

CONTRACT No. 1

WATER SYSTEM IMPROVEMENTS

for the

GARRARD COUNTY WATER ASSOCIATION Lancaster, Kentucky

JUNE 2022

BOARD OF DIRECTORS:

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BILL OLIVER - VICE-PRESIDENT
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PROJECT NO. 19014

BID DOCUMENTS

GENERAL NOTES

- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE ENGINEER TWO WORKING DAYS (MINIMUM) BEFORE BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH CITY, COUNTY AND STATE REQUIREMENTS.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
- EXISTING UTILITIES, ESPECIALLY GAS LINES AND OIL LINES, MAY BE CATHODICALLY PROTECTED. THEREFORE, DUCTILE IRON PIPE, FITTINGS, GATE VALVES, AND/OR BOXES LAID WITHIN 100' OF LINES WITH CATHODIC PROTECTION SHALL BE WRAPPED IN POLYETHYLENE ENCASUREMENT. MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF AWWA'S LATEST REVISION.
- ALL CONSTRUCTION AND INSTALLATION OF MATERIALS BEING USED SHALL BE IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SUBSTITUTIONS AND DEVIATION SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
- EXISTING UTILITIES HAVE BEEN SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH A REPRESENTATIVE WHEN WORKING NEAR EXISTING UTILITIES.
- THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND ALL OTHER UTILITIES AND OTHER IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION.
- UNLESS OTHERWISE NOTED, A SEPARATE BID ITEM HAS NOT BEEN ESTABLISHED FOR FITTINGS. THE FITTINGS INCLUDED BUT NOT LIMITED TO ARE: TEES, BENDS, PLUGS, REDUCERS, CROSSES, COUPLINGS, ETC. CONTRACTORS SHALL INCLUDE THE COST OF THESE ITEMS IN THE BID PRICE FOR THE PIPE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY REMOVAL/RELOCATION OF TRAILERS, BUILDINGS, FENCES, TREES, SHRUBS, ETC. AND REPLACEMENT OF SAID ITEMS AFTER CONSTRUCTION ACTIVITIES.
- CONTRACTOR IS TO COORDINATE WITH THE PROPERTY OWNERS AS TO WHETHER OR NOT TEMPORARY FENCING IS REQUIRED AND CONSTRUCT IF NECESSARY.
- ALL PIPING SHALL HAVE 30" MINIMUM COVER, UNLESS OTHERWISE NOTED.
- WHERE UNSTABLE MATERIAL IS ENCOUNTERED OR WHERE THE DEPTH OF EXCAVATION IN EARTH EXCEEDS FIVE (5) FEET, THE SIDES OF THE TRENCH OR EXCAVATION SHALL BE SUPPORTED BY SUBSTANTIAL SHEETING, BRACING, OR SHIELDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, STREETS, ROADS, NARROW RIGHTS-OF-WAY OR OTHER CONSTRUCTED AREAS UNLESS OTHERWISE SPECIFIED. THE STANDARDS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT AND THE KENTUCKY LABOR CABINET SHALL BE FOLLOWED.
- ALL EXCAVATION IS UNCLASSIFIED. COMPENSATION FOR ALL EXCAVATION SHALL BE INCLUDED IN LUMP SUM BID.
- REGRADE OF SITE SHALL BE SUCH THAT DRAINAGE IS AWAY FROM ALL STRUCTURES.
- BACKFILL AROUND ALL STRUCTURES SHALL BE SUFFICIENTLY COMPACTED TO PRECLUDE SETTLEMENT AND PONDING OF WATER AROUND STRUCTURES AND GRADED TO DIVERT RUNOFF AWAY FROM THE STRUCTURES.
- DIMENSIONS, DETAILS AND REINFORCEMENT MAY VARY WITH MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL OBTAIN AND MAINTAIN ON SITE, APPROVED SHOP DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- ALL VALVES & HYDRANTS SHALL BE LOCATED AT THE BACKSIDE OF THE DITCHLINE, UNLESS OTHERWISE NOTED.
- FINAL LOCATION OF SERVICES, VALVES, & HYDRANT ORIENTATION ARE TO BE FIELD LOCATED DURING CONSTRUCTION & APPROVED BY THE ENGINEER.
- AT THE CONTRACTORS OPTION, CLASS 350 DUCTILE IRON PIPE MAY BE SUBSTITUTED FOR ANY PIPE PARTICULARLY SPECIFIED, BUT AT NO ADDITIONAL COST TO THE OWNER.
- NO PAY ITEM FOR EXTRA TRENCH DEPTH HAS BEEN SET UP. CONTRACTOR SHALL INCLUDE THE COST OF THE ADDITIONAL DEPTH IN HIS BID PRICE.
- ROCK SOUNDINGS WERE NOT PERFORMED BY THE ENGINEER. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO DETERMINE SUBSURFACE CONDITIONS.
- CONTRACTOR TO DIG/EXPOSE EXISTING WATER MAIN FAR ENOUGH AHEAD OF NEW WATER MAIN CONSTRUCTION TO AVOID DAMAGE TO EXISTING WATER MAIN AND/OR INTERRUPTION OF EXISTING CUSTOMER SERVICES.
- ALL NEW SERVICE LINE FROM THE NEW MAIN TO THE SETTERS SHALL BE CLASS 250 3/4" PE CTS TUBING UNLESS SHOWN DIFFERENTLY ON THE PLANS
- THE MAXIMUM ALLOWABLE LENGTH OF SERVICE LINE FROM THE WATER MAIN TO THE CUSTOMER'S METER SERVICE SHALL BE AS FOLLOWS:

SERVICE LINE DIAMETER	MAXIMUM LENGTH
3/4" INCH	100 FEET
1-1/2" INCH	100-200 FEET
2" INCH	200+ FEET

CONNECTIONS TO EXISTING DISTRIBUTION SYSTEM SHALL BE MADE AS FOLLOWS:

- CONNECT TO EXISTING (SIZE) W.M. (WET TAP) - CONTRACTOR SHALL PROVIDE, FURNISH AND INSTALL ALL FITTINGS, MESSENGERS AND APPURTENANCES TO CONNECT THE PROPOSED WATER MAIN TO THE EXISTING WATER MAIN UNDER PRESSURE.
 - CONNECT TO EXISTING (SIZE) W.M. - CONTRACTOR SHALL PROVIDE, FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES TO CONNECT THE PROPOSED WATER MAIN TO THE EXISTING WATER MAIN. VALVES ARE A SEPARATE PAY ITEM.
- NO BLASTING WILL BE PERMITTED ON THIS PROJECT
 - GRIP RINGS SHALL BE INSTALLED ON ALL FITTINGS
 - ALL NEW METERS SHALL BE 5/8" X 3/4"
 - WHEN POSSIBLE, CONTRACTOR SHALL FREEBORE ALL BITUMINOUS AND/OR CONCRETE DRIVEWAYS. FREEBORING AND/ OR OPEN CUTTING DRIVEWAYS SHALL BE INCLUDED IN THE BID PRICE FOR THE PIPE.

GENERAL NOTES (CONTINUED)

- NEW LINE AND EXISTING LINES MUST REMAIN IN SERVICE UNTIL ALL METERS ASSEMBLED HAVE BEEN REPLACED AND RECONNECTED TO THE NEW LINE
- NO METERS CAN BE RECONNECTED TO THE NEW WATER MAIN UNTIL TESTING, STERILIZATION AND SAMPLING HAS BEEN SUCCESSFULLY COMPLETED
- COPIES OF ALL BACTE RESULTS MUST BE PROVIDED TO THE ENGINEER PRIOR TO RECONNECTS OF ANY METER.
- A NO. 12 AWG INSULATED COPPER LOCATOR WIRE SHALL BE PLACED IN THE TRENCH SIX INCHES ABOVE ALL PLASTIC LINES. THE INSULATION SHALL BE BLUE FOR WATER. THE WIRE SHALL BE LOOPEED INTO ALL VALVE BOXES W/ ENOUGH SLACK TO ALLOW ACCESS TO THE LOOPS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLUMBING PERMITS NECESSARY TO RELOCATE OR RECONNECT ANY CUSTOMER'S METER SERVICE OR SERVICE LINE. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES AND EMPLOY THE NECESSARY LICENSED PLUMBER.

FINAL CLEANUP AND RESTORATION

UNLESS SPECIFICALLY APPROVED BY THE OWNER AND ENGINEER, CLEANUP OF DISTURBED AREAS SHALL BE KEPT CURRENT WITH CONSTRUCTION AND RESTORATION EFFORTS BY THE CONTRACTOR INITIATED NO LONGER THAN SEVEN (7) DAYS AFTER THE TRENCH EXCAVATION WORK HAS STARTED. ALL EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILLING OF THE TRENCH AND ANY LARGE ROCKS, STONES OR DEBRIS SHALL BE REMOVED FROM THE SITE, AND SHALL NOT BE A BURDEN TO THE PROPERTY OWNER(S) AND/OR ADJACENT PROPERTIES. THE CONTRACTOR MAY WINDROW OR TRACK-IN THE EXCAVATED MATERIAL OVER THE TRENCH PRIOR TO FINAL CLEANUP TO ALLOW FOR AND TO ASSIST IN THE INITIAL SETTLEMENT OF THE TRENCH. ALL DISTURBED AREAS MUST BE SEED AT LEAST WITH A TEMPORARY SEED MIX IF FOR SOME REASON THE AREA CANNOT BE PERMANENTLY SEEDED WITHIN TWO (2) WEEKS.

DEPARTMENT OF HIGHWAYS - GENERAL NOTES

- ALL EFFECTED KYTC DITCHLINES SHALL REMAIN FREE OF EXCESS SILT OR EROSION AND CONSTRUCTED TO THE NORMAL TYPICAL SECTION OF THE ROADWAY WITH A MINIMUM DEPTH OF 18 INCHES FROM THE SHOULDER BREAK POINT.
- ALL NECESSARY STEPS SHALL BE TAKEN TO PREVENT EROSION OR SILTATION OF THE PUBLIC RIGHT-OF-WAY, ADJOINING PROPERTY AND WATERWAYS.
- ALL VALVES TO BE FLUSH W/ EXISTING GRADE.
- ALL WATER LINE LOCATED WITHIN STATE HIGHWAY R.O.W. SHALL BE CONSTRUCTED OUT AND AROUND THE END OF ALL EXISTING CULVERTS AND HEADWALLS.
- UNDERGROUND UTILITIES INSTALLED INSIDE STATE RIGHT-OF-WAY SHALL BE LOCATED WITHIN 3-5 FEET FROM THE EDGE OF THE RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON THE PLANS.
- UNDERGROUND UTILITIES SHOWN MORE THAN 5 FEET FROM THE EDGE OF THE RIGHT-OF-WAY SHALL BE INSTALLED WITH A MINIMUM DEPTH OF COVER OF 42 INCHES WITH PRIOR APPROVAL ON A CASE BY CASE BASIS.
- UNDERGROUND UTILITIES CROSSING ANY ENTRANCE OR CROSSROAD PAVED WITH CONCRETE OR ASPHALT SURFACE INSIDE STATE RIGHT-OF-WAY SHALL BE INSTALLED BY BORING UNLESS WRITTEN PERMISSION TO OPEN CUT IS OBTAINED FROM THE PROPERTY OWNER AND APPROVED BY THE KYTC DISTRICT PERMITS ENGINEER.
- UNDERGROUND UTILITIES SHALL NOT BE INSTALLED IN EMBANKMENT FILLS OR BETWEEN EDGE OF PAVEMENT AND DITCHLINE UNLESS SPECIFICALLY NOTED ON PERMITTED PLANS.
- FIRE HYDRANTS OR UTILITY SERVICE BOXES SHALL BE LOCATED WITHIN 2 FEET FROM THE EDGE OF RIGHT-OF-WAY LINE, OR OFF RIGHT-OF-WAY.

INDEX OF DRAWINGS

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SD-1	STANDARD DETAILS
SD-2	EROSION CONTROL
SD-3	DETAILS

SHEET LOCATION MAP



LEGEND

EXISTING	PROPOSED	DESCRIPTION
PVC	PVC	POLYVINYL CHLORIDE
DIP	DIP	DUCTILE IRON PIPE
WM	WM	WATER MAIN
☐	☐	HYDRANT ASSEMBLY
☐	☐	FLUSHING/BLOWOFF ASSEMBLY
☐	☐	AIR RELEASE VALVE (ARV)
☐	☐	GATE VALVE (GV)
☐	☐	WATER MAIN (WM)
☐	☐	SPECIAL CROSSING OR CASING PIPE
☐	☐	WATER MAIN TO BE ABANDONED
☐	☐	RIGHT-OF-WAY LINE
☐	☐	CENTERLINE
☐	☐	PROPERTY LINE
☐	☐	EASEMENT ACQUIRED

UTILITIES

BUD - Before You Dig
 1-800-752-6007
 or DIAL 811

NOTE:
 IN ACCORDANCE WITH KENTUCKY STATE LAW, ANY UTILITY LOCATED WITHIN 5 FT. PROBING OR DIGGING IN OR ON THE GROUND SHALL CONTACT THE ONE CALL CENTER FOR UNDERGROUND UTILITY LOCATIONS.

WATER ASSOCIATION

GARRARD COUNTY WATER ASSOCIATION
 PHONE: 859-792-4501
 FAX: 859-792-1671

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THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE DRAWING OR TITLE BLOCK TO DETERMINE THE ACTUAL SCALE.

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PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED



CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS

GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky

SHEET LOCATION MAP,
 LEGEND, UTILITIES and
 INDEX OF DRAWINGS

PROJECT NO.
 19014

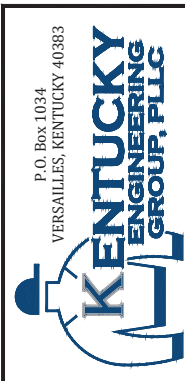
SHEET NO.
 1

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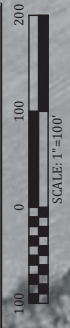


CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

AERIAL PLAN -
KY 152

PROJECT NO. 19014
SHEET NO. 2

- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



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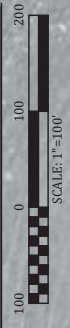
CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

**AERIAL PLAN -
KY 152**

PROJECT NO.
19014

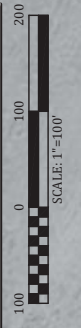
SHEET NO.
3

- GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.





- GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SUR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.

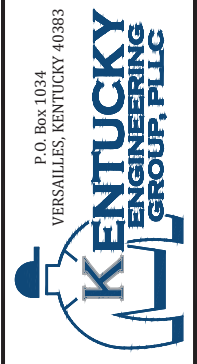


INSTALL WATER MAIN WITHIN STATE RW UNLESS OTHERWISE NOTED

PROJECT NO. 19014
SHEET NO. 4

AERIAL PLAN - KY 152

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GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



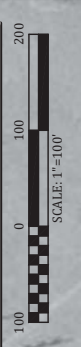
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- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



PROJECT NO. 19014
SHEET NO. 5

**AERIAL PLAN -
KY 152**

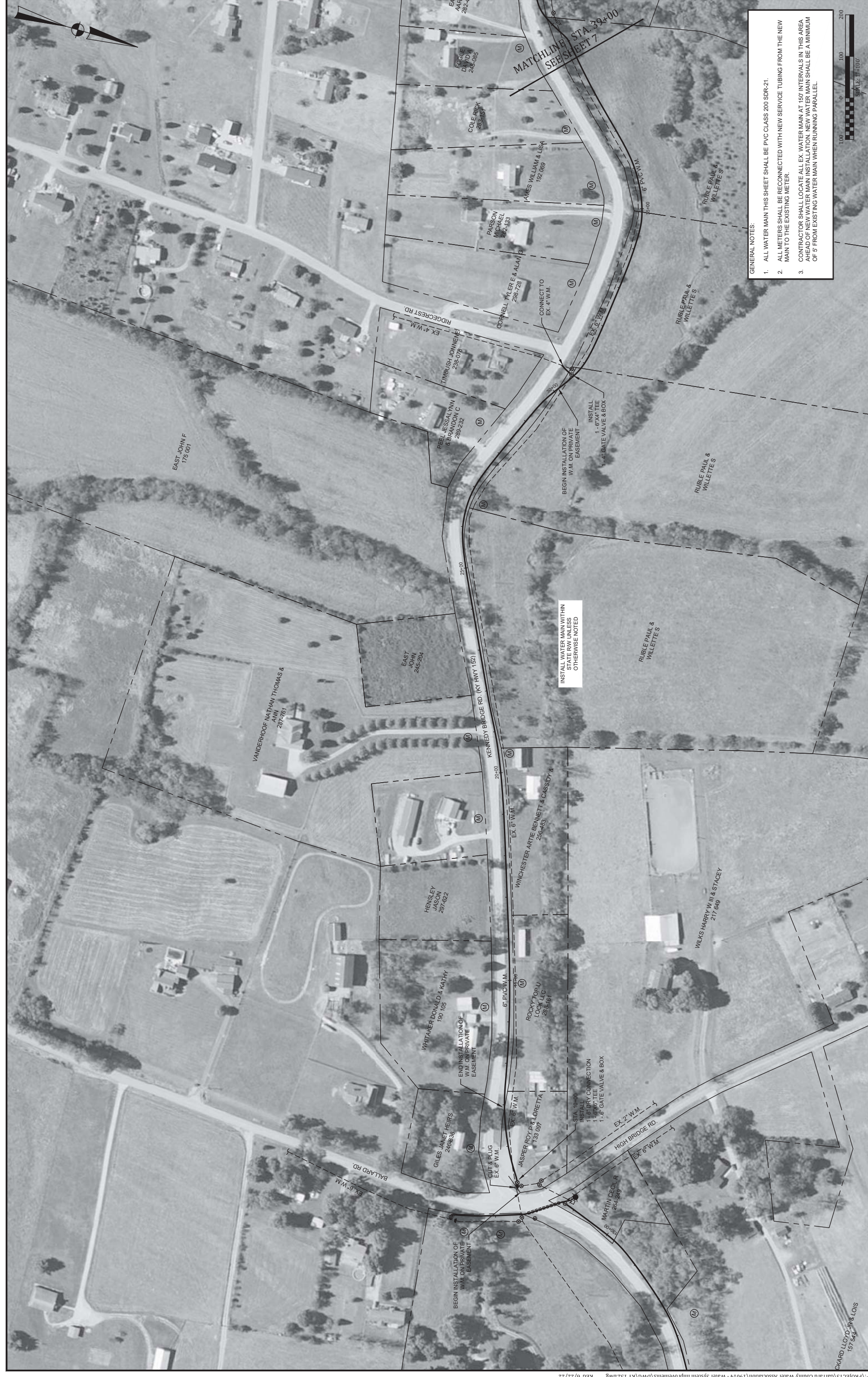
**CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS**
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



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- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 15' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



PROJECT NO. 19014
SHEET NO. 6

AERIAL PLAN - KY 152

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WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



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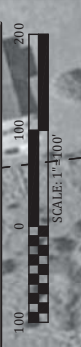
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- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



PROJECT NO. 19014
SHEET NO. 7

**AERIAL PLAN -
KY 152**

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.

PROJECT NO. 19014
 SHEET NO. 8

**AERIAL PLAN -
 HARMONS LICK/PROFIT RD.**

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 GARRARD COUNTY WATER ASSOCIATION
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P.O. Box 1034
VERSAILLES, KENTUCKY 40383

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GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

AERIAL PLAN -
HARMONS LICK RD.

PROJECT NO.
19014

SHEET NO.
9

GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.





GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS ON THIS SHEET ARE NEW.



PROJECT NO. 19014
 SHEET NO. 10

**AERIAL PLAN -
 PROFIT RD.**

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 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



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NO.	DATE	REVISIONS	BY

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 THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE DRAWING OR TITLE BLOCK TO DETERMINE THE ACTUAL SCALE.

DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED
2022 © Kentucky Engineering Group, PLLC	

NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
2. ALL METERS ON THIS SHEET ARE NEW.



INSTALL WATER MAIN WITHIN PRIVATE EASEMENT UNLESS OTHERWISE NOTED

STA. 64+70
CONNECT TO EX. 1"
W.M. AT EX. BLOWOFF
ASSEMBLY
INSTALL
1.4" G.V. & BOX

SOLE OF 18" STEEL
CASING OPEN CUT

STA. 57+60
INSTALL AIR RELEASE
VALVE AT RIGHT POINT

MATCHLINE STA. 45+00
SEE SHEET 10



GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.

PROJECT NO. 19014
 SHEET NO. 12

**AERIAL PLAN -
 NARROW GAP RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

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NO.	DATE	REVISIONS	BY

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GENERAL NOTES:

1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.

PROJECT NO. 19014
SHEET NO. 13

**AERIAL PLAN -
NARROW GAP RD.**

**CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS**
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

P.O. Box 1034
VERSAILLES, KENTUCKY 40383
**KENTUCKY
ENGINEERING
GROUP, PLLC**

DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

2022 © Kentucky Engineering Group, PLLC

NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 250 SDR-17.
 2. ALL METERS THIS SHEET ARE NEW.



PROJECT NO. 19014
 SHEET NO. 14

**AERIAL PLAN -
 PAPER MILL RD.**

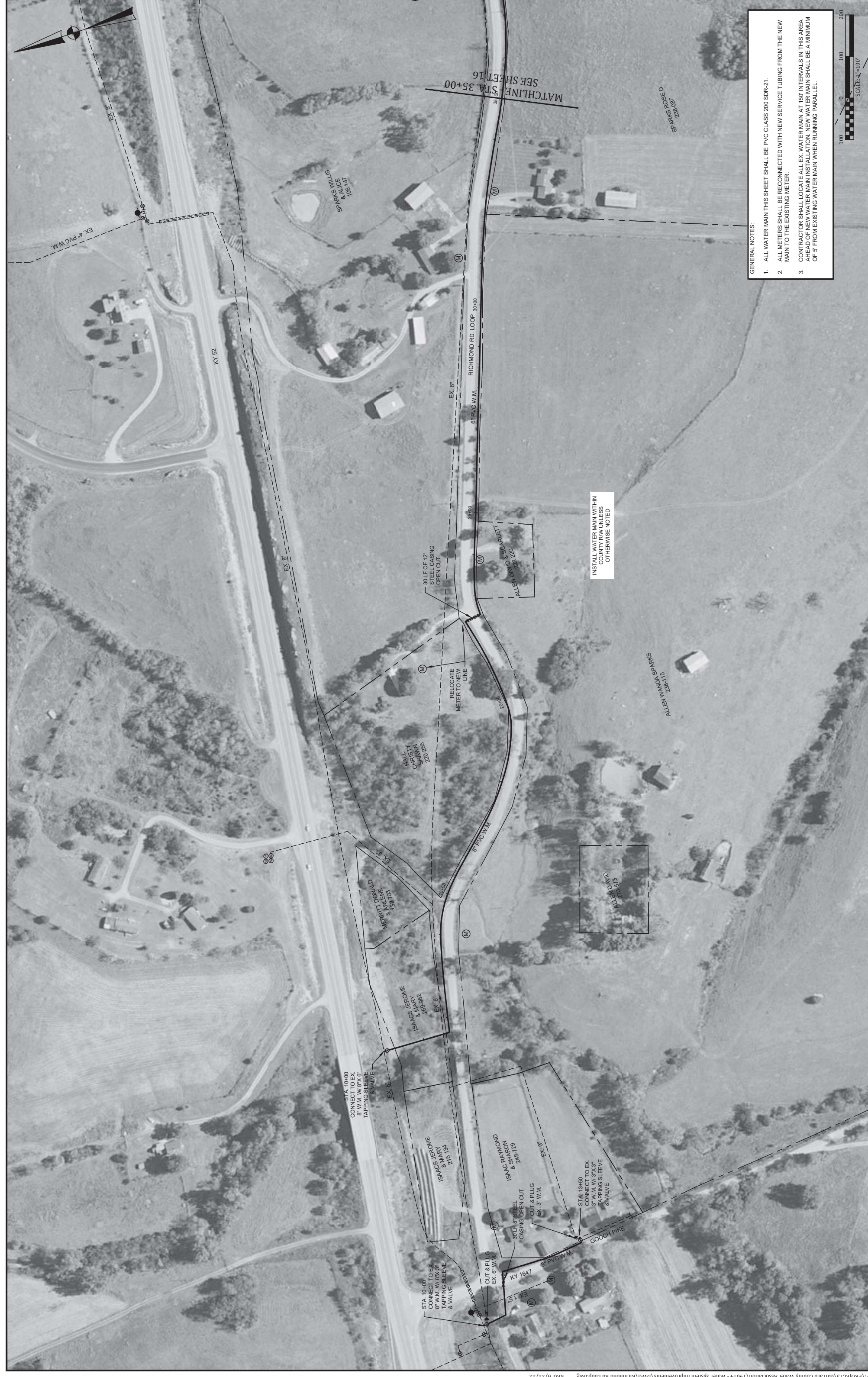
CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



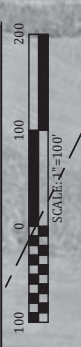
DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.

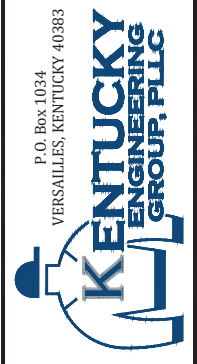


INSTALL WATER MAIN WITHIN
PROPERTY LINES UNLESS
OTHERWISE NOTED

PROJECT NO. 19014
SHEET NO. 15

**ADDITIVE ALTERNATE #1
AERIAL PLAN -
RICHMOND RD. LOOP**

**CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS**
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



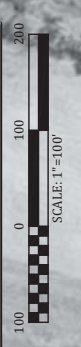
DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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- GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



PROJECT NO. 19014
SHEET NO. 16

**ADDITIVE ALTERNATE #1
AERIAL PLAN -
RICHMOND RD. LOOP**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

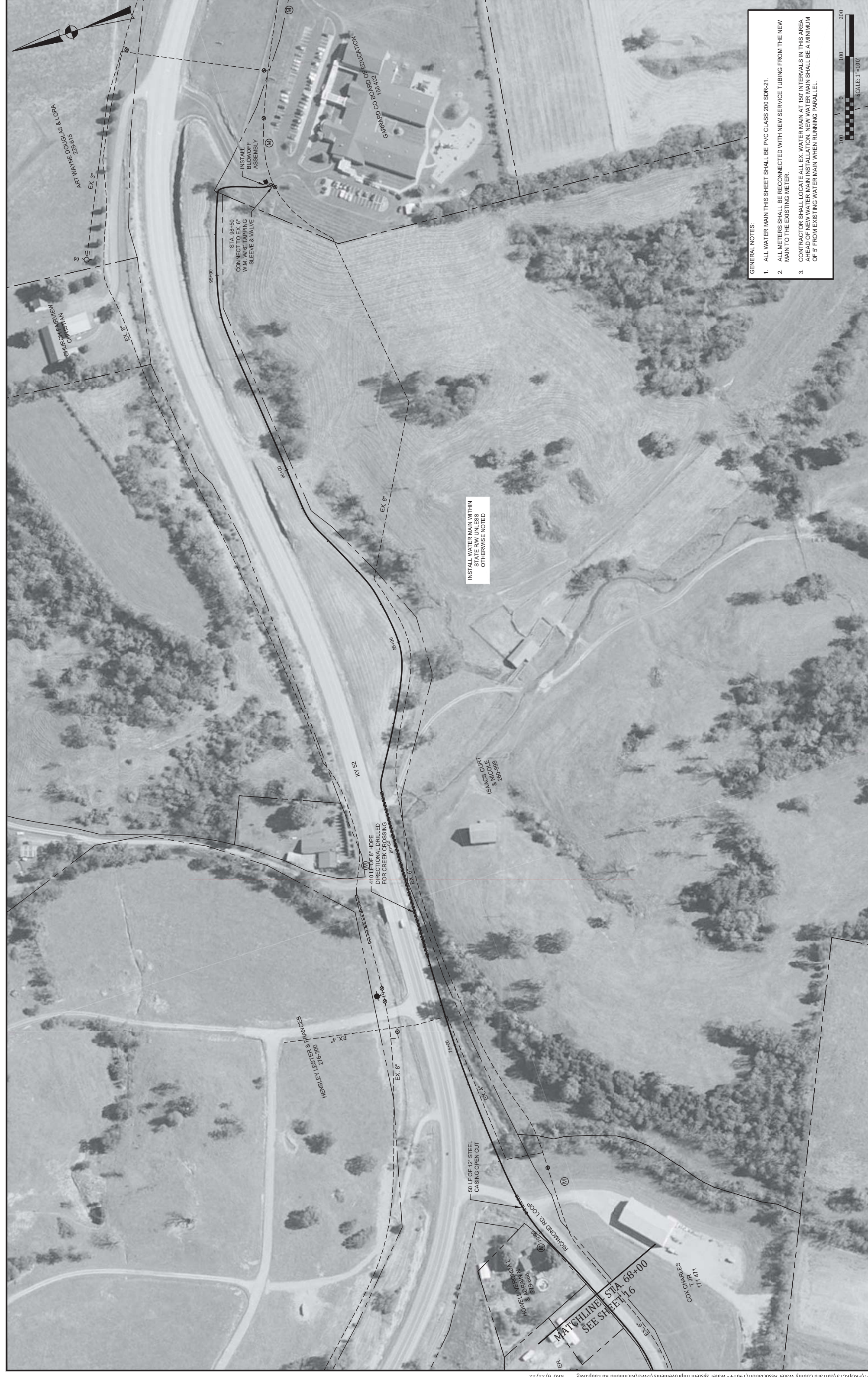


DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

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NO.	DATE	REVISIONS	BY

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- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 3. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.

INSTALL WATER MAIN WITHIN
STATION UNLESS
OTHERWISE NOTED

PROJECT NO.
19014

SHEET NO.
17

ADDITIVE ALTERNATE #1
AERIAL PLAN -
RICHMOND RD. LOOP

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

2022 © Kentucky Engineering Group, PLLC

NO.	DATE	REVISIONS	BY

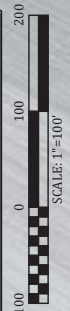
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GENERAL NOTES:

1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.



PROJECT NO. 19014
SHEET NO. 18

**ADDITIVE ALTERNATE #2
AERIAL PLAN -
STARNES RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

P.O. Box 1034
VERSAILLES, KENTUCKY 40383

DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

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NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS THIS SHEET ARE NEW.

PROJECT NO. 19014
 SHEET NO. 19

**ADDITIVE ALTERNATE #3
 AERIAL PLAN -
 BOONES CREEK RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

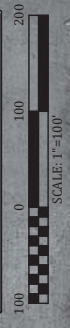
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NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR21.
 2. ALL METERS THIS SHEET ARE NEW.



PROJECT NO. 19014
 SHEET NO. 20

**ADDITIVE ALTERNATE #3
 AERIAL PLAN -
 BOONES CREEK RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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MATCHLINE STA. 38+00
 SEE SHEET 19

INSTALL WATER MAIN WITHIN
 COUNTY ROW UNLESS
 OTHERWISE NOTED



GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. CONTRACTOR SHALL FREEBORE ALL BITUMINOUS AND/OR CONCRETE DRIVEWAYS.



INSTALL WATER MAIN WITHIN STATE RW UNLESS OTHERWISE NOTED

PROJECT NO. 19014
 SHEET NO. 21

**ADDITIVE ALTERNATE #4
 AERIAL PLAN -
 US 27 - MT. HEBRON RD. TO
 CANOE CREEK RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

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NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.



INSTALL WATER MAIN THIS SHEET WITHIN COUNTY RIGHT OF WAY

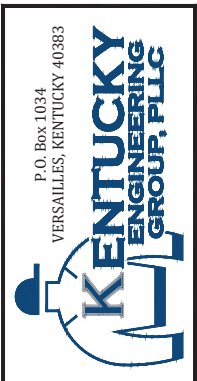
STA. 10+00
 TIE IN TO EX. 3\"/>

200 LF OPEN CUT FOR 12\"/>

PROJECT NO. 19014
 SHEET NO. 22

**ADDITIVE ALTERNATE #5
 AERIAL PLAN -
 NINA RIDGE**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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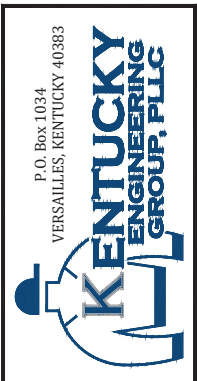
GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.

SCALE: 1"=100'

PROJECT NO. 19014
 SHEET NO. 23

**ADDITIVE ALTERNATE #5
 AERIAL PLAN -
 NINA RIDGE**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

2022 © Kentucky Engineering Group, PLLC

NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-17.
 2. ALL METERS THIS SHEET ARE NEW.

SCALE: 1"=100'

PROJECT NO. 19014
 SHEET NO. 24

**ADDITIVE ALTERNATE #6
 AERIAL PLAN -
 HAMM HILL RD.**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



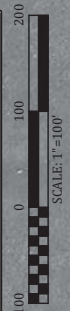
DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED
2022 © Kentucky Engineering Group, PLLC	

NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. ALL METERS THIS SHEET ARE NEW.



STA. 48+25
 3\"/>

INSTALL WATER MAIN WITHIN COUNTY RIGHT OF WAY UNLESS OTHERWISE NOTED

±200LF OF 8\"/>

COLUMBIA GAS

EX. 4\"/>

STA. 10+00
 CONNECT TO EX. 4\"/>

OPEN CUT COUNTY ROAD

GOOCH PIKE (KY 167)

PROJECT NO. 19014
 SHEET NO. 25

ADDITIVE ALTERNATE #7
AERIAL PLAN -
BELL LANE

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED
2022 © Kentucky Engineering Group, PLLC	

NO.	DATE	REVISIONS	BY

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ADDITIVE ALTERNATE # 8
AERIAL PLAN -
GLENMORE HEIGHTS -
EASTLAND ACRES

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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- GENERAL NOTES:
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. CONTRACTOR SHALL FREEBORE ALL BITUMINOUS AND/OR CONCRETE DRIVEWAYS.
 3. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 4. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.





- GENERAL NOTES:**
1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-21.
 2. CONTRACTOR SHALL FREEBORE ALL BITUMINOUS AND/OR CONCRETE DRIVEWAYS.
 3. ALL METERS SHALL BE RECONNECTED WITH NEW SERVICE TUBING FROM THE NEW MAIN TO THE EXISTING METER.
 4. CONTRACTOR SHALL LOCATE ALL EX. WATER MAIN AT 150' INTERVALS IN THIS AREA AHEAD OF NEW WATER MAIN INSTALLATION. NEW WATER MAIN SHALL BE A MINIMUM OF 5' FROM EXISTING WATER MAIN WHEN RUNNING PARALLEL.



PROJECT NO. 19014
SHEET NO. 27

**ADDITIVE ALTERNATE #8
AERIAL PLAN -
GLENMORE HEIGHTS -
EASTLAND ACRES**

CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

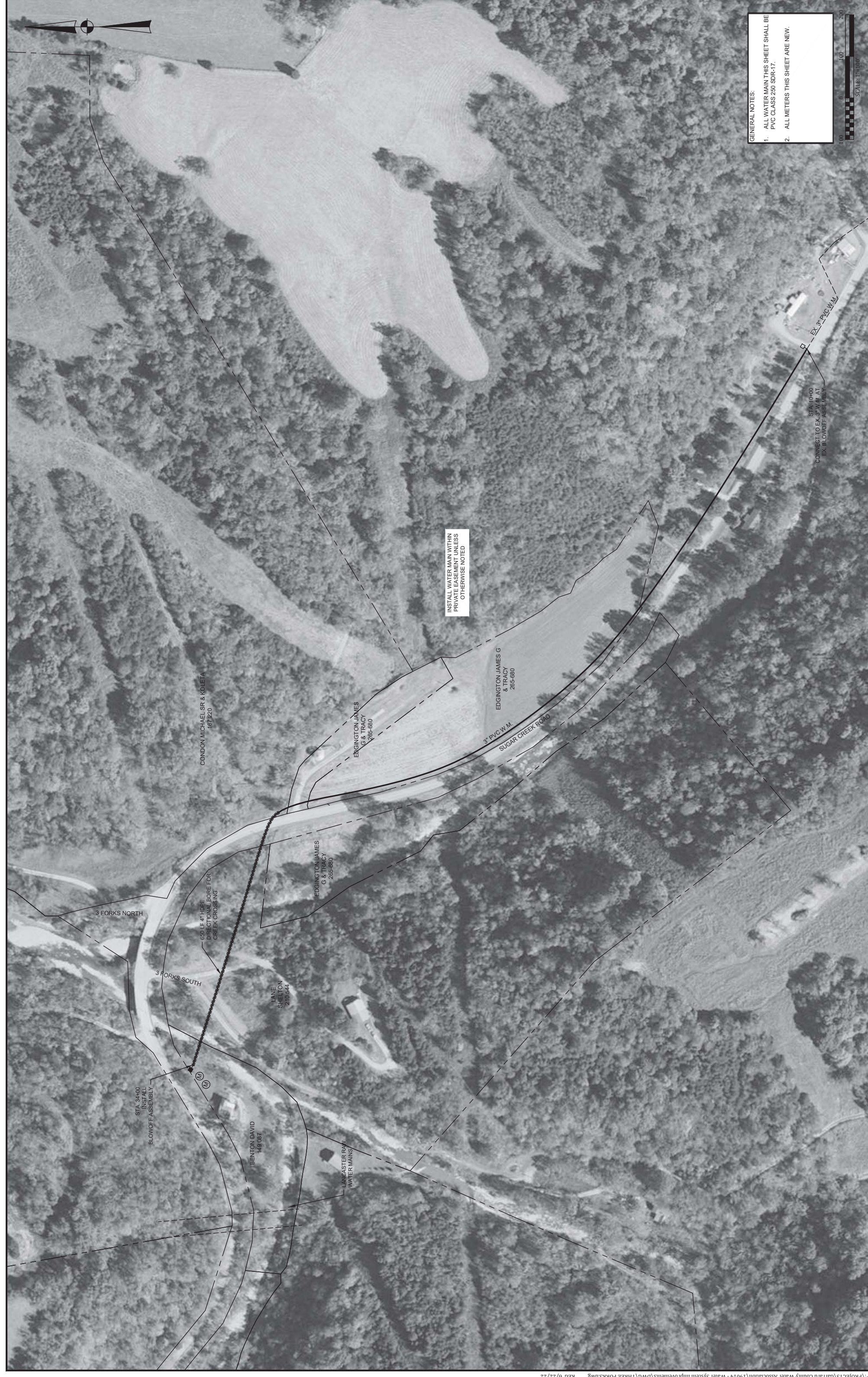


DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

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NO.	DATE	REVISIONS	BY

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GENERAL NOTES:
 1. ALL WATER MAIN THIS SHEET SHALL BE PVC CLASS 200 SDR-17.
 2. ALL METERS THIS SHEET ARE NEW.



PROJECT NO. 19014
 SHEET NO. 28

**ADDITIVE ALTERNATE #9
 AERIAL PLAN -
 SUGAR CREEK RD.**

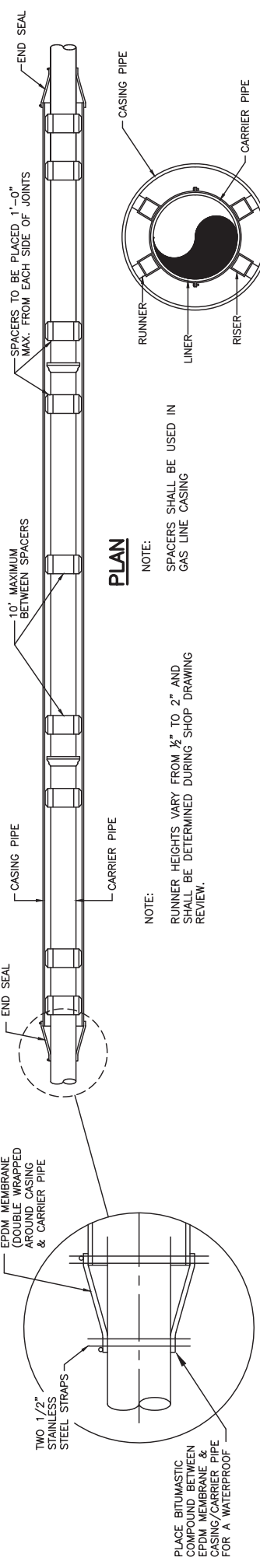
CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
 GARRARD COUNTY WATER ASSOCIATION
 Garrard County, Kentucky



DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED

NO.	DATE	REVISIONS	BY

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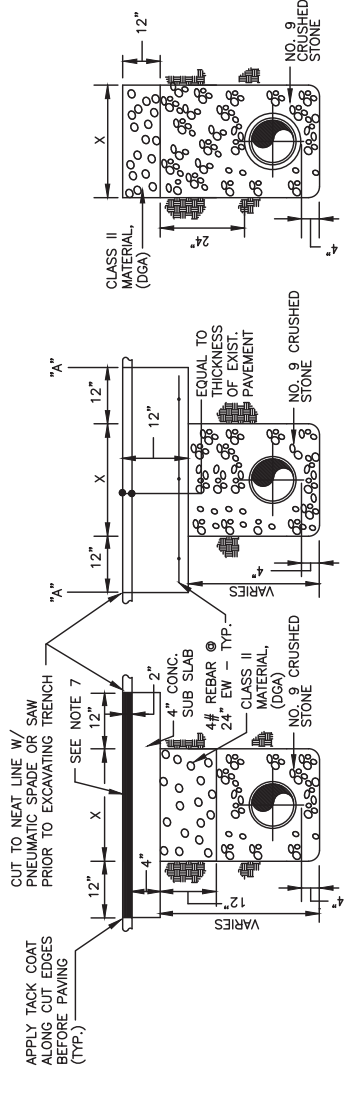


ENCASEMENT PIPE SPACER DETAIL
NOT TO SCALE

PLAN
NOTE:
RUNNER HEIGHTS VARY FROM 1/2" TO 2" AND SHALL BE DETERMINED DURING SHOP DRAWING REVIEW.

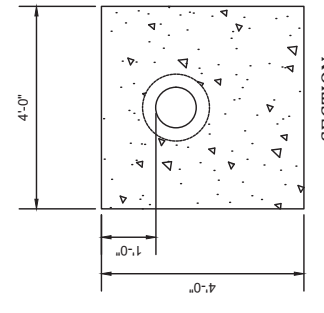
ELEVATION
NOTE:
SPACERS SHALL BE USED IN GAS LINE CASING

- NOTES:**
1. OPEN CUTS SHALL INCLUDE APPROPRIATE STEEL CASING
 2. REPLACE BITUMINOUS PAVEMENT WITH SAME TYPE AND THICKNESS (2" MIN.) AS EXISTING PAVEMENT
 3. IF ROCK IS ENCOUNTERED, A MINIMUM OF 6" NO. 9 CRUSHED STONE MUST BE PLACED UNDER THE ENCASEMENT PIPE.
 4. X = MAX. WIDTH OF TRENCH AT SURFACE UNDER NORMAL CONDITIONS (36" + PIPE O.D.).
 5. FROM POINTS "A" TO NEAREST JOINT OR BREAK IN PAVEMENT MUST BE AT LEAST 6' OR MORE. IF LESS THAN 6' REMOVE PAVEMENT TO JOINT OR BREAK AND REPLACE ENTIRE SLAB.
 6. NO. 610 CRUSHED STONE MAY BE SUBSTITUTED FOR MECHANICALLY TAMPED EARTH BACKFILL WITH PRIOR APPROVAL OF THE ENGINEER.
 7. 1" SAW CUT OUTSIDE OF TRENCH LINES, BITUMINOUS PATCH PLACED IN 2" LIFTS WITH TACK COAT ON EACH SIDE. EACH LIFT COMPACTED WITH SMALL ROLLER.



PAVEMENT REPLACEMENT
NOT TO SCALE

BITUMINOUS SURFACE
CONCRETE PAVEMENT
CRUSHED STONE PAVEMENT

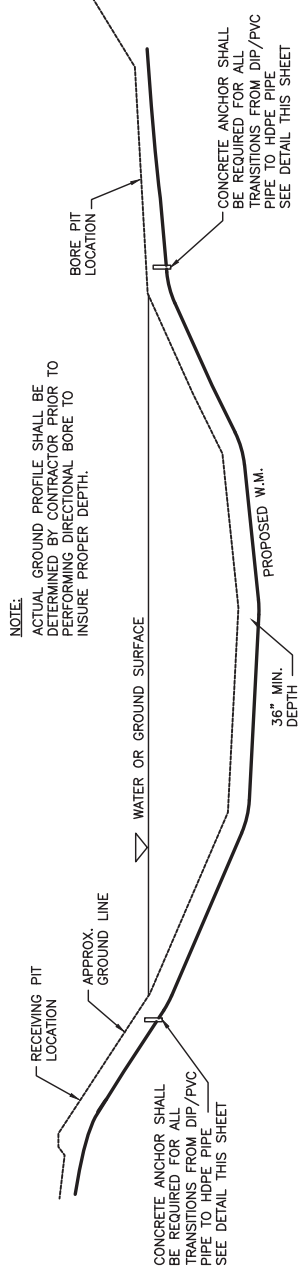


SECTION

PLAN

HDPE RESTRAINT COLLAR TO BE ENCASED IN CONCRETE
HDPE BUTT WELD TO BE ENCASED IN CONCRETE (TYP.)
HDPE PIPING SHALL ENTER PERPENDICULAR TO WALL CONTRACTOR MAY BE REQUIRED TO USE FITTING TO MEET THIS REQUIREMENT
HDPE CARRIER PIPE
HDPE BUTT WELD
MJ ADAPTER
MJ JOINT ON NEXT TWO PIPE JOINTS

HDPE RESTRAINT WALL
NOT TO SCALE



TYPICAL CREEK/SURFACE DIRECTIONAL BORE DETAIL
NOT TO SCALE

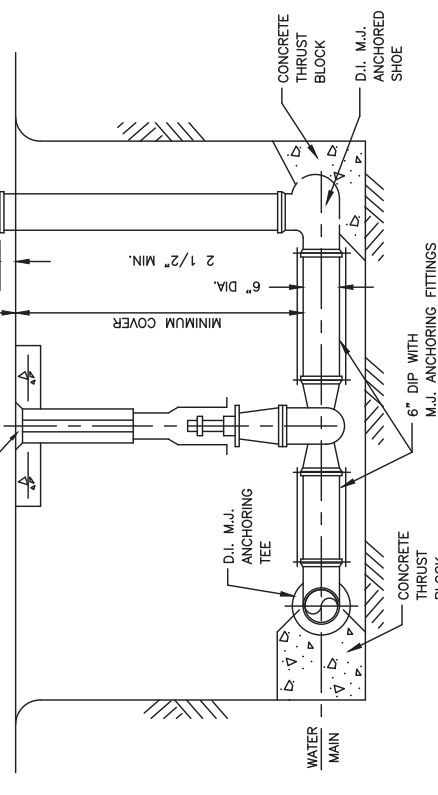
NOTE:
ACTUAL GROUND PROFILE SHALL BE DETERMINED BY CONTRACTOR PRIOR TO PERFORMING DIRECTIONAL BORE TO INSURE PROPER DEPTH.

CONCRETE ANCHOR SHALL BE REQUIRED FOR ALL TRANSITIONS FROM DIP/PVC PIPE TO HDPE PIPE SEE DETAIL THIS SHEET

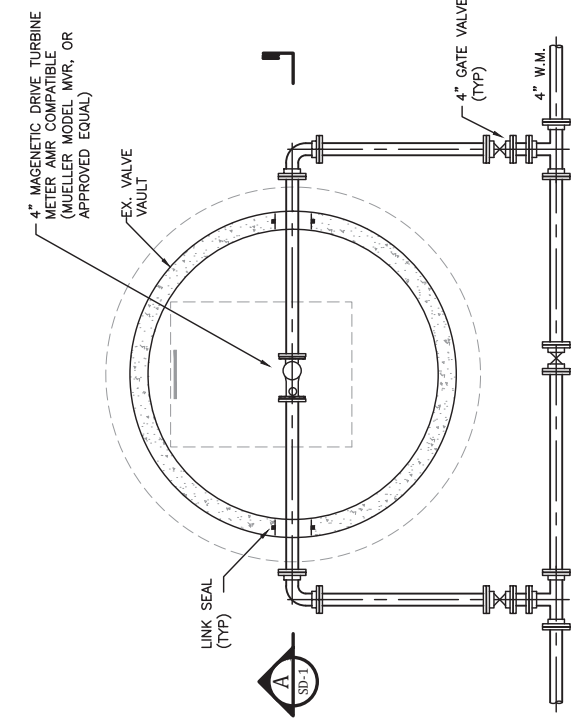
CONCRETE ANCHOR SHALL BE REQUIRED FOR ALL TRANSITIONS FROM DIP/PVC PIPE TO HDPE PIPE SEE DETAIL THIS SHEET

NOTE:
ISOLATION VALVE SHALL BE ANCHORED TO STAINLESS STEEL HYDRAULIC THREADED RODS (SAME SIZE AS STD. M.J. BOLTS) OR MECHANICAL JOINT ANCHORING FITTINGS AS MANUFACTURED BY CLOW OR APPROVED EQUAL.

6" D.I. M.J. ANCHORING ISOLATION GATE VALVE. SEE STANDARD DETAIL FOR CONC. PAD AND VALVE ACCESSORIES



FLUSHING ASSEMBLY
NOT TO SCALE



PLAN - METER VAULT
NOT TO SCALE

NOTES:

1. FURNISH AND INSTALL IN EXISTING VALVE VAULTS.
2. 3 LOCATIONS: OLD MACK PUMP STATION RAINES WAY PRV VAULT CARTERSVILLE RD ALTITUDE VALVE VAULT

SECTION
NTS

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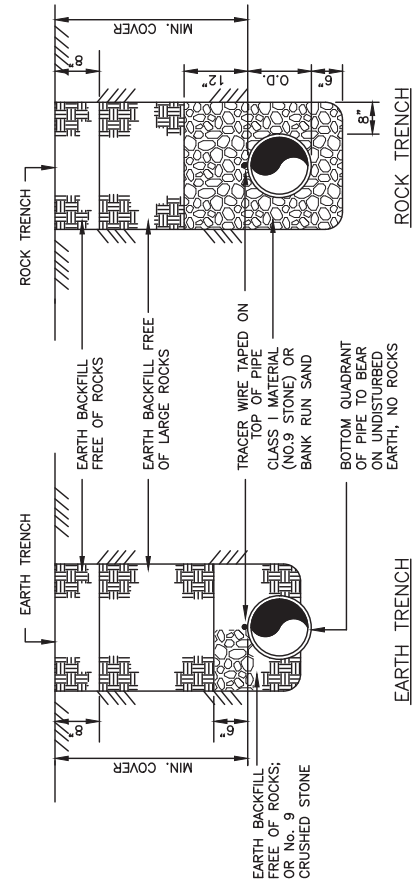
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PROJECT MGR: RCC
DRAWN BY: JAB
CHECKED BY: RCC
SCALE: AS NOTED
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CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

PROJECT NO. 19014
SHEET NO. SD-1

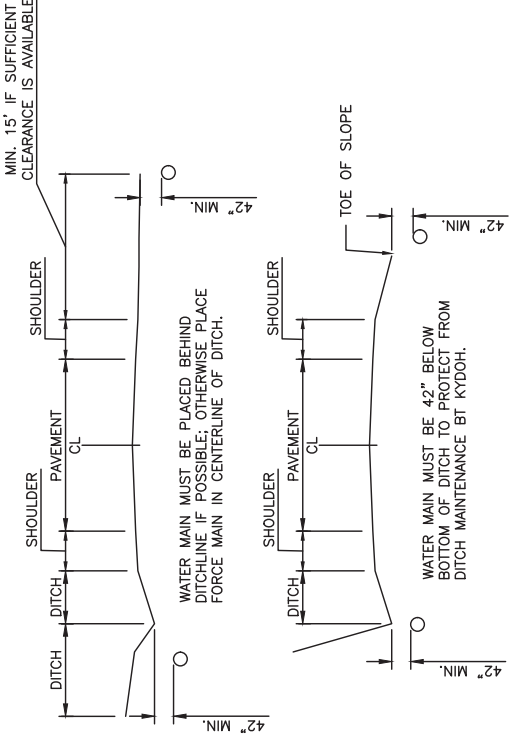
STANDARD DETAILS



TYPICAL - BEDDING AND BACKFILL

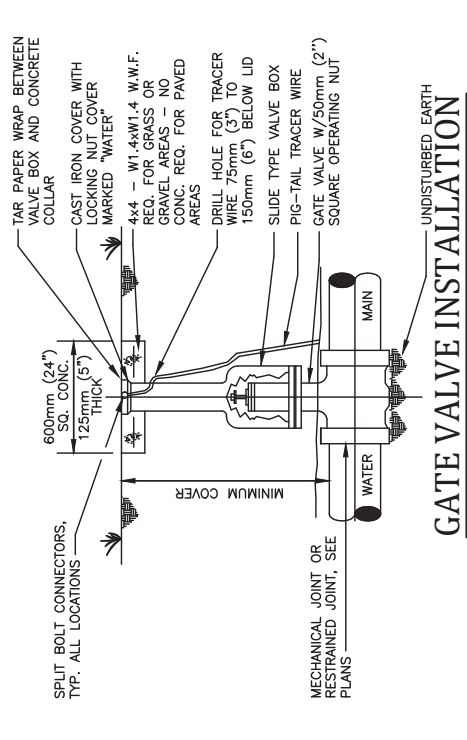
NOT TO SCALE

1. REPLACE BITUMINOUS PAVEMENT WITH SAME TYPE AND THICKNESS (2" MIN.) AS EXISTING PAVEMENT.
2. IF ROCK IS ENCOUNTERED, A MINIMUM OF 6" NO. 9 CRUSHED STONE MUST BE PLACED UNDER THE ENCASEMENT PIPE.
3. X = MAX. WIDTH OF TRENCH AT SURFACE UNDER NORMAL CONDITIONS (36" + PIPE O.D.)
4. FROM POINTS "A" TO NEAREST JOINT OR BREAK IN PAVEMENT MUST BE AT LEAST 6' OR MORE. IF LESS THAN 6' REMOVE PAVEMENT TO JOINT OR BREAK AND REPLACE ENTIRE SLAB.
5. NO. 6/10 CRUSHED STONE MAY BE SUBSTITUTED FOR MECHANICALLY TAMPED EARTH BACKFILL WITH PRIOR APPROVAL OF THE ENGINEER.
6. 1" SAW CUT OUTSIDE OF TRENCH LINES. BITUMINOUS PATCH PLACED IN 2' LIFTS WITH TACK COAT ON EACH SIDE. EACH LIFT COMPACTED WITH SMALL ROLLER.



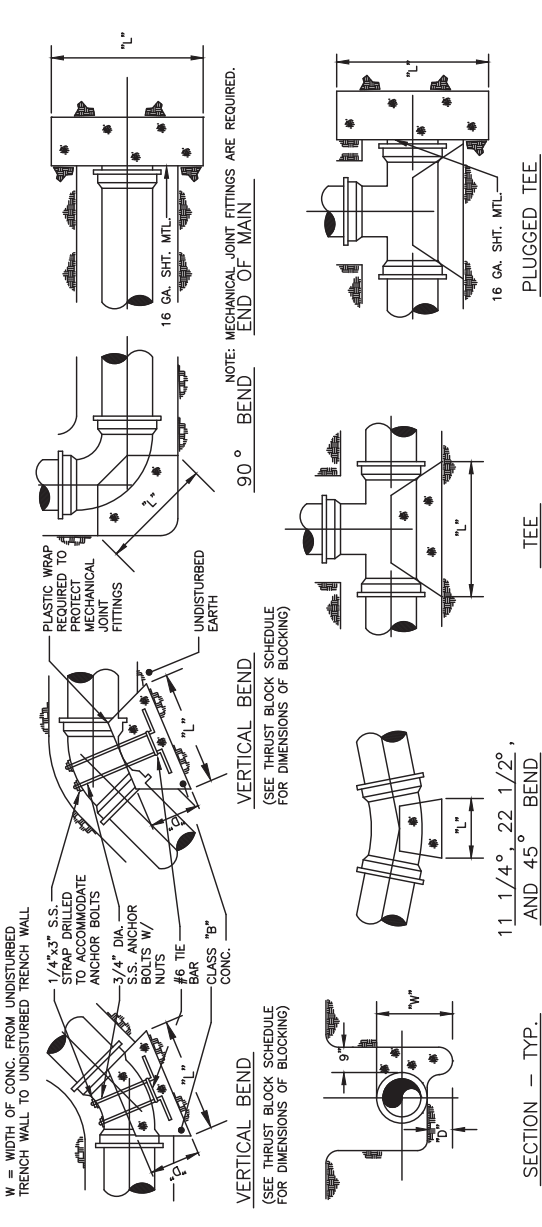
TYPICAL CONSTRUCTION ON KYDOH RIGHTS OF WAYS

NOT TO SCALE



GATE VALVE INSTALLATION

NOT TO SCALE



SECTION - TYP.

11, 1/4", 22, 1/2", AND 45° BEND

THRUST BLOCK SCHEDULE - CLASS 200 PVC

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 5000 PSF	
	W	L	W	L	W	L	W	L	D	W
4"	1.78	0.07	1.12	0.04	1.12	0.04	1.12	0.04	1.12	0.04
6"	4.00	0.15	2.4	0.08	2.4	0.08	2.4	0.08	2.4	0.08
8"	7.50	0.42	4.00	0.22	4.00	0.22	4.00	0.22	4.00	0.22
10"	11.67	0.65	6.25	0.35	6.25	0.35	6.25	0.35	6.25	0.35
12"	16.00	0.89	8.00	0.50	8.00	0.50	8.00	0.50	8.00	0.50
14"	22.50	1.67	12.25	0.91	12.25	0.91	12.25	0.91	12.25	0.91
16"	30.00	2.22	16.00	1.19	16.00	1.19	16.00	1.19	16.00	1.19

THRUST BLOCK SCHEDULE - CLASS 250 PVC

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 3000 PSF	
	W	L	W	L	W	L	W	L	D	W
4"	2.667	.10	1.2	0.04	1.2	0.04	1.2	0.04	1.2	0.04
6"	5.000	.19	2.4	0.08	2.4	0.08	2.4	0.08	2.4	0.08
8"	9.000	.50	4.0	0.16	4.0	0.16	4.0	0.16	4.0	0.16
10"	13.327	.78	6.0	0.24	6.0	0.24	6.0	0.24	6.0	0.24
12"	18.139	1.11	8.0	0.36	8.0	0.36	8.0	0.36	8.0	0.36
14"	23.692	1.67	10.0	0.54	10.0	0.54	10.0	0.54	10.0	0.54
16"	30.000	2.22	12.0	0.72	12.0	0.72	12.0	0.72	12.0	0.72

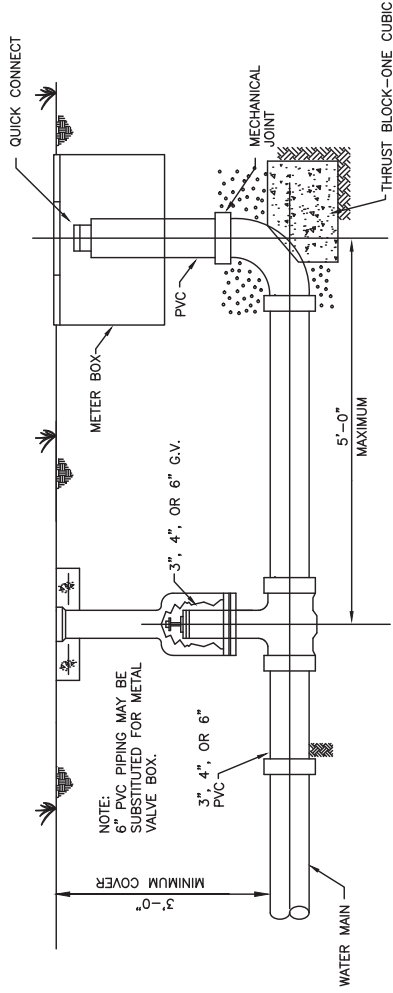
THRUST BLOCK SCHEDULE - CLASS 350 D.I.P.

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 3000 PSF	
	W	L	W	L	W	L	W	L	D	W
4"	3.750	.21	1.8	0.08	1.8	0.08	1.8	0.08	1.8	0.08
6"	7.000	.39	3.0	0.16	3.0	0.16	3.0	0.16	3.0	0.16
8"	12.250	.91	6.0	0.42	6.0	0.42	6.0	0.42	6.0	0.42
10"	18.139	1.48	9.0	0.64	9.0	0.64	9.0	0.64	9.0	0.64
12"	24.000	2.18	12.0	0.96	12.0	0.96	12.0	0.96	12.0	0.96
14"	30.000	3.00	15.0	1.20	15.0	1.20	15.0	1.20	15.0	1.20
16"	36.000	3.96	18.0	1.58	18.0	1.58	18.0	1.58	18.0	1.58

WATER MAIN THRUST BLOCKS

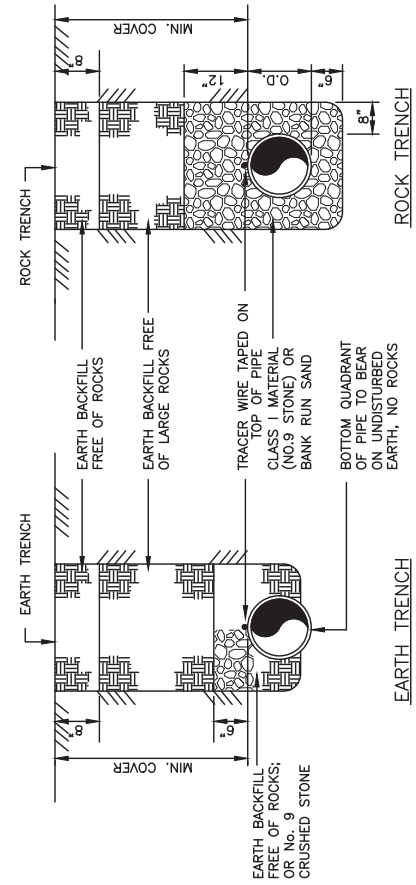
(SEE THRUST BLOCK SCHEDULE FOR DIMENSIONS OF BLOCKING)

NOT TO SCALE



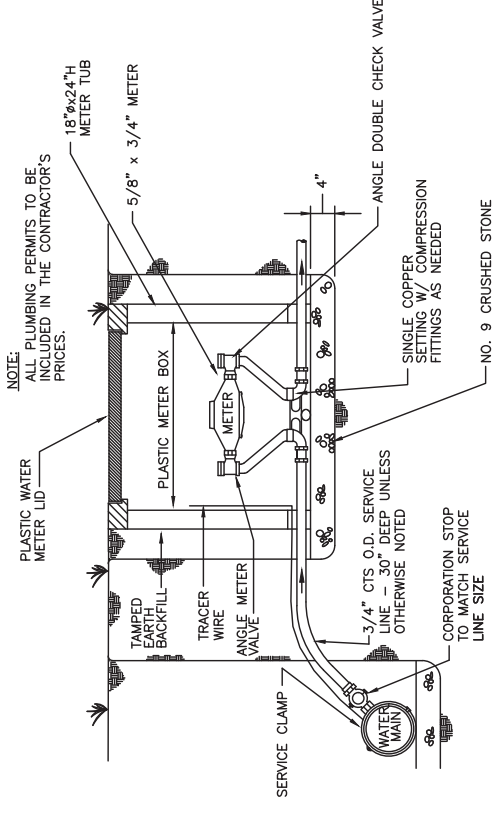
BLOWOFF HYDRANT ASSEMBLY

NOT TO SCALE



TYPICAL SERVICE CONNECTION

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AIR RELEASE VALVE

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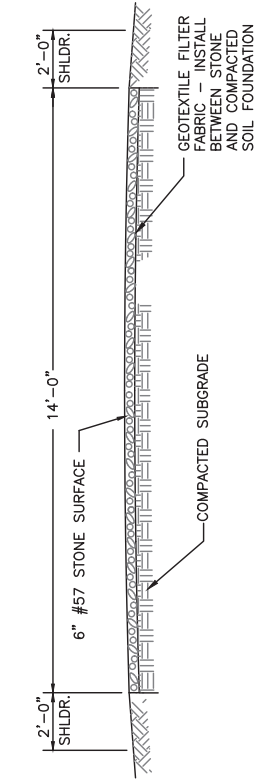
DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED



CONTRACT No. 1
WATER SYSTEM IMPROVEMENTS
GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

PROJECT NO. 19014
SHEET NO. SD-2

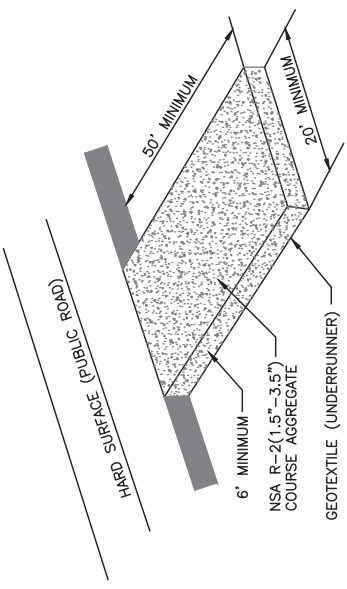
STANDARD DETAILS



CONSTRUCTION ROAD STABILIZATION

NOT TO SCALE

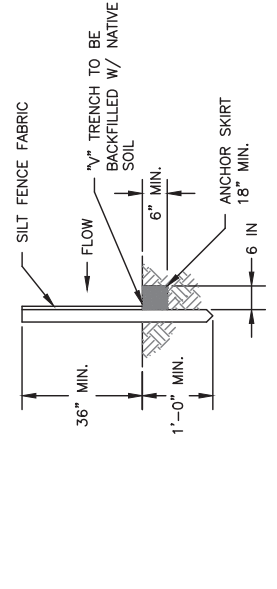
- NOTES:
1. TREES, STUMPS, ROOTS, BRUSH, WEEDS, AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED FROM THE WORK AREA.
 2. UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE ROADBED AND PARKING AREAS.
 3. GRADING, SUBGRADE PREPARATION, AND COMPACTION SHALL BE DONE AS NEEDED. FILL MATERIAL SHALL BE DEPOSITED IN LAYERS NOT TO EXCEED 9 INCHES AND COMPACTED TO THE REQUIRED ELEVATION.
 4. THE ROAD SHALL BE GRADED TO THE REQUIRED ELEVATION. SURFACE PREPARATION AND PLACEMENT OF THE SURFACE COURSE SHALL BE IN ACCORDANCE WITH SOUND ROADWAY CONSTRUCTION.
 5. ALL CUT AND FILLS SHALL BE 2:1 OR FLATTER TO THE EXTENT POSSIBLE.
 6. WATER BREAKS OR BARS MAY BE USED TO CONTROL SURFACE RUNOFF.
 7. ROADS SHALL BE LAID OUT ACCORDING TO GOOD LANDSCAPE MANAGEMENT PRINCIPLES.
 8. ALL ROADSIDE DITCHES, CUTS, FILLS, AND DISTURBED AREAS ADJACENT TO ROADS SHALL BE STABILIZED WITH APPROPRIATE TEMPORARY OR PERMANENT VEGETATION.



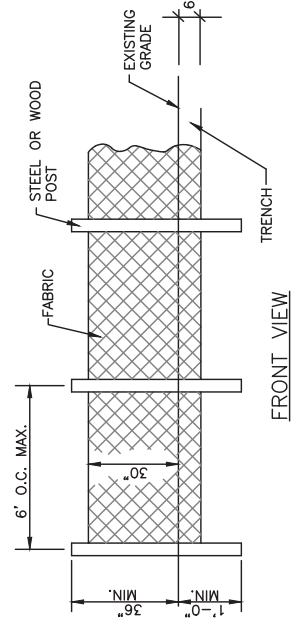
- NOTES:
1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET. GEOTEXTILE (KTYC TYPE III) SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
 2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 3. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
 4. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO LEAVING THE SITE. WHEELS MUST BE WASHED IMMEDIATELY. WHEELS SHALL BE CLEANED IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



TRENCH DETAIL FOR SEDIMENT FENCE



FRONT VIEW

- NOTES:
1. GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE OF THE BARRIER. JOINTS CANNOT BE AVOID.
 2. GEOTEXTILE FABRIC SHALL BE SPICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
 3. POSTED SHALL BE AT LEAST 5 FEET IN LENGTH
 4. WOOD POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC. SHALL BE 17/32 PER LINEAR FOOT.
 5. THE PROJECTIONS OF THESE POSTS SHALL BE FASTENED SECURELY TO THE TRENCH IN LENGTH, WIRE TIES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
 6. TURN SILT FENCE UP SLOPE AT ENDS.

SEDIMENT BARRIER

NOT TO SCALE

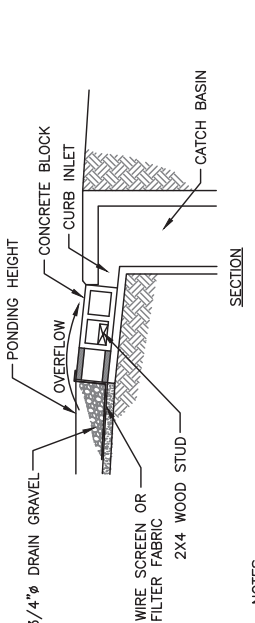
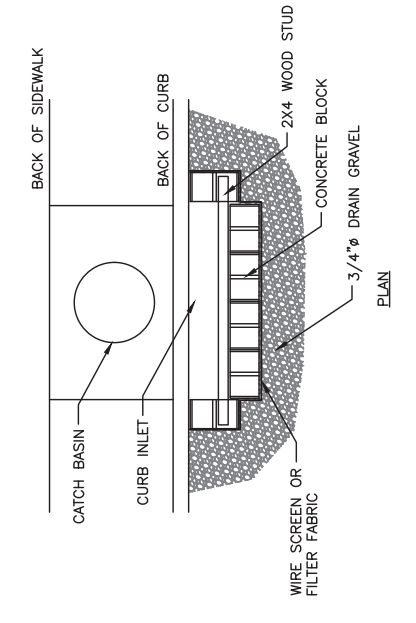
EROSION CONTROL NOTES

1. A KPDES STORMWATER PERMIT IS REQUIRED FOR THIS PROJECT. COVERAGE STARTS WHEN DIVISION OF WATER ACKNOWLEDGES RECEIPT OF A NOTICE OF INTENT FOR COVERAGE.
2. THE KPDES PERMIT REQUIRES THAT THE PERMITTEE SHALL MINIMIZE DISTURBANCE AND THE PERIOD OF TIME THAT THE DISTURBED AREA IS WITHOUT STABILIZATION PRACTICES.
3. FINAL STABILIZATION SHALL BEGIN WITHIN 14 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE BEEN SUSPENDED FOR MORE THAN 180 DAYS. WHEN SNOW COVER CAUSES DELAYS, STABILIZATION SHALL BEGIN AS SOON AS POSSIBLE. STABILIZATION PRACTICES INCLUDE SEEDING, MULCHING, PLACING SOIL, PLANTING TREES OR SHRUBS, AND USING GEOTEXTILE FABRICS AND OTHER STABILIZATION PRACTICES.
4. THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE FIELD OFFICE SHALL BE OBTAINED FROM FOR ALL CRITICAL AREAS (WITHIN 25' OF A STREAM). SOIL STABILIZATION TECHNIQUES SHALL BE IMPLEMENTED WITHIN 24 HOURS OR AS SOON AS PRACTICAL AFTER COMPLETION OF GRADING OR DISTURBANCE. TEMPORARY STABILIZATION PRACTICES SHALL BE INITIATED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES.
5. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED AND IMPLEMENTED AS OUTLINED IN THE KPDES STORMWATER PERMIT KYR 10.
6. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE PROPERLY DESIGNED.
7. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE INSTALLED DURING THE INITIAL GRADING AT LOCATIONS THAT WILL PROVIDE THE BEST PROTECTION FROM THE SITES.
8. A MULTI-PURPOSE BASIN USED FOR A SEDIMENT TRAP THAT IS THEN CONVERTED TO A DETENTION/RETENTION BASIN SHALL BE DREGGED PERIODICALLY DURING CONSTRUCTION ACTIVITIES AND AFTER STABILIZATION IN ORDER TO PROVIDE ADEQUATE STORAGE.
9. INLET PROTECTION IS REQUIRED TO MINIMIZE DISCHARGE OF SEDIMENT LADEN WATER.
10. SITE PERIMETER CONTROLS ARE REQUIRED AND SHALL BE INSTALLED TO PREVENT THE DEPOSIT OF SOIL AND DEBRIS FROM GRADED SURFACES ONTO PUBLIC STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.
11. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROL AND REVISE THE CONTROLS AS NEEDED.
12. INSPECTIONS AND MAINTENANCE

1. ALL EROSION CONTROL MEASURES, DISCHARGE LOCATIONS, VEHICLE EXITS, DISTURBED AREAS OF THE SITE, AND MATERIALS STORAGE AREAS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. EACH INSPECTION MUST BE DOCUMENTED IN ACCORDANCE WITH THE KPDES GENERAL PERMIT FOR STORMWATER POINT SOURCE DISCHARGES FROM CONSTRUCTION ACTIVITIES (KTYC10).
2. SEDIMENT ACCUMULATED IN THE SILT FENCES, INLET PROTECTION AREAS, AND DETENTION/RETENTION BASINS SHALL BE REMOVED IMMEDIATELY WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. SEDIMENT MUST BE REMOVED FROM ANY SEDIMENT BASINS WHEN THE NO MORE THAN 1/3 VOLUME HAS BEEN FILLED WITH COLLECTED SEDIMENT.
4. ALL REQUIRED REPAIRS ARE TO BE MADE IMMEDIATELY.
5. REMOVED SEDIMENT MUST BE SPREAD AND VEGETATED OR OTHERWISE STABILIZED IN A MANNER THAT DOES NOT RESULT IN MUDDY RUNOFF TO NEARBY DITCHES AND WATERBODIES.
6. INSPECT THE CONSTRUCTION ENTRANCE DAILY TO ENSURE NO TRACKING OR DIRT ONTO LOCAL ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC STREETS, MUST BE REMOVED IMMEDIATELY. SEE NOTE 3 FOR HANDLING OF PUBLIC STREETS.
7. MAINTAIN THE ENTRANCE AS NECESSARY TO PREVENT TRACKING OF DIRT.

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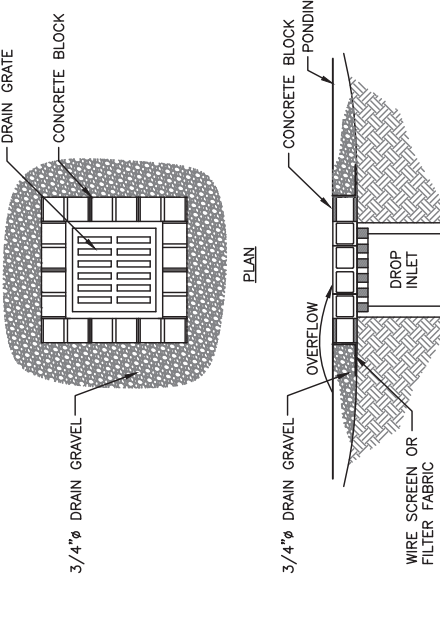
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- NOTES:
1. USE BLOCK AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
 2. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT.
 3. AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB INLET SEDIMENT BARRIER

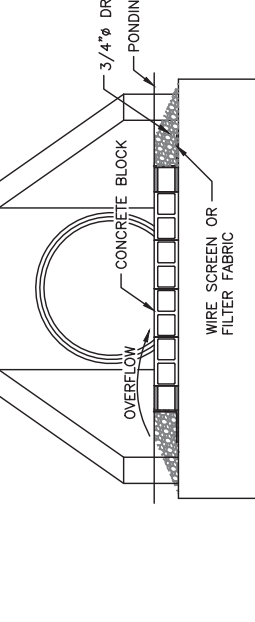
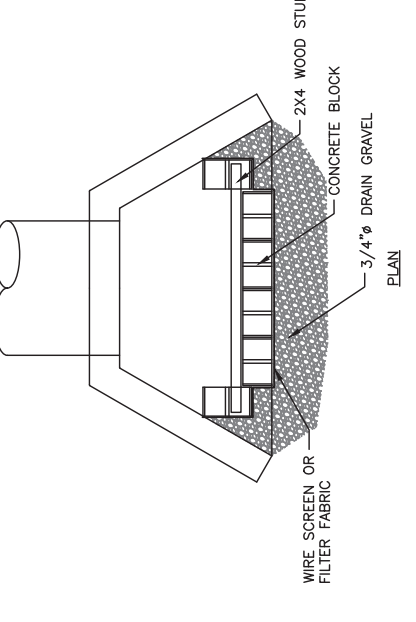
NOT TO SCALE



- NOTES:
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS (LESS THAN 3% SLOPE)
 2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
 3. THE BASIN SHOULD BE LOCATED AT THE DOWNSLOPE OF THE GROUND ELEVATION. THIS SIZE SHOULD BE DETERMINED FROM THE DESIGNER. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

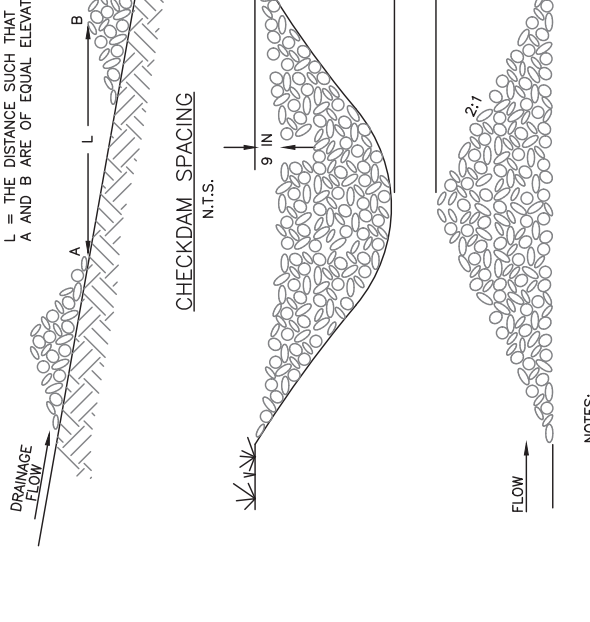
DROP INLET SEDIMENT BARRIER

NOT TO SCALE



CULVERT INLET SEDIMENT BARRIER

NOT TO SCALE



- NOTES:
1. ROCK CHECK DAMS SHOULD BE CONSTRUCTED OF GRADED 5 TO 10 INCH STONE. MECHANICAL OR HAND PLACEMENTS SHALL BE USED TO INSURE COMPLETE COVERAGE OF THE DAM IS LOWER THAN THE EDGES.
 2. INSPECT BEHIND RIPRAP CHECKDAM DAILY AND CLEAN WHEN COLLECTED DEBRIS EXCEEDS HALF OF ITS DEPTH.

ROCK CHECK DAM

NOT TO SCALE

PROJECT NO. 19014

SHEET NO. SD-3

EROSION CONTROL DETAILS

CONTRACT No. 1

WATER SYSTEM IMPROVEMENTS

GARRARD COUNTY WATER ASSOCIATION
Garrard County, Kentucky

P.O. Box 1034
VERSAILLES, KENTUCKY 40383

KENTUCKY ENGINEERING GROUP, PLLC

DATE:	JUNE 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED
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NO.	DATE	REVISIONS

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