ADDENDUM NO. 2

RFP #22-53

Valve and Finished Water Tank & Reservoir Improvements

Bids Due: July 19, 2022 at 2:00 P.M. (Local Time)

The following changes, additions, and/or deletions shall be made to the Request for Proposal (RFP) for Water Treatment Service Unit – Valve and Finished Water Tank & Reservoir Improvements, RFP #22-53.

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum is nineteen (19) pages, including attachments.**

Bidder is to acknowledge receipt of Addendum No. 2, including all attachments (if any) in its Bid by so indicating on Attachment B of the RFP. Bids submitted without acknowledgment of receipt of this addendum will be considered nonconforming.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the Bid document which are outlined below are referenced to a page or Section in which they appear conspicuously. The Bidder is 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. Changes to the original text are bolded and italicized.

Section/Page(s)	**Change**

CHANGES TO BID FORM:

BASE BID #1 — Delete Item 2.2 Salvage and Replace Existing Grating and replace with the following:

2.2 Replace Existing Grating

CHANGES TO SPECIFICATIONS:

Section 01 22 00 — Replace Paragraph 1.4.G with the following:

A. Item No. 2.2 – Replace Existing Grating:
   1. Includes the following in accordance with Division 05 Section "Metal Fabrications."
      a. Remove and existing fiberglass grating.
      b. Furnish and install new steel frame.
      c. Furnish and install new fiberglass grating.
   2. Unit of Measure: Lump Sum.

Section 01 45 34 Replace existing Section 01 45 34 with reissued Section 01 45 34 attached to this Addendum No. 2.

Section 01 45 34 Delete the following Paragraph 3.1.E:

E. Soils:
1. Inspect and verify in accordance with Table 1705.6 of the Building Code and this Specification.
2. Inspect and verify:
   a. Excavations are extended to proper depth and reached proper material.
   b. Classification of structure fill and backfill material.
   c. Classification of utility backfill material.
   d. Use of proper fill and backfill materials, lift thicknesses and compaction.
   e. Prior to placement of fill, subgrade material and preparation, and subgrade compaction.

Section 08 10 03 Add the following Schedule to the end of Part 3:

ACCESS HATCH SCHEDULE				
SHEET	LOCATION	TYPE	SIZE	NOTES
8	VAULT 1	FLUSH MOUNT	36	
9	VAULT 3	FLUSH MOUNT	36	
10	VAULT 4	FLUSH MOUNT	36	
11	VAULT 5	FLUSH MOUNT	30	
25	WTP RESERVOIR HATCH #1	SURFACE MOUNT	42	
25	WTP RESERVOIR HATCH #2	SURFACE MOUNT	42	
25	WTP RESERVOIR HATCH #2	SURFACE MOUNT	42	
26	NC RESERVOIR HATCH #1	SURFACE MOUNT	42	
26	NC RESERVOIR HATCH #1	SURFACE MOUNT	42	
26	NC RESERVOIR HATCH #2	SURFACE MOUNT	42	
27	LIBERTY RESERVOIR HATCH #1	SURFACE MOUNT	42	
27	LIBERTY RESERVOIR HATCH #1	SURFACE MOUNT	42	
27	LIBERTY RESERVOIR HATCH #2	SURFACE MOUNT	42	
28	VAULT 2	FLUSH MOUNT	30	BASE BID #1 - ALTERNATE #1
29	NC RESERVOIR HATCH #1	SURFACE MOUNT	42	BASE BID #2 - ALTERNATE #3
29	NC RESERVOIR HATCH #1	SURFACE MOUNT	42	BASE BID #2 - ALTERNATE #3

Section 09 91 00 Add the following Paragraph 3.9.A.4:

1. Metals – Immersed (interior of potable water system pipe): Modified Polyamine or Satin Polyamidoamine Epoxy System:
   (Note: Contractor shall verify current NSF certification; provide product currently certified at no extra cost to Owner.)

System Manufacturer	Pipe and Fitting Size Limitations	Surface Preparation	First Coat	Second Coat
Tnemec	Pipes 4” to 8” diameter	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): 141-WH03 Epoxoline 7.0 – 9.0 Mils	(Shop): 141-WH03 Epoxoline 7.0 – 9.0 Mils (16.0 mils min, 18.0 mils max total)
	Pipes 10” to 12” diameter	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): 141-WH03 Epoxoline 16.0 – 18.0 Mils	
	Pipes 14” diameter and greater; valves and fittings 4” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): N140-1255 Pota-Pox Plus 7.0 – 9.0 Mils	(Shop): N140-1255 Pota-Pox Plus 7.0 – 9.0 Mils (16.0 mils min, 18.0 mils max total)
Carboline	Pipes 4” to 8” diameter; fittings		No NSF certified equivalent	
	Valves 4” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Carboguard 891 HS 4.0 – 10.0 Mils	(Shop): Carboguard 891 HS 4.0 – 10.0 Mils (16.0 mils min, 20.0 mils max total)
	Pipes 10” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Plasite 4500 16.0 – 20.0 Mils	
ICI/DeVoe	Pipes 4” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Interline 925 by International Paint 16.0 – 18.0 Mils	
	Valves and fittings 4” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop): Bar Rust 233 H 16.0 – 20.0 Mils	
Sherwin Williams	Valves and fittings		No NSF certified equivalent	
	Pipes 4” diameter and greater	(Shop): SSPC-SP10 near-white blast cleaning	(Shop) Sherplate PW Epoxy 16.0 – 20.0 Mils	

CHANGES TO DRAWINGS:

Sheet 7	Replace existing Sheet 7 with reissued Sheet 7 attached to this Addendum No. 2.
Sheet 18	Replace Keynote B with the following: MODIFY EXISTING RESERVOIR ACCESS HATCH #2 (SEE DETAIL ON SHEET 26)

II. QUESTIONS AND ANSWERS

Q: Note 2 on drawing 7 refers to a detail for the new grating supports but no such detail is provided. Please provide detail.

A: Details included on reissued sheet 7.

Q: Notes 3 and 5 on drawing 13 indicates that new supports may be required to support the new grating. Please provide details regarding the existing grating supports so we can evaluate the potential need for additional supports prior to submitting a bid. If new supports are required, will this be considered extra work or incidental to base bid?

A: See attached record drawing showing existing grating supports in the Vault House. Existing supports should be sufficient, however the age of the structure and lack of a clear condition assessment due to the locations of the supports is uncertain. Repair or replacement of supports would be additional work paid for through the allowance.

Q: Note 3 on drawing 6 indicates the existing pipe pit is to be cleaned of sludge and debris. Is the cleaning to occur in the entire pit or just in the area of pipe and grating replacement Can the removed sludge be disposed of on-site? If so where? What volume of sludge is expected? We respectfully request that a bid quantity be established for the sludge removal and disposal?

A: Sludge level in the pipe pit is approximately 6” deep. Contractor will need to clean sludge out of the proposed area of work as shown on the drawings. Water may be pumped out with a trash pump and sludge can be shoveled out and disposed of in the on-site WTP grit dumpster. If there is more debris in the pit at the time of construction, City personnel will assist in the removal.

Q: Note 6 on drawing 6 indicates that the replacement of pipe hangers and supports will be paid for by allowance. What pipe hangers and supports are covered by Bid item 2.3.

A: Hangers and supports directly associated with the valve and piping that needs to be replaced to complete the work. Note 6 includes other supports and hangers located in the Sodium Hypochlorite Room – Chemical Building Basement that are deteriorating in the vicinity of the work area & pipe sump.

Q: What is the “out to out” length and width dimension for the existing bottom section of vault no. 1 upon which the new flat slab and riser section are support upon? Drawing 8 only provides the interior dimensions.

A: No record drawings detail that structure. Adjacent vault # 2 has 0'-9" thick walls on the short side of the structure and 1'-0" thick walls on the long side. Contractor should verify wall thickness for this vault in the field.

Q: Pre-casting of the new valve boxes into the cover slabs for the valve vaults is not feasible as it is unlikely the boxes can be pre-located in the proper position relative to the new operators. Will coring of the new top slabs and field grouting of the new valve boxes for valve vaults 1, 3, 4 and 5 be allowed?

A: This method will be allowed. Take steps to avoid coring through steel reinforcement.

Q: What are the "inside clear" and "out to out" length and width dimensions for the existing lower box and new upper riser sections for valve vault No. 3? Drawing No. 9 does not provide any of these dimensions.

A: No record drawings detail that structure, chamber scan dimensions on drawings indicate the existing lower box interior dimensions of 12'-9" long by 8'-7" wide. Walls detailed for adjacent two-valve structure are 1'-0" thick on all sides. Contractor should verify wall thickness for this vault in the field. Per keynote 7, upper riser is 5'-0" interior square with the wall thickness to be provided by the precast manufacturer.

Q: What is the top of slab elevation for the new flat slab designated as key item 6 on drawing No. 9?

A: Elevation 1002'-3" per section 3.

Q: What are the "inside clear" and "out to out" length and width dimensions for the existing lower box and new upper riser sections for valve vault No. 4? Drawing No. 10 does not provide any of these dimensions.

A: Drawings indicate the existing lower box interior dimensions of 12'-6" long by 5'-0" wide. Walls are 1'-0" thick on all sides. Contractor should verify wall thickness for this vault in the field. Per keynote 7, upper riser is 5'-0" interior square with the wall thickness to be provided by the precast manufacturer.

Q: What is the bottom of foundation elevation for the fluoride bulk tank located immediately NW of vault 3 shown on drawing No. 9?

A: See attached record drawings.

Q: What is the type, dimensions and burial depth of the electrical duct bank located immediately West of Vault No. 3?

A: See attached record drawings.

Q: What is the type, dimensions and burial depth of the electrical duct bank located immediately West of Vault No. 4 as shown on Drawing No. 10?

A: See attached record drawings.

Q: What is the thickness of the existing top slab on vault 5 as shown on Drawing No. 11. Alternatively what is the full replacement height of the existing structure?

A: Top slab thickness is approximately 12" thick. Keynote 7 indicates contractor to remove portion of riser necessary to complete valve replacement. Existing structure is concrete block and should be sawcut to height and rebuilt to the elevation on the drawings.

Q: Is the headwall structure shown on drawing No. 17 existing or proposed?
A: The headwall structure is part of the proposed overflow improvements.

Q: Note 4 on drawing 5 indicates a yard hydrant is to be installed on the existing 24-inch CW line. What size hydrant? Is this to be a standard 6-inch hydrant with valve and box?
A: Standard hydrant.

Q: Please provide a detail of the air vent screen replacement work described by measurement and payment item 5.1.
A: There are no record drawing details of the existing vent. The round cover can be removed. There is an existing screen wrapped around the interior of the vent to be replaced.

Q: How is the interior of the existing valve vault shown on drawing No. 12 accessed? Drawing No. 12 does not show an opening. What is the size of the Opening and will it support the installation of new grating? Please provide a layout plan and details for the existing Grating supports referenced in note Nos. 3 and 5 shown on drawing Nos. 12 and 13, respectively.
A: See attached record drawings.

Q: What structures does the painting specification (09 91 00) apply and what structures does the steel coating specification (09 97 13) apply?
A: The painting specification is for the process piping inside the valve vaults. The steel coating specification is for the tanks and wet interior piping.

Q: Keynote 6 on drawing 15 indicates the interior and exterior of the 24” FE pipe is to be painted per specification 09 91 00 in the area of the new weld on flange. What specific coating system specified in 09 91 00 is to be used as none of them appear to be NSF 61 compliant?
A: Coating System No. 4 has been added to Specification Section 09 91 00 as noted above.

Q: Section 34 on drawing No. 15 shows a pipe wrap repair located directly between two spot repairs. Is this correct? If so how does the Engineer propose this work be completed?
A: Locations identified as requiring pipe wrap coincide with the pipe which is in the worst condition. The locations requiring spot repairs have intermittent corrosion and pits, but not to a degree that we feel requires a complete pipe wrap system. The recommendation would be to perform the spot repairs at the same time you are preparing the area requiring the pipe wrap. Next, install the pipe wrap per the manufacturer’s recommendations. Lastly, paint the exterior of the entire pipe, including the spot repaired area and wrapped area.

Q: What is the top of slab elevation for the new flat slab designated as key item 3 on drawing No. 28?
A: Elevation 1002’-3” per Section 3.

Q: What are the “inside clear” and “out to out” length and width dimensions for the existing lower box and new upper riser sections for valve vault No. 2? Drawing No. 28 does not provide any of these dimensions.
A: Drawings indicate the existing lower box interior dimensions of 6’-6” long by 5’-0” wide. Walls are 0’-9” thick wall on the short side of the structure and 1’-0” thick wall on the long

side. Contractor should verify wall thickness for this vault in the field. Per keynote 4, upper riser is 4'-0" interior square with the wall thickness to be provided by the precast manufacturer.

Q: What structures does the disinfection procedures specified in Specification 01 74 26 applied to? AWWA C652 method 3 is specified with Specification 09 97 13. Does this only apply to the elevated reservoir work at Manchester and North Campus?

A: The procedure specified in Specification 01 74 26 is for all facilities. Disinfection of pipes for valve replacement are to be in accordance with AWWA 651. City staff will provide chemicals and laboratory testing, contractor to assist City staff and coordinate all work for disinfection.

Q: Keynote A on drawing 18 references Drawing 27 for the Hatch 2 work. Should the reference be drawing 26?

A: The note has been revised.

Q: Specification 08 10 03 specifies two type of hatches. Specifically, Aluminum Flush Mounted Hatches and Reservoir Hatches. The documents do not indicate where each type is required. Please provide a hatch schedule for all hatches required for this project.

A: Aluminum flush mounted hatches for valve vaults and reservoir hatches for underground reservoir access hatches. See Schedule in this Addendum No. 2.

Q: For the concrete repair work at the Liberty Reservoir (Pay item 2.5), please provide repair quantity information of the type provided by keynote 3 on drawing 16 for the WTP site.

A: Per note D. on sheet 20, there were two observed locations requiring concrete repair.

Q: Can a site visit to the Water Treatment Plant be scheduled for Contractors wanting to view the site conditions?

A: Site visits can be held Monday, July 11th after 2:00 p.m. or Wednesday after 9:00 a.m. Schedule visit with Emily Schlanderer at ESchlanderer@a2gov.org or 248.224.6492.

Q: Who is responsible for the cost of materials testing for Soils, Concrete and Steel? Specification 01 45 35 states Contractor is responsible and in contrast 01 45 34 states Owner is responsible for cost.

A: Special inspections for tank and steel construction are to be paid for through the allowances for testing for each site. All soil and concrete testing is the Contractor's responsibility. Reference to soil testing removed from specification 01 45 34.

Q: Is coating of the inside of new process piping and valves required for potable water piping? If interior of piping is required, could we get a specification for that?

A: Site piping and DIP in valve vaults get NSF cement mortar lining, steel pipe from effluent filter discharge gets NSF epoxy coating per specification. Valves call out NSF 61 epoxy from Tnemec in specification.

Q: Sheet 6 Note #3 says to abandon the perimeter grating in place. Is a new perimeter frame to be set and if so can we get a cut detail showing design intent for perimeter support?

A: Existing perimeter framing is being abandoned, and new angle framing is being installed. Furnish new grating per City.

Respondents are responsible for any conclusions that they may draw from the information contained in the addendum.

Attachments:

Specification 01 45 34 (Reissued, 4 pages)
Sheet 7 – WTP River Valve Plans, Sections and Isometric (Reissued, 1 page)
Record Drawings (6 pages)

SECTION 01 45 34 – SPECIAL INSPECTIONS AND TESTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes provisions for special inspections as follows and includes the Statement of Special Inspections.
   1. Special inspections of structures. Including reservoir and tank inspections.

B. Special inspection services for which Owner will contract and pay directly and will be performed by a special inspector or inspectors selected by Owner:
   1. Steel construction.
   2. Reinforced concrete construction.
   3. Underground reservoir inspection.
   4. Elevated tank inspection.
   5. Travel expense of the special inspector.

C. Testing, special inspections and certifications which are not included in the above, but shall be included in the Contractor's Base Bid:
   1. Inspections and tests required by codes or ordinances or by an authority having jurisdiction and made by a legally constituted authority.
   2. Inspections, testing services and certifications including, but not limited to, the following:
      a. Pipe leakage tests.
      b. Tank leakage tests.
      c. Manufacturer's certificate of compliance for weld filler metal.
      d. Testing in connection with the Engineer's review of materials and equipment proposed by Contractor to be incorporated into the Work.
      e. Testing performed for the Contractor's convenience.

D. Owner Paid Items: Owner may elect to inspect or to employ either Engineer or a special inspector to inspect materials or systems on the Project other than those specified herein. The cost of this inspection will be paid for by Owner.

E. Special inspection services are required to verify compliance with the Contract Documents and with the requirements of the Building Code. These services do not relieve Contractor of responsibility for verification of compliance with Contract Document requirements.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. ACI – American Concrete Institute:
      a. 211.1 – Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
      b. 301 – Specification for Structural Concrete.
      c. 318 – Building Code Requirements for Reinforced Concrete.
   2. AISC – Steel Construction Manual.
   3. Michigan Building Code.
   4. MDOT:
      a. Standard Specifications for Construction.

1.4 DEFINITIONS

A. Terms:
1. Building Code: The building code plus amendments, if any, legally adopted for the location in which the Project is located.
2. Special Inspection: Inspection and testing as herein required of materials, installation, fabrication, erection or placement of components and connections requiring special expertise of one or more approved special inspectors in order to ensure compliance with the Building Code and the Contract Documents.
3. Testing Agency; Independent Testing Agency: Special inspector.

1.5 PERFORMANCE REQUIREMENTS

A. Special Inspector Qualifications:
1. Qualified in accordance with the Building Code and by local building official.
2. Objective, competent and independent from the contractor performing the work to be inspected.
3. Familiar with Building Code requirements for special inspections.
4. Having adequate equipment, periodically calibrated as required, to perform the special inspections.
5. Employing experienced personnel educated in conducting, supervising and evaluating special inspections similar in complexity to that required for the Project.
6. Submission of Qualifications:
a. Special inspector shall provide to the building official written documentation as required to demonstrate competence, objectivity and experience or training.
b. Disclose possible conflicts of interest.

B. Perform special inspections in accordance with:
1. Laws and Regulations.
2. Reference procedures and requirements.
3. Building Code.
4. Contract Documents.
5. Manufacturer's requirements, as applicable.
6. Reviewed submittals for the Project, as applicable.

C. Testing Outside a Structure Footprint: In accordance with Division 01 Section "Testing for Buried Utilities, Roadways, and Site Projects."

1.6 REINSPECTION COSTS

A. Reinspection:
1. When initial special inspections of items except soil compaction indicate noncompliance with the Contract Documents, subsequent special inspections occasioned by the noncompliance shall be performed by the same special inspection agency, and the costs thereof will be deducted by the Owner from the Contract Sum.
2. Soil Compaction:
a. The first retesting of soil compaction shall be paid for in accordance with the provisions of the Contract Documents.
b. The second and subsequent retesting for soil compaction due to noncompliance with the Contract Documents shall be performed by the same special inspection agency, and the costs thereof will be deducted by the Owner from the Contract Sum.

B. Uncovering Costs: Paid for as described in the General Conditions.

1.7 REPORTS AND SUBMISSIONS

A. Special Inspection Reports:
1. Special inspector shall keep records of special inspections in accordance with the Building Code.
2. Records shall indicate that work inspected was or was not completed in conformance with the Contract Documents.
3. Report and reinspect non-conformances until they are in conformance with the Contract Documents.
4. Final Report:
a. Prepare and submit a final report at the completion of the special inspections.

b. Document the completion of specified special inspections and correction of discrepancies.
c. Submit as specified for inspection reports.

5. Provide typed electronic copies of reports to:
   a. Owner.
   b. Engineer.
   c. Contractor.
   d. Building official.
6. Discrepancies: Bring to immediate attention of Contractor, and, if not corrected, to attention of Engineer and building official.

1.8 SCHEDULES FOR SPECIAL INSPECTIONS

A. Establishing Schedule: By advance discussion between special inspector and Contractor, determine the time required to perform special inspection and to issue findings.

B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the special inspector.

C. Adherence to Schedule: When the special inspector is ready according to the determined schedule, but is prevented from performing special inspection due to incompleteness of the Work, extra costs attributable to the delay may be charged to Contractor and shall not be borne by Owner.

1.9 CONTRACTOR'S DUTIES

A. Cooperate with Special Inspector:
   1. Schedule the Work so that special inspector is allowed a reasonable schedule and amount of time to access and view the components requiring special inspection before being obscured by subsequent construction.
   2. Notify special inspector 24 hours minimum prior to expected time when special inspection services will be required.
   3. Provide the following as necessary for special inspector to properly perform its functions:
      a. Access to the Work.
      b. Facilities for access to the Work.
      c. Tools.
      d. Storage.
      e. Assistance as requested.

B. Submission of Written Statements:
   1. To be submitted by each contractor responsible for construction of a main wind or seismic force resisting system, designated seismic system or a wind or seismic resisting component listed in the Statement of Special Inspections.
      a. Submit to building official, Owner, and Engineer, prior to commencement of construction on the respective system or component.
      b. Acknowledging awareness of the special inspections specified herein.
   2. Each fabricator, at the completion of their respective fabrication, shall submit a certificate of compliance to the building official and Engineer stating that the fabrication was performed in accordance with the Contract Documents.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STATEMENT OF SPECIAL INSPECTIONS

A. Frequency of Special Inspections:
   1. The minimum frequency of the special inspections (periodic vs. continuous) shall be as indicated in the Building Code.
   2. Quality assurance inspections performed in accordance with standards referenced herein shall conform to the frequency requirements indicated in those standards.

B. Steel Construction:
   1. Inspect and verify structural steel in accordance with the quality assurance requirements of AISC 360 and the Contract Documents.

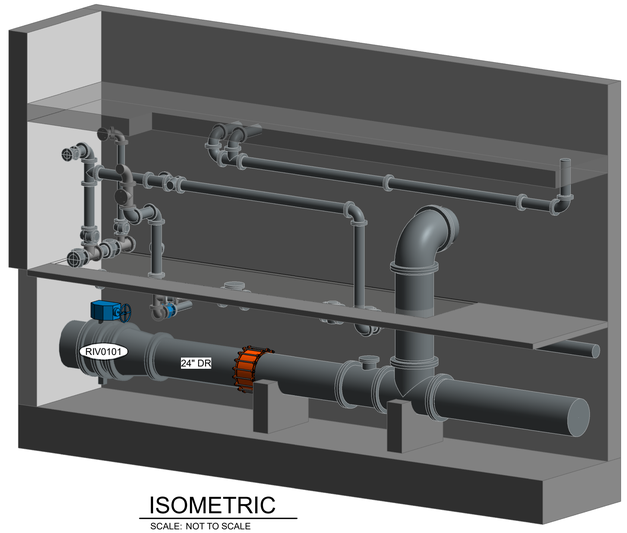
C. Concrete Repair Materials:
   1. Test materials as indicated in Division 03 Section “Rehabilitation of Cast-in-Place Concrete.”

D. Underground Reservoir and Elevated Tank Inspections

   1. Work to be completed by one of the inspection firms listed in section 01 21 13. Separate allowances have been created for inspections related to the improvements to be completed at each site.

   2. Inspection of work completed in the underground reservoirs and elevated tanks shall be coordinated in accordance with sections 05 60 10 Elevated Steel Water Tank Miscellaneous Repairs, 09 91 00 Painting and 09 97 13 Steel Coatings.

END OF SECTION 01 45 34

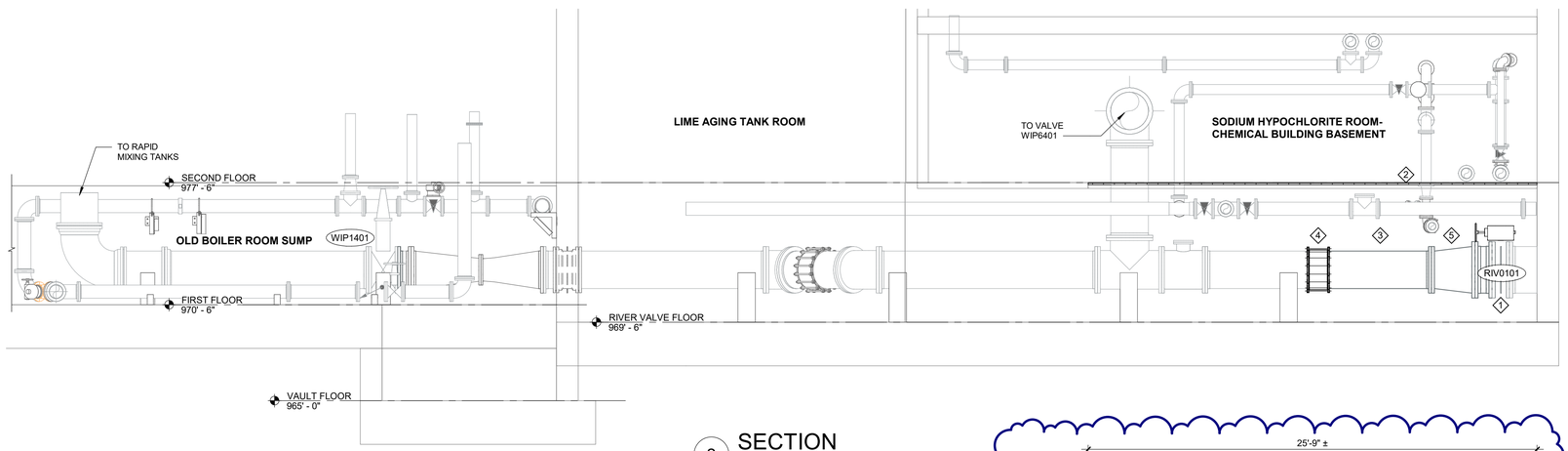


ISOMETRIC

SCALE: NOT TO SCALE

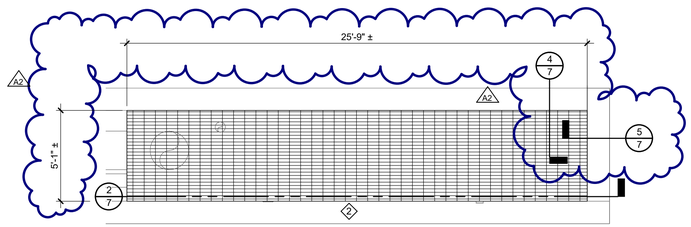
KEY NOTES

1. 30" BUTTERFLY VALVE.
2. INSTALL PAINTED, GALVANIZED W8X10 GRATING SUPPORTS ACCORDING TO THE DETAIL THIS SHEET AND TO MATCH THE LAYOUT THAT WAS FIELD VERIFIED. INSTALL PAINTED, GALVANIZED W8X10 SUPPORTS AT ENDS OF GRATING AT PENETRATIONS, AND FRAME BACK TO GRATING SUPPORTS SPANNING ACROSS TRENCH. INSTALL PAINTED, GALVANIZED L5X3X1/4 ACCORDING TO THE DETAIL THIS SHEET AT EACH END OF THE TRENCH. ENSURE ENDS OF GRATING SPANS WILL BE SUPPORTED AND THAT GRATING DOES NOT SPAN MORE THAN 4-FEET. INSTALL SALVAGED GRATING ON NEW SUPPORT SYSTEM AND ANCHOR TO SUPPORTS WITH STAINLESS STEEL SADDLE CLIPS IN A CONFIGURATION THAT PERMITS GRATING TO BE REMOVED IN THE FUTURE.
3. 24" PIPING.
4. 24" COUPLING.
5. 30"x24" REDUCER.



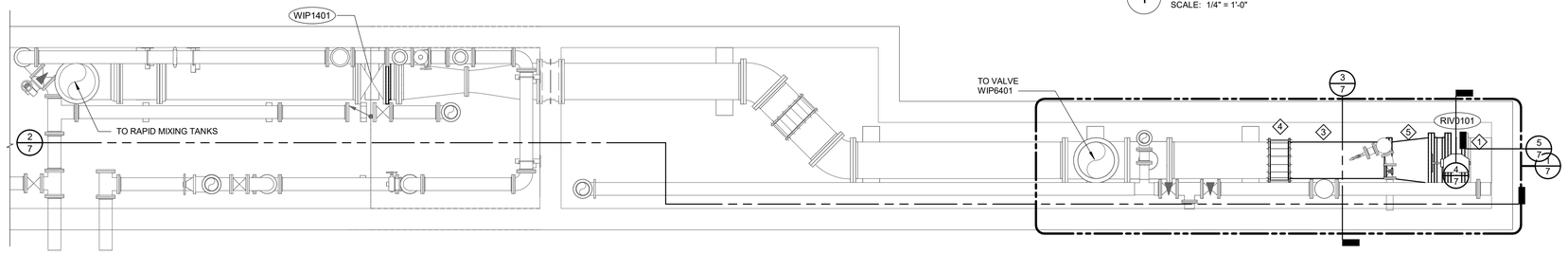
2 SECTION

SCALE: 1/4" = 1'-0"



1 UPPER GRATING PLAN

SCALE: 1/4" = 1'-0"



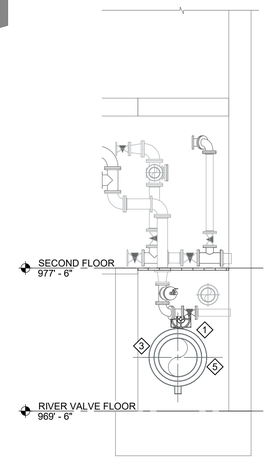
WTP - CHEMICAL BUILDING

EQUIPMENT AND PIPING PLAN

SCALE: 1/4" = 1'-0"

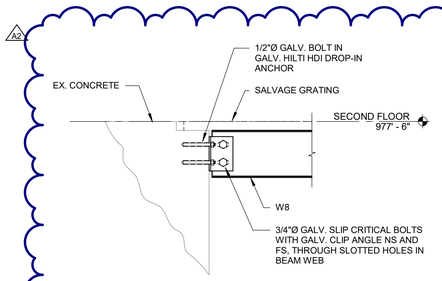
0 2 4 8

NORTH



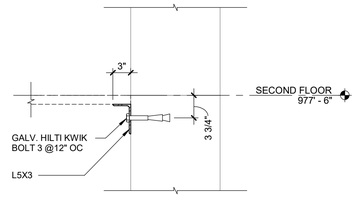
3 SECTION

SCALE: 1/4" = 1'-0"



4 SECTION

SCALE: 1" = 1'-0"



5 SECTION

SCALE: 1" = 1'-0"

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fishbeck

Engineers | Architects | Scientists | Constructors

Ann Arbor Water Treatment Plant

Ann Arbor, Michigan

Valve and

Finished Water Tank & Reservoir Improvements

WTP RIVER VALVE PLANS, SECTIONS AND ISOMETRIC

REVISIONS

7/6/2022	A2	ADDENDUM NO. 2

5/25/2022 BIDS AND CONSTRUCTION

Drawn By RS2

Designer JS

Reviewer TDM/DJV

Manager JS

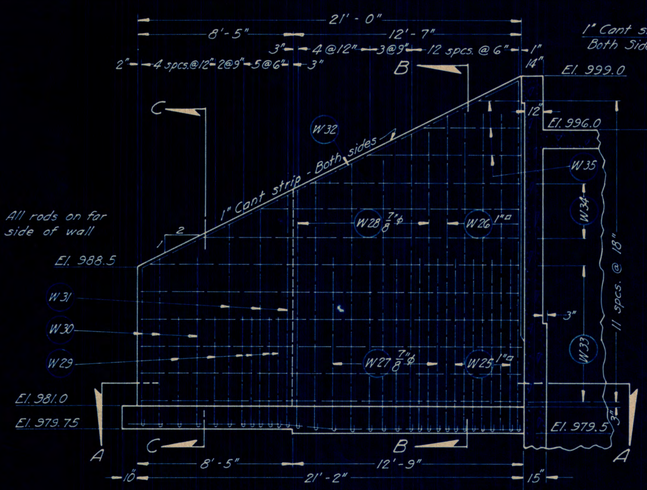
Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.

211162

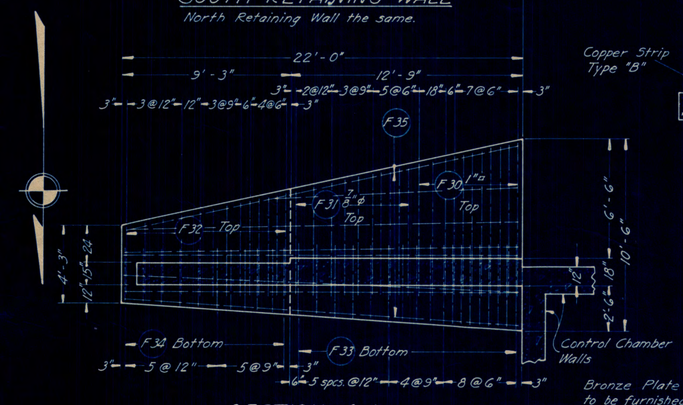
SHEET NO.

7

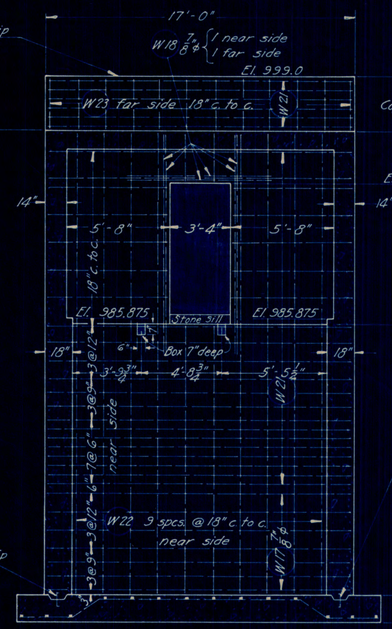


SOUTH RETAINING WALL

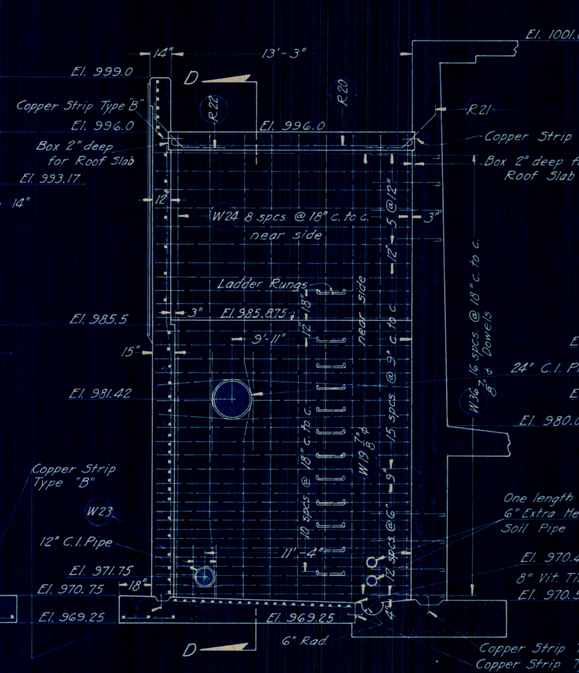
North Retaining Wall the same.



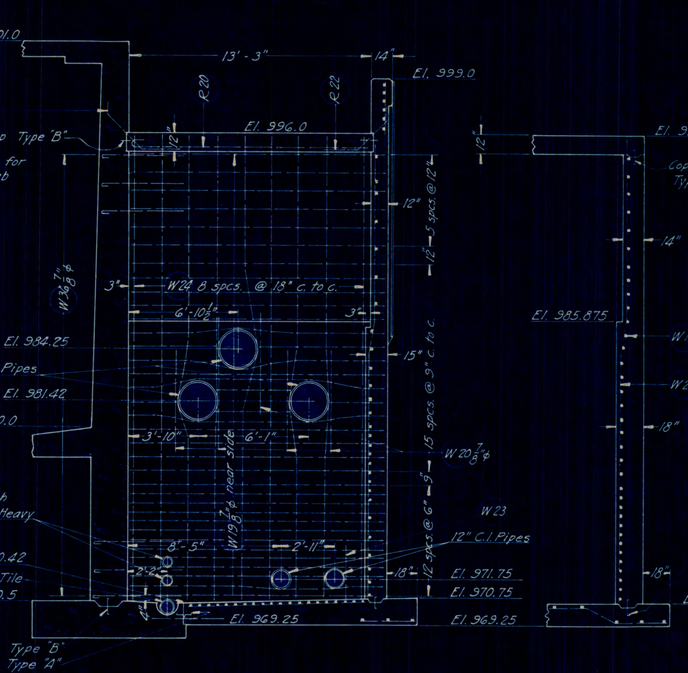
SECTION A-A
SOUTH RETAINING WALL FOOTING



EAST WALL LOOKING EAST

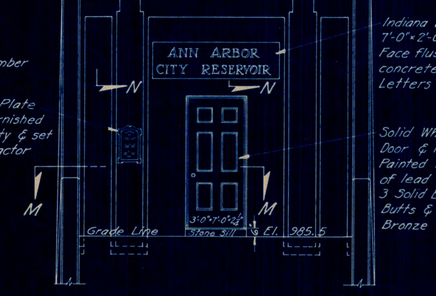


SOUTH WALL LOOKING SOUTH

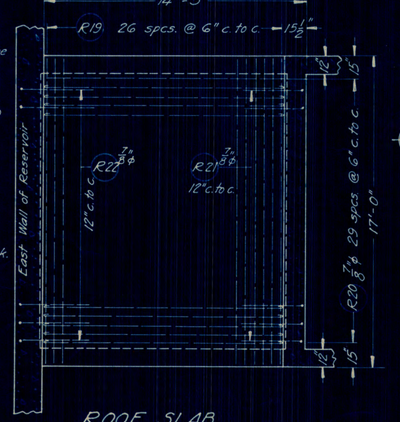


NORTH WALL LOOKING NORTH

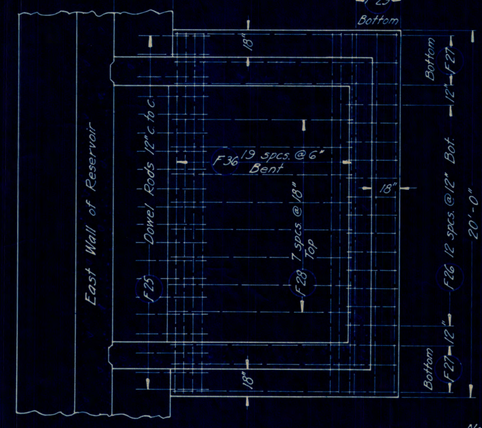
SECTION D-D



EXTERIOR ELEVATION
EAST WALL ~ CONTROL CHAMBER

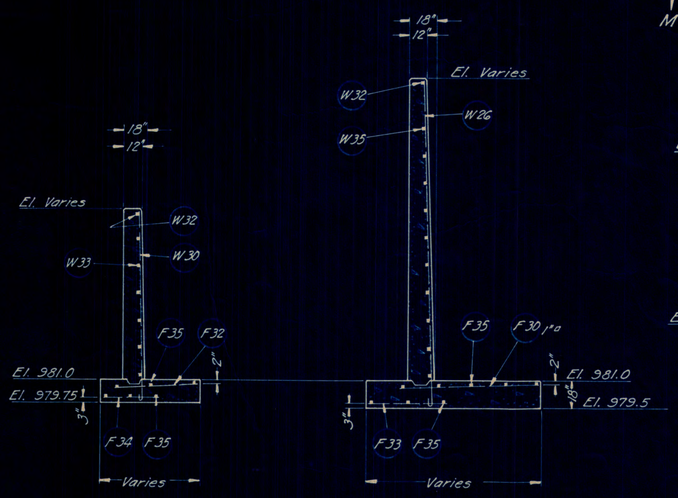


ROOF SLAB

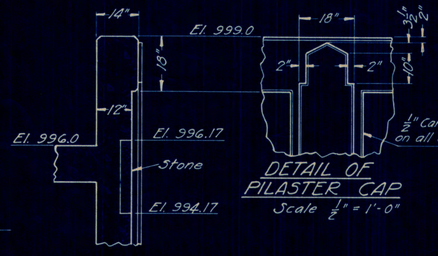


FLOOR SLAB & WALL FOOTINGS

Note:
Reinforcing $\frac{1}{2}$" ϕ Rods, unless noted.

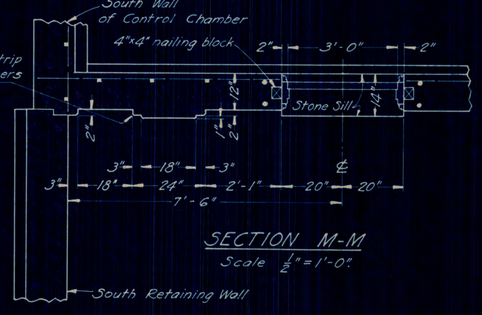


SECTION C-C
SECTION B-B
SOUTH RETAINING WALL



DETAIL OF PILASTER CAP
Scale $\frac{1}{2}$" = 1'-0"

SECTION N-N
Scale $\frac{1}{2}$" = 1'-0"



SECTION M-M
Scale $\frac{1}{2}$" = 1'-0"

Bar Schedule is shown on Dwg. No. 71409

APPROVED

Geo. H. Sanderson
CITY ENGINEER

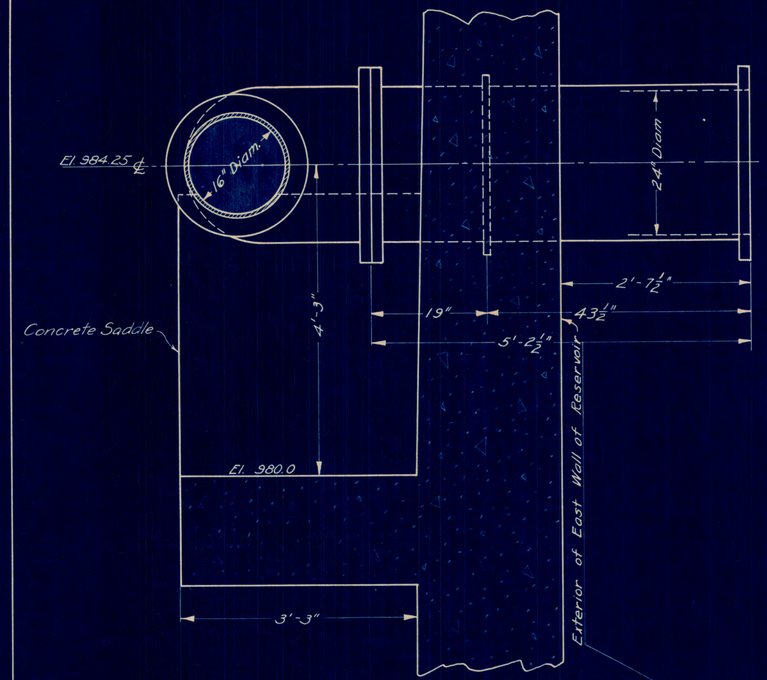
H. H. Caswell
MGR. WATER DEPT.

SHEET NO.	71414
INDEX NO.	
SHELF NO.	
SIZE NO.	
SUB. NO.	
DESIGNED BY	CARL SANZI
DRAWN BY	H.C. TABLER
TRACED BY	"
CHECKED BY	

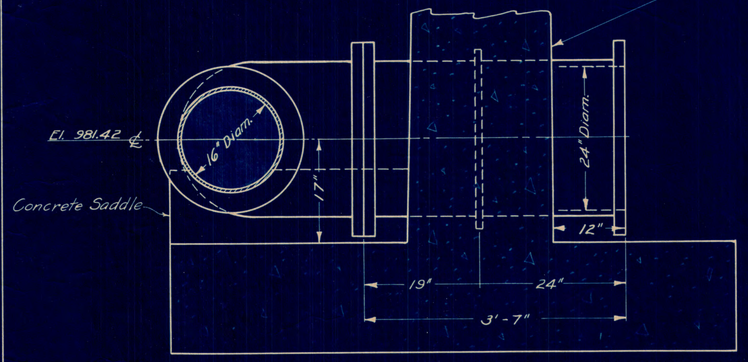
ANN ARBOR CITY WATER DEPT.
RESERVOIR
CONTROL CHAMBER & RETAINING WALLS

PREPARED BY
CITY ENGINEER'S OFFICE
FOR
BOARD OF WATER COMMISSIONERS
ANN ARBOR, MICHIGAN

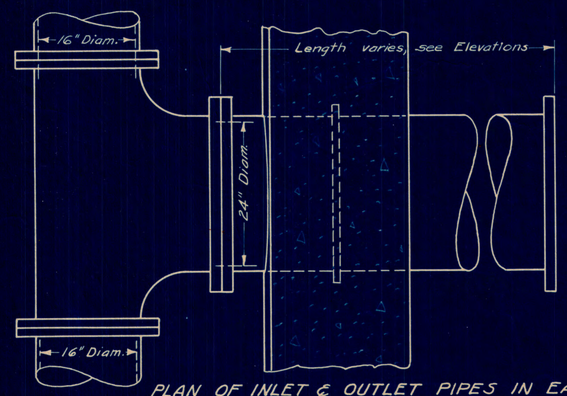
SCALE $\frac{1}{4}$" = 1'-0" EXCEPT AS NOTED. JULY 1931.



SECTIONAL ELEVATION OF INLET AT UNIT NO. 2

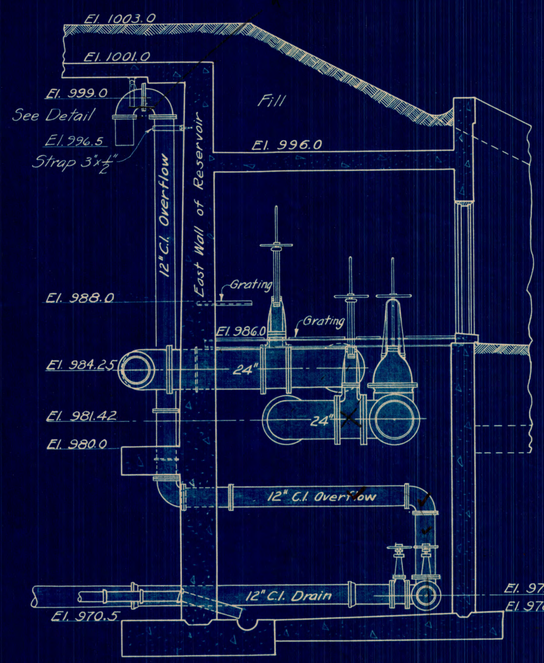


SECTIONAL ELEVATION OF OUTLET AT UNITS NO.1 & NO.3

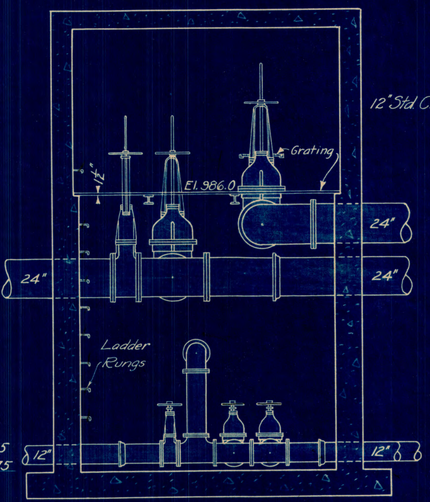


PLAN OF INLET & OUTLET PIPES IN EAST WALL

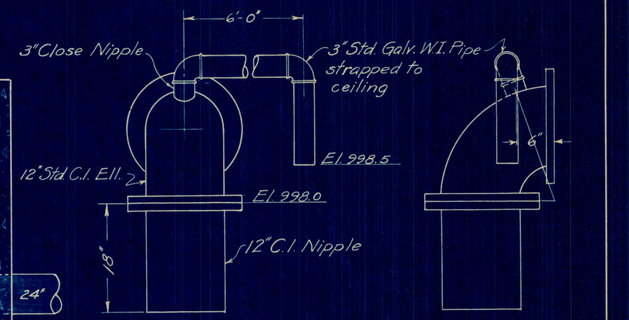
Scale: 1" = 1'-0"



SECTION A-A

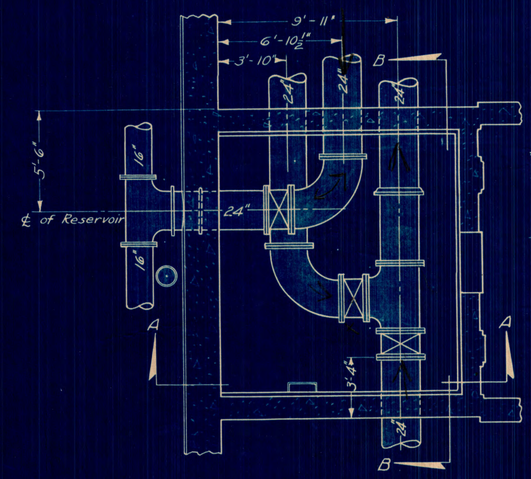


SECTION B-B

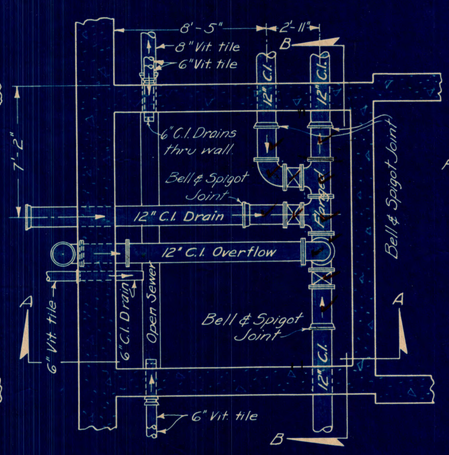


DETAIL OF OVERFLOW VACUUM BREAKER

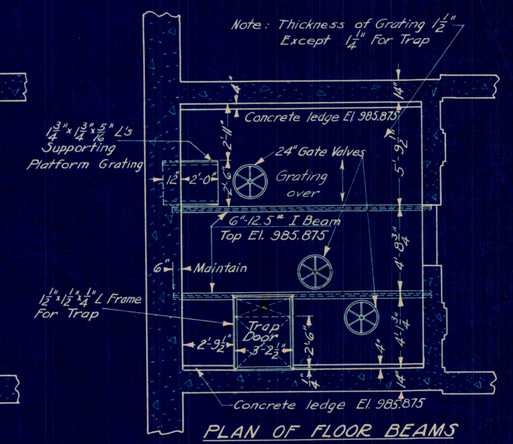
Scale: 1"=1'-0"



PLAN ABOVE EL. 986.0
CONTROL CHAMBER



PLAN ABOVE EL. 971.0
CONTROL CHAMBER



PLAN OF FLOOR BEAMS
CONTROL CHAMBER

APPROVED

Geo. H. Sandenburgh
CITY ENGINEER

H. H. Caswell
MGR. WATER DEPT.

SHEET NO.	71415
INDEX NO.	
SHELF NO.	
SIZE NO.	
SUB. NO.	
DESIGNED BY	CARL SANZI
DRAWN BY	H. C. TABLER
TRACED BY	R. HOLLISTER
CHECKED BY	

ANN ARBOR CITY WATER DEPT.
RESERVOIR

PIPING LAYOUT I

PREPARED BY
CITY ENGINEER'S OFFICE
FOR
BOARD OF WATER COMMISSIONERS
ANN ARBOR, MICHIGAN

SCALE ¼" = 1'-0" EXCEPT AS NOTED. JULY 1931

12-16-93 I:\34459\DWGS\A\C\A-C-05.DWG

NOTES:

1. USE 5' RADIUS MINIMUM BEND FOR ALL PRIMARY DUCTBANKS.
2. FOR CIRCUIT AND RACEWAY SCHEDULE, SEE DRAWING A-E-14.
3. INSTALL MOGUL FITTINGS IN 90° BEND WHERE CONDUITS PENETRATE BUILDING.

SCALE: 1"=20'

FILTER BUILDING

SEE DWG A-E-09

CO_2 INJECTION PANEL

LCP-22

SEE DWG A-E-10

LOX TANK PAD (A)

CO2 TANK PAD (A)

CONC. WALK

CONC. CHANNEL

CARBON DIOXIDE TANK

VAULT

SLOW MIXING TANKS

RECARBONATION BASIN

PUMP HOUSE

DUCT BANK, TYP SEE DWG A-E-07 AND (16011)

LUBRICANT STORAGE SCHEDULE A SEE DWG A-E-09

OZONE BUILDING (A)

STORAGE SHED

ELECTRIC ROOM

OZONE SUBSTATION SEE DWG A-E-07

NOTE 3

CLARIFIER NO. 4

CLARIFIER NO. 3

TRENCH DR

FLOCCULATION BASIN NO. 1

FLOCCULATION BASIN NO. 2

2-2" PVC

2-½" ASH LINE

AIR-GAS PIPING

SEDIMENTATION BASINS

O/H TELE LINE

CONC. CHANNEL

4600N

4800N

5200E

5400E

5600E

EXISTING ELECTRIC MANHOLE

DUCT BANK ENTRY, TYP SEE (16015)

DIESEL TANK

SODIUM HYPOCHLORIDE FACILITY

TRAFFIC TRENCH, TYP SEE (16008)

FLUORIDE STORAGE TANK PAD SCHEDULE C SEE DWG C-E-02

WEATHER STATION

RESERVOIR

AMMONIA TANK ACCESS ROAD SCHEDULE B SEE DWG C-E-02

ELECTRIC MANHOLE, SEE (16010)

SLUDGE THICKENER SCHEDULE C SEE DWG C-E-04

ANTENNA

GAS METER

AIR COND

6' SIDEWALK SCHEDULE B

NEW CONDUITS SEE DRAWING B-E-02

THICKENER #1

PRIMARY SWITCH HOUSE

SLUDGE STORAGE

THICKENER #2

DUCT BANK, TYP SEE (16014)

PRIMARY POWER SWITCHGEAR SWG-1 & UTILITY METERING CABINET, SEE DWG A-E-14

A-E-13, N4489.00 E5670.50

EXISTING DETROIT EDISON HOBART LINE

EXISTING DETROIT EDITION ARGO LINE.

CE

DB

VENT

1=20.0

DSGN	D.M.WILSON					
DR	A-C-05 M.A.REICHERT					
CHK	J.TURNER					
APVD	G.J.SWANSON	NO.	DATE	REVISION	BY	APVD

CH2M HILL

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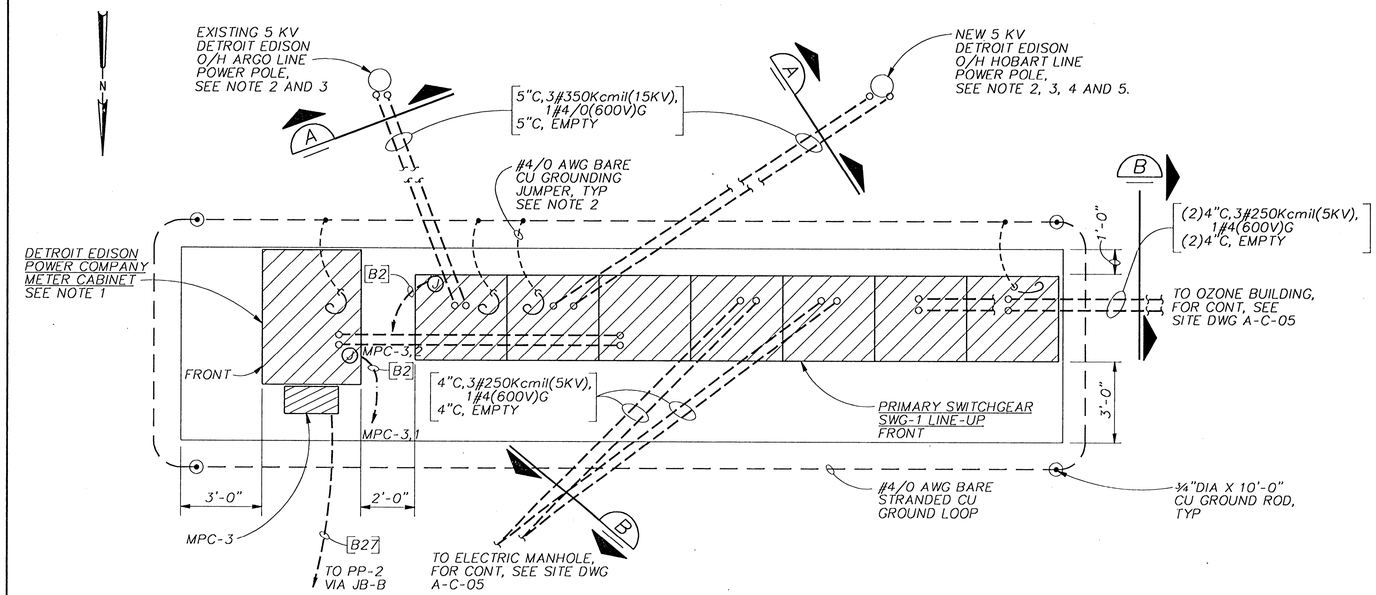
CITY OF
ANN ARBOR, MICHIGAN
WATER PLANT IMPROVEMENTS

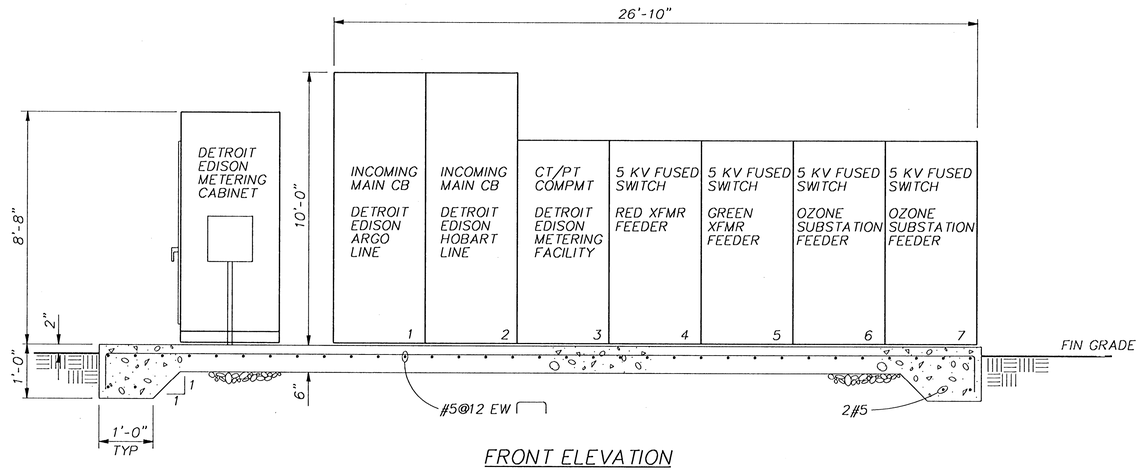
SCHEDULE A - OZONE AND ELECTRICAL IMPROVEMENTS

SITEWORK ELECTRICAL SITE PLAN

SHEET NO.	19
DWG NO.	A-C-05
DATE	DEC 1993
PROJ NO.	GLO34459



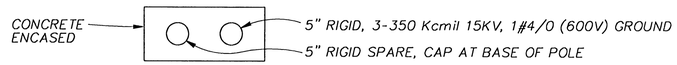
PLAN



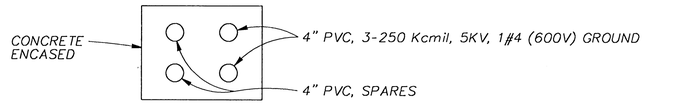
FRONT ELEVATION

PRIMARY POWER SWITCHGEAR (SWG-1) & UTILITY METERING FACILITY

NTS



SECTION A
NTS A-E-13



SECTION B
NTS A-E-13

NOTES:

1. PROVIDE A 4'-6" SQ X ¾"THK PLYWOOD BACKBOARD WITH A 2 CIRCUIT PANELBOARD, DUPLEX RECEPTACLE AND ENCANDESCENT 100 WATT LIGHT SOCKET AND BULB IN A NEMA 3R PAINTED GALVANIZED STEEL, FREESTANDING ENCLOSURE, AS PER DECO SPECIFICATIONS. ENCLOSURE SHALL HAVE A CONTINUOUS HINGED DOOR WITH PADLOCKABLE VAULT TYPE HANDLE AND VENTILATION LOUVERS AT TOP AND BOTTOM OF FRONT PANEL. ENCLOSURE SHALL HAVE ENOUGH SPACE FOR ADDITIONAL 4'-8"X 3'-0"X ¾"THK PLYWOOD BACKBOARDS. INSTALL INSTALL DECO FURNISHED METERING CABINET ON BACKBOARD AS REQUIRED PER DECO APPROVAL.
2. ROUTE GROUNDING JUMPERS THRU CONCRETE SLAB WITHIN A ¾"SCH 40 PVC CONDUIT SLEEVE. PROVIDE AN EXTRA 5 FEET OF GROUNDING CABLE COILED FOR FINAL EQUIPMENT GROUND TERMINATION. SEAL ALL FLOOR PENETRATIONS WATERTIGHT WITH APPROVED SEALING COMPOUND.
3. ELBOW UP AND TERMINATE CONDUIT AT THE BASE OF THE DETROIT EDISON POLE. PULL CABLES TO POLE AND LEAVE SUFFICIENT CABLE LENGTH FOR TERMINATION ON POLE BY DECO.
4. MAINTAIN SERVICE FROM EXISTING HOBART POLE AND NEW SERVICE FROM NEW HOBART POLE UNTIL ALL LOADS CAN BE SWITCHED OVER. REMOVE EXISTING CIRCUITS AND RECONNECT ARGO TO NEW SWITCHGEAR.
5. NEW HOBART SERVICE POLE TO BE INSTALLED BY DETROIT EDISON.

1=32.0

DSGN	D.M.WILSON				
DR	A-E-13 B.M.WILLIAMS				
CHK	R.E.NAGEL				
APVD	G.J.SWANSON	NO.	DATE	REVISION	BY APVD

REUSE OF DOCUMENTS

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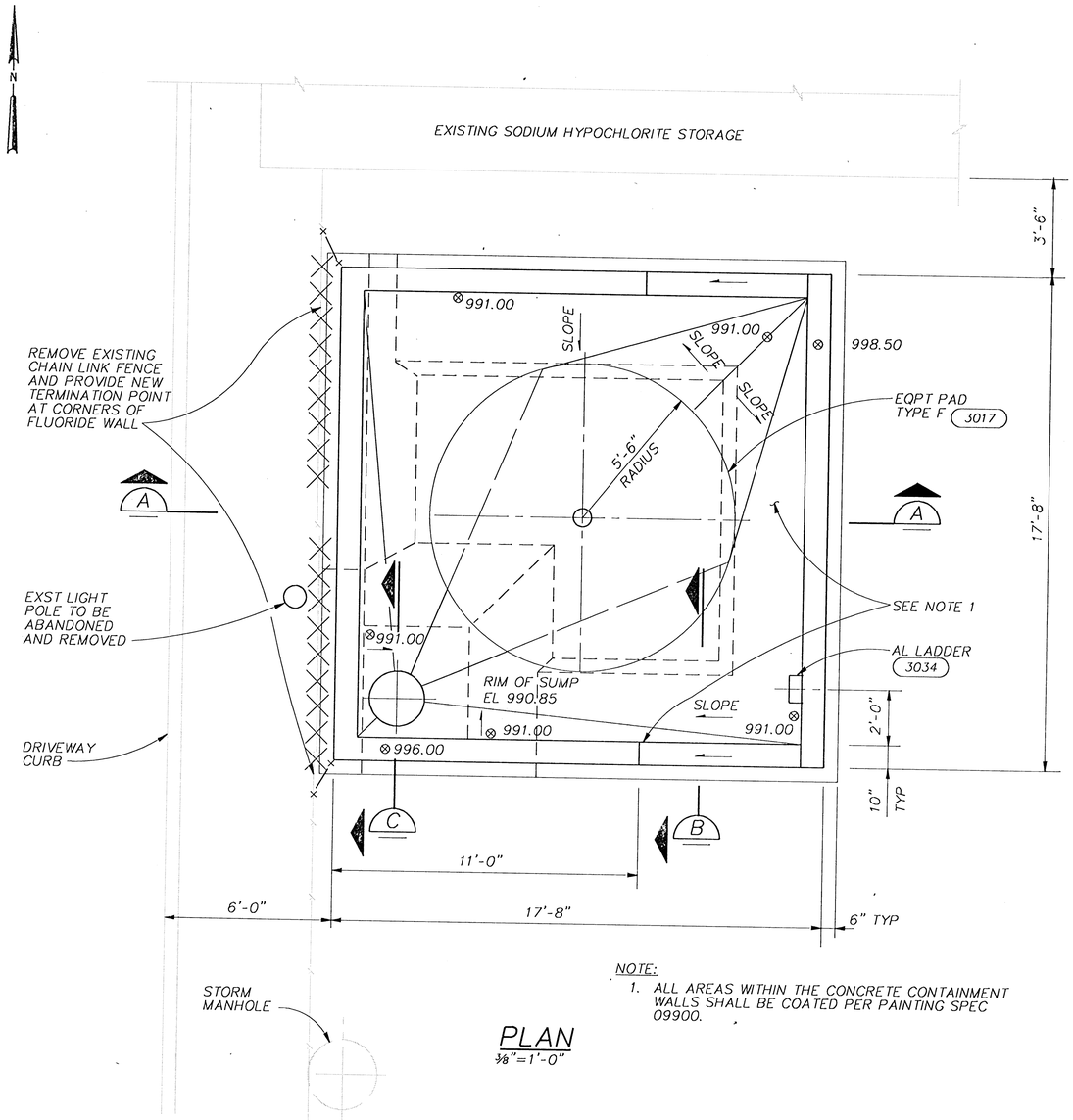
CITY OF ANN ARBOR, MICHIGAN
WATER PLANT IMPROVEMENTS

SCHEDULE A - OZONE AND ELECTRICAL IMPROVEMENTS

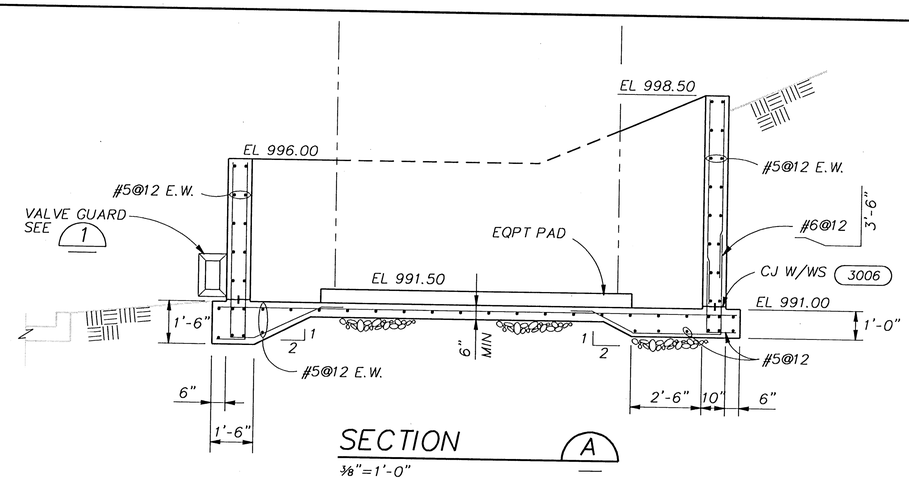
PRIMARY SWITCHGEAR AND METERING FACILITY PLAN, ELEVATION AND SECTIONS

SHEET	66
DWG NO.	A-E-13
DATE	DEC 1993
PROJ NO.	GL034459

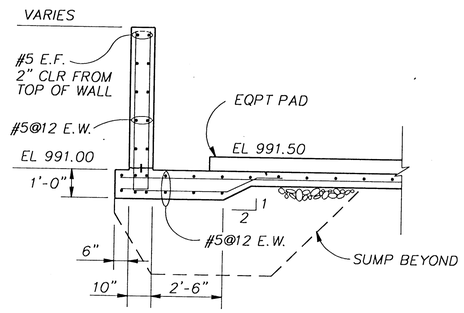


PLAN
⅜"=1'-0"

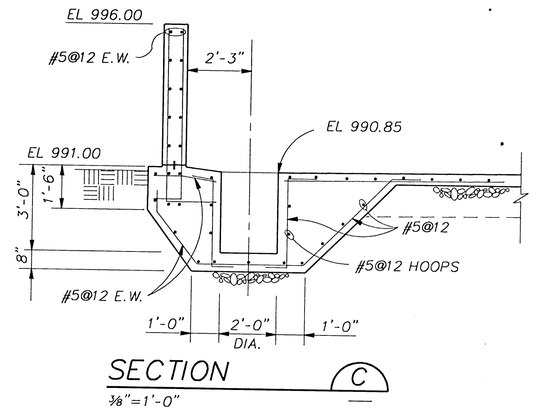
NOTE:
1. ALL AREAS WITHIN THE CONCRETE CONTAINMENT WALLS SHALL BE COATED PER PAINTING SPEC 09900.



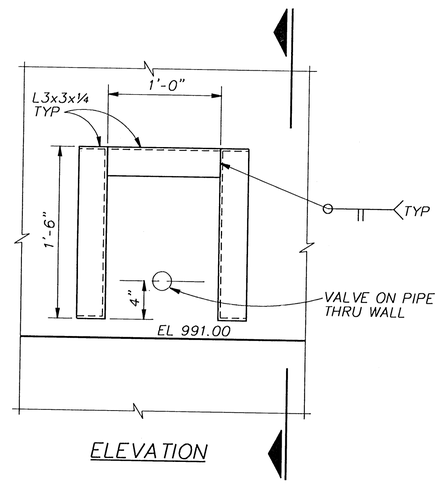
SECTION A
⅜"=1'-0"



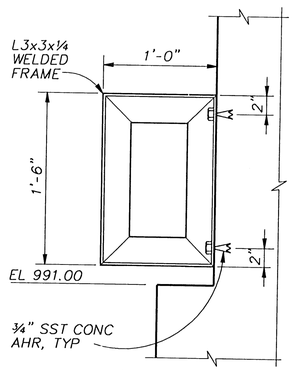
SECTION B
⅜"=1'-0"



SECTION C
⅜"=1'-0"



ELEVATION



SECTION

DETAIL 1
1½" = 1'-0"

Kent P. Wanders

DSGN M.L.HOYRUP							
DR C-S-01 R.D.WILKENING							
CHK S.PITKIN							
APVD S.P.WANDERS	NO.	DATE	REVISION	BY	APVD		

1=32.0

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0 1"
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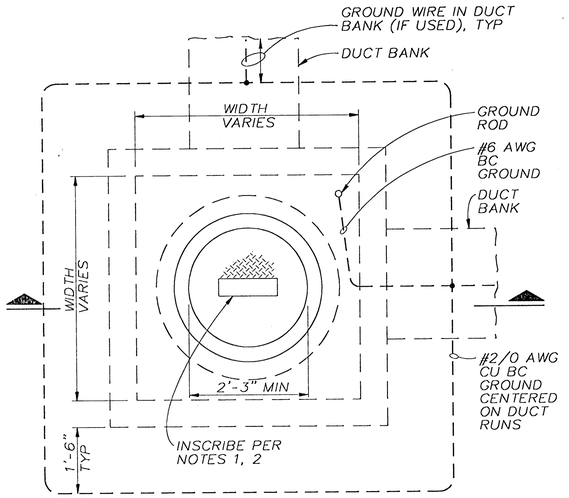
CITY OF
ANN ARBOR, MICHIGAN
WATER PLANT IMPROVEMENTS

SCHEDULE C - PROCESS IMPROVEMENTS

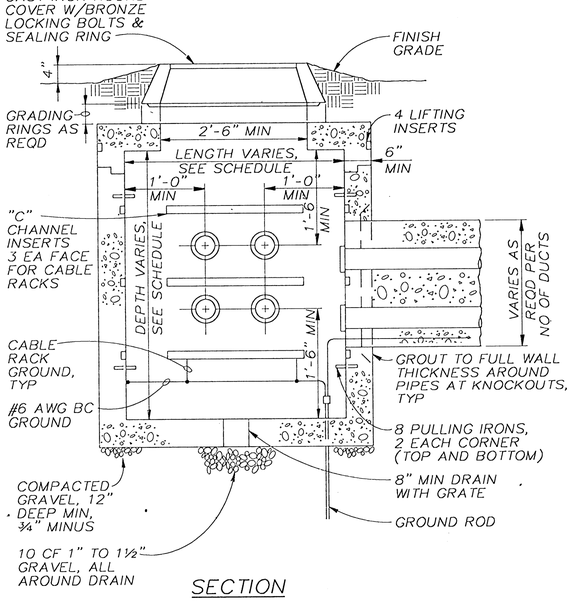
STRUCTURAL FLUORIDE FACILITY PLAN, SECTIONS AND DETAIL

SHEET	178
DWG NO.	C-S-01
DATE	DEC 1993
PROJ NO.	GL034459



NOTES:
1. INSCRIBE "ELECTRICAL HIGH VOLTAGE" IF ANY CIRCUIT IN MANHOLE IS ABOVE 600V.
2. INSCRIBE "ELECTRICAL LOW VOLTAGE" IF ALL CIRCUITS IN MANHOLE ARE 600V OR LESS.

PLAN

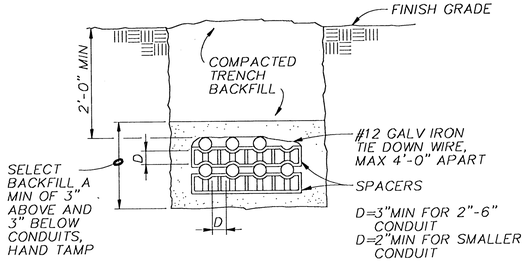


SECTION

TYPICAL MANHOLE WITH GROUNDING

NTS

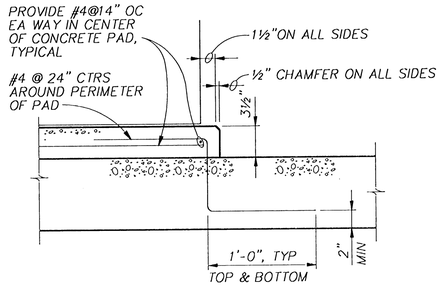
16010



TYPICAL UNDERGROUND CONDUIT

NTS

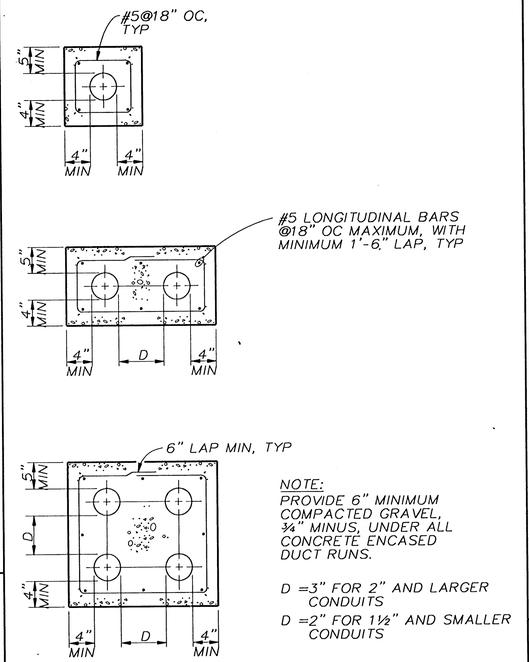
16011



CONCRETE PAD SECTION

NTS

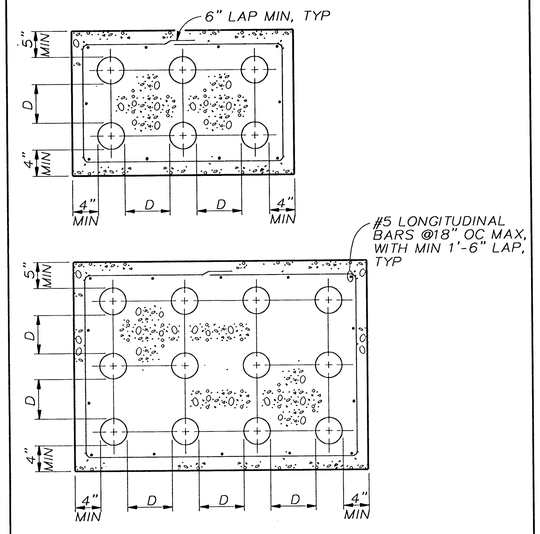
16012



NOTE:
PROVIDE 6" MINIMUM COMPACTED GRAVEL, ¾" MINUS, UNDER ALL CONCRETE ENCASED DUCT RUNS.

D =3" FOR 2" AND LARGER CONDUITS

D =2" FOR 1½" AND SMALLER CONDUITS

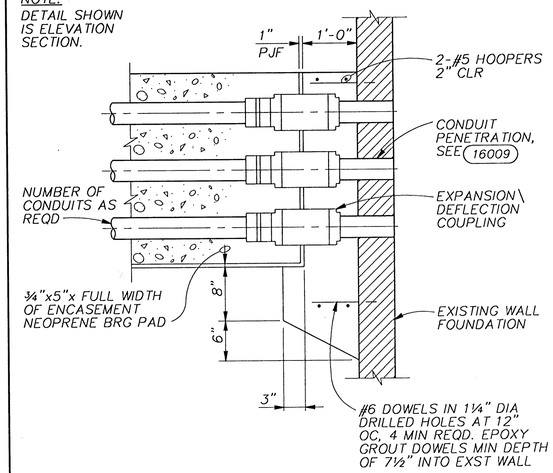


TYPICAL DUCT BANK DETAILS

NTS

16014

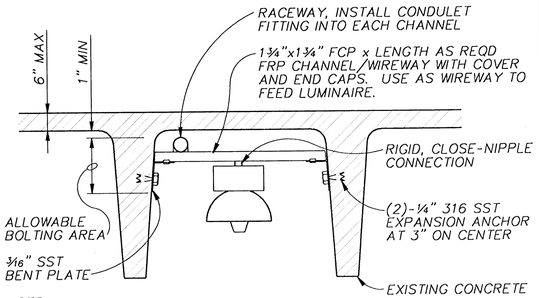
NOTE:
DETAIL SHOWN IS ELEVATION SECTION.



CONCRETE ENCASED DUCT BANK BUILDING INTERFACE

NTS

16015



NOTE:
PAINT SST IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

LUMINAIRE MOUNTING

NTS

16016

1=1.0

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VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CITY OF
ANN ARBOR, MICHIGAN
WATER PLANT IMPROVEMENTS

STANDARD DETAILS

ELECTRICAL

SHEET	220
DWG NO.	E-02
DATE	DEC 1993
PROJ NO.	GL034459