CASSVILLE WATER SYSTEM IMPROVEMENTS

CASSVILLE, MISSOURI

N
N.T.S.

INDEX TO DRAWINGS

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY
MISSOURI NO. 000427

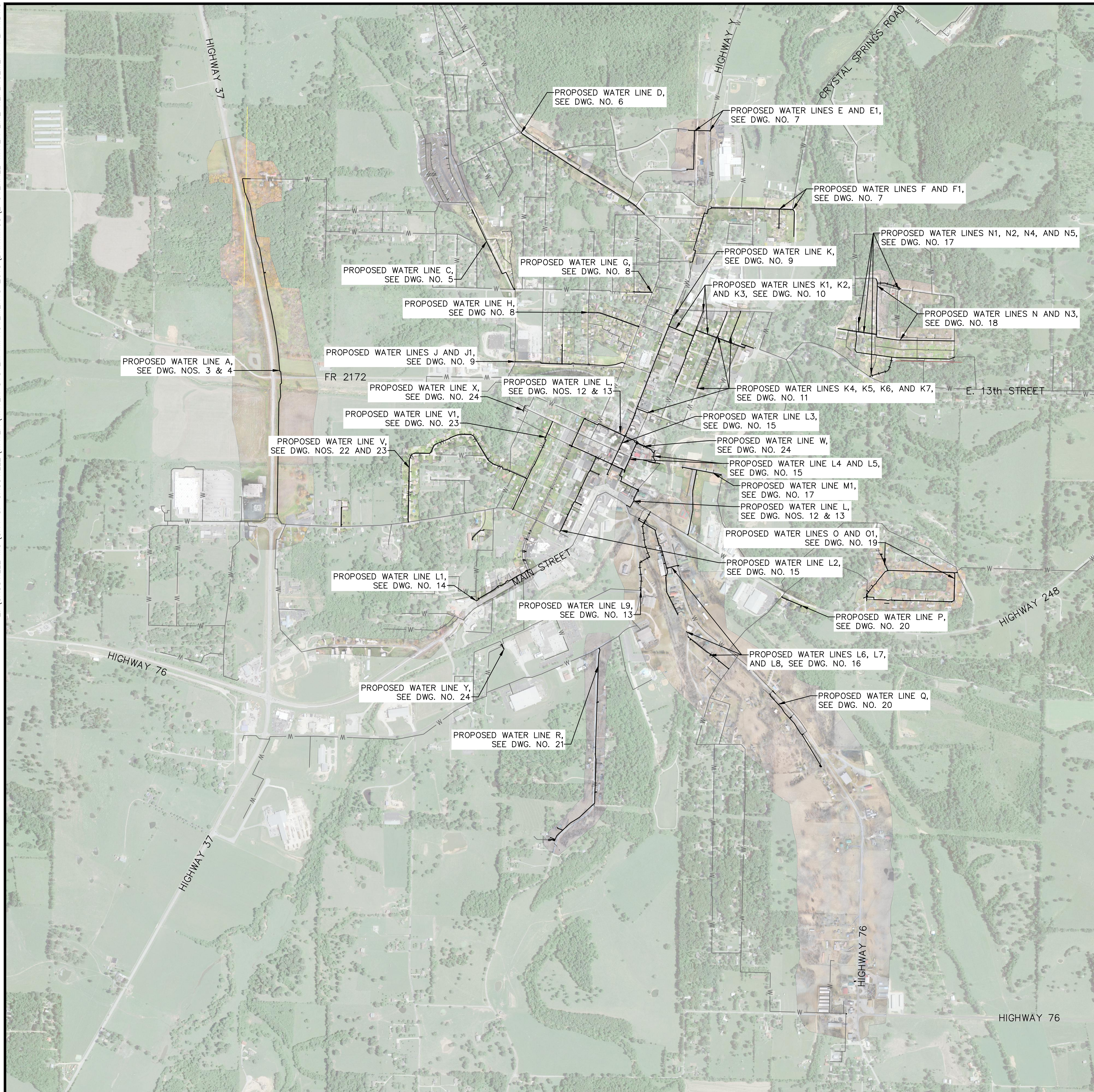
DATE	REVISION

DWN. BY: MHJ
CKD. BY: JTB
APPD. BY: GDW
DATE : 2021

LOCATION MAP & INDEX
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
1

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\2 OVERALL WATER LINE REPLACEMENT PLAN.DWG



GENERAL NOTES:

1. CONTRACTOR SHALL REMOVE, PRESERVE AND REPLACE ALL SIGNS, MAIL BOXES AND FENCES WITHIN THE LIMITS OF THE PROPOSED IMPROVEMENTS.
2. ALL TRAFFICWAYS INCLUDING DRIVEWAYS, ALLEYWAYS AND SIDEWALKS SHALL REMAIN ACCESSIBLE TO RESIDENTIAL AND EMERGENCY VEHICLES DURING PROJECT DURATION.
3. ALL CONSTRUCTION AND EXCAVATION ACTIVITIES SHALL BE CONFINED TO EASEMENTS, RIGHT-OF-WAY AND/OR WORK AREA LIMITS AS SHOWN ON DRAWING. DUE TO THE LOCATION OF UNDERGROUND UTILITIES, TERRAIN AND OTHER PERMANENT OBSTRUCTIONS, THE DISTANCE OF THE PROPOSED WATER LINE FROM THE ROADWAY SURFACE VARIES THROUGHOUT THE PROJECT. UNDER NO CIRCUMSTANCES SHALL THE PROPOSED WATER LINE BE PLACED OFF OF ROADWAY RIGHT-OF-WAY OR PERMANENT EASEMENTS.
4. THE LOCATION OF SOME EXISTING UTILITIES HAVE BEEN APPROXIMATED. 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 BEGINNING OF CONSTRUCTION.
5. CONTRACTOR SHALL PRESERVE ALL TREES AND SHRUBBERY LOCATED WITHIN THE CONSTRUCTION EASEMENT AND RIGHT-OF-WAY TO THE EXTENT POSSIBLE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND THE OFFSITE DISPOSAL OF ANY TREES AND/OR BRUSH THAT MUST BE REMOVED IN ORDER TO INSTALL THE PROPOSED IMPROVEMENTS.
6. ADDITIONAL FITTINGS WILL BE REQUIRED WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE PREPARED TO FURNISH AND INSTALL THESE FITTINGS AS REQUIRED FOR A COMPLETE WORKING SYSTEM (I.E. BENDS, COUPLINGS, ETC.).
7. ALL SURFACES (CONCRETE, ASPHALT, GRAVEL OR DIRT) AND THEIR APPURTENANCES (CURBS, CULVERTS, ETC.) DISTURBED DURING CONSTRUCTION SHALL BE REPLACED PER SPECIFICATIONS AND STANDARD DETAILS. CONTRACTOR SHALL OPEN CUT AND REPLACE PAVEMENT ON STREET AND DRIVE CROSSINGS PER SPECIFICATIONS AND STANDARD DRAWING DETAILS, EXCEPT AS NOTED ON PLANS WHERE BORES SHALL BE REQUIRED. EACH DRIVE SURFACE CROSSED SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES, UNLESS APPROVED BY THE CITY OR MoDOT PRIOR TO THE START OF CONSTRUCTION.
8. IN AREAS WHERE PROPOSED WATER 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 OF THAT IN EXISTENCE PRIOR TO BEGINNING. PAVEMENT REPAIR SHALL ONLY BE PAID FOR DIRECTLY IN AREAS WHERE EXCAVATION IS TO BE UNDERNEATH THE PAVEMENT AND IF THE PAVEMENT MUST BE DISTURBED TO INSTALL WATER LINE. ANY PAVEMENT DISTURBED DUE TO CONSTRUCTION EQUIPMENT OR OTHER ACTIVITIES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND NOT BE PAID FOR DIRECTLY. REPAIR OF PAVEMENT DUE TO SUCH INCIDENTAL CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. 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. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE MUTCD.
10. PROPOSED WATER MAIN SHALL BE BURIED A MINIMUM OF 42" FROM GROUND LINE TO TOP OF PIPE, PER PROJECT PLANS AND SPECIFICATIONS.
11. CONNECTION DETAILS ARE BASED ON AVAILABLE INFORMATION. CONTRACTOR SHALL BE PREPARED TO ALTER CONNECTIONS AND PROVIDE NECESSARY FITTINGS AS FIELD CONDITIONS WARRANT AND AS APPROVED BY ENGINEER.
12. CONTRACTOR SHALL CONTACT ELECTRIC COMPANY PRIOR TO CONSTRUCTION FOR STABILIZATION OF ANY EXISTING POWER POLES ALONG THE PROPOSED WATER LINE ROUTE.
13. 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).
14. DURING ALL CONSTRUCTION ACTIVITIES, CARE SHALL BE TAKEN TO PREVENT DAMAGE TO ADJACENT STRUCTURES, BILLBOARDS, PROPERTY PINS, AND BURIED PIPING AND UTILITIES. REPAIR OF ALL STRUCTURES, BILLBOARDS, PROPERTY PINS, AND/OR UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE AND TO THEIR ORIGINAL CONDITION.
15. IN AREAS WHERE EXISTING LINE IS TO BE REPLACED, THE CONTRACTOR SHALL CONSTRUCT, TEST, DISINFECT AND FLUSH NEW WATER LINE FIRST. AFTER FLUSHING AND RECEIPT OF ACCEPTABLE SAMPLES, CONNECTION OF SERVICES TO NEW LINE MAY THEN PROCEED. ONCE ALL SERVICE CONNECTIONS ARE COMPLETED, CONNECTION TO OLD DISTRIBUTION LINE SHALL BE MADE. CONTRACTOR SHALL ABANDON AND CAP OLD LINES AS SHOWN ON DETAIL.
16. IN AREAS WHERE EXISTING LINE IS TO BE REPLACED, ALL WATER SERVICE LINES AND METERS SHALL BE RECONNECTED TO THE PROPOSED WATER LINE, PER STANDARD DETAILS. CONTRACTOR SHALL ANTICIPATE ADDITIONAL SERVICE LINE QUANTITIES WHEN THE PROPOSED WATER LINE IS NOT INSTALLED BETWEEN THE METER AND THE EXISTING WATER LINE.
17. WATER SERVICE SHALL BE MAINTAINED FOR ALL CUSTOMERS AT ALL TIMES EXCEPT FOR THE RECONNECTION OF SERVICE LINES TO THE PROPOSED WATER LINES.

LEGEND

N

—W— EXISTING WATER LINE

—— PROPOSED WATER LINE

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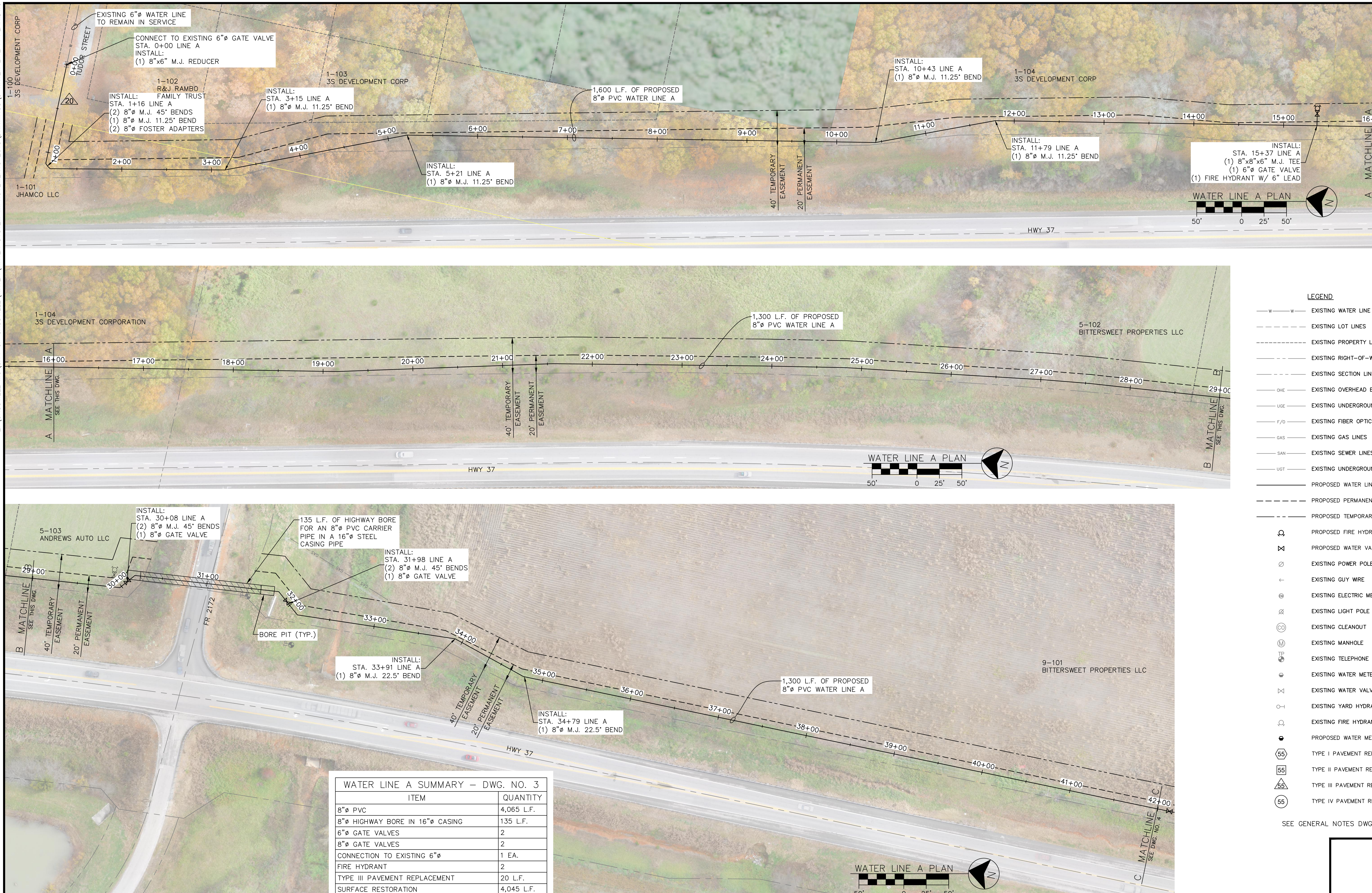
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

OVERALL WATER LINE REPLACEMENT PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
2



WATER LINE A SUMMARY – DWG. NO. 3	
ITEM	QUANTITY
8"ø PVC	4,065 L.F.
8"ø HIGHWAY BORE IN 16"ø CASING	135 L.F.
6"ø GATE VALVES	2
8"ø GATE VALVES	2
CONNECTION TO EXISTING 6"ø	1 EA.
FIRE HYDRANT	2
TYPE III PAVEMENT REPLACEMENT	20 L.F.
SURFACE RESTORATION	4,045 L.F.

LEGEND

- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

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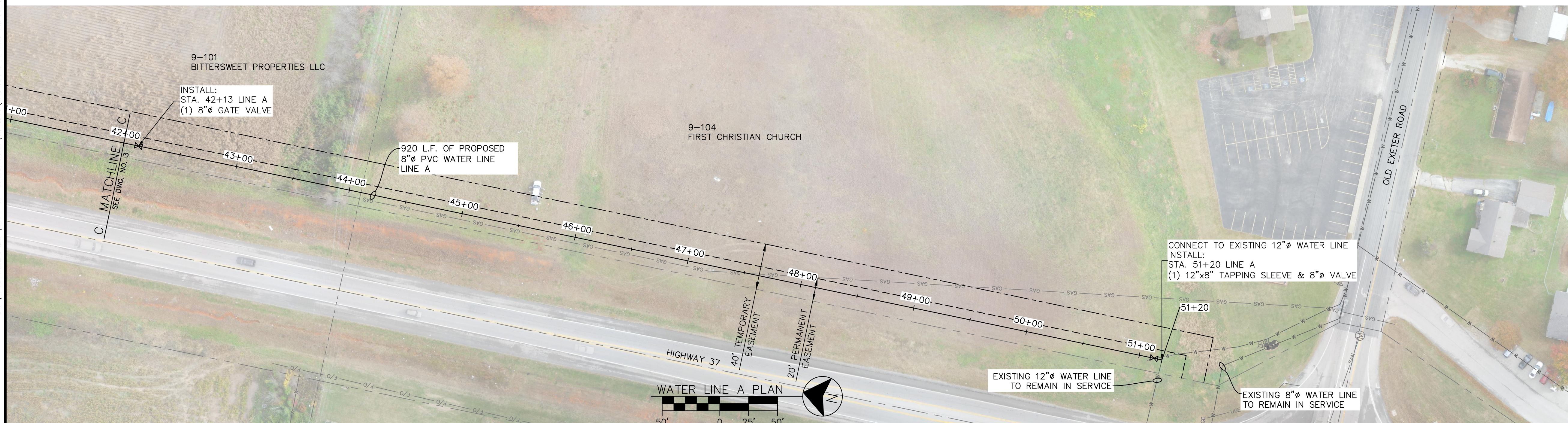
WATER LINE A PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
3

LEGEND

EXISTING PIPE TO BE ABANDONED/REMOVED	EXISTING SEWER LINES	EXISTING LIGHT POLE	TYPE II PAVEMENT REPLACEMENT
EXISTING WATER LINE	EXISTING UNDERGROUND TELEPHONE	EXISTING CLEANOUT	TYPE III PAVEMENT REPLACEMENT
EXISTING LOT LINES	PROPOSED WATER LINE	EXISTING MANHOLE	TYPE IV PAVEMENT REPLACEMENT
EXISTING PROPERTY LINES	PROPOSED PERMANENT EASEMENT	EXISTING TELEPHONE PEDESTAL	
EXISTING RIGHT-OF-WAY	PROPOSED TEMPORARY EASEMENT	EXISTING WATER METER	
EXISTING SECTION LINES	PROPOSED FIRE HYDRANT	EXISTING WATER VALVE	
EXISTING OVERHEAD ELECTRIC	PROPOSED WATER VALVE	EXISTING YARD HYDRANT	
EXISTING UNDERGROUND ELECTRIC	EXISTING POWER POLE	EXISTING FIRE HYDRANT	
EXISTING FIBER OPTIC	EXISTING GUY WIRE	PROPOSED WATER METER	
EXISTING GAS LINES	EXISTING ELECTRIC METER	TYPE I PAVEMENT REPLACEMENT	



SEE GENERAL NOTES ON DWG. NO. 2

WATER LINE A SUMMARY – DWG. NO. 4

ITEM	QUANTITY
8"ø PVC	920 L.F.
12"x8" TAPPING SLEEVE AND VALVE	1 EA.
SURFACE RESTORATION	920 L.F.

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WATER LINE A PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 4

PRELIMINARY
2/23/2024

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LEGEND

—W—	EXISTING PIPE TO BE ABANDONED/REMOVED
—W—W—	EXISTING WATER LINE
— — —	EXISTING LOT LINES
- - - -	EXISTING PROPERTY LINES
—— — —	EXISTING RIGHT-OF-WAY
—— - - -	EXISTING SECTION LINES
—OHE—	EXISTING OVERHEAD ELECTRIC
—UGE—	EXISTING UNDERGROUND ELECTRIC
—F/O—	EXISTING FIBER OPTIC
—GAS—	EXISTING GAS LINES
—SAN—	EXISTING SEWER LINES
—UGT—	EXISTING UNDERGROUND TELEPHONE
——	PROPOSED WATER LINE
— — —	PROPOSED PERMANENT EASEMENT
—— - -	PROPOSED TEMPORARY EASEMENT
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	EXISTING POWER POLE
	EXISTING GUY WIRE
	EXISTING ELECTRIC METER
	EXISTING LIGHT POLE
CO	EXISTING CLEANOUT
M	EXISTING MANHOLE
TP	EXISTING TELEPHONE PEDESTAL
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING YARD HYDRANT
	EXISTING FIRE HYDRANT
	PROPOSED WATER METER
55	TYPE I PAVEMENT REPLACEMENT
55	TYPE II PAVEMENT REPLACEMENT
55	TYPE III PAVEMENT REPLACEMENT
55	TYPE IV PAVEMENT REPLACEMENT

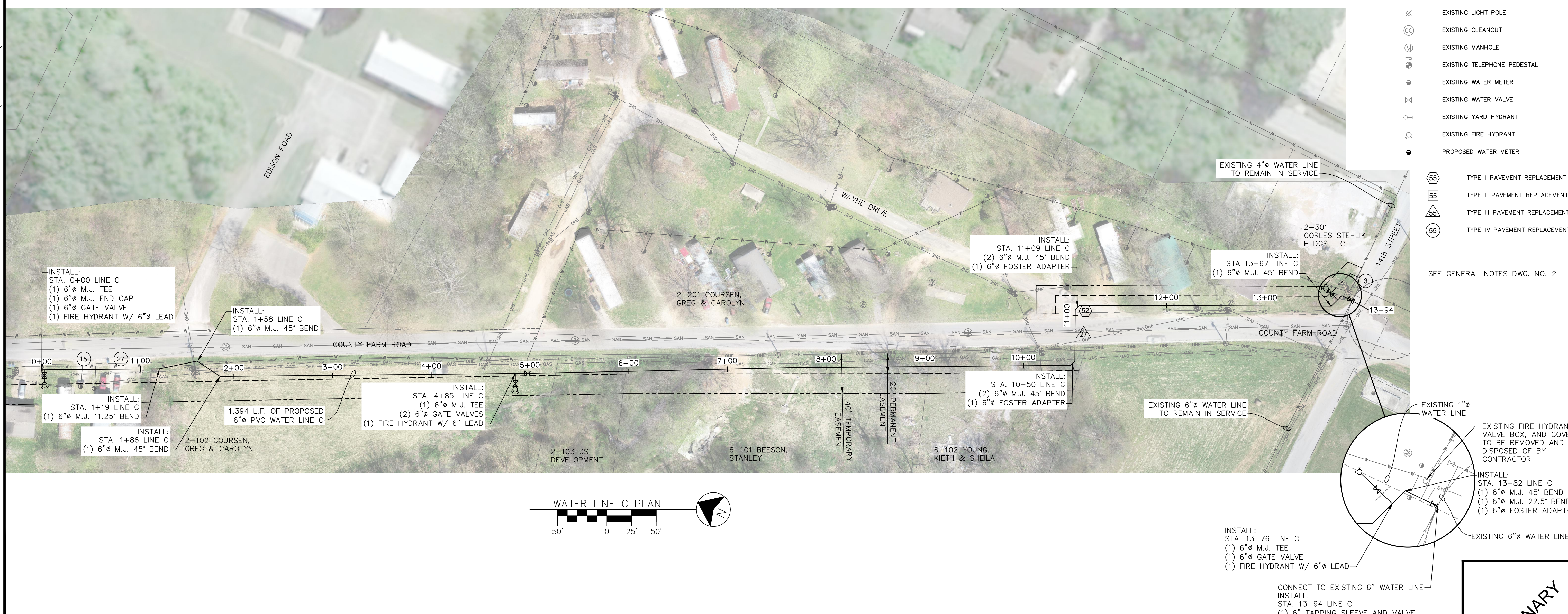
SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL INSTALL NEW 1"ø SERVICE LINE FROM PROPOSED METER TO EXISTING SERVICE LINE LOCATION FOR EACH STRUCTURE ON COURSEN PROPERTIES. LOCATION OF EXISTING SERVICE LINES IS UNKNOWN.

WATER LINE C SUMMARY – DWG. NO. 5

ITEM	QUANTITY
6"ø PVC	1,394 L.F.
6"ø GATE VALVE	4 EA.
1"ø SERVICE TAP AND CORP STOP	2 EA.
FIRE HYDRANT	2 EA.
TYPE I PAVEMENT REPLACEMENT	52 L.F.
TYPE III PAVEMENT REPLACEMENT	27 L.F.
TYPE IV PAVEMENT REPLACEMENT	42 L.F.
SURFACE RESTORATION	1,273 L.F.



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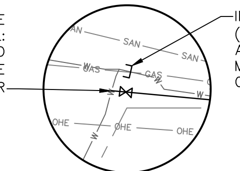
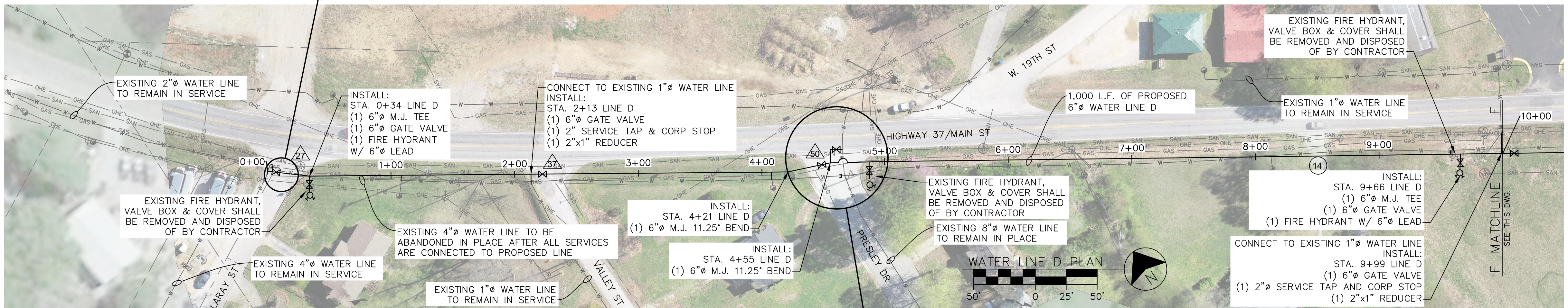
DATE:	2021

WATER LINE C PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 5

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\6 WATER LINE D PLAN.DWG



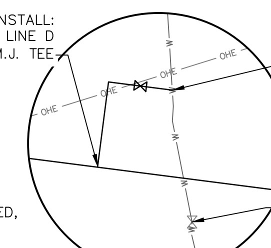


WATER LINE D SUMMARY – DWG. NO. 6	
ITEM	QUANTITY
6"ø PVC	2,174 L.F.
6"ø GATE VALVE	9 EA.
CONNECT TO EXISTING 1"ø WATER LINE	2 EA.
CONNECT TO EXISTING 6"ø WATER LINE	1 EA.
4"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
8"X6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	8 EA.
2"ø SERVICE TAP AND CORP STOP	2 EA.
1"ø SERVICE LINE	62 L.F.
FIRE HYDRANT	5 EA.
TYPE III PAVEMENT REPLACEMENT	168 L.F.
TYPE IV PAVEMENT REPLACEMENT	61 L.F.
SURFACE RESTORATION	1,945 L.F.

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, TEST, FLUSH, AND DISINFECT PROPOSED WATER LINE ALONG BUSINESS HIGHWAY 37 TO PROPOSED VALVE AT 17th STREET PRIOR TO TAKING EXISTING PRV OUT OF SERVICE FOR RECONNECTION.
2. ONCE INSTALLED, ALL EXISTING WATER METERS SHALL BE CONNECTED TO PROPOSED WATER MAIN ALONG HIGHWAY 37.
3. EXISTING PRV SHALL BE TEMPORARILY TAKEN OUT OF SERVICE AND EXISTING WATER LINE ALONG BUSINESS HIGHWAY 37 SHALL BE ABANDONED IN PLACE TO EXISTING VALVE AT 17th STREET.
4. CONTRACTOR SHALL INSTALL, TEST, FLUSH, AND DISINFECT FINAL CONNECTION TO EXISTING PRV AND 17th TIE–IN PRIOR TO PUTTING PRV AND CONNECTIONS BACK INTO SERVICE.

SEE GENERAL NOTES DWG. NO. 2

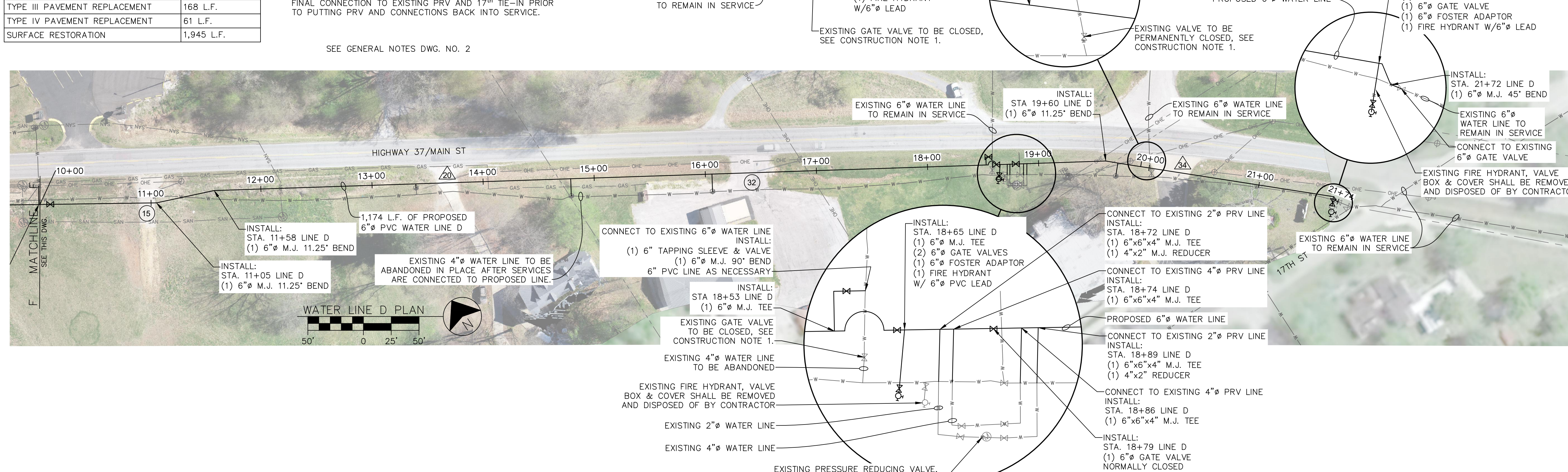


CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

LEGEND

EXISTING PIPE TO BE ABANDONED/REMOVED
EXISTING WATER LINE
EXISTING LOT LINES
EXISTING PROPERTY LINES
EXISTING RIGHT–OF–WAY
EXISTING SECTION LINES
EXISTING OVERHEAD ELECTRIC
EXISTING UNDERGROUND ELECTRIC
EXISTING FIBER OPTIC
EXISTING GAS LINES
EXISTING SEWER LINES
EXISTING UNDERGROUND TELEPHONE
PROPOSED WATER LINE
PROPOSED PERMANENT EASEMENT
PROPOSED TEMPORARY EASEMENT
PROPOSED FIRE HYDRANT
PROPOSED WATER VALVE
EXISTING POWER POLE
EXISTING GUY WIRE
EXISTING ELECTRIC METER
EXISTING LIGHT POLE
EXISTING CLEANOUT
EXISTING MANHOLE
EXISTING TELEPHONE PEDESTAL
EXISTING WATER METER
EXISTING WATER VALVE
EXISTING YARD HYDRANT
EXISTING FIRE HYDRANT
PROPOSED WATER METER
TYPE I PAVEMENT REPLACEMENT
TYPE II PAVEMENT REPLACEMENT
TYPE III PAVEMENT REPLACEMENT
TYPE IV PAVEMENT REPLACEMENT



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WATER LINE D PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 6

PRELIMINARY 2/23/2024

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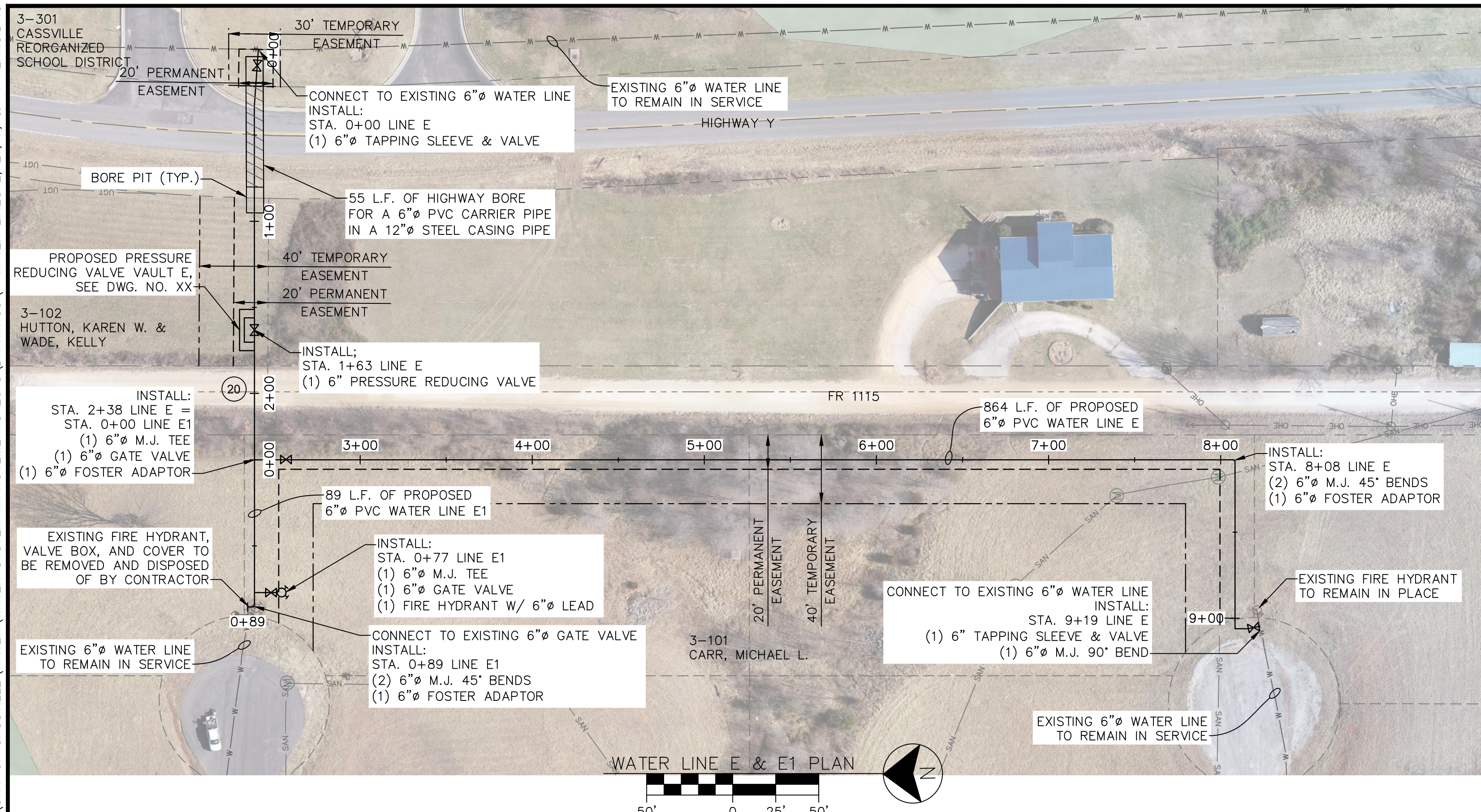


LEGEND

EXISTING PIPE TO BE ABANDONED/REMOVED	PROPOSED FIRE HYDRANT
EXISTING WATER LINE	PROPOSED WATER VALVE
EXISTING LOT LINES	EXISTING POWER POLE
EXISTING PROPERTY LINES	EXISTING GUY WIRE
EXISTING RIGHT-OF-WAY	EXISTING ELECTRIC METER
EXISTING SECTION LINES	EXISTING LIGHT POLE
EXISTING OVERHEAD ELECTRIC	EXISTING CLEANOUT
EXISTING UNDERGROUND ELECTRIC	EXISTING MANHOLE
EXISTING FIBER OPTIC	EXISTING TELEPHONE PEDESTAL
EXISTING GAS LINES	EXISTING WATER METER
EXISTING SEWER LINES	EXISTING WATER VALVE
EXISTING UNDERGROUND TELEPHONE	EXISTING YARD HYDRANT
PROPOSED WATER LINE	EXISTING FIRE HYDRANT
PROPOSED PERMANENT EASEMENT	PROPOSED WATER METER
PROPOSED TEMPORARY EASEMENT	TYPE I PAVEMENT REPLACEMENT
	TYPE II PAVEMENT REPLACEMENT
	TYPE III PAVEMENT REPLACEMENT
	TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTE:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT LINE F FROM STA 0+00 TO STA 25+57 WITHOUT MAKING FINAL CONNECTIONS AT STA 11+48 AND 15+92. ONCE LINE F HAS BEEN PUT IN SERVICE, CONTRACTOR SHALL COORDINATE WITH THE CITY OF CASSVILLE FOR MAKING FINAL CONNECTION AT STA. 11+48 AND 15+92.
2. ONCE LINE F HAS BEEN PUT INTO SERVICE, CONTRACTOR SHALL INSTALL END CAPS AS SHOWN.

WATER LINE E SUMMARY – DWG. NO. 7

ITEM	QUANTITY
6"ø PVC	864 L.F.
6"ø HIGHWAY BORE IN 12"ø CASING	55 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
PRESSURE REDUCING VALVE VAULT	LUMP SUM
TYPE IV PAVEMENT REPLACEMENT	20 L.F.
SURFACE RESTORATION	844 L.F.

WATER LINE E1 SUMMARY – DWG. NO. 7

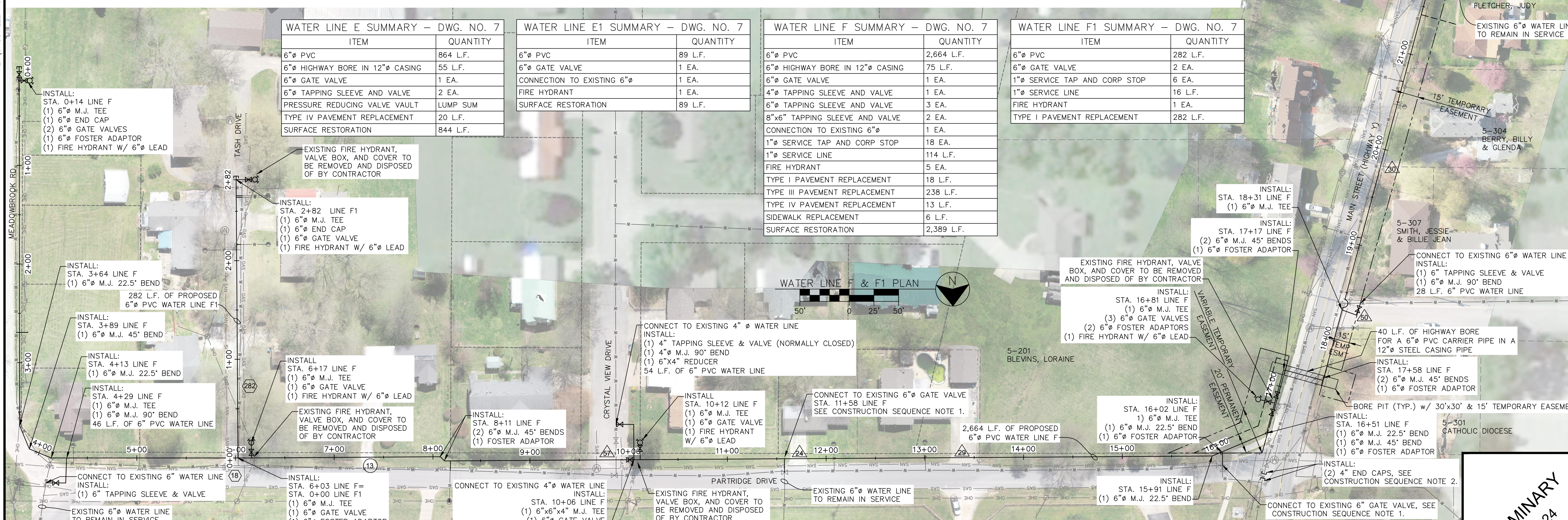
ITEM	QUANTITY
6"ø PVC	89 L.F.
6"ø GATE VALVE	1 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
FIRE HYDRANT	1 EA.
SURFACE RESTORATION	89 L.F.

WATER LINE F SUMMARY – DWG. NO. 7

ITEM	QUANTITY
6"ø PVC	2,664 L.F.
6"ø HIGHWAY BORE IN 12"ø CASING	75 L.F.
6"ø GATE VALVE	1 EA.
4"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	3 EA.
8"x6" TAPPING SLEEVE AND VALVE	2 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
1" SERVICE TAP AND CORP STOP	18 EA.
1" SERVICE LINE	114 L.F.
FIRE HYDRANT	5 EA.
TYPE I PAVEMENT REPLACEMENT	18 L.F.
TYPE III PAVEMENT REPLACEMENT	238 L.F.
TYPE IV PAVEMENT REPLACEMENT	13 L.F.
SIDEWALK REPLACEMENT	6 L.F.
SURFACE RESTORATION	2,389 L.F.

WATER LINE F1 SUMMARY – DWG. NO. 7

ITEM	QUANTITY
6"ø PVC	282 L.F.
6"ø GATE VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	6 EA.
1"ø SERVICE LINE	16 L.F.
FIRE HYDRANT	1 EA.
TYPE I PAVEMENT REPLACEMENT	282 L.F.



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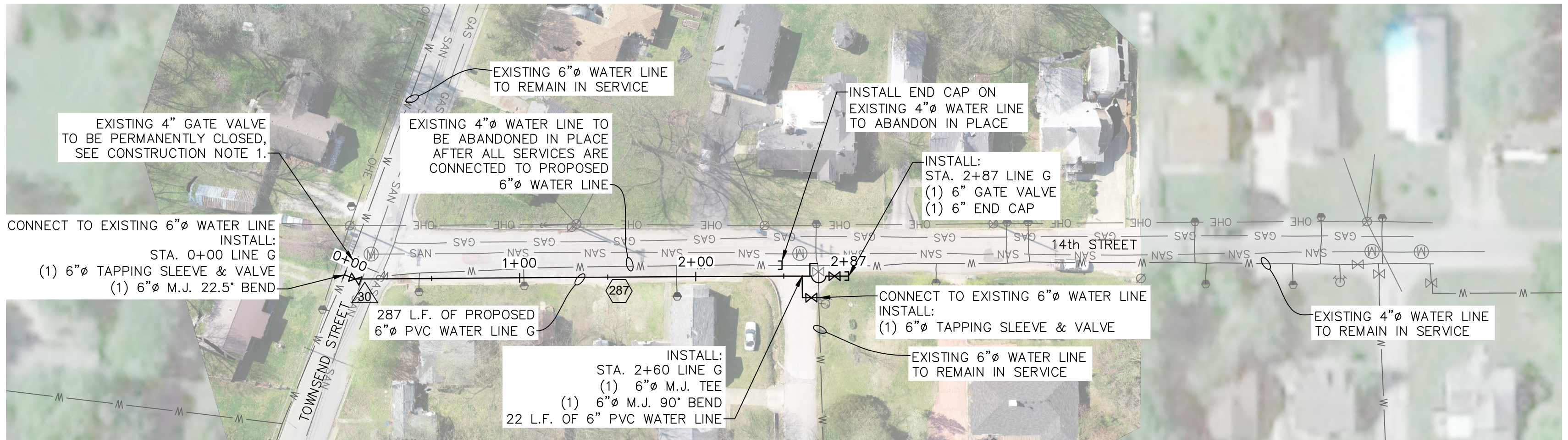
WATER LINES E, E1, F, & F1 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

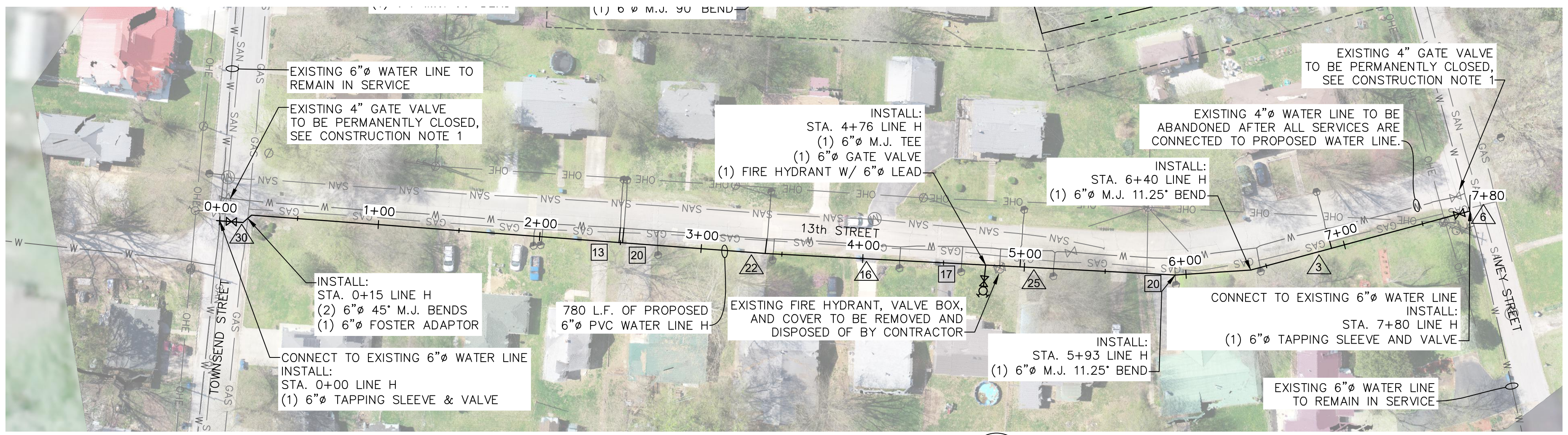
DWG. NO. 7

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\8 WATER LINES G & H PLANS.DWG



WATER LINE G PLAN

50' 0 25' 50'



WATER LINE H PLAN

50' 0 25' 50'

WATER LINE G SUMMARY – DWG. NO. 8

ITEM	QUANTITY
6"ø PVC	309 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	4 EA.
1"ø SERVICE LINE	11 L.F.
TYPE I PAVEMENT REPLACEMENT	287 L.F.
TYPE III PAVEMENT REPLACEMENT	30 L.F.

WATER LINE H SUMMARY – DWG. NO. 8

ITEM	QUANTITY
6"ø PVC	780 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	14 EA.
1"ø SERVICE LINE	50 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	70 L.F.
TYPE III PAVEMENT REPLACEMENT	102 L.F.
SURFACE RESTORATION	608 L.F.

LEGEND

- W — EXISTING PIPE TO BE ABANDONED/REMOVED
- W — EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- OHE — EXISTING OVERHEAD ELECTRIC
- UGE — EXISTING UNDERGROUND ELECTRIC
- F/O — EXISTING FIBER OPTIC
- GAS — EXISTING GAS LINES
- SAN — EXISTING SEWER LINES
- UGT — EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- CO — EXISTING CLEANOUT
- M — EXISTING MANHOLE
- TP — EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 — TYPE I PAVEMENT REPLACEMENT
- 55 — TYPE II PAVEMENT REPLACEMENT
- 55 — TYPE III PAVEMENT REPLACEMENT
- 55 — TYPE IV PAVEMENT REPLACEMENT

CONSTRUCTION NOTE:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

SEE GENERAL NOTES DWG. NO. 2

PRELIMINARY 2/23/2024

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ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

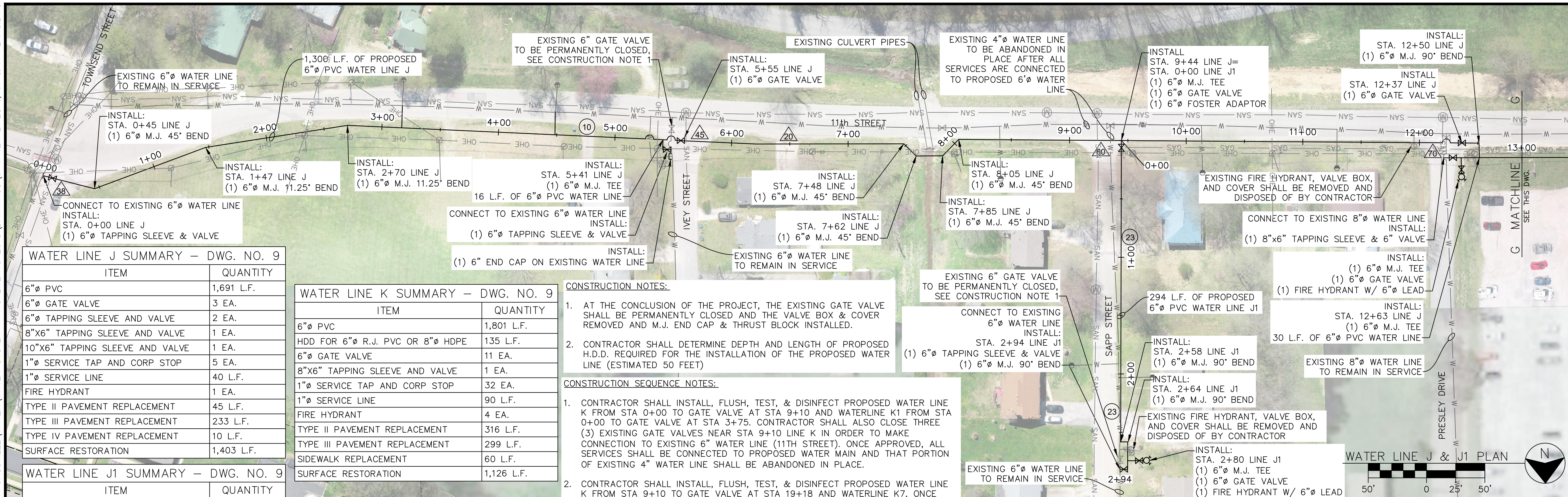
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINES G & H PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 8

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\9 WATER LINES J, J1 & K PLANS.DWG



WATER LINE J SUMMARY – DWG. NO. 9	
ITEM	QUANTITY
6"ø PVC	1,691 L.F.
6"ø GATE VALVE	3 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
8"X6" TAPPING SLEEVE AND VALVE	1 EA.
10"X6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	5 EA.
1"ø SERVICE LINE	40 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	45 L.F.
TYPE III PAVEMENT REPLACEMENT	233 L.F.
TYPE IV PAVEMENT REPLACEMENT	10 L.F.
SURFACE RESTORATION	1,403 L.F.

WATER LINE J1 SUMMARY – DWG. NO. 9	
ITEM	QUANTITY
6"ø PVC	294 L.F.
6"ø GATE VALVE	2 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	2 EA.
FIRE HYDRANT	1 EA.
TYPE IV PAVEMENT REPLACEMENT	46 L.F.
SURFACE RESTORATION	248 L.F.

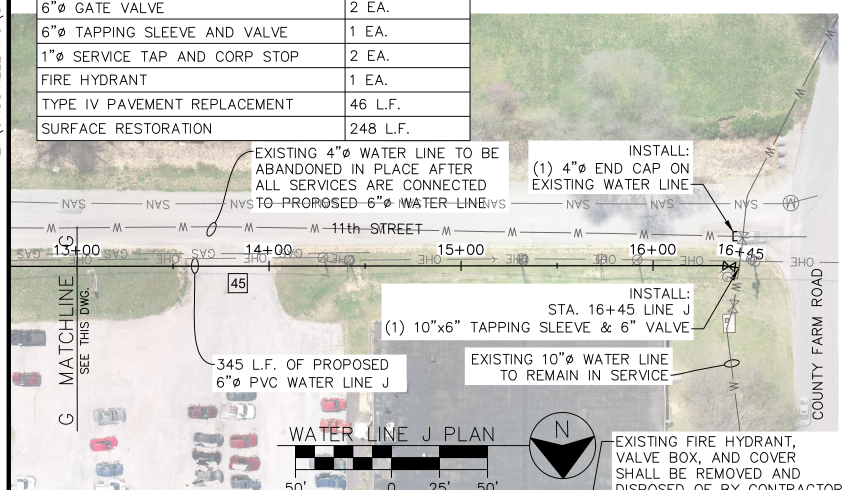
WATER LINE K SUMMARY – DWG. NO. 9	
ITEM	QUANTITY
6"ø PVC	1,801 L.F.
HDD FOR 6"ø R.J. PVC OR 8"ø HDPE	135 L.F.
6"ø GATE VALVE	11 EA.
8"x6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	32 EA.
1"ø SERVICE LINE	90 L.F.
FIRE HYDRANT	4 EA.
TYPE II PAVEMENT REPLACEMENT	316 L.F.
TYPE III PAVEMENT REPLACEMENT	299 L.F.
SIDEWALK REPLACEMENT	60 L.F.
SURFACE RESTORATION	1,126 L.F.

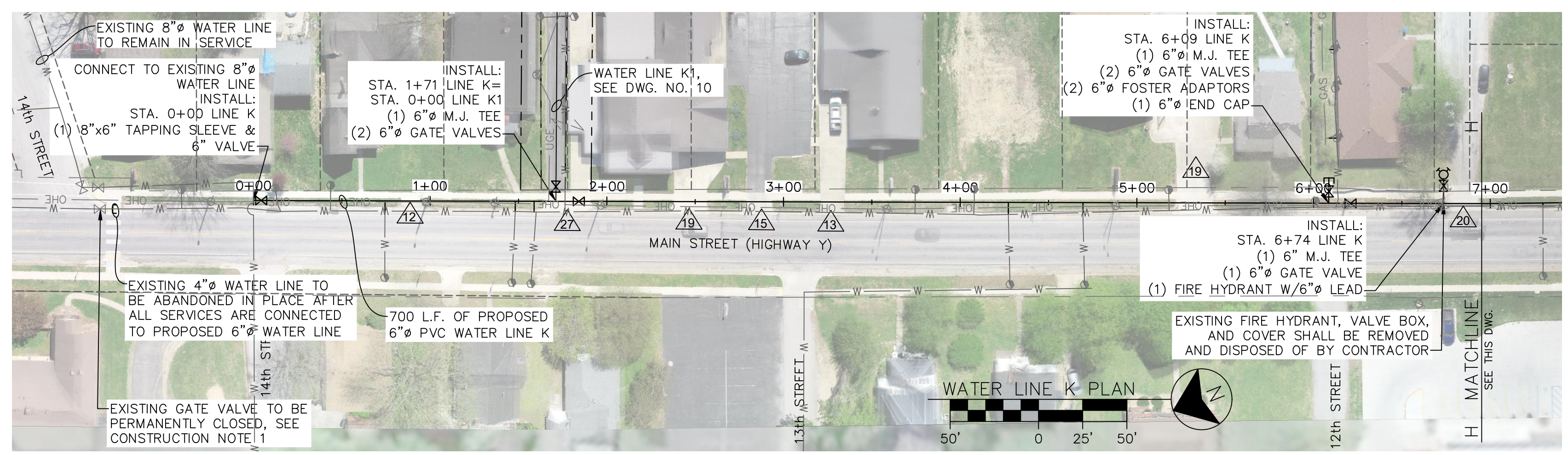
CONSTRUCTION NOTES:

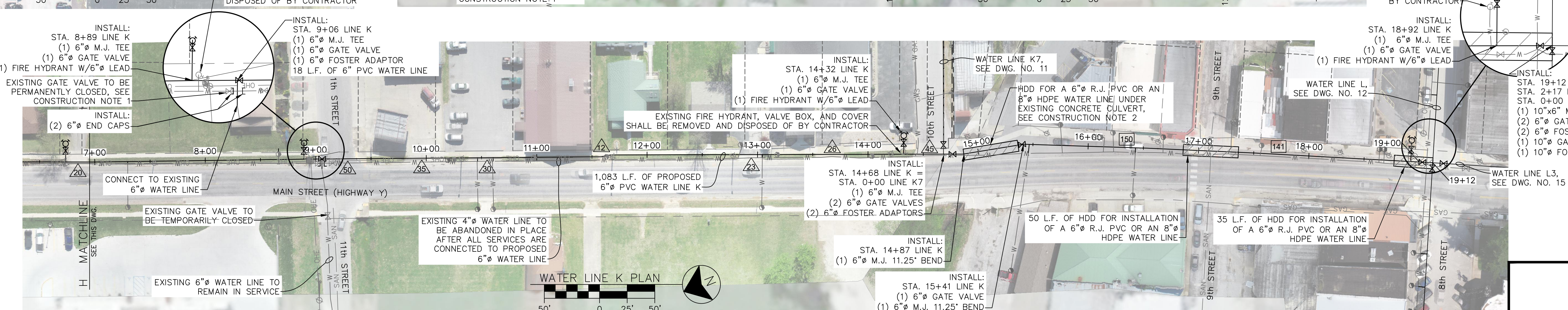
1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.
2. CONTRACTOR SHALL DETERMINE DEPTH AND LENGTH OF PROPOSED H.D.D. REQUIRED FOR THE INSTALLATION OF THE PROPOSED WATER LINE (ESTIMATED 50 FEET)

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINE K FROM STA 0+00 TO GATE VALVE AT STA 9+10 AND WATERLINE K1 FROM STA 0+00 TO GATE VALVE AT STA 3+75. CONTRACTOR SHALL ALSO CLOSE THREE (3) EXISTING GATE VALVES NEAR STA 9+10 LINE K IN ORDER TO MAKE CONNECTION TO EXISTING 6" WATER LINE (11TH STREET). ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING 4" WATER LINE SHALL BE ABANDONED IN PLACE.
2. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINE K FROM STA 9+10 TO GATE VALVE AT STA 19+18 AND WATERLINE K7, ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING 4" WATER LINE SHALL BE ABANDONED IN PLACE.







LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- OHE — EXISTING OVERHEAD ELECTRIC
- UGE — EXISTING UNDERGROUND ELECTRIC
- F/O — EXISTING FIBER OPTIC
- GAS — EXISTING GAS LINES
- SAN — EXISTING SEWER LINES
- UGT — EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- CO — EXISTING CLEANOUT
- M — EXISTING MANHOLE
- TP — EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 — TYPE I PAVEMENT REPLACEMENT
- 55 — TYPE II PAVEMENT REPLACEMENT
- 55 — TYPE III PAVEMENT REPLACEMENT
- 55 — TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE:	2021

WATER LINES J, J1 & K PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 9

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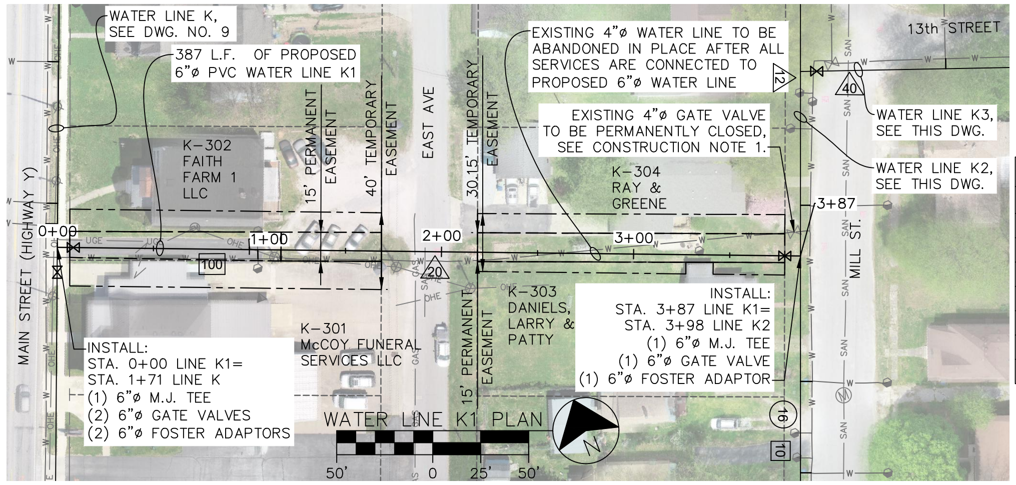


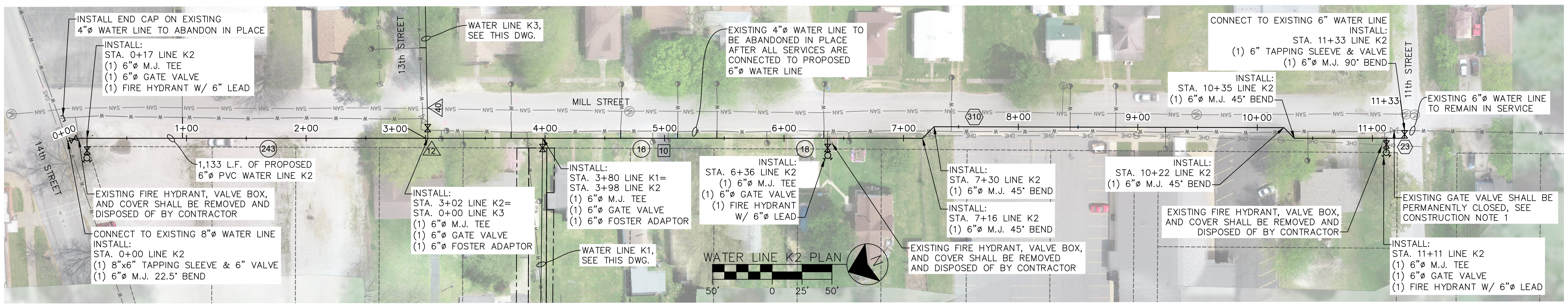
WATER LINE K1 SUMMARY – DWG. NO. 10	
ITEM	QUANTITY
6"ø PVC	380 L.F.
6"ø GATE VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	3 EA.
1"ø SERVICE LINE	5 L.F.
TYPE II PAVEMENT REPLACEMENT	100 L.F.
TYPE III PAVEMENT REPLACEMENT	20 L.F.
SURFACE RESTORATION	260 L.F.

WATER LINE K2 SUMMARY – DWG. NO. 10	
ITEM	QUANTITY
6"ø PVC	1,133 L.F.
6"ø GATE VALVE	3 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
8"X6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	18 EA.
1"ø SERVICE LINE	51 L.F.
FIRE HYDRANT	1 EA.
TYPE I PAVEMENT REPLACEMENT	333 L.F.
TYPE II PAVEMENT REPLACEMENT	10 L.F.
TYPE III PAVEMENT REPLACEMENT	12 L.F.
TYPE IV PAVEMENT REPLACEMENT	277 L.F.
SIDEWALK REPLACEMENT	6 L.F.
SURFACE RESTORATION	495 L.F.

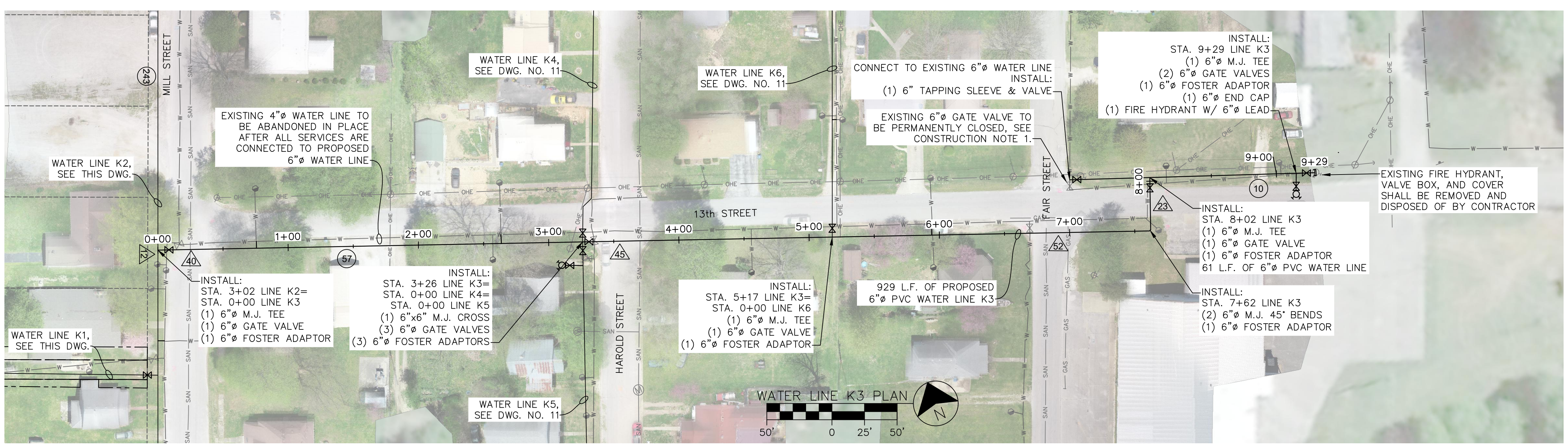
WATER LINE K3 SUMMARY – DWG. NO. 10	
ITEM	QUANTITY
6"ø PVC	990 L.F.
6"ø GATE VALVE	5 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	9 EA.
1"ø SERVICE LINE	21 L.F.
FIRE HYDRANT	1 EA.
TYPE III PAVEMENT REPLACEMENT	160 L.F.
TYPE IV PAVEMENT REPLACEMENT	67 L.F.
SURFACE RESTORATION	763 L.F.

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 TYPE I PAVEMENT REPLACEMENT
- 55 TYPE II PAVEMENT REPLACEMENT
- 55 TYPE III PAVEMENT REPLACEMENT
- 55 TYPE IV PAVEMENT REPLACEMENT



SEE GENERAL NOTES DWG. NO. 2



CONSTRUCTION NOTE:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINE K1. ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING WATER LINE SHALL BE ABANDONED IN PLACE BY INSTALLING END CAPS, CLOSING AND REMOVING VALVES, ETC AS CALLED OUT ON THE PLANS.
2. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINES K2, K3, K4, K5, & K6. ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING WATER LINE SHALL BE ABANDONED IN PLACE BY INSTALLING END CAPS, CLOSING AND REMOVING VALVES, ETC AS CALLED OUT ON THE PLANS.

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

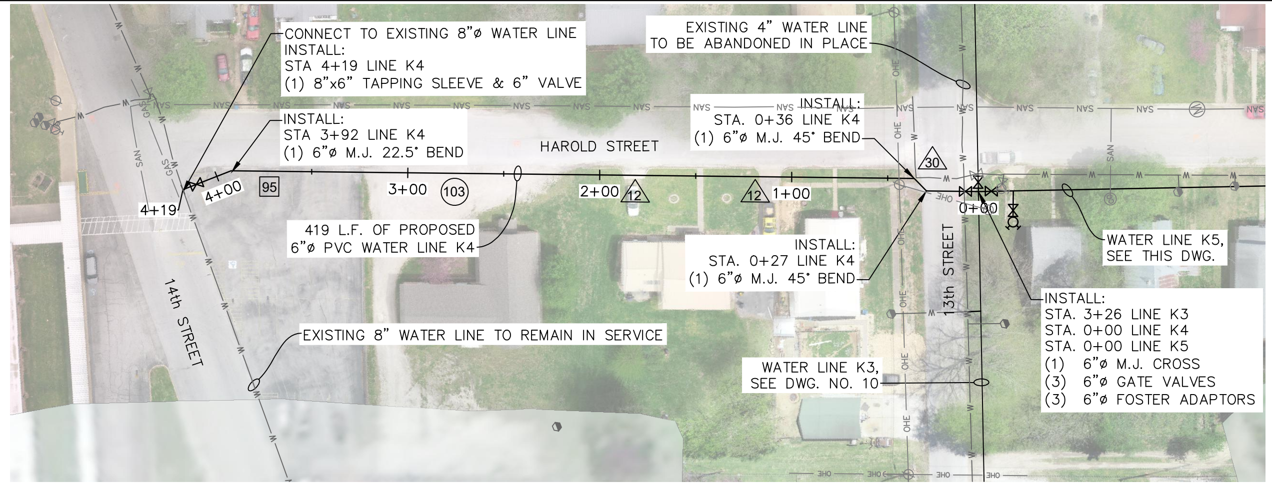
DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINES K1, K2, & K3 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
10

WATER LINE K4 SUMMARY – DWG. NO. 11	
ITEM	QUANTITY
6"ø PVC	419 L.F.
6"ø GATE VALVE	1 EA.
8X6" TAPPING SLEEVE AND VALVE	1 EA.
TYPE II PAVEMENT REPLACEMENT	95 L.F.
TYPE III PAVEMENT REPLACEMENT	54 L.F.
TYPE IV PAVEMENT REPLACEMENT	103 L.F.
SIDEWALK REPLACEMENT	7 L.F.
SURFACE RESTORATION	160 L.F.

WATER LINE K5 SUMMARY – DWG. NO. 11	
ITEM	QUANTITY
6"ø PVC	802 L.F.
6"ø GATE VALVE	3 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	17 EA.
1"ø SERVICE LINE	50 L.F.
FIRE HYDRANT	2 EA.
TYPE II PAVEMENT REPLACEMENT	10 L.F.
TYPE III PAVEMENT REPLACEMENT	24 L.F.
TYPE III PAVEMENT REPLACEMENT	10 L.F.
SIDEWALK REPLACEMENT	6 L.F.
SURFACE RESTORATION	752 L.F.



WATER LINE K4 PLAN

50' 0 25' 50'

CONSTRUCTION NOTE:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

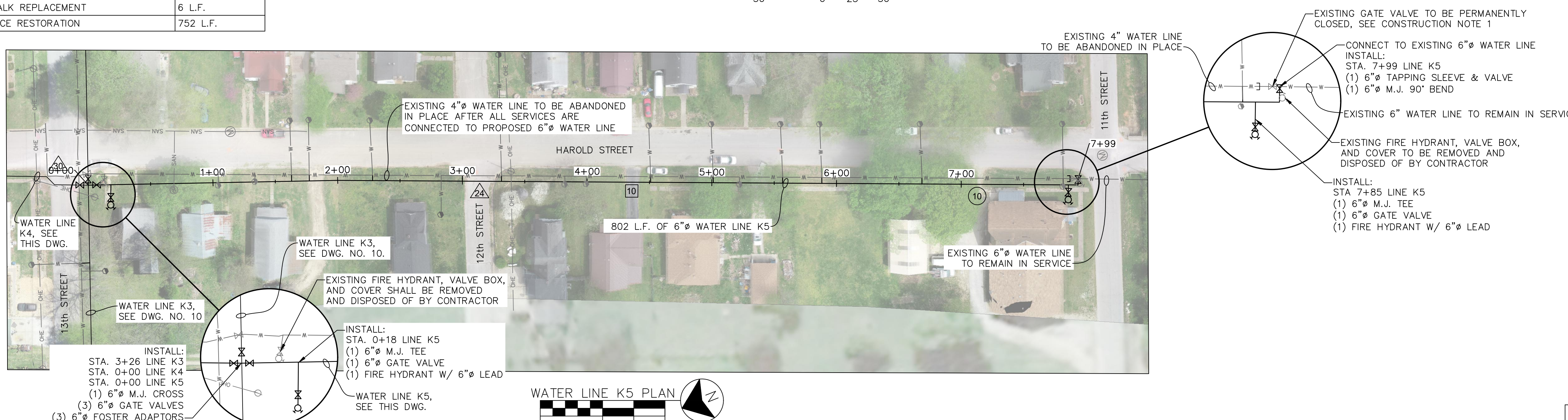
CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINES K4, K5, K6, & K7. ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING WATER LINE SHALL BE ABANDONED IN PLACE BY INSTALLING END CAPS, CLOSING AND REMOVING VALVES, ETC AS CALLED OUT ON THE PLANS.

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- OHE EXISTING OVERHEAD ELECTRIC
- UGE EXISTING UNDERGROUND ELECTRIC
- F/O EXISTING FIBER OPTIC
- GAS EXISTING GAS LINES
- SAN EXISTING SEWER LINES
- UGT EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- CO EXISTING CLEANOUT
- M EXISTING MANHOLE
- TP EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 TYPE I PAVEMENT REPLACEMENT
- 55 TYPE II PAVEMENT REPLACEMENT
- 55 TYPE III PAVEMENT REPLACEMENT
- 55 TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

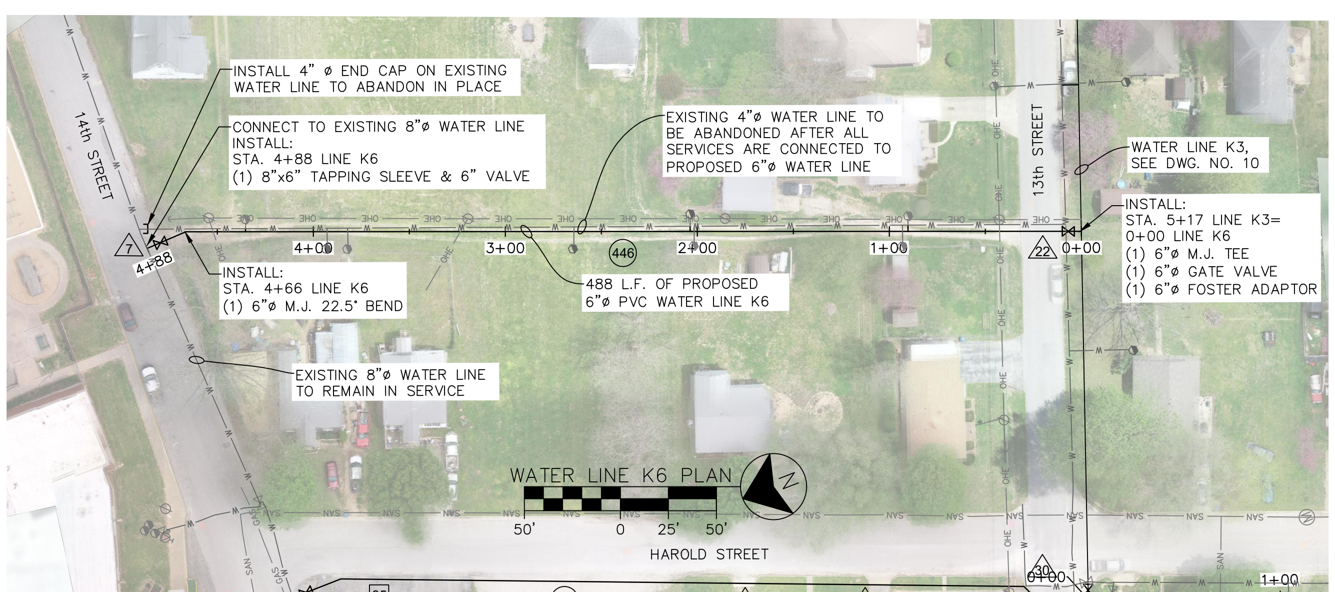


WATER LINE K5 PLAN

50' 0 25' 50'

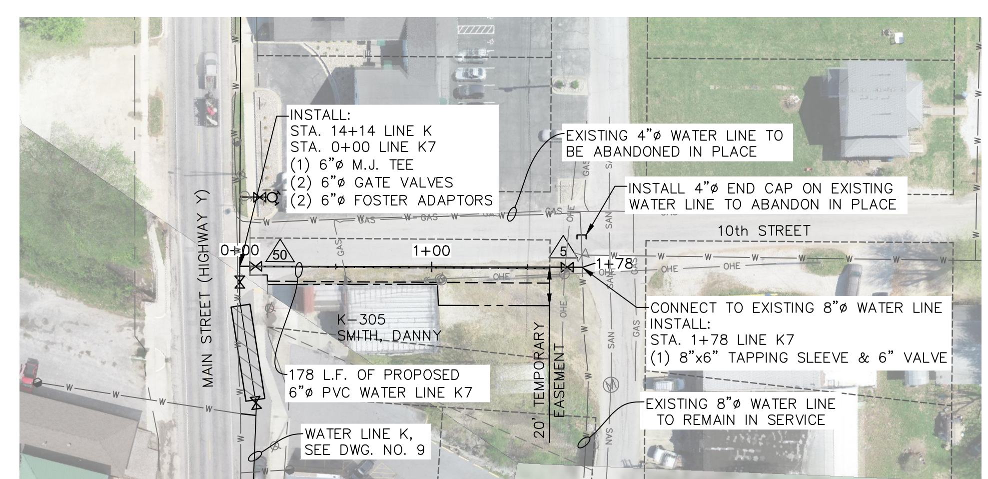
WATER LINE K6 SUMMARY – DWG. NO. 11	
ITEM	QUANTITY
6"ø PVC	488 L.F.
6"ø GATE VALVE	1 EA.
8"X6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	8 EA.
1"ø SERVICE LINE	6 L.F.
TYPE III PAVEMENT REPLACEMENT	29 L.F.
TYPE IV PAVEMENT REPLACEMENT	446 L.F.
SURFACE RESTORATION	13 L.F.

WATER LINE K7 SUMMARY – DWG. NO. 11	
ITEM	QUANTITY
6"ø PVC	178 L.F.
6"ø GATE VALVE	1 EA.
8"X6" TAPPING SLEEVE AND VALVE	1 EA.
TYPE III PAVEMENT REPLACEMENT	55 L.F.
SURFACE RESTORATION	123 L.F.



WATER LINE K6 PLAN

50' 0 25' 50'



WATER LINE K7 PLAN

50' 0 25' 50'

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC. CONSULTING ENGINEERS and SURVEYORS 7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200	THIS DRAWING IS A DOCUMENT OF SERVICE AND IS THE PROPERTY OF ALLGEIER, MARTIN and ASSOCIATES, INC. THIS DOCUMENT SHALL NOT BE USED ON THIS OR OTHER PROJECTS WITHOUT THE WRITTEN CONSENT OF ALLGEIER, MARTIN and ASSOCIATES, INC. CERTIFICATE OF AUTHORITY MISSOURI NO. 000427	DATE / REVISION	DWN. BY: MHJ CKD. BY: JTB APPD. BY: GDW DATE: 2021

WATER LINES K4, K5, K6 & K7 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 11

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LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, FLUSH, TEST, & DISINFECT PROPOSED WATER LINE L. ONCE APPROVED, ALL SERVICES SHALL BE CONNECTED TO PROPOSED WATER MAIN AND THAT PORTION OF EXISTING WATER LINE SHALL BE ABANDONED IN PLACE BY INSTALLING END CAPS, CLOSING AND REMOVING VALVES, ETC AS CALLED OUT ON THE PLANS.

WATER LINE L SUMMARY – DWG. NO. 12

ITEM	QUANTITY
10"ø PVC	2,300 L.F.
10"ø HIGHWAY BORE IN 20"ø CASING	100 L.F.
10"ø GATE VALVE	1 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
1"ø SERVICE TAP AND CORP STOP	18 EA.
1"ø SERVICE LINE	50 L.F.
FIRE HYDRANT	1 EA.
TYPE I PAVEMENT REPLACEMENT	1,929 L.F.
TYPE II PAVEMENT REPLACEMENT	105 L.F.
TYPE III PAVEMENT REPLACEMENT	26 L.F.
SURFACE RESTORATION	240 L.F.

WATER LINE L PLAN

50' 0 25' 50'

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINE L PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 12

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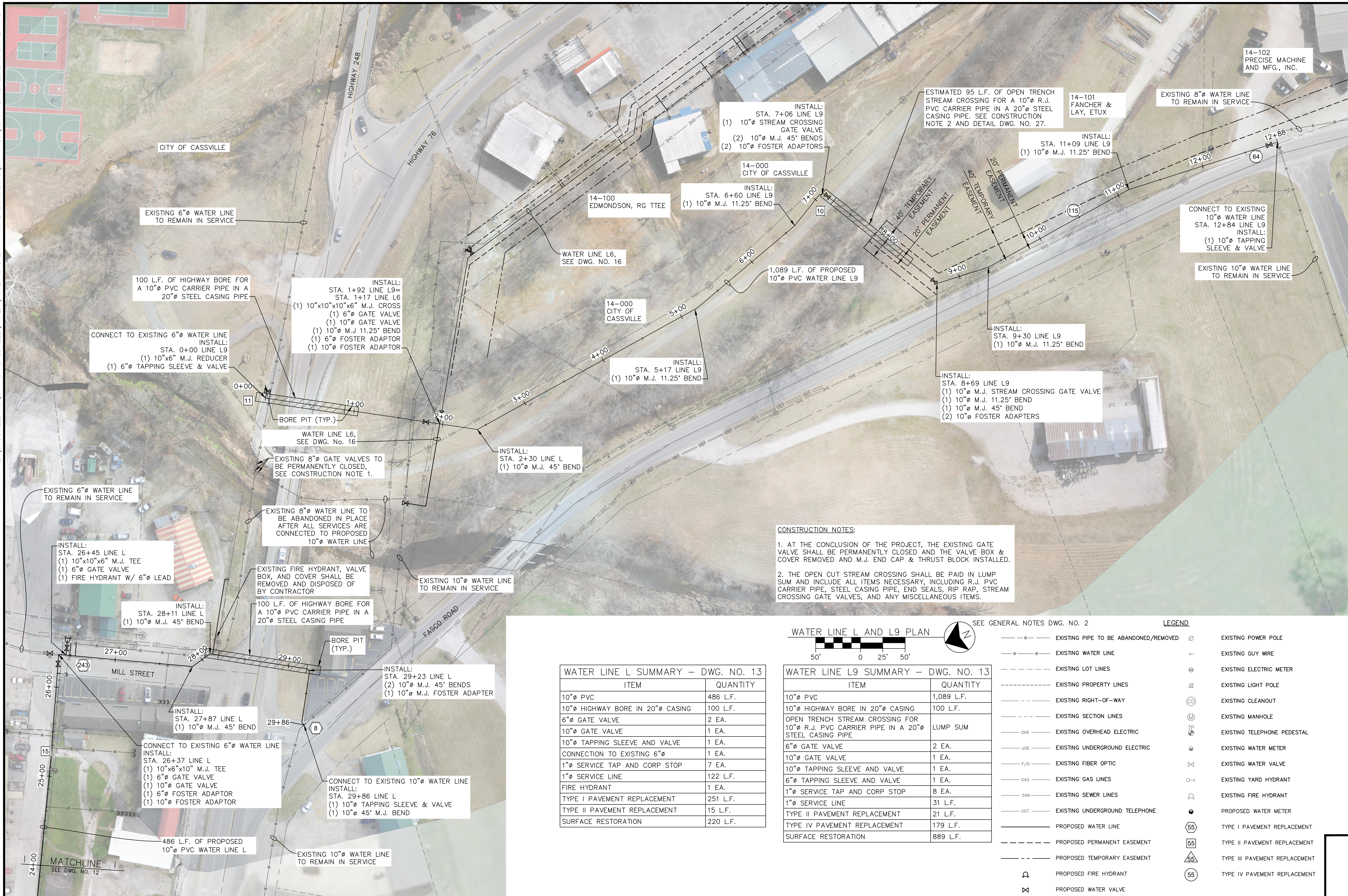


CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

2. THE OPEN CUT STREAM CROSSING SHALL BE PAID IN LUMP SUM AND INCLUDE ALL ITEMS NECESSARY, INCLUDING R.J. PVC CARRIER PIPE, STEEL CASING PIPE, END SEALS, RIP RAP, STREAM CROSSING GATE VALVES, AND ANY MISCELLANEOUS ITEMS.

WATER LINE L AND L9 PLAN

50' 0 25' 50'

SEE GENERAL NOTES DWG. NO. 2

WATER LINE L SUMMARY – DWG. NO. 13

ITEM	QUANTITY
10"ø PVC	486 L.F.
10"ø HIGHWAY BORE IN 20"ø CASING	100 L.F.
6"ø GATE VALVE	2 EA.
10"ø GATE VALVE	1 EA.
10"ø TAPPING SLEEVE AND VALVE	1 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
1"ø SERVICE TAP AND CORP STOP	7 EA.
1"ø SERVICE LINE	122 L.F.
FIRE HYDRANT	1 EA.
TYPE I PAVEMENT REPLACEMENT	251 L.F.
TYPE II PAVEMENT REPLACEMENT	15 L.F.
SURFACE RESTORATION	220 L.F.

WATER LINE L9 SUMMARY – DWG. NO. 13

ITEM	QUANTITY
10"ø PVC	1,089 L.F.
10"ø HIGHWAY BORE IN 20"ø CASING	100 L.F.
OPEN TRENCH STREAM CROSSING FOR 10"ø R.J. PVC CARRIER PIPE IN A 20"ø STEEL CASING PIPE	LUMP SUM
6"ø GATE VALVE	2 EA.
10"ø GATE VALVE	1 EA.
10"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	8 EA.
1"ø SERVICE LINE	31 L.F.
TYPE II PAVEMENT REPLACEMENT	21 L.F.
TYPE IV PAVEMENT REPLACEMENT	179 L.F.
SURFACE RESTORATION	889 L.F.

LEGEND

EXISTING PIPE TO BE ABANDONED/REMOVED	EXISTING POWER POLE
EXISTING WATER LINE	EXISTING GUY WIRE
EXISTING LOT LINES	EXISTING ELECTRIC METER
EXISTING PROPERTY LINES	EXISTING LIGHT POLE
EXISTING RIGHT-OF-WAY	EXISTING CLEANOUT
EXISTING SECTION LINES	EXISTING MANHOLE
EXISTING OVERHEAD ELECTRIC	EXISTING TELEPHONE PEDESTAL
EXISTING UNDERGROUND ELECTRIC	EXISTING WATER METER
EXISTING FIBER OPTIC	EXISTING WATER VALVE
EXISTING GAS LINES	EXISTING YARD HYDRANT
EXISTING SEWER LINES	EXISTING FIRE HYDRANT
EXISTING UNDERGROUND TELEPHONE	PROPOSED WATER METER
PROPOSED WATER LINE	TYPE I PAVEMENT REPLACEMENT
PROPOSED PERMANENT EASEMENT	TYPE II PAVEMENT REPLACEMENT
PROPOSED TEMPORARY EASEMENT	TYPE III PAVEMENT REPLACEMENT
PROPOSED FIRE HYDRANT	TYPE IV PAVEMENT REPLACEMENT
PROPOSED WATER VALVE	

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

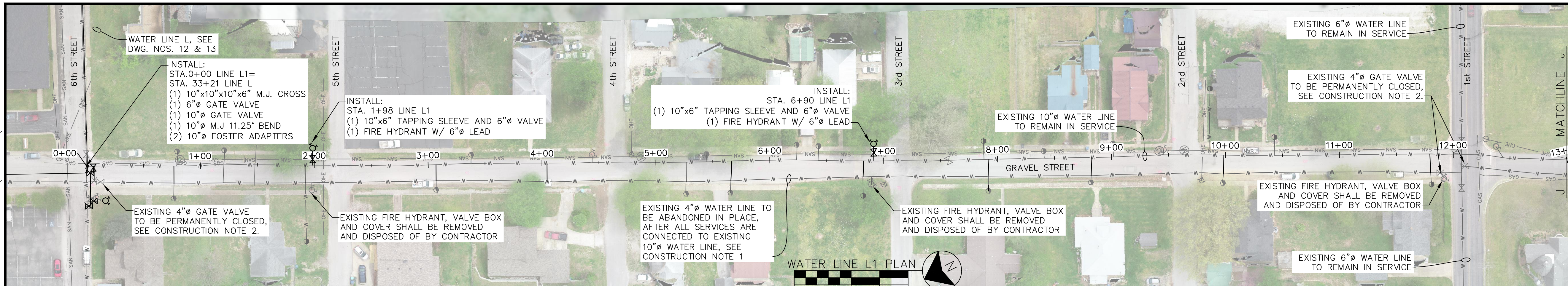
DATE	REVISION

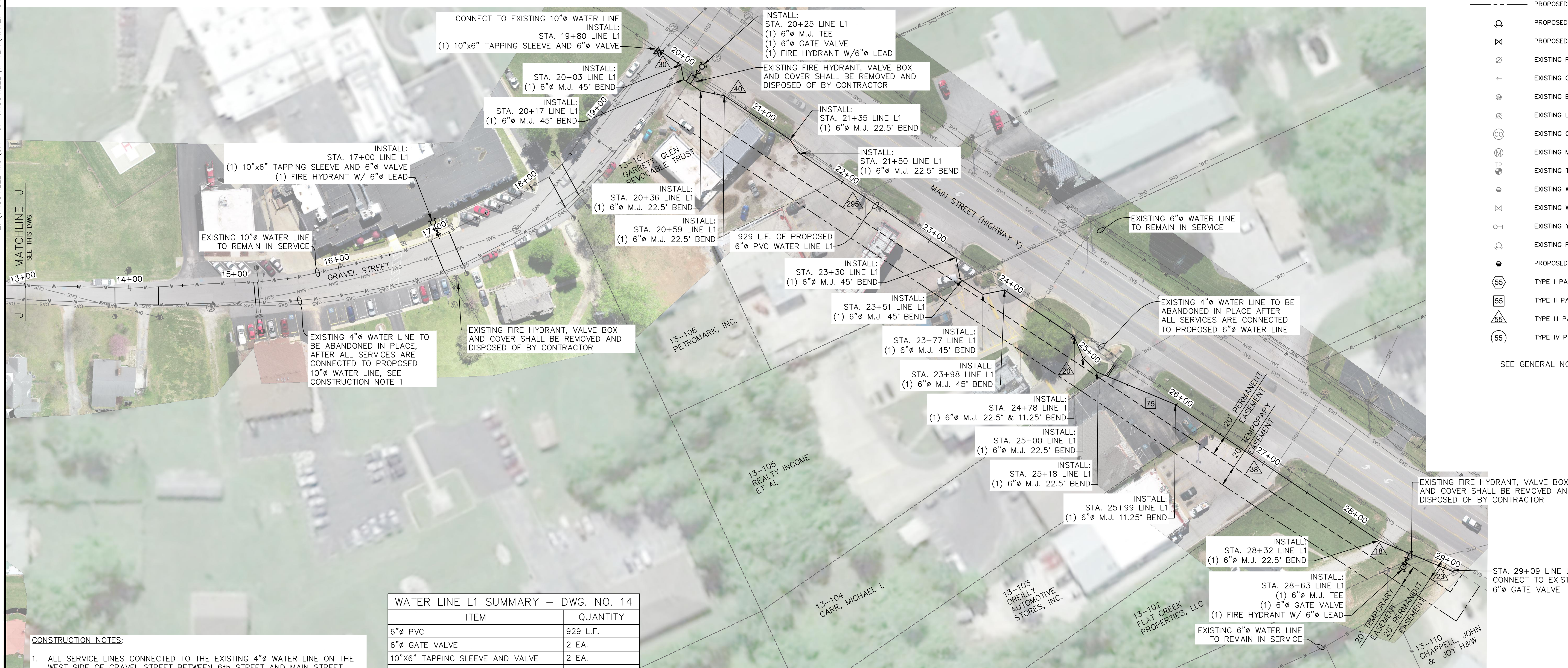
DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE:	2021

WATER LINES L & L9 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 13

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\14 WATER LINE L1 PLAN.DWG





WATER LINE L1 PLAN
50' 0 25' 50'

LEGEND

—W—	EXISTING PIPE TO BE ABANDONED/REMOVED
—W—	EXISTING WATER LINE
— — —	EXISTING LOT LINES
- - - -	EXISTING PROPERTY LINES
— - -	EXISTING RIGHT-OF-WAY
— - - -	EXISTING SECTION LINES
—OHE—	EXISTING OVERHEAD ELECTRIC
—UGE—	EXISTING UNDERGROUND ELECTRIC
—F/O—	EXISTING FIBER OPTIC
—GAS—	EXISTING GAS LINES
—SAN—	EXISTING SEWER LINES
—UGT—	EXISTING UNDERGROUND TELEPHONE
——	PROPOSED WATER LINE
— — —	PROPOSED PERMANENT EASEMENT
— - -	PROPOSED TEMPORARY EASEMENT
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	EXISTING POWER POLE
	EXISTING GUY WIRE
	EXISTING ELECTRIC METER
	EXISTING LIGHT POLE
CO	EXISTING CLEANOUT
M	EXISTING MANHOLE
TP	EXISTING TELEPHONE PEDESTAL
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING YARD HYDRANT
	EXISTING FIRE HYDRANT
	PROPOSED WATER METER
55	TYPE I PAVEMENT REPLACEMENT
55	TYPE II PAVEMENT REPLACEMENT
55	TYPE III PAVEMENT REPLACEMENT
55	TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. ALL SERVICE LINES CONNECTED TO THE EXISTING 4"ø WATER LINE ON THE WEST SIDE OF GRAVEL STREET BETWEEN 6th STREET AND MAIN STREET SHALL BE EXTENDED ACROSS GRAVEL STREET AND CONNECTED TO THE EXISTING 10"ø WATER LINE. AFTER THIS HAS BEEN COMPLETED, THE EXISTING 4"ø WATER LINE SHALL BE ABANDONED IN PLACE. ADDITIONALLY, ALL VALVES ON THE ABANDONED 4"ø LINE SHALL BE REMOVED AND THE SURFACE RESTORED TO THE APPROPRIATE SURROUNDING MATERIAL.
2. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

WATER LINE L1 SUMMARY – DWG. NO. 14

ITEM	QUANTITY
6"ø PVC	929 L.F.
6"ø GATE VALVE	2 EA.
10"X6" TAPPING SLEEVE AND VALVE	2 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
1"ø SERVICE TAP AND CORP STOP	28 EA.
1"ø SERVICE LINE	410 L.F.
FIRE HYDRANT	2 EA.
TYPE II PAVEMENT REPLACEMENT	75 L.F.
TYPE III PAVEMENT REPLACEMENT	464 L.F.
SURFACE RESTORATION	390 L.F.

AM

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

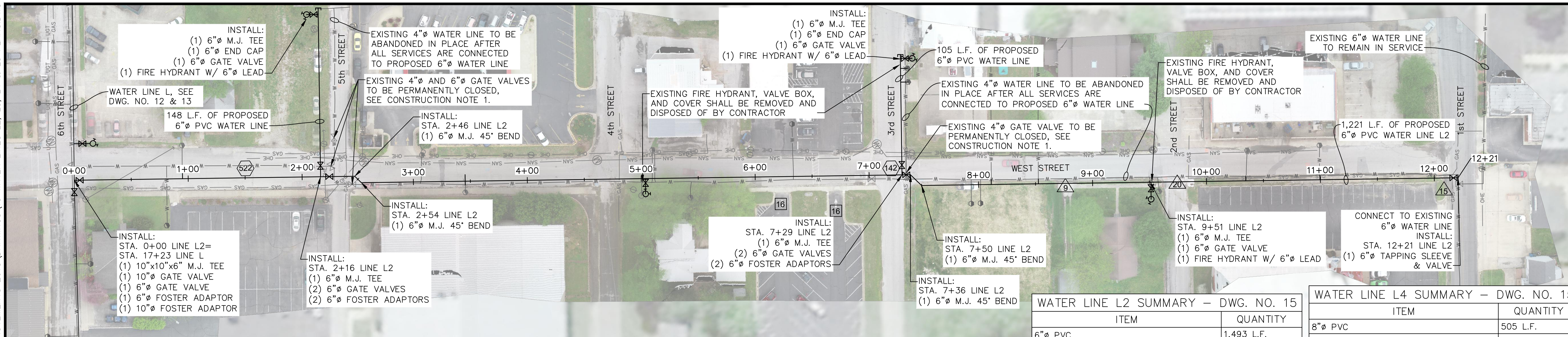
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	12-09-2020

WATER LINE L1 PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
14

PRELIMINARY
2/23/2024



WATER LINE L2 PLAN

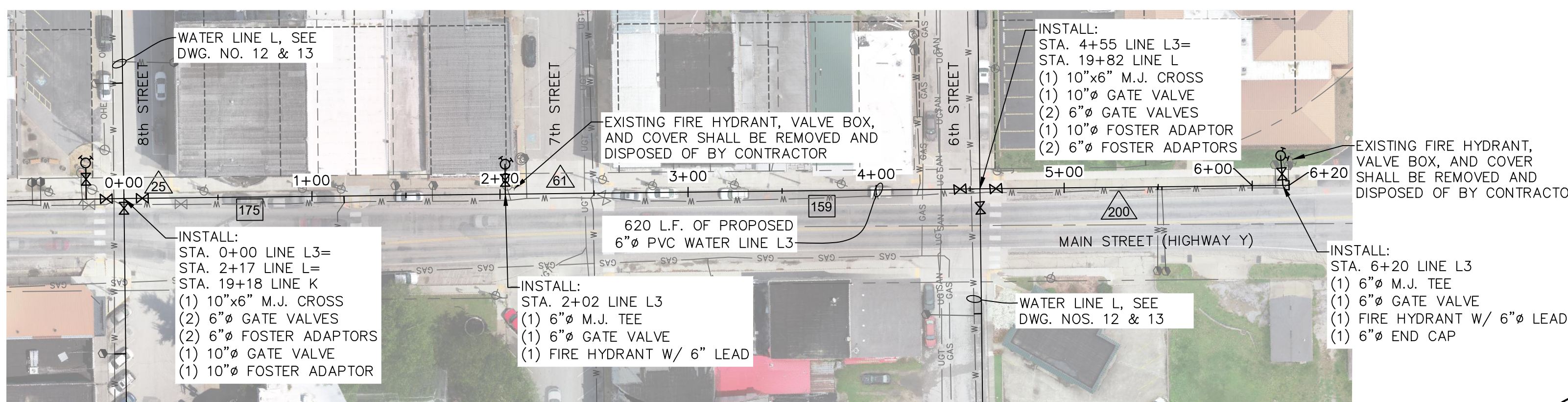
50' 0 25' 50'

WATER LINE L2 SUMMARY – DWG. NO. 15	
ITEM	QUANTITY
6"ø PVC	1,493 L.F.
6"ø GATE VALVE	8 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	15 EA.
1"ø SERVICE LINE	88 L.F.
FIRE HYDRANT	4 EA.
TYPE I PAVEMENT REPLACEMENT	664 L.F.
TYPE II PAVEMENT REPLACEMENT	32 L.F.
TYPE III PAVEMENT REPLACEMENT	44 L.F.
SIDEWALK REPLACEMENT	18 L.F.
SURFACE RESTORATION	735 L.F.

WATER LINE L3 SUMMARY – DWG. NO. 15	
ITEM	QUANTITY
6"ø PVC	620 L.F.
6"ø GATE VALVE	5 EA.
1"ø SERVICE TAP AND CORP STOP	9 EA.
1"ø SERVICE LINE	10 L.F.
FIRE HYDRANT	2 EA.
TYPE II PAVEMENT REPLACEMENT	334 L.F.
TYPE III PAVEMENT REPLACEMENT	286 L.F.

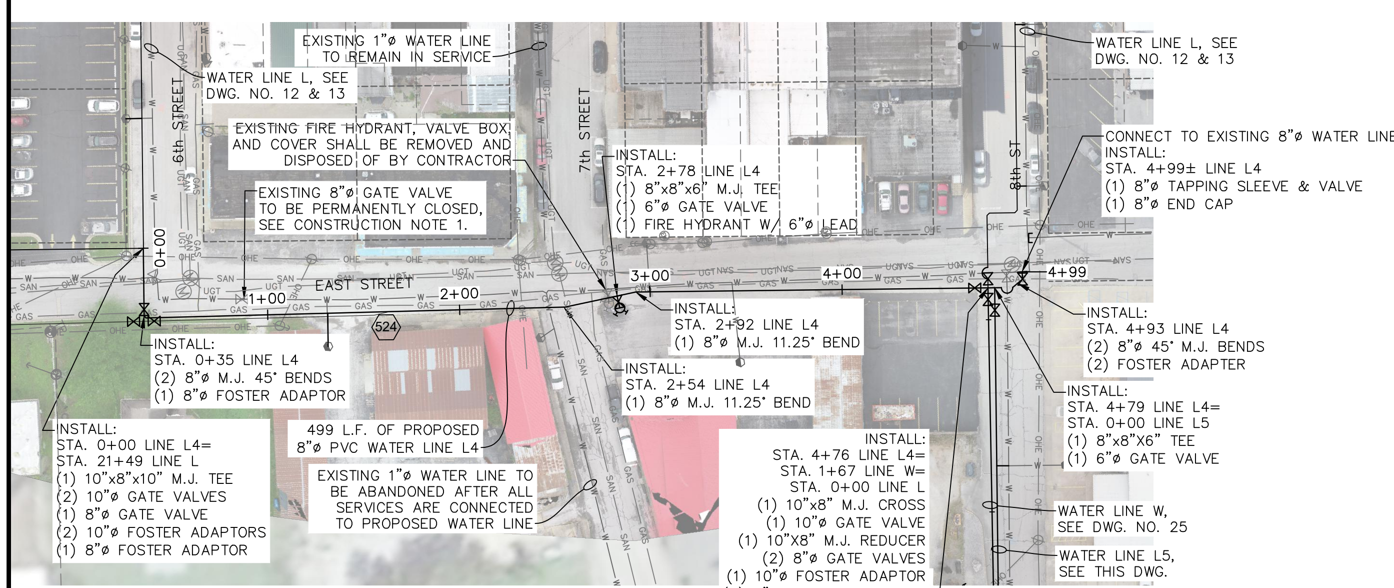
WATER LINE L4 SUMMARY – DWG. NO. 15	
ITEM	QUANTITY
8"ø PVC	505 L.F.
6"ø GATE VALVE	1 EA.
8"ø GATE VALVE	1 EA.
8"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	3 EA.
1"ø SERVICE LINE	3 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	524 L.F.

WATER LINE L5 SUMMARY – DWG. NO. 15	
ITEM	QUANTITY
6"ø PVC	527 L.F.
6"ø GATE VALVE	2 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
1"ø SERVICE TAP AND CORP STOP	6 EA.
1"ø SERVICE LINE	335 L.F.
FIRE HYDRANT	1 EA.
TYPE I PAVEMENT REPLACEMENT	450 L.F.
SURFACE RESTORATION	77 L.F.



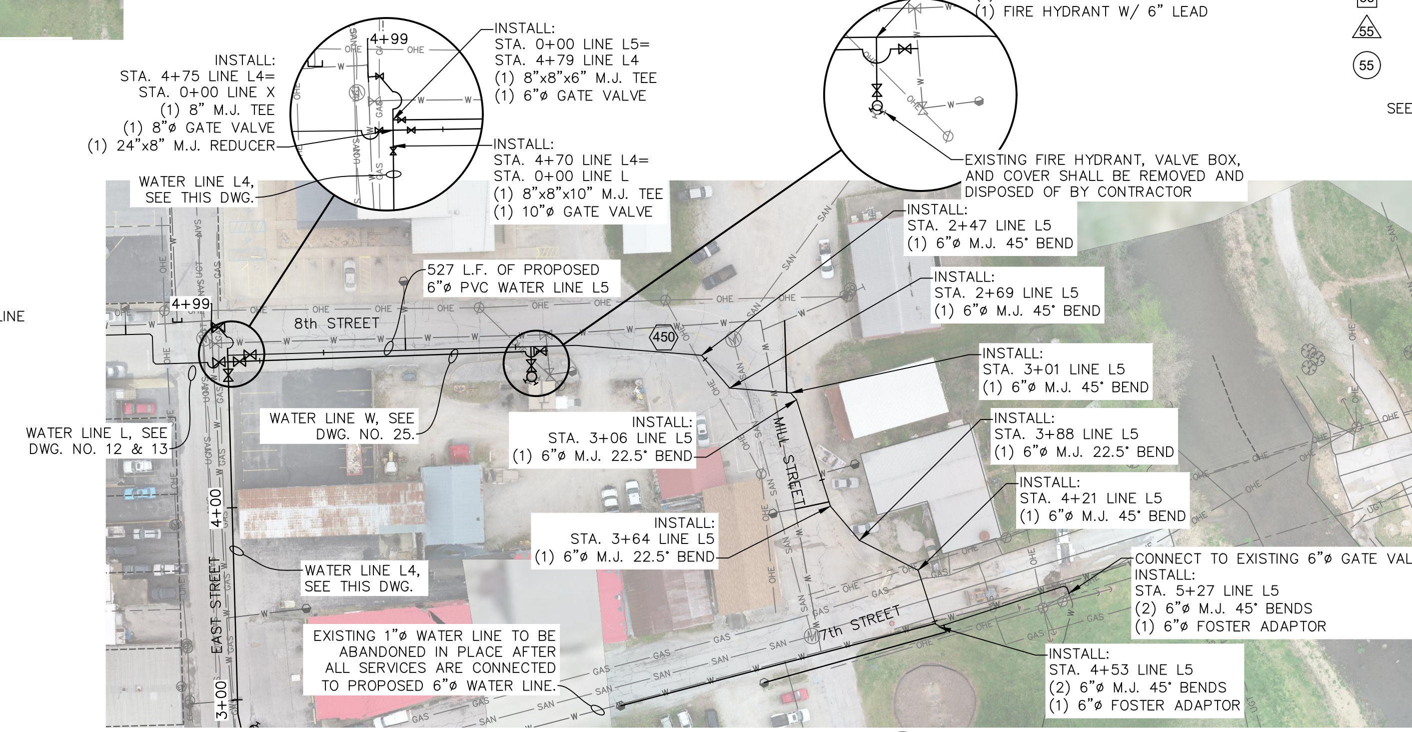
WATER LINE L3 PLAN

50' 0 25' 50'



WATER LINE L4 PLAN

50' 0 25' 50'



WATER LINE L5 PLAN

50' 0 25' 50'

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- OHE — EXISTING OVERHEAD ELECTRIC
- UGE — EXISTING UNDERGROUND ELECTRIC
- F/O — EXISTING FIBER OPTIC
- GAS — EXISTING GAS LINES
- SAN — EXISTING SEWER LINES
- UGT — EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- CO — EXISTING CLEANOUT
- M — EXISTING MANHOLE
- TP — EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 — TYPE I PAVEMENT REPLACEMENT
- 55 — TYPE II PAVEMENT REPLACEMENT
- 55 — TYPE III PAVEMENT REPLACEMENT
- 55 — TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

CONSTRUCTION SEQUENCE NOTES:

1. A

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\15 WATER LINES L2, L3, L4 & L5 PLANS.DWG

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

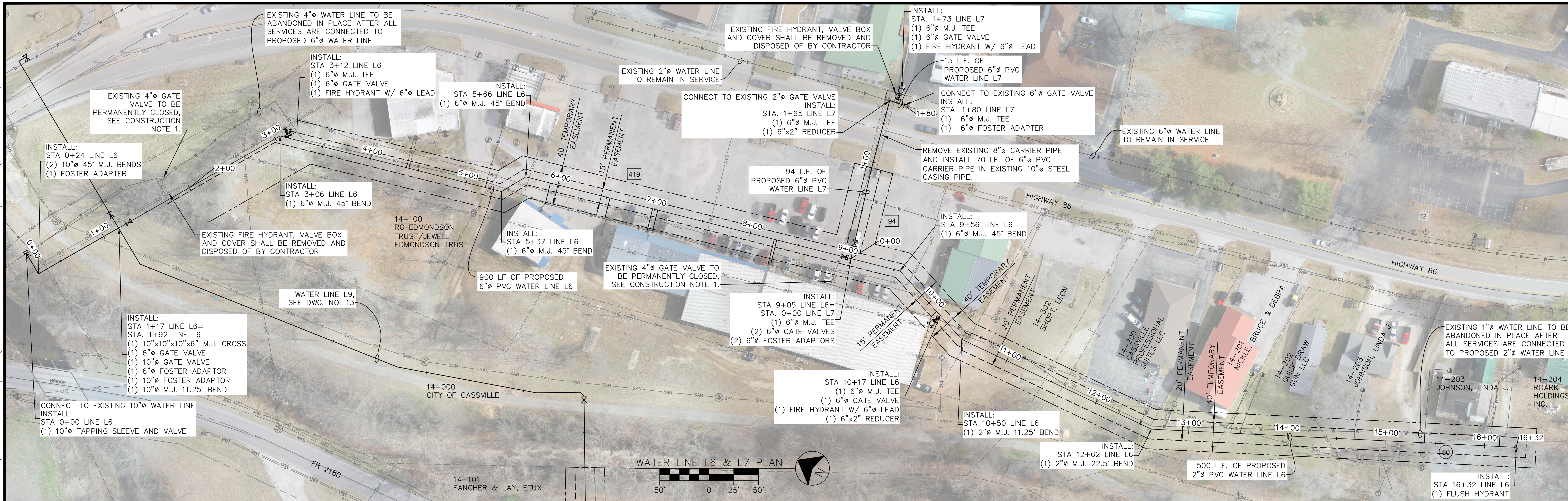
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE:	2021

WATER LINES L2, L3, L4 & L5 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 15

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\16 WATER LINES L6, L7 & L8 PLANS.DWG



WATER LINE L6 SUMMARY – DWG. NO. 16	
ITEM	QUANTITY
2"ø PVC	615 L.F.
6"ø PVC	900 L.F.
10"ø PVC	117 L.F.
10"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø GATE VALVE	4 EA.
1"ø SERVICE TAP AND CORP STOP	18 EA.
1"ø SERVICE LINE	71 L.F.
FLUSH HYDRANT	1 EA.
FIRE HYDRANT	2 EA.
TYPE II PAVEMENT REPLACEMENT	513 L.F.
TYPE IV PAVEMENT REPLACEMENT	80 L.F.
SURFACE RESTORATION	1,039 L.F.

WATER LINE L7 SUMMARY – DWG. NO. 16	
ITEM	QUANTITY
6"ø PVC	109 L.F.
6"ø PVC CARRIER PIPE IN EXISTING 10"ø CASING PIPE	70 L.F.
6"ø GATE VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	1 EA.
CONNECTION TO EXISTING 2"ø	1 EA.
CONNECTION TO EXISTING 6"ø	1 EA.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	94 L.F.
SURFACE RESTORATION	15 L.F.

WATER LINE L8 SUMMARY – DWG. NO. 16	
ITEM	QUANTITY
6"ø PVC	787 L.F.
6"ø GATE VALVE	1 EA.
10"x6" TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	4 EA.
1"ø SERVICE LINE	21 L.F.
FIRE HYDRANT	1 EA.
TYPE III PAVEMENT REPLACEMENT	32 L.F.
SURFACE RESTORATION	755 L.F.

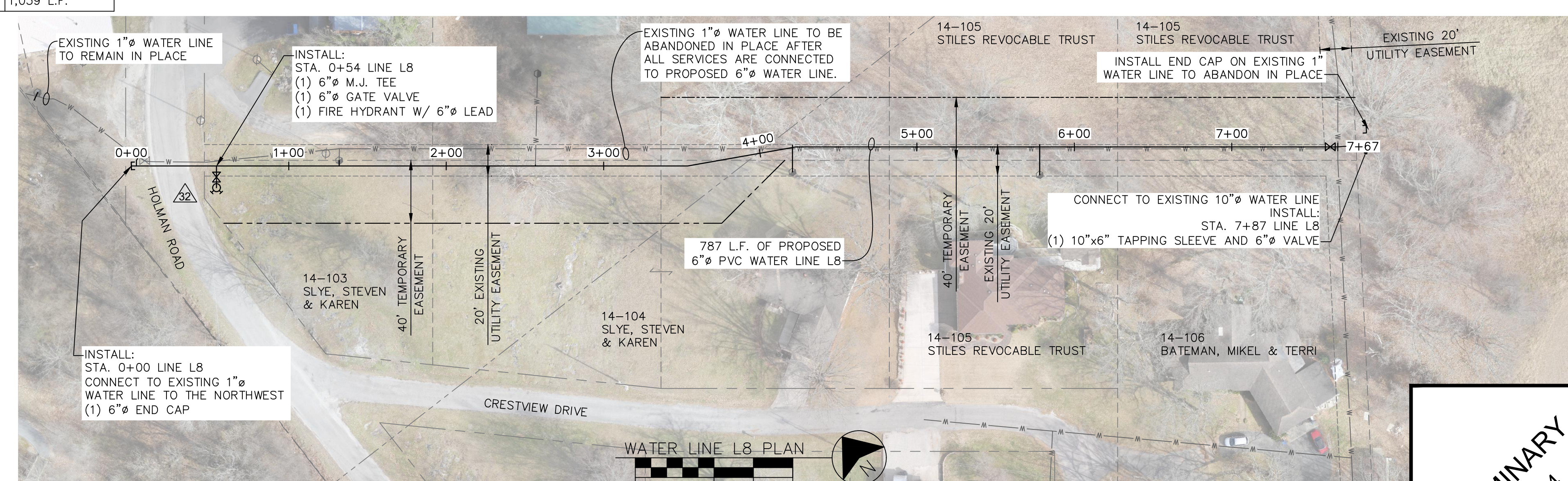
CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

LEGEND

EXISTING PIPE TO BE ABANDONED/REMOVED	PROPOSED WATER VALVE
EXISTING WATER LINE	EXISTING POWER POLE
EXISTING LOT LINES	EXISTING GUY WIRE
EXISTING PROPERTY LINES	EXISTING ELECTRIC METER
EXISTING RIGHT-OF-WAY	EXISTING LIGHT POLE
EXISTING SECTION LINES	EXISTING CLEANOUT
EXISTING OVERHEAD ELECTRIC	EXISTING MANHOLE
EXISTING UNDERGROUND ELECTRIC	EXISTING TELEPHONE PEDESTAL
EXISTING FIBER OPTIC	EXISTING WATER METER
EXISTING GAS LINES	EXISTING WATER VALVE
EXISTING SEWER LINES	EXISTING YARD HYDRANT
EXISTING UNDERGROUND TELEPHONE	EXISTING FIRE HYDRANT
PROPOSED WATER LINE	PROPOSED WATER METER
PROPOSED PERMANENT EASEMENT	TYPE I PAVEMENT REPLACEMENT
PROPOSED TEMPORARY EASEMENT	TYPE II PAVEMENT REPLACEMENT
PROPOSED FIRE HYDRANT	TYPE III PAVEMENT REPLACEMENT
	TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2



PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINES L6, L7 & L8 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 16

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\17 WATER LINES M, M1, N1, N2, N4 & N5 PLANS.DWG

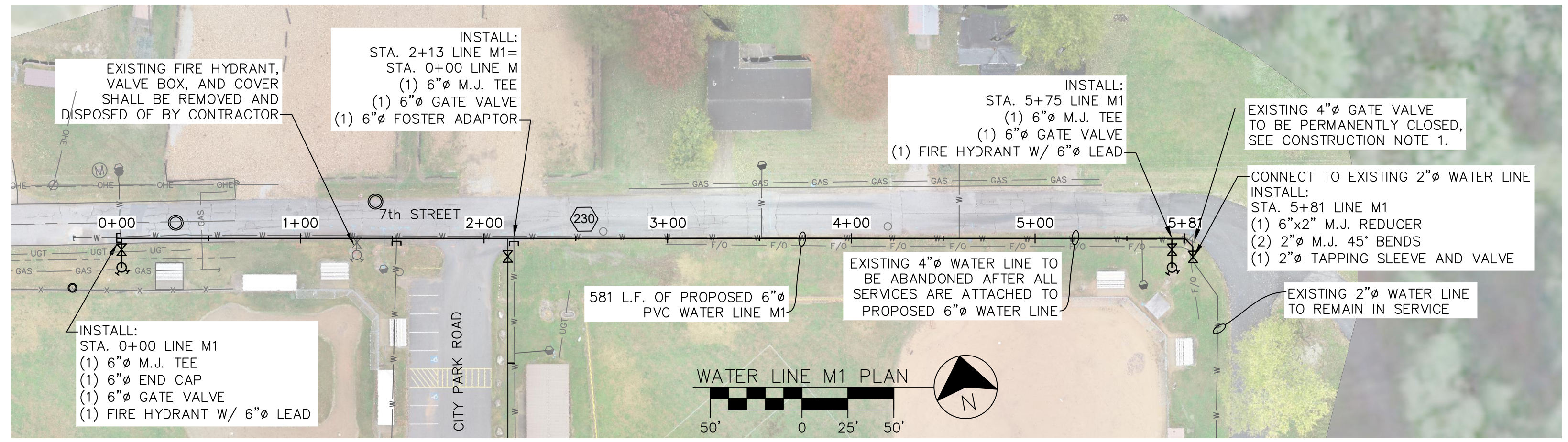
WATER LINE M1 SUMMARY – DWG. NO. 17	
ITEM	QUANTITY
6"ø PVC	581 L.F.
6"ø GATE VALVE	2 EA.
2"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	5 EA.
1"ø SERVICE LINE	10 L.F.
FIRE HYDRANT	2 EA.
TYPE I PAVEMENT REPLACEMENT	230 L.F.
SURFACE RESTORATION	351 L.F.

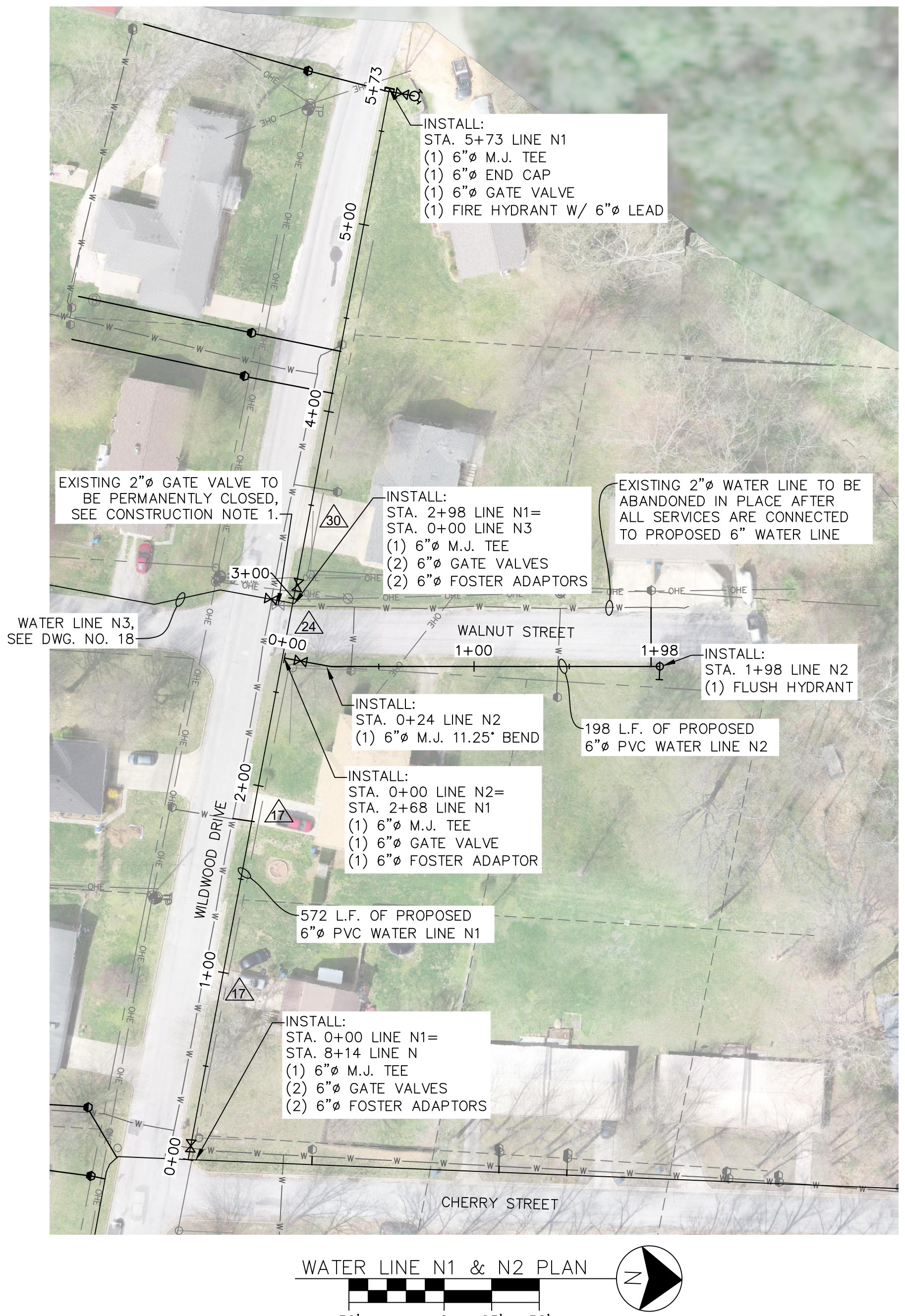
WATER LINE N1 SUMMARY – DWG. NO. 17	
ITEM	QUANTITY
6"ø PVC	572 L.F.
6"ø GATE VALVE	3 EA.
1"ø SERVICE TAP AND CORP STOP	6 EA.
TYPE 1 METER	3 EA.
1"ø SERVICE LINE	406 L.F.
FIRE HYDRANT	1 EA.
TYPE III PAVEMENT REPLACEMENT	88 L.F.
SURFACE RESTORATION	484 L.F.

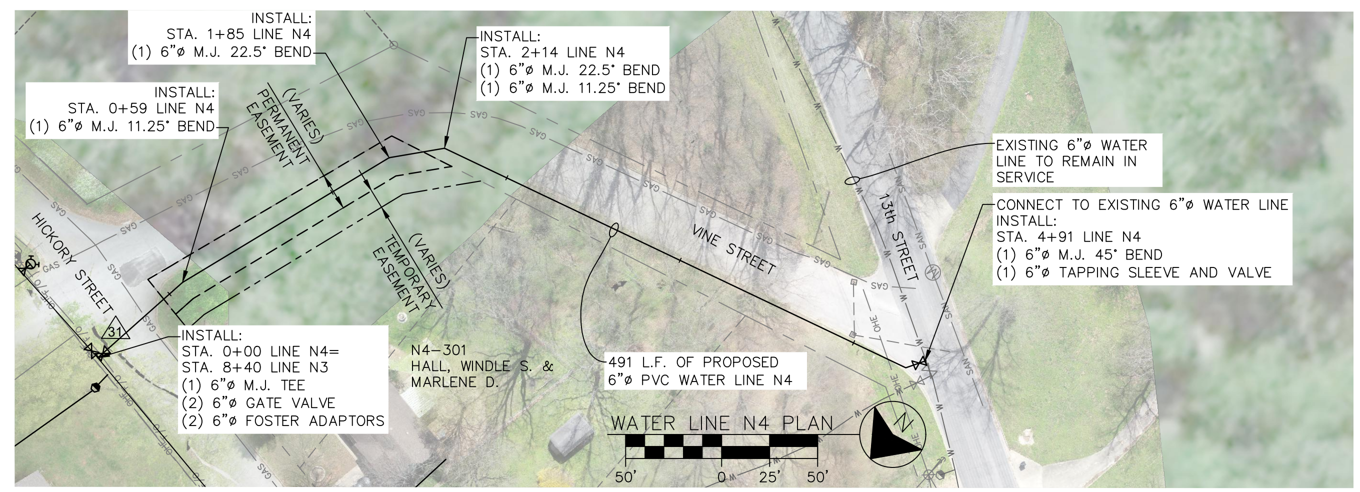
WATER LINE N2 SUMMARY – DWG. NO. 17	
ITEM	QUANTITY
6"ø PVC	198 L.F.
6"ø GATE VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	3 EA.
1"ø SERVICE LINE	31 L.F.
FLUSH HYDRANT	1 EA.
SURFACE RESTORATION	198 L.F.

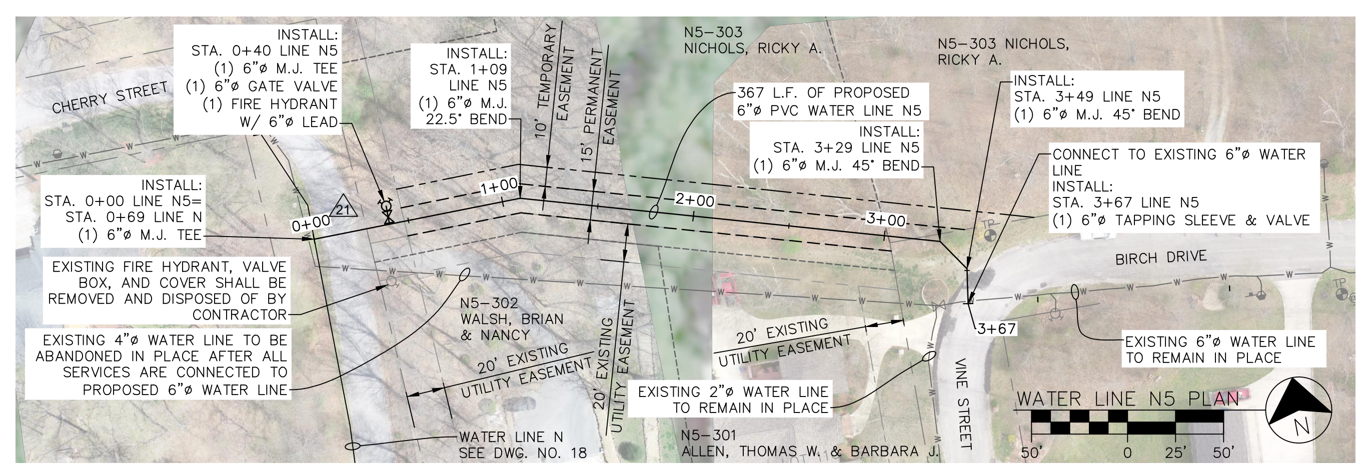
WATER LINE N4 SUMMARY – DWG. NO. 17	
ITEM	QUANTITY
6"ø PVC	466 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
TYPE III PAVEMENT REPLACEMENT	31 L.F.
SURFACE RESTORATION	435 L.F.

WATER LINE N5 SUMMARY – DWG. NO. 17	
ITEM	QUANTITY
6"ø PVC	367 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	1 EA.
1"ø SERVICE LINE	25 L.F.
FIRE HYDRANT	1 EA.
TYPE III PAVEMENT REPLACEMENT	21 L.F.
SURFACE RESTORATION	346 L.F.









LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE:	2021

WATER LINES M1, N1, N2, N4 & N5 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 17

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\18 WATER LINES N, N1 & N3 PLANS.DWG

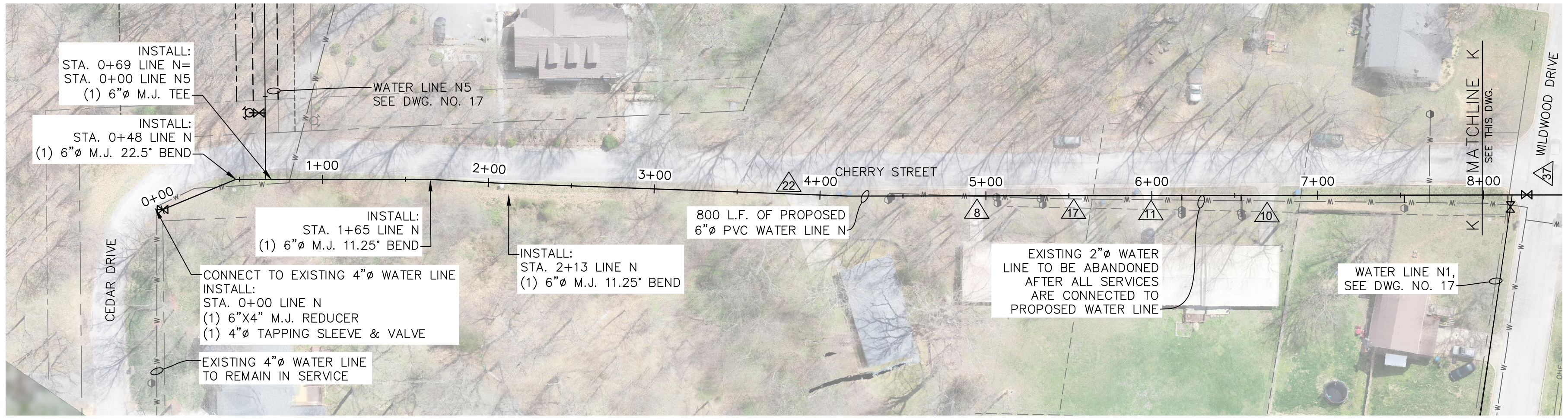
CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED AND THE VALVE BOX & COVER REMOVED AND M.J. END CAP & THRUST BLOCK INSTALLED.

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

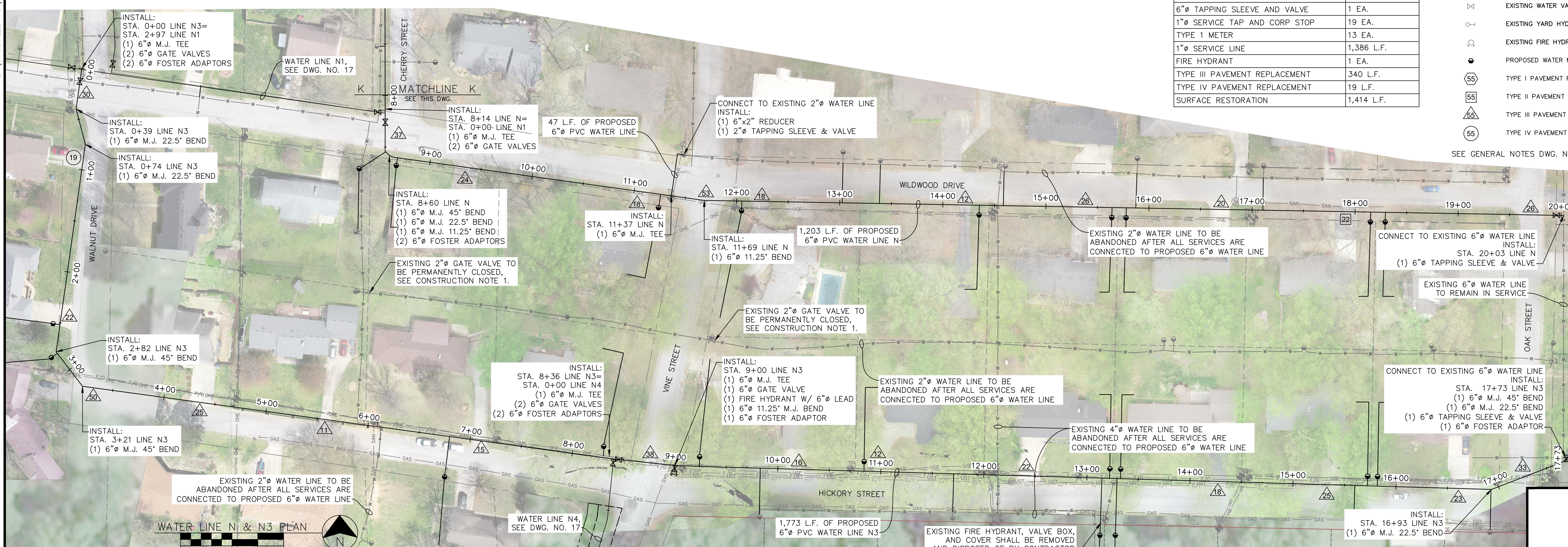
SEE GENERAL NOTES DWG. NO. 2



WATER LINE N PLAN
50' 0 25' 50'

WATER LINE N SUMMARY – DWG. NO. 18	
ITEM	QUANTITY
6"ø PVC	2,003 L.F.
6"ø GATE VALVE	1 EA.
2"ø TAPPING SLEEVE AND VALVE	1 EA.
4"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	26 EA.
TYPE 1 METER	9 EA.
1"ø SERVICE LINE	1,025 L.F.
TYPE II PAVEMENT REPLACEMENT	22 L.F.
TYPE III PAVEMENT REPLACEMENT	302 L.F.
SURFACE RESTORATION	1,679 L.F.

WATER LINE N3 SUMMARY – DWG. NO. 18	
ITEM	QUANTITY
6"ø PVC	1,773 L.F.
6"ø GATE VALVE	3 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	19 EA.
TYPE 1 METER	13 EA.
1"ø SERVICE LINE	1,386 L.F.
FIRE HYDRANT	1 EA.
TYPE III PAVEMENT REPLACEMENT	340 L.F.
TYPE IV PAVEMENT REPLACEMENT	19 L.F.
SURFACE RESTORATION	1,414 L.F.



WATER LINE N & N3 PLAN
50' 0 25' 50'

ALLGEIER, MARTIN and ASSOCIATES, INC.
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7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY
MISSOURI NO. 000427

DATE	REVISION

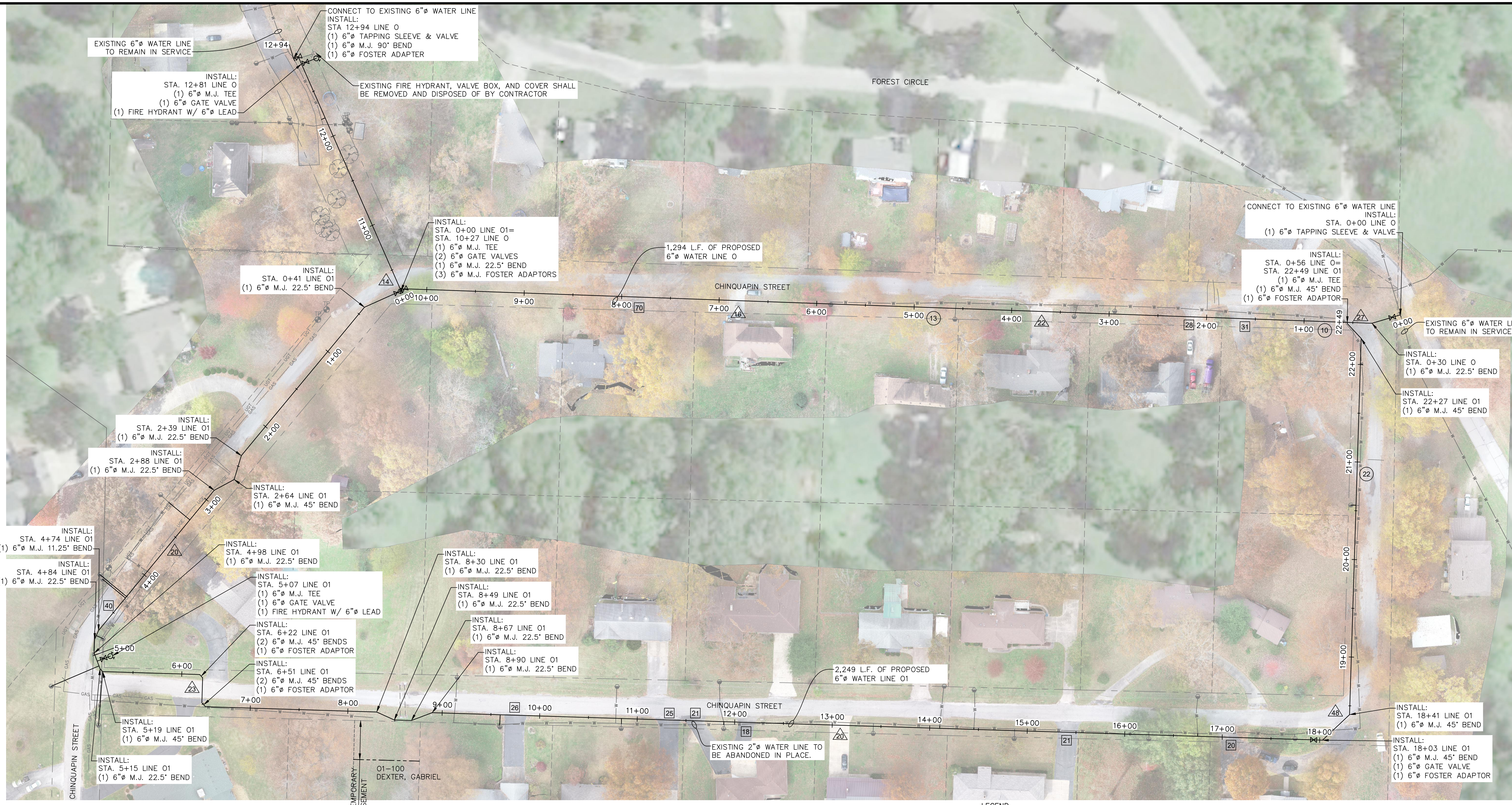
DWN. BY: MHJ
CKD. BY: JTB
APPD. BY: GDW
DATE: 2021

WATER LINES N & N3 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 18

PRELIMINARY
2/23/2024

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\19 WATER LINES O & O1 PLANS.DWG



WATER LINE O & O1 PLAN

50' 0 25' 50'

N

WATER LINE O SUMMARY – DWG. NO. 19	
ITEM	QUANTITY
6"ø PVC	1,294 L.F.
6"ø GATE VALVE	2 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	6 EA.
1"ø SERVICE LINE	10 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	129 L.F.
TYPE III PAVEMENT REPLACEMENT	79 L.F.
TYPE IV PAVEMENT REPLACEMENT	23 L.F.
SURFACE RESTORATION	1,076 L.F.

WATER LINE O1 SUMMARY – DWG. NO. 19	
ITEM	QUANTITY
6"ø PVC	2,249 L.F.
6"ø GATE VALVE	3 EA.
1"ø SERVICE TAP AND CORP STOP	20 EA.
1"ø SERVICE LINE	237 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	171 L.F.
TYPE III PAVEMENT REPLACEMENT	111 L.F.
TYPE IV PAVEMENT REPLACEMENT	22 L.F.
SURFACE RESTORATION	1,934 L.F.

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

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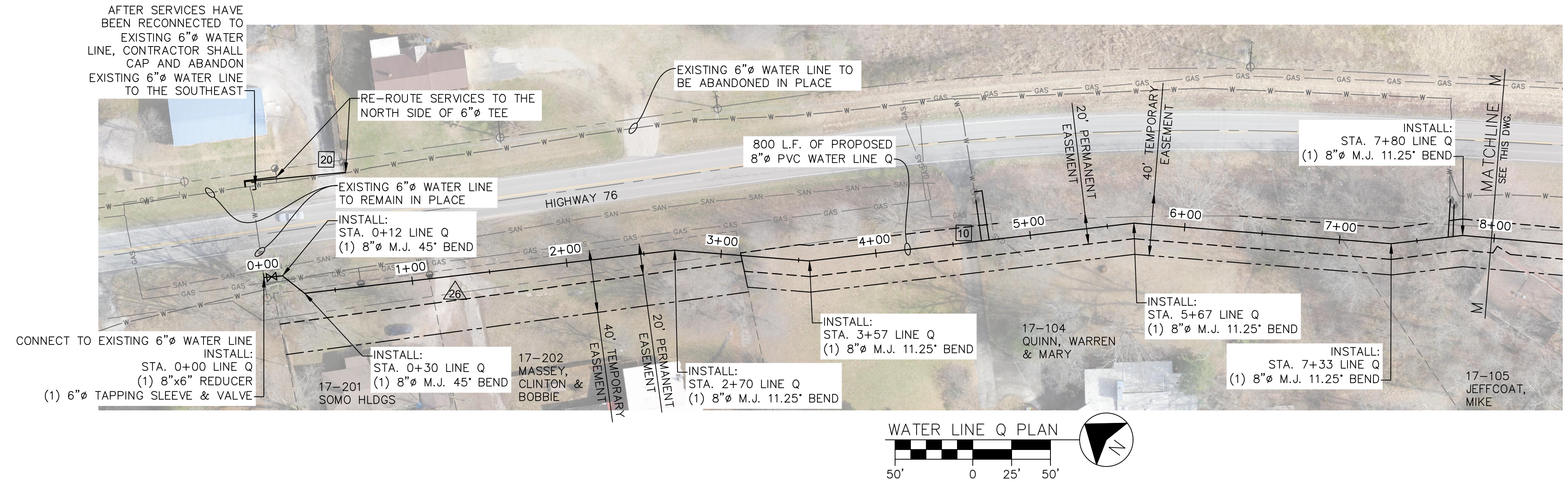
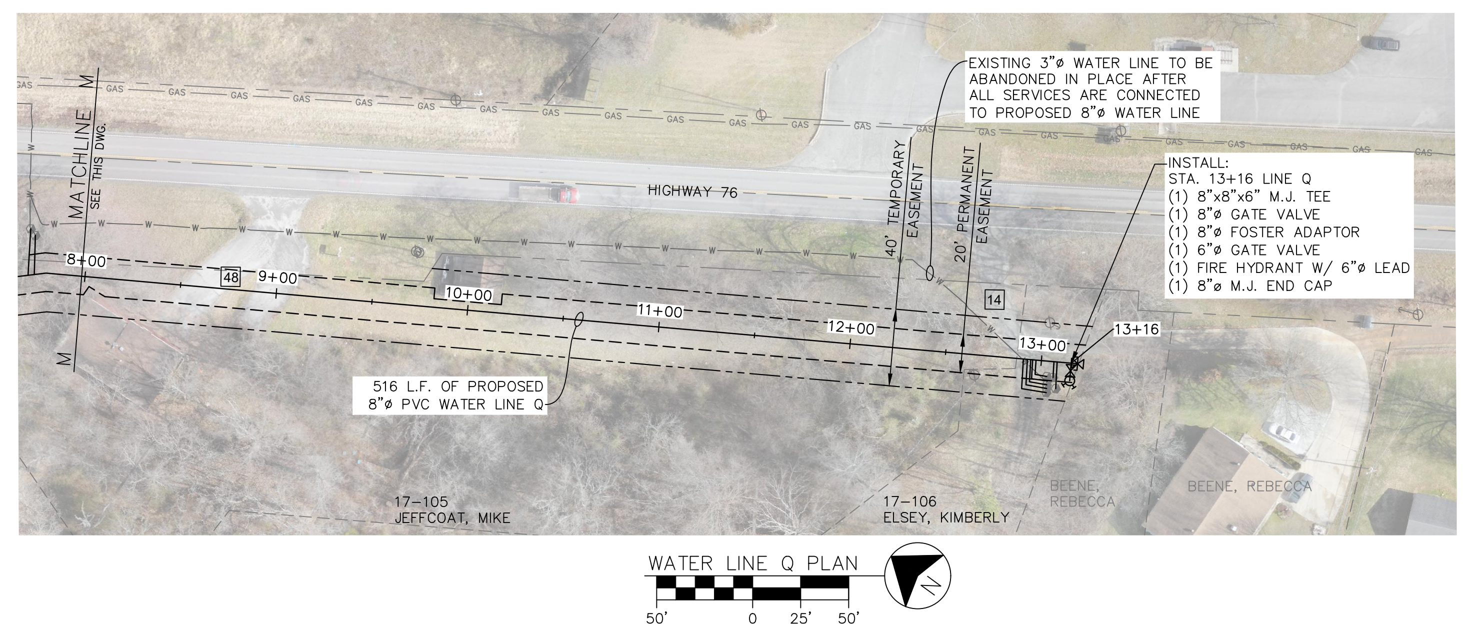
DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINES O & O1 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\20 WATER LINE Q PLAN.DWG





LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 TYPE I PAVEMENT REPLACEMENT
- 55 TYPE II PAVEMENT REPLACEMENT
- 55 TYPE III PAVEMENT REPLACEMENT
- 55 TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

WATER LINE Q SUMMARY – DWG. NO. 20	
ITEM	QUANTITY
8"ø PVC	1,316 L.F.
6"ø GATE VALVE	1 EA.
8"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	11 EA.
1"ø SERVICE LINE	231 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	92 L.F.
TYPE III PAVEMENT REPLACEMENT	26 L.F.
SURFACE RESTORATION	1,218 L.F.

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
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APPD. BY:	GDW
DATE :	2021

WATER LINE Q PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 20

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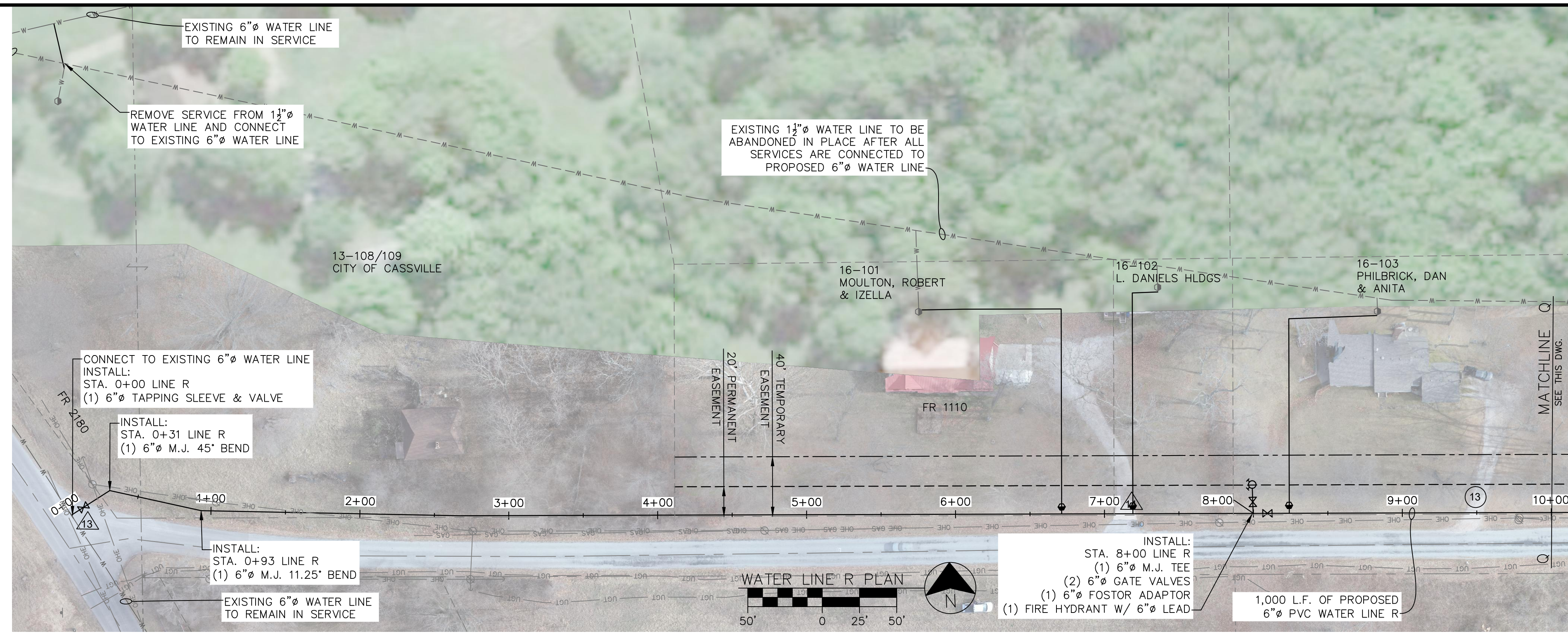
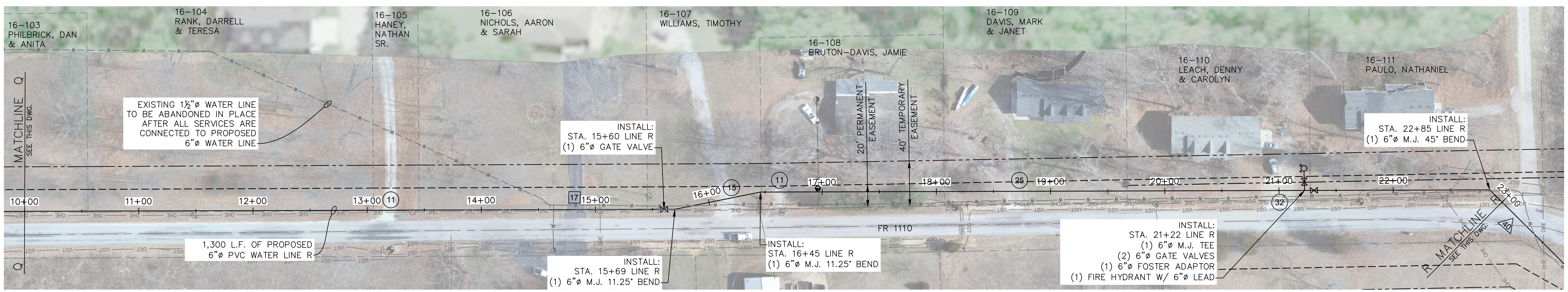
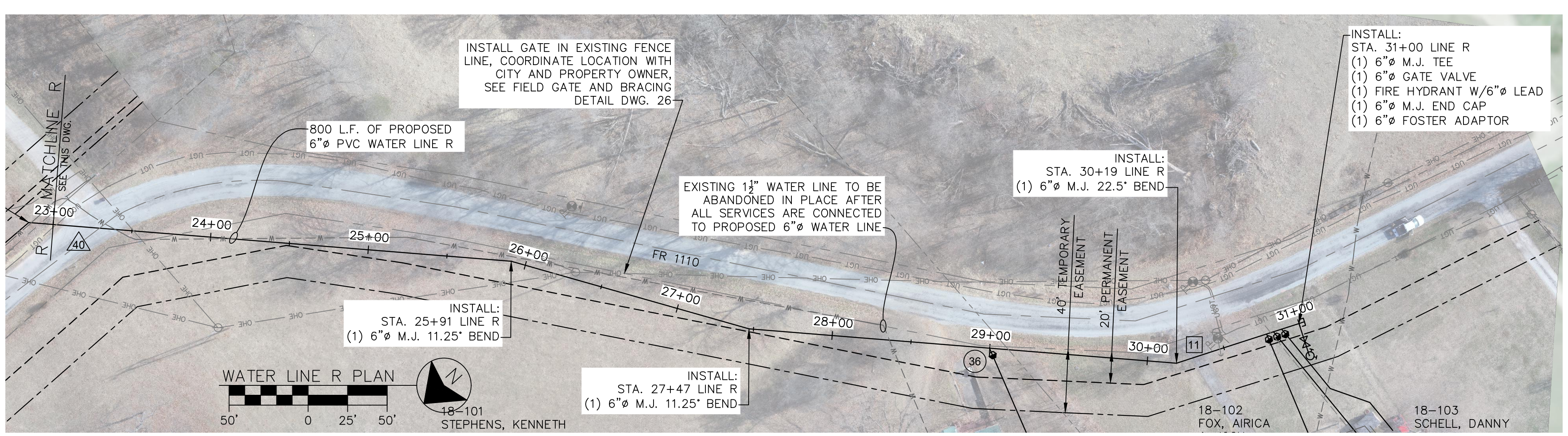




WATER LINE R PLAN

50' 0 25' 50'

N



LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT–OF–WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

WATER LINE R SUMMARY – DWG. NO. 21	
ITEM	QUANTITY
6"ø PVC	3,100 L.F.
6"ø GATE VALVE	6 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	10 EA.
TYPE 1 METER	8 EA.
1"ø SERVICE LINE	807 L.F.
FIRE HYDRANT	3 EA.
TYPE II PAVEMENT REPLACEMENT	28 L.F.
TYPE III PAVEMENT REPLACEMENT	67 L.F.
TYPE IV PAVEMENT REPLACEMENT	143 L.F.
SURFACE RESTORATION	2,862 L.F.

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

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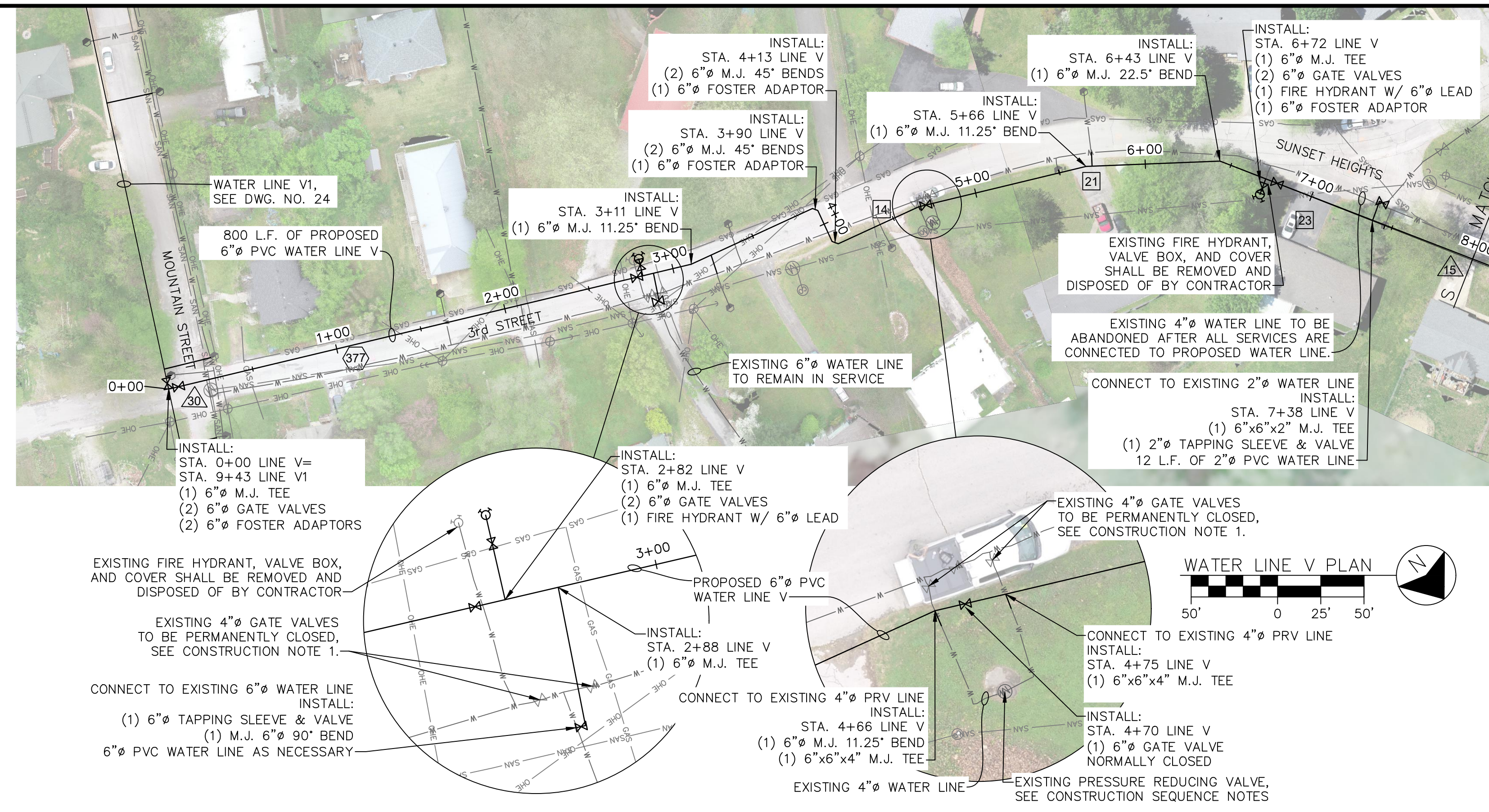
CKD. BY:	JTB
APPD. BY:	GDW
DATE:	2021

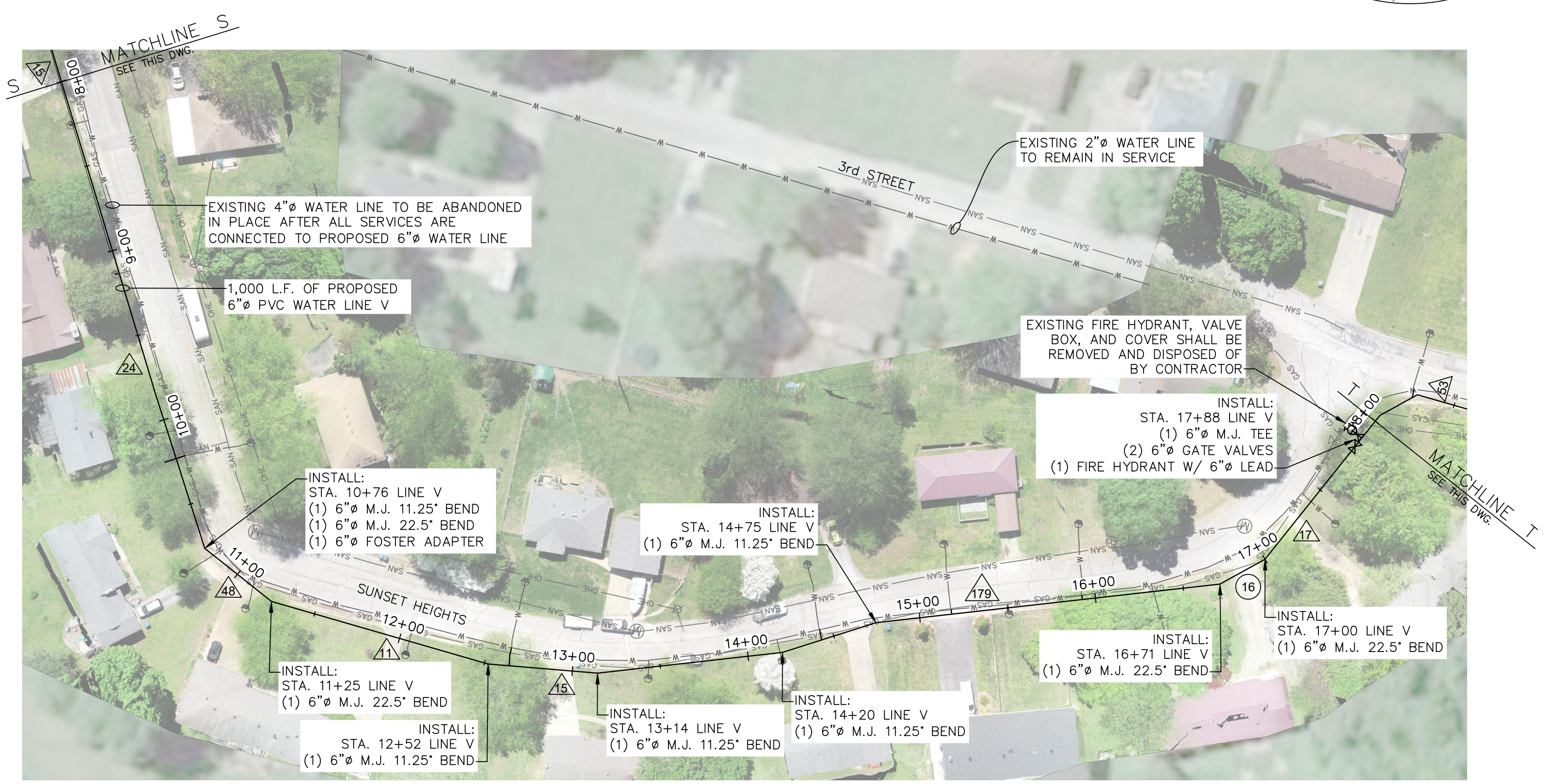
WATER LINE R PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 21

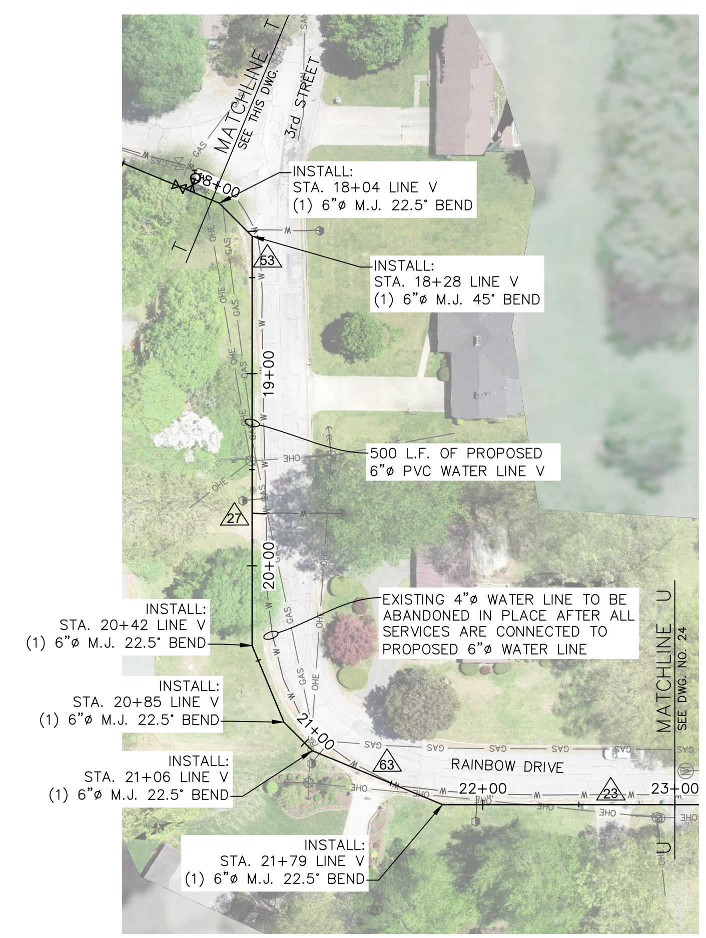
WATER LINE V SUMMARY – DWG. NO. 23	
ITEM	QUANTITY
2"ø PVC	12 L.F.
6"ø PVC	2,300 L.F.
6"ø GATE VALVE	8 EA.
2"ø TAPPING SLEEVE AND VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	28 EA.
1"ø SERVICE LINE	68 L.F.
FIRE HYDRANT	3 EA.
TYPE I PAVEMENT REPLACEMENT	377 L.F.
TYPE II PAVEMENT REPLACEMENT	58 L.F.
TYPE III PAVEMENT REPLACEMENT	505 L.F.
TYPE IV PAVEMENT REPLACEMENT	16 L.F.
SURFACE RESTORATION	1,356 L.F.



WATER LINE V PLAN
50' 0 25' 50'



WATER LINE V PLAN
50' 0 25' 50'



WATER LINE V PLAN
50' 0 25' 50'

LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- 55 TYPE I PAVEMENT REPLACEMENT
- 55 TYPE II PAVEMENT REPLACEMENT
- 55 TYPE III PAVEMENT REPLACEMENT
- 55 TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED, AND THE VALVE BOX & COVER REMOVED, AND M.J. END CAP & THRUST BLOCK INSTALLED.

CONSTRUCTION SEQUENCE NOTES:

1. CONTRACTOR SHALL INSTALL, TEST, FLUSH, AND DISINFECT PROPOSED WATER LINE V FROM PROPOSED VALVE AT STA. 2+82 TO STA. 30+98 PRIOR TO TAKING EXISTING PRV OUT OF SERVICE FOR RECONNECTION.

2. ONCE INSTALLED, ALL EXISTING WATER METERS SHALL BE CONNECTED TO PROPOSED WATER MAIN ALONG WATER LINE V.

3. EXISTING PRV SHALL BE TEMPORARILY TAKEN OUT OF SERVICE AND EXISTING WATER LINE ALONG WATER LINE V SHALL BE ABANDONED IN PLACE TO EXISTING VALVE AT STA. 30+98.

4. CONTRACTOR SHALL INSTALL, TEST, FLUSH, AND DISINFECT FINAL CONNECTION TO EXISTING PRV AND STA. 30+98 TIE-IN PRIOR TO PUTTING PRV AND CONNECTIONS BACK INTO SERVICE.

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

WATER LINE V PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
22

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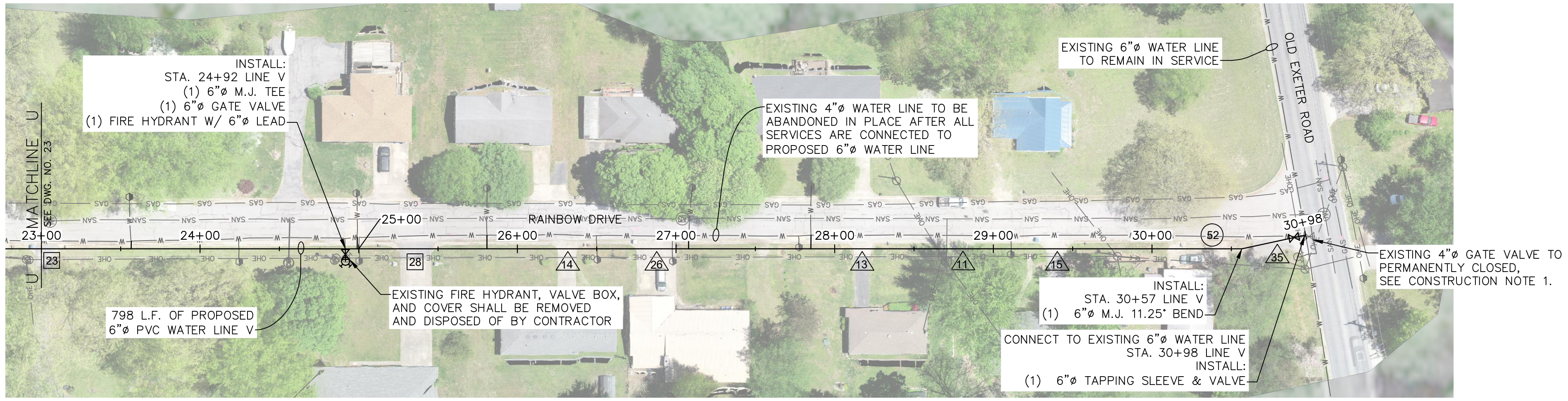


WATER LINE V PLAN

50' 0 25' 50'

WATER LINE V SUMMARY – DWG. NO. 24	
ITEM	QUANTITY
6"ø PVC	798 L.F.
6"ø GATE VALVE	1 EA.
6"ø TAPPING SLEEVE AND VALVE	1 EA.
1"ø SERVICE TAP AND CORP STOP	11 EA.
1"ø SERVICE LINE	37 L.F.
FIRE HYDRANT	1 EA.
TYPE II PAVEMENT REPLACEMENT	51 L.F.
TYPE III PAVEMENT REPLACEMENT	114 L.F.
TYPE IV PAVEMENT REPLACEMENT	52 L.F.
SURFACE RESTORATION	582 L.F.

WATER LINE V1 SUMMARY – DWG. NO. 24	
ITEM	QUANTITY
6"ø PVC	1,449 L.F.
6"ø GATE VALVE	4 EA.
6"ø TAPPING SLEEVE AND VALVE	2 EA.
1"ø SERVICE TAP AND CORP STOP	13 EA.
1"ø SERVICE LINE	167 L.F.
FIRE HYDRANT	2 EA.
TYPE III PAVEMENT REPLACEMENT	137 L.F.
TYPE IV PAVEMENT REPLACEMENT	57 L.F.
SIDEWALK REPLACEMENT	80 L.F.
SURFACE RESTORATION	1,175 L.F.

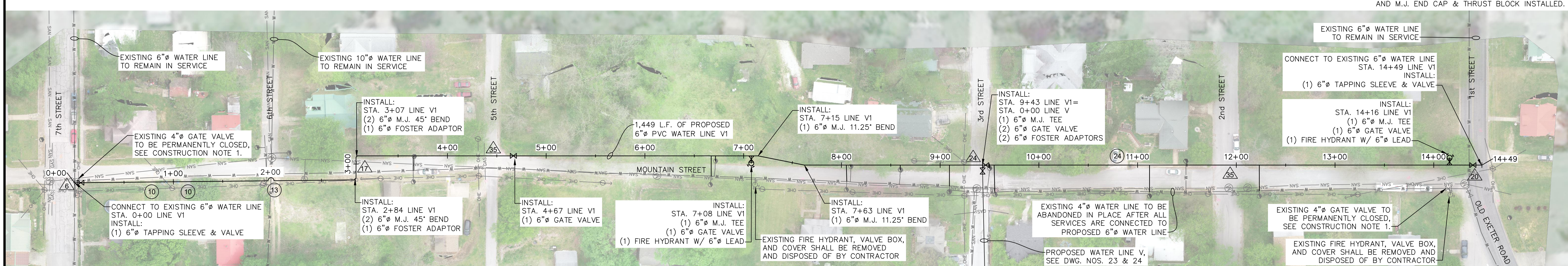
LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED, AND THE VALVE BOX & COVER REMOVED, AND M.J. END CAP & THRUST BLOCK INSTALLED.



LINE V1 PLAN

50' 0 25' 50'

PRELIMINARY 2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

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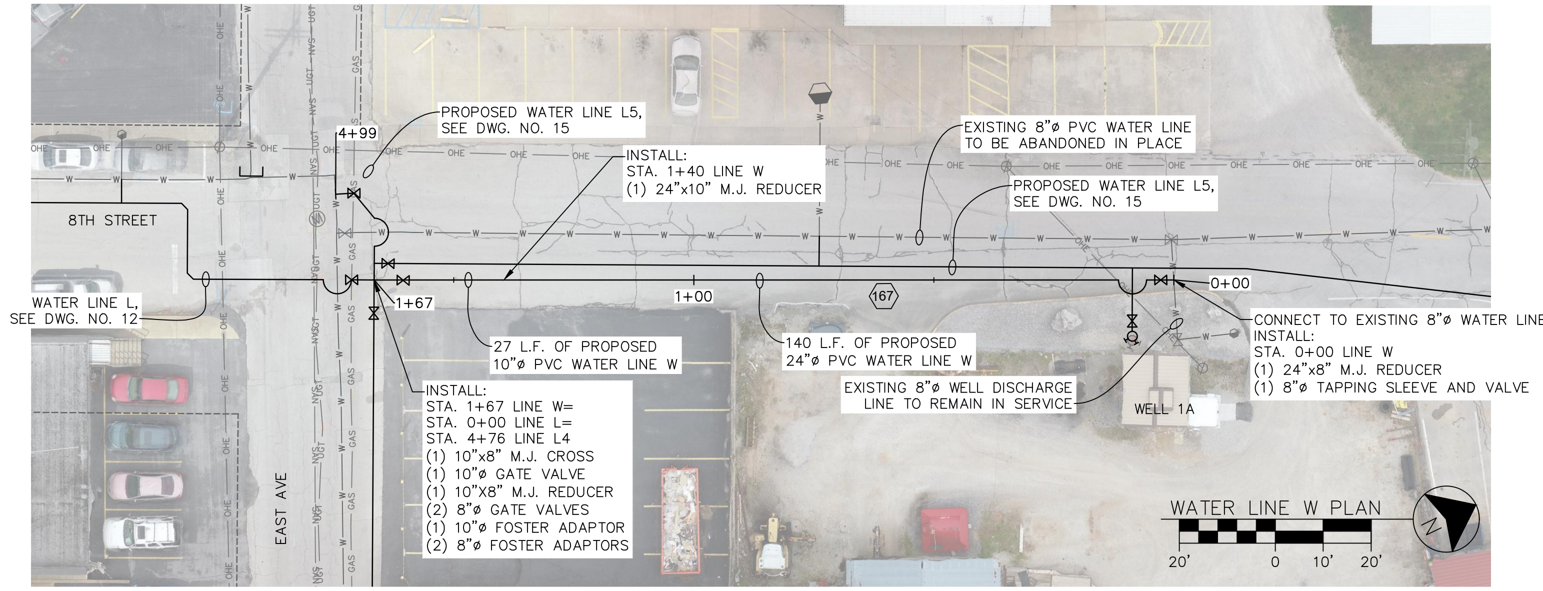
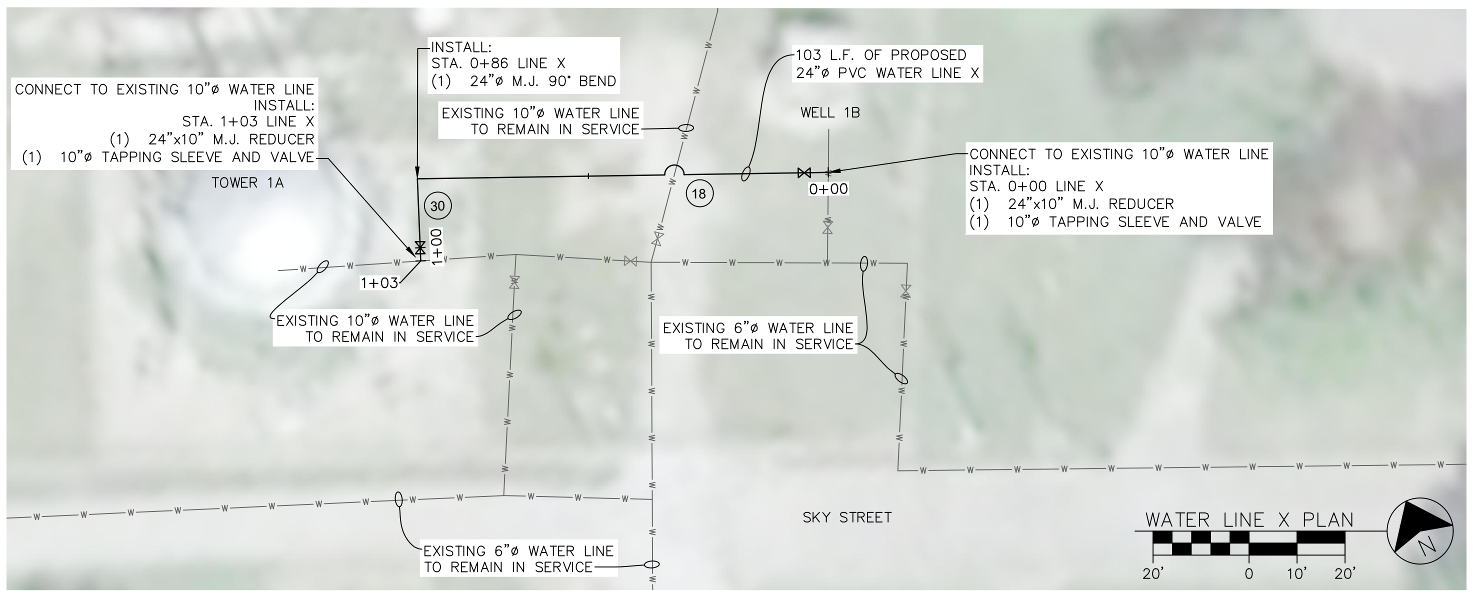
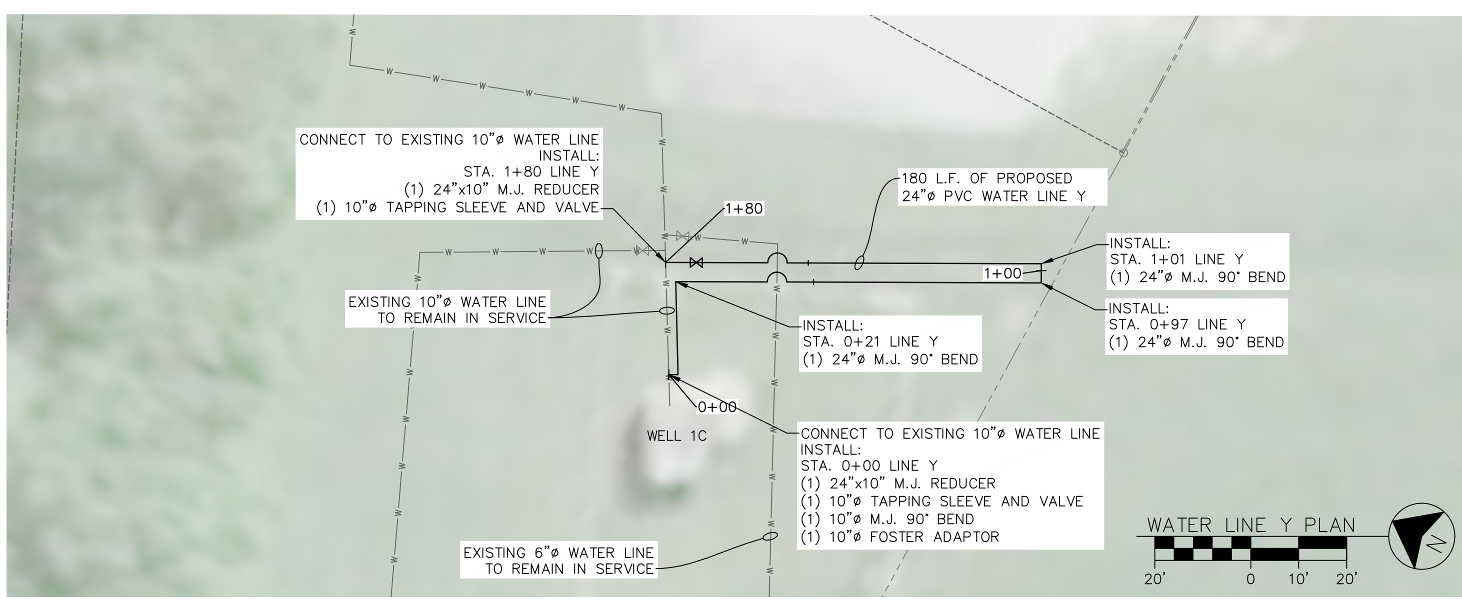
WATER LINES V & V1 PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 23







LEGEND

- EXISTING PIPE TO BE ABANDONED/REMOVED
- EXISTING WATER LINE
- EXISTING LOT LINES
- EXISTING PROPERTY LINES
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS LINES
- EXISTING SEWER LINES
- EXISTING UNDERGROUND TELEPHONE
- PROPOSED WATER LINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING YARD HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER METER
- TYPE I PAVEMENT REPLACEMENT
- TYPE II PAVEMENT REPLACEMENT
- TYPE III PAVEMENT REPLACEMENT
- TYPE IV PAVEMENT REPLACEMENT

SEE GENERAL NOTES DWG. NO. 2

WATER LINE W SUMMARY – DWG. NO. 25

ITEM	QUANTITY
10"ø PVC	27 L.F.
24"ø PVC	140 L.F.
8"ø TAPPING SLEEVE AND VALVE	1 EA.
10"ø GATE VALVE	1 EA.
TYPE I PAVEMENT REPLACEMENT	167 L.F.

WATER LINE X SUMMARY – DWG. NO. 25

ITEM	QUANTITY
24"ø PVC	103 L.F.
10"ø TAPPING SLEEVE AND VALVE	2 EA.
TYPE IV PAVEMENT REPLACEMENT	48 L.F.
SURFACE RESTORATION	55 L.F.

WATER LINE Y SUMMARY – DWG. NO. 25

ITEM	QUANTITY
24"ø PVC	180 L.F.
10"ø TAPPING SLEEVE AND VALVE	2 EA.
SURFACE RESTORATION	180 L.F.

CONSTRUCTION NOTES:

1. AT THE CONCLUSION OF THE PROJECT, THE EXISTING GATE VALVE SHALL BE PERMANENTLY CLOSED, AND THE VALVE BOX & COVER REMOVED, AND M.J. END CAP & THRUST BLOCK INSTALLED.

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

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DWN. BY:	CSJ
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APPD. BY:	GDW
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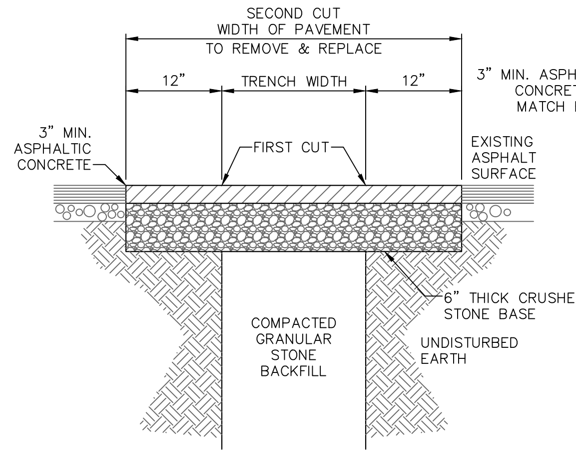
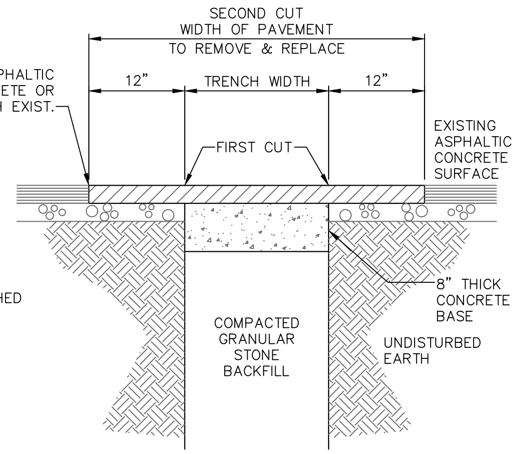
WATER LINES W, X & Y PLANS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO. 24

PRELIMINARY 2/23/2024



TYPE I
ASPHALT SURFACING



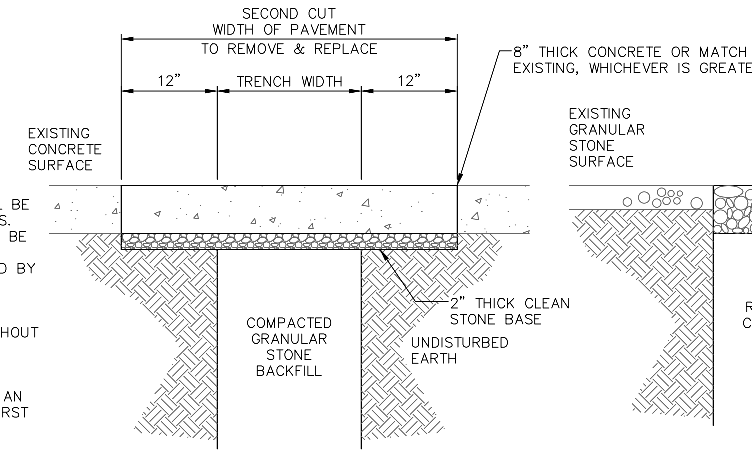
TYPE II
ASPHALTIC CONCRETE SURFACING

NOTES

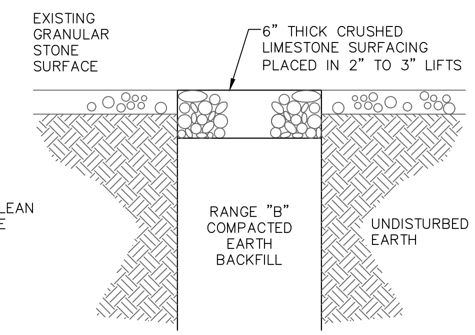
STANDARD WIDTH OF PAVEMENT REPAIR AREAS FOR ASPHALT & CONCRETE SHALL BE BASED ON A REPAIR WIDTH OF 48 INCHES. ANY ADDITIONAL WIDTH OF REPAIR SHALL BE AT THE CONTRACTORS EXPENSE & CONSIDERED INCIDENTAL OR AS APPROVED BY THE ENGINEER.

PAVEMENT SHALL BE REMOVED AT THE TRENCH WIDTH AFTER THE FIRST CUT WITHOUT DAMAGE TO ADJACENT PAVEMENT.

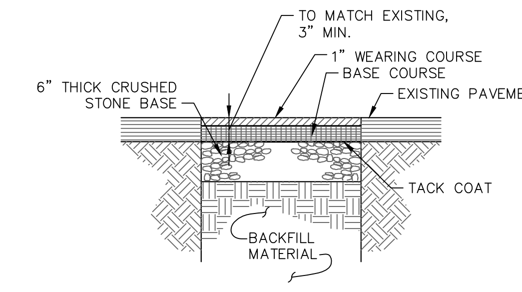
AFTER TRENCH IS PROPERLY BACKFILLED, PAVEMENT SHALL BE CUT AND REMOVED AN ADDITIONAL 12" ON EACH SIDE OF THE FIRST SAW CUT, AS SHOWN. THE SECOND CUT SHALL BE SAWN TO FULL DEPTH OF THE EXISTING SURFACE.



TYPE III
CONCRETE SURFACING

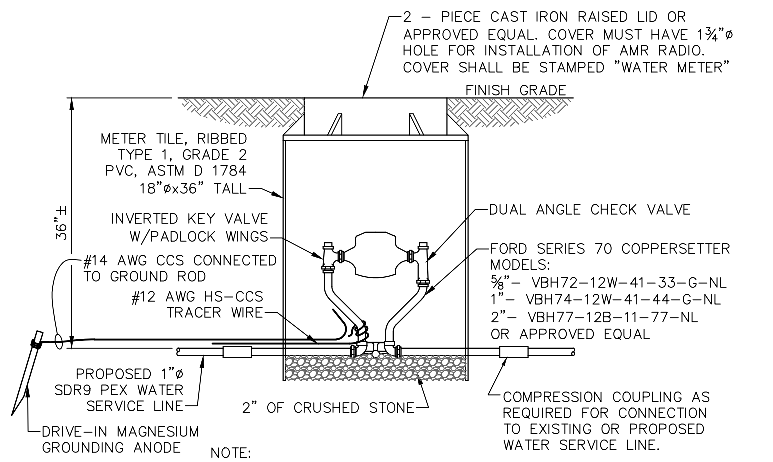


TYPE IV
CRUSHED STONE SURFACING



TYPE V
CHIP & SEAL SURFACE

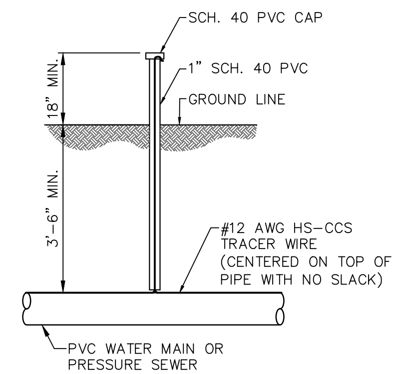
PAVEMENT REPAIR DETAILS
NTS



NOTE:
USE 1"ø PVC PIPE IN BRACE EYE TO SUPPORT METER & COPPERSETTER.

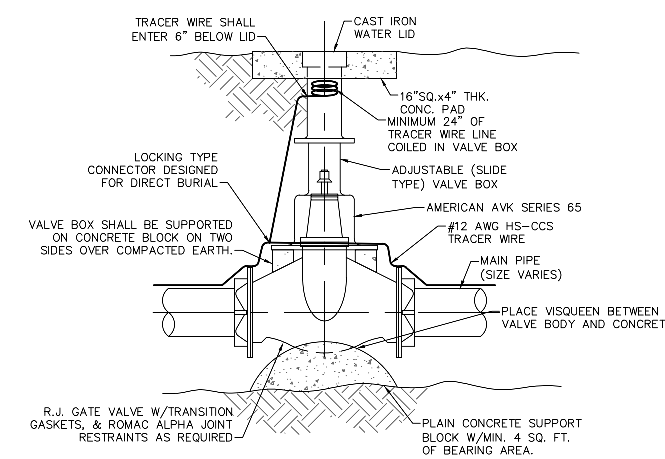
COPPERSETTER MATERIAL SHALL CONTAIN LESS THAN 0.25% LEAD CALCULATED BY WEIGHTED AVERAGE.

TYPE 1 WATER METER INSTALLATION DETAIL
NTS

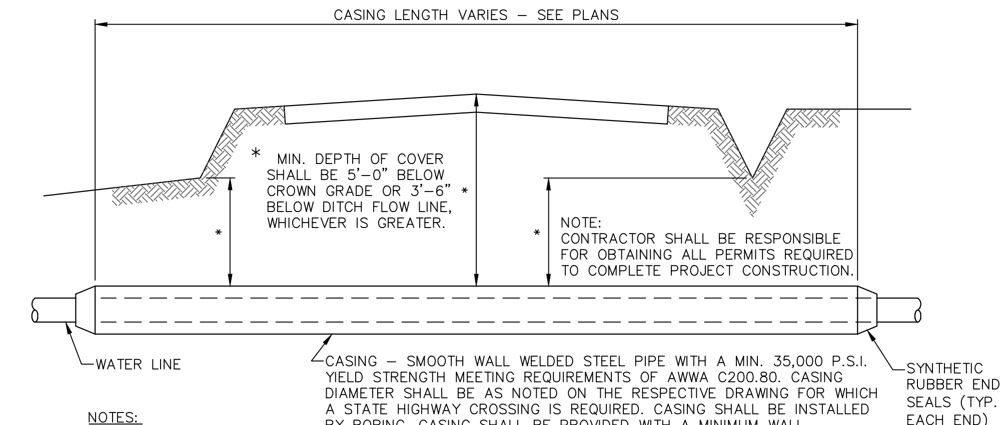


DETECTION WIRE RISER DETAIL
NTS

NOTES:
1. DETECTION WIRE RISERS SHALL BE INSTALLED AS REQUIRED TO PROVIDE A RISER SPACING, INCLUDING THOSE AT GATE VALVES, FLUSH STATIONS, AND FIRE HYDRANTS, NOT EXCEEDING 1000 FEET.
2. THE CITY PREFERS NO SPLICES. IF NECESSARY, USE RIGID FITTINGS OR WATERPROOF CONNECTORS SPECIFICALLY DESIGNED FOR DIRECT BURIAL AS DIRECTED BY MANUFACTURER.
3. DETECTION WIRE SHALL BE LOOPED ON OUTSIDE OF VALVE BOX AND ENTER 6" BELOW THE LID.



VALVE INSTALLATION DETAIL
NTS



CASING – SMOOTH WALL WELDED STEEL PIPE WITH A MIN. 35,000 P.S.I. YIELD STRENGTH MEETING REQUIREMENTS OF AWWA C200.80. CASING DIAMETER SHALL BE AS NOTED ON THE RESPECTIVE DRAWING FOR WHICH A STATE HIGHWAY CROSSING IS REQUIRED. CASING SHALL BE INSTALLED BY BORING. CASING SHALL BE PROVIDED WITH A MINIMUM WALL THICKNESS AS FOLLOW'S:

CASING DIAMETER (INCHES)	MIN. WALL THICKNESS (INCHES)
6, 8, 10, 12, 14 & 16	0.188
18, 20 & 22	0.250
24 & 26	0.281
28, 30, 32 & 34	0.312

NOTES:
1. ANNULAR SPACE BETWEEN CASING AND CARRIER PIPES SHALL BE BRACED BY CASING SPACERS PER SPECIFICATIONS.

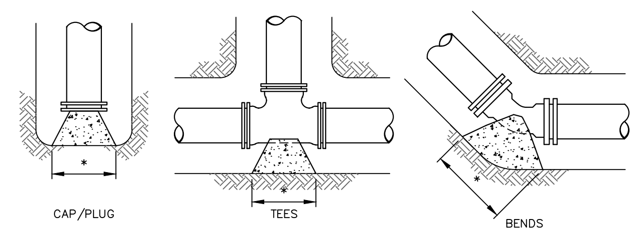
STATE HIGHWAY CROSSING DETAIL
NTS

HIGHWAY 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. THE CONTRACTOR SHALL INSURE THAT TRAFFIC INTERRUPTIONS ARE MINIMIZED DURING THE UNDERGROUND EXCAVATION OPERATIONS. AFTER THE OPERATION IS 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 ⅛-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.



* SEE THRUST BLOCK SIZING TABLE

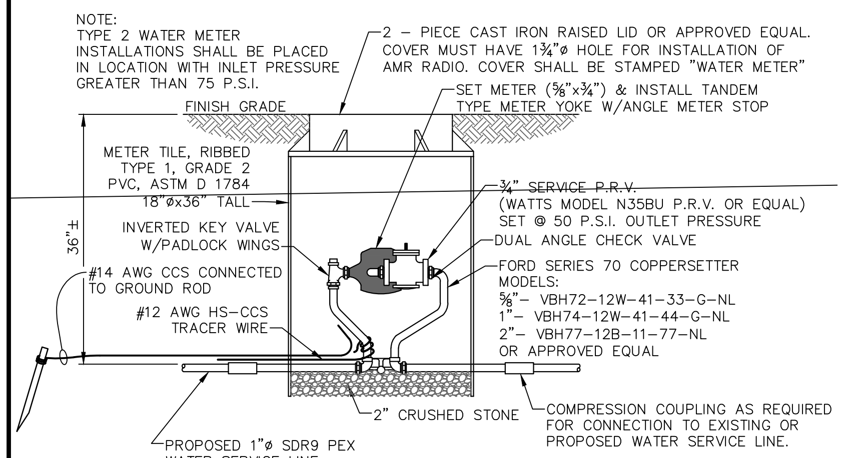
CONCRETE THRUST BLOCK SIZING

PIPE SIZE (IN)	*MINIMUM AREA OF BEARING ON UNDISTURBED SOIL (SF)				
	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEES, PLUGS, CAPS, & HYDRANTS
4 & 6	3	2	1	1	3
8	6	3	2	1	4
10	9	5	3	2	6

AREAS ARE BASED ON A WORKING PRESSURE OF 150 P.S.I. AND A SOIL RESISTANCE OF 2000 POUNDS PER SQUARE FOOT.

THRUST BLOCK DETAIL
NTS

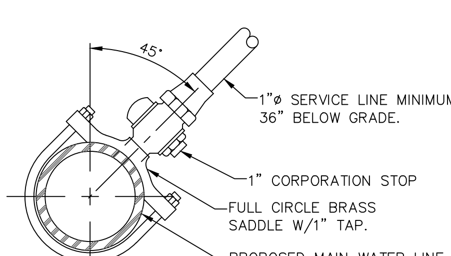
NOTE:
TYPE 2 WATER METER INSTALLATIONS SHALL BE PLACED IN LOCATION WITH INLET PRESSURE GREATER THAN 75 P.S.I.



NOTE:
USE 1"ø PVC PIPE IN BRACE EYE TO SUPPORT METER & COPPERSETTER.

COPPERSETTER MATERIAL SHALL CONTAIN LESS THAN 0.25% LEAD CALCULATED BY WEIGHTED AVERAGE.

TYPE 2 WATER METER INSTALLATION DETAIL
NTS



SERVICE TAP DETAIL
NTS

PRELIMINARY
2/23/2024

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY
MISSOURI NO. 000427

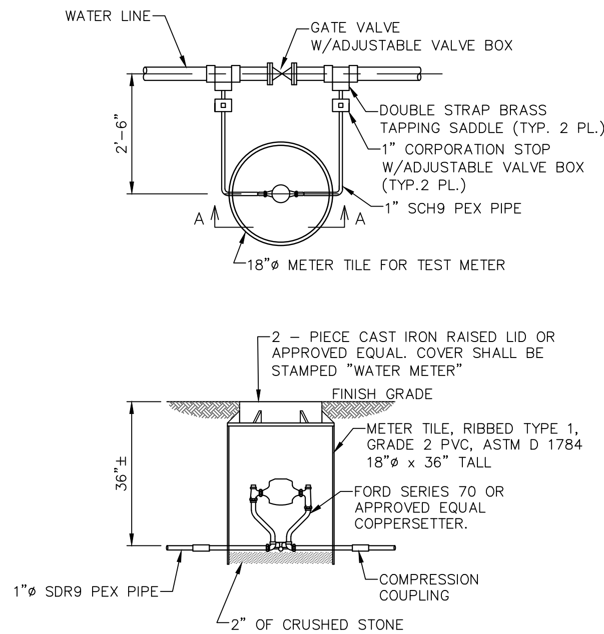
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

STANDARD CONSTRUCTION DETAILS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
25

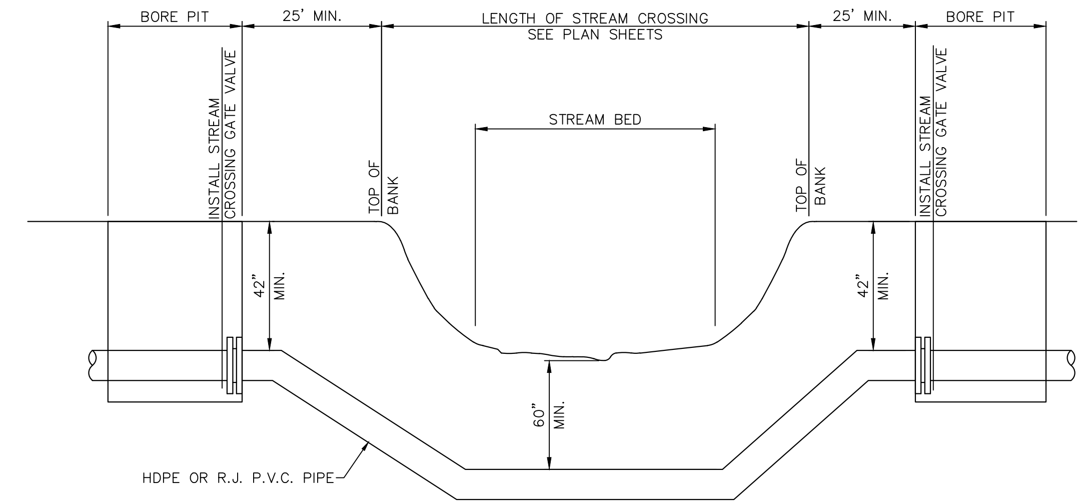
Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\26 STANDARD CONSTRUCTION DETAILS.DWG



STREAM CROSSING GATE VALVES SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE STREAM CROSSING DETAIL (SEE DETAILS THIS DWG).

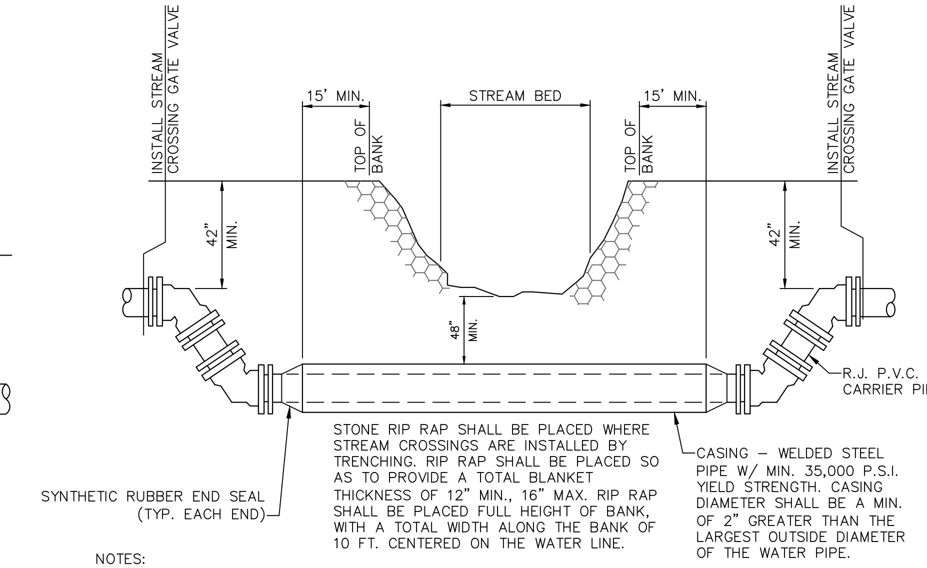
NOTE:
USE PVC PIPE BRACE TO SUPPORT METER & COPPERSETTER

STREAM CROSSING GATE VALVE DETAIL
NTS



NOTE:
STREAM CROSSINGS MAY BE INSTALLED BY OPEN CUT W/STEEL CASING PIPE OR HORIZONTAL DIRECTIONAL DRILLING AT THE CONTRACTORS OPTION.

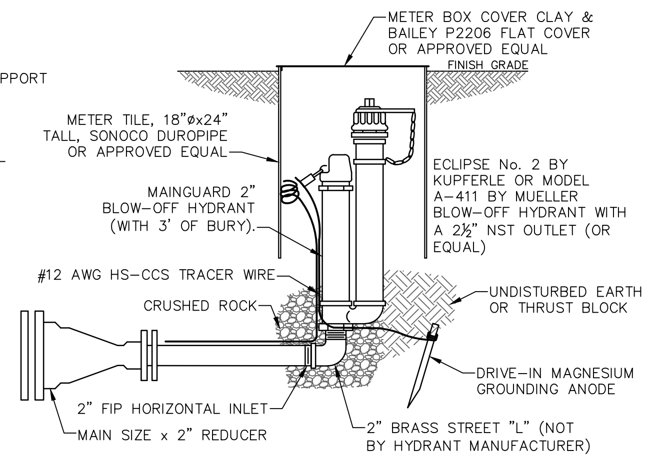
HDD STREAM CROSSING DETAIL
NTS



NOTES:
CASING SPACERS SHALL BE UTILIZED FOR BRACING IN THE ANNULAR SPACE BETWEEN CASING & CARRIER PIPES.

STREAM CROSSINGS MAY BE INSTALLED BY OPEN CUT WITH STEEL CASING PIPE OR HORIZONTAL DIRECTIONAL DRILLING AT THE CONTRACTORS OPTION.

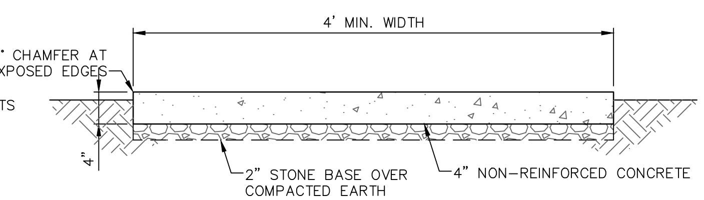
OPEN TRENCH STREAM CROSSING DETAIL
NTS



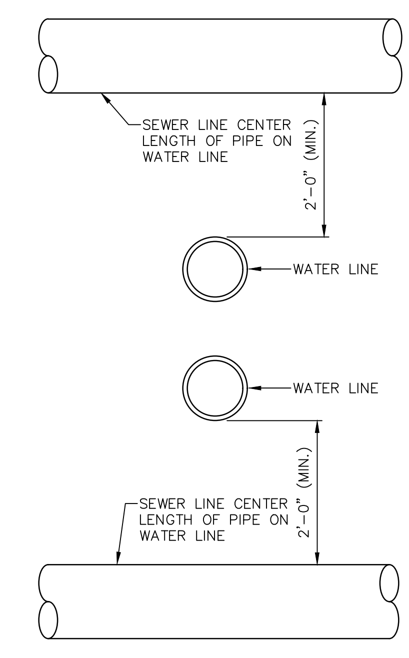
FLUSH HYDRANT DETAIL
NTS

FLUSH HYDRANT NOTE:
BLOW-OFF HYDRANTS SHALL BE NON-FREEZING, SELF DRAINING TYPE, WITH AN OVERALL LENGTH OF 2.5'. SET UNDERGROUND IN A 18"øx24" TALL SUNOCO DUROPIPE METER BOX,THESE HYDRANTS WILL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT. ALL OF THE WORKING PARTS SHALL BE OF BRONZE-TO-BRONZE DESIGN, AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2½" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR APPROVED EQUAL.

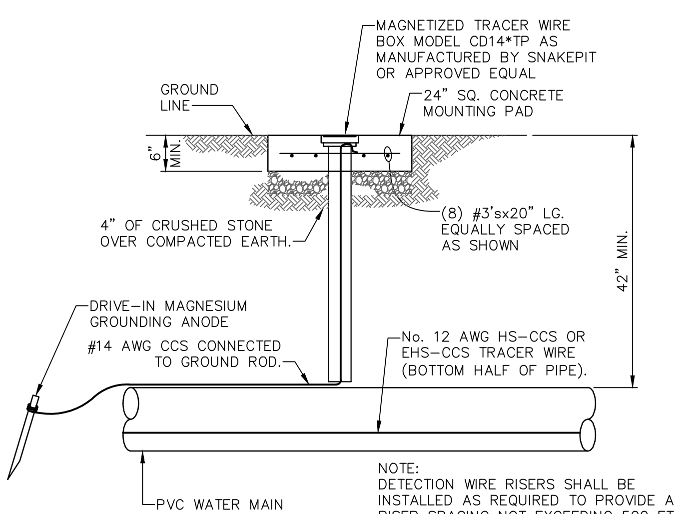
NOTE:
1. ALL CONCRETE SIDEWALK REPLACEMENT SECTIONS SHALL MEET ADA REQUIREMENTS EVEN IF ADA REQUIREMENTS WERE NOT PREVIOUSLY MET.
2. ALL CONCRETE SIDEWALK CURB RAMPS SHALL MEET ADA REQUIREMENTS.



SIDEWALK DETAIL
NTS



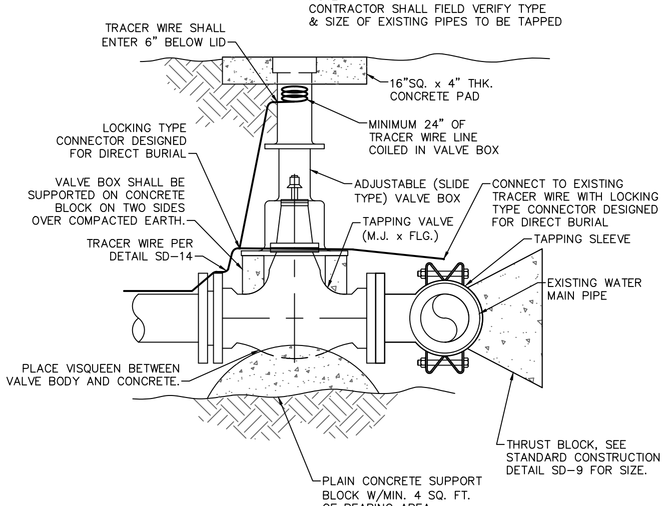
WATER/SEWER LINE CROSSING DETAIL
NTS



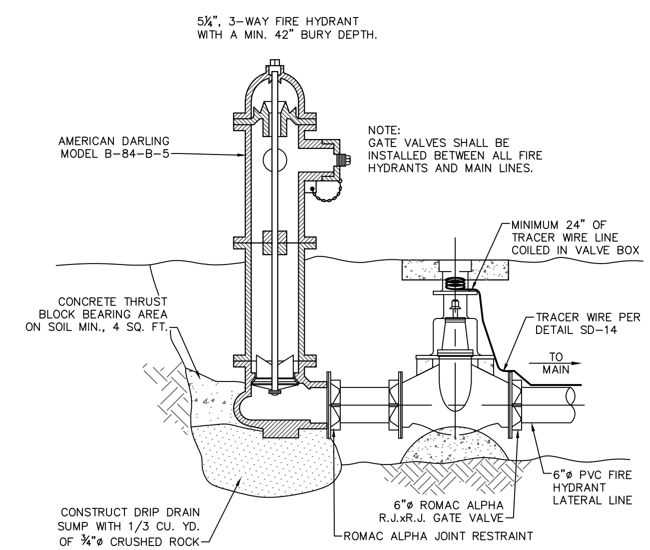
NOTE:
DETECTION WIRE RISERS SHALL BE INSTALLED AS REQUIRED TO PROVIDE A RISER SPACING NOT EXCEEDING 500 FT.

DETECTION WIRE RISER DETAIL
NTS

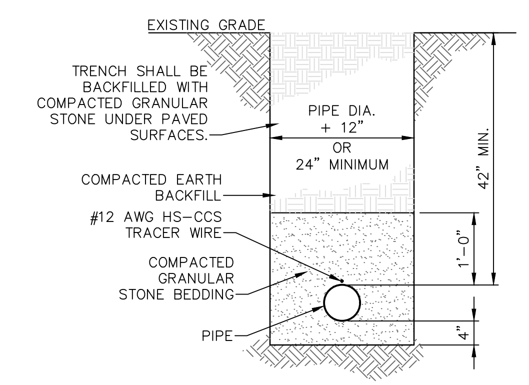
NOTE:
CONTRACTOR SHALL FIELD VERIFY TYPE & SIZE OF EXISTING PIPES TO BE TAPPED



TAPPING SLEEVE & VALVE DETAIL
NTS



FIRE HYDRANT INSTALLATION
NTS



STANDARD TRENCH & BEDDING DETAIL
NTS

NOTE:
TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4" BELOW BOTTOM OF PIPE AND BACKFILLED TO 6" 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

PRELIMINARY
2/23/2024

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CONSULTING ENGINEERS and SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

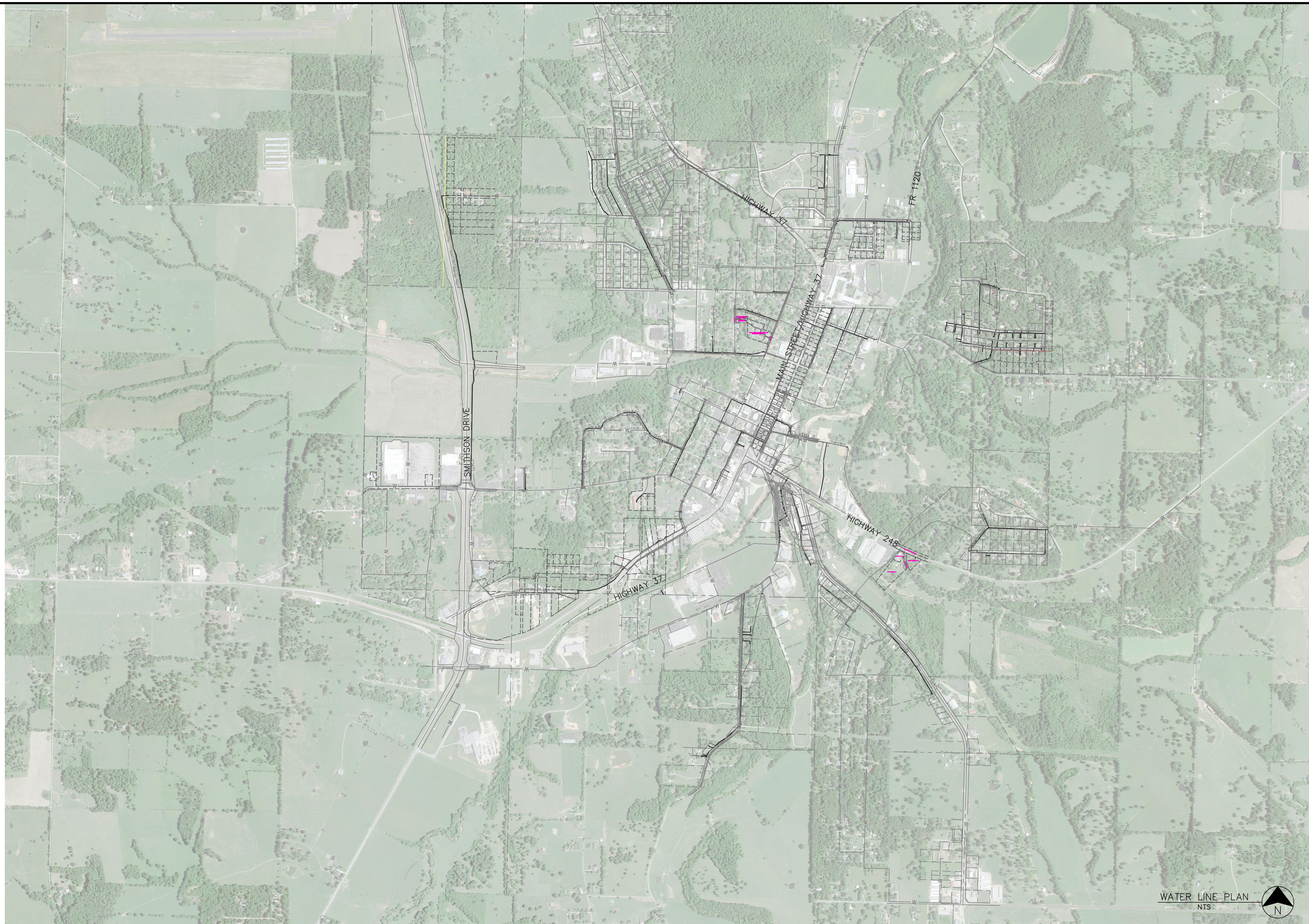
DATE	REVISION

DWN. BY:	MHJ
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

STANDARD CONSTRUCTION DETAILS
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
26

Z:\CASSVILLE MO\CITY OF CASSVILLE\WATER\WATER SYSTEM IMPROVEMENTS 2018\DRAWINGS\SW-1 STORMWATER POLLUTION PREVENTION PLAN.DWG



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CERTIFICATE OF AUTHORITY
MISSOURI NO. 000427

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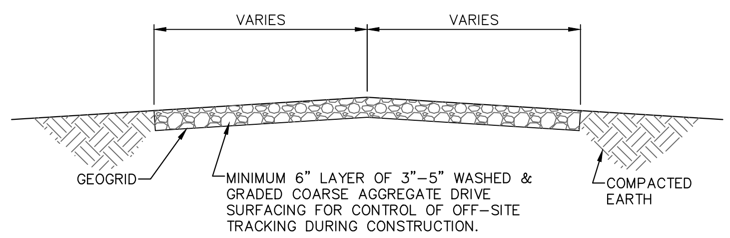
CKD. BY:	JTB
APPD. BY:	GDW
DATE :	2021

STORMWATER POLLUTION PREVENTION PLAN
CASSVILLE WATER SYSTEM IMPROVEMENTS
CASSVILLE, MISSOURI

DWG. NO.
SW-1

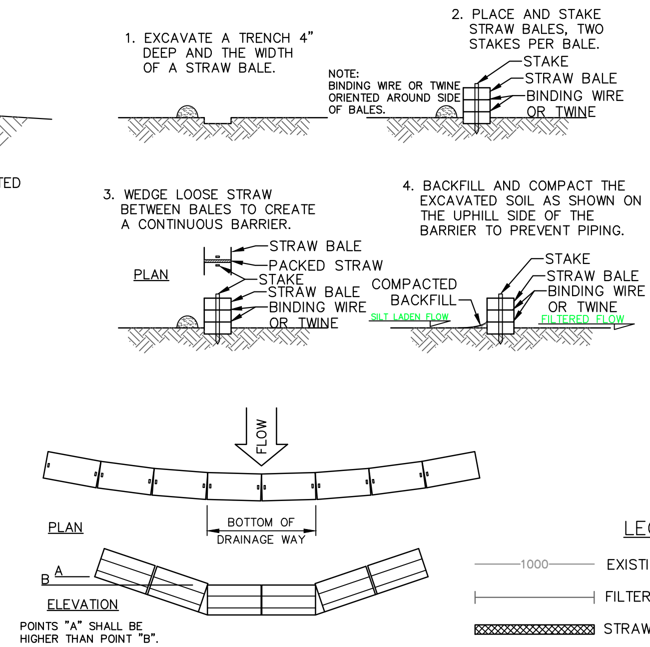


TYPICAL SECTION THRU CONSTRUCTION ENTRANCE

N.T.S.

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.



STRAW BALE BARRIER

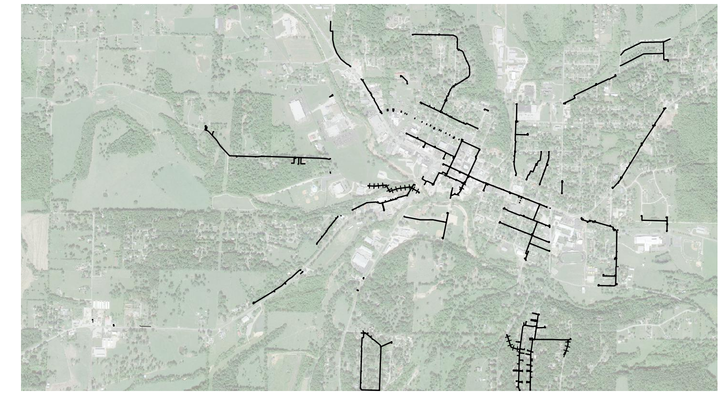
N.T.S.

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.

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.



OUTFALL #2 PLAN

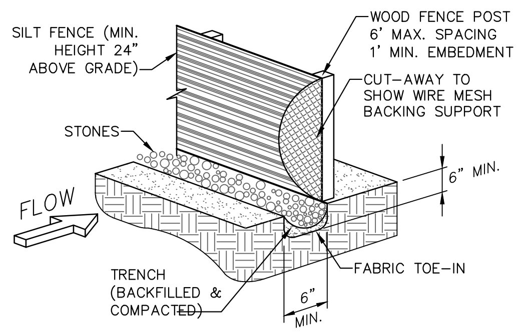
40' 0 20' 40'

OUTFALL #1 PLAN

40' 0 20' 40'

OUTFALL #3 PLAN

40' 0 20' 40'



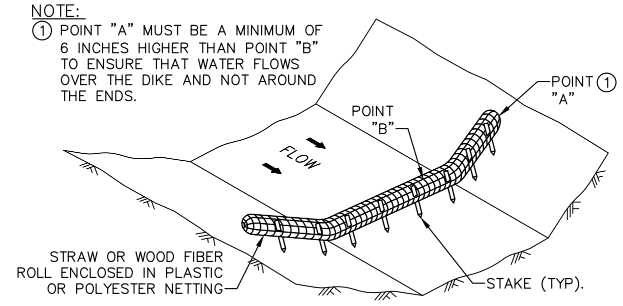
FILTER FABRIC SILT FENCE

N.T.S.

NOTES:

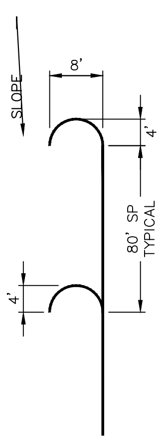
1. SILT FENCE SHALL BE SECURELY FASTENED TO EACH WOOD SUPPORT POST OR TO WOVEN WIRE. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
2. INSPECTION SHALL BE MADE AT LEAST WEEKLY, BEFORE A KNOWN MAJOR STORM EVENT, AND AFTER EACH 0.5" RAINFALL EVENT. REPAIR OR REPLACEMENT 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.

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

N.T.S.



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.

FILTER FABRIC SILT FENCE HOOK DETAIL

N.T.S.

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.

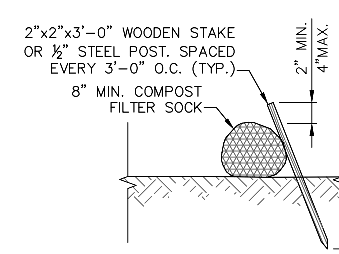
THE DESIGNATED ENVIRONMENTAL MANAGER FOR THE SITE IS:

____

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

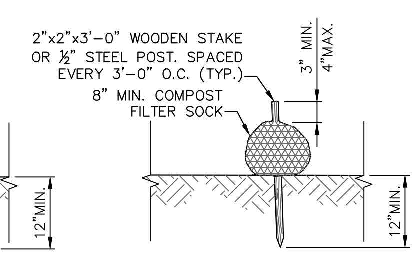
THE CONTRACTOR SHALL PENCIL IN AND KEEP CURRENT, ANY UPDATE AS NEEDED, ANY AND ALL ADDITIONS OR CHANGES TO THE STORM WATER POLLUTION PREVENTION PLAN ON THE SWPPP DRAWING, INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF THE FOLLOWING ITEMS, IF APPLICABLE:

- 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



ALTERNATIVE 1 (Staking)

N.T.S.

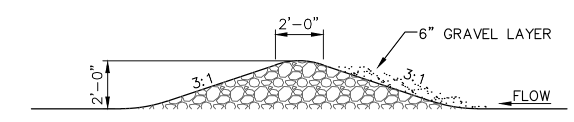


ALTERNATIVE 2 (Staking)

N.T.S.

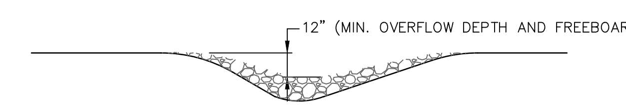
COMPOST FILTER SOCK

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



CROSS SECTION OF ROCK DAM SEDIMENT BASIN

N.T.S.



CROSS SECTION OF DITCH AT ROCK DAM

N.T.S.

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.

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

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CERTIFICATE OF AUTHORITY MISSOURI NO. 000427

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STORMWATER POLLUTION PREVENTION PLAN DETAILS
CASSVILLE WATER SYSTEM IMPROVEMENTS

CASSVILLE, MISSOURI

DWG. NO.
SW-2