



SAFETY ★ QUALITY ★ SERVICE

AN INFORMATION GUIDE TO

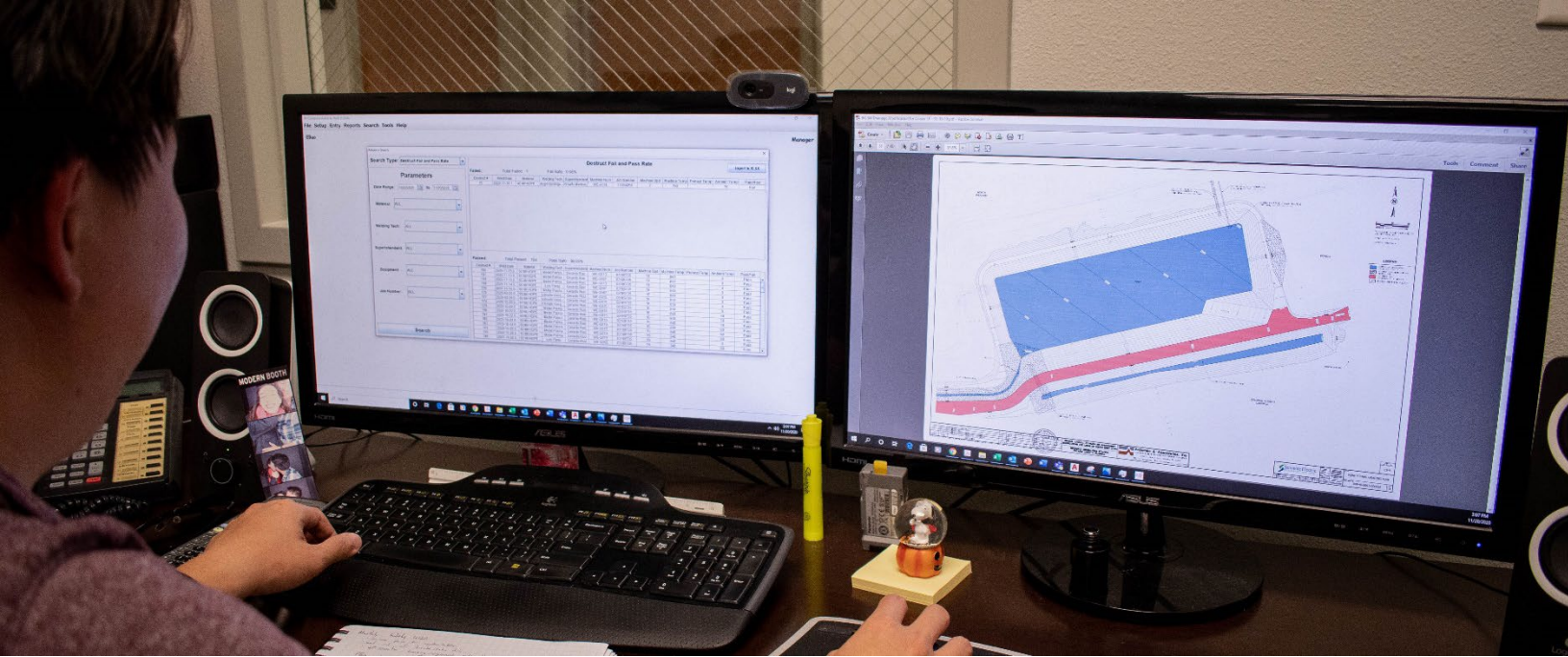
# COMPUTER AIDED AS-BUILT

4301 STERLING COMMERCE DRIVE  
PLANT CITY, FL 33566

[COMANCO.COM](http://COMANCO.COM)

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## WHAT IS CAAB?

CAAB™ is a COMANCO-exclusive proprietary software that launched in 2009 for geosynthetic installation services. The **Computer Aided As-Built (CAAB™)** program was *developed with the intention of providing a more authentic and efficient means of documentation* versus the industry norm of handwritten record keeping.

Since then, CAAB™ has technologically advanced into something much more.

The intent of CAAB™ is to provide a centralized database for all Quality Assurance/Quality Control parameters on past and current projects the company performs. Then, to use the gathered information for as-builts, reporting, and metrics analysis. Where once CAAB™ was solely a way to build GPS as-builts, now our program is a function of all facets for geosynthetic liner construction. The tablet, cloud-based, proprietary system provides a platform for in-situ quality data entry integrated into 3D GPS modeling features.

CAAB™ provides **two key functions**:

1. Authentic, automated documentation and,
2. Advanced search analytics



# THE BENEFITS CAAB OFFERS

## CLOUD BASED PROGRAM

- Data is captured and entered in real-time so that all QC documentation is up to date and any errors can be caught and fixed immediately rather than at the end of the project.
- QA/QC submittal packages can be created with a much quicker turnaround than hand-written forms.
- Project set-up can be completed from anywhere – specifications, materials, and any site-specific data can be prepared in the office prior to going out to the field.

## EFFICIENT FIELD DATA COLLECTION

- With efficient programming, seam control reports and repair reports are automatically populated with information from GPS as-built so that there is no double entering of information.
- The program is equipped with functions to help speed up data entry.
- The less time spent collecting and inputting information, the more time that is spent doing actual QA on the liner and checking welds/overlaps/subgrade.

## ELIMINATES ERRORS

- With the in-house program, prewelds and destructs will automatically fail if the values do not match the pre-setup peel and shear values.
- The seam control and repair report will automatically “fail” if there is no corresponding preweld for the information entered in.
- Air test values will fail if the PSI loss is greater than the pre-setup values in the layer setup.



## ADVANCED SEARCH ANALYTICS

- The analytics dashboard to gathers data on destruct test failures and other welding analytics per operator, machine, material, or superintendent.

Advance Search

Search Type: **Destruct Fail and Pass Rate**

**Parameters**

Date Range: 02/16/2021 To 03/19/2021

Material: ALL

Welding Tech: Angel Rodriguez

Superintendent: Arnulfo Martinez

Equipment: ALL

Job Number: ALL

**Search**

**Destruct Fail and Pass Rate** Export to XLSX

Failed: Total Failed: 0 Fail Rate: 0.00%

| Destruct #   | Weld Date    | Material    | Welding Tech  | Superintendent   | Machine Num | Job Number | Machine Spd | Machine Temp | Preheat Temp | Ambient Temp | Pass/Fail |
|--|--------------|-------------|---------------|------------------|-------------|------------|-------------|--------------|--------------|--------------|-----------|
| <b>Passed: Total Passed: 16 Pass Rate: 100.00%</b> |              |             |               |                  |             |            |             |              |              |              |           |
| 256  | 2021-02-23 0 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 850          |              | 63           | Pass      |
| 257  | 2021-02-23 0 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A104     | 031910207  | 7           | 850          |              | 63           | Pass      |
| 258  | 2021-02-23 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 850          |              | 66           | Pass      |
| 270  | 2021-02-23 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 7           | 850          |              | 70           | Pass      |
| 273  | 2021-02-24 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 850          |              | 75           | Pass      |
| 277  | 2021-02-25 0 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 830          |              | 57           | Pass      |
| 279  | 2021-02-25 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 830          |              | 65           | Pass      |
| 281  | 2021-02-25 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 830          |              | 74           | Pass      |
| 282  | 2021-02-25 0 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 830          |              | 76           | Pass      |
| 284  | 2021-02-25 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 7           | 830          |              | 80           | Pass      |
| 287  | 2021-03-04 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 830          |              | 73           | Pass      |
| 289  | 2021-03-04 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 850          |              | 75           | Pass      |
| 291  | 2021-03-04 1 | 40 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 8           | 850          |              | 75           | Pass      |
| 294  | 2021-03-05 0 | 60 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 7           | 850          |              | 67           | Pass      |
| 296  | 2021-03-05 1 | 60 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 7           | 850          |              | 71           | Pass      |
| 299  | 2021-03-11 0 | 60 MII HDPE | Angel Rodrigu | Arnulfo Martinez | WE-A114     | 031910207  | 7           | 850          |              | 59           | Pass      |

Destruct test failure rates are crucial to the geosynthetic industry as a metric for determining the quality of welders. However, typically there is only a broad overview such as, “the company has an x% destruct failure rate” and no further information. CAAB allows for a deeper dive into the analytics behind destruct failures. By being able to sort by the operator, welding machine, superintendent, or material, CAAB allows users to hone in on specific issues and fix them quickly and concisely.

- The big picture view shows total square feet of liner installed versus bid quantities, or roll waste quantities, so project managers can quickly oversee multiple projects at once.

(See next page.)

Advance Search X

Search Type: **SF Deployed** **SF Deployed** [Export to XLSX](#)

Total SF Deployed: 1,959,995

**Parameters**

Date Range: 02/16/2021  To 03/16/2021

Material: ALL

Welding Tech: ALL

Superintendent: ALL

Equipment: ALL

Job Number: ALL

**Search**

| Job Number | Job Name                 | SF Panel Area Only | SF Anchor Trench | SF Ballast Trench | SF Total Deployed | Material              | Superintendent   |
|------------|--------------------------|--------------------|------------------|-------------------|-------------------|-----------------------|------------------|
| 03178987   | Metro South Shore Ba...  | 75789.53           | 0.0              | 0.0               | 75789.53          | 80 Mil LLDPE Smooth   | Jorge Barrantes  |
| 03189735   | SOUTH PIERCE A-5         | 529329.6           | 0.0              | 0.0               | 529329.6          | Primary               | Gerardo Ruiz     |
| 031910207  | Mosaic SF Cooling Po...  | 305460.94          | 3844.424         | 0.0               | 309305.34         | 40 Mil HDPE Textured  | Arnulfo Martinez |
| 031910207  | Mosaic SF Cooling Po...  | 101075.94          | 6543.5728        | 0.0               | 107519.51         | 50 Mil HDPE Textured  | Arnulfo Martinez |
| 032010576  | Mosaic Bartow SGS RR     | 37575.21           | 2441.5195        | 0.0               | 40016.73          | 40 Mil HDPE Textured  | Jorge Gomez      |
| 032010601  | Mosaic Bonnie Mine R...  | 8971.338           | 0.0              | 0.0               | 8971.338          | 80 Mil HDPE Textured  | Jeremy Giles     |
| 032110770  | Mosaic Bartow SGS Li...  | 14000.369          | 2150.2708        | 0.0               | 16150.64          | 80 Mil HDPE Textured  | Jorge Gomez      |
| 07189237B  | Nutrien White Springs    | 923340.2           | 9255.228         | 0.0               | 632595.44         | Primary               | Juan Ortiz       |
| 07189237B  | Nutrien White Springs    | 6648.6665          | 0.0              | 0.0               | 6648.6665         | Secondary             | Juan Ortiz       |
| 07189237C  | Nutrien Toe Road and...  | 141208.12          | 1381.7365        | 0.0               | 142589.86         | Primary               | Martin Calderon  |
| 07189237C  | Nutrien Toe Road and...  | 16949.865          | 0.0              | 0.0               | 16949.865         | Secondary             | Martin Calderon  |
| 072010540  | Duke Energy Crystal R... | 6468.501           | 4127.2046        | 0.0               | 10595.706         | 50 Mil LLDPE Textured | Tony Sanchez     |
| 072010540  | Duke Energy Crystal R... | 51294.67           | 3686.6694        | 31.740667         | 55015.062         | 60 Mil HDPE Textured  | Tony Sanchez     |
| 072010594  | Switch Proposed U.D. ... | 8425.336           | 0.0              | 0.0               | 8425.336          | Secondary             | Alejandro Loza   |

CAAB can provide a big picture overview to project managers or upper management who are looking to see progress over more than one project. It is also essential to see how much is installed per job for billing purposes and projecting out completion dates to bid future work.

