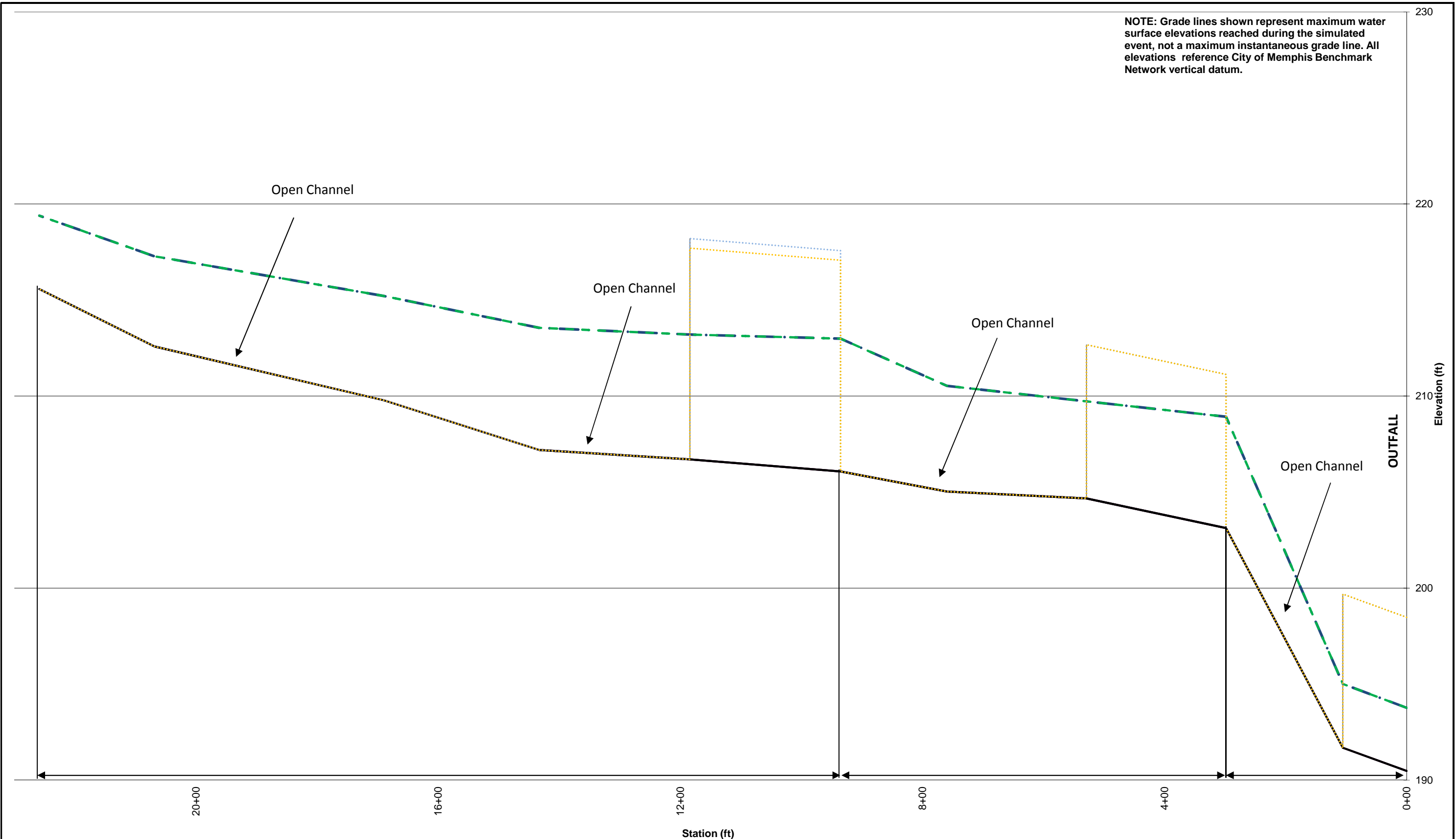


APPENDIX C: HYDRAULIC PROFILES

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



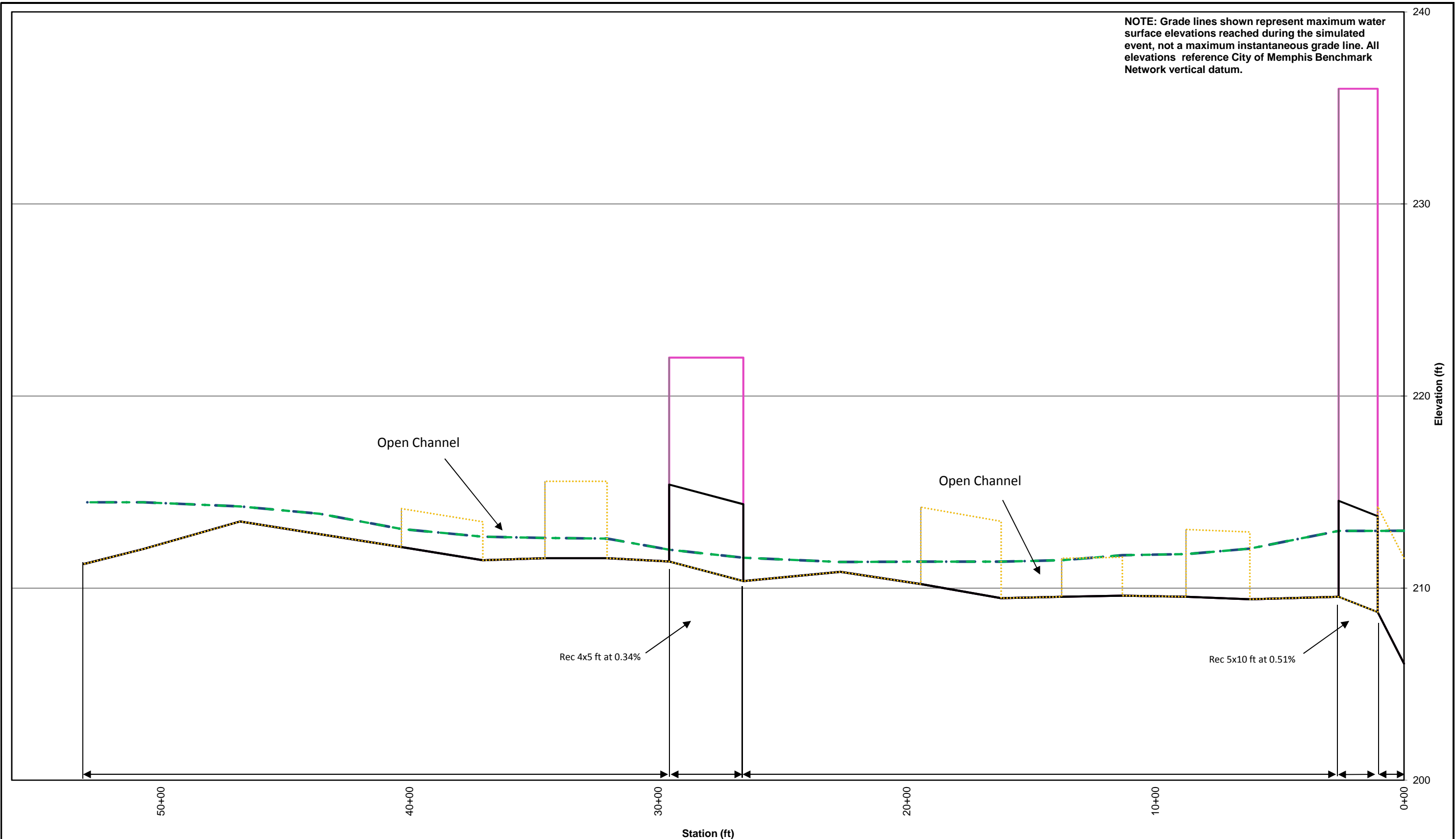
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 - - - Pr. 10-Year
 — Ground Surface at Manholes
— Model Node
 — Sewer Pipe
 - · - · - Left Top of Bank
- · - · - Right Top of Bank

**Memphis Todd Creek Drain Study
 Airport - Main Branch
 Hydraulic Profile**

**Figure
 A-1**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



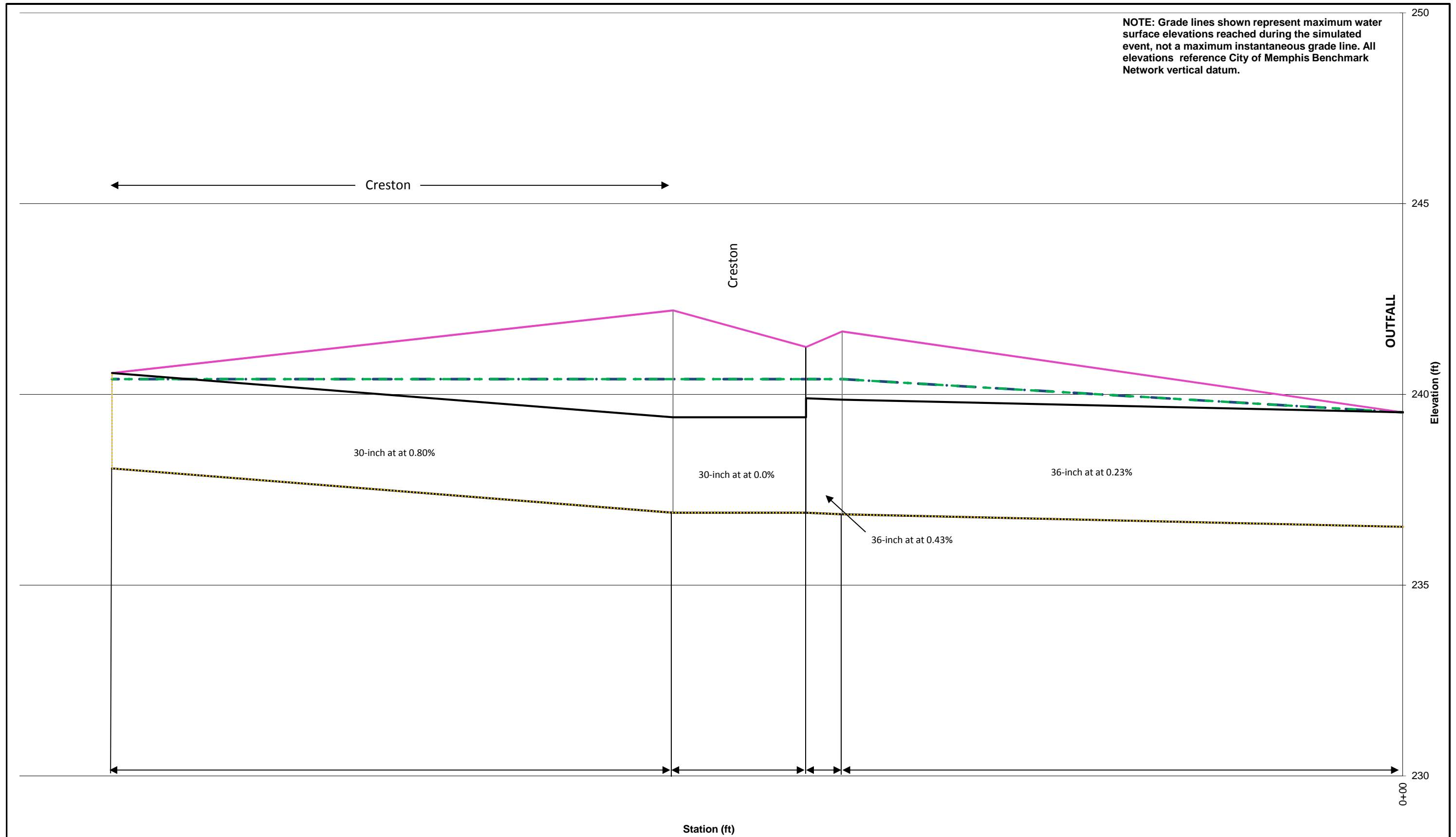
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017


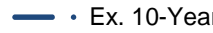
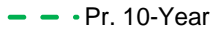
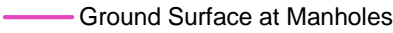


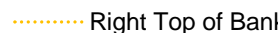
—•— Ex. 10-Year
 — Pr. 10-Year
 — Model Node
 — Sewer Pipe
 — Left TOB
 — Right TOB
 — Ground Surface at Manholes

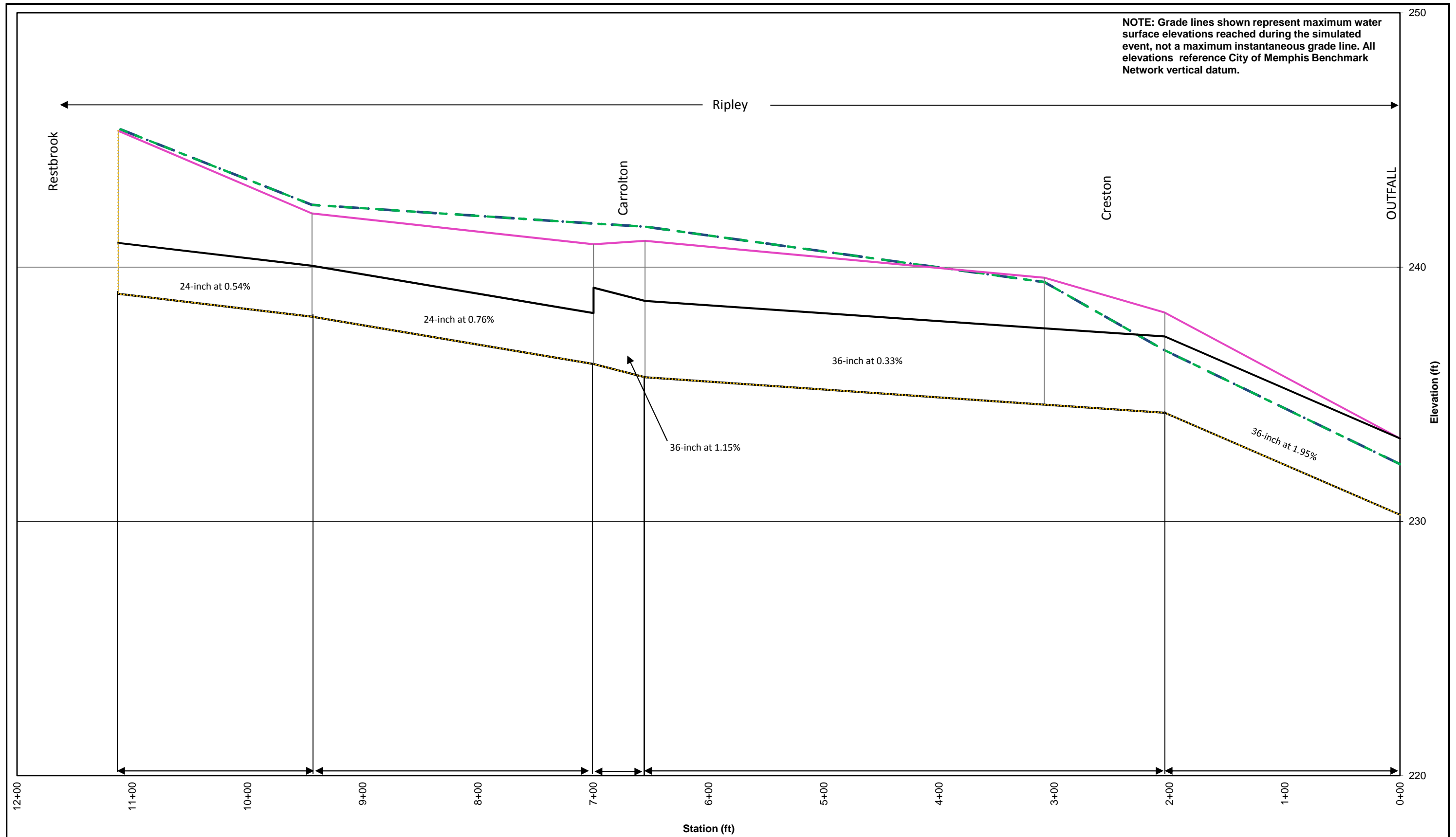
**Memphis Todd Creek Drain Study
 Airport - Main Branch South to Second St
 Access Road
 Hydraulic Profile**


**Figure
 A-2**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

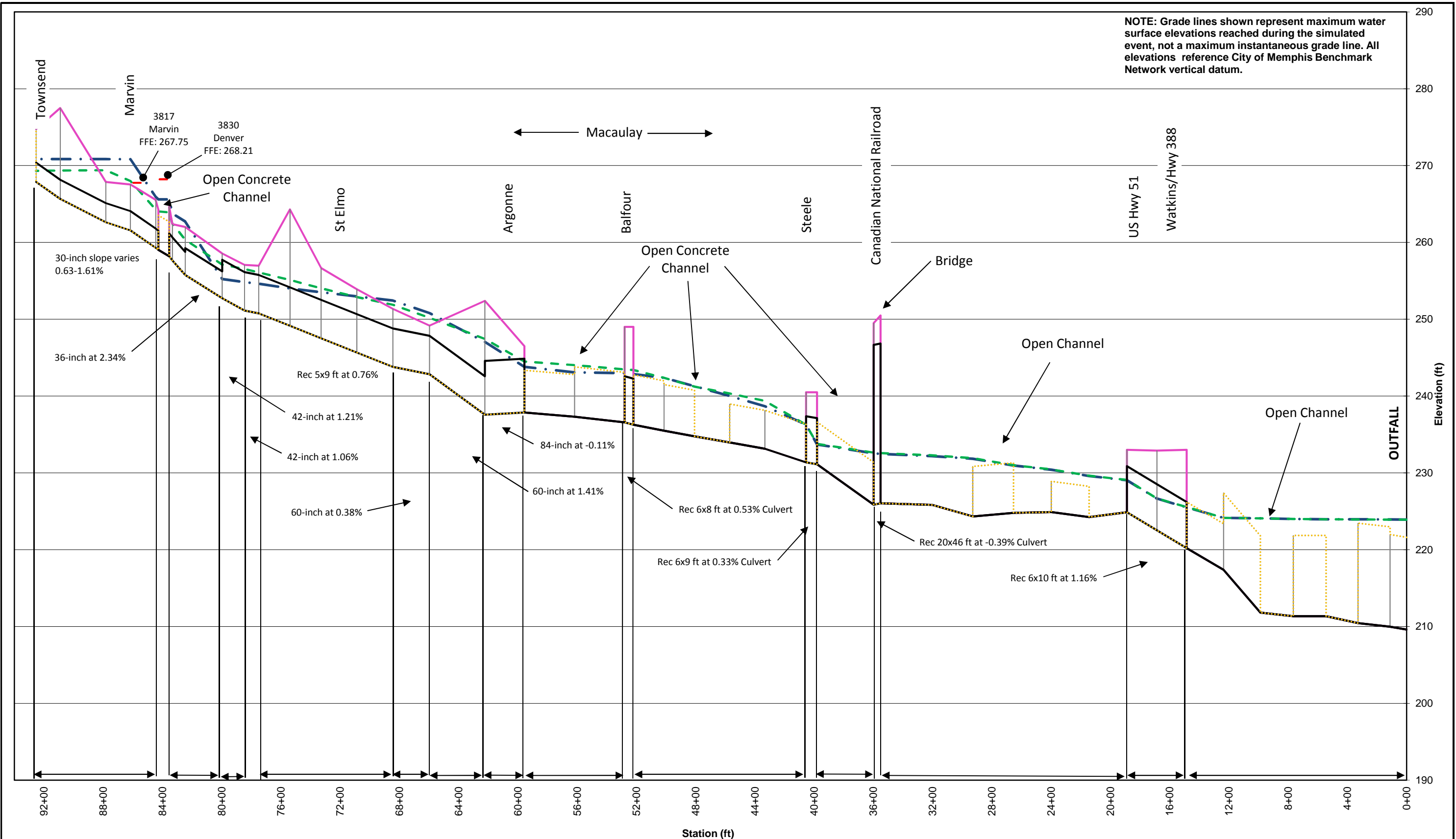


 TETRA TECH	 Ex. 10-Year	 Pr. 10-Year	 Ground Surface at Manholes	Memphis Todd Creek Drain Study Carrolton - Outfall Southeast to Carrolton St Hydraulic Profile	Figure C-1
	 Model Node	 Sewer Pipe	 Left Top of Bank		
DRAWN BY: JMB DATE: 8/25/2017	 Right Top of Bank				



 TETRA TECH	<ul style="list-style-type: none"> —•— Ex. 10-Year - - - Pr. 10-Year — Ground Surface at Manholes — Sewer Pipe - · - · - Left Top of Bank - · - · - Right Top of Bank 	Memphis Todd Creek Drain Study Carrollton - Outfall South to Restbrook Hydraulic Profile	Figure C-2
DRAWN BY: JMB DATE: 8/25/2017			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



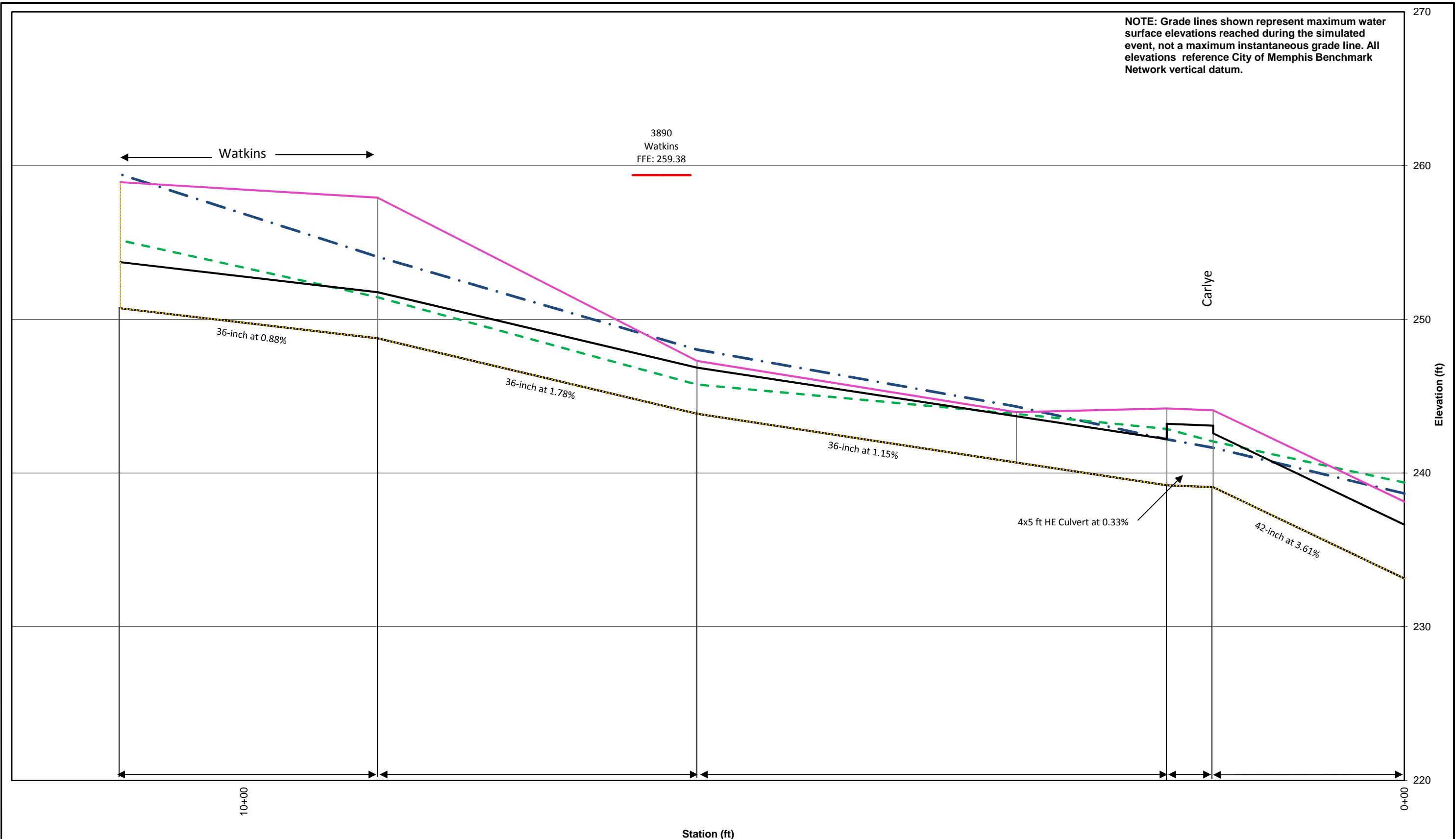
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Model Node
 — Sewer Pipe
 - - - Pr. 10-Year
 - - - Right Top of Bank
 — Ground Surface at Manholes
 - - - Left Top of Bank

Memphis Todd Creek Drain Study
Denver - Todd Creek Main Branch to Townsend
Hydraulic Profile

Figure D - 1

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



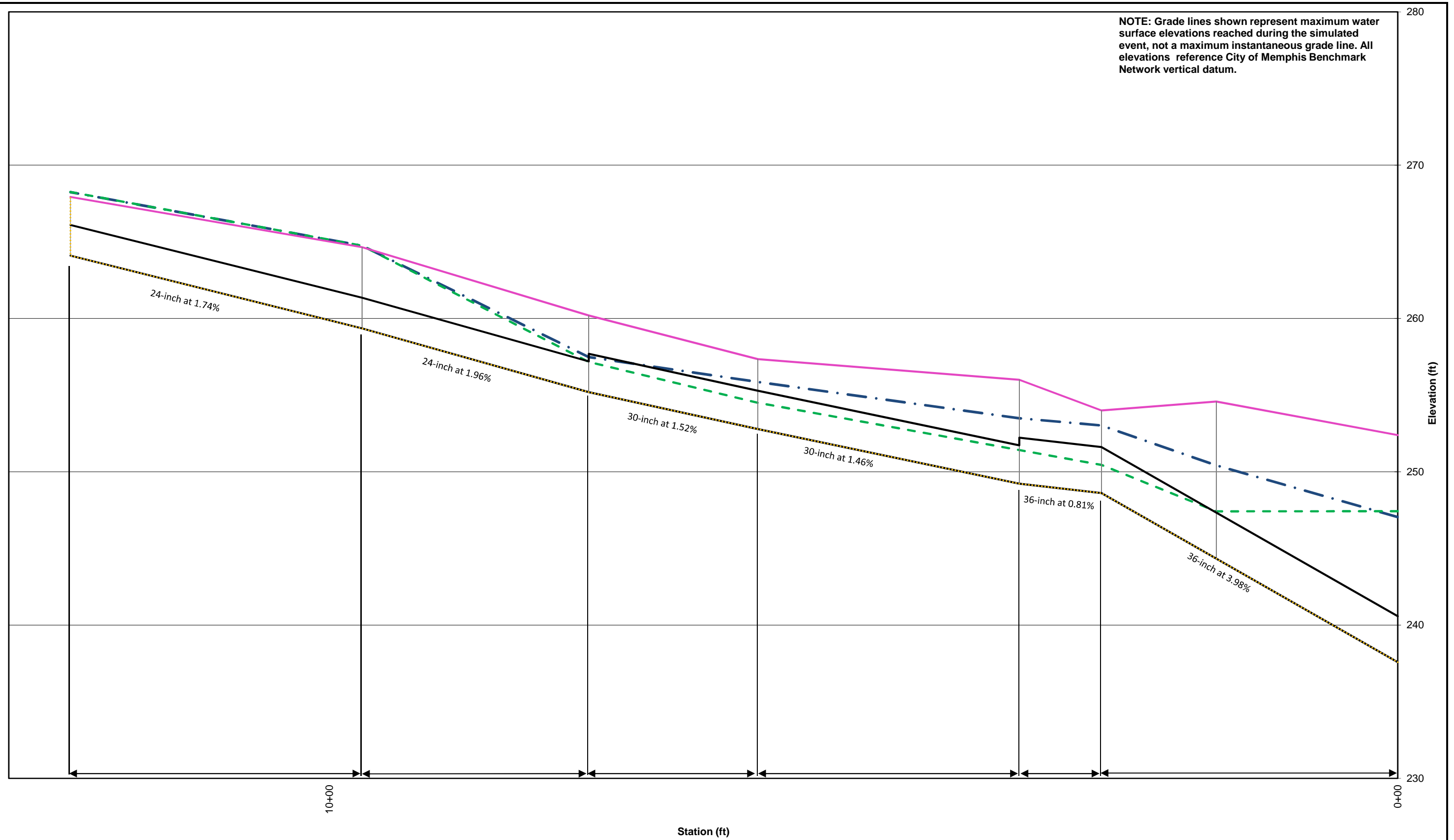
Tt TETRA TECH
 DRAWN BY: JMB DATE: 8/25/2017


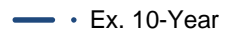
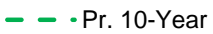
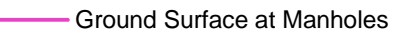



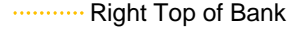
—•— Ex. 10-Year - - - Pr. 10-Year — Ground Surface at Manholes
 — Model Node — Sewer Pipe - - - - - Left TOB
 - - - - - Right TOB

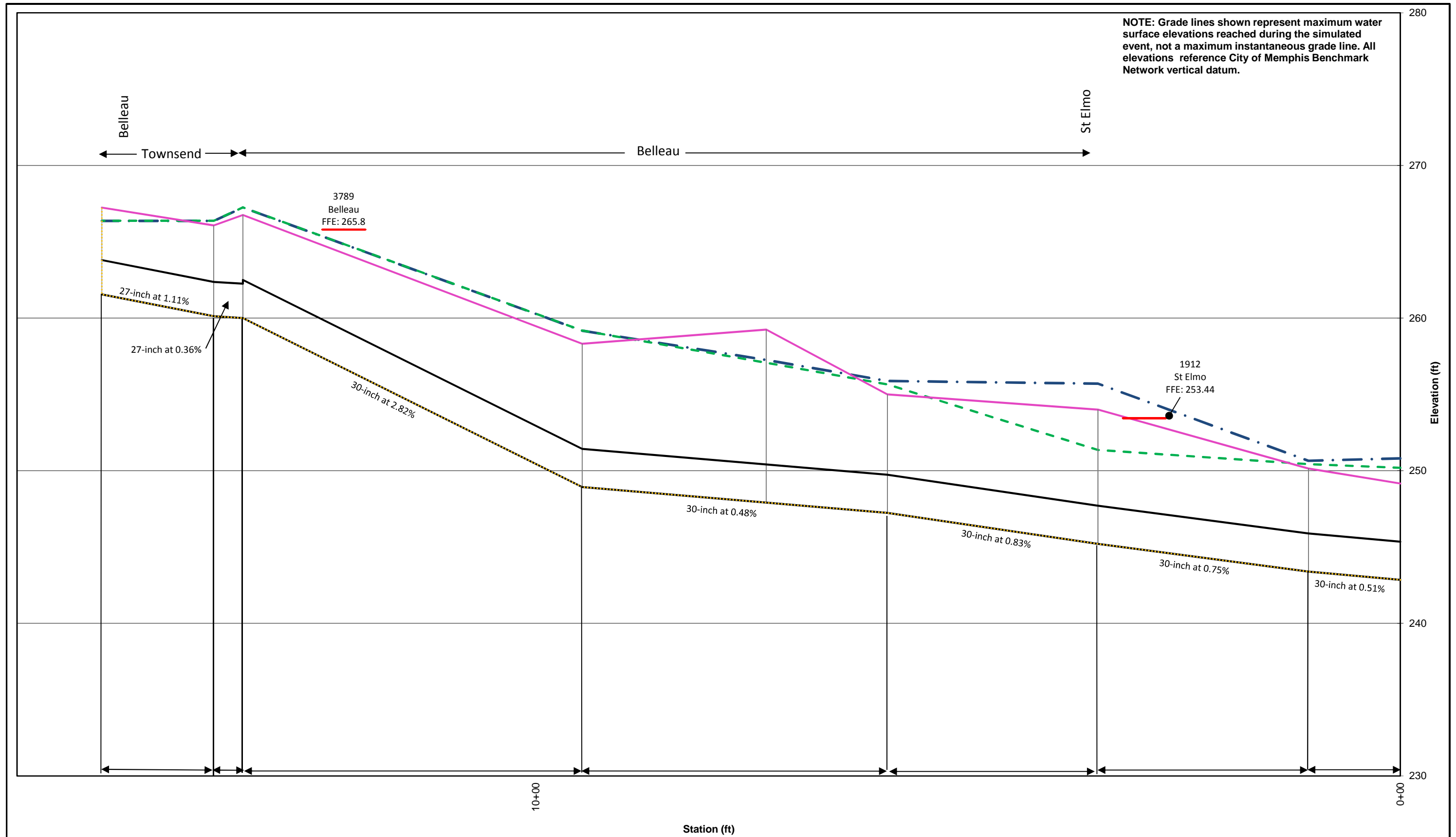
**Memphis Todd Creek Drain Study
 Denver - Main Branch South to Watkins
 Hydraulic Profile**

**Figure
 D - 2**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

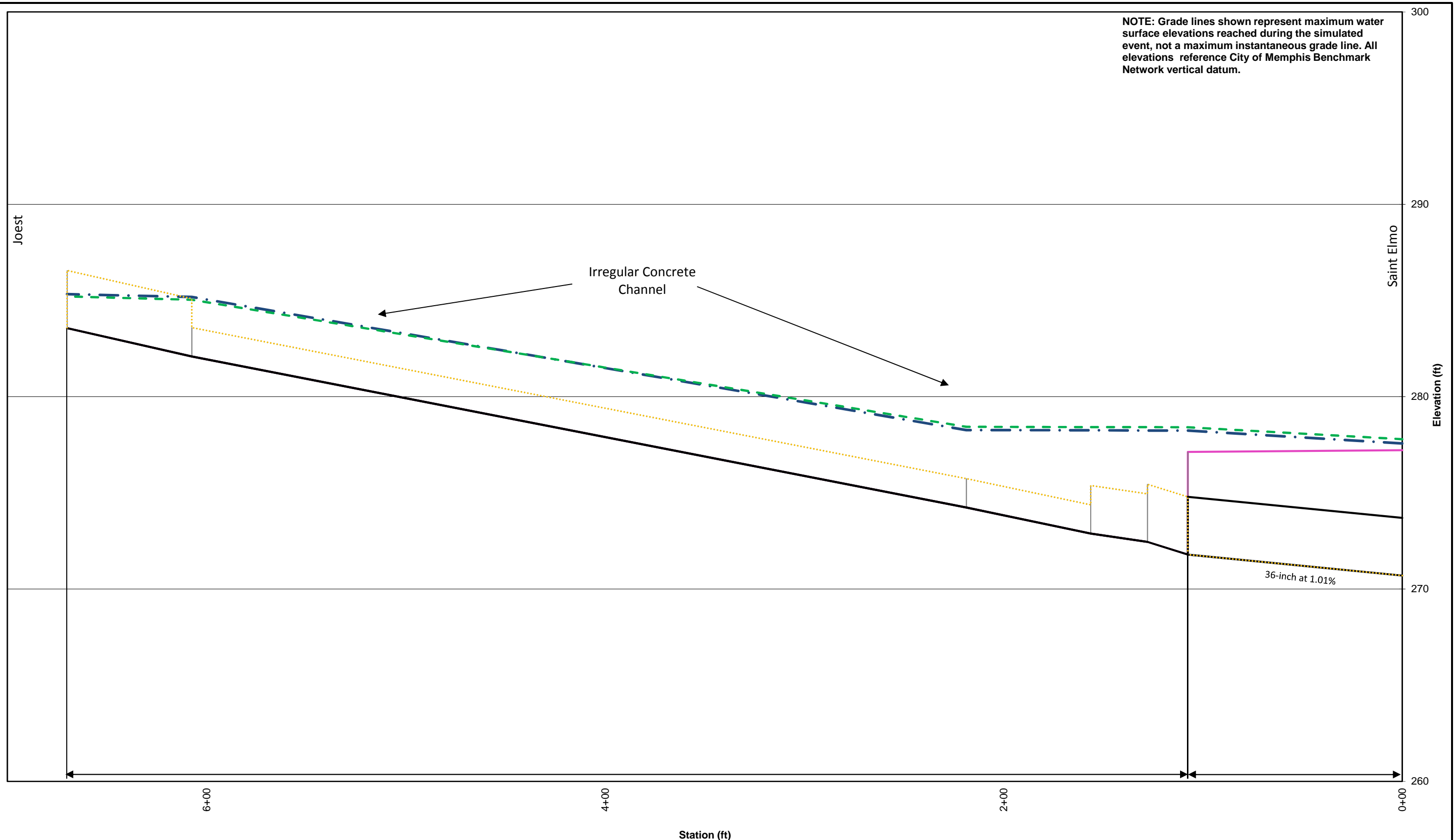


 TETRA TECH	 Ex. 10-Year	 Pr. 10-Year	 Ground Surface at Manholes	Memphis Todd Creek Drain Study Denver - Main Branch East to School Hydraulic Profile	Figure D - 3
	 Model Node	 Sewer Pipe	 Left Top of Bank		
DRAWN BY: JMB DATE: 8/25/2017	 Right Top of Bank				



TETRA TECH	—•— Ex. 10-Year — Model Node	- - - Pr. 10-Year — Sewer Pipe	— Ground Surface at Manholes - · - · - Left Top of Bank	Memphis Todd Creek Drain Study Denver - Main Branch South to Belleau Hydraulic Profile	Figure D - 4
	DRAWN BY: JMB DATE: 8/25/2017	- · - · - Right Top of Bank			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



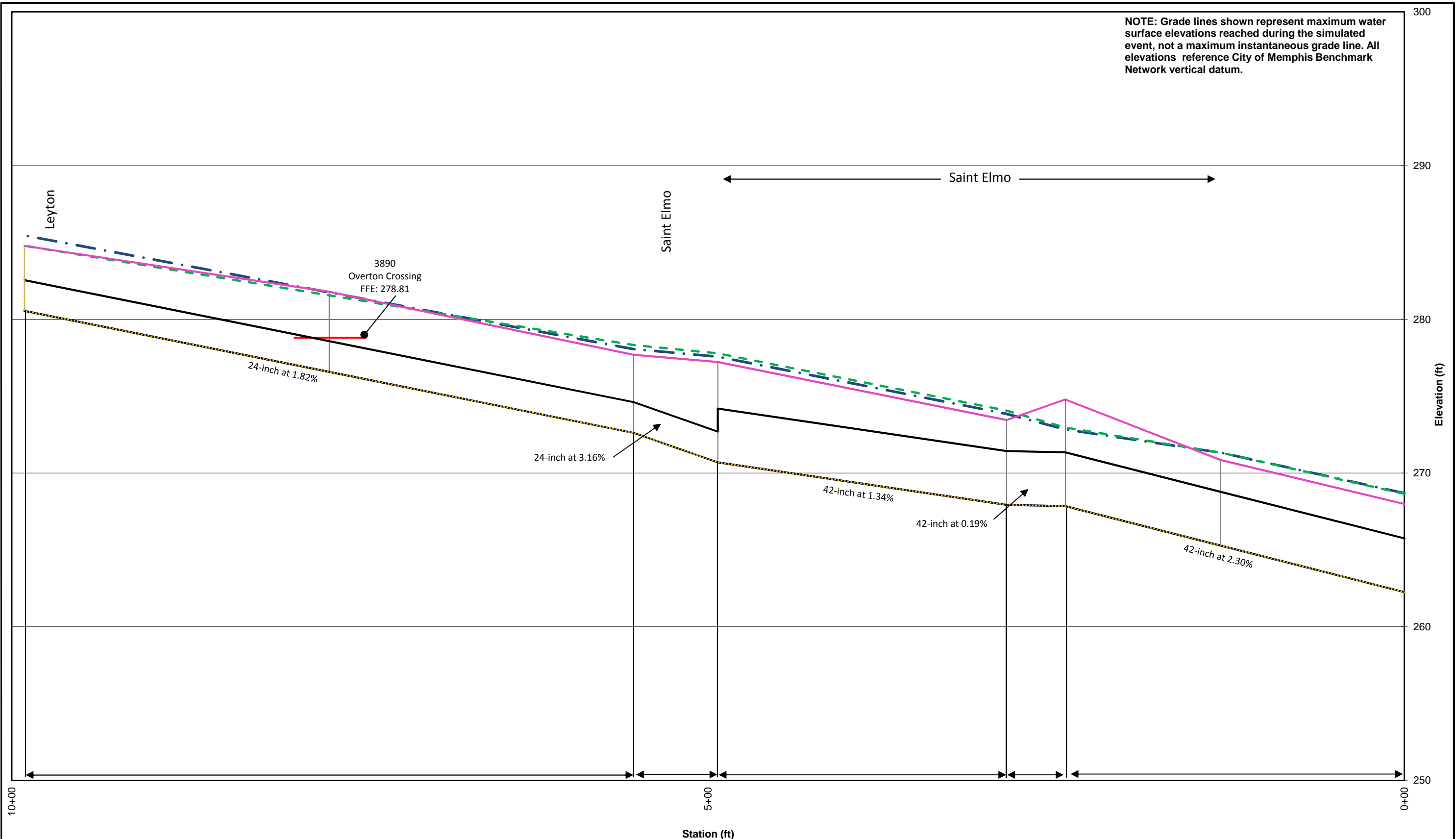
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Sewer Pipe
 — Left Top of Bank
 — Right Top of Bank
 — Ground Surface at Manholes

**Memphis Todd Creek Drain Study
 Denver - East to Joest
 Hydraulic Profile**

**Figure
 D - 5.1.1**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

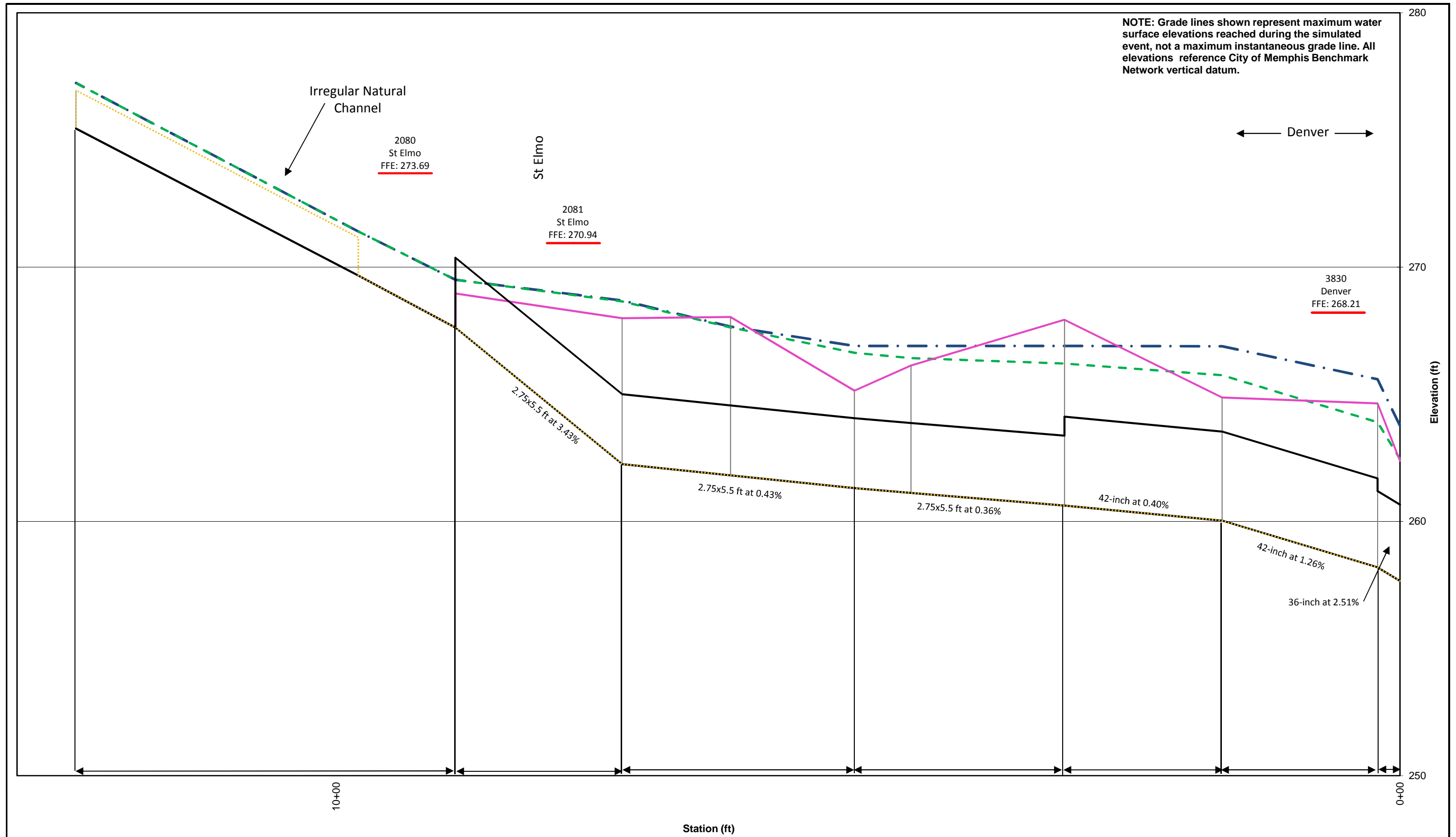


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

- Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- Sewer Pipe
- · - · - Left Top of Bank
- · - · - Right Top of Bank

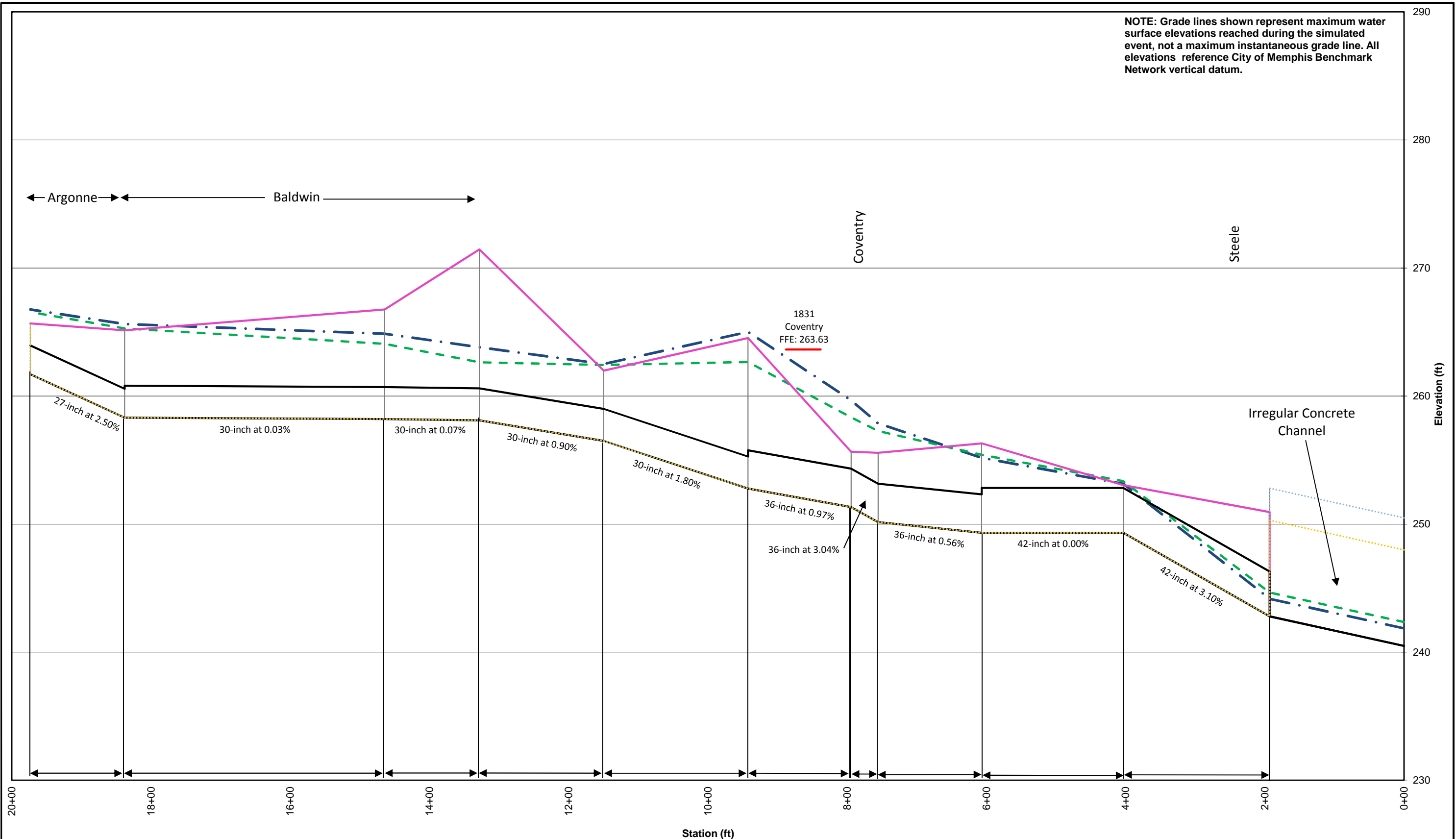
**Memphis Todd Creek Drain Study
 Denver - East to Leyton
 Hydraulic Profile**

**Figure
 D - 5.1**

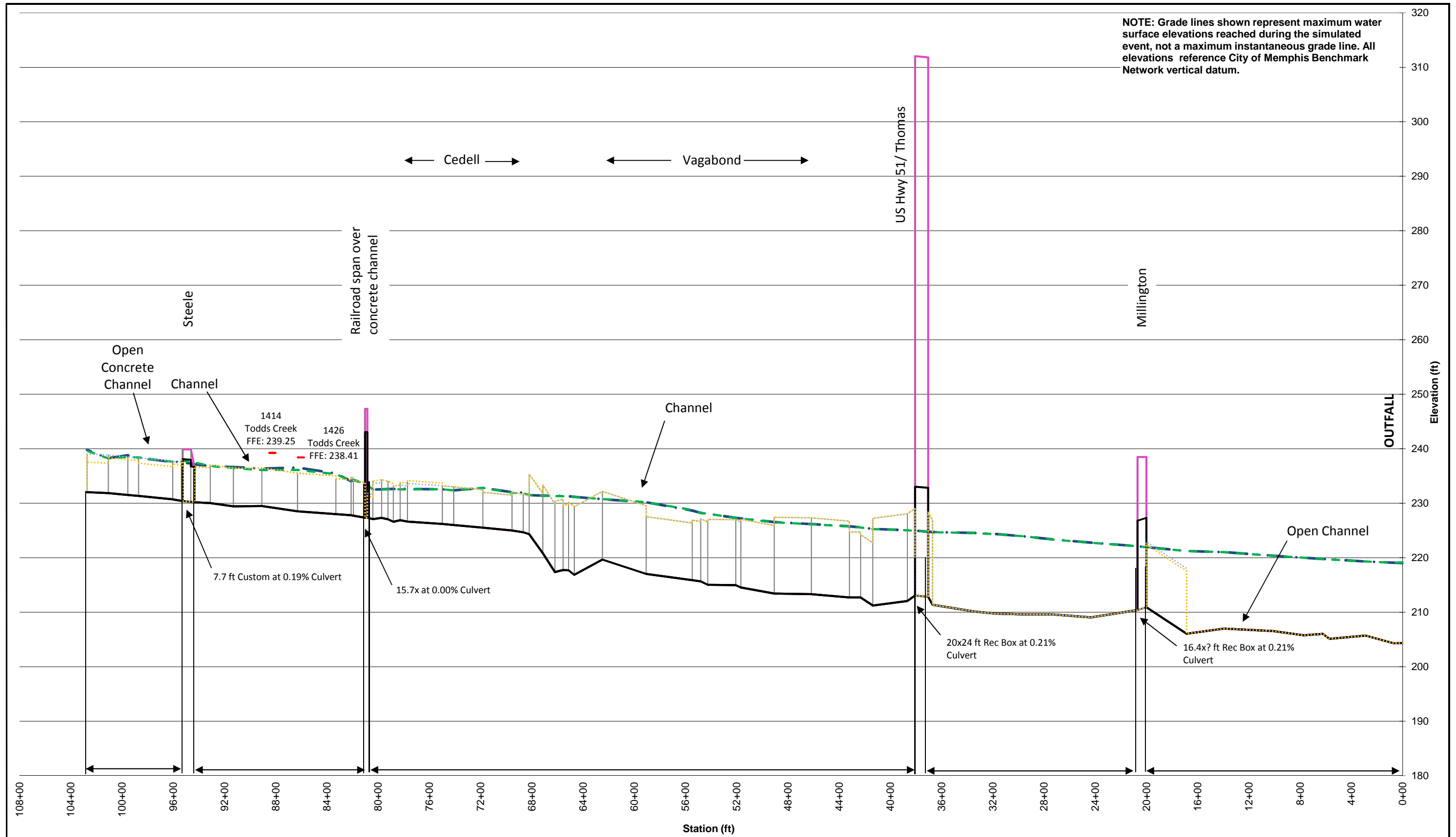


<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>—•— Left Top of Bank</p> <p>—•— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Denver - Main Branch North to St Elmo Hydraulic Profile</p>	<p>Figure D - 5</p>
	<p>— Model Node</p>			
<p>DRAWN BY: JMB DATE: 8/25/2017</p>				

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



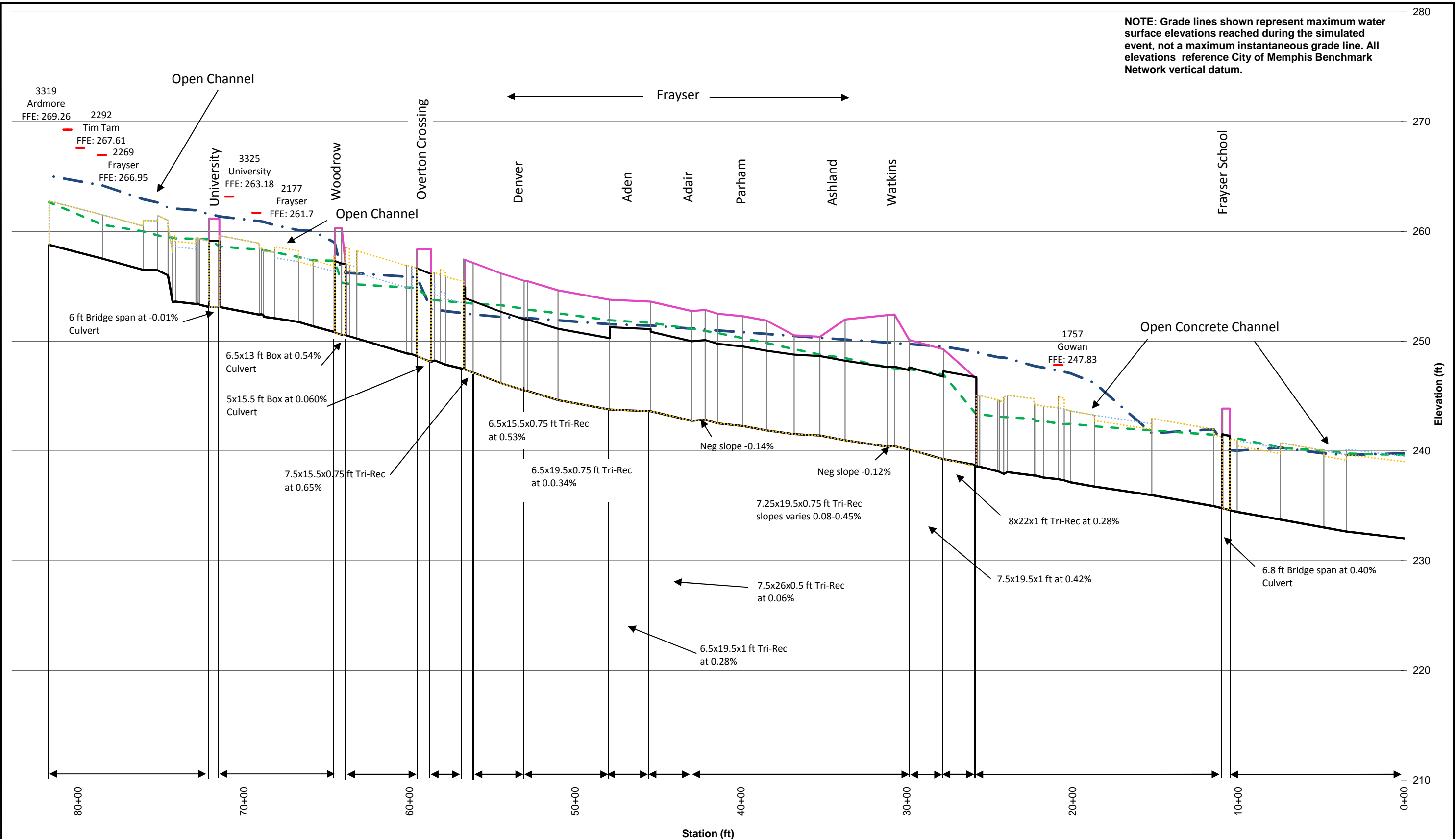
<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Denver - Outfall Steele to Argonne Hydraulic Profile</p>	<p>Figure D - 6</p>
	<p>— Model Node</p>			
<p>DRAWN BY: JMB DATE: 8/25/2017</p>				



NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>—•— Pr. 10-Year</p> <p>—•— Model Node</p> <p>—•— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>—•— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Outlet to Steele Street Hydraulic Profile</p>	<p>Figure T - 1A</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

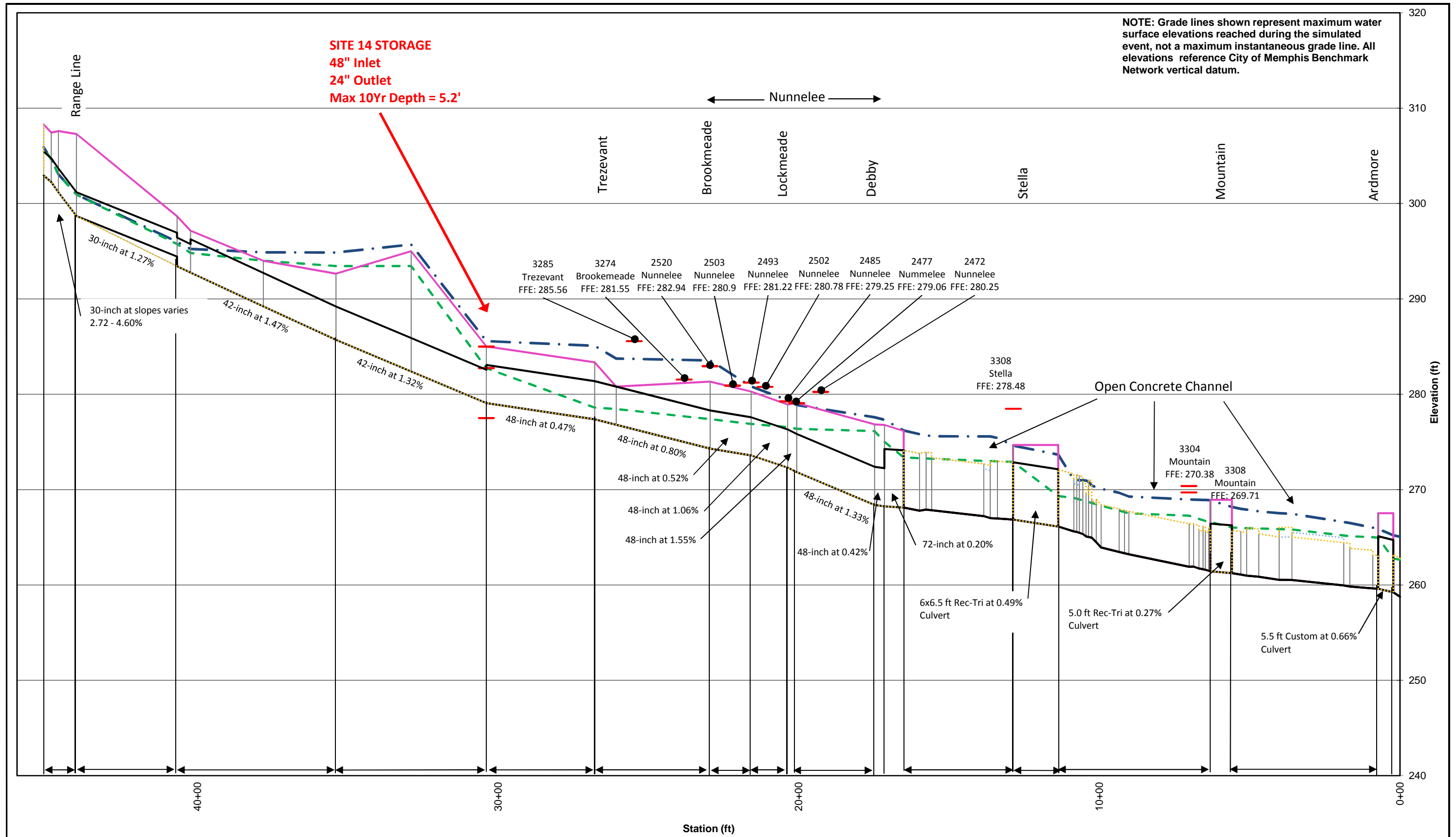


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

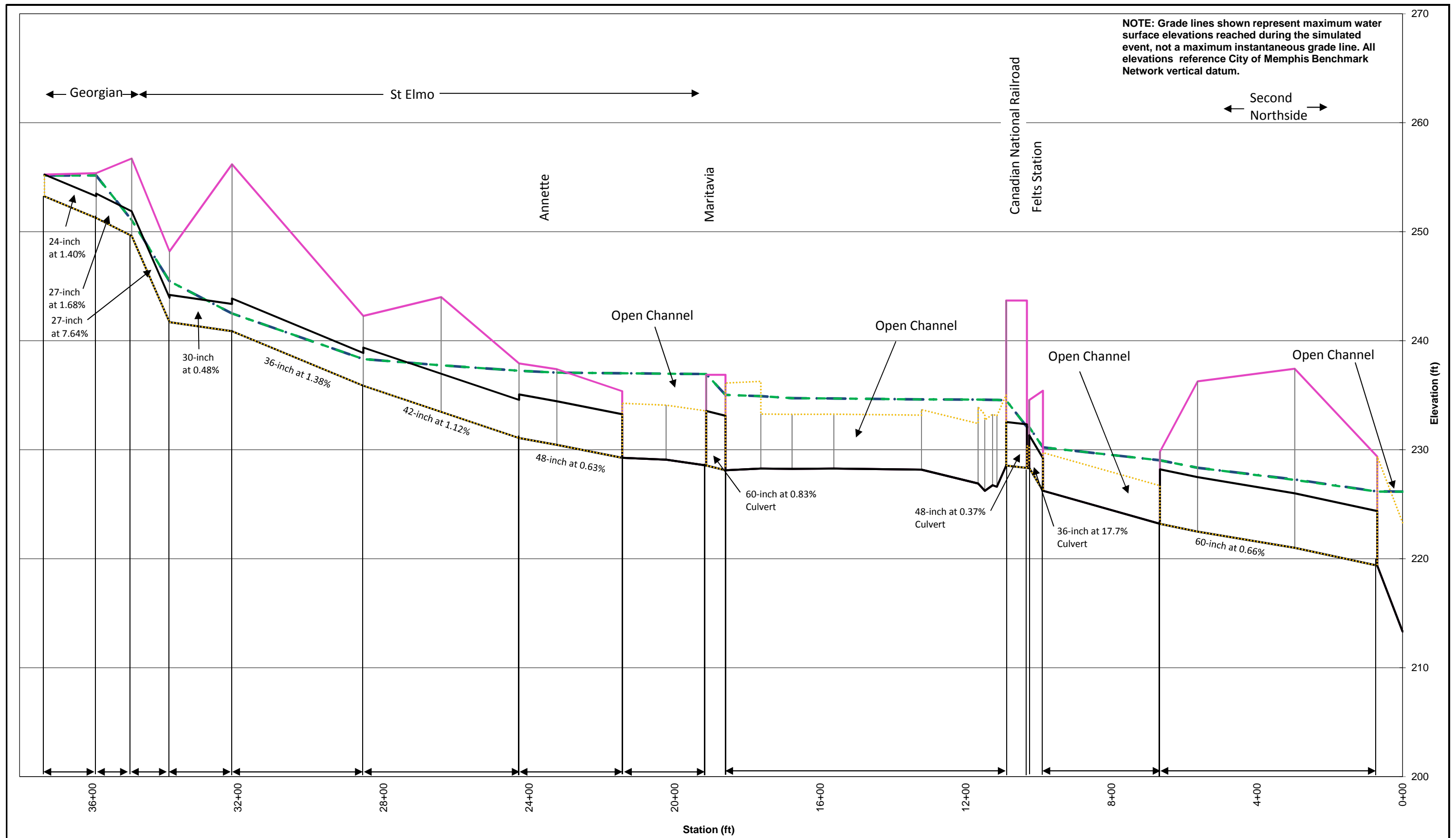
—•— Ex. 10-Year
 — Model Node
 —••••• Right TOB
 - - - Pr. 10-Year
 — Sewer Pipe
 — Ground Surface at Manholes
 - - - Left TOB

**Memphis Todd Creek Drain Study
 Todd Creek - Steele Street to Ardmore
 Hydraulic Profile**

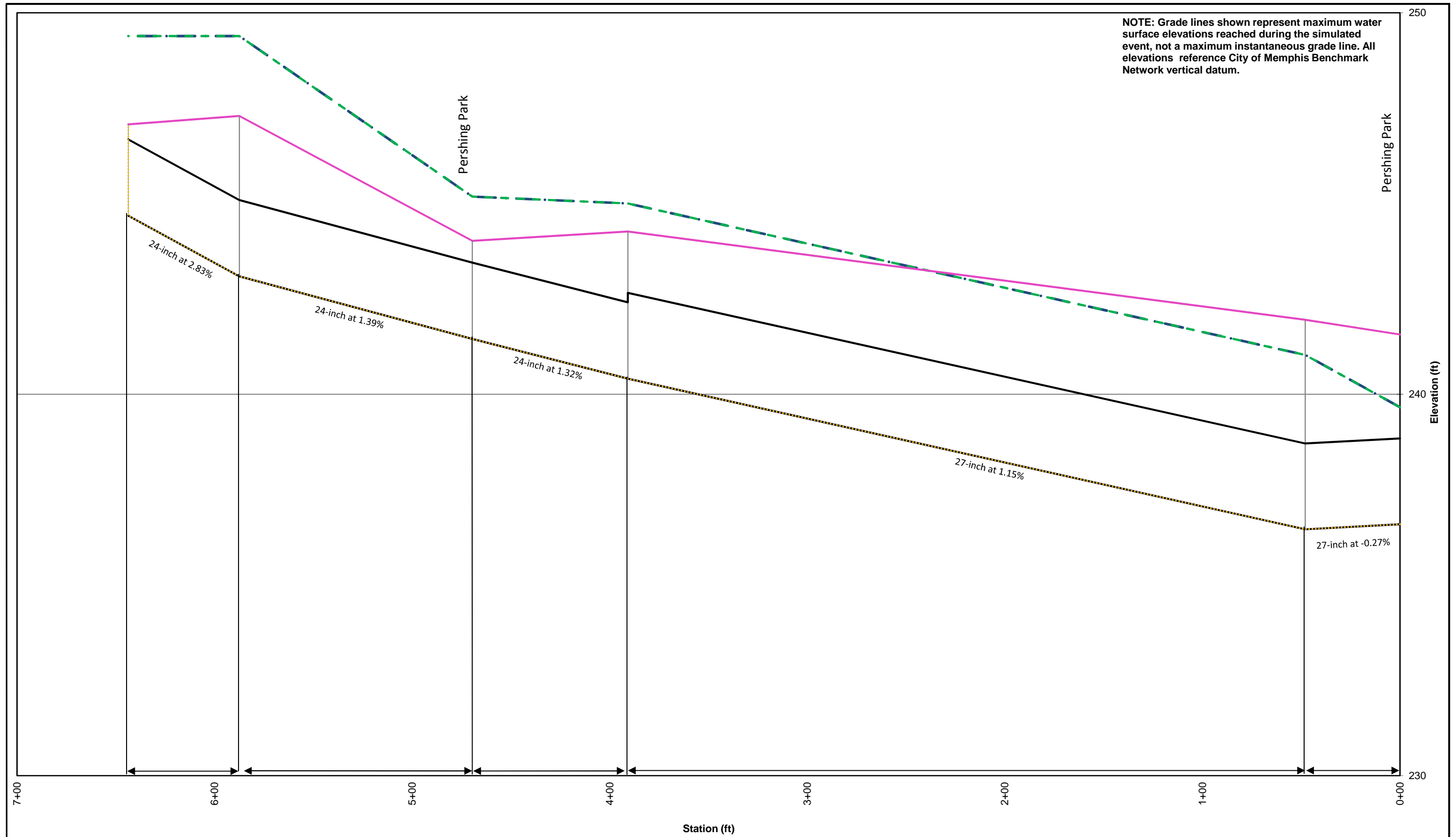
**Figure
 T - 1B**



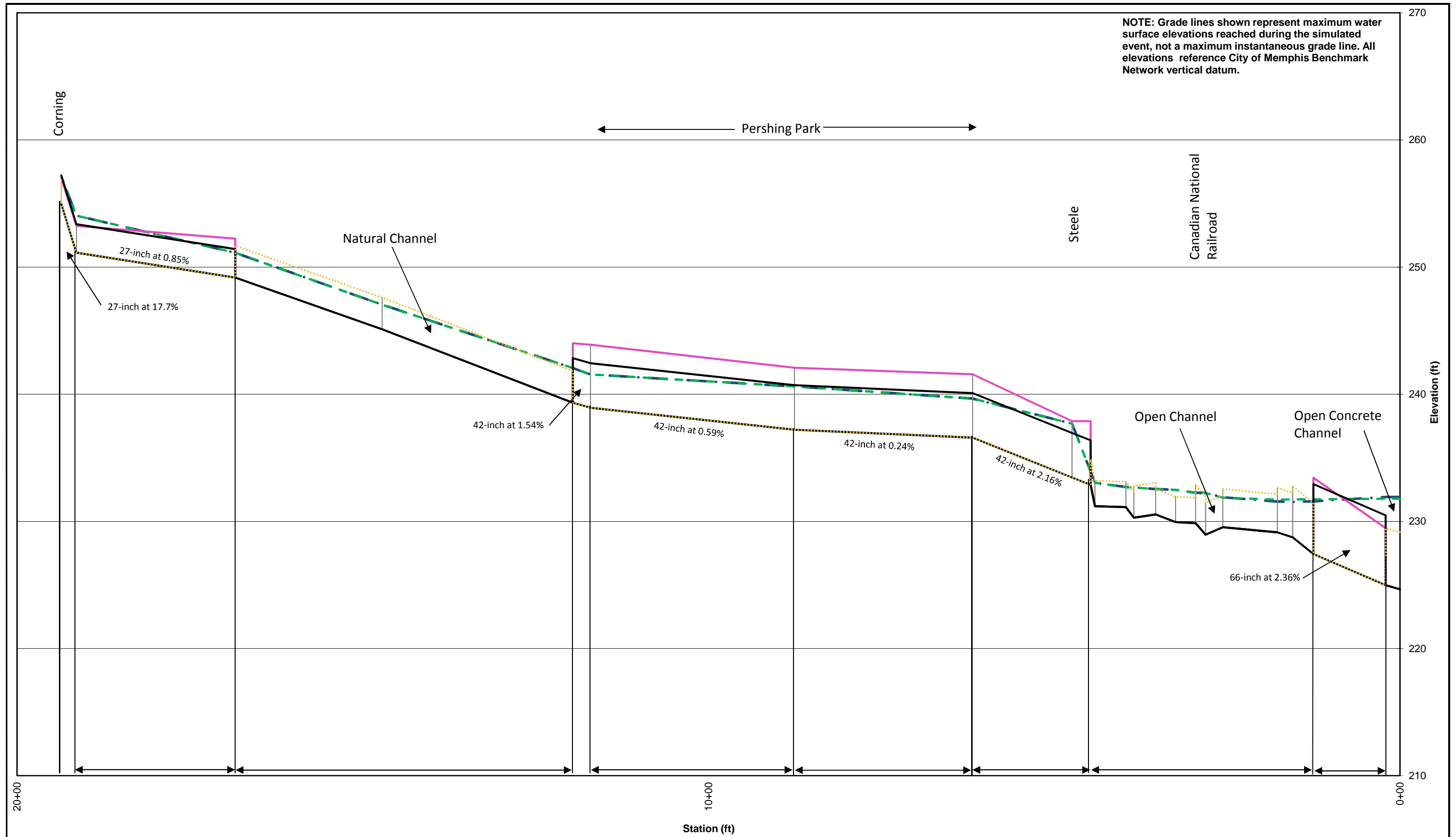
<p>TETRA TECH</p> <p>DRAWN BY: JMB DATE: 8/25/2017</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Ardmore to Rangeline Hydraulic Profile</p>	<p>Figure T - 1C</p>
	<p>— Model Node</p>			



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>—•— Pr. 10-Year</p> <p>—•— Model Node</p> <p>—•— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>—•— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch East to Georgian Hydraulic Profile</p>	<p>Figure T - 2</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>			



TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	Ex. 10-Year Model Node Right Top of Bank	Pr. 10-Year Sewer Pipe	Ground Surface at Manholes Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - East to Pershing Park Hydraulic Profile	Figure T - 3.1
	<p>Station (ft)</p>				

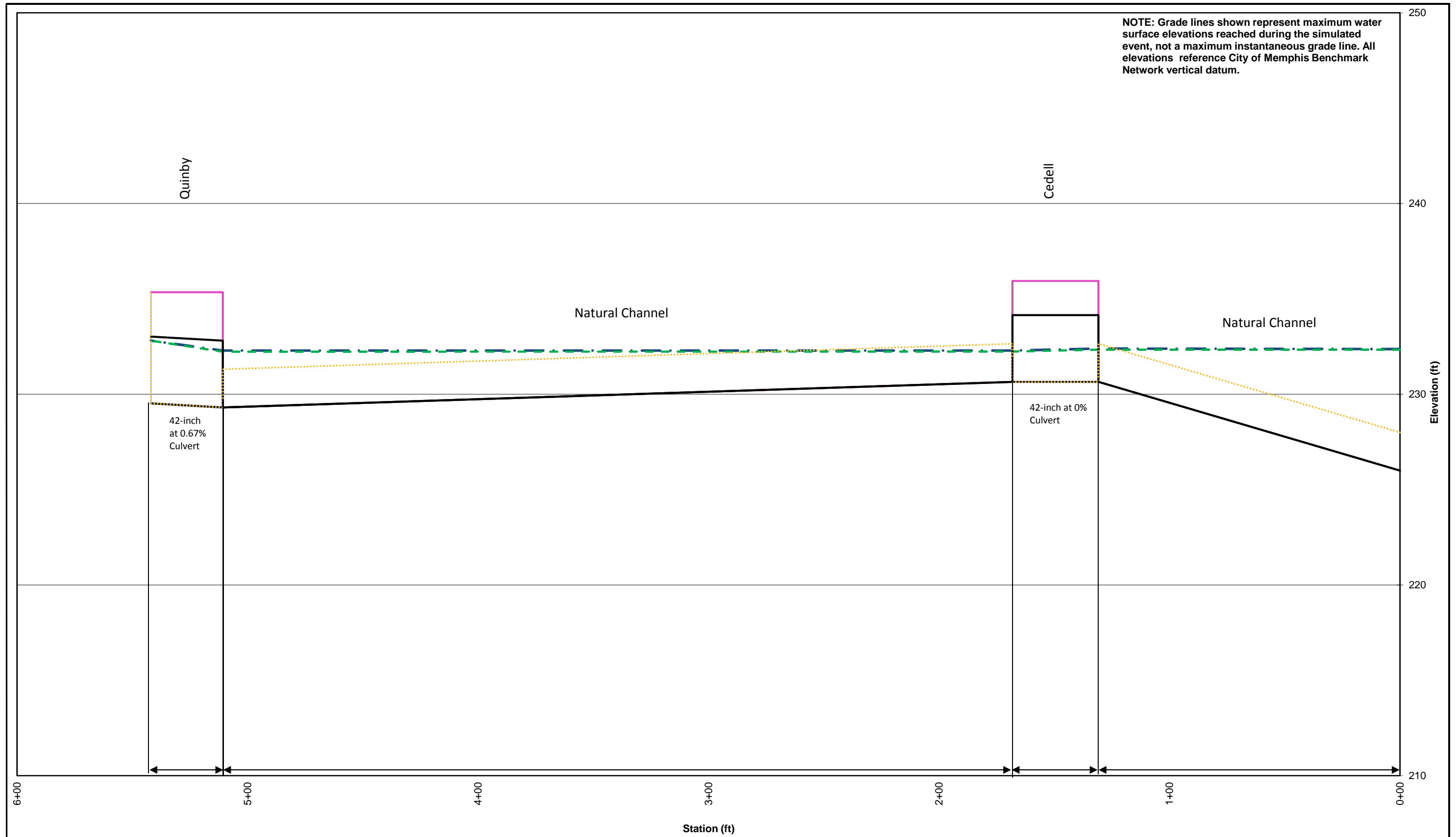


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

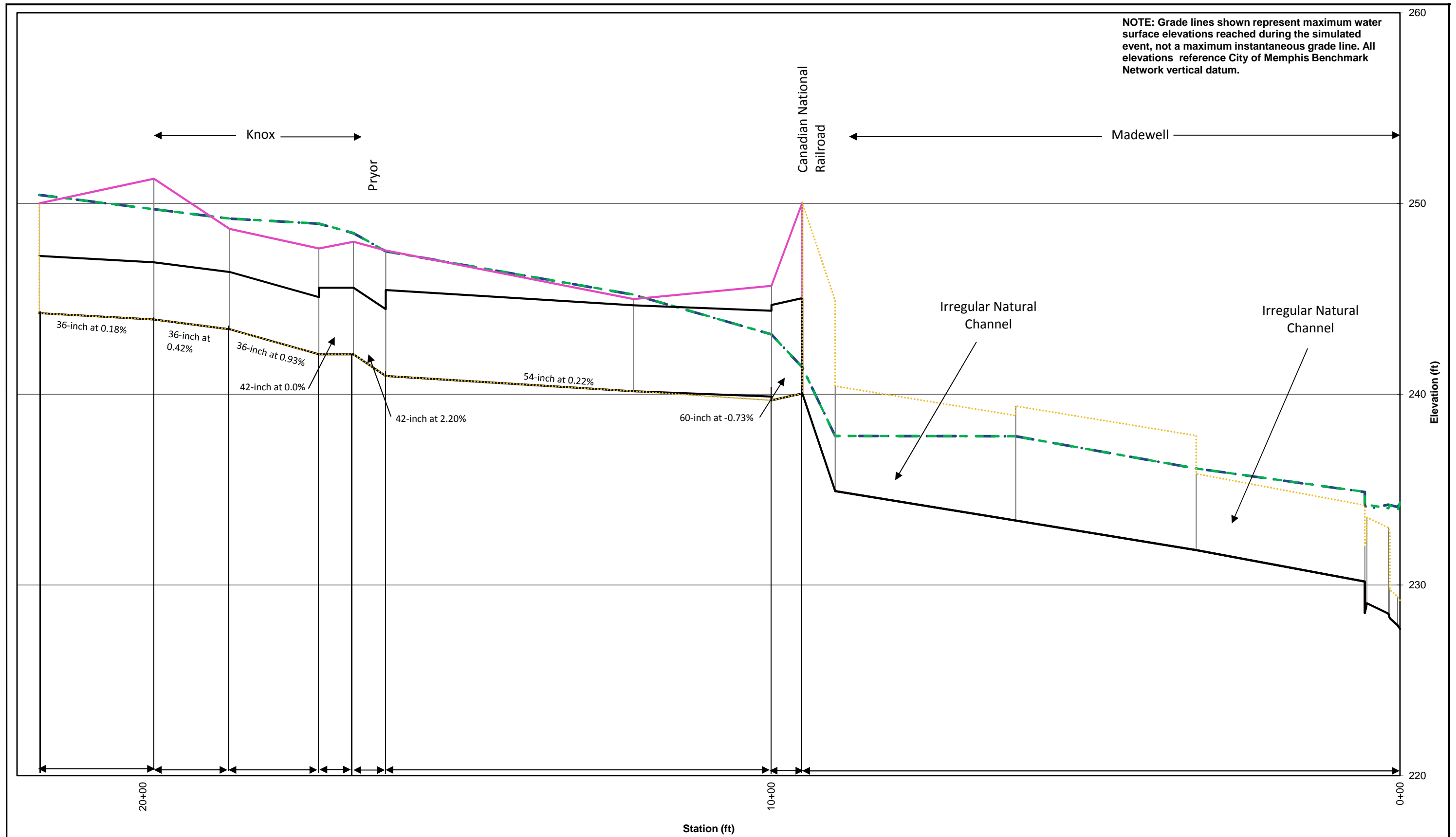
—•— Ex. 10-Year
 — Pr. 10-Year
 — Model Node
 — Sewer Pipe
 —•— Left Top of Bank
 —•— Right Top of Bank
 — Ground Surface at Manholes

**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch East to Corning
 Hydraulic Profile**

**Figure
 T - 3**

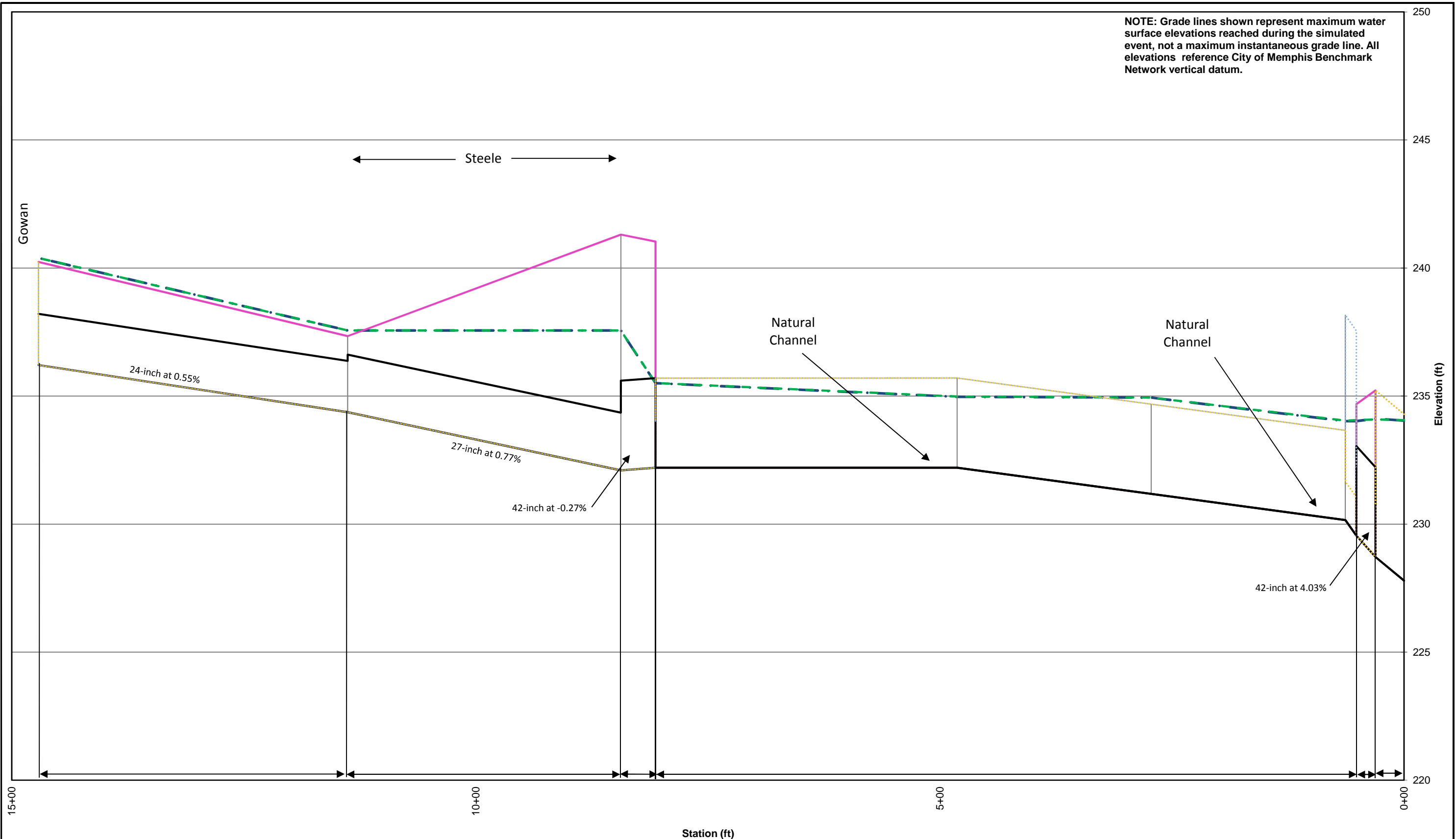


TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	Ex. 10-Year Model Node Right Top of Bank	Pr. 10-Year Sewer Pipe	Ground Surface at Manholes Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - Main Branch North to Quinby Hydraulic Profile	Figure T - 4



TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	Ex. 10-Year Model Node Right Top of Bank	Pr. 10-Year Sewer Pipe	Ground Surface at Manholes Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - Main Branch West to Knox Hydraulic Profile	Figure T - 5

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



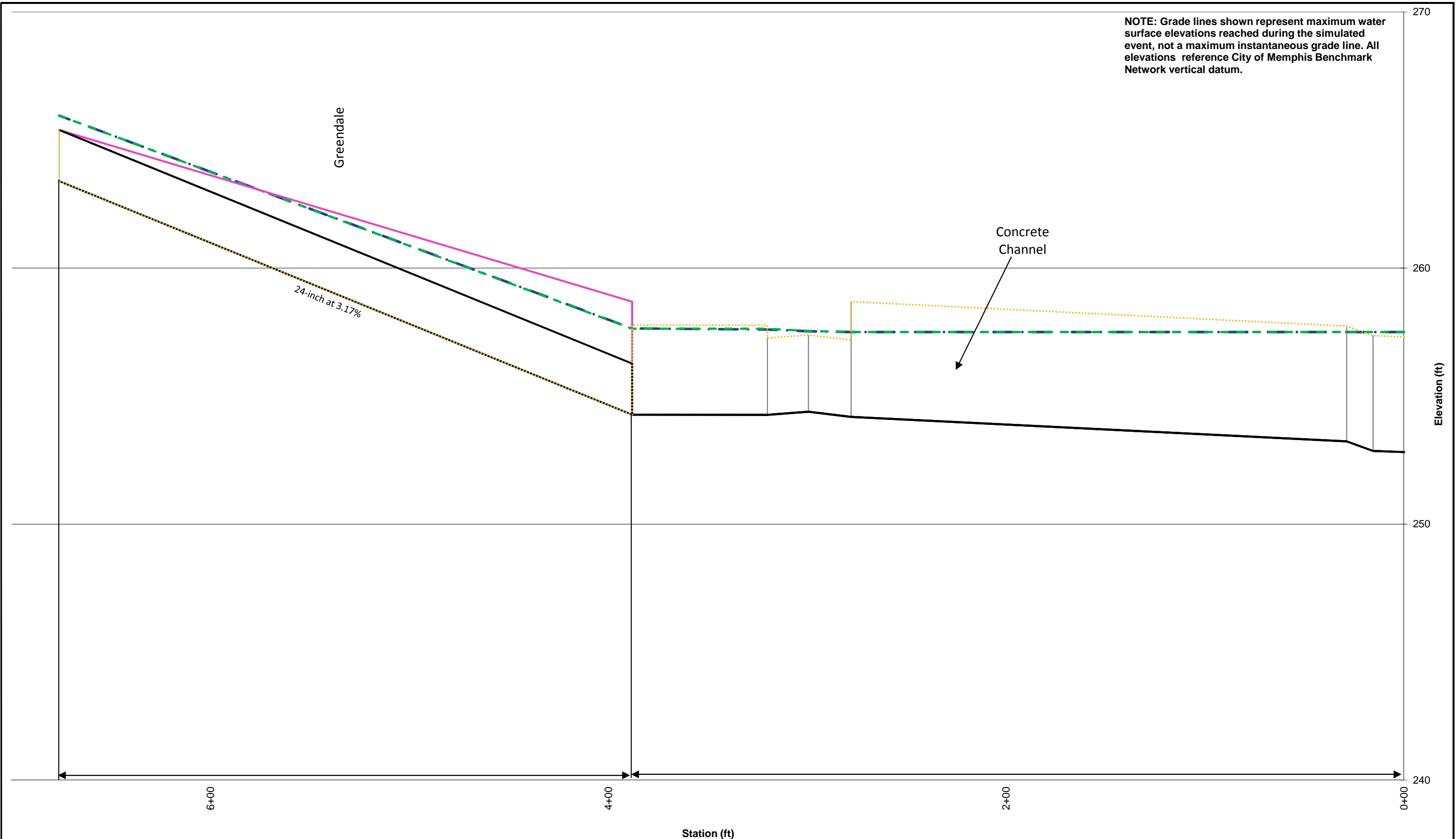
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

— • Ex. 10-Year
- - - • Pr. 10-Year
— Ground Surface at Manholes
⋯ Left Top of Bank
⋯ Right Top of Bank
— Sewer Pipe

**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch East to Gowan
 Hydraulic Profile**

**Figure
 T - 6**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



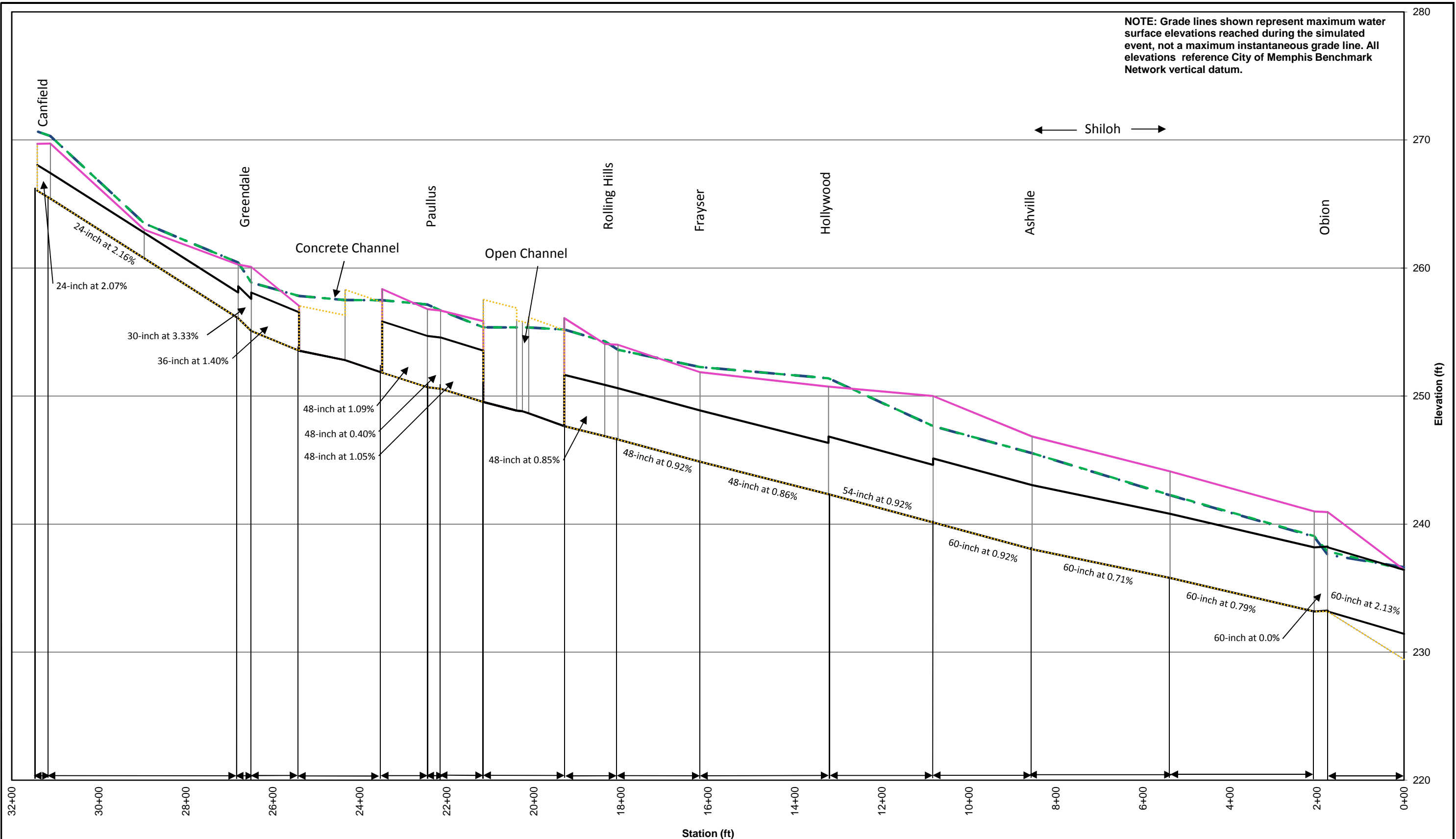
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- · · · · Left Top of Bank
- Sewer Pipe
- · · · · Right Top of Bank

**Memphis Todd Creek Drain Study
 Todd Creek - East to Greendale
 Hydraulic Profile**

**Figure
 T - 7.1**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

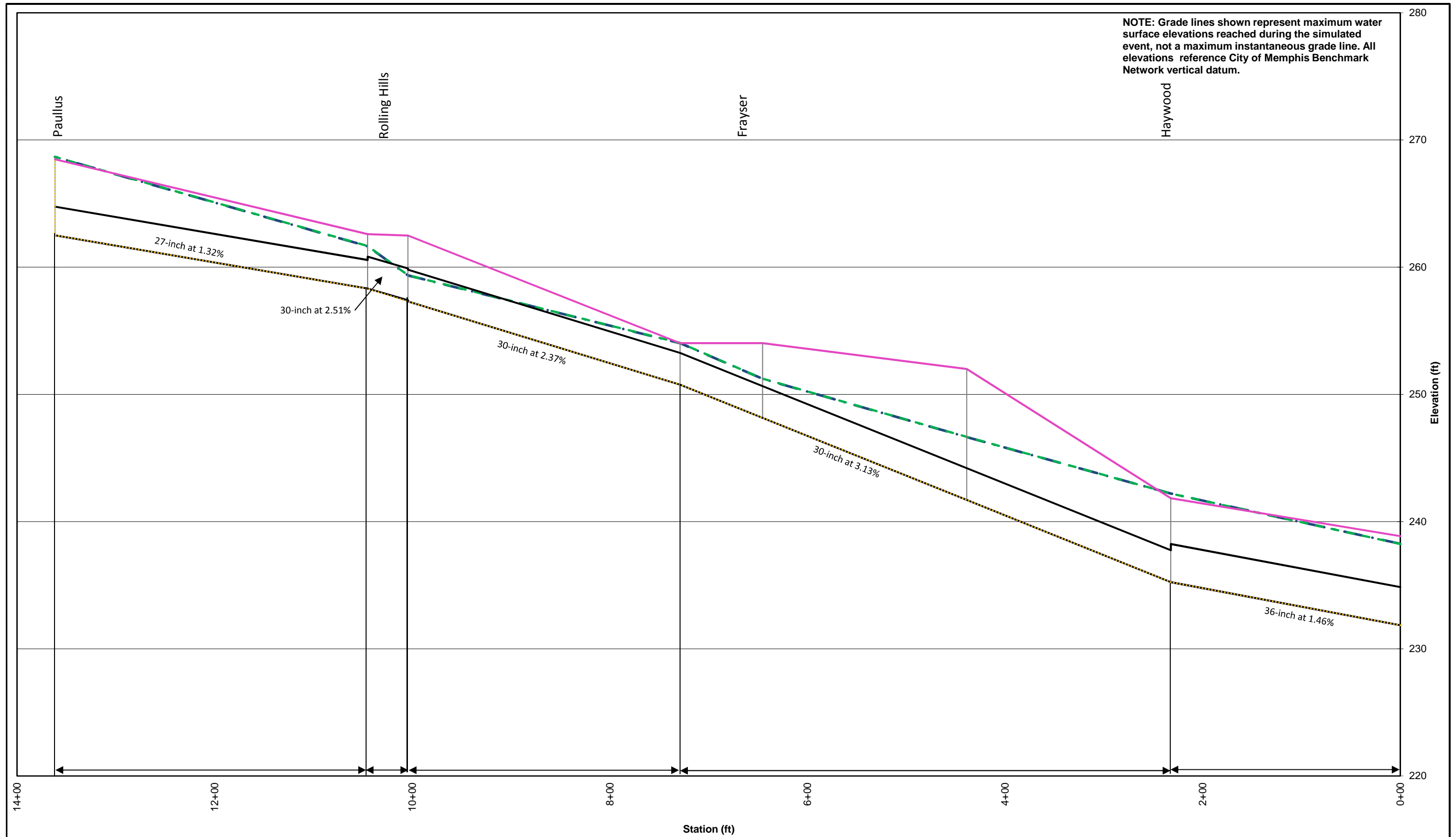


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

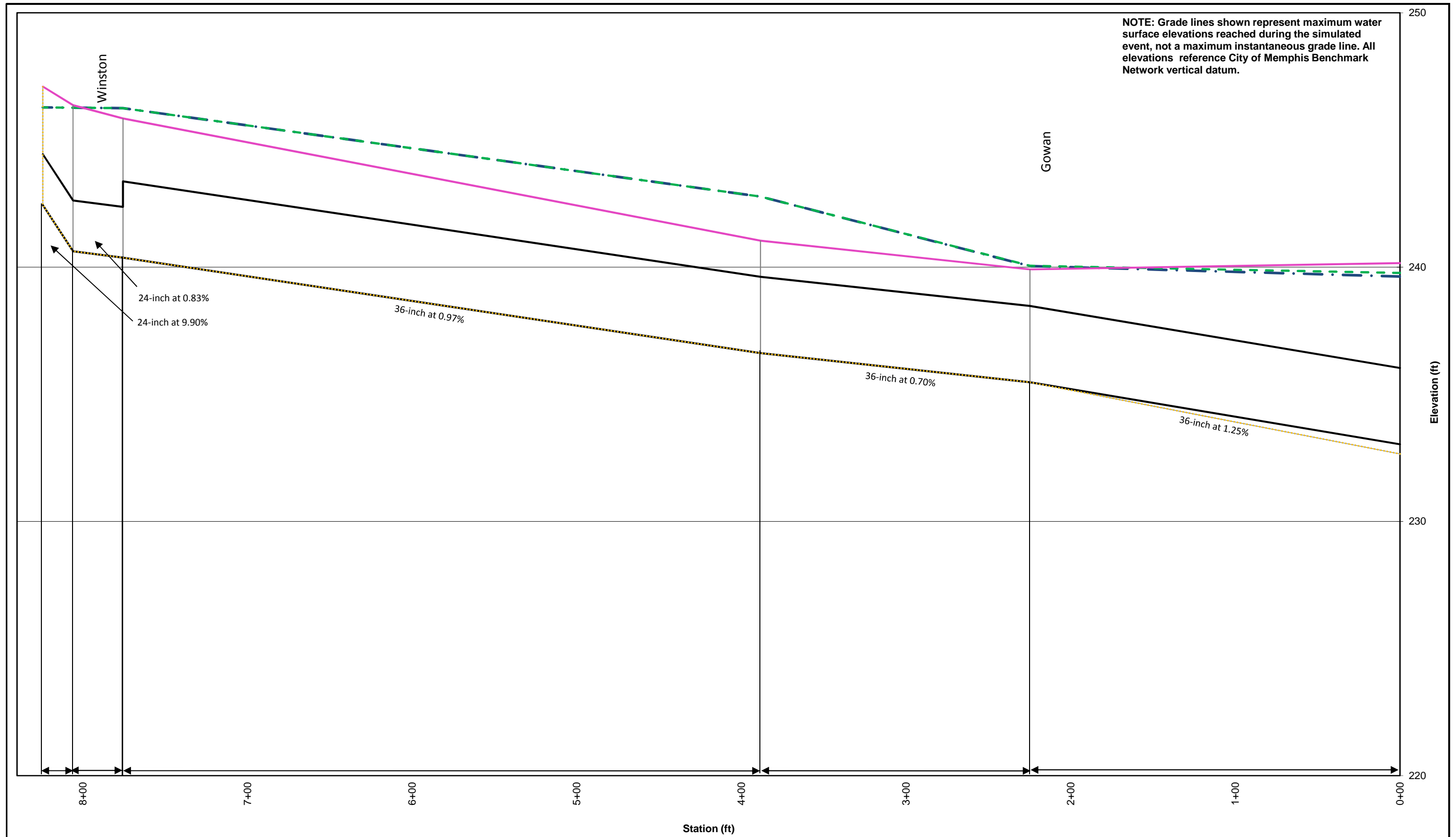
—•— Ex. 10-Year
 — Pr. 10-Year
 — Ground Surface at Manholes
 — Left Top of Bank
 — Right Top of Bank
 — Sewer Pipe

**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch South to Canfield
 Hydraulic Profile**

**Figure
 T - 7**



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—••• Right Top of Bank</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Paullus Hydraulic Profile</p>	<p>Figure T - 8</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>				



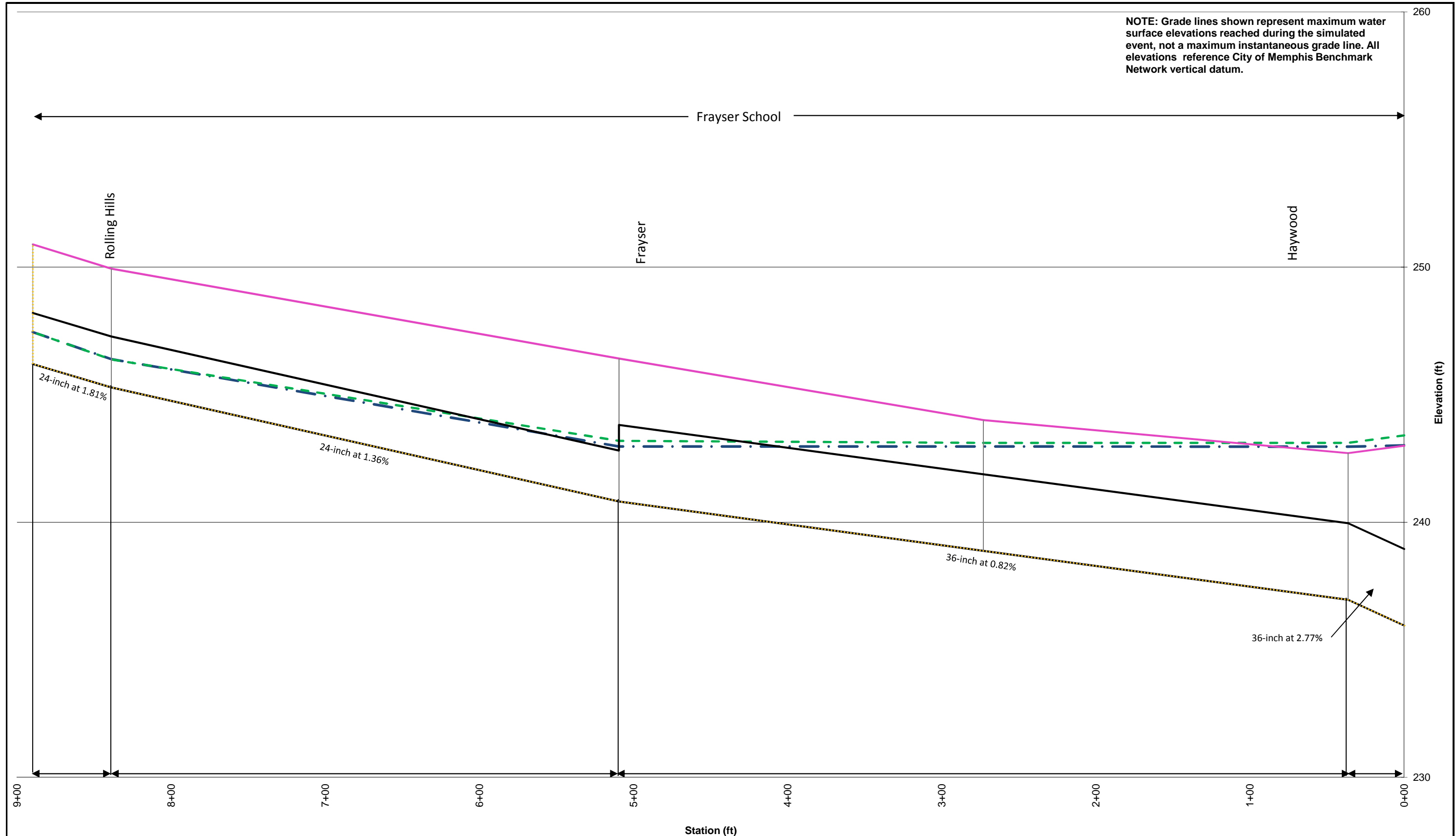
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Model Node
 — Sewer Pipe
 —•— Left Top of Bank
 —•— Right Top of Bank
 — Ground Surface at Manholes

**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch North to Winston
 Hydraulic Profile**

**Figure
 T - 9**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

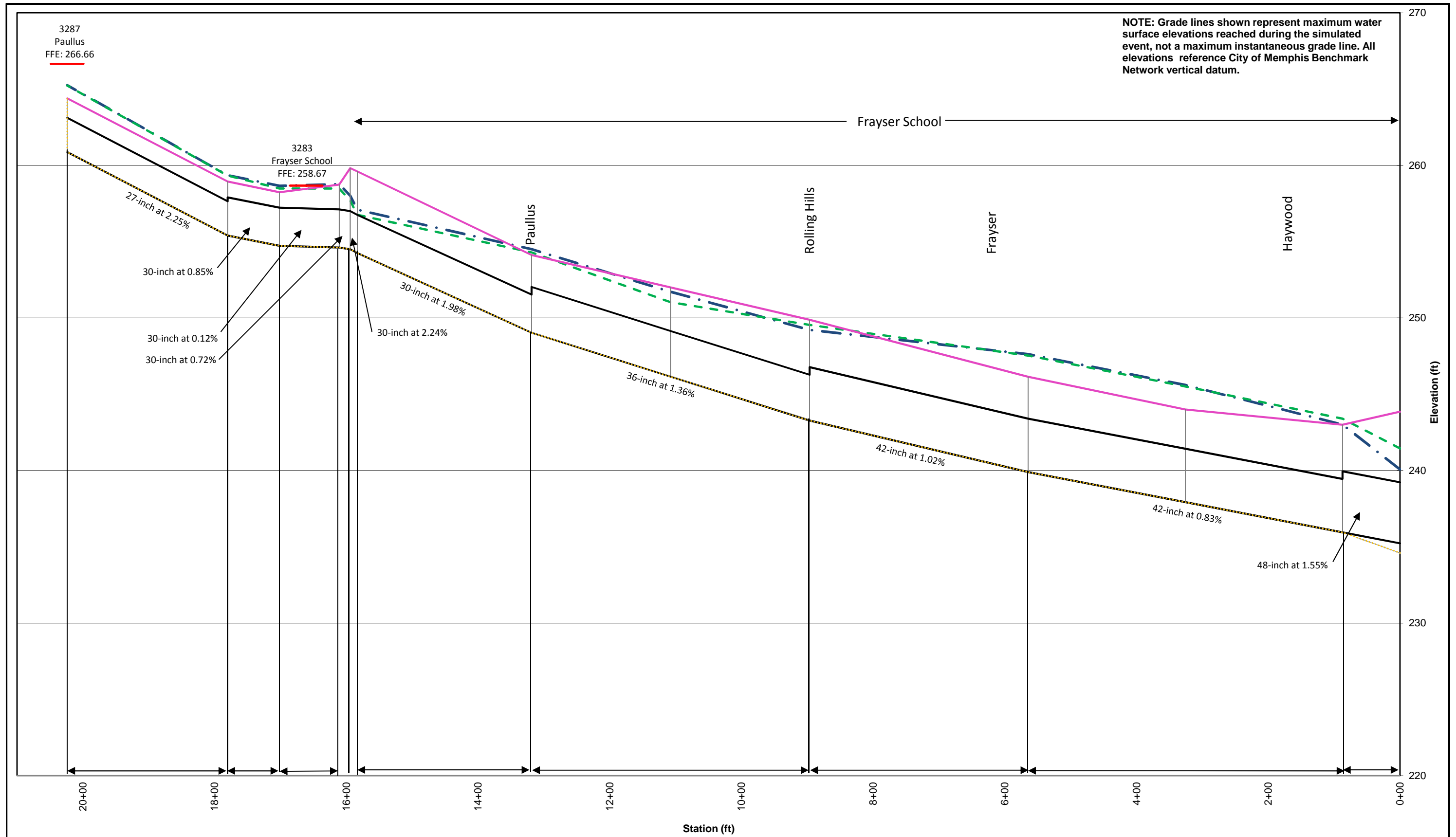


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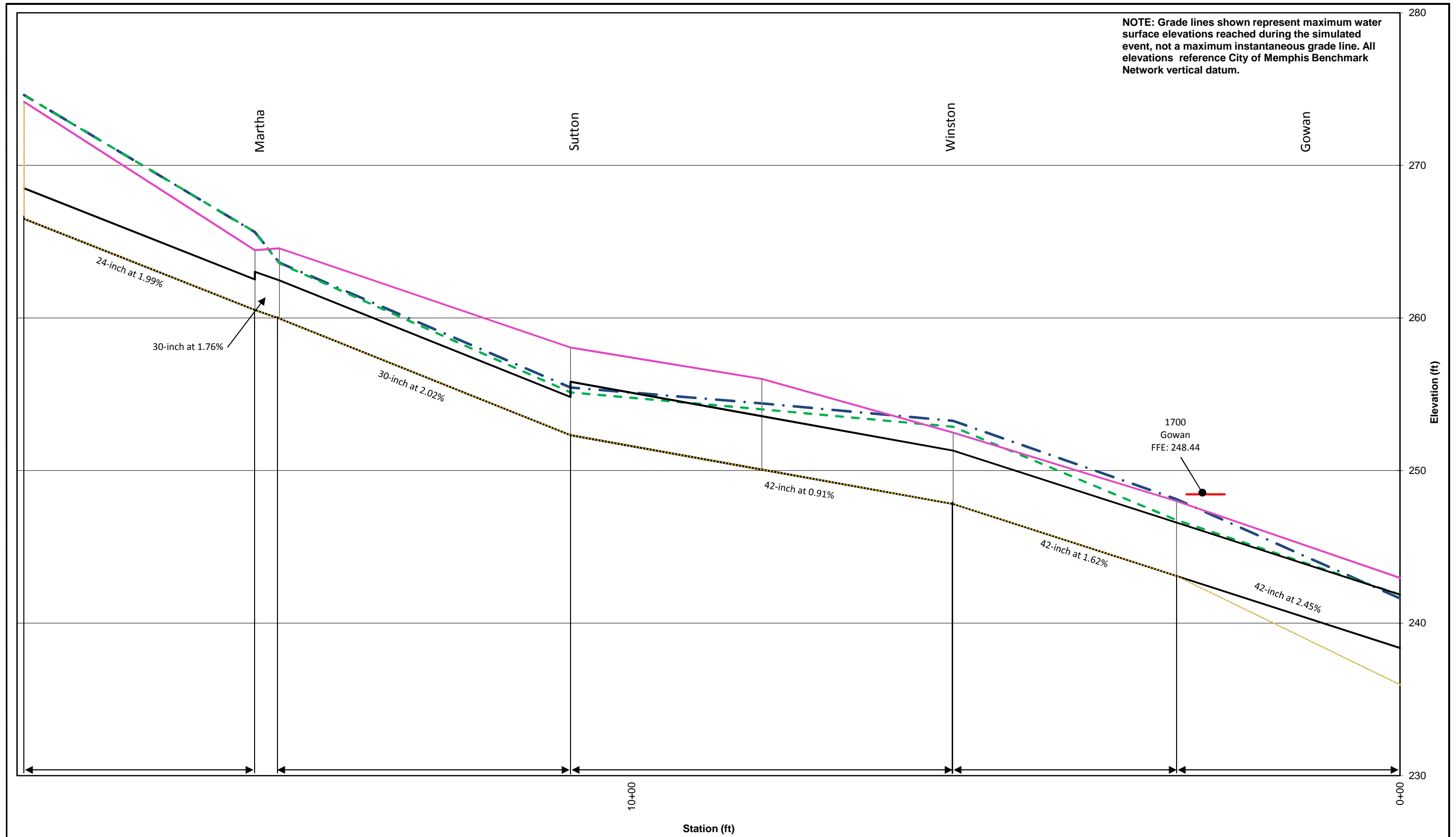
—•— Ex. 10-Year
 — Pr. 10-Year
 — Sewer Pipe
 Left Top of Bank
 Right Top of Bank


Memphis Todd Creek Drain Study
Todd Creek - South along Frayser School Road
Hydraulic Profile

Figure T - 10.1

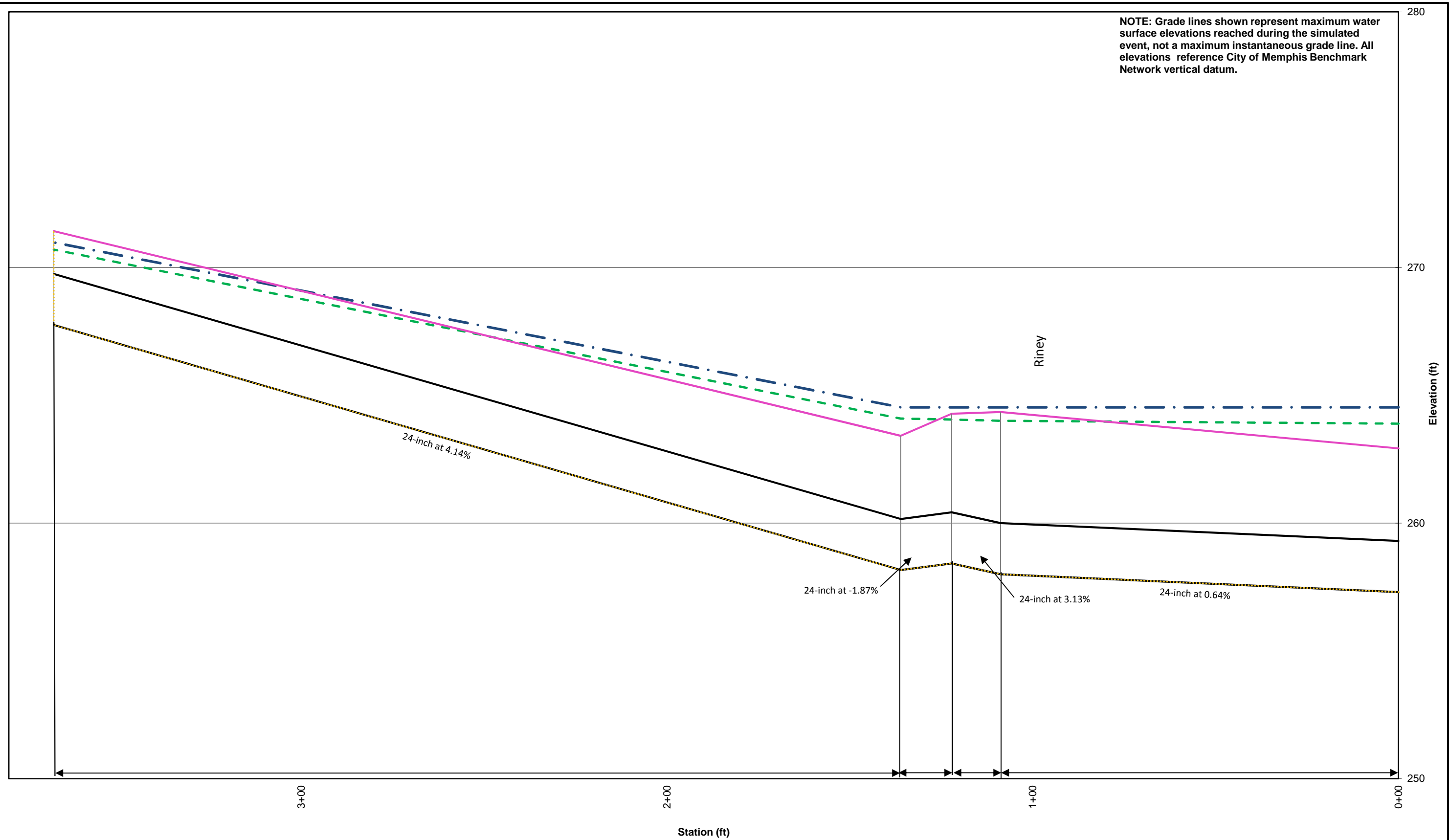


<p>TETRA TECH</p> <p>DRAWN BY: JMB DATE: 8/25/2017</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—••••• Right Top of Bank</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—••••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch South along Frayser School Road Hydraulic Profile</p>	<p>Figure T - 10</p>
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 TETRA TECH	<ul style="list-style-type: none"> —•— Ex. 10-Year - - - Pr. 10-Year — Ground Surface at Manholes — Sewer Pipe - · - · - Left Top of Bank - · - · - Right Top of Bank 	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch North to Claire Hydraulic Profile</p>	<p>Figure T - 11</p>
DRAWN BY: JMB DATE: 8/25/2017			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

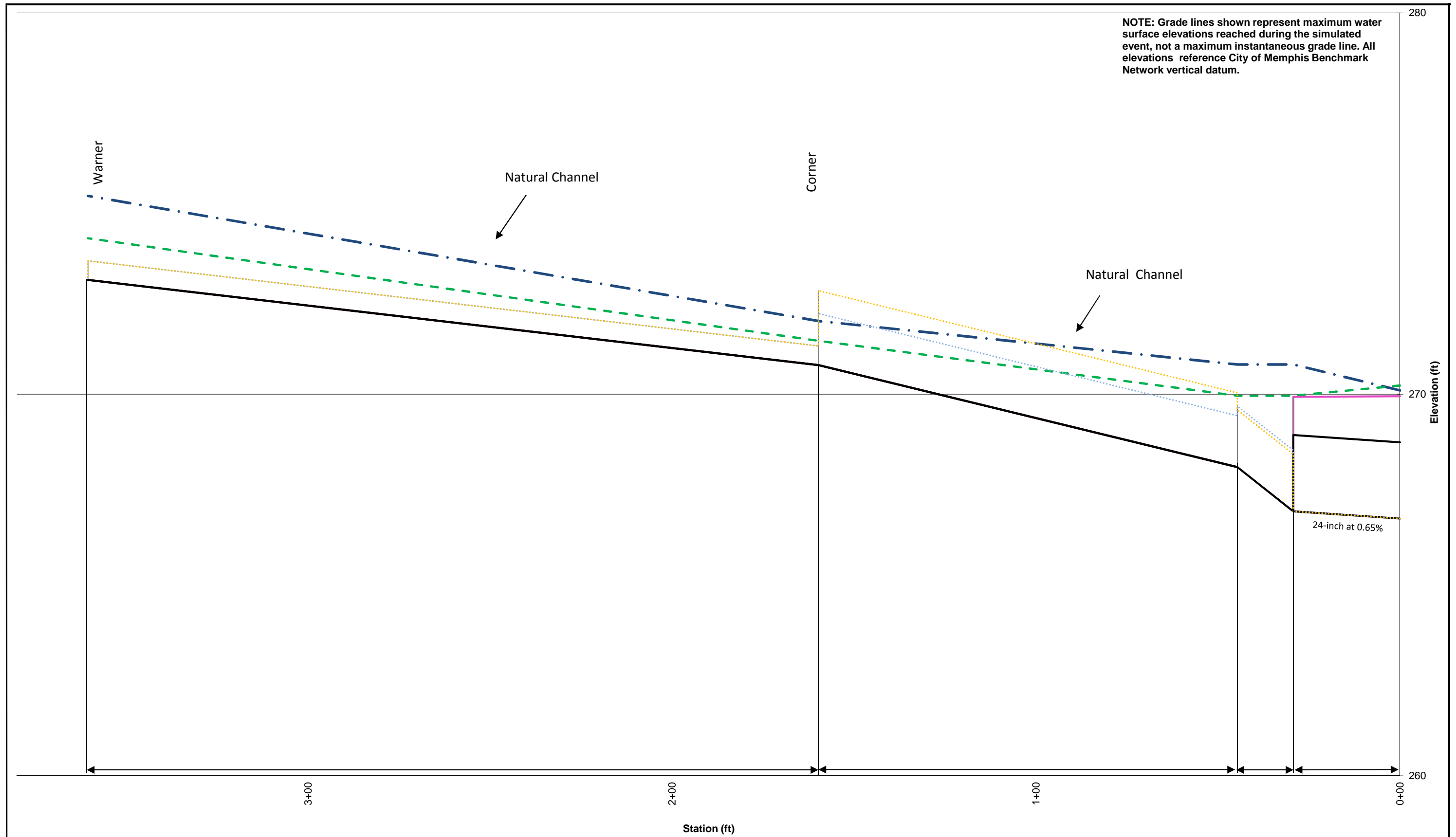


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

— · — Ex. 10-Year
- - - Pr. 10-Year
— Ground Surface at Manholes
· · · · · Left Top of Bank
— Sewer Pipe
· · · · · Right Top of Bank
— Model Node

**Memphis Todd Creek Drain Study
 Todd Creek - East
 Hydraulic Profile**

**Figure
 T - 13.2**



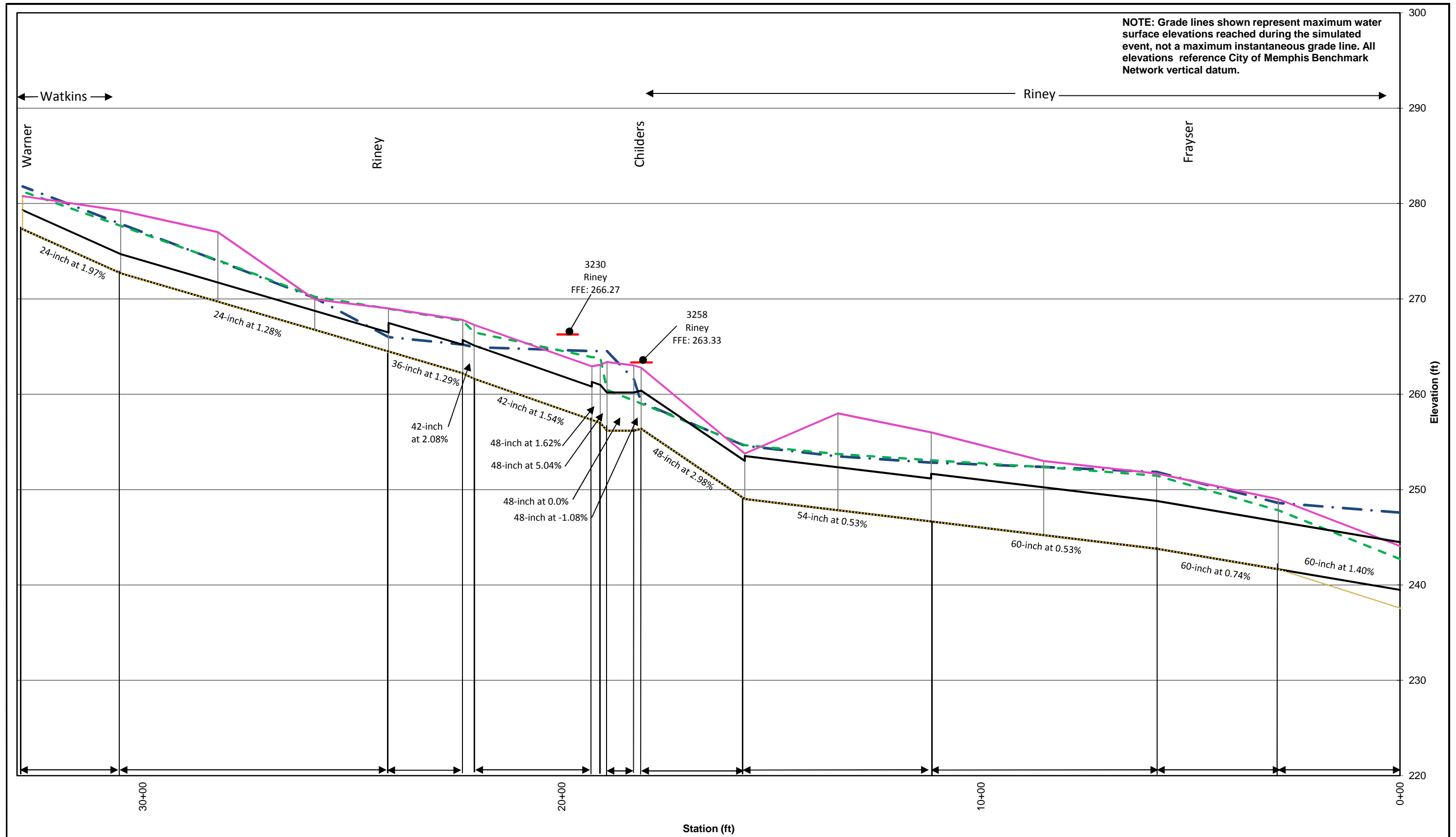
Tt TETRA TECH

DRAWN BY: JMB | DATE: 8/25/2017

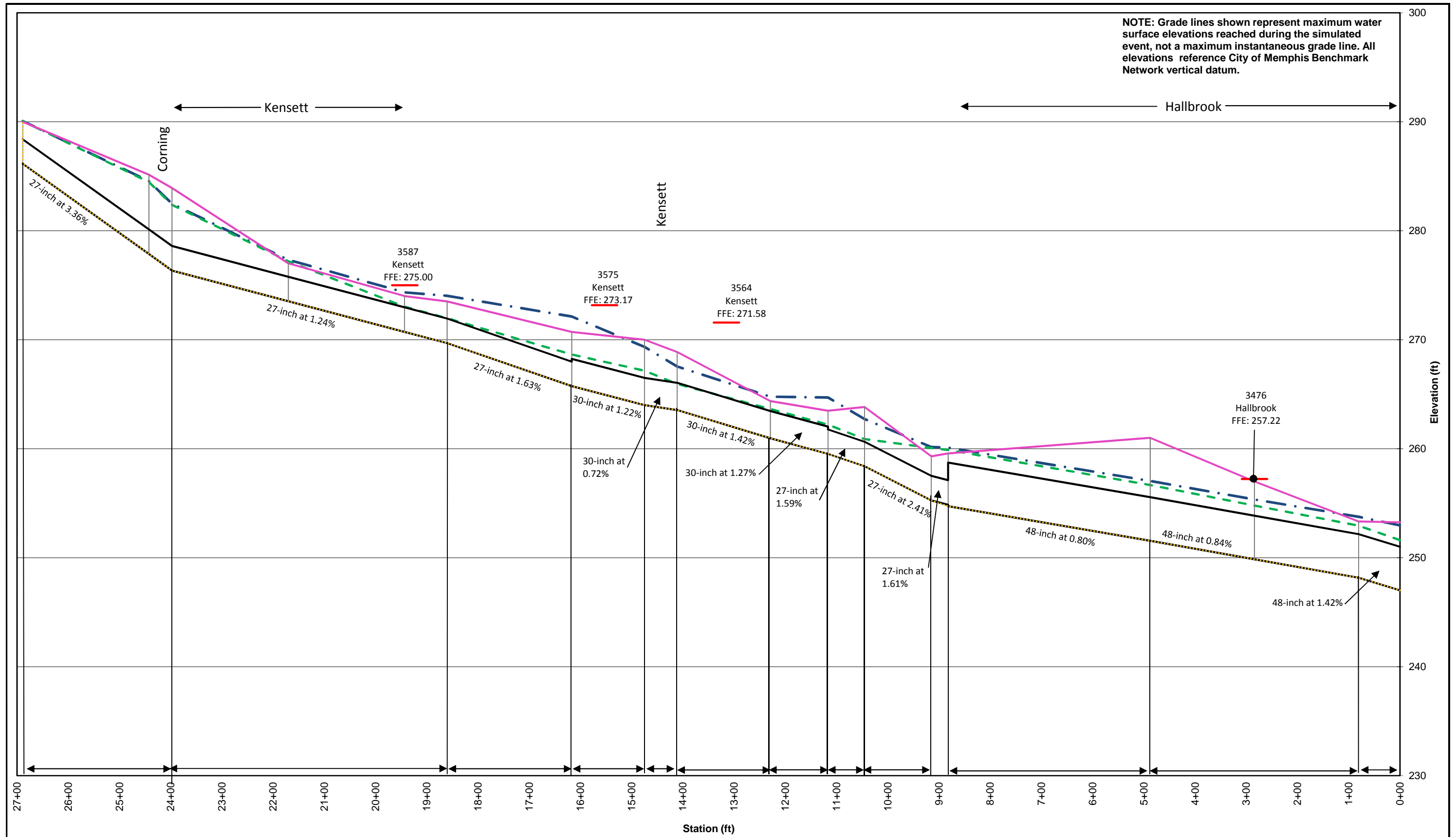
- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- Sewer Pipe
- · · · · Left Top of Bank
- · · · · Right Top of Bank

**Memphis Todd Creek Drain Study
Todd Creek - South to Corner
Hydraulic Profile**

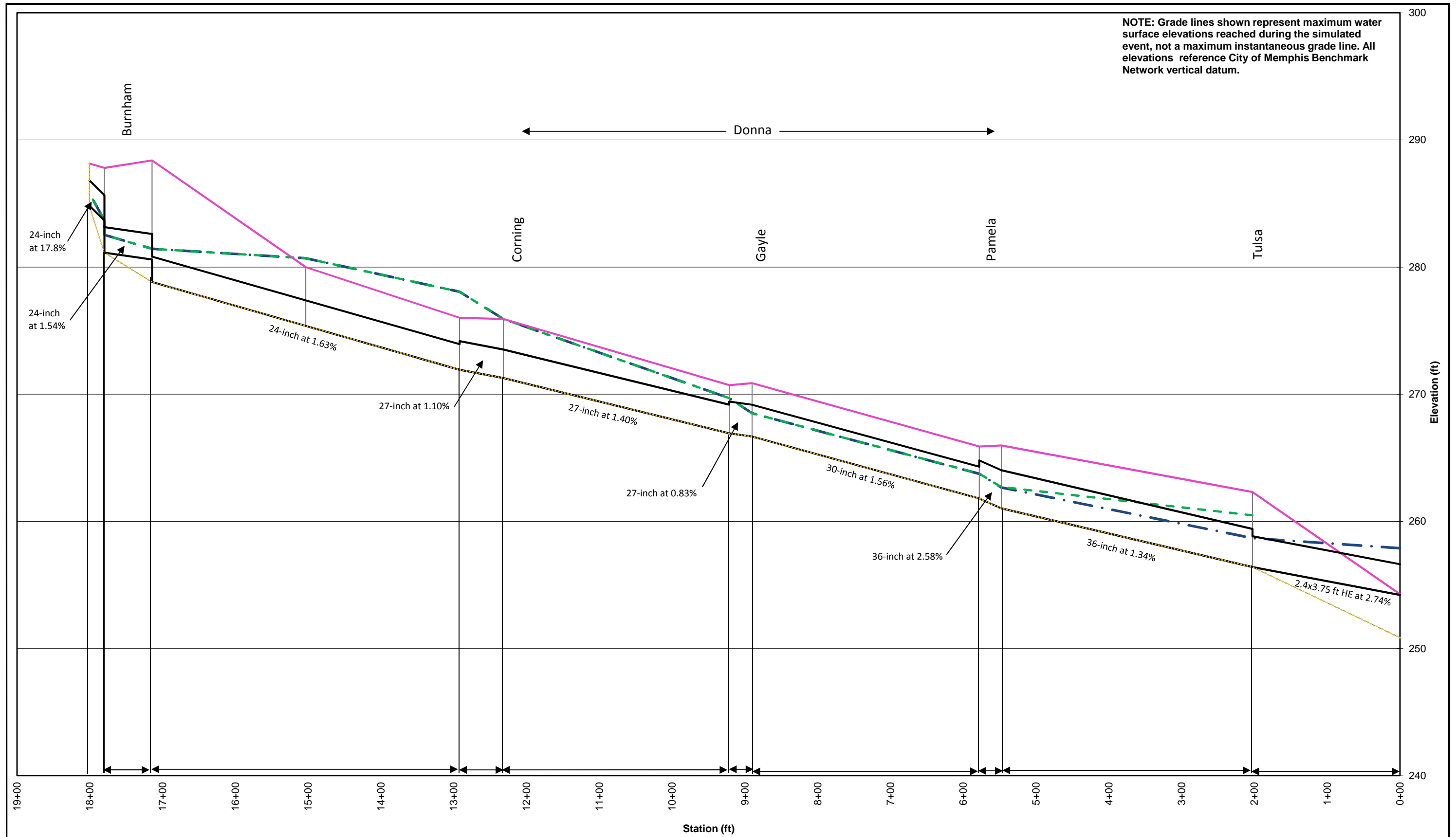
**Figure
T - 13.4**



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—••••• Right TOB</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—••••• Left TOB</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Warner Hydraulic Profile</p>	<p>Figure T - 13</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>				

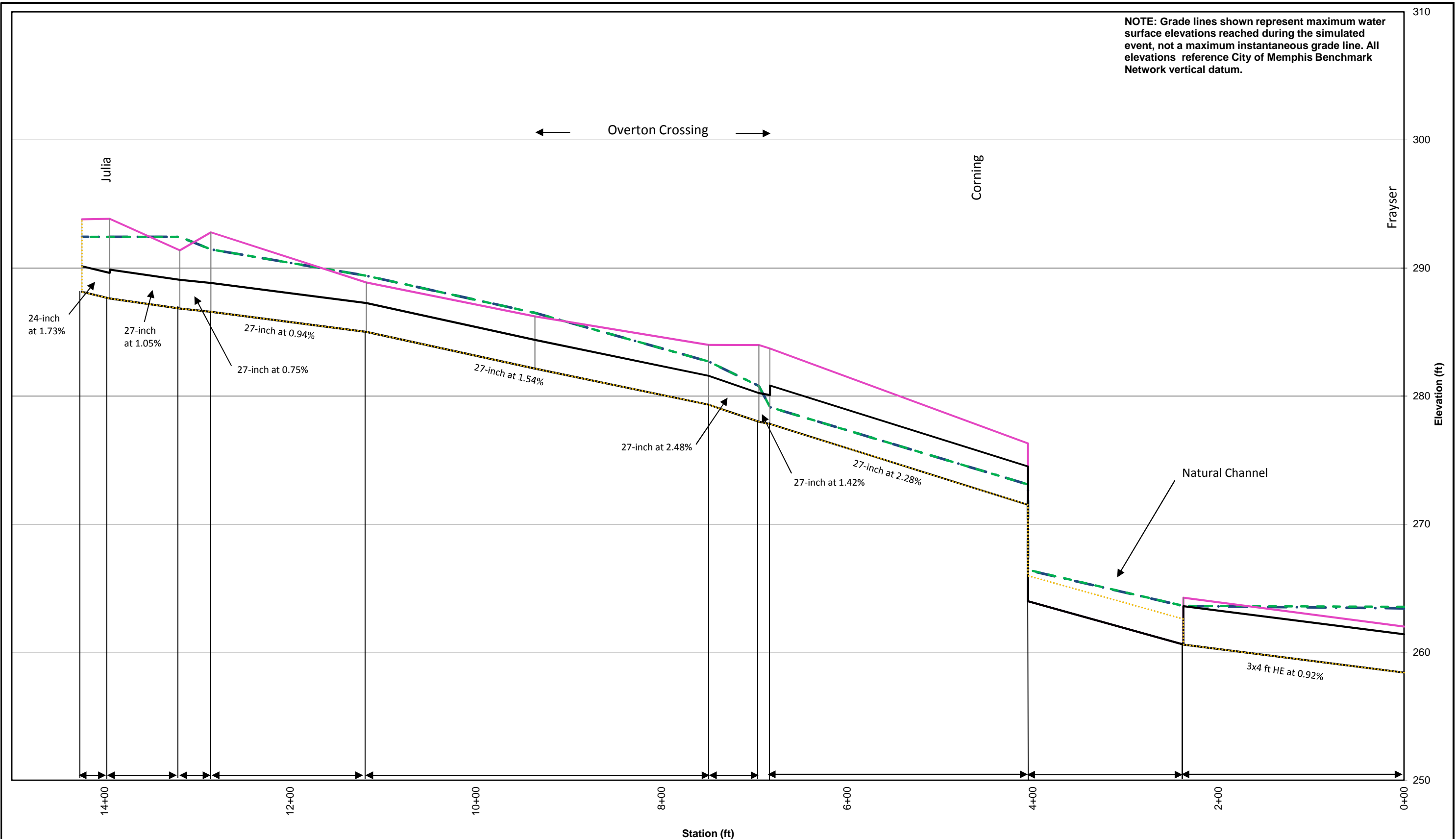


<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>—•— Pr. 10-Year</p> <p>—•— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>—•— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - North to Corning Hydraulic Profile</p>	<p>Figure T - 14.2</p>
	<p>—•— Model Node</p>			
<p>DRAWN BY: JMB DATE: 8/25/2017</p>				



TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	—•— Ex. 10-Year — Model Node —••••• Right Top of Bank	- - - Pr. 10-Year — Sewer Pipe	— Ground Surface at Manholes - - - Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - North to Burnham Hydraulic Profile	Figure T - 14.3
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NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

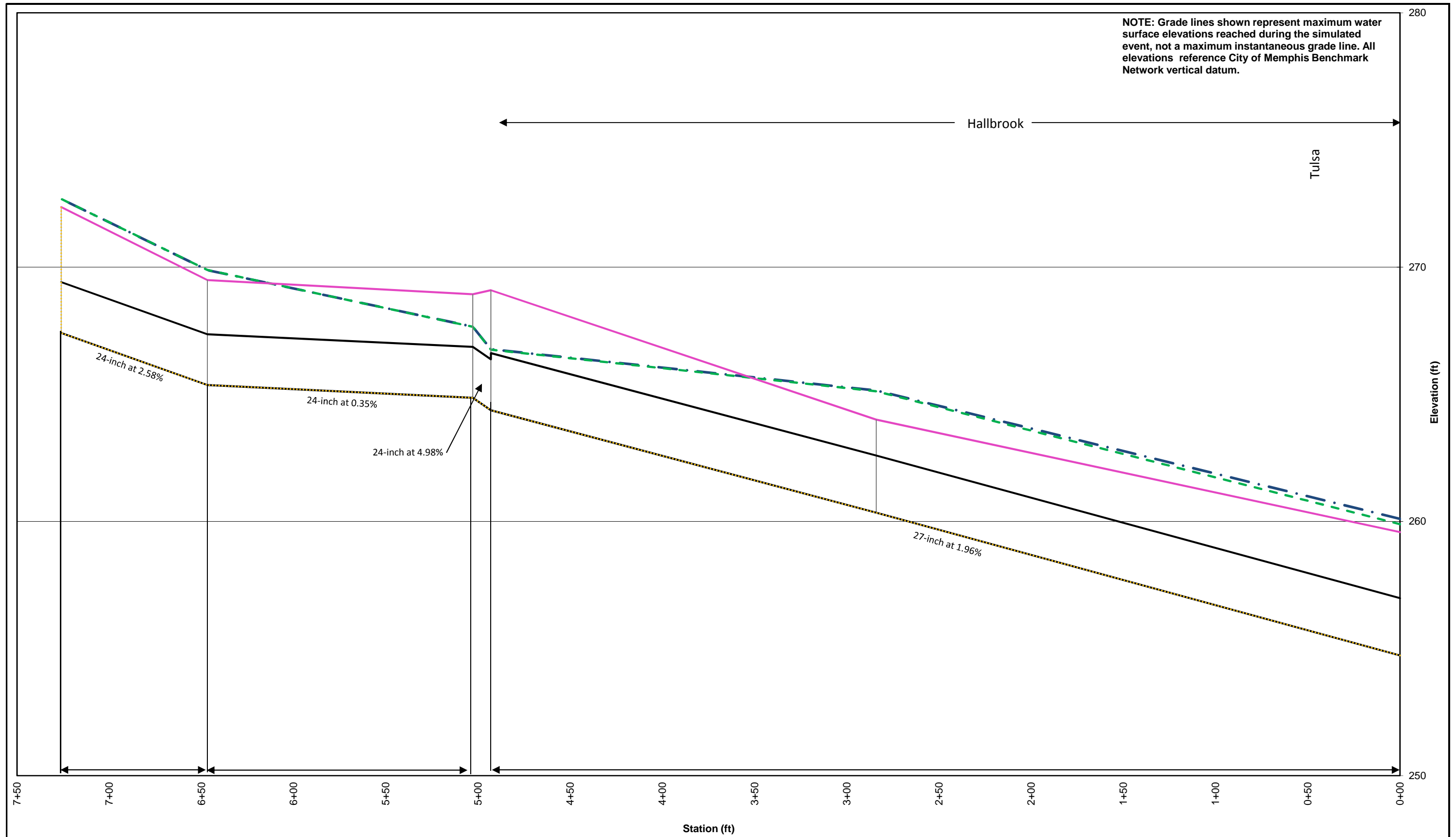


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

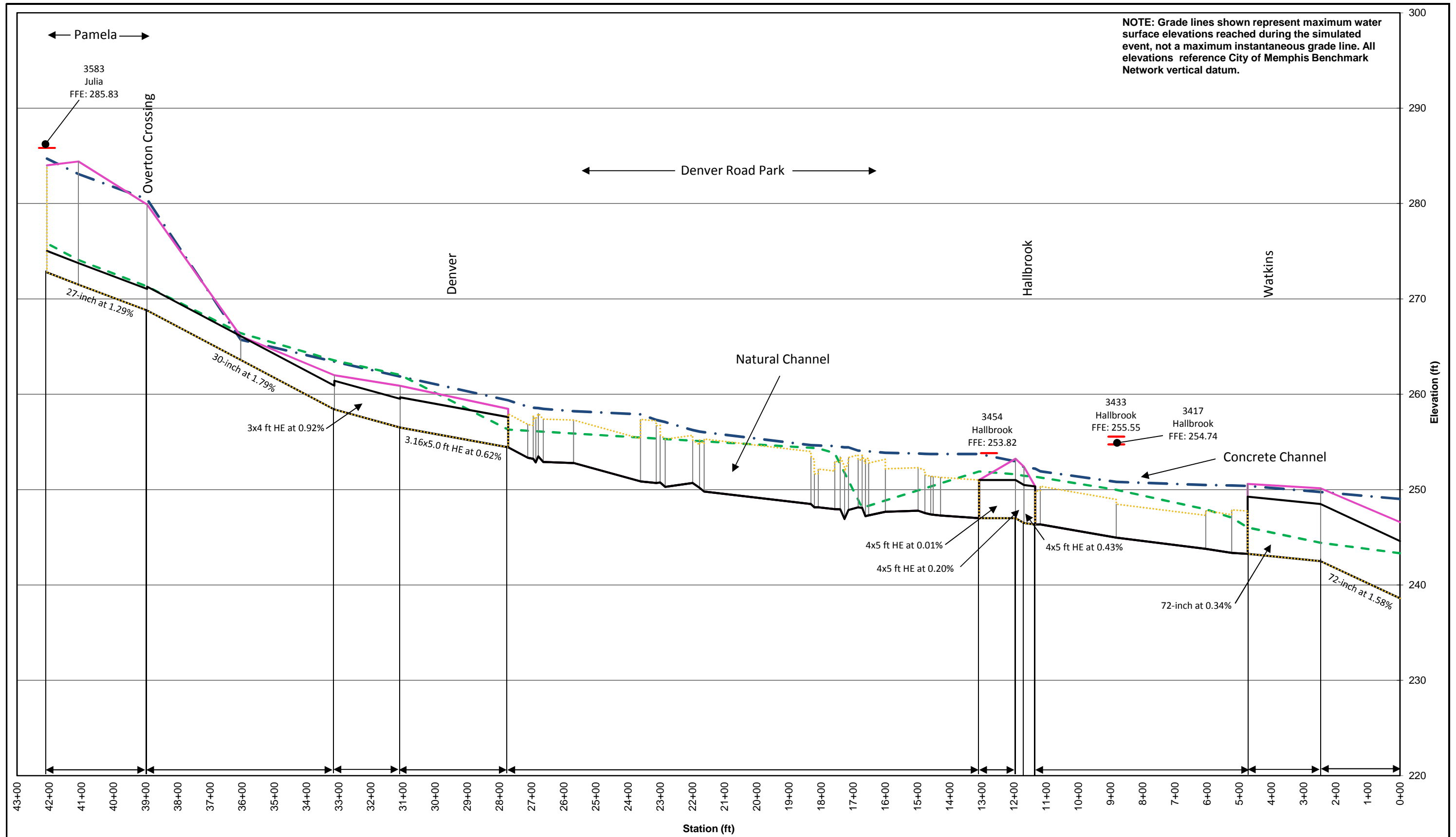
—•— Ex. 10-Year
 — Model Node
 —••••• Right Top of Bank
 - - - Pr. 10-Year
 — Sewer Pipe
 —••••• Left Top of Bank
 — Ground Surface at Manholes

**Memphis Todd Creek Drain Study
 Todd Creek - North to Julia
 Hydraulic Profile**

**Figure
 T - 14.4**



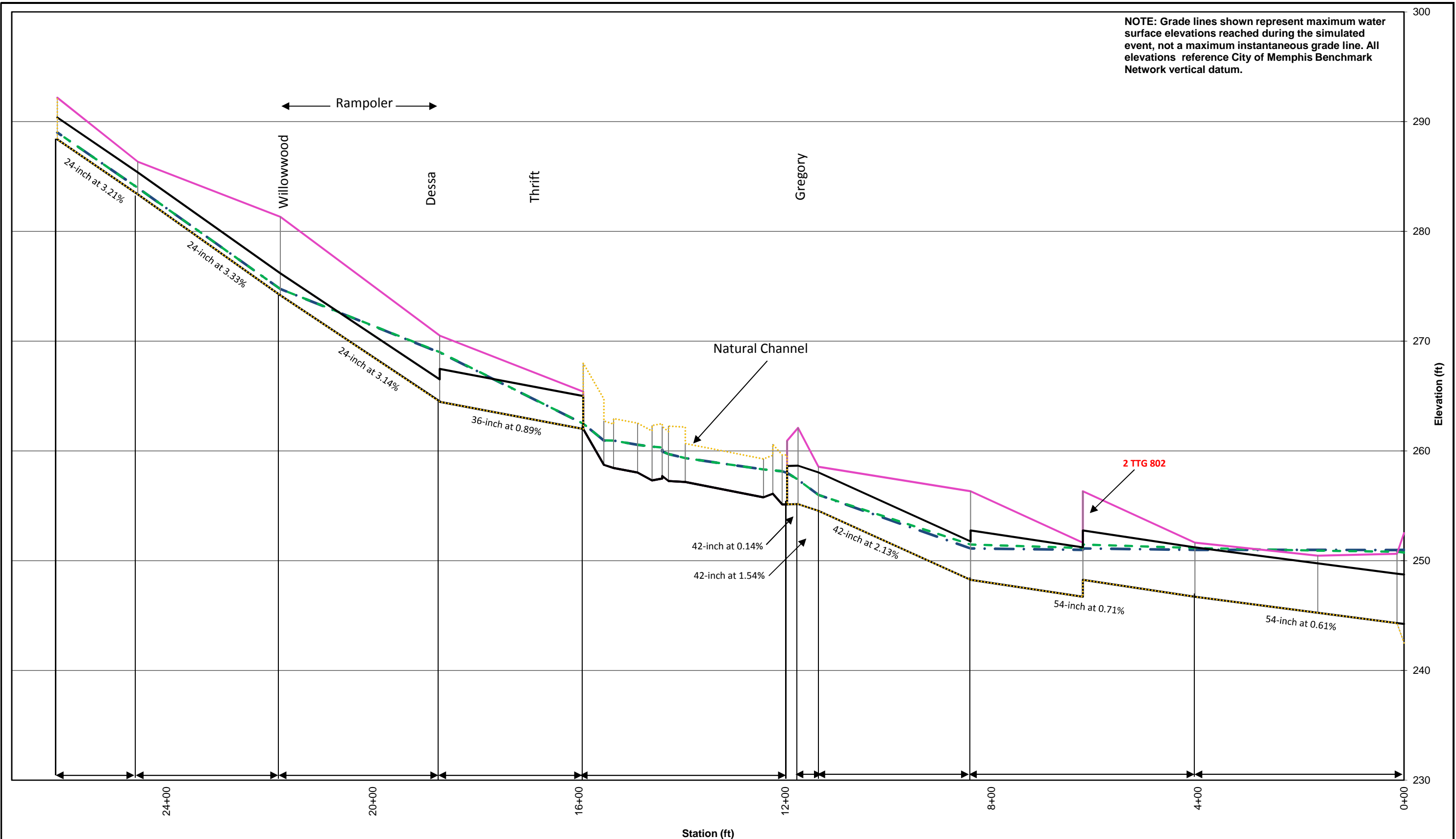
TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	—•— Ex. 10-Year — Model Node —••••• Right Top of Bank	- - - Pr. 10-Year — Sewer Pipe	— Ground Surface at Manholes - - - - - Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - North along Hallbrook Hydraulic Profile	Figure T - 14.2.1
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NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

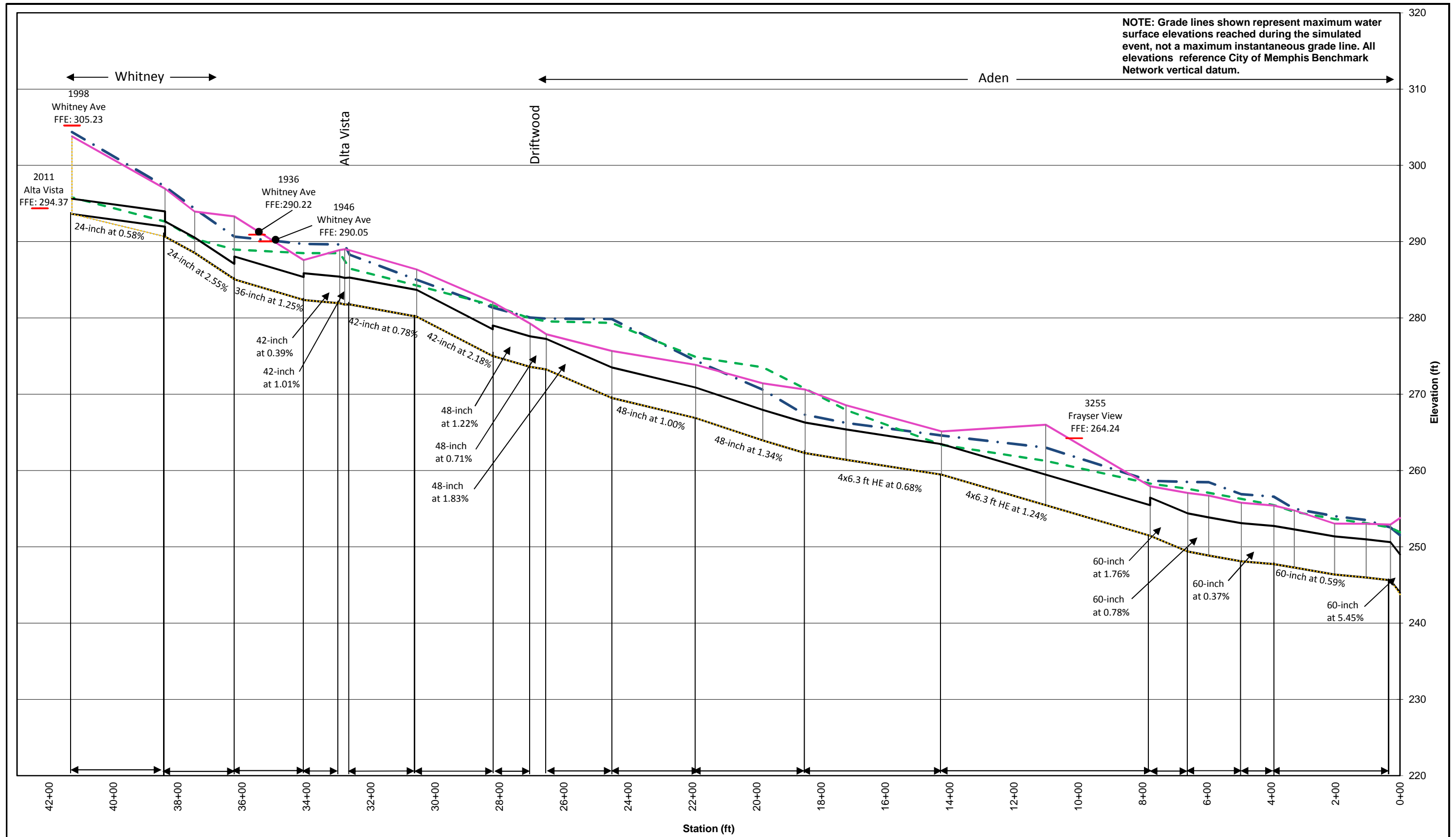
<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>— Ground Surface at Manholes</p> <p>— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch North to Pamela Hydraulic Profile</p>	<p>Figure T - 14</p>
	<p>— Model Node</p> <p>— Right Top of Bank</p>		
<p>DRAWN BY: JMB DATE: 8/25/2017</p>			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



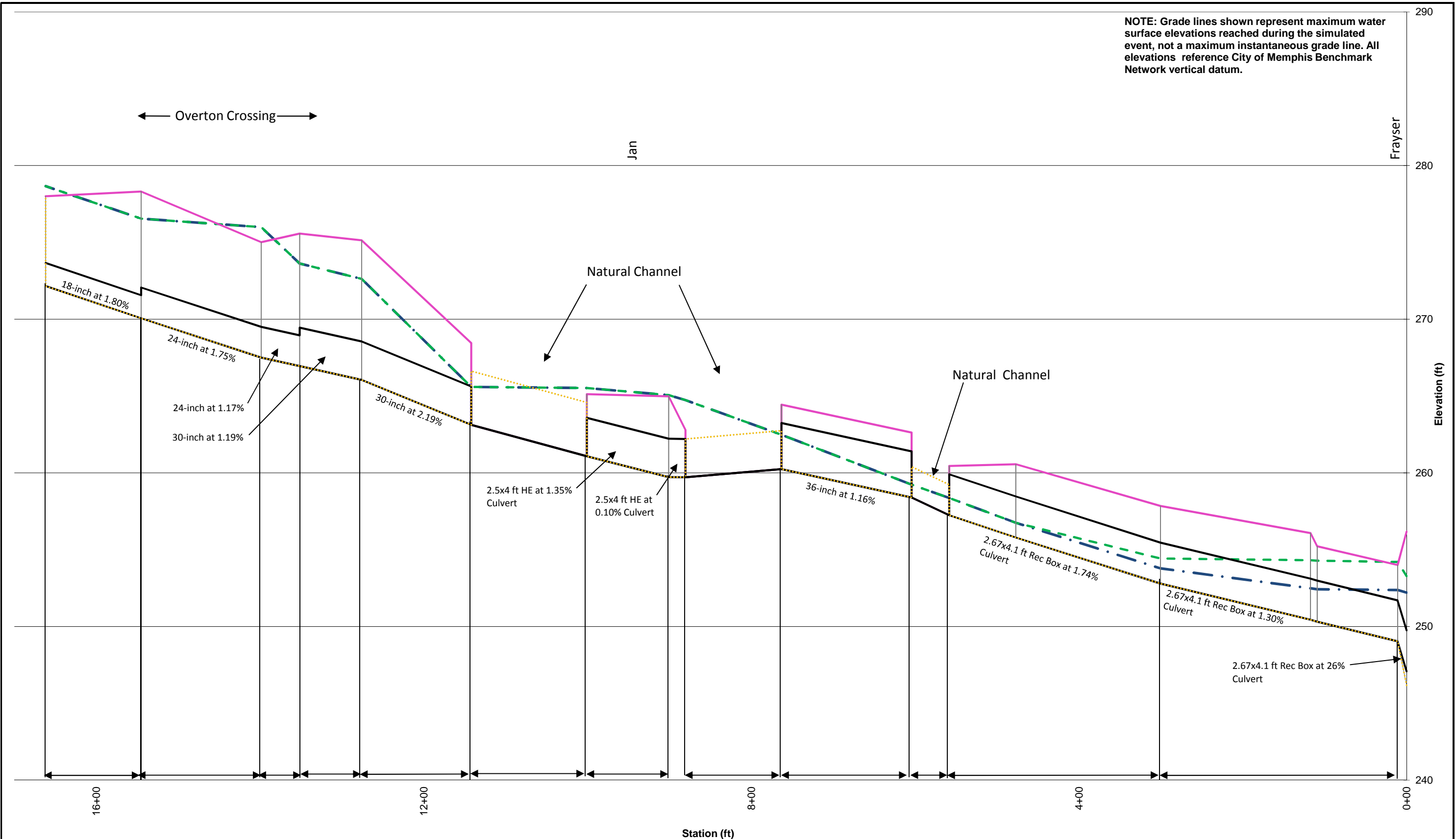
<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>—•— Left Top of Bank</p> <p>—••••• Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—••••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Warner Hydraulic Profile</p>	<p>Figure T - 16</p>
	<p>— Model Node</p>			

DRAWN BY: JMB | DATE: 8/25/2017



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Model Node</p> <p>— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Whitney Hydraulic Profile</p>	<p>Figure T - 17</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>			

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



Tt TETRA TECH

DRAWN BY: JMB | DATE: 8/25/2017

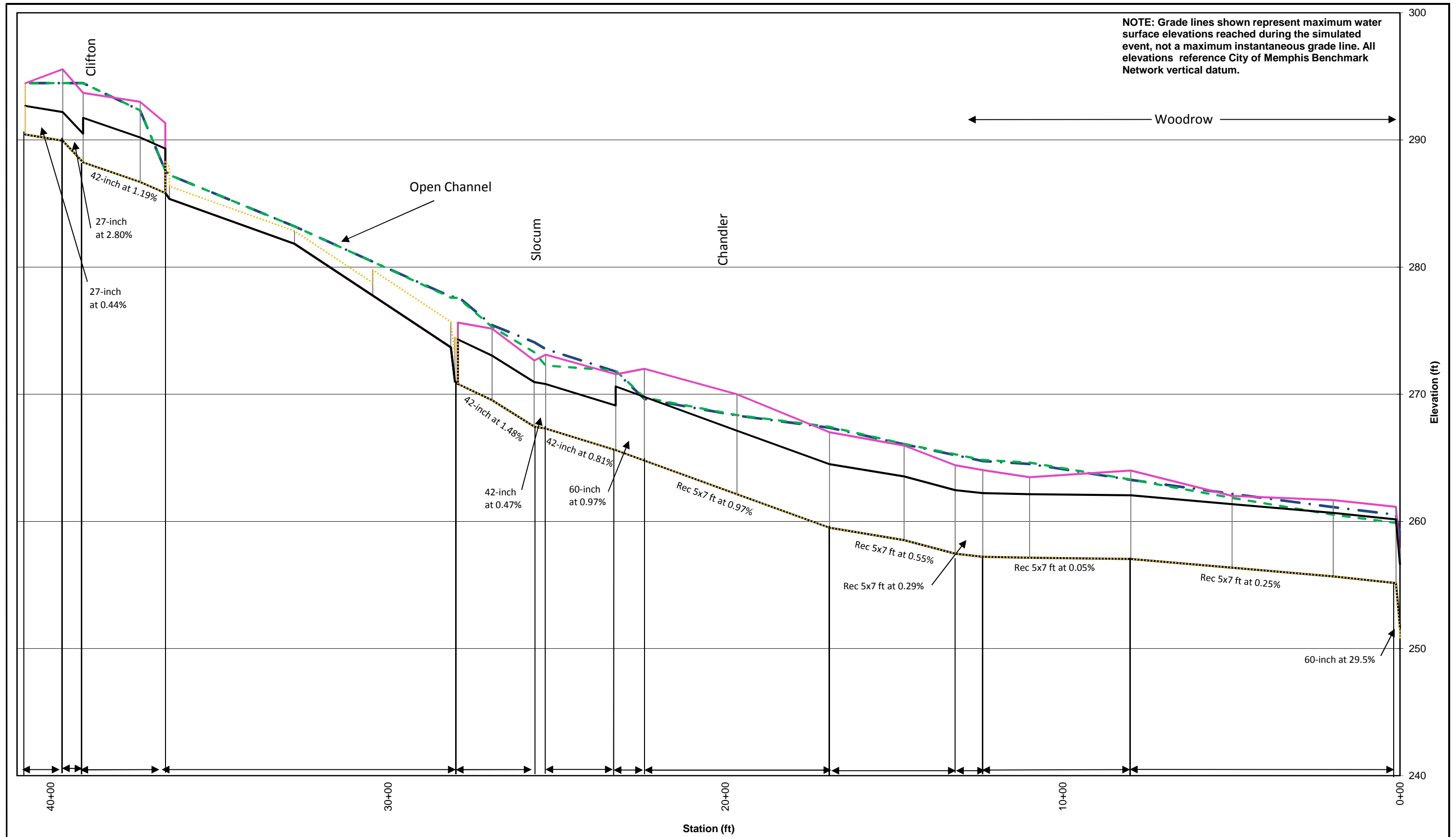
—•— Ex. 10-Year
 — Model Node
 —••• Right Top of Bank

—•— Pr. 10-Year
 — Sewer Pipe

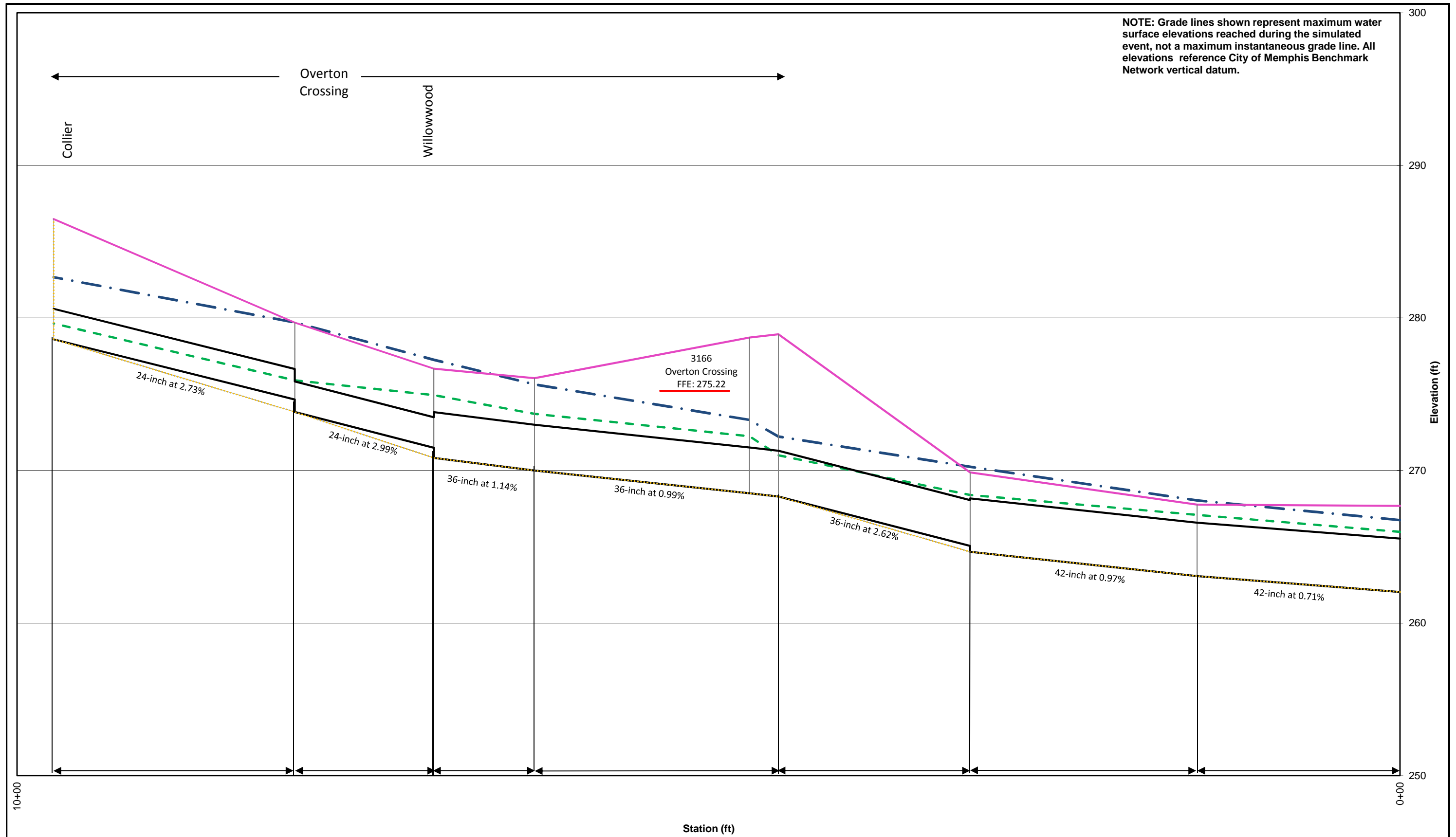
— Ground Surface at Manholes
 —••• Left Top of Bank

**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch North to Overton
 Crossing
 Hydraulic Profile**

**Figure
 T - 18**

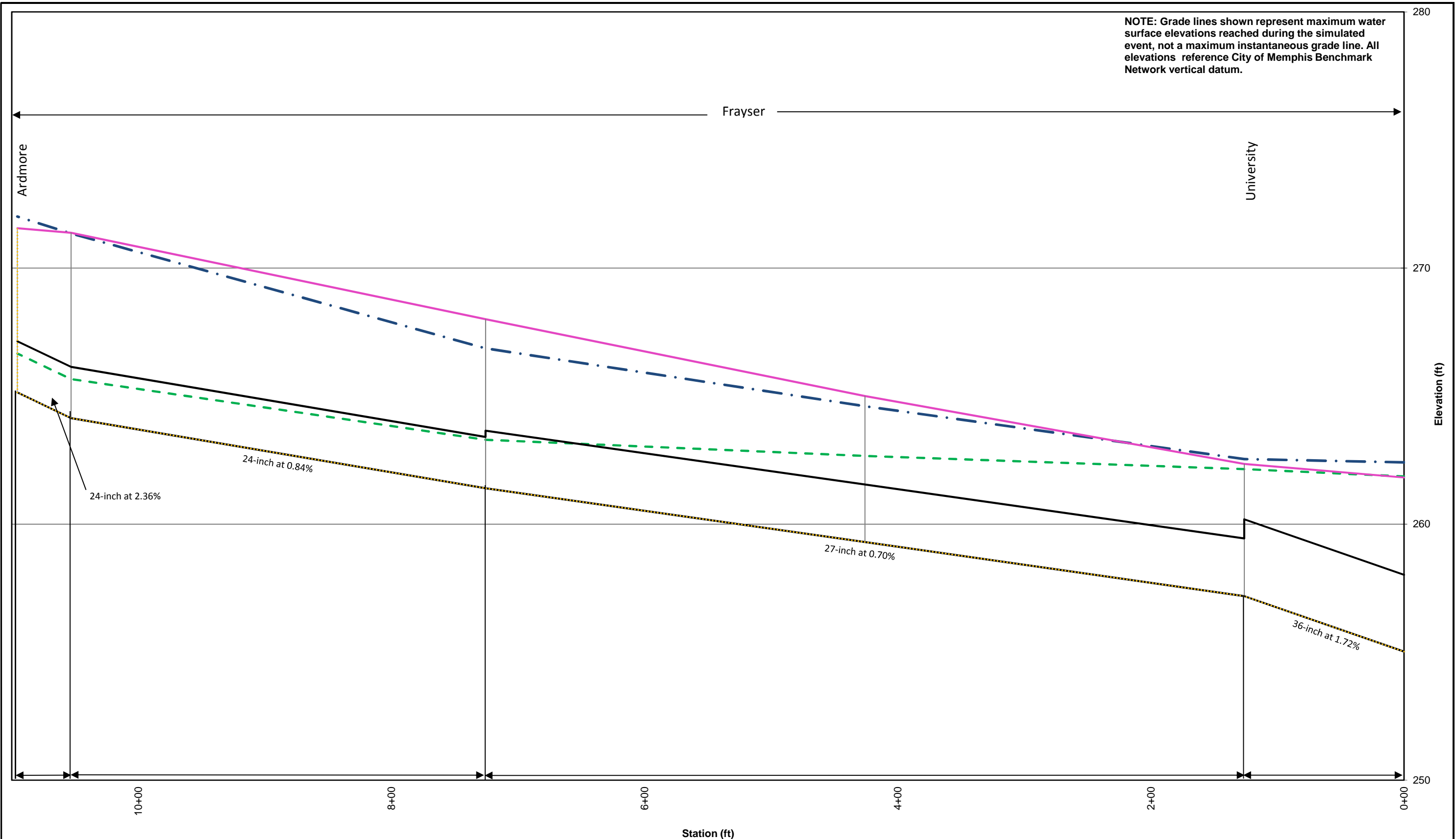


<p>TETRA TECH</p> <p>DRAWN BY: JMB DATE: 8/25/2017</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—••••• Right Top of Bank</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—••••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study</p> <p>Todd Creek - Woodrow South to Clifton</p> <p>Hydraulic Profile</p>	<p>Figure</p> <p>T - 19.1</p>
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TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	—•— Ex. 10-Year — Model Node —••••• Right Top of Bank	- - - Pr. 10-Year — Sewer Pipe	— Ground Surface at Manholes - - - - - Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Collier Hydraulic Profile	Figure T - 19
	Station (ft)				

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



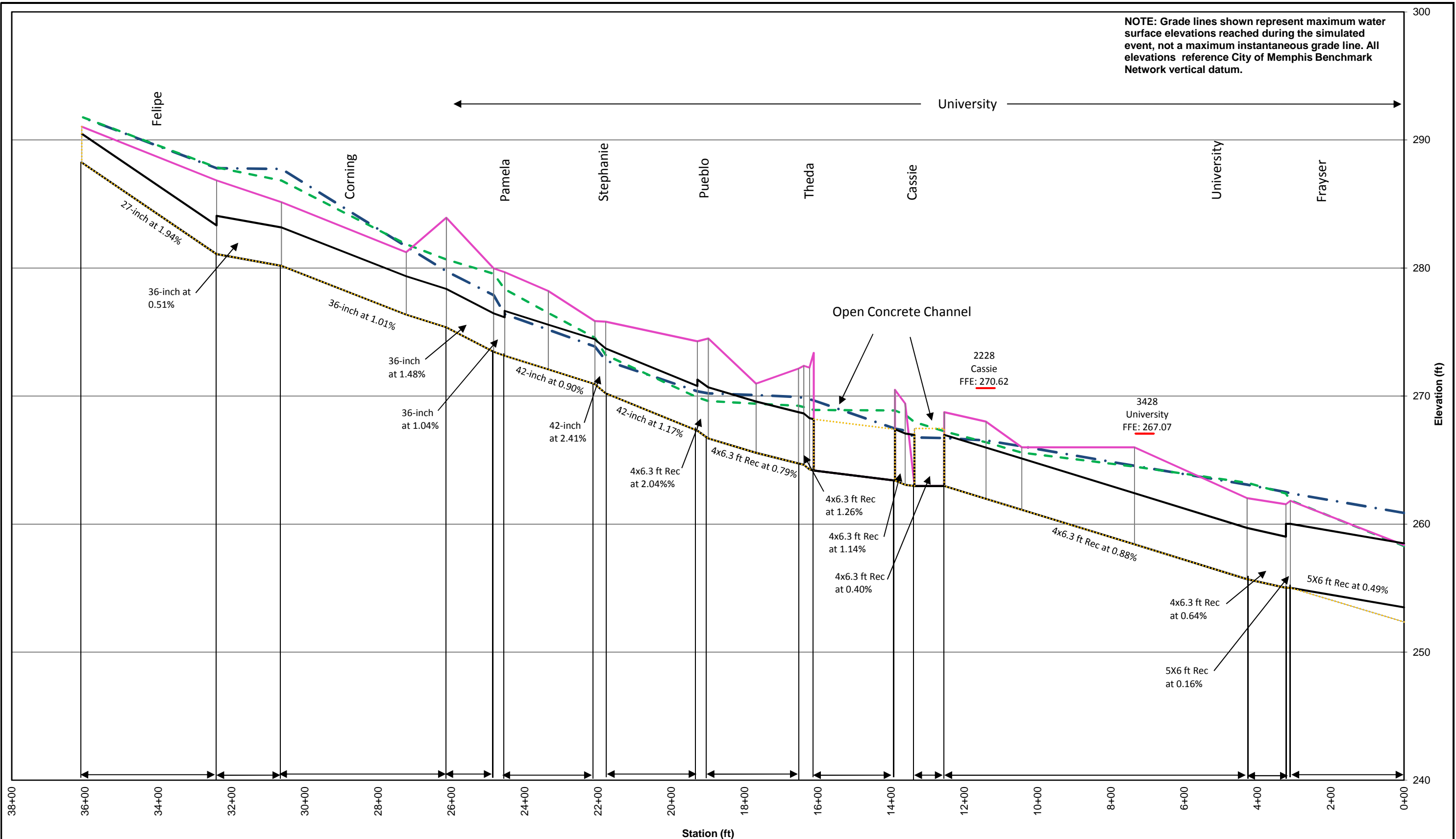
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- · - · - Left Top of Bank
- Model Node
- Sewer Pipe
- · · · · Right Top of Bank

Memphis Todd Creek Drain Study
Todd Creek - University East to Ardmore
Hydraulic Profile

Figure
T - 20.1

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

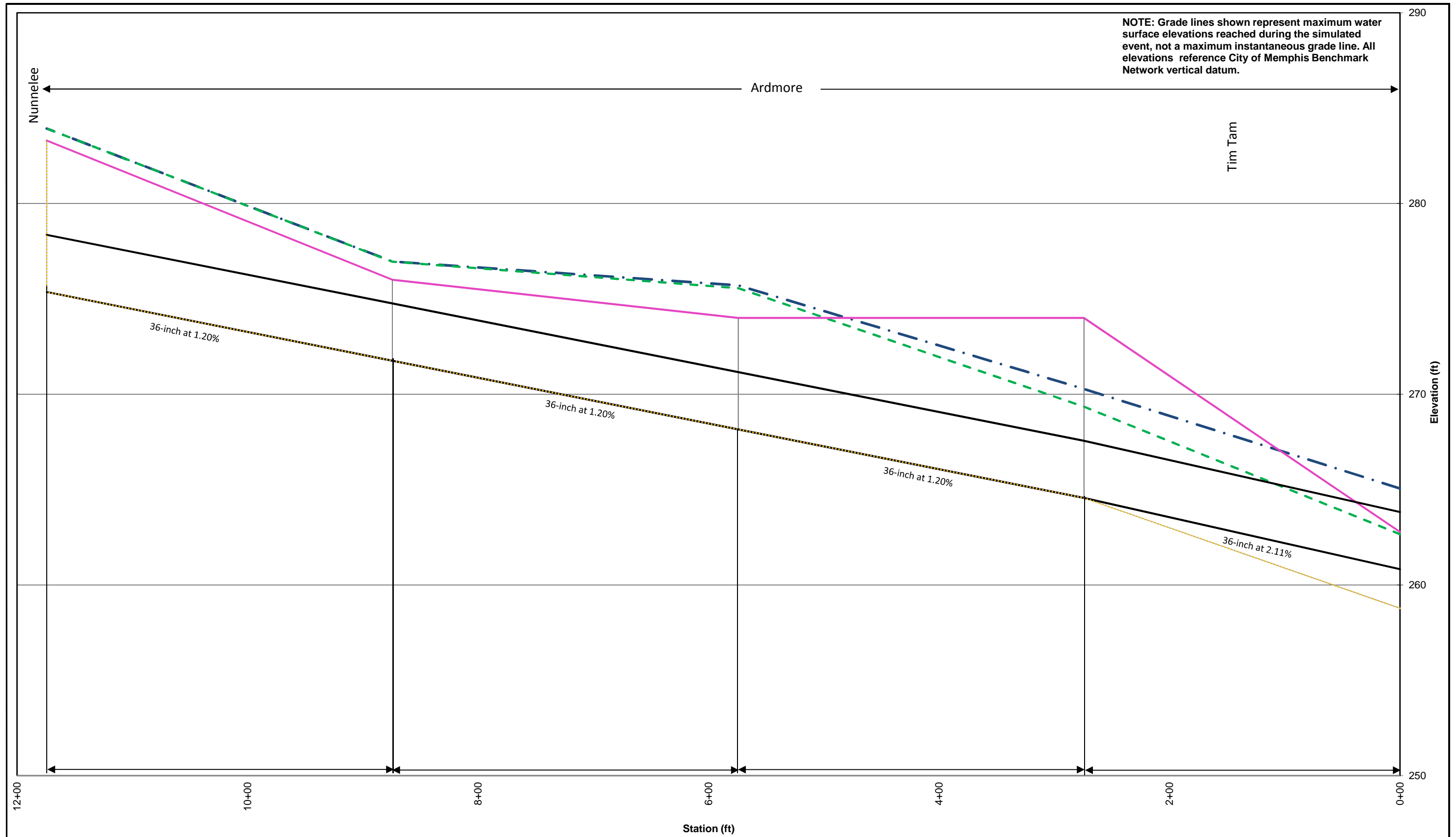


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Ground Surface at Manholes
 — Left Top of Bank
 — Right Top of Bank
 — Sewer Pipe

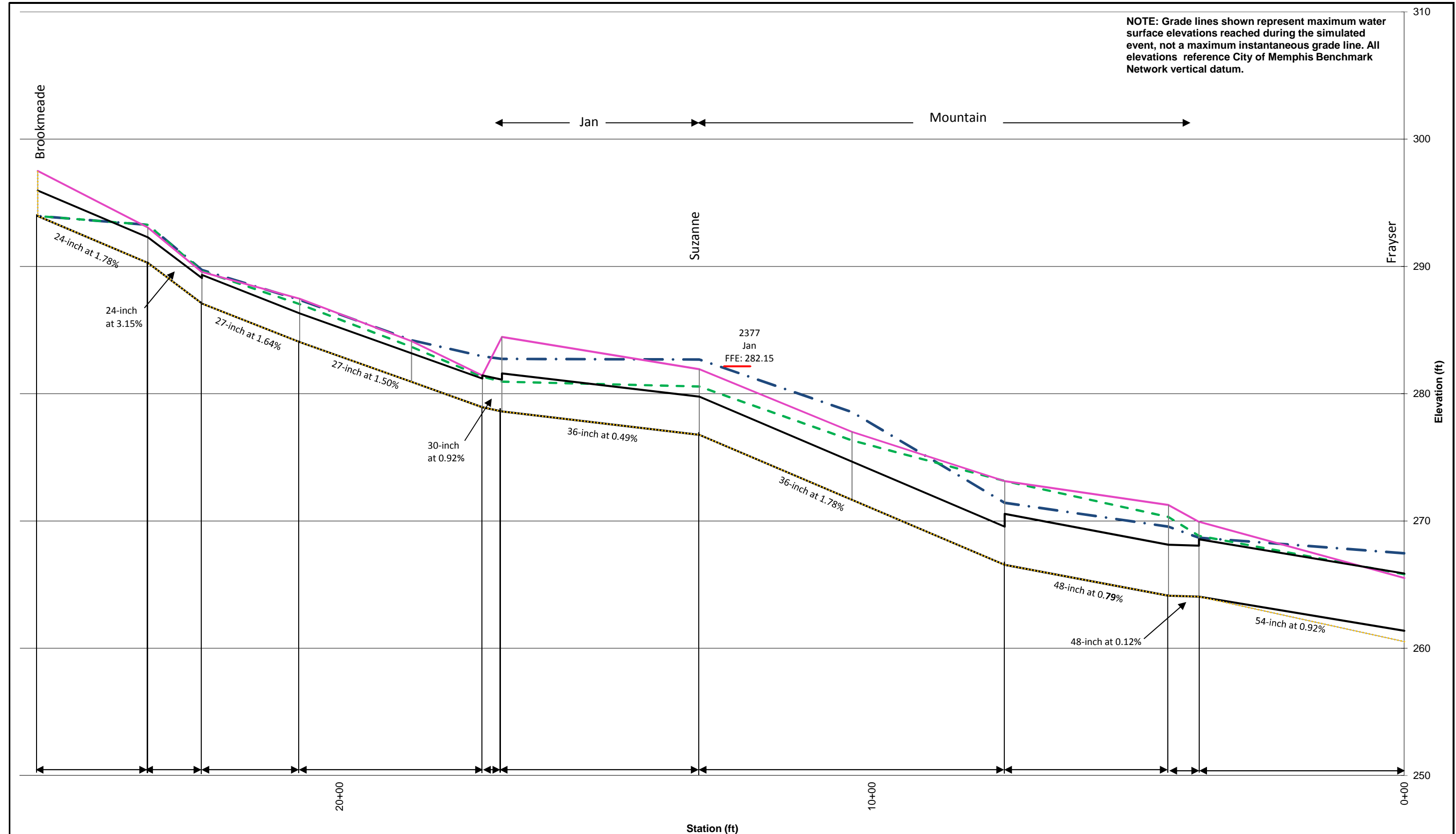
**Memphis Todd Creek Drain Study
 Todd Creek - Main Branch North to Felipe
 Hydraulic Profile**

**Figure
 T - 20**



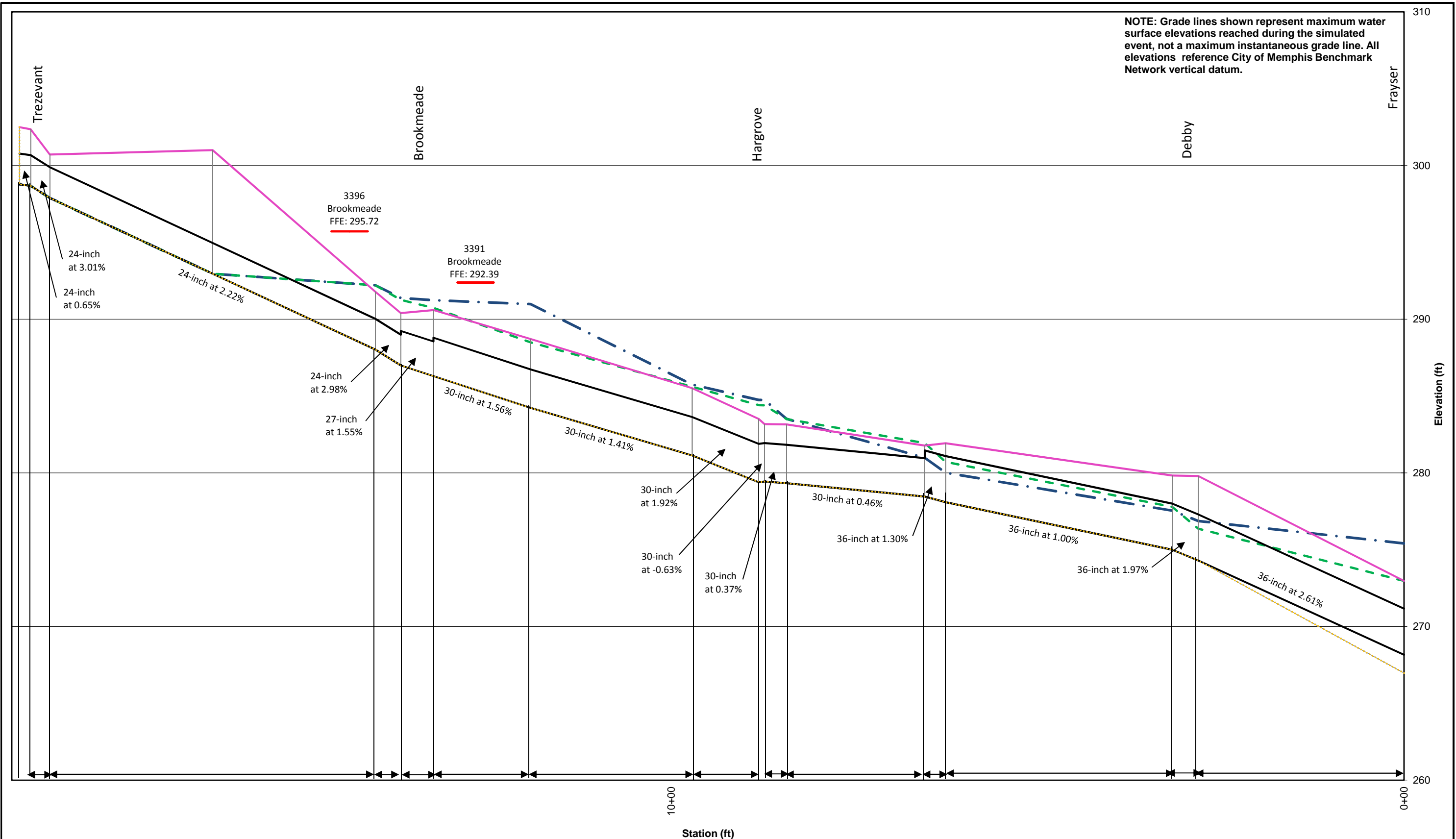
TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	Ex. 10-Year Model Node Right Top of Bank	Pr. 10-Year Sewer Pipe	Ground Surface at Manholes Left Top of Bank	Memphis Todd Creek Drain Study Todd Creek - Main Branch South to Nunnelee Hydraulic Profile	Figure T - 21

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>—•— Left Top of Bank</p> <p>—•— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—•—</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Main Branch Northeast to Brookmeade Hydraulic Profile</p>	<p>Figure T - 22</p>
	<p>— Model Node</p>			
<p>DRAWN BY: JMB DATE: 8/25/2017</p>				

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



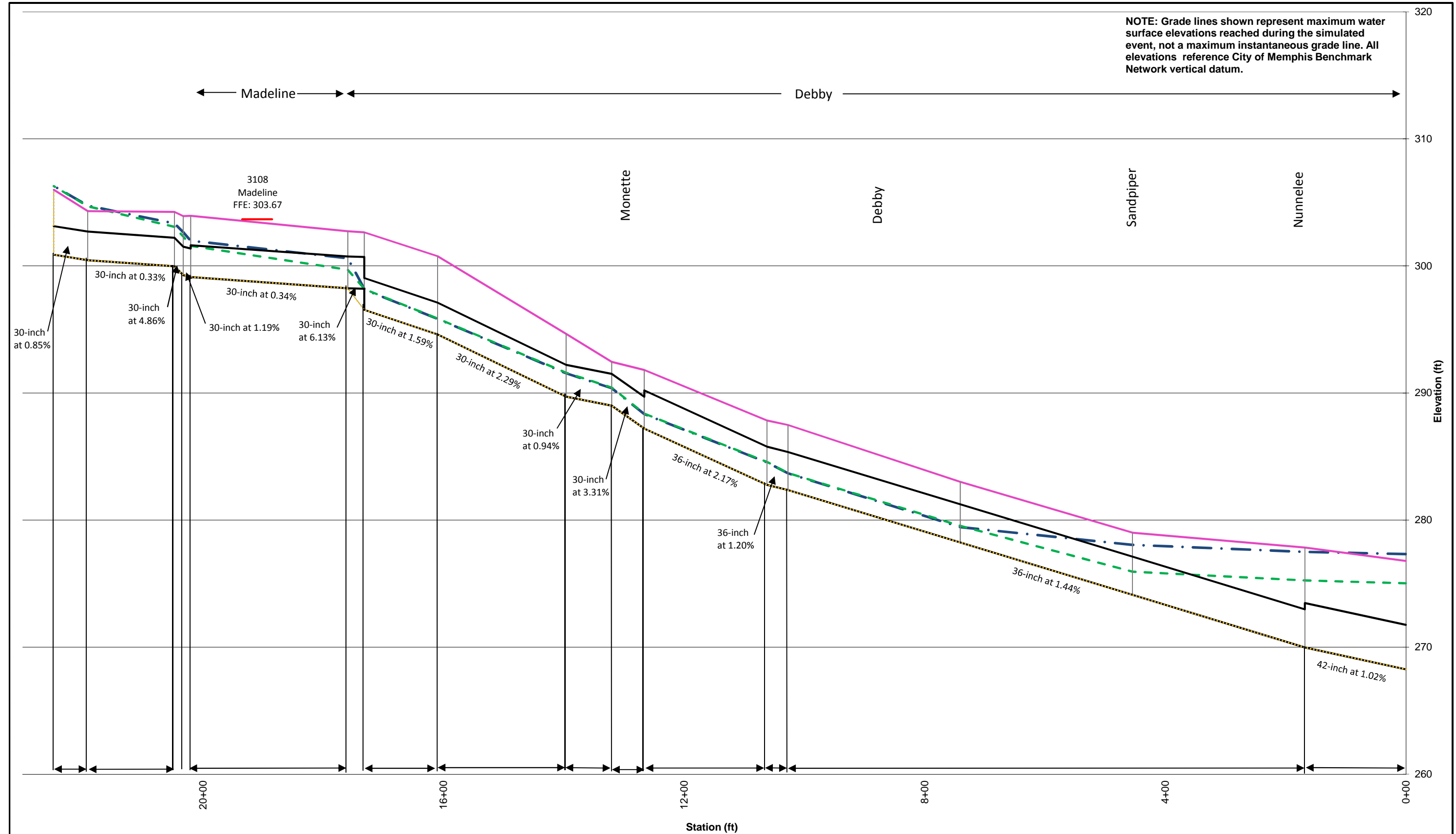
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

— · — Ex. 10-Year
- - - Pr. 10-Year
— Ground Surface at Manholes
· · · · · Left Top of Bank
— Sewer Pipe
· · · · · Right Top of Bank
— Model Node

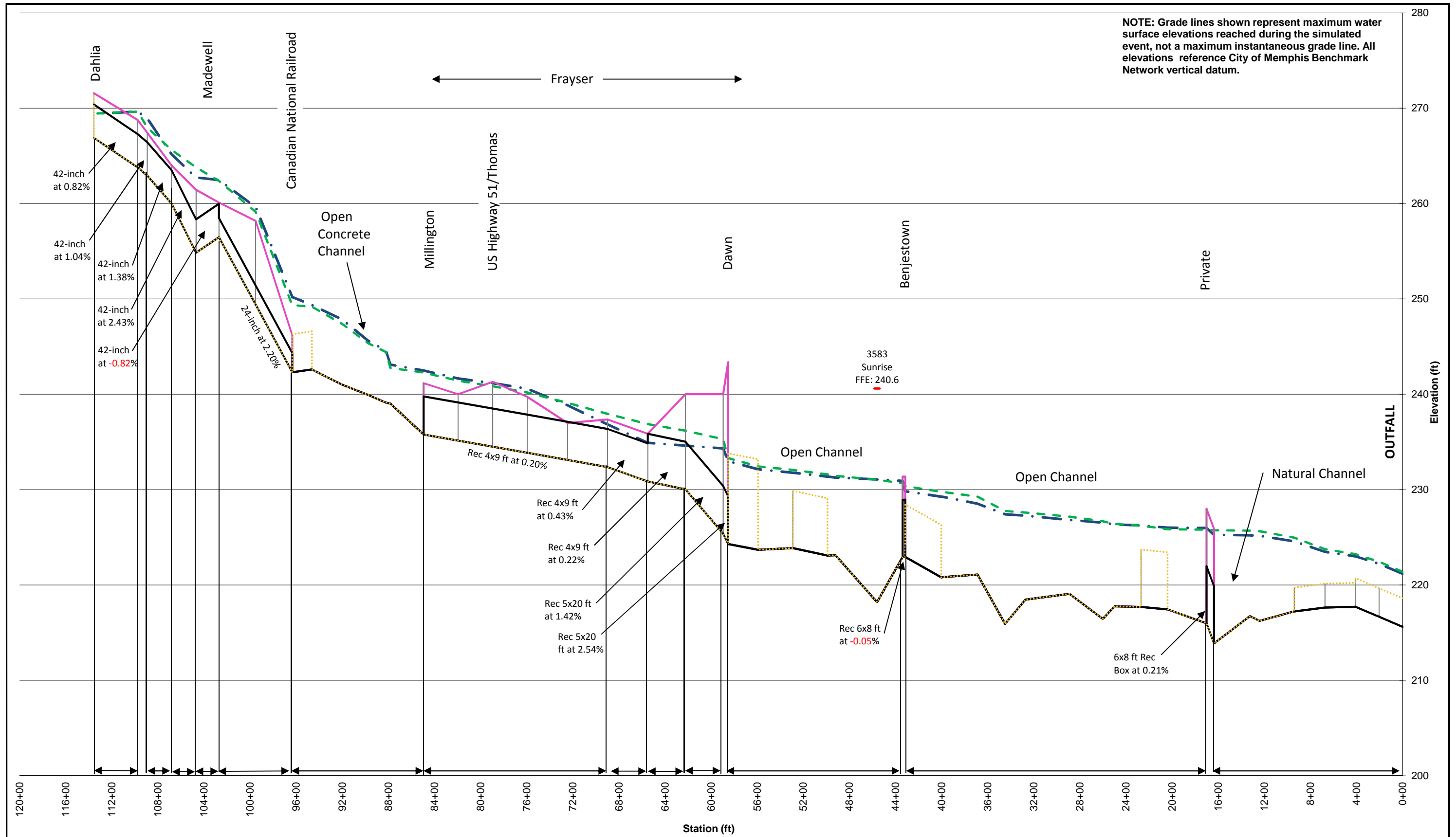
**Memphis Todd Creek Drain Study
 Todd Creek - Debby North to Trezevant
 Hydraulic Profile**

**Figure
 T - 23**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



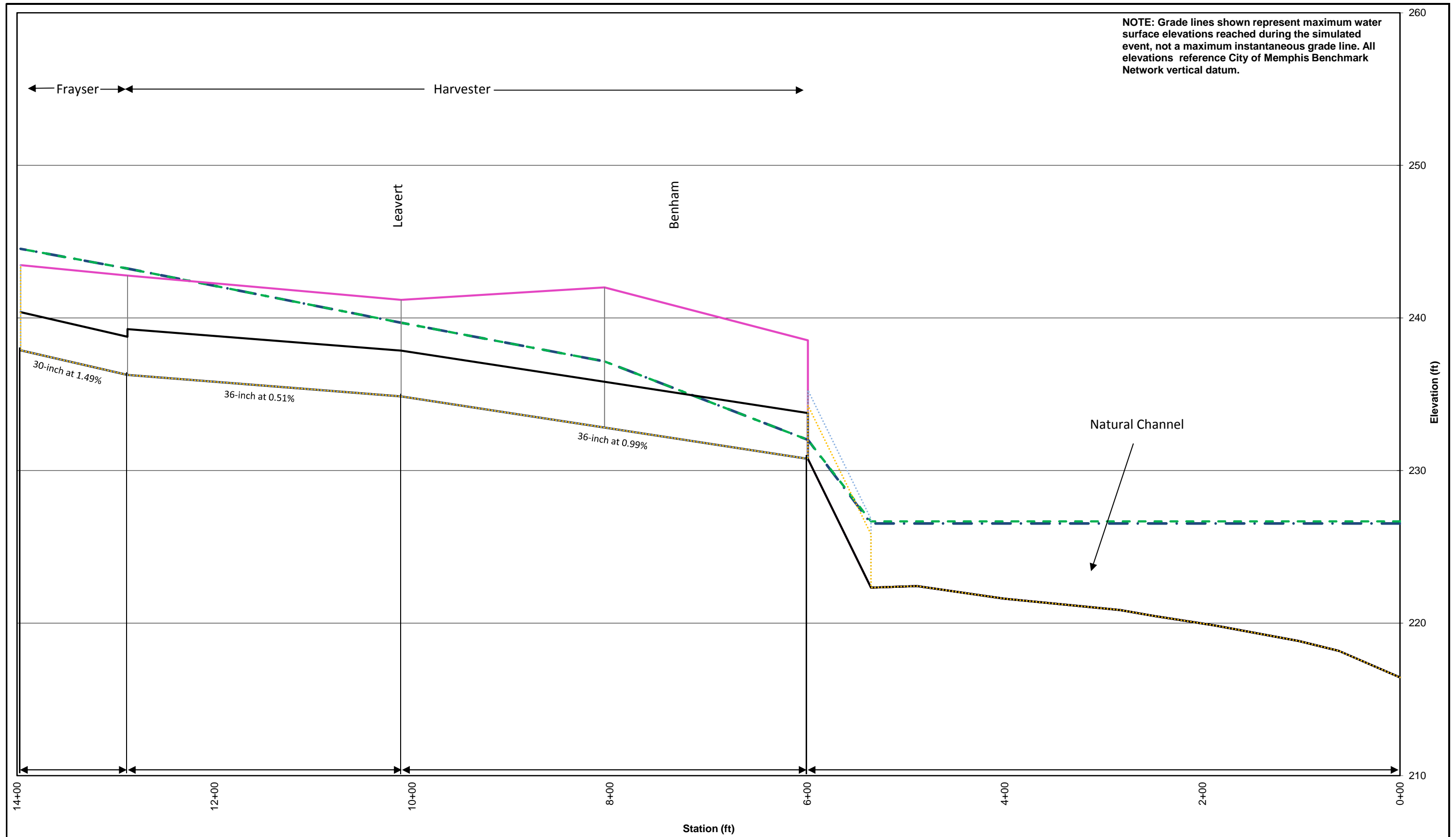
<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—•••• Right Top of Bank</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—•••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study Todd Creek - Debby South to Madeline Hydraulic Profile</p>	<p>Figure T - 24</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>				



Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

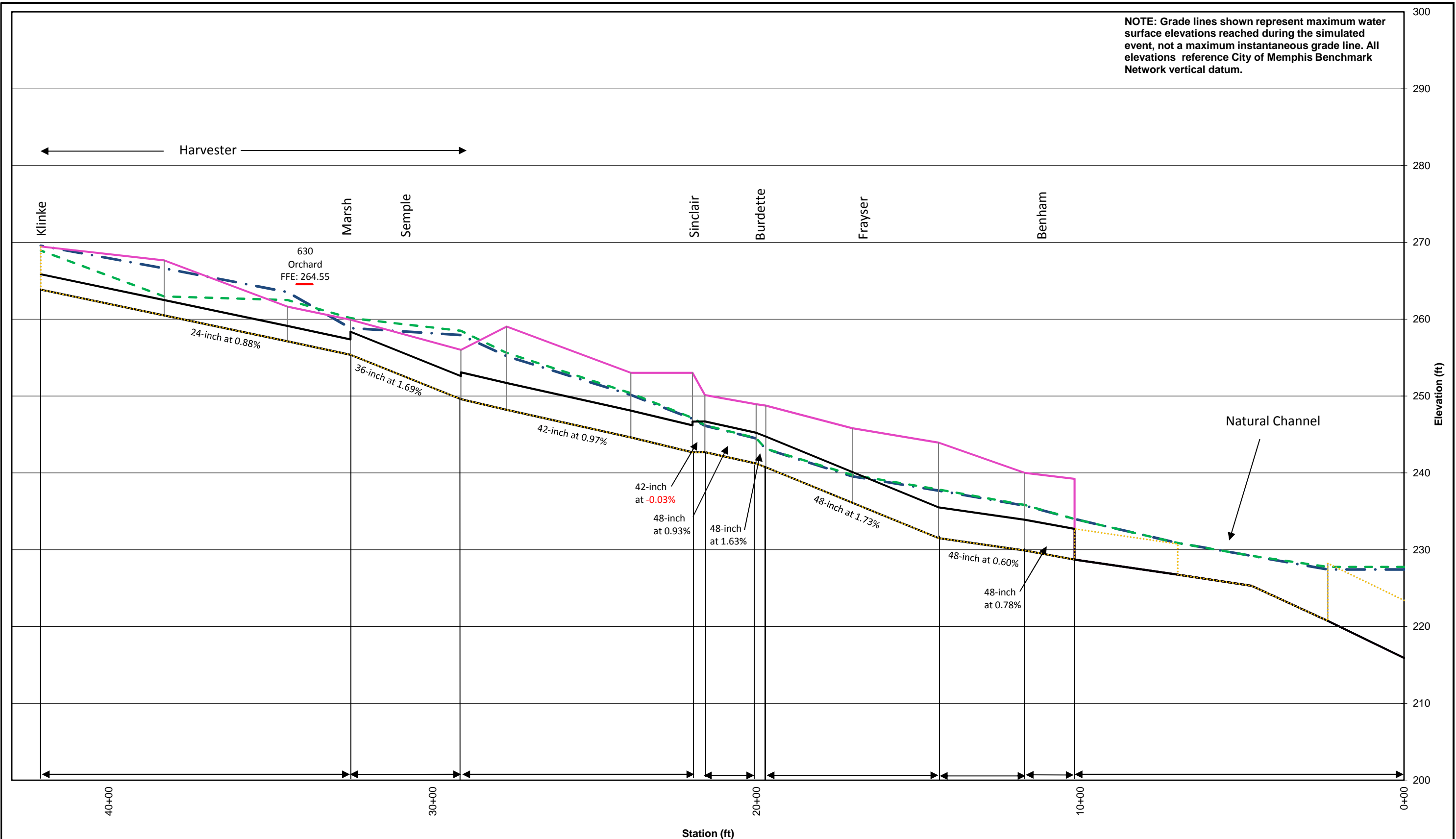
**Memphis Todd Creek Drain Study
 WMPS - Outfall to Dahlia
 Hydraulic Profile**

**Figure
 W - 1**



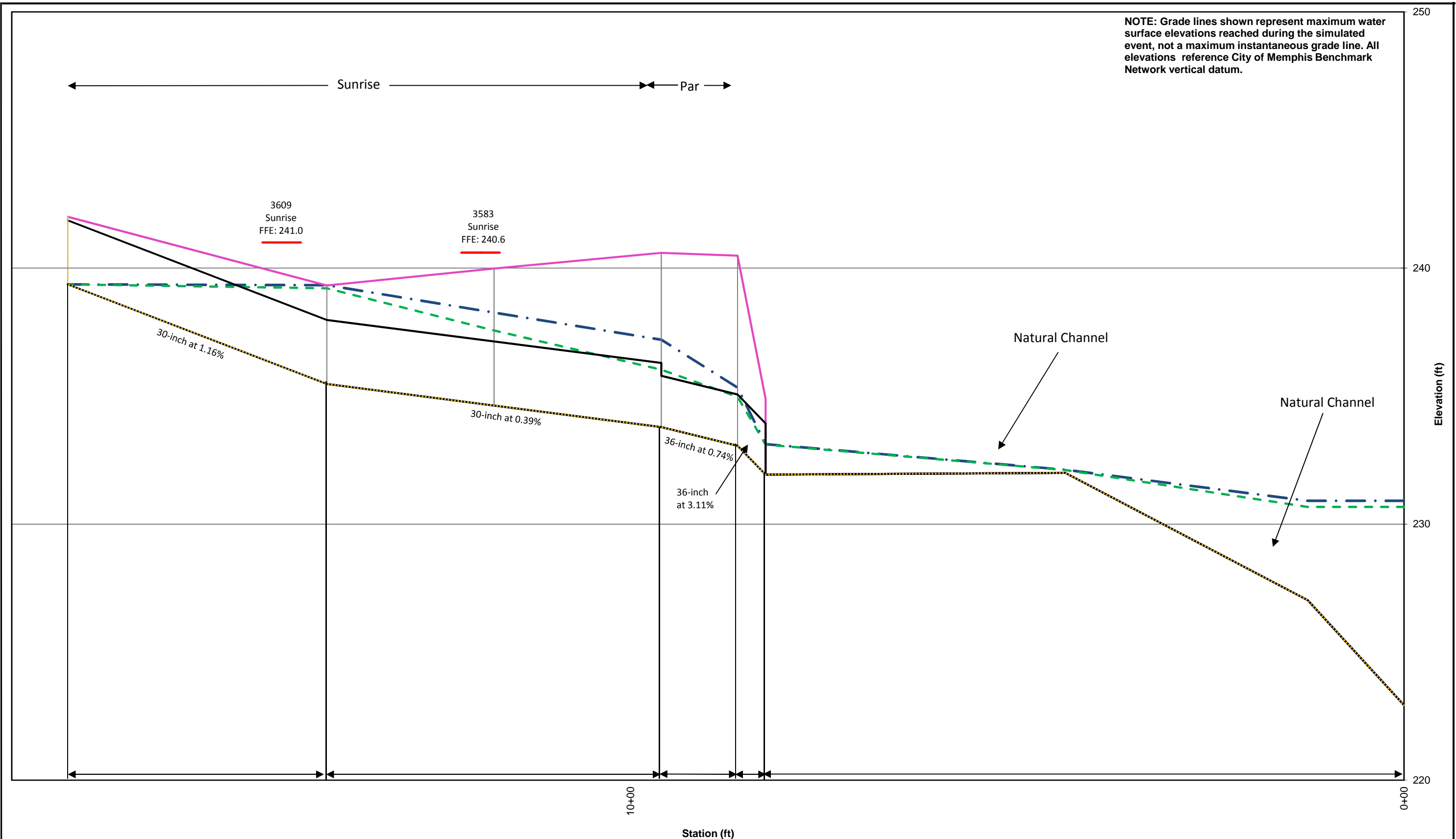
TETRA TECH DRAWN BY: JMB DATE: 8/25/2017	Ex. 10-Year Model Node Right TOB	Pr. 10-Year Sewer Pipe	Ground Surface at Manholes Left TOB	Memphis Todd Creek Drain Study WMPS - Main Branch South along Harvester Hydraulic Profile	Figure W - 2

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Pr. 10-Year</p> <p>— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study WMPS - Main Branch South to Klinke Hydraulic Profile</p>	<p>Figure W - 3</p>
	<p>— Model Node</p>			
<p>DRAWN BY: JMB DATE: 8/25/2017</p>				

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



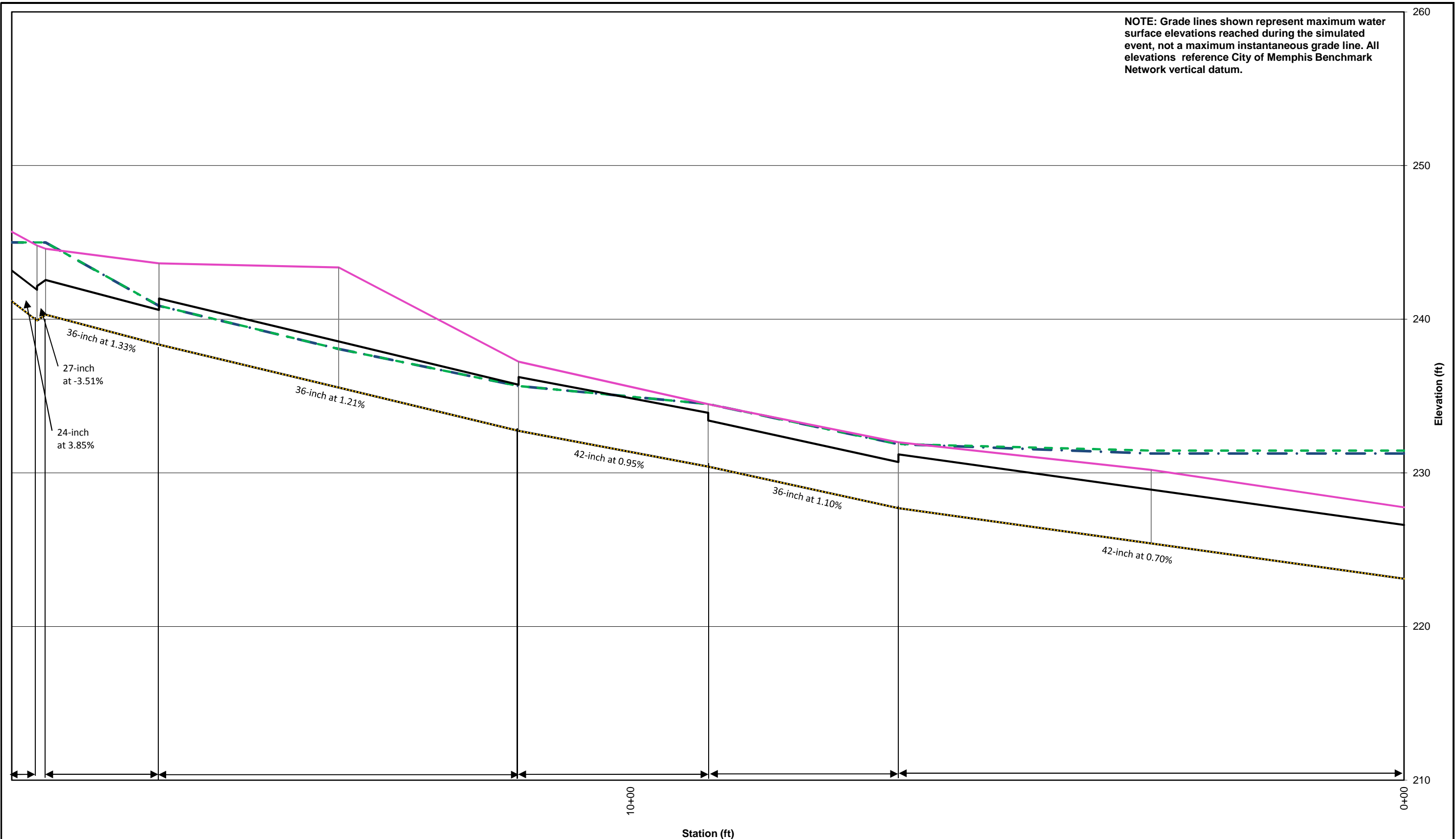
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- · · · · Left Top of Bank
- Model Node
- Sewer Pipe
- · · · · Right Top of Bank

**Memphis Todd Creek Drain Study
 WMPS - Main Branch North along Sunrise
 Hydraulic Profile**

**Figure
 W - 4**

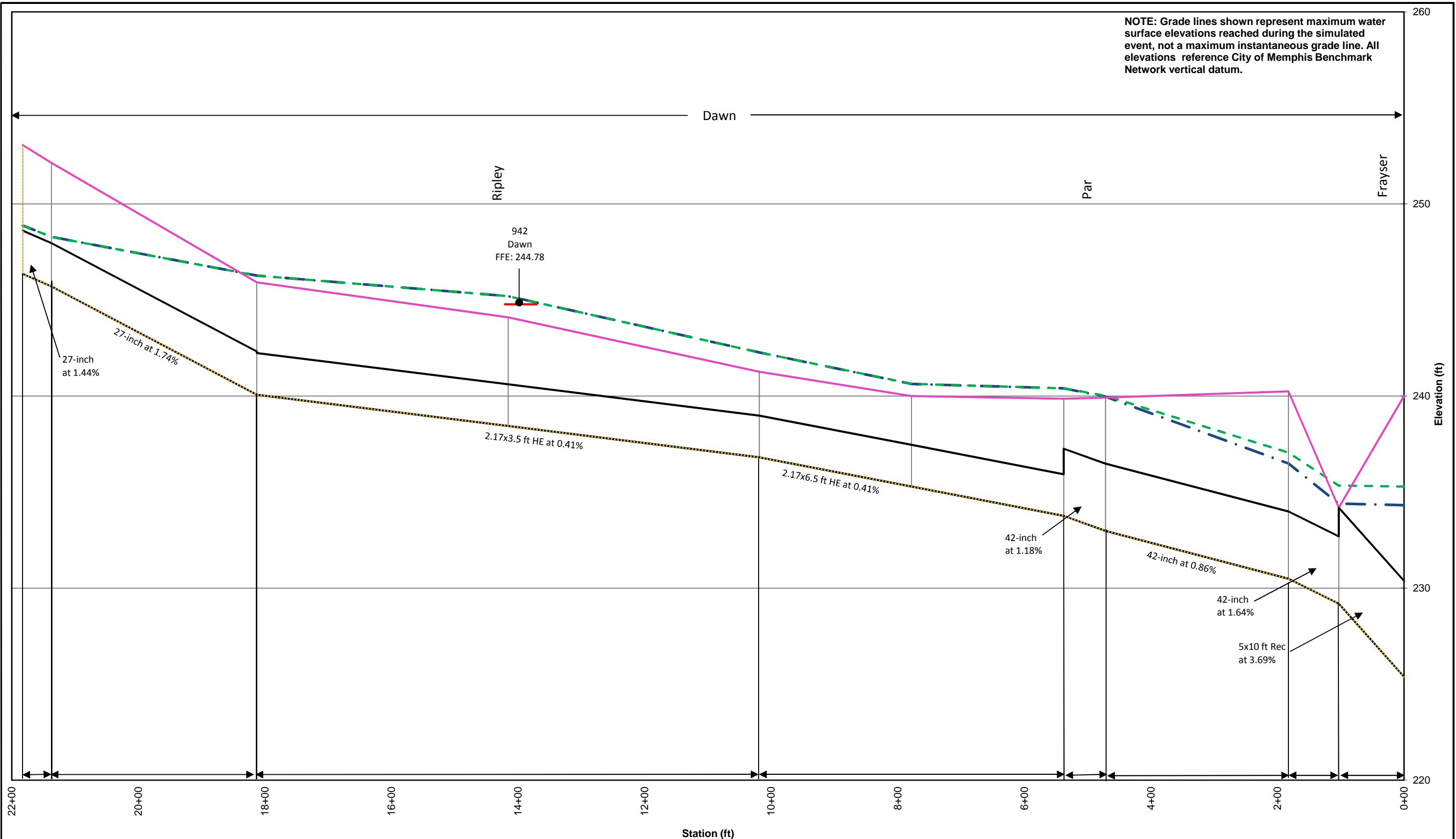
NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>—•— Pr. 10-Year</p> <p>—•— Sewer Pipe</p> <p>—•— Right Top of Bank</p>	<p>—•— Ground Surface at Manholes</p> <p>—•— Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study WMPS - Main Branch South to Frayser Hydraulic Profile</p>	<p>Figure W - 5</p>
	<p>—•— Model Node</p>			

DRAWN BY: JMB | DATE: 8/25/2017

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



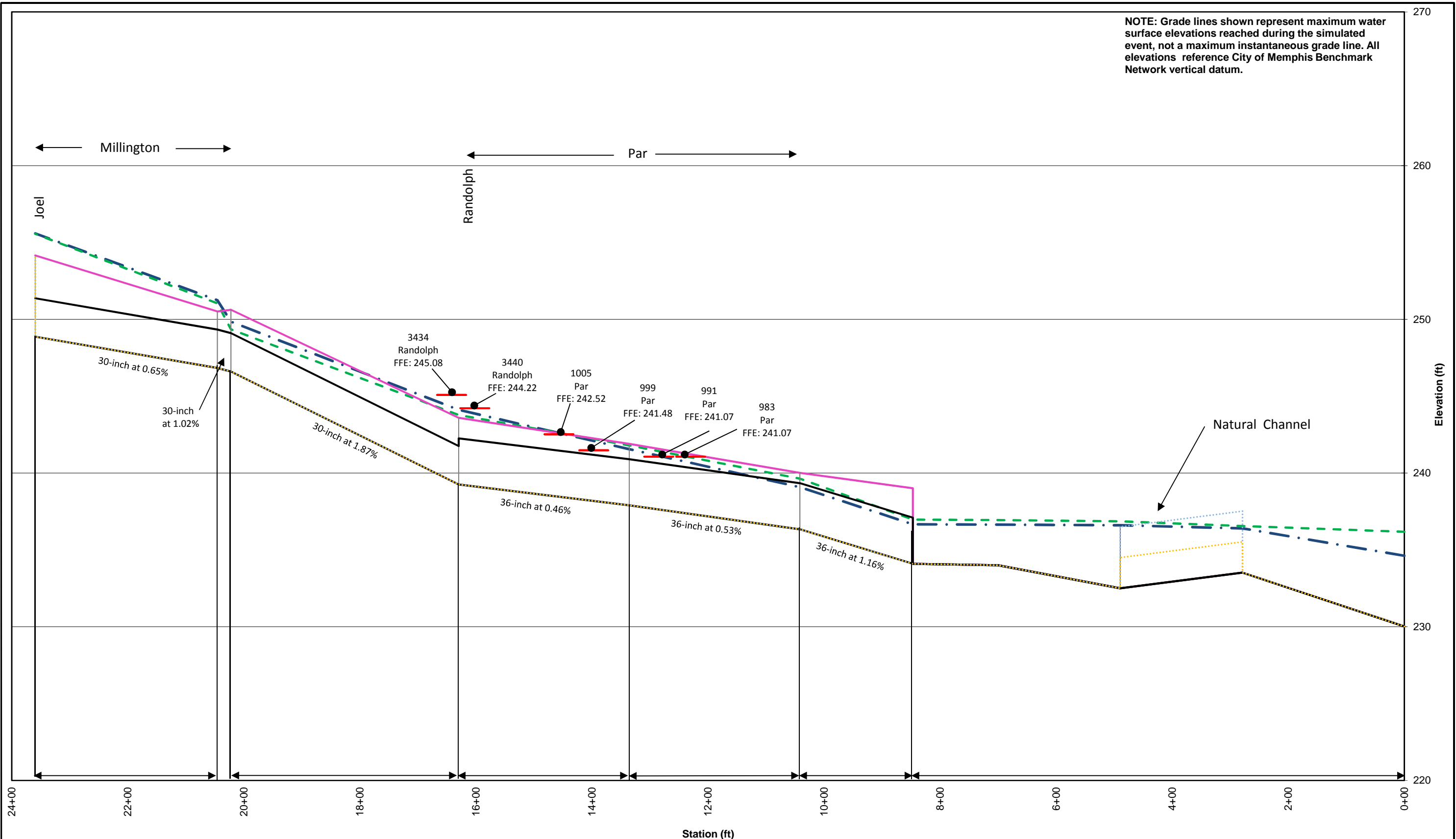
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — — — Pr. 10-Year
 — — — Sewer Pipe
 —•—•— Left Top of Bank
 —••••• Right Top of Bank

**Memphis Todd Creek Drain Study
 WMPS - Main Branch Northeast to Randolph
 Hydraulic Profile**

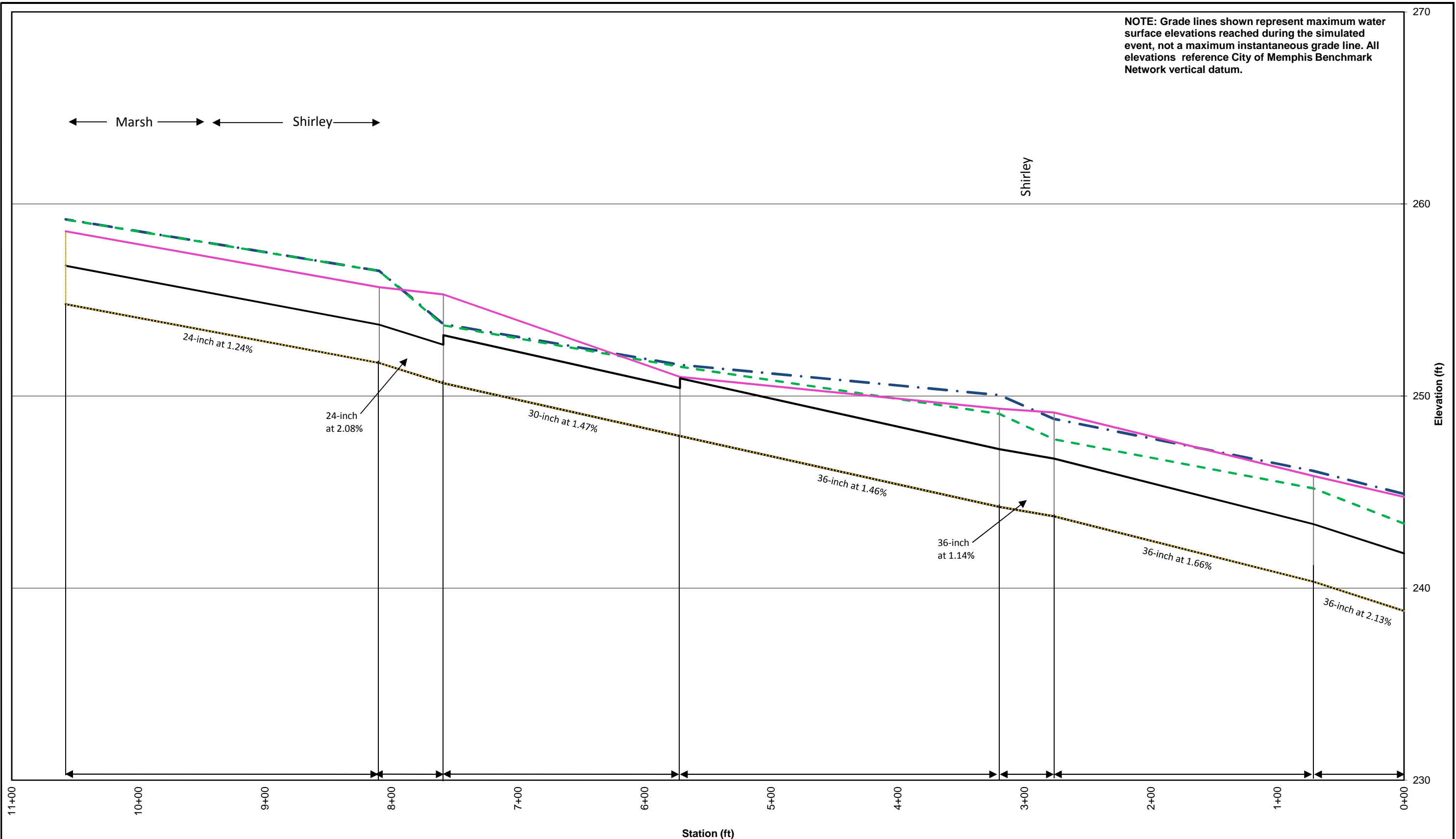
**Figure
 W - 6**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



<p>TETRA TECH</p>	<ul style="list-style-type: none"> Ex. 10-Year Model Node Right Top of Bank 	<ul style="list-style-type: none"> Pr. 10-Year Sewer Pipe 	<ul style="list-style-type: none"> Ground Surface at Manholes Left Top of Bank 	<p>Memphis Todd Creek Drain Study WMPS - Main Branch Northeast to Millington Hydraulic Profile</p>	<p>Figure W - 7</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>				

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

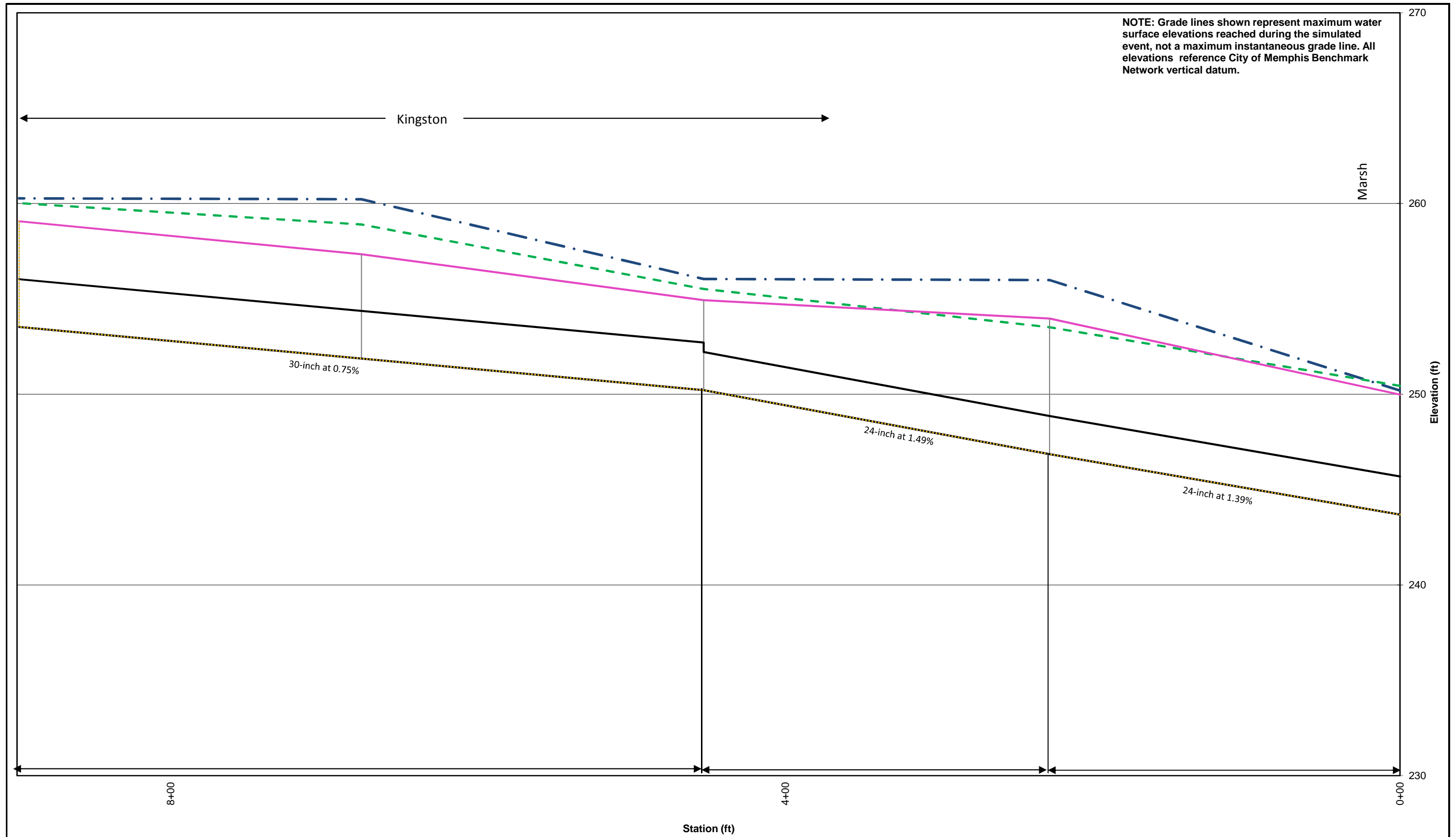


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Ground Surface at Manholes
 — Left Top of Bank
 — Right Top of Bank
 — Sewer Pipe

**Memphis Todd Creek Drain Study
 WMPS - East to Shirley
 Hydraulic Profile**

**Figure
 W - 8.3**



Tt TETRA TECH

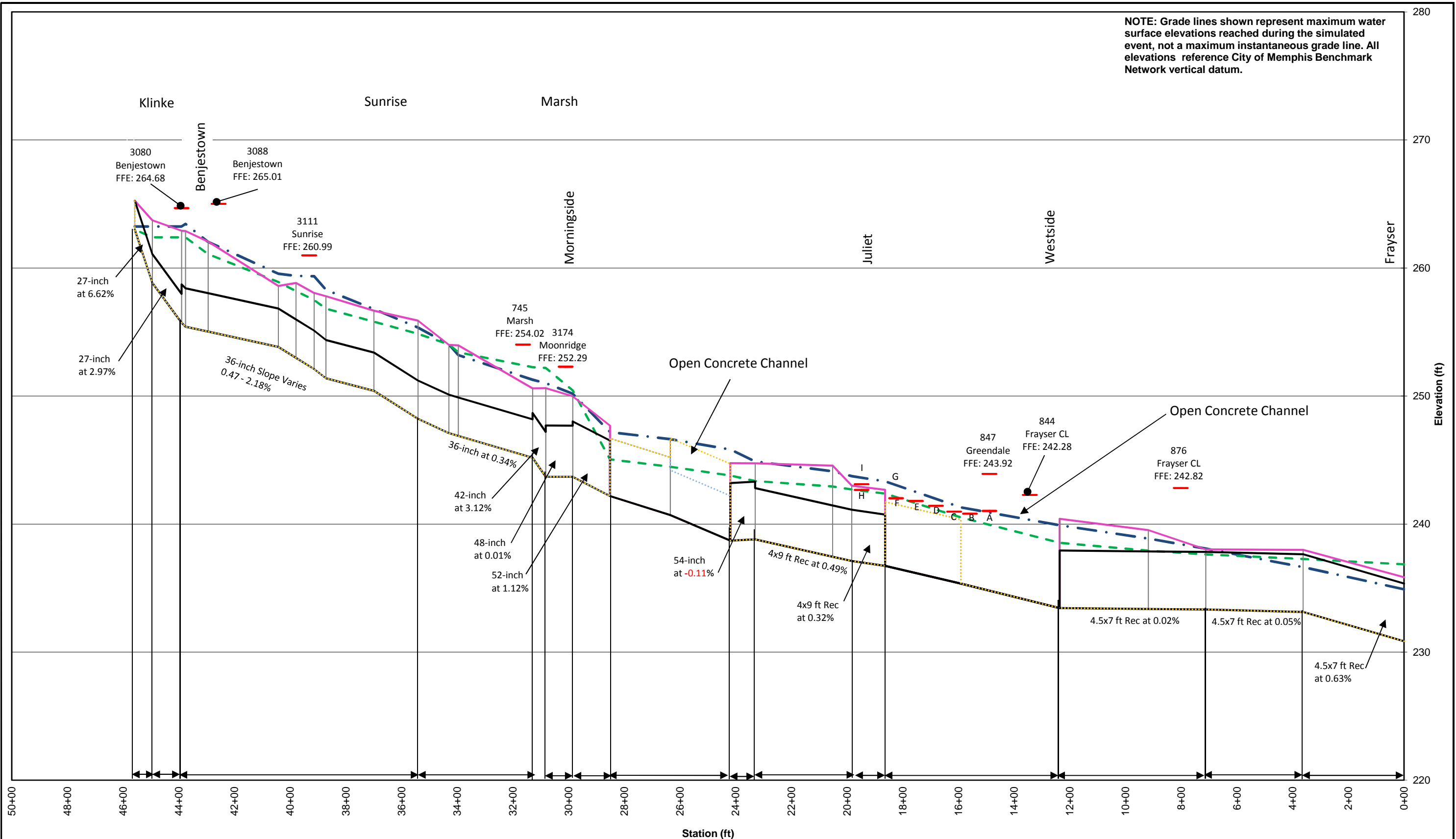
DRAWN BY: JMB | DATE: 8/25/2017

- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- Sewer Pipe
- · · · · Left Top of Bank
- · - · - Right Top of Bank
- Model Node

**Memphis Todd Creek Drain Study
WMPS - South to Kingston
Hydraulic Profile**

**Figure
W - 8.4**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



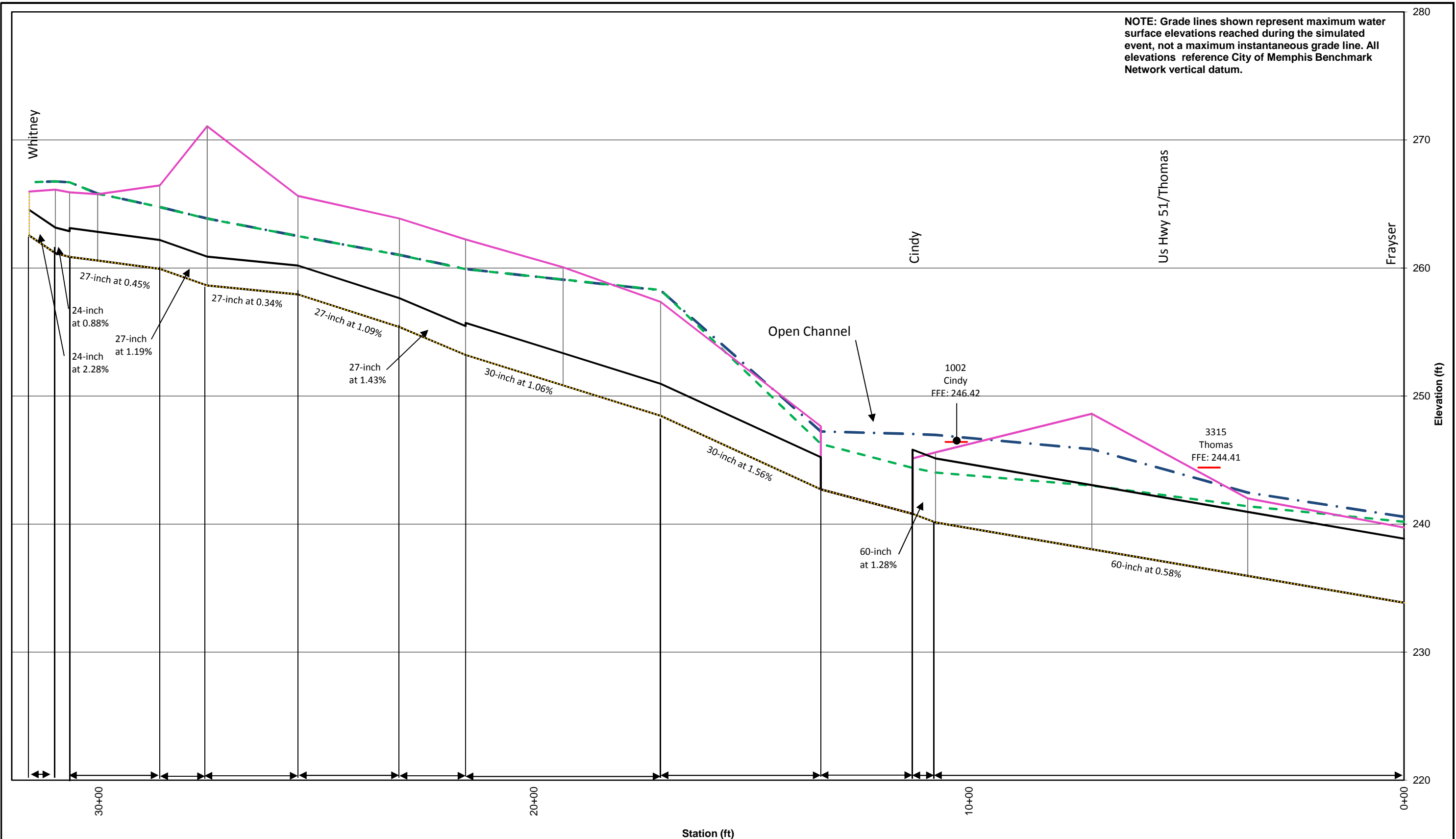
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Ground Surface at Manholes
 — Left Top of Bank
 — Sewer Pipe
 — Right Top of Bank

**Memphis Todd Creek Drain Study
 WMPS - Main Branch South to Klinke
 Hydraulic Profile**

**Figure
 W - 8**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.



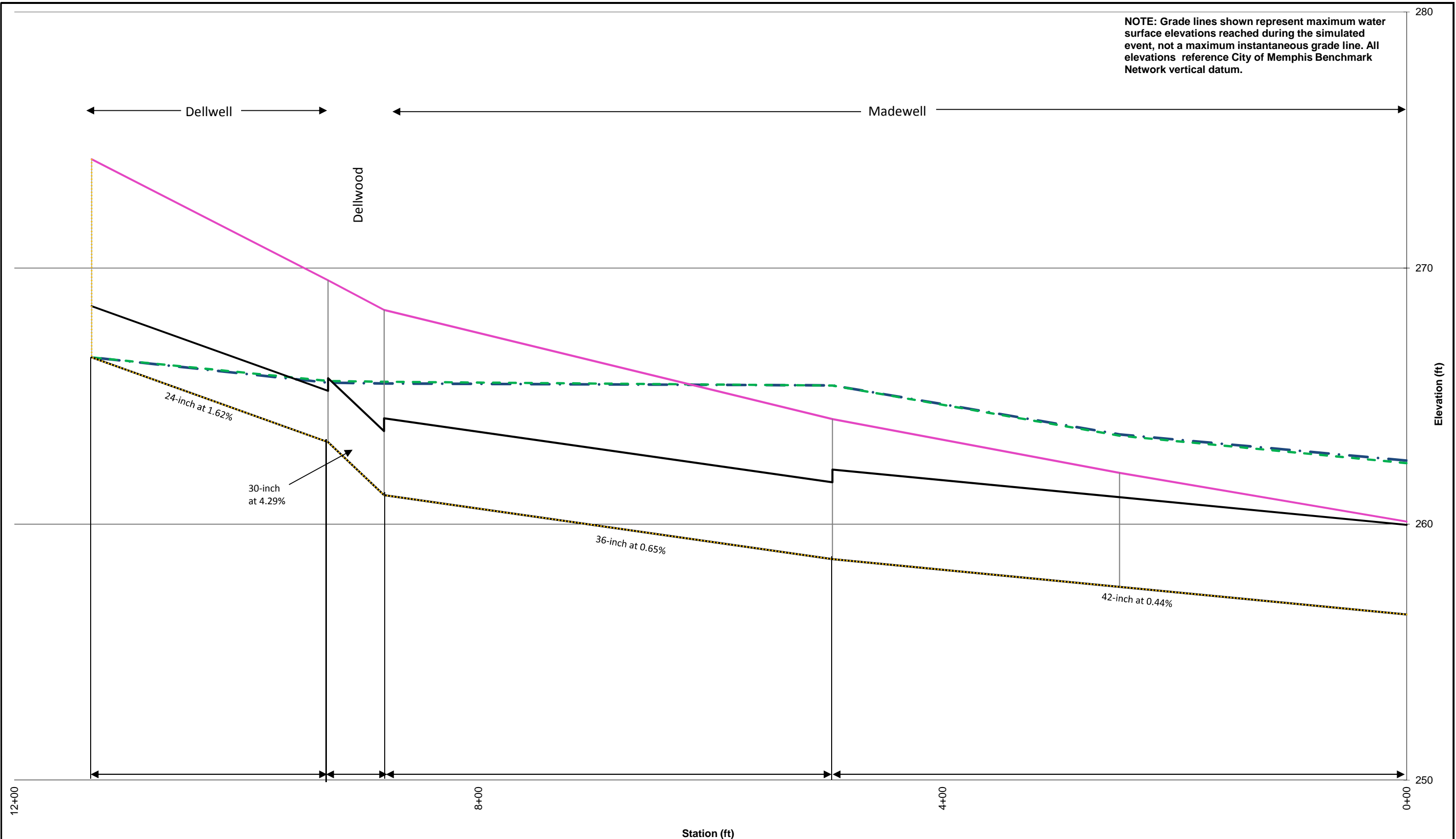
Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

—•— Ex. 10-Year
 — Pr. 10-Year
 — Model Node
 — Sewer Pipe
 —••••• Right Top of Bank
 — Ground Surface at Manholes
 —••••• Left Top of Bank

**Memphis Todd Creek Drain Study
 WMPS - Main Branch South to Whitney
 Hydraulic Profile**

**Figure
 W - 9**

NOTE: Grade lines shown represent maximum water surface elevations reached during the simulated event, not a maximum instantaneous grade line. All elevations reference City of Memphis Benchmark Network vertical datum.

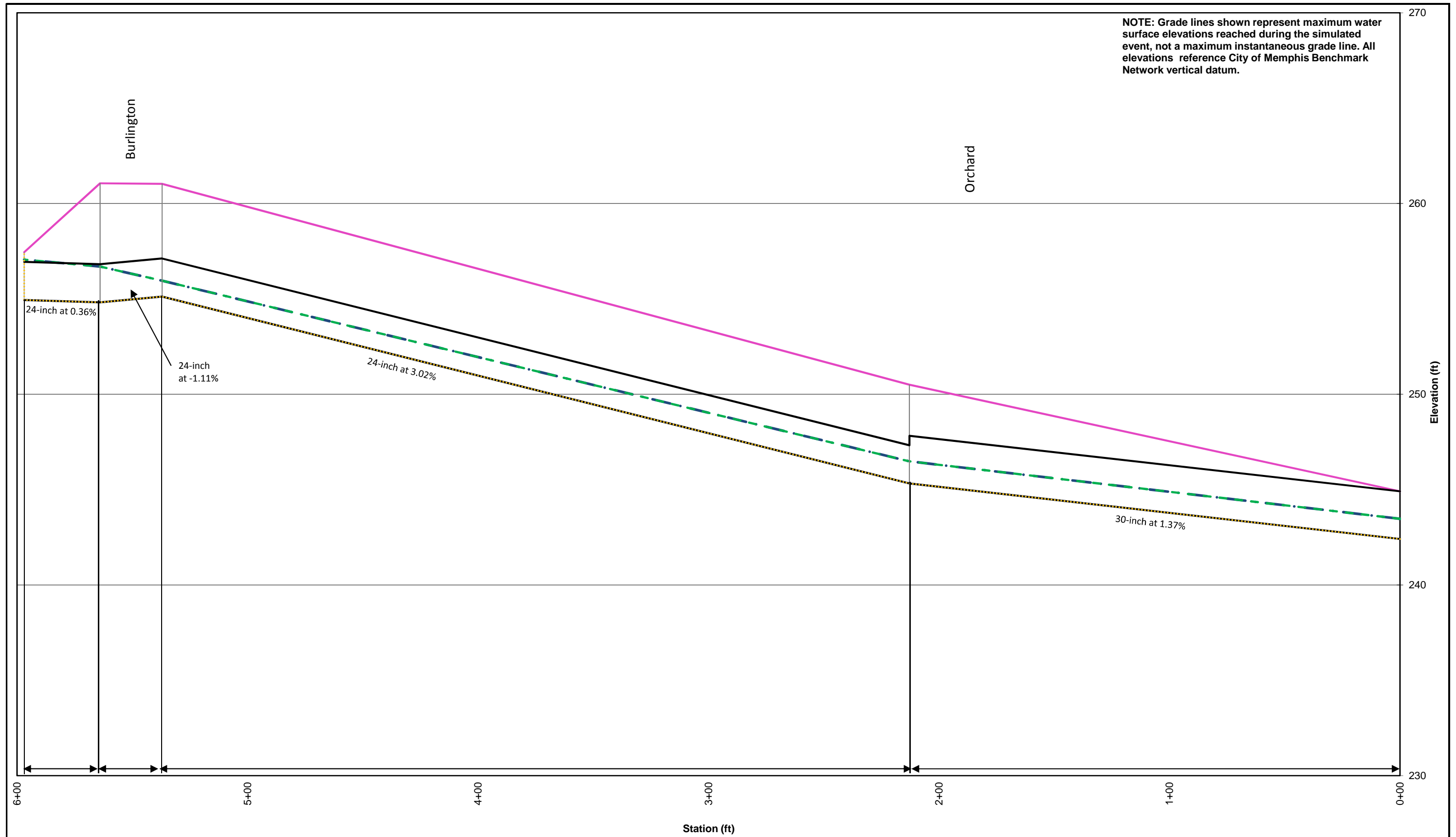


Tt TETRA TECH
 DRAWN BY: JMB | DATE: 8/25/2017

- · — Ex. 10-Year
- - - Pr. 10-Year
- Ground Surface at Manholes
- Model Node
- Sewer Pipe
- · · · · Left Top of Bank
- · · · · Right Top of Bank

**Memphis Todd Creek Drain Study
 WMPS - Main Branch South to Dellwood
 Hydraulic Profile**

**Figure
 W - 11**



<p>TETRA TECH</p>	<p>—•— Ex. 10-Year</p> <p>— Model Node</p> <p>—••••• Right Top of Bank</p>	<p>—•— Pr. 10-Year</p> <p>— Sewer Pipe</p>	<p>— Ground Surface at Manholes</p> <p>—••••• Left Top of Bank</p>	<p>Memphis Todd Creek Drain Study WMPS - Orchard to Burlington Hydraulic Profile</p>	<p>Figure W-12</p>
	<p>DRAWN BY: JMB DATE: 8/25/2017</p>				