Bountiful City
Planning Commission Agenda
Tuesday, February 06, 2024
6:30 p.m.

NOTICE IS HEREBY GIVEN that Bountiful City Planning Commission will hold a meeting in the Council Chambers, Bountiful City Hall, 795 South Main, Bountiful, Utah, 84010, at the time and on the date given above. The public is invited to attend. Persons who are disabled as defined by the Americans with Disabilities Act may request an accommodation by contacting the Bountiful City Planning Office at 801-298-6190. Notification at least 24 hours prior to the meeting would be appreciated.

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1. Welcome and Roll Call

2. Consideration to Approve the meeting minutes from January 16, 2024
   - Review
   - Action

3. Conditional Use Permit for a Tattoo Parlor at 1455 South 500 West
   Assistant Planner Hadlock
   - Application withdrawn

4. Conditional Use Permit for a Silo Addition for Weber Basin Water Conservancy District at 38 North Davis Boulevard
   Senior Planner Corbridge
   - Review
   - Public Hearing
   - Action

5. Preliminary/Final Architectural and Site Plan Review for a Silo Addition for Weber Basin Water Conservancy District at 38 North Davis Boulevard
   Senior Planner Corbridge
   - Review
   - Forward a recommendation to the City Council

6. Open and Public Meeting Act Training
   - City Attorney Jeppsen

7. Planning Director’s report, update, and miscellaneous items

8. Adjourn

Bountiful City
Draft Planning Commission Meeting Minutes
795 South Main Street, Bountiful UT 84010
Council Chambers City Hall
Tuesday, January 16, 2024

Commissioners in attendance:	Chair Lynn Jacobs, James Clark, Sean Monson, Krissy Gillmore, Beverly Ward, and Richard Higginson
Commissioners absent:	Alan Bott
Ex Officio:	Planning Director Francisco Astorga Senior Planner Amber Corbridge City Engineer Lloyd Cheney City Attorney Brad Jeppson Recording Secretary Sam Harris

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Section I: Action Summary

1. Welcome and Roll Call

Chair Jacobs called the meeting to order at 6:30pm and welcomed everyone, including newly appointed member Richard Higginson (City Council) and newly hired City Attorney Brad Jeppsson.

2. Planning Commission meeting minutes from December 6, 2023

Motion: Commissioner Gilmore motioned to approve the Planning Commission meeting minutes from December 6, 2023.

Second: Commissioner Clark seconded the motion.

Vote: The motion passed unanimously (6-0).

3. Planning Commission meeting minutes from December 19, 2023

Motion: Commissioner Gilmore motioned to approve the Planning Commission meeting minutes from December 19, 2023.

Second: Commissioner Ward seconded the motion.

Vote: The motion passed unanimously (6-0).

4. Variance Request to construct an 8' tall precast concrete wall and gate for Dominion Energy's Station at 172 East 1500 South (Parcel #030420052)

Presentation: Senior Planner Corbridge presented the item.

Public Hearing: Chair Jacobs opened the public hearing. Sherri Morgan, Greg Seegmiller, Rich Reader, and Trent Hodgson provided public comments. Several Dominion Energy employees provided answers and comments during the public hearing.

Motion: Commission Monson motioned to approve the Variance Request with the following conditions:

- There shall be consultation and plan to be studied/approved for mitigation of the weight on Woods Cross City waterline.
- Comply with Staff's recommendations:
    - Meet staff review comments.
    - Apply for and obtain necessary building permits.

Second: Commissioner Higginson seconded the motion.

Vote: The motion passed unanimously (6-0).

5. Eagle Ridge Drive Dedication Plat

Presentation: City Engineer Cheney.

Motion: Commissioner Higginson motioned to forward a positive recommendation to the City Council as presented by Staff.

Second: Commissioner Clark seconded the motion.

6. Planning Director's Report/Update

Planning Director Astorga welcomed Council member Richard Higginson to the Commission, relayed changes to the in-written approvals, and provided an update regarding the status of the General Plan update.

7. Adjourn

Chair Jacobs adjourned the meeting at 7:14 pm.

Section II: Verbatim Transcription

Lynn Jacobs
Welcome everyone to our Planning Commission Meeting. It's great to have everyone here with us tonight. This may be one of the biggest turnouts we've had in a while so thank you, thanks for coming we love to have everyone join us. A couple of items of note. We have a new member of our commission; council member Higginson has been appointed to represent the City Council. Welcome, we're excited to have you. I understand you've served on the Planning Commission a few times before.

Richard Higginson
Just one time, for six years.

Lynn Jacobs
Well, we're excited to have you back.

Richard Higginson
Happy to be here.

Lynn Jacobs
We have a new City Attorney; would you like to introduce yourself?

Brad Jeppson
I'm Brad Jeppsen. I've been working for West Valley. I've been here for about two weeks. I'm excited to be here. I'm from Mantua up by Logan, and excited to be here.

Lynn Jacobs
Thank you. It's nice to have you. With that we'll move to the next agenda. We have two sets of meeting minutes to review and comment on and approve. I do have a comment on page 3, there is a typo on item six. I think it's available.

Samantha Harris
Okay.

Lynn Jacobs
Does anyone else have any comments? Would anyone like to make a motion? I think we should do this as two items. So, the motion for December 5.

Krissy Gillmore
I'll make a motion to approve the meeting minutes for December 5, 2023.

Lynn Jacobs
We have a motion. Do we have a second?

Jim Clark

Second

Lynn Jacobs
Motion and a second. All in favor?

Chair Lynn Jacobs, James Clark, Sean Monson, Krissy Gillmore, Beverly Ward, and Richard Higginson
Aye.

Lynn Jacobs
Any opposed

Lynn Jacobs
Moving to the next agenda item which is December 19th minutes.

Krissy Gillmore
I'll make another motion that we approve the meeting minutes for December 19, 2023.

Lynn Jacobs
We have a motion. Do we have a second? Beverly seconds. All in favor?

Beverly Ward
Aye.

Lynn Jacobs
Beverly with the second. All in favor?

Chair Lynn Jacobs, James Clark, Sean Monson, Krissy Gillmore, Beverly Ward, and Richard Higginson
Aye.

Lynn Jacobs
Any opposed? Passed unanimously. With that, we'll move to the next item on our agenda which is the variance request to construct an 8-foot-tall precast concrete wall and gate for Dominion Energy. Is the representative from Dominion here tonight? Excellent. At a certain point in the presentation, if you have additional comments, we'll ask you to do that. But in the meantime, our Senior Planner Amber Corbridge, take it away.

Amber Corbridge
Okay, so, before you tonight we're looking at a variance request. The applicant is here representing Dominion Energy and they're requesting to have a variance from a wall and height fence wall height standards in the single-family residential zone R-4. The subject property is a 0.2-acre parcel owned by Mountain Fuel Supply Company, located in the R-4 zone. The applicant stated that this site has a regulator station where natural gas is distributed to the surrounding community. Site improvements include newly remodeled equipment, an eight-foot-

high solid precast concrete wall along the North, West and South property lines and a gate along the East property line. The applicant stated that this site needs to be upgraded to a more efficient station due to the increased demand for natural gas.

Dominion Energy is standardizing the wall fence height to be at least 8 feet high for new or remodeled stations to better mitigate the noise and disruption to neighboring properties and secure the facility. The current standards for this site require the fence and wall height to have a maximum height of six feet. The variance to this would allow for Dominion Energy to construct an eight-foot-high precast concrete wall around the property. And in the Utah Code, there are criteria that need to be met in order for you to grant this variance. The following are the criteria.

First, literal enforcement of the ordinance would cause an unreasonable hardship for the applicant that is not necessary to carry out the general purposes of land use ordinances.

In our response to the applicant, we said that the additional height is necessary to protect the station from intrusion and create a greater sound visual buffer between the residential and non-residential uses. The buffer standards between residential and non-residential uses is at least six feet tall and 20 feet from a public street. However, there is no clear maximum standard listed for buffers. The property is at least 20 feet from a public street. Therefore, a literal enforcement of the wall fence height meaning at least six feet tall would not allow for consideration of appropriate additional height in cases of allowed public-private utility facilities in residential zones. The proposed wall would allow for appropriate offering as required by code while providing a decorative concrete wall to provide both visual and sound buffering to the adjacent residential property.

Second, there are special circumstances attached to the property that do not generally apply to other properties in the same zone.

Our response is the property is considered a public-private utility facility and by nature of use unique within the zone. This use is necessary within residential zones to provide a needed service to the community. The proposed improvements will provide needed expansion of an existing utility facility.

Third, granting the variance is essential to the enjoyment of a substantial property right possessed by other property in the same zone.

Our response to this is utility facilities in residential zones are necessary to provide essential services. These uses by nature are unique and unlike other properties in the residential zone. The proposed variance would allow for reasonable change to the height standards for fences and walls to provide appropriate security and buffering to adjacent properties.

Fourth, the variance will not substantially affect the general plan and will not be contrary to the public interests.

Our response to that is the proposed variance is consistent with the general plan and is in keeping with the public's interests. Utility facilities are a necessary part of the City and provide a desired service for Bountiful City residents.

And finally, the fifth criteria is the spirit of the land use ordinance is observed and substantial justice done.

Our response to this is the proposal wall protect the public and utility facility by restricting access to utility equipment and facilities. The land use ordinance anticipates construction of utility facilities within residential zones. The proposed variance would allow for the needed regulator station to upgrade and continue efficient use of the site while providing adequate buffering between uses. As a condition of approval Staff recommends that plans meet all department review comments and the applicant apply for and obtain any necessary building permits. There are no significant impacts with this variance request as it is to upgrade and improve an existing utility facility. The existing chain link fence would be replaced with a more secure, durable and visually appealing wall.

Based on an analysis of the required criteria from state code, including the findings that we just mentioned. Staff recommends the Planning Commission review this requested variance, hold a public hearing and grant the variance to allow for an eight-foot-high precast concrete wall surrounding the property for an existing utility facility subject to meet and Staff review comments and apply for and obtain necessary building permits. Any questions for Staff?

Lynn Jacobs
Thank you, Amber. Does anyone have any questions?

Sean Monson
Yeah, I have a couple. I'm a little bit confused reading your Staff report. Is the current standard up to six feet or is it limited to six feet?

Amber Corbridge
So, there's two codes we're looking at, the first is in the residential zone, we have a maximum fence height of six feet. That's the variance we are looking at tonight. The other is a buffering standard for uses between commercial and residential which, you know, has to be at least six feet so there's no room for it to be greater than six with buffering if it's in a residential zone. Does that make sense?

Sean Monson
Yeah. And the next question, I don't know if you are supposed to answer this or our new City Attorney. As you look at this element number two, there are special circumstances attached to property that not generally apply to other properties the same area. And I admit I have been variance grinch and I freely acknowledge that, but I want to make sure that we're complying and following the law. I mean, it seems to me that what we're saying is it makes this unique property

is the use not the topography or the geographic layout. It's the use. That can't be the way the code is interpreted, and Utah code, can it? I mean it can't be that the use is unique, and it has to be that the property is unique.

Amber Corbridge
It's a unique use in the zone and so it should be treated differently, but we don't exactly have a standard for fence height, you know, for this type of use. It's very specific and unique.

Sean Monson
When you look at these variances. I mean, this always seems to be the issue that we're grappling with. And I guess I look for a deeper understanding from you or our City Attorney. Is that the geographic topography that has to be unique? Or is it the use of has to be unique or the contemplated use that has to be unique because it's contemplated use that has to be unique, this seems like the standard.

Brad Jeppson
It's not just the contemplated use. We're talking about the property. We're talking about all elements in this. In this example, we have a permitted use or a conditional use in a non-conditional zone so in this we're not just looking at the type of property or the activity. We're talking about what has been allowed on this property and what is currently being allowed on this property as we go along. We say it's a unique, this is an R-4 zone. This is not an R-4 activity, but it's permitted R-4 activity in the whole state and our City. This would be no different from our own sites in our same zones, water or power, transformer. Same thing, whether they are allowed it in the zone they're unique to the R-4 zone.

Lynn Jacobs
It does feel like this site is a little unique in terms of where it is. It's not like fronting the street. It's like set back. It’s almost like a flag lot. Where it's not, I don't know if there's a lot of other parcels in the City that are like this. It's very unique in that in that topography. That makes sense. I wonder if that helps.

Francisco Astorga
If I may, in addition to what Amber, just wanting to point out the state criteria. There are special circumstances attached to the property that do not generally apply to other properties in the same zone. We are looking at it holistically as both the conditions of the site and also the use.

Sean Monson
I think that the wording, special circumstances, does give us some wiggle room.

Lynn Jacobs
I really appreciate this discussion, because a lot of times someone might come in asking for variance to offset some special circumstances that they even self-create which is not really what we're after. Good conversation.

Beverly Ward

How long has the site been used by Dominion Energy?

Francisco Astorga
I do not have that information.

Caroline King (Dominion)
1950's, that's when we were granted the property.

Beverly Ward
Is that about when the homes were built in area too, kind of grew up together.

Lloyd Cheney
Most of the homes were built in the early 60s.

Beverly Ward
It may even been there before the homes were there.

Lynn Jacobs
I had a question; I was looking through the designs and I see the elevation of the wall. What is the gate reflect? Does it look like the wall? I am having a hard time seeing that in the plans.

Amber Corbridge
So, I believe on page 31 of the packet you can see elevation details of the gate.

Lynn Jacobs
So, it's still chain link, the gate?

Amber Corbridge
Yes.

Lynn Jacobs
With kind of security wiring on top? Is it six or is it eight?

Amber Corbridge
That one is showing seven plus one.

Lynn Jacobs
Hoping to understand what were getting. Any other questions for Staff? Does the applicant have anything to add that may have not brought up yet before we open our public hearing.

If you can come up to the podium and turn on the mic so it gets recorded.

Caroline King (Dominion)
We are doing actually three sides in the precast wall. So we're doing the north side, the west side, and the south side in the precast 8-foot.

Lynn Jacobs
Thank you. Okay, well with that we will be opening this to a public hearing and this is a variance request which is a legislative item for us which is a really unique as a Planning Commission that we handle this we get to decide yes or no. This is our decision not City Council.

Francisco Astorga
Mr. Chair, a quick correction, not the legislative, it is quasi-judicial item. Sorry about that. Thank you.

Lynn Jacobs
Thank you for the correction. I spoke too quickly. But we are the deciding body on this matter. And so as you would like to make a comment, come up to the podium, state your name, state your address, and address your comments to us as your Planning Commission not the Staff or the applicant. After we close the public hearing if we want to we can bring questions back to them for more discussion and debate about this item but we would love to hear your comments and so we would love to open this public hearing for you. Come on up.

Sherri Morgan
I'm Sheri Morgan. I live at 190 East 1500 South which was built in the thirties. And I was glad to read the application that has been submitted to see that there are multiple references to noise abatement. Many of the neighbors who live around this property and become very concerned about the noise just recently as we've been looking at the issue of this wall until the upgrades have been put in this summer we had never had a problem with noise coming from this property. But it has become a significant issue since the upgrades. And I'm aware this is a meeting about a wall variance. But I actually think these issues are tied together. And some of us have a proposed solution that ties these issues together.

So we're looking at Utah Code 10-9A-702. I want to look to the last of the five factors, subsection 2A-5, which is a catch all that a variance can only be granted if the spirit of the land use ordinance is observed and substantial justice is done. This catch all does not specifically tie to the variance of like the other four of the other five, and it's the substantial justice that I think is how we tie the noise problem in. So, obviously this is a residential neighborhood. And once these upgrades have been in place, there was noise that was going 24-7. And we actually had somebody who measured decibels, I wasn't the so I'm not going to speak to it, but it was quite loud, and it took several weeks before we can get someone at Dominion to come and even look at it and talk to us about it. It was a while I think that there's somebody that we know addresses the problem who won't speak to anyone from the neighborhood on the phone.
Normally, we don't have any leverage when dealing with a big company like Dominion. We're in a really unique position because right now there's something that Dominion wants, and there's something that we want. And I think that you're in a position to help everyone.

I think that this variance should be made contingent on addressing the noise problem and I think that we need to have acoustical analysis done to determine what is the proper noise mitigation. There are some issues with this wall as proposed and the first most glaringly obvious issue I see

is that there are three concrete walls to help with noise abatement and then there's one chain like fence, and the property to the East of that is in an unfortunate position where there will be no noise abatement for property is directly East where there's a chain link fence. In fact, unless I'm really confused about how sound waves works, it's going to be amplified the property to the East. So, that's a concern just right off it is with the wall as proposed.

Sean Monson
Can I ask you one quick question? What is the address of the residence?

Sherri Morgan
190 East is the residence East of that.

Sean Monson
So it's your house that's directly East?

Sherri Morgan
It is. Another problem that I see with this wall with noise abatement and I understand that's not the only purpose of the wall, but that is something that was put into this application. Sorry, I feel like it's a little bit fair game is that the wall is some 40 feet away from the exposed pipe fitting used to be exposed pipe. That's a new feature of the upgrade. There used to be a concrete structure around pipe, not just sides but a lid and I don't know if it's the upgrade or the removal of concrete structure that sounds like something and acoustical analysis could help us with but certainly having walls that far away, for noise abatement seems problematic when there's an exposed pipe there might be a better solution would be to tie the variance with putting some sort of better insulation around the actual pipe. Dominion is a large corporation, we want to be able to work with them, we want to have their service this year. But we're concerned about our enjoyment of our property, getting concerned about our property values, if this was to go back to the 24-7 noise that it had been at and I think substantial justice would be to tie these issues together and to make sure that the variance has to do with the noise problem. I understand that Dominion cares about security also we care about security, too. I think that was a great point. But there's nothing so urgent about security, that this can't be paused and addressed with noise before a variance is granted or not granted. I say this because right now there's a foot wide gap in the fence and it's been there for nine months and it's not onto a private property. It's onto the public access road it goes back so it's not secure and it hasn't been secure. And while we'd all like it to be secured, this isn't an urgent thing. So, I just want to suggest a solution that requires three things: that would be to defer a decision tonight about this variance; to require acoustic analysis to see about what would actually mitigate the noise; and make having that done be a requirement before the variance.

And I also think it would be important to prescribe a specific decibel level and just looking at the Bountiful City ordinance. It's defined as quiet. I think that is generally forty decibels. And so that's what some of us in the neighborhood would be asking that you do.

Lynn Jacobs

I have a follow-up question for you. So, you said there was 24/7 really loud, what are the conditions like now is it still like that or better or worse?

Sherri Morgan
It has gotten better. It has been shut down to run at certain times and I'm not the right person to answer this because I'm very often gone at times when it's running, but I know that there's someone in the neighborhood who's actually been measuring the decimals and the times who can answer that, and I think he's here and will be addressing you.

Lynn Jacobs
Thank you.

Sherri Morgan
Thank you so much.

Lynn Jacobs
Thanks for coming.

Greg Seegmiller
My name is Greg Seegmiller. I'm the City Engineer for Woods Cross City. I live in Roy, Utah. Do you need the full street address?

Brad Jeppson
Yeah, I think we need it for the record for tracking folks.

Greg Seegmiller
I'm just a consulting City Engineer for Woods Cross. My address 5902 South 4150 West. Woods Cross City of course it owns the property to the South and to the East of this parcel. We received information about this public hearing tonight and Woods Cross City has had their tanks there. I don't know how long but there is a water line. As far as I can tell, a fairly large water line that goes right underneath the fence on the South side of the Dominion Energy parcel. We're concerned about a heavy concrete wall that will be placed on top of that and we would propose working with them to either relocate the wall or change the weight of the wall that would pose a problem to our water line.

Jim Clark
The weight of the wall could cause damage to the waterline.

Greg Seegmiller
Potentially, yeah.

Jim Clark
How far down or under is the waterline?

Greg Seegmiller

We don't know.

Sean Monson
This is a waterline that serves Woods Cross?

Jim Clark
Yeah.

Greg Seegmiller
All those things on the property service Woods Cross City. So anyway, I just would like to have that opportunity to work with them on a possible change in the wall or material.

Richard Higginson
Mr. Chairman, I have a question.

Lynn Jacobs
Yeah.

Richard Higginson
Is there a design that spans the pipeline that you'd be comfortable with? With a concrete wall was domination on each side?

Greg Seegmiller
The pipeline is parallel to property.

Lynn Jacobs
Do you know the diameter? How big is your waterline?

Greg Seegmiller
Oh, I believe the 16 inch. So, it's good size pipeline.

Lynn Jacobs
It runs parallel to the proposed wall,

Greg Seegmiller
I have information on GIS that I'm happy to share with you.

Lynn Jacobs
Thank you for comment, sir.

Rich Reader
Thanks for this opportunity. My name is Rich Reader. I live at 120 East 1500 South. My house is one of the houses that’s affected by this. It's actually affecting the entire block from about 75 East to about 195 East and 1500 South to 1600 South. It's very, very loud. The application touch that we kind of had, you know a brief summary of the application in that application touches

about the enjoyment and the neighborhood quiet of the wall. I'm a little concerned there was a statement in there that says the wall will be an adequate buffer. As charities filled out a lot of our concerns very well. And one them, this wall is relatively very short. Compared to the distances from noise sources. So when the voice hits the wall I don't think there's much attenuation that we will see from the wall within six feet. I'm a mechanical engineer, I designed systems that often include outdoor equipment that's noisy, breeding project or concern for affected neighborhood. We always consult with acoustical engineers, and they provide solutions of what we should incorporate into our projects and I think that's what's required here is good acoustical analysis. I'm worried with this variance is approved every everybody will say oh, with 8-foot-walls all we need. We hope it'll work. We wish it'll work. We think it'll work. I've heard all these kinds of comments. Nobody knows for sure and just doesn't seem in my experience that is adequate for the noises that we've been subject to. Now I've been recording the noise. A Dominion employee after we really, really complained. One of our neighbors had a Facebook going. Finally they sent about two weeks later, a Dominion employee who came out and took sound, interesting he was wearing ear protection and a few hours later it was turned off. And then a few days later it resumed operation at a much lower capacity and kind of early morning hours of the day. That's been so-so acceptable, you know, 24/7 was just horrible. But Dominion hasn't told us what's their future plan. Do they intended crank backup to 24/7 once they get your wall? Is there some schedule that they're only going to run it in the winter? Early morning? We have no idea, that they're explaining that this is this work was done because the increase gas demand. So if they crank it back up to where it was our neighborhoods got a big problem.

Lynn Jacobs
Thank you. Any additional comments. Yeah, please. And as you come and comment, if you could kind of add new information that's really helpful for us.

Trent Hodgson
So my name is Trent Hodgson. I live at 91 East and 1600 South. Actually just one backyard away from the property in question. But I, we kind of banded together as a neighborhood, had a meeting and several chats and things about noise, that's our main. The noise that wasn't there before the changes happen on the property and the noises that has been since the change in the property. To give you some reference, I can hear this noise from within my home and it is louder sometimes and quieter at other times. But it doesn't wake me up out of a sleep but as I get up out of bed the noise is there. My bed, my bedroom in my basement, surrounded by concrete walls. But I go upstairs the noise increases. So the concern is that we don't do something now like you said, we're going to be living with a noise at some level for the rest of our time living in the neighborhood. So we as a neighborhood, we have gotten together we banded together a little bit to address this because we've had... I was the Facebook guy. I started the conversation on Facebook with Dominion Energy and they responded. They acknowledged that I was there. And shortly afterwards, and I said, I'm little frustrated. I said we're at the point right now where if we don't get this taken care of immediately, I'll be filing a police report because it's absolutely unacceptable. Problem is when we're in the winter months my kids aren't playing outside but if this carries into the spring and summer months. I won't want my kids outside playing. I'm in construction and I am also a safety trainer working in construction for years and years. It's a level where you're having a conversation with somebody you're going to have to raise your voice. I

just don't want my kids playing around that especially if it's loud. So we as a neighborhood are just really hoping that you guys will have our backs on this and help us to get a solution that will protect the property which is absolutely necessary, I appreciate your time.

Richard Higginson
Mr. Hodgson, What's the nature of the noise?

Trent Hodgson
So it sounds, I'm in construction so I'll make some comparisons. A high pressure airlines such as a needle for a jackhammer. If you were to pull out the hose it sounds like that the high shrill noise. Obviously, it's pressurized gas I think it's releasing. I'd also compared it to a concrete saw, similar to one who would be cutting concrete on maybe the freeway I-15 project and if you drive past that as a high shrill grinding, loud high-pitched noise. It's just it's kind of a cross between those two things it's not low. It's very shrill.

Richard Higginson
Thanks.

Lynn Jacobs
Any additional comments? Looks like we can go ahead and close the public hearing at 7:04, bring it back to the group and you know, actually I wonder if the applicant would like to address any of the comments.

Tori (Dominion)
My name is Tori (Dominion) [*inaudible*] the safety manager for Dominion Energy. And I agree with the community that noise levels are incredibly high. Normally for these types of things, we will look at a County Health noise ordinance and it usually sets a nighttime/daytime level at the perimeter and how we impact the surrounding community. In the absence of actual established limits. We will look at the Federal Energy Regulatory Commission and they have levels that we need to meet for our compressor station and the numbers they set are fifty at our property boundaries for daytime and fifty for night accounts that greater sensitivity. We are not meeting that level. We would like to meet that level. We want to make sure we're a good corporate citizen that meets the needs of our customers and the surrounding community so we will we try we will try to work with you to bring those noise levels down. The materials that we've selected for the fencing has worked at other rec stations we have and does reduce attenuate the noise levels, to the community health department ranks in those areas.

Richard Higginson
Where those first regulations you're quoting the fifty to fifty-five?

Tori (Dominion)
That was for the Federal Energy Regulatory Commission. That's what they established the noise that we can exceed for what they call the near sensitive area. So in this situation, we've got our property perimeter.

Richard Higginson
What is the station at right now?

Tori (Dominion)
Well, it's ranging if you come from the side, we have the high gas flow coming in on one side and that's where most of the noise is coming from. But right now we're probably upper seventies / eighties around the perimeter so it does seem to be attended to.

Lynn Jacobs
Does Davis County have a regulation.

Tori (Dominion)
Not that I can find. Salt Lake County has one in Salt Lake County similar it has a fifty-five day / fifty nighttime noise ordinance.

Lynn Jacobs
I think this is a good conversation.

Rich Reader
That's correct Bountiful City noise ordinance says quiet in most acceptable noise categories quiet is in the low forties. I've lived there thirty plus years and I'm one of the newcomers and we've never heard, until this project, fifty-five, is very, very annoying and noticeable. There are ways to get this to where it can be quiet. There's very proven acoustical engineering procedures that can bring this back to the way it was when we all bought our homes. My worry is that they don't fix it right. We're going to be back and if they fix it right, it'll be a good solution. If they follow a sound engineering recommendation it will be cost effective. If they don't fix it right, everybody's going to be upset, will be back, the disruption will continue the fix will be a lot more expensive and it probably won't be satisfactory.

I think in such a large corporation they need to have study done and put that neighborhood back the way it was. They used to have buildings, now they have a tin shed. It's a fancy tin shed. But I think they need to put the neighborhood back the way it was. Just to come in and say some other national standards would allow it to be higher, if we had all moved in under those kind of noise levels, we would have made decisions. I probably wouldn't have moved there. That's like what you hear if you live next the freeway.

Richard Higginson
Or second West.

Rich Reader
But you know, you chose to live there. That's one thing. We all moved here, Bountiful's a nice community. While this kind of disruption comes in because some national standard, I don't think that the right solution because I know I've done these projects. I know that you get down, there are ways, the wall is not a total solution.

Lynn Jacobs
Thank you. Appreciate that. Anymore from Dominion?

John (Dominion)
My name is John [inaudible]. I'm the engineer of the project. I thought I could just explain a little bit as the station works. And everyone's here is right and we want to make it to where it was, you know, quiet what it used to be. So before, I want to start with so what the station is doing is there's a high-pressure gas line, it's steel, it's in the hundreds of pounds per square inch, comes into that regulator station and it and the pressure drops so it goes from like maybe 440. So that's what you're hearing. That's why it sounds like when you're letting air out of your tire something that's it's a really high pressure going into a lower pressure. With some of the history of that station it used to be, I believe a masonry building and the pipes came into the building through the concrete floor and what we've been doing what we found, because it's an older station, it's kind of a safety issue because the pipes come up through the concrete and there might be some rusting with the pipe. So, that's why now they come up out of the ground and straight into the building. Part of the theory of design is instead of now having a masonry building around it, we basically take those walls and push it out to be the sort of the wall. So that's a little bit of what's going on there. That's why it's so loud because the solid part, you know, the law that used to be there for the building is kind of gone. So I just kind of wanted to add that. And it's not really like the station turns on and off. It's whenever there's a lot of like a demand. Everyone's heating their houses the pressure will drop in the low-pressure system all the yellow pipe you see for gas lines, the pressure will drop in that system and then this station will kick in and that's why you'll hear and kind of intermittently. It's, you know, usually when it's colder, it'll trigger because it's saying well the pressures drop too low. Let's add some more so.

Lynn Jacobs
About how far is it from your building to the to the wall that we're proposing?

John (Dominion)
Looks like about thirty feet. You know, going North and South on the backside it's about fifteen feet. So, I mean it does make sense that it might be you know, it's not like right around like it used to be. Our stations like this Bountiful can be successful, but...

Lynn Jacobs
Are the other stations that you've retrofitted like this in other neighborhoods as well?

John (Dominion)
Can I just clarify those distances? It's about thirty feet to the North and South. It's about eighty feet to the West. And it's back sixty feet to the East.

Lynn Jacobs
To the East where the chainlink fence is? Okay, thank you.

Rich Reader

So, I'm looking at that, that is very far. So that's quite a distance. Maybe going in that direction. This sound level....

[Inaudible]

Lynn Jacobs
You might want to come on up.

Sean Monson
Tell us your name and who you're with.

Dominion Employee
[Inaudible] with Dominion. I work for measurement control. I run the rec stations. We've done them with this design precast wall, you've got the box. Look in there. It's not just for aesthetics. It also helps break up the noise. If you look at sound rooms. They do like egg cartoon stuff. So when the noise comes in it kind of breaks it up. The bricks in there do the same thing. So as it hits, it's not a flat surface that reflects the noise it breaks it up. So that's part of the reason we do this precast wall. A lot of what was there previously, with the chain link fence, there was a lot of weeds and foliage that grew up on the chain link fence, which makes a huge difference with noise because it's hard to get through all foliage. So we take that in that chain link, now, you've got that much to break that noise. We have corrosion problems the way it was with masonry buildings going in for concrete, you got corrosion, you can't dig around the concrete so that's why we brought the pipes outside of the building so that we can inspect those and make sure we have any corrosion. On and off, you know in the morning, everyone gets up wants a hot shower, so you got your water heaters. Everyone gets up their a little cold they turn up the thermostat. So because a lot more demand, as you make that cut from 400 pounds to 45 pounds, you increase the velocity of the gas so when you got a big pipe, kind of pinch it off, the velocity on the other side increases. So that's where the noise is coming from. You just have increased velocity.

Lynn Jacobs
One last question I have for Dominion. You guys have probably run into this situation elsewhere where you have noise and issues and concerns from the community. What things that you've done to mitigate that noise at other locations?

Tori (Dominion)
Technically, the sound walls are very effective at mitigating the noise, they do provide a great deal of attenuation. The other, some of the other areas we been able at our gate stations and we can look at the valves, change in some of the valves that will also mitigate the noise I don't know that is an option at this station. Mostly arcade stations, but those seem to be pretty effective. We do as you increase the distance the sound level is cut by half and be double the distance from the source. Most of the noise is coming from that high pressure. And we have had success with these types of walls.

Lynn Jacobs

Help me understand, the pipes come out and then they go into the building and most of the noise is coming from where the pipes coming out of the ground or was coming from the regulator inside of the building?

Tori (Dominion)
It's coming from the high-pressure side as it flows into that rec station and then the pressure is dropped. It's mostly concentrated on that high pressure side.

Lynn Jacobs
On the outside of the building?

Dominion Employee
It's the center of the site.

Tori (Dominion)
So we did take, we did a couple of things. We took some level readings around the perimeter of the station. And then at the actual rec station area. And then we also did a sound spectrum analysis to see just in anticipating so you want to break the noise consisting of several different types of frequencies and you want to break it down into frequencies so you can know where you're having the biggest concern and based on that you can select a material that's going to attenuate to have the biggest bang for your buck is going to attenuate those times. What we found was that the greatest noise was 1000 to 4000 hertz range and this material is pretty effective at attenuating that sound. The greatest results... so the highest level we find is actually at that where the high-pressure pipe is entering into that station and we measured it at 97 decibels. That's over, that's well over OSHA level for occupational exposure. That's why our employee was measuring that was wearing his hearing protection, he's supposed to do that. So that is where it's occurring primarily. Again, as you double the distance from that source, you're cutting the noise level in half. It's a logarithmic function.

Richard Higginson
I do a question before you go maybe. What was the thought process behind having a full wall of this enclosure be chain link rather than at least partially precast.

Tori (Dominion)
Normally, what we do and I'm not sure on this one. We'll wrap the wall around the corners and then we have to have a gate so that we can get equipment in and out of there safely so our employees can go in with the trucks and equipment to do work on the station. And think this one just has...

John (Dominion)
Well, I think it's because Woods Cross facilities are somewhat directly out, but I do understand what the neighbors are saying about kind of the problem in that area there.

Tori (Dominion)
And that's the most distant from the station as well.

Dominion Employee
Originally, the reason we was going to do the precast wall on the North and the West, is because that's where the residential area is we was not going to do it on the South side and just put chain link back up because we figured the foliage would grow back up and we did not have residents that live directly on the other side of that fence. So we figured over time that foliage would probably grow back up through that fence.

[inaudible]

Lynn Jacobs
But you're currently planning doing your wall on this side.

Dominion Employee
Yes. Currently, we plan on doing the three sides, the North, West and the South side.

Lynn Jacobs
But the East side is all chain link.

Dominion Employee
Yes.

Brad Jeppson
Chairman, I'd like to have just a brief moment.

Lynn Jacobs
Sure. Love to hear your insights.

Brad Jeppson
More to counsel to the Commission. I would like to just kind of warn the Council against getting into an idea of adding conditions that aren't related to the specific variance. The statutes in this case limits us, it's very specific, we can require them to mitigate any harmful effects caused by the variance. So we're not here in a situation where we're reaching for adding new conditions to a conditional use permit or anything like that. So, I would warn the Council against establishing or requesting the applicant do anything that's not tied to the variance which is an extra two feet on a wall as a condition of accepting their variance.

Sean Monson
That is what I am thinking as well. It's not a conditional use permit to the facility. Right. I think we've already got that again. The question that I have for you though, is that and I can't remember on the variance statutes if they meet the conditions there are five conditions that are outlined in Utah law, is it a situation where the Planning Commission shall grant the variance or as it may grant the variance and that's, I'm wondering what kind of discretion we have regarding granting this variance.

Brad Jeppson
It certainly is a may grant the variance. You do have discretion whether or not they fit those whether you accept it or not. What I would counsel you guys not to do is to tie acceptance of the variance, something other than an instance is mitigating the actual request for variance such as the Woods Cross Engineer talked about adding more weight to wall that specific to this variance. The statute is pretty clear that you guys are here to accept or deny and you can acquire them to mitigate specifically what problems the variance would cause, not that conditional use is already bound.

Lynn Jacobs
Along that same line, would it be appropriate for us to put conditions on the materials that they're using? For instance, you know, right now is a wall they're asking for eight-foot wall they're selling it as a concrete wall, it looks really nice, right?

Brad Jeppson
Well, what part of the variance you looking to mitigate. I'm assuming that we have rules in our City, especially in R-4 zoning. We don't have high walls for a bunch of reasons. Which of those reasons that we try and mitigate by having a specific material?

Krissy Gillmore
I think where I am at, part of their request for variance was for safety to prevent people trespassing in. The other part of the request is the noise and so coming back to the material and even extending that. Do we want to grant variance or something that might not address the problem, part of their problem. That's where I'm kind of conflicted on how this works and what discretion we have.

Brad Jeppson
You can certainly deny it when required on that six-foot wall. What we can't do is we can't say well, you got to do something that's not tied to the negative impacts of the variance. So, if you're trying to say that we need this, this, this condition on the property based on utility, probably outside of statute today, if you're probably saying we want the wall to look like this and this because it will fit in with the neighborhood it will probably within the confines of statute.

Lynn Jacobs
So for instance, going from a six foot wall to an eight-foot wall is not creating the noise, and so we won’t be able to tie a required noise study to the variance.

Brad Jeppson
I haven’t seen a nexus between that and the noise.

Sean Monson
What's the rationale for the six-foot wall versus eight-foot wall in mitigation factors? There's going to be some reasons why it should be six-feet maybe it's visibility and those are the things...between 6-feet and 8-foot but that's what we can vote for. That's pretty much it. I mean,

unfortunately, I don't think anyone really anticipated. I remember when this came up as a conditional use. No, this was not an issue. The noise no one talked about this.

Richard Higginson
So, we could mitigate the additional height by saying it had to be open at the top, some sort of an open fence structure rather than...

Sean Monson
[Inaudible]

Lynn Jacobs
Which is visibility.

Brad Jeppson
I think Woods Cross example was a great one as well. Adding the extra weight of the two feet added to the wall may require some mitigation to keep their pipe safe. I'm not an engineer. I can't say whether it does. That's just an example, a clear nexus between what you were actually asking them to do and their variance.

Lynn Jacobs
Thank you for the clarification that was incredibly helpful. Any other thoughts or conversation? Where is everyone leaning? Bringing it back to the Commission.

Richard Higginson
Happy to share where I'm leaning since I'm the new guy. I'm wishing that our attorney hadn't told us that we couldn't require additional things. That's what I'm wishing because we want to make things all better. But I think that the case has been made and our Staff has endorsed having the higher wall is a good thing for the neighborhood. The neighbors have expressed that as well. We're just hoping we could go further. I'm leaning towards approval.

Lynn Jacobs
I feel so much for this area, if I lived in this neighborhood, I wouldn't be so upset. I would be so irate and angry that your peaceful life has been completely disrupted. And that's horrible and I think about what we as Planning Commission can do with what we have in front of us as we have this variance. It seems like we have like two options. Option one is we can either approve the variance or option two is we can deny the variance. If we were to deny variance, Dominion Energy's probably next move is to build a six-foot wall because that's allowed and they don't have to ask for any permission to do that. They can just go do that. And I think that that probably would make less sense than building an eight-foot wall because I don't know that the six-foot or eight-foot wall is really going to fix the noise problem. But it feels like an eight-foot wall more likely to fix the noise problem and a six-foot wall. I'm not a sound engineer, I am a civil engineer. I've been involved in some sound engineering throughout my career and I studied it. It's complicated stuff. And when you think you're going to fix it, sometimes it makes it worse. And it makes me nervous from that perspective, because sometimes putting walls in certain ways can amplify it in another direction. I can see that concern a big way here, where we got three solid

walls and a fence over here. You get this amplification effect, right? I don't know if I'm no sound engineer right but logic tells me that that could happen and it makes me nervous. You know? I don't know what to do here tonight. This is a tough one. This is a really tough one. I do think that the Woods Cross concern is incredibly valid and something that absolutely needs to be addressed with our approval.

Richard Higginson
One thing that's in the neighborhoods' favor is the fact that Dominion has indicated multiple times tonight that they want to fix the problem also. So maybe they work with the neighbors.

Lynn Jacobs
It's helpful.

Beverly Ward
I just have a question. It was something Commissioner Monson mentioned about a conditional use permit that. [Inaudible]. Was this something that happened.

Lynn Jacobs
There was something a year and a half or two years ago. Where they were looking to do a building.

Francisco Astorga
It was a different utility. It was a water well. It was South Davis Water as they applied for a variance as they couldn't meet the front yard setback. Maybe three or four years ago.

Lynn Jacobs
Sorry, everyone. Little, history. This is why it's both good and bad that we been on for a few years.

Jim Clark
So, what do we do about Woods Cross?

Lynn Jacobs
Well, I wonder would it be appropriate to attach a requirement that they meet with Woods Cross mitigate the impact? I don't know. [inaudible]. Can't have them crush a waterline. That's probably their main supply for the whole City. Lloyd, do you have thoughts around that?

Lloyd Cheney
Maybe I can add some insight. I talked to Greg Seemiller a couple of times about this, and it's been a long time since anyone has actually located those waterlines.

Lynn Jacobs
GIS layer right now. Gotcha.

Lloyd Cheney

At this point it's using the crayon on a map. Until you know where your waterline is and where your property line is, where your proposed fence alignment is. It's all just a guess.

Sean Monson
We could, I know this isn't a conditional use permit. But we could I imagine as part approve this variance have imposed a condition as mitigating condition that they consult with Woods Cross. That issue be analyzed and addressed before as a condition of approval.

Brad Jeppson
I don't see any problem with that mitigation on that there is a nexus between the increased weight and possibility that could crush it, like Lloyd said, I'm not sure that if that's real or imagined, that would take an engineer to figure that out. But that has a clear nexus in my mind.

Sean Monson
I have the same thoughts. I really feel for the neighbors and people living in this neighborhood. I know, unfortunately, I think is probably not the proper venue to address it. Right now, in this body. We don't really have the ability to address, how to address the sound issue. There are other avenues you might pursue and need to hold and maybe consult with an attorney about that. But I don't think we're the right body. We don't have the authority under our code or state law. As we've already been talking about to oppose the kind of conditions such as noise mitigation factors that we would all know I'm sure we would all understand and appreciate that we have the power to do that. If we deny this request to being just six-foot wall I don't think helps anyone, it doesn't help the neighborhood.

Lynn Jacobs
Any other thoughts. Anyone prepared to make a motion?

Jim Clark
Well, I do think we could require a chain link fence instead of being open chain link fence have that slatting I've seen.

Lynn Jacobs
I think that’s what on here that's what it looks like, to me. Is it slatting? The chain link gate will have slatting in it.

Jim Clark
That's certainly going to help with the mitigation.

Lynn Jacobs
More discussion? Okay. Yeah, go ahead.

Tori (Dominion) (Dominion Energy Employee)
I wanted to comment on the concern about the wall reflecting noise back. [inaudible].

Lynn Jacobs

That's helpful.

Tori (Dominion)
So, you're probably not going to get a lot of bounce back off that.

Lynn Jacobs
Was that what you were going to say?

Trent Hodgson
No. So, Trent Hodgson again, I just want to ask one more question to the council about the remodel facility originally. What would be the permitting process for Questar to come in and remodel this facility? Because if there is a permit process, I would assume that permit process has not been followed and that's where we would address the sound issues.

Richard Higginson
Lloyd, are they required to get a permit?

Lloyd Cheney
[inaudible].

Lynn Jacobs
Was it a pre-existing use that they were?

Trent Hodgson
Yeah, but I have a pre-existing home if I remodeled my home I'm required to have a permit.

Lynn Jacobs
I don't believe any permits were applied for demolition of the existing building or construction of the new metal building.

Sean Monson
Would it have been required?

Amber Corbridge
Our Building Official told me that that would not been required for what they've done so far, but the wall would be required to have a permit because it's seven-feet or more in height.

Lynn Jacobs
This was about building permits in what's required and what's not. Thank you. Thanks for the comment. Well, back in the matter, and was the variance of the wall. Anyone prepared to make a motion?

Sean Monson
Chairman, I'll moved that we approve the variance request by Dominion Energy for property parcel number 03-042-0052 with the mitigating condition that there be consultation and a plan to

be studied and plan approved for mitigation of the weight on Woods Cross City waterline and recommendations of Staff.

Richard Higginson
Second.

Lynn Jacobs
We have a motion in the second. All in favor?

Chair Lynn Jacobs, James Clark, Sean Monson, Krissy Gillmore, Beverly Ward, and Richard Higginson
Aye.

Lynn Jacobs
Any opposed? Okay, variance is passed. I hope we can work together and get this sorted out.

Samantha Harris
Oh, are you on?

Francisco Astorga
I was going to drive for Lloyd.

Lynn Jacobs
Move on to the next agenda item. Eagle Ridge Drive Dedication Platt. Take it away Lloyd.

Lloyd Cheney
Over the last couple of years, we've been working very hard to construct the extension of Eagle Ridge Drive from Bountiful Boulevard to our favorite City recreational spot: the B. That construction wrapped up this year. Though the property to construct the road was transferred by deed, there hasn't been an official recorded road dedication plat for the alignment of the road. In the memo you'll see a couple of things. Number one, the master plan that was approved back in January 2022, which identifies the widths of the road, in an that area, so sixty feet wide as planned, not the entire way but from Bountiful Boulevard to approximately the North side of the debris basin, and then the Eagle Ridge Subdivision to the North, that short section of Eagle Ridge Drive is only fifty-four (54) feet wide. There will be a transition between those two roadway widths. The future completion of Eagle Ridge Drive. We've built that facility in accordance with the street master plan, the roadway dedication plat, which is the very last item in your packet, identifies with the appropriate geometry the exact location of the roadway and that runs through the property that's currently owned by Rainey Homes and will become eventually the last phase of the Stone Creek Subdivision. By recording this dedication plat, it dedicates that property as a right-of-way that will grant rights to utilities, will be installed to be maintained there, those utilities were installed with the construction of a right-of-way. Happy to answer any questions you have. It's really just the next step to get this to the Council so we can record this and tie a nice bright ribbon around this project.

Lynn Jacobs
I saw that it looks really nice. Oh that's a beautiful road. I was really surprised to see it, wow that happened fast.

[Inaudible]

Richard Higginson
I do have a question, kind of a tangent from this issue. Lloyd, is the temporary connector to Skyline Drive going to eventually be removed or will it be brought up to code and used as part of the subdivision?

Lloyd Cheney
You mean the big horseshoe bend?

Richard Higginson
Yeah, 25 feet wide 14 feet.

Lloyd Cheney
There are no plans to eliminate that, and associated with that I don't know that there are any hard and fast plans to dramatically improve it.

Richard Higginson
Was that street dedicated to the City back when it was constructed or is it across private property?

Lloyd Cheney
It is, I believe, it was actually dedicated to the County by I think her name is Ethel Kingston.

Richard Higginson
Thank you, and thanks for your work on this project. This is huge.

Lynn Jacobs
This is awesome. [inaudible]. Any further questions for Staff about this item, it goes to City Council with our recommendation. We need Sharon back to take over the motions.

Richard Higginson
I'll be happy to make a motion that we pass along recommendation for final approval to the City Council for the dedication of Eagle Ridge Drive as presented.

Lynn Jacobs
Excellent. We have a motion. Do we have a second?

Jim Clark
Second.

Lynn Jacobs
All in favor?

Chair Lynn Jacobs, James Clark, Sean Monson, Krissy Gillmore, Beverly Ward, and Richard Higginson
Aye.

Lynn Jacobs
Any opposed?

Back to our Planning Director's report/update.

Francisco Astorga
I'll be brief. Sorry Brad for calling you Clint. My apologies on the record. Did we get Richard a proper welcome to the Commission.

Lynn Jacobs
Yes.

Richard Higginson
Oh, absolutely.

Francisco Astorga
I missed it. I went back to get copies and the last thing: in the past, Shawn, Jim, maybe Lynn will recall that for these variances, we would come back with in-written form approval. We have stopped that practice in that the record shown in the meeting minutes, and that's why we take a look at that. We hope that you're okay with that old school practice of bringing it back two weeks for that in written approval. We're completely comfortable taking the meeting minutes and writing a letter on behalf of the Planning Commission as we're not the ones granting the variance, but it is the commission. So, this is more of procedural change that we'd like to officially let you know that we're no longer following that old practice that we used to have here. If you have any issues, you can call me directly and we can talk about that, but we simply wanted to give you that specific update.

And the last one, as some of you call and ask about the or email or text me about the General Plan update. What we're currently doing is that we are having the City Council; they're taking a look at each section one at a time, and they are fine tuning it right before you get it. We anticipate that it'll be sometime in the Spring. We're thinking sometime around April, as that when you don't come back to you as an official document to review. If you pay attention to any of the City Council packets, you'll have to find sections here and there as City Council is taking a good look. They were a little slow during the first meeting in December but they were extremely efficient at the meeting from last week in fine tuning the goals. Those are my updates. Any questions for me?

Lynn Jacobs

No. Awesome. Thank you.

Francisco Astorga
Thank you.

Lynn Jacobs
So with that, we will adjourn. Thank you all.

Planning Commission
Staff Report

Subject: Conditional Use Permit for a Tattoo Parlor at 1455 South 500 West Suite F
Author: Jonah David Hadlock, Assistant City Planner
Date: February 6, 2024

Background

On December 14, 2023, the applicants, Matt and Cassidy Morrison, submitted a Conditional Use Permit (CUP) application for a proposed tattoo parlor located at 1455 South 500 West Suite F. The property is in the Heavy Commercial Zone (C-H) which allows for tattoo parlors as a conditional use. On January 29, 2024, the applicant withdrew their submitted application.

Attachments

1. E-mail from applicant withdrawing the application

Jonah Hadlock

From: Cassidy Morrison <clarkcassidy75@gmail.com>
Sent: Monday, January 29, 2024 9:20 AM
To: Jonah Hadlock
Subject: Morrison conditional use

Hi this is Cassidy Morrison just letting you know to be taken off the agenda because we are no longer signing on that space. Thank you.

Planning Commission
Staff Report

Subject:	**Conditional Use Permit and Final Architectural and Site Plan for a Silo Addition for Weber Basin Water Conservancy District**
Address:	**38 North Davis Boulevard**
Author:	**Amber Corbridge, Senior Planner**
Department:	**Planning**
Date:	**February 6, 2024**

Background

The applicant, Jesse Moreno, with Weber Basin Water Conservancy District is requesting both 1) Conditional Use Permit (CUP) and 2) Preliminary/Final Architectural Site Plan Approval to build a new silo for their water treatment plant located at 38 North Davis Boulevard. The property is zoned R-3 (Single-Family Residential) where this proposed addition for a private utility facility is listed as a conditional use. The applicant states this proposal to build a new silo addition (approximately 13' diameter and 35' tall) with ancillary pump/compressor enclosure (approximately 10' tall and 160 square ft.) will upgrade and improve the existing site infrastructure. This upgrade also includes demolition of the existing Powdered Activated Carbon (PAC) storage feed system building and feed equipment, piping modifications to the raw water and return wash water line upstream of the influent, and paving/grading improvements to the site (see attached plan set for full details of the demolition plan and site improvements). Also, see Figure A-C, generally showing the proposed site changes.

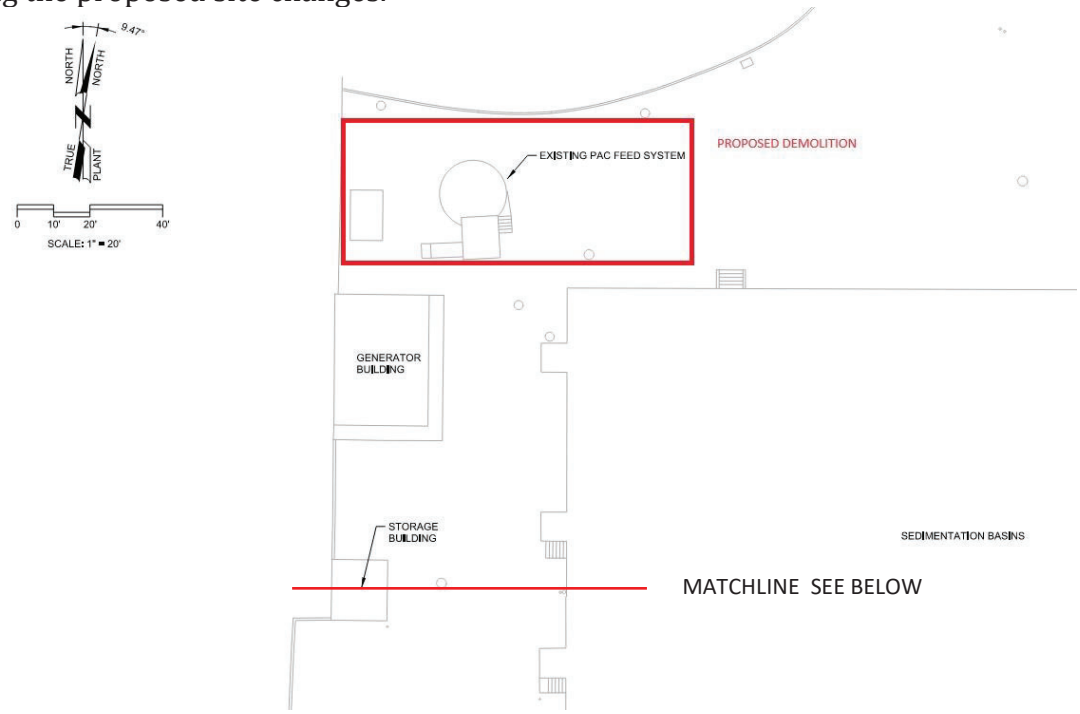


Figure A: Bountiful Weber Basin Water Conservancy District at 38 N Davis Blvd., Proposed Site Plan 2024

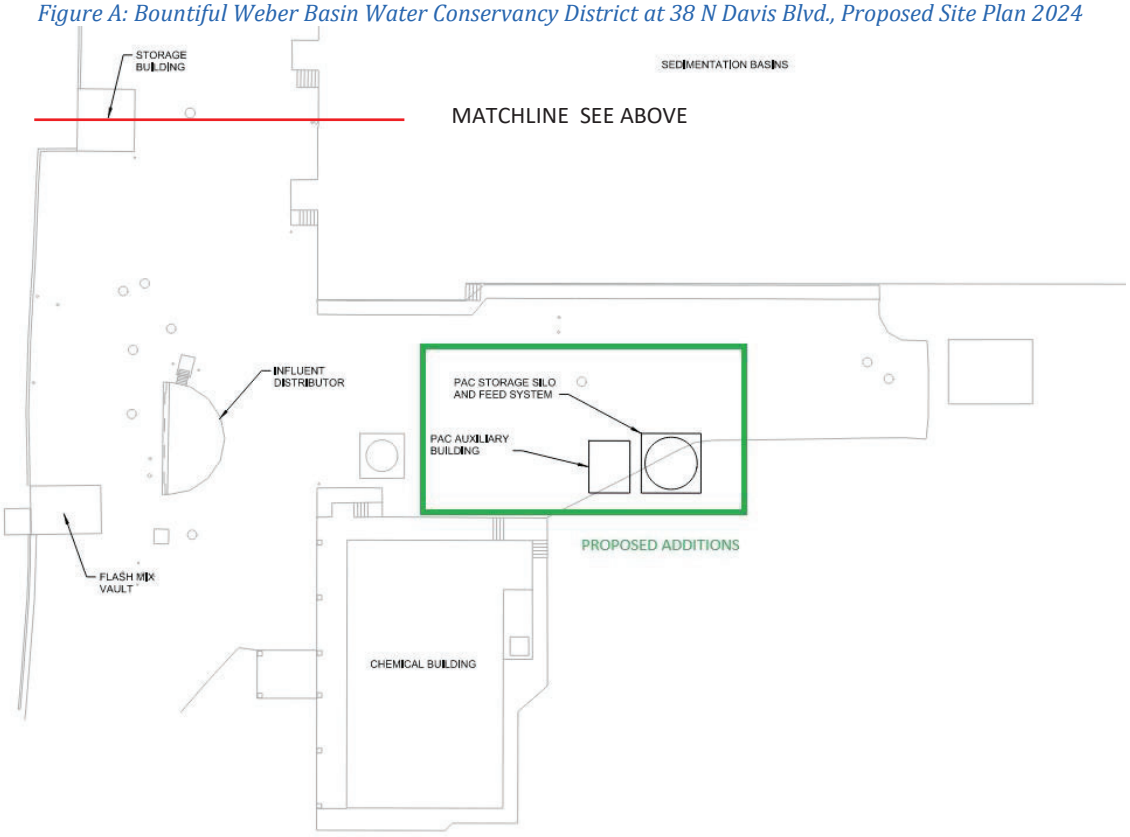


Figure B: Bountiful Weber Basin Water Conservancy District at 38 N Davis Blvd., Site Plan with Changes 2024

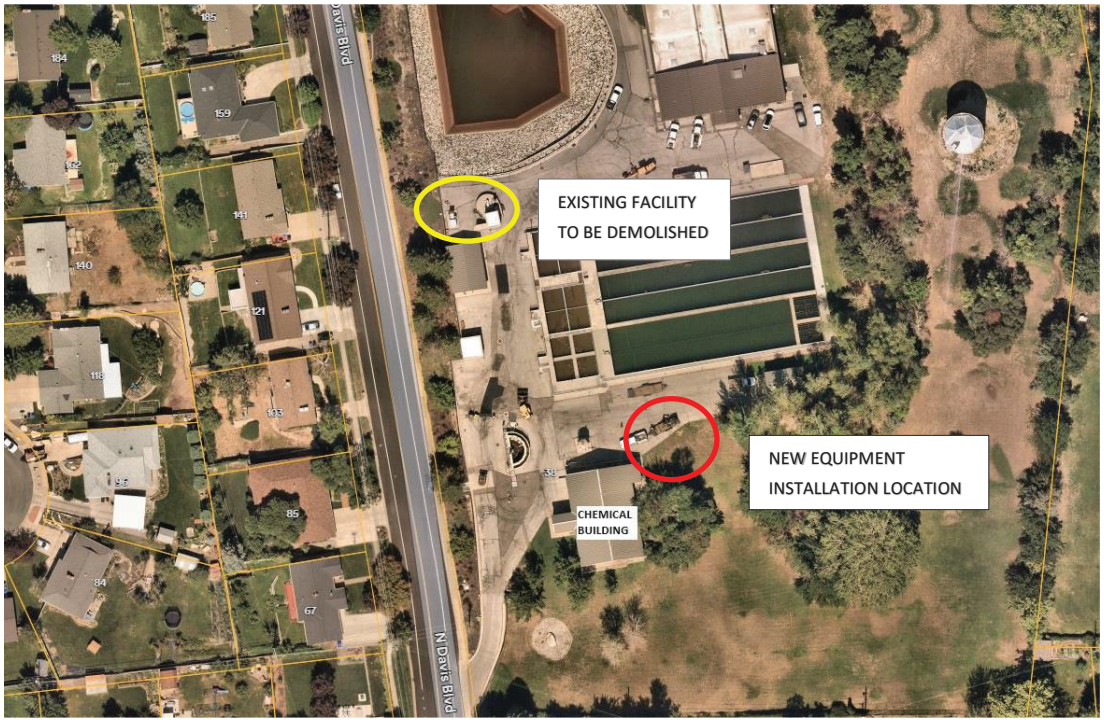


Figure C: Bountiful Weber Basin Water Conservancy District at 38 N Davis Blvd., Nearmap Aerial View Aug 2023, Existing Site Conditions

Analysis
Conditional Use Standards

The Planning Commission shall consider how the proposed addition 1) relates to the surrounding uses, 2) impacts the existing surrounding developments, and 3) appropriate buffering of uses and buildings, proper parking and traffic circulation, and the use of building materials and landscaping, which are in harmony with the area (see Code 14-2-506.C).

The proposed addition would fit in with the surroundings, as there is an already established water treatment facility on the site. The new silo and treatment equipment would serve Bountiful, West Bountiful and North Salt Lake by providing culinary water. The silo structure will be the same design, color, and materials as the silo structure at the Layton Weber Basin Water Conservancy District, as shown below in Image 1. The silo structure would fit in as much as physically possible with neutral colors and simple design. The proposed new location would also sit back further away from the street behind an existing chemical building and would not be visible from the street, as shown in Image 2 below. The small structure proposed to sit adjacent to the silo, to house the supporting system, would also be behind the existing chemical building. Staff recommends the exterior building color match the existing structures on site, being neutral and visually blend in as much as possible.

Image 1: Layton Weber Basin Water Conservancy District, Google Street View August 2023, Existing Silo

Image 2: Bountiful Weber Basin Water Conservancy District at 38 N Davis Blvd., Google Street View 2022

The applicant stated for the conditional use, to mitigate any potential conflicts with surrounding properties, work to be performed will be during reasonable business hours (8 AM to 5 PM). The potential visual negative impacts associated with the proposed additions would be mitigated with exterior building colors and placement, and no additional site lighting is proposed with the changes. According to Weber Basin Water Conservancy District, the silo will have minimal noise disruption to the neighborhood, as the equipment being used is stored inside the structure.

Occasionally, the silo will be serviced with a Powdered Activated Carbon (PAC), which removes odors and odd tastes found in the water, usually around springtime. This chemical is transferred from a delivery truck to the silo equipment, which makes a blowing type sound. This would happen during regular business hours, which mitigates the noise mitigation associated with the use.

Architectural and Site Plan Review

The Planning Commission shall determine if the proposed architectural and site development plans submitted are consistent with the purpose and objectives of the Code (14-2-301). The purpose of the architectural and site plan review and approval process is:

1. *To determine compliance with the Land Use Code*
2. *To promote the orderly and safe development of land in the City*
3. *To implement the policies and goals established in the Bountiful City General Plan*
4. *To promote the orderly layout of buildings, landscaping, walkways, lighting, and other site improvements.*

The architectural and site plans have been reviewed by staff, where setbacks, height, landscaping, screening, parking, loading, lighting, and all other applicable standards are reviewed for compliance. The plans for the proposed silo and ancillary equipment meet department review comments. Staff recommends as a condition of approval; the applicant obtain necessary building permits for demolition and construction to accommodate the proposed changes.

Department Review

This staff report was written by the Senior Planner and was reviewed by the City Engineer, City Attorney, and Planning Director.

Significant Impacts

There are minimal impacts of this proposed development on the property and surrounding uses, as it is an upgrade of the existing land use. The existing infrastructure, such as water, sewer, culinary water, and transportation are in place to support this development.

Recommendation

Conditional Use Permit: Staff recommends that the Planning Commission hold a public hearing and approve the Conditional Use Permit (CUP) for a new silo addition at 38 North Davis Boulevard, subject to Preliminary/Final Architectural and Site Plan approval by the City Council and complying with all department staff review comments.

Preliminary/Final Architectural and Site Plan: Staff recommends that the Planning Commission review the Preliminary/Final Architectural and Site Plan application for a new silo addition and site changes, and forward a positive recommendation to the City Council to approve, subject to:

1. Meeting all department staff review comments.
2. Obtain necessary building permits.

Note: Final approval and building permits will be granted when all conditions are met and satisfied.

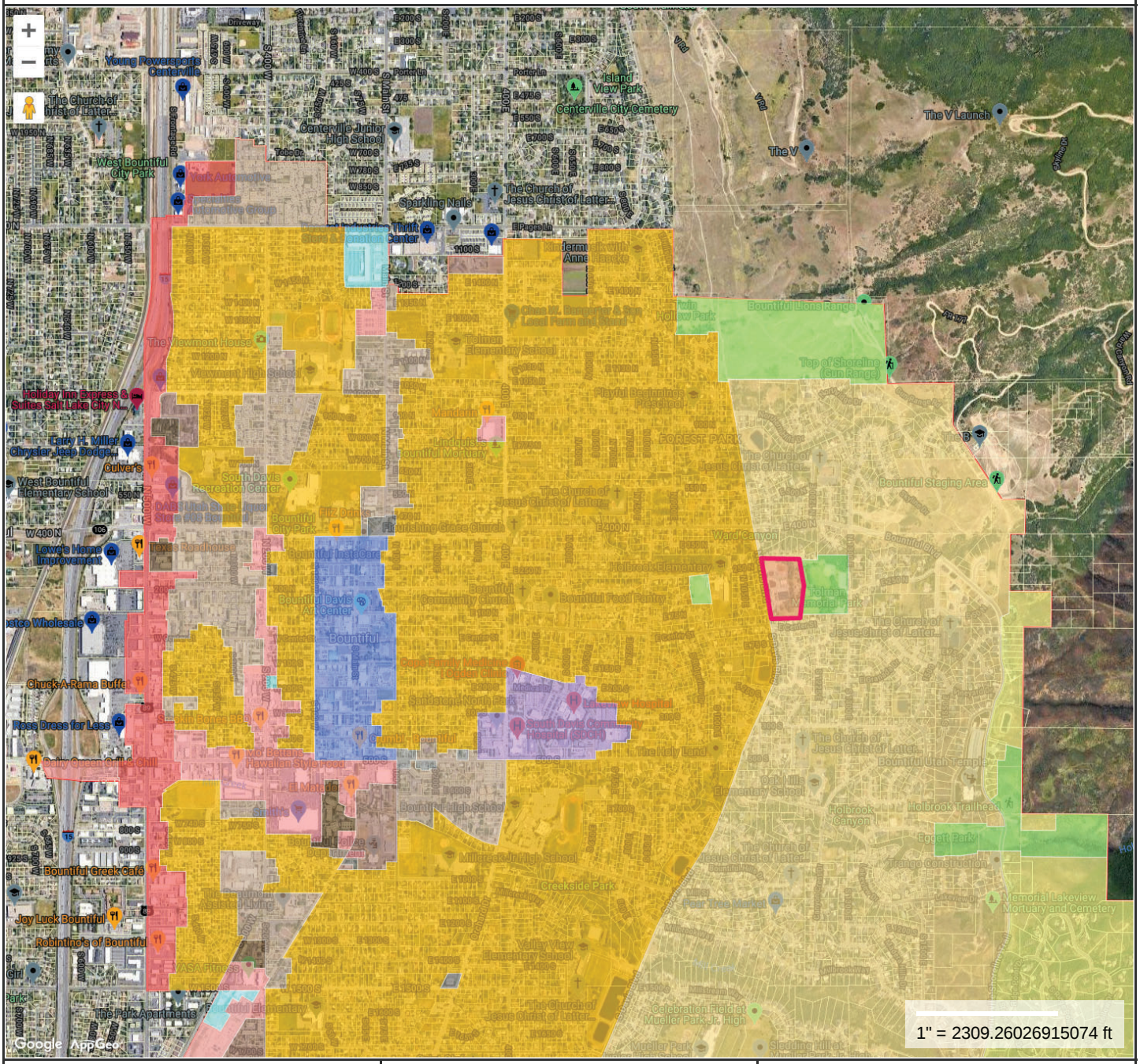
Attachments

1. Statement of Intent
2. Vicinity Map
3. Design Plan Set
4. Boundary Survey
5. Updated Plans

Statement of Intent:

Weber Basin Water Conservancy District (WBWCD/District) owns and operates a water treatment plant located at 38 N Davis Blvd, Bountiful, Utah 84010. To better serve the residents of Bountiful City and provide the highest quality culinary water, the District routinely upgrades its existing infrastructure to better and more improved infrastructure. The District intends on replacing its existing powder activated carbon (PAC) feed building which is used to store dry carbon powder to be mixed and fed manually into our PAC generator building to be used as a treatment process for receiving influent water with a PAC silo which will store and automatically feed PAC into our treatment process. This upgrade includes demolition of the existing PAC storage feed system building and feed equipment, piping modifications to the raw water and return wash water line upstream of the influent distributor, and paving and grading improvements to the site.

Vicinity Map - 38 N Davis Boulevard for a New Silo at the Weber Basin Water Conservancy District



BOUNTIFUL
EST. 1847

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Bountiful, Utah makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Map Theme Legends

Zoning

WEBER BASIN WATER CONSERVANCY DISTRICT

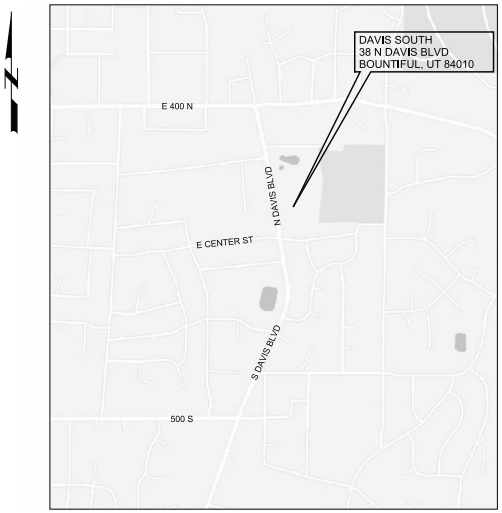
DAVIS SOUTH WATER TREATMENT PLANT
PAC FEED PROJECT

FINAL BID SET

FEBRUARY 2022

VOLUME 2 OF 2

VICINITY MAP
NO SCALE



LOCATION MAP
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
No. 334216
KARINA M. PAYNE
STATE OF UTAH

carollo®

JOB NO.
201237
DRAWING NO.
G01
SHEET NO.
1 OF 46

PROJECT NO. 11599A10 FILE NAME: 20123700G01.dgn

SHEET NO.	DRAWING NO.	DESCRIPTION
		(G) - GENERAL
1	G01	COVER SHEET
2	G02	DRAWING INDEX, DESIGN CRITERIA, AND PIPE SCHEDULE
3	G03	GENERAL NOTES, LEGENDS AND SYMBOLS
4	G04	GENERAL ABBREVIATIONS
5	G05	RAW WATER PROCESS FLOW DIAGRAM
6	G06	OVERALL SITE PLAN
		(D) - DEMOLITION
7	D01	SITE PLAN
8	D02	PHOTOS
9	D03	DETAILS
		(C) - CIVIL
10	C01	GRADING AND PAVING PLAN
11	C02	YARD PIPING PLAN
12	C03	ASPHALT REPLACEMENT AND STORMWATER UPGRADES BID ALTERNATE
		(S) - STRUCTURAL
13	GS01	GENERAL STRUCTURAL NOTES
14	S01	PAC SILO AND SUPPORT BUILDING FOUNDATION PLAN
15	S02	PAC SILO AND SUPPORT BUILDING FOUNDATION SECTION
		(M) - MECHANICAL
16	GM01	GENERAL MECHANICAL LEGEND AND SYMBOLS
17	M01	PAC FEED SYSTEM PLANS AND SECTION
18	M02	EXISTING CHEMICAL BUILDING MODIFICATIONS PLAN
19	M03	EXISTING CHEMICAL BUILDING MODIFICATIONS DETAILS
20	M04	EXISTING FLASH MIX VAULT MODIFICATIONS PLAN AND DETAILS
		(E) - ELECTRICAL
21	GE01	ELECTRICAL LEGEND
22	GE02	ELECTRICAL ABBREVIATIONS
23	E01	OVERALL SITE PLAN
24	E02	DUCT BANK SECTIONS
25	E03	PANELBOARD PP-C2 PARTIAL ONE-LINE DIAGRAM
26	E04	PAC SILO POWER AND CONTROL PLANS
27	E05	PAC AUXILIARY BUILDING POWER, CONTROL AND GROUNDING PLAN
28	E06	CHEMICAL BUILDING LOWER LEVEL POWER AND CONTROL PLAN
29	E07	CHEMICAL BUILDING UPPER LEVEL POWER AND CONTROL PLAN
30	E08	SECURITY SYSTEM RISER DIAGRAM
		(N) - INSTRUMENTATION
31	GN01	SYMBOLS AND ABBREVIATIONS 1
32	GN02	SYMBOLS AND ABBREVIATIONS 2
33	GN03	SYMBOLS AND ABBREVIATIONS 3
34	GN04	SYMBOLS AND ABBREVIATIONS 4
35	GN05	SAMPLE LOOP DRAWING
36	GN06	PAC SYSTEM NETWORK CONNECTION DIAGRAM
37	N01	PAC STORAGE AND FEED SYSTEM P&ID 1
38	N02	PAC STORAGE AND FEED SYSTEM P&ID 2
39	N03	PAC STORAGE AND FEED SYSTEM P&ID 3
		(T) - TYPICAL DETAILS
40	TC01	CIVIL
41	TE01	ELECTRICAL 1
42	TE02	ELECTRICAL 2
43	TE03	ELECTRICAL 3
44	TP01	PIPING
45	TS01	STRUCTURAL 1
46	TS02	STRUCTURAL 2

DAVIS SOUTH PAC DESIGN CRITERIA

DESCRIPTION	UNITS	VALUE
PLANT CAPACITY		
DESIGN MAXIMUM CAPACITY	MGD	16
MINIMUM CAPACITY	MGD	2
POWDERED ACTIVATED CARBON (PAC)		
CHARACTERISTICS: DRY POWDER, 18 LB/CU FT		
STORAGE TYPE: BULK DRY SILO, PNEUMATICALLY LOADED		
NUMBER OF SILOS	NO.	1
STORAGE CAPACITY	CU FT	2,000
	POUNDS	36,000
DAYS STORAGE (AVE DOSE, MAX PLANT CAPACITY)		13
METERING TYPE: VOLUMETRIC DRY FEEDER		
NUMBER OF DRY FEEDERS	NO.	1
FEEDER CAPACITY	CF/HOUR	18
DOSAGE		
MIN. DOSE	MG/L	10
AVG. DOSE	MG/L	20
MAX. DOSE	MG/L	50

PIPING SCHEDULE

FLOW STREAM IDENTIFIER	SERVICE	PIPE SIZE (1)	MATERIAL	PRESSURE CLASS/WALL THICKNESS	PIPE SPEC. SECTION	JOINTS/FITTINGS	LINING	COATING	TESTING METHOD	TESTING PRESSURE (psi)	NOTES
D	DRAINS										
	ALL LOCATIONS	ALL SIZES	PVC	SCH 80	40_05_31.01	SW			GR		
PAC	POWDER ACTIVATED CARBON										
	ALL LOCATIONS	All SIZES	PVC	SCH 80	40_05_31.01	SW/FL			LH	80	NO 90° BENDS
PP	POTASSIUM PERMANGANATE										
	ALL LOCATIONS	ALL SIZES	PVC	SCH 80	40_05_31.01	SW/FL			LH	80	
RWW	RETURN WASH WATER										
	BURIED	ALL SIZES	DIP	DIPRA 150	40_05_19.01	RB&SP/ RMJ		PE	HH	80	WRAP PIPE AND VALVE IN POLYWRAP. SEE SPEC.
	BURIED	ALL SIZES	WELDED STEEL	SCH 40	40_05_24.04	FL	EPP	WXT	HH	80	WELDED TEE TO EXISTING 36" RW. FLANGE TO DIP
SA	SAMPLE										
	EXPOSED	ALL SIZES	PVC	SCH 80	40_05_31.01	SW/FL			HH	80	
	BURIED	ALL SIZES	PVC	SCH 80	40_05_31.01	SW/FL			HH	80	
SD	STORM DRAIN										
	BURIED	ALL SIZES	CORRUGATED HDPE	ASTM F2468	40_05_31.01	B&SP			GR		DUAL WALL, NO 90° BENDS
UW	UTILITY WATER										
	INTERIOR	ALL SIZES	PVC	SCH 80	40_05_31.01	SW/FL			HH	100	
	BURIED	2" AND SMALLER	CTS POLY	SDR 9	40_05_31.01	CF/SCRD			HH	100	

NOTES:
(1) NOMINAL DIAMETER (INCHES)

PIPE MATERIAL AND JOINT/FITTING ABBREVIATIONS:

BW	BUTT WELD
B&SP	BELL AND SPIGOT
BF	BARBED FITTING
CF	COMPRESSION FITTING
CI	CAST IRON
CISP	CAST IRON SOIL PIPE
CL	CLASS, FOLLOWED BY DESIGNATION
CM	CEMENT MORTAR
CTP	COAL TAR PITCH
DIP	DUCTILE IRON PIPE
DWV	DRAIN, WASTE AND VENT
FL	FLANGE
FRP	FIBERGLASS PIPE
GA	GAUGE, PRECEDED BY THE DESIGNATION
GE	GROOVED END PIPE
GSP	GALVANIZED STEEL PIPE
MJ	MECHANICAL JOINT
MDPE	MEDIUM PRESSURE POLYETHENE
NPS	NOMINAL PIPE SIZE, FOLLOWED BY THE NUMBER IN INCHES
PE	POLYETHYLENE
PVC	POLYVINYL CHLORIDE
R-B&SP	RESTRAINED BELL AND SPIGOT
RMJ	RESTRAINED MECHANICAL JOINT
SCH	SCHEDULE, FOLLOWED BY THE DESIGNATION
SCRD	SCREWED-ON/THREADED
SST	STAINLESS STEEL
SW	SOLVENT WELD
WLD	WELD

LINING AND COATING ABBREVIATIONS:

ACR	ACRYLIC COATING
CM	CEMENT MORTAR
CP	CARRIER PIPE
EPP	EPOXY POLYURETHANE COATING
FA	FIELD APPLIED COATING
GC	GEL COAT
GL	GLASS LINED
HSE	HIGH SOLIDS EPOXY
I	INSULATED (ONLY)
P	PAINTED
POL	POLYETHYLENE LINED
PE	POLYETHYLENE-WRAPPED
PVC	POLYVINYL CHLORIDE
CE	CERAMIC EPOXY
CT	COAL TAR ENAMEL
CTX	COAL TAR EPOXY
TW	TAPE WRAPPED
FP	FLUOROPOLYMER
R	RUBBER LINING
EPX	EPOXY LINED
WXT	WAX TAPE

TEST PRESSURE METHOD:

AM	AIR METHOD
GR	GRAVITY METHOD
HH	HIGH HEAD METHOD
LH	LOW HEAD METHOD
SC	SPECIAL CASE
PSI	POUNDS PER SQUARE INCH

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
GENERAL
DRAWING INDEX, DESIGN CRITERIA AND PIPE SCHEDULE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. G02
SHEET NO. 2 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700G02.dgn

Model: Layout1 ColorTable: gsbladw.ctb DesignScript: CarolloStd_Prm_v0905.pen PlotScale: 1:1 User: svcPW Plot Date: 22-FEB-2023 11:09:53 AM LAST SAVED BY: mmorris

GENERAL NOTES

1. FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
3. UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
4. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK.
5. CONTRACTOR SHALL COMPLY WITH LOCAL CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS.
6. PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN/CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
7. ALL PIPELINES 12" AND LARGER SHALL HAVE A MINIMUM COVER OF 36" UNLESS THE COVER DEPTH IS SPECIFICALLY INDICATED ON THE DRAWINGS. PIPE SMALLER THAN 12" SHALL HAVE A MINIMUM COVER OF 30" UNLESS NOTED OTHERWISE. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID.
8. EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
10. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM.
11. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE.
12. THE CONTRACTOR SHALL CONTACT THE PROPER UTILITY REPRESENTATIVE AS FOLLOWS FOR QUESTIONS OR COORDINATION OF CONSTRUCTION RELATED TO EXISTING UTILITIES.

    BLUE STAKE OF UTAH: CALL 811
13. CONTRACTOR SHALL VERIFY THAT PIPING SHOWN TO BE ABANDONED OR AS ABANDONED PREVIOUSLY IS NO LONGER IN SERVICE. LINES IN SERVICE SHALL BE MAINTAINED UNTIL NO LONGER REQUIRED BY THE PLANT.
14. ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE PLANT.
15. CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE.
16. ALL SIDEWALKS TO BE 3'-0" WIDE UNLESS SHOWN OTHERWISE.
17. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES.
18. PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPES AND FACILITIES.
19. CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
20. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.

LINE WORK

NEW / EXISTING

CONSTRUCTION
FENCE
UTILIDUCT
GUARDRAIL
FUTURE CONSTRUCTION
CENTER LINE
HIDDEN LINE
REMOVE AND/OR ABANDON
GATE
MATCH LINE — MATCH LINE SEE DWG ##X##

SYMBOLS

BRACKET
BREAK LINE
PIPE BREAK PLAN VIEW
PIPE BREAK CROSS SECTION
PIPE CONTINUATION (SINGLE LINE)
KEY TAG — X
KEY NOTE — 34
REVISION DELTA — 2
EXISTING ELEVATION — T.O.W. XXXX.X± (EXIST)
ELEVATION — TOC XXXX.XX
SCALE — 0, 50', 100', 200'
NORTH ARROW/PLANT NORTH — TRUE, NORTH, NORTH, PLANT, 30°
EQUIPMENT/DEVICE TAG AND NUMBER — XXX-XX-XXXX
EQUIPMENT
EX-EQUIP = EXISTING EQUIPMENT
EF-EQUIP = FUTURE EQUIPMENT

PIPE TAG
PIPE SIZE — X" XXX — FLOW STREAM
SIZE FLOW STREAM
EX-SIZE FLOW STREAM = EXISTING
EF-SIZE FLOW STREAM = FUTURE

UNDERGROUND/ OVERHEAD WARNING (STATE/REGION SPECIFIC)

811 Know what's below. Call before you dig.

Avoid overhead power line contact. It's costly.
Call before you OVERHEAD
Replace with Regional Phone Number

DETAIL REFERENCES

PLAN/VIEW TITLE — A PLAN
VIEW
DESCRIPTION
VIEW DESCRIPTION, AS NECESSARY
FILE: FILE
PLAN NOT REFERENCED

SECTION CUT — C / –
VIEW
- = SHOWN ON SAME DRAWING
##X## = SEE INDICATED DRAWING

SECTION OR DETAIL VIEW TITLE W/ REFERENCE — C/1 ##X## SECTION/DETAIL
ALPHA = SECTION
NUMERIC = DETAIL
VIEW DESCRIPTION, AS NECESSARY
DESCRIPTION
SCALE: SCALE
FILE: FILE
DRAWING CUT ORIGINATION

DETAIL OR ENLARGED PLAN CALL OUT — 1 ##X##
ALPHA = ENLARGED PLAN
NUMERIC = DETAIL
SEE INDICATED DRAWING

DRAWING REFERENCE — ##X##
AREA DESIGNATOR (WHEN APPLICABLE)
DISCIPLINE DESIGNATOR
SHEET NUMBER

TYPICAL DETAIL REFERENCE — ? (TYP) TYP
TYPICAL DETAIL #
(TYP) - INDICATES THE TYPICAL DETAIL IS USED IN MULTIPLE LOCATIONS WITHIN THE DRAWING

EXTERIOR ELEVATION VIEWS — A ##X##
SEE INDICATED DRAWING

PHOTO LOCATION — # ##X##
ARROW INDICATES POINT OF VIEW
SEE INDICATED DRAWING

GRID BUBBLE — A 1

TYPICAL DETAIL NUMBER
? TYP
LINE 3
LINE 1
LINE 2
TYPICAL DETAIL TITLE
MOD
MODIFICATION NOTE
S = STANDARD
J = JOB SPECIFIC
R = REVISED
N = NOTE TO TYPICAL DETAIL USER
SHT # OF #
SHEETS IN DETAIL
VER DATE
DATE CREATED (REVISED)
INDICATES LOCATED ON TYPICAL DETAIL SHEETS

HATCH PATTERNS

AGGREGATE BASE COURSE (ABC)
ALUMINUM
ASPHALT PAVING
BEDROCK
BRICK OR BLOCK
BRONZE, BRASS, OR COPPER
CAST IRON OR FIBERGLASS
CLSM
CONCRETE (ALL CLASSES)
DRAIN ROCK
GRAVEL
GRATING — SPAN
LANDSCAPING
RUBBER
SAND OR GROUT
EXISTING/ UNDISTURBED SOIL
STRUCTURAL FILL OR BACKFILL
STEEL
TREAD PLATE
WOOD

MISCELLANEOUS

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
GENERAL
GENERAL NOTES, LEGEND, AND SYMBOLS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. G03
SHEET NO. 3 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700G03.dgn

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LAST SAVED BY: mmorris

A

@	AT (MEASUREMENT)
Δ	DEFLECTION ANGLE, CENTRAL ANGLE
#	NUMBER (REBAR Ø)
AB	ANCHOR BOLT
ABC	AGGREGATE BASE COURSE
ABS	ACRYLONITRILE BUTADIENE STYRENE
AC	ASPHALTIC CONCRETE
ACB	AIR CIRCUIT BREAKER
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASBESTOS CEMENT PIPE
ACU	AIR CONDITIONING UNIT
AD	AREA DRAIN
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJUST, ADJUSTABLE
ADMIN	ADMINISTRATION
ADR	ACCESS DOOR
AED	AREA EQUIPMENT DRAIN
AER	AERATION(OR)
AFC	AFTERCOOLER
AFF	ABOVE FINISHED FLOOR
AFM	AIR FLOW MONITOR
AHU	AIR HANDLING UNIT
AIC	AIR COMPRESSOR
AIL	AIR INTAKE LOUVER
ALT	ALTERNATE
AL	ALUMINUM
ANCH	ANCHOR
ANV	ANGLE VALVE
APPROX	APPROXIMATE, APPROXIMATELY
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	ACID VENT
AVG	AVERAGE
AVV	AIR AND VACUUM VALVE
AW	ACID WASTE

B

BC	BEGIN CURVE, BRASS CAP, BACK OF CURB, BOLT CIRCLE
BCKR	BACKER BOARD
BCM	BATCHMETER
BD	BOARD
BDD	BACKDRAFT DAMPER
BDR	BASIN DRAIN LINE
BF	BLIND FLANGE
BFG	BELOW FINISHED GRADE
BFP	BELT FILTER PRESS
BFV	BUTTERFLY VALVE
BG	BREAK GLASS HAND SWITCH
BKW	BACKWASH
BLDG	BUILDING
BLK	BLOCK
BLKHD	BULKHEAD
BLR	PROCESS BLOWER
BM	BEAM, BENCH MARK
BOTT	BOTTOM
BOTTS	BOTTOM SLUDGE
BPV	BACK PRESSURE VALVE
BRG	BEARING
BSP	BLACK STEEL PIPE
BTU	BRITISH THERMAL UNITS
BTWN	BETWEEN
BV	BALL VALVE
BWCCP	BAR-WRAPPED CONCRETE CYLINDER PIPE

C

C	CLOSE, CONDUIT CHANNEL (STRUCTURAL)
CA	CONCRETE ANCHOR
CAUSTIC	CAUSTIC SOLUTION (CONCENTRATED OR DILUTE)
CB	CATCH BASIN
CC	CENTER OF CURVATURE, CENTER TO CENTER
CCB	CHLORINE CONTACT BASIN
CD	CEILING DIFFUSER, CONDENSATE DRAIN
CDL	CHEMICAL DRAIN LINE
CDT	CONDUIT
CEF	CEILING EXHAUST FAN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEMD	CHEMICAL DRAIN
CHF	CHEMICAL FEEDER
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CIRC	CIRCUMFERENTIAL/CIRCUMFERENCE
CJ	CONSTRUCTION JOINT
CKA	CHECK VALVE, ANGLE
CKB	CHECK VALVE, BALL
CKF	CHECK VALVE, FLAP
CKS	CHECK VALVE, SWING
CL	CENTER LINE
CLK	CHAIN LINK
CLD	CHLORINE LEAK DETECTOR
CLL	CHLORINE LIQUID
CLP	CHLORINE GAS (PRESSURE)
CLR	CLEAR
CLS	CHLORINE SOLUTION
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CLV	CHLORINE GAS (VACUUM)
CML	CEMENT MORTAR LINED
CMLC	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNV	CONVEYOR
CO	CLEANOUT
COL(S)	COLUMN(S)
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUATION OR (D) (OUS)
CORR	CORRUGATE(D), CORROSION
CP	CONTROL POINT
CPLG	COUPLING
CPT	CARPET
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL, CIRCULATING SLUDGE
CSP	CHEMICAL SUMP PUMP, CORRUGATED STEEL PIPE
CT	CURRENT TRANSFORMER, CERAMIC TILE
CTJ	CONTROL JOINT
CTL	CONTROL
CTR	CENTER, CENTERED
CTSK	COUNTERSUNK
CU	CUBIC
CUP	COPPER PIPE
CV	CHECK VALVE
CW	COLD WATER
CWV	COMBINATION WASTE AND VENT
CY	CUBIC YARD

D

D	DEPTH, DIGITAL OR DISCRETE, DRAIN
DW	DRIVEWAY
DBL	DOUBLE
DDR	DESICCANT DRYER
DEG or °	DEGREE
DEMO	DEMOLISH, DEMOLITION
DET	DETAIL
DFL	DECANT/FILTRATE
DG	DOOR GRILLE
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIF	DIFFUSER
DIG	DIGESTER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIW	DEIONIZED WATER
DL	DEAD LOAD, DRAIN LINE
DLV	DOOR LOUVER
DMP	DAMPER
DMS	DIAPHRAGM SEAL
DN	DOWN
do	DITTO
DO	DOOR OPENING
DP	DEEP (OR DEPTH)
DPV	DIAPHRAGM VALVE
DR	DOOR, DRAIN
DRT	DRIP TRAP
DRV	DRAIN VALVE
DS	DIGESTED SLUDGE, DOWN SPOUT
DSW	DISTILLED WATER, DOOR SWITCH
DUC	DUST COLLECTOR
DUH	DUCT HEATER UNIT
DW	DISTILLED WATER
DWD	DEWATERING DRAIN
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)

E

E	EAST
EA	EACH
EC	END OF CURVE
ECC RED	ECCENTRIC REDUCER
ECU	EVAPORATOR COOLING UNIT
ED	EQUIPMENT DRAIN
EF	EXHAUST FAN, EACH FACE
EFF	EFFLUENT
EG	EXHAUST GRILLE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EJR	INJECTOR/EDUCTOR
EL	ELEVATION
ELEC	ELECTRICAL
ELL	ELBOW
EMBED	EMBEDMENT
EMH	ELECTRICAL MANHOLE
EP	EDGE OF PAVEMENT
EPS	EXPANDED POLYSTYRENE
EPV	ECCENTRIC PLUG VALVE
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ES	EACH SIDE
ESEW	EMERGENCY SHOWER AND EYE WASH
ESS	EMERGENCY HAND SWITCH
ET	ELECTRICALLY HEAT TRACED
EUH	ELECTRIC UNIT HEATER
EVR	EVAPORATOR
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EWEF	EACH WAY EACH FACE
EWH	ELECTRIC WATER HEATER, EXHAUST
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION, EXPANSION TANK
EXPO	EXPOSED
EXT	EXTERIOR

F

FACT	FACTORY
FAD	FOUL AIR DUCT
FB	FLAT BAR
FBW	FILTER BACKWASH
FC	FACE OF CURB, FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER, FLOOR DRAIN, FOUND
FDC	FIRE DEPARTMENT CONNECTION
FDL	FLOOR DRAIN LINE
FDR	FEEDER
FEFF	FINAL EFFLUENT
FG	FLAP GATE
FH	FIRE HYDRANT
FILT	FILTRATE
FIN	FINISH
FIN FL	FINISHED FLOOR
FIN GR	FINISHED GRADE
FL	FLOOR, FLOW LINE
FLA	FOUL AIR
FLD	FILTER DRAIN
FLE	FILTER EFFLUENT
FLEX	FLEXIBLE
FLG	FLANGE, OR FLANGED
FLR	FILTER
FM	FORCE MAIN
FND	FOUNDATION
FO	FUEL OIL
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPP	FLEXIBLE PLASTIC PIPE
FRP	FIBERGLASS REINFORCED PLASTIC
FRPP	FIBERGLASS REINFORCED PLASTIC PIPE
FRS	FROTH SPRAY
FS	FAR SIDE
FSTN	FASTEN(ED)
FT or '	FOOT, FEET
FTG	FOOTING
FUP	FUEL DISPENSER
FV	FLAP VALVE
FW	FLUSHING WATER, FINISHED WATER
FX	FIRE EXTINGUISHER
FXC	FIRE EXTINGUISHER CABINET
FXE	FIRE EXTINGUISHER - ELECTRICAL

G

G	GAS, GROUND, GUTTER
GA	GAUGE or GAGE
GAL	GALLONS
GALV	GALVANIZE(D)
GAV	GRAVITY VENTILATOR
GB	GRADE BREAK
GBT	GRAVITY BELT THICKENER
GC	GROOVED COUPLING
GEL	GRAVITY EXHAUST LOUVER
GEN	GENERAL, GENERATOR
GL	GLASS
GLV	GLOBE VALVE
GM	GAS METER
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GR	GRADE
GRTG	GRATING
GRV	GRAVITY VENTILATOR
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM

H

H	EXPLOSION-PROOF, HIGH, HORIZONTAL
H1E	HOOK ONE END
H2E	HOOK TWO ENDS
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HDWL	HEADWALL
HEF	HOOD EXHAUST FAN
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HEAT PUMP, HORSEPOWER, HIGH PRESSURE
HPA	HIGH PRESSURE AIR
HPT	HIGH POINT
HPU	HEAT PUMP UNIT AIR
HR	HANDRAIL, HOSE REEL, HOUR
HSF	HOOD SUPPLY FAN
HSS	HOLLOW STRUCTURAL SECTION (STEEL)
HTX	HEAT EXCHANGER
HV	HOSE VALVE
HW	HOT WATER
HWL	HIGH WATER LEVEL
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HxW	HEIGHT BY WIDTH
HYD	HYDRANT

I

IA	INSTRUMENT AIR
ID	INSIDE DIAMETER, INSIDE DIMENSION, IDENTIFICATION
IE	INVERT ELEVATION
I.F.	INSIDE FACE
IN or "	INCHES
INCL	INCLUDE, INCLUDING
INF	INFLUENT
INJ	INJECTOR
INSTR	INSTRUMENTATION
INSUL	INSULATIE)(ED)(ING)(ION)
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
ISR	INTRINSICALLY SAFE RELAY

J

JST	JOIST
JT	JOINT

K

KGV	KNIFE GATE VALVE

L

L	ANGLE (STRUCTURAL), LENGTH, LOUVER
LAB	LABORATORY
LAV	LAVATORY
LB(S)	POUND(S)
LDF	LIQUID DIESEL FUEL
LDFR	LIQUID DIESEL FUEL RETURN
LF	LINEAL FEET
LG	LONG
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LHRA	LEFT HAND REVERSE ACTIVE
LHRB	LEFT HAND REVERSE BEVEL
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW PRESSURE
LPA	LOW PRESSURE AIR
LPG	LIQUIFIED PROPANE GAS
LPT	LOW POINT
LR	LONG RADIUS
LS	LAB SINK
LT	LEFT
LWL	LOW WATER LEVEL

M

M	MOTOR
MAINT	MAINTENANCE
MAN	MANUAL
MASY	MASONRY
MATL	MATERIAL
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MECHANICAL COUPLING
MCJ	MASONRY CONTROL JOINT
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MG/L	MILLIGRAMS PER LITER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MIX	MIXER
MJ	MECHANICAL JOINT
MK	MARK
ML	MIXED LIQUOR
MO	MASONRY OPENING
MOD	MODIFIED
MOIST	MOISTURE
MON	MONUMENT
MOS	MOISTURE SEPARATOR
MPM	METERING PUMP
MS	MOP SINK
MTD	MOUNTED

N

N	NORTH, NEUTRAL
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEV	VALVE, NEEDLE
NG	NATURAL GRADE, NATURAL OR LP GAS
NIC	NOT IN CONTRACT
NO., #	NUMBER
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
NS	NEAR SIDE
NTS	NOT TO SCALE

O

O	OPEN
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER, OUTSIDE DIMENSION
OED	OPEN EQUIPMENT DRAIN
O.F.	OUTSIDE FACE
OFL	OVERFLOW
OPNG	OPENING
OPP	OPPOSITE
OPP HND	OPPOSITE HAND
OZ	OUNCE

P

P	POLE
PBL	POLYMER BLENDER
PC	POINT OF CURVATURE
PCC	PLANT CONTROL CENTER
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCP	PROGRESSIVE CAVITY PUMP
PD	POSITIVE DISPLACEMENT, PLANT DRAIN
PD, PLD	PULSATION DAMPENER
PDP	POSITIVE DISPLACEMENT PUMP
PE	PLAIN END
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PH	PHASE, PHYSICALLY HANDICAPPED
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PL	PLATE, PROPERTY LINE
PLAS	PLASTIC
PLCS	PLACES
PLS	POLYMER SOLUTION
PLWD	PLYWOOD
PMP	PUMP
PNL(S)	PANEL(S)
POL	POLYMER
POLY	POLYETHYLENE
POS	POSITION
POW	POTABLE WATER
PP	POWER POLE
PPMV	PARTS PER MILLION (VOLUME)
PRC	POINT OF REVERSE CURVATURE
PREFAB	PREFABRICATED
PRG	PRESSURE REGULATOR
PRI	PRIMARY
PROJ	PROJECTION
PRR	PRESSURE OR VACUUM RELIEF VALVE
PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATION VALVE, PRESSURE RELIEF VALVE
PS	PUMP STATION, PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSG	PRESSURE GAUGE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT, POINT OF TANGENCY
PV	PLUG VALVE
PVC	POINT OF VERTICAL CURVATURE, POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PLW	PLANT WATER

Q

QTY	QUANTITY

R

R/W	RIGHT OF WAY
RAD	RADIUS, RADIAL
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RD	ROOF DRAIN
RDL	ROOF DRAIN LINE
RDOF	ROOF DRAIN OVERFLOW
RECIRC	RECIRCULATING
RED	REDUCER, ROOF EQUIPMENT DRAIN
REF	REFERENCE
REG	REGULATOR, REGULATING
REINF	REINFORCE(D)(NG)(MENT)
REJ	RUBBER EXPANSION JOINT
REQD	REQUIRED
RER	REACTOR
RES	RESERVOIR
REV	REVISION, REVERSE
RF	RETURN FAN
RG	RETURN GRILLE RUBBER GASKET
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RHRA	RIGHT HAND REVERSE ACTIVE
RHRB	RIGHT HAND REVERSE BEVEL
RLS	REGISTERED LAND SURVEYOR
RM	ROOM
RO	ROUGH OPENING
ROT	ROTAMETER
RP	RADIUS POINT
RPM	REVOLUTIONS PER MINUTE
RPMP	REINFORCED PLASTIC MORTAR PIPE
RR	RETURN REGISTER
RSR	RISER
RT	RIGHT
RTF	ROTARY FEEDER
RTU	ROOF TOP UNIT
RUD	RUPTURE DISK
RW	RECLAIMED WATER, REUSE WATER
RWR	RECLAIMED WATER RETURN
RWW	RAW WASTEWATER

S

S/W	SIDEWALK
S	SOUTH, SWITCH, SLOPE
SA	SAMPLE
SC	SECONDARY CLARIFIER
SCB	SCRUBBER
SCD	SMOKE CONTROL DAMPER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCO	SURFACE CLEANOUT
SCR	BAR SCREEN
SCR	SILICON CONTROL RECTIFIER
SD	SMOKE DETECTOR, SPLITTER DAMPER, STORM DRAIN
SDL	SUMP DISCHARGE DRAIN LINE
SDO	SLUDGE DRAWOFF
SE	SECONDARY EFFLUENT
SEC	SECONDARY, SECOND
SECT	SECTION
SED	SEDIMENTATION
SEP	SEPTAGE
SF	SUPPLY FAN
SFW	SOFTENED WATER
SG	SUPPLY GRILLE
SGS	STORE FRONT GLAZING SYSTEM
SHD	SHOWER DRAIN
SHDR	SOLIDS HANDLING-RECYCLE
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SK	SKIMMINGS
SL	SLOPE, SLUDGE
SLC	SLUDGE COLLECTOR DRIVE
SLG	SLIDE GATE
SLV	SLEEVE VALVE
SMP	SAMPLER, SUMP PUMP
SN	SUPERNATANT OR SUBNATANT
SOL	SOLUTION
SP	STATIC PRESSURE, SET POINT
SPD	SUMP PUMP DRAIN
SPDT	SINGLE POLE DOUBLE THROW
SPEC(S)	SPECIFICATION(S)
SPL	SPLITTER BOX
SPR	SPARE
SPS	SAMPLE SINK
SPW	SAMPLE WATER
SQ	SQUARE
SQ FT	SQUARE FEET
SQ IN(S)	SQUARE INCH(ES)
SR	SHORT RADIUS, SUPPLY REGISTER
SRL	SCRUBBER RECIRCULATION LIQUID (CAUSTIC)
SS	SANITARY SEWER, SELECTOR SWITCH
SSK	SERVICE SINK
SSL	SECONDARY SLUDGE
SST	STAINLESS STEEL
ST	SLUDGE TRANSFER
STA	STATION
STB	STABILIZER
STD(S)	STANDARD(S)
STIFF	STIFFENER
STIR	STIRRUPS
STL	STEEL
STM	STEAM
STP	STEEL PIPE
STR	STRAINER
STRUCT	STRUCTURAL
SUG	SLUICE GATE
SUPT	PIPE SUPPORT, SUPPORT
SV	SERVICE VALVE, SHUTOFF VALVE, SOLENOID VALVE
SW	SANITARY WASTE
SWR	SEAL WATER
SYM	SYMMETRICAL
SYN	SYNTHETIC

T

T	TANGENT LENGTH, THERMOSTAT, TIMER
T&B	TOP AND BOTTOM
TAS	THREADED ANCHOR STUD
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TDH	TOTAL DYNAMIC HEAD
TDR	TIME DELAY RELAY, TOWEL DISPENSER/RECEPTACLE
TEL	TELEPHONE
TH	TEST HOLE
THK	THICKENER, THICKNESS, THICK
TKS	THICKENED SLUDGE
TLV	TELESCOPING VALVE
TMH	TELEPHONE MANHOLE
TMP	TEMPERATURE
TNK	TANK
T.O.	TOP OF
TOC	TOP OF CONCRETE
TOG	TOP OF GRATING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
T.O.W.	TOP OF WALL
TR	TRIAD (THREE CONDUCTOR SHIELDED CABLE), TIMING RELAY
TRD	TREAD
TS	THICKENER SUPERNATANT OR SUBNATANT
TSD	THICKENED SLUDGE DECANT
TSPL	TURBIDIMETER SAMPLE
TSTAT	THERMOSTAT
TTB	TELEPHONE TERMINAL BOARD
TUR	TURBINE
TV	TURNING VANES
TWV	THREE-WAY VALVE
TYP	TYPICAL

U

UC	UNDERCUT
UG	UNDERGROUND
UHMWPE	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
UHMW	ULTRA HIGH MOLECULAR WEIGHT
UNO	UNLESS NOTED OTHERWISE
US	UTILITY SINK

V

V	VALVE
VAR	VARIES
VB	VALVE BOX
VCP	VITRIFIED CLAY PIPE
VEC	VINYL ESTER COATING
VERT	VERTICAL
VFR	VOLUMETRIC FEEDER
VG	VACUUM GAUGE, VALLEY GUTTER
VOL	VOLUME
VRV	VACUUM REGULATING VALVE
VTR	VENT THROUGH ROOF

W

W	WEST, WIDTH
W/	WITH
W/O	WITHOUT
WAS	WASTE ACTIVATED SLUDGE
WCO	WALL CLEANOUT
WEF	WALL EXHAUST FAN
WF	WALL FITTING, WASH FOUNTAIN
WH	WATER HEATER
WI	WEIGHT INDICATOR
WL	WALL LOUVER, WATER LEVEL
WM	WATER METER
WOD	WASTE OIL DRAIN
WP	WEATHERPROOF, WATERPROOF
WPT	WORKING POINT
WRG	WEIR GATE
WRS	WATER SOFTENER
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WALK THROUGH, WEIGHT
WTF	WATER TREATMENT FACILITY
WTP	WATER TREATMENT PLANT
WTR	WATER
WV	WATER CONTROL VALVE
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT

Y

Y	WYE
YCO	YARD CLEANOUT
YH	YARD HYDRANT

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN WATER CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

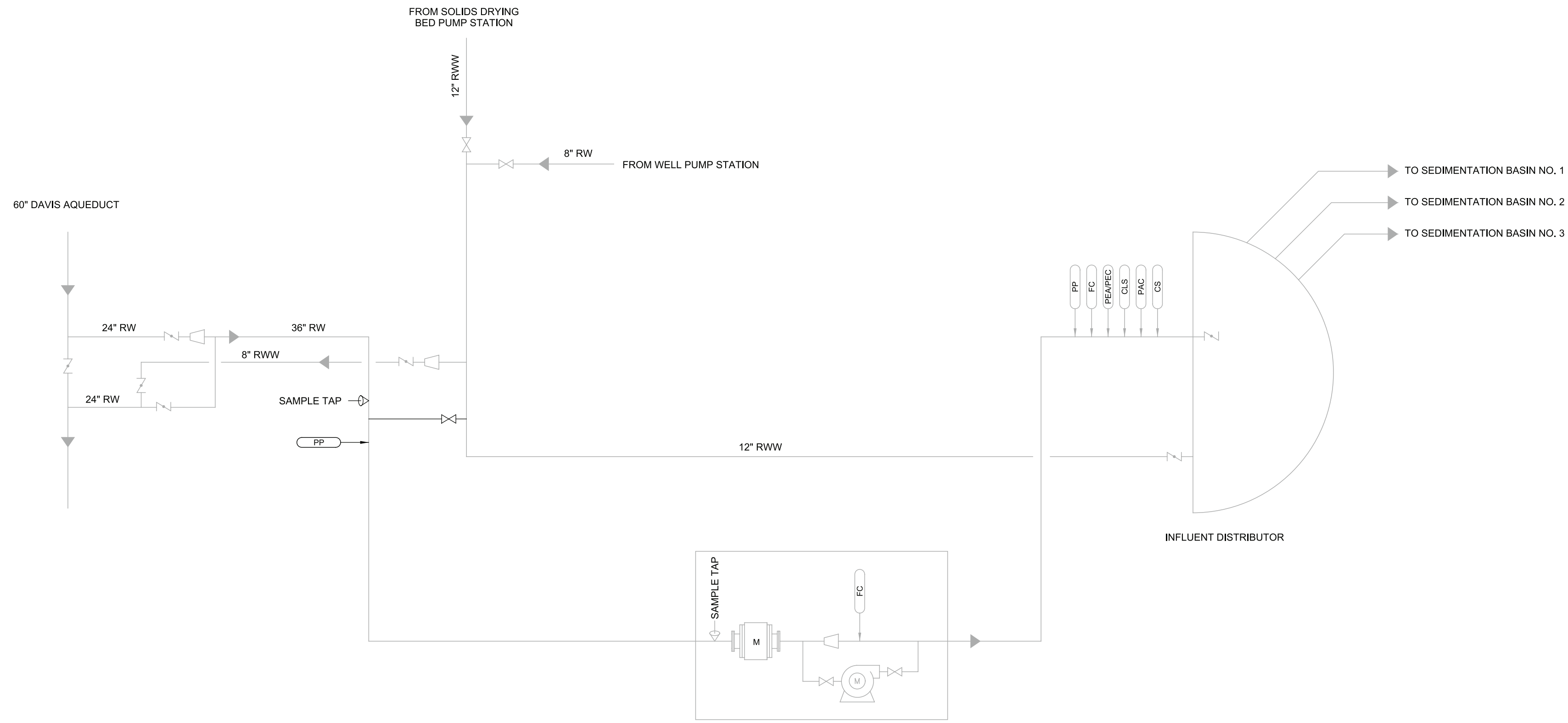
GENERAL

GENERAL ABBREVIATIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. G04
SHEET NO. 4 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700G04.dgn



CHEMICAL ABBREVIATIONS:

PP	POTASSIUM PERMANGANATE
FC	PRIMARY COAGULANT
PEA/PEC	POLYMER
CLS	CHLORINE SOLUTION
PAC	POWDERED ACTIVATED CARBON
CS	CAUSTIC SODA

PIPE ABBREVIATIONS:

RW	RAW WATER
RWW	RETURN WASH WATER

Plot Date: 22-FEB-2023 11:09:42 AM User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

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DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

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GENERAL
RAW WATER PROCESS FLOW DIAGRAM

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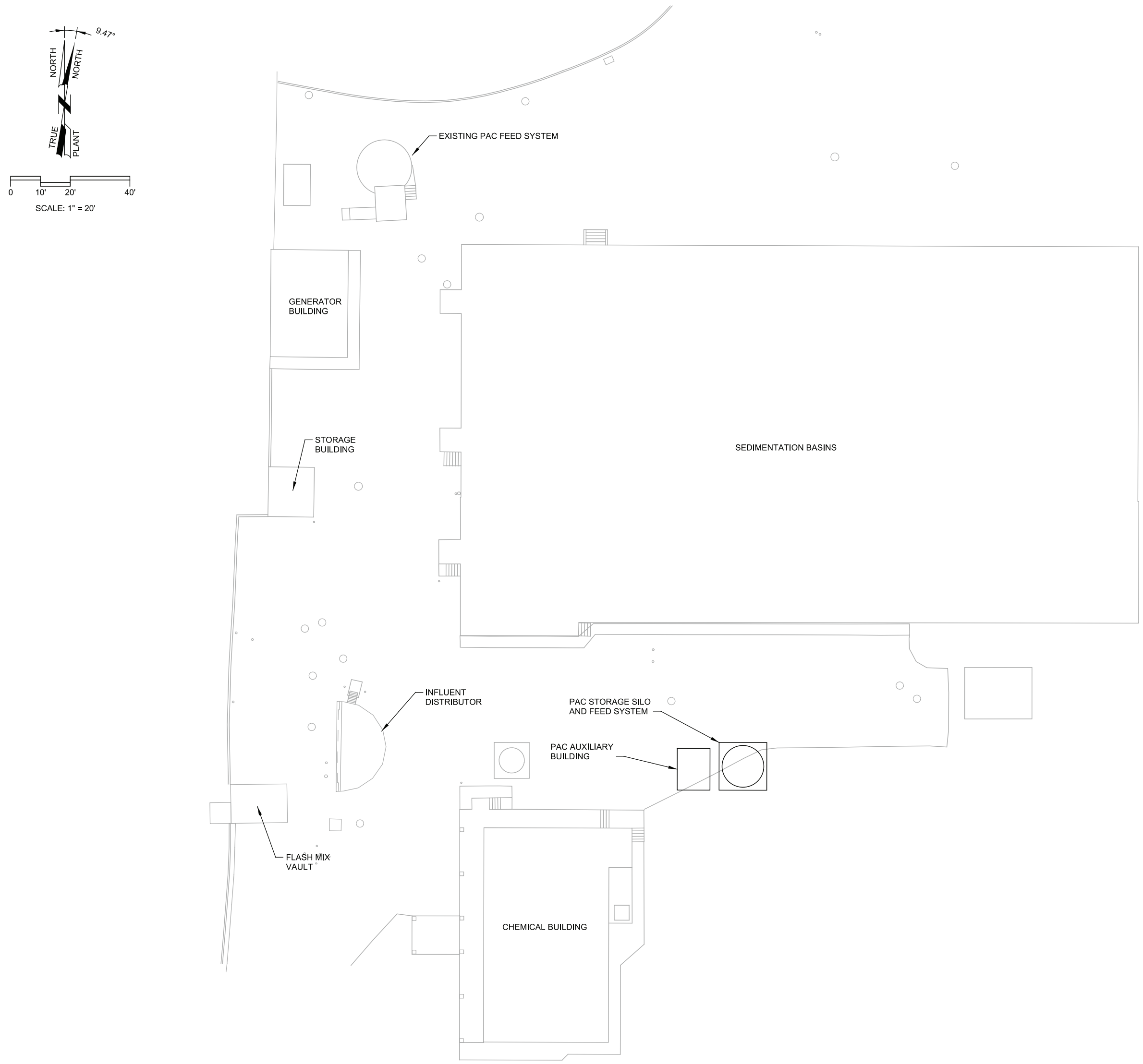
JOB NO. 201237
DRAWING NO. G05
SHEET NO. 5 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700G05.dgn



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DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

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DAVIS SOUTH WTP PAC FEED PROJECT
GENERAL
OVERALL SITE PLAN

VERIFY SCALES
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0 1"
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JOB NO. 201237
DRAWING NO. G06
SHEET NO. 6 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700G06.dgn

1 PHOTO

SCALE: NO SCALE
FILE: IMG_4870.JPG

KEY NOTES:

1. DISCONNECT AND REMOVE ALL PIPING INSIDE EXISTING PAC STRUCTURE. DISCONNECT POWER AND PULL ELECTRICAL WIRES BACK TO FIRST PULLBOX. REMOVE EQUIPMENT IN STRUCTURE BEFORE DEMOLITION OF THE CONCRETE. SEE PHOTO 1.
2. DEMOLISH EQUIPMENT AND PIPING IN BASEMENT OF GENERATOR BUILDING ASSOCIATED WITH EXISTING PAC SYSTEM. SEE ADDITIONAL NOTES ON DEMOLITION ON DRAWING D02.
3. SAW CUT AND REMOVE ASPHALT. BACKFILL HOLE LEFT FROM DEMOLITION OF PAC STRUCTURE WITH AGGREGATE BASE COURSE. PLACE 8" OF AGGREGATE BASE COURSE IN THE DEMOLITION AREA AND PATCH BACK 4" ASPHALT. SEE CIVIL GRADING DRAWINGS.
4. SAWCUT AND REMOVE ASPHALT. SEE CIVIL GRADING DRAWINGS.
5. DEMOLISH PAC PIPING INSIDE EXISTING PAC STRUCTURE. DEMOLISH PAC PIPING BETWEEN EXISTING PAC STRUCTURE AND THE GENERATOR BUILDING. SEE YARD PIPING DRAWING C02 FOR ANTICIPATED ALIGNMENT. CONTRACTOR TO FIELD VERIFY.
6. LOCATE POWER FEED FOR PAC STRUCTURE. DISCONNECT POWER TO EQUIPMENT AND PULL WIRES BACK TO FIRST PULLBOX OUTSIDE OF STRUCTURE. CONTRACTOR TO FIELD VERIFY.
7. APPROXIMATE EXTENTS OF SAWCUT AND REMOVAL OF ASPHALT FOR YARD PIPING WORK. SEE DRAWING C02.
8. CURB AND GUTTER, CHAIN LINK FENCE, AND LANDSCAPING GROUND COVER TO BE REMOVED FOR YARD PIPING WORK. CONTRACTOR TO RE-INSTALL FENCE, LANDSCAPING WITH GROUND COVER AND SPRINKLER SYSTEM, AND CURB AND GUTTER WHEN PIPING WORK IS COMPLETE. MATCH EXISTING.
9. CUT AND CAP EX 1 1/2" PAC AT BUILDING. REMOVE PIPE TO EXISTING PAC STRUCTURE AS PART OF DEMOLITION. SEE YARD PIPING DRAWING C02, KEYNOTE 17.
10. CUT AND CAP EX 4" UW INTO EXISTING PAC STRUCTURE. REMOVE PIPE TO BATCH TANK AS PART OF DEMOLITION. SEE YARD PIPING DRAWING C02, KEYNOTE 18. EX 4" UW IS SHOWN TO BE ASBESTOS CONCRETE IN RECORD DRAWINGS. CONTRACTOR TO OBTAIN AN AIR QUALITY PERMIT AND PROVIDE ABATEMENT FOR CUTTING INTO THE PIPE AS PART OF THE DEMOLITION WORK.
11. BID ALTERNATE: DEMOLITION WORK FOR NEW 6" SD CONNECTION. SEE YARD PIPING DRAWING C02. DEMOLISH SECTION OF CURB AND GUTTER AND REMOVE AND REPLACE LANDSCAPE ROCK AND LANDSCAPE FABRIC AFTER PIPING WORK IS COMPLETE. REPLACE SECTION OF CURB AND GUTTER REMOVED PRIOR TO FINAL PAVING.
12. AN EXISTING GROUNDING SYSTEM EXISTS AROUND THE PERIMETER OF THE PAC STRUCTURE. GROUND RODS AT CORNERS AND COPPER WIRE CONNECTING THE RODS TO THE DUCT BANK SYSTEM. CONTRACTOR TO LOCATE AND DISCONNECT FROM THE DUCT BANK SYSTEM AND DEMOLISH GROUND RING FROM PAC STRUCTURE AS PART OF DEMOLITION.
13. SAWCUT AND REMOVE SIDEWALK FOR PIPING INSTALLATION. SEE GRADING AND PAVING DRAWING C01 AND YARD PIPING DRAWING C02.

REV	DATE	BY	DESCRIPTION

DESIGNED JCB
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DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 7667716-2202 JACOB C. BAER STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
DEMOLITION
SITE PLAN

VERIFY SCALES
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. D01
SHEET NO. 7 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700D01.dgn

Plot Date: 23-FEB-2023 10:36:08 AM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

GENERAL NOTES:

1. REMOVE ALL PIPING, TANKS, PUMPS AND APPURTENANCES ASSOCIATED WITH THE EXISTING PAC SYSTEM. CAP PIPES AT EXTERIOR WALL. SEE CIVIL AND DEMO DRAWINGS. DISCONNECT WATER FROM UW HEADER AND CAP CONNECTIONS, LEAVE THE UW HEADER.
2. DISCONNECT ELECTRICAL CONNECTIONS AT JUNCTION BOXES AND ABANDON WIRES IN WIREWAY. WIREWAY TO REMAIN IN PLACE.

2 PHOTO (D01)
SCALE: NO SCALE
FILE: IMG_4853.JPG

3 PHOTO (D01)
SCALE: NO SCALE
FILE: IMG_4855.JPG

4 PHOTO (D01)
SCALE: NO SCALE
FILE: IMG_4864.JPG

REV	DATE	BY	DESCRIPTION

DESIGNED JCB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 7567716-2202 JACOB C. BAER STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
DEMOLITION
PHOTOS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. D02
SHEET NO. 8 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700D02.dgn

Plot Date: 22-FEB-2023 11:34:42 AM User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

5 PHOTO (D01)
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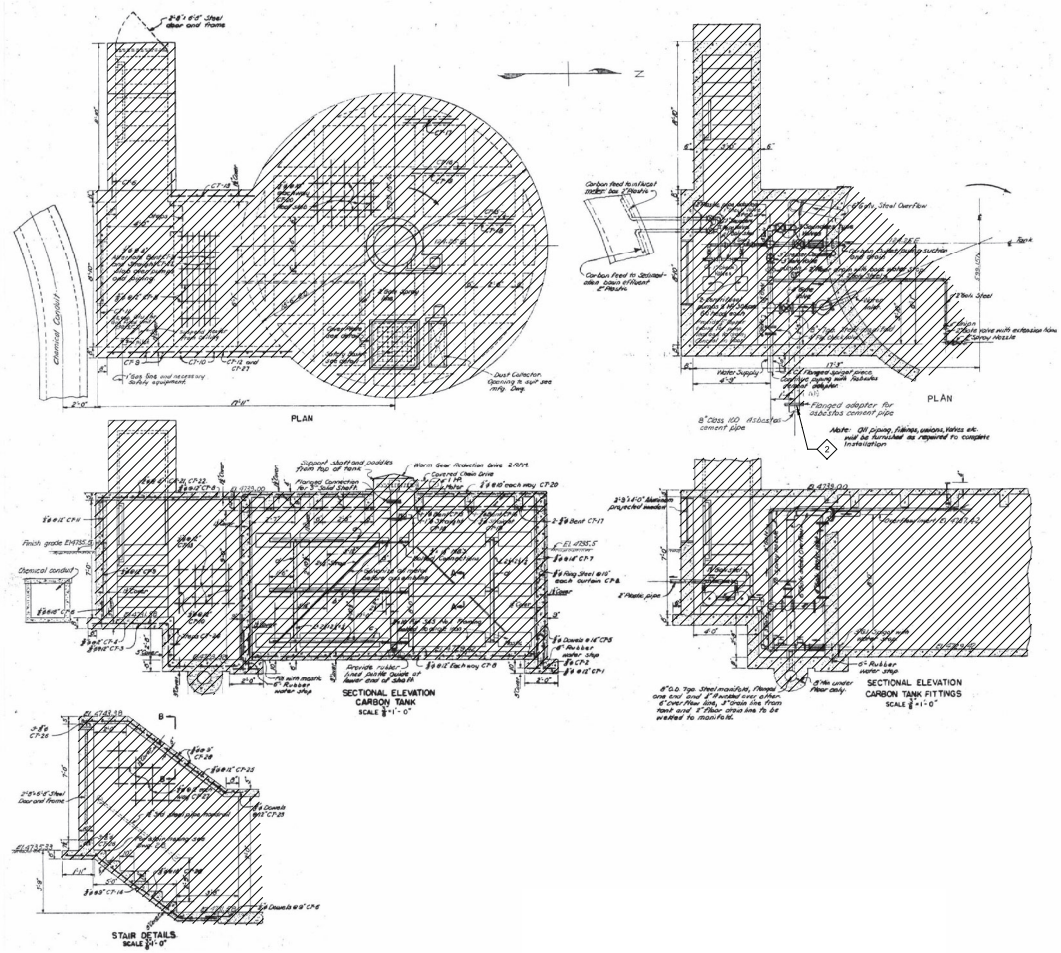
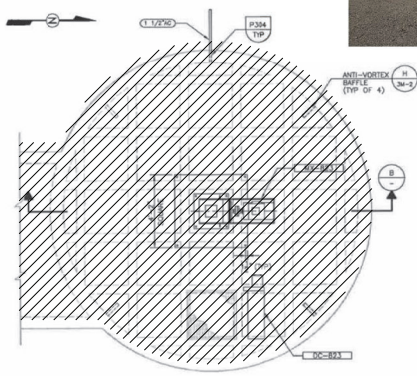
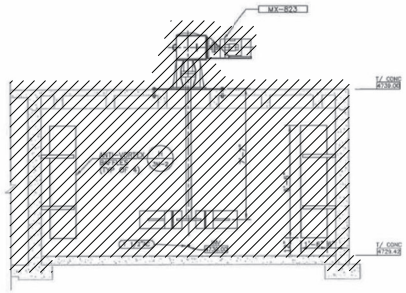




A CARBON TANK – SLURRY MIXER
3/8" = 1'-0"



B SECTION – CARBON TANK SLURRY MIXER
3/8" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL DEMOLISH EXISTING PAC STRUCTURE INCLUDING THE CMU STORAGE BUILDING, CONCRETE STAIRS, BASEMENT LEVEL, AND CARBON TANK. CONTRACTOR SHALL DEMOLISH MECHANICAL MIXING EQUIPMENT, ELECTRICAL AND MECHANICAL IN THE BASEMENT OF EXISTING PAC STRUCTURE. ALL PIPING WITHIN THE STRUCTURE, AND SOME YARD PIPING. SEE YARD PIPING PLANS.
2. EXISTING STRUCTURE RECORD DRAWINGS ARE SHOWN FOR REFERENCE. CONTRACTOR TO FIELD VERIFY.

KEY NOTES:

1. CONTRACTOR TO TEST THE BLOCK FILL IN THE CMU OVER THE PAC BUILDING FOR HAZARDOUS MATERIALS, INCLUDING ASBESTOS. IF FOUND, OBTAIN AN AIR QUALITY PERMIT FROM THE STATE AND PROVIDE ABATEMENT AS PART OF THE DEMOLITION.
2. DEMOLISH 8" STEEL DRAIN PIPE UP TO EXISTING FLANGE. CONTRACTOR SHALL INSTALL BLIND FLANGE OR OTHERWISE CAP 8" DRAIN PIPE AT OR BEFORE THE EXISTING FLANGE. THE EXISTING 8" ASBESTOS CEMENT PIPE SHALL BE PROTECTED IN PLACE AND SHALL REMAIN IN SERVICE.

REV	DATE	BY	DESCRIPTION

DESIGNED JCB
DRAWN MM
CHECKED KMP
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 7687716-2202 — JACOB C. BAER — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
DEMOLITION
DETAILS

VERIFY SCALES
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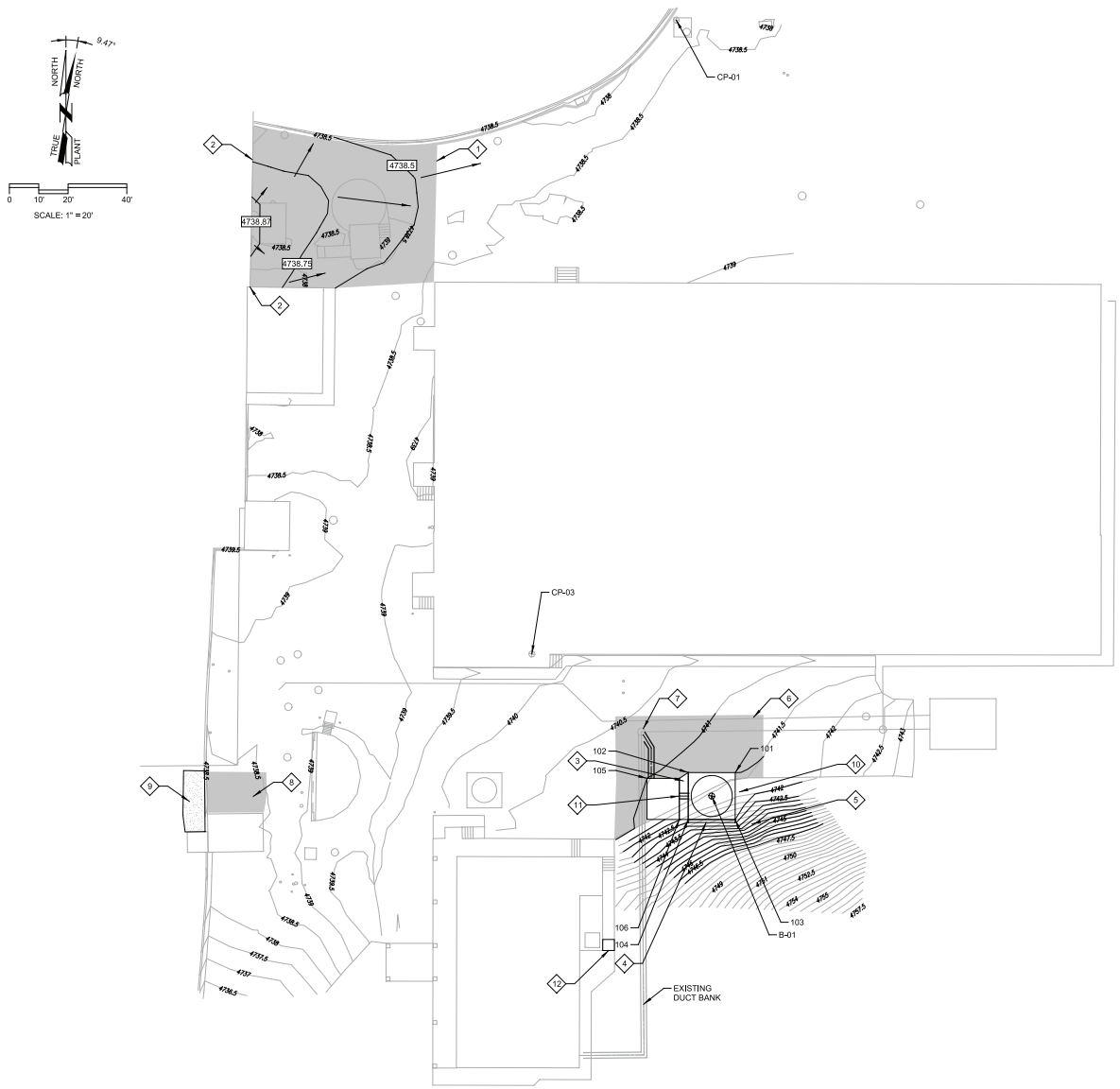
JOB NO. 201237
DRAWING NO. D03
SHEET NO. 9 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700D03.dgn



KEY NOTES:

1. EXTENTS OF NEW ASPHALT PATCH. BACKFILL HOLE LEFT FROM PAC DEMOLITION WITH STRUCTURAL FILL, PLACE 8" AGGREGATE BASE COURSE AND 4" ASPHALT PAVING. SEE DEMOLITION DRAWING D01.
2. PRIOR TO PAVING, PLACE ADDITIONAL AGGREGATE BASE COURSE TO RAISE FINISHED GRADE, AS SHOWN, TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE FENCE LINE AND GENERATOR BUILDING.
3. SIDEWALK BETWEEN PAC SILO FOUNDATION AND AUXILIARY BUILDING FOUNDATION PER TYPICAL DETAIL CR302 ON DRAWING TC-01. PROVIDE POSITIVE SLOPE TO NORTH TO ASPHALT.
4. PLACE 12" WIDE GRAVEL WRAPPED IN 4 OZ. GEOTEXTILE DOWN 36" BELOW GRADE FOR DRAINAGE OFF OF PAC SILO FOUNDATION. SEE STRUCTURAL DRAWINGS. PLACE 3"-4" GRAVEL ON TOP SURFACE OVER FILTER FABRIC TO TIE INTO GRASS LANDSCAPING.
5. RE-GRADE LANDSCAPE SLOPE AROUND PAC FOUNDATION. PLACE LANDSCAPE ROCK. CAP SPRINKLER PIPE DISTURBED DURING EXCAVATION.
6. EXTENTS OF NEW ASPHALT PATCH. SEE DEMOLITION DRAWINGS. REPLACE 4" ASPHALT. SCARIFY AND RE-COMPACT EXISTING ABC. REPLACE AS NEEDED.
7. AFTER ASPHALT DEMOLITION AROUND EXISTING ELECTRICAL PULL BOX, SCARIFY AND PLACE ADDITIONAL ABC TO BRING LOW AREAS TO GRADE. PROVIDE A HIGH POINT AT THE MANHOLE RING AND COVER TO DRAIN AWAY ONCE ASPHALT IS PLACED, ADD GRADE RING AS NEEDED.
8. EXTENTS OF ASPHALT PATCH FOR YARD PIPING WORK. BACKFILL YARD PIPE TRENCH WORK WITH ABC UP TO ASPHALT AND COMPACT. PATCH BACK 4" ASPHALT PAVEMENT.
9. RESTORE LANDSCAPING WITH GROUND COVER AND SPRINKLER SYSTEM, CURB AND GUTTER, AND FENCING BACK TO MATCH EXISTING PRIOR TO THE WORK.
10. CONTRACTOR TO POTHOLE AND FIELD VERIFY LOCATION OF 3" NG LINE. REROUTE AROUND PAC SILO FOUNDATION AS NEEDED. SEE YARD PIPING DRAWING C02.
11. CONDUIT TRENCH DUCT. SEE DRAWING E01. PLACE FIBER BOARD EXPANSION MATERIAL BETWEEN TRENCH DUCT AND CONCRETE SIDEWALK.
12. EXTENTS OF NEW SIDEWALK PATCH. SEE DEMOLITION DRAWINGS AND YARD PIPING DRAWING C02. REPLACE 4" SIDEWALK. SCARIFY AND RE-COMPACT EXISTING ABC. REPLACE AS NEEDED. INSTALL 1/2" EXPANSION JOINT AT INTERFACE WITH EXISTING WALL.

SURVEY CONTROL POINTS					
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEV	REMARKS
CP-01	CONTROL POINT NO. 1	3484410.01	1541637.47	4738.39	PK NAIL IN CONC. STRUCTURE
CP-03	CONTROL POINT NO. 3	3484188.93	1541624.45	4742.7	PK NAIL IN CONC. STRUCTURE
GEOTECHNICAL					
B-01	GEOTECHNICAL BORING	3484151.28	1541692.87		CENTERED IN PAC SILO LOCATION
NEW STRUCTURES					
101	PAC SILO FOUNDATION	3484160.47	1541699.45	4742.17	NE CORNER, TOC
102	PAC SILO FOUNDATION	3484157.87	1541683.67	4742.17	NW CORNER, TOC
103	PAC SILO FOUNDATION	3484144.69	1541702.06	4742.00	SE CORNER, TOC
104	PAC SILO FOUNDATION	3484142.08	1541686.28	4742.00	SW CORNER, TOC
105	PAC AUX BLDG	3484153.60	1541670.14	4742.15	NW CORNER, TOC
106	PAC AUX BLDG	3484141.58	1541692.87	4742.00	SE CORNER, TOC

HORZ. DATUM
NAD_83 STATE PLANE
UTAH NORTH ZONE
US SURVEY FOOT

VERT. DATUM
NAVD 88

REV	DATE	BY	DESCRIPTION

DESIGNED JCB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 7667716-2202 JACOB C. BAER STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

CIVIL

GRADING AND PAVING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. C01
SHEET NO. 10 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700C01.dgn

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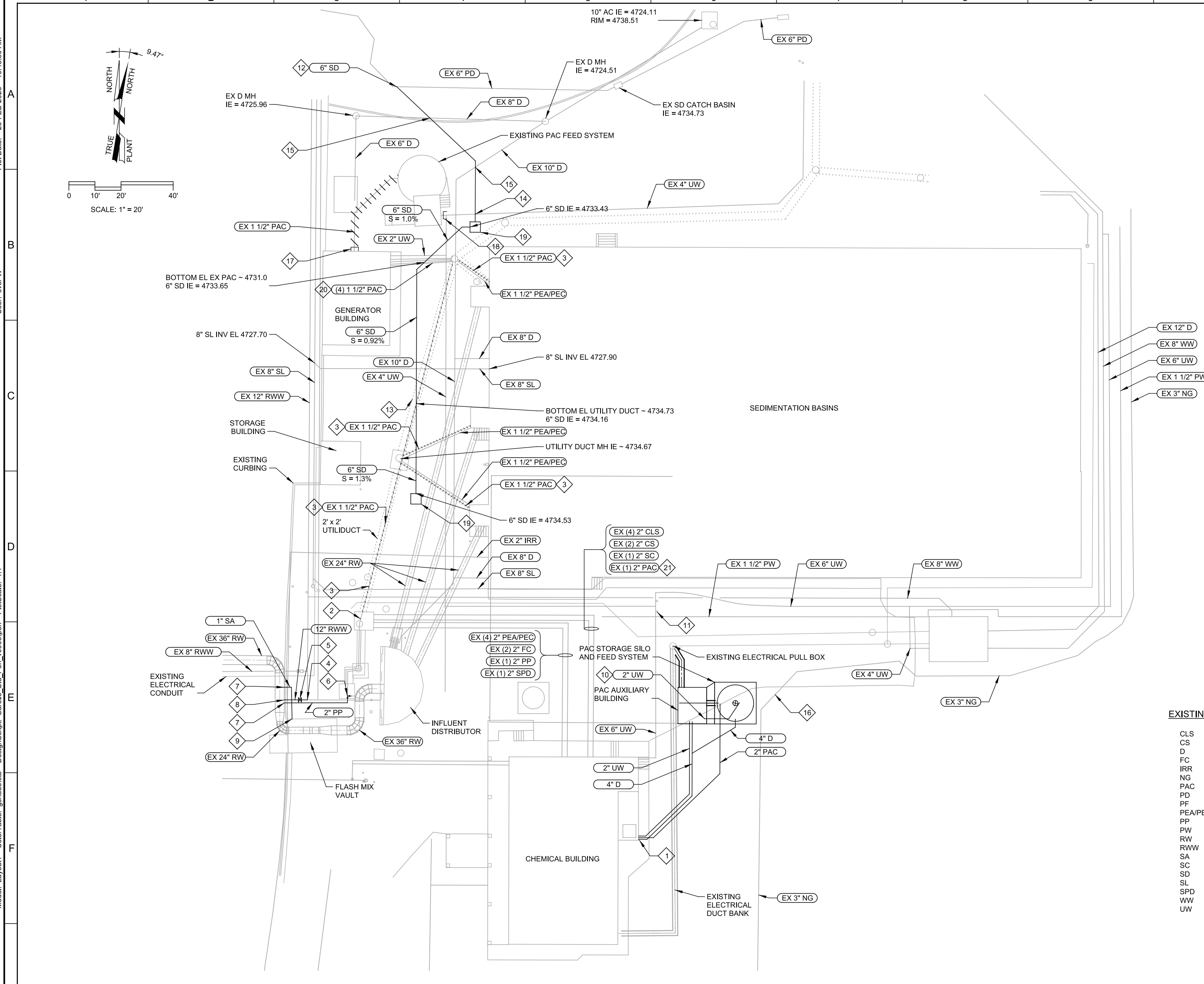

GENERAL NOTES:

1. PROVIDE AT LEAST 2% SLOPE ON DRAIN LINES FROM PAC STORAGE SILO AND AUXILIARY BUILDING.
2. CONTRACTOR TO VERIFY ALL PIPE MATERIALS, SIZES, AND ELEVATIONS IN THE FIELD.

\# KEY NOTES:

1. CORE DRILL THROUGH EXISTING CHEMICAL BUILDING STAIRWELL WALL TO ALLOW FOR THREE NEW PIPE PENETRATIONS. SEE DRAWING M02 FOR CONTINUATION INSIDE CHEMICAL BUILDING. SEE DEMOLITION SITE PLAN DRAWING D01 AND GRADING AND PAVING DRAWING C01.
2. CUT EXISTING 1 1/2" PAC PIPE. AN EXISTING 2" SPARE WILL BE REPURPOSED AS 2" PAC PIPE. CONNECT 2" PAC PIPE TO EXISTING 1 1/2" PAC PIPE WITH A 90 DEGREE BEND INSIDE EXISTING UTILITY VAULT.
3. REMOVE EXISTING 1 1/2" PAC PIPES AND ASSOCIATED PIPE SUPPORTS FROM THE EXISTING UTILITY DUCT BETWEEN GENERATOR BUILDING AND EACH FLOCCULATION BASIN INLET AND TO THE NEW PAC CONNECTION (SEE KEYNOTE 2 FOR NEW CONNECTION LOCATION).
4. REPLACE EXISTING 12" RWW 90 BEND WITH A TEE FITTING.
5. BURIED GATE VALVE. SEE TYPICAL DETAIL CY716.
6. REPLACE EXISTING 2" PP 90 DEGREE BEND WITH A TEE FITTING TO SPLIT INTO TWO FEED LINES (EXISTING AND NEW). PROVIDE A BALL VALVE ON EACH FEED LINE. CORE DRILL THROUGH EXISTING UTILITY VAULT AND ROUTE NEW 2" PP FEED LINE AS SHOWN.
7. CONNECT THE 1" SA AND THE 2" PP TO THE 36" STEEL PIPE WITH A 2" THREADOLET CONNECTION. PROVIDE A TRANSITION FROM PVC TO STEEL. SEE SECTION 01_14_00 WORK RESTRICTIONS.
8. REMOVE MORTAR COAT ON 36" RW AND WELD ON A 12" TAPPING TEE, ROMAC FTS445 WELD-ON TAPPING SLEEVE OR EQUAL. FOLLOW MANUFACTURERS INSTRUCTIONS FOR WELDING INSIDE AND OUT OF SLEEVE. VERIFY THICKNESS OF EXISTING STEEL PIPE. BOLT ON THE GATE VALVE AND THEN TAP THROUGH THE VALVE. COORDINATE A PLANT SHUTDOWN AS NEEDED. FITTING TO BE WRAPPED WITH WAX TAPE PRIOR TO BURY. CONNECT TO EXISTING 12" RWW BY REMOVING THE 90° FITTING AND INSTALLING A TEE WITH RESTRAINED MJ FITTINGS. POLY WRAP THE DUCTILE IRON PIPE AND FITTINGS PRIOR TO BURY. VALVE TO BE INSTALLED PER TYPICAL DETAIL CY716. SEE KEYNOTE 5.
9. SEE SAMPLE LINE CONTINUATION INSIDE FLASH MIX VAULT ON SHEET M04.
10. CONTRACTOR TO PROVIDE 2" UW WATER CONNECTION FROM AUXILIARY BUILDING TO PAC SILO THROUGH FLOOR SLABS. SEE DRAWING M01 FOR CONTINUATION INSIDE.
11. UW YARD SHUTOFF VALVE TO CHEMICAL BUILDING.
12. BID ALTERNATE: CONTRACTOR TO LOCATE EX 6" PD. RUN NEW 6" SD FROM CATCH BASIN AND TIE INTO EXISTING 6" PD WITH POSITIVE GRADE WITH A WYE FITTING. REPLACE ROCK LANDSCAPE AND CURB AND GUTTER AFTER PIPE WORK IS COMPLETE.
13. BID ALTERNATE: CONTRACTOR TO CONFIRM INVERT ELEVATION OF EXISTING UTILITY DUCT TO RUN 6" SD UNDERNEATH.
14. BID ALTERNATE: POTHOLE EXISTING 4" UW TO VERIFY DEPTH. ADJUST 6" SD TO RUN ABOVE OR BELOW IT AND INTERCEPT EX 6" SD AS NEEDED. 4" UW MAY BE LOOPED AT CONTRACTORS OPTION. EX 4" UW IS NOTED IN RECORD DRAWINGS AS ASBESTOS CEMENT. SEE DEMOLITION DRAWINGS FOR DEMOLITION REQUIREMENTS.
15. BID ALTERNATE: CONTRACTOR TO FIELD VERIFY INVERT ELEVATION OF EXISTING 10" D AND 8" D FROM MANHOLES OR POTHOLING TO DETERMINE CROSSING OF 6" SD.
16. CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF 3" NG PIPE. REROUTE AS NEEDED. SEE CIVIL GRADING PLAN DRAWING C01.
17. CUT AND CAP EX 1 1/2" PAC AT GENERATOR BUILDING. REMOVE PIPE TO EXISTING PAC STRUCTURE AS PART OF DEMOLITION. SEE DEMOLITION DRAWING D01 KEYNOTE 9.
18. CUT AND CAP EX 4" UW INTO EXISTING PAC STRUCTURE. REMOVE PIPE TO SILO AS PART OF DEMOLITION. SEE DEMOLITION DRAWING D01 KEYNOTE 10. COORDINATE SHUT DOWN OF UW WITH FACILITY.
19. BID ALTERNATE: 2' x 2' PRECAST STORMWATER CATCH BASIN WITH 6" WALL, OLDCASTLE PRECAST OR EQUAL. RUN 6" PVC SD PIPE TO CATCH BASIN TO THE NORTH. MAINTAIN A POSITIVE SLOPE OF 1%.
20. ABANDON IN PLACE QTY (4) 1 1/2" PAC LINES BETWEEN GENERATOR BUILDING AND UTILITY DUCT.
21. AN EXISTING 2" SPARE PIPE WILL BE REPURPOSED AS 2" PAC BETWEEN THE CHEMICAL BUILDING AND THE EXISTING UTILITY DUCT VAULT ADJACENT TO THE INFLUENT DISTRIBUTOR.

EXISTING PIPE ABBREVIATIONS:

CLS	CHLORINE SOLUTION
CS	CAUSTIC SODA
D	DRAIN
FC	FERRIC CHLORIDE
IRR	IRRIGATION
NG	NATURAL GAS
PAC	POWDERED ACTIVATED CARBON
PD	PLANT DRAIN
PF	POLYMER FEED
PEA/PEC	CATIONIC OR ANIONIC POLYMER
PP	POTASSIUM PERMANGANATE
PW	POTABLE WATER
RW	RAW WATER
RWW	RETURN WASH WATER
SA	SAMPLE LINE
SC	SPARE CHEMICAL
SD	STORM DRAIN
SL	SLUDGE
SPD	SUMP PUMP DISCHARGE
WW	WELL WATER
UW	UTILITY WATER

REV	DATE	BY	DESCRIPTION

DESIGNED JCB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 7667716-2202 JACOB C. BAER STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
CIVIL
YARD PIPING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
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JOB NO. 201237
DRAWING NO. C02
SHEET NO. 11 OF 46

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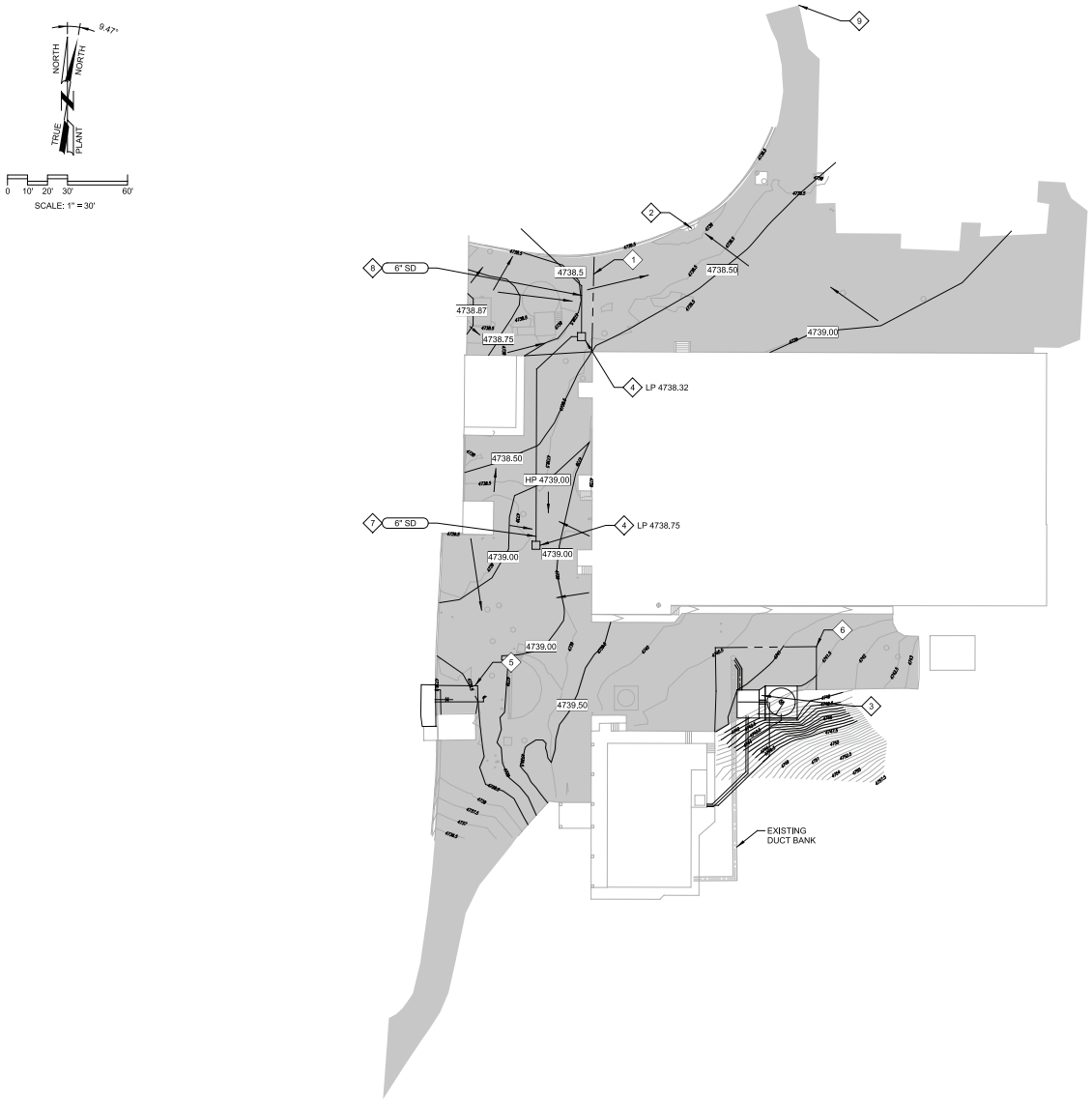

GENERAL NOTES:

1. SHADED AREA SHOW IS FOR AN ASPHALT REPLACEMENT BID ALTERNATE. CONTRACTOR TO PROVIDE A BID PRICE TO REMOVE THE 4" ASPHALT, RE-GRADE IN AREAS THAT HAVE ALTERED SLOPE, AND RE-PAVE WITH 4" ASPHALT. THE BASE BID PAVEMENT AREAS SHOWN ON THE CIVIL GRADING PLANS ARE TO BE SUBTRACTED FROM THE BID ALTERNATE PRICE.

KEY NOTES:

1. EXTENTS OF NEW ASPHALT PATCH IN BASE BID. SEE DEMOLITION AND CIVIL GRADING DRAWINGS.
2. CATCH BASIN FOR SITE DRAINAGE. LIFT SUBGRADE AROUND BOX SO AFTER PAVING IT IS THE LOW POINT IN THIS AREA.
3. CONCRETE SIDEWALK BETWEEN PAC SILO AND AUXILIARY BUILDING IN BASE BID. SEE CIVIL GRADING DRAWINGS.
4. INSTALL A NEW 2' x 2' PRECAST CATCH BASIN AT THE LOW POINT. PIPE 6" PVC SD PIPE NORTH PER KEYNOTE 7 AND KEYNOTE 8.
5. EXTENTS OF NEW ASPHALT PATCH IN BASE BID FOR YARD PIPING WORK. SEE CIVIL GRADING AND YARD PIPING DRAWINGS.
6. EXTENTS OF NEW ASPHALT PATCH IN BASE BID. SEE DEMOLITION AND CIVIL GRADING DRAWINGS.
7. INSTALL CATCH BASINS AND ROUTE 6" SD PIPE UNDER UTILITY DUCT TO NORTH CATCH BASIN. SEE YARD PIPING DRAWING C02.
8. INSTALL CATCH BASINS AND ROUTE 6" SD PIPE NORTH TO INTERCEPT EX 6" PD. CONNECT TO PIPE WITH A WYE FITTING. SEE YARD PIPING DRAWING C02.
9. NEW ASPHALT IN THE BID ALTERNATE SHALL EXTEND TO THE JOINT BETWEEN OLD ASPHALT AND NEWER ASPHALT.

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CIVIL
ASPHALT REPLACEMENT AND STORMWATER UPGRADES BID ALTERNATE

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JOB NO. 201237
DRAWING NO. C03
SHEET NO. 12 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700C03.dgn

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ColorTable: gsshade.ctb
Model: Layout1
LAST SAVED BY: mmorris

GENERAL NOTES:

1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH PROJECT DRAWINGS BY OTHER DISCIPLINES AND WITH THE SPECIFICATIONS.

2. UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE GENERAL NOTES AND TYPICAL DETAILS.

3. PRESENTATION CONVENTIONS FOR STRUCTURAL DRAWINGS:

   A. SCREENED LINE WORK INDICATES EXISTING CONDITIONS.
   B. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES.
   C. PLANS ARE TREATED AS HORIZONTAL SECTIONS. (I.E.: "PLAN AT ELEVATION 110" SHOWS CONSTRUCTION AT AND BELOW ELEVATION 110.)

4. VERIFY DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK. ADVISE ENGINEER IMMEDIATELY OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DIMENSIONS, AND INFORMATION SHOWN ON THESE DRAWINGS. CONFIRM THE FOLLOWING BEFORE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS:

   A. DIMENSIONS AND WEIGHTS FOR EQUIPMENT SELECTED.
   B. SIZES AND LOCATIONS OF EQUIPMENT PADS FOR EQUIPMENT SELECTED.

5. TYPICAL DETAILS ARE INCLUDED ON THE "TS" DRAWINGS.

   A. TYPICAL DETAILS ARE INTENDED TO APPLY AT LOCATIONS DESCRIBED BY THEIR TITLES, EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
   B. IN STRUCTURAL TYPICAL DETAILS, ORIENTATION OF BARS IN EACH MAT OF REINFORCEMENT (WHETHER "LINES" OR "DOTS"ARE CLOSER TO THE FACE OF THE CONCRETE) IS GENERALLY ARBITRARY. SEE DRAWINGS OF EACH STRUCTURE FOR ORIENTATION REQUIRED AT THAT STRUCTURE.

6. SEE CIVIL DRAWINGS FOR STRUCTURE COORDINATES. POINTS ON THE STRUCTURES TO WHICH SITE COORDINATES REFER ARE SHOWN ON THE STRUCTURAL PLANS.

7. DRAWINGS PREPARED BY OTHER DISCIPLINES INCLUDE OPENINGS, ANCHORS, PIPES, CONDUITS, AND OTHER ITEMS THAT ARE EMBEDDED INTO OR PASS THROUGH STRUCTURES.

   A. CONFIRM SIZE AND LOCATIONS OF OPENINGS, PENETRATIONS AND EMBEDMENT FOR ITEMS AND EQUIPMENT FURNISHED.
   B. IN GENERAL, OPENINGS, EMBEDMENTS, AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
   C. SEE MECHANICAL DRAWINGS FOR DETAILS OF PIPE PENETRATIONS, PIPE SUPPORTS, AND ASSOCIATED STRUCTURAL REQUIREMENTS.
   D. SEE MECHANICAL DRAWINGS FOR EQUIPMENT PADS AND PIPE SUPPORTS.

STRUCTURAL DESIGN CRITERIA - GENERAL:

SEE DRAWINGS OF INDIVIDUAL STRUCTURES FOR SPECIFIC DESIGN CRITERIA BASED ON THESE OVERALL CRITERIA FOR THE SITE.

1. BUILDING CODE:

   A. 2018 INTERNATIONAL BUILDING CODE ("IBC 2018") WITH ASCE 7-16.
   B. LOCAL AMENDMENTS: UTAH STATE CODE.

2. STRUCTURE RISK CATEGORY: SEE PLANS FOR EACH STRUCTURE.

3. DEAD LOADS: CALCULATED FOR STRUCTURE SELF-WEIGHT.

4. LIVE LOADS: (REDUCTIONS NOT USED)

   A. LIVE LOAD: SEE PLANS.
   B. EQUIPMENT LOADS: SEE PLANS.

5. SNOW LOAD DATA:

   A. GROUND SNOW LOAD, Pg = 41 PSF.
   B. SNOW EXPOSURE FACTOR, Ce = 0.9.
   C. FLAT ROOF SNOW LOAD: 34 PSF (MINIMUM).

6. WIND DESIGN DATA:

   A. SPECIAL WIND REGION: NO
   B. WIND-BORNE DEBRIS REGION: NO
   C. BASIC WIND SPEED (3 SEC GUST, 33 FEET ABOVE GROUND): 109 MPH.

8. EARTHQUAKE DESIGN DATA:

		0.2 SECOND		*1.0 SECOND	
A.	SITE CLASS: D.				
B.	MAPPED SPECTRAL RESPONSE ACCELERATIONS:	Ss = 1.32	g	S1 = 0.50	g
C.	SITE COEFFICIENTS:	Fa = 1.20		Fv = 1.80	
D.	MAXIMUM CONSIDERED ACCELERATIONS:*	Sms = 1.58	g	Sm1 = 1.34	g
E.	DESIGN SPECTRAL RESPONSE ACCELERATIONS:*	Sds = 1.06	g	Sd1 = 0.90	g

   (* 5% DAMPED)

9. CONSTRUCTION LOADS:
   STRUCTURES HAVE BEEN DESIGNED FOR OPERATING LOADS ON COMPLETED FACILITIES. UNTIL CONSTRUCTION IS COMPLETE AND MEMBERS HAVE ACHIEVED THEIR DESIGN STRENGTH, PROTECT STRUCTURES AS REQUIRED BY SHORING, BRACING, AND BALANCING.

GEOTECHNICAL REPORT / FOUNDATION DESIGN CRITERIA:

1. GEOTECHNICAL INVESTIGATION REPORT:

   TITLE: PAC SILO
   PREPARED BY: AGEC APPLIED GEOTECH.
   REPORT NO: 1220741 DATED: 11/22/22.

2. FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT.

   A. NET ALLOWABLE BEARING PRESSURE: 2,000 PSF.

   B. FROST DEPTH: 30"

   C. LATERAL EARTH PRESSURE (UNO):
   SURCHARGE: EQUIVALENT TO 2 FEET OF SOIL ABOVE FINISHED GRADE.

	STATIC	SEISMIC
ACTIVE (PSF/FT):	50	93
AT REST (PSF/FT):	65	93
PASSIVE (PSF/FT):	250	207
SLIDING COEFFICIENT OF FRICTION:	0.35	0.35

TYPICAL STRUCTURAL MATERIALS:

1. MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

2. SEE PROJECT SPECIFICATIONS AND NOTES ON DRAWINGS OF SPECIFIC STRUCTURES FOR DETAILED AND LOCATION-SPECIFIC REQUIREMENTS.

REINFORCING STEEL (FOR CONCRETE AND MASONRY):

1. DEFORMED BARS:
   A. TYPICAL: ASTM A 615, GRADE 60.

CONCRETE:

1. NORMAL DENSITY.

2. MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH, f'c (AT 28 DAYS UNO).

   A. STRUCTURES: "CLASS A" f'c = 4500 PSI.
   B. FILL AND THRUST BLOCKS: "CLASS C" f'c = 2500 PSI.
   C. ELECTRICAL DUCT ENCASEMENT: "CLASS CE" f'c = 2500 PSI.
   D. PRECAST MEMBERS: "CLASS D" f'c = 5000 PSI.
   E. PAVING/CUB AND GUTTER/SIDEWALK: "CLASS PM" f'c = 4500 PSI.

STRUCTURAL STEEL:

1. SECTIONS

   A. SHAPES W, WT: ASTM A 992 (Fy = 50 KSI)
   B. SHAPES S, ST, M, MT, HP, C, MC, L: ASTM A 36 (Fy = 36 KSI)
   C. PLATES AND BARS: ASTM A 36 (Fy = 36 KSI)
   D. PIPES: ASTM A 53, GRADE B (Fy = 35 KSI)
   E. HOLLOW STRUCTURAL SECTIONS:
      ROUND: ASTM A 500, GRADE B (Fy = 42 KSI)
      SQUARE AND RECTANGULAR: ASTM A 500, GRADE B (Fy = 46 KSI)

2. CONNECTIONS:

   A. BOLTS - STEEL TO-STEEL:
      ASTM F 3125 GRADE A325 HIGH-STRENGTH BOLTS, WITH LOAD INDICATOR WASHERS.
   B. BOLTS - STEEL TO CONCRETE OR MASONRY:
      ANCHOR BOLTS WITH HEX FORGED HEAD.
      ASTM F 1554, GRADE 36 GALVANIZED.
   C. WELDS - SHIELDED METAL ARC PROCESS USING E70-XX ELECTRODES.

STAINLESS STEEL:

1. ANSI TYPE 316/316L EXCEPT WHERE TYPE 304/304L IS INDICATED ON THE DRAWINGS.

2. SECTIONS: SHAPES AND BARS: ASTM A 276.

3. BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:

   A. MATCH ALLOY OF THE STRUCTURAL MEMBERS CONNECTED.
   B. TYPE 316/316L: ASTM F 593, GRADE B8M, CLASS 1, HEAVY HEX.
   C. TYPE 304/304L: ASTM F 593, GRADE B8, CLASS 1, HEAVY HEX.

4. WELDED CONNECTIONS:

   A. TYPE 316L: E316L-15 ELECTRODES.
   B. TYPE 304L: E304L-15 ELECTRODES.

CONSTRUCTION:

CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

EXCAVATION AND BACKFILLING:

1. EXPOSE AND PREPARE SUBGRADE AS SHOWN ON THE DRAWINGS AND SPECIFIED. OBTAIN ENGINEER'S OBSERVATION OF SUBGRADE SURFACES, AS EXPOSED AND AS PREPARED, BEFORE PROCEEDING WITH FOUNDATION CONSTRUCTION.

CONCRETE:

1. SEE S101/TYP FOR CONCRETE NOTES, INCLUDING CLEAR COVER AND LAP SPLICE LENGTH REQUIREMENTS FOR REINFORCING.

2. SUBMIT LOCATIONS OF CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS FOR ACCEPTANCE BY THE ENGINEER BEFORE FORM LAYOUT.

3. PROVIDE CHAMFER AT EXPOSED EDGES OF CAST-IN-PLACE CONCRETE. SEE SPECIFICATION 03_11_07 FOR CHAMFERS.

4. PROVIDE REINFORCING:

   A. AT OPENINGS - AS INDICATED IN S180/TYP.

5. WELDING OF REINFORCING IS NOT PERMITTED.

6. MAINTAIN MINIMUM 3 INCHES CLEAR CONCRETE COVER BETWEEN REINFORCING AND EMBEDMENTS.

7. FINISH CONCRETE AS SPECIFIED IN SECTION 03_35_29.

8. CONCRETE PADS

   A. EQUIPMENT PAD SEE S302/TYP.

   B. HOUSEKEEPING PAD FOR ELECTRICAL EQUIPMENT SEE S350/TYP.

STEEL AND STAINLESS STEEL - CONNECTIONS:

1. BOLTED:

   A. MADE USING 3/4-INCH DIAMETER BOLTS.
   B. HAVING A MINIMUM OF 2 BOLTS, SPACED NOT CLOSER THAN 3 INCHES ON CENTER.
   C. WITH A DISTANCE OF AT LEAST 1 1/2 INCHES FROM CENTER OF BOLT TO ANY EDGE OF A PLATE OR STRUCTURAL ELEMENT.

2. WELDED:

   A. FILLET WELDS: PER AWS CODE BASED ON THE THICKNESS OF THE MATERIALS BEING JOINED, AND FULL LENGTH OF THE JOINT.

3. INTERFACE BETWEEN MATERIALS:

   A. AT BOLTED CONNECTIONS THAT INCLUDE DIFFERENT METALS (E.G.: STEEL AND STAINLESS STEEL, OR ALUMINUM AND STEEL) PROVIDE ISOLATING SLEEVES AND WASHERS AS SPECIFIED IN SECTION 05_05_24.
   B. WHERE ALUMINUM IS IN CONTACT WITH MASONRY OR CONCRETE, COAT ALUMINUM SURFACES WITH A BITUMINOUS COATING.

4. POST-INSTALLED ANCHORS IN CONCRETE:

   A. INSTALL IN FULL COMPLIANCE WITH ACCEPTED BUILDING CODE EVALUATION REPORT AND MANUFACTURER'S INSTRUCTIONS.
   B. DO NOT CUT, DAMAGE, OR INTERRUPT EXISTING REINFORCEMENT TO INSTALL ANCHORS. USE NON-DESTRUCTIVE TESTING EQUIPMENT TO IDENTIFY LOCATIONS OF REINFORCEMENT IN MEMBERS BEFORE DRILLING HOLES FOR ANCHORS.

METAL FABRICATIONS:

1. HANDRAILS AND GUARDRAILS:

   A. STEEL, EXCEPT WHERE OTHER MATERIALS ARE NOTED.

2. GRATING:

   A. ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. GRATING AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.
   C. UNLESS INDICATED ON THE DRAWINGS AS "REMOVABLE GRATING", SECURELY FASTEN GRATING TO SUPPORTS AS INDICATED IN S559/TYP.

3. COVER PLATES:

   A. STEEL WITH STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. COVER PLATE AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.

SPECIAL INSPECTION:

1. SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01_45_24 FOR DETAILS.

2. DIVISION 2 SITE CONSTRUCTION (EARTHWORK)

   A. EXCAVATION DEPTH.
   B. ADEQUACY OF EXPOSED SURFACE TO PROVIDE REQUIRED SUPPORT.
   C. PREPARATION OF SOILS/SURFACES SUPPORTING CONSTRUCTION.
   D. FILL AND BACKFILL.

3. DIVISION 3 CONCRETE:

   A. LOCATIONS.
   B. FORMWORK AND MEMBER SIZES.
   C. REINFORCING STEEL.
   D. ANCHORS: CAST-IN AND POST-INSTALLED.
   E. CONCRETE MIX AND PLACEMENT.
   F. PROTECTION AND CURING PROCEDURES.
   G. PRECAST CONCRETE.

4. DIVISION 5 METALS

   A. GENERAL ALL METALS:
      1) MEMBER LOCATIONS.
      2) MEMBER SIZES/TYPES.
      3) ANCHORS - CAST-IN AND BUILT-IN ANCHOR BOLTS.
      4) ANCHORS - POST-INSTALLED MECHANICAL AND ADHESIVE.

   B. STRUCTURAL STEEL (CARBON AND STAINLESS).
      1) HIGH-STRENGTH BOLTING.
      2) WELDING.

STRUCTURAL OBSERVATION:

1. STRUCTURAL OBSERVATION IS REQUIRED DURING AND AT SPECIFIC STAGES OF CONSTRUCTION. SEE SPECIFICATION SECTION 01_45_24 FOR DETAILS.

STRUCTURAL SYMBOLS:

1. SEE GENERAL DRAWINGS FOR KEY TO DRAWING TITLES AND SECTION CUTS, AND FOR DEFINITION OF MATERIALS SHADING PATTERNS.

2. WELDING: SYMBOLS: IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) A2.4.

STRUCTURAL ABBREVIATIONS:

1. SEE GENERAL DRAWINGS FOR GENERAL LIST OF ABBREVIATIONS USED ON DRAWINGS.

2. ABBREVIATIONS FOR NAMES OF TECHNICAL GROUPS MAY BE FOUND IN THE PROJECT SPECIFICATIONS.

3. STRUCTURAL MEMBERS:

   A. STEEL: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S STEEL CONSTRUCTION MANUAL, CURRENT EDITION.

4. ABBREVIATIONS FOR STRUCTURAL DRAWINGS:
   WHEN USED ON THE STRUCTURAL DRAWINGS, THE FOLLOWING ABBREVIATIONS HAVE THE MEANINGS LISTED.

REINFORCEMENT:		OTHER:	
BO	BOTTOM OF	L	ANGLE
EF	EACH FACE	PL	PLATE
I.F.	INSIDE FACE		
O.F.	OUTSIDE FACE		
T.O.	TOP OF		
#	NUMBER (REINFORCING BAR SIZE)		

DEFERRED DESIGN SUBMITTALS

AS DEFINED IN THE BUILDING CODE, DEFERRED DESIGN SUBMITTALS ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION, AND THAT ARE TO BE REVIEWED BY THE REGISTERED DESIGN PROFESSIONAL AND SUBSEQUENTLY SUBMITTED TO THE BUILDING OFFICIAL.

DEFERRED DESIGN SUBMITTALS FOR THIS PROJECT INCLUDE:

1. DIVISION 3 CONCRETE.

2. DIVISION 5 METALS.

   A. 05_05_24 MECHANICAL ANCHORING AND FASTENING TO CONCRETE.

3. DIVISION 15.

   A. 15050 COMMON WORK RESULTS FOR MECHANICAL EQUIPMENT.
   B. 15061 PIPE SUPPORTS.

4. LIFTING EYES: SUBMIT DETAILS WITH CALCULATIONS DEMONSTRATING THE SPECIFIED LOAD CAPACITY TO ENGINEER. DELIVER REMOVABLE EYES TO OWNER AFTER INSTALLATION OF REMOVABLE PANELS.

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED FF
DATE FEBRUARY 2023

PROFESSIONAL STRUCTURAL ENGINEER — No. 7882644-2203 — D. CRAIG BRINCK — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

GENERAL

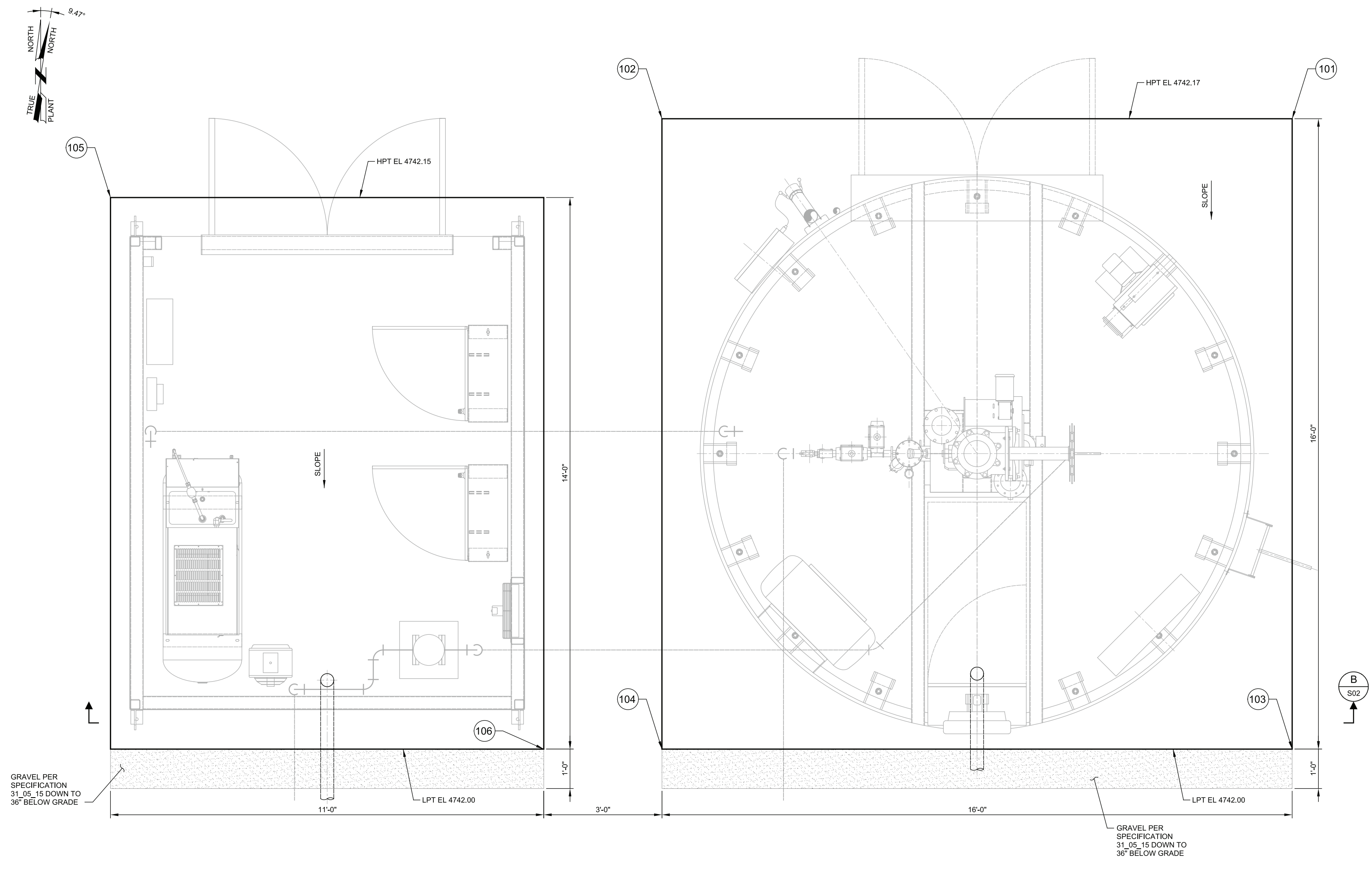
STRUCTURAL NOTES

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. GS01
SHEET NO. 13 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GS01.dgn

Model: Layout1 ColorTable: gsshade.ctb DesignScript: CarolloStd_Pen_v0905.pen PlotScale: 1:1 User: avcPW Plot Date: 22-FEB-2023 1:45:30 PM LAST SAVED BY: mmorris



A **PLAN**
SCALE: 3/4" = 1'-0"
FILE: 20123700S101

GENERAL NOTES:

1. SEE GENERAL DRAWINGS FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE DRAWING GS01 FOR GENERAL STRUCTURAL NOTES. SEE DRAWINGS TS01 THRU TS02 FOR TYPICAL STRUCTURAL DETAILS.
3. COORDINATE EQUIPMENT PAD SIZES AND LOCATIONS WITH MECHANICAL, ELECTRICAL, AND HVAC DRAWINGS AND WITH MANUFACTURER SUBMITTALS.
4. NOT ALL PENETRATIONS ARE SHOWN ON THESE DRAWINGS. COORDINATE PENETRATIONS WITH THE MECHANICAL, ELECTRICAL, AND HVAC DRAWINGS, AND WITH MANUFACTURER SUBMITTALS.

(XXX) INDICATES SITE COORDINATES PER SCHEDULE ON CIVIL DRAWING C01.

STRUCTURAL DESIGN CRITERIA

REFER TO DRAWING GS01 FOR GENERAL DESIGN CRITERIA THAT ARE APPLICABLE TO ALL STRUCTURES:

1. ROOF LIVE LOADS:
   - A. SILO ROOF LIVE LOAD: 20 PSF
2. SNOW LOADS:
   - A. GROUND SNOW LOAD, pg: 41 PSF
   - B. UNIFORM FLAT ROOF SNOW LOAD, pf: 34 PSF
   - C. SLOPED ROOF SNOW LOAD, ps: 34 PSF
3. WIND LOADS:
   - A. RISK CATEGORY: III
   - B. BASIC WIND SPEED, V: 109 MPH
   - C. DIRECTIONALITY FACTOR, Kd: 1.0 (SILO), 0.85 (AUX BLDG)
   - D. EXPOSURE CATEGORY: C
   - E. TOPOGRAPHIC FACTOR, Kzt: 1.0
   - F. GROUND ELEVATION FACTOR, Ke: 1.0 (CONSERVATIVE)
   - G. GUST EFFECT FACTOR, G: 0.85
4. EARTHQUAKE LOADS:
   - A. RESPONSE SPECTRUM PARAMETERS:
     - i. SHORT PERIOD DESIGN ACCELERATION, SDS: 1.056
     - ii. 1-SEC PERIOD DESIGN ACCELERATION, SD1: 0.896
     - iii. LONG PERIOD TRANSITION PERIOD, TL: 8 SEC
   - B. SEISMIC IMPORTANCE FACTOR, Ie: 1.25
   - C. SILO SEISMIC PARAMETERS:
     - i. SYSTEM: WELDED STEEL SILO/SKIRT SUPPORTED VERTICAL VESSEL
     - ii. RESPONSE MODIFICATION FACTOR, R: 2
     - iii. OVERSTRENGTH FACTOR, Ωo: 2
     - iv. DEFLECTION AMPLIFICATION FACTOR, Cd: 2
     - v. SEISMIC RESPONSE COEFFICIENT, Cs: 0.66
     - vi. SEISMIC BASE SHEAR: V: 27.1 k
   - D. AUXILIARY BUILDING SEISMIC PARAMETERS:
     - i. SYSTEM: STEEL ORDINARY MOMENT FRAME
     - ii. RESPONSE MODIFICATION FACTOR, R: 1
     - iii. OVERSTRENGTH FACTOR, Ωo: 1
     - iv. DEFLECTION AMPLIFICATION FACTOR, Cd: 1
     - v. SEISMIC RESPONSE COEFFICIENT, Cs: 1.32
     - vi. SEISMIC BASE SHEAR: V: 5.1 k

REV	DATE	BY	DESCRIPTION

DESIGNED DCB
DRAWN MM
CHECKED FF
DATE FEBRUARY 2023

PROFESSIONAL STRUCTURAL ENGINEER No. 7882644-2203 D. CRAIG BRINCK STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
STRUCTURAL
PAC SILO AND SUPPORT BUILDING FOUNDATION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. S01
SHEET NO. 14 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700S01.dgn

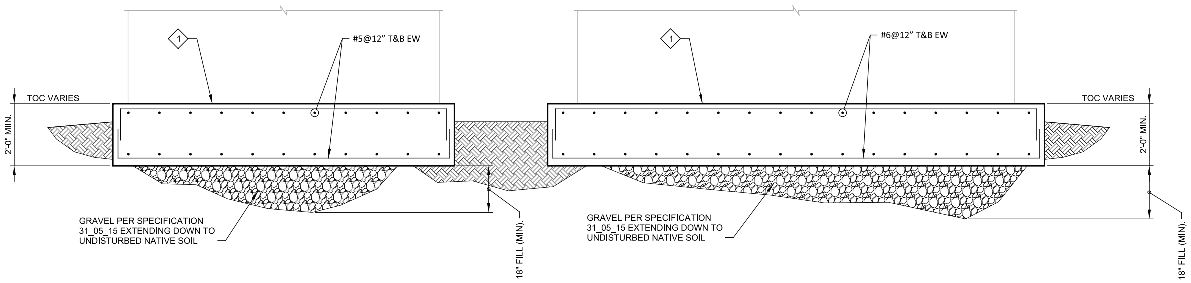
Plot Date: 22-FEB-2023 1:45:15 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

GENERAL NOTES:

1. FOR CONCRETE REINFORCING BARS SEE DETAILS S101/TYP, S144/TYP, S180/TYP.
2. COORDINATE PIPE AND ELECTRICAL CONDUIT PENETRATIONS WITH THE PAC EQUIPMENT MANUFACTURER. SEE MECHANICAL AND ELECTRICAL DRAWINGS.

KEY NOTES:

1. ANCHORAGE VARIES DEPENDING ON THE EQUIPMENT AND ANCHORING PRODUCTS SELECTED BY THE CONTRACTOR; THEREFORE, CONCRETE ANCHOR DESIGN IS THE CONTRACTOR'S RESPONSIBILITY. THE SLABS HAVE BEEN DESIGNED FOR GENERAL STRENGTH AND STABILITY FOR THE ESTIMATED SILO AND BUILDING LOADS, BUT THE ANCHOR DESIGN REQUIREMENTS MAY DICTATE A THICKER OR WIDER SLAB.



B SECTION
S01
SCALE: 1/2" = 1'-0"
FILE: 20123700S301

REV	DATE	BY	DESCRIPTION

DESIGNED DCB
DRAWN MM
CHECKED FF
DATE FEBRUARY 2023

PROFESSIONAL STRUCTURAL ENGINEER No. 7882644-2203 D. CRAIG BRINCK STATE OF UTAH

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
STRUCTURAL
PAC SILO AND SUPPORT BUILDING FOUNDATION SECTION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. S02
SHEET NO. 15 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700S02.dgn

Plot Date: 22-FEB-2023 1:45:22 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: mmorris

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	DESCRIPTION
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		HUB & SPIGOT JOINT (RUBBER GASKET)
		PUSH-ON JOINT (RESTRAINED)
		ADAPTER SIDE GROOVED END ADAPTER FLANGE
		FLANGED COUPLING ADAPTER
		FLANGED COUPLING ADAPTER WITH THRUST TIES
		FLEXIBLE COUPLING
		FLEXIBLE COUPLING WITH THRUST TIES
		METAL BELLOWS EXP JOINT
		ELASTOMER BELLOWS EXP JOINT
		FLEXIBLE COUPLING ADAPTER
		DISMANTLING JOINT
		EXPANSION COMPENSATOR
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER (FOT. FOB)
		UNION
		CAP
		ANCHOR
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		ELBOW, 22.5 DEGREE
		ELBOW, 11.25 DEGREE
		LATERAL

DOUBLE LINE	SINGLE LINE	DESCRIPTION
		GATE VALVE
		KNIFE GATE VALVE
		BUTTERFLY VALVE
		CHARACTERIZED BALL CONTROL VALVE
		BALL VALVE
		GLOBE VALVE
		3-WAY VALVE
		3-WAY GLOBE TYPE MIXING VALVE
		4-WAY VALVE
		DIAPHRAGM VALVE
		PLUG VALVE
		LUBRICATED PLUG VALVE
		CONCENTRIC PLUG VALVE
		LUBRICATED CONCENTRIC PLUG VALVE
		SWING CHECK VALVE
		WAFER CHECK VALVE
		PINCH VALVE
		BALL CHECK VALVE
		DUAL CHECK VALVE
		SILENT CHECK VALVE
		MUD VALVE (PLAN VIEW)
		NEEDLE VALVE
		CHECK BACKFLOW PREVENTER
		PIPE MATERIAL CHANGE
		FLOAT VALVE
		3-WAY PLUG VALVE
		BALL V-NOTCH VALVE
		PUMP DISCHARGE

MECHANICAL SYMBOLS

SINGLE LINE	DESCRIPTION
	AIR OR CHEMICAL DIFFUSER
	QUICK DISCONNECT HIGH PRESSURE AIR OR FLUSHING
	BATCHMETER
	AIR VENT
	BASKET STRAINER
	BLOWER
	CALIBRATION COLUMN
	COMPRESSOR/TURBINE
	COMPRESSOR: RECIPROCATING
	DIAPHRAGM SEAL
	DRAIN
	EJECTOR OR EDUCTOR
M	ELECTRIC MOTOR
	EQUIPMENT DRAIN
	EXPANSION JOINT, FLEXIBLE VIBRATION JOINT
	FAN: EXHAUST/SUPPLY
	FILTER
	FIRE HYDRANT
	FLAME ARRESTER
	FLAME ARRESTER WITH THERMALLY OPERATED VALVE
	FLOOR DRAIN
	FLOW SWITCH
	GAUGE: PRESSURE
	GAUGE: DIFFERENTIAL PRESSURE
	WEIR
	MIXER
	OIL OR MOISTURE TRAP
	PRIMARY LEVEL ELEMENT: BUBBLER
	PRIMARY LEVEL ELEMENT: ELECTRODE
	PRIMARY LEVEL ELEMENT: FLOAT SWITCH
	PRIMARY LEVEL ELEMENT: FLUID
	PRIMARY LEVEL ELEMENT: INVERTED COLUMN

SINGLE LINE	DESCRIPTION
	PRIMARY LEVEL ELEMENT: RADAR
	PRIMARY LEVEL ELEMENT: ULTRASONIC
	PRIMARY FLOW ELEMENT: FLUME
X	PRIMARY FLOW ELEMENT: X = C - CORIOLIS X = M - MAGNETIC X = P - PROPELLER X = PT - PITOT TUBE X = R - ROTAMETER X = T - TURBINE X = TH - THERMAL X = U - ULTRASONIC X = D - DENSITY
	PRIMARY FLOW ELEMENT: ORIFICE PLATE
	PRIMARY FLOW ELEMENT: VENTURI TUBE
	PRIMARY FLOW ELEMENT: WEIR
	PULSATION DAMPENER
	PUMP: CENTRIFUGAL
	PUMP: DIAPHRAGM
	PUMP: METERING
	PUMP: PLUNGER
	PUMP: PERISTALTIC TUBE METERING
	PUMP: PROGRESSIVE CAVITY
	PUMP: RECIPROCATING
	PUMP: ROTARY
	PUMP: SCREW
	PUMP: SUBMERSIBLE
	PUMP: VERTICAL LIFT
	PIPE REDUCER: CONCENTRIC
	PIPE REDUCER: ECCENTRIC (FOT, FOB)
	ROTARY CHEMICAL FEEDER
	RUPTURE DISK
	SAMPLE PORT
	SIGHT GLASS
	SLIDE GATE
	SLUICE GATE
	STRAINER: WYE TYPE

SINGLE LINE	DESCRIPTION
	STRAINER: WYE TYPE WITH BLOWOFF
	THERMOMETER
	VALVE: ANGLE
	VALVE: AIR RELIEF
	VALVE: CONE
	VALVE: FLAPPER CHECK
	VALVE: FOUR WAY
	VALVE: HOSE
	VALVE: PLUG CONCENTRIC
	VALVE: PRESSURE RELIEF PRESSURE-REDUCING REGULATOR
	VALVE: TELESCOPING
	VALVE: THREE WAY AIR OPERATED
M	VALVE: THREE WAY MOTOR OPERATED
S	VALVE: THREE WAY SOLENOID OPERATED
	VALVE: VACUUM
	BACKPRESSURE REGULATOR SELF-CONTAINED
	BACKPRESSURE REGULATOR W/ EXTERNAL PRESSURE TAP
	PRESSURE-REDUCING REGULATOR: SELF-CONTAINED
	PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP

IDENTIFICATION SYMBOLS

CHEMICAL INJECTION POINT — CHEMICAL / DWG NO.

PIPE DESIGNATOR — PIPE SIZE — FLOW STREAM — "X" XXX

UNIQUE IDENTIFIER — CONTINUATION FROM DWG NO. — CONTINUATION TO DWG NO.

CONTINUATION TAG — A B C

EQUIPMENT / VALVE TAG — XXX-XX-XXXX

KEY TAG — X

LINE SYMBOLS

PIPE ABOVE OR BELOW GROUND

PIPE UNDERNEATH SLAB OR STRUCTURE

FUTURE

EXISTING

DEMO

PROCESS LINE SYMBOLS

PRIMARY PROCESS FLOW IN PIPE

SECONDARY PROCESS FLOW IN PIPE

PRIMARY PROCESS FLOW IN CHANNEL

SECONDARY PROCESS FLOW IN CHANNEL

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

MECHANICAL

MECHANICAL LEGEND AND SYMBOLS

VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING — 0 — 1" — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

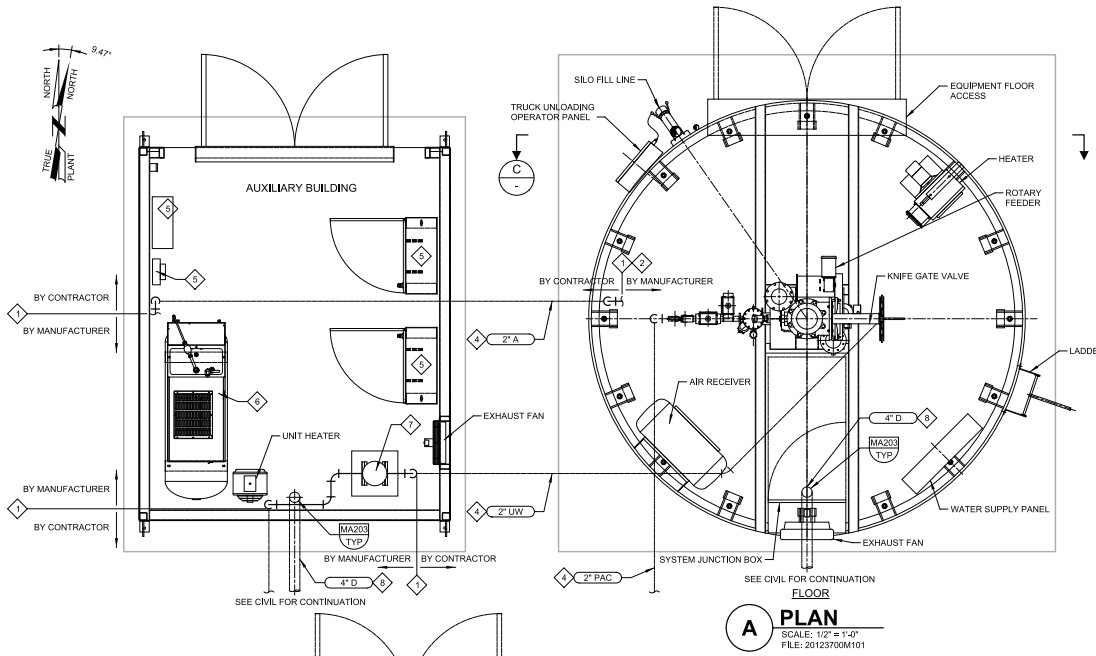
JOB NO. 201237

DRAWING NO. GM01

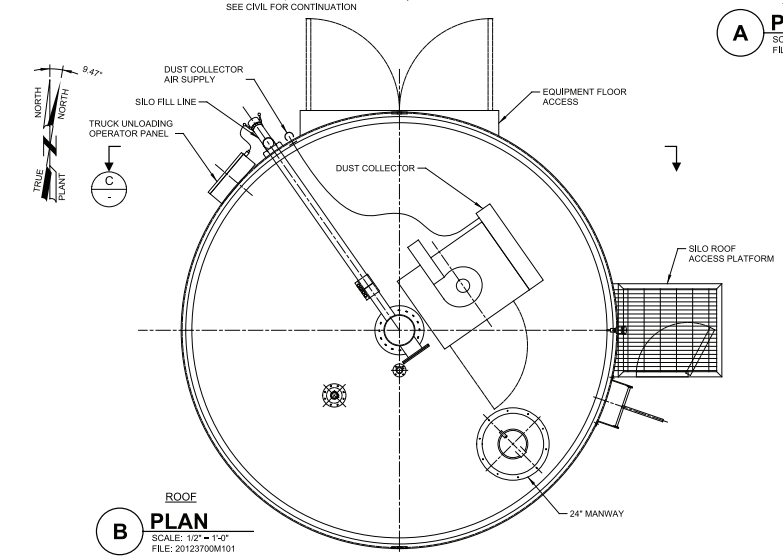
SHEET NO. 16 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GM01.dgn

Model: Layout1 ColorTable: gsthade.ctb DesignScript: CarolloStd_Pen_v09i05.pen PlotScale: 1:1 User: avcPW Plot Date: 22-FEB-2023 2:16:34 PM LAST SAVED BY: mmorris

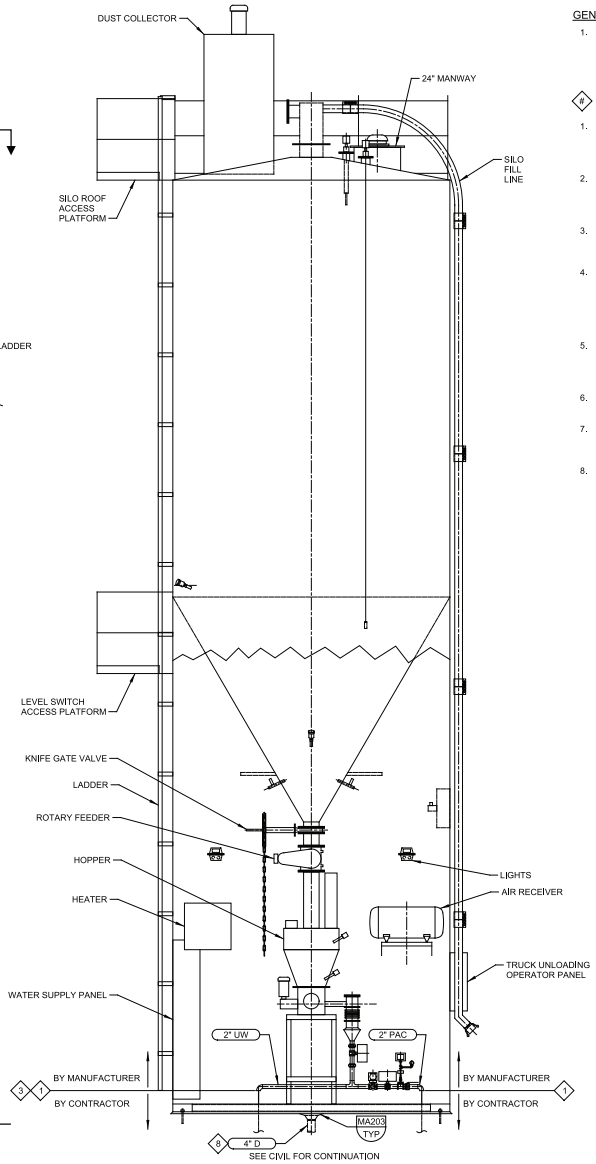


A PLAN
SCALE: 1/2" = 1'-0"
FILE: 20123700M101



ROOF

B PLAN
SCALE: 1/2" = 1'-0"
FILE: 20123700M101



C SECTION
SCALE: 3/8" = 1'-0"
FILE: 20123700M301

GENERAL NOTES:

1. AUXILIARY BUILDING AND SILO LAYOUTS SHOWN ARE APPROXIMATE. MANUFACTURER SHALL DETERMINE FINAL LAYOUT WITH ENGINEER APPROVAL.

KEY NOTES:

1. TRANSITION BETWEEN CONTRACTOR SUPPLIED AND MANUFACTURER SUPPLIED PIPING. SLAB PENETRATION LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR FINAL LOCATIONS.
2. CONTRACTOR SHALL RUN A SINGLE PIPE FOR COMPRESSED AIR TO THE INLET AIR MANIFOLD IN SILO. MANUFACTURER SHALL PROVIDE AIR DISTRIBUTION TO DUST COLLECTOR, SILO DISCHARGE AERATION, AND PNEUMATIC ACTUATED VALVES.
3. CONTRACTOR SHALL RUN A SINGLE UW PIPE TO THE SILO. MANUFACTURER SHALL PROVIDE DISTRIBUTION TO WETTING CONE AND PAC FEED WATER.
4. CONTRACTOR TO COORDINATE PIPE SIZE AND EQUIPMENT LOCATION WITH MANUFACTURER BEFORE LOCATING UTILITY WATER AND AIR PIPING BETWEEN SILO AND AUXILIARY BUILDING AND PAC PIPING FROM SILO. PIPING UNDER AND BETWEEN STRUCTURES TO BE CONCRETE ENCASED PER TYPICAL DETAIL CY119.
5. MANUFACTURER SHALL PROVIDE ELECTRICAL EQUIPMENT AND SHALL DETERMINE SIZE AND FINAL LOCATION IN AUXILIARY BUILDING. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS.
6. AIR COMPRESSOR (CMP-520) SHALL BE SIZED AND SUPPLIED BY MANUFACTURER.
7. BOOSTER PUMP (PMP-525) SHALL BE SIZED AND SUPPLIED BY MANUFACTURER. MANUFACTURER SHALL ALSO PROVIDE APPROPRIATELY SIZED PUMP STAND OR TABLE.
8. CONCRETE ENCASE DRAIN PIPES UNDER STRUCTURES PER TYPICAL DETAIL CY119.

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo

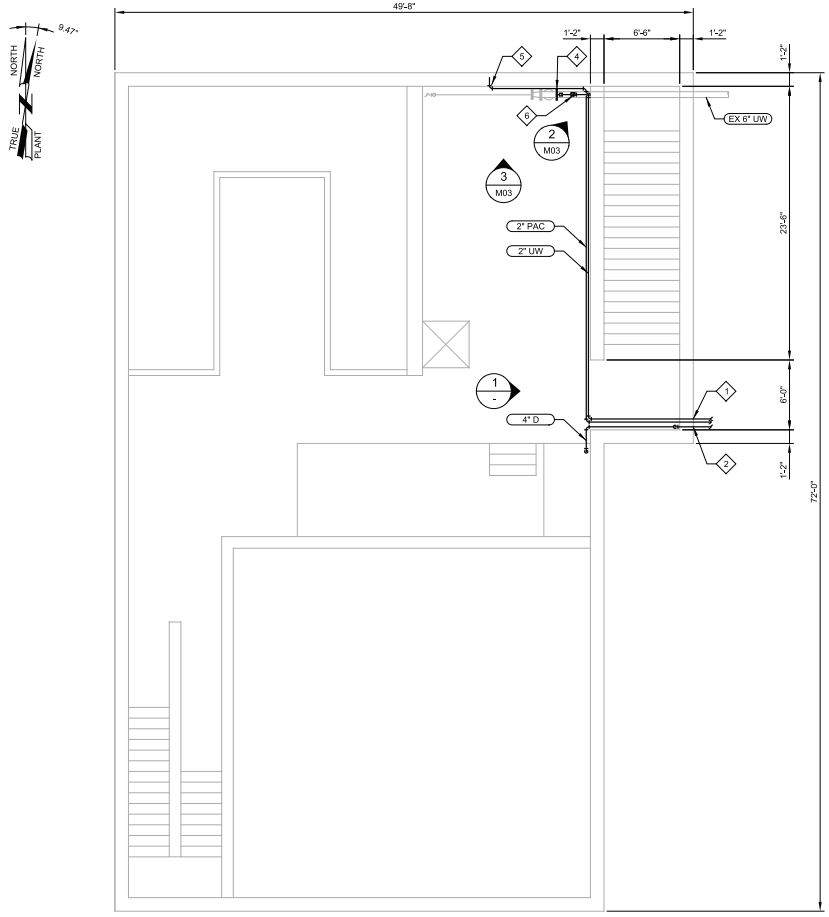
WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
MECHANICAL
PAC FEED SYSTEM PLANS AND SECTION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. M01
SHEET NO. 17 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700M01.dgn



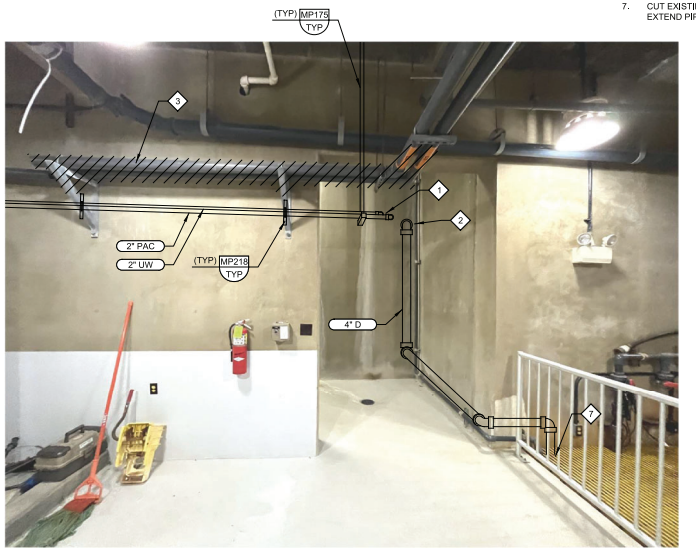
D PLAN
SCALE: 3/16" = 1'-0"
FILE: 20123700M9110

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING PIPING, SUPPORTS, AND EQUIPMENT IN THE CHEMICAL BUILDING. COORDINATE WITH ENGINEER ON ANY CONFLICTS OF NEW PIPE ROUTE.
2. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS BEFORE STARTING WORK.

KEY NOTES:

1. CORE DRILL HOLE FOR 2" UW AND 2" PAC AT APPROXIMATELY 4737.44. GROUT FILL ANNULAR SPACE. CONTRACTOR TO FIELD VERIFY ELEVATION OF 2" PAC CONNECTION AT UTILITY BOX EXIT ON NORTH WALL. PAC PIPE TO REMAIN AT SAME ELEVATION WITH NO VERTICAL BENDS. SEE CIVIL YARD PIPING FOR CONTINUATIONS.
2. CORE DRILL HOLE FOR 4" D. DRAIN LINE TO SLOPE AT LEAST 1/4" PER FOOT TO SUMP. SEE CIVIL YARD PIPING FOR CONTINUATION.
3. REMOVE EXISTING CAUSTIC SODA PIPING AND ASSOCIATED PIPE SUPPORTS THAT INTERFERE WITH NEW PIPE.
4. REPLACE EXISTING 6" BLIND FLANGE WITH A NEW 6" BLIND FLANGE WITH TAPPED THREADED 2" CONNECTION. COORDINATE WITH OWNER FOR UW SHUTOFF TO CHEMICAL BUILDING. PROVIDE BALL VALVE IMMEDIATELY AFTER TAP CONNECTION FOR ISOLATION OF 2" UW. SEE PHOTO 2.
5. CONNECT 2" PAC TO EXISTING SPARE PIPE. SEE PHOTO 3 ON DRAWING M03 FOR UTILITY BOX AND SPARE CONNECTION. SEE PIPE CONTINUATION IN CIVIL YARD PIPING.
6. SUPPLY NEW BACKFLOW PREVENTER ON 2" UW.
7. CUT EXISTING GRATING TO ALLOW PIPE TO DRAIN IN SUMP. EXTEND PIPE A MINIMUM OF 6" BELOW GRATING.



1 PHOTO
SCALE: NO SCALE
FILE: 2022-10-24 10.59.00.jpg

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
MECHANICAL
EXISTING CHEMICAL BUILDING MODIFICATION PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. M02
SHEET NO. 18 OF 46

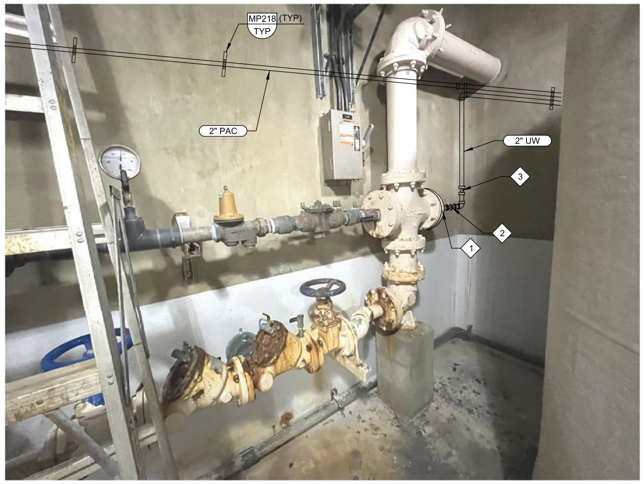
PROJECT NO. 201237-100000 FILE NAME: 20123700M02.dgn

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING PIPING, SUPPORTS, AND EQUIPMENT IN THE CHEMICAL BUILDING. COORDINATE WITH ENGINEER ON ANY CONFLICTS OF NEW PIPE ROUTE.

KEY NOTES:

1. REPLACE EXISTING 6" BLIND FLANGE WITH A NEW 6" BLIND FLANGE WITH TAPPED THREADED 2" CONNECTION. COORDINATE WITH OWNER FOR UW SHUTOFF TO CHEMICAL BUILDING. PROVIDE BALL VALVE IMMEDIATELY AFTER TAP CONNECTION FOR ISOLATION OF 2" UW.
2. SUPPLY NEW BACKFLOW PREVENTER ON 2" UW.
3. 2" BALL VALVE TO ISOLATE BFP.
4. CONNECT 2" PAC TO EXISTING SPARE STUBBED PIPE.



2 PHOTO (M02)
SCALE: NO SCALE
FILE: 2022-10-24 10.56.02.jpg

3 PHOTO (M02)
SCALE: NO SCALE
FILE: 2022-03-28 11.14.14.jpg

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

carollo

Weber Basin Water Conservancy District

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
MECHANICAL
EXISTING CHEMICAL BUILDING MODIFICATION DETAILS

VERIFY SCALES
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0 1"
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JOB NO. 201237
DRAWING NO. M03
SHEET NO. 19 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700M03.dgn

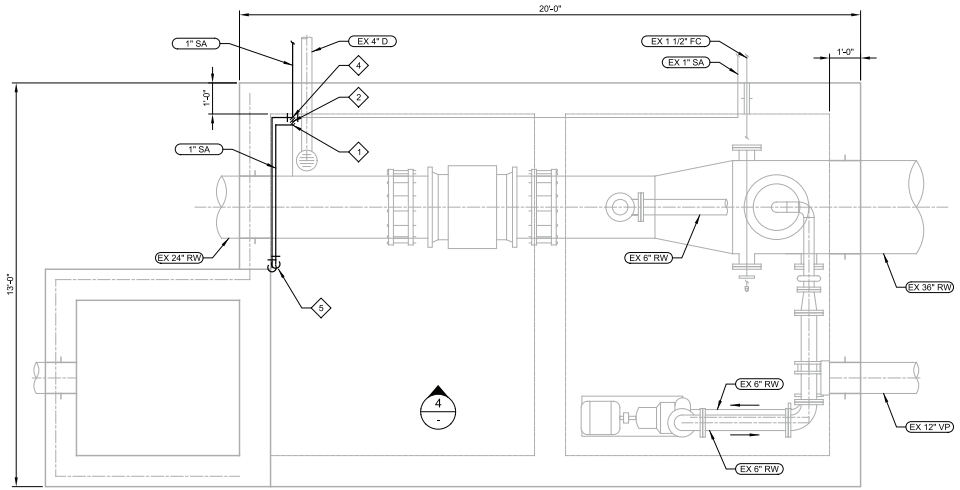
Plot Date: 22-FEB-2023 2:16:46 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: mmorris

GENERAL NOTES:

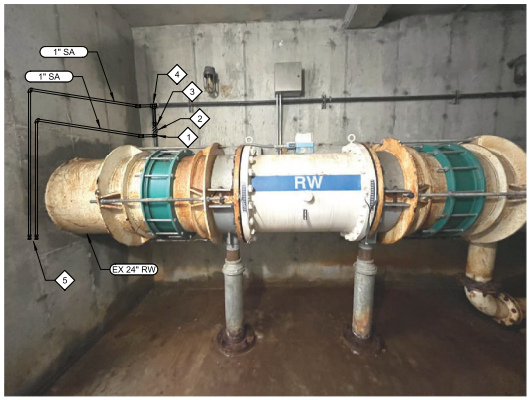
1. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING PIPING IN THE FLASH MIX VAULT. COORDINATE WITH ENGINEER ON ANY CONFLICTS OF NEW PIPE ROUTE.
2. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS BEFORE STARTING WORK.

KEY NOTES:

1. CUT EXISTING SAMPLE LINE AND ROUTE PIPE OVER 24" RW.
2. REMOVE EXISTING PIPE TO ALLOW FOR NEW SAMPLE LINE.
3. CORE DRILL HOLE FOR NEW 1" SA. GROUT FILL ANNULAR SPACE AROUND PIPE.
4. REPLACE 90 DEGREE BEND WITH TEE. CONNECT NEW SAMPLE LINE TO EXISTING PIPE AND ROUTE PIPE OVER 24" RW.
5. PROVIDE BALL VALVES ON BOTH SAMPLE CONNECTIONS 3'-6" ABOVE FINISHED FLOOR.



E **PLAN**
SCALE: 1/2" = 1'-0"
FILE: 20123700M120



4 - **PHOTO**
SCALE: NO SCALE
FILE: 2022-03-28 10.35.10.JPG

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo®

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

MECHANICAL

EXISTING FLASH MIX VAULT MODIFICATIONS
PLAN AND DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. M04
SHEET NO. 20 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700M04.dgn

ELECTRICAL PLAN SYMBOLS

IDENTIFICATION SYMBOLS

EQUIP # — EQUIPMENT AND INSTRUMENT IDENTIFICATION

EQUIPMENT/INSTRUMENT LOCATOR

LUMINAIRE IDENTIFICATION
- a = CIRCUIT DESIGNATION
- b = DEVICE SWITCHED FROM
- c = MOUNTING HEIGHT IN FEET TO BOTTOM OF FIXTURE
- X = LUMINAIRE TYPE, REFER TO THE LUMINAIRE SCHEDULE

XXXX — CONDUIT IDENTIFICATION
- XXXX = CONDUIT NUMBER, REFER TO CONDUIT SCHEDULE

UNLESS OTHERWISE NOTED, GROUPED CONDUITS ARE LABELED LEFT TO RIGHT OR TOP TO BOTTOM.

INDICATES KEYNOTE X (PERTAINS ONLY TO SHEET WHERE NOTE IS FOUND)

DISCONNECT SWITCH
- A = TYPE, REFER TO DISCONNECT SCHEDULE

CAMERA

LUMINAIRES

LINEAR FIXTURE

2' X 2' LAY-IN TROFFER

2' X 4' LAY-IN TROFFER

LUMINAIRE POLE MOUNTED

GO/NO-GO PANEL - STROBE AND HORN
- R = RED LIGHT
- G = GREEN LIGHT
- H = HORN

GO/NO-GO PANEL - SOLID

GO/NO-GO PANEL - STROBE

LUMINAIRE, EMERGENCY BATTERY-POWERED

LUMINAIRE, EMERGENCY/EXIT BATTERY-POWERED

LUMINAIRE, EMERGENCY BATTERY-POWERED REMOTE

LUMINAIRE, SURFACE OR PENDANT MOUNTED

LUMINAIRE, WALL MOUNTED

LUMINAIRE, FLOOD/SPOT

LUMINAIRE, EXIT ONE OR TWO FACES AS INDICATED. ARROW POINTS IN DIRECTION OF EGRESS.

SWITCHES/RECEPTACLES

SINGLE POLE SWITCH
- a = CIRCUIT DESIGNATION
- b = DEVICE SWITCHED DESIGNATION
- c = TYPE
  - 2 = DOUBLE POLE SWITCH
  - 3 = THREE-WAY SWITCH
  - 3P = THREE POSITION SWITCH
  - 4 = FOUR-WAY SWITCH
  - K = KEY OPERATED SWITCH
  - F = SWITCH AND FUSESTAT HOLDER
  - P = SWITCH AND PILOT LIGHT
  - T = THERMOSTAT
  - D = DIMMER SWITCH
  - L = LOW VOLTAGE LIGHT SWITCH
  - M = MANUAL MOTOR STARTER
  - N = NETWORKED SINGLE OR MULTIPLE SWITCH LOCATIONS

REFER TO ABBREVIATIONS LEGEND FOR ALL OTHER DESIGNATIONS.

OCCUPANCY SENSOR
- X REFERENCE LIGHTING CONTROL COMPONENT SCHEDULE
- a = CIRCUIT DESIGNATION
- b = DEVICE SWITCHED DESIGNATION
- c = MOUNTING HEIGHT IN FEET TO BOTTOM OF SENSOR

PHOTOCELL

SWITCH AND SINGLE RECEPTACLE
- a = CIRCUIT DESIGNATION
- b = DEVICE TYPE DESIGNATION

DUPLEX RECEPTACLE

QUADRUPLEX RECEPTACLE

IN FLOOR DUPLEX RECEPTACLE

IN FLOOR QUADRUPLEX RECEPTACLE

DUPLEX RECEPTACLE w/SPLIT WIRE

DEDICATED RECEPTACLE

SPECIAL PURPOSE RECEPTACLE

WELDING RECEPTACLE
- a = CIRCUIT DESIGNATION
- b = DISCONNECT TYPE

TWIST LOCK RECEPTACLE
- a = AMP RATING

TELEPHONE OUTLET
- a = CIRCUIT DESIGNATION
- b = MOUNTING HEIGHT

DATA COMMUNICATIONS OUTLET
- a = CIRCUIT DESIGNATION
- b = MOUNTING HEIGHT

FIRE ALARM

SMOKE DETECTOR
- a = TYPE
  - I = IONIZATION
  - P = PHOTOELECTRIC
  - d = DUCT DETECTOR

FACP — FIRE ALARM CONTROL PANEL

FIRE ALARM PULL STATION

FIRE ALARM HORN/STROBE COMBINATION

FIRE ALARM STROBE

FIRE SPRINKLER
- F = FLOW SWITCH
- T = TAMPER SWITCH

RACEWAY

EXPOSED CONDUIT

BREAK AND CONTINUATION IN CONDUIT RUN

EXPOSED CONDUIT HIDDEN BEHIND WALLS, FLOORS OR OTHER STRUCTURES

UNDERGROUND CONDUIT, DIRECT BURIED OR IN DUCT BANK

CONDUIT IN SLAB

CONDUIT VERTICAL CHANGE IN DIRECTION

CONDUIT CAP

JUNCTION BOX

CONDUIT SEAL

CONDUIT TEE

DUCT BANK APPROXIMATE DIMENSIONS SHOWN ON DUCT BANK SECTIONS

CONDUIT SIZE AND CONDUCTORS

INDIVIDUAL CONDUCTORS

W"C-(3-X (Ø), 1-Y (N) & 1-Z (G))

W"C (WHERE INDICATED): W = CONDUIT TRADE SIZE

3-X (Ø):
- 3 = QUANTITY
- X = SIZE OF CONDUCTORS
- (Ø) = DESIGNATES PHASE CONDUCTORS

1-Y (N) (WHERE INDICATED):
- 1 = QUANTITY
- Y = SIZE OF CONDUCTORS
- (N) = DESIGNATES NEUTRAL CONDUCTORS

1-Z (G) (WHERE INDICATED):
- 1 = QUANTITY
- Z = SIZE OF CONDUCTORS
- (G) = DESIGNATES GROUND CONDUCTORS

U{3-X (Ø) & 1-X (G)}
- U = NUMBER OF PARALLEL RUNS

VFD CONDUCTORS

U{[N/C-X (Ø) & INTEGRAL (G)]:VFD}
- U = NUMBER OF PARALLEL RUNS
- N/C = NUMBER OF PHASE CONDUCTORS IN CABLE
- X = SIZE OF CONDUCTORS
- VFD = VFD CABLE

MULTI CONDUCTOR CABLES

K/2/C#16S
- K (WHERE INDICATED) = NUMBER OF PAIRS
- 2/C#16S = TWO CONDUCTOR, 16 GAUGE, TWISTED SHIELDED PAIR

K/3/C#16S
- K (WHERE INDICATED) = NUMBER OF TRIPLETS
- 3/C#16S = THREE CONDUCTOR, 16 GAUGE, TWISTED SHIELDED TRIPLETS

U{[N/C-X (Ø) & INTEGRAL (G)]:MC}
- U = NUMBER OF PARALLEL RUNS
- MC = MULTICONDUCTOR CABLE
- N/C = NUMBER OF PHASE CONDUCTORS IN THE CABLE
- X = SIZE OF CONDUCTORS

FIBER OPTIC CABLES

FO/N
- N = NUMBER OF INDIVIDUAL FIBERS

GROUNDING

UNDERGROUND GROUND CABLE #4/0 SDBC UNLESS OTHERWISE NOTED

GROUND ROD

GROUND ROD AND GROUND WELL

ELECTRICAL ONE-LINE SYMBOLS

MEDIUM VOLTAGE

CIRCUIT BREAKER, MEDIUM VOLTAGE
- a = CIRCUIT BREAKER NUMBER
- b = FRAME SIZE

ANSI RELAY DEVICE
- a = ANSI DEVICE FUNCTION
- b = QUANTITY

MEDIUM VOLTAGE DISCONNECT SWITCH NON-FUSED CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE SINGLE FUSE CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE DOUBLE FUSE CUT OUT

MEDIUM VOLTAGE SINGLE FUSE

MEDIUM VOLTAGE DOUBLE FUSE

MEDIUM VOLTAGE LIVE FRONT TERMINATOR

MEDIUM VOLTAGE ELBOW

MEDIUM VOLTAGE TEE

MEDIUM VOLTAGE CONTACTOR

MEDIUM VOLTAGE STARTER

MOV-ELBOW ARRESTER

LOW VOLTAGE

LOW VOLTAGE CIRCUIT BREAKER
- a = TYPE
  - MCP = MOTOR CIRCUIT PROTECTOR
  - TM = THERMAL MAGNETIC
  - SS = SOLID STATE
- b = FRAME SIZE (MANUFACTURER TO DETERMINE FRAME SIZE UNLESS INDICATED)
- c = NUMBER OF POLES
- d = TRIP SETTING (AT = AMP TRIP) (AC = MCP CONTINUOUS RATING)
- e = DESIGNATION
- f = INTERRUPTING RATING

LOW VOLTAGE CIRCUIT BREAKER AUXILIARY OPERATOR
- * = S = SHUNT TRIP
- = G = GROUND FAULT INTERRUPTER
- = V = SOLENOID KEY RELEASE

DISCONNECT SWITCH
- A = TYPE, REFER TO DISCONNECT SCHEDULE

FUSED DISCONNECT SWITCH
- B = TYPE, REFER TO DISCONNECT SCHEDULE
- b = FUSE RATING

FUSE

COMBINATION STARTER WITH CONTROL POWER TRANSFORMER
- a = CIRCUIT BREAKER DISCONNECT, TYPE AS NOTED
- b = STARTER TYPE REFER TO THE SPECIFICATIONS FOR STARTER DEFINITIONS.
- c = NEMA STARTER SIZE
- d = OVERLOAD

MOTOR STARTER/DRIVES:
- a = DEVICE TYPE
  - VFD-6 = 6-PULSE VFD
  - VFD-18 = 18-PULSE VFD
  - VFD-RH = REDUCED HARMONIC VFD (18-PULSE OR ACTIVE FRONT END AS DEFINED IN THE SPECIFICATIONS)
  - RVSS = REDUCED VOLTAGE SOLID STATE STARTER
  - RVAT = REDUCED VOLTAGE AUTO TRANSFORMER
  - a/B = DEVICE WITH BYPASS STARTER. REFER TO THE SPECIFICATIONS
- b = INPUT OPTIONS
  - LL = LINE REACTOR
  - PHF = PASSIVE HARMONIC FILTER
- c = OUTPUT OPTIONS
  - LR = LOAD REACTOR
  - DV/DT = Dv/dt FILTER
  - SWF = SINE WAVE FILTER

EQUIPMENT ENCLOSURE

MISCELLANEOUS

MOTOR
- HP = HORSEPOWER RATING
- FULL LOAD AMPS AS NOTED

PACKAGED EQUIPMENT LOAD RATING AS INDICATED
- a = RATED LOAD
- b = UNIT(HP, KW, KVA) AS INDICATED

TRANSFORMER
- a = DEVICE I.D.
- b = KVA RATING
- c = NUMBER OF PHASES
- d = PRIMARY VOLTAGE
- e = SECONDARY VOLTAGE
- f,g = CONNECTION TYPE SYMBOL
- h = IMPEDANCE

GROUNDED WYE CONNECTION

DELTA CONNECTION

ENGINE-GENERATOR RATINGS AS INDICATED ON THE DRAWINGS
- a = KVA/KW
- b = VOLTAGE/CONNECTION
- c = PHASE
- d = WIRE
- e = PF

CURRENT TRANSFORMER WITH SHORTING TERMINAL BLOCK
- a = QUANTITY
- b = RATIO

POTENTIAL TRANSFORMER
- a = QUANTITY
- b = RATIO
- c,d = CONNECTION TYPE SYMBOL

SSM — SOLID STATE MULTIFUNCTION METER

ATP — AMPERE TEST POINT

VTP — VOLTAGE TEST POINT

UTILITY METER

LIGHTNING ARRESTER

SPD — SURGE PROTECTIVE DEVICE

DRAWOUT CONNECTION

GROUND

CAPACITOR

BATTERY

KIRK KEY INTERLOCK

LOAD BANK

REV	DATE	BY	DESCRIPTION

DESIGNED: CE
DRAWN: CE
CHECKED: CAC
DATE: FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
ELECTRICAL LEGEND

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. 0 — 1". IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. GE01
SHEET NO. 21 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GE01.dgn

Plot Date: 22-FEB-2023 2:17:44 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

ABBREVIATIONS

A	AMP	J	JUNCTION BOX	TACH	TACHOMETER
ABS	ABSOLUTE			TB - X	TERMINAL BLOCK - UNIT X
AC	ALTERNATING CURRENT	K	KEY INTERLOCK	TC	THERMOCOUPLE / TIME CLOCK / TRAY CABLE
ACK	ACKNOWLEDGE	KA	KILOAMP	TD	TEMPERATURE DETECTOR RELAY
ACTR	ACTUATOR	KV	KILOVOLT	TE	TOTALLY ENCLOSED
AF	AMP FRAME	KVA	KILOVOLT AMPERE	TEFC	TOTALLY ENCLOSED FAN COOLED
AFC	AUTOMATIC FREQUENCY CONTROL	KVAR	KILOVAR (REACTANCE)	TENV	TOTALLY ENCLOSED NON-VENTILATED
AIC	AMP INTERRUPTING CAPACITY	KW	KILOWATT	TERM	TERMINAL
AM	AMMETER	KWD	KILOWATT DEMAND	TJB	TERMINAL JUNCTION BOX
ANN	ANNUNCIATOR	KWH	KILOWATT HOUR	TM	THERMAL MAGNETIC
ANT	ANTENNA			TP	TWISTED PAIR
APU	AUXILIARY POWER UNIT	L	LONG-TIME	TS	TEMPERATURE SWITCH
ARM	ARMORED CABLE	L-B	LINE-BUS	TS1W	TWO SPEED CONSEQUENT POLE, ONE WINDING
AS	AMMETER SWITCH	L-G	LINE-GROUND	TS2W	TWO SPEED SEPARATE WINDING
ASYM	ASYMMETRICAL	LA	LIGHTNING ARRESTOR	TSTAT	THERMOSTAT
AT	AMP TRIP	LBL	LABEL		
ATO	AUTOMATIC THROW OVER	LC	LIGHTING CONTACTOR	UHF	ULTRA HIGH FREQUENCY
ATP	AMMETER TEST POINT	LCP- X	LOCAL CONTROL PANEL NO. X	UNG	UNGROUNDED
ATS	AUTOMATIC TRANSFER SWITCH	LL	LEAD-LAG LOAD REACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
AUTO XFMR	AUTOMATIC TRANSFORMER	LP	LIGHT POLE	UVR	UNDER VOLTAGE RELAY
AUX	AUXILIARY	LP - X	LIGHTING PANEL NO. X		
AWG	AMERICAN WIRE GAGE	LTG	LIGHTING	V	VOLT
		LV	LOW VOLTAGE	VA	VOLT AMPERE
B	BELL	LVL	LEVEL	VAR	VARMETER
BAT	BATTERY			VCP	VENDOR CONTROL PANEL
BFG	BELOW FINISHED GRADE	M-X	MOTOR CONTROLLER NO. X	VFD	VARIABLE FREQUENCY DRIVE
BHP	BRAKE HORSEPOWER	MA	MILLIAMPERE	VHF	VERY HIGH FREQUENCY
BKR	BREAKER	MCA	MOTOR CIRCUIT AMPS	VM	VOLTMETER
BRF	BELOW RAISED FLOOR	MCC - X	MOTOR CONTROL CENTER NO. X	VP	VAPORPROOF
		MCP	MOTOR CIRCUIT PROTECTOR	VR	VOLTAGE REGULATOR
C	CONDUIT / CONTINUOUS LOAD	MH	MANHOLE / MOUNTING HEIGHT	VS	VOLTAGE SWITCH
CB	CIRCUIT BREAKER	MLO	MAIN LUGS ONLY	VT	VOLTAGE TRANSFORMER
CCTV	CLOSED CIRCUIT TELEVISION	MOD	MOTOR OPERATED DAMPER	VTP	VOLTAGE TEST POINT
CCW	COUNTER CLOCKWISE	MOV	METAL OXIDE VARISTOR		
CKT	CIRCUIT	MPR	MOTOR PROTECTION RELAY	W	WATT / WEST
COAX	COAXIAL CABLE	MS-X	MOTOR STARTER NO. X	WT	WATER TIGHT
COM	COMMON	MSP	MOTOR STARTING PANEL	WP	WEATHER PROOF
COMM	COMMUNICATION	MTO	MANUAL THROW OVER		
CPT	CONTROL POWER TRANSFORMER	MTR-X	MOTOR NO. X	XFMR	TRANSFORMER
CR	CONTROLLED RECEPTACLE	MTS	MANUAL TRANSFER SWITCH		
CS	CONTROL SWITCH	MV	MEGAVOLT		
CT	CURRENT TRANSFORMER	MVA	MEGAVOLT-AMPERES		
CV	CONTROL VALVE	MVS	MEDIUM VOLTAGE SWITCH		
CW	CLOCKWISE / COOL WHITE	MW	MEGAWATT		
DC	DIRECT CURRENT	N	NEUTRAL		
DCS	DISTRIBUTED CONTROL SYSTEM	NC	NORMALLY CLOSED		
DCU - X	DISTRIBUTED CONTROL UNIT NO. X	NEC	NATIONAL ELECTRICAL CODE		
DEMO	DEMOLITION	NFC	NONMETALLIC FLEXIBLE CONDUIT		
DISC	DISCONNECT SWITCH	NL	NIGHT LIGHT		
DM	DEMAND METER	NO	NORMALLY OPEN		
DPDT	DOUBLE POLE DOUBLE THROW	NP	NAMEPLATE		
DPST	DOUBLE POLE SINGLE THROW				
DS	DOOR SWITCH	O	OPEN OR OPENED		
		OH	OVERHEAD		
E/G	EMERGENCY GENERATOR	OL	OVERLOAD RELAY		
EM	EMERGENCY				
EMT	ELECTRICAL METALLIC TUBING	P	POLE		
ENCL	ENCLOSURE	PA	PUBLIC ADDRESS		
ENG	ENGINE	PB	PUSHBUTTON / PULL BOX		
ENT	ELECTRICAL NON-METALLIC TUBING	PCS	PVC COATED GALVANIZED STEEL CONDUIT		
EP	EXPLOSION PROOF	PCM	PROCESS CONTROL MODULE		
ETM	ELAPSED TIME METER	PE	PHOTOCELL		
		PF	POWER FACTOR		
F	SUB-FED	PFCC	POWER FACTOR CORRECTION CAPACITOR		
FA	FIRE ALARM	PFR	PHASE FAILURE RELAY		
FACP	FIRE ALARM CONTROL PANEL	PH	PHASE		
FDR	FEEDER	PNL	PANEL		
FLA	FULL LOAD AMPS	PPX	POWER PANEL NO. X		
FLX	FLEXIBLE CONDUIT	PRI	PRIMARY		
FO	FIBER OPTIC	PT	POTENTIAL TRANSFORMER		
FRC	FIBERGLASS RIGID CONDUIT	PVC	POLYVINYL CHLORIDE RIGID PLASTIC CONDUIT		
FREQ	FREQUENCY	PWR	POWER		
FU	FUSE				
FU	SW FUSED SWITCH	RAC	RIGID ALUMINUM CONDUIT		
FVNR	FULL VOLTAGE NON-REVERSING	RECPT	RECEPTACLE		
FVR	FULL VOLTAGE REVERSING	REV	REVERSE		
FWD	FORWARD	RF	RADIO FREQUENCY		
		RMS	ROOT MEAN SQUARED		
G	GROUND / EQUIPMENT GROUND / GROUND FAULT	RVAT	REDUCED VOLTAGE AUTO TRANSFORMER		
GEN	GENERATOR	RVNR	REDUCED VOLTAGE NON-REVERSING		
GRC	GALVANIZED STEEL RIGID CONDUIT	RVSS	REDUCED VOLTAGE SOLID STATE		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER (RECEPTACLE)				
GFI	GROUND FAULT INTERRUPTER (BREAKER)	S	SHIELD / SHORT-TIME		
GFR	GROUND FAULT RELAY	SA	SURGE ARRESTER		
		SC	SHORT CIRCUIT		
H	HOT-LEG	SDBC	SOFT DRAWN BARE COPPER		
HF	HIGH FREQUENCY	SFL	SUB FEED LUGS		
HP	HORSEPOWER	SLT	SEALTIGHT LIQUIDTIGHT FLEXIBLE CONDUIT		
HPS	HIGH PRESSURE SODIUM	SM	SURFACE MOUNTED		
HR	HOUR	SP	SINGLE POLE		
HSTAT	HUMIDISTAT	SPD	SURGE PROTECTIVE DEVICE		
HV	HIGH VOLTAGE	SPDT	SINGLE POLE DOUBLE THROW		
HVAC	HEATING/VENTILATION/AIR CONDITIONING	SPST	SINGLE POLE SINGLE THROW		
HZ	HERTZ	SPKR	SPEAKER		
		SS	SOLID STATE		
I	INSTANTANEOUS / INTERMITTENT LOAD	STB	SHORTING TERMINAL BLOCK		
IC	INTERRUPTING CAPACITY	SW	SWITCH		
IJB	INSTRUMENT JUNCTION BOX	SWBD	SWITCHBOARD		
IMC	INTERMEDIATE METAL CONDUIT	SWGR	SWITCHGEAR		
INST	INSTANTANEOUS	SYM	SYMMETRICAL		
INT	INTERLOCK				
INTERCOM	INTERCOMMUNICATION				

POWER DEVICE FUNCTION NUMBERS

1	MASTER ELEMENT
2	TIME-DELAY STARTING OR CLOSING RELAY
3	CHECKING OR INTERLOCKING RELAY
4	MASTER CONTACTOR
5	STOPPING DEVICE
6	STARTING CIRCUIT BREAKER
7	ANODE CIRCUIT BREAKER
8	CONTROL POWER DISCONNECTING DEVICE
9	REVERSING DEVICE
10	UNIT SEQUENCE SWITCH
11	MULTIFUNCTION DEVICE
12	OVER-SPEED DEVICE
13	SYNCHRONOUS-SPEED DEVICE
14	UNDER-SPEED DEVICE
15	SPEED OR FREQUENCY MATCHING DEVICE
16	DATA COMMUNICATIONS DEVICE
17	SHUNTING OR DISCHARGE SWITCH
18	ACCELERATING OR DECELERATING DEVICE
19	STARTING-TO-RUNNING TRANSITION CONTACTOR
20	ELECTRICALLY OPERATED VALVE
21	DISTANCE RELAY
22	EQUALIZER CIRCUIT BREAKER
23	TEMPERATURE CONTROL DEVICE
24	VOLTS PER HERTZ RELAY
25	SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE
26	APPARATUS THERMAL DEVICE
27	UNDERVOLTAGE RELAY
27N	GROUND FAULT UNDERVOLTAGE RELAY
28	FLAME DETECTOR
29	ISOLATING CONTACTOR
30	ANNUNCIATOR RELAY
31	SEPARATE EXCITATION DEVICE
32	DIRECTIONAL POWER RELAY
33	POSITION SWITCH
34	MASTER SEQUENCE DEVICE
35	BRUSH-OPERATING OR SLIP-RING SHORT-CIRCUITING DEVICE
36	POLARITY DEVICE
37	UNDERCURRENT OR UNDERPOWER RELAY
38	BEARING PROTECTIVE DEVICE
39	MECHANICAL CONDITION MONITOR
40	FIELD RELAY
41	FIELD CIRCUIT BREAKER
42	RUNNING CIRCUIT BREAKER
43	MANUAL TRANSFER OR SELECTOR DEVICE
44	UNIT SEQUENCE STARTING RELAY
45	ABNORMAL ATMOSPHERIC CONDITION MONITOR
46	REVERSE-PHASE OR BALANCE CURRENT RELAY
47	PHASE-BALANCE OR PHASE-SEQUENCE VOLTAGE RELAY
48	INCOMPLETE SEQUENCE RELAY
49	MACHINE OR TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
53	FIELD EXCITATION RELAY
54	TURNING GEAR ENGAGING DEVICE
55	POWER FACTOR RELAY
56	FIELD APPLICATION RELAY
57	SHORT-CIRCUITING OR GROUNDING DEVICE
58	RECTIFICATION FAILURE RELAY
59	OVERVOLTAGE RELAY
60	VOLTAGE OR CURRENT BALANCE RELAY
61	DENSITY SWITCH OR SENSOR
62	TIME-DELAY STOPPING OR OPENING RELAY
63	PRESSURE SWITCH
64	GROUND DETECTOR RELAY
65	GOVERNOR
66	NOTCHING OR JOGGING DEVICE
67	AC DIRECTIONAL OVERCURRENT RELAY
68	BLOCKING OR OUT OF STEP RELAY
69	PERMISSIVE CONTROL DEVICE
70	RHEOSTAT
71	LIQUID LEVEL SWITCH
72	DC CIRCUIT BREAKER
73	LOAD-RESISTOR CONTACTOR
74	ALARM RELAY
75	POSITION CHANGING MECHANISM
76	DC OVERCURRENT RELAY
77	TELEMETERING DEVICE
78	PHASE-ANGLE MEASURING RELAY
79	AC RECLOSING RELAY
80	FLOW SWITCH
81	FREQUENCY RELAY
82	DC LOAD MEASURING RECLOSING RELAY
83	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
84	OPERATING MECHANISM
85	PILOT COMMUNICATIONS, CARRIER OR PILOT-WIRE RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
88	AUXILIARY MOTOR OR MOTOR GENERATOR
89	LINE SWITCH
90	REGULATING DEVICE
91	VOLTAGE DIRECTIONAL RELAY
92	VOLTAGE AND POWER DIRECTIONAL RELAY
93	FIELD-CHANGING CONTACTOR
94	TRIPPING OR TRIP-FREE RELAY

COMMONLY USED SUFFIX LETTERS APPLIED TO POWER DEVICE FUNCTION NUMBERS

A	ALARM ONLY
B	BUS PROTECTION
G	GROUND FAULT PROTECTION (RELAY CT IN A SYSTEM NEUTRAL CIRCUIT OR GENERATOR PROTECTION)
GS	GROUND FAULT PROTECTION (RELAY CT IN TOROIDAL OR GROUND SENSOR TYPE)
L	LINE PROTECTION
M	MOTOR PROTECTION
N	GROUND FAULT PROTECTION (RELAY COIL CONNECTED IN RESIDUAL CT CIRCUIT)
T	TRANSFORMER PROTECTION
V	VOLTAGE
P	PHASE PROTECTION

ABBREVIATIONS

AFD	- ARC FLASH DETECTOR
CLK	- CLOCK OR TIMING SOURCE
DDR	- DYNAMIC DISTURBANCE RECORDER
DFR	- DIGITAL FAULT RECORDER
ENV	- ENVIRONMENTAL DATA
HIZ	- HIGH IMPEDANCE FAULT DETECTOR
HMI	- HUMAN MACHINE INTERFACE
HST	- HISTORIAN
LGC	- SCHEME LOGIC
MET	- SUBSTATION METERING
PDC	- PHASOR DATA CONCENTRATOR
PMU	- PHASOR MEASUREMENT UNIT
PQM	- POWER QUALITY MONITOR
RIO	- REMOTE I/O DEVICE
RTU	- REMOTE TELEMETRY UNIT/REMOTE TERMINAL UNIT
SER	- SEQUENCE OF EVENTS RECORDER
TCM	- TRIP CIRCUIT MONITOR

NOTES:

1. REFER TO SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL ABBREVIATIONS.

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

ELECTRICAL

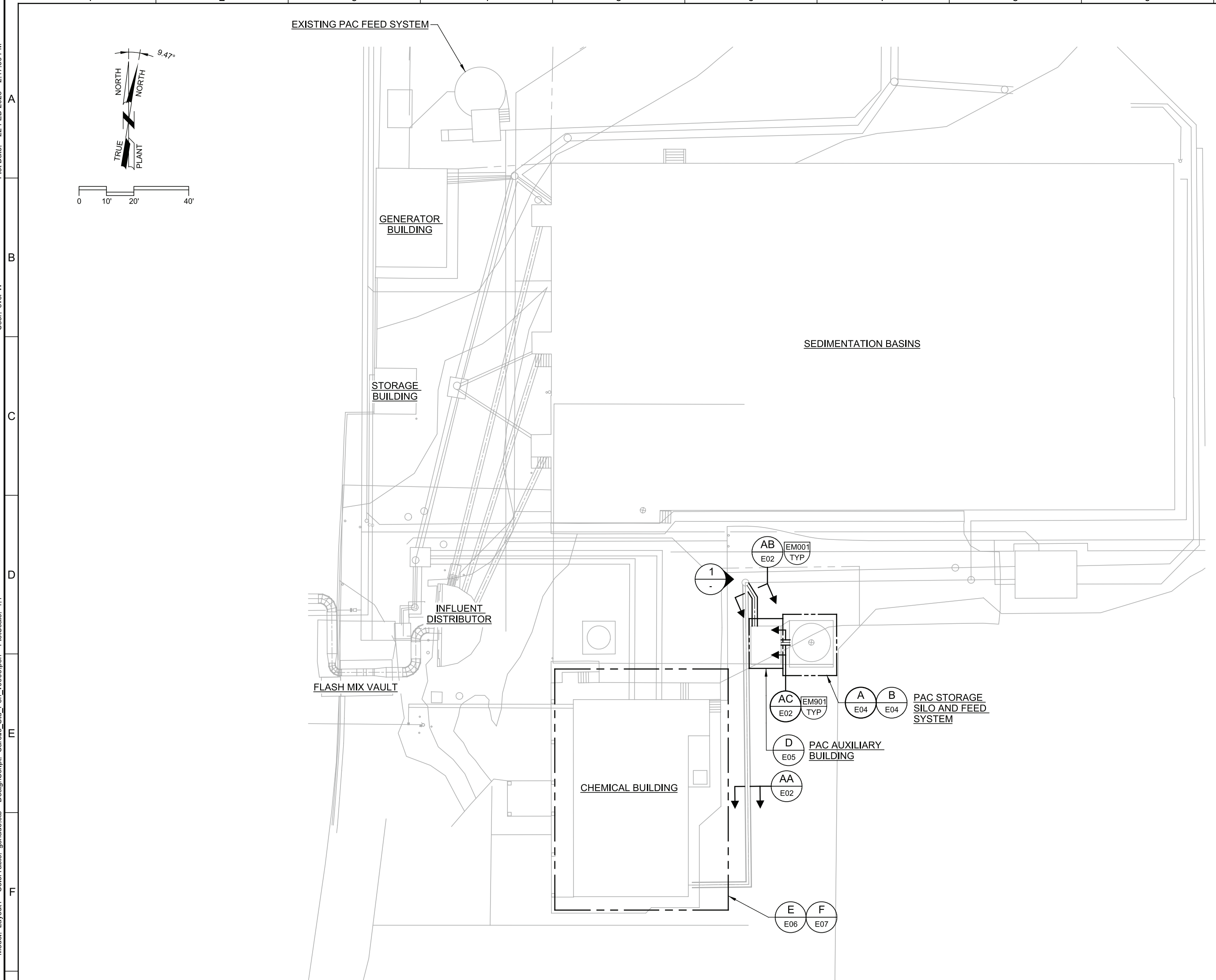
ELECTRICAL ABBREVIATIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. GE02
SHEET NO. 22 OF 46

Plot Date: 22-FEB-2023 2:18:18 PM
User: avcPW
PlotScale: 1:1
DesignScript: CarolBp_Std_Pen_v0905.pen
ColorTable: gsblade.ctb
Model: Layout1
LAST SAVED BY: mmorris

PROJECT NO. 201237-100000 FILE NAME: 20123700GE02.dgn



KEY NOTES:

1. CUT THE SPARE CONDUITS BACK A MINIMUM OF 4 INCHES AND PROVIDE END BELL COUPLINGS ON ALL SPARE CONDUITS. A TOTAL OF (4) SPARE (UNUSED) CONDUITS EXIST WITHIN THE MANHOLE. NOTE-TWO ADDITIONAL SPARE CONDUITS EXIST BUT ARE NOT VISIBLE FROM THE PHOTO PERSPECTIVE.

EXISTING MANHOLE

1 - PHOTO
SCALE: NO SCALE
FILE: 20123700E01

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN MNH
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

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DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
OVERALL SITE PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

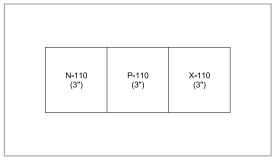
JOB NO. 201237
DRAWING NO. E01
SHEET NO. 23 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700E01.dgn

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 User: svcPW Plot Date: 22-FEB-2023 2:17:50 PM
LAST SAVED BY: mmorris

GENERAL NOTES:

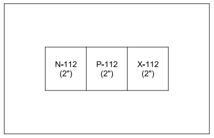
1. CONSTRUCT DUCT BANK PER DETAIL EM001/TYP UNLESS OTHERWISE INDICATED.



Width: 2'-3"
Height: 1'-6"

AA DUCT BANK SECTION

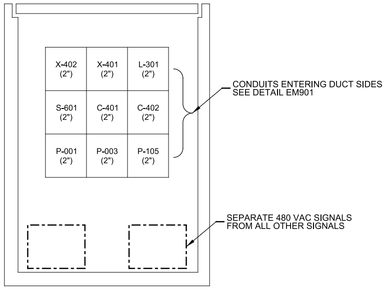
E01, E05, E07



Width: 1'-11"
Height: 1'-5"

AB DUCT BANK SECTION

E01, E05



Width: 1'-11"
Height: 2'-2"

AC DUCT BANK SECTION/ TRENCH DUCT

E01, E04, E05

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
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CHECKED CAC
DATE FEBRUARY 2023

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DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
DUCT BANK SECTIONS

VERIFY SCALES
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

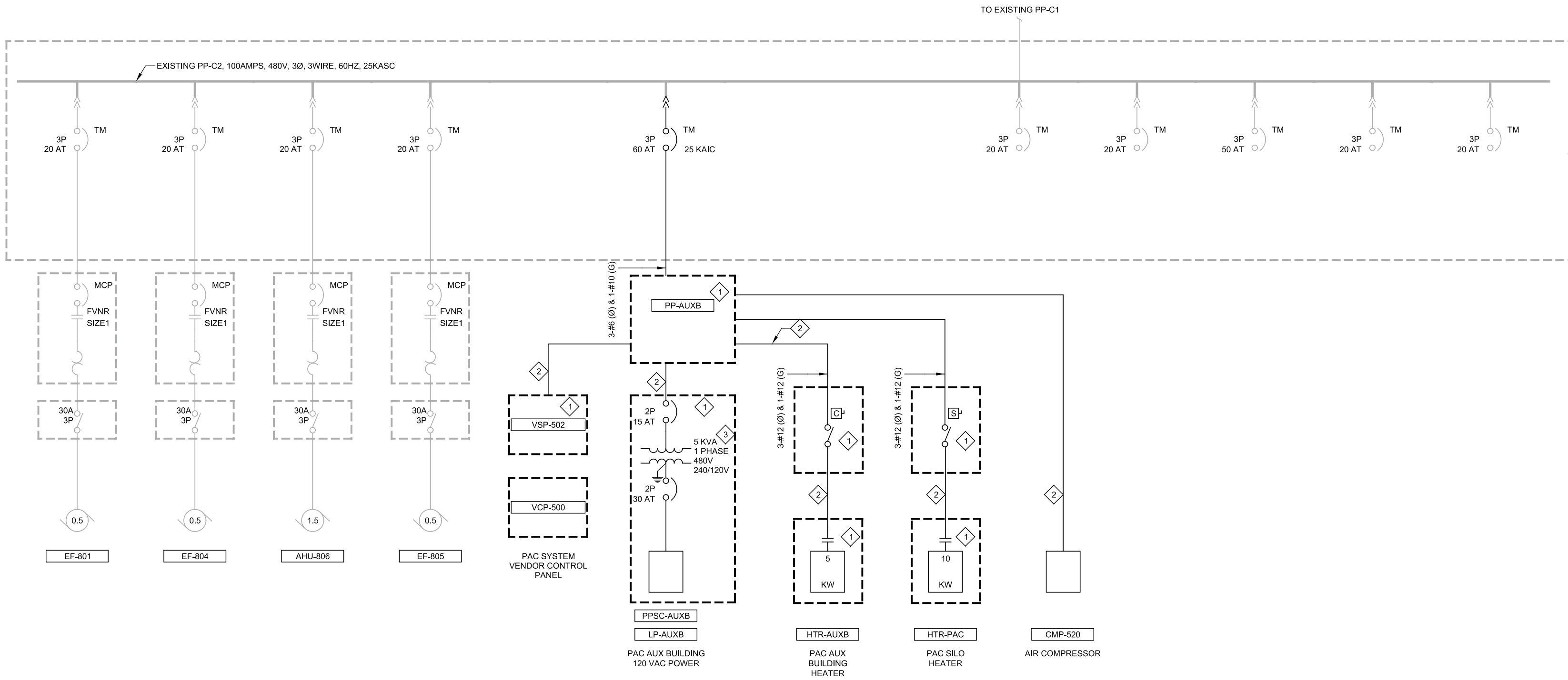
JOB NO. 201237
DRAWING NO. E02
SHEET NO. 24 OF 46

Plot Date: 22-FEB-2023 2:18:36 PM User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: mmorris

PROJECT NO. 201237-100000 FILE NAME: 20123700E02.dgn

KEY NOTES:

1. PROVIDED BY PAC SYSTEM SUPPLIER.
2. CONDUIT WIRE IS PROVIDED BY THE PAC SYSTEM SUPPLIER.
3. EQUIPMENT KVA RATING IS SHOWN, HOWEVER PAC SUPPLIER SHALL SIZE AND PROVIDE PPSC BASED ON ACTUAL LOAD REQUIREMENTS.



DISCONNECT SCHEDULE 1/26/2023

TAG	VOLTAGE	POLES	AMPS	NEMA TYPE	TYPE	HORSEPOWER	FUSE SIZE	BREAKER AF/AT	ACCESSORIES
C	600 VAC	3P	30A	12	NON-FUSED				
S	600 VAC	3P	30A	9	NON-FUSED				

ACCESSORIES
1= "B" TYPE ELECTRICAL INTERLOCK FOR POSITION INDICATION
2= INSULATED GROUNDABLE NEUTRAL KIT
3= DRAIN AND BREATHER KIT WHEN OUTDOORS
4= EARLY BREAK AUXILIARY CONTACT

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN DB
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

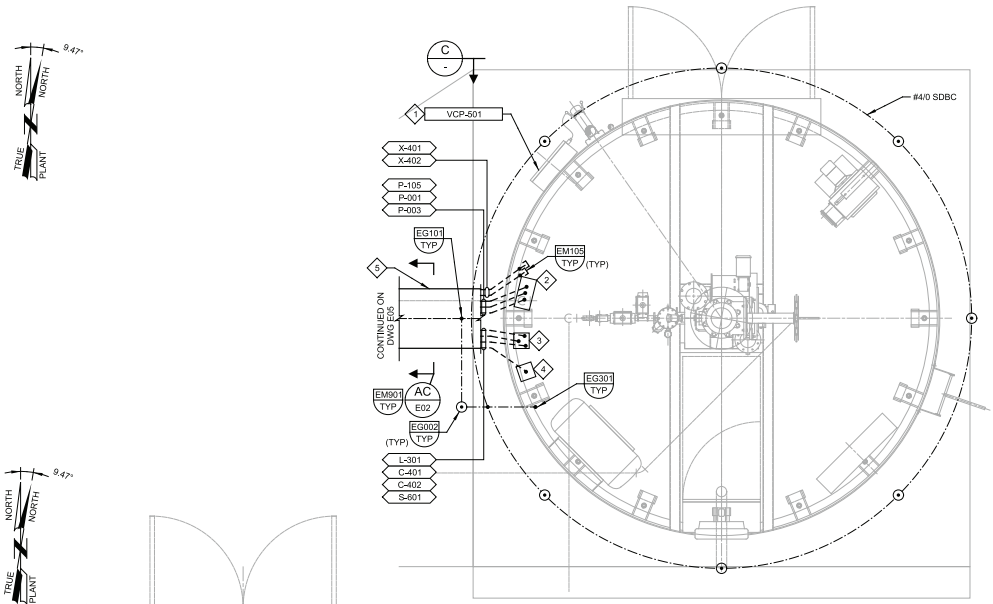
WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
PANELBOARD PP-C2
PARTIAL ONE-LINE DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. E03
SHEET NO. 25 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700E03.dgn

Plot Date: 22-FEB-2023 2:17:36 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: mmorris

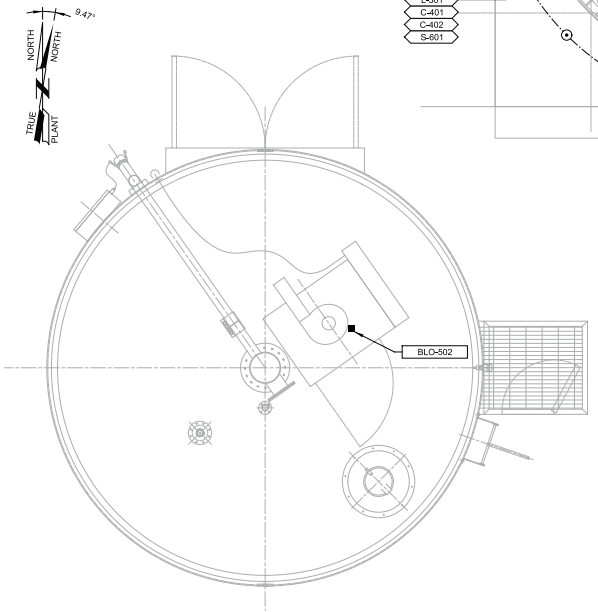


FLOOR

A ENLARGED PLAN

A / E01

SCALE: 1/2" = 1'-0"
FILE: 20123710E0101

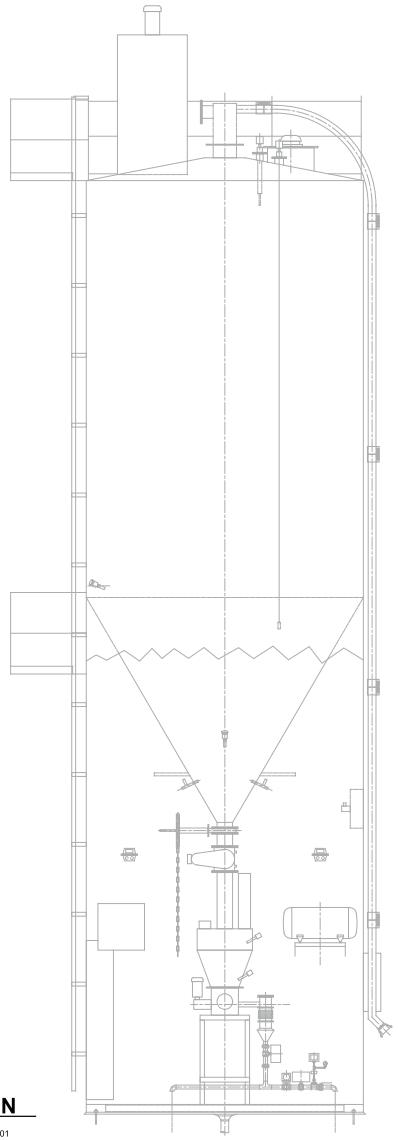


ROOF

B ENLARGED PLAN

B / E01

SCALE: 1/2" = 1'-0"
FILE: 20123710E0102



C SECTION

C / -

SCALE: 3/8" = 1'-0"
FILE: 20123710E0301

GENERAL NOTES:

1. INTERIOR OF SILO AND TOP MOUNTED EQUIPMENT IS ASSUMED TO BE PRE-WIRED TO J-BOX(S) MOUNTED WITHIN SILO INTERIOR. CONFIRM THIS IS THE CASE FOR ALL VENDORS CONSIDERED. CONTRACTOR SHALL PROVIDE INTERIOR OF SILO CONDUIT AND WIRE, WHERE NOT PRE-PACKAGED WITH THE VENDOR SUPPLIED SILO EQUIPMENT.
2. THE INTERIOR OF THE PAC SILO AS WELL AS UPPER EXTERIOR BLOWER AND ANCILLARY SYSTEMS SHALL BE CONSTRUCTED IN CONFORMANCE WITH A CLASS II DIVISION 1 LOCATION. ELECTRICAL INSTALLATION SHALL COMPLY WITH ARTICLES 500 AND 502 OF NFPA70 NATIONAL ELECTRICAL CODE.
3. NOT ALL EQUIPMENT IS SHOWN ON THIS DRAWING. REFER TO P&IDS AND MECHANICAL DRAWINGS.
4. PROVIDE 4/0 SDBC GROUND RING. BOND LIGHTNING PROTECTION TO GROUND RING. SEE SPECIFICATION 26_41_01.

◇ KEY NOTES:

1. NEMA 4X TRUCK UNLOADING PANEL - PROVIDED BY PAC SYSTEM VENDOR.
2. 480VAC JUNCTION BOX - PROVIDED BY PAC VENDOR, WITH SILO INTERIOR SIGNALS PRE-WIRED BY VENDOR TO JUNCTION BOX.
3. DISCRETE SIGNAL JUNCTION BOX - PROVIDED BY PAC VENDOR, WITH SILO INTERIOR DISCRETE CONTROL SIGNALS PRE-WIRED BY VENDOR TO JUNCTION BOX.
4. ANALOG SIGNAL JUNCTION BOX - PROVIDED BY PAC VENDOR, WITH SILO INTERIOR ANALOG SIGNAL(S) PRE-WIRED BY VENDOR TO JUNCTION BOX.
5. PROVIDE ALL BELOW GRADE CONDUIT ELLS USING PVC COATED STEEL ELBOWS. TAPED GRC CONDUIT IS NOT ALLOWED.

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN MNH
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 5329023 — GUY C. EHLERS — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

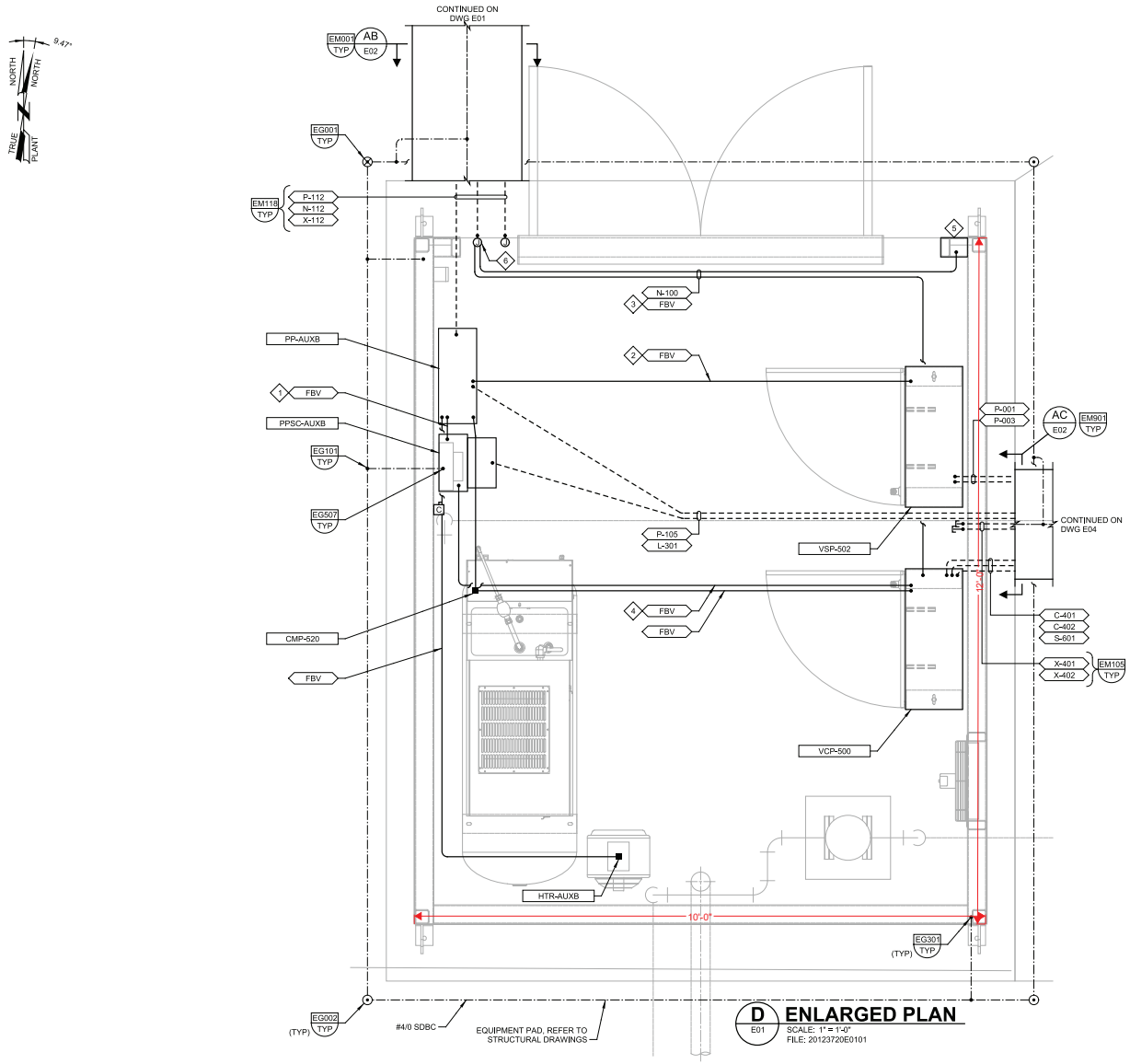
WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
PAC SILO POWER, CONTROL, AND GROUNDING PLANS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. E04
SHEET NO. 26 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700E04.dgn

Plot Date: 22-FEB-2023 2:18:09 PM User: svcPW Model: Layout1 ColorTable: gsshade.ctb DesignScript: CarolloSht_Prm_v0905.pen PlotScale: 1:1 LAST SAVED BY: mmorris



D ENLARGED PLAN
E01 SCALE: 1" = 1'-0" FILE: 20123720E0101

GENERAL NOTES:

1. PAC AUXILIARY BUILDING IS PROVIDED BY THE PAC SYSTEM SUPPLIER. ALL EQUIPMENT WITHIN THE BUILDING INTERIOR IS PROVIDED BY THE PAC SYSTEM SUPPLIER, UNLESS OTHERWISE NOTED.
2. BUILDING INTERIOR 120 VAC LIGHTING AND RECEPTACLE CIRCUITS SHALL BE PREWIRED TO PPSC-AUXB BY THE PAC SYSTEM SUPPLIER.
3. LOCATION OF EQUIPMENT WITHIN THE AUXILIARY BUILDING IS SHOWN DIAGRAMMATICALLY, AND MAY CHANGE DEPENDING UPON THE PAC VENDOR SELECTED. NOT ALL CONDUITS ARE SHOWN. CONDUIT AND WIRE FOR POWER AND CONTROL CIRCUITS INSIDE THE PAC AUXILIARY BUILDING ARE PROVIDED BY THE PAC SYSTEM SUPPLIER.
4. CONDUITS DESIGNATED AS FBV SHALL BE PROVIDED BY THE PAC SYSTEM VENDOR.
5. PAC AUXILIARY BUILDING IS SHOWN WITH AN ESTIMATED OVERALL SIZE. CONTRACTOR TO COORDINATE WITH PAC VENDOR TO CONFIRM BUILDING OVERALL SIZE, INTERNAL EQUIPMENT, INTERNAL ARRANGEMENT, AND PROVIDE BUILDING INTERNAL EQUIPMENT, INSTRUMENTS AND POURED SLAB AS REQUIRED.
6. PROVIDE SECURITY CARD SWIPE READER FOR THE PAC BUILDING DOOR ACCESS. PROVIDE (TO MATCH THE EXISTING SYSTEM)
   MFR: HID
   MODEL: PROX PRO 5355
7. PROVIDE SECURITY CARD SWIPE READER FOR THE PAC BUILDING DOOR ACCESS. PROVIDE (TO MATCH THE EXISTING SYSTEM)

   BADGE READER: HID PROXIMITY PROX PRO 5355

   DOOR HARDWARE: HES 9600 (HES 9600-12/24D-632)
   SURFACE MOUNT ELECTRIC
   DOOR STRIKE CONTROLLER: DSX-1022

   WIRES: 4 STRAND WIRE 18 GAUGE (SPARE)
   2 STRAND WIRE 18 GAGE (FOR DOOR STRIKE)
   6 STRAND WIRE 22 GAUGE (FOR CARD READER)
   4 STRAND WIRE 22 GAUGE (SPARE)
   PULL STRING FOR FUTURE USE

   CONDUIT: DOOR LATCH 1/2" GRC WITHIN CONCRETE WALLS TO DOOR FRAME STRIKE PLATE

   BADGE READER: 1/2" GRC WITHIN CONCRETE WALLS TO SINGLE GANG BOX FLUSH MOUNTED TO EXTERIOR WALL. MOUNT AT 48: ABOVE FINISHED GRADE WITHIN 12' OF DOOR FRAME ON STRIKE SIDE OF THE DOOR.
8. PROVIDE 4/0 SDBC GROUND RING. BOND LIGHTNING PROTECTION TO GROUND RING. SEE SPECIFICATION 26_41_01.

KEY NOTES:

1. 480VAC POWER CONDUIT AND WIRE FOR PPSC-AUXB PROVIDED BY PAC SYSTEM VENDOR.
2. 480VAC POWER CONDUIT AND WIRE FOR VSP-502 PROVIDED BY PAC SYSTEM VENDOR.
3. FIBER OPTICS CONDUIT WITHIN BUILDING INTERIOR PROVIDED BY PAC SYSTEM VENDOR. FIBER OPTICS CABLING SHALL BE PROVIDED BY CONTRACTOR.
4. 120VAC CONDUIT AND WIRE FOR PLC SYSTEM POWER PROVIDED BY SYSTEM VENDOR.
5. SECURITY SYSTEM CONTROLLER. SEE GENERAL NOTES ABOVE.
6. PROVIDE 12"X12"X6" JUNCTION BOX FOR FIBER OPTIC CABLE. ENSURE FIBER BEND RADIUS IS NOT EXCEEDED FOR FIBER CABLING ROUTED WITHIN CONDUITS OR CONTAINED WITHIN JUNCTION BOXES.

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN MNH
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN WATER CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
PAC AUXILIARY BUILDING
POWER, CONTROL, AND GROUNDING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" 1'-0"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

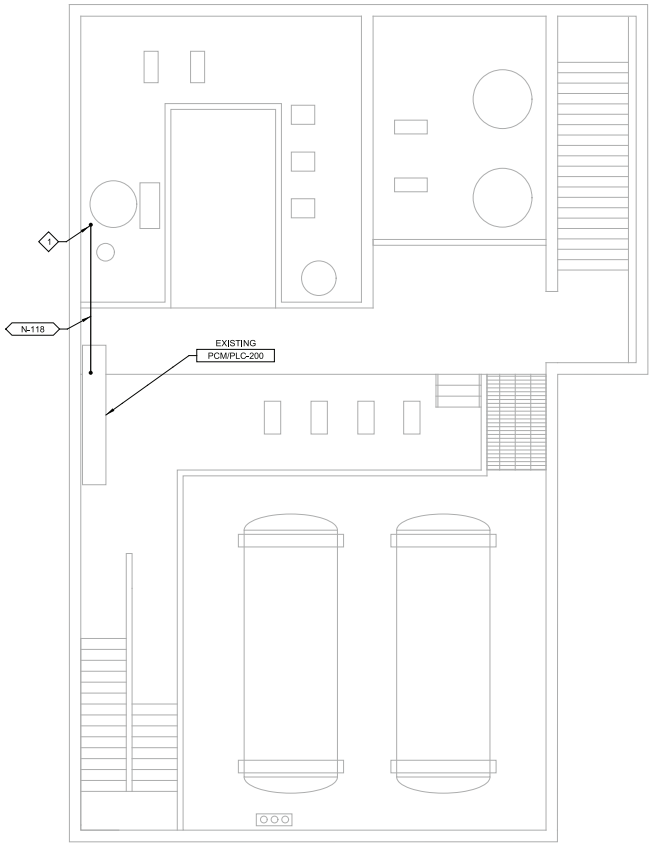
JOB NO. 201237
DRAWING NO. E05
SHEET NO. 27 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700E05.dgn

Plot Date: 22-FEB-2023 2:17:58 PM
User: evcPW
PlotScale: 1:1
DesignScript: Carollo_Std_Pen_v0905.pen
ColorTable: gsshade.ctb
Model: Layout1
LAST SAVED BY: mmorris

KEY NOTES:

1. ROUTE CONDUIT TO LEVEL ABOVE.



E01 PLAN

SCALE: 3/16" = 1'-0"
FILE: 201237E0102

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN ANV
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

ELECTRICAL

CHEMICAL BUILDING LOWER LEVEL POWER AND CONTROL PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

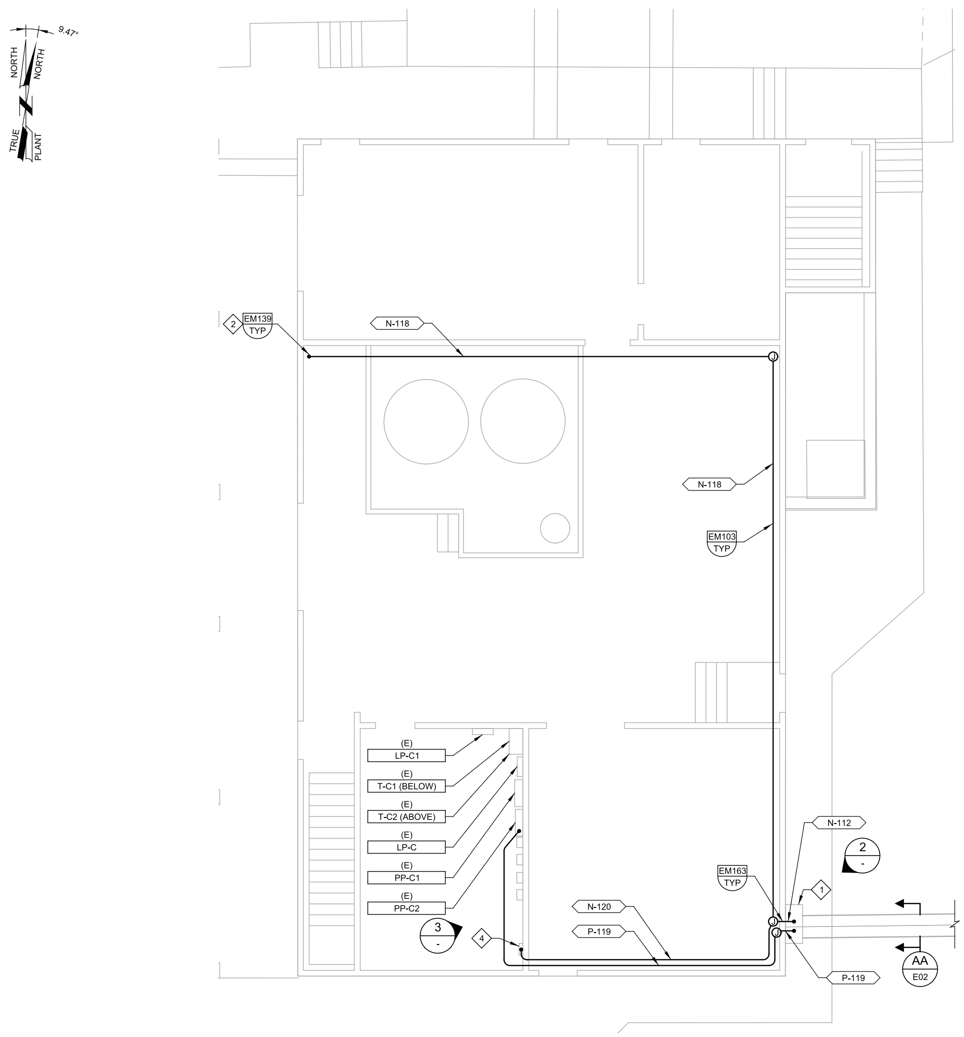
JOB NO. 201237
DRAWING NO. E06
SHEET NO. 28 OF 46

Plot Date: 22-FEB-2023 2:18:06 PM
User: avcPW
PlotScale: 1:1
DesignScript: Carollo_Std_Pen_v0905.pen
ColorTable: gsbladx.ctb
Model: Layout1
LAST SAVED BY: mmorris

PROJECT NO. 201237-100000 FILE NAME: 20123700E06.dgn

KEY NOTES:

1. EXISTING WIREWAY. USE EXISTING CONDUITS STUBBED INTO BOTTOM OF WIREWAY. PROVIDE NEW CONDUITS FROM TOP OF WIREWAY INTO BUILDING AS SHOWN.
2. ROUTE CONDUIT TO LEVEL BELOW.
3. EXISTING 1" CONDUIT, WITH ETHERNET CABLE. DO NOT DISTURB.
4. EXISTING SECURITY PANEL.



F PLAN
E01
SCALE: 3/16" = 1'-0"
FILE: 20123730E0101

EXISTING CHEMICAL BUILDING

2 PHOTO
SCALE: NO SCALE
FILE: 20123730E0103

EXISTING CHEMICAL BUILDING

3 PHOTO
SCALE: NO SCALE
FILE: 20123730E0103

REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN ANV
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

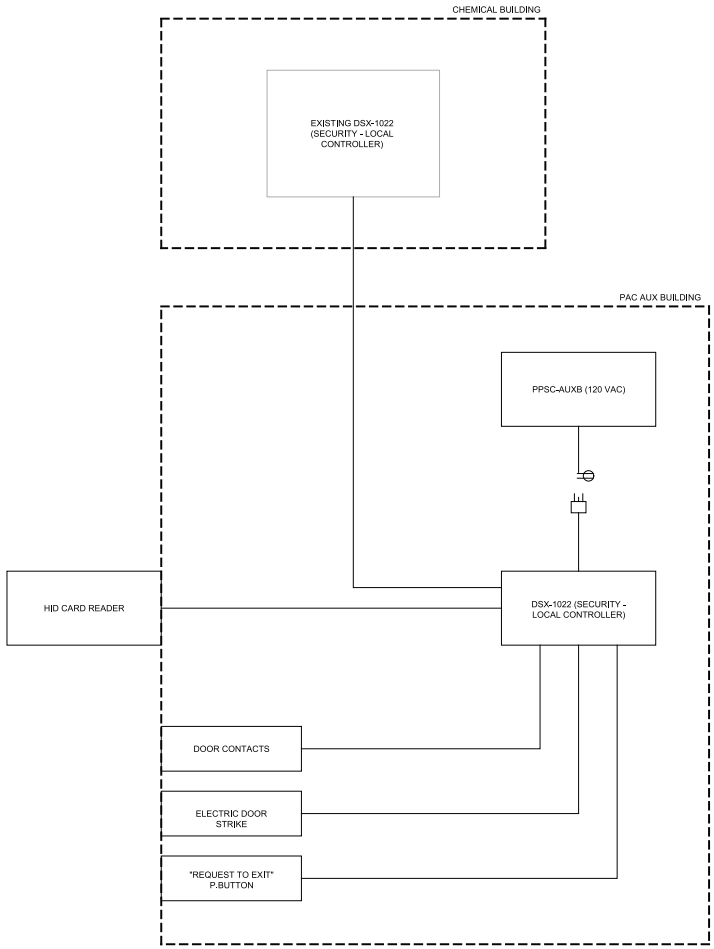
WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
CHEMICAL BUILDING UPPER LEVEL POWER AND CONTROL PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. E07
SHEET NO. 29 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700E07.dgn

Plot Date: 22-FEB-2023 2:18:04 PM User: svcPW PlotScale: 1:1 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen LAST SAVED BY: bshepard



REV	DATE	BY	DESCRIPTION

DESIGNED GCE
DRAWN MNH
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
ELECTRICAL
SECURITY SYSTEM RISER DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. E08
SHEET NO. 30 OF 46

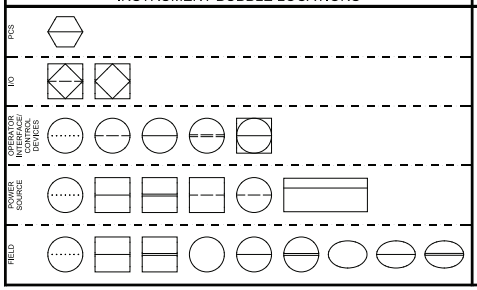
PROJECT NO. 201237-100000 FILE NAME: 20123700E08.dgn

Plot Date: 22-FEB-2023 2:17:57 PM
User: avcPW
PlotScale: 1:1
DesignScript: Carollo_Std_Pen_v09i05.pen
ColorTable: gsblade.ctb
Model: Layout1
LAST SAVED BY: mmorris

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
HMI/SCADA SYSTEM OPERATOR INTERFACE TERMINAL	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER ◇1 ◇2	REFER ◇3	ACTION ALARM SP - NUMERIC STATUS - SET POINT TREND	DESCRIPTION ◇2 ◇5	DESCRIPTION	E - EXISTING F - FUTURE		
HARDWIRED I/O POINT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE 7 - IO TABLE	REFER ◇1 ◇2 ◇4	REFER ◇3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
NETWORK / SOFT I/O	1 - TAG 2 - LOOP NUMBER 3 - PROTOCOL 4 - PANEL 5 - PLC 6 - EXISTING/FUTURE 7 - IO TABLE 8 - SWITCH/SEGMENT	REFER ◇1 ◇2	REFER ◇3	COMMUNICATION PROTOCOL CNET - CONTROLNET DNET - DEVICENET EIP - ETHERNET/IP FF - FOUNDATION FIELDBUS HART-IP - HART OVER ETHERNET MANF - MFR. PROPRIETARY MBRTU - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SNMP - SNMPv3 HTTP - WEB SERVER (TCP/IP)	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
LOCAL OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1 ◇2	REFER ◇3	ACTION ALARM SP - NUMERIC STATUS - SET POINT TREND	DESCRIPTION	LOI - LOCAL OPERATOR INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
PILOT DEVICE OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1 ◇2	REFER ◇3	AM - AUTO/MANUAL BYPASS - BY PASS E-STOP - EMERGENCY STOP FRLR - FIXED RATE/LEVEL RATE HOA - HAND/OFF/AUTO LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE NOOT - NO OFFLINE/OFFLINE TRANSITION OC - OPEN/CLOSE OLOL - ON LINE/OFFLINE OO - OFF/ON OSC - OPEN/STOP/CLOSE RST - RESET SAAM - SEMI AUTO/AUTO/MANUAL SEL - SELECT SPD - SPEED SS - START/STOP ST - STOP	DESCRIPTION ◇2 ◇5	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER ◇3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
POWER DEVICE AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	DISC - DISCONNECT	REFER ◇3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER FU - FUSE	REFER ◇3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
INSTRUMENT PRIMARY ELEMENT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1	REFER ◇3	DESCRIPTION ◇5	DESCRIPTION ◇6 ◇7	AREA NO, BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER ◇1	REFER ◇3	DESCRIPTION ◇5	DESCRIPTION ◇6 ◇7	DESCRIPTION INT - INTEGRAL REM - REMOTE	E - EXISTING F - FUTURE		OUT - OUTDOOR
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1 ◇3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇1 ◇3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	DESCRIPTION	E - EXISTING F - FUTURE		
FIELD EQUIPMENT NON-POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇3	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	AREA NO, BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT PRIMARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER ◇3	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT AUXILIARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER ◇3	DESCRIPTION	DESCRIPTION ◇6 ◇7	DESCRIPTION	E - EXISTING F - FUTURE		
FIELD EQUIPMENT STARTER/DRIVE CUBICLE/CABINET	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE-POLE 5 - POWER SOURCE 6 - EXISTING/FUTURE	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER ◇3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART-WINDING STARTER RVAT - REDUCED VOLTAGE AUTO RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		

INSTRUMENT BUBBLE LOCATIONS



NOTES

1. INSTRUMENT TAG IDENTIFICATION LETTERS TABLE
2. OPERATOR PILOT DEVICE LEGEND
3. EQUIPMENT TAGGING TABLE
4. I/O TYPE DESIGNATIONS
5. INSTRUMENT TYPE DESIGNATIONS TABLE
6. FURNISHED BY: FBO FURNISHED BY OWNER; FBV FURNISHED BY VENDOR
7. PROVIDED BY: PBO PROVIDED BY OWNER; PBV PROVIDED BY VENDOR

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CDS
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5612657 MATTHEW G. HATCH STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. GN01
SHEET NO. 31 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GN001.dwg

INSTRUMENT TAG IDENTIFICATION LETTERS

	MEASURED VARIABLE / INSTRUMENT FUNCTION	ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	CONVERTER, TRANSDUCER, RELAY, SPECIAL DEVICES	INDICATOR	RECORDER	CONTROL/COMMAND	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH	SWITCH LOW LOW	SWITCH LOW	SWITCH HIGH	SWITCH HIGH HIGH	SWITCH COMBINATION HIGH/ LOW	ACTION	ALARM LOW LOW	ALARM LOW	ALARM HIGH	ALARM HIGH HIGH	TOTALIZE INDICATOR TRANSMITTER	VALVE	GAUGE	LIGHT	SPEED SETTING
A	ANALYSIS	AE	AT	AIT	AY	AI	AR	AC	AIC	ARC	AS	ASLL	ASL	ASH	ASHH	ASHL		AALL	AAL	AAH	AAHH				AL	
B	BURNER FLAME	BE	BT	BIT	BY	BI	BR	BC	BIC	BRC	BS	BSLL	BSL	BSH	BSHH			BALL	BAL	BAH	BAHH				BL	
C	CONDUCTIVITY	CE	CT	CIT	CY	CI	CR	CC	CIC	CRC	CS	CSLL	CSL	CSH	CSHH	CSHL		CALL	CAL	CAH	CAHH				CL	
D	DENSITY	DE	DT	DIT	DY	DI	DR	DC	DIC	DRC	DS	DSLL	DSL	DSH	DSHH	DSHL		DALL	DAL	DAH	DAHH				DL	
E	VOLTAGE												ESL													
F	FLOW	FE	FT	FIT	FY	FI	FR	FC	FIC	FRC	FS	FSLL	FSL	FSH	FSHH	FSHL		FALL	FAL	FAH	FAHH	FQI	FCV	FG	FL	
FF	FLOW RATIO				FFY	FFI		FFC	FFIC		FFS														FFL	
H	HAND (MANUAL)*							HC			HS*						HA*						HV		HL	HSS
I	CURRENT		IT	IIT	IY	II	IR	IC	IIC	IRC	IS	ISLL	ISL	ISH	ISHH			IALL	IAL	IAH	IAHH				IL	
J	POWER																									
K	TIME				KY	KI	KR	KC	KIC	KRC	KS	KSLL	KSL	KSH	KSHH			KALL	KAL	KAH	KAHH		KV		KL	
L	LEVEL	LE	LT	LIT	LY	LI	LR	LC	LIC	LRC	LS	LSLL	LSL	LSH	LSHH	LSHL		LALL	LAL	LAH	LAHH		LCV	LG	LL	
M	MOISTURE OR HUMIDITY	ME	MT	MIT	MY	MI	MR	MC	MIC	MRC	MS	MSLL	MSL	MSH	MSHH			MALL	MAL	MAH	MAHH				ML	
N	USER'S CHOICE																									
P	PRESSURE OR VACUUM	PE	PT	PIT	PY	PI	PR	PC	PIC	PRC	PS	PSLL	PSL	PSH	PSHH	PSHL		PALL	PAL	PAH	PAHH		PCV		PL	
PD	DIFFERENTIAL PRESSURE		PDT	PDIT	PDY	PDI	PDR	PDC	PDIC	PDRC	PDS	PDSLL	PDSL	PDSH	PDSHH			PDALL	PDAL	PDAH	PDAHH		PDCV		PDL	
Q	QUANTITY	QE	QT	QIT	QY	QI	QR				QS	QSLL	QSL	QSH	QSHH			QALL	QAL	QAH	QAHH					
R	RADIATION																									
S	SPEED	SE	ST	SIT	SY	SI	SR	SC	SIC	SRC	SS	SSLL	SSL	SSH	SSHH			SALL	SAL	SAH	SAHH					
T	TEMPERATURE	TE	TT	TIT	TY	TI	TR	TC	TIC	TRC	TS	TSLL	TSL	TSH	TSHH	TSHL		TALL	TAL	TAH	TAHH		TCV		TL	
TD	DIFFERENTIAL TEMPERATURE		TDT	TDIT	TDY	TDI	TDR	TDC	TDIC	TDRC	TDS	TDSLL	TDSL	TDSH	TDSHH			TDALL	TDAL	TDAH	TDAHH		TDCV		TDL	
U	MULTIVARIABLE					UI	UR	UC	UIC	URC	US														UL	
V	VISCOSITY	VE	VT	VIT	VY	VI	VR	VC	VIC	VRC	VS	VSLL	VSL	VSH	VSHH			VALL	VAL	VAH	VAHH				VL	
W	WEIGHT	WE	WT	WIT	WY	WI	WR				WS	WSLL	WSL	WSH	WSHH			WALL	WAL	WAH	WAHH					
X	UNCLASSIFIED	XE	XT	XIT	XY	XI	XR	XC	XIC	XRC	XS	XSLL	XSL	XSH	XSHH			XALL	XAL	XAH	XAHH		XCV	XG	XL	
XV	VIBRATION	XVE	XVT		XVY	XVI	XVR				XVS			XVSH	XVSHH					XVAH	XVAHH				XVL	
Y	STATUS***					YI																			YL	
Z	POSITION	ZE	ZT	ZIT	ZY	ZI		ZC**			ZS**												ZV		ZL**	

* REFER TO OPERATOR PILOT DEVICE LEGEND

** LETTER INDICATES POSITION (O=OPEN, C=CLOSED, R=RAISE, L=LOWER, ETC)

OPERATOR PILOT DEVICE LEGEND

DEVICE TYPE / PILOT DEVICE FUNCTION	LOCAL-OFF-REMOTE (LOR)/OR LOCAL-STOP-REMOTE (LSR)	STOP(SP)	START (ST)	HAND-OFF-AUTO (HOA)	OFF-ON (OO)	SELECT (SEL)	OPEN-STOP-CLOSE (OSC)	JOG OPEN-HOLD-CLOSE (JOHC)	SEMIAUTO-AUTO-MANUAL (SAAM)	LEAD-LAG-STANDBY (LLGS)	JOG OPEN-JOG CLOSE (JOJC)	ON-LINE-OFFLINE (OLOF)	AUTO-MANUAL (AM)	FIXED RATE-LEVEL RATE (FRLR)	OPEN-CLOSE (OC)	NO,OFF,LINE-OFFLINE TRANSITION (NOOT)	LOW-HIGH (LH)	RESET (RST)	SPEED (SPD)	START-STOP (STSP)	E-STOP (E-SP)	BYPASS (BYP)			SILENCE	POSITION (POS)
PILOT DEVICE TAG (HAND SWITCHES)	HAS*	HSB	HSC	HSD	HSE	HSF	HSG	HSH	HIS	HSJ	HSK	HSL	HSM	HSN	HSO	HSP	HSQ	HSR	HSS	HST	HSU	HSV	HSW	HSX	HSY	HSZ

I/O TYPE DESIGNATIONS

RNG	RUNNING	SPDC	SPEED COMMAND
FAIL	FAILED/FAULT	SPDF	SPEED FEEDBACK
FWD	RUNNING FORWARD	REM	LOR IN REMOTE
FAST	RUNNING HIGH	LOC	LOR IN LOCAL
SLOW	RUNNING LOW	AUTO	HOA IN AUTO
REV	RUNNING REVERSE	HAND	HOA IN HAND
SVC	SOLENOID VALVE CLOSE	RST	RESET
SVO	SOLENOID VALVE OPEN		
RUN	RUN		
SLWC	MOTOR START LOW		
REVC	MOTOR START REVERSE		

INSTRUMENT TYPE DESIGNATIONS

CGD	COMBUSTIBLE GAS DETECTOR	RTD	RESISTANCE TEMP DETECTOR
COND	CONDUCTIVITY	SB	SLUDGE BLANKET
DO	DISSOLVED OXYGEN	SC	STREAMING CURRENT
FMCW	FREQ. MODULATED CONT. WAVE	SD	SLUDGE DEPTH
IS	INTRINSIC SAFETY BARRIER	SH	SODIUM HYPOCHLORITE
LEL	LOWER EXPLOSIVE LIMIT	SO2	SULFUR DIOXIDE
MLSS	MIXED LIQUOR SUSPENDED SOLIDS	TDR	TIME DOMAIN REFLECTOMETRY
ORP	OXIDATION REDUCTION POTENTIAL	TOC	TOTAL ORGANIC CARBON
P-SUB	PRESSURE SUBMERSIBLE	TSS	TOTAL SUSPENDED SOLIDS
PC	PARTICLE COUNTER	UVI	UV INTENSITY
PTOF	PULSE TIME OF FLIGHT	UVT	UV TRANSMITTANCE

SPECIFIC ABBREVIATIONS

HTR	HEATER
HTU	HEAT TRACE UNIT
MWH	MOTOR WINDING HEATER
SV	SOLENOID VALVE
SPD	SURGE PROTECTIVE DEVICE
UPS	UNINTERRUPTIBLE POWER SUPPLY
YA	STATUS AUTO
YR	STATUS REMOTE
Y1	STATE RUNNING
Y2	ALARM FAILED/FAULT

P&ID LINE SYMBOLS

INSTRUMENT OR CONNECTION TO PROCESS

PNEUMATIC SIGNAL

ELECTRIC SIGNAL

HYDRAULIC SIGNAL

CAPILLARY TUBE

ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)

ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)

INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)

PROCESS LINE SYMBOLS

PRIMARY PROCESS FLOW IN PIPE

SECONDARY PROCESS FLOW IN PIPE

PRIMARY PROCESS FLOW IN CHANNEL

SECONDARY PROCESS FLOW IN CHANNEL

DESIGNATIONS

EQUIPMENT ENCLOSURE

EXISTING

FUTURE

FUTURE

MISCELLANEOUS P&ID SYMBOLS

PROCESS CONTINUATION — DESC2 / DESC1 / # / DWG NO. — UNIQUE IDENTIFIER — CONTINUATION SHEET

SIGNAL CONTINUATION — DESC2 / DESC1 / # / DWG NO. — UNIQUE IDENTIFIER — CONTINUATION SHEET

PIPE CALLOUT — PIPE SIZE

SCHEMATIC DETAIL — ? / -

TYPICAL DETAIL — * / TYP — TYPNUM, TYPNUM2, TYPNUM3, TYPNUM4, TYPNUM5, TYPNUM6

REV	DATE	BY	DESCRIPTION

DESIGNED CE

DRAWN CE

CHECKED CDS

DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 5612657 — MATTHEW G. HATCH — STATE OF UTAH

carollo

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS 2

VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING — 0 — 1" — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237

DRAWING NO. GN02

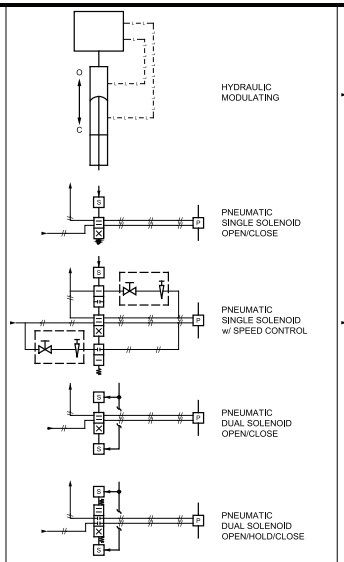
SHEET NO. 32 OF 46

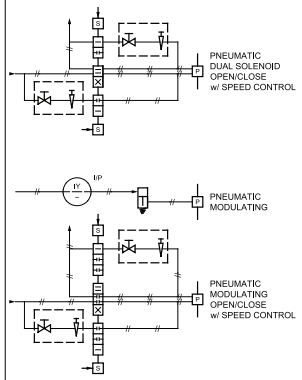
PROJECT NO. 201237-100000 FILE NAME: 20123700GN002.dwg

Model: Layout1 ColorTable: gshade.ctb DesignScript: CarolloStd_Pen_v0905.pen PlotScale: 1:1 User: svcPW Plot Date: 22-FEB-2023 2:28:14 PM bordelon

ACTUATORS

- DIAPHRAGM
- ELECTRIC DISCRETE
- ELECTRIC MODULATING
- ELECTRIC HYDRAULIC
- HAND
- HYDRAULIC
- PNEUMATIC
- SOLENOID





PIPING

- AIR GAP
- BLIND FLANGE
- CAPPED OR PLUGGED
- CONCENTRIC INCREASER
- CONCENTRIC REDUCER
- DRAIN
- ECCENTRIC INCREASER
- FLANGED CONNECTION
- TEE
- UNION
- ECCENTRIC REDUCER
- EXPANSION COUPLING
- EXPANSION JOINT VIBRATION CENTER
- FLEXIBLE CONNECTION
- QUICK DISCONNECT

PUMPS

- AIR DRIVEN
- CENTRIFUGAL
- CHEMICAL FEED DIAPHRAGM
- DIAPHRAGM
- GEAR
- PERISTALTIC OR HOSE
- PISTON
- PROGRESSIVE CAVITY
- OR SUBMERSIBLE
- VERTICAL TURBINE
- VERTICAL CHOPPER
- WATER CHAMP

BLOWERS/ COMPRESSORS

- CENTRIFUGAL SINGLE STAGE BLOWER
- CENTRIFUGAL MULTI STAGE BLOWER
- RECIPROCATING COMPRESSOR
- SCREW COMPRESSOR
- FAN
- LIQUID RING COMPRESSOR
- ROTARY LOBE BLOWER

CHECK VALVES

- BACK FLOW PREVENTER
- BALL
- DIAPHRAGM CHECK
- DOUBLE FLAP
- FLAPPER
- SLANTING CHECK VALVE
- SPRING LOADED GENERAL
- SPRING LOADED SWING
- SWING

PRESSURE VALVES

- BACKPRESSURE REGULATING SELF CONTAINED
- BACKPRESSURE REGULATING EXTERNAL TAP
- PRESSURE REDUCING SELF CONTAINED
- PRESSURE REDUCING EXTERNAL PRESSURE TAP
- REGULATING
- PRESSURE RELIEF
- VACUUM RELIEF

VALVES

- 3-WAY
- 3-WAY PLUG
- 4-WAY
- AIR-RELIEF
- ANGLE
- BALL
- BALL V-NOTCH
- BUTTERFLY
- BUTTERFLY-BURIED VALVE BOX
- CONE
- DIAPHRAGM
- FLOAT
- GATE
- GATE-BURIED VALVE BOX
- GLOBE
- HOSE
- MUD
- NEEDLE
- PINCH
- PLUG ECCENTRIC
- PLUG ECCENTRIC w-VALVE BOX
- PLUG ECCENTRIC LUBRICATED
- PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX
- PLUG CONCENTRIC
- PLUG CONCENTRIC -BURIED VALVE BOX
- PLUG CONCENTRIC LUBRICATED
- PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX
- PUMP DISCHARGE
- TELESCOPING

VALVE DESIGNATIONS	
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSE
FLP	FAIL LAST POSITION

MISC

- AIR / CHEMICAL DIFFUSER
- BASKET STRAINER
- BLOW-OFF SILENCER
- CALIBRATION COLUMN
- COALESCER
- DESICCANT DRYER
- EDUCTOR/EJECTOR
- EQUIPMENT/INSTRUMENT LOCATOR
- EXHAUST FAN
- EYEWASH
- FILTER
- FILTER SEPARATOR
- FINE FILTER
- FIRE ALARM/SENSOR
- FLAME ARRESTER
- FLAME ARRESTER w/THERMALLY OPERATED VALVE
- FLOW CONDITIONER
- GAS CANNON
- GRINDER
- HEAT EXCHANGER
- HOIST
- HORIZONTAL MIXER
- HOSE CONNECTION
- INLET STRAINER
- INLINE STATIC MIXER
- INLINE DUCT DAMPER
- LOUVER OR DAMPER
- MATERIAL CHANGE
- MIXER
- MOTOR
- NOZZLE
- ORIFICE RESTRICTION
- PERISTALTIC COMPOSITE SAMPLER
- OR PULSATION DAMPENER
- REFRIGERATED DRYER
- RUPTURE DISK
- SAMPLE PORT
- SIGHT TUBE
- SMOKE DETECTOR
- STRAINER - MECHANICALLY CLEANED
- STRAINER WITH BLOW OFF
- STRAINER WYE TYPE
- VAPOR HEATER
- VAPORIZER
- VENT
- VENT TO ATMOSPHERE

REV	DATE	BY	DESCRIPTION

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DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5612657 MATTHEW G. HATCH STATE OF UTAH

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WEBER BASIN WATER CONSERVANCY DISTRICT

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DAVIS SOUTH WTP PAC FEED PROJECT
INSTRUMENTATION
SYMBOLS AND ABBREVIATIONS 3

VERIFY SCALES
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JOB NO. 201237
DRAWING NO. GN03
SHEET NO. 33 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GN003.dwg

FLOW

- BATCH
- CORIOLIS
- MAGNETIC
- ORIFICE
- PADDLE WHEEL
- PISTON
- ANNUBAR
- PITOT TUBE
- POSITIVE-DISPLACEMENT
- PROPELLER-TURBINE
- ROTAMETER
- THERMAL
- ULTRASONIC
- ULTRASONIC BIOGAS
- V-CONE
- VENTURI TUBE OR FLOW NOZZLE
- VORTEX

FLUMES

- LEOPOLD-LAGCO
- PALMER-BOWLUS
- PARSHALL
- REGULAR CUTTHROAT
- TRAPEZOIDAL

GATES

SIDE VIEW	PLAN VIEW
SLIDE	FLAP
SLUICE	KNIFE
STOP	SLIDE
	SLUICE
	STOP
	WEIR
	BUTTERFLY

LEVEL

- BUBBLER
- CAPACITANCE
- DIFFERENTIAL PRESSURE (TANK)
- ELECTRODE
- FLOAT
- INVERTED COLUMN
- PROBE
- RADAR PTOF
- RADAR (FREQUENCY MODULATED CONTINUOUS WAVE)
- RADAR TDR
- SUSPENDED/ SUBMERSIBLE
- TUNING FORK
- ULTRASONIC

NETWORKS

CABLE CALLOUTS AND ABBREVIATIONS

- 24/FO-SM — FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE
- (2) 24/FO-SM — FIBER LINE REPRESENTS TWO 24-STRAND FIBER OPTIC CABLES
- (1) 24/FO-SM EA. — EACH FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE
- (4) — COPPER LINE REPRESENTS FOUR COPPER ETHERNET CABLES
- (2) EA. — EACH COPPER LINE REPRESENTS TWO COPPER ETHERNET CABLES

FIBER ABBREVIATIONS

##/FO-XX
= STRAND COUNT
FO = FIBER OPTIC

XX = MODE
SM = SINGLE MODE
MM = MULTIMODE

NETWORK ABBREVIATIONS

BMS	= BUILDING MANAGEMENT SYSTEM
BSN	= BUSINESS NETWORK
FCN	= FIELD CONTROL NETWORK
MIN	= MAINTENANCE INFORMATION NETWORK
PCN	= PROCESS CONTROL NETWORK
PLCN	= PLC NETWORK
SCN	= SECURITY CONTROL NETWORK
PCN-W	= WIRELESS PROCESS CONTROL NETWORK
NR	= NETWORK RACK
NP	= NETWORK PANEL
ES	= ETHERNET SWITCH
FPP	= FIBER PATCH PANEL

VLAN SYMBOLS

- = BUSINESS NETWORK
- = SECURITY CONTROL NETWORK
- = BUILDING MANAGEMENT SYSTEM
- = PROCESS CONTROL NETWORK
- = WIRELESS PROCESS CONTROL NETWORK
- = MAINTENANCE INFORMATION NETWORK
- = PLC NETWORK
- = FIELD CONTROL NETWORK

NETWORK LINE SYMBOLS

- COPPER ETHERNET — C C C C C
- FIBER OPTIC ETHERNET — F F F F F
- WIRELESS ETHERNET — W W W W W
- PROFIBUS DP — PBD PBD PBD PBD PBD
- PROFIBUS PA — PBA PBA PBA PBA PBA
- SERIAL DATA

MISCELLANEOUS NETWORK SYMBOLS

NETWORK CABLE CONTINUATIONS

BOTTOM/LEFT OF PAGE STYLE CONTINUATION: UNIQUE IDENTIFIER, DWG NO., DESC 1, DESC 2, DESC 3, CONTINUATION SHEET

TOP OF PAGE STYLE CONTINUATION: DESC 3, DESC 2, DESC 1, DWG NO., CONTINUATION SHEET, UNIQUE IDENTIFIER

FIELD NETWORK DEVICE

PLC TAG / PANEL TAG, PROTOCOL / SEGMENT #, DEVICE SPECIFIC SYMBOL, TAG, DESC 1, DESC 2, DESC 3, P&ID DRAWING REFERENCE

NETWORK EQUIPMENT CALLOUT

TAG
DESC 1

PRESSURE/VACUUM

PRESSURE

- GAUGE
- MANOMETER
- PRESSURE SWITCH
- PRESSURE TRANSMITTER

DIFFERENTIAL PRESSURE

- GAUGE DIFFERENTIAL INDICATOR
- DIFFERENTIAL PRESSURE SWITCH
- DIFFERENTIAL PRESSURE TRANSMITTER

PRESSURE SEALS

- SEAL ANNULAR
- SEAL DIAPHRAGM
- SEAL SANITARY

EXAMPLE

- PRESSURE SWITCH

TEMPERATURE

- TEMPERATURE w/THERMOWELL
- TEMPERATURE GAUGE
- THERMOMETER

WEIGHT

- PLATFORM SCALE
- LOAD CELLS

WEIRS

SIDE VIEW	PLAN VIEW
RECTANGULAR w/o END CONTRACTIONS	RECTANGULAR w/o END CONTRACTIONS
RECTANGULAR w/ END CONTRACTIONS	RECTANGULAR w/ END CONTRACTIONS
V-NOTCH (TRIANGULAR)	V-NOTCH (TRIANGULAR)
TRAPEZOIDAL (CIPOLLETTI)	TRAPEZOIDAL (CIPOLLETTI)

REV	DATE	BY	DESCRIPTION

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DAVIS SOUTH WTP PAC FEED PROJECT

INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS 4

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JOB NO. 201237
DRAWING NO. GN04
SHEET NO. 34 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GN004.dwg

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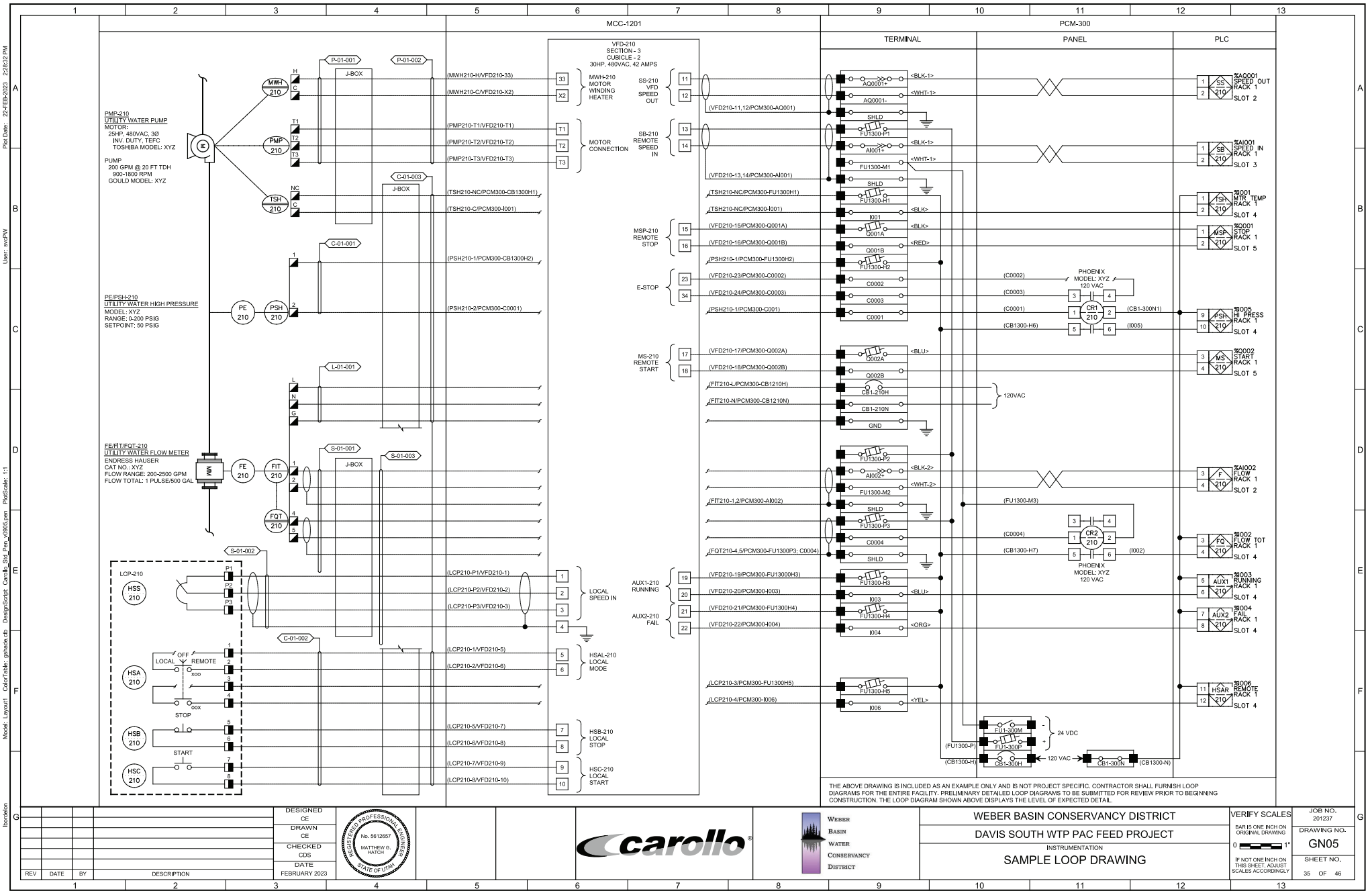

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SAMPLE LOOP DRAWING

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JOB NO. 201237
DRAWING NO. GN05
SHEET NO. 35 OF 46

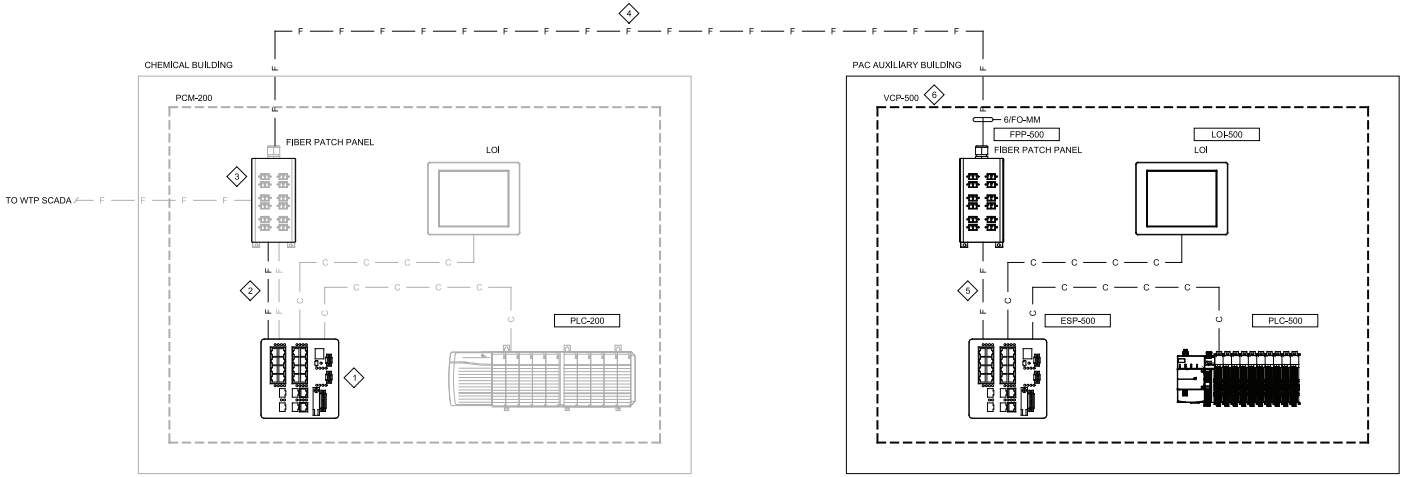
PROJECT NO. 201237-100000 FILE NAME: 20123700GN005.dwg

GENERAL NOTES:

1. COMMUNICATION PROTOCOL SHALL BE ETHERNET/IP. UNLESS NOTED OTHERWISE. ALL NETWORK COMMUNICATION SHALL BE MINIMUM 100 MBPS.
2. PROVIDE ADDITIONAL HARDWARE AND CONFIGURATION AS NEEDED FOR A FULLY FUNCTIONAL SYSTEM.

KEY NOTES:

1. NEW ETHERNET SWITCH FURNISHED AND INSTALLED BY OWNER.
2. NEW DUPLEX FIBER OPTIC PATCH CABLE FURNISHED AND INSTALLED BY OWNER.
3. TERMINATE NEW FIBER OPTIC CABLE WITH TYPE SC CONNECTORS. PROVIDE NEW FIBER OPTIC PATCH PANEL CONNECTOR PLATE FOR EXISTING PATCH PANEL.
4. 6-STRAND MULTIMODE FIBER OPTIC CABLE.
5. DUPLEX FIBER OPTIC PATCH CABLE.
6. VENDOR CONTROL PANEL SHALL BE PROVIDED BY THE PAC SYSTEM SUPPLIER.



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DAVIS SOUTH WTP PAC FEED PROJECT

INSTRUMENTATION

PAC SYSTEM NETWORK CONNECTION DIAGRAM

VERIFY SCALES
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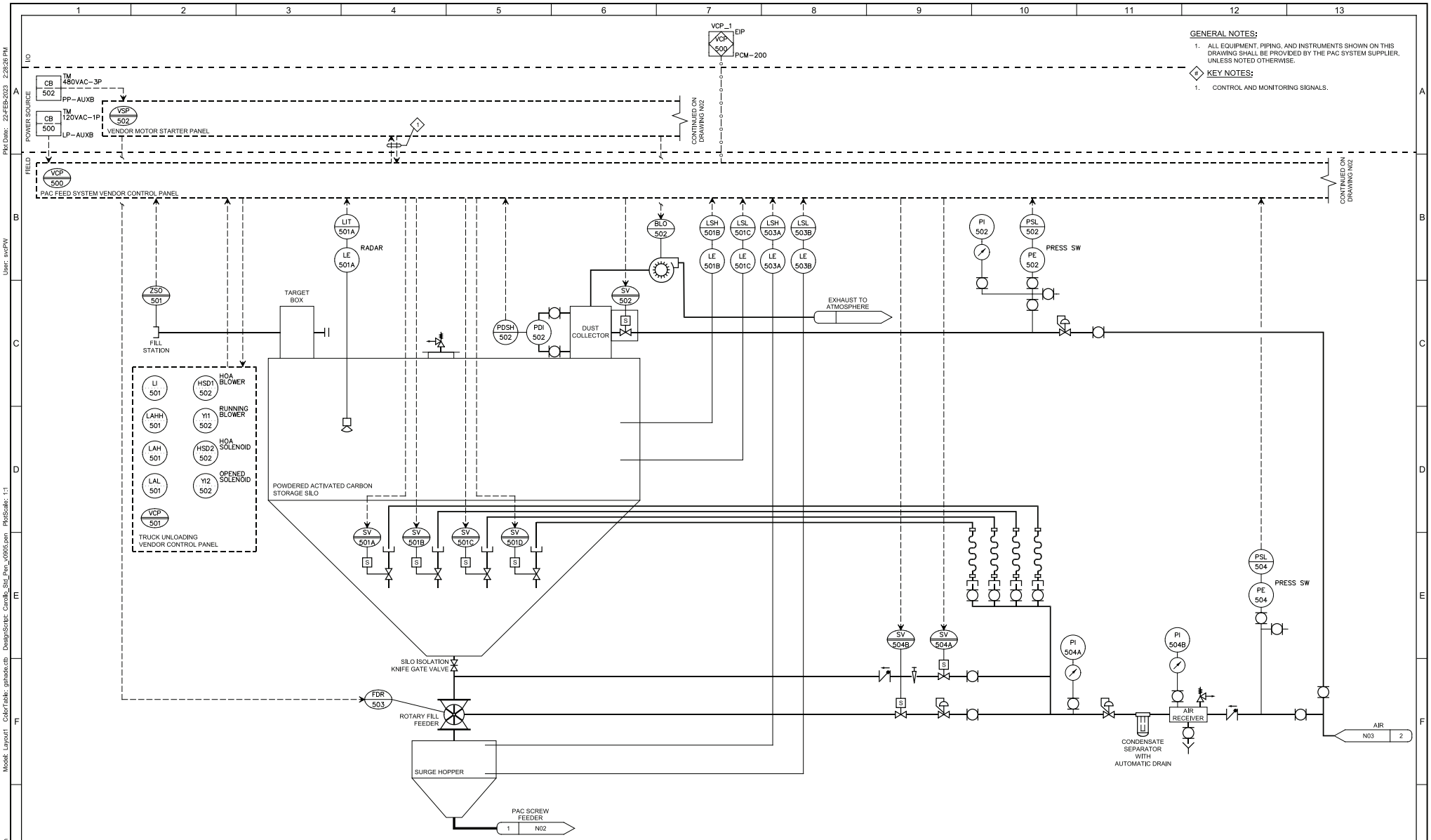
JOB NO. 201237
DRAWING NO. GN06
SHEET NO. 36 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700GN006.dwg



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DAVIS SOUTH WTP PAC FEED PROJECT

INSTRUMENTATION

PAC STORAGE AND FEED SYSTEM P&ID 1

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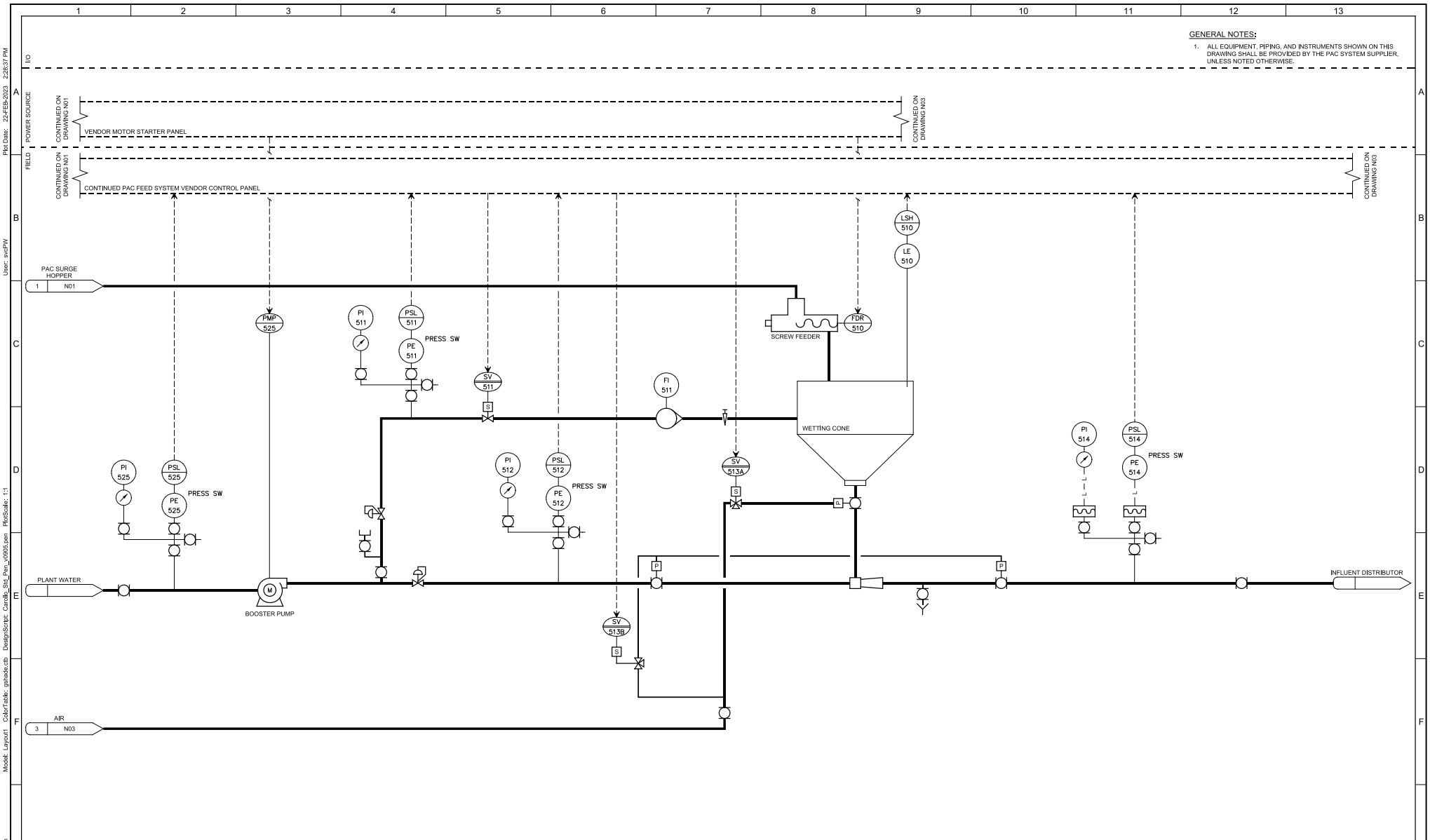
JOB NO. 201237
DRAWING NO. N01
SHEET NO. 37 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700N001.dwg



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INSTRUMENTATION

PAC STORAGE AND FEED SYSTEM P&ID 2

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JOB NO. 201237
DRAWING NO. N02
SHEET NO. 38 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700N002.dwg

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User: svcPW
PlotScale: 1:1
DesignScript: Carollo_Std_Pen_v0905.pen
ColorTable: gshade.ctb
Model: Layout1
bordelon

GENERAL NOTES:

1. ALL EQUIPMENT, PIPING, AND INSTRUMENTS SHOWN ON THIS DRAWING SHALL BE PROVIDED BY THE PAC SYSTEM SUPPLIER, UNLESS NOTED OTHERWISE.

I/O

POWER SOURCE

CONTINUED ON DRAWING N02

VENDOR MOTOR STARTER PANEL

FIELD

CONTINUED ON DRAWING N02

CONTINUED PAC FEED SYSTEM VENDOR CONTROL PANEL

POWER AND CONTROL

STATUS AND ALARM

VCP 520

AIR COMPRESSOR VENDOR CONTROL PANEL

PSH 520A

PE 520A

PRESS SW

PSL 520B

PE 520B

PRESS SW

CMP 520

AIR COMPRESSOR

AIR RECEIVER TANK

PI 520

DRY 521

REFRIGERATED AIR DRYER

PI 521

PAC STORAGE SILO 2 N01

PAC WETTING CONE AND EDUCTOR 3 N02

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PAC STORAGE AND FEED SYSTEM P&ID 3

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JOB NO. 201237

DRAWING NO. N03

SHEET NO. 39 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700N003.dwg

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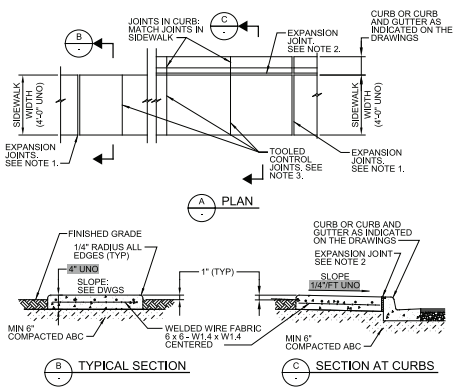
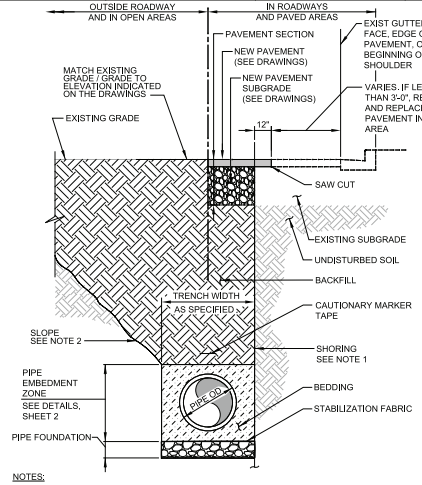


NOTES:

1. PROVIDE EXPANSION JOINTS AT ENDS OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, AT BOTH SIDES OF DRIVEWAYS, AT INTERSECTIONS, AT CORNERS OF STRUCTURES, AND AT MAXIMUM SPACING OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" WIDE BITUMINOUS FIBER WITH 1/4" RADIUS CONCRETE EDGES AT EACH SIDE.
2. PROVIDE EXPANSION JOINT AT CURB. JOINT SHALL BE 3/8" WIDE BITUMINOUS FIBER WITH 1/4" RADIUS CONCRETE EDGE AT SIDEWALK.
3. PROVIDE WEAKENED PLANE JOINTS AT UNIFORM SPACING EQUAL TO 1.0 TO 1.25 TIMES SIDEWALK WIDTH, BUT NOT GREATER THAN 10 FEET OC MAXIMUM. PROVIDE 1/4" RADIUS CONCRETE EDGES EACH SIDE AT JOINTS.
4. TOP OF CONCRETE ELEVATIONS: AS INDICATED ON THE DRAWINGS.

CR302 SIDEWALK

TYP N 12/24/2020

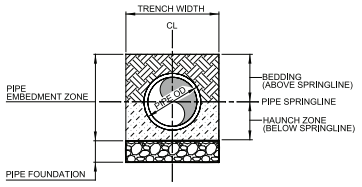


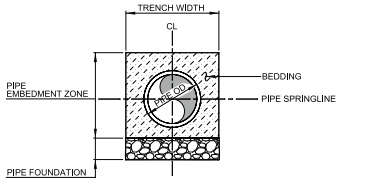
NOTES:

1. SEE SPECIFICATIONS FOR SHORING REQUIREMENTS.
2. SEE SPECIFICATIONS FOR SLOPE REQUIREMENTS.
3. SEE SPECIFICATIONS FOR DEPTH AND WIDTH REQUIREMENTS.

CY111 PIPE TRENCH

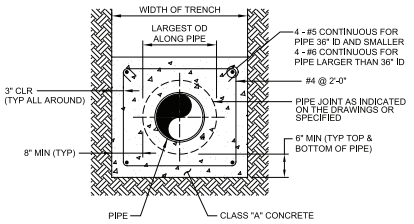
TYP SN SHEET 1 OF 2 08/19/22





CY111 PIPE TRENCH

TYP SN SHEET 2 OF 2 08/19/22

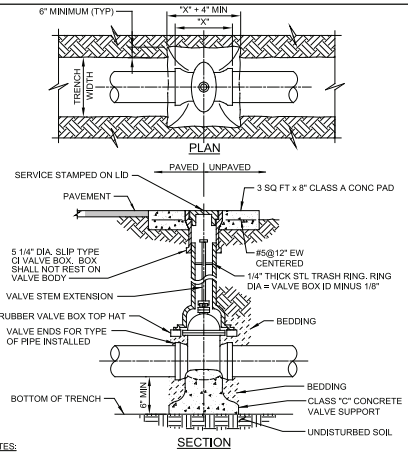


NOTE:

1. TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.
2. SEE MP100 - MP199 FOR DETAILS OF PIPE ENCASEMENT CONNECTIONS TO STRUCTURES.

CY119 PIPE ENCASEMENT - CONCRETE

TYP S 08/19/22



NOTES:

1. ALL BURIED VALVES SHALL BE PROVIDED WITH EXTENSION STEM OPERATION WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
2. COAT BURIED PIPE AND VALVE BOX AS SPECIFIED.
3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.
4. VALVE TYPE AS INDICATED ON THE DRAWINGS.

CY716 GATE VALVE - DIRECT BURY

TYP S 10/20/20

REV	DATE	BY	DESCRIPTION

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REGISTERED PROFESSIONAL ENGINEER No. 7667716-2202 JACOB C. BAER STATE OF UTAH

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TYPICAL DETAILS

CIVIL

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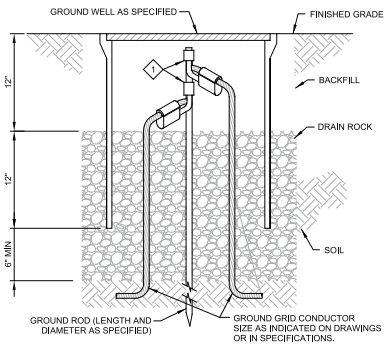
JOB NO. 201237
DRAWING NO. TC01
SHEET NO. 40 OF 46

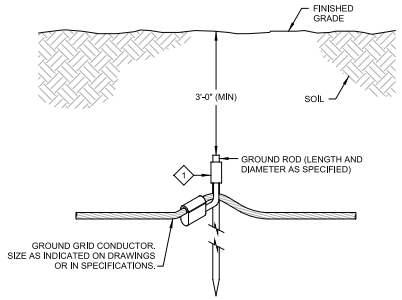
PROJECT NO. 201237-100000 FILE NAME: 201237000TC01.dgn



KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

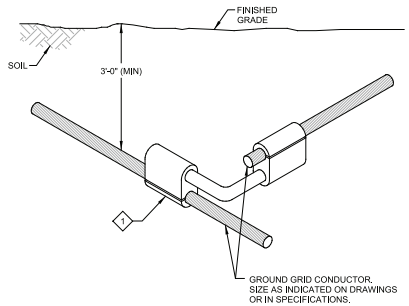
EG001 TYP S GROUND ROD AND GROUNDWELL COMPRESSION CONNECTION



KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

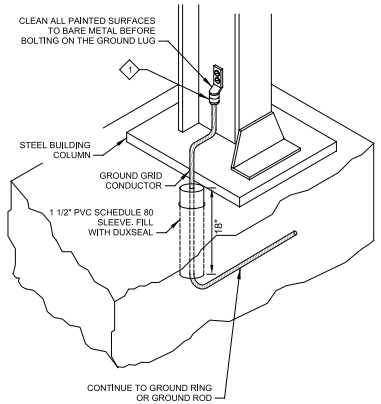
EG002 TYP S GROUND ROD COMPRESSION CONNECTION



KEY NOTES:

1. GROUND GRID CROSS CONNECTOR. SIZE FOR CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

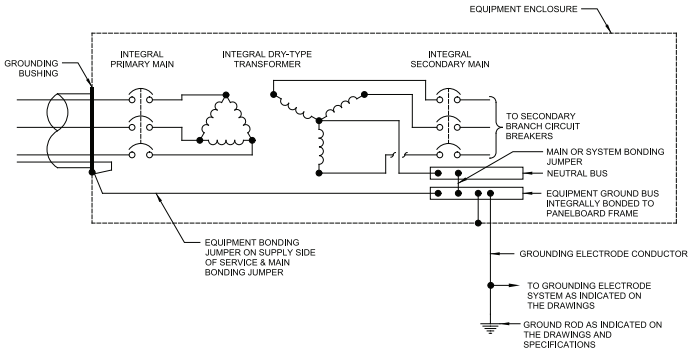
EG101 TYP S COPPER GROUNDING CABLE CONNECTION COMPRESSION CONNECTION



KEY NOTES:

1. HEAVY DUTY COMPRESSION TERMINAL

EG301 TYP S BUILDING STRUCTURE GROUNDING COMPRESSION CONNECTION



EG507 TYP S PACKAGED POWER SUPPLY GROUNDING DETAIL

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TYPICAL DETAILS

ELECTRICAL 1

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JOB NO. 201237
DRAWING NO. TE01
SHEET NO. 41 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700TE01.dgn

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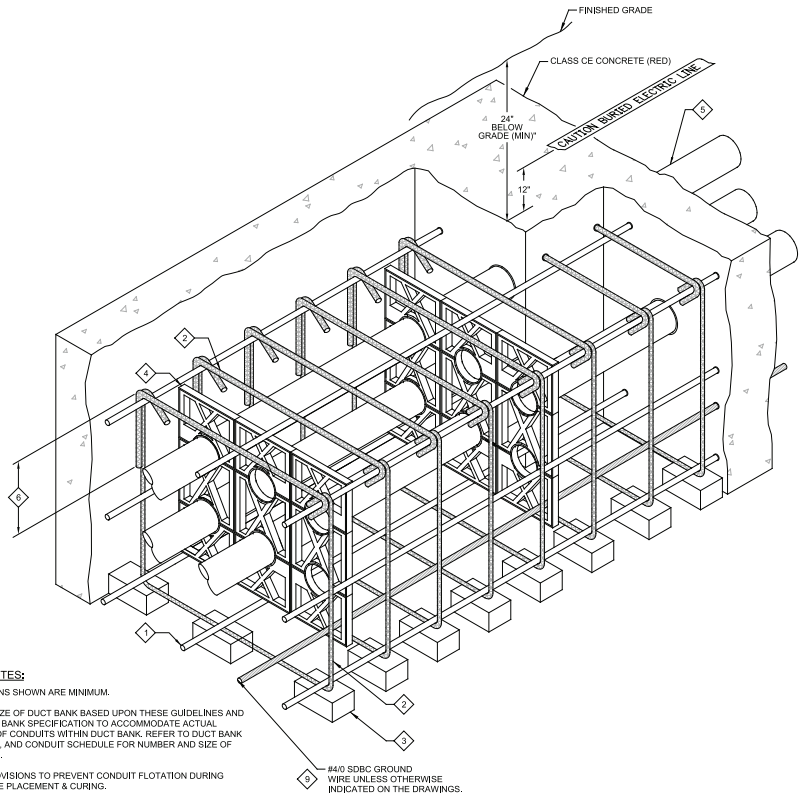
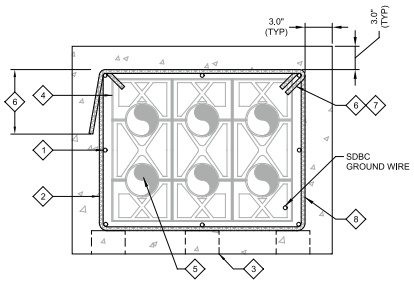


GENERAL NOTES:

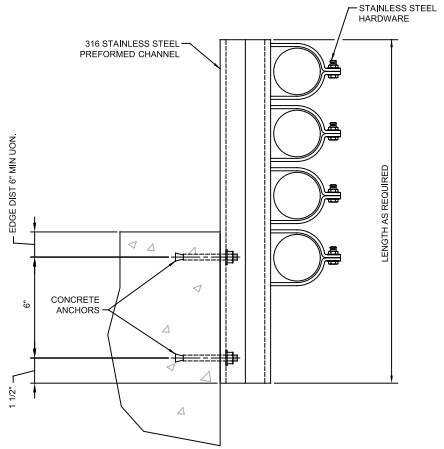
1. DIMENSIONS SHOWN ARE MINIMUM.
2. ADJUST SIZE OF DUCT BANK BASED UPON THESE GUIDELINES AND THE DUCT BANK SPECIFICATION TO ACCOMMODATE ACTUAL NUMBER OF CONDUITS WITHIN DUCT BANK, REFER TO DUCT BANK SECTIONS, AND CONDUIT SCHEDULE FOR NUMBER AND SIZE OF CONDUITS.
3. MAKE PROVISIONS TO PREVENT CONDUIT FLOTATION DURING CONCRETE PLACEMENT & CURING.

KEY NOTES:

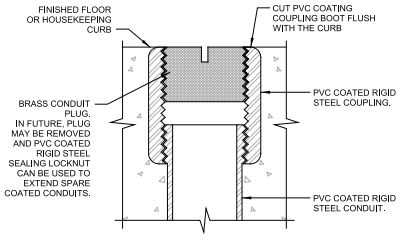
1. #4 REINFORCING STEEL 12" MAXIMUM ON CENTER AROUND ENTIRE PERIMETER OF DUCT BANK.
2. #4 REINFORCING STEEL TIES MAXIMUM 24" ON CENTER ALONG LENGTH OF DUCT BANK.
3. MINIMUM OF TWO PRECAST CONCRETE BAR SUPPORTS PLACED UNDER A TIE AT EACH PVC CONDUIT SPACER ALONG LENGTH OF DUCT BANK. PROVIDE PRECAST BAR SUPPORTS AT INTERVALS OF 24" TO REDUCE DEFLECTION.
4. PVC CONDUIT SPACERS ON 8'-0" CENTERS (MAXIMUM), LOCATE 12" FROM TIES.
5. REFER TO DUCT BANK SECTIONS AND SPECIFICATIONS FOR CONDUIT REQUIREMENTS.
6. 1'-4" OR 135 DEGREE HOOK FOR SHALLOW DUCT BANKS SHALLOWER THAN 21"
7. CONTRACTOR'S OPTION TO PROVIDE 1'-4" LAP LENGTH EACH SIDE OF HORIZONTAL TIE.
8. LOWER PORTION OF TIES COULD BE U-BARS IF UPPER PORTIONS PROVIDES 1'-4" VERTICAL LEGS EACH SIDE.
9. BOND THE DUCT BANK GROUND WIRE TO THE GROUNDING SYSTEM AT BOTH ENDS OF THE DUCT BANK.



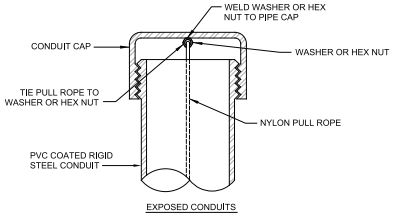
EM001 TYP REINFORCED CONCRETE DUCT BANK



EM103 TYP CONDUIT SUPPORT



ENCASED CONDUITS



EXPOSED CONDUITS

GENERAL NOTES:

1. PROVIDE 2" MIN CLEAR BETWEEN ADJACENT CONDUITS

EM105 TYP SPARE CONDUIT DETAIL

REV	DATE	BY	DESCRIPTION

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WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

TYPICAL DETAILS

ELECTRICAL 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. TE02
SHEET NO. 42 OF 46

Plot Date: 22-FEB-2023 2:33:03 PM
User: svcPW
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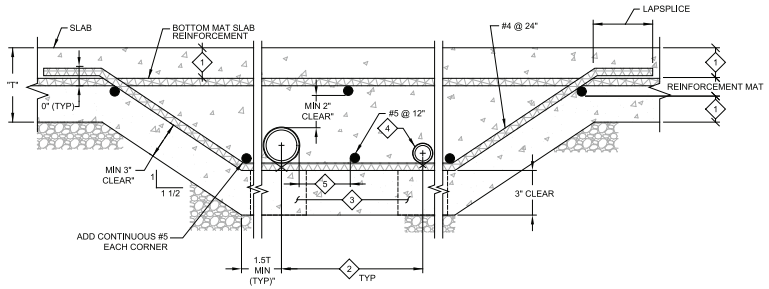
Model: Layout1
LAST SAVED BY: mmorris

PROJECT NO. 201237-100000 FILE NAME: 20123700TE02.dgn



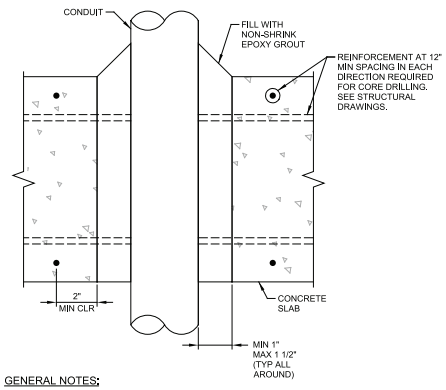
GENERAL NOTES:

1. MOVE CONDUITS TO AVOID CONFLICTS WITH WATERSTOPS. WHERE HORIZONTAL & VERTICAL CLEARANCES SHOWN CANNOT BE MAINTAINED, CONTACT ENGINEER FOR INSTRUCTIONS BEFORE PLACING CONCRETE.
3. TYPICAL SLAB REINFORCEMENT SUPPORT, SPACE AS REQUIRED TO PREVENT #4 CONDUIT SUPPORTS FROM SAGGING.
4. TIE CONDUITS TO SUPPORTS & ANCHOR TO PREVENT FLOTATION.
5. PROVIDE MIN 2" CLEAR BETWEEN CONDUIT & ADJACENT PARALLEL REINFORCEMENT (TYP).

KEY NOTES:

1. FOR REQUIRED TOP AND BOTTOM COVER OVER REINFORCEMENT SEE DETAIL. S101 TYP
2. MINIMUM ON CENTER HORIZONTAL SPACING OF PARALLEL CONDUITS = 4X OUTSIDE DIAMETER OF THE LARGER CONDUIT.

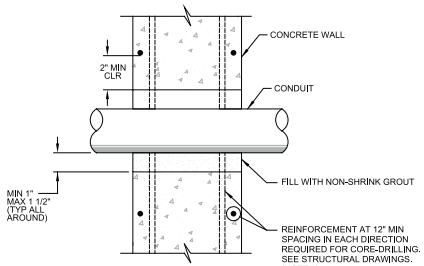
EM118 TYP S ENCASED CONDUIT UNDER CONCRETE SLAB ON GRADE



GENERAL NOTES:

1. PROVIDE NON-DESTRUCTIVE TESTING TO DETERMINE LOCATIONS OF REINFORCEMENT. MAINTAIN MIN 2" CLEAR BETWEEN CORE DRILLED OPENING AND REINFORCEMENT.
2. APPLY EPOXY CEMENT BONDING AGENT PRIOR TO GROUTING.

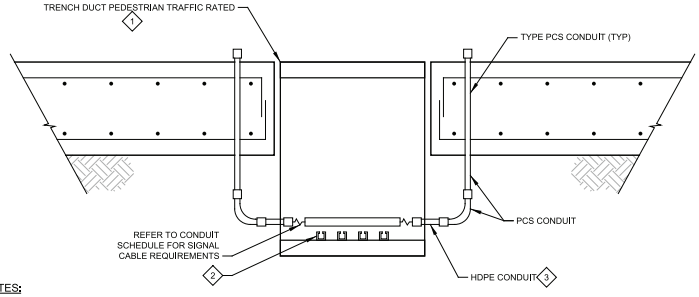
EM139 TYP S CORE DRILLED PENETRATION CONCRETE SLAB



GENERAL NOTES:

1. PROVIDE NON-DESTRUCTIVE TESTING TO DETERMINE LOCATIONS OF REINFORCEMENT. MAINTAIN MIN 2" CLEAR BETWEEN CORE DRILLED OPENING AND REINFORCEMENT.
2. APPLY EPOXY CEMENT BONDING AGENT OR ROUGHEN CONCRETE SURFACE PRIOR TO GROUTING.
3. PROVIDE CAST-IN SLEEVE FOR PENETRATIONS IN WALLS WITH REINFORCEMENT SPACING LESS THAN 2" IN EACH DIRECTION. REFER TO STRUCTURAL DRAWINGS.

EM163 TYP S CORE DRILLED PENETRATION CONCRETE WALL



KEY NOTES:

1. PROVIDE TRENCH DUCT WITH FACTORY END CAPS. MFR - TRENWA OR EQUAL.
   PROVIDE COMPOSITE TYPE LID. MFR-FIBERLIGHT OR EQUAL.
2. PROVIDE FIBERGLASS UNI-STRUT SECURED TO BOTTOM OF TRENCH DUCT. PHYSICALLY SEPARATE POWER, CONTROL, AND ANALOG SIGNALS BY ROUTING THE CABLES WITHIN ISOLATED PVC CONDUIT SECURED BY THE FIBERGLASS UNI-STRUT
3. PROVIDE TYPE HDPE CONDUIT TO ALLOW POSSIBLE TRENCH DUCT SETTLING.

EM901 TYP J TRENCH DUCT DETAIL 12-13-2022

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CAC
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 5329023 GUY C. EHLERS STATE OF UTAH

carollo

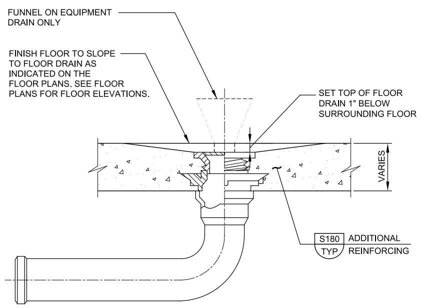
WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
TYPICAL DETAILS
ELECTRICAL 3

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. TE03
SHEET NO. 43 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700TE03.dgn

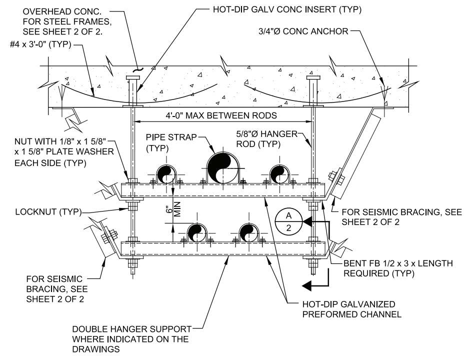


NOTE:

1. PROVIDE 12" RADIUS SLOPE TO EQUIPMENT DRAINS WHERE FLOOR DOES NOT SLOPE TO DRAIN.

MA203 TYP DRAIN - FLOOR OR EQUIPMENT DRAIN W/O TRAP

12/01/22

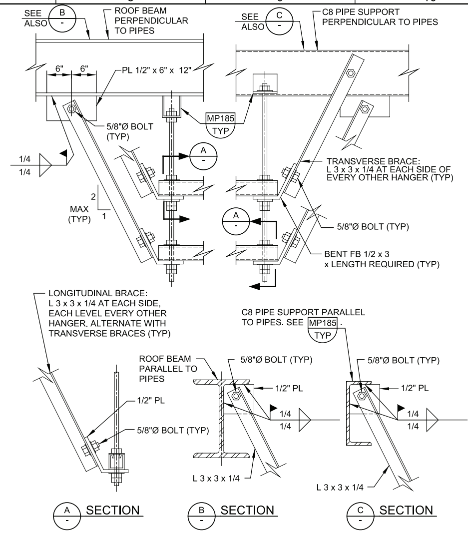


NOTES:

1. HANGER SPACING SHALL BE BASED ON MAXIMUM SPAN ALLOWABLE FOR ANY INDIVIDUAL PIPE.
2. ALL-THREAD ROD SHALL BE USED ONLY FOR DOUBLE SUPPORTS.
3. ALL MATERIALS SHALL BE HOT-DIP GALVANIZED.

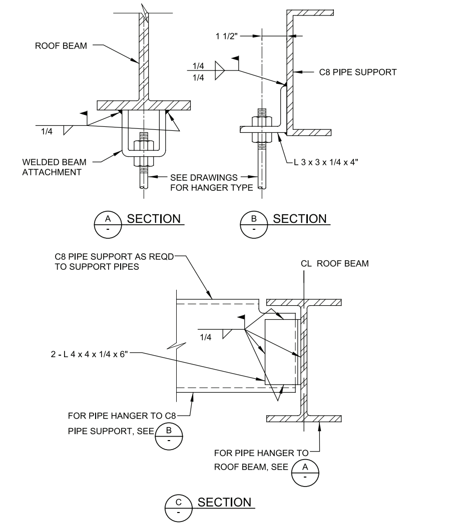
MP175 TYP PIPE SUPPORT - OVERHEAD TRAPEZE - DOUBLE BEAM

N SHEET 1 OF 2 12/01/22



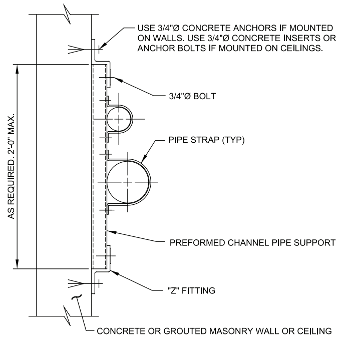
MP175 TYP PIPE SUPPORT - OVERHEAD TRAPEZE - DOUBLE BEAM

N SHEET 2 OF 2 12/01/22



MP185 TYP PIPE SUPPORT - OVERHEAD CONNECTIONS TO STEEL FRAMING

12/01/22



NOTES:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, ALL MATERIAL SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, THE MATERIALS SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS. HOT-DIP GALVANIZE AFTER FABRICATION.
2. SPACE PREFORMED CHANNEL PIPE SUPPORTS AT MAXIMUM 5'-0" O.C.

MP218 TYP PIPE SUPPORT - WALL - PREFORMED CHANNEL W/ PIPE CLIPS

N 12/01/22

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
TYPICAL DETAILS
PIPING

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. TP01
SHEET NO. 44 OF 46

PROJECT NO. 201237-100000 FILE NAME: 201237000TP01.dgn

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1. SEE DIVISION 03 SPECIFICATION FOR REQUIREMENTS FOR CONCRETE CONSTRUCTION.
2. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLABS SHALL BE AS FOLLOWS. CONTACT ENGINEER FOR LOCATIONS INSIDE CONCRETE.
   - 10" THICK OR LESS: ....#5 @ 12" EACH WAY.
   - MORE THAN 10" THICK: ....#5 @ 12" EACH WAY, EACH FACE.
3. WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAP SPLICED, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK. SEE DETAIL S144/TYP.
4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, DOWELS BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS SPLICED TO THE DOWELS.
5. SLAB, BEAM AND COLUMN REINFORCING BARS SHALL HAVE A MINIMUM EXTENSION OR ANCHORAGE INTO SUPPORTS IN ACCORDANCE WITH ACI 318 AND ACI 350.
6. PROVIDE STIRRUP SUPPORT BARS SHALL BE TO SECURE TOP BARS AGAINST DISPLACEMENT AS REQUIRED.
7. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONCRETE COVER OVER #11 AND SMALLER REINFORCING BARS SHALL BE AS FOLLOWS:

A. SLABS AND JOISTS:

FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES FOR DRY CONDITIONS
- #7 BARS AND SMALLER...1"
- #8 BARS AND LARGER..1 1/2"

FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR LOCATED OVER FLUIDS...2"

B. BEAMS AND COLUMNS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
- STIRRUPS, SPIRALS, AND TIES..............................1 1/2"
- PRINCIPAL REINFORCEMENT................................2"

FORMED CONCRETE SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR IN BEAMS LOCATED OVER FLUIDS:
- STIRRUPS AND TIES...2"
- PRINCIPAL REINFORCEMENT................................2 1/2"

C. WALLS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
- #7 BARS AND SMALLER...1"
- #8 BARS AND LARGER..1 1/2"

FORMED CONCRETE SURFACES EXPOSED TO WEATHER, OR IN CONTACT WITH SOIL OR FLUIDS......................2"

S101 TYP S — REINFORCED CONCRETE NOTES

SHEET 1 OF 3 03/12/19

D. FOOTINGS AND SLABS ON GRADE:

FORMED VERTICAL CONCRETE SURFACES............................2"

AT UNFORMED CONCRETE SURFACES CAST AGAINST SOIL, ROCK, OR CONCRETE WORK MATS...3"

TOP SURFACE OF FOOTINGS AND SLABS..............................SAME AS SLABS

8. WATERSTOPS:
   A. PROVIDE WATERSTOPS AT JOINTS IN SLABS AND WALLS OF LIQUID-CONTAINING STRUCTURES, AND PORTIONS OF STRUCTURES BELOW THE DESIGN GROUNDWATER LEVEL. MAKE WATERSTOPS CONTINUOUS THROUGH STRUCTURE, SPLICING WATERSTOPS IN SLABS WITH WATERSTOPS IN WALLS.
   B. END WATERSTOPS 3" BELOW TOP OF WALLS. WHERE TOP OF WALL IS COVERED BY A SLAB WITHOUT WATERSTOPS, CONTINUE WATERSTOP TO WALL/SLAB JOINT. WHERE TOP OF WALL IS COVERED BY A SLAB WITH WATERSTOPS, MAKE WATERSTOPS CONTINUOUS, SPLICING WATERSTOPS IN WALLS WITH WATERSTOPS IN SLAB.
9. CURE CONCRETE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE WATER CURING IS SPECIFIED, MEMBRANE CURING IS NOT ALLOWED.
   A. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. STUDY SPECIFICATION REQUIREMENTS AND FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED.
   B. KEEP WATER CURED SURFACES VISIBLY MOIST AT ALL TIMES. FLOOD TOPS OF WALLS NOT LESS THEN 3 TIMES DAILY.
10. DO NOT PLACE BACKFILL AGAINST WALLS UNTIL:
    A. WALLS HAVE BEEN CAST TO FULL HEIGHT OF STRUCTURE AND CONCRETE HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
    B. CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND CONCRETE IN THOSE ELEMENTS HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
11. LAP SPLICES:
    A. SEE TABLE 1 OF THIS DETAIL FOR LAP SPLICE LENGTHS.
    B. WHEN MULTIPLE BARS ARE SPLICED AT THE SAME SECTION, THE "CLEAR BAR SPACING" IS DEFINED AS THE MINIMUM CLEAR DISTANCE BETWEEN THE BARS OUTSIDE THE SPLICE LENGTH MINUS ONE BAR DIAMETER.
    C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BARS AT A LAP SPLICE SHALL BE IN CONTACT WITH EACH OTHER.
    D. "TOP BARS" ARE HORIZONTAL REINFORCEMENT AT LOCATIONS WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
12. FORM EXPOSED CONCRETE CORNERS AND EDGES WITH 3/4" CHAMFER UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

S101 TYP S — REINFORCED CONCRETE NOTES

SHEET 2 OF 3 03/12/19

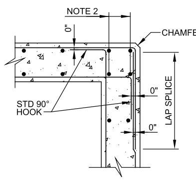
TABLE 1: REINFORCING BAR LAP SPLICES: f'c = 4500 PSI, Fy = 60,000 PSI				
BAR SIZE	MINIMUM COVER (BAR DIA)	MINIMUM CLEAR BAR SPACING (BAR DIA)	LAP SPLICE LENGTH (INCHES)	
			TOP BARS	OTHER BARS
#4	MORE THAN 1	MORE THAN 2	32 *	25 *
	MORE THAN 2	MORE THAN 4	20	16
#5	MORE THAN 1	MORE THAN 2	40 *	31 *
	MORE THAN 2	MORE THAN 4	26	20
#6	MORE THAN 1	MORE THAN 2	48 *	37 *
	MORE THAN 2	MORE THAN 4	30	24
#7	MORE THAN 1	MORE THAN 2	70 *	54 *
	MORE THAN 2	MORE THAN 4	43	33
#8	MORE THAN 1	MORE THAN 2	81 *	62 *
	MORE THAN 2	MORE THAN 4	50	38
#9	MORE THAN 1	MORE THAN 2	90 *	70 *
	MORE THAN 2	MORE THAN 4	56	42
#10	MORE THAN 1	MORE THAN 2	104 *	81 *
	MORE THAN 2	MORE THAN 4	62	48
#11	MORE THAN 1	MORE THAN 2	114 *	88 *
	MORE THAN 2	MORE THAN 4	69	54

REINFORCING BAR LAP SPLICE TABLE NOTES:

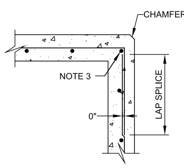
1. TABULATED SPLICE LENGTHS ARE APPLICABLE ONLY WHEN BOTH REQUIREMENTS FOR MINIMUM COVER AND FOR MINIMUM CLEAR BAR SPACING ARE SATISFIED.
2. * = IF THE CLEAR BAR SPACING IS LESS THAN OR EQUAL TO TWO BAR DIAMETERS, OR THE COVER IS LESS THAN OR EQUAL TO ONE BAR DIAMETER, THE LAP SPLICE LENGTH SHALL BE INCREASED BY 50 PERCENT.

S101 TYP S — REINFORCED CONCRETE NOTES

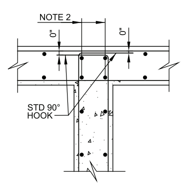
SHEET 3 OF 3 03/12/19



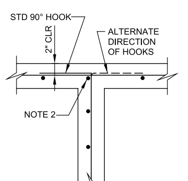
A - DETAIL - CORNER: DOUBLE MAT



B - DETAIL - CORNER: SINGLE MAT



C - DETAIL - INTERSECTION: DOUBLE MAT



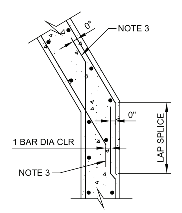
D - DETAIL - INTERSECTION: SINGLE MAT

NOTES:

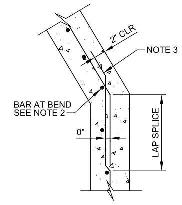
1. BAR SIZE, SPACING, AND ORIENTATION OF BAR LAYERS SHALL BE AS INDICATED ON THE DRAWINGS.
2. AT INTERSECTION, MAKE BAR SIZE THE LARGER OF BAR SIZES IN CONNECTING WALLS. PLACE BARS IN SAME LAYERS AS AT CONNECTING WALLS (TYP).
3. BAR TAILS: 12 BAR DIAMETERS PLUS 12".

S144 TYP S — WALL REINFORCEMENT AT CORNERS & INTERSECTIONS SHEET 1 OF 2

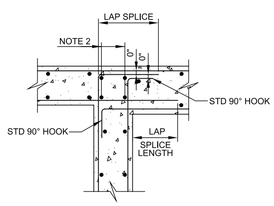
05/31/16



E - DETAIL - INTERSECTION: DOUBLE MAT



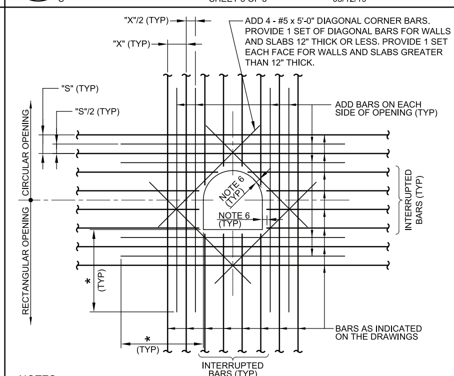
F - DETAIL - INTERSECTION: SINGLE MAT



G - DETAIL - INTERSECTION: CHANGE IN WALL THICKNESS

S144 TYP S — WALL REINFORCEMENT AT CORNERS & INTERSECTIONS SHEET 2 OF 2

05/31/16



NOTES:

1. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL BE EQUAL TO OR GREATER THAN 1/2 THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS.
2. PROVIDE STANDARD ACI HOOKS ON BARS IF STRAIGHT EXTENSION PAST THE OPENING, CANNOT BE ACHIEVED.
3. PLACE ADD BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
4. PLACE #5 DIAGONAL BARS ON INSIDE OF INTERRUPTED REINFORCING.
5. * DIMENSION EQUALS OPENING DIMENSION MEASURED PERPENDICULAR TO ADD BARS PLUS LAP SPLICE LENGTH.
6. 2" CLEAR TO CONCRETE OPENINGS OR OUTSIDE FACE OF PIPES AND PIPE SLEEVES. DO NOT OVERCUT REINFORCEMENT FOR EASIER PLACEMENT OF WEEP RINGS AND FLANGES.
7. ADD BARS ARE NOT REQUIRED AT SIDES OF OPENINGS PARALLEL TO AND WITHIN 6" OF A WALL OR BEAM.

S180 TYP S, N — ADDITIONAL REINFORCING AT OPENINGS IN CONCRETE SLABS OR WALLS

03/12/19

REV	DATE	BY	DESCRIPTION	
				DESIGNED CE
				DRAWN CE
				CHECKED FF
				DATE FEBRUARY 2023

PROFESSIONAL STRUCTURAL ENGINEER No. 7882644-2203 D. CRAIG BRINCK STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT

DAVIS SOUTH WTP PAC FEED PROJECT

TYPICAL DETAILS

STRUCTURAL 1

VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING — 0 1" — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

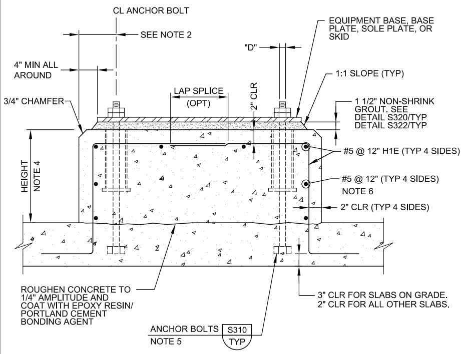
JOB NO. 201237

DRAWING NO. TS01

SHEET NO. 45 OF 46

Plot Date: 22-FEB-2023 2:33:13 PM User: svcPW PlotScale: 1:1 DesignScript: Carollo_Std_Pen_v0905.pen ColorTable: gshade.ctb Model: Layout1 LAST SAVED BY: mmorris

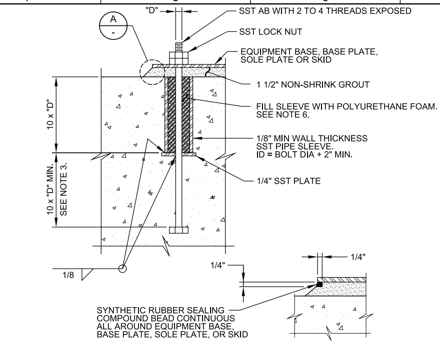
PROJECT NO. 201237-100000 FILE NAME: 201237000TS01.dgn



NOTES:

1. "D" = DIAMETER OF ANCHOR BOLT.
2. THE EDGE DISTANCE ON THE ANCHOR BOLTS SHALL NOT BE LESS THAN 6" OR 8 x "D".
3. PAD DIMENSIONS AND ANCHOR BOLT SIZE SHALL CONFORM TO EQUIPMENT MANUFACTURER'S REQUIREMENTS.
4. HEIGHT TO SUIT EQUIPMENT FURNISHED OR AS INDICATED ON THE DRAWINGS.
5. WHERE CONCRETE SLAB OR BEAM THICKNESS WILL NOT ACCOMMODATE THE ANCHOR BOLT, PROVIDE EXTRA THICKNESS FOR SLAB OR BEAM.
6. PROVIDE HOOPS OR CORNERS PER DETAIL S144/TYP.

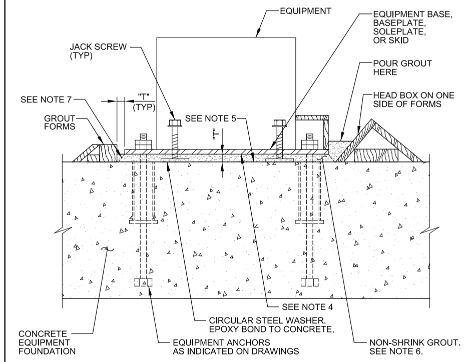
S302 TYP — EQUIPMENT BASE — N — 12/29/2017



NOTES:

1. "D" = DIAMETER OF ANCHOR BOLT.
2. ANCHOR BOLT DIAMETER AS INDICATED ON THE DRAWINGS, IF NOT INDICATED ON THE DRAWINGS, THE ANCHOR BOLT SIZE SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
3. WHERE CONCRETE SLAB OR BEAM THICKNESS WILL NOT ACCOMMODATE THE ANCHOR BOLT, PROVIDE EXTRA THICKNESS OF SLAB OR BEAM.
4. PREFABRICATED PLASTIC ANCHOR BOLT SLEEVE OPTIONAL.
5. DO NOT USE ALL THREAD RODS AS A SUBSTITUTE FOR BOLTS WITH A BOLT HEAD. SMOOTH RODS THREADED AT THE ENDS MAY BE USED IF ACCEPTABLE TO THE ENGINEER. DO NOT WELD NUTS TO THE THREADED RODS.
6. COMPLETELY REMOVE ANY POLYURETHANE FOAM FROM CONCRETE, EQUIPMENT BASE, BASE PLATE, SOLE PLATE, OR SKID, AND ANCHOR BOLTS ABOVE TOP OF CONCRETE.
7. DO NOT USE LEVELING NUTS TO SUPPORT AND LEVEL EQUIPMENT BASE, BASE PLATE, SOLE PLATE, OR SKID.

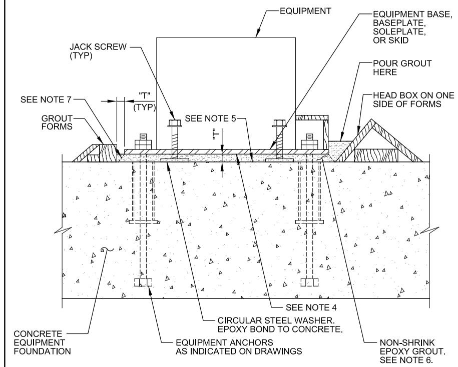
S310 TYP — ANCHOR BOLT - EMBED AND SLEEVE — N — 05/20/15



NOTES:

1. "T" = EQUALS GROUT THICKNESS INDICATED ON THE DRAWING. 1" MINIMUM GROUT THICKNESS.
2. FILL ANCHOR SLEEVES WITH POLYURETHANE FOAM BEFORE GROUTING.
3. DO NOT USE LEVELING NUTS ON EQUIPMENT ANCHORS.
4. PREPARE SURFACE OF EQUIPMENT BASES, BASE PLATES, SOLE PLATES, AND SKIDS IN CONTACT WITH GROUT AS SPECIFIED IN SECTION 46_05_10.
5. PREPARE SURFACES OF CONCRETE FOUNDATION IN CONTACT WITH GROUT AS SPECIFIED IN SECTION 46_05_10.
6. PLACE NON-SHRINK GROUT AS SPECIFIED IN SECTION 46_05_10.
7. AFTER GROUT SETS, TRIM GROUT TO 45 DEGREE CHAMFER.

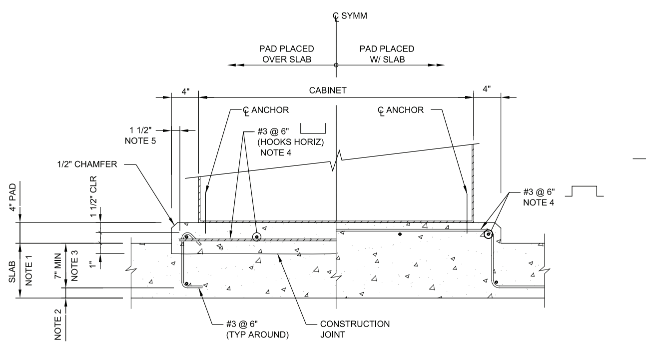
S320 TYP — EQUIPMENT GROUTING WITH NON-SHRINK GROUT — N — 12/15/20

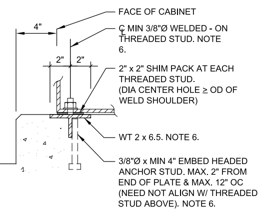


NOTES:

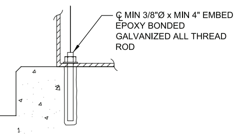
1. "T" = EQUALS GROUT THICKNESS INDICATED ON THE DRAWING. 1" MINIMUM GROUT THICKNESS.
2. FILL ANCHOR SLEEVES WITH POLYURETHANE FOAM BEFORE GROUTING.
3. DO NOT USE LEVELING NUTS ON EQUIPMENT ANCHORS.
4. PREPARE SURFACE OF EQUIPMENT BASES, BASE PLATES, SOLE PLATES, AND SKIDS IN CONTACT WITH GROUT AS SPECIFIED IN SECTION 46_05_10.
5. PREPARE SURFACES OF CONCRETE FOUNDATION IN CONTACT WITH GROUT AS SPECIFIED IN SECTION 46_05_10.
6. PLACE NON-SHRINK EPOXY GROUT AS SPECIFIED IN SECTION 46_05_10.
7. AFTER GROUT SETS, TRIM GROUT TO 45 DEGREE CHAMFER.

S322 TYP — EQUIPMENT GROUTING WITH NON-SHRINK EPOXY GROUT — N — 12/29/17





A CAST-IN-ANCHOR

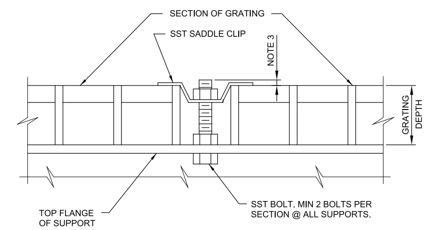


B POST-INSTALLED ANCHOR

NOTES:

1. SEE STRUCTURAL DRAWINGS FOR THICKNESS OF SLAB BELOW PAD. SLAB REINFORCEMENT NOT SHOWN.
2. SEE S101/ TYP FOR MIN CONCRETE COVER REQUIREMENTS.
3. CONTACT ENGINEER FOR INSTRUCTIONS WHERE HOOK EMBEDMENT IS LESS THAN DIMENSION SHOWN.
4. FOR EQUIPMENT WITH CONDUIT WINDOWS BELOW, ADJUST BAR LOCATIONS TO FIT BETWEEN WINDOWS.
5. LOCATE VERTICAL EDGE OF PAD AND VERTICAL FACE OF #3s USING VERTICAL 2x FORM DURING SLAB PLACEMENT.
6. HOT DIP GALVANIZE WT AND HEADED ANCHOR STUD ASSEMBLY. TOUCH UP GALVANIZING AFTER FIELD WELDING THREADED STUDS.

S350 TYP — ELECTRICAL EQUIPMENT HOUSEKEEPING PAD — S — 02/21/14



NOTES:

1. GRATING FASTENERS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS.
2. GRATING FASTENERS SHALL BE INSTALLED AT EACH CORNER OF EACH PANEL AND AT SPACING NOT TO EXCEED 8'-0".
3. RECESS THE GRATING CLIP WITHIN THE DEPTH OF THE GRATING TO AVOID A TRIPPING HAZARD.

S559 TYP — GRATING - FASTENERS (ALL MATERIALS) — 03/16/21

REV	DATE	BY	DESCRIPTION

DESIGNED: CE
DRAWN: CE
CHECKED: FF
DATE: FEBRUARY 2023

PROFESSIONAL STRUCTURAL ENGINEER — No. 7882644-2203 — D. CRAIG BRINCK — STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
TYPICAL DETAILS
STRUCTURAL 2

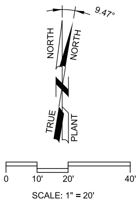
VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING — 0 — 1" — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

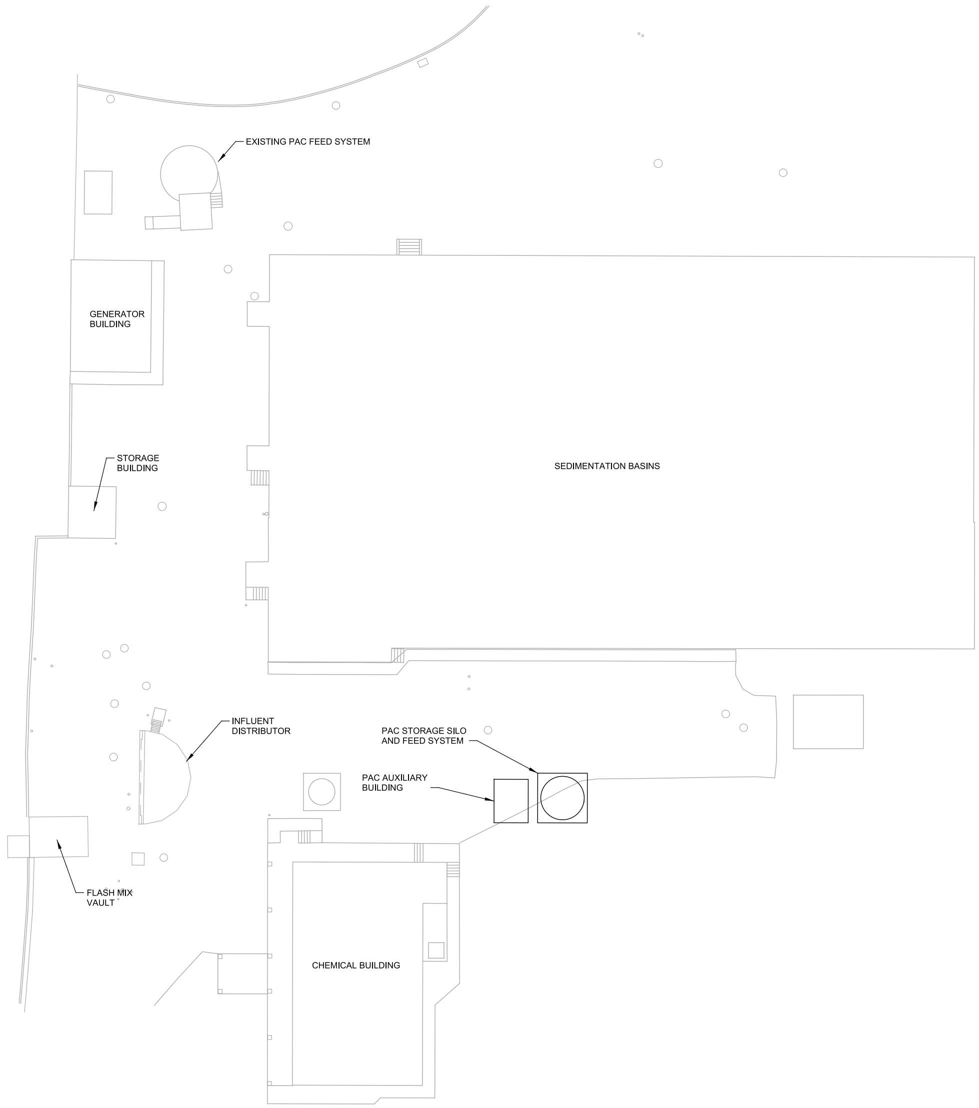
JOB NO. 201237
DRAWING NO. TS02
SHEET NO. OF 46

PROJECT NO. 201237-100000 FILE NAME: 201237000TS02.dgn

Plot Date: 22-FEB-2023 2:33:25 PM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: mmorris

Plot Date: 22-FEB-2023 11:09:49 AM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1





REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER No. 12294472-2202 BRADLEY R. BUSWELL STATE OF UTAH

carollo®

WEBER BASIN WATER CONSERVANCY DISTRICT

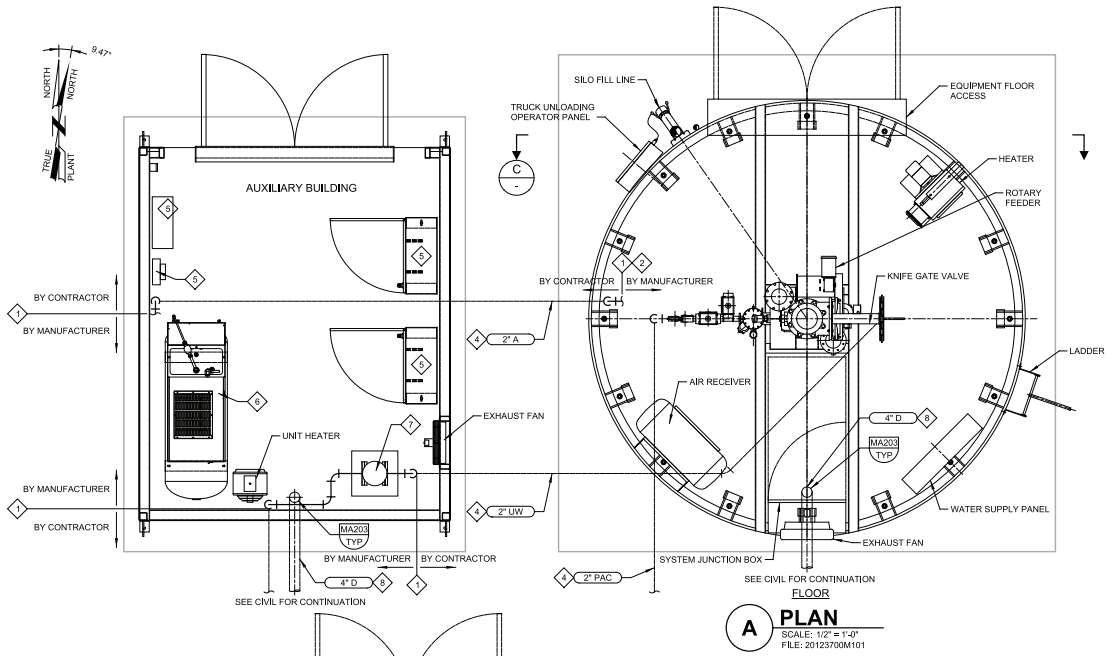
WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
GENERAL
OVERALL SITE PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

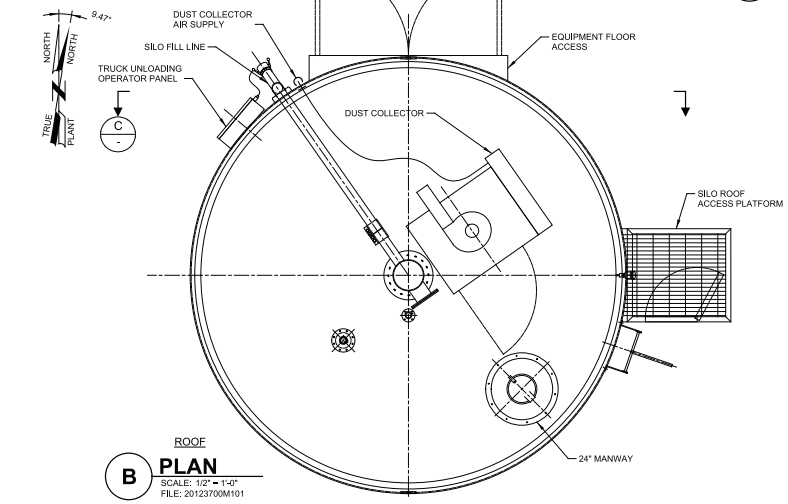
JOB NO. 201237
DRAWING NO. G06
SHEET NO. 6 OF 46

LAST SAVED BY: mmorris

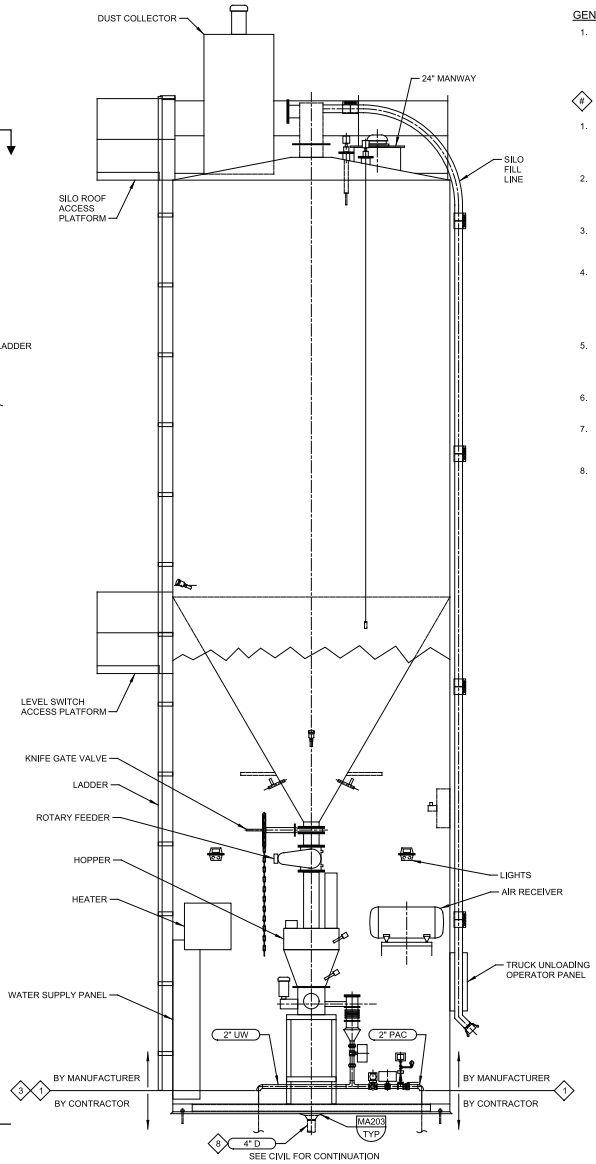
PROJECT NO. 201237-100000 FILE NAME: 20123700G06.dgn



A PLAN
SCALE: 1/2" = 1'-0"
FILE: 20123700M101



B PLAN
SCALE: 1/2" = 1'-0"
FILE: 20123700M101



C SECTION
SCALE: 3/8" = 1'-0"
FILE: 20123700M301

GENERAL NOTES:

1. AUXILIARY BUILDING AND SILO LAYOUTS SHOWN ARE APPROXIMATE. MANUFACTURER SHALL DETERMINE FINAL LAYOUT WITH ENGINEER APPROVAL.

KEY NOTES:

1. TRANSITION BETWEEN CONTRACTOR SUPPLIED AND MANUFACTURER SUPPLIED PIPING. SLAB PENETRATION LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR FINAL LOCATIONS.
2. CONTRACTOR SHALL RUN A SINGLE PIPE FOR COMPRESSED AIR TO THE INLET AIR MANIFOLD IN SILO. MANUFACTURER SHALL PROVIDE AIR DISTRIBUTION TO DUST COLLECTOR, SILO DISCHARGE AERATION, AND PNEUMATIC ACTUATED VALVES.
3. CONTRACTOR SHALL RUN A SINGLE UW PIPE TO THE SILO. MANUFACTURER SHALL PROVIDE DISTRIBUTION TO WETTING CONE AND PAC FEED WATER.
4. CONTRACTOR TO COORDINATE PIPE SIZE AND EQUIPMENT LOCATION WITH MANUFACTURER BEFORE LOCATING UTILITY WATER AND AIR PIPING BETWEEN SILO AND AUXILIARY BUILDING AND PAC PIPING FROM SILO. PIPING UNDER AND BETWEEN STRUCTURES TO BE CONCRETE ENCASED PER TYPICAL DETAIL CY119.
5. MANUFACTURER SHALL PROVIDE ELECTRICAL EQUIPMENT AND SHALL DETERMINE SIZE AND FINAL LOCATION IN AUXILIARY BUILDING. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS.
6. AIR COMPRESSOR (CMP-520) SHALL BE SIZED AND SUPPLIED BY MANUFACTURER.
7. BOOSTER PUMP (PMP-525) SHALL BE SIZED AND SUPPLIED BY MANUFACTURER. MANUFACTURER SHALL ALSO PROVIDE APPROPRIATELY SIZED PUMP STAND OR TABLE.
8. CONCRETE ENCASE DRAIN PIPES UNDER STRUCTURES PER TYPICAL DETAIL CY119.

REV	DATE	BY	DESCRIPTION

DESIGNED BRB
DRAWN MM
CHECKED CRKJ
DATE FEBRUARY 2023

REGISTERED PROFESSIONAL ENGINEER — No. 12294472-2202 — BRADLEY R. BUSWELL — STATE OF UTAH

carollo

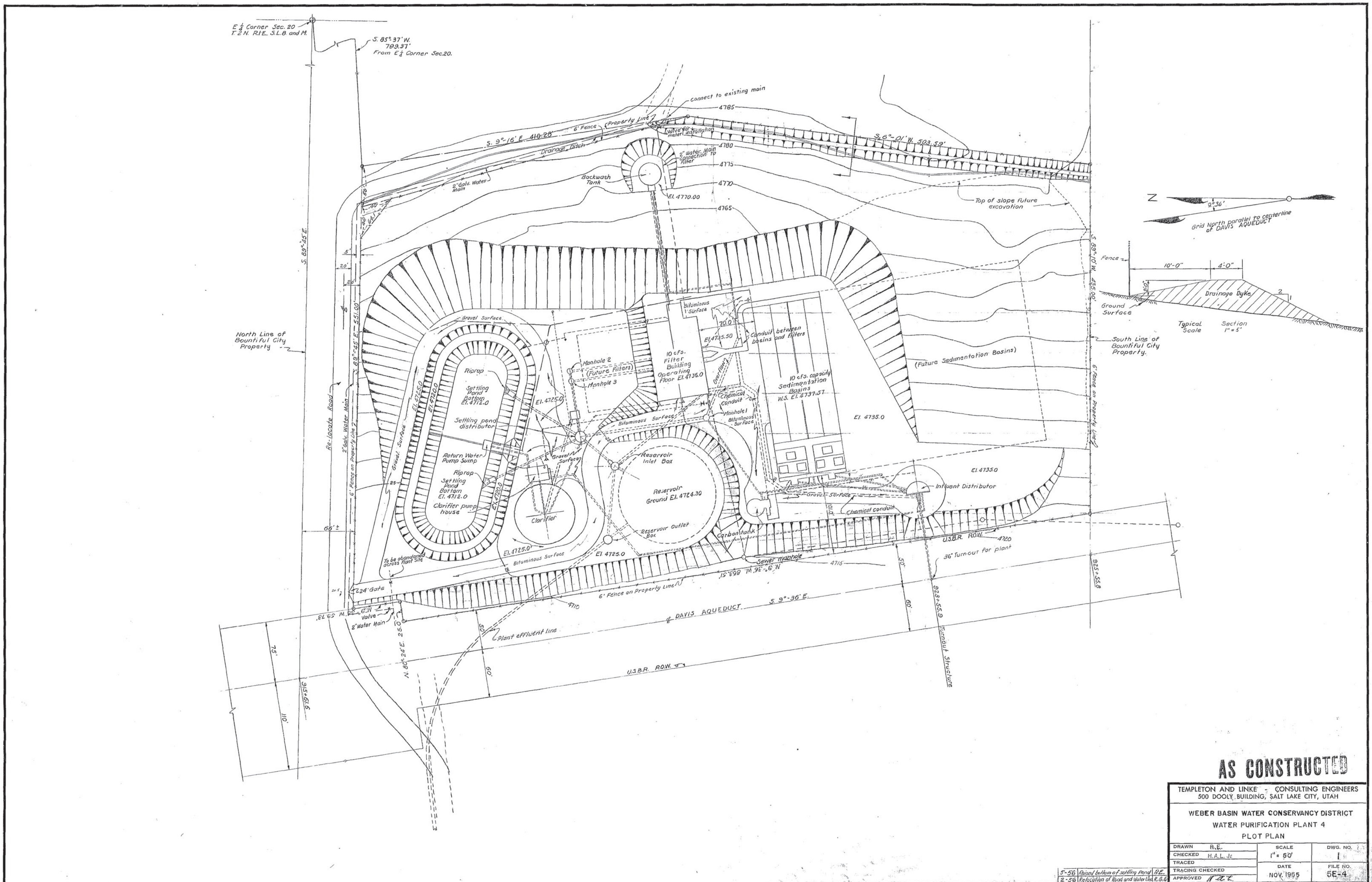
WEBER BASIN WATER CONSERVANCY DISTRICT

WEBER BASIN CONSERVANCY DISTRICT
DAVIS SOUTH WTP PAC FEED PROJECT
MECHANICAL
PAC FEED SYSTEM PLANS AND SECTION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201237
DRAWING NO. M01
SHEET NO. 17 OF 46

PROJECT NO. 201237-100000 FILE NAME: 20123700M01.dgn

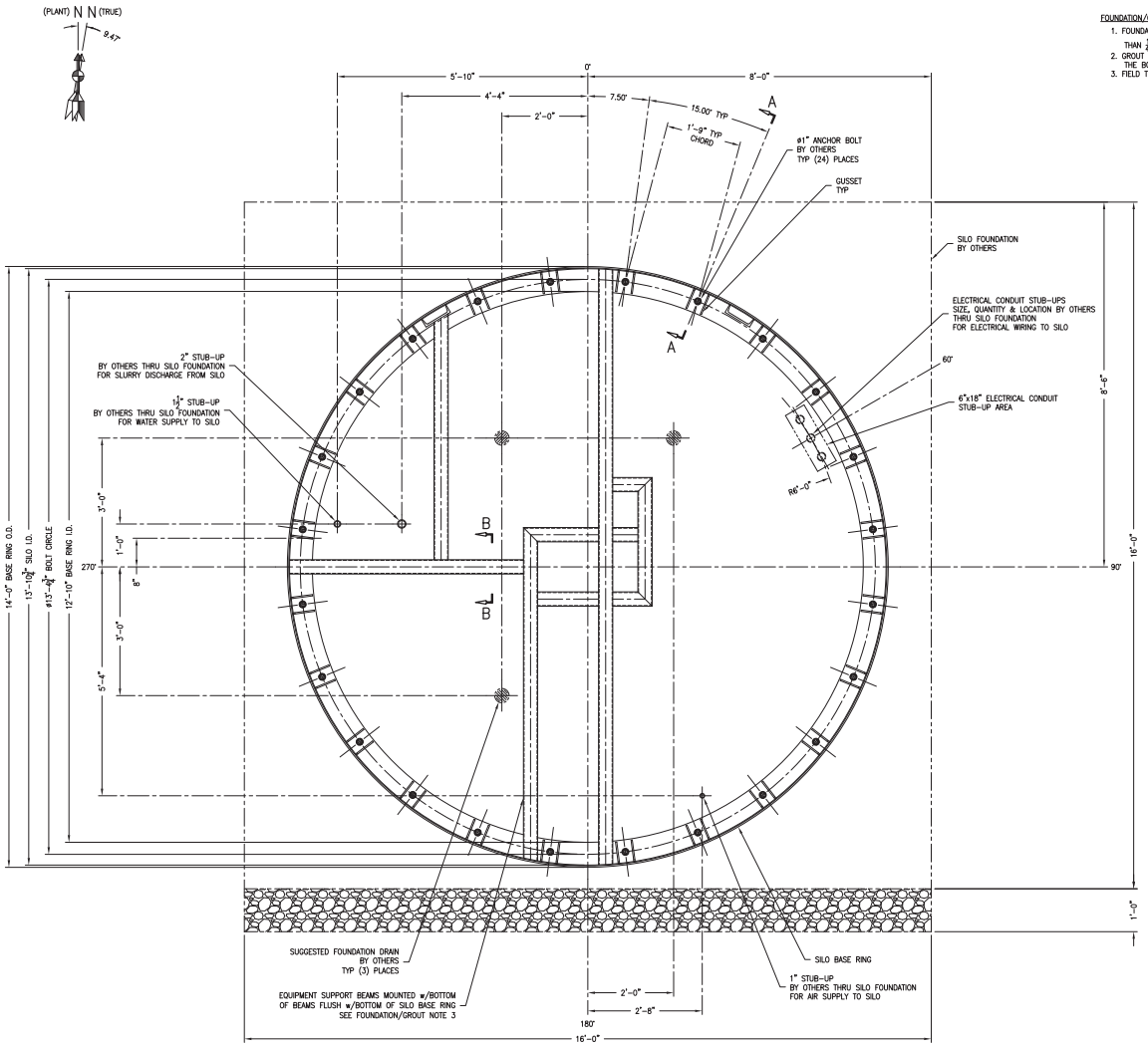

E ¼ Corner Sec. 20
T.2N. R.1E. S.L.B. and M.
S. 85°-37' W.
799.37'
From E ¼ Corner Sec.20.
Connect to existing main
6' Fence
Property Line
Drainage Ditch
2" Galv. Water Main
Backwash Tank
El. 4770.00
2" Water Main Connection to filter
Top of slope future excavation
Grid North parallel to centerline of DAVIS AQUEDUCT
Fence
10'-0"
4'-0"
Drainage Dyke
Ground Surface
Typical Section
Scale 1" = 5'
North Line of Bountiful City Property
South Line of Bountiful City Property.
Re-locate Road
2" Galv. Water Main
6' Fence on Property Line
6' Fence on Property Line
Gravel Surface
Riprap
Settling Pond Bottom El. 4712.0
Settling pond distributor
Return Water Pump Sump
Settling Pond Bottom El. 4712.0
Clarifier pump house
Clarifier
Manhole 2
(Future Filters)
Manhole 3
10 cfs. Filter Building Operating Floor El. 4736.0
Bituminous Surface
Conduit between basins and filters
10 cfs. capacity Sedimentation Basins W.S. El. 4737.57
(Future Sedimentation Basins)
Chemical Conduit
Manhole 1
El. 4725.0
El. 4735.0
Reservoir Inlet Box
Reservoir Ground El. 4724.30
Reservoir Outlet Box
Carbon tank
Influent Distributor
Chemical conduit
Sewer manhole
U.S.B.R. ROW
36" Turnout for plant
Turnout Structure
To be abandoned across Plant Site
24' Gate
Valve
2" Water Main
DAVIS AQUEDUCT
S. 9°-36' E.
Plant effluent line
U.S.B.R. ROW
AS CONSTRUCTED
TEMPLETON AND LINKE - CONSULTING ENGINEERS
500 DOOLY BUILDING, SALT LAKE CITY, UTAH
WEBER BASIN WATER CONSERVANCY DISTRICT
WATER PURIFICATION PLANT 4
PLOT PLAN
DRAWN R.E.
CHECKED H.A.L. Jr.
TRACED
TRACING CHECKED
APPROVED
SCALE 1" = 50'
DATE NOV. 1955
DWG. NO. 1
FILE NO. 5E-4
5-56 Raised bottom of settling pond R.E.
2-56 Relocation of Road and Water Line R.G.G.

SILO LOADING DATA NOTES:
1. WIND AND SEISMIC LOADS ARE ULTIMATE LOADS.
2. ALL OTHER LOADS ARE SERVICE LOADS.

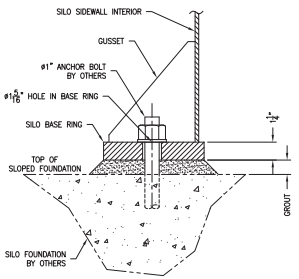
FOUNDATION/GROUT NOTES:
1. FOUNDATION MUST BE LEVEL TO ±¼" IN ANY 30' CIRCUMFERENCE AND NO MORE THAN ½" VARIANCE IN ANY ONE PLANE AROUND THE ENTIRE CIRCUMFERENCE.
2. GROUT MUST BE FLOWABLE, SELF LEVELING, NON SHRINK, WITH 100% CONTACT WITH THE BOTTOM OF SILO BASE RING.
3. FIELD TO GROUT UNDER EQUIPMENT BASE BEAMS.

SILO LOADING DATA

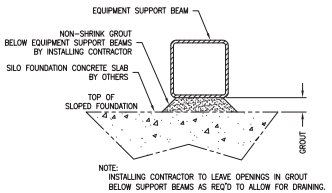
SILO INSIDE DIAMETER:	13'-10⅜"	ROOF LIVE LOAD:	9099 LBS.
SILO EAVE HEIGHT:	35'-0"	ROOF SNOW LOAD:	6320 LBS.
MATERIAL IN SILO:	POWDER ACIVATED CARBON	TOTAL ICE LOAD:	4417 LBS.
PRODUCT COMPACTED BULK DENSITY:	35.0 LBS./FT^3	EQUIPMENT LIVE LOAD:	0 LBS.
ROOF LIVE LOAD:	60.0 LBS./FT^2	EQUIPMENT DEAD LOAD:	2000 LBS.
PLATFORM LIVE LOAD:	100.0 LBS./FT^2	EQUIPMENT PRODUCT LOAD:	735 LBS.
ENVIRONMENTAL LOADS PER:	IBC 2021/2018 – ASCE 7 2016	TANK DEAD LOAD:	20063 LBS.
RISK CATEGORY:	3	PRODUCT LOAD:	76176 LBS.
SNOW: GROUND SNOW LOAD:	41.0 LBS./FT^2	SHEAR WIND:	8703 LBS.
EXPOSURE:	C	MOMENT WIND:	172115 FT-LBS.
ROOF SNOW LOAD:	41.7 LBS./FT^2	SHEAR SEISMIC:	85802 LBS.
Is:	1.10	MOMENT SEISMIC:	2077927 FT-LBS.
ICE: ICE THICKNESS:	0.5 IN	ANCHOR ROD QUANTITY:	
ROOF ICE LOAD:	1.8 LBS./FT^2		24 EQ. SPACED AROUND PERIMETER
Ii:	1.25	ASD LOAD COMBINATIONS:	
WIND: WIND VELOCITY:	109 MPH	MAX. TENSION PER ANCHOR ROD:	15113 LBS.
EXPOSURE:	C	MAX. SHEAR PER ANCHOR ROD:	1915 LBS.
Iw:	1.00		
SEISMIC: Ie:	1.25		
Sds:	1.056 (PER CAROLLO SPEC)	LRFD LOAD COMBINATIONS:	
Sd1:	0.896 (PER CAROLLO SPEC)	MAX. TENSION PER ANCHOR ROD:	21414 LBS.
R:	2.00	MAX. SHEAR PER ANCHOR ROD:	2251 LBS.
V:	0.858 W		
SDC:	E		



SILO FOUNDATION PLAN



SECTION "A–A"
ANCHOR BOLT HOLD DOWN ELEVATION
TYP (24) PLACES
SCALE: 3"=1'-0"



NOTE:
INSTALLING CONTRACTOR TO LEAVE OPENINGS IN GROUT BELOW SUPPORT BEAMS AS REQ'D TO ALLOW FOR DRAINING.

SECTION "B–B"
TYPICAL EQUIPMENT SUPPORT BEAM GROUTING ELEVATION
SCALE: 3"=1'-0"

CHEMCO SYSTEMS

DATE	REV	BY	REMARKS
12/22/23	0	GK	INITIAL ISSUE

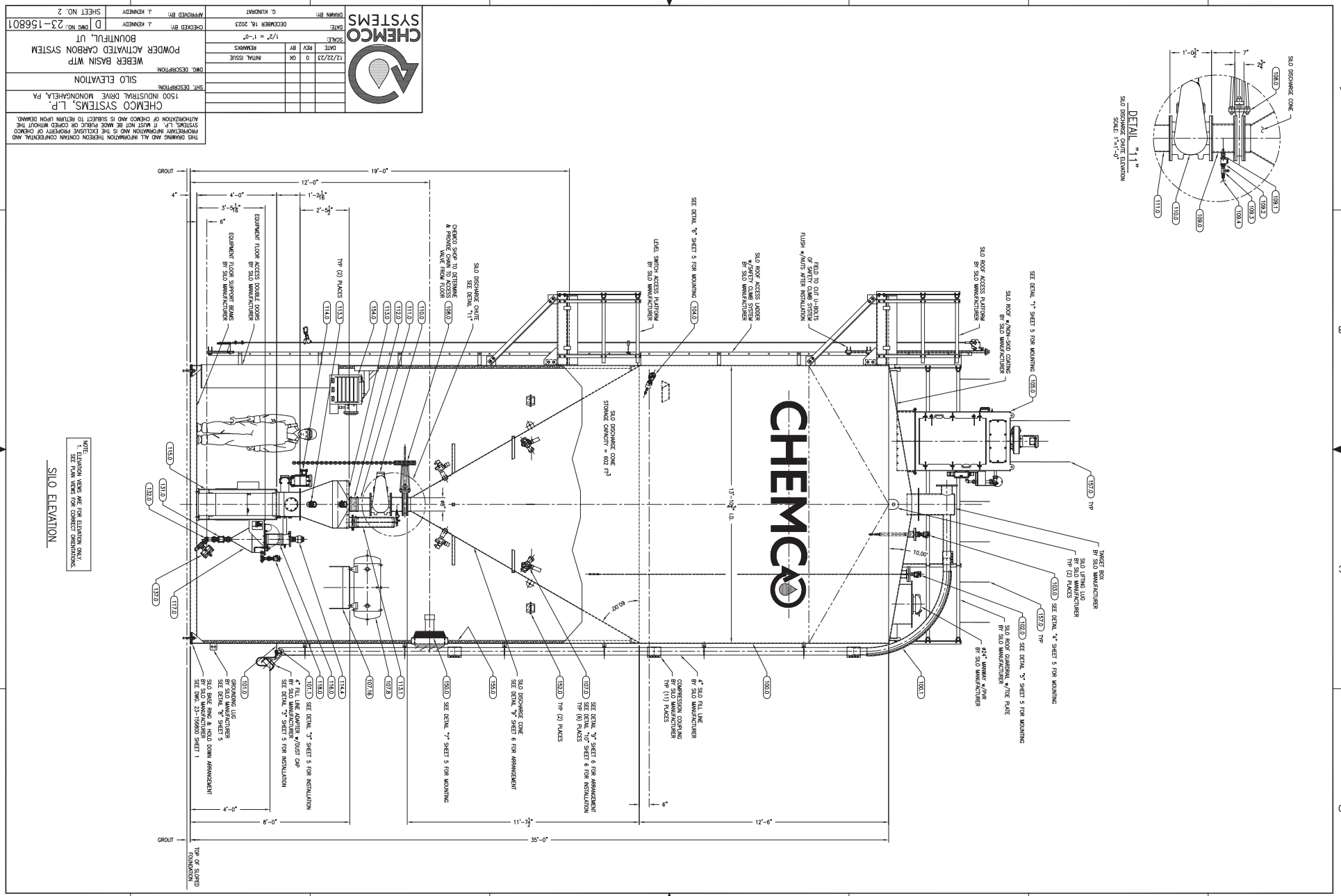
SCALE: 3/4" = 1'-0"
DATE: OCTOBER 24, 2023
DRAWN BY: G. KUNDRAT

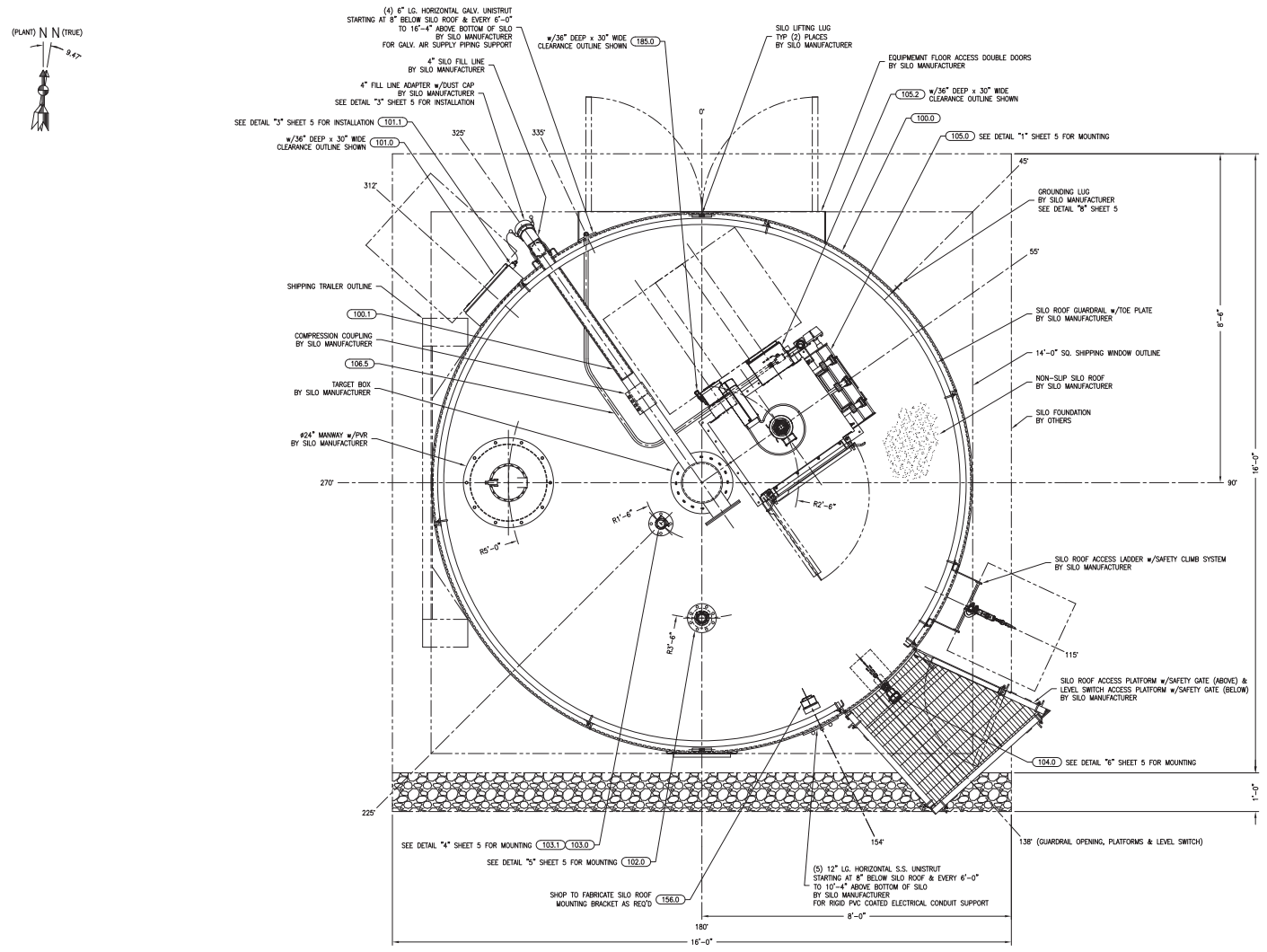
CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA

SHT. DESCRIPTION:
SILO FOUNDATION & ANCHOR BOLT PLAN

DWG. DESCRIPTION:
WEBER BASIN WTP
POWDER ACIVATED CARBON SILO
BOUNTIFUL, UT

CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D
DWG NO.: 23-156800
SHEET NO. 1


CHEMCO SYSTEMS
DRAWN BY: G. KLINDFAT
DATE: DECEMBER 18, 2023
SCALE: 1/2" = 1'-0"
DATE | REV | BY | REMARKS
12/22/23 | 0 | GK | INITIAL ISSUE
CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D
DWG NO: 23-156801
SHEET NO. 2
CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA
WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT
SILO ELEVATION
THIS DRAWING AND ALL INFORMATION THEREON CONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION AND IS THE EXCLUSIVE PROPERTY OF CHEMCO SYSTEMS, L.P. IT MUST NOT BE MADE PUBLIC OR COPIED WITHOUT THE AUTHORIZATION OF CHEMCO AND IS SUBJECT TO RETURN UPON DEMAND.
SILO ELEVATION
NOTE:
1. ELEVATION VIEWS ARE FOR ELEVATION ONLY. SEE PLAN VIEWS FOR DIMENSIONAL ORIENTATIONS.
DETAIL "11"
SILO DISCHARGE CONE ELEVATION
SCALE: 1"=1'-0"
SILO DISCHARGE CONE
GROUT
TYP OF CLOSED FOUNDATION
EQUIPMENT FLOOR ACCESS DOUBLE DOORS BY SILO MANUFACTURER
EQUIPMENT FLOOR SUPPORT BEAMS BY SILO MANUFACTURER
TYP (2) PLACES
CHEMCO SHOP TO DETERMINE & PROVIDE CHAIN TO ACCESS VALVE FROM FLOOR
SILO DISCHARGE CHUTE SEE DETAIL "11"
SILO DISCHARGE CONE STORAGE CAPACITY = 602 FT3
LEVEL SWITCH ACCESS PLATFORM BY SILO MANUFACTURER
SEE DETAIL "6" SHEET 5 FOR MOUNTING
SILO ROOF ACCESS LADDER w/CAGE/ SAFETY CLIMB SYSTEM BY SILO MANUFACTURER
FIELD TO CUT U-BOLTS AS NEEDED FLUSH w/NUTS AFTER INSTALLATION
SILO ROOF ACCESS PLATFORM BY SILO MANUFACTURER
SILO ROOF w/NON-SKID COATING BY SILO MANUFACTURER
SEE DETAIL "1" SHEET 5 FOR MOUNTING
TARGET BAR BY SILO MANUFACTURER
SILO LIFTING LUG BY SILO MANUFACTURER TYP (2) PLACES
SEE DETAIL "4" SHEET 5 FOR MOUNTING
SILO ROOF GUARDRAIL w/TOE PLATE BY SILO MANUFACTURER
#24" MANWAY w/DAVIT BY SILO MANUFACTURER
4" SILO FILL LINE BY SILO MANUFACTURER
COMPRESSION COUPLING BY SILO MANUFACTURER TYP (1) PLACES
SEE DETAIL "9" SHEET 6 FOR ARRANGEMENT TYP (6) PLACES
SEE DETAIL "10" SHEET 6 FOR INSTALLATION
TYP (2) PLACES
SILO DISCHARGE CONE SEE DETAIL "8" SHEET 6 FOR ARRANGEMENT
SEE DETAIL "7" SHEET 5 FOR MOUNTING
4" FILL LINE ADAPTER w/DUST CAP BY SILO MANUFACTURER SEE DETAIL "3" SHEET 5 FOR INSTALLATION
SEE DETAIL "1" SHEET 5 FOR INSTALLATION
GROUNDING LUG BY SILO MANUFACTURER
SILO BASE RING & HOLD DOWN ARRANGEMENT BY SILO MANUFACTURER SEE DWG. 23-156800 SHEET 1
SEE DETAIL "6" SHEET 5
19'-0"
12'-0"
4'-0"
1'-2 1/8"
3'-5 1/16"
2'-5 1/2"
6"
4"
13'-10 1/2" I.D.
10.00°
60.00°
6"
4'-0"
8'-0"
11'-7 1/2"
12'-6"
35'-0"



SILO ROOF PLAN

CHEMCO SYSTEMS

DATE	REV	BY	REMARKS
12/22/23	0	GK	INITIAL ISSUE

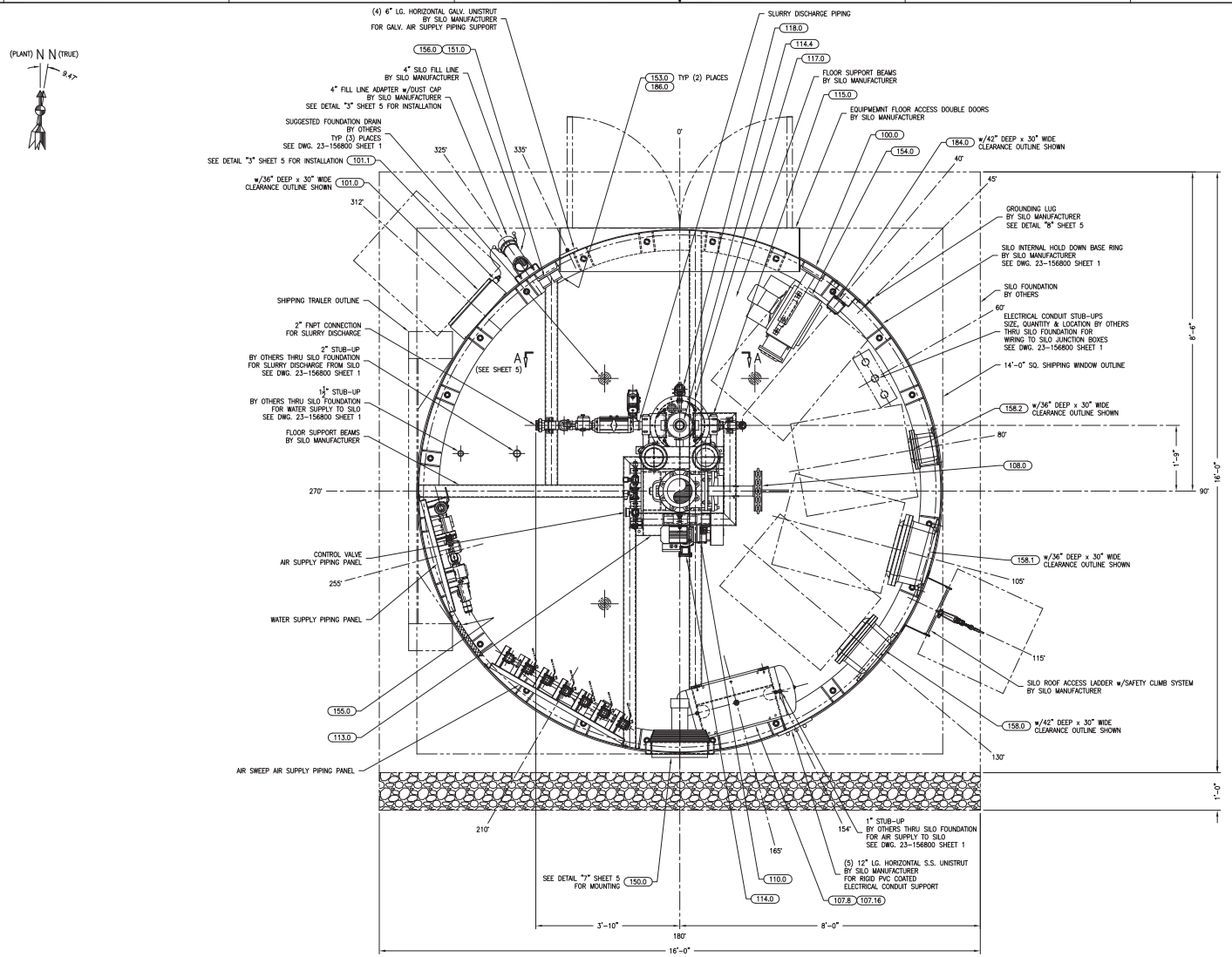
SCALE: 3/4" = 1'-0"
DATE: NOVEMBER 29, 2023
DRAWN BY: G. KUNDRAT

CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA

SHT. DESCRIPTION: SILO ROOF PLAN

DWG. DESCRIPTION: WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT

CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D DWG NO.: 23-156801
SHEET NO. 3



SILO EQUIPMENT FLOOR PLAN

CHEMCO SYSTEMS

DATE	REV	BY	REMARKS
12/22/23	0	GK	INITIAL ISSUE

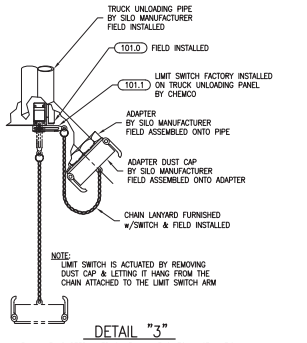
SCALE: 3/4" = 1'-0"
DATE: NOVEMBER 29, 2023
DRAWN BY: G. KUNDRAT

CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA

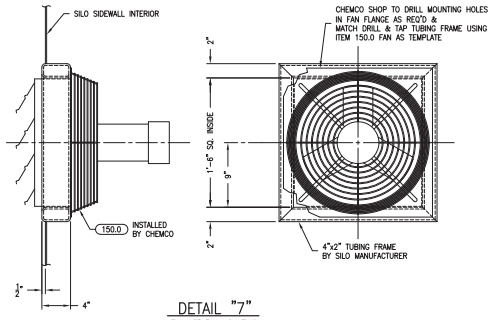
SHT. DESCRIPTION: SILO EQUIPMENT FLOOR PLAN

DWG. DESCRIPTION: WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT

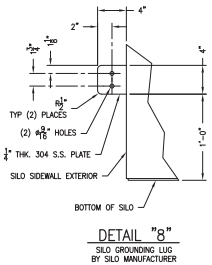
CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D DWG NO.: 23-156801
SHEET NO. 4



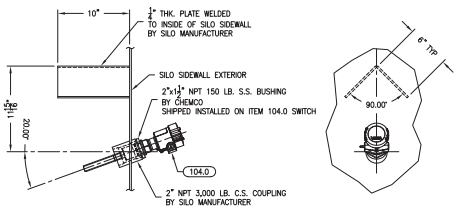
DETAIL "3"
FILL LINE ADAPTER & TRUCK FILL LIMIT SWITCH INSTALLATION



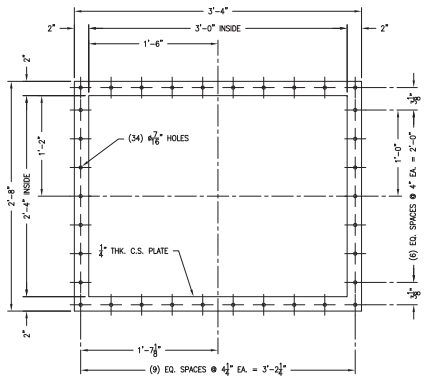
DETAIL "7"
EXHAUST FAN MOUNTING



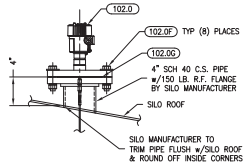
DETAIL "8"
SILO GROUNDING LUG BY SILO MANUFACTURER



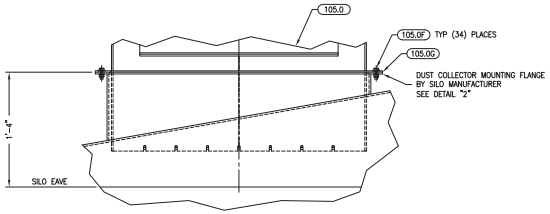
DETAIL "6"
SILO SIDEWALL LOW LEVEL SWITCH MOUNTING



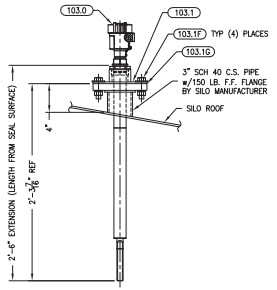
DETAIL "2"
DUST COLLECTOR MOUNTING FLANGE BY SILO MANUFACTURER



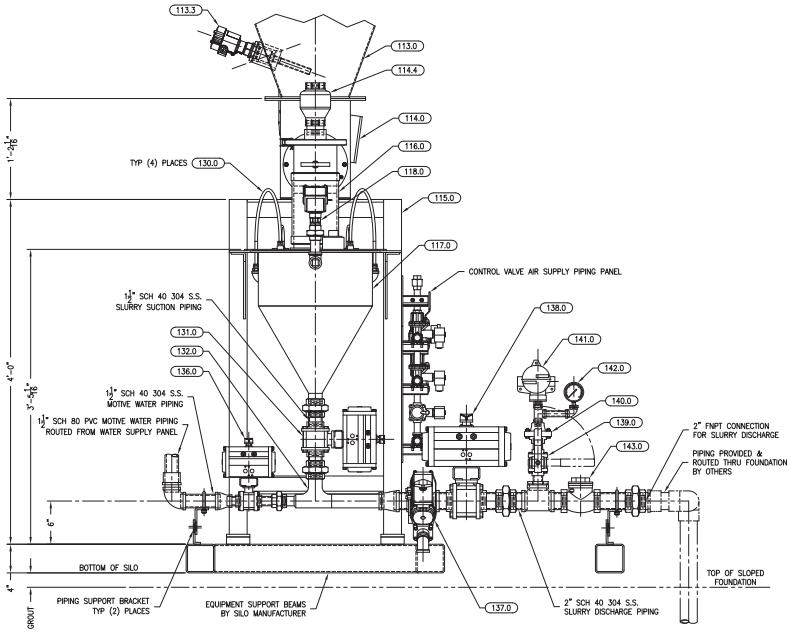
DETAIL "5"
SILO CONTINUOUS LEVEL SENSOR MOUNTING



DETAIL "1"
DUST COLLECTOR MOUNTING



DETAIL "4"
SILO HIGH LEVEL SWITCH MOUNTING



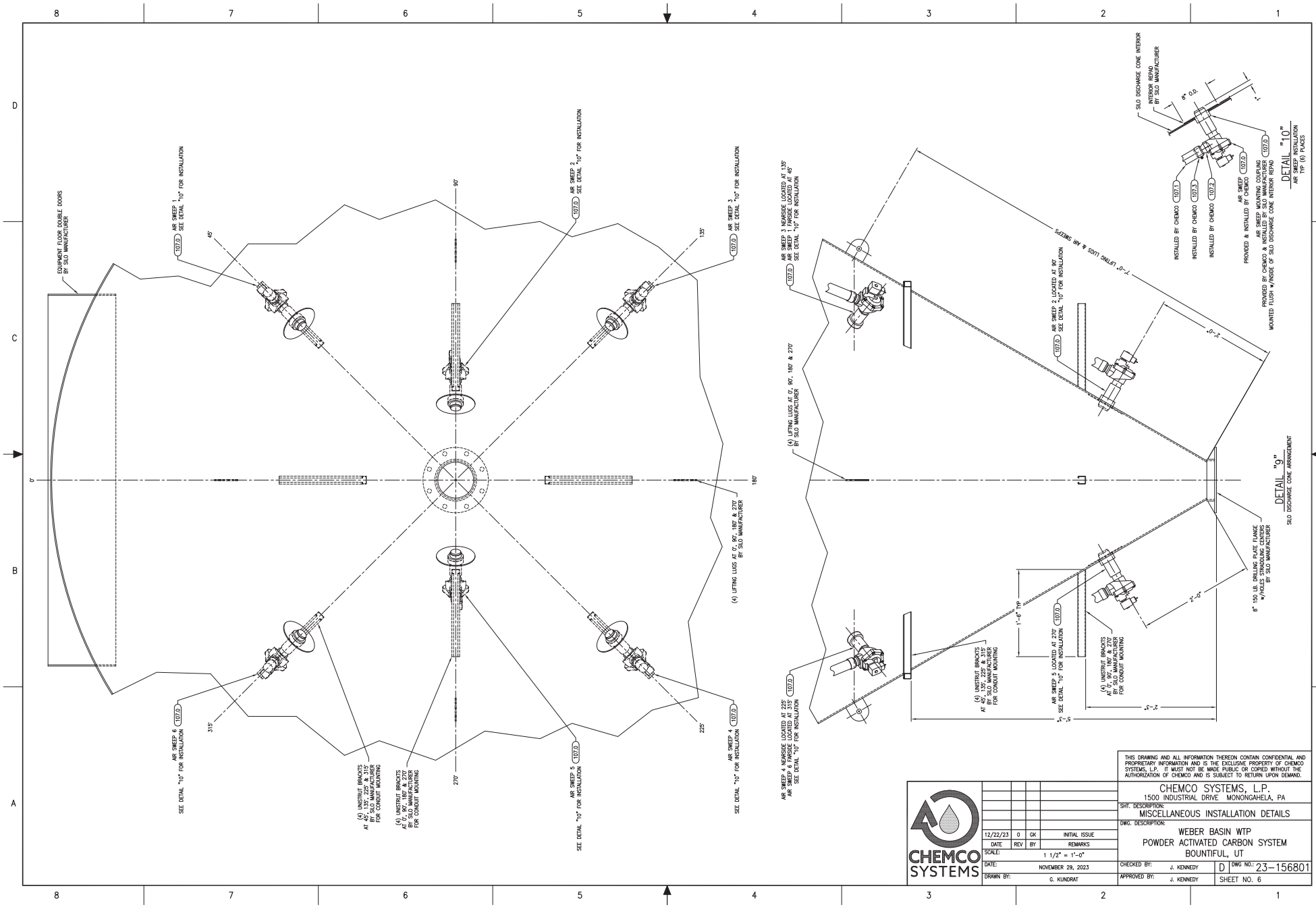
SECTION "A-A"
SCREW FEEDER,WETTING CONE & SLURRY DISCHARGE PIPING ELEVATION
(SEE SHEET 4 FOR ORIENTATION WITHIN PLAN VIEW)

CHEMCO SYSTEMS

DATE	REV	BY	REMARKS
12/22/23	0	GK	INITIAL ISSUE

SCALE: 1 1/2" = 1'-0"
DATE: NOVEMBER 29, 2023
DRAWN BY: G. KUNDRAT

CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA
SHT. DESCRIPTION: MISCELLANEOUS INSTALLATION DETAILS
DWG. DESCRIPTION: WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT
CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D
DWG NO.: 23-156801
SHEET NO. 5



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CHEMCO SYSTEMS

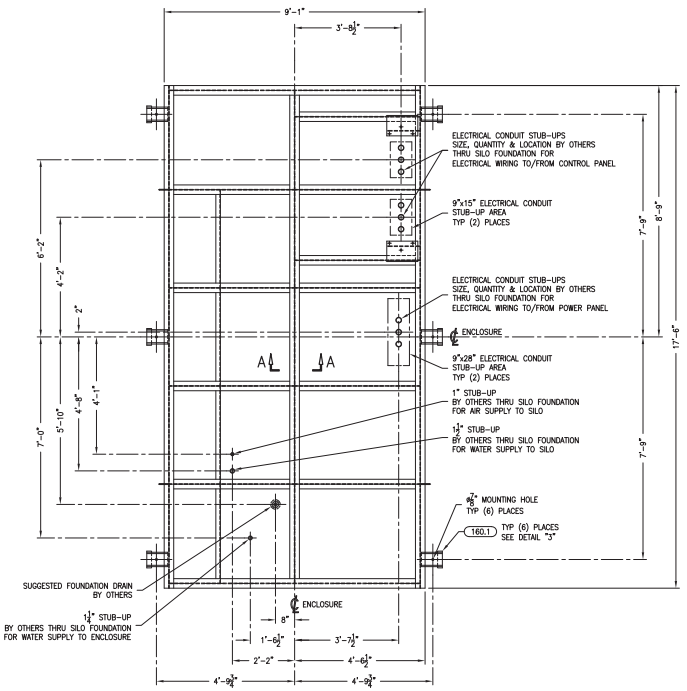
DATE	REV	BY	REMARKS
12/22/23	0	GK	INITIAL ISSUE

CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA

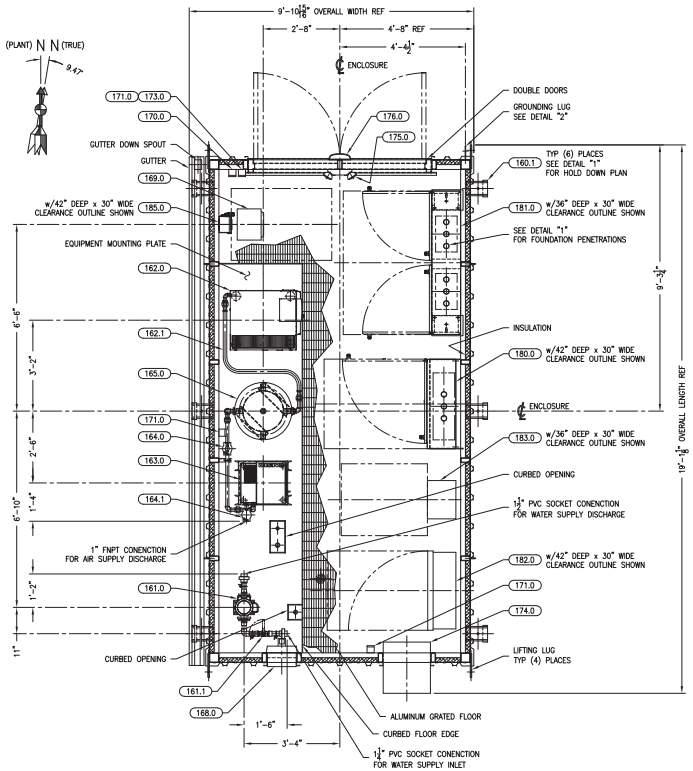
SHT. DESCRIPTION: MISCELLANEOUS INSTALLATION DETAILS

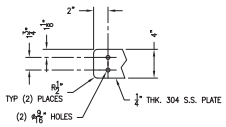
DWG. DESCRIPTION: WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT

SCALE: 1 1/2" = 1'-0"
DATE: NOVEMBER 29, 2023
DRAWN BY: G. KUNDRAT
CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
D
DWG NO.: 23-156801
SHEET NO. 6

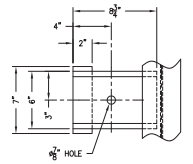


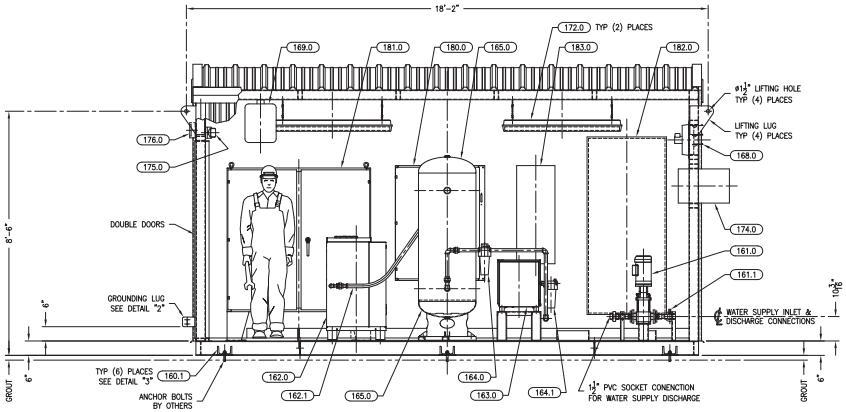
DETAIL "1"
ENCLOSURE BASE, HOLD DOWN & FOUNDATION PENETRATIONS PLAN

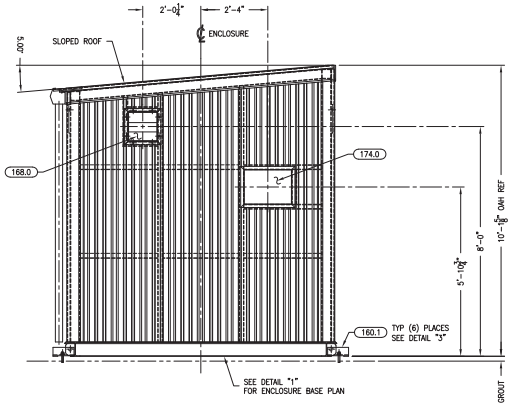




DETAIL "2"
GROUNDING LUG
SCALE: ½"=1'-0"

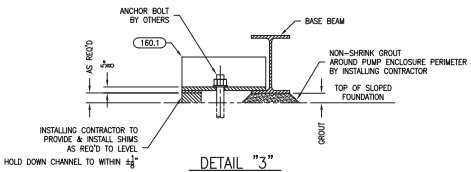




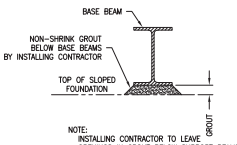


ITEM 160.0 ARRANGEMENT
PUMP/COMPRESSOR ENCLOSURE
(1) REQ'D

NOTE:
ITEM 166.0 DRAIN & 167.0 CONDENSATE MANAGEMENT SYSTEM NOT SHOWN FOR VIEW CLARITY. CHEMCO SHOP TO INSTALL AS REQ'D & ROUTE DRAIN TO NEAR FOUNDATION DRAIN LOCATION.



DETAIL "3"
PUMP/COMPRESSOR ENCLOSURE HOLD DOWN
TYP (6) PLACES
SCALE: 2"=1'-0"



NOTE:
INSTALLING CONTRACTOR TO LEAVE OPENINGS IN GROUT BELOW SUPPORT BEAMS AS REQ'D TO ALLOW FOR DRAINING.

SECTION "A-A"
TYPICAL PUMP ENCLOSURE BASE BEAM GROUTING ELEVATION
SCALE: 2"=1'-0"

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CHEMCO SYSTEMS, L.P.
1500 INDUSTRIAL DRIVE MONONGAHELA, PA.

SHT. DESCRIPTION: PUMP/COMPRESSOR ENCLOSURE ARRANGEMENT
DWG. DESCRIPTION: WEBER BASIN WTP
POWDER ACTIVATED CARBON SYSTEM
BOUNTIFUL, UT

12/22/23	0	CK	INITIAL ISSUE
DATE:	REV:	BY:	REMARKS

SCALE: 1/2" = 1'-0"
DATE: DECEMBER 21, 2023
DRAWN BY: G. KUNDRAT
CHECKED BY: J. KENNEDY
APPROVED BY: J. KENNEDY
DWG NO: 23-156801 D
SHEET NO. 7

CHEMCO SYSTEMS