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CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS CASSVILLE, MISSOURI



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CONSULTING ENGINEERS and SURVEYORS
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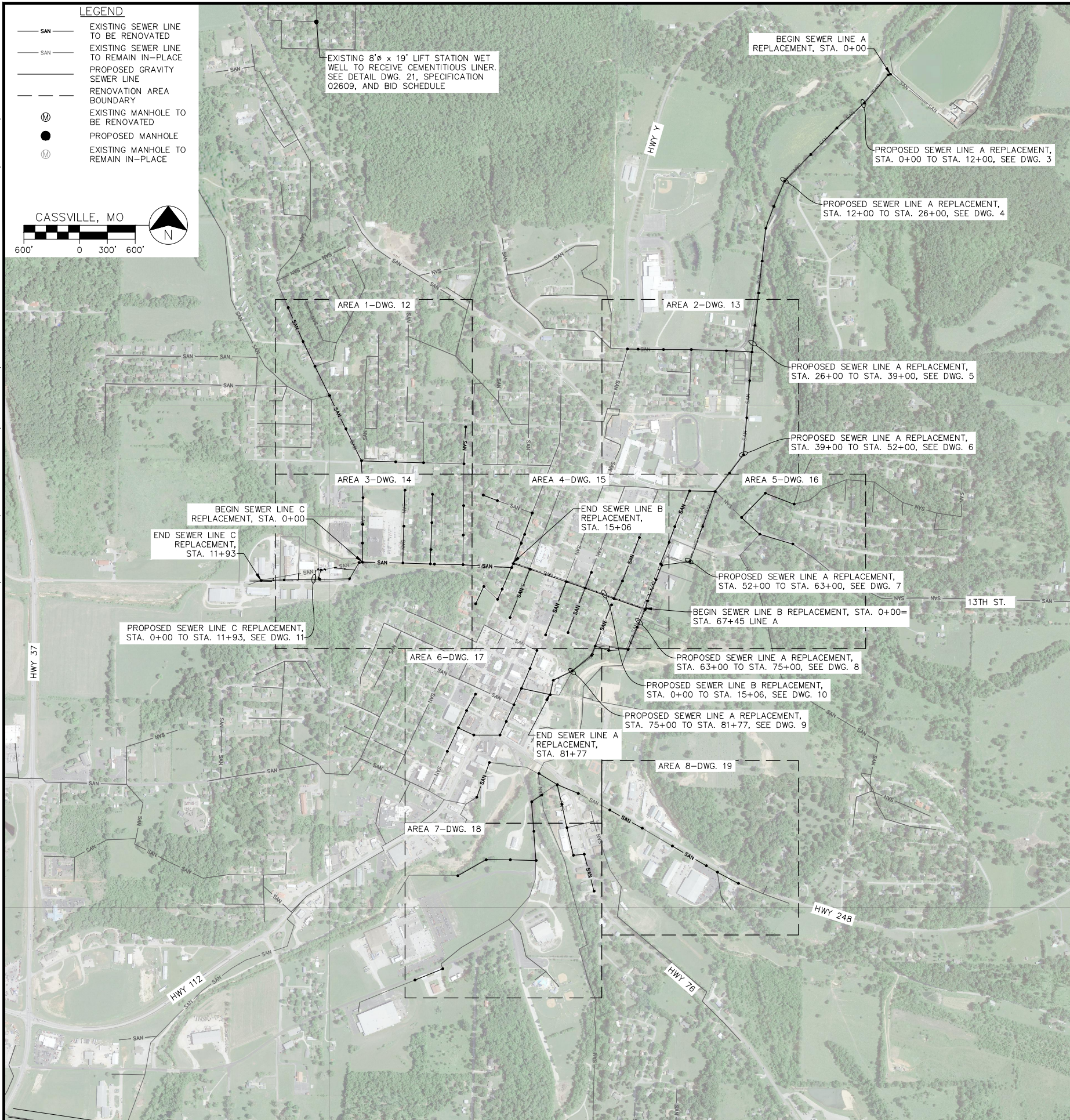
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LOCATION MAP & INDEX
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
1



CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS CASSVILLE, MISSOURI

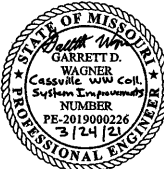


- SPECIAL NOTES – POINT REPAIR AND EXISTING LINE REPLACEMENT AREAS:**
1. ALL POINT REPAIRS ARE TO BE INSTALLED IN THE SAME TRENCH AS THE EXISTING SEWER. POINT REPAIRS ARE TO BE INSTALLED AS EXISTING SEWER IS REMOVED. EXISTING SEWER AND ASSOCIATED CASING, CONCRETE ENCASEMENT, ETC. SHALL BE REMOVED AND DISPOSED OF OFF SITE BY CONTRACTOR.
 2. ALIGNMENT OF PROPOSED POINT REPAIRS SHALL FOLLOW THAT OF EXISTING SEWER. THE PROPOSED POINT REPAIRS SHALL BE LAID ON A UNIFORM SLOPE MATCHING THE SLOPE OF THE EXISTING SEWER LINE.
 3. IN AREAS WHERE THE EXISTING SEWER LINE OR MANHOLES ARE TO BE REMOVED AND REPLACED WITH THE EXISTING SEWER "LIVE", CONTRACTOR SHALL UTILIZE ALL METHODS, TECHNIQUES AND EQUIPMENT NECESSARY TO MAINTAIN UNRESTRICTED FLOW OF WASTEWATER DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT ALLOW WASTEWATER TO OVERFLOW FROM MANHOLES OR OPEN TRENCHES ONTO THE GROUND SURFACE OR INTO WATERWAYS. ALL WASTEWATER SHALL EITHER BE DIRECTED THROUGH THE TRENCH TO THE DOWNSTREAM SECTIONS OF THE COMPLETED REPLACEMENT SEWER LINE, OR AROUND THE OPEN TRENCH TO DOWNSTREAM SECTIONS OF THE COMPLETED REPLACEMENT SEWER LINE BY PORTABLE, TEMPORARY PUMPING SYSTEMS.
 4. CARE SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT SURFACE RUNOFF FROM ENTERING SEWER LINES VIA OPEN TRENCH EXCAVATIONS.
 5. THE AMOUNT OF TRENCHING OPENED IN A DAY SHALL NOT EXCEED THE FOOTAGE OF SEWER LINE THAT CAN BE REMOVED AND REPLACED THAT DAY. NO PIPE GAPS BETWEEN SECTIONS OF EXISTING AND REPLACEMENT SEWER LINES SHALL BE ALLOWED TO REMAIN UPON COMPLETION OF A DAY'S WORK.
 6. PORTIONS OF PROPOSED REPLACEMENT SEWER ARE TO BE INSTALLED IN THE SAME TRENCH AS THE EXISTING SEWER. PROPOSED SEWER IS TO BE INSTALLED AS EXISTING SEWER IS REMOVED. EXISTING SEWER AND ASSOCIATED CASING, CONCRETE ENCASEMENT, ETC. SHALL BE REMOVED AND DISPOSED OF OFF SITE BY CONTRACTOR. SEE PLAN AND PROFILE DWG's FOR FLOW LINE ELEVATIONS.
 7. UNLESS NOTED OTHERWISE ON PLAN AND PROFILE DWG.'S, PROPOSED MANHOLES ARE TO BE INSTALLED AT THE SAME LOCATIONS OF EXISTING MANHOLES. EXISTING MANHOLES SHALL BE REMOVED AND DISPOSED OF OFF SITE BY CONTRACTOR.
 8. ALIGNMENT OF PROPOSED REPLACEMENT SEWER IS TO FOLLOW THAT OF EXISTING SEWER. STATIONING AND DEFLECTION ANGLES SHOWN ON PLAN AND PROFILE DWG's MAY HAVE TO BE ADJUSTED IN THE FIELD IN ORDER TO FOLLOW EXISTING ALIGNMENT.
 9. IN AREAS WHERE SEWER IS INSTALLED "LIVE", EACH MANHOLE--TO--MANHOLE SECTION OF REPLACEMENT SEWER SHALL BE INDIVIDUALLY AIR TESTED, PER SPECIFICATIONS, IMMEDIATELY UPON INSTALLATION. UPON SATISFACTORY COMPLETION OF THE AIR TEST, CONTRACTOR SHALL COMPLETE THE CONNECTION OF EXISTING SEWER MAINS CONNECTED TO THE REPLACEMENT SEWER.
 10. ALL EXISTING ACTIVE SERVICE TAPS SHALL BE RECONNECTED TO NEWLY INSTALLED SEWER MAIN UPON SATISFACTORY COMPLETION OF AIR TEST.

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND THE CITY OF CASSVILLE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE WORK ZONE SAFETY GUIDELINES OF PART VI OF THE MUTCD.
3. ALL PEDESTRIAN FACILITIES SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE ADA.
4. CONTRACTOR SHALL, AT HIS EXPENSE, PROVIDE ACCESS TO PRIVATE PROPERTY AT ALL TIMES.
5. CONTRACTOR SHALL, AT HIS EXPENSE, RETAIN THE SERVICES OF A PLS LICENSED IN MISSOURI, WHO SHALL BE RESPONSIBLE FOR RESTORING ANY INCIDENTALLY DAMAGED SURVEY MONUMENTS NOT SCHEDULED FOR REMOVAL AS PART OF CONSTRUCTION PROJECT. CONTRACTOR SHALL NOTIFY THE CITY OF CASSVILLE OF ANY MONUMENTS DAMAGED BY AN OUTSIDE PARTY.
6. CONTRACTOR SHALL REMOVE, PRESERVE AND REPLACE ALL SIGNS, MAIL BOXES, CULVERT PIPES AND FENCES WITHIN THE LIMITS OF THE PROPOSED IMPROVEMENTS. ATTEMPTS HAVE BEEN MADE TO NOTE THESE ITEMS, HOWEVER, REGARDLESS OF WHETHER THEY ARE CALLED OUT ON PLANS OR NOT, CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION AND/OR REPLACEMENT OF THESE ITEMS DURING CONSTRUCTION.
7. CONTRACTOR SHALL PRESERVE ALL TREES AND SHRUBBERY (AS POSSIBLE) LOCATED WITHIN THE CONSTRUCTION EASEMENT AND RIGHT-OF-WAY. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND THE OFF-SITE DISPOSAL OF ANY TREES THAT MUST BE REMOVED IN ORDER TO INSTALL THE PROPOSED IMPROVEMENTS.
8. ALL TRAFFICWAYS INCLUDING DRIVEWAYS, ALLEYWAYS AND SIDEWALKS SHALL REMAIN ACCESSIBLE TO RESIDENTIAL AND EMERGENCY VEHICLES FOR PROJECT DURATION.
9. ALL CONSTRUCTION AND EXCAVATION ACTIVITIES SHALL BE CONFINED TO EASEMENTS, RIGHT-OF-WAY AND/OR WORK AREA LIMITS AS SHOWN ON DWG'S.
10. LOCATIONS OF EXISTING UTILITIES AS SHOWN ON PLANS ARE APPROXIMATE, LOCATED WITH INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL CONTACT ALL UTILITIES PRIOR TO EXCAVATION, AND SHALL BE RESPONSIBLE FOR THE EXACT LOCATION AND PRESERVATION OF ALL BURIED UTILITY LINES. UTILITY LOCATING SERVICE, SUCH AS MISSOURI DIG-RITE, SHALL BE CONTACTED BY THE CONTRACTOR 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
11. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH ALL UTILITY COMPANIES, AND THE CITY OF CASSVILLE.
12. ALL SURFACES (CONCRETE, ASPHALT, GRAVEL OR DIRT) AND THEIR APPURTENANCES (CURBS, CULVERTS, ETC.) DISTURBED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS PER PLANS AND SPECIFICATIONS. CONTRACTOR SHALL OPEN CUT AND REPLACE PAVEMENT ON STREET AND DRIVE CROSSINGS PER SPECIFICATIONS AND STANDARD DRAWING DETAILS, EXCEPT STATE HIGHWAY AND RAILROAD CROSSINGS WHERE BORES SHALL BE REQUIRED. EACH DRIVE SURFACE CROSSED SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES, UNLESS APPROVED BY THE CITY OF CASSVILLE PRIOR TO START OF CONSTRUCTION.
13. TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE, PLACE AND MAINTAIN ALL BARRIERS (CONES, BARRELS, ETC.) AND SAFETY PERSONNEL (FLAGMEN) AS NECESSARY FOR A SAFE WORKING ENVIRONMENT.
14. IN AREAS WHERE PROPOSED SEWER LINE IS PLACED CLOSE TO EDGE OF ROADWAY, CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS OF ANY DAMAGE OR RUTTING TO EXISTING PAVEMENT MADE BY CONSTRUCTION EQUIPMENT. UPON PROJECT COMPLETION, EXISTING PAVEMENT SHALL BE OF EQUAL TO OR BETTER CONDITION THAN THAT IN EXISTENCE PRIOR TO BEGINNING CONSTRUCTION.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LINE AND GRADE STAKING REQUIRED TO COMPLETE THE PROJECT.
16. CONTRACTOR SHALL EXERCISE CAUTION TO GUARD AGAINST THE DEGRADATION OF THE WATERS OF THE STATE DUE TO CONSTRUCTION RELATED POLLUTANTS (SILT, DEBRIS, AND PETROLEUM PRODUCTS).
17. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BY-PASS PUMPING OR OTHER METHODS TO KEEP SEWER LINE IN SERVICE AT ALL TIMES DURING THE PROJECT.
18. EXISTING SEWER LINES INDICATED ON THE DRAWINGS SHALL BE RENOVATED/REPAIRED BY INSTALLING CIPP.
19. EXISTING MANHOLES INDICATED ON THE DRAWINGS SHALL BE RENOVATED BY INSTALLING NEW FRAME AND COVERS, A CEMENTITIOUS COATING, AND A FLEXIBLE CHIMNEY SEAL. NEW MANHOLE FRAMES AND COVERS ON ALL RENOVATED MANHOLES SHALL BE FIELD ADJUSTED, AS NECESSARY, TO MATCH EXISTING PAVEMENT OR GRADE ELEVATIONS. REFER TO PROJECT SPECIFICATIONS FOR COMPLETE DETAILS.
20. ALL EXISTING SERVICE LATERAL CONNECTIONS SHALL BE REPAIRED OR REPLACED BY EITHER OPEN TRENCH OR TRENCHLESS METHODS AS SHOWN ON THE STANDARD CONSTRUCTION DETAIL DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS.
21. ALL EXISTING PROPERTY LINES SHOWN WERE PROVIDED BY THE COUNTY'S GIS DATABASE AND SHALL BE USED FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL CONSTRUCTION ACTIVITY WITHIN CITY RIGHT-OF-WAY OR PERMANENT EASEMENTS.
22. CLEANING AND INSPECTION OF ALL GRAVITY SEWER LINES WITHIN THE PROJECT AREA HAS NOT BEEN COMPLETED; THEREFORE, THE CONDITION OF EXISTING GRAVITY SEWER LINES IS UNKNOWN. CONTRACTOR SHALL BE PREPARED TO ALTER THE PROJECT BASED ON THE PRE-C.I.P.P. VIDEO INSPECTION.
23. ALL EXISTING ACTIVE SERVICE LATERAL TEES LOCATED ON EXISTING LINES THAT ARE TO BE REPLACED SHALL BE CONNECTED TO PROPOSED SEWER LINE, PER SPECIFICATIONS.
24. IN SOME LOCATIONS MULTIPLE UTILITIES ARE LOCATED IN EXTREMELY CLOSE PROXIMITY TO THE SEWER LINES TO BE REPLACED AS PART OF THIS PROJECT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO THESE OTHER EXISTING UTILITIES. IN THE EVENT ANY OTHER UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE RESPECTIVE UTILITY AND MAKE EVERY ATTEMPT TO KEEP INTERRUPTION OF SAID UTILITY SERVICE TO A MINIMUM. ALL COSTS ASSOCIATED WITH DAMAGE TO OTHER UTILITIES AND THEIR SUBSEQUENT REPAIRS DUE TO CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

CIVIL ENGINEER: GARRETT D. WAGNE
LICENSE NO. PE-2019000226



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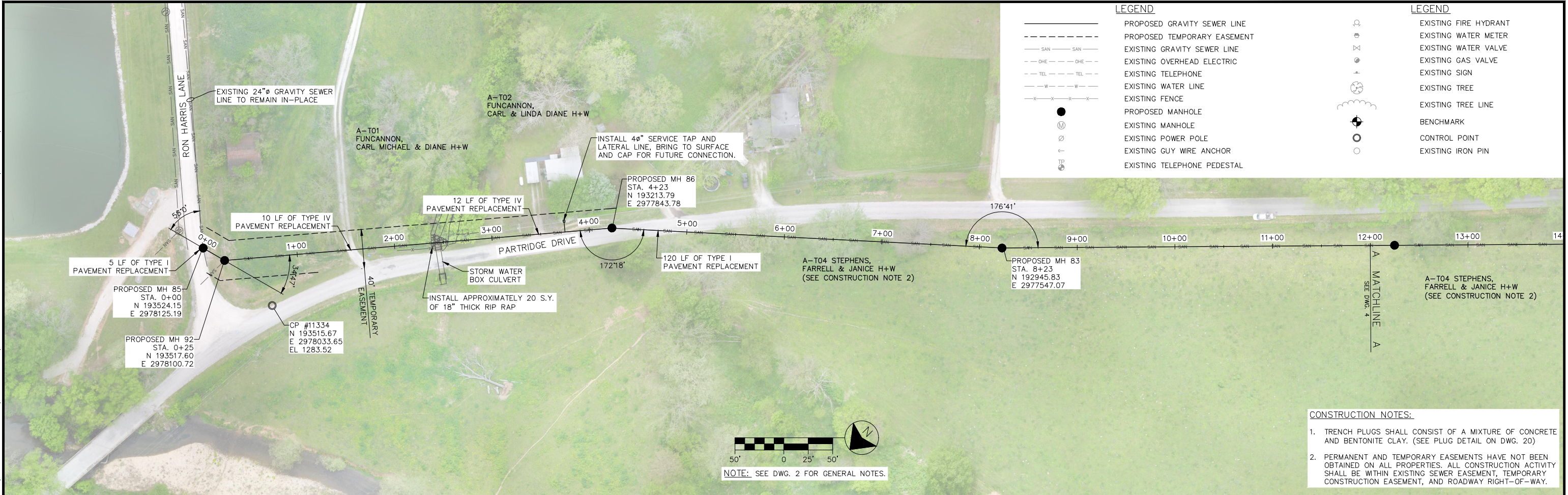
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OVERALL SITE PLAN
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

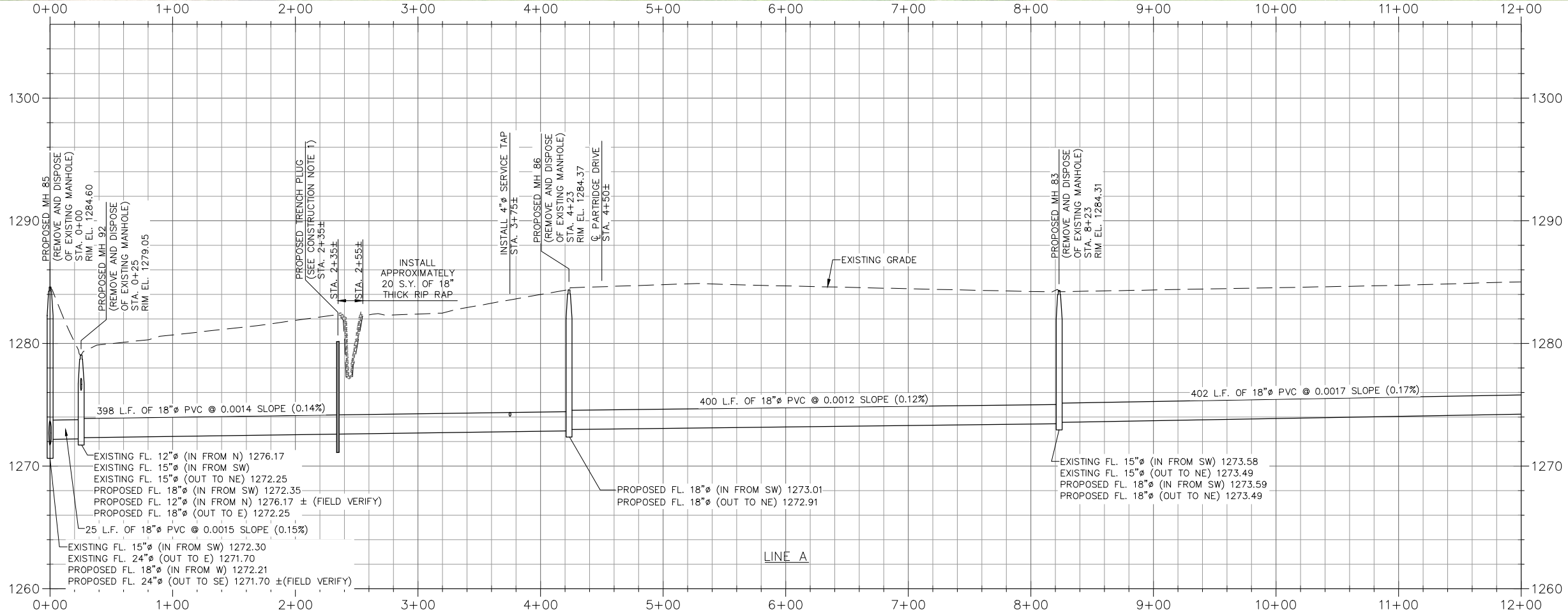
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- CONSTRUCTION NOTES:**
1. TRENCH PLUGS SHALL CONSIST OF A MIXTURE OF CONCRETE AND BENTONITE CLAY. (SEE PLUG DETAIL ON DWG. 20)
 2. PERMANENT AND TEMPORARY EASEMENTS HAVE NOT BEEN OBTAINED ON ALL PROPERTIES. ALL CONSTRUCTION ACTIVITY SHALL BE WITHIN EXISTING SEWER EASEMENT, TEMPORARY CONSTRUCTION EASEMENT, AND ROADWAY RIGHT-OF-WAY.



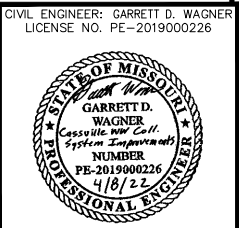
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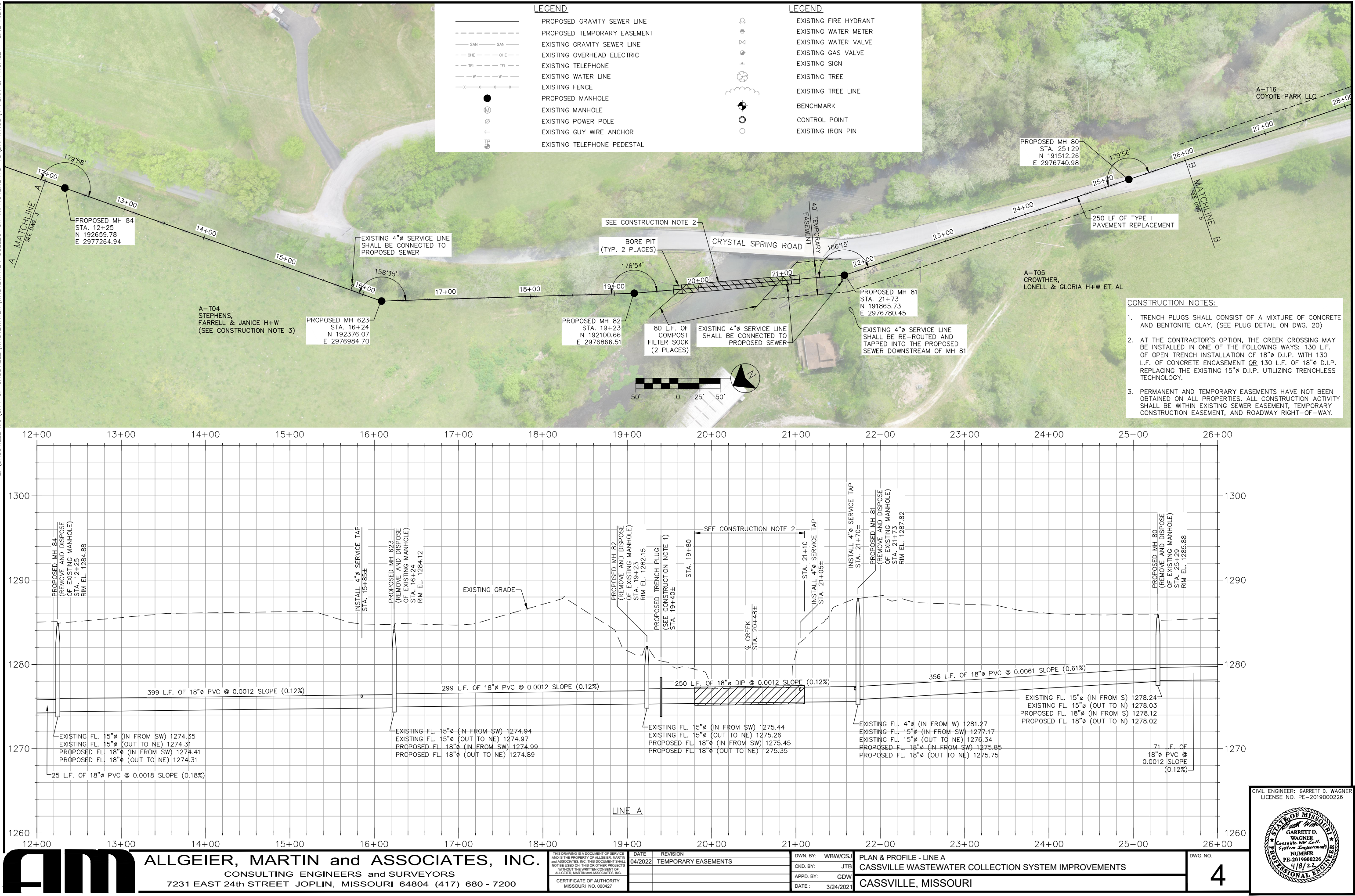
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PLAN & PROFILE - LINE A
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

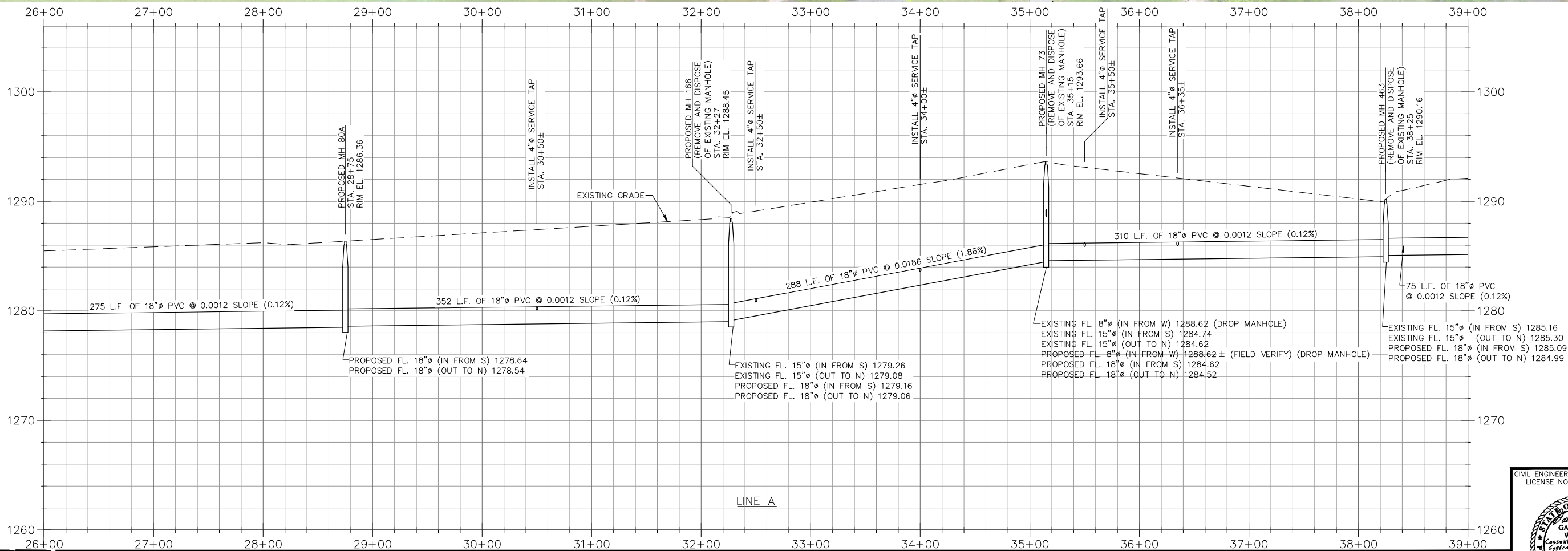
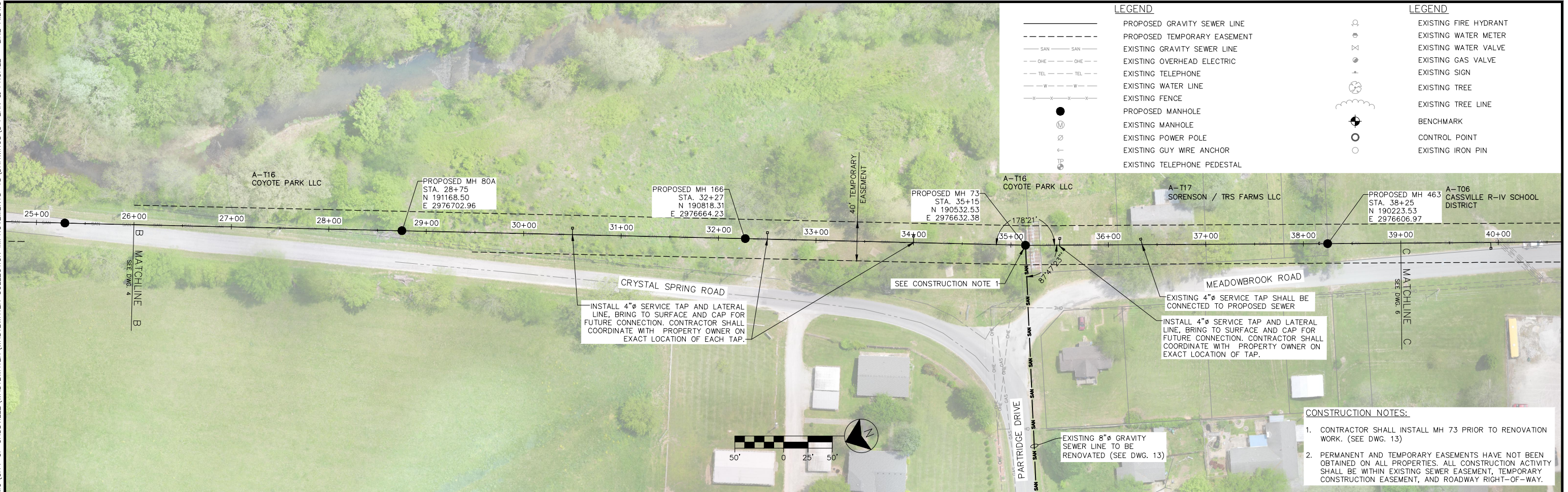
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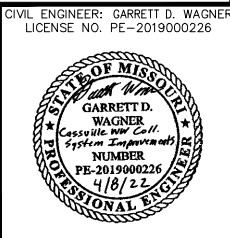
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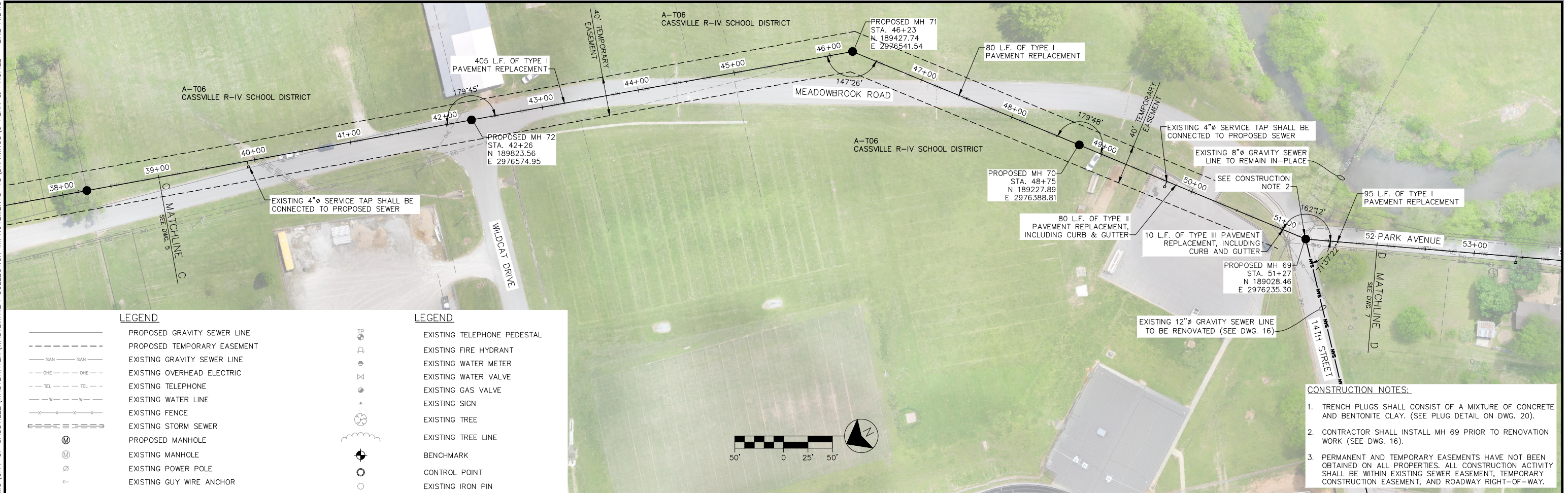
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CASSVILLE, MISSOURI

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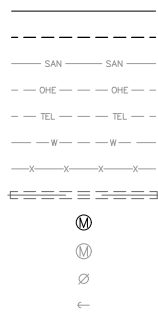
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LEGEND

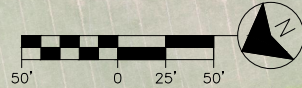


PROPOSED GRAVITY SEWER LINE
PROPOSED TEMPORARY EASEMENT
EXISTING GRAVITY SEWER LINE
EXISTING OVERHEAD ELECTRIC
EXISTING TELEPHONE
EXISTING WATER LINE
EXISTING FENCE
EXISTING STORM SEWER
PROPOSED MANHOLE
EXISTING MANHOLE
EXISTING POWER POLE
EXISTING GUY WIRE ANCHOR

LEGEND

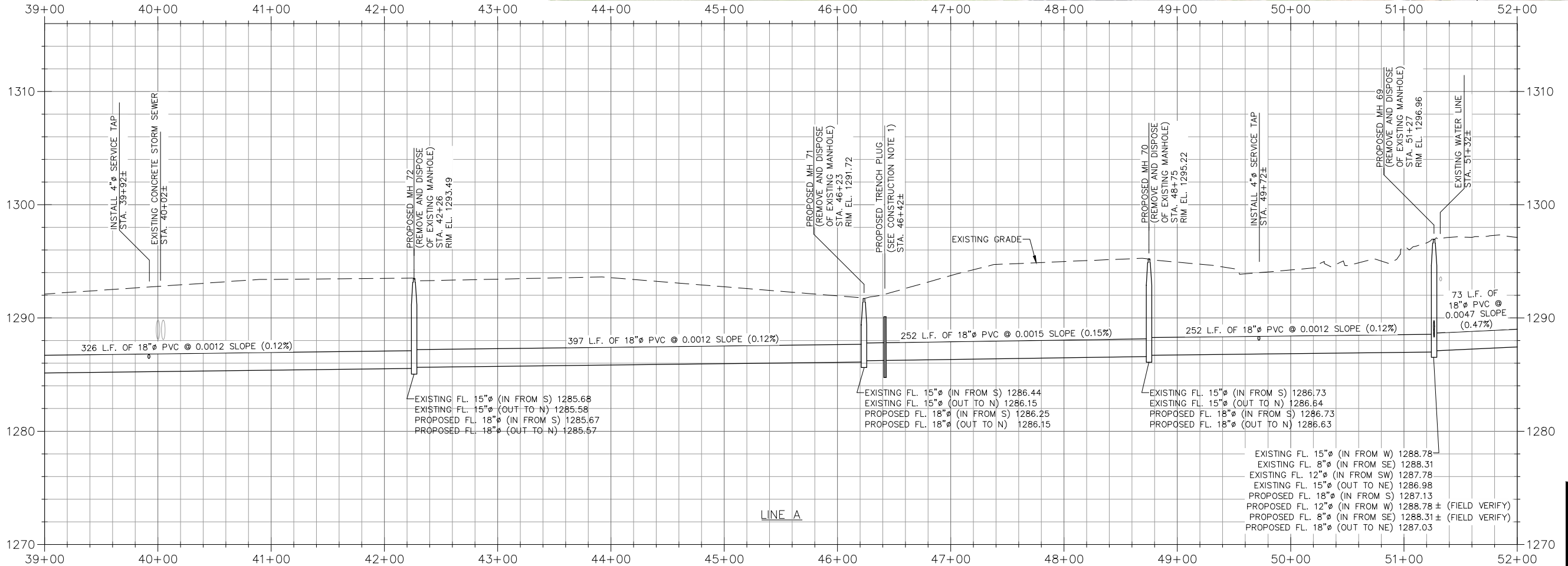


EXISTING TELEPHONE PEDESTAL
EXISTING FIRE HYDRANT
EXISTING WATER METER
EXISTING WATER VALVE
EXISTING GAS VALVE
EXISTING SIGN
EXISTING TREE
EXISTING TREE LINE
BENCHMARK
CONTROL POINT
EXISTING IRON PIN



CONSTRUCTION NOTES:

1. TRENCH PLUGS SHALL CONSIST OF A MIXTURE OF CONCRETE AND BENTONITE CLAY. (SEE PLUG DETAIL ON DWG. 20).
2. CONTRACTOR SHALL INSTALL MH 69 PRIOR TO RENOVATION WORK (SEE DWG. 16).
3. PERMANENT AND TEMPORARY EASEMENTS HAVE NOT BEEN OBTAINED ON ALL PROPERTIES. ALL CONSTRUCTION ACTIVITY SHALL BE WITHIN EXISTING SEWER EASEMENT, TEMPORARY CONSTRUCTION EASEMENT, AND ROADWAY RIGHT-OF-WAY.



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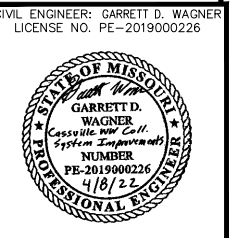
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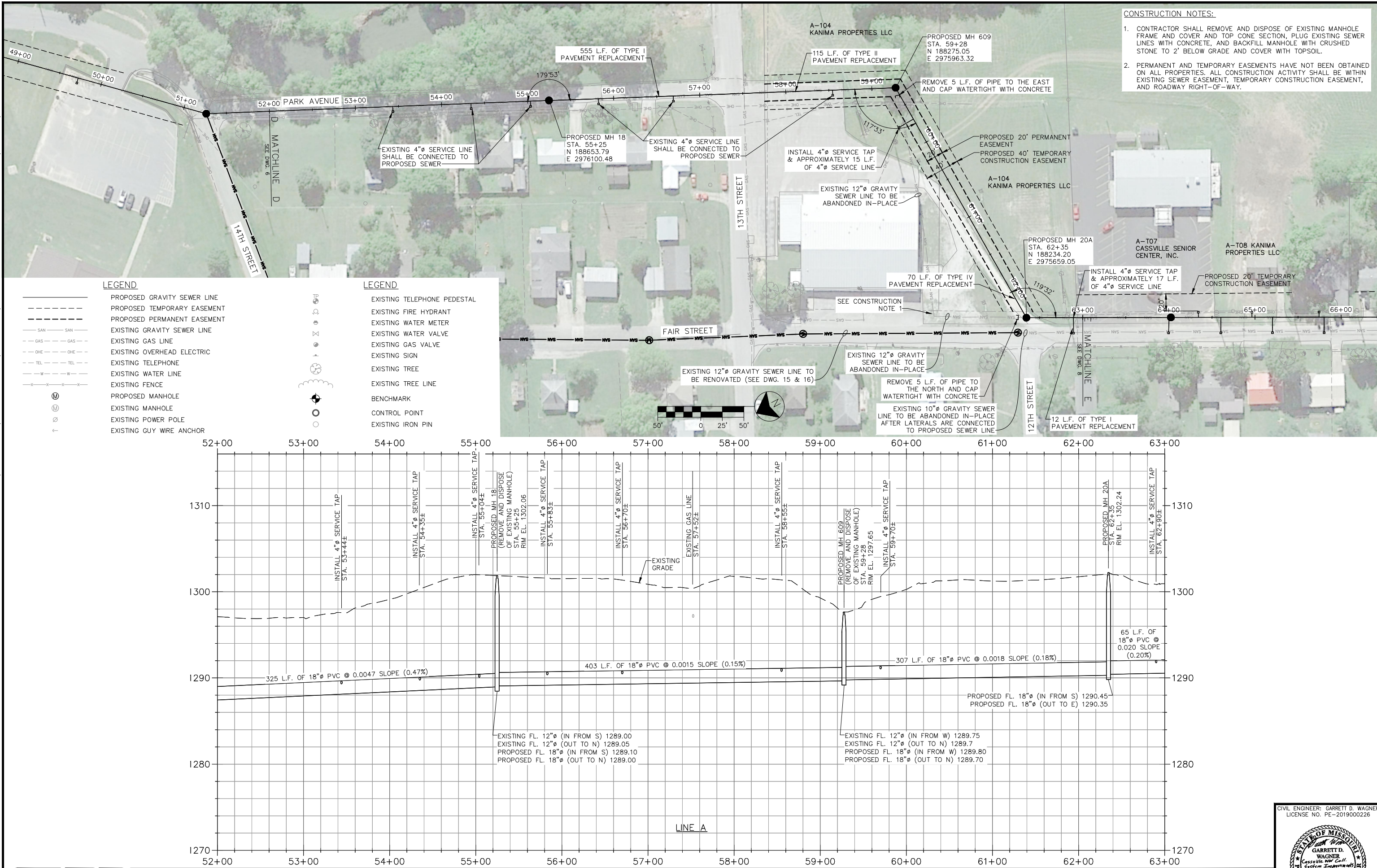
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PLAN & PROFILE - LINE A
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

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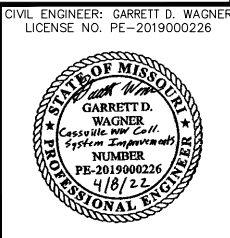
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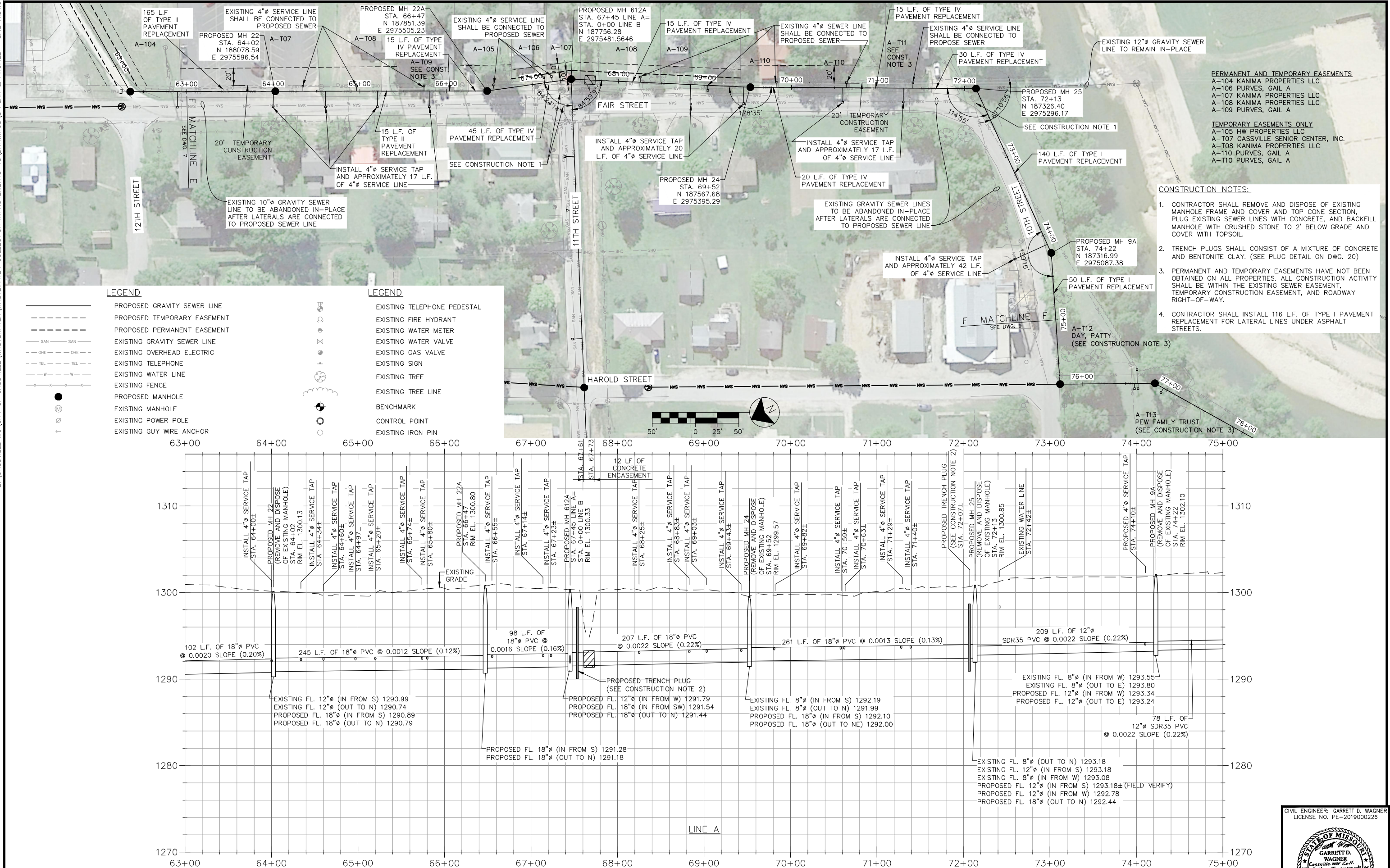
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PLAN & PROFILE - LINE A
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CASSVILLE, MISSOURI

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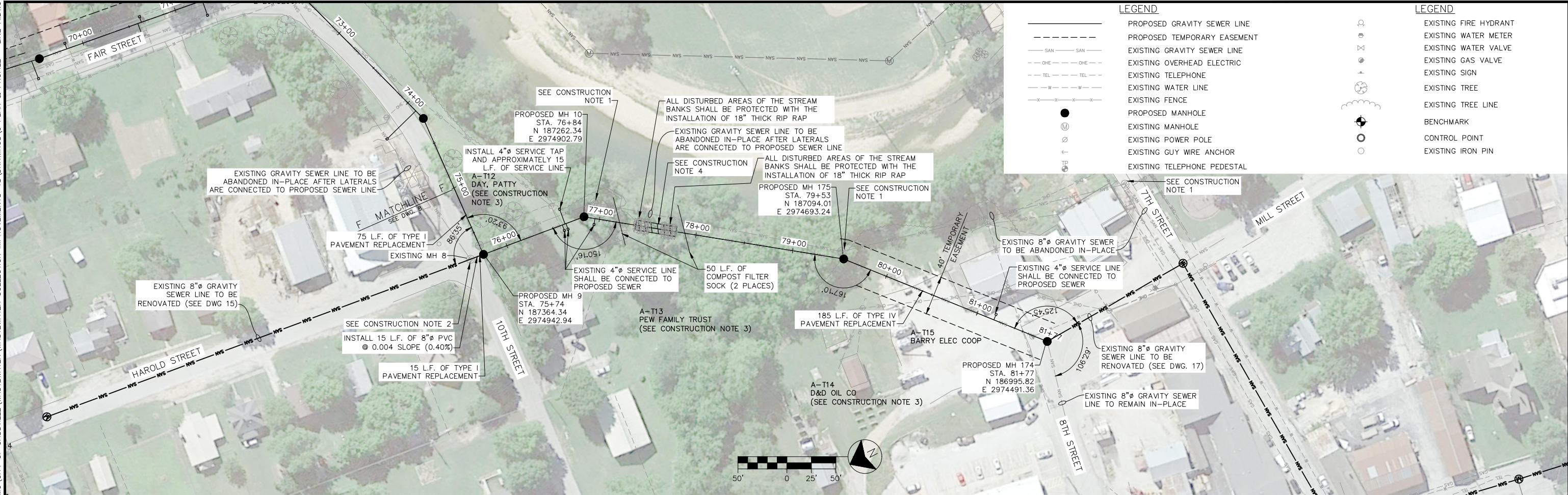
PLAN & PROFILE - LINE A
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 8

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226

STATE OF MISSOURI
GARRETT D. WAGNER
Cassville, MO
Professional Engineer
NUMBER
PE-2019000226
4/8/22

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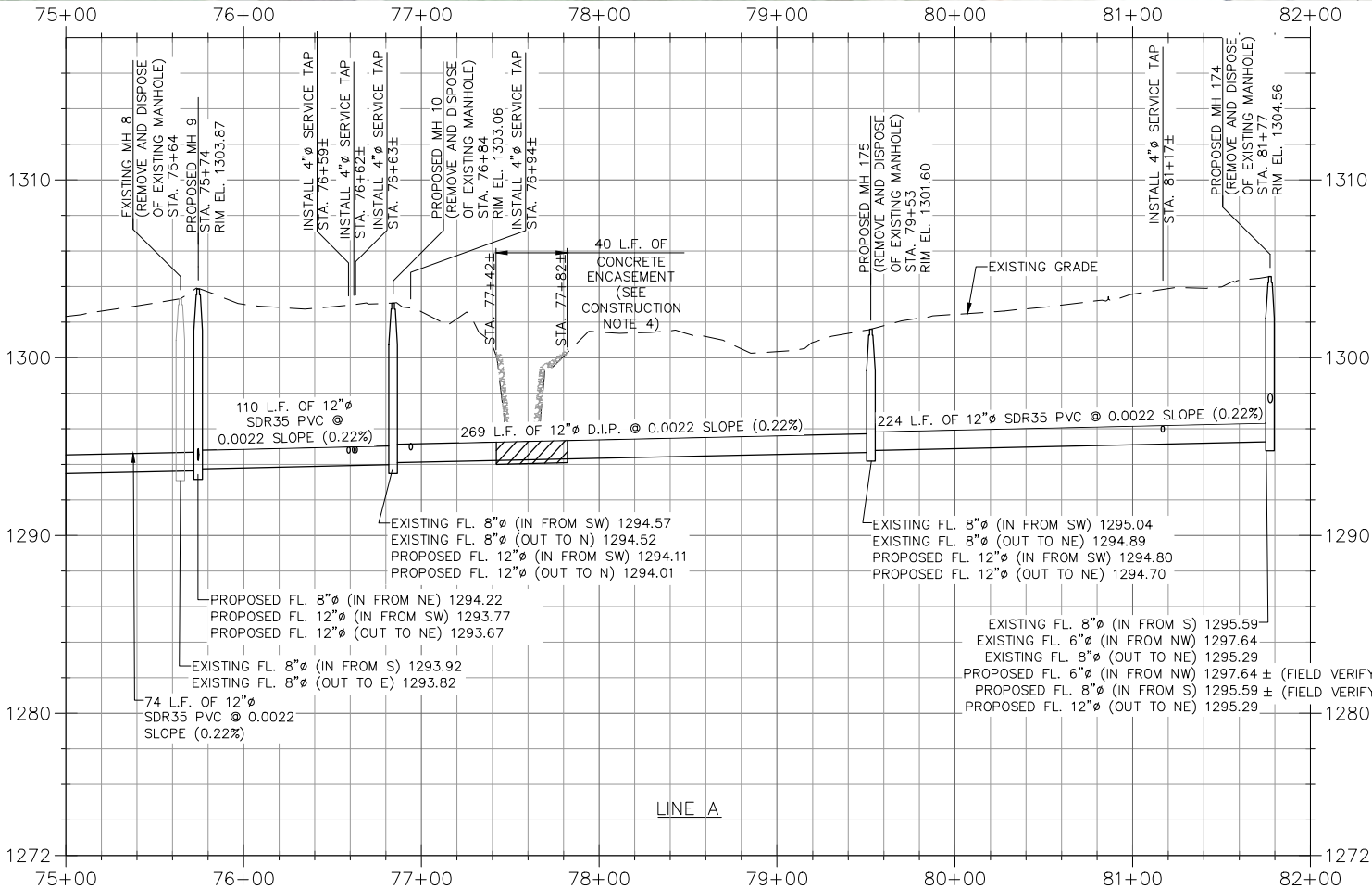


LEGEND

- PROPOSED GRAVITY SEWER LINE
- PROPOSED TEMPORARY EASEMENT
- EXISTING GRAVITY SEWER LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE
- EXISTING WATER LINE
- EXISTING FENCE
- PROPOSED MANHOLE
- EXISTING MANHOLE
- EXISTING POWER POLE
- EXISTING GUY WIRE ANCHOR
- EXISTING TELEPHONE PEDESTAL

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING SIGN
- EXISTING TREE
- EXISTING TREE LINE
- BENCHMARK
- CONTROL POINT
- EXISTING IRON PIN



CONSTRUCTION NOTES:

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANHOLE FRAME AND COVER AND TOP CONE SECTION, PLUG EXISTING SEWER LINES WITH CONCRETE, AND BACKFILL MANHOLE WITH CRUSHED STONE TO 2' BELOW GRADE AND COVER WITH TOPSOIL.
- PRIOR TO C.I.P.P. WORK, MANHOLE SHALL BE REMOVED AND 15 L.F. OF 8" PVC SHALL BE CONNECTED TO EXISTING PIPE MATCHING THE EXISTING SLOPE TO THE NORTH.
- PERMANENT AND TEMPORARY EASEMENTS HAVE NOT BEEN OBTAINED ON ALL PROPERTIES. ALL CONSTRUCTION ACTIVITY SHALL BE WITHIN THE EXISTING SEWER EASEMENT TEMPORARY CONSTRUCTION EASEMENT, AND ROADWAY RIGHT-OF-WAY.
- ALL NECESSARY WORK FOR A COMPLETE CREEK CROSSING INSTALLATION, INCLUDING APPROXIMATELY 40 L.F. OF TRENCHING, BACKFILL, 12" D.I.P., CONCRETE ENCASEMENT, STREAM BANK GRADING, AND RIP RAP SHALL BE MEASURED AND PAID FOR ON A LUMP SUM BASIS.



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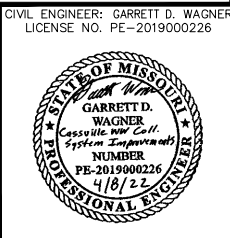
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DATE:	3/24/2021

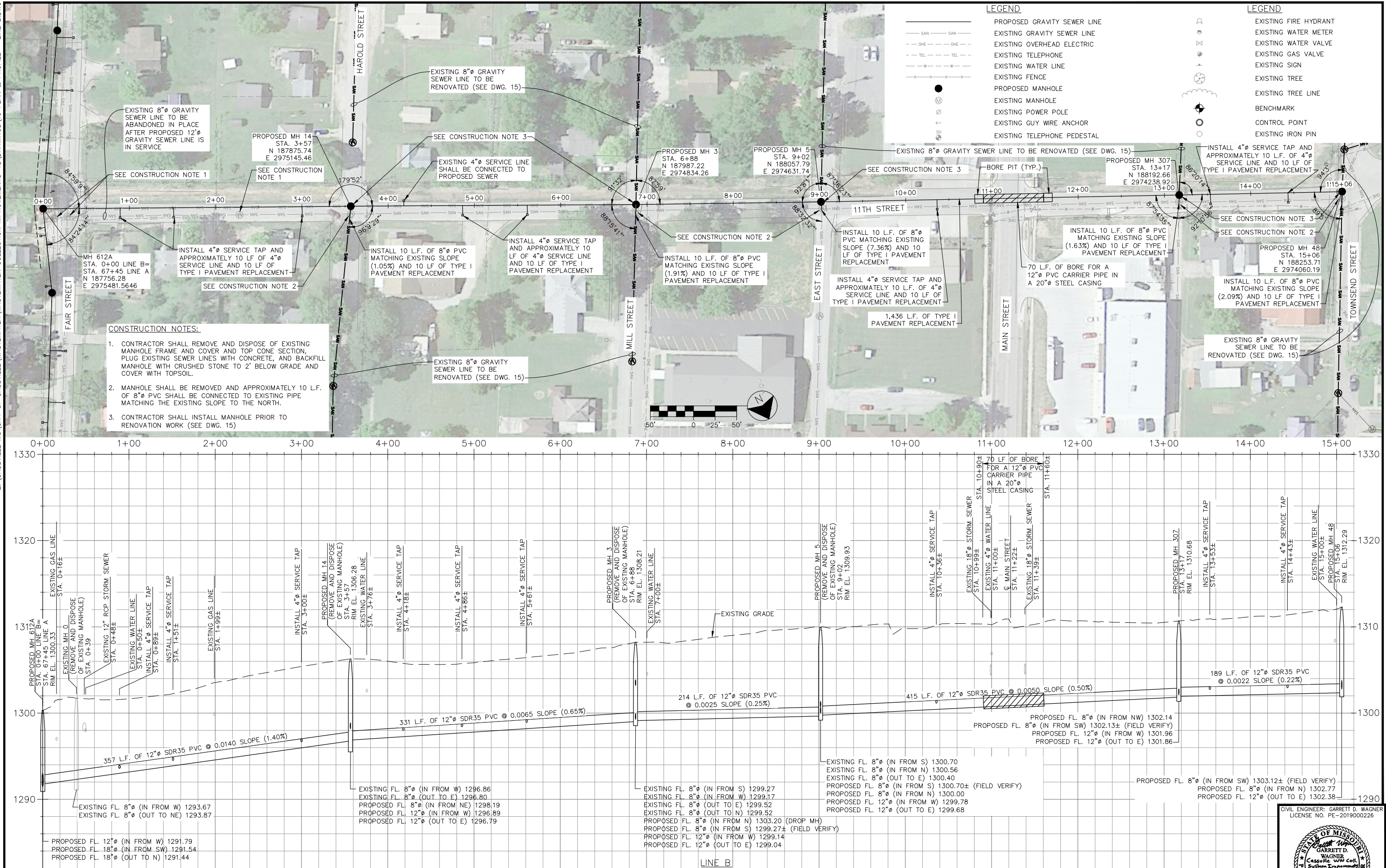
PLAN & PROFILE - LINE A
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

9



Z:\CASSVILLE.MO\CITY OF CASSVILLE\WASTEWATER COLLECTION IMPROVEMENTS '18\DRAWINGS\10 PLAN & PROFILE - LINE B.DWG



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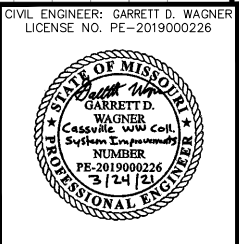
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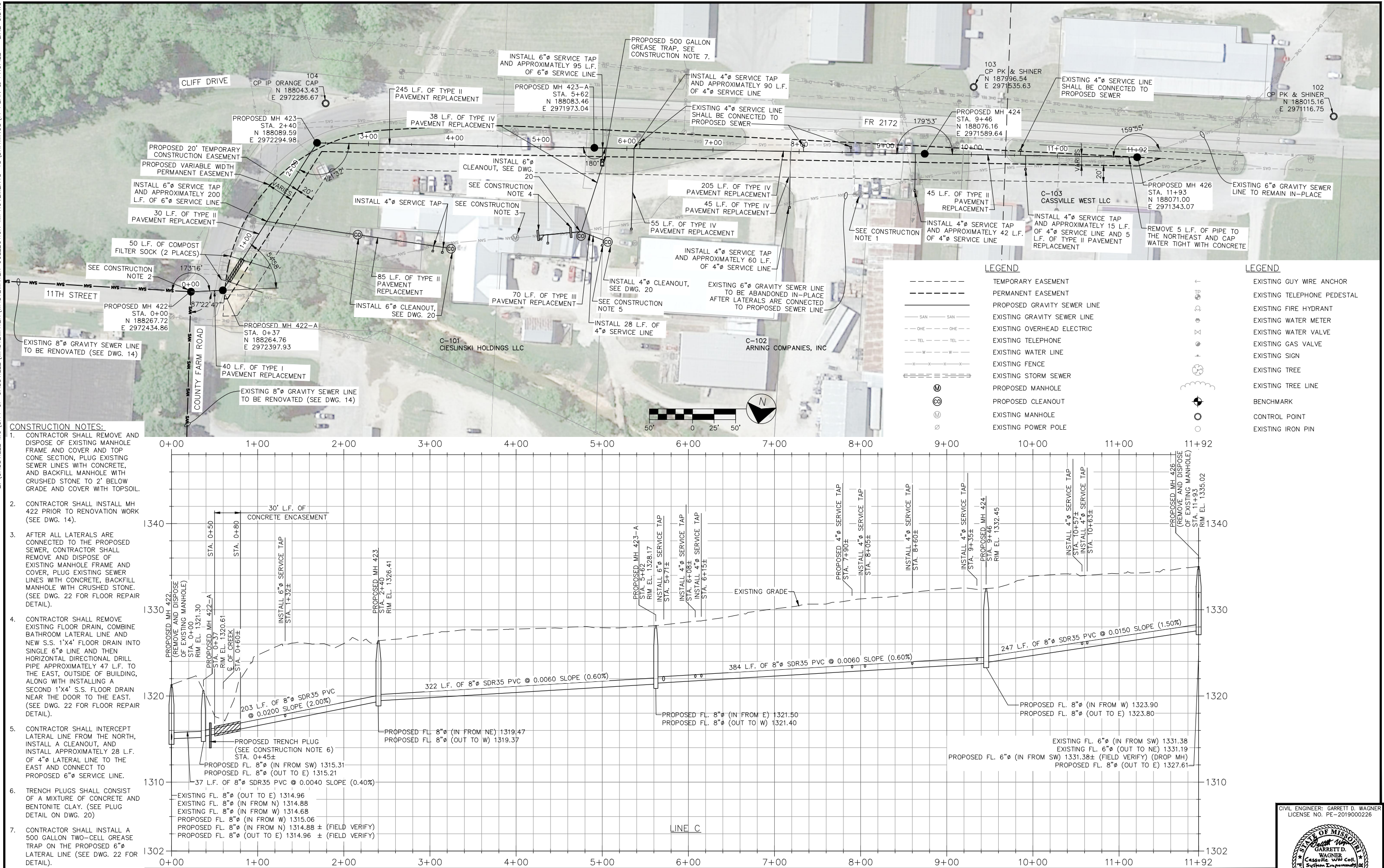
DATE	REVISION

DWN. BY: WBW/CSJ
CKD. BY: JTB
APPD. BY: GDW
DATE: 3/24/2021

PLAN & PROFILE - LINE B
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
10





- CONSTRUCTION NOTES:
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANHOLE FRAME AND COVER AND TOP CONE SECTION, PLUG EXISTING SEWER LINES WITH CONCRETE, AND BACKFILL MANHOLE WITH CRUSHED STONE TO 2' BELOW GRADE AND COVER WITH TOPSOIL.
 - CONTRACTOR SHALL INSTALL MH 422 PRIOR TO RENOVATION WORK (SEE DWG. 14).
 - AFTER ALL LATERALS ARE CONNECTED TO THE PROPOSED SEWER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANHOLE FRAME AND COVER, PLUG EXISTING SEWER LINES WITH CONCRETE, BACKFILL MANHOLE WITH CRUSHED STONE. (SEE DWG. 22 FOR FLOOR REPAIR DETAIL).
 - CONTRACTOR SHALL REMOVE EXISTING FLOOR DRAIN, COMBINE BATHROOM LATERAL LINE AND NEW S.S. 1'x4' FLOOR DRAIN INTO SINGLE 6" LINE AND THEN HORIZONTAL DIRECTIONAL DRILL PIPE APPROXIMATELY 47 L.F. TO THE EAST, OUTSIDE OF BUILDING, ALONG WITH INSTALLING A SECOND 1'x4' S.S. FLOOR DRAIN NEAR THE DOOR TO THE EAST. (SEE DWG. 22 FOR FLOOR REPAIR DETAIL).
 - CONTRACTOR SHALL INTERCEPT LATERAL LINE FROM THE NORTH, INSTALL A CLEANOUT, AND INSTALL APPROXIMATELY 28 L.F. OF 4" LATERAL LINE TO THE EAST AND CONNECT TO PROPOSED 6" SERVICE LINE.
 - TRENCH PLUGS SHALL CONSIST OF A MIXTURE OF CONCRETE AND BENTONITE CLAY. (SEE PLUG DETAIL ON DWG. 20)
 - CONTRACTOR SHALL INSTALL A 500 GALLON TWO-CELL GREASE TRAP ON THE PROPOSED 6" LATERAL LINE (SEE DWG. 22 FOR DETAIL).

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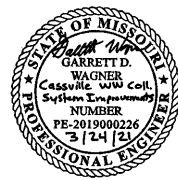
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CKD. BY: JTB
APPD. BY: GDW
DATE: 3/24/2021

PLAN & PROFILE - LINE C
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

11

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



Z:\CASSVILLE MO\CITY OF CASSVILLE\WASTEWATER COLLECTION IMPROVEMENTS\18\DRAWINGS\12 SANITARY SEWER RENOVATION - AREA 1.DWG



LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- ⊕ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- ⊕ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.



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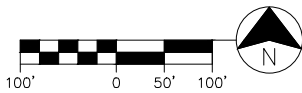
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APPD. BY: GDW
DATE: 3/24/2021

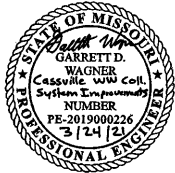
SANITARY SEWER RENOVATION - AREA 1
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

12



CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



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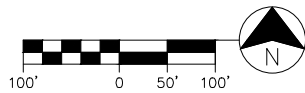


LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- Ⓜ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.
- CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT MH 73 (LINE A DWG. 5) IS INSTALLED PRIOR TO C.I.P.P. WORK UPSTREAM.



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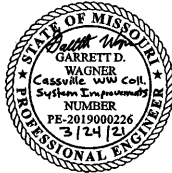
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DATE: 3/24/2021

SANITARY SEWER RENOVATION - AREA 2
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

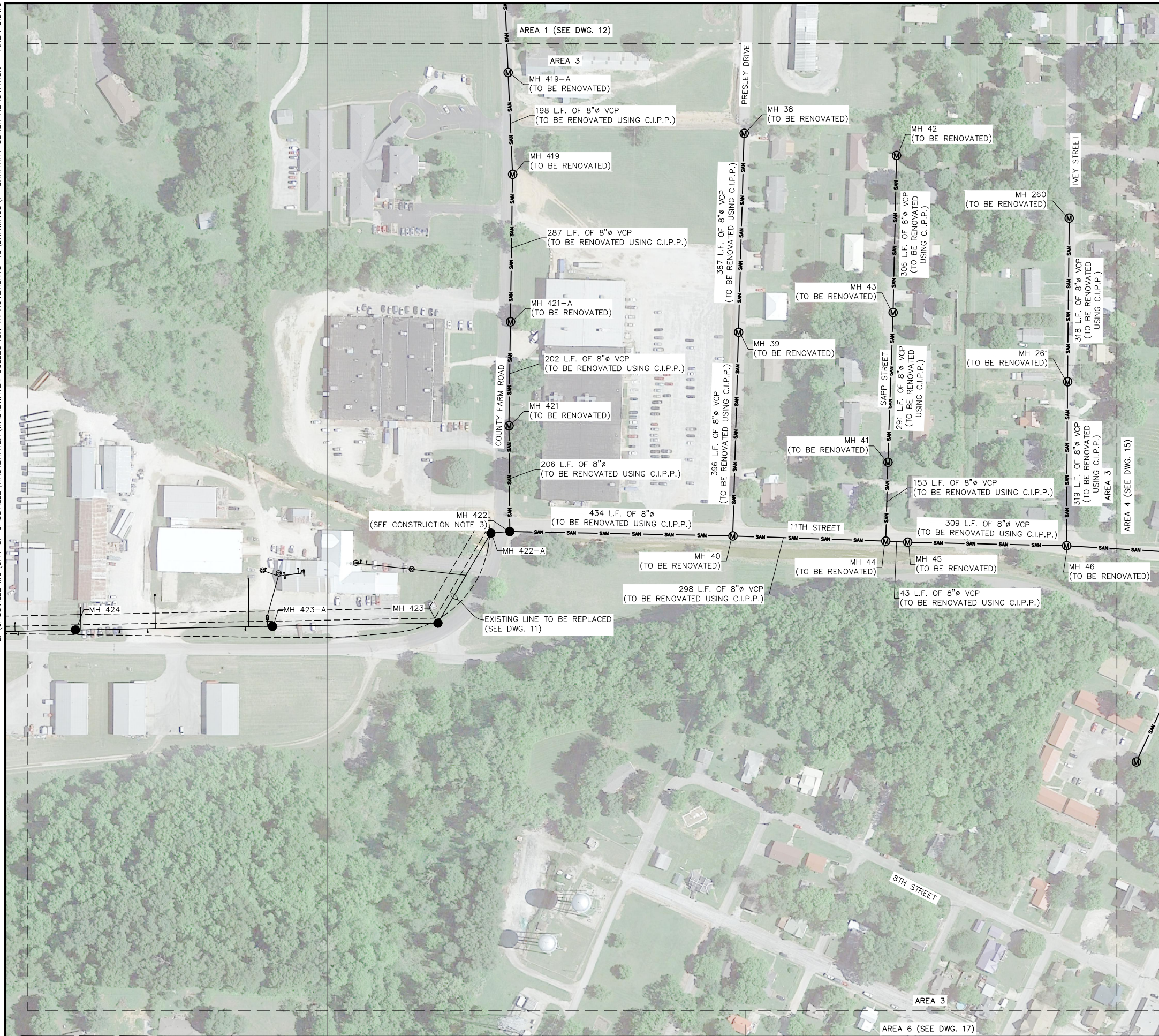
DWG. NO.

13

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



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LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- Ⓜ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG. NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.
- CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT MH 422 (LINE C DWG. 11) IS REPLACED PRIOR TO C.I.P.P. WORK UPSTREAM AND DOWNSTREAM.



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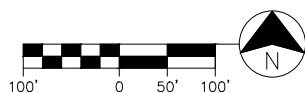
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DATE: 3/24/2021

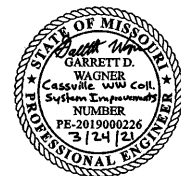
SANITARY SEWER RENOVATION - AREA 3
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

14



CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



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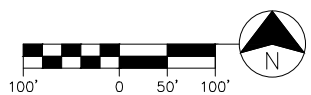


LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- ⊙ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- ⊙ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.
- CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NECESSARY MANHOLES ARE INSTALLED PRIOR TO C.I.P.P. WORK UPSTREAM AND/OR DOWNSTREAM.



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DATE: 3/24/2021

SANITARY SEWER RENOVATION - AREA 4
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
15

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226

Garrett D. Wagner
Cassville WWS Coll. System Improvements
PE-2019000226
3/24/21

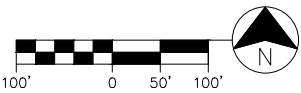
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- LEGEND**
- SAN — EXISTING SEWER LINE TO BE RENOVATED
 - SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
 - EXISTING SEWER LINE TO BE REPLACED
 - AREA BOUNDARY
 - Ⓜ EXISTING MANHOLE TO BE RENOVATED
 - EXISTING MANHOLE TO BE REPLACED
 - Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.
- CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NECESSARY MANHOLES ARE INSTALLED PRIOR TO C.I.P.P. WORK UPSTREAM AND/OR DOWNSTREAM.



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SANITARY SEWER RENOVATION - AREA 5
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
16



Z:\CASSVILLE MO\CITY OF CASSVILLE\WASTEWATER\WASTEWATER COLLECTION IMPROVEMENTS\18\DRAWINGS\17 SANITARY SEWER RENOVATION - AREA 6.DWG



LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- SAN — EXISTING SEWER LINE TO BE REPLACED
- — — AREA BOUNDARY
- Ⓜ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG. NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.
- INSTALL APPROXIMATELY 10' DEEP MANHOLE OVER EXISTING LINES (SEE DETAIL ON DWG. 21) PRIOR TO CIPP WORK. AFTER INSTALLATION, CONTRACTOR SHALL REMOVE 5 L.F. OF PIPE TO THE NORTHEAST AND CAP WATERTIGHT WITH CONCRETE.
- AFTER MH 195-A IS INSTALLED, AND PRIOR TO RENOVATION OF MH 190, CONTRACTOR SHALL PLUG FLOWLINE TO THE SOUTHWEST WATERTIGHT WITH CONCRETE.
- CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT MH 174 (LINE A DWG. 9) IS REPLACED PRIOR TO C.I.P.P. WORK UPSTREAM.



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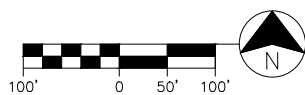
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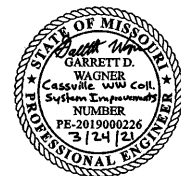
SANITARY SEWER RENOVATION - AREA 6
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

17



CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



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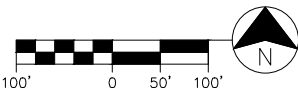


LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- Ⓜ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.



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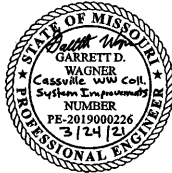
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APPD. BY: GDW
DATE: 3/24/2021

SANITARY SEWER RENOVATION - AREA 7
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

18

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226



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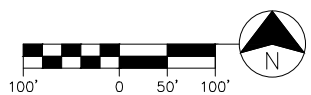


LEGEND

- SAN — EXISTING SEWER LINE TO BE RENOVATED
- SAN — EXISTING SEWER LINE TO REMAIN IN-PLACE
- EXISTING SEWER LINE TO BE REPLACED
- AREA BOUNDARY
- Ⓜ EXISTING MANHOLE TO BE RENOVATED
- EXISTING MANHOLE TO BE REPLACED
- Ⓜ EXISTING MANHOLE TO REMAIN IN-PLACE

CONSTRUCTION NOTES:

- SEE DWG NO. 2 FOR GENERAL NOTES.
- UNLESS NOTED OTHERWISE, ALL MANHOLES TO BE RENOVATED ARE ASSUMED TO BE 8' DEEP FOR ESTIMATING PURPOSES. PAYMENT SHALL BE MADE AT THE UNIT PRICE STATED IN THE BID SCHEDULE WITH THE CONTRACT QUANTITY TO BE ADJUSTED BASED ON THE FINAL INSTALLED QUANTITY.



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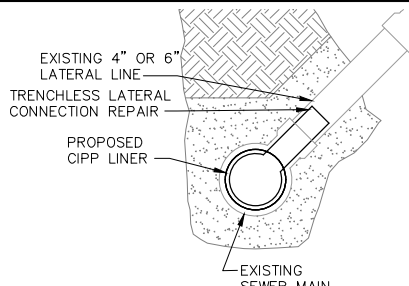
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APPD. BY: GDW
DATE: 3/24/2021

SANITARY SEWER RENOVATION - AREA 8
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

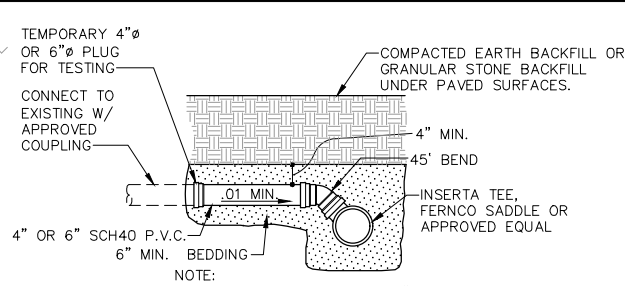
DWG. NO.
19

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226

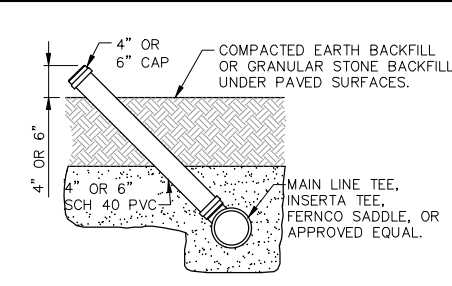
Garrett D. Wagner
Cassville WWS Coll. System Improvements
Professional Engineer
PE-2019000226
3/24/21



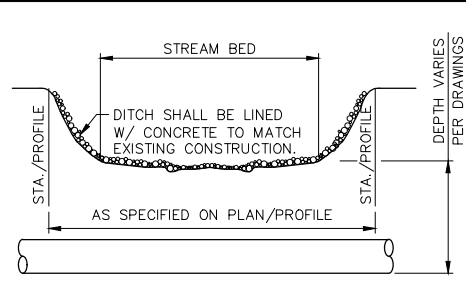
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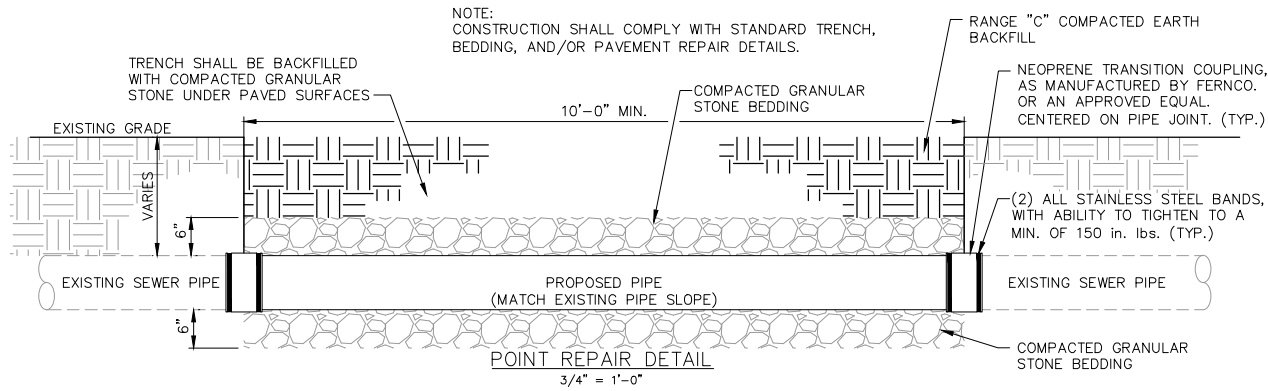
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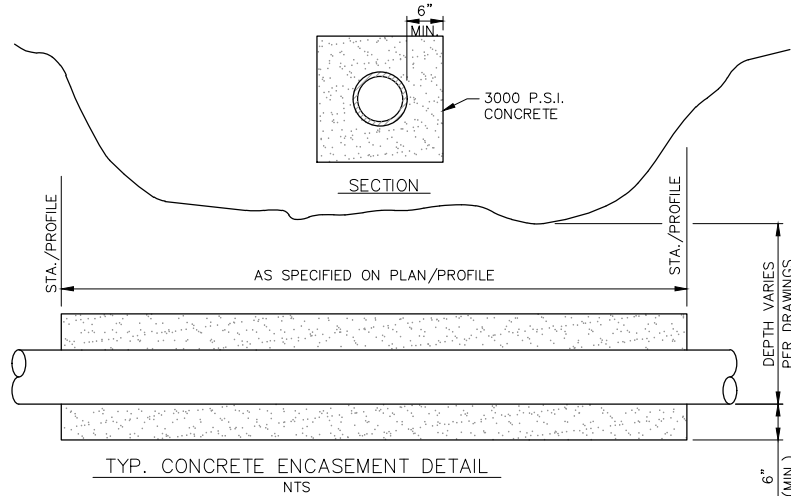
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N.T.S.



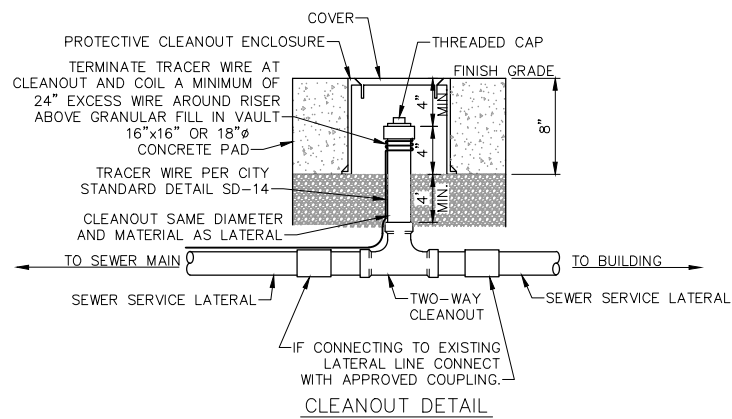
TYPICAL STREAM CROSSING DETAIL
N.T.S.



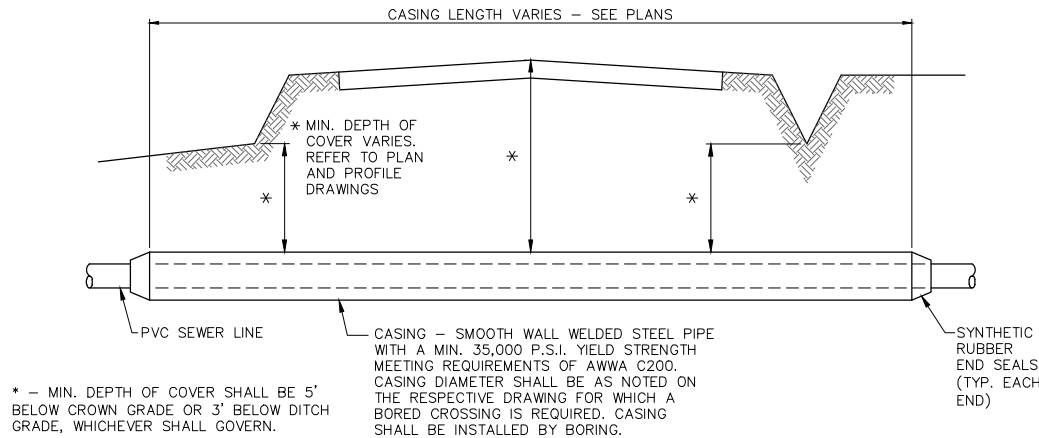
POINT REPAIR DETAIL
3/4" = 1'-0"



TYP. CONCRETE ENCASEMENT DETAIL
N.T.S.



- NOTES:
1. A SEALED CLEANOUT WITH REMOVABLE CAP SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE EDGE OF THE PUBLIC EASEMENT, OR PROPERTY LINE AND SHALL BE HOUSED IN A PROTECTIVE ENCLOSURE, AS REQUIRED BY MISSOURI STATE STATUTE. THIS PROTECTIVE ENCLOSURE SHALL BE THE ACCESS POINT FOR THE SERVICE LINE CLEANOUT AS WELL AS THE ACCESS POINT FOR CONNECTION TO THE TRACER WIRE. THE TOP OF THE PROTECTIVE ENCLOSURE SHALL BE INSTALLED TO FINISH GRADE.
 2. PROTECTIVE ENCLOSURE SHALL BE EAST JORDAN 1566Z ASSEMBLY. CLEANOUT BOX LID SHALL HAVE THE WORD "SEWER" OR "S" IN THE CASTING.
 3. CAP THE END OF THE WIRE INSIDE THE PROTECTIVE ENCLOSURE WITH A THERMOPLASTIC SHELL CONNECTOR RATED FOR DAMP, UNDERGROUND APPLICATIONS.



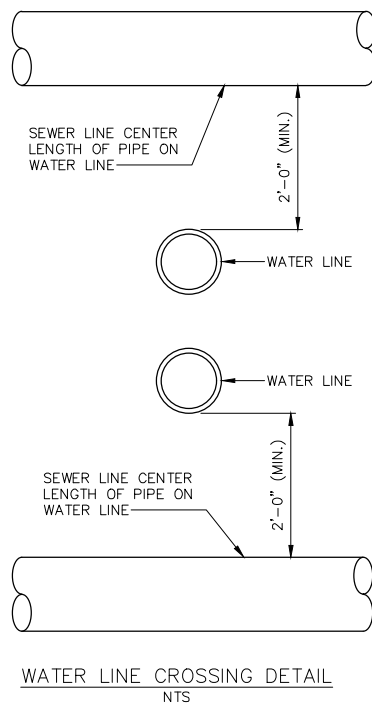
* - MIN. DEPTH OF COVER SHALL BE 5' BELOW CROWN GRADE OR 3' BELOW DITCH GRADE, WHICHEVER SHALL GOVERN.

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED TO COMPLETE PROJECT CONSTRUCTION.

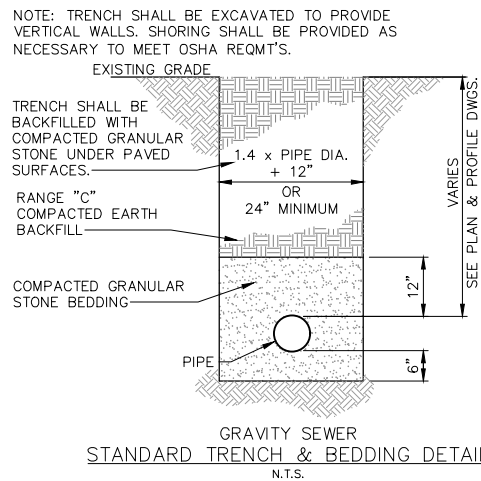
STEEL CASING CROSSING DETAIL
N.T.S.

CROSSING NOTES:

1. CASING SPACERS SHALL BE REQUIRED BETWEEN THE CASING PIPE AND THE CARRIER PIPE, AND SHALL BE METALLIC WITH A POLYVINYL CHLORIDE LINER, WELDED STEEL RISERS, GLASS REINFORCED PLASTIC RUNNERS, AND A RUST-INHIBITING COATING.
2. AFTER THE UNDERGROUND EXCAVATION OPERATIONS ARE COMPLETED, THE CONTRACTOR SHALL SLIDE THE CARRIER PIPE IN PLACE. ALL PIPE JOINTS SHALL BE COMPLETED OUTSIDE OF THE CASING AND INSPECTED BY THE RESIDENT PROJECT REPRESENTATIVE BEFORE THE PIPE IS PUSHED INTO THE CASING PIPE. ONCE THE CARRIER PIPE HAS BEEN FIXED, THE ANNULAR SPACE AT EACH END OF THE CASING PIPE BETWEEN IT AND THE CARRIER PIPE SHALL BE SEALED WITH 1/8-INCH THICK SYNTHETIC RUBBER END SEALS, MODEL "C" BY PIPELINE SEAL AND INSULATOR, INC., HOUSTON, TEXAS, OR APPROVED EQUAL.
3. CASING SPACERS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS IN A MANNER SUCH THAT THERE SHALL BE NO METALLIC CONTACT BETWEEN THE CASING AND THE CARRIER PIPE. THE POSITIONING OF THE SPACER SHOULD ENSURE THAT THE CARRIER PIPES ARE ADEQUATELY SUPPORTED THROUGHOUT THEIR LENGTH, PARTICULARLY AT THE ENDS, TO OFFSET SETTLING AND POSSIBLE ELECTRICAL SHORTING. THE END SPACER MUST BE WITHIN 12" OF THE END OF THE CASING PIPE, REGARDLESS OF CARRIER/CASING DIFFERENTIAL OR TYPES OF SPACERS BEING USED.



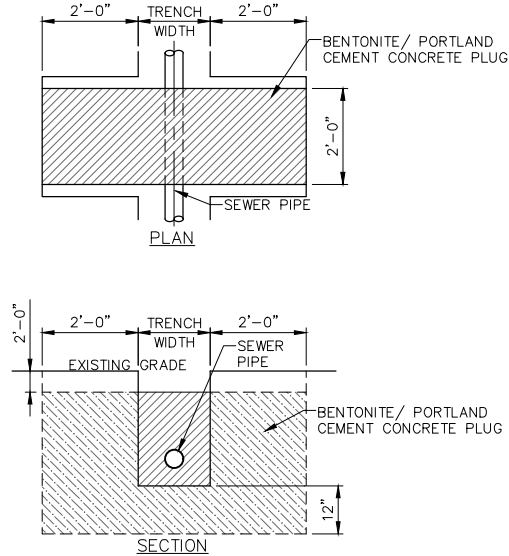
WATER LINE CROSSING DETAIL
N.T.S.



GRAVITY SEWER
STANDARD TRENCH & BEDDING DETAIL
N.T.S.

NOTE:
TRENCH SHALL BE EXCAVATED TO A DEPTH OF 6" BELOW BOTTOM OF PIPE AND BACKFILLED TO 12" ABOVE PIPE WITH GRAVEL OR CRUSHED STONE CONFORMING TO THE FOLLOWING GRADATION TO PROVIDE UNIFORM BEDDING FOR THE ENTIRE LENGTH OF THE PIPE.

SIEVE SIZE	PERCENT PASSING
1	100
3/4	90-100
3/8	20-55
No. 4	0-10
No. 8	0-5



NOTE:
TRENCH PLUG SHALL CONSIST OF A FORMED BENTONITE CLAY GROUT PLACED FULL TRENCH WIDTH AS SHOWN. GROUT SHALL CONTAIN MIN. 10% BENTONITE BY WEIGHT. (MAX. 20% BENTONITE)

TRENCH PLUG DETAIL
N.T.S.



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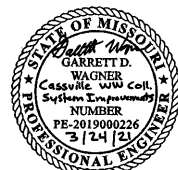
DATE	REVISION

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DATE: 3/24/2021

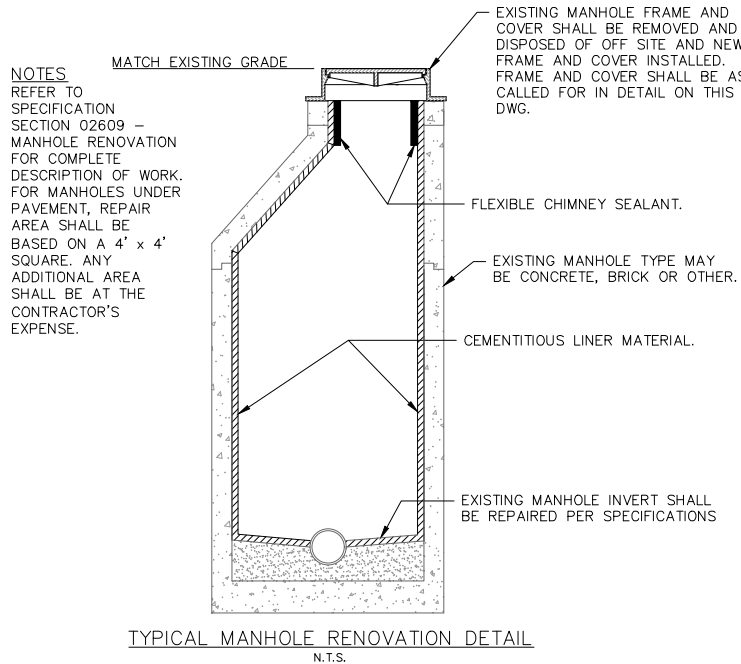
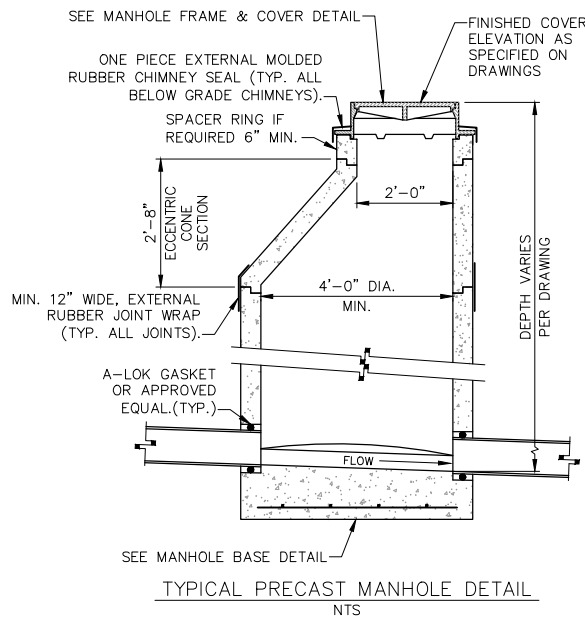
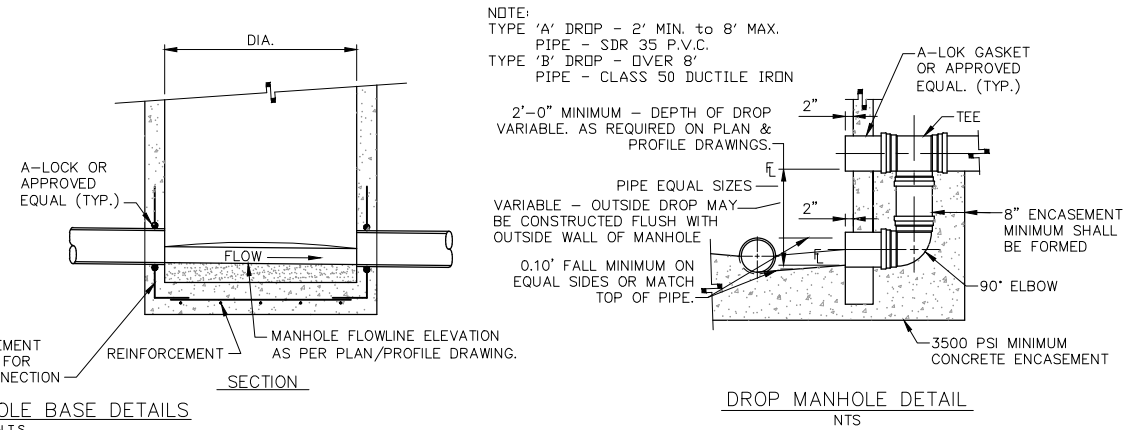
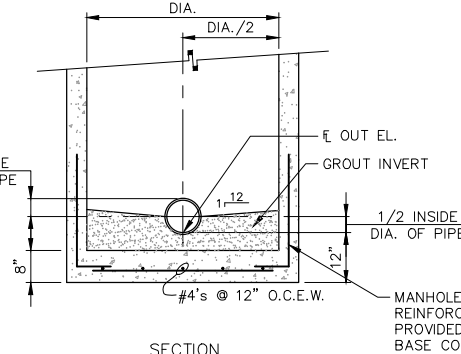
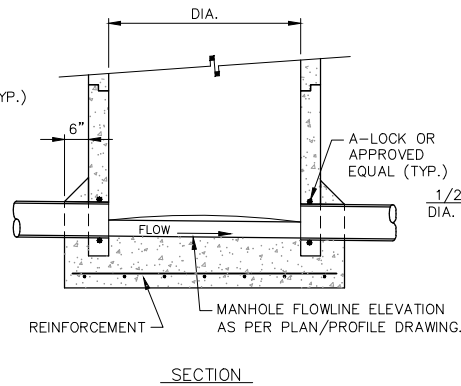
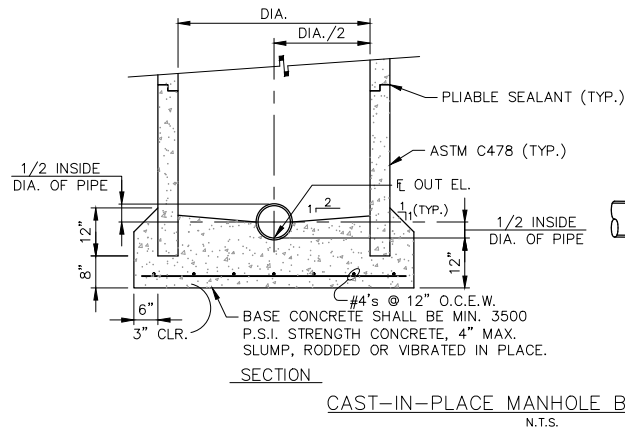
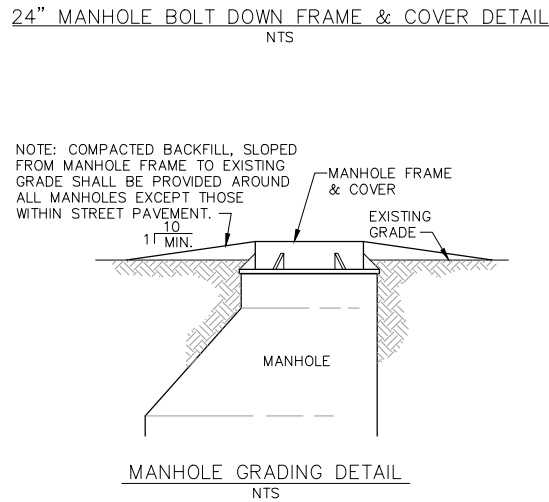
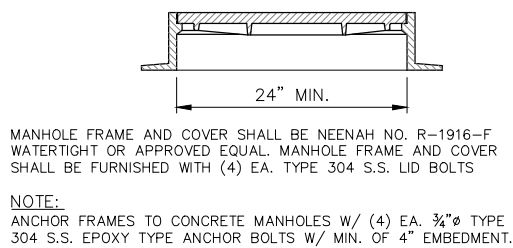
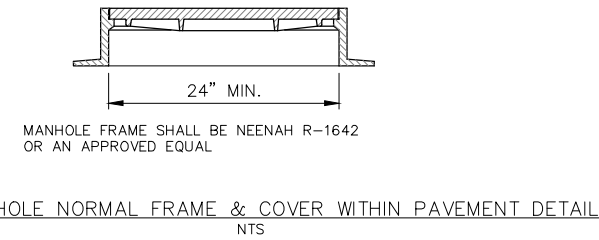
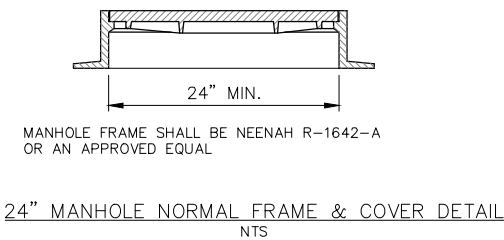
STANDARD CONSTRUCTION DETAILS
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
20

CIVIL ENGINEER: GARRETT D. WAGNER
LICENSE NO. PE-2019000226

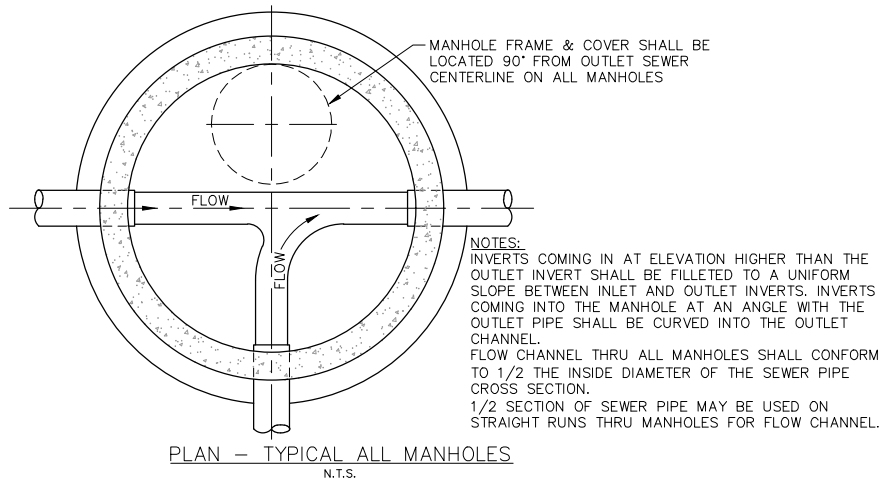


Z:\CASSVILLE MO\CITY OF CASSVILLE\WASTEWATER COLLECTION IMPROVEMENTS 18\DRAWINGS\21 STANDARD CONSTRUCTION DETAILS.DWG



GENERAL NOTES:

- JOINT BETWEEN MANHOLE FRAME AND ADJUSTMENT RING AREA SHALL BE WATERTIGHT. JOINT GASKET SHALL BE OF PREFORMED MASTIC (RAM-NEK, HAMILTON-KENT, OR APPROVED EQUAL). A ONE-PIECE EXTERNAL, MOLDED RUBBER SEAL SHALL BE INSTALLED AROUND MANHOLE FRAME AND ADJUSTMENT RING AREA ON ALL BELOW-GRADE MANHOLES.
- MANHOLE JOINTS SHALL BE WATERTIGHT. JOINT GASKET SHALL BE PREFORMED MASTIC (RAM-NEK, HAMILTON-KENT, OR APPROVED EQUAL). A MIN. 12" WIDE, EXTERNAL RUBBER JOINT WRAP SHALL BE INSTALLED ON ALL BELOW-GRADE PRECAST CONCRETE MANHOLE JOINTS.
- OPENINGS FOR SEWER PIPE IN MANHOLE SECTIONS SHALL BE FORMED AT THE FACTORY, EITHER CAST IN PLACE GASKET OR CUTOUT OPENING.
 - MINIMUM OPENING FOR CUTOUTS SHALL BE EQUAL TO OUTSIDE DIAMETER OF PIPE PLUS (4) FOUR INCHES AND MAXIMUM OPENING SHALL BE EQUAL TO OUTSIDE DIAMETER OF PIPE PLUS (6) INCHES
 - ANNULAR SPACE BETWEEN SEWER PIPE AND CUTOUT OPENING IN MANHOLE SECTIONS SHALL BE FILLED WITH NON-SHRINKING TYPE GROUT PER SPECIFICATIONS.
 - CAST-IN-PLACE GASKET SHALL BE A-LOCK OR APPROVED EQUAL.
- ALL MANHOLE DETAILS ARE FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS AND SHALL CONFORM TO ASTM SPEC. C478 - (CURRENT REVISION) WITH THE FOLLOWING MODIFICATIONS:
 - CEMENT USED SHALL CONFORM TO SPECIFICATIONS FOR PORTLAND CEMENT ASTM DESIGNATION C150. CONCRETE SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
 - MINIMUM SHELL THICKNESS SHALL BE: FOR (0) TO 16 FEET DEPTH, (1/12) ONE-TWELFTH INTERNAL SHELL DIAMETER OR (4) FOUR INCHES, WHICHEVER IS GREATER. FOR 16 FEET AND OVER IN DEPTH, (1/12) ONE-TWELFTH INTERNAL SHELL DIAMETER PLUS (1) ONE INCH OR (5) INCHES, WHICHEVER IS GREATER.
 - EXTERIOR DAMP PROOFING SHALL CONFORM TO KOPPERS SPECIFICATIONS FOR COAL TAR BITUMASTIC SUPER SERVICE BLACK, TNEEC HEAVY DUTY BLACK, CARBOLINE, OR APPROVED EQUAL. DAMP PROOFING SHALL BE FACTORY APPLIED.
 - JOINTS BETWEEN MANHOLE SECTIONS SHALL BE WATERTIGHT. JOINT GASKETS SHALL BE RUBBER O-RING TYPE (NATURAL OR SYNTHETIC) OR PREFORMED MASTIC (RAM-NEK, HAMILTON-KENT OR APPROVED EQUAL). A MIN. 12" WIDE, EXTERNAL RUBBER JOINT WRAP SHALL BE INSTALLED ON ALL BELOW-GRADE PRECAST CONCRETE MANHOLE JOINTS.



MANHOLE SCHEDULE

LINE A			
MANHOLE NUMBER	MANHOLE DIAMETER	LID TYPE	LID DIAMETER
85	48"	BOLT DOWN	24"
92	48"	BOLT DOWN	24"
86	48"	BOLT DOWN	24"
83	48"	BOLT DOWN	24"
84	48"	BOLT DOWN	24"
623	48"	BOLT DOWN	24"
82	48"	BOLT DOWN	24"
81	48"	BOLT DOWN	24"
80	48"	BOLT DOWN	24"
80A	48"	BOLT DOWN	24"
166	48"	BOLT DOWN	24"
73	48"	BOLT DOWN	24"
463	48"	BOLT DOWN	24"
72	48"	BOLT DOWN	24"
71	48"	BOLT DOWN	24"
70	48"	BOLT DOWN	24"
69	48"	BOLT DOWN	24"
18	48"	BOLT DOWN	24"
609	48"	BOLT DOWN	24"
20A	48"	BOLT DOWN	24"
22	48"	BOLT DOWN	24"
22A	48"	BOLT DOWN	24"
612A	48"	BOLT DOWN	24"
24	48"	BOLT DOWN	24"
25	48"	BOLT DOWN	24"
9A	48"	BOLT DOWN	24"
9	48"	BOLT DOWN	24"
10	48"	BOLT DOWN	24"
175	48"	BOLT DOWN	24"
174	48"	BOLT DOWN	24"

LINE B			
MANHOLE NUMBER	MANHOLE DIAMETER	LID TYPE	LID DIAMETER
14	48"	BOLT DOWN	24"
3	48"	BOLT DOWN	24"
5	48"	BOLT DOWN	24"
307	48"	BOLT DOWN	24"
48	48"	BOLT DOWN	24"

LINE C			
MANHOLE NUMBER	MANHOLE DIAMETER	LID TYPE	LID DIAMETER
422	48"	BOLT DOWN	24"
422A	48"	BOLT DOWN	24"
423	48"	NORMAL	24"
423A	48"	NORMAL	24"
424	48"	NORMAL	24"
426	48"	NORMAL	24"



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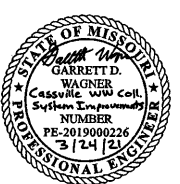
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STANDARD CONSTRUCTION DETAILS
CASSVILLE WASTEWATER COLLECTION SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

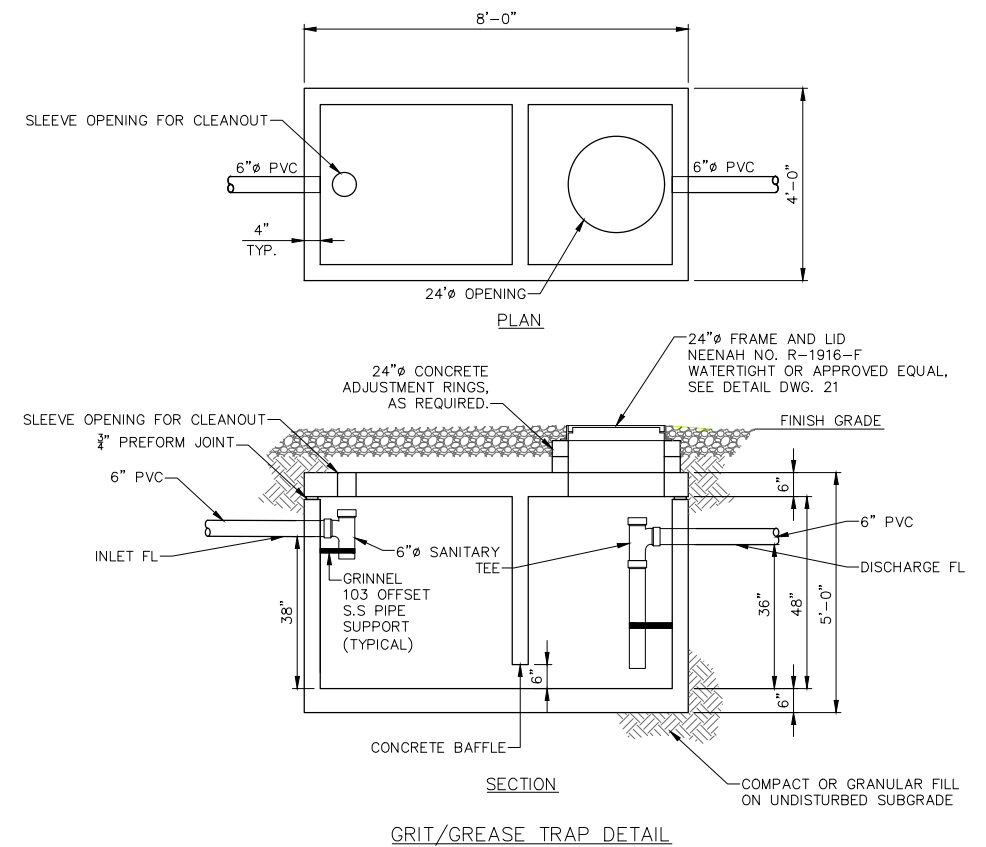
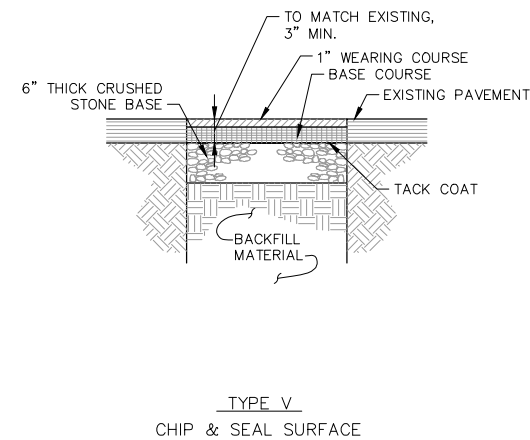
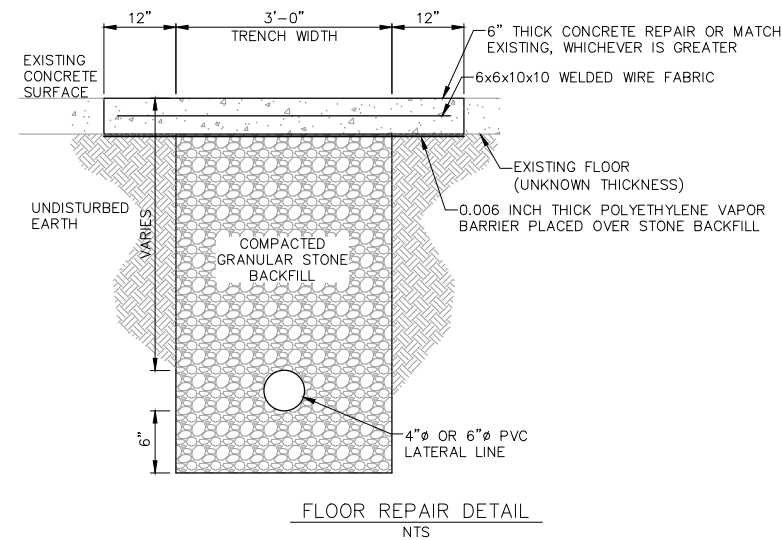
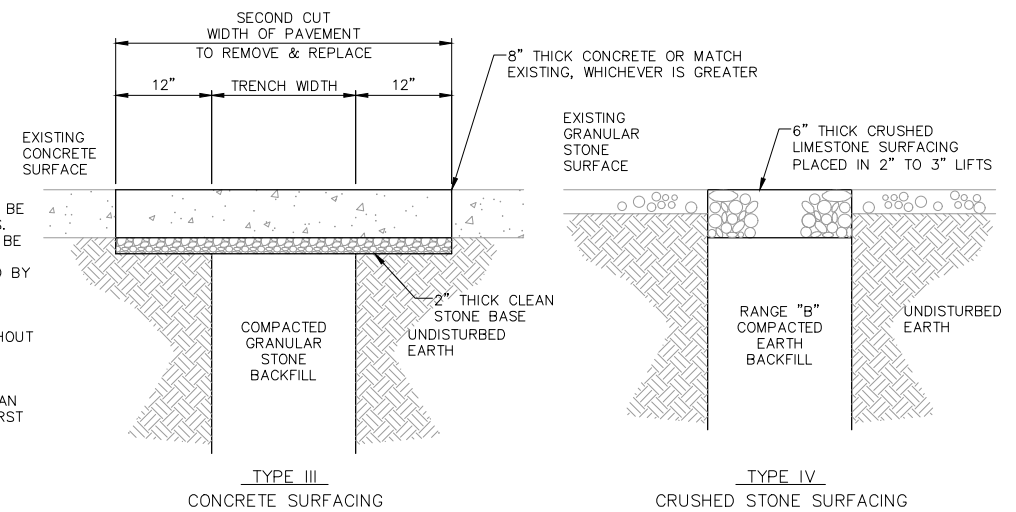
21

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LICENSE NO. PE-2019000226



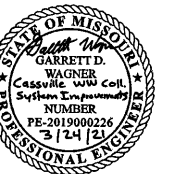
PAVEMENT REPAIR DETAILS

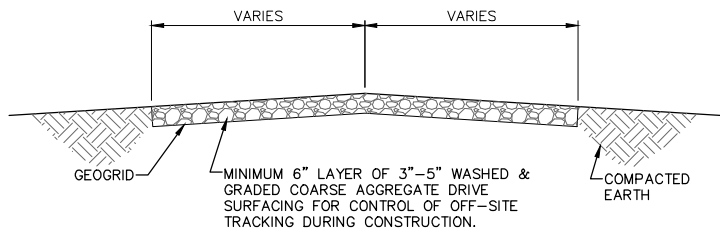
NTS



NOTE:
TANK SHALL BE PRECAST, DIMENSION
CAN VARY FROM WHAT IS SHOWN.—
REINFORCEMENT AND DIMENSIONED PLAN
SHALL BE SUBMITTED TO THE ENGINEER
FOR APPROVAL PRIOR TO FABRICATION.

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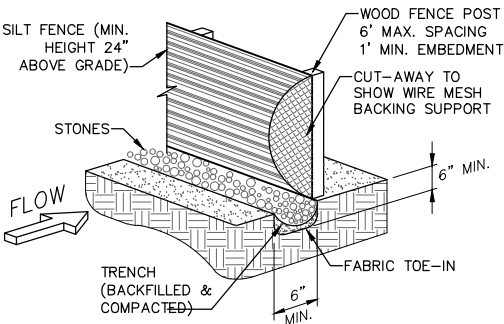




TYPICAL SECTION THRU CONSTRUCTION ENTRANCE

NOTES:

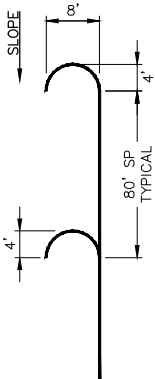
1. WHEN NECESSARY, EQUIPMENT/VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE PUBLIC STREET OR ROAD AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
2. THE SITE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS MAY REQUIRE. ALL SEDIMENT SPILLED, DROPPED, WASHED AWAY OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED AS SOON AS POSSIBLE.



FILTER FABRIC SILT FENCE

NOTES:

1. SILT FENCE SHALL BE SECURELY FASTENED TO EACH WOOD SUPPORT POST OR TO WOVEN WIRE. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
2. INSPECTION SHALL BE MADE AT LEAST WEEKLY, BEFORE A KNOWN MAJOR STORM EVENT, AND AFTER EACH 0.5" RAINFALL EVENT. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
3. ACCUMULATED SILT SHALL BE REMOVED FROM THE UPPER SIDE OF SILT FENCE WHEN IT REACHES A DEPTH OF 8 INCHES. THE SILT SHALL BE DISPOSED ON SITE (OR AT AN APPROVED SITE) AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
4. FILTER FABRIC SILT FENCE SHALL BE ENHANCED WITH STRAW BALES IF SITE CONDITIONS INDICATE THE NEED FOR ADDITIONAL FILTRATION OF RUNOFF.



FILTER FABRIC SILT FENCE HOOK

NOTE:
HOOKS SHOWN
LARGER FOR CLARITY

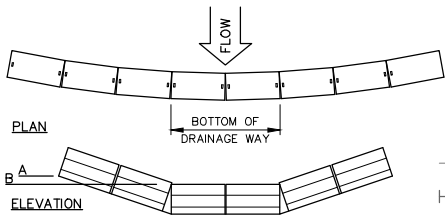
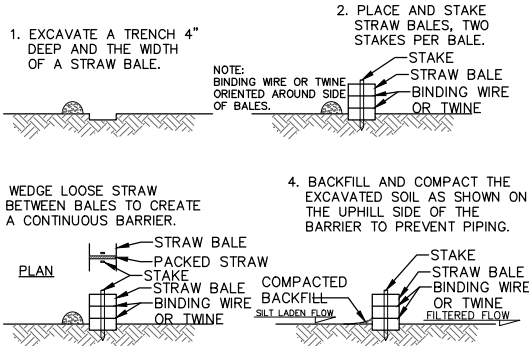
INSTALL AS NEEDED ON SLOPES
WHERE SILT FENCE IS INSTALLED
PARALLEL TO SLOPE.

NOTE:

FILTER FABRIC SILT FENCE/HOOKS AND STRAW BALE BARRIER
LOCATIONS ARE APPROXIMATE. PLACEMENT MAY NEED ADJUSTED
ACCORDING TO SITE SPECIFIC TERRAIN CONDITIONS.

CONSTRUCTION NOTE:

THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL EROSION OR
POLLUTION CONTROL DEVICES AS REQUIRED DURING THE
CONSTRUCTION PHASE IN ORDER TO COMPLY WITH STORM WATER
DISCHARGE REGULATIONS OF THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY AND ALL OTHER AGENCIES HAVING JURISDICTION.



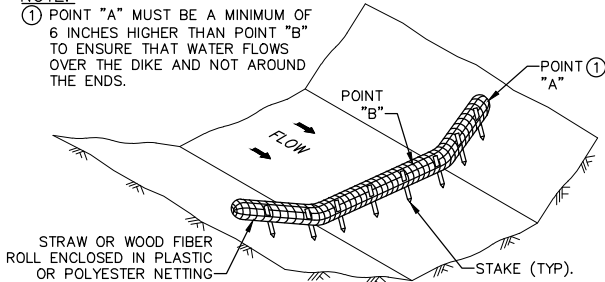
STRAW BALE BARRIER

NOTES:

1. STRAW BALE BARRIER SHALL BE ENHANCED WITH FILTER FABRIC SILT FENCE IF SITE CONDITIONS INDICATE THE NEED FOR ADDITIONAL FILTRATION OF RUNOFF.
2. INSPECTION SHALL BE MADE AT LEAST WEEKLY, BEFORE A KNOWN MAJOR STORM EVENT, AND AFTER EACH 0.5" RAINFALL EVENT. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
3. ACCUMULATED SILT SHALL BE REMOVED FROM THE UPPER SIDE OF STRAW BALE WHEN IT REACHES ONE THIRD THE HEIGHT OF THE BALES. THE SILT SHALL BE DISPOSED ON SITE (OR AT AN APPROVED SITE) AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NOTE:

1. POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.



COMPOST FILTER SOCK DITCH CHECK

NOTE:

SEE SWPPP APPENDICES FOR ADDITIONAL
INFORMATION AND EXAMPLES OF BMP'S AND
REQUIRED INSPECTION AND REPORTING FORMS.

THE CONTRACTOR SHALL NAME AN INDIVIDUAL AS THE SITE ENVIRONMENTAL MANAGER RESPONSIBLE FOR ALL STORM WATER AND ENVIRONMENTAL ISSUES AT THE SITE DURING THE CONSTRUCTION OF THE PROJECT.

THE DESIGNATED ENVIRONMENTAL MANAGER FOR THE SITE IS:

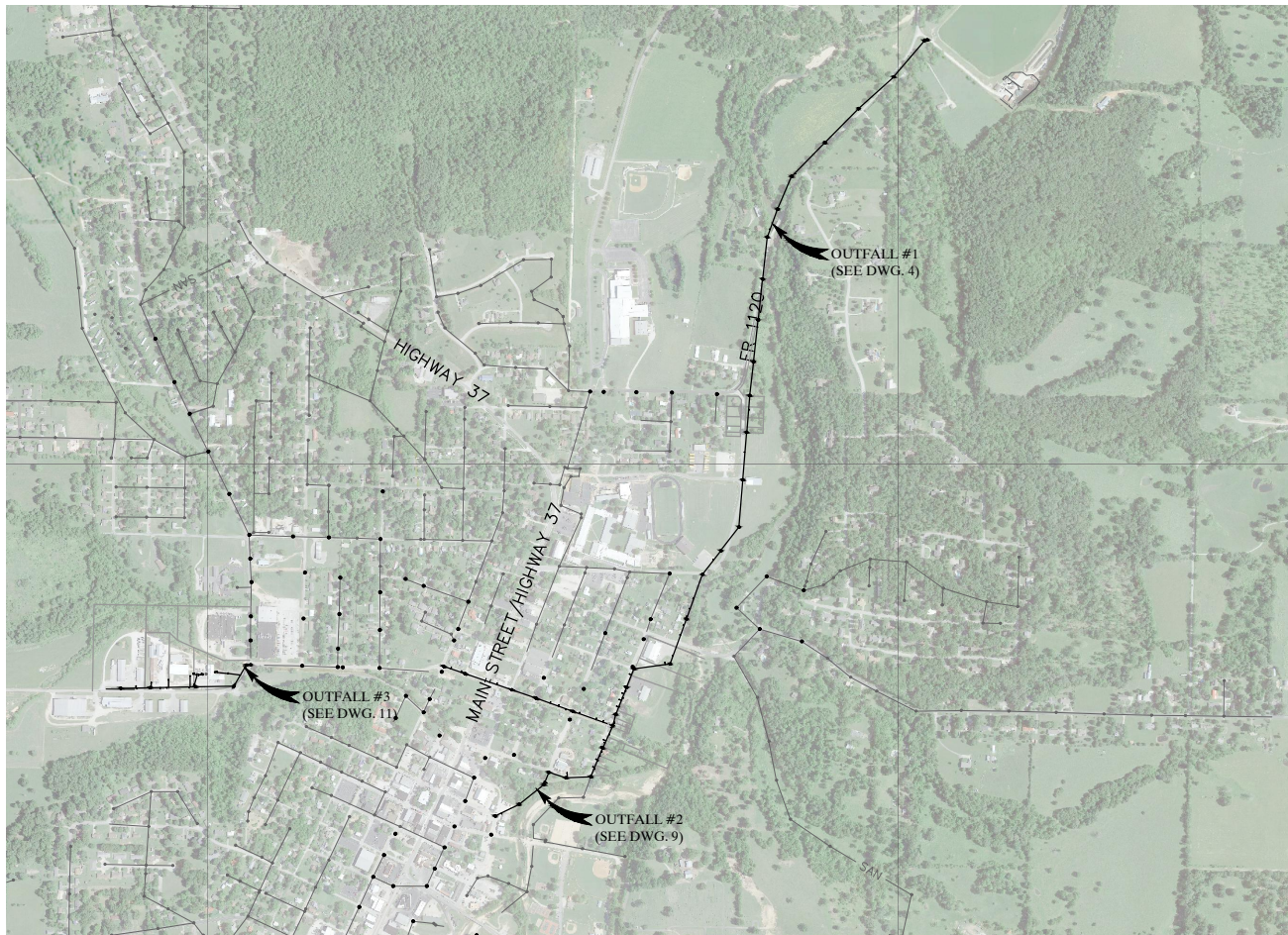
THE CONTRACTOR SHALL PHYSICALLY MARK IN THE FIELD THE LOCATION OF THE OUTFALL AND INDICATE THE OUTFALL NUMBER, AS SHOWN ON THE SWPPP DRAWING.

THE CONTRACTOR SHALL PENCIL IN AND KEEP CURRENT, ANY UPDATE AS NEEDED, ANY AND ALL ADDITIONS OR CHANGES TO THE STORM WATER POLLUTION PREVENTION PLAN ON THE SWPPP DRAWING, INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF THE FOLLOWING ITEMS, IF APPLICABLE:

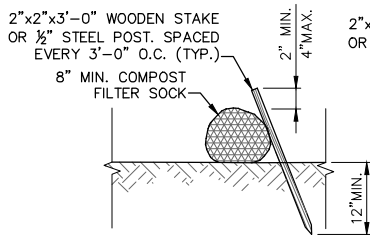
- CONSTRUCTION OFFICE
- PORTABLE TOILET(S)
- SOLID WASTE CONTAINER(S)
- FUEL STORAGE AREA
- MATERIAL STORAGE AREA(S)
- CHEMICAL STORAGE AREA(S)
- EQUIPMENT STORAGE AREA(S)
- TOP SOIL STOCKPILE AREA(S)
- ANY AND ALL ADDITIONAL INSTALLED BMP'S

LEGEND

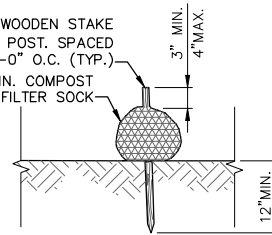
- 1000 EXISTING 5' CONTOURS
- ||| FILTER FABRIC SILT FENCE
- STRAW BALE BARRIER
- INSTALL CONSTRUCTION SITE ENTRANCE/EXIT DRIVE W/ MIN. 6" LAYER OF 3" - 5" COARSE AGGREGATE, WASHED & GRADED, WITH NO FINES, PLACED ON TOP OF THE GEOGRID FOR CONTROL OF OFF-SITE SEDIMENT TRACKING DURING CONSTRUCTION ACTIVITIES.



CITY PLAN
NTS



ALTERNATIVE 1 (Staking)

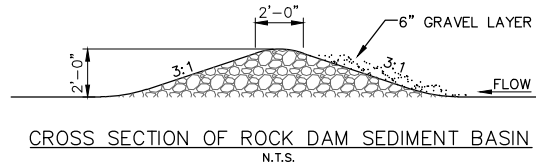


ALTERNATIVE 2 (Staking)

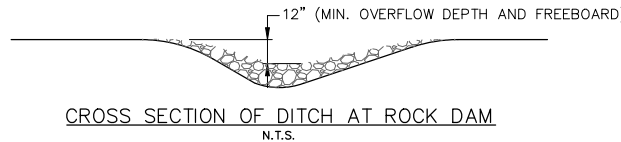
COMPOST FILTER SOCK

COMPOST FILTER SOCK: SLOPE, SOCK SPACING, AND SOCK DIAMETER		
SLOPE	SPACING (ft)	SOCK DIAMETER (inches)
<50:1	250	8
50:1 - 10:1	125	12
10:1 - 5:1	100	12
3:1 - 2:1	50	18
> 2:1	25	18

THE CONTRACTOR SHALL MAINTAIN A COPY OF THE MDNR ISSUED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT, A CURRENT SIGNED AND CERTIFIED COPY OF THE SWPPP, AND COPIES OF ALL COMPLETED INSPECTION AND MAINTENANCE FORMS AT THE CONSTRUCTION SITE AT ALL TIMES, AS REQUIRED. THE ISSUED STORM WATER DISCHARGE PERMIT AND THE SWPPP MUST BE AVAILABLE FOR REVIEW BY ANY AND ALL LOCAL, STATE, OR FEDERAL AUTHORIZED REGULATORY AGENCY REPRESENTATIVE UPON REQUEST.



CROSS SECTION OF DITCH AT ROCK DAM



THIS DRAWING IS FOR A STORM WATER POLLUTION PREVENTION PLAN ONLY, AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION PURPOSES.