

CONCRETE GROUND STORAGE TANK FOUNDATION SPECIFICATION

All structural areas, including 7.0-ft outside their limits, should be stripped, excavated, and undercut to a depth of 2.5 feet below existing ground surface. All obstructions, topsoil, and other organic or deleterious materials shall be removed. In localized areas where organics/roots or other deleterious materials extend to greater depths, further excavation and backfilling may become necessary. Fill should not be placed until the excavated surface has been inspected by the Engineer and approved for compaction and placement of structural backfill operations.

All stripped or undercut areas should be proof-rolled with appropriate compaction equipment for site and soil conditions. This would typically consist of a vibratory drum type compactor for sandy soils. The moisture content should be adjusted as necessary to aid compaction efforts.

Care should be taken to avoid damage to any nearby or adjacent structures while compaction operations are ongoing. Prior to initiating compaction operations occupants of nearby or adjacent structures should be notified and the existing conditions of the structures should be documented with photographs and survey (if deemed necessary). Compaction should cease if deemed potentially detrimental to nearby or adjacent structures. It is recommended a vibratory roller maintain a minimum separation of 30-ft from existing structures. Within this zone use of a track-mounted bulldozer or a vibratory roller operating in a static mode is recommended.

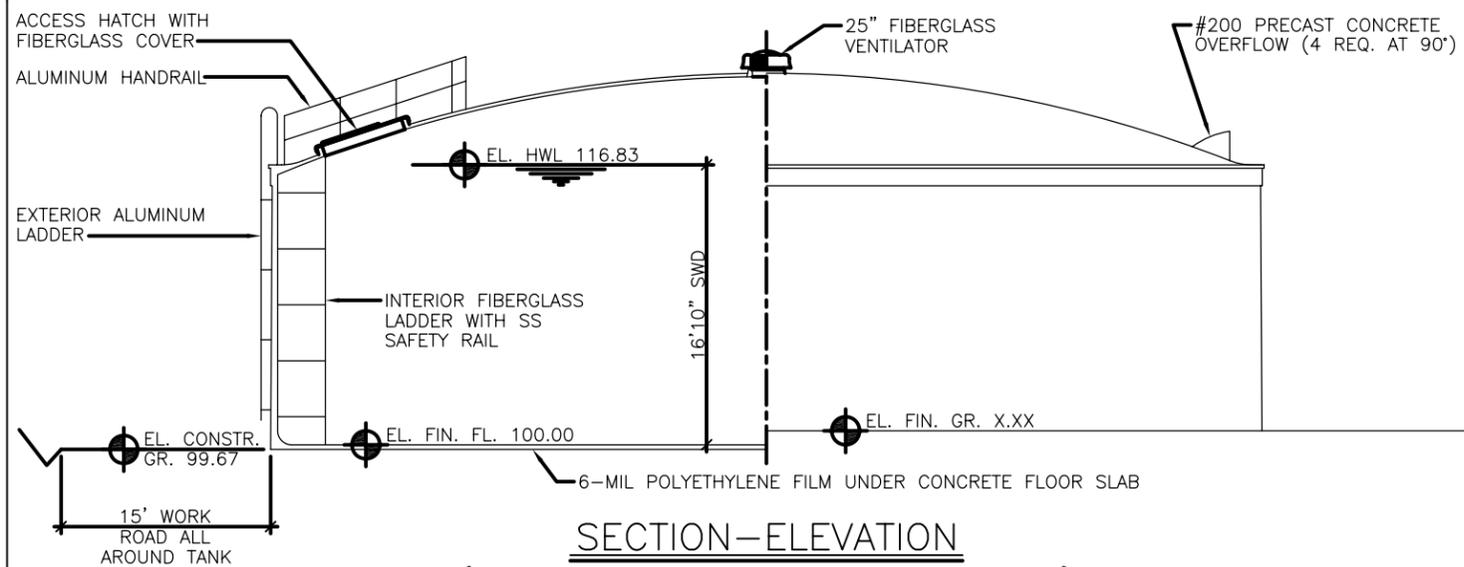
In any areas observed to be “yielding” or “pumping” during compaction operations, localized cuts or trenches may be made to evaluate the conditions of the soils. As indicated above, localized unstable areas or areas containing organics/roots or other deleterious materials discovered during stripping and compaction may require excavation and backfilling.

Foundation bearing soils within the structural footprint should be excavated to the proposed bottom of footing elevations utilizing every effort to minimize disturbance of the soils resting at the bearing surface. Next, the foundation bearing soils should be tested for compaction to a target of 95 percent of the maximum dry density determined from ASTM D 1557, *Test Method for Compaction Characteristics Using Modified Effort* or 98 percent of the maximum dry density determined from ASTM D 698, *Test Method for Compaction Characteristics Using Standard Effort*. The bearing surface, including all areas within the structural footprint, must be inspected and tested to 1.0-ft below the prepared undercut elevation and approved by the Engineer.

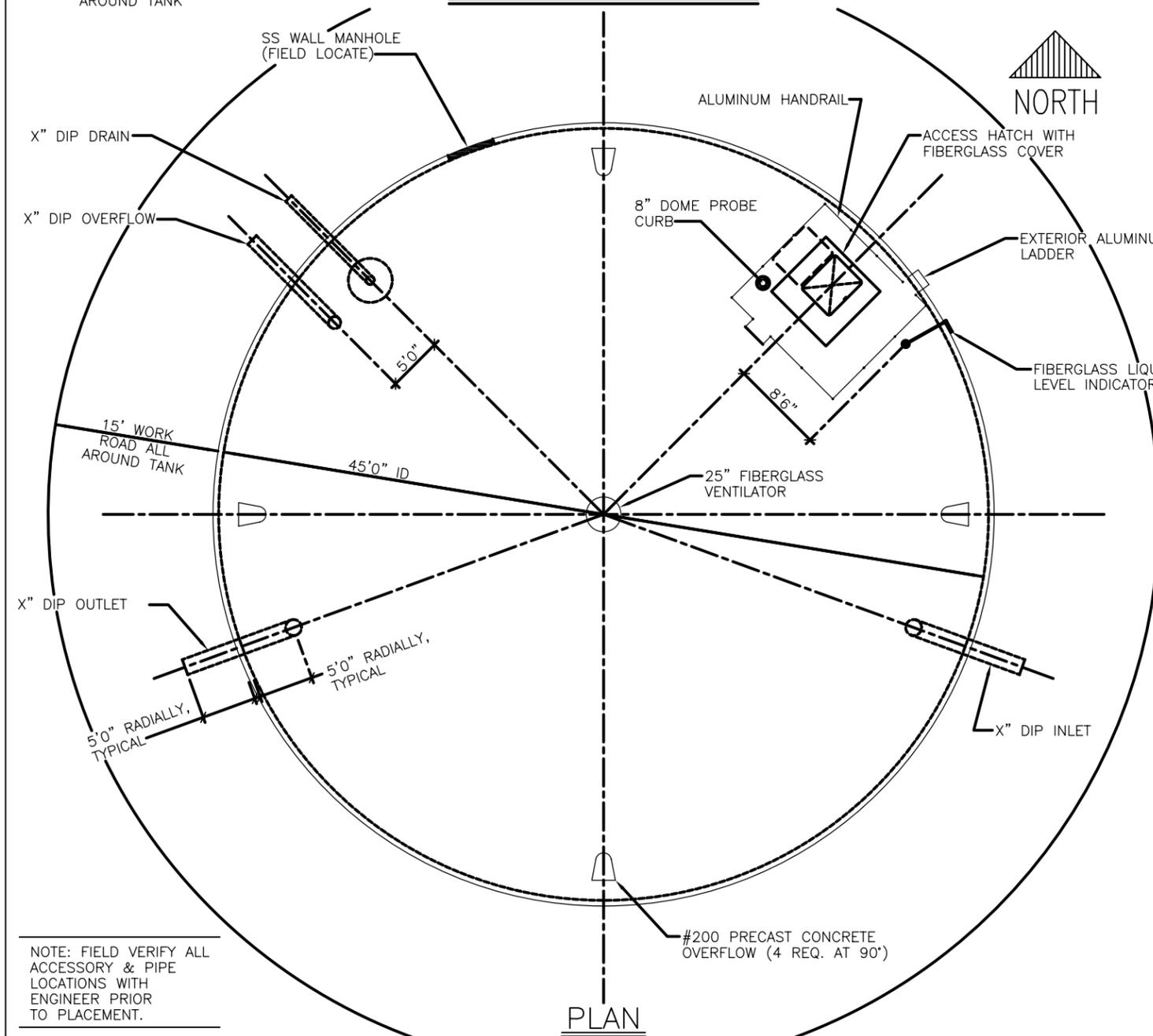
If any foundation bearing soils are determined to be deficient, then the footing bottoms should be compacted utilizing hand-held compaction equipment to achieve the compaction criterion outlined above. Over excavation and re-compaction may be necessary to fulfill the compaction criterion. It is important to note that the moisture content should be strictly controlled during any compaction procedures.

Place fill materials, lift thicknesses not greater than 12-in. Each lift should be placed and compacted, prior to placement of the next lift. Field density tests should be performed to at least 1.0-ft below the stripped, excavated, proof-rolled, and compacted surface of natural soils. Additional field density tests should be performed for each 1.0-ft lift of fill placed. Any areas not in compliance with the compaction requirements should be reworked and retested prior to placement of the next lift of fill. All fill material in the proposed structural areas should be compacted to 95 percent of the maximum dry density determined from ASTM D 1557, *Test Method for Compaction Characteristics Using Modified Effort* or 98 percent of the maximum dry density determined from ASTM D 698, *Test Method for Compaction Characteristics Using Standard Effort*.

Fill materials should preferably consist of select fill containing less than 10 percent fines (i.e., less than 10 percent passing the # 200 sieve). It is noted that select fill towards the upper end of this limit (i.e., 7 to 10 percent fines) may require strict moisture control during compaction. Additionally, select fill would be free of organics and other deleterious materials.



SECTION-ELEVATION

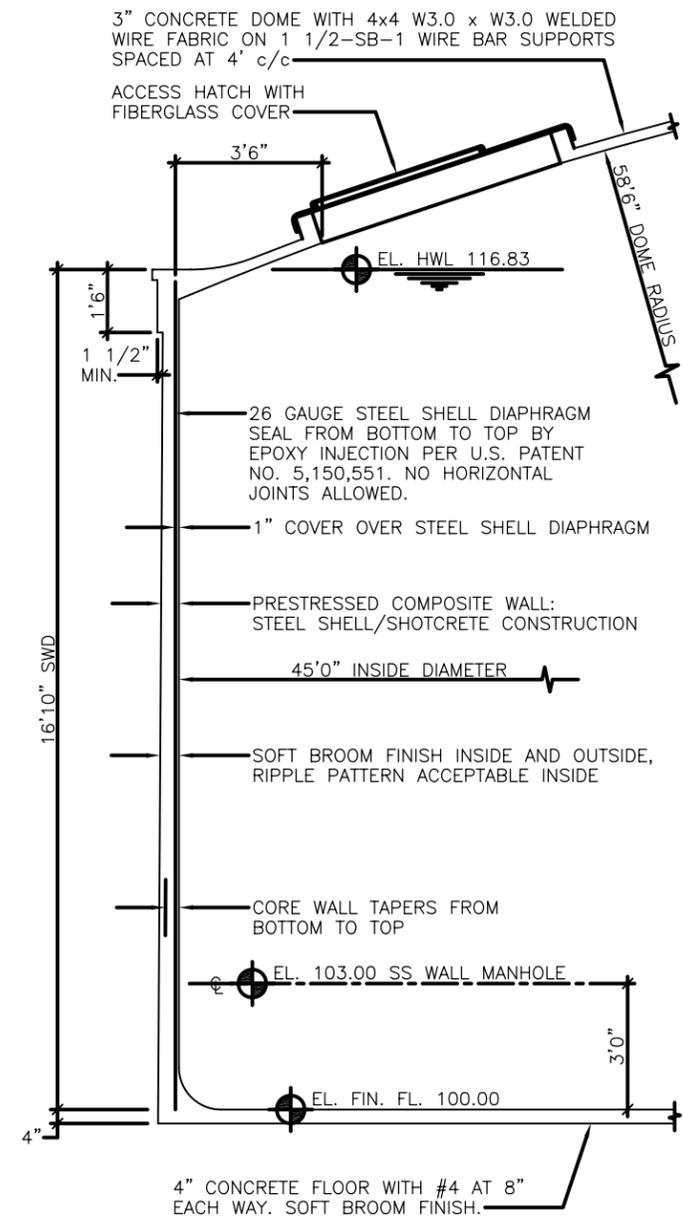


PLAN

NOTE: FIELD VERIFY ALL ACCESSORY & PIPE LOCATIONS WITH ENGINEER PRIOR TO PLACEMENT.

NOTES:

- SHOTCRETE SHALL BE APPLIED BY OR UNDER DIRECT SUPERVISION OF NOZZLEMEN CERTIFIED BY THE AMERICAN CONCRETE INSTITUTE AS OUTLINED IN ACI CERTIFICATION PUBLICATION CP-60.
- TENSION IN PRESTRESSING WIRE SHALL BE MEASURED BY AN ELECTRONIC DIRECT-READING STRESSOMETER ACCURATE TO WITHIN 2%.



TYPICAL WALL SECTION



TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
COLUMBIA COUNTY,
FLORIDA

CONSULTING ENGINEER:

TANK DESCRIPTION:
200,000-GALLON
WATER STORAGE TANK

TANK DIMENSIONS:
45'0" ID x 16'10" SWD

DATE: 8/11/08

DRAWN: KJK

CHECKED:

APPROVED:

DESIGNED:

REV.	DESCRIPTION	DATE

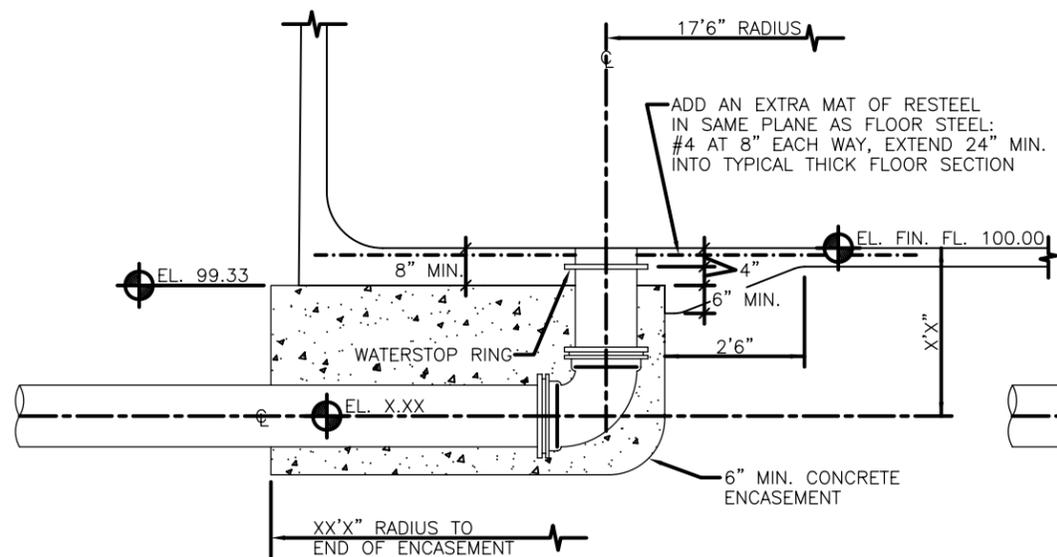
WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE-STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED. THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 1"

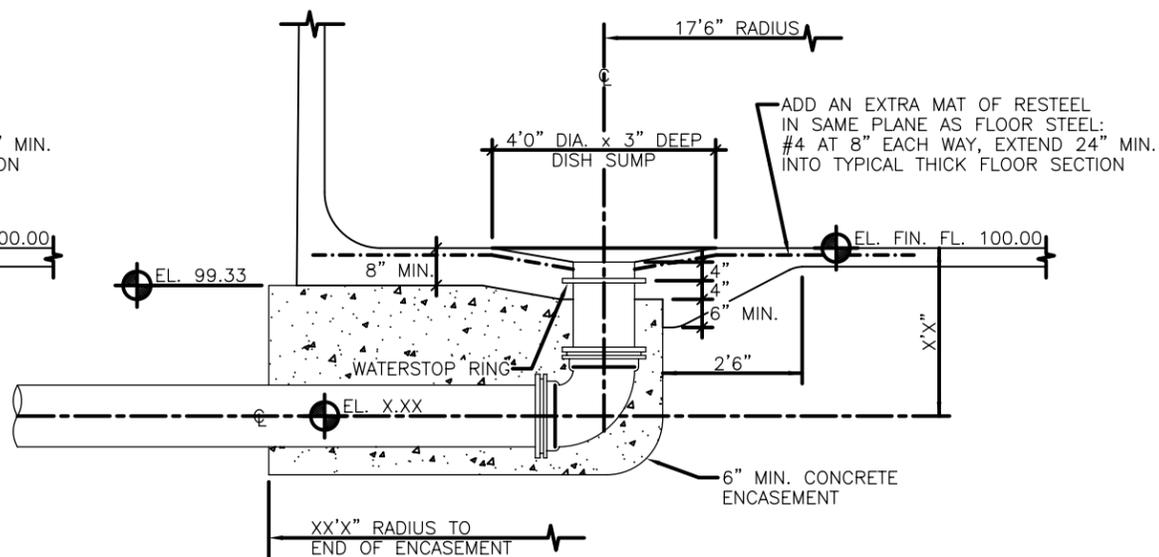
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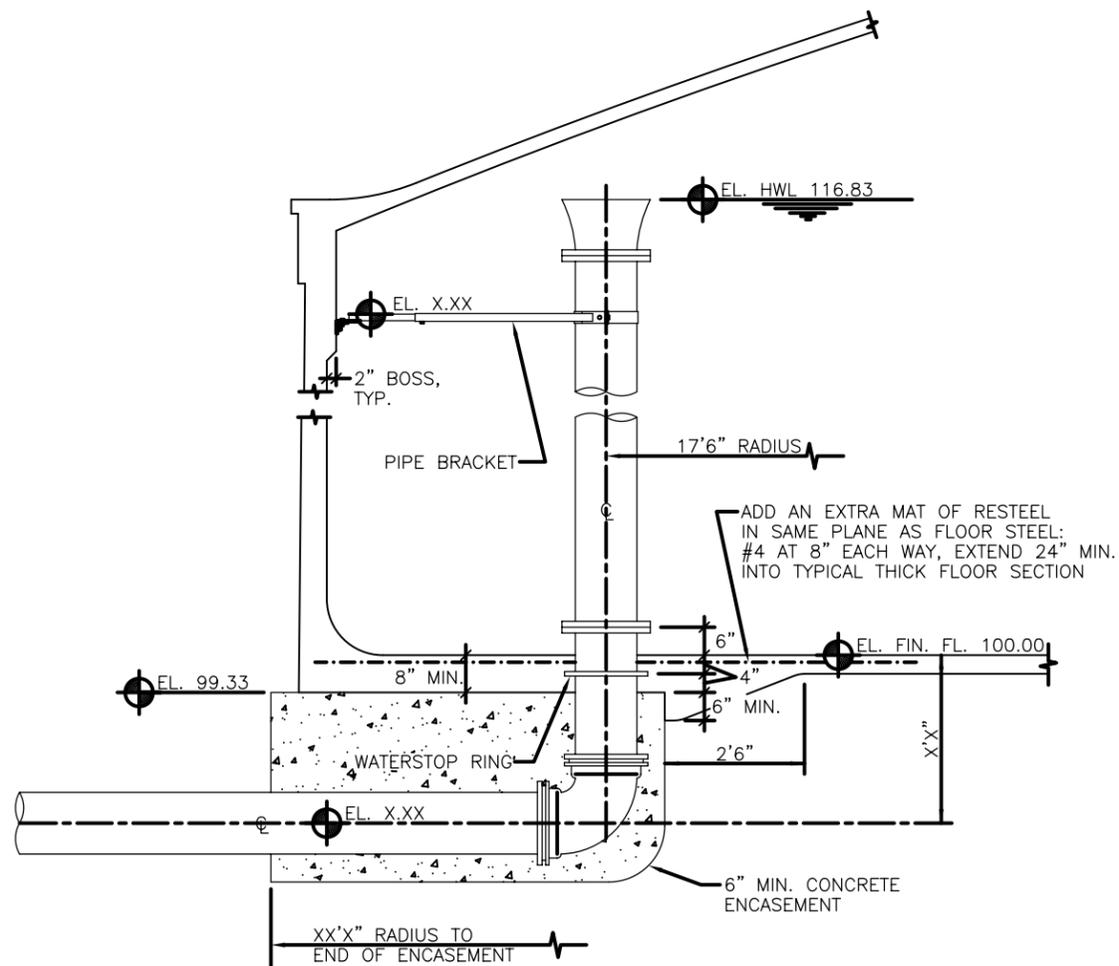
SHEET 1 **OF** 4



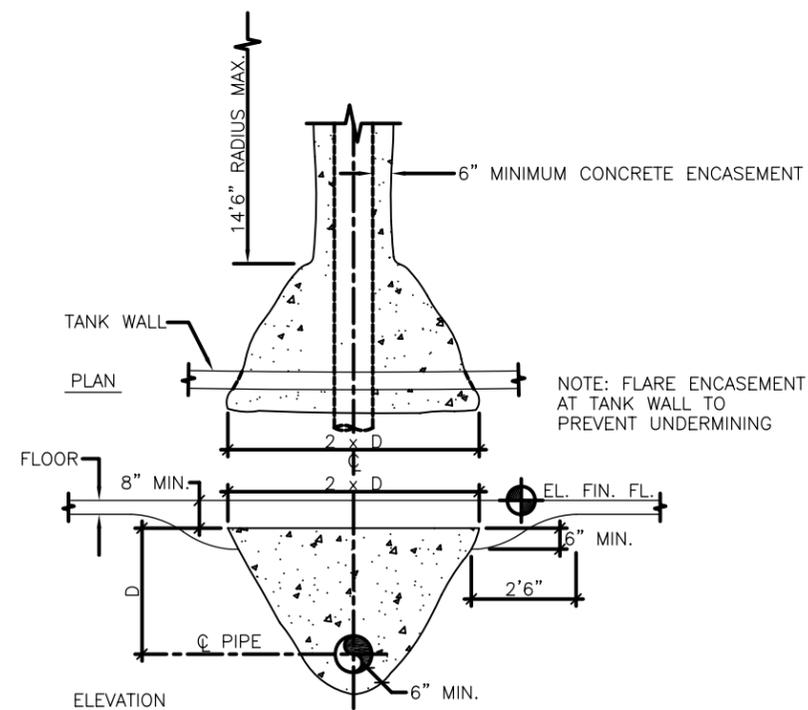
X" DIP INLET AND X" DIP OUTLET



X" DIP DRAIN



X" DIP OVERFLOW



TYPICAL PIPE ENCASUREMENT AT WALL

TANK BUILDER:
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FLORIDA

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REV.	DESCRIPTION	DATE

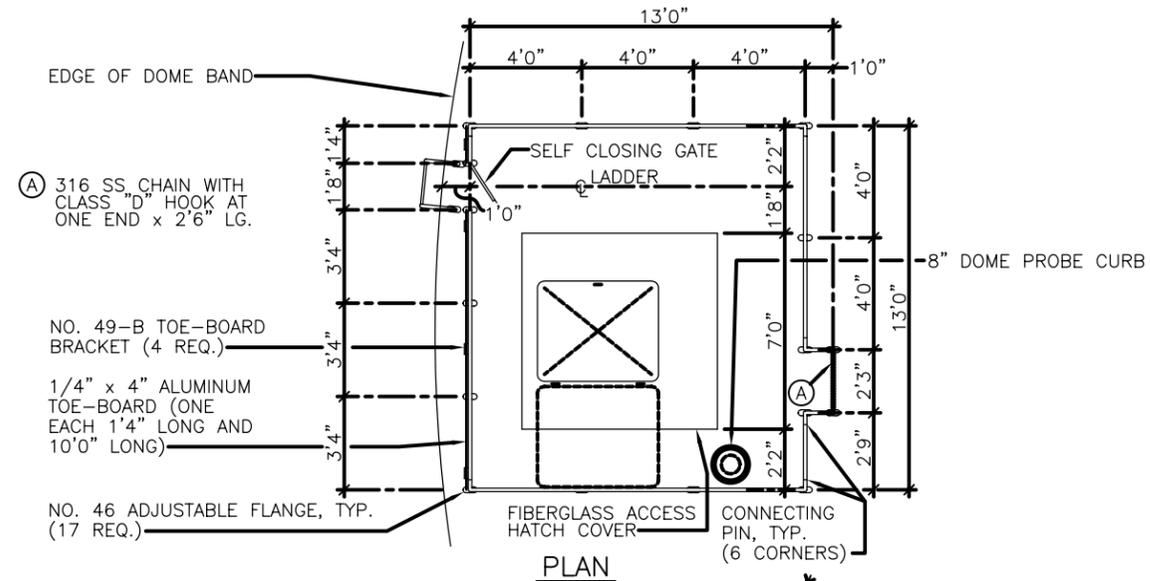
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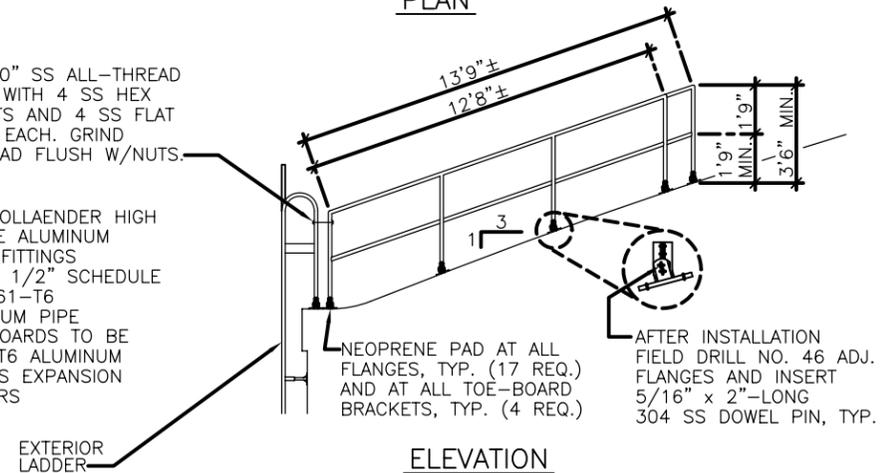
SHEET 2 **OF** 4



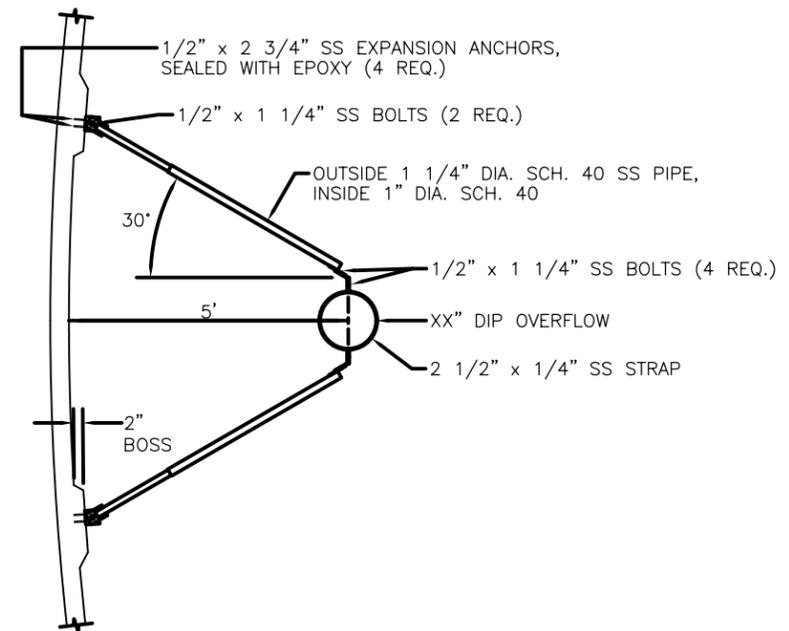
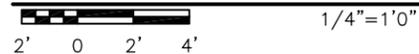
3/8" x 10" SS ALL-THREAD (2 REQ.) WITH 4 SS HEX HEAD NUTS AND 4 SS FLAT WASHERS EACH. GRIND ALL-THREAD FLUSH W/NUTS.

NOTES:

1. USE HOLLANDER HIGH TENSILE ALUMINUM ALLOY FITTINGS
2. USE 1 1/2" SCHEDULE 40/6061-T6 ALUMINUM PIPE
3. TOE-BOARDS TO BE 6061-T6 ALUMINUM
4. USE SS EXPANSION ANCHORS



ALUMINUM HANDRAIL



PIPE BRACKET
NTS

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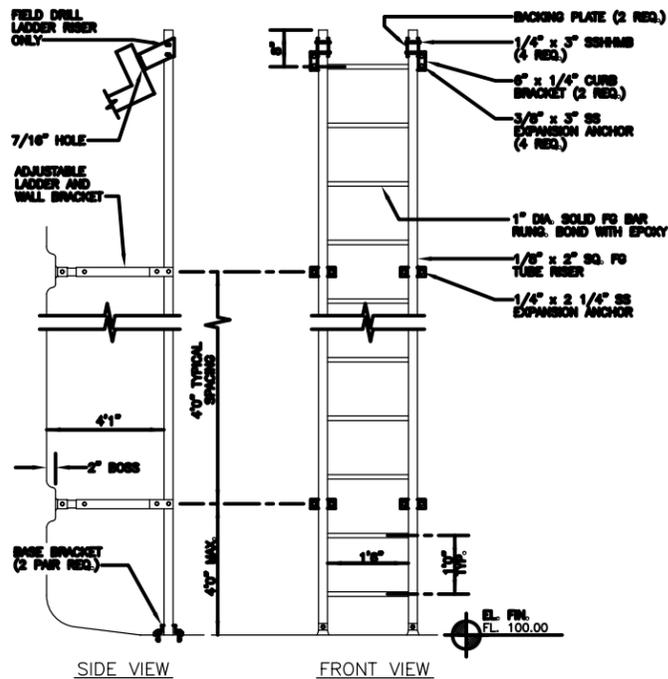
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FILE NO.

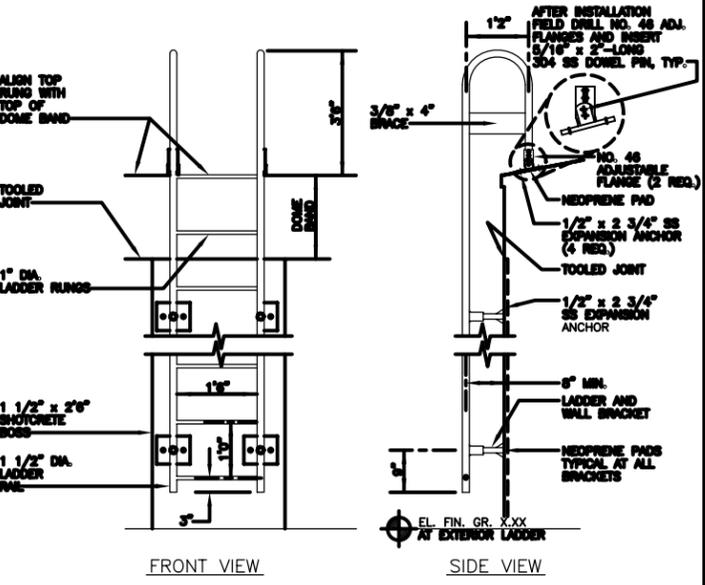
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SHEET 3 OF 4



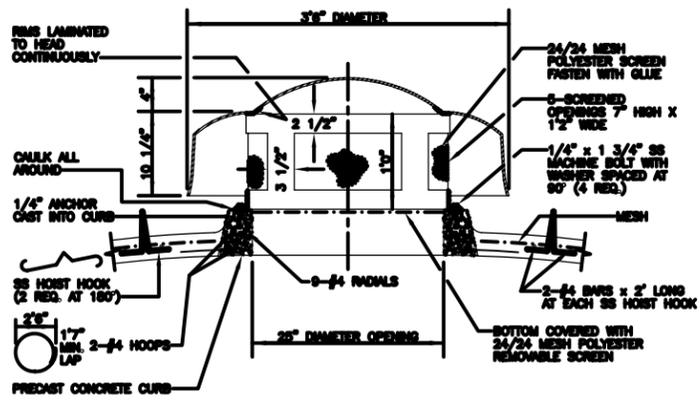
NOTE: 1/4" x 2" FLAT BAR FIBERGLASS CROSS-BRACE TO BE PROVIDED FOR BRACING WALL BRACKET SUPPORTS ON EVERY BRACKET.

INTERIOR FIBERGLASS LADDER WITH SS SAFETY RAIL

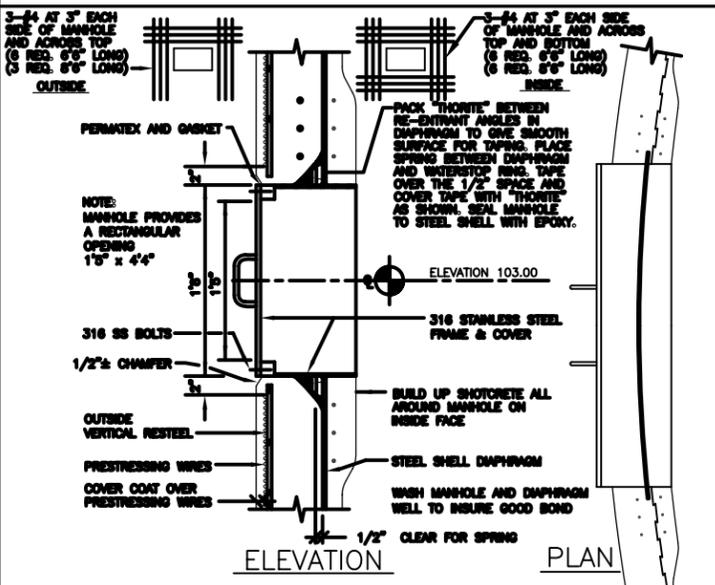


NOTES: 1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6 OR 6063-T6.
2. FLANGE AND GASKETS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.

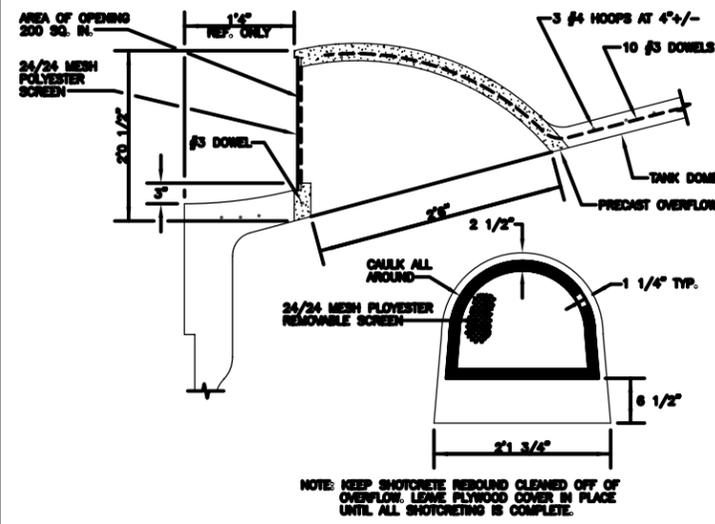
EXTERIOR ALUMINUM LADDER WITH SAFETY RAIL



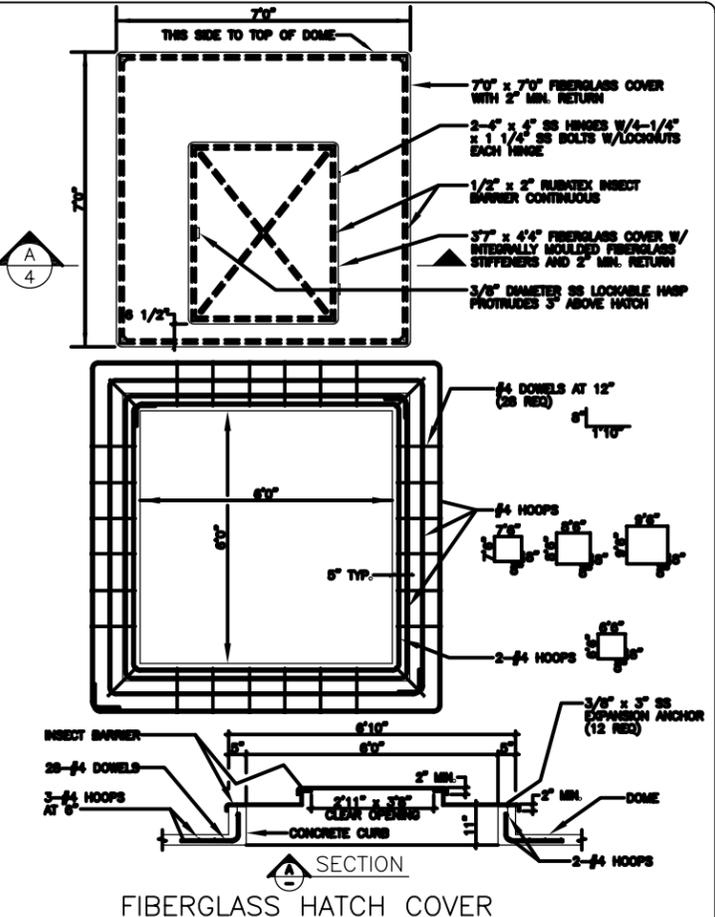
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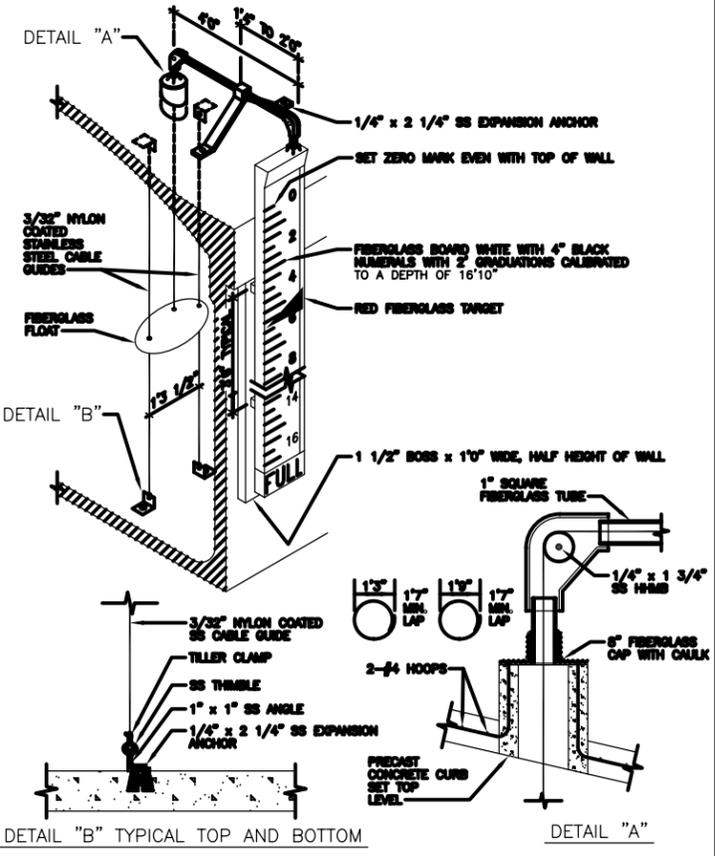
STAINLESS STEEL WALL MANHOLE



#200 PRECAST CONCRETE OVERFLOW (4 REQ.)



FIBERGLASS HATCH COVER



FIBERGLASS LIQUID LEVEL INDICATOR



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