

# **TRICON™ RETAINED SOIL WALL SYSTEM**

***CrimpLock™* Connection System**  
(5'-0" x 10'-0" Panels)

## **CONSTRUCTION MANUAL**

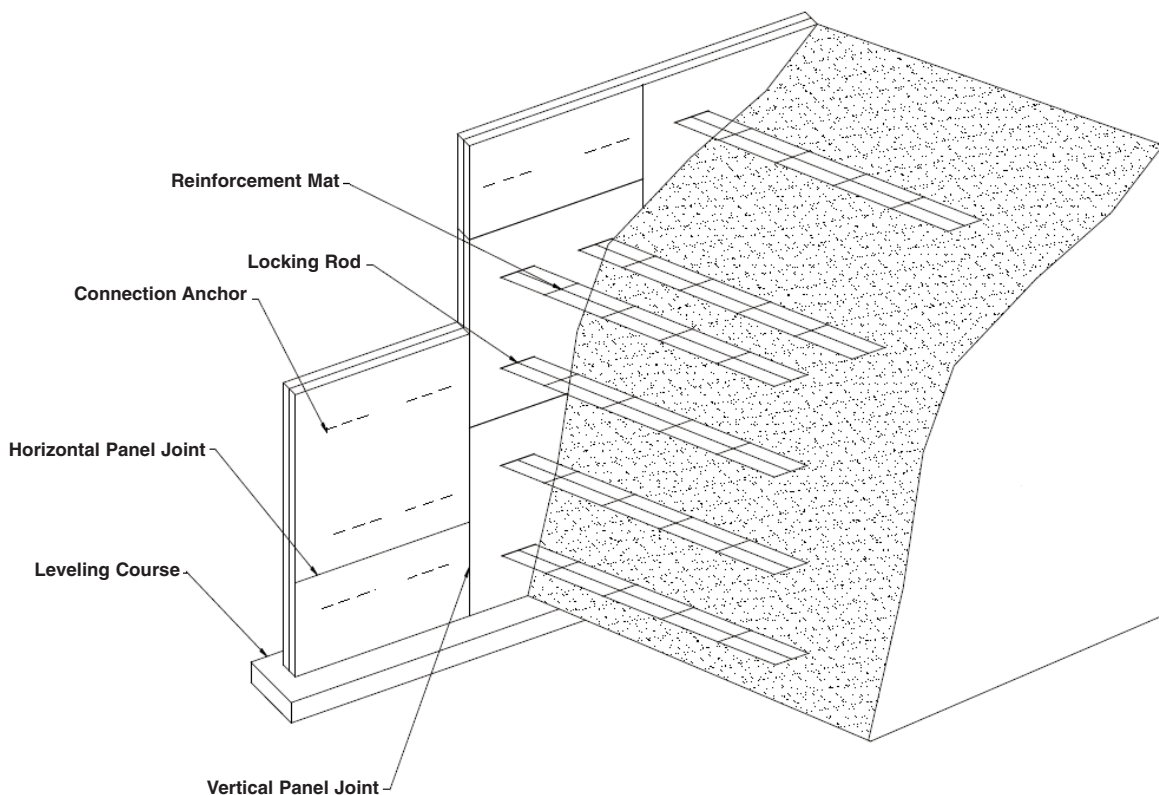
**Tricon**  
Precast Limited™



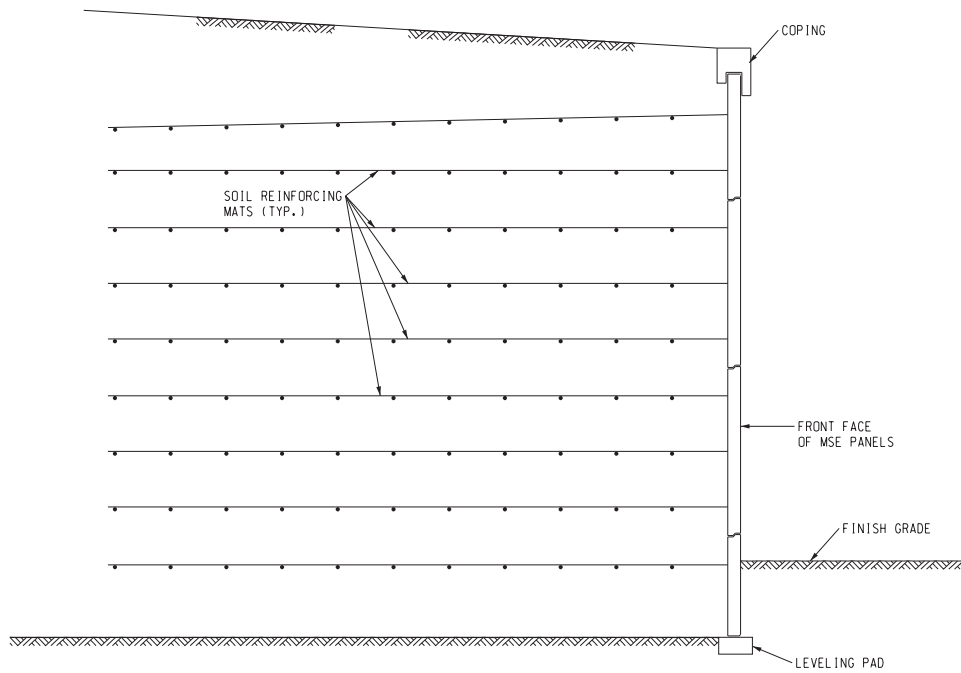
# TRICON™ RETAINED SOIL WALL SYSTEM

The Tricon™ Retained Soil Wall System is a mechanically stabilized earth retaining wall structure comprised of a cast-in-place leveling course (by others), precast concrete fascia panels, panel alignment shims, HDPE bearing pads, filter fabric and adhesive joint materials, connection anchors, locking rods, hot-dipped galvanized welded wire soil reinforcement mats combined with a select backfill mass (by others). Included with the system are engineered design and erection drawings, precast concrete copings, as well as limited on-site technical assistance as required.

Figure 1 below illustrates the installed system.

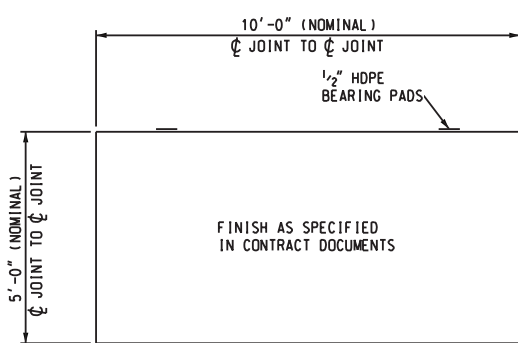


**FIGURE 1**



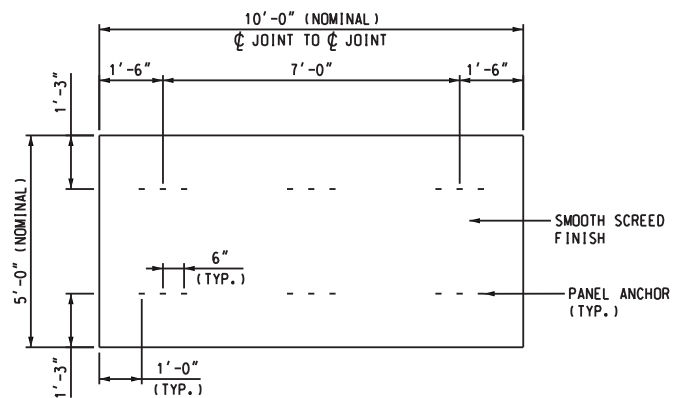
Cross Section of Typical Retained Soil Wall

FIGURE 2



Front Face Elevation

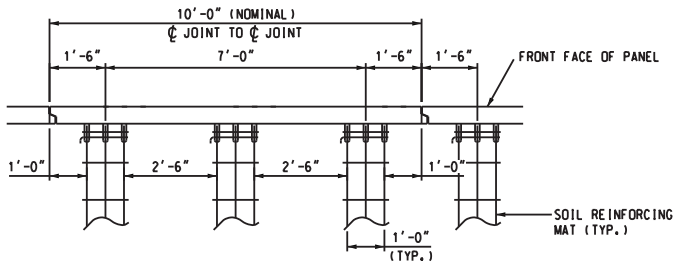
Nominal Erection Dimension = 5'-0" H  
10'-0" W CL Joint to CL Joint



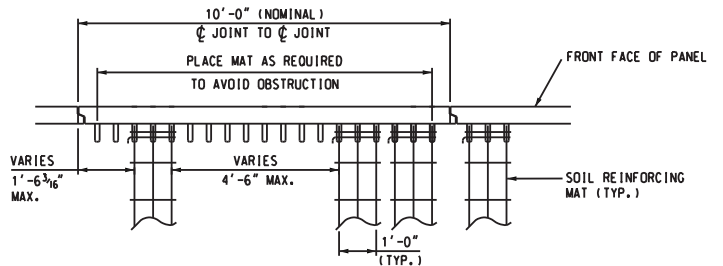
Back Face Elevation

Mat Width Will Vary - See Elevation Drawings for Mat Designations  
Type W - 12" Wide  
Type Y - 6" Wide

FIGURE 3



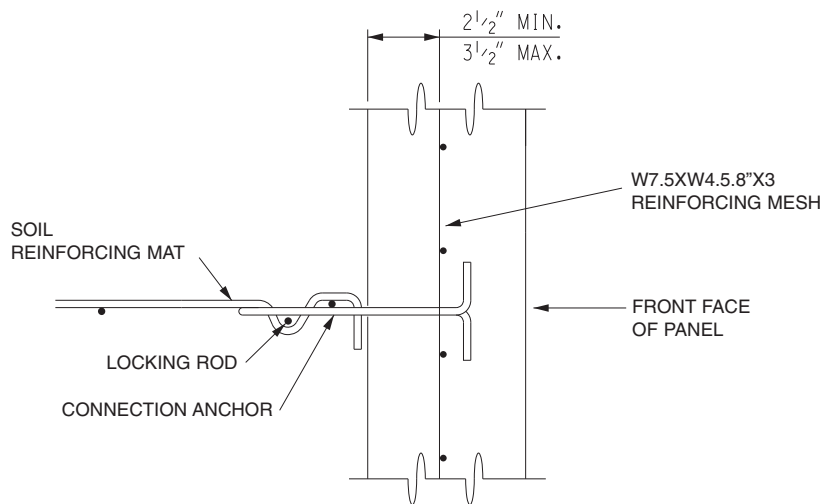
**Panel with Type "W" (12" Wide) Soil Reinf.**



**U-Panel with Type "W" (12" Wide) Soil Reinf.**

**FIGURE 4**

**CONNECTION ANCHOR  
DETAIL**



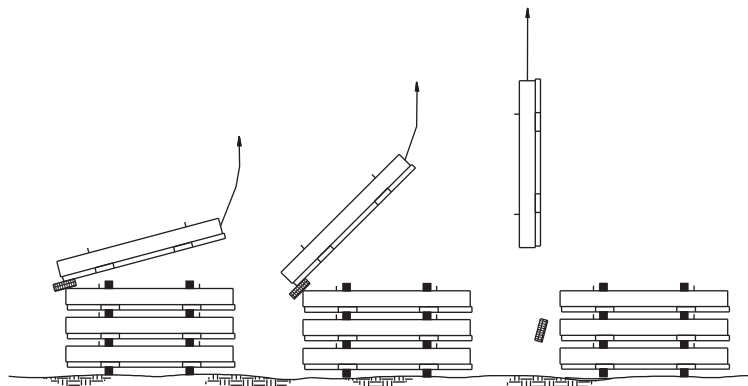
**FIGURE 5**

## Delivery, Storage and Handling

**Soil Reinforcement Mats-** Mats are supplied in bundles, by size and tagged with description. Mats should be stored on wooden dunnage. Mats should be color coded by size to help identify easily.

**Wall Panels-** Unloading- Panels can be unloaded individually by using a four point lift with slings. Panels should be stacked four high on level ground. The panels are shipped stacked four high and can be unloaded by stack using nylon slings.

**Storage-** Panels should be stored on adequate dunnage as near to the final setting position as possible on firm, level ground. Dunnage should maintain vertical alignment to eliminate the chance of the panel being damaged. When lifting panels off storage stack, always place a wooden block between panels to prevent damage when rotating to vertical position. (See Figure 6)



**FIGURE 6**

# ERECTION PROCEDURE

## I. Leveling Course Construction

Layout the leveling course on the centerline and grade of the wall panels as provided by the project drawings.

Course dimensions are detailed in the supplied erection drawings. Typical course is 6 inches thick and 12 inches wide.

Finish leveling course to a smooth trowel finish.

**LINE AND GRADE MUST BE HELD TO 1/4" TOLERANCE.**



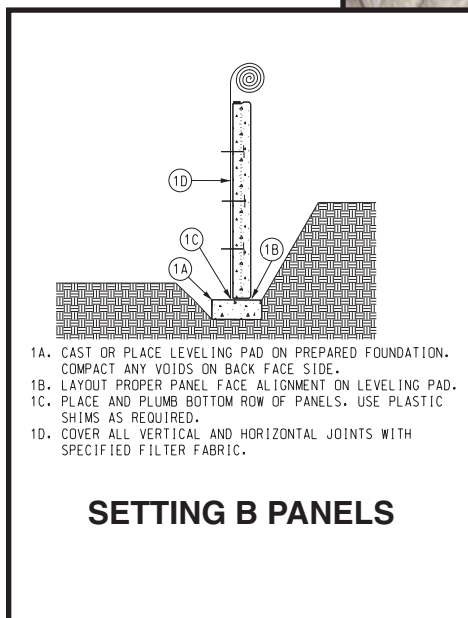
## II. Setting "B" Panels

Snap chalk line on leveling course along the face of the panels.

Place first "B" panel. Closely check for horizontal alignment and vertical plumb. Back-batter panel as required to obtain vertical plumb after backfill. A 1/4" to 3/4" back-batter is typical – adjust as needed for different backfill materials. Use wooden wedges and/or shims as required.

Brace panel with 2 X 4 lumber for vertical alignment.

Set second half "B" panel at a typical 3/8" spacing. Align, shim, and brace panel.



Use clamps to secure First and Second panels together.

Set remaining "B" panels in wall as described above.

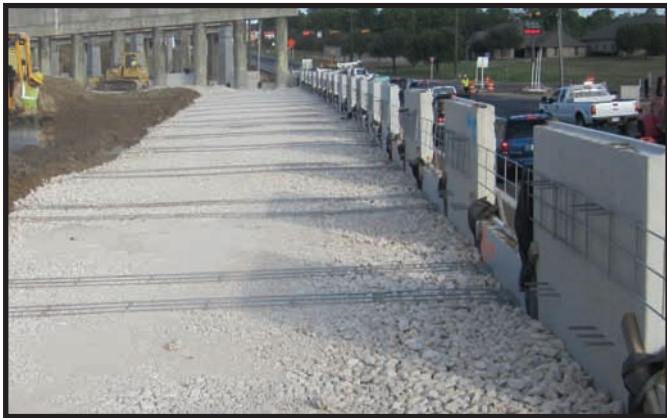
Install supplied filter fabric with adhesive over the vertical and horizontal joints. Make sure to cover the joint between the panel and leveling course.



### III. Backfill

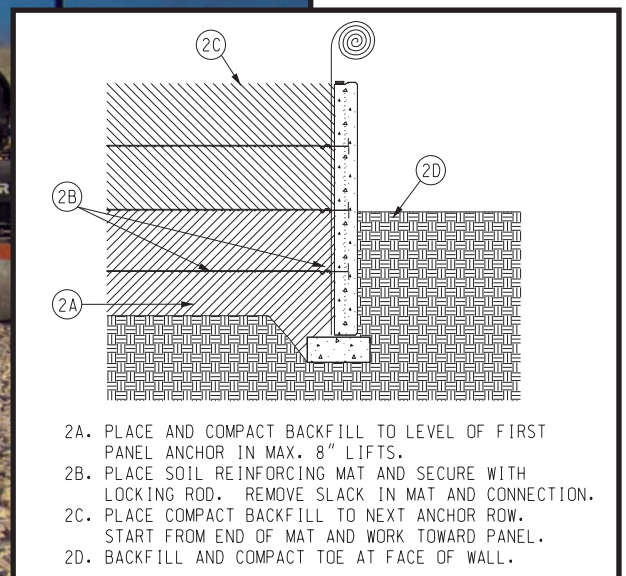
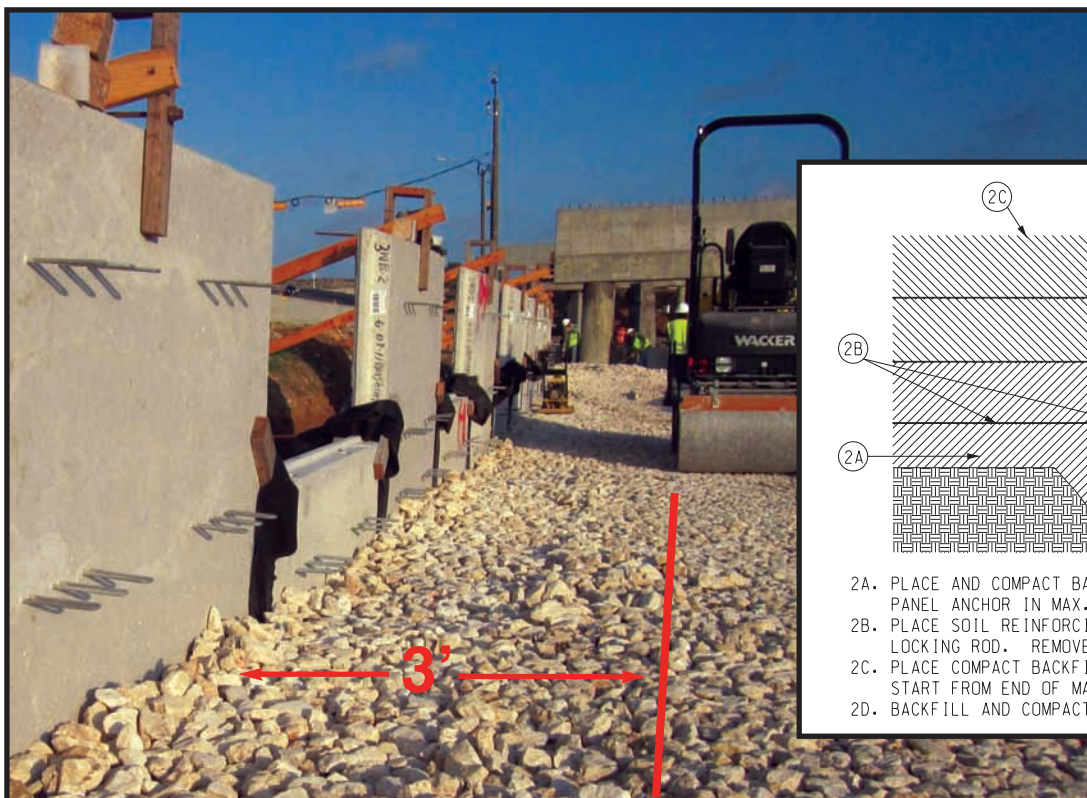
Place and compact the first lift of specified backfill up to the first row of soil reinforcement mats. Use hand operated compactors within 3 feet of the panel.

Place soil reinforcement mats into the wall connectors and install the locking rod. Remove any slack in the connection by using a wooden wedge between the panel and transverse wire.



The use of tie wire in this connection system is neither recommended or required. If tie wire is used, it must be coated to prevent galvanic reaction. Uncoated tie wire should never be used with this wall system.

Continue installing and compacting backfill in specified lifts to the next level of connectors. (Do not operate tracked equipment on reinforcing mats. Equipment with rubber tires can be used, but with extreme caution.)





## IV. Installation of Second and Following Panel Courses

Always backfill to the top of the prior course before setting the next course.

Remove clamps one panel at a time. Remove wooden wedges from panel face. Place supplied bearing pads on top of the panels in the preformed bearing pad pockets.

Set "A" panel in place. Check spacing, and the horizontal and vertical alignment of the panel. Set joint clamps.

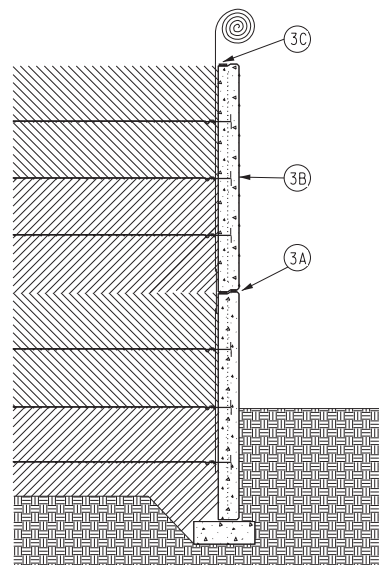
Install supplied filter fabric with adhesive over the vertical and horizontal joints.



Install backfill and soil reinforcement mats as described in Step III – Backfill.

Check the vertical alignment. No bracing should be required for the remainder of the wall.

Backfill front of the wall above the leveling pad according to the plans.



3A. PLACE BEARING PADS AT TOP OF PANEL.  
3B. PLACE AND PLUMB NEXT LIFT OF PANELS.  
3C. REPEAT SEQUENCE 2B THRU 3C UNTIL TOP OF WALL ELEVATION IS REACHED.

## V. Final Completion of the Wall

Install “T” panels as described in Step IV – Installation of Second and Following Panel Courses.

Complete backfill and compaction. Remove all bracing, clamps, and wedges.

Form and pour the level-up course to accept precast coping, or form and pour coping in place as specified.



## Materials Supplied with the Tricon™ Retained Soil Wall System

- Precast Concrete Fascia Panels
- Panel Alignment Shims
- Panel Bearing Pads
- Filter Fabric and Adhesive
- Soil Reinforcement Mats
- Connection Locking Rods
- Panel Lifting Devices (1 set)



## Material, Tools and Equipment Required by Contractor

- Excavation Equipment
- Leveling Course Formwork and Concrete
- Crane, Picker or Boom Truck
- Cable and Sling Rigging
- Survey Instrument
- Chalk Line, Level, Plumb Bob
- Wooden Wedges, Pry Bars
- Select Backfill Material and Placement Equipment
- Small Vibratory Roller
- Joint Clamps and Bracing
- Hammer Drill and Concrete Bits
- Miscellaneous Small Tools



# TRICON PRECAST LTD.

**F**ounded in 1987, Tricon Precast Ltd. provides innovative engineered MSE wall and bridge systems throughout North America. With headquarters in Houston, Tricon operates two state-of-the-art plants strategically located in Texas; Houston in the Gulf Coast Region and San Antonio in the Central Texas Region making it the largest precast concrete manufacturer in the state. Networks of licensed producer partners expand the reach of the Tricon systems by providing manufacturing and support across the US and Canada.

Tricon de Mexico headquartered in Mexico City, provides the Tricon products and systems into many parts of that country.

Tricon Engineering Group (TEG) headquartered in Grand Rapids, MI, with offices in Texas, provides a full range of structural engineering services not only for all Tricon system applications but for other civil construction projects across the continent. TEG continues to expand its network with the most talented and innovative professional engineering staff in the country.

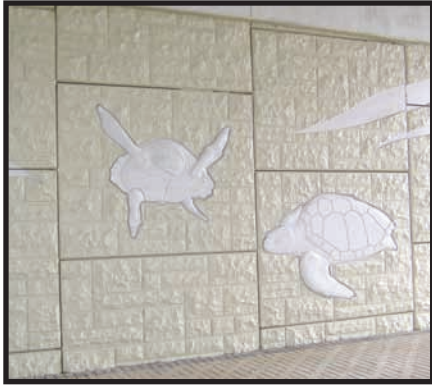
Tricon's unique patented systems are produced and offered by a growing number of licensed precast affiliate partners. Licensing agreements are currently available in certain geographic locations. Interested precast concrete producers should please contact us for more information.

Products and Systems include:

- *Retained Soil Wall System™*
- *Drill Shaft Fascia Panel Wall System*
- *Soil Nail Fascia Panel Wall System*
- *Temporary Wire Wall System*
- *Permanent Wire Wall System*
- *Alfabloc® Wall System*
- *Shuttabloc™ Wall System*
- *Redi-Span™ Arch Bridge System*
- *Tricon Plank-Deck™ Bridge System*
- *Con-Struct™ Prefabricated Bridge System*
- *Sound Wall System*
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- *Precast Concrete Traffic Barriers*







# Tricon

Precast Limited™



(Henry Road between Aldine Bender & Aldine Mail Rt.)

**TRICON PRECAST, LTD.**  
**15055 HENRY RD.**  
**HOUSTON, TX 77060**  
**281-931-9832 • 281-931-0061 FAX**  
**1-877-387-4266 (TOLL FREE)**



(FM 2252 @ Old Nacogdoches Road)

**SERVTEX PLANT**  
**21248 OLD NACOGDOCHES RD.**  
**NEW BRAUNFELS, TX 78132**  
**830-629-7000 PHONE**  
**830-629-7556 FAX**