

Taylorsville EQ Tanks and Relief Sewer 100% Review Meeting

December 21, 2023

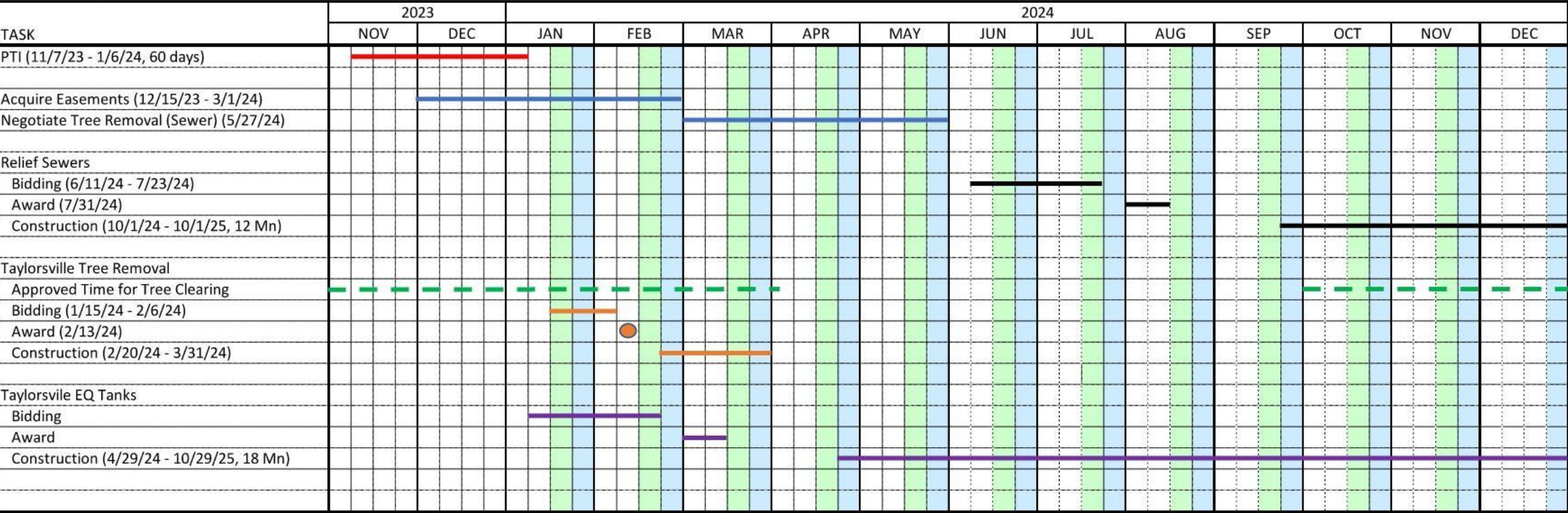
AGENDA

- A. Schedule**
- B. Tree Removal Project**
- C. Taylorsville EQ Tanks Project**
- D. Mud Run Relief Sewer Project**
- E. Funding (Dan Gill – OWDA)**
- F. Easements**
- G. Permits**
- H. Opinion of Probable Construction Cost**
- I. Hazen Construction Services**

SCHEDULE

TCA Taylorsville EQ Tanks and Relief Sewer Schedule

December 21, 2023



*PTI submittal for all work

- OWDA Board Meetings (3rd Thursday)
- TCA Board Meetings (Last Wednesday)
- TCA Special Board Meeting

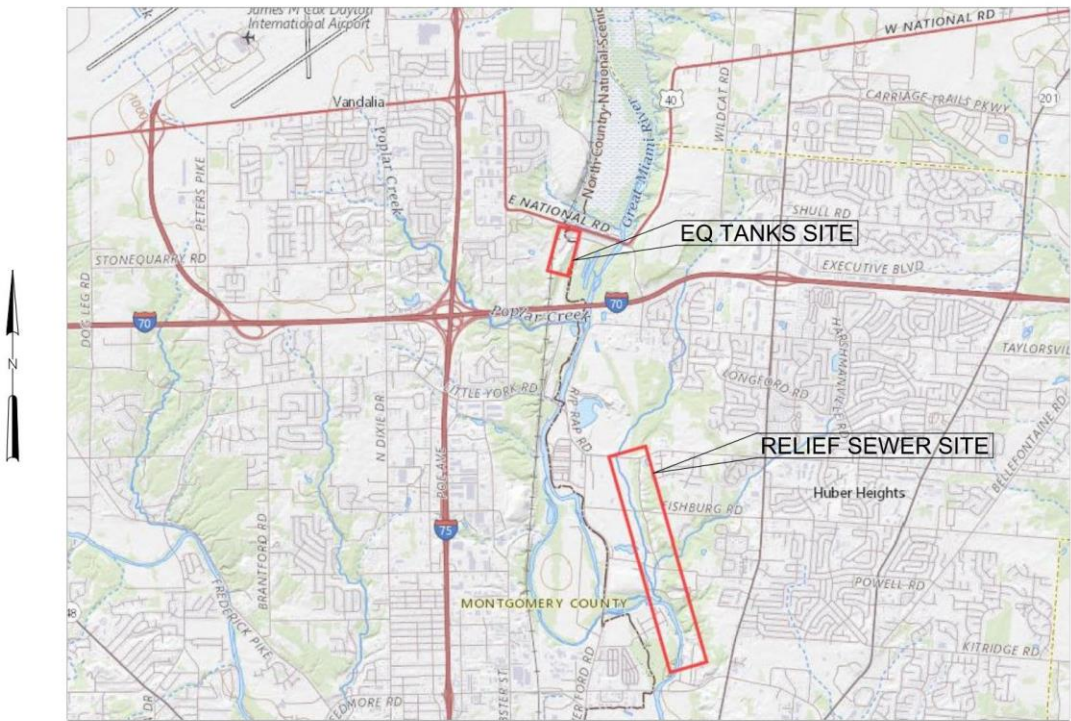
TREE REMOVAL

- **Taylorsville EQ Site Only**
- **Separate Project (Advertise ASAP)**
- **MCD Lease Agreement (dependent on 100% documents)**
- **Bidding Requirements**
- **Reimburse in OWDA Construction Loan for EQ Tanks**
- **Timing (trees down by 3/31)**

TREE REMOVAL

TAYLORSVILLE EQUALIZATION IMPROVEMENTS TREE REMOVAL PLANS

HAZEN CONTRACT NO. 55003-017
NOVEMBER 2023



LOCATION PLAN
N.T.S.

SHEET INDEX	
SHT NO.	SHEET TITLE
C001	TREE REMOVAL COVER SHEET
C002	LEGEND SYMBOLS AND ABBREVIATIONS
C003	TREE REMOVAL KEY MAP
C004	EQ SITE TREE REMOVAL PLAN

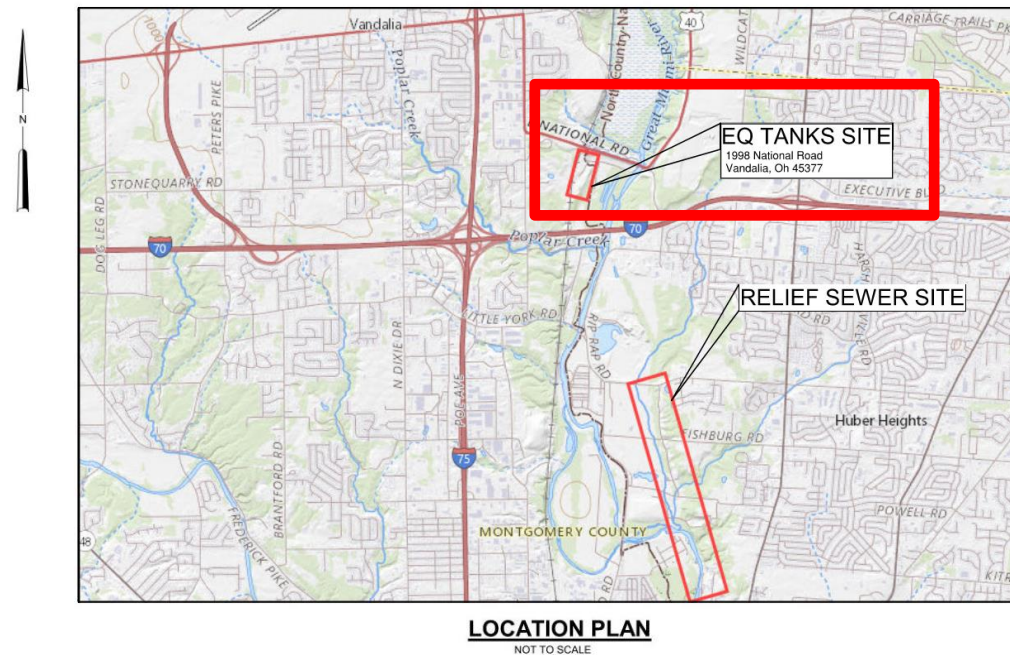
TAYLORSVILLE EQ TANKS PROJECT

- **Taylorsville EQ Site Only**
- **Separate Project**
- **MCD Lease Agreement**
- **PTI**

TAYLORSVILLE EQ TANKS PROJECT

TAYLORSVILLE EQUALIZATION IMPROVEMENTS

HAZEN CONTRACT NO. 55003-017
DECEMBER 2023



TAYLORSVILLE EQ TANKS PROJECT

GENERAL

DRAWING NO	SHEET NAME
G001	COVER SHEET
G002	INDEX OF DRAWINGS
G003	LEGEND, SYMBOLS AND ABBREVIATIONS

CIVIL

DRAWING NO	SHEET NAME
C001	NOTES, LEGENDS, AND ABBREVIATIONS
C002	OVERALL SITE PLAN
C003	EXISTING CONDITIONS AND DEMOLITION PLAN
C004	ENLARGED SITE PLAN
EQUALIZATION PUMP STATION	
C200	SITE LAYOUT, PAVING AND STAKING PLAN
C201	GRADING AND DRAINAGE PLAN
C202	YARD PIPING PLAN - FORCE MAIN
C203	YARD PIPING PLAN - LATERAL
EQUALIZATION TANKS	
C300	SITE LAYOUT AND PAVING PLAN
C301	GRADING AND STAKING PLAN
C302	YARD PIPING PLAN
DETAILS	
CD01	STANDARD DETAILS (1 OF 4)
CD02	STANDARD DETAILS (2 OF 4)
CD03	STANDARD DETAILS (3 OF 4)
CD04	STANDARD DETAILS (4 OF 4), CLIENT STANDARD DETAILS

MECHANICAL

DRAWING NO	SHEET NAME
M001	PROCESS FLOW DIAGRAM
DIVERSION CHAMBER	
M100	PLANS
M101	SECTIONS
EQUALIZATION PUMP STATION	
M200	PLANS AND SECTION
INFLUENT METER VAULT	
M220	PLANS AND SECTION
EQUALIZATION TANKS	
M300	PLAN
M301	ENLARGED PLAN AND SECTIONS
INFLUENT VALVE VAULT	
M320	PLANS AND SECTION
EFFLUENT VALVE VAULT	
M330	PLANS AND SECTION
EFFLUENT METER VAULT	
M340	PLANS AND SECTION
EFFLUENT METER VALVE VAULT	
M360	PLANS AND SECTION
PROCESS MECHANICAL STANDARD DETAILS	
MD01	SHEET 1

STRUCTURAL

DRAWING NO	SHEET NAME
S001	GENERAL STRUCTURAL NOTES - SHEET 1
S002	GENERAL STRUCTURAL NOTES - SHEET 2
DIVERSION CHAMBER	
S100	PLANS
S101	SECTIONS
EQUALIZATION PUMP STATION	
S200	PLANS
S201	SECTIONS
S202	DETAILS
INFLUENT METER VAULT	
S220	PLANS AND SECTIONS
INFLUENT VALVE VAULT	
S320	PLANS AND SECTIONS
EFFLUENT VALVE VAULT	
S330	PLANS AND SECTION
EFFLUENT METER VAULT	
S340	PLANS AND SECTION
EFFLUENT METER VALVE VAULT	
S360	PLANS AND SECTION
ELECTRICAL BUILDING	
S500	PLANS
S501	SECTIONS AND DETAILS
STRUCTURAL STANDARD DETAILS	
SD01	SHEET 1
SD02	SHEET 2
SD03	SHEET 3
SD04	SHEET 4
SD05	SHEET 5

ARCHITECTURAL

DRAWING NO	SHEET NAME
ELECTRICAL BUILDING	
A500	SCHEDULES AND PLANS
A501	ELEVATIONS AND DETAILS

HVAC

DRAWING NO	SHEET NAME
H001	LEGEND, GENERAL NOTES, AND ABBREVIATIONS
H002	SCHEDULES AND AIRFLOW DIAGRAMS
ELECTRICAL BUILDING	
H500	PLAN
HVAC STANDARD DETAILS	
HD01	SHEET 1

ELECTRICAL

DRAWING NO	SHEET NAME
E001	LEGENDS AND SYMBOLS
E002	ABBREVIATION AND GENERAL NOTES
E003	OVERALL SITE PLAN
E004	PUMP STATION DIVERSION AREA SITE PLAN
E005	EQ TANK AREA SITE PLAN
E006	MUD RUN METER VAULT SITE PLAN
E007	DUCTBANK SCHEDULES
E008	CONDUIT AND WIRE SCHEDULES
DIVERSION CHAMBER	
E100	AREA CLASSIFICATION PLANS AND SECTION
E101	PLANS
EQUALIZATION PUMP STATION	
E200	AREA CLASSIFICATION PLANS AND SECTION
E201	PLANS
INFLUENT METER VAULT	
E220	PLANS AND SECTION
EQUALIZATION TANKS	
E300	AREA CLASSIFICATION PLAN AND SECTION
E301	PLAN
E302	ENLARGED PLAN AND SECTION
E303	PANEL SCHEDULES AND RISER DIAGRAMS
E304	EQUIPMENT SUPPORT STRUCTURE DETAILS
E305	ELEMENTARY CONTROL SCHEMATICS
INFLUENT VALVE VAULT	
E320	AREA CLASSIFICATION PLANS AND SECTION
E321	PLANS
EFFLUENT VALVE VAULT	
E330	AREA CLASSIFICATION PLANS AND SECTION
E331	PLANS
EFFLUENT METER VAULT	
E340	PLANS AND SECTION
EFFLUENT METER VALVE VAULT	
E360	PLANS AND SECTION
ELECTRICAL BUILDING	
E500	PLANS
E501	MCC-ELB SINGLE LINE DIAGRAM AND ELEVATION
E502	PANEL SCHEDULES AND RISER DIAGRAMS
E503	CONTROL BLOCK DIAGRAM
E504	ELEMENTARY CONTROL SCHEMATICS
ELECTRICAL STANDARD DETAILS	
ED01	SHEET 1
ED02	SHEET 2
ED03	SHEET 3
ED04	SHEET 4

INSTRUMENTATION

DRAWING NO	SHEET NAME
I001	LEGEND, SYMBOLS AND ABBREVIATIONS
I002	PARTIAL NETWORK ARCHITECTURE DIAGRAM
PROCESS AND INSTRUMENTATION DIAGRAM	
I100	DIVERSION CHAMBER
I200	EQ PUMP STATION
I201	EQ PUMP STATION POWER MONITORING
I300	EQUALIZATION TANKS
INSTRUMENTATION STANDARD DETAILS	
ID01	STANDARD DETAILS - SHEET 1
ID02	STANDARD DETAILS - SHEET 2
ID03	STANDARD DETAILS - SHEET 3

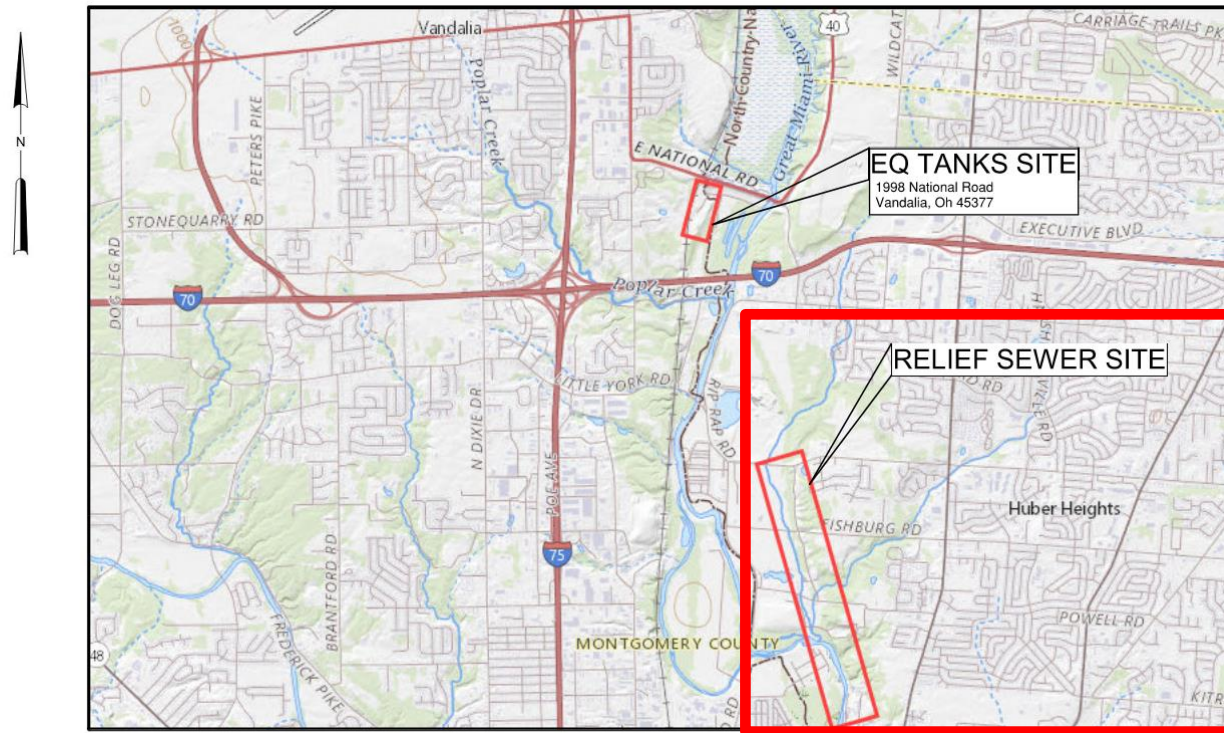
MUD RUN RELIEF SEWER PROJECT

- **Mud Run Metering Station**
- **Sewer from Chambersburg to WWTP**
- **Easements**
- **Tree Removal**
- **PTI**

MUD RUN RELIEF SEWER PROJECT

MUD RUN RELIEF SEWER

HAZEN CONTRACT NO. 55003-017
DECEMBER 2023



LOCATION PLAN
NOT TO SCALE

MUD RUN RELIEF SEWER PROJECT

GENERAL

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G001	COVER SHEET
G002	INDEX OF DRAWINGS
G003	LEGEND, SYMBOLS AND ABBREVIATIONS

CIVIL

DRAWING NO	SHEET NAME
C001	NOTES, LEGENDS, AND ABBREVIATIONS
C002	OVERALL SITE PLAN
C003	EXISTING CONDITIONS AND DEMOLITION PLAN
C004	ENLARGED SITE PLAN

RELIEF SEWER

C400	KEY MAP
C401	PLAN AND PROFILE - STA 10+00 TO STA 15+00
C402	PLAN AND PROFILE - STA 15+00 TO STA 20+00
C403	PLAN AND PROFILE - STA 20+00 TO STA 25+00
C404	PLAN AND PROFILE - STA 25+00 TO STA 30+00
C405	PLAN AND PROFILE - STA 30+00 TO STA 35+00
C406	PLAN AND PROFILE - STA 35+00 TO STA 40+00
C407	PLAN AND PROFILE - STA 40+00 TO STA 45+00
C408	PLAN AND PROFILE - STA 45+00 TO STA 50+00
C409	PLAN AND PROFILE - STA 50+00 TO STA 55+00
C410	PLAN AND PROFILE - STA 55+00 TO STA 60+00
C411	PLAN AND PROFILE - STA 60+00 TO STA 65+00
C412	PLAN AND PROFILE - STA 65+00 TO STA 70+00
C413	PLAN AND PROFILE - STA 70+00 TO STA 75+00
C414	PLAN AND PROFILE - STA 75+00 TO STA 80+00
C415	PLAN AND PROFILE - STA 80+00 TO STA 85+00
C416	PLAN AND PROFILE - STA 85+00 TO STA 90+00
C417	PLAN AND PROFILE - STA 90+00 TO STA 95+00
C418	PLAN AND PROFILE - STA 95+00 TO STA 98+77
C419	METERING STATION AND NRI JUNCTION STRUCTURE
C420	SITE AND GRADING PLAN
C421	STORM PIPE PLAN AND PROFILE
C421	EXISTING METERING STATION LAYOUT PLAN

SLUDGE LINE RELOCATION

C600	KEY MAP
C601	PLAN AND PROFILE - STA 10+00 TO STA 15+00
C602	PLAN AND PROFILE - STA 15+00 TO STA 20+00
C603	PLAN AND PROFILE - STA 20+00 TO STA 25+00
C604	PLAN AND PROFILE - STA 25+00 TO STA 30+00
C605	PLAN AND PROFILE - STA 30+00 TO STA 40+00
C606	PLAN AND PROFILE - STA 35+00 TO STA 40+00
C607	PLAN AND PROFILE - STA 40+00 TO STA 44+64

DETAILS

CD01	STANDARD DETAILS (1 OF 4)
CD02	STANDARD DETAILS (2 OF 4)
CD03	STANDARD DETAILS (3 OF 4)
CD04	STANDARD DETAILS (4 OF 4), CLIENT STANDARD DETAILS

MECHANICAL

DRAWING NO SHEET NAME

MUD RUN METER VAULT

M400	PLAN AND SECTION
M401	SECTION AND ISOMETRIC VIEW

PLANT WET WELL

M600	DEMOLITION - PLAN AND SECTIONS
M601	PLAN AND SECTIONS

PLANT JUNCTION STRUCTURE

M620	PLAN AND SECTIONS
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NRI JUNCTION STRUCTURE

M640	PLANS AND SECTION
M641	SECTIONS

PROCESS MECHANICAL STANDARD DETAILS

MD01	SHEET 1
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STRUCTURAL

DRAWING NO SHEET NAME

S001	GENERAL STRUCTURAL NOTES - SHEET 1
S002	GENERAL STRUCTURAL NOTES - SHEET 2

MUD RUN METER VAULT

S400	PLANS
S401	SECTIONS

PLANT WET WELL

S600	PLANS AND SECTION
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PLANT JUNCTION STRUCTURE

S620	PLANS AND SECTIONS
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NRI JUNCTION STRUCTURE

S640	PLANS AND SECTION
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STRUCTURAL STANDARD DETAILS

SD01	SHEET 1
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SD04	SHEET 4
SD05	SHEET 5

ARCHITECTURAL

DRAWING NO SHEET NAME

MUD RUN METERING VAULT

A400	FLOOR PLAN
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HVAC

DRAWING NO SHEET NAME

H001	LEGEND, GENERAL NOTES, AND ABBREVIATIONS
H002	SCHEDULES AND AIRFLOW DIAGRAMS

MUD RUN METER VAULT

H400	PLAN AND SECTION
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HVAC STANDARD DETAILS

HD01	SHEET 1
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E008	CONDUIT AND WIRE SCHEDULES

DIVERSION CHAMBER

E100	AREA CLASSIFICATION PLANS AND SECTION
E101	PLANS

EQUALIZATION PUMP STATION

E200	AREA CLASSIFICATION PLANS AND SECTION
E201	PLANS

INFLUENT METER VAULT

E220	PLANS AND SECTION
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EQUALIZATION TANKS

E300	AREA CLASSIFICATION PLAN AND SECTION
E301	PLAN
E302	ENLARGED PLAN AND SECTION
E303	PANEL SCHEDULES AND RISER DIAGRAMS
E304	EQUIPMENT SUPPORT STRUCTURE DETAILS
E305	ELEMENTARY CONTROL SCHEMATICS

INFLUENT VALVE VAULT

E320	AREA CLASSIFICATION PLANS AND SECTION
E321	PLANS

EFFLUENT VALVE VAULT

E330	AREA CLASSIFICATION PLANS AND SECTION
E331	PLANS

EFFLUENT METER VAULT

E340	PLANS AND SECTION
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EFFLUENT METER VALVE VAULT

E360	PLANS AND SECTION
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MUD RUN METER VAULT

E400	AREA CLASSIFICATION PLANS AND SECTIONS
E401	PLANS
E402	LIGHTING PLANS
E403	PANEL SCHEDULE, RISER DIAGRAMS, AND BLOCK DIAGRAMS
E404	ELEMENTARY CONTROL SCHEMATIC

ELECTRICAL STANDARD DETAILS

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I002	PARTIAL NETWORK ARCHITECTURE DIAGRAM

PROCESS AND INSTRUMENTATION DIAGRAM

I400	MUD RUN METER VAULT
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INSTRUMENTATION STANDARD DETAILS

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ID03	STANDARD DETAILS - SHEET 3

FUNDING PLAN / REQUIREMENTS

- **Publicly Bid EQ Tree Removal**
 - **Reimburse on EQ Const. Loan**
 - **EQ Planning Loan (original) Rolled into EQ Const. Loan**
- **Bid EQ Tanks Project**
 - **MCD Lease Agreement**
 - **PTI**
- **Bid Mud Run Project**
 - **Waiting on Easements and Tree Removal**
 - **Start in October (tree clearing requirements)**
 - **Roll Planning Loan (amendment) into Sewer Const. Loan**

EASEMENTS

- **Planning on having by early March**
 - **Confirm with Anna**

PERMITS

- **PTI Submitted 11/7/23**
 - **Anticipate having by 1/6/24 (60 day review period)**
 - **Need to have before bidding EQ**
 - **Sewer work is included**
- **Construction Permits**
- **Right-of-Way Permits**

OPINION OF PROBABLE CONSTRUCTION COST

Deliverable	EQ Site	Relief Sewer	Sludge Line	Total Cost	Notes
Planning	\$11.74 M	\$8.89 M	\$ -	\$20.63 M	•Class IV Estimate (-30% to +50%) •Initial AquaStore Est. \$2.63 M
30%	\$16.14 M	\$7.63 M	\$ -	\$23.77 M	•AquaStore increased Est. to \$4.63 M •Foundation/ GeoPeirs Not included •Included 30% Construction Contingency
60%	\$16.38 M	\$7.48 M	\$0.63 M	\$24.48 M	•Added Sludge Line Replacement to Project •Additional Tank details included •Contingency only reduced to 25%
90%	\$15.88 M	\$8.24 M	\$0.45 M	\$24.57 M	•Contingency Reduced to 5% •Increase in Relief Sewer size to 30" •Communications Antenna (100')
*100%	\$15.49 M	\$7.8 M	\$0.43 M	\$23.72 M	•Contingency Reduced to 0% •Included cable/conduit pricing •Updated equipment quotes

* Cost shown are for all work combined into 1 bid package. If separated into two separate projects the general conditions would increase within each package (i.e. - separate supervision and trailers, etc)

HAZEN CONSTRUCTION SERVICES

- **EQ Site – \$476,000**
 - 18 Month Construction
 - On Site RPR 2 Days a week
- **Mud Run – \$ 261,000**
 - 12 Month Construction
 - On Site RPR 1 Day a week
- Projects assumed to end at the same time, and where possible progress meetings and site visits will be combined to reduce costs.

HAZEN CONSTRUCTION SERVICES

Tri Cities Wastewater Authority - Taylorsville EQ Improvements Additional Services Fee for Construction Phase and RPR Services 12/19/2023												
TASK	VP	TA/QC	PM	SAS	SPE	PE	AE	AD	DD	RPR	Total Hours	Fee Labor
Hourly Rate =	\$ 90.00	\$ 80.00	\$ 70.00	\$ 85.00	\$ 54.00	\$ 45.00	\$ 40.00	\$ 34.00	\$ 43.00	\$ 45.00		
Task 100 Mud Run Relief SewerConstruction Services												
Pre-Construction Meeting / Conformed Drawings			8		8			2	24		42	\$ 6,736
Progress Meetings (12)			96					32			128	\$ 25,142
Submittal Review (Assume 30 Shop Dwgs)			40			20	120	60			240	\$ 33,939
CA (12 Pay Apps, 20 RFIs, Materials Reports, 2 COs) 12 mn		32	100		240	24	16	80			492	\$ 86,811
Schedule Reviews			72			72					144	\$ 26,662
RPR (one day per week for 12 months),			40		20					416	476	\$ 72,772
Record Drawings			4		16				40		60	\$ 9,222
TASK TOTAL =	0	32	360	0	284	116	136	174	64	416	1582	\$ 261,284
Task 200 Taylorsville EQ Construction Services												
Pre-Construction Meeting / Conformed Drawings			8		8			2	80		98	\$ 14,490
Progress Meetings (6)			48					16			64	\$ 12,571
Submittal Review (Assume 80 Shop Dwgs & 10 O&M Manuals)			100			55	320	160			635	\$ 89,242
CA (12+6=18 Pay Apps, 20 RFIs, Materials Reports, 2 COs)		24	60		80	24	16	60			264	\$ 45,724
Schedule Reviews			72			144					216	\$ 37,094
Start-up Assistance		40	40								80	\$ 19,320
RPR (two days per week for 18 months), Special Inspections			60	20	20					1248	1348	\$ 203,311
Record Drawings			24			32			320		376	\$ 54,354
TASK TOTAL =	0	64	412	20	108	255	336	238	400	1248	3081	\$ 476,106
Labor Hours Subtotal	0	96	772	20	392	371	472	412	464	1664	4663	
Labor Fee Subtotal												\$ 737,390
Multiplier 3.22												
Hazen and Sawyer Labor Classifications												
VP - Vice-President												
TA/QC - Technical Advisor / Quality Control												
PM - Project Manager												
SAS - Senior Associate												
SPE - Senior Principal Engineer												
PE - Project Engineer												
AE - Assistant Engineer												
AD - Administrative												
DD - Design Drafter												
RPR - Resident Project Representative (Inspector)												
Subconsultants												
Surveying												Total \$
Geotechnical												\$ -
Total												\$ -
Subs and Expenses												
Mileage						22500					\$ 0.655	\$ 14,738
Shipping						1 LS					\$ 150,000	\$ 150
Outside Reproductions						1 LS					\$ 1,000,000	\$ 1,000
Miscellaneous						1 LS					\$ 270.00	\$ -
Other Direct Costs Subtotal												\$ 15,888
GRAND TOTAL FEE FOR ADDITIONAL SERVICES												\$ 752,127
Hazen												

QUESTIONS