

**TOWN OF UNION
MONROE COUNTY, WEST VIRGINIA**

CONTRACT # 1 – PICKAWAY WATERLINE EXTENSION

ADDENDUM #1

JUNE 13, 2023

THRASHER PROJECT #010-00428

TO WHOM IT MAY CONCERN:

A Pre-Bid Conference was held on Tuesday, June 6, 2023, on the above-referenced project, a copy of the sign in sheet is included in this Addendum. The following are clarifications and responses to questions posed by contractors for the above reference project.

A. GENERAL

1. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**
2. **DAVIS BACON WAGES APPLY TO THIS PROJECT. THE UPDATED DAVIS BACON WAGE RATES ATTACHMENT HAS BEEN ADDED AS PART OF THIS ADDENDUM.**

B. DRAWINGS

The following Plan Sheets have been revised as part of this Addendum:

Sheet 11- Valve Addition
Sheet 12- Valve Addition
Sheet 13- Valve Addition
Sheet 15- Farm Fence Quantity/Layout Reduction
Sheet 16- MEP Updates

C. QUESTIONS AND RESPONSES

1. QUESTION

Can you verify the Liquidated Damages? The specs say \$1,000/Day plus costs incurred by owner and engineer, is it simply \$1,000/Day?

RESPONSE

Liquidated Damages are to be \$1,000/Day.

2. QUESTION

What are the “Special Damages” that are mentioned in the specs? Can you explain them? Do they apply?

RESPONSE

Please see specification 4.06, of EJDC 520.

3. QUESTION

Are any additional permits required other than what you currently have in place?

RESPONSE

No

4. QUESTION

Are B&O Taxes or any additional taxes required?

RESPONSE

There are no B&O Taxes required for the Town of Union.

5. QUESTION

Is the use of Type 1L cement approved?

RESPONSE

Yes.

6. QUESTION

Is AIS or BABA required?

RESPONSE

AIS is required.

7. QUESTION

Where is the asphalt overlay located?

RESPONSE

This Bid Item has been adjusted, see attached Bid Form.

8. QUESTION

Are the curb stops that are shown on the details required?

RESPONSE

Curb stops are to be included only if spelled out in plans, please use details shown on D-5 for typical installation.

9. QUESTION

Are the 2" valves at the connections & blowoffs being paid under the 2" gate valve item?

RESPONSE

This Bid Item has been adjusted, see attached Bid Form. 2" valves at the branch connections are a separate bid item. The Blowoff Flushing Hydrant Assembly contain a valve.

10. QUESTION

Are portable stoplights acceptable for traffic control?

RESPONSE

WVDOH requires the traffic plan to be approved. We have included specifications that are required for WVDOH with regards to portable stoplights.

11. QUESTION

Is the Town paying for & making the application to the power company for the new services?

RESPONSE

Yes.

12. QUESTION

Is there a bid item for the 12" casing open-cut?

RESPONSE

This Bid Item has been adjusted, see attached Bid Form.

13. QUESTION

Can you confirm the number of blowoffs on this project?

RESPONSE

This Bid Item has been adjusted, see attached Bid Form.

D. CLARIFICATIONS

1. The correct address for the location of the Bid Opening is 175 Pump Street, P.O. Box 13, Union, WV 24983. Contact Anthony Brown at (304) 920-9014 or by email at abrown@thethrashergruop.com to confirm the receipt of your bid if mailing.
2. Contractor is responsible for locating existing utilities (gas lines, etc.) in project installation area (ex: trailer courts). Contractor will be responsible to repair any and all damage to existing utilities caused by construction activities at no expense of owner.

JUNE 13, 2023

Page 5 of 5

If you have any questions or comments, please feel free to contact me at your earliest convenience. As a reminder, bids will be received until 2:00 p.m. on Tuesday, June 20, 2023, at Town of Union, 175 Pump Street, Union, WV 24983. Good luck to everyone and thank you for your interest in the project.

Sincerely,

THE TERRY GROUP, INC.



ANTHONY J. BROWN, P.E.
Project Manager

Enclosures: Pre-Bid Sign-In Sheet
C-410 Bid Form
Wage Rates
WVDOH Portable Stoplight Specifications
Plan Sheets: 11, 12, 13, 15, 16

TOWN OF UNION
MONROE COUNTY, WEST VIRGINIA
CONTRACT # 1 - PICKAWAY WATERLINE EXTENSION
CONTRACT # 2 - WATER STORAGE TANK

PRE-BID CONFERENCE

Tuesday, June 6, 2023

Thrasher Project #010-00428

Name	Representing	Phone #	Email Address
DUST SNIDERS	MAIN STREET BUILDERS	304 487 3912	T.C. SNIDER & OUTLOOK.COM
Justin Metheney	Bluerock Underground	304 - 893-4775	Justin.Metheney@Bluerockunderground.com
Rusty Sarver	Main Street Builders	304-487-3912	RustySarver@gmail.com
JOE PROSELY	Mid Atlantic Storage	740604-9479	joe@midatlanticstorage.com
RANDY RICHMOND	FANCO, INC.	304 890 6434	r.richmond.fanco@gmail.com
Luke Bihl	MASSI	740-604-2286	lb1h1@massi.us
Kevin Fuller	Primer Group	304-696-3356	kevin.f@primer.com
Travis Fuller	Premier Group	304) 646-3356 304-921-2283	travis.f@premier.com
Tommy Peyton	Reagan Enterprises	304-920-2211	travis.peyton@reagan-enterprises.com

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

*Town of Union
P.O. Box 13
Union, WV 24983*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Opening Requirements

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

The total Bid cost stated includes a complete operating installation including furnishing and installation of any and all changes or additions in plans, piping, mechanical work, additional electrical work, accessories, controls, etc. necessary to accommodate alternative equipment systems or materials used in construction.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the detailed Specifications and as shown on the Plans for the complete construction and placing in satisfactory operation the Contract #1 – Pickaway Waterline Extension. The Project "Sequence of Construction" has been detailed in the Drawings and Specification Division 1, Project Summary, Section 011000. The Bidder agrees to perform all the Work proposed for the total of the following Bid prices.

3.01 *Lump Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02 and shown in the bid schedule.

B. Lump Sum Bids may be one of the following:

1. Lump Sum Price (Single Lump Sum)
 2. Lump Sum Price (Base Bid and Alternates)
 3. Lump Sum Price (Sectional Lump Sum Bids)
- C. All specified cash allowance(s) are included in the price(s) set forth in the bid schedule, and have been computed in accordance with Paragraph 13.02 of the General Conditions.
- D. All specified contingency allowances are included in the price(s) set forth in the bid schedule, and have been computed in accordance with Paragraph 13.02 of the General Conditions.

3.02 *Unit Price Bids*

- A. Bidder will perform the following Work at the indicated unit prices as shown in the Bid Schedule.
- B. Bidder acknowledges that:
1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
 2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 *Total Bid Price (Lump Sum and Unit Prices)*

**PROPOSED
CONTRACT #1 – PICKAWAY WATERLINE EXTENSION
FOR THE**

**TOWN OF UNION
MONROE COUNTY, WEST VIRGINIA
THRASHER PROJECT #010-00428**

BID SCHEDULE

NOTE: Bid Unit Price amounts are to be shown in both words and figures. In case of discrepancy, the Bid Unit Price shown in words will govern. Bids shall include sales tax and all other applicable taxes and fees.

Bid Item	Quantity	Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
1	1 LS	Mobilization/Demobilization		
			Dollars	
			Cents	\$
				\$
2	1 LS	Erosion & Sediment Control		
			Dollars	
			Cents	\$
				\$

June 13, 2023

Bid Item	Quantity		Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
3	1	LS	Video Taping of Project Area		
			Dollars		
			Cents	\$	\$
4	21,100	LF	6" PVC Waterline, C-900, DR-18, Class 150		
			Dollars		
			Cents	\$	\$
5	1,800	LF	4" PVC Waterline, C-900, DR-18, Class 150		
			Dollars		
			Cents	\$	\$
6	1,300	LF	2" PVC Waterline, Class 250, SDR 17		
			Dollars		
			Cents	\$	\$
7	4,100	LF	3/4" and 1" PE Tubing Service Line, SDR-9, 200 psi		
			Dollars		
			Cents	\$	\$
8	11	EA	6" M.JT. Gate Valve Complete w/ Box and Lid		
			Dollars		
			Cents	\$	\$
9	1	EA	6" M.JT. Gate Valve Complete w/ Box and Lid, 5/8" x 3/4" Bypass Meter Assembly		
			Dollars		
			Cents	\$	\$
10	4	EA	4" M.JT. Gate Valve Complete w/ Box and Lid		
			Dollars		
			Cents	\$	\$
11	2	EA	2" M.JT. Gate Valve Complete w/ Box and Lid		
			Dollars		
			Cents	\$	\$

Bid Item	Quantity		Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
12	126	EA	5/8" x 3/4" Pressure Reducing Meter Installation		
				Dollars	
				Cents	\$
					\$
13	13	EA	Fire Hydrant Assembly, Complete		
				Dollars	
				Cents	\$
					\$
14	10	EA	Fire Hydrant Extension		
				Dollars	
				Cents	\$
					\$
15	3	EA	Flushing Hydrant		
				Dollars	
				Cents	\$
					\$
16	85	LF	12" Steel Casing Pipe (Bore & Jack)		
				Dollars	
				Cents	\$
					\$
17	96	LF	12" Steel Casing Pipe (Open Cut)		
				Dollars	
				Cents	\$
					\$
18	80	LF	12" PVC SCH 40 (Open Cut)		
				Dollars	
				Cents	\$
					\$
19	68	LF	4" Steel Casing Pipe (Bore & Jack)		
				Dollars	
				Cents	\$
					\$
20	720	LF	2" PVC Casing for 1" Service Line		
				Dollars	
				Cents	\$
					\$

June 13, 2023

Bid Item	Quantity		Description with Unit Price Written In Words	Unit Price (In Figures)	Total Price (In Figures)
21	1400	LF	HMA Driveway/Road Repair		
			Dollars		
			Cents	\$	\$
22	1400	LF	Gravel Driveway/Road Repair		
			Dollars		
			Cents	\$	\$
23	1	LS	Tank Site Road with Farm Gate and Fencing		
			Dollars		
			Cents	\$	\$
24	1	LS	Check Valve Vault		
			Dollars		
			Cents	\$	\$
25	1	LS	UTC Tank Site Valve Vault Modifications		
			Dollars		
			Cents	\$	\$
26	24,000	LF	WVDOH Inspection Fees		
			Dollars		
			Cents	\$	\$
27	3	EA	1" Air Release Valve Assembly, Complete		
			Dollars		
			Cents	\$	\$

TOTAL BID: _____
 _____ (Words)
 _____ (\$ _____) (Figures)

(Bid Unit Price amounts are to be shown in both words and figures. In case of discrepancy, the Bid Unit Price shown in words will govern.)

3.04 *Method of Award*

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceeds such amount, the owner may reject all bids.

- A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

~~ARTICLE 4 — BASIS OF BID — COST PLUS FEE~~

4.01 ~~The Contract Price will be the Cost of the Work, determined as provided in Paragraph 13.01 of the General Conditions, together with the following fee, and subject to the Guaranteed Maximum Price.~~

4.02 *Contractor's Fee*

- ~~A. Contractor's fee will be [number] percent of the Cost of the Work. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions.~~
 - ~~1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.~~
- ~~B. Contractor's fee will be determined by applying the following percentages to the various portions of the Cost of the Work as defined in Article 13 of the General Conditions. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions:~~

Costs	Percent
Payroll costs (See Paragraph 13.01.B.1, General Conditions)	
Materials and Installed Equipment cost (GC 13.01.B.2)	
Amounts to be paid to Subcontractors (GC 13.01.B.3)	
Amount to be paid to special consultants (GC 13.01.B.4)	
Other costs (GC 13.01.B.5)	

- ~~1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.~~
- ~~C. Contractor's fee will be the fixed sum of \$[number].~~

4.03 *Guaranteed Maximum Price*

- ~~A. The Guaranteed Maximum Price to Owner of the Cost of the Work including Contractor's Fee will not exceed \$[Bidder fill in GMP].~~

Deleted

~~ARTICLE 5—PRICE PLUS TIME BID~~

5.01 ~~Price Plus Time Contract Award (Stipulated Price Contract)~~

- ~~A. The Bidder to which an award of the Contract will be made will be determined in part on the basis of the Total Bid Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Total Bid Price		#{number}
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	#{number}/day	
B	4. Adjustment Amount (2 x 3)		#{number}
A+B	5. Amount for Comparison of Bids		#{number}

- ~~B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is the Total Bid Price.~~

- ~~C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

5.02 ~~Price Plus Time Contract Award (Cost Plus Fee with Guaranteed Maximum Price Contract)~~

- ~~A. The Bidder to which an award of Contract will be made will be determined in part on the basis of the Guaranteed Maximum Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Guaranteed Maximum Price		#{number}
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	#{number}/day	
B	4. Adjustment Amount (2 x 3)		#{number}
A+B	5. Amount for Comparison of Bids		#{number}

- ~~B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is based on the cost of the Work, plus a fee, subject to a guaranteed maximum price, as set forth in the Agreement.~~

- ~~C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

Deleted

ARTICLE 6—TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

- 6.02 Bidder agrees that the Work will be substantially complete on or before **[Bidder inserts date]**, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **[Bidder inserts date]**.

Deleted

June 13, 2023

- 6.03 ~~Bidder agrees that the Work will be substantially complete within [Bidder inserts number] calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within [Bidder inserts number] calendar days after the date when the Contract Times commence to run.~~

Deleted

- 6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information,

June 13, 2023

observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

WAGE RATES

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"General Decision Number: WV20230020 05/26/2023

Superseded General Decision Number: WV20220020

State: West Virginia

Construction Type: Building

County: Monroe County in West Virginia.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	02/03/2023

2 02/17/2023
3 05/26/2023

Revised per Addendum #1
June 13, 2023

* ASBE0080-002 02/27/2023

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 34.50	29.27

BOIL0667-005 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 41.63	26.38

BRWV0009-001 12/01/2021

	Rates	Fringes
BRICK POINTER/CAULKER/CLEANER....	\$ 30.15	25.24

BRWV0015-010 06/01/2021

	Rates	Fringes
MASON - STONE.....	\$ 30.25	24.58

CARP0439-005 12/01/2022

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Scaffold Builder and Floor Laying - Carpet, Hardwood, Resilient and Vinyl; Excluding Form Work).....	\$ 31.26	25.05

CARP0443-009 05/01/2021

	Rates	Fringes
MILLWRIGHT.....	\$ 35.50	26.75

ENGI0132-007 12/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
GROUP 1.....	\$ 44.56	21.15
GROUP 2.....	\$ 44.21	21.15
GROUP 3.....	\$ 43.21	21.15
GROUP 4.....	\$ 32.71	21.15

GROUP 1: All Friction Cranes, Tower Cranes and all Cranes
with 180 ft. or more of boom including mast and jibs or
lifting capacity of 100 tons or more and hoists with 30,000
pound line pull or more

GROUP 2: Operating Cranes and Tower Cranes with a lifting
capacity of 15 tons and over

GROUP 3: Backhoe, all other Cranes

GROUP 4: Bobcat/Skid Steer/Skid Loader, Roller, Oiler

IRON0549-006 12/01/2022

	Rates	Fringes
IRONWORKER (Ornamental).....	\$ 35.19	25.66

IRON0787-006 06/01/2022

	Rates	Fringes
IRONWORKER (Reinforcing).....	\$ 31.50	23.75

LAB00379-019 12/01/2020

	Rates	Fringes
LABORER Wacker Roller Operator.....	\$ 26.32	16.50

LAB00453-006 12/01/2017

	Rates	Fringes
LABORER Common or General.....	\$ 22.76	16.75
Concrete Saw (Hand Held/Walk Behind).....	\$ 22.76	16.75
Grouting.....	\$ 22.76	16.75

LAB00543-003 06/01/2020

	Rates	Fringes
LABORER.....	\$ 25.41	16.75

LABORER CLASSIFICATIONS

Asphalt Raker, Jack Hammer, Motorized Buggy Operator, Water
Boy

LAB00984-005 12/01/2020

	Rates	Fringes
LABORER Group 2.....	\$ 21.94	15.75

LABORER CLASSIFICATIONS

GROUP 2: Airtool Operator, Asbestos Abatement (Removal from
Floors, Walls, and Ceiling), Bobcat Operator (Clean
up/Demolition), Dewatering, Rodman, Skytrak Forklift
Operator

PAIN0970-007 12/01/2022

	Rates	Fringes
PAINTER (Drywall Finishing/Taping).....	\$ 30.85	17.80

	Rates	Fringes
GLAZIER.....	\$ 32.00	12.22

PLAS0926-007 06/01/2018

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.63	21.26

PLAS0926-008 06/01/2018

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.63	21.26
PLASTERER.....	\$ 30.06	20.36

* UAVG-WV-0001 01/01/2021

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 29.81	23.45

* UAVG-WV-0002 01/01/2019

	Rates	Fringes
LABORER (Carpenter Tender).....	\$ 23.32	16.12
LABORER (Chipping Gun).....	\$ 24.78	16.25
LABORER (Concrete Worker).....	\$ 23.57	16.17
LABORER (Grade Checker).....	\$ 23.45	16.16
LABORER (Landscape).....	\$ 22.99	16.35
LABORER (Mortar Mixer).....	\$ 23.35	16.06
LABORER (Pipelayer).....	\$ 23.94	16.34
LABORER (Scaffold Builder).....	\$ 23.28	16.24
LABORER (Tamper - Hand Held).....	\$ 24.75	16.04

* UAVG-WV-0028 01/01/2019

	Rates	Fringes
PLUMBER.....	\$ 32.54	24.58

SUWV2012-018 08/13/2012

	Rates	Fringes
BRICKLAYER.....	\$ 27.50	12.35
ELECTRICIAN.....	\$ 28.16	15.11
IRONWORKER, STRUCTURAL.....	\$ 26.01	12.18
LABORER: Demolition.....	\$ 20.58	9.47
LABORER: Mason Tender - Brick...	\$ 21.47	8.29
LABORER: Mason Tender - Cement/Concrete.....	\$ 22.05	8.54
OPERATOR: Bulldozer.....	\$ 30.24	10.26
OPERATOR: Excavator.....	\$ 30.31	10.81

OPERATOR: Forklift.....	\$ 33.09	3.00
PAINTER: Brush, Roller and Spray.....	\$ 22.03	9.95
PIPEFITTER, Includes HVAC Pipe Installation\.....	\$ 27.64	18.09
ROOFER.....	\$ 24.28	9.32
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 25.61	15.68
Truck Driver: Single and Double Axle Dump Trucks.....	\$ 28.52	3.00

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were

prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter

* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

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"General Decision Number: WV20230061 01/27/2023

Superseded General Decision Number: WV20220061

State: West Virginia

Construction Type: Heavy

Counties: Barbour, Braxton, Calhoun, Fayette, Gilmer, Greenbrier, Jackson, Lewis, Mason, McDowell, Mingo, Monroe, Nicholas, Pendleton, Pocahontas, Randolph, Ritchie, Roane, Summers, Tucker, Upshur, Webster and Wyoming Counties in West Virginia.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

0 01/06/2023
1 01/27/2023

Revised per Addendum #1
June 13, 2023

CARP0443-008 05/01/2021

	Rates	Fringes
MILLWRIGHT.....	\$ 35.50	26.75

* ELEC0307-008 11/28/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 37.00	18.77

ENGI0132-014 12/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
GROUP 1.....	\$ 39.95	19.55
GROUP 2.....	\$ 37.19	19.55
GROUP 3.....	\$ 36.08	19.55
GROUP 4.....	\$ 32.62	19.55

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Cranes (All types), Boom trucks, Loaders of six (6) cubic yard capacity and over, Excavators and shovels with an operating weight of one hundred ten thousand (110,000) pounds and over.

GROUP 2: Loaders up to six (6) cubic yard capacity, Backhoe, Bulldozers, Bobcat/Skid Steer/Skid Loader, Forklift, Drill, Excavators and shovels with an operating weight of up to one hundred ten thousand (110,000) pounds

GROUP 3: Roller.

GROUP 4: Oiler

ENGI0132-027 12/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
(PIPELINE)		
GROUP 1.....	\$ 39.95	19.55
GROUP 2.....	\$ 37.19	19.55

POWER EQUIPMENT OPERATOR PIPELINE CLASSIFICATIONS

GROUP 1: Boom, Bulldozer, Excavator, Mechanic, Pipe Bending Machine

GROUP 2: Oiler.

ENGI0132-029 12/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Single and Double Axle		

Dump Trucks.....	\$ 37.19	19.55
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IRON0549-011 12/01/2022

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 35.19	25.66

IRON0568-020 12/01/2020

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 33.70	22.04

LAB00379-040 12/01/2020

	Rates	Fringes
LABORER: (PIPELINE).....	\$ 25.26	16.50

LABORER CLASSIFICATIONS:

Chain Saw, Common, Flagger, Landscape, Pipelayer, Sandblaster

LAB00379-043 12/01/2021

	Rates	Fringes
LABORER:		
GROUP 1.....	\$ 27.35	16.50
GROUP 2.....	\$ 26.32	16.50
GROUP 3.....	\$ 25.26	16.50

GROUP 1: Tunnel Driller, Tunnel Miner.

GROUP 2: Air Tool Operator, Chain Saw, Compactor (Dirt) Hand
Held, Concrete Worker, Hand Held Drill, Form Work Only,
Grade Checker, Grouting, Pipelayer, Skytrak Forklift
Operator, Tamper (Hand Held), Wacker Roller Operator.

GROUP 3: Carpenter Tender, Common or General, Flagger,
Landscape

PLAS0926-001 06/01/2018

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.63	21.26

* UAVG-WV-0010 01/01/2019

	Rates	Fringes
LABORER (Mason Tender - Cement/Concrete).....	\$ 26.17	16.50

* UAVG-WV-0012 01/01/2019

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Mechanic).....	\$ 35.45	18.30

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at
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(weighted union average rate).

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the union which prevailed in the survey for this
classification, which in this example would be Plumbers. 0198
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where applicable, i.e., Plumbers Local 0198. The next number,
005 in the example, is an internal number used in processing
the wage determination. 07/01/2014 is the effective date of the
most current negotiated rate, which in this example is July 1,
2014.

Union prevailing wage rates are updated to reflect all rate
changes in the collective bargaining agreement (CBA) governing
this classification and rate.

Survey Rate Identifiers

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
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Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

Revised per Addendum #1
June 13, 2023

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

"General Decision Number: WV20230080 01/06/2023

Superseded General Decision Number: WV20220080

State: West Virginia

Construction Type: Highway

Counties: West Virginia Statewide.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

SUVV2015-001 01/01/2014

	Rates	Fringes
BRICKLAYER		
Barbour, Berkeley, Doddridge, Gilmer, Grant, Hampshire, Hardy, Harrison, Jefferson, Lewis, Marion, Mineral, Monongalia, Morgan, Pendleton, Pocahontas, Preston, Randolph, Taylor, Tucker, Upshur, Webster.....\$ 30.74		18.21
Boone, Braxton, Clay, Fayette, Greenbrier, Kanawha, Logan, McDowell, Mercer, Monroe, Nicholas, Putnam, Raleigh, Summers, Wyoming.....\$ 29.66		20.20
Brooke, Hancock.....\$ 29.94		16.22
Cabell, Lincoln, Mason, Mingo, Wayne.....\$ 30.61		20.88
Calhoun, Jackson, Pleasants, Ritchie, Roane, Wirt, Wood.....\$ 30.33		15.27
Marshall, Ohio, Tyler, Wetzel.....\$ 30.01		16.26
CARPENTER		
Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan, Pendleton.....\$ 31.26		15.90
Brooke, Hancock, Marshall, Ohio.....\$ 27.86		19.30
Remaining Counties.....\$ 27.72		19.44
CEMENT MASON/CONCRETE FINISHER		
All Counties.....\$ 28.67		18.85
DIVER		
Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan, Pendleton		
Diver Tender.....\$ 31.26		15.90
Diver.....\$ 32.25		15.90
Brooke, Hancock, Marshall, Monongalia, Ohio, Wetzel		
Diver Tender.....\$ 32.01		16.76
Diver.....\$ 48.02		16.76
Remaining Counties		
Diver Tender.....\$ 27.72		19.44
Diver.....\$ 28.27		19.44
ELECTRICIAN (SIGNAL & LIGHTING)		
Equipment Operator.....\$ 23.30		17.99
Flagger.....\$ 17.00		7.39
Groundman/Truck Driver.....\$ 20.79		17.89
Installer.....\$ 26.21		18.11

Technician.....	\$ 29.12	18.22
ELECTRICIAN		
Barbour, Doddridge, Harrison, Lewis, Marion, Monongalia, Pendleton, Pocahontas, Preston, Randolph, Taylor, Tucker, Upshur.....	\$ 30.14	21.14
Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan.. Boone, Braxton, Calhoun, Clay, Fayette, Gilmer, Kanawha, Nicholas, Putnam, Raleigh, Roane, Summers, Webster, Wyoming.....	\$ 30.50	15.78
Boone, Braxton, Calhoun, Clay, Fayette, Gilmer, Kanawha, Nicholas, Putnam, Raleigh, Roane, Summers, Webster, Wyoming.....	\$ 35.34	16.62
Brooke, Marshall, Ohio, Wetzel.....	\$ 28.35	22.74
Cabell, Lincoln, Logan, Mason, Mingo, Wayne.....	\$ 32.62	21.70
Greenbrier, McDowell, Mercer, Monroe.....	\$ 25.05	16.32
Hancock.....	\$ 34.00	29.10
Jackson, Pleasants, Ritchie, Tyler, Wirt, Wood..	\$ 31.56	21.43

IRONWORKER		
Barbour, Brooke, Hancock, Harrison, Marion, Marshall, Monongalia, Ohio, Taylor, Tyler, Wetzel..	\$ 35.74	22.84
Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan, Pendleton, Preston, Tucker.....	\$ 33.29	17.39
Boone, Braxton, Clay, Fayette, Kanawha, Lincoln, Logan, McDowell, Mingo, Nicholas, Putnam, Raleigh, Randolph, Webster, Wyoming.. Cabell, Wayne.....	\$ 34.87	19.50
Calhoun, Doddridge, Gilmer, Jackson, Lewis, Mason, Pleasants, Ritchie, Roane, Upshur, Wirt, Wood... Greenbrier, Mercer, Monroe, Pocahontas, Summers..	\$ 33.02	20.10
	\$ 35.43	16.13

LABORER		
Class 1.....	\$ 26.95	16.30
Class 2.....	\$ 25.92	16.30
Class 3.....	\$ 24.86	16.30

LABORER CLASSIFICATIONS:

GROUP 1: Powderman, Laser Screed Operator, and GPS Operator.
GROUP 2: Pipelayer (Including Laser Beam Set Up), Form Setter (Road), Drill Operator, Air Tool Operator, Grade Checker and Asphalt Raker, Vibrator Man, Whacker, Chainsaw Operator, Mortarman, Brick Mason Tender, Cement Finisher Tender, Drill Tender, Powderman Tender, Water Proofer, Sheeter & Shorer, Placement of Lagging, Pipelayer Tender, Bull-Float Man, Pavement Reinforcing Placer, Handyman, Signal Man, Greencutter, Georgia Power Buggy, Burner, Cement Blower Man, Bituminous Hand Sprayer, Bork 250 Remote Control Ditch Witch

and Walk Behind Concrete Saw, Mulcher and Seeder (hand and machine), Installation of Ground Mounted Beams and Signs including Concrete Footers, Installation of Overhead Sign Supports and Signs including Concrete Footers, Installation of Guardrail and Anchors Assemblies, Tree Trimmer, Caisson Bottom Man, Bush Hammering, Core Drilling, Placement and Mixing of Grout and Bridge Demolition Specialist.**
GROUP 3: Flag Person, Traffic Control Maintenance Person, Carpenter's Tender, and General Laborer.

PAINTER

Barbour, Berkeley,		
Doddridge, Gilmer, Grant,		
Hampshire, Hardy,		
Harrison, Jefferson,		
Lewis, Marion, Mineral,		
Monongalia, Morgan,		
Pendleton, Preston,		
Randolph, Taylor, Tucker,		
Upshur, Webster.....\$ 31.87	14.20	
Boone, Braxton, Cabell,		
Calhoun, Clay, Fayette,		
Greenbrier, Kanawha,		
Lincoln, Logan, Mason,		
McDowell, Mercer, Mingo,		
Monroe, Nicholas,		
Pocahontas, Putnam,		
Raleigh, Summers, Wayne,		
Wyoming.....\$ 32.05	14.30	
Brooke, Hancock, Marshall,		
Ohio, Wetzel.....\$ 30.95	14.36	
Jackson, Pleasants,		
Ritchie, Roane, Tyler,		
Wirt, Wood.....\$ 30.84	14.30	

PILEDRIVERMAN

Berkeley, Grant,		
Hampshire, Hardy,		
Jefferson, Mineral,		
Morgan, Pendleton.....\$ 32.25	15.90	
Brooke, Hancock, Marshall,		
Monongalia, Ohio, Wetzel....\$ 32.01	16.76	
Remaining Counties.....\$ 28.27	19.44	

POWER EQUIPMENT OPERATOR:

Class 1.....\$ 33.25	18.60
Class 2.....\$ 30.49	18.60
Class 3.....\$ 29.38	18.60
Class 4.....\$ 25.92	18.60
Class 5A.....\$ 26.04	18.60
Class 5B.....\$ 28.64	18.60
Class 5C.....\$ 26.94	18.60

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Cranes, tower cranes, derricks, derrick boats, draglines, clamshells, cableways, boom truck, loaders of 6 cubic yard capacity and over, excavators and shovels with an operating weight of 110,000 pounds and over.
GROUP 2: Loaders up to 6 cubic yard capacity, gradall, hoist 2 drums or more, mixer plant (2 or more mixers including batch control), pile driver operator, core drill, trencher, backhoe, asphalt paver, cement paver, rotary drill, bulldozers, concrete pump, controlled fine grade machine, slip form paver, log loader, log skidder, motor grader, rubber tired scraper, tractor pan, Roto Miller, tow or work boat, mobile conveyor, transloader, articulating equipment, material hauler, carry

deck, compactor with blade, skidsteer including attachments, fork lift, self-propelled concrete spreader, concrete finishing machine, derrick (single drum), hoist (single drum), single drum paver, air tugger, Ross Carrier, multiple concrete saw, hydraulic post driver, horizontal road-boring machine, tie distributor, track lining machine, ballast tamper, anchor application machine, ribbon rail puller, ballast regulator, auto sled, turn table, pavement breaker, asphalt batch plant, concrete batch plant, crushing plant, compactor with blade, power broom, vac-all truck, self-propelled concrete spreader and concrete finishing machine, mechanics with tools and greasers, excavators, and shovels with an operating weight of up to 110,000 pounds.

GROUP 3: Asphalt roller

GROUP 4: Air compressor, concrete mixer (under 1 cubic yard), light plant, mechanic's tender, assistant engineer, screedman, spreader box man, joint sealer and pump, steam jenny, stationary conveyor (belt or bucket), A-frame, tire man, screening and washing plant, form sub-grader, power form handling equipment, burlap and curing machine, form grader, bull float, bar and joint installing machine, roller and compactor, hydroblaster, concrete mixer (single drum, 1 cu. yd. or over), portable concrete saw and highway striping operator. Utility operators shall be paid Group 2 rate when operating 1 to 5 air compressors, pumps, stationary conveyors (belt or bucket), light plants, and gasoline or diesel powered welders and all farm type tractors.

GROUP 5A: Those operating off-road trucks in the following counties: Barbour, Braxton, Boone, Calhoun, Clay, Doddridge, Fayette, Gilmer, Greenbrier, Harrison, Jackson, Kanawha, Lewis, Marion, Mercer, McDowell, Monongalia, Monroe, Nicholas, Pleasants, Pocohontas, Preston, Putnam, Raleigh, Randolph, Roane, Ritchie, Summers, Taylor, Tucker, Tyler, Upshur, Webster, Wirt, Wood, and Wyoming.

GROUP 5B: Those operating off-road trucks in the following counties: Cabell, Lincoln, Logan, Mason, Mingo, and Wayne.

GROUP 5C: Those operating off-road trucks in the following counties: Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan and Pendleton.

FOOTNOTE: \$2.00 per hour shall be added to the Group 1 rate for individuals operating a lattice boom crane with a fixed boom of 150 feet or more. \$0.25 per hour shall be added to all of the above schedules for underground work.

TRUCK DRIVER

Berkeley, Grant,		
Hampshire, Hardy,		
Jefferson, Mineral,		
Morgan, Pendleton		
Class 1.....	\$ 25.72	18.11
Class 2.....	\$ 26.61	18.11
Class 3.....	\$ 27.38	18.11
Brooke, Hancock		
Class 1.....	\$ 29.17	13.86
Class 2.....	\$ 30.92	13.86
Class 3.....	\$ 31.71	13.86
Cabell, Lincoln, Logan,		
Mason, Mingo, Wayne		
Class 1.....	\$ 29.79	15.60
Class 2.....	\$ 30.76	15.60
Class 3.....	\$ 31.55	15.60
Marshall, Ohio, Wetzel		
Class 1.....	\$ 26.26	16.81
Class 2.....	\$ 27.16	16.81
Class 3.....	\$ 27.76	16.81

Remaining Counties

Class 1.....	\$ 26.97	16.15
Class 2.....	\$ 27.76	16.15
Class 3.....	\$ 28.44	16.15

TRUCK DRIVER CLASSIFICATIONS:

GROUP 1: Single Axle Trucks used as Dumps, Supply, Fuel, Water, Van, Flatbody, Monorail, Distributor (other than Bituminous Distributors) including Towed Single Units, Material Checkers and Receivers, Greasers, Tireman and Mechanic Tenders (Trucks), Warehouse, Yardmen and Pick-up trucks.

GROUP 2: Tandem and Tri-Axle Trucks used as Dumps, Supply, Fuel, Water, Van, Flatbody, Monorail and including Towed Single Units, Truck Tractors used in combination with Dump, Van, Tank, Flatbed, Low platform or Pole Trailers, Bituminous Distributors, Agitator or Mixer Trucks (up to 20 cubic-yards), Rubber-tired tractors (towing and pushing), Drag and Tag-alongs.

GROUP 3: Mobile Metered Mixer, Agitator or Mixer Trucks (over 20 cubic yards), & Mechanic Truck.

A. Double Hitch equipment operated by 1 driver shall pay 50% more than the wages set out above.

B. \$0.25 per hour shall be added for tunneling and all other underground work.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year.

Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at

<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local),

a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

636 - Temporary Traffic Signals

Effective Date: July 24, 2019

Materials Code 715.009.002

Contact: daniel.ellars@wv.gov

Producer/Supplier Model Approval Number

ADDCO LLC (ADD1.01.636)	PTS-2000	1363084A
Horizon Signal Technologies (HST1.01.660)	SQ3TS	1392834A
Horizon Signal Technologies (HST1.01.660)	*SQ2 w/AV Signal Controller	1392835A
North America Traffic (NAT2.01.636)	PTL 2.4x	1424050A
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**GUIDELINES FOR THE USE OF
PORTABLE TRAFFIC SIGNALS**
IN RURAL TWO-LANE MAINTENANCE OPERATIONS

by

Ginger Daniels, P.E.
Texas Transportation Institute

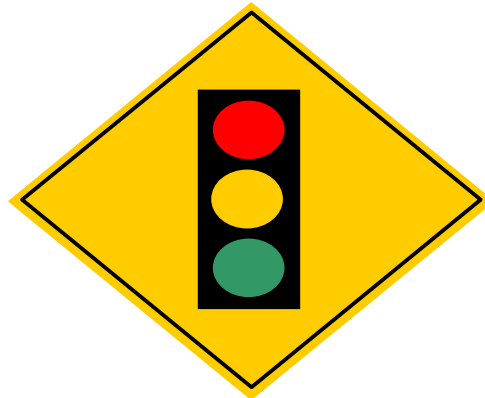
Steve Venglar, P.E.
Texas Transportation Institute

And

Dale Picha, P.E.
Texas Transportation Institute

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DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. Not intended for construction, bidding, or permit purposes. The engineer in charge of the project was Ginger Daniels, Texas P.E. #64560.

This document contains information about the programming of portable traffic signal control devices in rural, two-lane maintenance work zones. The Texas Manual on Uniform Traffic Control Devices (TMUTCD) specifies that such portable signals are subject to the same standards as permanent signal installations. This field guide should not be widely distributed until TxDOT resolves conflicting language in the TMUTCD between the requirement for engineering studies for signal installation/operation and the practical daily application of portable traffic signals in maintenance work zones. Otherwise, the proposed field setup and signal timings entered into the portable signal controllers must be appropriately determined by an engineering study (i.e., they must be approved by an engineer). Revisions to the TMUTCD will be necessary before the guidelines within this document can be fully implemented.

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How to use this guidebook.....

The purpose of this document is to provide guidelines for the application of portable traffic signals in short-term maintenance projects on rural two-lane highways.

This guidebook serves as a supplement to the operator’s manual for your specific equipment and is not a replacement for the detailed equipment operating information supplied by the manufacturer.

You will find guidelines in this document on:

- **the types of maintenance projects best suited for portable traffic signals,**
- **how to set up work zones using portable traffic signals,**
- **the different modes of signal operation, and**
- **how to determine signal timings for setting the controllers.**

This guidebook was developed in conjunction with Research Project 7-3926, “Study and Evaluate the Use of Temporary Traffic Signals to Replace Flaggers for Maintenance Operations.” More detailed information and the basis for the guidelines presented in this document can be found in Research Report 3926-1 [\(1\)](#).

TABLE OF CONTENTS

List of Figures	x
List of Tables	xi
Section 1 - Applicability of Portable Signals in Two-Lane Rural Work Zones	1
Overview.....	1
Benefits of Using Portable Signals in Place of Flaggers	2
Types of Maintenance Projects.....	2
Guidelines for General Use in Routine Maintenance	3
Section 2 - Setting Up the Work Zone	5
Field Inventory	5
Basic Guidelines for Work Zone Traffic Control Devices	6
Night Closures.....	6
Site Specific Considerations	8
Determining Length of the Work Zone	8
Designing for Sight Distance.....	8
Handling Intersecting Streets and Driveways.....	10
Dealing with Work Zone Speeds	10
Section 3 - Operation of the Portable Traffic Signals	11
How They Work	11
Signal Modes of Operation	12
Guidelines for Determining Signal Timing Parameters	14
Verification of Phase Timings	17
Field Check of Phase Timings	18
Flashing Operation	21
Section 4 - Glossary of Signal Terminology	23
Section 5 - References	25

LIST OF FIGURES

	Page
Figure 1. Field Setup of Portable Traffic Signals	1
Figure 2. Portable Traffic Signal Installation for Temporary Work Zone Control.....	5
Figure 3. Placement of Traffic Control Devices for Short-Term Stationary Maintenance Work Using Portable Traffic Signals	7
Figure 4. Driver Line of Sight Impeded by Horizontal Geometry and Roadside Objects	8
Figure 5. Driver Line of Sight Impeded by Vertical Geometry.....	8
Figure 6. Lengthening a Work Zone to Provide Adequate Line of Sight.....	9
Figure 7. Complete Signal Cycle for Portable Traffic Signal Installation.....	11
Figure 8. Computation of Maximum Wait Time for Portable Signals in Rural Two-Lane Maintenance Work Zone	20

LIST OF TABLES

	Page
Table 1. Decision Sight Distance (4)	9
Table 2. Portable Traffic Signal Phases for Work Zone Application	14
Table 3. Green Phase Time Setting Per Approach.....	15
Table 4. Yellow Change Intervals for Various Speed and Grade Combinations (5)	16
Table 5. Work Zone Travel Time for Various Speeds and Work Zone Lengths.....	17
Table 6. Conditions for Type of Flashing Operation for Portable Traffic Signals	21

SECTION 1

APPLICABILITY OF PORTABLE SIGNALS IN TWO-LANE RURAL WORK ZONES

OVERVIEW

Portable traffic signals (see [Figure 1](#)) have been used on two-lane bridge construction projects throughout the state. Typically these projects have lasted a minimum of three months in duration and had work zone lengths ranging from 400 to 1200 feet, with clear line of sight through the work zone. The valuable experience gained from these projects has contributed to the awareness of this technology and its transferability to short-term lane closures.



Figure 1. Field Setup of Portable Traffic Signals.

There are, however, characteristics unique to daily lane closures operated with portable traffic signals. Maintenance work can be carried out more efficiently in longer work zones than those found in the construction projects. Longer work zone lengths, in turn, can create concerns regarding sight distance and the amount of time motorists must wait for opposing traffic to clear the work zone before proceeding.

Many of the same safety concerns found in flagging operations for maintenance work are still present in signal-operated work zones. These concerns are as follows:

- opportunities for limited sight distance;
- excessive motorist delay time;
- intersecting streets and driveways; and
- high speeds through the work zone.

One of the safety concerns related to flagging that is alleviated with portable signals is the exposure of flagging personnel to vehicular conflicts. Guidelines for addressing the general safety and operational concerns with signal-operated work zones are provided in this document. Specific guidance is provided on the signal operation aspect of this technology.

BENEFITS OF USING PORTABLE SIGNALS IN PLACE OF FLAGGERS

The guidelines presented in this report were developed in part based on field testing experience. The following lists advantages of portable signals over flagging, as expressed by maintenance personnel who were involved in the test projects.

- Traffic signals communicate more directly with motorists than flaggers: red means “stop” and green means “go.” Drivers tend to have a clearer understanding of and greater familiarity with traffic signals.
- Portable signals allow flaggers to do other work that is needed within the work zone.
- More work can be accomplished at a faster rate with the flagging personnel performing other tasks.
- Maintenance personnel are not exposed to vehicle conflicts and do not have to deal directly with angry motorists; there is no longer a need to rotate flaggers every two hours to prevent fatigue and stress.
- Maintenance work that affects the open traffic lane, such as reorienting equipment or applying a tack coat near the edge of the lane, can be coordinated much easier with the operation of the signals than with flaggers, especially with signal features that allow remote monitoring from within the work area.

TYPES OF MAINTENANCE PROJECTS

Many of the routine maintenance projects that would require flagging operations are candidates for portable signals. Emergencies and special events are also situations where the availability of portable signals can be advantageous.

Pavement Repair

All types of pavement repair work on two-lane roadways that would require flagging operation – including blade work on pavement or shoulders, base repairs, and surface repairs – are candidates for portable traffic signals. Pavement repair is the most common activity for which portable signals are used.

Roadside Maintenance

Roadside work, such as guardrail repair and ditch maintenance that requires one lane to be closed, are candidate projects.

Bridge Maintenance

Bridge work that requires a lane closure, such as bridge rail repairs and slope repairs, are applicable projects.

Emergencies

Portable signals are especially useful in situations where an emergency requires that a lane be closed for an extended period of time and/or overnight. Culvert washouts, emergency pavement failures, and roadway obstructions are examples.

Special Events

Portable signals can be set up in situations when a heavy influx of traffic is expected for an event, and signalized control is needed where it would not otherwise be required. Examples are festivals and sporting events. This field book does not provide specific guidelines on the use of portable signals for special events or for the application of portable signals at three-way or four-way intersections.

GUIDELINES FOR GENERAL USE IN ROUTINE MAINTENANCE

The efficiency and effectiveness of portable signals for two-lane work zones are maximized under these general conditions:

- **The routine maintenance work is at least a half-day project.**

The total time to set up the signals and put them into operation is approximately 45 minutes. It is true that other equipment mobilization and work area setup activities can take place simultaneously. Nonetheless, it is not cost effective to mobilize the signal trailers for projects of extremely short duration.

- **The equipment is used a minimum of eight to ten working days per month.**

Based on the efficiencies gained from its use, this general rule-of-thumb assures that the return on investment from the equipment occurs in a two-year time frame. The more frequently the signals can be used, the more quickly they pay for themselves and begin realizing savings. Sharing the equipment among adjoining maintenance sections to increase their frequency of use in turn increases the return on the investment. Conversely, less frequent use will result in a longer payback period and a longer time horizon before annual savings begin.

SECTION 2

SETTING UP THE WORK ZONE

FIELD INVENTORY

Before using the portable signals on a routine maintenance project, a field survey must be conducted to assess roadway and traffic conditions. This survey should be conducted on a day and time where traffic conditions will be similar to that experienced during the project. The information collected will be important in designing the work zone and in determining signal timing.

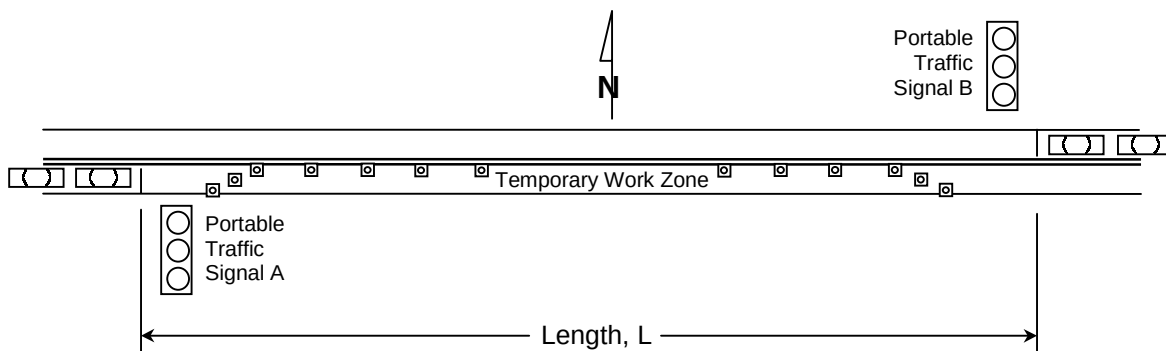


Figure 2. Portable Traffic Signal Installation for Temporary Work Zone Control.

As a minimum, the following field information should be recorded, some of which are described in more detail later in this guide:

1. **Identify locations for portable signal trailer units.** Check for level, stable shoulder areas, or clear zone space to place the trailers. Record the length between the proposed trailer locations. The practical maximum length of activity area for one-way traffic signal control should not exceed 2600 feet. Shorter lengths are desirable, especially if the activity area is on a roadway with limited sight distance and/or if higher volumes would encourage red-light violations. Signal timing (discussed later in this manual) may also limit the length of the work zone.
2. **Check the locations for adequate visibility of the signals as motorists approach them.** The signal locations will have to be adjusted if minimum sight distance guidelines are not met.
3. **Note the presence of intersecting streets and driveways.** As in a flagging operation, work zone limits should be established so that high-volume driveways and intersections with county/state routes are not located within the activity area. During the actual work, a maintenance technician will be required on the ground to help coordinate traffic flow should a driveway or street intersect the

work zone. Prior notification of adjacent property owners is a good way to avoid problems related to driveways and should aid in the improvement of driver compliance.

4. **Record traffic conditions.** For each direction of traffic, count the number of vehicles passing a stationary point during four-minute intervals. This is one measure to determine how many vehicles would be expected to queue at the signal. Document the flow of traffic between the two directions: is the flow evenly split between the two lanes, or is it uneven and favoring one direction over another? These conditions may change during the course of the day, and if so, traffic conditions at those times should be recorded as well.
5. **Document the speed at which motorists are approaching the proposed work zone.** The speed on approach is an important factor in determining sight distance requirements. It also is necessary as the basis for determining work zone speeds, which in turn is important for developing signal timing.

BASIC GUIDELINES FOR WORK ZONE TRAFFIC CONTROL DEVICES

Figure 3 shows the typical work zone layout using portable signals and the approach signs that are required. Here are additional considerations for work zone setup:

1. Use of portable signals does not preclude having flaggers present at locations within the work area where sight distances may be limited in one or both directions, or where high volume driveways or intersections are located within the work area.
2. Temporary traffic control signals shall meet the physical display and operational requirements of conventional traffic signals. Signal timing shall be established by qualified personnel and in accordance with established guidelines presented in this implementation guide.
3. Stop lines 24 inches wide and made of a removable material may be installed. Due to the short-term nature of the work, it is not practical to remove/cover other permanent pavement markings and raised pavement marking reflectors. After completion of the work, the stop lines shall be removed.

Night Closures

Portable signals are especially useful in situations where an emergency requires that a lane be closed for an extended period of time and/or overnight. For overnight use of portable signals, follow the guidelines found in the Texas Manual on Uniform Traffic Control Devices (TMUTCD)(2), Sections 6H-36 and 6H-37. These standards provide for illumination, pavement markings, and other important requirements necessary for nighttime operation. Clear line of sight from one end of the work zone to the other is important for overnight operations.

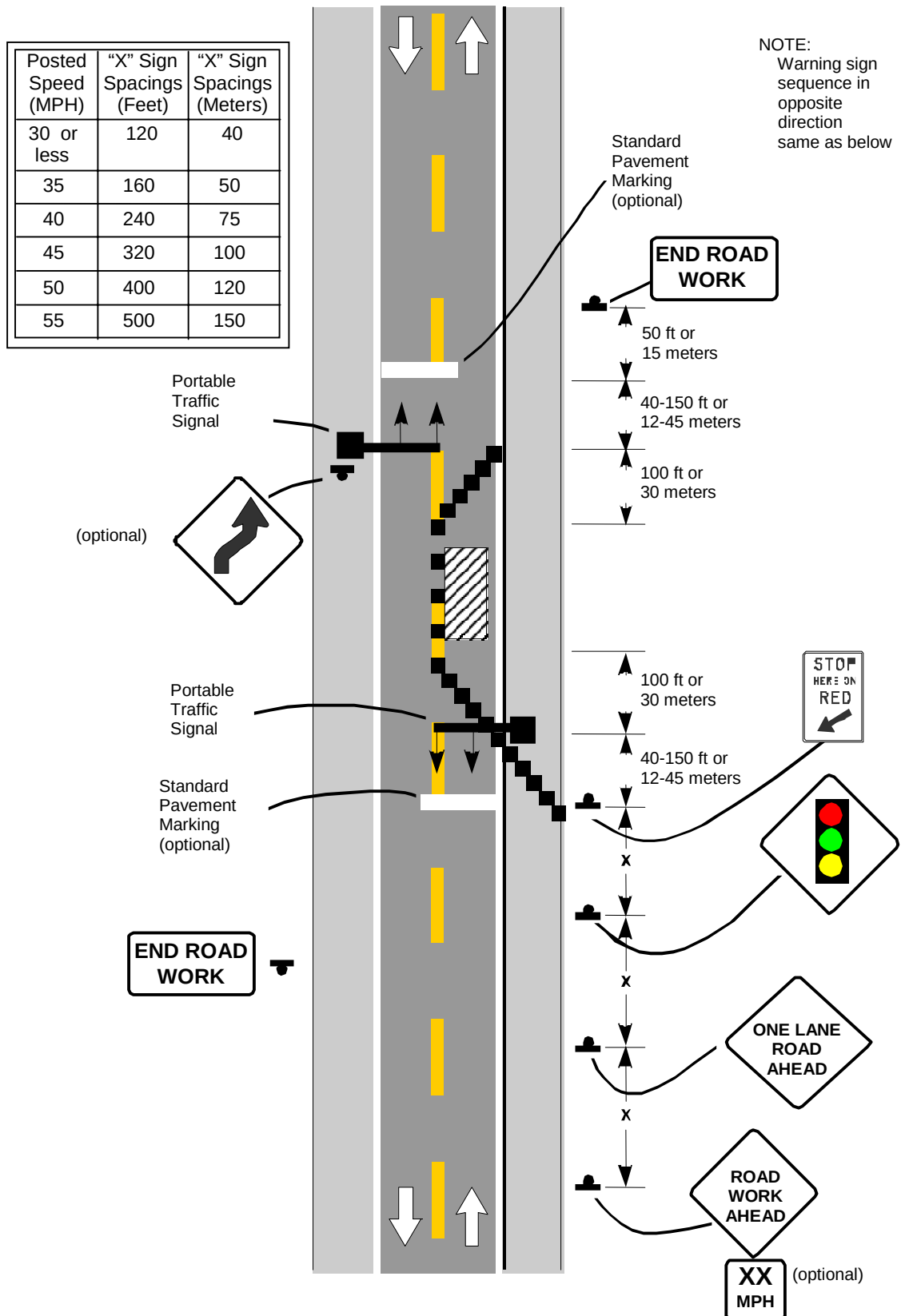


Figure 3. Placement of Traffic Control Devices for Short-Term Stationary Maintenance Work Using Portable Traffic Signals.

SITE-SPECIFIC CONSIDERATIONS

Determining Length of the Work Zone

The length of the work zone will be a function of the routine maintenance project scope and will be limited by the maximum time a motorist can be expected to wait before getting a green indication. The longer the work zone, the longer a motorist must wait for all opposing traffic to clear. A maximum reasonable wait time for a motorist at a rural work zone is four minutes, particularly if the motorist has restricted visibility of the work activity and the opposite end of the work zone. As part of the signal timing design, a check will have to be made to be certain the reasonable wait time is not exceeded. If it is exceeded, then adjustments will have to be made to shorten the work zone length.

Designing for Sight Distance

In all maintenance work zones, it is necessary for vehicles approaching the zone to have adequate time to see and respond to work zone traffic control devices. [Figures 4](#) and [5](#) illustrate improper placement of portable traffic signals due to horizontal and vertical geometric limitations, respectively.

The Texas MUTCD [\(2\)](#) and national MUTCD [\(3\)](#) specify that all traffic signals have at least two signal heads per approach. If any signal heads are located above a travel lane, the bottom of such a signal head must be at least 15 feet in height, but no greater than 19 feet high.

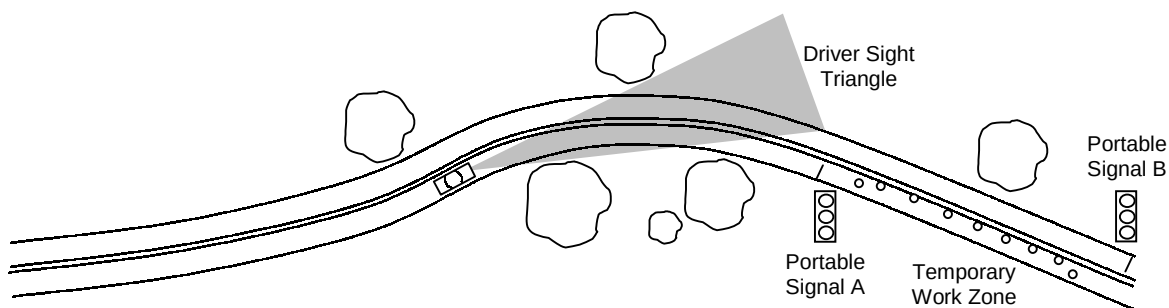


Figure 4. Driver Line of Sight Impeded by Horizontal Geometry and Roadside Objects.



Figure 5. Driver Line of Sight Impeded by Vertical Geometry.

The main factor in determining how much clear line of sight is required to see the signal heads and the work zone is the speed of vehicles approaching each side of the work zone. [Table 1](#) shows you the necessary clear line of sight, based on the speed of approaching vehicles.

Table 1. Decision Sight Distance (4).

Design Speed (mph)	Decision sight distance (DSD) for rural road speed/path/direction change (feet)
30	450
40	600
50	750
60	1000
70	1100

If hills or curves in the road do not allow you to position the ends of the work zone such that you have the necessary clear line of sight shown in [Table 1](#), lengthen the work zone to include the hill, curve, or roadside object that obstructs the clear line of sight of approaching motorists and check the available line of sight again. [Figure 6](#) shows an example of lengthening a work zone to provide adequate line of sight.

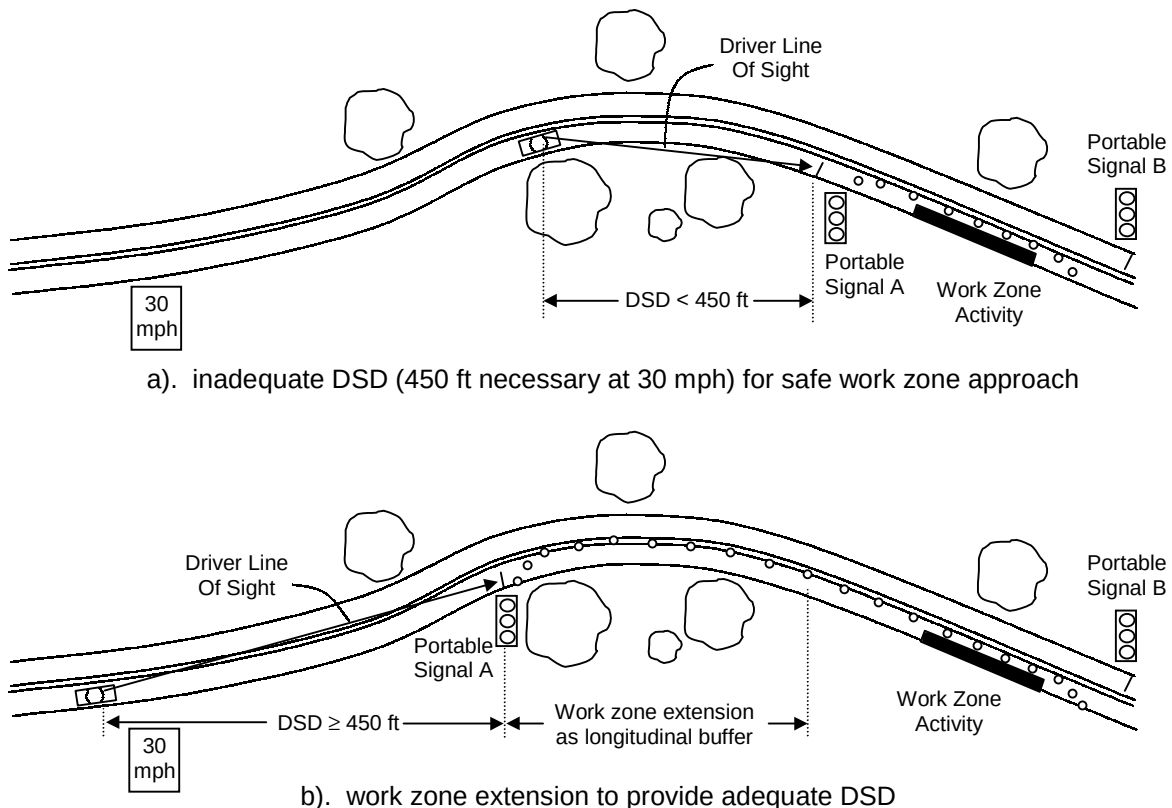


Figure 6. Lengthening a Work Zone to Provide Adequate Line of Sight.

Handling Intersecting Streets and Driveways

Streets and driveways intersecting a work zone create difficulties for portable signal operation as well as for flagging operation. Section 6C-5 of the TMUTCD (2) should be followed:

“Access should be controlled throughout the construction or maintenance work zone including all entering intersections within the zone. Driveways create a problem that may be monitored by flaggers.”

Plan work zones to exclude intersections of heavily traveled streets. Station one technician on the ground to monitor work zone access if minor streets or driveways cannot be avoided. The responsibility of this technician would be to hold traffic until there is certainty of the direction of travel, either by a platoon of vehicles passing or through remote signal monitoring capability. Notification of adjacent property owners by letter or by a printed door/gate hanger would provide an additional warning about the presence of a one-lane, two-way operation.

Dealing with Work Zone Speeds

The speed of traffic traveling through a work zone operated by a portable traffic signal is a critical factor in determining signal timings. Work zone speed has a direct impact on safety because the lowest reasonable speed through the work zone is used to compute the [red clearance interval](#). This interval is the time allotted for vehicles to pass through the work zone before opposing traffic is released.

In a portable traffic signal application, estimating the lowest speed that motorists are expected to be traveling is of critical importance. The dilemma occurs when a speed is chosen at which motorists are expected to travel, the signal clearance intervals are set for that chosen speed, and the actual speed of traffic turns out to be lower than expected. The potential for the opposing traffic to receive a green indication before traffic is cleared is heightened in this situation.

The guidelines for signal timing presented later in this manual are based on a conservative work zone travel speed of 20 mph. Advisory speed signing shown on [Figure 3](#) is strongly recommended in conjunction with “Road Work Ahead” construction warning signs. The use of advisory speed signs can help reduce the variability of speeds through the work zone. If used, they should be displayed at either 20 mph or 25 mph.

SECTION 3

OPERATION OF THE PORTABLE TRAFFIC SIGNALS

HOW THEY WORK

Portable signals use the standard display for traffic signals: a green signal indication means it is safe to proceed, and a yellow indication means the green indication will be terminating. The portable traffic signal's red indication means it is no longer safe to enter the work zone. Traffic that is safely within the zone will be allowed sufficient time to clear the zone before a green signal indication is given for traffic in the opposing direction. A conflict monitor is used to ensure that conflicting traffic green indications are not presented simultaneously by the signals.

Figure 7 shows the various timing components of a portable traffic signal in a work zone, and how those components make a complete signal cycle. The signal displays on the horizontal bars labeled "G," "Y," and "R" correspond to the indications the driver on that particular approach will see. An east/west highway is used as an example. The descriptors above and below the bars describe the "phase timings" that must be determined before the controller can be programmed. A glossary of signal terminology is included at the back of this document.

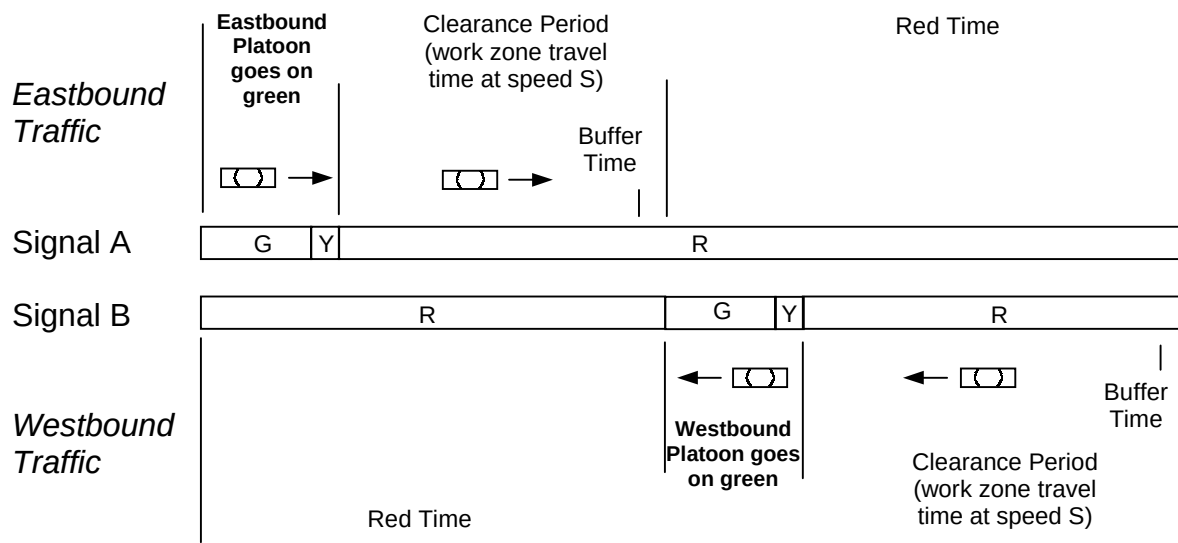


Figure 7. Complete Signal Cycle for Portable Traffic Signal Installation.

After conducting the field inventory, the steps for determining the timing components for programming the controller are:

1. Determine the SIGNAL MODE OF OPERATION.
2. Determine the PHASE TIMINGS.
3. Verify that the MAXIMUM CYCLE LENGTH OF 4 MINUTES (240 seconds) is not exceeded.

SIGNAL MODES OF OPERATION

Portable traffic signals can be programmed to operate in one of several different modes. The different modes are described below. Two units can be operated in a pretimed mode, which has a fixed duration green and clearance period for both approaching directions of traffic. Alternatively, the devices can be operated in one of several traffic actuated modes, which tend to be more responsive to real-time traffic demand at each signal. In any mode of operation, the portable traffic signals are programmed so adequate time is available to clear vehicles once they have entered the one-lane work zone.

Pretimed Operation

In pretimed mode, the duration of each green indication is the same, regardless of how many vehicles are present in the queue that is stopped at the signal. Initial timing of the greens for each of the two approaches requires that you have some idea about how much traffic there will be on each approach, and how much this traffic volume varies. Pretimed operation is best for regular (i.e., non-varying), predictable traffic volumes, whether they are low, medium, or high. Pretimed mode is also used where volumes are generally low, and vary only slightly. Pretimed mode is also a default mode that can be used if the detectors used with the portable signals are broken.

Traffic Actuated Operation (Red Rest)

Operation of portable traffic signals in an actuated mode means that some form of detection technology is being used at the site to identify the presence of, and possibly keep a running count of, vehicles that approach each side of the work zone. In red rest mode portable signals display a red indication to each side of the work zone until the detectors sense an approaching vehicle. If the clearance time has expired (i.e., any vehicles previously in the work zone have safely cleared), any vehicle approaching the signal will receive a green indication. The green is displayed for the minimum green time. Then the signal controller transitions to a yellow clearance interval before returning to rest in red. If the detectors sense a vehicle coming from the same direction

as a vehicle that has just received the green (but the controller has already advanced back to the red rest state), the controller immediately advances to green for the approaching vehicle. This series of events would not happen if the second vehicle approached the work zone from the opposing direction, because the controller would have to wait for the first vehicle to clear through the work zone before giving an opposing vehicle a green indication.

The signal controller begins timing the red clearance interval when the red signal indication is displayed. Essentially, the red clearance interval is the time required for a motorist to safely proceed through the work zone and have some “buffer” time between their departure from the work zone and the beginning of an opposing green indication (if a vehicle were present in queue waiting to enter the work zone from the opposing direction).

Traffic Actuated Operation (Favoring One Direction)

Rather than resting in red, the signals can also be set to rest in green for the higher volume direction of traffic, while resting in red for the opposing, lower volume direction. In this mode, the signal controller will rest in green for the higher volume approach and will only advance through yellow and red clearance to give the green to the lower volume approach when the detector senses a vehicle on that approach. If more than one vehicle is in queue on the lower volume approach, the green can be extended up to the [maximum green time](#) for that approach.

Traffic Actuated Operation (Recall to Minimum Green for Both Directions)

The portable signal controllers can also be set to give at least a minimum green, yellow, and red clearance time, in succession, to each direction of traffic. This mode of operation would be similar to pretimed operation, but on each side the green can be extended longer than the minimum time if multiple vehicles are waiting on that approach. As in all other modes of actuated operation, an upper limit of green time for each side, known as the maximum green time, prevents a long queue of vehicles on one side from holding the green too long and causing unacceptable delays to traffic in the opposing direction.

Manual Operation

Rather than using one of the automatic cycling modes of the signal controllers (i.e., pretimed or any of the actuated modes), the signals can also be manually operated by a member of the work crew. Such operation may be desirable if short-term detector problems are encountered, if highly variable volumes exceed the programmed maximum green times, or if work zone activity necessitates an unusual schedule of traffic flow interruptions. In manual mode, the controller can be advanced to green in either direction, or set to red for both directions. However, all red clearance times are observed by the controller (i.e., manually switching from green at one side to green at

the other side does not switch off one green and turn on the other green right away – red clearance remains enforced).

GUIDELINES FOR DETERMINING PHASE TIMINGS

Once the mode of operation is selected, the timings for each individual phase can be determined. [Table 2](#) shows the phase timings needed for actuated and pretimed modes of operation.

Table 2. Portable Traffic Signal Phases for Work Zone Application.

MODE OF OPERATION	ACTUATED	PRETIMED
PHASES	Maximum Green Time Minimum Green Time Extension Interval	Green Time
	Yellow Change Interval	Yellow Change Interval
	Red Clearance Interval (Work Zone Travel Time plus Buffer Time)	Red Clearance Interval (Work Zone Travel Time plus Buffer Time)

Maximum Green Time (actuated operation) or Green Time (pretimed operation)

The green time that should be given for each approach is mainly determined by the number of vehicles expected during each cycle. The more vehicles, the greater the demand for green time. However, keep in mind that the first few vehicles at the signal will take extra time to determine that the signal is green and begin responding (i.e., stop braking and begin accelerating) to the green signal indication.

[Table 3](#) can be used to approximate the amount of green time based on how many vehicles are expected each signal cycle. One thing to keep in mind when you are computing the green time for each approach is that the total waiting time for the queues on either side of the work zone should be less than 240 seconds (i.e., four minutes) wherever possible.

The green time settings shown in [Table 3](#) are input as the green time for pretimed operation. In actuated operation, these values would be input as the maximum green time.

Minimum Green Time (actuated operation)

If operating in actuated mode, it will be necessary to specify the minimum green time, or the least amount of time a green indication will be displayed to each approach. This time should be at least the time required for one or two vehicles to safely start up and proceed into the work zone. A range of 7 to 10 seconds is usually appropriate.

Table 3. Green Phase Time Setting Per Approach.

Queued Vehicles Per Cycle	Green Time ^{*,**} (sec)
<5	12
5	15
10	27
15	39
20	51
25	63
30	75
35	87
40	99

* - Based on a total lost time of 3.3 seconds and a saturation flow of 1500 passenger cars per hour green per lane.

** - Long green times may cause wait times in the opposing direction to be greater than 240 seconds, depending on the length of the work zone.

Extension Interval (actuated operation)

If you are operating portable signals in actuated mode, it will also be necessary to specify the extension interval, or the amount of green time added to the active green phase each time another oncoming vehicle is detected. Based on the fact that motorists approaching a portable traffic signal are likely to be more conservative than motorists at a standard signalized intersection, a practical extension interval is 2.4 seconds. If the signal controller accepts only round number settings, an extension interval of 3 seconds can be used. Extension intervals that are too short will not give vehicles adequate time to reach and pass through the signal; extension intervals that are too long will unnecessarily extend the green and cause higher delays to traffic in the opposing direction.

Yellow Change Interval

A yellow indication is always used in normal operation to terminate a green indication and inform motorists that a change in right-of-way is occurring. The guidelines that exist for the duration of the yellow interval at signalized intersections are largely dependent on speed and are also applicable to portable traffic signals. Different combinations of speed and grade produce the values in [Table 4](#).

Table 4. Yellow Change Intervals for Various Speed and Grade Combinations (5).

Speed* (mph)	Grade of Approach								
	Uphill				Level	Downhill			
	+4%	+3%	+2%	+1%	0	-1%	-2%	-3%	-4%
25	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.1	3.2
35	3.3	3.4	3.5	3.5	3.6	3.6	3.8	3.9	4.0
45	4.0	4.1	4.2	4.2	4.4	4.5	4.6	4.7	4.8

* Speed is 85th percentile speed

Red Clearance Interval

Portable traffic signals make use of the red clearance interval, or “all red” period to allow vehicles that have entered the work zone under a green or yellow indication to safely pass through and exit the one-lane work zone. A red indication is displayed to traffic at both ends of the work zone.

The two factors that determine the duration of the red clearance interval are as follows:

- (1) the speeds at which motorists will drive through the one lane work zone; and
- (2) the amount of [buffer time](#) between the vehicles that have completed travel through the zone and the start of green phase for opposing direction traffic.

$\text{Red Clearance Interval} = \text{Work Zone Travel Time} + \text{Buffer Time}$

Work Zone Travel Time

Since faster vehicles will pass through the work zone more quickly than slower vehicles, it is necessary for safe operation to design the duration of the red clearance around the slowest reasonable speed that motorists will use in the work zone.

The speed used to compute the red clearance interval will depend on a number of factors, including the location and length of the work zone, any work zone speed reduction and/or warning signing, the normal speeds and speed limit on the facility, and the duration and nature of work in the work zone. [Table 5](#) contains travel time values for the indicated work zone lengths. **A speed of 20 mph is a reasonable value to use**

for most cases. Note that the values in [Table 5](#) are for travel time at the given speed only; they do not include any buffer time.

Table 5. Work Zone Travel Time for Various Speeds and Work Zone Lengths.

Lowest Reasonable Speed (mph)	Work Zone Travel Time (sec) by Work Zone Length (feet)									
	250	500	750	1000	1250	1500	1750	2000	2250	2500
15	11	23	34	45	57	68	79	91	102	113
20	9	17	26	34	43	51	60	68	77	85
25	7	14	21	24	34	41	48	55	61	68

Buffer Time

Buffer time is a safety time cushion that helps guarantee that vehicles entering/departing the work zone in opposing directions are separated in time. The red clearance time entered into the portable signal controllers is based on the length of the work zone (from stop bar to stop bar) and the safe speed motorists are expected to drive through the zone. Since motorists drive different speeds, depending on the relative hazard perceived when driving through the work zone (or how vigilantly they control their speed with respect to work zone speed signing), variation in work zone travel time always exists.

It is in the interest of safety that the red clearance time entered into the portable signal controllers be based on the lowest reasonable speed expected for motorists as they drive through the zone. However, it is likely that a very slow motorist (i.e., slower than the speed used to compute the red clearance time), or a motorist that pauses or stops in the work zone due to a perceived or actual conflict with work zone maintenance equipment, will travel through the work zone. Since it will take this motorist longer than the red clearance time to safely travel through the work zone, a buffer time is entered into the controller so that departing traffic is safely separated in time from traffic that will enter the work zone from the opposing direction. The buffer time should be based on engineering judgement and knowledge of motorist behavior and speed variability along the work zone roadway. Typical buffer time values are 3 to 5 seconds. Recall that the buffer time is added to the red clearance time for each direction, and this sum is entered into the controller as the (directional) red clearance time.

VERIFICATION OF PHASE TIMINGS

Once all green time, yellow change, and red clearance (including buffer time) signal settings have been computed, checks should be made to ensure that the combinations of these settings do not produce an excessive wait time for queues of vehicles at either

end of the work zone. The following equations can be used to compute the maximum wait time for each direction. The equations assume that traffic is east and westbound.

$$\text{Maximum Wait Time (eastbound traffic)} = Y_e + R_e + G_{w, \max} + Y_w + R_w \quad (1)$$

where: Y_e, Y_w = yellow clearance time in seconds (eastbound, westbound)
 R_e, R_w = red clearance time based on travel time and buffer time, in seconds (eastbound, westbound)
 $G_{w, \max}$ = maximum green time in the westbound direction, seconds

$$\text{Maximum Wait Time (westbound traffic)} = Y_w + R_w + G_{e, \max} + Y_e + R_e \quad (2)$$

where: Y_e, Y_w = yellow clearance time in seconds (eastbound, westbound)
 R_e, R_w = red clearance time based on travel time and buffer time, in seconds (eastbound, westbound)
 $G_{e, \max}$ = maximum green time in the eastbound direction, seconds

- ✓ **The maximum wait time in each direction should be less than 240 seconds, if at all possible.**
- ✓ **If the 240-second threshold is exceeded, the work zone length should be reduced and the phase timing values recalculated.**
- ✓ **The calculated buffer time is not entered directly into the portable signal controller; it is added to the red clearance based on travel time, and this sum is entered as the total red clearance time for each direction.**

Figure 8 is an example of the breakdown in phase timing elements present at a work zone controlled by portable traffic signals, and it shows the computation of maximum wait time. All timings shown in Figure 8 are examples only; actual signal settings will be based on work zone characteristics, field conditions, and signal programmer judgement.

FIELD CHECK OF PHASE TIMINGS

Once timings have been determined and implemented for a project, it is important to monitor how well the signal operates in the field. A check should be made to see if all phase timings are appropriate.

If operating in pretimed mode and the green times appear to be too short (i.e., vehicles consistently remain in the queue at the onset of yellow), consider increasing the green time by a few seconds. Conversely, if the pretimed operation green time appears too long (i.e., the signal consistently remains green even after all vehicles in the queue have departed), reduce the green time by a few seconds. In actuated mode, it is usually only necessary to determine whether or not the maximum time is too low (i.e., vehicles remain in queue at the onset of yellow). If there is insufficient green time, increase the maximum green time by a few seconds.

In addition to observing operations from the ground, driving through the work zone at the general speed of traffic is a good way to assess conditions. The time it takes to travel through the work zone should be consistent with the values shown in [Table 5](#). Modifications to phase timings should be within the guidelines presented in this guidebook.

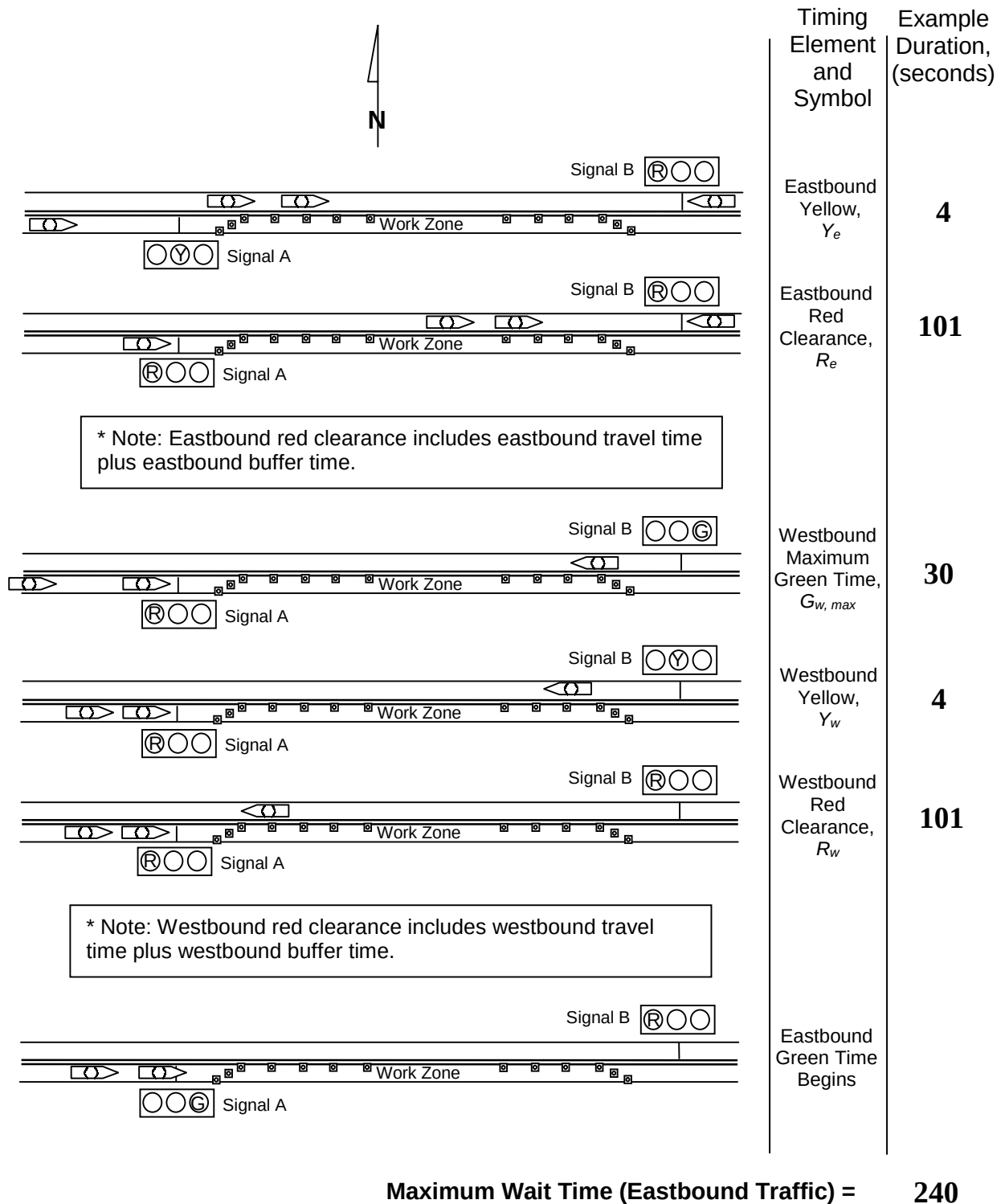


Figure 8. Computation of Maximum Wait Time for Portable Signals in Rural Two-Lane Maintenance Work Zone.

FLASHING OPERATION

Use the table below as a guide for determining appropriate signal modes of operation for unique situations.

Table 6. Conditions for Type of Flashing Operation for Portable Traffic Signals.

	CLEAR LINE OF SIGHT through work zone from end to end	NO CLEAR LINE OF SIGHT through work zone from end to end
ALL LANES OPEN During setup/take-down operations and daytime breaks (when there are NO obstructions in the roadway and both lanes fully operational)	Flash yellow to both directions of traffic	Flash yellow to both directions of traffic
DEFAULT EMERGENCY OPERATION Due to equipment malfunction	Flash red to both directions of traffic	Display solid red indications to both directions of traffic Flagging operation should begin immediately
TEMPORARY OPERATIONS Brief hold of traffic while work performed in travel lane	Display solid red to both directions of traffic	Display solid red to both directions of traffic

In all modes of operation the indications presented to motorists by the signals are monitored by a conflict monitor, or watchdog, device. This device operates independently from the internal electronics that perform the controller timing functions. It exists solely to determine whether or not the controller logic attempts to implement settings that violate clearance times or present conflicting phase indications simultaneously. If the watchdog detects any abnormalities in the timing instructions output by the controller logic, it will customarily go to red for all approaches. However, some variability exists into how the watchdog response is programmed. For instance, if both ends of the work zone are visible to one another, the watchdog may be set to flash in red if it detects any problems with the signal output of the controller.

SECTION 4

GLOSSARY OF SIGNAL TERMINOLOGY

A variety of terms pertaining to work zone setup and requirements can be found in Part VI, Section 6C of the TMUTCD (2). The following glossary pertaining to traffic signal terminology contains terms from several sources, including references (6) and (7).

Cycle Length, or Cycle - Time elapsed between the start of successive green indications for same-direction traffic. The cycle length is fixed, or constant, in pretimed operation and variable in actuated operation.

Minimum Green Time - The shortest green time of a phase. If a time setting control is designated as minimum green, the green time shall not be less than that setting. For a fully-actuated controller, this is the first timed portion of the green interval. It is usually set (i.e., for permanent signal installations) considering the number of waiting vehicles between the detector and stop line, though this definition may not be applicable (depending on sensing equipment) for portable signals.

Maximum Green Time - In actuated controllers, the longest time for which a green indication will be displayed (and the longest the green indication can be extended) in the presence of a call on an opposing phase.

Pretimed Operation - Operation of traffic signals with predetermined fixed cycle length, fixed interval duration, and fixed interval sequence.

Actuated Operation - Operation of traffic control signals in accordance with the varying demands of traffic as registered with the controller by traffic detectors.

Red Rest - Display of the red indication for all signal phases after the expiration of all clearance intervals.

Extension Interval - For a fully actuated controller, that portion of the green interval in which timing resets with each subsequent vehicle actuation, thus extending the green interval.

Yellow Change Interval - Signal interval following the green display for each phase which indicates a change in right-of-way assignment is occurring. Longer yellow change intervals are used with higher approach speeds.

Red Clearance Interval - Interval following the yellow portion of each phase. Red clearance at standard intersections is designed around intersection width and vehicle speeds. In the case of portable traffic signals, the red clearance is the time required to safely travel through the work zone.

Buffer Time - A signal phasing period designed as a safety cushion to separate departing and approaching (i.e., and conflicting) traffic movements through the one-lane work zone. The tail end of the red clearance period is referred to as the buffer time, especially when this time has been specifically designed and incorporated for safety.

Detector - A sensing device used with actuated control that is able to identify when a vehicle is approaching or stopped at an intersection. Detectors using a variety of sensing technologies are available. Most intersections use in-pavement loop detectors, whereas portable signals commonly use either microwave, infrared, or video detection.

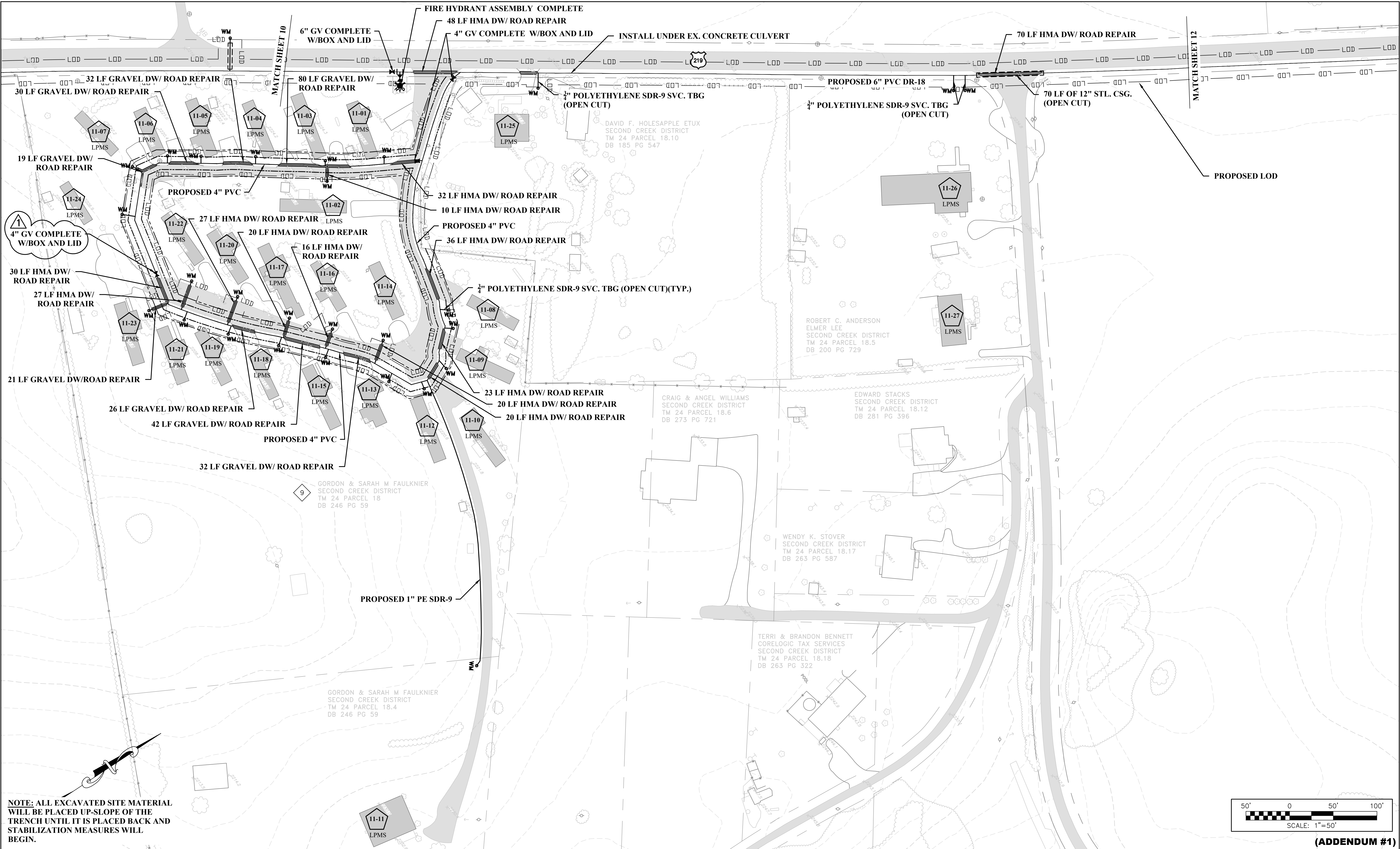
Gap Out - If no vehicles pass the detector during the vehicle (i.e., green) interval, the signal will gap out. In other words, the green time counts down to zero, and the signal changes to yellow, and then to red.

SECTION 5

REFERENCES

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2. *Texas Manual on Uniform Traffic Control Devices*. Texas Department of Transportation, Austin, Texas, 1980 (Revision 5, March 1994).
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6. *Traffic Engineering Handbook, Fourth Edition*. Institute of Transportation Engineers, Prentice Hall, 1992.
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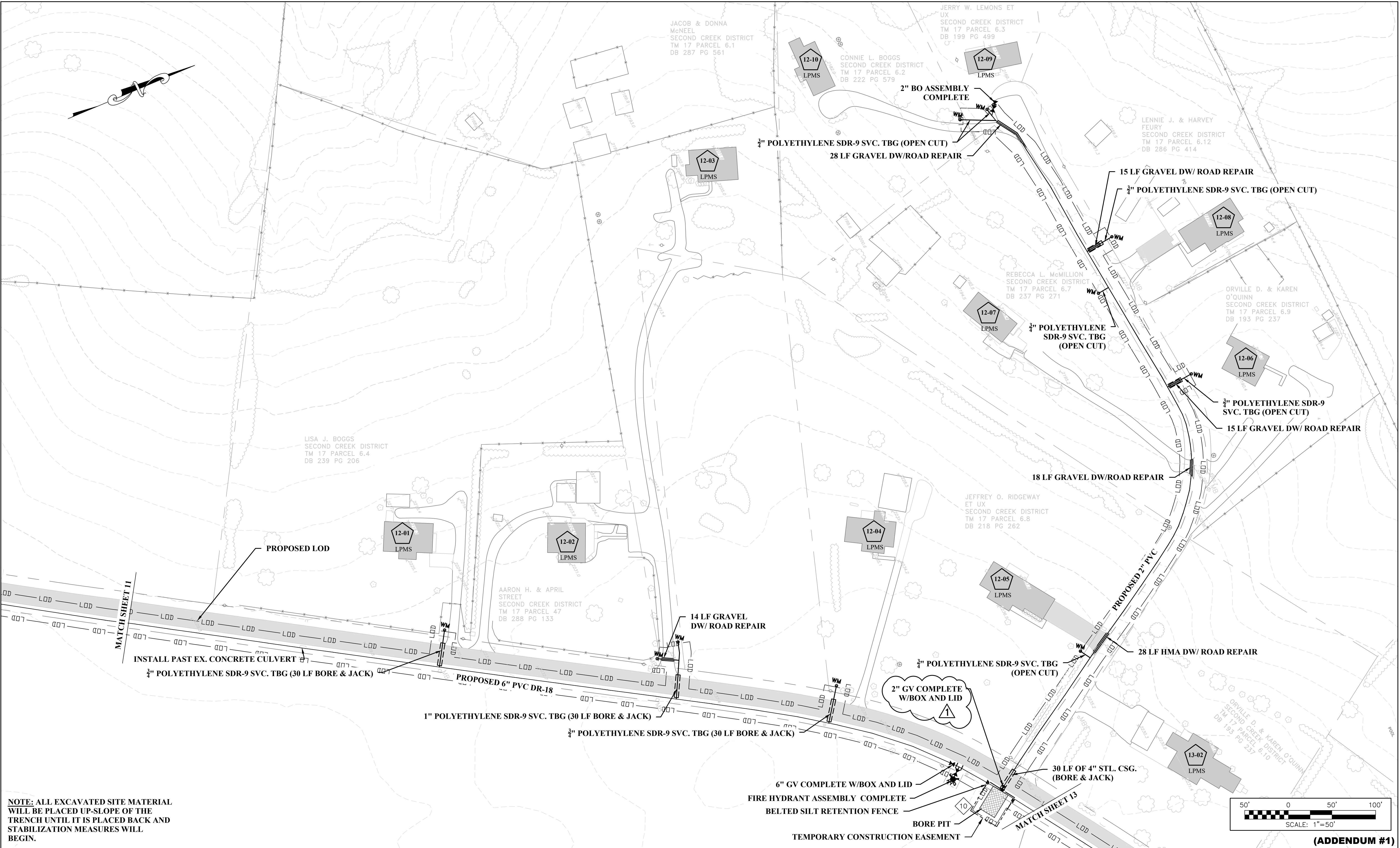
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TOWN OF UNION MONROE COUNTY, WEST VIRGINIA PICKAWAY: WATER LINE EXTENSION		SHEET No.
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PLAN VIEW

	SHEET No.
	13

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PUBLIC NOTICE SIGN
STONE CONSTRUCTION ENTRANCE
12' 6 BAR TUBE GATE

14-01
LPMS

14-02
LPMS

HOKE JERRY I & DREAMA
SECOND CREEK DISTRICT
TM 17 PARCEL 34.1
DB 303 PG 545

PROPOSED LOD

PROPOSED 6" PVC DR-18

3/4" POLYETHYLENE SDR-9 SVC. TBG (OPEN CUT)
(NON-USACE FUNDED)

15-01
LPMS

825 LF OF FARM FENCE
(SEE DETAIL THIS SHEET)

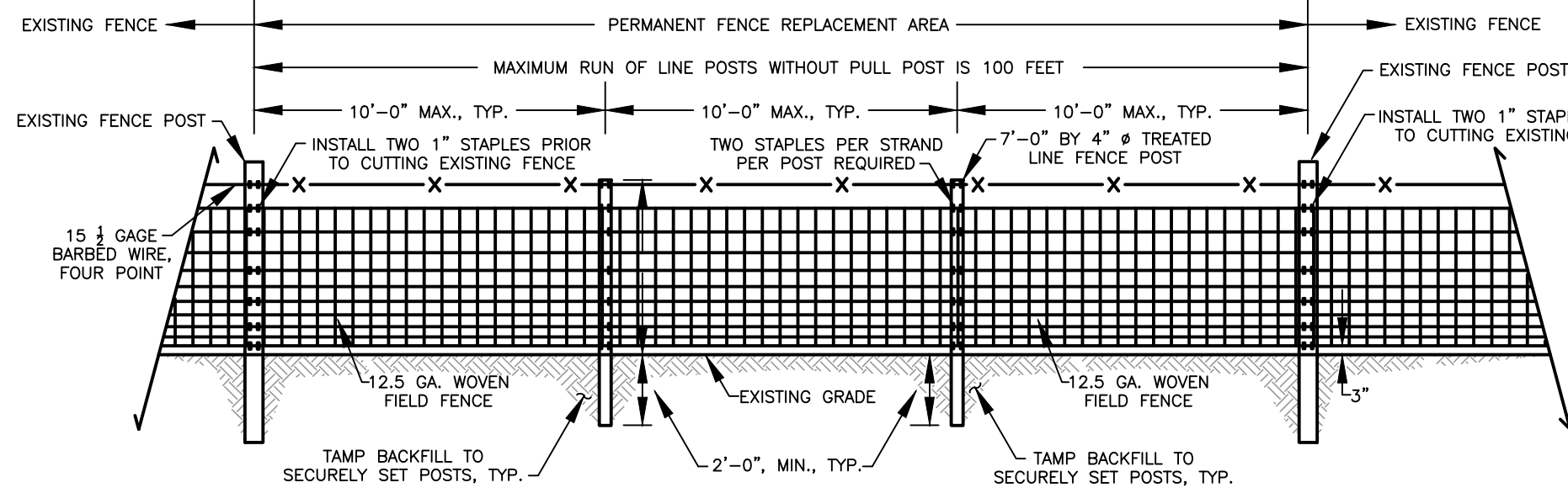
IRONS ROBERT A & ELIZABETH
SECOND CREEK DISTRICT
TM 17 PARCEL 34
DB 197 PG 103

EXISTING FARM FENCE

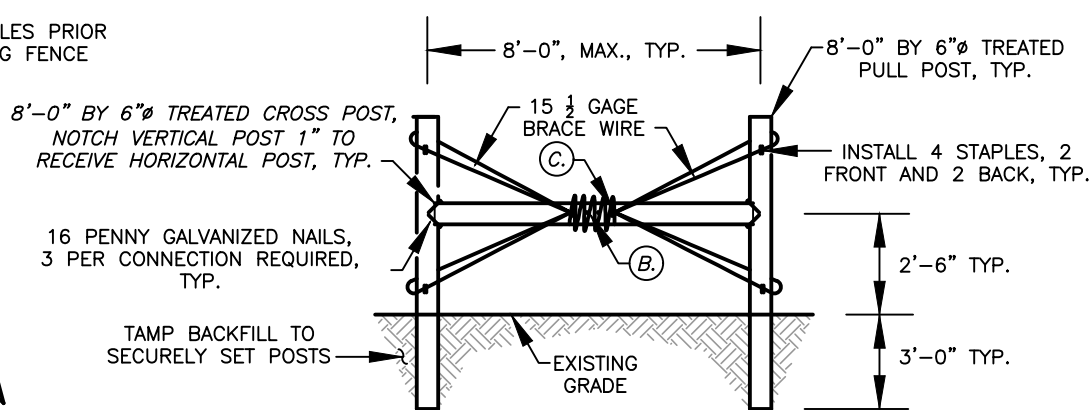
TANK VALVE VAULT
(CONTAINED IN CONTRACT #2)

100,000 GAL TANK SITE
(CONTAINED IN CONTRACT #2)

FARM FENCE DETAIL



PERMANENT FENCE ELEVATION VIEW, TYP.



CORNER AND PULL POST ELEVATION VIEW, TYP.

NOTES:

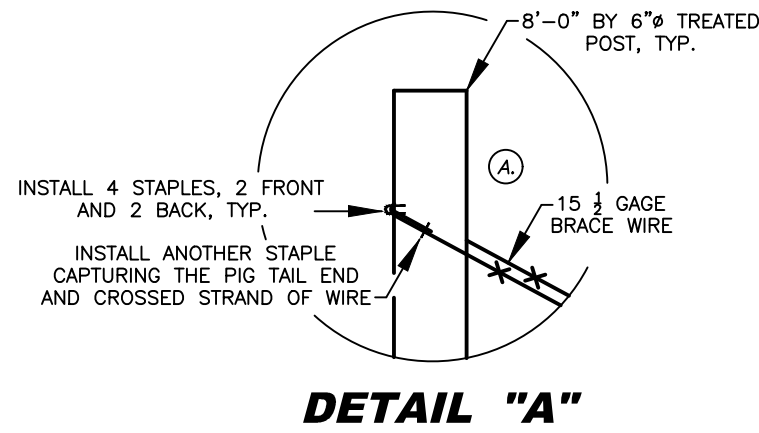
- 1) THE PERMANENT FENCE ALIGNMENT SHALL FOLLOW THE ALIGNMENT INDICATED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 2) THE CONTRACTOR SHALL CUT THE EXISTING FENCE AT AN EXISTING FENCE POST WITH THE APPROVAL OF THE ENGINEER. PRIOR TO CUTTING THE FENCE, THE CONTRACTOR SHALL INSTALL TWO STAPLES IN EACH EXISTING HORIZONTAL FENCE STRAND CROSSING THE EXISTING POST. THE FENCE CUT SHALL BE MADE AT A SUFFICIENT DISTANCE FROM THE INSTALLED STAPLES TOWARDS THE AREA TO BE REMOVED TO ALLOW THE EXISTING FENCE STRANDS TO BE WOUND ONCE, MINIMUM, AROUND THE EXISTING POST. AFTER CUTTING THE CONTRACTOR SHALL WRAP THE PIG TAIL END OF THE FENCE AROUND THE POST, STRETCH THE FENCE, AND SECURE IT TO THE POST WITH ANOTHER STAPLE CAPTURING BOTH STRANDS OF FENCE.
- 3) LINE FENCE POSTS SHALL BE 7'-0" BY 4" DIAMETER TREATED POSTS, FENCE POSTS TO BE USED WILL REQUIRE THE APPROVAL OF THE ENGINEER. AT THE DIRECTION OF THE ENGINEER LONGER POSTS, EXTRA BRACING, AND ADDITIONAL BARBED WIRE MAY BE REQUIRED AT GROUND DEPRESSIONS AND STREAM CROSSINGS TO CONTAIN LIVESTOCK.
- 4) CORNER AND PULL POSTS SHALL BE 8'-0" BY 6" # AND INSTALLED IN THE PERMANENT FENCE AT 100 FOOT INTERVALS, ANGLE POINTS, BENDS, CORNERS, AND HIGH OR LOW POINTS AS DESIGNATED BY THE ENGINEER.
- 5) SPACING BETWEEN POSTS SHALL BE MEASURED PARALLEL TO THE GROUND AND POSTS SHALL BE SET VERTICALLY. AFTER THE POST IS SET IN THE EXCAVATED HOLE, COMPACTED BACKFILL SHALL BE PLACED SECURELY SETTING THE POST TO THE SATISFACTION OF THE ENGINEER.
- 6) PERMANENT FENCE SHALL CONSIST OF 12.5 GA. WOVEN FIELD FENCE AND 1 1/2" NUMBER 9 STAPLES.

- (A) WRAP FENCE AROUND EACH PULL POST EXTENDING FROM 6" TO 8" FROM THE TOP AND 6" TO 8" FROM THE GROUND FORMING A LOOP OF WIRE AROUND BOTH POSTS. OVERLAP ENDS OF LOOPED WIRE 4" MINIMUM IN EACH DIRECTION. OVERLAP SHOULD BE PLACED ON OUTSIDE OF INSTALLED PULL POST. INSTALLATION AND ATTACHED TO THE PULL POST BY TWO 1 1/2" NUMBER 9 STAPLES. PLACE THE STAPLES AT THE INTERSECTION OF THE OVERLAP FENCE STRANDS CAPTURING BOTH STRANDS. BEND THE PIG TAIL OF FENCE BACK ALONG THE ALIGNMENT OF THE FENCE AND INSTALL ANOTHER STAPLE CAPTURING BOTH STRANDS. REPEAT FOR OTHER OVERLAPPED STRAND. CONTINUE THE PROCESS ON THE OPPOSITE POST FORMING AN "X" CONFIGURATION AS SHOWN.

- (B) PLACE A STEEL BAR AT THE "X" INTERSECTION ADJACENT TO THE HORIZONTAL SUPPORT POST. TWIST THE FENCE STRANDS TOGETHER TO BRING THE PULL POSTS INTO TENSION.

- (C) INSTALL TWO 1 1/2" NUMBER 9 STAPLES INTO THE HORIZONTAL SUPPORT POST AT THE END OF THE TWISTED STRANDS AS SHOWN, FOUR STAPLES ARE REQUIRED PER INSTALLATION.

AT ALL CORNERS OR BENDS, THREE (3) PULL POSTS WILL BE REQUIRED AND SHALL BE BRACED IN EACH DIRECTION.



DETAIL "A"

NOTE: CONTRACT 1 & 2 BOUNDARIES:

WATERLINE:
1st CONTRACT TO THIS POINT, SHALL INSTALL CAPPED STUB-OUTS.

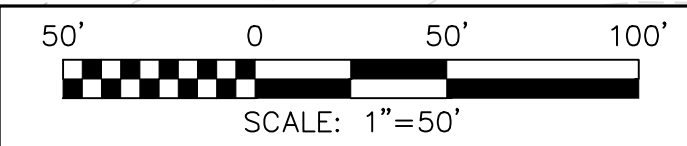
2nd CONTRACT TO THIS POINT, SHALL MAKE LINE TIE-IN TO PREVIOUSLY INSTALLED CAPPED STUB-OUTS.

GRADING:
1st CONTRACT TO THIS POINT, SHALL CREATE A GRADUAL TRANSITION TO EXISTING GRADE PAST THE BOUNDARY POINT .

2nd CONTRACT TO THIS POINT, SHALL TIE GRADING INTO BOUNDARY WITH GRAVEL FINISHED ROADWAY.

FENCING:
FARM FENCE: CONTRACT 1
TANK SITE FENCE: CONTRACT 2

ELECTRICAL FEED (TANK SITE): CONTRACT 2



(ADDENDUM #1)

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NO.	BY	DATE	DESCRIPTION

SCALE:	
DRAWN:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

PHONE
(304) 431-7800

THRASHER

155 BLUE ANGEL LANE
BEAVER WV 26330
www.thrashereng.com

FAX
(304) 425-0445

PHASE No.
CONTRACT No.
1
PROJECT No.
101-010-0428

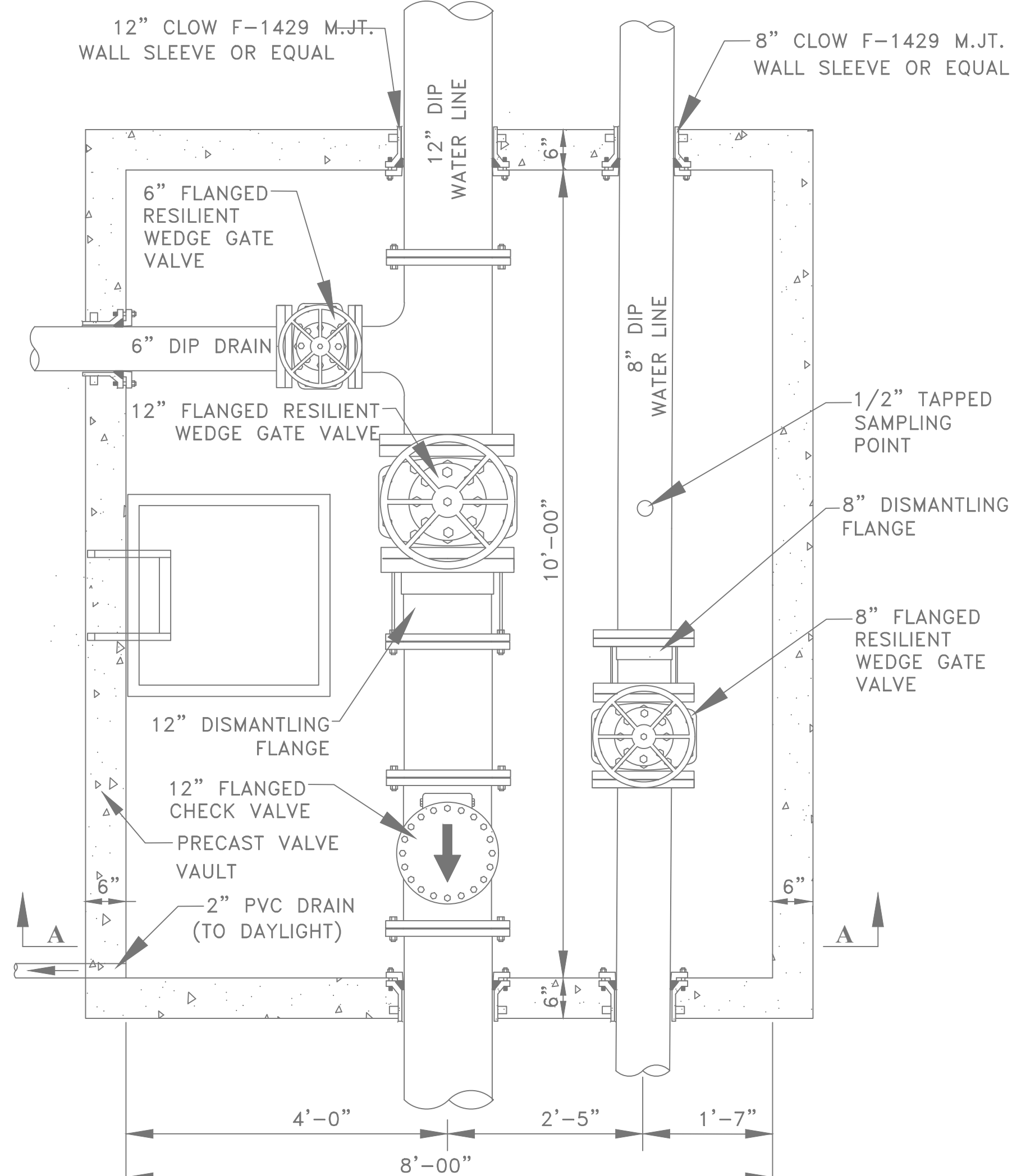
TOWN OF UNION
MONROE COUNTY, WEST VIRGINIA
PICKAWAY: WATER LINE EXTENSION

PLAN VIEW

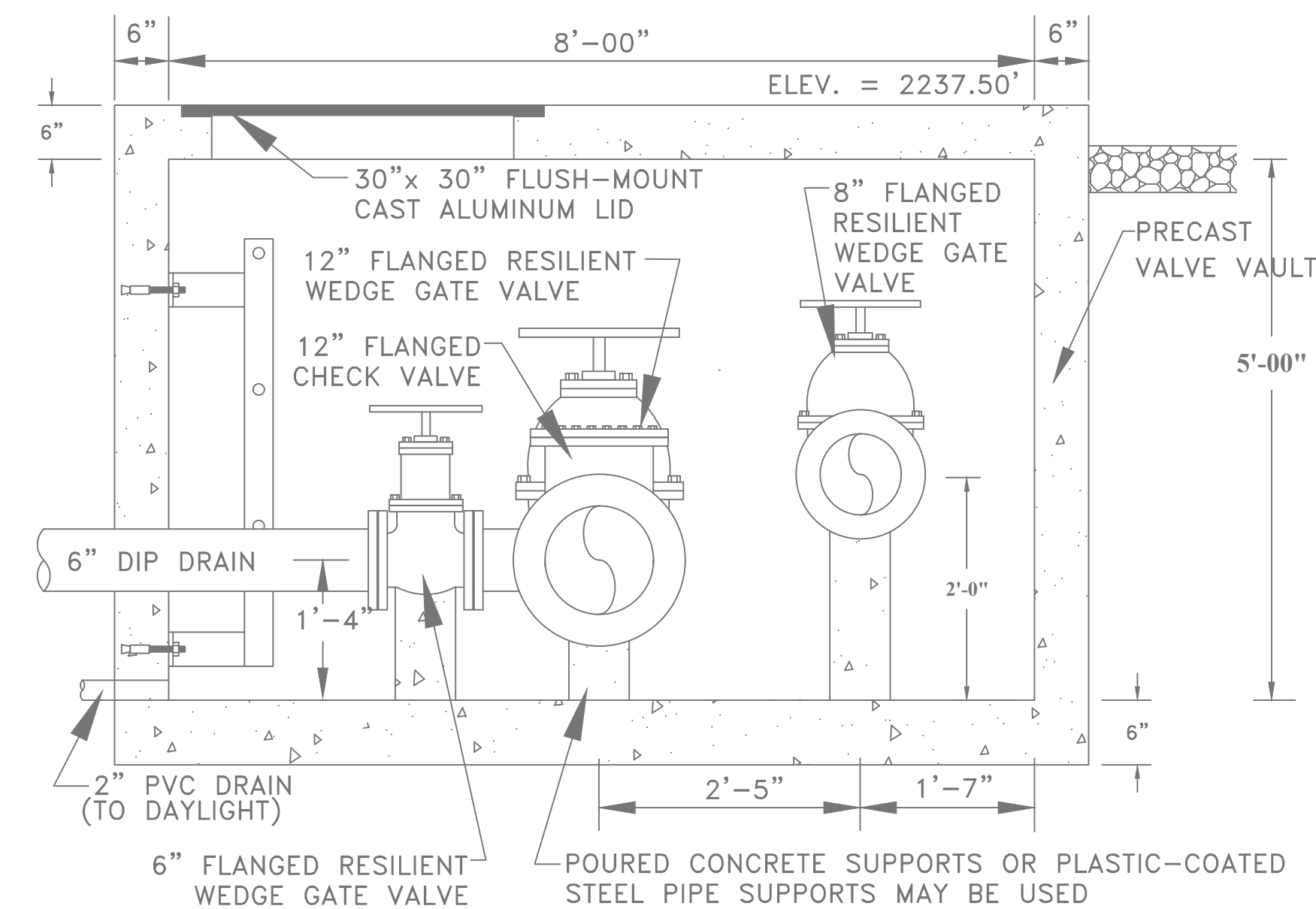
SHEET No.

15

CAD FILE: R:\010\010-0428 Union Pickaway Water EA\Drawing\Contract #\NCT-019-Sheet 16.dwg
PLOT DATE/TIME: 6/13/2023 10:51 AM
LAYOUT: 16
USER: wesley johnson



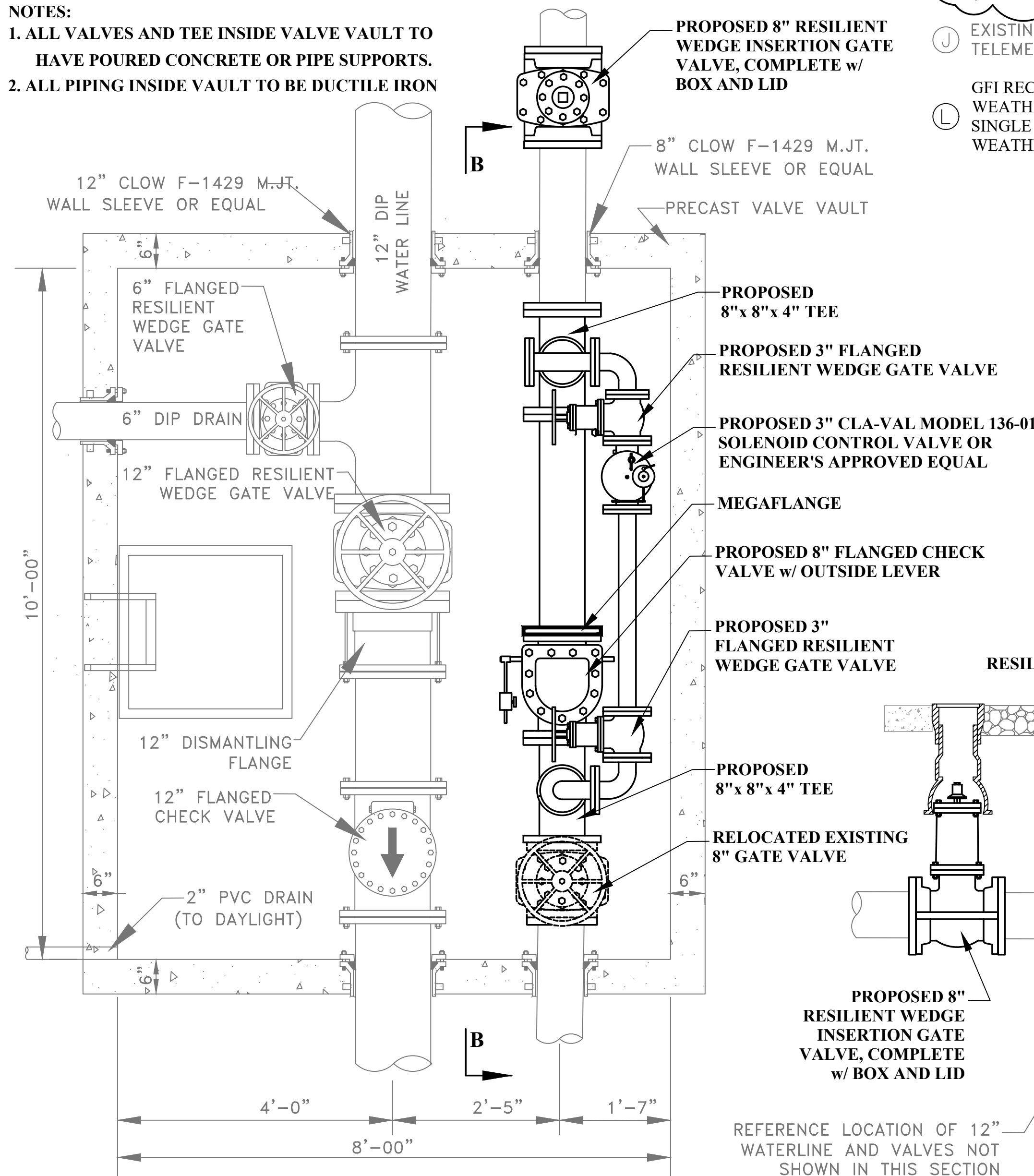
EXISTING UTC VALVE VAULT PLAN VIEW
SCALE: 1/2" = 1'-0"



EXISTING UTC VALVE VAULT SECTION A
SCALE: 1/2" = 1'-0"

		Panel: T													
		NEMA-1													

NOTES:
1. ALL VALVES AND TEE INSIDE VALVE VAULT TO HAVE POURED CONCRETE OR PIPE SUPPORTS.
2. ALL PIPING INSIDE VAULT TO BE DUCTILE IRON



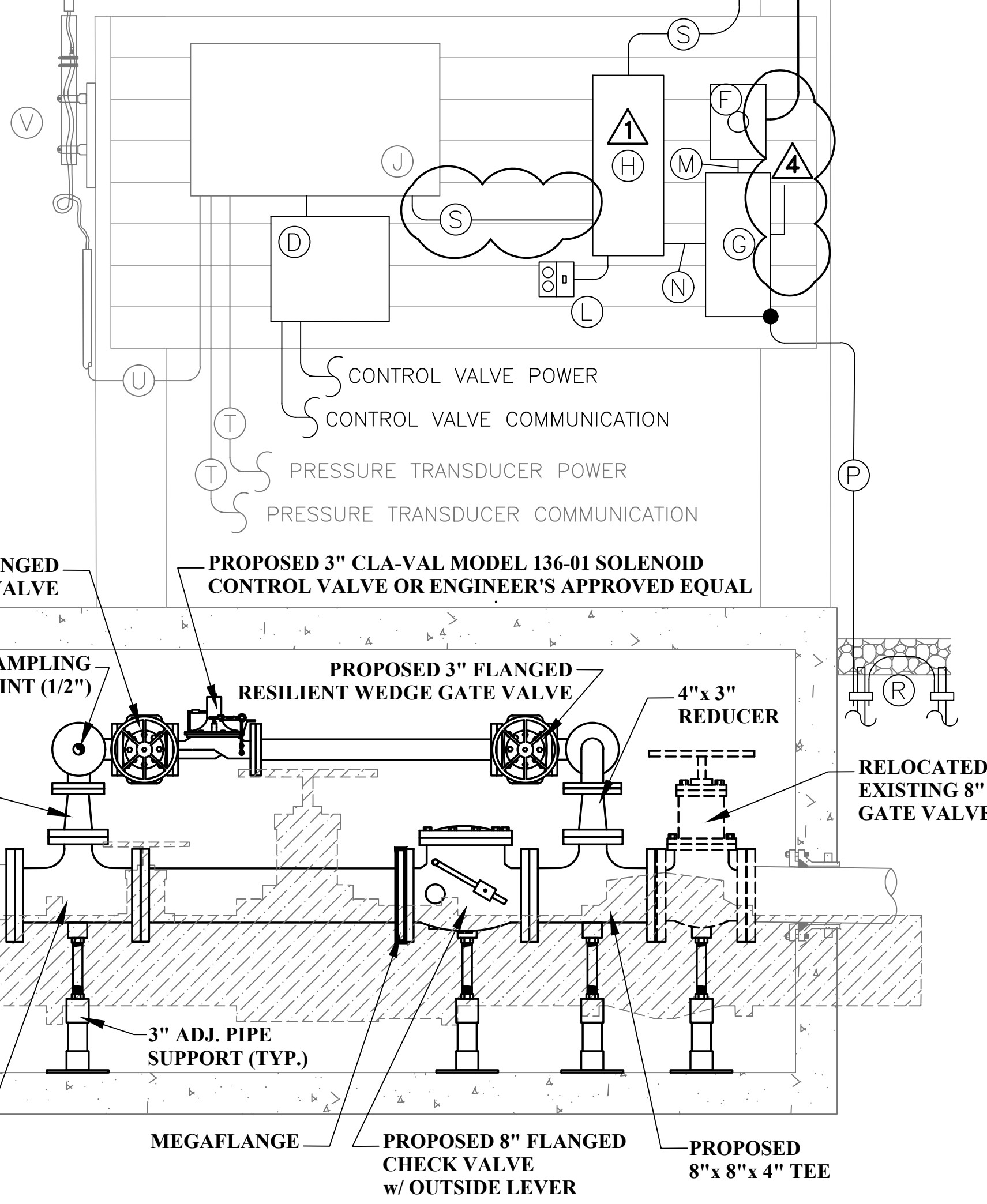
PROPOSED UTC VAULT MODIFICATION PLAN VIEW
SCALE: 1/2" = 1'-0"

RISER NOTES:

- (A) 120/240V, 1Ø, 3W SERVICE BY POWER CO.
- (B) DRIP LOOP.
- (C) WEATHERPROOF HEAD.
- (D) CONTROL VALVE CONTROL PANEL.
- (E) POLE LIGHT: HUBBELL # DDL-140L-1 LED DUSK-TO DAWN WITH PHONE CELL.
- (F) METER.
- (G) MAIN SWITCH: 2P-100A, 120/240V, 1Ø, 3W HEAVY DUTY NEMA-4X STAINLESS STEEL SERVICE RATED FUSED SAFETY SWITCH WITH 100A FUSES.
- (H) PANEL "U". (SEE SCHEDULE THIS SHEET)
- (J) EXISTING TELEMETRY PANEL
- (L) GFI RECEPTACLE WITH WEATHERPROOF COVER AND SINGLE POLE SWITCH WITH WEATHERPROOF COVER.

- (M) 2" CONDUIT WITH 3-#2 CABLES.
- (N) 2" CONDUIT WITH 3-#2 CABLES, 1-#6 GROUND.
- (P) #6 COPPER GROUND WIRE.
- (R) GROUNDING RODS WITH CLAMPS PER N.E.C.
- (S) 3/4" CONDUIT WITH 2-#12, 1-#12 GROUND.
- (T) EXISTING CONDUIT WITH CONTROL CONDUCTORS PER PRESSURE TRANSDUCER.
- (U) EXISTING CONDUIT FOR COAX CABLE.
- (V) EXISTING TELEMETRY ANTENNA

UTC TANK ELECTRICAL RISER DIAGRAM
SCHEMATIC



PROPOSED UTC VAULT MODIFICATION SECTION B
SCALE: 1/2" = 1'-0"

(ADDENDUM #1)

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	WDJ	6-13-23	PANEL "U" SCHEDULE ADDED TO SHEET, REPLACE PANEL "T" NOTE
	WDJ	6-13-23	CHANGED NUMBER OF REQUIRED CABLES
	WDJ	6-13-23	REMOVED RISER NOTE X
	WDJ	6-13-23	INCOMING POWER FEED LOCATION CHANGED
NO.	BY	DATE	DESCRIPTION

SCALE:	
DRAWN:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

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155 BLUE ANGEL LANE BEAVER WV 26330 www.thrashereng.com	
PHONE (304) 431-7800	FAX (304) 425-0445

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1
PROJECT No.
101-010-0428

TOWN OF UNION MONROE COUNTY, WEST VIRGINIA PICKAWAY: WATER LINE EXTENSION UTC TANK SITE VALVE VAULT LOCATION: MODIFICATION DETAILS
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SHEET No.
16