Nevada Test Site Oral History Project
University of Nevada, Las Vegas

Interview with John F. Campbell

January 14, 2005
Las Vegas, Nevada

Interview Conducted By
Mary Palevsky

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Table of Contents

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[00:00:00] Begin Track 2, Disc 1.

Mary Palevsky: *OK, so you can just talk to me a little bit about that picture.*

John Campbell: Yes, what this is mostly is just a montage of different scenes from the era of 1979 to 1981 in Area 25 and the MX [Missile Experimental] missile program. Both the concept of the silo, the racetrack and some of the developments of the rocket, experiments with the towers and using them as a launch pad also. And it got, let's see, here's a picture of a transporter. This would actually be something that would carry the missile. Another transporter. I think it's laid down here. The missile would be in here. And this was a transporter. Huge truck. Huge. All this stuff was big.

Now when you say "transporter," would that be to transport it there or to actually make it move around the—?

All of the above. That was kind of what they called the shell and pea game, where they've got a pea under three shells and they don't know which ones because some of them would be dummies, some of them would be the real thing, and they were always on the move.

Right. But you were saying to me, and I wasn't aware of this, that there was development but there was going to be one of the racetracks at the [Nevada] test site.

They were going to use this as one of the players in the system. They were going to use the railroads, they were going to use several locations, Tucson, Arizona, I think. Wherever they had the missile silos, they were going to take and use a select one or two out of the field for MX, and the rest of them would be dummies. So if they were going to try to destroy one over here or one

over here, the chances are of them knowing which was live would be a big deterrent of keeping them guessing and on the move.

And this is all—yes, this was another transporter.

So everything had to be mined. I mean you were there because—

There were two different phases of it. There was the railroad part of it. There was an underground trench that was going to be covered over later, and they had the big trencher. Where was it? It's in another picture. I don't have a picture of that. It's in there. But they had missile silos, vertical shafts about 180 feet. I don't know—the ones in Arizona, how they—they were all about 200 feet down. And they were about twelve feet in diameter. Finished product, I think, was somewhere around twelve feet. And then they had a railroad underground system. They had tunnels where they'd store missiles, the potential of having one. So we had different experiment areas just on the test site, and all this was missile research, MX research, which is what? Missile Experiment, I think.

Is that what that stands for?

I think that'd be. That's—Missile Experimentation. I'd have to go back and do some homework but I think that's what that acronym meant.

I didn't know that. And is this under what, Department of Defense [DoD] or whose—do you remember?

Indirectly, yes. It was different than the tunnels. That was Defense Nuclear Agency [DNA]. They run the tunnels and they invited the other players to do that. This was done by the Air Force in Area 25, Area 400. It was Area 400 during the nuclear rocket development [Project Pluto]. Then it was Area 25, Little Skull Mountain, and then evolved to Yucca Mountain all in the same twenty-five-mile perimeter.

Right. Because that was confusing to me at one point. With the rocket development, I was reading "[Area] 400" "[Area] 25" and then someone explained to me that the name changed.

And if you go out there and you pay attention to the signs as you come down into Area 400 by the gate, it'll say Area 400 there. And then if you'd make a left and go down to the Administration and Engineering building, which is offices and administration building, they'd start MX and then to Lathrop Wells. Then Yucca Mountain later evolved up at Yucca Mountain. Because [Seymour] Shackelton pioneered the road into Yucca Mountain. In fact, he's the one that gave me these pictures, because I was with him on most of these jobs. And then he knew that I was going to tell this story, and so he give it to me, oh, seven, eight years ago. And I've guarded them with my life.

And this is R-MAD [Reactor Maintenance, Assembly, and Disassembly] I believe. Westinghouse. Marine Division. I'm going to say that's R-MAD, just right off the top.

OK. So I'll make that number 2.

Number 2, R-MAD. Looks like an evening shot. And this is R-MAD, probably—

Yes, it looks similar.

—because of the missile, I think. Water tower. I would guess R-MAD.

Yes, so number 3 also. Now this is a great picture. This is a great aerial photo.

Yes, this is the aerial photo of—

This is number 4.

Number 4, and it views Yucca Mountain. And looking north, towards the Area 12. But this is Area 25 MX missile silo and racetrack. Because the silo, I believe it's right here but it's covered up.

Yes, sort of to the left of that vertical.

Yes, it's got a big, big concrete plug that they just set in the top about twelve feet across and about the same size as that one coming out of the ground. Exactly the same size, because that was a plug that sat on top of the silo.

Now can we see Rainier Mesa in this? Is that where you're saying Area 12 is? That's the mesa there. Yes. OK.

That might be Buckboard, which is right at the edge of Rainier Mesa. Buckboard is to the south, more west than south, from like Area 17, which is right in the middle of Rainier Mesa. That used to be the office. Administration was Area 17. It was a drill yard, office trailers, the buses would go there. I think they had a concrete batch plant. One time back in '67, there was quite a large project—Bill Wise was the division manager for REECo [Reynolds Electrical and Engineering Company] up there on that.

Which raises a question. When you're working MX, are you still a REECo person at that point?

Yes.

REECo then contracts on these various projects. OK.

I believe what REECo provided was—because I heard both Dale Fraser and Bill Flangas say that the things that REECo owned you could put in the back of a pickup. But they *managed* all of the above, including personnel for all of the test site, Tonopah, all of it. Then they had the different factions come in with, like in Area 25 there was Westinghouse, Boeing Aerospace, which I did most of my work was with Boeing Aerospace, through the Air Force. Major Jacobs, he was the point of contact with the Air Force.

That's William Jacobs?

William Jacobs, yes.

But REECo's the contractor on all these things.

The prime contractor.

So they would come to REECo and say, We need someone to do this kind of thing, and they would say—

Bingo.

John Campbell is the choice.

Well, they'd award the contract up in Fraser's office—or [Harold] Cunningham then—and then they'd deliver it. Usually it'd go to Division Mining, Bill Flangas. And then it'd trickle down to Area 12. For the most of the miners were home, or their major drawing pool was Area 12 because that's where the biggest cadre were. And then they would assign the job from there, kind **[00:10:00]** of. Well, they sent Shack [Seymour Shackelton] to Area 25 and then pretty soon I think I followed or Lavell Atkinson followed, Marv Swena, and we all did work there in the missile silo and the underground egress. I'd have to get my pictures out to—but this here. This is the—

OK. So now we're on picture 5.

Picture 5, and this is a picture of Little Skull Mountain, X-portal and Y-portal. REECo did both of the portals as far as the excavation in and setting up. This was REECo's job. This belonged to—who was the contractor?

So it wasn't REECo?

No. No. REECo did everything outside you can see, and then they had to set the mole up right here, the TBM, tunnel boring machine, right here in one piece and walk it into the mountain. Because this was a time study to say that at that time Russia would deliver a barrage of missiles and it hit the mountain that we had missiles stored under, could we effectively egress out of this mountain, shoot, and fire? Because these are pits. Now this is a very complex operation.

Now this is X or Y here?

This is Y. This is X.

So it goes left to right. X and then Y.

Yes. So as you're looking at it, to the north would be—because we're looking kind of north to southeast here, and this is Little Skull Mountain. This was the pit, rubble pit they called it. There was another rubble pit. It wasn't built then, but I think it's right here. Because this tunnel went in 700 feet and then a cross cut off to the left and they'd put in a huge jacking station. I mean the hydraulic rams were like this.

Which is what? Five feet.

Every bit of that. And this was done automatic. They brought sections of pipe in, and this was a vertical boring machine that would start up underground because they took the tunnel boring machine 700 foot straight in and parked it, come back about 150 feet and drove what they call a cross cut to the left. Probably a nineteen-foot tunnel, and they drove that with a road header. Al Redman was down there. I'll think of the contractor. It'll come to me in a minute. Because I worked right with a lot of them. I got to see all this start up and work.

And so I understand, this is to see if this were attacked, would it be possible to get that missile that's in the attacked place out—

And if we had a direct hit here, could we egress up through the middle of that, tip off or tip the cutting head off, and then start shooting missiles out here? Because we're all underground.

All right. So you have to have the cutting head first and then the—oh wow.

The same mole that would go underground, they'd tip it vertical like this. They had to have the same—but it all ran remotely from outside. Or they had an alcove here—

We're still in X-tunnel now.

Yes. I don't know those guys' names. I'm starting to see their faces. Dale—and I'll get them here in a second.

That's all right. We can do that later.

Yes, and they'll come to me. I think it was 150 or 200 feet off here, about this area right here.

Right. Right to the edge of the picture.

Then they filled this pit, this huge pit up here, full of boulders. I got the other pictures that tell this story and reinforce it. And then we could egress through all that, you know. And the dirt would go down this liner they put in. Everything was designed—the electrical wall went together, little stairways all went together—everything went. As they'd mine up four feet, they would set another section in, clamp, drop those big rams down, put another section in. Men would go in **[00:15:00]** and actually take air wrenches and bolt this section together, and then they'd start and they'd turn the mole on up again, electric, and up another four feet. And they did that in record time and actually holed through the rubble pit on top.

They did? So did I understand you correctly that the same tunnel boring machine that went in—

Like it. Not the same one.

One like—not the same one but one like it.

One is a vertical and one was horizontal. Same design. Made by the same tunnel boring machine manufacturer in Washington. I've been away from it so long, I can't remember. Robbins, I think. Robbins is what this—made in Washington. Oh no, it came out of Chicago. It was one of them that the Air Force bought, I think, for ten million [dollars] out of Chicago in one of the sewer or water tunnels in Chicago. Then they sent it to Robbins to be rebuilt

That's what it's reminding me of, a little bit, when you see things on TV about how they do that.

Right. The Air Force bought that. I think they shipped it to Washington—back to the Robbins factory—reconditioned it, and then the Air Force took delivery of it. Because it had to set up with a pair of walking shoes. Because outside the tunnel, they're helpless. They have to have something to hold on to, to turn this big head on to start moving forward. And then it has big, oh, pads that reach out and grip the sides of the tunnel, and then they have hydraulic rams that push it out and delivers the dirt outside on conveyor belt. This was all done with conveyor belt. There were very few people underground. A lot of good engineering went into it. It had to have been. And it all proved successful. I think the only person that we lost on that job was going into this-right here was our office where the stairs are. One morning a Teamster walking up the stairs to a safety meeting died of a heart attack. I was up here in this little office giving the miners the safety meeting. They had some people down here in the other office. The supporting crafts were down here. And I got a call to get my butt down there. When I run down there in my truck, they had this old boy laying on the steps and they didn't know what to do. And I started—because I'd been trained in mine rescue—started mouth-to-mouth and get somebody to resuscitate him—I was working on his [chest] and trying to get his heart beating, but you just know, even though we tried, for forty miles [after he was in the ambulance]. They put him in an ambulance and got him on the way to Mercury Medical—and they tried to shock him and everything. But he'd cut his eyebrow when he hit the step and there wasn't a drop of blood come out, so he was dead on his feet. But that's the only man that we lost that I know of there in all of the time. And they later went back and did other experiments, even after I left the test site. This was quite an experiment area for underground—the early days of what they were doing over in Iraq: tunnel busters with tanks and stuff. They perfected weaponry underground here in this one [X-portal]. This one [Y-

portal], I don't think they ever did anymore but disassemble the TBM—and this was the same thing. It had a different kind of mole, TBM at the X-portal.

OK, so this is Y now.

Yes.

Working on the same thing, same question.

Same thing. Same concept, different contractors, you know, different ideas, different cadre of people, but REECo supported all of this, and *some* of this. Nothing underground, but some of the outside support, like pumping the toilets, drinking water, trash. REECo did the portal on X and Y and the underground mining at Y-portal up until another contractor did the installation of the vertical TBM.

That REECo did for the whole test site.

REECo supported that, yes. That was their prime contract. But the outside sub-contractor, they managed the personnel and the engineering and everything from the mole being delivered here and setting up to go underground. And I've got pictures of that. I don't know if I got anything going in, but I got them coming out.

Yes, that'll be great to see.

Yes. It's the same thing, only the portals there. But REECo did all the facing-off of the portals. Shackelton and, I think, Lavell Atkinson was in on that, Marv Swena.

What's the name? What Atkinson? Lavell?

[00:20:00] Lavell. He comes to the breakfasts [informal monthly meeting of REECo retirees]. Yes. He was down there as much as I was, off and on. Yes, he was one of the tunnel walkers I worked with. But that was quite a job we had.

Yes, it's a huge area there.

I was there probably three years on this project at Little Skull. But this is Seymour Shackelton. He's the project manager.

So now we're moving on to 6, and you explained this to me before. This is very interesting. Now this is not in the same area, though. [Photo 6 not scanned.]

Yes.

It is.

It's right down the road, three miles away, towards the Lathrop Wells gate. I think it's about two-and-a-half to three miles from here to here.

OK. From picture 5 to picture 6.

Both Area 25. One was called Little Skull Mountain. The other one was called, oh, it had several names: MX, the silo. But in Area 25. In fact, from the Lathrop Wells gate is only about a half-a-mile.

Oh, really.

Yes, it's right there, right behind Lathrop Wells.

Now you've got these stickers on here. Are they related to this or you just put them on there?

No, no, no, these were out of P-tunnel. When I was the mining superintendent at P-tunnel, these are the three events I was on. This one and this one was two in one.

Distant Zenith and Distant Light, and then Diamond Fortune.

And Diamond Fortune and Mission Cyber. They were all at G-tunnel back in the late eighties.

All right. So let's talk about this one. This is so interesting.

Well, what this was—and I've got more pictures of the inside of the silo and the thing—that they had about a 125-foot silo. And we, as miners for REECo, went down and modified this silo or the shaft itself to in turn install a U2 rocket motor attached to the end of a launch tube—I think

it's about a five-foot diameter tube—that could, in fact, house a missile. And this was done by Boeing Aerospace, the date I would have to get—

We can get that.

Yes. Yes, I'll have to get better timetables because it took us over a period of a year-and-a-half, two years.

See, because what we can do is once we get this transcript, we can add in the dates.

Here's Little Skull Mountain.

Great. So that's that from 5 there. I see it in the distance. Right.

Then the highway. See? Here's Little Skull. See, we never had a road up there yet. This was a *long* time after this. The road came off—there's the road right there. Yes.

Oh, I see it.

Yes. That would go to Little Skull Mountain right here. But it'd go around the base of this mountain.

So there's the mountain in the distance and so we're looking at this—

Right. You're looking due east, south and east, from—looking out across—

Now we're on photo 6, and is this something that's dynamic here, that's actually happening in time?

Yes, yes, it started out as they compacted a twenty-two-foot overburden, compacted soil, alluvium and most of the desert material that was found there. I think they did import some Betonite in places to mix with it. But it had to be compacted to spec. And then at zero time they fired this U2 rocket motor, which pushed this tube and plug up through the twenty-two foot of overburden and then locked in place. I think I got a video of this, too. There is a video available, I know. I used to have one. I think I still do. And then it locked, and then they fired some

explosive bolts near the plug and tipped it off, and then in all practicality could fire the **[00:25:00]** missile out of the tube. So it was a another example where we could egress up through an overburden or protective cover, or even if that was a direct hit, a rubble zone, we could blow up through it, tip off, and fire a missile.

Yes, I've never—you see things like this in movies and sort of the idea of it. I never thought about the fact that of course you had to be able to tip off all that material that you've gone up through to fire the missile.

And the engineers had to shear this plant. REECo got a big "attaboy" award for it, and I did. I did. I got an award for it because some engineer up in Spokane, Washington drew up a time chart about two years before we ever started, and we finished it within twelve hours of what they wanted. But we had to use every available resource—I stayed out on the job for sometime 10-12 hours a day—this is where I seen the path of snow. I was standing in my office looking out the window.

Oh yes, why don't you tell that story again? That's a great story.

Yes. I was here in one of these offices, trailer right here?

OK, we're back on picture 4, in the office complex.

Yes, in Area 25, and I'd be headed back toward the A&E building, which would be due east from the MX missile silo. This road here pretty much runs due east and west. And it was on a, oh, almost dark on the swing shift. And again, I don't know what year it was. But there was a storm come across the desert in the early spring. It was kind of warm and all of a sudden, it just dropped twenty-five degrees. And for about a mile-and-a-half, there was a snowstorm that put down probably about two-and-a-half to three inches of wet snow in a path across the desert. And you could step from dry pavement or wet pavement to snow pavement in one big step. It was

that—and you could look to the north and you'd look to the south and you could see where it just—it was like somebody painted it on there. *Shhhoooo!* And it was gone, melting as fast as it fell.

So it was in that era that you were spending all this time out there.

Yes.

That relates to what you said earlier, too, before we had the recorder on, about having been married to your job.

You do. Because, well, I didn't know when I was coming home. And the only babysitter I had, because I had two daughters here, one was twelve and fourteen. Yes, because as luck would have it, I bought this house—I didn't know anybody here. And I moved in and I was out here one morning, I think, getting something out of the garage, and I saw Britt Johnson over there admiring the house on the corner. And he worked with me for twenty-five years.

You're kidding.

He just moved out. He's been here as long as I have. We bought the houses brand new. Yes. And he's a good person and neighbor. And he's still got a key to this house. Yes. That's how much I trust the man. Because I worked with him, you know, every day, every day, every day, every day.

And he moved out.

Yes, here about, oh, two months ago (2004). He comes to the breakfasts every once in a while.

I think I might've met him.

Yes. He's a real nice guy. *Super* nice guy. He probably has one of the nicest backyards in the neighborhood. He does. And it's probably one of the *biggest* backyards in the neighborhood.

And he's out there mowing it, oh, he's pushed that mower for thirty years. I told him, I said, Britt, you've wore out ten lawn mowers, pushing them out there. And it's true.

But he worked there and you worked there, so did that help with your kids?

Babysitting? Yes. His daughter would- across the street, and I had a rule that they would have a phone in the garage, and they could go out and play, because I was on swing shift a lot and I wouldn't get home till 2:30 in the morning. And if that phone rang over three times without somebody on the other end of it, there was hell to pay. You can go out there and play kickball and this, because they were young and—but if that phone didn't get answered—. You know, I'm sure their devilishness went [on] and someday I'll find out what really went on and all that.

Right. They'll tell you someday. They'll tell you the story someday.

[00:30:00] Yes. Yes, it'll slip out. That's all right, though. But anyway, this was quite a success for Boeing Aerospace and REECo, because REECo supported them with the personnel and all of the equipment, and all they did was bring the money and their blueprints, and their engineers. And we had to do it Boeing's way, which was different than the way REECo did things, because they were into building airplanes and we were into driving tunnels, you know. That's close enough, but not building airplanes it isn't. They could split a hair right down the middle.

Oh, I see what you're saying, yes. It had to be exact.

And that's good, yes. And you had to work for all them old biddies. Me, you know, I had to make—if I interfaced between the construction trades, and they were on the edge [laughing]. They were all good at what they did as craftsmen. Now what they did off the test site, I didn't have no control over. We'd hear stories and stuff, but when they came to work, they were professional. And REECo had some *really*, really good people. They came from all over the

United States. They came together, as destiny would have it, and the luck of the draw that they came from everywhere with good ideas and we made it work.

Was working for Boeing and those kinds of engineers different than working for the labs when they were doing—?

Same. Same type of engineering. Were always supervised by a—let's see, the pecking order would start like with the Air Force in Area 25 or Area 400. The Air Force was the overseer, kind of. First I guess it would be DOE, or Department of Energy, then ERDA [Energy Research and Development Agency], and back then I think it was ERDA, and the pecking order, then would come the Air Force or DNA, according to where you were at, and then would come the contractor. And the contractor was REECo because they had the prime contract. They did, oh, 90 percent of the labor union craft support, maintenance, all the trucks, everything was done by REECo. Support services for the contractor, but the contractor brought their checkbook with them and we got to spend their money. And REECo got a cut of it. If we did good, they got cost plus award. So yes, this was one of the funner jobs that I was on. Had a small group of miners, not very many, five or six, but I handpicked them all. And yes, we got a big attaboy for this, or REECo did. And we got to go to dinner and tell stories, and I get to relive the moment every time I pick up the picture and look at it. When I've gone by there, going to Yucca Mountain, we got up high enough—when I went out with some doctors from Boston University, what was it, September, October? No, September 4 or—

Just this past?

Yes, yes, Dr. Lew Pepper asked me if I would go along with a whole busload of doctors and health care professionals, doctors, nurses, most of them were doctors, though. In fact, they were the doctors that are—one of the doctors was soliciting people to do analysis on the former work

here at the Nevada Test Site, because it's transitioning from the Department of Labor has got it—see, DOE kind of was with the Department of Labor. Now DOE's getting clear out of the picture.

Oh, they are.

Clear out. They no longer will have anything to do with the Flamingo office. It'll all be the Department of Labor. That's in a transition right now. Well then, the Department of Labor has got their people that are schooled in environmental workplace hazards. They've been trained to take the information from the screening and make the award to the individual. It kind of went in about backwards. DOE and the Boston University and [University of California at] San Francisco, they kind of provided **[00:35:00]** the medical information. And then the Department of Energy and Department of Labor started, once the doctors said, `Yes, this is an environmental disease`, then they started awarding the hundred and fifty thousand [dollars] medical and—

Right. We could spend a lot of time talking about this and I actually want to sometime, but is that evolving, the kinds of illnesses that are covered? Is that established or are they still doing research on it?

I wouldn't want to be quoted on this, even though I'm on the advisory panel with University of Boston and I'm on the DOE working group on the protection of human subjects. Here's one. I went to school and—here's Dr. Susan Rose. She was the lady that invited me to participate in a working group. I went to Bethesda, Maryland and Washington D.C., and we'd sit around this round table, thirty or so of us, and discuss the protection of human subjects. We even authored a book over here on the protection of human subjects in research.

Yes, I know. Yes, because you have to—

She a character. She's no longer with the DOE. She's UCLA [University of California, Los Angeles], something in this booklet—it tells about her in there. This was her last meeting. The new guy is here. But I get this flyer probably two or three times a year.

Right. I'll get a copy of this at some point, this protecting human subjects.

Yes, this is the last I got, and that's why I knew that Susan had left—because I was on her DOE working group with the protection of human subjects and the ethics behind it. So I got to go to all the sites, see. I got to go to Hanford [Washington]. I got to go to Los Alamos [National Laboratory, New Mexico]. I got to go to Sandia [National Laboratories, New Mexico]. Where else? We got one more. Sandia—

Lawrence Livermore [National Laboratory]? No?

No, I never went to Livermore. Oak Ridge [National Laboratory]. Oak Ridge, Tennessee.

Oak Ridge. OK. All right. So this protection of human subjects is so when you are working with people, that they are protected when you're trying to figure out whether they have the illnesses.

We take their information, blood, or this, you know, then the information has to be protected because if, for instance, like Glenn Bell in Oak Ridge, he has berylliosis, see. He was a milling machine operator or a lathe operator building the plutonium triggers, see, and they were using beryllium. He caught berylliosis. He can no longer get a mortgage insurance for his home because he participated in a study and the information later found out that he was positive berylliosis, so—

Oh my. That's awful. That's really awful.

It is, see? And it's horrible for him because, you know—

Gets hit.

Both ways.

From all sides, really. Yes.

And that's just one of the horror stories that's come about, you know, because all of it's written in sad stories. But I have to hand it to Susan Rose, she's like a—well, she a tall slender redhead and she [was] always a-chewing on somebody—and very articulate. She's a Ph.D. She's not bashful about taking the big ones on. I have to admire that her ethics were about as good as you could ever want.

Right. But this is interesting because there's a double problem here. You want to find out what the illnesses were that people had when working for DOE, but then you have to protect them from negative consequences of people finding that out.

Because they participated, even though—

In the study.

Yes, and they've awarded some of the people, lot of the guys, I know, oh, probably ten, twelve.

Is that information then kept confidential, the award itself, I wonder, or is that public?

No, no, no, I think all the—it's up to the individual himself to say, `I did`. The first ones we knew were going to get it, you know. It was just a matter of time, because that was like the test case and they took the worst cases first.

Right. And what is that act? That's the Radiation Workers—?

There's two of them. There's RECA [Radiation Employees Compensation Act], which is the uranium miners and mill workers during the uranium period, and the atomic workers, the people that worked like at Hanford, Oak Ridge, that worked directly to do with the nuclear end of it, the **[00:40:00]** bomb-making and the consequences from bomb-making [Energy Employees Occupational Illness Compensation Act]. Because they pinned DOE down to—back in the first days I started working with the working group, DOE finally admitted to Congress, started with

Congress, that they knew some of it. Some of the people that started the program way back when knew that there would be some consequences and they weren't honest to the worker. They could've said, `Yes, if you work out there, your hair's going to fall out. Good chance of it. Yes`. They didn't tell us that. They kind of, `We'll go ahead and get it done, then we'll go back and clean up the mess`.

And we were on that mission. We were on a mission. That was one of the things that I really liked about the job that I had. They didn't run out of money and they were always on a mission to get it done. And those scientists, they're kind of dangerous in themselves because they want to drive a ten-foot tunnel and put a twelve-foot something in it. And they'd come and they'd say, `Well, we got to do it`. A lot of times we would do it. Somehow, some way, all these people together. The pool of thinkers that they had was great. In the tunnels especially, you really saw that shine among some of the old timers, like a Frank Solaegui and Seymour Shackelton. They just knew. Well, it's a gift, I guess. Intuition tells you what to do. And they had the concern of the men with them, because I worked right—well, this is in a three-foot cage, I worked with Frank Solaegui as we'd come out of S-Room. They severed some arming and firing cables back in the eighties and left a live nuclear weapon underground, and we had to go down this forty-eight-inch cased hole and mine out a coal tar plug, about 10-12 feet thick, take some technicians down, re-splice the cables, fill it back up, and then fire it. But they lost all their arming and diagnostic, too. So all they were interested in was just getting it to go fire. But I worked with Frank Solaegui and Cornelius Smith on that job. It was a lot of fun.

Which test was that, now?

Esrom. U7ak. Area 7. U7ak Esrom. It was named after a cheese.

Oh, that was in the cheese days.

Yes, back when Livermore named all of their shots after a cheese. Yes. Here's a real good book for all that, Mary.

Oh, I see. Esrom, 1976. U7ak.

Was it 7ak?

Yes, you've got it. U7ak. Now which book is this?

Ever seen that one? That has *every* one of the nuclear weapons, the date, the time, where it was at, who—

Yes. I have another version of this one. This looks older than mine. [United States Nuclear Tests: July 1945 through September 1992, (DOE/NV-209, Rev. 15, Sept. 2000)]

Could've been.

This one I got. I got it off the Internet. It's the same—

Sedan crater.

Right. With Sedan. But this is a different—this is great. This is actually a different cover. Yours is 1994. Yes, this is an earlier one..

But it covered every event—right up to the last shot. Here's the book that we helped author with Susan Rose, with human subject—

Oh, I would love to get a copy of this. Maybe I can get it from the DOE.

Yes, they'd have it there, but here. Here are all the people that are the big players in—

Oh, there you are. Yes. Let me take the number of this report and then I'll just get it from DOE. They usually have a number on it. I'll do this when we turn off. Yes.

But I spent about five years doing this.

How did you become involved in that aspect?

When I left the test site and they gave us a grant to go to school, I jumped right into computers. **[00:45:00]** I just took everything and got a computer. And I set about—and I still got the database that I started out with, naming all the people that I worked with and could remember and their nickname and where I worked at with them.

Just because you wanted to do that yourself.

Just because I wanted to. That's how I got Boston University[BU]—when they first started doing the screening—and they came back and didn't know anybody here. Sandie Medina they hired, which she was our secretary, and she knew that I had all this stuff here. And I had been talking to the guys and they'd given me little bits of information about this one and that one, where they were at. And it's not really up to date because I just, well, I just didn't have enough time, but I kept all the documents, like when they died and stuff. I got a whole bunch of documents, obituaries. And they came to me and asked me if I would help them put it together because I had some stuff that they couldn't get access to. But I had it in my stuff here, that's how they got started. I was probably 90 percent of their program with the information I gave them for probably about five months, until they started opening the door and getting deeper into it. But the information that Sandie and I give them, they knew right where to go and points of contact. Because we were *there*.

Right. Very interesting.

Yes. There were some more things I wish I would—when I left Area 12, I can still see it in my mind. In the Area 12 department office there was—during the *very* last days of when we were up there shutting Area 12 down and mothballing all the tunnels—I was there. And there was a box of pictures in the department office that I would've given my right arm for, because they were all

the old timers and *great*, great, great pictures. You couldn't get pictures out there. Nobody could have a camera.

So how did those pictures—?

I don't know. Well, there were certain people that *could* have cameras, and they took quite a few pictures. That's how I got *my* pictures. I'd follow those photographers around and a lot of times they'd take a Polaroid of a pour, we were going to make a pour, and they put them down in the trash and I would save them.—*phffft!* They'd go in my pocket. I always had my eye on that photographer, and I got to know a lot of them and I always got around the pictures. Later on, while I was in supervision, they were more readily available. And then—yes. And I started collecting as many as I could.—

So that batch of pictures got left.

I asked a friend who still worked in the department office to get them for me and what I heard later, is that the clean up crews came in there under directions from Bechtel [Nevada] and took *all* of the records that we were supposed to keep from cradle to grave on explosives, hazardous materials, and they took them and loaded them in a truck and took them to the landfill and dumped them. Senator [Harry] Reid, he kind of got in the middle of it. And they didn't pursue it because it was after the fact, but there was a *lot* of records that went to the dump that should never have been—health record-type documents. IH records.

IH?

Industrial hygiene. That would've helped anybody paint the picture like it really, really was. But they came in there and when they cleaned the offices out, they just took *pshhhooo* and gutted our department office where there'd been records for forty years kept what was not archived. And

took them to the landfill. So some archaeologist in the next millennium will be down there and say, Aha!

Whatever, yes, but they're in the bottom of one of them craters, where the bomb crater was; they took a D-9 Caterpillar (CAT) down in there and they started dumping stuff here and covered it up. And they hired the D-9 CAT skinner, Dick Norvelle [sp], he was a miner in the tunnels for years and then he got into the operating engineers, and he was the D-9 CAT skinner down there that buried all this stuff.

CAT skinner, it's called?

It's an operator, CAT skinner. Another terminology.

No, it's great.

Yes. In fact, one of the jobs that we was on over at Climax, to use just some of the phrases, I was working for Gaylan Adair and they tasked all the miners to get together and start **[00:50:00]** putting up a glossary of the terminology we used for some of the mining equipment and some of the situations and stuff. We had weird names for things and we had to put definitions for the users or the experimenters, because they didn't know what we were talking about. Yes, we had to put together a whole glossary for their interpretation. In fact, I got a copy of it somewhere.

Great. That'd be great to see. I'd love to copy that off.

Yes, it is because there's some things you just wouldn't want to use in mixed company, but it was a standard name of the tool, and what else you going to call it?

That's right. That's what it's called.

Yes, and I knew one old boy, in fact, in Colorado in 1963-64, I was working in the uranium mine and the only communication we had was on a radio. And this superintendent, Evert Roberts, we needed some, what they call a moyle that goes in an air hammer for spading, chipping hard rock,

but they called it a bull prick. That was the only name—or a beavertail was the wide one, or a bull prick for the other one. And he got on the radio and was ordering four or five—you know. Climax Uranium was out of Grand Junction, Colorado, it was a subsiderary of American Metals in Lakewood, Colorado. Somebody down there in the office was saying, What? He said, You know. So she had to go find somebody in the office. Tim McCandless was the mining personnel manager and he said, Oh, I know what they mean. Yes, it's OK.

Right. That's amazing.

Yes. But that happened out there in Area 15 at Climax shaft when we did the repository there on the nuclear waste back in the early seventies. That was on the glossary. And tools that we used, they had like a drift. We had a drift and a heading and a swamper, a muck pile, muck, a powder poking pole, all those little things that you had that as tools of the trade that nobody would know what you were talking about.

Right. Right. It's a whole language.

Yes, it is.

It's a language, and it's just a very specialized language. Just like scientists have their language, you have your language. Now Climax again, we'll get to that later, was this the forerunner of Yucca Mountain?

Yes. It was the prototype Test Bed Livermore did on the feasibility of granite, because that was that real hard blue granite. In fact, this right here is a core sample from Area 15. [showing sample]

Oh, look at that. That's so interesting.

See, that's how hard that stuff was, and that's—

That is beautiful.

Yes. That's a core sample from that granite there at Area 15, or Climax.

Amazing. Yes.

Yes, I got all kinds of—

Yes, you do. When we come back with the cameraman, we'll shoot that.

Yes, there's all kinds of—

I'm going to make you lay all your artifacts out on a table and you can talk about them.

I'll get them all out. Yes. And there's a story behind them. That's why I brought them home, because every one of them has a story attached.

Has a story. Absolutely.

I know right where I got it and I knew at the time that I picked it up that later there'd be a story to tell about this.

Right. Exactly.

Yes, and then I would never have occasion to think of the instant. I was *there* and I picked it up, and I *knew* why I picked it up. And I packed it home, all this, to be here today.

Correct. So let's do a little more here. I'm going to be out of CD in fifteen minutes and then we'll figure out what we want to do next. But let's go through a few more—

OK. Some of this is going to be—because I spent a lot of time in Area 25. Of my total twenty-six years out there, I was down there probably four to five years.

Yes. That's just a piece.

Not a lot. Yes.

Right. What is this?

These are—uh oh, here we go. OK, this is MX. This is—

OK, now this is your scrapbook.

Kind of a scrapbooky blue—

This is a blue scrapbook. OK.

We can tag it a number, if you want.

Well, I think, but if you're going to go through individual photos, we might want to look at the photos themselves.

Yes, this is the crew we had there in Area 25, Jack Pryor [sp] and a couple of ironworkers, but we went down on a crane cable and hook on a workdeck down inside the silo. See, this is where—this plug, see the taper there?

Yes.

Fit right in there, just like a cork. *Pshooo!*

Ohhh, I see. We'll put the 7 there and then we'll go on— [Photo 7 not scanned.]

OK. Now this is at Area 15 shaft. That's a picture of myself standing beside a diamond drill rig at the bottom of Climax.

[00:55:00] *OK, so that's picture 8.* [Photo 8 not scanned.]

Later, this drift right here will be a canister drift, but there was nothing there but an explosives powder storage.

Oh, I see. Powder [explosives] storage.

It was a place where we stored dynamite underground. We had to have a powder magazine underground. You had to meet special criteria and conditions. See the rail? Got the railroad in.

Yep, I see it.

But this is right at the bottom of 15 shaft. Climax. Area 15. [Also two nuke events: Hardhat and Piledriver]

OK. All right. So that's number 8.

This is inside of a plug. Remember I told you the—following the photographer around?

Right.

OK, this is the inside of a containment plug, probably at P-tunnel.

A containment plug where the device would go?

No, the device is way up forward at ground zero. This is back in the area of the tunnel—I can show you maps of where would be later. This was at U6a, which was code name Russet. That was a real classified job and I was—

That's a shot of you.

Yes. Or is it at P-Tunnel? I think this is at P-Tunnel. Yes, that's in P-Tunnel.

OK, we know that's you, so we don't have to label it.

This is me and Bert Baldwin. This was a forty-eight-inch drill hole at U2aw.

OK. So we'll call that 9.

This is a mine rescue team. I'm was on mine rescue. That's probably back in the seventies. I don't know exactly what.

This is a crawl tube in a containment plug in one of the tunnels. Could be E-Tunnel.

This here is E-Tunnel. That's a Fenix and Scisson inspector and that was a picture of me back in the sixties, seventies.

This is an MX missile pit. Remember I told you where the pit and rubble pit was at?

Yes. Right.

And here's another picture of the flats down there and Lathrop Wells is right out of the corner.

This is down in Area 25.

I'm not going to label all of these but—

This is at T-Tunnel in the office outside.

This is Ledoux, 1a shaft. That was a load bearing that we cut inside the shaft. That was Ledoux. This was at U2aw. This was a group—there's Shackelton, me, Bert Baldwin, Gordon Stewart, Jim Fowler, and Cecil McMurtry.

OK, then we're labeling that one. Number 10.

Yes. That's U2aw drill hole shaft.

Here's the crew—

Is that night, or is it just—?

No, that was early in the afternoon.

Oh, early in the afternoon.

But it was done with a Polaroid. This was that guy I said jumped off the swimming pool and onto his head. That's Matt Spremich right there, in the red hat. He was the Cryderman mucker operator. That's Cornelius Smith, Jack Pryor, that's me, Hank DiCamillo, Alfred Sweeney, Cotton Wilson, Matt Spremich. Cecil McMurtry is one of them but I can't tell which one it is.

We'll call that 11 and then we can have a caption on that if we use it.

Yes, that would be back in the seventy-one—Brandi [daughter] was born around '69. Yes. Here's a diamond drill rig at N-Tunnel. I was standing behind the rig. And then that's how you get that core, that little piece of core—

Yes, yes, let's label that 12. So that's the kind of thing that would come out of there?

Well, yes, that's how you obtained core samples, because this drill right here would drill sometimes two, three thousand feet—either down or sideways—and they would bring back core samples. That way they could tell the geology of the ground and radiation and stuff.

OK, so that's 12. That was 12.

And this is down inside the rubble pit at MX. X-portal? I think this was Y-portal. Yes. You see all the big trucks that we hauled the rubble down in.

There's a picture of an Alpine Miner, probably at one of the tunnels.

Ray Slaughter, some guys. That was at that code name Russet U6a. We had to dress out in full body suits, two layers of everything, twice a day, and that was at U6a.

I'm going to put 13 on that one, because that interesting, with the suits.

[01:00:00] Yes, and this is at N-Tunnel, at A and B drift in, ooh, code name, I'd have to remember back, but it's in N-Tunnel back in probably the mid-seventies.

OK, let's put that one. That's interesting, too, because I haven't—14. N-Tunnel. Oh, look at this.

OK, here's picking of the mole at X-portal, I was telling you, when we moved it to Area 12, that's how we had a two-crane pick and had to pick that thing up and then drive this big truck right here. Here it's coming down the hill. That was four hundred tons right there.

Gosh! So let's just say that this is page—

All this here is MX.

Yes, let's say 15 and all the color pictures here are that.

Here's Bruce Wilhelm. He comes to the breakfasts all the time.

Yes, I've seen Bruce Wilhelm.

Yes, he was a mining engineer, superintendent, walking boss. And—oh boy, Coors? I'm going to need some help with some with some of these guys. I know him. That's Enos Cooper. Coors [Aguaseno Trujillo]. And I don't even know where that's at. Bruce could tell you.

Yes, OK, let's label this 16.

Yes. See, there's one that I could get in, because he knows. He's the only engineer that ever wore a Mickey Mouse watch. I thought, Hm.

This is the little Alpine Miner we had at N-Tunnel. This is Waid Tadlock. This is the first Alpine Miner that we got at N-Tunnel back in the, oh, early seventies.

OK, we'll call that 17.

Yes, that Waid Tadlock. Now these are all MX.

That's all MX, all of the rest of the color pictures here.

The actually taking of the mole was at the bottom of the hill there where it's loaded up. We got that far one day. But on this trailer right here, there's sixty-four rear tires and they blew out seven of them getting up to Area 12.

OK, now we're looking at the series that I'm calling 15. This thing itself weighed—

Four hundred tons. Altogether, this thing right here, from here to there. There it's the only thing that supporting it because if you let go, it'd roll now, because all the walking shoes, all the grippers, everything is off of it.

Oh, I see. Is off of it.

It's back in the tunnel. But that's just the mole itself. There's the cutting head and the hydraulic rams and everything that run it.

So that's what I was going to ask you. Everything that runs it is inside?

Yes. It's all contained in this, and this is buried underground at N-Tunnel, probably under water right now. Yes. I was the last human being that came off of it. Because we had to make an inspection before we closed the tunnel up to fill it full of water, because it was emitting water and we—I don't know how many miles of drift there is in N-Tunnel. It worked for almost forty years. Thirty-some years.

So explain that to me. When everything's decommissioned, it's left—?

At one time they were going to take it out the other side of the mountain. They were going to drive it clear over to the north side of Rainer MesaTonopah site and hopefully that they would use the test bed out there. But they could take it on out the other side of the mountain. If they had to take it apart, it would cost more to take it apart, ship it, refurbish it. Nobody would bother it underground, so they just shut the power off and pulled the key out. For why, I don't know. They asked me to pull the key off the mole. DNA went with us, the inspector, I think there was a team of about five of us, six of us, went and inspected the whole tunnel, through every part of the tunnel. We got, I think, a picture of the last time we were out underground there. We went outside, closed the turn tube in E-Tunnel to N-Tunnel, N-Tunnel old portal side, closed the turn tube in there, and I went outside and got permission from Power Dispatch to turn the power off in N-Tunnel, and it went dead. And she had supported families for almost thirty-some years, because it never shut down, except to have an execution of an event. And that was just kind of like putting your old dog to sleep, I guess, after he'd worked with you for twenty-five years. Because I worked there fifteen years at N-Tunnel, and I got to be the one that pulled the plug on her.

So that was when?

[01:05:00] I left in '94, so it'd have been '93, '94. I did E-Tunnel after N-Tunnel. We did Chemical Kiloton '92,'93 in the N-tunnel before button up..

When you say you "swept" the tunnel, what does that mean?

We start at the furthest point and take a map and we have to actually physically go into every drift and search for hazardous materials—lead, used a lot of lead. We couldn't leave any lead, we couldn't leave any paint cans, any hazardous materials, barrels of this, that, that, and whatever had to be—some of the doors had to be opened so the water could flow freely wherever. But it's

going to cover all them—and that's been going on for ten years, making thirty gallons a minute, somewhere around thirty, forty gallons a minute.

I'm completely ignorant of this, John, so how does the water get in there?

It's trapped in the mountain.

Oh, OK. But where does it come from, the water?

The surface. Snow, rain over the years. Natural water flow.

OK, so it's the natural water. Water's not being flushed in there.

No, no. It seeps out of the rock. There are some places you might cross a fault and that water'll just—just a little trickle, maybe ten, fifteen gallons an hour, but altogether over the period of time—and there's miles of tunnel there. *Miles*. Because it went back eight thousand feet. And then there was all kinds of side drifts off of the main tunnels—

How did the water not get in there during all those years?

It was always there.

It was always there?

Yes. We'd seal it off by grouting. See, we could dry it up if we wanted to. Some places they wanted to, other places no, it didn't matter. But the water was there and always will be, and that's the force of nature that we had to live with. And it was expensive to live with water because it made mud and mud is tough on machinery and all of the above. Yes. It had its good aspects but not much.

Here's the TAPS [tunnel and pipe seal] at N-Tunnel during probably Miners Iron or Mighty Epic, maybe. Commander Dick Kovach and Seymour Shackelton.

OK, let's look at this picture. This is—

OK, there's an old friend that died. That was Sandie Medina's husband, Bud Coy. He was a super great guy. Seymour Shackelton, and Commander Dick Kovach. He's over at Yucca Mountain now. He's the main man over there for Yucca Mountain.

What's his first name, do you know?

Dick Kovach.

Dick Kovach? OK, we're going to call this 18.

And this was at P-Tunnel, Mighty Oak.

That was in N-Tunnel. That's Waid Tadlock, myself, and Aaron Jones [sp]. He just died here about last year. They called him Stringbean, after the Grand Ol' Opry star, Aaron Jones.

OK. I'll put a 19 on that.

This is underground at N-Tunnel, I think is right behind this picture. That was taken at the same time as—I think it was A-B drift. There's him on an Alpine Miner. Where was that at? It was just right here. Here. See that fan back right there? We'd mine out a stretch and then we'd go in right behind it and hang a wire. That's what we're doing is holding this chain link fence up. In case the ground fell in, it would protect us.

OK, so that's 17, is the back of 19, it looks like. Yes.

Yes. Right. That's the same drift. Same person. Same day. Either before or after, I don't know which.

Here's a group of the guys mining up the invert at N-Tunnel. That's about how big a crew we'd have. And that's back in the mid-seventies—

That's a good picture.

Yes. That's Waid Tadlock, Hank DiCamillo, Cecil McMurtry, Candy Romero, Jack Pryor, Darrel Jorgensen. About half these guys are dead. Paul—Paul Mascarenas, Chuck Womack, Jim

Fowler, Paddlefoot, or Roger Phillips, Frank Martinez, “Bang Bang”—Robert Banegas, an electrician, I don’t know the electrician’s name. Mechanics is “Gator”—Earl Causey, Wayne Hart, and Bob Bradley—his son owns Western Marine here in town.

OK, we’re going to call that 21, so we can go back and get that.

[01:10:00] Yes, that’s the crew. They stopped at right there and—

Yes, that’s great. OK, I got to stop my machine.

OK.

[01:10:06] End Track 2, Disc 1.

[00:00:00] Begin Track 2, Disc 2.

—disc, so we did at 20.

This person right here, this is Pub Crouch, probably one of the neatest mining people that we had—Joe LaComb, Willie Sweeney, that’s Pub Crouch . I don’t know him. I thought it was Bud Edwards. We’ll have to back up. This is Joe LaComb here. He was God. He was Mr. DNA. He only answered to God and the Pentagon. Dr. Linger. That man right there, he told everybody what to do, when to and how high to jump. And he was a mining engineer. And he had more to do with the success of the mission that we were on. His guidance, his gut—he’s a miner, and he knew. He had that innate knowledge of how he wanted it and how it should be done. Can you do it?

Now this is back with weapons testing, now.

Yes.

OK. This is nuclear weapons testing.

And this is Joe LaComb in his younger days. I went to his retirement party at the Gold Coast [Hotel and Casino, Las Vegas, Nevada], and I don’t think since the Geneva conference—and I

heard one of the scientists say that—that there had been that *many* doctors, Ph.D.s. Senator Reid was there. [Richard] Bryan was there. And when he retired, he had, I would say, five, six hundred. Dr. Linger from the Pentagon was there. Anybody that was *anybody*, because when the Navy and the Army and the Air Force came in, in their dress uniforms, my God it was big—and I got to go. I actually got invited to something like that. Yes. I sat with Jim Metcalfe.

OK, I'm going to put 21 on this picture so we know. Now is he still alive? LaComb?

Yes. He lives in Pioche. Agate Eye, or Willie Sweeney, [laughing] because he had a—

Glass Eye.

Agate Eye. That was his nickname, his real name is Willie Sweeney. And Bob Couch. I think that was a scientist. I don't know. I don't know, but that's Joe LaComb.

OK. Great.

Me at underground at U6a, where we had to dress out. We were handling plutonium.

You were what?

Handling plutonium.

OK. So that's 22. There's two pictures with you—that's you completely—?

Yes, dressed out. Dressed out.

All right. And you were going in—

Back in the test bed where they'd had a nuclear weapons shot and we were recovering their stuff.

OK. All right. Oh wow, this is all—

This is more of the mole going down the hill, Area 25 Little Skull Mountain. This is when I told you they had the D-9 CATs behind it for—see, I let Sam Williams get away with two of my pictures. And I, oh! I didn't want to do it, but I couldn't tell him that it was my camera that took

them [laughing]. Because he was our engineer, and he said, Could I have those pictures? And I said, Uh, yes. Because I took them to the job one day for reference to another job.

Yes. Oh, I see.

See? So I let my mouth overload my ability to get my pictures back. That's where them two—Sam Williams has these.

So this is a continuation of all those shots of me—

Taking the mole to Area 12. And this is it going down the hill at Little Skull Mountain X-PortalYucca. And here, I'm going to show you this spot, because I was taking the pictures. Right here. This is it.

OK. So we're back looking at this big picture of the X and Y tunnel.

I'm going to show you exactly where we're at. See this right here? Looking down there?

Yes.

We were coming off of right here—

Off that curve.

Right here. Headed down this road here. And all of those tires were sliding because you'll see—

Look, you can see them.

See the cable from here? There's a D-9 CAT right behind this one and another D-9 CAT behind that one, with a big cable holding it.

So yes, we'll call that 23 and that's just that whole two pages' continuation. [Photo 23 not scanned.]

[00:05:00] But this was what they call—and if you were a rigger or somebody that was hauling heavy loads, they would call that four hundred tons "point loaded."

What does that mean?

"Point loaded" means, Mary, that it's only—OK, see, it's round. All that weight is right there. And right back here. Four hundred tons is sitting right there and right there.

On those two points. Wow.

And see the chains that were holding this thing? Because it's round. It could roll. You can't even see the chains that were holding on there. They're that big around.

So how many inches is that, would you say?

Oh, I'd say it's an inch-and-a-half chain. High tensile.

A lot of these pictures were given to me. There's Britt Johnson, my neighbor. And, oh, I can't remember, he's an "Overhomer." Overhomers, they had a name, they were from Utah. "Over to home?"

Over to home. Overhomer.

So we call them Overhomers.

And that's Richard Horne, one of my miners—friends that worked for me for years, and he and I were friends as kids in uranium in Gateway, Colorado back in the sixties. And he's still in Arizona right now.

This is the mouth of the silo as we're going down.

OK, this is interesting. So this is—

Area 25.

OK, I'm going to put 24 on these two pictures.

Yes, just the same.

So that's going down from the—

Going down into this. Which one? This one here. This is the plug that fit in there. In fact, this is an earlier construction picture of the final pod. And there is a video of this actually coming out that Boeing Aerospace has. I'll bet you that they'd let you get it.

OK. Great.

There's Richard.

Here's a group underground. There's one of your DNA. Henry DiCamillo. Sergeant Some—and again, a lot of these guys, their names'll come to me in a little bit when I get—Here's an Alpine Miner breaking through at N-Tunnel. Eleven, twenty-two, seven-by-seven drift.

Wow! That's interesting. Yes, let me go ahead and put a little sticker on that because that's interesting.

That's actually at N-Tunnel.

This is 25. All right.

Twenty-two drift. Now you go into my map and all the drifts have a name or a number.

OK, so that's how you've identified it. N22.

N22.

LOS is—

Line-of-sight.

Line-of-sight. Seven-by-seven drift. OK.

That's almost right into ground zero. That's how I can tell where it's at. That's breaking through into ground zero, I believe, because there was a drift that came this way and one coming straight, and I'll show you here on a—just some—

These are different badges and things.

Yes, pictures.

Great. Those are good.

And I guess when we really get—because I got—there's—these are all—just a quick—here, see, these are Yucca Mountain. See, that's more Yucca Mountain. This is Yucca Mountain, the actual portal as we were doing the job.

N-Tunnel group. P—that's in front of P-Tunnel, Papa-Tunnel.

There's Sandie [Medina].

Yes, I see that's Sandie.

This is one of the last pictures of the group before the weapons shutdown.

OK, let's put 26 on that. We aren't going to name all those people, but that's an interesting picture.

Well, I know—yes, I know. Yes. OK. And these are the ones going down hole on top of the Esrom. Remember the one I told you—Esrom? U7ak? This is it.

Oh, this is when you had to go down and—

This is when we actually were in the job and what we had to do to wear that. And this was on and on and on, Mary. I mean I don't know where you stop and where you start.

[00:10:00] *Well, this is good because we have the story. As I said, we don't need to get all of them but we'll—let's pull those aside.*

The numbered ones, the ones that are numbered, then—

Well, let's just look at these and then we can talk about them.

But yes, I wanted to get a picture—see, I wanted one of my maps.

Oh yes, that would be great.

And I got them, but I don't know which—so I can show you the enormity of one of the tunnels, how big they really, really were.

Yes, that would be great.

Here's the last—remember I told you we turned the water off? Now this group of people was from UNLV [University of Nevada, Las Vegas] geological department and that was one of the last pictures underground. In fact, I still got that shirt there. [Photo 27]

Yes, you have it. [Reading] "N-Tunnel, last known picture taken underground before shutdown."

And this was a tour that I took underground. Now this guy is the head of security for Los Alamos now. He was a heck of a nice guy. Sharp, too. Young. I think he worked for the CIA [Central Intelligence Agency] one time, too.

Do you mind if we pull this out so we can scan it? Or maybe there's another way I can get this picture.

Well, I know one way you can get it. This one here.

Yes, but I don't want to mess up your—

That's all right. We're going to have to—

Just because it goes with your story, that's why I like it.

Well, let's just pull it out of there. There's a map—no, I need a map. That's Tuffy Ruth, lives up in Mesquite.

Who does?

Tuffy Ruth. He was one of the miners out there. In fact, his dad was one of the Texas Rangers out there. Back in the day.

Wow! Yes, really.

Yes, yes, that was—and he's—

So you're looking for a map, though, right?

There's Climax. That's actually the repository that we did.

These are all—that's Ledoux.

This is P-Tunnel, swing shift, I think.

This is a picture of one of the tunnels.

This is Ledoux.

There's an underground mucking machine.

I wanted to—

Look at those interesting documents you have, though. I'm going to have to come and sit down one day and just look at these.

Yes. See, these are from Flangas through Don Hembry. Tell some of the changes. All signed.

Was REECo's. REECo's no more.

I know. Yes, those are interesting just as examples.

And these are our personnel roster for 6-12-94. That's how many there was left out of seven hundred. It's like going to your own funeral.

Yes. Yes.

Yes. Here. Economy Program Review. Bob Schuette. He was a project manager at N-Tunnel. I think he's still out there.

Here's one. That's a diamond drill rig. [Reading] "G-Tunnel, diamond drill, 1975."

I've got this picture here. Harry Reid.

Oh, Harry Reid. Look at that.

This is me, Waid Tadlock, Harry Reid, Lieutenant Commander Richards, and Richard Horne, underground at Diamond Fortune.

Yes, Diamond Fortune, right?

This one or this one. One of these here was this here. And ten years later, I got him to sign it at the breakfast. He came to the breakfast.

Oh, right. That's right.

And I knew he was coming.

So you brought it with you?

So I took this and I said, Here. Took me ten years, I think, to catch up with him.

Here, this is the Chemical Kiloton at N-Tunnel. We did one that was a non-nuclear, the last at N-Tunnel. That's the article about it.

This was outside of P-Tunnel.

This is a terrific picture for **[00:15:00]** *people to understand what that whole situation was, because you've got the hill—I'm going to put this as 29. This is terrific.*

And this is the portal. This was my office, oh, right here. And this is actually underground [P-main] when we actually poured concrete invert of P-Tunnel, Papa-Tunnel.

Wow! That's amazing.

Here's an actual ground zero at Mission Cyber. U12p LOS GZ Room. [Photo 28] [Unclear phrase]

OK, so I put 29 on the picture with the portal and 30, this is called an invert.

Yes, that's pouring an invert. The invert is the floor. That's another terminology—

Oh, I see. But look how wide this—I mean how many feet wide is this? It looks huge.

Nineteen by twenty-two, I believe.

This is the cavity where Senator Reid was. Senator Reid was right standing probably, well, there's probably ten foot of concrete poured when *he* was there. That was in this cavity during the time we were doing this.

Right. And then where was that other one? Oh, this. What is this?

That's ground zero at P-Tunnel. That's the actual mining of the ground zero. Ground zero would actually be right in the center of that plate. That's the actual GZ, they called it.

OK, so I'm going to put 31 on that because that's interesting, too, for the underground—oh, there's the water seeping up, as you say.

Yes, in places it's more than others, but it'll drip. Some places in the tunnels are *really* wet. T-Tunnel was really, really wet.

OK, these are excellent because you know one of the things is to give people a sense of what it was like down there.

Here's a picture of the group bringing the mole out, remember?

Yes. Yes.

And that's all the men, the players that I had down there doing it.

MX. Here's one of the transporters.

This is good, 31 of the mole, because it gives a proportion of the size of the machinery. So that's 32 with the mole.

There's the ditch digger in MX, the racetrack system. Remember the big ditch they were going to dig? And look at the size of the machinery—

Oh yes, let's get that one, too.

That's big. *Huge*. It was the trench digger.

Ditch digger, 33, the MX trench digger.

This is P-Tunnel during the construction of a test bed—because that's the line-of-sight pipe, see? See all the little ports out there? That's where the scientists would hang an experiment—each one of them had a cable and an experiment.

OK. That's great.

Maybe a gauge, maybe a something that we'd—yes. So when this was all—because this pipe would go inside the tunnel and they'd be welded from one to the X. See? All in sequence of a taper. From ground zero it'll start out this big around and then it goes to—

OK, so it starts out how wide around, would you say? Six inches?

Pretty close. Between six and eight. It's right where the bomb is. The device set here. Here's the pipe. Inside the A-box. A-box is—I got a picture of one. There's some here somewhere.

OK, let me just make sure I say for my reference that we're looking at picture 34 with the line-of-sight pipe and the places where—

In the background outside, in the test chambers where the scientific experiments will later be placed for the test.

Right. And these are much wider, so you're saying the pipe tapers as it goes through the tunnel.

As it gets closer to the portal, it gets bigger. Like a megaphone.

OK, 34. But you were looking for a map, I think.

Yes, here we go. Here's a map of—I think it's this one. Here's a map of the test site, kind of. Here's Mission Cyber. Mighty Oak. Here's T-Tunnel. The whole schematic of T-Tunnel.

[00:20:00] *OK, so I'm going to put a 35 on this. I can actually make a Xerox of this.*

And I've got better maps than this. I know I do. This is a copy off of one somewhere.

OK, so this is Mighty Oak—

See, here's the portal. That's the outside. And you go in and this, where we poured the concrete on the invert, that's this here, and that goes for two thousand feet right straight on out. And this is what they call the cable drift, which we don't like to run the cables down the same drift that we run the motors, for safety and—because you damage one of those cables, you're out of business. And then this is the TO2 main drift that tells you where all the containment plugs are, alcoves, runarounds. But this is Mighty Oak. This is the one that got away from them.

What happened on Mighty Oak?

I never did hear for sure whether containment failed or whether the device went bigger than they anticipated. Sometimes that would happen. Kind of like making a cake. You don't have—so in the containment of it, of—well, where was I at?

You were saying it was like making a cake. The device could've gone bigger.

Yes. You never knew—they got better at it, but I've even heard the scientists say, `We don't know for sure what it's going to do`. Because one of the scientists came to me at U1A and said—because he wanted to know what kind of ground did we hit in or we come across as we were mining the shaft. And I was there as a miner most of the time, and I knew we went through some real hard area. And I told him and he said, `Well, that's what we want to know because the nuclear device itself has a mind of its own.` When it goes off, it'll go out. And if it's contained, it'll go back and come out again. This time, it comes back stronger. If you can hold it the second time, you got it. But it has to be—because it'll come out and *pwoooh* again. And they want to know where that hard area in the geological strata is so they can plan that in the containment. It's all in a formula they have. Well, the overburden here and this kind of ground here and that. They kind of know what they're going to do. And it's *all* important.

So with Mighty Oak, what year was that? I can look.

You have to look in the bible there.

Yes, let me look in the bible.

Seventy—eighty—'83, '84? I'm going to guess and see how close I am.

Well, let's see how close you are. And then what was the deal with it, though?

Well, some of the gases got away or were released into the atmosphere.

Eighty-six.

Eighty-six? OK. It was dirty (radiation). The overburden plug was built to withstand 1200 psi [pounds per square inch] and 1200 degrees Fahrenheit for so many seconds. All of them failed to one degree or another. The last containment plug held most of it, but it did—the test bed, all of their experiments and everything else, was more or less lost because of the tremendous amount of heat. Because I don't know how they got—it got to over 1000 degrees. One of the miners, Acorcinio Trujillo, went back in. They were supposed to go up to the point of going in, but under no circumstances were they supposed to enter into the reentry drift. This is on reentry. And Coors told me this, you know, because his eyes were [big] because of the weird things that he'd seen. He said all of the wood was still in place but it was ash. One ladder was standing up against the tunnel. He said they touched it and it disintegrated. But it was standing there by itself, cooked, fried in seconds, [snaps fingers] like that. And then it's still there. I know Coors, and he told me this story, he said, My God, he said, you couldn't have believed how the tunnel **[00:25:00]** was. Because I helped drive it, and we had wood lagging in the tunnel sets to protect so the ground wouldn't fall. And all that was turned to ash and it was just standing there, just like a ghost town, kind of like, you know, the nuclear holocaust. It was, because it got up to around 1000 degrees for how many seconds. A fireball went through there and it contained

most of it where it didn't escape into the atmosphere. Some did, especially when they had to open up the tunnel to ventilate, there was some of the hazardous byproducts did get out, and I think they traced them as far as—I don't know if they ever got into Canada, but there was quite a bit of negative publicity on Mighty Oak.

Yes. And what was the name of the guy again who looked back? You just gave me his name. The guy who told you the story about things breaking apart.

Oh, Coors? His nickname was Coors because his name is Acorcinio Trujillo.

Acorcinio Trujillo. OK. Got it.

Yes. I got a picture of him here somewhere. He's a little Mexican miner, and in fact he's still involved with the union, and he comes to the breakfasts once in a while. He's here in town.

Yes. I'm not sure if—I don't think I've met him.

Well, he can tell you about that one because they all got in trouble because they weren't supposed to go in that far without authorization from God [the Test Director], more or less. See, here's when I was talking about the cables? This is actually an A-box.

An A-box is what contains the device?

Right. And this is—line-of-sight is this way, this is the bypass drift that you come in. See, that—there's—

Oh, I see. I see. That's good. We'll call that 36. But I want to go back to your—

Here's the bypass, see? See that bypass? This is LOS here. This is the TAPS—

I want to go back to this, which is 35, which is the map. So this is how complicated the underground is.

Yes. Oh yes.

See, this is very interesting to me.

N-Tunnel was twice that big. There were twenty-two shots at N-Tunnel, and all of them had their own test bed—see, this is one shot right here, *all* of this. See, this is Mighty Oak. I worked on Mighty Oak. Now if it was P-Tunnel, here, see, this is Mission Cyber. This is P-Tunnel, the newest tunnel.

OK, we'll call this 37. [Photo 37 not scanned.]

Yes, this is the test bed. See, here's your last plug, your containment plug. And all of this stuff here is what they call the test bed. Line-of-sight, bypass, then your cross cuts into it.

So I've probably asked this question before but I can't—it's so new and interesting, I don't understand it. You would use one drill for one test. That test would go off. Would that whole tunnel be—?

Oh no. No. I see what—you were thinking the tunnel boring machine?

No, not necessarily. Just any test that you had, say, at the end here, would that test bed be usable again or would it just be—?

Sometimes some of it. Most—see, this is ground zero where the device would go off.

Right. At the very left of the photo.

There would be a big rubble zone—it probably wouldn't be usable beyond that point—there's your MAC [maximum auxiliary closure]. M-A-C. Auxiliary closure? I don't know what the M stands for, but M-A-C is a MAC for the closure thing. It's big doors that come together. It's called a MAC, or a fast gate. And then the TAPS is—here's your TAPS. That's the TAPS. Tunnel and pipe seal. Here's your MAC. That's one right there. See, that's the closure. And then there's another explosive device right in here that at the time the device goes off- there's high explosive wrapped around the pipe. They collapse the pipe to contain the explosion—because all they want is the flash of light. They don't want any of the other—they want, as soon as that flash

of light goes off, they want to close the tunnel off and keep it back there. Oh, you got to be good at it. Got to be *really* good at it.

That's amazing.

Yes, it was. Joe LaComb again. I went to a DNA meeting downtown, and I didn't ever know how important the mining was going into ground zero. This point right in here from right about here down about sixty feet—

Now we're looking at 36 again, which is an actual photograph of ground zero. So back—

[00:30:00] Yes. Right. But we're in the bypass. If we was looking down the line-of-sight pipe—

Oh, I see what you're saying.

See? See, we're—

We're in the bypass here.

Yes, we're in the bypass. We're right here, see? Looking in here is right here on the map, in reference. Because they were all pretty much the same. Down, oh, about forty, fifty feet away, the tunnel had to be designed in such a way that some—and I don't understand the physics behind it or whatever. It had to be designed much, he [Joe LaComb] said, `Like a woman's breasts`. He said that the tunnel has to come down here within a half-inch to an inch of mining, and it narrows down and it narrows down into a 7'x 7' drift, and right in where it narrows down, right there, he said, for about fifteen feet, he said, `You guys get it right on. If it takes a month, do it.` He said, `That'll save our bacon.`

The width there.

Whatever it—the shape and coming together at the closure point has to be within a half-inch. And I have always thought what difference is it going to make to that bomb when it goes off, whether it's a half-inch?

Right. I would ask the same question.

And he said they got records to prove it because they would line the tunnel with geophones, and they knew exactly what happened and how to prevent the explosion from coming around and staying back in the cavity. And it took probably ten years to come up with that, that I went to, one of the last DNA meetings downtown, and they told us, I think it was a P-Tunnel, Mission Ghost or Mission Cyber, one of them, he said, It's so important. That's why we harp at you. And I said, I'm glad I got to come, because that was my responsibility, to make sure that as a mining superintendent that we do it the right way the first time. But I never could figure out in my mind why do you need it within a half-inch, an inch? Why? And then he explained to me why, that from an engineering standpoint. I was there to get the job done.

Exactly. How amazing.

But yes, we could go on for days.

No, but this is helpful. It's helping me understand—

And here's my list of nickname names.

Oh, your roster.

Yes. [Reading from roster]: Abeshire, Mike—"Fresh Air Mike," Gaylan Adair, Bob Adams. Some of them don't have nicknames but a lot of them did. This was one of the first ones I got.

This is great!

Mostly, these guys worked underground. Gino Choquer. He's up in Pioche, Nevada..

Oh gosh. You just did this on your own?

Yes.

OK, there's Lavell Atkinson. You mentioned him. Well, you know, if you can print me out one of these or make me a copy of this, that'd be great.

I can get a hold of Sandie and get the software program from her. It's in—I got it in a database in there. I might even have a disc.

Yes, short of that, if we can just make a copy, I don't need it on disc. But you know, this is real helpful just from—well, there's so many people, first of all, on this list, and that you put this together is amazing.

Yes. Remember the guy, Tuffy? That's the kid from Mesquite that his dad was—turtle herder or the little cartoon of the turtle herder? Ruth, Clawsen. We called him Tuffy.

Right. Lot of Ruths there. Must've been a family name or something.

Yes, they were. They were. Lee Ruth was a brother of—and then Craig Ruth was a brother, and Tuffy.

No, this would be great to have, and I don't need the database. This is just interesting because of all the different names. So at some point, as we said. We're going to be around for a while.

But yes, this goes on and on.

And I might just have to come over one day and look at all your stuff.

I think that's the only way you're going to get it done because, you know, I've got—

No, that's all right. We'll come back.

This is a neat thing, too.

What is this? This is a red book.

Yes, Dear Diary. My collection of memorabilia—here, this is—

Oh my God, a menu from the world-famous Chicken Ranch.

You know it's, I think, twenty-five years old.

Wow, this is an artifact, John.

[00:35:00] Yes. Yes. My cousin said, `You're a historian, whether you know it or not, because you pack-ratted all this stuff.`

Oh my gosh. I mean I've never been, obviously, to a whorehouse, so you'll have to explain this to me. You would actually go in and these are things you would ask for? [reading Chicken Ranch menu]

Yes.

Wow! Amazing. OK, I'm going to get a copy of this, too. That's very interesting.

Just to show you another one that I got—

I'm such an innocent. I'm thinking, oh, they serve food there [laughing].

Well, they—

[Both have walked out of the room at this point. Conversation inaudible for a short time.]

This was a funny—I did this on a bet. I put it somewhere but I don't know what I did with it. It was a cookbook and I think all of them—here.

What is this? [Reading title] "By Hook or By Cook: The Official Nevada Brothel Cookbook. *Oh my gosh. Amazing.*

And look, I got it signed.

Amazing.

I went up hunting with Don Slagle and I told him, I said, `Don, I got to stop by the red light district over here and pick up a T-shirt for Denny,` my godson. He was about nineteen then, and he always wanted me to get him a T-shirt from one of them places. So I pulled over and we went in. Nobody was awake. It was about nine o'clock in the morning, you know. They weren't ready for business. And so the bartender lady, she was, oh, late sixties? She knew Bill Flangas; went to grade school with Bill Flangas. And here she's kind of the madam, I guess. She's in charge, because she run back and woke one of the girls up and said, `You got to go help the customers.` And I said, `I just wanted a T-shirt`. But while we were

there, they took us on a tour of the cribs back in there. And I didn't know this till then, that they had a main entrance to the brothel, then they had a side entrance for the kids, young—if the dad wanted to take the boy or something, eighteen, seventeen-year-old, they couldn't go in the front, according to the State of Nevada, but they could go in the side door, that it was OK. But I never knew that. They had a side door. Much like the Mormon religion. Do you know a lot about—?

No, not much.

OK. Go up in like Pine Valley in those *old*, old, old Mormons' homes, and each'd say, in the days of polygamy, each wife had to have her entrance to the house.

Interesting. Her own entrance.

Her own private entrance to the house. And you can go up there and you can see some of them with five entrances to the house. Five doors.

Interesting.

Yes. I never knew that.

I didn't either till—

Back in the days of polygamy they—that was kind of an unwritten requirement among the womenfolk that, `OK, I'm in this situation but I want my own door.`

That's really fascinating.

It is. It is. My cousin told me that, because he was a Mormon. His mother was a Mormon from Tooele, Utah from *way* back in the early times. I'm sure she's gone. She was in her nineties twenty years ago. But she was full of history. And she passed all the books on to him from their old home.

[00:40:00] *How amazing. That's a really interesting history. It's really interesting.*

Oh, it is. And it's colorful. Colorful as heck when you get into some of those characters. It was. It was neat how they—and then he told me, he said no, and he could show you back in the days that it was kind of an unwritten law among the Church that yes, you build the lady her own entrance into the development.

Interesting. Let's look at this—

Oh, this? My "Dear Diary?"

Yes.

This was a diary that I kept a lot of times. As we'd go to meetings and things would happen during the day—

Here's an MX sticker. "Peacemakers."

MX Peacemaker badges.

Yes, badges. That was an event. It was King of Diamonds. Somewhere on here—

Oh, right, so they made a little—[badge]

Yes.

Oh, that's interesting.

Here. [Reading] "Talked to [name unclear] about Marvin Hubbard motorman on Foster's crew." There was some horseplay on the back of a motor going in. And the motor, they didn't lose control of it, but it banged another motor ahead of it and they had a potential serious accident. But thank God nobody got hurt, but I had to go and bring in all the Blue Safety Team—we had a safety team—and I had to make notes of what I did in case I had to—I didn't always keep it full but I got, oh, guys being—had to verbally reprimand them. Then I had to put it in paperwork. But I had to keep a Dear Diary—

You did, to remind yourself of what actually happened, yes.

And then if it really happened, and then you got this proof that—

Your documentation, right.

Yes. I don't even know what I got in a lot of this stuff.

Well, it's interesting, though. [Reading] "No classified discussion allowed in this area."

This came out of E-Tunnel. That complex was abandoned for probably twenty years. It was just kind of like an old ghost town—they just walked off and left it. And when we got ready to mothball it, I went up there and started looking through some of the old stuff that they were going to throw away, and it just broke my heart. That's where that came from, in an underground concrete bunker.

Oh, I noticed that telephone, yes, that old telephone.

It works, too, and it came out of E-Tunnel bunker there. And they were just throwing them away. Loaded them all in the back of a big dump, end dump, head to that pit and dump all that stuff in there. I said, `No, some of this stuff ain't`—but this was—

That was there? You found that there?

Hanging in one of the—

[Reading] "No classified discussion allowed in this area."

Yes. That was actually hung in E-Tunnel in one of the concrete recording bunkers outside, partially underground.

You should hang that on your wall. That's a good one.

Yes.

Oh, this was another accident that they called—they got home and all of a sudden the accident got worse. We had a couple of guys do that. One of them was a professional rodeo—followed the calf roping and bulldogging and stuff. Wayne Lee. He died of a heart attack out

here. He was an early Nevadan and a test site worker. And he would go to these rodeos all over the country on weekends and he'd come to work and heal up. And I don't know how many times that REECo probably paid for him to work while he healed up from a broken arm or a collarbone or something, you know.

Gosh. You know what, John? We've been talking a long time and there was one thing, unless you come across something, that I would love to get on the CD because we didn't have it on before. When you were talking about those miners, what did you call them? The guys who'd only stay someplace for a short period of time?

Tramp miners?

Tramp miners. And your cousin. If you could just tell me that narrative again. That was interesting.

Well, there was, I guess it would be a certain element in the mining world, there was in my early **[00:45:00]** mining career, which would be back in '62, '63, '64, in some of the uranium mining camps like—where I started out was out of Gateway, Colorado up on John Brown Mesa for Climax Uranium. And I got to know a lot of the old-timers that had been in the mining business for twenty, twenty-five years. And they had a circuit that they would go. I heard one miner tell me, Bob Wallace from Tucson, Arizona, Kid, he said, there's only two good jobs, he said, the one you just left and the one you're going to get. The one you got ain't worth a shit. But they'd go and get—usually two paydays, maybe three, according to how broke they were, and then they'd be off to another job. They'd hear about a new job starting up. Because in those days, you could go to work almost anywhere. And if you didn't like the boss or the color of the money wasn't right, you'd go. Because *always* they could make double day's pay. I remember going to work in a uranium mine out of Gateway, in the shaft for Climax

Uranium a division of American Metals Englewood, Colorado, called Bonanza One, for Climax Uranium back in 1963. And I went to work at eighteen years old making *twice* what my uncle did as principal and football coach and teacher in a high school. My monthly salary or weekly or eleven days on and four off. Eleven and three. Eleven and three. I would just damn near double what he made and didn't know how to—just that they had money in both pockets.

And you were saying before that they would travel all over the country.

They had a circuit. They would go from the water projects and mines in California, near Bakersfiled, California and Ely, Nevada, they would travel up into the Coeur d'Alenes district which is in Idaho, then they would go from there over into Butte, Montana and work in the copper mines there, and then they'd head—according to what time of the year it was, too, because they always had a saying that, `The first snowfall, we're going to head south`. And they'd go into Tucson, Arizona or Superior, Globe, Arizona, they're a whole lot of copper mines that hire thousands of miners. And then some of them would go into Kansas and Missouri and work in the lead mines. Some of them would go into Leeds, North Dakota and work in the gold mine. They had a seven-thousand-foot shaft at Leeds, South Dakota, I believe. Leeds. There's a huge gold mine there, underground. And then some of them would go into the iron fields and mine taconite up in Michigan and Wisconsin and in that area. But they had like a circuit. And they always would have buddies somewhere and they would talk. One guy I worked with in Colorado, I hadn't seen him for—his name was Al Fredericks. And I think he only had two suits of clothes to his name, his working clothes and his go-to-the-bar clothes. Because that's all they did. They didn't have any really social life. I don't know why, but the mentality, `I don't know if I'm going to live tomorrow`, I think edged on them a little bit. Because a lot of them were on the edge of it, you know, getting killed. A lot of them did, especially during

Grants back in ’58, ’59, they were killing three or four or five a week there for a while in Grants, New Mexico. Yes.

Is that the uranium mine?

Yes. Out in Ambrosia Lake. We lost a cousin there, Gaylon Bennett, back in, I think, ’59 or ’60. He was down there underground and got caved in on. I think just in that one cave-in alone there were about three or four of them at one time.

And that’s different. Then you had a cousin that worked at the test site.

Yes.

So would these tramp miners, would they come in and out of the test site very much or—?

Yes. Yes. When they were hiring, the word’d get out they were going to hire for E-Tunnel, going to start E-Tunnel up again, so they’re going to hire, oh, sixty. They’re going to hire sixty men. Well, they’d go down to the laborers’ union and get on the out of work list—but they’d hear this information down at the Golden Nugget [Hotel and Casino, Las Vegas, Nevada], at the *old* Golden Nugget, the original downtown Golden Nugget there. The back bar was where the miners hung out. And you could go in there and ask anyone of the bartenders have you seen, Dale Phebus or John Timberlake or Bobby Brown or some of the tramp miners, because that’s where they spent their **[00:50:00]** weekends. They were either at work—because a lot of them were single and they’d live in camp, so they had facilities in Area 12 and Mercury for them to stay. But come the weekend, into town they’d come. Monday morning, you’d have to loan them twenty dollars just to eat for the week. And they’d come to town and blow all their money, and come back to work, and work *hard* for that money. And get both pockets full of money and head right back to town. Monday morning, they’d be broke again. And some of them wouldn’t show up for three or four days, and then some of them’d just take off. And then you’d see them again,

oh, in time. Like it went in a full circle. And slowly over time, a lot of them are gone. But Dale Phebus can tell you lots of good stories. Oh! And I got to know Chuck Phillips, his dad Rodger. He just retired from the test site as a miner and supervisor. Him and, Jack Stollard, the All-American they called him, and he had tramped all over the world. Mostly tunnels, water tunnels. And he was from—I don't know where he was from. But very vocal. And he was a superintendent on the test site back in the early seventies, mid-seventies. He was a character. Oh, my goodness. Some of the things they used to do. He talked about going to work. He'd put a pint of Jim Beam in his boot. And when they were in Australia mining with a Conway mucker, he'd go in there and some of them guys could run them old muckers better drunk than they could sober. If they could tie them to the side of that, they were OK. Because everybody else took care of one another. You couldn't drink underground, and they tried to refrain from it, but every once in a while one of them characters like him, he would. I'll think of it. But they worked out here on the dam during the big tunnel project. They were young kids out there.

Oh. On the dam.

And I got to listen to their stories, doing the diversion at Boulder Dam, back during the Depression.

Wow.

Yes. And Sailor Ryan, he was the business agent of the union here. He's the one that—was it [Paul] Laxalt? Yes. They set him up. He took a bribe from them and they burned him. He would've been the governor. Back in the seventies. Jim Ryan. He was the business agent of the labor union and he was the dark horse candidate for governor and he had a shoe-in. Bill Flangas ran, too, but he didn't even get off the—he didn't have very many votes, I guess. I think the voting—I don't know what it was, but it wasn't much.

Yes, that's Nevada history. I don't know. Recent history I don't know very much about at all.

Yes. That was back in, like I said, when my home here was on the edge of town. Now it's the center of town.

Right. It's amazing.

It is. But yes, those tramp miners, they—

Yes, thanks for that. That's interesting.

They're what made the test site. Because the test site, they hired miners from Grants, New Mexico; Superior, Arizona; Tucson, Arizona; the coal mines back in the East, a few. Some of them worked back in Washington, D.C. on the rapid transit subway. And California, the rapid transit there. All these guys, and they'd hear about the test site, because it paid good, you know, and they had a camp, and everybody liked Las Vegas. But see, a lot of them couldn't live here. A lot of them could not live here. They'd come and work and they just couldn't handle the environment, I guess. They were all right at work, but when they got to town—and all they did was keep them bartenders rich down there. That's all they did. And the cocktail waitresses, they got all the money.

Yes. That's interesting.

Yes. It was colorful but you couldn't wait to get back to work Monday to hear all the stories that went on. And Dale Phebus, if you get over there at that breakfast when, oh, him and Fred Widmeir and a bunch of them old-timers get over there and get to talking—somebody'd throw in some dirt there about Dale Phebus and, *Oh*, he said, oh my God, I thought everybody forgot about that. Because he went down on the Westside one time, and the only thing—one of the compressor men, he called Ted Nuttle up, Dale Phebus did. This is back, oh, in the mid-sixties. And he went to a bar down there called Sugar **[00:55:00]** Hill. It was all black. And

Dale had a big diamond ring, *big* one, about a carat-and-a-half diamond ring. He had a pair of nice cowboy boots. And old Ted Nuttle said when he picked him up in the parking lot, he didn't have nothing but his shorts on. They'd rolled him for his diamond ring, his money, his boots, and everything and left him standing out on the street on the Westside. Ask him about that question, then watch him stutter.

I don't know. You can ask him, John.

But I like to hear all these stories because, well, you spent hours sitting beside them or working with them. You spent more time with the people you worked with than your own family. I don't know how I did it. You just kept doing it. You don't know any different. My dad told me that. When he was seven years old, they went to Oregon in a covered wagon from Colorado to Oregon on the Oregon Trail. And he got to telling me the stories about they would eat rabbit and this and I said, Dad, didn't you get cold? And he said, Yes, but it was the best there was. We were living a dream. Soon as they got to Oregon, everything was going to be OK. And when they left Colorado there midway between Paonia and Hotchkiss, they watched their house go down the river. Right where my family's cattle ranch is. In 1914, I believe it was, '13 or '14, spring runoff in that high country, and they watched their house go down the river as they headed to Oregon. I've got a book on it. *Dreaming West*. My cousin wrote it. Called *Dreaming West*. Because he used to listen to his mother tell all the stories about when they went to Oregon on a covered wagon. Yes. Took them almost nine months to get from Delta, Colorado, where the Gunnison River and the Colorado River come together, from there to somewhere in Oregon, Willamette Valley, I think, in Oregon or Washington, somewhere in there, it took them nine months. Yes. Seven of them.

Dreaming West. *That's a great title.*

Yes. Yes, I got it in my library over there somewhere.

Yes, I'll take a look at it.

Well, I remember my dad telling me the stories about how they would—and I just couldn't imagine till I worked in Jeffrey City, Wyoming. And I had one of the old-timers up there, the old natives, take me out and show me the Oregon Trail. Almost ninety years later, you could still see the ruts. I mean they were like that deep. Still. Ninety years or—and Independence Rock out of Casper [Wyoming] where all the names are and stuff. Yes, I've been up there and looked at that, and actually went and walked down the Oregon Trail where my dad went at seven.

Wow! That's amazing. So the ruts were still a couple of feet deep, even this much—

You could see the old road, the old bed, out across that prairie.

We should stop, but what's interesting—what you're saying about storytelling—is that I hadn't really thought about it but I think I hear you saying in the mining days, in the test site days, you're underground with these guys a long time, and so you're going to tell stories.

We would tell stories about it. It's all we could do and we'll tell about—well, a group of us'll get together, like even at the breakfasts, me and Roger Phillips got into a heck of a, oh, we had everybody laughing that was right there in our immediate—because all of them had been there and had witnessed how he got the name Paddlefoot. And we have a big two-deck work jumbo that comes underground up into the—that when we'd drill and blast and use dynamite back in the sixties. And you got twenty-five people swarming over this thing like ants, all of them with a job to do, and you can't hear anything. The noise is so loud that you can't hear conversation—you have to either read minds or signal with your light.

Oh, interesting.

Yes, you got to know.

So you actually do signals with the light and you— Wow.

Yes. You signal one another "no" or "come in" or "go out," like you're running a train, and the guy who's way on the other end of the train, that's how conductors do with the lanterns. Same thing. We do it with the light on our head. We shake them to "come in" and go like this [sounds like rubbing hands together] in front of your light means "come in slow."

[01:00:00] *Another language. Interesting.*

Another language. Yes. And you better learn—if you're going to stay alive—to watch. If somebody shakes their light at you, you better start pedaling backwards or something, or turn around and look, because somebody's trying to tell you something.

Yes. So Paddlefoot came from—?

Well, he fell off the top of the jumbo. He's got feet like this. Even when you see him today, you know, he's got [laughing] it takes a cow-and-a-half to do one foot. I called him my shithouse lawyer because he is pretty sharp. But his dad was one of the old-timers, so he grew up in the business. And he stayed at NTS after I left in 1994. He was out there with Bechtel for five or six more years. But he comes to the breakfasts every once in a while. But we get into some of these stories about him falling off the jumbo, and the guy, the shift boss, was there—he landed right in the middle of them, you know. He looked up at him and he said, `You paddlefooted son of a buck. Get back up there.` Because he fell on top of him, you know, and I think he had some timber with him or something. Didn't hurt him, but he got the name Paddlefoot and it stuck. Thirty years later when you say Paddlefoot, even his wife knows who Paddlefoot is.

That's interesting. OK. We should stop.

OK.

[01:01:22] End Track 2, Disc 2. [End of interview]

UNLV Nevada Test Site Oral History Project

Interview with John F. Campbell

January 14, 2005 in Las Vegas, NV
Conducted by Mary Palevsky

Photographs
Originals located in the John F. Campbell Collection

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9 – Bert Baldwin and John F. Campbell in cased drill hole U2AW

10 – Crew at cased hole U2AW in Area 2
(Left to Right are Cecil McMurtry, Jim Fowler, Gordon Stewart, Bert Baldwin, John F. Campbell, and Seymour Shackelton)

11 – Crew at Area 1 U1A Shaft 1970
(Top Row Left to Right are Cornelius Smith, Jack Pryor, Alfred Sweeny, John F. Campbell, and Henry Dicamillo)
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12 – John F. Campbell next to a Diamond Drill Rig in U12N Tunnel

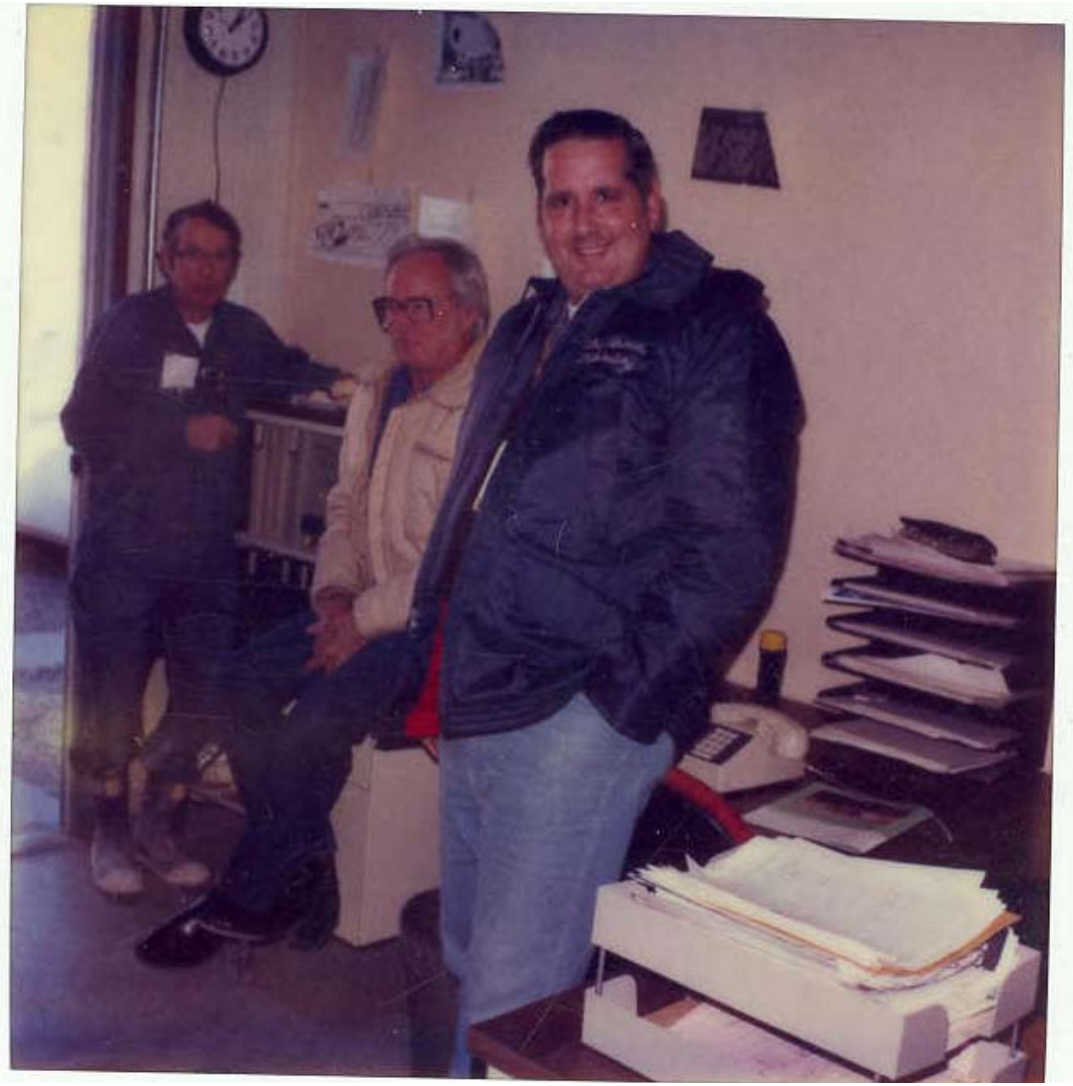
13 – Re-entry at U6A code named Russet
(John F. Campbell is facing the camera, Ray slaughter and Bob Peterson are at the right of photo)

14 – N-Tunnel Area 15 at A and B drift

15 – Two-crane pick up of a Tunnel Boring Machine

16 - Crew at U12 N-Tunnel (Bruce Wilhelm is at far right)

17 – Waid Tadlock operating an Alpine Miner in N-Tunnel



18 – In the office at T-Tunnel
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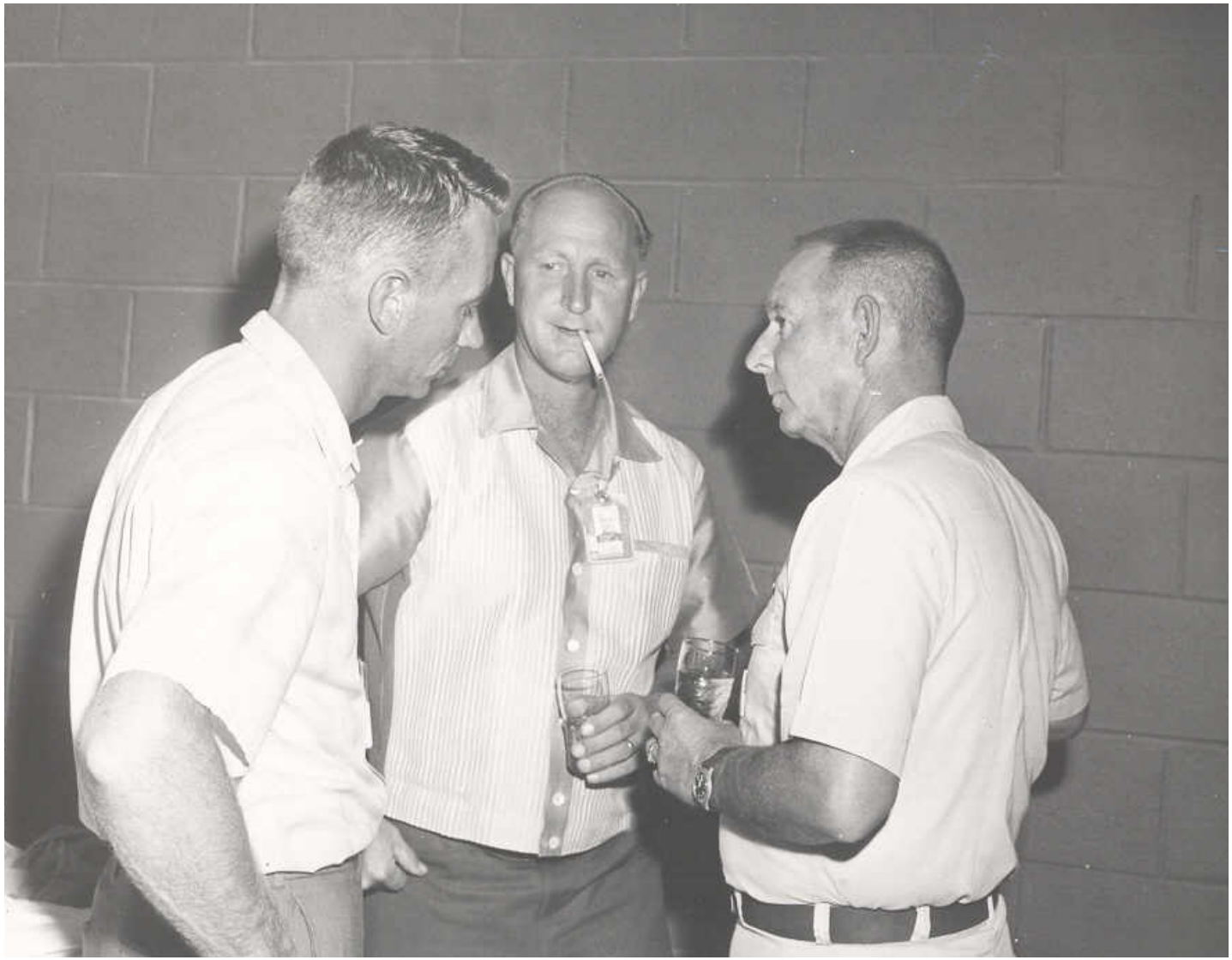

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29 – P-Tunnel Portal and Yard

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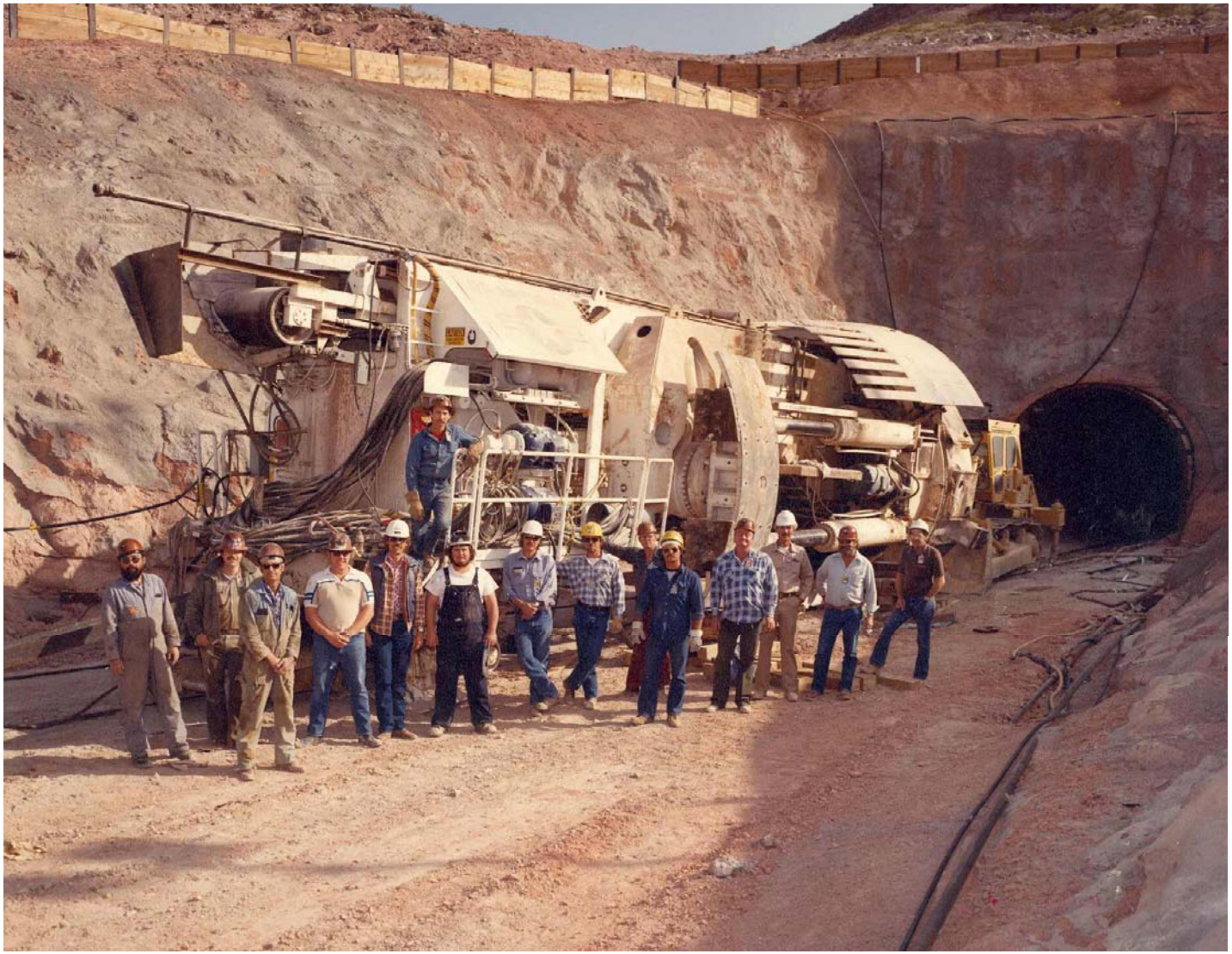

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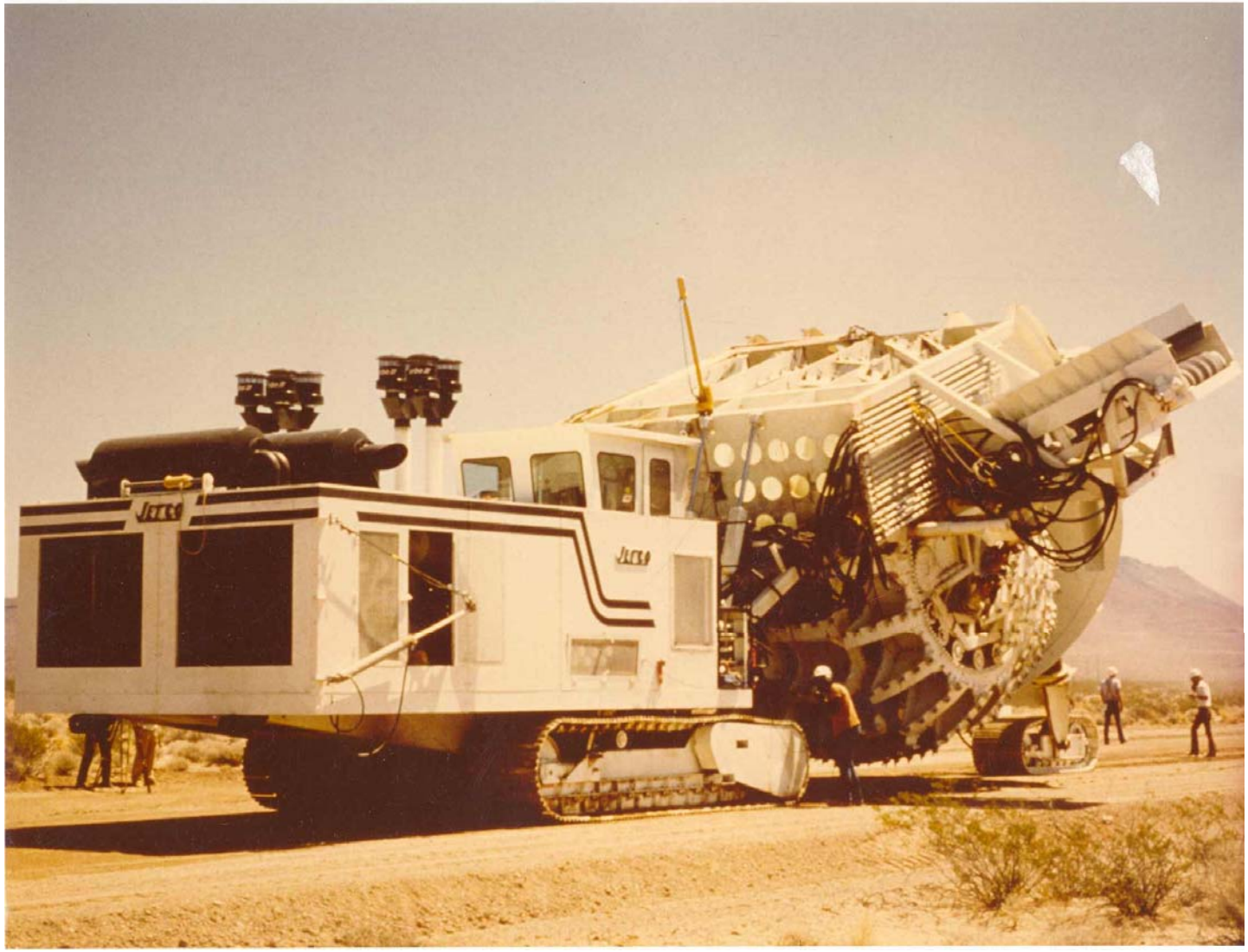

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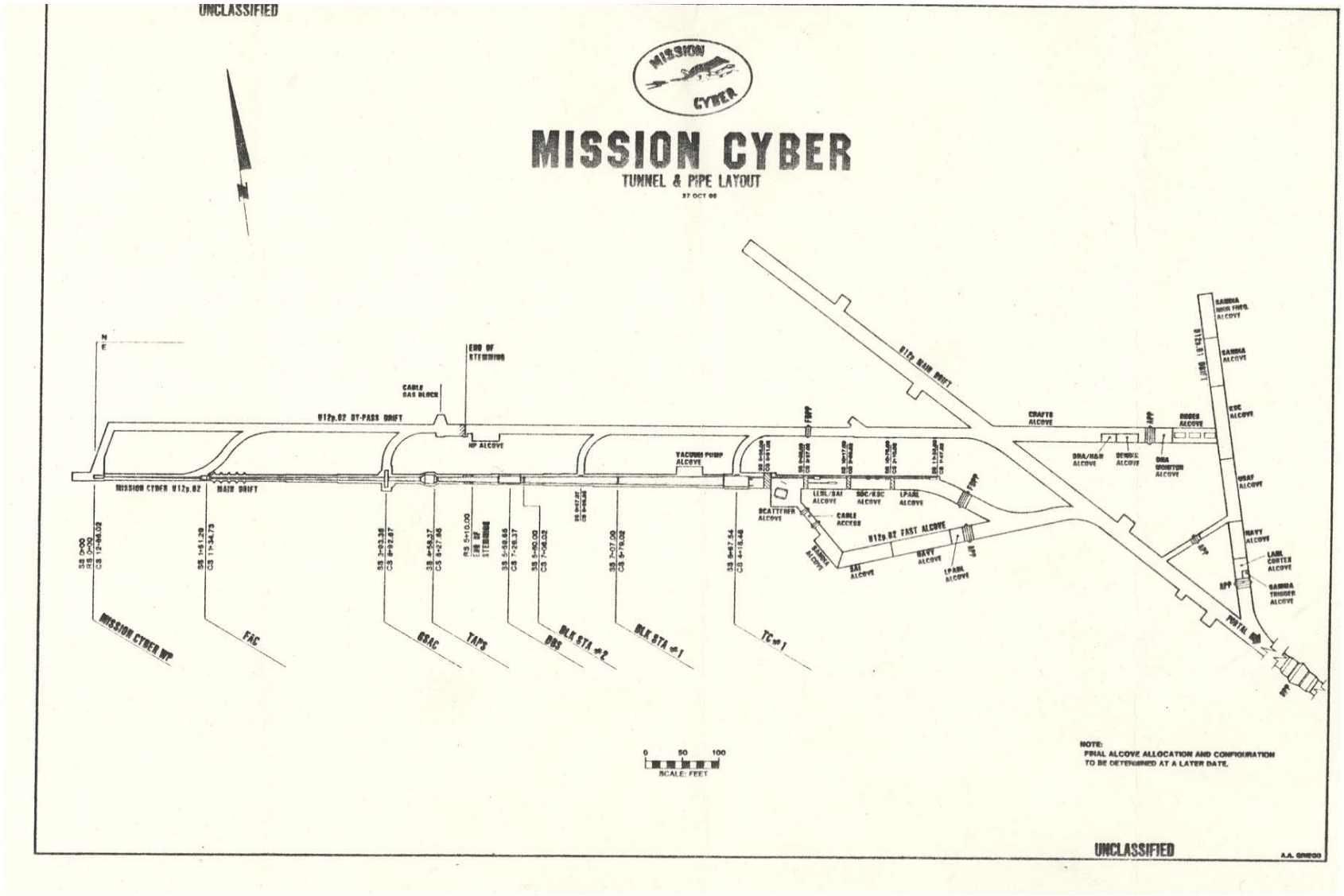

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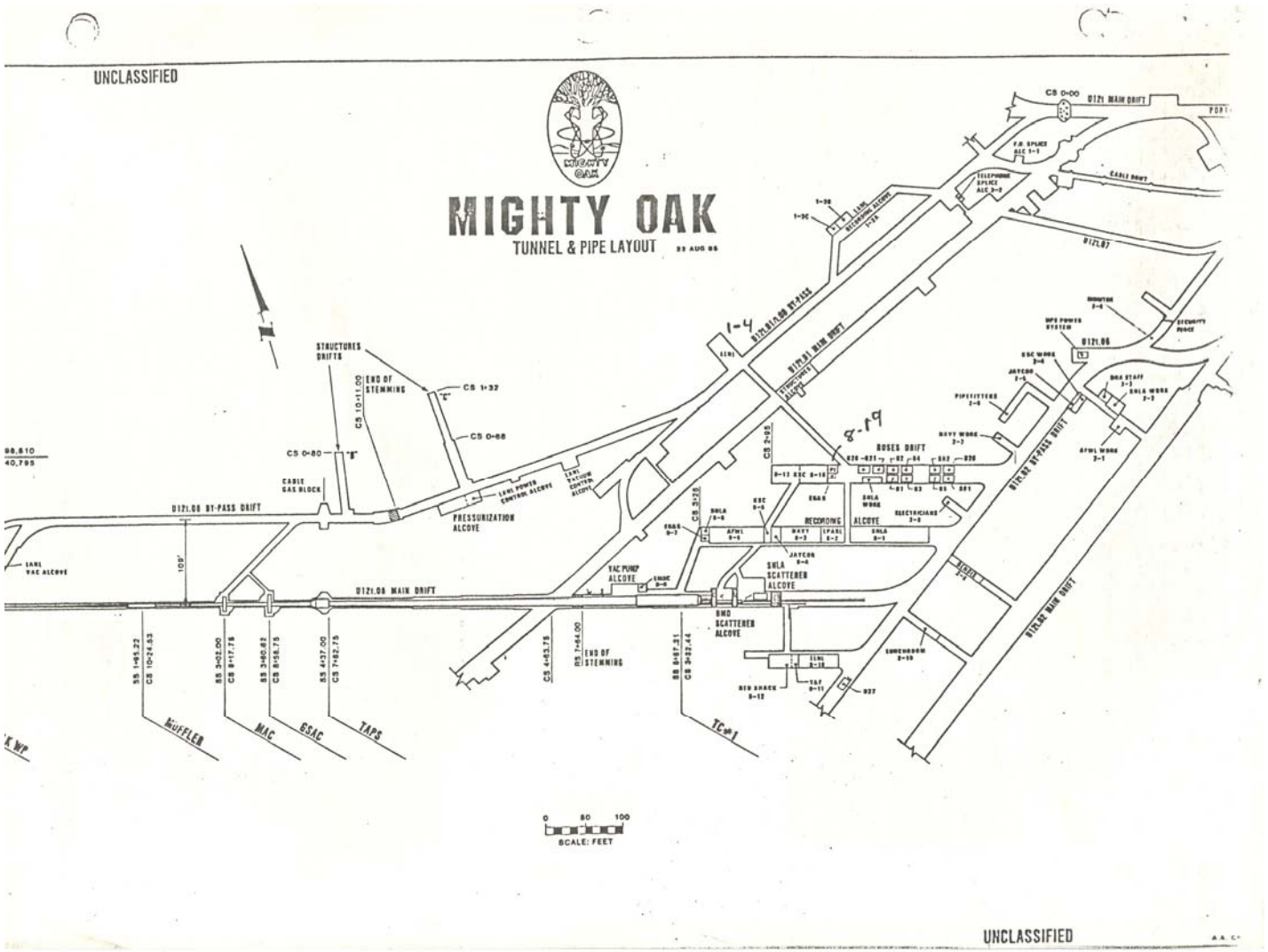

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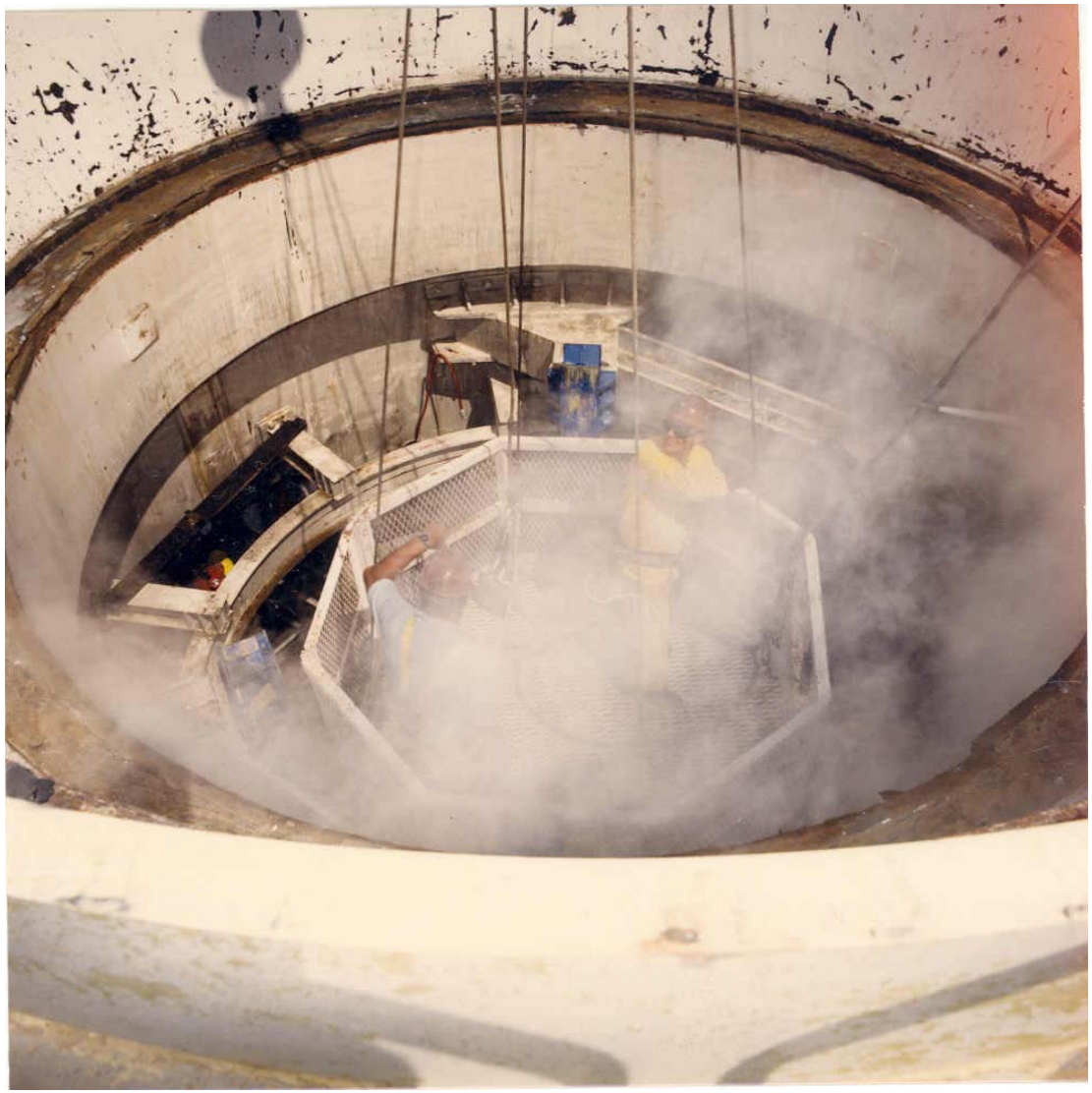

Area 25 MX Missile Silo

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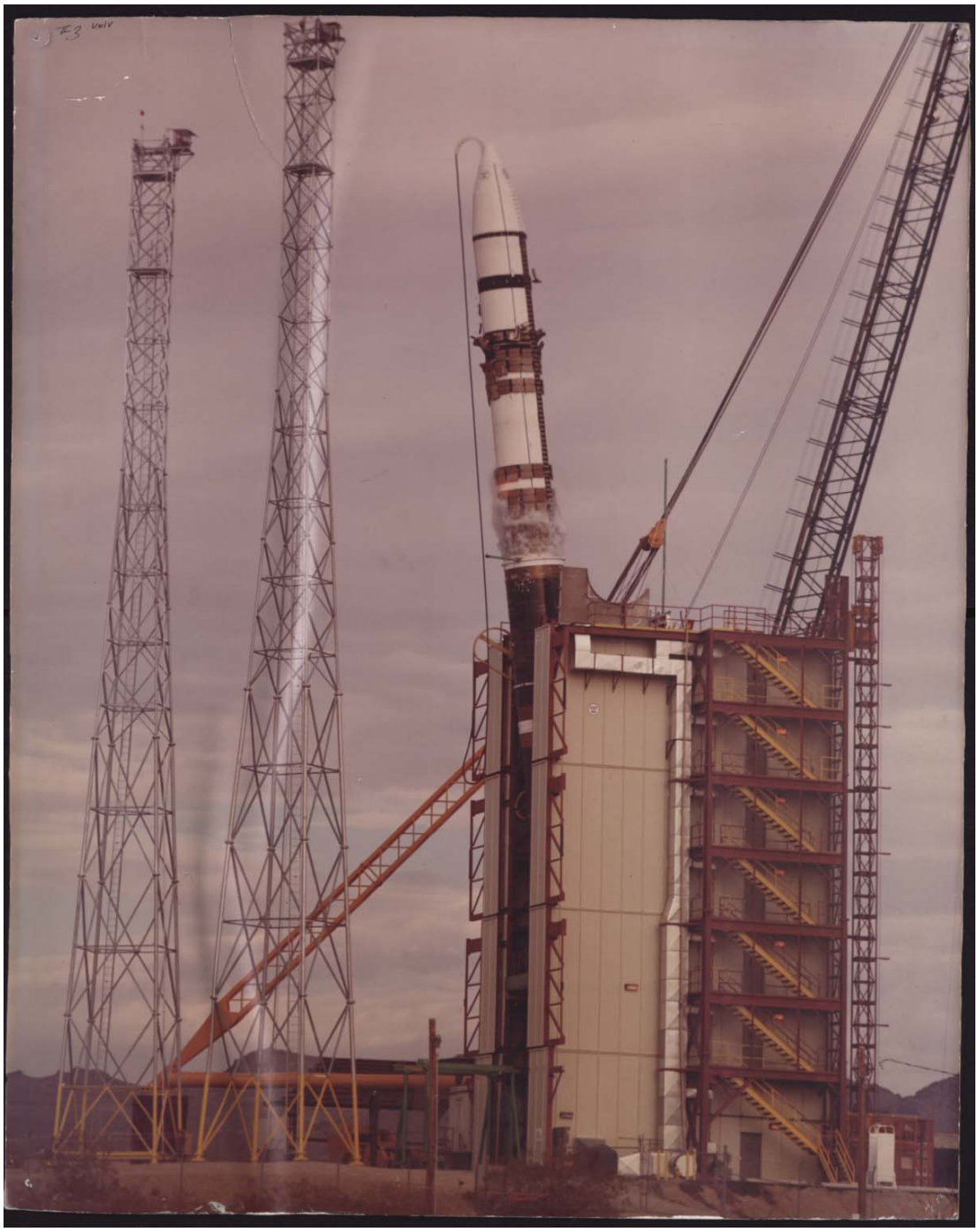

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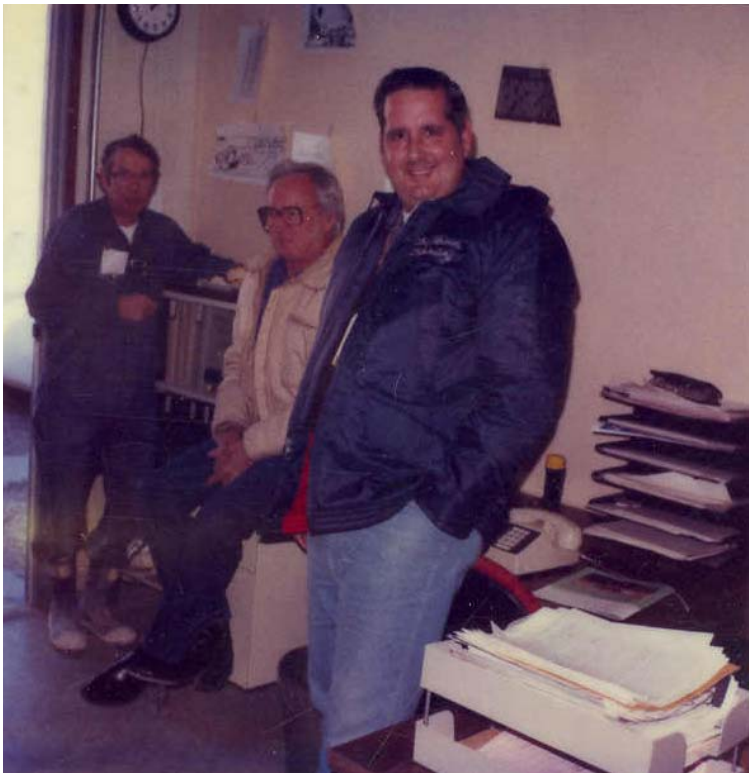

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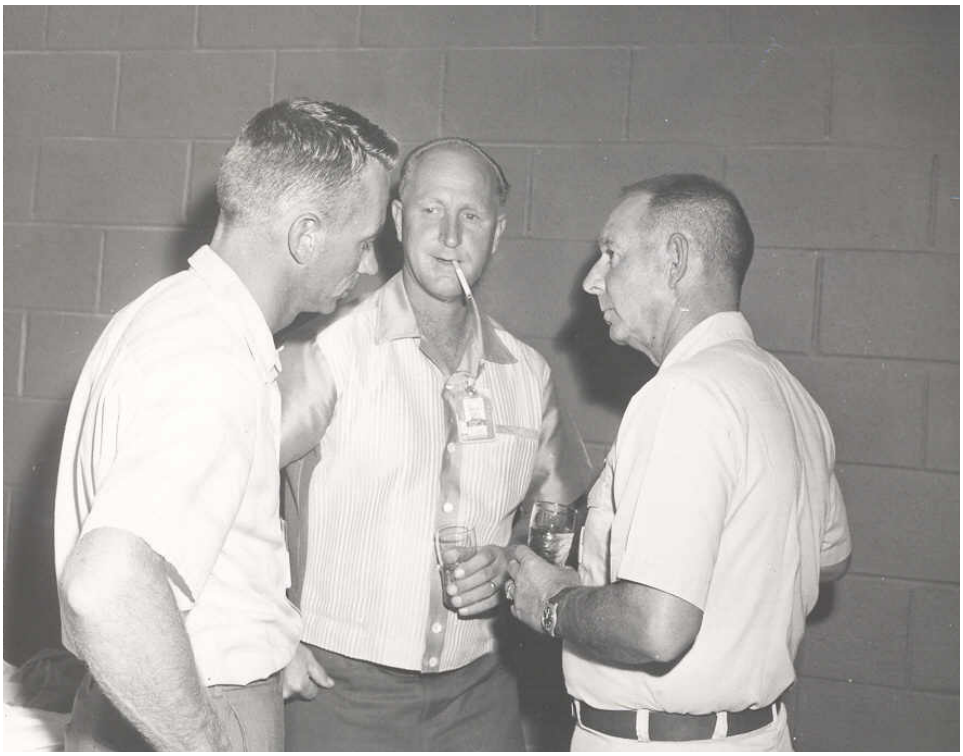

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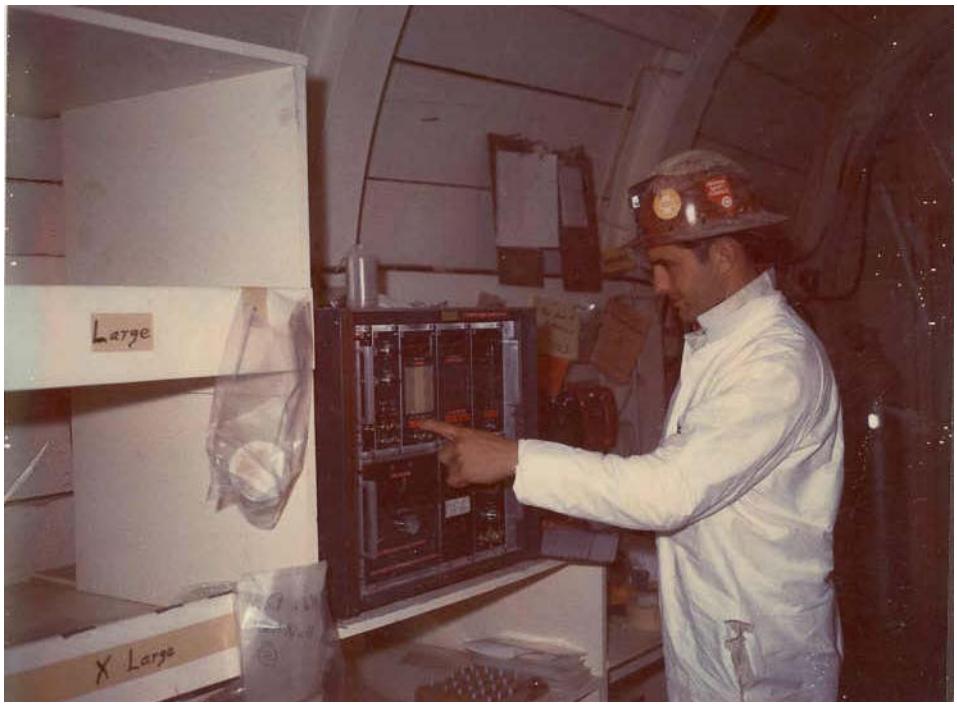

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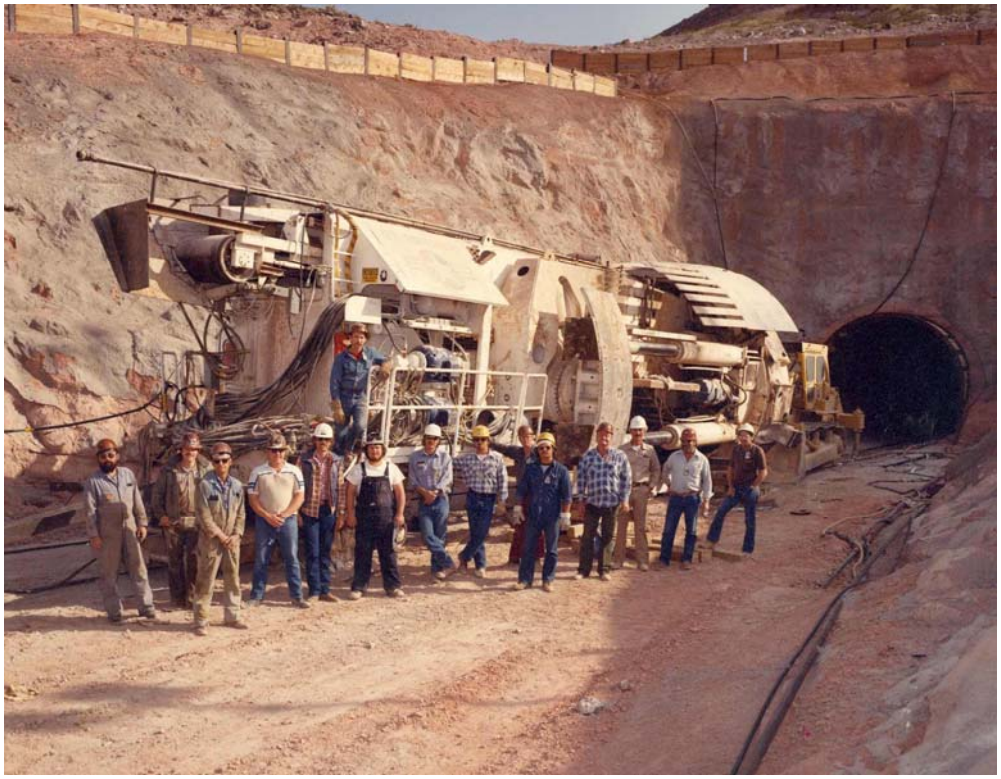

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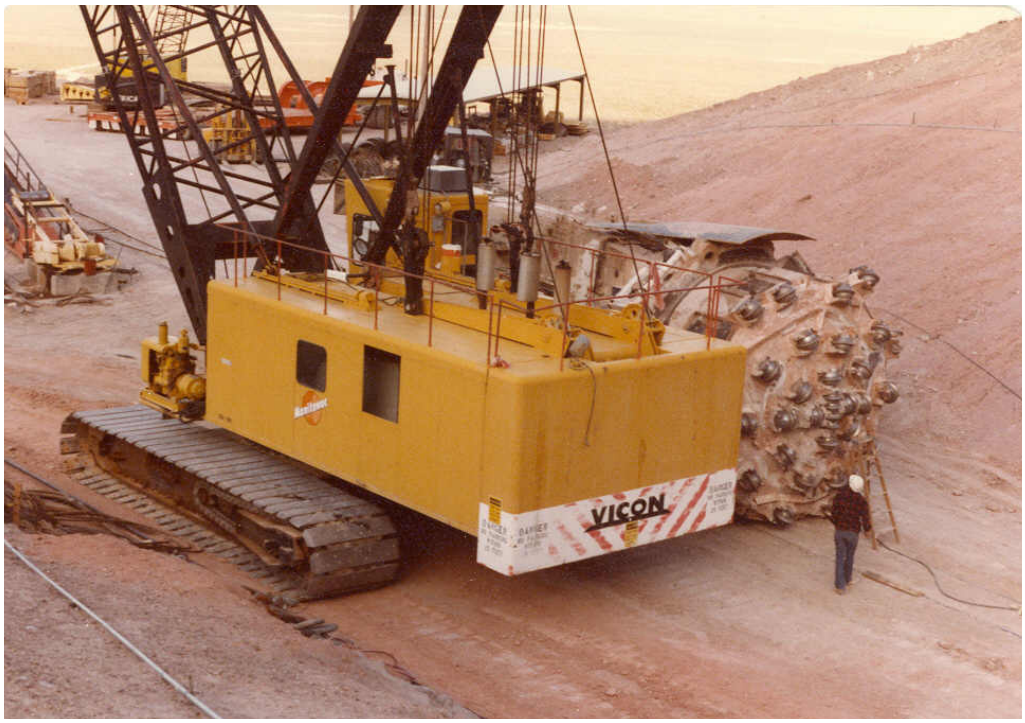

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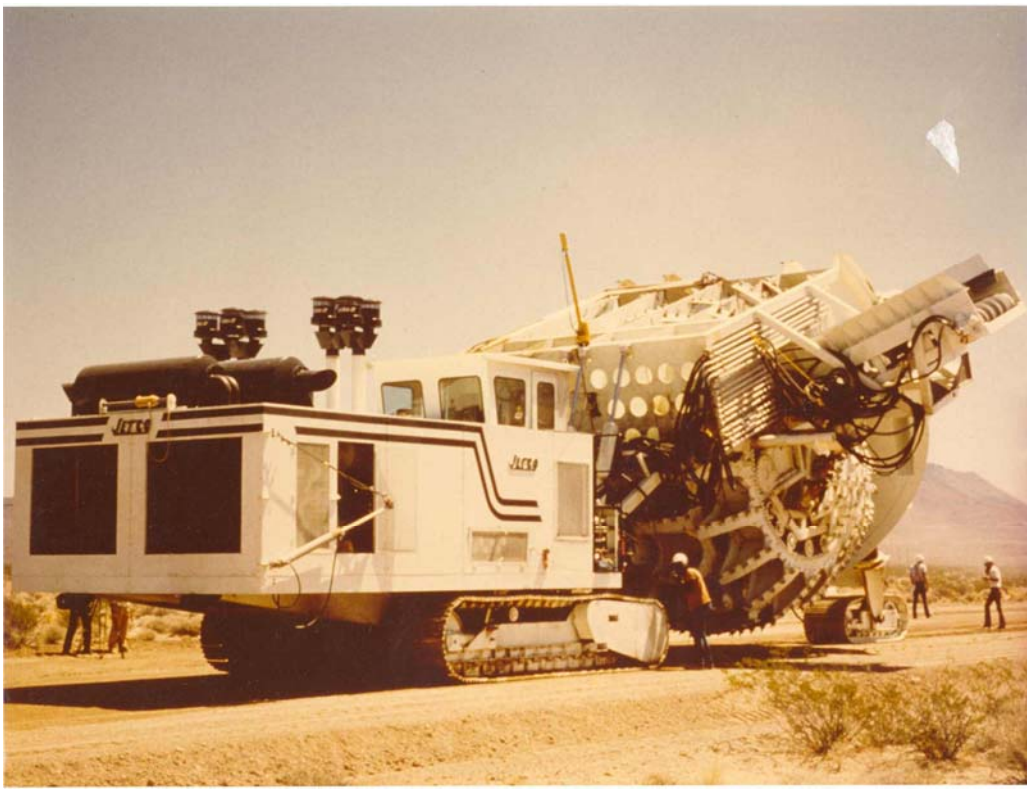

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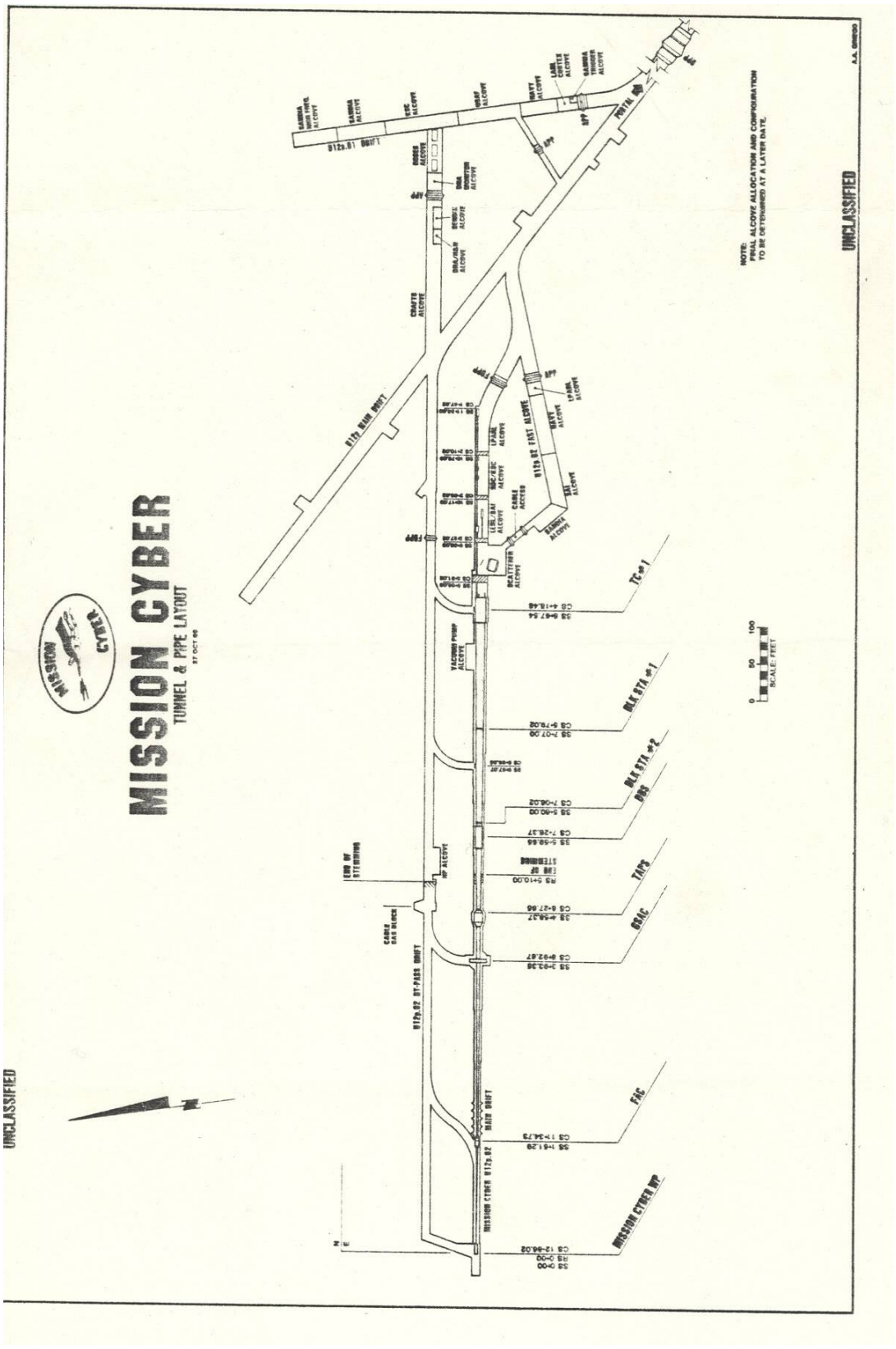

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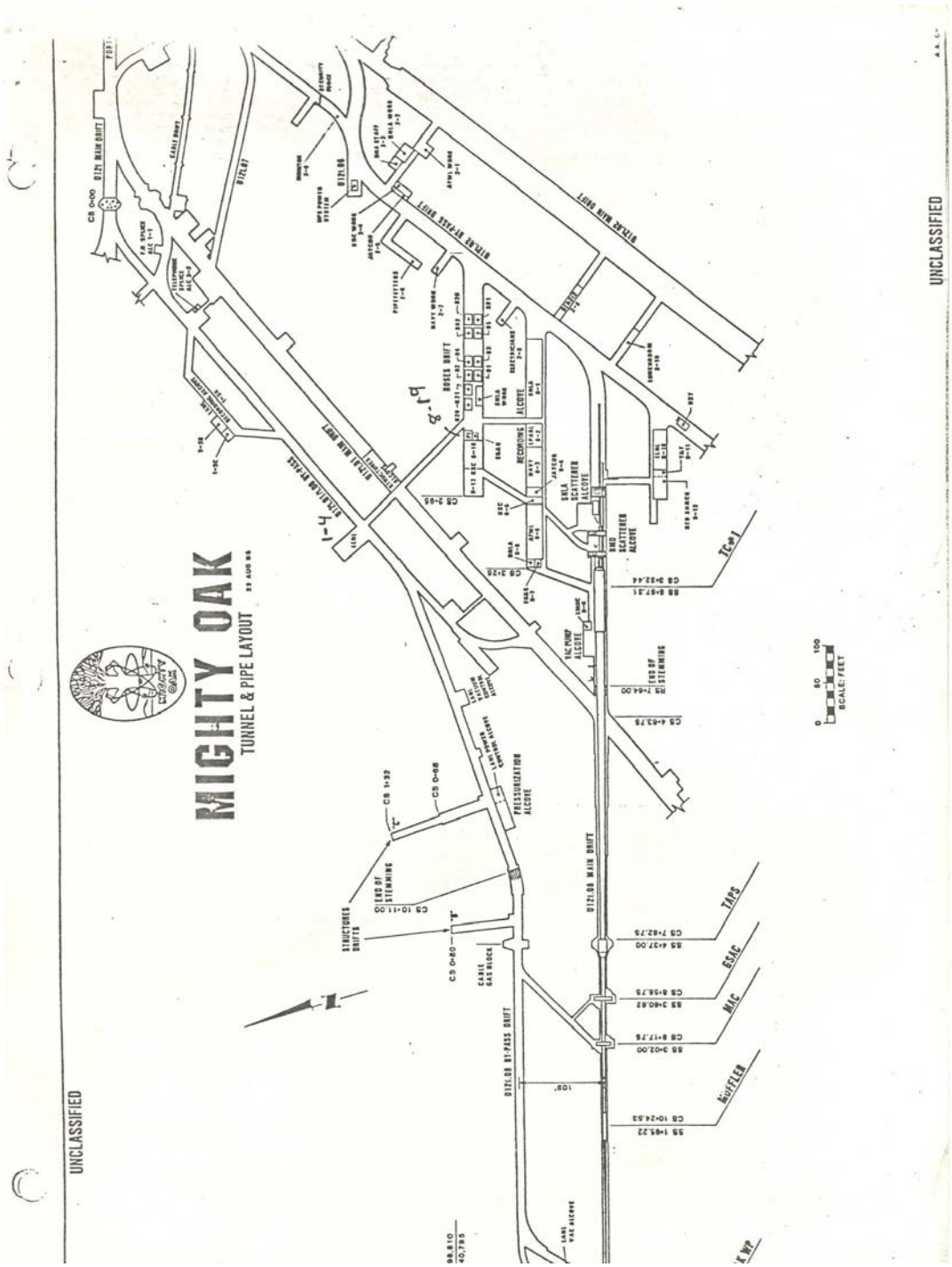

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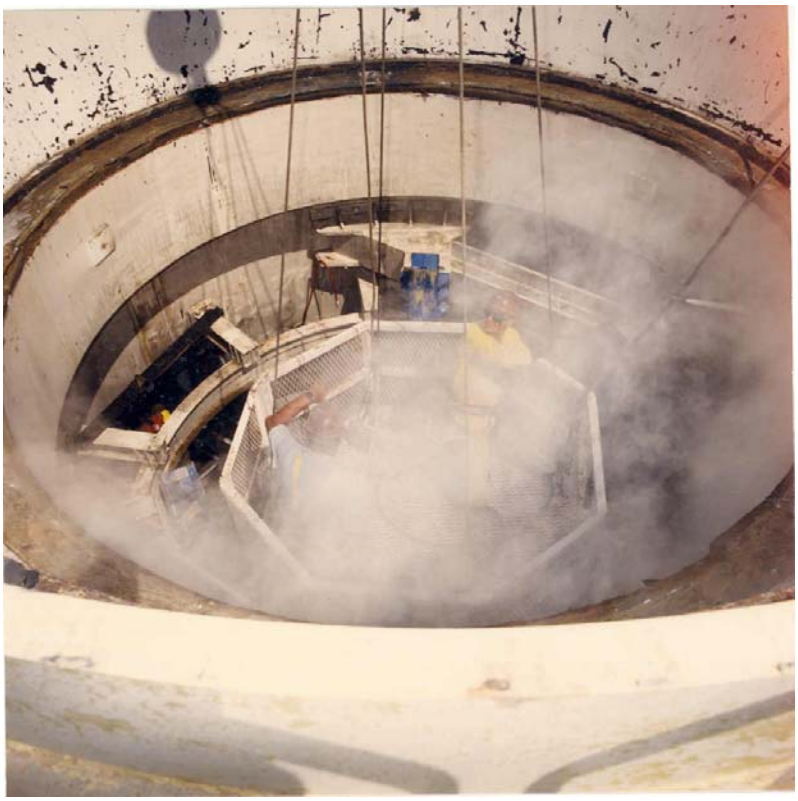

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