

SPECIAL MEETING NOTICE

A Special Meeting of the Ironwood City Commission will be held on Monday, January 29, 2018 at 5:30 P.M. in the City Commission Chambers, Memorial Building, 213 S. Marquette Street, Ironwood, MI 49938.

The purpose of the special meeting will be to discuss and consider a change order for the Phase 4 water and sewer project.

Scott B. Erickson
City Manager

AGENDA

1. Special Meeting Called to Order.
Recording of the Roll.
2. Citizens wishing to address the Commission on Items on the Agenda. (Three Minute Limit)
3. Discuss and Consider change order for the Phase 4 Water and Sewer project.
4. Adjournment.



COLEMAN ENGINEERING COMPANY

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MEMO

TO: Ironwood City Commission

FROM: Coleman Engineering Company, Paul Anderson, P.E.

DATE: January 25, 2018

RE: Change Order 3
City of Ironwood Phase IV Utility Project

The attached Change Order 3 resolves a number of project issues on the above referenced project. The largest two issues that are resolved are as follows:

1. **Calendar Days Converted to Completion Date:** The Contract was originally a Calendar days contract providing the Contractor 155 calendar days. With a winter shutdown for the in-town work and the Contractor working on the 16" water main project out north during the winter months, a new format was needed to set project milestone dates for the completion of different tasks. This Change Order accomplishes setting those project milestone dates. Having milestone dates was also a request of USDA Rural Development. Milestone dates provide a defined date defining what work is to be accomplished by that date. It minimizes interpretation and negotiating of things such as weather days and site conditions. All project milestone dates are in Attachment 2 of Change Order 3.
2. **Matting Addition:** Requirements for matting in the wetlands as per the MDEQ wetland permit were not included in the bidding documents. This Change Order adds in the cost of matting in the wetlands. Coleman Engineering has reviewed all of the unit prices of the contract and we have no reason to believe that the matting was included anywhere in the original bid unit prices (i.e. the City is not paying for the matting twice).

Numerous other construction issues are clarified and added in via this Change Order as are defined in Attachment 1.

The project has contingency funds available to pay for all items within this Change Order. Change Order 1, which includes water and sewer work in the Francis Street area, was originally listed as a Possible Future Project in the Preliminary Engineering Report. USDA Rural Development directed that Change Order 1 add this work into the project at the beginning of the project, in order to reduce the amount of contingency funds up front. This Change Order 3, along with other project additions, will reduce or eliminate the ability to perform the Change Order 1 Francis Street work, by using contingency funds. However, the ability to perform the Francis Street work will be reevaluated at the end of the project.

Coleman Engineering will be in attendance at the 1/31/18 City Commission meeting to discuss any questions that the Commission may have regarding Change Order 3. USDA Rural Development has already provided approval of this Change Order via email. Ruotsala Construction and Coleman Engineering have signed the Change Order. The project team is seeking the City Commission's approval and recommendation for Mayor's signature of this Change Order.

Date of Issuance: January 18, 2018
Owner: City of Ironwood
Contractor: Ruotsala Construction, LLC
Engineer: Coleman Engineering Company
Project: Phase IV Utility Project

Effective Date: January 18, 2018
Owner's Contract No.: N/A
Contractor's Project No.: N/A
Engineer's Project No.: 16385/86
Contract Name: N/A

The Contract is modified as follows upon execution of this Change Order:

Description:

Change to contract deadline date, clarification of numerous project issues, addition of storm and wetland permit work.

This Change Order has no associated Engineering Amendments.

Attachments:

Attachments 1, 2, 3, 4, 5, 6 & 7

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES
Original Contract Price: \$ 3,218,303.00	Original Contract Times: Substantial Completion: 155 Ready for Final Payment: 155 days or dates
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. 2: \$ 160,738.50	[Increase] [Decrease] from previously approved Change Orders No. 1 to No. 2: Substantial Completion: 35 Ready for Final Payment: 35 days
Contract Price prior to this Change Order: \$ 3,379,041.50	Contract Times prior to this Change Order: Substantial Completion: 190 Ready for Final Payment: 190 days or dates
[Increase] [Decrease] of this Change Order: \$ 54,878.00	[Increase] [Decrease] of this Change Order: Substantial Completion: N/A Ready for Final Payment: N/A days or dates
Contract Price incorporating this Change Order: \$ 3,433,919.50	Contract Times with all approved Change Orders: Substantial Comp: see attachment 2 Ready for Final Payment: see Attachment 2 days or dates

RECOMMENDED:		ACCEPTED:		ACCEPTED:	
By:		By:		By:	
	Engineer (if required)		Owner (Authorized Signature)		Contractor (Authorized Signature)
Title:	Project Engineer	Title	Mayor	Title	President
Date:	1/25/18	Date		Date	1/25/18

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

Attachment 1 for Change Order 3:

Contract Dates

The Notice to Proceed was issued for the original contract bid scope of work on 7/11/17. Change Order 3 hereby changes the project from a working days contract to a completion milestone date contract. Completion milestone dates are listed in Attachment 2. Road paving work where pipe is installed in 2018 (Luxemore, east Washington St, Hill St) shall have a completion date of June 15th 2018 for underground work and August 1, 2018 for paving and final restoration. This 8/1/18 date is created so that the trenches have time to "heal" after pipeline installation. The only scope of work with this 8/1/18 completion date is the HMA, Agg Base and immediately surrounding improvements such as driveways, concrete curb or sidewalk and restoration. Portions of the project where pipe was installed in 2017 (Sutherland, west Washington St, May St) shall be paved and restored prior to the 6/30/18 deadline.

The 16" waterline in North Ironwood has a completion date of 6/30/18. It is the Contractor's goal to complete the 16" waterline work prior to Spring 2018. The Contractor shall work 5 days a week (weather permitting) on this work during the winter of 2018 with a full crew of equipment and workers and progress the work in an efficient and effective manner. Those 5 days a week do not have to be Monday through Friday (makeup weather days will be performed on weekends). This efficient and effective progress shall start as of 1/24/18 when RCC will have the currently needed wood matting installed.

If the 16" watermain work is not all complete by the day the County Road Commission puts on road limits, and the Engineer and Owner deem that the Contractor worked as described above, then the Completion Date will be extended to 8/1/18. This Completion Date extension will be done in writing by the engineer and will not require another Change Order to be executed. The Contractor will be expected to continue work until ground water conditions do not allow. This could be past the date the road limits are put on and the Contractor will be expected to stockpile materials as required to work during road limits. If the Owner and Engineer deem that the Contractor did not work effectively in the winter of 2018 as described above, then the completion date shall remain 6/30/18. If these milestone dates are not met, then the Contractor will be in default of the Contract and liquidated damages will be assessed.

Contractor is allowed to work through the winter months of the 2017 / 2018 winter, in order to progress contract work. Contractor shall abide by City and County Road Restrictions in the spring of 2018. Liquidated damages will be assessed if any milestone completion date is not met.

All milestone dates are for FINAL COMPLETION of scope of work. Requests for substantial completion punch lists must be requested prior to the deadline dates as per the terms of the contract. If all punch list work is not completed by the milestone dates, then liquidated damages will be assessed.

Change Order 1 Removal

This change order removes the entire scope of work for Change Order 1. At the end of the construction process of the Contract Work, the budget will be evaluated to see if any part of the Change Order 1 scope of work will be able to be added back in via a new Change Order.

Contract Changes in Cost

See attachment 3 for all costs associated with this change order.

RCC will be paid the contract unit price of \$1.74/LF for the straw wattles that are required for the wetland work on the 16" main. This price is the difference from the silt fence is the material cost difference from the silt fence to the straw wattles.

Work Change Directives 3 through 9 are incorporated into this change order. The cost for these work items shall be at contract unit prices as shown on Attachment 3 to this Change Order. RCC will not be granted any additional time other than the completion dates discussed in Attachment 2.

- a. WCD #3 – Washington & May Street Storm
- b. WCD #4 – Washington Street Storm
- c. WCD #5 – Clearing & Grubbing, Additional Silt Fence
- d. WCD #6 – Additional Water Services
- e. WCD #7 – Revised Air Relief Vault
- f. WCD #8 – Hydrant Extensions
- g. WCD #9 – PRV Vault & Water Services off 16" main

Clarifications

No additional time or compensation will be granted for any claims by Ruotsala Construction regarding the following issues:

1. Dealing with wet or soft soils on the project and waiting for the road subgrade to "heal" during the 2017 construction season.
2. In the 2018 construction season, work shall progress proficiently once weather and road restrictions allow. The engineer and owner will make the decision as to how much time the roads need to "heal". All paving work shall be completed as per Attachment 2.
3. No additional compensation will be paid by the project for cost escalation of materials or rate increases for paving from 2017 to 2018. Multiple mobilizations will likely be needed for paving operations in 2018. Additional subcontractor mobilizations will not be paid for by the Project since this was required in Specification 02951.
4. Coordination with the gas company (Xcel) and having to work around old and new gas lines.
5. Increasing the trench width from 4' to 8' on the 16" watermain through wetlands. Any additional pipe bedding, excavation and any associated work is to be performed at Ruotsala's expense.

6. The wetlands on the 16" main north of Town, have been remapped as part of the new permit process for the wider trench. The new lineal footage of the wetland is 2,257' down from 3,125' in the original design. Also, instead of 2 wetland areas, there are now 8 wetland areas. There will therefore be more clay plugs required at the beginning and ending of each of these areas. The project will not pay any extra for the additional clay plugs.
7. RCC will need to install sedimentation barriers prior to melting runoff conditions in winter/spring of 2018. RCC will need to leave the sedimentation barrier in place until vegetation is established and then remove the wattles (in conformance with the MDEQ permit) as required by MDEQ and the land owner.
8. There will be no additional costs to the project for the necessary 3 boulders and rounded granitic stone in the bottom of the stream at station 92+60, which are required by the November 2017 MDEQ wetland permit (to address the trench width issue).
9. The new wetland permit drawings (now a part of the Contract Documents: see Attachments 4-7) show the 30' easement to be 10' east of the existing watermain and 20' west of the existing watermain. All contract work must be performed within this easement.
10. No additional time will be granted for RCC to perform "utility explorations" as per the contract documents. These will be paid as per the contract unit price.
11. The hydrant approximately 150' north of North Star Road was installed by RCC out of the 30' easement. RCC is responsible for either obtaining a permanent easement from the landowner or relocating the hydrant to be within the easement. It is up to RCC to resolve these issues with the private land owners and there will be no cost to the project for any of this work.
12. As previously agreed to, RCC is responsible for adding an Air Release Vault, at RCC's cost, approximately 50 feet south of North Star Road where RCC errantly created an additional high point in the 16" line.
13. Dewatering: the contract documents call out in numerous spots that dewatering is incidental to the Work and is at the contractor's cost.

Wetland Permit Work

The MDEQ wetland permit #WRP006619 and the associated Notice of Authorization, as well as MDEQ wetland permit WRP009745 and the associated Notice of Authorization and submittal drawings, shall hereby become a contract document and bound into this Contract. All permit requirements shall be followed by RCC while performing the Contract work in the wetlands, at no expense to Owner or Project unless specifically stated in this Change Order. All wetland permits are included in Attachments 4, 5 & 6 and the plans have been revised accordingly in Attachment 7. RCC will be paid for the matting as they complete the water main underneath the matting. This assumes RCC will be starting to install pipe at project tie-in (station 71+25) and working up station to the north. RCC will be paid only one time for matting. RCC will not be paid for matting, if there is still remaining waterline to be installed to

the south of the matting (since that remaining waterline will require matting to its north). If RCC needs to go back in through the wetlands for pipe repairs during pressuring testing, restoration fixes or any other issues, it will be up to RCC to comply with the MDEQ permit to perform the work at no additional cost to the project. RCC will be paid for the matting in wetlands F and G as soon as this change order is approved and processed by all parties, including USDA Rural Development. Payment of all other wetlands (A-E) are per the terms above.

Any matting and temporary roads that the contractor deems necessary in between the wetlands shall be the cost of the Contractor. If not all of the matting is necessary, then only what is necessary and agreed to by the Engineer will be paid for.

RCC will utilize matting (timber, rock, or other), as needed to complete all scope of work as per Attachment 2 deadlines in conformance with the MDEQ permits. RCC agrees to perform all restoration cleanup by the Attachment 2 deadlines.

The matting unit costs are as follows:

Wetland	Length	Stations	Cost / LF	Cost
A	357 LF	72+93-76+50	\$97	\$34,629
B	136 LF	77+98-78+85	\$97	\$13,192
C	320 LF	79+99-83+19	\$97	\$31,040
D	84 LF	84+21-85+05	\$97	\$8,148
E	718 LF	86+03-93+20	\$97	\$69,646
F	265 LF	97+44-100+08	\$22.50	\$5,963
G	90 LF	102+70-103+60	\$20	\$1,800

The reason for the lower unit price for wetlands F and G is because that unit price was agreed upon for those two wetlands due to the expected use of the rock matting detail. If RCC uses any other matting detail for those two wetlands, that is at RCC's cost.

Winter Maintenance

Roads were not paved prior to snowfall at the end of the 2017 construction season, therefore RCC shall protect all structures (within the roadway) with gravel or other appropriate means. RCC shall monitor these structures throughout the winter to verify that damage is not being caused by snowplows or other equipment. RCC shall fix any damage caused to the project during the winter months, at RCC's expense.

Road Subgrade Issues:

The project will pay for "fixes" in the spring caused by in situ material high moisture content and pumping problems whether this is in the normal roadway or at a structure. However, problems caused by settlement caused by voids or inadequate compactive effort near a structure or along a utility trench is a warranty item and must be covered by Ruotsala. Issues from lack of compactive effort (to be fixed at Ruotsala's expense) will have significant settlement at localized areas, much more than at the "moisture" problem areas. Defective work identified in the 1 year warranty period will need to be fixed at RCC's expense.

Attachment 2

**Final Completion Date when Liquidated
Damages begin**

Final Restoration of all "in-town" underground work installed prior to March 1, 2018 (Both Asphalt Lifts)	6/30/2018
All remaining "in-town" pipe, structures and associated underground work shall be installed by 6/15/18	6/15/2018
Final Restoration of all "in-town" underground work installed after 3/1/18 shall be complete by 8/1/18 (includes Both Lifts Asphalt)	8/1/2018
Final Installation and Restoration of all "16" Watermain in North Ironwood" shall be complete by 6/30/18. (See attachment 1 for language regarding possible 8/1/18 date).	6/30/2018
On 7/16/2018, Owner and Engineer will make determination as to if roads where pipelines were installed during 2018 need more time to heal or if subgrade undercutting needs to occur. If subgrade undercutting needs to occur, then RCC shall complete undercutting, paving and all restoration work by 8/1/18. If more time is needed for roads to heal, then a time extension change order will be granted at that time.	7/16/2018

Attachment 3 of Change Order 3

Work Change Directive #3 Work Items							
Plan Sheet 25 – Washington Street Storm						Project Allocations	
Item #	Description	Quantity	Units	Unit Cost	Subtotal	Water	Sewer
218	12-Inch HDPE Storm Sewer	20	LF	\$ 25.00	\$ 500.00		\$ 500.00
223	Storm Sewer Catch Basin, 2' Diameter	1	EA	\$ 1,500.00	\$ 1,500.00		\$ 1,500.00
224	Storm Sewer Catch Basin, 4' & 5' Diameter	1	EA	\$ 2,300.00	\$ 2,300.00		\$ 2,300.00
				Subtotal	\$ 4,300.00		
Plan Sheet 29 and 30 – May Street Storm							
218	12-Inch HDPE Storm Sewer	217	LF	\$ 25.00	\$ 5,425.00		\$ 5,425.00
223	Storm Sewer Catch Basin, 2' Diameter	1	EA	\$ 1,500.00	\$ 1,500.00		\$ 1,500.00
224	Storm Sewer Catch Basin, 4' & 5' Diameter	2	EA	\$ 2,300.00	\$ 4,600.00		\$ 4,600.00
				Subtotal	\$ 11,525.00		
Work Change Directive #4 Work Items							
218	12-Inch HDPE Storm Sewer	20	LF	\$ 25.00	\$ 500.00		\$ 500.00
223	Storm Sewer Catch Basin, 2' Diameter	1	EA	\$ 1,500.00	\$ 1,500.00		\$ 1,500.00
225	Connect to Existing Storm Sewer	1	EA	\$ 700.00	\$ 700.00		\$ 700.00
				Subtotal	\$ 2,700.00		
Work Change Directive #5 Work Items							
330	Erosion Control, Silt Fence	3500	LF	\$ 1.74	\$ 6,090.00	\$ 6,090.00	

	Clearing and Grubbing	1	acre	\$ 6,500.00	\$ 6,500.00		\$ 6,500.00	
				Subtotal	\$ 12,590.00			
Work Change Directive #6 Work Items								
133	1-Inch Corporation Stop	1	EA	\$ 125.00	\$ 125.00		\$ 125.00	
134	1-Inch Curb Stop & Box	1	EA	\$ 200.00	\$ 200.00		\$ 200.00	
135	1-Inch Type K Copper	10	LF	\$ 25.00	\$ 250.00		\$ 250.00	
102	8-Inch Water Main	14	LF	\$ 40.00	\$ 560.00		\$ 560.00	
106	8-Inch Gate Valve & Box	1	EA	\$ 1,600.00	\$ 1,600.00		\$ 1,600.00	
	2-Inch Corporation Stop	1	EA	\$ 900.00	\$ 900.00		\$ 900.00	
	2-Inch Curb Stop & Box	1	EA	\$ 900.00	\$ 900.00		\$ 900.00	
	2-Inch Type K Copper	8	LF	\$ 60.00	\$ 480.00		\$ 480.00	
				Subtotal	\$ 5,015.00			
Work Change Directive #7 Work Items								
	Air Relief Vault Detail Changes: no price change	1	LS	\$ -	\$ -			
				Subtotal	\$ -			
Work Change Directive #8 Work Items								
	24" Hydrant Extension	2	LS	\$ 1,541.00	\$ 3,082.00		\$ 3,082.00	
				Subtotal	\$ 3,082.00			
Work Change Directive #9 Work Items								
	2-Inch Corporation Stop	3	EA	\$ 900.00	\$ 2,700.00		\$ 2,700.00	
	2-Inch Curb Stop & Box	4	EA	\$ 900.00	\$ 3,600.00		\$ 3,600.00	
	2-Inch Type K Copper	20	LF	\$ 60.00	\$ 1,200.00		\$ 1,200.00	
	PRV Vault	1	EA	\$ 5,000.00	\$ 5,000.00		\$ 5,000.00	
133	1-Inch Corporation Stop	-1	EA	\$ 125.00	\$ (125.00)		\$ (125.00)	
134	1-Inch Curb Stop & Box	-1	EA	\$ 200.00	\$ (200.00)		\$ (200.00)	
135	1-Inch Type K Copper	-10	LF	\$ 25.00	\$ (250.00)		\$ (250.00)	
				Subtotal	\$ 11,925.00			

Wetland Matting Costs								
	Wetland A	357	LF	\$ 97.00	\$ 34,629.00		\$ 34,629.00	
	Wetland B	136	LF	\$ 97.00	\$ 13,192.00		\$ 13,192.00	
	Wetland C	320	LF	\$ 97.00	\$ 31,040.00		\$ 31,040.00	
	Wetland D	84	LF	\$ 97.00	\$ 8,148.00		\$ 8,148.00	
	Wetland E	718	LF	\$ 97.00	\$ 69,646.00		\$ 69,646.00	
	Wetland F	265	LF	\$ 22.50	\$ 5,962.50		\$ 5,962.50	
	Wetland G	90	LF	\$ 20.00	\$ 1,800.00		\$ 1,800.00	
				Subtotal	\$ 164,417.50			
Recind Change Order 1								
	Remove Change Order 1 WaterScope of Work	1	LS	\$ (98,235.50)	\$ (98,235.50)		\$ (98,235.50)	
	Remove Change Order 1 SewerScope of Work	1	LS	\$ (62,441.00)	\$ (62,441.00)			\$ (62,441.00)
				Subtotal	\$ (160,676.50)			
							Water	Sewer
				Totals	\$ 54,878.00		\$ 98,794.00	\$ (43,916.00)



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMIT**

Issued To:

Scott Erickson
City of Ironwood
213 S Marquette St
Ironwood, MI 49938

Permit No: WRP006619
Submission No.: 2PC-328C-5P6F
Site Name: 27-City of Ironwood Phase IV Utility Project-Ironwood Twp.
Issued: April 17, 2017
Expires: April 17, 2022

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|--|---|
| ☒ Part 301, Inland Lakes and Streams | ☐ Part 323, Shorelands Protection and Management |
| ☒ Part 303, Wetlands Protection | ☐ Part 325, Great Lakes Submerged Lands |
| ☐ Part 315, Dam Safety | ☐ Part 353, Sand Dunes Protection and Management |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Authorized Activity:

Construct a new 16 inch diameter water main, which will include excavating/blasting approximately 4397 cubic yards of soil/bedrock from two wetland areas totaling 3125 lineal feet by 4 feet wide by 9 feet deep. Approximately 1389 cubic yards of sand bedding shall be placed around the new pipe. Excavated material shall be stockpiled temporarily next to the trench and then used to backfill and restore the wetland to the original elevation. Installation of the water main beneath a tributary to Welch Creek will also be conducted, with the stream flow to be either pumped around or directed through a flume so that installation by open cut method in the dry may be accomplished. Stream restoration to original grade and bottom substrate shall be conducted upon project completion.

No work is authorized nor placement/disposal of dredge spoils in wetlands outside the 30 foot wide easement area at any time.

Temporary stockpiling of dredge spoils in wetlands shall be on timber matting or geotextile fabric.

All work shall be completed in accordance with plans prepared by Coleman Engineering, dated 1/23/17 and last revised 3/14/17. Said plans are kept on file at the MDEQ's Water Resources Division.

Water Course Affected: unnamed stream

Property Location: Gogebic County, Ironwood Township, T47N, R47W, Section 3, T48N, R47W, Section 34

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.

- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, the MDEQ has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from the MDEQ. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to the MDEQ to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all of the above information may be provided to the MDEQ. The MDEQ will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.

- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. Authority granted by this permit does not waive permit or program requirements under Part 91 of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/deqstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
 2. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
 3. No fill, excess soil, or other material shall be placed in any wetland, floodplain, or surface water area not specifically authorized by this permit, its plans, and specifications.
 4. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
 5. The permit placard shall be kept posted at the work site, in a prominent location at all times for the duration of the project, or until permit expiration.
 6. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDEQ, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.

Prior to the initiation of any permitted construction activities, a sedimentation barrier shall be constructed immediately down gradient of the construction site. Sedimentation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The sedimentation barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site and stabilized with seed and mulch. The sedimentation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.

All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.

All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be contained in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be stabilized with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

Rip rap shall be placed over geotextile fabric along both stream banks upon completion of the crossing. All riprap shall be properly sized and graded based on wave action and velocity, and shall consist of natural field stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is not allowed.

The construction of the stream crossing shall be subject to the specifications for protection of natural resources at utility water crossings as given in the Administrative Rules for Part 301, Inland Lakes and Streams, of the NREPA, R 281.832 - R 281.838 (Rule 22 through 28). Permittee is cautioned not to commence construction of the watercourse crossing without first reviewing said specifications and adhering to them. The permittee shall

be responsible for transmittal of the Administrative Rules to the general contractor and/or subcontractors and shall ensure that all contractors comply with all conditions of this permit.

During work on the culvert, and until the site is stabilized, the stream shall be blocked off with clean stone, gravel bags, or other acceptable materials, and the water pumped around the crossing. Water shall be discharged into the watercourse with appropriate treatments to remove suspended particles and to dissipate energy. An extra pump shall be kept on site in the event of failure.

No fill, excess soil, or other material shall be placed in the 100-year floodplain, any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.

Prior to the initiation of any permitted construction activity, a sedimentation barrier shall be installed along the entire route of the disturbed wetland area and maintained in good working order until permanent stabilization and re-vegetation of all disturbed areas has occurred. The sedimentation barrier shall be removed after re-vegetation.

Construction must be undertaken and completed during the dry period of the wetland, or when frozen.

If the area does not dry out or freeze, construction shall be done on equipment mats to prevent compaction of the soil.

Upon completion of the project, the disturbed wetland areas shall be restored to the original contour elevation, revegetated and reseeded with species native to Michigan appropriate to the site, and mulched to prevent erosion.

The permittee shall implement project design features, which will assure that the authorized pipeline, conduit, or utility installation does not result in drainage of the associated wetlands. If the pipeline, conduit, or utility installation causes drainage, the permittee remains liable and responsible for project modifications, as approved by the MDEQ, to halt the resultant drainage and to prevent future drainage of the wetland.

Trench excavation shall be restored to pre-existing grade by backfilling the trench so native soils are replaced in reverse order of excavation, replacing the topsoil at the surface.

All slurry resulting from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from wetlands and surface waters and allowed to filter through natural upland vegetation, gravel filters, or other engineered devices for a sufficient distance and/or period of time necessary to remove sediment or suspended particles.

Issued By:


James Caron
Upper Peninsula District Office
Water Resources Division
906-875-2071

cc: Ironwood Twp. Clerk
Gogebic County CEA, Part 91
Mike Foley, Coleman Engineering, Ironwood, MI



NOTICE OF AUTHORIZATION

Permit Number: WRP006619

Date Issued: April 17, 2017

Expiration Date: April 17, 2022

The Michigan Department of Environmental Quality, Water Resources Division, P.O. Box 30458, Lansing, Michigan 48909-7958, under provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; specifically:

- ☐ Part 31, Floodplain Regulatory Authority of the Water Resources Protection.
- ☒ Part 301, Inland Lakes and Streams.
- ☒ Part 303, Wetlands Protection.
- ☐ Part 315, Dam Safety.

Authorized activity:

Prior to the initiation of any permitted construction activities, a sedimentation barrier shall be constructed immediately down gradient of the construction site. Sedimentation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The sedimentation barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site and stabilized with seed and mulch. The sedimentation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.

All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.

All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be contained in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be stabilized with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

Rip rap shall be placed over geotextile fabric along both stream banks upon completion of the crossing. All riprap shall be properly sized and graded based on wave action and velocity, and shall consist of natural field stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is not allowed.

The construction of the stream crossing shall be subject to the specifications for protection of natural resources at utility water crossings as given in the Administrative Rules for Part 301, Inland Lakes and Streams, of the NREPA, R 281.832 - R 281.838 (Rule 22 through 28). Permittee is cautioned not to commence construction of the watercourse crossing without first reviewing said specifications and adhering to them. The permittee shall be responsible for transmittal of the Administrative Rules to the

This notice must be displayed at the site of work.

Laminating this notice or utilizing sheet protectors is recommended.

Please refer to the above permit number with any questions or concerns.

general contractor and/or subcontractors and shall ensure that all contractors comply with all conditions of this permit.

During work on the culvert, and until the site is stabilized, the stream shall be blocked off with clean stone, gravel bags, or other acceptable materials, and the water pumped around the crossing. Water shall be discharged into the watercourse with appropriate treatments to remove suspended particles and to dissipate energy. An extra pump shall be kept on site in the event of failure.

No fill, excess soil, or other material shall be placed in the 100-year floodplain, any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.

Prior to the initiation of any permitted construction activity, a sedimentation barrier shall be installed along the entire route of the disturbed wetland area and maintained in good working order until permanent stabilization and re-vegetation of all disturbed areas has occurred. The sedimentation barrier shall be removed after re-vegetation.

Construction must be undertaken and completed during the dry period of the wetland, or when frozen.

If the area does not dry out or freeze, construction shall be done on equipment mats to prevent compaction of the soil.

Upon completion of the project, the disturbed wetland areas shall be restored to the original contour elevation, revegetated and reseeded with species native to Michigan appropriate to the site, and mulched to prevent erosion.

The permittee shall implement project design features, which will assure that the authorized pipeline, conduit, or utility installation does not result in drainage of the associated wetlands. If the pipeline, conduit, or utility installation causes drainage, the permittee remains liable and responsible for project modifications, as approved by the MDEQ, to halt the resultant drainage and to prevent future drainage of the wetland.

Trench excavation shall be restored to pre-existing grade by backfilling the trench so native soils are replaced in reverse order of excavation, replacing the topsoil at the surface.

All slurry resulting from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from wetlands and surface waters and allowed to filter through natural upland vegetation, gravel filters, or other engineered devices for a sufficient distance and/or period of time necessary to remove sediment or suspended particles.

To be conducted at property located in: Gogebic County, Waterbody: unnamed stream
T47N, R47W, Section 3, T48N, R47W, Section 34, City of Ironwood

Permittee:
City of Ironwood
213 S Marquette St
Ironwood, MI 49938


James Caron
Upper Peninsula District Office
Water Resources Division
906-875-2071

*This notice must be displayed at the site of work.
Laminating this notice or utilizing sheet protectors is recommended.*
Please refer to the above permit number with any questions or concerns.



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
GENERAL PERMIT AUTHORIZATION**

Issued To:

Scott Erickson
City of Ironwood
213 S Marquette St
Ironwood, MI 49938

Permit No.: WRP006619
Submission No.: HN8-T7F8-ADWD8
Site Name: 27-City of Ironwood Phase IV Utility Project-Ironwood Twp.
Issued: April 17, 2017
Expires: April 17, 2022

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|--|---|
| ☒ Part 301, Inland Lakes and Streams | ☐ Part 323, Shorelands Protection and Management |
| ☒ Part 303, Wetlands Protection | ☐ Part 325, Great Lakes Submerged Lands |
| ☐ Part 315, Dam Safety | ☐ Part 353, Sand Dunes Protection and Management |
| ☐ Part 31, Water Resources Protection (Floodplain Regulatory Authority) | |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Authorized Activity:

This permit authorizes revision of permit #WRP 6619 and allows use of clean gravel fill over geotextile fabric in wetland areas to temporarily access the watermain construction site. The total amount of fill authorized is 1174 cubic yards in a 2257 foot long by 12 foot wide area. This gravel fill shall be placed only in the footprint where the new water main will be installed and shall be removed immediately upon completion of the project.

Authorization is also given to construct a temporary 20 foot long by 12 foot wide by 1.3 foot rise timber mat stream crossing across the Welch Creek tributary to provide access with equipment. No fill other than the mats is authorized on the approaches to the crossing or in the stream.

All other conditions associated with permit WRP 6619 remain in full force.

All work shall be completed in accordance with the attached plans and the terms and conditions of this permit.

Authorized Under General Permit Category: J. Minor Revision

Watercourse Affected: Tributary to Welch Creek

Property Location: Gogebic County, City of Ironwood, T47 and 48N, R47W, Sections 3 and 34

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.

- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, the MDEQ has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from the MDEQ. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to the MDEQ to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all of the above information may be provided to the MDEQ. The MDEQ will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be

constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.

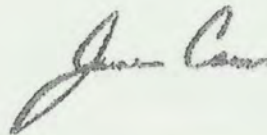
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. Authority granted by this permit does not waive permit or program requirements under Part 91 of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/deqstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
 2. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
 3. No fill, excess soil, or other material shall be placed in any wetland, floodplain, or surface water area not specifically authorized by this permit, its plans, and specifications.
 4. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
 5. The permit placard shall be kept posted at the work site, in a prominent location at all times for the duration of the project, or until permit expiration.
 6. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDEQ, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.

All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be contained in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be stabilized with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

The structure/bridge shall span the bankfull width of the stream with the lowest bottom of beam elevation at or above the natural ground elevations on each bank.

This permit is for one installation of a bridge over a stream. The structure may not be removed and reinstalled at a later date, unless authorized under another permit.

The structure shall be removed immediately upon completion of the project activity or by expiration date of the permit, whichever is earlier. The area shall be restored to prior condition and configuration upon removal of the temporary structure.



Issued By: _____

James Caron
Upper Peninsula District Office
Water Resources Division
906-875-2071



COLEMAN ENGINEERING COMPANY

635 CIRCLE DRIVE
IRON MOUNTAIN, MI 49801
PHONE: 906-774-3440

• 200 EAST AYER STREET
IRONWOOD, MI 49938
PHONE: 906-932-5048

• 120 US HWY 41 E, STE. B
NEGAUNEE, MI 49866
PHONE: 906-475-7489

October 20, 2017

Mr. James Caron
Michigan Department of Environmental Quality
Upper Peninsula District Office
Water Resources Division
1504 W. Washington Street
Marquette, MI 49855

RE: Permit Number: WRP006619
City of Ironwood – Phase IV Utility Project Temporary Wetland Access

Dear Mr. Caron:

On behalf of the City of Ironwood (The City), we are requesting clarification and minor amendment to the above referenced MDEQ permit.

Issue 1: We are seeking to clarify that the attached detail may be used as equipment mats to prevent compaction of the soil. This matting shall be removed upon completion of construction. Industry-standard timber mats may also be used, depending on which matting solution better-fits site conditions. See attached equipment mat detail.

Issue 2: We are requesting an amendment to the project permit. Please see the attached detail that describes the method we propose to temporarily cross Welch Creek Tributary, during construction. All material used for the temporary crossing will be removed after construction.

If you have any questions or comments, please contact me at (906) 932-5048.

Sincerely,
COLEMAN ENGINEERING COMPANY

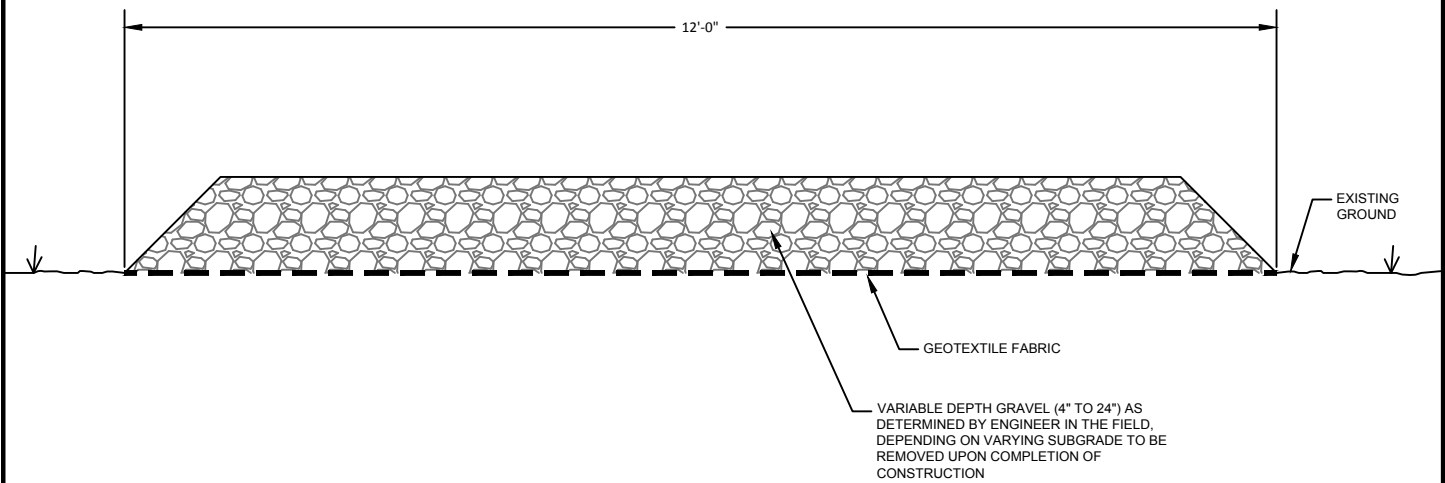
Paul C. Anderson
Project Manager

PCA/ras

Attachments

Cc: Mr. Scott Erickson, City Manager, City of Ironwood, Michigan

NOT TO SCALE



EQUIPMENT MATTING CROSS SECTION
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT
IRONWOOD, MICHIGAN

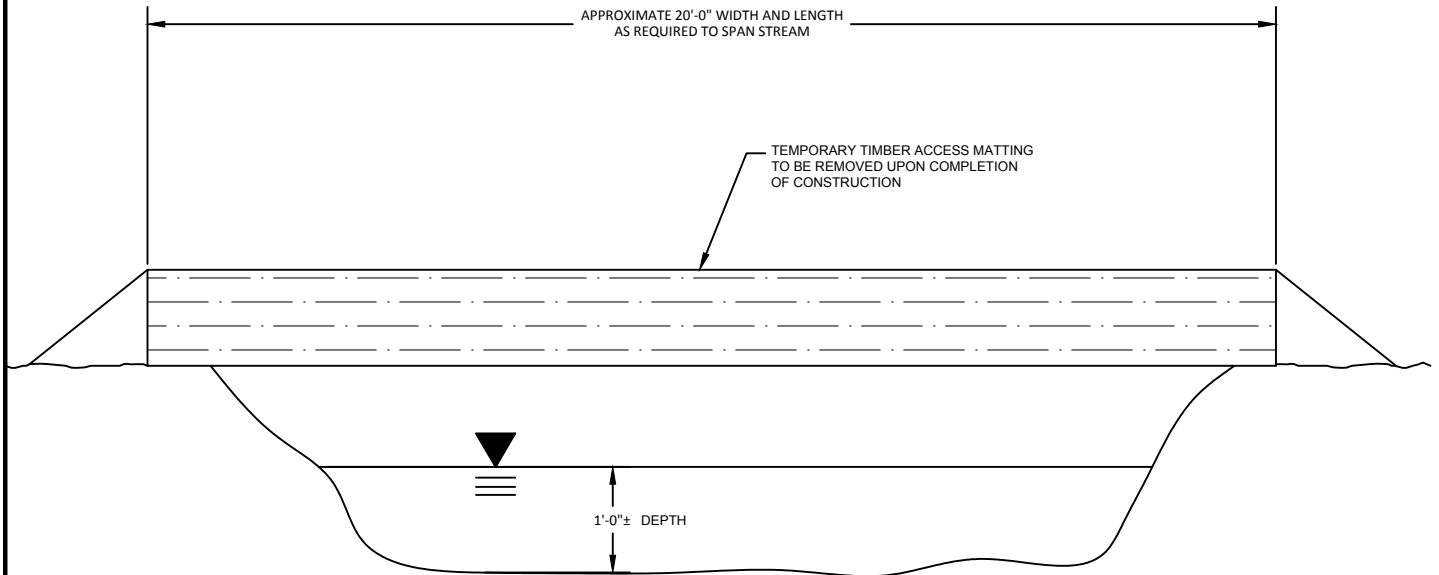


COLEMAN ENGINEERING COMPANY

635 CIRCLE DRIVE • IRON MOUNTAIN, MI 49801 • PHONE: 906-774-3440
200 EAST AYER STREET • IRONWOOD, MI 49938 • PHONE: 906-932-5048
120 US HWY 41 E., STE. B • NEGAUNEE, MI 49866 • PHONE: 906-475-7489

DATE 10/20/17
JOB NO 16386
CADD FILE 16385-Details

NOT TO SCALE



ACCESS MATTING OVER WELCH CREEK TRIBUTARY
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT
IRONWOOD, MICHIGAN



COLEMAN ENGINEERING COMPANY

635 CIRCLE DRIVE • IRON MOUNTAIN, MI 49801 • PHONE: 906-774-3440
200 EAST AYER STREET • IRONWOOD, MI 49938 • PHONE: 906-932-5048
120 US HWY 41 E., STE. B • NEGAUNEE, MI 49866 • PHONE: 906-475-7489

DATE 10/20/17
JOB NO 16386
CADD FILE 16385-Details



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMIT**

Issued To:

Scott Erickson
City of Ironwood
213 S. Marquette Street
Ironwood, MI 49938

Permit No: WRP009745
Submission No.: HN8-T9FE-HF66T
Site Name: 27-City of Ironwood 16-inch Watermain-Ironwood Twp
Issued: November 30, 2017
Expires: November 30, 2022

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|--|---|
| ☒ Part 301, Inland Lakes and Streams | ☐ Part 323, Shorelands Protection and Management |
| ☒ Part 303, Wetlands Protection | ☐ Part 325, Great Lakes Submerged Lands |
| ☐ Part 315, Dam Safety | ☐ Part 353, Sand Dunes Protection and Management |
| ☐ Part 31, Water Resources Protection (Floodplain Regulatory Authority) | |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Authorized Activity:

Construct a 16 inch water main which will include excavating/blasting approximately 6353 cubic yards of soil/bedrock from multiple wetland areas totaling 2257 lineal feet by 8 feet wide by 9.5 feet deep. Excavated soil shall be stockpiled next to the trench over geotextile fabric or matting (which may include the entire 30 foot easement area) and used to backfill and restore the wetland. Approximately 1956 cubic yards of clean sand bedding shall be used to backfill around the new water main. The water main shall also be installed beneath an unnamed tributary to Welch Creek. Stream flow shall be passed through a flume or flow shall be pumped around the crossing so that installation by open cut can be utilized.

A temporary crossing of the tributary is also authorized which will include installation of a 24 inch diameter by 18 foot long culvert which will be backfilled with clean rock fill. Equipment shall access the project site through wetlands by use of temporary placement of approximately 1174 cubic yards of gravel over geotextile fabric or under frozen conditions.

Stream restoration shall occur following project completion as per the attached modified plan and shall utilize 3-6 inch rounded granitic material, boulders in the stream channel and rip rap over geotextile fabric along the banks.

All work shall be completed in accordance with plans prepared by Coleman Engineering which shall be kept on file at the MDEQ's Water Resources Division.

Waterbody Affected: unnamed stream
Property Location: Gogebic County, Ironwood Township, Town/Range/Section 48N47W34

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, the MDEQ has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from the MDEQ. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to the MDEQ to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all of the above information may be provided to the MDEQ. The MDEQ will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).

- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
 - 1. Authority granted by this permit does not waive permit or program requirements under Part 91 of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/deqstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
 - 2. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
 - 3. No fill, excess soil, or other material shall be placed in any wetland, floodplain, or surface water area not specifically authorized by this permit, its plans, and specifications.
 - 4. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
 - 5. The permit placard shall be kept posted at the work site, in a prominent location at all times for the duration of the project, or until permit expiration.
 - 6. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDEQ, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.

Prior to the initiation of any permitted construction activities, a sedimentation barrier shall be constructed immediately down gradient of the construction site. Sedimentation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The sedimentation barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site and stabilized with seed and mulch. The sedimentation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.

All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.

The construction of the stream crossing shall be subject to the specifications for protection of natural resources at utility water crossings as given in the Administrative Rules for Part 301, Inland Lakes and Streams, of the NREPA, R 281.832 - R 281.838 (Rule 22 through 28). Permittee is cautioned not to commence construction of the watercourse crossing without first reviewing said specifications and adhering to them. The permittee shall be responsible for transmittal of the Administrative Rules to the general contractor and/or subcontractors and shall ensure that all contractors comply with all conditions of this permit.

Exposed streambanks resulting from this construction shall be stabilized with temporary measures in accordance with appropriate Best Management Practices based on site conditions, and if necessary, may be riprapped extending above the ordinary high water mark, to provide adequate erosion protection. Temporary stabilization measures shall be maintained until permanent measures are in place.

No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.

The temporary culvert shall be removed immediately upon completion of the project activity. The area shall be restored to prior condition and configuration upon removal of the temporary structure as per the approved plan.

All riprap shall be properly sized and graded based on wave action and velocity, and shall consist of natural field stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is not allowed.

During installation of the water main beneath the stream, and until the site is stabilized, the stream shall be blocked off with clean stone, gravel bags, or other acceptable materials, and the water pumped around the crossing. Water shall be discharged into the watercourse with appropriate treatments to remove suspended particles and to dissipate energy. An extra pump shall be kept on site in the event of failure.

No fill, excess soil, or other material shall be placed in the 100-year floodplain, any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.

Construction must be undertaken and completed during the dry period of the wetland, or when frozen.

If the area does not dry out or freeze, construction shall be done on equipment mats to prevent compaction of the soil.

Upon completion of the project, the disturbed wetland areas shall be restored to the original contour elevation, revegetated and reseeded with species native to Michigan appropriate to the site, and mulched to prevent erosion.

Trench excavation shall be restored to pre-existing grade by backfilling the trench so native soils are replaced in reverse order of excavation, replacing the topsoil and organics at the surface.

All slurry from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from the wetlands and surface waters and allowed to filter through natural upland vegetation, a gravel filter or filter bag to remove sediment and suspended particles.



Issued By:

James Caron
Upper Peninsula District Office
Water Resources Division
906-875-2071

cc: Ironwood Township Clerk
Gogebic County CEA, Part 91
Paul Anderson, Coleman Engineering, Ironwood, MI



NOTICE OF AUTHORIZATION

Permit Number: WRP009745

Date Issued: November 30, 2017

Site Name: 27-City of Ironwood 16-inch Watermain-Ironwood Twp

Expiration Date: November 30, 2022

The Michigan Department of Environmental Quality, Water Resources Division, P.O. Box 30458, Lansing, Michigan 48909-7958, under provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; specifically:

☒ Part 301, Inland Lakes and Streams.

☒ Part 303, Wetlands Protection.

Authorized activity:

Construct a 16 inch water main which will include excavating/blasting approximately 6353 cubic yards of soil/bedrock from multiple wetland areas totaling 2257 lineal feet by 8 feet wide by 9.5 feet deep. Excavated soil shall be stockpiled next to the trench over geotextile fabric or matting (which may include the entire 30 foot easement area) and used to backfill and restore the wetland. Approximately 1956 cubic yards of clean sand bedding shall be used to backfill around the new water main. The water main shall also be installed beneath an unnamed tributary to Welch Creek. Stream flow shall be passed through a flume or flow shall be pumped around the crossing so that installation by open cut can be utilized.

A temporary crossing of the tributary is also authorized which will include installation of a 24 inch diameter by 18 foot long culvert which will be backfilled with clean rock fill. Equipment shall access the project site through wetlands by use of temporary placement of approximately 1174 cubic yards of gravel over geotextile fabric or under frozen conditions.

Stream restoration shall occur following project completion as per the attached modified plan and shall utilize 3-6 inch rounded granitic material, boulders in the stream channel and rip rap over geotextile fabric along the banks.

All work shall be completed in accordance with plans prepared by Coleman Engineering which shall be kept on file at the MDEQ's Water Resources Division.

To be conducted at property located in: Gogebic County, Waterbody: unnamed stream
Section 34, Town 48N, Range 47W, Ironwood Township

Permittee:

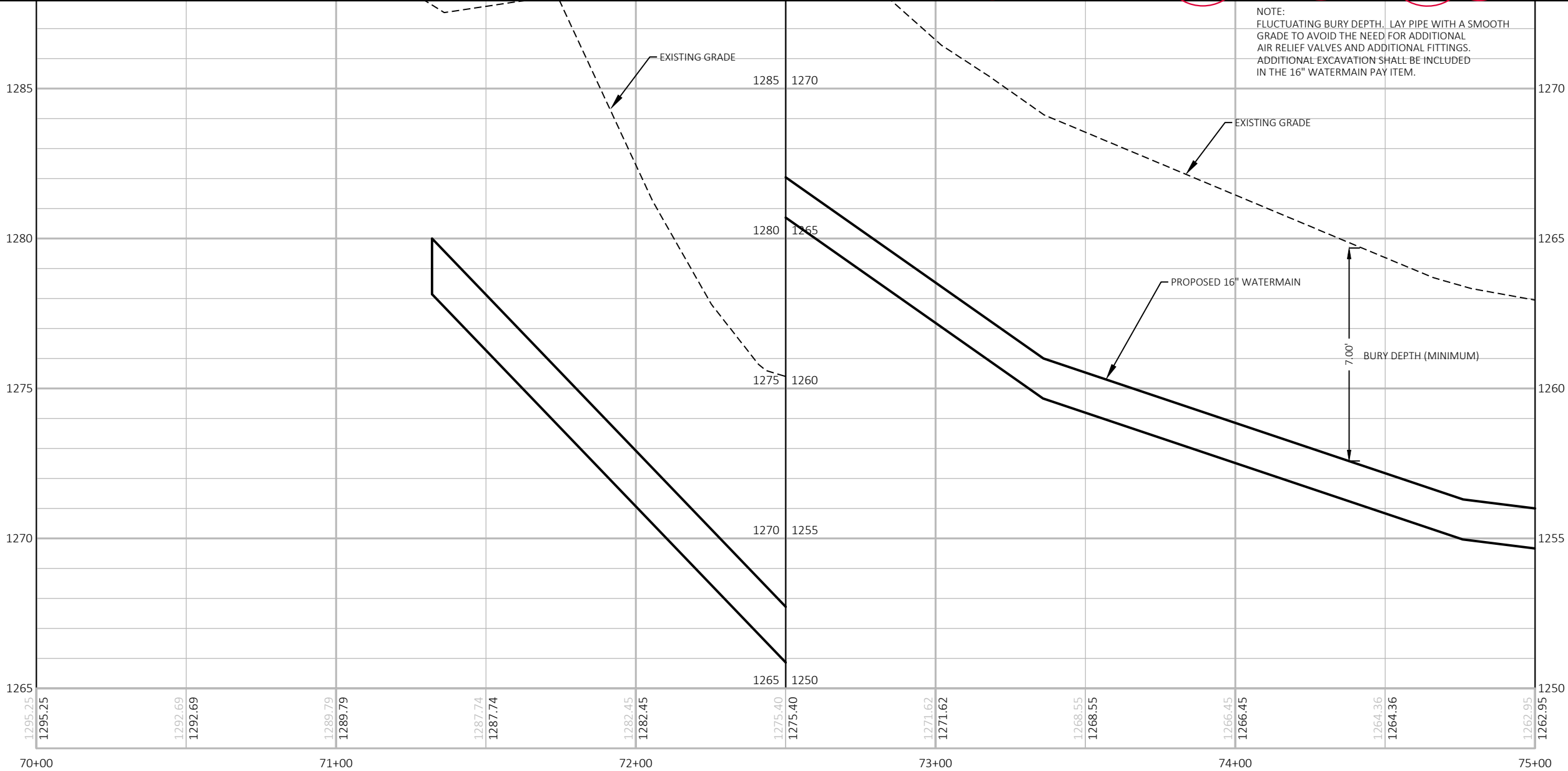
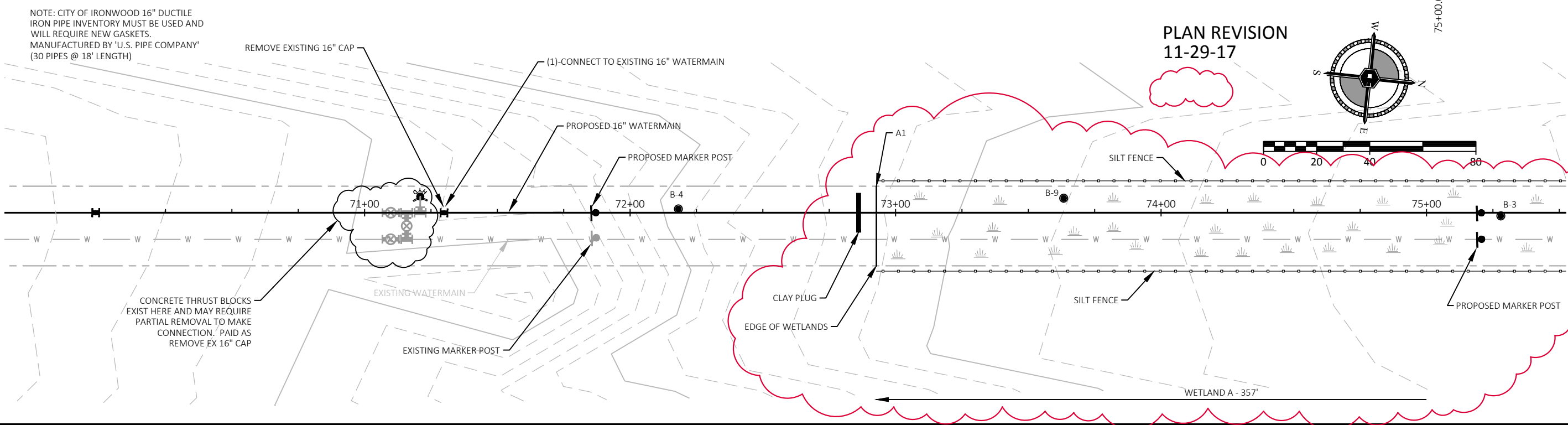
City of Ironwood
213 S. Marquette Street
Ironwood, MI 49938

A handwritten signature in black ink, appearing to read "James Caron", is written over a light blue horizontal line.

James Caron
Upper Peninsula District Office
Water Resources Division
906-875-2071

*This notice must be displayed at the site of work.
Laminating this notice or utilizing sheet protectors is recommended.
Please refer to the above permit number with any questions or concerns.*

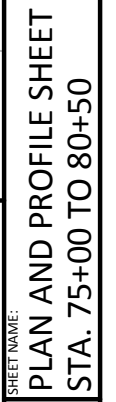
NOTE: CITY OF IRONWOOD 16" DUCTILE IRON PIPE INVENTORY MUST BE USED AND WILL REQUIRE NEW GASKETS. MANUFACTURED BY 'U.S. PIPE COMPANY' (30 PIPES @ 18' LENGTH)



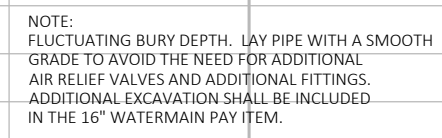
TRANSCANADA/GREAT LAKES GAS TRANSMISSION COMPANY
TOM RAVELLI
906-360-0409
CHRIS GIERL
906-285-1720



COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE • IRON MOUNTAIN, MI 49801 • PHONE: 906-774-3440
200 EAST ATER STREET • IRONWOOD, MI 49938 • PHONE: 906-532-5048
120 US HWY 41 E., STE. B • NEGAUNEE, MI 49866 • PHONE: 906-475-7489



- GENERAL CONDITIONS FOR CONSTRUCTION NEAR TRANSCANADA RIGHT-OF-WAY AND FACILITIES**
- NO WORK MAY TAKE PLACE WITHIN THE TRANSCANADA PIPELINE RIGHT-OF-WAY, PRESCRIBED AREA OR WITHIN A TRANSCANADA DESIGNATED EXCLUSION AREA WITHOUT A TRANSCANADA REPRESENTATIVE ON SITE.
 - THE INSTRUCTIONS AND DIRECTIONS OF THE TRANSCANADA REPRESENTATIVE SHALL BE STRICTLY ADHERED TO.
 - UNDER ALL CIRCUMSTANCES IT SHALL BE NECESSARY TO HAND EXCAVATE THE PIPELINE PRIOR TO MECHANICAL EXCAVATION WITHIN 5m (15ft).
 - SOME MUNICIPALITIES REQUIRE ADDITIONAL SETBACKS FROM PIPELINE ROW'S FOR THE SAFETY OF THE PUBLIC. PLEASE CHECK WITH THE LOCAL MUNICIPALITY TO DETERMINE THESE REQUIREMENTS. A SETBACK IS THE MINIMUM DISTANCE REQUIRED BETWEEN A PROPERTY LINE AND A STRUCTURE AS DICTATED BY A REGULATOR AND/OR MUNICIPALITY.

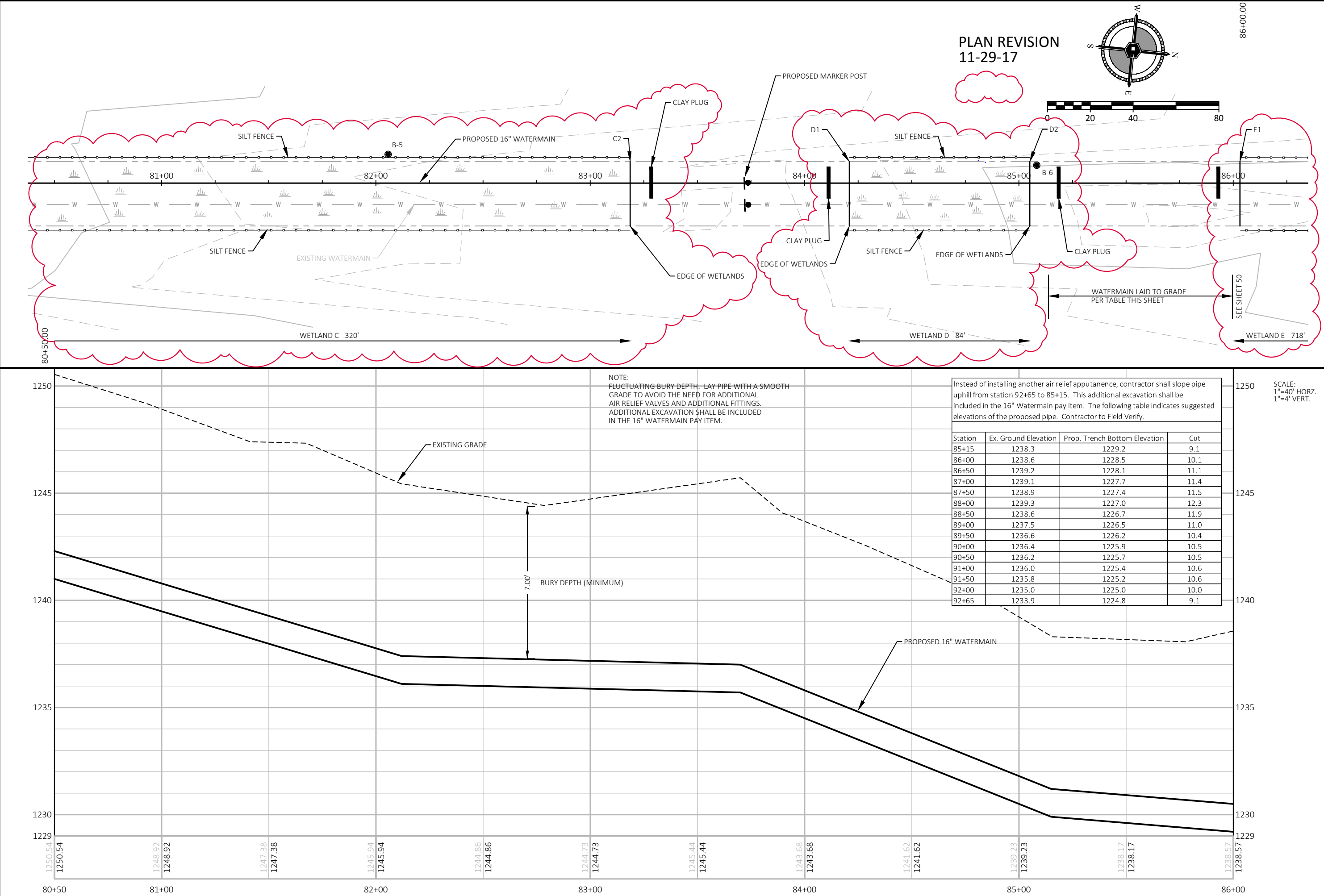


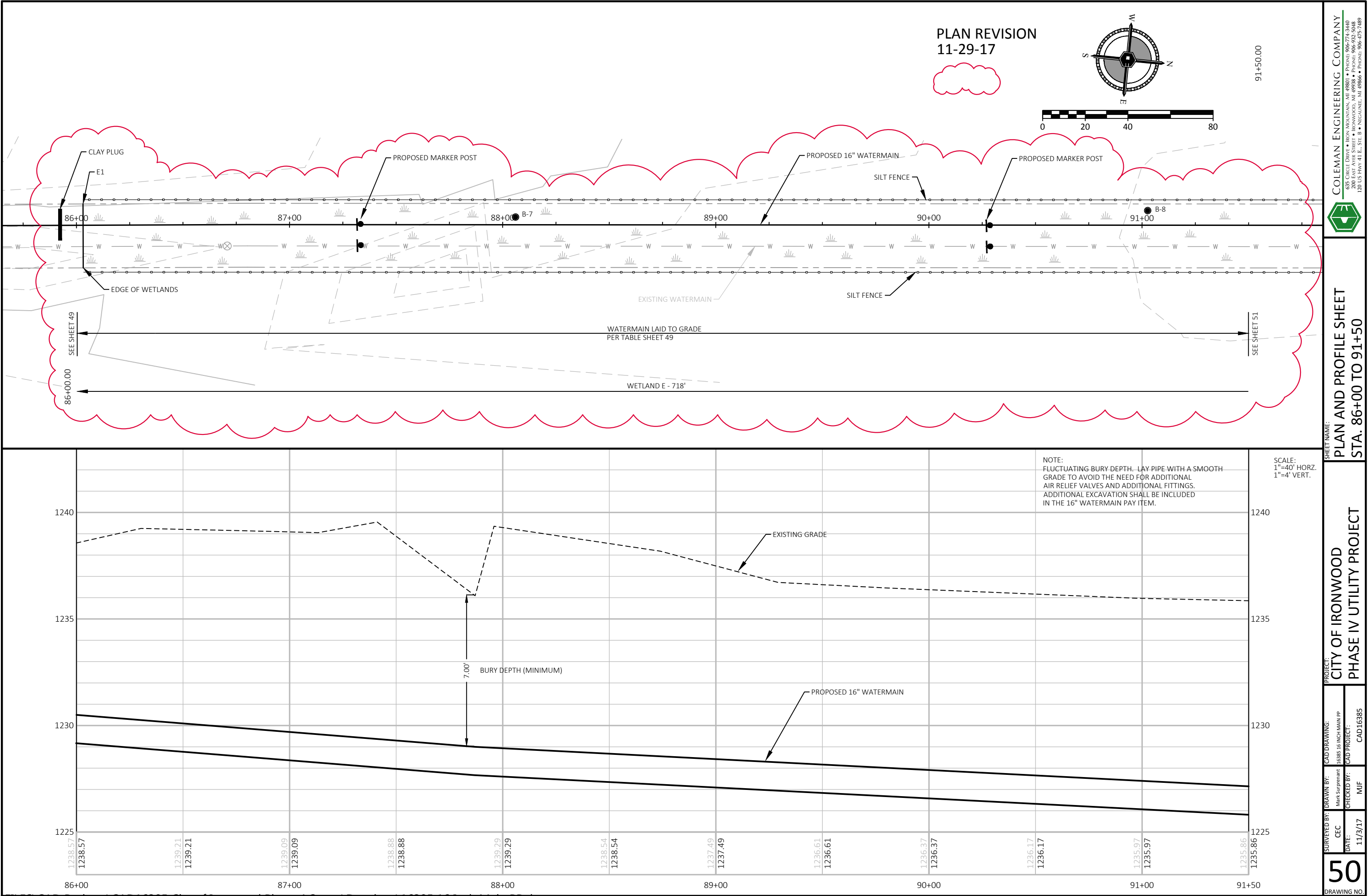
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1"=4' VERT.

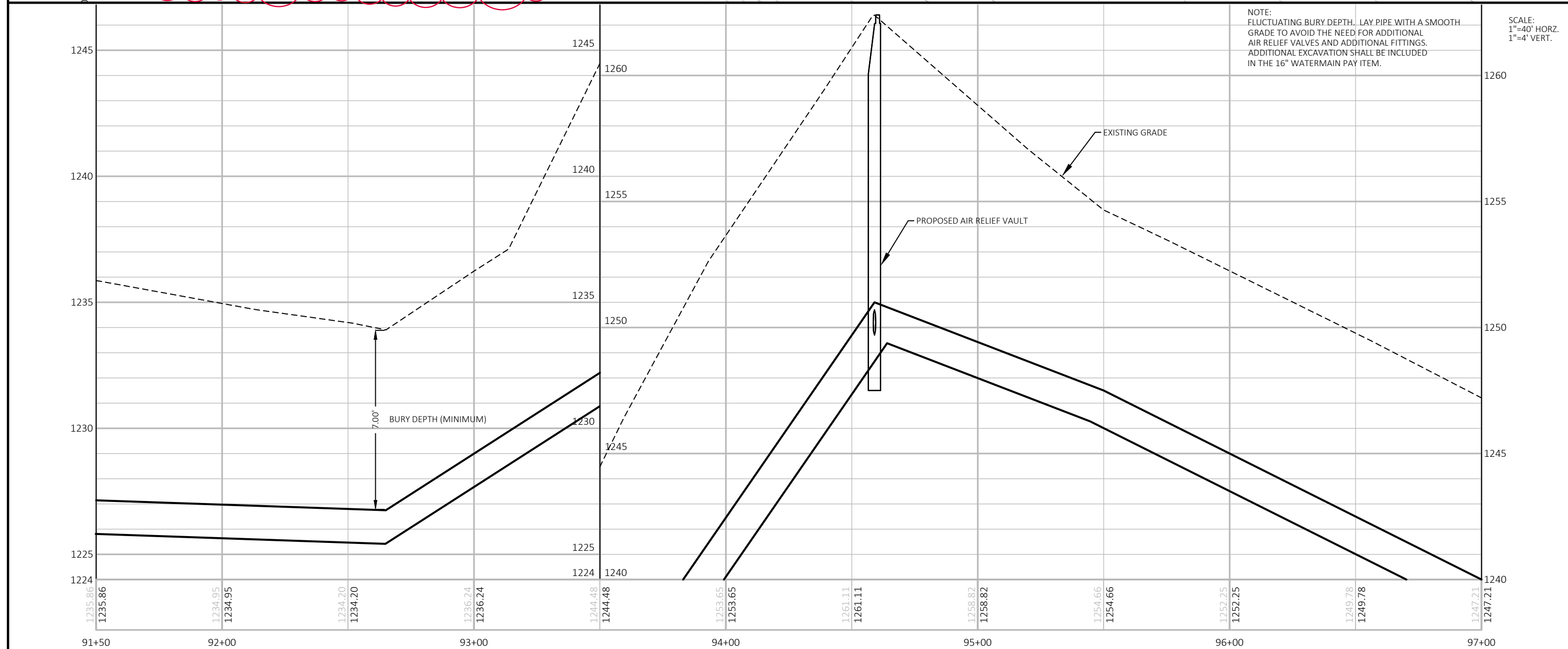
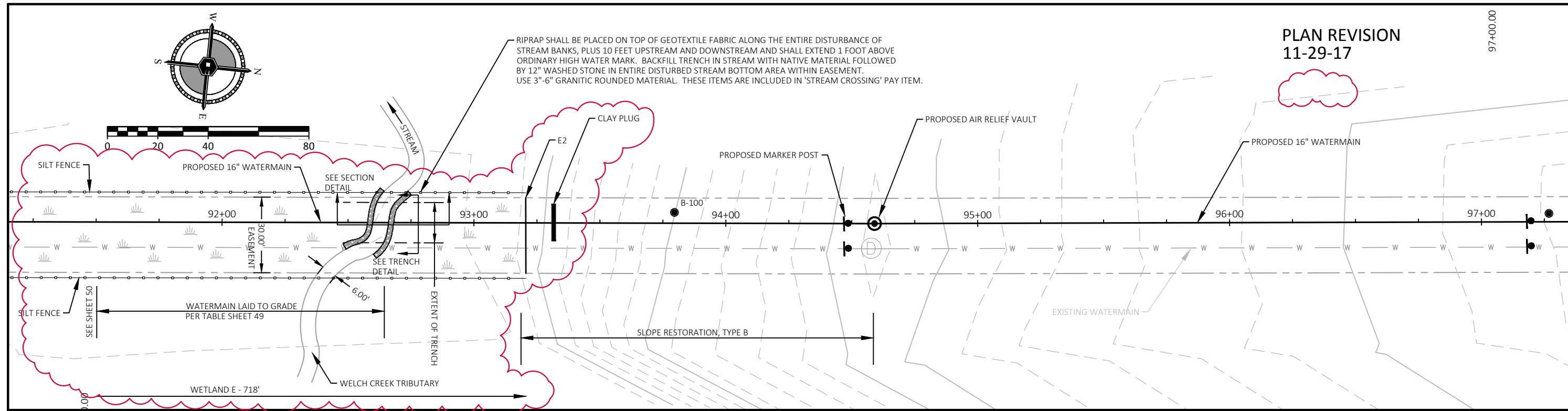
PROJECT:
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT

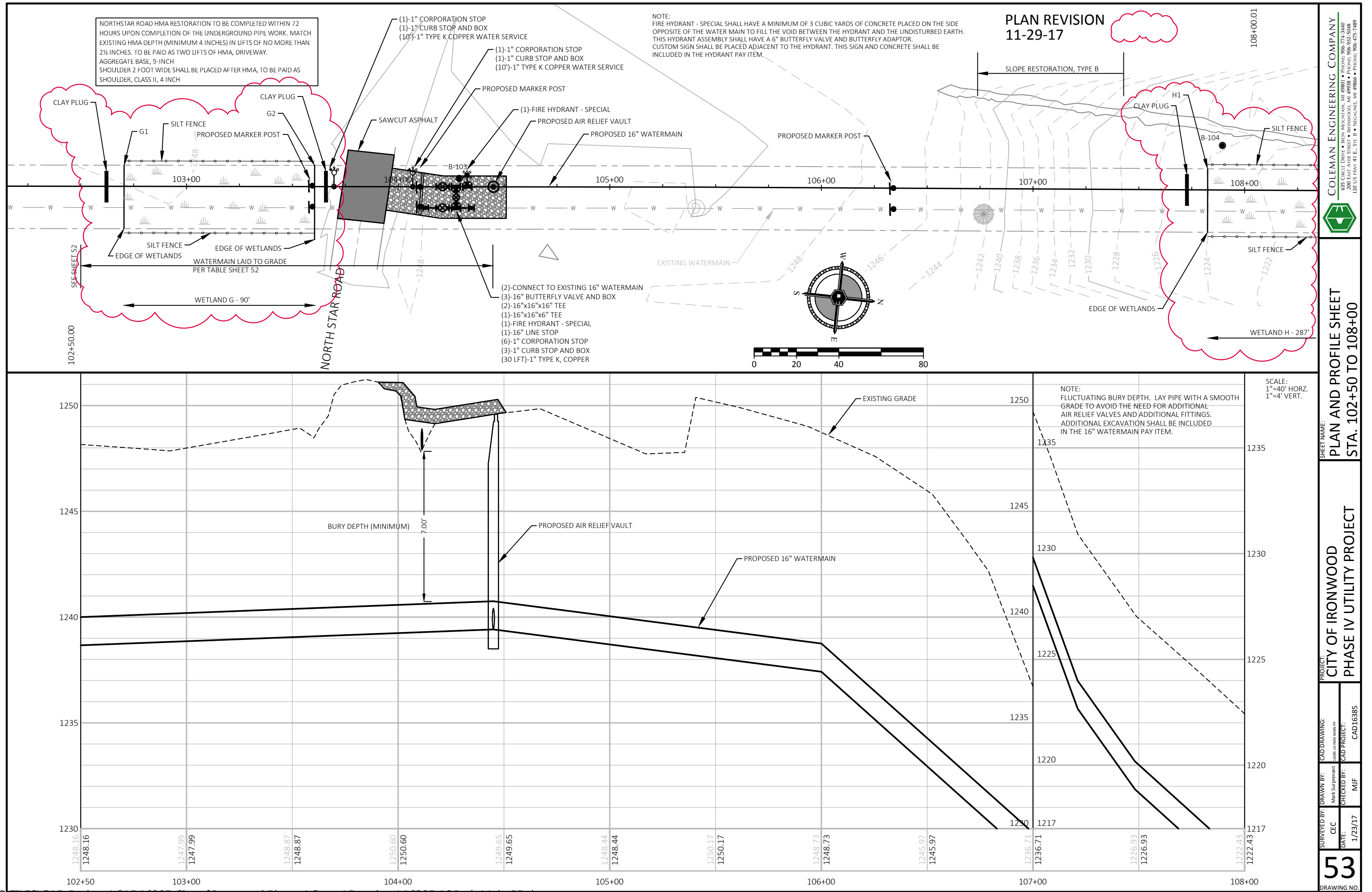
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CEC	Mark Surprenant	16385 16 INCH MAIN
DATE:	CHECKED BY:	CAD PROJECT:
11/3/17	MJF	CAD16385

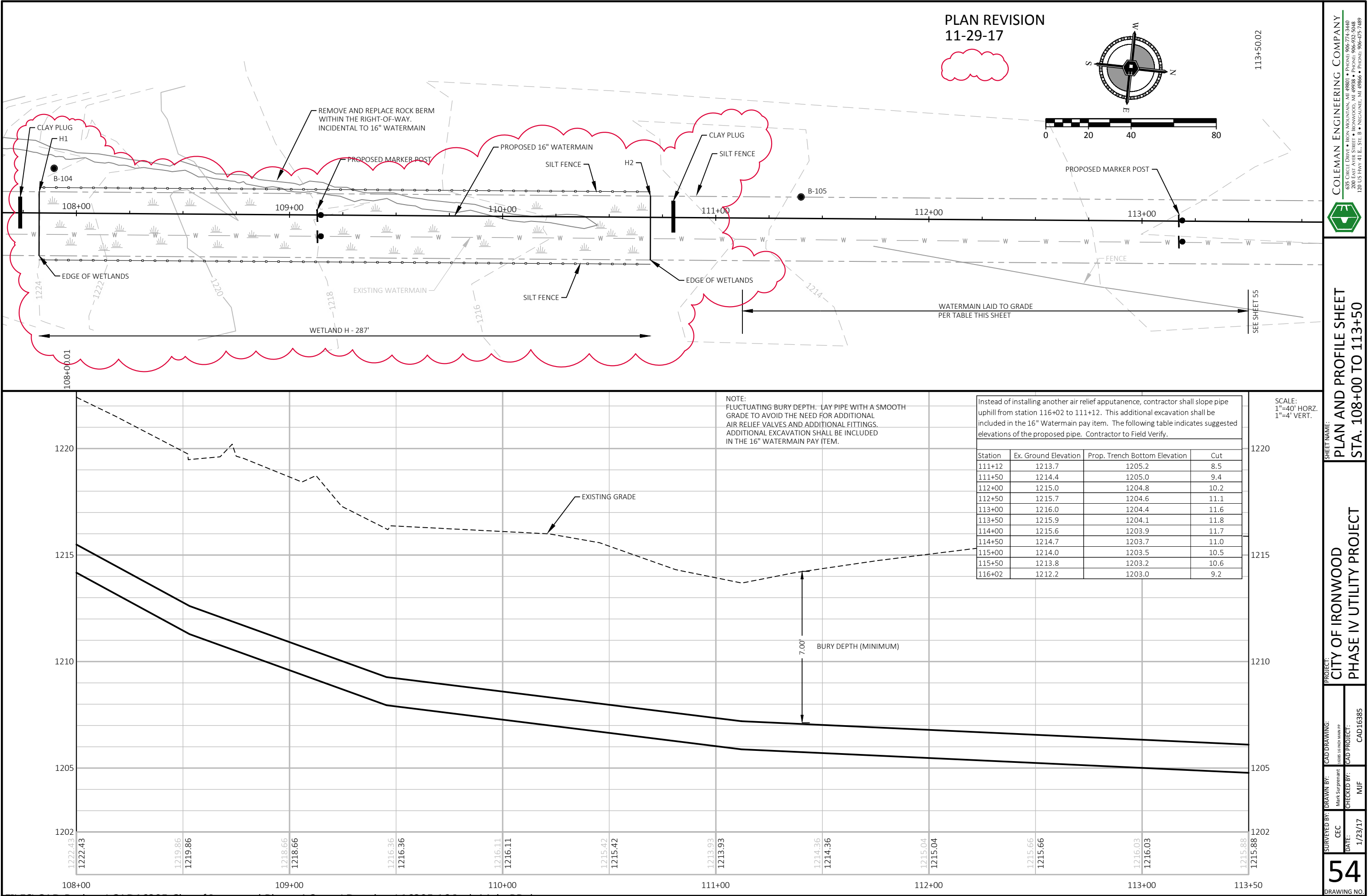
48
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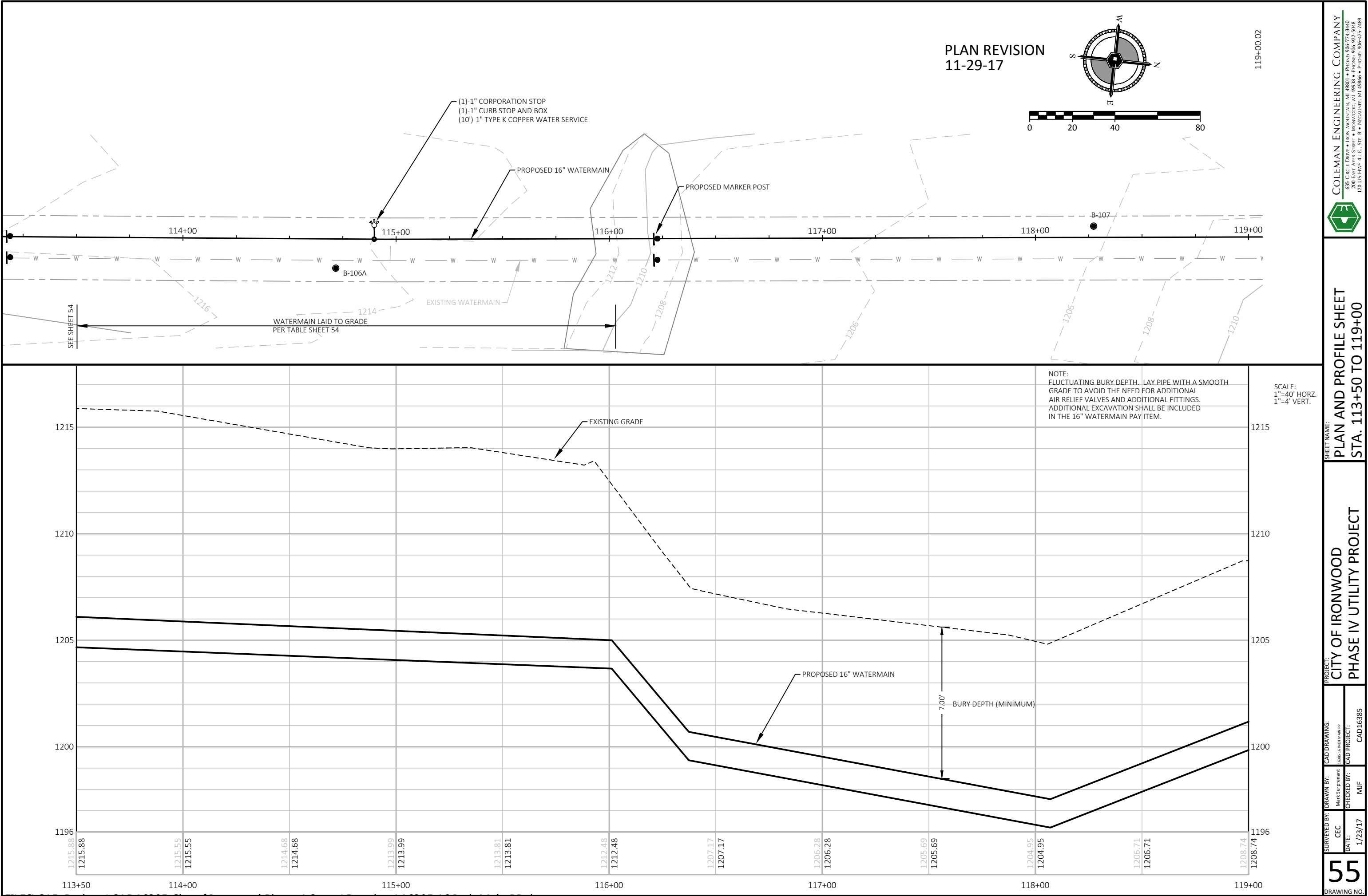


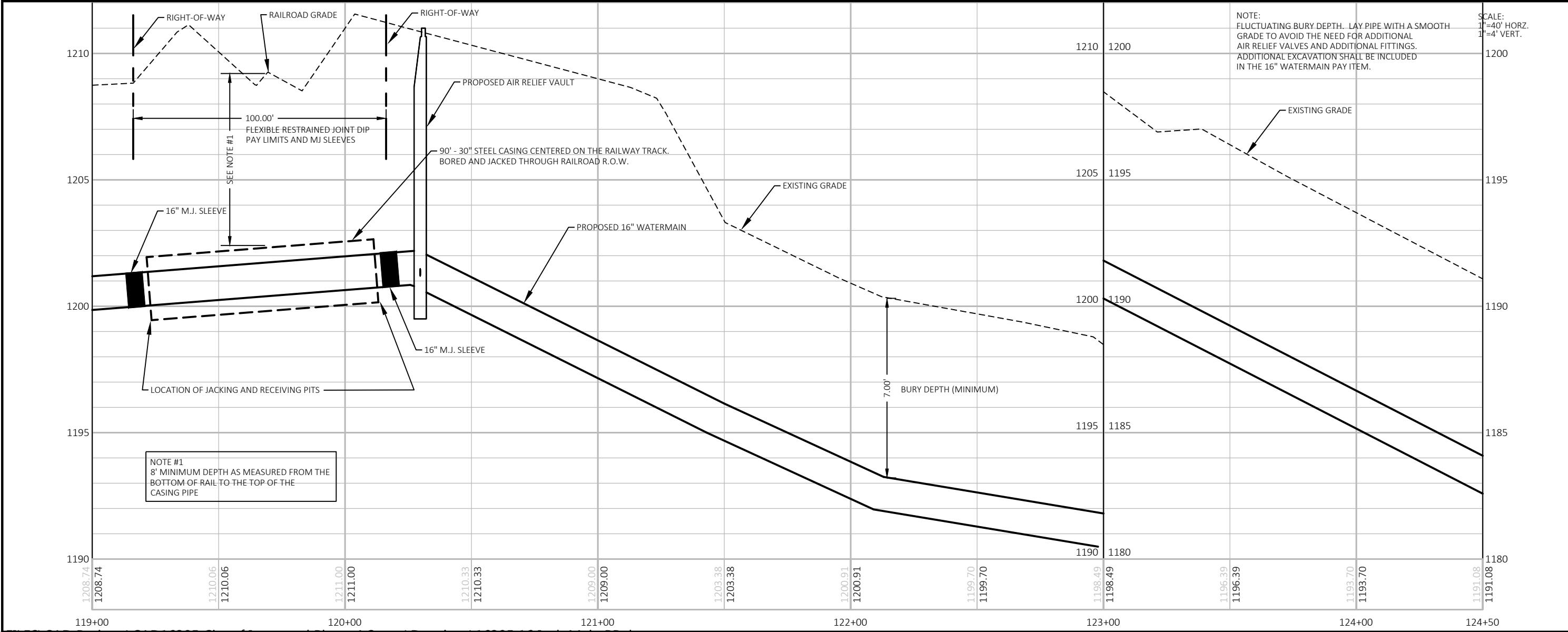
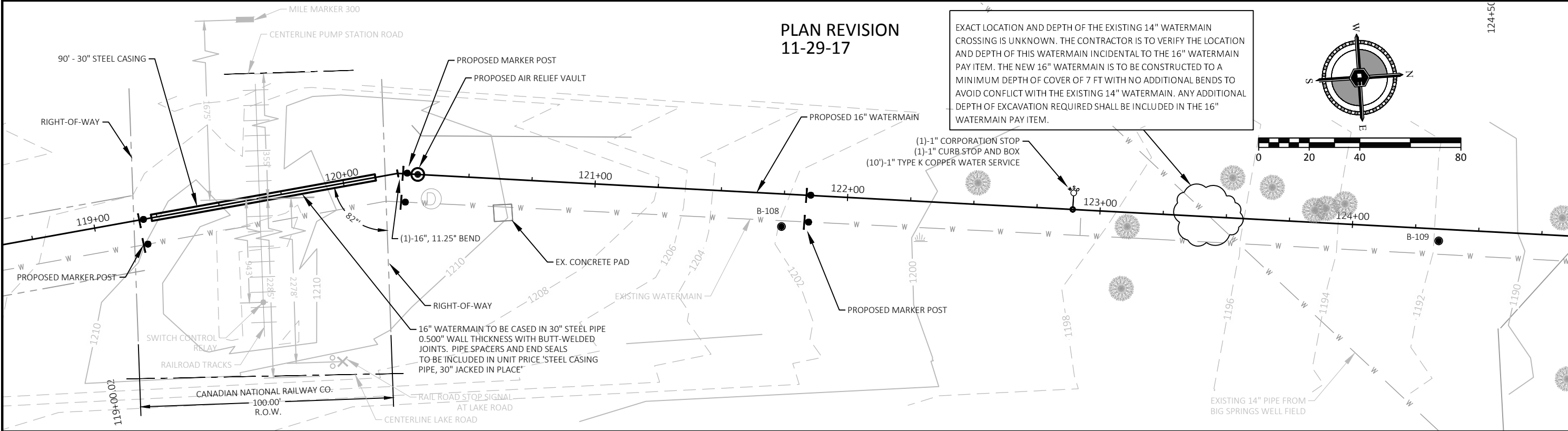












COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE • IRON MOUNTAIN, MI 49801 • PHONE: 906-774-3440
200 EAST AVER STREET • IRONWOOD, MI 49938 • PHONE: 906-932-5048
120 US HWY 41 E., STE. B • NEAQUINE, MI 49866 • PHONE: 906-475-7489

SHEET NAME:
PLAN AND PROFILE SHEET
STA. 119+00 TO 124+50

PROJECT:
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT

SURVEYED BY:
CEC

DRAWN BY:
Mark Surprenant

CAD DRAWING:
16 INCH MAIN PP

DATE:
1/23/17

CHECKED BY:
MJF

CAD PROJECT:
CAD16385

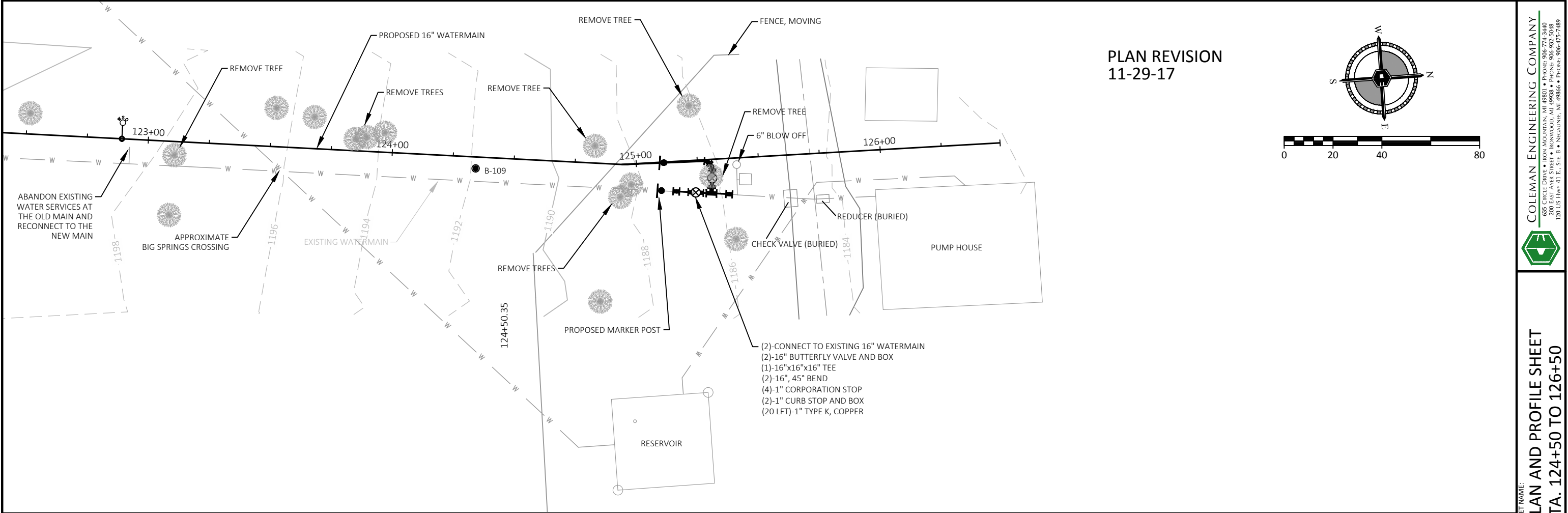
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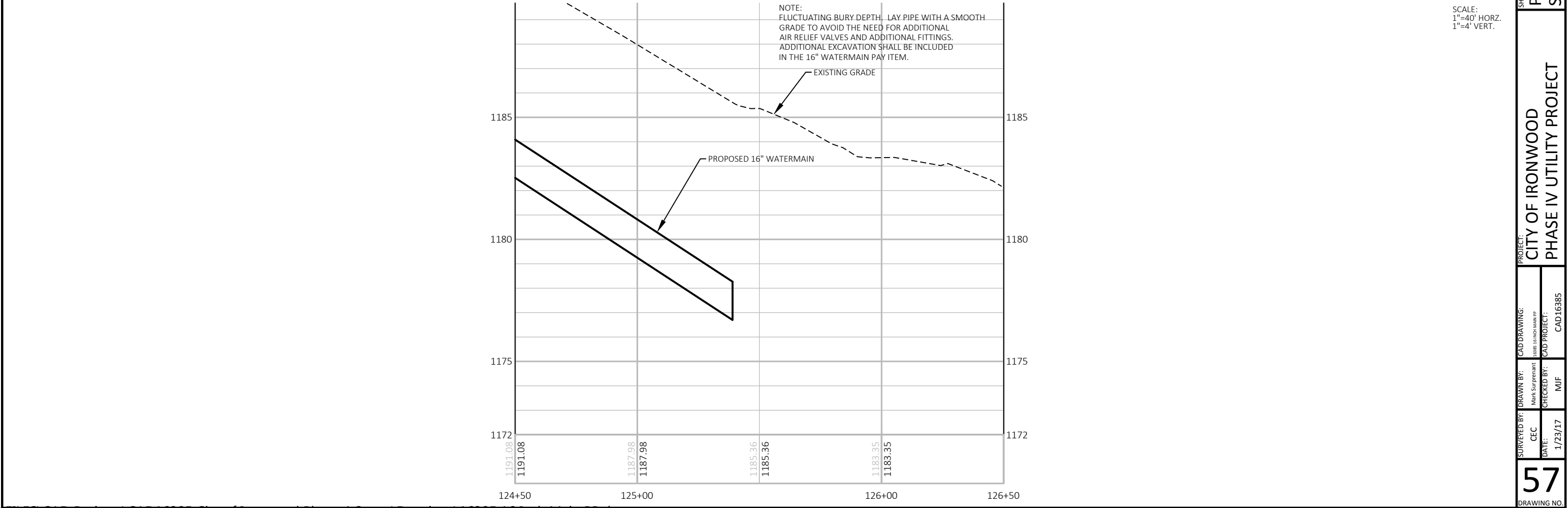
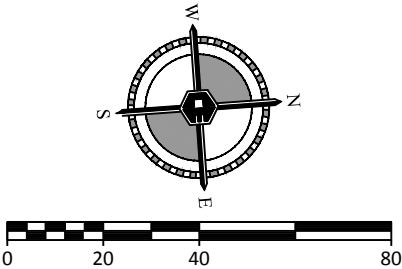
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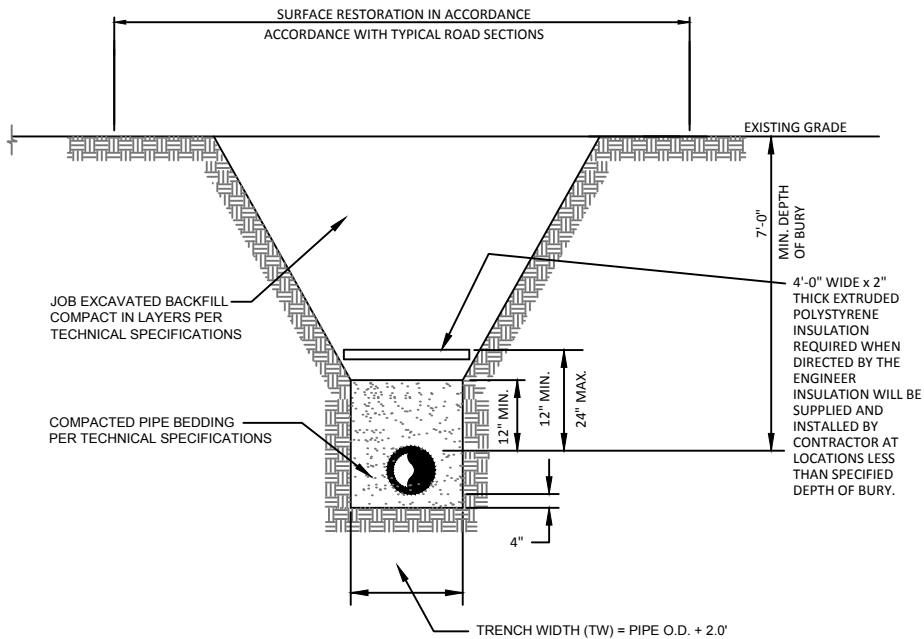
PLOT BY: MARK SURPRENANT



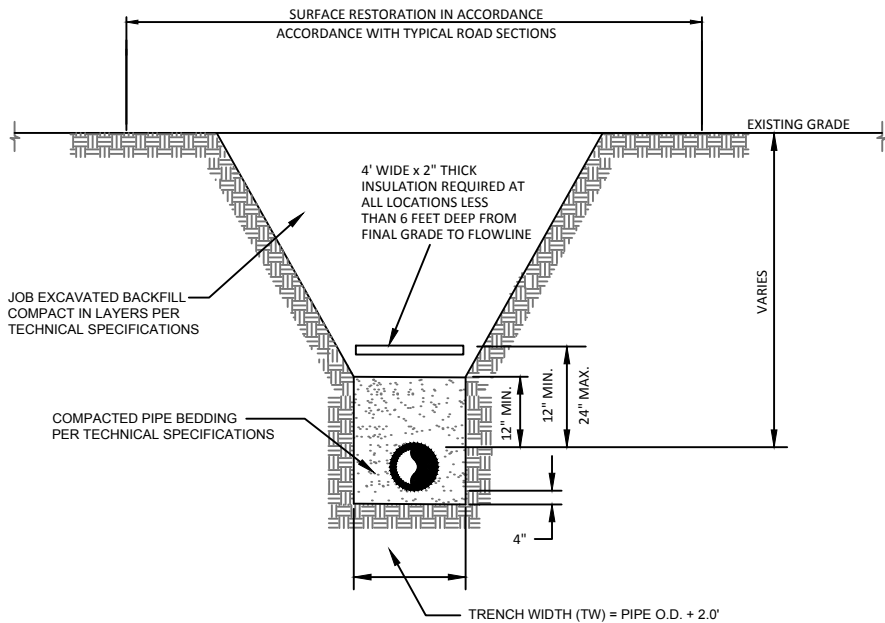
PLAN REVISION
11-29-17



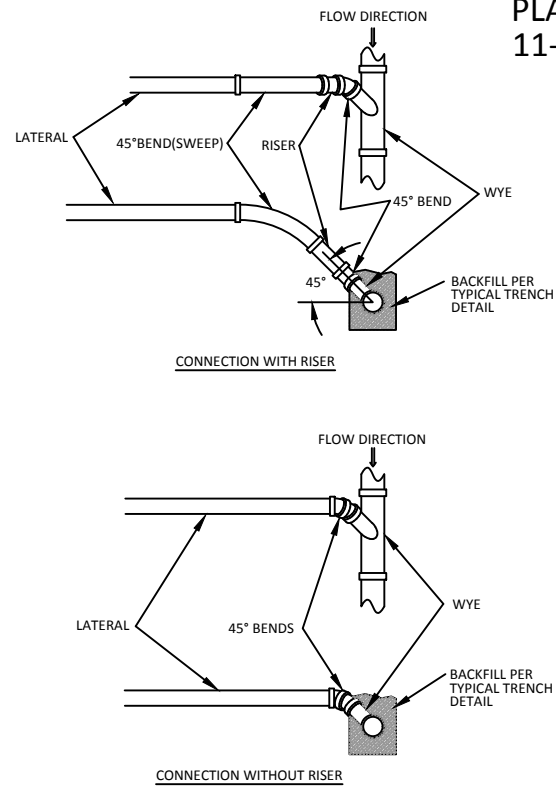
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1"=40' HORZ.
1"=4' VERT.



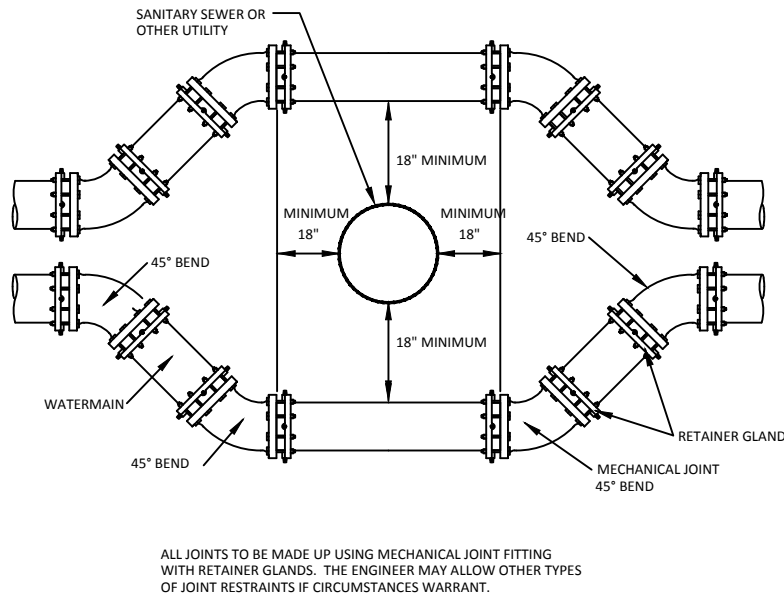
TYPICAL TRENCH DETAIL WATER - DUCTILE IRON



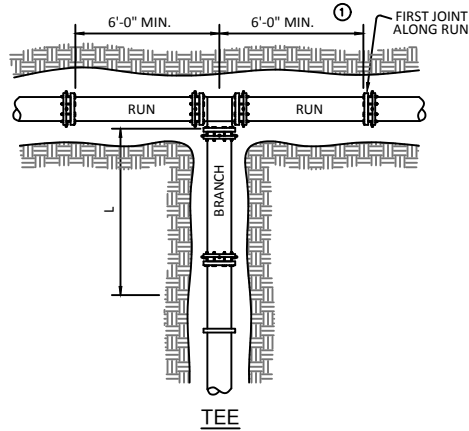
TYPICAL TRENCH DETAIL - SANITARY AND STORM



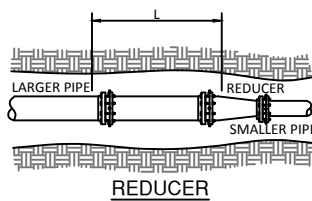
SANITARY LATERAL CONNECTION DETAIL



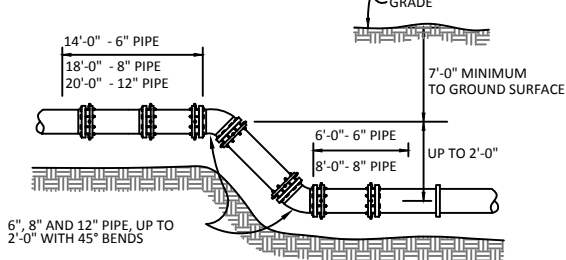
WATER MAIN CROSSING DETAIL



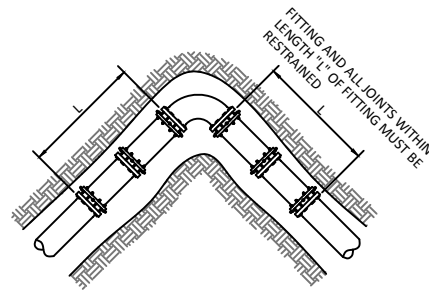
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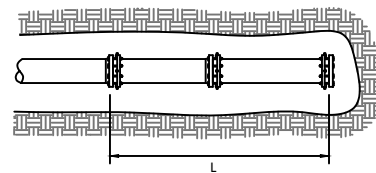
REDUCER



VERTICAL OFFSET



HORIZONTAL BEND



DEAD END ②

PIPE RESTRAINT SCHEDULE - DUCTILE *						
6", 8" AND 12" DUCTILE WATERMAIN CLASS 52 150 PSI TEST PRESSURE, 7'-0" BURY						
PIPE DIAMETER	LENGTH 'L'					
	BEND ≤22.5°	BEND 22.5° <45°	BEND 45° <90°	① TEE AND WYE	② DEAD END	REDUCER
6"	3'	5'	11'	4'	18'	10' (6"x8")
8"	3'	6'	14'	10'	24'	10' (8"x10")
10"	4'	7'	16'	15'	29'	
12"	4'	8'	19'	20'	34'	18' (10"x12") 16' (12"x8") 15' (8"x4")

① 6'-0" MINIMUM TO FIRST JOINT ALONG TEE OR WYE.
ALL RESTRAINED JOINTS TO BE SERIES 1100 MEGALUG RETAINER
GLANDS MANUFACTURED BY EBAA IRON, INC.

② SHUTOFF VALVES TO BE TREATED AS DEAD END

* FOR POLYETHYLENE ENCASEMENT ON DUCTILE IRON PIPE, ADD 50% TO ALL VALUES
LISTED IN THIS TABLE

PIPE RESTRAINT SCHEDULE - DUCTILE IRON				
PE wrapped Pressure Class 350, 250 working pressure, 7' Bury				
Pipe Diameter	Length in Feet			
	Bend<22	Bend 22 to 44	Bend 45 to 90	Tee or Wye
16"	41	86	207	176
Pipe Diameter	Length in Feet			
	Bend<22	Bend 22 to 44	Bend 45 to 90	Dead End
16"	16	33	80	207

1.) Minimum of 6' to first joint from a fitting in any direction
2.) Valves shut off with no pipe on other side to be treated as dead end.
3.) Restraint shall be in each direction from a fitting.
4.) Pipe restraint devices shall only be as specified.

THRUST RESTRAINT DETAILS

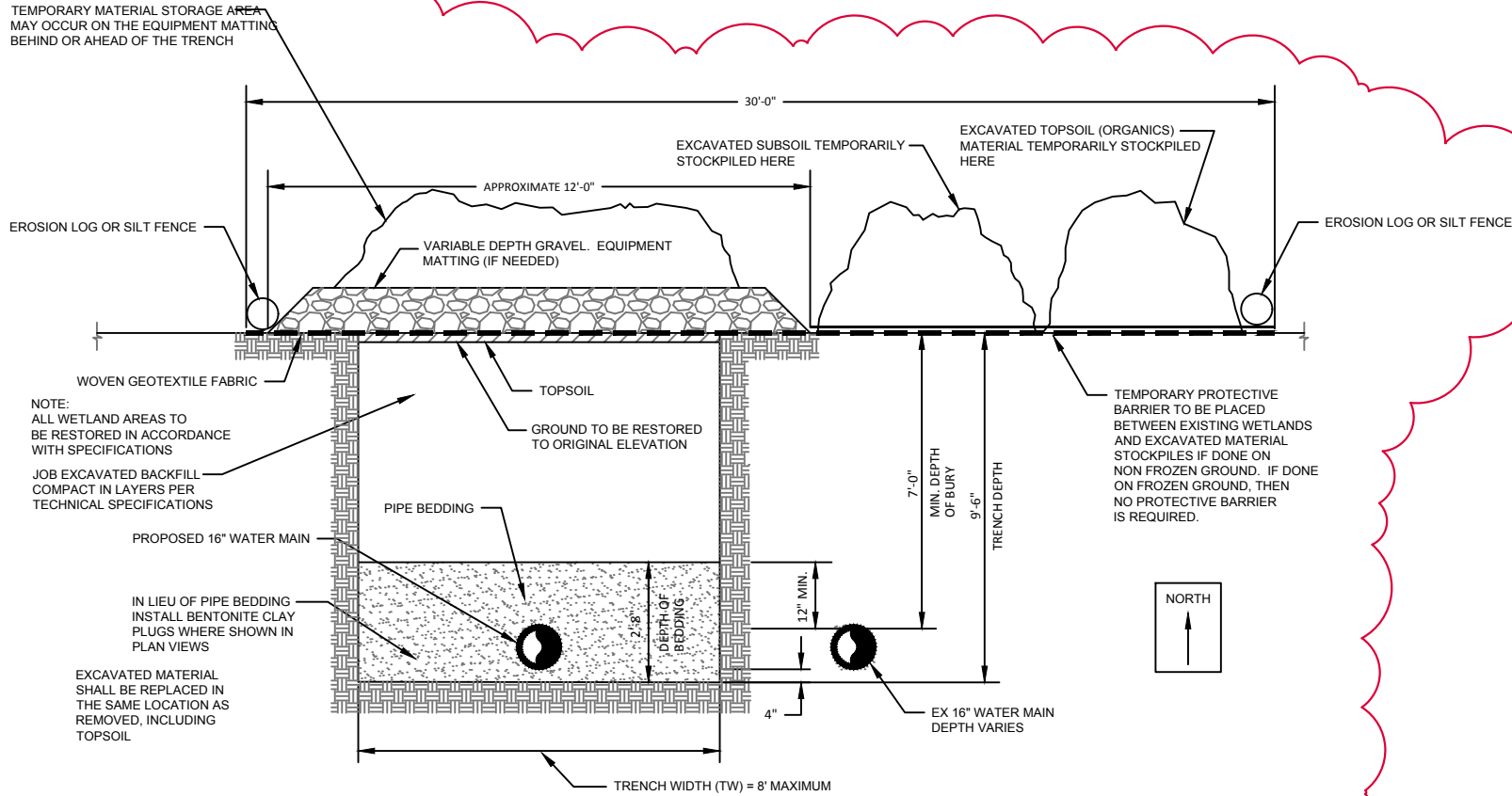
COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE • IRON MOUNTAIN, MI 49001 • PHONE: 906-774-3440
200 EAST AVER STREET • IRONWOOD, MI 49938 • PHONE: 906-932-5408
120 US HWY 41 E., STE. B • NEQUAME, MI 49866 • PHONE: 906-475-7489

PROJECT:
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT

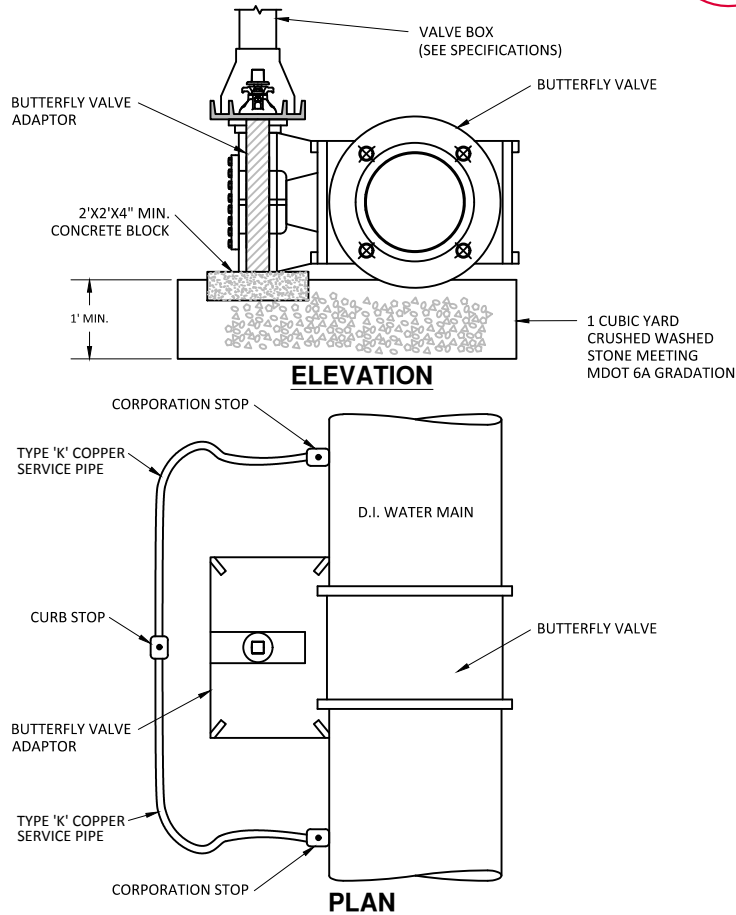
SURVEYED BY: CEC	DRAWN BY: Mark Surprenant	CAD DRAWING: 16385-DETAILS
DATE: 1/23/17	CHECKED BY: MJF	CAD PROJECT: CAD16385

61
DRAWING NO.

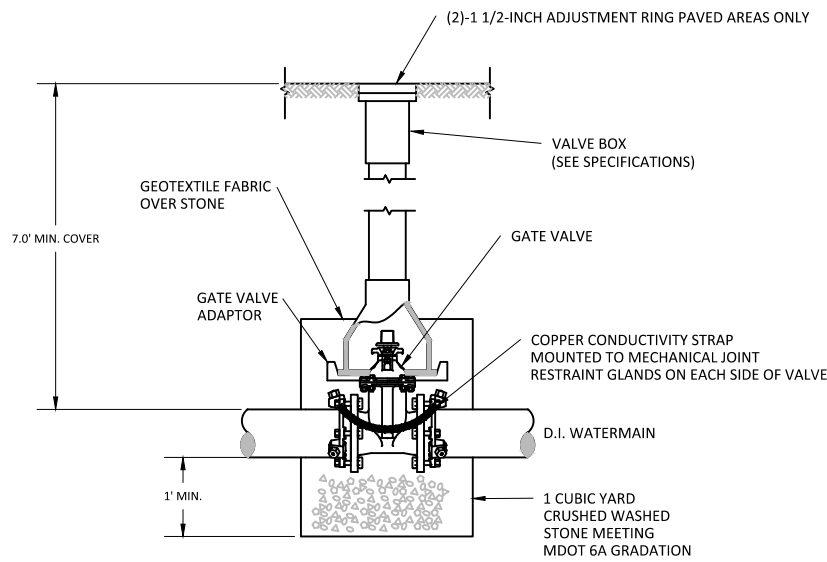




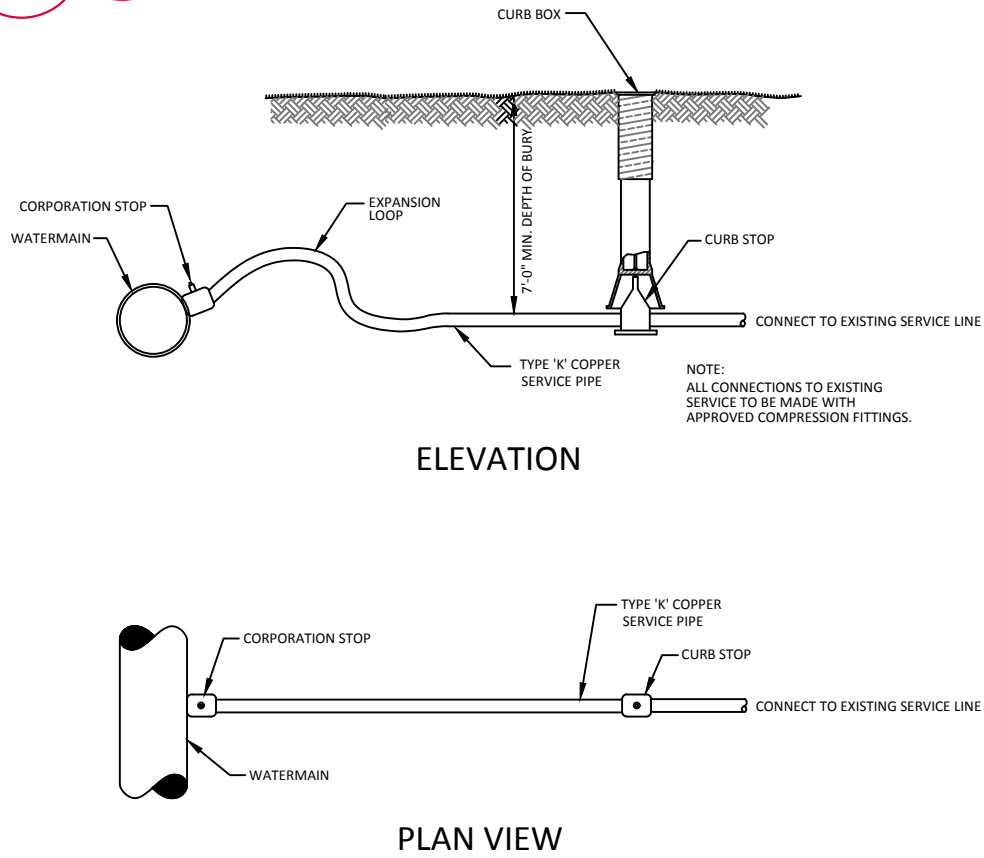
TYPICAL WETLAND CROSSING TRENCH DETAIL 16" WATERMAIN - DUCTILE IRON



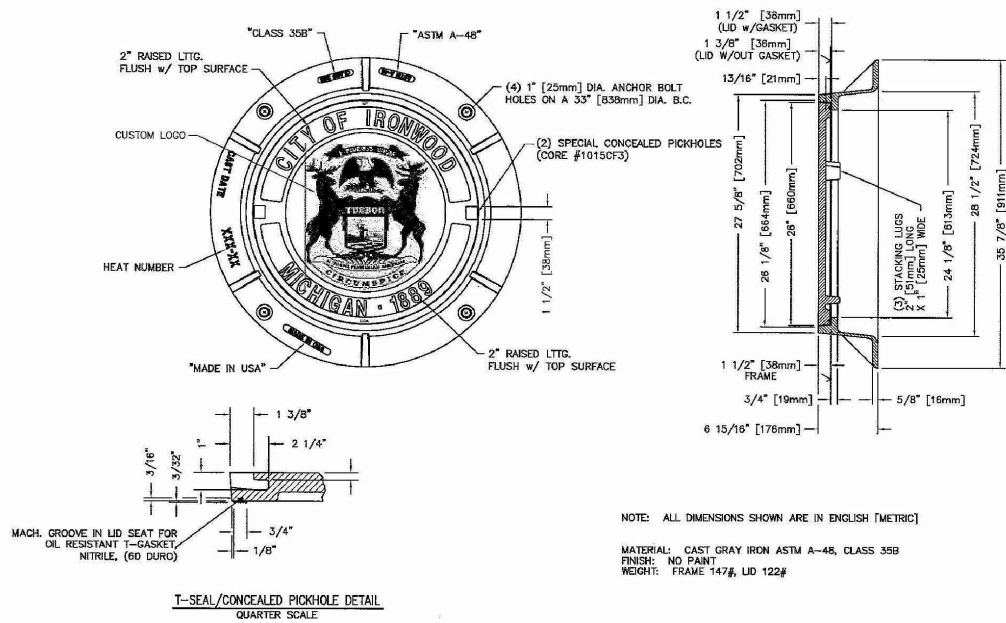
TYPICAL BUTTERFLY VALVE DETAIL - DUCTILE IRON



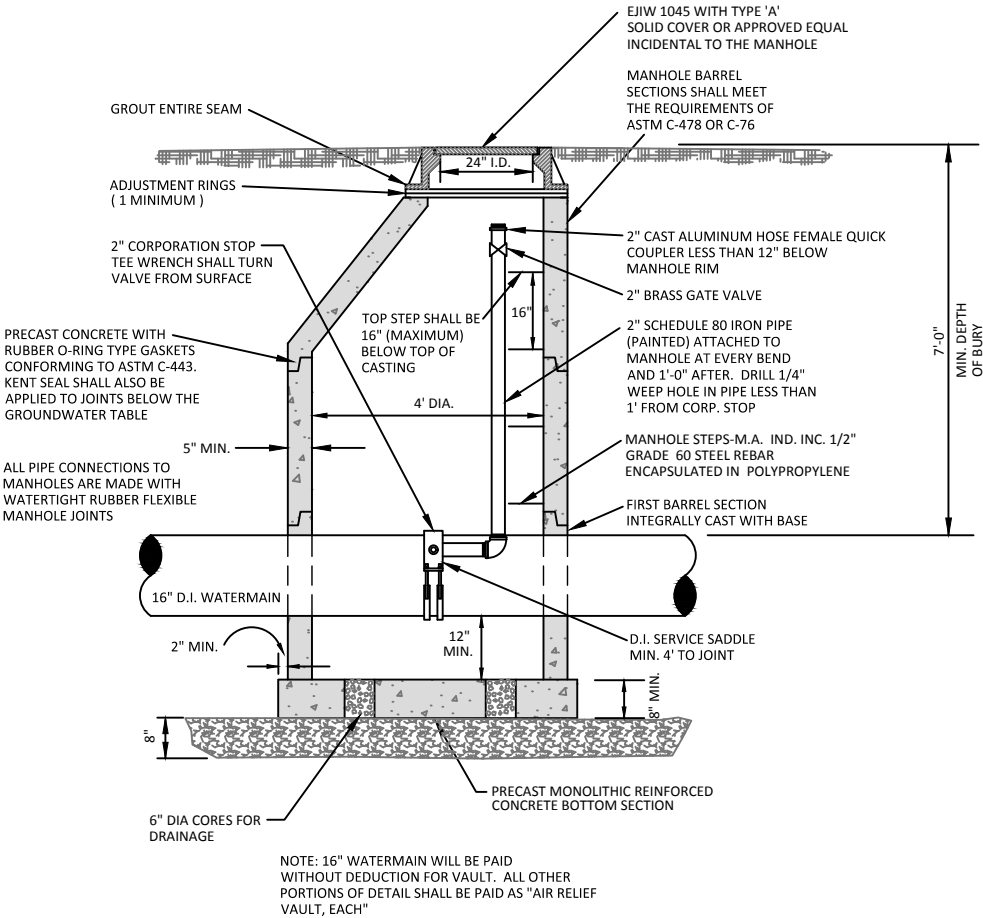
TYPICAL GATE VALVE AND BOX DETAIL - DUCTILE IRON



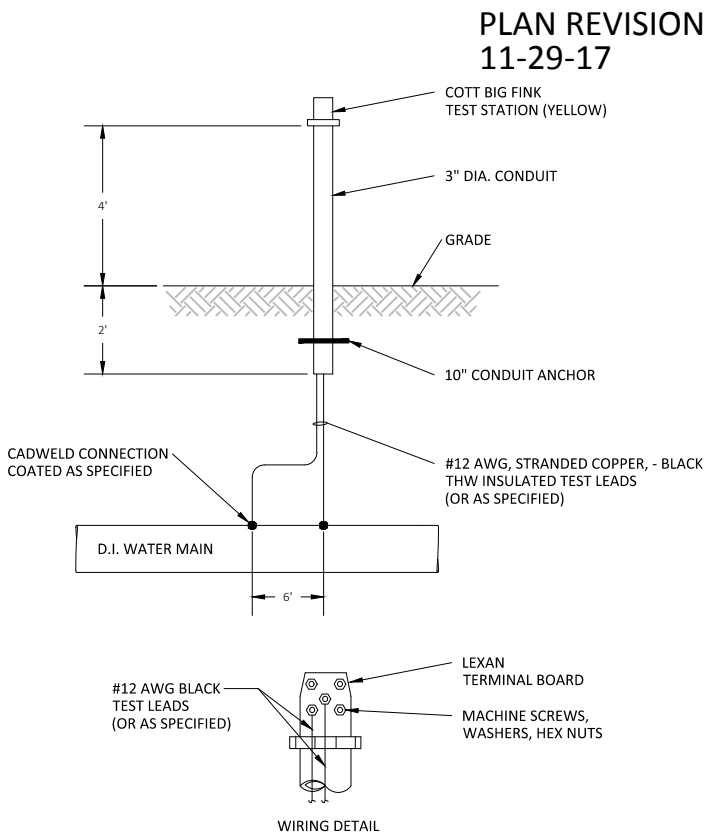
TYPICAL WATER SERVICE DETAIL - DUCTILE IRON WATERMAIN



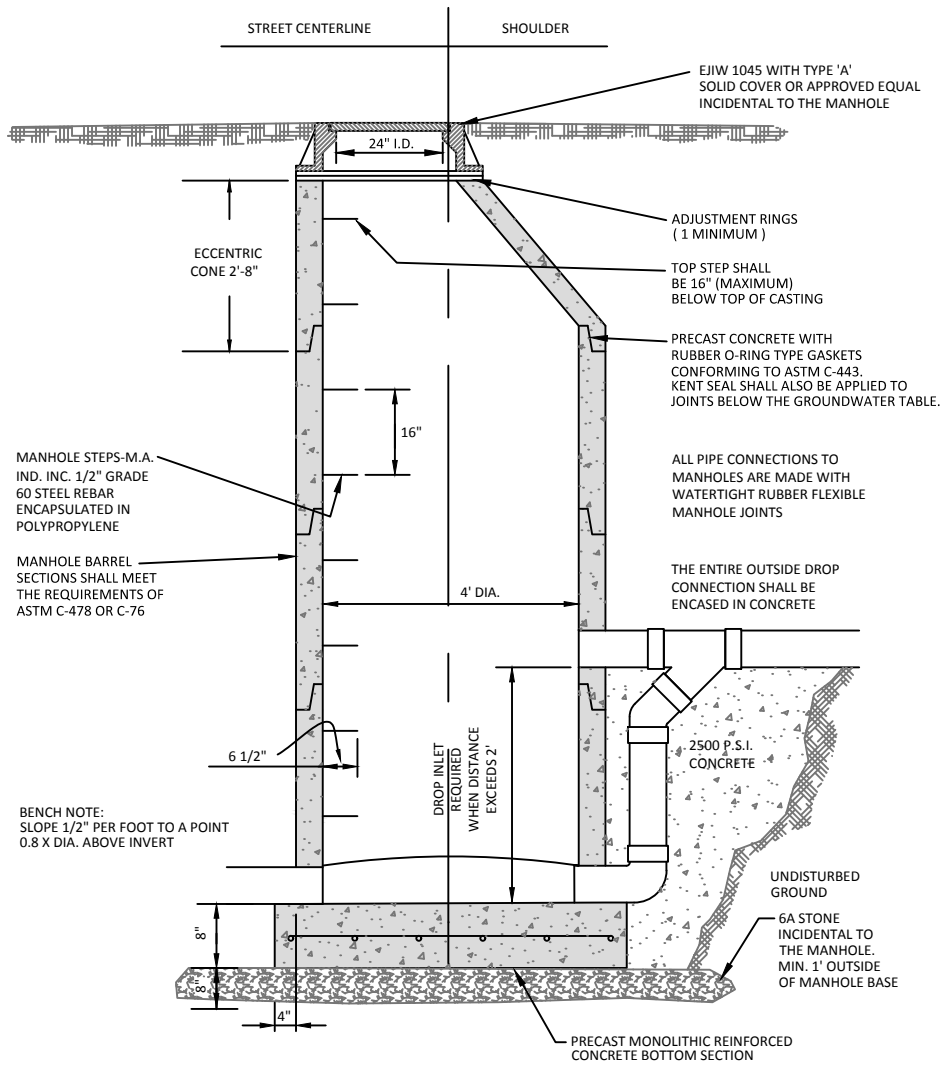
MANHOLE CASTING DETAIL



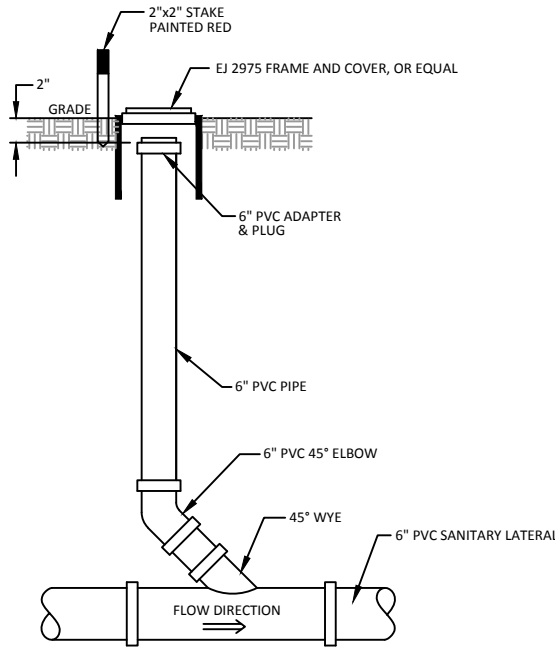
TYPICAL AIR RELIEF VAULT DETAIL



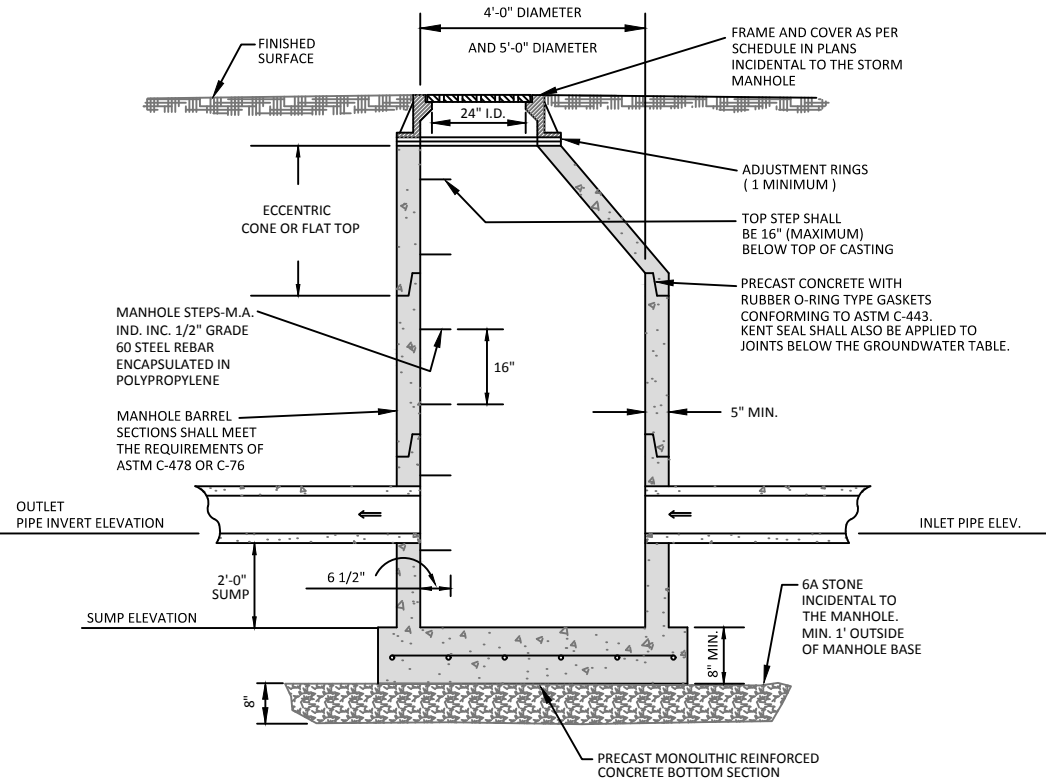
TYPICAL 2 WIRE TEST STATION



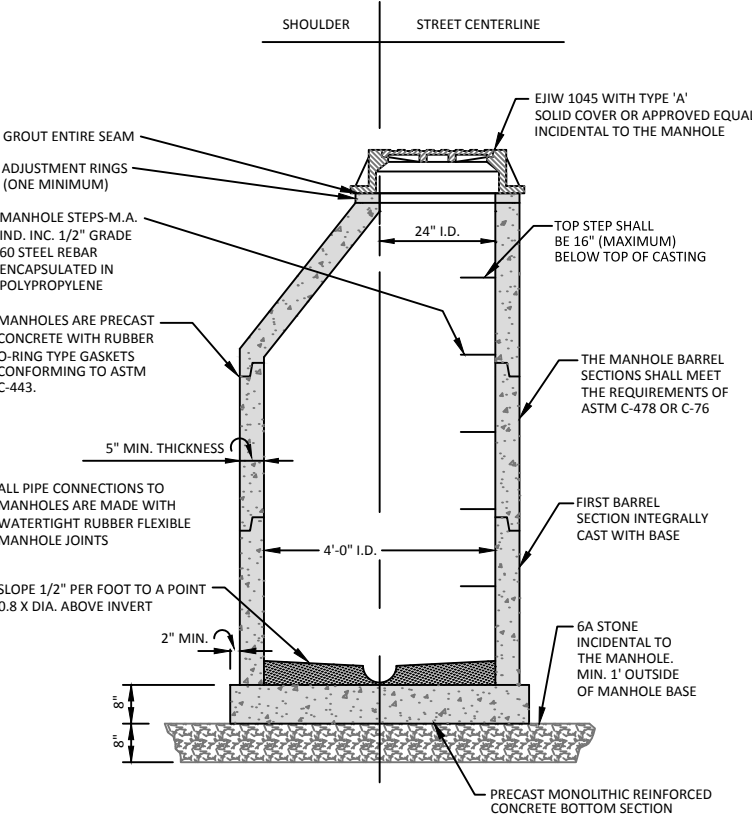
TYPICAL DROP MANHOLE



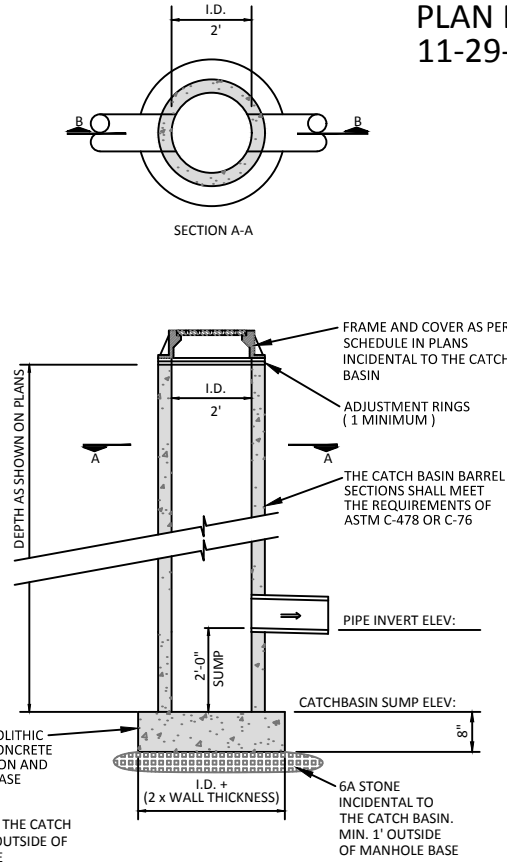
SANITARY SEWER SERVICE LATERAL CLEANOUT



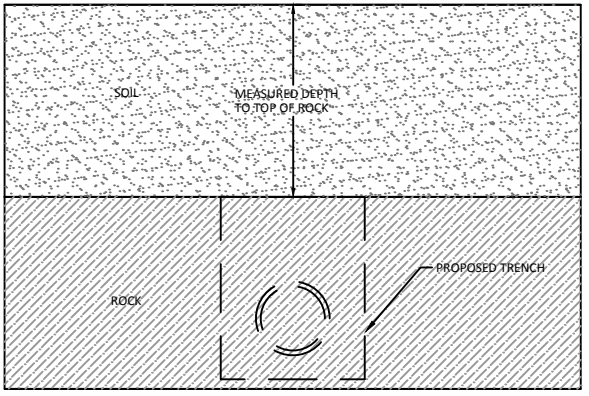
TYPICAL STORM MANHOLE



TYPICAL SANITARY MANHOLE



TYPICAL CATCH BASIN



TYPICAL ORIGINAL GROUND TRENCH DETAIL

PLAN REVISION
11-29-17

COLEMAN ENGINEERING COMPANY
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120 US HWY 41 E., STE. B • NEAUNEE, MI 49866 • PHONE: 906-475-7489

SHEET NAME:
MISCELLANEOUS
DETAILS SHEET

PROJECT:
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT

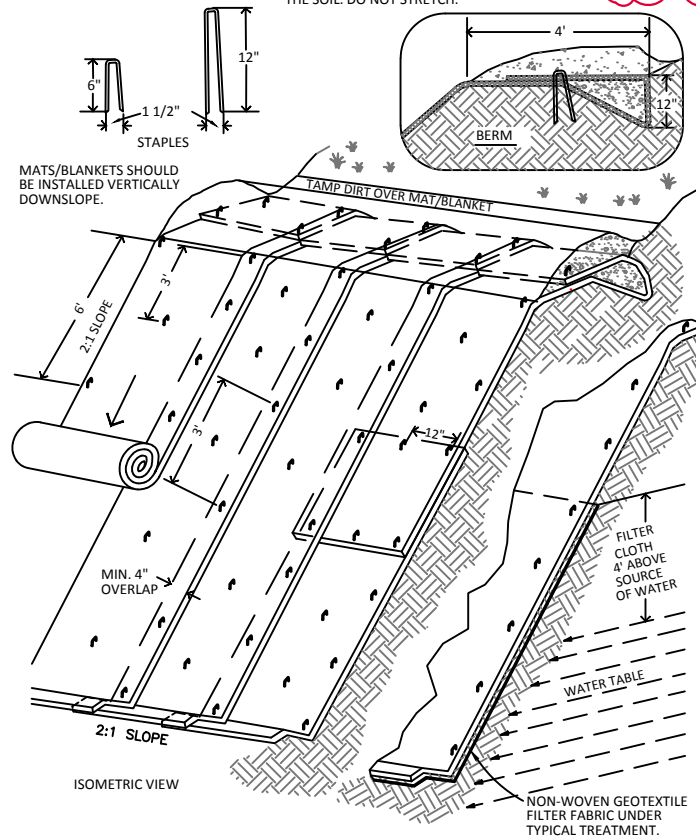
SURVEYED BY: CEC
DRAWN BY: Mark Surprenant
CHECKED BY: MJF
DATE: 1/23/17
CAD DRAWING: CAD PROJECT: CAD16385

64
DRAWING NO.



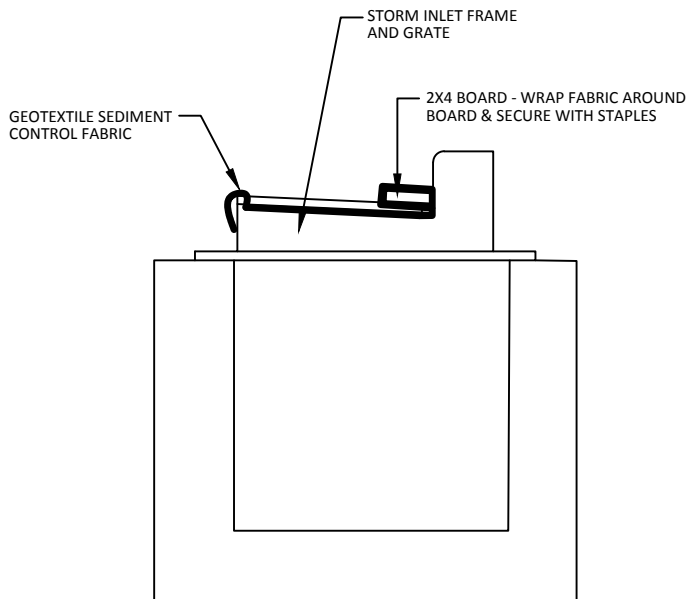
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- NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BANKETS SHALL HAVE GOOD SOIL CONTACT.
 2. LAY BANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.



EROSION MAT DETAIL

CURB INLET PROTECTION

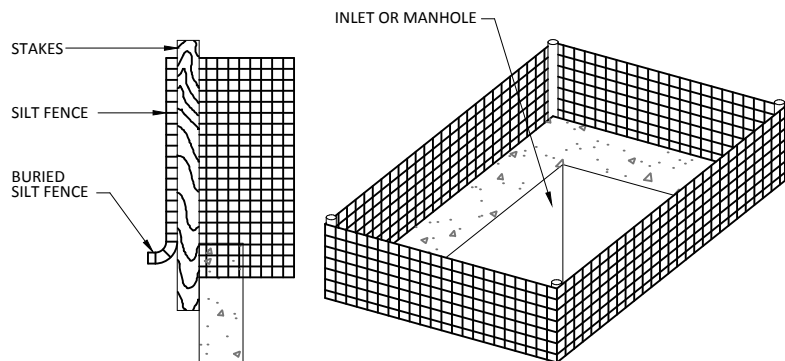


GENERAL NOTES

1. FABRIC SHALL BE REPLACED AND MAINTAINED AT THE ENGINEER'S DIRECTION.
2. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX. (TYPE A)
4. CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY DIRT AND DEBRIS THAT ACCUMULATES IN EXISTING AND NEW STRUCTURES AND AROUND EROSION CONTROL DEVICES INSTALLED.
5. THE FABRIC SHALL EXTEND A MINIMUM OF 8" BEYOND THE SIDES OF THE INLET COVER TO PROVIDE A HANDHOLD WHEN MAINTAINANCE OR REMOVAL IS REQUIRED.

EROSION CONTROL FABRIC SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

INLET PROTECTION



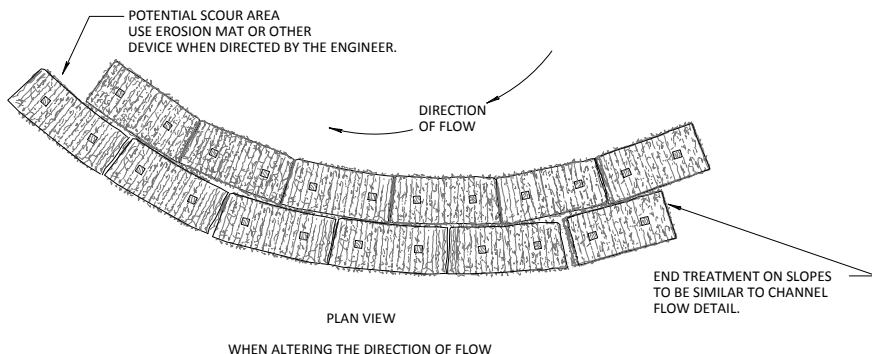
NOTE:
THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.

NOTE: TO BE INSTALLED UPON COMPLETION OF BACKFILLING THE STRUCTURE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

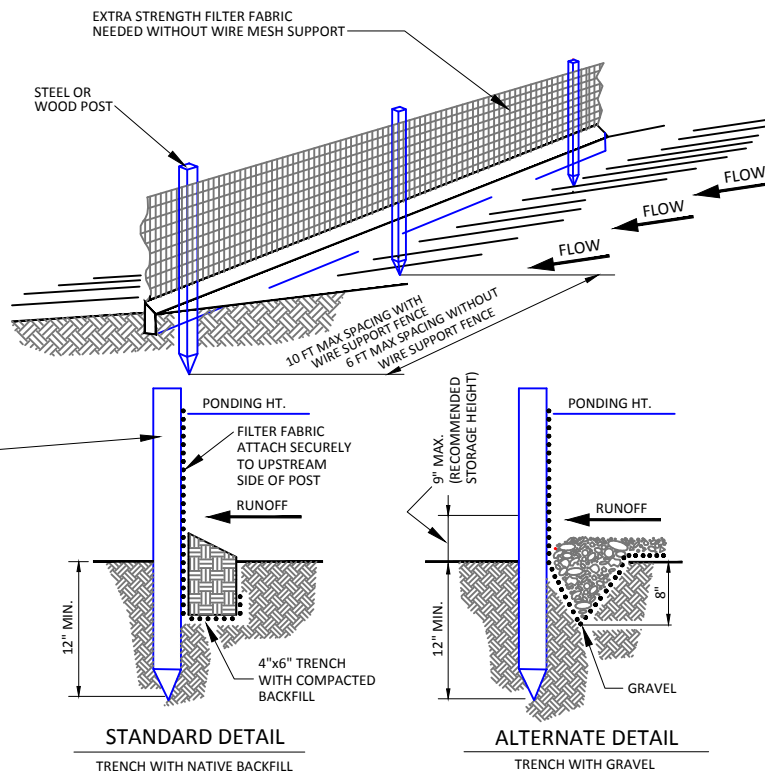


EROSION BALES DETAIL

* 9" STRAW WATTLES ARE AN APPROVED EQUAL TO TRADITIONAL SILT FENCE FOR THE 16" MAIN SCOPE OF WORK.

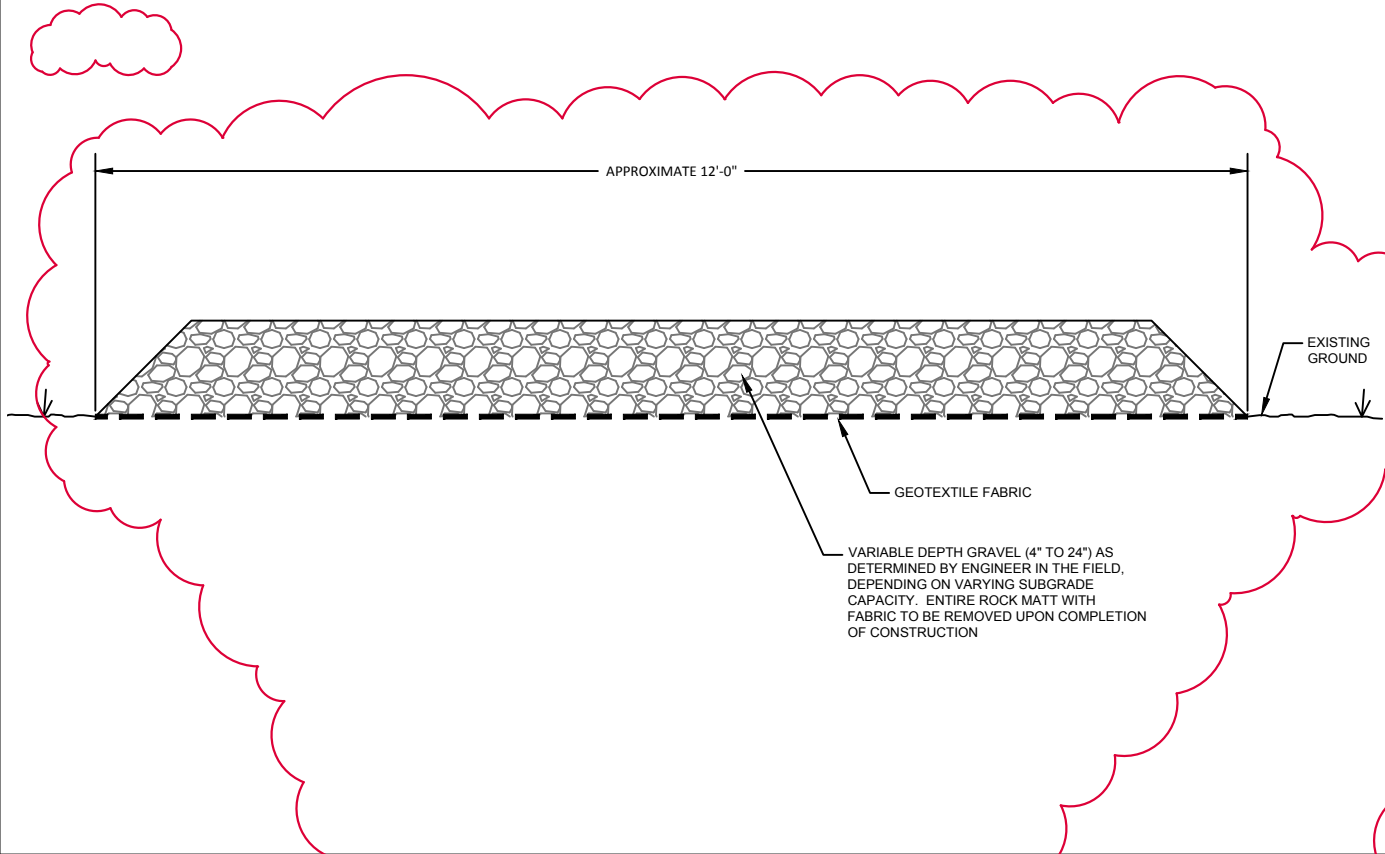
GENERAL NOTES:

1. LOCATION, TYPE AND QUANTITY OF EROSION CONTROL MEASURES TO BE APPROVED BY ENGINEER/INSPECTOR PRIOR TO INITIATION OF CONSTRUCTION
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

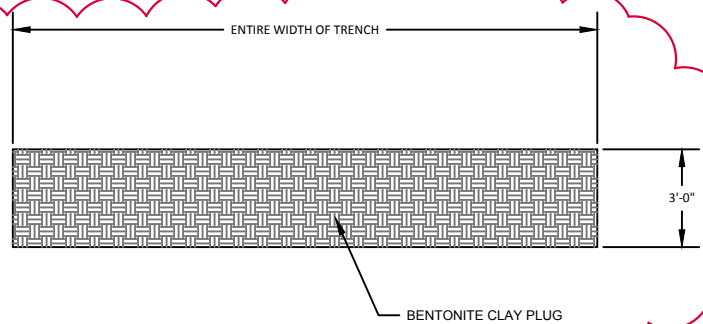


SILT FENCE DETAIL

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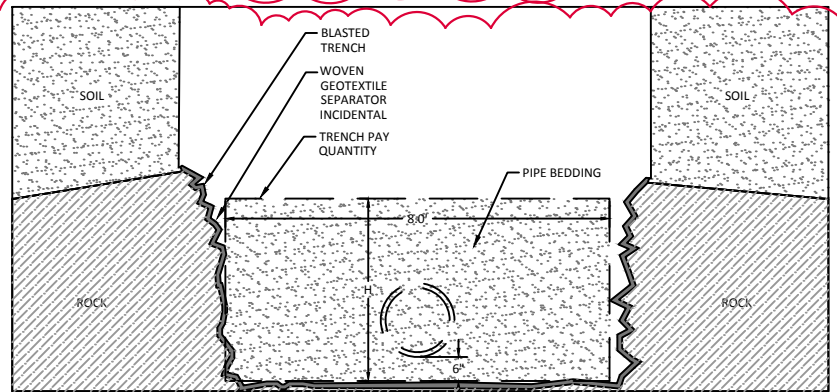


EQUIPMENT MATTING CROSS SECTION

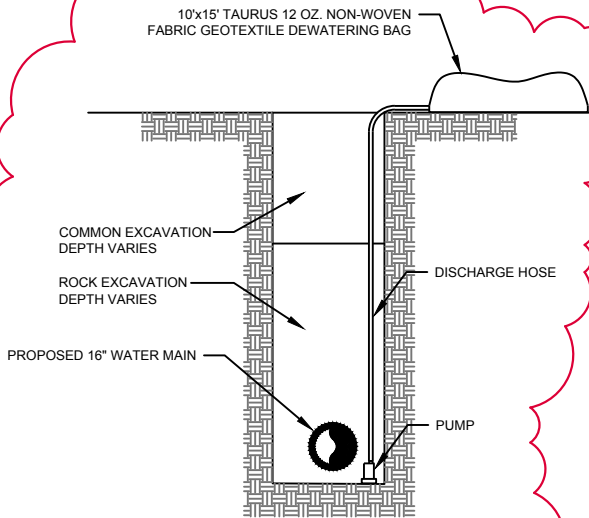


TOP VIEW

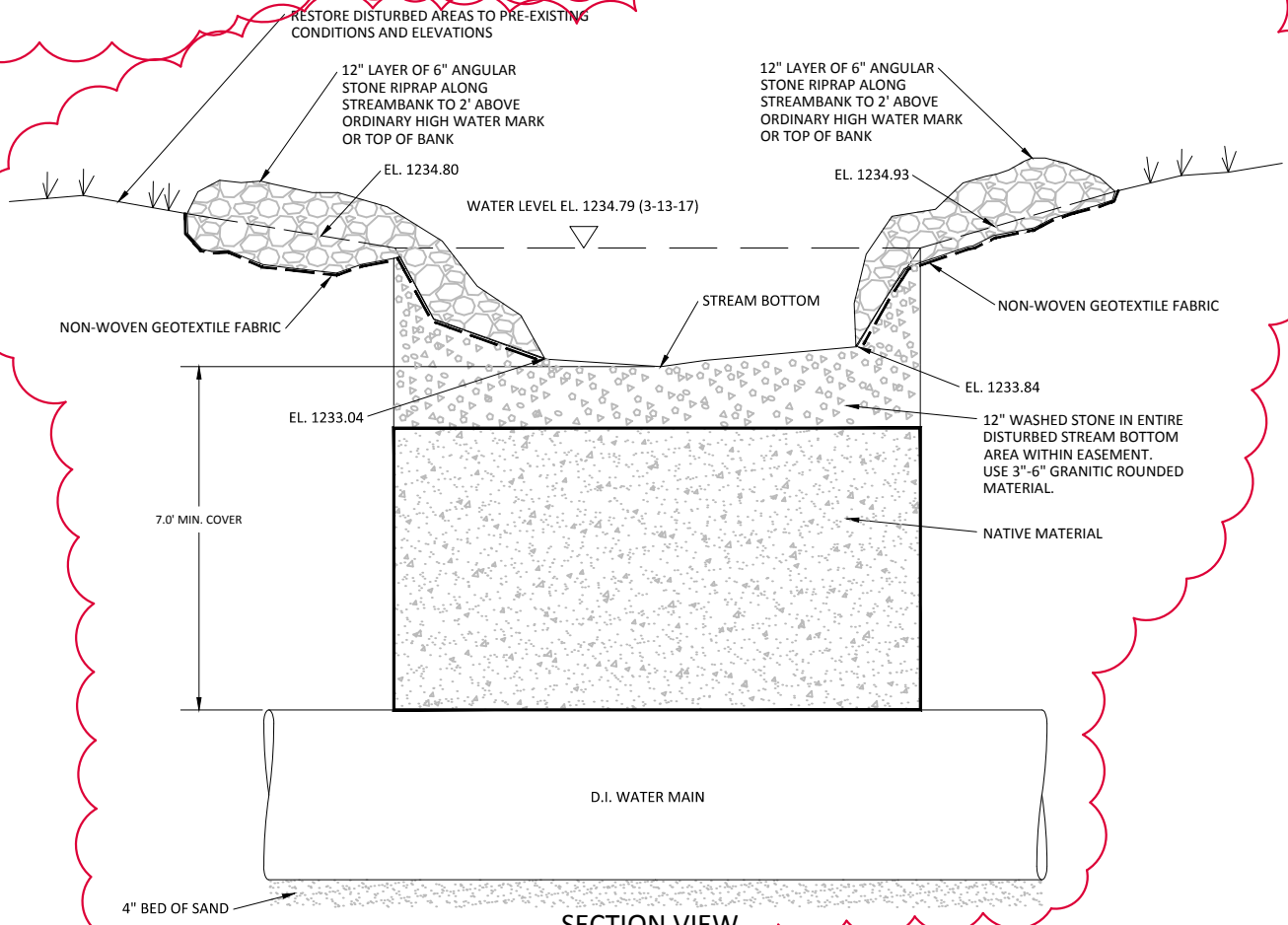
TYPICAL CLAY PLUG DETAIL



TYPICAL BLASTED/DRILLED ROCK TRENCH DETAIL



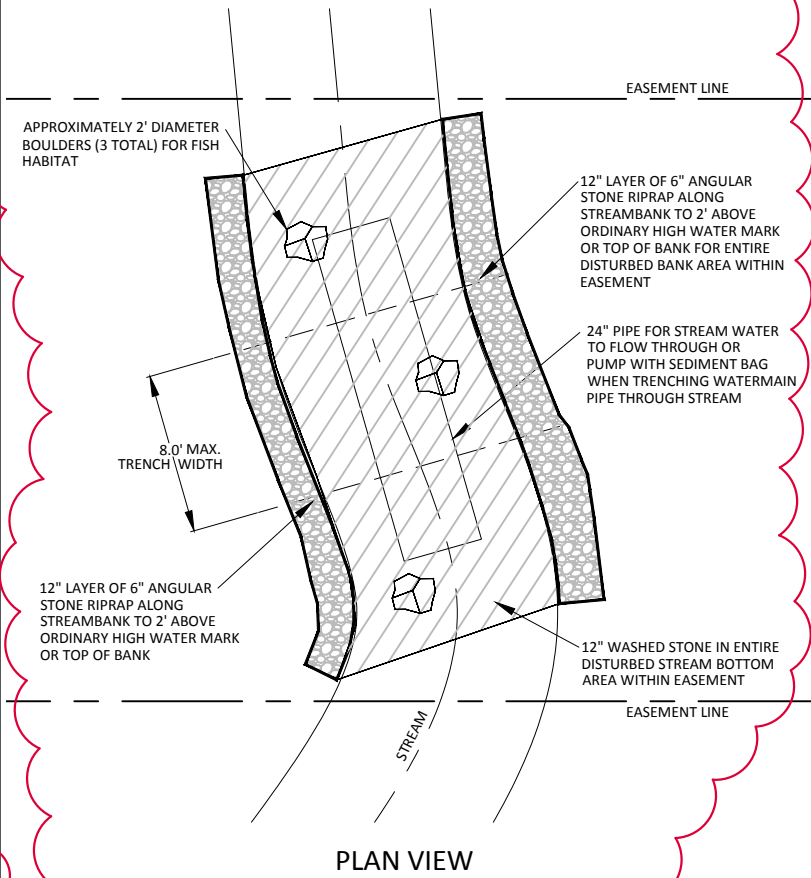
TYPICAL DEWATERING DETAIL FOR WATERMAIN



SECTION VIEW

TYPICAL STREAM CROSSING RESTORATION DETAIL

TYPICAL STREAM CROSSING RESTORATION DETAIL FOR WATERMAIN

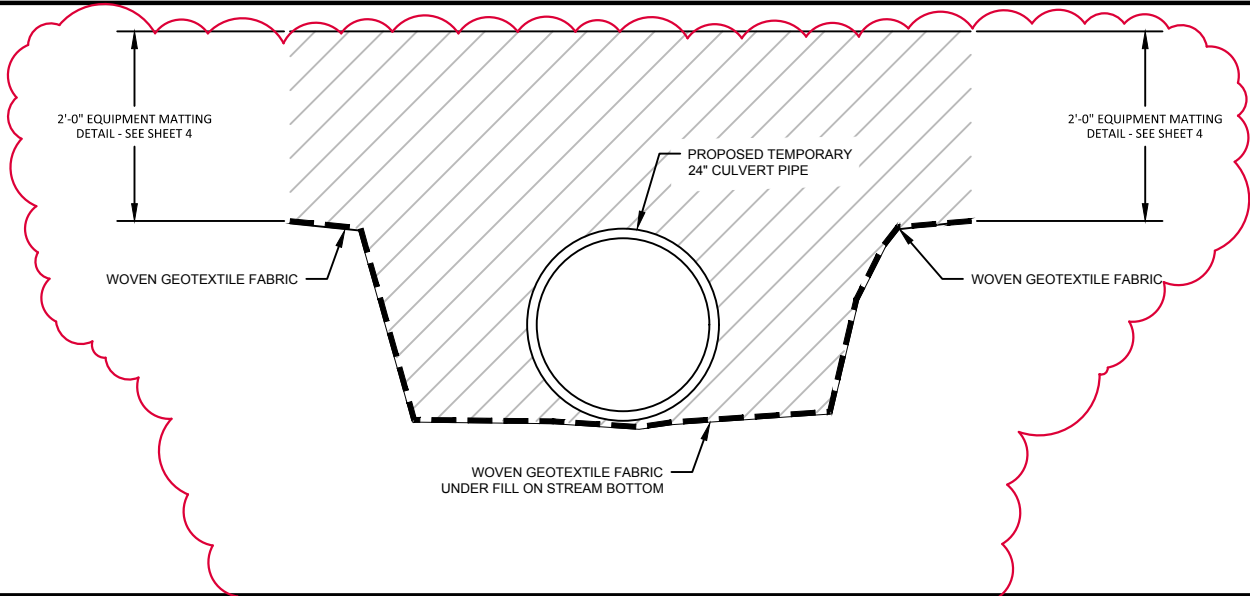


PLAN VIEW

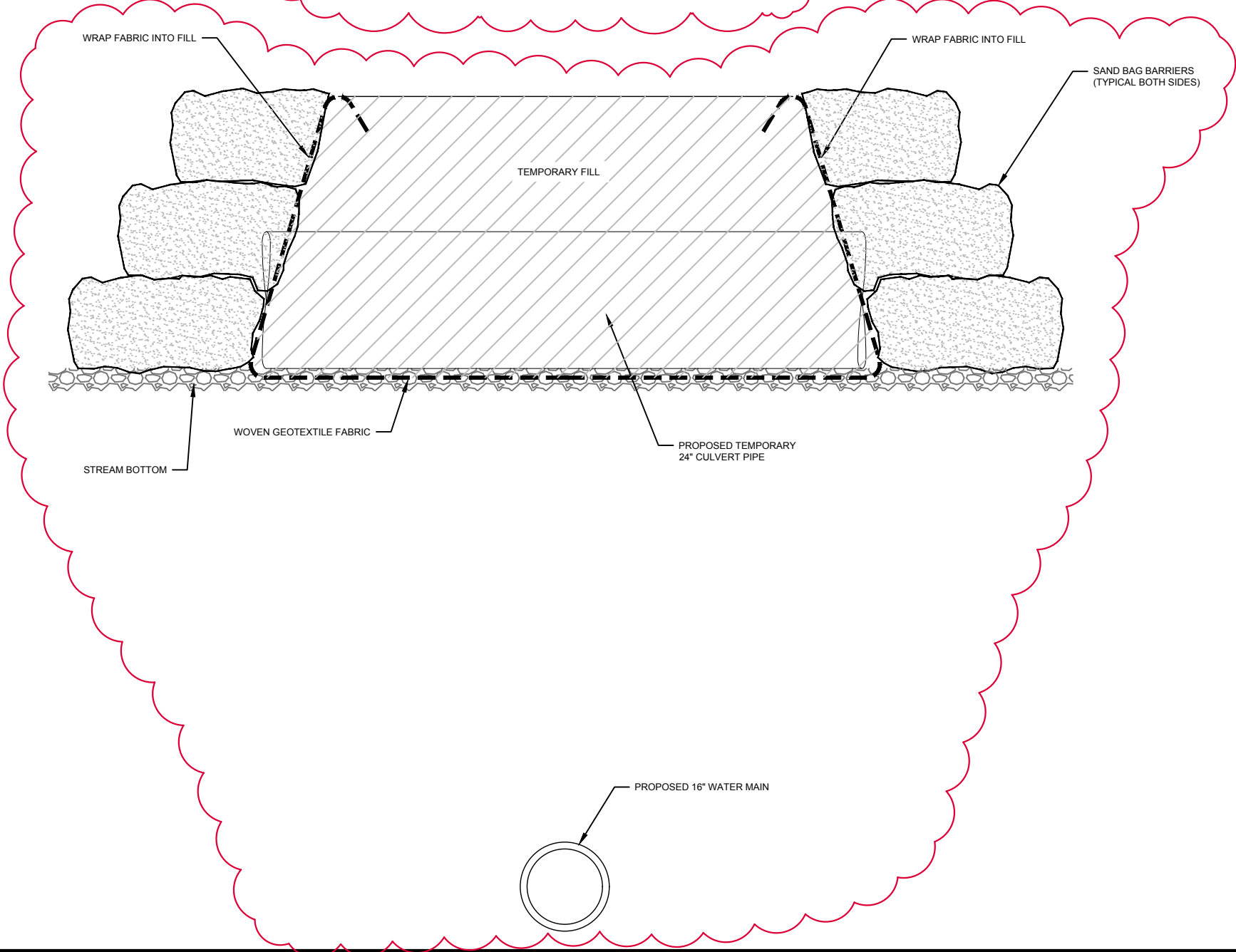
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NOT TO SCALE



STREAM CROSSING MATTING - SECTION B-B

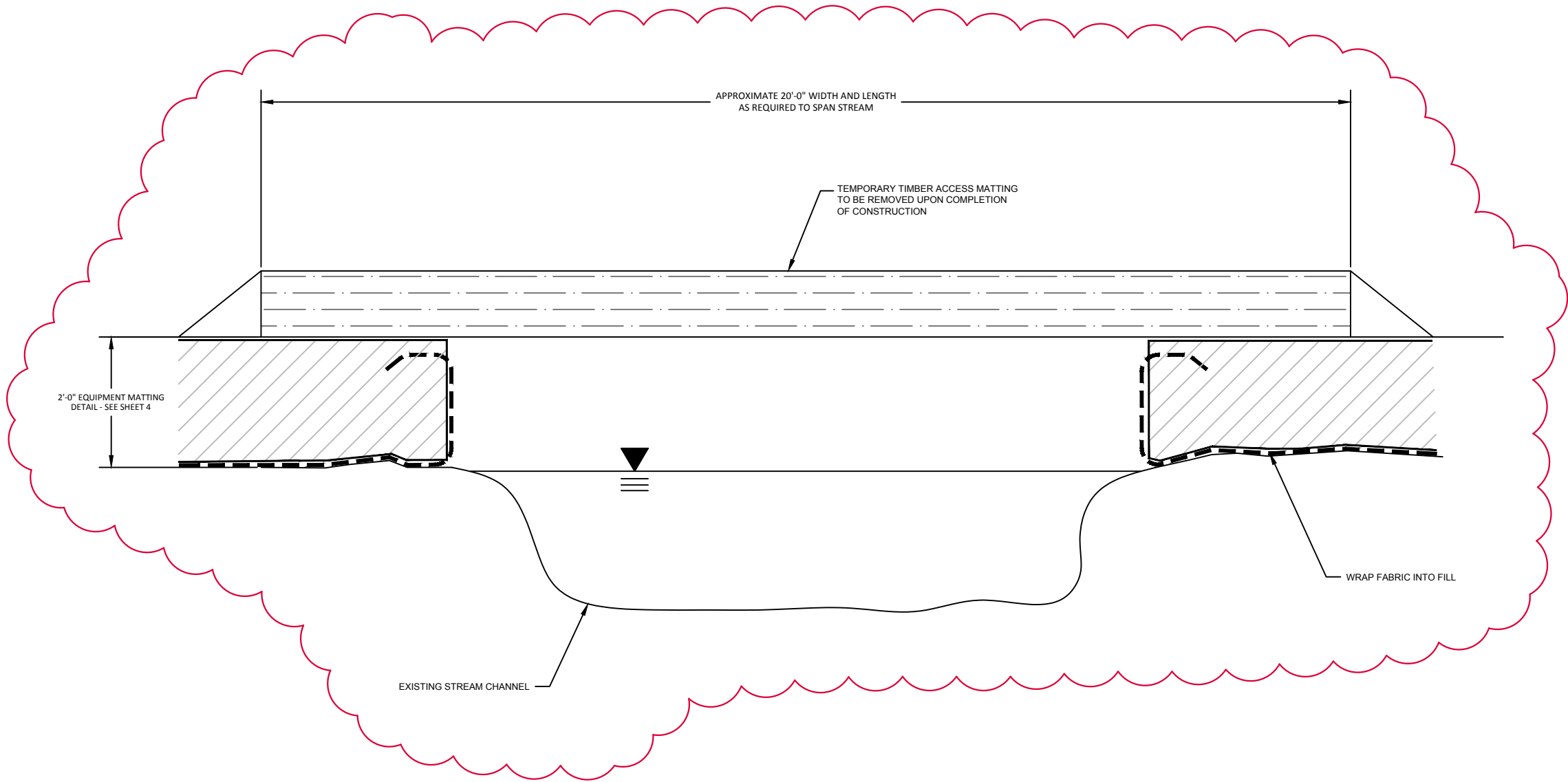


STREAM CROSSING MATTING - SECTION C-C

PLAN REVISION
11-29-17



NOT TO SCALE



ACCESS MATTING OVER WELCH CREEK TRIBUTARY



SHEET NAME:
MISCELLANEOUS
DETAILS SHEET

PROJECT:
CITY OF IRONWOOD
PHASE IV UTILITY PROJECT

SURVEYED BY: CEC
DATE: 3/14/17
DRAWN BY: Mark Surprenant
CHECKED BY: MJF
CAD DRAWING: 16385-DETAILS
CAD PROJECT: CAD16385

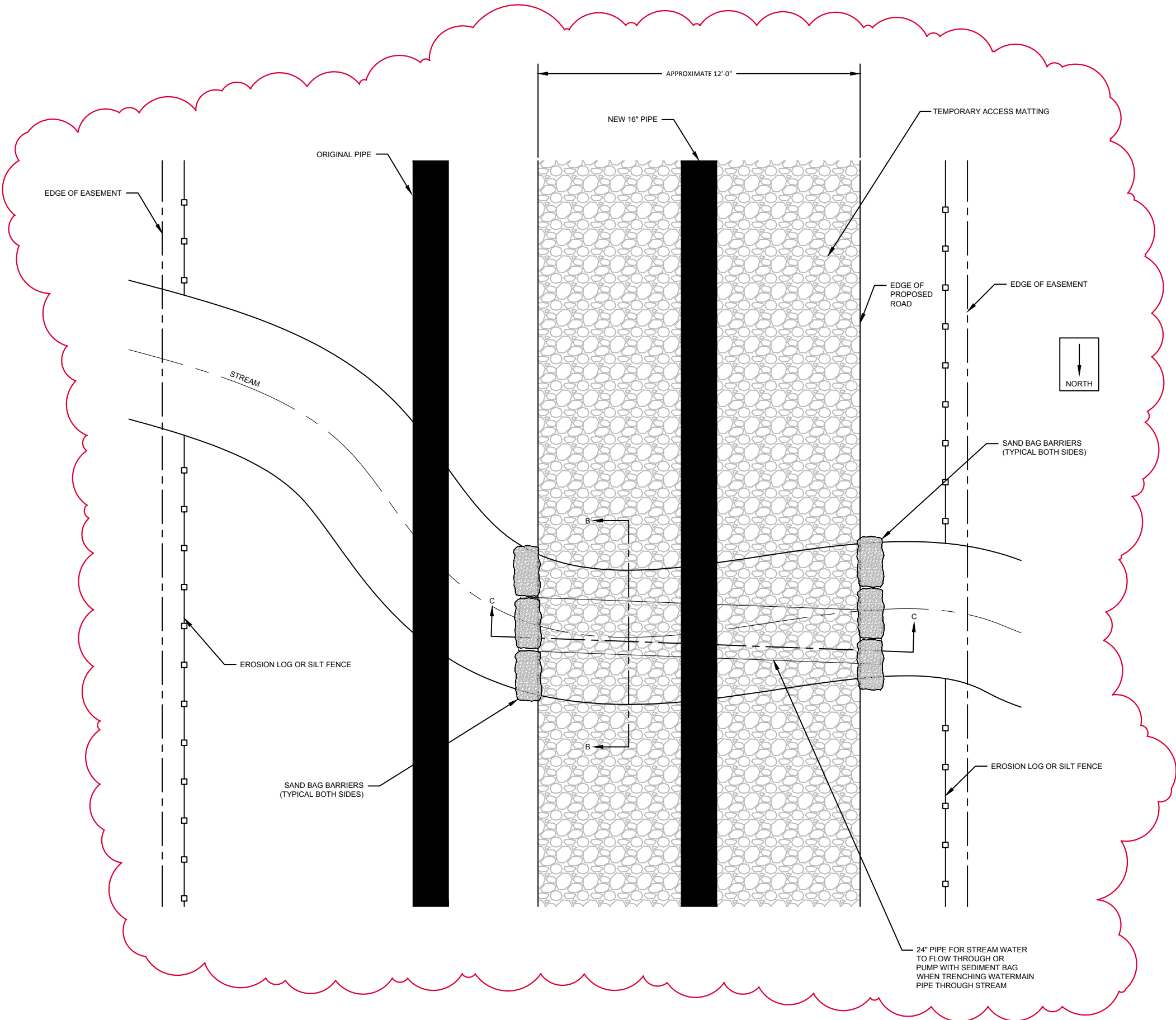
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DRAWING NO.

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NOT TO SCALE



ALTERNATE: STREAM CROSSING MATTING - PLAN VIEW