

NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

212 PETROLEUM BLDG.

P. O. BOX 566

ROSWELL, NEW MEXICO 88201

PHONE 622-1958 AREA CODE 505

June 11, 1968

*Chd 3807*

Mr. A. L. Porter, Jr.  
Oil Conservation Commission  
State of New Mexico  
Santa Fe, New Mexico

Re: Suggested Specifications and  
Test Proceedure for Lined Evaporative  
Pits for Use In Southeastern New  
Mexico.

Mr. Porter:

Enclosed is a suggested plan for design, construction  
and testing of the evaporative pits.

I will discuss this with you next week when I come up  
for the Playa Lake hearing.

Yours very truly,

*Charles C. Loveless, Jr.*  
Charles C. Loveless, Jr.

DOCKET MAILED

Date 7-8-68

Case 3807

RECOMMENDATIONS FOR SPECIFICATIONS COVERING CONSTRUCTION OF  
SALT WATER EVAPORATION PITS IN SOUTHEAST NEW MEXICO AND PRO-  
CEDURES FOR INSPECTION AND REPAIRS

General - Data on evaporation of water in open pits and lakes available from many sources indicate that relatively high rates of evaporation may be expected in Southeast New Mexico. Rates range from around 2.5 inches per month to nearly 14.0 inches in June have been reliably reported by the U. S. Government during the period 1951-1960 at the Bitter Lakes Game Refuge near Roswell. Even higher rates are reported in the area near the Texas border in Southeast New Mexico. During the period February 15, 1968 to present, June 10, 1968, high rates of evaporation have been observed by me in the experimental pits operated by authority of the Oil Conservation Commission of New Mexico. Based on the Bitter Lakes observations, the experimental pits were designed to dispose of 30 BPD which required a cumulative safe storage of 2500 bbl. the amount of salt water that was expected to build up on the pits during the months October - March; after which the daily rate of evaporation was expected to exceed 30BPD.

I am convinced after the relatively brief period of operations, evaporative pits will provide an economical method to dispose of reasonable amounts of oil field brine. These pits properly lined and constructed in a manner to provide ease in testing for leaks should assure the minimum of damage through fresh water pollution and permit operators of marginal oil wells to continue economic operations of these wells after January 1, 1969 when the no-pit order is scheduled to become

effective.

Pit Design - The experimental pit above mentioned is comprised of a header pit 60' x 20' which abuts upon three evaporation pits 100' x 40'. (See diagram in first monthly report of operations dated April 23, 1968). The pits must be constructed on level ground in order that water levels in the header and the evaporative units may be maintained at the same elevation by means of syphon hoses or pipes which feed water from the header to the evaporators.

The header pit, the main function of which is to trap all oil films which would interfere with evaporation, should be lined with an oil resistant material such as poly vinyl chloride. The evaporators may be lined with polyethylene or similar material.

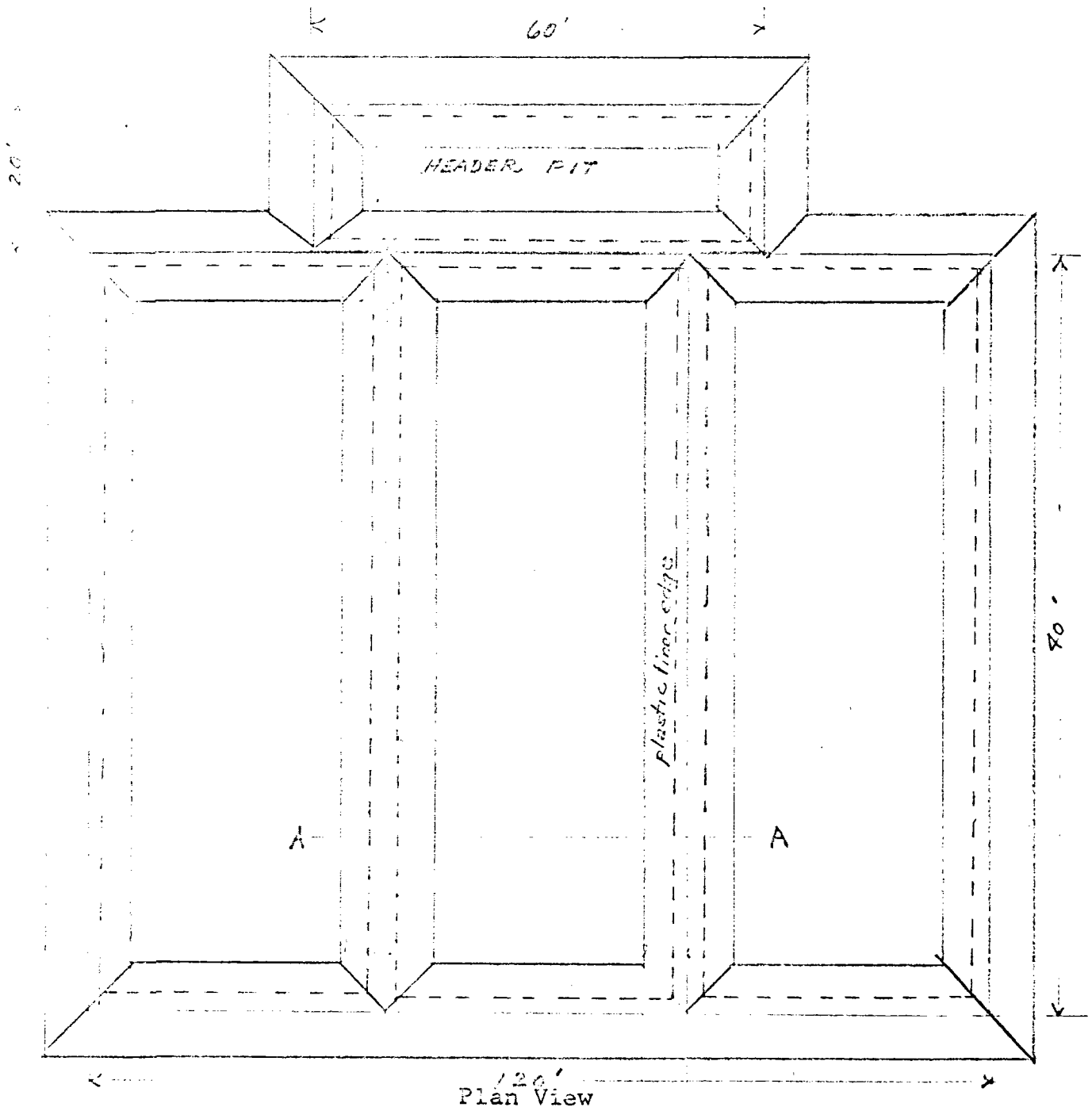
Where unlevel terrain is encountered, pits should be designed with multiple header pits which would service as many evaporators as can be geometrically grouped to accomodate the syphons. In large installations, water should be split by valving or otherwise to distribute it proportionately to the headers.

Based on the Bitter Lake observations, each 100' x 40' unit should easily dispose of ten barrels per day year round. Thus, pits may be designed with multiple evaporator modules in accordance with total water to disposed of at the production facility which it serves.

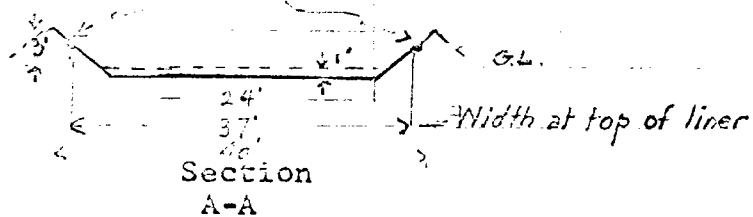
The attached diagram shows the idealized configuration for a unit to dispose of 30 EPD. With an average center depth of three feet, including the header, this unit should have peak winter storage capacity of around 2500 bbl. which will exceed

Fig. 1

EXPERIMENTAL PLASTIC LINED EVAPORATION PIT OPERATED BY NEW MEXICO SALT WATER DISPOSAL COMPANY, INC. - LOCATED IN SECTION 8, TOWNSHIP 11 SOUTH, RANGE 34 EAST, LEA COUNTY, NEW MEXICO



Scale: 1 inch = 20 ft. --- lining edge buried in dike



cumulative water demands occassioned by the low evaporation rates during the winter months. In the northern reaches of Lea County and Chaves County, as well as in all of Roosevelt County, it would appear advisable to erect snow drift fences along the north side of the evaporation pits during winter months. Since the pits would normally expected to be fenced for livestock, the north fence might be set back far enough to drift the snow before it reaches the pits if the snow fence is attached to the regular fencing.

Pit linings should meet the following specifications:  
For the header pit, the liner should be oil resistant and meet the following minimum physical requirments:

Tear Strength - pounds minimum - 10  
(Method 5134.1, Federal Spec  
CCC-T-191b.)

Rip Strength, pounds minimum - 24

Seam Shear Strength , 4" seam, pounds minimum - 60  
(Method 5100 of Federal Spec.  
CCC-T-191b.)

Mullen Burst , psi minimum - 100  
(Method ASTM-D774)

Moisture Vapor Transmission  
(Method ASTM D-697) gm/100 sq.  
inch/24 hr. - atmosphere)  
minimum -1.6

Color should be black or green

Chemical stability - Good to oil or grease

Minimum weight per 1000 sq. feet. - pounds - 45

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 25, 1968

Mr. [REDACTED] Gent  
Pl [REDACTED]  
Wid [REDACTED]  
Wich [REDACTED]

Dear [REDACTED]

With reference to your letter concerning "Plasti-Steel Tanks", the Commission Order A-3221 prohibiting the surface disposal of produced brines in the counties of Southeast New Mexico does not provide for the use of lined pits. It may be possible for an operator to use lined pits after notice and hearing. At such hearing the Commission would certainly consider the type of materials to be used in the pit construction. We cannot at this time definitely say that we would approve the use of any particular [REDACTED]

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir [REDACTED]

cc: Mr. Joe D. Ramsey, Supervisor  
Oil Conservation Commission  
Post Office Box 1980  
Hobbs, New Mexico

ILLEGIBLE

*Handwritten:*  
Docket Mailed  
out 7-8-68

# PLASTI-STEEL<sup>INC.</sup>

formerly Plastic Products, Inc.

1005 WICHITA PLAZA / AM 2-6861 WICHITA, KANSAS 67202

April 23, 1968

Mr. A. L. Porter  
The New Mexico Oil Conservation Comm.  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: "Plasti-Steel Tanks"

Dear Mr. Porter:

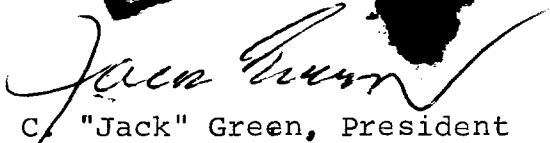
Under [REDACTED] we sent you our brochure on above,  
along [REDACTED] Mittal asking if you would approve  
our tanks [REDACTED] for oil field brines and wastes.

As we haven't [REDACTED] you, it is quite possible the materials  
could have been [REDACTED] "shuffle" so I am sending you, en-  
closed, a new file [REDACTED] information, that you will be familiar  
with the equipment we are offering to the operators in lieu of  
liners for pits.

While to ask endorsement [REDACTED] product would be out  
of the question, we [REDACTED] that our tanks, properly  
installed, are [REDACTED]

Very truly yours,

PLASTI-STEEL<sup>INC.</sup>

  
M. C. "Jack" Green, President

MCG:dlm

Encls.

cc: Joe Ramey  
P.O. Box 1980  
Hobbs, New Mexico

ILLEGIBLE

Order No. R-3221-C in Case No. 3807 was sent to the following:

Loy M. Hembree  
Sinclair Oil & Gas  
Midland, Texas

Ralph Gray  
Artesia, New Mexico

L. C. Hudry  
Atlantic Richfield  
Roswell

Jim Knauf  
U. S. G. S.  
Artesia

E. F. Motter  
Cities Service  
Hobbs

Loy B. Goodheart  
Rice Engineering  
P. O. Box 1142  
Hobbs, New Mexico

Hendershot  
Johniner Company  
Unit 1460  
P. O. Box 1460  
Wewoka, Oklahoma 74884

Dr. Charles T. Staff  
Staff Industries, Inc.  
78 Dryden Road  
Upper Montclair, New Jersey  
Bob Elwell  
R & R Service Co.  
P. O. Box 1409  
Hobbs, N. M.

Bill Abbott  
Agua, Inc.  
Hobbs, N. M.

L. L. Yaeger  
Griffolyn Co. Inc.  
P. O. Box 33248  
Houston, Texas 77033

Charles Loveless  
N. M. Salt Water Disposal Co. Inc.  
Roswell, New Mexico

Norman Woodruff  
El Paso

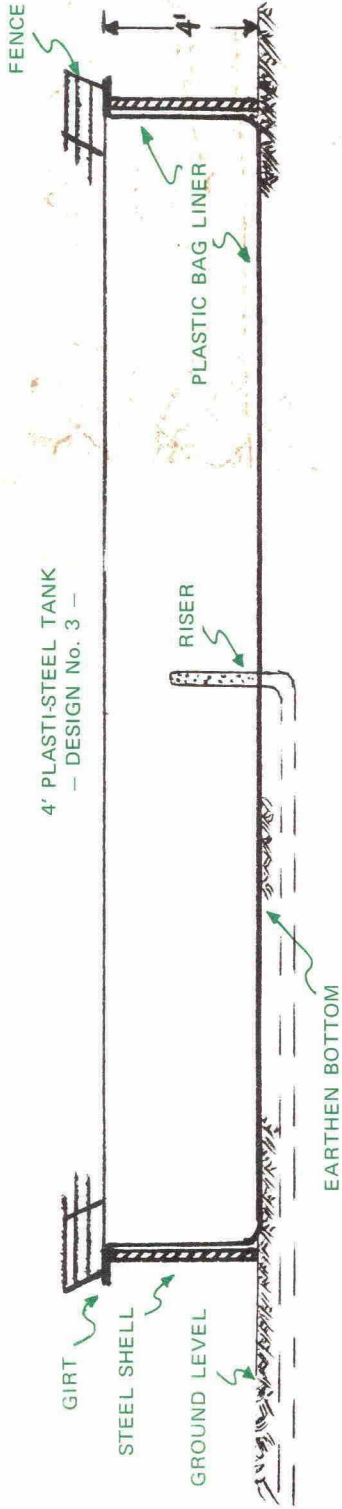
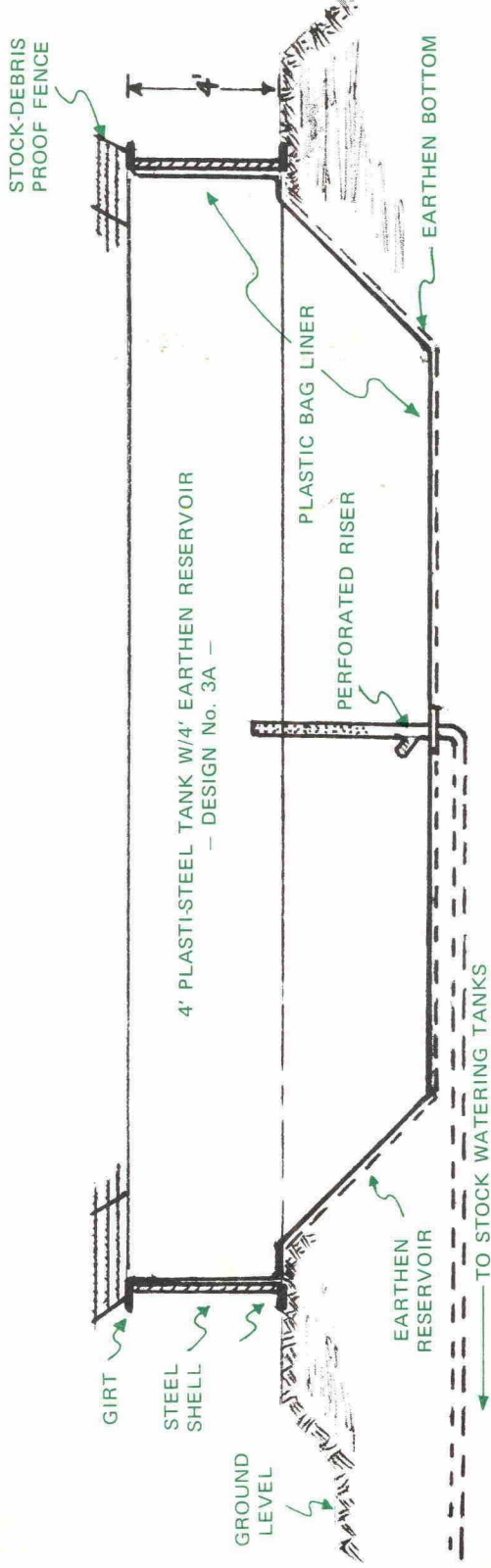
Jason Kellahin  
Santa Fe

E. E. Howard  
G M Wallace & Co.  
Englewood Colorado 80110

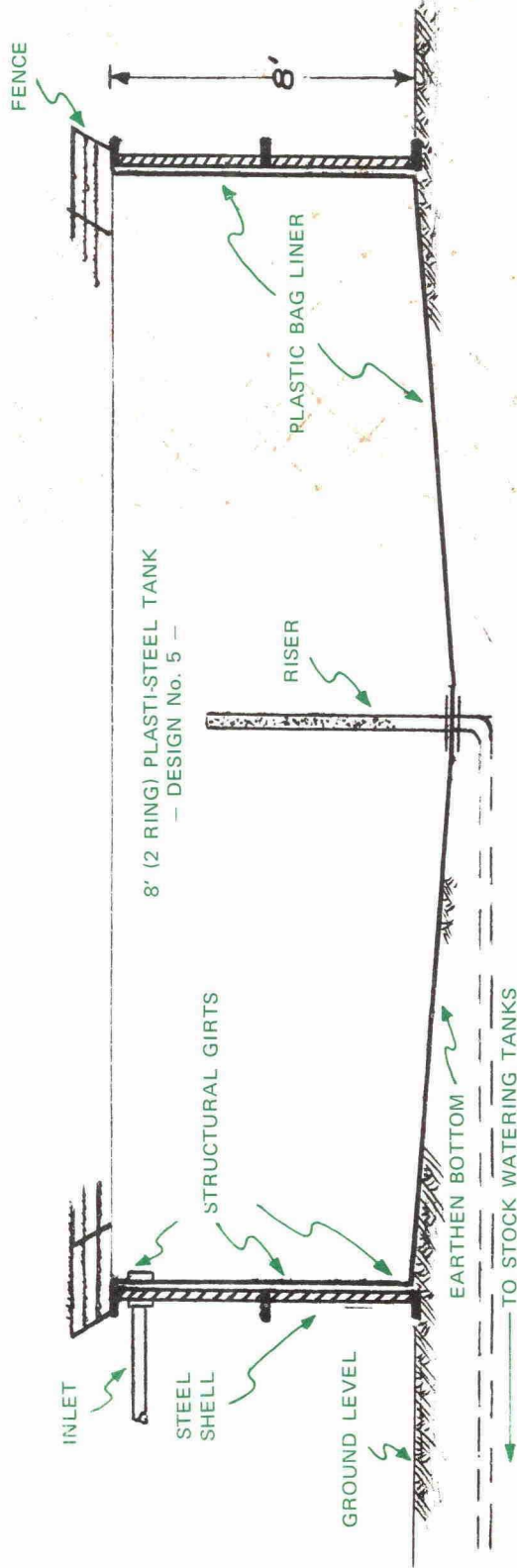
James Barrett  
Electric Building  
El Paso, Texas 79901

M. C. "Jack" Green, Pres.  
Plastic-Steel, Inc.  
Wichita Plaza  
Wichita, Kansas 67202

SUGGESTED DESIGNS  
"PLASTI-STEEL TANK"<sup>PAT. PEND.</sup>  
RESERVOIR INSTALLATIONS



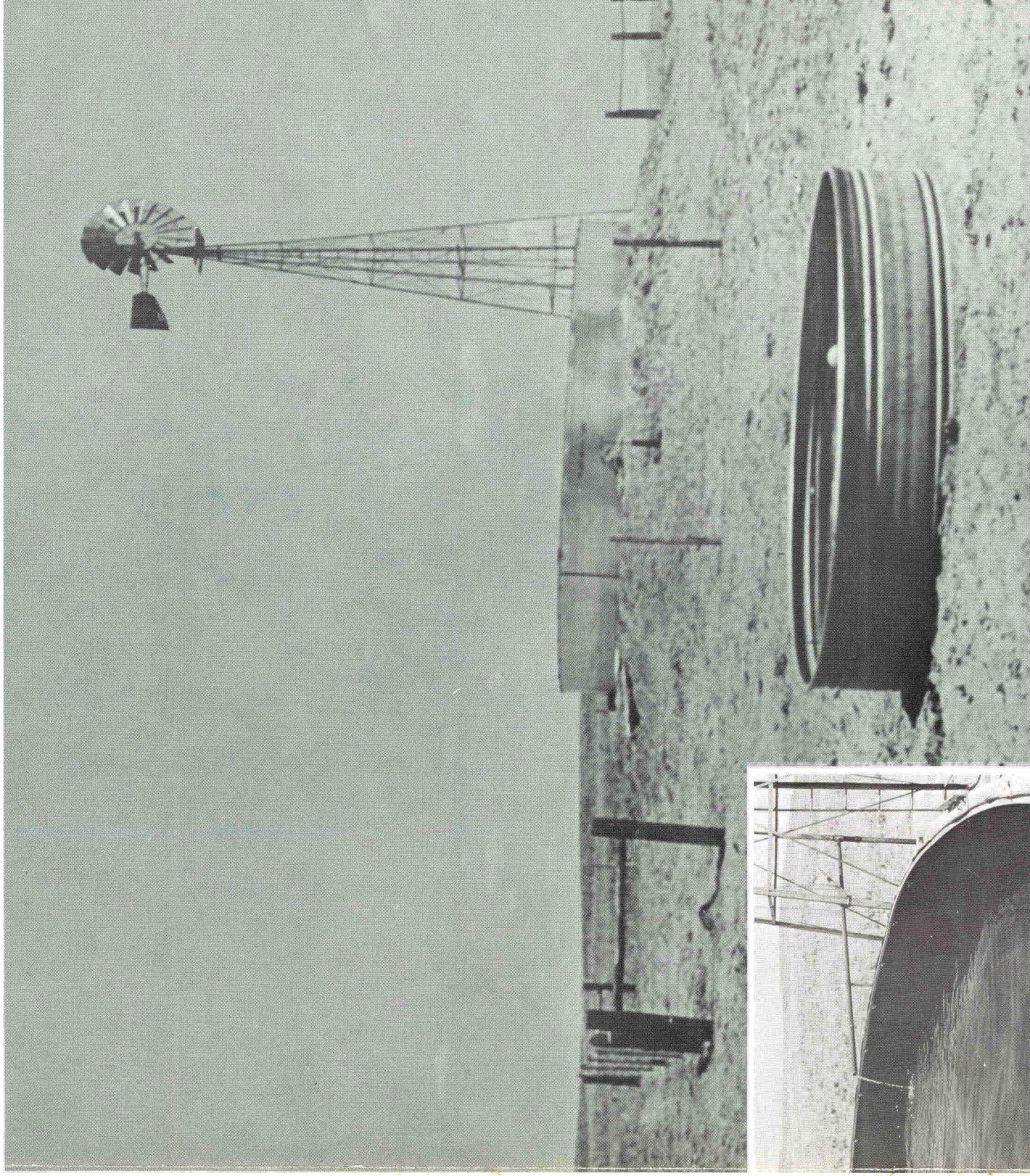
SIZES 10' X 4' TO 120' X 8'  
— 2000 GALLONS TO 640,000 GALLONS —



**PLASTI-STEEL** *INC.*

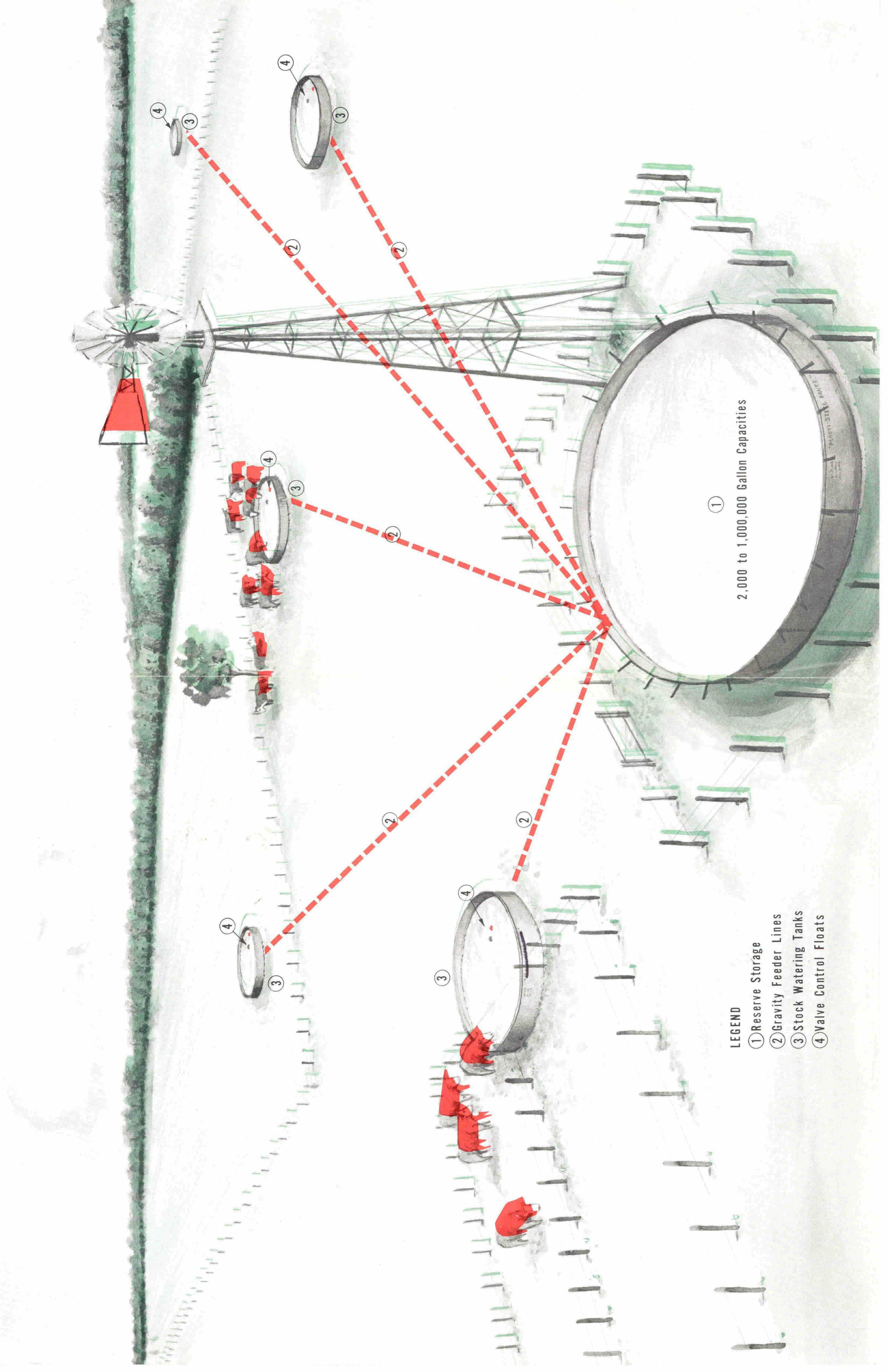
Formerly Plastic Products, Inc.  
1005 WICHITA PLAZA / AM 2-6861 / WICHITA, KANSAS 67202

"PLASTI-STEEL TANKS"<sup>PAT. PEND.</sup>  
for  
Ranch - Farm - Wildlife - Forestry  
(SIZES - 2,000 TO 640,000 GALLONS)



**PLASTI-STEEL** *INC.*

Formerly Plastic Products, Inc.  
1005 WICHITA PLAZA / AM 2-6861 / WICHITA, KANSAS 67202



① 2,000 to 1,000,000 Gallon Capacities

- LEGEND
- ① Reserve Storage
  - ② Gravity Feeder Lines
  - ③ Stock Watering Tanks
  - ④ Valve Control Floats

# LOW COST STORAGE

SAFE, DURABLE, STOCKPROOF

## TANKS

FRESHWATER

SALTWATER

OIL RESIDUES,  
AND WASTE

CHEMICAL  
WASTES

**PLASTI-STEEL** Inc.

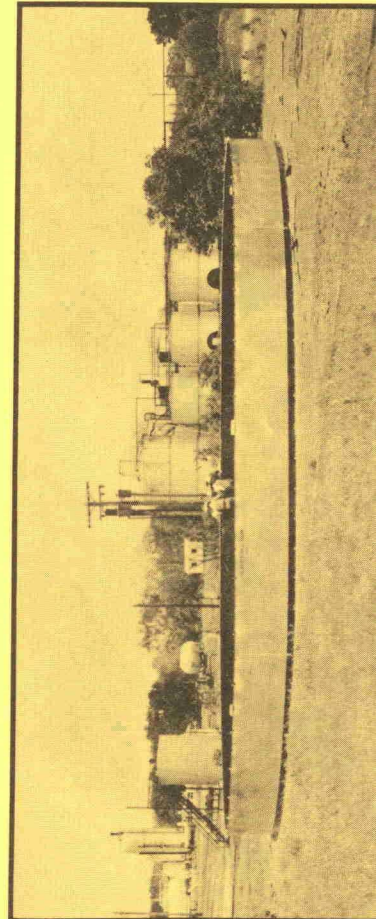
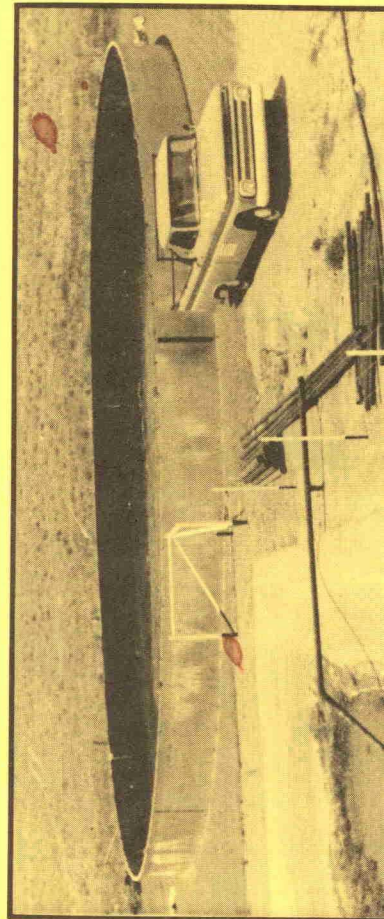
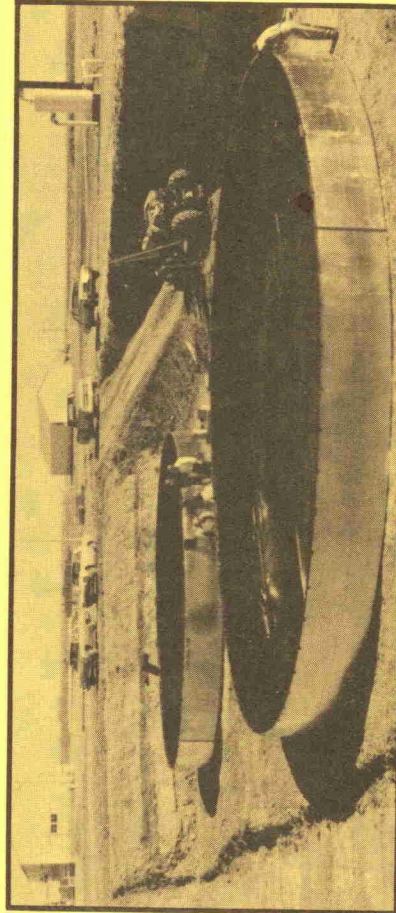
Formerly Plastic Products, Inc.  
1005 Wichita Plaza / Wichita, Ks. 67202

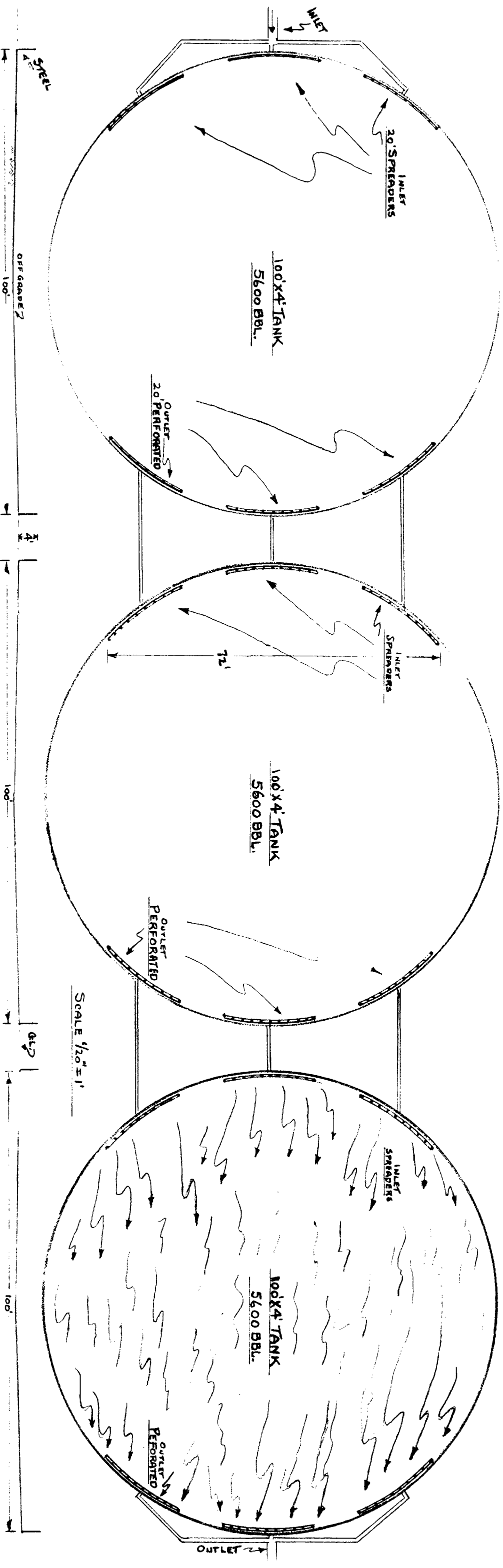
Water Reservoirs  
Treating Tanks  
Filter Tanks  
Sedimentation Tanks

Storage Tanks  
Accumulation Tanks  
Aeration Tanks  
Disposal Tanks

### SIZES 60 BBL. TO 16,000 BBL.

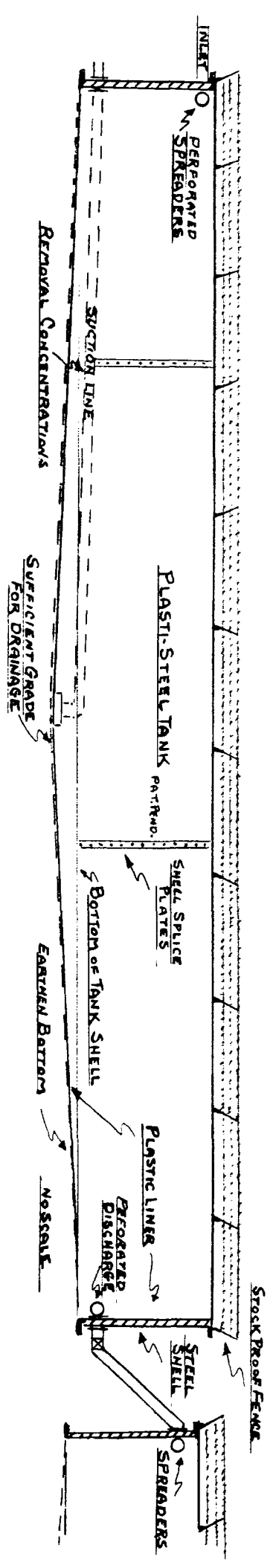
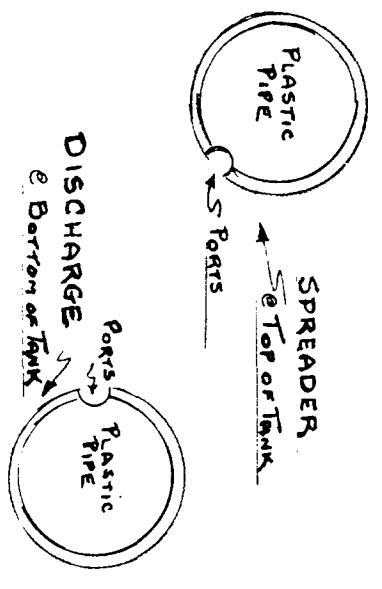
| UNIT SIZE<br>DIA. HGT. | CAPACITY<br>IN<br>BARRELS | UNIT SIZE<br>DIA. HGT. | CAPACITY<br>IN<br>BARRELS |
|------------------------|---------------------------|------------------------|---------------------------|
| 10' x 4'               | 60 Bbls.                  | 70' x 4'               | 2,750 Bbls.               |
| 12' x 4'               | 80 Bbls.                  | 80' x 4'               | 3,600 Bbls.               |
| 14' x 4'               | 110 Bbls.                 | 90' x 4'               | 4,540 Bbls.               |
| 16' x 4'               | 143 Bbls.                 | 100' x 4'              | 5,600 Bbls.               |
| 20' x 4'               | 224 Bbls.                 | 120' x 4'              | 8,080 Bbls.               |
| 25' x 4'               | 364 Bbls.                 | 50' x 8'               | 2,800 Bbls.               |
| 30' x 4'               | 500 Bbls.                 | 60' x 8'               | 4,000 Bbls.               |
| 35' x 4'               | 687 Bbls.                 | 70' x 8'               | 5,500 Bbls.               |
| 40' x 4'               | 900 Bbls.                 | 80' x 8'               | 7,220 Bbls.               |
| 45' x 4'               | 1,136 Bbls.               | 90' x 8'               | 9,080 Bbls.               |
| 50' x 4'               | 1,400 Bbls.               | 100' x 8'              | 11,200 Bbls.              |
| 60' x 4'               | 2,000 Bbls.               | 120' x 8'              | 16,120 Bbls.              |





## SUGGESTIVE DESIGN SEDIMENTATION AERATION ASSEMBLY

**"PLASTI-STEEL TANKS"**  
3 100' x 4' MAX. CAPACITY 16,800 BBL.  
(SIZES AVAILABLE TO 48,480 BBL.)



## GENERAL INSTALLATION PROCEDURE

### GRADE PREPARATION

1. Clear and level area where tank is to be set, removing rocks, brush, stubble, etc. Note: Dirt is preferable to sand if any fill of grade is required.
2. Lay out bottom girt on grade, bolt together, check for roundness using a center grade stake. Level the girt by digging out or filling in under girt, using a string level or transit for guidance. Note: With tanks Design No. 3 (Top Girt Only), use girt for checking grade, then remove for attachment to after scribing a circle on the earthen surface.

*Steel*

### STEEL ERECTION

1. Bolt top girt to steel shell securely, starting the self-tapping bolts from center towards each end.
2. Stand first panel on bottom girt, centering top girt splice with bottom girt, then attach second and succeeding panels to first, bolting both girt and shell splices (*hand tight only*) as you go. Notes: Insert caulking compound between shell splices prior to bolting together. With Tanks Design No. 3 (Top Girt Only), stand panel on scribed circle.
3. When last panel is in place, check top girt for roundness against center grade stake and plumb sides, using plumb bob or level, bracing or tying down, if necessary, to hold tank round and plumb. Then tighten all splice bolts, and again check for levelness with string level or transit.
4. Bolt panels to bottom girt.
5. Build a 2" to 3" dirt cove as shown around inside perimeter of tank, utilizing dirt from inside of tank and foot compact. (Also build cove on outside of Design No. 3 Tanks). Then rake or smooth entire bottom of tank.

### LINER INSTALLATION

1. Unroll liner towards center of tank and position polar cap (which is exact center of liner) in a shallow dug hole in center of tank. Then unfold liner and stretch out to sides.
2. Hang the liner on the top girt with clip clamps spacing the liner out evenly. Work slack out from center of tank so that liner is properly positioned with seams of liner hanging vertical.
3. Puncture liner approximately 1" down from cort insert in hem and slip over protruding bolt as shown on drawing. Leave slack between bolts equal to curvature of tank. *Do not pull taught*. Note: Liners of Design 3-B are grommeted for hanging.
4. Install protective shim on bolt - long end down.
5. Compress liner anchor against tank with clips and bolt.
6. Again position liner and lay weighted liner retainer ring out against liner tightly, completely around perimeter of tank.

### COMPLETION OF TANK

1. Install stay posts and attach to tank with the U Bolts provided.
2. If fence arms are utilized, bolt to tank and attach barbwire.

**NOTES:** 1. On tanks *Deisgn* No. 3-B, bolt both top and bottom girts to shell. Dismantling and re-assembling will necessitate removal and replacing splice bolts only.

2. Where corrosion boot is required, apply to bottom of shell before assembling panel.

**PLASTI-STEEL**<sup>INC.</sup>  
Formerly Plastic Products, Inc.

1005 WICHITA PLAZA / AM 2-6861 / WICHITA, KANSAS 67202

## DESIGN DETAIL AND

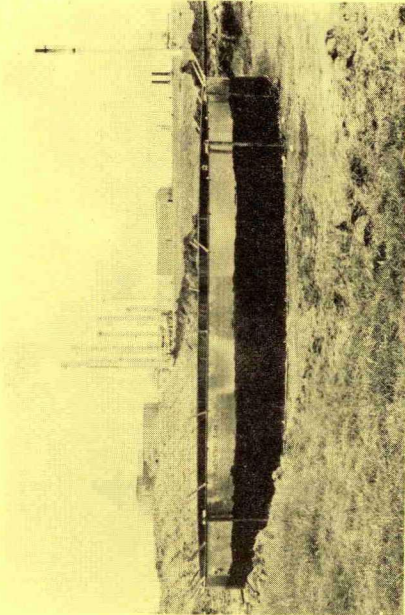
## ERECTION PROCEDURE

# PLASTI-STEEL TANKS

AVAILABLE IN SIZES  
50 BBL. TO 16,000 BBL.

— **TANKS CONSIST OF —**  
**PREFABRICATED GALVANIZED STEEL SHELL**  
(no bottom)  
**Punched and formed for assembly and erection in 10' sections.**  
  
**ONE-PIECE HEAVY DUTY PLASTIC BAG LINER**  
Electronically fabricated in polar cap design to exact tank dimensions.

| UNIT SIZE<br>DIA. HGT. | CAPACITY<br>IN<br>BARRELS | UNIT SIZE<br>DIA. HGT. | CAPACITY<br>IN<br>BARRELS |
|------------------------|---------------------------|------------------------|---------------------------|
| 10' x 4'               | 50 Bbls.                  | 80' x 4'               | 3,546 Bbls.               |
| 13' x 4'               | 90 Bbls.                  | 90' x 4'               | 4,465 Bbls.               |
| 16' x 4'               | 143 Bbls.                 | 100' x 4'              | 5,465 Bbls.               |
| 20' x 4'               | 200 Bbls.                 | 120' x 4'              | 8,000 Bbls.               |
| 25' x 4'               | 364 Bbls.                 | 50' x 8'               | 2,920 Bbls.               |
| 30' x 4'               | 565 Bbls.                 | 60' x 8'               | 4,100 Bbls.               |
| 35' x 4'               | 687 Bbls.                 | 70' x 8'               | 5,500 Bbls.               |
| 40' x 4'               | 957 Bbls.                 | 80' x 8'               | 7,092 Bbls.               |
| 45' x 4'               | 1,100 Bbls.               | 90' x 8'               | 8,930 Bbls.               |
| 50' x 4'               | 1,460 Bbls.               | 100' x 8'              | 10,930 Bbls.              |
| 60' x 4'               | 2,050 Bbls.               | 110' x 8'              | 13,200 Bbls.              |
| 70' x 4'               | 2,750 Bbls.               | 120' x 8'              | 16,000 Bbls.              |



PLANT WASTE WATER ACCUMULATION TANK

*Suitable for storage of fresh water, salt water, chemicals, or wastes, etc.*

*Low initial cost — — good salvage value.*

*Easy to transport and install.*

*Minimum of grade preparation.*

*Suitable for either permanent or temporary reusable storage.*

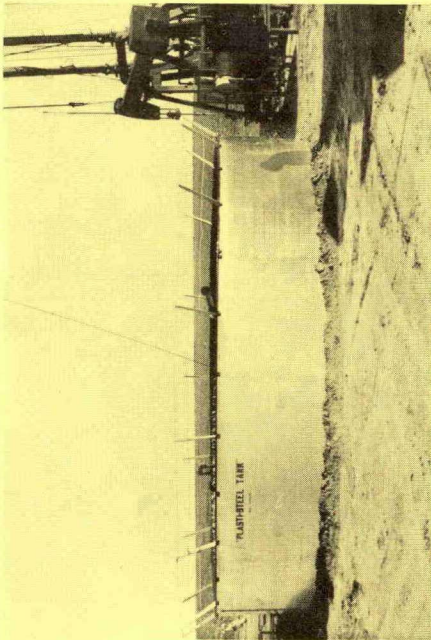
*Liners impervious to salt water, wastes, and most chemicals.*

*Can be visually inspected.*

*Acceptable to regulatory agencies.*

*Stock, weed, and debris proof.*

*Easy to modify or equip.*



OIL FIELD SALT WATER TANK

**PLASTI-STEEL**<sup>INC.</sup>  
(FORMERLY PLASTIC PRODUCTS, INC.)

1005 WICHITA PLAZA — AREA 316 — AM 2-6861 — WICHITA, KANSAS 67202

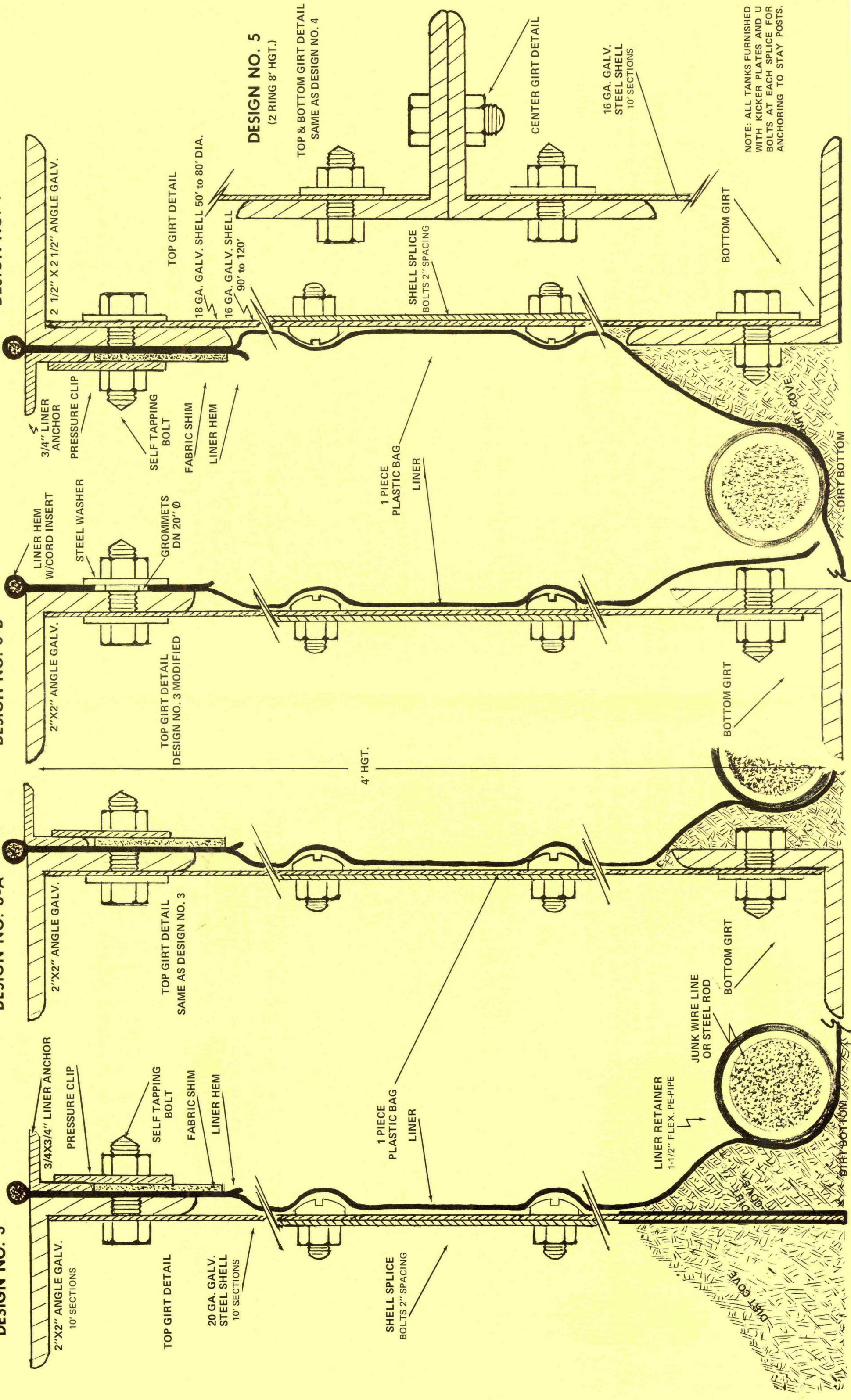
# PLASTI-STEEL TANK DESIGNS

# DESIGN NO. 3

**DESIGN NO. 3-A**

**DESIGN NO. 3-B**

# DESIGN NO. 4



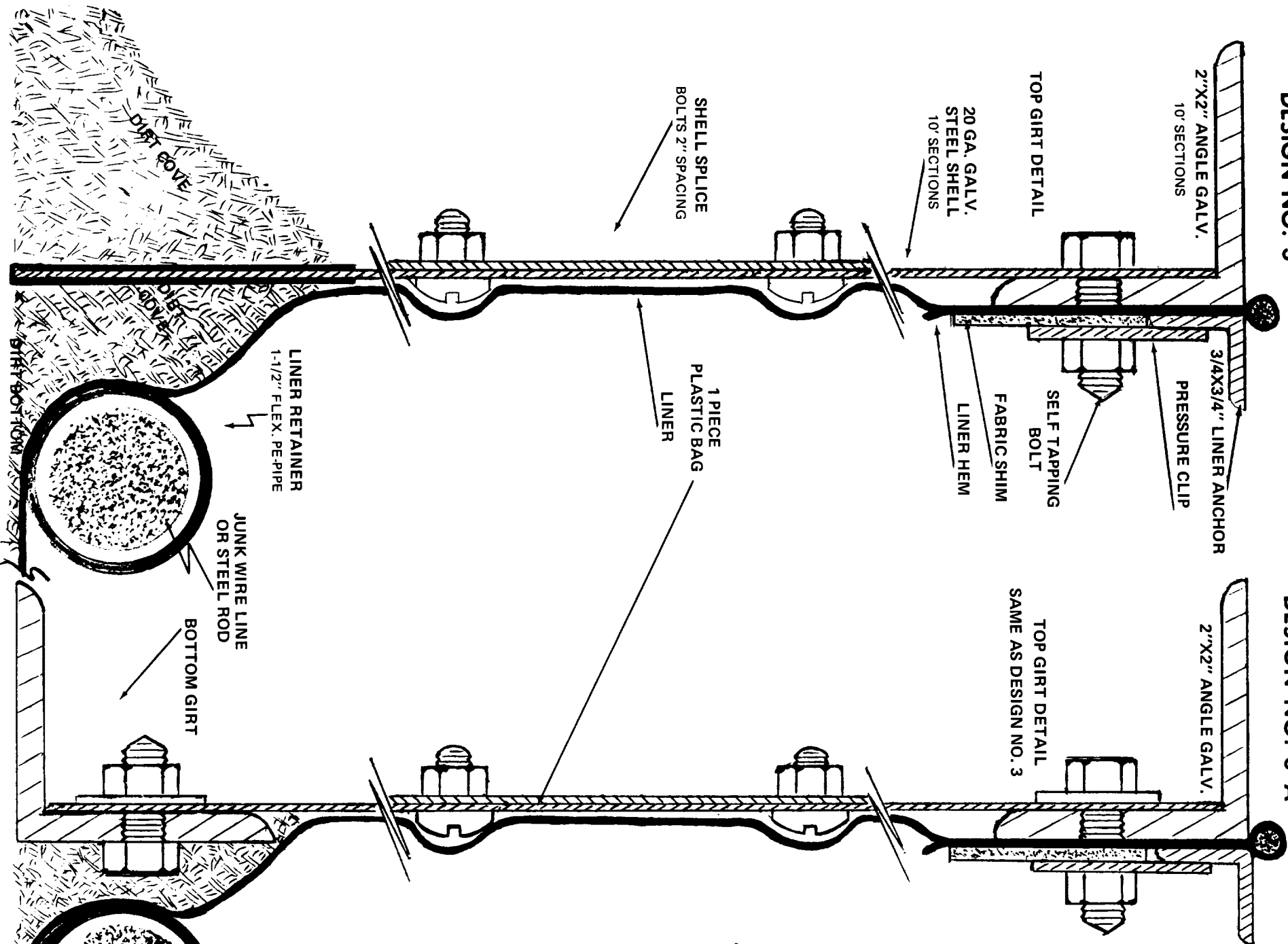
**NOTE: ALL TANKS FURNISHED WITH KICKER PLATES AND U BOLTS AT EACH SPICE FOR ANCHORING TO STAY POSTS.**

#### **RE: IMPROVED DESIGN "PLASTI-STEEL TANKS"**

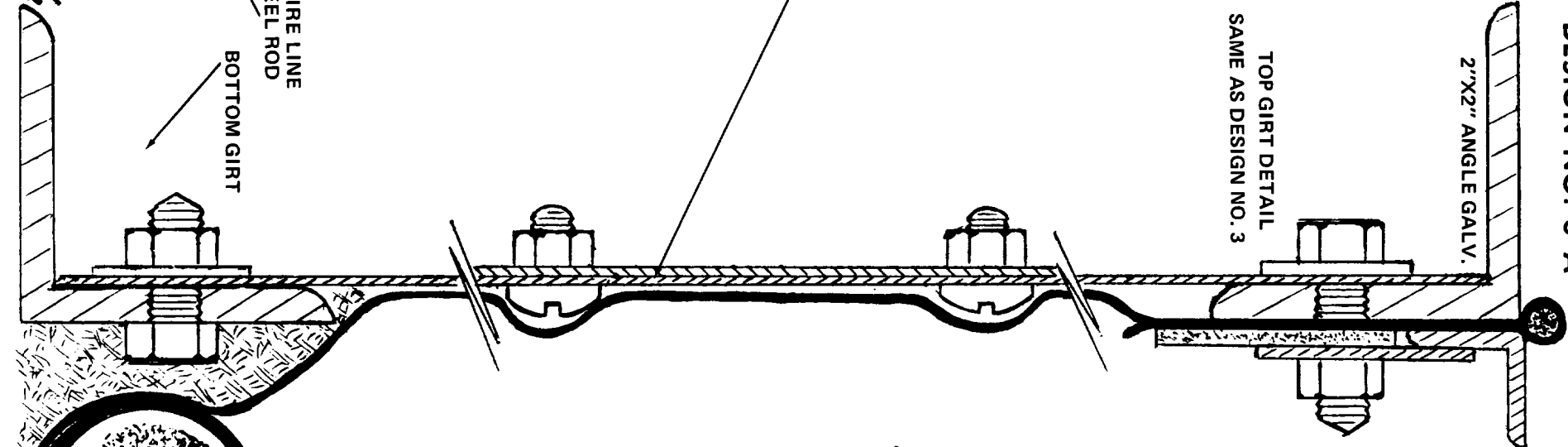
1. Tank, regardless of size, can now be erected, dismantled, transported and re-erected in 4' x 10' panels. Dismantling and re-erecting necessitates only the removal and replacement of splice bolts.
2. Steel shells and structural girts are in 10" pre-punched and matched lengths for simple joining into panels.
3. Self tapping bolts, by cutting threads in girts lock shell to same increasing structural strength.
4. Sectional design reduces labor requirements and erection time. 4' x 10' panels can be handled easily by 2 men.
5. Erection has been simplified with less chance of mis-mating or alignment.
6. Shell splice widths have been increased from 2" to 4", splice bolts from 12 to 22 which on 10' panels vs. 30' to 40' stretchout on steel shell stiffens the tank vertically.
7. Steel panels can be pre-assembled in the warehouse or at job site prior to erection. Requires bolting shell to girt with 6 self-tapping bolts.
8. All steel parts are now electro-galvanized or cadmium plated for better corrosion resistance.

# PLASTI-STEEL TANK DESIGNS

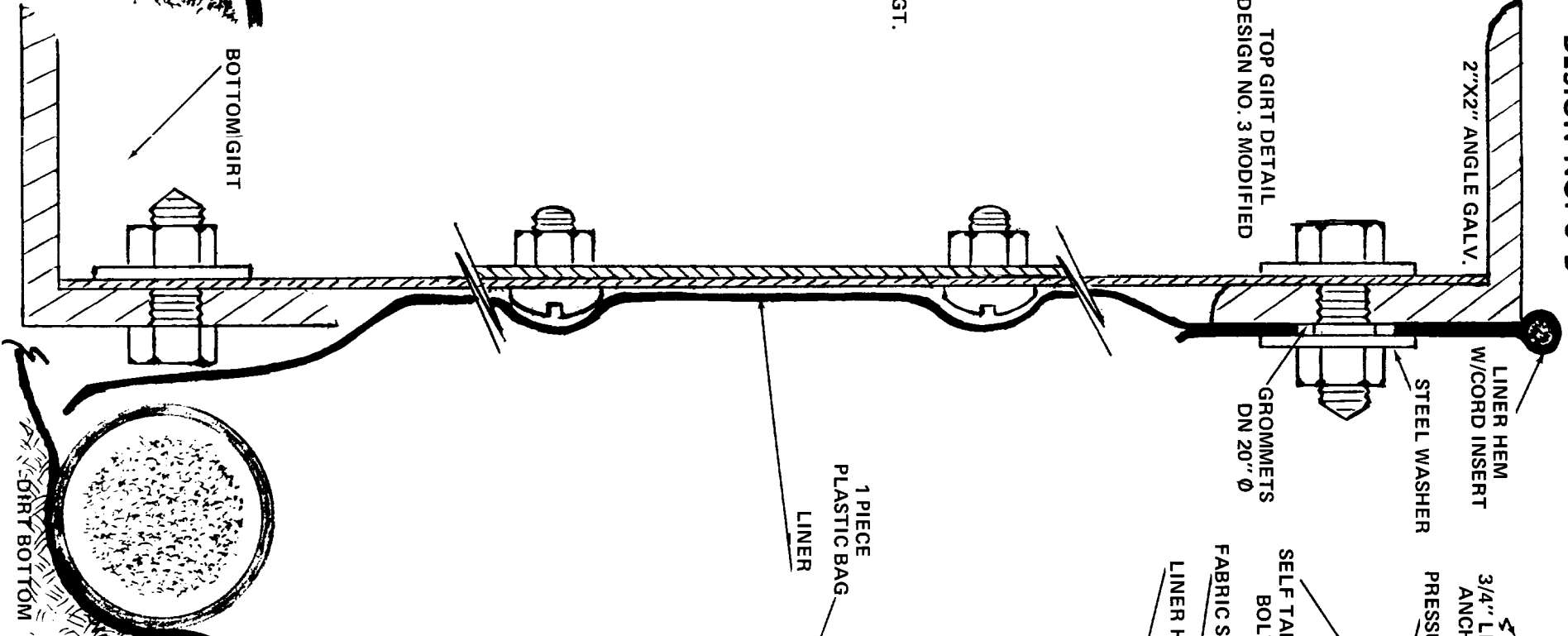
DESIGN NO. 3



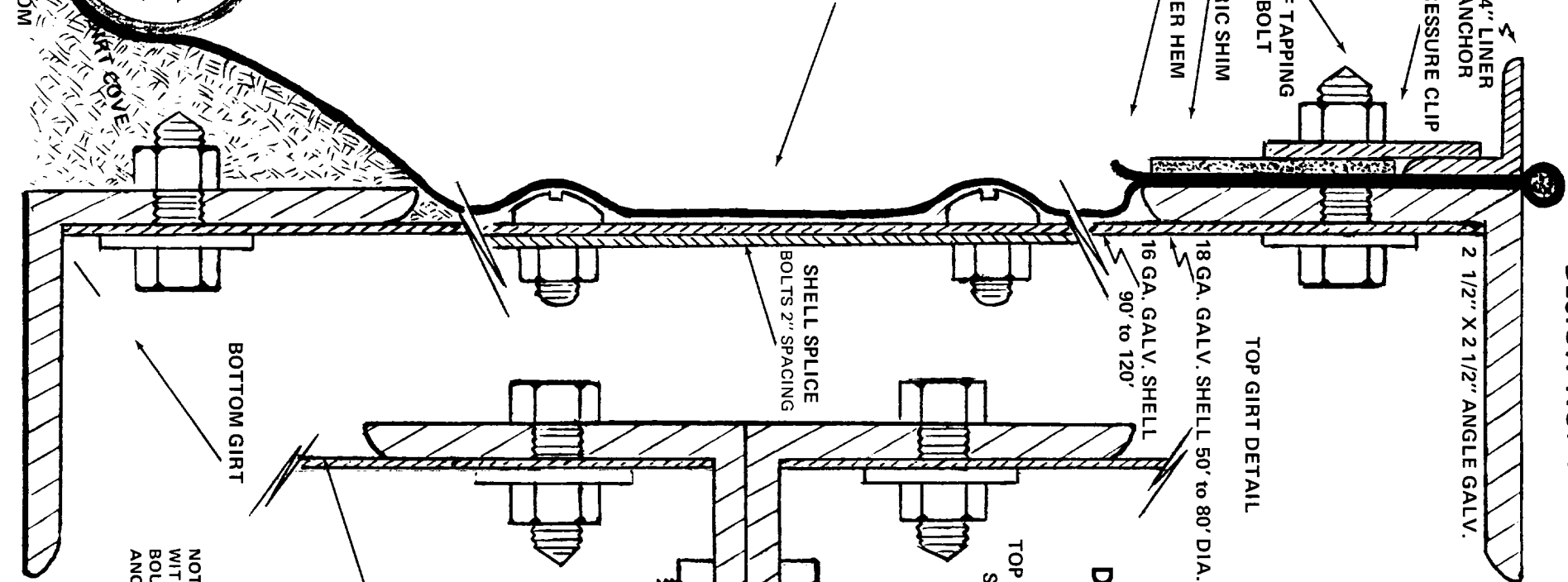
DESIGN NO. 3-A



DESIGN NO. 3-B



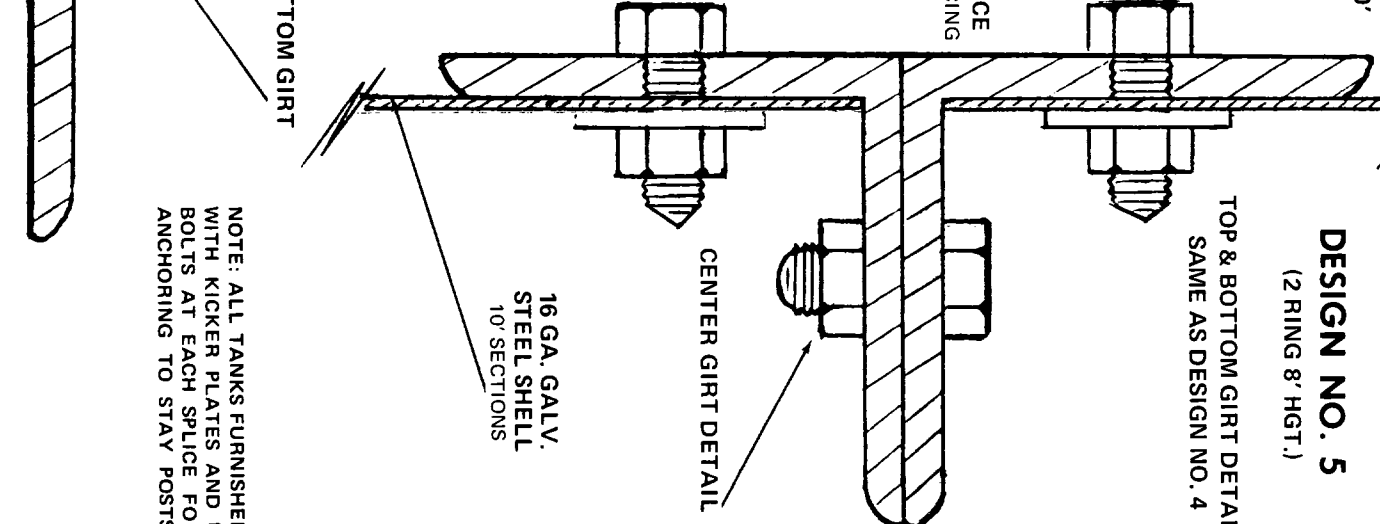
DESIGN NO. 4



DESIGN NO. 5

(2 RING 8' HGT.)

TOP & BOTTOM GIRT DETAIL  
SAME AS DESIGN NO. 4



NOTE: ALL TANKS FURNISHED WITH KICKER PLATES AND U BOLTS AT EACH SPLICE FOR ANCHORING TO STAY POSTS.

# GENERAL INSTALLATION PROCEDURE

## GRADE PREPARATION

1. Clear and level area where tank is to be set, removing rocks, brush, stubble, etc. Note: Dirt is preferable to sand if any fill of grade is required.
2. Lay out bottom girt on grade, bolt together, check for roundness using a center grade stake. Level the girt by digging out or filling in under girt, using a string level or transit for guidance. Note: With tanks Design No. 3 (Top Girt Only), use girt for checking grade, then remove for attachment to after scribing a circle on the earthen surface.

## STEEL ERECTION

1. Bolt top girt to steel shell securely, starting the self-tapping bolts from center towards each end.
2. Stand first panel on bottom girt, centering top girt splice with bottom girt, then attach second and succeeding panels to first, bolting both girt and shell splices (*hand tight only*) as you go. Notes: Insert caulking compound between shell splices prior to bolting together. With Tanks Design No. 3 (Top Girt Only), stand panel on scribed circle.
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3. Puncture liner approximately 1" down from cort insert in hem and slip over protruding bolt as shown on drawing. Leave slack between bolts equal to curvature of tank. *Do not pull taught*. Note: Liners of Design 3-B are grommeted for hanging.
4. Install protective shim on bolt - long end down.
5. Compress liner anchor against tank with clips and bolt.
6. Again position liner and lay weighted liner retainer ring out against liner tightly, completely around perimeter of tank.

## COMPLETION OF TANK

1. Install stay posts and attach to tank with the U Bolts provided.
2. If fence arms are utilized, bolt to tank and attach barbwire.

**NOTES:**

1. On tanks Design No. 3-B, bolt both top and bottom girts to shell. Dismantling and re-assembling will necessitate removal and replacing splice bolts only.
2. Where corrosion boot is required, apply to bottom of shell before assembling panel.

**PLASTI-STEEL** INC.

Formerly Plastic Products, Inc.

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