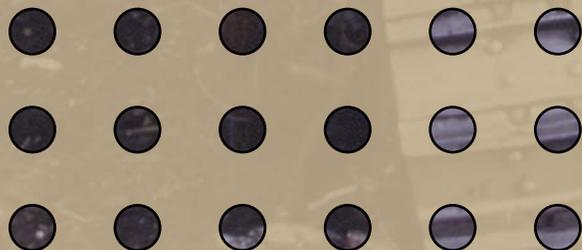


Anatomy: Hurricane Andrew

In the early morning hours of August 24, 1992, Hurricane Andrew hit south Dade County with a vengeance. For several hours, sustained winds in excess of 165 miles per hour laid waste to all that was in its path. Microbursts of intense proportions literally destroyed hurricane-proof hangars at Homestead Air Force Base and Tamiami Airport. Hundreds of acres of mobile home parks were completely destroyed. Thousands of acres of agricultural properties were ruined.

The north eye wall made landfall between SW 152nd Street and Kendall Drive, the south eye wall at Naranja Lakes, with ground zero at Cutler Ridge. Naranja Lakes sustained Andrew's highest winds.

This is a chronological summary of the Phillips and Jordan, Inc.'s recovery efforts assisting the U.S. Army Corps of Engineers following Hurricane Andrew.



Background

The unanimous conclusion by all experts was that Hurricane Andrew was the worst natural disaster in terms of property damage to hit the continental United States in its recorded history. Hurricane Andrew was the third most powerful hurricane to strike America. Only Camille in 1969 and the 1935 Labor Day storm that hit the Florida Keys had lower barometric pressures at landfall. Andrew's barometric pressure inside the eye was registered at 926 millibars (27.22 inches) near Homestead. The storm surge was measured at 16.9 feet at Deering Estate on Biscayne Bay.¹

The toll of devastation left in Andrew's wake included¹ :

- 137,561 homes damaged or destroyed
- 300,000 plus people left homeless
- \$390 million damage to Dade County schools²
- 400 airplanes destroyed
- 33,000 plus acres of citrus and nurseries destroyed³

Lt. General Authur E. Williams, chief of the Corps of Engineers, commented after his initial visit to the area that he saw "total devastation, beyond anything I've ever personally observed".¹ Bob Ayers, vice president with Brown & Root, observed that "several of the staff have been involved in the other emergency efforts, and all agree that the devastation in Homestead and Florida City is the worst they have ever seen, including Kuwait City".²



South Florida following Hurricane Andrew

Request For Proposals

On Tuesday, September 1, 1992, Phillips and Jordan, Inc. was requested to meet with representatives of the Corps of Engineers in Miami, Florida. We were questioned relative to our expertise, qualifications for, and commitment to the clean

up effort in the event that we were selected to be one of six (6) contractors requested to submit proposals to the Corps for a section of the clean up. Our response was positive.

On the following morning, September 2, 1992, we attended a pre-bid conference in Miami. Also attending were representatives from Brown & Root, Gilbert Southern, Hardaway, Hubbard, and Metric. We were briefed on the scope of work, and the manner in which the proposals were to be submitted. A helicopter tour of the work areas was conducted following the pre-bid meeting. That evening, the contractors and the Corps of Engineers met again for a Question & Answer session. At that time we were told the following:

Proposals would be due at 2:00 P.M. on the following day, September 3, 1992.

Each contractor would be allotted 30 minutes to give a presentation of their company's qualifications and proposal.

The Corps would evaluate all the proposals submitted, and would award from one to six contracts, based upon the Contractor's proposal, and presentation regarding:

- Ability to mobilize quickly
- Project Management team - who the key players would be
- Proposed Labor and Equipment - stressed local preference
- Subcontracting Plan - small and disadvantaged business
- Safety Plan

During the pre-bid briefing, Colonel Salt impressed upon the contractors the urgency of the undertaking and the serious nature of the accumulating debris with respect to health hazards. It was stressed that we had to immediately commit the resources necessary to expeditiously remove the debris from the streets. Further, he declared the Corps' commitment to the Partnering concept of contracting for this endeavor.

The Corps had divided the affected region into 6 geographic areas. Our review of these areas revealed that Area I had predominately wooded debris, Area II and IV were mostly rural areas with mixed debris, and Areas III, V and VI were the most heavily devastated areas, with huge quantities of mixed debris that posed the greatest health risk.

The Scope of Work for all areas was identical:

1. Collect and remove the debris from the streets
2. Haul the debris to debris reduction facilities
3. Separate the debris into:
 - a. Burnable debris
 - b. Non-burnable debris
 - c. Ineligible debris
4. Dispose of the burnable debris by burning
5. Stockpile the other debris

The contract called for the contractor to begin debris removal within 48 hours of the Notice-to-Proceed, to be fully mobilized within 7 days, and to have the debris removed from the assigned work area at the end of 30 days.

During the preparation of our proposal, we identified four (4) areas where subcontractors would play key roles:

- Trucking
- Owner/Operator equipment
- Environmental matters (Hazardous/Toxic materials)
- Liners for our burning operations

Contacts were made that night to Avisco, Inc. relative to the environmental aspects, Siboney Contracting relative to trucking, SLT Environmental relative to the synthetic liners for the burn areas, and several contractors with equipment relative to anticipated equipment needs. All of the contractors contacted were firms with whom we had enjoyed past, successful dealings, and who could be trusted to honor their commitments to begin debris removal within 48 hours of an NTP, and to be fully mobilized within 7 days. Given the fact that the Corps could possibly award one contract for the entire effort, we wanted to ensure that our proposal was complete in every detail, including subcontract participation from the small, disadvantaged firms (Avisco is woman-owned, and their major subcontractor, STEP, Inc., is a black-owned firm; Siboney, our trucking subcontractor, is a South Florida DBE firm; the equipment Owner/Operators are all small business). Commitments were made by us to these potential subcontractors that if we were awarded a contract we, in turn, would award subcontracts to the companies identified in our Proposal.

We submitted our proposal to the Corps on Thursday, September 3, 1992, followed by the oral presentation of our qualifications to perform the work. On the night of September 3, 1992, we received a call from the Corps informing us that we had been selected to perform one of the debris removal contracts. Our assigned area was to be Area III, which included

portions of Cutler Ridge, Perrine, Naranja Lakes, and Homestead. The area encompassed approximately 50 square miles.

On Friday morning, September 4, 1992, we signed a Letter Contract for a thirty (30) day, \$7.5 million scope of work, with provisions to expand the contract to \$15.0 million. We also attended a Preconstruction Conference for the work. The session was conducted by Major Holman who stressed the following mandates to be followed as we carried out our mission:

*“Singularity and strength of purpose,
Responsiveness, Communication, and Safety”*

Immediate Mobilization

Early Friday morning, September 4, 1992, we began contacting the Owner/Operators who were reserving equipment for us. By mid afternoon, we had fifteen (15) transports on the road to Miami hauling front-end loaders and backhoes with grapples, along with a convoy of service trucks, campers, and other support equipment. This equipment marshaled at the Dade-Broward County line on Friday night.

During the day on Friday, representatives of the Corps and contractor visited several sites in search of places to stockpile the debris removed from the streets. Based on the fact that burning was ongoing at the Coast Guard Complex, we requested permission from the Coast Guard to establish a debris reduction and staging facility on their complex. Permission was granted on Friday.

Saturday morning, September 5, 1992, 4:30 A.M., escorted by the Florida Highway Patrol, a convoy over one and one-half mile long proceeded down Florida’s Turnpike toward Homestead. At 10:00 that morning, debris removal activities began in the northeast corner of our work area. Using 16 loaders and 75 trucks, we removed 284 loads of debris from the streets the first day.

By quitting time Sunday, September 6, we had moved another 845 loads. By quitting time Monday, we had moved another 1,120 loads, had employed 142 trucks, and had put 48 loading units on the streets.

At the end of the first week (9/11/92), we had:

- Employed 658 people
- Mobilized 149 pieces of heavy equipment
- Mobilized 257 dump trucks
- Hauled 12,455 loads of debris = 249,100 c.y.

- Established office facilities for the Corps and ourselves

At the end of the second week (9/18/92), we had:

- Employed 1,096 people
- Mobilized 237 pieces of heavy equipment
- Mobilized 455 dump trucks
- Hauled 28,995 loads of debris = 579,900 c.y.
- Started and completed the cleanup of 24 schools
- Started and completed the cleanup of another 31 schools (in 24 hours)
- Been assigned an additional area (23 square miles taken from two other contractors)
- Been assigned the tasks of clearing debris from 3 mobile home parks

By the end of the third week (9/25/92), we had:

- Employed 1,472 people
- Mobilized 274 pieces of heavy equipment
- Mobilized 669 dump trucks
- Hauled 53,280 loads of debris = 1,065,600 c.y.
- Started and completed the debris removal from 3 mobile home parks (1,037 spaces)
- Been assigned an additional 2 mobile home parks
- Been assigned an additional area (10 square miles)

In the final analysis, we had:

- Moved over 4,000,000 cubic yards of debris
- Employed over 1,650 people
- Worked in excess of 700,000 manhours
- Contracted for over 750 dump trucks
- Moved 1/3 of the total debris removed by the six Corps contractors working on this effort
- Performed this in less than 90 days

Responsiveness

Beginning with the assignment to clean up the school grounds, and continuing throughout the Project, we responded immediately to every Task assigned to us. Consider that:

On Sunday, September 13, 1992, with less than 12 hours notice, we mobilized our entire force to remove debris from 31 schools, in an area unfamiliar to us, in order to have the schools opened on Monday, September 14. Responding to criticism of the Corps’ efforts, General Williams pointed with pride to this accomplishment⁴.



Trailer Parks Before and After Recovery Operations

When President Bush decided to present keys to new residences of the Florida City RV park, we worked around the clock for 72 hours to prepare and repair the infrastructure necessary to provide basic services.

When given the assignment to remove the debris from the mobile home parks, we committed massive amounts of skilled workers and specialized equipment immediately, and produced final sites ready for trailer hookups within a matter of days. Colonel Salt personally visited the work site to emphasize the urgency of this Task.

Summary

Observations made during the pre-bid investigation of the work area revealed that it would take a large and diverse fleet of construction equipment to effectively remove the debris. Based on these observations, Phillips and Jordan began on September 2, 1992, reviewing its inventory of viable equipment, contacting Owner/Operators who owned the needed equipment, and contacting equipment rental companies around the Southeast. Rental units of the required equipment were reserved in our name pending the outcome of the contractor selection process.

Immediately following the notification of our being selected as one of the contractors, we began the process of confirming rental contracts, mobilizing company assets from as far away as New York, and finalizing agreements with instate Owner/Operators. Central to this process of equipment selection was the identification and mobilization of specialized attachments

to go on the equipment. Grapples for backhoes were fabricated or modified; rakes and clamps for loaders were secured from distant projects.

At the same time the equipment was being mobilized, notifications were sent to P&J supervisors around the country to mobilize their crews and tools at once to Miami. Local Florida officers, project managers, supervisors, and mechanical support personnel were on site Friday night, September 4, 1992. These forces came already equipped with tools, communication equipment, and a discipline for long hours and hard work for extended periods of time.

By the end of the first week, we had mobilized 41 foremen and superintendents to the Project, as well as 23 mechanical support personnel (mechanics, oilers, and supervisors). Additionally, we mobilized several dozen highly skilled operators from around the United States and Canada. It was this immediate response, with highly skilled workers, that allowed P&J to reach peak production in an economy of time.

It is a testimony to this superior supervisory effort that our yield, measured in truck loads per day per truck, peaked in the very beginning, and then remained virtually constant during the entire work effort, even after traffic control devices began having their negative impact. This is no small feat when one considers the diversity of the work Tasks assigned to us.

In recognition of our efforts, the U.S. Army Corps of Engineers awarded us an Outstanding Performance Evaluation and nominated us for Civil Works Contractor of the Year.

“The contractor’s (Phillips and Jordan) debris storage sites were efficiently maintained and so well operated that one of their three sites was solely responsible for accepting in excess of 3,000 truck loads of debris per day while continuing to maintain an organized traffic flow in and out of the site.”

- From the USACE nomination of Phillips and Jordan for Civil Works Contractor of the Year

- 1 National Hurricane Center data • September 18, 1992
- 2 Dixie Contractor • October 5, 1992, page 13
- 3 Miami Herald • September 24, 1992, page 1b
- 4 Engineering News Record • October 19, 1992, page 17
- 5 Dixie Contractor • October 5, 1992, page 17