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REQUEST FOR PROPOSALS

**PROGRESSIVE DESIGN/BUILD SERVICES FOR A
THERMAL BIOSOLIDS DRYING SYSTEM AT THE
DOWNRIVER WASTEWATER TREATMENT FACILITY**

Proposal Due Date: November 25, 2019

NOTICE TO DESIGN-BUILD ENTITIES

OHM Advisors Inc. (OHM), on behalf of the Downriver Utility Wastewater Authority (DUWA), is requesting Proposals from Design-Build (DB) entities to provide Design-Build Services for a proposed Thermal Biosolids Drying System (the PROJECT) at the Downriver Wastewater Treatment Facility (DWTF) located at 797 Central Street, Wyandotte, MI 48192. It is DUWA's intent to award a single contract to a selected DB entity to deliver the PROJECT.

Following receipt of Proposals, a selection committee will review proposals and select up to three (3) DB entities to interview that are expected to provide the best value, based on qualifications and other factors that have been set forth in this Request for Proposals (RFP). Final selection will be based upon the combined rating of the proposal and interviews as outlined herein.

Procurement and selection shall be made without any lobbying and/or direct contact with DUWA (and its 13 municipal members) by Design-Build Entity, their subconsultants, subcontractors or suppliers. All expenses associated with the preparation and submission of a Proposal for this PROJECT shall be the sole financial responsibility of the DB entities.

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SECTION 1 – SUBMISSION REQUIREMENTS

1.1 Submission Package

Submit a sealed package containing (7) seven bound copies of completed Proposal plus one (1) complete electronic copy in PDF format on a flash drive by the deadline and to the address shown below. To be considered, Proposal packages must arrive by the time and date shown, regardless of whether they are hand delivered or mailed.

The overall content and format of the Submission shall adhere to the outline (following) and as more described in Section 6 of this RFQ/P:

- Cover Letter
- Qualifications and Experience of the DB team for similar, recent projects.
- Technical Proposal
- Cost Proposal

1.2. Submission Location and Deadline

DB entities seeking to submit a Proposal must provide the requested number of copies of the fully completed Proposal packages to:

OHM Advisors
% DUWA System Manager
34000 Plymouth Road
Livonia, MI 48150
Attn: Lambrina Tercala, PE

Proposal packages must be addressed and submitted to DUWA on or before:

3:00 p.m. EST on Monday, November 25 2019

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SECTION 2 – PROCUREMENT PROVISIONS

2.0 RFP PROCEDURES

2.1 Availability of RFP documents

The complete set of the RFP documents (including all attachments) are available for download from the DUWA website (www.duwauthority.com). Interested bidders will be notified of the posting by DUWA’s System Manager via email. To be included on the ‘interested bidders’ list, you must e-mail your contact information to Lambrina Tercala at Lambrina.Tercala@ohm-advisors.com. Proposers are solely responsible for any reproduction costs.

2.2 Issuance and Acknowledgement of Receipt of Addendum

DUWA will notify interested bidders of available addenda via email. The addenda, when released, will be available for download from DUWA’s website at: www.duwauthority.com.

It is solely the responsibility of each of these proposers to ensure that they receive any and all addenda. Proposers shall acknowledge receipt of addenda in their Submissions.

2.3 Requests for Clarification

Proposers should submit Requests for Clarification in written form via email to Lambrina Tercala as set forth below. Requests for Clarification must be submitted prior to 2:00 p.m. local time on November 8, 2019. All questions received by this time and date will be responded to, in writing, by issuance of an addenda, no later than November 15, 2019. Requests for clarification received after this time and date will not receive a response, except in the sole discretion of DUWA. Anonymity of the source of specific questions will be maintained in the written responses. Responses to all questions will be emailed to all registered RFP recipients.

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All requests for clarification must be sent via email to the following:

OHM Advisors
c/o DUWA System Manager
Lambrina Tercala, PE, Project Manager
Phone: (734)-466-4430
Email: Lambrina.Tercala@ohm-advisors.com
Subject: DUWA Biosolids DB RFP

2.4 RFP Optional Pre-Proposal Meeting

DUWA will conduct an optional pre-proposal meeting with each interested proposer. Proposers must email their interest for a meeting to Lambrina Tercala by October 21, 2019. The intent of the meeting would be to brainstorm and communicate PROJECT information or answer questions to clarify PROJECT requirements, in an open collaborative environment. Meetings will be held individually and confidentially with each proposer. Available dates for the meeting will be scheduled for the week of October 28 or November 4.

The Proposer may request a tour of the dewatering area following the meeting. All personnel who want to participate shall bring their own personal protective equipment, which includes as a minimum: hard hat, safety glasses and appropriate footwear.

2.5 RFP Submission Materials

The responses to the RFP must be made according to the requirements set forth in this RFP. Noncompliance with these requirements or the inclusion of conditions, limitations, or misrepresentations may be cause for rejection of the Proposal.

Responses shall be addressed and delivered or mailed to:

OHM Advisors
% DUWA System Manager
34000 Plymouth Road
Livonia, MI 48150
Attn: Lambrina Tercala, PE
Subject: TIME SENSITIVE - DUWA Biosolids DB RFP

- Submissions must be received by the specified submittal date and time.
- Submissions received after the deadline will not be accepted.

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- Faxed and emailed Proposals will not be accepted.
- Number of Copies: Submit a sealed package containing (7) seven bound copies of completed Proposal plus one complete electronic copy in PDF format a flash drive.

Submitted Proposals must conform to the requirements of this RFP and must be signed by the appropriately authorized official with the authority to commit the Proposer to perform the PROJECT Work.

2.6 Confidentiality of Design and Pricing Information

All Proposals sent to DUWA are understood to be confidential documents. DUWA shall make reasonable efforts, consistent with applicable laws, to refrain from disclosing to competing proposers prior to Award, the content of any commercially sensitive business information regarding design, prices or pricing that is contained in another proposer's Proposal.

DUWA shall also make reasonable efforts, consistent with applicable laws, to refrain from disclosing the content of any commercially sensitive financial information labeled CONFIDENTIAL within the RFP.

2.7 Proposal Validity for 90 Days

The offer represented by each proposer's Proposal will remain in full force and effect for ninety (90) days after the Proposal Due Date. If award has not been made within ninety (90) days after the Proposal Due Date, each proposer that has not previously agreed to an extension of such deadline shall have the right to withdraw its Proposal.

2.8 Procurement Schedule

The following is the anticipated RFP schedule and related project dates and is subject to change by DUWA:

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Table 2.8.1: Procurement Schedule Milestones and Dates

| Milestone | Date |
|--|---------------------|
| Invitation to Submit Proposals | October 14, 2019 |
| Optional Pre-Proposal Meetings (tentative) | Oct 28-Nov 8, 2019 |
| Requests for Clarification Deadline | Nov 8, 2019 |
| Deadline for RFP Submittal | Nov 25 2019 |
| Interviews | Dec 9-13, 2019 |
| DUWA Board Approval of Selected DB Entity & Dryer Manufacturer | January 10, 2020 |
| Negotiations | January 20-31, 2020 |
| Issue NTP | February 13, 2020 |

DUWA reserves the right, at any time, to make additions, modifications or deletions to any of the events or dates that comprise the RFP Schedule. Such changes shall be made by RFP Addendum.

2.9 Procurement Terms and Conditions

2.9.1 Duty of Review

Each proposer, in submitting its Proposal, acknowledges and understands its obligation to carefully and thoroughly examine all RFP documents and other information available to the proposer relating to the PROJECT and the conditions under which the Work will be performed. Each proposer shall seek clarification prior to submission of its Proposal of any and all items of information contained in the RFP documents or in any other documents upon which the proposer has relied in preparing its Proposal that it observes (or should have observed in the exercise of reasonable care in its capacity as a DB entity responsible for both design and construction of the PROJECT), which constitute or indicate: (1) errors, omissions, conflicts, ambiguities, lack of coordination or noncompliance with Applicable Laws; (2) problems associated with design feasibility, constructability, availability of labor, materials, products or equipment; or (3) difficulties or obstructions affecting proposer's ability to perform the Work within the constraints of the proposed project duration.

Failure by a proposer to fully inform itself of the matters described herein and to seek clarification in the manner required herein shall not relieve the proposer from its responsibilities under the Design-Build Contract for the PROJECT and other contract documents should it be awarded the PROJECT nor serve as the

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basis for any claim by the proposer that it was mistaken or misled in connection with the preparation of its Proposal or its planning for design or construction of the Work.

DUWA assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of RFP documents.

2.9.2 Duty to Inspect Site and Records

The Proposer has a duty to ensure that the appropriate members of the DB entity team have carefully and thoroughly inspected:

- DWTF and its surroundings, existing improvements and their existing uses by the Veolia DUWA Plant Operation & Maintenance crews, routes of ingress and egress, and local conditions in the vicinity of the site (including, without limitation, sources and availability of labor, materials and equipment); and all reports, surveys, test data, as-built drawings and other information concerning visible and concealed conditions (including, without limitation, locations and capacities of utility sources and locations of utility lines) above and below the surface of the ground or in existing improvements that (a) proposer is informed are available to the proposer for review or (b) are disclosed by public records, in order to fully acquaint itself with all of the conditions, restrictions, obstructions, difficulties and other matters which might affect the proposer's ability to complete the design and construction of the Work in accordance with the requirements of the RFP Documents and its Proposal.

The DB entity may rely upon the technical data provided, but not upon non-technical data, interpretations, opinions or provisional statements. DUWA does not warrant the completeness or accuracy of any data provided and DUWA assume no liability for such data. Any additional testing, investigation or reports shall be performed by the DB entity's engineer under separate contract with the DB entity. The DB entity shall obtain advanced approval from DUWA when accessing the site for testing and investigation. Any excavation within the limits of the DWTF shall be fully investigated first by utilizing Ground Penetrating Radar and Potholing to confirm elevation, location, and type of underground utility present within the proposed excavation area.

2.9.3 Duty to Raise Any Objections to DUWA Design-Build Contract

A sample DUWA Design-Build Contract is provided in Exhibit C. Any objections or requests of modifications to the Contract terms must be included in the Proposal. Failure of a proposer to accept the terms of the DUWA's Design-Build

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Contract may result in the rejection of the Proposal. It shall be the responsibility of the prospective proposer to review all sections and exhibits of the Design-Build Contract, including insurance requirements. If no objections are received, then DUWA will assume the proposer is able to and will enter into the Design-Build Contract for this PROJECT and fulfill the terms and requirements set therein. DUWA may recover any damages accruing to DUWA as a result of the successful proposer's failure or refusal to execute the DUWA Design-Build Contract for the PROJECT.

2.9.4 No Warranty

Proposers are solely responsible to satisfy themselves as to the suitability of any estimates, projections, budgets, design concepts, technical criteria, reports, surveys, test data and other information provided to, or reviewed by, them relating to the PROJECT, Site or existing improvements and nothing stated therein, in the RFP Documents or in any other information provided by DUWA shall be construed as implying the creation or existence of any warranty, express or implied, on the part of DUWA with respect to the completeness, accuracy or sufficiency thereof.

2.9.5 Ownership and Copyright

Drawings, renderings, models, building designs, design approaches, design details, construction techniques, procedures, means and methods and other technical design and construction information contained within a Design-Build Proposal, or any other documents submitted by proposer to DUWA (typ), shall be deemed the sole and exclusive property of DUWA, all copyrights thereto shall be deemed assigned to and held by DUWA, and the proposer shall retain no property, copyright or other proprietary rights with respect thereto; provided, however, that: (1) nothing herein shall be interpreted as prohibiting or limiting the right of any proposer that does not receive Award of the Design-Build Contract for the PROJECT to copy, use or incorporate such technical design information contained within its own Design-Build Proposal for its own use in the conduct of its business, trade or profession; and (2) with respect to the proposer who receives Award of the Design-Build Contract for the PROJECT, such proposer's rights and obligations with respect to copying, use or incorporation of such technical design information in any projects or work other than the PROJECT shall be governed by the terms of the Design-Build Contract.

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2.9.6 Reservation of Rights

DUWA reserves the right to modify this RFP, to change, by additions, deletions or modifications, the RFP submittal date, PROJECT Criteria, PROJECT Budget, Contract Time, Design-Build Contract, or any other portion of the RFP documents prior to submittal date.

The issuance of an RFP constitutes only an invitation for the DB entity to present their competitive Proposals. DUWA reserves the right to determine, in its sole discretion, whether any aspect of the Proposal satisfactorily meets the criteria established in the RFP and the right to seek clarification or revisions from any proposer submitting Proposals. DUWA reserves the right to waive minor irregularities and omissions in the information contained in the Proposal submitted, and to make all final determinations. DUWA also reserves the right to reject any or all Proposals received as a result of this solicitation and to procure PROJECT services by other means. DUWA reserves the right to decide not to award an agreement as a result of the RFP or cancel the RFP process.

DUWA shall not be obligated to respond to any Proposal submitted, nor be legally bound in any manner by the submission of the Proposal.

In the event the RFP is withdrawn by DUWA prior to the receipt of RFP Proposals, or if DUWA does not proceed for any reason, DUWA shall have no liability to any proposer for any costs or expenses incurred in connection with the preparation and submittal of a response to this RFP

2.9.7 Inaccuracies or Misrepresentations

If in the course of the RFP process or in the administration of a resulting Contract, DUWA determines that the DB entity has made a material misstatement or misrepresentation or that materially inaccurate or misleading information has been provided to DUWA or DUWA, the DB entity may be terminated from the RFP process or in the event a Contract has been awarded, the Contract may be immediately terminated.

In the event of a termination under this provision, DUWA is entitled to pursue any available legal remedies.

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2.9.8 Proposal Expenses

The proposer shall bear, at its own expense, without reimbursement by DUWA or DUWA, all costs and expenses associated with the preparation of its Design-Build Proposal and its participation in the Request for Proposal process.

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SECTION 3 - PROJECT TERMS and CONDITIONS

3.1 Regulatory Compliance

The design and construction must comply with the requirements of all applicable local, State and Federal agencies. Each portion of the work shall be performed by a person licensed, equipped and experienced to do work in the particular field. Please review Public Contract Code and Public Law, which include requirements for performance of the work by Contractors and Subcontractors. Both shall furnish certified payroll records and participate in an approved apprenticeship program as required by Federal and State requirements. The labor compliance and apprenticeship requirements will be monitored throughout the construction process. If the DB entity is not in compliance it shall be in default of its contract.

All subcontracts that are not listed by the DB entity in the Proposal shall be awarded by the DB entity in accordance with state and federal code.

3.2 WIFIA Requirements

The Design-Build Contract is expected to include WIFIA requirements including NEPA, Davis-Bacon, American Iron and Steel, and all other federal cross-cutter provisions apply. For further details see their website at:
<https://www.epa.gov/wifia>

3.3 Prevailing Wages and Federal Labor Standards

The successful proposer who is awarded the Design-Build Contract for the PROJECT will be required to comply with all applicable provisions of the Federal public law and State labor codes, including all prevailing wage requirements of US Department of Labor and WIFIA. Federal Labor Standard Provisions, including prevailing wage requirements of the Davis-Bacon and related Acts will be enforced.

The PROJECT is a "public work" and a prevailing wage project. The DB entity is required to pay the prevailing wage rate as determined by the Davis-Bacon Act. In the event of a conflict between Federal and State wage rates, the higher of the two will prevail. The DB entity shall post a copy of the prevailing rate of per diem wages at each job site.

This PROJECT is subject to compliance monitoring and enforcement. The Awarded DB entity shall maintain all records in accordance with Federal and State requirements and

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shall cooperate with DUWA and any other labor compliance monitoring consultant to the fullest extent possible.

3.4 Workers' Compensation

The DB Entity shall comply with the State of Michigan Workers' Disability Compensation Act (WDCA), Public Act 317 of 1969, as amended and any other state or local requirement.

3.5 Compliance with other DUWA Provisions

The DB entity and all subcontractors shall comply with DUWA procurement and workplace policies, included as Attachment D.

3.6 Conflict of Interest

In the procurement of supplies, equipment, construction, and services by sub-recipients, the conflict of interest provisions in 24 CFR 85.36, OMB Circular A- 110, and 24 CFR 570.611, respectively, shall apply. No employee, officer, or agent of the sub-recipient shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved.

DUWA has additional requirements in Attachment D, section 11.03 of their policy document.

3.7 Changing Team Members Prohibited

No changes to the members of DB entity team, including the firms and listed personnel, shall be permitted after the deadline for submission of the RFPs, except if the member has left employment with the DB entity companies, or except with the prior written authorization of DUWA, which authorization may be granted or withheld in the DUWA's sole discretion. This requirement shall be in effect through completion of the PROJECT.

3.8 Liquidated Damages

The Design-Build Contract for the PROJECT will include provisions for payment of liquidated damages by the DB entity to DUWA of \$2,000.00 (cost projections indicate delay damages of up to \$4,200/CD) per calendar day if the DB entity fails to substantially complete the work within the contract time for substantial completion. The Design-Build Contract for the PROJECT also includes provisions for payment of liquidated damages by the DB entity to DUWA of \$2,000.00 per calendar day if the DB

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entity fails to obtain final completion of the work within the contract time for final completion.

3.9 Legal Entity for Contracting Purposes

DUWA anticipates that the parties involved in the design-build will enter into the contract through a single legal entity. If the contracting entity lacks sufficient capitalization, DUWA may require that the entity provide a customary guarantee from a corporate parent.

3.10 Bridge Crane Use

The DB entity is to provide crane, rigging and any other equipment required to perform the work. There is a bridge crane in the Dewatering Building that is in the work site. The Contractor shall be allowed to use the overhead crane. If the crane is used, the Contractor will be responsible for a 3rd party pre- and post- inspection of the crane. Repairs to the crane as identified by the post inspection shall be at the Contractor’s expense.

Note: During the execution of this project, the Contractor is allowed the use of building equipment (i.e. overhead cranes, jib hoists, etc.); however, in the event that any or all of the equipment is out of service, no compensation shall be owed to the Contractor for providing alternate equipment or any delays this may cause.

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SECTION 4 – FACILITY BACKGROUND

4.1 Downriver Wastewater Treatment Facility

The Downriver Wastewater Treatment Facility (“DWTF”) utilizes preliminary, primary, secondary, and disinfection treatment processes to treat sewage prior to discharging treated effluent to the Trenton Channel of the Detroit River. The DWTF is an oxygen activated sludge (OAS) plant as a secondary wastewater treatment plant. The treatment plant’s typical dry weather flows range from 30-60 MGD. However, the treatment plant has the capacity to fully treat 125 Million Gallons per Day (MGD), and the capability to process up to 225 MGD during extreme wet weather events.

Preliminary treatment consists of influent pumping, screening and grit removal. After grit removal, wastewater enters the primary treatment facilities. In the primary treatment facilities, there are seven (7) primary settling tanks with ferric chloride and anionic polymer feed capabilities. During Wet Weather conditions, all preliminary treatment flow in excess of 150 MGD up to 225 MGD is pumped by the Tunnel Pump Station. The Tunnel Pump Station by-passes excess preliminary treatment flow from primary treatment and re-introduces the flow into primary treatment effluent flow before the low lift pump station. The low lift pump station has a pumping capacity of 200MGD and pumps flow into the secondary treatment process. Secondary treatment consists of pure oxygen fed activated sludge processing and final settling.

Preliminary treated wastewater (screening and grit removal) undergoes primary sedimentation with the ability to enhance treatment with ferric chloride/polymer addition. Primary sludge is pumped to gravity thickeners for co-processing with wasted secondary biosolids from the OAS process. secondary wasted activated sludge (WAS) is pumped to the gravity thickeners. Thickened biosolids (typical range of 2 to 3 %TS) are pumped to the Solids Handling Building for dewatering and cake conveyance to enclosed truck loading bay. Raw (undigested) cake biosolids (typical range of 23 to 31 %TS) are hauled away in double-hitch gravel train trailers (55 tons loads) to landfill(s) for disposal.

As will be further detailed herein, the composition (mass ratio of primary sludge to WAS, wet mass quantity and dry solids quality) of the dewatered cake biosolids will vary as a result of seasonal treatment (during the months of March through May) of de-icing fluid waste (glycol) from the Detroit Metro Airport. Accordingly, the mass fraction of primary sludge to thickened WAS approximates one-to-one (1:1). That is, equivalent (50/50%) mass proportions of the feedstock composition of dewatered cake biosolids. However, during the non-glycol treatment periods, the typical feedstock composition of primary sludge to thickened WAS is in a range of two-to-one (2:1) and to as high as three-to-one (3:1). As a result, centrifuged cake biosolids can be dewatered to more than 30% TS.

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Currently, there are four (4) aged belt filter presses (BFPs) and two (2) high-solids centrifuges (Alfa Laval – ALDEC G2-120 machines) in the dewatering area of DWTF’s Solids Handling Building. Veolia North America – Central, LLC (Veolia) is the contract Operator for DUWA of the DWTF under a long-term (20-year) agreement to provide full-service operations, maintenance and management (OM&M) services through the end of 2039. Veolia is responsible for the processing, management and disposition of all biosolids produced at the DWTF.

4.2 Cake Biosolids

The thickened biosolids blend of primary sludge and secondary WAS have been co-dewatered via a combination of BFPs and centrifuges. The annual average of wet mass of cake biosolids between 2013-2017 has been approximately 122-WTPD (an annual equivalent of more than 44,500 WTPY). The average total solids (%TS) content of the dewatered cake has been 25 to 27 %TS. Accordingly, the dry mass production of cake biosolids has averaged ~32 dry tons per day (DTPD) or annual equivalent of ~1,750 DTPY.

The Project will process only centrifuged dewatered biosolids (the “feedstock”) for thermal drying into Class A product (e.g. granules with minimal dust at 90 to 92 %DS). The cake solids from the centrifuges has averaged 28 %TS (a range of 27 to 31 %TS).

The BFPs will be removed as part of the DB entity’s SoW for the Project and therefore, the feedstock to the thermal drying system will completely and exclusively be raw and undigested biosolids from dewatering centrifuges.

The fiber (cellulostic) content in the primary sludge results in a consistently high level of dewaterability of the thickened biosolids. During the non-glycol processing periods (e.g. June thru Jan.) the cake solids from the centrifuges will range from 29 to 31 %TS, and during the glycol treatment periods (e.g. Feb. thru May) the cake solids drops a bit to a range of 27 to 28 %TS. A structured emulsion polymer is used for biosolids dewatering.

The seasonal variation in wet cake mass production (e.g. WTPD) approximates ten (10%) to fifteen (15%) percent. The historical variation over the past five (5) years has averaged twelve (12%) percent as compared to the annualized daily average levels. This peaking factor becomes the basis for maximum month and capacity design criteria for the Project, relative to daily average cake biosolids production levels (365 day basis).

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- Existing (2) Centrifuges (to remain)
 - Serial# 5024552, 5024568
 - Alfa Laval-ALDEC G2-120
 - Achieves 29% DS after dewatering
 -
- Existing (4) Belt Filter Presses (3 operation; 1 nonoperational) (to be removed)
 - Roediger (2.2 meter)
 - 2000 lbs dry solids per hr ea
 - Achieves 24% DS after dewatering

Additional information associated with the historical biosolids generation at DWTF is included as Attachment G.

4.3 DWTF Permit Language

During wet weather conditions when flows through the treatment plant exceed 125 MGD, DUWA is authorized to blend effluent from preliminary treatment and primary treatment with effluent receiving primary treatment and secondary treatment, respectively. A program is being developed to reduce bypass/blending.

- Preliminary Treatment
 - All dry weather and wet weather flows shall receive preliminary treatment (screening and grit removal) and disinfection.
- Primary Treatment
 - All dry weather and wet weather flows up to and including a flow rate equivalent to 150 MGD shall receive primary treatment. During wet weather conditions, incremental flows greater than a flow rate equivalent to 150 MGD may bypass primary treatment with the stipulation that such flows shall receive secondary treatment.
- Secondary Treatment
 - All dry weather flows up to and including the design flow rate of 125 MGD shall receive secondary treatment. During wet weather conditions, incremental flows greater than the design flow rate of 125 MGD may bypass secondary treatment with the stipulation that such flows shall receive preliminary and primary treatment and disinfection as stated in a. and b. above. Should 25 MGD of additional secondary treatment capacity be provided under Part I.A.7., this design flow rate will increase to 150 MGD.

DUWA's full NPDES permit is provided as Attachment F.

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SECTION 5 – PROJECT OVERVIEW and SCOPE of SUPPLY

5.1 Project Overview

The project consists of Progressive Design/Build Services for the design, installation, commissioning and performance testing of a Thermal Biosolids Drying System, as well as one (additional) dewatering centrifuge. The thermal drying system equipment will be selected by DUWA and designed, procured and installed by the DB entity as detailed below. All other materials and equipment shall be recommended, designed, furnished and installed by the DB entity.

5.2 The Project Delivery Overview and Schedule

The procurement of the Project is occurring with two overlapping RFPs. The first RFP is the procurement of the Thermal Biosolids Drying System equipment through a separate RFP. The second RFP is the procurement of the progressive Design-Build entity. DUWA will select the equipment vendor, and the DB entity will contract with that entity for procurement of the equipment.

The DB entity will lead the progressive implementation of the PROJECT in collaboration with the entity providing the Thermal Biosolids Drying System, DUWA and Veolia. The core work of the DB entity will be to demolish and remove the existing four (4) BFPs and supply/install a new third (3rd) high-solids centrifuge to complement the existing two (2) centrifuges. The heat dryer(s) are to be installed in the location of the removed BFPs. The DB entity will design and provide conveyance systems for each process step including but not limited to feeding the centrifuges, the dryer and truck loadout. Field erection and installation of the Project will be performed by the DB entity. The DB entity will also provide a bypass conveyance/piping system of cake biosolids around the dryer trains and to the enclosed truck loading bay to enable Veolia to provide continuous dewatering operations should the drying system be off-line.

The DB entity will also be responsible for interim dewatering operations while the dryer system is being installed and commissioned. The DB entity will be responsible for its sequencing and interfacing/coordination operations plan with DUWA and Veolia, and the DB entity will provide temporary dewatering equipment during installation of the Project.

After a DB entity is selected and a contract signed, there will be a two-phase Progressive Design-Build process which will proceed as follows: Phase I will entail permitting and roughly 60% design of the PROJECT. At the end of Phase I, the selected DB entity will propose a guaranteed maximum price (GMP) for Phase II work. Upon negotiation and agreement on a GMP (which will require DUWA Board Approval and a

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second contract or an amendment of the contract for Phase I), a separate authorization will initiate Phase II work. Phase II will entail design completion, construction, commissioning, and as-builts.

Table 5.2.1 – Project Schedule

| | |
|---|-------------------|
| Negotiations, Contract Development and Issue NTP | February 13, 2020 |
| DB Entity - Prepare and Submit Applicable Permits | |
| Permit Approvals (Anticipated) | Apr 2020 |
| Submit 30% Design | Apr 2020 |
| DUWA Review Comments with Approval/Release Critical Equipment (30 days after receipt of 30% design) | May 2020 |
| Submit 60% Design | June 2020 |
| EGLE Part 41 – Comments (8 weeks) | Aug 2020 |
| Open Book GMP Proposal | July 2020 |
| DUWA Board Approves Final Negotiated GMP Scope and Fee **Following receipt of EGLE 60% comments | Aug 2020 |
| 100% Design Submission | Sept 2020 |
| EGLE Part 41 Permit | Nov 2020 |
| Construction NTP | Nov 2020 |
| Construction Substantially Complete | July 2021 |
| Start-Up and Commissioning | Sept 2021 |
| Preliminary 30-day Acceptance Test | Oct 2021 |
| Final Completion - Deliver warranties, O&Ms, record drawings | Nov 2021 |
| Two Year Warranty Period w/ 30-day Stress Test | Nov 2023 |

DB shall coordinate with EGLE for submission and approval of the project as outlined herein. It is anticipated that each of the progressive design milestone submittals will be provided to EGLE with 8 week review periods for the 60% design and 100% design.

DUWA Design reviews shall be completed in 30 days; other submittals shall be per General Conditions section 3.8.

The GMP Proposal will summarize all scope, basis of design, assumptions, clarifications, schedule and pricing information. This proposal will be presented on an open book basis to DUWA and their agents (e.g. OHM and VEOLIA Capital Project Team) for review and comment. Pricing information shall include three quotes for subcontracted work and material/equipment pricing. The open book review will form the basis for subsequent negotiations and finalization of the GMP scope prior to the commencement of Phase II activities. All prices and cost estimates in the GMP will be

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subject to third party review against market norms, at the request of DUWA and their agents.

If agreement on the GMP proposal is not reached and the DB entity is not engaged for Phase II, DUWA will be free to use the above work products for the sole purpose of completing this PROJECT.

5.3 Dryer Technology Supplier Assignment

DUWA is selecting a Dryer Technology Supplier for assignment and incorporation into the Design-Build Entity's scope and contract in Phase I.

5.4 Interim/Temporary Operation

It is expected that the new system be installed in the existing dewatering area. As long as feasible, the existing dewatering system must remain operable while the new dewatering and drying equipment is installed. The Contractor shall provide a construction sequencing plan and temporary dewatering equipment for the PROJECT.

Veolia Operations staff can provide labor, polymer and a power source in support of an approved temporary dewatering plan. The dewatering plan shall be developed, approved by Veolia and tested by the DB entity prior to operation by Veolia

5.5 Veolia North America (VEOLIA)

Veolia has two distinct roles that relate to this project:

- Operation and maintenance of the DWTF is by VEOLIA under a 20-year service agreement with DUWA. This work is completed by VEOLIA's Operations Team.
- Contract oversight of the progressive DB entity is expected to be by VEOLIA under a stand-alone contract with DUWA. Contract oversight is completed by VEOLIA's Capital Project Team. In this role, VEOLIA will act as the primary point-of-contact on day-to-day project matters.

5.6 Project and Delivery Objectives

The PROJECT goals are to reduce the solids volume, disposal cost and the related environmental impact. The return-on-investment of this capital project is expected to provide immediately relief to DUWA's operating expense, even with loan interest payments.

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Specific success factors include:

- **Cost:** Providing a complete functional Dryer Process that meets the goals of the PROJECT at the lowest practical capital and lifecycle cost.
- **Operations:** Producing a Dryer System that is easy, efficient, and effective to operate with temporary dewatering or alternates not impacting dewatering production. The PROJECT shall not produce the need for a material change to Veolia's existing O&M contract.
- **Maintenance:** Producing a Dryer System that minimizes required maintenance.
- **Safety:** Designing and building a Dryer System that is safe to construct, operate, and maintain.
- **Quality:** taking into account equipment maintenance and replacement, the PROJECT is expected to provide short term payback of capital investment in full compliance with environmental requirements.
- **Meeting Time Constraints:** The PROJECT will expedite delivery of long lead equipment and save months on project completion.

DUWA has selected the Progressive Design-Build delivery process for the Thermal Dryer PROJECT because DUWA believes this delivery method is best suited to achieving its overall objectives for the PROJECT.

Specific delivery expectations include:

- **Innovation:** The DB delivery should allow for innovative design and construction/sequencing options that may lead to capital or life cycle cost savings, and/or to improve functionality.
- **Accountability:** DB entity to provide for a single point of accountability for performance of all services. DUWA will provide a single point of accountability for all directions to the DB entity.
- **Collaboration:** The selected DB entity for the Dryer PROJECT must work in a collaborative manner with DUWA, OHM and VEOLIA's Plant Operations-Maintenance Group (O&M) and the SCADA Engineers. The DB delivery should promote a cooperative and collaborative relationship between the parties.

The objective of the project is to furnish and install one additional dewatering centrifuge (to offset removal of belt filter presses); remove all four (4) existing belt filter presses which are beyond their useful life to provide space for new equipment; furnish and install one Biosolids Thermal Drying System by DUWA assignment that would include thermal biosolids dryers and major appurtenances such as storage vessel, pumps, and heater. Ancillary equipment must also be installed to support the process equipment, including a heat source for the dryers, structural work, and electrical power and controls upgrades as required. The most likely source of heat is the natural gas supply that formerly fired the incinerators.

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The dryer system process will result in dried biosolids in the form of discrete granules that are pathogen-free (approximately 90% dried, Class A biosolids). The proposed system would reduce the solids volume. These dried solids may be landfilled or could potentially be used for beneficial reuse by a third party.

The overall Project objectives and expected performance results include the following:

- A minimum and target average biosolids moisture content removal and wet mass reduction of 68.5% and 70.0%, respectively.
- Production of Class A solids in granular form with minimum dust content
- Annualized operating uptime of 91.5% and target maximum month at 100%
- Reliable feedstock processing through both dryer trains without fires or sparks
- Automated process control and continuous monitoring of operations and safety
- Ease of accessibility for process sampling, trouble-shooting and maintenance
- Online by Nov 2021 or sooner
- Maintain plant operations through construction
- A significant net reduction in operating expenses (ie dryer operating costs will not increase and offset savings from disposal costs)

5.7 Design Criteria

5.7.1 Thermal Dryer Design Criteria

The Dryer Design Criteria is summarized in Table 1 (following). The Design Criteria reflects the target (“sweet spot”) for centrifuge cake solids content of 28.5 %TS (and target controlled range of 26-29 %TS) so as optimize feedstock conveyance, bin storage and pumping, and moisture evaporation of the dryers’ system.

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Table 1: Project Design Criteria

| Design Criteria | Daily Avg. | Max. Month | Capacity |
|--------------------------------------|-------------|------------|----------|
| Wet Mass Processed, WTPD | 140.0 | 156.0 | 175.0 |
| Dewatered Cake Solids, %TS | 28.5 | 26.0 | 26.0 |
| Cake Bin Storage Fill, % of Level | 85.0 | 85.0 | 85.0 |
| Cake Bin Solids Retention Time, hrs. | 8.1 | 7.3 | 6.4 |
| Feedstock Loading Rate, lb TS/hr | 3,630 | 3,380 | 3,790 |
| Dryer Operation Uptime, % hrs/dy | 91.5% | 100% | 100.0% |
| Inlet Drying Temperature, deg F | See Note * | <525 | 550 |
| Outlet Dry Solids Temperature, deg F | 95 - 115 | < 120 | <100 |
| Dried Solids Content, %DS | 90.0 - 92.0 | > 92.0 | 92.0 |
| Drying Evap. Demand, lb H2O/hr | 8,830 | 9,370 | 11,000 |

** Inlet temperature safely operating in range of 330 to 500 deg F for thermal oil and up to 280 deg F for hot water.*

The overall quantity of dryers is dependent on the equipment selected, however, in no case, shall a single dryer unit be accepted. Relative to the Project Design Criteria provided above in Table 1 (above), if two dryer units are provided, the individual dryer units shall nominally be able to process half (50%) of the feedstock flow and loadings on an equivalent processing schedule and reliability duration over each operating year.

The integrated Biosolids Thermal Drying System shall include a single (one) 60 to 65 cubic yards (CY) storage bin for feedstock interconnect between centrifuges dewatering and dual thermal drying trains. The single (one) thermal oil heater system shall have a net output capacity of 18.0 MMBtu/hr to continuously and safely supply heat to the dual thermal drying trains via dual loops for flow/temp. controls. The quantity of hot water heater system, if applicable, may be more than one.

Each dryer train will have its own condenser for control and management of recirculating process air with net foul air exhaust flow and condenser water blowdown as return streams from the Solids Handling Building to the DWTF for further treatment/disposition. Alternative approaches will be considered if sufficient information is provided to understand the complete financial and environmental implications.

Fugitive emissions of odor and/or dust within the Solids Handling Building (SHB) from the Dryer Project are to be controlled and mitigated via the following Basis of Design expectations:

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5.7.2 Other Design Criteria

The following design requirements shall be evaluated and presented during the preliminary design review workshops in phase I:

- SCADA Integration and Controls Implementation (Current Platform- IFIX)
- Add screening or straining system upstream of Dryer and Centrifuge(s)
- Bypass system around Thermal Dryers
- Sludge Thickening Tank conveyance
- Odor control options including use of existing Sodium Permanganate system

5.7.3 – Dewatering Building Structural Assessment

At the request of DUWA, the engineering firm Hubble, Roth and Clark Inc. (HRC) performed a structural assessment of the Solids Handling Building’s floor structure for support of two Thermal Sludge Dryer units. The complete assessment and report are provided as Attachment G.

NOTE: Dependent on dryer manufacturer selection, the floor slab of the building may potentially NOT BE ADEQUATE. The floor slab was recommended to be retrofitted to meet current state code requirements.

5.8 Scope of Work – Phase I

This scope of work has been separated into the following five tasks:

- Task 1: Permitting
- Task 2: 30% Design
- Task 3: Critical Equipment Procurement
- Task 4: 60% Design
- Task 5: Development of a Guaranteed Maximum Price for Phase II/III

The details for each task are further detailed below.

Task 1 – Permitting

The DB entity will be responsible for identification, submission, approval and payment of all applicable permits necessary to meet local, state and federal requirements including but not limited to:

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- Michigan Department of Environment, Great Lakes, and Energy - Part 41- Permit
- Updates (if applicable) to existing NPDES Permit - NO. MI0021156
- City of Wyandotte - Building Permits or Business License Requirements

It is anticipated that the 30% Basis of Design will be provided to EGLE and review comments will be provided within 8 weeks of the 60% design submission. Additional review time can be addressed by General Conditions section 7.4 (Delays and Extensions of Time).

Task 2 - Basis of Design Development - 30% Design

The Basis of Design will outline key design requirements and features of the Dryer Project, together with a preliminary schedule and cost estimate. It will also be used in the various permit applications, as required for approval of the project.

During this task, the DB entity will complete preliminary engineering of the Facility Improvements. Initially, a draft Basis of Design report will be submitted for review and comment by DUWA, OHM and Veolia. Once all comments are incorporated, the report will be submitted to Regulatory Agencies, as required. It is anticipated that this task will require two meetings with the stakeholders.

The DB entity shall be responsible for developing the Basis of Design Report (BODR) in coordination with DUWA. The Basis of Design will include the following:

1. Preliminary project drawings and specifications completed to approximately 30% completion (see list below)
2. List of anticipated permits and regulatory requirements
3. Building code compliance overview with Structural Engineer Assessment
**Note Section 5.7.3 Assessment Report and Recommendations.
4. Material Sampling
5. Wastewater flow and loading projections
6. Governing mass balances
7. Process design and major equipment sizing
8. Odor and dust control analysis
9. Description of scope of upgrades for engineering disciplines
10. A list of major equipment for conveyance, mechanical process, HVAC, electrical
11. Estimated annual operational cost of the new facilities including all new equipment, chemicals, labor, electricity, gas and other utilities.

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*It is anticipated that the existing polymer system will be sufficient for the additional centrifuge.

12. Operational requirements/support during construction, startup and testing.
13. Construction staging requirements and tie-ins to existing infrastructure
14. Preliminary cost estimate
15. Preliminary construction schedule List of Basis of Design Drawings

Civil

- Cover sheet
- Index of Drawings
- Legend, abbreviations and general notes
- Existing conditions and demolition plan
- Site layout plan
- Foundation plans
- Floor plans
- Wall sections

Mechanical Process

- Process Legend and General Notes
- Process Piping Schedules
- Process Flow Diagram
- General Arrangement plans showing major equipment and process

piping

- Hydraulic profile
- Major interconnecting process piping outside dewatering building
- Process Equipment Schedule

Instrumentation and Electrical

- Piping and Instrumentation Drawings of Major Equipment and Chemical systems
- SCADA System Architecture
- Electrical Single Line Drawing
- Electrical Site Plan

The DB entity will submit the Basis of Design Report to DUWA for review and comment. Comments on the draft Basis of Design report will be incorporated into a final Basis of Design Report and the detailed design drawings.

Task 3 - Critical Equipment Procurement - Dryer System & Critical Equipment Selection

The critical dryer system equipment will be selected by DUWA and integrated into the PROJECT design by the DB Entity. This task will include schedule analysis, identification of critical schedule dates and early execution of a Purchase Order for submittals and fabrication prior to approval of Phase II.

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The DB Entity will analyze the project schedule and identify any other long lead, schedule critical equipment. This task will include schedule analysis and justification for the need to include early procurement of other critical equipment in this Phase I task. It is anticipated that the centrifuge equipment will need to be analyzed for Phase I procurement.

Task 4 - Detailed Design - 60% Design

After acceptance of the final BODR, DB entity's Engineer shall prepare the following Technical Exhibits:

- Drawings in accordance to the Drawing List included within the BODR
- Technical Specifications
- Final design calculations

The Technical Exhibits shall show or describe the character, scope, and intent of, or relate to, the Work to be performed or furnished by or for the DB entity, and shall be consistent with the final BODR. The DB entity's Engineer shall provide in writing to DUWA the descriptions of any deviations in the Technical Exhibits from the final Basis of Design Report.

The DB entity's Engineer shall take the Technical Exhibits to a point of 60% design completion of the final design. Technical Exhibits at the 60% level will, as appropriate, contain final site investigations; final project layout and features; detailed design of project features; detailed drawings and specifications; design calculations (civil, electrical, mechanical, structural); and quality management reviews. The 60% design drawings shall generally include the general, civil, mechanical, structural, electrical, and instrumentation drawings. The control strategy will also be updated from the Basis of Design Report as required.

The DB Entity will be responsible for communication and submission of necessary engineering requirements to Michigan Department of Environment, Great Lakes and Energy (EGLE) and other state agencies for preliminary approvals within this task. The GMP proposal shall include all fees, completion of design costs and any remaining requirements for the DB Entity to acquire necessary state permits.

The DB entity's Engineer shall develop the 60% Technical Exhibits, and furnish three paper copies and an electronic copy in both original file formats (i.e., MSWord; AutoCAD; etc.) and Adobe PDF format. These documents will serve as the GMP design documents.

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Task 5 - Development of a Guaranteed Maximum Price (GMP) for Phase II

Once DUWA has reviewed and commented on the Detailed Design, the DB entity will prepare and finalize the GMP Proposal. The purpose of the GMP Proposal is to delineate a firm and detailed Basis of Design, scope of work, price and schedule to complete the design and permitting, construction documents and subsequent construction and start-up of the facility. The GMP Proposal will be an “open book” proposal. An Open Book Proposal is developed in a collaborative and transparent manner where any and all line items and costs that sum up to the GMP will be provided by the delivery team at the necessary level of detail and are open to scrutiny and discussion by the stakeholders. The GMP Proposal will include the following:

- List of required permits and status
- Construction Documents (plans and specifications) developed to approximately 60% completion
- Construction schedule
- Construction sequencing plan
- Detailed fixed-price cost proposal including a risk register and schedule of values
- The risk register shall quantify the value and likelihood of the remaining project risks as the basis for the DB entity’s “contingency” in the phase II GMP.
- List of specific performance requirements
- Design review protocol
- Acceptance testing protocol

The DB entity will establish a GMP utilizing a rigorous process including evaluation of the RFP, available as-builts, site visits, and detailed conceptual design meetings to establish initial site plans and project requirements. The DB entity will conduct outreach for work they intend to subcontract and engage the vendor community to solicit bid proposals for the project. The specialty subcontractor scopes will include receiving three alternate options.

The GMP will be established utilizing detailed costs rather than budgets or allowances where feasible. The GMP delivery will be a completely open book process, sharing the entirety of the DB entity’s cost data.

The elements of the GMP will include:

- General conditions
- Thermal Dryer Equipment Quote
- Centrifuge Equipment Quote
- Ancillary Equipment Quotes

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- Demolition Cost
- Earthwork
- Structural concrete
- Rebar
- Miscellaneous Metals
- Underground piping
- Above ground piping
- Electrical
- Instrumentation & Controls
- SCADA Programming and System Integration
- Process equipment installation and commissioning
- Factory Acceptance Testing
- Initial 30 Day Acceptance Test
- Veolia O&M staff training
- All subcontractor and partner quotes
- Warranty Period 30 Day Stress Test (Phase III)

5.9 Consideration of GMP Proposal and Negotiations for Phase II

DUWA will consider the proposed GMP for Phase II work and, in DUWA's sole discretion may accept or reject the GMP proposal. If DUWA accepts the GMP proposal, DUWA will issue a notice to proceed with Phase II work.

5.10 Scope of Work – Phase II

Phase II includes completion of the design documents and any remaining permitting, construction management, equipment procurement, subcontractor procurement, construction, engineering services during construction, startup, testing, commission, training, and as-builts.

Including but not limited to the following:

- 90% (Essentially Complete) Design Package & Review, with updated PROJECT Schedule.
- 100% Design Package.
- Temporary dewatering.
- Demolish and dispose of the belt filter presses.
- Furnish and install the new centrifuge.
- Furnish and install the dryers and ancillary equipment.

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- Construction phase engineering services such as integration of the centrifuge and dryer control panels into the existing DWTF SCADA system.
- All necessary conveyance system(s) to deliver sludge to the new dewatering centrifuge, and from all of the centrifuges to the dryer system
- All necessary conveyance system(s) between components of the new dryer system.
- All necessary conveyance system(s) from the new dryer system to truck loadout.
- Concrete foundations, pads, tanks, structural components, walkways, stairs, platforms, stacks, handrail, grating and covers,
- Equipment installation, piping to and from the dryer system, interconnecting piping, manual isolation valves, anchor bolts, epoxy/adhesive for anchors.
- Calibration or auxiliary gas cylinders.
- Chemical addition systems, such as polymer
- Motor control center, motor starters, adjustable frequency drives, main disconnects, breakers, or power supply.
- Field wiring, interconnecting wiring, conduit, wiring terminations at equipment, local equipment disconnects, local equipment control panels, junction boxes, and wiring terminations at control panels.
- All miscellaneous electrical and mechanical hardware.
- All required modifications to the existing building structure, electrical, plumbing or HVAC systems.
- Punch-List documentation and resolution.
- PLC 5 Replacements
- Final inspection
- Update the PROJECT Schedule on a weekly basis.
- Start-Up and Commissioning.
- Issue 2 year Warranty, Operations & Maintenance (O&M) Manuals, and record drawings(1) EA - 30 Day Acceptance Test Period
- PROJECT Close-out.

5.11 Scope of Work - Phase III – Warranty Period and Additional Stress Test

DUWA will require a two (2) year warranty period upon substantial completion of phase II, which includes an acceptance test of the entire system for a 30 day period. DUWA may also require an additional 30 day stress test to be provided during the two (2) year warranty period with timing to be determined at the discretion of DUWA. The DB entity shall include the cost of one representative to be on-site to witness and document the system performance during this test period.

The additional performance/stress test may be conducted during the glycol season under which the DWTP will be receiving significant deicing fluid into the plant.

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Stress Test Performance Requirements (within 30-day period):

1. 10 days at Daily Average
2. 7 continuous days at Max Month Capacity
3. 7 continuous days at Full Capacity

| Design Criteria | Daily Avg. | Max. Month | Capacity |
|--------------------------------------|-------------|------------|----------|
| Wet Mass Processed, WTPD | 140.0 | 156.0 | 175.0 |
| Dewatered Cake Solids, %TS | 28.5 | 26.0 | 26.0 |
| Cake Bin Storage Fill, % of Level | 85.0 | 85.0 | 85.0 |
| Cake Bin Solids Retention Time, hrs. | 8.1 | 7.3 | 6.4 |
| Feedstock Loading Rate, lb TS/hr | 3,630 | 3,380 | 3,790 |
| Dryer Operation Uptime, % hrs/dy | 91.5% | 100% | 100.0% |
| Inlet Drying Temperature, deg F | See Note * | <525 | 550 |
| Outlet Dry Solids Temperature, deg F | 95 - 115 | < 120 | <100 |
| Dried Solids Content, %DS | 90.0 – 92.0 | > 92.0 | 92.0 |
| Drying Evap. Demand, lb H2O/hr | 8,830 | 9,370 | 11,000 |

** Inlet temperature safely operating in range of 330 to 500 deg F for thermal oil and up to 280 deg F for hot water.*

5.12 Project Budget and Funding

5.12.1 Budget and Allocation of Specified Costs

The budget target for the DB entity PROJECT work including procurement of the thermal drying system is \$15,500,000 plus contingencies and third party costs.

5.12.2 Funding

The PROJECT will be funded by DUWA utilizing a combination of funding sources. DUWA recently prepared and submitted a Letter of Interest to US EPA regarding funding under the Water Infrastructure Finance and Innovation Act (WIFIA), for this and several other projects. The PROJECT shall satisfy WIFIA funding requirements. If a WIFIA loan is not awarded to DUWA by US EPA, then DUWA will proceed with traditional municipal bonding to secure the funds. Schedule implications may be realized if there is a shift in funding source.

The WIFIA loan requirements including NEPA, Davis-Bacon, American Iron and Steel, and all other federal cross-cutter provisions apply. The DB Entity Team shall be reasonably expected to furnish additional information and/or drawings to

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DUWA that supports its needed cost data and/or documentation to enable disbursement of WIFIA loan funds.

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Section 6 – SUBMISSION PACKAGE

Proposals should be concise, well-organized, and demonstrate the Proposer's applicable experience and approach to the PROJECT.

Proposal Elements

The Proposal shall consist of the following elements:

- Cover Letter
- Qualifications and Experience of the DB team for similar, recent projects.
- Technical Proposal
- Cost Proposal

6.1 Cover Letter

The Proposer must submit a cover letter on the Proposer's letterhead. It must be signed by a representative of the Proposer who is authorized to sign such material, must expressly certify under penalty of perjury that all information provided in the Proposal is true and correct to the best of the representative's knowledge, and must commit the Proposer to the obligations contained in the Proposal. The transmittal letter must include the name, address, phone number and email address for the Proposer's Contact, and must specify who would be the DB entity's signatory to any contract documents executed with DUWA.

6.2 Qualifications and Experience

The proposer shall complete and include the following forms and information in their proposal as provided in ATTACHMENT A. Additional qualifications information or experience can be provided as necessary.

- Part I: Contact Information & Certification
- Part II: General Information
- Part III: Minimum Qualification Requirements
- Part IV: Minimum Experience Requirements
 - Questions (A) General Contractor & (B) Principal Engineering Firm
- Part V: Recent Construction Projects Completed
- Part VI: Key Personnel Experience
- Part VII: Financial Information
- Part VIII: Evaluation and Scoring - Qualifications and Experience

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6.3 Technical Proposal

The Technical Proposal should contain the following sections:

- Executive Summary
- Proposal Section 1: Understanding of Key Issues
- Proposal Section 2: Approach to Preconstruction Services
 - Project validation/development of additional data
 - Alternatives analysis/conceptual designs
 - Design Development
 - Permitting
 - Development of Guaranteed Maximum Price
- Proposal Section 3: Management Approach
 - Project Management and Team Leadership (including team organization and involvement during project stages, communication and coordination with and their Agents (DUWA and VEOLIA), involvement of VEOLIA O&M staff, commissioning and staff training)
 - Approach to Sub-contracting and Self-performance
 - Risk Management Approach
 - Permit Management Approach
 - Design and Construction Integration during Phases I & II.
 - Quality Management
 - Project-specific Safety Plan
 - Record drawings
 - O&M Manuals
- Proposal Section 4: Schedule Management
 - Description of the Proposer's scheduling approach and sequencing graphics
 - Identification of Phase I deliverables and 14 or 30 day review times including milestones that require Owner decisions
 - Approach for achieving permit approvals
- Proposal Section 5: Project Challenges and Proposed Solutions
- Proposal Section 6: Alternative Ideas
- Proposal Section 7: Local Presence
 - Provide address and date established for either member of DB Entity that has a local office within one of the 13 Wayne County communities that make up DUWA.
- Proposal Appendix A: Proposed Phase I Scope of Work
- Proposal Appendix B: Example of a recent Project Specific Health and Safety Plan, preferably in Michigan
- Proposal Appendix C: Detailed Gantt Chart Schedules for Phase I and Phase II
- Proposal Appendix D: Completed Proposal Forms

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- Insurance Company Letter of Intent
- Surety Letter of Intent
- Public Works Contractor Registration
- Non-Collusion Declaration
- Worker's Compensation Certification
- Michigan Professional Engineer Licensing

6.4 Cost Proposal

The cost proposal template is provided in ATTACHMENT B of this RFP and shall include:

6.4.1 Phase 1 Fixed Fee

The DB entity shall propose a Fixed Fee for Phase 1 of the PROJECT. The Fixed Fee shall include all costs of design, engineering, subcontract work, supervision, management, general conditions, overhead, bonds, insurance, taxes, compliance with all applicable codes and agency requirements, procurement of permits, profit, allowances, contingencies, and any and all items required for the completion of the Phase 1 tasks of the PROJECT.

Under the terms of the Design-Build Contract for the PROJECT, DUWA reserves the right at any time prior to commencement of construction to terminate the Design-Build Contract for the PROJECT and to pay the DB entity an agreed compensation for its design, engineering, and preconstruction services (including, without limitation, all costs and expenses associated with such services) that is based upon the Fixed Fee that is proposed by the proposer and negotiated with DUWA. The amount payable to the DB entity in the event that the Design-Build Contract for the PROJECT is terminated prior to commencement of construction shall be limited to a prorated amount of the agreed-to Fixed Fee, based on the percentage of completion of the construction documents and preconstruction services that has been accomplished by the DB entity at the time of such termination.

6.4.2 Mark-Ups for Phase 2

The DB entity shall also propose a Phase 2 Markup Fee or markup as a percentage of allowable direct costs of the work (such as trade subcontracts, equipment purchase orders and engineering sub consultants).

6.4.3 Indicative Cost Estimate for Phase 2

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The Proposal shall include an Indicative Cost Estimate, which shall include costs anticipated by the Proposer to complete Phase 2 work. This indicative estimate shall provide an appropriate level of detail to confirm that the available project budget can be achieved.

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Section 7 – SELECTION and AWARD

7.1 Informational Summary

The provisions of this Section are intended to summarize for the proposers the methodology and process that DUWA intends to follow with respect to the RFP. This summary is provided for the convenience of the proposers and should not be interpreted as a complete or definitive statement of all procedures, conditions, requirements or standards that may apply to any of the aforementioned processes.

7.2 Best Value Criteria and Short-Listing for Interviews

The initial scoring and selection of DB Firms to interview shall be based on the criteria and weightings shown below in Table 7.2. DUWA expects to short-list up to three (3) qualified DB entities to interview.

Table 7.2: Anticipated Selection Criteria and Weighting

| Evaluation Criteria | |
|-------------------------------|-----|
| Technical Proposal | 30% |
| Qualifications and Experience | 35% |
| References | 15% |
| Cost proposals | 20% |

7.3 Review Committee

DUWA will establish a Review Committee with responsibility for conducting the: (1) evaluation, scoring and ranking of the Proposals; and (2) interviews. Those submittals that do not meet the requirements may be deemed nonresponsive and disqualified from further consideration. DUWA may utilize the services of appropriate experts to assist in the evaluation process.

7.4 Interviews

Interviews will be conducted after scoring of the Proposals. Each Proposer invited to participate in an interview will be notified by DUWA’s System Manager by email. DUWA expects the interviews to include:

- Brief presentation of the Proposal
- Responses to questions regarding the Proposal
- Responses to additional questions/scenarios

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Interviews will be evaluated and scored based on the same evaluation criteria used to evaluate the Technical Proposal. The interviews will entail a confidential exchange between a proposer and the RFP Review Committee.

7.5 Best Value Selection

DUWA will award the Phase 1 -Progressive Design-Build Contract for the PROJECT on the basis of a best value selection as specifically described in this solicitation.

The determination of the Progressive Design Build firm providing the best value to DUWA shall be calculated from a combined score of the RFP Selection Criteria and the Interview Score.

7.6 Negotiations

DUWA reserves the right, but shall not have the obligation, as part of the RFP process to hold discussions or negotiations. If negotiations are conducted, they may be conducted with some or all short-listed DB entities. Negotiations shall be confidential exchanges between the potential DB entity and DUWA conducted for the purpose of bargaining, alteration of assumptions and positions, and may apply to price, schedule and technical requirements. These discussions or negotiations will be conducted honestly, fairly, and in good faith to respect the right of both parties.

Should DUWA fail to reach an agreement with the top ranked proposer, DUWA may enter negotiations with the next highest rated proposer (if additional proposers exist), and so on. If an agreement cannot be reached with the available proposer(s), DUWA reserves the right not to award a contract for this PROJECT during this procurement process.

7.7 Award

DUWA will issue a written decision supporting its Award of the Design-Build Contract for the PROJECT to the successful proposer, stating the basis of the Award.

7.8 Notification

DUWA will notify all short-listed DB entities by email of the selected DB entity for this PROJECT after Award and execution of a Design-Build contract.

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ATTACHMENTS

Attachment A - Qualifications and Experience

Attachment B - Cost Proposal Bid Template

Attachment C - Design-Build Contract

Attachment D – DUWA’s Policies and Procedures

Attachment E – Veolia’s Technical Memorandum re Biosolids Generation @ DWTF

Attachment F – NPDES PERMIT NO. MI0021156

Attachment G – HRC Solids Building Floor Assessment

Attachment H – Solids Complex Record Drawing Set

ATTACHMENT A - QUALIFICATIONS AND EXPERIENCE

Allen Park
Belleville
Brownstown Twp.
Dearborn Heights
Ecorse
Lincoln Park

Downriver Utility Wastewater Authority

25605 Northline Road • Taylor, Michigan 48180

River Rouge
Riverview
Romulus
Southgate
Taylor
Van Buren Twp.
Wyandotte

ATTACHMENT A – QUALIFICATIONS & EXPERIENCE

Part I: Contact Information & Certification

Part II: General Information

Part III: Minimum Qualification Requirements

Part IV: Minimum Experience Requirements
Questions (A) General Contractor & (B) Engineering Firm

Part V: Recent Construction Projects Completed

Part VI: Key Personnel Experience

Part VII: Financial Information

Part VIII: Evaluation and Scoring - Qualifications and Experience

PART I: CONTACT INFORMATION & CERTIFICATION

The DB entity must provide all of the following contact information to be considered for further review. The DB entity must also sign this form, certifying that the statements and information contained in this Proposal are complete and accurate and that the submittal contains no false or deliberately misleading information. By signing this form, the DB entity acknowledges that receipt of this submittal by DUWA does not constitute either a direct or implied guarantee to the DB entity that it will be selected for interviews. By signing this form and submitting this proposal, the DB entity further agrees to be bound by the procedures and conditions as described in this Request for Proposal submittal. The DB entity is the entity that will execute the Design-Build Contract.

If the legal entity constituting the DB entity has not yet been formed, questions referring to the DB entity should be answered as if the DB entity has been formed.

A. CONTACT INFORMATION

1. Legal Name of DB Entity: _____
2. Address of DB Entity: _____
3. Phone Number of DB Entity: _____
4. Contact Person and Title: _____
Contact person for this SOQ. Contact does not need to be the Company Owner.
Contact Person Email: _____
5. DB Entity is: a Corporation a Partnership
 a Sole Proprietorship a Joint Venture
 Other legal entity (specify): _____
6. Date of company formation or incorporation: _____
7. Under the laws of what state: _____

B. DESIGN-BUILD TEAM MEMBERS

In the spaces provided below, name the General Contractor and the Principal Engineering Firm:

1. General Contractor Name: _____
2. Principal Engineering Firm Name: _____

NOTE: DB Entities should only list the Other Design Firms that will participate in the Design of the PROJECT, if any.

3. Other Design Firm Name: _____
Explain involvement with the Design:

4. Other Design Firm Name: _____
Explain involvement with the Design:

NOTE: Attach additional pages for additional Design Firms if necessary.

C. ORGANIZATIONAL DOCUMENTS

If the DB entity is a privately held corporation, limited Liability Company, Partnership, Joint Venture, or other legal entity:

- Provide a copy of the organizational documents or agreement committing to form the same as provided below.
- Indicate all shareholders, partners or members who will perform work on the PROJECT.

D. EXECUTION & CERTIFICATION

Complete and attach **Attachment A-1 Proposer Form**: All information set forth in this proposal shall be certified under penalty of perjury by the Design-Build entity and, if a partnership or joint venture, its general partners or joint venture members.

ATTACHMENT A-1:PROPOSER FORM

CERTIFICATION:

The undersigned is/are a legally authorized representative(s) of the DB entity, and hereby declare that I am/ we are submitting this Proposal; I am/we are duly authorized to sign this Statement of Qualifications on behalf of the above named firm; and I/we have read all the answers herein and know all of their contents and that all information set forth in this Proposal and all attachments hereto are, to the best of my/our knowledge, true, accurate and complete as of its submission date.

The undersigned certifies and declares under penalty of perjury under the laws of the State of Michigan, that the foregoing is true and correct and that this declaration was executed in _____ County, Michigan, on _____
(Date)

DB ENTITY SIGNATURE(S):

Note: the DB entity shall be the entity that will execute the Design-Build Contract. No Statement of Qualifications shall be accepted which has not been signed in ink in the appropriate space below:

1. If Proposer is an **INDIVIDUAL**, sign here (*include a notarized affidavit attesting to the authenticity of said signature*):

Signature: _____ Date: _____

Proposer's Typed Name and Title: _____

2. If Proposer is a **PARTNERSHIP or JOINT VENTURE**, all general Partners or members shall sign here (*include a notarized affidavit attesting to the authenticity of said signatures*):

Partnership/JV Name (type or print)

Signature: _____ Date: _____

Member/Partner of the Partnership

Member/Partner's Typed Name and Title: _____

Signature: _____ Date: _____

Partner/Member of the Partnership

Member/Partner's Typed Name and Title: _____

ATTACHMENT A-1: PROPOSER FORM (continued)

3. If Proposer is a **CORPORATION**, the duly authorized officer (s) shall sign as follows: The undersigned certify that they are respectively:

_____ and _____
Title Title

of the corporation named below; that they are designated to sign this Proposer Form by resolution (*attach a certified copy, with corporate seal, if applicable, notarized as to its authenticity or Secretary's certificate of authorization*) for and on behalf of the below named CORPORATION, and that they are authorized to execute same for and on behalf of said CORPORATION:

Corporation Name (type or print)

By: _____ Date: _____

Title: _____

By: _____ Date: _____

Title: _____

4. If Proposer is an **OTHER legal entity**, an authorized representative of the entity shall sign here (include a notarized affidavit attesting to the authenticity of said signatures):

Entity name _____

By: _____ Date: _____

Title: _____

5. If the DB entity is a firm that has not yet been formed, all entities and other parties proposed to comprise such DB entity shall sign here (include a notarized affidavit attesting to the authenticity of said signatures), the individual signatories making the certification described above on behalf of such entities/parties:

Proposed DB Entity Name (type or print) Signature: _____

Date: _____

On Behalf of Proposed Member/Partner Name (type or print)
Signatory for Proposed Member/Partner's Typed Name and Title:

Signature: _____ Date: _____

On Behalf of Proposed Member/Partner Name (type or
print) Signatory for Proposed Member/Partner's Typed
Name and Title:

PART II: GENERAL INFORMATION

The DB entity must provide all of the following information:

A. INFORMATION ABOUT THE GENERAL CONTRACTOR

Definition:

- “General Contractor” shall mean the general contractor, holding a current, valid, Class “A” general engineering contractor license in good standing that will assume responsibility for the subcontracting, management, supervision and administration of the construction for the PROJECT.

1. Name of General Contractor: _____
2. Date of company formation or incorporation: _____
3. Under the laws of what state: _____
4. General contractor is a (*select one and provide requested information*): Corporation – provide information in 4a(1) and 4a(2)
 Sole proprietorship – provide information in 4b(1) and 4b(2)
 Joint Venture, Partnership or Other legal entity – provide information in 4c (1) and 4c (2)
5. Has there been any change in ownership of the General Contractor at any time during the last three (3) years (immediately before the date upon which this RFP was issued)?

NOTE: A corporation whose shares are publicly traded is not required to answer this question but must check the “Publicly Traded” box.

Yes No Publicly Traded

If “yes,” explain on a separate page.

6. Is the General Contractor a subsidiary, parent, holding company or affiliate of another construction or design firm?

NOTE: Include information about other firms if one firm owns 50 percent or more of another, or if an owner, partner, or officer of your firm holds a similar position in another firm.

Yes No

If “yes,” explain on a separate page.

7. Are any corporate officers, partners or owners connected to any other design or construction firms?

NOTE: Include information about other firms if an owner, partner, or officer of your firm holds a similar position in another firm.

Yes No

If "yes," explain on a separate page.

8. State the General Contractor's gross revenues for each of the following years:

2016: \$ _____

2017: \$ _____

2018: \$ _____

9. Largest job during the last 3 years \$ _____

Total bonding capacity: \$ _____

10. Major jobs in progress (We do check references, so please provide current contact information)

| Customer/Location | Type of Work | Size (\$M) | Customer Contact | Telephone |
|-------------------|--------------|------------|------------------|-----------|
| | | | | |
| | | | | |
| | | | | |

11. Major jobs completed in the past three years

| Customer/Location | Type of Work | Size (\$M) | Customer Contact | Telephone |
|-------------------|--------------|------------|------------------|-----------|
| | | | | |
| | | | | |
| | | | | |

12. Does your company have a Site Specific Safety Manual?

Yes No

13. Does your company have a QA/QC Manual?

Yes No

14. List all license numbers, classifications and expiration dates of the Michigan contractor's licenses held by the General Contractor:

15.

| License Number | Trade Classification | Date Issued | Expiration Date |
|----------------|----------------------|-------------|-----------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

16. If any of your firm’s license(s) are held in the name of a corporation or partnership, list below the names of the qualifying individual(s) listed on the appropriate State Licensing Board records who meet(s) the experience and examination requirements for each license.

17. Has the General Contractor changed names or license numbers in the past five (5) years (immediately before the date upon which this RFP was issued)?

Yes No

If “yes,” explain on a separate page, including the reason for the change.

18. Provide surety information for General Contractor:

Bonding Co/Surety: _____

Surety Agent: _____

Agent Address: _____

Phone Number: _____

B. INFORMATION ABOUT THE PRINCIPAL ENGINEERING FIRM

Definitions:

- “Principal Engineering Firm” means the firm with licensed engineers whose stamp will appear on PROJECT Construction Documents.
- “Principal Engineer” means the professional providing professional services as lead engineer for the PROJECT.

1. Provide the following:

Name of Principal Engineering Firm: _____

Name of Principal Engineer: _____

License Number: _____

Years in Practice: _____

2. **Is the Principal Engineering Firm different from that of the General**

Contractor? No; proceed to Question 11

Yes; answer all questions below

3. Date of company formation or incorporation: _____

4. Under the laws of what state: _____

5. Principal Engineering Firm is a (select one and provide requested

information): Corporation – provide information in 5a

Sole proprietorship – provide information in 5b

Joint Venture, Partnership or Other legal entity – provide information in 5c

6. Has there been any change in ownership of the Principal Engineering Firm at any time during the last three (3) years (immediately before the date upon which this RFP was issued)?

NOTE: A corporation whose shares are publicly traded is not required to answer this question but must check the “Publicly Traded” box.

Yes No Publicly Traded

If “yes,” explain on a separate page.

7. Is the Principal Engineering Firm a subsidiary, parent, holding company or affiliate of another design or construction firm?

NOTE: Include information about other firms if one firm owns 50 percent or more of another, or if an owner, partner, or officer of your firm holds a similar position in another firm.

Yes No

If “yes,” explain on a separate page.

8. State the Principal Engineering Firm’s gross revenues for each of the

following years: 2016: \$_____

2017: \$_____

2018: \$_____

9. Has the Principal Engineering Firm changed names in the past five (5) years (immediately before the date upon which this RFP was issued)?

Yes No

If "yes," explain on a separate page, including the reason for the change.

10. Provide the following information for all known Engineers and Architects who will be designing the project: *(attach additional pages if necessary)*

| Engineer/ Architect | Discipline | License Number | Years in Practice |
|---------------------|------------|----------------|-------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

c. INFORMATION ABOUT THE OTHER DESIGN FIRMS, IF ANY

For each of the Other Design Firms identified in Part I.B, if any, provide design licensing information below.

1. Name of Other Design Firm: _____

Element of Design to be performed: _____

Provide the following information for all known Engineers and Architects of this Other Design Firm who will be providing detailed design for this PROJECT:

(attach additional pages if necessary)

| Engineer/ Architect | Discipline | License Number | Years in Practice |
|---------------------|------------|----------------|-------------------|
| | | | |
| | | | |
| | | | |

2. Name of Other Design Firm: _____

Element of Design to be Performed: _____

Provide the following information for all known Engineers and Architects of this Other Design Firm who will be providing detailed design for this PROJECT:

(attach additional pages if necessary)

| Engineer/ Architect | Discipline | License Number | Years in Practice |
|----------------------------|-------------------|-----------------------|--------------------------|
| | | | |
| | | | |
| | | | |

NOTE: Attach additional pages for additional Design Firms if necessary.

PART III: MINIMUM QUALIFICATION REQUIREMENTS

This Part III is the first step in evaluating the DB entity. It seeks information about various members of the Design-Build Team, and consists of questions that must be answered correctly or the DB entity will be disqualified.

NOTE: DB entity will be immediately disqualified if the answer to any of questions 1 through 4 is “No.”

1. Does the General Contractor possess a valid and current contractor’s license for this PROJECT for which the DB entity intends to submit a proposal?

Yes No

2. Insurance Requirements regarding insurance requirements for this PROJECT. Is the DB entity able to obtain (or has) insurance in the limits stated in Attachment C- Design Build Contract?

Yes No

Provide a notarized declaration from the Insurance Company or from the broker/agent stating that the DB entity is able to obtain or has insurance in the limits stated in Attachment C for this construction PROJECT. Either provide the declaration or include the following notarized statement in the last paragraph of the declaration:

“The undersigned declares under penalty of perjury that the above statements submitted are true and correct and that this declaration was executed in State: _____, County: _____, on (date).”

(Name and Title, printed or typed)

(Signature)”

3. Do the General Contractor and each proposed subcontractor have current workers’ compensation insurance coverage as required by the Labor Code or are legally self-insured pursuant to Labor Code section 3700 et seq.?

Yes No

4. Is the DB entity able to obtain performance and payment bonds for the PROJECT, which is expected to involve a construction contract of up to \$18 million?

Yes No

Provide a notarized statement from the Surety Company stating the amount of bonding currently available to the DB entity for this construction contract. Either provide a declaration or include the following in the last paragraph of the declaration.

"The undersigned declares under penalty of perjury that the above statements submitted are true and correct and that this declaration was executed in State:

_____, County: _____, on _____ (date)."

Name of bonding company/surety: _____

Name of surety agent, address and telephone number: _____

(Name and Title, printed or typed)

(Signature)"

NOTE: The preceding notarized statement must be from the surety company, not an agent or broker.

5. Has the financial information required in PART VII: FINANCIAL been provided?

Yes No

Include the financial information in PART VII: FINANCIAL.

NOTE: DB entity will be immediately disqualified if the answer to any of questions 6 through 12 are "Yes".

6. Has any contractor license held by the General Contractor or any of the proposed DB team members been revoked or suspended without a successful appeal for reinstatement, within the last five (5) years (immediately before the issuance of this RFP)?

Yes No

7. Within the last five (5) year (immediately before the issuance of this RFP), has a surety firm completed a contract or paid for completion of a contract on behalf of the General Contractor or any member of the DB Team?

Yes No

8. At the time of submitting this Proposal, is the General Contractor or any member of the DB Team ineligible to bid on or be awarded a public works contract with any other public agency, for any reason, including as a result of a voluntary settlement agreement?

Yes No

9. At the time of submitting this Proposal, is the General Contractor or any member of the DB Team ineligible to bid on or be awarded a public works contract pursuant to State or Federal labor code requirements?
- Yes No
10. At any time during the last five (5) years (immediately before the issuance of this RFP), has the General Contractor or any member of the DB Team or any of its owners or officers been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?
- Yes No
11. Has any professional license, credential or registration held by any Architect who will provide services been revoked or suspended at any time in the last five years (immediately before the issuance of this RFP)?
- Yes No
12. Has any professional license, credential or registration held by any Engineer who will provide services been revoked or suspended at any time in the last five years (immediately before the issuance of this RFP)?
- Yes No

NOTE: DB entity will be immediately disqualified if the answer to any of questions 13 through 17 are "No".

13. Do all architects and engineers of record who are expected to work on the project possess current professional licenses for the services which they intend to provide?
- Yes No
14. Does the DB entity hereby agree that the contractors at every tier will use a "skilled and trained workforce" to perform all work on the PROJECT that falls within an "apprenticeable occupation" in the building and construction trades, or has the DB entity attached hereto evidence that the DB entity has entered into a project labor agreement incorporating such requirements?
- Yes, the DB entity will use a "skilled and trained workforce"
- Yes, the DB entity has entered into a project labor agreement (include such evidence in this Part III)
- No
15. Has the Principal Engineering Firm that will design the PROJECT designed at least one (1) biosolids dryer or sludge handling project over \$5 million in the last five (5) years (immediately before the issuance of this RFP)?
- Yes No

State the name of the project below and list the project in Part V: Recent

Construction Projects Completed

Refer to Part V for definition of "project value". For the purpose of this question, the design work must be 100% complete and construction in progress or completed.

16. Has the General Contractor that will construct the PROJECT constructed at least one (1) biosolids dryer or sludge handling project over \$5 million in the last five (5) years (immediately before the issuance of this RFP)?

Yes No

State the name of the project below and list the project in Part V: Recent Construction Projects Completed

Refer to Part V for definition of "project value".

17. Days Away, Restricted, or Transferred (DART) Rate

DART Rate for the General Contractor that has performed work the three most recent years:

| | Year | DART Rate |
|-----------------------------|-------------|------------------|
| Most recent available year | 2018 | |
| Previous year | 2017 | |
| Year prior to previous year | 2016 | |
| Three-year average DART: | | |

18. List the General Contractor's total recordable injury/illness rate for each of the past three premium years, and include the applicable statistical standard for that year of the appropriate category; calculate the three-year average.

| | Year | Average total recordable injury/illness rate | Applicable statistical standard for that year | Applicable business category (describe category) |
|-----------------------------|-------------|---|--|---|
| Most recent available year | 2018 | | | |
| Previous year | 2017 | | | |
| Year prior to previous year | 2016 | | | |
| Three-year average: | | | | |

19. List the General Contractor's lost work rate for each of the past three premium years, and include the applicable statistical standard for that year of the appropriate category; calculate the three-year average.

| | Year | Lost work rate | Applicable statistical standard for that year | Applicable business category (describe category) |
|-----------------------------|-------------|-----------------------|--|---|
| Most recent available year | 2018 | | | |
| Previous year | 2017 | | | |
| Year prior to previous year | 2016 | | | |
| Three-year average: | | | | |

PART IV: MINIMUM EXPERIENCE REQUIREMENTS

A. QUESTIONS FOR THE GENERAL CONTRACTOR

Provide the following information about the General Contractor that will construct the PROJECT. If the General Contractor is itself the DB entity, then provide all information requested as it relates to the DB entity itself.

Name of General Contractor: _____

- A-1. How many years has the General Contractor been licensed in Michigan under their present business name and license number?

10 years or more 8 to 9 years 6 to 7 years 5 yrs. or less

Note: Failure to provide a letter of explanation for a “Yes” answer to Questions A-2 and A-3 may result in immediate DB entity disqualification.

- A-2. Is the General Contractor currently the debtor in a bankruptcy case?

Yes No

If “yes,” please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

- A-3. Was the General Contractor in bankruptcy at any time during the last five (5) years (immediately before the issuance of this RFP)?

Note: This question refers *only* to a bankruptcy action that was *not* described in answer to question 2, above.

Yes No

If “yes,” please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court’s discharge order, or of any other document that ended the case, if no discharge order was issued.

Note: Failure to provide an explanation for “yes” answer to Questions A-4 to A-14 may result in immediate DB entity disqualification.

- A-4. At any time in the last five (5) years (immediately before the issuance of this RFP) has the General Contractor been assessed and paid liquidated damages of more than \$50,000 on a construction contract with either a public or private owner?

Yes No

If “yes,” explain on a separate page. Identify all such projects by owner, owner’s address, the date of completion of the project, amount of liquidated damages assessed and all other information necessary to fully explain the assessment of liquidated damages.

A-5. Has the General Contractor ever defaulted on a construction contract?

Yes No

If "yes," explain on a separate page.

A-6. In the last five (5) years (immediately before the issuance of this RFP) has the General Contractor been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?

Yes No

If "yes," explain on a separate page. State the name of the organization debarred the name of the person within your firm who was associated with that organization, the year of the event, the owner of the project, and the basis for the action.

NOTE: The following two questions refer only to disputes between contractors and owners of projects. You need not include information about disputes with suppliers, other contractors, or subcontractors. You need not include information about "pass-through" disputes in which the actual dispute is between a subcontractor and a project owner.

A-7. In the past five (5) years (immediately before the issuance of this RFP) has any claim, dispute or lawsuit in excess of \$50,000 been **filed in court or arbitration against** the General Contractor concerning their work on a construction project?

Yes No

If "yes," on a separate page identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

A-8. In the past five (5) years (immediately before the issuance of this RFP) has the General Contractor made any claim, dispute or lawsuit in excess of \$50,000 against a project owner concerning work on a project or payment for a contract and **filed that claim in court or arbitration**?

Yes No

If "yes," on a separate page identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending, or if resolved, a brief description of the resolution).

A-9. At the time of submitting this Proposal, does the General Contractor or any first- or second-tier subcontractor or supplier anticipated to be utilized on this PROJECT by the General Contractor currently have an unresolved Stop Notice filed on any public agency projects?

No

- Yes, one unresolved Stop Notice
 Yes, two or more unresolved Stop Notices

If "yes," explain on a separate page. Identify the year of the event, the owner, the project and the detailed explanation for the stop notice.

- A-10. In the last five (5) years (immediately before the issuance of this RFP) has any insurance carrier, or any form of insurance, refused to renew the insurance policy for the General Contractor due to non-payment or contractor losses?

- Yes No

If "yes," on a separate page provide the name of the insured, name the insurance carrier, the form of insurance and the year of the refusal.

- A-11. During the last five (5) years (immediately before the issuance of this RFP), has your firm ever been denied bond coverage by a surety company, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?

- Yes No

If yes, provide details on a separate page indicating the date when your firm was denied coverage and the name of the company or companies which denied coverage; and the period during which you had no surety bond in place.

- A-12. Has the General Contractor ever been found liable in a civil suit or found guilty in a criminal action for making any false claim or material misrepresentation to any private or public agency or entity?

- Yes No

If "yes," explain on a separate page, including identifying who was found liable or guilty, the court and case number, the name of the public entity, the civil or criminal verdict, the date and the basis for the finding.

- A-13. Has the General Contractor ever been convicted of a crime involving any federal, state, or local law related to construction?

- Yes No

If "yes," explain on a separate page, including identifying who was convicted, the name of the victim, the date of the conviction, the court and case number, the crimes, and the grounds for the conviction.

- A-14. Has the General Contractor ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?

- Yes No

If "yes," identify on a separate page the person or persons convicted, the year, the court (the county if a state court; the district or location of the federal court), the case number, the crimes, and the grounds for conviction.

A-15. Has MIOSHA or any other state OSHA agency cited and assessed penalties against the General Contractor for any “serious,” “willful” or “repeat” violations of its safety or health regulations in the past five (5) years?

NOTE: If General Contractor has filed an appeal of a citation, and the state’s Occupational Safety and Health Appeals Board has not yet ruled on the appeal, General Contractor need not include information about it.

Yes No

If “yes,” attached a separate page describing all citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, and the amount of penalty paid, if any. If any citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision. Note, “serious,” “willful” or “repeat” violations may deem a DB entity disqualified.

A-16. Has the Federal Occupational Safety and Health Administration cited and assessed penalties against the General Contractor in the past five (5) years (immediately before the issuance of this RFP)?

NOTE: If General Contractor has filed an appeal of a citation and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, General Contractor need not include information about the citation.

Yes No

If “yes,” on separate page describe the citations, the party against whom the citation was made, date of citation, nature of the violation, project on which the citation was issued, owner of project, and the amount of penalty paid, if any. State the case number and date of any decision.

A-17. Has the EPA, any Air Quality Management District or any Regional Water Quality Control Board cited and assessed penalties against either the General Contractor or the owner of a project on which the preceding parties were performing on a contract in the past five (5) years?

NOTE: If an appeal of a citation has been filed and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, you need not include information about the citation.

Yes No

If “yes,” on separate page describe the citations, the party against whom the citation was made, date of citation, nature of the violation, project on which the citation was issued, owner of project, and the amount of penalty paid, if any. State the case number and date of any decision.

A-18. Do you require documented safety meetings to be held for construction employees and field supervisors during the course of a project? (*select one*)

- Yes, at least once a week
- Yes, every two weeks
- Yes, less than every two weeks

A-19. Within the last five (5) years (immediately before the issuance of this RFP) has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

- Yes
- No

If "yes," please explain the reason for the absence of workers' compensation insurance on a separate page. If "No," please provide a statement by your current workers' compensation insurance carrier that verifies periods of workers' compensation insurance coverage for the last five years. (If your firm has been in the construction business for less than five years, provide a statement by your workers' compensation insurance carrier verifying continuous workers' compensation insurance coverage for the period that your firm has been in the construction business.)

A-20. In the past five (5) years (immediately before the issuance of this RFP) has the General Contractor been assessed any penalties and/or liquidated damages in excess of \$15,000 due to the failure to pay prevailing wage or failure to submit Certified Payroll Reports?

- No
- Yes, one penalty have been assessed
- Yes, two or more penalties have been assessed

If "yes," explain on a separate page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency.

A-21. At any time during the last five years (immediately before the issuance of this RFP), has the General Contractor been found to have violated any provision of Michigan apprenticeship laws or regulations, or the laws pertaining to use of apprentices on public works?

- Yes
- No

If "yes," provide the date of the findings and attach a copy of the final

decision. Date of Findings _____

B. QUESTIONS FOR THE PRINCIPAL ENGINEERING FIRM

Provide the following information about the Principal Engineering Firm (“Firm”) that will design the PROJECT. If the Principal Engineering Firm is itself the DB entity, then provide all information requested as it relates to the DB entity itself.

Name of Principal Engineering Firm: _____

Name of Principal Engineer: _____

B-1. How many years has the Principal Engineer been licensed and practicing in Michigan?

10 years or more 8 to 9 years 6 to 7 years 5 years or less

B-2. Is the Firm currently the debtor in a bankruptcy case?

Yes No

If “yes,” please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

B-3. Was the Firm in bankruptcy at any time during the last five (5) years (immediately before the issuance of this RFP)?

Note: This question refers *only* to a bankruptcy action that was *not* described in answer to question B-2, above.

Yes No

If “yes,” please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court’s discharge order, or of any other document that ended the case, if no discharge order was issued.

* * * * *

Note: Failure to provide an explanation for “yes” answer to Questions B-4 to B-6 may result in immediate DB entity disqualification.

B-4. In the last five (5) years (immediately before the issuance of this RFP) has the Principal Engineer or the Firm been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?

Yes No

If “yes,” explain on a separate page. State the name of the organization debarred, the year of the event, the owner of the project, and the basis for the action.

B-5. In the past five (5) years (immediately before the issuance of this RFP) has any claim, dispute or lawsuit in excess of \$50,000 been **filed in court or arbitration against** the Principal Engineer or the Firm concerning its design work on a construction project?

Yes No

If "yes," on a separate page identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

B-6. In the past five (5) years (immediately before the issuance of this RFP) has the Principal Engineer or the Firm made any claim, dispute or lawsuit in excess of \$50,000 against a project owner concerning its design work on a project or payment for a contract and **filed that claim in court or arbitration?**

Yes No

If "yes," on a separate page identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending, or if resolved, a brief description of the resolution).

B-7. In the last five (5) years (immediately before the issuance of this RFP) has any insurance carrier, or any form of insurance, refused to renew the insurance policy for the Principal Engineer or the Firm, based on non-payment or losses?

Yes No

If "yes," on a separate page provide the name of the insured, name the insurance carrier, the form of insurance and the year of the refusal.

B-8. Within the last five (5) years (immediately before the issuance of this RFP) has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

Yes No

If "yes," please explain the reason for the absence of workers' compensation insurance on a separate page. If "No," please provide a statement by your current workers' compensation insurance carrier that verifies periods of workers' compensation insurance coverage for the last five years.

B-9. Has the Principal Engineer or the Firm ever been found liable in a civil suit or found guilty in a criminal action for making any false claim or material misrepresentation to any private or public agency or entity?

Yes No

If "yes," explain on a separate page, including identifying who was found liable or guilty, the court and case number, the name of the public entity, the civil or criminal verdict, the date and the basis for the finding.

B-10. Has the Principal Engineer or the Firm ever been convicted of a crime involving any federal, state, or local law related to design?

Yes No

If "yes," explain on a separate page, including identifying who was convicted, the name of the victim, the date of the conviction, the court and case number, the crimes, and the grounds for the conviction.

B-11. Has the Principal Engineer or the Firm ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?

Yes No

If "yes," identify on a separate page the person or persons convicted, the year, the court (the county if a state court; the district or location of the federal court), the case number, the crimes, and the grounds for conviction.

B-12. Has the Michigan State Agency or an agency in any other state, taken any disciplinary action against the Principal Engineer?

Yes No

If "yes," please explain on a separate page.

PART V: RECENT CONSTRUCTION PROJECTS COMPLETED

The DB entity shall submit all project experience information in accordance with the instructions that follow. Failure to meet the submittal or experience requirements listed below for submitted past projects will deem the DB entity as disqualified.

Definitions:

- “Completed project” as used in this Part V means:
 - For the General Contractor, the project has passed the commissioning functional tests for all facility system components.
 - For the Principal Engineering Firm and Other Design Firms, the project design work is complete and construction is in progress or completed.
- “Project value” represents the individual project cost, inclusive of design and construction, but does not represent entire facility construction values.

A. GENERAL CONTRACTOR AND PRINCIPAL ENGINEERING FIRM CONSTRUCTION AND DESIGN EXPERIENCE

The DB entity shall identify at least five (5) and no more than eight (8) completed projects by the General Contractor and the Principal Engineering Firm in the format prescribed by the **Project Data Sheets**, provided immediately following this part.

- At least two (2) of those projects must be attributed to the Principal Engineering Firm of the DB Team.
- At least two (2) of those projects must be attributed to the General Contractor of the DB Team.

Each of the projects must:

1. Have been completed in the past 15 years (immediately before the issuance of this RFP) and demonstrate the DB entity’s experience with design and construction, and experience in obtaining permits and approvals;
2. Be over \$10 million in the initial design and construction project value; and
3. Identify how the DB entity held a prime role as the General Contractor, the Principal Engineering Firm, or both.

These reference projects shall demonstrate expert knowledge of sludge handling and/or specialty dryer equipment, mechanical, and electrical systems similar to the requirements for the PROJECT. **Direct design and construction experience with sludge drying equipment within wastewater treatment plants is highly desirable.** Reference projects should also emphasize experience with alternative project delivery (i.e., DB, design assist, construction manager at risk (CMAR), and progressive DB). The reference projects should indicate the extent of work that was self-performed, and the nature of the work that was self-performed. In addition, reference projects should describe the work that was subcontracted.

In the reference projects, the DB entity must demonstrate qualifications and experience relevant to the development and implementation of the PROJECT. If applicable, the DB entity may provide descriptions of relevant experience related to other types of major processing facilities.

Each project should indicate the involvement and responsibilities of the key personnel of the DB entity, highlighting project experience where the key personnel of the DB entity have previously worked together. The Project Data Sheets require a description of the specific roles in these projects of the following key personnel: program/project manager, on-site project manager, superintendent (if different from above), construction manager, and design manager.

DUWA's and their agent's assessment of project experience may include reference checks from owners. Names and references must be current and verifiable.

Projects will be reviewed in the order presented. Any project beyond the eighth will not be read or considered.

B. OTHER DESIGN FIRMS

For each of the Other Design Firms identified in Part I.B, if any, provide detailed design experience below.

The DB entity shall identify at least one (1) and no more than three (3) completed design projects for ***each*** of the Other Design Firms, in the format prescribed by the ***Project Data Sheets***, provided immediately following this part. These reference projects shall demonstrate design experience applicable to the requirements for this PROJECT. If applicable, the DB entity may provide descriptions of relevant design experience of these design firms related to other types of major processing facilities.

Each of the design efforts must:

1. Have been completed in the past 15 years (immediately before the issuance of this RFP).

DUWA's and their agent's assessment of design experience may include reference checks from owners. Names and references must be current and verifiable.

Projects will be reviewed in the order presented. Any project beyond the **third** will not be read or considered.

PROJECT DATA SHEET #__
 (One data sheet per project; number each sheet)

NAME OF DESIGN-BUILD TEAM MEMBER: _____

Provide a maximum of 3 pages per project.
 General format presented below shall be followed, beginning with summary information in the table, followed by responses to each requested statement in the order provided.

| | |
|--|--|
| Project Name | |
| Project Location | |
| Responsible Firm and Role | <i>Name of firm 1: Role Name of firm 2: Role</i> |
| Project Manager | <i>Name of program or overall project manager</i> |
| On-Site Project Manager | <i>Name of on-site project manager</i> |
| Project Superintendent | <i>Name of project superintendent</i> |
| Delivery Method | <i>List project delivery method such as design-build, design-bid-build, design-bid-operate, etc.</i> |
| Scope of Services | <i>Describe scope of services relative to all phases of project delivery</i> |
| WWTP Flow and Sludge Processing Volumes | <i>Describe type of equipment and capacity of the facility</i> |
| System Appurtenances | <i>Briefly list facility components including centrifuges, conveyors, pumps, biosolids drying equipment, system controls or other related appurtenances.</i> |
| Original Contract \$ | <i>Contract value at time of award</i> |
| Final Contract \$ | <i>Provide final contract value; briefly explain in one sentence if final contract value varies from original contract value, and provide additional information below.</i> |
| Original Schedule Completion | <i>Provide scheduled completion date at time of award</i> |
| Actual Schedule Completion | <i>Provide current status of project (in design, in construction, completed, completed and operating). Provide actual or projected completion date; briefly explain in one sentence if actual or projected completion date differs from original scheduled completion date and provide additional information below.</i> |
| Owner Reference | <i>Provide owner contact name(s), agency, address, phone number, and e-mail address. The owner contact is the project manager or other person who you believe is best qualified to answer interview questions.</i> |

Description of Project

Provide narrative to describe objective of the project, project size and capacity, and system components.

Relevancy to the Thermal Biosolids Drying System Project

Describe how the project is applicable and relevant to the PROJECT.

Responsible Firms Role

Describe specific role of responsible firms in the design or construction of the project. Describe team structure and management.

Contract Amount, Change Orders

Explain if the project was completed within the original construction contract amount. Describe differences of final contract amount compared to award amount. Identify cause such as owner added scope, unforeseen conditions, design related issues, or other circumstances (describe).

Contract Schedule

Explain the project schedule and schedule challenges. Explain reason for actual or projected completion date that differs from original scheduled completion date including approved time extensions.

For completed projects, provide following information with blanks filled in:

- a. Original Contract Completion Date: _____
- b. Time Extensions Granted (number of days): _____
- c. Contract End date (c = a + b): _____
- d. Actual Date of Completion: _____
- e. Date of Recorded Notice of Completion: _____

Project Data Sheets for Other Design Firms may leave schedule information blank.

Claims and Liquidated Damages

For this project, describe history of claims, disputes and litigation over \$50,000 and how resolved. State if any liquidated damages were assessed; state if no liquidated damages were assessed.

Self-Performance and Participation by DB Team Members

For this project, describe the extent of self-performance by the General Contractor, and include a description of the work that was self-performed. In addition, describe participation by members of the DB Team’s key personnel and respective role(s).

Permitting and Compliance

For this project, describe history of compliance with permit conditions

Design and Construction Management Techniques

Explain design collaboration approach and project delivery strategy; provide overview of design and construction challenges and how those challenges were addressed; describe any ingenuity and innovation employed

PART VI: KEY PERSONNEL EXPERIENCE

A. KEY PERSONNEL MATRIX

The DB entity shall provide a matrix similar to Table 1 below to identify and summarize the experience of all Key Personnel (i.e. personnel proposed to hold positions identified in Part VI

(B) below) proposed to be assigned to the PROJECT. This matrix shall include:

- Name of the individual and name of firm
- The number of years of professional experience, sludge processing project experience, Sludge Drying experience, design-build experience, and
- Role and responsibilities for *this* PROJECT.

Table 1 – Summary Key Personnel Experience and Assigned Project Responsibility

| Name of Key Personnel/ Name of Firm | Project Experience | | | | For DUWA Thermal Biosolids Drying System Project - Title and Responsibility |
|--|--------------------|----------------------------------|------------------|----|---|
| | Prof. Exp. | Sludge Processing and Dewatering | Biosolids Drying | DB | |
| Name 1 | | | | | ROLE Responsibility 1 Responsibility 2 |
| Name 2 | | | | | ROLE Responsibility 1 Responsibility 2 |
| Name 3 | | | | | ROLE Responsibility 1 Responsibility 2 |

B. RESUMES AND KEY PERSONNEL PROJECT DATA SHEETS

Provide resumes (limited to three pages each) of the following Key Personnel (indicate if any one person is proposed to carry more than one title):

- Program/Project Manager
- On-site Project Manager
- Project Superintendent
- Construction Manager
- Engineer of Record
- Design Manager
- Electrical Engineer
- Mechanical Engineer

The DB entity’s proposed Project Manager and Project Superintendent for the Project shall each have ten (10) years of professional experience and worked on a minimum of two (2) projects that are closely related or comparable to this PROJECT, and in the same role as

proposed for this PROJECT.

In addition to the resumes required above, provide three (3) Key Personnel Project Data Sheets each for the DB entity's proposed Project Manager and Project Superintendent, within the format prescribed by the attached *Key Personnel Project Data Sheets*. Also provide one (1) Key Personnel Project Data Sheet each for all other remaining Key Personnel.

If the proposed Project Manager and/or Project Superintendent are the same as those listed in the Project Data Sheets submitted under PART V: RECENT CONSTRUCTION PROJECTS COMPLETED, then simply check the appropriate box on the Key Personnel Project Data Sheet that will identify the Project Data Sheet number. No further information will need to be submitted to score the proposed Project Manager and Project Superintendent. Only complete the Key Personnel Project Data Sheet if the proposed Project Manager and Project Superintendent are different than those projects submitted in PART V.

DUWA's and their agent's assessment of Key Personnel's project experience may include reference checks from owners. Names and references must be current and verifiable.

NOTE: The Design-Build Contract will include a provision requiring the Design-Builder to assign to the PROJECT the personnel identified in this RFP.

KEY PERSONNEL PROJECT DATA SHEET # _____

Submitted for:

NAME: _____

TITLE/ROLE: _____

Select one:

- For position identified above, refer to Project Data Sheet #_(enter sheet #). No further information needs to be submitted.
- This is a new Project Data Sheet submitted for the position identified above. All the data requested below is completed.

| | |
|--|--|
| Project Name | |
| Project Location | |
| Responsible Firm and Role | <i>Name of firm 1: Role Name of firm 2: Role</i> |
| Project Manager | <i>Name of program or overall project manager</i> |
| On-Site Project Manager | <i>Name of on-site project manager</i> |
| Project Superintendent | <i>Name of project superintendent</i> |
| Delivery Method | <i>List project delivery method such as design-build, design-bid-build, design-bid-operate, etc.</i> |
| Scope of Services | <i>Describe scope of services relative to all phases of project delivery</i> |
| WWTP Flow and Sludge Processing Volumes | <i>Describe type of equipment and capacity of the facility</i> |
| System Appurtenances | <i>Briefly list facility components including centrifuges, conveyors, pumps, biosolids drying equipment, system controls or other related appurtenances.</i> |
| Original Contract Value | <i>Contract value at time of award</i> |
| Final Contract Value | <i>Provide final contract value; briefly explain in one sentence if final contract value varies from original contract value.</i> |
| Original Schedule Completion | <i>Provide scheduled completion date at time of award</i> |
| Actual Schedule Completion | <i>Provide current status of project (in design, in construction, completed, completed and operating). Provide actual or projected completion date; briefly explain in once sentence if actual or projected completion date differs from original scheduled completion date.</i> |
| Owner Reference | <i>Provide owner contact name(s), agency, address, phone number, and e-mail address. The owner contact is the project manager or other person who you believe is best qualified to answer interview questions.</i> |

PART VII: FINANCIAL

A. FINANCIAL INFORMATION

DB entity shall provide and attach the following in a sealed envelope attached only to the Original Proposal submittal:

- A copy of the DB entity's Dunn and Bradstreet Report.
- A copy of the DB entity's most recent financial statements including the balance sheet, statement of cash flows, and notes to the financial statements.

In the event that the DB entity is a partnership or joint venture (whether formed or intended to be formed), all general partners or members shall provide the above financial information. ***The financial information shall also be provided for the project guarantor, if a Guarantor is needed (see below).*** The financial information must be for the company(ies) that makes up the DB entity, not the parent company, unless the parent company is acting as the Guarantor.

Fill in the information below for the three most recent fiscal years. In the event that the DB entity is a partnership or joint venture (whether formed or intended to be formed), all general partners or members shall provide the information below:

| | |
|---|----------|
| Current Assets: | \$ _____ |
| Current Liabilities: | \$ _____ |
| Total Net Worth: | \$ _____ |
| Current Ratio (Assets/Liabilities): | _____ |
| Working Capital (Current Assets - Current Liabilities): | \$ _____ |

B. GUARANTOR

The obligations under the DB Agreement shall be irrevocably, absolutely and unconditionally guaranteed by an entity with a net worth of at least 15 million dollars. If the DB entity (or, collectively, general partners or members, as applicable) does not have such financial qualifications, a Project Guarantor will be required. If such a Guarantor is needed, a single Guarantor shall sign a Guaranty Agreement (to be developed) which will make them responsible for the DB entity's performance under the DB Contract. If applicable, the Guarantor shall be identified and provide the same financial information required in Section VII.A above.

PART VIII: EVALUATION AND SCORING – QUALIFICATIONS AND EXPERIENCE

A. EVALUATION

All proposals will first be reviewed for their responsiveness, including timely receipt of the package and inclusion of all required forms. Any proposal that is incomplete in any material respect may be deemed non-responsive and may be rejected in its entirety. DUWA reserves the right to waive informalities or to request additional information.

The initial evaluation of DB entities will be based on information provided in Part III and Part IV. If the DB entity “fails” any questions posed in Part III or Part IV, they may be disqualified. Those DB entities that pass the minimum requirements of Part III and Part IV will then be evaluated for the requirements set forth in Parts V, VI, and VII. Those DB entities which pass the minimum requirements in Parts V, VI, and VII will be further evaluated within the context and weighting of the following categories:

- **DB Entity and DB Team Experience: 40 Points**
- **Key Personnel Experience: 40 Points**
- **Financial Capability: 20 Points**

1) DB Entity and Other DB Team Experience Evaluation:

The DB entity’s and DB team’s experience will be evaluated using the following criteria:

- a. Prior working relationships of the DB Team
- b. Demonstrated experience with design and design management of biosolids projects similar in size and type to this PROJECT.
- c. Demonstrated experience with construction and construction management of biosolids projects similar in size and type to this PROJECT.
- d. Demonstrated experience applying innovative solutions, creative technologies, and efficient systems for similar projects.
- e. Experience with startup and commissioning of biosolids projects.
- f. Operational history of a biosolids facility designed and/or constructed by DB entity or DB team members.
- g. Experience with alternative delivery projects (DB, CMAR, Progressive DB, and Design Assist).
- h. Development and implementation of successful design and construction quality management plans.
- i. Effective management of subcontractors

2) Key Personnel Experience Evaluation:

Proposed Key Personnel will be evaluated using the following criteria:

- a. Key Personnel design and design management experience and past

performance on projects of similar size and type that are comparable to this PROJECT.

- b. Key Personnel construction and construction management experience and past performance on projects of similar size and type that are comparable to this PROJECT.
- c. Prior working relationships of the proposed individuals (i.e., the past projects on which DB entity's proposed individuals have worked together or with others).
- d. Key Personnel's alternative delivery experience (DB, CMAR, Progressive DB, and Design Assist).
- e. Key Personnel previous plant startup, commissioning, and owner staff training.
- f. Geographic proximity of the management office to the PROJECT site.
- g. Project Manager's experience with managing multidisciplinary teams on complex projects
- h. Project Manager's experience with managing multidisciplinary teams on complex projects
- i. Key Personnel's safety record.
- j. Successful implementation of design and construction quality control management plants.

3) Financial Capability Evaluation:

The DB entity's financial capability will be evaluated based on the financial statements using the following criteria:

- a. Profitability and growth
- b. Solvency
- c. Financial efficiency
- d. Market strength
- e. Bond, credit, and other ratings

The evaluation process shall also comply with DUWA's Policies and Procedures provided in Attachment D.

ATTACHMENT B - COST PROPOSAL BID TEMPLATE

| | | |
|---|--|---|
| Allen Park Belleville Brownstown Twp. Dearborn Heights Ecorse Lincoln Park | <h2 style="color: blue;">Downriver Utility Wastewater Authority</h2> <p style="color: blue;">25605 Northline Road • Taylor, Michigan 48180</p> | River Rouge Riverview Romulus Southgate Taylor Van Buren Twp. Wyandotte |
|---|--|---|

ATTACHMENT B – COST PROPOSAL BID TEMPLATE

B.1 Cost Proposal

The DB entity shall propose a Fixed Fee for Phase I of the PROJECT. The Fixed Fee shall include all costs of design, engineering, subcontract work, supervision, management, general conditions, overhead, bonds, insurance, taxes, compliance with all applicable codes and agency requirements, procurement of permits, profit, allowances, contingencies, and any and all items required for the completion of the Phase 1 tasks of the PROJECT.

The budget amount included below for the Dryer equipment shall be adjusted to reflect the actual equipment cost. The DB Entity shall provide additional detail and substantiate the proposed markup for the dryer equipment within the Phase I Fixed Fee.

Under the terms of the Design-Build Contract for the PROJECT, DUWA reserves the right at any time prior to commencement of construction to terminate the Design-Build Contract for the PROJECT and to pay the DB entity an agreed compensation for its design, engineering, and preconstruction services (including, without limitation, all costs and expenses associated with such services) that is based upon the breakdown and Fixed Fee that is proposed below and negotiated with DUWA. The amount payable to the DB entity in the event that the Design-Build Contract for the PROJECT is terminated prior to commencement of construction shall be limited to a prorated amount of the agreed-to Fixed Fee, based on the tasks or percentage of completion of the construction documents and preconstruction services that has been accomplished by the DB entity at the time of such termination.

| | |
|--|---------------------------------|
| Permitting | \$ |
| 30% Design Package, Cost Estimate & Review | \$ |
| Critical Equipment Procurement – Dryer Package (Dryers, Heaters, Cake Bin, Extraction Shafts, Pumps to Dryers) | \$ 7,420,000.00 (Budget Amount) |
| Dryer Equipment Markup in Phase I | \$ |
| Other Critical Equipment | |
| 1. _____ | \$ |
| 2. _____ | \$ |
| 60% Design Package, Cost Estimate & Review | \$ |
| Guaranteed Maximum Price Proposal & Negotiation | \$ |
| Phase 1 – Progressive Design Build Total Fixed Fee | \$ |

B.2 Mark-Ups for Phase II

The DB entity shall also propose a Phase II markup as a percentage of allowable direct costs of the work (such as trade subcontracts, equipment purchase orders and engineering sub consultants).

| | |
|----------------------------------|---|
| Phase 2 Markup % on Direct Costs | % |
|----------------------------------|---|

B.3 Indicative Cost Estimate for Phase II

The Proposal shall include an Indicative Cost Estimate, which shall include costs anticipated by the Proposer to complete Phase 2 work. This indicative estimate shall provide an appropriate level of detail to confirm that the available project budget can be achieved. The table provided below represents the minimum level of detail required for this indicative estimate.

| Project Scope Description | Cost |
|---|-------------|
| Engineering Design & Permitting | |
| General Conditions Cost (Field Staff, Bonds, Insurance, Trailers, etc.) | |
| Demolition (4 Belt Press Units & Ancillary Equipment) | |
| Furnish and Install Centrifuge and Ancillary Equipment | |
| Furnish and Install Dryer System | |
| Bypass or temporary dewatering system | |
| Electrical, Instrumentation and Controls | |
| Commissioning, Startup and Performance Testing | |
| Total Indicative Project Cost Estimate | |

B.4 Phase III – Warranty Period Performance/Stress Test

The DB Entity shall propose a performance test fee for one representative to be present during the warranty period stress/performance test as defined in the RFP.

| | |
|---|----|
| Phase III – Performance/Stress Test Fee | \$ |
|---|----|

B.5 OFFEROR'S REPRESENTATIONS

B.5.1 – Offeror has examined and carefully studied the RFP Documents and any data and referenced items identified in the RFP, and hereby acknowledges receipt of the following Addenda:

| Addendum No. | Addendum Date |
|--------------|---------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

B.5.2 – Offeror has examined and carefully studied the Dryer RFP for a Thermal Biosolids Dryer Manufacturer Services at the DWTF RFP, and any data and reference items identified in the RFP, and hereby acknowledges receipt of the RFP.

Signature _____ Date _____

ATTACHMENT C - DESIGN-BUILD CONTRACT

SAMPLE
PROGRESSIVE DESIGN-BUILD CONTRACT

**PROJECT: THERMAL BIOSOLIDS
DRYING SYSTEM**

LOCATED IN:

Wyandotte, MI

EFFECTIVE DATE: _____

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- Exhibit B: Project Description and Scope of Work
- Exhibit C: Insurance Requirements
- Exhibit D: Warranty Form
- Exhibit E: As-Builts

Progressive Design Build Agreement

This Progressive Design Build Agreement (this “Agreement”) is entered into as of _____, (“Effective Date”) by and between: Downriver Utility Wastewater Authority, Inc., (“DUWA”) and XXXXXX., the “Design Build Entity” or “DBE.” DUWA and the DBE may be referred to in this Contract collectively as the “Parties” or singularly as a “Party.”

In exchange for the mutual covenants and obligations contained herein, DUWA and the DBE agree as set forth below.

1. General

1.1 **Engagement.** DUWA hereby engages the DBE and the DBE hereby agrees to faithfully and diligently perform the Work in accordance with the terms and conditions contained in this Agreement and the Contract Documents. The Agreement shall be administered by DUWA and the DBE shall perform the work at the direction of DUWA and its Project Representative.

1.2 **Definitions.** The terms, words and phrases used in this Agreement and the Contract Documents shall have the meanings given them in the General Conditions included as Exhibit A.

1.3 **Project Description.** The project is the: **Thermal Biosolids Dryer System Project** (the "Project").

1.4 **System Operator and System Manager.** Veolia Water North America – Central, LLC (“Veolia”) has a contractual relationship with DUWA to operate and maintain the Downriver Wastewater Treatment Facility (“Facility”). OHM Advisors (“OHM”) is the manager of the Downriver Wastewater Treatment System (“System”) and is responsible for managing and supervising the day-to-day operations of DUWA. Both Veolia and DUWA will provide input on the Project, however, only DUWA’s Representative will be authorized to make decisions on DUWA’s behalf for the Project.

1.5 **Thermal Biosolids Drying Equipment Supplier.** OHM, on behalf of DUWA, will issue a separate Request for Proposal (“RFP”) for the procurement of a Thermal Dryer Equipment Supplier (“Equipment Supplier”). DUWA will select the Equipment Supplier and the DBE will contract separately with the Equipment Supplier to purchase the thermal dryer equipment. Any contract between DBE and the Equipment Supplier shall incorporate and require the Equipment Supplier to be bound by the terms of this Agreement and the applicable Contract Documents, and shall name DUWA as a third-party beneficiary. DBE shall provide copies of any contract entered into with Equipment Supplier to DUWA for review and comment prior to the execution of the contract. DUWA’s review of any such contract shall not constitute approval of the contract or any specific terms within the contract.

1.6 Relationship of Parties.

1.6.1 **DUWA and DBE.** The DBE is an independent contractor and not an agent, fiduciary, partner, member, subsidiary, of or otherwise affiliated with DUWA. Nothing

contained in this Agreement shall be deemed to constitute any Party a partner, agent, or legal representative of any other Party or to create a joint venture, partnership, agency, or any relationship between the Parties (unless such a relationship existed between certain Parties prior to the execution of this Agreement, in which case such relationship shall not be deemed to extend to the other Parties). The obligations of DUWA, on the one hand, and the DBE, on the other hand, hereunder are neither collective nor joint in nature.

1.6.2 **DBE and Third Parties.** Nothing contained in this Agreement gives the DBE or any third party any claim or right of action against DUWA that does not otherwise exist without regard to this Agreement.

1.7 **DUWA's Representative.** DUWA's Project Representative who will be the point of contact for DBE and is authorized to make decisions on DUWA's behalf regarding the Services is **Lambrina Tercala, Project Manager, OHM.**

1.8 **DBE's Representative.** The DBE's representative who is authorized to make decisions on the DBE's behalf regarding the Services is **TBD, Project Director.**

1.9 **Acknowledgement.** DBE acknowledges it has carefully examined and understands this Agreement and the Contract Documents; has investigated the nature, locality and site of the Project and the conditions and difficulties under which the Construction Work is to be performed, and enters into this Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any opinions or representations of DUWA, OHM or Veolia, or any of their respective officers, agents, servants, or employees.

1.10 **Water Infrastructure Finance and Innovation Act.** All or portions of the Project may be funded by a loan provided under the Water Infrastructure Finance and Innovation Act ("WIFIA" or the "Act"). As such, this Agreement is subject to the requirements of the Act, 33 U.S.C. 3901 et seq., as amended and the implementing regulations at 40 CFR 35.10000 et seq.

2. **Contract Documents.**

2.1 This Agreement, together with the documents referenced below form the Contract Documents. The Contract Documents form the entire agreement between DUWA and DBE and are incorporated into the Agreement by reference as though fully set forth herein. If a conflict exists between the provisions of the Contract Documents, the provision in the Contract Document first listed below shall govern:

- a. Change Orders and Construction Change Directives
- b. Addenda, including but not limited to any addenda, modifications or amendments to this Agreement
- c. This Agreement and the incorporated Exhibits listed below
 - i. Exhibit A: General Conditions
 - ii. Exhibit B: Project Description and Scope of Work
 - iii. Exhibit C: Insurance Requirements
 - iv. Exhibit D: Warranty Form

- v. Exhibit E: As-Builts
- d. Construction Documents
- e. The DBE's GMP Proposal
- f. The Request for Proposal
- g. The DBE's Response to the RFP

All prior agreements with respect to the matters contained in this Agreement are superseded hereby and each Party confirms that it is not relying on any representations or warranties of the other Party except as specifically set forth in this Agreement. The Contract Documents are intended to be fully complementary. The DBE shall carefully review all the Contract Documents for any conflicts or ambiguities and will promptly notify DUWA in writing through a request for clarification or information if it notices any conflict between or among Contract Documents. The DBE and DUWA will discuss and resolve any identified conflicts or ambiguities prior to execution of the Agreement or, if applicable, prior to DUWA's acceptance of the GMP proposal.

2.2 The Contract Documents are intended to permit the parties to complete the Work and all obligations required by the Contract Documents within the Contract Time(s) for the Contract Price. The Contract Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards.

3. Progressive Design-Build Services

3.1 **Phased Services.** DBE shall perform all design and construction services, and provide all material, equipment, tools and labor, necessary to complete the Work described in and reasonably inferable from the Contract Documents. The Project shall be implemented in three (3) phases.

3.2 **Phase 1 Services.** DUWA has selected the DBE on the basis of the DBE's statement of qualifications and mutually agreed pricing for the performance of the design concept, preliminary engineering, geotechnical investigations and detailed designs to a 60% completion level, as well as preparation of a proposed Guaranteed Maximum Price ("GMP") and schedule for the completion of design, construction and post-construction Phase 2 tasks, including performance testing, startup commissioning and operator training and support. The level of completion required for Phase 1 Services is defined in Exhibit B to this Agreement and the Contract Documents. The DBE acknowledges and accepts that it is responsible for all work reasonably required for the delivery of the 60% designs and proposed schedule and GMP, whether or not explicitly stipulated in the Agreement.

3.3 **Phase 2 Services.** In the event that the Parties have agreed upon the GMP and DUWA has issued a Notice to Proceed with Phase 2, DBE shall perform the Phase 2 services, all as further described in Exhibit B, Scope of Work (as updated or amended). DBE's Phase 2 services shall consist of the completion of design services for the Project, the procurement of all materials and equipment for the Project, the performance of construction services for the Project, the start-up, testing, and commissioning of the Project, and the provision of warranty services, all as further described in Exhibit B to this Agreement and Contract Documents.

3.4 **Phase 3 Services.** DUWA will require a two (2) year warranty period upon Substantial Completion of Phase 2. Within the warranty period, DUWA will require a 30 day stress test to be completed, with timing of the test to be determined at the discretion of DUWA. Stress testing requirements are set forth in the Scope of Work included as Exhibit B.

3.5 **GMP Proposal.** Although preliminary cost estimates shall be provided continually by the DBE to the DUWA throughout the design development process, at the 60% design level, the DBE shall submit a GMP proposal to DUWA which shall include, at a minimum, the following:

- a) A proposed GMP, which shall be the sum of:
 - 1) DBE's Phase 2 Fixed Fee; and
 - 2) The estimated Cost of the Work, which shall be defined on an open-book basis, including only those costs reasonably and actually incurred by the DBE in the proper performance of the Work), inclusive of any DBE's Contingency, (as defined).
- b) The 60% design documents, which are set forth in detail and are attached to the proposal;
- c) A list of the assumptions and clarifications made by DBE in the preparation of the GMP proposal, which list is intended to supplement the information contained in the drawings and specifications and is specifically included as part of the 60% design submission;
- d) The Substantial Completion Date upon which the proposed GMP is based, and a schedule upon which the Substantial Completion Date is based; and
- e) A schedule of unit prices and other substantiating documentation.

3.6 **Review and Adjustment to GMP.** Upon receipt of DBE's GMP proposal for Phase 2, DUWA may: (a) accept the GMP and issue a Notice to Proceed with Phase 2 services, or (b) enter into a negotiation with DBE on the scope, GMP, and schedule, for Phase 2 services to achieve a mutually acceptable basis on which to proceed, or (c) reject DBE's proposal for Phase 2 and either: (i) cancel the Project, (ii) proceed with another design build entity, or (iii) exercise the "off- ramp" final design provisions of Section 3.7. If the Parties agree upon the GMP and DUWA issues a Notice to Proceed with Phase 2, DBE shall perform the Phase 2 services, all as further described in the GMP proposal and Exhibit B, Scope of Work, as amended or revised.

3.7 **Off Ramp.**

a. If the parties enter into negotiations under Section 3.6(b) and are unable to reach an agreement on the DBE's GMP for Phase 2 within a period of twenty one (21) days, as may be extended by the mutual agreement of the parties, then the proposed GMP shall be deemed withdrawn and of no effect. In such event, DUWA and DBE shall meet and confer as to how the Project will proceed, with DUWA having the following options:

(i) DUWA may declare Phase 1 Services completed and authorize DBE to continue, as an extension of Phase 1, to complete a unified set of plans and specifications for use by DUWA to solicit competitive bids for construction of the Project and completion of DBE's responsibilities as the Engineer of Record, including the provision of engineering services during construction; or

(ii) DUWA may terminate the relationship with DBE and proceed to exercise its available options to perform the final design and construction with parties other than DBE.

b. If DUWA fails to exercise either of its options under Section 3.7(a) above within a reasonable period of time, DBE may give written notice to DUWA that it considers this Agreement completed. If DUWA fails to exercise either of the options under Section 3.7(a) within fifteen (15) days of receipt of DBE's notice, then this Agreement shall be deemed completed.

c. If DUWA terminates the relationship with DBE under Section 3.7(a), or if this Agreement is deemed completed under Section 3.7(b), then DBE shall have no further liability or obligations to DUWA under this Agreement, except for the submission to DUWA of all work product in accordance with Section 3.7(d), and DBE shall not have a claim for compensation for services anticipated in Phase 2.

d. If DUWA terminates this Agreement, DBE shall supply DUWA with copies of all design and construction documents, including all drawings, calculations and engineering documents ("Work Product") related to the design through the completion of the DBE's portion of the Work. DUWA shall also have the right to contract directly with any of DBE's sub-consultants for design-related services on this Project, and DBE shall take such steps as are reasonably necessary to enable DUWA to implement such relationships. DBE shall provide in any design sub-consultancy agreements that DUWA shall have the right to negotiate directly with such sub-consultants for the continuation of their services with respect to the Project, and that any provisions with respect to copyright or the ownership of instruments of service confirm such right of DUWA.

3.8 Completion. Once DBE has received a Notice to Proceed with Phase 2, DBE shall perform all design and construction services, and provide all material, equipment, tools, labor, manuals, start-up, commissioning and testing services for the Project necessary to complete the Work described and reasonably inferable from the Contract Documents.

4 Contract Time and Schedule.

4.1 Phase 1 Work. The DBE will commence the Phase 1 Work after execution of this Agreement and upon receipt of a written Phase 1 Notice to Proceed and shall complete the Phase

1 Work prior to the Milestone dates set forth in Section 4.3(a) unless otherwise duly amended by a written and executed Change Order or Construction Change Directive.

4.2 **Phase 2 Work.** The DBE will commence the Phase 2 Work upon receipt of a written Phase 2 Notice to Proceed and shall complete the Phase 2 Work prior to the Milestone dates set forth in Section 4.3(b).

4.3 **Milestone Completion Dates.**

a. Phase 1 Services shall be completed on or before the following milestone deadlines:

- Submittal of GMP: July 1, 2020

b. Phase 2 Services shall be completed before the following milestone deadlines:

- Substantial Completion: July 1, 2021
- Final Completion: November 30, 2021

c. Interim milestones shall be achieved in accordance with Exhibit B and the schedule approved by DUWA upon acceptance of the GMP and issuance of the Phase 2 Notice to Proceed.

d. All of the dates set forth in this Section 4.3 shall be subject to adjustment only in accordance with the General Conditions.

4.4 **Time is of the Essence.** Time is of the essence in the performance of this Work. DBE shall make whatever adjustments in working hours, manpower, equipment, etc. deemed necessary to complete the Work, at DBE's expense, in accordance with the terms of the Agreement and the specific schedule requirements hereof.

4.5 **Delay.** Delays caused solely by DUWA shall entitle the DBE to an extension of the Project schedule, but there shall be no adjustment in the DBE's compensation unless such delay is both unreasonable under the circumstances and beyond the contemplation of the parties as of the Effective Date of this Agreement.

4.6 **Liquidated Damages.** DBE understands that if Substantial Completion as set forth in the Milestones set forth in section 4.3(b) is not achieved by the specified dates that DUWA will suffer damages which are difficult to determine and accurately specify. DBE agrees that if Substantial Completion is not attained on the date set forth in Section 4.3(b), that Design Builder will be assessed Two-Thousand Dollars (\$2,000) as liquidated damages for each day Substantial Completion is delayed.

4.7 **Force Majeure.** Delays caused as a result of Force Majeure shall temporarily excuse nonperformance of obligations during the period of time the Force Majeure prevents performance, other than payment obligations; provided that DUWA may suspend payment with respect to the time period of the Force Majeure if DBE is unable to provide Service. The Party invoking Force Majeure shall notify the other Party as soon as reasonably possible of the Force

Majeure, and shall specify the particulars thereof (including the expected duration thereof) and what actions have or will be undertaken to correct the Force Majeure. The Parties shall exercise reasonable good faith efforts to remove the cause or mitigate the effect of the Force Majeure. The DBE shall resume performance of the obligations under this Agreement immediately upon passing of the Force Majeure event.

4.8 **Normal Working Hours.** DUWA will determine the normal working hours for the Project.

5 **Contract Price.**

5.1 **Phase 1 Contract Price.** Subject to the performance by the DBE of its obligations hereunder, the DUWA agrees to pay the DBE for the performance of the Phase 1 Work a not to exceed amount of _____. The Contract Price includes all applicable federal and/or state sales, use, franchise, excise, assessments and other taxes which may now or hereafter be levied. Payments of the Contract Price will be allocated and disbursed on the basis of percentage completion of the major Tasks and in the amounts set forth below:

Phase 1: \$X,XXX,XXX Fixed Fee

- Task 1: Permitting
- Task 2: 30% Design
- Task 3: Thermal Dryer Equipment and Centrifuge
- Task 4: 60% Design
- Task 5: Development of a Guaranteed Maximum Price for Phase II

5.2 **Phase 2 Contract Price.** For the Phase 2 work, DUWA shall pay DBE an agreed upon Phase 2 Contract Price as set forth in the GMP if accepted by DUWA.

5.3 **Procedure for Payment.** Subject to the conditions in this Section 5 and elsewhere in the Contract Documents, DUWA shall make payment within sixty (60) days after receipt of each properly submitted, accurate and approved Application for Payment (invoice) in accordance with the provisions of the General Conditions.

5.4 **Insurance and Bonds.** On or before the date specified in the Notice to Proceed, DBE shall provide financial security for the performance of its obligations under this contract through one or more payment and performance bonds that guarantee the DBE's timely performance of its obligations under this Agreement for the benefit of DUWA. The DBE shall secure such bonds from a company holding Certificates of Authority as acceptable sureties on Federal Bonds and as Acceptable Reinsuring Companies as published in the Department of Treasury Circular 570. The DBE shall provide the insurance and bonds required in Exhibit C attached hereto and made a part hereof. The DBE acknowledges that it has read and understands the insurance and bonding requirements set forth in Exhibit C and agrees that it shall comply with the terms and conditions thereof at no additional cost to DUWA.

5.5 **Record Keeping and Financial Controls.** DBE shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, using

accounting and control systems in accordance with generally accepted accounting principles, and in such accounts as may be necessary for DUWA's utility accounting purposes. During the performance of the Work and for a period of three (3) years after Final Payment, DUWA and DUWA's accountants shall be afforded access from time to time, upon reasonable notice, to DBE's records, books, correspondence, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to the Work, all of which DBE shall preserve for a period of three (3) years after Final Payment. During the performance of the Work, "reasonable notice" to review, examine and audit DBE's records, books, correspondence, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to the Work shall be three business days' written notice.

5.6 Invoice documentation. The DBE agrees to provide such supporting documentation for each invoice as DUWA may reasonably require. DBE, if requested by DUWA, will provide an executed statutory form of conditional lien waiver and release with each invoice.

5.7 Retainage. Each and any invoice will be subject to a ten percent (10%) retainage by DUWA. The cumulative retainage invoice shall be paid upon completion and acceptance of the Work by DUWA and the City.

5.8 Payment to Subcontractors. DBE will pay amounts due to its subcontractors (if any) no later than fifteen (15) Business Days after receipt of payment from DUWA. DBE shall certify to DUWA in writing at the time of submittal of each invoice that all sub-subcontractors, subcontractors and suppliers have been paid for work and material from previous progress payments received, less any retainage, prior to receipt of any further progress payments. This provision in no way creates any contractual relationship between any sub-subcontractor, subcontractor or supplier and DUWA or any liability on DUWA for DBE's failure to make timely payments to them.

5.9 Final Payment Conditions. As a condition precedent to DUWA's final payment under this Agreement, DBE shall furnish certifications, satisfactory to DUWA, that state that no liens of any kind, including, but not limited to, mechanics' liens or other claims arising directly or indirectly out of any act or omission of such DBE or any of its subcontractors, sub-subcontractors or suppliers, have been made or attached against the Work or upon any property owned by DUWA. DUWA, at any time, without notice, may pay and discharge liens, claims, and encumbrances filed by the DBE's sub-subcontractors or suppliers and deduct the amount paid, together with costs and attorneys' fees, from compensation due to the DBE hereunder.

5.10 Final Payment Acceptance. The acceptance by DBE of the final payment under this Agreement shall constitute and operate as a release to DUWA for all claims and liability to the DBE, its representatives, subcontractors, sub-subcontractors, supplies and assigns for any additional compensation or payment relating to any and all things done or furnished to the services rendered by the DBE, except for claims then pending of which notice has been provided in writing to DUWA. However, final payment shall in no way relieve the DBE of liability for its obligations or for faulty or defective work discovered after final payment.

5.11 **Disputes.** If DUWA disagrees with any portion of a billing, DUWA will notify the DBE within ten (10) Business Days of the disagreement, and the applicable Parties will attempt to resolve the disagreement using the methods set forth in the General Terms and Conditions. DUWA's payment of any amounts will not constitute a waiver of any disagreement with an invoice.

6 Ownership

6.1 **Work Product.** All drawings, specifications and other documents and electronic data furnished by DBE to DUWA under this Agreement ("Work Product") are deemed to belong to DUWA, and DUWA shall retain the ownership and property interests therein, including the copyrights thereto, in perpetuity. To the extent not inconsistent with DUWA's unrestricted use of the Work Product for the Project, Work, or Facility, DBE shall retain its rights in its pre-existing standard drawing details, designs, specifications, databases, computer software, proprietary information, documents, templates, and any other property owned by DBE on the date of this Agreement or developed outside of this Agreement.

6.2 **Project Ownership.** All of the Project equipment, materials and facilities that are designed and constructed by DBE will be the property of DUWA. DBE may not treat itself as the owner of the Project or any of the capital improvements thereof for federal tax or any other purpose and will not be entitled to borrow against, or mortgage or otherwise encumber any interest in the Project.

7 Notices.

All notices required pursuant to this Agreement shall be in writing and shall be deemed duly given when actually received by the recipient specified below. Any such notice may be sent by recognized courier service, mail, or electronic mail and will be addressed to the recipients as set forth below:

If to DUWA:
Rick Sollars, Chairman
Downriver Utility Wastewater Authority
25605 Northline Road
Taylor, MI 48180

With copies to:
OHM Advisors
c/o Lambrina Tercala
34000 Plymouth Road
Livonia, MI 48150
Lambrina.tercala@ohm-advisors.com

James G. Fausone
Fausone Bohn, LLP

41700 W. Six Mile Road, Ste. 101
Northville, MI 48168
jfausone@fb-firm.com

If to DBE :
Name
Address
Contact Information

8 Miscellaneous Provisions.

8.1 **Entire Agreement.** This Agreement and the attached Exhibits contain the entire agreement between the parties and all prior negotiations and agreements are merged herein. Neither DUWA nor DUWA's agents have made any representations except those expressly set forth herein, and no rights or remedies shall be acquired by the DBE by implication or otherwise unless expressly set forth herein.

8.2 **Interpretation.** All the terms and provisions of this Agreement shall be deemed and construed to be "covenants" and "conditions" as though the words specifically expressing or imparting covenants and conditions were used in each separate term and provision. The headings in this Agreement are for convenience only and shall not be used to construe or interpret the scope or intent of the Agreement or in any way affect the same. As used herein, the singular shall include the plural, and the plural include the signature. Unless the context otherwise expressly requires, the words "herein", "hereof", and "hereunder" and other words of similar import refer to the Agreement as a whole and not to any particular Article, Section or other subdivision.

8.3 **Amendments.** Except for Change Orders, no amendment or modification of this Agreement shall be binding unless in writing and duly executed by all Parties.

8.4 **Waiver.** No waiver by any Party hereto of any one or more defaults by any other Party in the performance of any provision of this Agreement shall operate or be construed as a waiver of any future default, whether of like or different character. No failure on the part of any Party hereto to complain of any action or non-action on the part of any other Party, no matter how long the same may continue, shall be deemed to be a waiver of any right hereunder by the Party (or Parties) so failing. A waiver of any of the provisions of this Agreement shall only be effective if made in writing and signed by the Party who is making such waiver.

8.5 **Remedies Cumulative.** The remedies reserved for DUWA herein shall be cumulative and additional to any other or further remedies provided in law or equity. Any waiver by DUWA of any provision of this Agreement shall not constitute a waiver of any other provisions of the Agreement.

8.6 **Assignment.** The DBE shall not assign all or any part of the Agreement, nor any Work, nor any payments due or to become due hereunder, without first obtaining consent in writing from DUWA, which consent may be withheld in DUWA's sole and absolute discretions.

8.7 **Severability.** If any clause, provision or section of this Agreement is ruled invalid by any court of competent jurisdiction (or arbitral tribunal), the invalidity of such clause, provision or section shall not affect any of the remaining provisions hereof, and the Parties shall substitute such invalid provision(s) with valid ones, which in their economic effect come so close to the invalid provisions that it can be reasonably assumed that the Parties would have executed this Agreement including those new provisions.

8.8 **Survival.** The provisions of Sections ____ of this Agreement shall survive the expiration or termination of this Agreement.

8.9 **Confidentiality and Nondisclosure.** DBE shall not disclose information regarding this Agreement or the Work, except for information that is required for the purposes of the performance of Work or in the public domain, to any person. Noncompliance by the DBE or others under the control or direction of the DBE with this obligation shall be sufficient cause for DUWA to immediately terminate this Agreement for cause without prior written notice and shall entitle DUWA to injunctive and other relief from a court of competent jurisdiction.

8.10 **Setoff.** DUWA is authorized to deduct any sums owed it by DBE (whether or not the debt arises out of this Agreement) from the payments due DBE under this Agreement. DUWA may also withhold payment from DBE in an amount sufficient to protect DUWA from any claims of third parties or any liens which arise as a result of DBE's or its subcontractors' and subcontractors' performance of the Work.

8.11 **Execution.** The DBE represents that the individual signing the Agreement on behalf of the DBE has the authority to sign and bind the DBE. Duplicate copies of this agreement shall be signed by DUWA and the DBE with each party retaining one original document.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first above written.

**DOWNRIVER UTILITY WASTEWATER
AUTHORITY**

DESIGN BUILD ENTITY

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

EXHIBIT A
GENERAL CONDITIONS
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ARTICLE 1

CONTRACT DOCUMENTS

1.1 DEFINITIONS

Unless the context expressly requires otherwise, defined terms used in the Contract Documents have the meanings set forth below.

1.1 “Acceptance Testing Plan” means the written testing and commissioning procedures to be developed by the Parties in accordance with the Acceptance Testing Outline, the Construction Documents, Good Engineering and Construction Practices and Prudent Industry Practices.

1.2 “Applicable Law” means any federal, State, local (or other political subdivision) constitution, statute, law, rule, code, regulation, consent decree, consent order, consent agreement, permit, Governmental Approval, any determination or order entered, promulgated or approved by any Governmental Agency having jurisdiction, any common law or principle of common law applicable to, as the case may be, any of the Work, Project, Parties, activities, requirements or obligations of the Parties under the Contract.

1.3 “Arbitration Rules” means the Michigan Revised Uniform Arbitration Act, Public Act 371 of 2012, MCL 691.1681 et seq., as amended and Michigan Court Rule 3.602.

1.4 “Business Day” means any day except Saturday, Sunday, and any day on which banking institutions in the State of Michigan generally are authorized or required by law or other governmental actions to close.

1.5 “Change of Law” means any of the following events occurring after the Effective Date:

- a. the adoption, modification or repeal, or change in interpretation or application, of any Applicable Law; or
- b. the modification, change in interpretation or application, or imposition of any material conditions, restrictions or limitations in any Governmental Approval, which imposes limitations, additional costs or burdens with respect to the DBE’s obligations under this Contract.

1.6 “Change Order” is a mutually agreed written order amending the Contract Time, Contract Price or other contract terms, pursuant to Exhibit M. All Change Orders will be executed by DBE and DUWA.

1.7 “Authority” means the Downriver Utility Wastewater Authority (DUWA).

1.8 “Construction Documents” consist of the detailed plans and specifications, calculations (if required) and other technical documents illustrating the character, nature, detail and scope of the Construction Work to be performed with respect to the Project, based on the approved GMP Proposal, and taking into account the scope of work and relevant design standards, including all paper or electronic plans and specifications prepared by the DBE and its

subcontractors for use in construction, any subsequent modifications, and responses to requests for clarification and information. These documents are complementary and what is required by one such document is required by all such documents.

1.9 “Contract Documents” are those documents set forth in Section 2 of the Contract and all subsequent contract modifications issued after execution of the Contract such as Change Orders.

1.10 “Contract Price” means the lump sum price for completing all Work in strict accordance with the Contract Documents and includes all Direct Costs (both for Design Services and Construction Work), General Conditions Costs, Overhead and Profit, subject to adjustments through approved Change Order.

1.11 “Contract Time” is the period of time allotted under the Project Schedule set forth in Exhibit E for the DBE to achieve Substantial Completion.

1.12 “Construction Change Directive” means a written directive issued not to exceed \$25,000 by DUWA authorizing the DBE to proceed with a modification to the scope of Work. The Construction Change Directive is not a Change Order and will only be assembled and issued when there is not adequate time to process a Change Order prior to proceeding with revisions to the scope of the Work or where there is disagreement as to whether an item is included scope. The DBE is responsible for providing rough order of magnitude pricing to DUWA and OHM for use in assembling the Construction Change Directive.

1.13 “Day” or “day” means calendar day unless specifically described as a work day or Business Day or unless statutorily defined.

1.14 The word “delay” means any and every delay, obstruction, hindrance, interference, loss of productivity, or inefficiency of any kind.

1.15 “DUWA” means the Downriver Utility Wastewater Authority

1.16 “Effective Date” means the date agreed upon by DUWA and the DBE for the effectiveness of the Contract, which is set forth on page 1 of the Contract.

1.17 “Environmental Condition” means the presence of any Regulated Substance on or at the Project site or any other location included in the sewage collection system or water delivery system, including the presence in surface water, groundwater, soils, or subsurface strata, or the migration of such a Regulated Substance from the Project site.

1.18 “Equipment Supplier” means the entity that will supply the thermal biosolids dryer and dewatering centrifuge to be purchased by DBE.

1.19 “Final Completion” has the meaning as defined in Paragraph 7.1.4 of these General Conditions.

1.20 “Good Engineering and Construction Practices” means those methods, techniques, standards and practices which, at the time they are to be employed and in light of the circumstances known or reasonably believed to exist at such time, are generally recognized and accepted as good design, engineering, equipping, installation, construction, commissioning and testing practices for the design, construction and improvement of capital assets in the municipal wastewater treatment and collection or drinking water distribution industry as practiced in the Western United States and particularly in Michigan for facilities of a similar size and nature and in a similar location and for a similar purpose as the Project. Good Engineering and Construction Practices is not necessarily defined as the optimal methods, techniques, standards or practices to the exclusion of others, but rather to refer to a range of methods, techniques, standards and practices that are reasonable under the circumstances.

1.21 “Governmental Authority” means any legislative, executive, judicial, or administrative department, board, commission, court, agency or other instrumentality of the Federal, State or local government, including a joint powers agency formed by two (2) or more of the foregoing.

1.22 “Governmental Approval” means any permit, license, approval, consent or other authorization which is required under Applicable Law for the Work or for the performance of any of the obligations under this Contract.

1.23 “Hazardous Waste or Hazardous Materials” means any substance falling within the definition of hazardous waste or hazardous material as set forth in the United States Resource Conservation and Recovery Act, 42 U.S.C §6901 et seq., the United States Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C §9601 et seq., or any other federal, state or local statutes, regulations and ordinances which are applicable to the handling, remediation or transportation of Hazardous Waste or Hazardous Materials.

1.24 “Indemnified Party” includes DUWA, OHM, Veolia and their respective officers, agents, directors, partners, members, employees, affiliates, parents and subsidiaries.

1.25 “Intellectual Property” includes Work Product and means any patents, copyrights, trade secrets, licensed software, proprietary technology or systems, or other intellectual property right owned or licensed in accordance with Applicable Law.

1.26 “Law” or “Laws” means all federal, state and local statutes, laws, ordinances and any regulations, orders and administrative guidelines (by whatever title, and without respect to whether enforceable at law) issued thereunder that are applicable to the performance of the Work under this Contract. To the extent that a Permit is required for DBE to perform the Work, “Law” includes “Permit.”

1.27 “Notice to Proceed” means a written document from DUWA to the DBE stating the date upon which the DBE is authorized to begin the Project Work. The date specified in the Notice to Proceed marks the beginning of the performance time of the Agreement.

1.28 “Permit” or “Permits” means every permit, license, authorization, certification, permission, or equivalent control document required under any federal, state or local statute, law ordinance, regulation or order.

1.29 “Permitted Delay” means a delay qualifying for an extension of the Contract Time.

1.30 “Person” means any natural person, corporation, Limited Liability Company, partnership, firm, association, Governmental Agency or any other entity whether acting in an individual, fiduciary or other capacity.

1.31 “Project” means the Project described in the Exhibit B.

1.32 “Project Schedule” means the schedule included in the Contract as Exhibit E, as adjusted per the Contract.

1.33 “Prudent Industry Practices” means those methods, techniques, standards and practices which, at the time they are employed and in light of the circumstances at the time, are generally accepted as reasonably prudent in the wastewater treatment and collection or drinking water distribution industry or recycled water delivery industry as practiced in the Western United States and particularly in Michigan for water and wastewater facilities of a similar size and used for similar purpose as the Project. Prudent Industry Practices is not necessarily defined as the optimal methods, techniques, standards or practices to the exclusion of others, but rather to refer to a range of methods, techniques, standards and practices that are reasonable under the circumstances.

1.34 “Regulated Substances” means any pollutant, contaminant, substance, hazardous substance, hazardous material, toxic substance, toxic pollutant, solid waste, municipal waste, industrial waste, or hazardous waste, petroleum or petroleum-derived substance, asbestos, or polychlorinated biphenyls, that is defined as such in, is subject to regulation under, or may form the basis for any requirement for investigation or remediation, under any Applicable Law.

1.35 “Subcontract” means the agreement entered into between DBE and any Sub-Contractor.

1.36 “Sub-Contractor” is any person or entity retained by DBE as an independent contractor to perform a portion of the Work and shall include materialmen and suppliers.

1.37 “Sub-Subcontractor” is any person or entity retained by Sub-Contractor as an independent contractor to perform a portion of the Work and shall include materialmen and suppliers.

1.38 “Substantial Completion” has the meaning as defined in Paragraph 7.1.3 of these General Conditions.

1.39 “Substantial Completion Date” is the date shown in the approved Project Schedule as the milestone for Substantial Completion.

1.40 “Supplier” means any person or entity retained by DBE or a Sub-Contractor to provide materials, equipment, or other goods for the Project.

1.41 “Surety” means an entity that guarantees the Work via issuance of performance and payment bonds as required pursuant to the terms of the Agreement.

1.42 “Total Float” means the number of days by which the Work or any part of the Work may be delayed, without negatively influencing the overall critical path of the Project Schedule.

1.43 “Work Product” means any and all plans, drawings, specifications, estimates, calculations, reports, models, and other documents and materials prepared by or on behalf of the DBE or its subcontractors in connection with the Project, whether in electronic or paper form.

1.44 “Work” or “Construction Work” means all labor, materials, services, equipment, supplies, tools, and appurtenances necessary for the proper design and construction services as further described in Exhibit B, and the DBE’s obligations under this Agreement.

1.2 EXECUTION, CORRELATION AND INTENT.

1.2.1 By executing the Agreement, the DBE represents that it is financially solvent; that it is qualified to do business in the State of Michigan, that it has all required licenses and permits necessary in connection with performance by the DBE hereunder (all such licenses and permits shall be at the DBE's sole cost and expense); that it has the expertise and authority to perform its obligations under the Agreement; that it has inspected the Project and the Work and familiarized itself with the local conditions (including, both all physical conditions and all applicable local codes, laws and regulations) under which the Work is to be performed; that it is familiar with all federal, state, municipal and county laws, ordinances and regulations which may, in any way, affect the Work or those employed therein, including, but not limited to, those particularly applicable to the Project; and that the Contract Price is the agreed amount for all the Work, including all risks, hazards, and difficulties in connection therewith assumed by the DBE under the Agreement. Each Sub-Contractor shall review the foregoing representations and shall be deemed to have made the same representations to DUWA in performing any Work on the Project.

1.2.2 The intention of the Agreement is that all labor, materials, facilities, utilities, equipment, insurance, taxes and all other items necessary for the proper execution and completion of the Work are included in the Contract Price. It is intended that all work required for the construction and administration of the Project shall be supplied including all such work that is in the Contract Documents or is reasonably inferable from the Construction Documents and the Contract Documents. Lists of "Work Included," "Scope" or "Description of Work" are not intended to enumerate each and every item of Work or appurtenances required. Words which have well-known technical or trade meanings are used herein in accordance with such recognized meanings.

1.2.3 The Agreement is intended to constitute a single agreement and every effort shall be made to construe such documents as being consistent and not contradictory. In the event of any

conflict among the Contract Documents, the Contract Documents shall be construed according to the priorities set forth in Section 2 of the Agreement:

1.2.4 Where codes, standards, requirements and publications of public and private bodies are referred to in the Contract Documents, references shall be understood to be to the latest revision prior to the date of the Agreement, except where otherwise indicated.

1.2.5 Where no explicit quality or standards for materials or workmanship are established for work, such work is to be of new, high quality for the intended use and workmanship shall be consistent with the best practices of that particular trade, skill and function.

1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

1.2.8 The relationship between the DBE and DUWA shall be that of an independent DBE. The Agreement shall not be construed to create any third party beneficiaries or to create any rights in any third parties.

1.2.9 If any provision of the Agreement shall be, to any extent, invalid or unenforceable, the remainder of the Agreement shall remain in full force and effect.

ARTICLE 2

DUWA

2.1 INFORMATION AND SERVICES REQUIRED OF DUWA.

Information or services under DUWA's control shall be furnished by DUWA with reasonable promptness after written request to avoid delay in the orderly progress of the Work. The furnishing of such information by DUWA shall not relieve the DBE from its duties under the Contract Documents, specifically as to inspection of the Project site and the Contract Documents. DUWA makes no representation or warranty with respect to subsurface conditions, or any reports provided by or on behalf of DUWA to the DBE regarding subsurface conditions.

2.2 DUWA'S RIGHT TO STOP THE WORK.

If the DBE fails to correct defective Work or fails to carry out the Work or to supply labor, materials and equipment in accordance with the Contract Documents, DUWA may order the DBE to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of DUWA to stop the Work shall not give rise to any duty on the part of DUWA to exercise this right for the benefit of the DBE or any other person or entity. Should DUWA elect to order the DBE to stop the Work, the DBE shall be responsible for whatever measures are necessary to maintain the Project Schedule once the cause for such order has been eliminated and for all costs and expenses associated therewith.

2.3 DUWA'S RIGHT TO CARRY OUT THE WORK.

If the DBE:

- a. Fails to properly respond to notices issued by DUWA pursuant to Paragraph 2.1.7 or Section 3.2 hereof; or
- b. The DBE has failed to make undisputed payments properly due to its Sub-Contractors, Sub-Sub-Contractors, laborers or materialmen or for material or labor used in the Work; or
- c. Fails to supply the quantity of properly skilled workmen necessary to complete the Work in accordance with the critical path activities as set forth in the Project Schedule; or
- d. Fails to supply materials and equipment as necessary to complete the Work in accordance with the Project Schedule; or
- e. Fails to maintain any insurance coverage required under the Agreement; or
- f. Fails to pay workers' compensation or other employee benefits; or
- g. Fails to pay withholding or other taxes; or
- h. Fails to perform any other material obligation under the Agreement;

then DUWA may, after seven (7) days written notice to DBE and without prejudice to any other remedy DUWA may have, make good such deficiencies or otherwise rectify such situations to the satisfaction of DUWA unless DBE shall have commenced corrective action within said seven (7) day period. In such case, the cost of correcting such deficiencies or otherwise rectifying such situations to the satisfaction of DUWA, including compensation for DUWA's separate DBEs' or consultants' additional services made necessary by such default, neglect or failure, shall be offset against any amounts otherwise due to the DBE. If the payments then or thereafter due the DBE are not sufficient to cover such amount, the DBE shall pay the difference to DUWA.

2.4 DUWA'S RIGHT TO WITHHOLD PAYMENT.

DUWA may withhold payment or, because of subsequently discovered evidence or subsequent observations, it may nullify the whole or any part of any payment previously issued, to such extent as it may be necessary in its opinion to protect DUWA from loss because:

2.4.1 The DBE fails to properly respond to notices issued by DUWA or DUWA pursuant to Paragraphs 2.1.7 or Section 3.2 hereof; or

2.4.2 The DBE is in default of any of its material obligations under the Agreement or otherwise is in material default under any of the Contract Documents; or

2.4.3 Any part of such payment is attributable to Work which is defective or not performed in accordance with the Construction Documents, as determined by DUWA; provided,

however, such payment shall be made as to the part thereof attributable to Work which is performed in accordance with the Construction Documents and is not defective, reserving, however, such amount as may be reasonably necessary to protect DUWA with respect to defective Work; or

2.4.4 The DBE has failed to make undisputed payments properly due in accordance with law or the Subcontract documents to Sub-Contractors, Sub-Sub-Contractors, Suppliers, laborers or materialmen or for material or labor used in the Work; or

2.4.5 Any part of such payment is attributable to Work with respect to which any party has filed an un-discharged claim against any payment or performance bonds; or

2.4.6 Third party claims have been filed that trigger DBE's indemnity obligation under Section 4.13 Indemnification; or

2.4.7 If DUWA reasonably determines that the portion of the Contract Price then remaining unpaid will not be sufficient to complete the Work in accordance with the Contract Documents after meeting with DBE and giving an opportunity to prove otherwise, no additional payments will be due the DBE hereunder unless and until the DBE, at no cost to DUWA, performs, and pays in full for, a sufficient portion of the Work so that such portion of the Contract Price then remaining unpaid is determined by DUWA to be sufficient to so complete the Work.

ARTICLE 3

DBE

3.1 REVIEW OF CONTRACT DOCUMENTS.

3.1.1 The DBE acknowledges that it has reviewed the Contract Documents and that it is familiar with the Contract Documents. The DBE hereby specifically acknowledges and declares that the Contract Documents are full and complete and that the Construction Documents are sufficient to enable it to construct the Work outlined therein in accordance with applicable laws, statutes, building codes and regulations, and otherwise to fulfill all of its obligations under the Agreement. The DBE further acknowledges that it has visited the Project site, examined all conditions affecting the Work, is fully familiar with all of the conditions thereon and affecting the same.

3.1.2 Each Sub-Contractor shall review the Contract Documents and shall be deemed to have made the same waiver set forth in Paragraph 4.1.1 above in performing any work on the Project.

3.1.3 Before starting the Work, and at frequent intervals during the progress thereof, the DBE shall carefully study and compare the Agreement, General Conditions, Construction Documents, and other Contract Documents and shall at once report to DUWA any error, inconsistency or omission the DBE may discover. Any necessary change shall be ordered as

provided in Article 11, subject to the other provisions of the Contract Documents. If the DBE proceeds with the Work without such notice to DUWA, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents the DBE could have discovered such, the DBE shall bear all costs arising therefrom.

3.2 SUPERVISION AND CONSTRUCTION PROCEDURES.

3.2.1 The DBE shall provide competent supervision, coordination and related services for construction of, and shall cause to be constructed, the Project. The DBE shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work. The DBE shall engage workers who are skilled in performing the Work, and all Work shall be performed with care and skill and in a good workmanlike manner. The DBE shall be liable for all property damage, including repairs and replacements of the Work and economic losses, which proximately result from the breach of this duty.

3.2.2 The DBE shall be responsible to DUWA for the acts and omissions of its employees. The DBE shall be as fully responsible to DUWA for the acts of its Sub-Contractors, Sub-Sub-Contractors, their agents and persons directly or indirectly employed by them, and other persons performing any of the Work as it is for the acts and omissions of persons directly employed by the DBE.

3.2.3 The DBE shall not be relieved from its obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of DUWA in its administration of the Agreement, or by inspections, tests or approvals required or performed by persons other than the DBE. No inspection performed or failed to be performed by DUWA hereunder shall be a waiver of any of the DBE's obligations hereunder or be construed as an approval or acceptance of the Work or any part thereof.

3.2.4 The DBE shall attend meetings scheduled by DUWA to discuss such matters as procedures, progress, problems, scheduling and safety.

3.2.5 At all times the DBE shall provide a Representative approved by DUWA who (a) will have full responsibility for the prosecution of the Work, (b) will act as agent and be a single point of contact in all matters on behalf of the DBE, (c) will be present (or its approved designee will be present) at the Project site at all times that the Work is performed and (d) will be available to execute instructions and directions from DUWA.

3.2.6 The DBE shall maintain daily field reports recording the labor force and equipment employed by the DBE and Sub-Contractors, materials and equipment received at the Project site or another location, visits by suppliers, significant progress in the Work and completed trade Work within the major Work areas, and other pertinent information. Daily field reports shall be furnished by the DBE promptly upon request by DUWA. DUWA's review of any daily field report shall not be construed as agreement with any information contained in such report.

3.2.7 The DBE shall maintain at the Project site a record copy of the Agreement and its Contract Documents in good order and annotated in a neat and legible manner using a contrasting, reproducible color to show (a) all revisions made, (b) dimensions noted during the execution of

the Work, (c) all deviations between the as-built installation and the Contract Documents, all approved Submittals and all clarifications and interpretations.

3.2.8 The right of possession of the premises and the improvements made thereon by the DBE shall remain at all times in DUWA. DBE's right to entry and use thereof arises solely from the permission granted by DUWA under the Contract Documents. Unless otherwise provided in the Contract Documents, all entrances to all buildings and areas of the Project site that are occupied by DUWA shall be provided with safe, secure and convenient access at all times.

3.2.9 If the Work involves modifications to and/or expansion of an existing occupied and/or operating facility, the DBE acknowledges and agrees that DUWA will continue its operation of the facilities in which the Work is to be performed and that the DBE will conduct its work so as to cause a minimum of interference with DUWA's operation of the existing facilities. The welfare of DUWA's employees, guests and invitees is to be considered at all times. If the Work involves modifications to and/or expansion of an existing occupied and/or operating facility, all shut downs/outages of building systems, utilities and equipment shall be approved in advance by DUWA. The DBE shall provide DUWA with reasonable prior notice of any required shutdowns of building systems, utilities and/or equipment, such amount of prior notice to be agreed upon between the DBE and DUWA. The DBE will, at the request of DUWA, schedule any work which otherwise may have an adverse impact upon the health, safety or welfare of DUWA's employees, guests or invitees or the normal facility operations during those times in which said adverse consequences may be minimized.

3.2.10 The DBE shall retain a competent registered professional engineer or registered land surveyor, acceptable to DUWA, who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the Project site and shall establish sufficient lines and grades for the construction of associated work. The DBE shall certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries. The DBE shall establish the building grades, lines, levels, column, wall and partition lines required by the various Sub-Contractors in laying out their work.

3.3 LABOR AND MATERIALS.

3.3.1 Unless otherwise specifically noted in the Contract Documents, the DBE shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, insurance, taxes, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. The DBE shall be responsible, at its sole cost and expense, for the cost of hook-up of temporary systems to existing systems, distribution of utilities from existing systems to all areas of the Work, and disconnection of temporary systems at completion of the Work. All associated costs will be incorporated into the final GMP submission. The DBE must obtain advance written approval from DUWA for any tie-ins to, and disconnections from, existing DUWA systems.

3.3.2 Prior to specifying any equipment for the Project with a manufacturer's warranty in excess of one (1) year, the DBE will provide written notice to DUWA specifying the equipment,

supplier and proposed terms and conditions of the extended warranty, and DUWA will have the right to review and approve such equipment and extended warranty prior to specification. At DUWA's request, the DBE will allow Veolia to participate in negotiation of any extended warranty. The DBE agrees to cooperate with DUWA in obtaining the information requested by DUWA relating to the applicable equipment manufacturer (including credit), the applicable equipment and proposed extended warranties, the operating and maintenance data pertaining to manufacturers' equipment, and information about customary maintenance or repair service, spare parts supply service or personnel support service that the manufacturer of the equipment furnishes.

3.3.3 The DBE will schedule and coordinate delivery and storage of equipment and materials and the sequencing of its Work with DUWA's current site logistics plan and the most current Project Schedule. The DBE shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the project site or other areas identified in the current site logistics plan for such use, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The DBE will maintain its storage area and will keep its storage areas clean, safe, and secure. Any materials or equipment stored offsite will be insured or stored in an insured or bonded warehouse. The risk of loss will remain on the DBE for all materials and equipment stored off-site per Section 4 of this Exhibit.

3.3.4 All Construction Work at the Project site, or in preparing or delivering materials or equipment to the Project site, is performed exclusively at the risk of the DBE until the completed Construction Work is accepted by DUWA. The DBE's interest in the Construction Work will be insured under the builder's risk policy and, subject to the terms and conditions of that policy, the DBE may be insured for some or all of the risk of loss under this provision. DUWA makes no representations or warranties regarding the scope or adequacy of the builder's risk coverage. Any damage or loss to the Construction Work will be repaired or replaced promptly by the DBE.

3.3.5 DUWA may, in writing, require the DBE to remove from the Project any employee or Sub-Contractor or employee of a Sub-Contractor that DUWA deems incompetent, careless or uncooperative and may require the DBE to replace any such employee or Sub-Contractor or employee of a Sub-Contractor with suitable personnel. The DBE shall at all times enforce strict discipline and good order among its employees and Sub-Contractors and shall not employ on the Project any unfit person or anyone not skilled in the task assigned to him. All services required under the Contract Documents shall be performed in a competent and professional manner. The DBE shall develop and administer an effective labor relations program for the Project; and the DBE shall employ, and require its Sub-Contractors and Sub-Sub-Contractors to employ, only compatible labor. In its labor analysis, the DBE shall take into consideration scheduled work by DUWA with the objective of eliminating strikes, picketing, hand billing and other similar activities which would disrupt the Project.

3.3.6 The DBE covenants that all Work shall be done in a good and workmanlike manner and that all materials furnished and used in connection therewith shall be new and approved by DUWA, except as otherwise expressly provided for in the Agreement and its Contract Documents. The DBE shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. DUWA may require the DBE to produce reasonable

evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of DUWA, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the DBE's expense.

3.3.7 Deviations from the Contract Documents shall not be permitted except for substitutions approved by DUWA in accordance with this Paragraph 3.3.7. Substitutions recommended by the DBE for the purpose of reducing the Contract Price or Contract Time shall be subject to Subparagraph 3.3.7.1 hereof. Substitutions recommended by the DBE or a Sub-Contractor for the purpose of reducing cost to the Sub-Contractor or DBE or off-setting delays for which the DBE or Sub-Contractor is responsible shall be subject to Subparagraph 3.3.7.2. DUWA shall determine whether the procedures of Subparagraph 3.3.7.1 or 3.3.7.2 shall apply to a specific request for a substitution. No other substitutions or variations from the Construction Documents, except that where "or approved equal" is used, the DBE shall have the right, after the Agreement has been executed, to request DUWA's approval of a substitute material generally considered to be equal to that named in the Construction Documents. DUWA, however, shall have no obligation to accept any substitute.

3.3.7.1 On-going value engineering recommendations of the DBE shall be reviewed by DUWA in its sole discretion.

3.3.7.2 Requests from the DBE or a Sub-Contractor for approval of any substitution for the benefit of the DBE or such Sub-Contractor, as determined by DUWA, must be submitted in writing to DUWA, together with all necessary supporting data. Requests for approval of any substitute shall be accompanied by an analysis of any changes in the Work of other trades or Sub-Contractors, redesign, other changes in the Contract Documents or additional costs that will result from the proposed substitute or a statement that no such matters will result and the analysis of whether the proposed substitute is inferior, equal or superior to the product specified.

(i) If a substitution recommended by the DBE requires changes in the work of other trades or Sub-Contractors, redesign, other changes in the Contract Documents or results in any additional costs whatsoever, the DBE shall be solely responsible for such costs.

(ii) By making a recommendation for a substitution, the DBE shall be deemed to represent and warrant that:

(a) The DBE has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to the product specified;

(b) The DBE will provide the same warranty for the proposed substitute product as for the specified product; and

(c) The DBE will waive all claims for additional costs related to the proposed substitute product including any which may subsequently become apparent.

(iii) By making a recommendation for a substitution involving redesign by the DBE or any Sub-Contractor, the DBE shall also be deemed to represent and warrant that such redesign:

(a) Will be free from errors and omissions;

(b) Will be fit for the purpose specified and will fully satisfy and perform as represented;

(c) Will properly interface with the design and Construction Documents provided by DBE and other Sub-Contractors (if any); and

(d) Will comply with all applicable laws, regulations, ordinances and requirements of, and conditions of any approvals, certifications or permits given by, any and all governmental authorities having jurisdiction over the design, construction, existence or use of the Project.

(iv) Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the DBE, notwithstanding approval or acceptance of such substitution by DUWA.

3.4 DESIGN STANDARDS.

3.4.1 The Project must be designed to comply with the following design standards, as applicable:

3.4.1.1 To the extent practicable and consistent with Prudent Industry Practices, a minimum design life of 15 years for pumps and mechanical equipment, 30 years for above- ground buildings and structures, and 50 years for underground pipes and lines.

3.4.1.2 Reliability criteria as defined in the United States Environmental Protection Agency document “Design Criteria for Mechanical, Electrical and Fluid System and Component Reliability” published in 1974 for the appropriate reliability class of treatment works, as applicable.

3.4.1.3 Performance standards listed in the latest edition of “Design of Municipal Wastewater Treatment Plants” published jointly by the Water Environment Federation and the American Society of Civil Engineers, as applicable.

The above and foregoing criteria are intended solely as design criteria, and will not be construed as constituting any warranty or guarantee of performance by the DBE.

3.4.2 DBE shall comply with National Fire Protection Association (“NFPA”) Design Standards including NFPA 820 (Standard for Fire Protection in Wastewater Treatment and Collection Facilities).

3.5 WARRANTIES.

3.5.1 DBE expressly warrants that the Work will be of good quality, free from defects in materials, workmanship, and design, in conformance with all applicable specifications, descriptions, samples, and drawings referred to in this Agreement, merchantable and fit for their intended purposes, and conforming to the Contract Documents and Applicable Laws. DBE’s warranty excludes damage due to improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage.

3.5.2 DBE warrants that the production, packaging, labeling and transportation of all goods will comply with all applicable national, regional, state and local Laws, rules, regulations, ordinances and orders.

3.5.3 DBE warrants that it has the experience and ability as may be necessary to perform all Work with a high standard of quality and that all Work will be performed in a workmanlike, professional manner and in accordance with the highest standards in the industry.

3.5.4 All warranties will survive inspection, testing and acceptance of the Work and expiration or termination of this Agreement. All warranties are considered independent. Each will be separately construed and interpreted without reference to any other warranty.

3.5.5 All materials furnished or installed, including and without limitation, the Thermal Biosolids Drying Equipment and dewatering centrifuge, shall be subject to a guaranty of the longer of (a) two (2) years from the date of Substantial Completion or (b) such longer period as may be provided in the Contract Documents. All rights acquired by DUWA through guarantees by the DBE shall inure to the benefit of DUWA, its successors and assigns. In addition to the foregoing, any equipment warranties and warranties from Sub-Contractors or Suppliers, secured by the DBE, including those in excess of two (2) years, and any additional bond or guaranty which may be required under the Contract Documents, shall also inure to the benefit of DUWA, its successors and assigns. The DBE shall require that each Sub-Contractor provide a similar warranty and guaranty for the benefit of the DBE and DUWA. The DBE shall acquire, catalog and deliver to DUWA all bonds and guarantees under Subcontracts and from material suppliers. The DBE shall render assistance and cooperate with DUWA in enforcing those warranties from Sub-Contractors and Suppliers which extend beyond the DBE's warranties.

3.5.6 The DBE's express warranty herein shall be in addition to, and not in lieu of, any other warranties, guaranties or remedies DUWA may have under the Agreement and its Contract Documents, at law, or in equity for defective work.

3.5.7 For a period of two (2) years commencing from Substantial Completion or the date of a warranty repair, whichever is later, and for longer periods specified in the Contract Documents for certain equipment manufacturers or suppliers, DBE will provide all labor, materials, and equipment necessary to promptly repair or replace any and all deficient, defective or non-conforming Work, provided that the Work was properly maintained and used, together with any other Work that is damaged during repair or replacement, without expense to DUWA (including

any additional re-inspection fees). If operations of the Facility are impaired by the defective or deficient Work or its correction, DBE shall use such overtime labor and time saving procedures as DUWA may require at DBE's expense. Establishment of the two (2) year period for correction of Work relates only to the DBE's express warranty on workmanship and specific obligation to correct defective or non-conforming Work, and has no relationship to statute of limitations periods for legal claims arising from this Contract.

3.5.8 DBE shall provide on-site troubleshooting services within five (5) days after receipt of notice in writing from DUWA of a problem with its Work. DUWA is hereby authorized to repair any defective or non-conforming Work, and DBE and its surety (if any) shall be liable for the cost thereof, if 10 days after giving of such notice to DBE, the DBE has failed to make or undertake the repairs with due diligence. In case of emergency, where, in the opinion of DUWA, delay could cause serious loss or damage, repairs may be made without notice being sent to the DBE, the expense in connection therewith shall be charged to the DBE, and its surety (if any) shall be liable for the cost thereof.

3.5.9 As part of the close-out documentation for Substantial Completion, the DBE shall execute and submit a completed "Warranty Form" in the format included in Exhibit D, for the Work, and any portion of the Work possessed. The Warranty Form shall be submitted prior to Substantial Completion or within five (5) days of the occupancy or use of a portion of the Project, whichever is applicable.

3.6 TAXES.

The DBE shall pay all consumer, use, sales and other similar taxes on supplies, materials, machinery, tools, utilities and other equipment and services used or incorporated in the construction of the Project which are required by law to be paid at the time the Agreement is executed, whether or not yet effective.

3.7 PERMITS, FEES AND NOTICES.

3.7.1 The DBE shall secure and pay for all Permits, and pay all fees necessary for the proper execution and completion of the Work which are legally required at the time the Agreement is executed. If any of the Work is required to be inspected or approved by any Government Authority other than DUWA, the DBE shall, at its sole cost and expense, cause such inspection or approval to be sought and obtained.

3.7.2 The DBE shall give all notices and comply with all Laws, ordinances, rules, regulations and lawful orders of any Government Authority bearing on the performance of the Work.

3.7.3 The DBE shall comply with all Applicable Laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. The Williams-Steiger Occupational Safety Act of 1970, administered by the United States Department of Labor, is specifically applicable. The DBE shall erect and maintain, as required by existing conditions and the progress of the Work, all reasonable safeguards for safety and protection, including barriers and the posting of danger signs and other

warnings against hazards, promulgate safety regulations and notify owners and users of adjacent utilities.

3.7.4 If the DBE performs, or allows any Sub-Contractor to perform, any of the Work knowing such Work to be subject to an error, inconsistency or omission in the Contract Documents, or contrary to Applicable Laws, ordinances, rules, regulations, codes or orders of any public authority, and fails to give DUWA notice thereof prior to performance thereof, the DBE shall bear all costs arising therefrom.

3.8 SUBMITTALS SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

3.8.1. The DBE will provide DUWA with a submittal schedule that indicates when submittals will be issued and when approval is required, including review periods by DUWA which provide at least 14 days for standard submittals and 30 days for major equipment or electrical submittals (submittals requiring a 30 day review period will be identified by DUWA).

3.8.2. The DBE will submit to DUWA for review all shop drawings, product data, samples and other submittals required by the Contract Documents in accordance with the submittal schedule and in all cases with reasonable promptness and in such sequence as to avoid delays in the Work or in the activities of the DBE. The DBE will not submit any submittal that is merely a tracing or copy of any of the Construction Documents. Each submittal will be prepared by DBE, its tier subcontractor, or supplier and will be submitted according to the Contract Documents.

3.8.3. As DBE is a DBE, the submittals must be prepared by, or under the responsible charge of, a professional engineer or architect registered or licensed in Michigan who will sign and seal all design-build submittals indicating that the design professional is the engineer or architect of record for that scope. DBE will remain liable and responsible for all design-build submittals notwithstanding any review by DUWA, OHM, Veolia or DBE's contractors.

3.8.4. Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared for the Work by the DBE or any Sub-Contractor, manufacturer, supplier or distributor to illustrate some portion of the Work. Shop Drawings are not Contract Documents.

3.8.5. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the DBE or any Sub-Contractor, manufacturer, Supplier or distributor to illustrate a material, product or system for some portion of the Work. Product Data are not Contract Documents.

3.8.6. Samples are physical examples furnished by the DBE or any Sub-Contractor, manufacturer, supplier or distributor which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged. Samples are not Contract Documents.

3.8.7. The DBE shall review, utilizing personnel who are qualified, knowledgeable and experienced in the area of expertise required, approve and only then submit, with reasonable promptness, in orderly sequence so as to cause no delay in the Work or in the work of DUWA or

any separate DBE, all Shop Drawings, Product Data and Samples required by the Contract Documents or subsequently required by DUWA.

3.8.8. Shop Drawings, Product Data and Samples shall be properly identified as specified, or as DUWA may require.

3.8.9. At the time of submission, the DBE shall clearly inform DUWA in writing of any deviation in the Shop Drawings, Product Data or Samples from the requirements of the Contract Documents.

3.8.10. Shop Drawings and other submittals which are not approved by the DBE will be returned un-reviewed.

3.8.11. Shop Drawings and other submittals may not be submitted with disclaimers or other exculpatory language inasmuch as it is the responsibility of the Sub-Contractor or Supplier originating such submission to properly prepare the submittal and the responsibility of the DBE to verify that the submittal has been properly prepared. Shop Drawings and other Submittals containing disclaimers or other exculpatory language will be returned un-reviewed.

3.8.12. By approving and submitting Shop Drawings, Product Data and Samples, the DBE thereby represents that it has (i) determined and verified all materials, field measurements, field construction criteria, catalog numbers and similar data; (ii) checked and coordinated such Shop Drawing, Product Data and Samples with the requirements of the Work and of the Contract Documents; and (iii) clarified any discovered design ambiguity with DUWA in writing.

3.8.13. DUWA will review and approve or take other appropriate action upon designated Shop Drawings, Product Data and Samples with reasonable promptness so as to cause no delay.

3.8.13.1 The DBE shall provide all submittals as required by the Project Schedule. The DBE shall allow for a maximum period of fourteen (14) days for DUWA's review and approval of any submittal not covered by the Project Schedule

3.8.13.2 DUWA's approval of a separate item shall not indicate approval of an assembly in which the item functions.

3.8.13.3 DUWA's review and approval of Shop Drawings and other Submittals that deviate from the requirements of the Contract Documents shall not constitute approval of deviations unless the same are clearly called out as required by the Project.

3.8.13.4 The DBE shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by DUWA's approval thereof.

3.8.14 The DBE shall, at its sole cost and expense, correct any errors identified by DUWA and shall resubmit the required number of corrected copies of Shop Drawings, Product Data or new Samples until approved.

3.8.14.1 The DBE shall direct specific attention in writing on resubmitted Shop Drawings, Product Data or Samples to revisions other than the corrections requested by DUWA on previous submissions and DUWA's review and approval of resubmitted submissions will not constitute approval of any changes other than those specifically noted.

3.8.14.2 The fees and expenses of DUWA in reviewing and approving more than one re-submittal of a submission shall be charged to the DBE and off-set against amounts otherwise due and payable to the DBE if resubmission is required because the original submittal and first re-submittal were not correct and complete. All time consumed by the resubmissions and re-reviews of a particular Submittal shall constitute time required to furnish the particular item, or delays not meeting the requirements for increases to Contract Time or Contract Price, or both.

3.8.14.3 The DBE shall submit to DUWA final Shop Drawings, as used for construction, marked as such for DUWA's records.

3.8.15 DUWA's review of the Shop Drawings, Product Data or Samples shall not relieve the DBE of responsibility for a deviation from the requirements of the Contract Documents unless DBE has informed DUWA in writing of such deviation at the time of submission and DUWA has given written approval to the specific deviation, nor shall DUWA's review relieve the DBE from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples.

3.8.16 Except as specifically authorized by DUWA in writing, no portion of the Work requiring a Shop Drawing, Product Data or Sample submission shall be commenced until the submission has been reviewed and approved by DUWA. All such portions of the Work shall be in accordance with such reviewed and approved Shop Drawings, Product Data and Samples.

3.9 USE OF SITE.

The DBE shall confine operations at the Project site to areas permitted by law, ordinances, permits, the Contract Documents and directions of DUWA or Veolia and shall not unreasonably encumber the Project site with any materials or equipment. The DBE shall abide by and enforce DUWA's or Veolia's instructions, if any, regarding signs, traffic circulation and patterns, advertisements, fires and smoking at the Project site. The DBE may utilize only such access routes as may be designated by DUWA or Veolia from time to time.

3.10 CUTTING AND PATCHING OF WORK.

3.10.1 The DBE shall be responsible for all cutting, fitting or patching that may be required to complete the Work or to make its several parts fit together properly and, to the extent required by the Contract Documents, for all cutting, fitting, or patching required in connection with work done by DUWA or DUWA's separate DBEs. DUWA shall not be responsible for any costs arising out of cutting, fitting and patching the work of the various Sub-Contractors and no claims on account thereof will be considered.

3.10.2 The DBE shall not, and shall not permit any Sub-Contractor to, damage or endanger any portion of the Work or the work of DUWA or any separate DBEs by cutting, patching or

otherwise altering any work, or by excavation. The DBE shall not cut or otherwise alter the work of DUWA or any separate DBE except with the written consent of DUWA and of such separate DBE. The DBE shall not unreasonably withhold from DUWA or any separate DBE its consent to cutting or otherwise altering the Work.

3.11 CLEANING UP.

3.11.1 The DBE, at all times, shall keep the Project site free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, it shall (i) remove all its waste materials and rubbish from and about the Project, as well as all tools, construction equipment, machinery, surplus materials and temporary installations and facilities; (ii) shall clean and protect all finished surfaces and areas in accordance with the Specifications.

3.11.2 If the DBE fails to clean up after request from DUWA, DUWA may do so and the cost thereof shall be charged to the DBE.

3.12 ROYALTIES AND PATENTS.

The DBE shall pay all royalties and license fees. The DBE shall indemnify and defend, with counsel reasonably acceptable to DUWA, all suits or claims for infringement of any patent rights or copyrights and shall defend, indemnify and save DUWA harmless from all loss, cost or expense (including attorney's fees) on account thereof. Notwithstanding the foregoing, the DBE shall not be responsible for infringement of patent rights where a particular design process or product of a particular manufacturer is specified by DUWA and the DBE has no reason to believe that such design process or product specified is an infringement of a patent.

3.13 INDEMNIFICATION.

3.13.1 To the fullest extent permitted by law, the DBE shall defend, indemnify and hold harmless Indemnified Parties from and against claims, damages, losses, and expenses (including but not limited to attorney fees) arising out of or resulting from performance of the Work or DBE's breach of this Agreement or failure to perform in accordance with the Contract Documents, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. The DBE shall not be required to defend or indemnify DUWA for damages caused by the sole negligence of DUWA. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.13.1.

3.13.2 To the fullest extent permitted by law, DBE shall indemnify, defend and hold harmless the Indemnified Parties from all liabilities, claims, demands, actions, suits and costs (including, without limitation, reasonable attorneys' fees) if caused by reason of or as result of a notice of lien, claim for lien, lien, or suit to foreclose a lien filed, given, made or maintained by subcontractor, sub-subcontractor or supplier of DBE provided that the DBE has received payment pursuant to the terms of this Contract.

3.13.3 In any and all claims against DUWA or any of its directors, officers, agents or employees by any employee of the DBE, any Sub-Contractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 3.13.1 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the DBE or any Sub-Contractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

3.13.4 The obligations of the DBE under this Section 3.13 shall survive the termination of the Agreement.

ARTICLE 4

SUB-CONTRACTORS

4.1 THIRD PARTY BENEFICIARY.

Nothing contained in the Agreement or the Contract Documents shall create any contractual relation between DUWA or any Sub-Contractor or Sub-Sub-Contractor.

4.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK.

4.2.1 Prior to executing any Subcontracts or utilizing any Sub-Contractors for the Work, the DBE shall provide DUWA with a list of proposed Sub-Contractors for DUWA's prior review and approval (the "Sub-Contractor List"). DUWA may object, for any reason, to any proposed Sub-Contractor within a reasonable time after its receipt of the Sub-Contractor List. The DBE shall not award any portion of the Work to a Sub-Contractor that was not nominated before execution of the Agreement, without first obtaining DUWA's written consent. If DUWA objects to any Sub-Contractor without cause, and such objection causes an increase in the Contract Price, DUWA shall, pursuant to Article 11, order any adjustments in the Contract Price required to make up the difference in cost between the proposed Sub-Contractor and the Sub-Contractor approved by DUWA, or the DBE's cost to self-perform, that part of the Work involved, whichever is applicable. The DBE shall make no substitution for any Sub-Contractor, person or entity previously approved by DUWA without first obtaining DUWA's written consent.

4.2.2 The DBE shall promptly deliver to DUWA a complete executed copy of each Subcontract awarded.

4.2.3 Upon award of a Subcontract, the Sub-Contractor shall identify its job-site staff and agree that such job-site staff may not be changed or reassigned (except where an individual leaves the employ of the Sub-Contractor or any affiliate) without the prior written consent of the DBE. The DBE shall consult with DUWA prior to giving consent to any proposed substitution.

4.3 SUBCONTRACTUAL RELATIONS.

4.3.1 By an appropriate written agreement, the DBE shall require each Sub-Contractor, to the extent of the portion of the Work to be performed by the Sub-Contractor, to be bound to the DBE by the terms of the Agreement and the Contract Documents, and to assume toward the DBE all the obligations and responsibilities which the DBE, by the Agreement and the Contract Documents, assumes toward DUWA. Where appropriate, the DBE shall require each Sub-Contractor to enter into similar agreements with its Sub-Sub-Contractors. The DBE shall make available to each proposed Sub-Contractor, prior to the execution of the Subcontract, copies of the Agreement and its Contract Documents to which the Sub-Contractor will be bound by this Section 4.3, and identify to the Sub-Contractor any terms and conditions of the proposed Subcontract which may be at variance with the Agreement and its Contract Documents. Each Sub-Contractor shall similarly make copies of the Agreement and its Contract Documents available to its Sub-Sub-Contractors.

4.3.2 The DBE shall cause all Sub-Contractors, Suppliers, laborers and vendors to agree to indemnify DUWA and hold it harmless from all claims that may arise from such Sub-Contractor's operations to the same extent as the DBE has indemnified DUWA pursuant to Section 3.13 hereof. Such provisions shall be in a form reasonably satisfactory to DUWA.

4.3.3 The agreement between the DBE and the Sub-Contractors (and, where appropriate, between Sub-Contractors and Sub-Sub-Contractors) shall include, without limitation:

4.3.3.1 Preserve and protect the right of DUWA under the Contract with respect to the Work to be performed under the Subcontract so that the subcontracting thereof will not prejudice such rights;

4.3.3.2 Require that such Work be performed in accordance with the requirements of the Contract Documents;

4.3.3.3 Require submission to the DBE of sworn statements and waivers of claim under each Subcontract and Sub-subcontract, in reasonable time to enable the DBE to comply with the Agreement, all such documents to be in the form approved by DUWA and in compliance with all requirements of applicable law;

4.3.3.4 Require that all claims for additional costs or extensions of time with respect to subcontracted portions of the Work shall be submitted to the DBE (via any Sub-Contractor or Sub-Sub-Contractor where appropriate) in sufficient time so that the DBE may comply in the manner provided, if any, in the Agreement for a like claim by the DBE upon DUWA. To the extent the DBE is liable to any Sub-Contractor, any such pass-through claim raised by the DBE against DUWA shall first be liquidated between the DBE and Sub-Contractor pursuant to the terms of a liquidation agreement under which (i) the DBE acknowledges its liability to the Sub-Contractor and remains unchanged to pay the Sub-Contractor regardless of the outcome of the DBE's claim against DUWA, (ii) the DBE's liability is liquidated to the extent of its recovery, if any, against DUWA; and (iii) the DBE agrees to pass its recovery, if any, to the Sub-Contractor. The DBE shall deliver the executed liquidation agreement to DUWA as a pre-requisite to pursuing any claims on behalf of the Sub-Contractor or Sub-Sub-Contractor;

4.3.3.5 Waive all rights the contracting parties may have against one another and against DUWA for damages caused by fire or other perils covered by the property insurance required under the Agreement; and

4.3.3.6 Obligate each Sub-Contractor specifically to consent to the provisions of this Section 4.3.

4.3.4 The DBE shall bear the risk of any inconsistencies between the terms and conditions of the Agreement and its Contract Documents and the terms and conditions of its Subcontract, purchase orders and similar documentation.

4.3.5 The DBE shall coordinate and supervise the work performed by Sub-Contractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The DBE and all Sub-Contractors shall at all times afford each trade, any separate DBE, or DUWA, every reasonable opportunity for the installation of work and the storage of materials.

4.4 COMMUNICATIONS WITH SUB-CONTRACTORS.

4.4.1 The DBE shall be responsible for the communication of information between the Sub-Contractors or Suppliers and DUWA and shall ensure that all communications from the Sub-Contractors and Suppliers are properly routed to the DBE.

4.4.2 Where, for purposes of clarity, direct communications between DUWA and Sub-Contractors or Suppliers are necessary, the DBE shall have a representative present.

ARTICLE 5

WORK BY DUWA OR BY SEPARATE DBES

5.1 DUWA'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS.

5.1.1 This is not an exclusive services contract. DUWA reserves the right to (i) perform work related to the Project with his own forces; and (ii) to award separate contracts in connection with other portions of the Project or other work on the Project.

5.1.2 The DBE will provide for the coordination of the work of DUWA's forces and of each separate DBE with the Work of the DBE, who shall cooperate therewith as provided in Section 6.2 hereof.

5.2 MUTUAL RESPONSIBILITY.

5.2.1 The DBE shall afford DUWA and DUWA's separate DBEs reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work related to the Project, and shall properly connect and coordinate its Work with theirs as required by the Contract Documents.

5.2.2 If any part of the Work depends on proper execution or results upon the work of DUWA or any separate DBE, the DBE shall, prior to proceeding with such portion of the Work,

inspect and promptly report to DUWA any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the DBE to inspect and report shall constitute an acceptance of DUWA's or DUWA's separate DBEs' work as fit and proper to receive its work, except as to defects which may develop or become apparent in DUWA's or separate DBE's work after the execution of the Work.

5.2.3 Should the DBE cause damage to the work or property of DUWA, or to other work on the Project site, the DBE shall promptly remedy such damage as provided in Article 9 hereof.

5.2.4 Should the DBE cause damage to the work or property of any separate DBE, the DBE shall upon due notice promptly settle with such other DBE by agreement, if it will so settle. If such separate DBE sues or initiates an arbitration proceeding against DUWA on account of any damage alleged to have been caused by the DBE, DUWA shall notify the DBE who shall defend such proceedings at the DBE's expense, and if any judgment or award against DUWA arises therefrom, the DBE shall pay or satisfy it and shall reimburse DUWA for all reasonable attorneys' fees and court or arbitration costs which DUWA has incurred.

5.3 DUWA'S RIGHT TO CLEAN UP.

If a dispute arises between the DBE and DUWA as to the DBE's responsibility for cleaning up as required by Section 3.11 hereof, DUWA may clean up and charge the cost thereof to the DBE upon 48 hours written notice if the DBE does not commence reasonable action.

ARTICLE 6

MISCELLANEOUS PROVISIONS

6.1 TESTS.

6.1.1 The DBE shall, at its sole cost and expense, provide and pay for testing and inspections required by the Contract Documents or laws, ordinances, rules, regulations or orders of any public authority having jurisdiction over the Work. The DBE shall give DUWA timely notice of its readiness and the date arranged so they may observe such inspection, testing or approval.

6.1.2 If DUWA determines that any Work requires special inspection, testing, or approval which Paragraph 6.1.1 hereof does not include, DUWA will instruct the DBE to order such special inspection, testing or approval, and the DBE shall give notice as provided in Paragraph 6.1.1 hereof. If such special inspection or testing reveals a failure of the Work to comply with (i) the requirements of the Contract Documents; or (ii) Laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, the DBE shall bear all costs thereof; otherwise DUWA shall bear such costs, and an appropriate Change Order shall be issued.

6.1.3 Certificates of inspection, testing or approval required to be obtained by the DBE or Sub-Contractors in connection with construction permits, shall be secured by the DBE, cataloged, indexed, bound (in removable form) and promptly delivered by it to DUWA.

6.2 OTHER PROJECTS.

Nothing set forth in the Contract Documents shall constitute an agreement between DUWA and the DBE with respect to services other than those included in the Contract Documents.

6.3 NONDISCRIMINATION.

The DBE shall comply with Titles VI and VII of the Civil Rights Act of 1964 (Public Law 88-352, 78 STAT.266), U.S. Department of Justice Regulations (28 CFR Part 42), the Michigan Civil Rights Act (Public Act No. 453 of 1976), the Michigan Handicappers Civil Rights Act (Public Act No. 220 of 1976) and all other fair employment practices and equal laws. The DBE shall furnish and file compliance reports within the times and in form prescribed by DUWA. Compliance reports may also elicit information as to the practices, policies, programs, and employment statistics of the DBE and Sub-Contractors. The DBE will permit access to DBE's records and accounts by DUWA and/or its agent for purposes of investigation to ascertain compliance with the Agreement and its Contract Documents. The DBE agrees that it will not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment because of religion, race, color, national origin, age, sex, height, weight, marital status, or handicap that is unrelated to the individual's ability to perform the duties of a particular assignment or position. The DBE hereby recognizes the right of the United States, the State of Michigan and DUWA to seek judicial enforcement of the foregoing covenants against discrimination, against itself or its Sub-Contractors connected directly or indirectly with the performance of the Agreement.

6.4 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES.

Notwithstanding any other provision of this Agreement to the contrary, neither party including their officers agents, servants and employee shall be liable to the other for lost profits or any special, indirect, incidental, or consequential damages in any way arising out of this Agreement however caused under a claim of any type or nature based on any theory of liability (including but not limited to: contract, tort, or warranty) even if the possibility of such damages has been communicated. Penalties or fines assessed by permitting parties for violations of DUWA NPDES Permit effluent maximum loads or concentrations for the Project as a result of defects in design or construction by DBE are hereby expressly excluded from this provision 6.4 and shall not be considered a consequential, special, indirect, or incidental damage.

6.5 MISCELLANEOUS PROVISIONS.

Remedies Cumulative: All rights and remedies provided in this Agreement are cumulative and not exclusive of any other rights or remedies that may be available to the parties, whether provided by law, equity, statute, in any other agreement between the parties or otherwise. Notwithstanding the foregoing, Owner's exclusive remedies for breach of the Schedule Milestones specified in Sections of the Agreement shall be the remedies specified in Section 4.6.

ARTICLE 7

TIME

7.1 DEFINITIONS.

7.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Final Completion of the Work as defined in Paragraph 7.1.4 hereof, including authorized adjustments thereto.

7.1.2 The date of commencement of the Work is the date established in a Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the Agreement or such other date as may be established therein.

7.1.3 The date of Substantial Completion of the Work or designated portion thereof is the date upon which DUWA shall have certified that construction is sufficiently complete, in accordance with the Agreement and its Contract Documents, so DUWA can utilize the Work or designated portion thereof for the use for which it is intended and shall include (i) completion of all specified training, (ii) receipt by DUWA of acceptable, specified O & M manuals (i.e., 90% O & M manuals in the case of Substantial Completion of the entire Work), (iii) all systems have been successfully tested and demonstrated by the DBE for their intended use, and (iv) DUWA having received all required certifications and/or approvals from the State of Michigan and any other political bodies having jurisdiction over the Work.

7.1.4 The date of Final Completion of the Work is the date on which the Work shall be fully, completely and finally completed in accordance with the Agreement and its Contract Documents and:

7.1.4.1 The DBE has completed all Punch List items to the satisfaction of DUWA, including providing DUWA with the results of any and all tests that may be required;

7.1.4.2 The DBE has delivered to DUWA:

7.1.4.2.1 All 100% complete maintenance and operating manuals; if any;

7.1.4.2.2 Marked sets of working Drawings reflecting "as built" conditions and upon which the DBE shall have transferred all changes in the location of any concealed utilities, mechanical or electrical systems and components;

7.1.4.2.3 Any special guarantees or warranties required by the Contract Documents;

7.1.4.2.4 An assignment and/or transfer of all guarantees and warranties from Sub-Contractors, vendors, Suppliers and manufacturers;

7.1.4.2.5 A list of the names, addresses and phone numbers of all Sub-Contractors and other persons providing guarantees or warranties;

7.1.4.2.6 The Sub-Contractor close-out logs; and

7.1.4.2.7 All required sworn statements and waivers of claim and other documentation required by the Contract Documents.

7.1.4.3 The DBE has otherwise complied with all close-out requirements of the Contract Documents.

7.2 PROGRESS AND COMPLETION.

7.2.1 All time limits stated in the Contract Documents are of the essence of the Agreement. The construction and completion of the Project shall be undertaken and completed in accordance with the Project Schedule described in the Contract Documents. The parties shall use the Project Schedule for planning and monitoring the progress of the Work.

7.2.2 The DBE shall begin the Work on the date of commencement as defined in Paragraph 7.1.2 hereof. It shall carry the Work forward expeditiously with adequate forces, shall at all times adhere to the Project Schedule and shall achieve Substantial Completion and Final Completion within the time limits set forth in the Project Schedule.

7.2.3 The DBE shall be responsible to maintain daily records that will enable the DBE to accurately update the Project Schedule as required in Paragraph 7.2.4 hereof.

7.2.4 At the end of the first month following issuance of the approved Project Schedule and every month thereafter (or at such lesser intervals if deemed necessary by DUWA), the DBE shall prepare an updated Project Schedule showing the actual status of the Project as of the date of the updated Project Schedule. The updated Project Schedule shall be related to the original Project Schedule to facilitate identification of variances therefrom (activity descriptions shall not be redefined on such updated Project Schedule).

7.2.5 Extensions of the Contract Time shall not be granted except as expressly provided for in this Article 7.

7.2.6 In the event (i) Construction Change Directives or Change Orders are issued by DUWA; (ii) the DBE receives a notice of a change in the Agreement or extra work to be performed; or (iii) the DBE becomes aware of any conditions which are likely to cause or are actually causing delays, the DBE shall notify DUWA in writing of the effect, if any, within any specific time limits set forth in the Agreement (and if no specific time limits are set forth, within fifteen (15) days) and shall state in what respects, if any, the Project Schedule should be revised with the reasons therefor. If the DBE shall fail to provide DUWA with written notice within the specified time period that an adjustment to the Project Schedule is necessary, then any claims by the DBE for an extension of the Contract Time shall be waived.

7.2.7 If the DBE shall fail to adhere to the Project Schedule, as revised pursuant to the Agreement, it must promptly work such additional time over regular hours, including Saturdays, Sundays and holidays and/or supply such additional workmen as may be required to bring the Work on schedule, without additional cost or expense to DUWA, including claims for inefficiency due to the use of overtime.

7.3 SUSPENSION BY DUWA.

7.3.1 DUWA may order the DBE in writing to suspend, delay or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of DUWA.

7.3.2 If the performance of all or any part of the Work on the Project is suspended, delayed or interrupted at the direction of DUWA:

7.3.2.1 If such act causes delays in the critical path activity, then the Project Schedule shall be adjusted as mutually agreed.

7.3.3 Any claims for extension of time pursuant to paragraph 7.3.2 hereof shall be made in writing to DUWA no more than five (5) days after the commencement of the delay; otherwise they shall be waived. In the case of a continuing cause of delay, only one claim is necessary. Any delay of less than twenty-four (24) hours duration shall not be justification for adjusting the Project Schedule or Contract Price.

7.3.4 To the extent practical, the DBE shall reduce the size of its Project staff upon notice from DUWA of any DUWA caused delay or interruption which is likely to exceed thirty (30) days to reduce costs and expenses to DUWA. Upon the termination of the delay or as otherwise directed by DUWA, the DBE shall restore the Project staff to its former size.

7.3.5 No adjustments to the Contract Price or Contract Time shall be made under this Section 7.3 for any suspension, delay or interruption (i) to the extent that performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the DBE; or (ii) for which an equitable adjustment is provided or excluded under any other provision of the Agreement. DUWA's exercise of any of its rights under the Agreement, or DUWA's requirement of correction or re-execution of any defective Work shall not, under any circumstances, be construed as interference with the DBE's performance of the Work.

7.3.6 NOTWITHSTANDING ANYTHING CONTAINED HEREIN TO THE CONTRARY. DBE ACKNOWLEDGES THAT NO EXTENSIONS OF THE CONTRACT TIME OR INCREASE TO THE CONTRACT PRICE SHALL BE PERMITTED EXCEPT AS APPROVED IN ADVANCE BY DUWA.

7.3.7 Each Sub-Contractor shall be bound by the foregoing provisions.

7.4 DELAYS AND EXTENSIONS OF TIME.

7.4.1 If the DBE shall be delayed by: (1) the combined action of workmen (either those employed on the Work or in any industry essential to the conduct of the Work) in no way caused by or resulting from default or collusion on the part of the DBE; (2) by strikes, lockouts, embargoes, fire, unavoidable casualties, unusual delays in transportation, national emergency, unusually severe and adverse weather conditions not reasonably anticipatable; or (3) by any other causes which the DBE could not reasonably control or circumvent, and if such delay affects the critical path activity, then the Project Schedule shall be adjusted as necessary to compensate for such delay (but the total extension of all critical path activities may not exceed the length of the delay).

7.4.2 Extension of the Contract Time shall be the DBE's sole remedy for any delay under Paragraph 7.4.1. In no event shall the DBE be entitled to any compensation or recovery of any damages in connection with any delay under 7.4.1, including, without limitation, consequential damages, lost opportunity costs, impact damages or other similar remuneration.

7.4.3 All claims for extension of time pursuant to Paragraph 7.4.1 hereof shall be made in writing to DUWA no more than ten (10) days after the commencement of the delay, except in connection with weather delays which shall be made on a monthly basis within five (5) days from the end of each month; otherwise they shall be waived. In the case of a continuing cause of delay only one claim is necessary. Any delay of less than twenty-four (24) hours duration shall not be justification for adjusting the Project Schedule.

7.4.4 No adjustments shall be made under this Section 7.4 for any suspension, delay or interruption (i) to the extent that performance would have been so suspended, delayed or interrupted by any other cause including due to the fault or negligence of the DBE; or (ii) for which an equitable adjustment is provided under any other provision of the Agreement. DUWA's exercise of any of its rights under the Agreement, or DUWA's requirement of correction or re-execution of any defective Work shall not, under any circumstances, be construed as interference with the DBE's performance of the Work.

7.4.5 Each Sub-Contractor shall be bound by the foregoing provisions.

7.5 ACCELERATION OF PERFORMANCE.

7.5.1 If DUWA shall desire the Work of the DBE hereunder to be performed with greater speed than is herein contracted for, the DBE shall, without affecting or abridging the rights of DUWA under the Agreement, upon receipt of a written order from DUWA, specifically setting forth a request pursuant to this Section 7.5, employ overtime work as so ordered. Only the premium cost of such overtime work, as shown on the time slips checked and approved each day by DUWA shall be paid by DUWA to the DBE as additional compensation, and no overhead, profits, costs, commissions, claims for inefficiencies or otherwise, or other costs or claims shall be charged or due with respect to use of overtime work or the acceleration of performance. This provision shall not apply to acceleration of performance caused by the DBE's default, the cost of which shall be borne solely by the DBE.

7.5.2 Each Sub-Contractor shall be bound by the foregoing provisions.

7.6 PREREQUISITES FOR START OF CONSTRUCTION.

7.6.1 The DBE shall not commence construction (or recommence construction following any suspension) of any portion of the Work prior to occurrence of all the following events except with the prior written consent of DUWA in his/her sole discretion, and the DBE shall promptly commence such construction promptly following the occurrence of such events:

7.6.1.1 DUWA shall have delivered to the DBE a Notice to Proceed for the relevant phase of the Work; and

7.6.1.2 DUWA has reviewed and approved the Project Schedule; and

7.6.1.3 DUWA has convened and conducted a kick-off meeting.

7.7 USE OF FLOAT.

7.7.1 Total Float and contract Float, whether disclosed or implied by the use of float suppression techniques, are not for the exclusive benefit of the DBE or DUWA, and shall be available to the DBE and DUWA.

ARTICLE 8

PHASE TWO PAYMENT AND COMPLETION

8.1 CONTRACT PRICE.

The Contract Price is the total amount payable by DUWA to the DBE for the performance of the Work, including all risks, hazards and difficulties therewith assumed by the DBE under the Agreement.

8.2 SCHEDULE OF VALUES: DETAILED COST BREAKDOWN.

During bid evaluation and prior to receipt of the Notice to Proceed, the DBE shall prepare, and submit to DUWA for approval, a Schedule of Values and Detailed Cost Breakdown showing the allocation of the Contract Price among the various components of the Work and in sufficient detail as DUWA may require. The DBE shall revise the Schedule of Values as required by DUWA. The Schedule of Values, and Detailed Cost Breakdown when approved by DUWA, shall be used as a basis for Applications for Payment and Progress Payments to the DBE. The DBE represents and warrants to DUWA that the final Schedule of Values and Detailed Cost Breakdown is an accurate and correct allocation of the Contract Price.

8.3 APPLICATIONS FOR PAYMENT.

8.3.1 The issuance of an Application for Payment will constitute a representation by the DBE to DUWA that the Work has progressed to the point indicated; that the quality of the Work is in accordance with the Contract Documents; that all as-built drawings are accurate and up-to-date; and that DBE is entitled to payment in the amount certified.

8.3.2 Payments will be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the Project or at some other location, only with the prior written approval of DUWA. Payment for materials stored off-site shall be conditioned upon submission by the DBE of the following: (1) the notarized bill of sale to DUWA executed by an officer of the selling corporation; (2) a certificate of insurance covering the material for fire, theft and vandalism naming DUWA as the insured party; (3) an affidavit from an officer of the selling corporation stating that he is an officer and giving the complete address of the specific location where the material is stored; (4) a certification authorizing inspection by DUWA or its representative at the storage location; and (5) such other evidence as DUWA may reasonably require demonstrating that it is the owner of such material free and clear of all rights in others. Except to the extent covered by the insurance required under the Agreement, the DBE shall have

full responsibility for all stored materials and shall bear the risk of all loss, damage or theft thereof or thereto.

8.3.3 The DBE warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will pass to DUWA upon the receipt of payment by the DBE, free and clear of all liens, claims, security interests, encumbrances or rights in others, hereinafter referred to in this Article 9 as "liens"; and that no portion of the Work, materials or equipment covered by an Application for Payment will have been acquired by the DBE, or by any other person performing Work at the site or furnishing materials or equipment for the Project, subject to a choate or inchoate lien or an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the DBE or such other person.

8.3.4 At a minimum, each Application for Payment shall (i) be accompanied by the DBE's sworn statements and waivers of claim, which sworn statement and waiver shall cover all work, labor and materials, including equipment and fixtures of all kinds done, performed or furnished as of the date of the request for payment; (ii) be accompanied by properly completed sworn statements and waivers of claim from each Sub-Contractor, Sub-Sub-Contractor, laborer and materialmen, which sworn statements shall cover all work, labor and materials, including equipment and fixtures of all kinds done, performed or furnished as of the date of the previous request for payment, and which waivers shall cover all work, labor and materials, including equipment and fixtures of all kinds, done, performed or furnished as of the previous request for which payment has been received; and (iii) such other evidence necessary to satisfy DUWA that the Work for which payment is requested has been completed in conformance with the Agreement, and that all amounts which have previously been paid for Work have been properly distributed to the various Sub-Contractors, Sub-Sub-Contractors, laborers and materialmen. In the event of any discrepancy, the DBE shall furnish a written explanation to DUWA.

8.3.5 DUWA will, with reasonable promptness, either approve payment in the amount DUWA determines is properly due, or notify the DBE in writing of its reasons for withholding payment.

8.4 PROGRESS PAYMENTS.

8.4.1 DUWA shall make payment upon, and only upon DUWA's receipt and approval of an Application for Payment which complies with all requirements of the Agreement.

8.4.2 DUWA may, on request and at his/her discretion, furnish to any Sub-Contractor, if practicable, information regarding the percentages of completion or the amounts applied for by the DBE and the action taken thereon by DUWA on account of Work done by such Sub-Contractor.

8.4.3 DUWA shall have no obligation to pay or to see to the payment of any moneys to any Sub-Contractor.

8.4.4 No Application for Payment, or any Progress Payment, or any approval of either by DUWA, or any partial or entire use of the Project by DUWA, shall constitute an acceptance of any Work not in accordance with the Contract Documents. Nor shall any prior estimate of

completed units made by DUWA in connection with a Progress Payment constitute a certification or acceptance of the amount of actual quantities which shall be determined by DUWA upon Final Completion which determination shall be final and binding.

8.5 PAYMENTS WITHHELD.

8.5.1 In addition to and not in limitation of the rights granted to DUWA under Section 2.4 hereof, DUWA may withhold payment because of subsequently discovered evidence or subsequent observations, or it may nullify the whole or any part of any payment previously issued, to such extent as may be necessary in its opinion to protect DUWA from loss because of any of the causes listed in Subparagraphs 8.5.1.1 through 8.5.1.7 below.

8.5.1.1 An Application for Payment is incorrectly completed or is not accompanied by properly completed supporting documentation; or

8.5.1.2 The DBE is in default of any of its material obligations under the Agreement or any of the Contract Documents; or

8.5.1.3 Any part of such payment is attributable to Work which is defective or not performed in accordance with the Construction Documents, as determined by DUWA; provided, however, such payment shall be made as to the part thereof attributable to Work which is performed in accordance with the Construction Documents and is not defective, reserving, however, such amount as DUWA shall determine reasonably necessary to protect DUWA with respect to defective Work; or

8.5.1.4 The DBE has failed to make payments promptly to Sub-Contractors, Sub-Sub-Contractors, laborers or materialmen or for material or labor used in the Work in accordance with the Subcontract documents; or

8.5.1.5 Any part of such payment is attributable to Work with respect to which DUWA has been notified of a claim or dispute or has received reasonable evidence indicating the existence of such a claim or dispute, provided DUWA has paid the DBE in accordance with the Agreement and its Contract Documents; or

8.5.1.6 If DUWA reasonably determines that the portion of the Contract Price then remaining unpaid will not be sufficient to complete the Work in accordance with the Contract Documents after meeting with the DBE and giving an opportunity to prove otherwise, no additional payments will be due the DBE hereunder unless and until the DBE, at no cost to DUWA, performs, and pays in full for, a sufficient portion of the Work so that such portion of the Contract Price then remaining unpaid is determined by DUWA to be sufficient to so complete the Work.

8.5.2 Until the Work is fifty percent (50%) completed as determined by DUWA, DUWA shall hold ten percent (10%) of each Progress Payment as retainage. After the Work is fifty percent (50%) completed, further retainage shall not be withheld, unless the DBE is not in compliance with the terms of the Contract Documents.

8.5.3 All retainage shall be held in an interest bearing account with a regulated financial institution in the State of Michigan. The interest shall belong to the DBE. The retainage plus interest shall be paid to the DBE with the Final Payment and upon fulfillment of the conditions set forth in Section 8.8.2 below.

8.6 FAILURE OF PAYMENT.

8.6.1 Unless otherwise directed by DUWA, the DBE shall carry with the Work and maintain its progress during the existence of any disputes and DUWA shall continue to make payments to the DBE over which there is no good faith dispute.

8.6.2 Each Sub-Contractor shall be bound by the foregoing provision.

8.7 SUBSTANTIAL COMPLETION.

When the DBE considers that the Work, or a designated portion thereof which is acceptable to DUWA, is substantially complete as defined in Paragraph 7.1.3 hereof, the DBE shall prepare for submission to DUWA a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the DBE to complete all Work in accordance with the Contract Documents. When DUWA, on the basis of an inspection, determines that the Work or designated portion thereof is substantially complete, it will then prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of DUWA and the DBE for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the DBE shall complete the items listed therein.

8.8 FINAL COMPLETION, FINAL PAYMENT AND RELEASE OF RETENTION.

8.8.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, DUWA will promptly make such inspection and, when DUWA finds the Work acceptable under the Contract Documents, all items on DUWA's Punch List completed to DUWA's satisfaction and the Agreement fully performed, DUWA will promptly issue a final Certificate for Payment, which shall set forth his/her final determination of the actual quantities and measurements of the completed work, and stating that to the best of his/her knowledge, information and belief, and on the basis of its observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the DBE, and noted in said final Certificate of Payment, is due and payable.

8.8.2 Neither the Final Payment nor the retained percentage shall become due until the DBE submits to DUWA (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which DUWA or its property might in any way be responsible, have been paid or otherwise satisfied; (2) consent of surety, if any, to final payment and release of retention; and (3) final, unconditional general releases and final sworn statements and waivers of claim from DBE and all Sub-Contractors, Sub-Sub-Contractors, laborers and material suppliers in the forms required by DUWA. Notwithstanding the foregoing, the DBE's

final waiver and unconditional release is not required to be submitted in advance of Final Payment but may be exchanged for Final Payment.

ARTICLE 9

PROTECTION OF PERSONS AND PROPERTY

9.1 SAFETY PRECAUTIONS AND PROGRAMS.

The DBE shall develop a comprehensive project safety program and require each separate Sub-Contractor to adhere to such program. The DBE shall appoint a safety officer who shall be responsible for administering the comprehensive safety program. This person shall be the DBE's Project Manager unless otherwise designated by the DBE in writing to DUWA. The person designated shall not be changed unless notice is given to DUWA. The DBE shall assume responsibility for full and violation free compliance with all applicable laws, rules and regulations pertaining to job and project safety.

9.2 SAFETY OF PERSONS AND PROPERTY.

9.2.1 The DBE shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

9.2.1.1 All employees on the Work and all other persons who may be affected thereby;

9.2.1.2 All of the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Project site, under the care, custody or control of the DBE or any of its Sub-Contractors or Sub-Sub-Contractors or others;

9.2.1.3 Other property at the Project site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and

9.2.1.4 DUWA's equipment and employees, directors, officers, agents and separate DBEs; provided that DUWA's equipment and employees, directors, officers, agents and separate DBEs comply with applicable state and federal safety regulations and the DBE's written safety program.

9.2.2 The DBE shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss, including without limitation the Confined Space Entry policy promulgated by DUWA. The Williams-Steiger Occupational Safety Act of 1970, as amended, administered by the United States Department of Labor, is specifically applicable as are parallel state statutes.

9.2.3 The DBE shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including barriers and of danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

9.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the DBE shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

9.2.5 All damage or loss to any property referred to in Subparagraphs 9.2.1.2, 9.2.1.3, and 9.2.1.4 hereof caused in whole or in part by the DBE, any Sub-Contractor, any Sub-Sub-Contractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, shall be remedied by the DBE, except damage or loss attributable solely to the acts or omissions of DUWA or anyone employed by DUWA or for whose acts DUWA may be liable and not attributable, at least in part, to the fault or negligence of the DBE; provided that such loss is not otherwise covered by insurance as required of any party (other than DBE) pursuant to the terms of the Agreement.

9.2.6 The DBE shall not load or permit any part of the Work to be loaded so as to endanger its safety.

9.2.7 The DBE shall at all times protect excavations, trenches, buildings and materials, from rain water, ground water, back-up or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The DBE shall provide and operate all pumps, piping and other equipment necessary to this end.

9.2.8 The DBE shall remove snow and ice which might result in damage or delay.

9.2.9 The DBE shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of DUWA, whether or not forming part of the Work, located within those areas of the Project to which the DBE has access. The DBE shall have full responsibility for the security of such property of DUWA located in such areas and shall reimburse DUWA for any such loss, damage or injury, except such as may be directly caused by directors, officers, agents or employees of DUWA.

9.3 EMERGENCIES.

In any emergency affecting the safety of persons or property, the DBE shall act, at its discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the DBE on account of emergency work, not occasioned in whole or in part by DBE's acts or omissions or by other causes which are DBE's responsibility or indemnity obligation hereunder, shall be determined as provided in Article 11 hereof.

9.4 ENVIRONMENTAL.

9.4.1 The DBE shall not, at any time, cause or permit any Hazardous Materials to be brought upon, stored, manufactured, blended, handled, or used in, on, or about the Work or the Project site for any purpose, except any Hazardous Materials as may be specifically called for in the Contract Documents and except as specifically identified in writing by the DBE. Any material change and/or addition to the Hazardous Materials or uses so identified must be approved in writing in advance by DUWA, which approval shall not be unreasonably withheld.

9.4.2 The DBE shall at all times be in material compliance with all applicable state, federal, and local environmental and safety laws and regulations; shall, at its sole cost and expense, obtain and maintain all permits, licenses, and authorizations required for the DBE's business, equipment, and operations on and in connection with the Work; shall comply with all material terms and conditions of such permits, licenses, and authorizations, and shall comply with all material and applicable requirements, orders, and directives of governmental agencies (collectively, the "Applicable Laws"), including, without limitation, the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §§ 9601 et seq.), all applicable fire and municipal building codes, and any amendments thereto and any applicable guidelines or regulations promulgated thereunder.

9.4.3 The DBE shall certify with each Application for Payment, that (i) the DBE, its agents, employees, Sub-Contractors, Sub-Sub-Contractors and their agents and employees, are in material compliance with the requirements of all Applicable Laws; (ii) to the DBE's best knowledge, no disposal of Hazardous Materials has occurred on, in, under, or about the Work or the Project site; (iii) to the DBE's best knowledge, no release of Hazardous Materials (except as otherwise reported to DUWA pursuant to Paragraph 9.4.6) has occurred on, in, under, or about the Work or the Project site; (iv) to the DBE's best knowledge, no soil or surface or ground water contamination of the Work or the Project site has occurred; and (v) no Hazardous Materials have been used on the Work or the Project site except as provided under Paragraph 9.4.1 hereof.

9.4.4 The DBE shall indemnify, defend, and hold DUWA, and its partners, officers, agents and employees harmless from and against any and all claims, judgments, damages, penalties, fines, liabilities, losses, and costs and expenses (including reasonable attorney's fees and court costs) which arise at any time during or after the completion of the Work as a result of or in connection with (i) the DBE's breach of any prohibition or requirement set forth in this Section 9.4; and (ii) any Hazardous Materials present or occurring in the soil or surface or ground water in, on, under, or about the Work, the property or other properties proximately caused by the DBE's, its agents', employees', Sub-Contractors', Sub-Sub-Contractors' and their agents and employees', activities on or in connection with the Work. This obligation by the DBE to indemnify, defend, and hold harmless includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal, or restoration work required by DUWA or any federal, state, or local governmental agency or political subdivision because of any Hazardous Materials occurring or present in the soil or surface or ground water in, on, under, or about the Work or the Project site, diminution in value of the Work or the Project site, damages for the loss or restriction on use of rentable or usable space or of any amenity of the Work or the Project site, and sums paid in settlement of claims, penalties, attorney's fees, court costs, consultant and laboratory fees, and expert's fees as a result of the DBE's, its agents', employees', Sub-Contractors', and their agents and employees' activities on or in connection with the Work or the Project site. Without limiting the foregoing, if any Hazardous Materials attributable to the DBE, its agents, employees, Sub-Contractors, or their agents or employees, or the activities of any of them, are found in the soil or surface or ground water in, on, under, or about the Work or the Project site, DBE shall promptly take all actions, at its sole expense, necessary to return the Work

or the Project site (as the case may be) to the condition existing prior to the introduction of Hazardous Materials to the Work or the Project site in accordance with Applicable Laws: provided (i) that, except in emergency situations (in which case notice shall be given to DUWA as soon as practicable), DUWA's written approval of such actions shall first be obtained, which approval shall not be unreasonably withheld; and (ii) if it is impossible to return the Work or the Project site to such condition, as determined by DUWA, then the DBE may substitute an alternative action which will achieve and maintain the safe condition of the Work or the Project site, if such alternative is acceptable to DUWA in DUWA's sole discretion. Notwithstanding anything to the contrary set forth in the Contract Documents, the DBE shall not be liable for any damages or costs suffered or incurred by DUWA as a result of encountering Hazardous Materials which were present at the Project site prior to commencement of the Work (except Hazardous Materials encountered in the removal and disposal of the Hazardous Materials included in the scope of the Work under the Agreement) even if the DBE's activities contributed or caused the Hazardous Materials to be disturbed or discharged unless the DBE had actual knowledge of the presence of the Hazardous Materials and nevertheless proceeded to cause such Hazardous Materials to be disturbed or discharged. The DBE shall not under any circumstances be liable to DUWA for any consequential damages as a result of discovery of or disturbing any Hazardous Materials which were present at the Project site prior to the DBE's commencement of the Work.

9.4.5 DUWA may conduct any testing, sampling, borings, and analyses it deems necessary. The DBE, upon request, shall be given split samples of such test samples or borings; such testing shall be at the DBE's expense if the DBE, its agents, employees, Sub-Contractors or their agents and employees have caused Hazardous Materials to be on the Work or the Project site. In addition to any other right granted by law or the Agreement, if the DBE is in material noncompliance with any Applicable Law, DUWA may make a reasonable demand for action upon the DBE. If the DBE does not respond within seven (7) days (unless an emergency is involved, in which case DBE shall respond as soon as is practicable), DUWA may, at its option, take whatever action it deems necessary and appropriate at the DBE's sole expense, which sums shall be immediately due and payable to DUWA. Upon termination of the Agreement, or abandonment of the Work by the DBE for any reason, the DBE shall remove all of its equipment, materials, and other items which may cause, contribute to, or result in contamination and investigate, remedy, and clean up any contamination caused by the DBE, its agents, employees, Sub-Contractors, Sub-Sub-Contractors or their agents or employees, in compliance with all Applicable Laws. At all times during the performance of the Work, the DBE shall if required by DUWA, or any governmental agency, promptly take whatever steps are necessary to stop any and all equipment, materials, and other items which may cause, contribute to, or result in contamination from causing, contributing to, or resulting in such contamination, and shall investigate, remedy, and clean up any contamination caused by the DBE, its agents, employees, Sub-Contractors, or their agents or employees.

9.4.6 The DBE shall promptly notify DUWA in writing of any release of Hazardous Materials on the Project site, specifying the nature and quantity of the release, the location of the release, and the measures taken to contain and clean up the release and ensure that future releases do not occur.

9.4.7 As used herein, the term "Hazardous Materials" means any hazardous, toxic, flammable, or explosive substance, material, or waste which is or becomes regulated by any local governmental authority, the State of Michigan, or the United States Government. The DBE shall be given a reasonable period of time within which to come into compliance with future-enacted laws or regulations. The term "Hazardous Material" includes, without limitation, any material or substance which is (i) designated as a "hazardous substance" pursuant to Section 311 of the Federal Water Pollution Control Act (33 U.S.C. § 1317); (ii) defined as a "hazardous waste" pursuant to Section 1004 of the Federal Resource Conservation and Recovery Act, (42 U.S.C. §§ 6901 et seq.); (iii) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation and Liability Act, (42 U.S.C. §§ 9601 et seq.); (iv) defined as a "hazardous" or "toxic" substance in any law similar to or in any amendment of any of the foregoing laws; or (v) petroleum or petroleum by-products. Any vehicles/waste shipment containers leaving an exclusion zone shall be decontaminated prior to leaving the Project site. The DBE shall inspect all waste shipment containers prior to leaving the Project site to ensure that the least possible amount of soil adheres to wheels and undercarriages.

9.4.8 The DBE shall not deliver site materials to any facility other than the approved disposal facility listed on the shipping manifest.

9.4.9 The DBE shall prepare and submit for approval by DUWA through Veolia, a route selection report containing results of any inspections of the proposed access routes to determine road conditions, overhead clearance, weight restrictions, and required traffic control measures.

9.4.10 The DBE shall ensure that waste shipment containers are protected against contamination by properly covering and lining them with compatible materials or by decontaminating them prior to any use other than hauling contaminated materials.

9.4.11 Prior to leaving the Project site, a load inspection of all shipments shall be conducted by a designated responsible party approved by DUWA's or Veolia's Designated Representative. The load inspection report shall be submitted to DUWA through Veolia, which shall verify and provide written documentation of the following:

- a. A complete and accurate manifest.
- b. Utilization of the proper DOT approved shipping container in accordance with Chapter 49 of the Code of Federal Regulation (CFR).
- c. Labeling in accordance with Department of Transportation regulations specified in 49 CFR.
- d. A bill of lading traceable to the manifest.
- e. Validations that all waste shipment containers are in good condition and are not leaking.
- f. A statement that the driver is physically fit to perform his duties.

- g. Validation that the driver has written documentation in his possession of completion of the required DOT safety training and health monitoring.
- h. A statement that the driver's logbook is current.
- i. Validation that a certificate of insurance is in force.

ARTICLE 10

WAIVER OF SUBROGATION

10.1 SUBROGATION.

DUWA and the DBE waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance required under the Agreement or any other insurance actually carried by DUWA or the DBE, respectively. The DBE shall require similar waivers by Sub-Contractors and Sub-Sub-Contractors in accordance with Article 5 hereof. All insurance policies required hereunder shall permit and recognize such waivers of subrogation.

ARTICLE 11

CHANGES IN THE WORK

11.1 GENERAL.

11.1.1 The DBE acknowledges that (i) that DUWA may, without invalidating the Agreement, order changes in the Work (including extra Work, less Work or alterations) at any time and (ii) that changes in the Work, regardless of their scope or number, are within the contemplation of the parties. Changes in the Work may be ordered only by Change Order or Construction Change Directive. Changes in the Work may be made without notice to any Sureties, and absence of such notice shall not relieve such Sureties of any of their obligations to DUWA.

11.1.2 A Change Order shall be based upon agreement among the Owner and the DBE. A Change Order may result from a Construction Change Directive. Agreement on any Change Order shall constitute a final settlement of and waiver of and permanent bar to all claims relating to the change in the Work which is the subject of the Change Order, including all direct and indirect costs associated with such change and any and all adjustments to the Contract Price and Contract Time. The DBE shall include the Work covered by such Change Orders in its Applications for Payment as if such Work were originally part of the Contract Documents.

11.1.3 A Construction Change Directive may be issued by DUWA and may or may not be agreed to by the DBE.

11.1.3.1 The Contract Time and Contract Price shall be adjusted appropriately when changes in the Work are ordered via a Construction Change Directive. However, the Contract Time shall be adjusted only if the DBE demonstrates to DUWA that the changes in the Work required by the Construction Change Directive adversely affect the critical path of the Work.

11.1.3.2 A Construction Change Directive may be used in absence of total agreement on the terms of a Change Order.

11.1.3.3 If the Construction Change Directive provides for an adjustment to the Contract Price, it shall state the method that shall be used for the adjustment. The decision of DUWA with respect to the determination of the method for adjustment to the Contract Price shall final and binding on the DBE.

11.1.3.4 A Construction Change Directive signed by the DBE indicates the DBE's agreement with all of its terms, including adjustment in the Contract Price and the Contract Time or the method for determining them. Such agreement shall be effective immediately and shall have the same legal effect of and be recorded as a Change Order.

11.1.4 Changes in the Work shall be performed under the applicable provisions of the Contract Documents, and the DBE shall proceed promptly, unless otherwise provided in the Change Order or Construction Change Directive. Any change in the Contract Price or Contract Time must result from the provisions of this Section 11.1. Accordingly, no oral instructions, course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that DUWA has been unjustly enriched by an alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall in the absence of a written Change Order or Construction Change Directive be the basis for any claim to an increase in any amounts due under the Contract Documents or a change in the time period provided for in the Contract Documents. All such claims are hereby waived by the DBE and are forever barred. Notwithstanding the foregoing, when time does not permit the processing of a Change Order in advance of commencing the change in the Work, upon receipt of a Construction Change Directive from DUWA, the DBE shall proceed with a change in the Work, and the parties shall concurrently proceed with the preparation and submission of a proposed Change Order.

11.1.5 Without invalidating this Agreement and without notice to any surety, DUWA may, by Change Order approved by DUWA and, if necessary, the Board of Directors, or Construction Change Directive signed by DUWA (a) order changes in the Work consisting of additions, deletions or other revisions (within the general scope of the Work) in the requirements of the Contract Documents and (b) unilaterally make or provide the basis for making an adjustment in Contract Price or Contract Time. Upon receipt of any such unilateral order, the DBE shall promptly proceed or continue with the Work involved unless DBE submits a written objection within four (4) working days. Any such adjustment made by Change Order or authorized by Construction Change Directive to which the DBE has submitted no objection shall be final and binding on the DBE.

11.2 PROCESSING DUWA-INITIATED CHANGES IN THE WORK.

11.2.1 Notwithstanding anything contained herein to the contrary, DUWA may negotiate changes in the Work with the DBE by submitting a Request for Proposal to the DBE describing the change being considered and requesting that the DBE submit its proposal for the corresponding adjustment in Contract Price or Contract Time, if any.

11.2.2 If a change in the Work is required, DUWA may issue a Construction Change Directive. Even though the DBE shall cause the changes in the Work therein described to be performed immediately, it shall, while the changed Work is being performed, also develop pricing for the change as required in Section 11.2.3 below.

11.2.3 Within fifteen (15) days of its receipt of a Request for Proposal or Construction Change Directive, the DBE shall provide DUWA with the amount of any change to the Contract Price or Contract Time and including an itemization of all costs of material and labor with extensions listing quantities and total costs, and a substantiation of any claim for an extension to the Contract Time by preparing a detailed schedule depicting the change's impact upon the Work's critical path. If DUWA wishes to proceed with the changes in the Work based upon the pricing quotation, DUWA shall submit a proposed Change Order to the DBE, together with the revised Construction Documents that will become part of the Contract Documents setting forth the exact amount of any adjustment in the Contract Price or the Contract Time.

11.2.4 Upon the DBE's acceptance of a proposed Change Order, it shall be executed by DUWA and the DBE, and the Contract Price or the Contract Time or both shall be adjusted to the extent provided in the Change Order.

11.2.5 Nothing contained herein shall limit the right of DUWA to order changes in the Work. No payments will be made in respect of changed Work unless and until a Change Order has been signed by DUWA and the DBE. In the case of disagreement as to the amount to be adjusted, credited, or paid for changed Work, the DBE shall nevertheless promptly comply with the Construction Change Directive or Change Order, as the case may be, and payment or credit shall be made in accordance with the Agreement payment provisions up to the reasonable estimated value of the change as determined by DUWA.

11.2.6 Where any changed Work is ordered by DUWA on a time and materials or cost plus fee basis, the DBE shall, for such purposes, permit DUWA to audit its books as they relate to the Project and shall require all Sub-Contractors to permit DUWA and the DBE to audit their books as they relate to the Project. The DBE shall produce, and shall cause any Sub-Contractors to produce, any and all data which DUWA may reasonably request for the purpose of determining the correctness of the charges. The DBE shall keep, and shall cause all Sub-Contractors to keep, such full and detailed accounts as may be necessary to reflect its operations with respect to such charges and extras, and the system adopted shall be such as is satisfactory to DUWA. DUWA, its directors, officers, agents and employees, shall be afforded access at all reasonable times to the DBE's books, correspondence, instructions, receipts, vouchers, memoranda and records of all kinds, relating to all changed Work under the Agreement as well as to such charges and extras. In regard to the foregoing and generally, the DBE hereby authorizes DUWA, and shall require all Sub-Contractors to authorize the DBE and DUWA, to check directly with its suppliers of labor and materials the charges for such labor, material and other items appearing in the DBE's bills rendered to DUWA, to confirm balances due and obtain sworn statements and waivers of claim.

11.3 PRICING FOR CHANGED WORK.

11.3.1 DUWA shall, at all times, have the right to order changes in the Work to be performed on the basis of (i) a lump sum Proposal as provided in Section 11.3.3; (ii) a Unit Price Basis as provided in Section 11.3.4 below; or (iii) Actual Cost of the Changes, plus a fee to the DBE for overhead and profit, as provided in Section 11.3.5 below. The DBE warrants that all costs in proposals and claims for adjustments in Contract Price shall not exceed those allowed under the Contract Documents, and that proposals and claims for adjustments to Contract Price shall grant prices, terms and warranties comparable to or better than prices, terms and warranties offered to others for similar work.

11.3.2 Credits for deductions from the Work shall be determined on the same basis as charges for additions to the Work except that a reasonable amount shall be deducted for overhead and profit in the case of deletions from the Work and the affected Sub-Contractor shall be allowed any restocking or material and equipment cancellation charges payable to suppliers and vendors for the purpose of computing the credit resulting from deductions from the Work.

11.3.3 Lump Sum Proposal: Should DUWA elect to have changed Work performed on a Lump Sum Proposal, it will so indicate in the Construction Change Directive or Request for Proposal and the DBE will, with reasonable promptness but in any event within the time periods set forth in Paragraph 11.2.3 hereof, transmit its Lump Sum Proposal detailing the proposed adjustment to the Contract Price (and the various components thereof). The Lump Sum Proposal shall be based solely upon the affected Sub-Contractors' estimated net cost for labor (including union fringe benefits, insurance, employment insurance, Social Security and taxes paid on labor) and materials and excluding increased bond premiums, plus the percentages for overhead and profit as hereinafter set forth. The Lump Sum Proposal shall be itemized and segregated by labor and material for the various components of the changed Work and no aggregate figures for labor and material will be acceptable. The DBE shall furnish, with its Lump Sum Proposal, supporting data consisting of DBE (self-performing), Sub-Contractor, Sub-Sub-Contractor and vendor executed proposals. The DBE (self-performing), Sub-Contractor or Sub-Sub-Contractor actually performing the changed Work shall be permitted to include in the estimate not more than fifteen (15%) percent for overhead and profit; The DBE and Sub-Contractors of a higher tier shall be permitted to include in the estimate a handling charge of five (5%) percent on changes to the contract for the value of up to a ten (10%) total aggregate change in initial contract value. After the ten (10%) of contract value is exceeded, DBE will be allowed a seven (7%) percent handling charge. The Sub-Contractors may include in their labor proposal only those workmen directly involved in the changed Work. All other supervision is included in the percentages for overhead and profit allowed the Sub-Contractors, unless (i) additional foremen are required in connection with the changed Work who were not otherwise on the Project site; or (ii) the total Contract Time is extended as a result of the changed Work, in which event an equitable amount shall be allowed for supervision during the extended period. Sub-Contractor's material costs will include invoiced costs, transportation and applicable sales or use taxes. Use of small tools is included in the overhead and profit. Equipment rental may be included only if the equipment will be required on the Project site for a longer duration solely because of the changed Work. Overhead and profit, as outlined above, includes all other costs whatsoever beyond those enumerated. If any of the changed Work included in the Lump Sum Proposal is covered by Unit Prices, DUWA may elect to use

these Unit Prices within the Lump Sum Proposal. Unit Prices shall include overhead and profit. Also, the overhead and profit of the DBE, Sub-Contractor, Sub-Sub-Contractor shall always be calculated on the cost of performing the work.

11.3.4 Unit Prices: Should DUWA elect to have changed Work performed on a Unit Price Basis, the DBE will submit, with reasonable promptness but in any event within the time periods set forth in Paragraph 11.2.3 hereof, a written proposal itemizing the quantities of each item of changed Work for which there is an applicable Unit Price contained in the Agreement, Contract Documents or applicable Subcontracts. The quantities must be itemized in relation to each specific item in the Contract Documents. The Unit Prices will also be applied to net increases in quantities of the same item. The Unit Prices will also be applied to net decreases in quantities of the same item. There shall be no adjustment (equitable or otherwise) to Unit Prices established in Subcontracts. Unit Prices, if any, shall be established through the bidding process and strictly adhered to thereafter, even if a change in quantity is made.

11.3.5 Time and Material: Should DUWA elect to have any changed Work performed on an Actual Cost of the Changes basis, the affected Sub-Contractors shall perform such changed Work at "actual cost of the changes" as defined in Paragraph 11.3.6 hereof, plus the percentages for overhead and profit set forth in Paragraph 11.3.3 hereof. The DBE will submit to DUWA daily time and material tickets for all changed Work, including changed Work performed by Sub-Contractors. These tickets will include the identification number assigned to this Work, the location and description of the changed Work, the classification of labor employed including the applicable Sub-Contractor, workers' names and social security numbers, the materials used, the equipment rented (not tools) and any other information ordered by DUWA.

11.3.6 The term "Actual Cost of the Changes" means the sum of all costs necessarily incurred and paid by the DBE in the proper performance of the changed Work. All such costs shall be in amounts no higher than those prevailing in the locality of the Work. The following costs shall constitute recoverable Actual Cost of the Changes to which the DBE is entitled when performing extra or change Work, or making any other claim for an adjustment to the Contract Price. These costs will also form the basis for the DBE's recoverable costs which are associated with extensions of the Contract Time caused by extra or changed Work, or other cause solely within the control of DUWA, and which are further substantiated by the DBE in accordance with the requirements of Subparagraph 11.3.6.7 below:

11.3.6.1 Payroll costs for employees of the DBE directly employed in the physical performance of the Work. Payroll costs for employees not directly employed in the physical performance of the Work, such as superintendents and foremen, are recoverable only to the extent that additional supervision or staffing is specifically required to be added for the proper execution of the Work. Percentage add-ons, or other costs, for employees not directly employed in the physical performance of the Work shall not be allowed unless the DBE establishes to DUWA's satisfaction that such employees are or were required for the proper execution of the Work and further that such employees were actually added to the DBE's staff, or their time on the Work was extended as a result of the extra or changed Work. Payroll costs shall include salaries or wages paid plus the cost of itemized fringe

benefits, including social security contributions, unemployment and workers' compensation insurance, and vehicle parking costs. The payroll costs associated with premiums paid for performing the Work after regular hours, on weekends or holidays shall be allowed only to the extent that these costs have been approved in writing by DUWA.

11.3.6.2 Overtime, when specifically authorized in writing by DUWA for reasons other than the failure of the DBE to perform the Work in accordance with the Project Schedule or otherwise in conformity with the Contract Documents shall be paid for by the Owner solely on the basis of the overtime rates established in the Contract Documents.

11.3.6.3 Costs of all materials and equipment furnished and incorporated into the Work by the DBE, including costs of transportation, and storage where applicable. All trade discounts, rebates, refunds and all returns from sales of surplus materials and equipment shall accrue to the benefit of DUWA. Use of small tools is included in the overhead and profit. Equipment rental may be included only if the equipment will be required on the Project site for a longer duration solely because of the changed Work.

11.3.6.4 Payments made by the DBE to Sub-Contractors for Work performed. All Sub-Contractor recoverable costs shall be determined in the same manner as the DBE's recoverable costs. If requested by DUWA, the DBE shall obtain competitive bids from the Sub-Contractors who are acceptable to DUWA, and the DBE will contract with those accepted by DUWA.

11.3.6.5 Sales, consumer, use or similar taxes related to the Work, and for which the DBE is liable, or are otherwise imposed by laws and regulations.

11.3.6.6 Construction equipment costs of the DBE's equipment or rental costs from others; hourly, daily, weekly or monthly rates will be applied where appropriate.

11.3.6.7 Other supplemental costs which are substantiated by the DBE as specifically being required for the proper execution of the extra or changed Work, unless specifically prohibited by Section 11.3.7 below.

11.3.6.8 The DBE's recoverable Actual Cost of the Changes shall not include any of the following costs when performing extra or changed Work, or in making any other claim for an increase to the Contract Price or extension of the Contract Time:

11.3.6.8.1 Payroll costs and other compensation of the DBE's officers, executives, principals, general managers, project managers, construction managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing or contracting agents, expeditors, clerks, or any other employees or agents who are not specifically employed full-time on the Work. Those or agents not employed on the Work are to be considered administrative costs which are covered by the Contract Price. Exceptions to this requirement will only be made on a case-by-case basis, each of which shall require prior written authorization and approval by DUWA.

11.3.6.8.2 Expenses of the DBE's principal and branch offices other than the DBE's office located at the Project site.

11.3.6.8.3 Any part of the DBE's capital expenses, including interest on the DBE's capital employed for the Work and charges against the DBE for delinquent payments.

11.3.6.8.4 Costs associated with the Work arising from one year correction of the Work period, warranties, or guarantees which are required by the Contract Documents.

11.3.6.8.5 Additional vehicle parking costs which exceed the parking reimbursement allowable within the payroll cost as provided in Section 11.3.6 above.

11.3.6.8.6 Any other supplemental costs which are not substantiated by the DBE as specifically being required for the proper execution of the extra or changed Work.

11.3.7 Unless and until DUWA shall elect either the Lump Sum Proposal, the Unit Price Basis or the Time and Material Basis, the DBE shall maintain and submit daily records of labor, material and equipment used in the changed Work which have been acknowledged thereon daily by DUWA. In any event, DUWA shall have the right to order such changes in the Work to proceed promptly prior to the submission of a Lump Sum Proposal and/or DUWA's election of the method by which the cost of the changed Work shall be determined. The DBE shall certify all time and records and invoices and keep and present in such form as DUWA may direct, an itemized accounting, together with supporting date and vouchers, of all actual costs associated with the extra or changed Work.

11.3.8 Any Cash Allowances and Provisionary Allowances shall not be subject to change in connection with Change Orders.

11.4 CONCEALED CONDITIONS.

11.4.1 The DBE shall promptly notify DUWA in writing, if it discovers that (a) actual subsurface conditions or latent physical conditions encountered at the Project site differ materially from those shown or indicated in the Contract Documents, (b) unknown physical conditions are encountered at the Project site, of an unusual nature, differ materially from those ordinarily encountered and recognized as inherent in work similar in character to the Work, or (c) any reference points need correction to enable the DBE to proceed with the Work.

11.4.2 If the DBE wishes to make a claim for an increase in the Contract Price or extension of the Contract Time pursuant to this Paragraph 11.4, it shall give DUWA written notice thereof prior to the end of the fifth (5th) Business Day after discovery of the conditions. This notice shall be given by the DBE before proceeding to execute further Work, except in an emergency endangering life or property in which case the DBE shall proceed in accordance with Paragraph 10.3. No such claim shall be valid for any work performed prior to delivery of written notice to

DUWA. In the case of a tunnel or subsurface boring collapse, DBE shall endeavor to protect its equipment and the completed Work without endangering the safety of any person.

11.4.3 No proposal or claim by DBE due to differing site conditions shall be allowed (a) if the DBE knew of the existence of those conditions before proceeding with the Work, or (b) if those conditions could have been discovered by the types of reasonable explorations and examinations for which the DBE was made responsible under the Contract Documents.

11.5 MINOR CHANGES IN THE WORK.

DUWA shall have the authority to order minor changes in the Work provided that such changes will not (i) involve an adjustment to the Contract Price or extension of the Contract Time, or (ii) render the Construction Documents, as so revised, not in material conformance with the Work as set forth in the Construction Documents prior to such change. Such changes shall be effected by written order by DUWA and shall be binding on the DBE. The DBE shall carry out such orders promptly.

11.6 REQUESTS FOR CHANGE ORDERS.

11.6.1 Subject to the other terms of the Agreement, if the DBE believes that any act, error, or omission of DUWA constitutes a change in the Work entitling it to additional compensation, it shall within twenty (20) days after the date on which the DBE discovers, or should with the exercise of appropriate diligence have discovered, the pertinent act, error or omission of DUWA (provided that the necessity of extra cost and/or time is already determinable, even if such extra cost and/or time has not yet been incurred), submit a Request for Change Order to DUWA stating the amount of the additional compensation or additional time to which it is entitled and justifying the request. DUWA shall evaluate the Request for Change Order within a reasonable period of time and advise the DBE whether DUWA will grant, grant in part, or deny the Request for Change Order. Any additional compensation granted shall be recorded in the form of a Change Order. Failure of the DBE to timely submit a Request for Change Order in accordance with the requirements of this Section 11.6.1 shall constitute a waiver of recovery arising out of the pertinent act, error or omission of DUWA, if DUWA was materially prejudiced thereby.

11.6.2 No proposal or claim by the DBE on account of changes to the Work shall be allowed for any costs or delay incurred more than twenty (20) days before the DBE gives written notice as required.

11.7 CHANGE ORDER PROCEDURE.

11.7.1 NO CHANGE IN THE WORK, WHETHER BY WAY OF ALTERATION OR ADDITION TO THE WORK, SHALL BE THE BASIS OF AN ADDITION TO THE CONTRACT SUM OR A CHANGE IN THE CONTRACT TIME UNLESS AND UNTIL SUCH ALTERATION OR ADDITION HAS BEEN AUTHORIZED BY A CHANGE ORDER EXECUTED AND ISSUED IN ACCORDANCE WITH AND IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

11.7.2 ANY CLAIM FOR INCREASED COST FOR DELAY SHALL BE ASSERTED IN ACCORDANCE WITH THE PROVISIONS OF THE AGREEMENT UNLESS THE TIME IS EXTENDED IN WRITING BY DUWA. THIS REQUIREMENT IS OF THE ESSENCE OF THE CONTRACT DOCUMENTS. ACCORDINGLY, NO COURSE OF CONDUCT OR DEALINGS BETWEEN THE PARTIES, NOR EXPRESS OR IMPLIED ACCEPTANCE OF ALTERATIONS OR ADDITIONS TO THE WORK SHALL BE THE BASIS FOR ANY CLAIM TO AN INCREASE IN THE CONTRACT PRICE OR CHANGE IN THE CONTRACT TIME.

11.7.3 CONTRACT PRICE AND CONTRACT TIME SHALL BE CHANGED ONLY BY CHANGE ORDER APPROVED IN ADVANCE BY DUWA, THE CEO AND, IF NECESSARY, THE BOARD OF DIRECTORS

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK.

12.1.1 If any portion of the Work should be covered contrary to the request of DUWA or to requirements specifically expressed in the Contract Documents, it must, if required by either, promptly be uncovered for observation and shall be replaced at the DBE's sole cost and expense. In such event, the DBE shall not be entitled to any increase to the Contract Price or extension of the Contract Time.

12.1.2 If any other portion of the Work has been covered which DUWA specifically requested to observe prior to being covered, DUWA may request to see such Work and it shall be promptly uncovered by the DBE. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Construction Change Directive or Change Order, be charged to DUWA. If such Work be found not in accordance with the Contract Documents, the DBE shall correct the Work at its sole cost and expense and maintain the Project Schedule.

12.2 CORRECTION OF WORK.

12.2.1 The DBE shall correct all Work rejected by DUWA as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion or Final Completion and whether or not fabricated, installed or completed. Such correction shall be accomplished within seven (7) days after notice from DUWA unless such work cannot be accomplished within such period, in which case the DBE shall commence the correction and submit its Drawings therefor within seven (7) days. The DBE shall bear all costs of correcting such rejected Work and maintaining the Project Schedule. Correction shall be accomplished without affecting the Final Completion date or the Project Schedule. Nothing set forth in this Paragraph shall be construed as extending any statute of limitations or statute of repose for any defects in materials and workmanship whether patent or latent.

12.2.2 If, within one (1) year after Substantial Completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the DBE agrees to make any and all repairs or replacements and further agrees to commence such repair or replacement and the replacement of any and all damage caused thereby at any time or times during the guarantee period, within seven (7) days from receipt of written notice from DUWA and to faithfully and diligently prosecute the same to conclusion, without cost to, and to the satisfaction of, DUWA. This obligation shall survive termination of the Agreement. DUWA shall give such notice promptly after discovery of the condition.

12.2.3 The DBE shall remove from the Project site all portions of the Work which are defective or non-conforming and which have not been corrected under Paragraph 12.2.1 hereof, unless removal is waived in writing by DUWA and the Work shall be corrected to comply with the Contract Documents without cost to DUWA.

12.2.4 If the DBE fails to correct defective or nonconforming Work, DUWA may correct it in accordance with Section 2.3 hereof.

12.2.5 If the DBE does not remove defective or nonconforming Work within a reasonable time fixed by written notice from DUWA, DUWA may remove it and may store the materials or equipment at the expense of the DBE. If the DBE does not pay the cost of such removal and storage within ten days (10) thereafter, DUWA may sell such Work at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the DBE. If such proceeds of sale do not cover all costs which the DBE should have borne, the difference shall be charged to the DBE and an appropriate Change Order shall be issued. If the payments then or thereafter due the DBE are not sufficient to cover such amount, the DBE shall pay the difference to DUWA.

12.2.6 The DBE shall bear the cost of making good all of the Work, the work of DUWA or separate DBEs and any other facilities destroyed or damaged by such deficiencies and their removal or correction.

12.2.7 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to any other obligation which the DBE might have under the Contract Documents. The establishment of the time period of one year after Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any special warranty required by the Contract Documents relates only to the specific obligation of the DBE to correct the Work, and has no relationship to the time within which the DBE's obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the DBE's liability with respect to the DBE's obligations other than specifically to correct the Work.

12.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK.

If DUWA prefers to accept defective or nonconforming Work, it may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect a

reduction in the Contract Price, or, if the amount is determined after Final Payment, it shall be paid by the DBE.

ARTICLE 13

TERMINATION OF THE AGREEMENT

13.1 TERMINATION FOR CAUSE.

13.1.1 DUWA shall have the right, without prejudice to any other right or remedy it may have to terminate the Agreement and take possession of the Project site and of all materials, tools and appliances thereon and finish the Project by whatever method DUWA may deem expedient upon five (5) Business Days prior written notice to the DBE upon the occurrence of any of the following events of default:

13.1.1.1 The DBE breaches a material term of the Agreement; or

13.1.1.2 The DBE shall make an assignment for the benefit of creditors; or make an admission in writing of its inability to pay its debts generally as they become due; or

13.1.1.3 The DBE shall voluntarily make any unauthorized changes in the personnel previously approved by DUWA; or

13.1.1.4 The filing of claims with DUWA by third parties alleging failure to pay any amount due (except disputed claims).

13.1.2 In such case, the DBE shall not be entitled to receive any further payment until the Project is finished. If the unpaid balance of the Contract Price shall exceed the expense of finishing the Project, including compensation for DUWA's additional services, such excess shall be paid to the DBE but only to the extent of the costs incurred by the DBE prior to the termination of the Agreement. If the expense of finishing the Project shall exceed the unpaid balance of the Contract Price, the DBE shall pay such excess to DUWA.

13.2 TERMINATION FOR CONVENIENCE.

DUWA may also terminate the Agreement for its convenience at any time upon five (5) calendar days' written notice of termination to the DBE. In such case, the DBE shall be entitled to receive, as total compensation for all services performed hereunder, (i) payment for all Work properly performed prior to the effective date of termination, including payment of the appropriate retainage, plus (ii) any restocking or material and equipment cancellation charges payable to Suppliers and vendors (unless the DBE shall have assigned to DUWA, at the request of DUWA, the agreements pursuant to which such material and equipment was ordered and DUWA shall have indemnified the DBE in connection therewith); plus (iii) the DBE's reasonable demobilization costs. Payment of such compensation is the sole and exclusive remedy of the DBE for a termination of the Agreement by DUWA without cause and the DBE shall not be entitled to, and hereby waives, claims for lost profits and all other damages and expenses. The DBE shall execute a waiver and general release of claim as a condition of payment. At DUWA's option, the DBE shall assign to DUWA all approved Subcontracts and DUWA shall indemnify and defend the DBE against all

claims for payment thereunder in respect of work performed after the date of termination. On the date that the DBE receives the written notice of termination, the DBE shall not order any additional products, materials or equipment and shall immediately cancel any previously submitted orders for products, materials and equipment.

ARTICLE 14

AUDIT

14.1 DUWA'S ACCESS TO DBE'S RECORDS.

14.1.1 The DBE agrees that DUWA or any of its duly authorized representatives shall, until the expiration of three (3) years after Final Payment under the Agreement, have access to and the right to examine and audit any directly pertinent books, documents, papers and records of the DBE involving transactions related to the Agreement.

14.1.2 The DBE shall include in the Subcontracts a provision to the effect that the Sub-Contractor agrees that DUWA or any of his duly authorized representatives shall, until the expiration of three (3) years after final payment under the Agreement, have access to and the right to examine any directly pertinent books, documents, papers and records of such Sub-Contractor, involving transactions related to the Agreement. The term "Subcontracts," as used in this clause only, excludes (1) purchase orders not exceeding Two Thousand Five Hundred (\$2,500.00) Dollars and (2) subcontracts or purchase orders, for public utility services at rates established for uniform applicability to the general public.

14.1.3 The periods of access and examination described in this Section 14.1 for records which relate to (1) under the "Claims" clause of the Agreement, (2) litigation or the settlement of claims arising out of the performance of the Agreement, or (3) costs and expenses of the Agreement as to which exception has been taken by DUWA or any of his duly authorized representatives, shall continue until such appeal, litigation, claim or exception has been disposed of.

ARTICLE 15

CONFLICT OF INTEREST

15.1 The DBE covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of the Work. The DBE further covenants that, in the performance of the Agreement, no person having any such interest shall be employed. The DBE further covenants that no officer, member or employee of DUWA and no other public official who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of the Agreement has any personal or financial interest, direct or indirect, in the Agreement or in the proceeds thereof.

15.2 The DBE also hereby warrants that it has not and will not employ any person to solicit or secure the Agreement upon any agreement or arrangement for payment of a commission, percentage, brokerage, or contingent fee, either directly or indirectly. The DBE further agrees that if this warranty is breached, DUWA may, at its option, terminate the Agreement without penalty,

liability or obligation, or may at its election, deduct from any amounts owed to the DBE hereunder any amounts of such commission, percentage, brokerage, or contingent fee.

15.3 The DBE agrees that neither it nor its employees will endeavor to influence DUWA's employees to seek employment with the DBE within the duration of the Agreement and shall not for a period of one (1) year thereafter employ any of DUWA's employees without prior written approval from DUWA. Proof of such activity as determined by DUWA may cause immediate termination of the Agreement.

15.4 The DBE shall include the provisions of this Article in any Subcontract it enters into pursuant to the Agreement.

ARTICLE 16

CONFIDENTIAL INFORMATION

16.1 In order that the DBE may effectively fulfill its covenants and obligations under the Agreement, it may be necessary or desirable for DUWA to disclose confidential and proprietary information to the employees pertaining to DUWA's past, present and future activities. Since it is difficult to separate confidential and proprietary information from that which is not, the DBE shall instruct its employees and all Sub-Contractors to regard all information gained by each such person as a result of the Work to be performed hereunder as information which is proprietary to DUWA and not to be disclosed to any organization or individual without the prior consent of DUWA.

16.2 The DBE agrees to take appropriate action with respect to its employees, Sub-Contractors and agents to insure that the obligations of non-use and non-disclosure of confidential information of the Agreement can be fully satisfied.

ARTICLE 17

CLAIMS

17.1 CLAIMS.

17.1.1 A "Claim" is a demand or assertion by the DBE seeking adjustment or interpretation of contract terms, payment of money, extension of time or other relief with respect to the terms of the Agreement or any of the Contract Documents that (ii) the procedure for resolution of which is not specifically provided for in the Agreement. The term "Claim" also includes all other disputes, controversies and matters in question between or among DUWA and the DBE arising out of or in any way relating to the Agreement, the Project or the Work. Claims must be made by written notice to DUWA containing as much detail as reasonably possible. The burden for substantiating any Claim shall rest with the DBE.

17.1.2 Except as otherwise specifically provided in this Agreement, Claims by the DBE must be made promptly and within not more than twenty (20) days, unless a longer period is granted by writing, after the DBE first recognizes the condition giving rise to the Claim, whether or not any impact in money or time has been determined. **In no event shall this provision be**

deemed to extend the period of time for the DBE to make claims for an extension of the Contract Time or adjustment to the Contract Price as provided in the other provisions of the Agreement, which provisions and time periods are to be strictly adhered to by the DBE.

17.1.3 Pending final resolution of a Claim, the Work shall continue unabated, the DBE shall proceed diligently with performance of the Work, and DUWA shall continue to make payment in accordance with the Contract Documents, except as to amounts in good faith dispute.

17.2 CLAIMS FOR ADDITIONAL COST.

Subject to the limitations and other time limits contained herein, if the DBE wishes to make a Claim for an increase in the Contract Price, to the extent the Claim is reasonably discoverable, written notice of it shall be given to DUWA before the DBE proceeds to execute the Work for which the Claim is made. Prior notice is not required for Claims relating to bona fide emergencies endangering life or property. All Claims for adjustment to the Contract Price shall be supported by such documentation as DUWA shall require.

17.3 INJURY OR DAMAGE TO PERSON OR PROPERTY.

If the DBE suffers injury or damage to person or property because of an act or omission of the Owner, or its employees or agents, or others for whose acts the Owner is legally liable, prompt notice of such injury or damage shall thereafter be given within a reasonable time and not exceeding twenty-four (24) hours in the case of serious personal injury or damage or seventy-two (72) hours in all other cases after first observance. The notice shall provide sufficient detail to enable the Owner to investigate the matter.

17.4 SUBMITTAL OF CLAIMS: DISPUTE RESOLUTION.

17.4.1 All Claims shall be submitted to DUWA. Any mutual agreement reached shall be final and binding upon the parties.

17.4.2 In the event of any dispute between the parties arising out of or in connection with the contract or the services or work contemplated herein; the parties agree to first make a good faith effort to resolve the dispute informally. Negotiations shall take place between the designated principals of each party. If the parties are unable to resolve the dispute through negotiation within 45 days, then either party may give written notice within 10 days thereafter that it elects to proceed with mediation pursuant to the commercial mediation rules of the American Arbitration Association. In the event that mediation is not invoked by the parties or that the mediation is unsuccessful in resolving the dispute, then either party may submit the controversy to a court of competent jurisdiction. The foregoing is a condition precedent to the filing of any action other than an action for injunctive relief or if a Statute of Limitations may expire.

17.4.3 Each party shall be responsible for its own costs and expenses including attorneys' fees and court costs incurred in the course of any dispute, mediation, or legal proceeding. The fees of the mediator and any filing fees shall be shared equally by the parties.

17.4.4 All Claims which are not asserted and pursued in accordance with the provisions of this Article 18 shall be deemed to have been waived.

17.4.5 The resolution of all Claims under this Article 17 resulting in a change in the Contract Price or Contract Time shall be memorialized by a Change Order. The provisions of this Article 18 shall survive the completion of the Work and termination of the Agreement.

ARTICLE 18

MISCELLANEOUS REQUIREMENTS

18.1 **Governing Law.** This Agreement will be governed and construed in accordance with the laws of the State of Michigan without regard to the principles of the conflict of laws. Both Parties agree that any enforcement of a judgment or alternative dispute award will be filed with the appropriate court of law in Wayne County.

18.2 **Licensing.** DBE represents that it is authorized to do business in the State of Michigan and is properly licensed by all necessary Governmental Agencies having jurisdiction over the Project for performance of its Services. DBE will cause all professional services to be performed by appropriately licensed professionals qualified for its Project duties.

18.3 **Anti-Corruption Compliance.**

18.3.1 In carrying out the terms of this Agreement, DBE hereby undertakes to strictly comply with applicable laws prohibiting the bribery of public officials and private persons, influence peddling, money laundering that may in particular entail a public contract debarment, including:

- (a) the 1977 Foreign Corrupt Practices Act of the United States,
- (b) the 1999 Canadian Corruption of Foreign Public Officials Act,
- (c) the 2010 UK Bribery Act,
- (d) the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions of December 17, 1997.

18.3.2 DBE undertakes to put in place and implement all necessary and reasonable policies and measures to prevent corruption.

18.3.3 DBE declares that to its knowledge, its legal representatives, directors, employees, agents, and anyone performing services for or on behalf of DUWA pursuant to this Agreement do not and will not directly or indirectly offer, give, agree to give, authorize, solicit, or accept the giving of money or anything else of value or grant any advantage or gift to any person, company or undertaking whatsoever including any government official or employee, political party official, candidate for political office, person holding a legislative, administrative or judicial position of any kind for or on behalf of any country, public agency or state owned company, official of a public international organization, for the purpose of corruptly influencing such person in their official capacity, or for the purpose of rewarding or inducing the improper performance of a relevant function or activity by any person in order to obtain or retain any business for DUWA or to gain any advantage in the conduct of business for DUWA.

18.3.4 DBE further undertakes to ensure that neither the DBE nor any of its legal representatives, directors, employees, agents, sub-contractors and anyone performing services for or on behalf of DUWA under this Agreement, has been, or is listed by any government agency as being debarred, suspended, proposed for suspension or debarment, or otherwise ineligible for participation in government procurement programs and/or bidding following invitations to bid advertised by the World Bank or any other international development bank.

18.3.5 DBE agrees to notify DUWA of any breach of any term of this Article 18 within a reasonable time.

18.3.6 If DUWA notifies DBE that it has reasonable grounds to believe that DBE has breached any term of this Article:

- a. DUWA is entitled to suspend performance of this Agreement without notice for as long as DUWA considers necessary to investigate the relevant conduct without incurring any liability or obligation to the DBE for such suspension;
- b. DBE is obliged to take all reasonable steps to prevent the loss or destruction of any documentary evidence in relation to the relevant conduct.

18.3.7 If DBE breaches any term of this clause:

- a. DUWA may immediately terminate this Agreement without notice and without incurring any liability.
- b. DBE must undertake to indemnify DUWA, to the maximum extent permitted by law, for any loss, damages, or expenses incurred or suffered by DUWA arising out of such breach.

18.4 DUWA Polices. DBE shall not discriminate against any employee or applicant for employment or applicant for employment because of race, color, national origin, religion, sex, age or for any reason prohibited by law. To the extent applicable to the Work on this Project, DBE shall comply with Executive Order 11246 or any amendment, replacement or counterpart thereof.

18.5 Patents and Copyrights. If DBE or its personnel make any inventions or prepare copyrightable material as a result of the performance of this Agreement, DBE promptly shall disclose such inventions or materials to DUWA. DBE agrees to grant, and hereby grants, to DUWA the entire right, title, and interest in and to such inventions and copyrightable materials, and DBE shall cooperate with DUWA and execute all documents necessary to perfect DUWA's rights in the inventions or materials and to allow DUWA to prosecute and obtain patents and copyrights thereon.

EXHIBIT B: PROJECT DESCRIPTION AND SCOPE OF WORK

This scope of work has been separated into the following five tasks:

- Task 1: Permitting
- Task 2: 30% Design
- Task 3: Critical Equipment Procurement
- Task 4: 60% Design
- Task 5: Development of a Guaranteed Maximum Price for Phase II/III

The details for each task are further detailed below.

Task 1 – Permitting

The DBE will be responsible for identification, submission, approval and payment of all applicable permits necessary to meet local, state and federal requirements including but not limited to:

- Michigan Department of Environment, Great Lakes, and Energy - Part 41- Permit
- Updates (if applicable) to existing NPDES Permit - NO. MI0021156
- City of Wyandotte - Building Permits or Business License Requirements

It is anticipated that the 30% Basis of Design will be provided to EGLE and review comments will be provided within 8 weeks of the 60% design submission. Additional review time can be addressed by General Conditions section 7.4 (Delays and Extensions of Time).

Task 2 - Basis of Design Development - 30% Design

The Basis of Design will outline key design requirements and features of the Dryer Project, together with a preliminary schedule and cost estimate. It will also be used in the various permit applications, as required for approval of the project.

During this task, the DBE will complete preliminary engineering of the Facility Improvements. Initially, a draft Basis of Design report will be submitted for review and comment by DUWA, OHM and Veolia. Once all comments are incorporated, the report will be submitted to Regulatory Agencies, as required. It is anticipated that this task will require two meetings with the stakeholders.

The DBE shall be responsible for developing the Basis of Design Report (BODR) in coordination with DUWA. The Basis of Design will include the following:

1. Preliminary project drawings and specifications completed to approximately 30% completion (see list below)
2. List of anticipated permits and regulatory requirements
3. Building code compliance overview with Structural Engineer Assessment
**Note Section 5.7.3 Assessment Report and Recommendations.
4. Material Sampling
5. Wastewater flow and loading projections
6. Governing mass balances
7. Process design and major equipment sizing
8. Odor and dust control analysis
9. Description of scope of upgrades for engineering disciplines
10. A list of major equipment for conveyance, mechanical process, HVAC, electrical
11. Estimated annual operational cost of the new facilities including all new equipment, chemicals, labor, electricity, gas and other utilities.
*It is anticipated that the existing polymer system will be sufficient for the additional centrifuge.
12. Operational requirements/support during construction, startup and testing.
13. Construction staging requirements and tie-ins to existing infrastructure
14. Preliminary cost estimate
15. Preliminary construction schedule List of Basis of Design Drawings
 - Civil
 - Cover sheet
 - Index of Drawings
 - Legend, abbreviations and general notes
 - Existing conditions and demolition plan
 - Site layout plan
 - Foundation plans
 - Floor plans
 - Wall sections
 - Mechanical Process
 - Process Legend and General Notes
 - Process Piping Schedules
 - Process Flow Diagram
 - General Arrangement plans showing major equipment and process piping
 - Hydraulic profile
 - Major interconnecting process piping outside dewatering building
 - Process Equipment Schedule

Instrumentation and Electrical

- Piping and Instrumentation Drawings of Major Equipment and Chemical systems
- SCADA System Architecture
- Electrical Single Line Drawing
- Electrical Site Plan

The DBE will submit the Basis of Design Report to DUWA for review and comment. Comments on the draft Basis of Design report will be incorporated into a final Basis of Design Report and the detailed design drawings.

Task 3 - Critical Equipment Procurement - Dryer System & Critical Equipment Selection

The critical dryer system equipment will be selected by DUWA and integrated into the PROJECT design by the DBE. This task will include schedule analysis, identification of critical schedule dates and early execution of a Purchase Order for submittals and fabrication prior to approval of Phase II.

The DBE will analyze the project schedule and identify any other long lead, schedule critical equipment. This task will include schedule analysis and justification for the need to include early procurement of other critical equipment in this Phase I task. It is anticipated that the centrifuge equipment will need to be analyzed for Phase I procurement.

Task 4 - Detailed Design - 60% Design

After acceptance of the final BODR, DBE's Engineer shall prepare the following Technical Exhibits:

- Drawings in accordance to the Drawing List included within the BODR
- Technical Specifications
- Final design calculations

The Technical Exhibits shall show or describe the character, scope, and intent of, or relate to, the Work to be performed or furnished by or for the DBE, and shall be consistent with the final BODR. The DBE's Engineer shall provide in writing to DUWA the descriptions of any deviations in the Technical Exhibits from the final Basis of Design Report.

The DBE's Engineer shall take the Technical Exhibits to a point of 60% design completion of the final design. Technical Exhibits at the 60% level will, as appropriate, contain final site investigations; final project layout and features; detailed design of project features; detailed drawings and specifications; design calculations (civil, electrical, mechanical, structural); and

quality management reviews. The 60% design drawings shall generally include the general, civil, mechanical, structural, electrical, and instrumentation drawings. The control strategy will also be updated from the Basis of Design Report as required.

The DBE will be responsible for communication and submission of necessary engineering requirements to Michigan Department of Environment, Great Lakes and Energy (EGLE) and other state agencies for preliminary approvals within this task. The GMP proposal shall include all fees, completion of design costs and any remaining requirements for the DBE to acquire necessary state permits.

The DBE's Engineer shall develop the 60% Technical Exhibits, and furnish three paper copies and an electronic copy in both original file formats (i.e., MSWord; AutoCAD; etc.) and Adobe PDF format. These documents will serve as the GMP design documents.

Task 5 - Development of a Guaranteed Maximum Price (GMP) for Phase II

Once DUWA has reviewed and commented on the Detailed Design, the DBE will prepare and finalize the GMP Proposal. The purpose of the GMP Proposal is to delineate a firm and detailed Basis of Design, scope of work, price and schedule to complete the design and permitting, construction documents and subsequent construction and start-up of the facility. The GMP Proposal will be an "open book" proposal. An Open Book Proposal is developed in a collaborative and transparent manner where any and all line items and costs that sum up to the GMP will be provided by the delivery team at the necessary level of detail and are open to scrutiny and discussion by the stakeholders. The GMP Proposal will include the following:

- List of required permits and status
- Construction Documents (plans and specifications) developed to approximately 60% completion
- Construction schedule
- Construction sequencing plan
- Detailed fixed-price cost proposal including a risk register and schedule of values
- The risk register shall quantify the value and likelihood of the remaining project risks as the basis for the DBE's "contingency" in the phase II GMP.
- List of specific performance requirements
- Design review protocol
- Acceptance testing protocol

The DBE will establish a GMP utilizing a rigorous process including evaluation of the RFP, available as-builts, site visits, and detailed conceptual design meetings to establish initial site plans and project requirements. The DBE will conduct outreach for work they intend to

subcontract and engage the vendor community to solicit bid proposals for the project. The specialty subcontractor scopes will include receiving three alternate options. The GMP will be established utilizing detailed costs rather than budgets or allowances where feasible. The GMP delivery will be a completely open book process, sharing the entirety of the DBE's cost data. The elements of the GMP will include:

- General conditions
- Thermal Dryer Equipment Quote
- Centrifuge Equipment Quote
- Ancillary Equipment Quotes
- Demolition Cost
- Earthwork
- Structural concrete
- Rebar
- Miscellaneous Metals
- Underground piping
- Above ground piping
- Electrical
- Instrumentation & Controls
- SCADA Programming and System Integration
- Process equipment installation and commissioning
- Factory Acceptance Testing
- Initial 30 Day Acceptance Test
- Veolia O&M staff training
- All subcontractor and partner quotes
- Warranty Period 30 Day Stress Test (Phase III)

Scope of Work – Phase II

Phase II includes completion of the design documents and any remaining permitting, construction management, equipment procurement, subcontractor procurement, construction, engineering services during construction, startup, testing, commission, training, and as-builts.

Including but not limited to the following:

- 90% (Essentially Complete) Design Package & Review, with updated PROJECT Schedule.
- 100% Design Package.
- Temporary dewatering.
- Demolish and dispose of the belt filter presses.

- Furnish and install the new centrifuge.
- Furnish and install the dryers and ancillary equipment.
- Construction phase engineering services such as integration of the centrifuge and dryer control panels into the existing DWTF SCADA system.
- All necessary conveyance system(s) to deliver sludge to the new dewatering centrifuge, and from all of the centrifuges to the dryer system
- All necessary conveyance system(s) between components of the new dryer system.
- All necessary conveyance system(s) from the new dryer system to truck loadout.
- Concrete foundations, pads, tanks, structural components, walkways, stairs, platforms, stacks, handrail, grating and covers,
- Equipment installation, piping to and from the dryer system, interconnecting piping, manual isolation valves, anchor bolts, epoxy/adhesive for anchors.
- Calibration or auxiliary gas cylinders.
- Chemical addition systems, such as polymer
- Motor control center, motor starters, adjustable frequency drives, main disconnects, breakers, or power supply.
- Field wiring, interconnecting wiring, conduit, wiring terminations at equipment, local equipment disconnects, local equipment control panels, junction boxes, and wiring terminations at control panels.
- All miscellaneous electrical and mechanical hardware.
- All required modifications to the existing building structure, electrical, plumbing or HVAC systems.
- Punch-List documentation and resolution.
- PLC 5 Replacements
- Final inspection
- Update the PROJECT Schedule on a weekly basis.
- Start-Up and Commissioning.
- Issue 2 year Warranty, Operations & Maintenance (O&M) Manuals, and record drawings(1) EA - 30 Day Acceptance Test Period
- PROJECT Close-out

Scope of Work - Phase III – Warranty Period and Additional Stress Test

DUWA will require a two (2) year warranty period upon substantial completion of phase II, which includes an acceptance test of the entire system for a 30 day period. DUWA may also require an additional 30 day stress test to be provided during the two (2) year warranty period with timing to be determined at the discretion of DUWA. The DBE shall include the cost of one representative to be on-site to witness and document the system performance during this test period.

The additional performance/stress test may be conducted during the glycol season under which the DWTP will be receiving significant deicing fluid into the plant.

Stress Test Performance Requirements (within 30 day period):

1. 10 days at Daily Average
2. 7 continuous days at Max Month Capacity
3. 7 continuous days at Full Capacity

| Design Criteria | Daily Avg. | Max. Month | Capacity |
|--------------------------------------|-------------|------------|----------|
| Wet Mass Processed, WTPD | 140.0 | 156.0 | 175.0 |
| Dewatered Cake Solids, %TS | 28.5 | 26.0 | 26.0 |
| Cake Bin Storage Fill, % of Level | 85.0 | 85.0 | 85.0 |
| Cake Bin Solids Retention Time, hrs. | 8.1 | 7.3 | 6.4 |
| Feedstock Loading Rate, lb TS/hr | 3,630 | 3,380 | 3,790 |
| Dryer Operation Uptime, % hrs/dy | 91.5% | 100% | 100.0% |
| Inlet Drying Temperature, deg F | See Note * | <525 | 550 |
| Outlet Dry Solids Temperature, deg F | 95 - 115 | < 120 | <100 |
| Dried Solids Content, %DS | 90.0 – 92.0 | > 92.0 | 92.0 |
| Drying Evap. Demand, lb H2O/hr | 8,830 | 9,370 | 11,000 |

** Inlet temperature safely operating in range of 330 to 500 deg F for thermal oil and up to 280 deg F for hot water.*

EXHIBIT C

INSURANCE AND BOND REQUIREMENTS

DBE shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damages to property which may arise from, or in connection with, the performance of the Work hereunder by the DBE, its agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the DBE's bid.

A. MINIMUM INSURANCE COVERAGE

1. Without in any way limiting DBE's liability hereunder, DBE shall maintain the following minimum limits of insurance at its own expense during the performance of the Work, with insurance companies rated A-VII or higher by A.M. Best's, to cover the risk of losses associated with this Agreement:

| Coverage | Limits |
|---|---|
| (i) Workers Compensation | Statutory; including requirements of the Labor Code of the State of Michigan and Employers Liability insurance |
| (ii) Employers Liability | \$1,000,000 each accident \$1,000,000 each employee \$1,000,000 policy limit |
| (iii) Commercial General Liability written on ISO CG 00 01 coverage form or its equivalent. No limiting or exclusionary endorsements material to the DBE's obligations in the Agreement may be attached. Coverage shall include a) contractual liability; b) explosion, collapse & underground perils (XCU); c) third-party over action coverage; d) Riggers Liability endorsement for the use of cranes, booms or other rigging equipment, if applicable; and e) amendment of the aircraft exclusion to include coverage for the use of commercial UAVs (drones), if applicable. | \$5,000,000 each occurrence for property damage and bodily injury (PD/BI) \$5,000,000 general aggregate \$5,000,000 products/completed operations aggregate |
| (iv) Automobile Liability – covering all owned, hired and non-owned autos (Policy shall be endorsed with MCS-90) | \$2,000,000 combined single limits – each accident |
| (v) Umbrella/Excess Liability providing coverage at least as broad as the underlying policy(ies) | May be utilized to meet limits outlined above |

| | |
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| (vi) Property | DBE shall be solely responsible for protecting and insuring all property owned or leased or used by the DBE in conjunction with the Work during the term of this Agreement |
| (vii) Professional Liability (Errors & Omissions), if applicable to the Work – Coverage shall not exclude Technology Errors & Omissions coverage if the DBE will have access to any Veolia Systems (including but not limited to any Veolia-owned or managed IT asset (server or application) wherever it is hosted (the public cloud, Veolia’s AWS instance, Veolia’s data center, etc.) | \$2,000,000 each claim \$2,000,000 annual aggregate |
| (viii) DBE’s Pollution Liability, if applicable to the Work | \$5,000,000 each claim \$5,000,000 annual aggregate |
| (ix) Valuable Papers Coverage, if applicable to the Work | Replacement cost covering “All Risk Perils” for damage to all drawings, specifications, plans, computations, sketches, test data, survey results, photographs, renderings, or other paper or reproductions |

2. DBE’s pollution liability policy in (viii) above shall provide coverage for:
 - a. Bodily injury, sickness, disease, sustained by any person, including death;
 - b. Property damage, including physical injury to or destruction of third-party tangible property including the resulting loss of use thereof;
 - c. Cleanup costs, and the loss of use of third-party tangible property that has not been physically injured or destroyed including diminution of value and natural resources damages;
 - d. Defense costs, including costs, charges, and expenses incurred in the investigation, adjustment, or defense of claims;
 - e. Contractual liability coverage, e.g., coverage for liability assumed by the DBE under this Agreement; and
 - f. The full scope of DBE’s operations as described within the scope of work for this Contact.

3. The pollution liability coverage may not contain restrictions for:
 1. Insured versus insured actions (however, exclusions for claims made between insured within the same economic family are acceptable);
 2. Completed operations in any coverage part of the policy for either the insured or additional insured;
 3. Damage to third-party property that cannot be used or is less useful because of

- operations of the DBE; or
4. Work performed by the DBE.

4. In the event that the state where the Work is to be provided allows an employer to opt out of Workers Compensation coverage, the DBE shall nevertheless obtain a Workers Compensation policy complying in all respects with this provision.

5. Prior to providing any Work under this Agreement, the DBE will provide DUWA with an ACORD certificate of insurance evidencing that the above described coverage are in full force and effect. DBE will include DUWA, its parent companies, subsidiaries, affiliates, and each of their officers, directors, employees, agents, representatives and Client (if applicable), (collectively "DUWA's Additional Insured") as additional insured with respect to coverage (iii), (iv), and (viii), (and (v) if applicable) above. All policies shall be primary and non-contributory, provide a full waiver of the insurer's right of subrogation in favor of DUWA Additional Insured and/or any sub-Contractor with respect to claims that are covered or should have been covered by valid and collectible insurance provided hereunder and said waiver will extend to any deductibles, co-insurance or retentions. DBE will not permit cancellation or non-renewal of its insurance coverage to be provided hereunder without thirty (30) days' written notice to DUWA.

6. All policies shall be issued on occurrence-based forms, except for coverage (vii) and (viii), which may be issued on a claims-made form. All claims-made policies will at least be retroactive to the earlier of the date of this Agreement or the commencement of the DBE's services in relation to the Work, and shall be maintained for three (3) years after the expiration or termination of this Agreement.

7. These insurance requirements will not be construed in any matter as waiving, restricting or limiting DUWA's rights or DBE's obligations under this Agreement. DUWA does not represent that coverage or limits herein will be adequate to protect DBE. DBE remains responsible for any liability not paid by insurance including deductibles and retentions.

B. ADDITIONAL INSURANCE

1. **Builders' Risk Insurance.** DBE shall procure a builders risk insurance policy for the full replacement value of the Project. DBE shall purchase and maintain during the life of the Project included below at the Base insurance against loss to the Work sufficient to replace the Work. Such coverage shall be written on an "all risk" causes of loss builders risk coverage form at replacement cost and without a co-insurance penalty and as follows:

a. Not limited to the following, policy perils shall include: theft, vandalism, malicious mischief, testing and startup, earth movement, terrorism (certified and non-certified), delay in completion or start up, mold, fungus, collapse, earth movement, flood, civil authority, windstorm, building ordinance and demolition.

b. Not limited to the following, the policy shall cover: underground work, foundations, sidewalks and paving, landscaping, falsework, temporary buildings, trailers, laydown areas, supplies, materials, machinery, equipment, fixtures, debris removal,

property in transit, property stored offsite, business interruption costs, extra expense costs and soft costs including but not limited to reasonable compensation for professional fees and general conditions.

c. Losses to the Work shall be replaced by the DBE at no expense to DUWA. Any deductible or sub-limited deductible shall not exceed \$50,000.

d. The insurer shall waive all rights of subrogation against DUWA.

e. Coverage including permission for temporary occupancy shall be maintained until final acceptance by DUWA and final payment has been made.

f. The policy shall allow for partial utilization of the Work by DUWA and Veolia.

g. The policy shall be maintained in effect until final payment is made unless otherwise agreed to in writing by DUWA with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

Losses shall be adjusted by and made payable to DBE as fiduciary for the Builders Risk Insured. DBE shall pay its subcontractors their just shares of insurance proceeds received by DBE and shall cause such subcontractors to make payments to their sub-subcontractors in similar manner.

2. Certificates of insurance shall be either emailed in pdf format to: Lambrina.tercala@ohm-advisors.com or mailed to the following postal address:

To DUWA: Rick Sollars, Chairman
Downriver Utility Wastewater Authority
25605 Northline Road
Taylor, MI 48180

With copies to:

OHM Advisors
c/o Lambrina Tercala
34000 Plymouth Road
Livonia, MI 48150
Lambrina.tercala@ohm-advisors.com

C. PAYMENT AND PERFORMANCE BONDS

1. The DBE shall furnish to DUWA and keep in force during the term of the Agreement performance and labor and material payment bonds, guaranteeing that the DBE will perform its obligations under the Agreement and will pay for all labor and materials furnished for the Work. Such bonds shall be issued in a form and by a Surety reasonably acceptable to DUWA, shall be submitted to DUWA for approval as to form, shall name DUWA as obligee, and shall be

in an amount equal to at least 100% of the Contract Price (as the same may be adjusted from time to time pursuant to the Agreement). The DBE shall deliver the executed, approved bonds to DUWA prior to the execution of the Agreement. Neither the DBE nor any Sub-Contractor may begin the Work until the required bonds are delivered to DUWA.

2. The costs of all bonds furnished hereunder shall be included in the Contract Price.

3. Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Agreement, the DBE shall promptly furnish a copy of the bonds to DUWA or shall permit a copy to be made.

4. If any Surety hereunder makes any assignment for the benefit of creditors, or commits any act of bankruptcy, or is declared bankrupt, or files a voluntary petition for bankruptcy or in the reasonable opinion of DUWA is insolvent, the Design-Builder shall immediately furnish and maintain another Surety satisfactory to DUWA.

D. GENERAL TERMS REGARDING INSURANCE AND BONDS

1. If DUWA is damaged by the failure of the DBE to purchase or maintain any insurance or bond required by the Agreement then the DBE shall pay all costs incurred by DUWA, including but not limited to reasonable attorney's fees.

2. Any insured loss under the required policies of property insurance will be adjusted with DUWA and will be made payable to DUWA as trustee for the insured. DUWA shall deposit in a separate account, and shall distribute monies received, based on any agreement that the parties in interest may reach. If no other distribution agreement is reached, the damaged Work shall be replaced or repaired, the monies received shall be used for that purpose and the Work involved and resulting costs shall be covered by Change Order. DUWA as trustee shall have the power to adjust and settle any loss with the insurers unless a party in interest objects in writing within fifteen (15) days following the occurrence of loss to DUWA's exercise of this power. If an objection is made, DUWA, as trustee, shall settle with the insurers pursuant to any agreement that the parties in interest may reach.

3. If by the terms of the insurance a mandatory deductible is required, the DBE shall be responsible for the deductible amount in the event of a paid claim. The DBE shall also be responsible for any co-insurance penalties.

EXHIBIT D: WARRANTY FORM

Thermal Dryer System

(Project/Component)

Downriver Wastewater Treatment Facility

(Location)

We hereby warrant the _____ (Project/Component) that we have constructed for a period of two years from _____ (Date), which is the date of Substantial Completion of the Project or within such longer period of time as may be prescribed by Applicable Law or by the terms of any applicable special guarantee or extended warranty required by the Contract Documents.

The following are excluded from the provisions of this warranty:

1. Damage due to improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage;
2. _____

We agree to provide all labor, materials, and equipment necessary to promptly repair or replace any and all deficient or defective Work, or Work failing to fulfill any of the requirements of the Contract Documents, provided that the Work was properly maintained and used, together with any other Work that is damaged during repair or replacement, without expense to DUWA of this warranty (including any additional re-inspection fees). We will, within five (5) days after receipt of written notice of such defects, provide on-site troubleshooting services, and within ten (10) days after receipt of written notice, commence to repair or replace the same together with any other work which may be damaged or displaced in so doing.

In the event of our failure to comply with the abovementioned warranty, we do hereby authorize DUWA to proceed to have the defect repaired and made good at our expense, and we will pay the cost therefor within thirty (30) calendar days of submission of application for payment including reasonable and customary evidence of such costs. We acknowledge and agree that DUWA has an express right to enforce this warranty or to proceed to have the defect repaired and made good at our sole expense should DBE fail to timely do so.

The warranty provided herein shall not be in lieu of, but shall be in addition to, any warranties or other obligations otherwise imposed by the Contract Documents and by Applicable Law.

Design Build Entity: _____

Signature: _____

Title: _____

Date: _____

EXHIBIT E AS-BUILTS

Below is a list of Facility-related as-built drawings.

1. March 2017 Record Set – 224 drawings

SAMPLE

ATTACHMENT D – DUWA’S POLICIES AND PROCEDURES

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| <p>Allen Park Belleville Brownstown Twp. Dearborn Heights Ecorse Lincoln Park</p> | <p style="text-align: center;">Downriver Utility Wastewater Authority</p> <p style="text-align: center;">25605 Northline Road • Taylor, Michigan 48180</p> | <p>River Rouge Riverview Romulus Southgate Taylor Van Buren Twp. Wyandotte</p> |
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ATTACHMENT D – APPLICABLE DUWA POLICIES

4. PURCHASE AND PROCUREMENT

4.01 General. In general, when purchasing goods and services, preference will be given to vendors located in one of the DUWA member communities, except in cases where either the price is greater and/or service and availability are limited. Further, for all purchases DUWA will endeavor to obtain the lowest prices for the purchase of any goods and/or services.

4.02 Purchase Approval & Limits.

a. Purchase Value - Under \$500. The System Manager may authorize purchases up to \$500.

b. Purchase Value - Between \$500 and \$10,000. The System Manager may authorize purchases up to \$10,000. Prior to any purchase orders being issued for any purchases with a cost between \$500 and \$10,000, a minimum of three (3) informal quotes shall be obtained for the requested goods and/or services unless it is deemed impractical or impossible (in the System Manager's discretion) to get such quotes.

c. Purchase Value - Between \$10,000 and \$20,000. The System Manager, with the prior consent of the Commission Chairperson (or alternative person designated by the Board), may authorize purchases up to \$20,000. Prior to any purchase orders being issued for any purchases with a cost between \$10,000 and \$20,000, three (3) informal bids shall be obtained for the requested goods and/or services unless it is deemed impractical or impossible (in the System Manager's discretion) to get such quotes.

d. Purchase Value - Over \$20,000. The System Manager must present a request for expenditures exceeding \$20,000 to the Board for approval. Formal bids shall be obtained for all purchases in excess of \$20,000.

e. Exceptions. Exceptions to the above purchase limits for goods and/or services are as follows:

- i. Payroll
- ii. Debt Requirement
- iii. Sewage Disposal Services
- iv. Utilities
- v. Professional Services (covered by Section 4.07)

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- vi. Emergency Purchases
- vii. Any other recurring expenditure with an annual purchase value exceeding \$20,000 which is approved by the Board through the budget process.

f. Informal Quotes. At least three (3) verbal quotes shall be obtained informally, either in person, or over the telephone or fax, providing that all telephone conversations and personal contacts are reduced to writing, including the name and title of the person providing the quote, and retained as specified in the records retention policy.

g. Informal Bids. At least three (3) written bids shall be obtained informally, either in person, in writing or over the telephone or fax, providing that all telephone conversations and personal contacts are reduced to writing, including the name and title of the person providing the quote, and retained as specified in the records retention policy.

h. Formal Bids. The procedure for formal bids is specified in Section 4.06.

i. Bidding Waived Expenditures. A bidding waived expenditure occurs when there are less than three (3) firms which are capable of supplying the goods and/or services needed. The Board must give its approval to waive the formal bidding procedure for a specific expenditure prior to any purchase orders being issued.

j. Emergency Purchases. An emergency purchase is any expenditure that is immediately required to protect the health, safety and/or welfare of a community or person(s). The authority for initiating such an expenditure rests with the System Manager (or approved designate). The System Manager shall immediately inform the DUWA Board of the need for, amount of, and nature of the emergency expenditure via email. At the next scheduled Board meeting, the System Manager will present documentation on the expenditure amount and appropriate justification of the emergency expenditure for approval.

4.03 Procedures for Purchase Orders. Purchase orders and backup documentation shall be maintained by the Accountant. Purchase orders shall be numbered consecutively and tracked via a purchase order log. The status of every purchase order shall be entered into the log, including the notation "VOID" where applicable.

4.04 Non-recurring Purchases. Prior to the purchase of goods and/or services, the individual placing the order shall complete a purchase order form and forward it to the Accountant with the appropriate backup documentation attached. Upon satisfactory review and coding of the account information, the Accountant will then route the purchase order and attachments to the System Manager for approval. Once approved,

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the purchase orders will be routed to the Accountant, to be attached to the invoices when received.

4.05 Recurring Purchases. Recurring purchases of goods and/or services shall follow the informal quote, informal bid, or formal bid procedure as designated in Section 4.02 based on the value of the recurring purchases for the fiscal year.

- a. Recurring purchases of services does not include professional services, which are covered in Section 4.07. A purchasing quotes/bids form must be completed. The order shall be placed with the supplier offering the best combination of price, service and availability. An effort will be made to purchase from businesses located in the member communities. A purchase order form is completed next and is forwarded with the purchasing quotes form and all pertinent backup documentation to the Accountant, who upon satisfactory review and coding of the account information, shall route the purchase order and attachments to the System Manager for approval. Once approved, the purchase orders will be routed to the Accountant, to be attached to the invoices when received.
- b. Once the initial quote and bid process is completed for reoccurring purchases, DUWA may continue to use the same vendor for those recurring purchases, however, DUWA should periodically request new quotes or bids for recurring purchases to ensure maximum value for DUWA funds.
- c. If there are less than three (3) suppliers from whom the goods and/or services can be purchased, the purchasing quotes/bids form shall include as many quotes/bids as are available with a notation indicating that no other vendors offer the good and/or services.

4.06 Formal Bids Procedure

- a. It shall be the policy of DUWA to obtain formal written bids from multiple vendors whenever goods and/or services are required, the purchase value of which exceeds \$20,000.
- b. The formal bidding procedure may however be waived by the Board if documentation is presented to the Board that the goods and/or services being sought were available only from a sole source. An example of this would be an exclusive distributorship for a region, a patent protected part or piece of equipment. A sole source is not defined as the only known supplier or the only supplier in the area.
- c. Formal Bids are any solicitation in which an advertisement is placed in the local paper and/or any appropriate trade journal and/or electronically on a

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website such as the Michigan Intergovernmental Trade Network (MITN) or BidDirect soliciting a written bid for the goods and/or services requested. Purchases that are made through a recognized regional or state purchasing program that meets DUWA’s formal bidding requirements is deemed to meet the intent of this policy.

- d. In conducting formal bids, DUWA’s staff or System Manager must perform the following procedural steps:
 - i. DUWA must prepare the specifications, potential list of bidders or target bidders, a schedule for when the goods and/or services is required, duration of advertisement, copy of advertisement defining the date and time of the bid opening. This information must be presented to the Board prior to placing any notice or advertisement in any publication. A copy of the proposed advertisement and any supplementary information will be included in the Request for Board Action sheet. A copy of the complete final proposal document will be available at the Board Meeting.
 - ii. DUWA then prepares and places the advertisement. There should be a minimum of fourteen (14) calendar days between the time of advertisement and the opening of bids.
 - iii. Bids received are to be date stamped and filed in a secure location until the opening.
 - iv. Bids are opened publicly in the DUWA administrative office at the exact time specified in the publication. Once bids are opened and reviewed, the System Manager prepares a Request for Board Action for the Board indicating the name of the bidders, the amount of the bid and a recommendation as to award of bid. Staff also notifies all bidders when the bid is to be awarded by the Board.
 - v. If all bids are equal in price, quality and service, the contract shall be awarded to the vendors located in the DUWA member communities (listed in Section **Error! Reference source not found.**).
 - vi. The DUWA reserves the right to reject any and all bids, proposals or statements of qualifications, and to select the bid, proposal or statement of qualifications deemed in the best interest of the DUWA.
 - vii. All formal bids are to be kept on file as specified in the records retention policy.
 - viii. Any and all of these procedures may be waived by the Board per their rules and regulations.

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- ix. The use of state or federal purchasing consortium pricing or bids within the last 18 months shall be considered in compliance with the requirements of this policy.

4.07 Procurement of Professional Services Policy

- a. Because it is difficult to objectively evaluate and compare professional services, public policy and the laws of the State of Michigan do not require that the State or any local community pursue a competitive bidding procedure for the procurement of such services. Such services include, for example, legal services, accounting, and engineering services. The DUWA, however, utilizes Request for Proposals/Qualifications for the procurement of professional services.
- b. Where Board or System Manager deem it necessary to pursue competitive bidding for professional services, DUWA shall post at its offices, and publish in a print media or by website, a notice requesting proposals/qualifications for professional services contracts. Said notice shall specify the type of service(s) requested, the duration of the proposed contract, if possible, and any special qualifications required by DUWA under the particular contract.
- c. DUWA shall accept proposals for professional services for a period of no less than fourteen (14) calendar days from the initial date of posting or publication.
- d. After the expiration of the bid period, the DUWA staff shall review the proposals to select a group of qualified applicants for interviews by the Board. As part of this process the System Manager and/or Board may request and/or appoint a committee to review the proposals for the purpose of recommending preferred firm(s) to the Board. The DUWA Board may conduct interviews of selected individuals or firms, providing each Commissioner the opportunity, at a public meeting, to question the potential service provider(s).
- e. The DUWA Board will then review the proposals for professional services submitted and select the firm that best satisfies DUWA's requirements under said contract for professional services.

4.08 Processing of Claims for Payment/Invoices

- a. Employees and/or independent contractors of the DUWA have a list of the dates by which invoices must be received to be included in the current month's check run; the deadline is generally seven (7) calendar days prior to the Board meetings. All vendors should be made aware that the DUWA pays invoices within thirty (30) calendar days of receipt when received by the

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deadline; however, checks are prepared and signed once a month. A special check run will only be done if there are checks that need to be issued to avoid service charges being added or loss of service or in the event of an emergency expenditure. Therefore, those invoices received after the deadline will be approved for payment at the next Board Meeting.

- b. When placing an order, the vendor must be notified that the DUWA is exempt from sales and use taxes. Requests for written verification of the DUWA's tax-exempt status shall be forwarded to the Accountant for handling.
- c. When goods or services are ordered, a purchase order is required. Required information includes description of the item(s) being purchased, item price(s) or vendor-supplied quote(s), itemization of any additional charges such as shipping and handling or labor, department which will be using the item(s) purchased (e.g., operations and maintenance or administration), location at which the item(s) shall be primarily used, and the budget account number(s) or line item description to be charged for the purchase.
- d. Purchase orders are then approved by the System Manager. The original signed purchase order is then forwarded to the Accountant, to be matched to the invoice when received. If the employee and/or independent contractor who initiated the purchase order needs a copy, one should be made before they forward the original to the Accountant.
- e. The employee and/or independent contractor and/or independent contractor accepting delivery of the merchandise must verify receipt of the correct merchandise by signing packing slip or other documentation and forwarding them to the Accountant to be included as backup documentation for that purchase.
- f. Purchase orders will not be required for minor purchases, such as gas and when parts are purchased from local stores. Employees and/or independent contractors must obtain a receipt, sign the receipt and note on the receipt where the costs are to be charged. This receipt is to be forwarded to the Accountant. Purchase orders are also not required for normal recurring items, such as utilities, floor mats, etc.
- g. All purchases are subject to the availability of budgeted funds.

4.09 Selection of Official Newspaper(s) or Online Publication

- a. The selection of an official newspaper(s) for the publication of the DUWA's notices and records is accomplished through a Request for Proposals/Qualifications process, the timing and frequency of which is determined by the Board upon the recommendation of the System Manager. In

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the alternative, the Board may elect to place all notices online at www.duwauthority.org.

b. In the event that the Board decides to select an official newspaper, the System Manager will establish a listing of potential print sources. These sources are notified and provided opportunity to respond. Additionally, DUWA posts at its office and in a print media a notice requesting proposals/qualifications for official newspaper services. The prepared Request for Proposals/Qualifications must assure that prospective bidders are advised of the following prerequisites and requirements:

- i. Newspapers submitting bids are required to be qualified to publish legal notices under the laws of the State of Michigan.
- ii. Bidders are required to quote an advertising rate per column inch for the publishing of DUWA Board' proceedings, notices and other records required by the By-Laws of the DUWA to be published, or that the DUWA determines it wants published.
- iii. Newspapers must also submit as part of their bid a sworn statement of circulation within the confines of the DUWA's service area. Such statement should set forth the average paid subscriptions and/or free circulation of said newspaper over the last three-month period.

4.10 Anti-Nepotism Policy

- a.** A member of the DUWA Board shall not participate in any vote, selection, discussion, interview or other official action regarding the awarding of purchasing contracts or professional service contracts in which he/she, or anyone within the sixth degree of consanguinity or affinity to him or her, will derive a direct financial benefit. This includes the following:
 - i. Spouse
 - ii. Parents or spouse's parents
 - iii. Grandparents or spouse's grandparents
 - iv. Children
 - v. Siblings or spouse's siblings
 - vi. Brothers-, sisters-, sons- or daughters-in-law.

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11. ETHICS, HARASSMENT, CONFLICT OF INTEREST, AFFIRMATIVE ACTION

11.01 Ethics

- a. DUWA is a public body and seeks to avoid all appearances of impropriety or other behavior inconsistent with the highest level of integrity. Behavior inconsistent with the highest standards of integrity and business or personal ethics is subject to discipline, up to and including discharge.
- b. DUWA has zero tolerance for intentional acts of deception or illegal behaviors.

11.02 Discrimination or Harassment Prohibited

- a. DUWA is committed to a work environment in which all individuals are treated with respect and dignity. Each individual has the right to work in a professional atmosphere that promotes equal employment opportunities and prohibits discriminatory practices, including harassment. Therefore, DUWA expects that all relationships among persons in the workplace will be businesslike and free of bias, prejudice, and harassment.
- b. DUWA expressly prohibits discrimination and/or harassment on the basis of race, sex, color, age, religion, height, weight, national origin, marital or familial status, handicap, genetic information or participation in the armed services. DUWA specifically prohibits illegal harassment, including by way of example, derogatory or objectionable conduct or comments, based upon any characteristic protected by federal or state civil rights laws. DUWA does not condone illegal discrimination or harassment of its employees by their supervisors, co-workers, or third parties on DUWA premises and over whom DUWA has control. Conduct in violation of this policy will result in discipline, up to and including discharge, at the discretion of DUWA.

11.03 Conflicts of Interest Prohibited

- a. DUWA expects its employees to perform their work according to the highest ethical standards of conduct. Employees are expected to devote their best efforts to the interests of DUWA. Business dealings that appear to create a conflict between the interests of DUWA and an employee and/or independent contractor are unacceptable. DUWA recognizes the right of employees to engage in activities outside of their employment which are of a private nature and unrelated to DUWA. However, the employee and/or independent

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| <p>Allen Park Belleville Brownstown Twp. Dearborn Heights Ecorse Lincoln Park</p> | <p style="text-align: center;">Downriver Utility Wastewater Authority</p> <p style="text-align: center;">25605 Northline Road • Taylor, Michigan 48180</p> | <p>River Rouge Riverview Romulus Southgate Taylor Van Buren Twp. Wyandotte</p> |
|---|---|--|

contractor must disclose any possible conflicts so that DUWA may assess and prevent potential conflicts of interest from arising. A potential or actual conflict of interest occurs whenever an employee and/or independent contractor is in a position to influence a decision that may result in a personal gain for the employee and/or independent contractor or an immediate family member (i.e. spouse or significant other, children, parents, siblings) as a result of DUWA's actions.

- b. If an employee and/or independent contractor has any question whether an action or proposed course of conduct would create a conflict of interest, he/she should immediately contact the System Manager to obtain advice on the issue. A violation of this policy will result in immediate and appropriate discipline, up to and including immediate termination.
- c. Employees may not engage in any business transaction or have financial or other personal interest, direct or indirect, which is incompatible with the proper discharge of official duties in the public interest or which would tend to impair independence of judgment or action in the performance of official duties. No employee and/or independent contractor shall solicit or accept from any person, business or organization any gift of greater than minimal value (including money, tangible or intangible personal property, food, beverage, loan, promise, service, or entertainment of greater than minimal value) for their personal benefit if it may reasonably be inferred that the person, business or organization:
 - i. Seeks to influence action of an official nature or seeks to affect the performance or nonperformance of an official duty; or
 - ii. Has an interest which may be substantially affected directly or indirectly by the performance or nonperformance of an official duty.

11.04 Affirmative Action and Equal Opportunity Employer Policy

- a. It is the policy of the DUWA to provide for and promote equal employment opportunity in employment compensation and other terms and conditions of employment without discrimination based on age, race, creed, color, national origin, gender, sexual orientation, disability, marital status, veteran status, genetic predisposition, or carrier status.
- b. The DUWA is committed to assuring equal employment opportunity and equal access to services, programs and activities for individuals with disabilities. It is the policy of the DUWA to provide reasonable accommodation to a qualified individual with a disability to enable such individual to perform the essential functions of the position for which he/she is applying or in which he/she is employed.

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- c. Further, it is the policy of the DUWA to provide reasonable accommodation for religious observers. The policy applies to all employment practices and actions. It includes, but is not limited to, recruitment, job application process, examination and testing, hiring, training, disciplinary actions, rate of pay or other compensation, advancement, classification, transfer, reassignment and promotions. The DUWA designated person for issues concerning Affirmative Action/Equal Employment Opportunity is the System Manager.

12. SAFETY AND DRUG-FREE WORKPLACE

12.01 Weapons and Safety

a. Weapons Prohibited.

- i. Employees, vendors and subcontractors may not, at any time while on any property owned, leased or controlled by DUWA, in any location in which the employee and/or independent contractor represents the DUWA for business purposes, or while engaging in DUWA business, possess or use any weapon. This restriction applies regardless of whether an individual possesses a concealed weapon permit or is allowed by law to open carry or possess a weapon.
- ii. Weapons include, but are not limited to, guns, knives or swords with blades over four inches in length, explosives, and any chemical whose purpose is to cause harm to another person.
- iii. Possession of a weapon can be authorized by the Board to allow security personnel or a trained employee and/or independent contractor to have a weapon on DUWA property when this possession is determined necessary to secure the safety and security of DUWA employees. Only the Chairman, or his designee, may authorize the carrying of or use of a weapon.
- iv. Employees who violate this policy will be subject to disciplinary actions, up to and including employment termination. The employment termination would be characterized as termination for cause. Contracts with vendors or subcontractors may be contractually terminated for violation of the policy.

b. Employee and/or independent contractor safety

- i. All employees with access to areas beyond the administrative offices, must sign the Employee and/or independent contractor Safety

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Awareness form. Those employees with access to hazardous areas must sign the Release, Waiver and Indemnification for Access to Hazardous Areas of the DUWA Facilities form. The Administrative Assistant will develop and maintain these forms.

c. Drug-free workplace

- i. DUWA intends to help provide a safe and drug-free work environment for our employees.
- ii. This policy also applies to any contractors or subcontractors doing business for or on behalf of DUWA.
- iii. The DUWA explicitly prohibits:
 1. The use, possession, solicitation for, or sale of narcotics or other illegal drugs, alcohol, or prescription medication without a prescription on DUWA premises or while conducting DUWA business.
 2. Being impaired or under the influence of legal or illegal drugs or alcohol away from the DUWA premises, if such impairment or influence adversely affects the employee and/or independent contractor's work performance, the safety of the employee and/or independent contractor or of others, or puts at risk DUWA's reputation.
 3. Possession, use, solicitation for, or sale of legal or illegal drugs or alcohol away from the DUWA premises, if such activity or involvement adversely affects the employee and/or independent contractor's work performance, the safety of the employee and/or independent contractor or of others, or puts at risk DUWA's reputation.
 4. The presence of any detectable amount of prohibited substances in the employee and/or independent contractor's system while at work, while on the premises of the DUWA or while conducting DUWA business. "Prohibited substances" include illegal drugs, alcohol, or prescription drugs not taken in accordance with a prescription given to the employee and/or independent contractor.
- iv. The DUWA may conduct drug and/or alcohol testing under any of the following circumstances:

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|---|--|--|

1. **Random Testing:** Employees may be selected at random for drug and/or alcohol testing at any interval determined by the DUWA.
 2. **For-Cause Testing:** The DUWA may ask an employee and/or independent contractor to submit to a drug and/or alcohol test at any time it feels that the employee and/or independent contractor may be under the influence of drugs or alcohol, including, but not limited to, the following circumstances: evidence of drugs or alcohol on or about the employee and/or independent contractor's person or in the employee and/or independent contractor's vicinity, unusual conduct on the employee and/or independent contractor's part that suggests impairment or influence of drugs or alcohol, negative performance patterns, or excessive and unexplained absenteeism or tardiness.
 3. **Post-Accident Testing:** Any employee and/or independent contractor involved in an on-the-job accident or injury under circumstances that suggest possible use or influence of drugs or alcohol in the accident or injury event may be asked to submit to a drug and/or alcohol test. "Involved in an on-the-job accident or injury" means not only the one who was or could have been injured, but also any employee and/or independent contractor who potentially contributed to the accident or injury event in any way.
- v. If an employee and/or independent contractor is tested for drugs or alcohol outside of the employment context and the results indicate a violation of this policy, or if an employee and/or independent contractor refuses a request to submit to testing under this policy, the employee and/or independent contractor may be subject to appropriate disciplinary action, up to and possibly including discharge from employment. In such a case, the employee and/or independent contractor will be given an opportunity to explain the circumstances prior to any final employment action becoming effective.

ATTACHMENT E – VEOLIA’S TECHNICAL MEMORANDUM RE BIOSOLIDS
GENERATION @ DWTF

DUWA – Biosolids Cake Generation Analysis

Downriver Wastewater Treatment Facility in Wyandotte, MI

Technical Memo – Performance Based Design (Sept. 2019)

FROM:

Tim Muirhead, P.E.
Biosolids SME, Veolia

TO:

Vyto Kaneulis, P.E. and Lambrina Tercala, P.E.
– DUWA System Managers, OHM Advisors

DATE:

September 27, 2019

CC:

Kelly Irving and Jason Tapp – DWTF O&M Team,
Veolia and Bill Hanley – Biosolids CPM, Veolia

Summary

This Veolia prepared Technical Memo (TM) is provided to historical context and updated cake biosolids quality and dewatering data at the Downriver Wastewater Treatment Facility (“DWTF”). The biosolids cake generated at the DWTF is the basis for conceptual design criteria and performance metrics of the **Biosolids Drying Facility Project** (“BDFP”). This analysis is also used as the technical basis for interested respondents (dryer equipment/technology supply bidders and progressive DB teams) of DUWA’s procurement RFPs for the BDFP.

The BDFP design criteria have been developed on recent performance of the dewatering centrifuges. The analysis relies upon the recent months of quasi “*steady-state*” dewatering performance (e.g. May thru Aug. 2019), Veolia’s process modeling and O&M contract basis, as well as context of the historical dewatering data.

Dewatering Data

The **Downriver Wastewater Treatment Facility (DWTF)** produces raw (undigested) dewatered cake biosolids from its treatment of wastewater. Veolia’s biosolids processing and management scope of the O&M Agreement is based upon the collection and hauling of the dewatered cake biosolids to existing or approved disposal sites.

Veolia’s biosolids fee is based upon an annual production of 47,981 wet tons for hauling and disposal. On a planned seven (7) days per week dewatering schedule, the contract budget allows for a calculated annualized cake production level of 131.5 wet tons per day (WTPD). At a target dry solids (%TS) content for the dewatered cake biosolids of 25.0% (based upon a blended operation of the existing dewatering equipment (belt filter presses and centrifuges), the equivalent annual and daily dry mass of cake biosolids for processing and final disposition is approximately 11,995 dry tons (or 32.9-DTPD). This data is the contract baseline that Veolia used to launch its assessment of the technical design criteria for the BDFP.



Historical Analysis

Veolia has analyzed the historical data for DWTF biosolids cake production on the basis of hauling information from Wayne County. The daily percent dry solids (%TS) data of the dewatered cake during these historical monthly and annual hauling periods was also analyzed to assess the dry mass levels and seasonal variations.

The following table summarizes the biosolids cake production (wet tons) as hauled away from the DWTF over the past six years (2013 thru 2018). Also provided in Table 1 is the annualized variation level (actual wet tons as compared to the annualized average wet tons over the six-year historical period). As indicated in the high-lighted contract values (last row in the table as target key performance indicators – KPI), the variation (ratio) of 1.12 is essentially double the highest prior years (2015 & 2016) as compared to the six-year annual average.

The abnormally values in 2018 reflect the apparent back-logging of biosolids in the DWTF by Wayne County. When discounting the 2018 historical data, the daily wet mass average in 2013 thru 2017 was 122.0-WTPD. The corresponding average variation in annualized wet mass in the prior four-years (2014 thru 2017) in which a complete set (all twelve months of historical data was available and analyzed) is computed to be ~1.055. Using this variation ratio as the basis of the maximum range in daily wet mass levels, the corresponding daily average wet mass level was determined to approximate 115.6-WTPD. As such, this historical daily average level of ~116-WTPD for hauled away cake biosolids was the original basis of process modeling for the BDFP.

| Table 1 – Summary of Historical Biosolids Cake Production (2013 – 2018) | | | |
|--|------------------------|--------------------------|--------------------------|
| Operating Year | Wet Mass (WTPY) | Daily Mass (WTPD) | Variation (Ratio) |
| 2013 | 43,232 | 118.4 | 1.01 |
| 2014 | 44,855 | 122.9 | 1.05 |
| 2015 | 45,305 | 124.1 | 1.06 |
| 2016 | 45,207 | 123.9 | 1.06 |
| 2017 | 43,960 | 120.4 | 1.03 |
| 2018 | 34,133 | 93.5 | 0.80 |
| 6-Yr. Avg. | 42,782 | 117.2 | 1.00 |
| <i>Excluding 2018</i> | 44,512 | 122.0 | |
| Contract Values / KPI | 47,981 | 131.5 | 1.12 |
| | | | |

The historical data was further analyzed on a monthly basis to assess any indicative seasonal fluctuations and the percent dry solids (%TS) of the dewatered cake was also calibrated to the monthly hauling wet mass levels to determine the monthly and annual dry mass of cake production. Table 2 (shown at the top of the following page) highlights the historical data for dry solids content and mass for the Wayne County operating years of 2015 through 2018. The data for 2013 through 2017 appeared to be reasonably consistent for further analysis.

| Table 2 – Summary of Historical Biosolids Cake Solids & Dry Mass (2016 – 2018) | | | |
|---|--------------------------|--------------------------|----------------------|
| Operating Year | Cake Solids (%TS) | Daily Mass (DTPD) | Annual (DTPY) |
| 2016 | 23.4 | 29.0 | 10,578 |
| 2017 | 29.9 | 36.0 | 13,144 |
| 2018 | 28.4 | 26.6 | 9,694 |
| 3-Yr. Avg. | 27.25 | 30.5 | 11,139 |

The biosolids cake data shown above in Table 2 indicates a predominate BFPs dewatering operation in 2016 and then centrifuge operations in 2017 and 2018. Relative to the prior comments of the “*bias low*” production numbers in 2018 as reflected in Table 1 as compared to the prior five years of cake solids haul-away data, the most relevant historical information with respect to annual and daily dry mass of dewatered biosolids is in 2017.

Accordingly, Veolia’s initial assessment for baseline capacity and processing through-put for the BFDP was premised on 36-DTPD, which at nearly 30 %TS cake solids, yields a wet mass rate of 120-WTPD. The plant’s management team reported their cake haul away operations in early 2019 was around 110-WTPD at two trips per day of dual gravel-train trailers with a nominal solids hauling weight capacity of fifty-five (55) wet tons each. Consequentially, the mid-point of 115-WTPD was selected as the initial basis of process modeling and life-cycle cost of the BDFP in comparison with the “*current situation*” status-quo of cake solids hauling to landfills.

| Table 3 – Summary of Historical Monthly Biosolids Characteristics (2016 & 17) | | | |
|--|------------------------|--------------------------|------------------------|
| Operating Month | Wet Mass (WTPD) | Cake Solids (%TS) | Dry Mass (DTPD) |
| January | 105.7 | 22.8 | 24.0 |
| February | 122.3 | 21.9 | 26.7 |
| March | 129.3 | 23.8 | 30.7 |
| April | 147.2 | 23.1 | 33.9 |
| May | 126.2 | 25.5 | 32.2 |
| June | 129.9 | 28.3 | 36.8 |
| July | 122.7 | 29.6 | 36.3 |
| August | 107.1 | 30.1 | 32.2 |
| September | 115.8 | 31.1 | 36.0 |
| October | 110.3 | 30.0 | 33.1 |
| November | 117.9 | 28.7 | 33.8 |
| December | 113.2 | 29.5 | 33.4 |
| Annual Total | 44,000 | | 11,855 |
| Monthly Average | 120.6 | 27.0 | 32.5 |

Table 3 (prior page), summarizes the historical monthly data for dewatered biosolids on an average basis for the apparent “*more accurate*” operating period of 2016 and 2017. As indicated, the average month for wet mass of cake production approximates 121-WTPD with a maximum month rate above 145-WTPD. Based upon the historical cake solids content, average dry mass levels reach monthly levels at ~32.5-DTPD and a sustained maximum months (e.g. during the warm weather months in summertime) to a level of ~36.5-DTPD.

The DWTF provides treatment of the high-strength organic waste (glycol) from the Detroit Airport, which does intermittently and seasonally impact the elevated production of secondary biological solids production from the oxygen activated sludge (OAS), which changes both the composition and overall mass quantity of cake solids.

A focused analysis of the historical data during various periods of glycol treatment over the past six years (2014 through 2019 year-to-date) to isolate those months in which higher levels of cake biosolids have been generated. As such, the monthly average has approximated 4,910 wet tons (or at approximately 161-WTPD). The corresponding average solids content during these months was 25.1 %TS, which is reflective of the average blend of cake solids from the belt filter presses and the centrifuges. The corresponding dry mass on a daily average is approximately 40.25-DTPD (or 1,225 dry tons in those peak months of biosolids generation).

Current Situation

Table 4 (following) summarizes the biosolids cake quality (%TS) and production (wet tons and dry tons) over the past four months (May thru Aug. 2019) that most accurately reflects the current situation for dewatering at the DWTF. Prior months in 2019 include Veolia’s dewatering operations of excess biosolids (eliminating the backlog by Wayne County of plant solids inventory) as well as wintertime months of cake production (as also inclusive of the impacts of elevated secondary biosolids from glycol discharges from the Detroit Metro. Airport).

As highlighted in Table 4, the quantity of cake biosolids has steadily declined over the past five (5) months and yields a year-end forecast that is slightly higher than Veolia’s modeling for its contract baseline level for wet cake mass disposal to landfill. Veolia’s annual contract value limit of 47,981 wet tons per year is equivalent to approximately 131.5 wet tons per day (WTPD) on average daily (7 days per week) dewatering schedule, as will be required to optimize the new thermal drying system. Table 4 also shows a steady increase in the dry solids quality of the cake biosolids over the past four (4) months as a result of Veolia’s optimization of dewatering operations with a focus on the cake solids via the two (2) centrifuges and minimizing any reliance on the BFPs. Accordingly, the target design values for the BDFP and related key performance indicators (KPI) are shown in the last row of Table 4 with respect to daily average levels of biosolids cake mass production and solids quality.

| Table 4 – Summary of Biosolids Cake Production & Quality (Apr. – Sept. 2019) | | | |
|---|------------------------|---------------------|------------------------|
| Operating Month | Wet Mass (WTPD) | Solids (%TS) | Dry Mass (DTPD) |
| April | 181.3 | 27.7 | 50.2 |
| May | 158.0 | 27.0 | 42.7 |
| June | 130.5 | 27.3 | 35.6 |
| July | 127.5 | 28.2 | 36.0 |
| August | 101.5 | 31.7 | 32.2 |

| | | | |
|----------------------------|--------------|-------------|-------------|
| September | 102.7 | 30.5 | 31.3 |
| 6-Month Average | 133.6 | 28.7 | 38.3 |
| Yr-End Forecast | 137.4 | 28.3 | 39.7 |
| Target Design / KPI | 140.0 | 28.5 | 39.9 |
| | | | |

Seasonal Variations

It is known that the mass ratio of thickened primary sludge and waste activated sludge (secondary biosolids) changes on a seasonal basis as primarily driven by the wintertime period of glycol discharge from the Airport.

Table 5 (below) summarizes the empirical seasonal variations in biosolids cake production as differentiated between primary sludge and secondary solids as to be centrifuge dewatered and then to be upgraded via thermal drying. As shown, the mass ratio of primary sludge is constantly more than thickened secondary biosolids and only balances for the couple of months in late winter/early spring when higher rates of activated sludge are generated from the processing of glycol from the Airport. During the summer / fall time months, the ratio of primary sludge to secondary solids peaks to a general mass ratio of three to one (3:1), which impacts the dry solids content of the dewatered cake and the highest fiber content in the biosolids as drying feedstock.

| Table 5 – Summary of Seasonal Changes in Biosolids Feedstock Composition | | | |
|---|-----------------------|-------------------------|---------------------------|
| Operating Month | Primary Sludge | Secondary Solids | Mass Ratio (TN/TN) |
| January | 67% | 33% | 2:1 |
| February | 60% | 40% | 1.5:1 |
| March | 50% | 50% | 1:1 |
| April | 50% | 50% | 1:1 |
| May | 60% | 40% | 1.5:1 |
| June | 67% | 33% | 2:1 |
| July | 71.5% | 28.5% | 2.5:1 |
| August | 75% | 25% | 3:1 |
| September | 75% | 25% | 3:1 |
| October | 75% | 25% | 3:1 |
| November | 71.5% | 28.5% | 2.5:1 |
| December | 67% | 33% | 2:1 |
| Annual Avg. | 66% | 34% | ~2:1 |
| Max. Month | 75% | 25% | 3:1 |
| Target Design / KPI | 67% | 33% | 2:1 |
| | | | |

Based upon the seasonal variations in the composition of the cake biosolids, Table 6 (below) illustrates the forecasted impacts on the dry solids content and mass yield of the dewatered feedstock for the BDFP. As indicated, the monthly average of wet mass of cake biosolids approximates 140 WTPD, with a monthly maximum of nearly 156-WTPD (peaking factor of ~1.12X). During the glycol treatment months (typically Feb. through May) the monthly average cake production is analyzed to approximate 150.5-WTPD (or 39.9-DTPD).

A deeper dive in the cake production data during the glycol treatment period seems to indicate a peak monthly level of 175-WTPD (peaking factor of ~1.25X). This through-put value becomes the design basis for the ultimate capacity level for the BDFP. This capacity level reflects a consistent peaking factor of 1.12X for the maximum month of wet mass of cake biosolids as shown in Table 6 below (e.g. $155.8 \times 1.12 = 174.5$ WTPD).

| Table 6 – Summary of Seasonal Changes in Biosolids Feedstock & Cake Production | | | |
|---|------------------------|---------------------|------------------------|
| Operating Month | Dry Mass (DTPD) | Solids (%TS) | Wet Mass (DTPD) |
| January | 40.0 | 28.5 | 140.5 |
| February | 39.2 | 27.0 | 145.2 |
| March | 40.5 | 26.0 | 155.8 |
| April | 40.5 | 26.0 | 155.8 |
| May | 39.2 | 27.0 | 145.2 |
| June | 40.0 | 28.5 | 140.5 |
| July | 38.0 | 28.0 | 135.7 |
| August | 36.9 | 29.0 | 127.2 |
| September | 36.9 | 29.0 | 127.2 |
| October | 36.9 | 29.0 | 127.2 |
| November | 38.0 | 28.0 | 135.7 |
| December | 40.0 | 28.5 | 140.5 |
| Annual Avg. | 38.9 | 27.9 | 139.7 |
| Max. Month | 40.5 | 29.0 | 155.8 |
| Target Design / KPI | 39.9 | 28.5 | 140.0 |

Accordingly, the following values are recommended as the basis for the daily average, maximum month and peak capacity operating scenarios and related conceptual process design criteria for the BDFP:

- o Daily Average = 140.0 WTPD at 28.5 %TS (39.9-DPTD)
- o Monthly Maximum = 156.0 WTPD at 26.0 %TS (40.5-DTPD)
- o Peak Capacity = 175.0 WTPD at 26.0 %TS (45.5-DTPD)

The following three (3) pages as **Attachment A** – provides conceptual modeling of these BDFP scenarios.

| VEOLIA NORTH AMERICA | | | | | TJM |
|--|-------|------------------------|-------|--------------------------------------|------------|
| Downriver Utility WW Authority, MI Project - Biosolids Management | | | | | vs.6 |
| Biosolids Thermal Drying Ops. (Daily Avg. - Yr. 2021) | | | | | 09/27/19 |
| DUWA BIOSOLIDS | | | | | |
| Dewatered Wet Mass | 140 | WTPD | | 51,100 | WTPY |
| Dewatered Cake Solids | 28.5 | %TS | | | |
| Dewatered Dry Mass | 39.9 | DTPD | | 14,565 | DTPY |
| Cake Solids Bulk Density | 64.0 | lb/CF | | | |
| Dewatered Cake Volume | 162 | CYPD | | 59,145 | CY/YR |
| CAKE BIOSOLIDS STORAGE | | | | | |
| Cake Storage Hopper (Live Bottom Augers) | 1 | No. | | 8'(W) x 12'(L) x 18'(H) | |
| Cake Storage Level Control | 85.0 | % | | 64.0 | CY |
| Cake Storage Volume Utilization | 54.5 | CY | | | |
| Cake Storage Retention Time | 8.1 | hrs. | | | |
| Cake Storage Hopper Turnover | 3.0 | No./DY | | | |
| THERMAL DRYING | | | | | |
| Thermal Dryers in Service | 2 | No. | | | |
| Thermal Dryers System Uptime | 91.5 | % | 52.0 | 364 | dys/Yr |
| Thermal Dryers System Schedule | 7.0 | dy/wk | | | |
| Thermal Dryers System Runtime | 22.0 | hrs/dy | | 8,010 | hrs/Yr |
| Cake Pumping to Thermal Dryers | 12.7 | GPM | | | |
| Cake Solids Loading to Thermal Dryers | 1,815 | lb/hr | | | |
| Cake Wet Mass Loading per Dryer | 3.2 | WTPH | | | |
| Moisture Loading Rate per Dryer | 2.3 | TPH | | | |
| Wet Cake Solids Loading per Dryer | 6,365 | lb/hr | | | |
| Thermal Dryer Loading Capacity | 7,290 | lb/hr | | | |
| Thermal Dryer Loading Utilization | 87 | % | | | |
| In-Direct Dryer System Solids Recovery | 96.5 | % | | | |
| Entrained Solids Discharge to Dryer Condenser | 1,395 | lb/dy | | 256 | DTPY |
| Condenser Service Water Flow Rate per Dryer | 140 | GPM | | 67.3 | MGPY |
| Condenser Water Recycle Solids Conc. | 905 | mg/L | | | |
| Dried Solids Dry Mass per Dryer | 19.5 | DTPD | 135 | 7,085 | DTPY |
| Dried Solids Content | 92.0 | %DS | | | |
| Dried Solids Wet Mass per Belt Dryer | 21.0 | TPD | 145 | 7,630 | TPY |
| Moisture Rate in Dried Solids Product | 0.1 | TPH | | | |
| Thermal Dryer Evaporation Demand | 4,415 | lb H ₂ O/hr | | | |
| Thermal Dryer Evaporation Capacity | 5,500 | lb H ₂ O/hr | | | |
| Thermal Dryer Capacity Utilization | 80 | % | | | |
| Energy Required for Drying Demand | 13.1 | MMBtu/hr | 1,480 | Btu/lb H ₂ O evap. effcy. | |
| Thermal Energy Required for Drying | 15.4 | MMBtu/hr | | 86.0% | Effcy. |
| Natural Gas Demand (LHV Basis) | 1,015 | BTU/cf | | | |
| Natural Gas Demand | 334.0 | Kcf/dy | | 121,560 | Kcf/Yr |
| Natural Gas Consumption | 3,455 | Therms/dy | | 125,745 | DTherms/Yr |
| DRIED SOLIDS HAULING & DISPOSITION | | | | | |
| Dried Solids Mass for Hauling & Disposition | 42.0 | TPD | 295 | 15,295 | TPY |
| Dried Solids Hauling Weight | 55.0 | TN/Load | | | |
| Dried Solids Hauling Demand | 0.8 | Loads/Day | 5.4 | | Loads/Wk |

| VEOLIA NORTH AMERICA | | | | | TJM |
|--|-------|------------------------|-------|-------------------------|--------------------------------------|
| Downriver Utility WW Authority, MI Project - Biosolids Management | | | | | vs.6 |
| Biosolids Thermal Drying Ops. (Max. Month - Yr. 2021) | | | | | 09/27/19 |
| DUWA BIOSOLIDS | | | | | |
| Dewatered Wet Mass | 156 | WTPD | | | WTPY |
| Dewatered Cake Solids | 26.0 | %TS | | | |
| Dewatered Dry Mass | 40.6 | DTPD | | | DTPY |
| Cake Solids Bulk Density | 64.0 | lb/CF | | | |
| Dewatered Cake Volume | 180 | CYPD | | | CY/YR |
| CAKE BIOSOLIDS STORAGE | | | | | |
| Cake Storage Hopper (Live Bottom Augers) | 1 | No. | | 8'(W) x 12'(L) x 18'(H) | |
| Cake Storage Level Control | 85.0 | % | | 64.0 | CY |
| Cake Storage Volume Utilization | 54.4 | CY | | | |
| Cake Storage Retention Time | 7.3 | hrs. | | | |
| Cake Storage Hopper Turnover | 3.3 | No./DY | | | |
| THERMAL DRYING | | | | | |
| Thermal Dryers in Service | 2 | No. | | | |
| Thermal Dryers System Uptime | 100.0 | % | 8.7 | | 61 dys/Yr |
| Thermal Dryers System Schedule | 7.0 | dy/wk | | | |
| Thermal Dryers System Runtime | 24.0 | hrs/dy | | | 1,460 hrs/Yr |
| Cake Pumping to Thermal Dryers | 12.9 | GPM | | | |
| Cake Solids Loading to Thermal Dryers | 1,691 | lb/hr | | | |
| Cake Wet Mass Loading per Dryer | 3.3 | WTPH | | | |
| Moisture Loading Rate per Dryer | 2.4 | TPH | | | |
| Wet Cake Solids Loading per Dryer | 6,500 | lb/hr | | | |
| Thermal Dryer Loading Capacity | 7,290 | lb/hr | | | |
| Thermal Dryer Loading Utilization | 89 | % | | | |
| In-Direct Dryer System Solids Recovery | 96.5 | % | | | |
| Entrained Solids Discharge to Dryer Condenser | 1,420 | lb/dy | | | DTPY |
| Condenser Service Water Flow Rate per Dryer | 140 | GPM | | | MGPY |
| Condenser Water Recycle Solids Conc. | 845 | mg/L | | | |
| Dried Solids Dry Mass per Dryer | 19.5 | DTPD | 134 | | DTPY |
| Dried Solids Content | 92.0 | %DS | | | |
| Dried Solids Wet Mass per Belt Dryer | 21.0 | TPD | 148 | | TPY |
| Moisture Rate in Dried Solids Product | 0.1 | TPH | | | |
| Thermal Dryer Evaporation Demand | 4,685 | lb H ₂ O/hr | | | |
| Thermal Dryer Evaporation Capacity | 5,500 | lb H ₂ O/hr | | | |
| Thermal Dryer Capacity Utilization | 85 | % | | | |
| Energy Required for Drying Demand | 13.6 | MMBtu/hr | 1,450 | | Btu/lb H ₂ O evap. effcy. |
| Thermal Energy Required for Drying | 16.0 | MMBtu/hr | | 86.0% | Effcy. |
| Natural Gas Demand (LHV Basis) | 1,015 | BTU/cf | | | |
| Natural Gas Demand | 378.5 | Kcf/dy | | | Kcf/Yr |
| Natural Gas Consumption | 3,915 | Therms/dy | | | DTherms/Yr |
| DRIED SOLIDS HAULING & DISPOSITION | | | | | |
| Dried Solids Mass for Hauling & Disposition | 42.0 | TPD | 295 | | TPY |
| Dried Solids Hauling Weight | 55.0 | TN/Load | | | |
| Dried Solids Hauling Demand | 0.8 | Loads/Day | 5.4 | | Loads/Wk. |

| VEOLIA NORTH AMERICA | | | | TJM |
|--|-------|------------------------|-------|--------------------------------------|
| Downriver Utility WW Authority, MI Project - Biosolids Management | | | | vs.6 |
| Biosolids Thermal Drying Ops. (Peak Capacity - Yr. 2021) | | | | 09/27/19 |
| DUWA BIOSOLIDS | | | | |
| Dewatered Wet Mass | 175 | WTPD | | WTPY |
| Dewatered Cake Solids | 26.0 | %TS | | |
| Dewatered Dry Mass | 45.5 | DTPD | | DTPY |
| Cake Solids Bulk Density | 64.0 | lb/CF | | |
| Dewatered Cake Volume | 205 | CYPD | | CY/YR |
| CAKE BIOSOLIDS STORAGE | | | | |
| Cake Storage Hopper (Live Bottom Augers) | 1 | No. | | 8'(W) x 12'(L) x 18'(H) |
| Cake Storage Level Control | 85.0 | % | | 64.0 CY |
| Cake Storage Volume Utilization | 54.4 | CY | | |
| Cake Storage Retention Time | 6.4 | hrs. | | |
| Cake Storage Hopper Turnover | 3.8 | No./DY | | |
| THERMAL DRYING | | | | |
| Thermal Dryers in Service | 2 | No. | | |
| Thermal Dryers System Uptime | 100.0 | % | 8.7 | 61 dys/Yr |
| Thermal Dryers System Schedule | 7.0 | dy/wk | | |
| Thermal Dryers System Runtime | 24.0 | hrs/dy | | 1,460 hrs/Yr |
| Cake Pumping to Thermal Dryers | 14.5 | GPM | | |
| Cake Solids Loading to Thermal Dryers | 1,895 | lb/hr | | |
| Cake Wet Mass Loading per Dryer | 3.6 | WTPH | | |
| Moisture Loading Rate per Dryer | 2.7 | TPH | | |
| Wet Cake Solids Loading per Dryer | 7,290 | lb/hr | | |
| Thermal Dryer Loading Capacity | 7,290 | lb/hr | | |
| Thermal Dryer Loading Utilization | 100 | % | | |
| In-Direct Dryer System Solids Recovery | 96.5 | % | | |
| Entrained Solids Discharge to Dryer Condenser | 1,590 | lb/dy | | DTPY |
| Condenser Service Water Flow Rate per Dryer | 140 | GPM | | MGPY |
| Condenser Water Recycle Solids Conc. | 945 | mg/L | | |
| Dried Solids Dry Mass per Dryer | 22.0 | DTPD | 152 | DTPY |
| Dried Solids Content | 92.0 | %DS | | |
| Dried Solids Wet Mass per Belt Dryer | 24.0 | TPD | 169 | TPY |
| Moisture Rate in Dried Solids Product | 0.1 | TPH | | |
| Thermal Dryer Evaporation Demand | 5,235 | lb H ₂ O/hr | | |
| Thermal Dryer Evaporation Capacity | 5,500 | lb H ₂ O/hr | | |
| Thermal Dryer Capacity Utilization | 95 | % | | |
| Energy Required for Drying Demand | 15.2 | MMBtu/hr | 1,450 | Btu/lb H ₂ O evap. effcy. |
| Thermal Energy Required for Drying | 17.9 | MMBtu/hr | | 86.0% Effcy. |
| Natural Gas Demand (LHV Basis) | 1,015 | BTU/cf | | |
| Natural Gas Demand | 422.0 | Kcf/dy | | Kcf/Yr |
| Natural Gas Consumption | 4,365 | Therms/dy | | DTherms/Yr |
| DRIED SOLIDS HAULING & DISPOSITION | | | | |
| Dried Solids Mass for Hauling & Disposition | 48.0 | TPD | 335 | TPY |
| Dried Solids Hauling Weight | 55.0 | TN/Load | | |
| Dried Solids Hauling Demand | 0.9 | Loads/Day | 6.1 | Loads/Wk. |

ATTACHMENT F – NPDES PERMIT NO. MI0021156

PERMIT NO. MI0021156

**STATE OF MICHIGAN**
DEPARTMENT OF ENVIRONMENTAL QUALITY

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*, as amended; the "Federal Act"); Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2011-1,

Downriver Utility Wastewater Authority
25605 Northline Road
Taylor, MI 48180

is authorized to discharge from the **Downriver Wastewater Treatment Facility** located at

797 Central Avenue
Wyandotte, Michigan 48192

designated as **Downriver WTF**

to the receiving water named the Trenton Channel of the Detroit River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on July 17, 2012, a complete modification request submitted on August 28, 2018, and a Department action initiated on November 16, 2018.

This permit took effect on November 1, 2017; the previously modified permit took effect on November 1, 2018; this modified permit takes effect on January 1, 2019. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its original effective date, this permit superseded National Pollutant Discharge Elimination System (NPDES) Permit No. MI0021156 (expiring October 1, 2012).

This permit and the authorization to discharge shall expire at midnight, **October 1, 2021**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information, forms, and fees as are required by the Department of Environmental Quality (Department) by **April 4, 2021**.

Issued: May 1, 2017; **Previously Modified (minor):** October 23, 2018; **Modified (minor):** December 17, 2018.

Original signed by Christine Alexander
Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

Annual Permit Fee Classification: Municipal Major, 50 MGD to less than 500 MGD (Individual Permit)

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31 of each year.

CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Southeast Michigan District Supervisor of the Water Resources Division. The Southeast Michigan District Office is located at 27700 Donald Court, Warren, Michigan 48092-2793, Telephone: 586-753-3700, Fax: 586-751-3751.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PART I

Section A. Limitations and Monitoring Requirements

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 125 MGD. Should 25 MGD of additional secondary treatment capacity be added under Part I.A.7., this capacity will be adjusted to 150 MGD.

- a. **Narrative Standard**
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Sampling Locations**
Samples for CBOD₅, Total Suspended Solids, Ammonia Nitrogen and Total Phosphorus shall be taken prior to disinfection. Samples for Dissolved Oxygen, Fecal Coliform Bacteria, Total Mercury, Oil & Grease, and pH shall be taken after disinfection. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative of the effluent.
- c. **Total Phosphorus Six Month Average Limit (April – September)**
The six month average shall be determined by adding the six monthly average results from April through September and dividing the sum by six. For the purpose of reporting on the Discharge Monitoring Reports, the permittee shall calculate and report the Six Month Average on the October Discharge Monitoring Report.
- d. **Ultraviolet Disinfection**
It is understood that ultraviolet light will be used to achieve compliance with the fecal coliform limitations. If disinfection other than ultraviolet light will be used, the permittee shall notify the Department in accordance with Part II.C.12. - Changes in Facility Operations.
- e. **Percent Removal Requirements**
These requirements shall be calculated based on the monthly (30-day) effluent CBOD₅ and Total Suspended Solids concentrations and the monthly influent concentrations for approximately the same period.
- f. **Final Effluent Limitation for Total Mercury**
The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the water quality-based effluent limit of 1.3 ng/l, pursuant to Rule 323.1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to 3 months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any month is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that month, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.9.

The permittee may choose to demonstrate that an alternate site-specific LCA is appropriate and request a permit modification. Such request and supporting documentation shall be submitted in writing to the Department. Supporting documentation shall include a minimum of 12 samples taken over a 12-month period in accordance with EPA Method 1631. If the Department determines the LCA to be appropriate, it would submit the proposed LCA to the USEPA for approval. Upon approval, this permit may be modified in accordance with applicable laws and rules to incorporate the alternate site-specific LCA as the effluent limitation for Total Mercury.

PART I**Section A. Limitations and Monitoring Requirements**

g. Total Mercury Testing and Additional Reporting Requirements

The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry." The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternative sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in: EPA Method 1669, *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance)*, EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e. a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under 'Total Mercury – Corrected' the same value reported under 'Total Mercury – Uncorrected.' The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

PART I

Section A. Limitations and Monitoring Requirements

2. Final Effluent Limitations, Monitoring Point 001B - Secondary Effluent Prior to Mixing with Secondary Bypass

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge secondary treated municipal wastewater, prior to mixing with flows from the secondary treatment bypass, from Monitoring Point 001B through Monitoring Point 001A and Outfall 001 and/or Outfall 002. Outfall 001 and Outfall 002 discharge to the Trenton Channel of the Detroit River. Such discharge shall be limited and monitored by the permittee as specified below.

| <u>Parameter</u> | <u>Maximum Limits for Quantity or Loading</u> | | | | <u>Maximum Limits for Quality or Concentration</u> | | | | <u>Monitoring Frequency</u> | <u>Sample Type</u> |
|---|---|--------------|--------------|--------------|--|--------------|--------------|--------------|-----------------------------|-------------------------|
| | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | | |
| Flow | (report) | --- | (report) | MGD | --- | --- | --- | --- | Daily | Report Total Daily Flow |
| Carbonaceous Biochemical Oxygen Demand (CBOD ₅) | --- | --- | --- | --- | 25 | 40 | (report) | mg/l | Daily | Calculation |
| Total Suspended Solids | --- | --- | --- | --- | 30 | 45 | (report) | mg/l | Daily | Calculation |
| Ammonia Nitrogen (as N) | --- | --- | --- | --- | (report) | --- | (report) | mg/l | Daily | Calculation |
| Total Phosphorus (as P) | | | | | | | | | | |
| Through Dec. 2019 | --- | --- | --- | --- | 1.0 | --- | (report) | mg/l | Daily | Calculation |
| Beginning Jan. 2020 | --- | --- | --- | --- | 0.7 | --- | (report) | mg/l | Daily | Calculation |
| | | | | | <u>Six Month Average (April - Sept.)</u> | | | | | |
| Total Phosphorus (as P) | | | | | | | | | | |
| Beginning Apr. 2020 | --- | --- | --- | --- | 0.6 | --- | --- | mg/l | Annually | Calculation |
| | | | | | <u>Minimum Monthly</u> | | | | | |
| CBOD ₅ Minimum % Removal | --- | --- | --- | --- | (report) | --- | (report) | % | Monthly | Calculation |
| Total Suspended Solids Minimum % Removal | --- | --- | --- | --- | (report) | --- | (report) | % | Monthly | Calculation |

PART I**Section A. Limitations and Monitoring Requirements**

a. Frequency of Analysis

Calculations for Monitoring Point 001B shall be conducted daily during periods of secondary treatment bypass. In order to determine compliance with these effluent limitations, calculations for this monitoring point during wet weather periods may be averaged with monitoring from Monitoring Point 001A from dry weather periods. This may be done at this monitoring point to determine compliance with the 7-day and monthly average requirements for secondary treatment requirements.

During wet weather conditions when secondary treatment is bypassed, 3-portion composite samples representative of the discharge may be taken at Monitoring Point 001B and used in place of the calculations to determine compliance with the effluent limitations.

b. Percent Removal Requirements

These requirements shall be calculated based on the monthly (30-day) effluent CBOD₅ and Total Suspended Solids concentrations and the monthly influent concentrations for approximately the same period.

c. Total Phosphorus Six Month Average Limit (April – September)

The six month average shall be determined by adding the six monthly average results from April through September and dividing the sum by six. For the purpose of reporting on the Discharge Monitoring Reports, the permittee shall calculate and report the Six Month Average on the October Discharge Monitoring Report.

PART I

Section A. Limitations and Monitoring Requirements

3. Final Effluent Limitations, Monitoring Point 001C - Secondary Treatment Bypass

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, for wet weather periods when the flow rate is greater than 125 MGD, the permittee is authorized to discharge primary treated municipal wastewater bypassing secondary treatment from Monitoring Point 001C through Monitoring Point 001A, and Outfall 001 and/or Outfall 002. Outfall 001 and Outfall 002 discharge to the Trenton Channel of the Detroit River. Such discharges are only authorized during wet weather conditions as described in Part I.A.6. of this permit and shall be monitored by the permittee as specified below.

| <u>Parameter</u> | <u>Maximum Limits for Quantity or Loading</u> | | | | <u>Maximum Limits for Quality or Concentration</u> | | | | <u>Monitoring Frequency</u> | <u>Sample Type</u> |
|-------------------------|---|--------------|--------------|--------------|--|--------------|--------------|--------------|-----------------------------|----------------------------|
| | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | | |
| Flow | (report) | --- | (report) | MGD | --- | --- | --- | --- | Daily | Calculate Total Daily Flow |
| CBOD ₅ | --- | --- | --- | --- | (report) | --- | (report) | mg/l | Daily | Composite |
| Total Suspended Solids | --- | --- | --- | --- | (report) | --- | (report) | mg/l | Daily | Composite |
| Ammonia Nitrogen (as N) | --- | --- | --- | --- | (report) | --- | (report) | mg/l | Daily | Composite |
| Total Phosphorus (as P) | --- | --- | --- | --- | (report) | --- | (report) | mg/l | Daily | Composite |

- a. **Sampling Locations**
Samples shall be taken of the primary treatment effluent prior to mixing with flows receiving secondary treatment. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative of the effluent.
- b. **Composite Samples**
Samples shall be representative composites of the secondary treatment bypass flow through Monitoring Point 001C. The composites shall consist of samples, starting at the time of bypass, taken every half hour for the first hour and then every two hours thereafter.
- c. **Frequency of Analysis**
Sampling at Monitoring Point 001C shall be conducted daily when the facility is bypassing around the secondary treatment processes.

PART I

Section A. Limitations and Monitoring Requirements

4. Final Effluent Limitations, Monitoring Point 001D - Primary Treatment Bypass

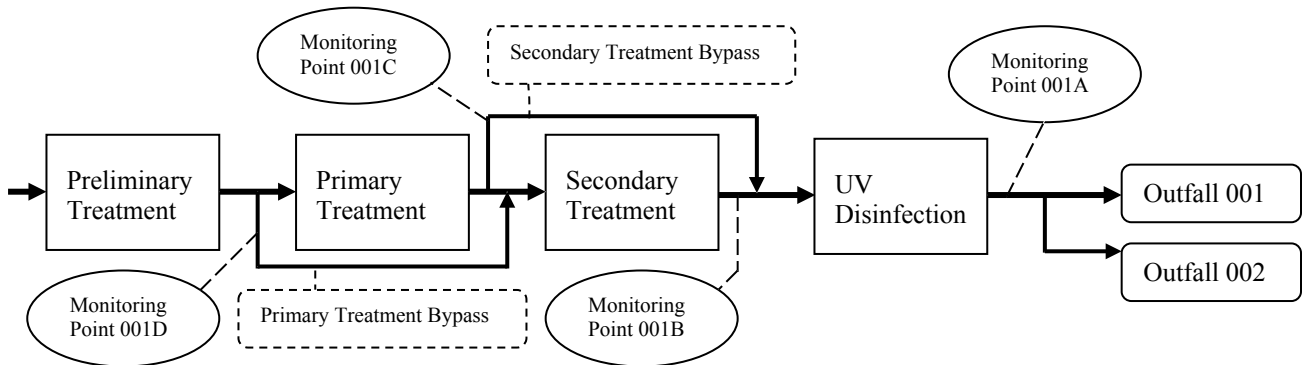
During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, for wet weather periods when the flow rate is greater than 150 MGD, the permittee is authorized to discharge preliminary treated municipal wastewater bypassing primary treatment from Monitoring Point 001D through Monitoring Points 001B and 001A, and Outfall 001 and/or Outfall 002. Outfall 001 and Outfall 002 discharge to the Trenton Channel of the Detroit River. Such discharges are only authorized during wet weather conditions as described in Part I.A.6. of this permit and shall be monitored by the permittee as specified below.

| <u>Parameter</u> | <u>Maximum Limits for Quantity or Loading</u> | | | | <u>Maximum Limits for Quality or Concentration</u> | | | | <u>Monitoring Frequency</u> | <u>Sample Type</u> |
|------------------|---|--------------|--------------|--------------|--|--------------|--------------|--------------|-----------------------------|-------------------------|
| | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | <u>Monthly</u> | <u>7-Day</u> | <u>Daily</u> | <u>Units</u> | | |
| Flow | (report) | --- | (report) | MGD | --- | --- | --- | --- | Daily | Report Total Daily Flow |

- a. **Sampling Locations**
Samples shall be taken prior to mixing with flows receiving primary treatment. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative of the effluent.
- b. **Frequency of Analysis**
Sampling at Monitoring Point 001D shall be conducted daily when the facility is bypassing around the primary treatment processes.

5. Flow Diagram

Outfall and monitoring point designations and bypass connections are shown for reference. Outfall 001 is the dedicated Downriver Wastewater Treatment Facility outfall. Outfall 002 is the connection to the Southgate Wyandotte Relief Drains Drainage District outfall.



PART I**Section A. Limitations and Monitoring Requirements****6. Wet Weather Flows**

During wet weather conditions when flows through the treatment plant exceed 125 MGD, the permittee is authorized to blend effluent from preliminary treatment and primary treatment with effluent receiving primary treatment and secondary treatment, respectively. The effluent must comply with all the effluent limitations and monitoring requirements in Parts I.A.1-4., except that when the flows through the wastewater treatment plant exceed the design flow rate of 125 MGD, the percent removal limitations for CBOD₅ and total suspended solids are waived at Monitoring Point 001A.

- a. **Preliminary Treatment**
All dry weather and wet weather flows shall receive preliminary treatment (screening and grit removal) and disinfection.
- b. **Primary Treatment**
All dry weather and wet weather flows up to and including a flow rate equivalent to 150 MGD shall receive primary treatment. During wet weather conditions, incremental flows greater than a flow rate equivalent to 150 MGD may bypass primary treatment with the stipulation that such flows shall receive secondary treatment.
- c. **Secondary Treatment**
All dry weather flows up to and including the design flow rate of 125 MGD shall receive secondary treatment. During wet weather conditions, incremental flows greater than the design flow rate of 125 MGD may bypass secondary treatment with the stipulation that such flows shall receive preliminary and primary treatment and disinfection as stated in a. and b. above. Should 25 MGD of additional secondary treatment capacity be provided under Part I.A.7., this design flow rate will increase to 150 MGD.

PART I**Section A. Limitations and Monitoring Requirements****7. Program for Reduction of Treatment System Bypass or Blending**

The Permittee shall implement a program to reduce secondary treatment system bypass or blending. The program may, at the discretion of the Permittee and with approval by the Department, include any or all of the following actions to reduce the average secondary bypasses and blending to an interim performance goal of no more than 4-6 per year (predicted):

- a. Increase the hydraulic loading of the existing secondary treatment units with approval of the Department for a revised basis of design or full plant evaluation;
- b. Utilize off-line primary clarifier tanks for wet weather storage assuming Part 41 redundancy requirements are met;
- c. Optimize the wet weather storage capacity of the Downriver Regional Storage and Transport System ("Tunnel") by modulating the Divider Wall Gate that separates the Upper and Lower Tunnel Compartments;
- d. Reduce or restrict the wet weather flow being conveyed into the Downriver Sewage Disposal System (DSDS) from excess sanitary sewage storage facilities owned and operated by local communities/agencies (e.g., the equalization basins owned by Lincoln Park, Allen Park and Ecorse Creek Pollution Abatement Drain No. 1 Drainage District), such that the sum of the discharges from the community's excess sanitary sewage storage facility(ies) and the discharges from all other outlets from the community to the DSDS during any given time period does not exceed the community's maximum allowable flow limit to the DSDS.
- e. Reduce or restrict the wet weather flow being conveyed into the DSDS from the combined sewer systems owned and operated by the City of River Rouge and the Southgate-Wyandotte Relief Drains Drainage District, respectively during storm events when the combined sewer overflow (CSO) retention treatment facilities owned and operated by those entities are discharging provided adequate flow is transported to meet the USEPA's 1994 CSO Policy requirements;
- f. Require reductions in infiltration and inflow (I/I) in select parts of the local community collection systems tributary to the DSDS with Department approved work plans;
- g. Add an in-system control gate or weir upstream of the Tunnel Pump Station to optimize utilization of Tunnel storage capacity; and/or;
- h. Add 25 MGD of secondary treatment capacity to the WWTF after Department review and approval per Part 41.

The following schedule shall be met:

- i. On or before December 1, 2017, the Permittee shall prepare and submit an evaluation report that considers the options noted above, for Department review and approval. Recommendations shall be included in this report that identify those actions that the Permittee believes will be reasonably effective and achievable;

PART I

Section A. Limitations and Monitoring Requirements

- j. On or before September 1, 2018, the Permittee shall prepare and submit a Work Plan for Department review and approval, identifying the control measures selected to be undertaken initially to reduce the frequency of secondary treatment system bypass/blending as defined above. The Work Plan shall include a proposed schedule for implementing the control measures and an analysis showing the expected level of reduction in the frequency of secondary treatment bypass that is expected to be achieved through those measures. The Permittee shall implement the approved Work Plan upon approval. Note that individual control measures may require submittal of a Part 41 permit application along with complete plans and specifications;
- k. The Permittee shall complete the initial control measures as specified in the approved work plan and commence an evaluation of performance of the System including an objective assessment as to the quantified reduction in frequency of secondary treatment system bypass/blending that has been achieved. The results of the performance evaluation shall be submitted to the Department for review and approval within 15 months following the completion of the initial control measures;
- l. In the event that the initial control measures do not achieve the interim performance goal, the Permittee shall develop and submit a Work Plan, within six (6) months of notification by the Department, identifying the additional control measures to be undertaken to reduce the frequency of secondary treatment system bypass to meet the interim performance goal. The Work Plan shall include a proposed schedule for implementing the control measures and an analysis showing the expected level of reduction in the frequency of secondary treatment bypass that is expected to be achieved through those measures. The Permittee shall implement the approved Work Plan upon approval.
- m. The Department may include additional requirements to further reduce secondary bypassing/blending as part of future NPDES permits that are reissued in accordance with applicable laws and rules.

8. Additional Monitoring Requirements

As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001A for the constituents listed below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in May 2018, October 2018, March 2019, and August 2020. Grab samples shall be taken for total mercury, available cyanide, total phenols, and parameters listed under Volatile Organic Compounds. For all other parameters, 24-hour composite samples shall be taken.

Test species for whole effluent toxicity monitoring shall include fathead minnow **and** either *Daphnia magna*, *Daphnia pulex* or *Ceriodaphnia dubia*. If the permittee has received Department approval to conduct acute toxicity testing using the more sensitive species identified in the toxicity database, the first three (3) tests required above may be performed using the more sensitive species. The last (4th) test shall be conducted using two (2) test species. Testing and reporting procedures shall follow procedures contained in EPA/600/4-90/027/F, "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (Fifth Edition)." When the effluent ammonia nitrogen (as N) concentration is greater than 5 mg/l, the pH of the toxicity test shall be maintained at the pH of the effluent at the time of sample collection. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

The results of such monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittee shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. The permittee shall report to the Department any whole effluent toxicity test results greater than 1.0 TU_A or 1.0 TU_C within five (5) days of becoming aware of the result. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules. **Parameters that have been struck through are not required to be analyzed as part of this condition.**

PART I

Section A. Limitations and Monitoring Requirements

Whole Effluent Toxicity

acute toxicity

Hardness

calcium carbonate

Metals (Total Recoverable), Cyanide and Total Phenols (Quantification levels in parentheses)

| | | | |
|---|--------------------|--|--------------------|
| antimony (1 µg/l) | arsenic (1 µg/l) | available cyanide (2 µg/l) using Method OIA – 1677 | |
| barium (5 µg/l) | beryllium (1 µg/l) | boron (20 µg/l) | cadmium (0.2 µg/l) |
| chromium (5 µg/l) | copper (1 µg/l) | lead (1 µg/l) | nickel (5 µg/l) |
| selenium (1 µg/l) | silver (0.5 µg/l) | thallium (1 µg/l) | zinc (5 µg/l) |
| mercury (0.5 ng/l) using Method 1631 Revision E | | total phenolic compounds | |

Volatile Organic Compounds

| | | | |
|--------------------------|----------------------------|----------------------|---------------------|
| acrolein | acrylonitrile | benzene | bromoform |
| carbon tetrachloride | chlorobenzene | chlorodibromomethane | chloroethane |
| 2-chloroethylvinyl ether | chloroform | dichlorobromomethane | 1,1-dichloroethane |
| 1,2-dichloroethane | trans-1,2-dichloroethylene | 1,1-dichloroethylene | 1,2-dichloropropane |
| 1,3-dichloropropylene | ethylbenzene | methyl bromide | methyl chloride |
| methylene chloride | 1,1,2,2,-tetrachloroethane | tetrachloroethylene | toluene |
| 1,1,1-trichloroethane | 1,1,2-trichloroethane | trichloroethylene | vinyl chloride |

Acid-Extractable Compounds

| | | | |
|----------------------|-------------------|-----------------------|--------------------|
| p-chloro-m-cresol | 2-chlorophenol | 2,4-dichlorophenol | 2,4-dimethylphenol |
| 4,6-dinitro-o-cresol | 2,4-dinitrophenol | 2-nitrophenol | 4-nitrophenol |
| Pentachlorophenol | phenol | 2,4,6-trichlorophenol | |

Base/Neutral Compounds

| | | | |
|-----------------------------|----------------------------|----------------------------|-----------------------------|
| acenaphthene | acenaphthylene | anthracene | benzidine |
| benzo(a)anthracene | benzo(a)pyrene | 3,4-benzofluoranthene | benzo(ghi)perylene |
| benzo(k)fluoranthene | bis(2-chloroethoxy)methane | bis(2-chloroethyl)ether | bis(2-chloroisopropyl)ether |
| bis(2-ethylhexyl)phthalate | 4-bromophenyl phenyl ether | butyl benzyl phthalate | 2-chloronaphthalene |
| 4-chlorophenyl phenyl ether | chrysene | di-n-butyl phthalate | di-n-octyl phthalate |
| dibenzo(a,h)anthracene | 1,2-dichlorobenzene | 1,3-dichlorobenzene | 1,4-dichlorobenzene |
| 3,3'-dichlorobenzidine | diethyl phthalate | dimethyl phthalate | 2,4-dinitrotoluene |
| 2,6-dinitrotoluene | 1,2-diphenylhydrazine | fluoranthene | fluorene |
| Hexachlorobenzene | hexachlorobutadiene | hexachlorocyclo-pentadiene | hexachloroethane |
| indeno(1,2,3-cd)pyrene | isophorone | naphthalene | nitrobenzene |
| n-nitrosodi-n-propylamine | n-nitrosodimethylamine | n-nitrosodiphenylamine | phenanthrene |
| pyrene | 1,2,4-trichlorobenzene | | |

PART I

Section A. Limitations and Monitoring Requirements

Quantification Levels and Analytical Methods for Selected Parameters

| | | | |
|--------------------------|------------------------------|---------------------------------|----------------------------|
| Total Antimony | 1 µg/l | 1,2-Diphenylhydrazine | 3.0 µg/l |
| Total Arsenic | 1 µg/l | 2,4,6-Trichlorophenol..... | 5.0 µg/l |
| Total Barium..... | 5 µg/l | 2,4-Dinitrophenol | 19 µg/l |
| Total Beryllium | 1 µg/l | 3,3'-Dichlorobenzidine | 1.5 µg/l (EPA Method 605) |
| Total Boron..... | 20 µg/l | Acrylonitrile | 1.0 µg/l |
| Total Cadmium..... | 0.2 µg/l | Benzidine | 0.1 µg/l |
| Hexavalent Chromium..... | 5 µg/l | Bis (2-Chloroethyl) Ether | 1.0 µg/l |
| Total Chromium..... | 10 µg/l | Di-N-Butyl Phthalate | 9.0 µg/l |
| Total Copper | 1 µg/l | Fluoranthene..... | 1.0 µg/l |
| Available Cyanide | 2 µg/l (EPA Method OIA 1677) | Hexachlorobenzene..... | 0.01 µg/l (EPA Method 612) |
| Total Cyanide | 5 µg/l | Hexachlorobutadiene..... | 0.01 µg/l (EPA Method 612) |
| Total Lead | 1 µg/l | Hexachlorocyclopentadiene | 0.01 µg/l (EPA Method 612) |
| Total Lithium..... | 10 µg/l | Hexachloroethane | 5.0 µg/l |
| Total Mercury | 0.5 ng/l (EPA Method 1631E) | Phenanthrene | 1.0 µg/l |
| Total Nickel | 5 µg/l | Pentachlorophenol..... | 1.8 µg/l |
| Total Selenium | 1.0 µg/l | Vinyl Chloride..... | 0.25 µg/l |
| Total Silver | 0.5 µg/l | | |
| Total Strontium..... | 1000 µg/l | | |
| Total Thallium..... | 1 µg/l | | |
| Total Zinc | 10 µg/l | | |

9. Pollutant Minimization Program for Total Mercury

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. The permittee shall continue to implement the Pollutant Minimization Program approved on May 11, 2004, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

- a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;
- b. a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and
- c. implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year, the permittee shall submit a status report for the previous calendar year to the Department that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. & b.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

PART I

Section A. Limitations and Monitoring Requirements

10. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated sewage, including sanitary sewer overflows (SSO) and combined sewer overflows (CSO), or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of combined sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification. Such notification shall also include a daily newspaper in the county of the affected municipality.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the "Report of Discharge Form" available via the internet at: <http://www.deq.state.mi.us/csosso/>, or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

In addition, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated sewage or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submit them as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

11. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
 - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
 - for a partnership, a general partner,
 - for a sole proprietorship, the proprietor, or
 - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.

PART I

Section A. Limitations and Monitoring Requirements

- b. A person is a duly authorized representative only if:
- the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
 - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

12. Monthly Operating Reports

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated Rule 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Since this permit includes modifications to the monitoring requirements in the previously-issued permit, the previously approved treatment facility monitoring program shall be revised. Within thirty (30) days of the effective date of this permit, the permittee shall submit to the Department a revised treatment facility monitoring program to meet this requirement. Upon approval by the Department the permittee shall implement the revised treatment facility monitoring program. The reporting forms and guidance are available on the DEQ web site at http://www.michigan.gov/deq/0,1607,7-135-3313_44117---,00.html. The permittee may use alternative operating forms if they are consistent with the approved monitoring program. These forms shall be maintained on site and shall be provided to the Department for review upon request. These treatment facility monitoring records shall be maintained for a minimum of three years.

PART I

Section A. Limitations and Monitoring Requirements

13. Asset Management

The permittee shall at all times properly operate and maintain all facilities (i.e., the sewer system and treatment works as defined in Part 41 of the NREPA), and control systems installed or used by the permittee to operate the sewer system and treatment works and achieve and maintain compliance with the conditions of this permit (also see Part II.D.3 of this permit). The requirements of an Asset Management Program function to achieve the goals of effective performance, adequate funding, and adequate operator staffing and training. Asset management is a planning process for ensuring that optimum value is gained for each asset and that financial resources are available to rehabilitate and replace those assets when necessary. Asset management is centered on a framework of five (5) core elements: the current state of the assets; the required sustainable level of service; the assets critical to sustained performance; the minimum life-cycle costs; and the best long-term funding strategy.

a. Asset Management Program Requirements

On or before April 1, 2018, the permittee shall submit to the Department an Asset Management Plan for review and approval. An approvable Asset Management Plan shall contain a schedule for the development and implementation of an Asset Management Program that meets the requirements outlined below in 1) – 4). A copy of any Asset Management Program requirements already completed by the permittee should be submitted as part of the Asset Management Plan. Upon approval by the Department the permittee shall implement the Asset Management Plan. (The permittee may choose to include the Operation and Maintenance Manual required under Part II.C.14. of this permit as part of their Asset Management Program).

1) *Maintenance Staff.* The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. The level of staffing needed shall be determined by taking into account the work involved in operating the sewer system and treatment works, planning for and conducting maintenance, and complying with this permit.

2) *Collection System Map.* The permittee shall complete a map of the sewer collection system it owns and operates. The map shall be of sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by the Department. **Note: Items below referencing combined sewer systems are not applicable to separate sewer systems.** Such map(s) or accompanying documents shall include but not be limited to the following:

- a) all sanitary sewer lines and related manholes;
- b) all combined sewer lines, related manholes, catch basins and CSO regulators;
- c) all known connections between the sanitary sewer or combined sewer and storm drain systems;
- d) all outfalls, including the treatment plant outfall(s), combined sewer treatment facility outfalls, untreated CSOs, and any known SSOs;
- e) all pump stations and force mains;
- f) the wastewater treatment facility(ies);
- g) all surface waters (labeled) that receive discharge from the treatment plant outfall(s);
- h) other major appurtenances such as inverted siphons and air release valves;
- i) a numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j) the scale and a north arrow;

PART I**Section A. Limitations and Monitoring Requirements**

- k) the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow; and
- l) the manhole interior material, rim elevation (optional), and invert elevations.
- 3) *Inventory and assessment of fixed assets.* The permittee shall complete an inventory and assessment of operations-related fixed assets. Fixed assets are assets that are normally stationary (e.g., pumps, blowers, and buildings). The inventory and assessment shall be based on current conditions and shall be kept up-to-date and available for review by the Department.
 - a) The fixed asset inventory shall include the following:
 - (1) a brief description of the fixed asset, its required design capacity (e.g., pump: 120 gallons per minute), its level of redundancy, and its tag number if applicable;
 - (2) the location of the fixed asset;
 - (3) the year the fixed asset was installed;
 - (4) the present condition of the fixed asset (e.g., excellent, good, fair, poor); and
 - (5) the current fixed asset (replacement) cost in dollars for year specified in accordance with approved schedules;
 - b) The fixed asset assessment shall include a “Business Risk Evaluation” that combines the probability of failure of the fixed asset and the criticality of the fixed asset, as follows:
 - (1) Rate the probability of failure of the fixed asset on a numerical scale (low to high) using criteria such as maintenance history, failure history, and remaining percentage of useful life (or years remaining);
 - (2) Rate the criticality of the fixed asset on a numerical scale (low to high) based on the consequence of failure versus the desired level of service for the facility; and
 - (3) Compute the Business Risk Factor of the fixed asset by multiplying the failure rating from (1) by the criticality rating from (2).
- 4) *Operation, Maintenance & Replacement (OM&R) Budget and Rate Sufficiency for the Sewer System and Treatment Works.* The permittee shall complete an assessment of its user rates and replacement fund, including the following:
 - a) beginning and end dates of fiscal year;
 - b) name of the department, committee, board, or other organization that sets rates for the operation of the sewer system and treatment works;
 - c) amount in the permittee’s replacement fund in dollars for year specified in accordance with approved schedules;
 - d) replacement fund strategy for all assets with a useful life of 20 years or less;
 - e) expenditures for maintenance, corrective action and capital improvement taken during the fiscal year;
 - f) OM&R budget for the fiscal year; and

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Section A. Limitations and Monitoring Requirements

- g) rate calculation demonstrating sufficient revenues to cover OM&R expenses. If the rate calculation shows there are insufficient revenues to cover OM&R expenses, the permittee shall develop and implement a financial strategy, within three (3) fiscal years after submittal of the Asset Management Plan, to reduce the revenue gap by at least 10 percent. The permittee's financial strategy may include OM&R rate increases, long term debt financing, utilization of reserves, and/or other appropriate revenue generating mechanisms. The ultimate goal of the Asset Management Program is to ensure sufficient revenues to cover OM&R expenses.
- b. Reporting
The permittee shall develop a written report that summarizes asset management activities completed during the previous year and planned for the upcoming year. The written report shall be submitted to the Department on or before October 30 of each year. The written report shall include:
- 1) a description of the staffing levels maintained during the budget year;
 - 2) a description of inspections and maintenance activities conducted and corrective actions taken during the previous year;
 - 3) the cumulative expenditures for collection system maintenance activities, treatment works maintenance activities, corrective actions, and capital improvement during the previous budget year;
 - 4) a summary of assets/areas identified for inspection/action (including capital improvement) in the upcoming fiscal year based on the five (5) core elements and the Business Risk Factors;
 - 5) a maintenance budget and capital improvement budget for the upcoming budget year that take into account implementation of an effective Asset Management Program that meets the five (5) core elements;
 - 6) an updated asset inventory based on the original submission; and
 - 7) an updated OM&R budget with updated rate schedule that includes the amount of insufficient revenues, if any.

14. Discharge Monitoring Report – Quality Assurance Study Program

The permittee shall participate in the Discharge Monitoring Report – Quality Assurance (DMR-QA) Study Program. The purpose of the DMR-QA Study Program is to annually evaluate the proficiency of all in-house and/or contract laboratory(ies) that perform, on behalf of the facility authorized to discharge under this permit, the analytical testing required under this permit. In accordance with Section 308 of the Clean Water Act (33 U.S.C. § 1318); and R 323.2138 and R 323.2154 of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, participation in the DMR-QA Study Program is required for all major facilities, and for minor facilities selected for participation by the Department.

Annually and in accordance with DMR-QA Study Program requirements and submittal due dates, the permittee shall submit to the Michigan DMR-QA Study Program state coordinator all documentation required by the DMR-QA Study. DMR-QA Study Program participation is required only for the analytes required under this permit and only when those analytes are also identified in the DMR-QA Study.

If the permitted facility's status as a major facility should change, participation in the DMR-QA Study Program may be reevaluated. Questions concerning participation in the DMR-QA Study Program should be directed to the Michigan DMR-QA Study Program state coordinator.

All forms and instructions required for participation in the DMR-QA Study Program, including submittal due dates and state coordinator contact information, can be found at <http://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program>.

PART I

Section B. Storm Water Pollution Prevention

Section B. Storm Water Pollution Prevention is not required for this permit.

PART I**Section C. Industrial Waste Pretreatment Program****1. Federal Industrial Pretreatment Program**

- a. The permittee shall implement the Federal Industrial Pretreatment Program approved on November 19, 2018, and any subsequent modifications approved up to the issuance of this permit. Approval of substantial program modifications after the issuance of this permit shall be incorporated into this permit by minor modification in accordance with 40 CFR 122.63.
- b. The permittee shall comply with Rules 323.2301 through 323.2317 of the Michigan Administrative Code (Part 23 Rules), the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403), and the approved Federal Industrial Pretreatment Program.
- c. The permittee shall have the legal authority and necessary interjurisdictional agreements that provide the basis for the implementation and enforcement of the approved Federal Industrial Pretreatment Program throughout the service area. The legal authority and necessary interjurisdictional agreements shall include, at a minimum, the authority to carry out the activities specified in Rule 323.2306(a).
- d. The permittee shall develop procedures which describe, in sufficient detail, program commitments which enable implementation of the approved Federal Industrial Pretreatment Program, 40 CFR Part 403, and the Part 23 Rules in accordance with Rule 323.2306(c).
- e. The permittee shall establish an interjurisdictional agreement (or comparable document) with all tributary governmental jurisdictions. Each interjurisdictional agreement shall contain, at a minimum, the following:
 - 1) identification of the agency responsible for the implementation and enforcement of the approved Federal Industrial Pretreatment Program within the tributary governmental jurisdiction's boundaries; and
 - 2) the provision of the legal authority which provides the basis for the implementation and enforcement of the approved Federal Industrial Pretreatment Program within the tributary governmental jurisdiction's boundaries.
- f. The permittee shall prohibit discharges that:
 - 1) cause, in whole or in part, the permittee's failure to comply with any condition of this permit or the NREPA;
 - 2) restrict, in whole or in part, the permittee's management of biosolids;
 - 3) cause, in whole or in part, operational problems at the treatment facility or in its collection system;
 - 4) violate any of the general or specific prohibitions identified in Rule 323.2303(1) and (2);
 - 5) violate categorical standards identified in Rule 323.2311; and
 - 6) violate local limits established in accordance with Rule 323.2303(4).
- g. The permittee shall maintain a list of its nondomestic users that meet the criteria of a significant industrial user as identified in Rule 323.2302(cc).
- h. The permittee shall develop an enforcement response plan which describes, in sufficient detail, program commitments which will enable the enforcement of the approved Federal Industrial Pretreatment Program, 40 CFR Part 403, and the Part 23 Rules in accordance with Rule 323.2306(g).

PART I**Section C. Industrial Waste Pretreatment Program**

- i. The Department may require modifications to the approved Federal Industrial Pretreatment Program which are necessary to ensure compliance with 40 CFR Part 403 and the Part 23 Rules in accordance with Rule 323.2309.
- j. The permittee shall not implement changes or modifications to the approved Federal Industrial Pretreatment Program without notification to the Department. Any substantial modification shall be subject to Department public noticing and approval in accordance with Rule 323.2309.
- k. The permittee shall maintain an adequate revenue structure and staffing level for effective implementation of the approved Federal Industrial Pretreatment Program.
- l. The permittee shall develop and maintain, for a minimum of three (3) years, all records and information necessary to determine nondomestic user compliance with 40 CFR Part 403, Part 23 Rules and the approved Federal Industrial Pretreatment Program. This period of retention shall be extended during the course of any unresolved enforcement action or litigation regarding a nondomestic user or when requested by the Department or the United States Environmental Protection Agency. All of the aforementioned records and information shall be made available upon request for inspection and copying by the Department and the United States Environmental Protection Agency.
- m. The permittee shall evaluate the approved Federal Industrial Pretreatment Program for compliance with the 40 CFR Part 403, Part 23 Rules and the prohibitions stated in item f. (above). Based upon this evaluation, the permittee shall propose to the Department all necessary changes or modifications to the approved Federal Industrial Pretreatment Program no later than the next Industrial Pretreatment Program Annual Report due date (see item o. below).
- n. The permittee shall develop and enforce local limits to implement the prohibitions listed in item f above. Local limits shall be based upon data representative of actual conditions demonstrated in a maximum allowable headworks loading analysis. An evaluation of whether the existing local limits need to be revised shall be submitted to the Department by December 1, 2018. The submittal shall provide a technical evaluation of the basis upon which this determination was made which includes information regarding the maximum allowable headworks loading, collection system protection criteria, and worker health and safety, based upon data collected since the last local limits review.

The following pollutants shall be evaluated:

- 1) Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Silver, and Zinc;
 - 2) Pollutants that are subject to limits or monitoring in this permit;
 - 3) Pollutants that have an existing local limit; and,
 - 4) Other pollutants of concern which would reasonably be expected to be discharged or transported by truck or rail or otherwise introduced into the POTW.
- o. On or before April 1st of each year, the permittee shall submit to the Department, as required by Rule 323.2310(8), an Industrial Pretreatment Program Annual Report on the status of program implementation and enforcement activities. The reporting period shall begin on January 1st and end on December 31st. At a minimum, the Industrial Pretreatment Program Annual Report shall contain the following items:
- 1) additions, deletions, and any other modifications to the permittee's previously submitted nondomestic user inventory (Rule 323.2306(c)(i));
 - 2) additions, deletions, and any other modifications to the permittee's approved Significant Industrial User List (Rule 323.2306(h));

PART I**Section C. Industrial Waste Pretreatment Program**

- 3) a listing of the names of Significant Industrial Users not inspected by the permittee at least once during the reporting period or at the frequency committed to in the approved Federal Industrial Pretreatment Program;
- 4) a listing of the names of Significant Industrial Users not sampled for all required pollutants by the permittee at least once during the reporting period or at the frequency committed to in the approved Federal Industrial Pretreatment Program;
- 5) a listing of the names of Significant Industrial Users without a permit at any time during the reporting period;
- 6) a listing of the names of nondomestic industrial users in significant noncompliance for each of the criteria as defined in Rule 323.2302(dd)(i)-(viii);
- 7) proof of publication of all nondomestic users in significant noncompliance in the largest daily newspaper in the permittee's area;
- 8) a summary of the enforcement activities by the permittee during the report period. This Summary shall include:
 - a) a listing of the names of nondomestic users which were the subject of an enforcement action;
 - b) the enforcement action taken and the date the action was taken; and
 - c) whether the nondomestic user returned to compliance by the end of the reporting period (include date nondomestic user returned to compliance).
- 9) a listing of the names of Significant Industrial Users who did not submit pretreatment reports in accordance with requirements specified in their permit during the reporting period;
- 10) a listing of the names of Significant Industrial Users who did not self-monitor in accordance with requirements specified in their permit during the reporting period;
- 11) a summary of results of all the sampling and analyses performed of the wastewater treatment plant's influent, effluent, and biosolids conducted in accordance with approved methods during the reporting period. The summary shall include the monthly average, daily maximum, quantification level, and number of samples analyzed for each pollutant. At a minimum, the results of analyses for all locally limited parameters for at least one monitoring event that tests influent, effluent and biosolids during the reporting period shall be submitted with each report, unless otherwise required by the Department. Sample collection shall be at intervals sufficient to provide pollutant removal rates, unless the pollutant is not measurable; and
- 12) any other relevant information as requested by the Department.

PART I**Section D. Residuals Management Program****1. Residuals Management Program for Land Application of Biosolids**

A permittee seeking authorization to land-apply bulk biosolids or prepare bulk biosolids for land application shall develop and submit a Residuals Management Program (RMP) to the Department (see Part I.D.1.e) for approval. Effective upon Department approval of the permittee's RMP, the permittee is authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules) which can be obtained via the internet (<http://www.michigan.gov/deq/> and on the left side of the screen click on Water, Biosolids & Industrial Pretreatment, Biosolids, then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen). The permittee's approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit.

a. RMP Approval and Implementation

A permittee seeking approval of an RMP shall submit the RMP to the Department (see Part I.D.1.e) at least 180 days prior to the land application of biosolids. The permittee may utilize the RMP Electronic Form which can be obtained via the internet (<http://www.michigan.gov/biosolids> then click on RMP Electronic Form which is under the Downloads banner in the center of the screen) or obtain detailed requirements from the Department. The RMP shall become effective and shall be implemented by the permittee upon written approval by the Department.

b. Annual Report

On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at <https://miwaters.deq.state.mi.us>. At a minimum, the report shall contain:

- 1) a certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP; and
- 2) a completed Biosolids Annual Report Form, available at <https://miwaters.deq.state.mi.us>.

c. Modifications to the Approved RMP

Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications to the Department (see Part I.D.1.e.) for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

d. Record Keeping

Records required by the Part 24 Rules shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

e. Contact Information

RMP-related submittals shall be made to the Department.

PART II

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

Section A. Definitions

Acute toxic unit (TU_A) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

Annual monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Authorized public agency means a state, local, or county agency that is designated pursuant to the provisions of section 9110 of Part 91 of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

Best management practices (BMPs) means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

Certificate of Coverage (COC) is a document, issued by the Department, which authorizes a discharge under a general permit.

Chronic toxic unit (TU_C) means $100/MATC$ or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium.

Class B biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

PART II

Section A. Definitions

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any *individual* sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Daily monitoring frequency refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Department means the Michigan Department of Environmental Quality.

Detection level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

Discharge means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

Discharge point is the location where the point source discharge is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

EC₅₀ means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

PART II

Section A. Definitions

Fecal coliform bacteria 7-day

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

Flow-proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

General permit means a National Pollutant Discharge Elimination System permit issued authorizing a category of similar discharges.

Geometric mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

Grab sample is a single sample taken at neither a set time nor flow.

IC₂₅ means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

Illicit connection means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

Illicit discharge means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

Inlet means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

PART II

Section A. Definitions

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

Land application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC₅₀ means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

Maximum extent practicable means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

MGD means million gallons per day.

Monthly concentration is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the seven day period was partially in each of two months, the monthly average shall be reported on the DMR of the month in which the last day of discharge occurred.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR. If the seven day period was partially in each of two months, the monthly average shall be reported on the DMR of the month in which the last day of discharge occurred..

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Municipal separate storm sewer means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a publicly-owned treatment works as defined in the Code of Federal Regulations at 40 CFR 122.2.

PART II

Section A. Definitions

Municipal separate storm sewer system (MS4) means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Federal Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact cooling water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Outfall is the location at which a point source discharge enters the surface waters of the state.

Part 91 agency means an agency that is designated by a county board of commissioners pursuant to the provisions of section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Part 631, or Part 632 pursuant to the provisions of section 9115 of Part 91 of the NREPA.

Part 91 permit means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point source discharge means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

Polluting material means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

POTW is a publicly owned treatment works.

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

PART II

Section A. Definitions

Public (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

Public body means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

Qualifying storm event means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

Quarterly monitoring frequency refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Regulated area means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

Secondary containment structure means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

Separate storm sewer system means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Significant materials Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills and significant leaks means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

PART II

Section A. Definitions

Special-use area means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

Stoichiometric means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

Storm water means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

SWPPP means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total maximum daily loads (TMDLs) are required by the Federal Act for waterbodies that do not meet Water Quality Standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet Water Quality Standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity reduction evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

WWSL is a wastewater stabilization lagoon.

WWSL discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

3-portion composite sample is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

PART II

Section A. Definitions

7-day concentration

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

7-day loading

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

24-hour composite sample is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations.** Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Chief of the Permits Section, Water Resources Division, Michigan Department of Environmental Quality, P.O. Box 30273, Lansing, Michigan, 48909-7773. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

PART II

Section C. Reporting Requirements

1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website, located at <https://miwaters.deq.state.mi.us>, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th (April 1st for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

PART II

Section C. Reporting Requirements

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. **24-Hour Reporting**
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. **Other Reporting**
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from **out-of-state** dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

PART II

Section C. Reporting Requirements

8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

9. Bypass Prohibition and Notification

- a. Bypass Prohibition
Bypass is prohibited, and the Department may take an enforcement action, unless:
 - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
 - 3) the permittee submitted notices as required under 9.b. or 9.c. below.
- b. Notice of Anticipated Bypass
If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. Notice of Unanticipated Bypass
The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

PART II

Section C. Reporting Requirements

- d. **Written Report of Bypass**
A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. **Bypass Not Exceeding Limitations**
The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.
- f. **Definitions**
- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
 - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

PART II

Section C. Reporting Requirements

12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

PART II

Section C. Reporting Requirements

15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Federal Act and the NREPA.

The Federal Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit.

PART II

Section D. Management Responsibilities

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Federal Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II

Section D. Management Responsibilities

6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environmental Quality permits, or approvals from other units of government as may be required by law.

ATTACHMENT G – HRC SOLIDS BUILDING FLOOR ASSESSMENT

Memorandum

To: Lambrina Tercala, P.E., Project Manager, OHM Advisors

From: Sean Herrle, P.E., Staff Engineer, Hubbell, Roth & Clark
Christa Crist, P.E., Project Engineer, Hubbell, Roth & Clark

Date: September 13, 2019

Subject: Review of BioCon Thermal Sludge Dryer
Solids Handling Building Floor Assessment

HRC Job No. 20180749.23

As requested by OHM Advisors, HRC performed a structural assessment of the Solids Handling Building's floor structure for support of two BioCon Thermal Sludge Dryer units. The floor slab, beams, underlying supporting columns, and basement floor slab were evaluated as part of this assessment to determine if adequate support of the proposed units can be provided by the existing structure. Structural assessment of the basement vertical walls was not included as part of this work.

Conditional Assessment / Assumptions:

- ≡ Historic Record Drawings of the floor slab structure, including beams, were available as were details for the columns and footings. Record Drawings also included the design loading for each of the aforementioned components. See Appendix A for excerpts.
- ≡ Cut sheets showing the dryer size and weight were made available by the Manufacturer. See Appendix A for cut sheets.
- ≡ Manufacturer's Cut Sheets appear to depict the proposed equipment spanning between column line B1 through C3. Based on the depicted layout, HRC assumes that impact from the proposed dryer units will be insignificant on the basement vertical walls.
- ≡ HRC previously inspected adjacent parts of the Solids Handling Building as part of separate, unrelated work in 2013. Photos of the floor slab and columns taken in the basement from this 2013 inspection were used as reference in this assessment.

Summary of Analysis:

- ≡ Uniform floor live loading of 150 psf was applied to the floor in addition to the proposed equipment loading. This approach is consistent with the live load schedule in the 1977 Record Drawings. Equipment loading and layout is per Manufacturer's Cut Sheets.
- ≡ Floor Slab – **NOT Adequate.**
 - Floor slab top reinforcement is not continuous per 1977 Record Drawings and does not appear to adequately resist the proposed forces.
 - Location of concentrated loads from unit's columns may cause tension in the top slab where there is no reinforcement.
 - 1994 Record Drawings indicate that there are four 3.5-foot x 10-foot floor slab openings in the vicinity of the proposed equipment. 1994 Record Drawings and 2011 Record Drawings do not appear to indicate that additional reinforcement was provided at the openings.
- ≡ Beams – **Adequate.**
 - Beams size, reinforcement size and location per 1977 Record Drawings and per 1994 Record Drawings appear to adequately resist proposed forces.
 - No reduction in structural integrity was considered due to beam condition.

- ≡ **Columns – Adequate.**
 - Column size, reinforcement size and location per 1977 Record Drawings appear to adequately resist proposed forces.
 - No reduction in structural integrity was considered due to column condition.
- ≡ **Basement Floor Slab on Ground – Adequate.**
 - Basement floor slab thickness, reinforcement size and location per 1977 Record Drawings appear to adequately resist proposed forces.
 - No reduction in structural integrity was considered due to basement floor slab condition.

Recommendations:

HRC recommends the following to the Design team:

- ≡ Review all pertinent record drawings.
- ≡ Conduct a conditional assessment of floor's structure.
- ≡ Verify floor opening locations and sizes.
- ≡ Retrofit floor slab to provide reinforcement meeting Michigan Building Code requirements.

Limitations of Assessment:

Differing Conditions: HRC's recommendations included within were developed utilizing available historic record drawings and photos from unrelated work. If deviations in site conditions are encountered during design or construction, they should be brought to the attention of HRC.

Change in Plans: HRC's recommendations included within were developed based on preliminary design plans, layout and cut sheets furnished by the Manufacture or Owners representative. Any revision in the plans for the proposed construction from those outlined in this memorandum should be brought to the attention of HRC to determine if any changes in recommendations are necessary.

Recommendations vs. Final Design: This memorandum and the recommendations included within are not to be considered a final design, but rather as a basis for the final design to be completed by others. It is the Client's responsibility to ensure that the recommendations of HRC are properly integrated into the design, and that HRC is provided the opportunity for design input and comment after the submittal of this memorandum, as needed. HRC recommends that we be retained to review the final Construction Documents to confirm that the proposed project design sufficiently considers HRC's recommendations.

Memorandum Interpretation: HRC is not responsible for the conclusions, opinions, or recommendations by others based upon the data presented herein.

Appendix A:

- ≡ BioCon Thermal Sludge Dryer (Manufacturer's Cut Sheets).
- ≡ Secondary Additions to Wyandotte Wastewater Plant, Hubbell, Roth & Clark Inc., 1977 (1977 Record Drawings).
 - Sheet 6, 12, S-1, S-2, S-3, S-4, S-14 & S-15.
- ≡ Wyandotte Wastewater Treatment Plant Improvement & Expansion Project, Hubbell, Roth & Clark Inc., 1994 (1994 Record Drawings).
 - Sheet B2-1 & B2-8.
- ≡ Phase 1 Solids Handling Improvements, Tetra Tech, 2011 (2011 Record Drawings).
 - Sheet S-3 & S-4.

Appendix A — Record Drawings

REDACTED BIOCON'S MANUFACTURER
INFORMATION. EQUIPMENT SELECTION WILL BE
PER DRYER RFP SELECTION PROCESS .

Sheet Title
SOLIDS HANDLING BUILDING

ARCHITECTURAL

1. SITE WORK - EXISTING UTILITIES & DEMOLITION
2. SITE WORK - ROADS & GRADING
3. SITE WORK - YARD PIPING - SOUTH
4. GRADIENTS
5. BASEMENT PLAN & DETAILS
6. PLAN EL. 582'-0", 578'-6" & 590'-9"
7. PLAN EL. 598'-6", 602'-9" & 604'-0"
8. PLAN EL. 616'-4" & DETAILS
9. ROOF PLAN
10. ELEVATIONS
11. WEST ELEVATION & DETAILS
12. BUILDING SECTIONS
13. BUILDING SECTIONS
14. STAIRS NO. 1, 3 & 4
15. STAIR NO. 2
16. STAIR DETAILS
17. WALL SECTIONS
18. WALL SECTIONS
19. WALL SECTIONS
20. WALL SECTIONS
21. EXPANSION JOINT DETAILS
22. MISCELLANEOUS DETAILS
23. MISCELLANEOUS DETAILS
24. SLUDGE THICKENING AREA PLAN & DETAILS
25. SLUDGE THICKENING AREA PLAN & DETAILS
26. METAL WALL DETAILS
27. METAL WALL DETAILS
28. ROADS - PLANS & PROFILES
29. SEWER PROFILE
30. STANDARD DETAILS
- C-17-1 D3 STANDARD DETAILS

STRUCTURAL

- S-1 TYPICAL DETAILS
- S-2 FOUNDATION PLAN
- S-3 BASEMENT PLAN
- S-4 FRAMING PLAN AT EL. 582'-0" & EL. 590'-9"
- S-5 FRAMING PLAN AT EL. 592'-5"
- S-6 FRAMING PLAN AT EL. 602'-9" & EL. 604'-0"
- S-7 FRAMING PLAN AT EL. 616'-4" & EL. 625'-0"
- S-8 FRAMING PLAN BOTTOM CHORD & CATWALK
- S-9 ROOF FRAMING PLAN
- S-10 ELEVATION & SECTION
- S-11 ELEVATIONS
- S-12 CROSS SECTIONS & DETAILS
- S-13 COLUMN SCHEDULE
- S-14 COLUMN SCHEDULE
- S-15 DETAILS
- S-16 TRUSSES & SWAY FRAMES
- S-17 SECTIONS & DETAILS
- S-18 SLUDGE THICKENING AREA - FOUNDATION PLAN SECTIONS
- S-19 SLUDGE THICKENING AREA - ROOF PLAN & DETAILS
- S-20 GRAVITY SLUDGE THICKENING TANK PLAN - SECTIONS & DETAILS
- S-21 SLUDGE STORAGE TANK PLAN - SECTIONS & DETAILS

INSTRUMENTATION

- I-1 COMPUTER BLOCK DIAGRAM
- I-2 INCINERATOR PROCESS FLOW
- I-3 INCINERATION CONTROL
- I-4 INCINERATION & FILTRATION INTERCONNECTION DIAGRAM
- I-5 SLUDGE THICKENING TANKS
- I-6 THICKENED SLUDGE & FILTER DELIVERY
- I-7 FILTERS
- I-8 ENST CHAMBERS
- I-9 CONTROL PANELS

NOTE: I-1 & I-2 ARE ISSUED FOR REFERENCE

MECHANICAL

- M-1 UNDERGROUND PLAN
- M-2 PLAN INCINERATOR AREA - ELEV. 568'-0"
- M-3 PLAN INCINERATOR AREA - ELEV. 582'-0"
- M-4 PLAN INCINERATOR AREA - ELEV. 593'-6"
- M-5 PLAN INCINERATOR AREA - ELEV. 604'-4"
- M-6 PLAN INCINERATOR AREA - ELEV. 616'-4"
- M-7 SECTIONS
- M-8 DETAILS AND SECTIONS
- M-9 PLAN FILTER AREA - ELEV. 574'-0"
- M-10 PLAN FILTER AREA - ELEV. 601'-9"
- M-11 PLAN FILTER AREA - ELEV. 602'-9"
- M-12 SECTIONS
- M-13 DETAILS & SECTIONS
- M-14 POLYMER PLAN & SECTIONS
- M-15 PLAN FILTER AREA - ELEV. 574'-0"
- M-16 PLANS & SECTIONS
- M-17 ROOF PLAN
- M-18 FLOW CONTROL
- M-19 SCHEDULE & DETAILS
- M-20 SLUDGE THICKENING AREA - CONTROL DIAGRAMS
- M-21 AIR FLOW & CONTROL DIAGRAM
- M-22 SLUDGE THICKENING AREA PROCESS PIPING SCHEMATIC
- M-23 SLUDGE THICKENING AREA PLAN - LOW LEVEL PROCESS PIPING
- M-24 SLUDGE THICKENING AREA PLAN - HIGH LEVEL PROCESS PIPING
- M-25 SLUDGE THICKENING AREA PLAN - PROCESS PIPING GALLERY
- M-26 SLUDGE THICKENING AREA - ROOF PLAN
- M-27 SLUDGE THICKENING AREA PLAN - HEATING & VENTILATION
- M-28 SLUDGE THICKENING AREA PLAN - UNDERGROUND
- M-29 SKUDGE THICKENING AREA - SECTIONS

M-30 TRANSFER SYSTEM

- M-31 CHLORINE SYSTEM ADDITIONS DETAILS

ELECTRICAL

- E-1 ELECTRICAL SITE PLAN - PRIMARY, SECONDARY, STREET LIGHT, UG DUCT BANK AND MANHOLE SYSTEM
- E-2 ENLARGED PARTIAL PLAN - UNDERGROUND CONDUIT & MANHOLE SYSTEM
- E-3 ENLARGED PARTIAL PLAN CONTINUATION AND MANHOLE DETAILS
- E-4 BASEMENT LIGHTING PLAN
- E-5 BASEMENT POWER PLAN
- E-6 1st & 2nd FLOOR, MEZZANINE POWER & LIGHTING
- E-7 3rd & 4th FLOOR POWER PLANS
- E-8 3rd & 4th FLOOR LIGHTING PLANS
- E-9 ROOF PLAN
- E-10 ELECTRICAL ROOM NO. 1 AND CABLE VAULT NO. 1
- E-11 ELECTRICAL ROOM NO. 1 & CABLE VAULT NO. 1 SECTION
- E-12 ELECTRICAL ROOM NO. 2 & CABLE VAULT NO. 2
- E-13 SLUDGE THICKENING AREA - GALLERY PLAN, POWER & LIGHTING
- E-14 SLUDGE THICKENING AREA - UPPER LEVEL, TANKS POWER & LIGHTING
- E-15 4800 V. SINGLE LINE DIAGRAM
- E-16 15 KV SWITCHGEAR, WIRING DIAGRAMS
- E-17 4800 V. PRIMARY SWITCHGEAR
- E-18 4800 V. MOTOR STARTER LINE-UPS MA & MB
- E-19 SECONDARY UNIT SUBSTATION II
- E-20 SECONDARY UNIT SUBSTATION FI
- E-21 MOTOR CONTROL CENTERS M.C.C.-FA, M.C.C.-FB, M.C.C.-FH
- E-22 MOTOR CONTROL CENTERS M.C.C.-FI, M.C.C.-II, M.C.C.-CA & CB
- E-23 POWER PANEL SCHEDULES
- E-24 SUB-BASEMENT GROUNDING PLAN
- E-25 SERVICE BUILDING - ELECTRICAL PLANS, POWER AND LIGHTING
- E-26 SERVICE BUILDING - MOTOR CONTROL CENTER M.C.C.-SB AND SCHEDULES
- E-27 SERVICE SOLIDS HANDLING BLDGS., ETC. - LIGHTING
- E-28 TO 32 LABORATORY ADDITION

SERVICE BUILDING

1. MISCELLANEOUS DETAILS
2. FLOOR PLAN
3. ROOF PLAN & DETAILS
4. ELEVATIONS & DETAILS
5. CROSS SECTIONS
6. REFLECTED CEILING PLAN & DETAILS
7. SCHEDULES & DOOR DETAILS
8. TYPICAL WALL SECTIONS
9. MISCELLANEOUS DETAILS
10. STRUCTURAL DETAILS
11. STRUCTURAL DETAILS
- H-1 HEATING & VENTILATION
- H-2 HEATING & VENTILATION
- H-3 PLUMBING

LABORATORY ADDITION

1. PLANS & SCHEDULES
2. PLANS, SECTIONS & ELEVATIONS
3. FURNITURE & EQUIPMENT
4. WALL SECTIONS
5. DETAILS
6. DETAILS
7. STRUCTURAL PLANS, ELEVATIONS & DETAILS
8. SCHEDULES AND DETAILS
9. PLUMBING
10. PLUMBING
11. HEATING, VENT. AND AIR CONDITIONING

DEPARTMENT OF PUBLIC WORKS

COUNTY OF WAYNE, MICHIGAN

DOWN RIVER SEWAGE DISPOSAL SYSTEM

SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT

WPC - MICH. - 1939

WAYNE COUNTY JOB NO. S-239

CONTRACT NO. 2

BOARD OF PUBLIC WORKS

MICHAEL BERRY
CHAIRMAN

PHILIP J. NEUDECK
VICE-CHAIRMAN

FREDDIE G. BURTON
SECRETARY

PLANS PREPARED BY

HUBBELL, ROTH & CLARK INC.

CONSULTING ENGINEERS

BLOOMFIELD HILLS, MICHIGAN

PREPARED UNDER SUPERVISION OF

David Brody
REGISTERED PROFESSIONAL ENGINEER

WAYNE COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED *David Brody*
CHIEF ENGINEER

APPROVED *Freddie G. Burton*
DIRECTOR

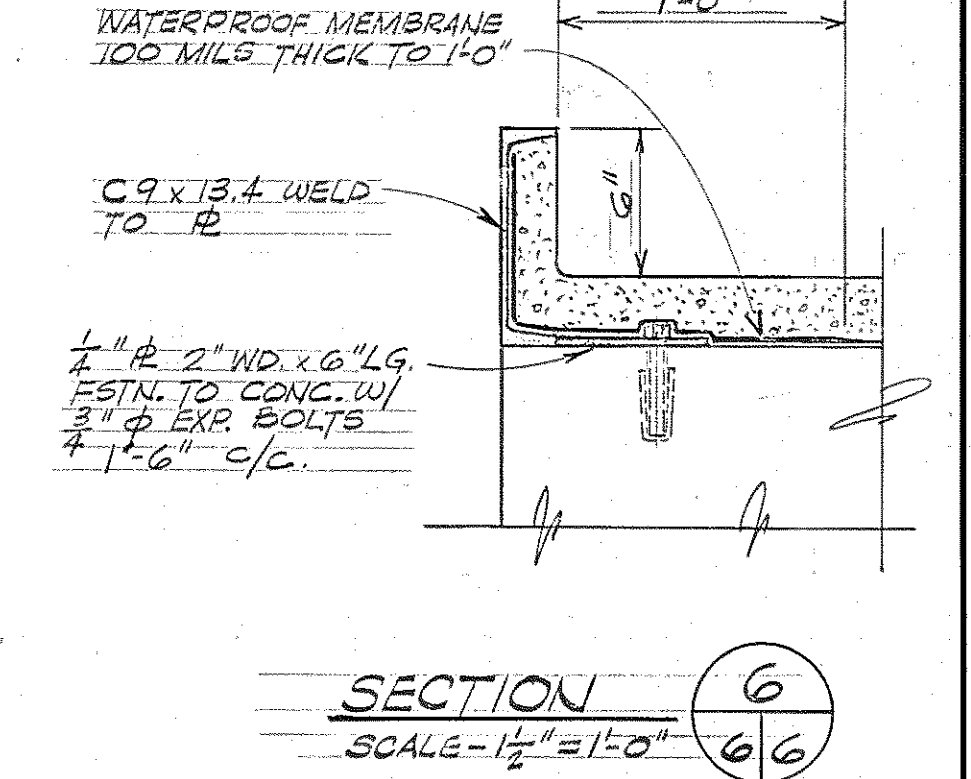
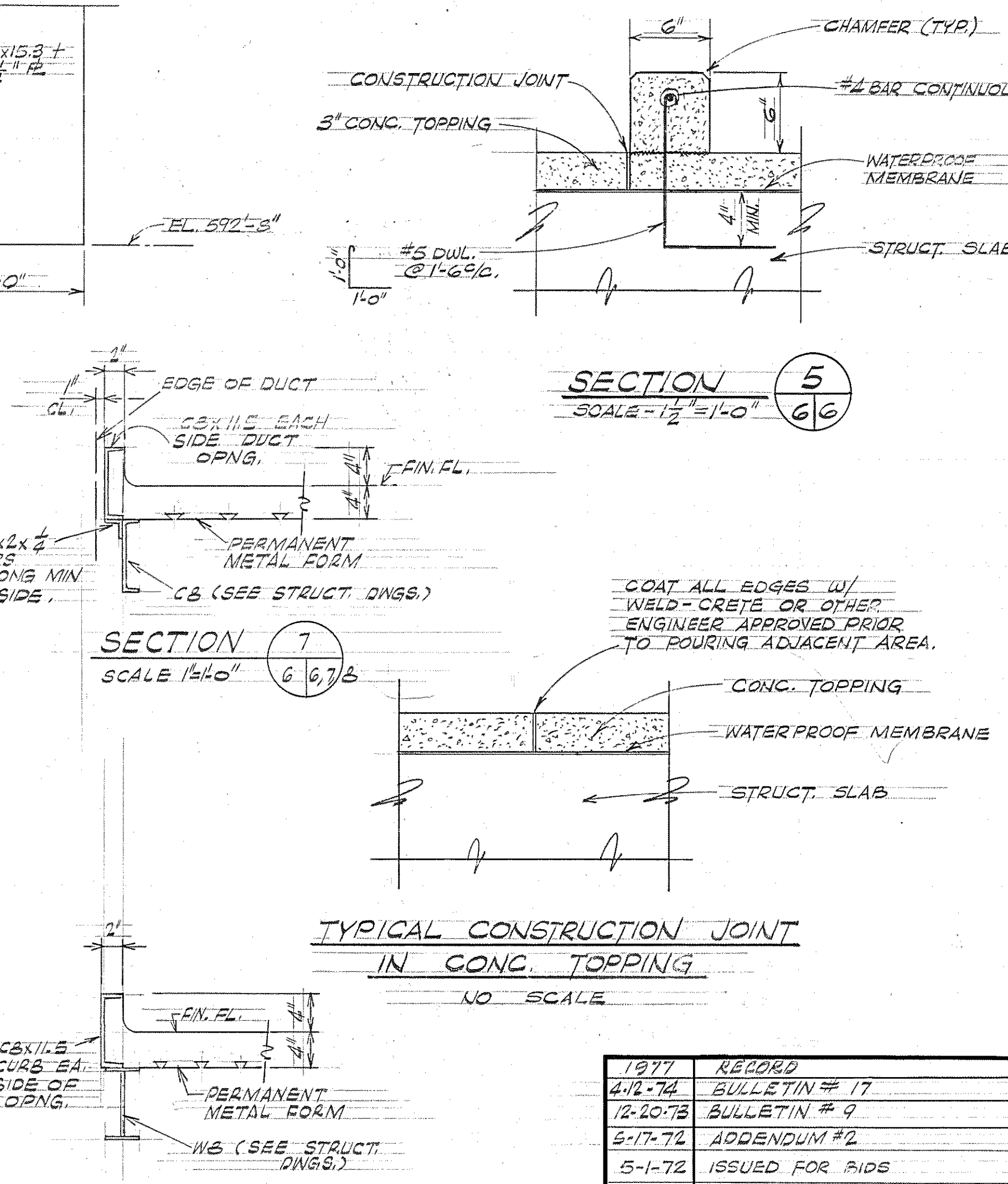
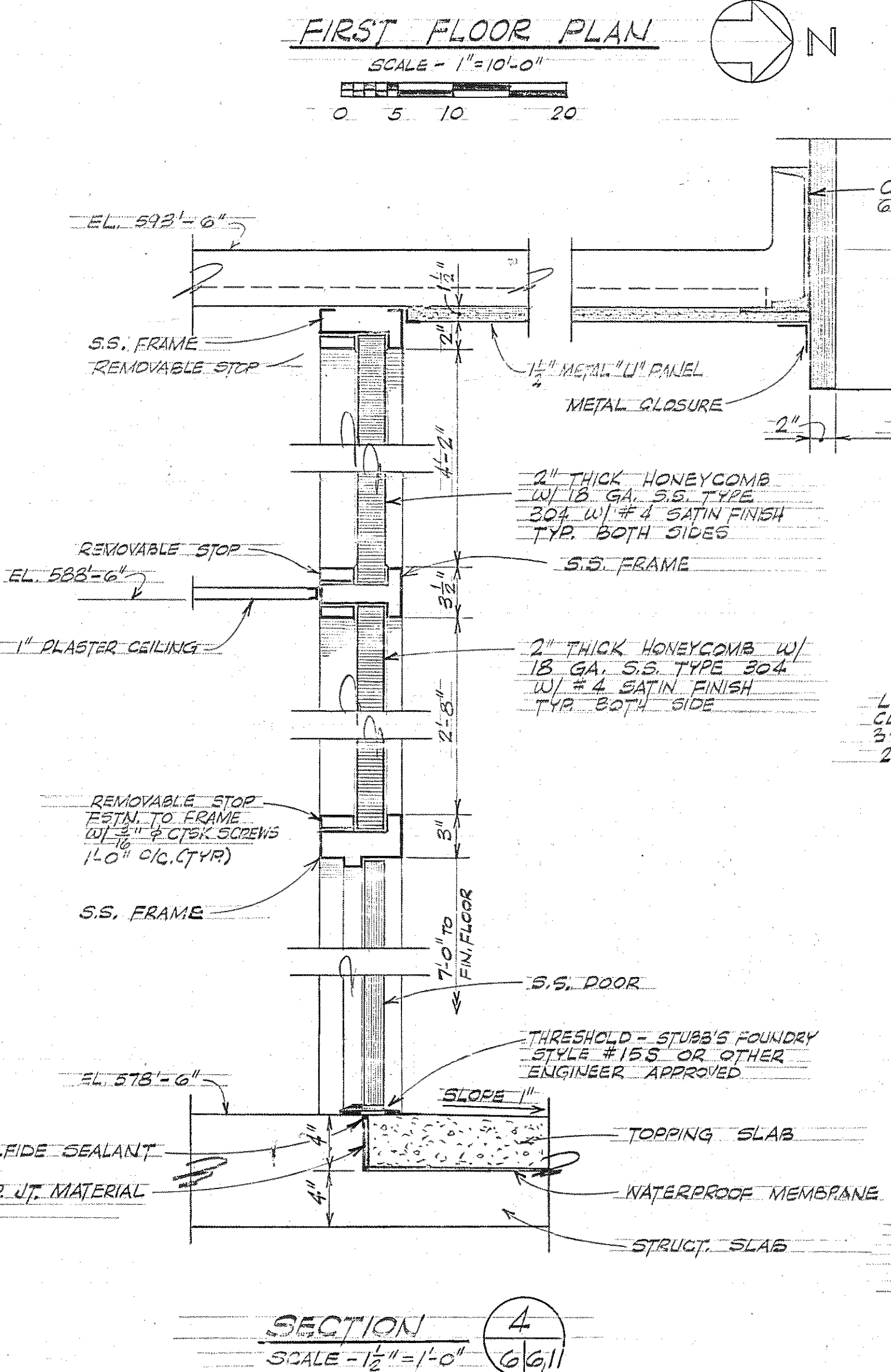
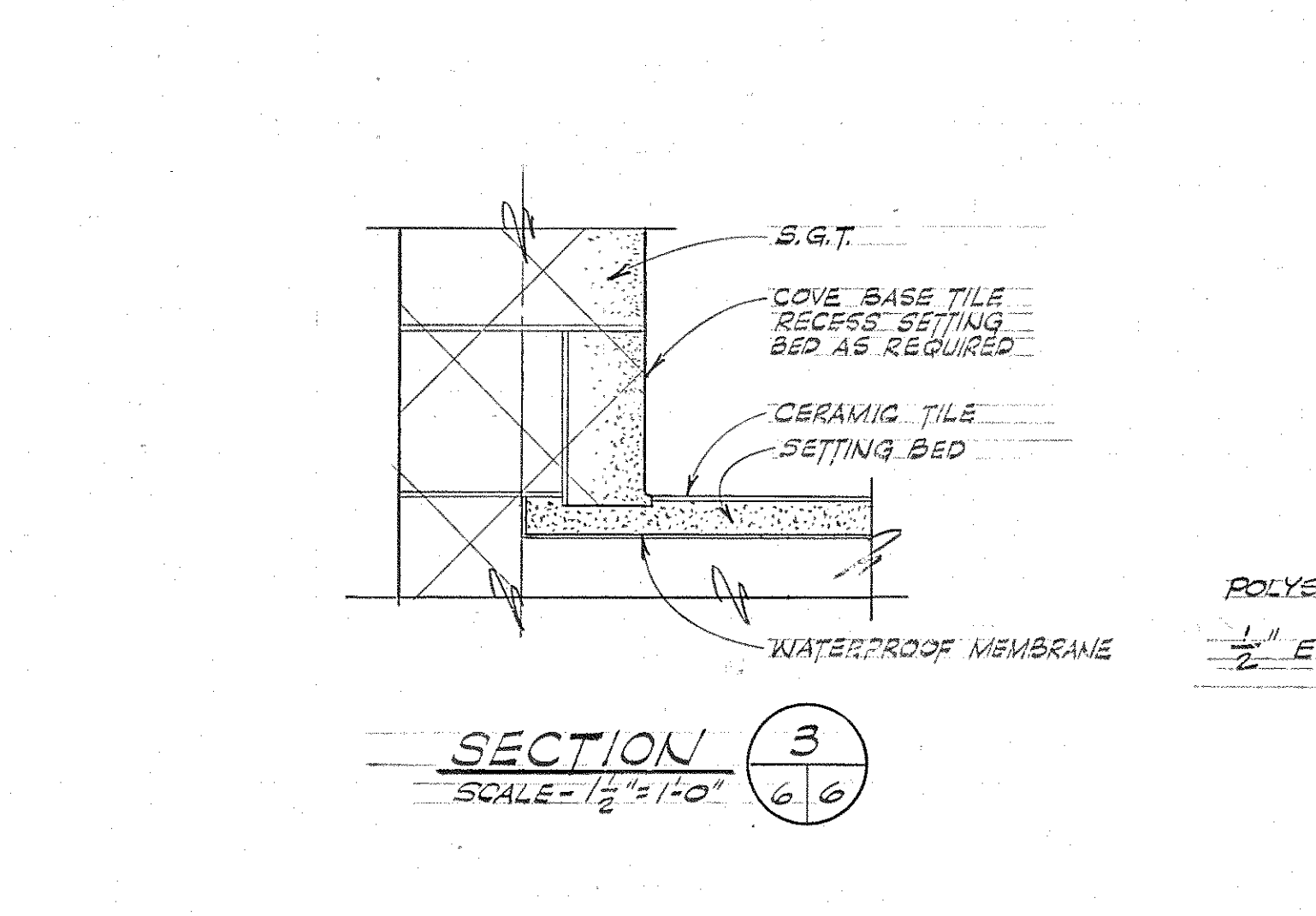
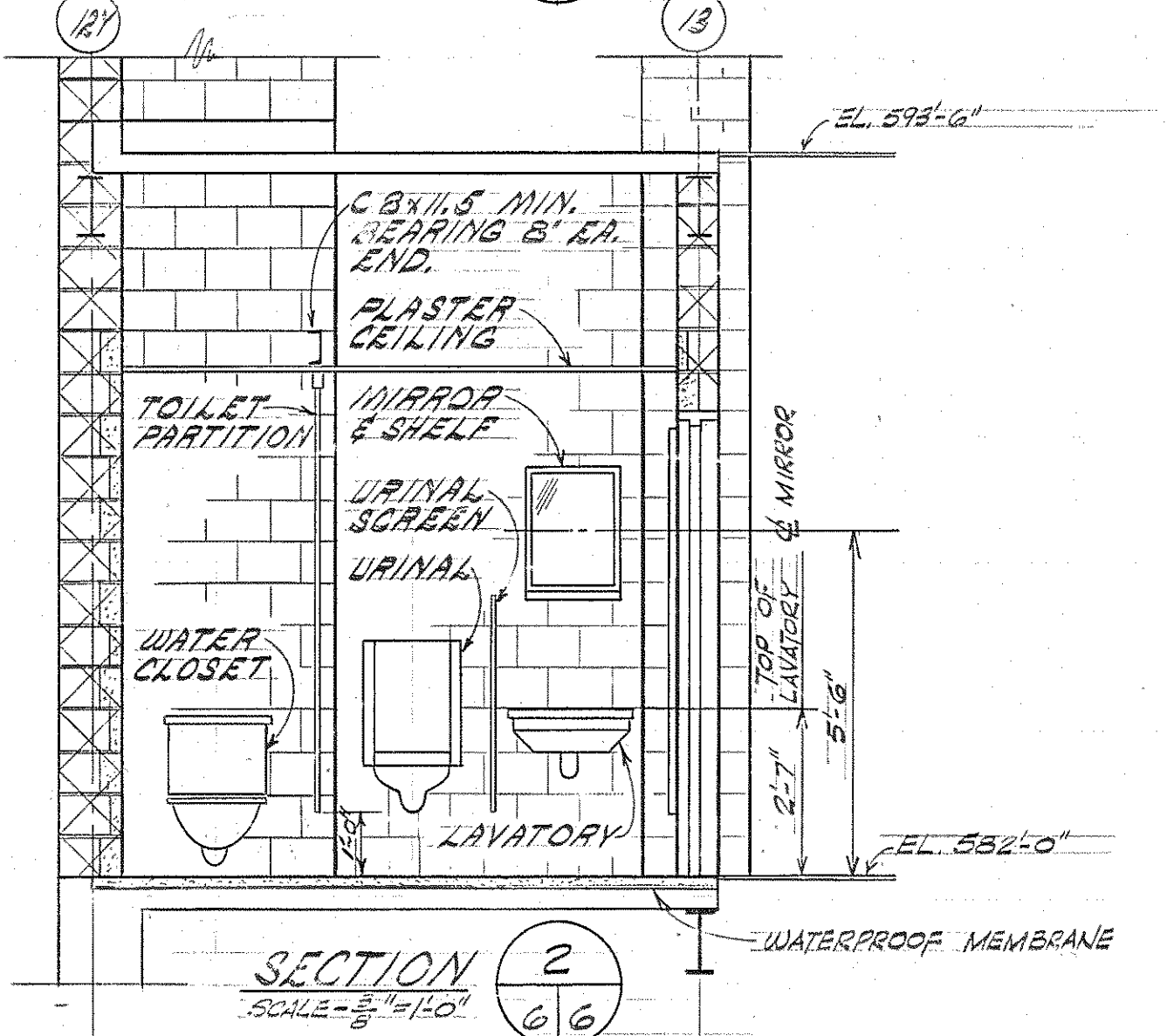
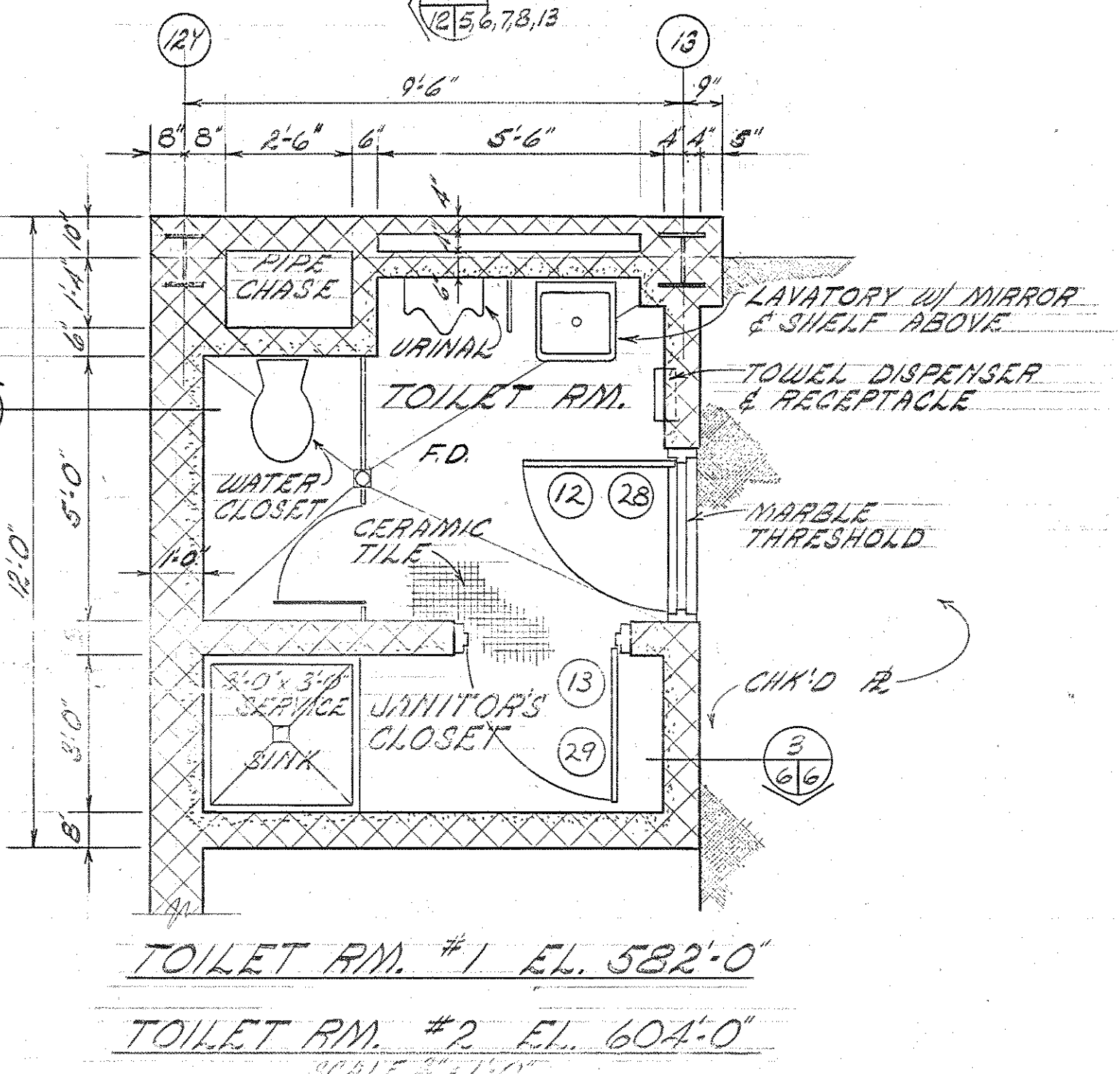
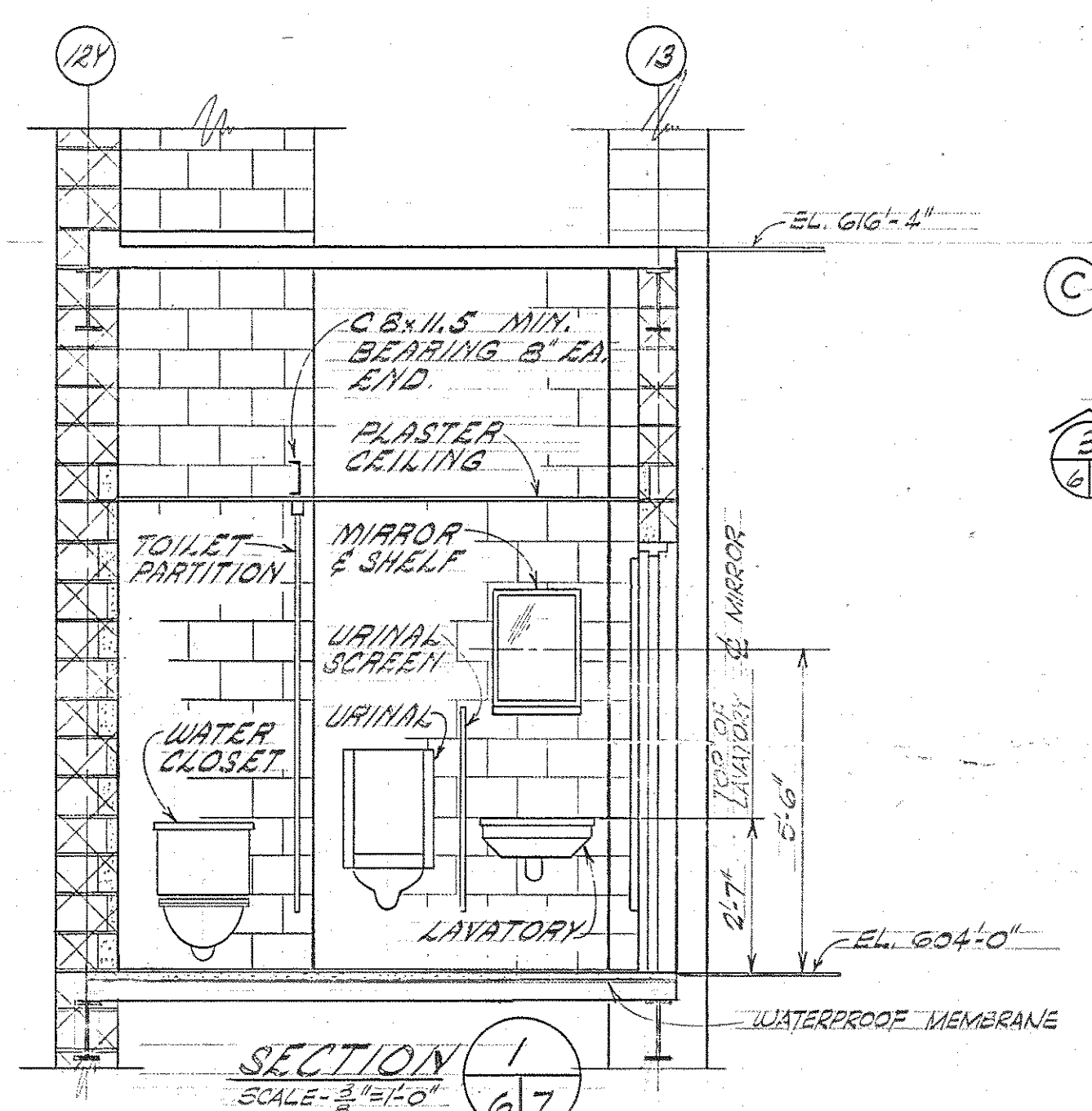
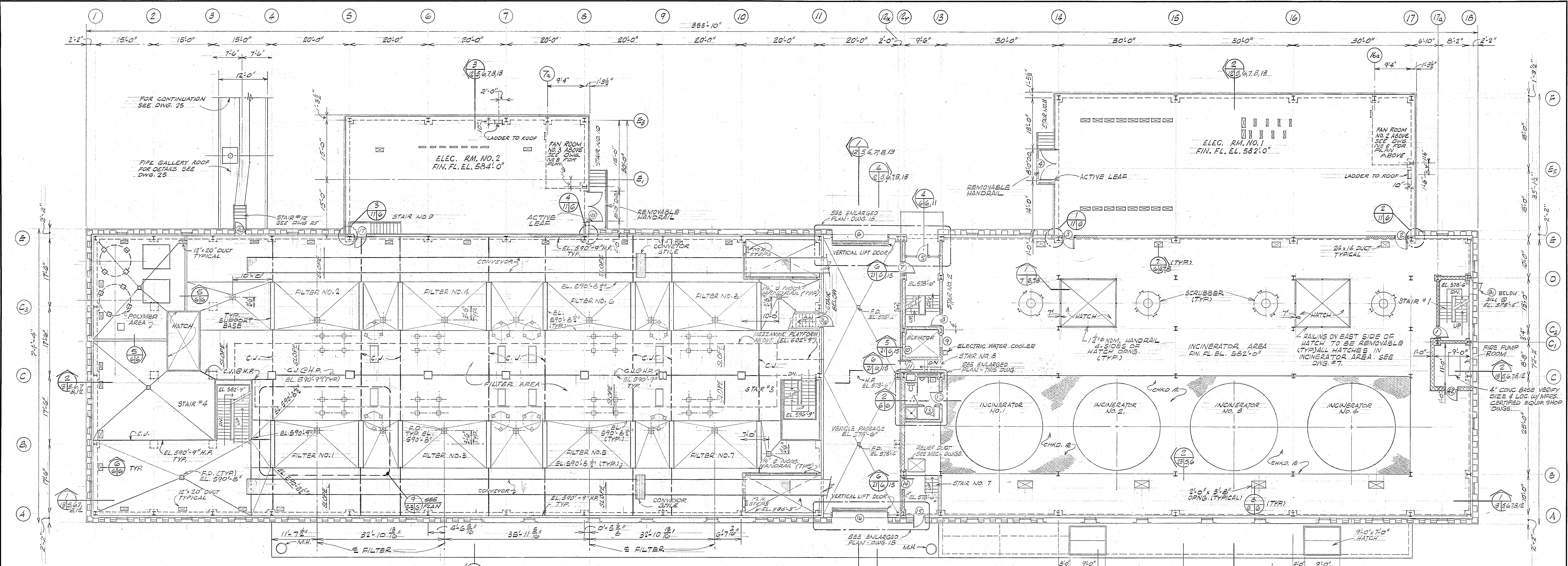
BOARD OF WAYNE COUNTY ROAD COMMISSIONERS

APPROVED *M. Jozuski*
CHIEF ENGINEER DESIGN DIVISION

APPROVED *W.P. Meyers*
COUNTY HIGHWAY ENGINEER

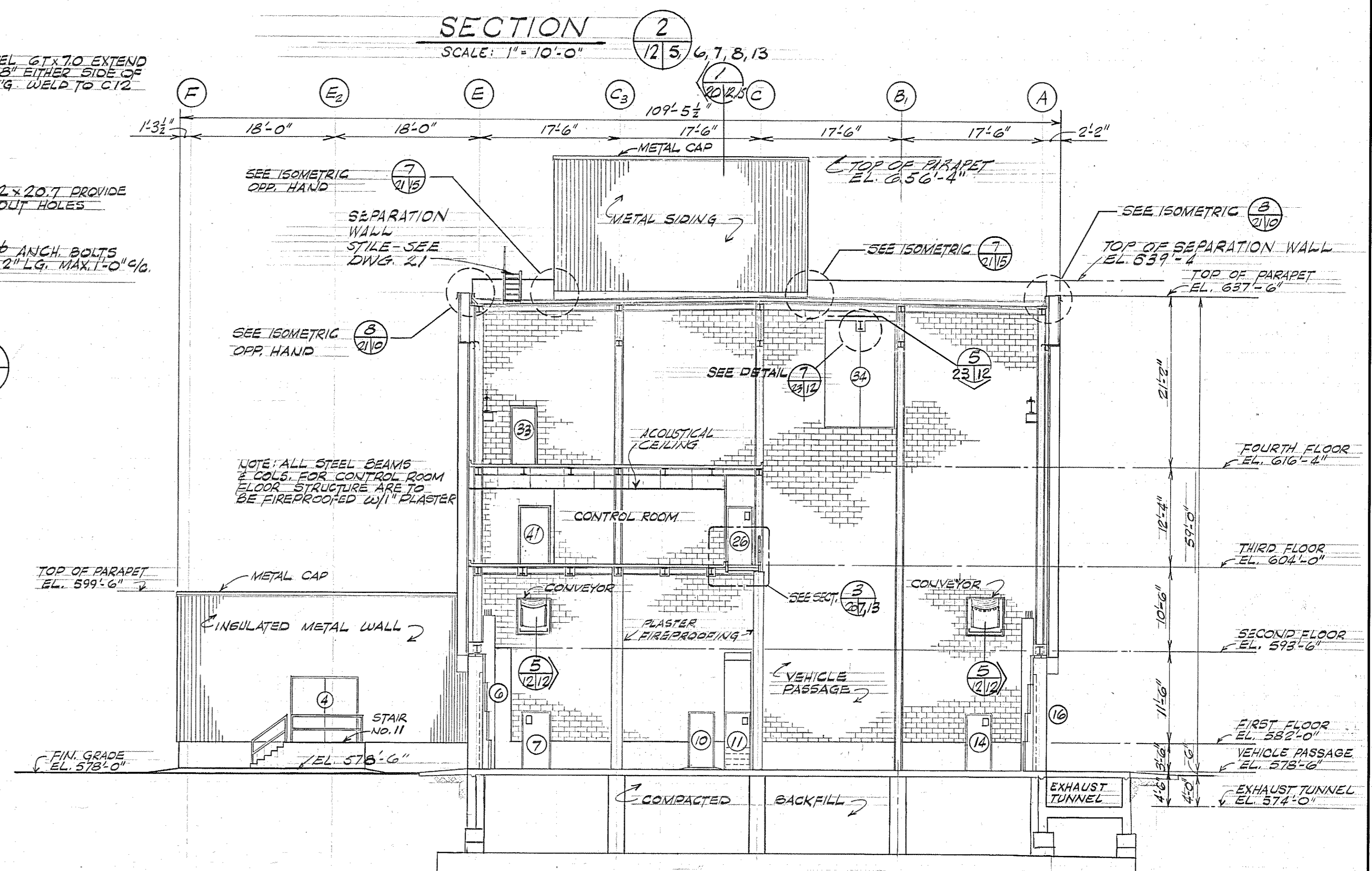
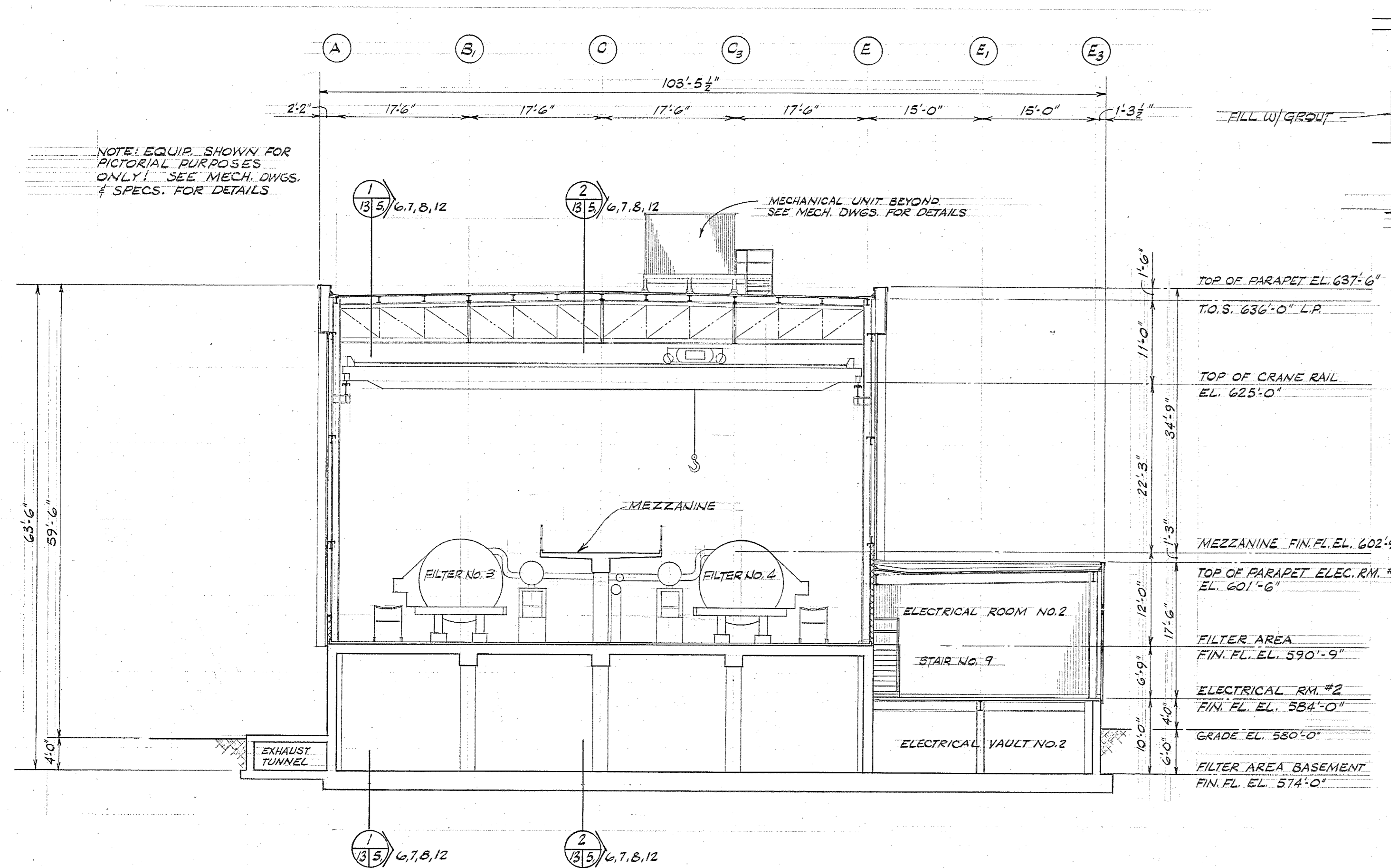
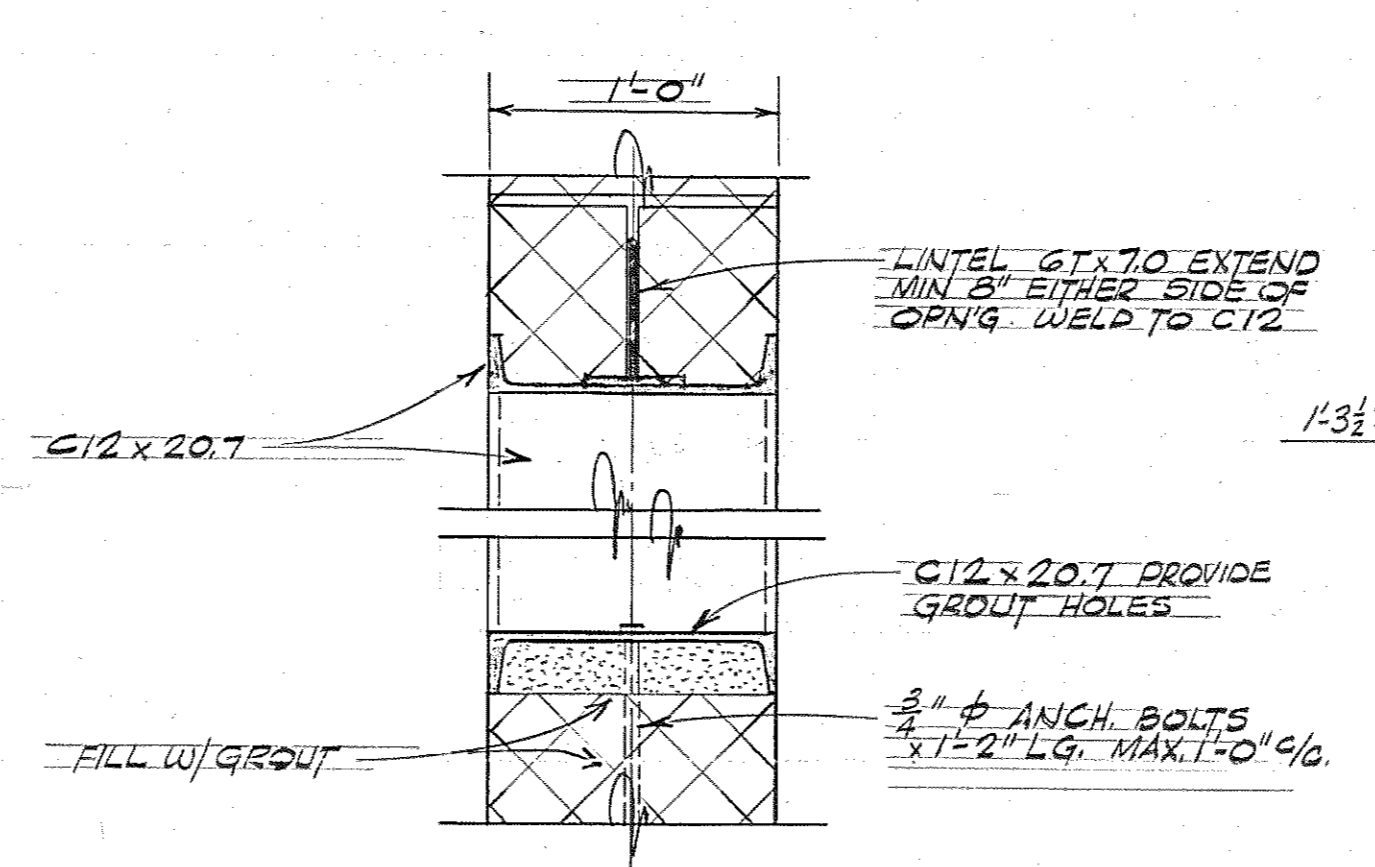
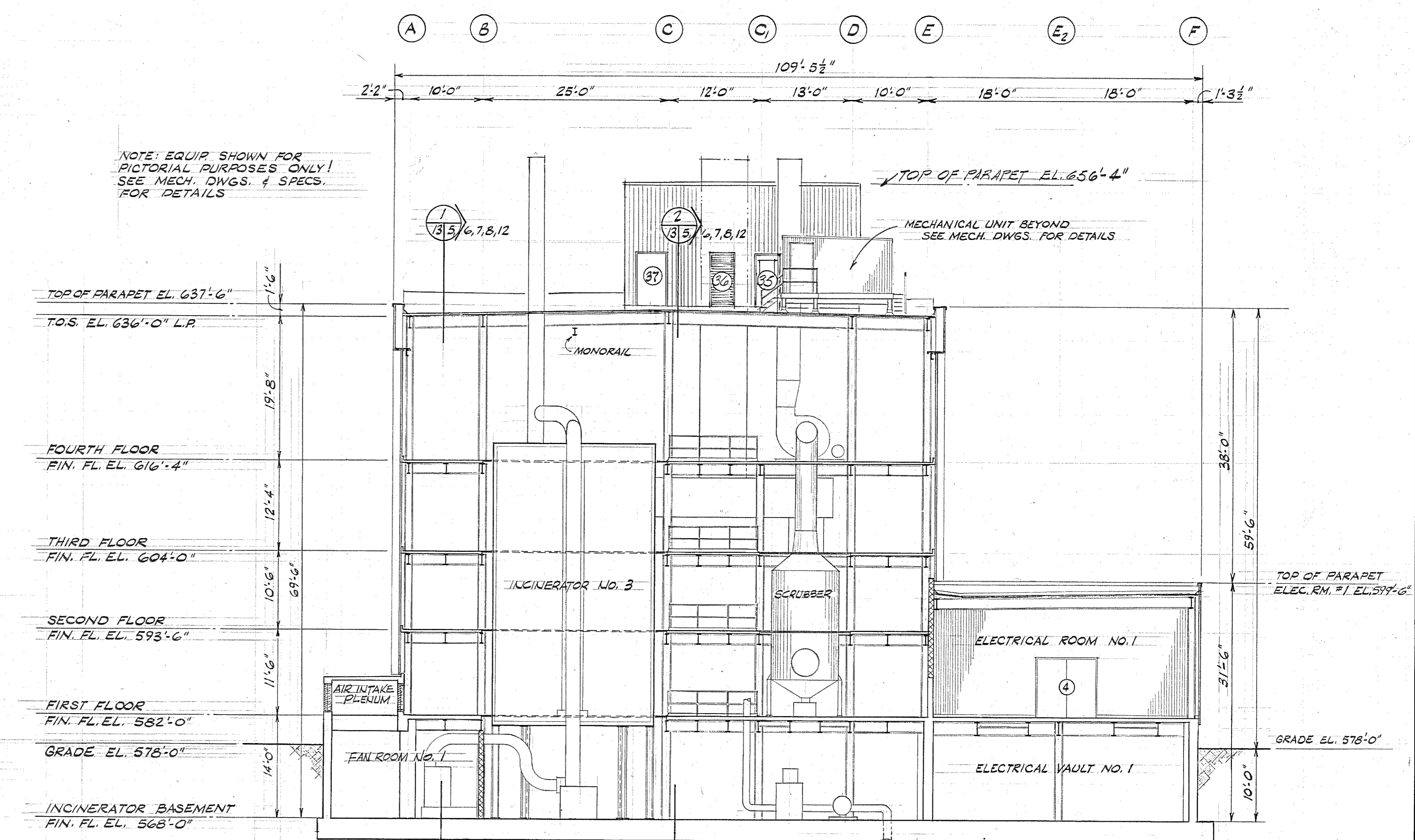
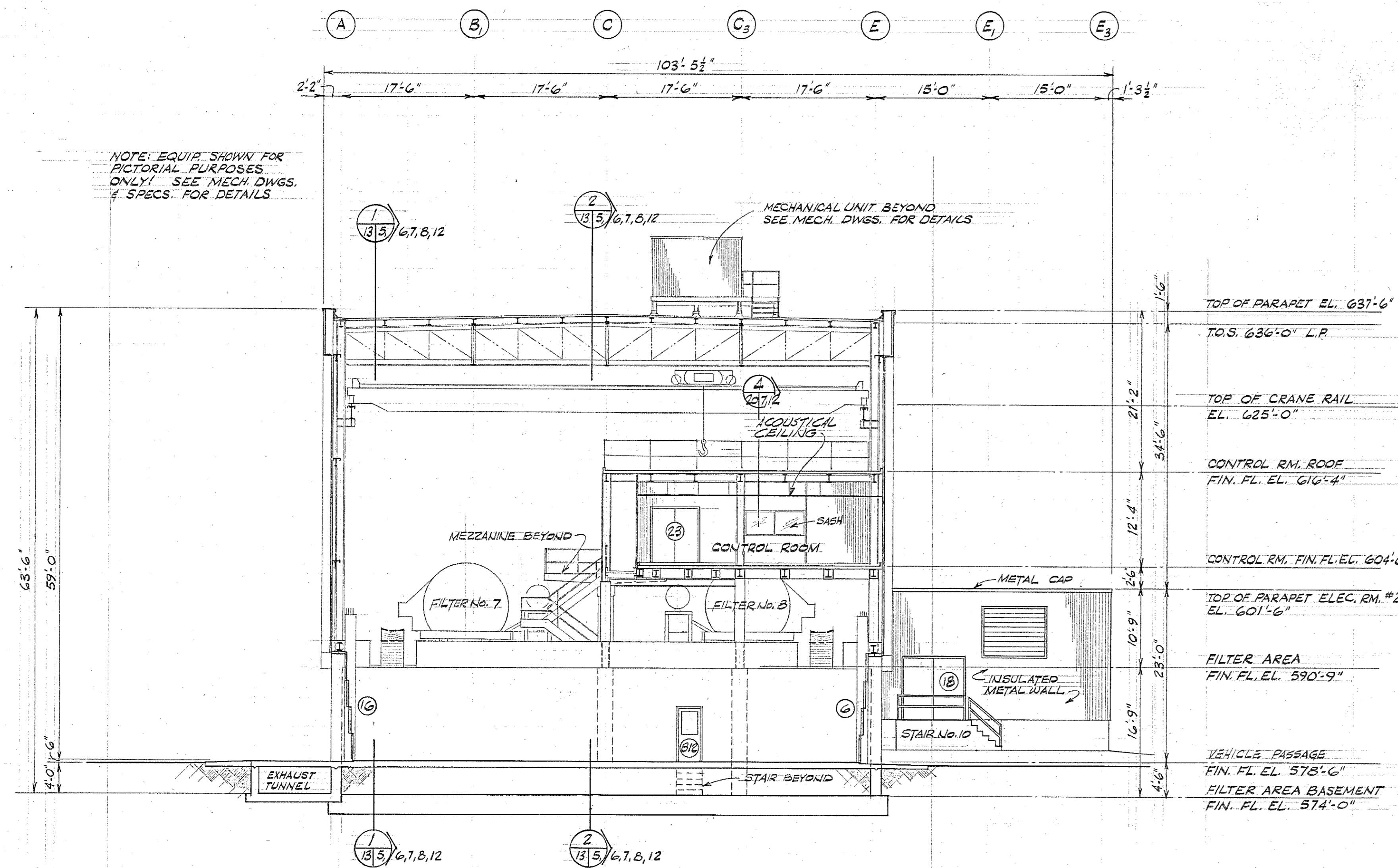
MICHIGAN DEPARTMENT OF HEALTH PERMIT

REG. NO. 11531

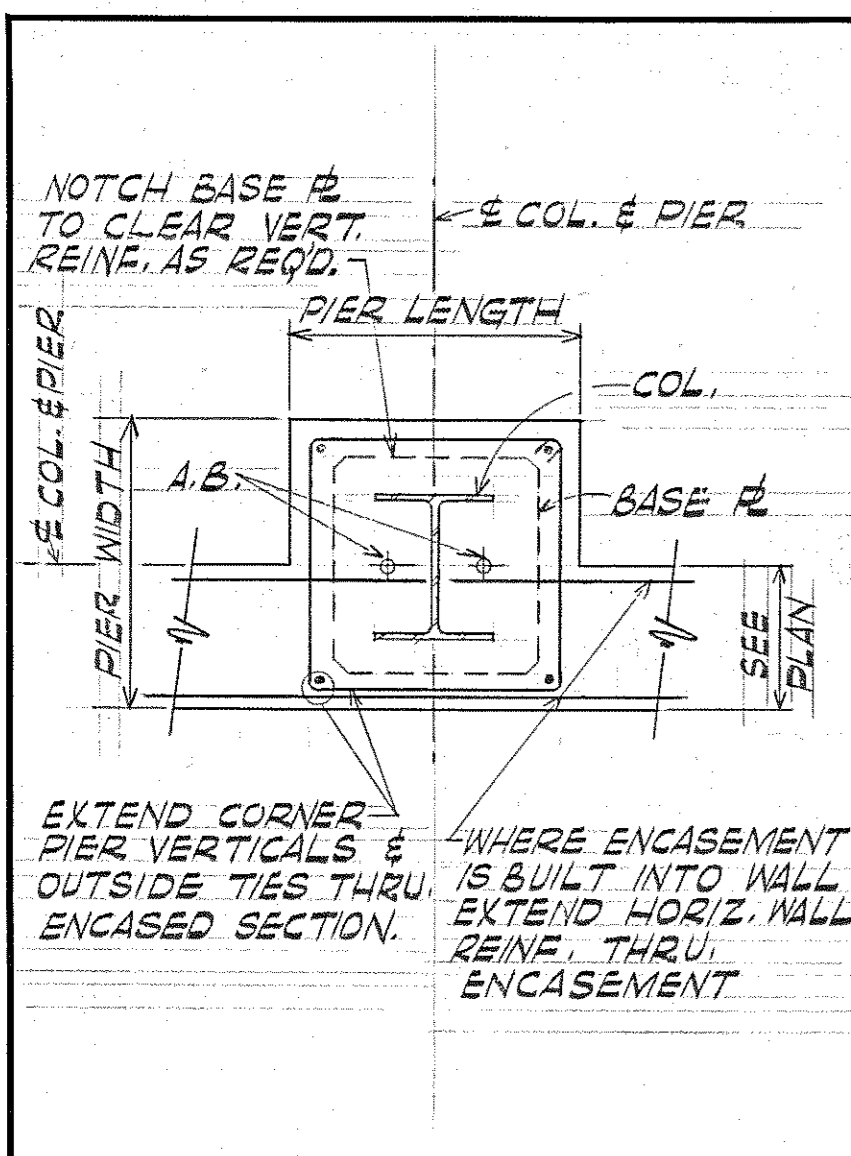


NOTE:
1. SEE DWG. 14 FOR STAIR NO. 1, 3, & 4
2. SEE DWG. 15 FOR STAIR NO. 2
3. SEE DWG. 16 FOR CONVEYOR STILE
4. SEE STRUCT. DWGS. FOR STAIR NOS. 7, 10 & 11
5. SEE DWG. 22 FOR FIRE-PROOFING OF COLS IN VEHICLE PASSAGE
6. SEE DWG. 5 FOR LADDER DETAIL

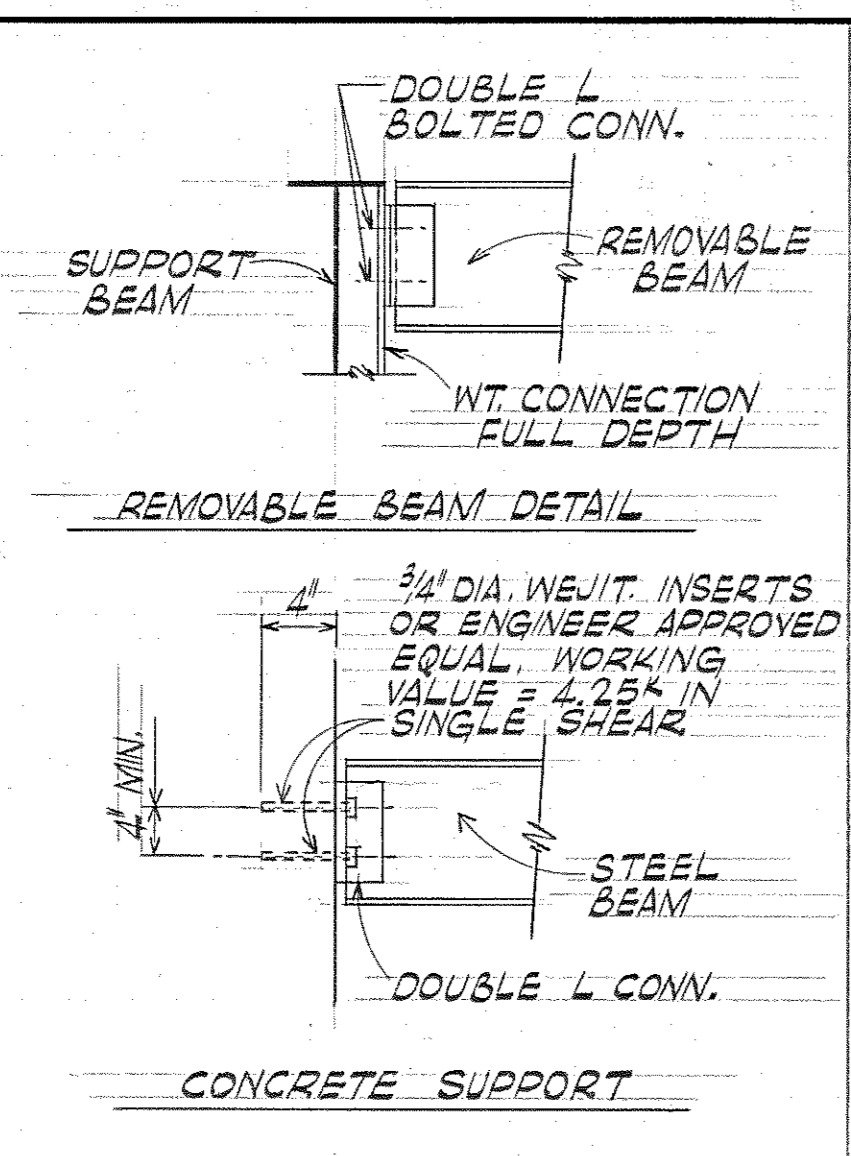
| | |
|--|------------------------------------|
| BOARD OF PUBLIC WORKS WAYNE COUNTY, MICHIGAN | |
| SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT | |
| SOLIDS HANDLING BUILDING PLAN EL. 582'-0", 578'-6", & 590'-9" | |
| 1977 RECORD | S-239 WPC-MICH-1939 CONTRACT NO. 2 |
| 4-12-74 BULLETIN # 17 | JOB NO. 69075 |
| 12-20-75 BULLETIN # 9 | HUBBELL, ROTH & CLARK, INC. |
| 5-17-72 ADDENDUM # 2 | CONSULTING ENGINEERS |
| 5-1-72 ISSUED FOR BIDS | BLOOMFIELD HILLS, MICH. 48313 |
| 8-29-72 M.S.D.H. | DATE 8-29-72 |
| DATE | ADDITIONS AND/OR REVISIONS |
| F.L.D. BK. | SCALE DR. CK. APP. C.M. |
| 6 | 6 |



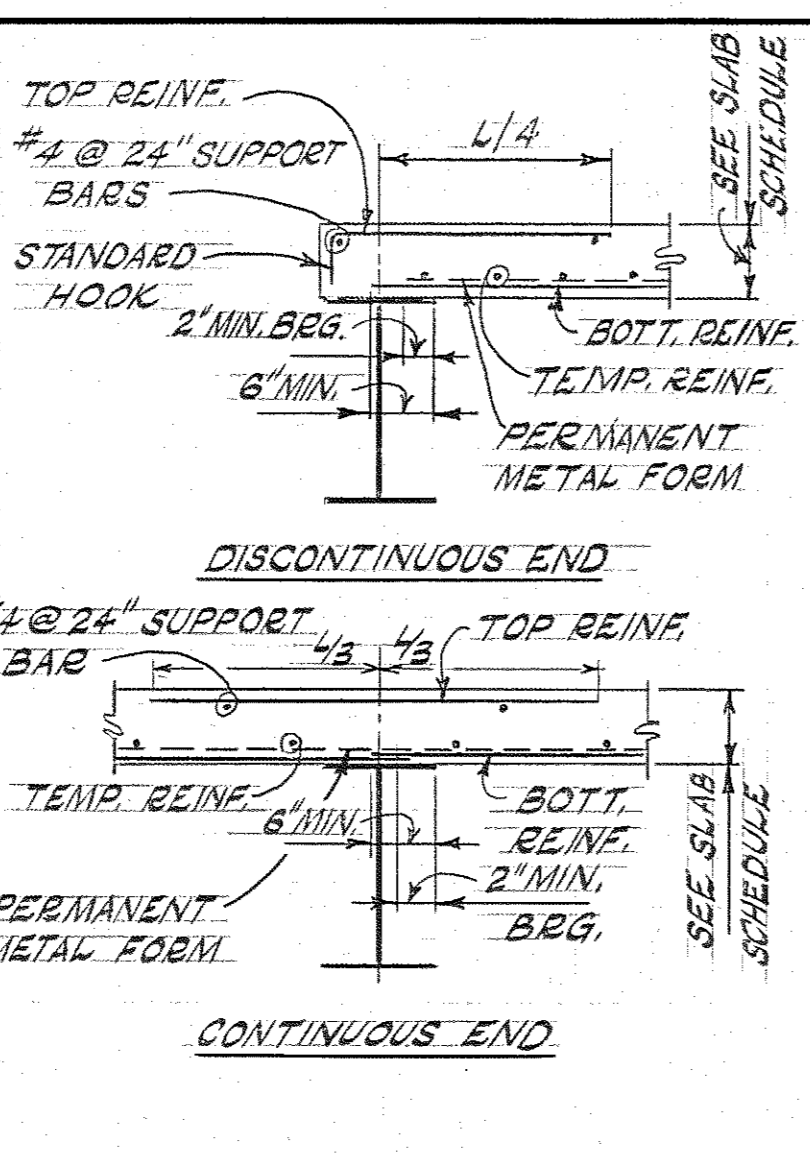
| | | | |
|---|----------------------------|--|------------------------------|
| 1977 | RECORD | BOARD OF PUBLIC WORKS WAYNE COUNTY, MICHIGAN | |
| 5-1-72 | ISSUED FOR BIDS | SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT | |
| 2-29-72 | M.S.D.H. | SOLIDS HANDLING BUILDING BUILDING SECTIONS | |
| DATE | ADDITIONS AND/OR REVISIONS | S-239 | WPC-MICH-1939 CONTRACT NO. 2 |
| F.L.D. BK. | SCALE | DR. | CK. |
| | AS NOTED | J.A./M.R. | L.A. |
| | | APP. | C.M. |
| | | DATE | 2-29-72 |
| HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 2709 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48313 | | JOB No. 69075 | SHEET No. 12 |
| | | CONTRACT NO. 2 | OF 30 |



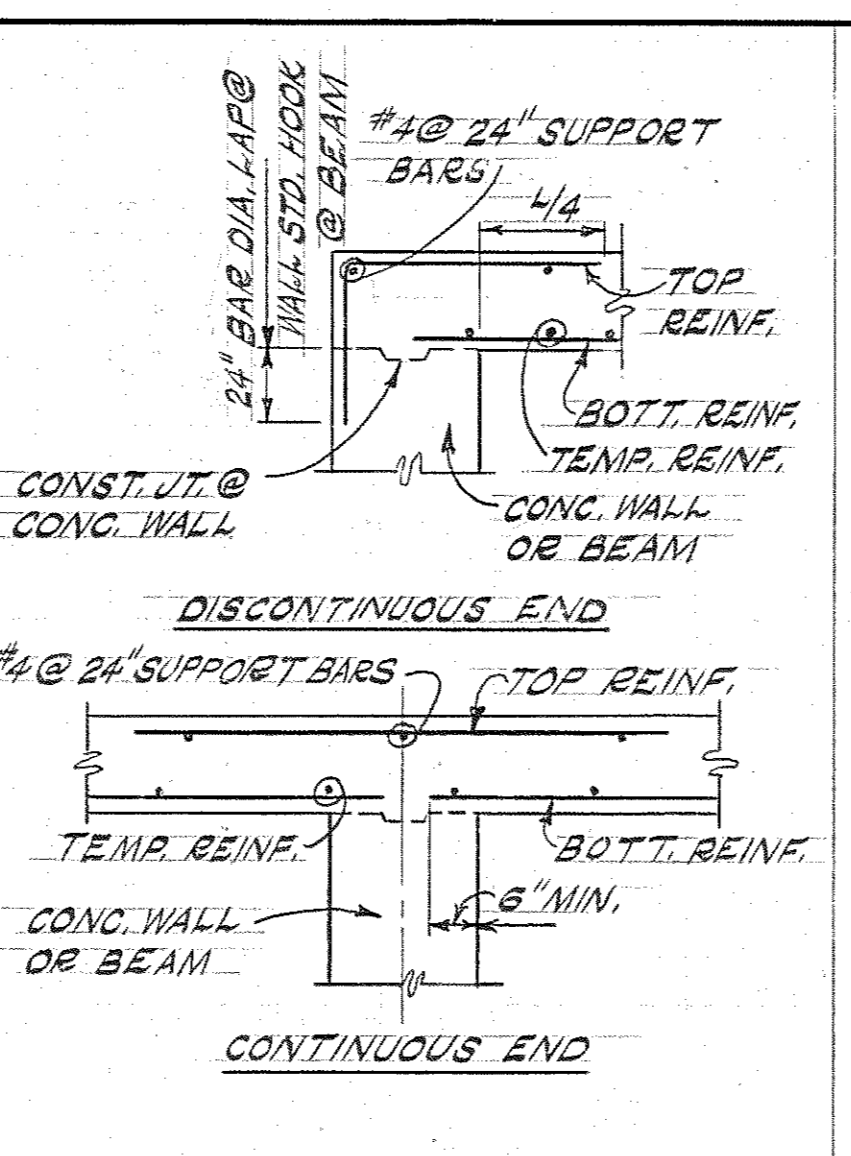
TYP. CONCRETE ENCASEMENT



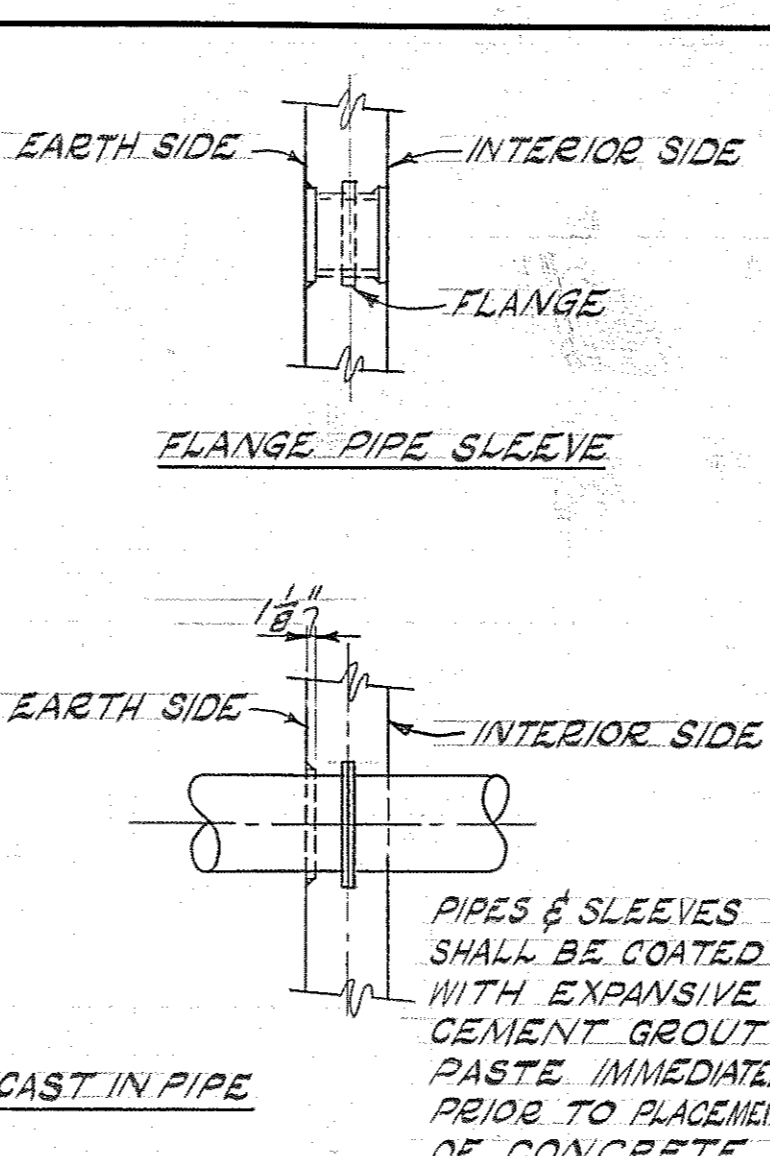
TYPICAL STEEL BEAM DETAIL



TYPICAL CONCRETE SLAB ON STEEL SUPPORTS



TYPICAL CONCRETE SLAB ON CONCRETE SUPPORTS



TYPICAL WALL DETAIL @ PIPE THRU WALL

REINFORCING DEVELOPMENT LENGTHS (WORKING STRESS DESIGN)

| LAP SPLICE (IN) | EMBEDMENT (IN) | | LAP SPLICE (IN) | EMBEDMENT (IN) | |
|-----------------|----------------|---------------|-----------------|----------------|-------|
| | TENSION | COMPR | | TENSION | COMPR |
| 12 | 17 | 17 | 3 | 6 | 7 |
| 12 | 22 | 22 | 4 | 8 | 9 |
| 15 | 27 | 27 | 5 | 10 | 12 |
| 18 | 33 | 33 | 6 | 12 | 14 |
| 21 | 39 | 39 | 7 | 14 | 17 |
| 24 | 48 | 48 | 8 | 18 | 22 |
| 27 | 61 | 61 | 9 | 22 | 27 |
| 31 | 78 | 78 | 10 | 27 | 35 |
| 34 | 95 | 95 | 11 | 33 | 42 |
| 41 | NOT PERMITTED | NOT PERMITTED | 14 | 42 | 53 |
| 55 | NOT PERMITTED | NOT PERMITTED | 18 | 54 | 77 |

LENGTHS SHOWN ARE FOR $f_c = 3.5 \text{ ksi}$ & $f_y = 60.0 \text{ ksi}$. FOR OTHER COMBINATIONS OF CONG. & REIN. REFER TO ACI 308-3, TABLE 14.3. *TOP BARS ARE HORIZ. BARS SO PLACED THAT MORE THAN 1/2 IN. OF CONG. IS CAST IN THE MEMBER BELOW THE BAR.

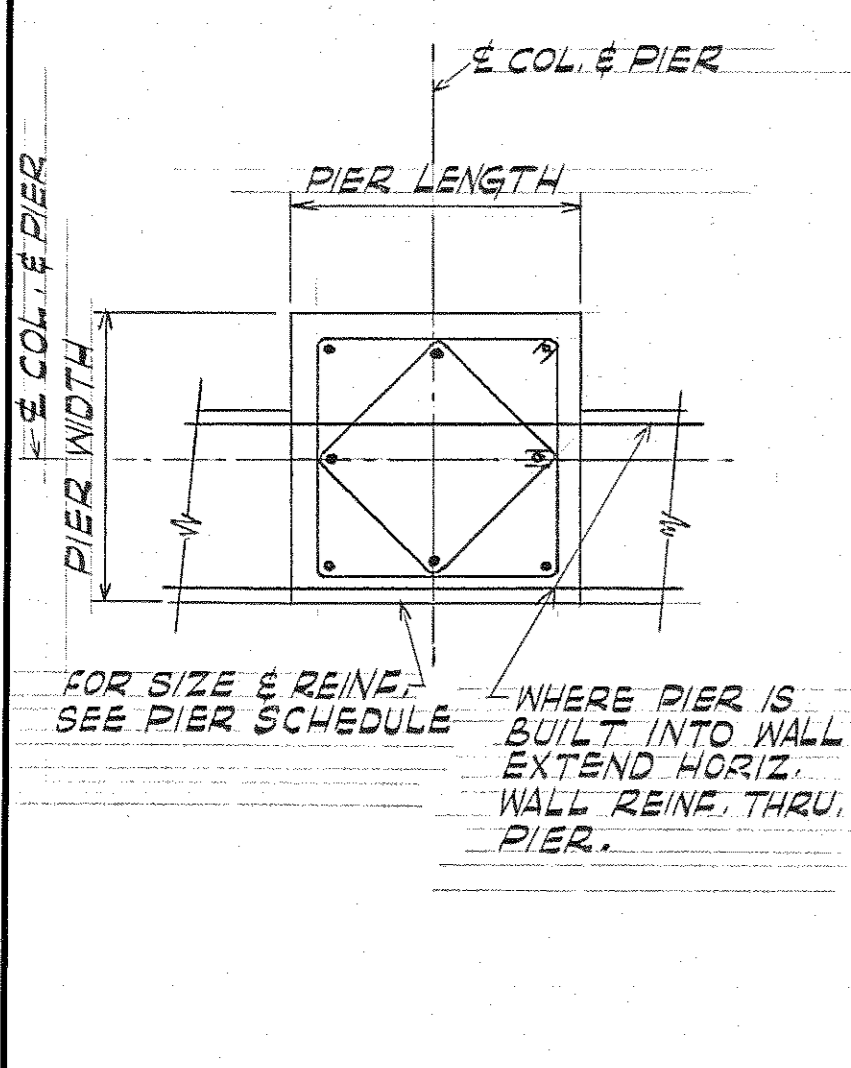
STRUCTURAL LEGEND

REINFORCED CONCRETE MATERIAL SCHEDULE

| STRUCTURAL ELEMENT | CLASS | 28 DAY COMP. STRENGTH (KSI) | YIELD STRENGTH (KSI) | CONCRETE* PROTECTION (IN.) CLEAR | DESIGN | REMARKS |
|--------------------------|-------|-----------------------------|----------------------|----------------------------------|--------------------------------|-------------------------------|
| MUD MAT | X | NOT REqd | | | | MIN. CEMENT CONTENT 4 BAGS/YD |
| FL. SLAB & CONC. TOPPING | A | 3.5 | YES | 60.0 | 1" | |
| FOUNDATION MAT | A | 3.5 | YES | 60.0 | 3" BOTT BARS 2" TOP BARS | |
| WALLS | A | 3.5 | YES | 60.0 | 1" INSIDE FACE 2" OUTSIDE FACE | |
| COLUMNS | A | 3.5 | YES | 60.0 | 2" TO VERT | |
| FLOOR BEAMS GRADE BEAMS | A | 3.5 | YES | 60.0 | 2" TO MAIN BARS 3" BOTT 2" TOP | |
| ALL OTHER CONG. | A | 3.5 | YES | 60.0 | 1 1/2" | |

*WHERE CONCRETE SURFACE IS EXPOSED TO STORM WATER OR SEWAGE MINIMUM COVER SHALL BE 2"

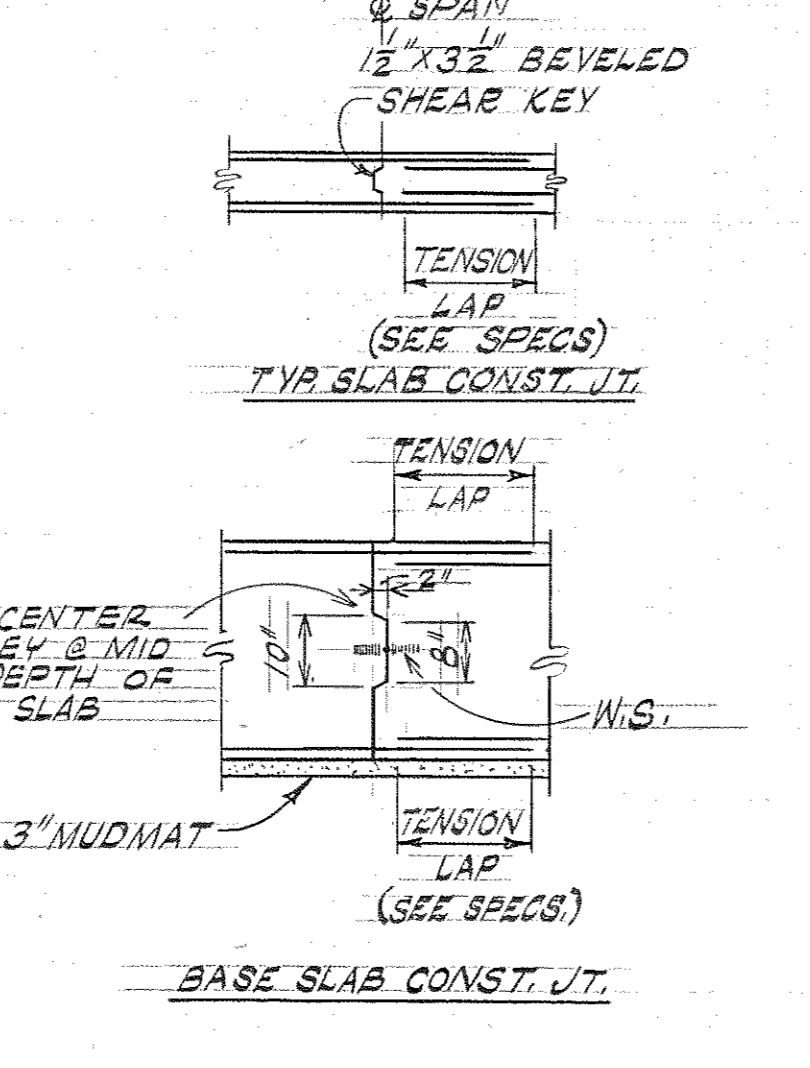
REINFORCED CONCRETE NOTES



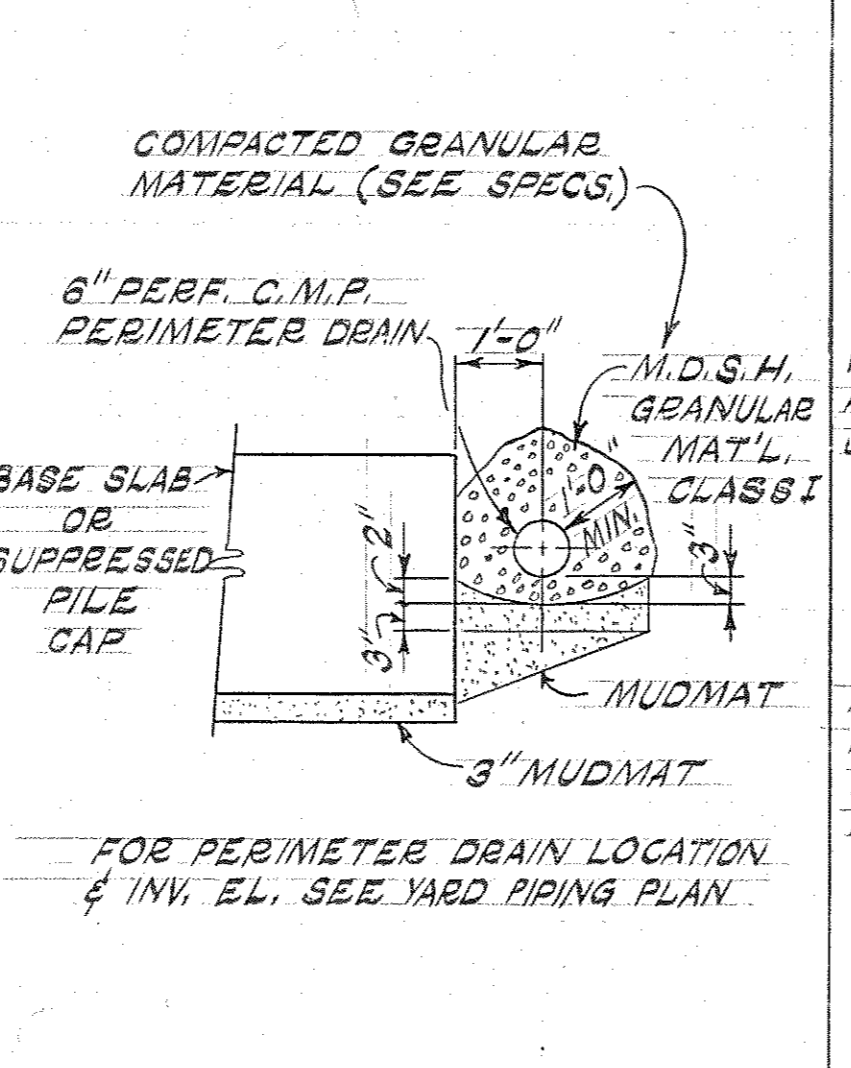
TYP. PIER DETAIL

NOTES:
 GRATING SHALL BE 1" x 3/16" BAR WELDED GRATING UNLESS OTHERWISE NOTED. (SEE SPECS.)
 CHECKERED PLATE SHALL BE 5/16" THICK UNLESS OTHERWISE SHOWN OR NOTED. (SEE SPECS.)
 PROVIDE 3" x 3" x 1/4" L GRATING & PLATE SUPPORTS @ COLUMNS AS REQUIRED.
 GRATING & CHECKERED PLATE SECTION TOLERANCES:
 BETWEEN ENDS OF PANELS 1/4" MAX.
 BETWEEN ADJ. PANELS 1/8" MAX.
 CUTS @ COL. - 1/4"
 TO CURBS
 PROVIDE CLOSURE BAR @ EDGE OF GRATING CUT FOR OPENINGS.
 FOR EXTENT OF GRATING & CHECKERED PLATE SEE ARCH. DRAWINGS.

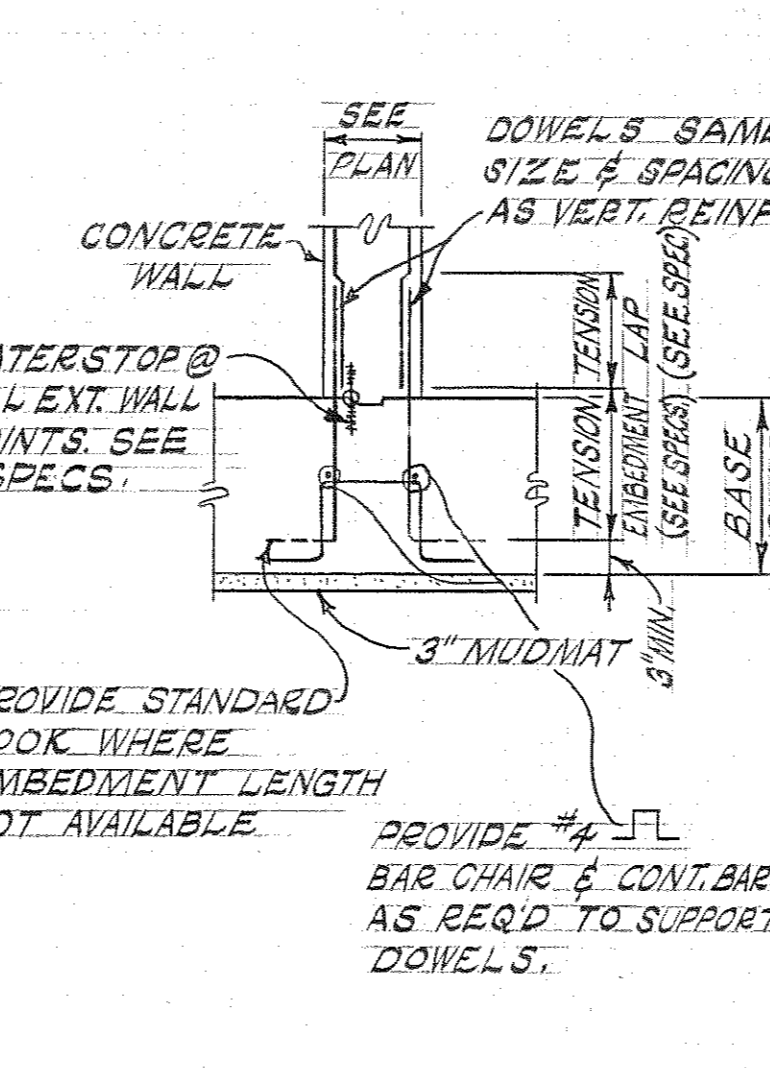
GRATING & CHECKERED PLATE NOTES



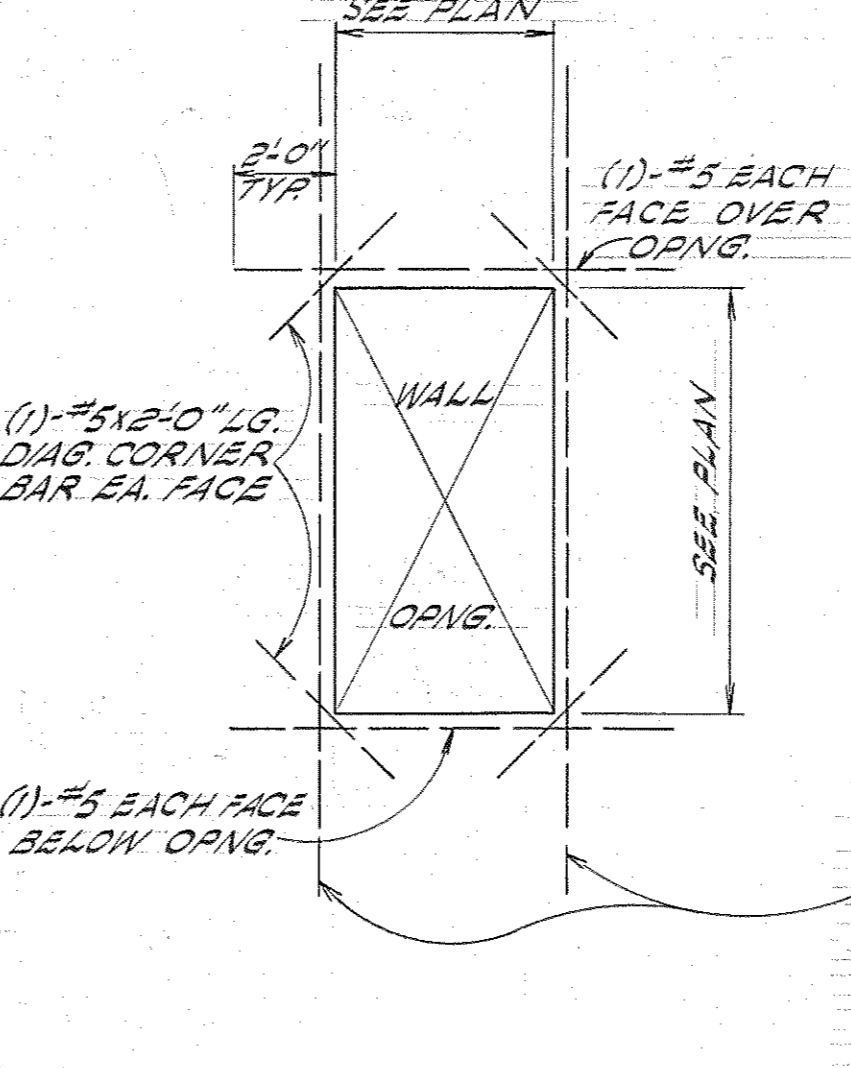
TYPICAL SLAB CONSTRUCTION JOINTS



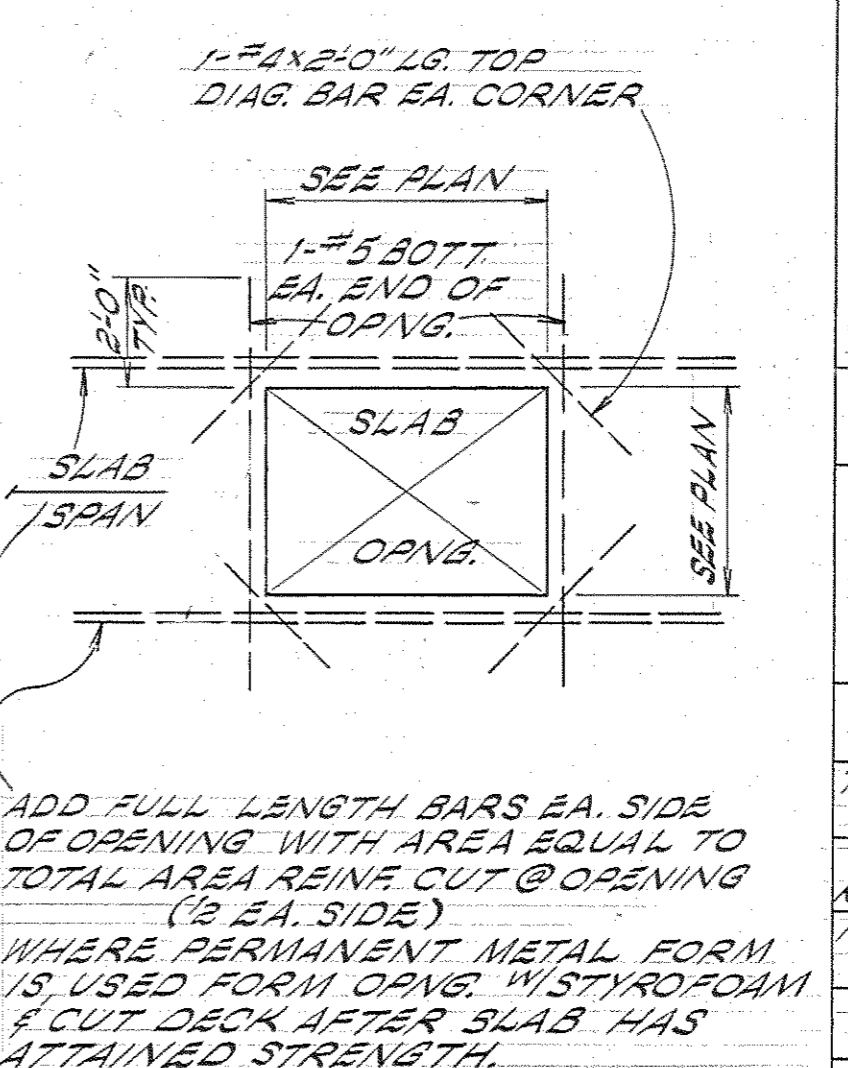
TYPICAL PERIMETER DRAIN DETAIL



TYPICAL WALL CONST. JT. @ BASE SLAB



TYPICAL OPENING CONCRETE WALL



TYPICAL OPENING CONCRETE SLAB

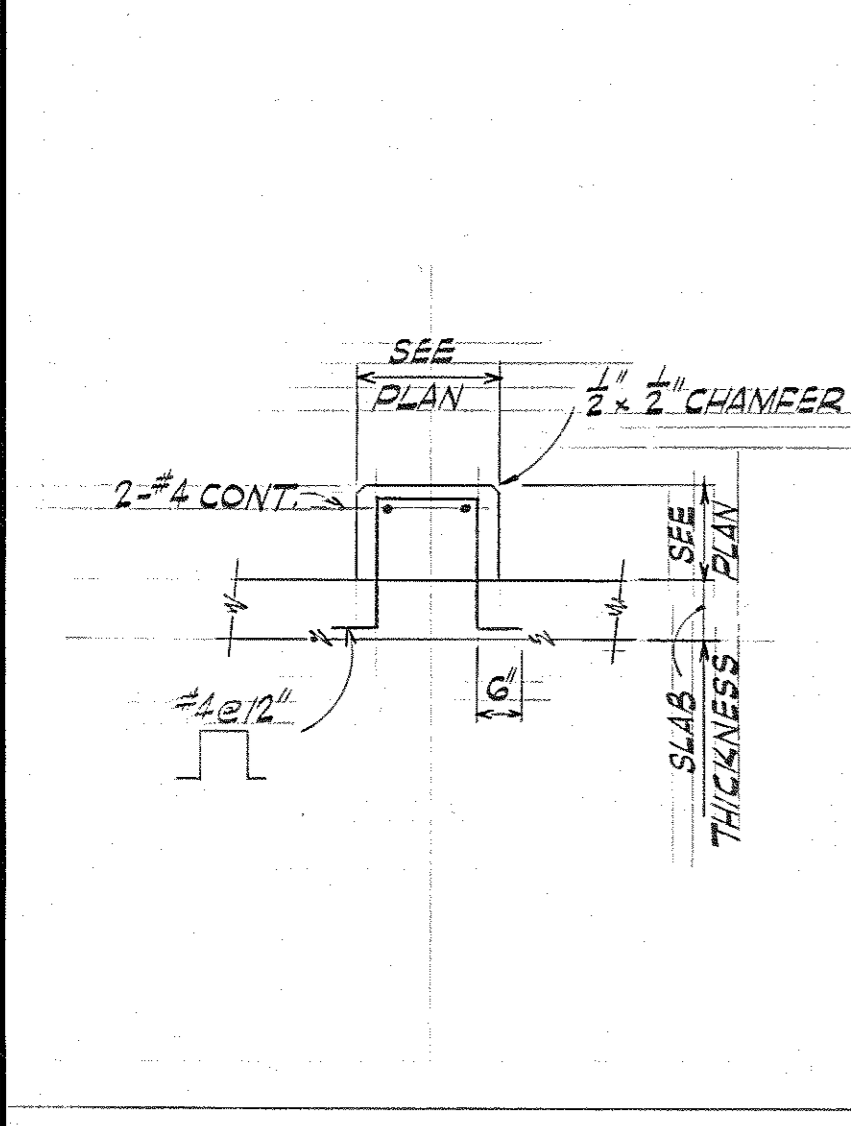
STRUCTURAL STEEL MATERIAL SCHEDULE

| STRUCTURAL ELEMENT | ASTM | YIELD STRENGTH | REMARKS |
|-------------------------|-------|----------------|---------|
| COLUMNS | A 572 | 50.0 | |
| TRUSSES, SWAY FRAMES | A 36 | 36.0 | |
| PURLINS | A 36 | 36.0 | |
| FLOOR BEAMS & GIRDS | A 36 | 36.0 | |
| GIRTS | A 36 | 36.0 | |
| BRACING | A 36 | 36.0 | |
| ALL OTHER 'E'S & SHAPES | A 36 | 36.0 | |

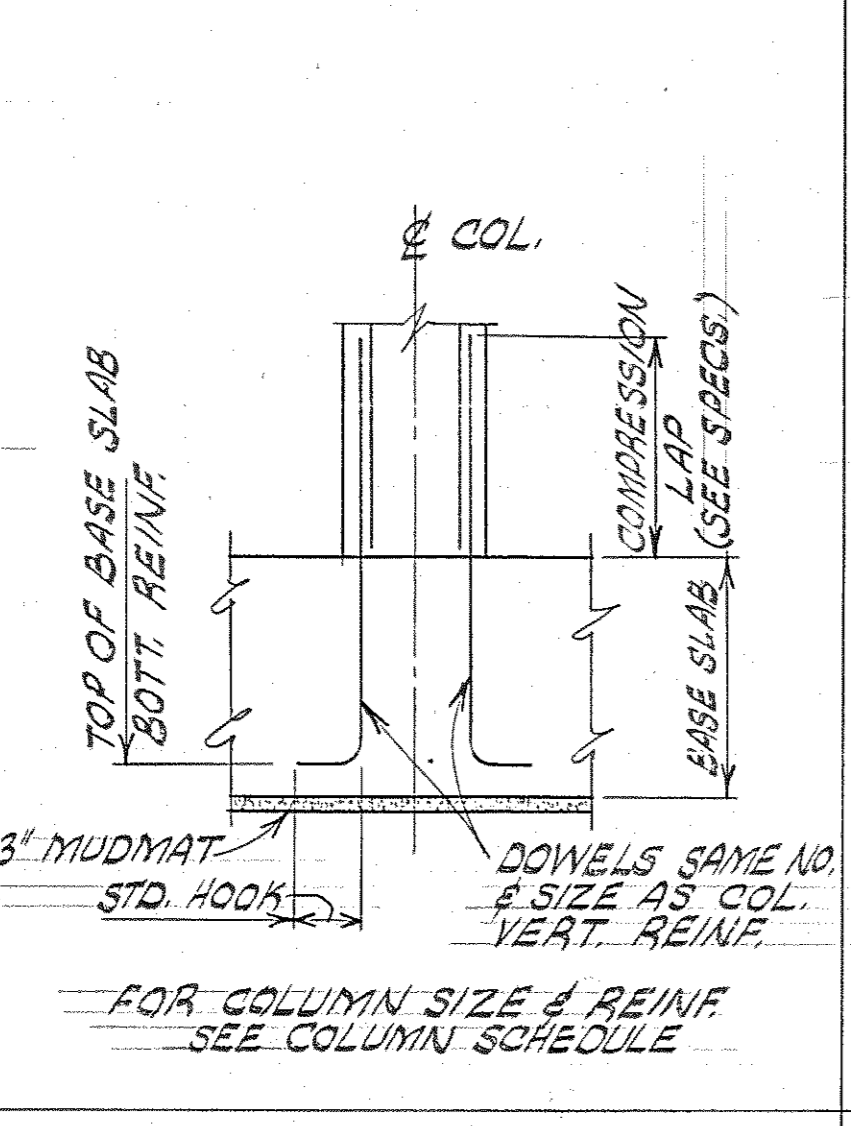
STRUCTURAL STEEL NOTES

FABRICATE AND ERCT BEAMS WITH MILL CHAMFER UP. CHAMFER BEAMS AND TRUSSES AS SHOWN ON DRAWINGS.
 QANT. INDICATES CANTILEVER
 T.O.S. INDICATES TOP OF STEEL
 CONT. INDICATES CONTINUOUS OVER SUPPORT

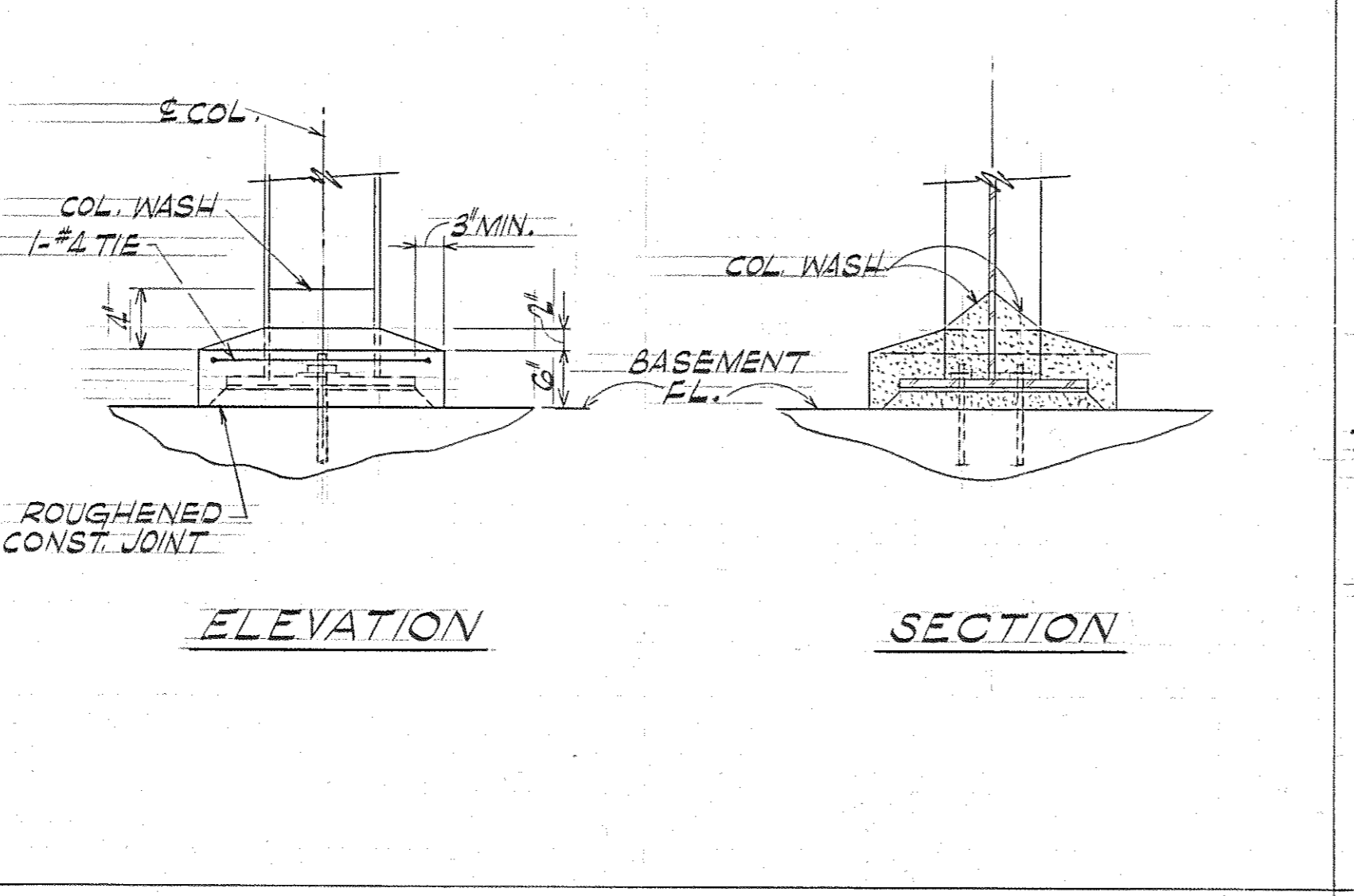
| STRUCTURAL ELEMENT | ASTM | YIELD STRENGTH | REMARKS |
|---------------------|-------|----------------|---|
| HIGH STRENGTH BOLTS | A 325 | | FRICTION TYPE FOR BRACING MEMBERS, OTHERS BEARING CONN. WITHHEADS IN SHEAR PLANE MAY BE USED FOR MINOR CONNECTIONS SUBJECT TO ENGINEER APPROVAL |
| OTHER BOLTS | A 307 | | |



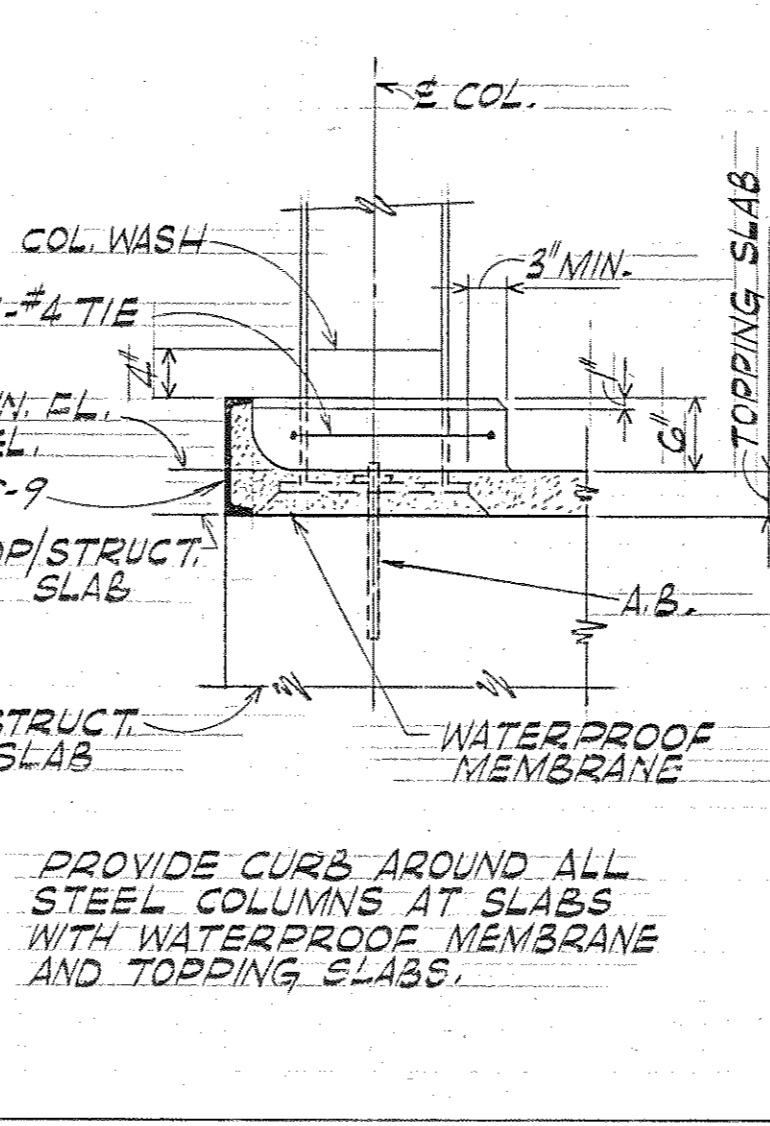
TYP. REINFORCED CURB DETAIL



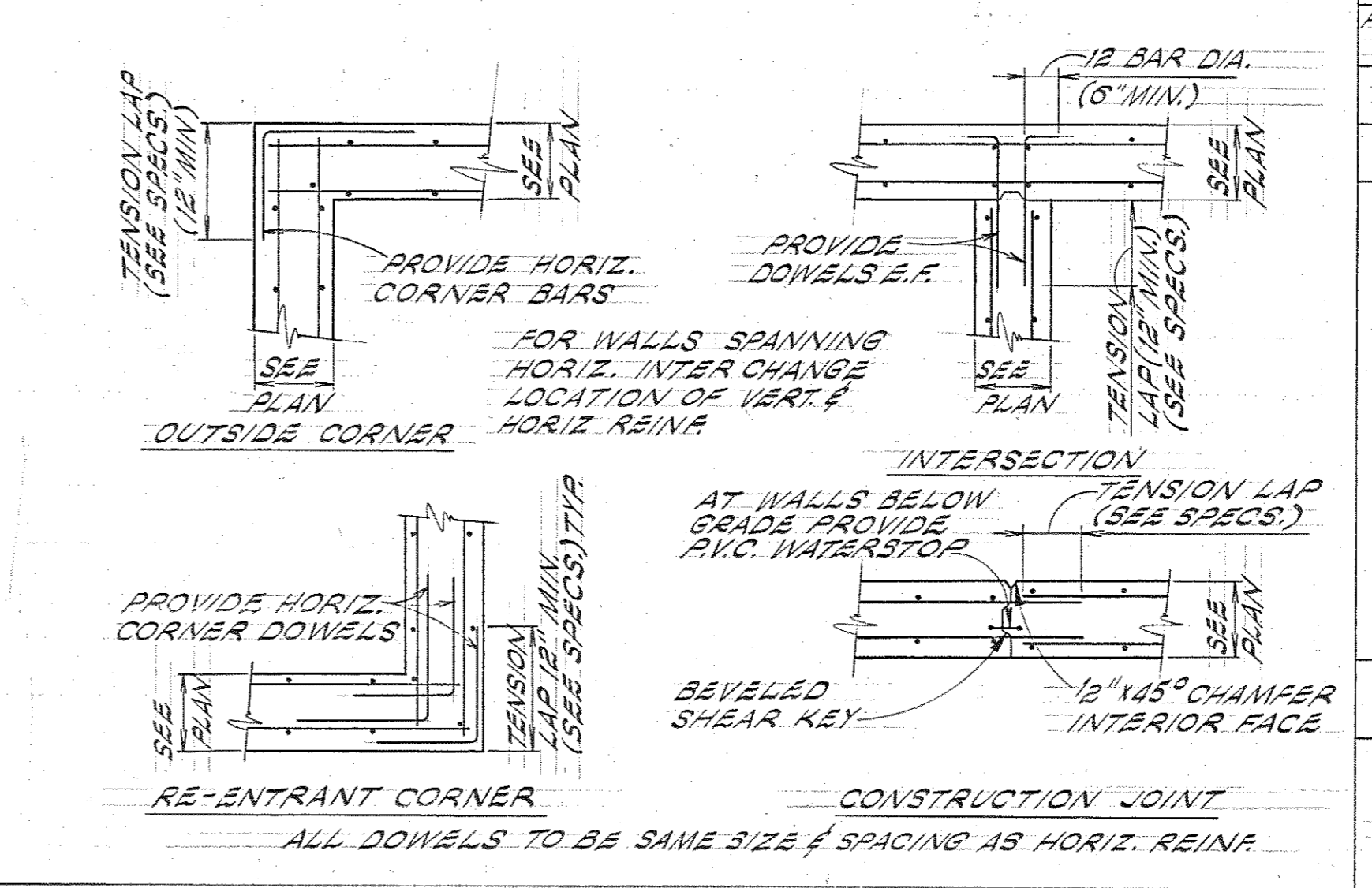
TYPICAL DETAIL @ CONCRETE COLUMN



TYPICAL CONC. CURB AT INTERIOR STEEL COLUMN BASE SLAB



TYPICAL CONC. CURB AT STEEL COLUMN W/ TOPPING SLAB



TYPICAL CONCRETE WALL DETAILS VERTICAL SPANNING WALLS SHOWN & TYP UNLESS NOTED

LIVE LOAD SCHEDULE

| OCCUPANCY | DESIGN LIVE LOAD (PS.F.) | LIVE LOAD REDUCED | REMARKS |
|---------------------------|--------------------------|-------------------|--|
| TYP. FLOOR INCUBATOR AREA | 150 | NO | PLUS EQUIP. WEIGHTS; 120 P.S.F. ON COLUMNS |
| TYP. FLOOR FILTER AREA | 150 | NO | PLUS EQUIP. WEIGHTS; 120 P.S.F. ON COLUMNS |
| TYP. FLOOR POLYMER AREA | 150 | NO | PLUS EQUIP. WEIGHTS; 120 P.S.F. ON COLUMNS |
| ELECT. MECH. ROOM FLOOR | 150 | NO | PLUS EQUIP. WEIGHTS |
| ELEV. MACH. ROOM | 100 | NO | OR 300# ON 4 SQ. IN AREA |
| ELEVATOR SUPPORTS | AS SHOWN ON DING. | NO | INCLUDES 100% IMPACT |
| CATWALKS, MEZZ. STAIRS | 100 | NO | |
| ROOF | 30 | NO | SNOW LOAD PLUS EQUIP. WEIGHT |
| VERT. BLDE. SURFACES | 20 | NO | 15 P.S.F. FIRST 50 FT.; 20 P.S.F. 50 TO 100 FT. WINDLOAD 25 WINDWARD; 5 WINDWARD |
| CHIMNEYS | 30 | NO | LOAD EFFECTIVE ON 25 OF PROJ. AREA OF CIRCULAR STACK 300 LBS. ANY DIRECTION @ ANY POINT OR 10 P.S.F. @ TOP OF RAIL |
| RAILINGS (IMPACT) | SEE REMARKS | NO | 25% IMPACT |
| CRANEWAY (IMPACT) | SEE REMARKS | NO | 25% VERT. 25% TRANSVERSE (CAPACITY + TROLLEY) HORIZ. 12 1/2% LONGITUDINAL HORIZ. (WHEEL LOAD) |

NOTES:
 LIVE LOAD BASED ON THE BOCA BASIC BUILDING CODE / 1970

| DATE | SCALE | DR. | CK. | APP. | DATE | NO. | REVISIONS |
|----------|-----------------|-----|-----|------|------|-----|-----------|
| 1977 | RECORD | | | | | | |
| 12-20-78 | BULLETIN #9 | | | | | | |
| 9-7-78 | BULLETIN #6 | | | | | | |
| 5-17-72 | ADDENDUM #2 | | | | | | |
| 5-1-72 | ISSUED FOR BIDS | | | | | | |
| 2-27-72 | MSDH | | | | | | |

BOARD OF PUBLIC WORKS
 WAYNE COUNTY, MICHIGAN

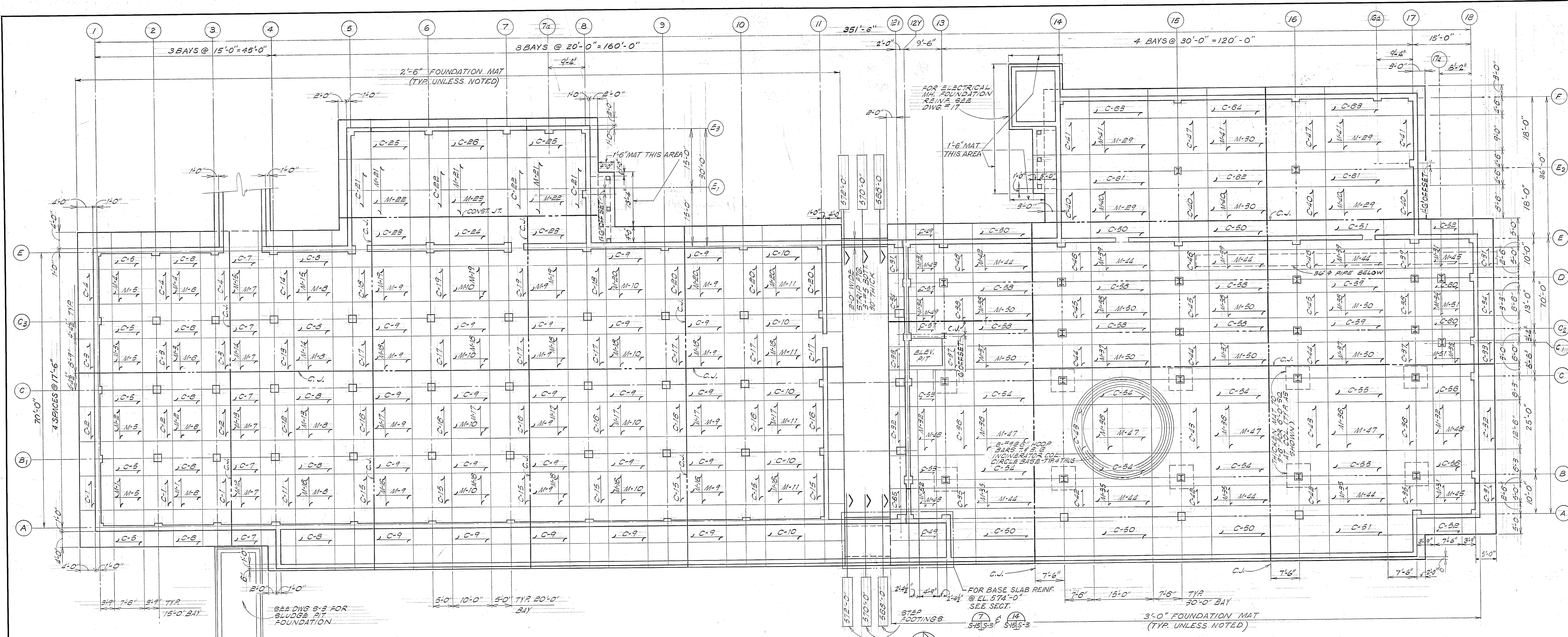
SECONDARY ADDITIONS TO
 WYANDOTTE WASTEWATER PLANT

SOLIDS HANDLING BUILDING
 TYPICAL DETAILS

DATE: 2-27-78
 SCALE: 1/8" = 1'-0"
 DR.: J.S.F./M.
 CK.: F.P.
 APP.: G.P.

5-239 WPC-MICH-1939 CONTRACT NO. 2
 JOB NO. 69075
 HUBBELL, ROTH & CLARK, INC.
 CONSULTING ENGINEERS
 BLOOMFIELD HILLS, MICH. 48013

SHEET NO. 5-1
 OF 21



FOUNDATION MAT REINFORCING PLAN
SCALE 1"=10'-0"

| REINFORCED CONCRETE SLAB SCHEDULE | | | | | |
|-----------------------------------|---|------------------|------|---|------------------|
| MARK | REINFORCEMENT | | MARK | REINFORCEMENT | |
| | BOTTOM | TOP | | BOTTOM | TOP |
| C-1 | (1)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-6" | C-23 | (1)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (18)-#7 @ 20'-0" |
| C-2 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (9)-#7 @ 17'-0" | C-24 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (13)-#7 @ 19'-6" |
| C-3 | (9)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (9)-#7 @ 17'-0" | C-25 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (11)-#7 @ 20'-0" |
| C-4 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (11)-#7 @ 17'-6" | C-26 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (9)-#7 @ 19'-6" |
| C-5 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 15'-0" | C-27 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (9)-#7 @ 19'-6" |
| C-6 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 14'-6" | C-28 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (9)-#7 @ 19'-6" |
| C-7 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 14'-6" | C-29 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (10)-#7 @ 19'-6" |
| C-8 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (13)-#7 @ 19'-6" | C-30 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (10)-#7 @ 19'-6" |
| C-9 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (14)-#7 @ 19'-6" | C-31 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (7)-#8 @ 10'-0" |
| C-10 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (13)-#8 @ 20'-0" | C-32 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (11)-#8 @ 24'-6" |
| C-11 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (13)-#7 @ 17'-6" | C-33 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (7)-#8 @ 11'-6" |
| C-12 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 17'-0" | C-34 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (7)-#8 @ 12'-6" |
| C-13 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 17'-0" | C-35 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (15)-#8 @ 10'-0" |
| C-14 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (13)-#7 @ 17'-6" | C-36 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (21)-#8 @ 24'-6" |
| C-15 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (13)-#7 @ 17'-6" | C-37 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (14)-#8 @ 11'-6" |
| C-16 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (14)-#7 @ 17'-0" | C-38 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (14)-#8 @ 12'-6" |
| C-17 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (15)-#7 @ 17'-0" | C-39 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (14)-#8 @ 9'-6" |
| C-18 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (9)-#7 @ 17'-0" | C-40 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (14)-#8 @ 17'-6" |
| C-19 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (11)-#7 @ 17'-0" | C-41 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (14)-#8 @ 13'-0" |
| C-20 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (15)-#7 @ 17'-6" | C-42 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (20)-#8 @ 10'-0" |
| C-21 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (10)-#7 @ 10'-0" | C-43 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (24)-#8 @ 24'-6" |
| C-22 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-1 | (17)-#7 @ 15'-0" | C-44 | (10)-#6 @ 12" O.C. EXTEND 3'-9" @ C-2 | (20)-#7 @ 11'-6" |

| REINFORCED CONCRETE SLAB SCHEDULE | | | | | |
|-----------------------------------|---|------------------|------|---|------------------|
| MARK | REINFORCEMENT | | MARK | REINFORCEMENT | |
| | BOTTOM | TOP | | BOTTOM | TOP |
| M-1 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (9)-#7 @ 17'-6" | M-23 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (12)-#7 @ 15'-0" |
| M-2 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (9)-#7 @ 17'-0" | M-24 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#8 @ 9'-6" |
| M-3 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (9)-#7 @ 17'-0" | M-25 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 12'-6" |
| M-4 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (9)-#7 @ 17'-6" | M-26 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#8 @ 15'-0" |
| M-5 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 15'-0" | M-27 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (7)-#8 @ 9'-6" |
| M-6 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 14'-6" | M-28 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (7)-#8 @ 24'-6" |
| M-7 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 14'-6" | M-29 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (12)-#7 @ 20'-0" |
| M-8 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 19'-6" | M-30 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 24'-6" |
| M-9 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 19'-6" | M-31 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#8 @ 10'-0" |
| M-10 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 19'-6" | M-32 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#8 @ 24'-6" |
| M-11 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (9)-#8 @ 20'-0" | M-33 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#8 @ 11'-6" |
| M-12 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 17'-6" | M-34 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (8)-#8 @ 12'-6" |
| M-13 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 17'-0" | M-35 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 24'-6" |
| M-14 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 17'-0" | M-36 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 11'-6" |
| M-15 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 17'-6" | M-37 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 11'-6" |
| M-16 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-6" | M-38 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 12'-6" |
| M-17 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-0" | M-39 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 14'-6" |
| M-18 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-0" | M-40 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 17'-6" |
| M-19 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-0" | M-41 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 15'-0" |
| M-20 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 17'-6" | M-42 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (20)-#7 @ 10'-0" |
| M-21 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (11)-#7 @ 10'-0" | M-43 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (12)-#7 @ 9'-6" |
| M-22 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (13)-#7 @ 20'-0" | M-44 | (3)-#6 @ 12" O.C. EXTEND 4'-10" @ CANT. END | (10)-#7 @ 24'-6" |

NOTES:
1. EXTENDED LENGTHS ARE FROM COLUMN E'S.

| DATE | ADDITIONS AND/OR REVISIONS |
|---------|----------------------------|
| 3-1-74 | BULLETIN #12 |
| 4-7-73 | BULLETIN #6 |
| 8-14-73 | BULLETIN #4 |
| 5-17-72 | ADDENDUM #2 |
| 5-1-72 | ISSUED FOR BIDS |
| 2-24-72 | 1/5/54 |

BOARD OF PUBLIC WORKS
WAYNE COUNTY, MICHIGAN

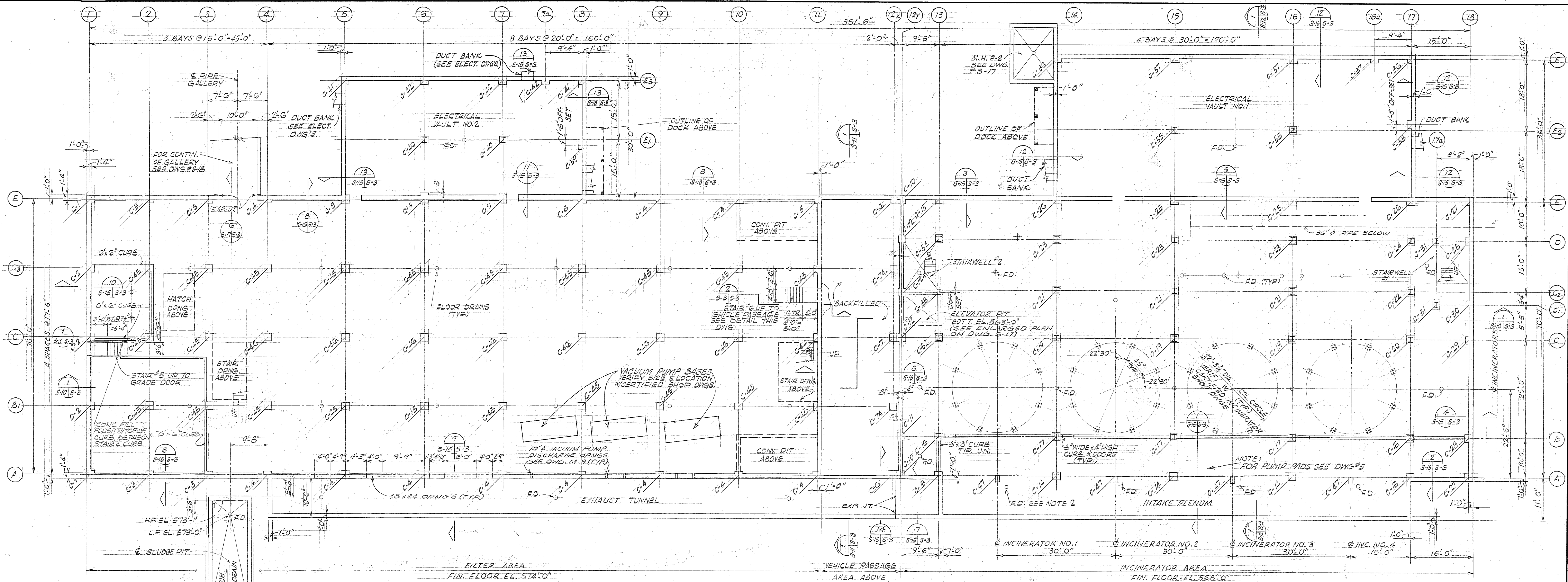
SECONDARY ADDITIONS TO
WYANDOTTE WASTEWATER PLANT

SOLIDS HANDLING BUILDING
FOUNDATION PLAN

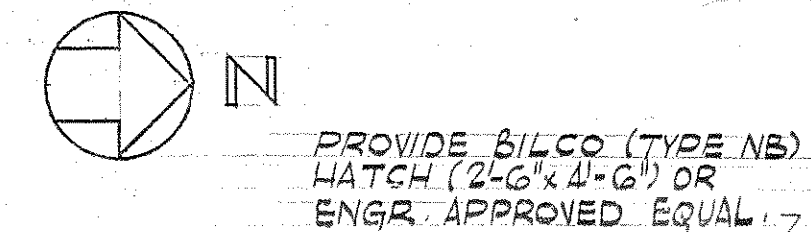
DATE: 8-27-72
SCALE: 1/4" = 1'-0"
DR: S.M.
CK: F.O.
APP: A.B.

5-239 WPC-MICH-1939 CONTRACT NO. 2
JOB No. 69075
HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
BLOOMFIELD HILLS, MICH. 48313

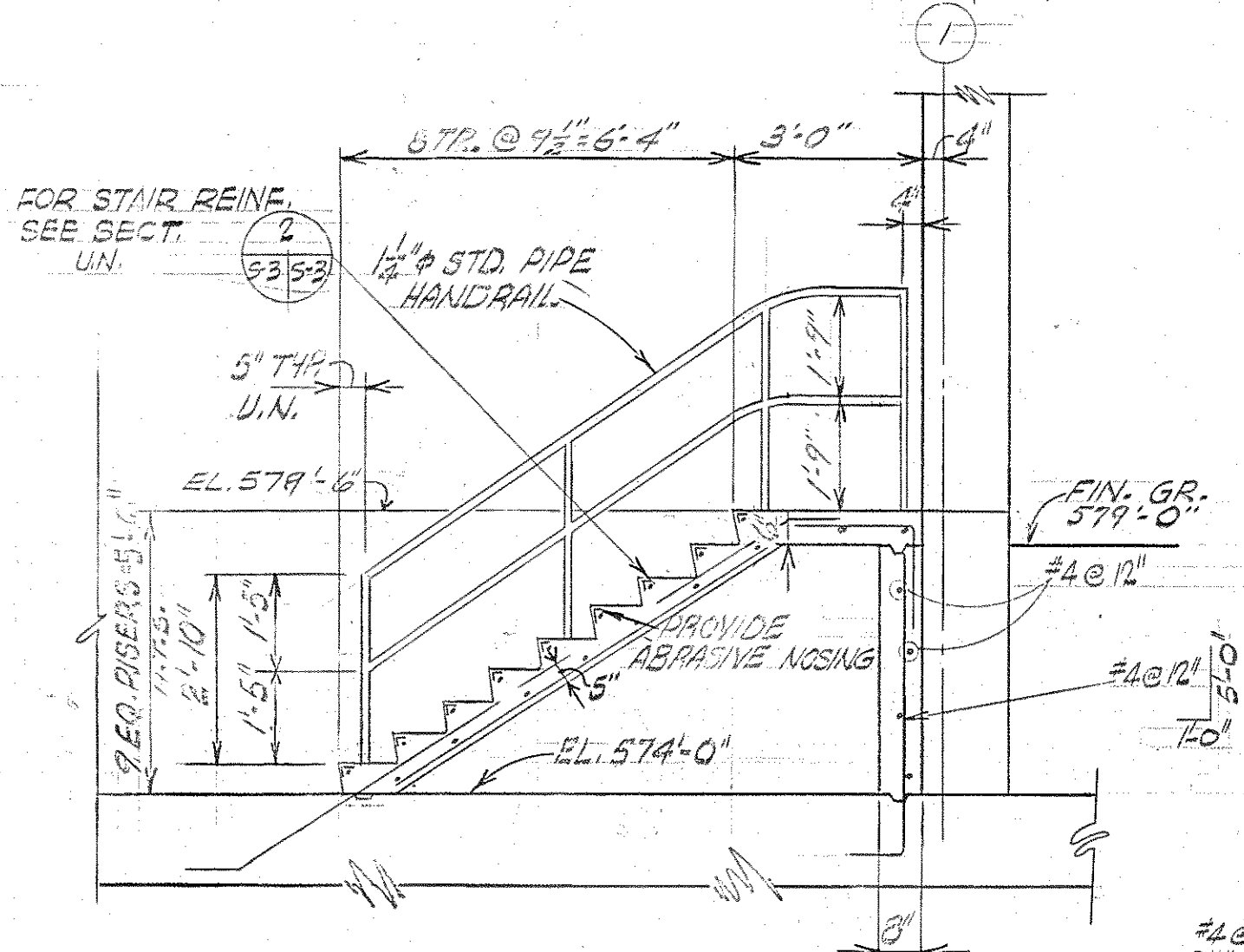
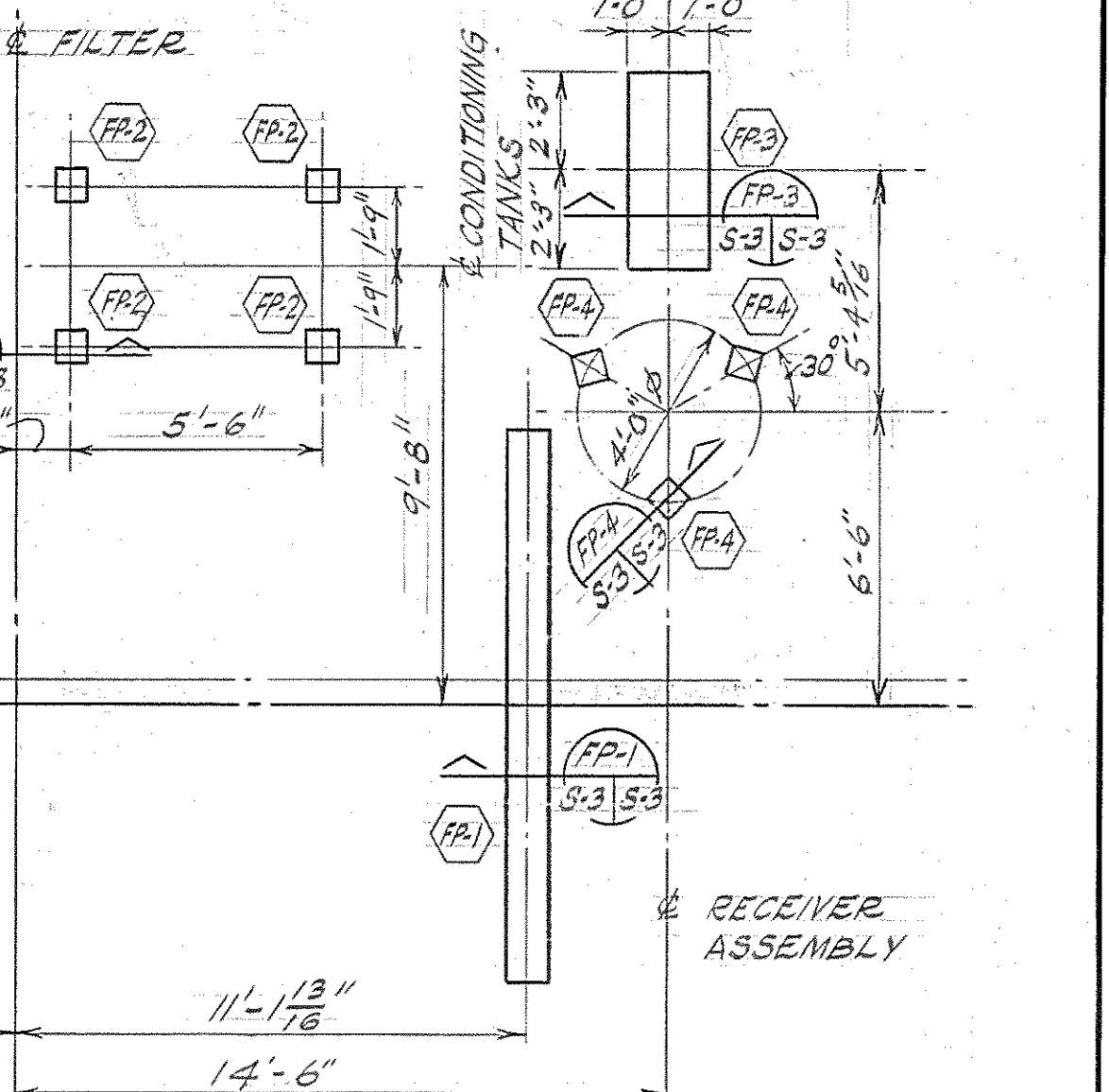
SHEET No. 5-2
OF 21



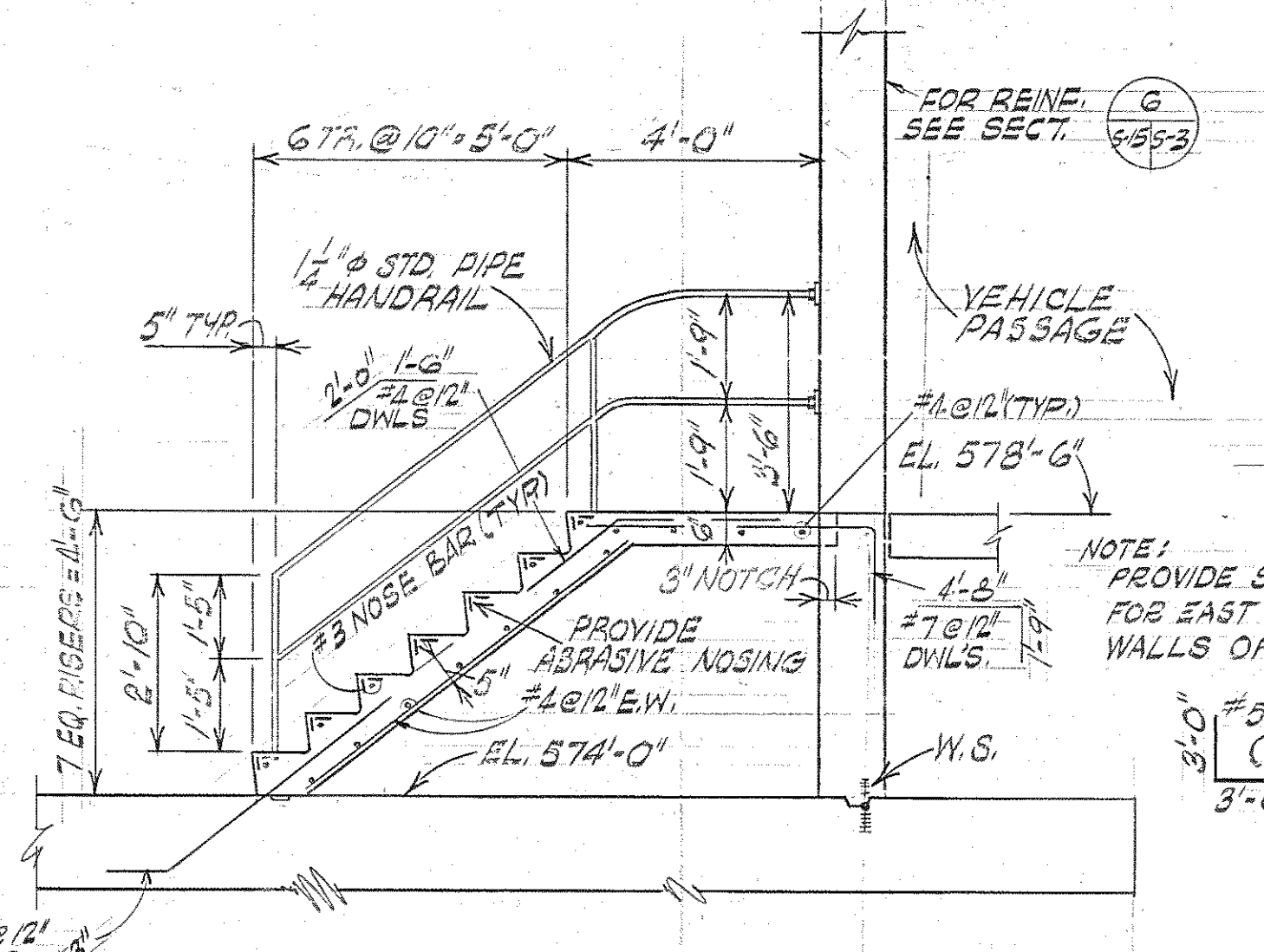
BASEMENT FLOOR PLAN
SOLIDS HANDLING BLDG.
SCALE: 1/8" = 1'-0"



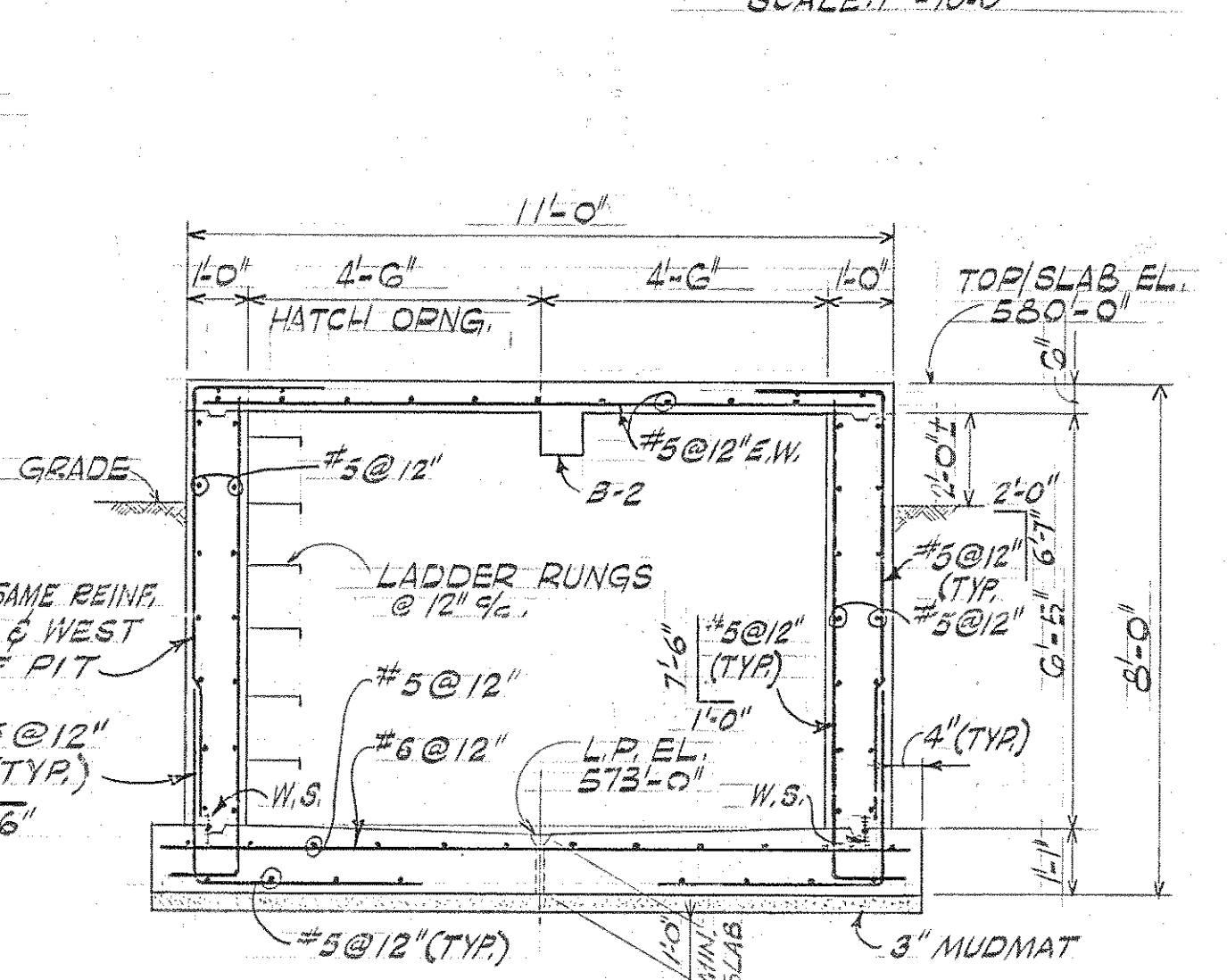
NOTE:
POSITIONS OF EQUIPMENT PIERS ARE AS SHOWN FOR FILTER NO. 1. FOR ORIENTATION OF EQUIPMENT PIERS FOR FILTERS NO. 2 THRU NO. 8 REFER TO SHOP DRAWINGS.



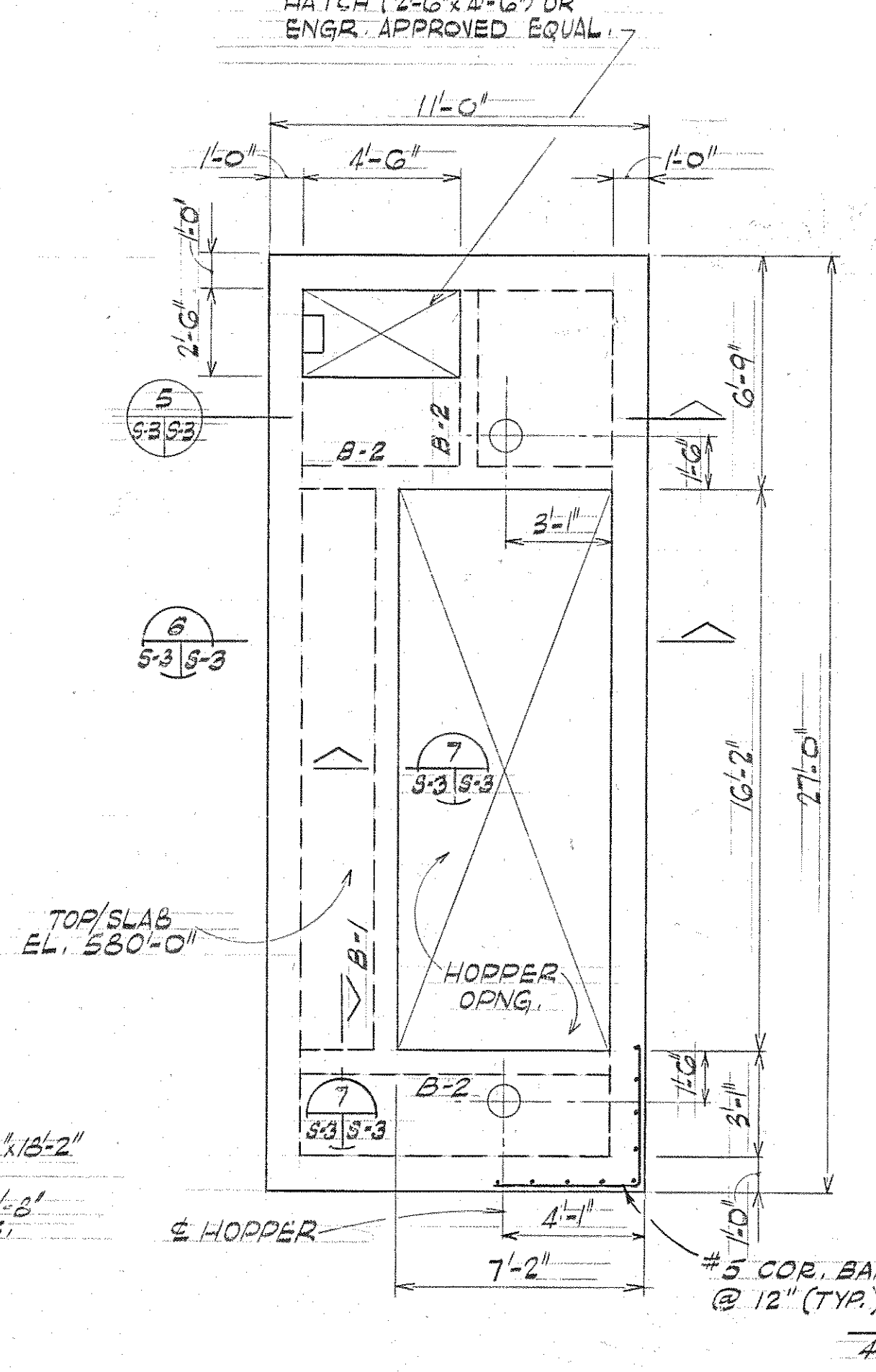
ELEVATION - STAIR #5
SCALE: 3/8" = 1'-0"



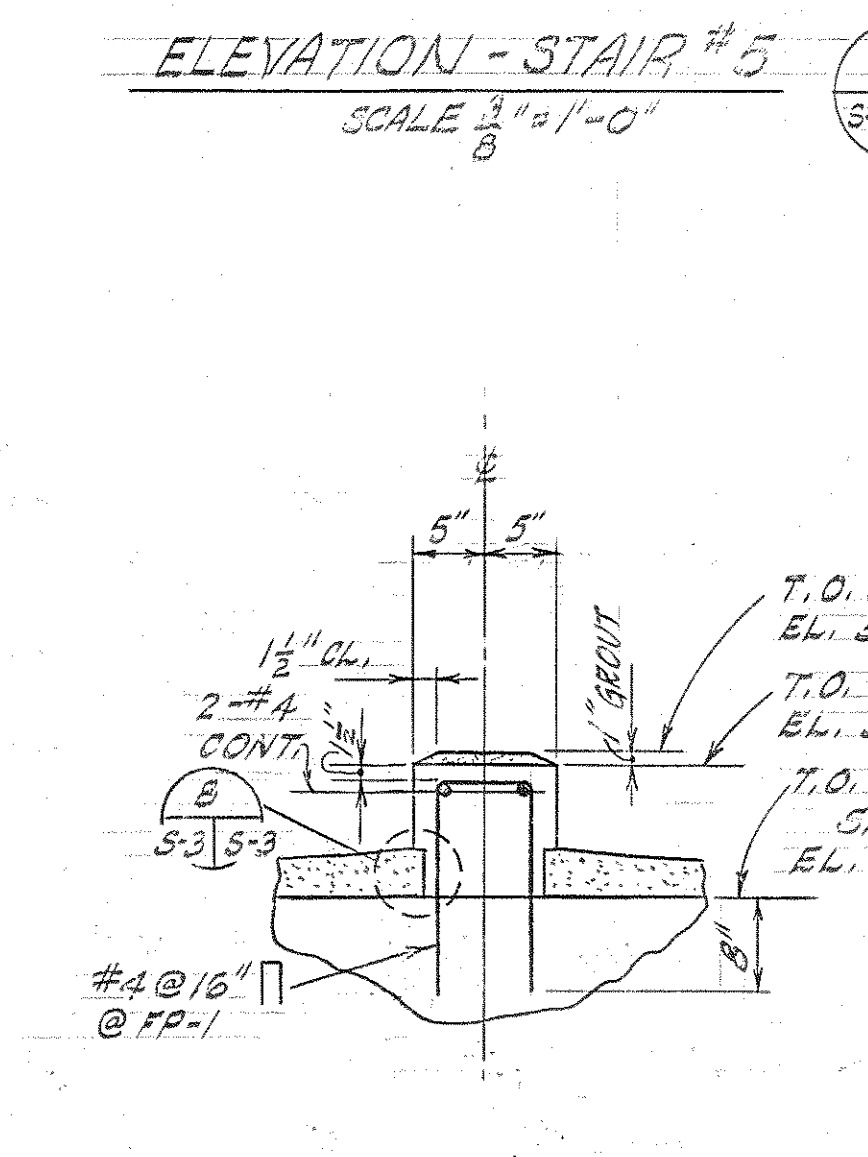
ELEVATION - STAIR #6
SCALE: 3/8" = 1'-0"



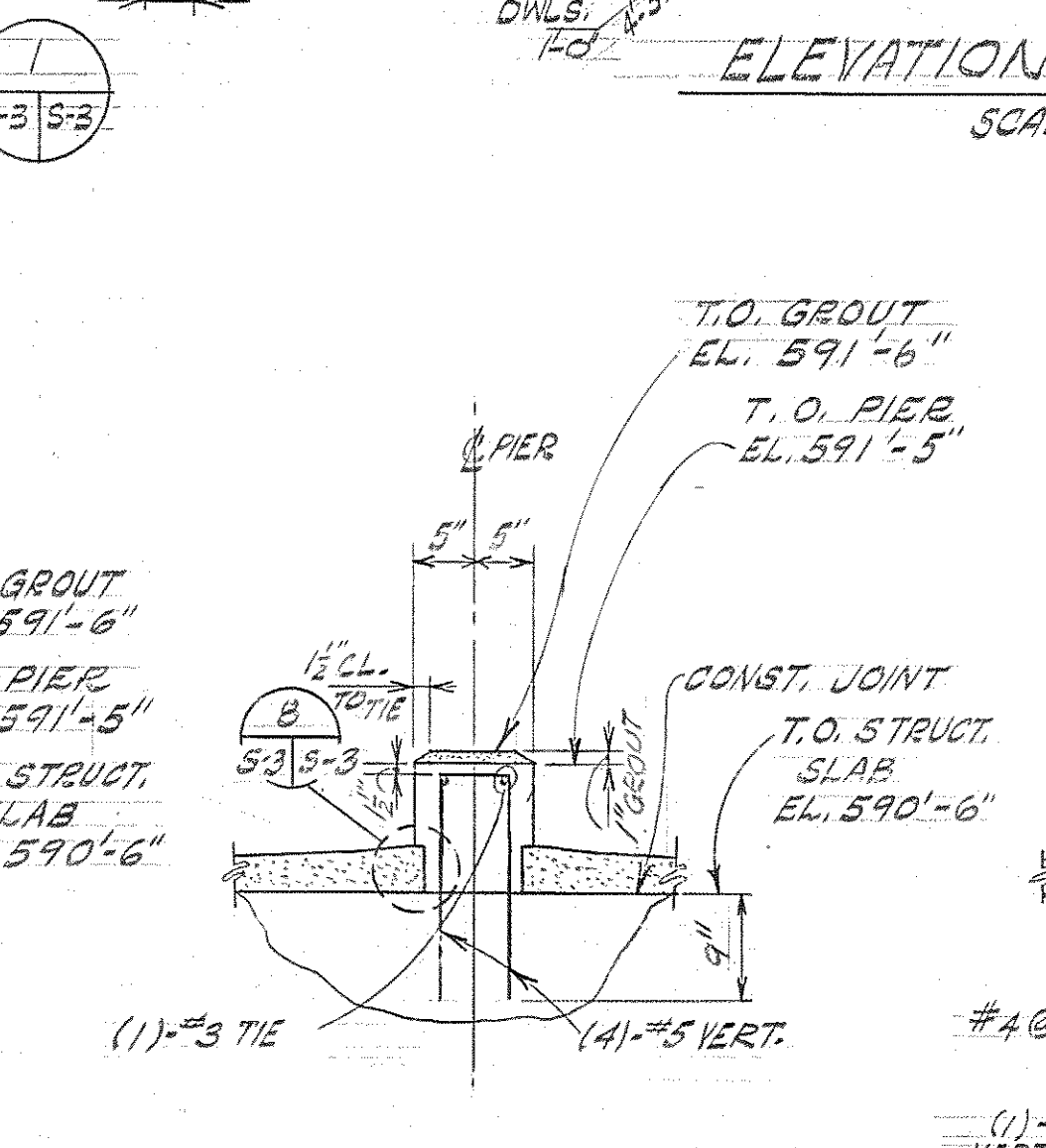
SECTION 5
SCALE: 3/8" = 1'-0"



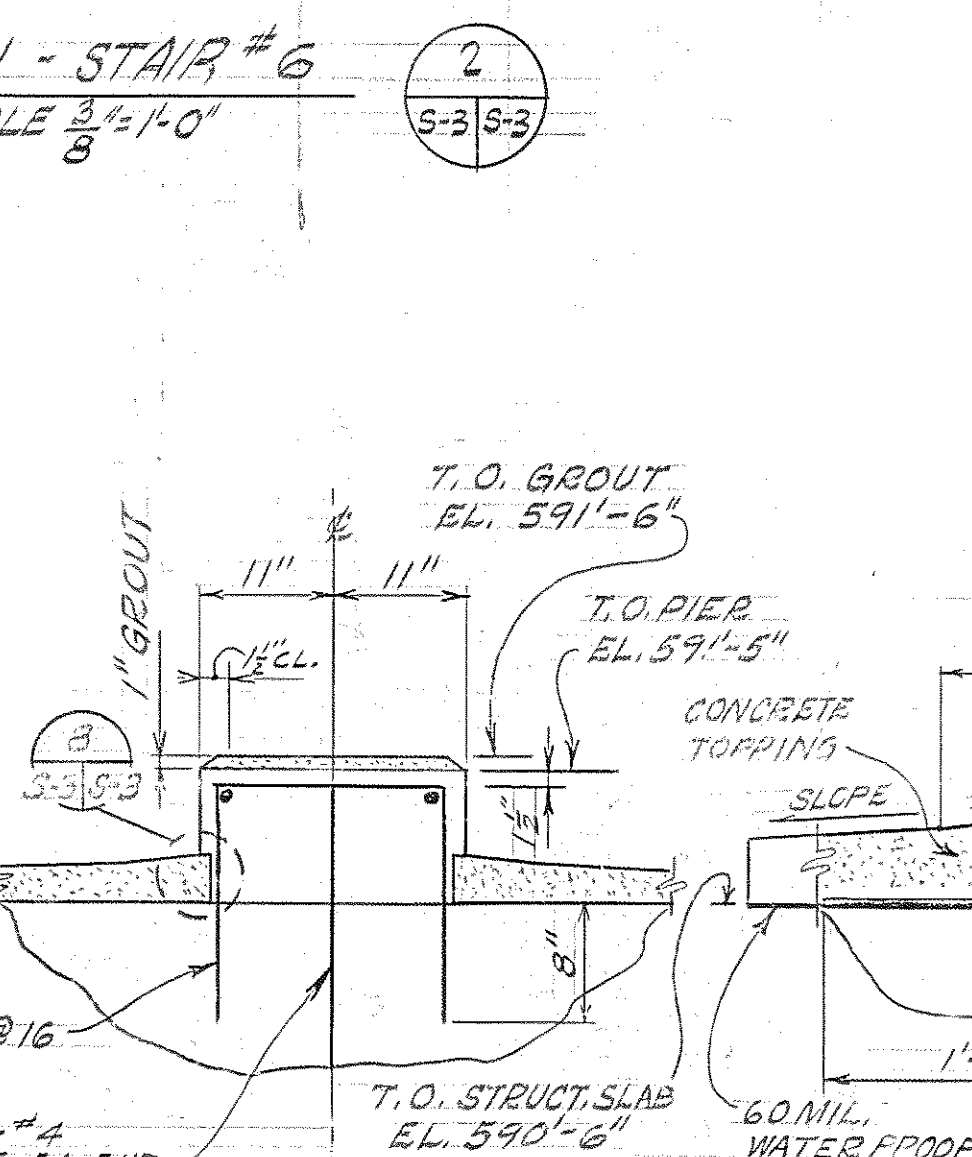
PLAN - SLUDGE PIT
SCALE: 1/4" = 1'-0"



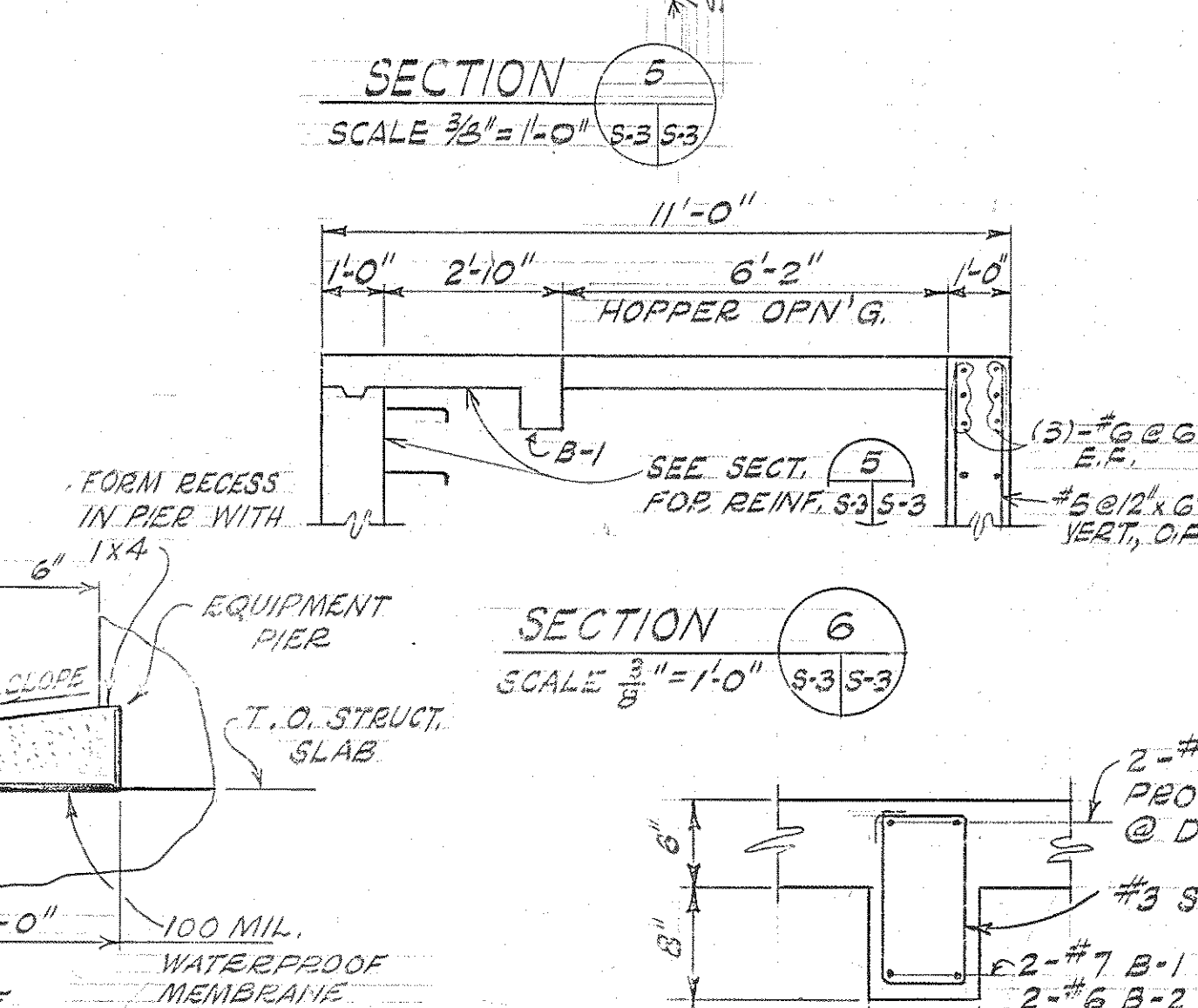
SECTION (FP1)
SCALE: 3/8" = 1'-0"



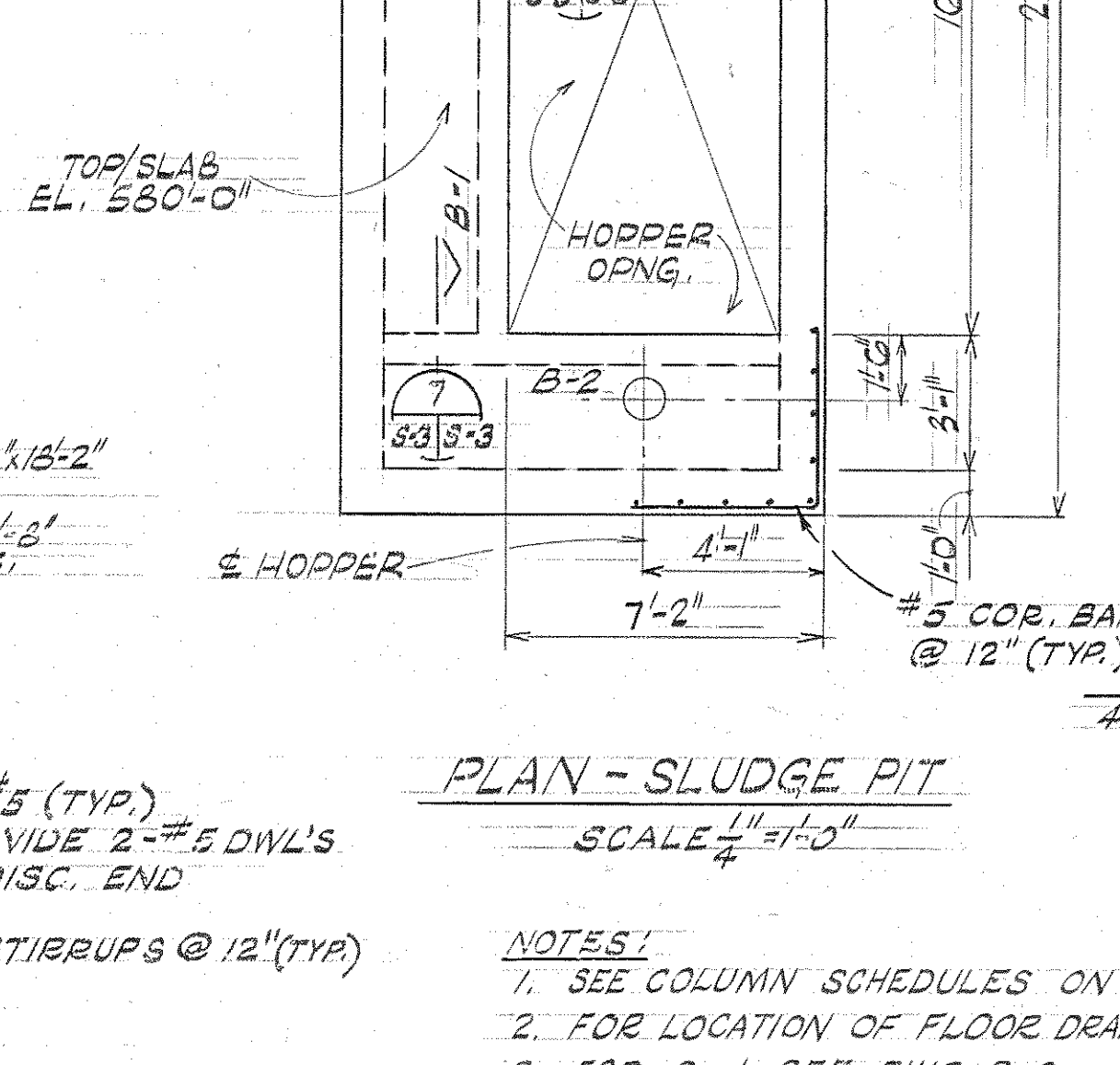
SECTION (FP2)
SCALE: 3/8" = 1'-0"



SECTION (FP3)
SCALE: 3/8" = 1'-0"



DETAIL (6)
SCALE: 1/2" = 1'-0"



SECTION 7
SCALE: 1/2" = 1'-0"

| FILTER PIER SCHEDULE | | | | | | |
|----------------------|----------------------|-------|-------|--------|-------------------|---|
| MARK | NO. REQ'D PER FILTER | TOTAL | WIDTH | LENGTH | SUPPORTING EQUIP. | REFERENCE |
| FP-1 | 2 | 16 | 10" | 12'-4" | FILTER | 80,000# S 1387-00000A S 1387-00000A SHEETS 1 & 2 |
| FP-2 | 4 | 32 | 10" | 10" | CONDITIONING TANK | 4,000# RC-4356-D-98 |
| FP-3 | 1 | 8 | 2'-0" | 4'-6" | FILTRATE PUMP | 700# VF 3767-D-98 |
| FP-4 | 3 | 24 | 10" | 10" | FILTRATE RECEIVER | 10,000# do |

FOR ANCHOR BOLTS SEE KOMLINE SANDERSON DRAWING NAB00-00003.CA & REFERENCE DRAWINGS.
SEE MIDWEST MECHANICAL CONTRACTOR DRAWINGS 72-3-30 & 72-3-31
1971 - RECORD

BOARD OF PUBLIC WORKS
WAYNE COUNTY, MICHIGAN

SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT

SOLIDS HANDLING BUILDING BASEMENT PLAN

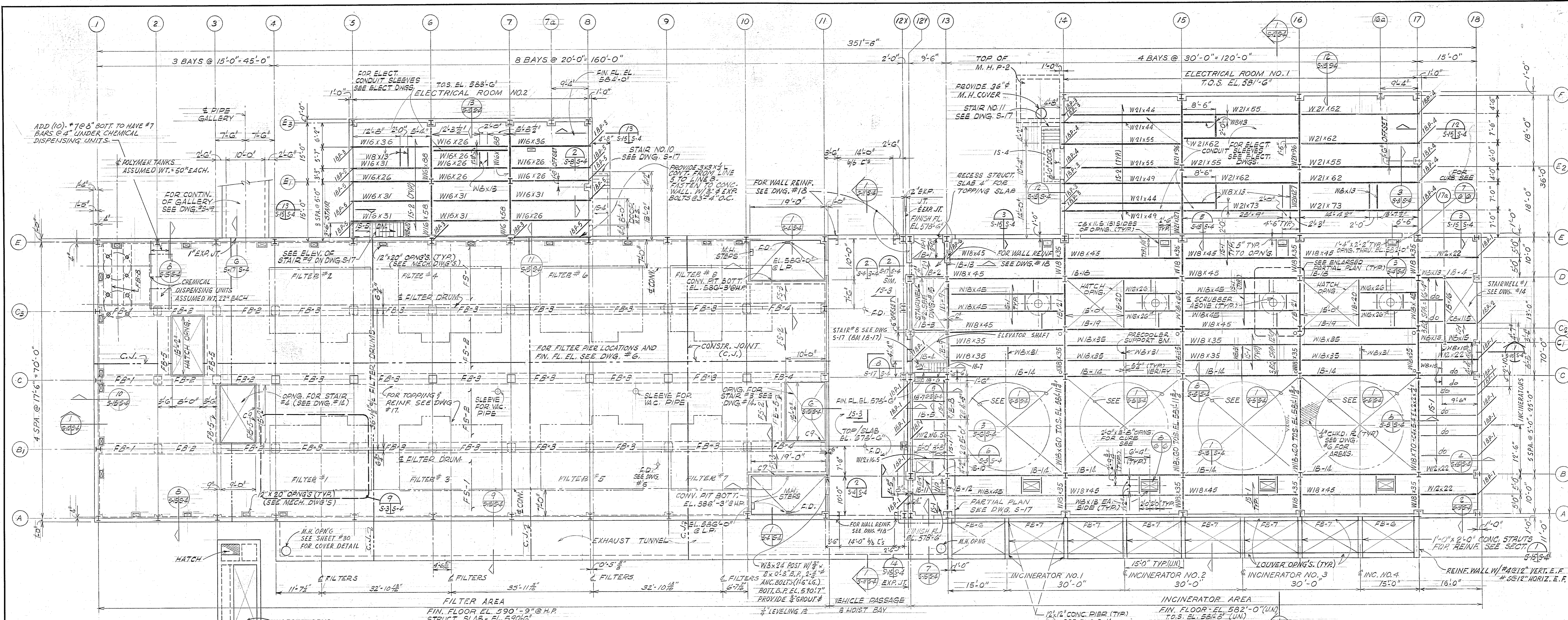
DATE: 8-24-78
ADDITONS AND/OR REVISIONS: 63075
F.L.D. BK. 107ED

WPC-MICH-1939
JOB No. 63075
DATE: 8-24-78

HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
BLOOMFIELD HILLS, MICH. 48313

CONTRACT NO. 2
SHEET NO. S-3
OF 21

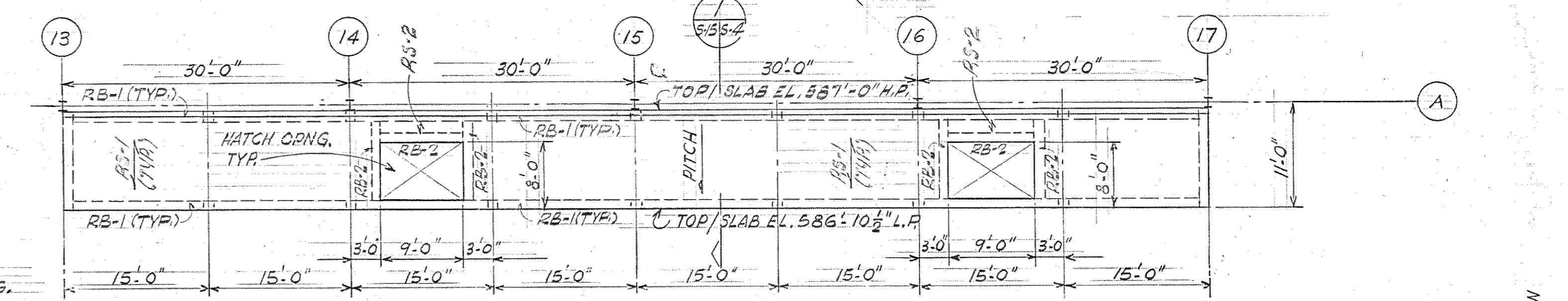
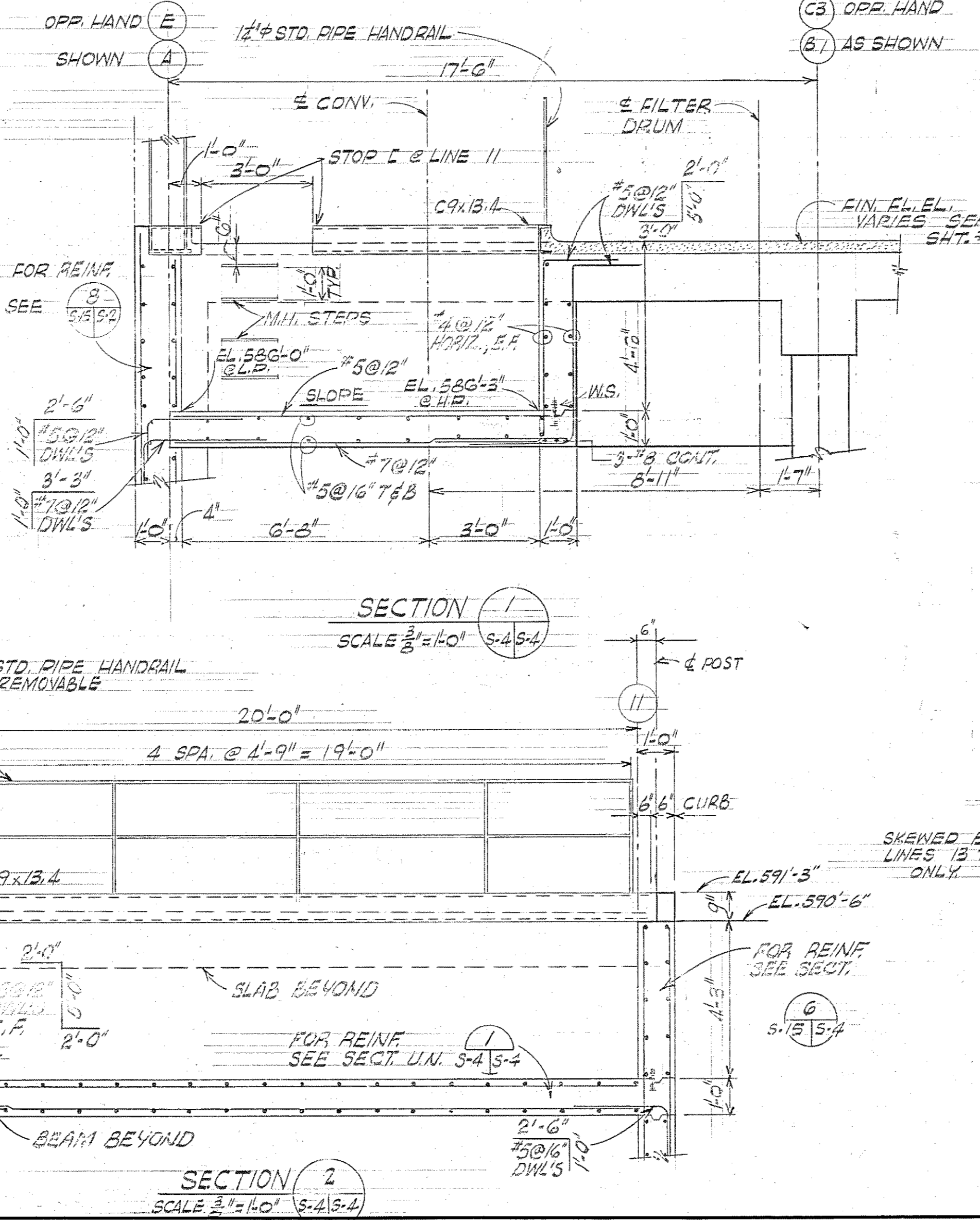
- NOTES:**
1. SEE COLUMN SCHEDULES ON DWG. S-3 & S-14.
2. FOR LOCATION OF FLOOR DRAINS SEE DWG. # 5.
3. FOR C. U. SEE DWG. S-2.
4. FOR EQUIPMENT INCINERATOR PIERS, SEE DWG. # S-3A.



FIRST FLOOR PLAN
SCALE: 1" = 10'-0"

| CONCRETE BEAM SCHEDULE | | | | | | | | | | |
|------------------------|-------|----------------|-----------------|-----------------|--------------|-----------------|--------------|---|--|--|
| MARK | SHAPE | SIZE | | REINFORCEMENT | | | ARRANGEMENT | REMARKS | | |
| | | OVER ALL WIDTH | OVER ALL DEPTH | BOTTOM STRAIGHT | TOP STRAIGHT | BENT OVER CONT. | | | | |
| FB-1 | 28" | 33" | 5'-7" | 2-#8 @ 12" | 2-#8 @ 12" | 2-#8 @ 12" | CONT. SUPPT. | ADD 3-#8 BOTT. ON LINE C3 ONLY | | |
| FB-2 | 28" | 33" | 4'-7" | 2-#8 @ 12" | 2-#8 @ 12" | 2-#8 @ 12" | CONT. SUPPT. | PROVIDE 5-#8-1-75 @ 1'-5" @ FB-3 | | |
| FB-3 | 28" | 33" | 6'-7" | 2-#8 @ 12" | 2-#8 @ 12" | 2-#8 @ 12" | CONT. SUPPT. | | | |
| FB-4 | 28" | 33" | 7'-7" | 2-#8 @ 12" | 2-#8 @ 12" | 2-#8 @ 12" | CONT. SUPPT. | | | |
| FB-5 | 12" | 15" | 2'-7" | 2-#8 @ 12" | 2-#8 @ 12" | 2-#8 @ 12" | CONT. SUPPT. | | | |
| FB-6 | SEE T | 15" | 20" | 2-#6 @ 12" | 2-#6 @ 12" | 2-#6 @ 12" | CONT. SUPPT. | ADD 1-#6 @ 24" TOP BAR BETWEEN STL. COLS. | | |
| FB-7 | SEE T | 15" | 20" | 2-#6 @ 12" | 2-#6 @ 12" | 2-#6 @ 12" | CONT. SUPPT. | ADD 1-#6 @ 24" TOP BAR BETWEEN STL. COLS. | | |
| RB-1 | SEE T | 12" | VARIES | 2-#4 CONT. | 2-#4 CONT. | 2-#4 CONT. | CONT. SUPPT. | | | |
| RB-2 | SEE T | 8" | 9" MAX. 5" MIN. | 2-#4 CONT. | 2-#4 CONT. | 2-#4 CONT. | CONT. SUPPT. | | | |
| FB-8 | SEE T | 24" | 18" | 3-#6 CONT. | 3-#6 CONT. | 3-#6 CONT. | CONT. SUPPT. | | | |

| REINFORCED CONCRETE SLAB SCHEDULE | | | | | |
|-----------------------------------|--------|---------------|----------|---------------------------------|-------|
| MARK | THICK. | REINFORCEMENT | | REMARKS | |
| | | BOTT. TYP. | TOP | | |
| FS-1 | 15" | #8 @ 12" | #8 @ 12" | #6 @ 12" DWLS @ DISC. END | 6'-1" |
| FS-2 | 15" | #8 @ 12" | #8 @ 12" | #6 @ 12" DWLS @ DISC. END | 3'-0" |
| FS-3 | 15" | #8 @ 12" | #8 @ 12" | #6 @ 12" DWLS @ DISC. END | 3'-0" |
| FS-4 | 4" | #4 @ 12" | #4 @ 12" | EXTEND TOP BARS 2'-0" INTO 15-1 | |
| FS-5 | 6" | #4 @ 12" | #4 @ 12" | EXTEND TOP BARS 2'-0" INTO 15-1 | |
| FS-6 | 3" | #4 @ 12" | #4 @ 12" | 6" x 6" W.W.F. @ DISC. END | 2'-0" |
| FS-7 | 3" | #4 @ 12" | #4 @ 12" | 6" x 6" W.W.F. @ DISC. END | 2'-0" |
| FS-8 | 3" | #4 @ 12" | #4 @ 12" | 6" x 6" W.W.F. @ DISC. END | 2'-0" |
| FS-9 | 3" | #4 @ 12" | #4 @ 12" | 6" x 6" W.W.F. @ DISC. END | 2'-0" |
| FS-10 | 3" | #4 @ 12" | #4 @ 12" | 6" x 6" W.W.F. @ DISC. END | 2'-0" |

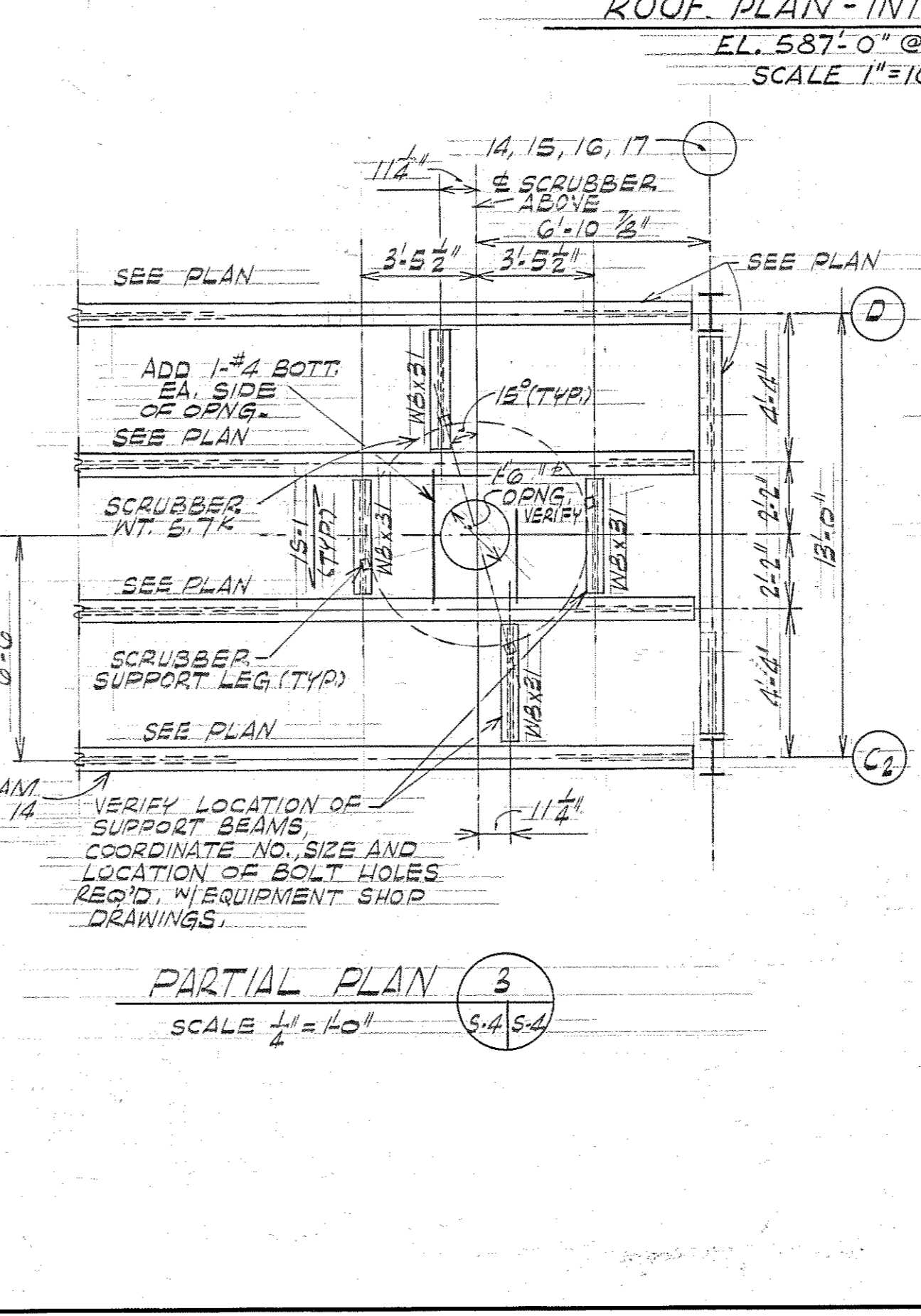


ROOF PLAN - INTAKE PLENUM
EL. 587'-0" @ H.P.
SCALE: 1" = 10'-0"

| WALL PLATES (WxTxL) | |
|---------------------|----------|
| 18P-1 | 9' x 6' |
| 18P-2 | 6' x 6' |
| 18P-3 | 12' x 6' |
| 18P-4 | 13' x 6' |
| 18P-5 | 11' x 6' |
| 18P-6 | 12' x 4' |

TYPICAL BEAM POCKET DETAIL

- NOTES:**
- FOR STEEL BEAM SCHEDULE SEE MATERIAL SCHEDULE ON DWG. S-5.
 - FOR COL. MK'S. SEE DWG. S-3.
 - FOR COL. SCHEDULES - SEE DWGS. S-1 & S-1A.
 - FOR SIZE AND LOCATION OF MECH. OPNGS. (NO) SEE MECH. DWGS.
 - REFER TO MECH. DWGS. FOR LOCATION OF PIPES.



PARTIAL PLAN 3
SCALE: 1/2" = 1'-0"

BOARD OF PUBLIC WORKS
WAYNE COUNTY, MICHIGAN

SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT
SOLIDS HANDLING BUILDING
FRAMING PLAN AT EL. 582'-0" & EL. 590'-9"

| DATE | ADDITIONS AND/OR REVISIONS | DR. | CK. | APP. |
|---------|----------------------------|-----|-----|------|
| 1977 | RECORD | | | |
| 4-12-74 | BULLETIN # 17 | | | |
| 2-20-75 | BULLETIN # 9 | | | |
| 3-17-75 | BULLETIN # 6 | | | |
| 8-14-75 | BULLETIN # 4 | | | |
| 3-17-72 | ADDENDUM # 2 | | | |
| 5-1-72 | ISSUED FOR BIDS | | | |
| 2-24-72 | MSD | | | |

S-239 WPC-MICH-1939 CONTRACT NO. 2

HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
BLOOMFIELD HILLS, MICH. 48303

SHEET NO. **S-4**
OF 21

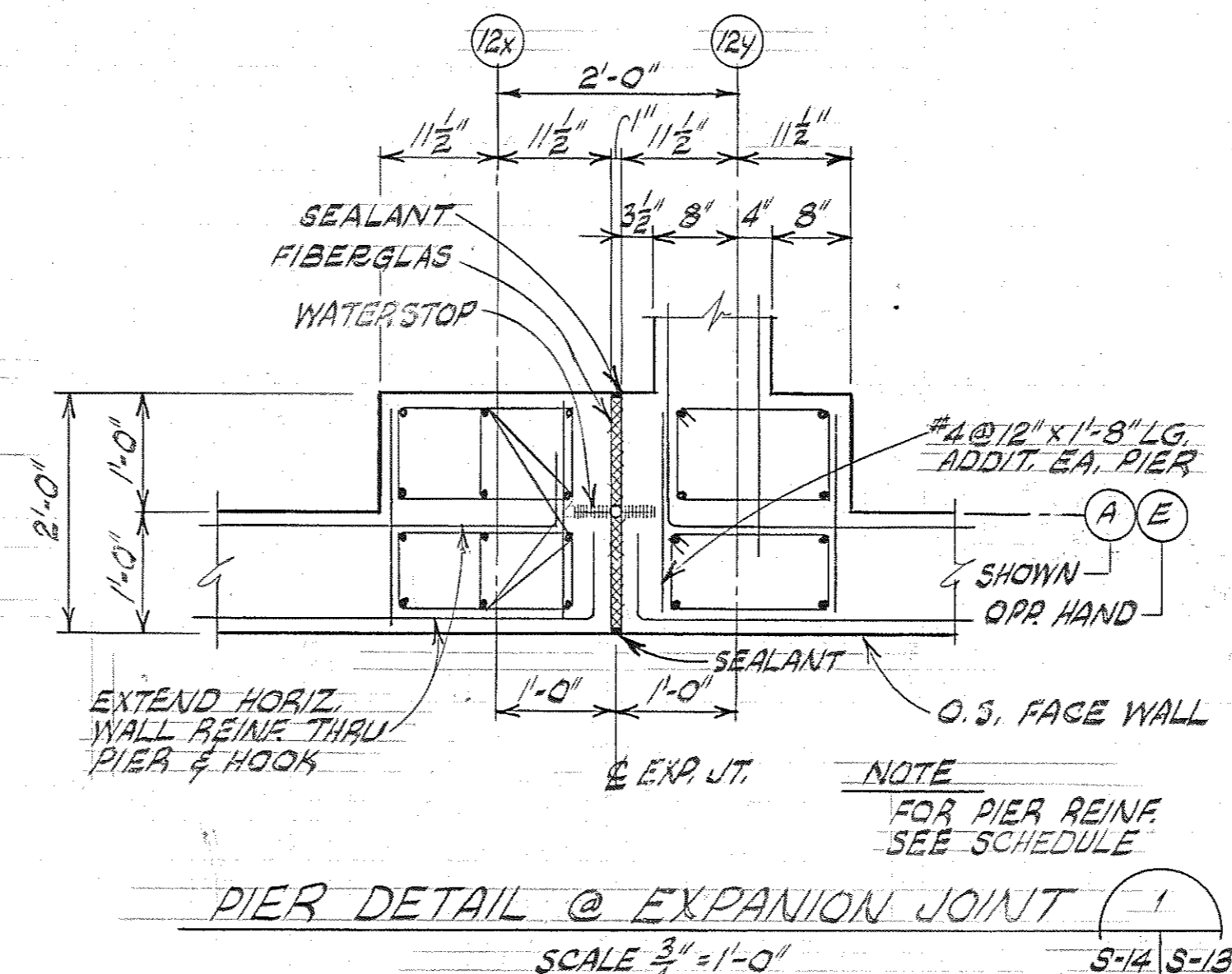
COLUMN SCHEDULE

| MARK | C-26 | C-27 | C-28 | C-29 | C-30 | C-31 | C-32 | C-33 | C-34 | C-35 | C-36 | C-37 | C-38 | C-39 | C-40 | C-41 | C-42 | C-43 | C-44 | C-45 | C-46 | C-47 | C-48 | |
|--|--------------------|-------------------|-------------------|--------------------|-------------------|------------------------------|--------------------|---|--------------------|--|-------------------|-----------------------|-----------------------------|----------------------------|--|--|--|--------------------|--------------------|--|---------------|--|--------------------|--|
| LOCATION | E-14 E-17 | E-18 A-18 | D-18 | C-18 B-18 | C-18 | C ₂ -17a D-17a | C-18 | C ₂ -18 | D-18 | E ₂ -15 E ₂ -16 | F-14 F-17 | F-15 F-16 F-16a | OFFSET @ E ₂ -17 | OFFSET @ E ₁ -8 | E ₁ -6 E ₁ -7 | E ₃ -5 E ₃ -8 | E ₃ -6 E ₃ -7 E ₃ -7a | C ₃ -11 | C-11 | B ₁ -2 THRU B ₁ -10 C ₂ -2, C ₂ -3 C ₃ -2 THRU C ₃ -10 | C-4 THRU C-10 | @ LINE A AND E ₁ 'S INGINERATORS | B ₁ -11 | |
| TOP OF STEEL EL. 636'-6" @ H.R. EL. 636'-0" @ L.R. | | | | | | T.O.S. VARIES | | | EL. VARIES | FIN. FL. EL. 637'-4" | | | | | | | | | | | | | | |
| EL. 623'-7" | | | | | | TOP COLUMN EL. 624'-4" | | | | | | | | | | | | | | | | | | |
| FINISH FLOOR EL. 616'-4" | | | | | | | | | | | | | | | | | | | | | | | | |
| FINISH FLOOR EL. 604'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| FINISH FLOOR EL. 593'-6" | | | | | | | | | | | | | | | | | | | | | | | | |
| TOP STRUCT. SLAB EL. 590'-6" | | | | | | | | | | | | | | | | | | | | | | | | |
| FINISH FLOOR EL. 582'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| BASEMENT FINISH FLOOR EL. 574'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| BASEMENT FINISH FLOOR EL. 568'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| BASE # | BP-9 | BP-2 | BP-2 | BP-2 | BP-2 | BP-8 | BP-5 | BP-6 | BP-5 | BP-2 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | BP-8 | |
| TOTAL LOAD KIPS | 204.6 ^k | 56.3 ^k | 76.3 ^k | 126.3 ^k | 75.1 ^k | 93.1 ^k | 323.0 ^k | 335.0 ^k | 325.0 ^k | 171.0 ^k | 37.4 ^k | 106.6 ^k | 26.3 ^k | 21.0 ^k | 101.0 ^k | 30.0 ^k | 57.2 ^k | 179.5 ^k | 149.5 ^k | 203 ^k | SEE REMARKS | | 92.2 ^k | |
| REMARKS | | | | | | | | BOTT. B.P. EL. 563'-2" COL. TO BEAR ON ELEVATOR PIT SLAB. | | @ ELECT. VAULT #1 | | | | | @ ELECT. VAULT #2 | | | | | | | | | |

REINFORCED CONCRETE PIER SCHEDULE

| MARK | SIZE W x L | REINFORCEMENT | | REMARKS | MARK | SIZE W x L | REINFORCEMENT | | REMARKS | | |
|--------|-----------------------------------|---------------|--------------------------------|-----------------------|---|---------------|---------------|--------------------------------|----------|---|--|
| | | VERTICAL | TIES SIZE & SPA. NO PER SET | | | | VERTICAL | TIES SIZE & SPA. NO PER SET | | | |
| (P-1) | 24" x 24" | 3-#8 | #3 @ 16" | 2 | BUILT INTO WALL | (P-11) | 24" x 24" | 3-#8 | #3 @ 16" | 2 | BUILT INTO WALL |
| (P-2) | 24" x 18" | 3-#7 | #3 @ 14" | 2 | BUILT INTO WALL | (P-12) | 18" x 12" | 4-#8 | #3 @ 16" | 1 | BUILT INTO WALL |
| (P-3) | 24" x 23" | 12-#6 | #3 @ 12" | 4 | | (P-13) | 12" x 12" | 4-#7 | #3 @ 16" | 1 | BUILT INTO WALL |
| (P-4) | 24" x 24" TOP 32" x 24" BOTTOM | 3-#8 | #3 @ 16" | 2 @ TOP 3 @ BOTTOM | ADD 3-#8 @ BOTT SEE DET. (1) BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | (P-14) | 19" x 25" | 6-#8 | #3 @ 16" | 2 | BUILT INTO WALL ENCASE STEEL COLUMN TO FIRST FLOOR. |
| (P-5) | 24" x 23" | 3-#8 | #3 @ 16" | 2 | BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |
| (P-6) | 24" x 20" | 3-#7 | #3 @ 14" | 2 | BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |
| (P-7) | 24" x 18" | 3-#7 | #3 @ 14" | 2 | BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |
| (P-8) | 24" x 18" | 3-#7 | #3 @ 14" | 2 | ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |
| (P-9) | 24" x 24" | 3-#8 | #3 @ 16" | 2 | BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |
| (P-10) | 24" x 15" | 4-#8 | #3 @ 16" | 1 | BUILT INTO WALL ENCASE STEEL COLUMN TO 1ST FLOOR | | | | | | |

CONC. PIER NOTES
 1. PROVIDE 3 SETS OF TIES @ 4" SPACING @ TOP OF PIER.
 2. EXTEND CORNER BARS & OUTSIDE TIES THRU ENCASED
 STEEL COLUMN SECTIONS.
 3. SEE TYP. DETAILS ON DWG. # S-1



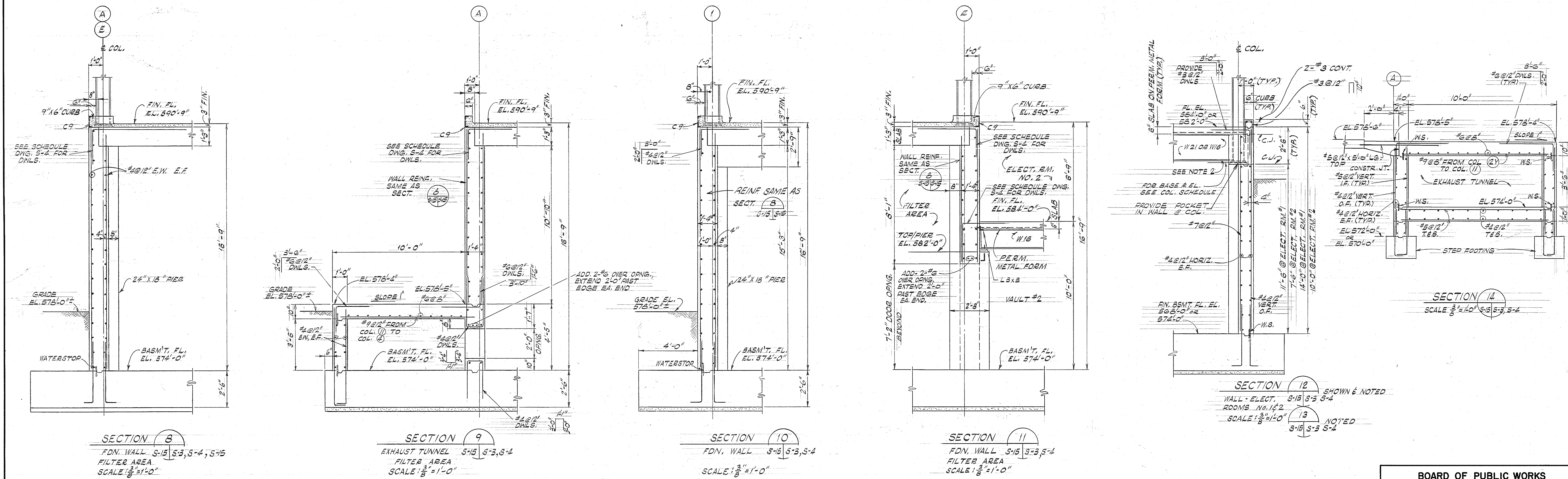
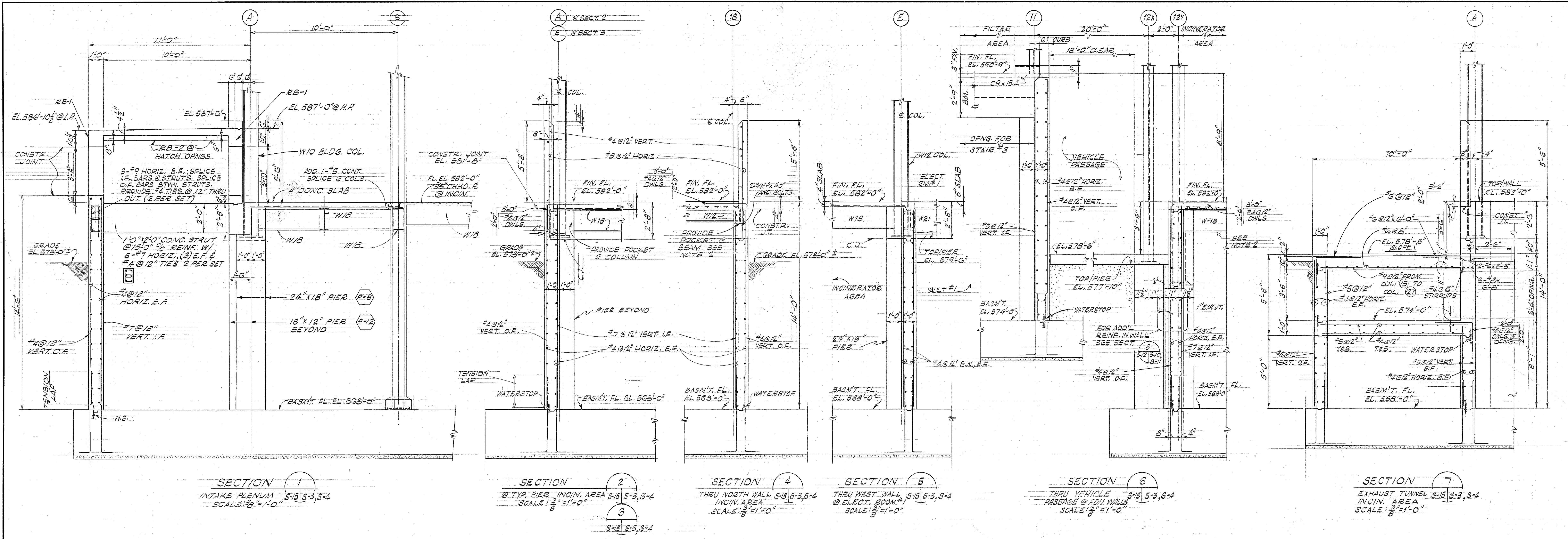
NOTES:
 1. SEE DWG. S-13 FOR BASE PLATE DETAILS &
 ANCHOR BOLT DETAIL

| | | | | | | |
|----------|-----------------|-------------------------------|-------|--------------------|---------------|----------------|
| 1977 | | RECORD | S-239 | | WPC-MICH-1939 | CONTRACT NO. 2 |
| 8-14-73 | BULLETIN #4 | HUBBELL, ROTH & CLARK, INC. | | SHEET NO. 5-14 | | |
| 5-17-72 | ADDENDUM #2 | CONSULTING ENGINEERS | | 3223 FRANKLIN ROAD | | |
| 5-17-72 | ISSUED FOR BIDS | BLOOMFIELD HILLS, MICH. 48013 | | or 2/1 | | |
| 2-27-72 | MS-D-1 | DATE | | 2-27-72 | | |
| FLD. BK. | SCALE | DR. | CK. | APP. | DATE | |
| | L.C. | F.O. | | | 2-27-72 | |

BOARD OF PUBLIC WORKS
 WAYNE COUNTY, MICHIGAN

SECONDARY ADDITIONS TO
 WYANDOTTE WASTEWATER PLANT

SOLIDS HANDLING BUILDING
 COLUMN SCHEDULE



NOTES:
1. SEE DNG. S-1 FOR REIN. DEVELOPMENT LENGTHS, REIN. CONC. NOTES, MATERIAL SCHEDULE & TYP. CONC. DETAILS.
2. WHERE BEAMS REST ON CONC. WALL, PROVIDE WALL PLATES SEE SHEET S-4.

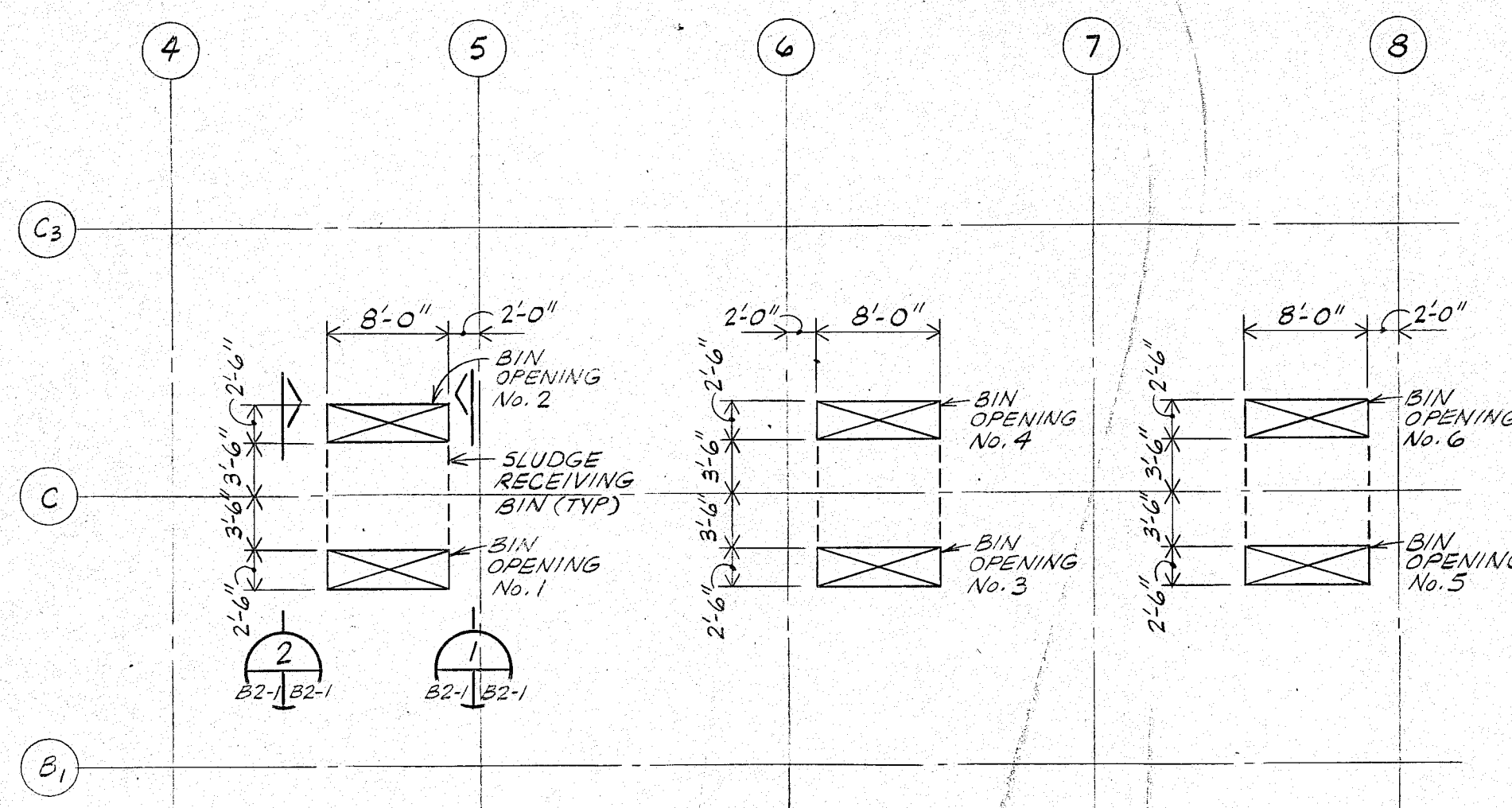
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|----------|----------------------------|
| 1977 | RECORD |
| 4-12-74 | BULLETIN # 17 |
| 8-14-73 | BULLETIN # 4 |
| 5-17-72 | APPENDUM # 2 |
| 5-1-72 | ISSUED FOR BIDS |
| 2-27-72 | MS04 |
| DATE | ADDITIONS AND/OR REVISIONS |
| F.L. BK. | SCALE |
| NOTED | DR. A.S. |
| | CK. FO |
| | APP. AFD |

BOARD OF PUBLIC WORKS
WAYNE COUNTY, MICHIGAN

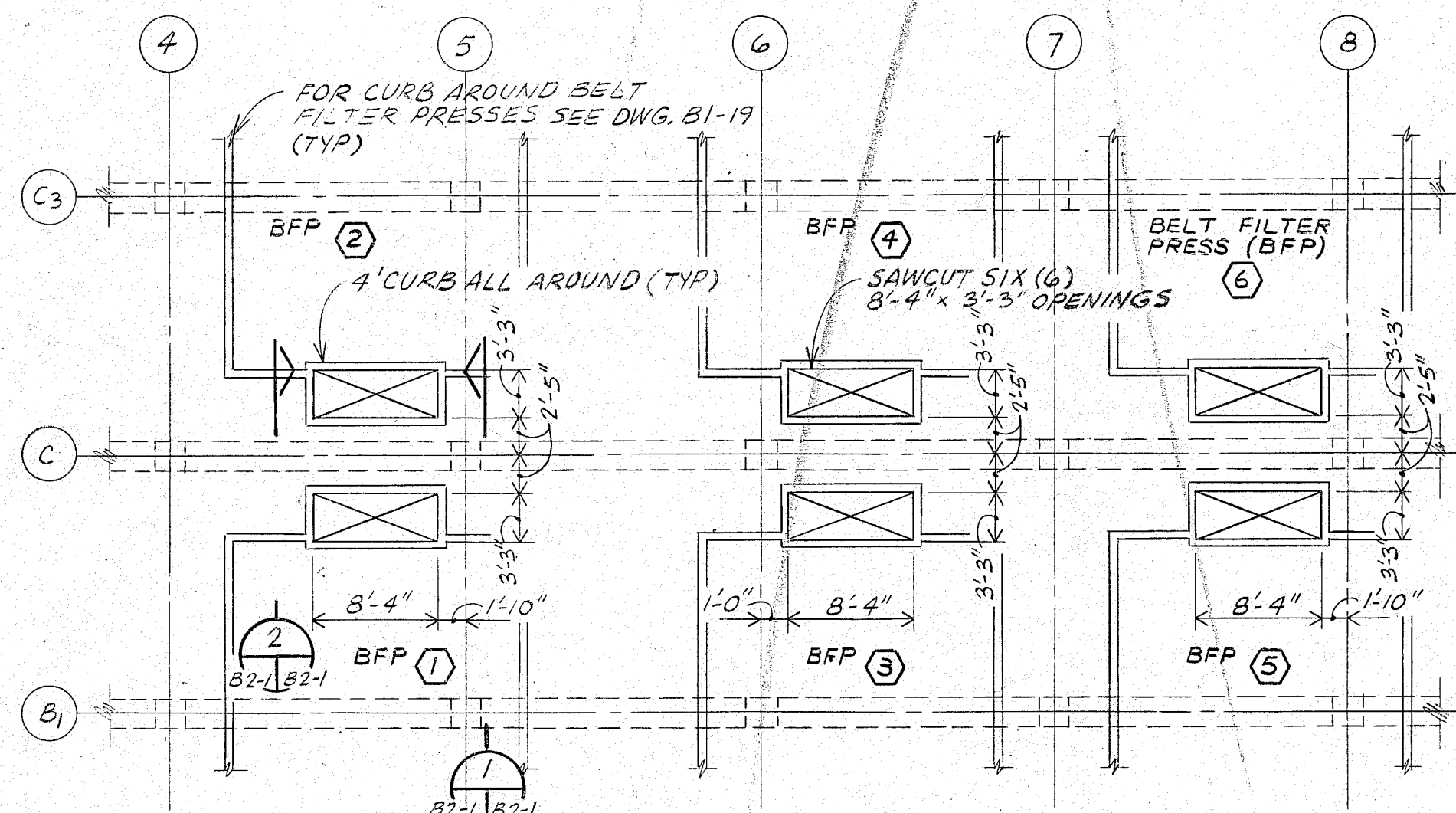
SECONDARY ADDITIONS TO WYANDOTTE WASTEWATER PLANT

SOLIDS HANDLING BUILDING DETAILS

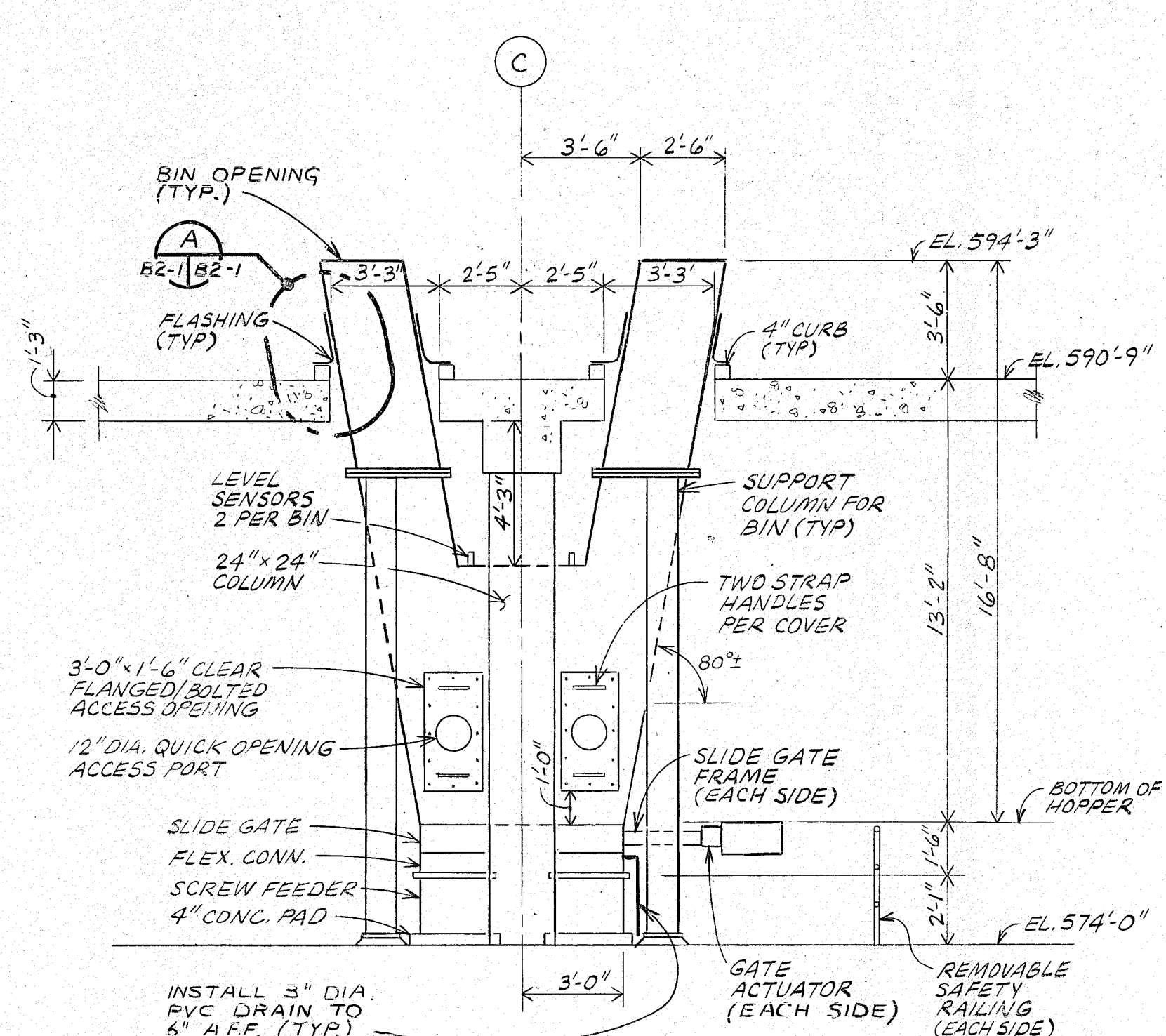
S-239 WPC-MICH-1939 CONTRACT NO. 2
JOB No. 69075
HUBBELL, ROTH & CLARK, INC. SHEET NO. S-15
CONSULTING ENGINEERS
BLOOMFIELD HILLS, MICH. 48313



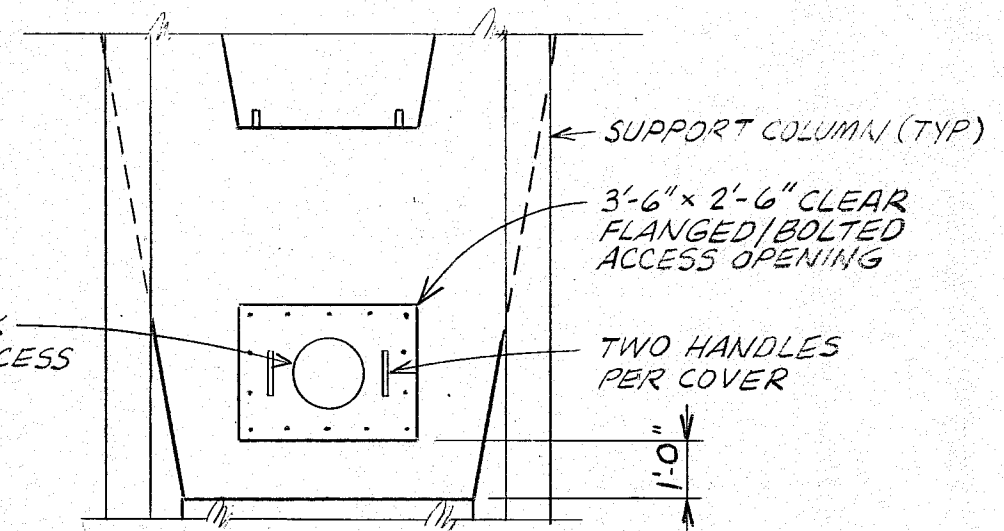
PLAN
BIN OPENINGS @ EL. 594.3"
SCALE: 1"=10'



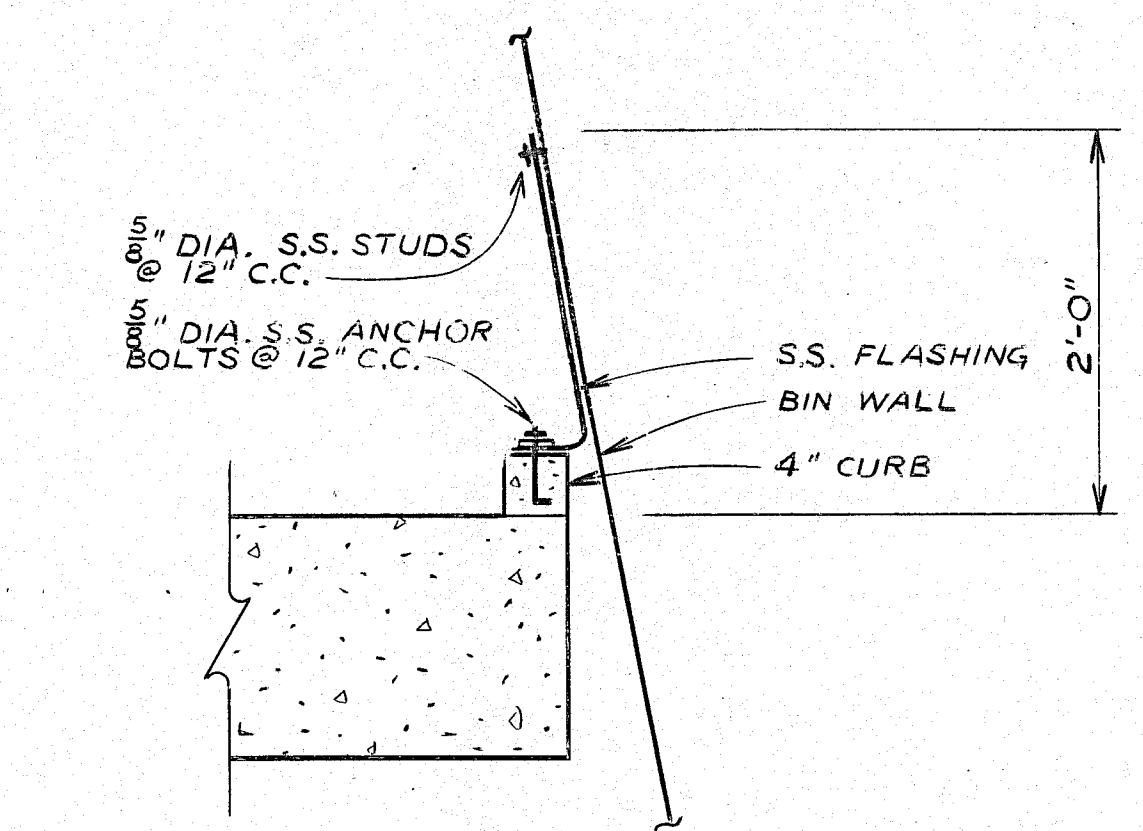
PLAN
FLOOR OPENINGS @ EL. 590.9"
SCALE: 1"=10'



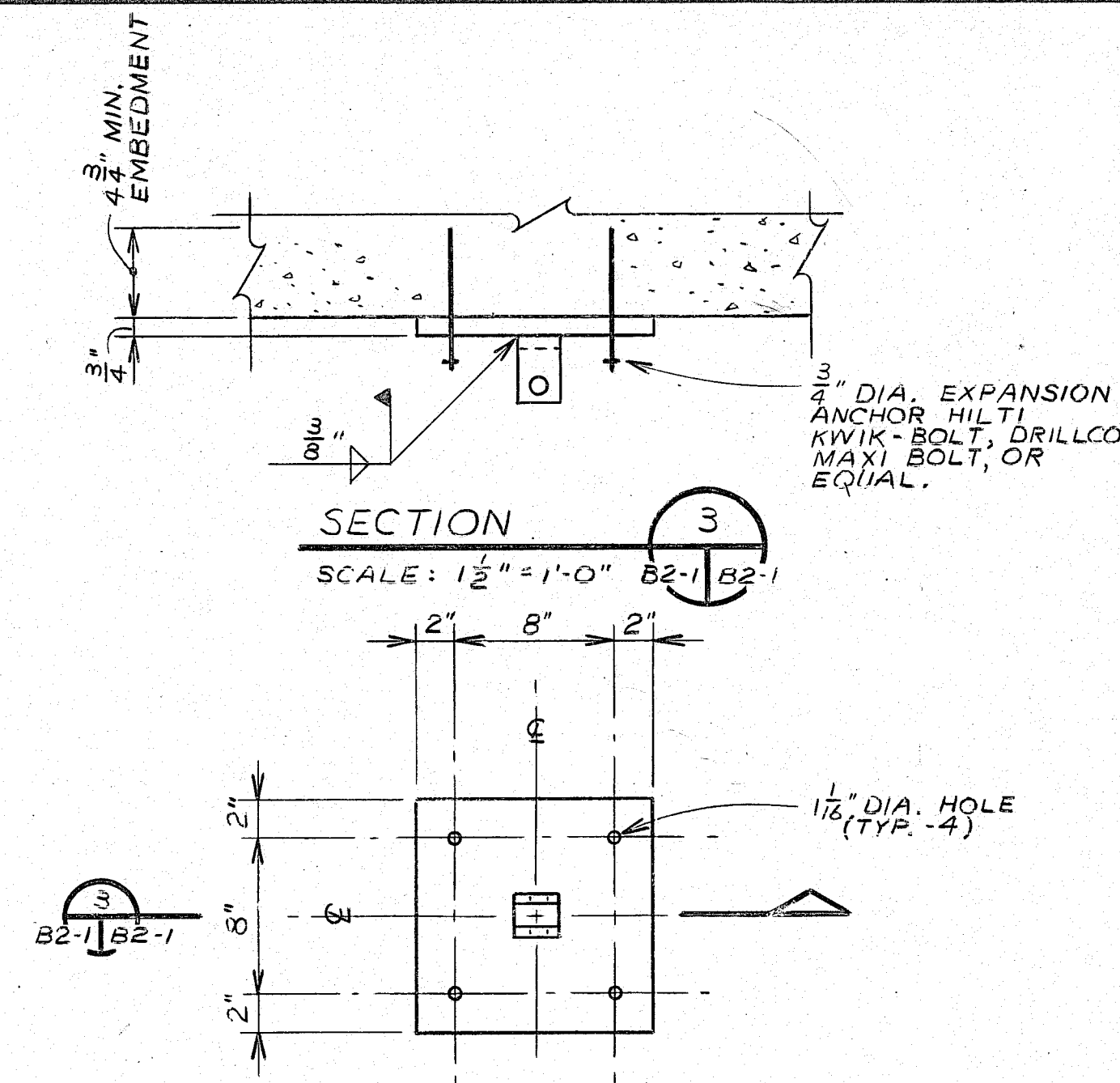
SECTION
SLUDGE RECEIVING BIN
SCALE: 1/4"=1'-0"



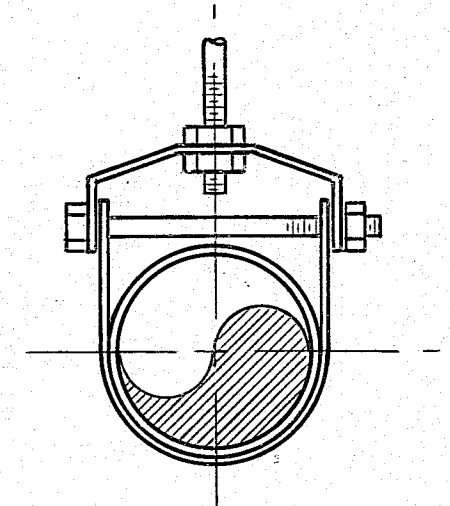
PARTIAL SECTION
SLUDGE RECEIVING BIN
SCALE: 1/4"=1'-0"



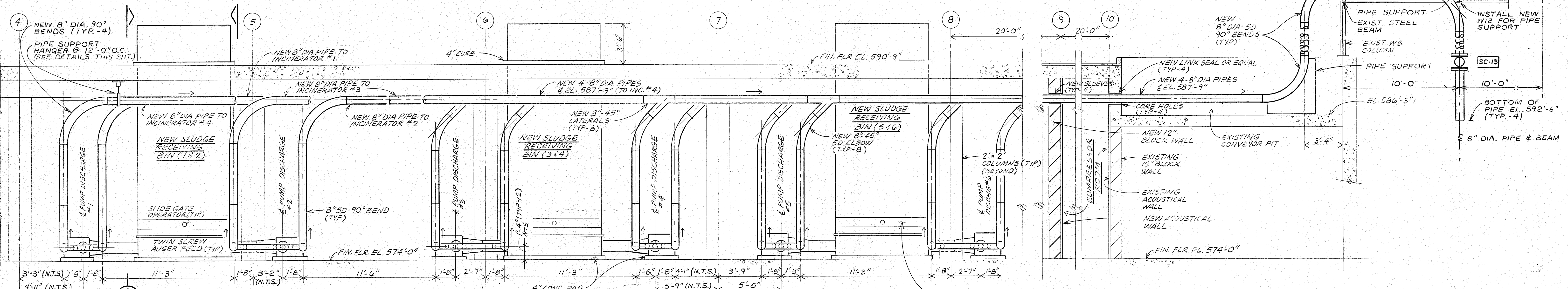
DETAIL - FLASHING ANCHOR
SCALE: 1"=1'-0"



DETAIL - MOUNTING PLATE
SCALE: 1/2"=1'-0"



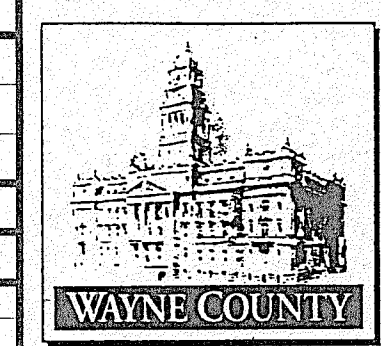
DETAIL - PIPE HANGER
SCALE: 1/2"=1'-0"



PROFILE
SLUDGE CAKE PIPING - LOWER LEVEL
SCALE: 1/4"=1'-0"

NOTE:
ACTUAL DIMENSIONS FOR CONSTRUCTION ARE DEPENDENT ON THE FINAL EQUIPMENT SELECTION AND APPROVED SHOP DRAWING LAYOUT. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

| REVISION | DATE | DRAWN: GML |
|----------|---------|---|
| H | | PREP. |
| G | | CHECK. |
| F | | DESIGN. |
| E | | CHECK. |
| D | | APPROVED: |
| C | | TOPO |
| B | | LEVELS |
| A | | FLD BK PAGE FLD BK PAGE |
| | | OWNER AND M.D.N.R. REVIEW 90% SUBMITTAL |
| | 8-1-94 | |
| | 3-25-94 | |
| | | OWNERS REVIEW 50% |

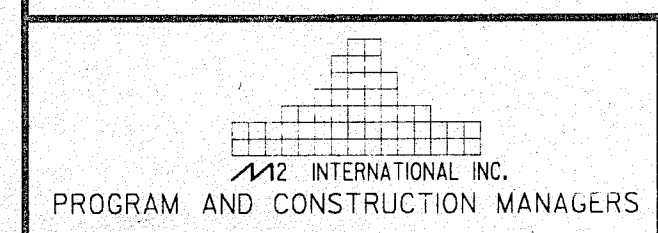


WAYNE COUNTY
DEPARTMENT OF PUBLIC SERVICES
DIVISION OF PUBLIC WORKS



HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
220 Bagley Suite 420
Detroit, MI 48226

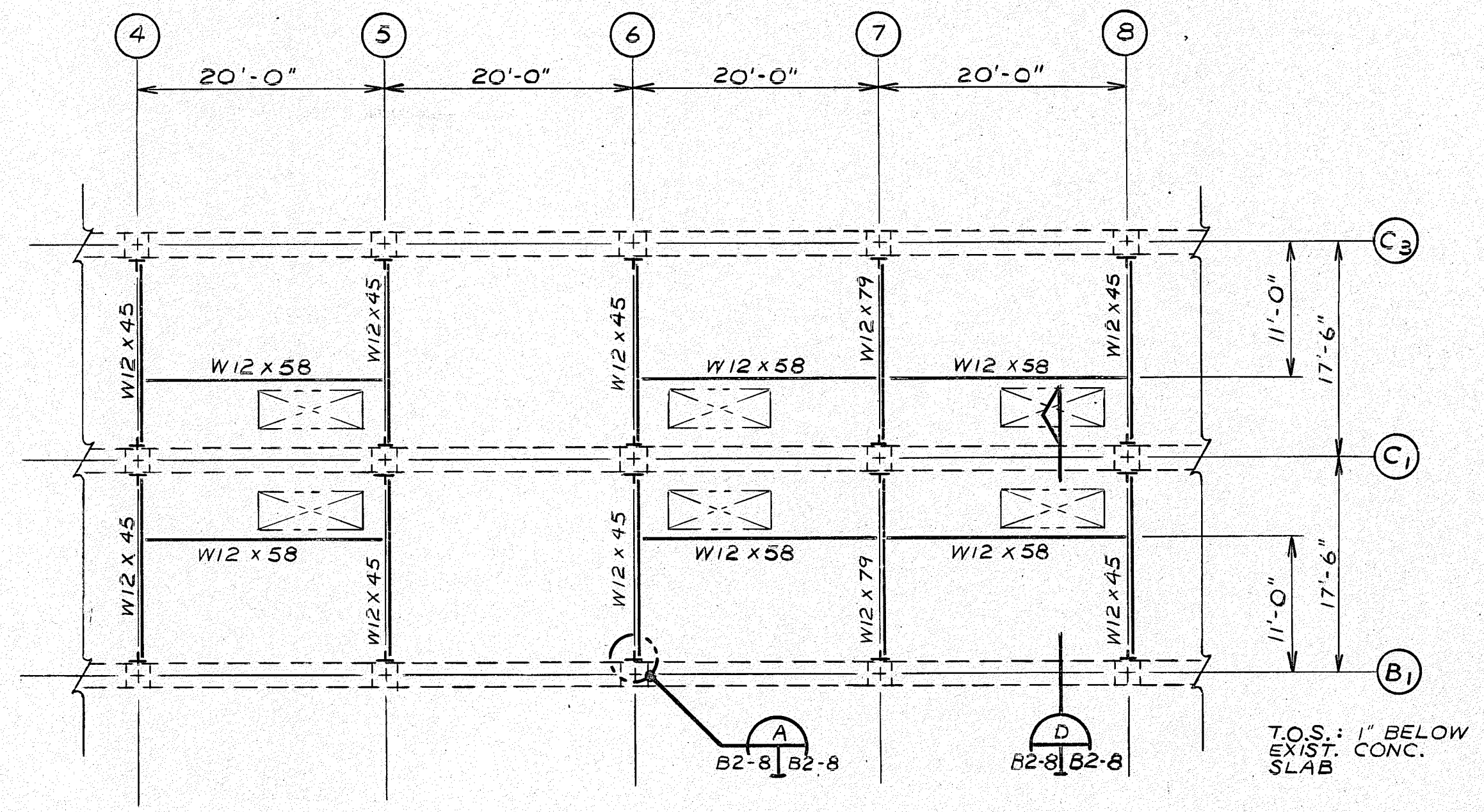
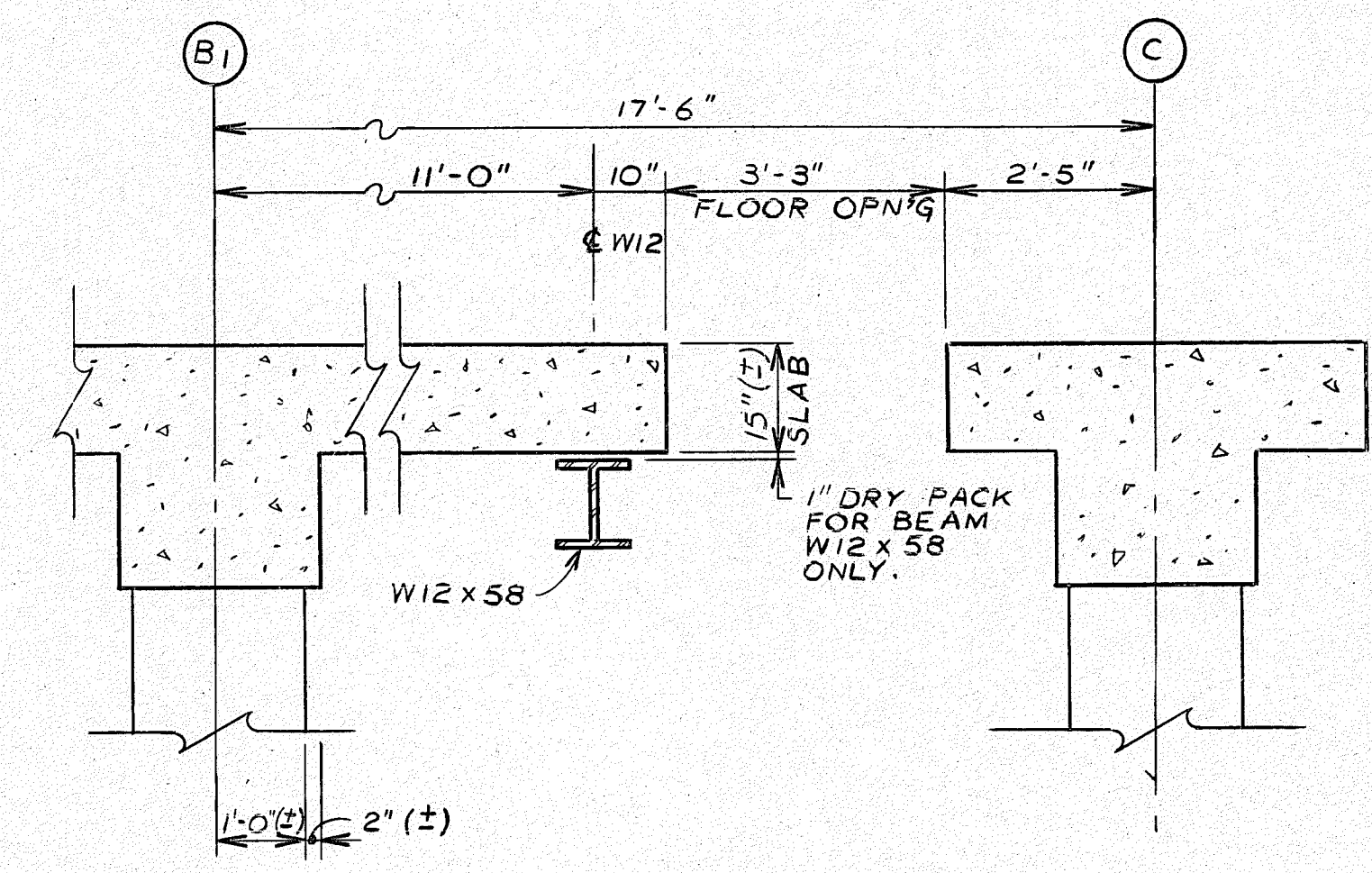
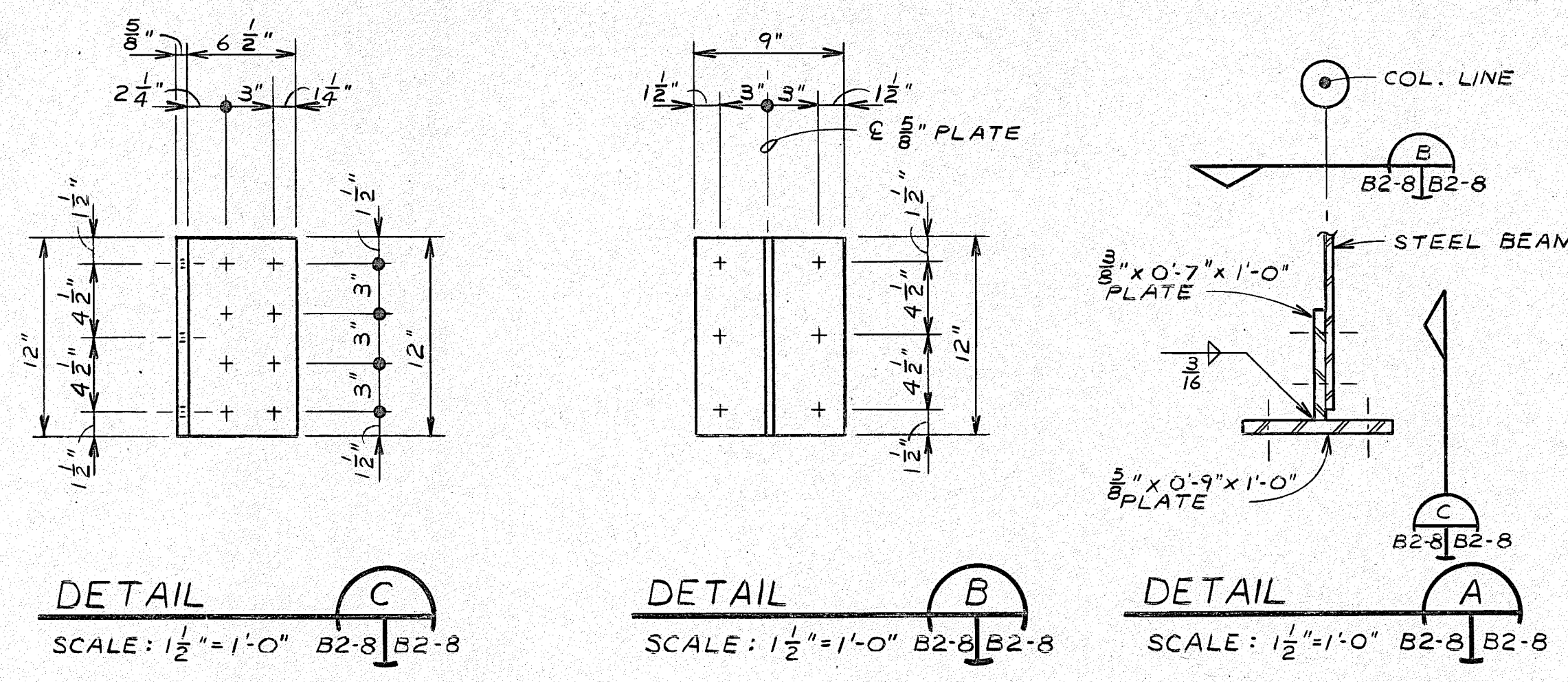
WYANDOTTE WASTEWATER TREATMENT PLANT
IMPROVEMENT & EXPANSION PROJECT



CONTRACT PACKAGE "B"
CONVEYOR SYSTEM IMPROVEMENTS
SLUDGE CAKE PUMPING SYSTEM

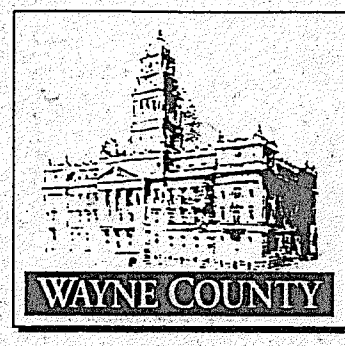
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|-----------------|----------|
| 112 PROJECT No. | M2891 |
| DATE: | |
| SCALE: | AS NOTED |
| JOB No. | 93125 |
| DWG. No. | B2-1 |

To MMI 7-29-94



STRUCTURAL STEEL FRAMING PLAN

| REVISION | DATE | DRAWN: T. W. R. |
|----------|--------|---|
| H | | DRAFT |
| G | | CHECK |
| F | | DESIGN |
| E | | CHECK |
| D | | APPROVED: |
| C | | TOPO |
| B | | LEVELS |
| A | 8-1-94 | OWNER AND M.D.N.R. REVIEW 90% SUBMITTAL |



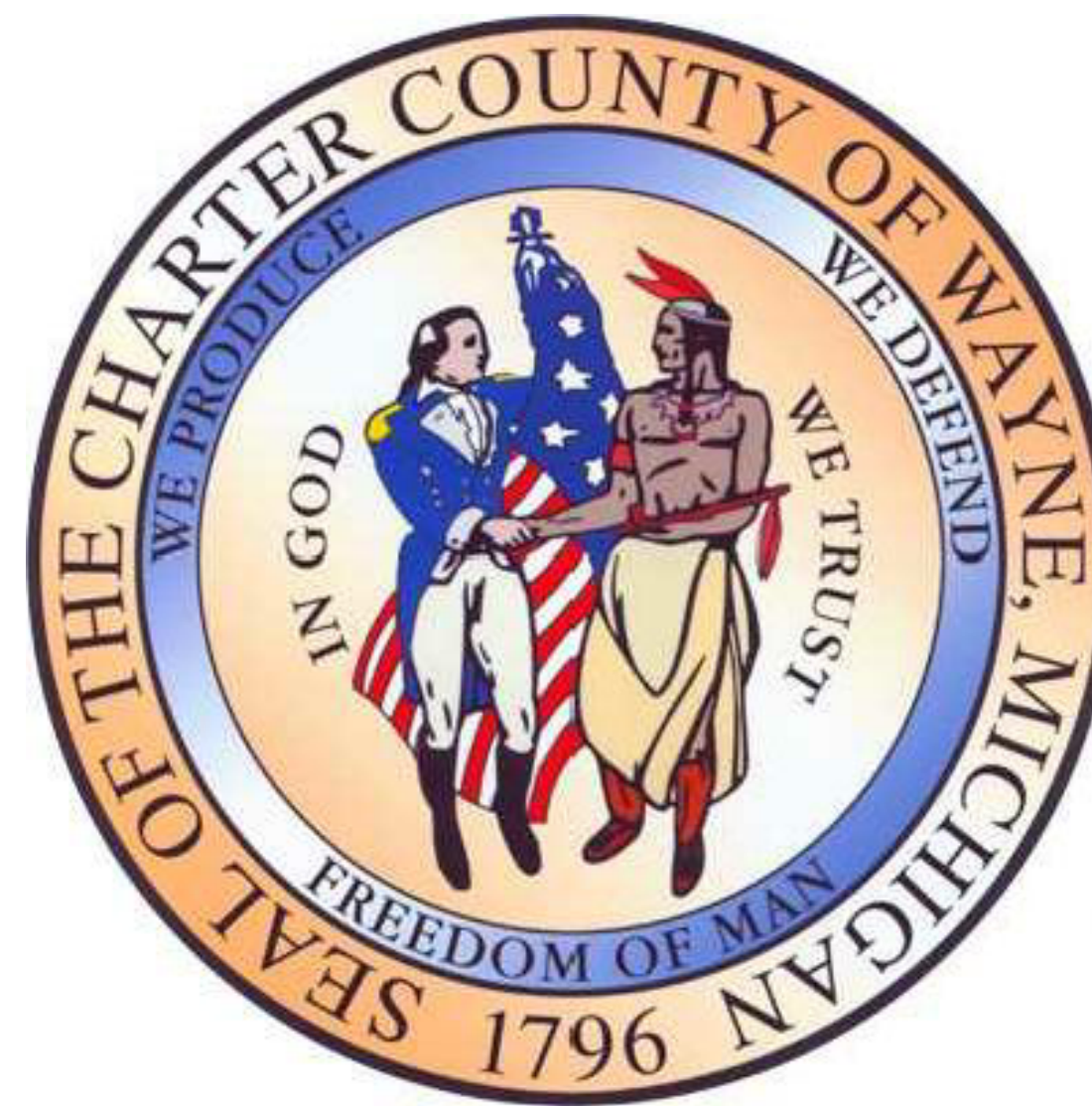
WAYNE COUNTY
DEPARTMENT OF PUBLIC SERVICES
DIVISION OF PUBLIC WORKS

HRC
HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
220 Bagley Suite 420
Detroit, MI 48226

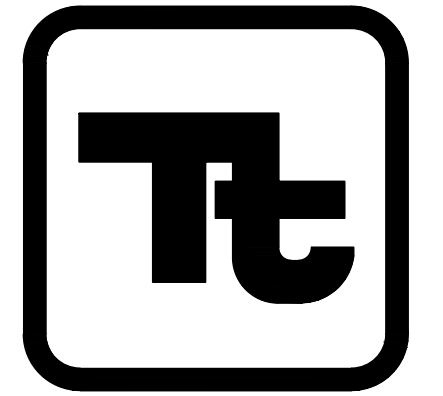
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|---|--|---|---------------------------------------|
| WYANDOTTE INTERNATIONAL INC. PROGRAM AND CONSTRUCTION MANAGERS | | WYANDOTTE WASTEWATER TREATMENT PLANT IMPROVEMENT & EXPANSION PROJECT | M2 PROJECT No. M2891 |
| | | CONTRACT PACKAGE "B" CONVEYOR SYSTEM IMPROVEMENTS | DATE: SCALE: AS NOTED |
| | | STRUCTURAL PLANS SECTIONS AND DETAILS | JOB No. 93125 DWG. No. B2-8 |

**WAYNE COUNTY, MICHIGAN
DEPARTMENT OF ENVIRONMENT
FACILITIES MANAGEMENT DIVISION
DOWNRIVER WASTEWATER TREATMENT FACILITY
PHASE 1 SOLIDS HANDLING IMPROVEMENTS**

**CONTROL NO. 37-08-107
SRF NO. 5217-04**



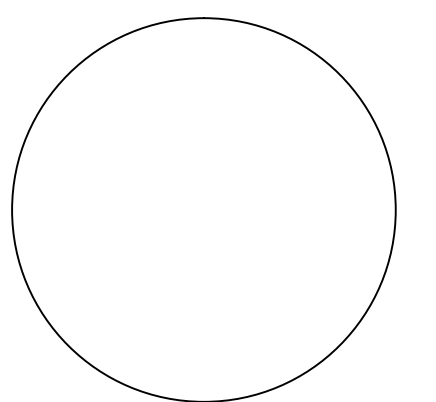
ROBERT A FICANO
COUNTY EXECUTIVE



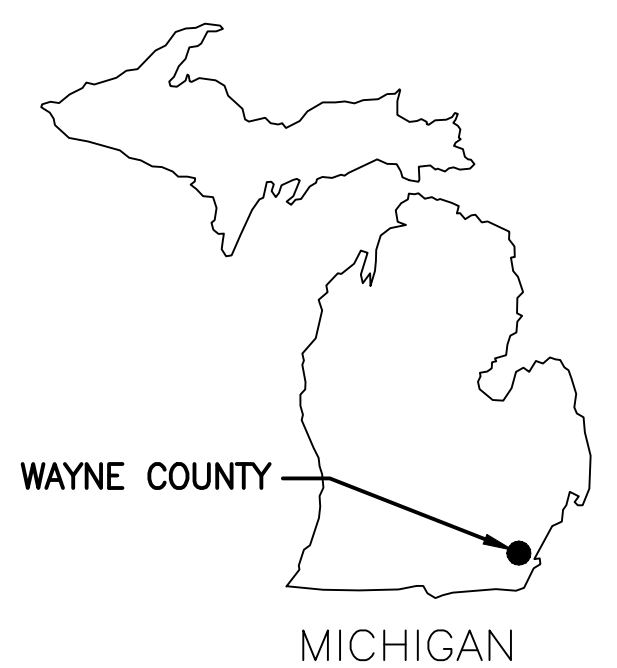
TETRA TECH

Detroit, Michigan Office
Cadillac Tower
65 Cadillac Square, Suite 3400
Detroit, Michigan 48226
Tel. 313.964.0790 Fax: 313.964.6957

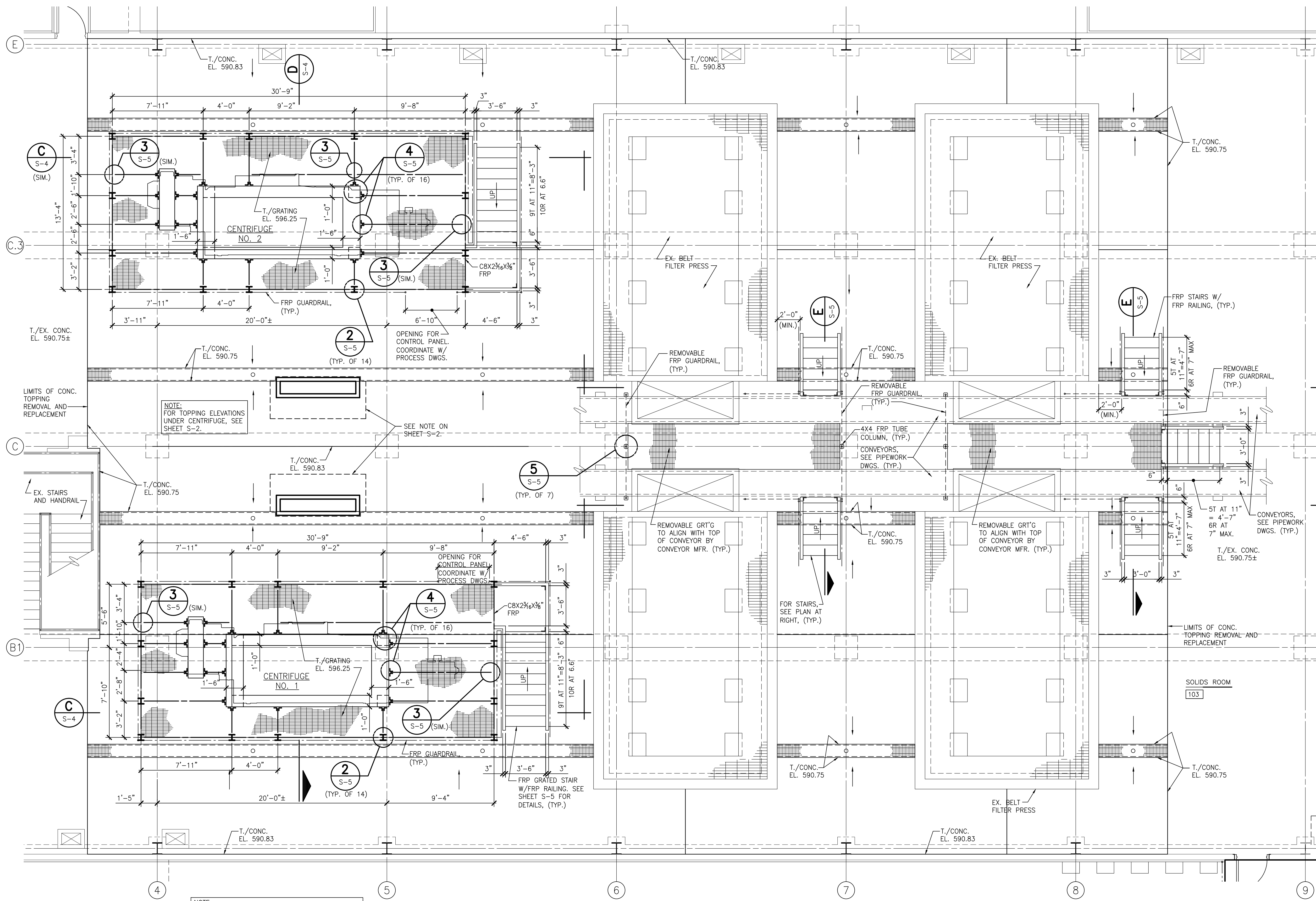
ISSUED:
APRIL, 2008



SIGNATURE OF LICENSEE



VOLUME I OF II

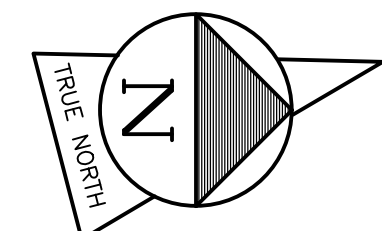


NOTE: FOR TOPPING ELEVATIONS UNDER CENTRIFUGE, SEE SHEET S-2.

SEE NOTE ON SHEET S-2.

NOTE: ALL CENTRIFUGE PLATFORM FRAMING BEAMS ARE 8X4X $\frac{3}{8}$ " FRP I-BEAMS (UNLESS NOTED OTHERWISE)

FRAMING PLAN
T./GRATING EL. 596.25
 SCALE: 1/4"=1'-0"



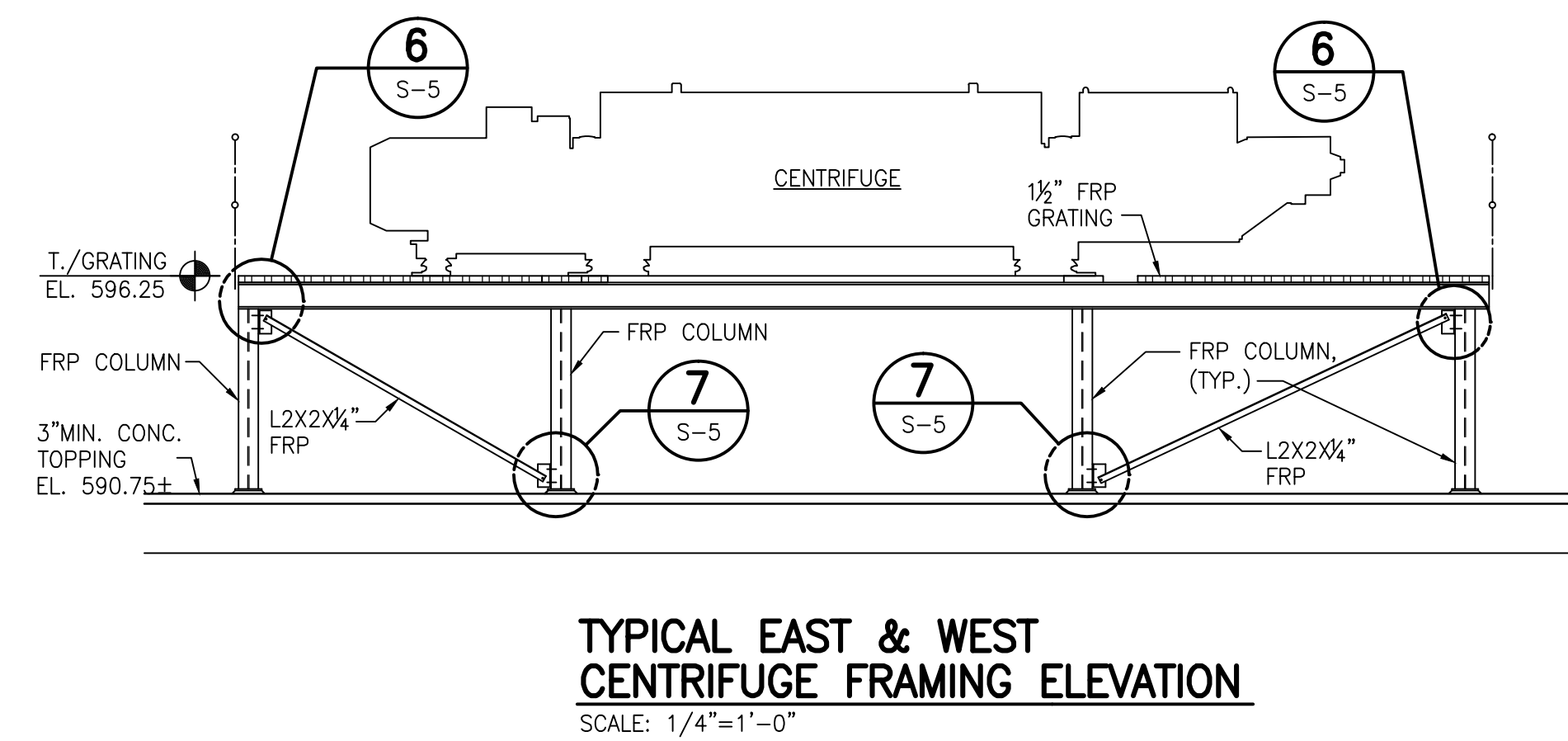
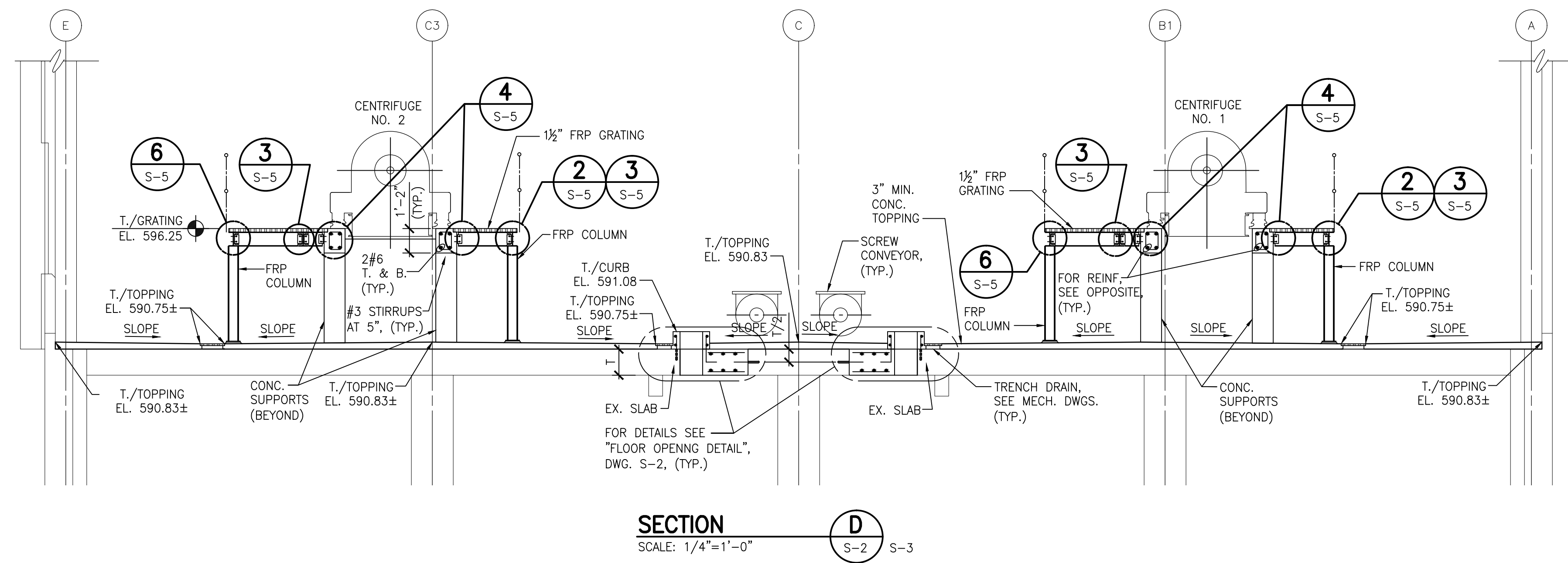
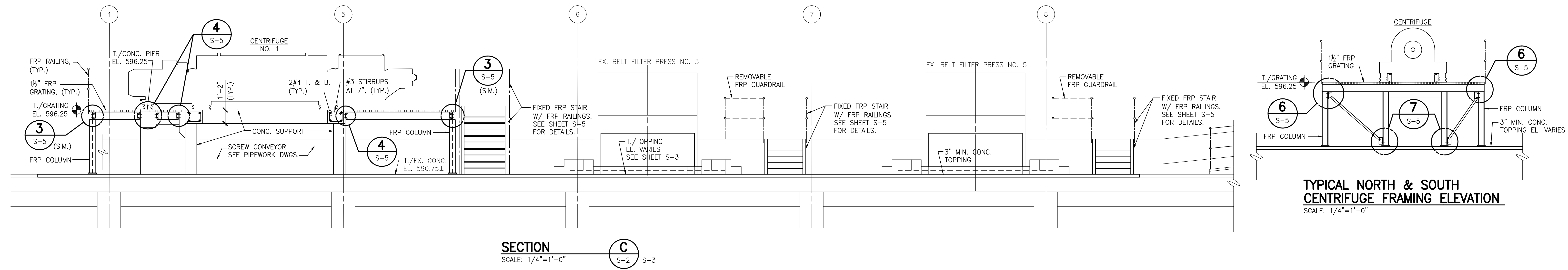
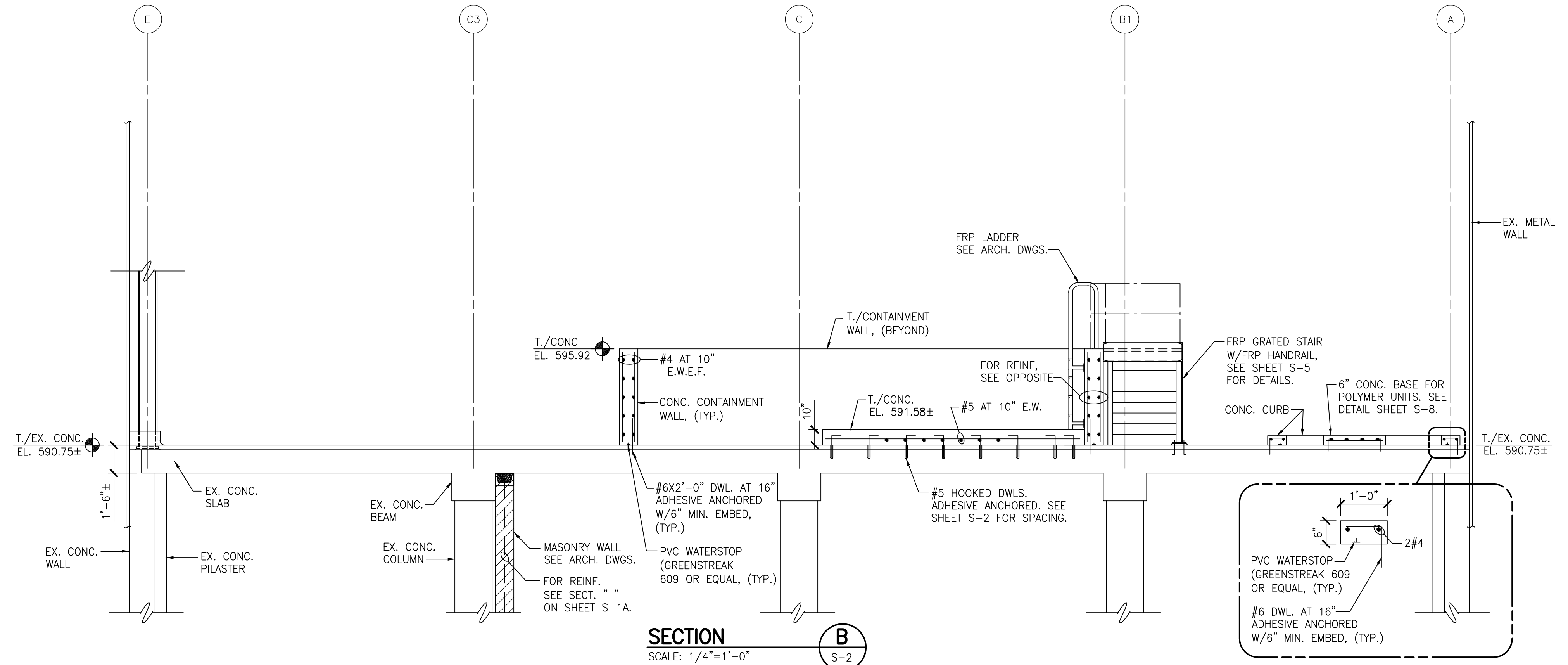
| △ | | | | |
|-----|--|----|--------|-------|
| △ | CONFORMING TO CONSTRUCTION RECORD DRAWINGS | | 6/2011 | |
| △ | RFI NO. 81 | | 5/2009 | |
| △ | ISSUED FOR BIDS | | 4/2008 | |
| REV | DESCRIPTION | BY | DATE | CHK'D |



DESIGNED A. FLAK CHECKED T. DOMBROWSKI
 SCALE AS NOTED CADD DATE 9/13/2012 7:51 AM
 PART \\BH5\WP\201204\20120490\TETRATEC_DVD\5\SOLIDS HANDLING BLDG.DWG
 WAYNE COUNTY, MICHIGAN, DEPARTMENT OF ENVIRONMENT
 FACILITIES MANAGEMENT DIVISION
 DOWNRIVER WASTEWATER TREATMENT FACILITY
 PHASE 1 SOLIDS HANDLING IMPROVEMENTS
 STRUCTURAL
SOLIDS HANDLING BUILDING
PERMANGANATE AREA ROOF & CENTRIFUGE FRAMING TOP PLAN

| | | |
|----------|------------------|-------|
| DIVISION | CONTRACT | SHEET |
| | 12756-07-003-S-1 | S-3 |
| | | OF |

PLOT DATE: 9/13/2012 8:14 AM LAST EDITED BY: Pamela Edwards



| △ | CONFORMING TO CONSTRUCTION RECORD DRAWINGS | 6/2011 | | |
|--|--|-----------|-------------------|------|
| △ | PROPOSAL REQUEST NO. 4 | 02/2009 | | |
| △ | PROPOSAL REQUEST NO. 1 | 11/2008 | | |
| △ | ISSUED FOR BIDS | 4/2008 | | |
| REV | DESCRIPTION | BY | DATE | CHKD |
| | | | | |
| DESIGNED | A. FLAK | CHECKED | T. DOMBROWSKI | |
| SCALE | AS NOTED | CADD DATE | 9/13/2012 7:49 AM | |
| PART: \\BH5\VP\201204\20120490\TETRADEC_DWG\5\SOLIDS HANDLING BLDG SECT | | | | |
| WAYNE COUNTY, MICHIGAN, DEPARTMENT OF ENVIRONMENT FACILITIES MANAGEMENT DIVISION DOWNRIVER WASTEWATER TREATMENT FACILITY PHASE 1 SOLIDS HANDLING IMPROVEMENTS STRUCTURAL | | | | |
| SOLIDS HANDLING BUILDING STORAGE AREAS AND CENTRIFUGE FRAMING SECTIONS | | | | |
| DIVISION | CONTRACT | SHEET | | |
| | 12756-07-003-S-1 | S-4 | | OF |

PLOT DATE: 9/13/2012 8:09 AM LAST EDITED BY: Porfirio Eduardo

ATTACHMENT H – SOLIDS COMPLEX RECORD DRAWING SET

Attachment H is available for download from the following link. Attachment H was not provided in the RFP package to reduce file size.

<https://ohm.filegenius.com/downloadPublic/g3fhb55qxnz5hwz>