NO. 1
1A	2" C W/4NO. 1, 1NO. 8(G)
2	125A/3P MAIN CIRCUIT BREAKER W/ SERVICE LABEL, 18 000 MIN. A.I.C. @ 480V, LOCKABLE
3	125A/3P EMERGENCY CIRCUIT BREAKER W/ MECHANICAL WALKING BEAM INTERLOCK 18 000 MIN. A.I.C. @ 480V
4	3/4" C. W/ 1 NO. 6(G)
5	2" C W/3NO. 8, 1NO. 10(G), 4NO. 12(CNTLS)
6	SEAL-OFF FITTING, C-H TYPE EYS, NOTE G9
7	3/4" C. W/2NO. 12, 1NO. 12(G)
8	25A/3P MOTOR CIRCUIT BREAKER 18 000 MIN. A.I.C. @ 480V, NOTE G15
9	20A/1P CIRCUIT BREAKER, 10 000 MIN. A.I.C. @ 120V
10	40A/3P CIRCUIT BREAKER 14 000 MIN. A.I.C. @ 480V.
11	3NO. 8, 1NO. 8(G), CONDUCTORS SHALL NOT EXCEED 18" IN LENGTH
12	REDUCED VOLTAGE SOLID STATE STARTER FOR 25HP 460V 3PH 31FLA MOTOR, NOTE G15
13	NEMA 4X STAINLESS STEEL JUNCTION BOX WITH POWER BLOCKS AND TERMINAL STRIPS AS REQUIRED SEE NOTE G10
14	2" C W/4NO. 12, 1NO. 12(G)
15	2" C W/LEVEL PROBE CABLE
16	15A/2P CIRCUIT BREAKER 14 000 MIN. A.I.C. @ 480V.
17	30A/2P CIRCUIT BREAKER 10 000 MIN. A.I.C. @ 240V.

GENERAL NOTES

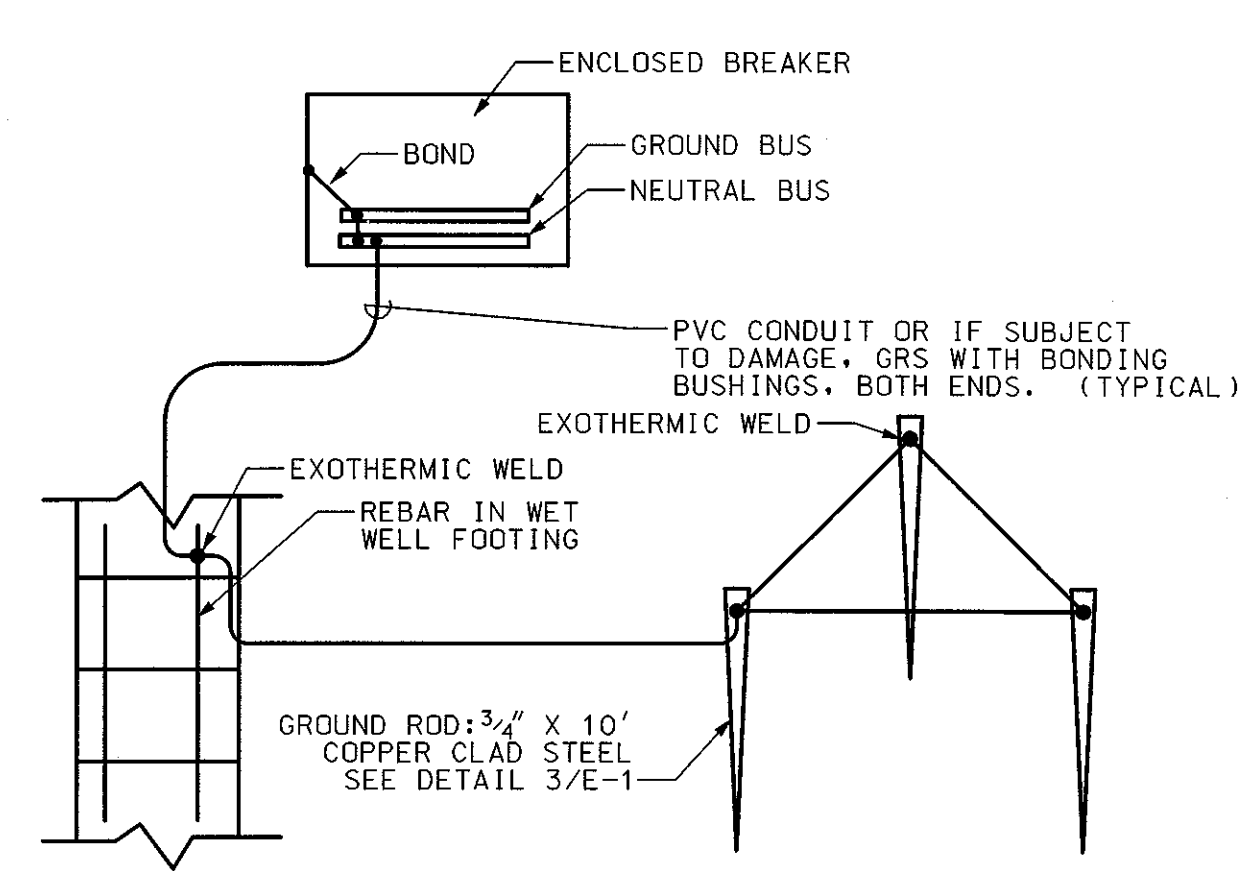
- FIELD COORDINATE THE LOCATION OF THE SERVICE POLE WITH GEORGIA POWER CONTACT JOSHUA GWINN, DISTRIBUTION ENGINEER, (912)306-2631, AND OSMAN BHOLAT, AREA SALES EXECUTIVE, (912)306-2326.
- UNLESS NOTED OTHERWISE, ALL CONDUITS INSTALLED EXPOSED TO ATMOSPHERE SHALL BE RIGID GALVANIZED STEEL CONDUIT, ALL CONDUITS INSTALLED BELOW GRADE SHALL BE SCHEDULE 80 PVC. ALL ELBOWS BELOW GRADE TO BE RIGID GALVANIZED STEEL.
- SEAL BOTH ENDS OF EACH CONDUIT ENTERING THE CONTROL CABINET FROM THE WET WELL WITH ELECTRICAL DUCT SEAL. SEAL ALL CONDUITS ENTERING CONTROL PANEL FROM BELOW GRADE WITH DUCT SEAL.
- THE EXACT LOCATION OF THE METER AND SERVICE SHALL BE COORDINATED IN THE FIELD WITH THE UTILITY COMPANY AND WITH OTHER WORK ON THE PROJECT SITE.
- CIRCUIT BREAKER AND SWITCH OPERATING HANDLES SHALL BE A MAXIMUM OF 66" ABOVE FINISHED GRADE. LOCATE DUPLEX PUMP CONTROL PANEL AND ENCLOSED CIRCUIT BREAKER WHERE INDICATED.
- POSITION ELECTRICAL EQUIPMENT SO THAT ALARM LIGHT CAN BE SEEN FROM THE NEAREST ROAD. EXACT ORIENTATION AND LOCATION OF ELECTRICAL EQUIPMENT STRUCTURE SHALL BE DETERMINED IN FIELD FOR BEST VIEW OF ALARM LIGHT & ACCESS TO ELECTRICAL EQUIPMENT.
- MOUNT AREA LIGHT TO THE TOP OF THE SERVICE POLE. REFER TO DETAIL 6/E1, THIS SHEET.
- ALL ATTACHMENT HARDWARE SHALL BE HOT DIPPED GALVANIZED.
- PROVIDE TYPE EYS TYPE CONDUIT SEAL-OFF. SEAL WITH SEALING COMPOUND. MAKE POWER & FLOAT CONNECTIONS IN THE JUNCTION BOX. LEVEL PROBE SHALL EXTEND TO CONTROL PANEL WITHOUT SPLICES OR INTERMEDIATE TERMINATIONS.
- 18" H X 48" W X 8" D MINIMUM NEMA 4X S.S. JUNCTION BOX W/ GASKETED SCREW COVER AND ALUMINUM BACKPLATE.
- PROVIDE A LUMARK NAVION SERIES AREA LIGHT WITH A WOOD POLE BRACKET: CAT. NO. NAV-AE-02-E-UNV-14W-10K-PER-AP WITH OA/RAT014 AND WP218 BRACKET.
- THE CONTRACTOR SHALL FIELD COORDINATE THE EXACT CONFIGURATION OF THE GENERATOR RECEPTACLE WITH THE OWNER'S GENERATOR. THE SUBMITTAL SHALL INDICATE THE CONTRACTOR HAS COORDINATED THE RECEPTACLE PRIOR TO SUBMITTING SHOP DRAWINGS.
- ALL METALLIC CONDUITS BELOW GRADE AND/OR ENCASED IN CONCRETE SHALL BE PROTECTED AGAINST CORROSION. APPLY TWO COATS OF 3M SCOTCHRAP PIPE PRIMER, ALLOWING EACH COAT TO DRY BETWEEN APPLICATIONS. THEN APPLY TWO OVERLAPPING LAYERS OF 3M SCOTCHRAP 51 TAPE (20 MILS). CORROSION PROTECTION SHALL EXTEND FROM 6" ABOVE GRADE TO THE END OF THE METALLIC CONDUIT.
- 2" SCH. 80 PVC STUBBED INTO THE WET WELL. PROVIDE STAINLESS STEEL SUPPORT HOOK AND NON-CONDUCTIVE, CLOSED MESH, ARAMID FIBER CABLE SUPPORT GRIPS FOR ALL CABLES. GRIPS FOR FLOAT AND PROBE CABLES SHALL BE SINGLE WEAVE, SINGLE EYE TYPE; GRIPS FOR PUMP CABLES SHALL BE DOUBLE WEAVE DOUBLE EYE TYPE. COORDINATE GRIP SIZE WITH CABLES SUPPORTED. ATTACH GRIP WITH TWO HEAVY-DUTY PLASTIC ZIP TIES. PROVIDE PRODUCTS OF SLINGCO AMERICA, TYRONE, GA. NO SUBSTITUTIONS PERMITTED. CONTACT CAROLE SYDES, SALES ACCOUNT MANAGER, (888)685-9478.
- THE CONTROL PANEL SHALL BE PROVIDED WITH MOTOR CIRCUIT BREAKERS SIZED FOR THE INITIAL PUMPS (7.5 HP) AND SHALL ALLOW SPACE FOR FUTURE/BUILD-OUT CONDITION PUMPS (25 HP). THE REDUCED VOLTAGE SOLID STATE STARTER SHALL BE SIZED AND PROVIDED FOR THE BUILD-OUT CONDITION PUMPS.
- THE SCADA SYSTEM FOR THE STATION SHALL BE PROVIDED AS AN INTEGRAL PART OF THE CONTROL PANEL. SCADA EQUIPMENT SHALL BE PROVIDED AND TESTED BY SILVER LAKE AUTOMATION, RINGON, GA. CONTACT ROB LANHAM, GENERAL MANAGER, (912)826-9700. COORDINATE WITH SILVER LAKE AUTOMATION FOR PANEL CONFIGURATION AND ANNUNCIATED ALARM POINTS. SCADA ANTENNA SHALL BE MOUNTED ON THE EQUIPMENT BACKBOARD.



2 EQUIPMENT BACKBOARD DETAIL
E1 NOT TO SCALE



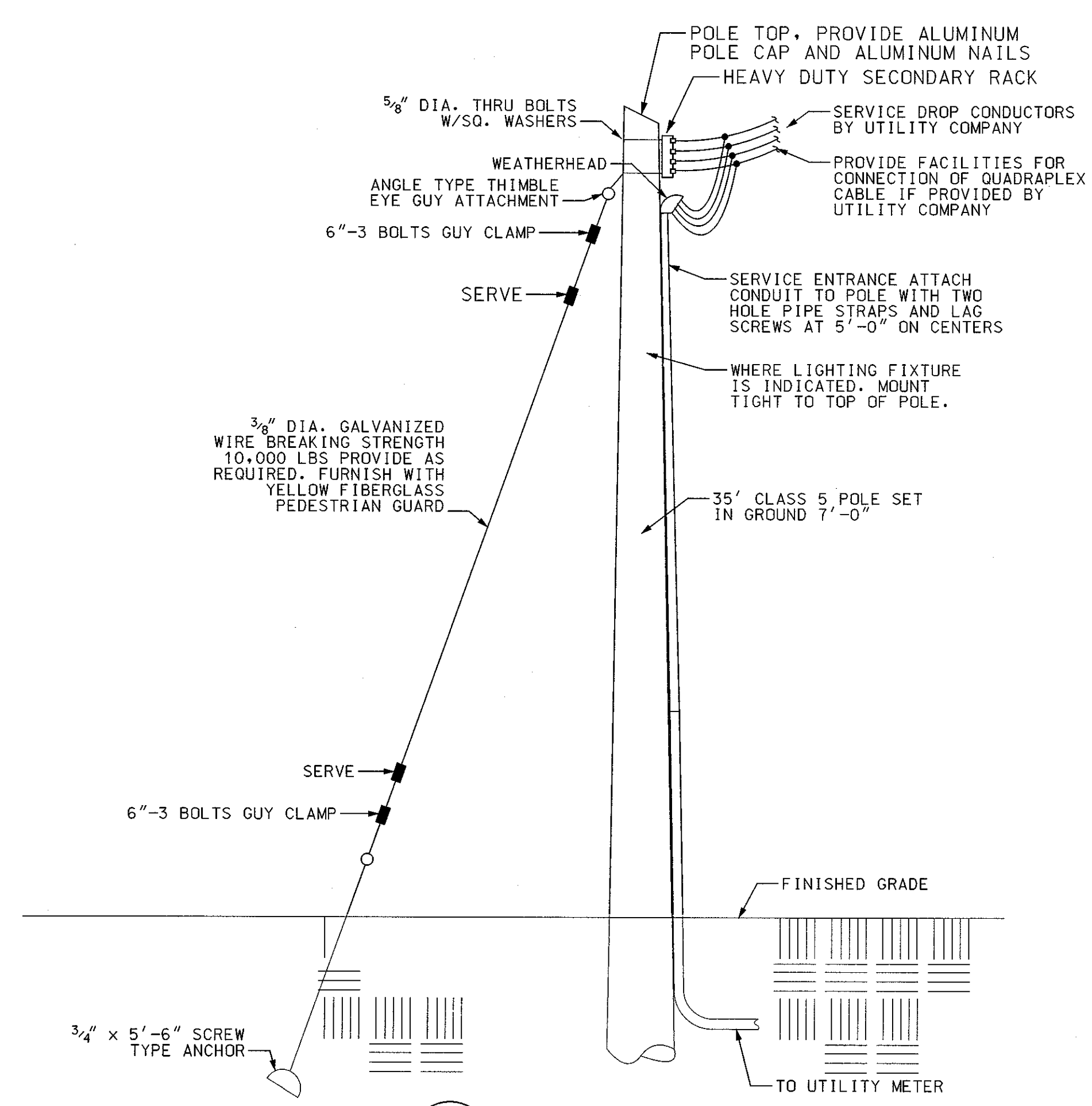
3 SECONDARY ELECTRICAL GROUNDING
E1 NOT TO SCALE



4 PUMP STATION SERVICE GROUNDING
E1 NOT TO SCALE

LEGEND

- EQUIPMENT AS NOTED
- MOTOR CIRCUIT BREAKER AND REDUCED VOLTAGE SOLID STATE STARTER
- DUPLEX RECEPTACLE, NEMA 5-20R
- WP WEATHERPROOF
- GROUND TO GROUND ROD SYSTEM
- GF GROUND FAULT CIRCUIT INTERRUPTER PROTECTION
- AIC INTERRUPTING CAPACITY IN AMPS
- CONDUIT SYSTEM CONCEALED BELOW GRADE
- PUMP MOTOR, HORSEPOWER INDICATED
- EMERGENCY GENERATOR RECEPTACLE, NOTE G12
- SEAL OFF FITTING, NOTE G9
- AREA LIGHT: LUMARK NAVION AREA LIGHT, NOTE G7,G11
- SURGE SUPPRESSION UNIT - APT MODEL TE-04-XDS-15-4X-A
- GROUND ROD LOCATION



6 SERVICE POLE DETAIL
E1 NOT TO SCALE

EMC ENGINEERING SERVICES, INC.
10 CHATHAM CENTER SOUTH DR.
SUITE 100 (31405) 801
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 233-4550
www.emc-eng.com

CIVIL MARINE ENVIRONMENTAL SURVEY
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

PUMP STATION ELECTRICAL PLAN

OLD AUGUSTA ROAD UTILITY EXTENSION

9TH G.M. DISTRICT
EFFINGHAM COUNTY, GEORGIA

Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.:	16-0004
DRAWN BY:	CC
DESIGNED BY:	CC
SURVEYED BY:	N/A
SURVEY DATE:	N/A
CHECKED BY:	PM
SCALE:	1"=10'
DATE:	MAY 2016

SHEET E1

OF 27

PG 24 YES 30. PROVIDE COMPLETE REQUIREMENTS OF SAMPLING FREQUENCY AND REPORTING OF SAMPLING RESULTS.

SAMPLING FREQUENCY: THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW FOR A QUALIFYING EVENT...

SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

- A. FOR EACH AREA OF THE SITE THAT DISCHARGES INTO 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 THE GENERAL PERMIT...

*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:

- 1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. OF THE GENERAL PERMIT BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THE GENERAL PERMIT...

PG 24 YES 31. PROVIDE COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F OF THE PERMIT.

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

- A. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD; B. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THE GENERAL PERMIT; C. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT...

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 THE GENERAL PERMIT...

PG 24 YES 32. DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION.

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

- A. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING: (1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING REFERRED TO AS A TOPOGRAPHIC MAP THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24,000 MAP SHOWING THE LOCATION OF THE INFRASTRUCTURE CONSTRUCTION; (2) A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL QUALITY ASSURANCE PROCEDURES...

C. SAMPLING POINTS

(1) FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR ALL OUTFALLS INTO SUCH STREAMS AND OTHER WATER BODIES, OR A COMBINATION THEREOF...

(A) THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY...

(A) THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY...

(B) IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).

(C) CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.

(D) THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

(E) THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

(F) PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS) OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION)...

(G) ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3 OR III.D.4, WHICHEVER IS APPLICABLE.

*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.

PG 24 YES 33. APPENDIX B RATIONALE FOR NTU VALUES AT ALL OUTFALL SAMPLING POINTS WHERE APPLICABLE.*

SAMPLE ANALYSIS: STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) OF 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 GENERAL PERMIT. THE NTU IS BASED UPON THE DISTURBED ACREAGE OF 4.72 ACRES FOR THE PROJECT SITE, THE SURFACE WATER DRAINAGE AREA OF 0.10-SQUARE MILES FOR THE DRAINAGE BASIN, AND THE RECEIVING WATER THE SAVANNAH RIVER, WHICH SUPPORTS WARM WATER FISHERIES.

PLAN YES 34. DELINEATE ALL SAMPLING LOCATIONS, PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED.*

PLAN YES 35. A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDING: (1) INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs, (2) INTERMEDIATE GRADING AND DRAINAGE BMPs, AND (3) FINAL BMPs. FOR CONSTRUCTION SITES WHERE THERE WILL BE NO MASS GRADING AND THE INITIAL PERIMETER CONTROL BMPs, INTERMEDIATE GRADING AND DRAINAGE BMPs, AND FINAL BMPs ARE THE SAME, THE PLAN MAY COMBINE ALL OF THE BMPs INTO A SINGLE PHASE.*

PLAN YES 36. GRAPHIC SCALE AND NORTH ARROW.

PLAN YES 37. EXISTING AND PROPOSED CONTOUR LINES WITH CONTOUR LINES DRAWN AT AN INTERVAL IN ACCORDANCE WITH THE FOLLOWING:

Table with 2 columns: Contour Type and Scale. Existing Contours: USGS 1":2000 Topographical Sheets; Proposed Contours: 1":400' Centerline Profile.

N/A NO 38. USE OF ALTERNATIVE BMPs WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMPs AS CERTIFIED BY A DESIGN PROFESSIONAL (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION). PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT WWW.GASWCC.ORG.

PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT WWW.GASWCC.ORG.

N/A NO 39. 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.

PG 46 YES 40. 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.

ALL STATE WATERS ON OR WITHIN 200 FEET FROM THE PROJECT SITE MUST BE DELINEATED ON ALL PHASES OF THE PLAN. ALL WETLANDS LOCATED WITHIN THE PROJECT SITE MUST BE DELINEATED.

41. DELINEATION OF ON-SITE WETLANDS AND ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE.

42. DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE.

43. DELINEATE ON-SITE DRAINAGE AND OFF-SITE WATERSHEDS USING USGS 1":2000 TOPOGRAPHICAL SHEETS.

44. AN ESTIMATE OF THE RUNOFF COEFFICIENT OR PEAK DISCHARGE FLOW OF THE SITE PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED.

N/A NO 45. STORM DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION. IDENTIFY/DELINEATE ALL STORM WATER DISCHARGE POINTS.

46. SOIL SERIES FOR THE PROJECT SITE AND THEIR DELINEATION.

47. THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION.

PG 24 YES 48. PROVIDE A MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED USING A TEMPORARY SEDIMENT BASIN, RETROFITTED DETENTION POND, AND/OR EXCAVATED INLET SEDIMENT TRAPS FOR EACH COMMON DRAINAGE LOCATION. SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED. A WRITTEN JUSTIFICATION EXPLAINING THE DECISION TO USE EQUIVALENT CONTROLS WHEN A SEDIMENT BASIN IS NOT ATTAINABLE MUST BE INCLUDED IN THE PLAN FOR EACH COMMON DRAINAGE LOCATION IN WHICH A SEDIMENT BASIN IS NOT PROVIDED. A WRITTEN JUSTIFICATION AS TO WHY 67 CUBIC YARDS OF STORAGE IS NOT ATTAINABLE MUST ALSO BE GIVEN. WORKSHEETS FROM THE MANUAL MUST BE INCLUDED FOR STRUCTURAL BMPs AND ALL CALCULATIONS USED BY THE DESIGN PROFESSIONAL TO OBTAIN THE REQUIRED SEDIMENT STORAGE WHEN USING EQUIVALENT CONTROLS. WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, PERMITTEES ARE REQUIRED TO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE, UNLESS INFEASIBLE. IF OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE NOT FEASIBLE, A WRITTEN JUSTIFICATION EXPLAINING THIS DECISION MUST BE INCLUDED IN THE PLAN.

SEDIMENT STORAGE: BASIN IS 4.72-ACRES. THE REQUIRED SEDIMENT STORAGE VOLUME FOR THIS ACREAGE IS 67 CY/AC * 4.72-ACRES = 317 CY. THE SEDIMENT WILL BE TRAPPED BY PERIMETER SILT FENCE AND ANY EXCESS WILL BE CAUGHT USING HAY BALE CHECK DAMS. REQUIRED STORAGE < AVAILABLE STORAGE

HAY BALE CHECK DAM STORAGE CALCULATION

- 1. DISTURBED AREA = 4.72 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC * DISTURBED AREA
REQUIRED SEDIMENT STORAGE = 67 CY/AC * 4.72 AC
REQUIRED SEDIMENT STORAGE = 317 CY = 8,559 CF

PLAN YES 49. 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.

VEGETATIVE MEASURES AND STRUCTURAL PRACTICES

Table with 5 columns: CODE, PRACTICE, DETAIL, MAP SYMBOL, DESCRIPTION. Rows include Sd1 (SEDIMENT BARRIER), Cd-H (HAY BALE CHECK DAM), St (STORM DRAIN OUTFALL PROTECTION), Du (DUST CONTROL ON DISTURBED AREAS), Ds1 (DISTURBED AREA STABILIZATION WITH MULCHING ONLY), Ds2 (DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING), Ds3 (DISTURBED AREA STABILIZATION WITH PERMANENT VEGETATION).

PG 25-27 YES 50. 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.

PG 24 YES 51. PROVIDE VEGETATIVE PLAN, NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES. INCLUDE SPECIES, PLANTING DATES AND SEEDING, FERTILIZER, LIME AND MULCHING RATES. VEGETATIVE PLAN SHOULD BE SITE SPECIFIC FOR APPROPRIATE TIME OF YEAR THAT SEEDING WILL TAKE PLACE AND FOR THE APPROPRIATE GEOGRAPHIC REGION OF GEORGIA.

TEMPORARY AND PERMANENT SEEDING SCHEDULE

Table with 6 columns: MONTH, TEMPORARY COVER, RATE PER ACRE (SEEDED ALONE, ADDED TO MIX), PERMANENT COVER, RATE PER ACRE (SEEDED ALONE, ADDED TO MIX). Rows list months from January to December with corresponding seed types and rates.

- NOTES: 1. FERTILIZING - APPLY 6-12-12 FERTILIZER AT THE RATE OF 35 POUNDS PER 1,000 SQUARE FEET, RAKING LIGHTLY INTO THE SOIL. APPLY AGRICULTURAL LIME AT A RATE OF ONE TON PER ACRE. THE AGRICULTURAL LIME SHALL MEET THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE. DRY STAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE AND DRY HAY SHALL BE APPLIED AT A RATE OF 2.5 TONS PER ACRE. WATER IMMEDIATELY AFTER MULCHING.

SILT FENCE STORAGE CALCULATION

- 1. DISTURBED AREA = 4.72 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC * DISTURBED AREA
REQUIRED SEDIMENT STORAGE = 67 CY/AC * 4.72 AC
REQUIRED SEDIMENT STORAGE = 317 CY = 8,559 CF

L x D x W = 24,655 CF

913 CY OF SEDIMENT STORAGE IS AVAILABLE IN THE SILT FENCE.

Table with 4 columns: NO, REVISION DESCRIPTION, BY, DATE. Multiple rows for revisions.

GSWCC logo and professional information for Alec B. Metzger, Level II Certified Design Professional, with certification number and dates.

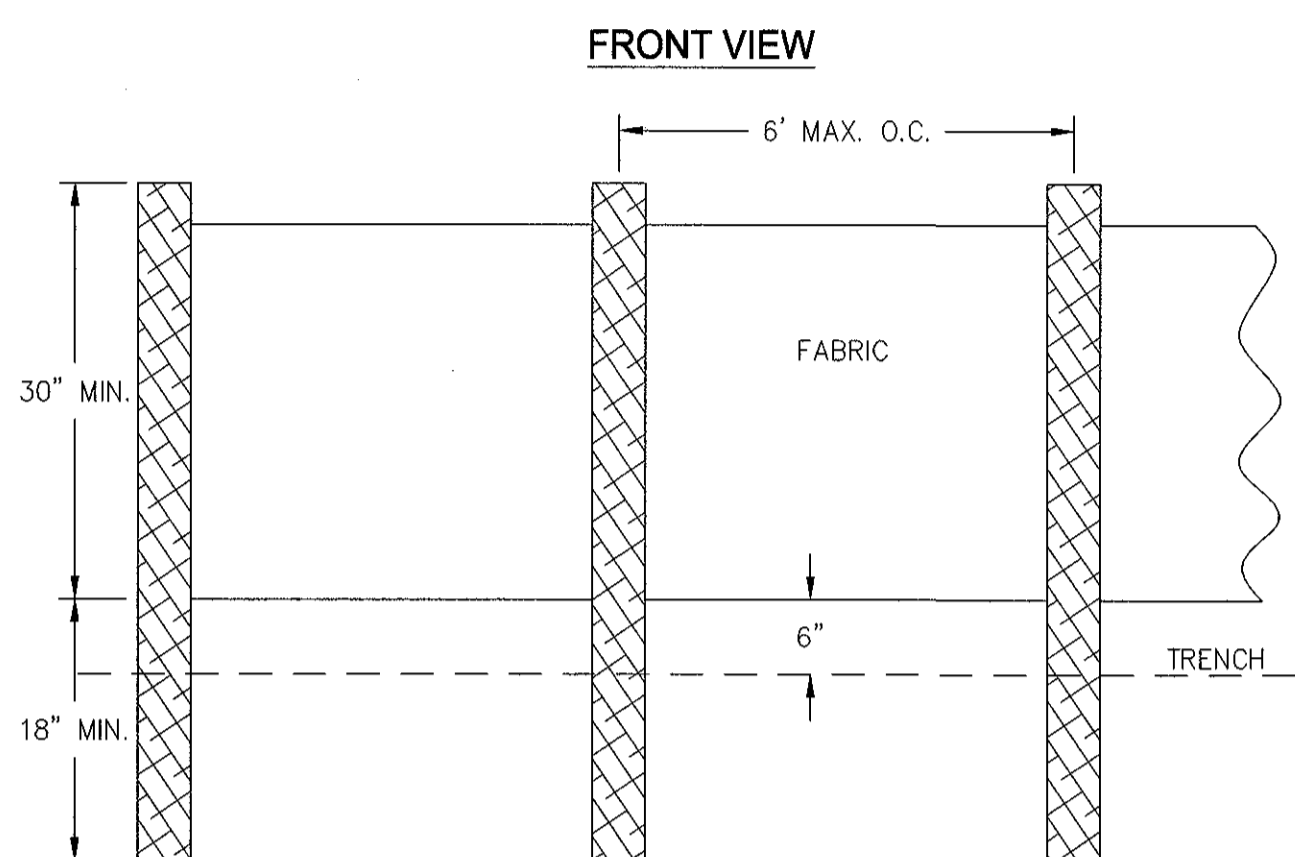
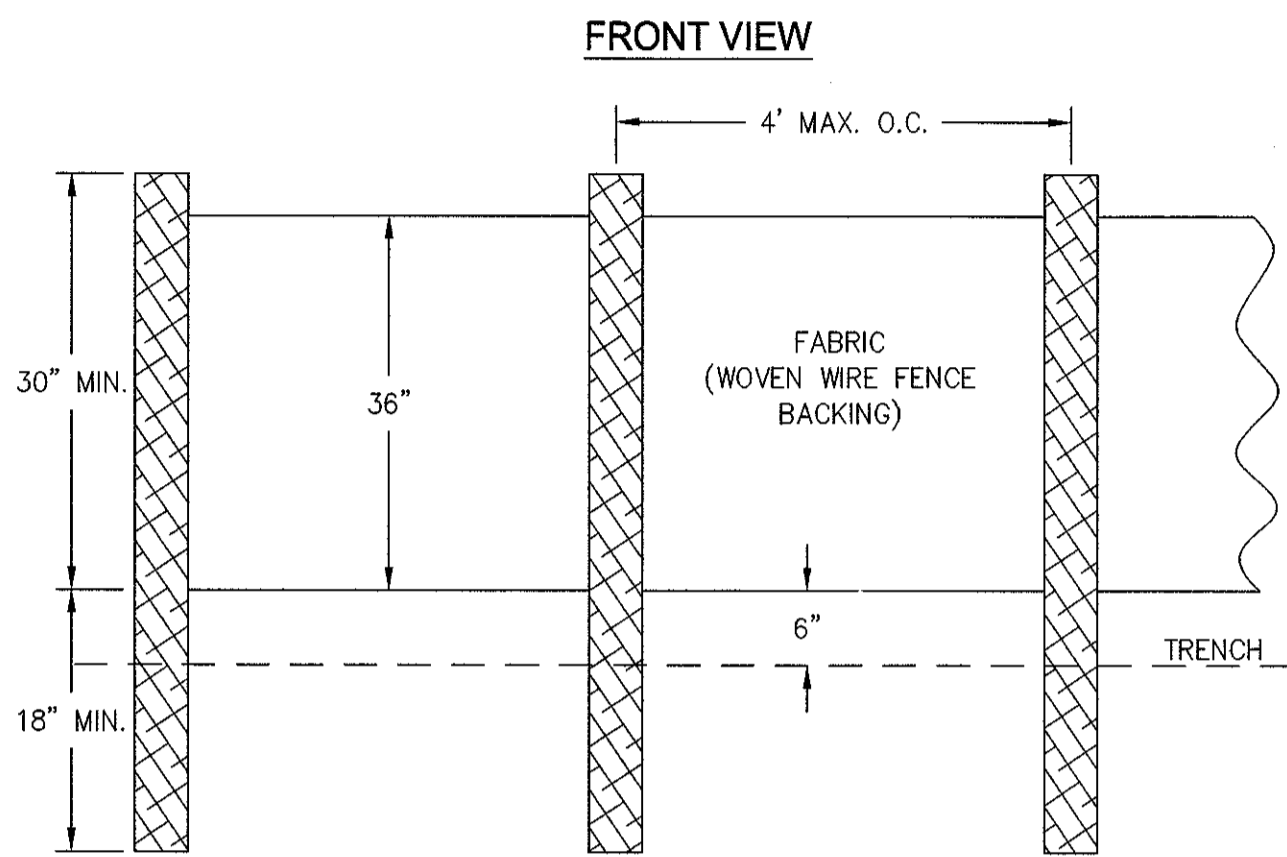
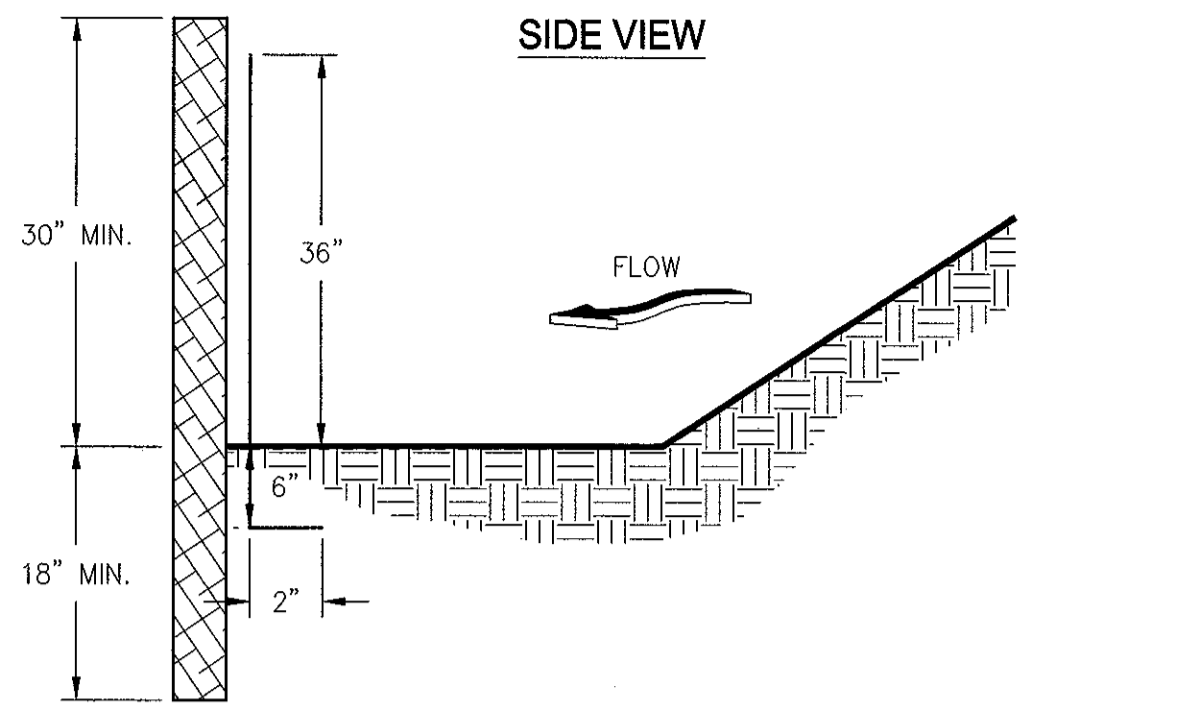
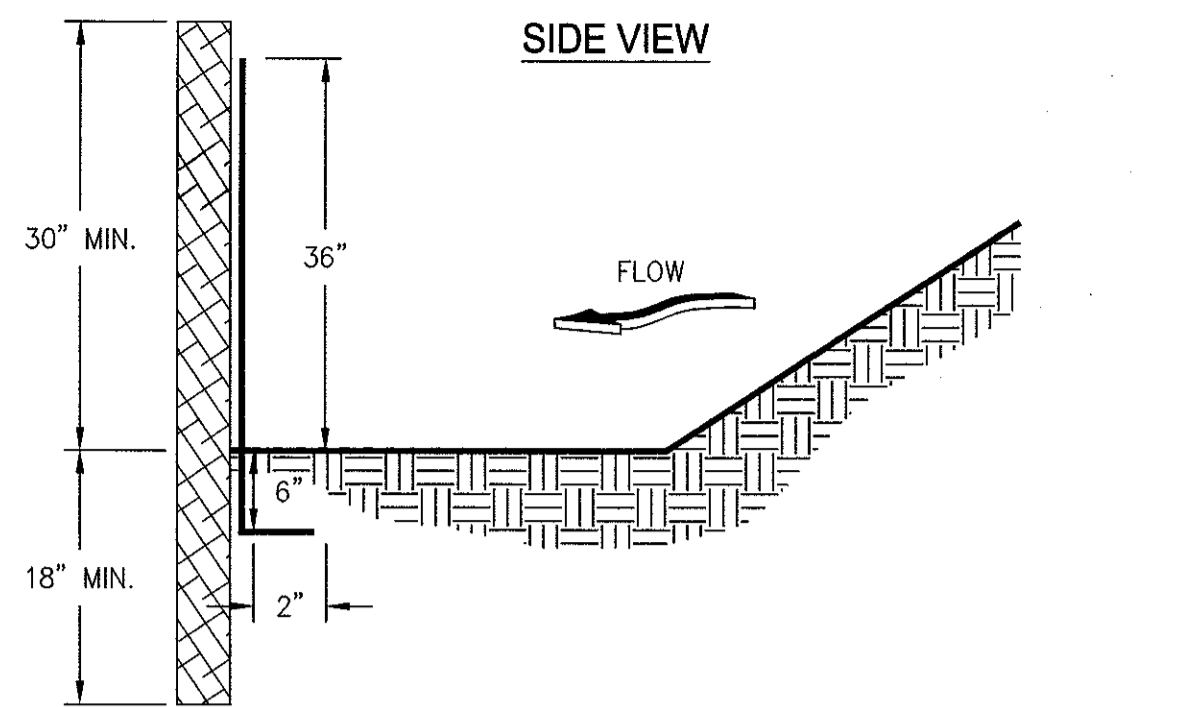
Professional Engineer seal for Alec B. Metzger, State of Georgia, No. 31412, with expiration date of 04/11/2019.

EMC ENGINEERING SERVICES, INC. logo and address information: 10 CHATHAM CENTER SOUTH DR., SUITE 300, SAVANNAH, GEORGIA 31412. Phone: (912) 232-4633, Fax: (912) 233-4650.

Vertical text on the right margin: EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES, OLD AUGUSTA ROAD UTILITY EXTENSION, 9TH G.M. DISTRICT, EFFINGHAM COUNTY, GA, Prepared for: EFFINGHAM COUNTY BOARD OF COMMISSIONERS.

Table with 2 columns: PROJECT NO., DRAWN BY, DESIGNED BY, SURVEYED BY, SURVEY DATE, CHECKED BY, SCALE, DATE. Values include 16-0004, CPR, ABM, ABM, N/A, MAY 2016.

C:\2016\PA16-0004_OLD AUGUSTA ROAD UTILITY.DWG\16-0004_C01.DWG 5/20/2016 12:22



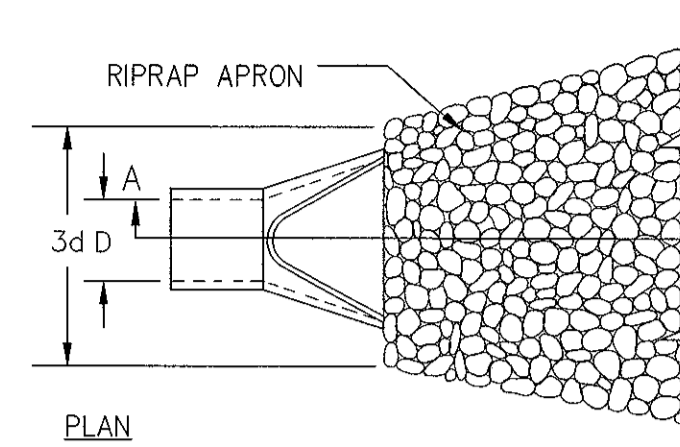
- NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
 2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

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

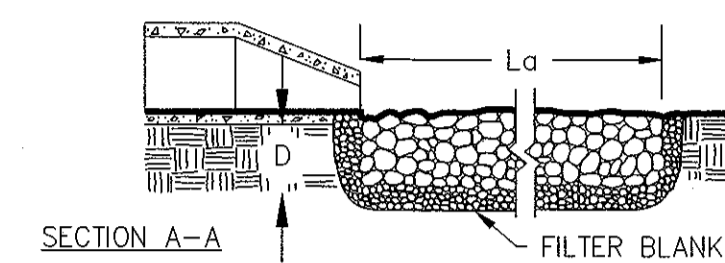
SILT FENCE - TYPE SENSITIVE
SCALE: NTS

SILT FENCE - TYPE NON-SENSITIVE
SCALE: NTS

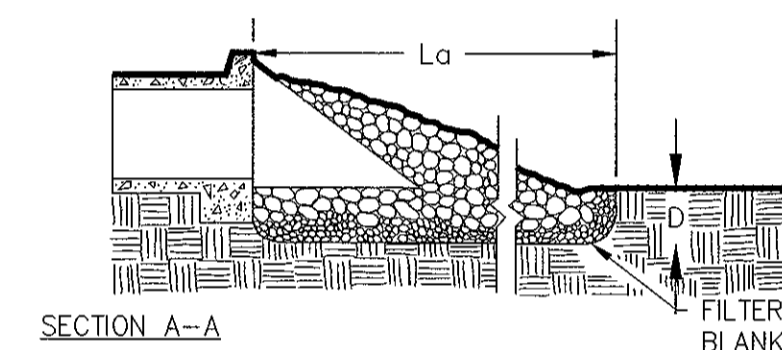
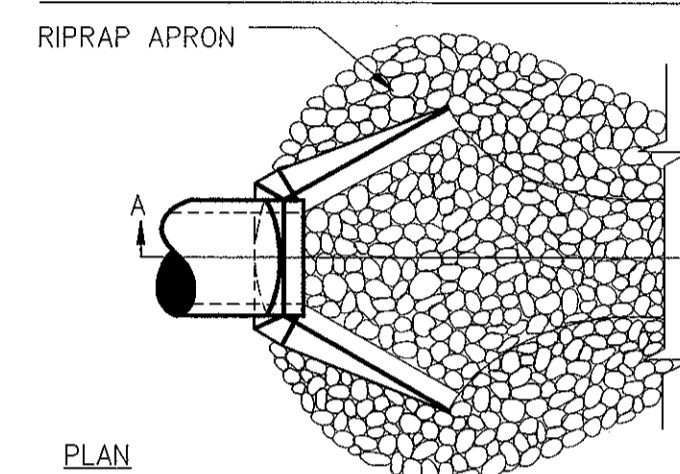
PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



- NOTES:
1. L_a IS THE LENGTH OF THE RIPRAP APRON.
 2. $D = 1.5$ TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
 3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
 4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

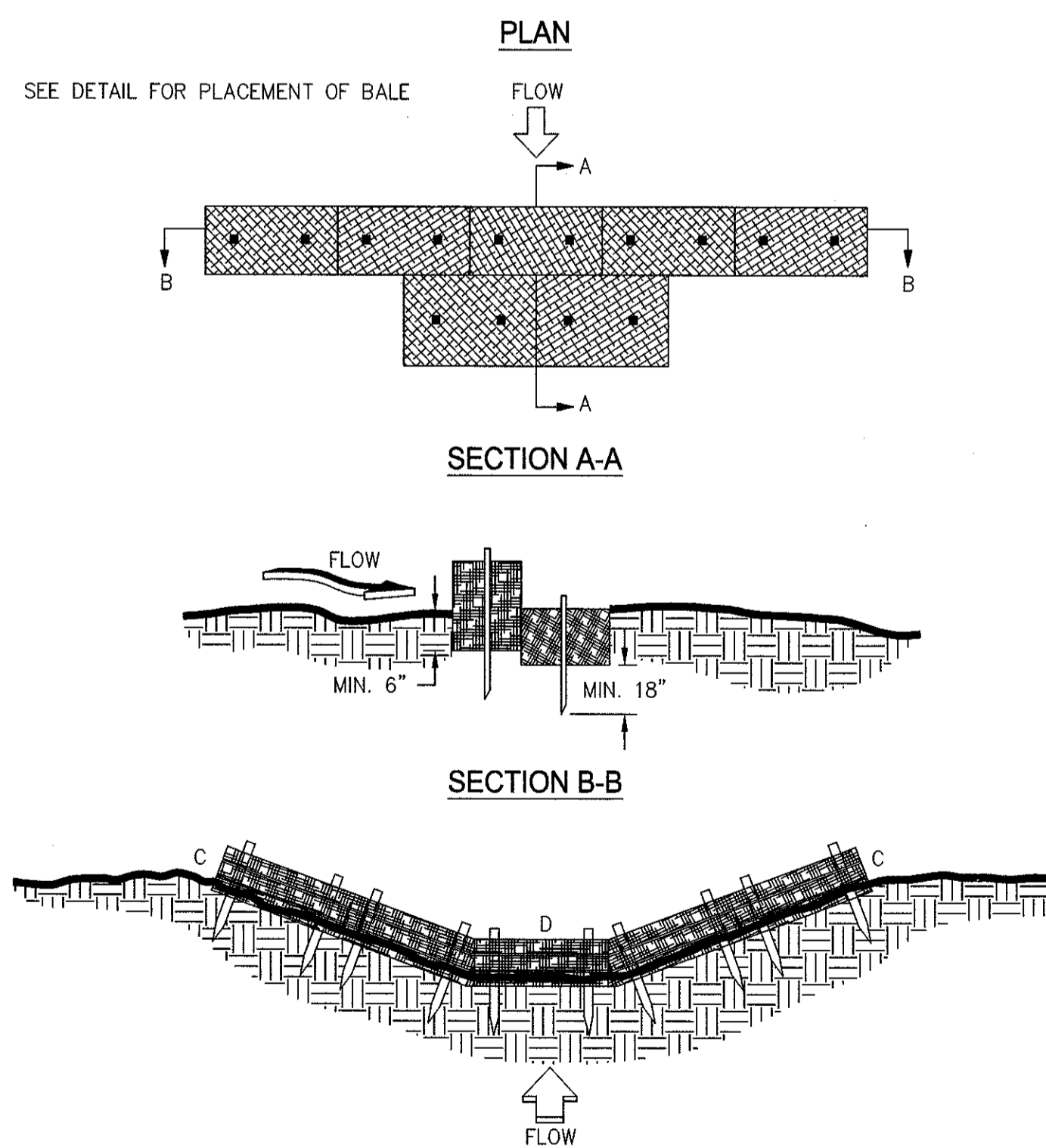


PIPE OUTLET TO WELL DEFINED CHANNEL



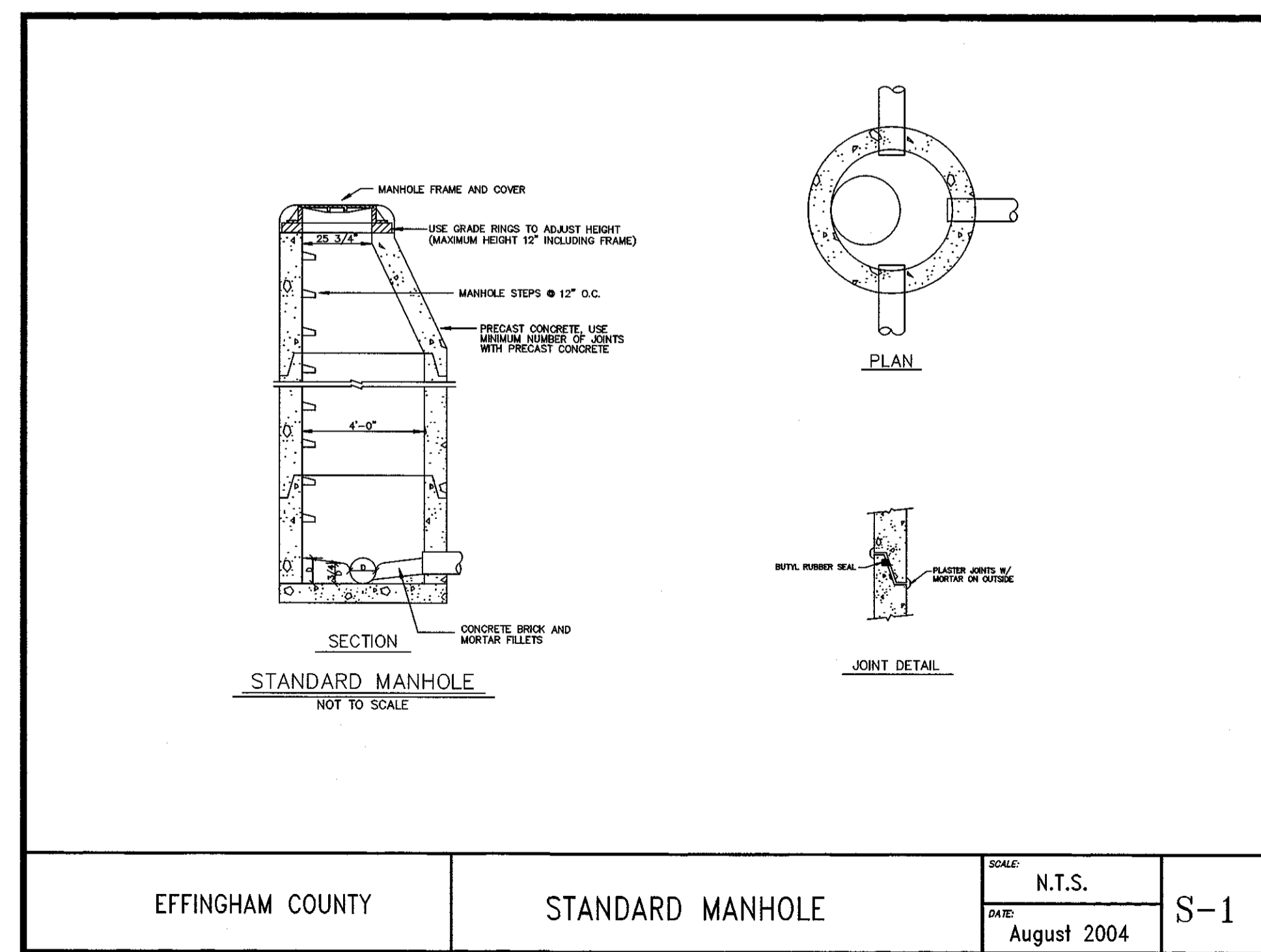
FLOW CHARACTERISTICS				OUTLET PROTECTION DIMENSIONS			
PIPE DIA.	FLOW RATE (CFS)	VELOCITY (FPS)	TAILWATER CONDITION	L_a	W1	W2	d50
24"	10.66	3.39	< 0.5 x (PIPE DIA.)	10	6.00	12.00	6"

RIP-RAP OUTLET PROTECTION
SCALE: NTS



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

TYPICAL HAY BALE CHECK DAM
SCALE: NTS



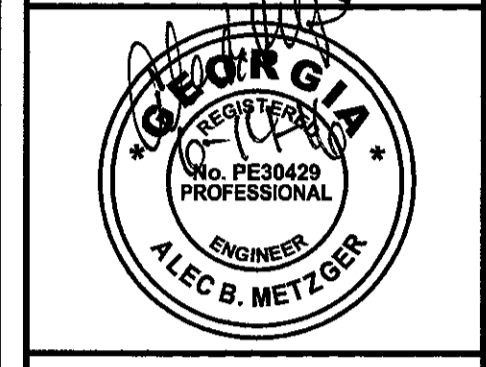
EFFINGHAM COUNTY

STANDARD MANHOLE

SCALE: N.T.S.
DATE: August 2004
S-1

NO.	REVISION DESCRIPTION	BY	DATE

GSWCC
ALEX B. METZGER
Level II Certified Design Professional
CERTIFICATION NUMBER: 0000083727
ISSUED: 04/11/2015 EXPIRES: 04/11/2018



EMC ENGINEERING SERVICES, INC.
10 GATHAM CENTER SOUTH DR.
SUITE 100 (3RD FLOOR)
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 233-4550
www.emc-eng.com

CIVIL
MARINE
ENVIRONMENTAL
SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK,
COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

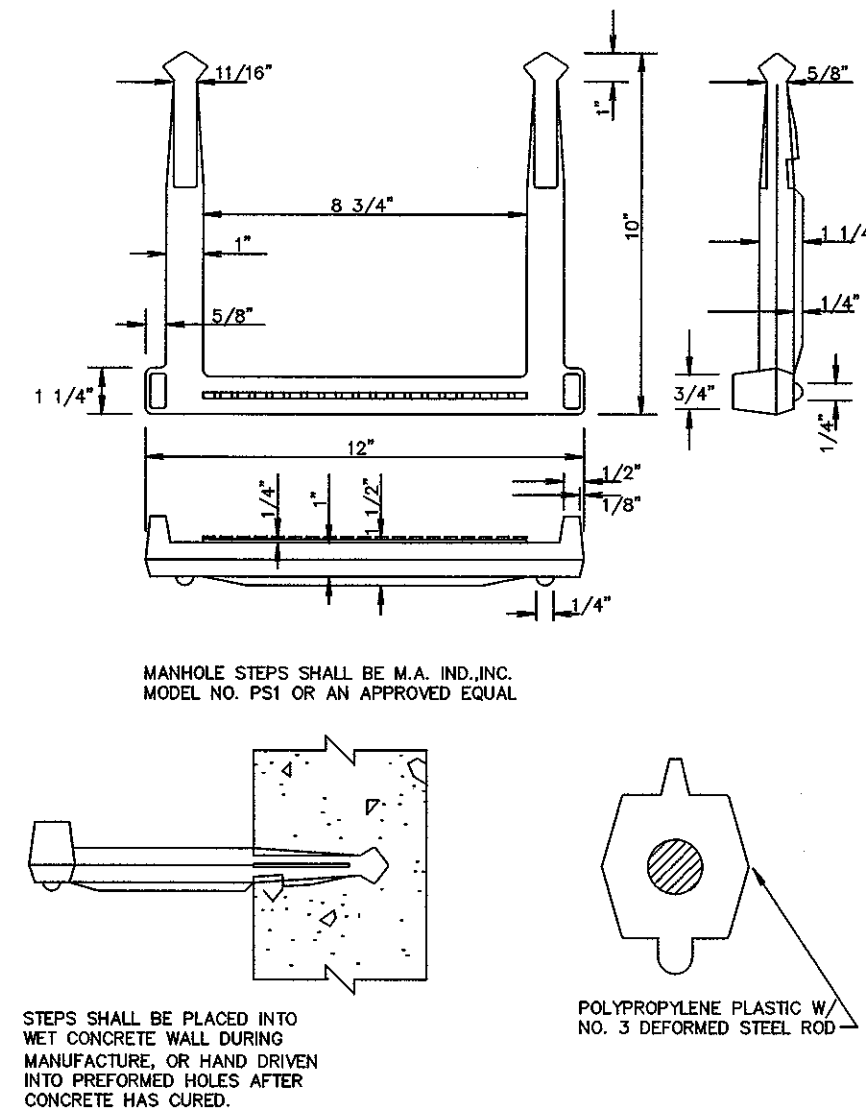
CONSTRUCTION DETAILS

OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GA
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
DRAWN BY: CPR
DESIGNED BY: ABM
SURVEYED BY:
SURVEY DATE:
CHECKED BY: ABM
SCALE: N/A
DATE: MAY 2016

SHEET
25
OF 27

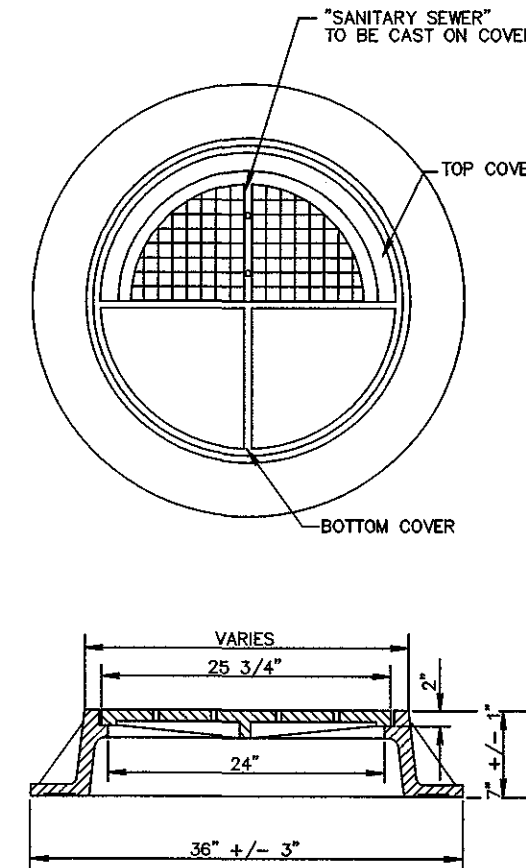
C:\2016\PA\16-0004 OLD AUGUSTA ROAD UTILITY.DWG\16-0004_001.DWG 5/20/2016 12:22



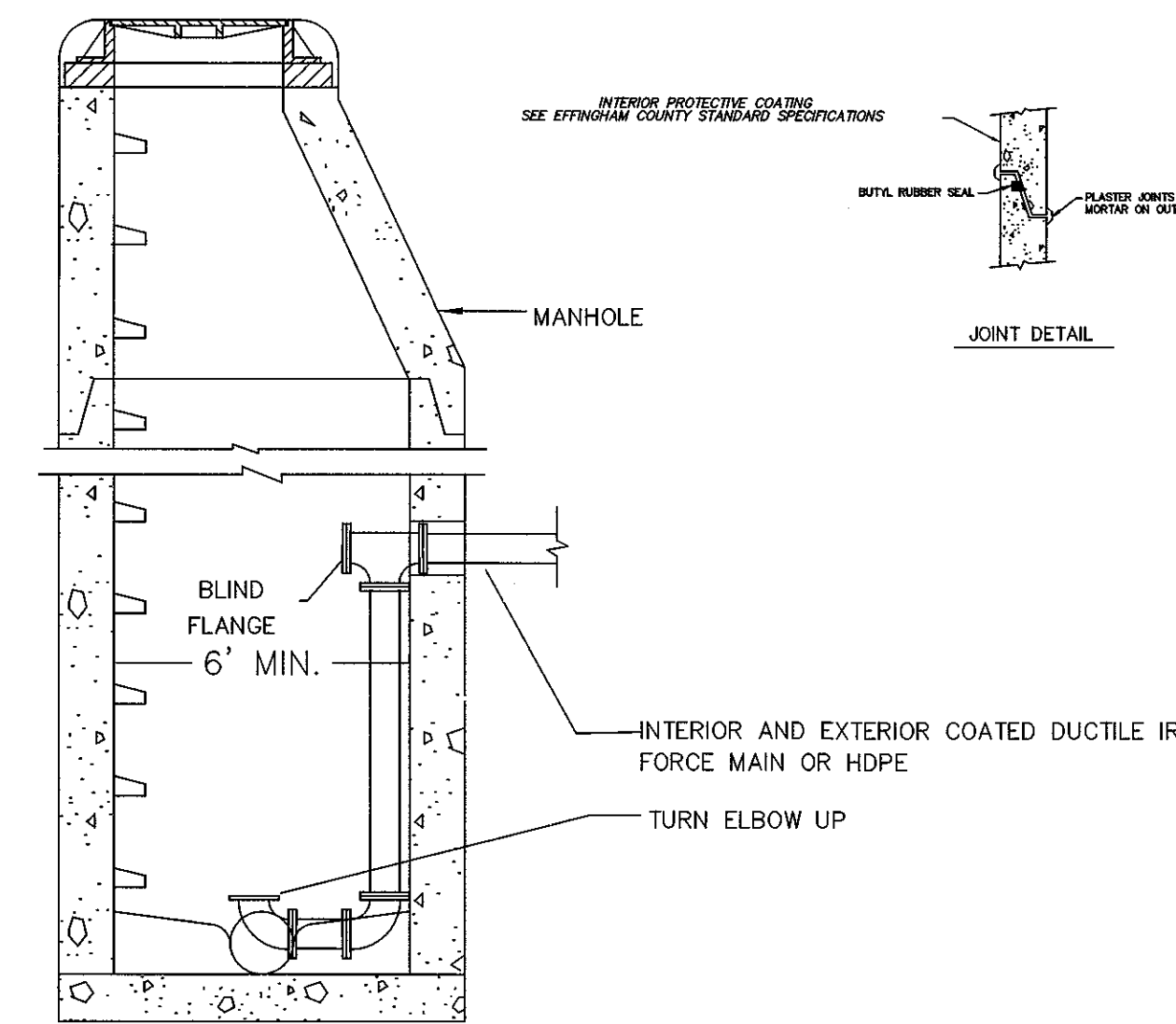
MANHOLE STEPS SHALL BE M.A. IND., INC. MODEL NO. PSI OR AN APPROVED EQUAL.

STEPS SHALL BE PLACED INTO PRECAST CONCRETE WALL DURING MANUFACTURE, OR HAND DRIVEN INTO PREFORMED HOLES AFTER CONCRETE HAS CURED.

POLYPROPYLENE PLASTIC W/ NO. 3 DEFORMED STEEL ROD



- NOTES:
1. CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE, DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOTBLASTING OR BY SOME OTHER APPROVED METHOD. CASTING SHALL NOT BE PAINTED.
 2. MATERIALS USED IN THE MANUFACTURE OF CASTINGS SHOULD CONFORM TO AASHTO M103/ASTM A48, CLASS 35B OR ASTM A48, CLASS 30, FOR GRAY IRON.
 3. ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER. ROUND FRAMES AND COVERS SHALL BE OF NON-ROCKING DESIGN, OR SHALL HAVE MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING UNDER TRAFFIC. FRAME SHALL BE SUITABLE FOR CAST IRON OR STEEL RISER RING FOR UPWARD ADJUSTMENT OF COVER. CLEAR OPENING SHALL BE 24".
 4. MANHOLE COVER SHALL BE 25-3/4" IN DIAMETER AND SHALL BE 2-INCHES THICK AT THE BEARING SURFACE.
 5. CASTINGS SHALL BE PROVIDED WITH THE INSCRIPTION "SANITARY SEWER" CAST INTO THE COVER IN LETTERING AT LEAST 2-INCHES HIGH. MANUFACTURER'S NAME, IF IT APPEARS ON THE COVER, SHALL BE CONFINED TO THE PERIPHERY.
 6. MANHOLE COVERS AND FRAMES SHALL BE USF 227, OR EQUAL AND SHALL BE THE TYPE SHOWN ON THIS DETAIL.



SECTION

EFFINGHAM COUNTY

MANHOLE STEP DETAIL

SCALE: N.T.S.
DATE: August 2004
S-2

EFFINGHAM COUNTY

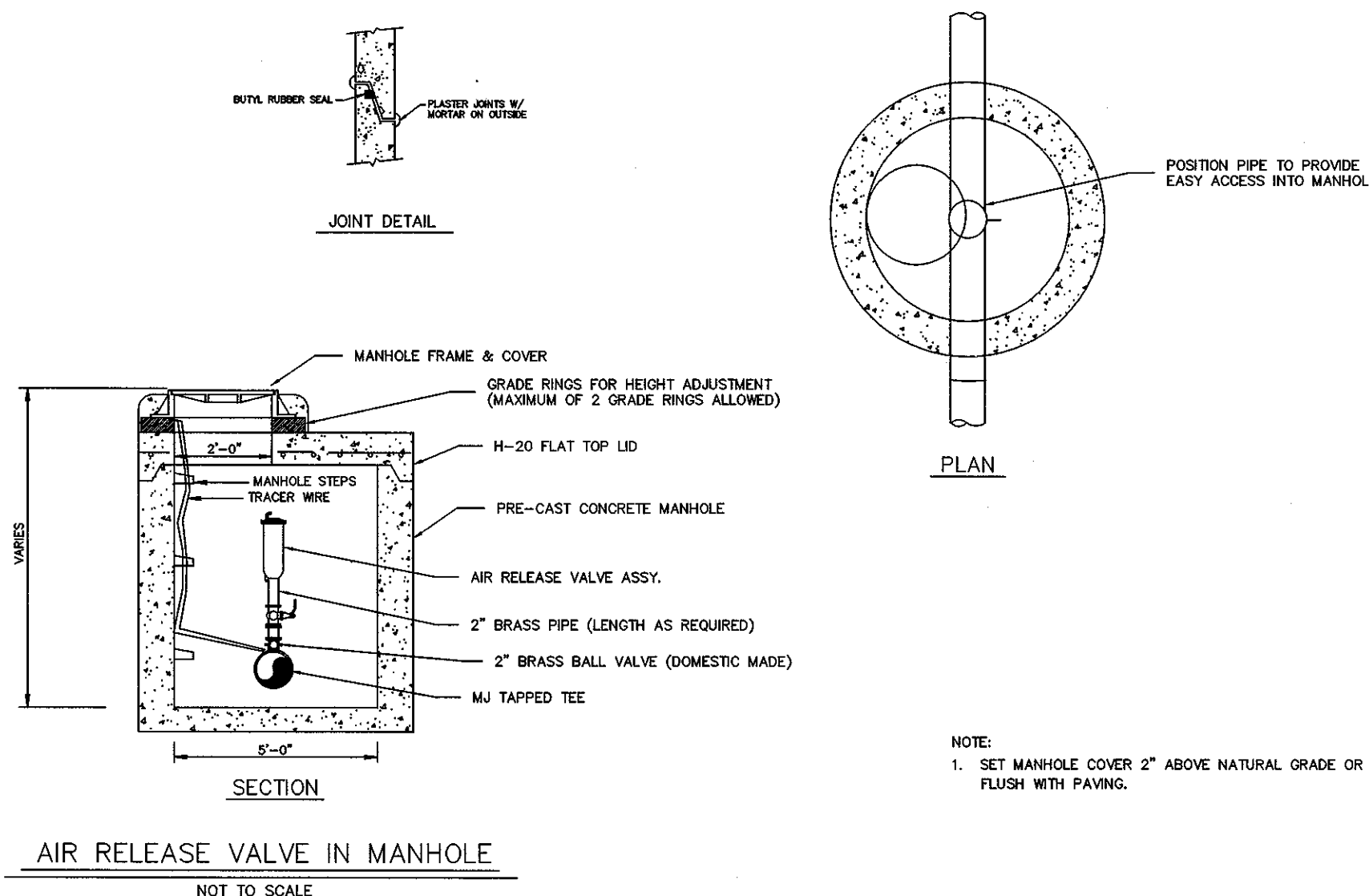
MANHOLE COVER & FRAME DETAIL

SCALE: N.T.S.
DATE: August 2004
S-3

EFFINGHAM COUNTY

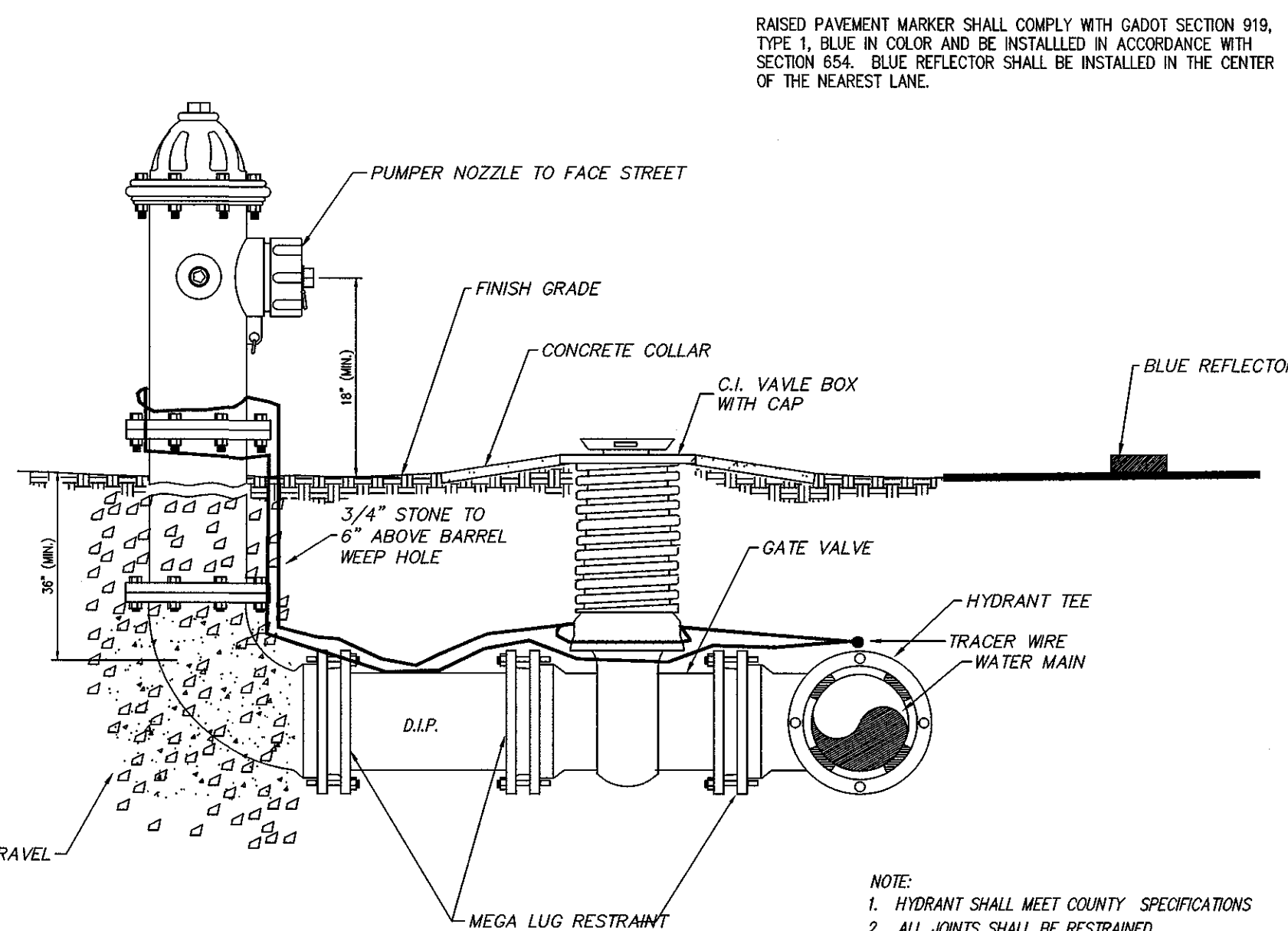
FORCEMAIN DROP INTO MANHOLE

SCALE: N.T.S.
DATE: August 2004
S-4



- NOTE:
1. SET MANHOLE COVER 2" ABOVE NATURAL GRADE OR FLUSH WITH PAVING.

AIR RELEASE VALVE IN MANHOLE
NOT TO SCALE

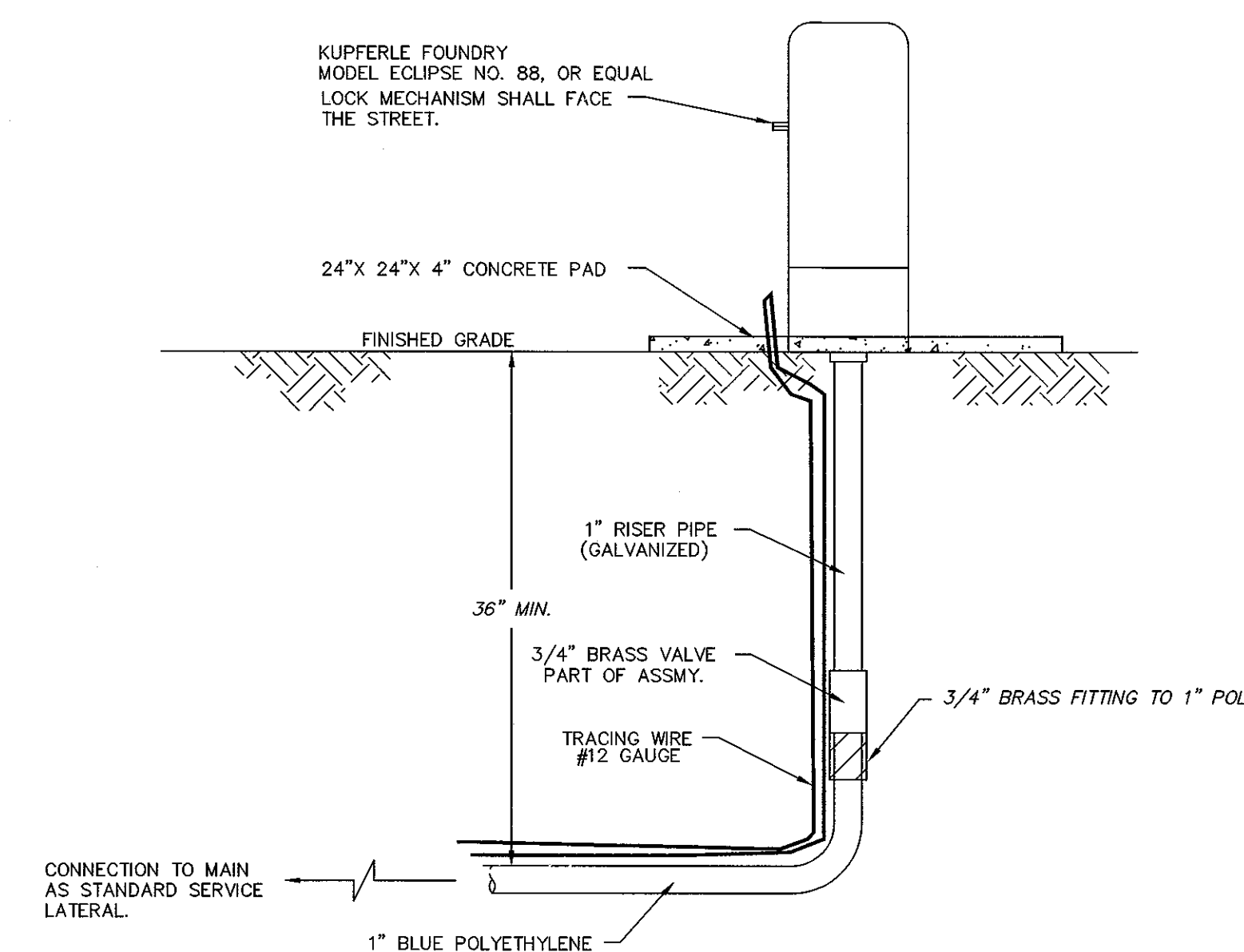


- NOTE:
1. HYDRANT SHALL MEET COUNTY SPECIFICATIONS
 2. ALL JOINTS SHALL BE RESTRAINED.

EFFINGHAM COUNTY

FIRE HYDRANT DETAIL

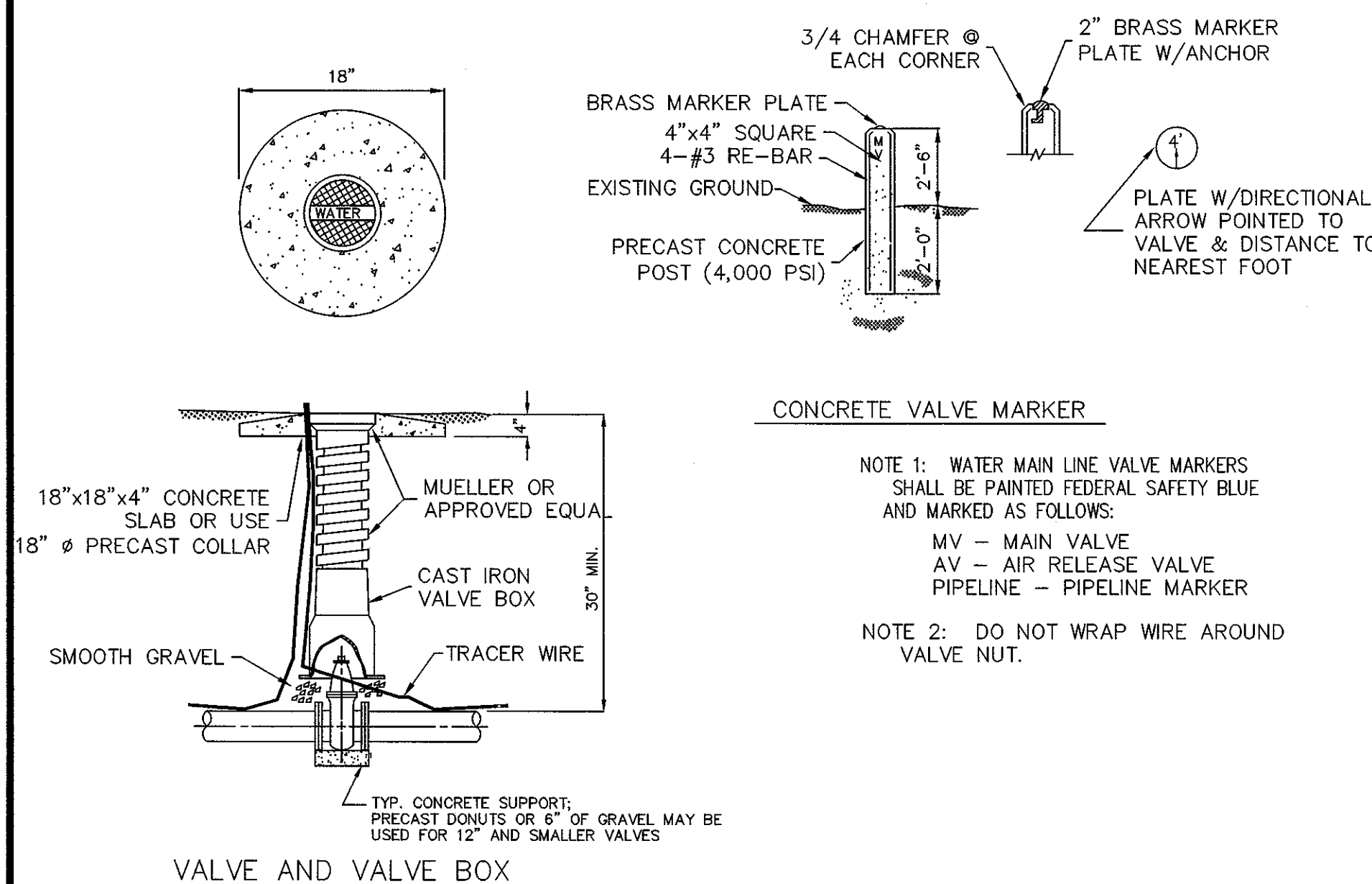
SCALE: N.T.S.
DATE: August 2004
W-3



EFFINGHAM COUNTY

PERMANENT SAMPLING STATION

SCALE: N.T.S.
DATE: August 2004
W-11



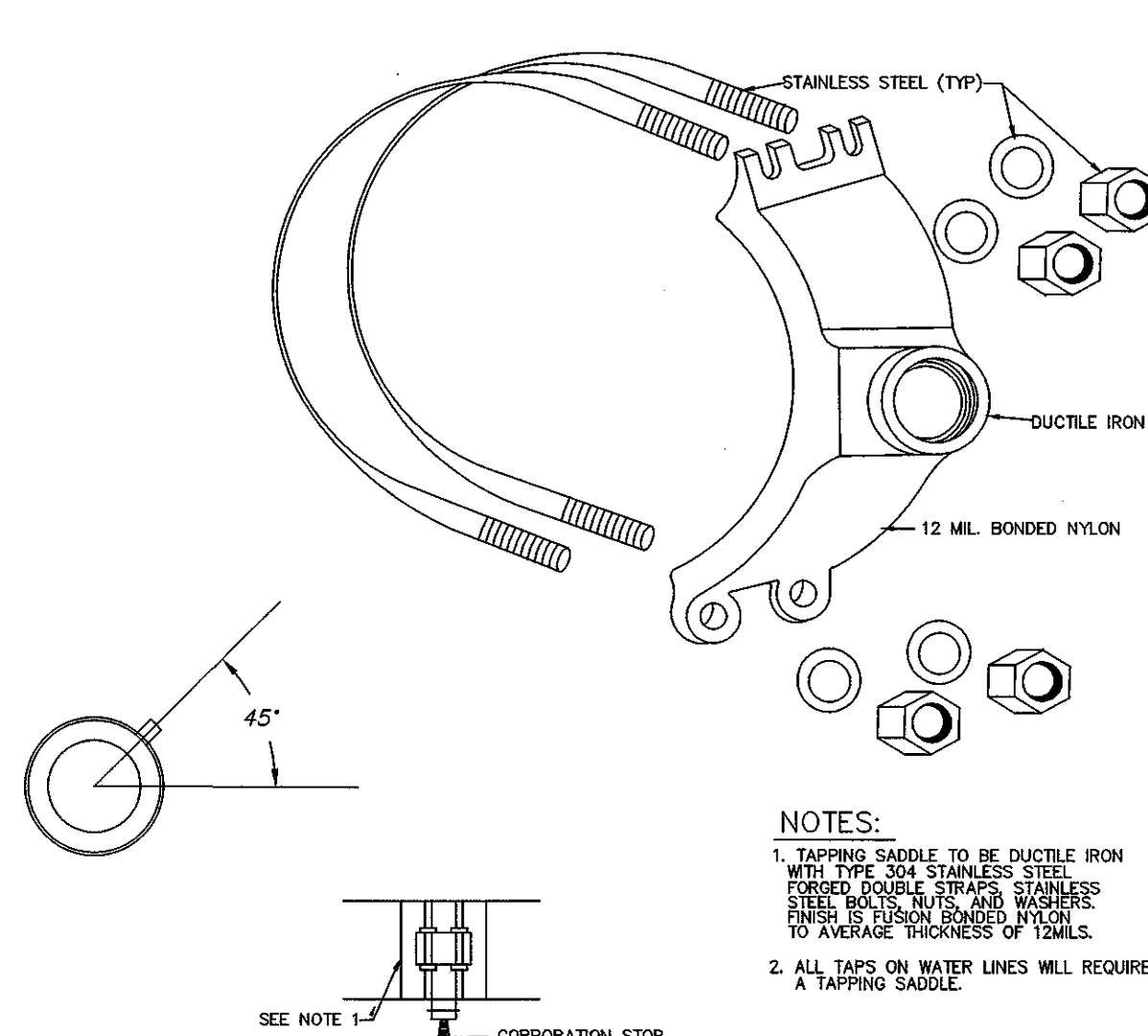
- NOTE 1: WATER MAIN LINE VALVE MARKERS SHALL BE PAINTED FEDERAL SAFETY BLUE AND MARKED AS FOLLOWS:
MV - MAIN VALVE
AV - AIR RELEASE VALVE
PIPELINE - PIPELINE MARKER
- NOTE 2: DO NOT WRAP WIRE AROUND VALVE NUT.

VALVE AND VALVE BOX

EFFINGHAM COUNTY

VALVE DETAIL

SCALE: N.T.S.
DATE: August 2004
W-2

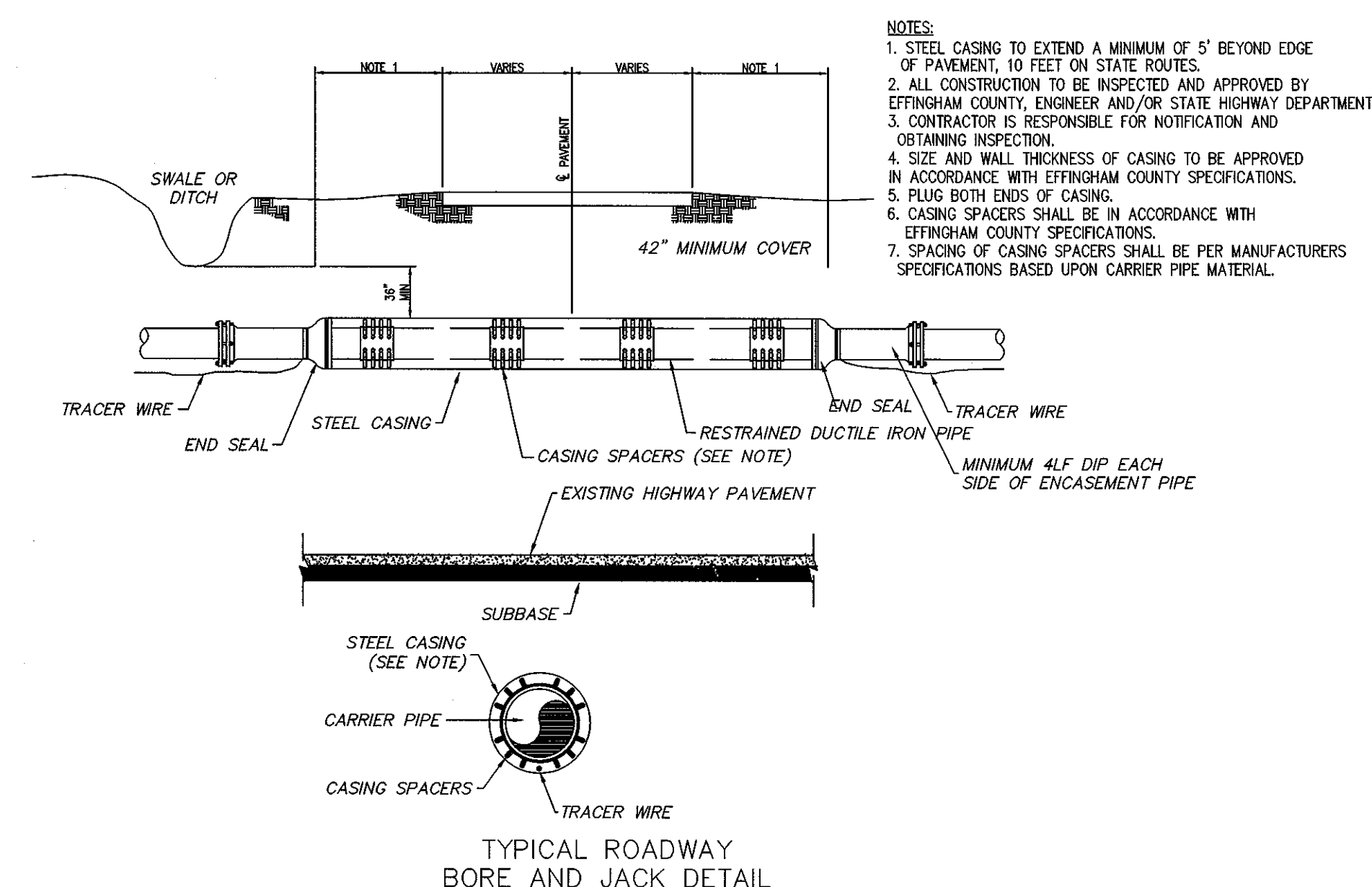


- NOTES:
1. TAPPING SADDLE TO BE DUCTILE IRON WITH TYPE 304 STAINLESS STEEL FIBERED DOUBLE STRAPS STAINLESS STEEL BOLTS, NUTS, AND WASHERS TO AVERAGE THICKNESS OF 1/2" MIN.
 2. ALL TAPS ON WATER LINES WILL REQUIRE A TAPPING SADDLE.

EFFINGHAM COUNTY

1" & 2" TAPPING SADDLE

SCALE: N.T.S.
DATE: August 2004
W-8

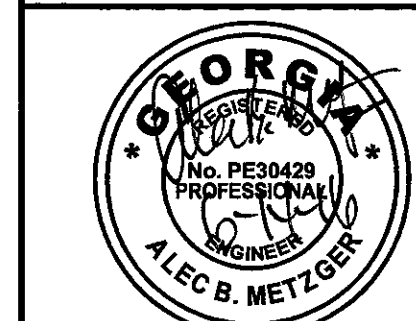


TYPICAL ROADWAY BORE AND JACK DETAIL

EFFINGHAM COUNTY

JACK AND BORE DETAIL (WATER SYSTEM ONLY)

SCALE: N.T.S.
DATE: August 2004
W-6



EMC ENGINEERING SERVICES, INC.
10 CHATHAM CENTER SOUTH DR.
POST OFFICE BOX 8101
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 233-4680
www.emc-eng.com

CIVIL ENGINEER
MARINE ENVIRONMENTAL SURVEY

ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH, STATESBORO & VALDOSTA

CONSTRUCTION DETAILS

OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GA

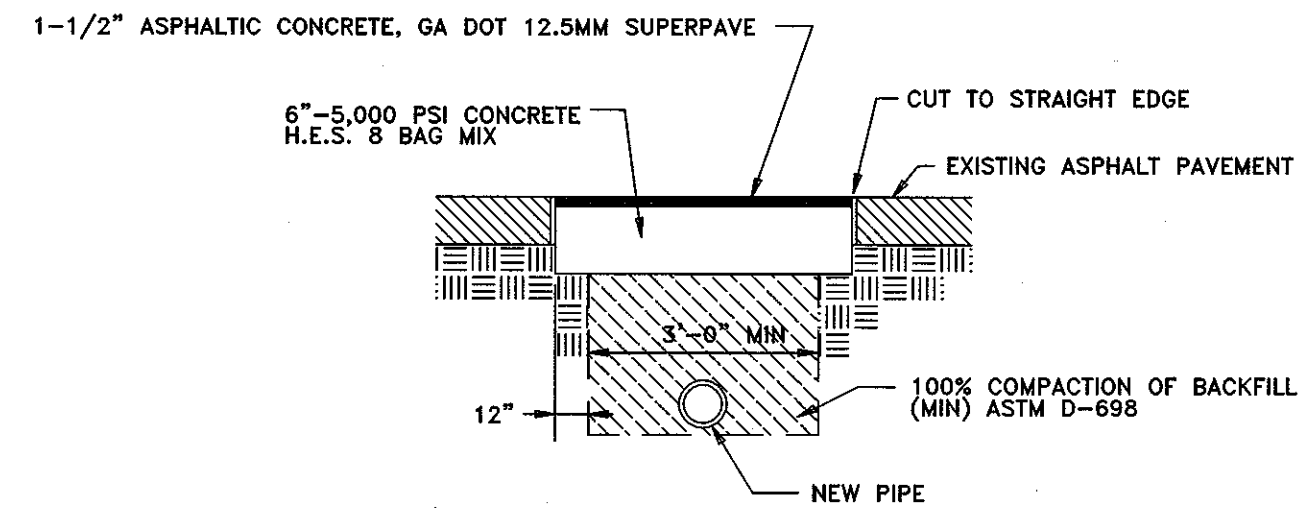
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
DRAWN BY: CPR
DESIGNED BY: ABM
SURVEYED BY:
SURVEY DATE:
CHECKED BY: ABM
SCALE: N/A
DATE: MAY 2016

SHEET
26
OF 27

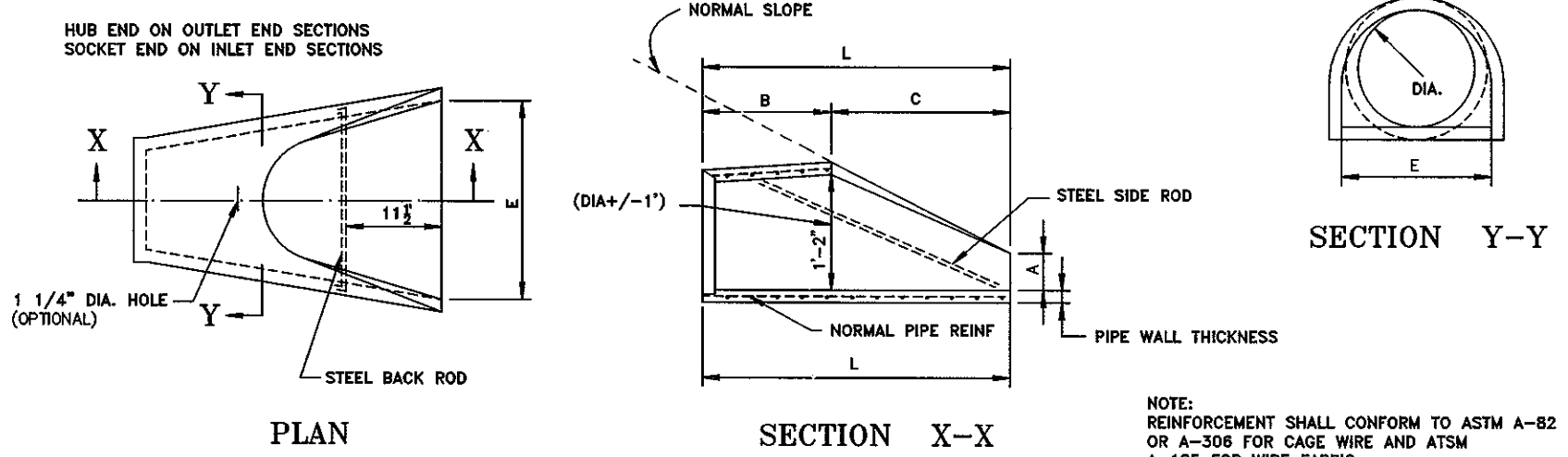
G:\2016\F\16-0004 OLD AUGUSTA ROAD UTILITY.DWG\16-0004_C01.DWG 5/20/2016 12:22

NOTE:
ALL LATERAL STREET CUTS MUST BE COVERED WITH STEEL PLATES OF SUFFICIENT THICKNESS TO SPAN THE CUT WITHOUT NOTICEABLE DEFLECTION. PLATES TO REMAIN IN PLACE UNTIL THE CONCRETE BASE HAS GAINED SUFFICIENT STRENGTH TO WITHSTAND TRAFFIC LOADS (24 HOURS MINIMUM).

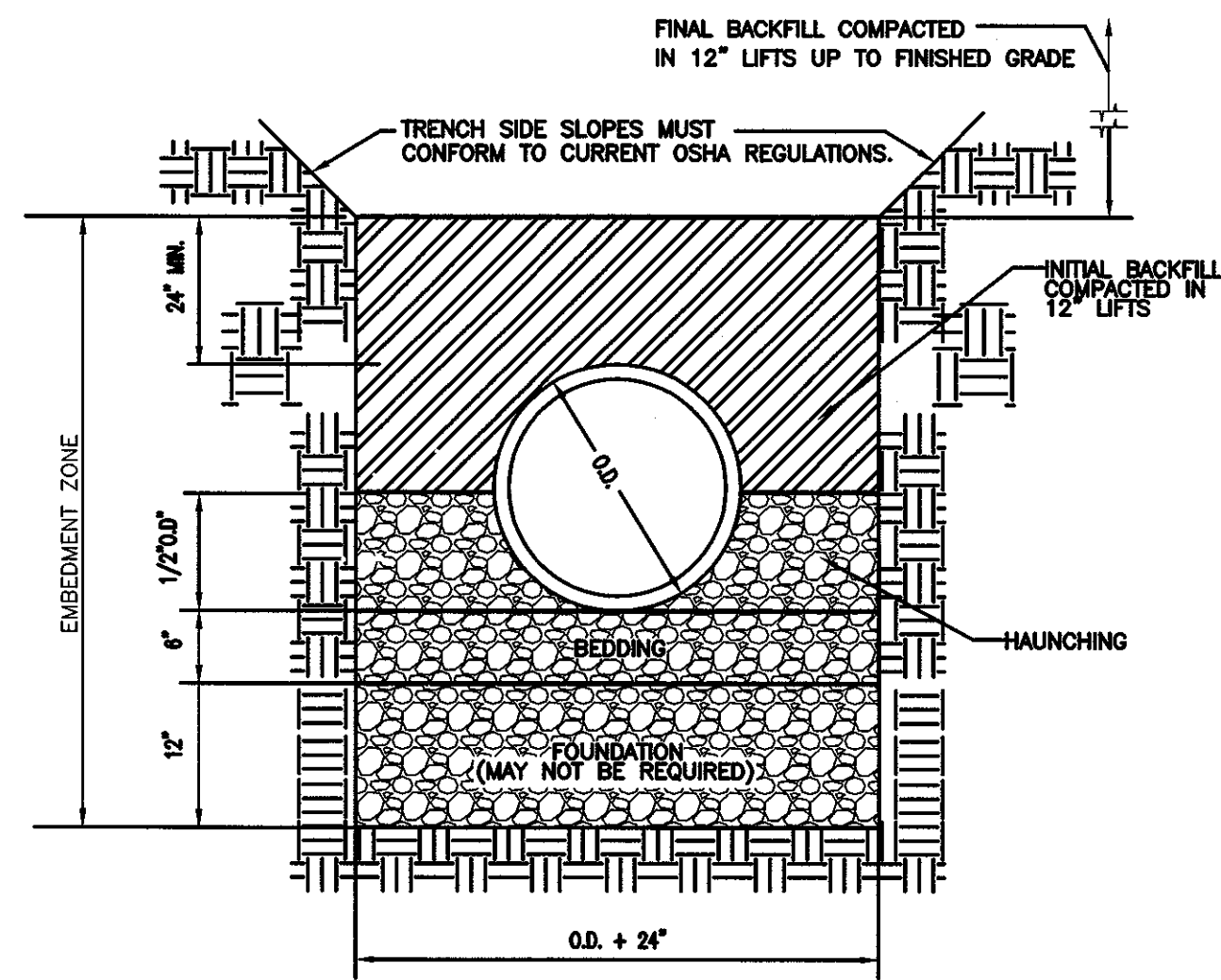


EFFINGHAM COUNTY	PAVEMENT REPLACEMENT	SCALE: N.T.S.	P-13
		DATE: August 2004	

FLARE REINFORCEMENT & DIMENSIONS (+/-1" TOLERANCE)									
PIPE DIA.	SIZE RODS	BACK RODS	FABRIC	SLOPE	A	B	C	L	E
12"	2-3x2 1/2"	NOT REQ'D	2"x8"/8"	2.2:1	4"	2'0"	4'1"	6'1"	2'0"
15"	2-3x2 1/4"	NOT REQ'D	2"x8"/8"	2.2:1	6"	2'3"	3'10"	6'1"	2'6"
18"	2-3x3"	NOT REQ'D	2"x8"/8"	2.2:1	9"	2'3"	3'10"	6'1"	3'0"
24"	2-3x5'0"	NOT REQ'D	2"x8"/8"	2.4:1	10"	3'8"	2'6"	6'2"	4'0"
30"	2-4x5'2"	NOT REQ'D	2"x8"/8"	2.4:1	12"	4'6"	1'8"	6'2"	5'0"
36"	2-4x7'5"	NOT REQ'D	2"x8"/8"	2.4:1	15"	5'3"	2'11"	6'2"	6'0"
42"	2-4x8'7"	NOT REQ'D	2"x8"/8"	2.4:1	21"	5'3"	2'11"	6'2"	6'6"



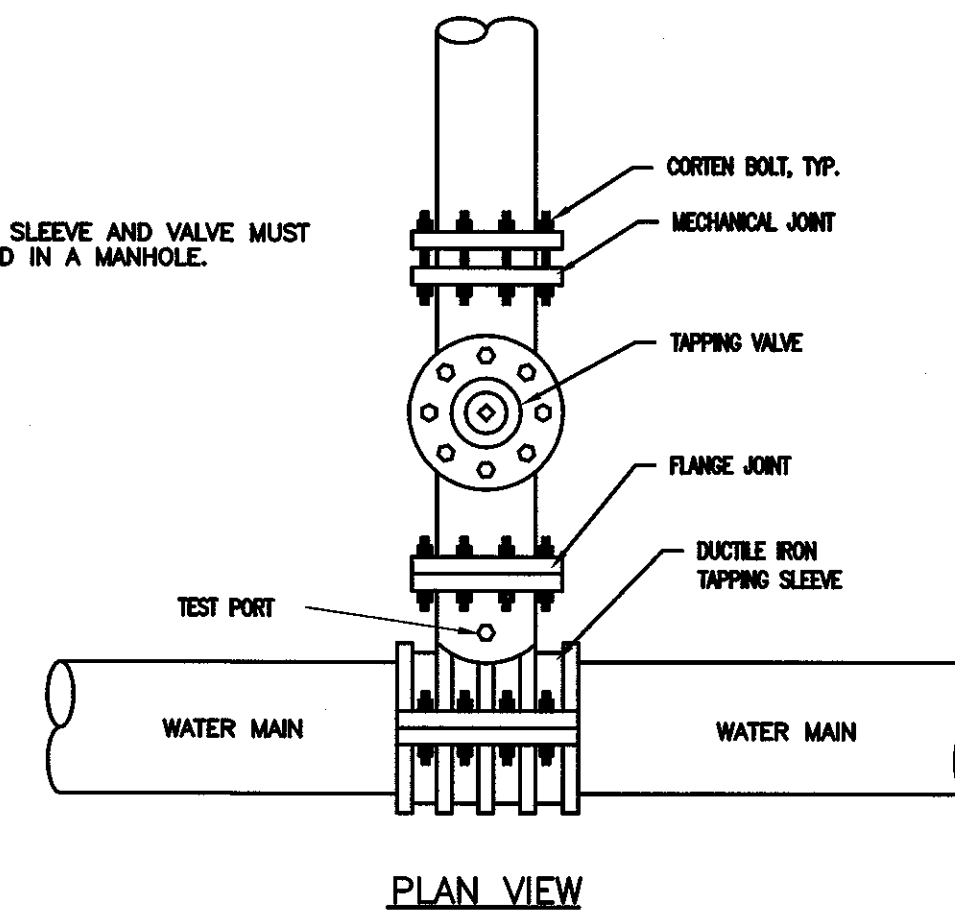
EFFINGHAM COUNTY	FLARED END SECTION DETAIL	SCALE: N.T.S.	P-33
		DATE: August 2004	



- NOTES:
- FOUNDATION, BEDDING AND HAUNCHING SHALL BE #57 STONE.
 - INITIAL BACKFILL FOR GRAVITY SEWER SHALL BE CLASS II OR BETTER SELECT COMMON FILL.
 - INITIAL BACKFILL FOR SANITARY FORCEMAIN SHALL BE CLASS III OR BETTER SELECT COMMON FILL.
 - FINAL BACKFILL SHALL BE CLASS III OR BETTER COMMON FILL.
 - SEE CITY OF SAVANNAH STANDARD SPECIFICATIONS SECTION 02554 PART 2.11 FOR MORE DETAILS.

STANDARD PIPE BEDDING DETAIL
SCALE: NTS

NOTE:
1. THE TAPPING SLEEVE AND VALVE MUST BE INSTALLED IN A MANHOLE.



TAPPING SLEEVE DETAIL
SCALE: NTS



EMC ENGINEERING SERVICES, INC.
10 CHATHAM CENTER SOUTH DR.
POST OFFICE BOX 8101
SAVANNAH, GEORGIA 31412
PHONE: (912) 232-6533
FAX: (912) 232-6580
www.emc-eng.com

CIVIL MARINE ENVIRONMENTAL SURVEY
ALBANY, ATLANTA, AUGUSTA, BRUNSWICK, COLUMBUS, SAVANNAH STATESBORO & VALDOSTA

CONSTRUCTION DETAILS
OLD AUGUSTA ROAD UTILITY EXTENSION
9TH G.M. DISTRICT
EFFINGHAM COUNTY, GA
Prepared for:
EFFINGHAM COUNTY BOARD OF COMMISSIONERS

PROJECT NO.: 16-0004
DRAWN BY: CPR
DESIGNED BY: ABM
SURVEYED BY:
SURVEY DATE:
CHECKED BY: ABM
SCALE: N/A
DATE: MAY 2016

SHEET
27
OF 27

Addendum No.1
ITB No 17-002 - Old Augusta Rd - Water Sewer Extension - Construction

All other terms and conditions in ITB 17-002 remain unchanged.

Effingham County reserves the right to reject any and all proposals, to waive any technicalities or irregularities and to award the offer based upon the most responsive, responsible submission.

Please sign receipt of this Addendum No. 1 below:

Print Name

Signature

Date

END OF ADDENDUM NO. 1