

CITY OF PANAMA CITY BEACH
WWTF INFLUENT PIPING REPLACEMENT
ADDENDUM NO. 1
November 28, 2017
(This Form Must Be Signed and Submitted With Bid Form)
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Addendum No. 1 addresses the following issues:

DRAWINGS

Drawings M-102, M-201, M-202, M-203 and M-204:

Replace these drawings with the revised, corresponding Drawings attached hereto and made part of this Addendum.

SPECIFICATIONS

Table of Contents

Delete the Table of Contents and substitute therefor the attached revised Table of Contents in its entirety.

DIVISION 0 – BIDDING REQUIREMENTS AND CONTRACT FORMS

Section 00030 – Proposal Form

Delete the Proposal Form and substitute therefor the revised Proposal Form attached hereto and made part of this Addendum.

DIVISION 1 – GENERAL REQUIREMENTS

Section 01150 – Measurement and Payment

Delete the Measurement and Payment section and substitute therefor the revised Measurement and Payment section attached hereto and made part of this Addendum.

DIVISION 9 – PAINTING AND COATING SYSTEMS

Add Section 09900 – Painting

Insert Section 09900 – “Painting” attached hereto and made part of this Addendum.

Appendix “A” – City Provided Pipe and Fittings Listing

Delete this Appendix and insert therefor the revised Appendix listing of owner furnished materials attached hereto and made part of this Addendum.

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QUESTIONS

“Do you have joint material (glands, gaskets & T-bolts) for all the MJ joints?”

Response: Glands, gasket and T-bolt assemblies will be provided for MJ joints.

“You indicate that the City is furnishing 5 joints (90 LF) of 6” MJ pipe but are not supplying any 6” restrainers for the pipe. Did you mean you are furnishing push joint pipe and not mechanical joint pipe?”

Response: Yes, the 6-inch fittings are to be restrained per the restrained joint schedule. Restrainers will be provided by the Owner.

“Do you not need the 6” fittings restrained?”

Response: See response to preceding question.

“For the 12” pipe, again you indicate you are supplying mechanical joint pipe or is it push joint pipe? Does it need to be restrained?”

Response: Yes the 12-inch pipe and fittings need to be restrained per the restrained joint schedule. Restrainers to be provided by the Owner.

“Are you supplying bolts and gaskets for the stainless steel piping? What are the specifications for these materials?”

These materials are to be provided by the Owner. See list of City-provided materials attached hereto and made part of this Addendum for more information. Bolts are to be 316 stainless steel manufactured in accordance with ANSI/ASME B18.21 and B1.1 and 7/8-inch by 4-inches for 12-inch piping and 1-inch by 4-1/4 inch for 14 inch piping. Nuts are to be 316 stainless steel manufactured in accordance with ANSI/ASME 18.2.2 and B1.1. Flange gaskets shall be full-face red rubber, 1/8 inch thick and comply with AWWA C-110.

“Are the 3” sliderails, pump base elbows and upper brackets new? If new, who supplies them?”

Response: As indicated in the revised drawings, the existing sliderails are to be salvaged and reinstalled under the project. The upper sliderail brackets are to be replaced with new units provided by the City. Also as indicated, the existing base elbows are to remain. In the event a pair of sliderails requires replacement, the City will have two sets of replacement units on hand.

“Please provide detail of 316 SS supports called out in Section A1 on M-203.”

Response: These supports are deemed un-necessary and have been deleted in the revised Drawings.

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“Please provide a complete listing of all City supplied materials.”

Response: A complete list is attached hereto and made part of this Addendum.

“What brand of MJ fitting are being supplied and are they compact?”

Response: See listing of City-provided materials.

“Have the covers on the Influent Pump Station been removed?”

Response: Only a portion of the covers have been removed. Bidders are encouraged to observe the covers for number of panels removed and fastening systems.

“Can the grit and raqs from the influent pump station be disposed in the appropriate on site City dumpsters?”

Response: Grit and debris accumulations are to be disposed of in City-provided roll off containers on-site. Unit pricing provisions have been added to the Bid Form by this Addendum.

“Are you supplying the epoxy liner repair kits for when the piping is field cut? If not what brand of liner is being used on the pipe supplied?”

Response: Epoxy liner repair kits will be provided by the Owner. The liner is to be Protecto 401 liner.

“Can groundwater from excavation dewatering be discharged to the City’s wastewater treatment facility?”

Response: Groundwater resulting from dewatering activities if required can be discharged to the wastewater treatment facility. The City will make available a point of discharge to the Reject Storage Basin immediately east of the piping replacement work zone.

“Are the vertical sections of flanged pipe at the discharge from the grit units to be provided with bitumastic coating that needs to be blasted off or just primed”

Response: All flanged pipe and fittings are being furnished with primer only and are to be field painted by the contractor per the requirements of Section 09900 – Painting, attached hereto and made part of this Addendum.

“Provide more detail regarding the materials staging area(s)”.

Response: Owner furnished fittings and valves will be stockpiled in the on-site Utility Parts Storage Building which is fitted with a 3 ton rated traveling bridge crane for loading purposes. Pipe shall be stockpiled immediately east of Clarifier 4 and immediately south of the piping replacement work zone.

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See site aerial photo attached hereto and made part of this Addendum.

BIDDER:

BY: _____

_____ (Printed and Signed)

TITLE: _____

DATE: _____

Materials Staging Area Aerial Photo

Utility Parts Storage Building

Pipe Material Storage Area

Reject Basin

Pipe Replacement Work Zone



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City Provided Pipe and Fittings List

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SECTION 00030

BID PROPOSAL FORM

This proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as _____ (a corporation, a partnership or an individual), whose Florida contractor's license number is _____ is hereby submitted to the CITY OF PANAMA CITY BEACH (hereinafter called "OWNER").

In compliance with the requirements of the Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the **WWTF INFLUENT PIPING REPLACEMENT** project in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID, each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under the CONTRACT DOCUMENTS within ten (10) calendar days after the NOTICE TO PROCEED to be issued by Owner in writing and achieve Substantial Completion of the WORK within the following completion schedule in consecutive calendar days thereafter.

<u>Completion Milestone</u>	<u>Calendar Days Following Notice to Proceed</u>
Complete By-pass Piping from Screening Structure to Influent Pumping Station	30
Complete All Influent Pumping Station Improvements	60
Complete Piping Removal and Replacement from Grit Units to Influent Pumping Station	90

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Final Completion of the WORK shall be achieved by BIDDER within the calendar days specified in the General Conditions after the date of Substantial Completion.

BIDDER further agrees to pay as liquidated damages, the sum of \$500 for each calendar day that expires after the Contract Time for Substantial Completion as more fully set forth in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

Addendum No. _____
Addendum No. _____
Addendum No. _____

BASE BID

BIDDER agrees to perform all the WORK described in the CONTRACT DOCUMENTS for the following lump sum: _____.

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BID SCHEDULE

BASE BID

Item No.	Description	Unit	Quantity	Unit Price	Cost
BASE BID					
GENERAL					
1	Mobilization/Demobilization (Not to exceed 3% of the total base bid)	LS			\$
2	Bonds and Insurance (not to exceed 2% of the total base bid)	LS			\$
3	Testing Allowance	Allowance			\$ 1,000.00
4	Hold Harmless	LS			\$ 10.00
5	Remove and Replace Existing Yard Piping	LS			\$
6	Remove Existing Grit and Debris Accumulations in Influent Pumping Station				
	A. Grit	CY	100	\$	\$
	B. Debris	CY	100	\$	\$
7	Remove and Replace Influent Pumping Station Riser Piping and All Other Improvements	LS			\$
8	Remove and Dispose of Surplus Hypochlorite Tanks	LS			\$
9	Construct All Other Improvements for Influent Piping and Pumping Station Piping Replacement	LS			\$
TOTAL BASE BID					\$

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ALTERNATE BID

ALTERNATE BID					
GENERAL					
Item No.	Description	Unit	Quantity	Unit Price	Cost
1	Remove Existing Spool Piece from Influent Pump 5 Discharge and Install Check Valve	LS			\$
2	Remove Existing Influent Pump Base Elbow and Install Replacement Base Elbow	EA	2	\$	\$
TOTAL ALTERNATE BID					\$

NOTE:

1. BIDS shall include sales tax and all other applicable taxes and fees. The OWNER may elect to utilize the Sales Tax Exemption Addendum (Section 00098) for material at its sole discretion.
2. BIDS shall be on the basis of a lump sum price except for Items 6 (Base Bid) and 2 (Alternate Bid) and shall be the total compensation to be paid by OWNER for the complete WORK. Final contract value will be adjusted based upon the actual cost of unit price items.
3. Where provided, bid unit prices and quantities, shall be applicable for any revisions to the WORK (either additions or omissions). In addition, these unit prices and quantities shall be reflected in the Schedule of Values as specified in the General Conditions. All unit prices are understood to include all associated charges for layout, insurance, taxes, field office and supervision, overhead and profit, bonds and miscellaneous items.
4. The OWNER reserves the right to reject any and all bids received.
5. **Failure to insert a bid amount for any item in the Bid Schedule will be considered grounds for the OWNER to determine the BID is non-responsive.**
6. By submitting this BID, the BIDDER and the BID BOND surety, are deemed to have stipulated and agreed that any and all claims, demands, actions or suits whatsoever, arising under this BID and/or BID BONDS, shall be subjected to the sole and exclusive jurisdiction and venue of the Circuit Court of Bay County, Florida. The BIDDER and BID BOND surety do agree, by submittal of this BID, that the sole and exclusive jurisdiction and venue in said forum is proper and

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appropriate since performance of the underlying contract to be awarded is to be accomplished within Bay County, Florida.

Bidder's Certification

BIDDER certifies that it has thoroughly familiarized itself with and inspected the site and has read and is thoroughly familiar with the CONTRACT DOCUMENTS. Additional site investigation, if deemed necessary by the BIDDER, shall be performed prior to BID submittal at the BIDDER's sole expense. Bidder certifies that the BID submitted is complete and is sufficient for the Bidder to provide a fully operational and working system in accordance with the CONTRACT DOCUMENTS. Furthermore, BIDDER certifies its understanding that neither the OWNER, PROJECT REPRESENTATIVE, nor ENGINEER shall provide any labor, equipment or materials of any kind, which may be required for the performance of the WORK, unless otherwise specifically directed by OWNER. Likewise, BIDDER certifies that it shall provide all equipment, materials, labor and services necessary to complete the WORK in accordance with the CONTRACT DOCUMENTS whether or not such equipment, material, labor, or service is expressly identified. Such occurrences are deemed subsidiary obligations of the contract for which complete compensation is made under the Lump Sum. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

As required, the following documents are submitted with this Bid Proposal:

1. Bid Bond – Section 00040
2. Executed Statement Under Section 287.087, Florida Statutes, On Preference To Businesses With Drug-Free Workplace Programs – Section 0095
3. Executed Trench Safety Act Compliance Document – Section 00096
4. Executed Public Entity Crimes Statement – Section 00097
5. All acknowledged Addenda
6. Sales Tax Exemption Addendum – 00808

CONTRACTOR:

Address

Phone Number

Date

[END OF SECTION 00030]

SECTION 01150 - MEASUREMENT AND PAYMENT

PART 1 - SCOPE OF WORK

The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Proposal section of these Specifications. Payment will be made based on the specified items included in the description in this section for each bid item.

1.1 GENERAL

All Contract Prices included in the Bid Proposal section will be full compensation for all labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the drawings and/or as specified in the Contract Documents to be performed under this contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this project.

1.2 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner/Engineer does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.3 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.4 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.5 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.6 LUMP SUM ITEMS

Where payment for items is shown to be paid on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item. Lump sum bid items shall be complete, tested and fully operable prior to request for final payment. **Measurement shall be based upon the Engineer's estimate of percent complete per partial payment period.**

1.7 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items.

1.8 OTHER PROVISIONS

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work unless indicated otherwise in the individual bid item. Final payment shall not be requested by the Contractor or made by the Owner until record drawings have been submitted to the Engineer.

- Testing and placing system in operation.
- Any material and equipment required to be installed and utilized for the tests.
- Maintain the existing quality of service during construction.
- Appurtenant work as required for a complete and operable system.

PART 2 – PRODUCTS
(NOT APPLICABLE)

PART 3 – EXECUTION

BASE BID

3.1 BID ITEM NO. 1 - MOBILIZATION/DEMobilIZATION

Payment for all work included under this bid item will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. Also included as part of this bid item is the cost for

photographs, shop drawings, working drawings, schedules, record drawings and documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement for this bid item will be lump sum. **The lump sum price for mobilization/demobilization will be limited to three percent (3%) of the total contract base bid amount.** Seventy percent (70%) of the lump sum price will be payable with the first month's partial payment. The remaining thirty percent (30%) will be payable with the final partial payment.

3.2 BID ITEM NO. 2 – BONDS AND INSURANCE

Payment for this bid item shall be made at the lump sum price bid for all bonds and insurance policies as required by the Contract Documents. Payment will be made only after proper documentation is provide to the Engineer. Measurement of this bid item shall be lump sum. THIS ITEM BID SHALL NOT EXCEED 2.0% OF THE ENTIRE CONTRACT BID AMOUNT.

3.3 BID ITEM NO. 3 – TESTING ALLOWANCE

The Owner has allocated the amount indicated as a testing allowance for quality control testing during construction. The Contractor shall employ, coordinate and direct the services of independent testing laboratories required for all testing. The Contractor shall pay all testing laboratory invoices and submit them for reimbursement. Payment for work completed under this item shall be made at the direct invoice amount without markup of any kind.

3.4 BID ITEM NO. 4 – HOLD HARMLESS

Payment for this bid item will be made at the lump sum price bid of ten dollars (\$10.00) for agreeing to Hold Harmless and indemnify the Owner and Engineer as specified in the Contract Documents.

3.5 BID ITEM NO. 5 – REMOVE AND REPLACE EXISTING YARD PIPING

Payment for all work included under this bid item will be made at the respective lump sum price bid for demolition, removal and disposal of the existing piping, all other selective demolition and installation of all proposed yard piping in accordance with the contract documents. Payment shall include, but not be limited to demolition, removal and disposal of all resulting materials, furnishing and installation of all proposed piping and fittings all other items and incidentals necessary with the exception of the pipe and fittings to be provided by the City to demolish and remove the existing piping and install all proposed piping as described in the contract documents complete in every detail. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.6 BID ITEM NO. 6 – REMOVE EXISTING GRIT AND DEBRIS ACCUMULATIONS IN INFLUENT PUMPING STATION

Payment for all work included under this bid item shall be made at the unit price bid for all work associated with measurement, excavation, removal and placement in City-provided containers in accordance with all applicable regulations of all debris and grit accumulations within the pumping station wetwell. Payment of the applicable unit price shall constitute complete compensation for all labor, materials and equipment necessary to complete the associated work item. Measurement shall be in-container volume after removal from the wetwell.

3.7 BID ITEM NO. 7 – REMOVE AND REPLACE INFLUENT PUMPING STATION RISER PIPING AND ALL OTHER IMPROVEMENTS

Payment for all work included under this bid item will be made at the respective lump sum price bid for demolition, removal and disposal of the existing riser piping, all other selective demolition and installation of all proposed riser piping in accordance with the contract documents. Payment shall include, but not be limited to demolition, removal and disposal of all resulting materials, furnishing and installation of all proposed riser piping and fittings (with the exception of those provided by the City) all other items and incidentals necessary to demolish and remove the existing riser piping and install all proposed riser piping as described in the contract documents complete in every detail. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.8 BID ITEM NO. 8 – REMOVE AND DISPOSE OF SURPLUS HYPOCHLORITE TANKS

Payment for all work included under this bid item will be made at the respective lump sum price bid for demolition, removal and disposal of the two (2) existing surplus hypochlorite tanks in accordance with the contract documents. Payment shall include, but not be limited to loading, transport and proper disposal of the two surplus tanks in the contract documents complete in every detail and in strict accordance with all applicable regulations. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.9 BID ITEM NO. 9 – CONSTRUCT ALL OTHER IMPROVEMENTS FOR INFLUENT PIPING AND INFLUENT PUMPING STATION PIPING REPLACEMENT

Payment for all work included under this bid item will be made at the respective lump sum price bid for furnishing (with the exception of the pipe, fittings and other materials to be provided by the City) and installing all other improvements required for the construction all other improvements for removal and disposal of the existing influent piping and all other work not listed above in accordance with the contract documents, complete in every detail including but not limited to piping replacement. Payment shall include all other items necessary for construction of the improvements indicated in the contract documents complete in every detail. Payment shall constitute complete compensation for all labor, materials (with the exception of all pipe and fittings provided by the City) and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

ALTERNATE BID

4.1 BID ITEM NO. 1 – REMOVE EXISTING SPOOL PIECE FROM INFLUENT PUMP 5 DISCHARGE AND INSTALL CHECK VALVE

Payment for all work included under this bid item will be made at the respective lump sum price bid for removing the existing spool piece from the influent pump No. 5 discharge piping and installing an Owner-furnished check valve. Payment shall include painting and all other items necessary for the valve replacement complete in every detail and ready for service. Payment shall compensation for all labor, materials (with the exception of the valve to be provided by the City) and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

4.2 BID ITEM NO. 2 – REMOVE EXISTING INFLUENT PUMP BASE ELBOW AND INSTALL REPLACEMENT BASE ELBOW

Payment for all work included under this bid item will be made at the respective unit price bid for removing the existing base elbow for a given influent pump and installing a replacement, Owner-furnished base elbow. Payment shall include all other items necessary for the base elbow replacement complete in every detail and ready for service. Payment shall compensation for all labor, materials (with the exception of the base elbow to be provided by the City) and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be unit price based upon the number of base elbows removed and replaced.

END OF SECTION 01150

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 SCOPE

A. Scope Of Work:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
2. In general the scope of work for painting includes all exposed flanged piping exiting the grit structures (3), the discharge piping from the 6 influent pumps and the exposed portion of the 30-inch piping connection on the east side of the Flow Splitter Structure. There is also internal coating required on select wall pipes as indicated on the Drawings.

1.2 SUMMARY

A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.

1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop-priming and surface treatment specified under other Sections.

B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Engineer will select from standard colors or finishes available.

1. Painting includes field-painting exposed bare and covered pipes and ducts, hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

1. Pre-finished items not to be painted include the following factory-finished components:

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- a. Finished mechanical and electrical equipment unless noted otherwise.
 - b. Light fixtures.
 - c. Switchgear.
 - d. Distribution cabinets.
 - e. Fire-extinguishers and mounting hardware.
 - f. Fiberglass doors and frames.
2. Finished metal surfaces not to be painted include:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper.
 - e. Bronze.
 - f. Brass.
 - g. Galvalume.
 3. Operating parts not to be painted include moving parts of operating equipment, such as the following:
 - a. Valve- and damper-operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 4. Labels: Do not paint over Underwriters Laboratories', Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- D. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 5 Section METAL FABRICATIONS for shop-priming ferrous metal.
- ### 1.3 SUBMITTALS
- A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.
1. Product Data for each paint system specified, including block fillers and primers.

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- a. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
 - b. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
- B. Samples for initial color selection in the form of manufacturer's color charts, if applicable.

1.4 QUALITY ASSURANCE

- A. **Applicator Qualifications:** Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.
- B. **Single-Source Responsibility:** Provide primers and undercoat paint produced by the same manufacturer as the finish coats.
- C. **Field Samples:** On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface until required sheen, color, and texture are obtained; simulate finished lighting conditions for review of in-place work.
1. Final acceptance of colors will be from job-applied samples.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Job Site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
1. Product name or title of material.
 2. Product description (generic classification or binder type).
 3. Manufacturer's stock number and date of manufacture.
 4. Contents by volume, for pigment and vehicle constituents.
 5. Thinning instructions.
 6. Application instructions.
 7. Color name and number.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45°F (7°C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 JOB CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50°F (10°C) and 90°F (32°C).
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45°F (7°C) and 95°F (35°C).
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or at temperatures less than 5°F (3°C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include the following:
 1. BENJAMIN MOORE AND CO. (MOORE).
 2. PPG INDUSTRIES, PITTSBURGH PAINTS (PPG).
 3. PRATT AND LAMBERT (P&L).
 4. THE SHERWIN-WILLIAMS COMPANY (S-W).
 5. ICI DULUX PAINT CENTERS

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Provide color selections made by Engineer from the manufacturer's full range of standard colors.

2.3 PRIMERS

- A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.
 1. Available Products: Subject to compliance with requirements, prime-coat materials that may be incorporated in the Work include, but are not limited to, the following: Ferrous Metal Primers: Synthetic, quick-drying, rust-inhibiting primers.
 - a. MOORE IronClad Retardo Rust-Inhibitive Paint #163
 - b. PPG 6-208 Red Inhibitive Metal Primer
 - c. P&L Effecto Rust-Inhibiting Primer
 - d. S-W Kem Kromik Metal Primer B50N2/B50W1
 2. Ferrous Metal Primers: Alkyd-type primers.
 - a. MOORE IronClad Retardo Rust-Inhibitive Paint #163
 - b. PPG 6-612 Speedhide Inhibitive White Primer
 - c. P&L Effecto Primer Red or White
 - d. S-W: Kem Kromik Metal Primer B50N2/B50W1
 3. Galvanized Metal Primers:
 - a. MOORE IronClad Galvanized Metal Latex Primer #155
 - b. PPG 6-215/216 Speedhide Galvanized Steel Primer
 - c. P&L P&L Interior Trim Primer
 - d. S-W Galvite B50W3

2.4 UNDERCOAT MATERIALS

1. Undercoat Materials: Provide the manufacturer's recommended factory-formulated undercoat materials that are compatible with the substrate and finish coats indicated.

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

2. Available Products: Subject to compliance with requirements, undercoat materials that may be incorporated in the Work include, but are not limited to, the following:
 - a. Interior Enamel Undercoat: Ready-mixed enamel.
 - b. MOORE MOORE's Alkyd Enamel Underbody #217
 - c. PPG 6-6 Speedhide Quick-Dry Enamel Undercoater
 - d. P&L Interior Trim Primer
 - e. S-W ProMar 200 Alkyd Semi-Gloss Enamel B34W200

2.5 EXTERIOR FINISH PAINT MATERIAL

- A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.
- B. Available Products: Subject to compliance with requirements, finish coat materials that may be incorporated in the Work include, but are not limited to, the following:
 1. Concrete Elastomeric Coating System:
 - a. ICI DULUX PAINT CENTERS Decra-Flex Elastomeric Coating System 2270 Fine

2.6 INTERIOR FINISH PAINT MATERIAL

- A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.
- B. Available Products: Subject to compliance with requirements, finish coat materials that may be incorporated in the Work include, but are not limited to, the following:
 1. Concrete:
 - a. ICI DULUX PAINT CENTERS Decra-Flex Elastomeric Coating System 2270 Fine

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected.
 - 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify the Engineer about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime. Notify Engineer in writing about anticipated problems using the specified finish-coat material with substrates primed by others.

2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen, as required, to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
 - c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
4. Ferrous Metals: Clean non-galvanized ferrous metal surfaces that have not been shop-coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council (SSPC).
 - a. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - b. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.
5. Galvanized Surfaces: Clean galvanized surfaces with non-petroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

- D. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.
 - 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - 2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
 - 3. Use only thinners approved by the paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 - 1. Paint colors, surface treatments, and finishes are indicated in the Schedules or on the Drawings.
 - 2. Provide finish coats that are compatible with primers and sealers used.
 - 3. Spray painting must be scheduled with other trades so as not to be a hazard.
 - 4. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 - 5. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
 - 6. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convactor covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 - 7. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 8. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 - 9. Sand lightly between each succeeding enamel or varnish coat.

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

10. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.
1. Brushes: Use brushes best suited for the material applied.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- E. Minimum Coating Thickness: Apply materials no thinner than the manufacturers recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- F. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.
- G. Mechanical items to be painted include, but are not limited to, the following:
1. Piping, pipe hangers, and supports.
 2. Tanks.
 3. Ductwork.
 4. Supports.
 5. Motors and mechanical equipment.
 6. Accessory items.
- H. Electrical items to be painted include, but are not limited to, the following:
1. Conduit and fittings.
 2. Switchgear.
- I. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

- J. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Re-coat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- K. Pigmented (Opaque) Finishes: Completely cover to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
- L. Provide satin finish for final coats.
- M. Completed Work: Match approved samples for color, texture, and coverage. Remove, re-finish, or re-paint work not complying with specified requirements.

3.4 CLEANING

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the Site.
 - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Engineer.
- B. Provide "Wet Paint" signs to protect newly-painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

3.6 EXTERIOR PAINT SCHEDULE

- A. General: Provide the following paint systems for the various substrates indicated.
- B. Ferrous Metal: Primer is not required on shop-primed items.
 - 1. Full-Gloss Alkyd Enamel: Two (2) finish coats over primer.
 - a. Primer: Synthetic rust-inhibiting primer.
 - 1) MOORE IronClad Retardo Rust-Inhibitive Paint #163
 - 2) PPG 6-208 Red Inhibitive Metal Primer
 - 3) P&L Effecto Rust-Inhibiting Primer
 - 4) S-W Kem Kromik Metal Primer B50N2/B50W1.
 - b. First and Second Coats: Gloss alkyd enamel.
 - 1) MOORE Impervo High-Gloss Enamel #133
 - 2) PPG 54 Line Quick-Dry Enamel
 - 3) P&L Effecto Enamel
 - 4) S-W Industrial Enamel B-54 Series
- C. Zinc-Coated Metal:
 - 1. High-Gloss Alkyd Enamel: Two (2) finish coats over primer.
 - a. Primer: Galvanized metal primer.
 - 1) MOORE IronClad Galvanized Metal Latex Primer #155
 - 2) PPG 6-215/216 Speedhide Galvanized Steel Primer
 - 3) P&L Interior Trim Primer
 - 4) S-W Galvite B50W3
 - b. First and Second Coats: Gloss alkyd enamel.
 - 1) MOORE Impervo High-Gloss Enamel #133
 - 2) PPG 54 Line Quick-Dry Enamel
 - 3) P&L Effecto Enamel
 - 4) S-W Industrial Enamel B-54 Series.
- D. Concrete:
 - 1. Concrete Filler - Two (2) coats minimum:
 - a. ICI DULUX PAINT CENTERS Ultra-Hide Blockaid Interior/Exterior Masonry Filler 3110-1200.

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

2. Concrete Elastomeric Paint - Apply to film thickness recommended by manufacturer for each substrate type.
 - a. ICI DULUX PAINT CENTERS Decra-Flex Elastomeric Coating System 2270, Fine

3.7 INTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated.

B. Ferrous Metal:

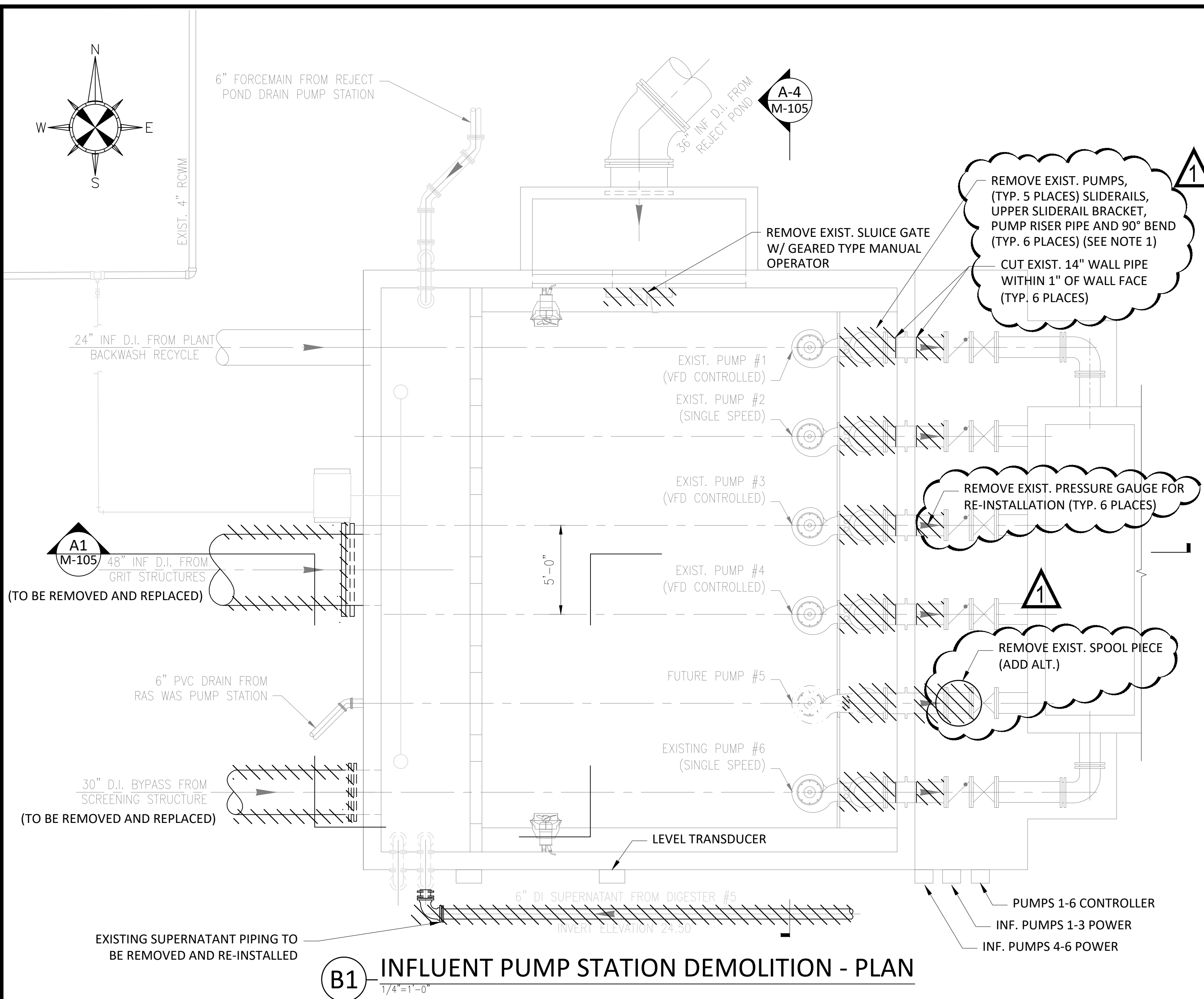
1. Semi-loss Enamel Finish: Two (2) coats over primer with total dry film thickness not less than 2.5 mils.
 - a. Primer: Synthetic, quick-drying, rust-inhibiting primer.
 - 1) MOORE Ironclad Retardo Rust-Inhibitive Paint #163
 - 2) PPG 6-208 Red Inhibitive Metal Primer
 - 3) P&L Effecto Rust-Inhibiting Primer
 - 4) S-W Kem Kromik Metal Primer B50N2/B50W1
 - b. Undercoat: Interior enamel undercoat.
 - 1) MOORE MOORE's Alkyd Enamel Underbody #217
 - 2) PPG 6-6 Speedhide Quick-Dry Enamel Undercoater
 - 3) P&L Interior Trim Primer
 - 4) S-W Pro-Mar 200 Alkyd Enamel Undercoater B49W200
 - c. Finish Coat: Interior, semi-gloss, odorless, alkyd enamel.
 - 1) MOORE MOORE's Satin Impervo Enamel #235
 - 2) PPG 27 Line Wallhide Semi-Gloss Enamel
 - 3) P&L Cellu-Tone Alkyd Satin Enamel
 - 4) S-W Classic 99 Semi-Gloss Enamel A40 Series
2. Semi-Gloss Finish: Two (2) coats over primer, with total dry film thickness not less than 2.5 mils.
 - a. Primer: Galvanized metal primer.
 - 1) MOORE Ironclad Galvanized Metal Latex Primer #155
 - 2) PPG 6-215/216 Speedhide Galvanized Steel Primer
 - 3) P&L Interior Trim Primer
 - 4) S-W Galvite B50W3

PANAMA CITY BEACH – INFLUENT PIPING REPLACEMENT

- b. Undercoat: Interior enamel undercoat.
 - 1) MOORE MOORE's Alkyd Enamel Underbody #217
 - 2) PPG 6-6 Speedhide Quick-Dry Enamel Undercoater
 - 3) P&L Interior Trim Primer
 - 4) S-W Pro-Mar 200 Alkyd Enamel Undercoater B49W200

- c. Finish Coat: Interior, semi-gloss, odorless, alkyd enamel.
 - 1) MOORE MOORE's Satin Impervo Enamel #235
 - 2) PPG 27 Line Wallhide Semigloss Enamel
 - 3) P&L Cellu-Tone Alkyd Satin Enamel
 - 4) S-W Classic 99 Semi-Gloss Enamel A40 Series

END OF SECTION 09900

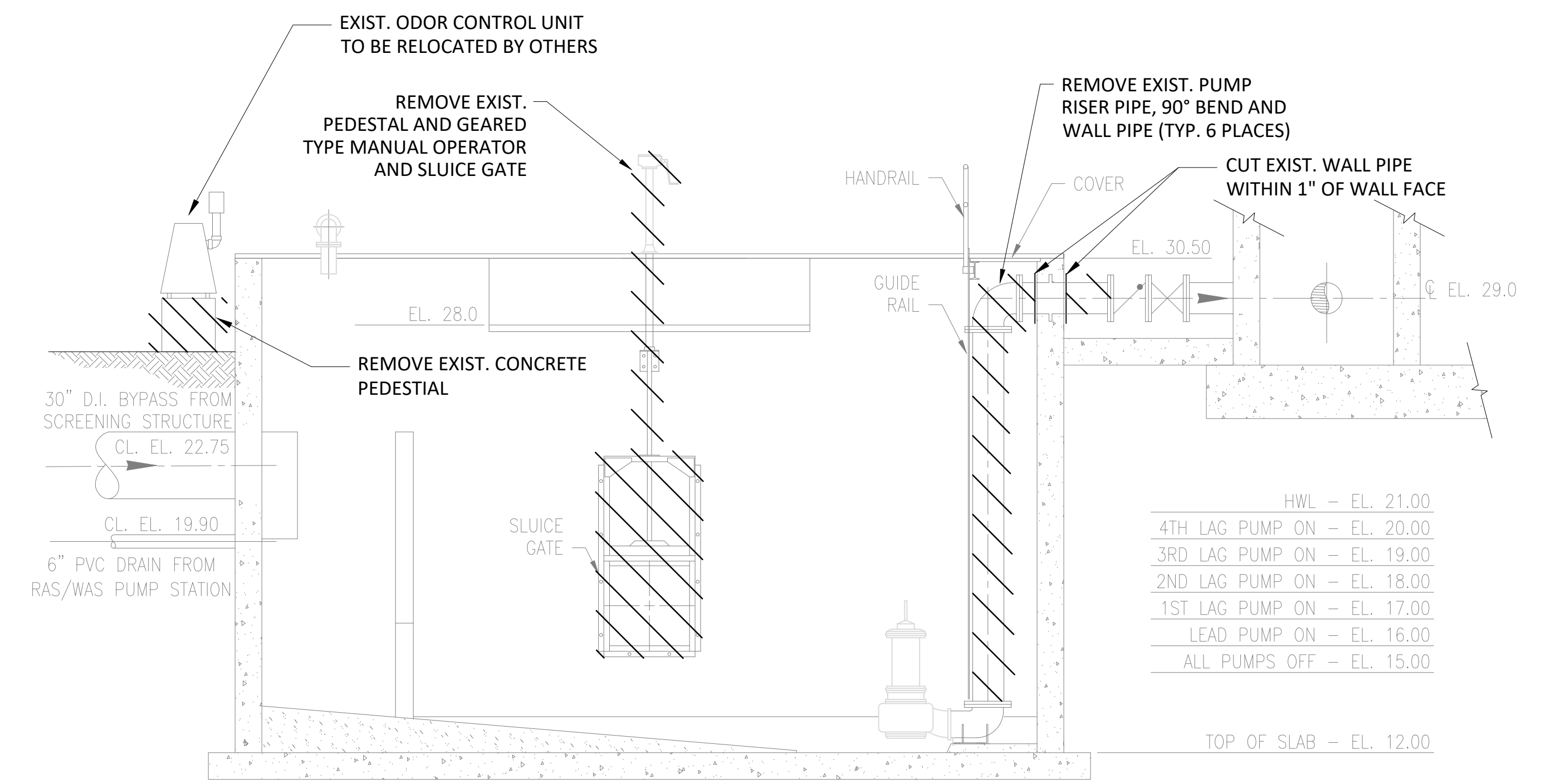


B1 INFLUENT PUMP STATION DEMOLITION - PLAN
1/4"=1'-0"

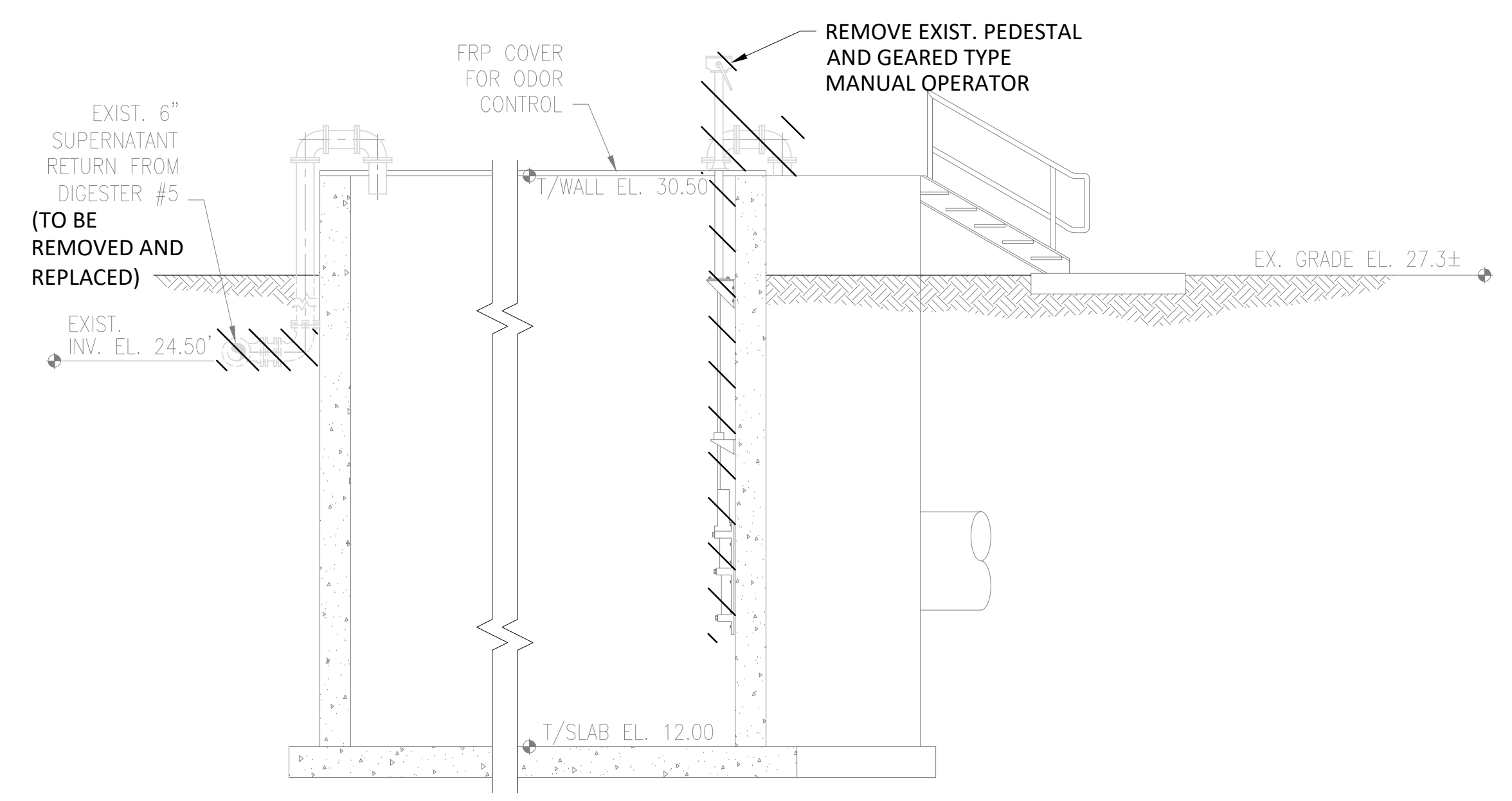


NOTES

- EXISTING SLIDERAILS TO BE SALVAGED FOR RE - INSTALLATION



A1 SECTION
1/4"=1'-0"



A4 SECTION
1/4"=1'-0"

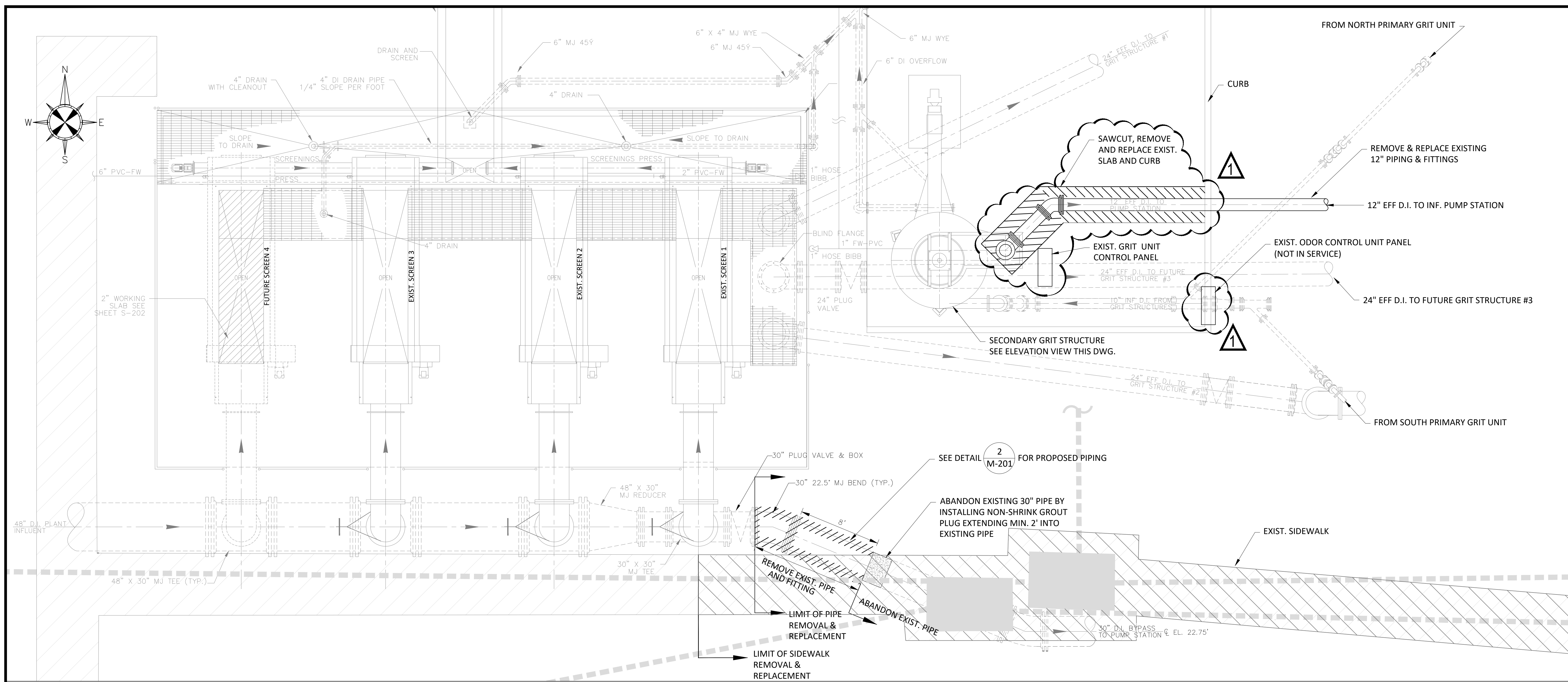
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				DESIGNED BY: M.E.S.
				DRAWN BY: M.A.S.
				CHECKED BY: A.E.S.

**WWTF INFLUENT PIPING REPLACEMENT
INFLUENT PUMPING STATION DEMOLITION PLAN**

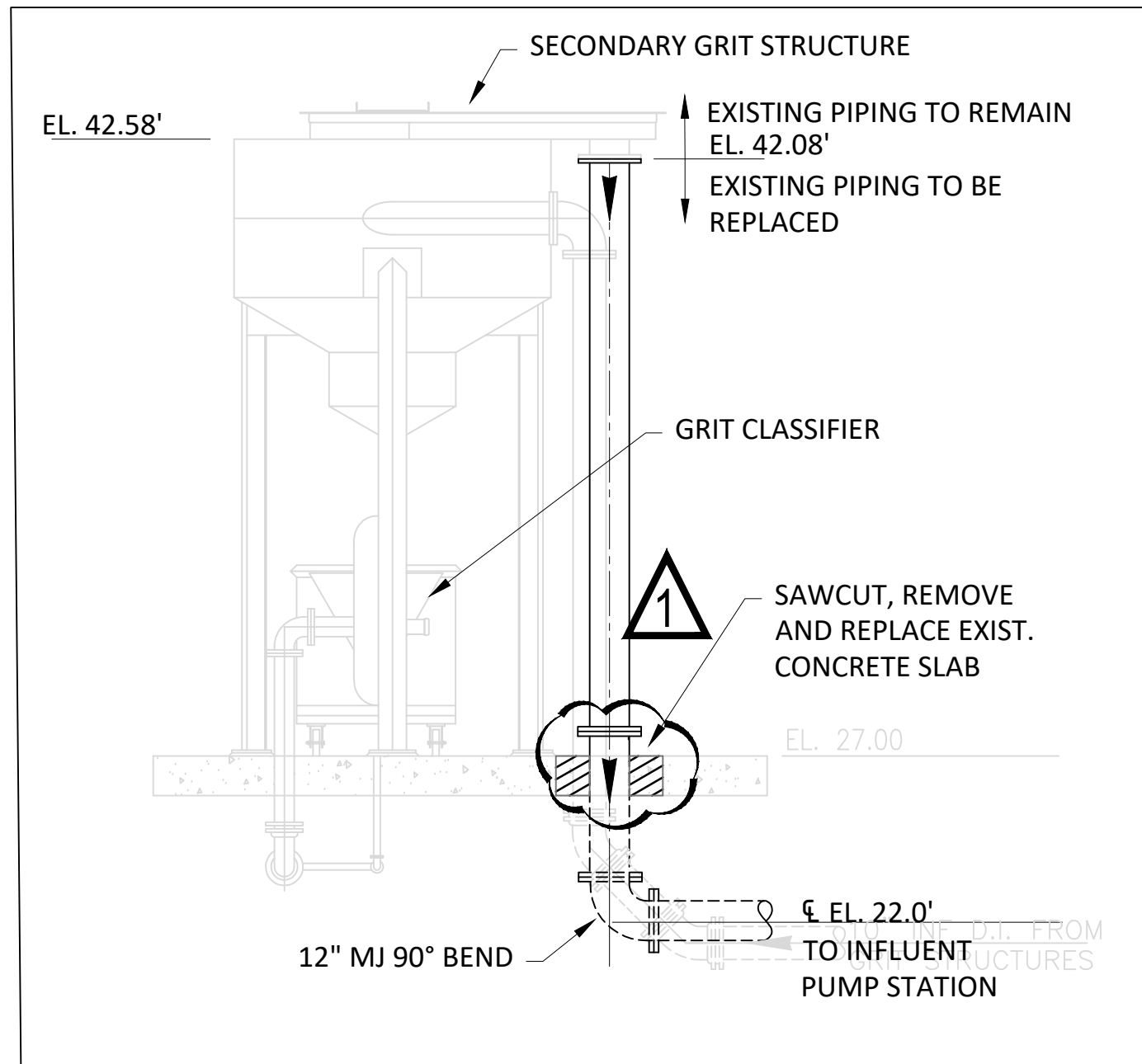
CITY OF
PANAMA CITY BEACH
116 SOUTH ARNOLD ROAD
PANAMA CITY BEACH, FLORIDA 32413

SHEET NUMBER

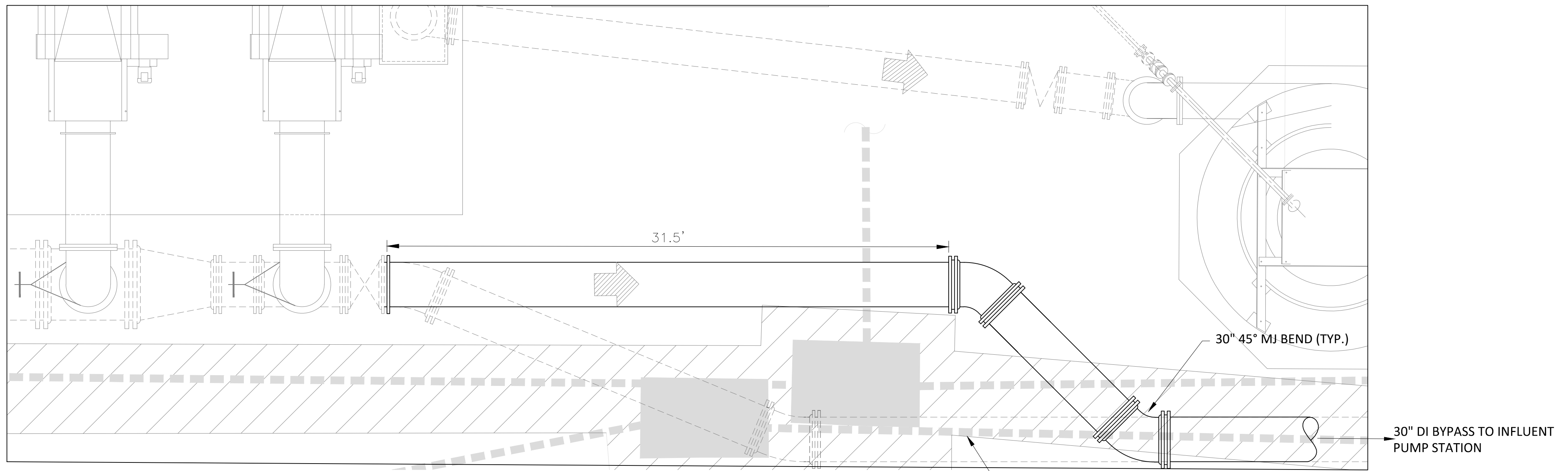
M-102



1 SCREENING STRUCTURE - PARTIAL PLAN
 M-200 SCALE: 1/4"=1'-0"



1 SECONDARY GRIT UNIT ELEVATION
 M-201 SCALE: 1/4"=1'-0"

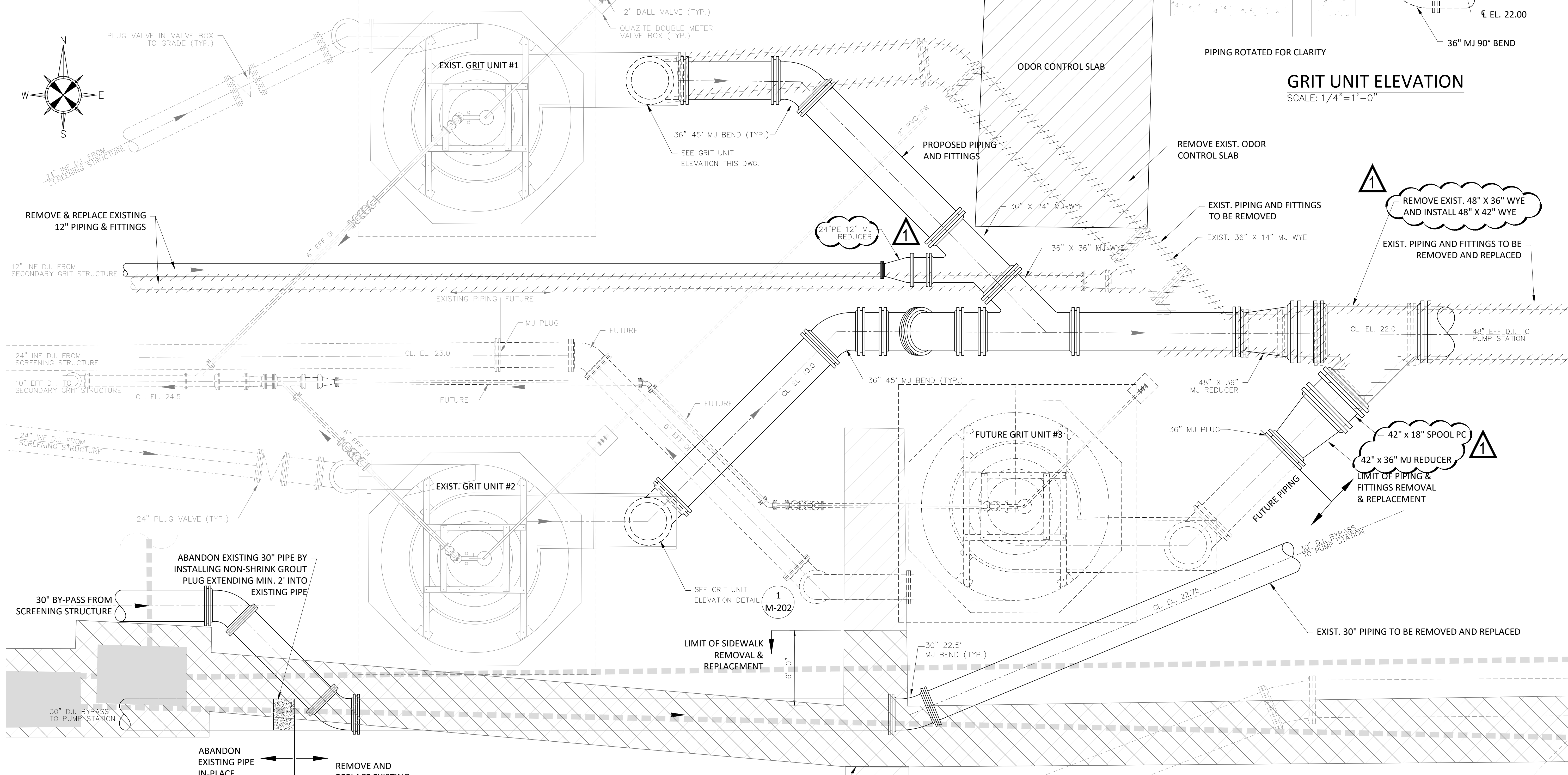
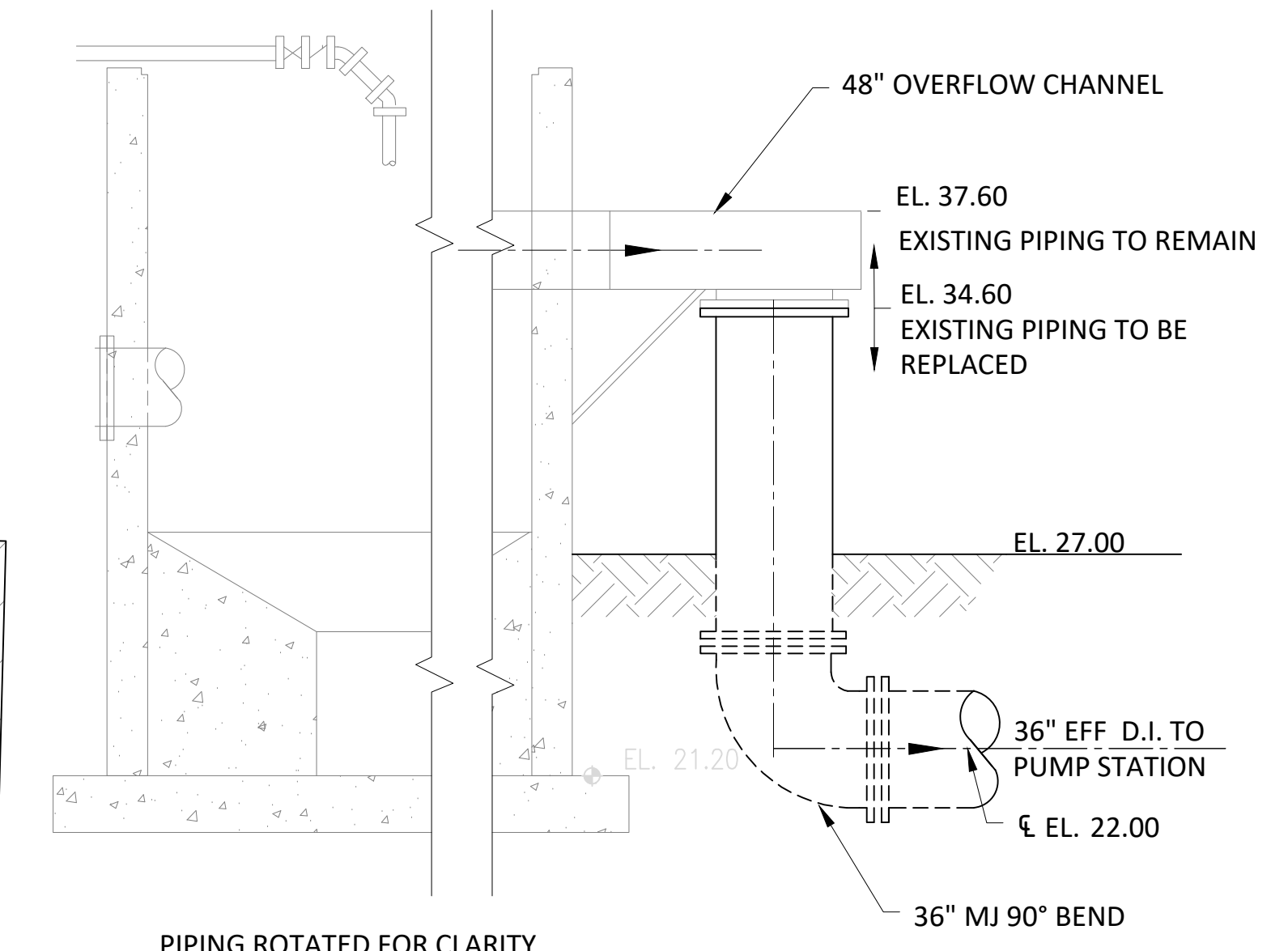
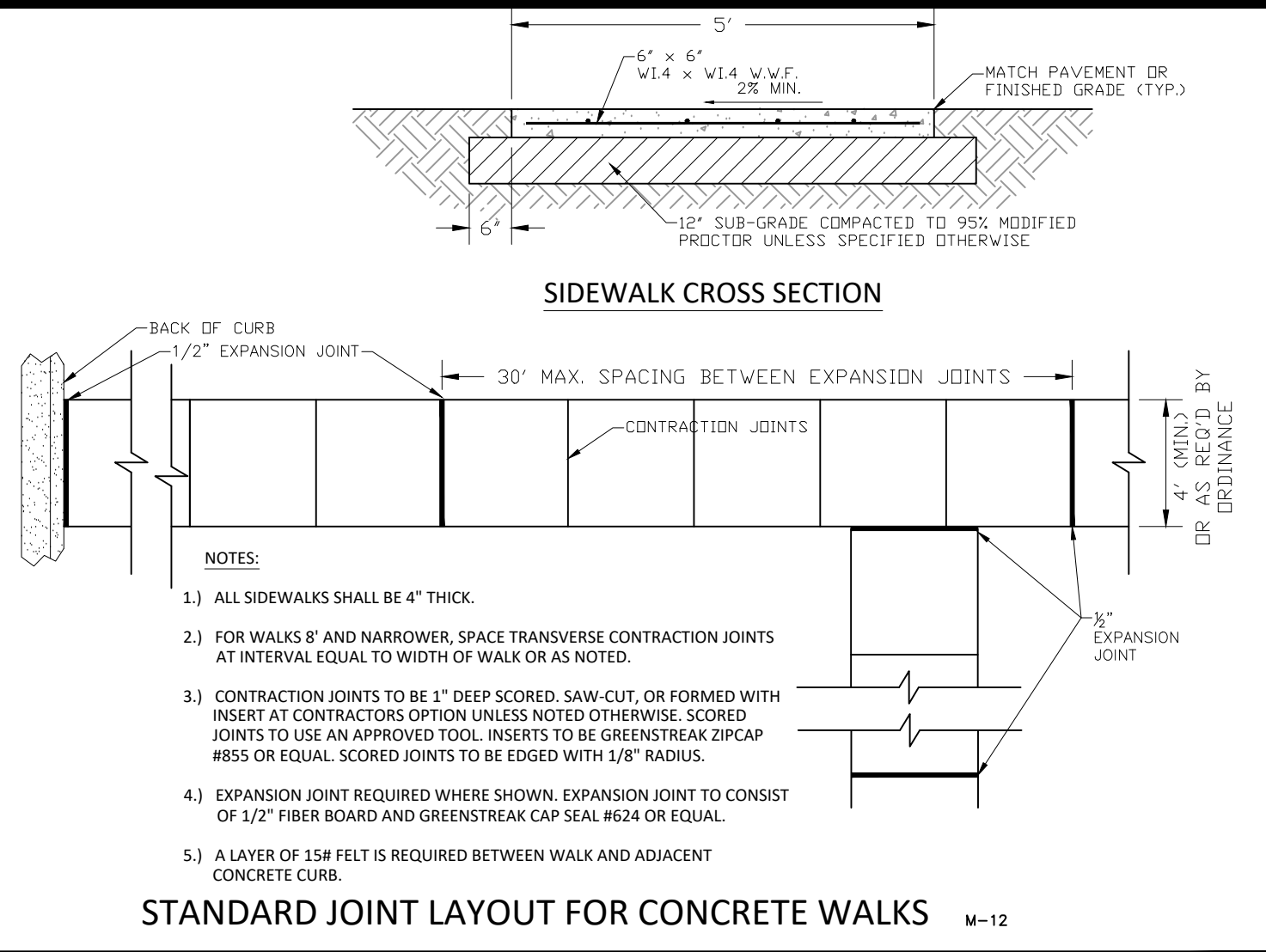


2 30" DI BYPASS PIPE - PARTIAL PLAN
 M-201 SCALE: 1/4"=1'-0"

FILE NO:	M-201(MS).dwg	DATE:	7-10-17
BY:	AS SHOWN	SCALE:	AS SHOWN
NO.:	1	DESIGNED BY:	M.E.S.
		REV. ADD. #1	M.A.S.
		DRAWN BY:	M.A.S.
		CHECKED BY:	A.E.S.

**WWTF INFLUENT PIPING REPLACEMENT
 EXISTING AND PROPOSED SCREENING
 STRUCTURE PIPING PLANS**

**CITY OF
 PANAMA CITY BEACH**
 116 SOUTH ARNOLD ROAD
 PANAMA CITY BEACH, FLORIDA 32413

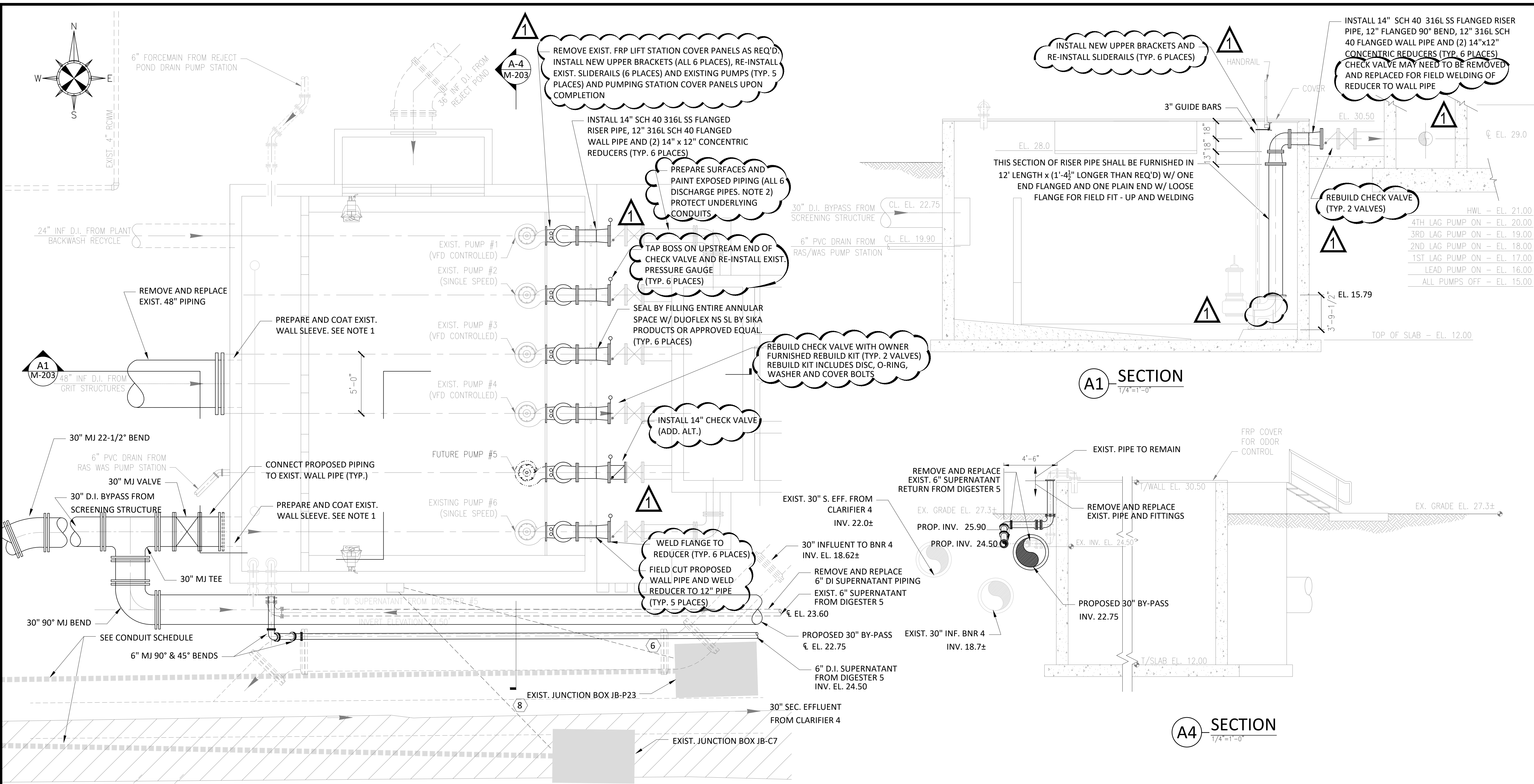


1 GRIT REMOVAL UNITS - PLAN
SCALE: 1/4" = 1'-0"

DATE:	7-10-17
SCALE:	AS SHOWN
DESIGNED BY:	M.E.S.
DRAWN BY:	M.A.S.
CHECKED BY:	A.E.S.
FILE NO.:	M-202(MS).dwg
BY:	
DATE:	11/20/17
M.E.S. REV. #:	#1
NO.:	Δ

**WWTF INFLUENT PIPING REPLACEMENT
EXISTING AND PROPOSED GRIT STRUCTURE PIPING PLAN**

CITY OF
PANAMA CITY BEACH
116 SOUTH ARNOLD ROAD
PANAMA CITY BEACH, FLORIDA 32413



B1 INFLUENT PUMP STATION MODIFICATIONS - PLAN
1/4"=1'-0"

Existing Conduit Bank Schedule JB-P23 (to be protected during construction)			Power			Control Conductor	From	To
Feeder Type	Number of Parallel Sets	Conduit Size	Phase Conductor	Neutral Conductor	Equipment Grounding Conductor			
24	1	2-inch	#1		#6	2#10 for Emergency Stop	Influent Pump 1	MCC-5A
25	1	2-inch	#1		#6	2#10 for Emergency Stop	Influent Pump 2	MCC-5A
26	1	2-inch	#1		#6	2#10 for Emergency Stop	Influent Pump 3	MCC-5A
27	1	2-inch	#1		#6	2#10 for Emergency Stop	Influent Pump 4	MCC-5B
28	1	2-inch					Influent Pump 5 (Future)	MCC-5B
29	1	2-inch	#1		#6	2#10 for Emergency Stop	Influent Pump 6	MCC-5B
31	1	1-inch	#10	#10	#10		Influent Pump Status Panel	Panel "LPB-5"
32	1	1-inch	#10	#10	#10		Influent Pump Status (Rec)	Panel "LPB-7"
33	1	1-inch	#10	#10	#10		Influent Level Controller (Power)	Panel "LPB-9"

Existing Conduit Bank Schedule JB-C7 (to be protected during construction)			Power			Control Conductor	From	To
Feeder Type	Number of Parallel Sets	Conduit Size	Phase Conductor	Neutral Conductor	Equipment Grounding Conductor			
30	1	3-inch				32#12	Influent Pump Status Panel	PLC#5
34	1	1-inch				2#22	Influent Level Controller (level)	PLC#5
46	1	1-1/2-inch	#6		#8		MCC 6 (Starter)	BNR#4 Flow Pump

NOTES

1. PREPARE ALL EXPOSED SURFACES OF WALL SLEEVE IN ACCORDANCE W/ SSPC - SP11 - "POWER TOOL CLEANING TO BARE METAL". REMOVE ALL SOLUBLE CONTAMINANTS IN ACCORDANCE WITH SSPC - SP1 - "SOLVENT CLEANING". COAT ACCORDING TO THE FOLLOWING SCHEDULE:

COAT	PRODUCT	DFT (MILS)
PRIMER	TNEMEC 1 OMNITHANE	2.5 - 3.5
INTERMEDIATE	TNEMEC 20 HS - 12 55 PORTA POX	6.0 - 8.0
FINISH	TNEMEC 20 HS - 15 BL PORTA POX	6.0 - 8.0

2. PREPARE ALL EXPOSED SURFACES OF DISCHARGE PIPING AND COAT IN ACCORDANCE WITH SPECIFICATIONS.

**WWTF INFLUENT PIPING REPLACEMENT
INFLUENT PUMP STATION MODIFICATIONS
PLAN AND SECTION**

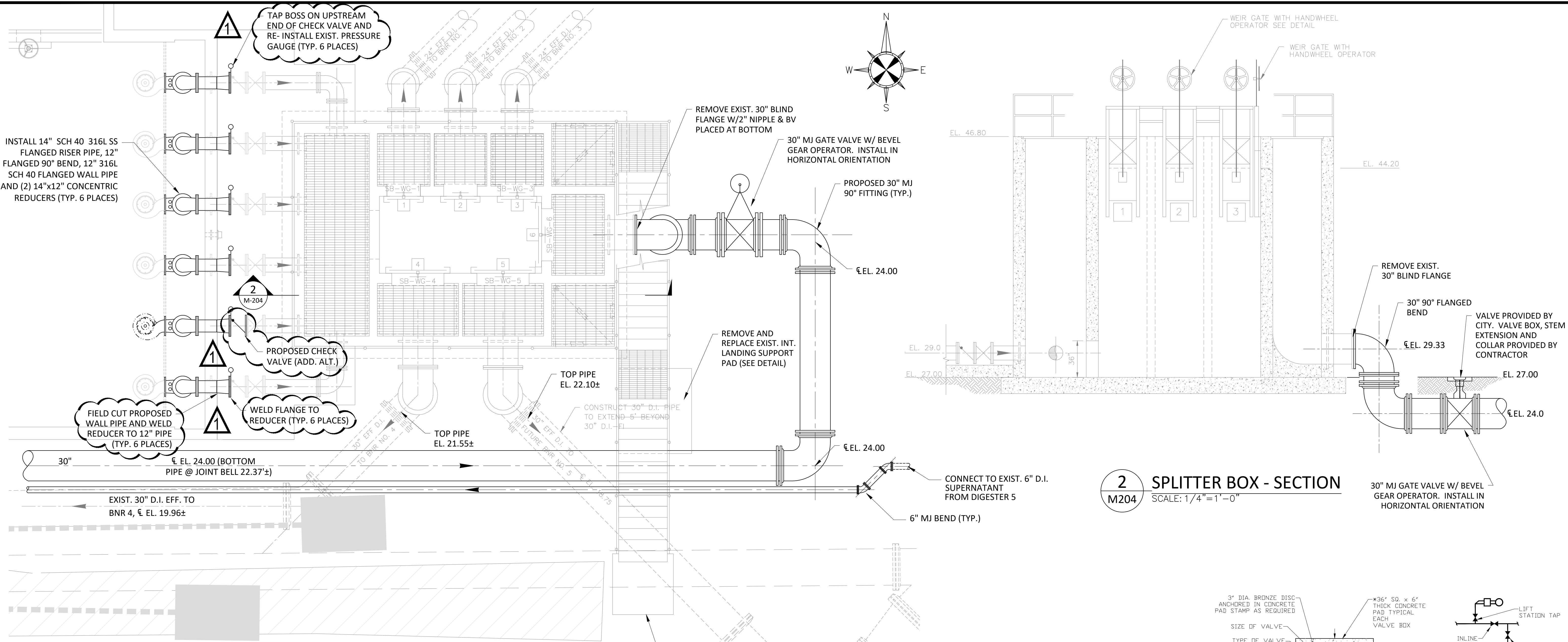
**CITY OF
PANAMA CITY BEACH**
 116 SOUTH ARNOLD ROAD
 PANAMA CITY BEACH, FLORIDA 32413

SHEET NUMBER

M-203

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DESIGNED BY:	M.E.S.		
DRAWN BY:	M.A.S.		
CHECKED BY:	A.E.S.		
FILE NO:	INF REHAB.dwg		
NO.	DATE	BY	REV. ADD. #1
Δ	11/20/17	M.E.S.	

H.W.L. -	EL. 21.00
4TH LAG PUMP ON -	EL. 20.00
3RD LAG PUMP ON -	EL. 19.00
2ND LAG PUMP ON -	EL. 18.00
1ST LAG PUMP ON -	EL. 17.00
LEAD PUMP ON -	EL. 16.00
ALL PUMPS OFF -	EL. 15.00



4 SPLITTER BOX - PLAN
M204 SCALE: 1/4" = 1'-0"

MAIN PIPE SIZE	HORIZ. BENDS			*TEES/WYES		REDUCERS		VALVES/PLUGS
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	
48	48	20	10	X30	X14	X36	X33	122
36	48	20	10	X36	X11	X36	X33	99
30	62	26	13	X30	X1	X36	X33	86
14						X12	X12	
12	18	8	4					
6	10	5	2					22

- NOTES:**
- RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.
 - RESTRAIN 11.25" BENDS 50% OF LENGTH FOR 22.5" BENDS.
 - ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 - PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.
 - PIPE SIZES ARE GIVEN IN INCHES.
 - PIPE LENGTHS ARE GIVEN IN FEET.
 - LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 50 PSI.
 - RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.
 - RESTRAINED LENGTHS ARE TO BE USED FOR SEWER AND RECLAIM WATER.
 - THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

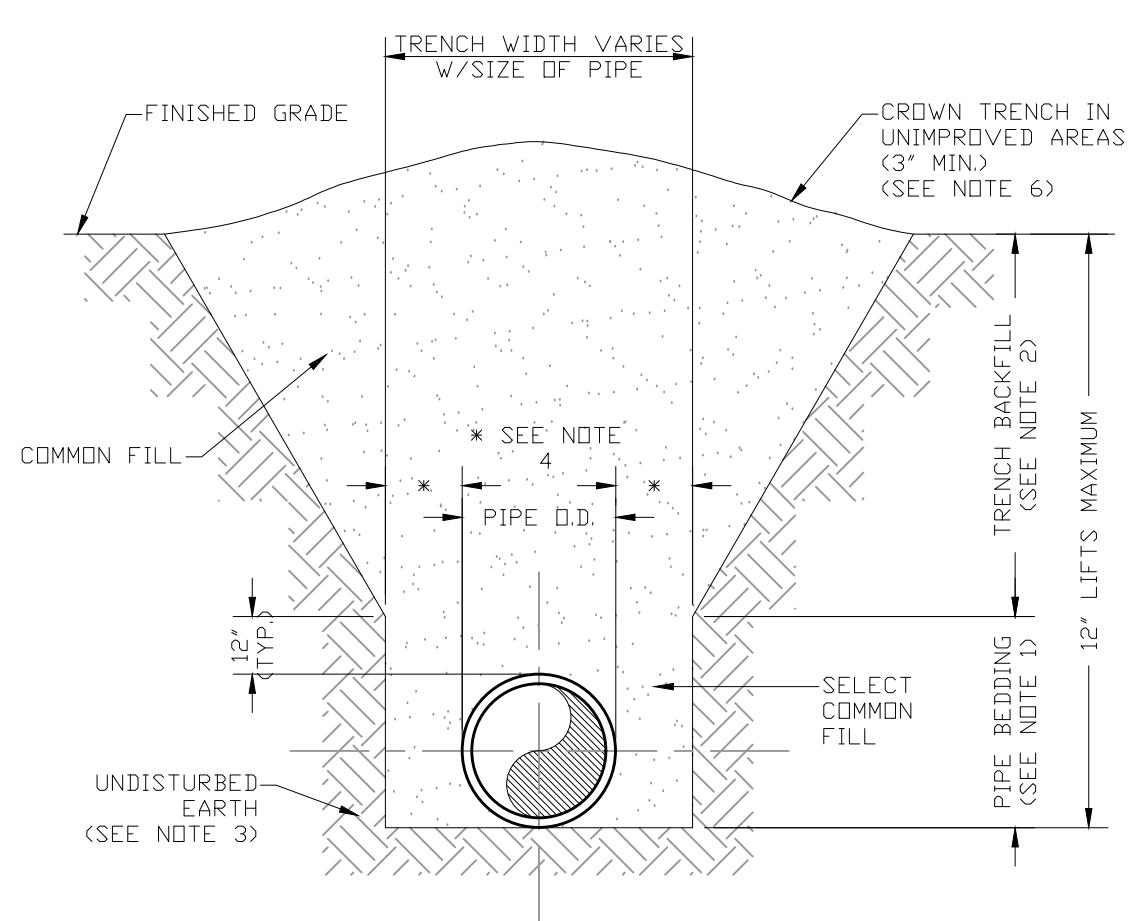
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES/WYES		REDUCERS		VALVES/PLUGS
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	
48	39	17	8	X30	X14	X36	X33	77
36	33	14	7	X36	X1	X36	X33	63
30	29	12	6			X36	X33	55
14						X12	X8	
12	14	6	3					
6	8	4	2					14

- NOTES:**
- RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.
 - RESTRAIN 11.25" BENDS 50% OF LENGTH FOR 22.5" BENDS.
 - ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 - PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.
 - PIPE SIZES ARE GIVEN IN INCHES.
 - PIPE LENGTHS ARE GIVEN IN FEET.
 - LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 50 PSI.
 - RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.
 - RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER.
 - THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

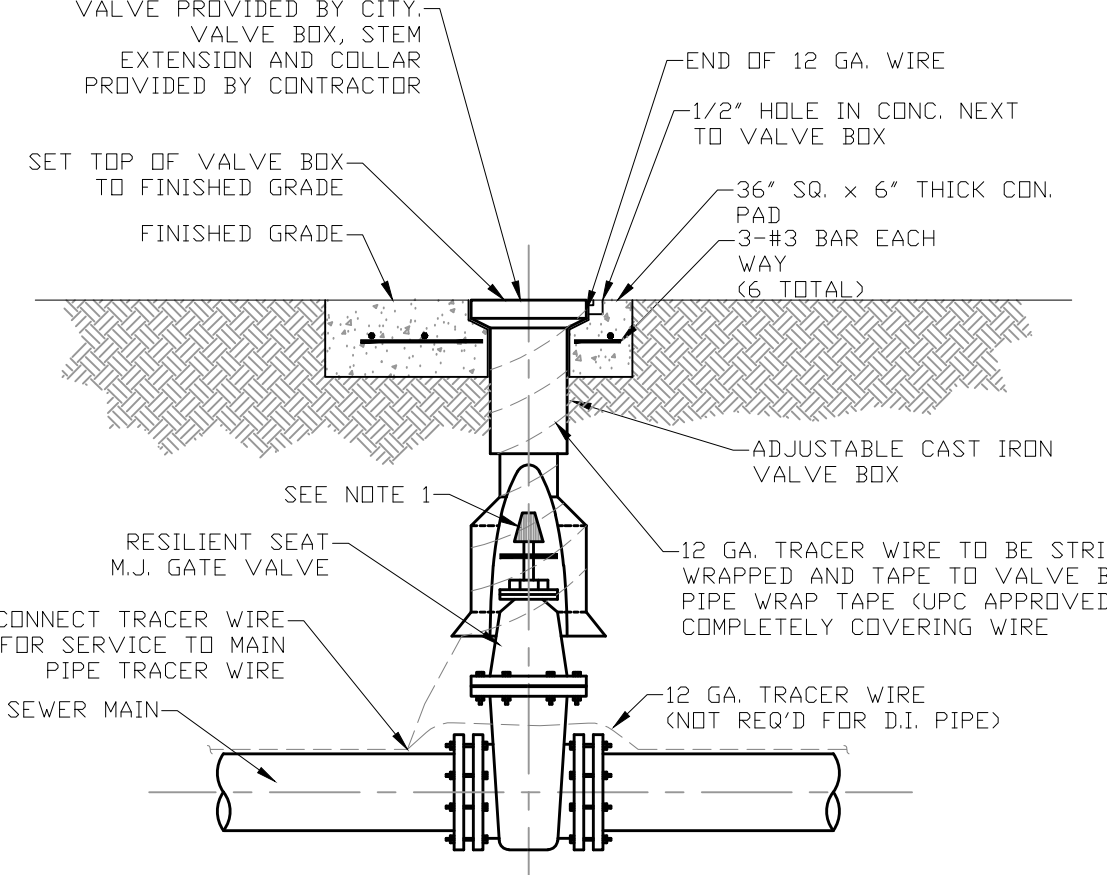
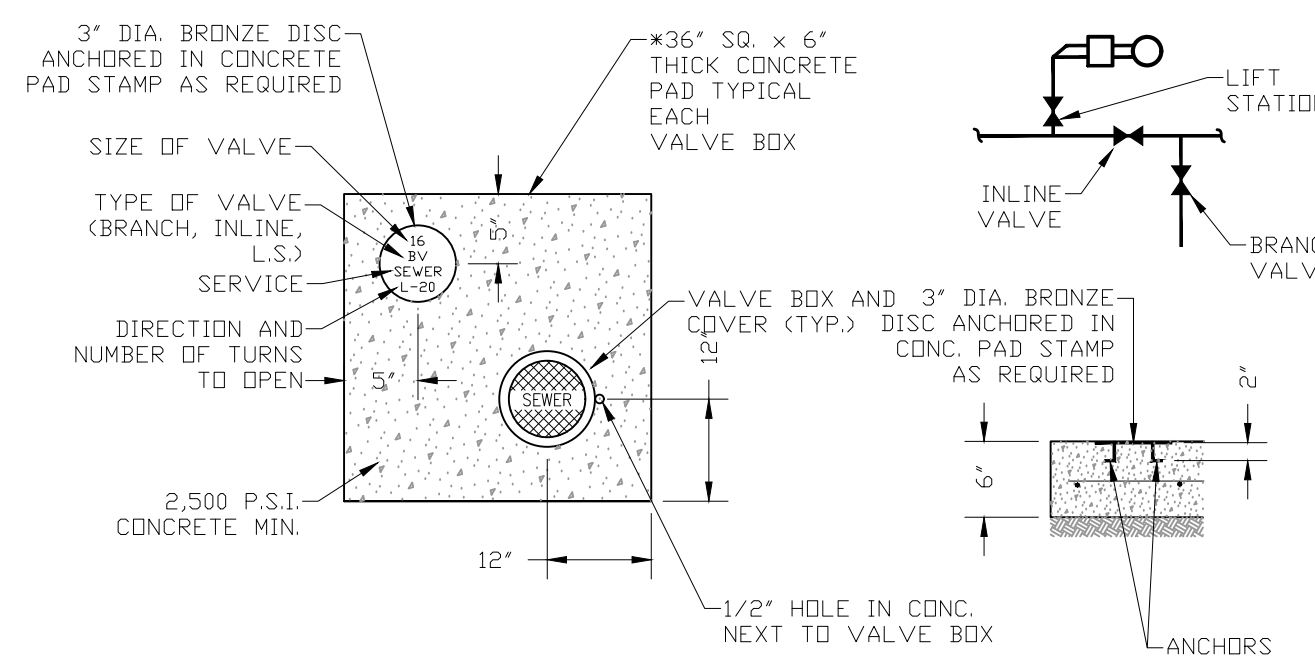
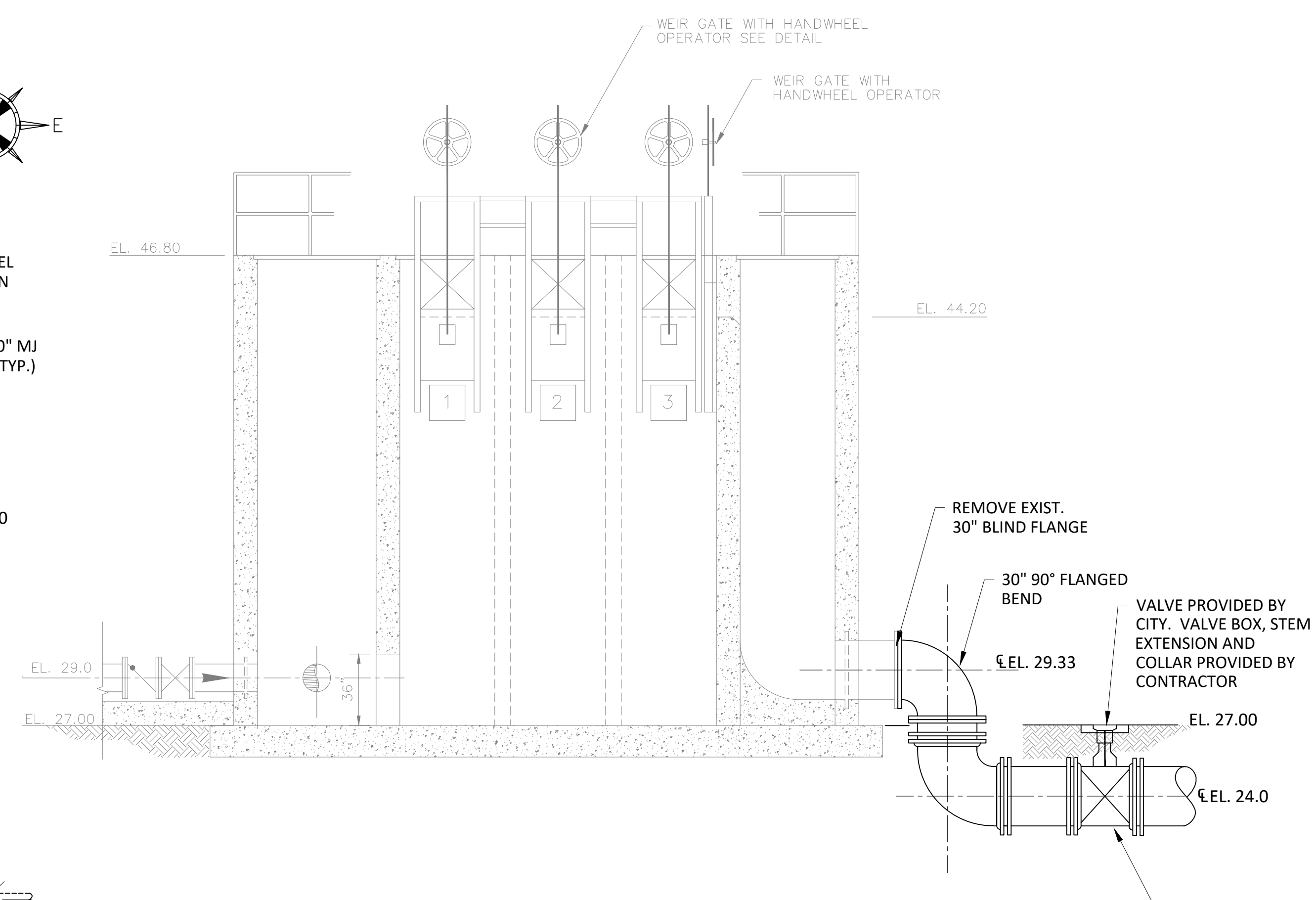
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR D.I.P. (NON-WRAPPED)



- NOTES:**
- PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY THE CITY.
 - (*) 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
 - ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
 - FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN FDOT, BAY COUNTY & CITY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

TRENCH DETAIL TYPE B BEDDING M-2

2 SPLITTER BOX - SECTION
M204 SCALE: 1/4" = 1'-0"



- NOTES:**
- THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.
 - VALVES 20" & LARGER SHALL HAVE BEVEL GEAR OPERATORS UNLESS DEPTH IS ADEQUATE TO MAINTAIN 24" COVER ON VALVE NUT.
- *NOTE: 24" SQ. PAD TO BE CONSTRUCTED INSIDE RESIDENTIAL AREAS.

SEWER GATE VALVE & BOX DETAIL (12" & LARGER) S-8

DATE: 7-10-17
SCALE: AS SHOWN
DESIGNED BY: M.E.S.
DRAWN BY: M.A.S.
CHECKED BY: A.E.S.

FILE NO: M-204(MS).dwg
NO. 1
DATE 11/20/17
BY M.E.S.
REV. #1
ADD. #1

**WWTF INFLUENT PIPING REPLACEMENT
PROPOSED SPLITTER BOX MODIFICATIONS**

CITY OF PANAMA CITY BEACH
116 SOUTH ARNOLD ROAD
PANAMA CITY BEACH, FLORIDA 32413

SHEET NUMBER

M-204