



VILLAGE OF TUSCARAWAS
TUSCARAWAS COUNTY, OHIO

CHERRY ST WATER LINE REPLACEMENT & STORM SEWER IMPROVEMENTS

ADDENDUM #1

OCTOBER 17, 2024

THRASHER PROJECT #T10-11077

TO WHOM IT MAY CONCERN:

The following are clarifications and responses to questions posed by contractors for the above-referenced project.

A. GENERAL

THE BID OPENING IS POSTPONED UNTIL WEDNESDAY, OCTOBER 30, 2024, at 11:00 AM.

THE BID FORM HAS BEEN REVISED. PLEASE REPLACE WITH THE ATTACHED C-410.

B. QUESTIONS AND RESPONSES

1. QUESTION

I need some clarification on the long and short services on the project. The bid line item calls out PE, but the detail on sheet D1 calls out copper. Could you clarify what material is to be used?

RESPONSE

The services will all be copper, the bid form has been updated. (See attached Bid Form C-410)

2. QUESTION

Can you tell me what the junction chamber is for this job?

RESPONSE

The junction chamber will be a manhole (48"). The plans have been revised. (See attached Sheet 8)

3. QUESTION

The plans show sidewalk removal but no replacement sidewalk, is that correct?

RESPONSE

Yes, the sidewalk will be removed as part of this project but will be replaced in a separate project.

4. QUESTION

What material is the backfill for areas that are removing sidewalk?

RESPONSE

6" of ODOT 304 aggregate will be used as a temporary walkway in areas where sidewalk is removed.

5. QUESTION

On sheet 2 from station 7+50 to 9+50 there is currently a gap that has no sidewalk. Are we putting sidewalk in this location?

RESPONSE

See response to Question 4.

6. QUESTION

I don't see a sidewalk detail in the prints. Does the sidewalk get compacted granular backfill or dirt under the sidewalk? Can you provide a trench detail for under the sidewalk and a sidewalk detail.

RESPONSE

See response to Question 4. (See attached Sheet D2)

7. QUESTION

Is the sidewalk 4" thick through the green areas and 6" thick through the driveways?

RESPONSE

See response to Questions 3 and 4.

8. QUESTION

Can you provide the elevations for RIM and INVERT on CB# S75 and CB# S84?

RESPONSE

See attached Sheets 7 and 7A.

9. QUESTION

Is 12" storm sewer to be SDR 35 pvc per plan sheets or 12" HDPE per spec book?
Please clarify.

RESPONSE

See the updated spec. 334113 (Public Storm Utility Drainage Piping and Structures).

10. QUESTION

Are sidewalks to be replaced? Please provide drawing if sidewalk is to be replaced
and locations.

RESPONSE

See response to Questions 3 and 4.

11. QUESTION

Is the drawing for soil on Page D1 to be for storm sewer ditch?

RESPONSE

Yes.

12. QUESTION

On page D1 for water service is a saddle to be used for water service or direct tap on
ductile? The drawing has an electrofusion saddle and coupling which ductile iron pipe
is to be installed.

RESPONSE

See revised detail Sheet D1.

13. QUESTION

Can not find where 2" steel service is located line 19 on bid form? Please identify
location. What material is to be used for steel service?

RESPONSE

The service line is for Warwick Manor Housing, Inc. See attached Sheet 4, note 5.

14. QUESTION

Is storm water prevention plan an allowance? There is no plan.

RESPONSE

This item has been added to the Bid Form (C-410).

As a reminder, bids will be received until 11:00 a.m. on Wednesday, October 30, 2024, at the Village of Tuscarawas located at 522 East Cherry St, Tuscarawas, OH 44682. Good luck to everyone and thank you for your interest in the project.

Sincerely,
THE THRASHER GROUP, INC.

A handwritten signature in blue ink, appearing to read "Brad Olinger", is written over a horizontal line.

Brad Olinger, PE
Project Manager

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:

*Village of Tuscarawas
522 East Cherry St.
Tuscarawas, OH 44682*

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 **Cherry St. Water Line Replacement & Storm Sewer Improvements**. 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
 CHERRY ST. WATER LINE REPLACEMENT & STORM SEWER IMPROVEMENTS
 FOR THE**

**VILLAGE OF TUSCARAWAS
 TUSCARAWAS COUNTY, OHIO
 THRASHER PROJECT #T10-11077**

BID SCHEDULE

Item #	DESCRIPTION	QTY.	UNIT	UNIT COST	COST
1	MOBILIZATION	1	LS		
2	MAINTAINING TRAFFIC	1	LS		
3	PRE/POST-CONSTRUCTION VIDEO	1	LS		
4	STORM WATER POLLUTION PREVENTION PLAN	1	LS		
5	CONSTRUCTION LAYOUT STAKES AND SURVEYING	1	LS		
6	LANDSCAPING	1	LS		

Item #	DESCRIPTION	QTY.	UNIT	UNIT COST	COST
7	PORTLAND CEMENT CONCRETE BASE	90	SY		
8	ASPHALT CONCRETE SURFACE COURSE	5	CY		
9	AGGREGATE BASE (TEMPORARY WALK & DRIVEWAY APRON)	140	CY		
10	PAYEMENT REMOVED	120	SY		
11	WALK REMOVED	7,000	SF		
12	12" PVC STORM SEWER	1,100	FT		
13	CATCH BASIN	5	EA		
14	MANHOLE	4	EA		
15	JUNCTION CHAMBER	1	EA		
15	8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 53, JOINTS, AND FITTING	2,700	FT		
16	3/4" COPPER SERVICE BRANCH (SHORT)	10	EA		
17	3/4" COPPER SERVICE BRANCH (LONG)	13	EA		
18	2" STEEL SERVICE BRANCH (LONG)	1	EA		
19	4" DUCTILE IRON SERVICE BRANCH (LONG)	2	EA		
20	TIE-INTO EXISTING 8" WATERLINE	2	EA		
21	TIE-INTO EXISTING 6" WATERLINE	3	EA		
22	TIE-INTO EXISTING 4" WATERLINE	1	EA		
23	4" GATE VALVE	1	EA		
24	6" GATE VALVE	3	EA		
25	8" GATE VALVE	5	EA		
26	6" FIRE HYDRANT ASSEMBLY	5	EA		
27	FIRE HYDRANT REMOVAL	5	EA		
28	STORM WATER PREVENTION PLAN	1	LS		

TOTAL BID ACTIVITY (GENERAL) _____

NOTE: THE CONTRACTOR'S UNIT PRICES SHALL INCLUDE PURCHASE AND INSTALLATION, COMPLETE IN PLACE, PER BID ITEM IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS.

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 Bid items will be based on actual quantities, determined as provided in the Contract Documents.

3.04 *Method of Award*

Method of Award = Lowest Qualified Bidder (Regular)

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.

{OR}

~~{Method of Award = Lowest Qualified Bidder (Deductive Alternate)}~~

~~———— If at the time this Contract is to be awarded, the lowest total bid submitted by a qualified, responsive, responsible bidder, as listed in contract does not exceed the amount of funds 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. The Owner may award the contract on the total bid submitted by a qualified, responsive, responsible bidder, less the amount(s) of the deductive alternate(s) subtracted in numerical order to produce the lowest bid within the funds available for financing.~~

~~s) subtracted in numerical order to produce the lowest bid within the funds available for financing.~~

~~) subtracted in numerical order to produce the lowest bid within the funds available for financing.~~

- ~~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.~~

{OR}

~~{Method of Award – Lowest Qualified Bidder (Additive Alternates)}~~

~~{Apply in numerical order as in deductive}~~

~~_____ 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. Awarding of Additive Alternate(s) will not affect the lowest Bidder. If such bids exceed such amount, the Owner may reject all bids.~~

~~The Owner will award the contract on the total base bid amount inclusive or exclusive of alternates as determined by the Owner and submitted by a qualified, responsive, responsible Bidder. The Owner may elect to award any or all of the additive alternates in no particular order.~~

- 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.~~

{OR}

~~{Method of Award = Lowest Qualified Bidder (Multiple Contracts)}~~

~~{Only if Necessary, If one company bids all contracts, they can add a % deduction to their total bid}~~

~~_____ 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. The Owner may award the contract on the total bid submitted by a qualified, responsive, responsible bidder after apply the % deduct, if offered, as listed in contract to produce the lowest bid within the funds available for financing.~~

- 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.~~

~~{OR}~~

~~{Method of Award = Lowest Qualified Bidder (Alternate Bids)}~~

~~—— If at the time this contract is to be awarded, the lowest total bid or either alternate 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. The Owner may award the contract on the total bid or either alternate total bid submitted by a qualified, responsive, responsible bidder less the amount of the deductive alternate as listed in contract to produce the lowest bid within the funds available for financing.~~

~~the amount of the deductive alternate as listed in contract to produce the lowest bid within the funds available for financing.~~

- ~~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

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 Addenda: **ACKNOWLEDGE IN BOR-4.**

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, 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)

SECTION 334113 - PUBLIC STORM UTILITY DRAINAGE PIPING AND STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Storm drainage piping.
2. Piping accessories.
3. Drainage structures.
4. Bedding and cover materials.
5. Pile support systems.
6. Pipe support systems.
7. Concrete encasement and cradles.

1.3 RELATED SECTIONS

1. Section 013300 – Submittal Procedures
2. Section 033000 – Cast-In-Place Concrete
3. Section 033050 – Crystalline Concrete Waterproofing
4. Section 036000 – Grouting
5. Section 310513 – Soils for Earthwork
6. Section 310516 – Aggregates for Earthwork
7. Section 312316 – Excavation
8. Section 312316.13 – Trenching
9. Section 330513 – Manholes and Structures
10. Section 330513.01 – Manhole Frames and Covers

1.4 REFERENCE STANDARDS

1. AASHTO M252 - Standard Specification for Corrugated Polyethylene Drainage Pipe.
2. AASHTO M294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter.
3. AASHTO T180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

- B. ASTM International:

1. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM A746 - Standard Specification for Ductile Iron Gravity Sewer Pipe.
3. ASTM B745 - Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains.
4. ASTM C14 - Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe.
5. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
6. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
7. ASTM C506 - Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.
8. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
9. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
10. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
11. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
12. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
13. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
14. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
15. ASTM D2680 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping.
16. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
17. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
18. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
19. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
20. ASTM F405 - Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings.
21. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
22. ASTM F667 - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings.

1.5 COORDINATION

- A. Coordinate Work of this Section with termination of storm sewer, trenching, connection to public storm sewer.

1.6 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data indicating pipe, pipe accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements including AIS Certificate where applicable.
- D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
- E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- F. Qualifications Statements:
 - 1. Submit qualifications for manufacturer and installer.
 - 2. Submit manufacturer's approval of installer.

1.7 CLOSEOUT SUBMITTALS

- A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of pipe and inlets.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.8 QUALITY ASSURANCE

- A. Perform Work according to ASTM standards and ODOT Construction and Material Specifications..

1.9 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Storage:

1. Store materials according to manufacturer instructions.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.
4. Do not place pipe flat on ground; cradle to prevent point stress.

C. Protection:

1. Keep UV-sensitive materials out of direct sunlight.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 STORM DRAINAGE PIPING

A. Plastic Piping: ASTM F2648

1. Material: **PVC SDR-35**
2. Size: 4 inch through 60 inch
3. Inside Nominal Diameter: As shown on Drawings.
4. Smooth Interior and annular exterior corrugations.

B. Fittings: ASTM F2306

1. Bell and spigot connections shall utilize a welded bell and valley or a saddle gasket meeting the soil-tight joint performance requirements of ASTM F2306

C. Joints:

1. Bell & spigot joint meeting ASTM F2648
2. Soil-tight
3. Gaskets for 12 inch through 60 inch shall meet ASTM F477

D. Anchors: Provide concrete anchors at pipe material transitions, fittings, and as shown on the drawings.

2.2 DRAINAGE STRUCTURES

A. Refer to Details on Contract Drawings.

B. Materials: Precast concrete.

C. Manholes:

1. Size: 48 inches through 96 inches in diameter.

2. Eccentric conical top.
3. Covers: Water tight, inscribed with STORM SEWER.
4. Reference Section 330513.16 – Manholes and Structures.
5. Reference Section 330513.01 – Manhole Frames and Covers.

D. Inlets:

1. Refer to ODOT Construction and Material Specifications
 - a. Size: 24 by 24 inches.
 - b. Grating:
 - 1) Cast iron.
 - 2) Bicycle safe.

E. Grouting: Reference Section – 036000

2.3 MATERIALS

A. Bedding and Cover:

1. Bedding: Fill Type as indicated on plans.
2. Cover: Fill Type as indicated on plans.
3. Soil Backfill from above Pipe to Finish Grade: Soil Type as indicated on plans.

B. Subsoil: No rocks more than 6 inches in diameter, frozen earth, or foreign matter.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that trench cut is ready to receive Work.
- C. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Correct over-excavation with coarse aggregate.
- C. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.

3.3 INSTALLATION

A. Excavation and Bedding:

1. Hand trim excavation for accurate placement of piping to indicated elevations.
2. Dewater excavations to maintain dry conditions to preserve final grades at bottom of excavation.
3. Provide sheeting and shoring if necessary.
4. Level materials in continuous layers not exceeding compacted depth of 8 inches.
5. Maintain optimum moisture content of bedding material to attain required compaction density.
6. Install pipe on compacted subgrade meeting bedding requirements.
7. Cradle bottom 20 percent of diameter to avoid point load.
8. Compact to 98 percent maximum density.

B. Piping:

1. Install pipe, fittings, and accessories according to ASTM D2321.
2. Seal joints watertight.
3. Installation Standards: Install Work according to ASTM standards.

C. Drainage Structures:

1. Catch Basins, Inlets, Manholes: As detailed on Contract Drawings.

3.4 TOLERANCES

A. Section 014000 - Quality Requirements: Requirements for tolerances.

B. Maximum Variation from Indicated Pipe Slope: 1/8 inch in 10 feet.

3.5 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Request inspection by Engineer prior to and immediately after placing aggregate cover over pipe.

C. Testing:

1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.
2. Compaction Tests:
 - a. Comply with ASTM D1557.
3. Deflection Test:

- a. Comply with ASTM C1103.

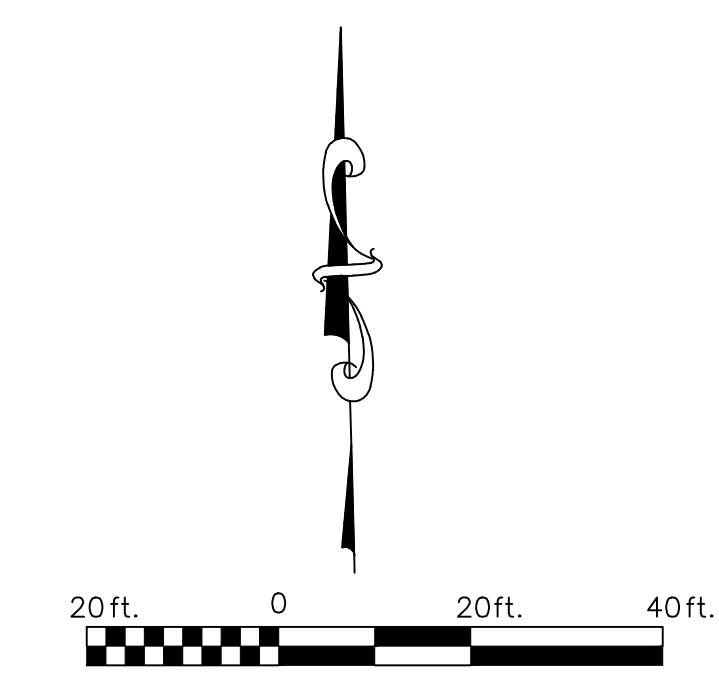
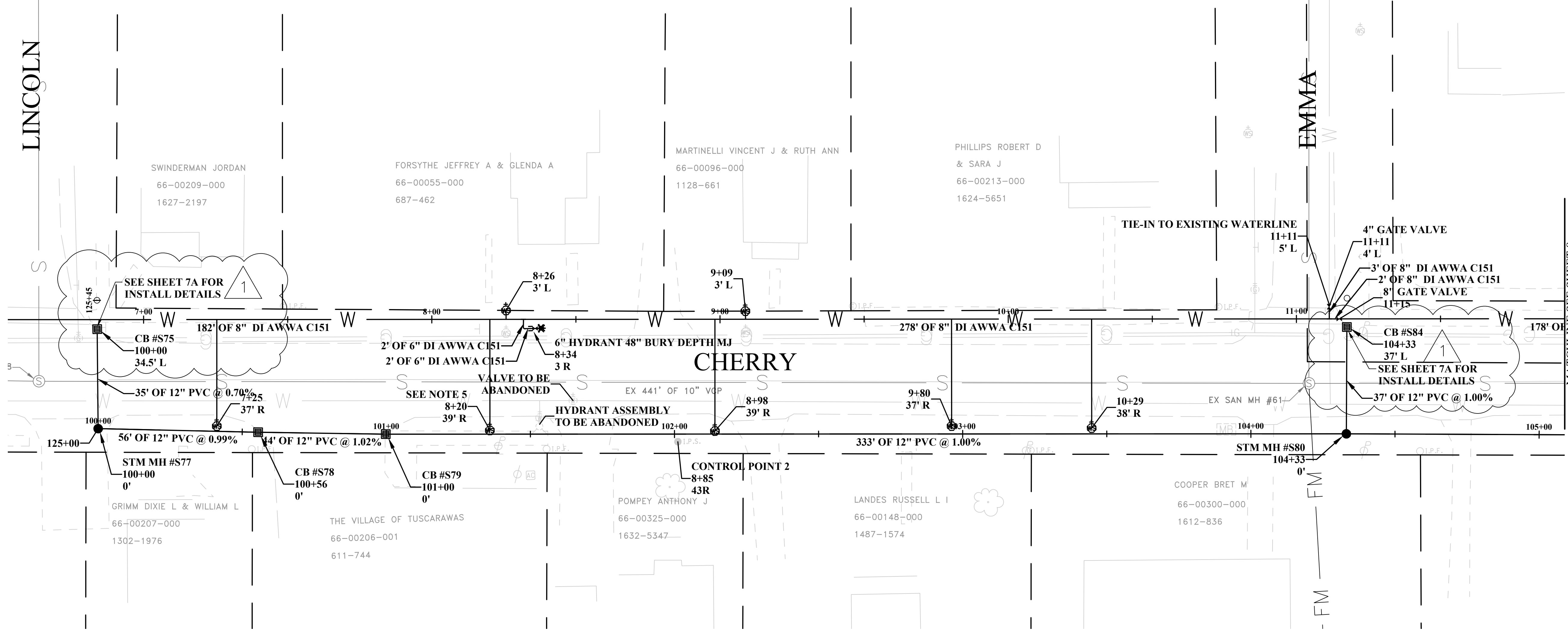
3.6 PROTECTION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

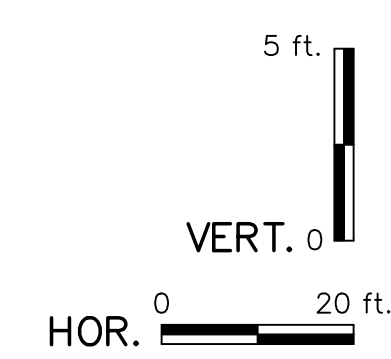
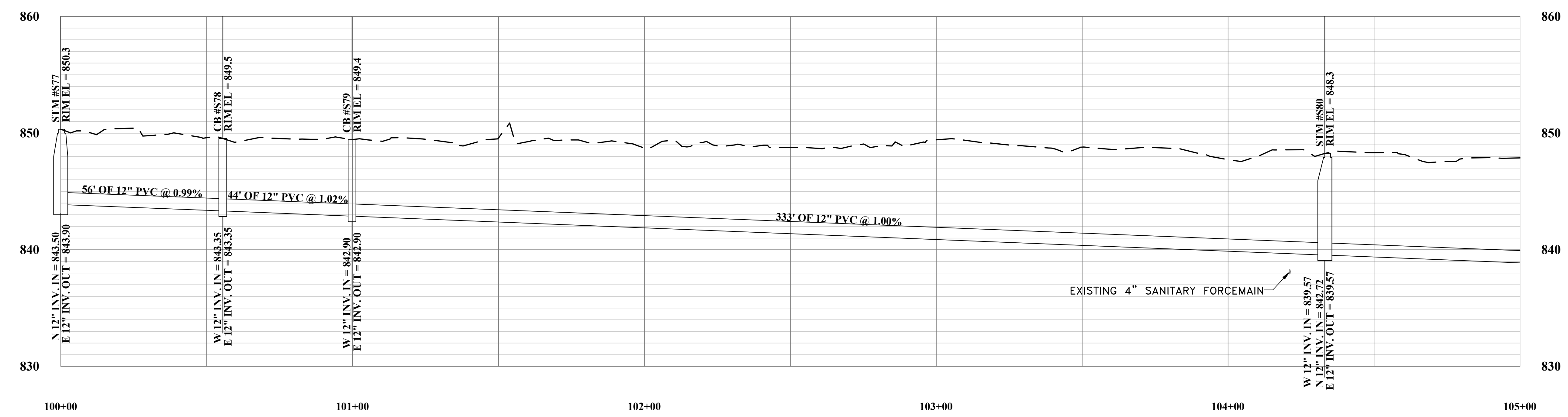
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 USER: scott m. dolson



- NOTES:
1. LOCATIONS OF CURB STOP VALVE TO BE VERIFIED BY CONTRACTOR BEFORE EXCAVATION.
 2. SEE GENERAL NOTES FOR INFORMATION REGARDING CONNECTIONS TO EXISTING WATERLINES.
 3. ALL RESIDENTIAL CURB STOP SEE DETAIL SHEET NO. D1.
 4. SEE SHEET D1 FOR THRUST BLOCKING DETAILS.
 5. 2" STEEL WATER SERVICE LINE.



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SURVEY BY:	
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CONTRACT No.
PROJECT No.
T10-11077

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CHERRY ST WATER MAIN & STORM SEWERS
PLAN & PROFILE - E CHERRY
100+00-105+00

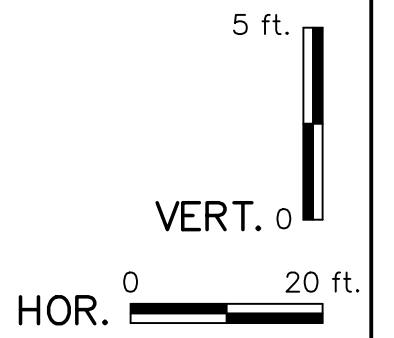
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1



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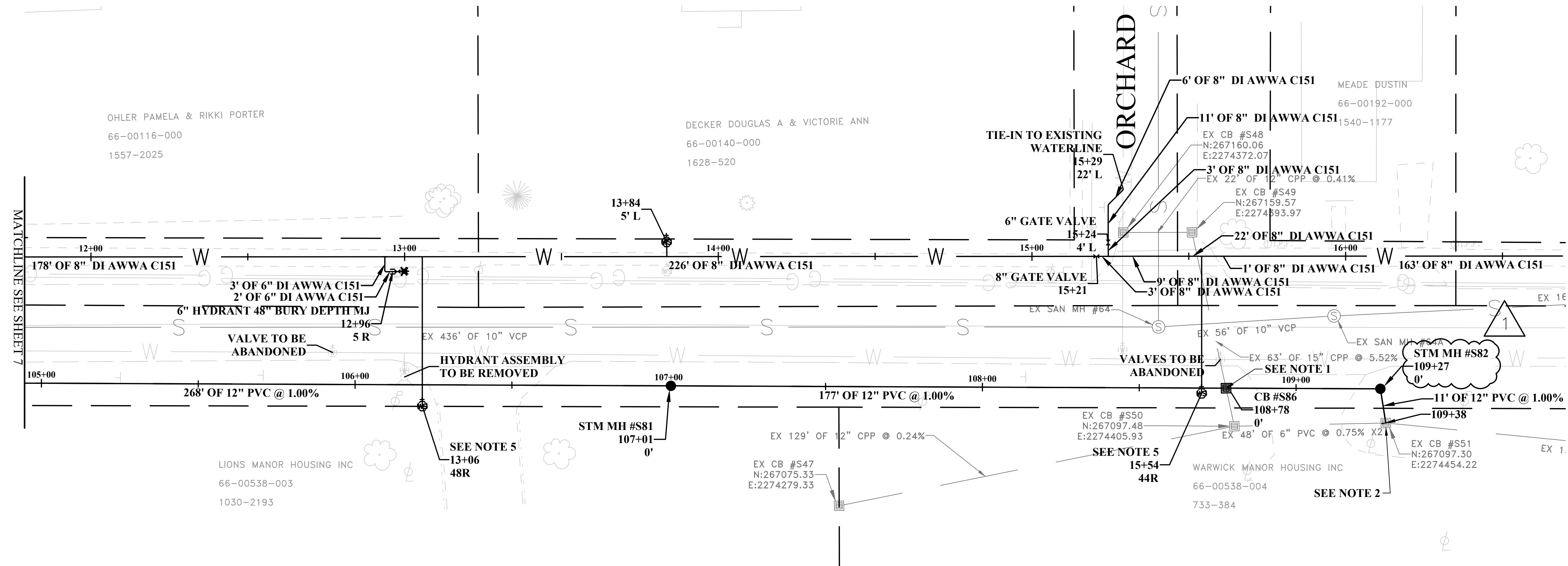
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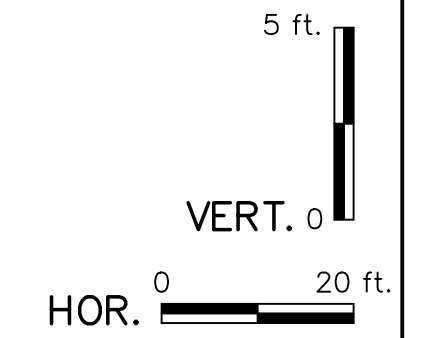
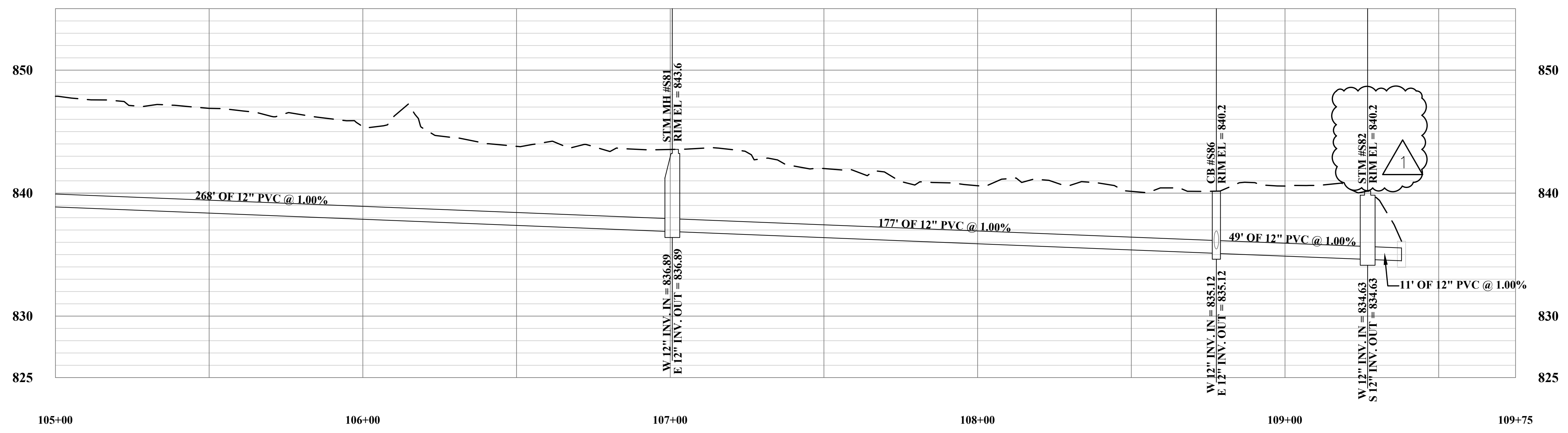
VILLAGE OF TUSCARAWAS
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PLAN & PROFILE - E CHERRY CB
DETAILS

SHEET No.
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- NOTES:
1. TIE EXISTING STM SEWER INTO PROPOSED STM SEWER.
 2. TIE INTO EXISTING CATCH BASIN.
 3. ALL RESIDENTIAL CURB STOP SEE DETAIL SHEET NO. D1.
 4. SEE SHEET D1 FOR THRUST BLOCKING DETAILS.
 5. 4" DUCTILE IRON WATER SERVICE LINE.



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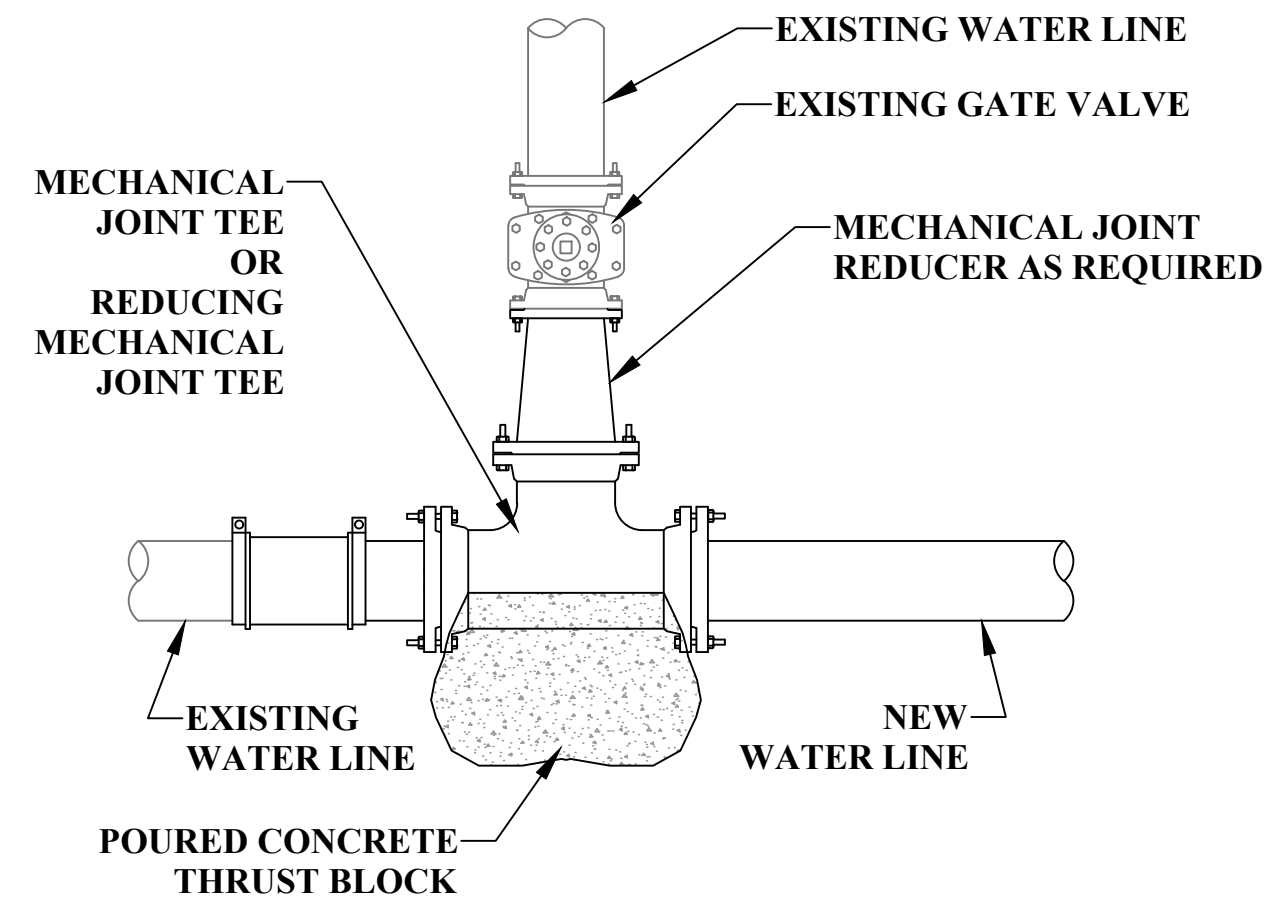
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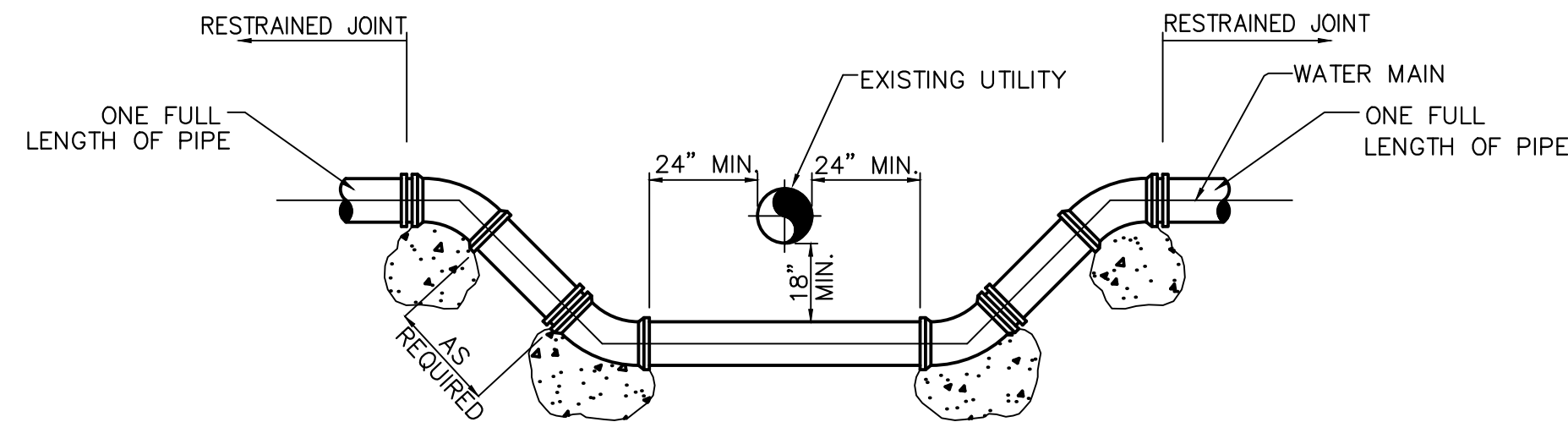
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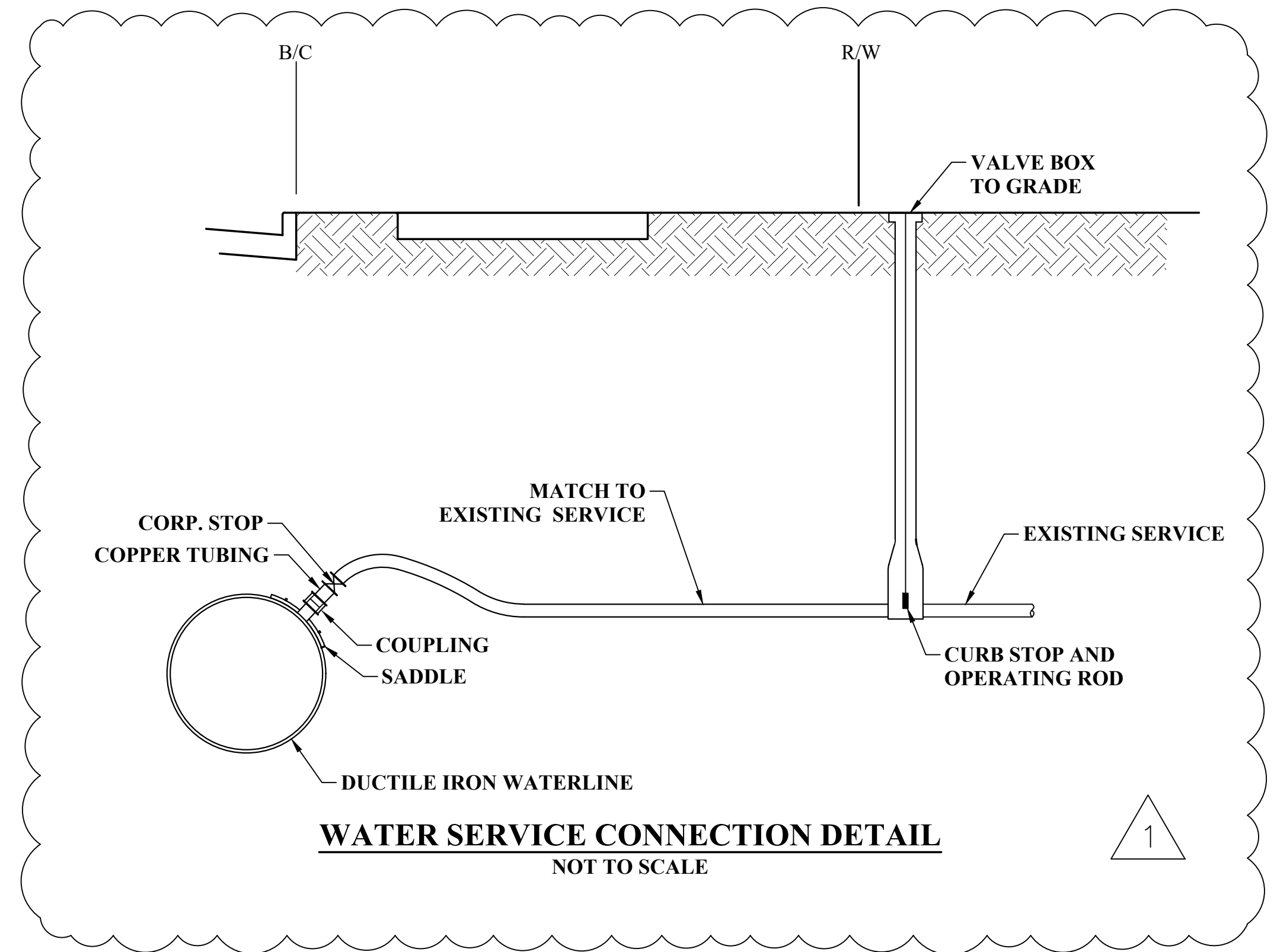
TIE IN DETAIL
NOT TO SCALE



UNLESS OTHERWISE REQUIRED BY WATER UTILITY, RESTRAINED MECHANICAL JOINTS SHALL BE USED. ADAPTERS SHALL BE PROVIDED FOR CONNECTION TO EXISTING MAIN IF REQUIRED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK ASSOCIATED WITH THE WATERLINE LOWERING WITH THE WATER DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST THREE WORKING DAYS IN ADVANCE OF THIS PROPOSED WORK ON THE WATERLINE.

WATER LOWERING DETAIL
NOT TO SCALE



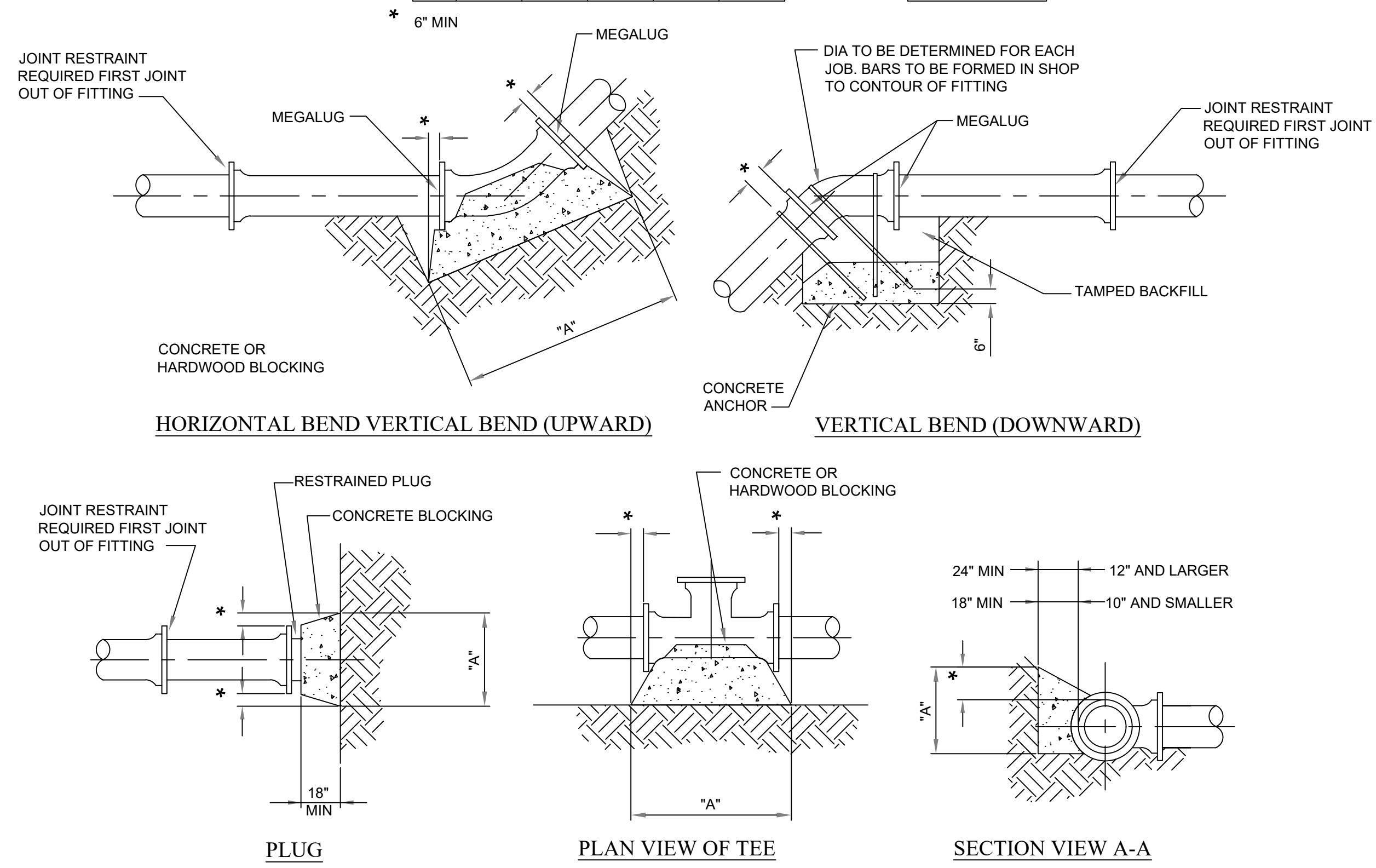
WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

PIPE SIZE X	A	B	DEPTH C	PIPE SIZE X	A	B	DEPTH C
11.25° BEND				90° BEND & UNBALANCED TEE			
18"	1'-3"	3'-0"	1'-6"	18"	2'-0"	6'-2"	3'-6"
16"	1'-0"	1'-9"	1'-6"	16"	1'-9"	5'-0"	3'-6"
12"	1'-0"	1'-2"	1'-3"	12"	1'-6"	3'-3"	3'-0"
10"	0'-9"	1'-0"	1'-0"	10"	1'-4"	2'-6"	3'-0"
8"	0'-9"	1'-0"	0'-8"	8"	1'-0"	2'-0"	2'-3"
6"	0'-9"	1'-0"	0'-6"	6"	1'-0"	1'-3"	2'-0"
4"	0'-6"	1'-0"	0'-4"	4"	0'-9"	1'-0"	1'-0"
DEAD END				45° BEND			
18"	1'-3"	6'-10"	3'-6"	18"	1'-3"	4'-9"	2'-6"
16"	1'-0"	3'-0"	3'-0"	16"	1'-0"	4'-3"	2'-3"
12"	0'-11"	4'-3"	3'-3"	12"	1'-0"	2'-6"	2'-3"
10"	0'-9"	3'-0"	3'-0"	10"	0'-9"	2'-0"	2'-0"
8"	0'-7"	2'-9"	2'-3"	8"	0'-9"	1'-8"	1'-6"
6"	0'-5"	1'-3"	1'-5"	6"	0'-9"	1'-0"	1'-6"
4"	0'-4"	0'-10"	0'-11"	4"	0'-9"	1'-0"	1'-0"
TEE				22° BEND			
18"	2'-9"	12'-3"	3'-6"	18"	1'-3"	2'-6"	2'-0"
16"	2'-6"	10'-0"	3'-6"	16"	1'-0"	2'-6"	2'-0"
12"	2'-0"	6'-6"	3'-0"	12"	1'-0"	1'-6"	2'-0"
10"	1'-9"	5'-0"	2'-6"	10"	0'-9"	1'-3"	2'-0"
8"	1'-6"	4'-0"	2'-3"	8"	0'-9"	1'-0"	2'-0"
6"	1'-0"	2'-8"	1'-6"	6"	0'-9"	0'-10"	1'-0"
4"	1'-0"	2'-0"	1'-0"	4"	0'-9"	0'-7"	1'-0"

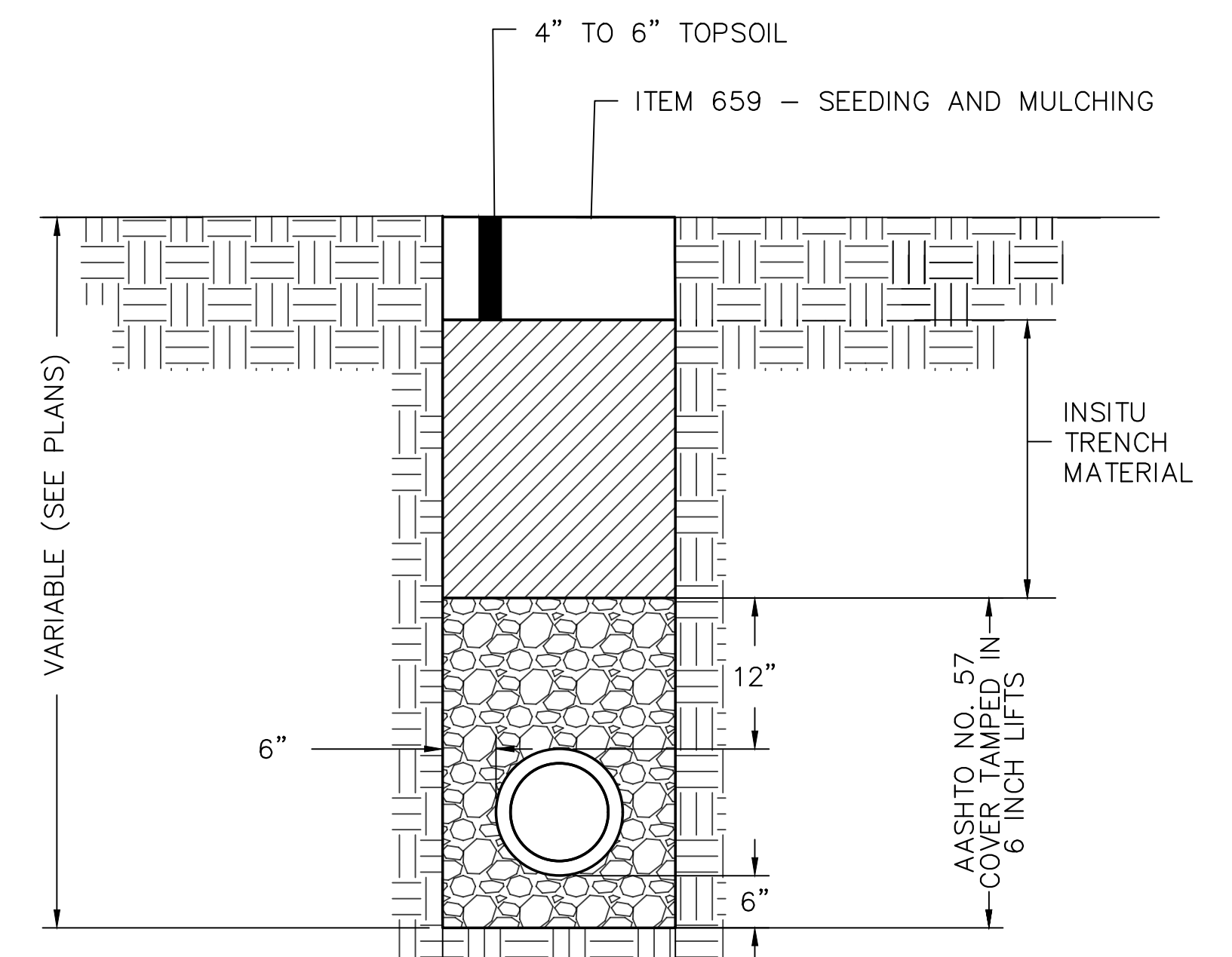
TABLE OF DIMENSIONS FOR HORIZONTAL & VERTICAL BENDS

"A" HORIZONTAL BENDS						
	90°	45°	22.5°	TEE	PLUG	
6"	6"	6"	6"	6"	6"	6"
8"	8"	8"	8"	8"	8"	8"
10"	10"	10"	10"	10"	10"	10"
12"	12"	12"	12"	12"	12"	12"
16"	16"	16"	16"	16"	16"	16"

MINIMUM VOLUME OF CONCRETE FOR TOP OF VERTICAL BENDS	
6"	4 C.F.
8"	11 C.F.
10"	22 C.F.
12"	37 C.F.
16"	71 C.F.



TYPICAL WATERMAIN THRUST BLOCKING DETAILS
NOT TO SCALE



* WIDTH OF TRENCH IS MEASURED 6" ABOVE TOP OF PIPE TRENCH MAY BE WIDER ABOVE THIS LINE

NOTE:
I. AGGREGATE TO BE PROVIDED BY ODOT PREQUALIFIED SUPPLIER.

NOTE : ALL CONCRETE FOR THRUST BLOCKS SHALL BE READY-MIXED 3000 psi (MINIMUM) CLASS "B". MIX DESIGN SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO USE. THRUST BLOCKS BASED ON 225 psi & 2000lb/ft² SOIL RESISTANCE TYPICAL FOR UNDISTURBED SAND AND GRAVEL CEMENTED WITH CLAY. FOR OTHER SOILS THE BEARING FACE OF THE THRUST BLOCKS SHOULD BE INCREASED BY THE FOLLOWING FACTORS.

SAND 2
SAND & GRAVEL 1.33
SHALE 0.4

SOFT CLAY, MUCK AND PEAT SHALL USE RESTRAINED JOINTS IN LIEU OF THRUST BLOCKS.

USER: scott m. dotson PLOT DATE/TIME: 10/17/2024 11:15 AM CAD FILE: R:\010\T10-11077.00 - Village Of Tuscarawas - Cherry St Water Main & Storm Sewers - Design\2. Design Drawings\01. GENERAL DETAILS.dwg

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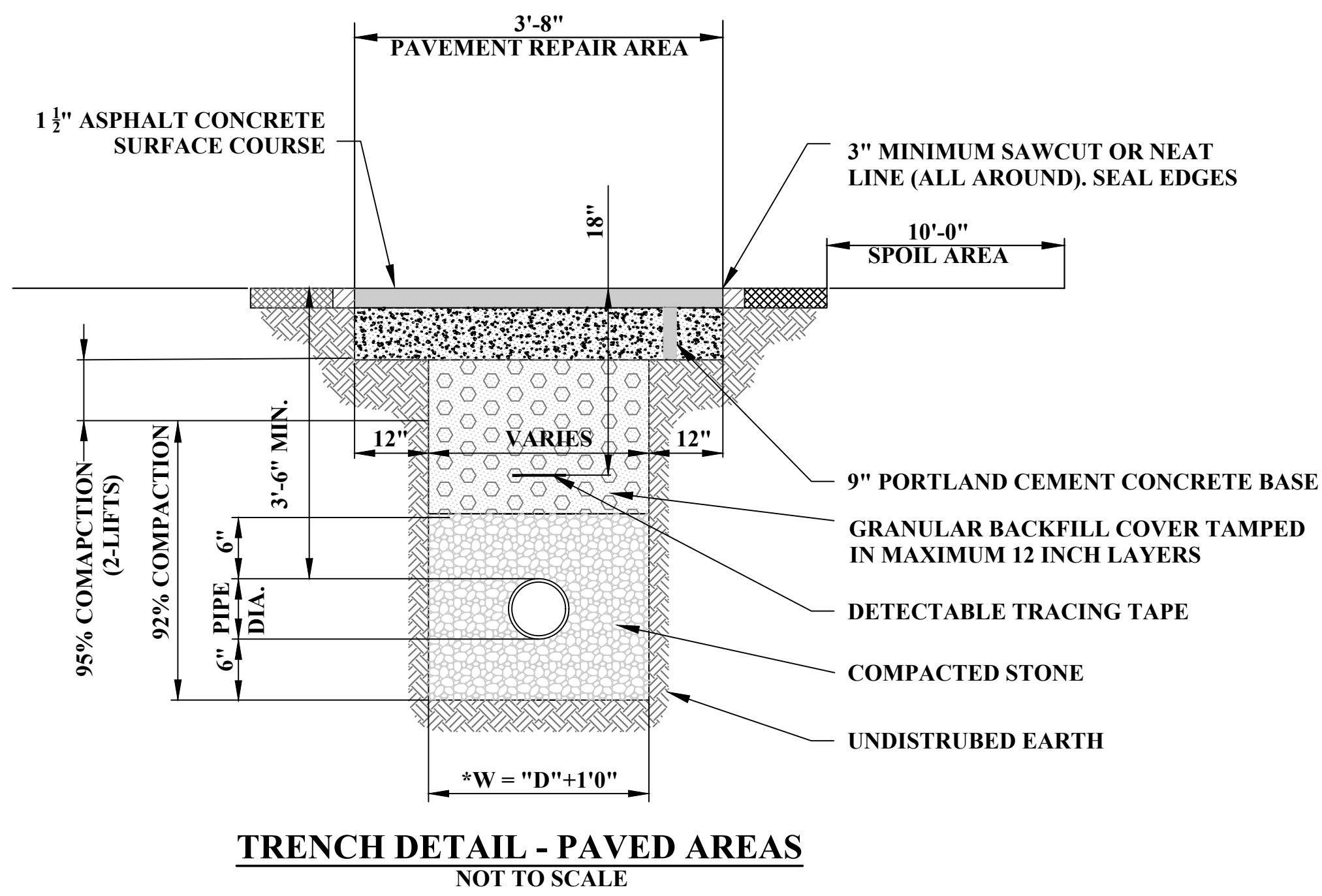
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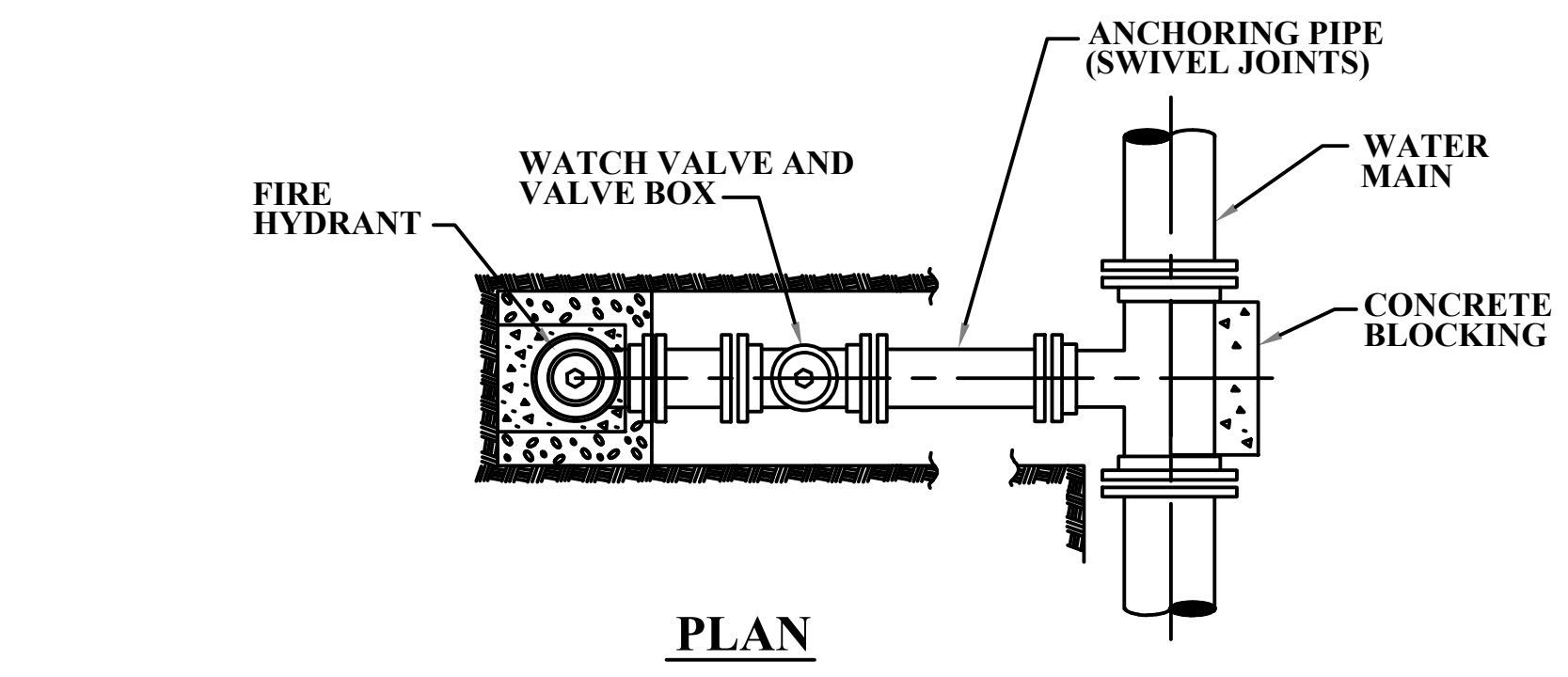
VILLAGE OF TUSCARAWAS
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GENERAL DETAILS

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D1

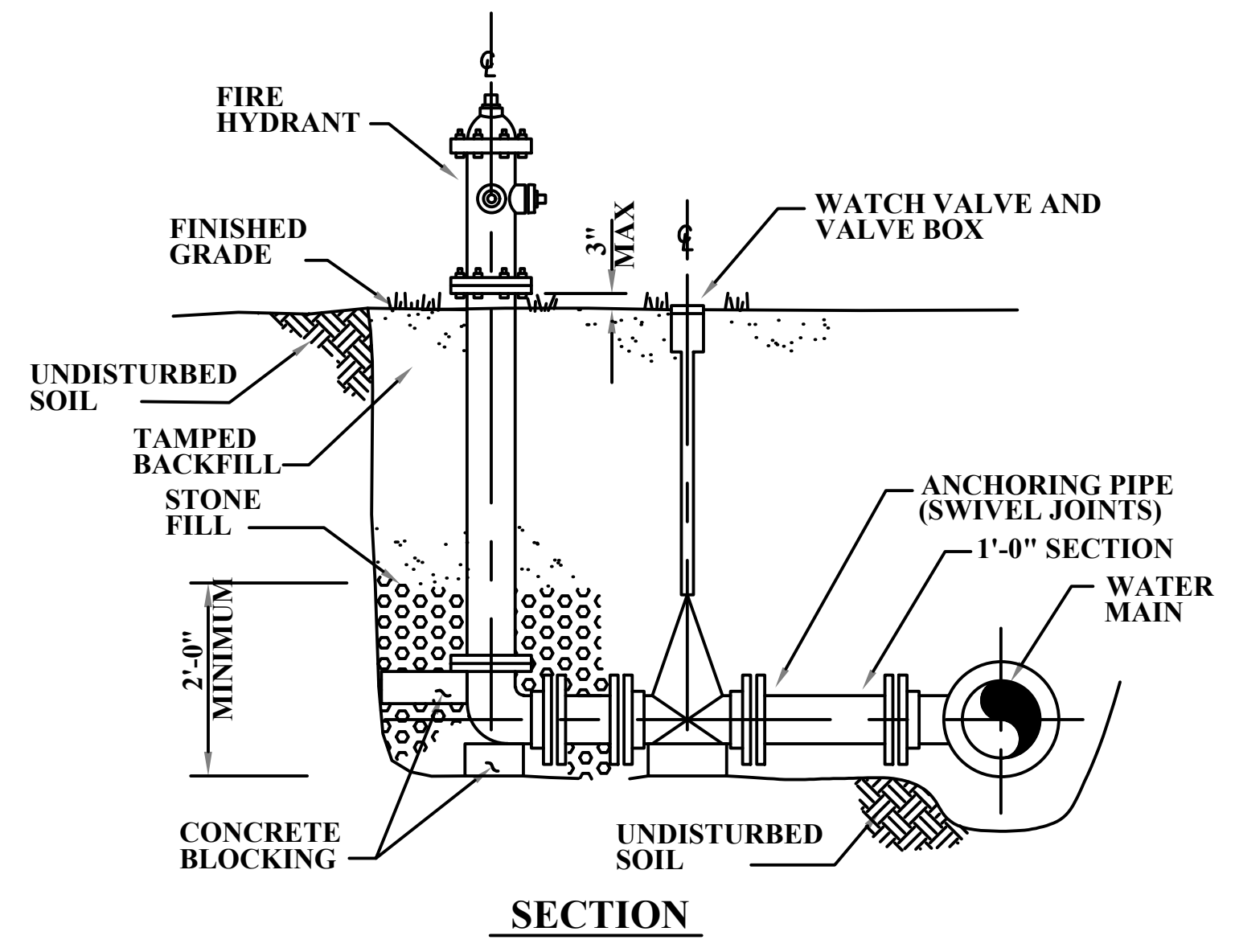
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TRENCH DETAIL - PAVED AREAS
NOT TO SCALE

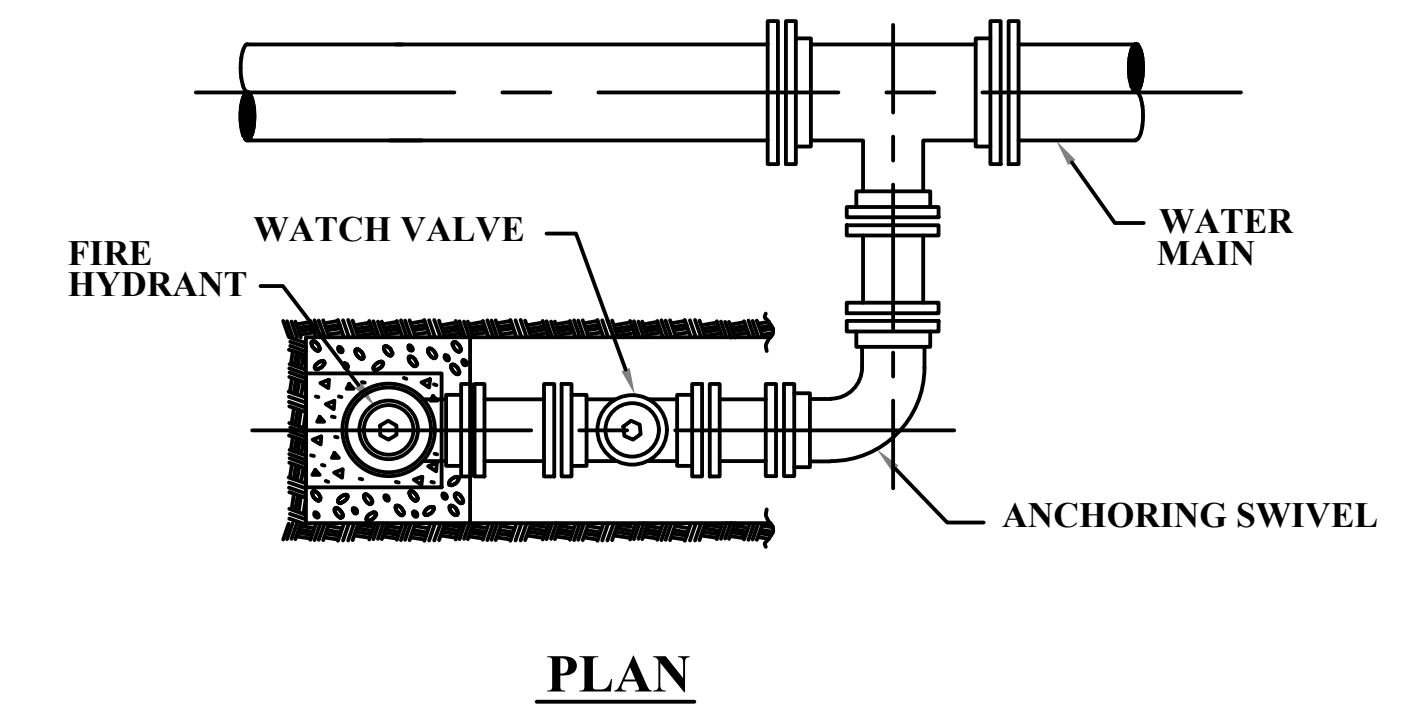


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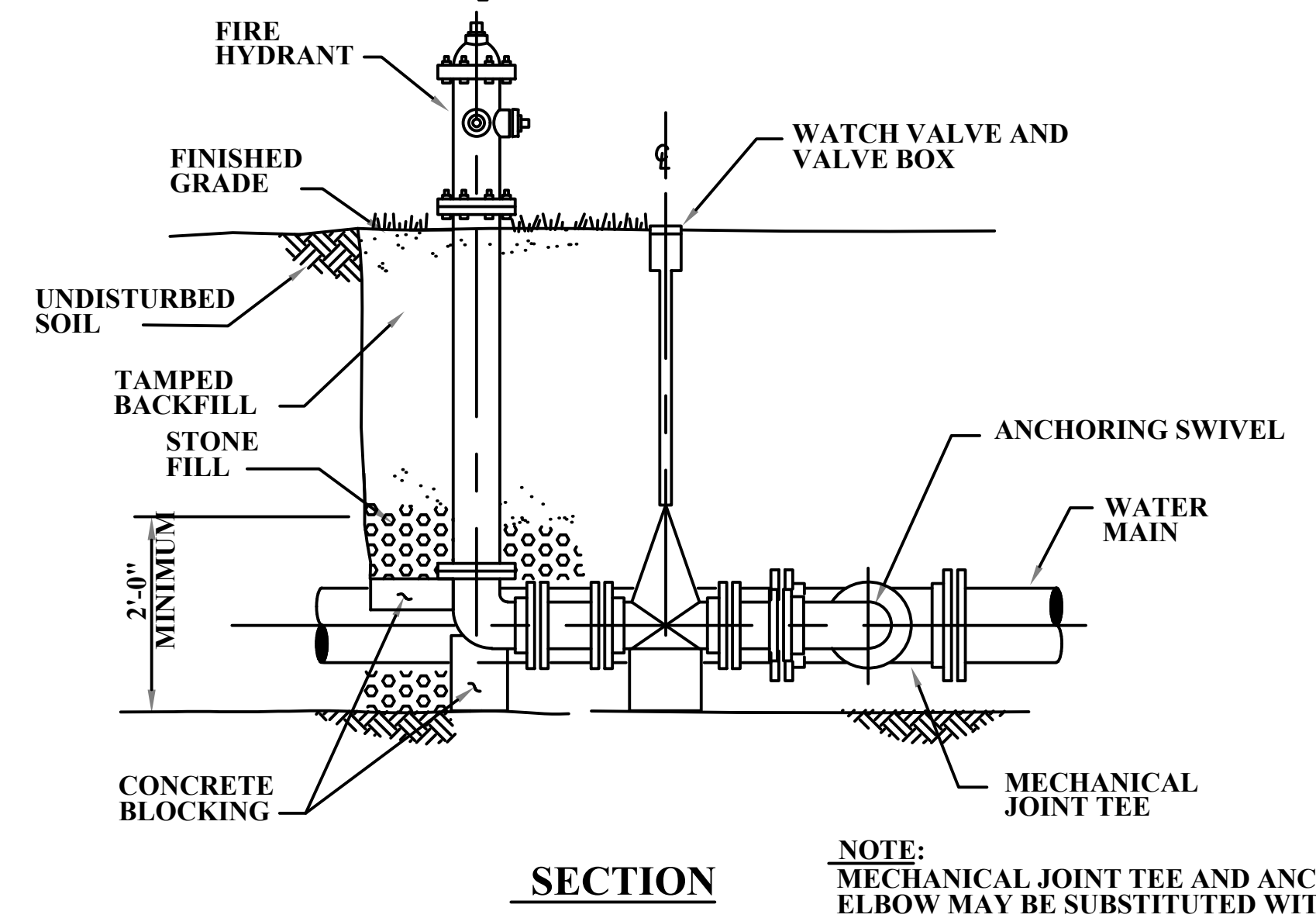


SECTION

HYDRANT PERPENDICULAR TO WATER MAIN DETAIL



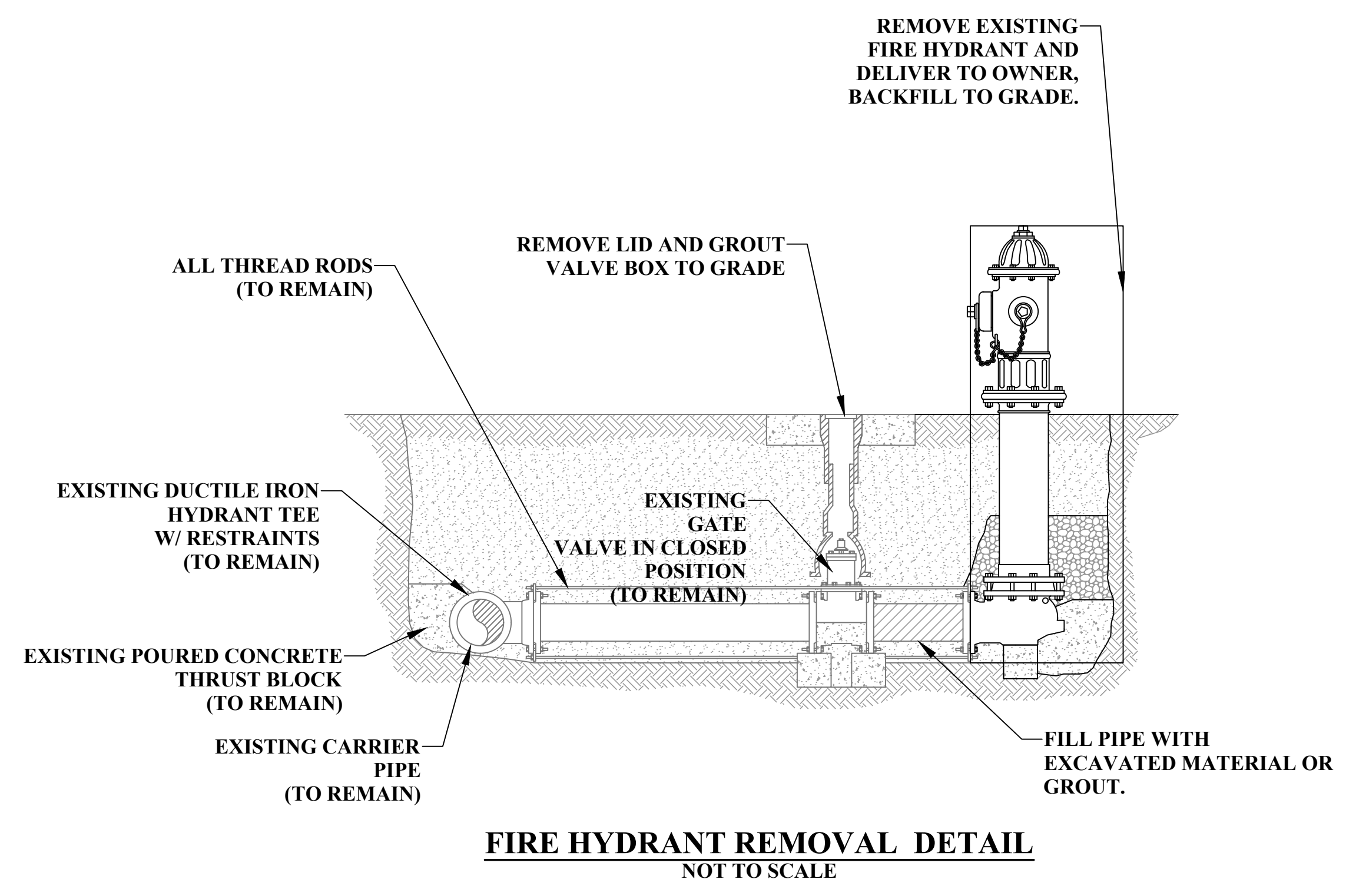
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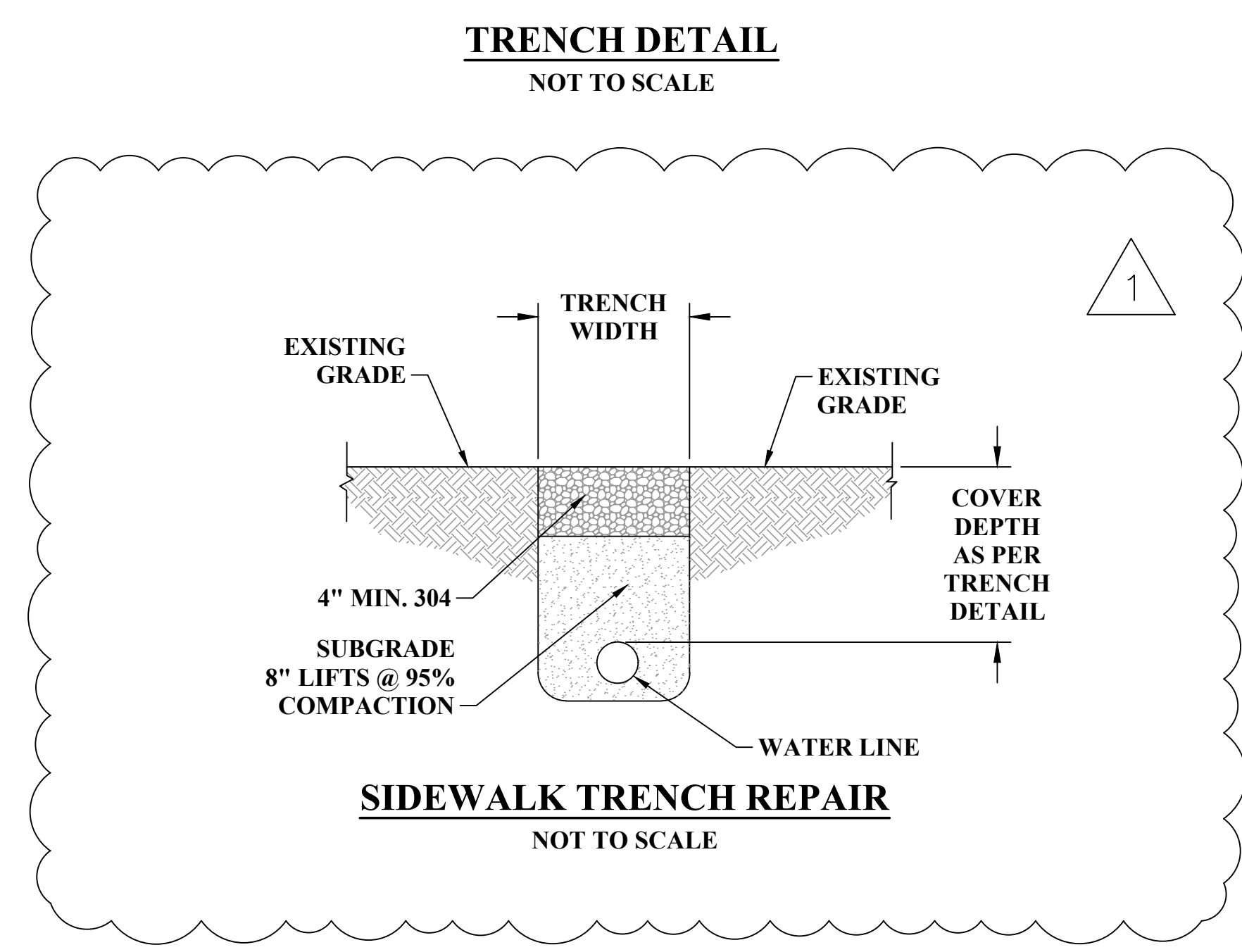
SECTION

HYDRANT PARALLEL TO WATER MAIN DETAIL

NOTE:
MECHANICAL JOINT TEE AND ANCHORING ELBOW MAY BE SUBSTITUTED WITH SPECIAL HYDRANT TEE COMBINING BOTH FITTINGS.



FIRE HYDRANT REMOVAL DETAIL
NOT TO SCALE



SIDEWALK TRENCH REPAIR
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VILLAGE OF TUSCARAWAS
CHERRY ST WATER MAIN & STORM SEWERS
GENERAL DETAILS

SHEET No.
D2