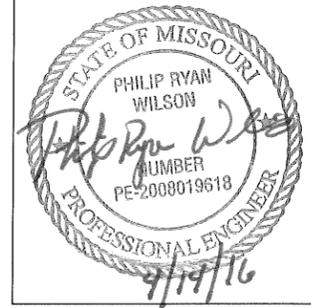




MISSOURI DEPARTMENT OF TRANSPORTATION SEWER IMPROVEMENTS SAVANNAH, MISSOURI

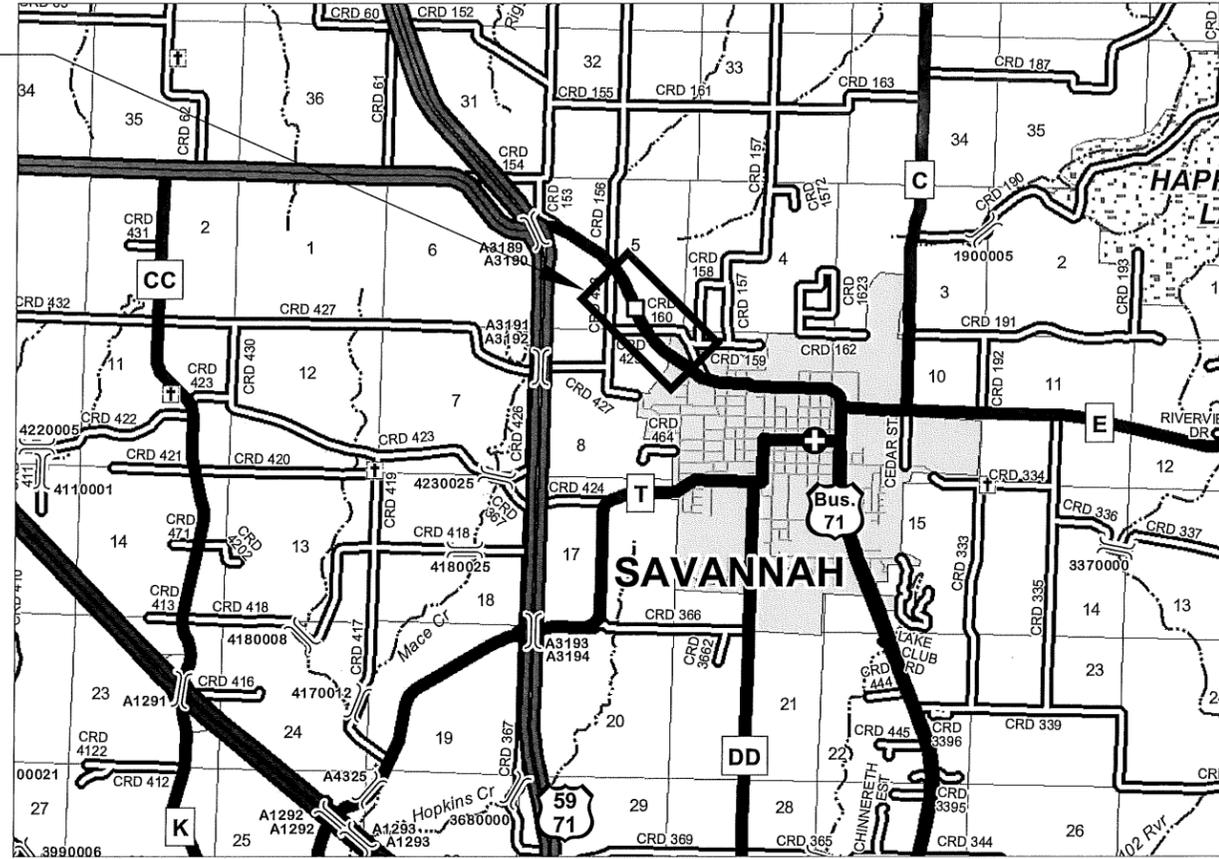
T59N, R35W, SECTIONS 5,8



PROJECT LOCATION

GENERAL NOTES

1. THE COMPLETED PUMP STATION AND FORCEMAIN SHALL BE OWNED AND MAINTAINED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
2. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE LOCAL, STATE AND FEDERAL REQUIREMENTS.
3. ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER; HOWEVER, ALL UTILITIES ACTUALLY EXISTING MAY NOT BE SHOWN. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF SAME SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
4. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS, PRIOR TO BEGINNING CONSTRUCTION ON THIS PROJECT.
5. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE UTILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION.
6. CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF UNDERTAKEN UNTIL ALL REQUIRED AND PROPERLY EXECUTED BONDS AND PERMIT FEES ARE RECEIVED AND APPROVED BY THE OWNER/INSTALLER.
7. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS AND ONE (1) COPY OF THE APPROPRIATE CONSTRUCTION SPECIFICATIONS AND PROJECT MANUAL AT THE JOB SITE AT ALL TIMES.
8. LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS.
9. RELOCATION OF ANY WATER LINE, SEWER LINE OR SERVICE LINE THEREOF REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. SILTATION AND EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE DISTURBANCE OF THE GROUND.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BERMS, SILT FENCES, STRAW BALES, OR OTHER MEANS TO PREVENT EROSION FROM REACHING THE PUBLIC RIGHT-OF-WAY. IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY DEBRIS AND EROSION AND RESTORE THE RIGHT-OF-WAY TO ORIGINAL OR BETTER CONDITION.
12. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
13. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE.
14. BY USE OF THESE PLANS, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL AREAS THAT THEY OR THEIR SUBCONTRACTORS DISTURB, BOTH WITHIN AND BEYOND THE PROJECT LIMITS. THESE AREAS SHALL BE RESTORED, SEEDED AND MULCHED TO A STATE THAT IS EQUAL TO OR BETTER THAN THE PRIOR CONDITION. THE CONTRACTOR SHALL BEAR THE RELATED EXPENSES, UNLESS DENOTED OTHERWISE WITHIN THE CONTRACT DOCUMENTS.
15. ALL EXISTING FENCES REMOVED DURING CONSTRUCTION SHALL BE REPLACED AT THE SAME LOCATION AFTER CONSTRUCTION IS COMPLETE. MATERIALS AND CONSTRUCTION OF NEW FENCES SHALL MATCH THE EXISTING FENCES.
16. SEED AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION. ALL EXISTING GRAVEL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESURFACED WITH 4 INCHES MINIMUM ROAD AGGREGATE MATERIAL WHEN CONSTRUCTION IS COMPLETE.
17. PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
18. ALL EXCAVATION SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
19. SUBGRADE SOIL FOR ALL CONCRETE STRUCTURES, REGARDLESS OF THE TYPE OR LOCATION, SHALL BE FIRM, DENSE AND THOROUGHLY COMPACTED AND CONSOLIDATED; SHALL BE FREE FROM MUCK AND MUD; AND SHALL BE SUFFICIENTLY STABLE TO REMAIN FIRM AND INTACT UNDER THE FEET OF THE WORKMEN OR MACHINERY ENGAGED IN SUBGRADE SURFACING, LAYING REINFORCING STEEL, AND DEPOSITING CONCRETE THEREON. IN ALL CASES WHERE SUBSOIL IS MUCKY OR WORKS INTO MUD OR MUCK DURING SUCH OPERATION, A SEAL COURSE OF EITHER CONCRETE OR ROCK SHALL BE PLACED BELOW SUBGRADE TO PROVIDE A FIRM BASE FOR WORKING AND FOR PLACING STRUCTURES.
20. PROPERTY PINS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY A LICENSED SURVEYOR AT CONTRACTOR EXPENSE.
21. AT PLACES WHERE THE EXCAVATION INTERSECTS WITH EXISTING GAS LINES, THE CONTRACTOR SHALL NOTIFY THE OWNER SO THE GAS LINE CAN BE INSPECTED BEFORE BACK FILLING. THE TRENCH BACKFILL SHALL BE HAND COMPACTED FOR THREE FEET IN EITHER DIRECTION TO AN ELEVATION OF 1 FOOT ABOVE THE GAS LINE. BACK FILL WITH SELECT EXCAVATED MATERIAL.
22. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SAFETY OF THE CONSTRUCTION WORKERS AND THE PUBLIC. THE GENERAL CONTRACTOR(S) AND SUBCONTRACTOR(S) ARE REQUIRED TO COMPLY WITH OSHA SAFETY RULES AS APPLICABLE TO THE SAFETY OF PERSONNEL, PROTECTION OF PROPERTY, AND WEARING OF PROTECTIVE EQUIPMENT. ALL WORKERS SHALL HAVE COMPLETED THE 10 HOUR OSHA SAFETY COURSE.
23. DIMENSIONS SHOWN FOR EQUIPMENT ARE APPROXIMATE AND MAY VARY DEPENDING ON MANUFACTURER SELECTED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH EQUIPMENT MANUFACTURER PRIOR TO CONSTRUCTION OF THE RELATED STRUCTURE.
24. NOTE THAT NO REPORTS OF EXPLORATIONS OR TESTS OF SUBSURFACE CONDITIONS AT THE SITE (E.G. GEOTECHNICAL REPORTS), OR DRAWINGS OF PHYSICAL CONDITIONS RELATING TO EXISTING SURFACE OR SUBSURFACE STRUCTURES AT THE SITE, ARE KNOWN TO OWNER.



PROJECT VICINITY MAP

UTILITY LOCATIONS ON THESE PLANS HAVE NOT BEEN FIELD VERIFIED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT DIG-RITE BEFORE PROCEEDING WITH CONSTRUCTION.

BENCHMARK

TBM:
SET STEPPED 60d NAILS IN EAST SIDE OF POWER POLE AT WEST SIDE OF ASPHALT DRIVE, SOUTHWEST CORNER OF MODOT MAINTENANCE SHED, NORTH OF ABANDONED RED HOUSE.
ELEV = 1146.37



PROJECT VICINITY MAP
(NO SCALE)

LEGEND

● IB_E	= EXIST IRON BAR	---	EXIST SEWER LINE
● IBPC_E	= EXIST IRON BAR W/ PLASTI	---	EXIST MAJOR CONTOUR
● FPST	= FENCE POST	---	EXIST MINOR CONTOUR
▶ FO	= FIBER OPTIC MARKER	---	EXIST FLOW LINE
∩ FH	= FIRE HYDRANT	---	TREE LINE
▶ G	= GAS MARKER	---	EXIST BUILDING
● GTPST	= GATE POST	---	EXIST EASEMENT
● GA	= GUY ANCHOR	---	EXIST EDGE OF ASPHALT
⊙ H&V	= CONTROL POINT	---	EXIST EDGE OF GRAVEL
⊙ LP	= LIGHT POLE	---	EXIST GRAVEL SHOULDER
▶ MS	= METAL SIGN	---	EXIST CHAINLINK FENCE
⊙ PP	= POWER POLE	---	EXIST OVERHEAD POWER
⊙ RW	= R/W MARKER	---	EXIST STORM PIPE
⊙ SSMH	= SANITARY SEWER MANHOLE	---	EXIST PROPERTY LINE
⊙ STMH	= STORM MANHOLE	---	EXIST SEWER PIPE
⊙	= STUMP	---	EXIST GAS LINE
⊙ TEP	= TELEPHONE PEDESTAL	---	EXIST POWER
⊙ TBM	= TEMP BENCHMARK	---	EXIST TELEPHONE LINE
⊙	= TREE	---	EXIST WATER LINE
		---	EXIST EDGE OF WATER
		---	PROPOSED SEWER LINE
		---	PERMANENT EASEMENT
		---	TEMPORARY EASEMENT

TELEPHONE /TV
CENTURYLINK
1-800-366-8201
MNA-BLUEBIRD
1-816-361-8821

WATER
CITY OF SAVANNAH
1-816-324-3315

ELECTRICITY
UNITED ELECTRIC COOPERATIVE
1-800-748-1488
KANSAS CITY POWER & LIGHT
1-888-544-4852

SEWER
CITY OF SAVANNAH
1-816-324-3315

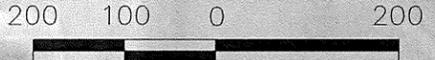
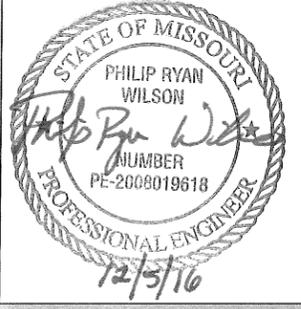
INDEX

DESCRIPTION	SHEET NO
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GENERAL LAYOUT	C2
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SITE PLAN	C5
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ELECTRICAL SITE PLAN	E1
SCHEMATICS	E2-E4
ELECTRICAL DETAILS	E5

L: 130493-010 CAD\CIVIL\130493 COVER.DWG DATE: 4/6/2016
LAYOUT: C1 BY: JCARTER XREF DWG2: NONE XREF DWG4: NONE
XREF DWG1: NONE XREF DWG3: NONE

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Designed By: <u>PRV</u> Drawn By: <u>JWR</u> Checked By: <u>PRV</u> Issue Date: _____								
SHAFFER, KLINE & WARREN, INC. 107 Butler Street, Macon, MO 63552-1628 660/385-6441 FAX: 660/385-6614 OFFICE LOCATIONS: Columbia, MO Lenexa, KS Macon, MO CIVIL ENGINEERS MECHANICAL ENGINEERS ELECTRICAL ENGINEERS LANDSCAPE ARCHITECTS LAWN CARE SERVICES LAND PLANNERS								
MODOT SEWER IMPROVEMENTS SAVANNAH, MO								
COVER								
130493-010 SHEET NO. C1								

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 LAYOUT: 02 BY: JCARTER DATE: 12/1/2016
 XREF DWG1: 130493 BASE.dwg
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 XREF DWG4: NONE



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1	12-01-16	REV. LOC. OF CONNECT TO CITY SYSTEM	JDC	PRW
NO.	DATE	REVISIONS	BY	APPD

Designated By: PRW
 Drawn By: JMR
 Checked By: PRW
 Issue Date:

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 107 Butler Street, Macon, MO 63552-1628
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 Macon, MO

North Kansas City, MO
 Houston, TX
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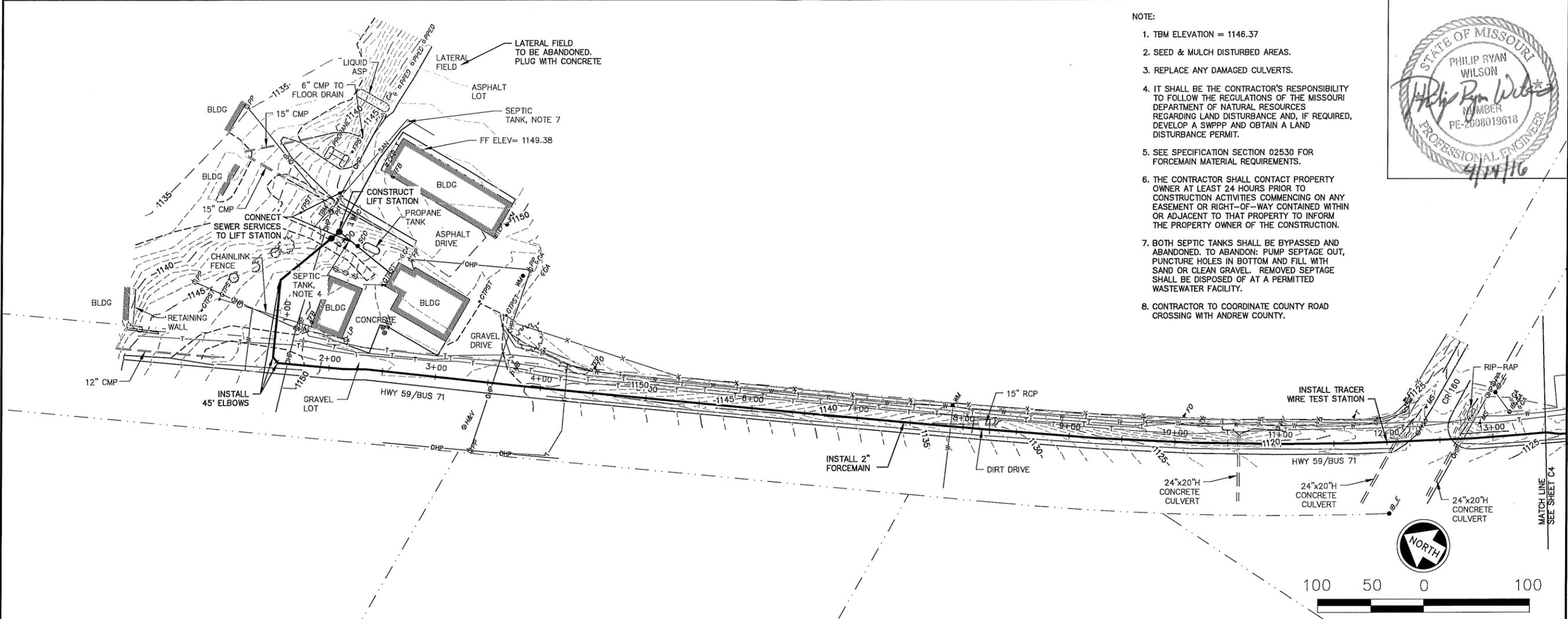
CIVIL ENGINEERS ELECTRICAL ENGINEERS MECHANICAL ENGINEERS STRUCTURAL ENGINEERS LANDSCAPE ARCHITECTS LAND SURVEYORS LAND PLANNERS

MODOT SEWER IMPROVEMENTS
SAVANNAH, MO

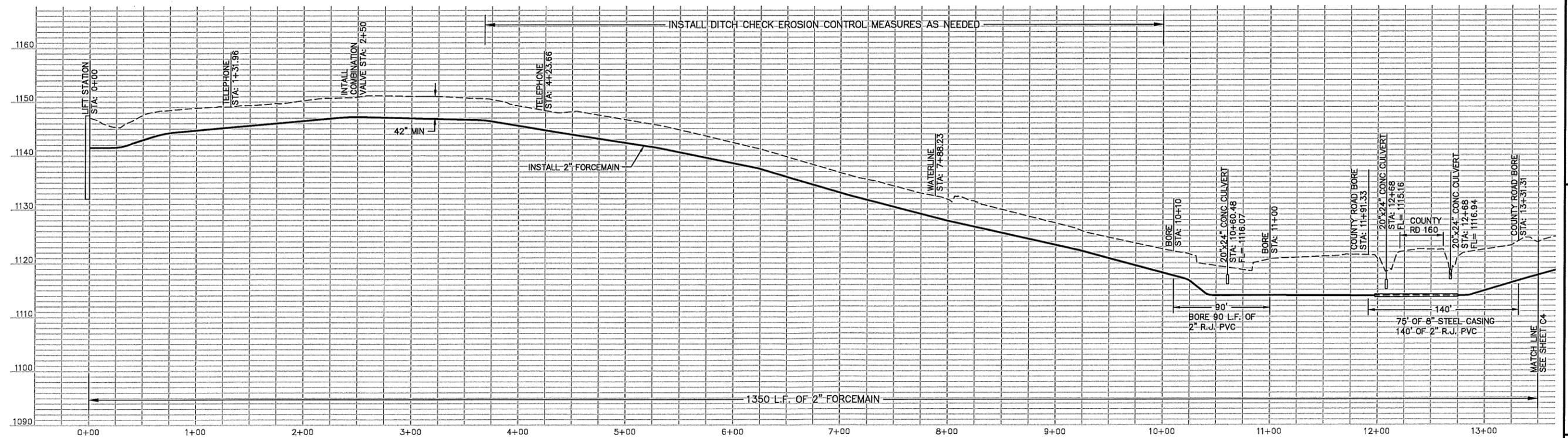
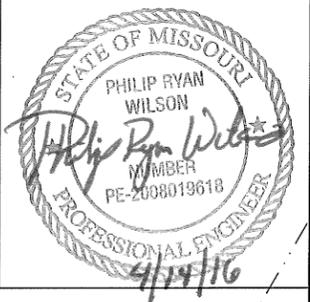
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 XREF DWG3: NONE XREF DWG4: NONE



- NOTE:
1. TBM ELEVATION = 1146.37
 2. SEED & MULCH DISTURBED AREAS.
 3. REPLACE ANY DAMAGED CULVERTS.
 4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE REGULATIONS OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES REGARDING LAND DISTURBANCE AND, IF REQUIRED, DEVELOP A SWPPP AND OBTAIN A LAND DISTURBANCE PERMIT.
 5. SEE SPECIFICATION SECTION 02530 FOR FORCEMAIN MATERIAL REQUIREMENTS.
 6. THE CONTRACTOR SHALL CONTACT PROPERTY OWNER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION ACTIVITIES COMMENCING ON ANY EASEMENT OR RIGHT-OF-WAY CONTAINED WITHIN OR ADJACENT TO THAT PROPERTY TO INFORM THE PROPERTY OWNER OF THE CONSTRUCTION.
 7. BOTH SEPTIC TANKS SHALL BE BYPASSED AND ABANDONED. TO ABANDON: PUMP SEPTAGE OUT, PUNCTURE HOLES IN BOTTOM AND FILL WITH SAND OR CLEAN GRAVEL. REMOVED SEPTAGE SHALL BE DISPOSED OF AT A PERMITTED WASTEWATER FACILITY.
 8. CONTRACTOR TO COORDINATE COUNTY ROAD CROSSING WITH ANDREW COUNTY.



SCALE: VERT: 1" = 10'
 HORIZ: 1" = 50'

DESIGNED BY: PRW	NO. 5	DATE	BY: APPD
DRAWN BY: JWR	NO. 4		
CHECKED BY: PRW	NO. 3		
ISSUE DATE:	NO. 2		
	NO. 1		

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 107 Butler Street, Macon, MO 63552-1628
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 Macon, MO

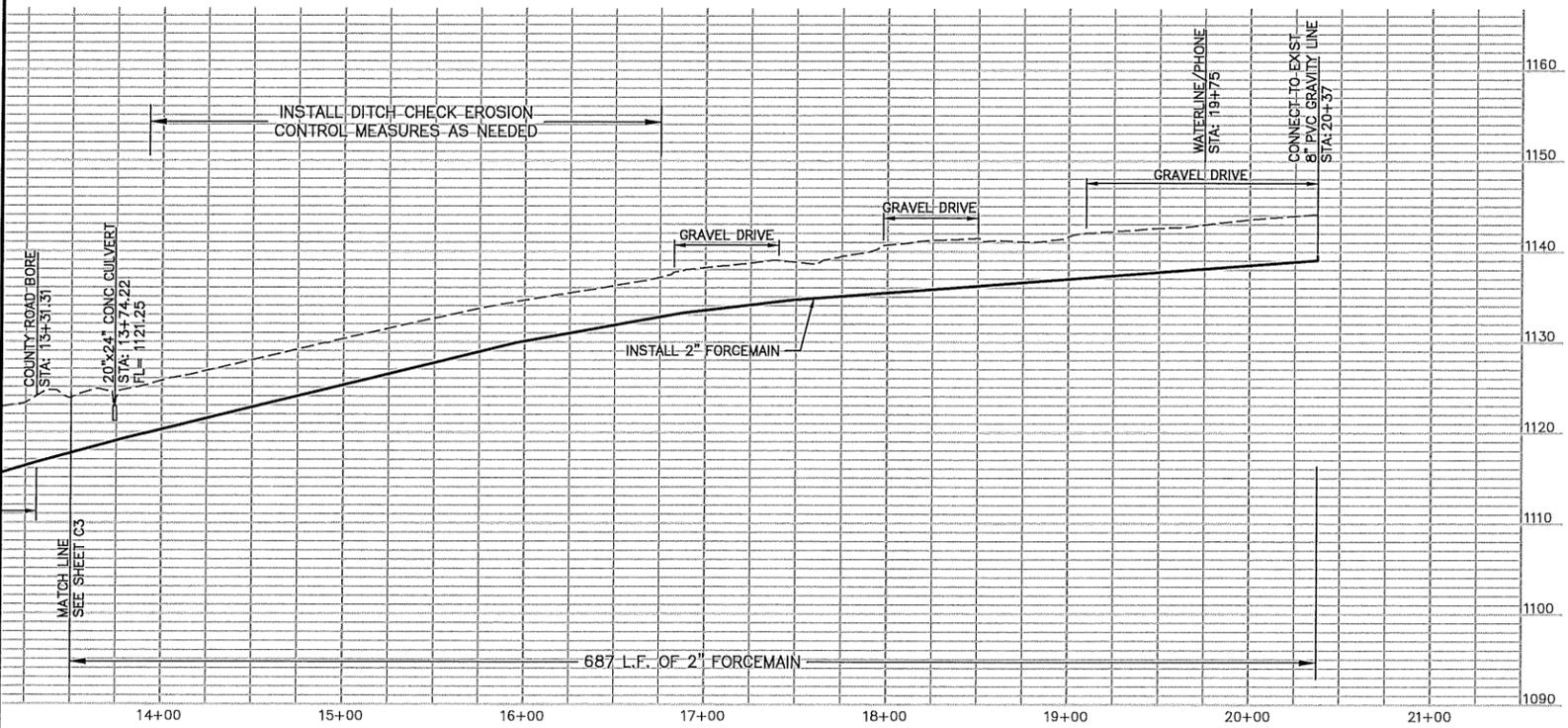
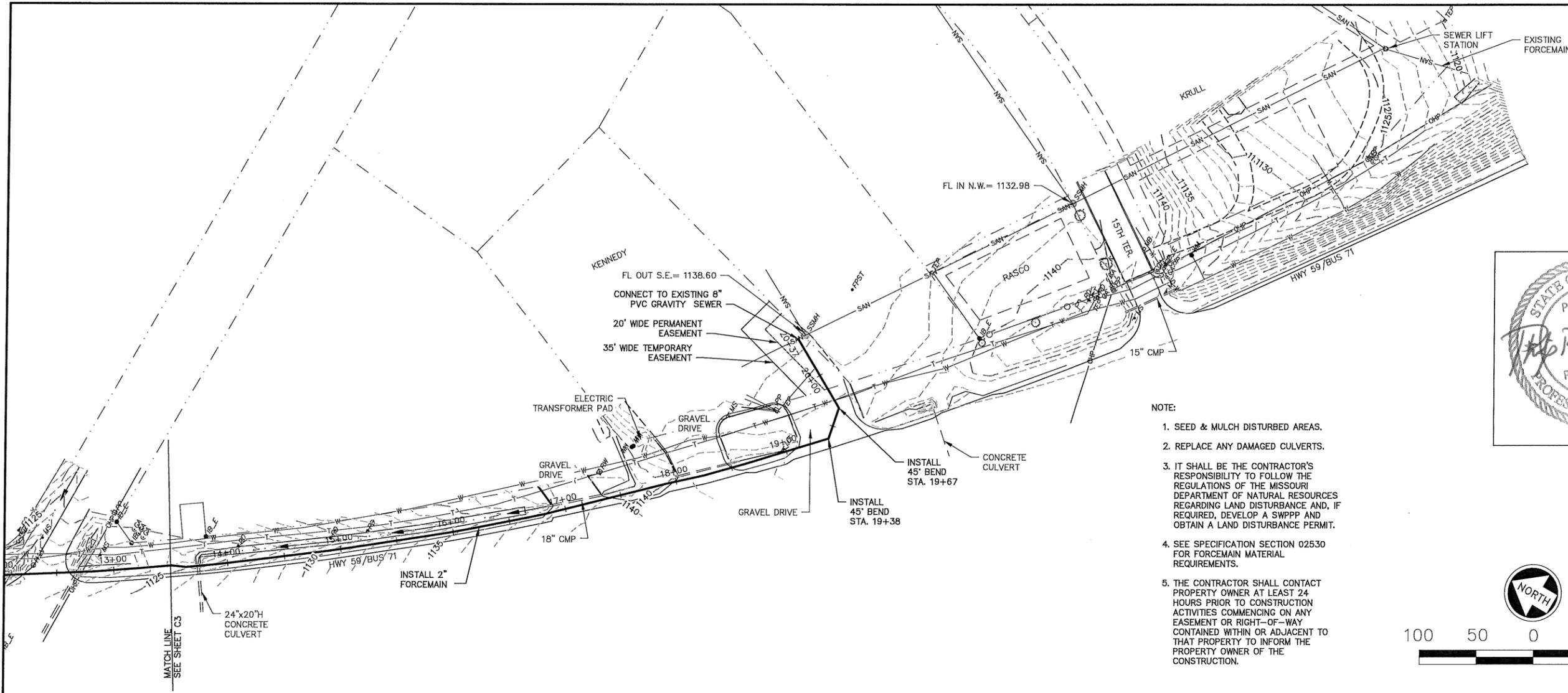
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MODOT SEWER IMPROVEMENTS SAVANNAH, MO

FORCEMAIN PLAN & PROFILE

130493-010
 SHEET NO. 3

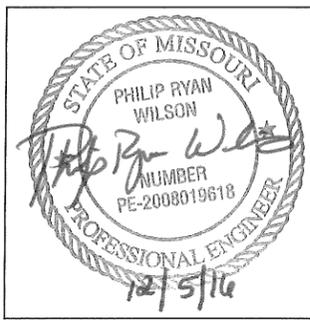
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 XREF DWG3: NONE
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 BY: JCARTER
 DATE: 12/1/2016



SCALE: VERT: 1" = 10'
 HORZ: 1" = 50'

NOTE:

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3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE REGULATIONS OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES REGARDING LAND DISTURBANCE AND, IF REQUIRED, DEVELOP A SWPPP AND OBTAIN A LAND DISTURBANCE PERMIT.
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1	12-01-16	REV. LOC. OF CONNECT TO CITY SYSTEM	JDC PRW
NO.	DATE	REVISIONS	BY / APPD

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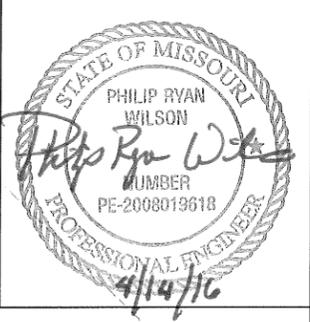
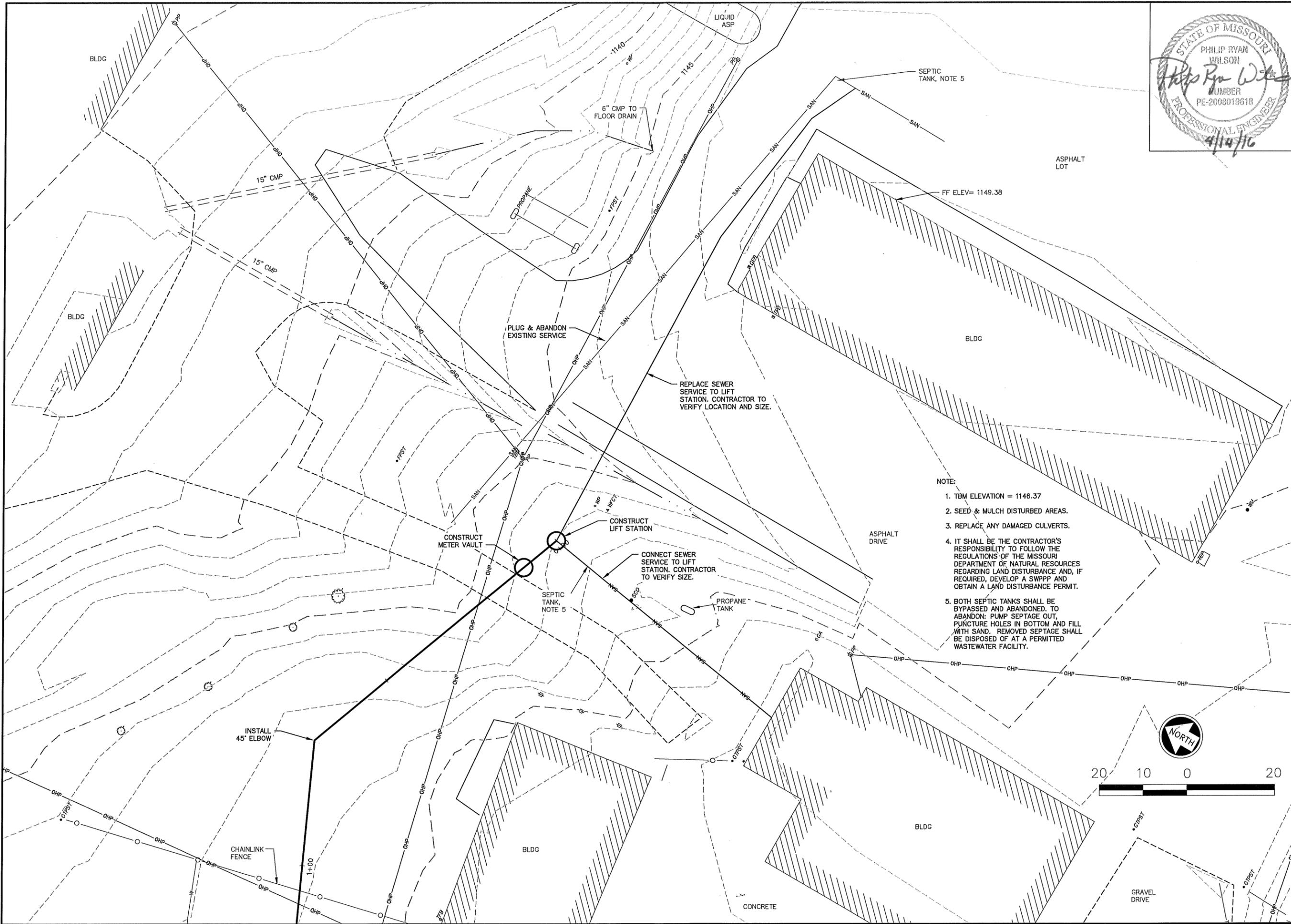
**MODOT SEWER IMPROVEMENTS
 SAVANNAH, MO**

FORCEMAIN PLAN & PROFILE

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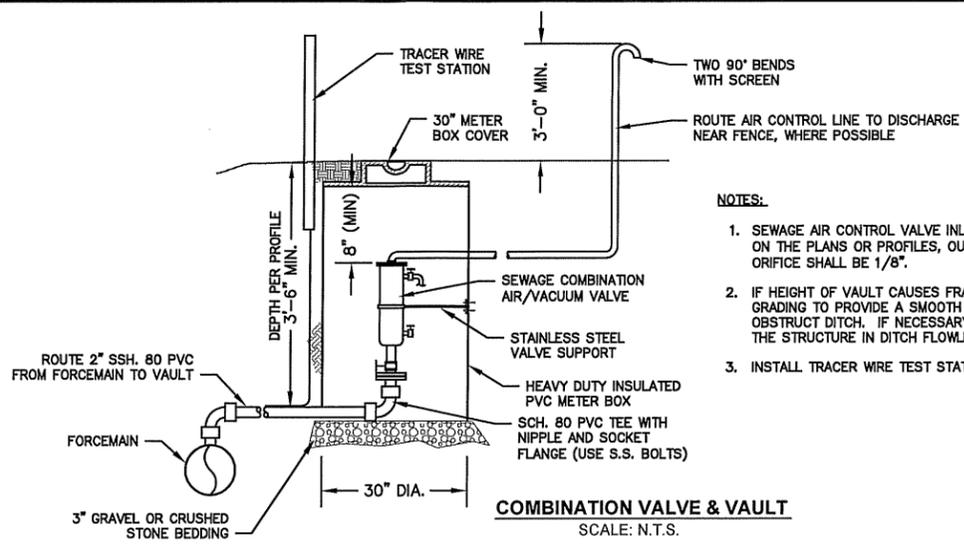
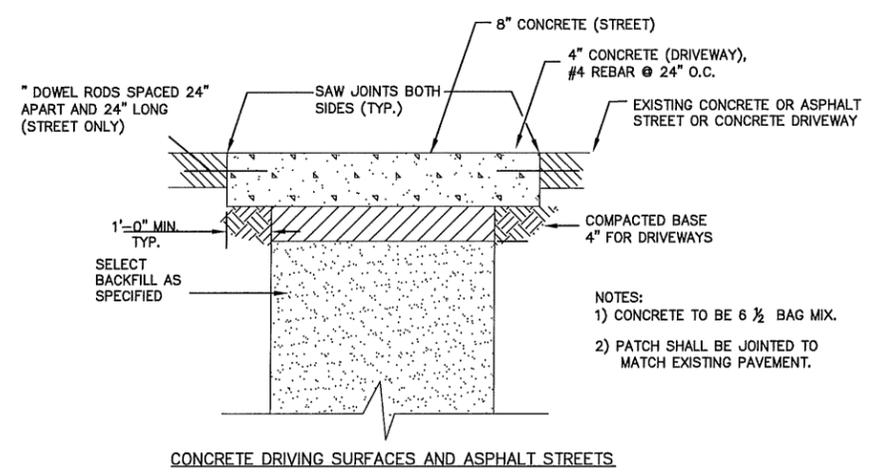
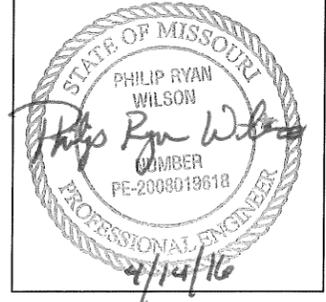
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 BY: JCARTER
 DATE: 4/6/2016

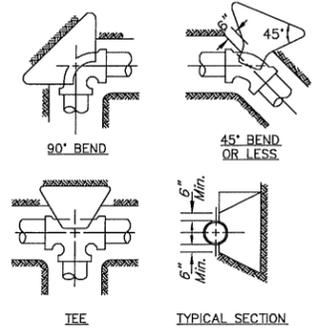


- NOTE:
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MODOT SEWER IMPROVEMENTS SAVANNAH, MO		SITE PLAN		
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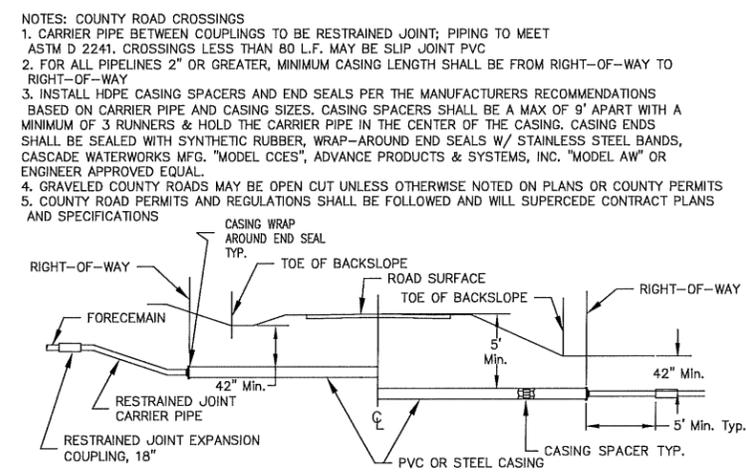
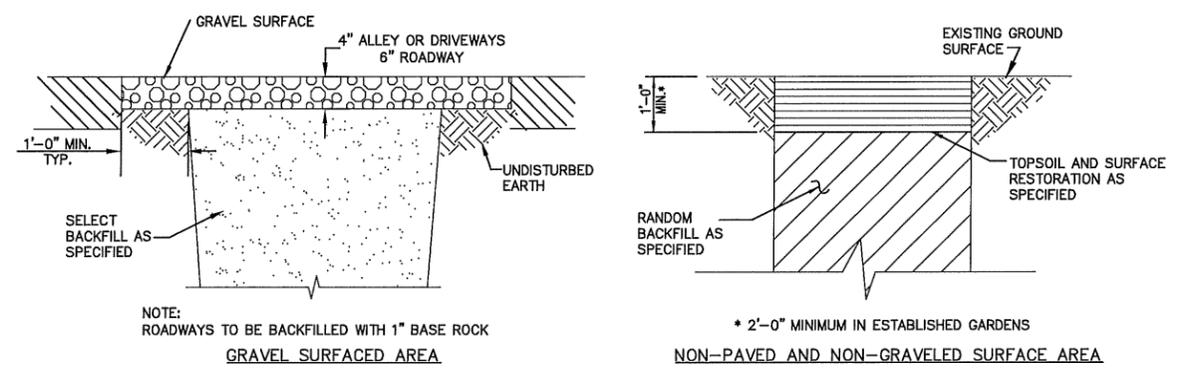
- NOTES:**
- SEWAGE AIR CONTROL VALVE INLETS SHALL BE 2" NPT. UNLESS OTHERWISE NOTED ON THE PLANS OR PROFILES, OUTLET SIZE SHALL BE 1" NPT AND AIR RELEASE ORIFICE SHALL BE 1/8".
 - IF HEIGHT OF VAULT CAUSES FRAME AND COVER TO BE ABOVE GRADE, PERFORM GRADING TO PROVIDE A SMOOTH TRANSITION. DO NOT LOCATE VAULT TO OBSTRUCT DITCH. IF NECESSARY, OFFSET ALIGNMENT AT VAULT TO AVOID PLACING THE STRUCTURE IN DITCH FLOWLINE OR ROADWAY.
 - INSTALL TRACER WIRE TEST STATION BESIDE EACH AIR CONTROL VALVE VAULT.



*TABLE GIVES REQUIRED AREA OF BEARING IN SQUARE FEET BETWEEN CONCRETE AND UNDISTURBED TRENCH WALL.

NOTE:
1. THRUST BLOCKS SHALL BE POURED CONCRETE.
2. THRUST BLOCKS SHALL BE PLACED AT EVERY FITTING.

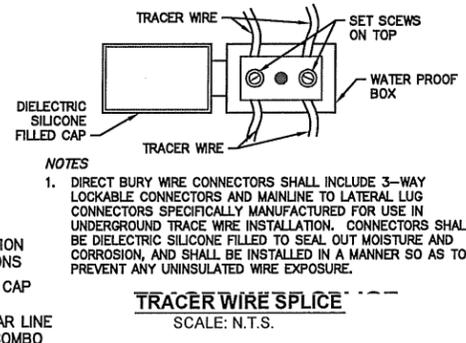
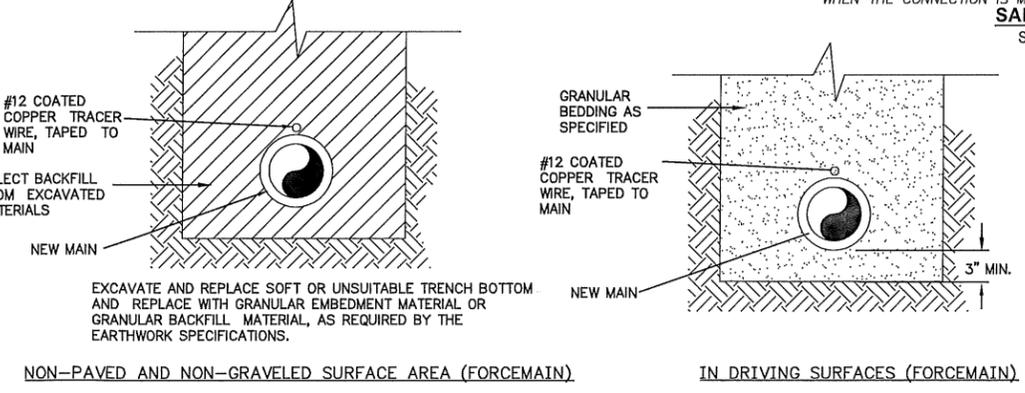
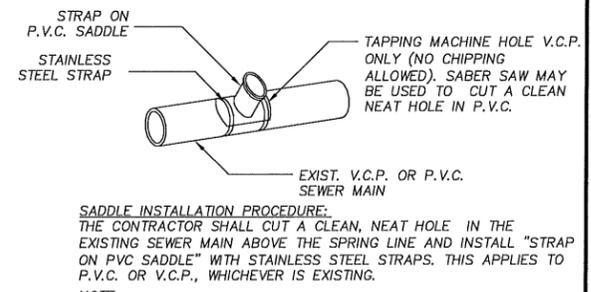
TYPICAL CONCRETE THRUST BLOCKS
SCALE: N.T.S.



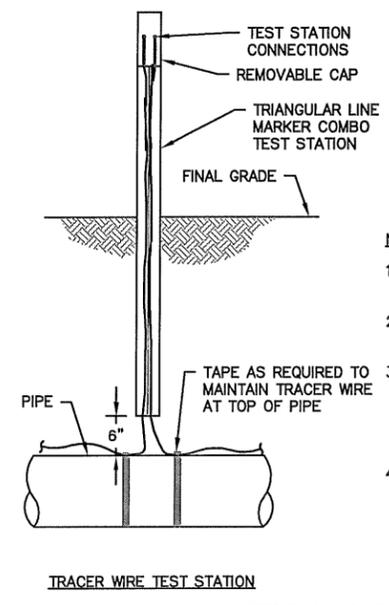
TRENCH WIDTH

PIPE SIZE (INCHES)	MIN. TRENCH WIDTH IN EARTH (INCHES)	MAX. TRENCH WIDTH IN EARTH (INCHES)	MIN. TRENCH WIDTH IN ROCK (INCHES)
< 4	20	26	20
4 - 6	22	30	24
8	22	30	24
10	24	32	24
12	30	35	26

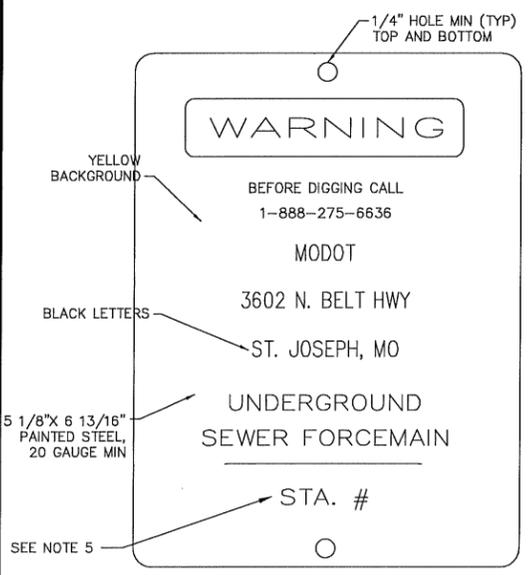
- NOTES: PIPE INSTALLATION/BEDDING (FORCEMAIN)**
- PIPE SHALL BE BURIED TO A MINIMUM DEPTH OF 42" TO THE TOP OF THE MAIN LINE AND SERVICES
 - PVC PIPE SHALL BE SLIP JOINT SDR21 AND SHALL MEET REQUIREMENTS OF ASTM 2241. JOINTS SHALL BE 20" IN LENGTH UNLESS PREAPPROVED BY THE ENGINEER
 - ALL CHANGES IN THE MAIN LINE DIRECTION GREATER THAN 11.25° SHALL BE ACCOMPLISHED USING STANDARD FITTINGS
 - TRACER WIRE SHALL BE TYPE UF #12 SOLID CONDUCTOR
 - TRACER WIRE SHALL BE INSTALLED WITH ALL MAIN LINES AND SERVICE LINES



- NOTES**
- DIRECT BURY WIRE CONNECTORS SHALL INCLUDE 3-WAY LOCKABLE CONNECTORS AND MAINLINE TO LATERAL LUG CONNECTORS SPECIFICALLY MANUFACTURED FOR USE IN UNDERGROUND TRACE WIRE INSTALLATION. CONNECTORS SHALL BE DIELECTRIC SILICONE FILLED TO SEAL OUT MOISTURE AND CORROSION, AND SHALL BE INSTALLED IN A MANNER SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE.
 - INSTALL TEST STATION ALONG NEW LINES AT LOCATIONS SHOWN ON PLANS.
 - SPLICE TRACER WITH WIRE NUT, THEN INSERT SPLICE INTO GEL PACK.
 - TRACER WIRE TEST STATIONS SHALL BE PLACED NEAR FENCE OR POWER POLES, IF POSSIBLE. MAXIMUM SPACING OF TEST STATIONS SHALL BE 1,500 FEET UNLESS NOTED OTHERWISE ON PLANS.
 - TRACER WIRE SHALL BE INSTALLED WITH ALL NON METALLIC PIPE IN ACCORDANCE WITH THE SPECIFICATIONS.



TRACER WIRE DETAILS
SCALE: N.T.S.



- NOTES: NAME PLATES AND SEWER LINE MARKERS**
- NAME PLATES SHALL BE PLACED IN ALL FENCE CROSSINGS.
 - NAME PLATES AND POSTS SHALL BE PLACED ON BOTH SIDES OF ALL ROAD CROSSINGS AND CREEK/STREAM CROSSINGS.
 - NAME PLATES AND POSTS SHALL BE PLACED AT ALL WATER LINE APPURTENANCES. I.E. GATE VALVES, AIR RELEASE VALVES, TEST STATIONS.
 - 48" MINIMUM CLEARANCE BETWEEN BOTTOM OF SIGN AND EXISTING GROUND LEVEL.
 - STA. # SHALL BE THE STATION AT WHICH THE SIGN IS PLACED.

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DATE: 4/6/2016
BY: JCARTER
XREF DWG2: NONE
XREF DWG4: NONE
LAYOUT: C7
XREF DWG1: NONE
XREF DWG3: NONE

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Drawn By: JWR
Checked By: PRW
Issue Date:

REVISIONS
DATE

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MISSOURI CERTIFICATE OF AUTHORITY: FOOT39850

SHAFER, KLINE & WARREN, INC.
107 Butler Street, Macon, MO 63552-1628
660/385-6441 FAX: 660/385-6614

OFFICE LOCATIONS:
North Kansas City, MO
Houston, TX
Tulsa, OK
Columbia, MO
Lenexa, KS
Macon, MO

SKW
ELECTRICAL ENGINEERS MECHANICAL ENGINEERS LAND SURVEYORS AND PLUMBERS

MODOT SEWER IMPROVEMENTS SAVANNAH, MO
MISC DETAILS

130493-010
SHEET NO.
C7

LEGEND

- OL1,OL2 - OVERLOADS
- TP1,TP2 - THERMAL PROTECTORS
- SLD1,SLD2 - SEAL LEAK DETECTORS
- GND - EQUIP. GROUND
- EA - ELECTRIC ALTERNATOR
- CRA - CONTROL RELAY A-HIGH LEVEL ALARM
- CRB - CONTROL RELAY B-PUMP 1 SEAL ALARM
- CRC - CONTROL RELAY B-PUMP 2 SEAL ALARM
- CRD - CONTROL RELAY D-PUMP 1 MOTOR THERMAL SWITCH
- CRE - CONTROL RELAY E-PUMP 2 MOTOR THERMAL SWITCH
- CRM1 - CONTROL RELAY M1-PUMP 1 RUN CONTACTS
- CRM2 - CONTROL RELAY M2-PUMP 2 RUN CONTACTS
- FS1 - FLOAT SWITCH 1-PUMPS OFF
- FS2 - FLOAT SWITCH 2-LEAD PUMP ON
- FS3 - FLOAT SWITCH 3-LAG PUMP ON
- FS4 - FLOAT SWITCH 4-HIGH LEVEL ALARM
- WIRING WITHIN PANEL
- FIELD WIRING
- EXISTING WIRING AND EQUIPMENT
- TERMINALS FOR ELECTRICAL CONNECTIONS
- * INDICATES DEVICE MOUNTED ON HINGED DEADFRONT INTERIOR
- ERM1 - PUMP 1 RUN METER
- ERM2 - PUMP 2 RUN METER

SYMBOL NOTES:

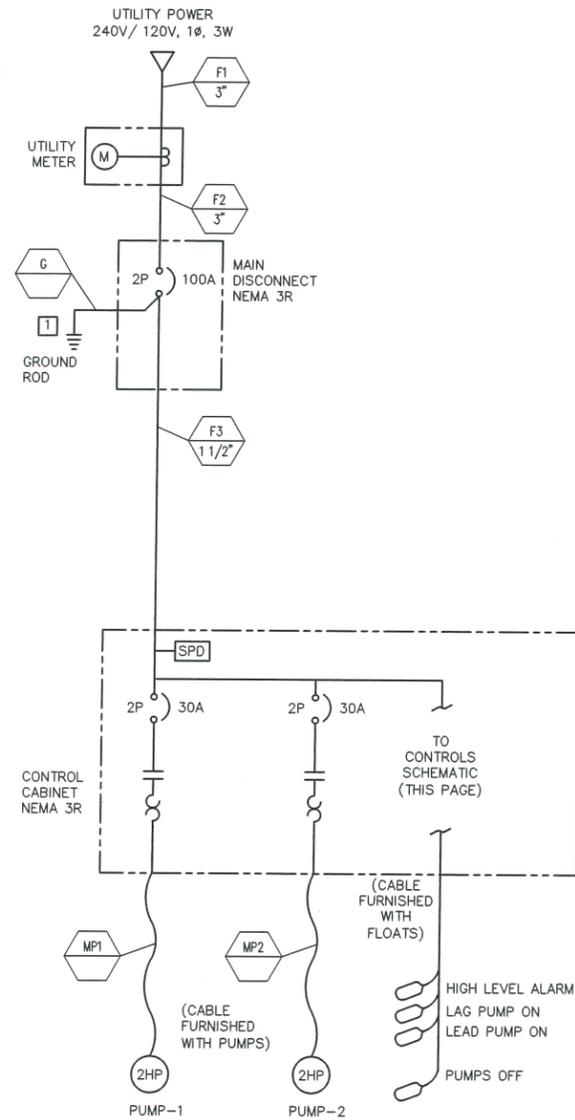
- 1 ALL GROUND RODS SHALL BE 3/4" X 10' COPPER BOND. GROUND WIRE SHALL BE CAD WELD BONDED TO ROD.
- 2 CONDUIT ENTRY TO CLASSIFIED LOCATION MUST BE SEALED PER NEC.

OPERATION SEQUENCE:

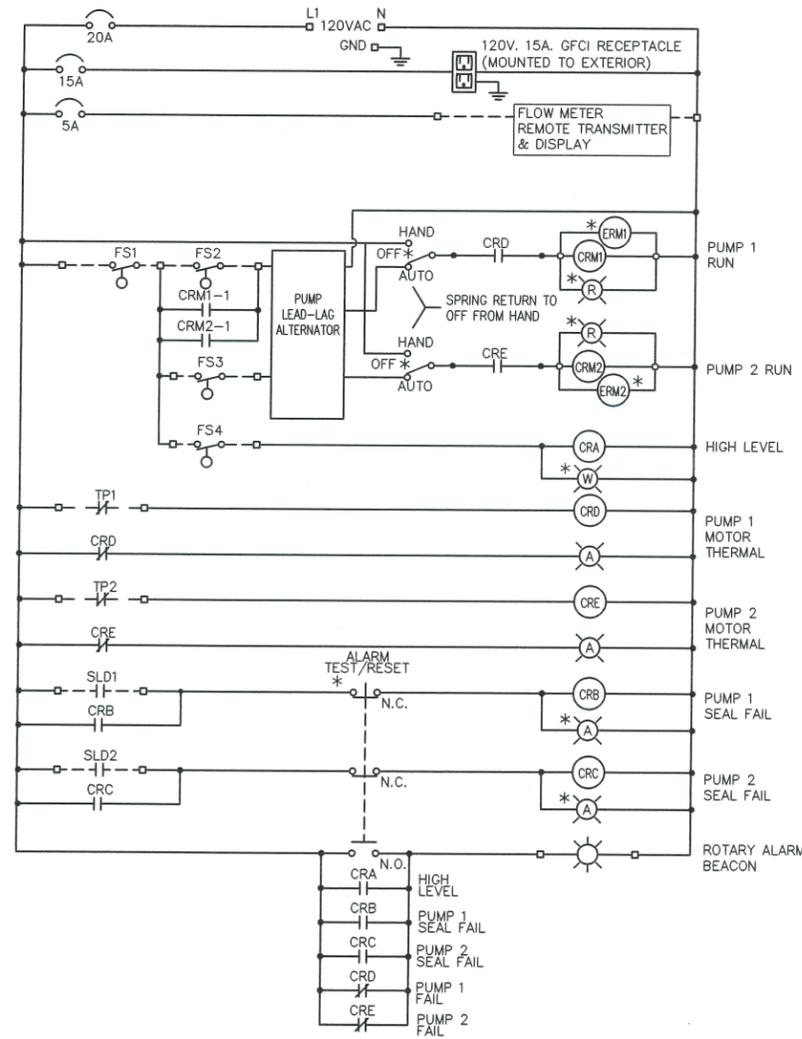
1. DUPLEX PUMPS WILL OPERATE IN A LEAD-LAG CONFIGURATION.
 - 1.1. WHEN WATER RISES TO THE LEAD PUMP ON FLOAT, LEAD PUMP BEGINS PUMPING.
 - 1.2. IF WATER CONTINUES TO RISE TO THE LAG PUMP ON FLOAT, LAG PUMP ALSO BEGINS PUMPING.
 - 1.3. PUMPS CONTINUE PUMPING UNTIL WATER IS BELOW PUMP OFF FLOAT.
2. THE PUMP OFF FLOAT IS PERMISSIVE TO ALL PUMP OPERATION. WATER MUST BE ABOVE THIS FLOAT.
3. ALARMS ARE GENERATED FOR PUMP SEAL FAILURE, OVERLOAD, AND HIGH LEVEL.
4. FLOW IS MONITORED VIA ELECTROMAGNETIC FLOW METER FOR LOCAL DISPLAY.

GENERAL NOTES:

1. SERVICE ENTRANCE INSTALLATION SHALL BE PER KCP&L ELECTRIC SERVICE STANDARDS MANUAL.
2. METER TO BE MOUNTED ON EQUIPMENT RACK. CONTRACTOR TO RUN WIRE TO SERVICE POLE AND LEAVE WIRE COILED WITH ENOUGH LENGTH TO REACH OVERHEAD LINES.
3. BURIED POWER CONDUITS SHALL BE SCHEDULE 40 PVC INSTALLED AT 24" MINIMUM BELOW GRADE OR AS INDICATED ON PLAN. TRANSITION TO RIGID GALVANIZED STEEL (RGS) AT 90° ELBOW BELOW GRADE. RGS CONDUIT TO BE COATED WITH BITUMASTIC COAL TAR EPOXY.
4. CONDUIT ROUTING AREA IS APPROXIMATE. FINAL ROUTING DECISIONS ARE TO BE COORDINATED WITH OWNER.
5. WET WELL IS CLASS 1, DIVISION 1, GROUPS C AND D LOCATION. DRY WELL IS CLASS 1, DIVISION 2, GROUPS C AND D LOCATION. ALL EQUIPMENT SHALL BE EXPLOSION PROOF AND RATED FOR THE LOCATION. SEALING PER NEC SHALL BE DONE FOR ALL POWER AND CONTROL CIRCUITS ENTERING THE CLASSIFIED LOCATION.
6. REMOTE FLOW METER AMPLIFIER AND DISPLAY MAY BE INCORPORATED IN CONTROL CABINET OR SEPARATE NEMA 3R ENCLOSURE BASED ON SELECTED HARDWARE.



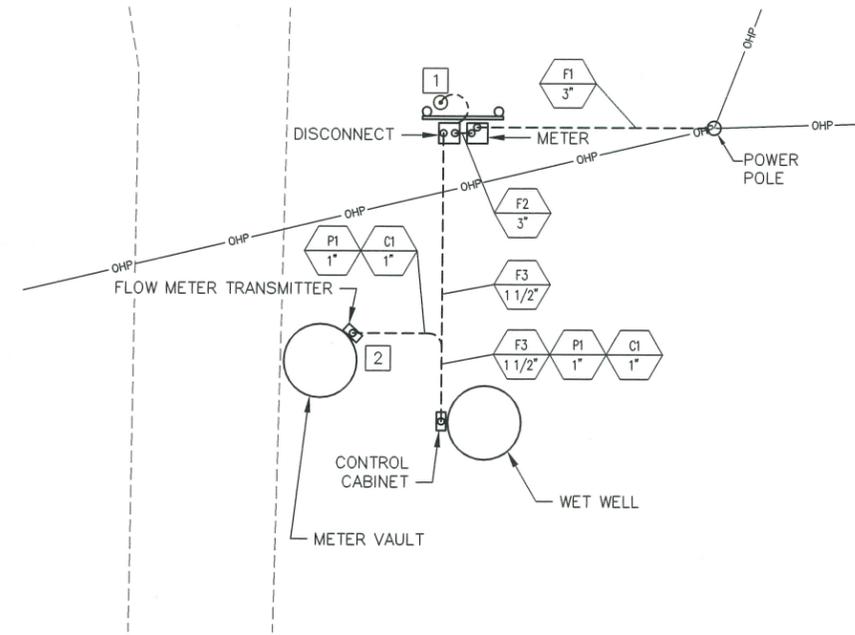
POWER ONE-LINE



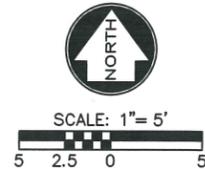
CONTROLS SCHEMATIC

CONDUIT NUMBER	FROM	TO	VOLTAGE (V)	# PHASES	WIRE SIZE, CONDUIT	CONDUIT TYPE
F1	POWER POLE	METER	240/120	1	3-#3, 3"	PVC & RGS
F2	METER	MAIN DISCONNECT	240/120	1	3-#3, 3"	RGS
F3	MAIN DISCONNECT	CONTROL CABINET	240/120	1	3-#3, #8 GND, 1 1/2"	PVC & RGS
MP1	PUMP-1 STARTER IN CONTROL CABINET	PUMP-1	240	1	SUBMERSIBLE CABLE FURNISHED BY PUMP MFG	-
MP2	PUMP-2 STARTER IN CONTROL CABINET	PUMP-2	240	1	SUBMERSIBLE CABLE FURNISHED BY PUMP MFG	-
G	MAIN DISCONNECT	3/4" X 10' GROUND ROD	-	-	#6 BARE COPPER GROUNDING CONDUCTOR	-
P1	CONTROL CABINET	FLOW METER TRANSMITTER	120	1	2-#12, #12 GND, 1"	PVC & RGS
C1	CONTROL CABINET	FLOW METER TRANSMITTER	DC	-	#18 TWISTED-SHIELDED PAIR, 1"	PVC & RGS
C2	FLOW METER TRANSMITTER	FLOW METER SENSOR IN VALVE VAULT	DC	-	#18 TWISTED-SHIELDED PAIR, 3/4"	RGS

CONDUIT SCHEDULE



PUMP STATION SITE PLAN



L:\130493-010\CAD\ELECTRICAL\130493-010 E-1.DWG
 LAYOUT: LAYOUT
 BY: DINA MCKINLEY
 DATE: 2/17/2017
 XREF DWG1: NONE
 XREF DWG2: NONE
 XREF DWG3: NONE
 XREF DWG4: NONE

NO.	DATE	REVISIONS	BY	APP'D
5				
4				
3				
2				
1				

Designed By: DM
 Drawn By: DMC
 Checked By: ACJ
 Issue Date: 2-17-17

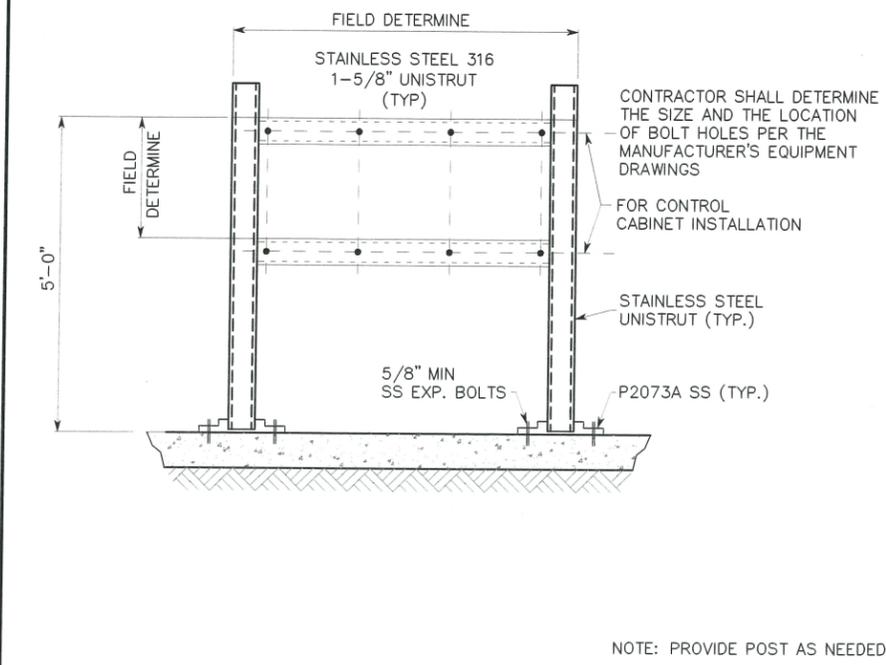


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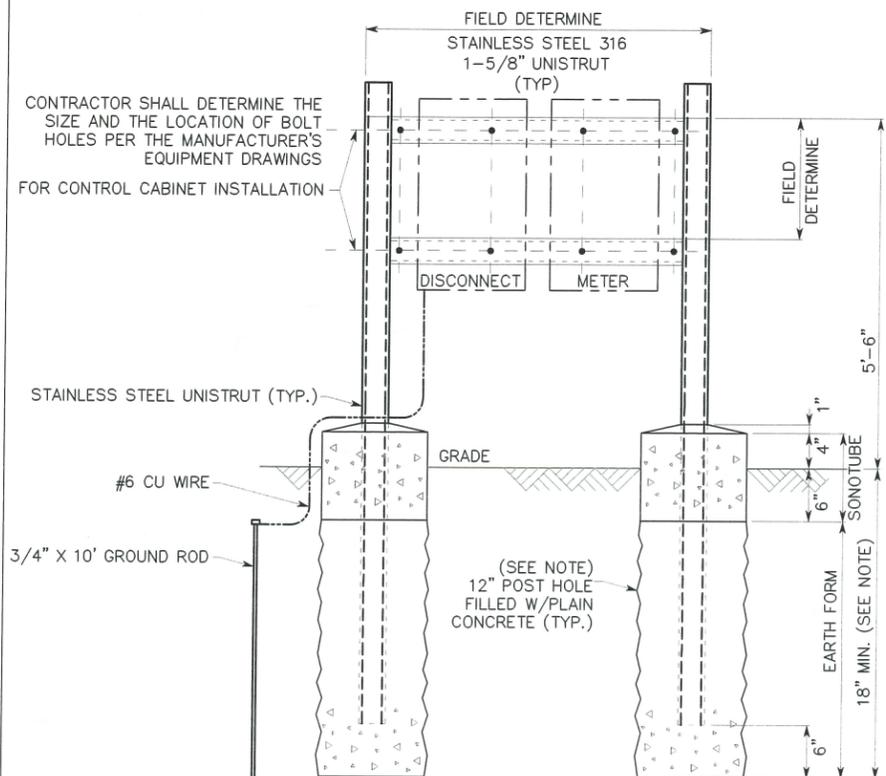
MODOT SEWER IMPROVEMENTS
 SAVANNAH, MO
 ONE-LINE, SCHEMATIC, ELECTRICAL
 SITE PLAN, AND CONDUIT SCHEDULE
 130493-010
 SHEET NO.
F1

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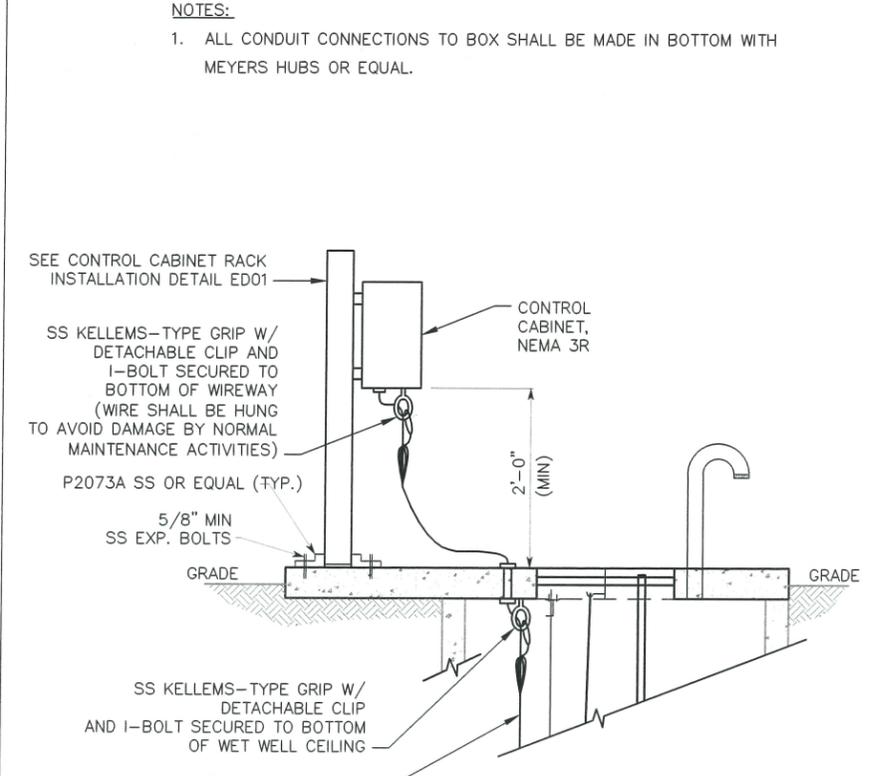
L:\130493-010\CAD\ELECTRICAL\130493-010 E-2.DWG
 LAYOUT: LAYOUT BY: DINA MCKINLEY DATE: 2/17/2017
 XREF DWG1: NONE XREF DWG2: NONE
 XREF DWG3: NONE XREF DWG4: NONE



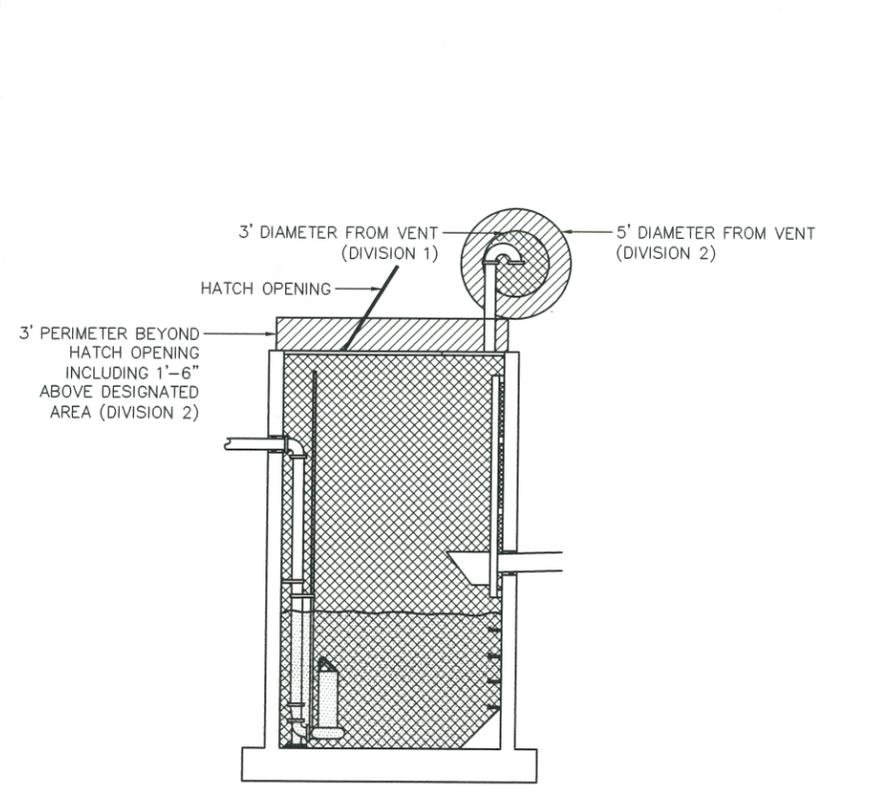
QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	WET WELL CONTROL CABINET & TERMINAL BOX RACK (SURFACE MOUNT) INSTALLATION	ED01



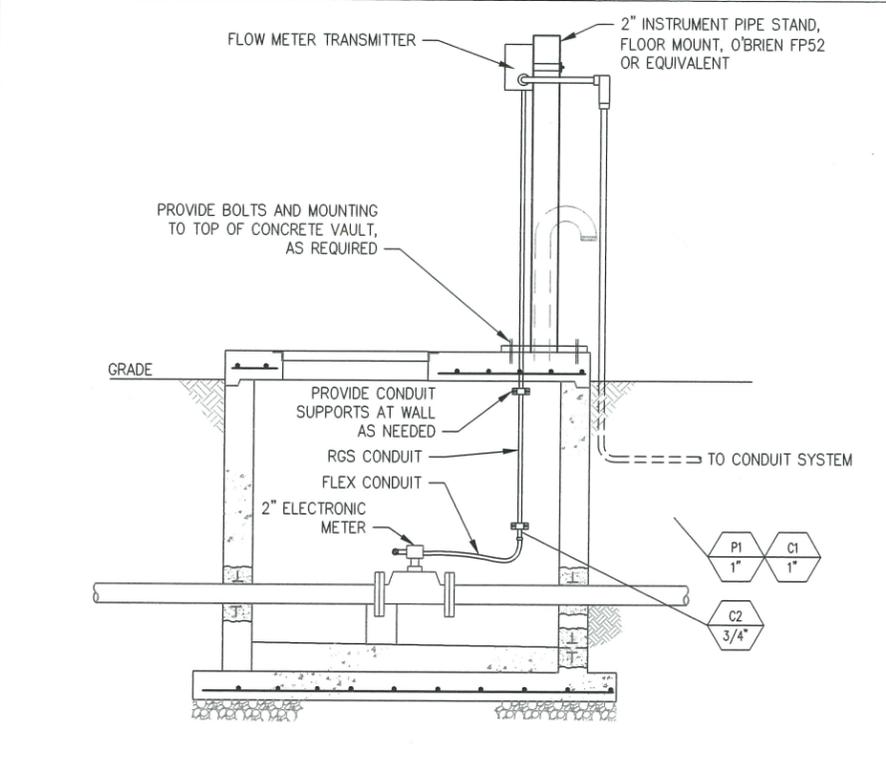
QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	SERVICE ENTRANCE RACK INSTALLATION	ED02



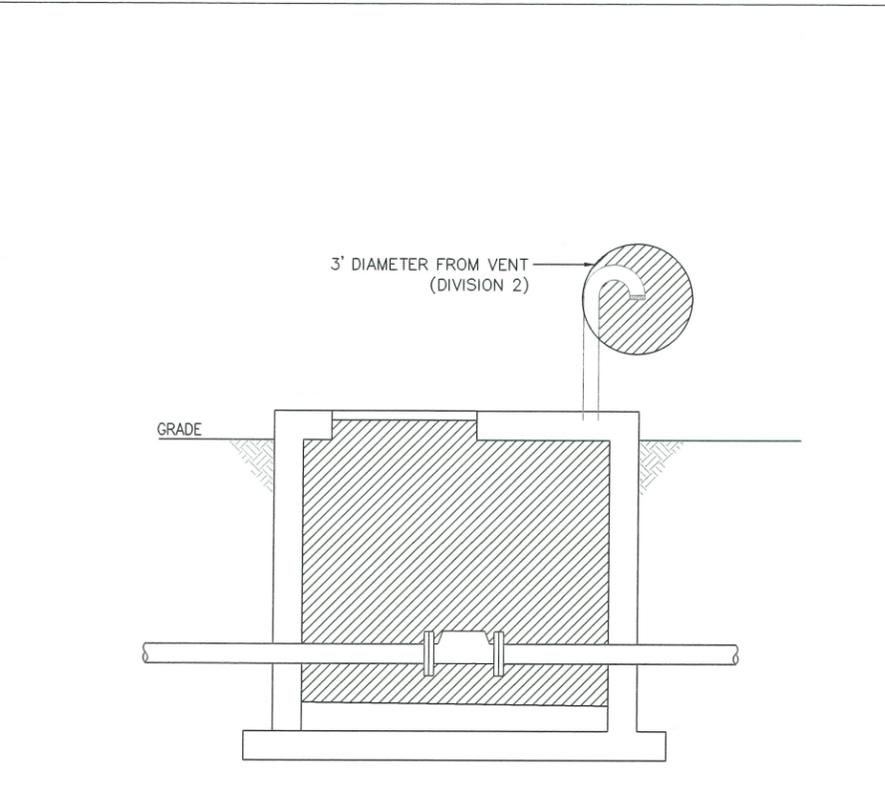
QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	WET WELL CONTROL CABINET INSTALLATION	ED03



QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	WET WELL AREA CLASSIFICATION	ED04



QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	METER VAULT ELECTRICAL DETAILS	ED05



QUANTITY	DESCRIPTION	MARK NO.
AS REQD.	DRY WELL AREA CLASSIFICATION	ED06

NOTES:
 1. ALL CONDUIT CONNECTIONS TO BOX SHALL BE MADE IN BOTTOM WITH MEYERS HUBS OR EQUAL.

Designed By: DM
 Drawn By: DM
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REGISTERED PROFESSIONAL ENGINEER
 PE-201700034
 STATE OF MISSOURI

MODOT SEWER IMPROVEMENTS SAVANNAH, MO

ELECTRICAL INSTALLATION DETAILS

130493-010
 SHEET NO. **E2**