

City of Fremont
Newaygo County, Michigan
Wastewater Lagoon Improvements

PROJ #2023755002.00

ADDENDUM #1

DATE:07/31/23

NOTICE: This Addendum No.1, issued in accordance with the Contract Documents, is incorporated into the Contract Documents and supersedes and updates all conflicting information and is hereby amended in certain particulars as follows:

Date: July 31, 2023

RFI:

1. Section 333123 2.02 – PVC Forcemain: Are all pipe joints of the 14” PVC forcemain line to be restrained or are just fittings required to be restrained?
All joints and fittings to be restrained on the Force main.
2. Section 333113 2.01 – DIP Gravity Sewer: Are all DI pipe joints to be restrained for the gravity sewer lines or are just the DI fittings to be restrained?
Just the fittings on gravity sewer.
3. Is there a specific MJ bolt & nut material requirement for buried hardware?
Buried MJ hardware shall be coated steel or stainless steel.
4. Sheet G5: please confirm the type of valves for the Lagoon 4 inlet and bypass lines are to be RW Gate Valves. They are drawn as such, but no specific call-out is shown.
Slide gate replacement at existing transfer structure is no longer part of this project.
5. Section 400559 / Sheet G8 : can the size of the proposed slide gates at the new irrigation pump station be provided.
Slide gates are called out as 20”
6. Sheet G7: Are any record drawings or manufacture/model# of existing sluice gates available for review?
Record drawings indicate the existing sluice gates are Armco Steel Corporation Model 55-20 with an 18” diameter.
7. Sheet G5 – is the Lagoon #4 overflow to be concrete pipe?
Overflow Pipe shall be 20” CPP (such as N12) as noted on G5.
8. “3.03 SAND AND GRAVEL PLACEMENT
3.05 SPECIAL HAUL ROADS”
Requires sand to be 24” thick in the bottom of the Storage Cell 4 for constructing the side slope cover. Is this incidental to the construction of cover sand and placement of stone mulch. Will the sand be required to be removed?
The haul road is incidental to construction. Section 31 05 00 3.03 and 3.05 both note 12” minimum. Excess sand shall be removed, up to 12” layer of sand can remain along bottom if within ten feet from toe of slope.
9. Please clarify the detail for the anchor trench and road detail on top of the berm (page G10).
See updated detail sheet G10. Road gravel shall extend to the top of stone armor system in addition to the 10’-12’ wide access drive. Liner shall have anchor trench as shown in detail.

CHANGES TO THE CONTRACT DOCUMENTS:

1. Section 11 90 00
Item 2.01.D – **DELETE**, “7000 series”, **REPLACE** with “8000 series”
2. Section 31 05 00
Section 3.02
ADD “C. Place a non-woven geotextile fabric, Contech C-100NW or engineer approved equal between sand and stone layers.”
3. Section 40 23 00 – Two specs were incorrectly included in the contract documents.
REMOVE the section that is out of sequence and notes 1.01.B.1 thru 1.01.B.10. **KEEP** technical spec 40 23 00 that is in correct sequence and includes 1.01.B.1 and 1.01.B.2.
4. Section 43 22 00
REPLACE - Remove entirely and replace with attached.
5. Section 43 32 21
REPLACE – Remove entirely and replace with attached.

CHANGES TO THE PLANS:

1. **G5: REPLACE** with attached: Lagoon 4 By-passing piping valves to be gate valves with box, lid and telescopic extension stem.
2. **G7: REPLACE** with attached: Replacement of existing sluice gates has been eliminated from the project.
3. **G8: REPLACE** with attached: Irrigation Pump Station Plan: 10” **Ball Plug** Valves
4. **G10: REPLACE** with attached: Overflow pipe to be 20” CPP, Road Gravel to extend over anchor trench to top of basin stone anchor system, in addition to access road as shown on plans. Sand cover to be 12” with 6” stone.

GENERAL ELECTRICAL

In the Proposed Electrical Riser Diagram and in Specification 260513 change the medium voltage cable ratings to the following: 25kV MV105 133% EPR.

ADDENDUM ACKNOWLEDGMENT:

This Addendum No. 1 shall be attached to and shall become a part of the Contract Documents. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may result in the rejection of the Bid.

END SECTION

DISTRIBUTION: (via email)

All Plan Holders
Todd Blake, City of Fremont
File

SECTION 43 22 00

LIQUID PROCESS EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide materials, labor, and services necessary for furnishing and installing two new magnetic meters for the purpose of measuring discharge volume and flow of wastewater.
- B. Meter location:
 - 1. Install on each discharge line as shown on plans and per manufacturer recommendations.

1.02 SUBMITTALS

- A. Make all submittals in accordance with Section 01 32 00 – Construction Progress Documentation.
- B. Submit shop drawings showing dimensions and details of construction and installation.
- C. Submit written guarantee in accordance with the Contract Documents
- D. Submit manufacturer's literature describing the operation and maintenance of the composite samplers.

1.03 DELIVER, STORAGE, AND HANDLING

- A. Manufacture shall issue written instructions to the contractor on special handling and installation requirements.
- B. Supply two extra copies of these instructions to the Engineer.

PART 2 - PRODUCTS

2.01 MAGNETIC FLOW METER

- A. Application:
 - 1. Flow meters shall be designed for metering wastewater with solid content of 0.5% to 8%.
 - 2. Flow meters for the following applications:
 - a. Treated Effluent water
- B. General:
 - 1. Low frequency electromagnetic induction type, producing a low voltage signal linearly proportional to flow.
 - 2. Accurate within +/-0.25% of meter scale for a velocity range of 1.0 fps to 33.0 fps.
 - 3. Operate on 120 Vac +/-10%, 60 Hz +/-5%.
 - 4. Signal converters:
 - a. Ability to be integrally or remotely mounted, as specified.
 - b. If not specified, the converter shall be remotely mounted.
 - 5. Flanged or flangeless type as specified.
 - 6. Length to diameter ratio: Minimum of 1.5 in order to minimize inaccuracies generated by the affects of inner wall conductivity of adjacent piping.
 - 7. Calibrated traceable to NIST standards:
 - 8. Supply a calibration curve to the engineer.

9. Manufacturer must comply with ISO 9000 Standards.
 10. Magnetic flow meters measuring thickened sludge: Capacitance type with electrodes that are not in contact with the process.
 11. Provide factory calibration and document with calibration curves and methodology submitted to the Engineer.
 12. Submergence: The sensor shall be pedestal sealed against permanent submergence to 30 feet when the terminal box is backfilled with a non-setting, transparent potting material (NEMA 6P).
- C. Meter:
1. Stainless steel or carbon steel schedule 20 minimum.
 2. Meter:
 - a. ANSI 150# flanges.
 - b. Teflon or approved equal suitable for wastewater applications
 - c. Hastalloy electrodes.
 - d. Capable of permanent submergence in up to 30 feet of water
 3. Furnish with two orifice type grounding rings.
 4. Grounding electrodes which penetrate the liner will not be acceptable.
- D. Signal Converter:
1. Microprocessor based capable of displaying flow rate and totalization simultaneously.
 2. Remote converters: Equipped with 50 feet of cable.
 3. Accuracy of meter: +/-0.25% of flow rate.
 4. Repeatability: +/- 0.1% of span.
 5. Rangeability: 75:1 or greater.
 6. Housed in a NEMA 4X enclosure.
 7. Current output: 4-20 mA into a 0 to 750 Ohms load and capable of accommodating bidirectional flow.
 8. Interchangeable without affecting meter accuracy or the need for recalibration for all meter sizes.
 9. Sensing of meter failure shall activate a user configurable zero or 100% output signal and a failure alarm contact closure.
 10. Provide automatic empty pipe detection.
 11. Include non-volatile memory so that flow totals and calibration are not lost during a power outage.
- E. Manufacturers:
1. Siemens FM MAG 5100W or Endress + Hauser Promag W 400 or approved equal.
 2. Influent Meter
 - a. Size: 10-inch.
 - b. Power Requirements: 120 Vac 50/60 Hz.
 - c. Indicator/Totalizer: 2 x 16 Character LCD lighted display.
 - d. 316 SS Grounding Rings Provided.
 - e. Low Flow 250 GPM /Max Flow 1700 GPM.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install all equipment in strict accordance with the manufacturer's recommendations and shop drawings as approved by the Engineer. Locate per Engineer.

3.02 ELECTRICAL WORK

- A. All electrical work shall be performed as specified in Division 26 – ELECTRICAL

3.03 PIPING AND VALVING

All external piping and valving shall be furnished and installed as specified in Section 40 23 00 – WATER AND WASTEWATER PROCESS PIPING.

3.04 FIELD SERVICES

The equipment manufacturer shall provide field services as specified under Section 01 75 16. Minimum instruction time shall be four (4) hours.

END OF SECTION

SECTION 43 23 21
VERTICAL TURBINE PUMPS

1.01 DESCRIPTION

- A. Work included:
1. Remove existing pumps, etc. per demolition plans.
 2. Provide all equipment, supplies, materials, parts, and labor necessary to furnish and install an effluent pumping station as herein specified.
 3. The system shall include but shall not necessarily be limited to the following:
 - two (2) vertical, 2 Stage turbine pumps
 - duplex control panel with variable frequency drives and associated electrical circuitry and circuit breakers.
- B. Related sections:
1. Section 01 20 00 Price and Payment
 2. Section 01 32 00 Construction Progress Documentation
 3. Section 01 75 16 Start Up Procedures
 4. Section 40 23 00 Water and Wastewater Process Piping and Valves
 5. Section 26 00 00 Electrical General Provisions
 6. Section 26 00 10 Electrical Equipment and Materials
 7. Section 26 00 50 Basic Materials and Methods
 8. Section 26 05 26 Grounding and Bonding
 9. Section 26 29 23 Variable Frequency Motor Controllers

1.02 UNIT PRICES

Refer to Section 01 20 00 - Price and Payment.

1.02 QUALITY ASSURANCE

- A. Use only personnel completely trained and experienced in installation of the materials and equipment, and thoroughly familiar with the original design and approved Shop Drawings.
- B. Pump manufacturer shall have a minimum of 10 years of experience in the manufacture of the type of equipment being supplied or as approved by Engineer.

1.03 SUBMITTALS

- A. General: Make all submittals in accordance with Section 01 32 00 – Construction Progress Documentation.
- B. Provide performance curves with pump efficiencies and horsepower requirements, and grinder performance and head loss characteristics.
- C. Submit shop drawings showing dimensions and details of construction and installation for pumps, motors, control panel, supports and accessories. Catalog cut sheets shall reflect characteristics for major items of equipment such as: materials of construction, major dimensions, motor, pump characteristic curves showing the design duty point capacity (GPM), head (FT), net positive suction head required (NPSHr), and hydraulic brake horsepower (BHP). Electrical components used in the motor branch and liquid level control shall be fully described.

- D. Submit operation and maintenance manuals for pumps.
- E. Manufacturer's Guarantee:
 - 1. Submit written guarantee in accordance with the contract documents.
 - 2. Guarantee the equipment will perform its intended service and that any defective design or workmanship shall be corrected or replaced at no expense to the Owner.
 - 3. The manufacturer shall warrant all equipment to be of quality construction, free of defects in material and workmanship.

1.05 START UP SERVICES

- A. Provide start up services as specified in section 01 75 16 - Start Up Procedures, for all equipment provided.

1.06 WARRANTY

All pumps, motors, pipes and related equipment shall be warranted against defects in materials or workmanship for a period of one year from the date of installation.

PART 2 PRODUCTS

2.01 PUMPS

- A. Type and Scope
 - 1. Furnish and install two- (2) Floway 14DOH 2-stage sump pumps, or Engineer approved equal.
 - 2. All components of the pumping unit shall be supplied by the same manufacturer.
 - 3. Pumps shall be identical in materials and performance with all replacement parts being interchangeable between pumps.
 - 3. Requirements:
 - a. Integral motor, variable frequency drives, suction and discharge elbows capable of being mounted in a horizontal position.
 - b. 10 inch column and discharge
 - c. Carbon Steel column material
 - d. Each pump motor shall be equipped with the necessary length of power and control cable(s) sized in accordance with NEC standards.
 - e. Pump to be factory primed and finished with no additional coating requirements.
- B. Design and Performance Criteria:
 - 1. Performance: Each pump unit shall be capable of operating under the following conditions:
 - 1800 gpm at 160 feet TDH (one pump running), minimum shut off head of 193 feet.
 - Efficiency: Minimum bowl efficiency of 80%
- C. Motor:
 - 1. 100 hp, 1800 RPM, WPI, 3/60Hz/460V
 - 2. Service Factor: 1.15
 - 3. Type: NEMA, vertical hollow shaft, Premium Efficiency
- D. Bowl Assembly:
 - 1. Bowl, suction case, and discharge case material:
 - a. Less than 8 inch pump: ASTM A48, Class 30, cast iron, without imperfections.
 - b. 8 inch and larger pumps: ASTM A48, Class 30, cast iron, without imperfections, with bowl water passages porcelain enamel coated.
 - 2. Bowl wear rings on 8 inch and larger pumps: Bronze, ASTM B505 alloy 932.

3. Impeller: Enclosed, bronze ASTM B584 alloy 836, statically & dynamically balanced for minimum vibration.
 4. Shaft: 416 stainless steel meeting ASTM A582, Type 416.
 5. Shaft diameter: Shaft diameter shall be recommended by the pump manufacturer and shall be of sufficient size to transmit the pump horsepower with a liberal safety factor.
 6. Non-Witnessed Hydrostatic bowl assembly test required for each bowl assembly.
 7. Non-Witnessed Performance Test required for each bowl assembly in accordance with Hydraulic Institute Standards at manufacturer's plant prior to shipment. Certified copies of the test curve with design duty condition shall be submitted to the Engineer.
- E. Column assembly:
1. Diameter: 6" minimum
 2. Maximum length:
 - a. Intermediate sections: 10 feet maximum.
 - b. Top and bottom sections: 5 feet
 3. Couplings: threaded, with a bearing retainer assembly
 4. Bearings: Synthetic cutless rubber
 5. Line shaft: ASTM A582 Grade 416 SS ground and polished. Diameter to be sized by the pump manufacturer to transmit the pump horsepower with a liberal safety factor.
 6. Shaft ends: Threaded stainless steel couplings.
- F. Discharge Head
1. General: Pump head with coupling guard shall be mounted on C.I. Soleplate on concrete pump pedestal and be suitable for mounting the motor and supporting the pump assembly. The design shall permit the drive shaft to be coupled above the stuffing box to facilitate easy removal of the drive.
 2. Material: Cast iron meeting ASTM A48, Class 30.
 3. Discharge outlet: 10 inch diameter with an ASTM Class 125 flange, with 1/4" NPT plugged tap.
 4. Stuffing box: Deep bore type with a minimum of 4 packing rings and a seal cage.
 5. Packing gland: Bronze split type secured with stainless steel studs and bronze nuts.
 6. Soleplate shall be cast iron material A48 Class 30.
 7. Non-Witness Hydrostatic test required.
- G. Control Panel and Appurtenances
1. The pump control panel shall be provided by the pump manufacturer.
 2. The complete control circuitry shall operate on 110 Volt, 60 Hertz, single phase power.
 3. All components shall be mounted in one common enclosure. The enclosure shall be a door-in-door lockable NEMA 3R enclosure furnished with UL approved outdoor paint (gray finish on all surfaces. The enclosure shall be suitable for wall or pole mounting.
 4. The control panel shall contain the following items:
 - Manual fused disconnect for each pump, or manual thermal magnetic molded case circuit breaker for each pump
 - Magnetic motor starter, NEMA rated, for each pump equipped with under voltage release and overload protection (manual reset)
 - Hand-Off-Automatic selector switch for each pump
 - Pump run lights for each pump (green)
 - Elapsed time meter for each pump, 6 digit, non-resettable, in hours and tenths of hours
 - Motor overload reset button (door mounted)
 - Thermostatically controlled electric heater
 - Phase failure monitor
 - Resettable run time clock to control automatic pump shut down

- 120V duplex GFI protected convenience outlet
 - Surge protection
 - HOA switch for the valve actuator
 - Valve open/closed indicator lights
 - Low level float
 - Valve Fail alarm light
 - Manual valve reset button
5. A terminal strip with box-type connector shall be supplied to make all power and control connections for the pump. All terminals shall be marked for each identification. A ground terminal strip shall also be provided.
 6. Toggle-type switches and miniature lights will not be acceptable for seal failure and pump running lights.
- E. 6. Variable Frequency Drive (VFD):
- a. Manufacturer: Allen-Bradley, Power Flex
 - b. Features:
 - i. Door operated mechanism with a 480 vac circuit breaker
 - ii. Across line starter in the enclosure.
 - iii. Selector switch for VFD start of across the line start.
 - iv. Hand/Auto selector switch.
 - v. Run lights and a Fault light.
 - vi. Electronic overload (adjustable).
 - vii. Provide variable torque control or pump control to provide smooth acceleration and deceleration to stop check valve hammering.
 - viii. Provide monitoring to protect the pump in case of check valve failure; to open when pump is running.
- I. Functional intent:
1. Control panels: Front access designed to house the controllers, indicators, recorders, totalizers, HOA switches, and any other instrumentation required to achieve the functional intent of the specifications and as indicated on the Drawings.
 2. Control panel: Vertical flat type shape, designed for front access.
 3. The complete panel shall be factory tested prior to shipment and field installation shall consist only of setting the panel in place and making the required electrical connections.
 4. Height of control panels shall not exceed 78 inches.
 5. Integrate controls with Irrigation system.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General:
1. Install pumps in accordance with manufacturer's recommendations and Shop Drawings as approved by the Engineer.
 2. Bolt down pumps to pump bases and connect to plumbing and control system.
 3. Test operate pumps with the guidance of an authorized service agent.
 4. Provide start up and calibration services for pumps and controls.

3.02 MANUFACTURER'S FIELD SERVICES

- A. The pump manufacturer shall provide field services for minimum instruction time of four (4) hours.

3.03 TESTING

- A. Field pump performance test:
1. After the pumping units have been erected, performance tests shall be conducted.
 2. The Contractor shall provide the electricity, lubricating oil, and the water for the test.
 3. The measurement of the quantity of water pumped is included in the performance test.
 4. The performance tests shall be conducted under the observation of the Engineer and the supervision of the municipality or entity that will operate the completed installation and with the cooperation of the manufacturer's factory representative.
 5. These tests shall be carried out by operating each pumping unit through the range specified for a continuous period of at least 2 hours, or until it is shown to the satisfaction of the Engineer that all of the equipment is in perfect condition and will meet the requirements specified.

END OF SECTION



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 DRILLING
 LANDSCAPE ARCHITECTURE

No.	Date	By	Revision
3	07-31-2023	GLW	ADDENDUM #1
2	06-29-2023	GLW	ISSUED FOR BIDS
1	10-14-2021	GLW	ISSUED FOR PERMITS

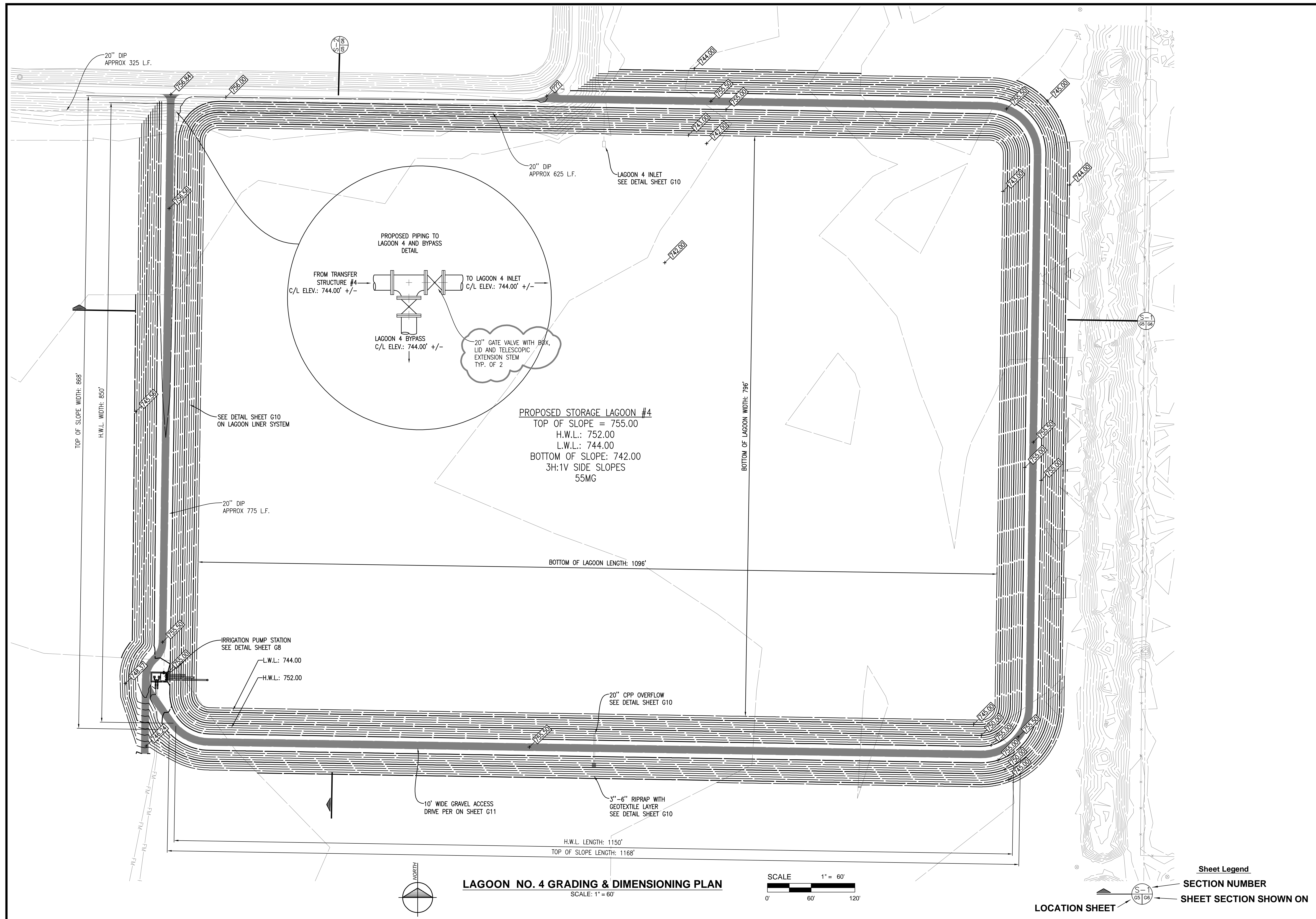
LAGOON NO. 4 GRADING & DIMENSIONING PLAN
WASTEWATER LAGOON IMPROVEMENTS
 CITY OF FREMONT

Date Issued: 06-29-2023
 Date Surveyed: 10-31-21
 Designed By: JML/AJP
 Drawn By: MJH
 Checked By: MJH
 Scale: AS NOTED

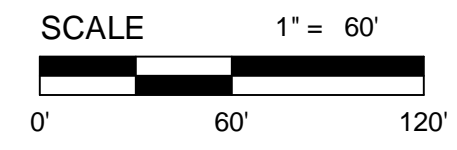
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 PART OF SECTION 23 & 26
 T 12 N, R 14 W
 SHERIDAN TOWNSHIP
 NEWAYGO COUNTY
 MICHIGAN

Project Number:
 2023755002.00

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LAGOON NO. 4 GRADING & DIMENSIONING PLAN
 SCALE: 1" = 60'

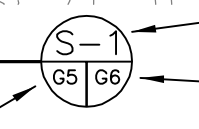


Sheet Legend

SECTION NUMBER

SHEET SECTION SHOWN ON

LOCATION SHEET





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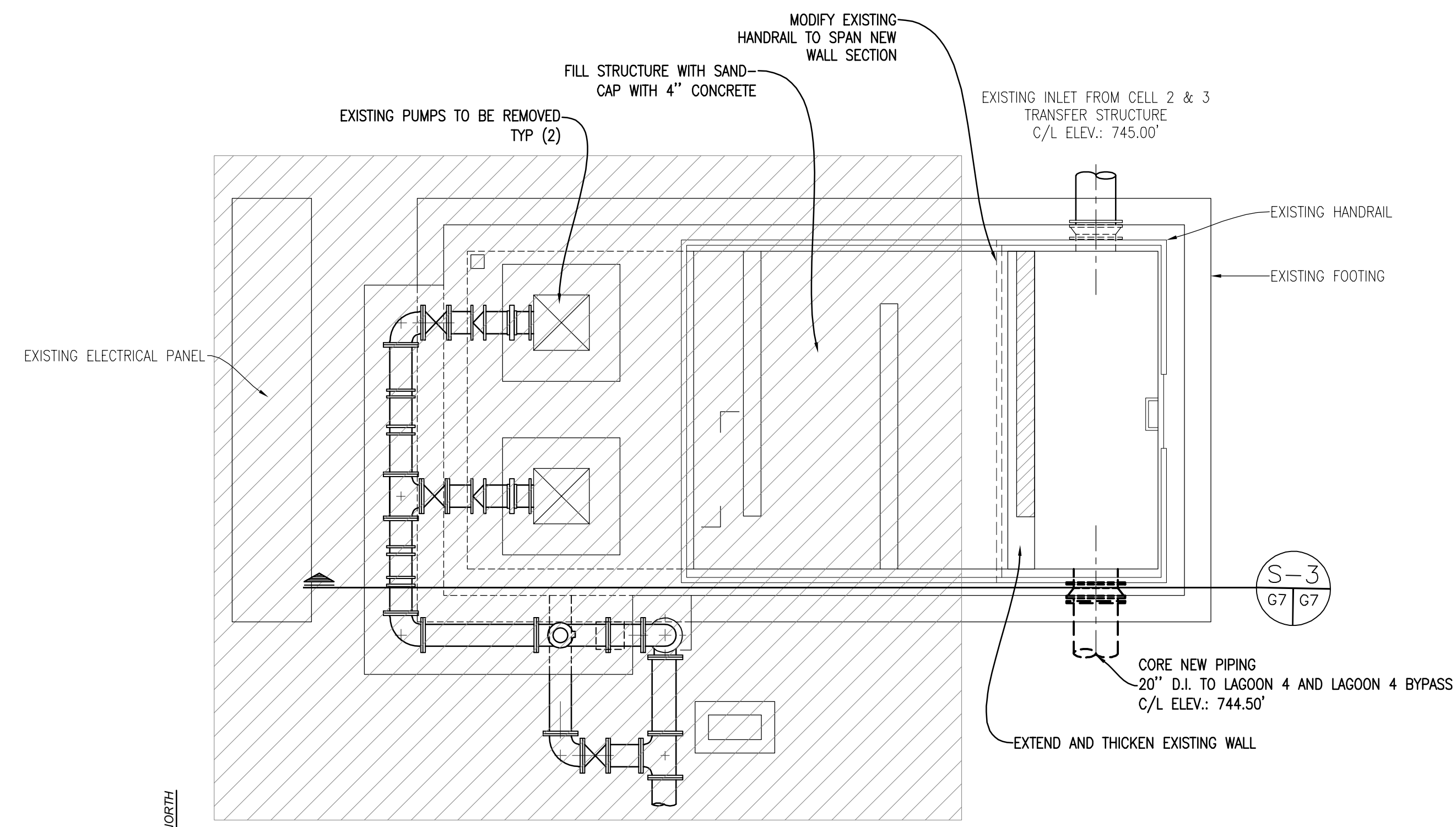
**EXISTING TRANSFER STRUCTURES
 WASTEWATER LAGOON IMPROVEMENTS
 CITY OF FREMONT**

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 Date Surveyed: ...
 Designed By: ...
 Drawn By: ...
 Checked By: MJH
 Scale: AS NOTED

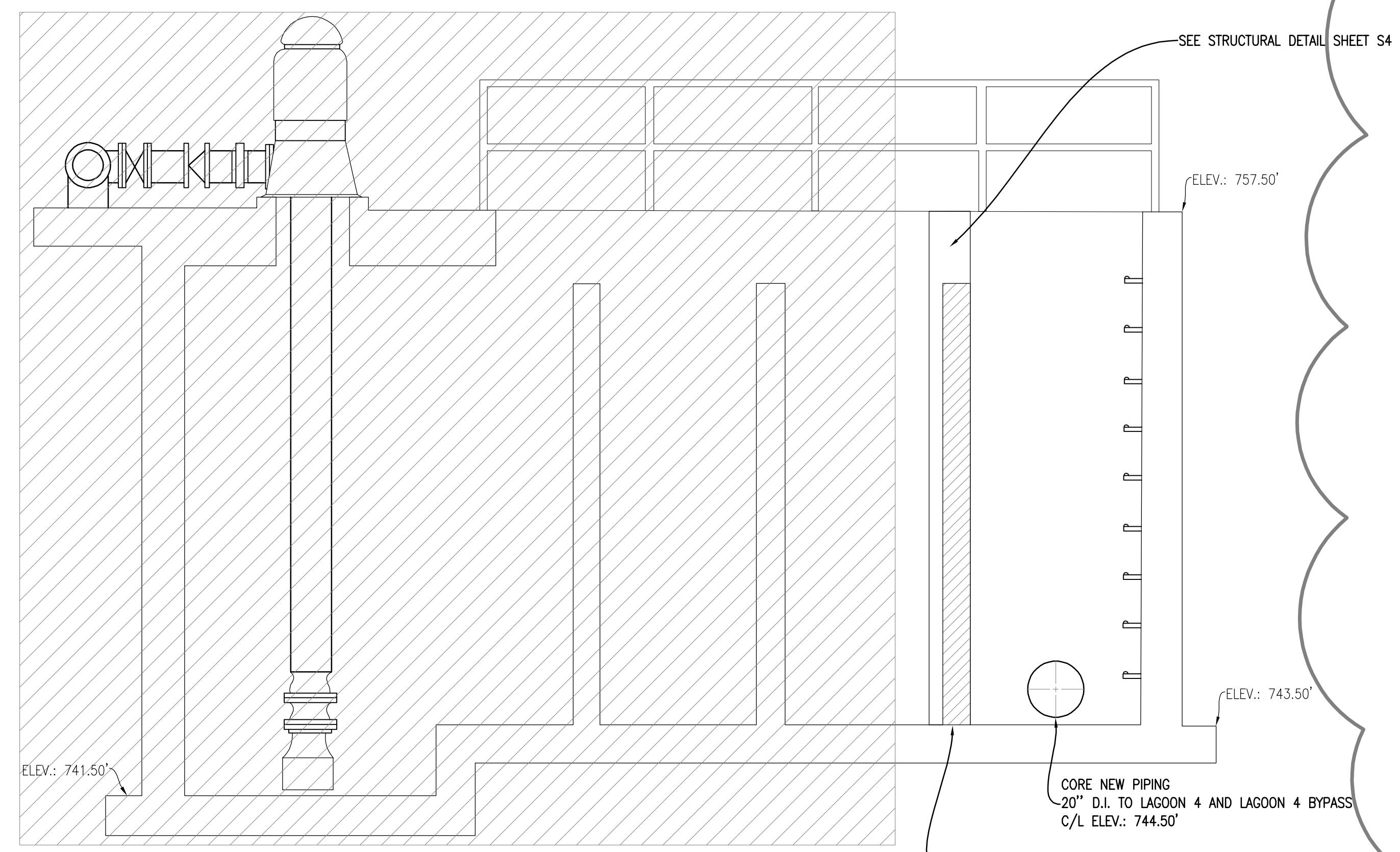
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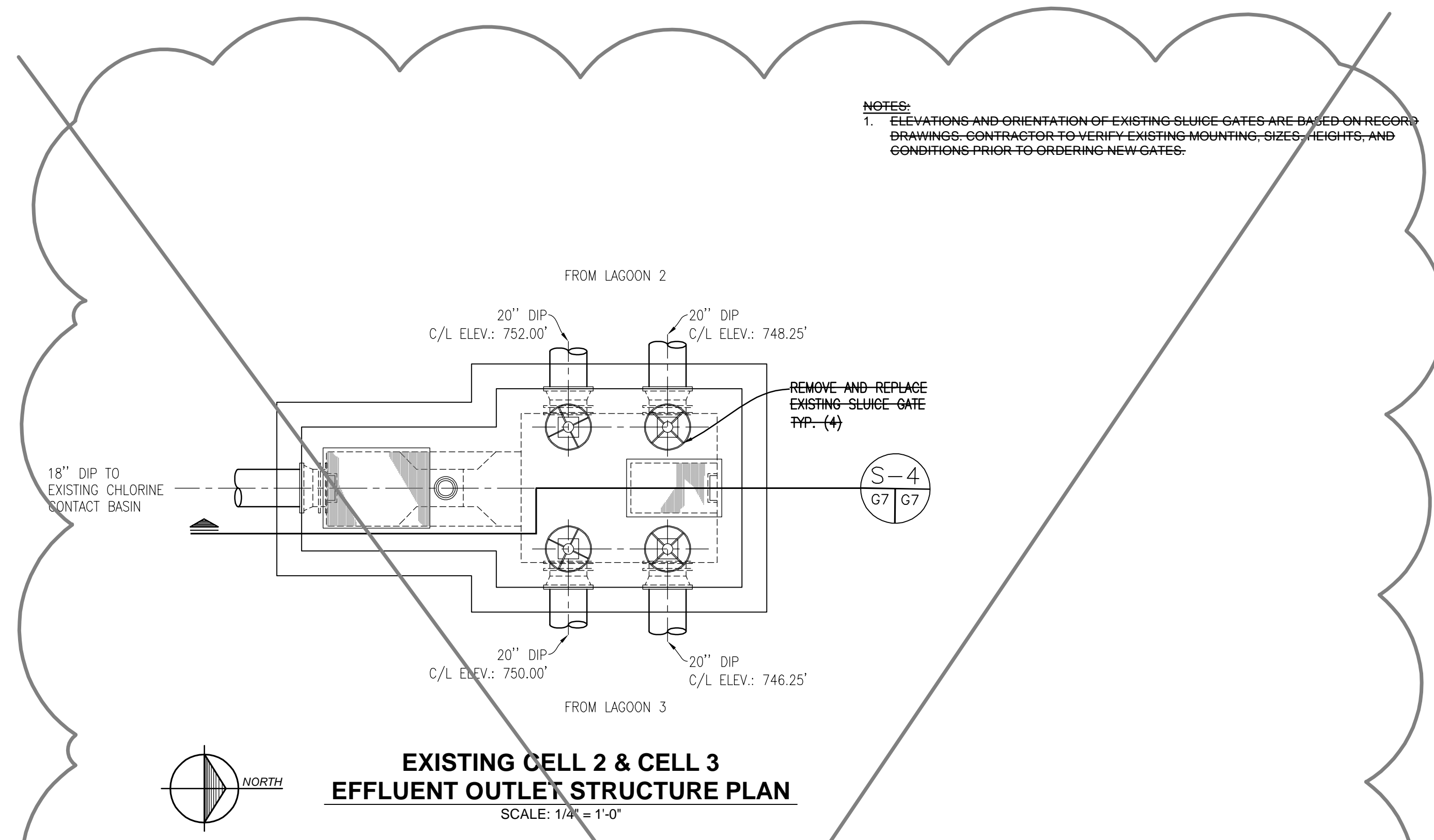
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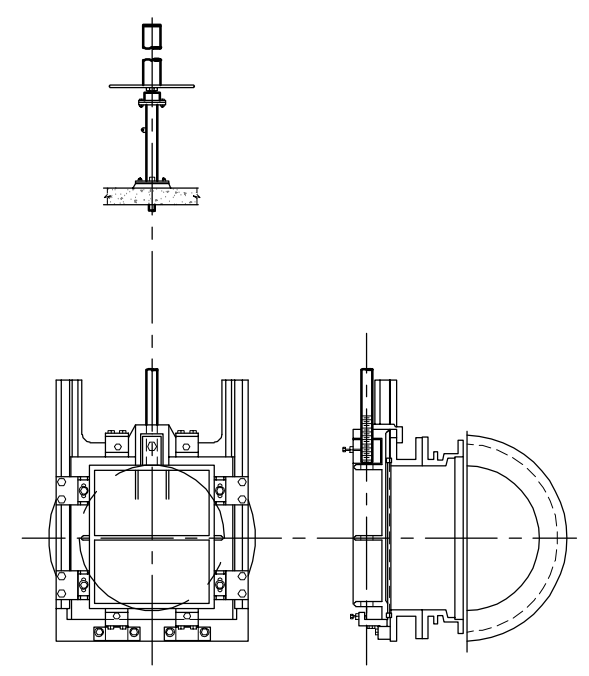
EXISTING CHLORINE CONTACT BASIN / NEW TRANSFER STRUCTURE 4 PLAN
 SCALE: 1/4" = 1'-0"



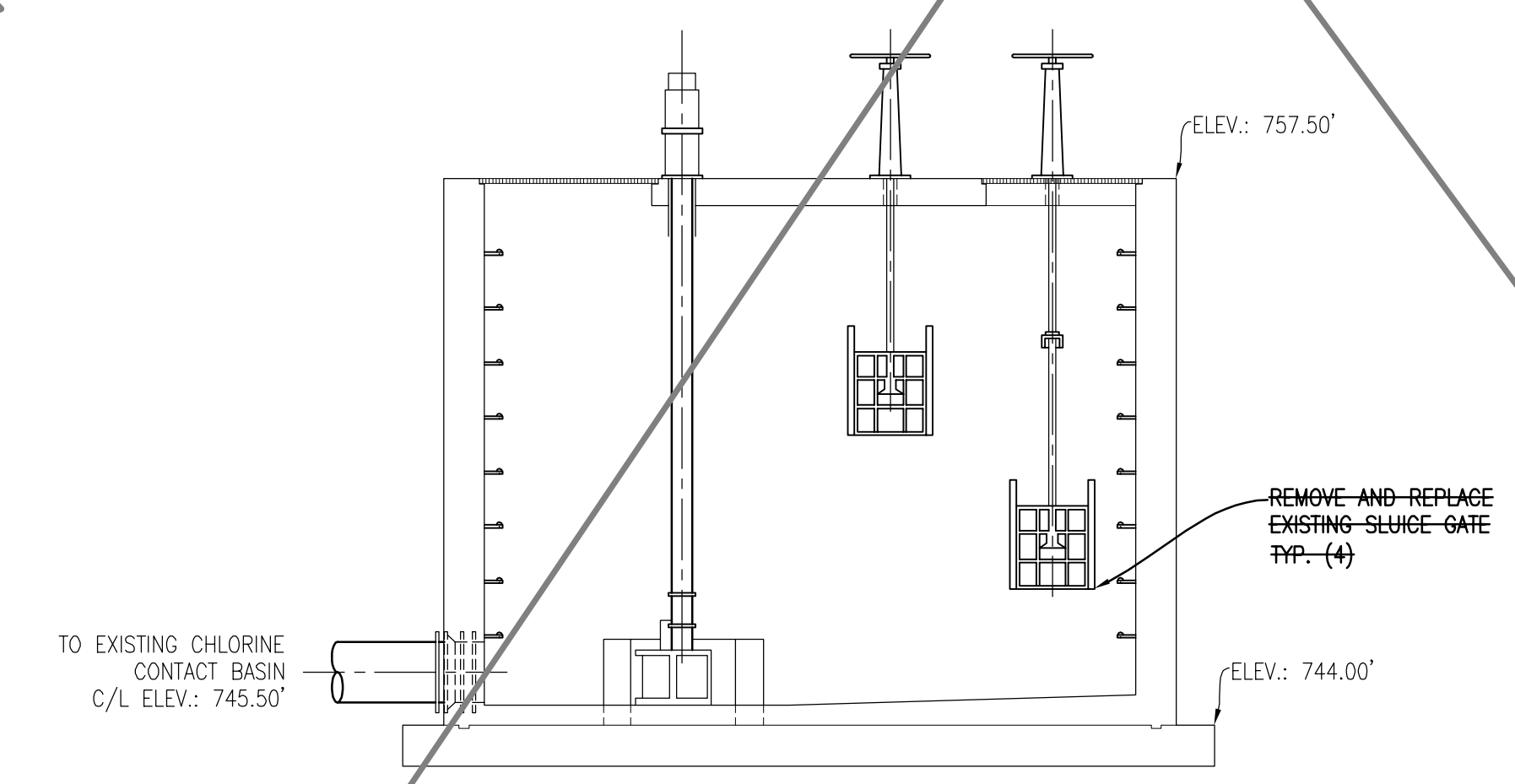
SECTION 3
 SCALE: 1/4" = 1'-0"



**EXISTING CELL 2 & CELL 3
 EFFLUENT OUTLET STRUCTURE PLAN**
 SCALE: 1/4" = 1'-0"



SLUICE GATE DETAIL
 SCALE: 1/2" = 1'-0"



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

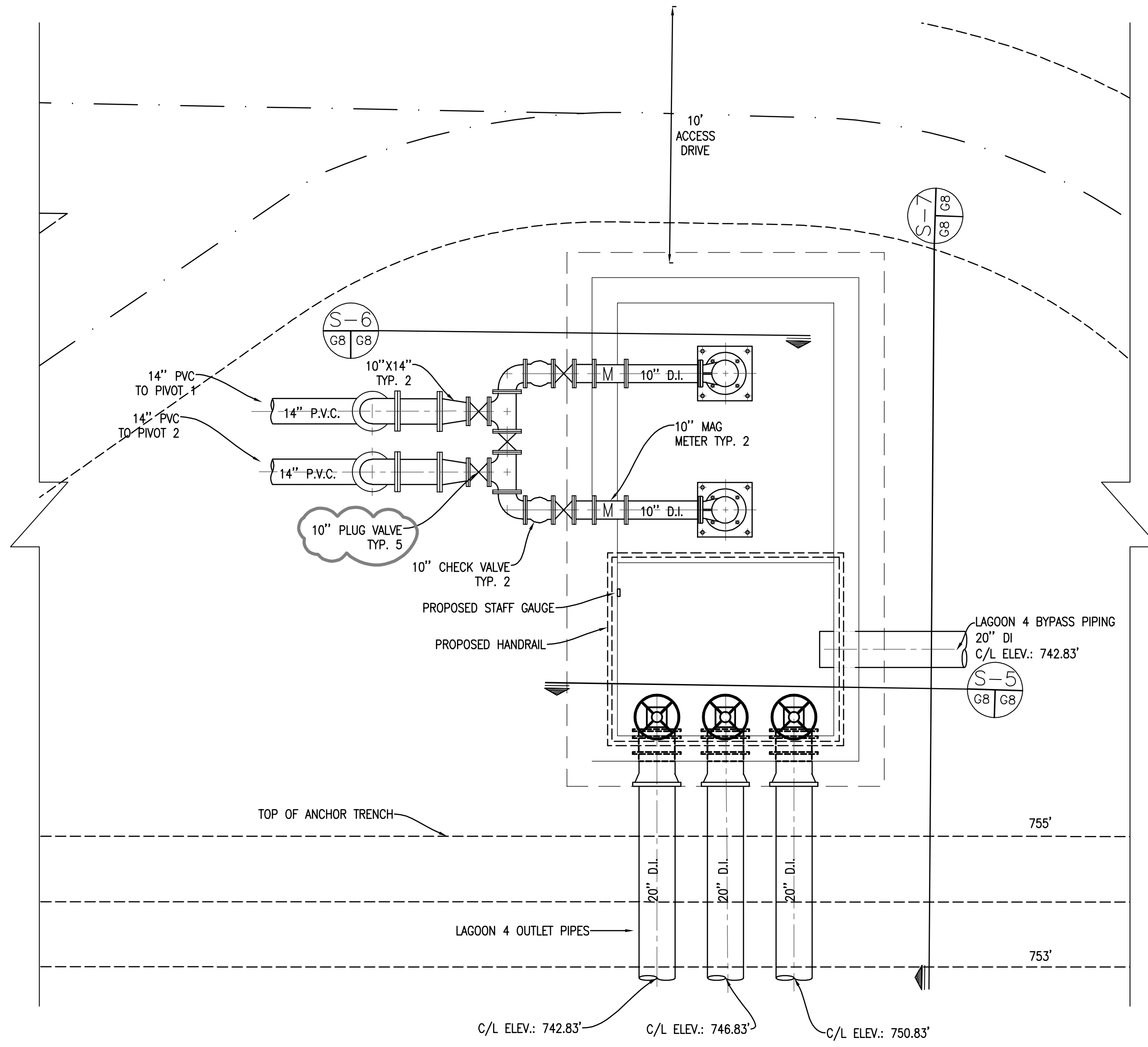
NOTES:
 1. ELEVATIONS AND ORIENTATION OF EXISTING SLUICE-GATES ARE BASED ON RECORD DRAWINGS. CONTRACTOR TO VERIFY EXISTING MOUNTING, SIZES, HEIGHTS, AND CONDITIONS PRIOR TO ORDERING NEW GATES.



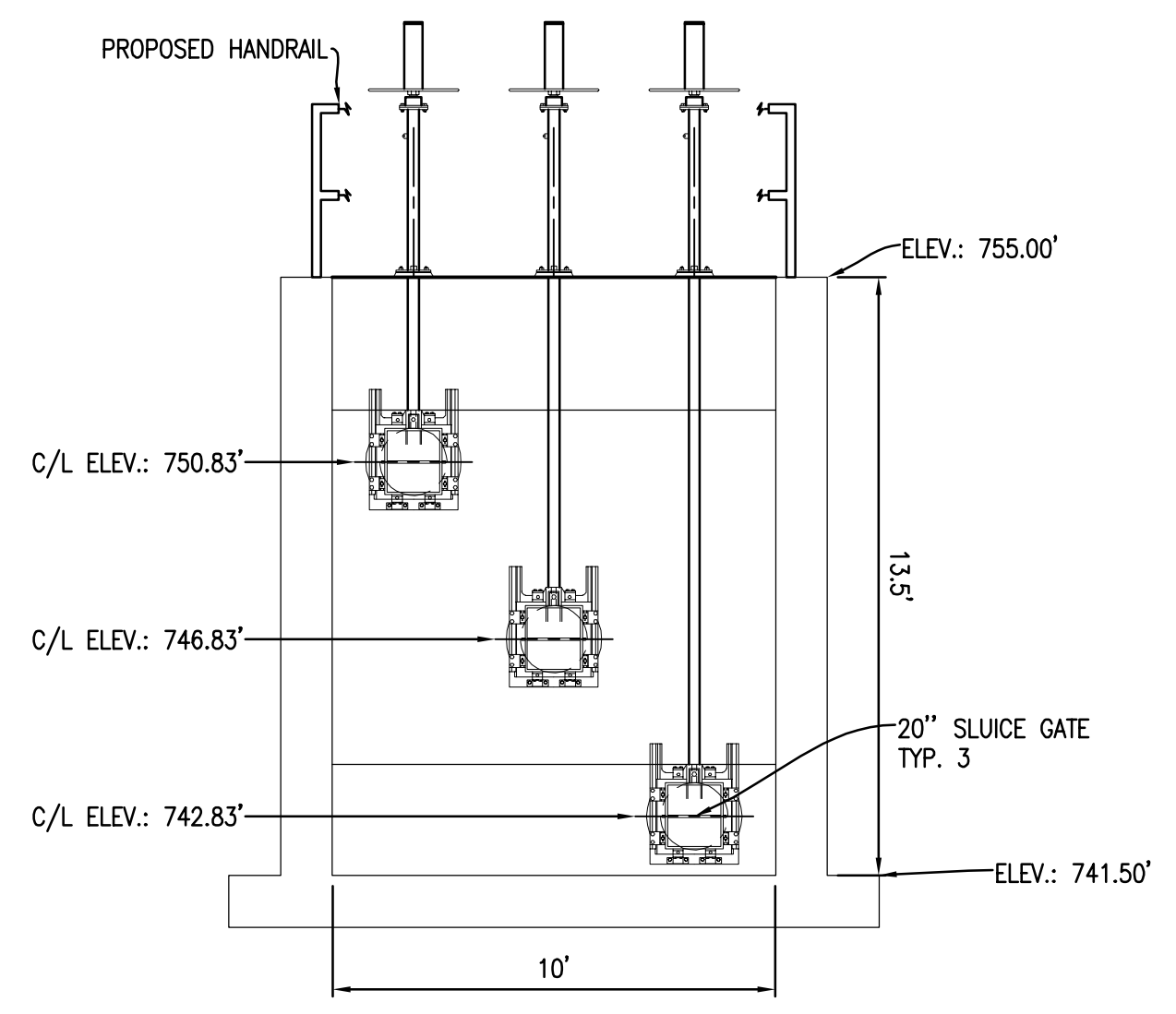
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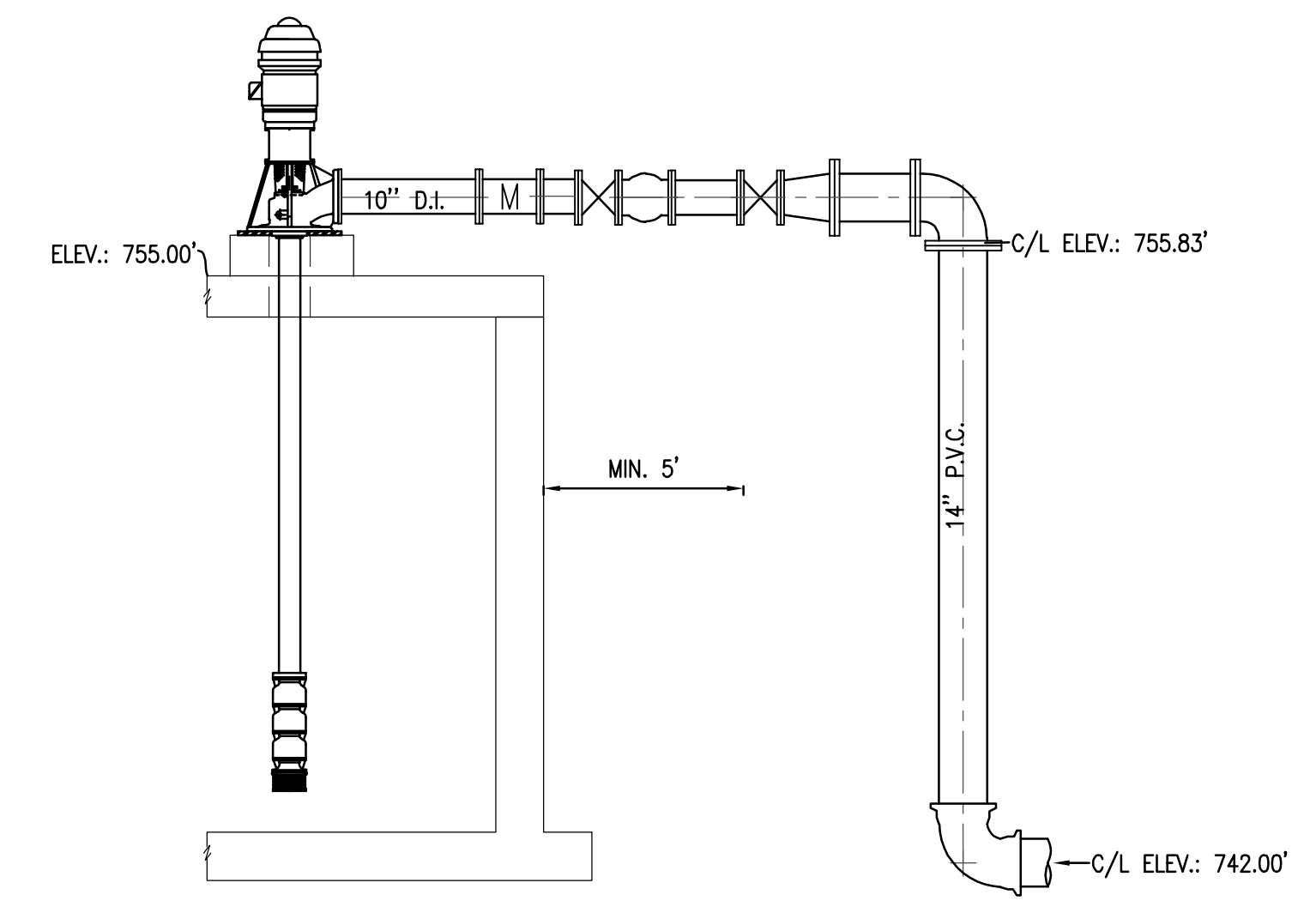
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IRRIGATION PUMP STATION PLAN
 SCALE: 1/4" = 1'-0"

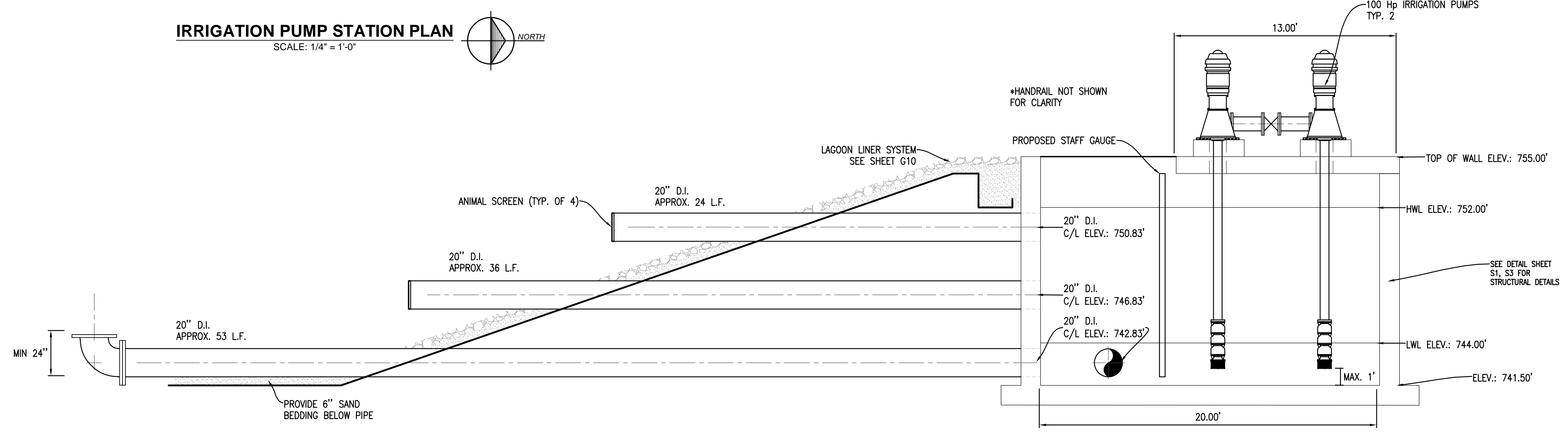


SECTION 5
 SCALE: 1/4" = 1'-0"



SECTION 6
 SCALE: 1/4" = 1'-0"

- NOTE:
- PIPE SUPPORTS ARE NOT SHOWN FOR CLARITY. PIPES TO BE SUPPORTED PER MECHANICAL SPECIFICATIONS.
 - SEE ELECTRICAL PLANS AND SPECIFICATIONS FOR WIRING AND POWER REQUIREMENTS FOR ALL EQUIPMENT.



SECTION 7
 SCALE: 1/4" = 1'-0"

**IRRIGATION PUMP STATION
 WASTEWATER LAGOON IMPROVEMENTS
 CITY OF FREMONT**

Date Issued: 06-29-2023
 Date Surveyed: 10-31-21
 Designed By: GLW
 Drawn By: JML/AJP
 Checked By: MJH
 Scale: AS NOTED

Original sheet size is 22x34
 Location:
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 NEWAYGO COUNTY
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Project Number:
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Sheet:
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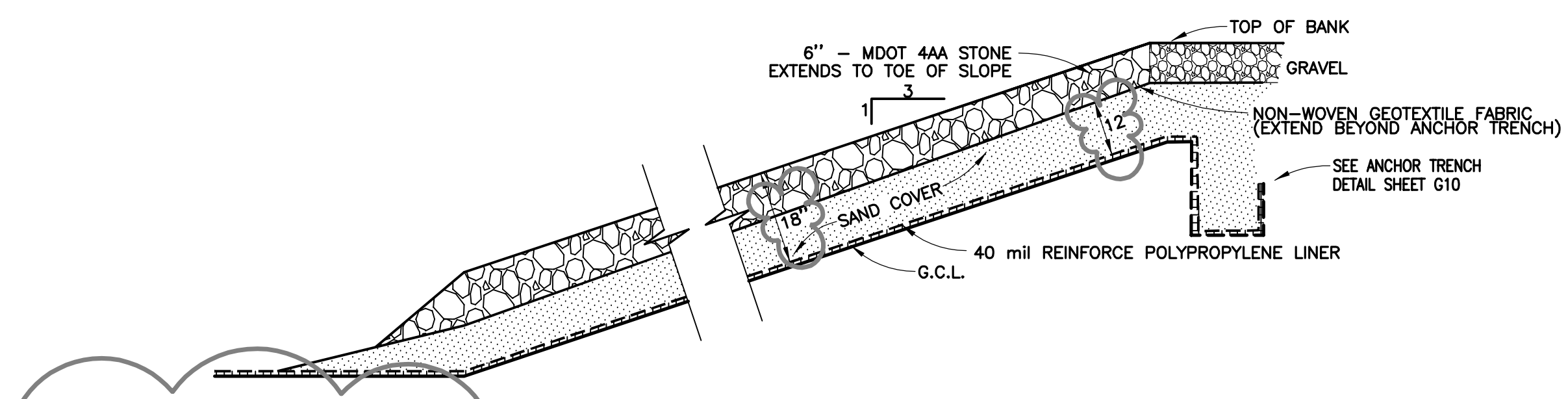
**DETAILS
 WASTEWATER LAGOON IMPROVEMENTS
 CITY OF FREMONT**

Date Issued: 06-29-2023
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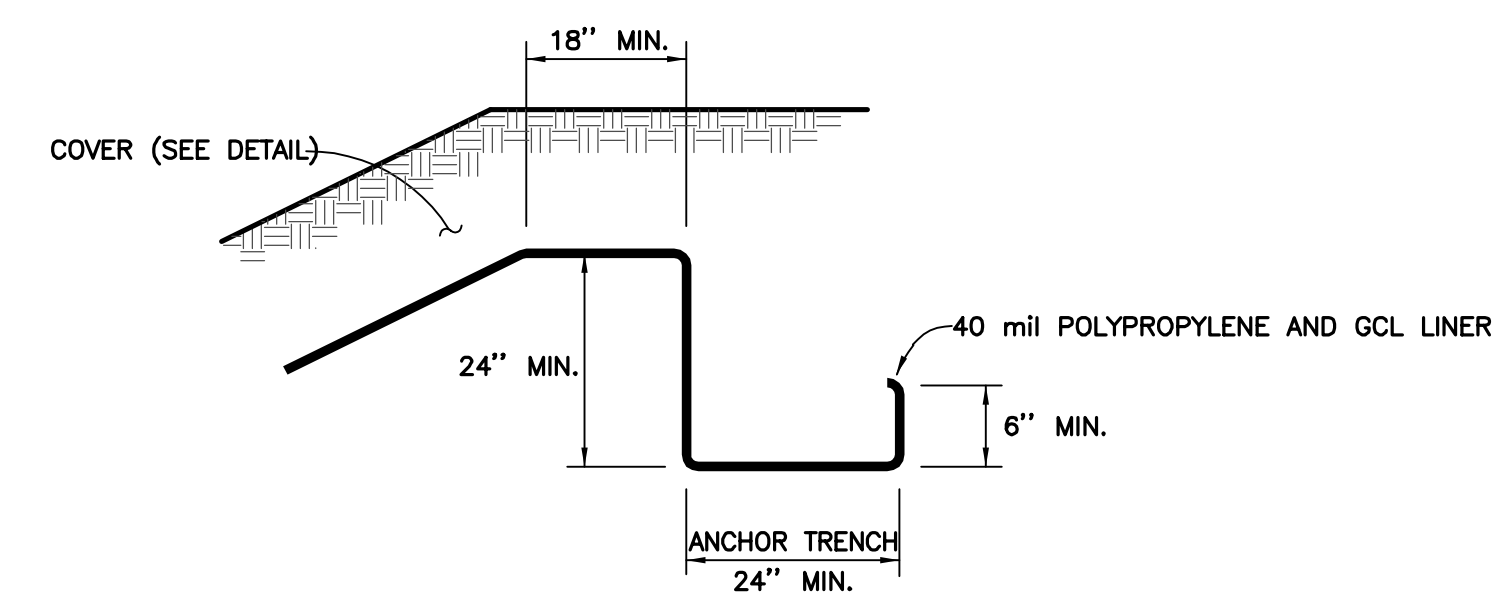
Project Number:
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G10

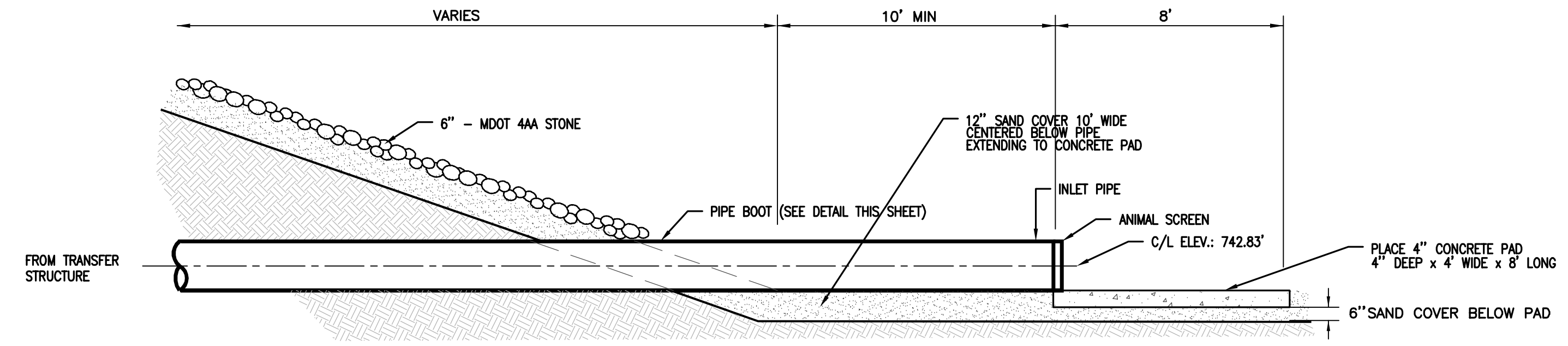


SAND BED TO COVER EXTEND TO MIN. 2' MAX 10' FROM TOE OF SLOPE ALONG BOTTOM OF LAGOON

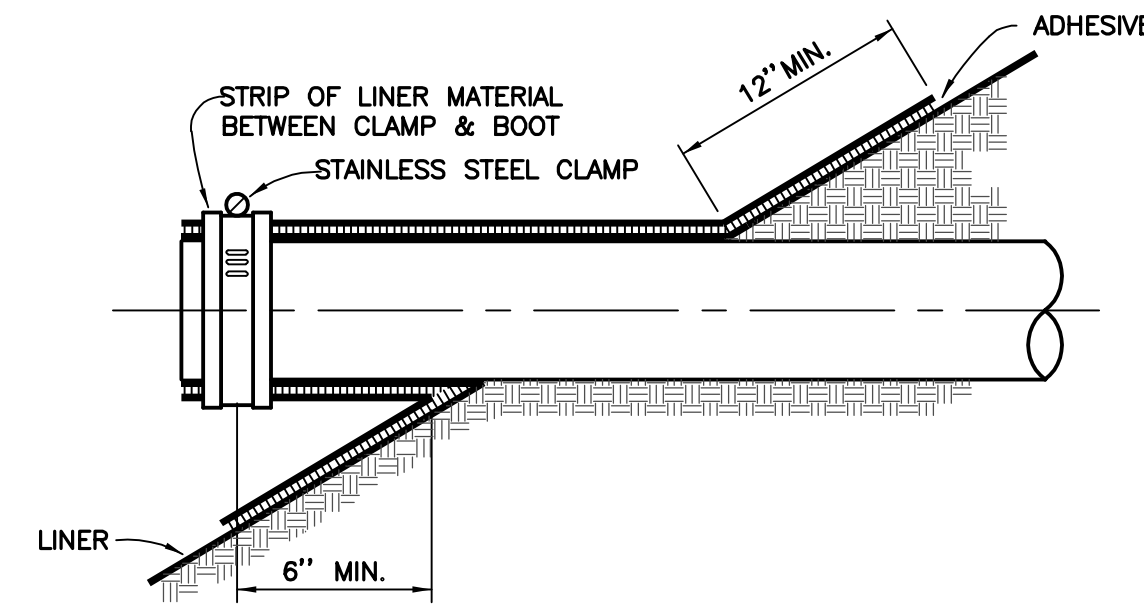
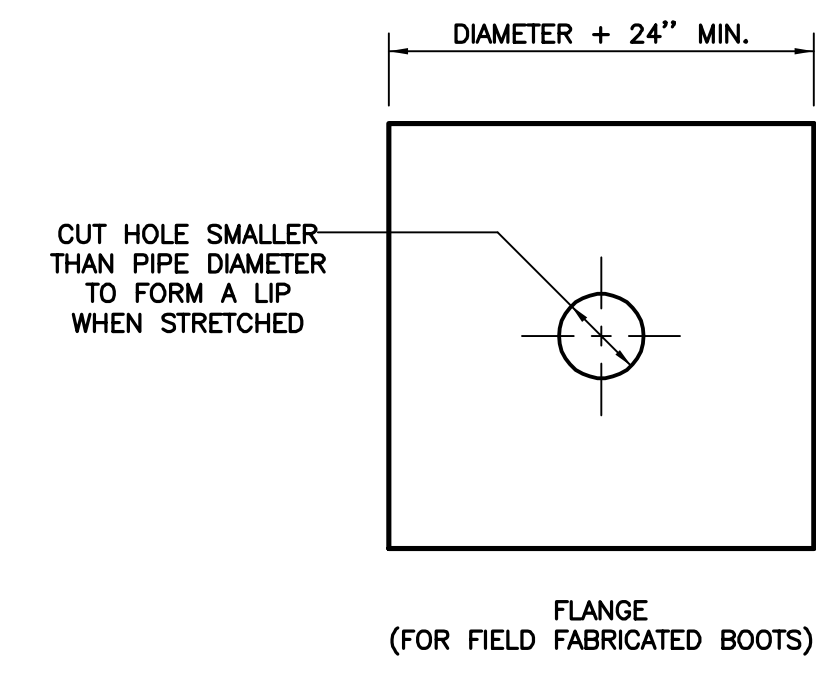
Typical Storage Lagoon Side Slope LINER CROSS SECTION DETAIL
 NOT TO SCALE



LINER ANCHOR TRENCH
 NO SCALE



CELL 4 INLET PIPE DETAIL
 NOT TO SCALE



PIPE BOOT DETAIL
 NO SCALE

