ADDENDUM No. 1

RFP No. 22-79

Water Tower Fall Protection Systems

Due: December 20, 2022 at 2:00 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes eighteen (18) pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment C– City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment E - City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment F - Conflict of Interest Disclosure Form of the RFP Document**
- **Attachment H – Prevailing Wage Declaration of Compliance**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Additions:

Item 1: Section II – Scope of Services Pg. 10. “City’s Responsibilities” add:

4. City to provide plans/drawings for the Manchester and South Industrial water towers, that contain details for ladders, platforms, hatches, walkthroughs and site elevations. Note all measurements for these areas and the Plymouth Road water tower are to be field verified by the selected contractor.

Attachment A.	Drawings for the City of Ann Arbor, Manchester Water Tower
Attachment B.	Elevation Drawings for South Industrial Water Tower

Item 2: “Itemized Bid Form” delete table and replace with the table below:

Itemized Bid Form

Location	Description	Price
Plymouth Road Water Tower	**Design, Materials and Installation of Fall Protection Systems** 1. Vertical Lifeline System for 3 ladders (*see est. measurements example in Attachment C)* 2. Anchorage points at each ladder landing 3. Add hand hold/anchorage point outside of exiting upper hatch 4. *Contractor to install 6 rigid floor hole coverings (see example in Attachment C).. All measurements to be field verified.* *Alternate 1: Design, supply and install new aluminum hatch that meets the minimum requirements of MIOSHA (see example in Attachment C).*	**1. $_____** **2. $_____** **3. $_____** **Alternate 1. $_____**
Manchester Water Tower	**Design, Materials and Installation of Fall Protection Systems** 1. Vertical Lifeline System for 3 ladders 2. Add anchorage points at each ladder landing 3. Add hand hold/anchorage point outside of upper hatch 4. Railing and swing gates where necessary on platforms 5. *Contractor to install 2 rigid floor hole coverings (see example in Attachment C). All measurements to be field verified.* 6. Repair spalling concrete and verify ladder can support maximum intended load *(see example in Attachment C).*	**1. $_____** **2. $_____** **3. $_____** **4. $_____** **5. $_____** **6. $_____**
South Industrial Water Tower	**Design, Materials and installation of LIFE Line System** 1. Add Ladder extension with security cover. 2. Integrate swing gate to existing guardrail 3. Install Vertical Lifeline System to ladder	**1. $_____** **2. $_____** **3. $_____**

Other (*additional items proposed by vender not identified in the scope*)	**Other Items** 1. 2. 3.	**1. $_____** **2. $_____** **3. $_____**

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Will the City provide finish/paint requirements and specs for each tower if welding/modification is required?

Answer 1: Yes. The paint or coating specifications and requirements are provided in Attachment D.

Question 2: Will the City provide welding specifications/requirements/procedures?

Answer 2: The City has provided specifications and requirements are provided in Attachment E. In addition, the selected contractor shall provide fall protection system design and specifications developed and overseen by a qualified and/or certified person.

Question 3: How many tie-off points are required at the top/roof of towers at Plymouth Road and Manchester?

Answer 3: Plymouth Road water tower requires two (2) tiedowns and Manchester requires one (1).

Question 4: Is the south industrial tower going to need a catwalk or platform added at the top of the ladder?

Answer 4: The City requests proposals for a comprehensive fall protection system that provides safe access to the ladder and serviceable components on top of the tower. This may be accomplished by multiple different means including a catwalk, integrated guardrails or a vertical life lin. Please note, the contractor may propose more than one if desired.

Question 5: Is a security cover going to be required on the new ladder section as the tower is behind a locked fence?

Answer 5: Yes. The City would prefer to include an additional deterrent mechanism for ladder access.

Question 6: Can you confirm that a list of attendees, following the November 22nd pre-proposal meeting, will be published as an amendment?

Answer 6: The attendees to the November 22nd pre-proposal meeting are listed below:

Dean Cobb	MDTS
Dimitri Pervolarakis	Premier Safety
Joel Buck	Skyline Fall Protection
Dan Larmaan	Agile Safety

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

Attachment A:	Manchester Water Tower Drawings
Attachment B:	South Industrial Water Tower Drawings
Attachment C:	Pictures
Attachment D:	Welding Specifications
Attachment E:	Paint/Coating Specifications

Attachment A

Drawings for the City of Ann Arbor, Manchester Water Tower

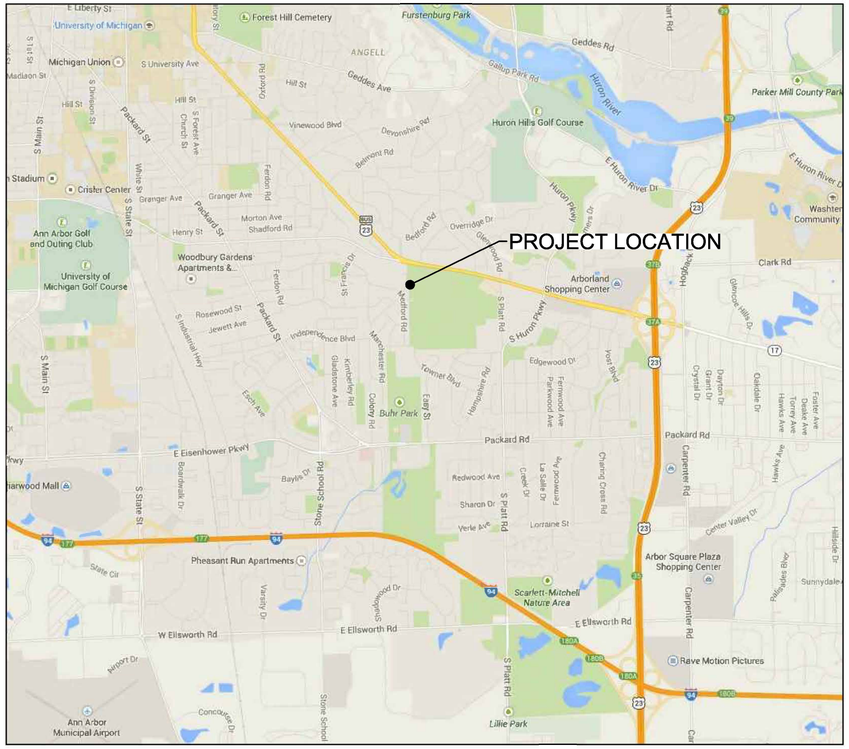
CITY OF ANN ARBOR, MICHIGAN
MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT

710 AVIS DRIVE, SUITE 100
ANN ARBOR, MI 48108
Tel. 734.665.6000 Fax. 734.213.3003

DIXON ENGINEERING, INC.
Ann Arbor, MI 0.50 MG Spheroid

www.tetratech.com

TETRA TECH



LOCATION MAP
SCALE: NONE

N

SHEET INDEX

SHEET NO.	SHEET TITLE
GENERAL	
G-000	COVER
G-001	GENERAL NOTES AND LEGEND
CIVIL	
C-101	SITE PLAN
C-301	TANK ELEVATION PROPOSED IMPROVEMENTS
C-500	SITE DETAILS
PROCESS	
D-001	PIPING LEGEND
D-101	TANK FLOOR PLAN - INTERIOR AND SITE
D-102	TANK INTERIOR GROUND LEVEL DEMOLITION
D-103	TANK INTERIOR GROUND LEVEL PROPOSED
D-500	PIPING DETAILS
D-501	PIPING DETAILS
STRUCTURAL	
S-101	STRUCTURAL PLAN AND SECTIONS
S-500	PLATFORM AND HATCH DETAILS
ELECTRICAL	
E-001	ELECTRICAL LEGEND
E-101	ELECTRICAL SITE PLAN
E-102	ELECTRICAL WATER TOWER PLAN
E-103	INSTRUMENTATION WATER TOWER PLAN
E-500	ELECTRICAL HEAT TRACE
E-501	ELECTRICAL HEAT TRACE
E-502	ELECTRICAL DETAILS
E-601	ELECTRICAL SCHEDULE
E-801	ELECTRICAL CONTROL PANEL
E-802	ELECTRICAL CONTROL PANEL
ED-101	ELECTRICAL REMOVAL PLAN
ED-102	ELECTRICAL DEMO PLAN

PROJECT LOCATION:

2011 MANCHESTER RD
ANN ARBOR, MI 48104

CLIENT INFORMATION:

CITY OF ANN ARBOR
WATER TREATMENT SERVICES UNIT

Tt PROJECT No.:

200-31537-15001

CLIENT PROJECT No.:

CONTRACT NO. 1 - ITB #: 4399, FILE #: 16001
CONTRACT NO. 2 - ITB #: 4400, FILE #: 16002

PROJECT DESCRIPTION / NOTES:

THIS PROJECT IS DIVIDED INTO TWO (2) CONTRACTS:
CONTRACT NO. 1 - MECHANICAL, ELECTRICAL AND MISCELLANEOUS WORK

CONTRACT NO. 2 - TANK COATING, ART PAINTING, METAL REPAIRS AND MISCELLANEOUS WORK

ISSUED:

AUGUST 6, 2015 - ISSUED FOR BIDS
AUGUST 28, 2015 - ADDENDUM NO. 1
MARCH 1, 2017 - CONFORMING TO CONSTRUCTION

VICINITY MAP:

SITE LEGEND (NOTE: NOT ALL SYMBOLS MAY BE USED)

SITE SYMBOLS

FEATURES

- EXISTING SIGN
- PROPOSED SIGN
- TRASH RECEPTACLE (TR)
- PICNIC TABLE
- POST (P)
- MAIL BOX (MB)
- POWER METER (PM)
- FLAG POLE (FLAG)
- ROCK (R)
- GUY WIRE
- UTILITY POLE
- DECIDUOUS TREE
- EVERGREEN TREE
- PALM TREE
- BUSH
- STUMP

STORM / DRAINAGE

- EXISTING MANHOLE (SD)
- PROPOSED MANHOLE (SD)
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING INLET BASIN (SD)
- PROPOSED INLET BASIN (SD)
- PROPOSED INLET BASIN (SD)

MISCELLANEOUS

- MONITORING WELL (MW-)
- SOIL BORING (B-)
- MANHOLE W/ ID (MH-??)
- SPOT ELEVATION (×???.??)
- SLOPE ARROW (1%)
- SLOPE ARROW (1%)
- HANDICAP MARKING
- FUTURE IMPROVEMENTS (F)

SURVEY

- FOUND PROPERTY CORNER (FI)
- SET PROPERTY CORNER (SI)
- FOUND MONUMENT (FM)
- SET MONUMENT (SM)
- OWNERSHIP TIE
- SECTION CORNER
- BENCHMARK (BM#)
- KEY NOTE
- SOIL EROSION AND SEDIMENTATION CONTROL NOTE

UTILITY SYMBOLS

WATER

- DRINKING FOUNTAIN (DF)
- EXISTING VALVE IN BOX (WV)
- PROPOSED VALVE IN BOX (WV)
- EXISTING CURB STOP (WCS)
- PROPOSED CURB STOP (WCS)
- METER (WM)
- EXISTING VALVE MANHOLE (W)
- PROPOSED VALVE MANHOLE (W)
- EXISTING WELL (WELL)
- PROPOSED WELL (WELL)
- EXISTING FIRE HYDRANT (FH)
- PROPOSED FIRE HYDRANT (FH)
- SPRINKLER HEAD (SH)
- IRRIGATION BOX (IJ)
- SPIGOT (SPIG)
- LOCATION FLAG (W)

SANITARY SEWER

- EXISTING MANHOLE (SS)
- PROPOSED MANHOLE (SS)
- EXISTING AIR RELEASE STRUCTURE (ARS)
- PROPOSED AIR RELEASE STRUCTURE (ARS)
- EXISTING IN-LINE FLUSH CONNECTION (ILFC)
- PROPOSED IN-LINE FLUSH CONNECTION (ILFC)
- EXISTING IN-LINE FLUSH CONNECTION (TFC)
- PROPOSED IN-LINE FLUSH CONNECTION (TFC)
- EXISTING CLEAN OUT (CO)
- PROPOSED CLEAN OUT (CO)
- EXISTING SEWER VALVE (SV)
- PROPOSED SEWER VALVE (SV)
- EXISTING CURB STOP (SCS)
- PROPOSED CURB STOP (SCS)
- PUMP STATION (SIMPLEX)
- PUMP STATION (DUPLEX)
- SEWER LATERAL
- LOCATION FLAG (SS)

NATURAL GAS

- MARKER (G)
- LOCATION FLAG (G)
- VALVE (GV)

CABLE TV

- RISER (TV)
- LOCATION FLAG (TV)
- JUNCTION BOX (CJ)

COMMUNICATIONS

- TELEPHONE (TEL)
- BOX OR RISER (TB)
- JUNCTION BOX (TJ)
- FIBER OPTIC BOX (FO)
- LOCATION FLAG (T)
- FIBER OPTIC FLAG (FO)
- MANHOLE (TEL)
- VAULT (TEL)
- SATELLITE DISH

UTILITY SYMBOLS (CONT'D.)

ELECTRICAL

- METER (EM)
- TRANSFORMER (ET)
- BOX OR RISER (EB)
- LOCATION FLAG (E)
- LIGHT POLE
- EXTERIOR BUILDING LIGHT
- TRAFFIC SIGNAL POLE (TSP)
- TRAFFIC SIGNAL CONTROL (BOX) (TS)
- RAIL ROAD SIGNAL (RR)
- MANHOLE (ELEC)
- JUNCTION BOX (EJ)

FEATURE HATCHING

- EXISTING ASPHALT TO BE DEMOLISHED
- EXISTING CONCRETE TO BE DEMOLISHED
- PROPOSED PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED LIGHT DUTY ASHPALT PAVEMENT
- PROPOSED HEAVY DUTY ASHPALT PAVEMENT
- PROPOSED GRAVEL
- WETLAND AREA
- PROPOSED SOD

FEATURES & FEATURE LINES

- GRADING LIMITS
- RIGHT OF WAY LINE
- SECTION LINE
- UTILITY EASEMENTS
- EXISTING CONTOUR - MAJOR (900)
- EXISTING CONTOUR - MINOR (899)
- PROPOSED CONTOUR - MAJOR (899)
- PROPOSED CONTOUR - MINOR (899)
- EROSION SILT FENCE (SF)
- EROSION SUPER SILT FENCE (SSF)
- FENCE (WOOD)
- FENCE (STEEL)
- FLOOD HAZARD AREA
- FLOW ARROW
- GUARD RAILING
- GRAVEL ROAD OR DRIVE
- RAIL ROAD TRACKS
- ROCK RETAINING WALL
- TREE / BRUSH LINES
- CLEARING & GRUBBING LIMITS
- WATER EDGES
- DITCH CENTER LINE
- WETLAND BOUNDARY
- PROPOSED SUPERSTRUCTURE
- EXISTING SUPERSTRUCTURE
- STRUCTURE (TANKS, ETC.)
- EXISTING UNDERGROUND STRUCTURE
- FUTURE STRUCTURE

UTILITY LINES

- CABLE TV OVERHEAD (OTV)
- CABLE TV UNDERGROUND (UTV)
- COMMUNICATION FIBER OPTIC (FO)
- COMMUNICATION OVERHEAD (OT)
- COMMUNICATION UNDERGROUND (UT)
- ELECTRIC OVERHEAD (OE)
- ELECTRIC UNDERGROUND (UE)
- NATURAL GAS (G)
- NATURAL GAS HIGH PRESSURE (HPG)
- JET FUEL (JT)
- SANITARY FORCEMAIN (FM)
- SANITARY SEWER LINE (SS)
- STORM DRAIN (SD)
- STORM ROOF DRAIN (RD)
- STEAM (SM)
- FIRE PROTECTION (F)
- WATER MAIN (W)
- UTILITY LINE 36" AND LARGER (36"SS)

NOTE: HEAVIER LINE WEIGHTS INDICATE PROPOSED WORK.

GENERAL NOTES

1. THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION; THE CONTRACTOR SHALL CONTACT MISS DIG (1-800-482-7171) FOR LOCATION OF UNDERGROUND UTILITIES LOCATED IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR RELOCATION OF EXISTING UTILITIES, IF REQUIRED.
2. UNDERGROUND UTILITIES AS SHOWN HEREON WERE TAKEN FROM EXISTING PLANS AND ARE APPROXIMATE LOCATIONS ONLY. UNDERGROUND UTILITY LOCATIONS HAVE NOT BEEN FIELD VERIFIED.
3. UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE CONSTRUCTION PLANS, ALL SIDEWALK, DRIVES, CULVERTS, GUARDRAILS AND ABOVE GROUND UTILITIES DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED, INCIDENTAL TO THE COST OF CONSTRUCTION, AT NO EXPENSE TO THE OWNER.
4. EXISTING WATER MAINS, GAS MAINS AND UNDERGROUND TELEPHONE, ELECTRIC AND CABLE TELEVISION CONDUITS AND/OR LINES ARE SHOWN ONLY IN THE PLAN VIEW OF THE CONSTRUCTION DRAWINGS. THE EXACT DEPTH OF THESE UTILITIES IS NOT KNOWN AND THEREFORE, NO ATTEMPT HAS BEEN MADE TO SHOW SUCH UTILITIES IN THE PROFILE OF THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THESE UTILITIES WHICH ARE NOT WITHIN THE SPACE OCCUPIED BY COMPLETED PIPES OR STRUCTURES THAT ARE A PART OF THIS CONTRACT. DURING CONSTRUCTION, IF DAMAGED OR DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS TO REPAIR OR REPLACE THEM AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES IN A MANNER ACCEPTABLE TO THE ENGINEER DURING THE PROPOSED CONSTRUCTION. ANY UTILITY, WHICH IS TO REMAIN IN SERVICE, THAT IS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT POINTS OF POSSIBLE CONFLICT SO THAT THESE CONFLICTS CAN BE RESOLVED.
7. CONTRACTOR SHALL INSTALL SILT FENCING ALONG THE DOWN SLOPE SIDE OF ALL EXCAVATIONS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE TELECOM COMPANIES AND THEIR EXISTING EQUIPMENT ON SITE.

SESC NOTES:

1. CONTRACTOR RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE ANY TEMPORARY SESC MEASURES AFTER PROJECT COMPLETION. CONTRACTOR RESPONSIBLE FOR OBTAINING, EXERCISING AND PERFORMING ALL WORK IN ACCORDANCE WITH THE CONDITIONS PROVIDED BY THE ISSUER OF THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT.
2. ENGINEER TO VERIFY PROPER INSTALLATION OF APPROVED SESC MEASURES PRIOR TO COMMENCEMENT OF EARTH DISTURBANCE ON SITE.
3. ALL TEMPORARY SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO EARTH DISTURBANCE ACTIVITY AND CHECKED DAILY FOR EFFECTIVENESS AND REPAIRED AS NEEDED.

ALL WORK SHOWN ON THIS SHEET SHALL BE CONSIDERED APPLICABLE TO BOTH CONTRACTS UNDER THE MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT.

TETRA TECH
www.tetratech.com
710 Avis Drive, Suite 100
Ann Arbor, MI 48106
Tel 734-665-6000, Fax 734-213-3003

MARK	DATE	DESCRIPTION	BY
	8/06/15	ISSUED FOR BIDS	
1	3/01/17	CONFORMING TO CONSTRUCTION	

CITY OF ANN ARBOR, MICHIGAN

MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

GENERAL NOTES AND LEGEND

Project No.:	200-31537-15001
Designed By:	EMS
Drawn By:	EMS
Checked By:	BMR

G-001

Bar Measures 1 inch

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ALL REFERENCE INFORMATION AND WORK SHOWN ON THIS SHEET SHALL BE CONSIDERED APPLICABLE TO BOTH CONTRACTS UNDER THE MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT, UNLESS NOTED OTHERWISE.

CONTRACT NO. 1

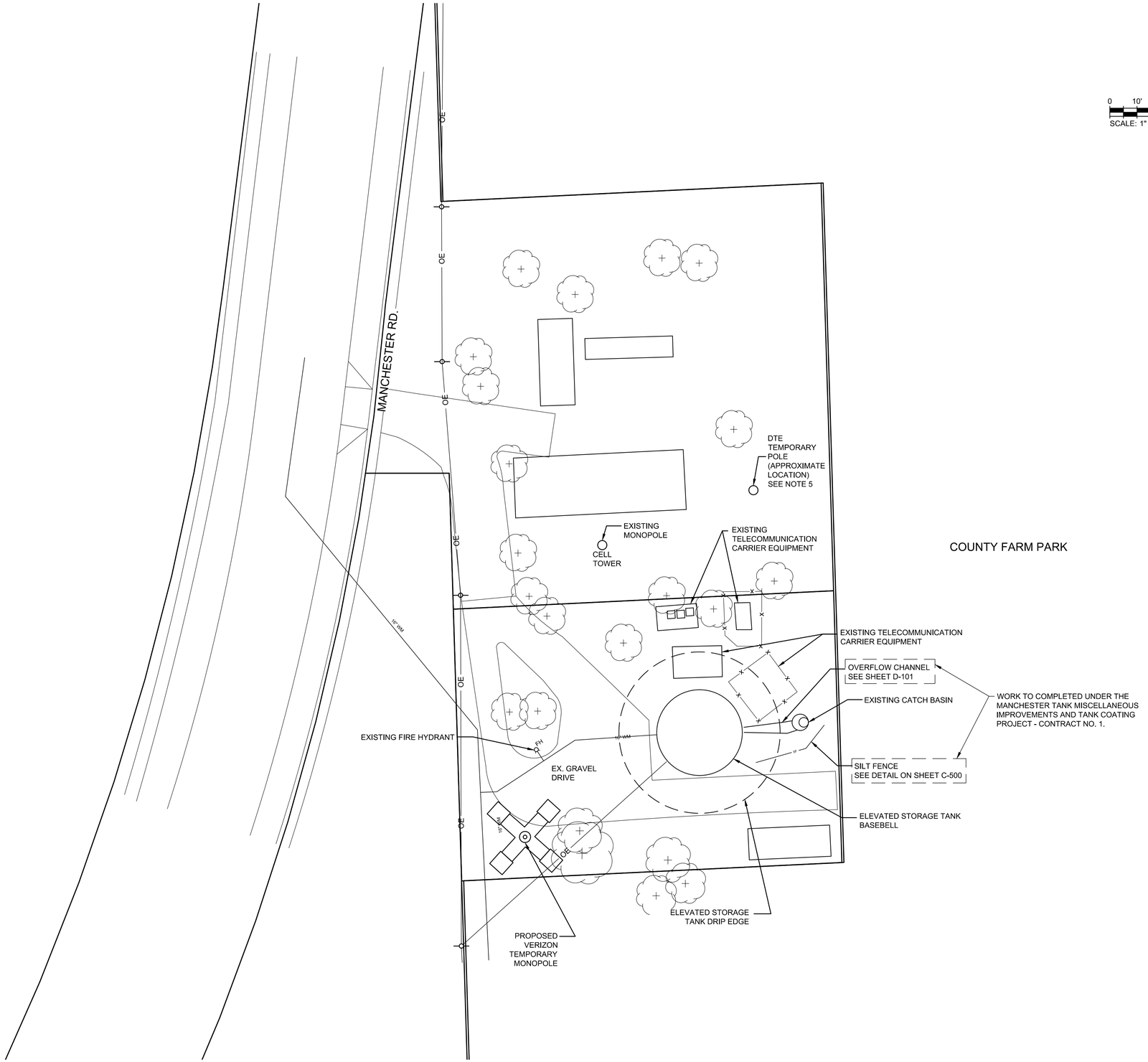
NOTES:

1. ALL LOCATIONS AND DIMENSIONS OF EXISTING FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY SITE CONDITIONS AND EXISTING FEATURES PRIOR TO COMMENCING WORK.
2. REPAIR AND REGRADE EXISTING GRAVEL DRIVE. REPLACE MINIMUM OF 6" TOP COURSE WITH MDOT 23A MODIFIED LIMESTONE IN ACCORDANCE WITH MDOT STANDARD CONSTRUCTION SPECIFICATIONS.
3. PLACE ONE (1) PROJECT SIGN IN ACCORDANCE WITH DETAIL ON SHEET C-500.
4. PROTECT TREES AND TELECOMMUNICATION MONOPOLES IN ACCORDANCE WITH ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, DIVISION I - GENERAL SPECIFICATIONS "PROTECTION OF TREES" AND STANDARD DETAIL SD-M-1.
5. ADDITIONAL CABLES WILL BE RUN TO DTE PROPERTY DURING CONSTRUCTION AND ARE NOT CURRENTLY SHOWN.

CONTRACT NO. 2

NOTES:

1. ALL LOCATIONS AND DIMENSIONS OF EXISTING FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY SITE CONDITIONS AND EXISTING FEATURES PRIOR TO COMMENCING WORK.
2. MAINTAIN PROTECTION OF TREES AND TELECOMMUNICATION MONOPOLES AS ESTABLISHED IN CONTRACT NO. 1 IN ACCORDANCE WITH ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS.
3. ADDITIONAL CABLES WILL BE RUN TO DTE PROPERTY DURING CONSTRUCTION AND ARE NOT CURRENTLY SHOWN.



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CITY OF ANN ARBOR, MICHIGAN

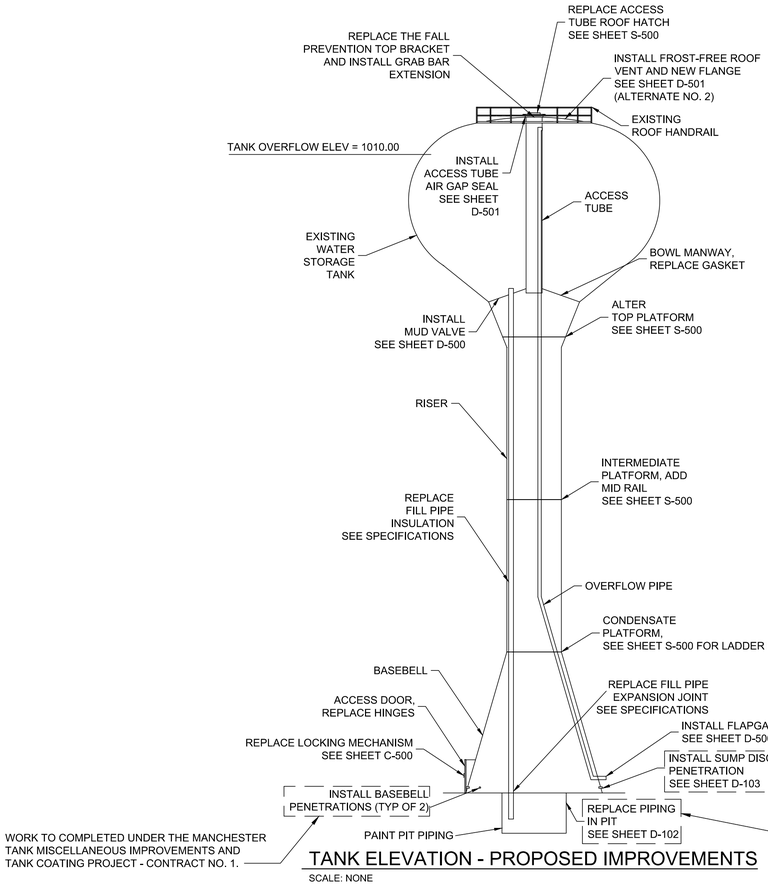
MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

SITE PLAN

Project No.:	200-31537-15001
Designed By:	EMS
Drawn By:	EMS
Checked By:	BMR

C-101

Bar Measures 1 inch



TANK ELEVATION - PROPOSED IMPROVEMENTS

SCALE: NONE

ALL WORK SHOWN ON THIS SHEET SHALL BE COMPLETED UNDER THE MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT - CONTRACT NO. 2, UNLESS NOTED OTHERWISE.

NOTES:
1. THE DRY INTERIOR IS TO BE REPAINTED INCLUDING THE FILL PIPE, AS PART OF CONTRACT NO. 2.
2. ALL PIT PIPING AND VALVES ARE TO BE PAINTED AS PART CONTRACT NO. 2.
3. THE TANK EXTERIOR IS TO BE REPAINTED AS PART OF CONTRACT NO. 2.
4. THIS DRAWING IS FOR REFERENCE ONLY. ORIENTATION OF ITEMS MAY VARY.
5. SEE SPECIFICATION SECTION 05 00 00 FOR DETAILS ON IMPROVEMENTS ASSOCIATED WITH BOTH CONTRACTS OF THE MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT.

TETRA TECH
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Ann Arbor, MI 48106
Tel 734-665-6000, Fax 734-213-3003

MARK	DATE	DESCRIPTION	BY
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1	3/01/17	CONFORMING TO CONSTRUCTION	

CITY OF ANN ARBOR, MICHIGAN

MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

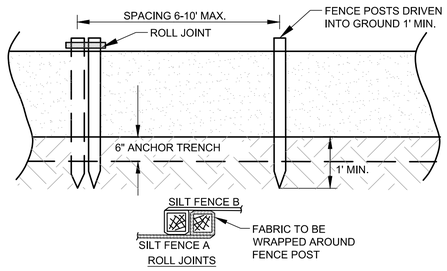
TANK ELEVATION PROPOSED IMPROVEMENTS

Project No.:	200-31537-15001
Designed By:	EMS
Drawn By:	EMS
Checked By:	BMR

C-301

Bar Measures 1 inch

WORK TO BE COMPLETED UNDER CONTRACT NO. 1



SILT FENCE

SCALE: NONE

SURVEILLANCE SIGNAGE

SCALE: NONE

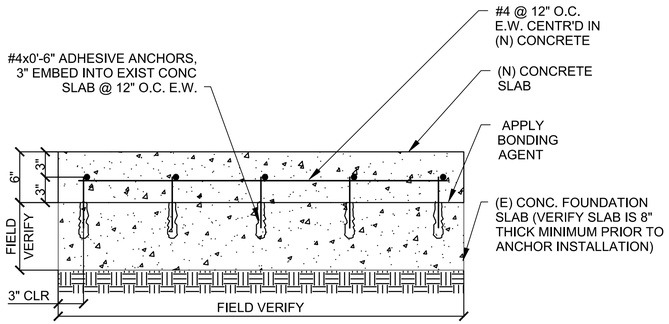
NOTES:
1. CONSTRUCTION SIGN SHALL BE BAKED ENAMEL ALUMINUM.
2. CONSTRUCTION SIGN COLORS SHALL MATCH SIMILAR SIGNS USED AT OTHER CITY OF ANN ARBOR SITES.
3. LETTERING SHALL BE DIE CUT VINYL LAMINATED ONTO THE PANEL. VINYL SHALL BE SUITABLE FOR EXTERIOR APPLICATIONS.
4. COLORS SHALL BE AS SHOWN.
5. 1 EACH OF SIGN, LOCATION TO BE DETERMINED IN FIELD.

WORK TO BE COMPLETED UNDER CONTRACT NO. 2

NORTH CAMPUS (PLYMOUTH ROAD) ELEVATED WATER STORAGE TANK LOCKING MECHANISM (FOR REFERENCE ONLY)

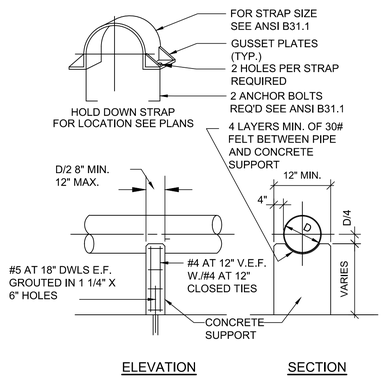
SCALE: NONE

NOTES:
1. SEE SPECIFICATION SECTION 05 00 00 FOR DETAILS.
2. PROVIDE SIMILAR LOCKING MECHANISM AND CONFIGURATION AT MANCHESTER TANK.



EQUIPMENT PAD MODIFICATION

SCALE: NONE



CONCRETE PIPE SUPPORT

SCALE: NONE

8' - 0"

4' - 0"

MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT

OWNER:
CITY OF ANN ARBOR
PUBLIC SERVICES DEPARTMENT
WATER TREATMENT SERVICES UNIT

CONTRACTORS:

ENGINEER:
TETRA TECH
ANN ARBOR, MI

DIXON ENGINEERING, INC.
LAKE ODESSA, MI

PROPOSED CONSTRUCTION SCHEDULE:

FOR MORE INFORMATION, PLEASE CONTACT _____, CITY OF ANN ARBOR AT (734) _____ EXT. ____ OR _____@a2gov.org

PROJECT SIGN DETAIL

SCALE: NONE

NOTES:
1. CONSTRUCTION SIGN SHALL BE BAKED ENAMEL ALUMINUM SHEET LAMINATED ONTO 2 SIDES OF A TRUSS TYPE CORRUGATED SHEET OF POLYMER CORE.
2. CONSTRUCTION SIGN SHALL BE STANDARD WHITE.
3. LETTERING SHALL BE DIE CUT VINYL (BLACK) LAMINATED ONTO THE PANEL. VINYL SHALL BE SUITABLE FOR EXTERIOR APPLICATIONS.
4. 1 EACH OF SIGN, LOCATION TO BE DETERMINED IN FIELD.
5. SECURE WITH TWO (2) 4X4 SET INTO CONCRETE.

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MARK	DATE	DESCRIPTION	BY
1	3/01/17	CONFORMING TO CONSTRUCTION	
	8/06/15	ISSUED FOR BIDS	

CITY OF ANN ARBOR, MICHIGAN
MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

SITE DETAILS

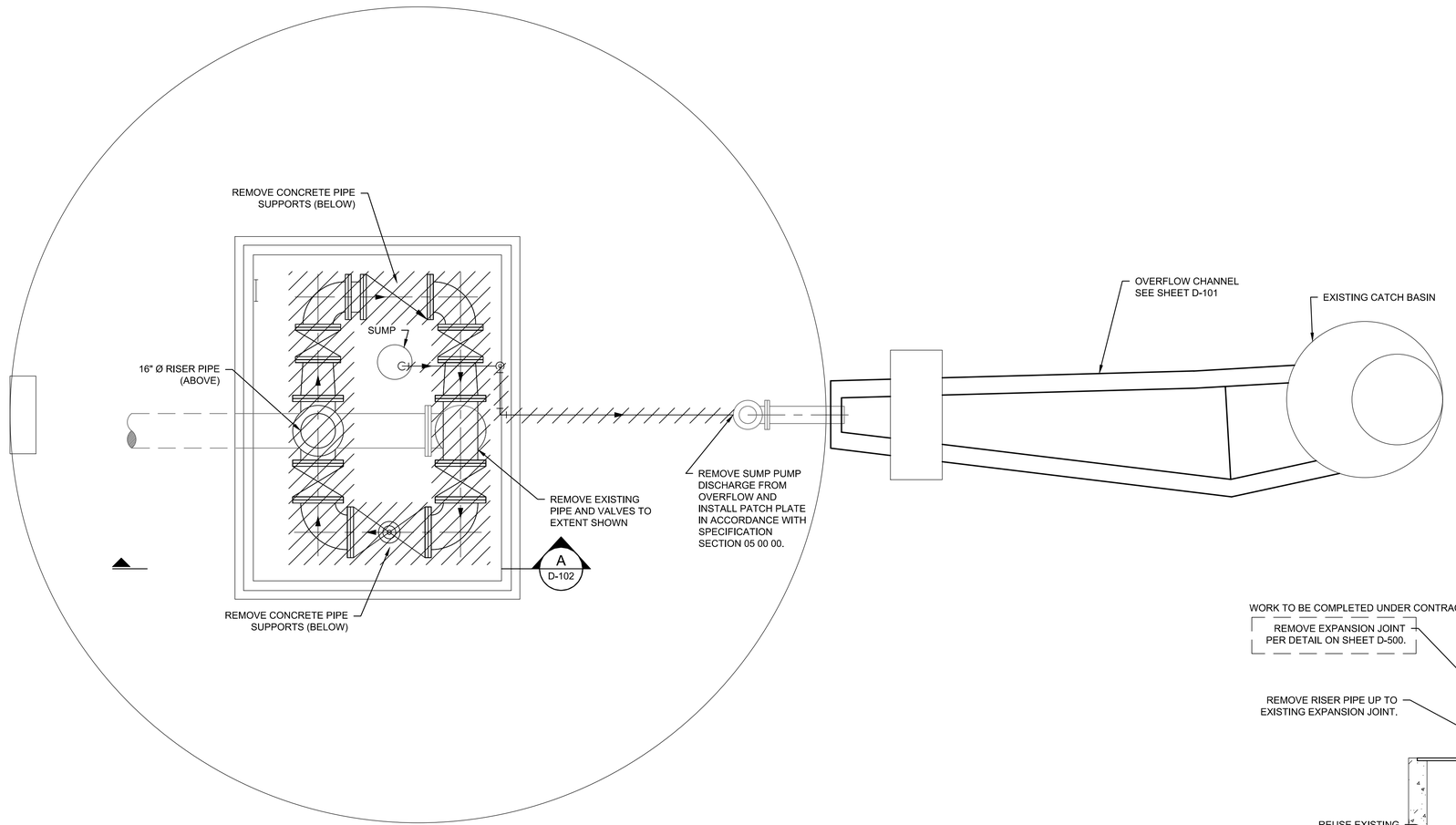
Project No.:	200-31537-15001
Designed By:	EMS
Drawn By:	EMS
Checked By:	BMR

C-500

Bar Measures 1 inch

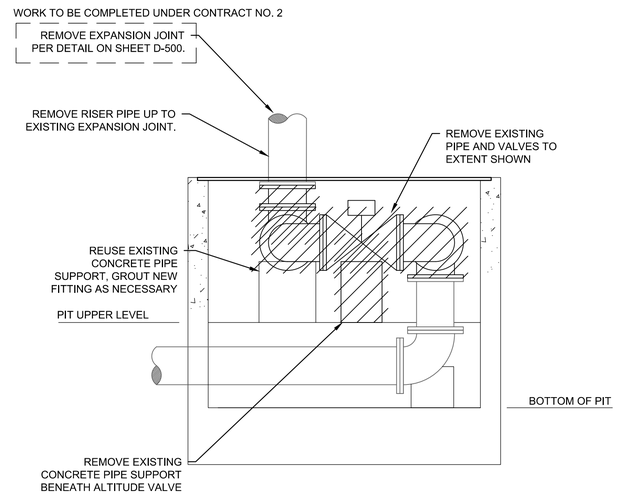
2/2/2017 12:31:22 PM - P:\IER\31537\200-31537-15001\CAD\SHEETFILES\C-500.DWG - LESPERANCE, ANDREW

ALL WORK TO BE COMPLETED UNDER CONTRACT NO. 1, UNLESS NOTED OTHERWISE



WATER TOWER DEMOLITION PIPING PLAN

SCALE: 3/8"=1'



SECTION A

SCALE: 3/8"=1'

TETRA TECH
www.tetratech.com
710 Avis Drive, Suite 100
Ann Arbor, MI 48106
Tel 734-665-6000, Fax 734-213-3003

MARK	DATE	DESCRIPTION	BY
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1	3/01/17	CONFORMING TO CONSTRUCTION	

CITY OF ANN ARBOR, MICHIGAN

MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

TANK INTERIOR GROUND LEVEL DEMOLITION

Project No.:	200-31537-15001
Designed By:	EMS
Drawn By:	EMS
Checked By:	BMR

D-102

Bar Measures 1 inch

STRUCTURAL GENERAL NOTES

A. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE. SEE ALSO INDIVIDUAL DRAWING NOTES AND PROJECT SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.

C. ELEVATIONS. ALL ELEVATIONS ARE REFERENCED TO GRADE (TOP OF EXISTING INTERIOR SAND) EL. = 0'-0" ELEVATIONS SHOWN ON DRAWINGS ARE REFERENCED TO THIS DATUM UNLESS NOTED.

D. ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.

F. SUBMIT SHOP DRAWINGS TO ENGINEER OF RECORD FOR REVIEW.

G. ABBREVIATIONS

ADD'L	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALUM.	ALUMINUM
B.M.	BEAM
B.O.	BOTTOM OF
BLDG.	BUILDING
C/C	CENTER TO CENTER
CJ	CONTROL JOINT
CLR	CLEAR
COL	COLUMN
CONT	CONTINUOUS
CTR	CENTER
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTANCE

E	EXISTING
EA	EACH
EJ	EXPANSION JOINT
EMB.	EMBED / EMBEDMENT
ENGR	ENGINEER
EQ	EQUAL
EW	EACH WAY
EXIST	EXISTING
GALV	GALVANIZED
GRTG	GRATING
IBC	INTERNATIONAL BUILDING CODE
LLV	LONG LEG VERTICAL
MATL	MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURER
MISC.	MISCELLANEOUS

MTL	METAL
N	NEW
O.C.	ON CENTER
OPNG	OPENING
PERIM	PERIMETER
REQ'D	REQUIRED
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURE(AL)
T.O.C.	TOP OF CONCRETE
T/	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VB	VAPOR BARRIER
VERT	VERTICAL
W/	WITH
W/O	WITHOUT

DESIGN CRITERIA

A. REFERENCES:

1. ICC INTERNATIONAL BUILDING CODE, 2012 EDITION
   RISK CATEGORY III IN ACCORDANCE WITH TABLE 1604.5
2. STATE BUILDING CODE: MICHIGAN BUILDING CODE
3. ASCE/SEI 7-10 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

B. DEAD LOADS = (SELF WEIGHT)

C. LIVE LOADS = 100 PSF

STRUCTURAL ALUMINUM

A. REFERENCES:
1. AA ALUMINUM DESIGN MANUAL
2. AA ALUMINUM STANDARDS AND DATA
3. ANSI/DWS D1.2 ALUMINUM WELDING CODE

B. MATERIALS:
1. PLATES AND ROLLED SHAPES: 6061-T6
2. STRUCTURAL BOLTS: 316 STAINLESS STEEL

C. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER CONSTRUCTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THE COMPLETION OF THE PROJECT.

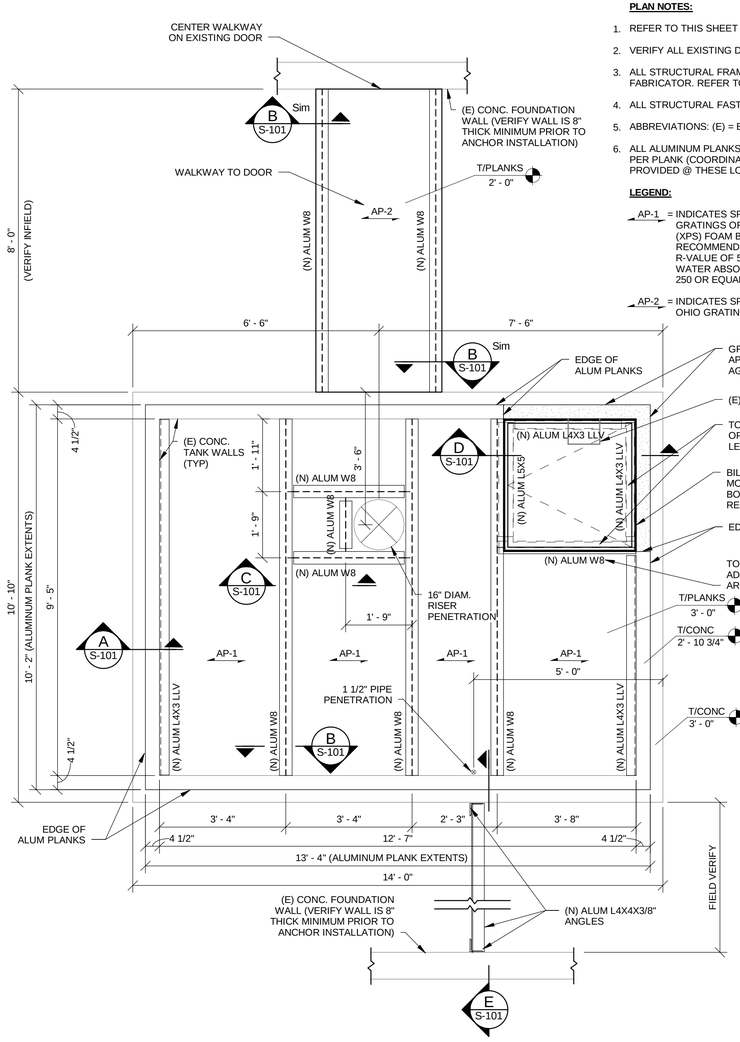
D. STRUCTURAL PERFORMANCE: DESIGN, ENGINEER, FABRICATE, AND INSTALL THE FOLLOWING METAL FABRICATIONS TO WITHSTAND THE FOLLOWING STRUCTURAL LOADS WITHOUT EXCEEDING THE ALLOWABLE DESIGN WORKING STRESS OF THE MATERIALS INVOLVED, INCLUDING FRAMING MEMBERS AND CONNECTIONS. APPLY EACH LOAD TO PRODUCE THE MAXIMUM STRESS IN EACH RESPECTIVE COMPONENT OF EACH METAL FABRICATION. SUBMIT SIGNED AND SEALED FABRICATION DRAWINGS AND DESIGN CALCULATIONS INDICATING COMPLIANCE WITH INDICATED LOADS. THE DESIGN ENGINEER SHALL BE A REGISTERED IN THE STATE OF MICHIGAN.

E. ALUMINUM PLANK SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD.

F. ALL CONCRETE IN CONTACT WITH ALUMINUM SHALL BE PROVIDED WITH A BITUMINOUS COATING.

G. ALUMINUM PLANK LIVE LOAD DEFLECTION SHALL NOT EXCEED L/360.

ALL WORK SHOWN ON THIS SHEET SHALL BE COMPLETED UNDER THE MANCHESTER TANK MISCELLANEAOUS IMPOVEMENTS AND TANK COATING PROJECT - CONTRACT NO. 1.



PIT PLATFORM STRUCTURAL PLAN

SCALE: 1/2" = 1'-0"

PLAN NOTES:

1. REFER TO THIS SHEET FOR GENERAL STRUCTURAL NOTES.
2. VERIFY ALL EXISTING DIMENSIONS IN FIELD.
3. ALL STRUCTURAL FRAMING MEMBERS SHALL BE ALUMINUM & ENGINEERED BY THE FABRICATOR. REFER TO STRUCTURAL ALUMINUM NOTE D.
4. ALL STRUCTURAL FASTENERS SHALL BE STAINLESS STEEL.
5. ABBREVIATIONS: (E) = EXISTING & (N) = NEW CONSTRUCTION
6. ALL ALUMINUM PLANKS SHALL BE FABRICATED WITH (4) PLANK LUGS & ACCESS HOLES PER PLANK (COORDINATE LOCATION w/ ALUMINUM FRAMING. 1/4" S.S. BOLTS SHALL BE PROVIDED @ THESE LOCATIONS.

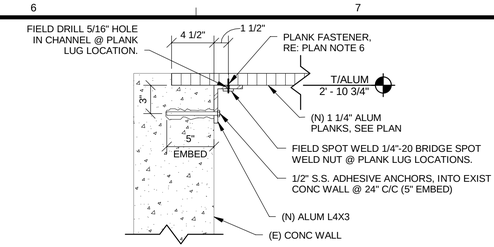
LEGEND:

AP-1 = INDICATES SPAN DIRECTION OF 1 1/4" UNPUNCHED ALUMINUM PLANKS BY OHIO GRATINGS OR APPROVED EQUAL. INSTALL 2" EXTRUDED POLYSTYRENE RIGID (XPS) FOAM BOARD INSULATION BENEATH EACH PANEL USING MANUFACTURER RECOMMENDED ADHESIVE AND METHODS. THE INSULATION SHALL BE MINIMUM R-VALUE OF 5.0 PER INCH, MINIMUM COMPRESSIVE STRENGTH OF 25PSI, AND WATER ABSORPTION LESS THAN 0.1%. PROVIDE OWENS CORNING FOAMULAR 250 OR EQUAL.

AP-2 = INDICATES SPAN DIRECTION OF 1 1/4" PUNCHED ALUMINUM PLANKS BY OHIO GRATINGS OR APPROVED EQUAL.

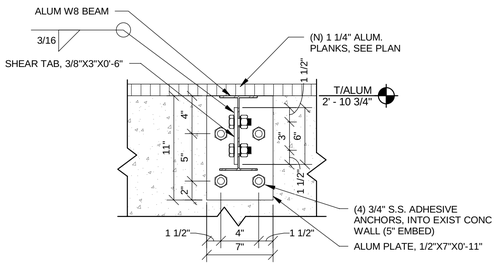
E PIPE SUPPORT FRAMING

S-101 SCALE 3/4" = 1'-0"



A TYPICAL ANGLE TO CONCRETE CONNECTION

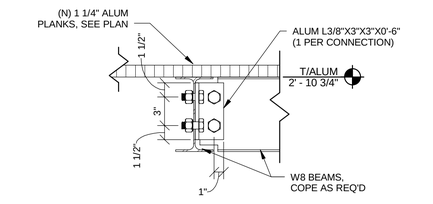
S-101 SCALE 1 1/2" = 1'-0"



NOTE: SIM SECTION HAS A DIFFERENT ELEVATION

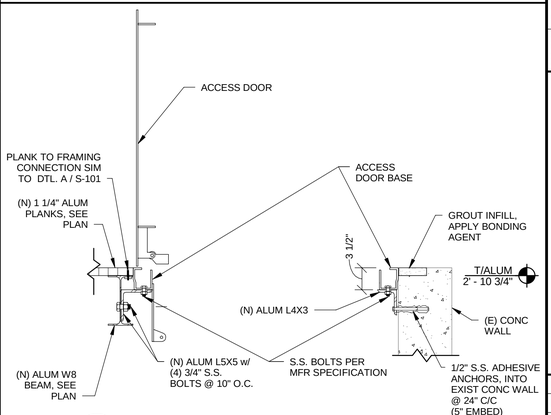
B TYPICAL FRAMING TO CONCRETE CONNECTION

S-101 SCALE 1 1/2" = 1'-0"



C TYPICAL FRAMING CONNECTION

S-101 SCALE 1 1/2" = 1'-0"



D FLOOR ACCESS DOOR SECTION

S-101 SCALE 1" = 1'-0"

0 1' 2' 4'

SCALE: 1/2" = 1'-0"

TETRA TECH
www.tetratech.com
710 AVIS DR. SUITE 100
ANN ARBOR, MI 48108
PHONE: (517) 316-3930 FAX: (517) 484-8140

MARK	DATE	DESCRIPTION	BY
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CITY OF ANN ARBOR, MICHIGAN

MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

STRUCTURAL PLAN AND SECTIONS

Project No.:	200-31537-15001
Designed By:	PAF
Drawn By:	PAF
Checked By:	CDC

S-101

Bar Measures 1 inch

P:\IER\31537\200-31537-15001\BIM\S-PLATFORM.rvt
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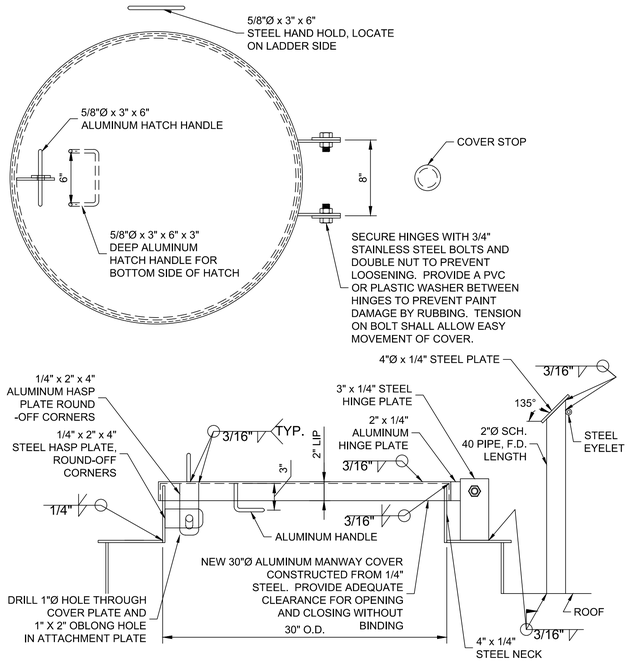
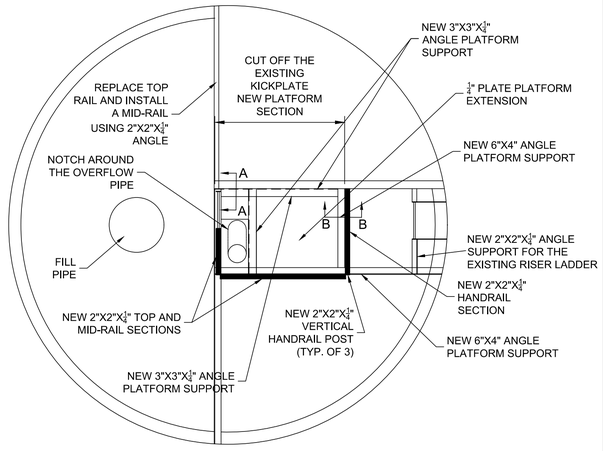
ALL WORK SHOWN ON THIS SHEET SHALL BE COMPLETED UNDER THE MANCHESTER TANK MISCELLANEOUS IMPROVEMENTS AND TANK COATING PROJECT - CONTRACT NO. 2.



NOTES:
1.MANWAY ORIENTATION TO BE DETERMINED BY THE ENGINEER.
2. INSTALL A COVER STOP SO THE HATCH CAN OPEN NO MORE THAN 135°.
3. INSTALL A 3/8" STAINLESS STEEL CHAIN WITH A HOOK TO ATTACH TO THE ROOF HATCH HANDLE WHILE OPEN. ATTACH CHAIN USING A S.S. QUICK LINK.

30" ACCESS TUBE HATCH

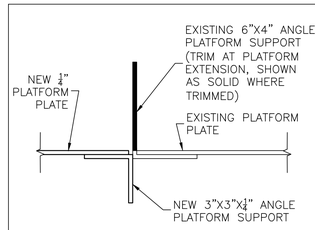
SCALE: NONE



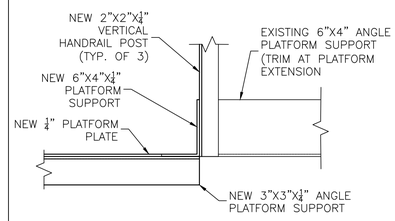
NOTES:
1. ALL WELDS TO BE 3/16" FULL FILLET.
2. NOTCH ANGLES WHERE THEY MEET TO CREATE A FLUSH SURFACE FOR THE PLATFORM FLOOR.

MODIFICATIONS TOP PLATFORM

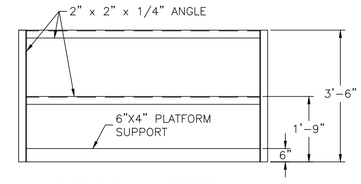
SCALE: NONE



SECTION A-A



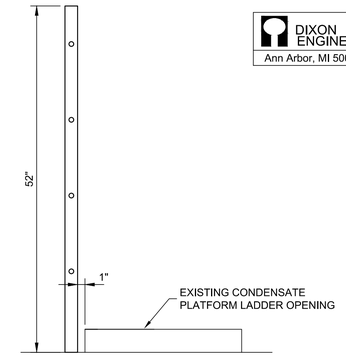
SECTION B-B



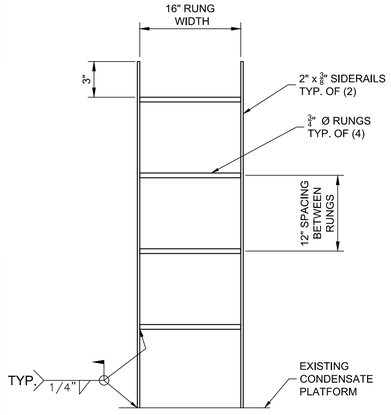
TYPICAL RAILING SECTION

DETAILS TOP PLATFORM

SCALE: NONE



SIDE VIEW

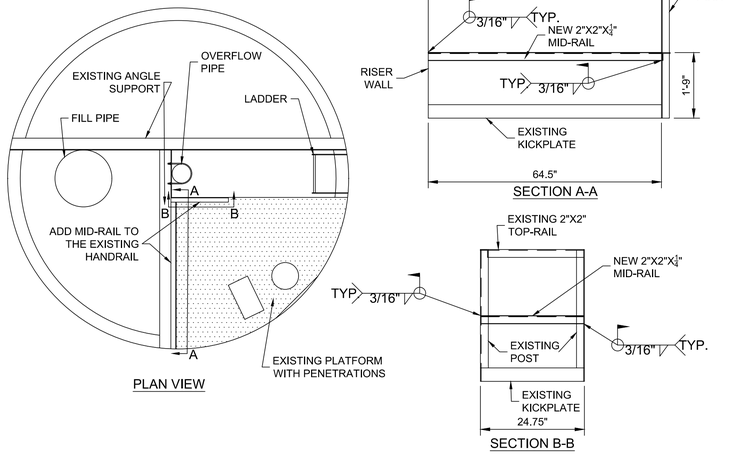


FRONT VIEW

NOTE:
PLATFORM LADDER OPENING NOT SHOWN ON FRONT VIEW FOR CLARITY.

CONDENSATE PLATFORM LADDER

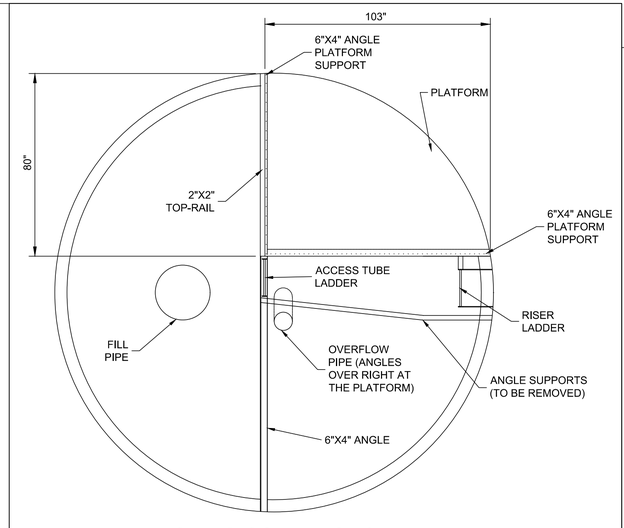
SCALE: NONE



PLAN VIEW

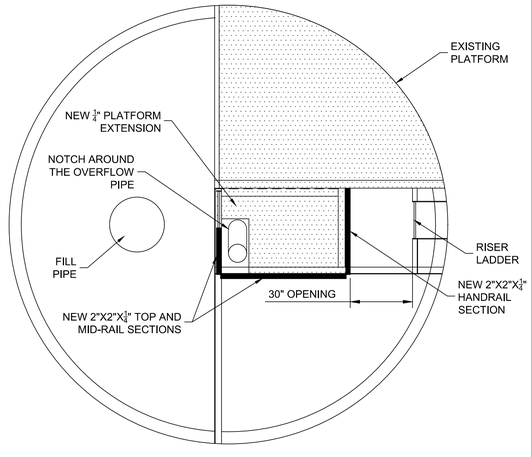
INTERMEDIATE PLATFORM

SCALE: NONE



EXISTING CONDITIONS TOP PLATFORM

SCALE: NONE



PROPOSED TOP PLATFORM

SCALE: NONE

DIXON ENGINEERING, INC.
Ann Arbor, MI 500MG Spheroid

TETRA TECH
www.tetratech.com
710 Avis Drive, Suite 100
Ann Arbor, MI 48106
Tel 734-665-6000, Fax 734-213-3003

MARK	DATE	DESCRIPTION
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BY

CITY OF ANN ARBOR, MICHIGAN
MANCHESTER TANK MISC IMPROVEMENTS AND TANK COATING PROJECT

PLATFORM AND HATCH DETAILS

Project No.:	200-31537-15001
Designed By:	T. FELTON
Drawn By:	T. FELTON
Checked By:	I. GABIN

S-500

Bar Measures 1 inch

2/2/2017 1:46:21 PM - P:\IER\31537\200-31537-15001\CAD\SHEETFILES\S-500.DWG - LESPERANCE, ANDREW

Attachment B. Elevation Drawings for South Industrial Water Tower

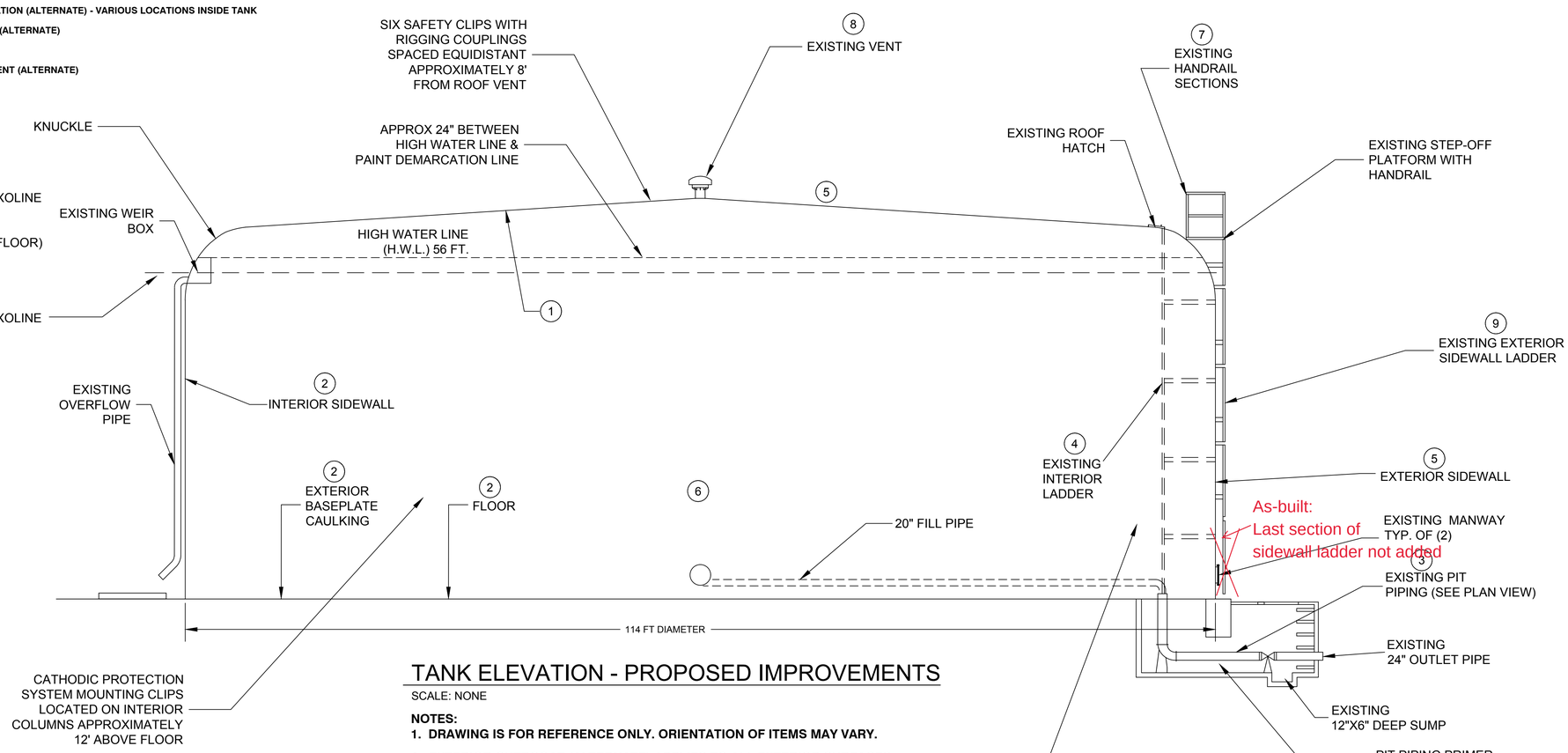
PROPOSED WORK SCHEDULE

1. WET INTERIOR ROOF COATING
2. WET INTERIOR SIDEWALL AND FLOOR COATING
3. PIT PIPING COATING
4. WET INTERIOR LADDER REPAIR. INSTALLED NEW SECTION OF LADDER. TOP 48"
5. EXTERIOR OVERCOATING (ALTERNATE)
6. CATHODIC CLIP AND COUPLING INSTALLATION (ALTERNATE) - VARIOUS LOCATIONS INSIDE TANK
7. ROOF HANDRAIL SECTION INSTALLATION (ALTERNATE)
8. ROOF VENT REPLACEMENT (ALTERNATE)
9. EXTERIOR SIDEWALL LADDER REPLACEMENT (ALTERNATE)

INTERIOR COATING DEMARCATION:

ABOVE LINE (WET ROOF)
PRIMER, TNEMEC SERIES 94-H20^
HYDRO-ZINC @ 2.5-3.5 MILS DFT.
TOP COAT, TNEMEC SERIES 22 EPOXOLINE
@ 30.0-40.0 MILS DFT.

BELOW LINE (WET SIDEWALLS AND FLOOR)
PRIMER, TNEMEC SERIES 94-H20^
HYDRO-ZINC @ 2.5-3.5 MILS DFT.
INTERMEDIATE, TNEMEC SERIES 22
EPOXOLINE @ 30.0-40.0 MILS DFT
TOP COAT, TNEMEC SERIES 22 EPOXOLINE
@ 30.0-40.0 MILS DFT.

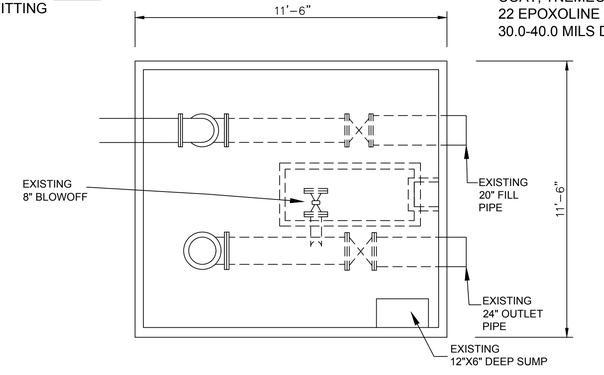


TANK ELEVATION - PROPOSED IMPROVEMENTS

SCALE: NONE

NOTES:

1. **DRAWING IS FOR REFERENCE ONLY. ORIENTATION OF ITEMS MAY VARY.**
2. **EXTERIOR OVERCOAT (ALTERNATE) APPLIES TO ALL EXTERIOR SURFACES**



PIT PIPING PLAN VIEW

SCALE: NONE

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	4/28/17	ISSUED FOR BID
	11/20/17	CONFORMING TO CONSTRUCTION
		BY

CITY OF ANN ARBOR, MICHIGAN
SOUTH INDUSTRIAL TANK COATING

TANK ELEVATION PROPOSED IMPROVEMENTS

Project No.:	200-31537-17001
Designed By:	J. SIWEK
Drawn By:	S. GOTHA
Checked By:	B. RUBEL

C-102

Bar Measures 1 inch

12/11/2017 9:53:54 AM - P:\IER\31537\200-31537-17001\CAD\SHEETFILES\C-102-TANK ELEVATION.DWG - MELLING, VICKIE

Attachment C Reference Pictures

Openings Field verify dimensions – picture 1

Openings Field verify dimensions – picture 2

North Campus hatch to be replace with an aluminum hatch to match Manchester tank's hatch – picture 3

GENERAL PAINTING INSTRUCTIONS:

1. SHOP PAINTING: SHOP PAINTING: ABRASIVE BLAST CLEAN ALL NEW STEEL TO COMMERCIAL GRADE (SSPC-SP6) CONDITION AND APPLY A THREE COAT EPOXY/URETHANE SYSTEM AS FOLLOWS:

COAT	TNEMEC SERIES	MINIMUM DFT	MAXIMUM DFT
PRIMER	27	2.0	3.0
INTERMEDIATE	27	2.0	3.0
TOP COAT*	1074	2.0	3.0

2. EDGES TO BE WELDED IN THE FIELD SHALL NOT BE COATED (LEAVE A MINIMUM OF EDGES TO BE WELDED IN THE FIELD SHALL NOT BE COATED (LEAVE A MINIMUM OF TWO INCHES BARE METAL.)

3. FIELD PAINTING: FIELD PAINTING: EXTERIOR-SOLVENT CLEAN, SPOT POWER TOOL CLEAN ALL ABRADED AND WELDED AREAS TO A SSPC-SP11 GRAY METAL CONDITION AND SPOT COAT IN ACCORDANCE WITH COATINGS AS SPECIFIED ABOVE. DRY INTERIOR-SPOT POWER TOOL CLEAN ALL AREAS OF BURNED COATING TO A SSPC-SP11 GRAY METAL CONDITION AND APPLY A TWO COAT EPOXY POLYAMIDE SYSTEM AS FOLLOWS:

COAT	TNEMEC SERIES	MINIMUM DFT	MAXIMUM DFT
PRIMER	FC20	3.0	5.0
TOP COAT*	FC20	3.0	5.0

4. PREPARATION OF GALVANIZED MATERIAL: PREPARATION OF GALVANIZED MATERIAL: APPLY ONE COAT OF CLEAN 'N' ETCH AS PER MANUFACTURER'S RECOMMENDATIONS AND COAT IN ACCORDANCE WITH COATINGS AS SPECIFIED BELOW:

COAT	TNEMEC SERIES	MINIMUM DFT	MAXIMUM DFT
PRIMER	66 HI-BUILD EPOXOLINE	2.0	3.0
TOP COAT*	1074 ENDURA-SHIELD	2.0	3.0
TOTAL		4.0	6.0

5. APPLY ALL COATINGS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. APPLY ALL COATINGS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

*TOP COAT COLOR TO MATCH EXISTING COLOR.

GENERAL WELDING:

1. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.

2. COMPLY WITH THE AWS D1.1 STRUCTURAL WELDING CODE, ANSI/AWWA D100-96 COMPLY WITH THE AWS D1.1 STRUCTURAL WELDING CODE, ANSI/AWWA D100-96 (LATEST EDITION THEREOF), "AWWA STANDARD FOR WELDED STEEL TANKS FOR WATER (LATEST EDITION THEREOF), "AWWA STANDARD FOR WELDED STEEL TANKS FOR WATER STORAGE" AND FEDERAL, STATE, AND LOCAL CODES, DURING CONSTRUCTION DESIGN AND FABRICATION.

3. MAKE ALL WELDS TO THE TANK WALL WITH E7018 LOW HYDROGEN ROD. WELD MAKE ALL WELDS TO THE TANK WALL WITH E7018 LOW HYDROGEN ROD. WELD SMOOTH AND AVOID UNDERCUTS AND BURRS. GRIND SMOOTH ALL WELDS SO THAT NO SHARP PROTRUSIONS REMAIN. SMOOTH IS DEFINED AS: "NO CUTS OR ABRASIONS OCCUR WHEN RUBBING YOUR HAND OVER THE WELD."

4. BEFORE WELDING, REMOVE ALL COATINGS WITHIN 6" OF THE AREA TO BE WELDED. BEFORE WELDING, REMOVE ALL COATINGS WITHIN 6" OF THE AREA TO BE WELDED.

5. USE ASTM A-36 CARBON STEEL FOR ALL STRUCTURAL STEEL; USE A-307 BOLTS USE ASTM A-36 CARBON STEEL FOR ALL STRUCTURAL STEEL; USE A-307 BOLTS UNLESS OTHERWISE SPECIFIED. 6. FIELD FIT UP PROBLEMS OR CHANGES TO THE PLAN SHEETS ARE TO BE BROUGHT TO FIELD FIT UP PROBLEMS OR CHANGES TO THE PLAN SHEETS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER.