

Generator Scope

To: James Contino Wharton-Smith

From: Steve Suggs

Date: February 26th 2018

Re: KWRU Generator Scope

The items listed below are to be included in a COP for installation of the new KWRU backup generator.

- Demolition & removal of the existing generator. Coordinate with KWRU staff if they would like to salvage any part of the generator prior to disposal.
- Demolition of the existing external fuel tank containment area. Fuel tank shall remain the property of KWRU and will be relocated on the site to an area designated by KWRU staff.
- Installation of modified generator foundation as shown and described in the attached plans.
- Coordinate delivery with Generator supplier and offloading of generator from freight shipper.
- Setting & installation of generator on modified foundation as shown in attached plans.
- Underlayment (like what is proposed for the filters) shall be installed between generator fuel tank and concrete.
- Supply and installation of generator tie-downs as shown on the attached plans including all misc. hardware.
- Installation of aluminum handrail as shown in the attached PDF.
- Design and installation of aluminum access stairway as shown in the attached plans.
- Supply and installation of access ladder as shown in the attached plans.
- **Electrical scope:**
 - Modification of generator distribution system from 1200 amp single breaker to (2) 600 amp rated breakers. Work to be performed in accordance with the latest version of the NEC by a professionally licensed electrician. Breaker modification work shall be warranted by the contractor in accordance with the provisions shown in division 16000 specifications.

- Supply and installation of a 600 amp 316SS NEMA 4X rated ATS to replace existing transfer switch. Transfer switch shall be similar to the one installed as part of the WWTP plant expansion project.
 - Existing disconnect that was just installed as part of the WWTP expansion project shall be relocated and reused.
 - Contractor shall install all conduit, 316SS conduit supports, wires, etc.. necessary to provide a functioning system. Conduit sizes to be per NEC.
 - Contractor shall supply all necessary components to wire temporary on-site generator into existing electrical system in order to provide backup power for the WWTP while new generator is being installed.
 - New ATS status shall be shown in SCADA just as the one installed during the WWTP expansion.
- The contractor shall provide any and all items not described in this document and the attached plans that is required for proper installation and function of the generator system.

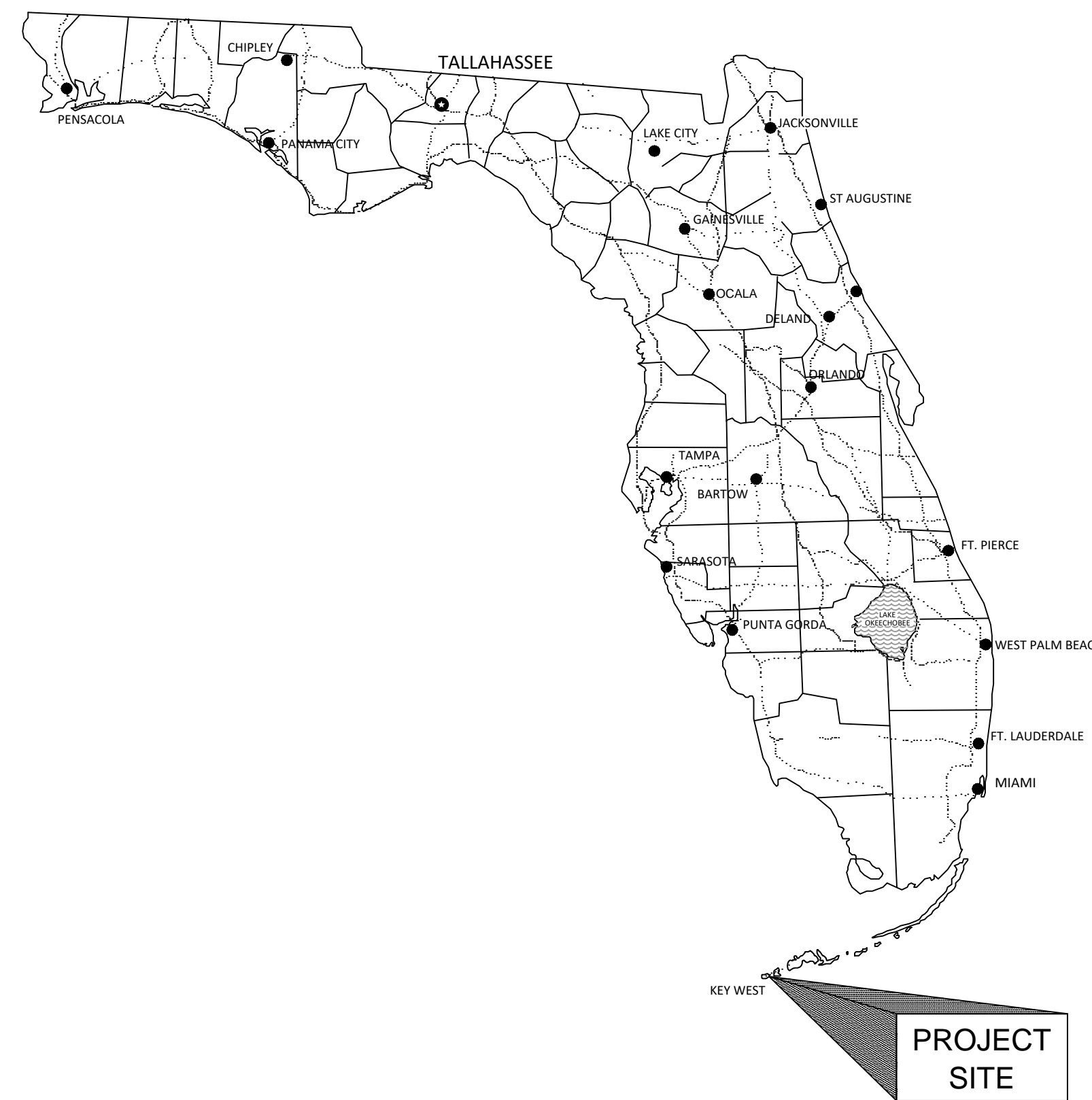
CONSTRUCTION PLANS

FOR

KWRU WWTP GENERATOR REPLACEMENT

KW RESORT UTILITIES

SECTION 35, TOWNSHIP 67 SOUTH, RANGE 25 EAST
 STOCK ISLAND, FLORIDA



LOCATION MAP

OWNER

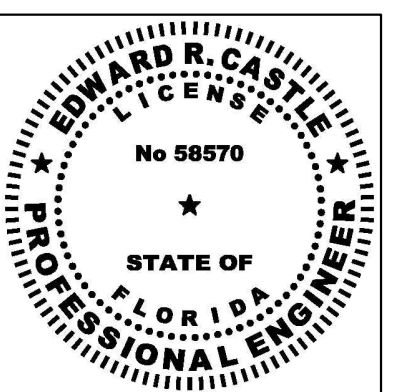
KW RESORT UTILITIES CORP
 6630 FRONT ST.
 STOCK ISLAND FL, 33040

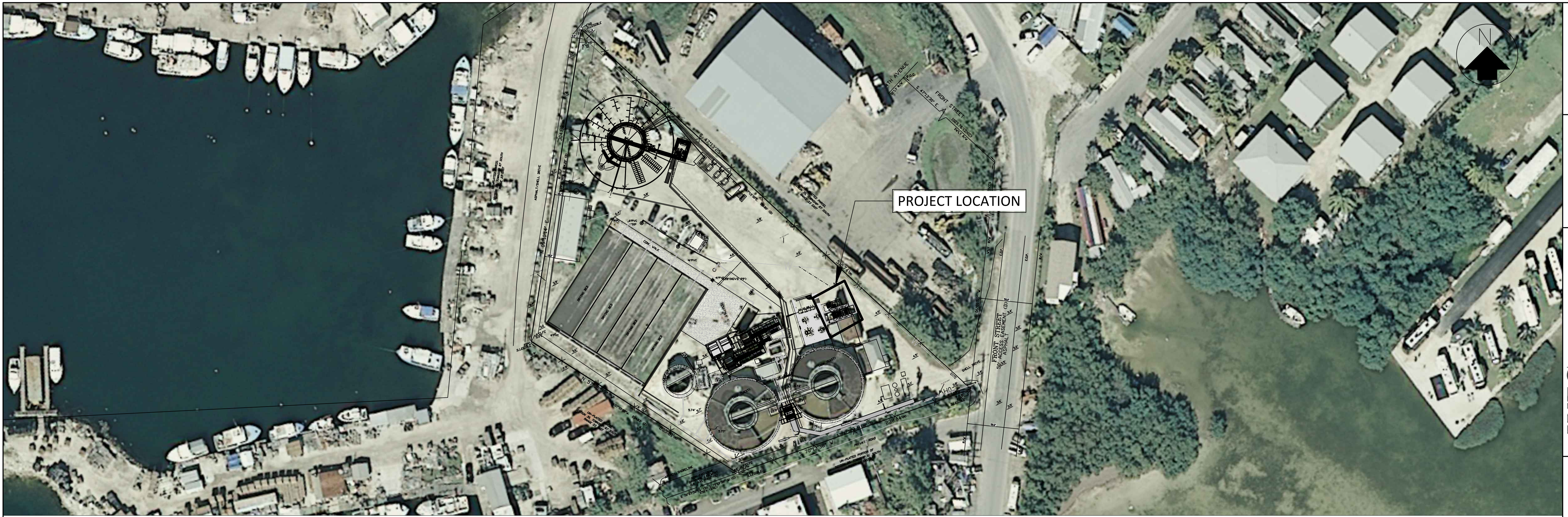
PREPARED BY

THE WEILER ENGINEERING CORPORATION
 6805 OVERSEAS HIGHWAY
 MARATHON FLORIDA, 33050
 EB # 6656
 (305) 289-4161



Edward R. Castle, State of Florida,
 Professional Engineer, License No.
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SITE MAP

GENERAL SHEETS

- G-01 COVER
- G-02 SITE MAP, INDEX OF DRAWINGS
- G-03 GENERAL NOTES
- G-04 STRUCTURAL NOTES
- G-05 ABBREVIATIONS & SYMBOL LEGEND

DETAILS SHEETS

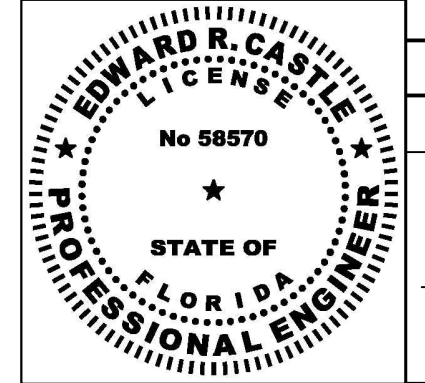
- D-01 GENERATOR DETAILS
- D-02 GENERATOR DETAILS
- D-03 LADDER DETAILS
- D-04 HANDRAIL DETAILS
- D-05 ALUMINUM GRATING DETAILS

Design:	S/S
Drawn:	CWK/SJ/LCS
Checked:	ERC
Approved By:	ERC
Scale:	AS SHOWN
Job No:	16013.001
Date Issued:	AS STAMPED

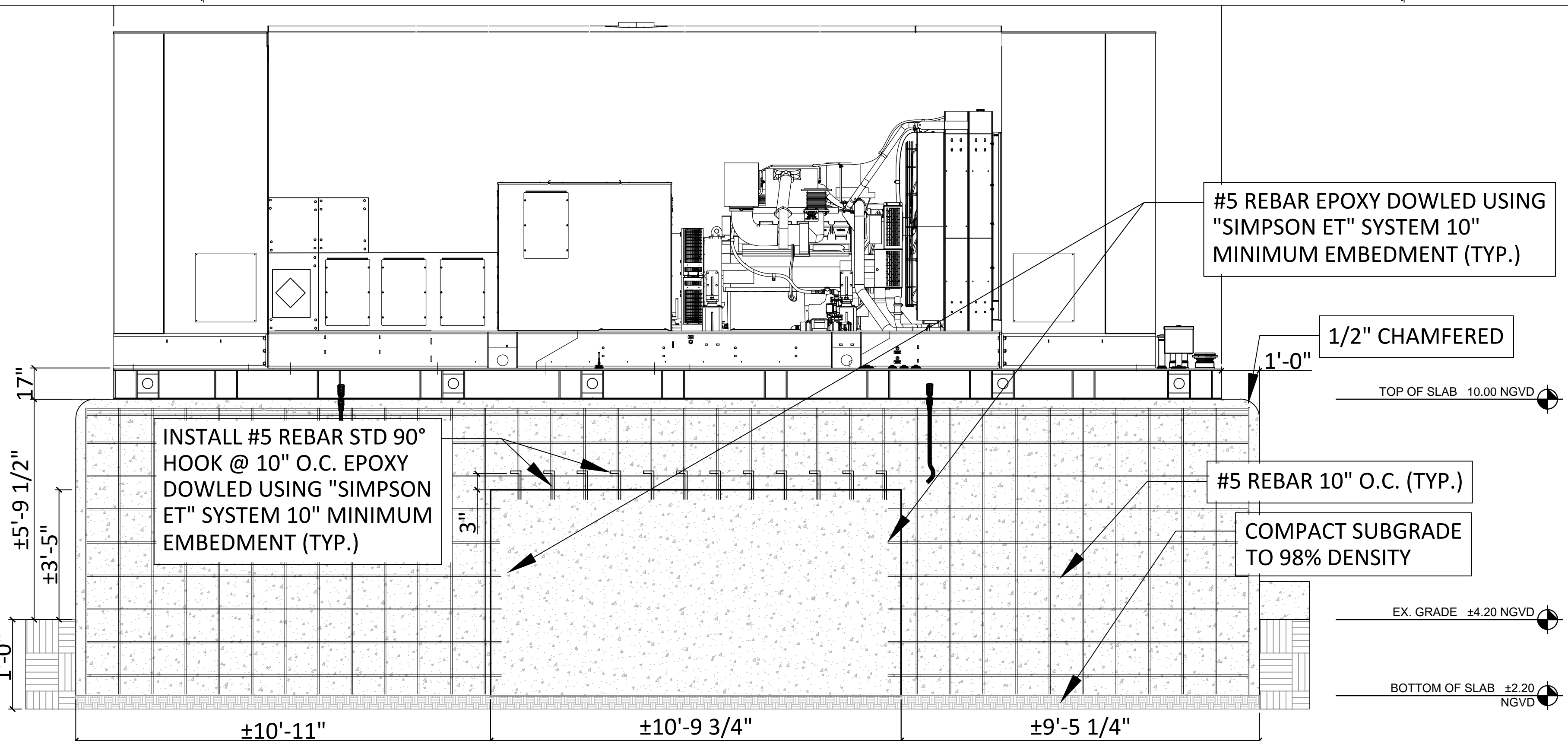
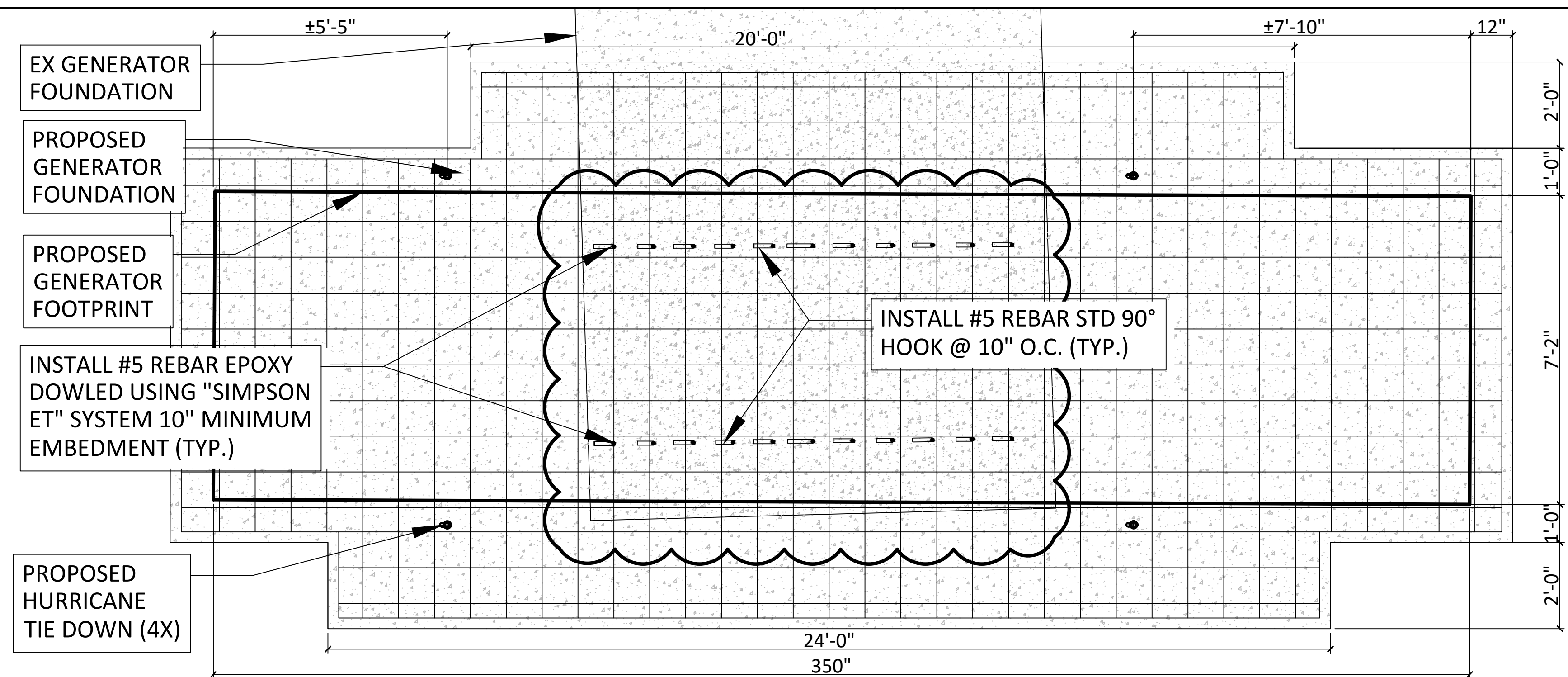
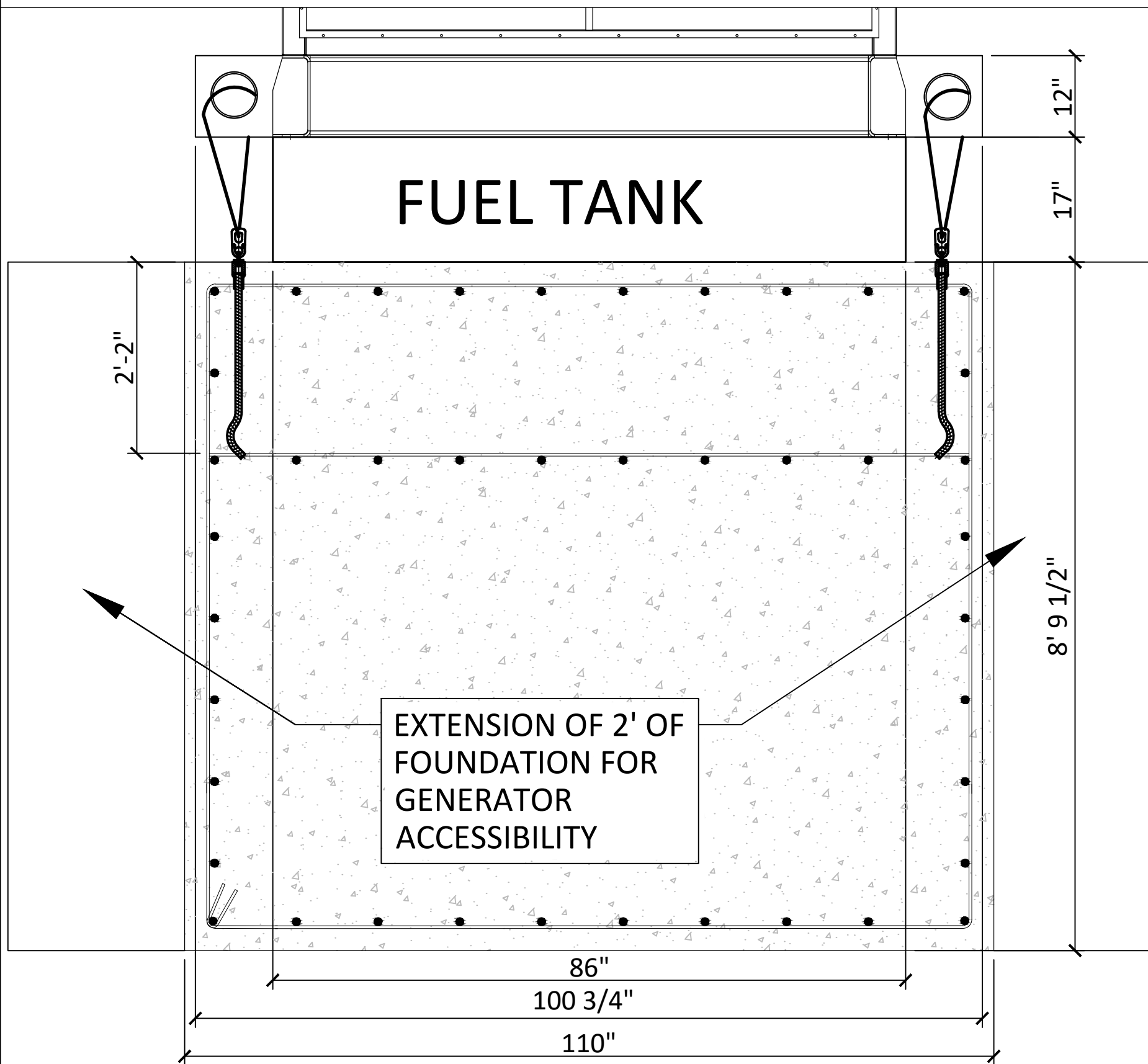
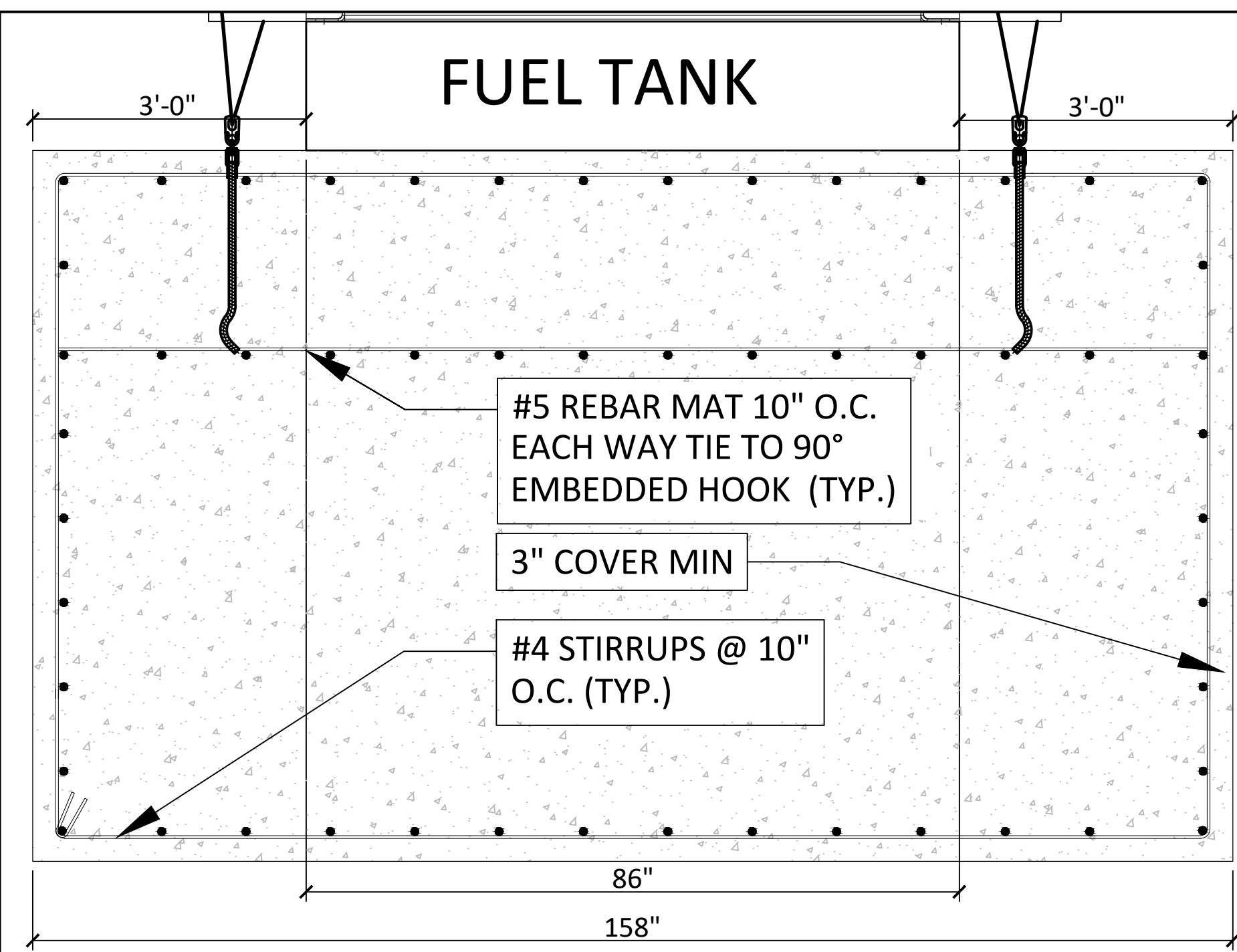
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 6805 OVERSEAS HWY
 MARATHON, FLORIDA 33050
 (305) 289-4161 PH, (305) 289-4162 FAX
 EB #6555

SITE MAP, INDEX OF DRAWINGS
FOR
KWRU WWTP EXPANSION

Description	Revisions

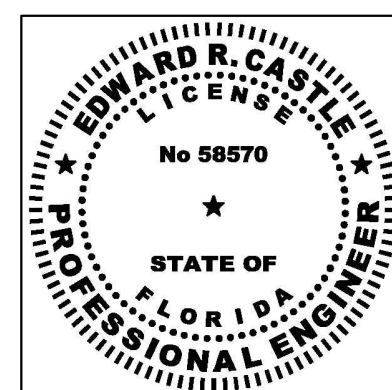


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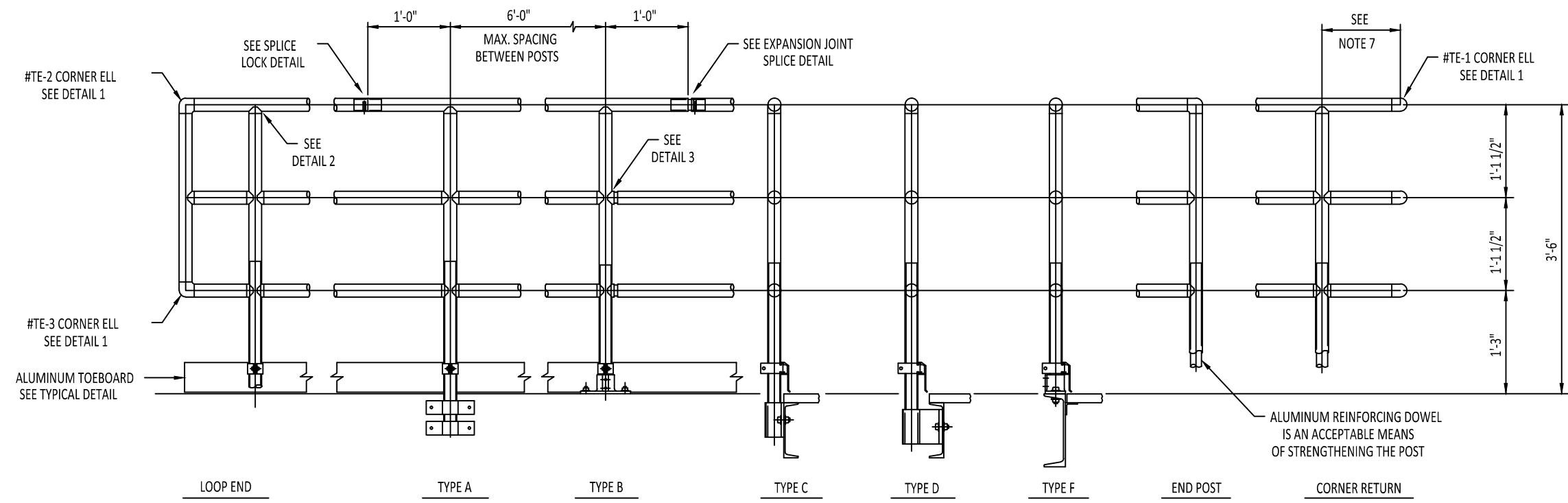


- NOTES:
- FOR CONCRETE STRUCTURAL NOTES, SEE SHEET G-04
 - SOME ITEMS NOT SHOWN FOR CLARITY

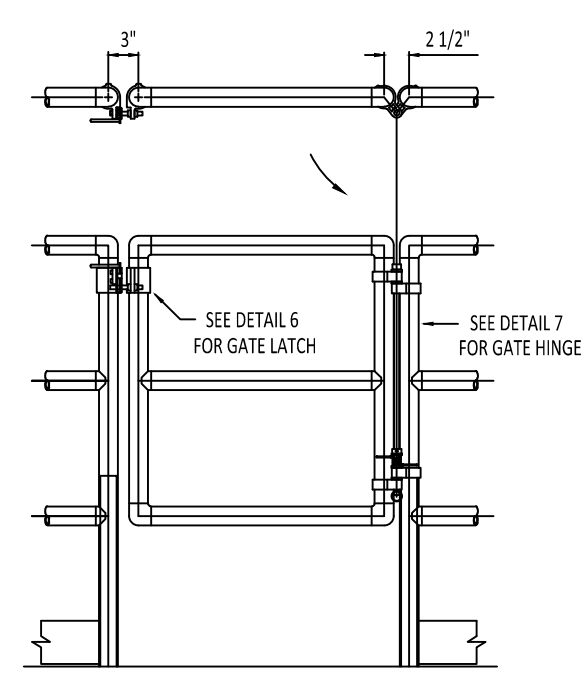
PROPOSED GENERATOR FOUNDATION DETAILS



Approved By:	ERC	AS SHOWN	16013.001	AS STAMPED
Design:	SJS	J.C.S.	Checked:	ERC
Scale:				
Job No.:				
Date Issued:				
WEC THE WELLER ENGINEERING CORPORATION 6805 OVERSEAS HWY MARATHON, FLORIDA 33050 (305) 289-4161 PH, (305) 289-4162 FAX EB #6555				
GENERATOR DETAILS FOR KWRU WWTP EXPANSION				
Revisions				
Description				
Edward R. Castle Professional Engineer State of Florida Registration No. 58574				
Sheet No. D-02				

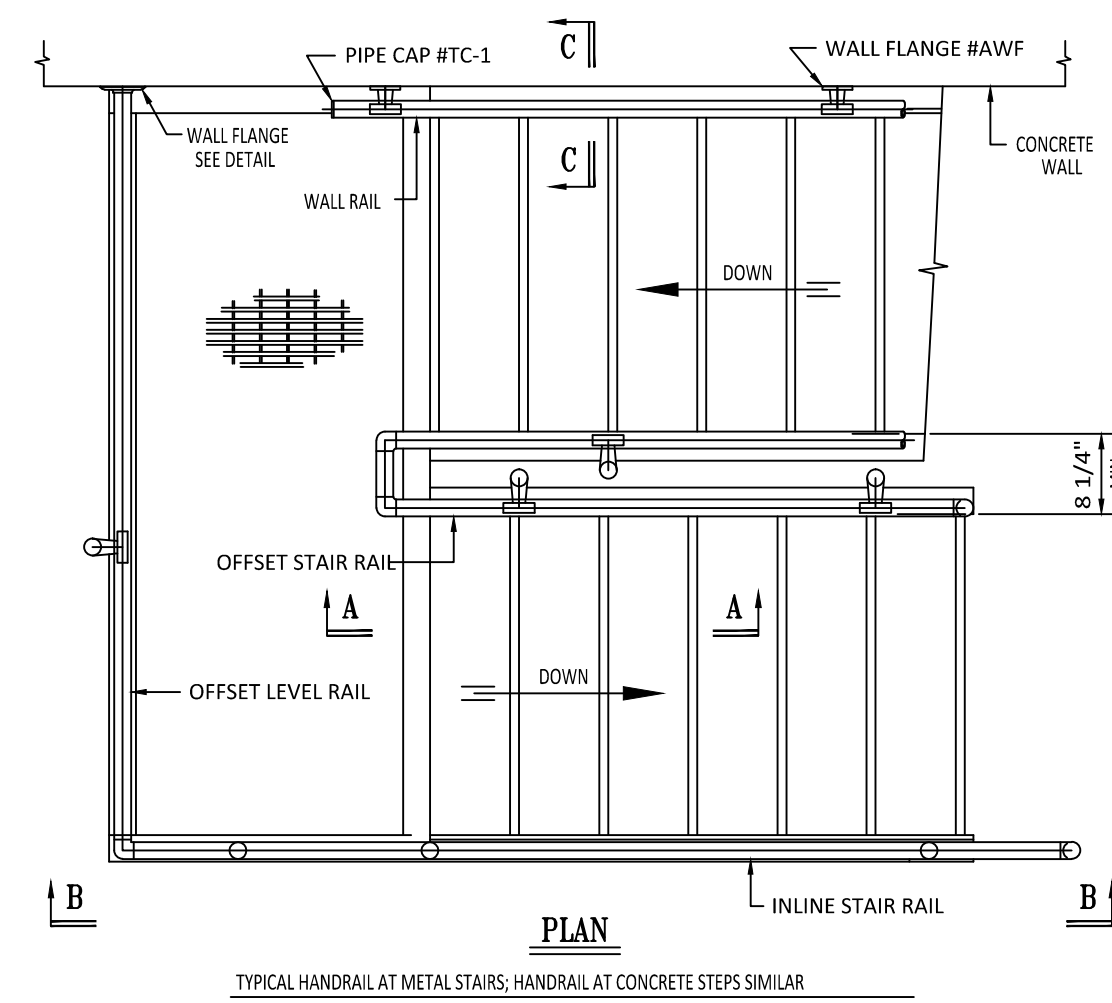


TYPICAL HANDRAIL

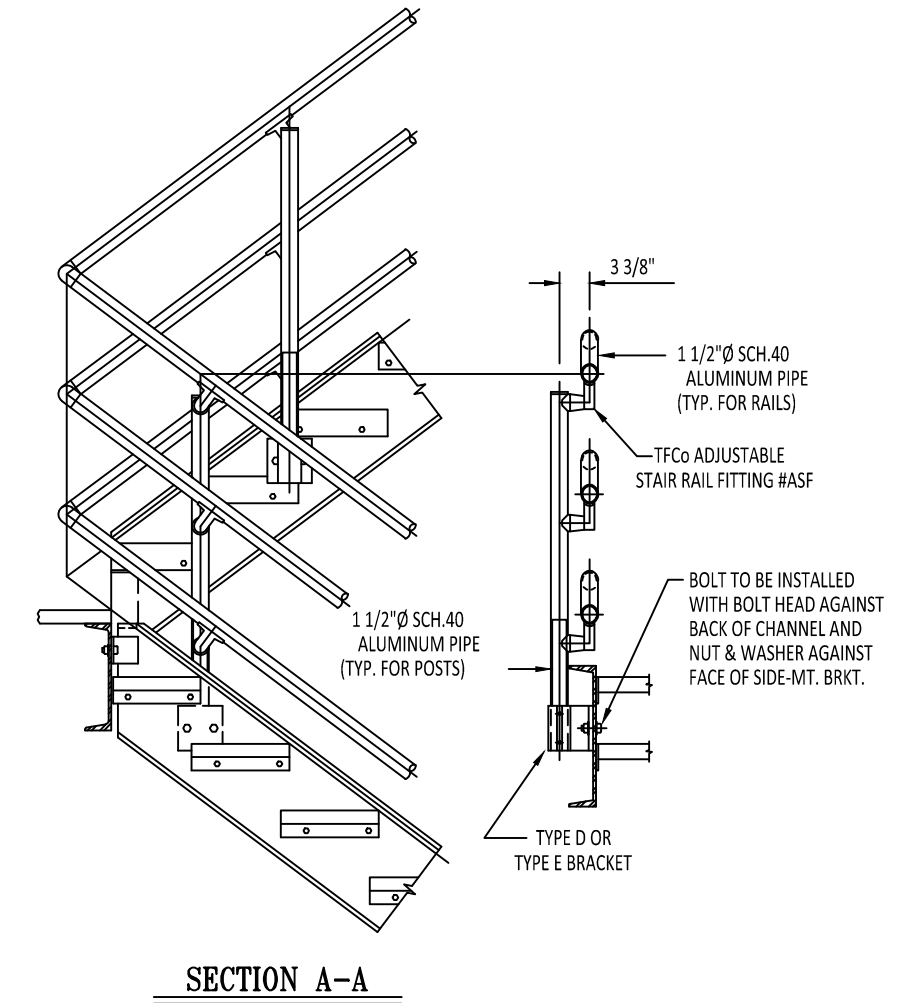


TYPICAL GATE
LEFT HAND GATE SHOWN

UBC-IRSL-96JAN00
3-LINE COMPONENT HANDRAIL
IN COMPLIANCE WITH 1994 UNIFORM BUILDING CODE



TYPICAL HANDRAIL AT METAL STAIRS; HANDRAIL AT CONCRETE STEPS SIMILAR



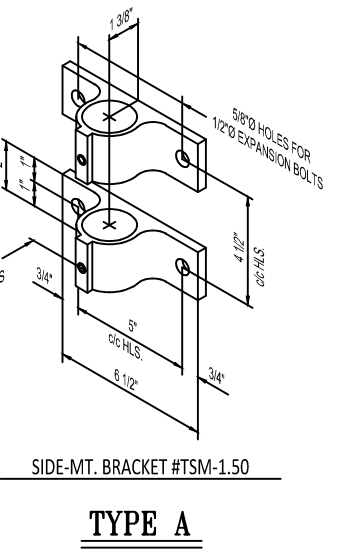
SECTION A-A

Design:	S/S
Drawn:	CWK/SJS
Checked:	ERC
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Date Issued:	AS STAMPED

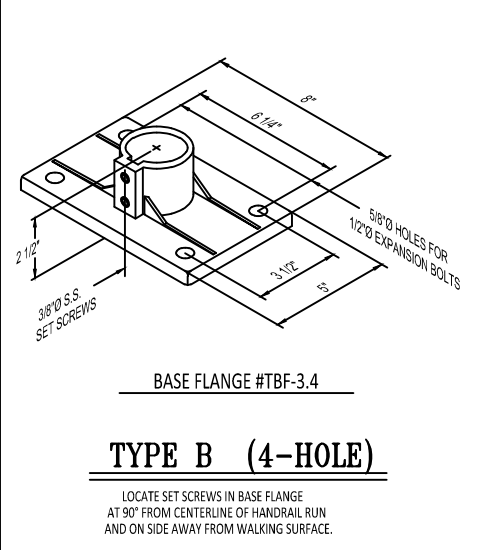
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MARATHON, FLORIDA 33050
(305) 289-4161 PH, (305) 289-4162 FAX

HAND RAIL DETAILS FOR KWRU WWTP EXPANSION

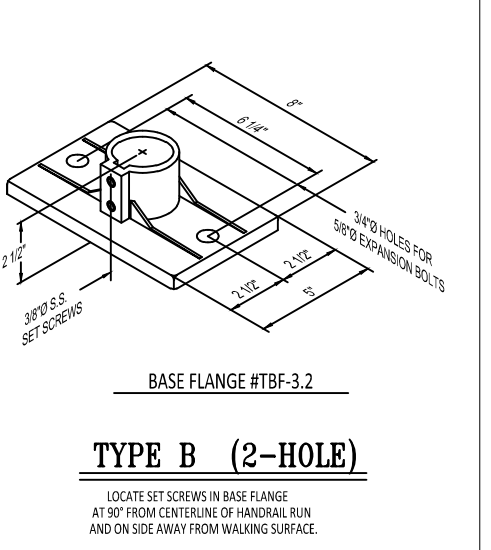
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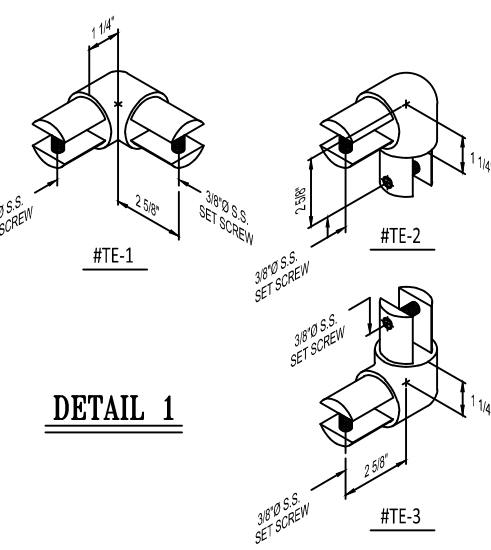
TYPE A



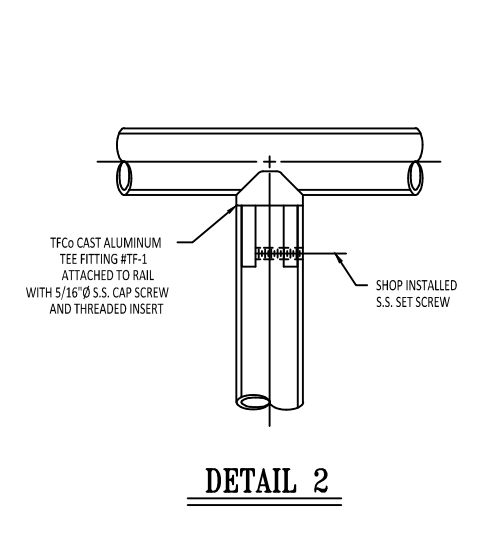
TYPE B (4-HOLE)



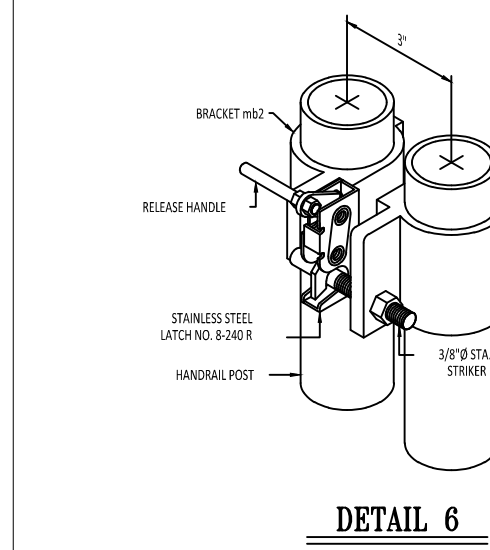
TYPE B (2-HOLE)



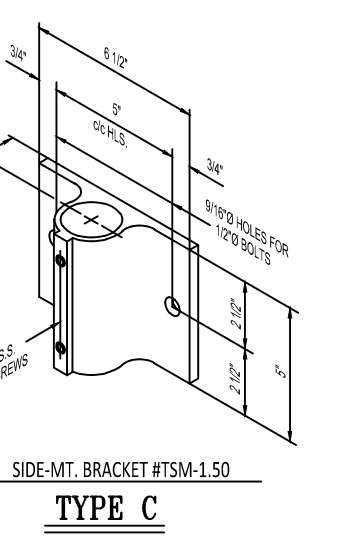
DETAIL 1



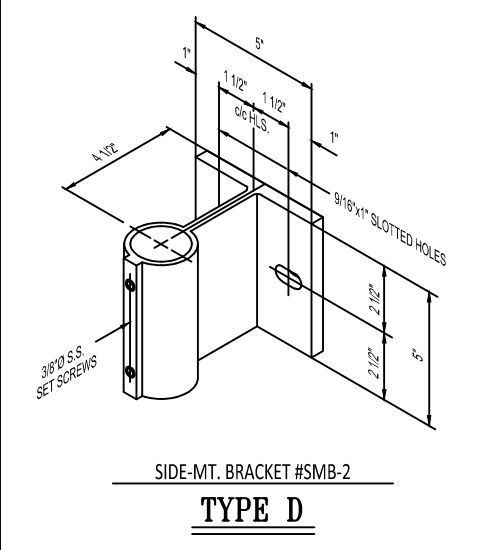
DETAIL 2



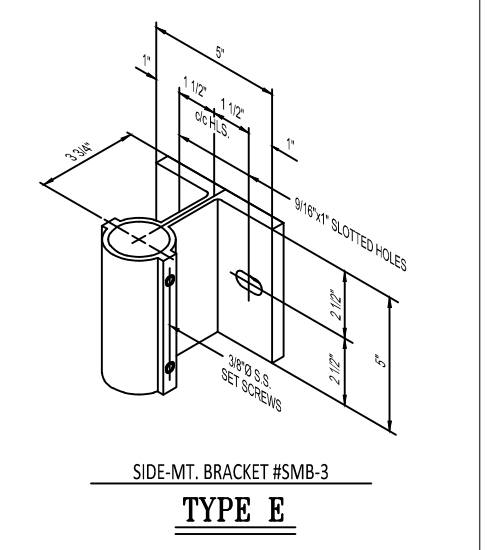
DETAIL 6



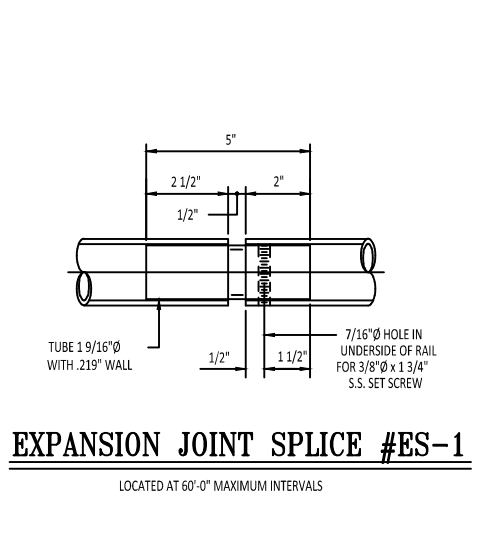
TYPE C



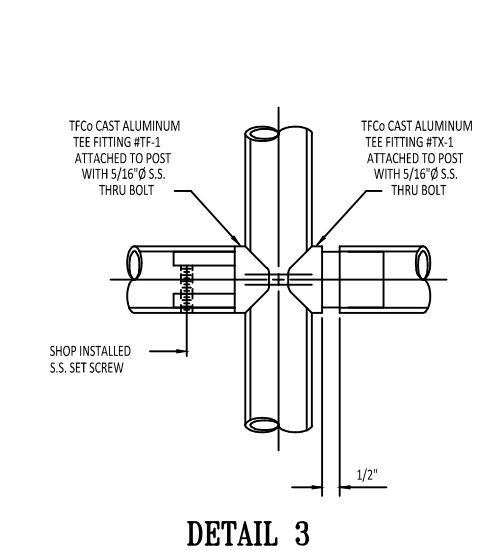
TYPE D



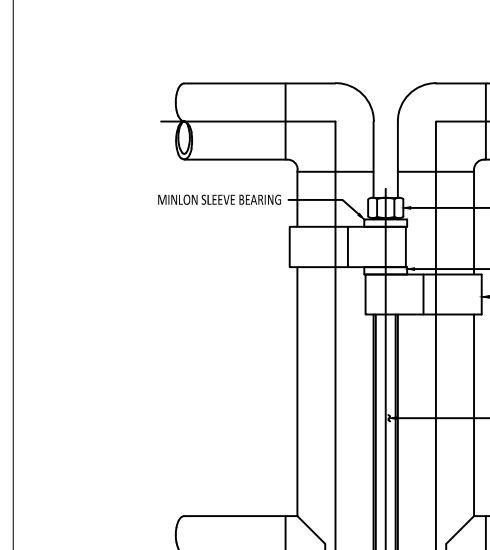
TYPE E



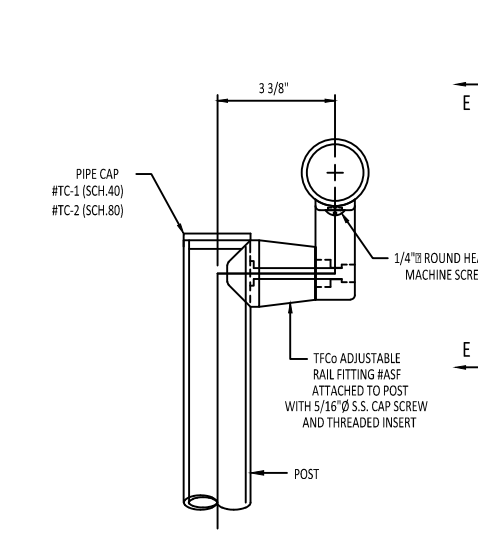
EXPANSION JOINT SPLICE #ES-1



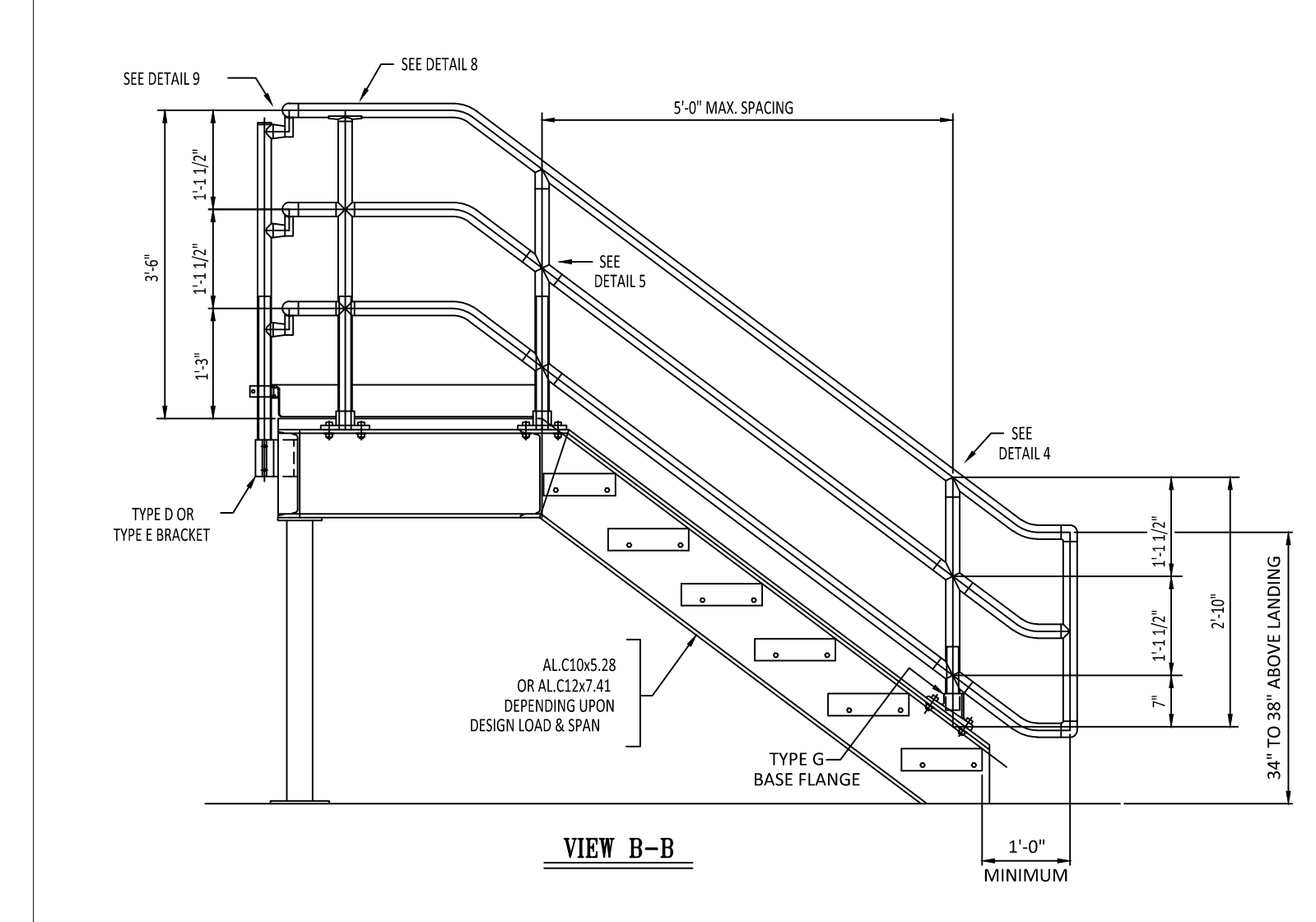
DETAIL 3



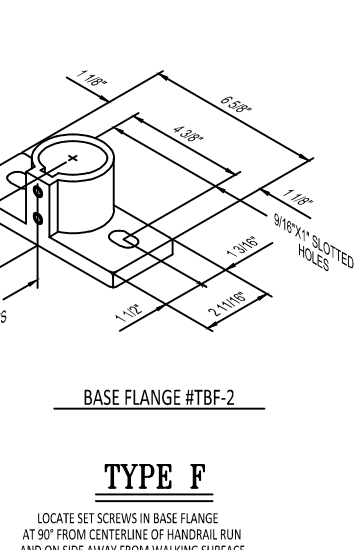
DETAIL 7



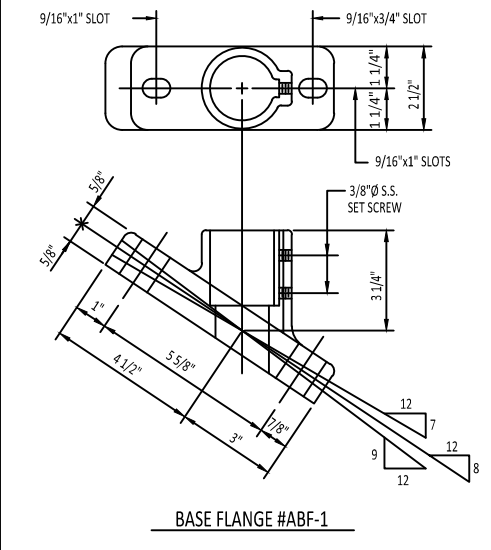
DETAIL 9



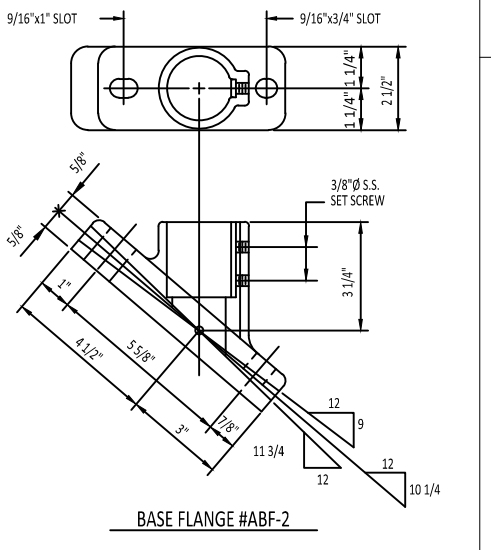
VIEW B-B



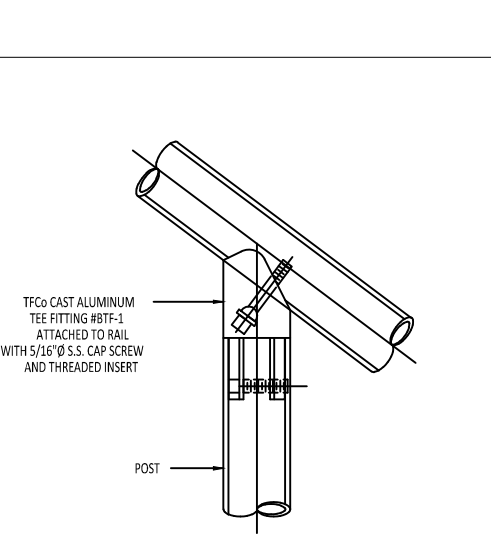
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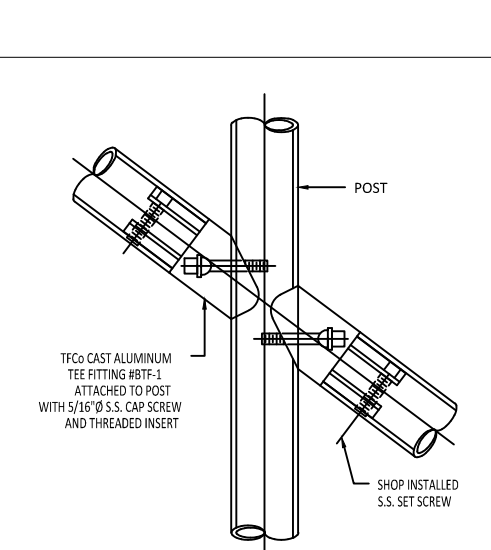
TYPE G



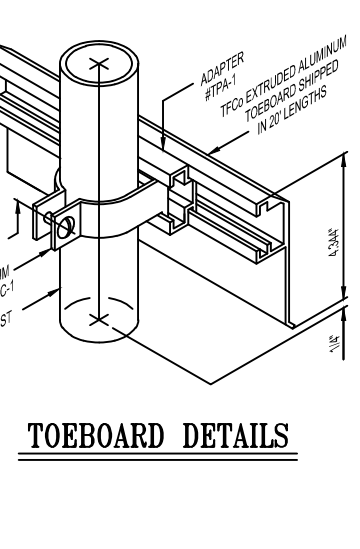
TYPE G



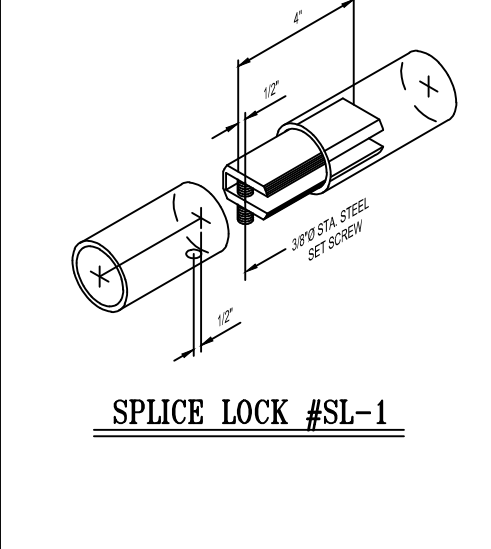
DETAIL 4



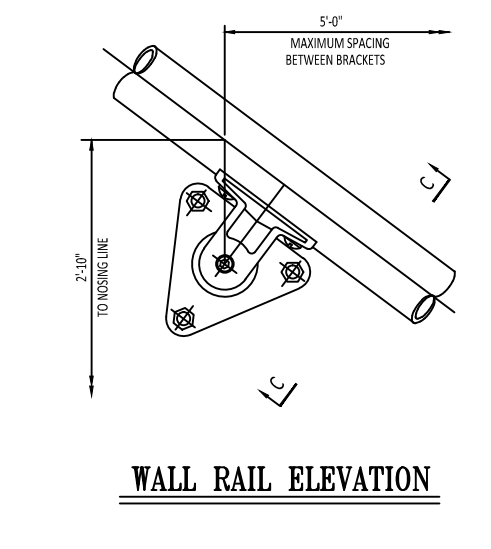
DETAIL 5



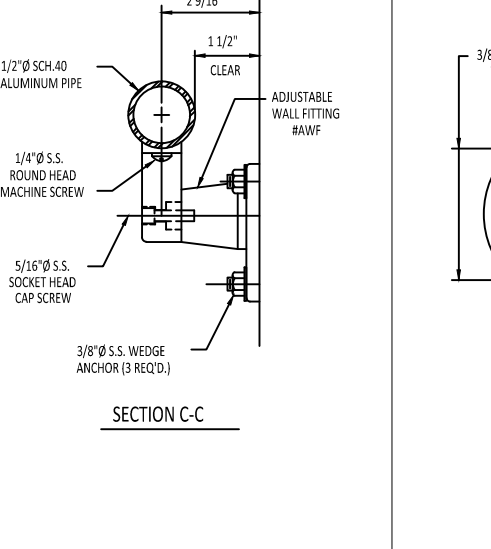
TOEBOARD DETAILS



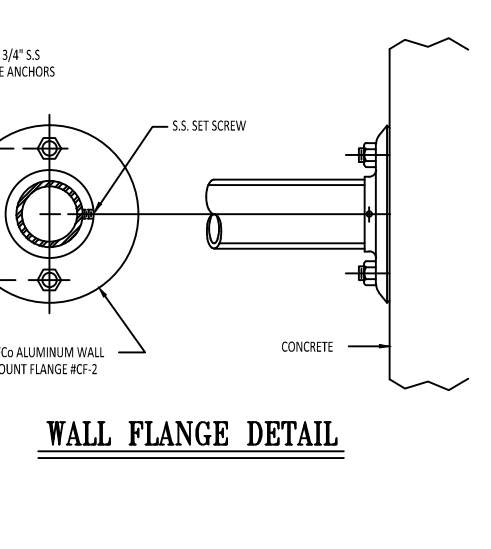
SPLICE LOCK #SL-1



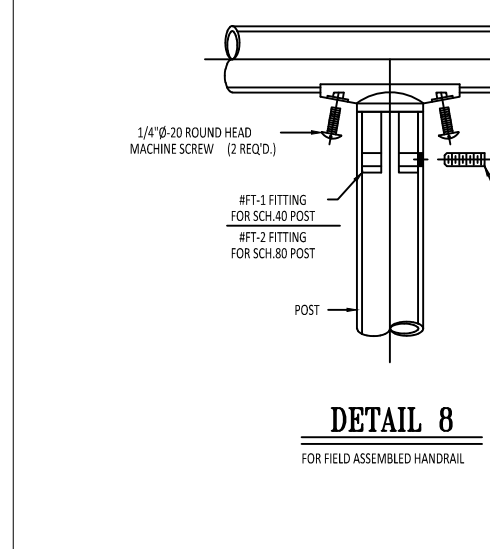
WALL RAIL ELEVATION



SECTION C-C



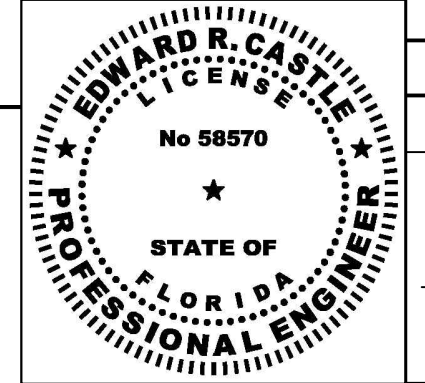
WALL FLANGE DETAIL



DETAIL 8

UNIFORM BUILDING CODE DESIGN SPECIFICATIONS

- Handrail shall be the product of a company normally engaged in the manufacture of pipe railing. Railing shall be shop assembled in lengths not to exceed 24 feet for field erection.
- Handrails and stair rails shall be designed to withstand a 200# concentrated load applied in any direction at any point on the top rail. Handrails and stair rails shall also be designed to withstand a load of 50#/ft applied horizontally to the top rail. The 200# load will not be applied simultaneously with the 50#/ft load. In addition, the handrails shall be designed to withstand a load of 100#/ft applied vertically downward to the top rail and simultaneously with the 50#/ft horizontal load. The 100#/ft vertical load does not apply to stair rails.
- The manufacturer shall submit calculations to the Engineer for approval. Testing of base castings or base extrusions by an independent lab or manufacturer's lab (if manufacturer's lab meets the requirements of the Aluminum Association) will be an acceptable substitute for calculations. Calculations will be required for approval of all other design aspects.
- Post spacing shall be a maximum of 6'-0". Posts and railings shall be a minimum of 1-1/2" Schedule 40 aluminum pipe alloy 6105-15, ASTM-B-429 or ASTM-B-221. The handrail manufacturer shall show that their posts are of adequate strength to meet the loading requirements. If the manufacturer's posts are not of adequate strength, the manufacturer may reduce the post spacing or add reinforcing dowels or may do both in order to meet the loading requirements.
- The handrail shall be made of pipes joined together with component fittings. Samples of all components, bases, toe plate and pipe must be submitted for approval. Components that are pop-riveted or glued at the joints will not be acceptable. All components must be mechanically fastened with stainless steel hardware. Handrail and components shall be bbf Rail, as manufactured by Thompson Fabricating Company (Birmingham, Alabama) or an approved equal.
- Posts shall not interrupt the continuation of the top rail at any point along the railing, including corners and end terminations (OSHA 1910.23). The top surface of the top railing shall be smooth and shall not be interrupted by projected fittings.
- The midrail at a corner return shall be able to withstand a 200# load without loosening. The manufacturer is to determine this dimension for their system. Provide physical tests from a laboratory to confirm compliance.
- Expansion bolts shall be spaced 10d apart and 5d edge distance for no reduction in pullout strength. A safety factor of 4 shall be used on expansion bolt pullout values published by the manufacturer. Expansion bolts shall be stainless steel type 18-8 wedge bolts and shall be furnished by the handrail manufacturer.
- Toe plate shall conform to OSHA standards. Toe plate shall be a minimum of 4" high and shall be an extrusion that attaches to the posts with clamps which will allow for expansion and contraction between posts. Toe plates shall be set 1/4" above the walking surface. Toe plates shall be provided on handrails as required by OSHA and/or as shown on drawings. Toe plates shall be shipped loose in stock lengths with pre-manufactured corners for field installation.
- Openings in the railing shall be guarded by a self-closing gate (OSHA 1910.23). Safety chains shall not be used unless specifically shown on the drawings.
- Finish shall be Aluminum Association M10-C22-A41 (215-R1). The pipe shall be plastic-wrapped. The plastic wrap is to be removed after erection.
- Aluminum surfaces in contact with concrete, grout or dissimilar metals will be protected with a coat of bituminous paint, mylar isolators or other approved material.



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