

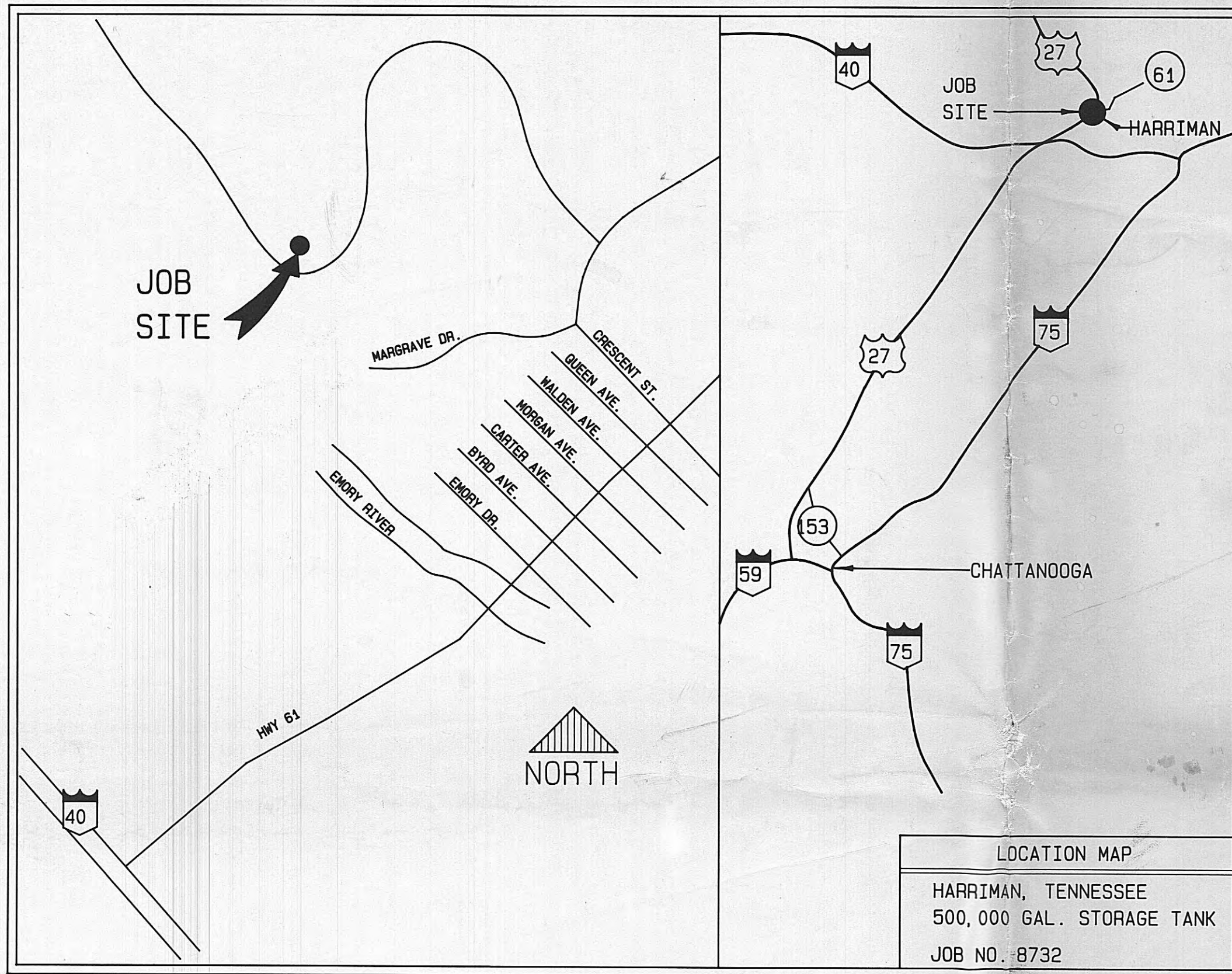


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500,000 GALLON WATER STORAGE TANK

WATER SYSTEM IMPROVEMENTS
HARRIMAN, TENNESSEE

CONSULTING ENGINEERS:
WHITE-TAYLOR-WALKER, INC.
BRENTWOOD, TENNESSEE

☐ NO EXCEPTION TAKEN ☐ REVISE AND RESUBMIT
☐ REJECTED ☒ FURNISH AS CORRECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

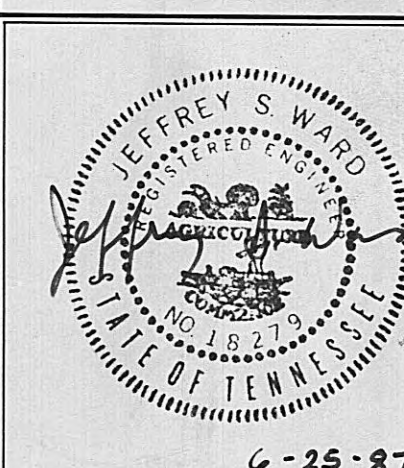
WHITE TAYLOR WALKER
CONSULTING ENGINEERS, INC.

Date 7-29-87 By ETL



THE CROM CORPORATION

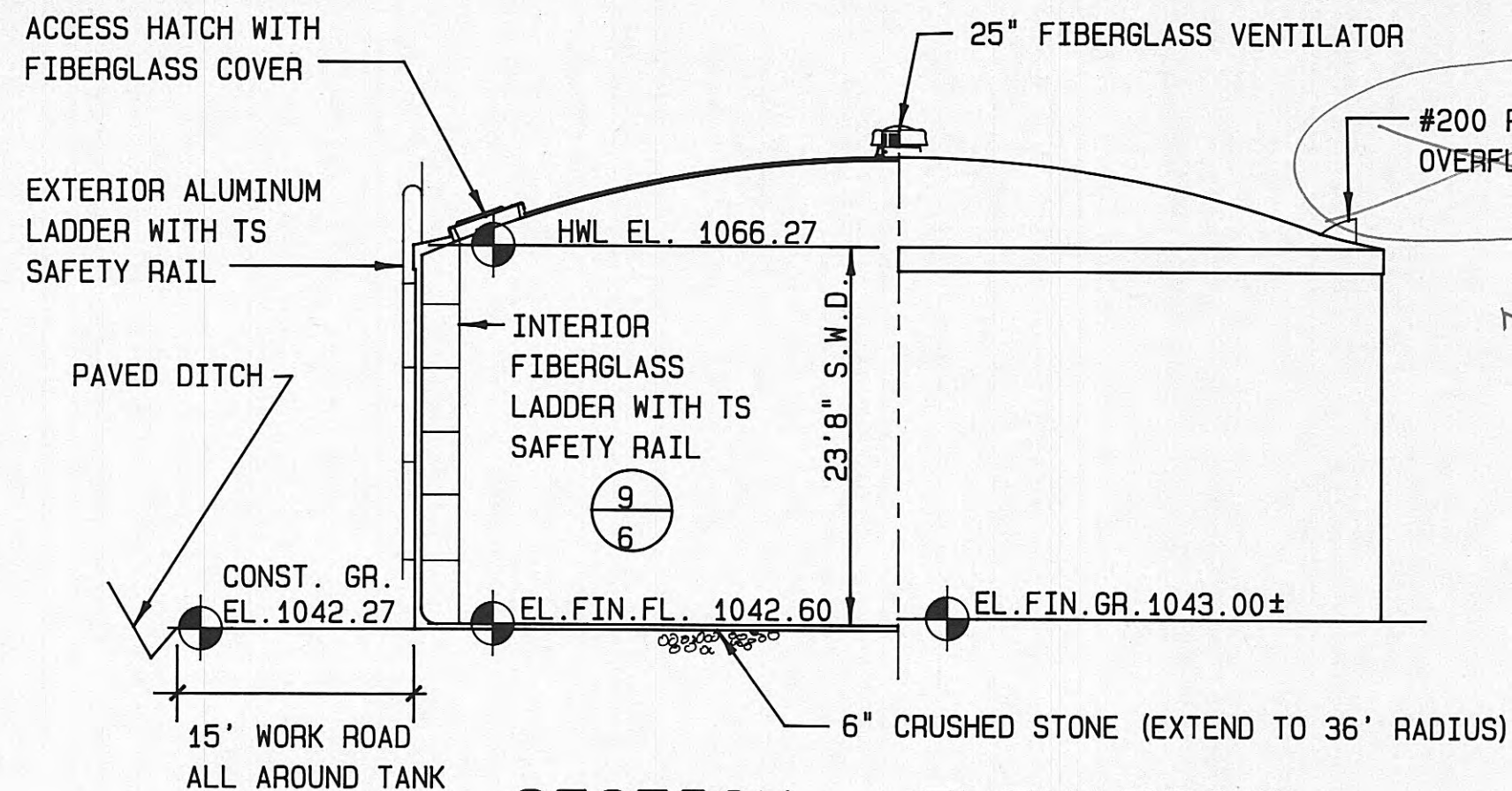
Prestressed Composite Tanks



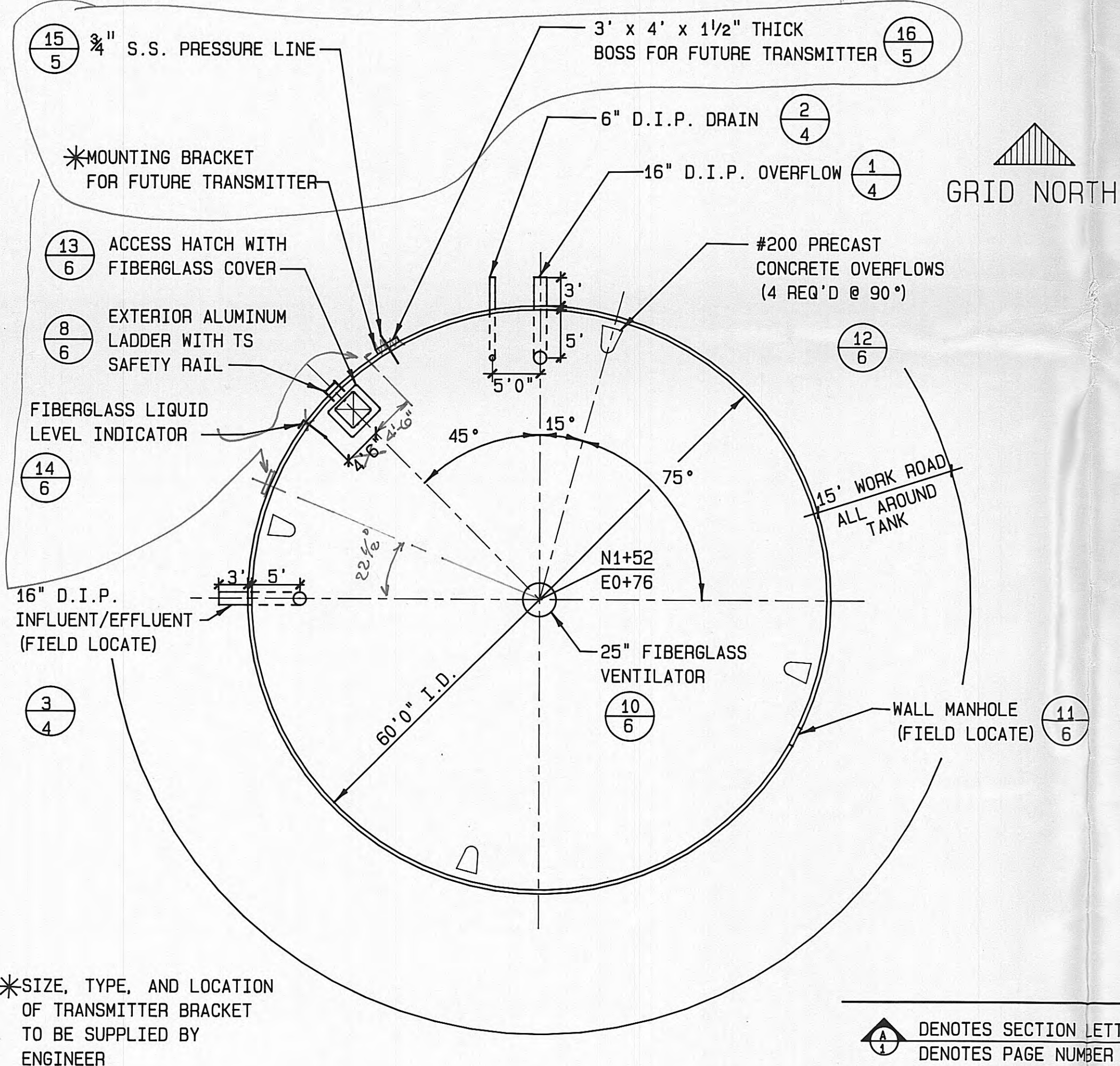
REV.	COMMENTS	DATE

Revisions are designated by a letter following the FILE NUMBER.
UPPER CASE letters indicate APPROVED distribution.

DATE: 6-1-87	FILE NUMBER:	SHEET
DRAWN: WDT	8732	1 OF 6
CHKD: JLN		
APPVD: JDC		



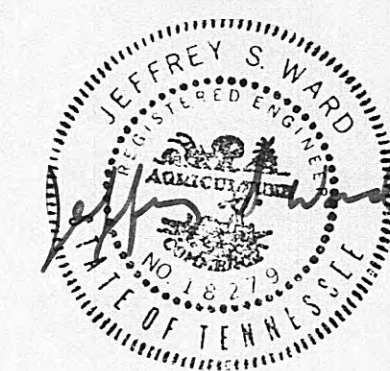
SECTION - ELEVATION



PLAN

NOTES

- A. Sitework: Material & Services Furnished By The Crom Corporation:
1. Clearing of the site, excavation, fill, compaction to an elevation 4" below top of floor slab on a 90' diameter circle.
 2. Dewatering of the 90' diameter work area if required.
 3. Furnish adequate working and open storage space for construction equipment and materials.
 4. Water and electricity for construction.
 5. Testing and disinfection of tank.
 6. Final backfill and landscaping.
 7. Inspector to approve site before placement of gravel.
- B. Concrete: Use Type I Cement.
1. 3500 psi with 3/4" aggregate for floor.
 2. 3500 psi with 3/8" aggregate pump mix for dome.
 3. 2500 psi for pipe encasement.
- C. Shotcrete Mixes: Use Type I Cement. f'g = 4000 psi
fg = 1520 psi
1. First coat on steel shell and prestressing wire: 1 to 3 mix
 2. All other shotcrete: 1 to 4 mix
- D. Material Testing:
1. Concrete: (3 cylinders per set) Test one at 7 days, one at 14 days, and one at 28 days.
 - A. 2 sets for floor.
 - B. 2 sets for dome.
 2. Shotcrete: (3 cylinders per set) Test one at 7 days, one at 28 days, and hold one.
 - A. 2 sets for outside core wall.
 - B. 2 sets for inside core wall.
 - C. 2 sets for cover coat.
- E. Curing:
1. Floor and walls to be water-cured during tank construction.
 2. Dome to be water-cured until prestressing is complete.
- F. Reinforcing Steel:
1. ASTM A-615 grade 40, lap 24 diameters.
 2. Use 2" slab bolsters with plate to support floor resteel.
- G. Prestressing Wire: Meets ASTM Spec. A-648-73 Class II
1. Aw : 0.0206 square inch
 2. Dia: 0.1620"
 3. Ultimate stress: 231,000 psi
 4. Initial stress: 145,600 psi
 5. Working stress, wall: 115,000 psi
dome ring: 120,000 psi
- H. Paint Schedule:
1. Exterior exposed surfaces: One coat "Thoroseal", two coats masonry paint.
 2. Interior surfaces: None.
- I. Accessories:
1. 25" fiberglass ventilator
 2. 200 square inch precast overflow, 4 req'd
 3. Precast access hatch curb with fiberglass cover
 4. Interior fiberglass ladder with TS Safety Rail
 5. Exterior aluminum ladder with TS Safety Rail
 6. Wall manhole
 7. Pipe sleeve for future transmitter
 8. Pipe bracket for 16" D.I.P. Overflow, 2 req'd
 9. Fiberglass Flange-flare for 16" D.I.P. Overflow
 10. Piping: 16" D.I.P. Overflow
16" D.I.P. Influent/Effluent
6" D.I.P. Drain
 11. Fiberglass liquid level indicator with precast curb
- J. Special Accessories
1. Mounting bracket for future transmitter
 2. Fiberglass mudsill



6-26-87

DATE: 6-2-87
DRAWN: WDT
CHKD: JW
APPVD: JDC

TANK DESCRIPTION:

500,000 GAL. RESERVOIR

TANK DIMENSIONS:

60'0" ID x 23'8" SWD

TANK BUILDER:

THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:

CITY OF
HARRIMAN, TENNESSEE

CONSULTING ENGINEER:

WHITE-TAYLOR-WALKER, INC
BRENTWOOD, TENNESSEE

REV.	DESCRIPTION	DATE	CK. BY

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

SCALE: 3/32" = 1'0"

FILE NO:
8732

SHEET 2 OF 6

DOME SHELL THICKNESS: 3" AT 4'-0" FROM WALL
 1 1/2" BOLSTER W/ PLASTIC TIPS (SB) ALL AROUND AT 3' & 5' FROM DOME EDGE TO SUPPORT RESTEEL
 FIELD BEND OUTSIDE VERTICAL RESTEEL TO PROVIDE 1" MINIMUM AND 2" MAXIMUM COVER
 EL. 1066.27 TOP OF WALL
 TOP OF STEEL
 SHELL DIAPHRAGM
 SPRINGLINE
 LIMIT OF DOME BAND
 PRESTRESSING WIRES
 1 1/2" MIN.
 SHOOT MIN. OF 1" COVER COAT OVER PRESTRESSING WIRES
 OUTSIDE VERTICAL RESTEEL
 CORE WALL = 3 1/2" AT TOP OF WALL
 4x4 W4.0 x W4.0 WELDED WIRE FABRIC EXTEND OVER DIAPHRAGM TO WITHIN 1 1/2" OF DOME EDGE
 4 #4's CIRCUMFERENTIALLY AT 3"
 #3 AT 48" (48 REQ'D)
 6-#4's CIRCUMFERENTIALLY (3 OUTSIDE, 3 INSIDE)
 NOTE: SEAL DOME RIB BRACKET ANCHORS WITH "THORITE"
 NOTE: PRIOR TO CASTING DOME, SANDBLAST TOP OF WALL AND IMMEDIATELY PRIOR TO CASTING, COAT WITH BONDING EPOXY (580).
 26 GAUGE STEEL SHELL DIAPHRAGM, 23'5 1/2" LONG

DOVE RING DETAIL

SHOOT MIN. OF 1" COVER COAT OVER
PRESTRESSING WIRES

PRESTRESSING WIRES

OUTSIDE VERTICAL RESTEEL: #4 AT 9"
ALTERNATE 27' & 29' LONG BARS
(128 EA. REQ'D)

SHOOT MIN. 1/8" COVER BETWEEN
VERTICAL BARS & PRESTRESSING WIRES
AND BETWEEN EACH LAYER OF
PRESTRESSING WIRES

1" COVER OVER DIAPHRAGM;
RIPPLE PATTERN ACCEPTABLE
60'0" I.D.

26 GAUGE STEEL SHELL
DIAPHRAGM SEALED WATER-
TIGHT BY EPOXY (16-26) INJECTION
NO HORIZONTAL JOINTS ALLOWED.

INSIDE VERTICAL RESTEEL:
#4 AT 12", ALTERNATE
5' & 7' LONG BARS
HOLD IN PLACE WITH
SPECIAL CLIPS

MID-WALL VERTICAL RESTEEL:
BARS AT 6" COMPRISED OF:
#5 AT 12" x 3' LONG &
#5 AT 12" x 2' LONG

HORIZONTAL WALL SECTION

CORE WALL=3 1/2" AT BASE OF WALL

OUTSIDE VERTICAL RESTEEL

PRESTRESSING WIRES

SHOOT MIN. 1" COVER COAT OVER PRESTRESSING WIRES

CLEAR DISTANCE BETWEEN DIAPHRAGM AND MID-WALL STEEL 3/4"

AT BASE OF WALL

7 #4 CIRCUMFERENTIALLY AT 6" ±

LIMIT OF PRESTRESSING WIRES

LIMIT OF STEEL SHELL

EL. 1042.27 CONST. 6R.

#5 AT 12" MIDWALL (192 REQ'D)

26 GAUGE STEEL SHELL DIAPHRAGM

#5 AT 12" MIDWALL (192 REQ'D)

2- #5 CIRCUMFERENTIALLY

EXPOSE CLEAN AGGREGATE PRIOR TO SHOOTING FILLET

*#4 CONCRETE FLOOR WITH #4 AT 8" EACH WAY.

FLOOR RESTEEL ON 2" SLAB BOLSTERS (SBP) SPACED 4' c/c

*EL.FIN.FL. 1042.60

*2-#5's CIRCUMFERENTIALLY

#5 AT 12" MID-WALL (192 REQ'D)

#4 AT 12" INSIDE FACE ALT.

59'6" DIAMETER OF FLOOR RESTEEL

INITIAL PRESTRESSING FORCE IN POUNDS

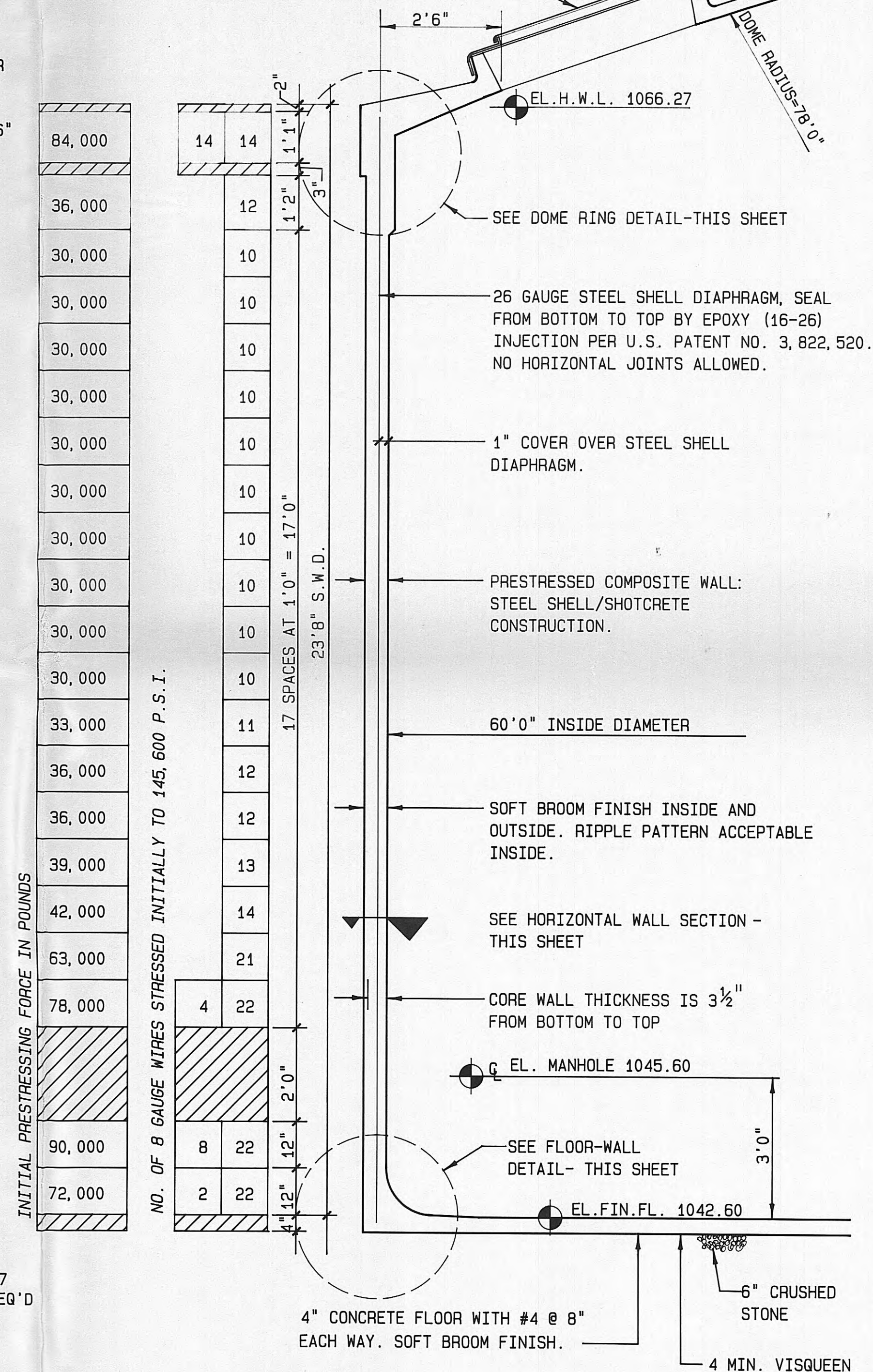
*NOTE: INCREASE FLOOR THICKNESS TO $4\frac{3}{4}$ "
AT EDGE OF CAST SLAB TO PROVIDE 1"
MIN. COVER OVER CIRCUMFERENTIAL #5 BARS

FLOOR-WALL DETAIL

TYPICAL WALL DETAILS SCALE: 1" = 1'0"

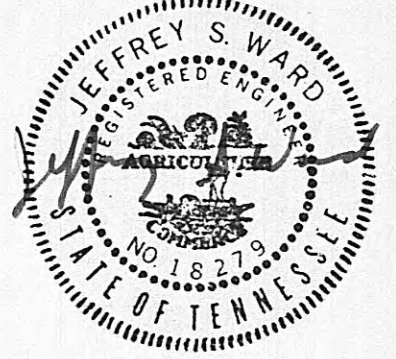
3" CONCRETE DOME WITH 4x4 W4.0xW4.0 WELDED WIRE FABRIC ON
1 1/2" BOLSTERS WITH PLASTIC TIPS SPACED AT 4' c/c

ACCESS HATCH WITH FIBERGLASS COVER



PRESTRESSING SCHEDULE

SCALE: 1/2" = 1'0"



6-25-87

DATE: 6-3-87
DRAWN: WDT
CHKD: JLW
APPVD: JDC

TANK DESCRIPTION:

500,000 GAL. RESERVOIR

TANK DIMENSIONS:

60'0" ID x 23'8"SWD

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:

CITY OF
HARRIMAN, TENNESSEE

CONSULTING ENGINEER:

WHITE-TAYLOR-WALKER, INC
BRENTWOOD, TENNESSEE

REV.	DESCRIPTION	DATE	CK. BY
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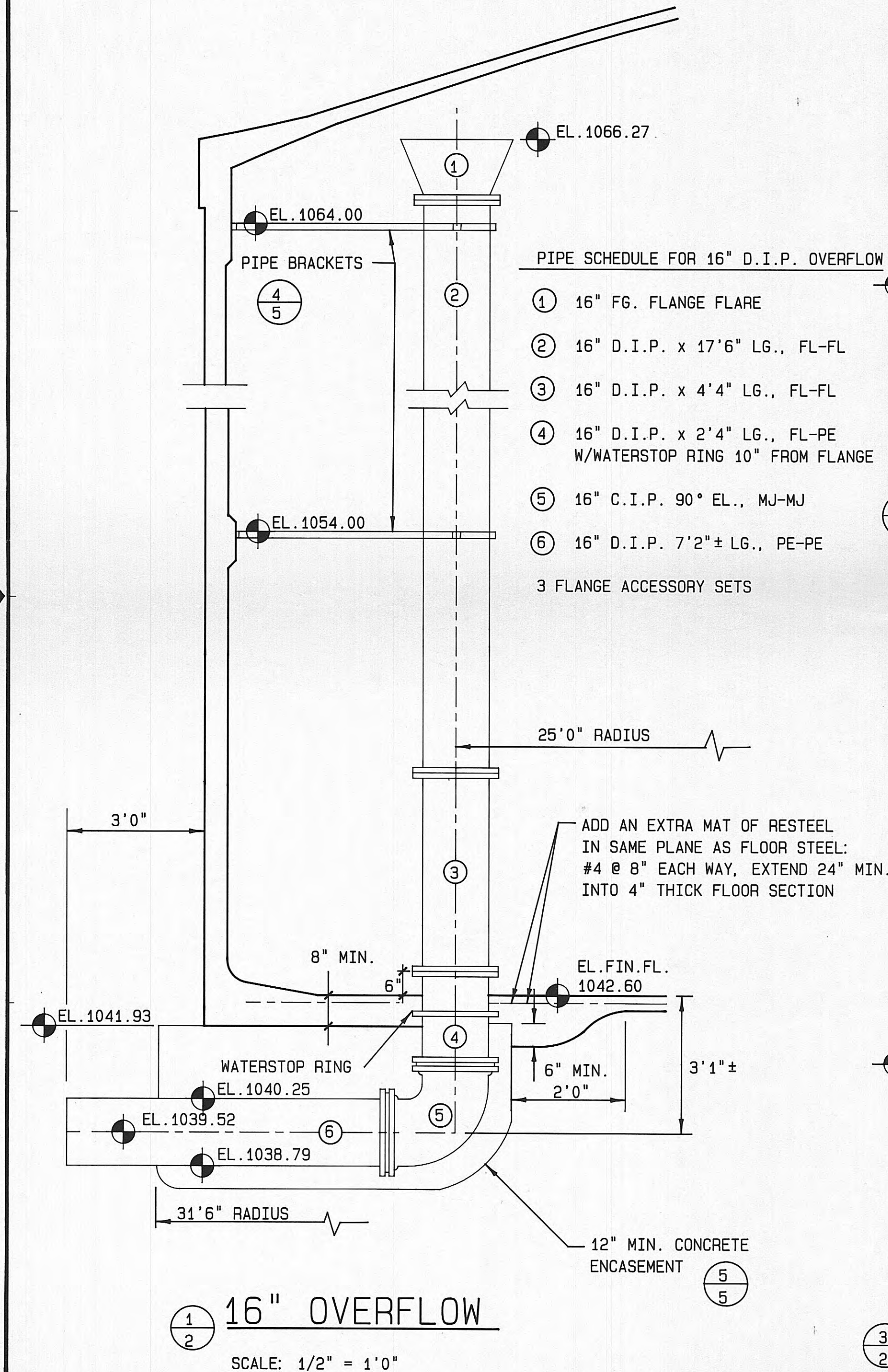
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SCALE: AS NOTED

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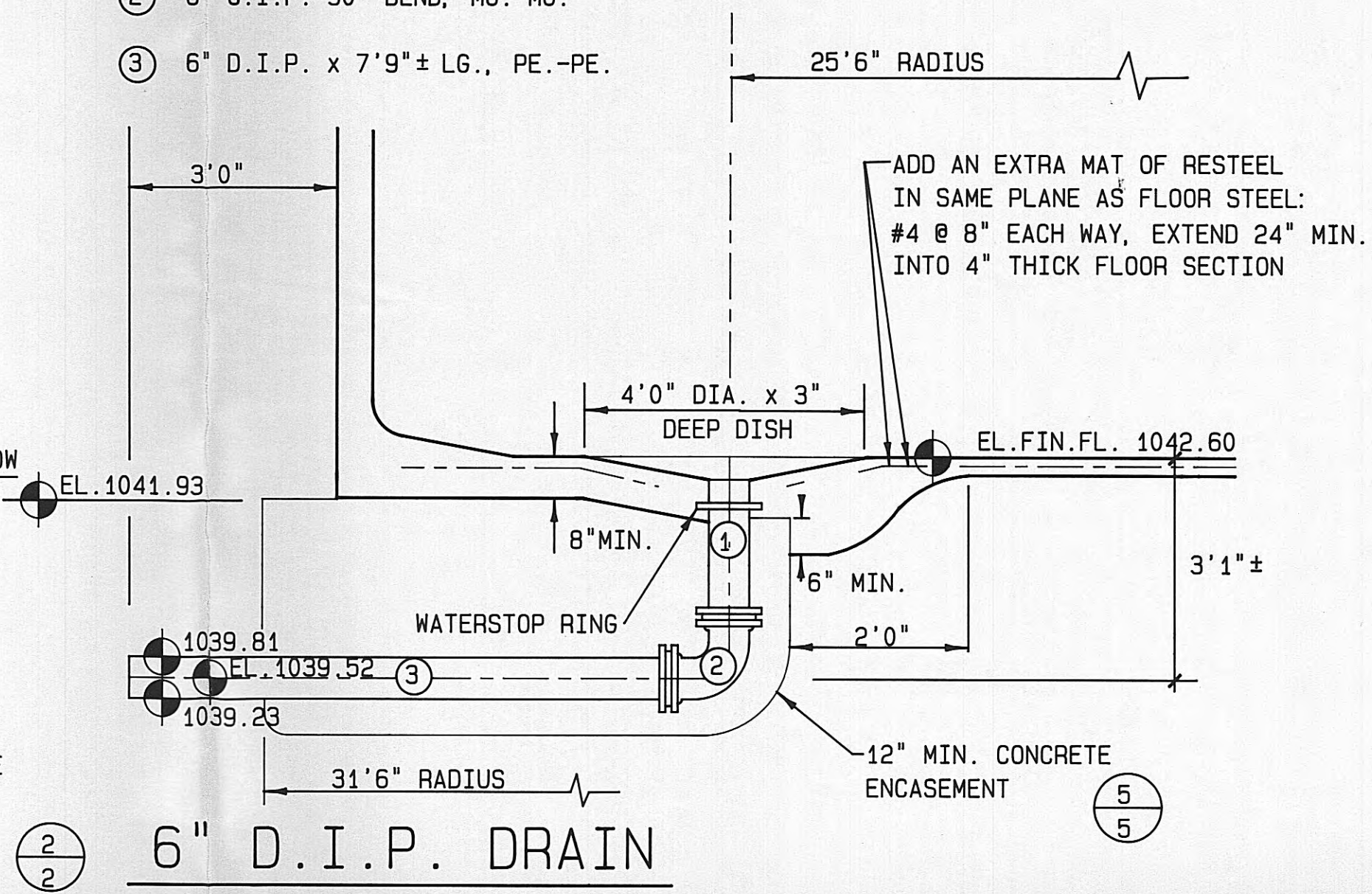
8732

SHEET 3 OF 6



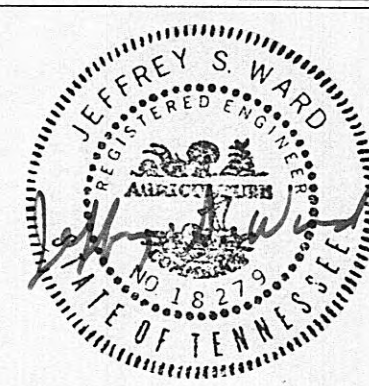
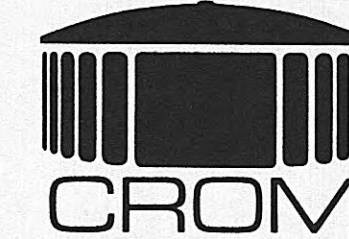
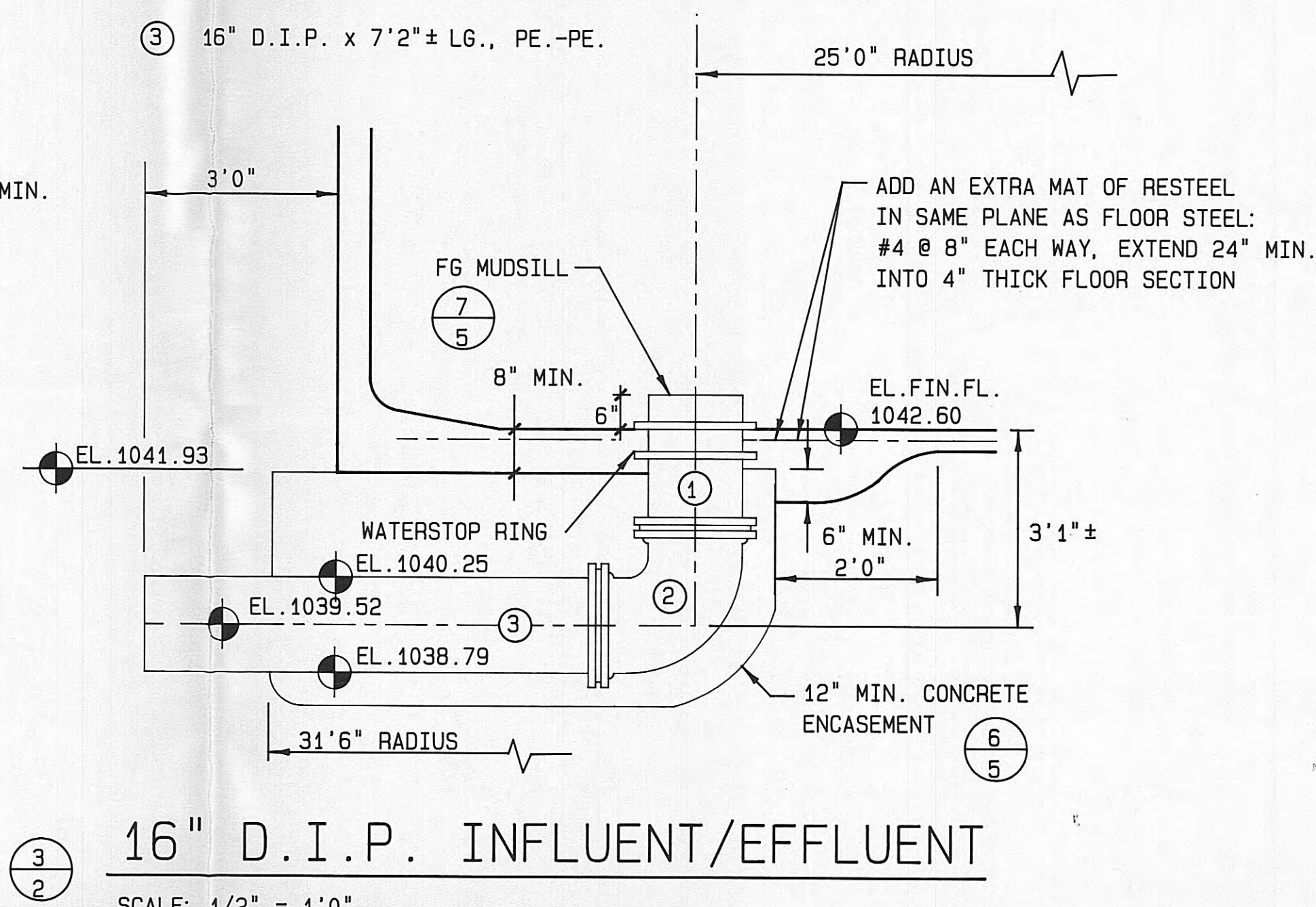
PIPE SCHEDULE FOR 6" D.I.P. DRAIN

- 6" D.I.P. x 2'2" LG., PE.-PE.
W/WATERSTOP RING 4" FROM END
- 6" C.I.P. 90° BEND, MJ.-MJ.
- 6" D.I.P. x 7'9"± LG., PE.-PE.



PIPE SCHEDULE FOR 16" D.I.P. INFLUENT/EFFLUENT

- 16" D.I.P. x 1'10" LG., PE.-PE.
W/WATERSTOP RING 4" FROM END
- 16" C.I.P. 90° BEND, MJ.-MJ.
- 16" D.I.P. x 7'2"± LG., PE.-PE.



6-25-87

DATE: 6-4-87
DRAWN: WDT
CHKD: JWS
APPVD: JDC

TANK DESCRIPTION:

500,000 GAL. RESERVOIR

TANK DIMENSIONS:

60'0" ID x 23'8"SWD

TANK BUILDER:

THE CROM CORPORATION
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OWNER:

CITY OF
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CONSULTING ENGINEER:

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AS NOTED

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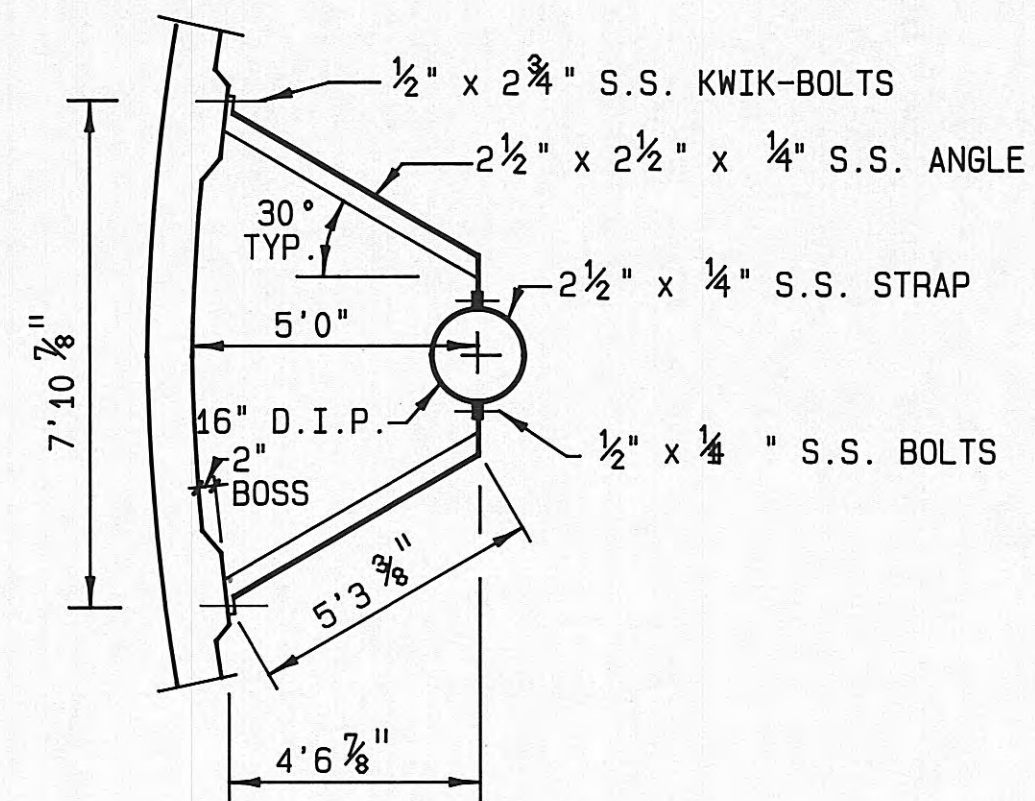
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SHEET

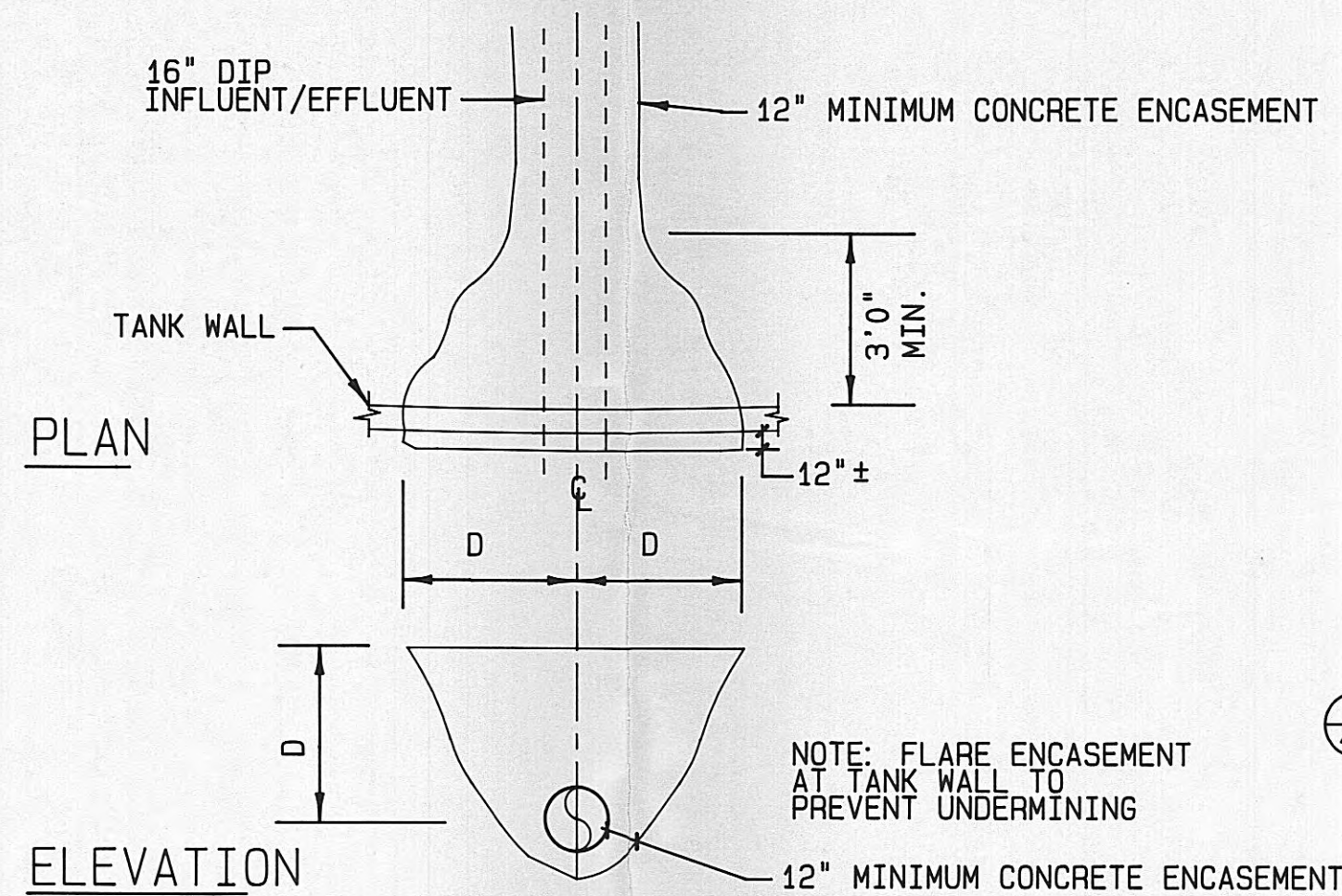
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OF

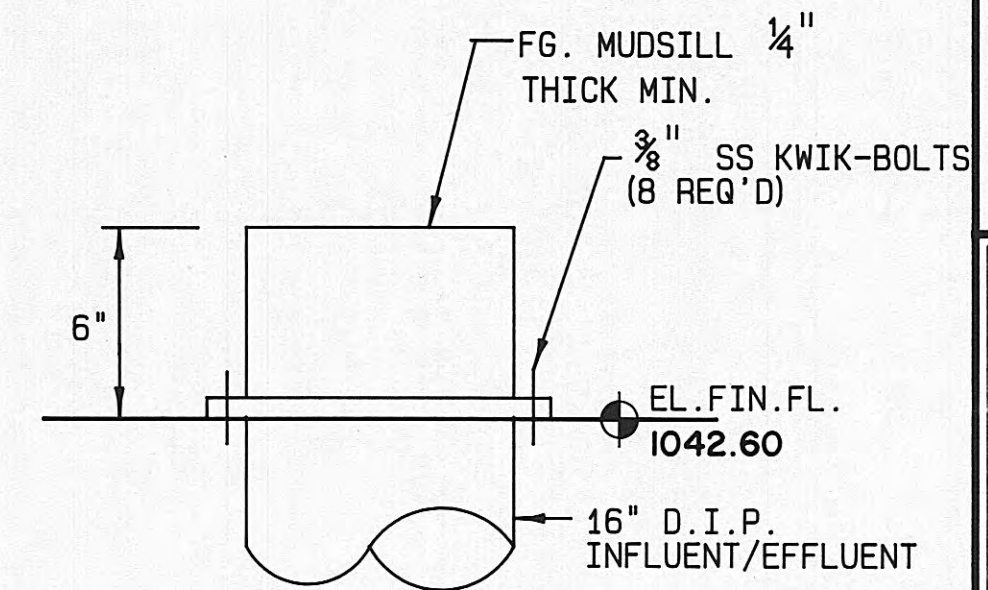
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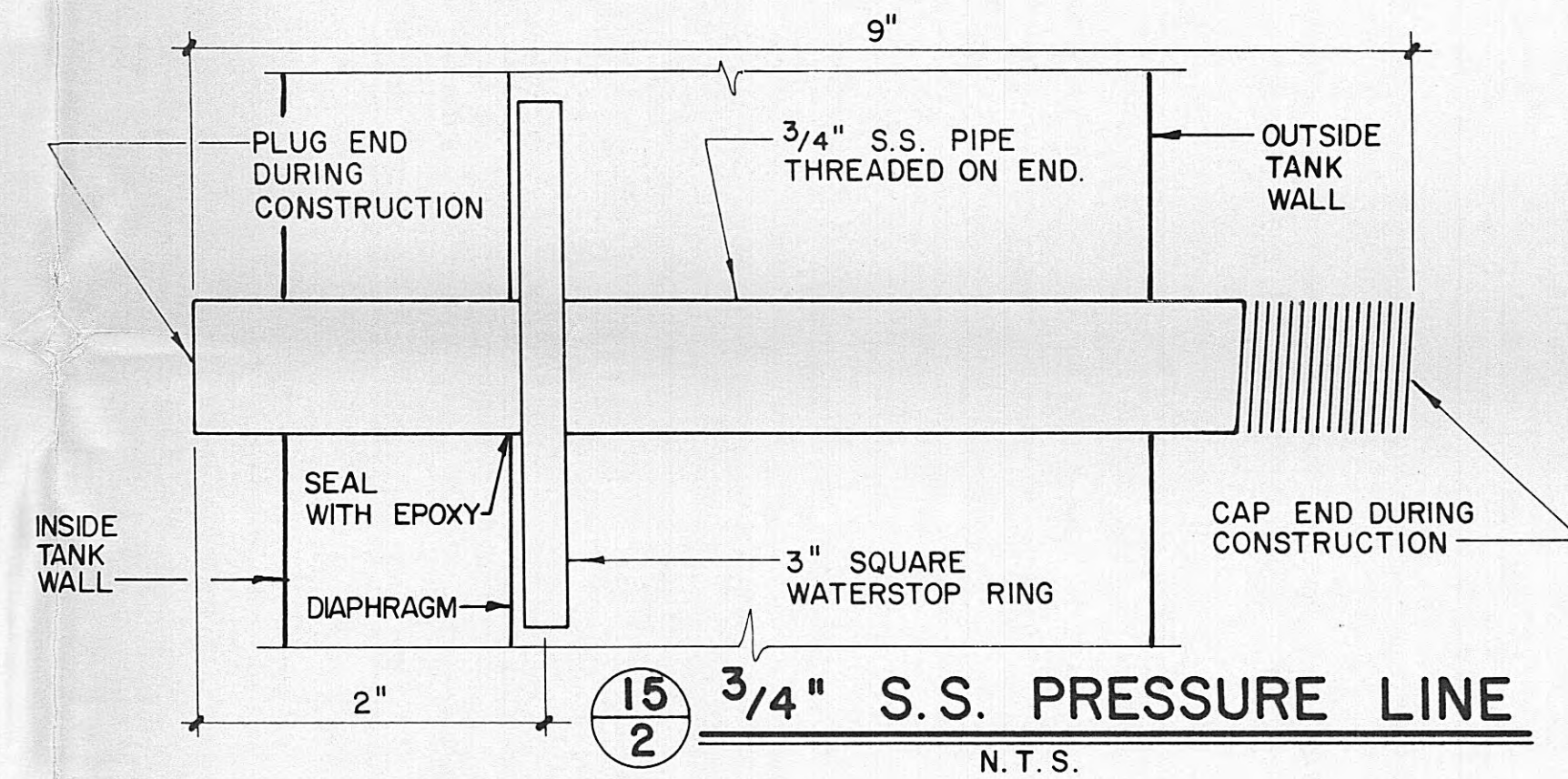
④ PIPE BRACKET, 2 REQ'D
N.T.S.



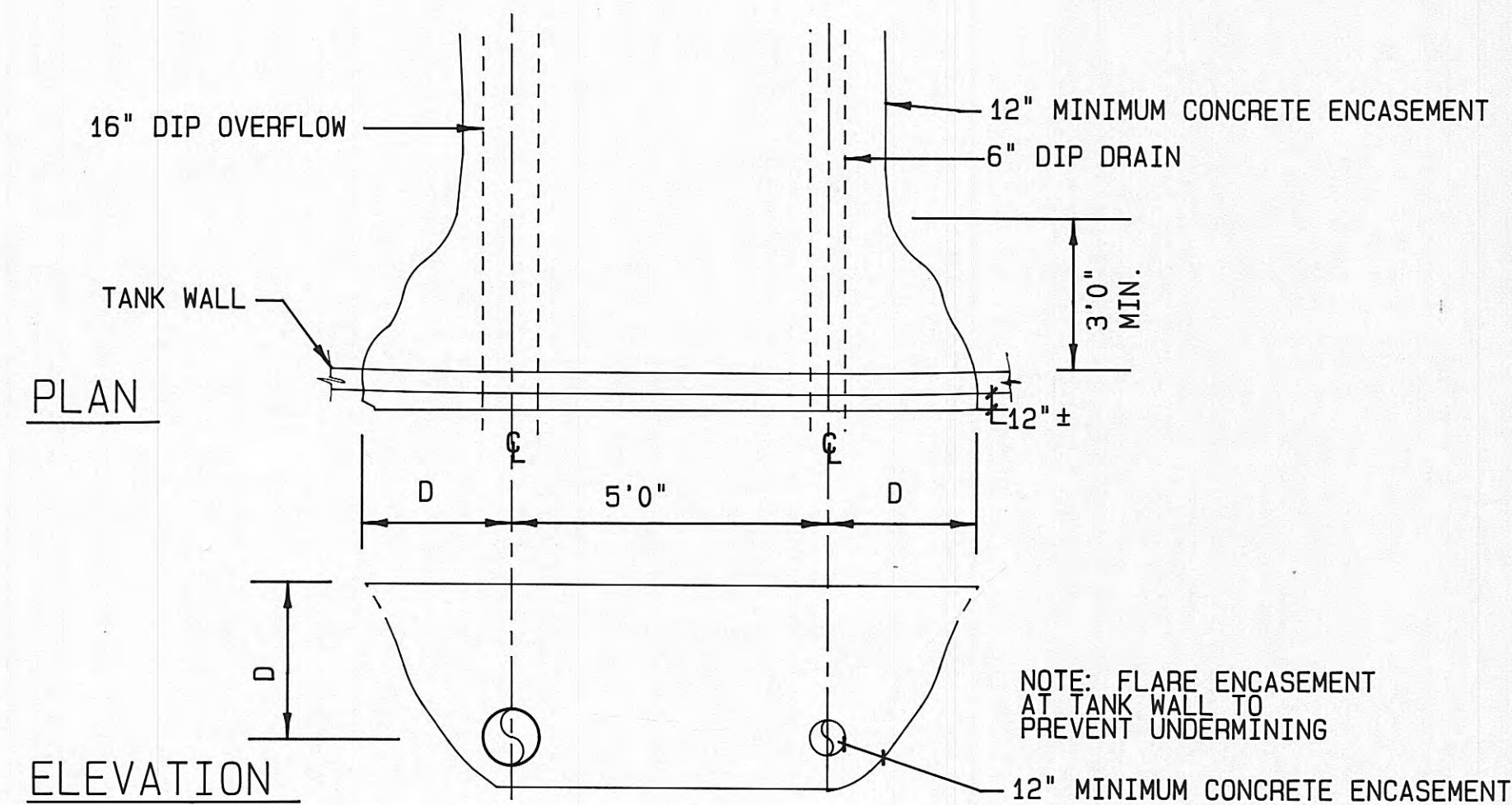
⑥ INFLUENT-EFFLUENT PIPE ENCASEMENT AT WALL
N.T.S.



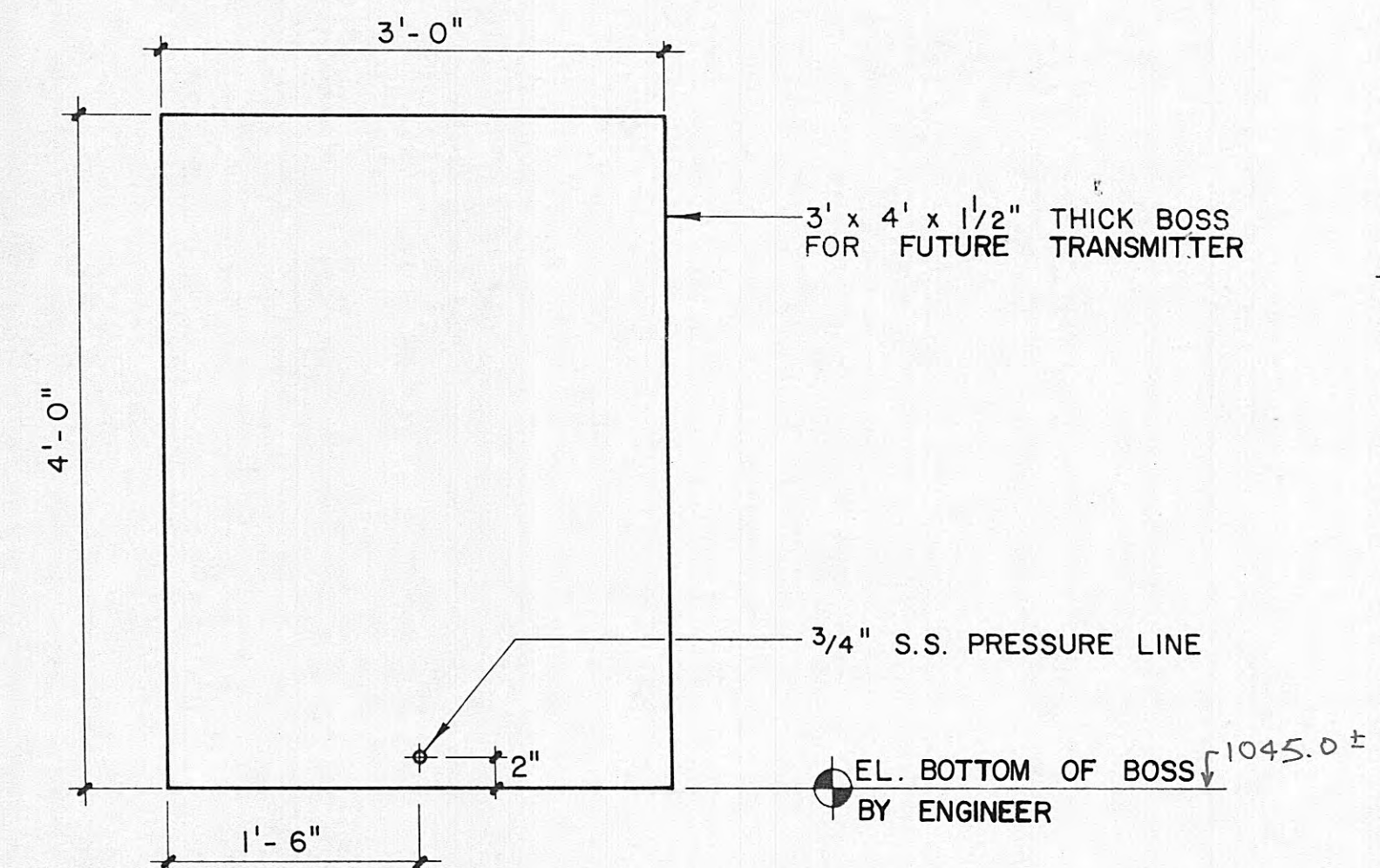
⑦ FG MUDSILL DETAIL
N.T.S.



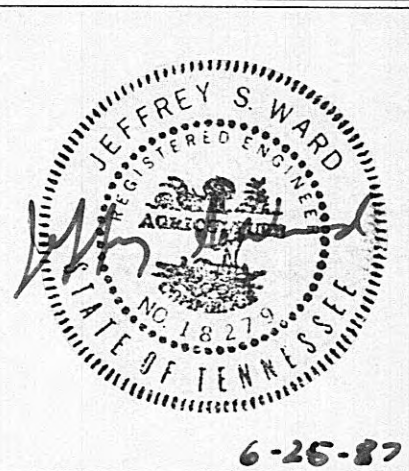
⑮ 3/4" S.S. PRESSURE LINE
N.T.S.



⑮ OVERFLOW & DRAIN PIPE ENCASEMENT AT WALL
N.T.S.



⑮ BOSS FOR FUTURE TRANSMITTER
SCALE: 1"=1'-0"



DATE: 6-8-87
DRAWN: WDT
CHKD: JW
APPVD: JDC

TANK DESCRIPTION:

500,000 GAL. RESERVOIR

TANK DIMENSIONS:

60'0" ID x 23'8" SWD

TANK BUILDER:

THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:

CITY OF
HARRIMAN, TENNESSEE

CONSULTING ENGINEER:

WHITE-TAYLOR-WALKER, INC
BRENTWOOD, TENNESSEE

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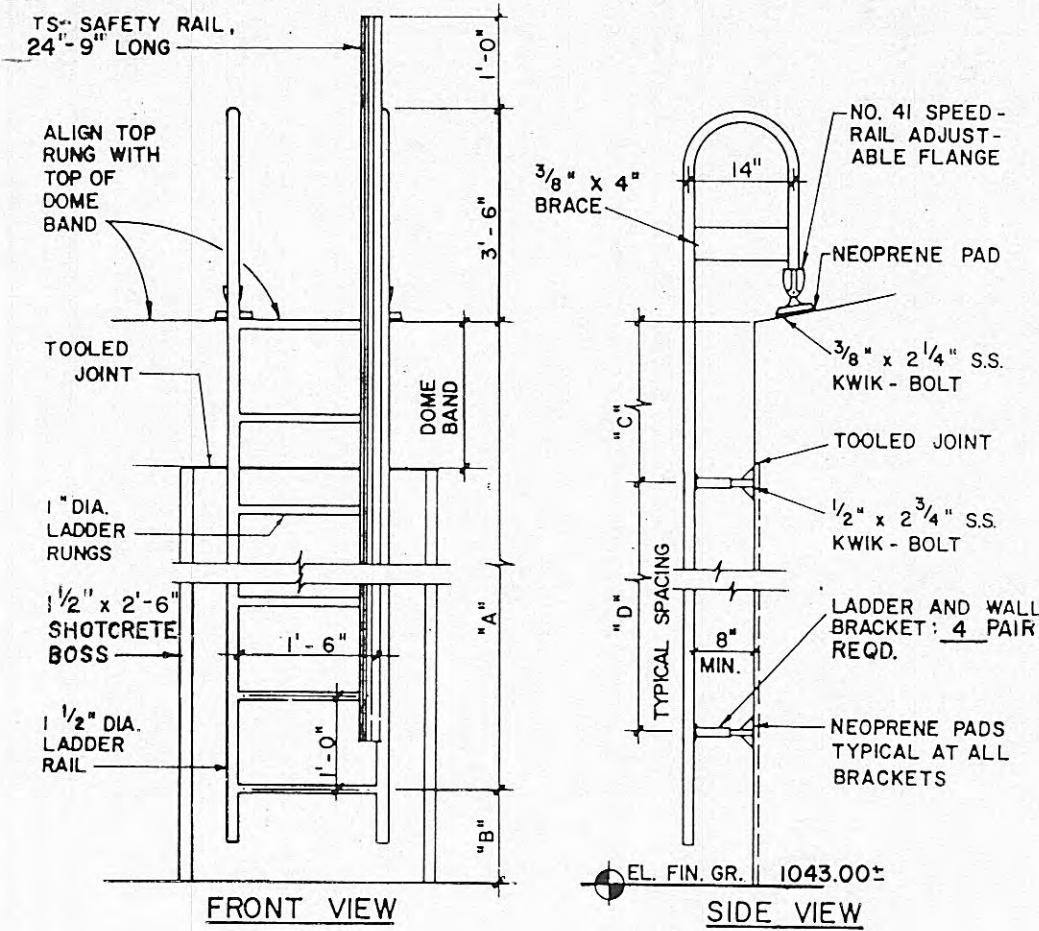
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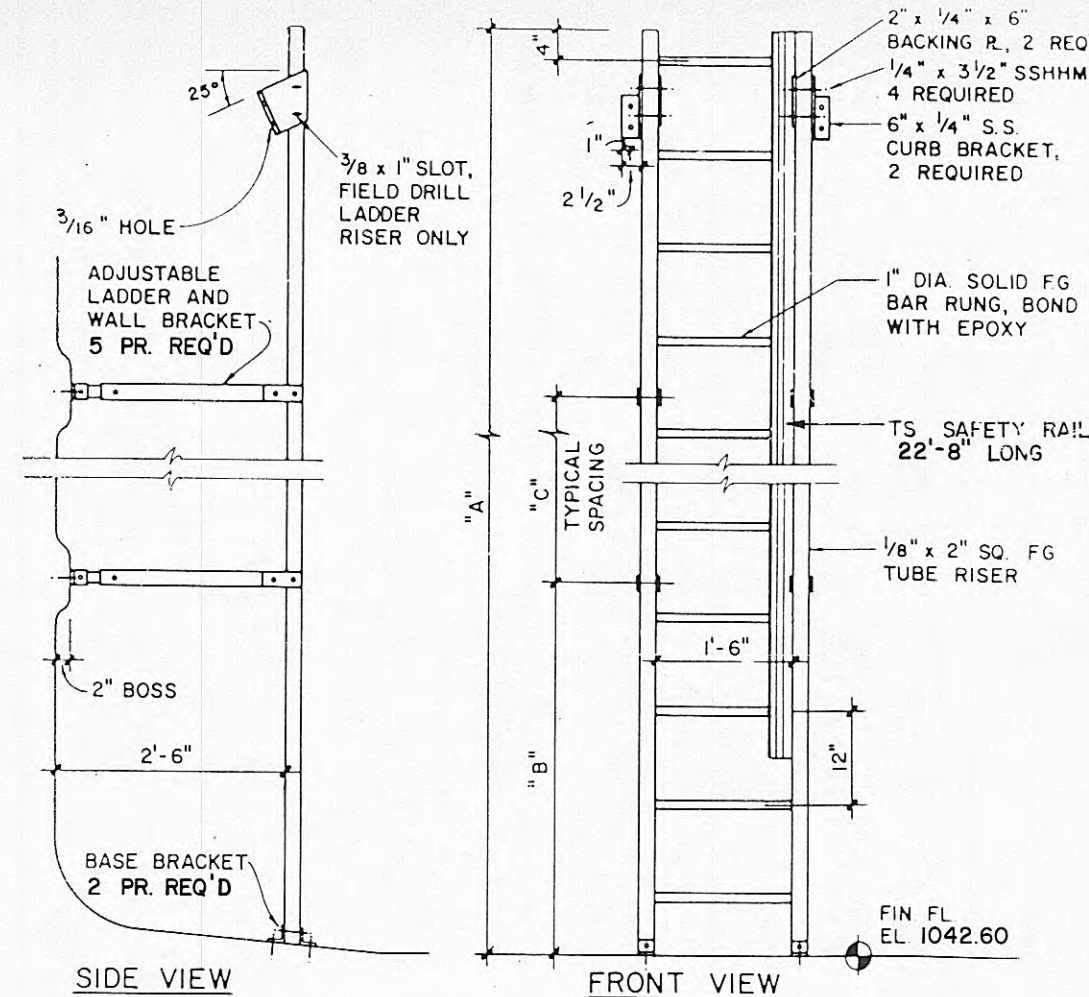
SHEET 5 OF 6



DIMENSION SCHEDULE			
A	22'-0"	D	6'-4"
B	1'-3"		
C	2'-6"		

NOTES: 1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6.
2. PLATES AND GUSSETS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.

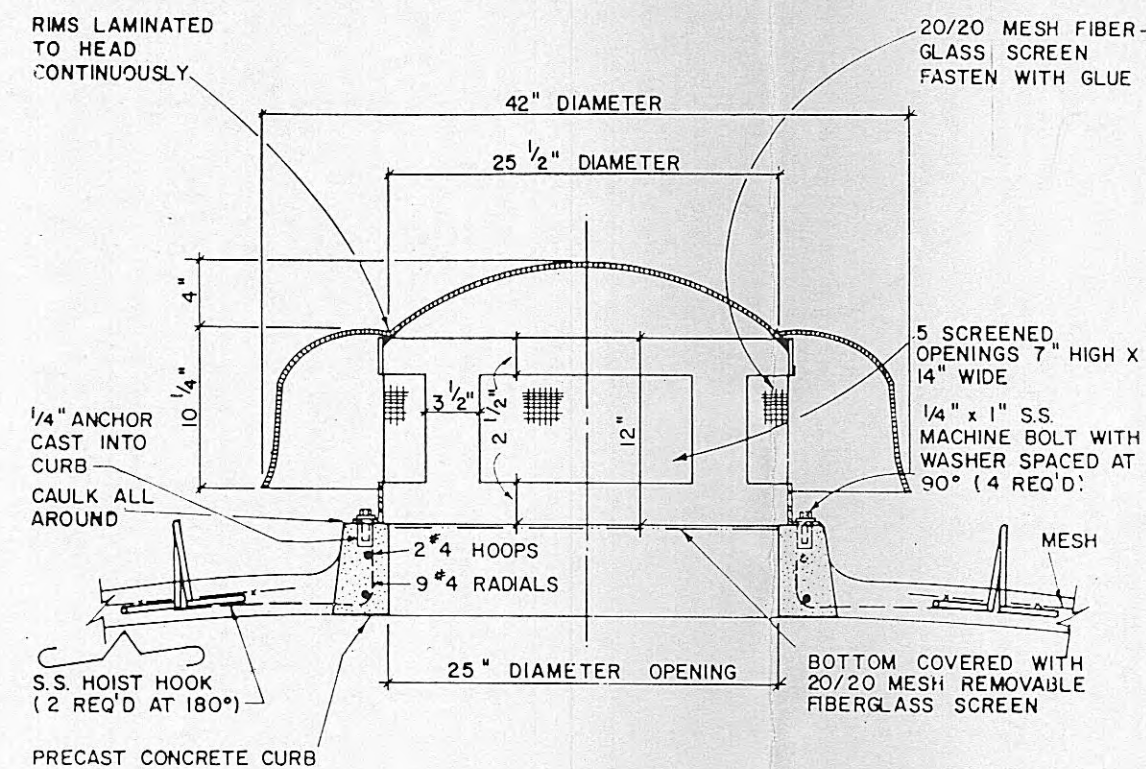
8/2 EXTERIOR ALUMINUM LADDER W/ TS SAFETY RAIL



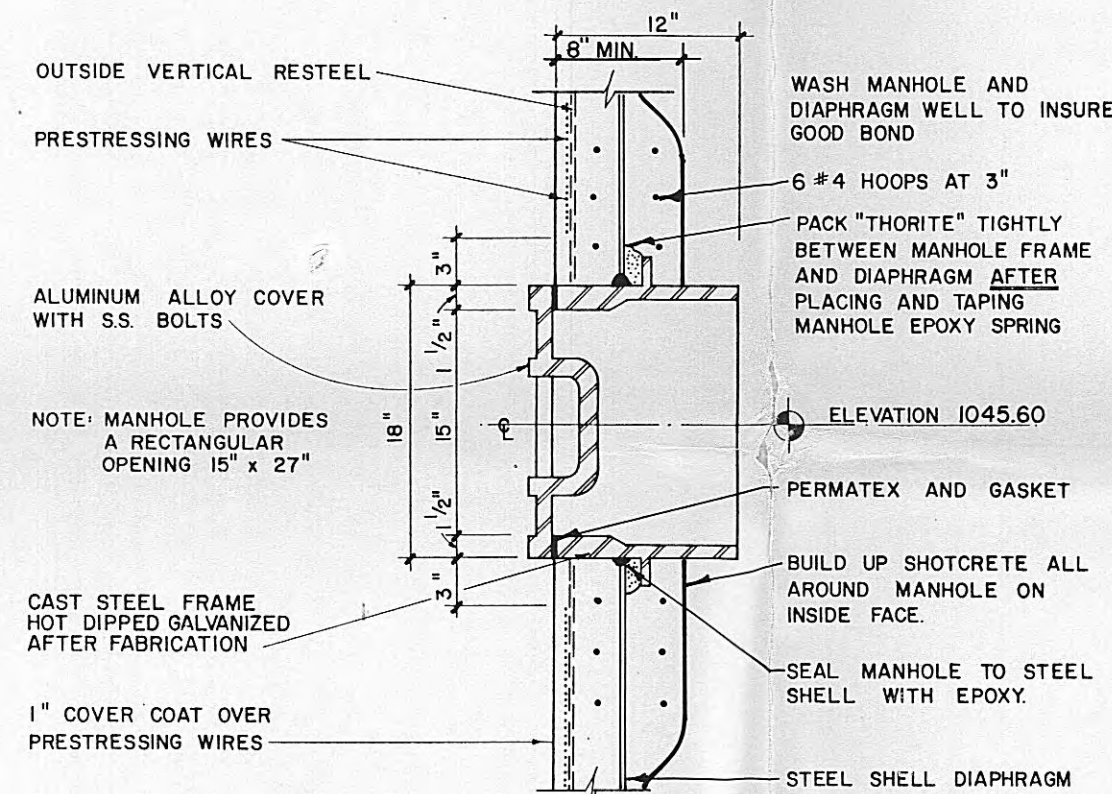
DIMENSION SCHEDULE			
A	25'-8"		
B	4'-0"		
C	4'-0"		

NOTE: 1/4" x 2" FLAT BAR FIBERGLASS CROSS-BRACE TO BE PROVIDED FOR BRACING WALL BRACKET SUPPORTS ON LADDERS OVER 20'-0" TALL. INSTALL ON EVERY OTHER BRACKET.

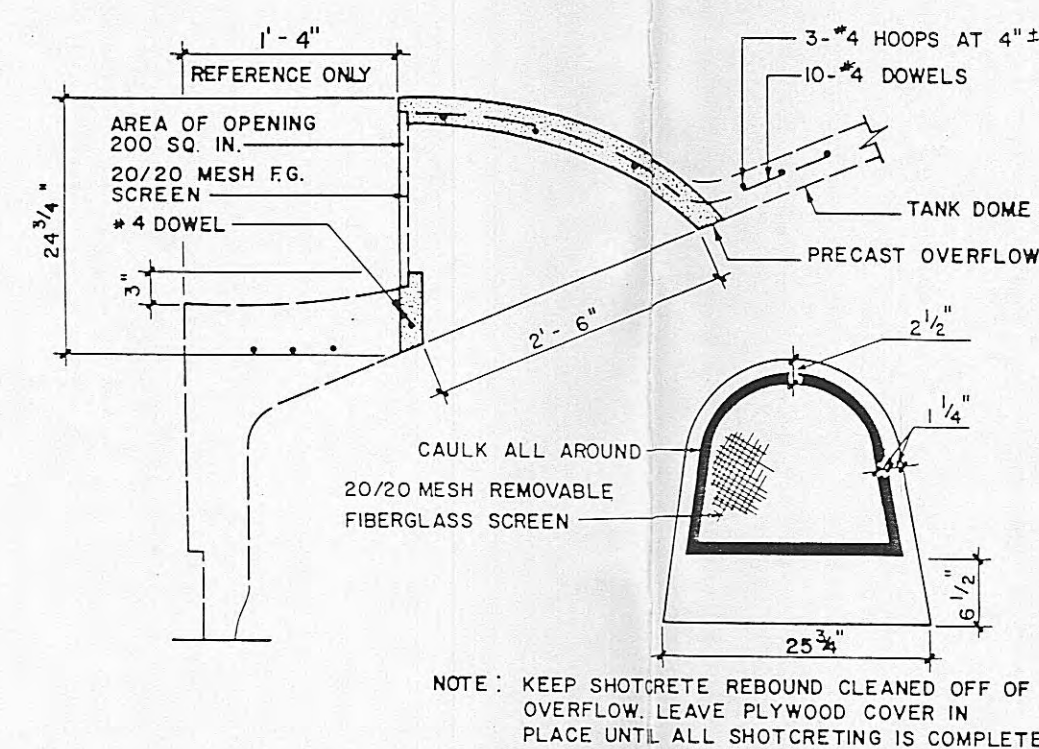
9/2 INTERIOR FIBERGLASS LADDER W/ TS SAFETY RAIL



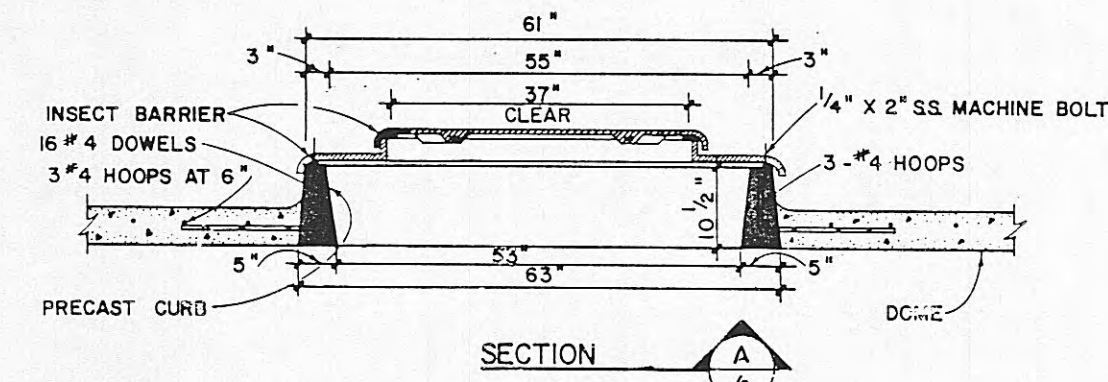
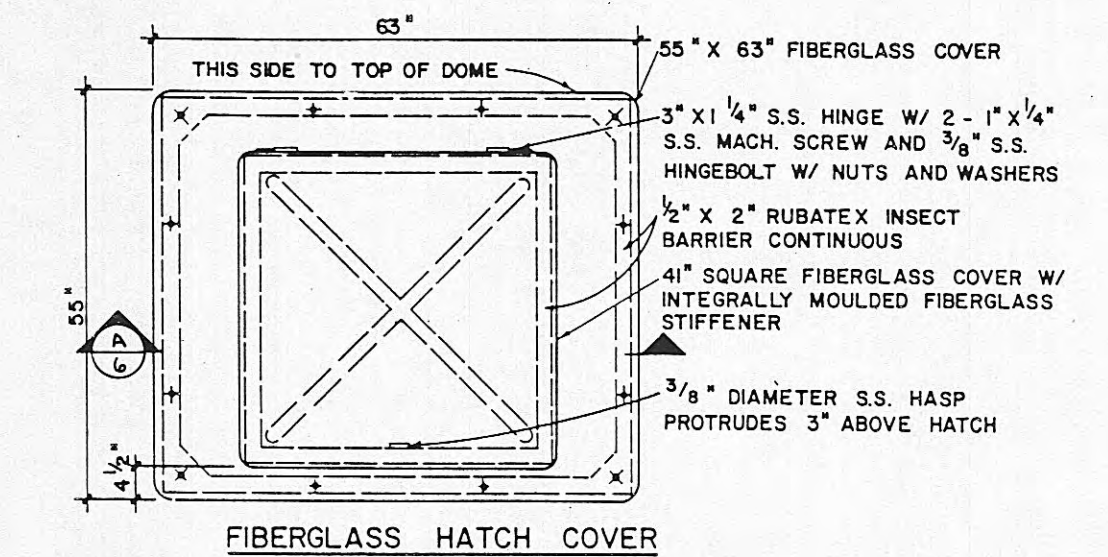
10/2 25" FIBERGLASS VENTILATOR



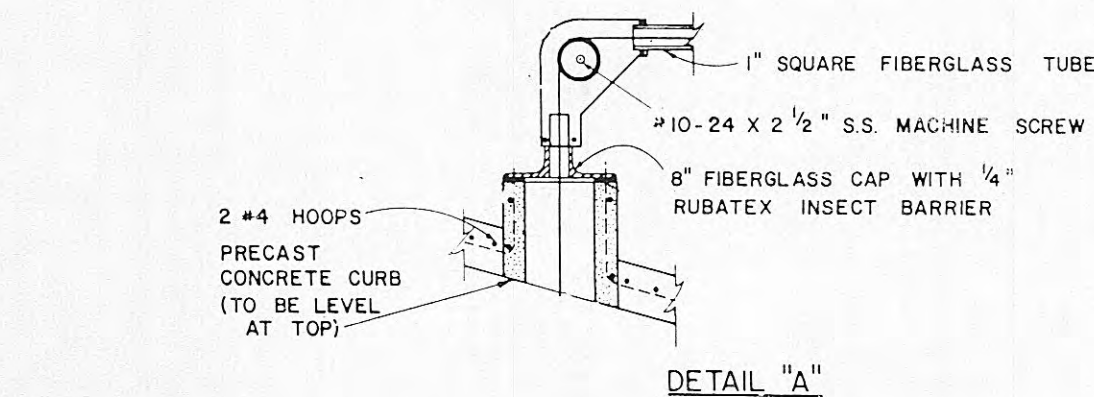
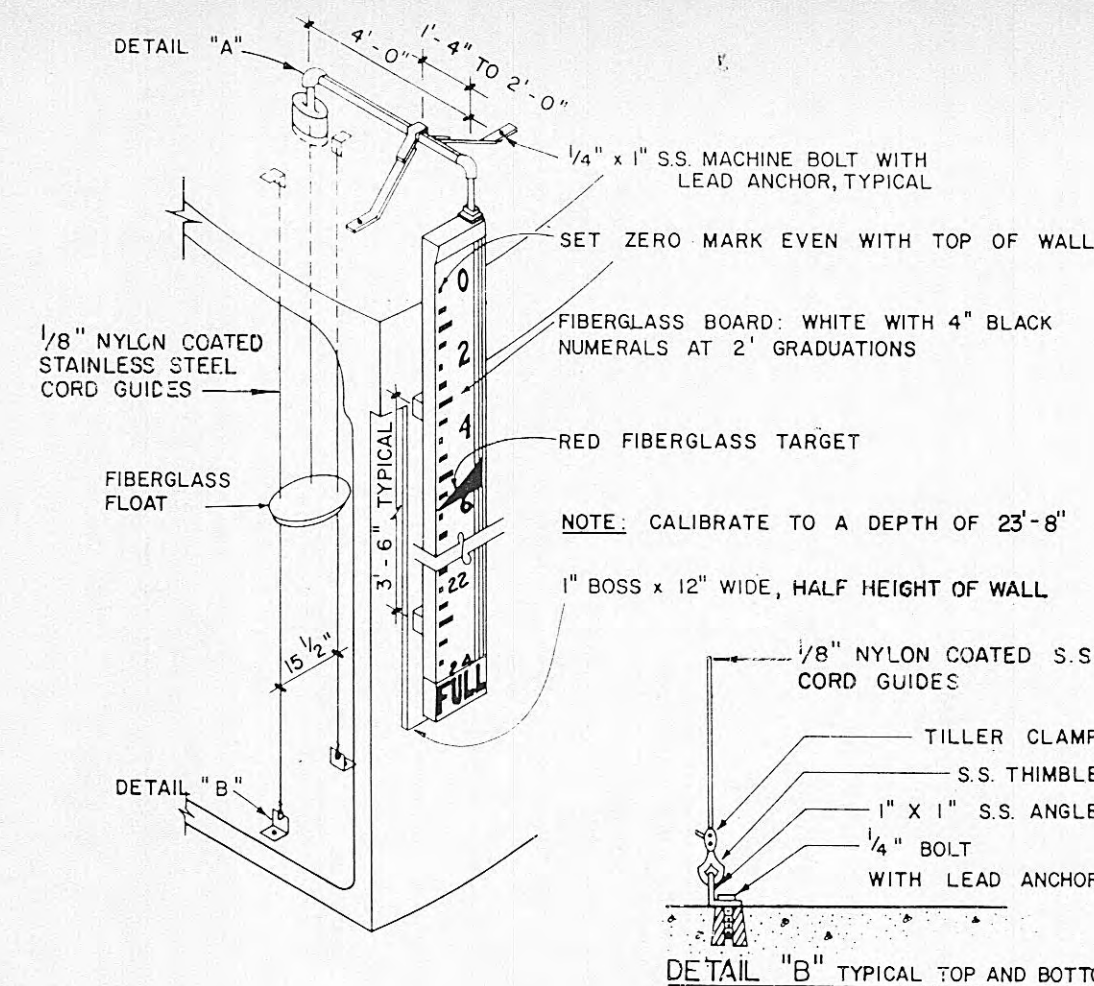
11/2 WALL MANHOLE DETAIL: 1 REQ'D



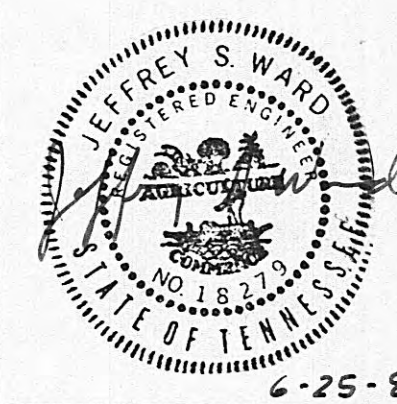
12/2 200 PRECAST CONCRETE OVERFLOW 4 REQD.



13/2 FIBERGLASS HATCH COVER AND CURB



14/2 FIBERGLASS LIQUID LEVEL INDICATOR



DATE: 6-5-87
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CHKD: JLD
APPVD: JDC

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500,000 GAL. RESERVOIR

TANK DIMENSIONS:
60' 0" ID x 23' 8" SWD

TANK BUILDER:
**THE CROM CORPORATION
GAINESVILLE, FLORIDA**

OWNER:
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HARRIMAN, TENNESSEE**

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**WHITE-TAYLOR-WALKER, INC.
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SCALE:
N.T.S.

FILE NO: