# Wednesday, January 4, 2023
# Planning Commission

**Planning Commission Agenda**
**PUBLIC NOTICE is hereby given that the Planning Commission of Spanish Fork, Utah, will hold a meeting at the City Council Chambers, 40 South Main Street, Spanish Fork, Utah, with a work session commencing at 5:00 p.m. and Planning Commission Meeting commencing at 6:00 p.m. on January 4, 2023.**
**Planning Commissioners**

**John Mendenhall**
**Todd Mitchell**
**Shauna Warnick**
**Joseph Earnest**
**Michelle Carroll**

**SPANISH FORK CITY does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in the employment or the provision of services. The public is invited to participate in all Spanish Fork City Planning Commission Meetings located at the City Council Chambers, 40 South Main Street, Spanish Fork. If you need special accommodation to participate in the meeting, please contact the Community Development Office at 801-804-4580.**

## 1. 5:00pm Work Session - No formal actions are taken in a work session.

A. CHAIR AND VICE-CHAIR SELECTIONS.

## 2. 6:00pm Planning Commission Meeting.

## 3. Minutes

A. December 7, 2022

## 4. Conditional Use Permits (Public Hearing)

A. 150 SOUTH 2022 AT&T CELL TOWER MODIFICATION. The proposal involves upgrading equipment on an existing tower located at 1449 East 150 South.

B. 300 EAST 2022 AT&T CELL TOWER MODIFICATION. The proposal involves upgrading equipment on an existing tower located at 1296 North 300 East.

## 5. Preliminary Plat

A. WILLOWBROOK COMMERCIAL SUBDIVISION. The proposal involves re-approval of a Preliminary Plat creating 2 lots for a nonresidential development located at approximately 1200 North Market Place Drive.

## 6. Title 15 Amendments (Public Hearing)

A. TITLE 15 AMENDMENTS - LANDSCAPING. The proposal involves various amendments to Municipal Code regarding Title 15 landscaping requirements.

## 7. Concept Review

A. VESTA CONCEPT REVISED.

## 8. Discussion

A. PARKING REQUIREMENTS.

## 9. Other Business

A. PLANNING COMMISSION WORK PROGRAM.

## 10. Adjourn

Draft Minutes
Spanish Fork City Planning Commission
40 South Main Street
Spanish Fork, Utah
December 7, 2022

**Commission Members Present:** Chairman Jesse Cardon, Commissioners John Mendenhall, Shauna Warnick, Joseph Earnest, Michell Carroll, Todd Mitchell.

**Staff Members Present:** Dave Anderson, Community Development Director; Brandon Snyder, Senior Planner; Michael Clark, Staff Engineering; Ana Burgi, Assistant City Attorney; Kimberly Brenneman, Development Coordination Manager.

**Citizens Present:** Fred Ludlow, John Bankhead, Thomas Sorensen, Jackie Larson, James Yates, David B, James Hylton, Tyler Voorhees, Brian Faye, Matt Riggs, Melyssa Riggs, Payton Matthews, Shane Williams, Cory Andersen.

## WORK SESSION

No action taken in work session.

## PLANNING COMMISSION MEETING

Chairman Cardon called the meeting to order at 6:00 p.m.

## PRELIMINARY ACTIVITIES

### Pledge of Allegiance

Commissioner Earnest led the pledge.

## MINUTES

November 2, 2022

Commissioner Warnick moved to approve the minutes from November 2, 2022.

Commissioner Mendenhall seconded and the motion passed all in favor.

## ZONE CHANGE

### ZONING MAP AMENDMENTS 2022

Dave Anderson addressed the Commission stating there are quite a few proposed amendments to the City's Zoning Map. The proposed changes are not essential but are practical for the current use to align with the zone. For the majority of the proposals, the property is owned by the City, they are public parks. At times when a residential development is approved, a developer will construct a park or open space that is then dedicated to the City at time of completion of the subdivision. The park is a public park and the maintenance obligation of Spanish Fork City. Parks are allowed in residential zones, but changing the zone to Public Facilities aligns better with the current use and ownership.

Dave Anderson then outlined the proposed Zone Changes one by one as shown in the staff report memo attached to the agenda

Commissioner Mitchell asked why the Rocky Mountain power corridor south of Legacy Farms is not proposed to be changed to Public Facilities.

Dave Anderson stated that until ownership of the property is a public entity, it should not be changed.

Commissioner Earnest asked with regard to the proposed change for the few homes in the Legacy Farms subdivision if the zoning is based on any historical agreements with the Legacy Farms Development. He asked that staff review that particular proposed change to make sure there is not anything in the development agreement that would prohibit the change in zoning designation.

Chairman Cardon stated that there is an additional pedestrian path as part of the exhibit for 1923 East 280 South.

Chairman Cardon opened the public hearing at 6:27 p.m.

Tyler Voorhees addressed the Commission regarding the Voorhees Duplex Addition later in the agenda.

Chairman Cardon stated that this public hearing is for the proposals that were just presented for staff and there would be an opportunity for him to address the Commission relative to his application.

Chairman Cardon closed the public hearing at 6:28 p.m.

Commissioner Earnest **moved** to recommend the approval of the Zoning Map Amendments 2022 to the City Council as presented.

Commissioner Mitchell **seconded** and the motion **passed** all in favor.

## LUDLOW DEVELOPMENT ENHANCEMENT OVERLAY 2022

Dave Anderson addressed the Commission stating this property has a unique history and there has been a Development Enhancement Overlay approved and applied to the property previously. The approval allowed for a non-residential use without requiring site improvements, namely the onsite parking requirements. Since the time of approval, the business that was originally approved to utilize the property is no longer operating from the site. Another business occupied the site for a time, which ended up generating more traffic than initially intended. The applicant is to go through a re-approval of the Development Enhancement Overlay every time the business located on site changes. The proposed business would have 2-3 employees and would generate about 5 business visits a week. Dave Anderson feels this would be an appropriate use for the property.

Fred Ludlow stated that he and his wife have owned the property since about 2007. They used it as a residential rental for some time. Then, in 2015, the zone was changed to Residential Office. The new business proposed to occupy the space is a telehealth business and would have very little business traffic.

Commissioner Earnest asked if the employees are able to park in the garage.

Fred Ludlow stated that the business could if they wanted to.

Chairman Cardon opened the public hearing at 6:35 p.m.

Thomas Swenson is the neighbor to the east of the property. The issue with the site is parking. They had issues with the previous tenant blocking their driveway. As long as the business maintains the parking that is stated there should not be an issue.

Brian Fay, lives to the north of the property. He has not had any problem with the previous businesses. With living across the street from the park, they have cars parked on the street all the time. He appreciates not having a wall on his south property line.

Fred Ludlow stated that the previous tenants over-parked and he didn't realize there was an issue until after the fact. Since then, some cameras have been added to help monitor the parking so that it does not become a problem.

Commissioner Carroll asked if there is a note in the rental agreement regarding parking.

Fred Ludlow stated that there are parking limits in the agreement.

Chairman Cardon closed the public hearing at 6:39 p.m.

Commissioner Mendenhall stated he remembers the concern about the parking from the original proposal in 2020. There was also discussion about the wall at that time and he is glad to hear that not having the wall has been good. He is glad to see that this has worked well for the site.

Commissioner Earnest asked if there are proposed changes to the site at this time.

Dave Anderson stated that there are not.

Commissioner Earnest recommended to Mr. Swenson that if there is any issue with the parking, to reach out to the business or Mr. Ludlow; as Mr. Ludlow seems to have a desire to be a good neighbor.

Commissioner Mitchell **moved** to recommend approval of the proposed Ludlow Development Enhancement Overlay 2022 to the City Council based on the following findings and conditions.

Findings:

1. That any approvals are specifically tied to RejuvaRoom LLC as described in the letter by the applicant.
2. That the proposed use as described in the letter from the applicant is appropriate for the site.
3. That the proposed use with the proposed improvements would not adversely impact neighboring properties.

Conditions:

1. That the applicant meets any conditions imposed by the City Council.

2. That the applicant receives Site Plan approval from the Development Review Committee.
3. That the approval is tenant specific and when the business is turned over that any new uses of the site and the property will be reviewed again

Commissioner Mendenhall **seconded** and the motion **passed** all in favor.

## VOORHEES DUPLEX ADDITION

Brandon Snyder addressed the Commission stating that this proposal had been on a previous Planning Commission agenda as a discussion item. The applicant is requesting the Infill Overlay zone be applied at 117 North 200 West. The previous discussion was related to improvements for not just the rear duplex but for the existing duplex on the site. The applicant has provided updated plans with the exterior material proposed as wainscot, hardy board and stucco to the existing duplex, which will match the rear duplex. The applicant will update the landscaping on the site. The applicant is also proposing to install a uniform vinyl fence around the property.

Chairman Cardon asked what would happen with the two trees that are in the front yard of the property.

Tyler Voorhees stated that the larger tree has already been removed.

Commissioner Earnest asked why the Infill Overlay is needed.

Brandon Snyder stated that the current zone allows for a single-family home. The existing duplex is legal non-conforming. For any additional units to be added to the property the Infill Overlay must be approved.

Tyler Voorhees stated that he was duplicating the property to the south that recently constructed a single-family home and duplex on one parcel.

Chairman Cardon opened the public hearing at 6:51 p.m.

Matt Riggs and Melysa Riggs live just south of the proposed property. Matt Riggs stated since the property to the south was approved to build the single-family home and duplex, he has had issues. He stated that the overhead power line was pulled from his home by construction equipment. Currently, he has water issues. There is water runoff from the south property to his property and feels his foundation is at risk. The improvements to the

north with an additional structure and added parking, will create more water runoff from the north property to his property. His property sits lower than the property to the north.

Commissioner Mitchell asked if the property to the south raised the site.

Matt Riggs stated that every time the lawn is watered, he has runoff on his property.

Commissioner Mendenhall observed from the aerial map that the water runoff from the roof of the south property is possibly what flows to Mr. Riggs' property to his foundation. If there is settling to the foundation that could be from the added water to the property.

Commissioner Warnick asked if there are parking issues.

Matt Riggs stated that there are no parking issues with the property to the south. He stated that his concern is the water runoff, not parking.

Chairman Cardon closed the public hearing at 6:56 p.m.

Michael Clark stated that it is a water trespassing issue and staff has been directed by the Legal Department that it is a civil matter.

Dave Anderson stated the intended use of the Infill Overlay is to allow for improvements to a site that limits the impact to existing neighboring properties.

Commissioner Mitchell stated that a Site Plan should show site grading and the water being retained on the property.

Dave Anderson stated that is correct and there is also making sure the grading with the building permit is away from the house.

Commissioner Mendenhall stated the concern is creating more impervious surfaces. It takes someone with the credentials to address the drain water, like an engineer.

Matt Riggs stated he has lived in the home for 30 plus years and has not had any issues until the property to the south added the structures.

Michael Clark gave the example of a property owner building a home with gravel on the side as an RV pad. When the property owner comes in later down the road and pours concrete for the RV pad then a water runoff issue arises. Michael Clark stated there was a property owner that was building on a vacant lot in an existing neighborhood where the property sat lower than the road. In anticipation of water runoff issued from adjacent properties and the road, the property owner added two concrete inlet boxes in the driveway that an engineer stated would hold a 200-year storm.

Commissioner Warnick asked if there is a resource where a community member could call with an issue like this.

Michael Clark stated that in the springtime, his department does receive many calls about this and there is a staff member that will go and meet with the property owner to see if there is some assistance that can be provided.

It was reiterated that the water trespassing is a civil issue and the City is limited in resources to assist.

Commissioner Mitchell stated that the applicant should not be held liable for the lack of water retention from the property to the south, but that there should be heightened scrutiny and review to make sure that water runoff does not occur. Particularly when an Infill Overlay development is requested.

Dave Anderson stated that storm drain should not be an issue and that is one of the easier issues that can be solved.

Commissioner Earnest would like to add that maybe not losing sight of the forest for the trees. The Infill Overlay is an opportunity to invest in a community that helps the neighborhood as a whole, even for the properties that do not participate in the Infill Overlay.

Commissioner Carroll stated that she appreciated the improvements that Mr. Voorhees has done to the exterior based on the feedback of the Planning Commission in October.

Commissioner Warnick stated it is important to note that the property will be a rental. There are pros and cons to that.

Tyler Voorhees stated he does not want to create a water issue for the neighbor to the south. He has also worked with Spanish Fork power to have the power line raised on his property so that there are no issues with equipment catching on the power line. He also stated that he anticipates living in one of the units of the duplex once constructed.

Commissioner Earnest **moved** to recommend the approval of the Voorhees Duplex Addition to the City Council based on the following findings and conditions.

Findings:

1. That the proposal is consistent with the City's General Plan Land Use Map Designation.

2. That with additional details the proposal can meet the intent of the Infill Overlay zone

Conditions:

1. That the applicant meets the City's Zoning requirements and Construction Standards.
2. That the applicant addresses any red-lines.
3. That the applicant meets any conditions recommended by the DRC and Planning Commission.
4. That the driveway is at least 20 feet wide and is concrete.
5. That heightened scrutiny by the City Engineering Department be given in regards to drainage and ensuring that adequate drainage measures be incorporated in the design.

Commissioner Mitchell **seconded** and the motion **passed** all in favor.

Commissioner Warnick asked if the City would provide a packet to residents.

Dave Anderson stated that the City does assist but it is limited to what can be provided.

Ana Burgi stated that when this arises the best response is "This is a civil matter, you may need to contact an attorney."

## TITLE 15 (Public Hearing)

### TITLE 15 COMMERCIAL DOWNTOWN AMENDMENT (EVENT CENTERS)

Dave Anderson stated that Event Centers are currently not allowed in the Commercial Downtown Zone, which covers a few blocks of historic downtown. The applicant approached staff about a particular building downtown and the desire for an event center. The idea of adding an element like an event center to the area, to help make this part of the community viable and active. The city currently lacks businesses that get people downtown on weekends, or in the evenings. Staff is recommending Event Centers be allowed in the Commercial Downtown Zone with the requirement that one off street parking space be provided for every 300 square feet of floor space. The current Commercial Downtown Zone does not require any off-street parking.

Commissioner Earnest asked if Dave Anderson has any history as to why Event Centers were excluded from the zone initially.

Dave Anderson stated it predates his time and does not have history.

James Yates is not the applicant but is the applicant's real estate agent. He stated Event Centers are the types of uses that invest in the downtown area. The applicant will be investing thousands of dollars in the building. There are other businesses in the area that have similar occupancy loads, but are not held to a parking standard. There are currently about 20 stalls on the property and would be able to meet the proposed parking; although he does not believe this should be a requirement.

Payton Matthews is an employee of the applicant and stated the owners opened their first event center in Daybreak in 2020 and a second location in Sandy in 2021. This will be the owner's third location.

Commissioner Carroll asked what the nature of the events typically are.

Payton Matthews stated that they have many wedding events. They also have other events like fundraisers. The owners have maintained good relationships with their property management groups. The majority of their events are at night. There are generally 1-2 daytime events a week. Of those daytime events, the majority are on Saturdays. In looking at their second location, Crescent Hall in Sandy and the parking for events, the owners feel this site provides the needed parking.

James Yates stated the applicant will spend about $300,000 in improvements including a facelift to the exterior. He stated that he sees so much of the event business go north, and it would be nice to see Main Street more vibrant and a destination for traffic.

Chairman Cardon opened the public hearing at 7:44 p.m.

Jackie Larson stated she lives just off Main Street near the Veterans building and sometimes there are events that have overflow parking on the street.

There was discussion of the parking around the proposed location.

Chairman Cardon closed the public hearing at 7:48 p.m.

Chairman Cardon stated when employed with a business that is located just outside the Commercial Downtown area that had a large volume of patrons. He feels that the parking could be an issue.

Commissioner Mendenhall stated the Angelus Theater would be a good barometer of parking issues or lack thereof. Parking will go where it will when businesses are closed. The businesses that he hears complaints from are during day time office hours, not in the evening. He likes the idea of the renovation of downtown and thinks it is important to the community.

Commissioner Warnick stated vibrant downtowns that she visits always have parking issues, and that is why it is vibrant and there are things to see with window shopping and creating a walking environment.

Dave Anderson stated there are a few parking areas that are owned by the city and maintained that adds about 100 parking stalls. In working with property owners a few years ago on this block, the city worked with property owners to try to facilitate a coordination of the property owners that have parking with removing fences and reconfiguring the parking to add about 30% more parking. At that time the previous business was the one hold out on the configuration and the effort eventually fell apart.

Dave Anderson stated that in a preliminary assessment of the properties within the current zone, there were not many that could fit the requirement.

Commissioner Warnick asked if it would be worth revising the effort to combine the parking on the block between 100 North and 200 North.

James Hilton thinks it would be worth looking at the revenue these businesses would be ringing to the area. Adding more parking would be adding more drivers and traffic. He thinks it would be worth looking at the revenue of the older area with limited parking versus the new businesses and ample parking.

Dave Anderson stated that he really believes that areas for this to thrive they need to be treated as urban. Typically, historic shopping areas are managed as a district and treat them as a whole.

Commissioner Earnest asked that businesses do what they can to limit their employees parking on Main Street.

There are some very impactful businesses downtown and it is important to support those businesses on Main Street.

Commissioner Earnest **moved** to recommend approval of the Title 15 Commercial Downtown Amendment (Event Centers) to the City Council as written.

Commissioner Warnick **seconded** and the motion **passed** all in favor.

## TITLE 15 AMENDMENTS

Dave Anderson indicated that this item is a work in progress and staff will present the amendments at the next meeting. The proposed amendments will be in regards to landscaping requirements. The item is not ready for review at this time.

Commissioner Warnick **moved** to continue.
Commissioner Mitchell **seconded** and the motion **passed** all in favor.

## GENERAL PLAN AMENDMENT (Public Hearing)

## TRANSPORTATION ELEMENT OF THE GENERAL PLAN 22.04-06

Commissioner Warnick asked why on the Main Street Relief Program the City is diverting traffic to 300 East instead of using 400 East and utilizing the Costco route that already exists.

Michael Clark stated that 300 East is substantially larger, it has less of an offset on 400 North, and after 300 South it continues south and south east on Scenic Drive.

Commissioner Mendenhall asked for Michael Clark to explain the thoughts of the intersection at 300 East and 800 North with a round-a-bout.

Michael Clark stated they have a traffic engineer working specifically for that intersection and movements.

Michael Clark stated that the trails have been added to the Transportation Master Plan, even though they are already detailed on the Trails Master Plan.

Chairman Cardon opened the public hearing at 8:20 p.m.

Jackie Larsen asked if there will be any access into the City that will not have a round-a-bout.

Michael Clark stated that the Center Street Interchange would not and 8000 South Interchange would not.

Jackie Larsen stated that any property owner that goes to the fairgrounds with a trailer and livestock, round-a-bouts are not safe.

James Hilton would like for there to be more bike paths with the roads. He feels there are many people that get overlooked that use public transportation

August Bigelow stated there are a handful of schools. He asked if there are any active transportation elements for elevated trails and pathways. There is an unprotected bike lane on Center Street. He feels that there should be more elements than just adding lights. He suggested raising the asphalt to the sidewalk height.

Chairman Cardon closed the public hearing at 8:26 p.m.

Michael Clark stated that the City does have a safety committee that meets once a month to discuss elements for safety and connectivity. What is proposed tonight is very high level, there are city processes and committees that focus on areas raised by the community. These requests are received via Citizen Support requests, phone calls, or community members visiting their office.

Commissioner Warnick asked if the city distinguishes commuter bike lanes from recreation bike lanes.

Dave Anderson stated there is a regional transportation plan update, that is done with Mountainland Association of Government for Utah County and cities within Utah County. They hold monthly meetings to review proposals for all types of transportation improvements.

Commissioner Carroll **moved** to recommend approval of the Transportation Element of the General Plan 22.04-06 to the City Council.

Commissioner Warnick **seconded** and the motion **passed** all in favor.

## CONCEPT REVIEW

### CANYON COURT CONCEPT

The Development Review Committee reviewed this item earlier today. The proposal is for a development that has a commercial and residential component to it. In this particular

case, since speaking with the applicant the Urban Village Commercial zone would be most appropriate. He is stating that with the understanding the text for Commercial Urban Village would need to change to allow for what is proposed, should support for the proposal be given. The current text was created long enough ago that the language would need to be updated. He thinks it would be detrimental to utilize other zones, as changes would need to be applied, like the required minimum size for an R-4 development.

Commissioner Mendenhall asked why R-4 requires 12 acres as a minimum.

Dave Anderson stated that based on the level of quality and amenities, a certain number of units would need to be built.

Dave Anderson stated there are projects in the valley that have been successful and location is very important.

Dave Anderson highlighted topics/thoughts from the DRC discussion earlier that day:

- That residential use should not be on the property at all.
- Parking requirements of 2.25 parking stalls per home that would include some cross access parking easements for the adjacent commercial lots.
- Parking should not be more than 2 stalls per unit as they are 2-bedroom one bath units.
- Reduction in parking allows for more open space and reduction in asphalt.
- Creating a stronger presence of pedestrian travel to lessen the feel of a shopping strip mall.
- The concern of having drive-thru businesses so close to the residential units. Automobile heavy traffic near residential structures.
- Timing of the commercial component development to the residential.
- The possibility of keeping the same number of units but going to 4 stories to allow for more open space.

The proposal is for 112 units.

Cory Andersen addressed the Commission.

Commissioner Warnick stated seeing a walking path around the property and the walkability is important to add.

Cory Andersen wanted feedback from the Commission with regard to the reduction in parking. They really would be able to provide more open space if they were allowed to

provide fewer parking stalls.  He asked how the Commission anticipates the garages not turn into storage units.

Commissioner Earnest stated in the same manner of maintaining the owner occupancy requirements.

Commissioner Warnick asked what the draw away from carports is.

Dave Anderson stated that from an architectural perspective to look at the R-4 zone.  In crafting the language and creating a zone to allow for higher density; the Planning Commission visited many projects within Utah County.  In looking at different projects that had a lot of carports and ones that do not, it was a very specific thing that was noted by Commissioners at the time, that it was the most significant amenity that could be provided by a developer.

Cory Andersen stated that the property manager would live on site.

Commissioner Warnick asks if this fits within the area.

Commissioner Carroll and Mitchell feel the look and modifications that have been made from the last renderings was done well and they like the look.

Commissioner Mendenhall appreciates that the applicant has listened to the feedback provided by the Planning Commission from previous meetings.

Commissioner feels comfortable with the cross-access parking.

Commissioner Mendenhall, Warnick and Carroll agreed with the parking cross access.

Commissioner Mendenhall stated when a carport is on the property it looks best when the structures are set back far enough from the building to allow for landscaping to buffer the carport.

Shane stated that the landscape gets worn with the pets from the tenants.

Commissioner Earnest stated he would like to make sure that commercial box building is set back far enough for the townhomes to the north.  The drink drive-thru needs to be moved to the interior of the development and to try to prevent the lights from the drive-thru is not shining into the units.  He is concerned with the phasing of the development

and making sure the grocer and retail goes in first. The semi-trucks for the grocery delivery are buffered from the residential component and the units that would be adjacent. He would like to accommodate a broader clientele and not just tenants in their 20's. He is comfortable with 2.25 parking stalls.

The proposed units are about 900 square feet, but the end units will be slightly larger.

BINGHAM CONCEPT

This item was requested to be continued by the applicant.

HIGHWAY 6 STORAGE UNITS CONCEPT

This item was requested to be removed from the Planning Commission agenda by the applicant.

VESTA CONCEPT

Dave Anderson stated that the purpose of the discussion is to explore whether residential development on the site is a viable possibility.

John Bankhead with Vesta. His company acquired this property in the spring and they have been working on adding additional industrial development to the property. There has been a draft concept put together but wanted to have a conversation with the Planning Commission about if residential development would be appropriate for the site.

Commissioner Earnest asked how many single-family lots would fit on the property.

John Bankhead said between 5,000 and 6,000 square foot lots but the roads would be expensive to get in there with some unique topography.

Commissioner Mendenhall stated that there is a market for everything and the need to meet the higher incomes is not being met in Spanish Fork. He thinks this area would be better for larger lots with a minimum of quarter acres. Even understanding the more expensive infrastructure that would be required, would not be an obstacle for those future property owners that want to live in Spanish Fork.

John Bankhead stated that there are logistical issues they know they need to work on, including SESD power lines, the canal, the aquafer, and adding walking trails.

Commissioner Earnest does not have townhome fatigue. He is concerned that they are a good product and somewhere people want to live. With the wind, he wonders if this is the place to put large expensive homes.

There was additional discussion regarding the residential aspect.

## DISCUSSION

### PARKING REQUIREMENTS

Dave Anderson stated he is working with a BYU professor about incorporating a parking study into a class curriculum for Spanish Fork City.

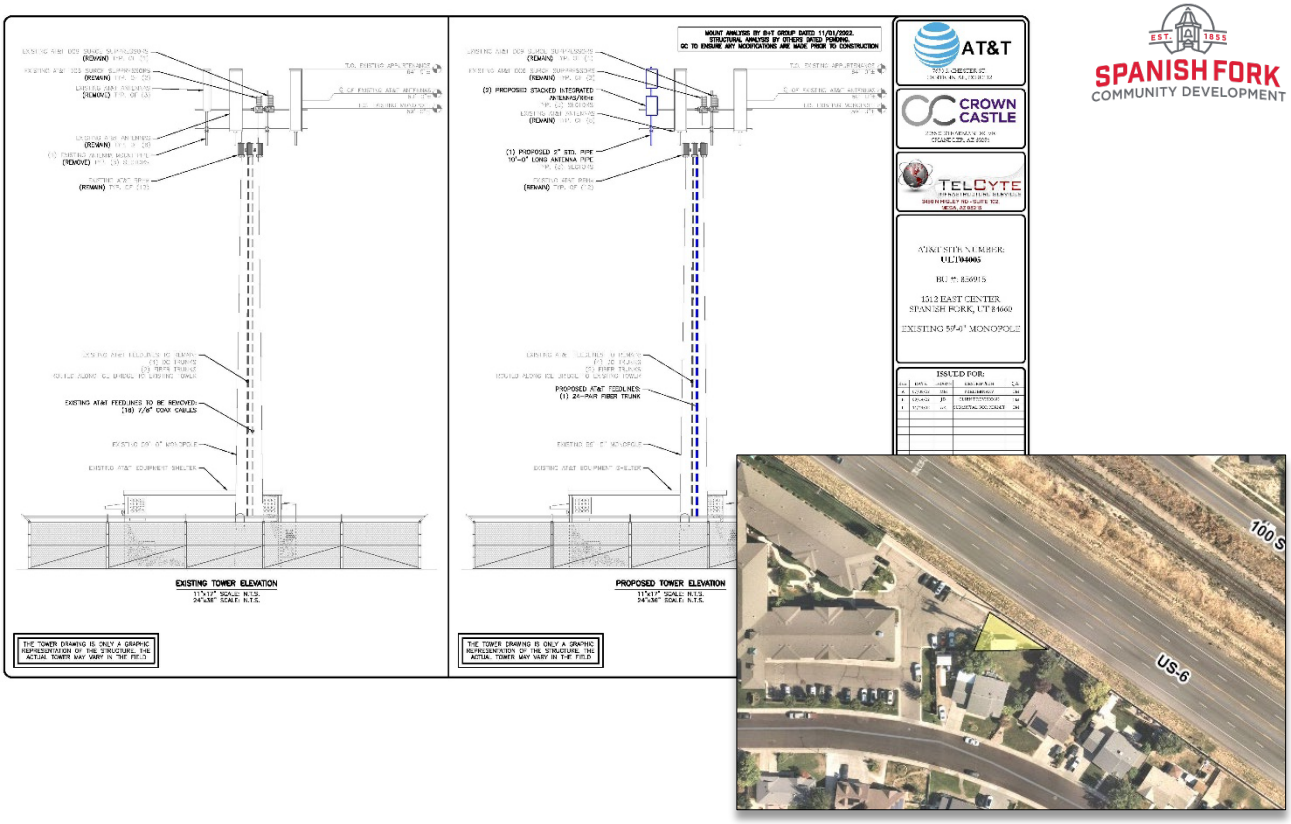
The Planning Commission supported the idea of working with the BYU students.

### LANDSCAPE REQUIREMENTS

Dave Anderson discussed the draft proposal and explained that work is still needed before the proposal is ready for the Planning Commission's consideration.

Chairman Cardon moved to adjourn meeting at 10:00 p.m.

Adopted:




SPANISH FORK COMMUNITY DEVELOPMENT

## 150 South 2022 AT&T Cell Tower Modifications Conditional Use Permit Request

January 4, 2023, Planning Commission Meeting.

Located at 1449 East 150 South.

The subject property is zoned R-1-8.

The applicant has requested that a conditional use permit be approved to allow for modifications on an existing tower.

## Recommendation

That the proposed Conditional Use Permit be approved based on the following finding and subject to the following conditions:

**Finding**

1. That the project conforms to the City's General Plan Land Use Designation and Zoning Map.

**Conditions**

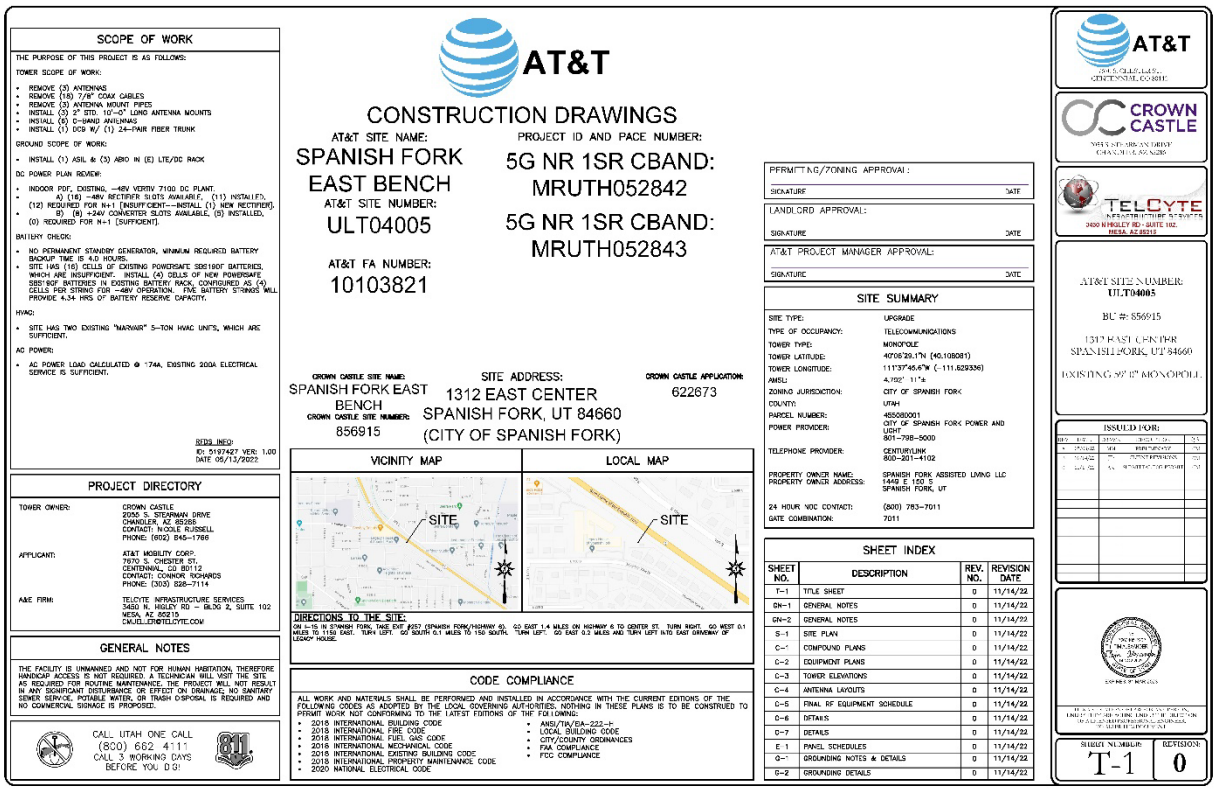
1. That the applicant meets the City's Zoning requirements and Construction Standards.
2. That the applicant addresses any red-lines.

## Key Issues

1. No Issues.

## Exhibits

1. Plans.
2. Picture.



## SCOPE OF WORK

THE PURPOSE OF THIS PROJECT IS AS FOLLOWS:

TOWER SCOPE OF WORK:

- REMOVE (3) ANTENNAS
- REMOVE (18) 7/8" COAX CABLES
- REMOVE (3) ANTENNA MOUNT PIPES
- INSTALL (3) 2" STD. 10'-0" LONG ANTENNA MOUNTS
- INSTALL (6) C-BAND ANALMUNAS
- INSTALL (1) DC9 W/ (1) 24-PAIR FIBER TRUNK

GROUND SCOPE OF WORK:

- INSTALL (1) ASIL & (3) ABO IN (E) LTE/DC RACK

DC POWER PLAN REVIEW:

- INDOOR PDF, EXISTING, -48V VERTIV 7100 DC PLANT.
  - A) (16) -48V RECTIFIER SLOTS AVAILABLE, (11) INSTALLED, (12) REQUIRED FOR N+1 [INSUFFICIENT—INSTALL (1) NEW RECTIFIER].
  - B) (8) +24V CONVERTER SLOTS AVAILABLE, (5) INSTALLED, (0) REQUIRED FOR N+1 [SUFFICIENT].

BATTERY CHECK:

- NO PERMANENT STANDBY GENERATOR, MINIMUM REQUIRED BATTERY BACKUP TIME IS 4.0 HOURS.
- SITE HAS (16) CELLS OF EXISTING POWERSAFE SBS190F BATTERIES, WHICH ARE INSUFFICIENT. INSTALL (4) CELLS OF NEW POWERSAFE SBS190F BATTERIES IN EXISTING BATTERY RACK, CONFIGURED AS (4) CELLS PER STRING FOR -48V OPERATION. THE BATTERY STRINGS WILL PROVIDE 4.34 HRS OF BATTERY RESERVE CAPACITY.

HVAC:

- SITE HAS TWO EXISTING "MARVAIR" 5-TON HVAC UNITS, WHICH ARE SUFFICIENT.

AC POWER:

- AC POWER LOAD CALCULATED @ ~74A, EXISTING 200A ELECTRICAL SERVICE IS SUFFICIENT.

RFDS INFO:
ID: 5197427 VER: 1.00
DATE 06/13/2022

## PROJECT DIRECTORY

| | |
|---|---|
| TOWER OWNER: | CROWN CASTLE<br>2055 S. STEARMAN DRIVE<br>CHANDLER, AZ 85286<br>CONTACT: NICOLE RUSSELL<br>PHONE: (602) 845-1766 |
| APPLICANT: | AT&T MOBILITY CORP.<br>7670 S. CHESTER ST.<br>CENTENNIAL, CO 80112<br>CONTACT: CONNOR RICHARDS<br>PHONE: (303) 526-7114 |
| A&E FIRM: | TELCYTE INFRASTRUCTURE SERVICES<br>3480 N. HIGLEY RD – BLDG 2, SUITE 102<br>MESA, AZ 85215<br>CMUELLER@TELCYTE.COM |

## GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

CALL UTAH ONE CALL
(800) 662 4111
CALL 3 WORKING DAYS
BEFORE YOU DIG

# AT&T

## CONSTRUCTION DRAWINGS

AT&T SITE NAME:
SPANISH FORK EAST BENCH

AT&T SITE NUMBER:
ULT04005

AT&T FA NUMBER:
10103821

PROJECT ID AND PACE NUMBER:
5G NR 1SR CBAND: MRUTH052842
5G NR 1SR CBAND: MRUTH052843

CROWN CASTLE SITE NAME:
SPANISH FORK EAST BENCH

CROWN CASTLE SITE NUMBER:
856915

SITE ADDRESS:
1312 EAST CENTER
SPANISH FORK, UT 84660
(CITY OF SPANISH FORK)

CROWN CASTLE APPLICATION:
622673

PERMITTING/ZONING APPROVAL:
SIGNATURE DATE

LANDLORD APPROVAL:
SIGNATURE DATE

AT&T PROJECT MANAGER APPROVAL:
SIGNATURE DATE

## SITE SUMMARY

| | |
|---|---|
| SITE TYPE: | UPGRADE |
| TYPE OF OCCUPANCY: | TELECOMMUNICATIONS |
| TOWER TYPE: | MONOPOLE |
| TOWER LATITUDE: | 40°06'29.17"N (40.108081) |
| TOWER LONGITUDE: | 111°37'45.6"W (-111.629336) |
| AMSL: | 4,902' ±1'± |
| ZONING JURISDICTION: | CITY OF SPANISH FORK |
| COUNTY: | UTAH |
| PARCEL NUMBER: | 48508001 |
| POWER PROVIDER: | CITY OF SPANISH FORK POWER AND LIGHT<br>801-798-5000 |
| TELEPHONE PROVIDER: | CENTURYLINK<br>800-201-4102 |
| PROPERTY OWNER NAME:<br>PROPERTY OWNER ADDRESS: | SPANISH FORK ASSISTED LIVING LLC<br>1440 E 150 S<br>SPANISH FORK, UT |
| 24 HOUR NOC CONTACT: | (800) 783-7011 |
| GATE COMBINATION: | 7011 |

## SHEET INDEX

| SHEET NO. | DESCRIPTION | REV. NO. | REVISION DATE |
|---|---|---|---|
| T-1 | TITLE SHEET | 0 | 11/14/22 |
| GN-1 | GENERAL NOTES | 0 | 11/14/22 |
| GN-2 | GENERAL NOTES | 0 | 11/14/22 |
| S-1 | SITE PLAN | 0 | 11/14/22 |
| C-1 | COMPOUND PLANS | 0 | 11/14/22 |
| C-2 | EQUIPMENT PLANS | 0 | 11/14/22 |
| C-3 | TOWER ELEVATIONS | 0 | 11/14/22 |
| C-4 | ANTENNA LAYOUTS | 0 | 11/14/22 |
| C-5 | FINAL RF EQUIPMENT SCHEDULE | 0 | 11/14/22 |
| C-6 | DETAILS | 0 | 11/14/22 |
| C-7 | DETAILS | 0 | 11/14/22 |
| E-1 | PANEL SCHEDULES | 0 | 11/14/22 |
| G-1 | GROUNDING NOTES & DETAILS | 0 | 11/14/22 |
| G-2 | GROUNDING DETAILS | 0 | 11/14/22 |

VICINITY MAP




LOCAL MAP




DIRECTIONS TO THE SITE:
GO N TO W SPANISH FORK, TAKE EXIT #257 (SPANISH FORK/HIGHWAY 6), GO RIGHT 1.4 MILES ON HIGHWAY 6 TO CENTER ST., TURN RIGHT, GO WEST 0.1 MILES TO 1150 EAST, TURN LEFT, GO SOUTH 0.1 MILES TO 150 SOUTH, TURN LEFT, GO EAST 0.3 MILES AND TURN LEFT INTO EAST GATEWAY OF LEGACY HOUSE.

## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL FIRE CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL PROPERTY MAINTENANCE CODE
- 2020 NATIONAL ELECTRICAL CODE
- ANSI/TIA/EIA-222-H
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- FAA COMPLIANCE
- FCC COMPLIANCE

AT&T
CROWN CASTLE
TELCYTE INFRASTRUCTURE SERVICES
3480 N HIGLEY RD - SUITE 102, MESA, AZ 85215

AT&T SITE NUMBER:
ULT04005

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

EXISTING 59'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | BY | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 07/06/22 | MM | PRELIMINARY | CM |
| B | 09/14/22 | CM | CLIENT REVISIONS | CM |
| 0 | 11/14/22 | AS | PERMITTING SUBMITTAL | CM |

SHEET NUMBER: T-1
REVISION: 0

**GENERAL NOTES:**

1. EVERY EFFORT HAS BEEN MADE IN THE CONSTRUCTION DOCUMENTS TO PROVIDE A COMPLETE SCOPE OF WORK. MINOR DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL NOT EXCUSE CONTRACTORS FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
2. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN THE CARRIER OR ITS DESIGNATED REPRESENTATIVE.
3. BIDDING REQUIREMENTS
   a. PRIOR TO THE SUBMISSION OF BIDS, VISIT THE JOB SITE TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. VISIT THE SITE WITH THE CONSTRUCTION DOCUMENTS TO VERIFY FIELD DIMENSIONS AND CONDITIONS TO CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN.
   b. PROVIDE NOTIFICATION TO OWNER IN WRITING OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF PRICE PROPOSAL. IN THE EVENT OF DISCREPANCIES, PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
   c. WHEN TOWER IS OWNED BY A THIRD PARTY, CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK.
   d. WHERE ANCHORING TO A CONCRETE ROOF SLAB, CONFIRM (PRIOR TO SUBMITTING BID) THE PRESENCE OF POST TENSION TENDONS. INCLUDE PROVISIONS FOR X-RAY PROCEDURES TO LOCATE THE TENDONS PRIOR TO CONSTRUCTION.
4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. CONSTRUCTION DOCUMENTS ARE INTENDED FOR DIAGRAMMATIC PURPOSES ONLY, UNO.
5. FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. BRING ANY DISCREPANCIES IMMEDIATELY TO THE ATTENTION OF THE OWNER AND RESOLVE BEFORE PROCEEDING WITH THE WORK.
6. FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS.
7. SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONSTRUCTION DOCUMENTS. PROVIDE ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
8. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES APPLICABLE TO THE WORK.
9. CONSTRUCTION COORDINATION REQUIREMENTS
   a. NOTIFY OWNER OF ANY DISCREPANCIES PRIOR TO START OF WORK.
   b. OBTAIN ALL PERMITS, SCHEDULE AND COORDINATE ALL INSPECTIONS.
   c. PROVIDE, AT THE PROJECT SITE, A FULL, CURRENT SET OF CONSTRUCTION DOCUMENTS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
   d. RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DOCUMENTS.
   e. PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
   f. PROVIDE FALL PROTECTION IN ACCORDANCE WITH FEDERAL, STATE, LOCAL, AND OWNER REQUIREMENTS.
   g. IF FAA LIGHTING AND MARKING IS PRESENT ON SITE AND IS POWERED BY ELECTRICAL SERVICE THAT IS TO BE INTERRUPTED, MAINTAIN THE NECESSARY LIGHTS DURING CONSTRUCTION AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A DISRUPTION.
   h. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A:10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
   i. STRUCTURAL COMPONENTS OF ADJACENT FACILITIES SHALL NOT BE ALTERED BY THIS CONSTRUCTION PROJECT, UNO. ENSURE THAT EXCAVATION DOES NOT AFFECT ADJACENT STRUCTURES.
   j. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL-APPROVED MATERIALS, IF APPLICABLE.
   k. BURIED UTILITIES MAY EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
   l. COORDINATE ALL POWER INSTALLATION WITH POWER COMPANY AS REQUIRED. REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO OWNER.
   m. PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
   n. KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
   o. MAINTAIN THE INTEGRITY OF THE BUILDING ENVELOPE AND CONSTRUCT BARRIERS IN THE AREA OF WORK TO PREVENT DAMAGE FROM WEATHER AS WELL AS FROM CONSTRUCTION DUST AND DEBRIS.
10. INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S SPECIFICATIONS, UNO, OR WHERE LOCAL CODES OR ORDINANCES DIRECT OTHERWISE.
11. PROPOSED CELLULAR EQUIPMENT AND FIXTURES WILL BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR, UNLESS NOTED OTHERWISE.
12. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY OWNER.
13. DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP THE APPROVED CONSTRUCTION DRAWINGS AND SUBMITTING THE REDLINED SET TO OWNER UPON COMPLETION. DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS TO BE SUBMITTED WITH REDLINED CONSTRUCTION DRAWINGS.
14. PROVIDE SUPPORTS FOR CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.
15. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS, MOUNT ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

**ABBREVIATIONS**

| | |
|---|---|
| A/C | AIR CONDITIONING |
| AFF | ABOVE FINISHED FLOOR |
| AGL | ABOVE GROUND LEVEL, ABOVE GRADE LEVEL |
| AWS | ADVANCED WIRELESS SERVICE |
| BBU | BATTERY BACKUP UNIT |
| BLDG | BUILDING |
| BLK | BLOCKING |
| CLG | CEILING |
| CLR | CLEAR |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| D | DEPTH |
| DBL | DOUBLE |
| DEG | DEGREE |
| ø, DIA | DIAMETER |
| DIAG | DIAGONAL |
| DN | DOWN |
| DET | DETAIL |
| DWG | DRAWING |
| E | EXISTING |
| EA | EACH |
| ELEV. EL | ELEVATION |
| ELEC | ELECTRICAL |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EXT | EXTERIOR |
| FIF | FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME |
| FIN | FINISH |
| FLUOR | FLUORESCENT |
| FLR | FLOOR |
| FT | FOOT, FEET |
| GA | GAUGE |
| GALV | GALVANIZED |
| GC | GENERAL CONTRACTOR |
| GRND | GROUND |
| GSM | GLOBAL SYSTEM MOBILE |
| GYP | GYPSUM BOARD |
| HORZ | HORIZONTAL |
| HR | HOUR |
| HT | HEIGHT |
| ID | INSIDE DIAMETER |
| IN | INCH, INCHES |
| INSUL | INSULATION |
| INT | INTERIOR |
| L | LENGTH |
| LBS | POUNDS |
| LTE | LONG TERM EVOLUTION |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MTL | METAL |
| MFR | MANUFACTURER |
| MGR | MANAGER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| NA | NOT APPLICABLE |
| NIC | NOT IN CONTRACT |
| NO | NUMBER |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| PCS | PERSONAL COMMUNICATION SERVICE |
| PDU | POWER DISTRIBUTION UNIT |
| PROJ | PROJECT |
| PROP | PROPERTY |
| PT | PRESSURE TREATED |
| PVC | POLYVINYL CHLORIDE |
| REQ | REQUIRED |
| RF | RADIO FREQUENCY |
| RM | ROOM |
| RO | ROUGH OPENING |
| RRH | REMOTE RADIO HEAD |
| SHT | SHEET |
| SIM | SIMILAR |
| SPEC | SPECIFICATION |
| SF | SQUARE FOOT |
| SS | STAINLESS STEEL |
| STL | STEEL |
| SUSP | SUSPENDED |
| TMA | TOWER MOUNTED AMPLIFIER |
| TND | TINNED |
| TYP | TYPICAL |
| UNIS | UNIVERSAL MOBILE TELECOMMUNICATION SERVICE |
| UNO | UNLESS NOTED OTHERWISE |
| VERT | VERTICAL |
| W/ | WITH |
| W/O | WITHOUT |
| WCS | WIRELESS COMMUNICATION SERVICE |
| WP | WATER PROOF |

## PROJECT NOTES

1. THE FOLLOWING INFORMATION HAS BEEN PROVIDED BY CROWN CASTLE FOR THIS PROJECT AND HAS NOT BEEN FIELD VERIFIED AS PART OF THIS PROJECT:
   a. SITE LAYOUT INFORMATION AND ORIENTATION
   b. EXISTING TOWER, MOUNT AND EQUIPMENT ELEVATIONS
   c. DESIGN PACKAGE BASED ON THE APPLICATION #: PENDING V0
2. A STRUCTURAL ANALYSIS TO DETERMINE THE TOWER CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.
   a. STRUCTURAL ANALYSIS BY: OTHERS
   b. DATED: PENDING
   c. RESULTS: PENDING
3. A MOUNT ANALYSIS TO DETERMINE THE MOUNT CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.
   a. MOUNT ANALYSIS BY: B+T GROUP
   b. DATED: 11/01/2022
   c. RESULTS: CONDITIONAL PASS
4. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

AT&T
CROWN CASTLE
TELCYTE INFRASTRUCTURE SERVICES
3480 N HIGLEY RD - SUITE 102, MESA, AZ 85215

AT&T SITE NUMBER:
ULT04005

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

EXISTING 59'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | BY | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 07/06/22 | MM | PRELIMINARY | CM |
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| 0 | 11/14/22 | AS | PERMITTING SUBMITTAL | CM |

SHEET NUMBER: GN-1
REVISION: 0

**SITE NOTES:**

1. WHEN SITE WORK IS INCLUDED IN SCOPE:
   a. CLEAR AND GRUB SITE OF ALL VEGETATION, PAVING, GRAVEL, BASE AND OTHER DEBRIS NOT TO REMAIN. SUBGRADES ARE TO BE SET PRIOR TO LANDSCAPE INSTALLATION.
   b. PROVIDE ELEVATION OF SUBGRADE WITHIN 0.10 FOOT OF ELEVATIONS SHOWN ON PLAN MINUS DEPTH OF TOPSOIL, FILL AND MULCH.
   c. ROUGH GRADE ALL AREAS WITHIN 1 FOOT OF ELEVATIONS INDICATED BEFORE PLANTING. PROVIDE POSITIVE DRAINAGE AWAY FROM EQUIPMENT SLABS, BUILDINGS AND THROUGH ALL PLANTER AREAS TO AVOID LOW SPOTS AND STANDING WATER.
   d. BLEND NEW GRADES NATURALLY INTO EXISTING GRADES.
   e. MAINTAIN POSITIVE DRAINAGE ON THE SITE AT ALL TIMES.
   f. IF REQUIRED, MAINTAIN CONTINUOUS EROSION CONTROL ON THE DOWNSTREAM SIDE OF THE SITE.
   g. IN LANDSCAPE AREAS, FINISH GRADES ARE TO FOLLOW THE GRADES AND EDGE DETAILS INDICATED AND BE MOUNDED 6 INCHES IN THE CENTER OF THE BED ABOVE THE EDGE OF THE LANDSCAPE AREA.
   h. DO NOT PLACE FILL OR EMBANKMENT MATERIAL ON FROZEN GROUND. DO NOT PLACE FROZEN MATERIALS, SNOW OR ICE IN ANY FILL OR EMBANKMENT.
   i. NOTIFY OWNER IF MODIFICATIONS TO THE PROPOSED GRADING SEEM NECESSARY AND OBTAIN APPROVAL PRIOR TO START OF WORK.
2. FOOTINGS SHALL BEAR ON FIRM, NATURAL, UNDISTURBED SOIL, OR ON ENGINEERED FILL (COMPACTED TO 95% ASTM D1557). ENSURE THAT EXCAVATIONS ARE FREE OF ORGANIC MATERIAL, DEBRIS, OR OTHER FOREIGN MATERIAL. NOTIFY OWNER IF ANY UNUSUAL CONDITIONS ARE ENCOUNTERED.
3. FILL AND SLAB BASE MATERIAL SHALL BE 3/4" MINUS CRUSHED ROCK PLACED IN 8" (MAXIMUM) LOOSE LIFTS AND COMPACTED TO 98% ASTM D1557.

**CONCRETE NOTES:**

1. CONCRETE AND REINFORCING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

| | |
|---|---|
| CONCRETE CONSTRUCTION | ACI 318, f'c=4 KSI, UNO |
| CEMENT | ASTM C150, PORTLAND CEMENT TYPE II, UNO |
| REINFORCING STEEL | ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60 KSI, UNO |
| WELDED WIRE FABRIC | ASTM A185 |
| SPIRAL REINFORCEMENT | ASTM A615, GRADE 60, fy=60 KSI |
| ANCHOR BOLTS | ASTM A307 |
| GRADE 60 REBAR WELDING | ASTM A706 |

NOTES: ANY BARS SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, fy=40 KSI. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D1.4 ARE SUBMITTED.

2. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

| | | |
|---|---|---|
| FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE | | 3" |
| FORMED SURFACES EXPOSED TO EARTH OR WEATHER | (> #8 BARS) | 2" |
| | (≤ #8 BARS) | 1 1/2" |
| SLABS AND WALLS | (INTERIOR FACE) | 3/4" |

3. AIR ENTRAIN ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. AIR ENTRAIN CONCRETE EXPOSED TO FREEZING AND THAWING WHILE MOIST IN ACCORDANCE WITH ACI 318, SECTION 4.4.1.
4. DETAIL REINFORCING STEEL (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
5. PERFORM WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) USING LOW HYDROGEN ELECTRODES. PERFORM WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) USING E70 XX ELECTRODES. DO NOT WELD WITHIN 4" OF COLD BENDS IN REINFORCING STEEL.
6. DO NOT FIELD BEND REINFORCING PARTIALLY EMBEDDED IN CONCRETE UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE ENGINEER.
7. SUPPORT BARS ON CHAIRS OR DOBIE BRICKS.
8. FURNISH NON-SHRINK GROUT BY AN APPROVED MANUFACTURER. MIX AND PLACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (4 KSI, MINIMUM).
9. ALL EXPANSION ANCHORS TO BE HILTI BRAND, UNO. TEST ADHESIVE ANCHORS TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER AND LOCAL JURISDICTION.

**STRUCTURAL STEEL NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

| | |
|---|---|
| WIDE FLANGE SHAPES | ASTM A992, GRADE 50 |
| SHAPES, PLATES, ANGLES, & RODS | ASTM A36, Fy 36 KSI |
| SPECIAL SHAPES AND PLATES | ASTM A572, Fy 50 KSI |
| PIPE COLUMNS | ASTM A53, GR B, Fy 35 KSI |
| STRUCTURAL TUBING | ASTM A500, GR B, Fy 46KSI |
| ANCHOR BOLTS | ASTM A307 |
| CONNECTION BOLTS | ASTM A325 TWIST-OFF |

2. BASE STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION (INCLUDING FIELD WELDING, HIGH STRENGTH FIELD BOLTING, EXPANSION BOLTS, AND THREADED EXPANSION ANCHORS) ON THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION.
3. HOT DIP GALVANIZE AFTER FABRICATION PER A123/A123M-00 ALL STEEL EXPOSED TO WEATHER AND WHERE NOTED.
4. CONFORM TO ALL AISC AND AWS STANDARDS FOR WELDING. PERFORM WELDING BY ANSI/AWS D1.1 CERTIFIED WELDERS USING E70 XX ELECTRODES. USE ONLY PRE-QUALIFIED WELDS AS DEFINED BY AWS.
5. PROVIDE COLD-FORMED STEEL FRAMING MEMBERS OF THE SHAPE, SIZE, AND GAGE SHOWN ON THE PLANS. PROVIDE MINIMUM SECTION PROPERTIES INDICATED. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
6. FOR BOLTED CONNECTIONS, USE 3/4" DIA., BEARING-TYPE, A325 BOLTS WITH A MINIMUM OF TWO BOLTS, UNO.
7. FOR NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING, USE 5/8" DIA. A307 BOLTS, UNO.
8. PREPARE AND PAINT IN ACCORDANCE WITH THE PAINT MANUFACTURER'S WRITTEN INSTRUCTIONS, UNO.
9. TOUCH UP ALL FIELD DRILLING, WELDING AND CUT SURFACES WITH 2 COATS OF GALVACON (ZINC RICH PAINT) OR APPROVED EQUAL.

**SPECIAL INSPECTIONS:**

1. WHEN REQUIRED, PROVIDE SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION.
2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER'S REPRESENTATIVE, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.

AT&T
7337 S. REVERE PKWY.
CENTENNIAL, CO 80112

CROWN CASTLE
2003 S. STEARMAN DRIVE
CHANDLER, AZ 85286

TELCYTE
INFRASTRUCTURE SERVICES
3480 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

AT&T SITE NUMBER:
**ULT04005**

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

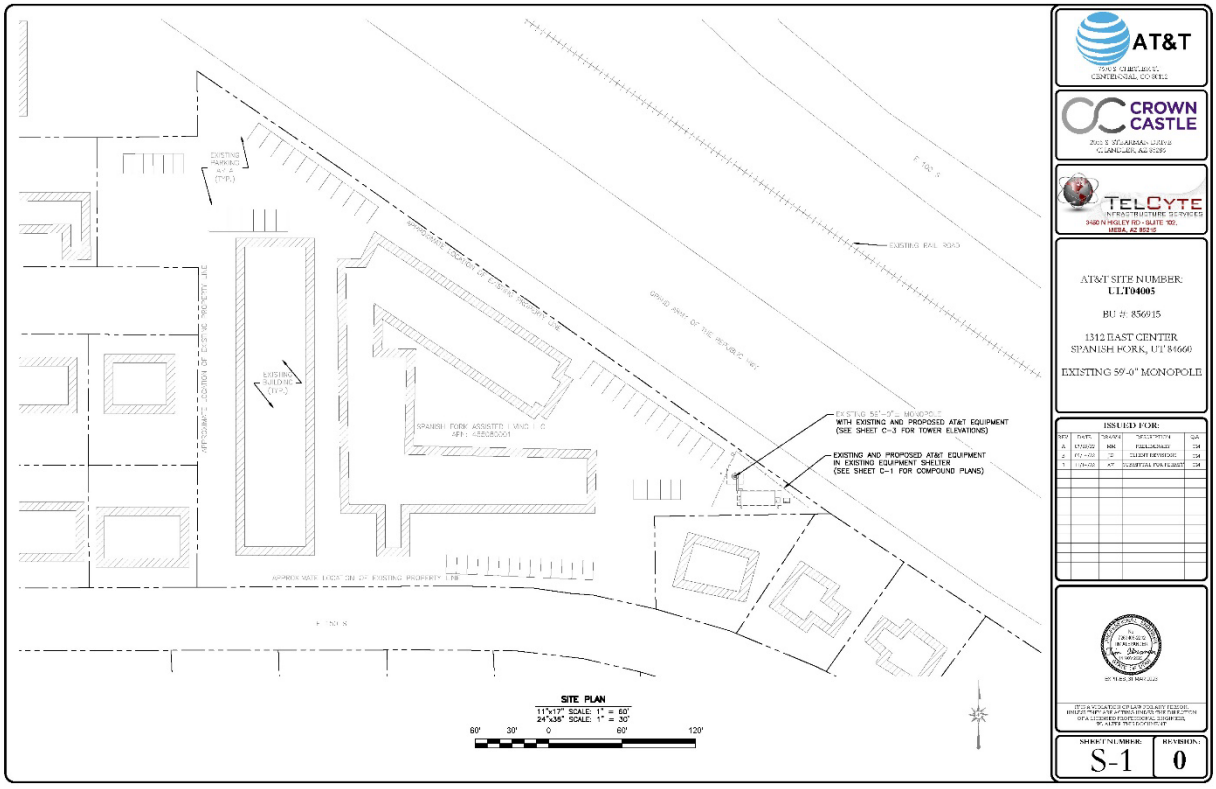
EXISTING 59'-0" MONOPOLE

**ISSUED FOR:**

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 12/16/22 | MK | FIELD REVIEW | DH |
| 0 | 1/4/23 | JC | ISSUED FOR REVIEW | DH |

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: GN-2 | REVISION: 0




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7337 S. REVERE PKWY.
CENTENNIAL, CO 80112

CROWN CASTLE
2003 S. STEARMAN DRIVE
CHANDLER, AZ 85286

TELCYTE
INFRASTRUCTURE SERVICES
3480 N HIGLEY RD - SUITE 102,
MESA, AZ 85215

AT&T SITE NUMBER:
**ULT04005**

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

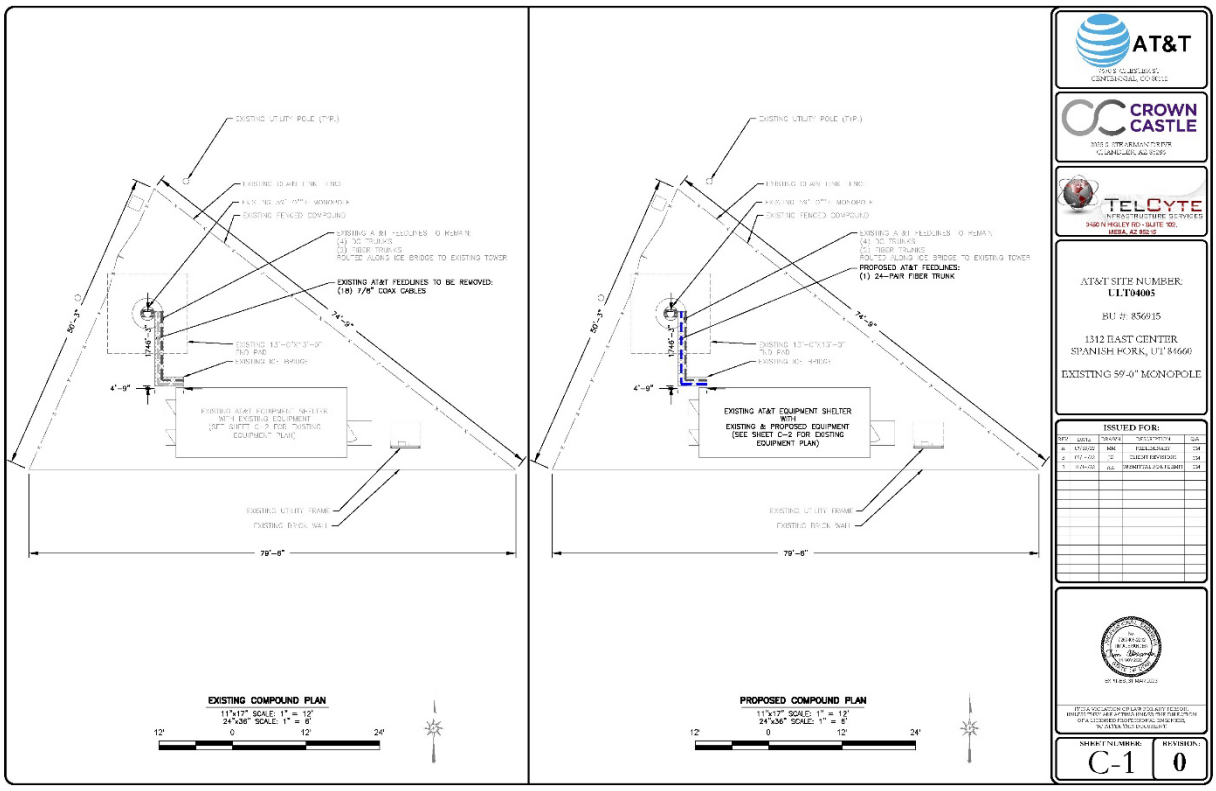
EXISTING 59'-0" MONOPOLE

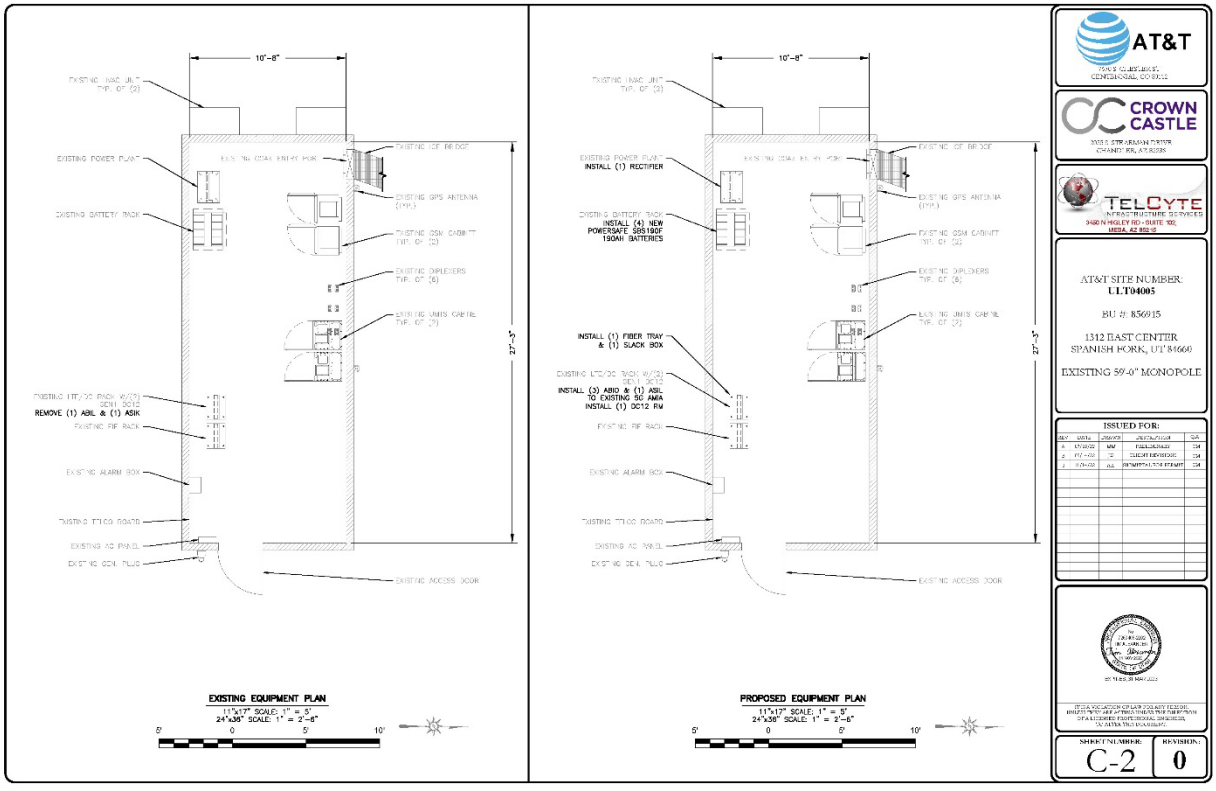
**ISSUED FOR:**

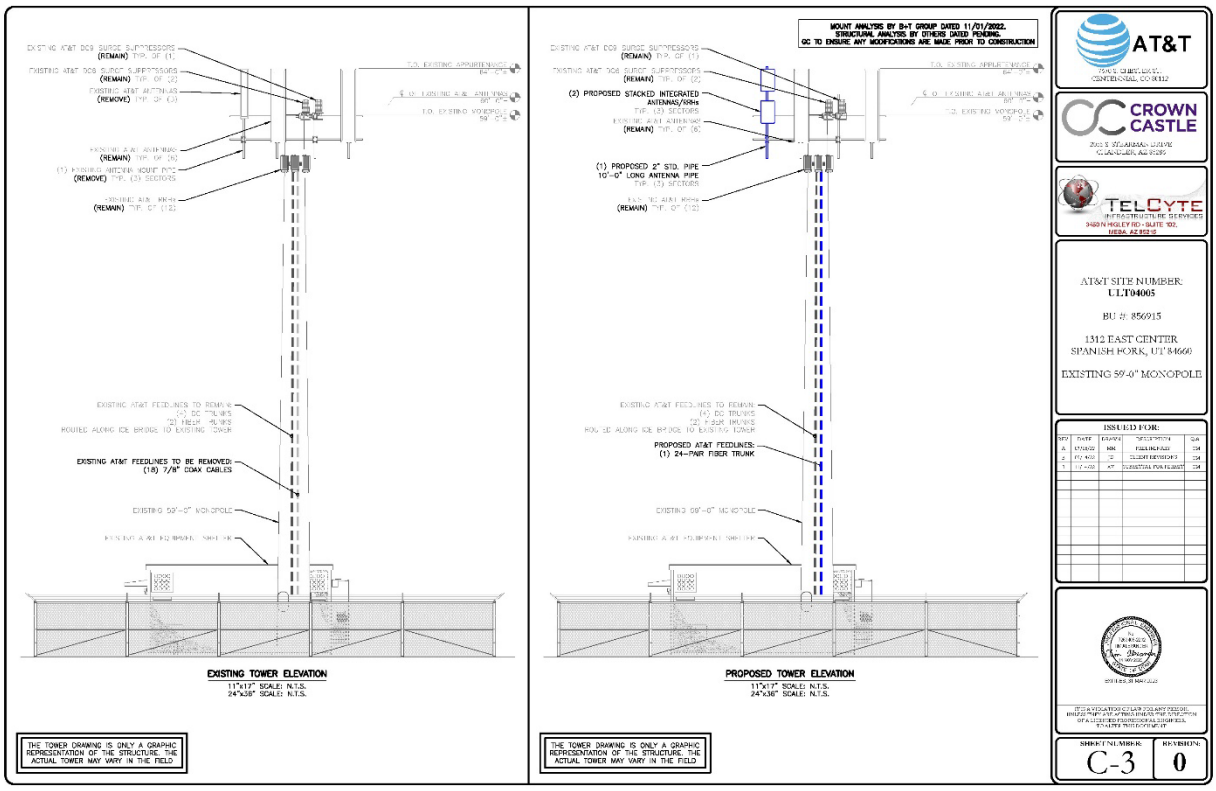
| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 12/16/22 | MK | FIELD REVIEW | DH |
| 0 | 1/4/23 | JC | ISSUED FOR REVIEW | DH |

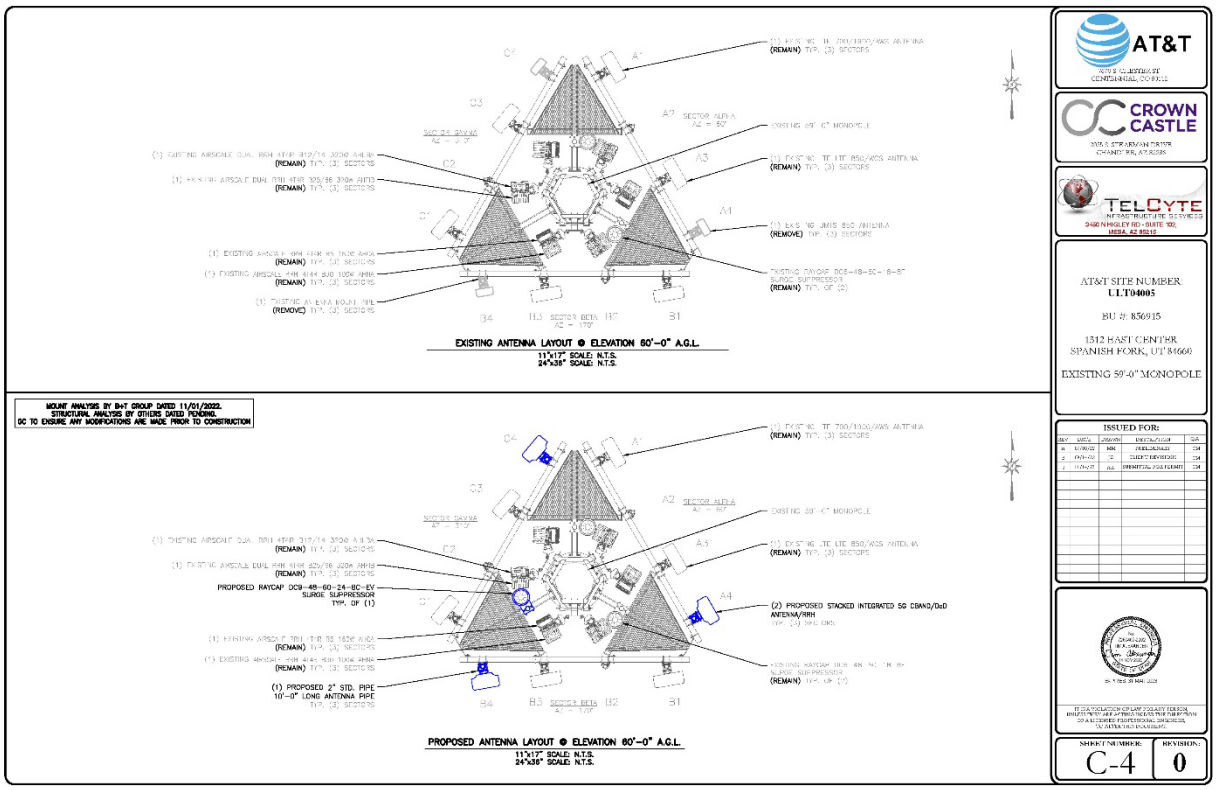
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SHEET NUMBER: S-1 | REVISION: 0


EXISTING UTILITY POLE (TYP.)
EXISTING CHAIN LINK FENCE
EXISTING 59'-0" MONOPOLE
EXISTING FENCED COMPOUND
EXISTING A.B.I. FEEDLINES TO REMAIN:
(4) 1/2 TRUNKS
(2) FIBER TRUNKS
ROUTED ALONG ICE BRIDGE TO EXISTING TOWER
EXISTING AT&T FEEDLINES TO BE REMOVED:
(18) 7/8" COAX CABLES
17'-6"
74'-8"
50'-3"
4'-9"
EXISTING 13'-0"X13'-0" TILT PAD
EXISTING ICE BRIDGE
EXISTING AT&T EQUIPMENT SHELTER WITH EXISTING EQUIPMENT (SEE SHEET C-2 FOR EXISTING EQUIPMENT PLAN)
EXISTING UTILITY FRAME
EXISTING BRICK WALL
79'-8"
EXISTING COMPOUND PLAN
11"x17" SCALE: 1" = 12'
24"x36" SCALE: 1" = 6'
12' 0 12' 24'
EXISTING UTILITY POLE (TYP.)
EXISTING CHAIN LINK FENCE
EXISTING 59'-0" MONOPOLE
EXISTING FENCED COMPOUND
EXISTING A.B.I. FEEDLINES TO REMAIN:
(4) 1/2 TRUNKS
(2) FIBER TRUNKS
ROUTED ALONG ICE BRIDGE TO EXISTING TOWER
PROPOSED AT&T FEEDLINES:
(1) 24-PAIR FIBER TRUNK
17'-6"
74'-8"
50'-3"
4'-9"
EXISTING 13'-0"X13'-0" TILT PAD
EXISTING ICE BRIDGE
EXISTING AT&T EQUIPMENT SHELTER WITH
EXISTING & PROPOSED EQUIPMENT
(SEE SHEET C-2 FOR EXISTING EQUIPMENT PLAN)
EXISTING UTILITY FRAME
EXISTING BRICK WALL
79'-8"
PROPOSED COMPOUND PLAN
11"x17" SCALE: 1" = 12'
24"x36" SCALE: 1" = 6'
12' 0 12' 24'
AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER:
ULT04005
BU #: 856915
1312 EAST CENTER
SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER: C-1
REVISION: 0


10'-8"
EXISTING HVAC UNIT TYP. OF (2)
EXISTING POWER PLANT
EXISTING BATTERY RACK
EXISTING ICE BRIDGE
EXISTING GPS ANTENNA (TYP.)
EXISTING OSM CABINET TYP. OF (2)
EXISTING DIPLEXERS TYP. OF (6)
EXISTING UNITS CABLE TYP. OF (2)
27'-3"
EXISTING RF RACK
EXISTING ALARM BOX
EXISTING ACCESS DOOR
EXISTING EQUIPMENT PLAN
11"x17" SCALE: 1" = 5'
24"x36" SCALE: 1" = 2'-6"
5' 0 5' 10'
INSTALL (1) RECTIFIER
INSTALL (4) NEW POWERSAFE SBS190F 190AH BATTERIES
INSTALL (1) FIBER TRAY & (1) SLACK BOX
INSTALL (3) ABIO & (1) ASIL TO EXISTING 5G AMIA
INSTALL (1) DC12 RM
PROPOSED EQUIPMENT PLAN
11"x17" SCALE: 1" = 5'
24"x36" SCALE: 1" = 2'-6"
5' 0 5' 10'
AT&T
CROWN CASTLE
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AT&T SITE NUMBER:
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BU #: 856915
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SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER: C-2
REVISION: 0


EXISTING TOWER ELEVATION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
THE TOWER DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. THE ACTUAL TOWER MAY VARY IN THE FIELD
MOUNT ANALYSIS BY B+T GROUP DATED 11/01/2022. STRUCTURAL ANALYSIS BY OTHERS DATED PENDING. GC TO ENSURE ANY MODIFICATIONS ARE MADE PRIOR TO CONSTRUCTION
PROPOSED TOWER ELEVATION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
THE TOWER DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. THE ACTUAL TOWER MAY VARY IN THE FIELD
AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER:
ULT04005
BU #: 856915
1312 EAST CENTER
SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER: C-3
REVISION: 0


EXISTING ANTENNA LAYOUT @ ELEVATION 60'-0" A.G.L.
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
MOUNT ANALYSIS BY B+T GROUP DATED 11/01/2022. STRUCTURAL ANALYSIS BY OTHERS DATED PENDING. GC TO ENSURE ANY MODIFICATIONS ARE MADE PRIOR TO CONSTRUCTION
PROPOSED ANTENNA LAYOUT @ ELEVATION 60'-0" A.G.L.
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER:
ULT04005
BU #: 856915
1312 EAST CENTER
SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER: C-4
REVISION: 0

(P) = PROPOSED

## FINAL ANTENNA & CABLE SCHEDULE

| SECTOR | MARK | BAND | ANTENNA MAKE/MODEL | ANTENNA C HEIGHT | ANTENNA AZIMUTH | TMA QTY./TYPE | RADIO QTY./TYPE | SURGE PROTECTION QTY./TYPE | CABLE QTY./TYPE |
|---|---|---|---|---|---|---|---|---|---|
| ALPHA | A1 | LTE 700/1900/AWS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | 60° | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA<br>(1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB | (1) DC6-48-60-18-8F | (1) FIBER TRUNK<br>(2) DC TRUNKS |
| | A2 | – | – | – | | – | – | | |
| | A3 | LTE 850/WCS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | | – | (1) AIRSCALE RRH 4T4R B30 100W AHNA<br>(1) AIRSCALE RRH 4T4R B5 160W AHCA | | |
| | A4 | 5G CBAND/DoD | (P) NOKIA – AEQU<br>(P) NOKIA – AEQK | 62'-0" | | – | – | | |
| BETA | B1 | LTE 700/1900/AWS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | 170° | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA<br>(1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB | (1) DC6-48-60-18-8F | (1) FIBER TRUNK<br>(2) DC TRUNKS |
| | B2 | – | – | – | | – | – | | |
| | B3 | LTE 850/WCS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | | – | (1) AIRSCALE RRH 4T4R B30 100W AHNA<br>(1) AIRSCALE RRH 4T4R B5 160W AHCA | | |
| | B4 | 5G CBAND/DoD | (P) NOKIA – AEQU<br>(P) NOKIA – AEQK | 62'-0" | | – | – | | |
| GAMMA | C1 | LTE 700/1900/AWS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | 310° | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA<br>(1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB | (P) (1) DC9-48-60-24-8C-EV | (P) (1) FIBER TRUNK |
| | C2 | – | – | – | | – | – | | |
| | C3 | LTE 850/WCS | COMMSCOPE – NNH4-65C-R6 | 60'-0" | | – | (1) AIRSCALE RRH 4T4R B30 100W AHNA<br>(1) AIRSCALE RRH 4T4R B5 160W AHCA | | |
| | C4 | 5G CBAND/DoD | (P) NOKIA – AEQU<br>(P) NOKIA – AEQK | 62'-0" | | – | – | | |

AT&T
1075 E. CLENTER ST
CENTENNIAL, CO 80121

CROWN CASTLE
3001 S. STRAVAN DRIVE
CHANDLER, AZ 85286

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3480 N HIGLEY RD - SUITE 102
MESA, AZ 85215

AT&T SITE NUMBER
**ULT04005**

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

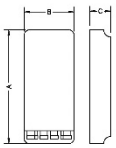
EXISTING 59'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 01/26/22 | MM | PRELIMINARY | DM |
| 0 | 09/14/22 | JC | RIGHT REVISIONS | DM |
| 1 | 11/04/22 | AS | PERMITTING SUBMITTAL | DM |

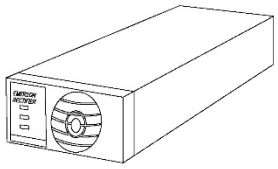
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SHEET NUMBER: C-5
REVISION: 0



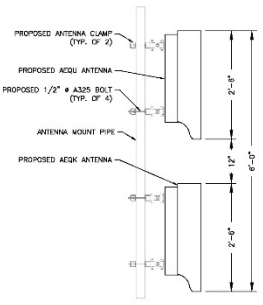

| ANTENNA SPECIFICATIONS | | | | |
|---|---|---|---|---|
| MODEL | LENGTH (A) | WIDTH (B) | DEPTH (C) | WEIGHT (lb) |
| NOKIA – AEQK | 29.5" | 17.7" | 9.5" | 99.2 |
| NOKIA – AEQU | 29.5" | 17.7" | 9.5" | 99.2 |

**ANTENNA SPECIFICATIONS**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



NEQ.15930 1R482000E3
RECTIFIER, NETSURE™ 512 & 721, HIGH EFFICIENCY, –48 VDC, 40 A/2000 W, 120/208/240 VAC, SINGLE-PHASE INPUT, 4.4 LBS.

**RECTIFIER DETAIL**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

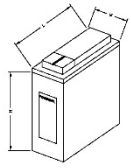



**ANTENNA MOUNTING**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

GENERAL SPECIFICATIONS

| POWERSAFE® SBS BATTERY | NUMBER OF CELLS | NOMINAL VOLTAGE (V) | NOMINAL CAPACITY 8HR. RATE 1.75VPC @ 77°F | 10HR. RATE 1.80VPC @ 25°F | NOMINAL DIMENSIONS LENGTH in mm | WIDTH in mm | HEIGHT in mm | TYPICAL WEIGHT KG LBS | SHORT CIRCUIT INTERNAL™ CURRENT (AMPS) | RESISTANCE** MILLI-OHMS | TERMINALS | ELECTROLYTE (1.300S.G.) PURE ACID ($H_2SO_4$) ACID VOLUME GAL L | WEIGHT (PER BLOC) LBS KG | VOLUME (PER BLOC) GAL L | WEIGHT (PER BLOC) LBS KG | LEAD WEIGHT (PER BLOC) LBS KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBS 85F | 6 | 12 | 31 | 31 | 11.9 | 303 | 3.80 | 97.0 | 6.26 | 159 | 22.7 | 10.3 | 1270 | 10.0 | M6 M | 0.37 1.42 | 4.05 1.84 | 0.11 0.40 | 1.61 0.73 | 15.6 7.08 |
| SBS 81GF | 6 | 12 | 38 | 38 | 11.9 | 303 | 3.80 | 97.0 | 7.24 | 184 | 28.2 | 12.8 | 1390 | 9.00 | M6 M | 0.48 1.80 | 5.15 2.34 | 0.13 0.51 | 2.04 0.93 | 17.7 8.03 |
| SBS 81AF | 6 | 12 | 62 | 62 | 11.9 | 303 | 3.80 | 97.0 | 10.4 | 264 | 42.0 | 19.1 | 1800 | 7.00 | M6 M | 0.78 2.95 | 8.45 3.83 | 0.22 0.83 | 3.35 1.52 | 29.6 13.4 |
| SBS C11F | 6 | 12 | 92 | 91 | 16.4 | 417 | 4.10 | 105 | 10.1 | 256 | 61.5 | 27.9 | 2300 | 5.50 | M6 M | 1.28 4.85 | 13.9 5.30 | 0.38 1.38 | 5.50 2.49 | 43.4 19.7 |
| SBS 100F | 6 | 12 | 100 | 100 | 15.6 | 395 | 4.30 | 108 | 11.3 | 287 | 71.9 | 32.6 | 2210 | 5.80 | M6 M | 1.34 5.09 | 14.6 6.59 | 0.38 1.43 | 5.77 2.62 | 49.7 22.5 |
| SBS 112F | 6 | 12 | 112 | 112 | 22.1 | 561 | 4.90 | 125 | 8.86 | 226 | 90.4 | 41.0 | 2500 | 5.00 | M6 M | 1.71 6.48 | 18.5 8.41 | 0.48 1.82 | 7.35 3.34 | 56.8 25.8 |
| SBS 145F | 6 | 12 | 145 | 145 | 17.8 | 452 | 5.80 | 172 | 9.37 | 238 | 105 | 47.6 | 4100 | 3.00 | M6 M | 2.25 8.51 | 24.3 11.0 | 0.63 2.39 | 9.56 4.36 | 72.4 32.8 |
| SBS 165F | 6 | 12 | 165 | 165 | 17.8 | 452 | 6.77 | 172 | 10.8 | 274 | 117 | 52.8 | 3700 | 2.30 | M6 M | 2.45 9.27 | 26.5 12.0 | 0.84 2.42 | 9.72 4.41 | 82.7 37.5 |
| SBS 170F | 6 | 12 | 170 | 170 | 22.1 | 561 | 4.90 | 125 | 11.1 | 283 | 115 | 52.3 | 3400 | 4.00 | M6 M | 2.09 7.93 | 22.7 10.3 | 0.59 2.23 | 8.99 4.08 | 82.0 37.2 |
| SBS 190F | 6 | 12 | 190 | 190 | 22.1 | 561 | 4.90 | 125 | 12.4 | 316 | 132 | 60.0 | 3800 | 3.30 | M6 M | 2.34 8.85 | 25.3 11.5 | 0.66 2.49 | 10.1 4.56 | 95.8 43.4 |

**RESISTANCE VALUES ARE FOR REFERENCE ONLY AND NOT INTENDED TO REPRESENT AN OHMIC VALUE OR BASELINE MEASUREMENT



**DUAL RRH MOUNTING BRACKET**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

BATTERY TYPE: SBS 190F
LEAD WEIGHT: 43.4 KG/95.8 LBS
ELECTROLYTE VOLUME:
8.86 L/2.34 GAL
ELECTROLYTE WEIGHT:
11.5 KG/25.3 LBS
SULFURIC ACID WEIGHT:
4.56 KG/10.1 LBS
SULFURIC ACID VOLUME:
2.49 L/0.66 GAL

TOTAL ELECTROLYTE PER BATTERY:
2.34 GALLONS

(4 ) BATTERIES X 2.34 GA =
9.4 GALLONS OF TOTAL ELECTROLYTES

AT&T
1075 E. CLENTER ST
CENTENNIAL, CO 80121

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3480 N HIGLEY RD - SUITE 102
MESA, AZ 85215

AT&T SITE NUMBER
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1312 EAST CENTER
SPANISH FORK, UT 84660

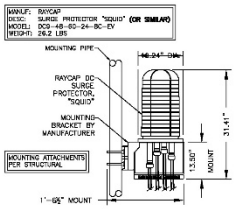
EXISTING 59'-0" MONOPOLE

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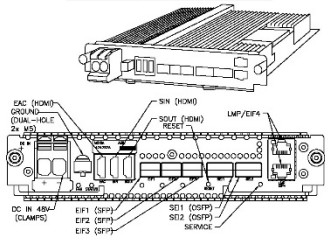
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SHEET NUMBER: C-6
REVISION: 0




**DC9 SURGE SUPPRESSOR**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

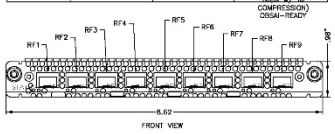
| | |
|---|---|
| MANUFACTURER: | NOKIA |
| MODEL: | ASIL CONTROLLER CARD (474757A) |
| DIMENSIONS: | 1.9" x 8.62" x 14.84" |
| WEIGHT: | 6.8 LBS |




**ASIL**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

| | |
|---|---|
| MANUFACTURER: | NOKIA / AIRSCALE |
| MODEL: | 473268A |
| DIMENSIONS: | .98" x 8.62" x 14.33" (H x W x D) |
| WEIGHT: | 5.84 LBS |

| LABEL | FUNCTION | CONNECTOR TYPE | ADDITIONAL INFORMATION |
|---|---|---|---|
| RF1 TO RF9 | FRONTHAUL INTERFACES TO RADIO UNITS | SFP28 | eCPRI 10/25GE (10/25G BASE-SR/LR/ER) - WITHOUT MACsec EIGHT PORT ARE: CPRI-CAPABLE (LINE RATES:2.45/4.91/9.83 Gbps w/ 10 COMPRESSION) OBSAI-READY |




**ASIO**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

AT&T
1670 S CLARITA ST
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3480 N MIGLEY RD - SUITE 100
MESA, AZ 85215

AT&T SITE NUMBER
**ULT04005**

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

EXISTING 59'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 01/06/22 | MK | PRELIMINARY | DH |
| 0 | 09/01/22 | JZ | RIGHT REVISION | DH |
| 1 | 11/04/22 | AS | PERMITTAL FOR PERMIT | DH |

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SHEET NUMBER: C-7
REVISION: 0

**ULT04005 / SPANISH FORK EAST BENCH, EXISTING AC PANEL, EXISTING BREAKER SCHEDULE**

| SLOT # | LOAD BREAKER LABEL | LOAD VOLT-AMPS | LOAD CONTINUOUS | LOAD NONCONTINUOUS | BREAKER | LOAD PER PHASE "A" | LOAD PER PHASE "B" | BREAKER | LOAD NONCONTINUOUS | LOAD CONTINUOUS | LOAD VOLT-AMPS | LOAD BREAKER LABEL | SLOT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RECTIFIER 1 | 2069 | | NC | 30 | 5829 | 5829 | 60 | NC | | 3629 | HVAC 1 | 2 |
| 3 | | 2069 | | NC | | 5829 | 5829 | | NC | | 3629 | | 4 |
| 5 | RECTIFIER 2 | 2069 | | NC | 30 | 5829 | 5829 | 60 | NC | | 3629 | HVAC 2 | 6 |
| 7 | | 2069 | | NC | | 5829 | 5829 | | NC | | 3629 | | 8 |
| 9 | RECTIFIER 3 | 2069 | | NC | 30 | 2061 | 2061 | 15 | | C | 1 | POWER FAIL RELAY | 10 |
| 11 | | 2069 | | NC | | 2061 | 2061 | | | C | 1 | | 12 |
| 13 | RECTIFIER 4 | 2069 | | NC | 30 | 2729 | 2729 | 20 | NC | | 720 | INTERIOR RECEPTACLES | 14 |
| 15 | | 2069 | | NC | | 2729 | 2729 | 15 | NC | | 840 | INTERIOR LIGHTS | 16 |
| 17 | RECTIFIER 5 | 2069 | | NC | 20 | 2308 | 2308 | 15 | | C | 300 | EXTERIOR LIGHTS | 18 |
| 19 | | 2069 | | NC | | 2069 | 2069 | 30 | | | | RECTIFIER 11 (NO LOAD) | 20 |
| 21 | RECTIFIER 6 | 1009 | | NC | 30 | 1009 | 1009 | 30 | | | | RECTIFIER 12 (NO LOAD) | 22 |
| 23 | | 1009 | | NC | | 1009 | 1009 | | | | | | 24 |
| 25 | RECTIFIER 7 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 26 |
| 27 | | | | | | 0 | 0 | | | | | BLANK | 28 |
| 29 | RECTIFIER 8 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 30 |
| 31 | | | | | | 0 | 0 | | | | | BLANK | 32 |
| 33 | RECTIFIER 9 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 34 |
| 35 | | | | | | 0 | 0 | | | | | BLANK | 36 |
| 37 | RECTIFIER 10 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 38 |
| 39 | | | | | | 200 | 200 | 20 | NC | | 200 | UMTS BIT CONTROLLER | 40 |
| 41 | EXTERIOR GFCI | 180 | | NC | 20 | 180 | 180 | | | | | BLANK | 42 |
| | CONNECTED PHASE TOTALS, VA | | | | | 19652 | 19697 | | | | | | |

| AC PANEL DATA | |
|---|---|
| SYSTEM VOLTAGE: | 240 |
| MAIN BREAKER: | 200 |
| BUSS RATING: | 200 |
| MAIN LUG ONLY: | N/A |
| KAIC RATING: | 10 KAIC FULLY RATED |

NOTES:

| | | |
|---|---|---|
| CONNECTED LOAD PER PHASE, AMPS: | 166 | 164 |
| CONNECTED LOAD PER PHASE, KVA: | 19.852 | 19.697 |
| TOTAL CONNECTED LOAD, KVA: | 39.534 | |
| NONCONTINUOUS LOAD PER PHASE, KVA: | 19.556 | 19.696 |
| TOTAL NONCONTINUOUS LOAD, KVA: | 39.252 | |
| CONTINUOUS LOAD PER PHASE, KVA: | 0.376 | 0.001 |
| TOTAL CONTINUOUS LOAD, KVA: | 0.378 | |
| DEMAND LOAD (CONT + NONCONT) PER PHASE, KVA: | 19.932 | 19.697 |
| TOTAL DEMAND LOAD (CONTINUOUS + NONCONTINUOUS), KVA: | 39.630 | |
| TOTAL DEMAND LOAD (CONT + NONCONT), AMPS: | 166 | 164 |
| PANEL CAPACITY, KVA: | 48.000 | |
| SPARE PANEL CAPACITY, KVA: | 8.371 | |

**EXISTING PANEL SCHEDULE**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

**ULT04005 / SPANISH FORK EAST BENCH, EXISTING AC PANEL, PROPOSED BREAKER SCHEDULE**

| SLOT # | LOAD BREAKER LABEL | LOAD VOLT-AMPS | LOAD CONTINUOUS | LOAD NONCONTINUOUS | BREAKER | LOAD PER PHASE "A" | LOAD PER PHASE "B" | BREAKER | LOAD NONCONTINUOUS | LOAD CONTINUOUS | LOAD VOLT-AMPS | LOAD BREAKER LABEL | SLOT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RECTIFIER 1 | 2069 | | NC | 30 | 5829 | 5829 | 60 | NC | | 3629 | HVAC 1 | 2 |
| 3 | | 2069 | | NC | | 5829 | 5829 | | NC | | 3629 | | 4 |
| 5 | RECTIFIER 2 | 2069 | | NC | 30 | 5829 | 5829 | 60 | NC | | 3629 | HVAC 2 | 6 |
| 7 | | 2069 | | NC | | 5829 | 5829 | | NC | | 3629 | | 8 |
| 9 | RECTIFIER 3 | 2069 | | NC | 30 | 2061 | 2061 | 15 | | C | 1 | POWER FAIL RELAY | 10 |
| 11 | | 2069 | | NC | | 2061 | 2061 | | | C | 1 | | 12 |
| 13 | RECTIFIER 4 | 2069 | | NC | 30 | 2729 | 2729 | 20 | NC | | 720 | INTERIOR RECEPTACLES | 14 |
| 15 | | 2069 | | NC | | 2729 | 2729 | 15 | NC | | 840 | INTERIOR LIGHTS | 16 |
| 17 | RECTIFIER 5 | 2069 | | NC | 20 | 2308 | 2308 | 15 | | C | 300 | EXTERIOR LIGHTS | 18 |
| 19 | | 2069 | | NC | | 2069 | 2069 | 30 | | | | RECTIFIER 11 (NO LOAD) | 20 |
| 21 | RECTIFIER 6* | 2069 | | NC | 30 | 2069 | 2069 | 30 | | | | RECTIFIER 12 (NO LOAD) | 22 |
| 23 | | 2069 | | NC | | 2069 | 2069 | | | | | | 24 |
| 25 | RECTIFIER 7 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 26 |
| 27 | | | | | | 0 | 0 | | | | | BLANK | 28 |
| 29 | RECTIFIER 8 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 30 |
| 31 | | | | | | 0 | 0 | | | | | BLANK | 32 |
| 33 | RECTIFIER 9 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 34 |
| 35 | | | | | | 0 | 0 | | | | | BLANK | 36 |
| 37 | RECTIFIER 10 (NO LOAD) | | | | 30 | 0 | 0 | | | | | BLANK | 38 |
| 39 | | | | | | 200 | 200 | 20 | NC | | 200 | UMTS BIT CONTROLLER | 40 |
| 41 | EXTERIOR GFCI | 180 | | NC | 20 | 180 | 180 | | | | | BLANK | 42 |
| | CONNECTED PHASE TOTALS, VA | | | | | 20857 | 20857 | | | | | | |

| AC PANEL DATA | |
|---|---|
| SYSTEM VOLTAGE: | 240 |
| MAIN BREAKER: | 200 |
| BUSS RATING: | 200 |
| MAIN LUG ONLY: | N/A |
| KAIC RATING: | 10 KAIC FULLY RATED |

NOTES:
CONNECT ONE NEW RECTIFIER TO EXISTING 30A/2P BREAKER.

| | | |
|---|---|---|
| CONNECTED LOAD PER PHASE, AMPS: | 174 | 173 |
| CONNECTED LOAD PER PHASE, KVA: | 20.857 | 20.697 |
| TOTAL CONNECTED LOAD, KVA: | 41.554 | |
| NONCONTINUOUS LOAD PER PHASE, KVA: | 20.556 | 20.696 |
| TOTAL NONCONTINUOUS LOAD, KVA: | 41.252 | |
| CONTINUOUS LOAD PER PHASE, KVA: | 0.376 | 0.001 |
| TOTAL CONTINUOUS LOAD, KVA: | 0.378 | |
| DEMAND LOAD (CONT + NONCONT) PER PHASE, KVA: | 20.932 | 20.697 |
| TOTAL DEMAND LOAD (CONTINUOUS + NONCONTINUOUS), KVA: | 41.630 | |
| TOTAL DEMAND LOAD (CONT + NONCONT), AMPS: | 174 | 173 |
| PANEL CAPACITY, KVA: | 48.000 | |
| SPARE PANEL CAPACITY, KVA: | 6.371 | |

**PROPOSED PANEL SCHEDULE**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

AT&T
1670 S CLARITA ST
CENTENNIAL, CO 80112

CROWN CASTLE
2000 S STRAVINSKY DRIVE
CHANDLER, AZ 85286

TELCYTE
INFRASTRUCTURE SERVICES
3480 N MIGLEY RD - SUITE 100
MESA, AZ 85215

AT&T SITE NUMBER
ULT04005

BU #: 856915

1312 EAST CENTER
SPANISH FORK, UT 84660

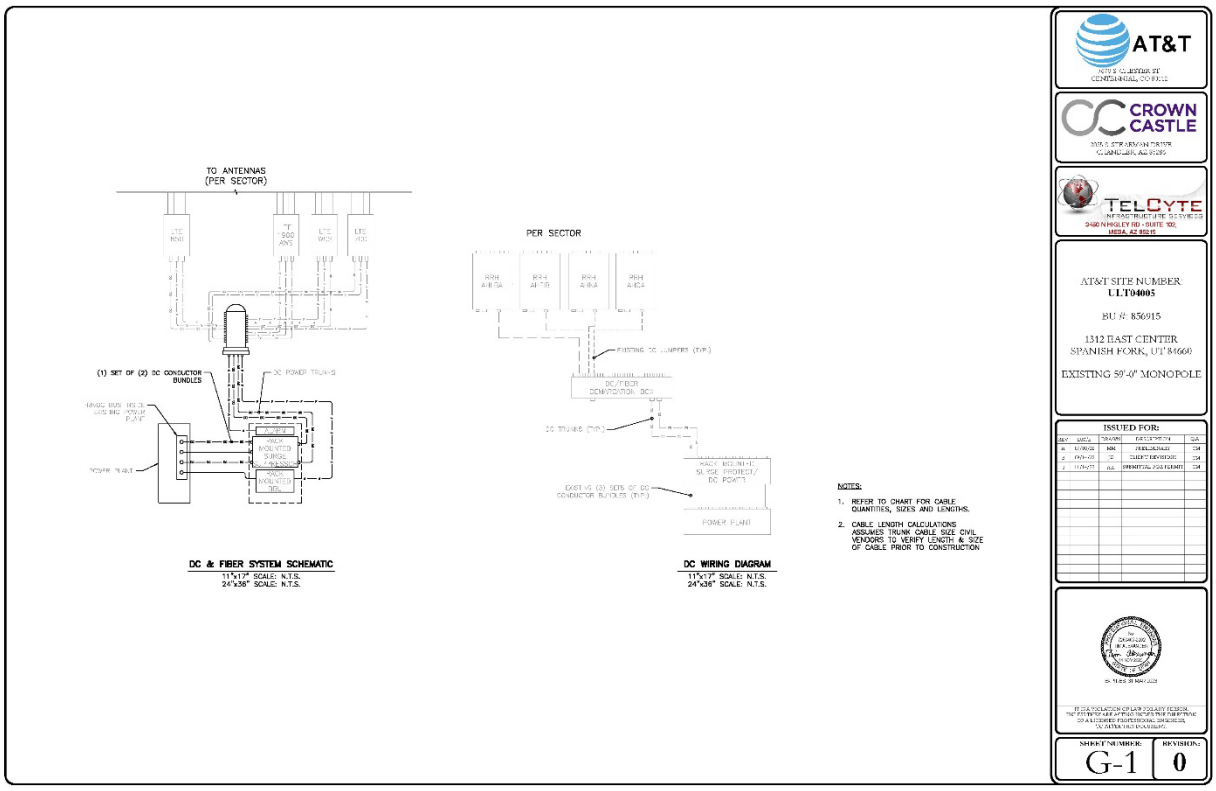
EXISTING 59'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 01/06/22 | MK | PRELIMINARY | DH |
| 0 | 09/01/22 | JZ | RIGHT REVISION | DH |
| 1 | 11/04/22 | AS | PERMITTAL FOR PERMIT | DH |

IT IS A VIOLATION OF LAW TO ALTER THIS DRAWING UNLESS YOU ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, YOU ALTERED THIS DRAWING, YOU SHALL STAMP THE ALTERATION AND SIGN AND DATE IT.

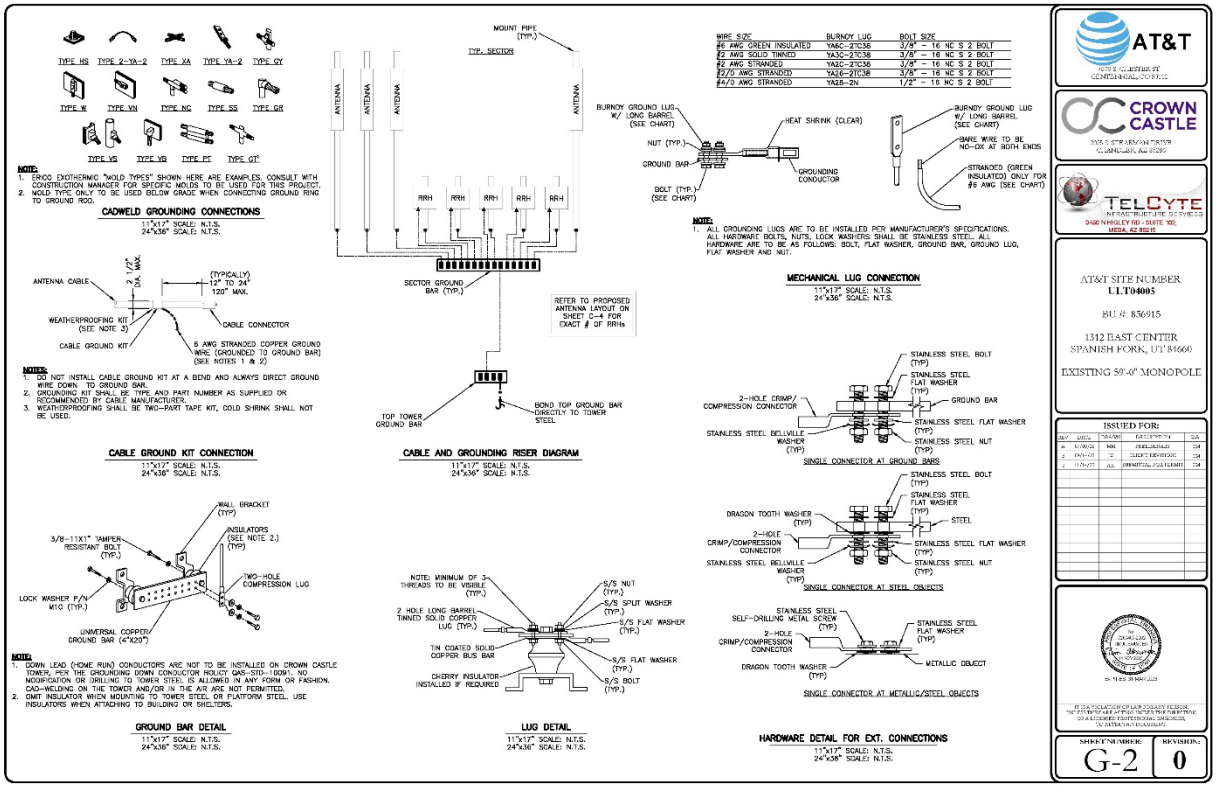
SHEET NUMBER: E-1
REVISION: 0




AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER
ULT04005
BU #: 856915
1312 EAST CENTER
SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 01/09/23 | MK | PERMIT/ZONING | DH |
| 2 | 09/14/22 | JC | SLIGHT REVISIONS | DH |
| 1 | 11/04/21 | AS | PERMITTING SUBMITTAL | DH |

SHEET NUMBER: G-1
REVISION: 0

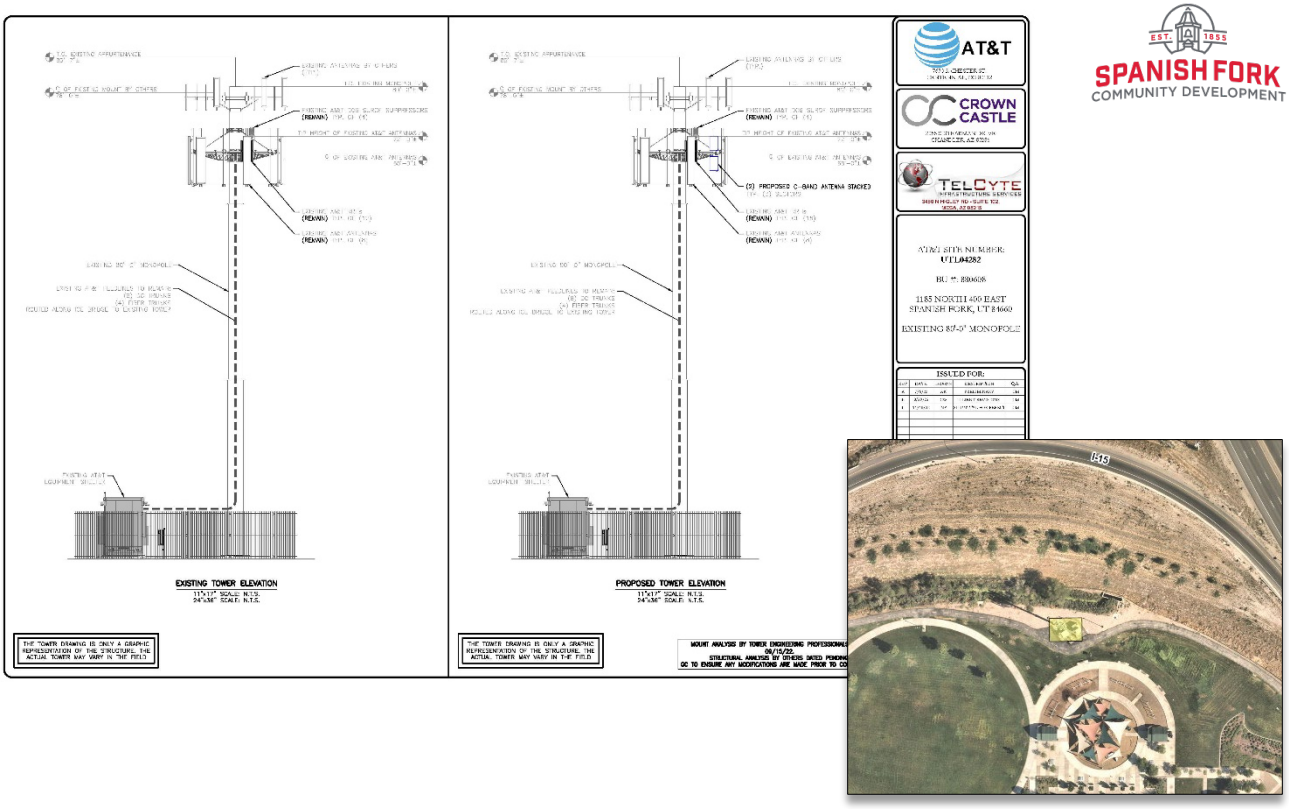



AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER
ULT04005
BU #: 856915
1312 EAST CENTER
SPANISH FORK, UT 84660
EXISTING 59'-0" MONOPOLE
ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 01/09/23 | MK | PERMIT/ZONING | DH |
| 2 | 09/14/22 | JC | SLIGHT REVISIONS | DH |
| 1 | 11/04/21 | AS | PERMITTING SUBMITTAL | DH |

SHEET NUMBER: G-2
REVISION: 0






SPANISH FORK COMMUNITY DEVELOPMENT

## 300 East 2022 AT&T Cell Tower Modifications Conditional Use Permit Request

January 4, 2023, Planning Commission Meeting.

Located at 1296 North 300 East.

The subject property is zoned P-F.

The applicant has requested that a conditional use permit be approved to allow for antennae modifications on an existing tower.

## Key Issues

1. No Issues.

## Recommendation

That the proposed Conditional Use Permit be approved based on the following finding and subject to the following conditions:

**Finding**

1. That the project conforms to the City's General Plan Land Use Designation and Zoning Map.

**Conditions**

1. That the applicant meets the City's Zoning requirements and Construction Standards.
2. That the applicant addresses any red-lines.

## Exhibits

1. Plans.
2. Picture.

## SCOPE OF WORK

THE PURPOSE OF THIS PROJECT IS AS FOLLOWS:

TOWER SCOPE OF WORK:

- INSTALL (6) C-BAND ANTENNAS STACKED

GROUND SCOPE OF WORK:

- INSTALL (4) ABIO & (2) ASL IN (E) LTE RACK

DC POWER PLAN REVIEW:

- INDOOR PDF, EXISTING, -48V VERTIV 7100 DC PLANT.
  (A) (16) -48V RECTIFIER SLOTS AVAILABLE, (8) INSTALLED, (15) REQUIRED FOR N+1 [INSUFFICIENT—INSTALL (7) NEW RECTIFIERS].
  (B) (8) +24V CONVERTER SLOTS AVAILABLE, (2) INSTALLED, (0) REQUIRED FOR N+1 [SUFFICIENT].

GENERATOR:

- SITE HAS A PERMANENT STANDBY GENERATOR, MINIMUM REQUIRED BATTERY BACKUP TIME IS 2.0 HOURS.

BATTERY CHECK:

- SITE HAS (12) CELLS OF EXISTING POWERSAFE SBS190F BATTERIES, CONFIGURED AS (4) CELLS PER STRING FOR -48V OPERATION. THESE BATTERY STRINGS WILL PROVIDE 1.97 HRS OF BATTERY RESERVE CAPACITY.

AC POWER:

- AC POWER LOAD ESTIMATED AT 110A, EXISTING 200A ELECTRICAL SERVICE IS SUFFICIENT. CONNECT NEW RECTIFIERS TO EXISTING AC POWER PANEL.

HVAC:

- 6' X 8' WIC WITH ONE FACTORY-INSTALLED 1.5TON HVAC UNIT.

AC POWER:

- LOAD CALCULATED @ 151A, EXISTING 200A ELECTRICAL SERVICE IS SUFFICIENT.

BIDS INFO:
ID: 5201653 VER: 1.00
DATE 5/13/2022

## PROJECT DIRECTORY

| | |
|---|---|
| TOWER OWNER: | CROWN CASTLE<br>2055 S. STEARMAN DRIVE<br>CHANDLER, AZ 85286<br>CONTACT: NICOLE RUSSELL<br>PHONE: (602) 845-1766 |
| APPLICANT: | AT&T MOBILITY CORP.<br>7670 S. CHESTER ST.<br>CENTENNIAL, CO 80112<br>CONTACT: CONNOR RICHARDS<br>PHONE: (303) 828-7114 |
| A&E FIRM: | TELCYTE INFRASTRUCTURE SERVICES<br>3480 N. HIGLEY RD – BLDG 2, SUITE 102<br>MESA, AZ 85215<br>CMUELLER@TELCYTE.COM |

## GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

CALL UTAH ONE CALL
(800) 662-4111
CALL 3 WORKING DAYS
BEFORE YOU DIG!

811

AT&T

# CONSTRUCTION DRAWINGS

PROJECT ID AND PACE NUMBER:

5G NR 1SR CBAND: MRUTH052859
5G NR 1SR CBAND: MRUTH052861

AT&T SITE NAME:

BDN 386
INDUSTRIAL PARK

| AT&T FA NUMBER: | AT&T SITE NUMBER: |
|---|---|
| 12854503 | UTL04282 |

| CROWN CASTLE SITE NAME: | SITE ADDRESS: | CROWN CASTLE APPLICATION: |
|---|---|---|
| INDUSTRIAL PARK | 1185 NORTH 400 EAST<br>SPANISH FORK, UT 84660<br>(CITY OF SPANISH FORK) | 608341 |

CROWN CASTLE SITE NUMBER: 880608

### VICINITY MAP




### LOCAL MAP




DIRECTIONS TO THE SITE FROM SALT LAKE CITY INTERNATIONAL AIRPORT:

GET ON I-80 E FROM W CROSSBAR RD AND TERMINAL DR 2.7 MI/HEAD NORTHEAST ON N TERMINAL DR 33 FT/SLIGHT RIGHT 0.2 MI/USE THE MIDDLE LANE TO TURN RIGHT TOWARD N 3700 W 144 FT/USE THE LEFT LANE TO TURN SLIGHTLY RIGHT ONTO N 3700 W 0.2 MI/CONTINUE ONTO W CROSSBAR RD 0.7 MI/TAKE THE RAMP ONTO TERMINAL DR 0.5 MI/USE THE LEFT 2 LANES TO TAKE THE I-80 E RAMP TO CITY CTR/OGDEN/PROVO 0.7 MI/KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-80 E AND MERGE ONTO I-80 E 0.4 MI/FOLLOW I-15 S TO YOUR DESTINATION IN SPANISH FORK 65.9 MI/MERGE ONTO I-80 E 0.8 MI/KEEP LEFT TO STAY ON I-80 E 2.0 MI/TAKE THE EXIT ON THE LEFT ONTO I-15 S/I-80 E TOWARD CHEYENNE/LAS VEGAS/CONTINUE TO FOLLOW I-15 S 19.0 MI/KEEP LEFT TO STAY ON I-15 S 9.6 MI/KEEP LEFT TO STAY ON I-15 S 4.1 MI/KEEP LEFT TO STAY ON I-15 S 11.4 MI/KEEP LEFT TO STAY ON I-15 S 2.3 MI/KEEP LEFT TO STAY ON I-15 S 19.7 MI/TAKE EXIT 250 TOWARD PAYSON 0.3 MI/USE THE LEFT LANE TO TURN LEFT ONTO 3200 W/MAIN ST 0.1 MI/SHARP LEFT TO MERGE ONTO I-15 N TOWARD SALT LAKE CITY 6.0 MI/TAKE THE US-6 E EXIT TOWARD PRICE/DESTINATION WILL BE ON THE RIGHT

## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL FIRE CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL PROPERTY MAINTENANCE CODE
- 2020 NATIONAL ELECTRICAL CODE
- ANSI/TIA/EIA-222-H
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- FAA COMPLIANCE
- FCC COMPLIANCE

PERMITTING/ZONING APPROVAL:
SIGNATURE DATE

LANDLORD APPROVAL:
SIGNATURE DATE

AT&T PROJECT MANAGER APPROVAL:
SIGNATURE DATE

## SITE SUMMARY

| | |
|---|---|
| SITE TYPE: | UPGRADE |
| TYPE OF OCCUPANCY: | TELECOMMUNICATIONS |
| TOWER TYPE: | MONOPOLE |
| TOWER LATITUDE: | 40°07'34.8998"N<br>(40.126361°) |
| TOWER LONGITUDE: | 111°38'56.5008"W (-111.6490280) |
| AMSL: | 4654'± |
| ZONING JURISDICTION: | CITY OF SPANISH FORK |
| COUNTY: | UTAH |
| PARCEL NUMBER: | 47-279-0011 |
| POWER PROVIDER: | SPANISH FORK<br>801-804-4430 |
| TELEPHONE PROVIDER: | PENDING |
| PROPERTY OWNER NAME:<br>PROPERTY OWNER ADDRESS: | UNITED POWER INC<br>500 COOPERATIVE WAY<br>BRIGHTON, CO 80603 |
| 24 HOUR NOC CONTACT: | (800) 783-7011 |
| GATE COMBINATION: | 7011 |

## SHEET INDEX

| SHEET NO. | DESCRIPTION | REV. NO. | REVISION DATE |
|---|---|---|---|
| T-1 | TITLE SHEET | 0 | 11/10/22 |
| GN-1 | GENERAL NOTES | 0 | 11/10/22 |
| GN-2 | GENERAL NOTES | 0 | 11/10/22 |
| S-1 | SITE PLAN | 0 | 11/10/22 |
| C-1 | COMPOUND PLANS | 0 | 11/10/22 |
| C-2 | EQUIPMENT PLANS | 0 | 11/10/22 |
| C-3 | TOWER ELEVATIONS | 0 | 11/10/22 |
| C-4 | ANTENNA LAYOUTS | 0 | 11/10/22 |
| C-5 | FINAL RF EQUIPMENT SCHEDULE | 0 | 11/10/22 |
| C-6 | DETAILS | 0 | 11/10/22 |
| E-1 | PANEL SCHEDULES | 0 | 11/10/22 |
| G-1 | GROUNDING NOTES & DETAILS | 0 | 11/10/22 |
| G-2 | GROUNDING DETAILS | 0 | 11/10/22 |

AT&T
7670 S CHESTER ST.
CENTENNIAL, CO 80112

CROWN CASTLE
2055 S STEARMAN DRIVE
CHANDLER, AZ 85286

TELCYTE INFRASTRUCTURE SERVICES
3480 N HIGLEY RD • SUITE 102,
MESA, AZ 85215

AT&T SITE NUMBER:
UTL04282

BU #: 880608

1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AS | PRELIMINARY | DH |
| 2 | 8/29/22 | CW | CLIENT REVISIONS | DH |
| 1 | 11/10/22 | DP | ATTAINABLE FOR REVIEW | DH |

PROFESSIONAL ENGINEER
TIMOTHY JOSEPH ALLEN
No. 0401021
STATE OF COLORADO
EXPIRES 11/30/2023

IT IS A VIOLATION OF LAW TO ALTER THESE DRAWINGS IN ANY WAY WITHOUT THE WRITTEN CONSENT OF A LICENSED PROFESSIONAL ENGINEER, EXCEPT AS AUTHORIZED BY LAW.

| SHEET NUMBER: | REVISION: |
|---|---|
| T-1 | 0 |

**GENERAL NOTES:**

1. EVERY EFFORT HAS BEEN MADE IN THE CONSTRUCTION DOCUMENTS TO PROVIDE A COMPLETE SCOPE OF WORK. MINOR DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL NOT EXCUSE CONTRACTORS FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
2. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN THE CARRIER OR ITS DESIGNATED REPRESENTATIVE.
3. BIDDING REQUIREMENTS
   a. PRIOR TO THE SUBMISSION OF BIDS, VISIT THE JOB SITE TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. VISIT THE SITE WITH THE CONSTRUCTION DOCUMENTS TO VERIFY FIELD DIMENSIONS AND CONDITIONS TO CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN.
   b. PROVIDE NOTIFICATION TO OWNER IN WRITING OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF PRICE PROPOSAL. IN THE EVENT OF DISCREPANCIES, PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
   c. WHEN TOWER IS OWNED BY A THIRD PARTY, CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK.
   d. WHERE ANCHORING TO A CONCRETE ROOF SLAB, CONFIRM (PRIOR TO SUBMITTING BID) THE PRESENCE OF POST TENSION TENDONS. INCLUDE PROVISIONS FOR X-RAY PROCEDURES TO LOCATE THE TENDONS PRIOR TO CONSTRUCTION.
4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. CONSTRUCTION DOCUMENTS ARE INTENDED FOR DIAGRAMMATIC PURPOSES ONLY, UNO.
5. FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. BRING ANY DISCREPANCIES IMMEDIATELY TO THE ATTENTION OF THE OWNER AND RESOLVE BEFORE PROCEEDING WITH THE WORK.
6. FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS.
7. SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONSTRUCTION DOCUMENTS. PROVIDE ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
8. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES APPLICABLE TO THE WORK.
9. CONSTRUCTION COORDINATION REQUIREMENTS
   a. NOTIFY OWNER OF ANY DISCREPANCIES PRIOR TO START OF WORK.
   b. OBTAIN ALL PERMITS, SCHEDULE AND COORDINATE ALL INSPECTIONS.
   c. PROVIDE, AT THE PROJECT SITE, A FULL, CURRENT SET OF CONSTRUCTION DOCUMENTS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
   d. RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DOCUMENTS.
   e. PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
   f. PROVIDE FALL PROTECTION IN ACCORDANCE WITH FEDERAL, STATE, LOCAL, AND OWNER REQUIREMENTS.
   g. IF FAA LIGHTING AND MARKING IS PRESENT ON SITE AND IS POWERED BY ELECTRICAL SERVICE THAT IS TO BE INTERRUPTED, MAINTAIN THE NECESSARY LIGHTS DURING CONSTRUCTION AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A DISRUPTION.
   h. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A:10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
   i. STRUCTURAL COMPONENTS OF ADJACENT FACILITIES SHALL NOT BE ALTERED BY THIS CONSTRUCTION PROJECT, UNO. ENSURE THAT EXCAVATION DOES NOT AFFECT ADJACENT STRUCTURES.
   j. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL-APPROVED MATERIALS, IF APPLICABLE.
   k. BURIED UTILITIES MAY EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
   l. COORDINATE ALL POWER INSTALLATION WITH POWER COMPANY AS REQUIRED. REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO OWNER.
   m. PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
   n. KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
   o. MAINTAIN THE INTEGRITY OF THE BUILDING ENVELOPE AND CONSTRUCT BARRIERS IN THE AREA OF WORK TO PREVENT DAMAGE FROM WEATHER AS WELL AS FROM CONSTRUCTION DUST AND DEBRIS.
10. INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S SPECIFICATIONS, UNO, OR WHERE LOCAL CODES OR ORDINANCES DIRECT OTHERWISE.
11. PROPOSED CELLULAR EQUIPMENT AND FIXTURES WILL BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR, UNLESS NOTED OTHERWISE.
12. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY OWNER.
13. DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP THE APPROVED CONSTRUCTION DRAWINGS AND SUBMITTING THE REDLINED SET TO OWNER UPON COMPLETION. DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS TO BE SUBMITTED WITH REDLINED CONSTRUCTION DRAWINGS.
14. PROVIDE SUPPORTS FOR CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.
15. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS, MOUNT ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

## ABBREVIATIONS

| | |
|---|---|
| A/C | AIR CONDITIONING |
| AFF | ABOVE FINISHED FLOOR |
| AGL | ABOVE GROUND LEVEL, ABOVE GRADE LEVEL |
| AWS | ADVANCED WIRELESS SERVICE |
| BBU | BATTERY BACKUP UNIT |
| BLDG | BUILDING |
| BLK | BLOCKING |
| CLG | CEILING |
| CLR | CLEAR |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| D | DEPTH |
| DBL | DOUBLE |
| DEG | DEGREE |
| ø, DIA | DIAMETER |
| DIAG | DIAGONAL |
| DN | DOWN |
| DET | DETAIL |
| DWG | DRAWING |
| E | EXISTING |
| EA | EACH |
| ELEV. | EL. ELEVATION |
| ELEC | ELECTRICAL |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EXT | EXTERIOR |
| FIF | FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME |
| FIN | FINISH |
| FLUOR | FLUORESCENT |
| FLR | FLOOR |
| FT | FOOT, FEET |
| GA | GAUGE |
| GALV | GALVANIZED |
| GC | GENERAL CONTRACTOR |
| GRND | GROUND |
| GSM | GLOBAL SYSTEM MOBILE |
| GYP | GYPSUM BOARD |
| HORIZ | HORIZONTAL |
| HR | HOUR |
| HT | HEIGHT |
| ID | INSIDE DIAMETER |
| IN | INCH, INCHES |
| INSUL | INSULATION |
| INT | INTERIOR |
| L | LENGTH |
| LBS | POUNDS |
| LTE | LONG TERM EVOLUTION |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MTL | METAL |
| MFR | MANUFACTURER |
| MGR | MANAGER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| NA | NOT APPLICABLE |
| NIC | NOT IN CONTRACT |
| NO | NUMBER |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| PCS | PERSONAL COMMUNICATION SERVICE |
| PDU | POWER DISTRIBUTION UNIT |
| PROJ | PROJECT |
| PROP | PROPERTY |
| PT | PRESSURE TREATED |
| PVC | POLYVINYL CHLORIDE |
| REQ | REQUIRED |
| RF | RADIO FREQUENCY |
| RM | ROOM |
| RO | ROUGH OPENING |
| RRH | REMOTE RADIO HEAD |
| SHT | SHEET |
| SIM | SIMILAR |
| SPEC | SPECIFICATION |
| SF | SQUARE FOOT |
| SS | STAINLESS STEEL |
| STL | STEEL |
| SUSP | SUSPENDED |
| TMA | TOWER MOUNTED AMPLIFIER |
| TND | TINNED |
| TYP | TYPICAL |
| UMTS | UNIVERSAL MOBILE TELECOMMUNICATION SERVICE |
| UNO | UNLESS NOTED OTHERWISE |
| VERT | VERTICAL |
| W/ | WITH |
| W/O | WITHOUT |
| WCS | WIRELESS COMMUNICATION SERVICE |
| WP | WATER PROOF |

## PROJECT NOTES

1. THE FOLLOWING INFORMATION HAS BEEN PROVIDED BY CROWN CASTLE FOR THIS PROJECT AND HAS NOT BEEN FIELD VERIFIED AS PART OF THIS PROJECT:
   a. SITE LAYOUT INFORMATION AND ORIENTATION
   b. EXISTING TOWER, MOUNT AND EQUIPMENT ELEVATIONS
   c. DESIGN PACKAGE BASED ON THE APPLICATION #: PENDING v0
2. A STRUCTURAL ANALYSIS TO DETERMINE THE TOWER CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.

| | |
|---|---|
| a. STRUCTURAL ANALYSIS BY: | OTHERS |
| b. DATED: | PENDING |
| c. RESULTS: | PENDING |

3. A MOUNT ANALYSIS TO DETERMINE THE MOUNT CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.

| | |
|---|---|
| a. MOUNT ANALYSIS BY: | TOWER ENGINEERING PROFESSIONALS |
| b. DATED: | 08/15/22 |
| c. RESULTS: | SUFFICIENT W/NO MODIFICATIONS |

4. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

AT&T
7670 S CHESTER ST.
CENTENNIAL, CO 80112

CROWN CASTLE
2055 S STEARMAN DRIVE
CHANDLER, AZ 85286

TELCYTE INFRASTRUCTURE SERVICES
3480 N HIGLEY RD • SUITE 102,
MESA, AZ 85215

AT&T SITE NUMBER:
UTL04282

BU #: 880608

1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80'-0" MONOPOLE

ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AS | PRELIMINARY | DH |
| 2 | 8/29/22 | CW | CLIENT REVISIONS | DH |
| 1 | 11/10/22 | DP | ATTAINABLE FOR REVIEW | DH |

PROFESSIONAL ENGINEER
TIMOTHY JOSEPH ALLEN
No. 0401021
STATE OF COLORADO
EXPIRES 11/30/2023

IT IS A VIOLATION OF LAW TO ALTER THESE DRAWINGS IN ANY WAY WITHOUT THE WRITTEN CONSENT OF A LICENSED PROFESSIONAL ENGINEER, EXCEPT AS AUTHORIZED BY LAW.

| SHEET NUMBER: | REVISION: |
|---|---|
| GN-1 | 0 |

**SITE NOTES:**

1. WHEN SITE WORK IS INCLUDED IN SCOPE:
   a. CLEAR AND GRUB SITE OF ALL VEGETATION, PAVING, GRAVEL, BASE AND OTHER DEBRIS NOT TO REMAIN. SUBGRADES ARE TO BE SET PRIOR TO LANDSCAPE INSTALLATION.
   b. PROVIDE ELEVATION OF SUBGRADE WITHIN 0.10 FOOT OF ELEVATIONS SHOWN ON PLAN MINUS DEPTH OF TOPSOIL, FILL AND MULCH.
   c. ROUGH GRADE ALL AREAS WITHIN 1 FOOT OF ELEVATIONS INDICATED BEFORE PLANTING. PROVIDE POSITIVE DRAINAGE AWAY FROM EQUIPMENT SLABS, BUILDINGS AND THROUGH ALL PLANTER AREAS TO AVOID LOW SPOTS AND STANDING WATER.
   d. BLEND NEW GRADES NATURALLY INTO EXISTING GRADES.
   e. MAINTAIN POSITIVE DRAINAGE ON THE SITE AT ALL TIMES.
   f. IF REQUIRED, MAINTAIN CONTINUOUS EROSION CONTROL ON THE DOWNSTREAM SIDE OF THE SITE.
   g. IN LANDSCAPE AREAS, FINISH GRADES ARE TO FOLLOW THE GRADES AND EDGE DETAILS INDICATED AND BE MOUNDED 6 INCHES IN THE CENTER OF THE BED ABOVE THE EDGE OF THE LANDSCAPE AREA.
   h. DO NOT PLACE FILL OR EMBANKMENT MATERIAL ON FROZEN GROUND. DO NOT PLACE FROZEN MATERIALS, SNOW OR ICE IN ANY FILL OR EMBANKMENT.
   i. NOTIFY OWNER IF MODIFICATIONS TO THE PROPOSED GRADING SEEM NECESSARY AND OBTAIN APPROVAL PRIOR TO START OF WORK.
2. FOOTINGS SHALL BEAR ON FIRM, NATURAL, UNDISTURBED SOIL, OR ON ENGINEERED FILL (COMPACTED TO 95% ASTM D1557). ENSURE THAT EXCAVATIONS ARE FREE OF ORGANIC MATERIAL, DEBRIS, OR OTHER FOREIGN MATERIAL. NOTIFY OWNER IF ANY UNUSUAL CONDITIONS ARE ENCOUNTERED.
3. FILL AND SLAB BASE MATERIAL SHALL BE 3/4" MINUS CRUSHED ROCK PLACED IN 8" (MAXIMUM) LOOSE LIFTS AND COMPACTED TO 98% ASTM D1557.

**CONCRETE NOTES:**

1. CONCRETE AND REINFORCING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

| | |
|---|---|
| CONCRETE CONSTRUCTION | ACI 318, f'c=4 KSI, UNO |
| CEMENT | ASTM C150, PORTLAND CEMENT TYPE II, UNO |
| REINFORCING STEEL | ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60 KSI, UNO |
| WELDED WIRE FABRIC | ASTM A185 |
| SPIRAL REINFORCEMENT | ASTM A615, GRADE 60, fy=60 KSI |
| ANCHOR BOLTS | ASTM A307 |
| GRADE 60 REBAR WELDING | ASTM A706 |

   NOTES: ANY BARS SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, fy=40 KSI. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D1.4 ARE SUBMITTED.
2. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

| | | |
|---|---|---|
| FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE | | 3" |
| FORMED SURFACES EXPOSED TO EARTH OR WEATHER | (≤ #5 BARS) | 2" |
| | (≥ #6 BARS) | 1 1/2" |
| SLABS AND WALLS | (INTERIOR FACE) | 3/4" |

3. AIR ENTRAIN ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER WITH AN AIR-ENTRAINING ADMIXT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. AIR ENTRAIN CONCRETE EXPOSED TO FREEZING AND THAWING WHILE MOIST IN ACCORDANCE WITH ACI 318, SECTION 4.4.1.
4. DETAIL REINFORCING STEEL (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
5. PERFORM WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) USING LOW HYDROGEN ELECTRODES. PERFORM WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) USING E70 XX ELECTRODES. DO NOT WELD WITHIN 4" OF COLD BENDS IN REINFORCING STEEL.
6. DO NOT FIELD BEND REINFORCING PARTIALLY EMBEDDED IN CONCRETE UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE ENGINEER.
7. SUPPORT BARS ON CHAIRS OR DOBIE BRICKS.
8. FURNISH NON-SHRINK GROUT BY AN APPROVED MANUFACTURER. MIX AND PLACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (4 KSI, MINIMUM).
9. ALL EXPANSION ANCHORS TO BE HILTI BRAND, UNO. TEST ADHESIVE ANCHORS TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER AND LOCAL JURISDICTION.

**STRUCTURAL STEEL NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

| | |
|---|---|
| WIDE FLANGE SHAPES | ASTM A992, GRADE 50 |
| SHAPES, PLATES, ANGLES, & RODS | ASTM A36, Fy 36 KSI |
| SPECIAL SHAPES AND PLATES | ASTM A572, Fy 50 KSI |
| PIPE COLUMNS | ASTM A53, GR B, Fy 35 KSI |
| STRUCTURAL TUBING | ASTM A500, GR B, Fy 46KSI |
| ANCHOR BOLTS | ASTM A307 |
| CONNECTION BOLTS | ASTM A325 TWIST-OFF |

2. BASE STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION (INCLUDING FIELD WELDING, HIGH STRENGTH FIELD BOLTING, EXPANSION BOLTS, AND THREADED EXPANSION ANCHORS) ON THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION.
3. HOT DIP GALVANIZE AFTER FABRICATION PER A123/A123M-00 ALL STEEL EXPOSED TO WEATHER AND WHERE NOTED.
4. CONFORM TO ALL AISC AND AWS STANDARDS FOR WELDING. PERFORM WELDING BY ANSI/AWS D1.1 CERTIFIED WELDERS USING E70 XX ELECTRODES. USE ONLY PRE-QUALIFIED WELDS AS DEFINED BY AWS.
5. PROVIDE COLD-FORMED STEEL FRAMING MEMBERS OF THE SHAPE, SIZE, AND GAGE SHOWN ON THE PLANS. PROVIDE MINIMUM SECTION PROPERTIES INDICATED. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
6. FOR BOLTED CONNECTIONS, USE 3/4" DIA., BEARING-TYPE, A325 BOLTS WITH A MINIMUM OF TWO BOLTS, UNO.
7. FOR NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING, USE 5/8" DIA. A307 BOLTS, UNO.
8. PREPARE AND PAINT IN ACCORDANCE WITH THE PAINT MANUFACTURERS WRITTEN INSTRUCTIONS, UNO.
9. TOUCH UP ALL FIELD DRILLING, WELDING AND CUT SURFACES WITH 2 COATS OF GALVACON (ZINC RICH PAINT) OR APPROVED EQUAL.

**SPECIAL INSPECTIONS:**

1. WHEN REQUIRED, PROVIDE SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION.
2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER'S REPRESENTATIVE, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.

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2003 S. STEARMAN DRIVE
CHANDLER, AZ 85286

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AT&T SITE NUMBER:
**UTL04282**

BU #: 880608

1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80'-0" MONOPOLE

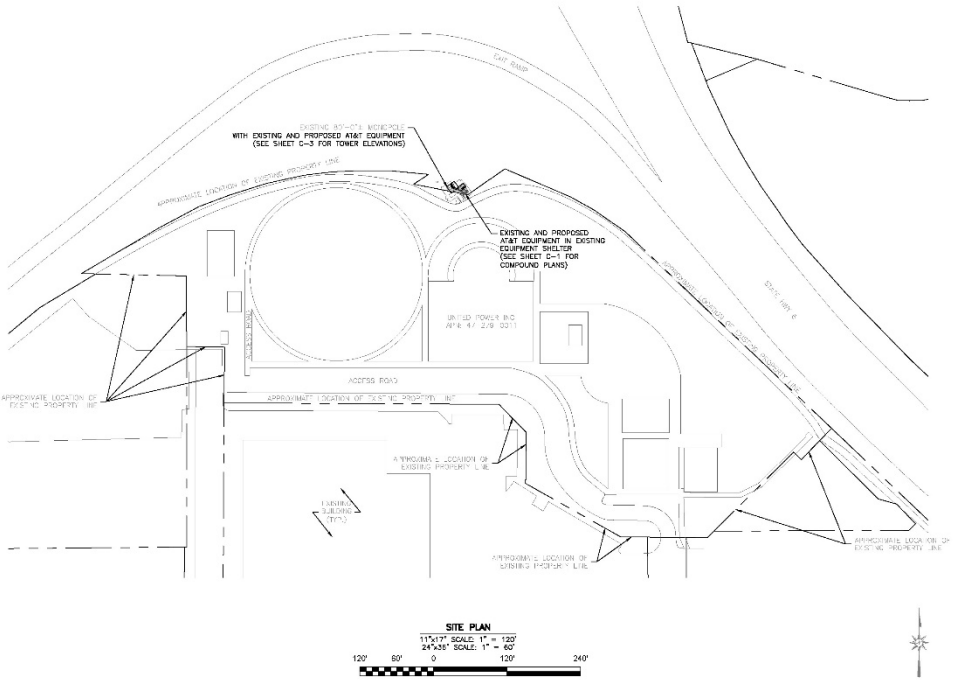
**ISSUED FOR:**

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/7/22 | AT | PRE-CONSULT | CM |
| B | 8/22/22 | DB | CLIENT REVISIONS | CM |
| 0 | 12/16/22 | BG | PERMITTING SUBMITTAL | LM |

EXPIRES 31 MAR 2023

IT IS A VIOLATION OF LAW TO ALTER THIS DRAWING IN ANY WAY. IF ANY ALTERATIONS ARE MADE TO THIS DRAWING, THE ALTERING ENGINEER SHALL ATTACH TO THE ALTERED DRAWING A NOTATION STATING THE ALTERATIONS AND SIGNED AND DATED BY THE ALTERING ENGINEER.

| SHEET NUMBER: | REVISION: |
|---|---|
| GN-2 | 0 |




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2003 S. STEARMAN DRIVE
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TELCYTE INFRASTRUCTURE SERVICES
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AT&T SITE NUMBER:
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1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80'-0" MONOPOLE

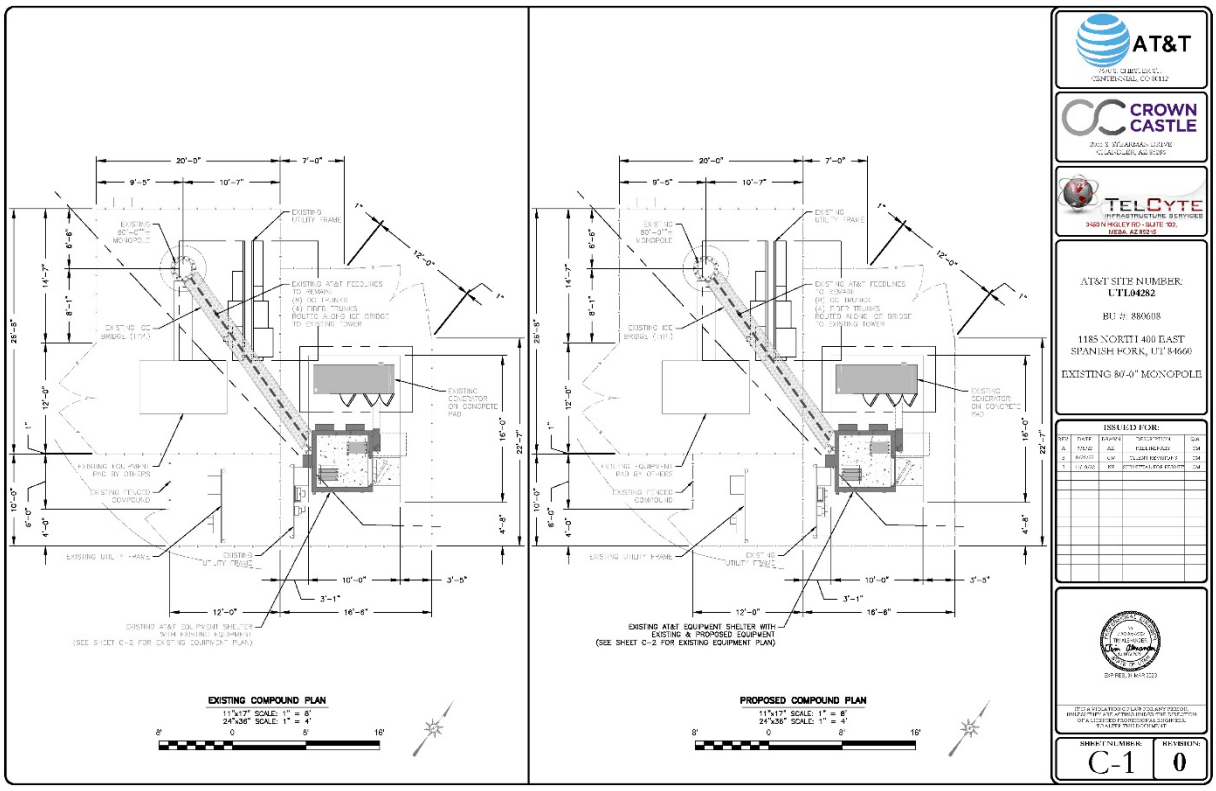
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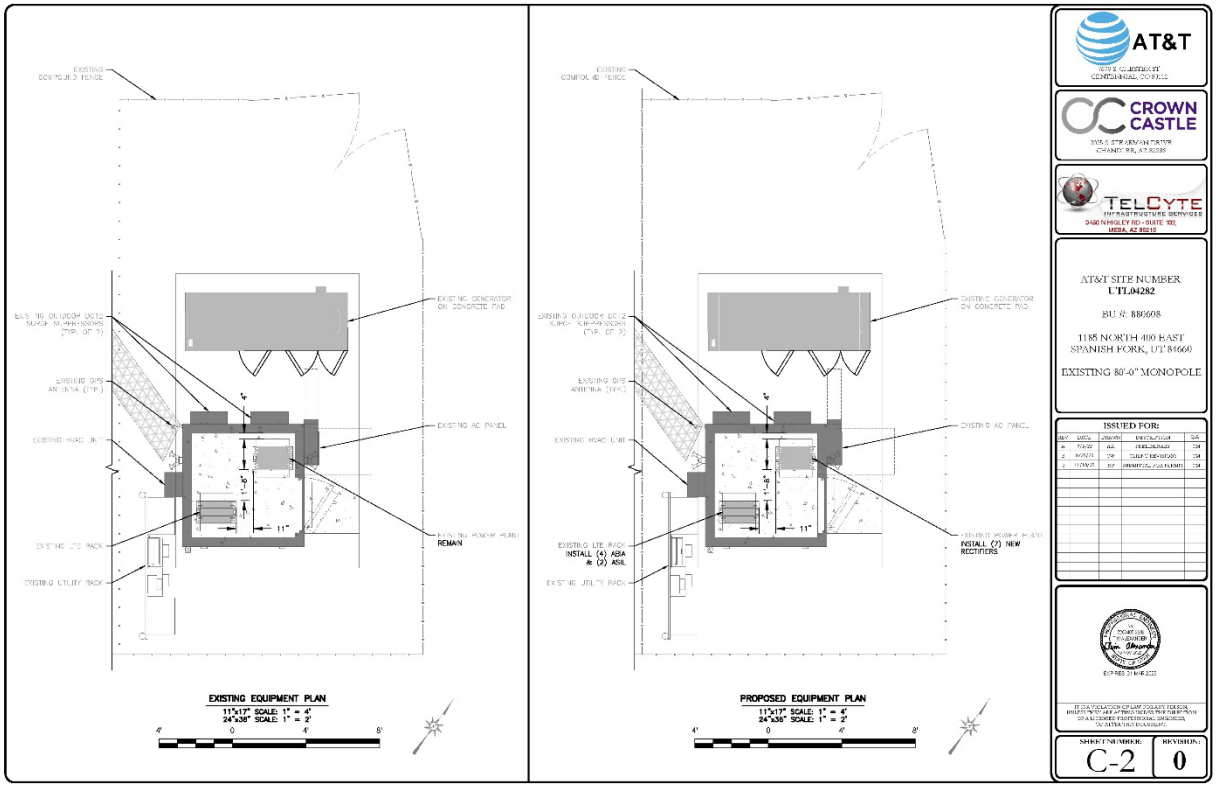
| REV | DATE | DRAWN | DESCRIPTION | QA |
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| A | 7/7/22 | AT | PRE-CONSULT | CM |
| B | 8/22/22 | DB | CLIENT REVISIONS | CM |
| 0 | 12/16/22 | BG | PERMITTING SUBMITTAL | LM |

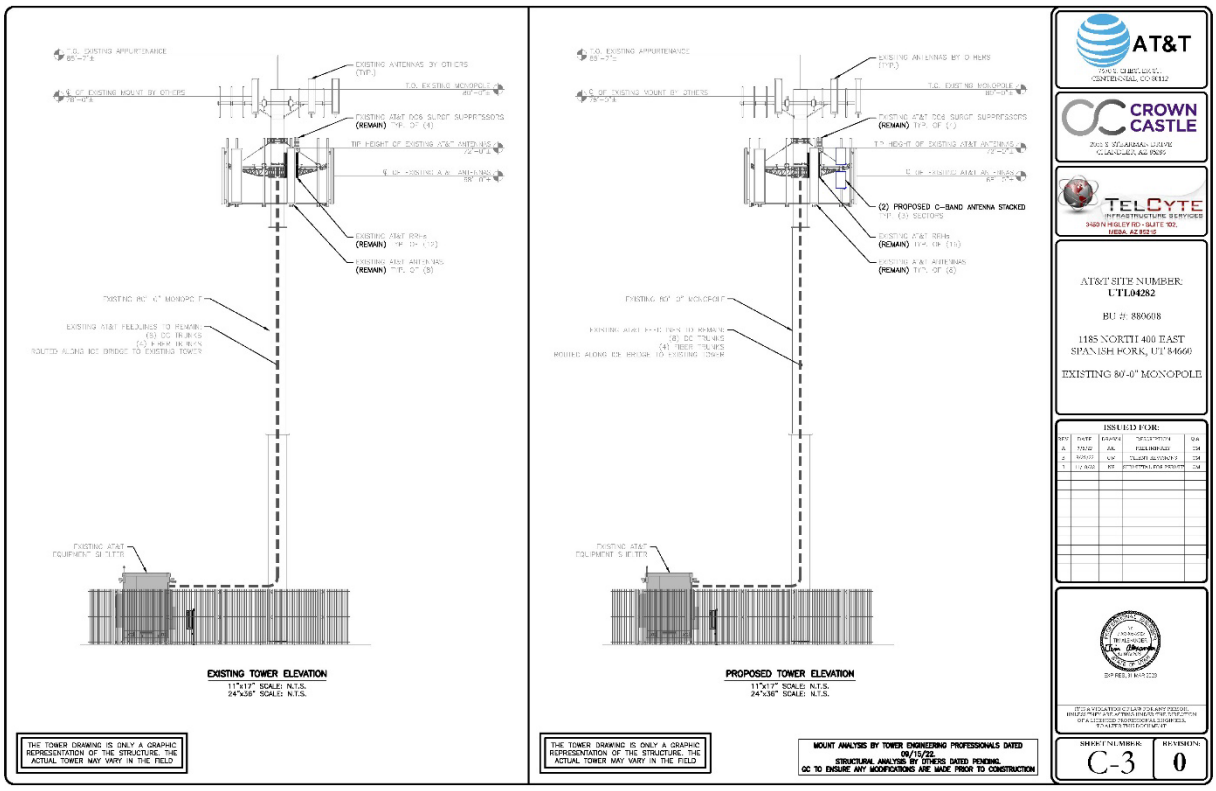
EXPIRES 31 MAR 2023

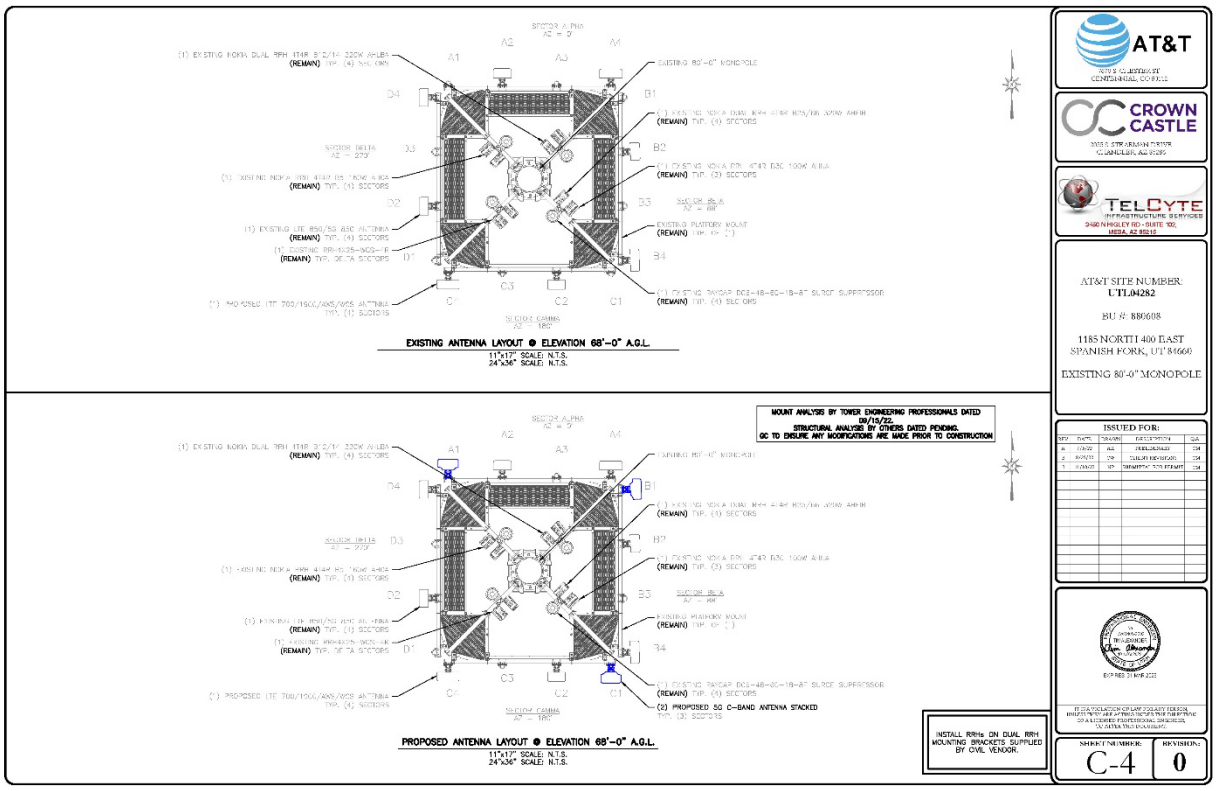
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| SHEET NUMBER: | REVISION: |
|---|---|
| S-1 | 0 |


EXISTING COMPOUND PLAN
PROPOSED COMPOUND PLAN
EXISTING AT&T EQUIPMENT SHELTER WITH EXISTING & PROPOSED EQUIPMENT
(SEE SHEET C-2 FOR EXISTING EQUIPMENT PLAN)
AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER:
UTL04282
BU #: 880608
1185 NORTH 400 EAST
SPANISH FORK, UT 84660
EXISTING 80'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER:
C-1
REVISION:
0


EXISTING EQUIPMENT PLAN
PROPOSED EQUIPMENT PLAN
EXISTING GENERATOR ON CONCRETE PAD
EXISTING AC PANEL
EXISTING HH&C UNIT
EXISTING UTILITY RACK
REMAIN
INSTALL (4) ASEA & (2) ASIL
INSTALL (7) NEW RECTIFIERS
AT&T
CROWN CASTLE
TELCYTE
AT&T SITE NUMBER:
UTL04282
BU #: 880608
1185 NORTH 400 EAST
SPANISH FORK, UT 84660
EXISTING 80'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER:
C-2
REVISION:
0


EXISTING TOWER ELEVATION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
THE TOWER DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. THE ACTUAL TOWER MAY VARY IN THE FIELD
PROPOSED TOWER ELEVATION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
THE TOWER DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. THE ACTUAL TOWER MAY VARY IN THE FIELD
MOUNT ANALYSIS BY TOWER ENGINEERING PROFESSIONALS DATED 09/15/22.
STRUCTURAL ANALYSIS BY OTHERS DATED PENDING.
QC TO ENSURE ANY MODIFICATIONS ARE MADE PRIOR TO CONSTRUCTION
AT&T
CROWN CASTLE
TELCYTE
INFRASTRUCTURE SERVICES
AT&T SITE NUMBER:
UTL04282
BU #: 880608
1185 NORTH 400 EAST
SPANISH FORK, UT 84660
EXISTING 80'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER:
C-3
REVISION:
0


EXISTING ANTENNA LAYOUT @ ELEVATION 68'-0" A.G.L.
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
PROPOSED ANTENNA LAYOUT @ ELEVATION 68'-0" A.G.L.
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
MOUNT ANALYSIS BY TOWER ENGINEERING PROFESSIONALS DATED 09/15/22.
STRUCTURAL ANALYSIS BY OTHERS DATED PENDING.
QC TO ENSURE ANY MODIFICATIONS ARE MADE PRIOR TO CONSTRUCTION
INSTALL RRHs ON DUAL RRH MOUNTING BRACKETS SUPPLIED BY CIVIL VENDOR.
AT&T
CROWN CASTLE
TELCYTE
INFRASTRUCTURE SERVICES
AT&T SITE NUMBER:
UTL04282
BU #: 880608
1185 NORTH 400 EAST
SPANISH FORK, UT 84660
EXISTING 80'-0" MONOPOLE
ISSUED FOR:
SHEET NUMBER:
C-4
REVISION:
0

(P) = PROPOSED

**FINAL ANTENNA & CABLE SCHEDULE**

| SECTOR | MARK | BAND | ANTENNA MAKE/MODEL | ANTENNA C. HEIGHT | ANTENNA AZIMUTH | TMA QTY./TYPE | RADIO QTY./TYPE | SURGE PROTECTION QTY./TYPE | CABLE QTY./TYPE |
|---|---|---|---|---|---|---|---|---|---|
| ALPHA | A1 | – | (P) NOKIA – AEQK+AEQU STACKED | 68'-0" | 0° | – | – | (1) DC6-48-60-18-8F | (1) FIBER TRUNK (2) DC TRUNKS |
| | A2 | LTE 850/ 5G 850 | CCI – TPA45R-KUBA | 68'-0" | | – | (1) NOKIA RRH 4T4R B5 160W AHCA | | |
| | A3 | – | – | – | | – | – | | |
| | A4 | LTE 700/ LTE 1900/ LTE AWS/ LTE WCS | COMMSCOPE – NNH4-65C-R6-V3 | 68'-0" | | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1) AIRSCALE RRH 4T4R B30 100W AHNA | | |
| BETA | B1 | – | (P) NOKIA – AEQK+AEQU STACKED | 68'-0" | 88° | – | – | (1) DC6-48-60-18-8F | (1) FIBER TRUNK (2) DC TRUNKS |
| | B2 | LTE 850/ 5G 850 | CCI – TPA45R-KUBA | 68'-0" | | – | (1) NOKIA RRH 4T4R B5 160W AHCA | | |
| | B3 | – | – | – | | – | – | | |
| | B4 | LTE 700/ LTE 1900/ LTE AWS/ LTE WCS | COMMSCOPE – NNH4-65C-R6-V3 | 68'-0" | | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1) AIRSCALE RRH 4T4R B30 100W AHNA | | |
| GAMMA | C1 | – | (P) NOKIA – AEQK+AEQU STACKED | 68'-0" | 180° | – | – | (1) DC6-48-60-18-8F | (1) FIBER TRUNK (2) DC TRUNKS |
| | C2 | LTE 850/ 5G 850 | CCI – TPA45R-KUBA | 68'-0" | | – | (1) NOKIA RRH 4T4R B5 160W AHCA | | |
| | C3 | – | – | – | | – | – | | |
| | C4 | LTE 700/ LTE 1900/ LTE AWS/ LTE WCS | COMMSCOPE – NNH4-65C-R6-V3 | 68'-0" | | – | (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB (1) AIRSCALE RRH 4T4R B30 100W AHNA | | |
| DELTA | D1 | – | – | – | 270° | – | – | (1) DC6-48-60-18-8F | (1) FIBER TRUNK (2) DC TRUNKS |
| | D2 | LTE 850/ 5G 850 | CCI – TPA45R-KUBA | 68'-0" | | – | (1) NOKIA RRH 4T4R B5 160W AHCA | | |
| | D3 | – | – | – | | – | – | | |
| | D4 | LTE 700/ LTE 1900/ LTE AWS/ LTE WCS | CCI – TPA45R-KUBA | 68'-0" | | – | (1) NOKIA DUAL RRH 4T4R B12/14 320W AHLBA (1) NOKIA DUAL RRH 4T4R B25/66 320W AHFIB (1) RRHx25-WCS-4R | | |

AT&T
5670 S. CENTENNIAL CT.
CENTENNIAL, CO 80112

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AT&T SITE NUMBER:
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BU #: 880608

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EXISTING 80' 0" MONOPOLE

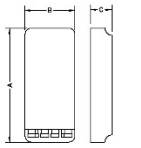
**ISSUED FOR:**

| REV. | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AP | PRE-CONSTRUCTION | PM |
| B | 10/21/22 | DB | CONSTRUCTION DOCS | PM |
| 0 | 12/16/22 | PM | PERMITTING SUBMITTAL | LM |

EXPIRES 31 MAR 2023

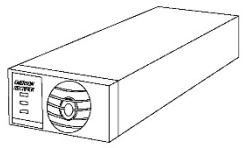
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SHEET NUMBER: C-5 REVISION: 0



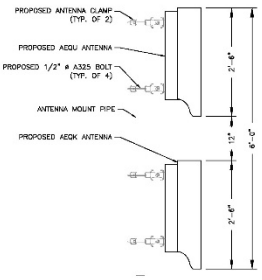

| ANTENNA SPECIFICATIONS | | | | |
|---|---|---|---|---|
| MODEL | LENGTH (A) | WIDTH (B) | DEPTH (C) | WEIGHT (lb) |
| NOKIA – AEQK | 29.5" | 17.7" | 9.5" | 99.2 |
| NOKIA – AEQU | 29.5" | 17.7" | 9.5" | 99.2 |

**ANTENNA SPECIFICATIONS**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



NEQ.15930 1R452000E3
RECTIFIER, NETSURE™ 512 & 721, HIGH EFFICIENCY, -48 VDC, 40 A/2000 W, 120/208/240 VAC, SINGLE-PHASE INPUT, 4.4 LBS.

**RECTIFIER DETAIL**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.




**ANTENNA MOUNTING**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

**NOT USED**
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

AT&T
5670 S. CENTENNIAL CT.
CENTENNIAL, CO 80112

CROWN CASTLE
2055 E. TECHNICIAN DRIVE
CHANDLER, AZ 85286

TELCYTE
INFRASTRUCTURE SERVICES
2450 N HIGLEY RD • SUITE 102
MESA, AZ 85215

AT&T SITE NUMBER:
UTL04282

BU #: 880608

1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80' 0" MONOPOLE

ISSUED FOR:

| REV. | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AP | PRE-CONSTRUCTION | PM |
| B | 10/21/22 | DB | CONSTRUCTION DOCS | PM |
| 0 | 12/16/22 | PM | PERMITTING SUBMITTAL | LM |

EXPIRES 31 MAR 2023

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SHEET NUMBER: C-6 REVISION: 0

UTL04282 / BDN 386 INDUSTRIAL PARK, EXISTING AC PANEL, EXISTING BREAKER SCHEDULE

| SLOT # | LOAD: BREAKER LABEL | LOAD: VOLT-AMPS | LOADS CONTINUOUS | LOADS NON-CONTINUOUS | BREAKER | LOAD PER PHASE: "A" | LOAD PER PHASE: "B" | BREAKER | LOADS NON-CONTINUOUS | LOADS CONTINUOUS | LOAD: VOLT-AMPS | LOAD: BREAKER LABEL | SLOT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RECTIFIERS | 20K | | NC | Y | 4900 | 4900 | Y | NC | | 2400 | | 2 |
| 3 | | 20K | | NC | | 2900 | 2900 | | NC | | 2400 | | 4 |
| 5 | RECTIFIERS | 20K | | NC | X | 2900 | 2900 | X | | | | RECTIFIERS (NO LOAD) | 6 |
| 7 | | 20K | | NC | | 2900 | 2900 | | | | | | 8 |
| 9 | RECTIFIERS | 20K | | NC | X | 2900 | 2900 | X | | | | RECTIFIERS (NO LOAD) | 10 |
| 11 | | 20K | | NC | | 2900 | 2900 | | | | | | 12 |
| 13 | BLANK | | | | | | | | | | | BLANK | 14 |
| 15 | BLANK | | | | | | | | | | | BLANK | 16 |
| 17 | BLANK | | | | | 0 | 0 | | | | | BLANK | 18 |
| 19 | BLANK | | | | | 0 | 0 | | | | | BLANK | 20 |
| 21 | BLANK | | | | | 0 | 0 | | | | | BLANK | 22 |
| 23 | BLANK | | | | | 180 | 180 | X | NC | | 180 | DIMMER OUTLET | 24 |
| 25 | HVAC | 1680 | | NC | X | 2772 | 2772 | X | NC | | 180 | DIMMER OUTLET | 26 |
| 27 | | 1680 | | NC | | 2772 | 2772 | | NC | | 180 | DIMMER OUTLET | 28 |
| 29 | EXTERIOR GFCI | 180 | | NC | X | 180 | 180 | X | NC | | 720 | INTERIOR RECEPTACLES | 30 |
| | CONNECTED PHASE TOTAL, VA | | | | | 11072 | 10472 | | | | | | |

| AC PANEL DATA | |
|---|---|
| SYSTEM VOLTAGE | 208 |
| MAIN BREAKER | 225 |
| BUS RATING | 225 |
| MAIN LUG ONLY | YES |
| KAIC RATING | 10 KAIC FULLY-RATED |

NOTES:

| | | |
|---|---|---|
| CONNECTED PHASE TOTAL, AMPS | 92 | 89 |
| CONNECTED LOAD PER PHASE, KVA | 11.072 | 10.672 |
| TOTAL CONNECTED LOAD, KVA | 21.744 | |
| NONCONTINUOUS LOAD PER PHASE, KVA | 11.072 | 10.672 |
| TOTAL NONCONTINUOUS LOAD, KVA | 21.744 | |
| CONTINUOUS LOAD PER PHASE, KVA | 0.000 | 0.375 |
| TOTAL CONTINUOUS LOAD, KVA | 0.375 | |
| DEMAND LOAD CONT + NONCONTI PER PHASE, KVA | 11.072 | 10.547 |
| TOTAL DEMAND LOAD CONTINUOUS + NONCONTINUOUS, KVA | 21.619 | |
| TOTAL DEMAND LOAD (CONT + NONCONT), AMPS | 92 | 88 |
| PANEL CAPACITY, KVA | 48.000 | |
| SPARE PANEL CAPACITY, KVA | 26.381 | |

EXISTING PANEL SCHEDULE
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

UTL04282 / BDN 386 INDUSTRIAL PARK, EXISTING AC PANEL, PROPOSED BREAKER SCHEDULE

| SLOT # | LOAD: BREAKER LABEL | LOAD: VOLT-AMPS | LOADS CONTINUOUS | LOADS NON-CONTINUOUS | BREAKER | LOAD PER PHASE: "A" | LOAD PER PHASE: "B" | BREAKER | LOADS NON-CONTINUOUS | LOADS CONTINUOUS | LOAD: VOLT-AMPS | LOAD: BREAKER LABEL | SLOT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RECTIFIERS | 20K | | NC | | 4900 | | | NC | | 2400 | | 2 |
| 3 | | 20K | | NC | | | 4900 | 30 | NC | | 2400 | RECTIFIERS* | 4 |
| 5 | RECTIFIERS | 20K | | NC | | 4900 | | | NC | | 2400 | | 6 |
| 7 | | 20K | | NC | | | 4900 | 30 | NC | | 2400 | RECTIFIERS* | 8 |
| 9 | RECTIFIERS | 20K | | NC | | 4900 | | | NC | | 2400 | | 10 |
| 11 | | 20K | | NC | | | 4900 | 30 | NC | | 2400 | RECTIFIERS* | 12 |
| 13 | RECTIFIERS* | 20K | | NC | 50 | 4900 | | 50 | NC | | 2400 | | 14 |
| 15 | | 20K | | NC | | | 4900 | | NC | | 300 | | 16 |
| 17 | BLANK | | | | | 0 | | | | | | BLANK | 18 |
| 19 | BLANK | | | | | | 0 | | | | | BLANK | 20 |
| 21 | BLANK | | | | | 0 | | | | | | BLANK | 22 |
| 23 | BLANK | | | | | | 0 | 20 | NC | | 180 | DIMMER OUTLET | 24 |
| 25 | HVAC | 1680 | NO | | | 2772 | | 20 | NC | | 180 | DIMMER OUTLET | 26 |
| 27 | | 1680 | NO | | | 2772 | | 15 | | C | 300 | EXTERIOR LIGHT | 28 |
| | CONNECTED PHASE TOTAL, VA | | | | | 14672 | 12172 | | | | | | |

| AC PANEL DATA | |
|---|---|
| SYSTEM VOLTAGE | 208 |
| MAIN BREAKER | 225 |
| BUS RATING | 225 |
| MAIN LUG ONLY | NO |
| KAIC RATING | 10 KAIC FULLY-RATED |

NOTES:
INSTALL (2) NEW 30A/2P BREAKERS. CONNECT SEVEN NEW RECTIFIERS TO NEW AND EXISTING 20A/2P BREAKERS. UPDATE PANEL DIRECTORY.

| | | |
|---|---|---|
| CONTINUOUS LOAD PER PHASE, KVA | 0.000 | 0.375 |
| TOTAL CONTINUOUS LOAD, KVA | 0.375 | |
| DEMAND LOAD CONT + NONCONTI PER PHASE, KVA | 14.672 | 12.547 |
| TOTAL DEMAND LOAD CONTINUOUS + NONCONTINUOUS, KVA | 27.219 | |
| TOTAL DEMAND LOAD (CONT + NONCONT), AMPS | 121 | 104 |
| PANEL CAPACITY, KVA | 48.000 | |
| SPARE PANEL CAPACITY, KVA | 12.381 | |

PROPOSED PANEL SCHEDULE
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

AT&T
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CENTENNIAL, CO 80112

CROWN CASTLE
2055 E. TECHNOLOGY DRIVE
CHANDLER, AZ 85286

TELCYTE
INFRASTRUCTURE SERVICES
2450 N FARLEY RD • SUITE 102
MESA, AZ 85215

AT&T SITE NUMBER:
UTL04282

BU #: 880608

1185 NORTH 400 EAST
SPANISH FORK, UT 84660

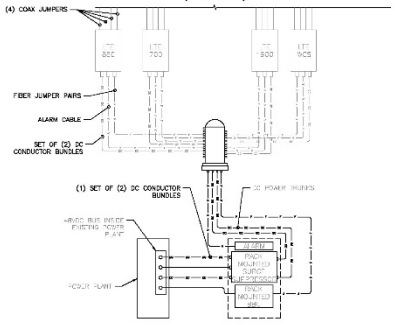
EXISTING 80' 0" MONOPOLE

ISSUED FOR:

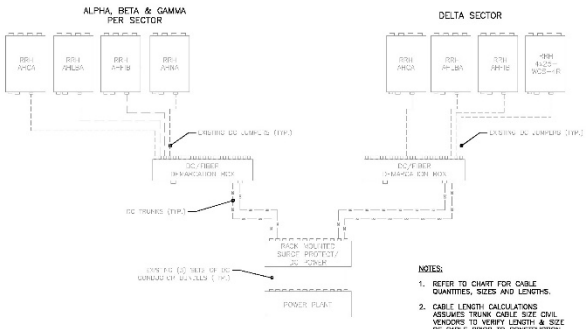
| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AT | PRE-FINAL | PM |
| B | 10/24/22 | DB | CONSTRUCTION | PM |
| 0 | 12/16/22 | BM | PERMITTING (CLIENT) | LM |

SHEET NUMBER: E-1
REVISION: 0

TO ANTENNAS
(PER SECTOR)




DC & FIBER SYSTEM SCHEMATIC
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.




NOTES:
1. REFER TO CHART FOR CABLE QUANTITIES, SIZES AND LENGTHS.
2. CABLE LENGTH CALCULATIONS ASSUMES TRUNK CABLE SIZE CIVIL VENDORS TO VERIFY LENGTH & SIZE OF CABLE PRIOR TO CONSTRUCTION

DC WIRING DIAGRAM
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

AT&T
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TELCYTE
INFRASTRUCTURE SERVICES
2450 N FARLEY RD • SUITE 102
MESA, AZ 85215

AT&T SITE NUMBER:
UTL04282

BU #: 880608

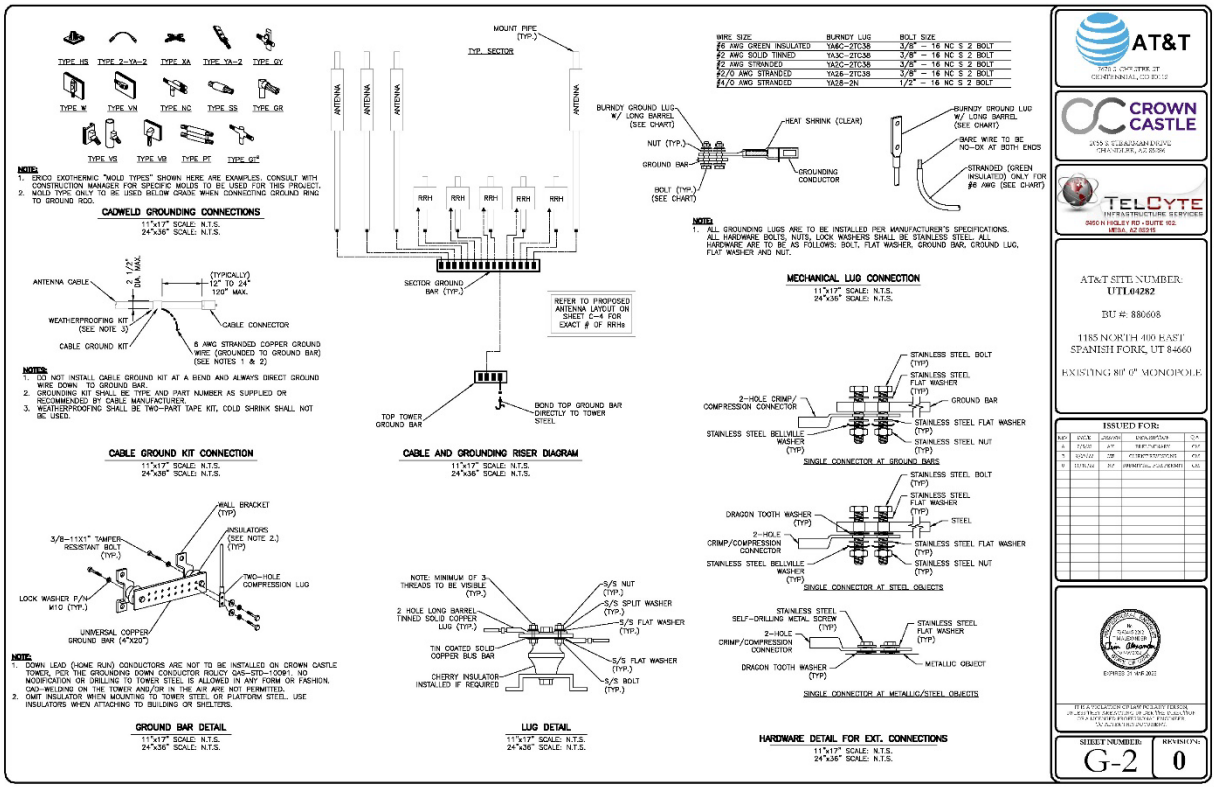
1185 NORTH 400 EAST
SPANISH FORK, UT 84660

EXISTING 80' 0" MONOPOLE

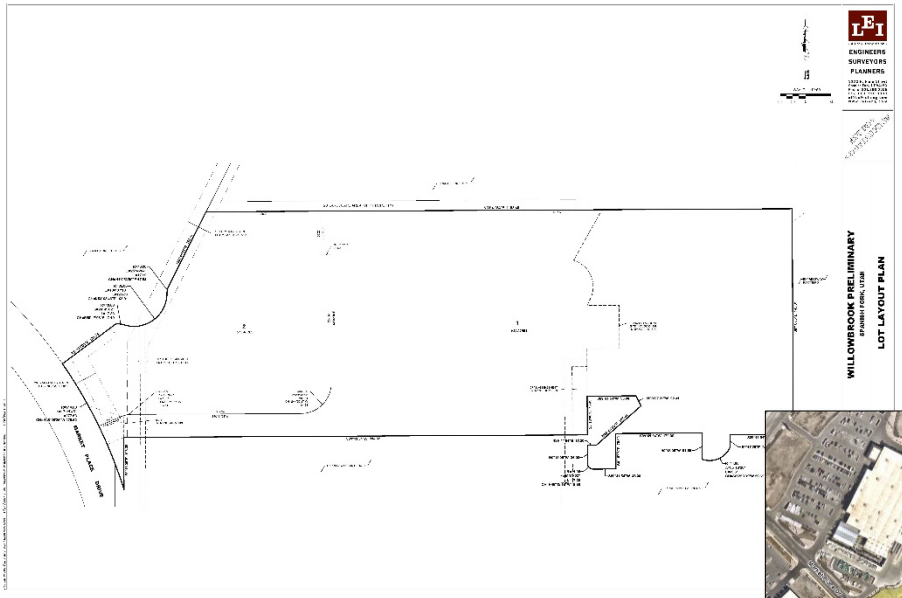
ISSUED FOR:

| REV | DATE | DRAWN | DESCRIPTION | QA |
|---|---|---|---|---|
| A | 7/5/22 | AT | PRE-FINAL | PM |
| B | 10/24/22 | DB | CONSTRUCTION | PM |
| 0 | 12/16/22 | BM | PERMITTING (CLIENT) | LM |

SHEET NUMBER: G-1
REVISION: 0


TYPE HB
TYPE 2-YA-2
TYPE XA
TYPE YA-2
TYPE GY
TYPE W
TYPE VN
TYPE NC
TYPE SS
TYPE GR
TYPE VB
TYPE VB
TYPE PT
TYPE GT
NOTE:
1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.
CADWELD GROUNDING CONNECTIONS
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
ANTENNA CABLE
2 1/2" DIA. MAX.
(TYPICALLY) 12" TO 24" 120" MAX.
WEATHERPROOFING KIT (SEE NOTE 3)
CABLE CONNECTOR
CABLE GROUND KIT
6 AWG STRANDED COPPER GROUND WIRE (GROUNDED TO GROUND BAR) (SEE NOTES 1 & 2)
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHERPROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.
CABLE GROUND KIT CONNECTION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
WALL BRACKET (TYP)
INSULATORS (SEE NOTE 2.) (TYP)
3/8-11X1" TAMPER-RESISTANT BOLT (TYP.)
TWO-HOLE COMPRESSION LUG
LOCK WASHER F/M4 M10 (TYP.)
UNIVERSAL COPPER GROUND BAR (4"X20")
NOTE:
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY, GAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.
GROUND BAR DETAIL
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
MOUNT PIPE (TYP.)
TYP. SECTOR
ANTENNA
RRH
SECTOR GROUND BAR (TYP.)
REFER TO PROPOSED ANTENNA LAYOUT ON SHEET C-4 FOR EXACT # OF RRHs
TOP TOWER GROUND BAR
BOND TOP GROUND BAR DIRECTLY TO TOWER STEEL
CABLE AND GROUNDING RISER DIAGRAM
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
NOTE: MINIMUM OF 3 THREADS TO BE VISIBLE (TYP.)
2 HOLE LONG BARREL TINNED SOLID COPPER LUG (TYP.)
TIN COATED SOLID COPPER BUS BAR
CHERRY INSULATOR INSTALLED IF REQUIRED
S/S NUT (TYP.)
S/S SPLIT WASHER (TYP.)
S/S FLAT WASHER (TYP.)
S/S FLAT WASHER (TYP.)
S/S BOLT (TYP.)
LUG DETAIL
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
WIRE SIZE | BURNDY LUG | BOLT SIZE
#6 AWG GREEN INSULATED | YA6C-2TC38 | 3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED | YA3C-2TC38 | 3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED | YA2C-2TC38 | 3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED | YA26-2TC38 | 3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED | YA28-2N | 1/2" - 16 NC S 2 BOLT
BURNDY GROUND LUG W/ LONG BARREL (SEE CHART)
NUT (TYP.)
GROUND BAR
BOLT (TYP.) (SEE CHART)
HEAT SHRINK (CLEAR)
GROUNDING CONDUCTOR
BURNDY GROUND LUG W/ LONG BARREL (SEE CHART)
BARE WIRE TO BE NO-OX AT BOTH ENDS
STRANDED (GREEN INSULATED) ONLY FOR #6 AWG (SEE CHART)
NOTE:
1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.
MECHANICAL LUG CONNECTION
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
STAINLESS STEEL BOLT (TYP)
STAINLESS STEEL FLAT WASHER (TYP)
GROUND BAR
2-HOLE CRIMP/ COMPRESSION CONNECTOR
STAINLESS STEEL BELLVILLE WASHER (TYP)
STAINLESS STEEL FLAT WASHER (TYP)
STAINLESS STEEL NUT (TYP)
SINGLE CONNECTOR AT GROUND BARS
STEEL
DRAGON TOOTH WASHER (TYP)
SINGLE CONNECTOR AT STEEL OBJECTS
STAINLESS STEEL SELF-DRILLING METAL SCREW (TYP)
METALLIC OBJECT
DRAGON TOOTH WASHER (TYP)
SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS
HARDWARE DETAIL FOR EXT. CONNECTIONS
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.
AT&T
CROWN CASTLE
TELCYTE INFRASTRUCTURE SERVICES
3855 N HIGLEY RD • SUITE 102
MESA, AZ 85215
AT&T SITE NUMBER:
UTL04282
BU #: 880608
1185 NORTH 400 EAST
SPANISH FORK, UT 84660
EXISTING 80' 0" MONOPOLE
ISSUED FOR:
SHEET NUMBER: G-2
REVISION: 0








## Willowbrook Commercial Subdivision Preliminary Plat Re-Approval Request

January 4, 2023. Planning Commission Meeting.

Located at approximately 1200 North Market Place Drive, including 13.28 acres.

The subject property is zoned I-1 and B-P.

The applicant has requested that a Preliminary Plat be re-approved.

## Key Issues

1. Storm Drainage.
2. Environmental.
3. Easements.
4. Utilities.
5. Power.

## Recommendation

That the proposed Preliminary Plat be approved based on the following finding and subject to the following conditions:

**Finding**

1. That the application conforms to the City's Zoning Map.

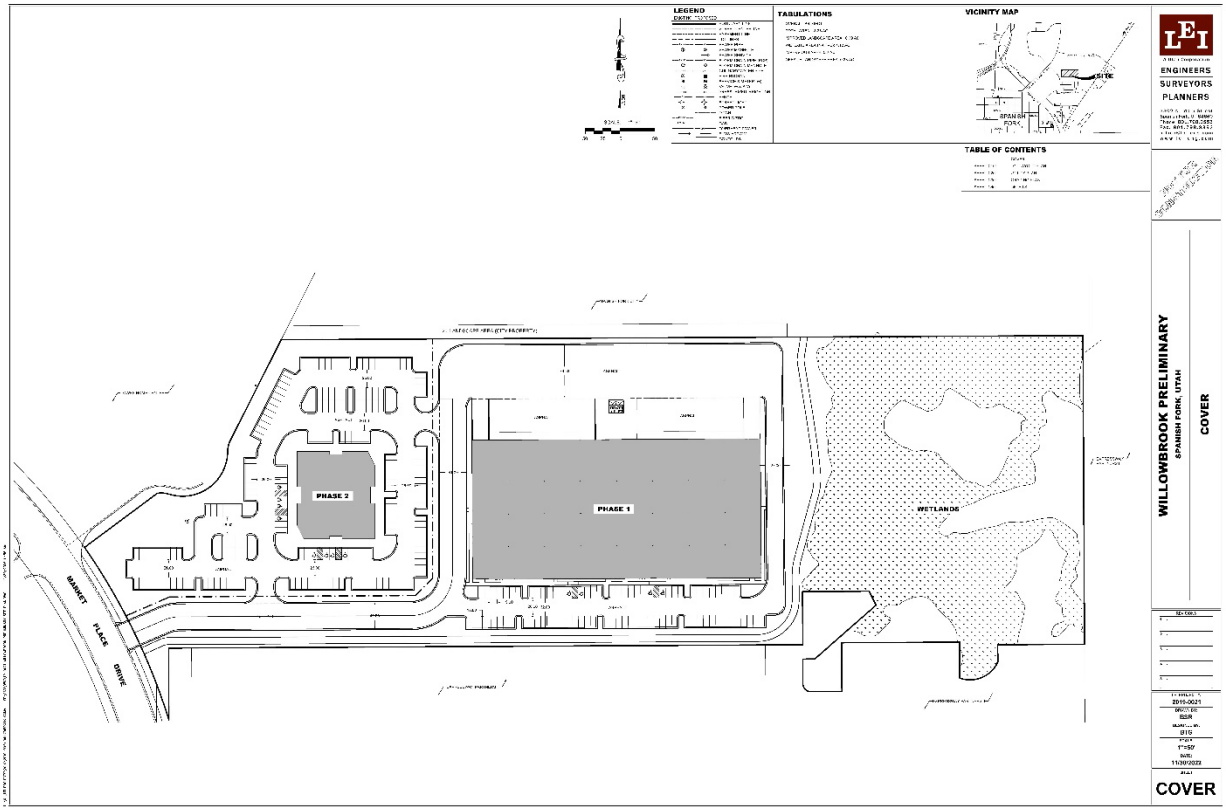
**Conditions**

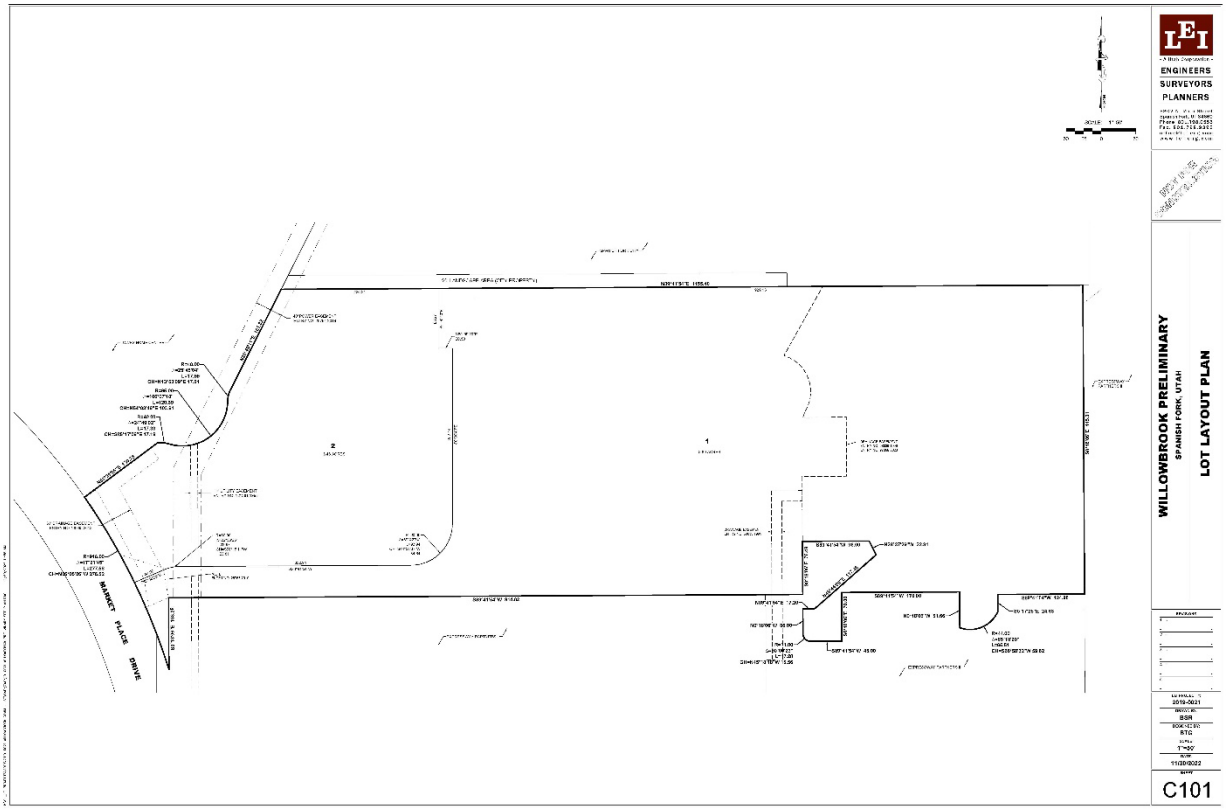
1. That the applicant meets the City's Construction Standards and zoning requirements.
2. That the applicant addresses any red-lines.
3. That the applicant follows the City's adopted environmental regulations ordinance.

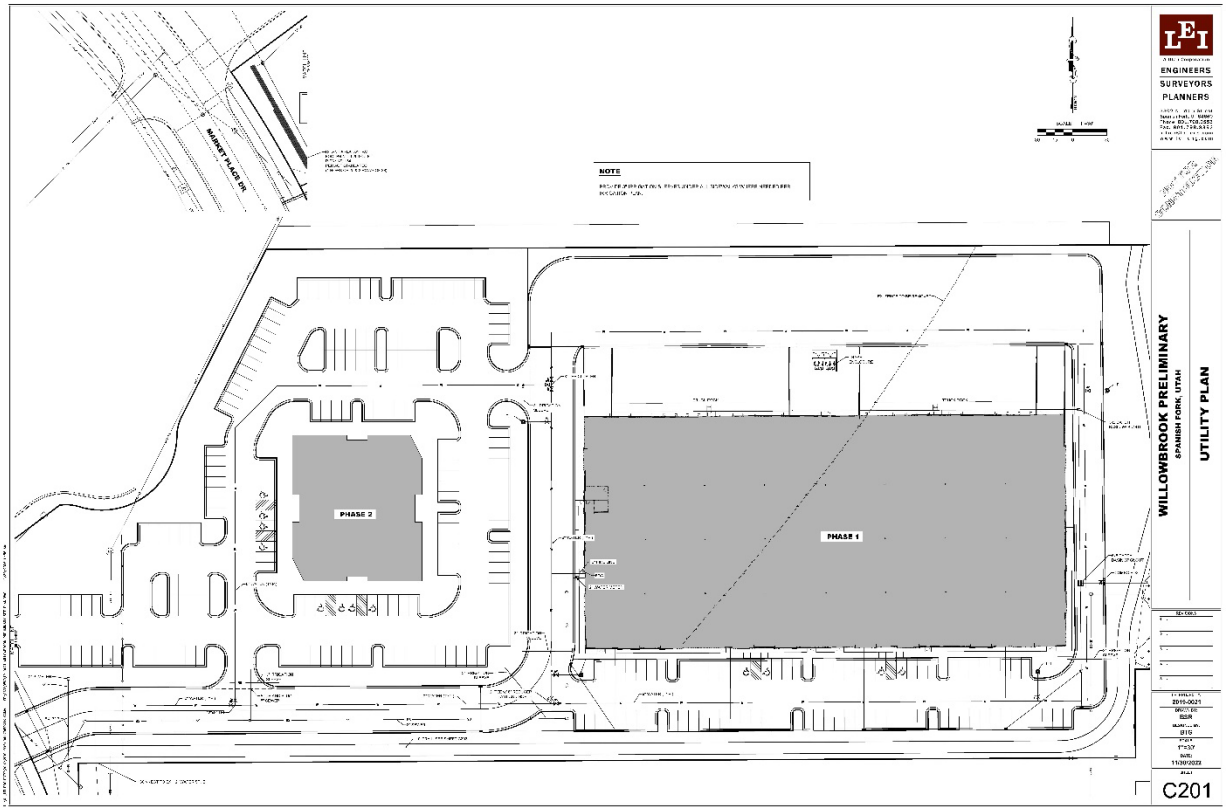
## Exhibits

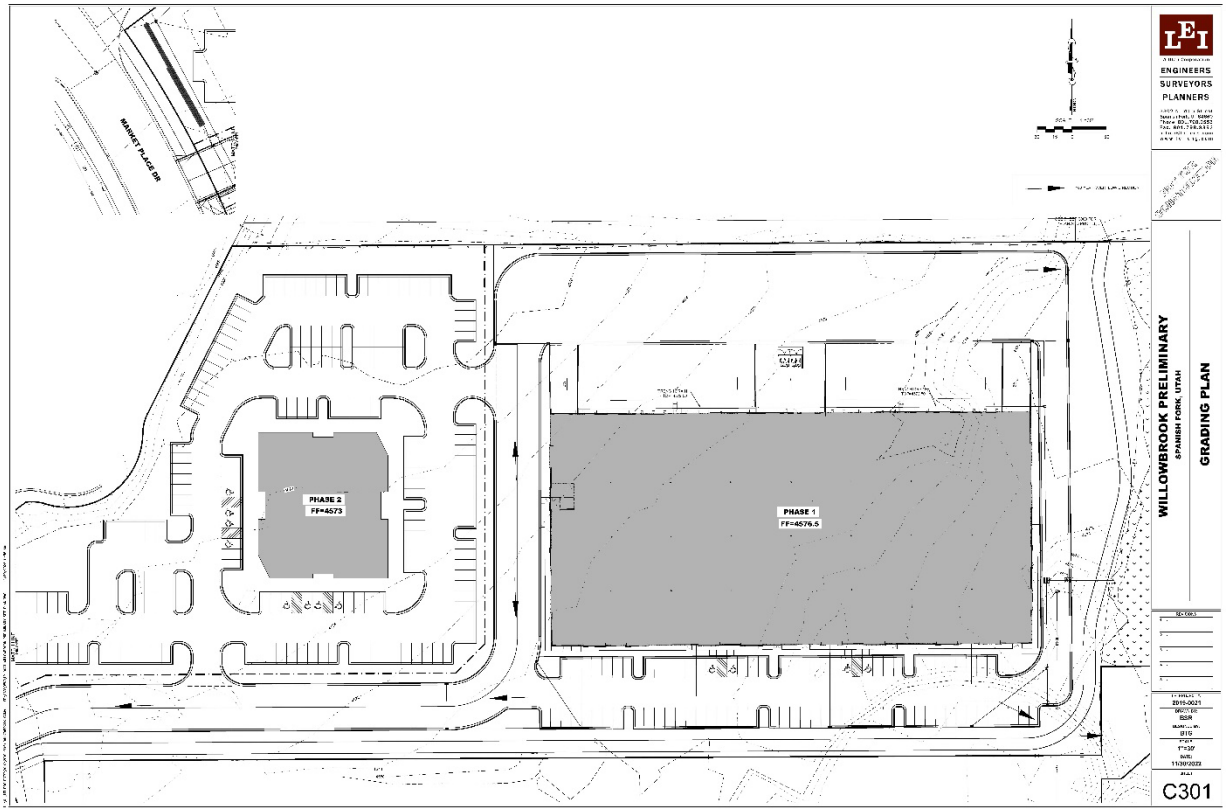
1. Preliminary Plat.

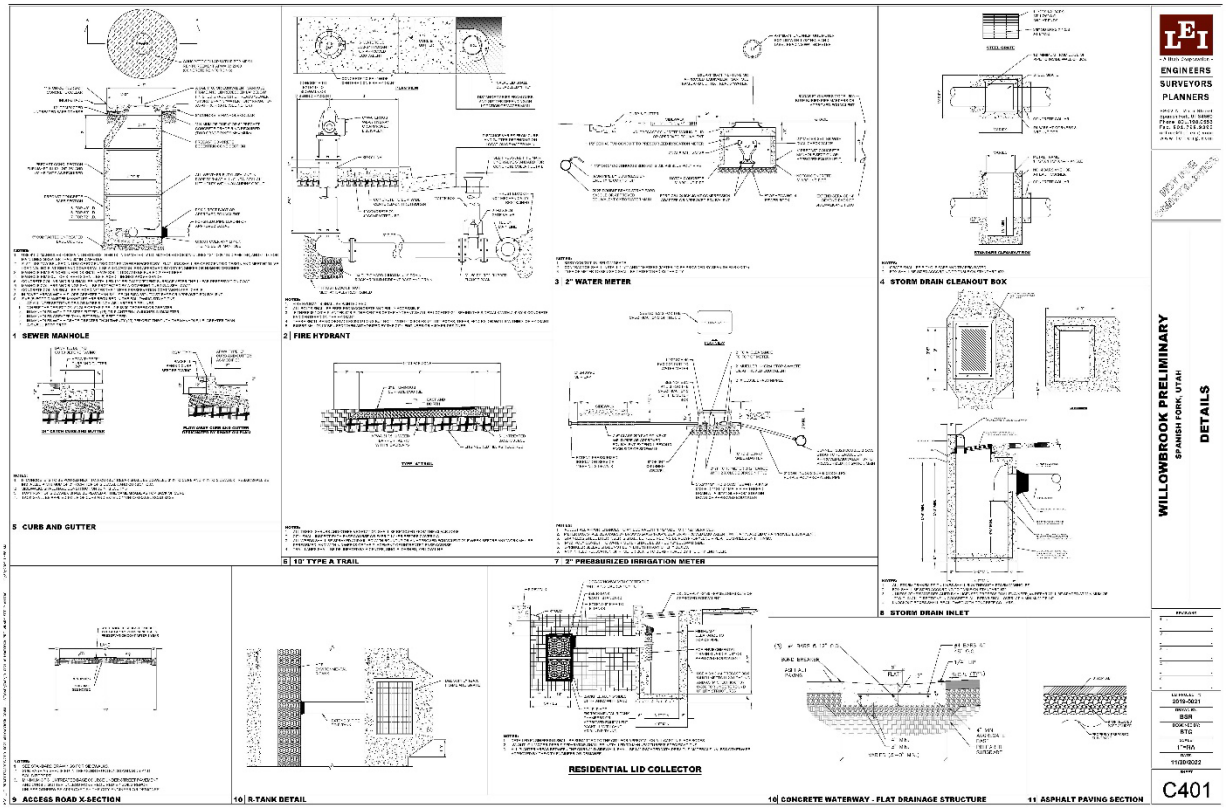
Exhibit 1


LEGEND
TABULATIONS
VICINITY MAP
SITE
SPANISH FORK
TABLE OF CONTENTS
PHASE 2
PHASE 1
WETLANDS
MARKET PLACE DRIVE
LEI
ENGINEERS
SURVEYORS
PLANNERS
WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH
COVER
COVER


MARKET PLACE DRIVE
LEI
ENGINEERS
SURVEYORS
PLANNERS
WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH
LOT LAYOUT PLAN
C101


MARKET PLACE DR
NOTE
PHASE 2
PHASE 1
LEI
ENGINEERS
SURVEYORS
PLANNERS
WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH
UTILITY PLAN
C201


MARKET PLACE DR
PHASE 2
FF=4573
PHASE 1
FF=4576.5
LEI
ENGINEERS
SURVEYORS
PLANNERS
WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH
GRADING PLAN
C301


1 SEWER MANHOLE
2 FIRE HYDRANT
3 2" WATER METER
4 STORM DRAIN CLEANOUT BOX
5 CURB AND GUTTER
6 10' TYPE A TRAIL
7 2" PRESSURIZED IRRIGATION METER
8 STORM DRAIN INLET
9 ACCESS ROAD X-SECTION
10 R-TANK DETAIL
RESIDENTIAL LID COLLECTOR
10 CONCRETE WATERWAY - FLAT DRAINAGE STRUCTURE
11 ASPHALT PAVING SECTION
LEI
ENGINEERS
SURVEYORS
PLANNERS
WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH
DETAILS
C401

SPANISH FORK
PRIDE & PROGRESS

**TO:** Community Development Department

**FROM:** Dave Anderson, AICP

**DATE:** December 21, 2022

**RE:** Proposed Landscape Requirements

Landmark Design has been working for the past several months to develop new landscape requirements for various situations and types of developments. This correspondence includes the proposed landscape requirements as well changes to related portions of the Municipal Code. Also, attached to this memorandum is a proposed Street and Shade Tree List and Residential Guidebook. While these materials are still in draft form, I believe they are very near being ready for adoption.

Several distinct factors led staff to believe a proposal of this nature was needed. Those factors include the following:

- long-lasting drought conditions;
- requests, most from businesses, to be allowed to install different landscaping than what the City currently requires;
- concerns about how deviating from the current requirements would lead to ugly/unmaintained sites in the City;
- efforts from other entities to encourage or mandate reductions in water use.

In my view, the highlights of the proposed changes include the following:

- they would create distinct processes and requirements for single-family homes on individual lots and other land uses;
- they would leave the requirements for single-family homes on individual lots nearly, if not entirely, the same as they are today.
- they would change the submittal and improvement requirements for non-residential and multi-family developments;
- landscaping plans and landscape improvements for non-residential and multi-family developments would be based on a maximum amount of water that a site would be allowed to use.

## 15.4.16 Design and Development Standards

### 15.4.16.010 Availability of Adequate Public Facilities

### 15.4.16.020 Unavailability of Adequate Public Facilities

15.4.16.030 Improvement Installations
15.4.16.040 Fees
15.4.16.050 Utility Connection
15.4.16.060 Sewage Facilities
15.4.16.070 Foundation Drains
15.4.16.080 Water Transfer
15.4.16.085 Street Improvements
15.4.16.090 Time Limitation for Completion
15.4.16.100 Conflict of Interest
15.4.16.110 Security for Improvements Required
15.4.16.120 Off Street Parking
15.4.16.130 Landscaping Regulations
15.4.16.140 Fencing and Clear Vision Area
15.4.16.150 Solid Waste Receptacle Areas
15.4.16.160 Site Reclamation
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## 15.4.16.130 Landscape Regulations

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### A. Purpose

It is in the public interest to enhance, conserve, and stabilize property values by encouraging pleasant and attractive landscapes and surroundings, providing proper separations between uses, conserving public water resources and promoting water efficient landscapes. The purpose of this chapter is to protect and enhance the environmental, economic, recreational, and aesthetic resources in Spanish Fork by promoting attractive properties by establishing standards and practices for the design, installation and maintenance of water efficient landscapes throughout the City.

### B. Landscape Requirements for Single-family and Twin Home Residential Uses

1. Application

   The landscape requirements that follow shall apply to all new and rehabilitated single-family and twin home residential landscapes. The following describes the general landscape design requirements for single-family and twin home residential uses.

a. All single-family residential lots shall have the front yard, side-street yards for corner lots and park strips landscaped within one (1) year of receiving a certificate of occupancy. Interior side and back yards must be landscaped within two (2) years of receiving a certificate of occupancy.
b. All portions of a lot that are not improved with impervious materials must be landscaped within the above-described timelines. Weeds do not qualify as required landscaping.
c. Required landscaping shall be comprised of live plant material with an automated irrigation system. Water-conserving designs are encouraged (see Section 15-C-2. Water-Conserving Landscape Design Requirements for Single-family and Twin Home Residential Uses below for details).
d. No more than 70% of a lot shall be surfaced with impervious materials. No more than 60% of the front and side-street setback areas can be improved with impervious surfaces.
e. In order to ensure landscaping requirements are met, Spanish Fork City shall require applicants to provide a deposit with the construction of new homes. The deposit amount shall be determined in the City budget and will be returned to the property owner when the required front and side-street yard landscape has been installed. In the event that the required landscaping has not been installed within four (4) years after the certificate of occupancy has been issued, the deposit will be forfeited to the City.

2. Water-Conserving Landscape Design Requirements and Recommendations for Single-family and Twin Home Residential Uses
   a. Water-conserving Landscape Design is Encouraged.
      The Localscapes® Program, the Salt Lake City Plant List and Hydrozone Schedule 2013 prepared by Salt Lake City Public Utilities, and the Utah State University Center for Water-efficient Landscaping, shall be primary references for the design and installation of water-conserving plants and landscapes in Spanish Fork City (see Spanish Fork Water-Conserving Landscape Online Resource List at www.spanishfork.org). These and other resources included in the list offer user-friendly design ideas, recommendations, programs, examples and inspiration for the implementation of water-conserving landscapes for single-family and twin home uses, as well as those for and developer/contractor installed projects.
   b. If size permits, the landscaped areas of the front yard, side and rear yards should follow Localscapes® five-step process as follows and as detailed in the Spanish Fork City Water-wise Landscape Design Elements & Principles Guidebook (2022) and the Localscapes® Program (see Spanish Fork Water-Conserving Landscape Online Resource List at www.spanishfork.org).
      i. Create a central open space in the front and rear yards consisting of lawn, hardscape, groundcover, gravel or compacted mulch.
      ii. Create smaller gathering areas constructed of hardscape shall be placed outside of the central open shape. In a landscape without lawn, gathering areas may function as the central open shape.
      iii. Fill remaining areas with planting beds composed of water-conserving plants and water-efficient irrigation systems.
      iv. Locate activity zones outside of the central open shape that are surfaced with materials other than lawn.

v. Provide paths and walkways to link the different areas of the yard together. These should be constructed of hardscape, mulch, other groundcover or non-lawn materials.

## C. Landscape Requirements for New and Rehabilitated Developer/Contractor Installed Landscapes for Residential Subdivisions, Professional Office, Commercial and Industrial uses

1. The following standards shall be required for all new and rehabilitated developer and contractor installed landscapes for the following project types:
   a. Multi-family residential uses and developer-installed landscapes for single-family subdivisions;
   b. Professional Office and Non-residential or Non-commercial uses;
   c. Commercial uses; and
   d. Industrial uses.
2. The standards do not apply to single-family, twin home and similar residential uses (see Section C. General Landscape Requirements for Single-family and Twin Home Residential Uses).
3. The standards are not intended to conflict with other landscape requirements as defined by Utah law, including stormwater retention requirements and low-impact development guidelines. Notwithstanding these outdoor standards, whenever any requirement may conflict with Utah law, such conflicting requirements shall not apply.
4. No more than 30% of the required landscaping shall be irrigated turf grass. At maturity, all applicable landscapes are required to have enough plant material (perennials, decorative grasses, shrubs, groundcovers and similar) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.
5. General design requirements, the following describes the general landscape design requirements for each type of use.
   a. Multi-family Residential Uses
      i. Minimum of 25% on-site landscapes as a percentage of total site area, except in the R-5 Zone where 20% on-site landscaping is required.
      ii. Parking lots shall include landscape islands within the parking lot, with a minimum of 108 square feet of planter area for every 10 parking spaces. Required landscape islands shall encompass individual islands of landscaping and shall be at least six (6) feet wide. Required planter areas shall include Shade Trees, as identified on the City's approved Street and Shade Tree List (Appendix X), with a maximum spacing of 30 feet (see Section 12.08 Street Trees and Park Strip Design).
      iii. Minimum 15-foot-wide planting area adjacent to all public streets, which shall include trees with a maximum spacing of 30 feet. The planting areas may be partially or completely within the street right-of-way area. The specific trees used shall be selected from the City's approved Street and Shade Tree List (Appendix X). On streets included in the Shade Tree Master Plan, the trees selected shall include the mix of trees as prescribed by the Plan. Street and Shade trees must be planted within 30 feet of the public street curb, and wherever possible, 50% of the required Street and Shade Trees must be planted in the park strip.

iv. A minimum 10-foot-wide planting buffer and a six (6) foot wall is required where any multi-family use abuts another property. An exception to the six (6) foot wall requirement may be granted if the Development Review Committee finds that the multi-family use and adjacent uses are designed to create an integrated campus-like environment. In such cases the planter area shall include shade trees are spaced a maximum of 30 feet apart.

In cases where it is determined that the tree species in the approved Street and Shade Tree List (see Appendix X) would adversely impact utility lines and public infrastructure, the use of substitute tree species may be approved by the Community Development Director

v. No more than 30% of the required landscaping shall be irrigated turf grass. At maturity, multi-family and non-residential landscapes are required to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.

b. Professional Office and Non-residential or Non-commercial Uses
   i. Minimum of 20% on-site landscaping as a percentage of total site area.
   ii. Parking lots shall include landscape islands within the parking lot, with a minimum of 108 square feet of planter area for every 10 parking spaces. Required landscape islands shall be individual islands of landscaping and shall be at least six (6) feet wide. Required planter areas shall include Street and Shade Trees, as identified on the City's approved Street and Shade Tree List (Appendix X), with a maximum spacing of 30 feet (see Section 12.08 Street Trees and Park Strip Design for details).
   iii. Minimum 15-foot-wide planting area adjacent to all public streets, which shall include trees with a maximum spacing of 30 feet. The planter area may be partially or completely within the street right-of-way area. The specific trees used shall be selected from the City's approved Street and Shade Tree List (Appendix X). In locations included in the Shade Tree Master Plan, the selected trees shall include the mix of trees as prescribed by the Plan. Street and Shade Trees must be planted within 30 feet of the public street curb wherever possible, with 50% of the required Street and Shade Trees required to be planted in the park strip.
   iv. A minimum 10-foot-wide planting buffer is required where the site abuts a residential use or district. The planting buffer shall include trees with a maximum spacing of 30 feet. A six (6) foot wall shall be constructed where the site abuts a residential district. Where the use of the adjacent property is residential but zoned Commercial Office, Commercial 1, Commercial 2, Commercial Downtown, Urban Village Commercial, Business Park or Shopping Center, a solid fence (not chain link with slats or similar) may be constructed in place of the wall. In situations where adjacent sites are designed to function as an integrated campus, the Development Review Committee may consider alternatives to the six (6) foot wall.
   v. In cases where it is determined that utilizing tree species found in the approved Street and Shade Tree List (Appendix X) would adversely impact utility lines, the use of substitute tree species may be approved by the Community Development Director.

No more than 30% of the required landscaping shall be irrigated turf grass. At maturity, multi-family and non-residential landscapes are required to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.

c. Commercial Uses
    i. Minimum of 15% on-site landscaping as a percentage of total site area.
    ii. Parking lots shall include landscape islands within the parking lot, with a minimum of 108 square feet of planter area for every 10 parking spaces. Required landscape islands shall be individual islands of landscaping and shall be at least six (6) feet wide. Required landscape islands shall include Shade Trees as identified on the City's approved list of Street and Shade Trees, with a maximum spacing of 30 feet.
    iii. Minimum of 15-foot-wide planter area adjacent to all public streets, which shall include one Street Tree for each 30 feet of frontage along all public streets. The specific trees used shall be selected from the City's approved Street and Shade Tree List (Appendix X). For sites included in the Shade Tree Master Plan, the trees selected shall include the mix of trees as prescribed by the Plan. Street and Shade Trees must be planted within 30 feet of the public street curb, and wherever possible 50% of the required Street and Shade Trees must be planted in the park strip.
    iv. A minimum 10-foot-wide planting buffer where the site abuts a residential use or district. The planting buffer shall include trees with a maximum spacing of 30 feet. A six (6) foot high wall shall be constructed where the site abuts a residential district. Where the use of the adjacent property is residential but zoned Commercial Office, Commercial 1, Commercial 2, Commercial Downtown, Urban Village Commercial, Business Park or Shopping Center, a solid Fence (not chain link with slats or similar) may be constructed in place of the Wall. Also, in situations where adjacent sites are designed to function as an integrated campus, the Development Review Committee may consider alternatives to the six (6) foot high wall.
    v. In cases where it is determined that utilizing tree species found in the approved Street and Shade Tree List (Appendix X) would adversely impact utility lines, the use of substitute tree species may be approved by the Community Development Director.
    vi. In order to ensure landscape requirements are met and City utilities are not damaged, Spanish Fork City shall require applicants to provide a deposit with the construction of each non-residential project valued at $50,000 or more. The deposit amount shall be determined in the City budget and will be refunded to whomever paid the application fees containing that line item. If the required landscape cannot be installed prior to the issuance of the Certificate of Occupancy, a landscaping bond will be required for the estimated cost of installing the required landscape. Once the landscaping is complete and approved, the landscaping bond will be refunded to whomever paid it.
    vii. No more than 30% of the required landscaping shall be irrigated turf grass. At maturity, multi-family and non-residential landscapes are required to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.

ci. Industrial Uses

i. Minimum of 10% on-site landscaping as a percentage of total site area.
ii. Parking lots shall include landscape islands within the parking lot, with a minimum of 108 square feet of planter area for every 10 parking spaces. Required landscape islands areas shall be individual islands of landscaping and shall be at least six (6) feet wide. Required planting areas shall include Street and Shade Trees, as identified on the City's approved list of Street and Shade Trees, with a maximum spacing of 30 feet. The planter area may be partially or completely within the street right-of-way area.
iii. A minimum 15-foot-wide planting area shall be located adjacent to all public streets, which shall include trees with a maximum spacing of 30 feet. The specific trees used shall be selected from the City's approved Street and Shade Tree List (Appendix X). On streets included in the Street and Shade Tree Master Plan, the selected trees shall include the mix of trees as prescribed by the Plan. Street and Shade Trees must be planted within 30 feet of the public street curb and, wherever possible, 50% of the required Street and Shade Trees must be planted in the park strip.
iv. A minimum of 10-foot-wide planting area and six (6) foot high wall are required where a site abuts a residential use or district. The planter area shall include trees with a maximum spacing of 30 feet.
v. In cases where it is determined that utilizing tree species found in the approved Street and Shade Tree List (Appendix X) would adversely impact utility lines, the use of substitute tree species can be approved by the Community Development Director.
vi. No more than 30% of the required landscaping shall be irrigated turf grass. At maturity, multi-family and non-residential landscapes are required to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.

6. Water-Conserving Landscape Design Requirements for New and Rehabilitated Developer/Contractor Installed Landscaping for Residential Subdivisions, Professional Office, Public, Commercial and Industrial uses
   a. General Water-conserving Design Considerations
      i. Plants selected for landscape areas shall be well-suited to the microclimate and soil conditions at the project site. Plants with similar water needs shall be grouped together as much as possible.
      ii. Areas with slopes greater than twenty five percent (25%) shall be landscaped with deep-rooting, water-conserving plants for erosion control and soil stabilization. No turf grasses or overhead irrigation is allowed on slopes greater than 25%.
      iii. Exemptions. Sports fields, turf play areas within public parks, school grounds, golf courses and cemeteries may be deemed exempt from the landscape water allowance limitations of this chapter with approval by the Community Development Director. All other portions of this chapter shall apply.
      iv. Mulch. After the completion of planting, all irrigated non-turf areas shall be covered with a minimum three-inch (3") to four-inch (4") layer of mulch to retain water, inhibit weed growth, and moderate soil temperature. Nonporous material shall not be placed under the mulch. Drip irrigation is required where turf grasses are not being utilized.

v. Soil Preparation. Soil preparation will be suitable to provide healthy growing conditions for the plants and to encourage water infiltration and penetration. Soil preparation shall include scarifying the soil to a minimum depth of six inches (6") and amending the soil with organic material as per recommendations of the landscape designer/ landscape architect based on the required soils report.

b. Plant Selection

The Localscapes® Program, the Salt Lake City Plant List and Hydrozone Schedule 2013 prepared by Salt Lake City Public Utilities, and the Utah State University Center for Water-efficient Landscaping shall be primary references for the design and installation of water-conserving plants and landscapes in Spanish Fork City (see Spanish Fork Water-Conserving Landscape Online Resource List at (add web/reference link).

c. Documentation

i. Landscape Plan Documentation Package

A copy of a landscape plan documentation package shall be submitted to and approved by the City prior to issuance of any permit. The landscape plan documentation package shall be prepared by a professional landscape architect. The irrigation plan shall be prepared by an irrigation designer certified by the Irrigation Association and/or a professional landscape architect.

ii. The landscape plan documentation package shall consist of the following items. A sample documentation set is provided in Appendix X.

a. Project Data Sheet. The project data sheet shall contain:

- project name and address;
- applicant or applicant agent's name, address, phone and fax number;
- landscape architects name, address, phone and fax number; and
- landscape contractor's name, address, phone.

b. Planting Plan: A detailed planting plan shall be drawn at an appropriate scale suitable for identifying the location of all plant materials.

c. Irrigation Plan: A detailed irrigation plan shall be drawn at the same scale as the planting plan and shall contain:

- layout of the irrigation system;
- a legend summarizing the type and size of all components of the system, including manufacturer name and model numbers;
- static water pressure in pounds per square inch (psi) at the point of connection to the public water supply;
- flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers; and;
- installation details for irrigation components;
- inclusion of a WaterSense labeled smart irrigation controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions. All controllers shall be equipped with automatic rain delay or rain shut-off capabilities.

d. Grading Plan: A grading plan shall be drawn at the same scale as the planting plan and shall contain:
   - property lines and street names, existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements, and
   - existing and finished contour lines and spot elevations for the proposed site improvements.

e. Soils Report: A soils report will be provided describing the depth, composition, and bulk density of the topsoil and subsoil at the site, in addition to recommendations for soil amendments. The planting plan shall incorporate the recommendations of the soils report into the planting specifications.

f. Landscape Water Allowance: The Maximum Applied Water Allowance shall be calculated using the following equation: MAWA = (ETo) (0.62)(1.15)[(0.8 x LA) + (0.3 x SLA)], where:
   - MAWA = Maximum Applied Water Allowance (gallons per year);
   - ETo = Reference Evapotranspiration (inches per year) as calculated from weather data at the closest available weather station. The ETO in the Spanish Fork region is 24.68;
   - 0.62 = Conversion Factor (to gallons);
   - 1.15= Delivery Inefficiency Factor (sprinkler system uniformity etc.);
   - 0.8 = ET Adjustment Factor (ETAF), plant factor or crop coefficient (.8 standard for cool season turf) LA = Landscape Area including SLA (square feet);
   - 0.3 = Additional Water Allowance for SLA. SLA = Special Landscape Area (square feet).

g. Irrigation Schedule: A monthly irrigation schedule shall be provided that covers the initial 120-day plant establishment period adjusted for seasonal variations. This schedule shall consist of a table with the following information for each valve:
   - plant type (turf, trees, low water use plants);
   - irrigation type (sprinklers, drip, bubblers);
   - flow rate in gallons per minute;
   - precipitation rate in inches per hour (sprinklers only);
   - run times in minutes per day;
   - number of water days per week; and
   - cycle time to avoid runoff.

## E. Landscape Requirements for all Project Types

1. General Requirements
   a. All irrigation systems shall be appropriate for the designated plant material to achieve the highest water efficiency. Drip irrigation and bubbler systems shall be used in all landscape are except those that contain lawn. Drip irrigation systems shall be equipped with a pressure regulator, filter, flush-end assembly, and any other appropriate components.
   b. Each irrigation valve shall irrigate landscaping with similar site, slope and soil conditions, and plant materials with similar watering needs. Lawn and planting beds shall be irrigated

on separate irrigation valves. In addition, drip emitters and sprinklers shall be placed on separate irrigation valves.

c. At least 3-4 inches of mulch, permeable to air and water, shall be used in planting beds to control weeds and improve the appearance of the landscaping.
d. At maturity, single-family landscapes are recommended to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.
e. At maturity, multi-family and non-residential landscapes are required to have enough plant material (perennials and shrubs) to create at least 50% living plant cover at maturity at the ground plane, not including tree canopies.
f. Lawn should not be installed in park strips, paths, or on slopes greater than 25% or 4:1 grade.

2. Trees
   a. Purpose

      The planting and growth of healthy trees contribute to making Spanish Fork an attractive and healthy community. Planting the correct type of tree in the right setting is an important factor for ensuring Spanish Fork will continue to be an attractive and resilient city in the future. Landscape design and implementation practices are therefore required to ensure existing trees are preserved to the greatest degree possible, and that newly planted trees survive and thrive. This is particularly important for street trees and trees located in the highly-visible front yards of all properties in the city. The purpose of this section is to define permitted and prohibited trees for use in Spanish Fork and to identify the standards that apply to the selection and planting of correct trees in different locations.

   b. Tree Selection and Standards

      Planting the right type of tree in the correct setting is an important factor for ensuring that Spanish Fork will continue to be an attractive and resilient city in the future. This is a function of the specific location where the tree is planted, and the size of the soil/planting area, as described below and detailed in the Spanish Fork Approved Street and Shade Tree List (Appendix X). In addition to those requirements, tree restrictions may be subject to requirements of other government agencies (UDOT, for example) and utilities with below and above-ground electrical, gas and cable services. In order to accomplish this, the following standards and practices shall be required.

      i. Selection and planting of street trees contained in the Spanish Fork Approved Street and Shade Tree List (Appendix X).
      ii. Existing trees should be preserved whenever possible.
      iii. When removing vegetation and plantings around the trunks and bases of existing trees when installing water efficient landscapes, special care should be taken to not damage the roots of existing trees.
      iv. Newly planted trees will need additional water during the first years of planting in order to become established. In addition to properly designed irrigation systems, other methods such as drip hoses and “gator bags” should be used to provide more water for new trees.

v. Street trees shall be selected based on a combination of their approximate size at maturity, Tree Size at maturity as follow:
   - Large Trees – 45 feet tall or greater at maturity;
   - Medium Trees – 30 to 45 feet tall at maturity;
   - Small Trees – Less than 30 feet tall at maturity.

vi. Nursery Stock Specifications - trees should be grown in a recognized nursery in accordance with good horticultural practice (American Association of Nurseryman Standards, ANSI Z60.1, as amended, or similar). Trees should be healthy, vigorous stock grown under climatic conditions similar to the locality of the project and free of disease, insects, eggs, larvae, and defects such as knots, sun-scale, injuries, abrasions, or disfigurement.

vii. Minimum Tree Size: the minimum size of all deciduous trees shall be 2-inch caliper minimum, measured as provided in the American Association of Nurseryman Standards, ANSI Z60.1, as amended, or similar. Evergreen trees shall be not less than six (6) feet in height, measured from ground level, unless approved in writing by the Community Development Director.

viii. Permitted Trees - General
   - Large Planting Areas: Select from the Large Tree List. Planting area width shall be a minimum of 10 feet wide, which is generally sufficient to accommodate large trees with maximum size, shade and energy conservation benefits, while providing space for root and branch growth that will not conflict with site features;
   - Medium Planting Areas: Select from the Medium Tree List. Planting area width shall be at least 5 to 10 feet, which is generally sufficient to accommodate size trees while providing space for root and branch growth that will not conflict with site features;
   - Small Planting Areas: Select trees from the Small Tree List. Planting area width shall be no smaller than 4 feet, which is considered the absolute minimum space necessary to accommodate small size trees.

c. Prohibited Tree List
   i. See Prohibited Tree List (Appendix X).

d. Street Trees and Park Strip Design
   i. See Spanish Fork Approved Street and Shade Tree List (Appendix X) and other requirements.
   ii. Park strips shall be designed as part of the adjacent use and landscape treatment.

3. Other Standards, Requirements and Maintenance Considerations

a. Use of Artificial Turf as a Ground Cover Not Permitted
   Artificial turf is a lawn substitute composed of individual artificial blades of grass that attempt to emulate natural turf in look and color. The use of artificial turf in park strips, front yards and side yards that are visible from the street does not meet the goals of creating an attractive and livable city and are not permitted.

b. Zero-scape Not Permitted
   Zero-scape is a landscape design method that eliminates the need for irrigation water by eliminating plants from the landscape. Zero-scape landscapes are typified by yards and

landscape areas covered with pavement, other paving and hardscape materials, gravel, rock and stone. Zero-scape landscapes treatments in park strips, front yards and side yards that are visible from the street do not meet the goals of creating an attractive and livable city and are not permitted in Spanish Fork City.

c. large shrubs at maturity shall be five (5) gallons when planted. All smaller shrubs, perennials and decorative grasses shall be a minimum of one (1) gallon size when planted.
d. larger shrubs at maturity shall be five (5) gallons when planted. All smaller shrubs, perennials and decorative grasses shall be a minimum of one (1) gallon size when planted.
e. Planting areas shall be separated from parking areas and driveways by a raised six (6) inch concrete curb.
f. Landscaped areas shall be maintained in a neat, clean, and orderly condition. This includes the removal of litter, proper pruning, lawn mowing, weeding, dead-heading of perennial plants, fertilizing, replacement of dead plants, and regular watering of all landscaped areas.
g. The Community Development Director may waive, at their discretion, the size requirements for required landscaping provided that the developer provides financial assurance that the landscaping will survive or be replaced after the first two growing seasons. Trees and bushes shall be replaced after the first two (2) growing seasons if they die or fail to reach the minimum required size by October 15 of the second year after the landscaping was installed and inspected by the City.

G. Plan Review, Construction Inspection and Post-Construction Monitoring

1. As part of the site plan or subdivision application, a copy of the required landscape plan documentation package shall be submitted to the city for review and approval before a permit shall be issued and construction begins .
2. All landscape plan documentation packages submitted must be stamped by a professionally licensed landscape architect (PLA). The irrigation plan must be prepared by and stamped by an IA certified irrigation designer or PLA.
3. All landscape irrigation systems should be installed by an IA certified irrigation contractor. The certified person representing the contracting firm shall be directly involved with the project and complete and document at least weekly site visits.
4. All installers, designers and auditors shall meet State and local license, insurance, and bonding requirements, and be able to show proof of such.
5. During construction, site inspection may be performed by the Community Development Department.
6. A guarantee of the installation of landscaping as approved shall be made to the City in the same manner as that required for any other required improvement by including in a bond, escrow or letter of credit, the estimated cost of the landscaping work at the time of building permit issuance, or is deemed satisfactory by the Planning Commission for all small developments, by means of a financial guarantee for landscaping remaining uncompleted at the time of application for final building inspection and power to panel and/or occupancy permit. Such financial guarantee shall specify the maximum length of time for completion of the remaining landscaping.

7. In order to ensure landscaping requirements are met and City utilities are not damaged, Spanish Fork City shall require applicants to provide a deposit with the construction of each non-residential project valued at $50,000 or more. The deposit amount shall be determined in the City budget and will be refunded to whomever paid the application fees containing that line item. If the required landscaping cannot be installed prior to the issuance of the Certificate of Occupancy, a landscaping bond will be required for the estimated cost of installing the required landscaping. Once the landscaping is complete and approved, the landscaping bond will be refunded to whomever paid it.
8. Spanish Fork City reserves the right to perform site inspections at any time before, during or after the irrigation system and landscape installation, and to require corrective measures if requirements of this chapter are not satisfied.

### H. Links and References

See add reference or link for a comprehensive matrix and list of specific and relevant online websites, reports and references that to support this chapter of the Zoning Ordinance.

## 15.4.16.140 Fencing and Clear Vision Area

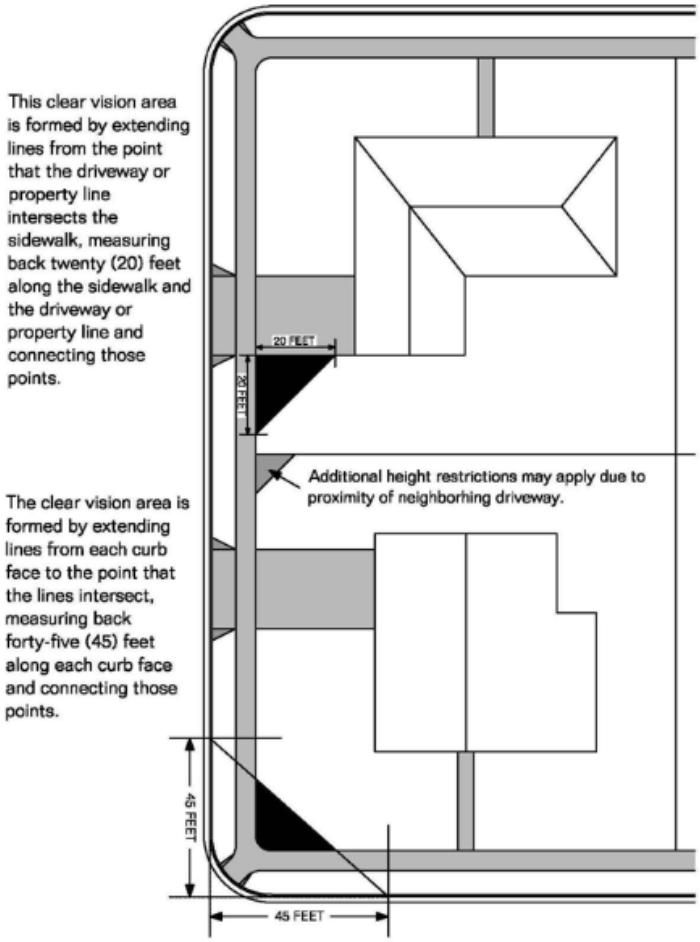
### A. General Fencing Requirements

1. A Building Permit is required for all fences that are taller than three (3) feet. No fee is charged for Fence Permits unless the Permit is required by the Building Code.
2. The maximum height of a fence is six (6) feet in all zoning districts; fence pillars are not to exceed six and one-half (6 1/2) feet in height. The Council may waive the height requirement at its sole discretion.
3. The maximum height of a solid fence within the front yard setback area is three (3) feet. Substantially open fences such as chain link, or wrought iron may be four (4) feet high.
    a. A residential lot with over two hundred (200) feet of frontage and that is a minimum of twenty thousand (20,000) square feet in areas, may obtain permission from the Community Development Director to locate a solid six (6) foot tall fence within a front yard. The fence must maintain a minimum setback of ten (10) feet from the front property line.
    b. A fence located within the front yard setback shall not be located in front of the residence, but must be to the sides of the residence. Clear vision requirements shall still apply.
    c. No more than fifty (50) percent of the lot frontage shall have said fencing within the front yard setback.
    d. The area between said fencing and the property line shall be landscaped within one (1) year of installing said fencing.
4. Barbed wire fencing is allowed in A-E, R-R, I-1 and I-2 districts.
5. Razor wire and other similar type fencing are allowed in C-2, I-1 and I-2 districts when located above a height of six (6) feet, subject to DRC approval. Additional screening of any such fence with plant materials may be required.
6. Fences must be built with a minimum setback of three (3) feet around the following utilities: fire hydrants, water meters (culinary and irrigation), telephone pedestals, power boxes and cable boxes.

### B. Restrictions for Clear Vision Area

1. The clear vision area is formed by extending lines from each curb face to the point that the lines intersect, measuring back 45 feet along each curb face and connecting those points. Fencing, planting and other obstacles are restricted within this area as follows:
    a. No solid fence shall exceed a height of three (3) feet, measured from the curb. Open fences such as chain link and wrought iron may be as tall as four (4) feet in the clear vision area, measured from the curb.
    b. Trees in park strips shall be pruned to maintain a clear area below 14 feet in height.
    c. Trees on private property must be pruned to maintain a clear area below eight (8) feet in height.
    e. Other site obscuring obstacles of that are three (3) feet or taller may not be placed in the clear vision area.
2. A second clear vision area is also required at each driveway or where the rear of a corner lot adjoins an interior lot's driveway. This clear vision area is formed by extending lines from the point that the driveway or property line intersects the sidewalk, measuring back 20 feet along

the sidewalk and the driveway or property line and connecting those points. The same restrictions for landscaping, fencing and obstacles apply in this area.




## 15.4.16.150 Solid Waste Receptacle Areas

Multi-family dwellings, and non-residential uses shall provide solid waste receptacle areas screened on three (3) sides with a masonry wall having a height at least one (1) foot above any receptacle or container. A steel site-obscuring gate at least six (6) feet in height is required. This requirement may be waived or modified by the DRC when it is determined that a “roll-out” residential style container is sufficient for the type of operation proposed, or, the screen wall requirement may be waived when solid waste receptacle areas are sufficiently screened or otherwise located within the project to not be visible by or adversely impact adjoining properties.

## 12.08 Street Trees and Park Strip Design

A. Intent
B. Applicability
C. Park Strip Design
D. Permitted Trees in Park Strips
E. Street Tree Requirements
F. Shade Tree Commission
G. Violations

### A. Intent

To establish consistent and appropriate planting of trees and plant materials within public street rights-of-way to create a verdant and attractive tree canopy, provide environmental benefit and establish a unified sense of identity for all new streets.

### B. Applicability

The requirements herein apply to all new development requiring regulating plan approval.

### C. Park Strip Design

1. See Section 15.4.16.130 Landscape Regulations for landscape submittal and design requirements.
2. The design and treatment of all park strips associated with any property or project shall be addressed as part of the overall landscape design of the associated property.

### D. Permitted Trees in Park Strips

1. See the Spanish Fork approved Street and Shade Tree List (Appendix X) for street trees permitted in park strips. Note that the selection of trees should be based on the size of the trees (small, medium and large) as determined by the width of the park strip.
2. All other trees are prohibited in the park strip.
    a. Street Tree Selection and Standards

    Planting the right type of tree in the correct setting is an important factor for ensuring that Spanish Fork City will continue to be an attractive and resilient city in the future. This is a function of the specific location where the tree is planted, and the size of the soil/planting area, as described below and detailed in the Spanish Fork Approved Street and Shade Tree List (Appendix X). In addition to those requirements, tree restrictions may be subject to requirements of other government agencies (UDOT, for example) and utilities with below and above-ground electrical, gas and cable services. In order to accomplish this, the following standards and practices shall be required.

    i. Limit the selection of street trees to the lists contained in the Spanish Fork Approved Street and Shade Tree List (Appendix X).
    ii. Existing trees should be preserved whenever possible.
    iii. When removing vegetation and plantings around the trunks and bases of existing trees when installing water efficient landscapes, special care should be taken to not damage the roots of existing trees.
    iv. Newly planted trees will need additional water during the first years of planting in order to become established. In addition to properly designed irrigation systems, other

methods such as drip hoses and “gator bags” should be used to provide more water for new trees.

v. Street trees shall be selected based on a combination of their approximate size at maturity, Tree Size at maturity as follow:
   - Large Trees – 45 feet tall or greater at maturity;
   - Medium Trees – 30 to 45 feet tall at maturity ;
   - Small Trees – Less than 30 feet tall at maturity.

vi. Nursery Stock Specifications - trees should be grown in a recognized nursery in accordance with good horticultural practice (American Association of Nurseryman Standards, ANSI Z60.1, as amended, or similar). Trees should be healthy, vigorous stock grown under climatic conditions similar to the locality of the project and free of disease, insects, eggs, larvae, and defects such as knots, sun-scale, injuries, abrasions, or disfigurement.

vii. Minimum Tree Size: the minimum size of all deciduous trees shall be 2-inch caliper minimum, measured as provided in the American Association of Nurseryman Standards, ANSI Z60.1, as amended, or similar. Evergreen trees shall be not less than six (6) feet in height, measured from ground level, unless approved in writing by the Community Development Director.

viii. Permitted Trees - General
   - Large Park Strips: Select from the Large Tree List. Planting area width shall be a minimum of 10 feet wide, which is generally sufficient to accommodate large trees with maximum size, shade and energy conservation benefits, while providing space for root and branch growth that will not conflict with site features;
   - Medium Park Strips: Select from the Medium Tree List. Planting area width shall be at least 5 to 10 feet, which is generally sufficient to accommodate size trees while providing space for root and branch growth that will not conflict with site features;
   - Small Park Strips: Select trees from the Small Tree List. Planting area width shall be no smaller than 4 feet, which is considered the absolute minimum space necessary to accommodate small size trees.

E. Street Tree Requirements

1. No tree may be planted within thirty feet (30’) of intersecting sidewalk corners.
2. No tree may be planted within ten feet of any water meter, electric meter, junction box, transformer, other electrical facility, or utility pole.
3. Only small trees should be planted in any area where the potential exists that limbs may grow into power or phone lines. Trees which interfere with public utilities will be trimmed at the owner's expense.
4. Clear Branch Height: Minimum clear branch height is eight feet (8').
5. Street Tree Spacing: Street trees shall be planted as follows:
   a. Number: each lot is required to have one tree for every thirty feet (30') of street frontage with a minimum of one street tree per street frontage.
   b. Spacing: Large Trees must be spaced a minimum of thirty (30) and a maximum of sixty feet (60') on center.

c. Medium Trees must be spaced a minimum of twenty (20) and a maximum of thirty feet (30') on center.
d. Placement: no trees may be planted closer to any curb or sidewalk than as follows unless a permeable surface is provided:
    i. Small and Medium Trees: three feet (3');
    ii. Large Trees: four feet (4').
e. Limited distance between curb and sidewalk: Where the distance from the back of the curb to the edge of the right-of-way or property line is less than nine feet (9') with a sidewalk, applicant shall work with the City staff to determine the appropriate tree species.
f. City Manager or designee may waive the street tree requirement in park strips less than six feet (6').

6. Tree wells and grates: In commercial districts, where the sidewalk extends from the back of curb to the property line, tree wells shall be utilized.
7. For tree wells adjacent to sidewalks five feet (5') in width or less, an open pit is not permitted. The opening must be covered with a tree grate or pervious pavement.
8. The opening in a tree grate for the trunk must be expandable.

F. Shade Tree Commission

(Ord. No. 16-98, Enacted, 12/01/1998) (Ord. 05-07, Repealed 12.08.030, February 20, 2007)

G. Violations

Any person violating 12.08.010 or 12.08.020 of this chapter shall be guilty of a Class C Misdemeanor. Removal of the offending tree shall be grounds for dismissal of any charges. (Ord. No. 16-98, Enacted, 12/01/1998)

## 15.1.04.020 Definitions

**"Activity Zones"**: a Localscapes® design principle that establishes specific areas of the home landscape for recreation or similar functions such as storage areas, fire pits, vegetable gardens and play areas (see Localscapes®).
**"Active Recreation Areas"**: areas of the landscape such as parks, sports fields and play areas dedicated to active play, where lawn is an appropriate landscape surface.
Artificial Turf: A ground cover or surface consisting of synthetic fibers made to look like natural grass.
**"Central Open Space"**: a Localscapes® design principle that establishes specific areas of the home landscape as unobstructed focal point and a primary use area.
**"Certified Irrigation Designer"**: a person certified by the Irrigation Association to prepare irrigation system designs, and/or a Professionally Licensed Landscape Architect (PLA) in the State of Utah.
**"Drought Tolerant Plant"**: a plant that can survive without irrigation for limited periods of time. The application of supplemental irrigation water may be desirable during extended drought periods for improved appearance, disease resistance and survival rates (see Non-Drought Tolerant Plant).
**"Evapotranspiration"**: the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time, expressed in inches per day, month or year.
**"Evapotranspiration Rate (ETo)"**: the amount of water lost from a cropped surface during the growing season as expressed in inches. For the purposes of this ordinance, ETo reflects the 30-year average for the Spanish Fork area during the 8-month growing season March through October, which is 24.68.
**"Gathering Areas"**: a Localscapes® design principle that establishes specific areas of the home landscape as patios, gazebos, arbors, decks, and similar spaces suitable for congregating and gathering.
**"Ground Cover"**: material planted in such a way as to form a continuous cover over the ground that can be maintained at a height not more than twelve inches (12").
**"Hardscape"**: durable and generally hard landscape materials such as concrete, wood, pavers, stone and compacted crushed stone.
**"Irrigated Landscape Area"**: all portions of a development site to be improved with planting and irrigation. Natural open space areas shall not be included in the irrigated landscaped area.
Landscape Irrigation Auditor:(LIA): A person certified by the Irrigation Association to conduct a landscape irrigation audit.
**"Landscape Water Allowance"**: for design purposes this is the upper limit of annual applied water for the established landscaped area. It is based upon the local reference evapotranspiration rate, the ETo adjustment factor and the size of the landscaped area.
**"Lawn"**: ground that is covered with grass or turf that is regularly mowed and irrigated (see Turf).
**"Localscapes®"**: a water-conserving design approach developed by Utah horticulturists, landscape architects, landscape experts, irrigation experts and members of the water industry that simplifies water-conserving design into a five-step process that is easy to implement by non-professionals and appropriate for use in Utah. Localscapes® is supported by the Spanish Fork City and is particularly appropriate for single-family and similar residential, twin home and similar yards and landscapes (see Water-conserving Landscape, Water-wise Landscape and Xeriscape).
**"Mulch"**: any material such as bark, wood chips, crushed stone, chat or similar materials left loose and applied to the soil for the purpose of preventing evapotranspiration.

**"Park Strip"**: a typically narrow landscaped area located between the back-of-curb and sidewalk or fence line in cases where no sidewalk exists. The application of water-conserving landscape treatments are generally encouraged in such locations.
**"Paths and Walkways"**: a Localscapes® design principle that establishes specific areas of the home landscape as routes that link other landscape areas and features.
**"Planting Bed"**: a Localscapes® design principle that establishes portions of the home landscape for the planting of regionally-appropriate and water-conserving plants, trees, shrubs, perennials, ornamental grasses and groundcovers.
**"Turf"**: ground that is covered with grass or lawn that is regularly mowed (see Lawn).
**"Water-conserving Landscape"**: see Water-wise Landscape and Xeriscape.
**"Water-conserving Plant"**: a plant that uses less water than standard plants.
**"Water-wise Landscape"**: (see Localscapes®, Water-conserving Landscape and Xeriscape)
**"Xeriscape"**: a type of landscape design that reduces the need for water. Xeriscape is also known as Water-conserving and Water-wise landscape design that is permitted and encouraged in Spanish Fork City. Localscapes® is a type of xeriscape design (see Localscapes®, Water-conserving Landscape and Water-wise Landscape).
**"Zero-scape"**: a type of landscape design that eliminates the need for irrigation water by eliminating plants from the landscape and utilization of gravel, rock and stone in place of plants (see Localscapes®, Water-conserving Landscape, Water-wise Landscape and Xeriscape).

attachments: Street and Shade Tree List
Residential Guidebook

## LIST A - SMALL STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maple, Trident** | Acer buergerianum | Streetwise | 20-30' + | 15-25' | 5 | high | high | low | medium | oval/round | small green-yellow in spring, insignificant | green samaras | orange-red | slow growing |
| **Maple, Tatarian*** | Acer tataricum | "Hot Wings, Pattern Perfect, Rugged Charm" | 20-25' + | 15-20' | 3 | medium | high | medium | high | oval to round | white clusters in spring | red samaras | yellow-red | showy seeds |
| **Maple, Shantung** | Acer truncatum | "Pacific Sunset, Norweigan Sunset," | 20-30' + | 20-30' | 4 | medium | medium | medium | medium | rounded to oval | pale yellow insignificant | samaras | "yellow, orange, red, purple" | heat tolerant |
| **Maple, Shantung** | Acer truncatum | Ruby Sunset | 20-25' + | 18-20' | 4 | medium | medium | medium | medium | "broad oval to round" | pale yellow insignificant | samaras | deep red | heat tolerant, glossy green leaves |
| **Netleaf Hackberry *** | Celtis reticulata | | 20-25' + | 20-25' | 3 | medium | high | medium | high | "rounded spreading" | "green in spring, insignificant" | orange-red | yellow | very tolerant to adverse growing conditions |
| **Eastern Redbud *** | Cercis canadensis | | 15-25' + | 20-30' | 4 | low | high | low | high | irregular | pink/purple before leaves | "small, brown pod 2-3"" long " | yellow | tolerant of partial shade, vibrant in the spring |
| **Fringetree, Chinese *** | Chionanthus retusus | | 20-25' | 20-25' | 5 | low | low | low | high | broadly oval | large green-white clusters in spring, fragrant | 1/2" - 1" blue-purple fruit | yellow | light brown exfoliating young bark |
| **Fringetree *** | "Chionanthus virginicus" | | 20-25' | 20-25' | 3 | medium | medium | high | medium | spreading oval | green-white in spring, fragrant | 1/2" - 3/4" blue-black fruit | yellow | stunning when in full bloom |
| **Hawthorn *** | Crataegus laevigata | Pauls Scarlet, Crimson Cloud | 20-25' + | 15-20' | 4 | medium | medium | medium | high | broad round | double rose red | red edible | no fall color | vibrant in the spring |
| **Hawthorn, Winter King *** | Crataegus viridis | Winter King | 20-30' + | 20-30' | 4 | medium | high | medium | high | wide vase | white in spring, showy | "bright red edible" | purplish red | tolerant of urban pollution |
| **Hawthorn, Lavalle *** | Crataegus x lavalleli | Lavelle | 20-30' + | 15-20' | 4 | medium | high | medium | high | dense oval | white in spring | red edible | coppery red | lustrous green leaves, persistent fruit |
| **"Hawthorn, Thornless Cockspur *"** | Cratageus crus-galli | Thornless Cockspur | 20-30' + | 20-35' | 3 | medium | high | medium | high | rounded spreading | white in spring | red edible | orange-scarlet | persistent fruit in to winter, thornless |
| **Maackia** | Maackia amurensis | | 20-30' + | 15-20' | 3 | medium | medium | medium | high | rounded vase | white fragrant in summer | flat see pods | yellow | tolerant of urban conditions |
| **Flowering Crabapple *** | Malus sp. | "Spring Snow, Snow Drift, Sargent, Zumi" | 15-25' + | 15-25' | 4 | high | medium | medium | high | rounded to oval | varies with cultivar | "fruit varies with cultivar" | yellow | fruitless or persistent fruit only, showy in spring |

## LIST A - SMALL STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parrotia** | Parrotia persica | Vanessa | 20-30' | 15-20' | 4 | medium | high | medium | high | upright vase | insignificant | insignificant | yellow-orange-red | slow growing |
| **Flowering Cherry, Kwanzan** | Prunus serrulata | Kwanzan | 20-25' + | 15-20' | 5 | medium | medium | low | medium | vase shaped | double deep pink | "sterile flowers do not produce fruit" | yellow | blossoms are showy in the spring |
| **"Flowering Cherry, Akebono *"** | Prunus x yedoensis | Akebono | 20-25' + | 20-25' | 5 | medium | medium | low | medium | spreading | double, light pink | black purple | yellow | blossoms are showy in the spring |
| **Flowering Pear, Korean Sun** | Pyrus fauriei | Korean Sun, Westwood | 10-15' + | 15-Oct | 4 | medium | medium | moderate | high | compact rounded | white in spring | "yellow green small" | red-purple | better branch attachment than most flowering pears |
| **Flowering Pear, Jack** | Pyrus calleryana | Jaczam Jack | 15-20' + | 10-12' | 5 | medium | high | medium | high | compact oval | white | "yellow green small" | yellow | ideal under utility lines |
| **Flowering Pear, Prairie Gem** | Pyrus ussuriensis | Prairie Gem, MorDak | 20-25' + | 20-25 | 3 | medium | high | medium | high | oval to rounded | white | "yellow green small" | yellow | hardy flowering pear cultivar |
| **Lilac, Peking Lilac *** | Syringa pekinensis | China Snow, Summer Charm | 20-25' + | 15-20' | 3 | medium | medium | low | high | rounded | "creamy white fragrant dense clusters" | dry capsules | yellow | attractive exfoliating, amber colored bark |
| **Lilac, Japanese Tree Lilac *** | Syringa reticulata | Ivory Silk | 20-25' + | 15-20' | 3 | low | medium | medium | high | "upright oval/ rounded" | "creamy white fragrant dense clusters" | dry capsules | yellow | tolerant of urban conditions |
| **Linden, Summer Sprite** | Tilia cordata | Summer Sprite Linden | 18-20' + | 12-15' | 3 | low | medium | medium | high | dense pyramidal | tiny yellow fragrant in spring | "gray nutlets with bracts" | yellow | perfect for confined urban spaces |
| **Zelkova, City Sprite *** | Zelkova serrata | City Sprite | 20-24' + | 15-18' | 5 | medium | high | low | medium | "compact oval to vase" | insignificant | insignificant | yellow | perfect for confined urban spaces |
| **Zelkova, Wireless *** | Zelkova serrata | Wireless | 20-24' + | 30-35' | 5 | medium | high | low | medium | "flat topped broad spreading" | insignificant | insignificant | reddish orange | ideal under utility lines, better in 5' parkstrips |

**Notes:**
All parkstrip trees must be a single trunk form unless approved by Community Development Director.
Other tree species may be appropriate with approval from the Community Development Director.

* Proven Performer
+ Trees to be planted under utility lines

**References:**
The Morton Arboretum http://www.mortonarb.org/trees-plants/search-trees/search- all-trees-and-plants
Missouri Botanical Gardens http://www.missouribotanicalgarden.org/plantfinder/plantf
Utah State University Cooperative Extension Tree Browser https://treebrowser.org
Cornell Woody Plants Database http://woodyplants.cals.cornell.edu/home
J. Frank Schmidt https://www.jfschmidt.com/indtroductions

## LIST B - MEDIUM STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maple, Hedge** | Acer campestre | Metro Gold, Queen Elizabeth | 25-35' | 25-35' | 5 | high | medium | medium | high | "oval/round dense" | small, green-yellow in spring, insignificant | green samaras | yellow | doesn't tend to get leaf scorch |
| **Maple, State Street** | Acer miyabei | State Street, Rugged Ridge | 30-45' | 30-35' | 4 | low | high | medium | high | "oval to rounded" | small, green-yellow in springs, insignificant | green samaras | yellow-orange | hardy, tough, pest free maple |
| **Euorpean Alder** | Alnus glutinosa | | 40-50 | 20-40' | 3 | low | medium | high | medium | pyramidal | drooping male catkins | "small woody cones" | none | tolerates a wide range of soils |
| **Hornbeam, Fastigate** | Carpinus betulus 'Fastigiata' | Fastigiata | 30-40' | 20-30 | 4 | low | medium | medium | medium | oval vase | catkins | clusters of small nutlets in bracts | yellow-orange | smoth gray bark with fluting |
| **Yellowood *** | Cladrastis kentukea | American, Perkins Pink | 30-50' | 30-50' | 4 | medium | medium | medium | high | round | "large hanging fragrant white or pink flowers" | flat papery pod | yellow | very showy flowers in late spring, smooth gray bark |
| **Turkish Filbert** | Corylus colurna | | 40-50' | 15-35' | 4 | low | medium | medium | high | pyramidal | insignificant | edible nut | | tolerant tree once estabilshed |
| **Hardy Rubber Tree** | Eucommia ulmoides | Emerald Point | 35-40' | 15-20' | 4 | medium | high | high | high | narrow oval | insignificant | winged seed | none | "tolerates a wide range of soil conditions, glossy green leaves" |
| **Ginkgo *** | Ginkgo biloba | "Autumn Gold, Princeton Sentry, Magyar, Colonade" | 40-45' | 15-30' | 4 | medium | high | medium | high | pyramidal | insignificant | fruitless | yellow-golden | "tolerant of a wide range of soil conditions, adapts well to urban environments" |
| **Honeylocust *** | Gleditsia triacanthos inermis | "Street Keeper, Skyline, Shademaster, Northern Acclaim, Sunburst, Perfection" | 35-50' | 20-40' | 3 | high | high | high | high | pyramidal to round dependent on cultivar | insignificant yet smell very sweet | reported as fruitless | golden yellow | small fine leaves give filtered shade |
| **Goldenrain *** | Koelreuteria paniculata | | 30-40' | 30-40' | 5 | high | high | medium | high | round | "very showy bright yellow flowers in upright clusters" | "black seed in papery capsule" | yellow-orange | tough adaptable tree |
| **"Osage Orange, White Shield"** | Maclura pomifera | White Shield, Wichita | 30-25' | 30-35' | 4 | medium | high | medium | high | "upright spreading" | none | none | yellow | tough tolerant, thornless, fruitless |

## LIST B - MEDIUM STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mulberry, Fruitless** | Morus alba | Fruitless Mulberry | 30-50' | 30-50' | 4 | high | high | high | high | "wide spreading" | small yellowish green | fruitless | none | tough tolerant tree |
| **Hophornbeam** | Ostrya virginiana | Autumn Treasure, Sun Beam | 25-40' | 20-30' | 3 | medium | medium | low | high | "oval to rounded" | brown-green in summer | hop-like sac | yellow | "mature smooth gray bark exfoliates to reveal orange inner bark" |
| **Amur Corktree *** | Phellodendron amurense | Macho, Eye Stopper, His Majesty | 30-45' | 30-60' | 3 | medium | high | medium | high | rounded broad spreading | non showy yellow-green | pea sized black | yellow | once established very tolerant to urban conditions |
| **Mayday Tree** | Prunus padus | Merlot | 30-40' | 18-30' | 3 | medium | medium | low | medium | "pyramidal to round" | showy white pendulous | pea sized black | yellow | showy in spring |
| **Flowering Pear** | Pyrus calleryana | Aristocrat, Autumn Blaze, Capital,Chanticleer, Trinity | 30-40' | 12-28' | 5 | medium | high | medium | high | upright to pyramidal | white in spring | small fruit | redish | good fall color |
| **Littleleaf Linden** | Tilia cordata | Greenspire | 40' | 35' | 3 | low | medium | medium | high | pyramidal | pale yellow in spring | nutlet | yellow | flowers are fragrant |
| **Linden, Crimean** | Tilia x euchlora | | 40-50 | 20-30' | 3 | low | medium | medium | high | "rounded pyramidal" | fragrant creamy yellow | "gray nutlets with bracts" | yellow | reported to have more resistance to aphids |
| **Elm, Emerald Flair** | Ulmus parvifolia | Emerald Flair | 40-45' | 30-35' | 4 | medium | high | medium | high | spreading vase | insignificant | "flat round samara" | red-orange red | has better red fall color than most cultivars |
| **Elm, Emerald Sunshine** | Ulmus propinqua | Emerald Sunshine | 30-35' | 20-25 | 5 | uknown | high | unknown | unknown | vase | inconspicuous | "small, flat, papery" | yellow | tolerant of all urban conditions |
| **Elm, Frontier *** | "Ulmus. carpinifolia and U. parvifolia." | Frontier | 30-40' | 20-30' | 4 | medium | high | medium | high | upright, vase | inconspicuous | "small, flat, papery" | "burgandy-purplish" | tolerant of all urban conditions |

**Notes:**
All parkstrip trees must be a single trunk form unless approved by Community Development Director.
Other tree species may be appropriate with approval from the Community Development Director.

* Proven Performer
+ Trees to be planted under utility lines

**References:**
The Morton Arboretum http://www.mortonarb.org/trees-plants/search-trees/search- all-trees-and-plants
Missouri Botanical Gardens http://www.missouribotanicalgarden.org/plantfinder/plantf
Utah State University Cooperative Extension Tree Browser https://treebrowser.org
Cornell Woody Plants Database http://woodyplants.cals.cornell.edu/home
J. Frank Schmidt https://www.jfschmidt.com/indtroductions

## LIST C - LARGE STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Black Maple** | Acer nigrum | | 60-75' | 40-50' | 4 | medium | high | low | high | oval to rounded | green-yellow in spring, insignificant | Green samaras | "yellow-orange-red" | "similar to sugar maple but more heat and drought tolerant" |
| **Maple, Sycamore** | Acer pseudoplatanus | | 40-55' | 35-55' | 4 | high | high | medium | high | round | small green-yellow in spring, insignificant | green samaras | yellow | Gray flaking bark |
| **Hornbeam** | Carpinus betulus | "Emerald Avenue, Frans Fontaine" | 40-60' | 15-40' | 4 | low | medium | medium | medium | "narrow fastigate to broadly pyramidal" | insignificant | "nutlets in papery bracts" | yellow | very symmetrically shaped |
| **Catalpa *** | Catalpa speciosa | | 50-70' | 20-50' | 4 | medium | high | medium | high | irregular open | white with spots inside | long slender | yellow | beautiful when in flower |
| **Hackberry *** | Celtis occidentalis | Chicagoland | 40-60' | 40-60' | 3 | medium | high | medium | high | rounded spreading | insignificant | purple drupe | pale yellow | tolerates both wet and dry conditions |
| **Honeylocust *** | Gleditsia triacanthos inermis | "Street Keeper, Skyline, Northern Acclaim" | 40-45' | 20-35' | 3 | high | high | high | high | pyramidal to round | insignificant yet smell very sweet | reported as fruitless | golden yellow | small fine leaves give filtered shade |
| **Kentucky Coffee *** | Gymnocladus dioicus | "Expresso, Prairie Titan, Stately Manor" | 60-80' | 40-45' | 3 | medium | high | medium | high | irregular open | "Greenish white, female are fragrant" | seedless | yellow | leaves drop early in the fall |
| **Tulip Tree** | Liriodendron tulipifera | | 60-70' | 30-50' | 4 | low | medium | medium | medium | broad conical | yellow with orange bands | "dry brown oblong" | golden yellow | flowers somewhat hidden by leaves |
| **Oak, English *** | Quercus robur | | 50-70' | 50-70' | 5 | high | medium | medium | high | broad rounded | insignificant | acorn | none | tolerant of alkaline soils |
| **Oak, Chinkapin** | Quercus muehlenbergii | Red Autumn | 40-60' | 50-60' | 5 | low | high | medium | high | oval to rounded | insignificant | acorn | "yellow brown or red" | tolerant of alkaline soils |
| **Oak, Shumard** | Quercus shumardii | | 40-60' | 30-40' | 5 | medium | high | medium | high | oval | insignificant | acorn | brownish red | does well in wet and dry soil |
| **Japanese Pagoda Tree** | Sophora japonica | Halka Millstone | 45' | 35' | 4 | medium | medium | medium | high | rounded to oval | white | seeds pods | green-yellow | tolerates many soil sypes and conditions, seed pods can be messy |
| **Linden, Silver *** | Tilia tomentosa | "Sterling Silver, Green Mountain, Satin Shadow" | 50-70' | 25-40' | 4 | medium | medium | medium | high | pyramidal | fragrant creamy yellow | "gray nutlets with bracts" | yellow | best heat and drought tolerant of all lindens |

## LIST C - LARGE STREET AND SHADE TREES

| COMMON NAME | BOTANICAL NAME | ACCEPTABLE CULTIVARS | "MATURE HEIGHT" | "CANOPY SPREAD" | USDA HARDINESS ZONE | SALT TOLERANCE | DROUGHT TOLERANCE | POOR DRAINAGE TOLERANCE | ALKALINITY TOLERANCE | SHAPE | FLOWERS | FRUIT | FALL COLOR | ADDITIONAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Elm, Commendation *** | "Ulmus (japonica x wilsoniana Morton) x (pumila x carpinifolia)" | Commendation | 50-70' | 40-50' | 4 | high | high | high | high | pyramidal | insignificant | flat round samara | yellow | fast growing but not wild |
| **Elm, Green stone *** | Ulmus davidianna 'JFS KW2UD' | Greenstone | 50-60' | 40-50' | 4 | unknown | unknown | unknown | unknown | upright vase | insignificant | "flat round samara" | yellow | strong branch attachments at open angles |
| **Elm, New Horizon *** | "Ulmus japonica × pumila 'New Horizon' " | New Horizon | 50-55' | 30-40' | 3 | high | medium | med | high | upright oval | insignificant | "flat round samara" | yellow | proven rugged street tree |
| **Elm, Accolade *** | "Ulmus japonica × wilsoniana 'Morton' " | Accolade | 50-60' | 30-40' | 5 | medium | high | low | high | arching vase | insignificant | "flat round samara" | yellow | excellent DED resistance |
| **Elm, Triumph *** | "Ulmus wilsoniana, U. japonica, and U. pumila" | Triumph | 50-60' | 40-45' | 4 | medium | high | high | high | upright oval to vase | insignificant | "flat round samara" | yellow | very dark green glossy leaves |
| **Zelkova *** | Zelkova serrata | Village Green, Green Vase | 40-55' | 30-50' | 5 | medium | high | low | medium | vase | insignificant | "small wingless drupe" | rusty red | "mature smooth gray bark exfoliates to reveal orange inner bark" |

**Notes:**
All parkstrip trees must be a single trunk form unless approved by Community Development Director.
Other tree species may be appropriate with approval from the Community Development Director.

* Proven Performer
+ Trees to be planted under utility lines

**References:**
The Morton Arboretum http://www.mortonarb.org/trees-plants/search-trees/search- all-trees-and-plants
Missouri Botanical Gardens http://www.missouribotanicalgarden.org/plantfinder/plantf
Utah State University Cooperative Extension Tree Browser https://treebrowser.org
Cornell Woody Plants Database http://woodyplants.cals.cornell.edu/home
J. Frank Schmidt https://www.jfschmidt.com/indtroductions

| LIST D - PROHIBITED TREES | | |
|---|---|---|
| COMMON NAME | BOTANICAL NAME | ADDITIONAL NOTES |
| **American Elm** | Ulmus americana | Exceptions are provided for species and cultivars that are resistant to Dutch Elm disease, such as 'Frontier', 'New Harmony' and 'New Horizon' cultivars. |
| **Birch** | Betula sp. | |
| **Box Elder** | Acer negundo | Exception provided for Acer negundo 'Sensation', an improved cultivar with characteristics that may be suitable for street trees in particular. |
| **Russian Olive** | Elagnus angustifolia | |
| **Siberian Elm** | Ulmus pumilla | |
| **Silver Maple** | Acer saccharinum | |
| **Tree of Heaven** | Alianthus | |
| **Blue Spruce** | Picea sp. | |

**Notes:**
Other tree species may be be prohibited at the discretion of the Community Development Director.

For questions regarding the Spanish Fork City Approved Street and Shade Trees Lists, please contact:


**DAVE ANDERSON**

**COMMUNITY AND ECONOMIC DEVELOPMENT DIRECTOR**

**C** 801.804.4586

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SF, UT 84660

**SPANISHFORK.ORG**







SPANISH FORK
PRIDE & PROGRESS

# RESIDENTIAL GUIDEBOOK

WATER-WISE LANDSCAPE DESIGN
ELEMENTS & PRINCIPLES

Date XX, XXXX

A Letter From Mayor Mendenhall

Dear Spanish Fork Residents,

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Sincerely,

Mayor Mike Mendenhal



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**05** LANDSCAPE DESIGN SIMPLIFIED

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**21** RESOURCE MATRIX

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# Introduction

## WHY CONSERVE WATER?

Today, Utah is among the fastest growing and driest states in the nation. By the year 2065 the population is expected to double — increasing demand for and stretching finite water resources even further. The current drought is at a level unseen for many years and in some areas the drought is at, or near historic levels. Water conservation is an issue that touches everyone and ensuring that residents have enough water for the future is a major concern for Spanish Fork City's decision makers, water providers, local leadership, and the public.

A 2018 survey conducted by the Utah Department of Natural Resources identified education and information as the foremost barriers to water conservation in Utah and sustainability as the most important reason to conserve. While water conservation will not solve all the problems of water supply and demand, it can help bridge the gap and establish sustainable practices consistent with Utah's climate and fast-growing population.[1]

## Water-Wise Landscapes

In Utah, outdoor residential water use is the largest single category of municipal water use averaging 45% of statewide municipal use. Of our culinary water use, approximately 65% is applied, often inefficiently, to landscapes.[2] The types of plants we grow, the density at which they are planted, and the type of system used to irrigate them can all have a major effect on the amount of water needed outdoors. Implementing more water-wise landscapes is one way we can help to conserve water now and for future generations.

**A water-wise landscape is functional, attractive, easily maintained in its natural surroundings, and helps to conserve water.** Efficient use of water in community landscapes reduces water waste and enhances the community's environmental, economic, recreational, and aesthetic resources. Other benefits include better functionality, less maintenance, enhanced curb appeal, lower water bills, simpler irrigation, and phased installation.[3]

# Landscape Design Simplified

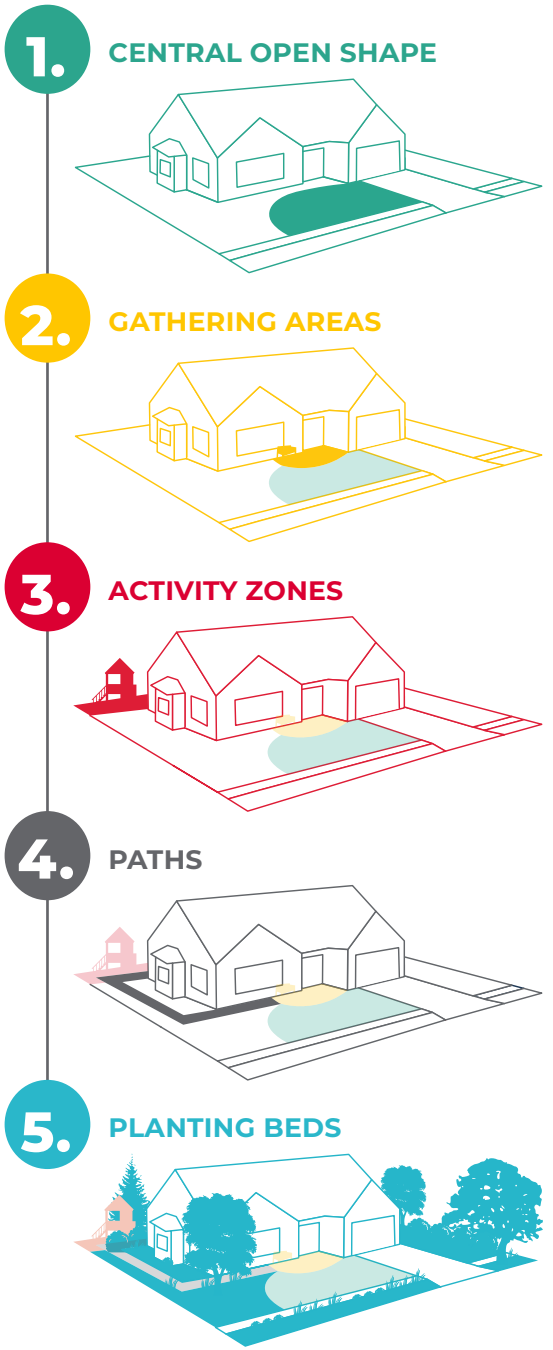
## WHO IS THIS GUIDEBOOK FOR?

The water conservation mindset begins with individual water users and while this guidebook is targeted towards single family home owners, it is meant to provide a foundation for anyone seeking to transform their landscape into a water conserving one. It is important to note that **Spanish Fork City does not require single family home owners to install water-wise landscapes**. Rather, the concepts and principles described here are meant to provide guidance, inspiration, and encouragement. Multi-family, commercial, and industrial uses are required to implement water-conserving landscapes (see Spanish Fork's Landscaping Regulations in City Code 15.4.16.130).

## THE LOCALSCAPES APPROACH

Implementing a water-wise landscape begins by utilizing designs and practices that take into account Utah's unique climate. Localscapes is a program that offers a simplified, practical approach to creating water-conserving landscapes and yards and the first section of this guidebook was adapted from the Localscapes Introductory Guide. What follows are five simple steps for transforming your yard into a practical, water-wise landscape.

**This approach can be customized to fit any yard size, shape, or location and can be scaled to meet any budget**. If renovating an entire yard isn't feasible, try starting small by installing one segment at a time or by focusing on a park strip or side yard. Remember, the Localscapes Approach is meant to be customizable to meet your needs and should be used in companion with principles of water-wise landscaping (see page 11).



# 1. Central Open Shape

- ☑ **Creates a focal point**
- ☑ **A simple, practical shape**
- ☑ **Often flat**



**A central open shape** creates a focal point that makes your landscape appear organized and well maintained. It allows sprinklers to work more efficiently by not forcing them to water oddly-shaped or inefficient lawn areas. The central open space can be made of materials such as turfgrass, ground cover, gravel, pavement, pavers, or any low-lying relatively flat material.



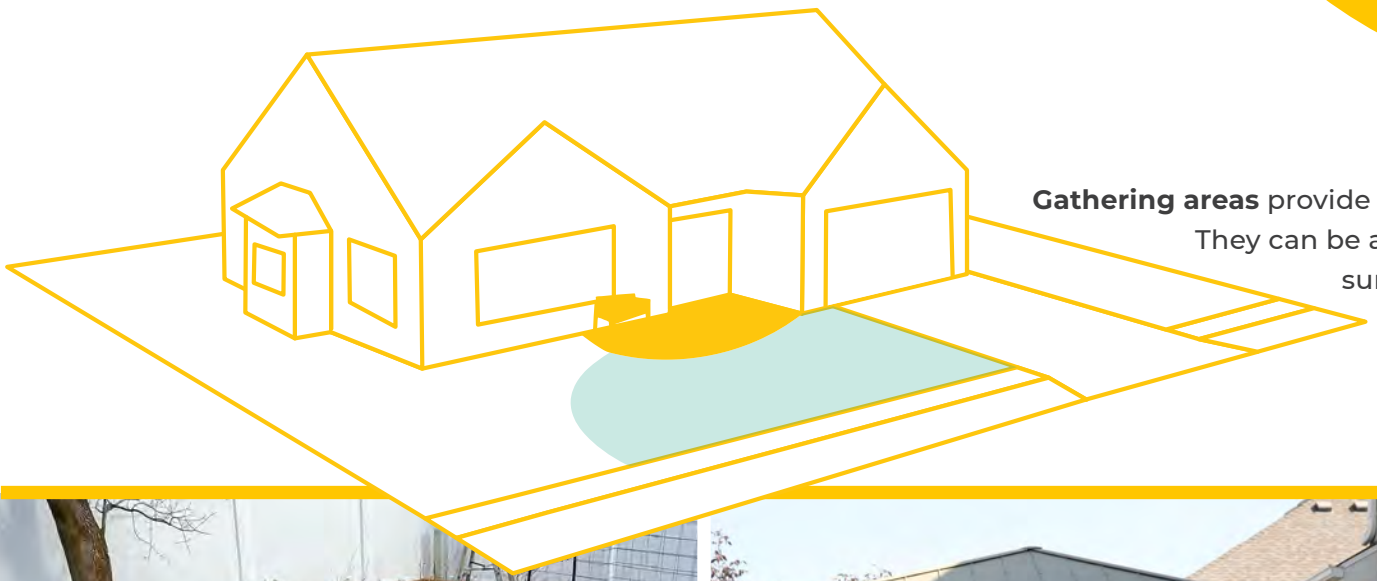




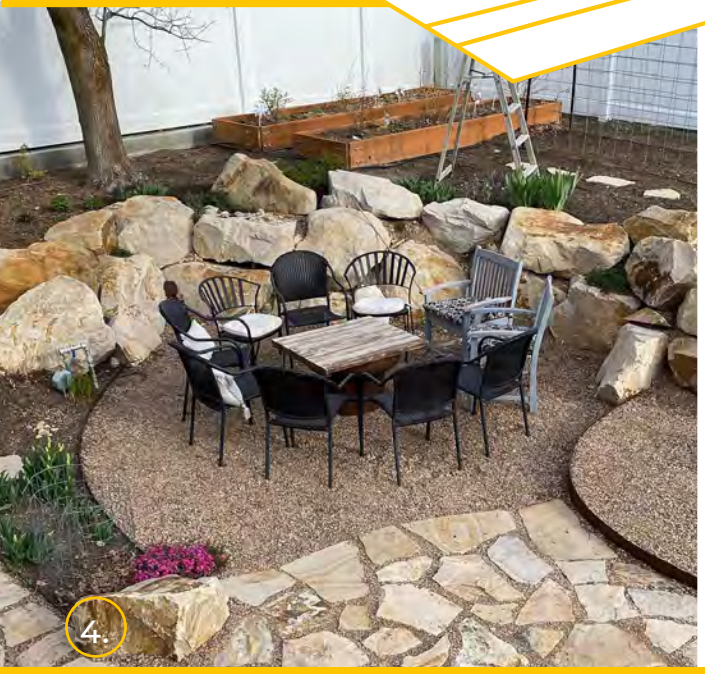


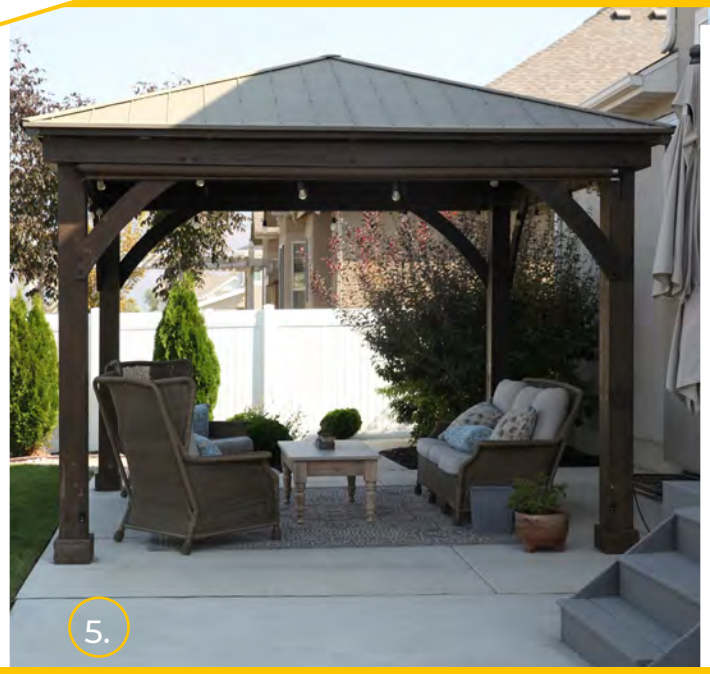
# 2. Gathering Areas

- ☑ **Areas to passively enjoy your yard**
- ☑ **Any size or shape**
- ☑ **Often include hardscape elements (patios, seating areas, courtyards, and decks)**
- ☑ **No lawn, plants, or water required**
- ☑ **Low maintenance**



**Gathering areas** provide opportunities to passively enjoy your yard. They can be any size or shape and are great for fire pits, sun decks, gazebos, and sitting areas.


4.


5.


6.

# 3. Activity Zones

- ☑ **Areas with dedicated uses**
- ☑ **Increase yard functionality while decreasing yard work**
- ☑ **No lawn**



**Activity zones** are dedicated areas without lawn surfacing. Examples include vegetable gardens, horseshoe pits, sheds, sports courts, hot tubs, and playsets.


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- ☑ **Used to connect and explore your yard**
- ☑ **No lawn**

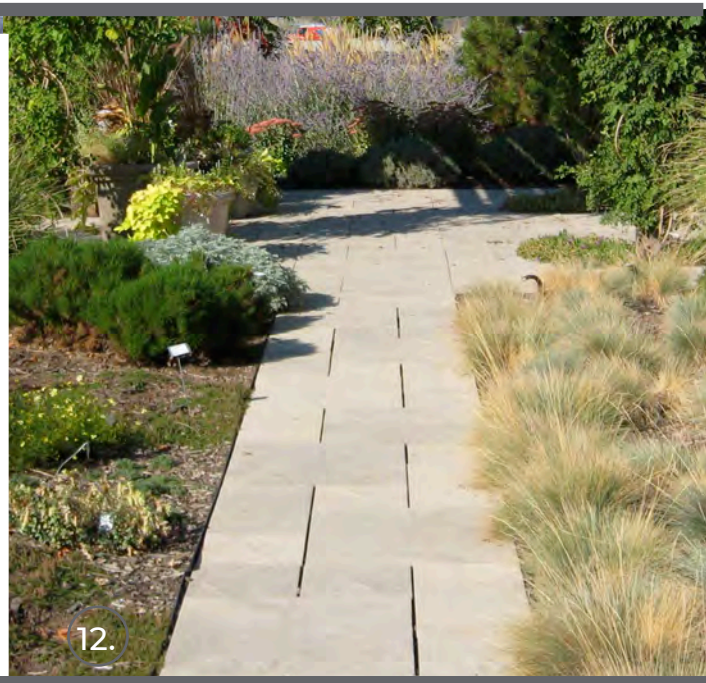
# 4. Paths



**Paths** connect the different areas of your yard and, when appropriate materials are used, can reduce maintenance. Options for path materials include concrete, stone, pavers, flagstone, compacted crushed stone, and similar materials. Turfgrass paths should be avoided since narrow lawn strips are difficult to irrigate and maintain (see Practical Turf Areas on page 12).

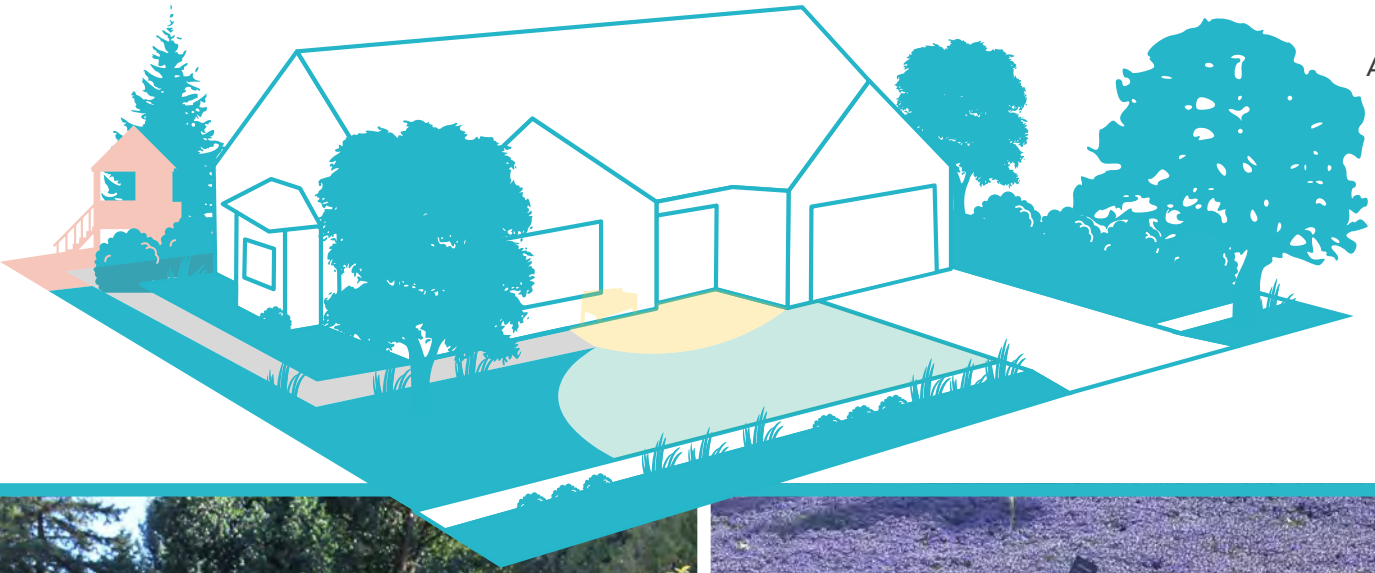

10.


11.


12.

# 5. Planting Beds

- ☑ **Fills and completes remaining areas**
- ☑ **Should be Utah-friendly, properly located, and watered efficiently**



After a plan is made for the central open shape, gathering areas, activity zones, and paths, **planting beds** composed of water-conserving plants and water-efficient irrigation systems are used to fill the remaining areas.


13.


14.


15.

# Principles of Water-Wise Landscaping

An effective water-wise landscape design requires the application of water-conserving principles such as grouping plants with similar water requirements together or applying mulch around plants to retain moisture.

The following section describes seven water-wise principles from the Utah State University Extensions Center for Water-Efficient Landscaping which are meant to support and complement the Localscape design elements. As we design, install, and manage our yards and landscapes, it is critical to utilize the following principles of water-wise landscaping.

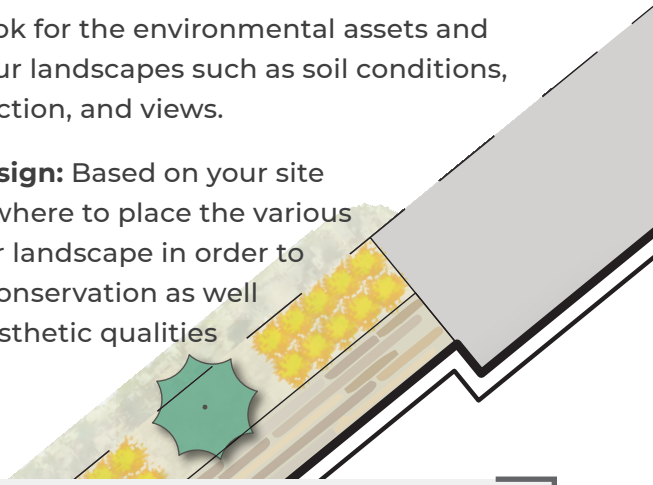
## PRINCIPLE #1: Start with a plan

The planning and design stage is an opportunity to consider the needs of those who will use and maintain the space while also acknowledging existing environmental conditions found on the site.

For a landscape design to be water-conserving, it needs to use water efficiently. The planning stage is the optimal time to decide which water efficiency strategies will be used.

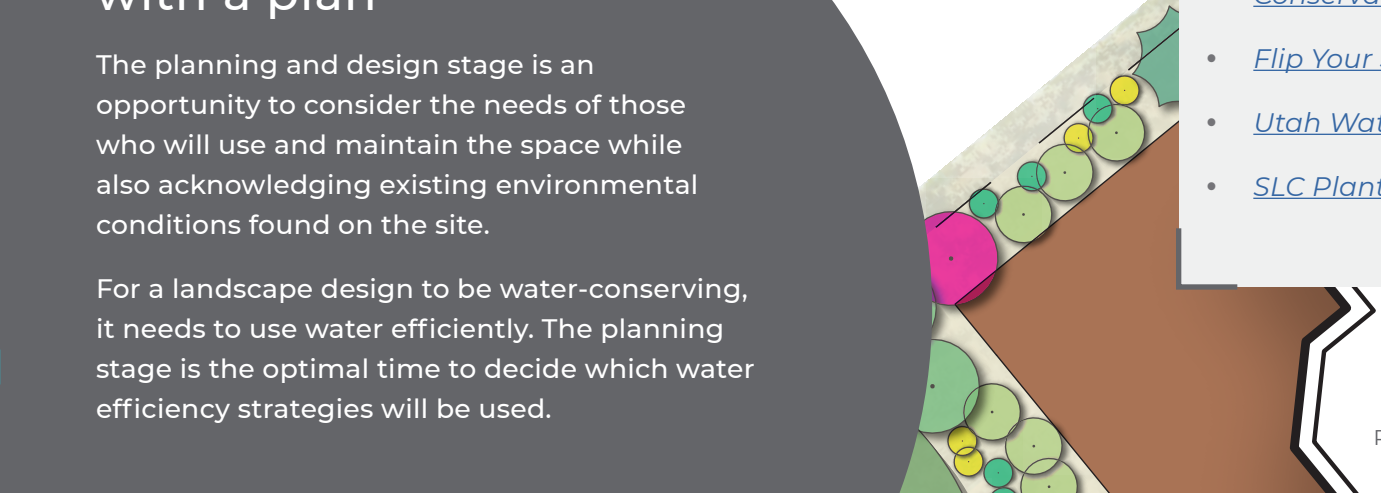
### KEY PLANNING & DESIGN CONSIDERATIONS

- **Develop a Plot Plan:** A plot plan is simply a map of your property that includes existing buildings, structures, trees, shrubs, property lines, driveways, gardens, utility lines, slopes, and other possible design limitations.
- **Site Analysis:** Look for the environmental assets and constraints of your landscapes such as soil conditions, slopes, wind direction, and views.
- **Planning the Design:** Based on your site analysis, decide where to place the various elements of your landscape in order to optimize water conservation as well as to enhance aesthetic qualities of your property.



### Planning & Design Resources

- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *Conservation Garden Park*
- *Flip Your Strip Program*
- *Utah Water Savers*
- *SLC Plant List & Hydrozone Schedule*



# **PRINCIPLE #2:** Practical turf-areas reduce over-irrigation

Water-efficient landscaping does not require the elimination of all turfgrass. In fact, turfgrass can be a practical and beneficial component of a water-wise landscape if best practices are followed. The use of turfgrass becomes problematic when it is over-irrigated, used in areas that are challenging to irrigate such as steep slopes or odd-shaped and narrow spaces, and when it is placed in areas where it isn't useful.[4]



## Turfgrass Resources

- *Localscapes® Program*
- *The Turfgrass Water Conservation Alliance*
- *USU Center for Water-efficient Landscaping*
- *USU Extension Sustainable Turf*
- *USU Climate Center*
- *Conserve Water Utah Grass Removal Rebates*
- *SLC Plant List & Hydrozone Schedule*

### KEY TURFGRASS CONSIDERATIONS

- **Consider functionality:** Turf grass is great for play areas, areas with high traffic, and areas needing temperature, noise, or dust control. If a turf area is only used when it's mowed (such as a park strip), choose a lower maintenance plant or ground cover for that location.
- **Choose species with lower water requirements:** Not all turfgrass species are the same. Choose a species with low water requirements that performs well in Utah.
- **Brown isn't always bad:** Many turfgrasses can withstand considerable drought stress by entering dormancy (turning brown). If a turfgrass is not performing a functional role, consider watering it less.
- **Lawn shape and size matter:** Avoid planting turfgrass in narrow, small, or oddly shaped areas that are difficult to irrigate efficiently.
- **Don't over water:** Water turfgrass separately from other landscape plants and design an irrigation system that doesn't exceed the turf's actual water needs.
- **Enhance turfgrass water-efficiency:** Typical practices such as mowing at taller blade heights, using proper fertilization, and returning grass clippings will lead to healthier turfgrass and improve water efficiency.

# **PRINCIPLE #3:** Soil preparation is the foundation of a quality landscape

Soil is the most basic component of a quality landscape and will have an impact on the growth rate, health, and appearance of plants.[5] Most plants do well under a range of soil conditions, although there are several chemical and physical characteristics that influence quality.



## Soil Resources

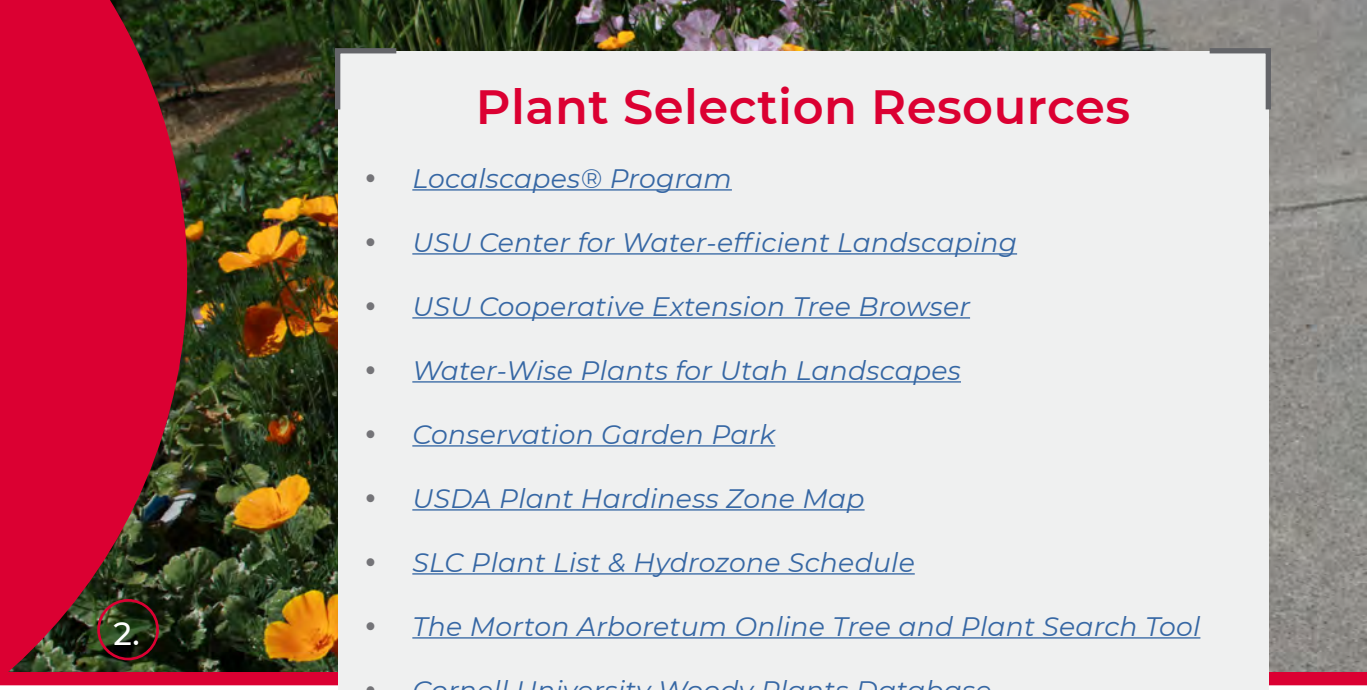
- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *Soil Testing Laboratory at USU*
- *USU Topsoil Quality Guidelines for Landscaping*
- *SLC Plant List & Hydrozone Schedule*
- *BYU Topsoil Parameters*

### KEY SOIL CONSIDERATIONS

- **Soil Texture:** The percentages of sand, silt, and clay in the soil will have an impact on drainage and nutrient retention. Strive for "loamy soils" that contain an appropriate balance of sand, silt, and clay for the best plant growth.
- **Soil Structure:** Small soil particles will clump together, forming large and small pores throughout the soil. These pores offer an important structure for water and air to reach the roots, and hold water.
- **Soil Organic Matter:** Organic material provides plant nutrients and improves water infiltration, drainage, and retention in the soil. Incorporating proper amounts of manure, compost, leaves, and grass clippings are examples of how to add organic matter into your soil.
- **Nutrient Status:** A healthy balance of nitrogen, phosphorus, and potassium is important for proper plant growth. In general, too many or too little soil nutrients will have a negative impact on plant growth and health.
- **Soil pH:** The acidity or alkalinity of soil affects the availability of mineral nutrients for plants. Some plants are acid-loving (lower pH) while others become sensitive to iron deficiency at high pH levels.

# PRINCIPLE #4:
## Proper plant selection and placement saves water

Selecting the right plant for the right place is critical to creating a water-efficient landscape. Proper placement provides shade, privacy, beauty, efficiency, and can even decrease yard maintenance.[3]




## Plant Selection Resources

- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *USU Cooperative Extension Tree Browser*
- *Water-Wise Plants for Utah Landscapes*
- *Conservation Garden Park*
- *USDA Plant Hardiness Zone Map*
- *SLC Plant List & Hydrozone Schedule*
- *The Morton Arboretum Online Tree and Plant Search Tool*
- *Cornell University Woody Plants Database*
- *J. Frank Schmidt and Son Tree Reference Guide PDF Download*
- *Missouri Botanical Gardens Plant Finder Tool*

### KEY PLANT SELECTION & PLACEMENT CONSIDERATIONS

- **Fit and Function:** Choose plants based on desired characteristics and water use.
- **Consider Adapted Plants:** Choose plants that are adapted to the soil, water, temperature, light, and pest considerations of the landscape to help minimize maintenance and water requirements. Note that not all adapted plants need to be native and that native plants are not necessarily water-conserving.
- **Hydrozones:** Group plants according to their water needs.
- **Seasonal Interest:** Foliage, bloom, and seed head displays will vary throughout the year. Consider incorporating spring, summer, and fall interest in each planting group to keep landscapes from looking bare and boring.
- **Hardiness Zone:** Plants that will survive in the Utah climate range between hardiness zones 4-9 and the range in Spanish Fork City is 5-7. Multiple factors can influence a plant's hardiness for a region. Visit the USDA Plant Hardiness Website to learn more and confirm with your professional plant suppliers that the selected plants are hardy for your location.

# **PRINCIPLE #5:** Retain moisture with mulch

Mulch covers the soil and prevents crusting, compaction, and moisture loss. Mulching around trees, shrubs, and flower beds can result in a ten-fold reduction in evaporative water loss from soil. Mulch is also an important visual design element and can be used along walkways, plant borders, and to add color and structure to the landscape.



## Mulch Resources

- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *Water-Wise Landscaping - Mulch*
- *SLC Plant List & Hydrozone Schedule*

### KEY MULCH CONSIDERATIONS

- **Organic mulches:** Materials such as wood or bark chips, shredded bark, nut shells, pine needles, and other similar compostable plant materials are examples of organic mulches.
- **Disease and toxic-free:** Make sure organic mulches (wood chips, shredded park, pine needles, etc.) are free from weed seeds, disease-causing organisms, and pesticide and herbicide residues.
- **Nitrogen deficiency:** Nitrogen deficiency can be avoided by composting mulch or by replacing the lost nitrogen using a specific fertilizer applied at specific rates.
- **Inorganic mulches:** Non-organic materials such as gravel and crushed stone are examples of inorganic mulches. Inorganic mulches provide many of the same benefits as organic mulches, but do not add to soil fertility.
- **Mulch application:** Mulch is best applied after planting in the fall or spring once the soil has warmed. It can be used with or without a weed barrier sheet.

# PRINCIPLE #6:
## Efficient irrigation is critical for conserving water

Grouping plants with similar water needs (hydrozoning) is the first step in developing an efficient irrigation plan. Once plants are properly zoned, develop an irrigation schedule that will apply the appropriate amount of water based on the unique needs of each zone.



## Irrigation Resources

- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *USU Climate Center*
- *SLC Plant List & Hydrozone Schedule*
- *EPA Water Budget Tool Spreadsheet Download*
- *EPA Landscape Water Budget Tool Links & Narratives*
- *EPA Landscape Water Budget Data Finder – by Zip Code Peak Month ETo and Rainfall*
- *EPA WaterSense – Weather-Based Irrigation Controllers, Soil Moisture-based Irrigation Controllers, Spray Sprinkler Bodies*
- *Hunter Irrigation Design & Technical Guides*
- *Rain Bird Irrigation Design Guides*

### KEY IRRIGATION CONSIDERATIONS

- **Hydrozones:** Group plants with similar irrigation needs in the same zones.
- **Drip irrigation:** Drip irrigation systems are great for water-efficient landscapes because water goes directly to the plants roots without being wasted on areas that do not need to be watered.
- **Irrigating lawn areas:** Turfgrass has more shallow roots than other landscape plants. It should be irrigated more frequently and not as deeply as other plants.
- **Irrigating trees and shrubs:** The longer and more extensive root systems of trees and shrubs mean they should be watered less frequently but for longer periods of time.
- **Automatic irrigation timers:** Do not forget to adjust an automatic irrigation timer with seasonal weather changes.
- **Irrigation system maintenance:** In order to ensure the most efficient use of water, irrigation system maintenance is critical. Make sure you understand how your system is configured and perform the necessary system maintenance required to keep it running smoothly and efficiently.

# **PRINCIPLE #7:** Proper landscape maintenance keeps plants healthy and helps to conserve water

Landscape maintenance is one of the most important components of a beautiful and lasting landscape. The main activities required to maintain a water-wise landscape are irrigation and irrigation system maintenance, weed control, fertilization, pruning, and pest and disease control.

3.



## Landscape Maintenance Resources

- *Localscapes® Program*
- *USU Center for Water-efficient Landscaping*
- *Soil Testing Laboratory at Utah State University*

### KEY LANDSCAPE MAINTENANCE CONSIDERATIONS

➔ **Weed control:** Controlling weeds is critical to maintaining a healthy water-wise landscape. Weeds can be removed mechanically, controlled though physical barriers (such as landscape fabric and/or mulch), or through the use of herbicides as a last resort.

➔ **Fertilization:** Plants require nutrients to grow and remain healthy (see soils discussion on page 13). In most cases, adding composted organic matter prior to planting will improve the fertility of your soil. The key is to know the habitat your plants are adapted to prior to planting and, if you don't know, err on the side of less rather than more nutrients, as over-fertilizing only weakens plants. Have your soil tested prior to installing plants so that you have an understanding of your specific landscape conditions (see the Utah State University Analytical Laboratory for quick and inexpensive soil sampling services).

➔ **Controlling plant growth:** Activities such as pruning, deadheading, and dividing will maintain the health and appearance of your plants by removing dead or undesirable growth and stimulating, reinvigorating, or re-directing their growth.

➔ **Pest and disease control:** Fighting insect or plant disease starts with preventing them in the first place. Prevention involves many of the principles that have been described, including using landscape plants adapted to your climate, diversifying plant choices, and maintaining optimal plant health by not over-fertilizing and by using the appropriate amount of water.

# Inspiration & Resources

How and when you decide to transform your yard into a water-wise landscape will depend on individual goals, time, budget, and other factors. Not everything has to be changed at once, and starting small and working in stages is an excellent approach.




Start with a park strip, side yard, or the "central open shape" if you aren't ready or able to transform your entire yard. Need ideas? Visit a local demonstration garden. Need help? Take advantage of available resources, programs, and classes. Remember, water-wise design elements and principles can be customized to fit any yard and scaled to fit any budget.

### FLIP YOUR STRIP PROGRAMS

Park strips are one of the largest water wasters in a residential landscape. These hot, narrow, strips of land are a challenge to water, and overhead spray often results in the sidewalk and street receiving more water than the park strip. For these reasons, "Flip your strip" programs offer rebates to remove turf from park strips and transform them into attractive, low-water alternatives. Visit utahwatersavers.com for more information.




### DEMONSTRATION GARDENS

Visiting a demonstration garden is a great way to find ideas and inspiration on how to design and maintain a water-wise landscape. They showcase plants adapted to your specific region and provide classes and other educational resources.

- Conservation Garden Park at Jordan Valley Water Conservancy District | 8275 South 1300 West, West Jordan
- Ogden Botanical Gardens | 1750 Monroe Blvd., Ogden
- USU Botanical Center | 80 East 725 South Sego Lily Dr., Kaysville
- Swaner EcoCenter |1258 Center Drive, Park City
- Red Butte Garden | 300 Wakara Way, Salt Lake City
- Sego Lily Gardens | 10000 South Centennial Pkwy, Sandy

# DESIGN INSPIRATION

The following are three examples of different sized lots that have been converted into water-conserving yards. Each reflects the specific needs and desires of the particular owner, illustrating that no lot is too small or too large, and no idea is too divergent to be incorporated into your own personal expression.

Once your new landscape is installed, you are likely to understand that the value of a water-wise landscape far exceeds the obvious reduction in water use. Some of the unanticipated joys include new splants and unexpected splashes of vegetative color in your yard, cooler air temperatures, accommodation of a wider range of outdoor activities in your yard, and the pride knowing that you achieved this on your own!

## LARGE LOT

### ALL ABOUT AGRICULTURE










This is an example of a 3/4 acre lot. The large lot is carefully designed to provide a range of activities suited to the needs and personality of the homeowner. In this example, “agriculture” is the primary theme, as illustrated by the rows of plants in the park strip, the extensive orchards in the furthest reaches of the rear yard, and the incorporation of a vegetable garden and chickens completing the “edible garden”.



# STANDARD LOT

### STONE & CIRCLES

This is an example of a standard 1/4 acre lot that predominates in many parts of Spanish Fork. The front yard lot is laid out in a simple manner, utilizing bold circular forms to create a central open space and stone patio, both backed by a colorful and texture-rich perennial garden. The rear yard is more active, bringing a  small lawn and a small playground together around the half-circle patio and entertainment area. The two yards are linked with a stone pathway on the widest side, making the front and back extensions of the other.

CIRCULAR PATIO



SMALL PLAYGROUND



STONE PATHWAY






# SMALL LOT

### THE POSTAGE STAMP

This is an example of a small urban lot approximately 1/8 acres in size found in the older, more central locations of the city. The design makes the most of a “postage stamp” sized lot, incorporating small lawns, gathering spaces, urban gardening and even a small orchard. The result is an attractive and intimate space where small surprises abound.

SMALL LAWNS

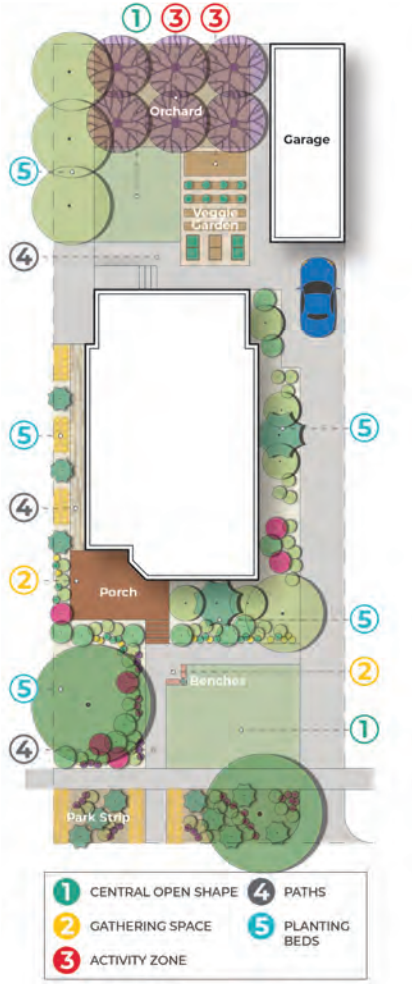


INTIMATE SPACES



URBAN GARDENING





# RESOURCE MATRIX

Click on the resource links below to learn more about specific water-wise landscape design principles, resources, programs, funding, and classes.

| Resources | Planning & Design | Turfgrass | Soil/ Topsoil | Plant Selection | Mulch | Irrigation | Landscape Maintenance | Resources/ Programs/ Funding | Classes |
|---|---|---|---|---|---|---|---|---|---|
| Spanish Fork Water-wise Landscape Design Elements & Principles Guidebook (2022) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Localscapes® Program | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| The Turfgrass Water Conservation Alliance | | ✓ | | | | | | | |
| Utah State University Center for Water-efficient Landscaping | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Utah State University Extension Sustainable Turf | | ✓ | | | | | | ✓ | |
| Utah State University Cooperative Extension Tree Browser | | | | ✓ | | | | | |
| Utah State University Climate Center | | ✓ | | | | ✓ | | ✓ | |
| Conserve Water Utah Grass Removal Rebates | | ✓ | | | | | | ✓ | |
| Soil Testing Laboratory at Utah State University | | | ✓ | | | | | | |
| Topsoil Quality Guidelines for Landscaping | | | ✓ | | | | | | |
| Water-Wise Plants for Utah Landscapes | | | | ✓ | | | | | |
| Conservation Garden Park | ✓ | | | ✓ | | | | | ✓ |
| USDA Plant Hardiness Zone Map | | | | ✓ | | | | | |
| Water-Wise Landscaping - Mulch | | | | | ✓ | | | | |
| Flip Your Strip Program | ✓ | | | | | | | ✓ | |
| Utah Water Savers | ✓ | | | | | | | ✓ | ✓ |
| Salt Lake City Plant List and Hydrozone Schedule 2013, Salt Lake City Public Utilities | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| EPA Landscape Water Budget Tool – Download excel tool (xlsx) | | | | | | ✓ | | ✓ | |
| EPA Landscape Water Budget Tool – Additional links and narratives | | | | | | ✓ | | ✓ | |
| EPA Landscape Water Budget Data Finder – by Zip Code Peak Month ETo and Rainfall | | | | | | ✓ | | ✓ | |

**RESOURCE MATRIX CONTINUED**

| Resources | Planning & Design | Turfgrass | Soil/ Topsoil | Plant Selection | Mulch | Irrigation | Landscape Maintenance | Resources/ Programs/ Funding | Classes |
|---|---|---|---|---|---|---|---|---|---|
| EPA WaterSense – Weather-Based Irrigation Controllers, Soil Moisture-based Irrigation Controllers, Spray Sprinkler Bodies | | | | | | ✓ | | ✓ | |
| Hunter Irrigation – Link to design literature and technical guides | | | | | | ✓ | | | |
| Rain Bird Irrigation – Link to design guides | | | | | | ✓ | | | |
| Brigham Young University – Topsoil Parameters | | | ✓ | | | | | | |
| The Morton Arboretum Online Tree and Plant Search Tool | | | | ✓ | | | | | |
| Cornell University Woody Plants Database | | | | ✓ | | | | | |
| J. Frank Schmidt and Son Tree Reference Guide PDF Download | | | | ✓ | | | | | |
| Missouri Botanical Gardens Plant Finder Tool | | | | ✓ | | | | | |

# IN CONCLUSION

"There is not an entity or individual that is entirely responsible for, or is the exception to, water efficiency. We all need to do what we can to use water wisely. Whether that step is taking a shorter shower, updating infrastructures and appliances, fixing a leak, adjusting sprinkler timers, installing secondary water meters, using a tiered rate, running or following an education campaign, or installing water-wise landscaping. Each step helps us to create changes that will assist in reaching our goals in being water-wise. We do not conserve water because we have a wet or dry year, we conserve because, as Utahns, we are not wasteful."[1]

- UTAH'S REGIONAL M&I WATER CONSERVATION GOALS 2019 REPORT

# WORKS CITED


1 Utah Division of Water Resources. (2019, November). Utah's Regional M&I Water Conservation Goals. Retrieved November 11, 2022, from https://conservewater.utah.gov/regional-water-conservation-goals/.

2 "Principles of Water Wise Landscaping." Utah State University Extension Center for Water-Efficient Landscaping. Retrieved September 20, 2022, from https://extension.usu.edu/cwel/principles.

3 An Introductory Guide to an innovative, practical landscape designed for Utah." Localscapes. Retrieved September 20, 2022, from https://localscapes.com/localscapesresources.

4 Kopp, Kelly and Johnson, Paul, "Water-Wise Landscaping: Practical Turfgrass Area" (2011). CWEL Extension Fact Sheets. Paper 19.

5 "Top Soil Quality Guidelines for Landscaping." Utah State University Extension Yard and Garden. Retrieved September 21, 2022, from: https://extension.usu.edu/yardandgarden/research/topsoil-quality-guidelines-for-landscaping.


# IMAGES

## COVER


1 Localscapes (2021, Sept. 28). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

2 Localscapes (2020, Sept. 10). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

3 USU Extension Photo Gallery (2011, June 29). Ornamental Grasses - Festuca [Digital image]. Retrieved November 21, 2022, from https://caas.usu.edu/marketing/photo-collection.


## LANDSCAPE DESIGN SIMPLIFIED


1 Localscapes (2019, Nov. 6). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

2 Localscapes (2021, Sept. 28). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

3 Localscapes (2018, Nov. 19). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

4 Localscapes (2022, April 10). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

5 Localscapes (2020, Oct. 5). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

6 Localscapes (2021, May. 5). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

7 Localscapes (2018, Nov. 5). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

8 Rick Egan. The Salt Lake Tribune. Activity zone, at Conservation Garden Park on the grounds of the Jordan Valley Water Conservancy District, on Wednesday, Sept. 14, 2022. Retrieved from https://www.upr.org/utah-news/2022-09-21/heres-what-these-salt-lake-valley-cities-are-doing-to-save-water.

9 Localscapes (2022, Sept. 17). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

10 Localscapes (2019, Sept. 25). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

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12 USU Extension Photo Gallery (2008, Oct. 1). USU Botanical Center Path [Digital image]. Retrieved November 21, 2022, from https://caas.usu.edu/marketing/photo-collection.

13 Localscapes (2020, Sept. 15). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

14 Localscapes (2022, May. 18). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

15 Localscapes (2021, Jan. 29). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.


## PRINCIPLES


1 Localscapes (2020, Sept. 10). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

2 USU Extension Photo Gallery (2014, June 7). Alterniscapes [Digital image]. Retrieved November 21, 2022, from https://caas.usu.edu/marketing/photo-collection.

3 USU Extension Photo Gallery (2011, Feb. 14). Yard/ Garden Pruning [Digital image]. Retrieved November 21, 2022, from https://caas.usu.edu/marketing/photo-collection.


## INSPIRATION & RESOURCES


1 Localscapes (2020, Oct. 23). Photos [Facebook page]. Facebook. Retrieved from https://www.facebook.com/localscapes.

2 Rick Egan. The Salt Lake Tribune. Activity zone, at Conservation Garden Park on the grounds of the Jordan Valley Water Conservancy District, on Wednesday, Sept. 14, 2022. Retrieved from https://www.upr.org/utah-news/2022-09-21/heres-what-these-salt-lake-valley-cities-are-doing-to-save-water.

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**C** 801.804.4586

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40 S MAIN ST

SF, UT 84660

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## LEGEND

| EXISTING | PROPOSED | |
|---|---|---|
| | | BOUNDARY LINE |
| | | STREET CENTERLINE |
| | | EASEMENT LINE |
| | | LOT LINES |
| EX SS | SS | SEWER PIPE |
| | | SEWER MANHOLE |
| | | SEWER SERVICE |
| EX SD | SD | STORM DRAIN PIPE (RCP) |
| | | STORM DRAIN MANHOLE |
| EX W | W | CULINARY WATER PIPE |
| | | FIRE HYDRANT |
| | | SERVICE & METER (W) |
| | | VALVE (W & SW) |
| EX PI | PI | PRESSURIZED IRRIGATION |
| X | X | FENCE |
| | | STREET LIGHT |
| | | POWER POLE |
| | | DITCH |
| EX FO | | FIBER OPTIC |
| EX GAS | | GAS |
| | OHP | OVERHEAD POWER |
| | | FLOW ARROW |
| | | CONTOURS |

## TABULATIONS

OVERALL PROJECT

TOTAL AREA: 13.28 AC

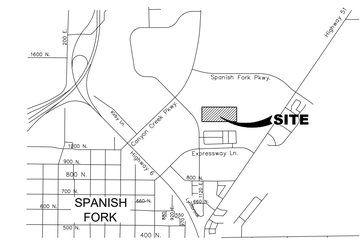
IMPROVED LANDSCAPE AREA: 0.99 AC

WETLAND AREA (NATIVE): 4.12 AC

IMPERVIOUS AREA: 5.2 AC

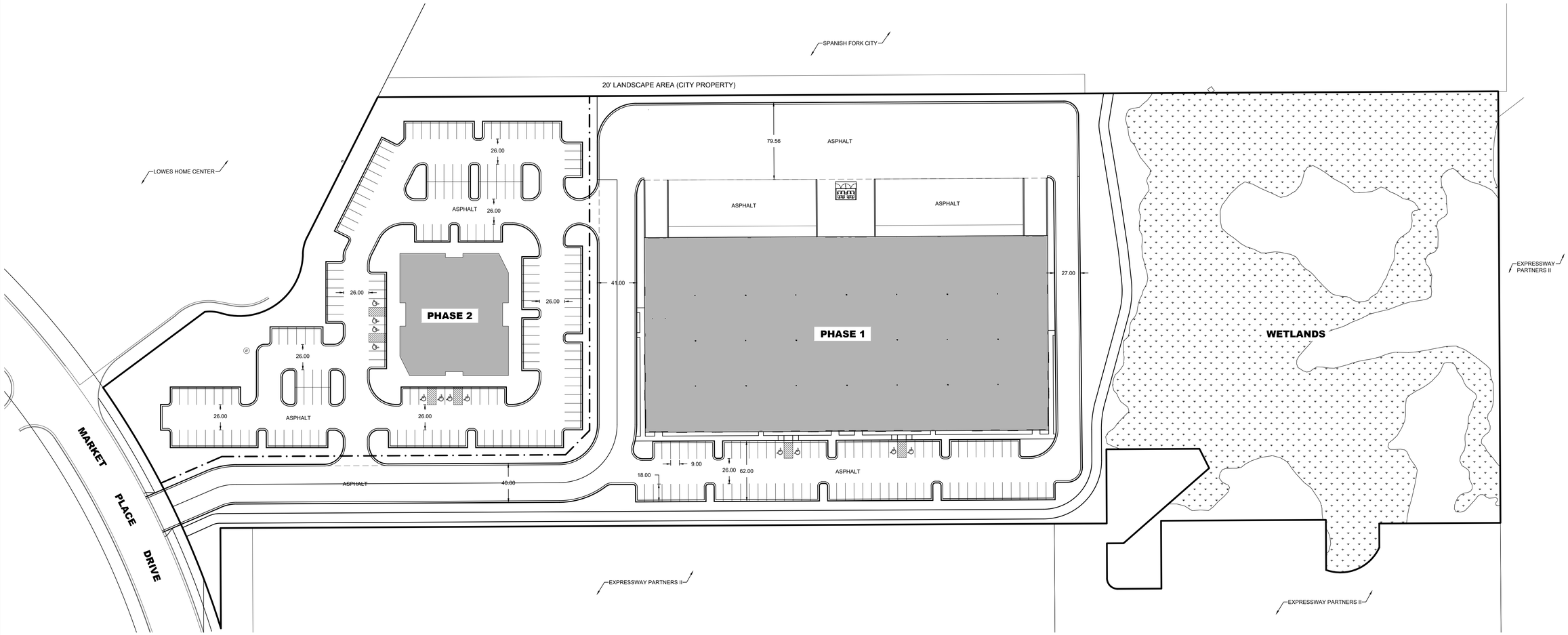
OFFSITE LANDSCAPE AREA: 0.33 AC

## VICINITY MAP




## TABLE OF CONTENTS


| | |
|---|---|
| | COVER |
| SHEET C101 | LOT LAYOUT PLAN |
| SHEET C201 | UTILITY PLAN |
| SHEET C301 | GRADING PLAN |
| SHEET C401 | DETAILS |



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# WILLOWBROOK PRELIMINARY

SPANISH FORK, UTAH

COVER

REVISIONS

1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2019-0021

DRAWN BY: BSR

DESIGNED BY: BTG

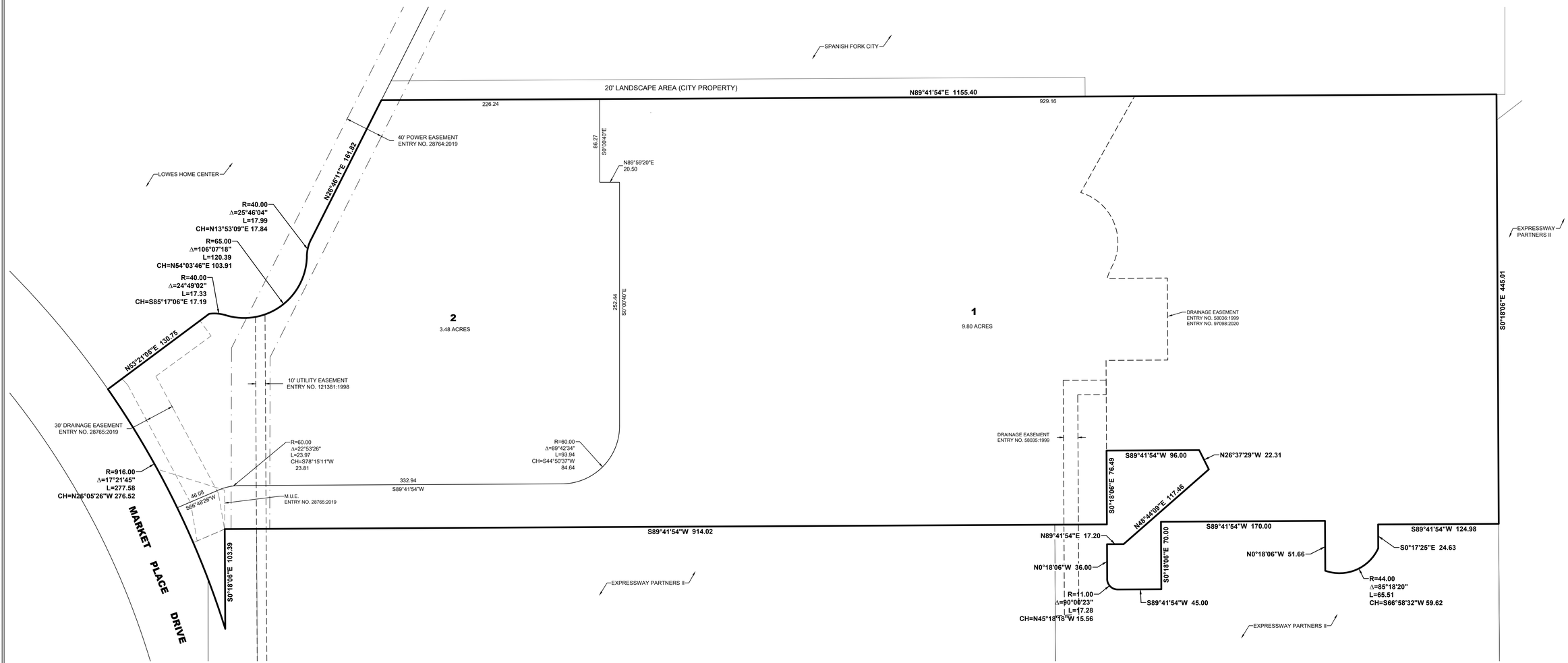
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DATE: 11/30/2022

SHEET

COVER


I:\0_LEI PROJECTS\2019\2019-0021 WILLOWBROOK COMM - SPT\CAD\DWG\19-0021 WILLOWBROOK PRELIMINARY SITE PLAN.DWG 11/30/2022 11:58 AM





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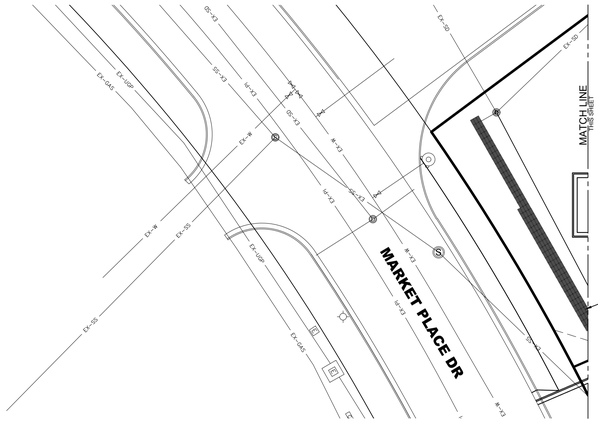
# LOT LAYOUT PLAN

| REVISIONS |
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| 2 - |
| 3 - |
| 4 - |
| 5 - |

LEI PROJECT #: 2019-0021
DRAWN BY: BSR
DESIGNED BY: BTG
SCALE: 1"=50'
DATE: 11/30/2022

SHEET C101

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R-TANK AREA: .011 AC
FOOTPRINT: 1,266 CU FT
R-TANKS: 154
PER ACF STANDARDS
(1 ROWS OF 25 & 3 ROWS OF 33)

**NOTE**

PROVIDE 3" IRRIGATION SLEEVES UNDER ALL SIDEWALKS WHERE NEEDED PER IRRIGATION PLAN.

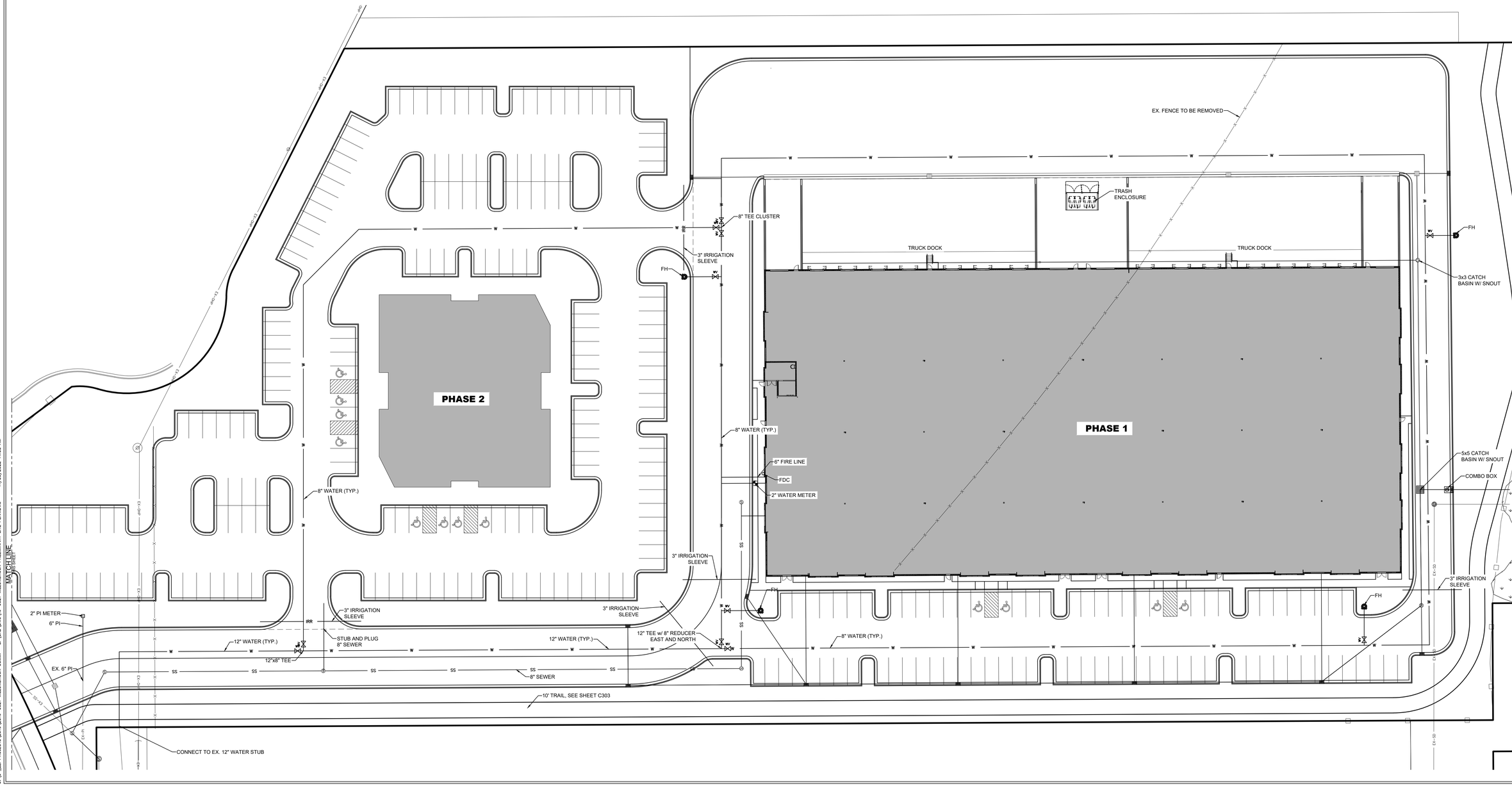
NORTH

SCALE: 1"=30'

30 15 0 30


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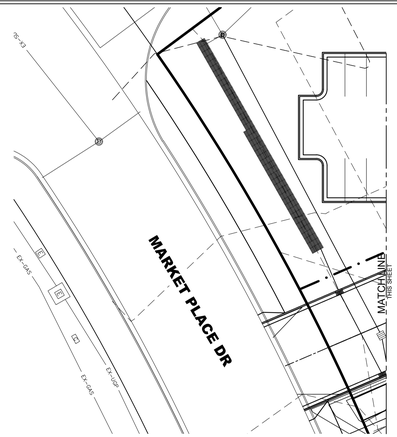

# WILLOWBROOK PRELIMINARY
## SPANISH FORK, UTAH
## UTILITY PLAN

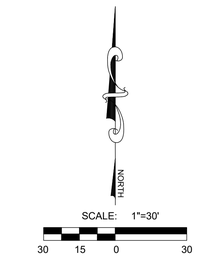
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100 YEAR OVERFLOW DIRECTION

SEE SHEET C303 FOR PLAN AND PROFILE

TRENCH DRAIN TOP=4572.50

TRENCH DRAIN TOP=4572.50

PHASE 2
FF=4573

PHASE 1
FF=4576.5

MATCHLINE
THIS SHEET

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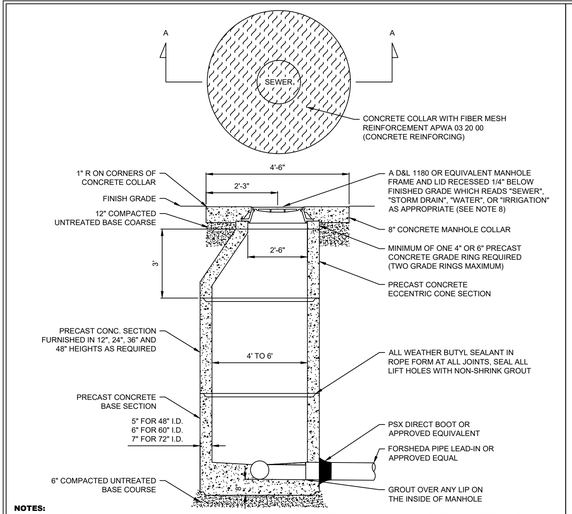
## GRADING PLAN

REVISIONS
1 -
2 -
3 -
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DESIGNED BY: BTG
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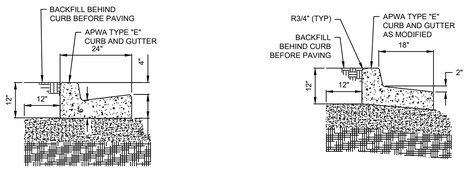
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**NOTES:**
1. USE 4' I.D. MANHOLES FOR MAIN LINES LESS THEN 18" IN DIAMETER; 5' I.D. MANHOLES FOR MAIN LINES 18" TO 30" IN DIAMETER, AND 6' I.D. FOR MAIN LINES GREATER THAN 30" IN DIAMETER.
2. FLAT LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET H20 LIVE LOADING. NO FLAT RING AND COVERS WILL BE ALLOWED UNLESS APPROVED BY CITY ENGINEER OR HIS/HER DESIGNEE.
3. MANHOLE RIMS PLACED IN FIELDS SHALL HAVE SOLID LIDS AND BE BURIED 2 FEET DEEP.
4. MANHOLE RIMS OUT OF STREETS SHALL BE PLACED 4 INCHES ABOVE GRADE.
5. CONCRETE COLLAR AND RIM SHALL BE INSTALLED 1/4" BELOW PAVEMENT SURFACE AFTER THE 1 YEAR PRESERVATION COAT.
6. MANHOLE COLLARS AND RINGS SHALL BE PROTECTED BY A COVERING DURING A SEAL COAT.
7. CONCRETE COLLAR SHALL BE PLACED AFTER THE 1 YEAR PRESERVATION COAT WHEN APPLICABLE.
8. IN PAVED AREAS WITH A SLOPE GREATER THAN 5% USE AN EJIW 3624 TWIST BASE OR APPROVED EQUIVALENT.
9. FIVE (5) FOOT DIAMETER MANHOLES ARE REQUIRED IN THE FOLLOWING SITUATIONS:
   a. AT ALL INTERSECTIONS OF 3 OR MORE 8-INCH OR LARGER PIPE LINES.
   b. WHERE THE DEFLECTION ANGLE OF THE PIPE LINE IS 90 DEGREES OR GREATER.
   c. IN MANHOLES WITH PIPE SIZES FIFTEEN (15) OR EIGHTEEN (18) INCHES IN DIAMETER.
   d. IN MANHOLES GREATER THAN FIFTEEN (15) FEET DEEP.
   e. IN MANHOLES WITH A GRADE GREATER THAN TWENTY (20) PERCENT THROUGH THE MANHOLE, I.E. GREATER THAN
   f. A ONE (1) FOOT DROP.

## 1 | SEWER MANHOLE

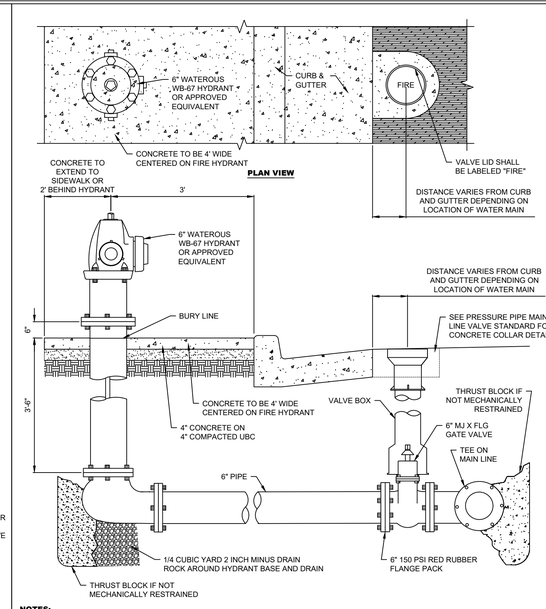



**24" CATCH CURB AND GUTTER**

**FLOW AWAY CURB AND GUTTER DESIGNATED BY SHADE ON PLAN**

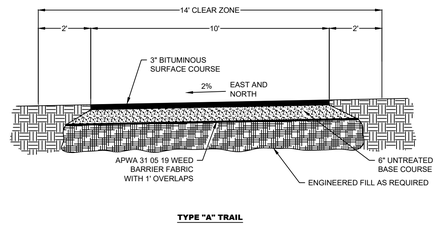
**NOTES:**
1. IF CONCRETE IS TO BE POURED NEXT TO A CURB #4 REBAR SHALL BE DOWELED 3" INTO CURB AND 4" INTO SIDEWALK. REBAR SHALL BE INSTALLED A MINIMUM OF 2" FROM TOP OF SIDEWALK AND CURB 24" O.C.
2. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS EVERY 5'.
3. TOP FRONT OF SIDEWALK SHALL BE PLACED AT THE SAME GRADE AS TOP BACK OF CURB.
4. TACK SHALL BE APPLIED TO LIP OF CURB AND EXTEND 1' ONTO GRAVEL ROAD BASE.

## 5 | CURB AND GUTTER




**NOTES:**
1. FIRE HYDRANTS SHALL BE PAINTED RED.
2. ALL BOLTS SHALL BE FREE FROM CONCRETE AND FULLY ACCESSIBLE.
3. IF THERE IS NOT A PLANTER STRIP, THE CENTER OF THE HYDRANT SHALL BE LOCATED 24" BEHIND THE SIDEWALK WITH A 4' BY 4' CONCRETE PAD CENTERED ON THE HYDRANT.
4. THERE SHALL BE NO OBSTACLES INCLUDING BUT NOT LIMITED TO POLES, UTILITY BOXES, TREES, FENCES, OR WALLS WITHIN 3' OF HYDRANT.
5. RISERS MAY ONLY BE USED WHEN AUTHORIZED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.

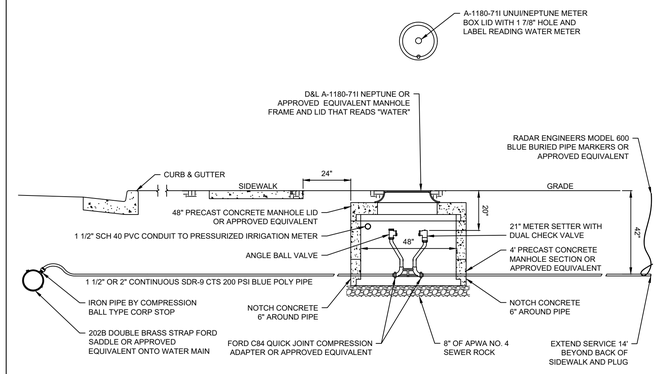
## 2 | FIRE HYDRANT




**TYPE "A" TRAIL**

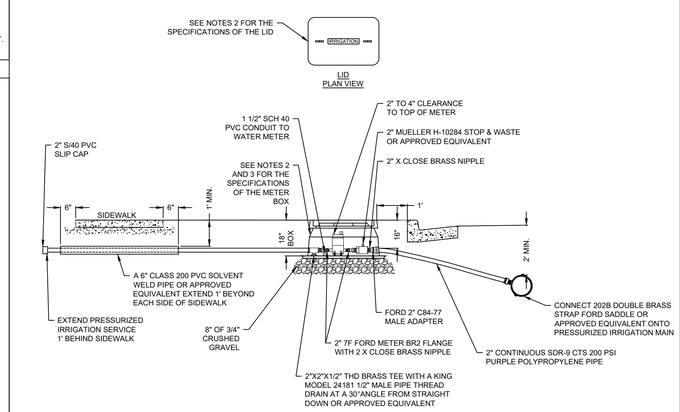
**NOTES:**
1. ALL TREES, SHRUBS AND OTHER VEGETATION SHALL BE REMOVED FROM THE CLEAR ZONE.
2. CITY SHALL INSPECT EACH BASE COURSE OR FABRIC LAYER BEFORE COVERING.
3. ALL WEEDS SHALL BE SPRAYED AND KILLED WITH ROUNDUP OR AN APPROVED EQUIVALENT ONE WEEK BEFORE ANY WORK MAY BE PERFORMED, AND WITHIN 3 WEEKS OF THE PLACEMENT OF UNTREATED BASE COURSE.
4. TRAIL LANES SHALL BE DELINEATED BY A CENTER, SINGLE, DASHED, YELLOW LINE.

## 6 | 10' TYPE A TRAIL



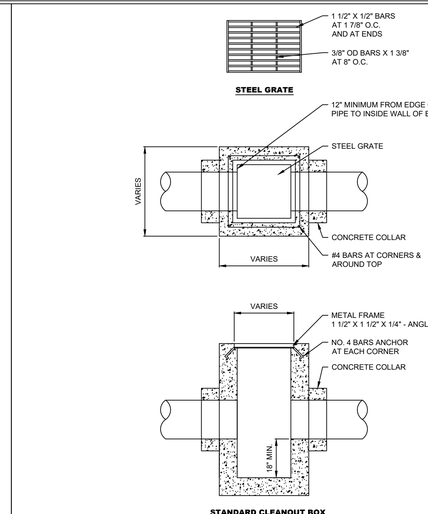

**NOTES:**
1. BURY CONDUIT 18" BELOW GRADE.
2. CONTRACTOR SHALL INSTALL 1 1/2" AND 2" METERS (METER TO BE PROVIDED BY SPANISH FORK CITY).
3. TYPE OF METER TO BE USED SHALL BE DETERMINED BY THE CITY.

## 3 | 2" WATER METER




**NOTES:**
1. ADJUST ALL APPURTENANCES TO AN EQUIVALENT 1 1/2" SIZE FOR 1 1/2" SERVICES.
2. METER BOX SHALL BE A CARSON BROOKS 24X36 1730-18 BOX OR APPROVED EQUIVALENT. WITH A 1730-3B LID OR APPROVED EQUIVALENT.
3. STAINLESS STEEL LINER INSERTS SHALL BE REQUIRED INSIDE POLYPROPYLENE PIPE AT COMPRESSION FITTINGS.
4. 1-1/2" POLY CONDUIT TO WATER METER SHALL BE BURIED 12" BELOW GRADE.
5. SPRINKLER SLEEVE SHALL NOT BE IN LINE WITH ANY UTILITY BOXES.
6. ANY INFIELD RELOCATION OF PI METER BOX IS TO BE APPROVED BY THE CITY ENGINEER.

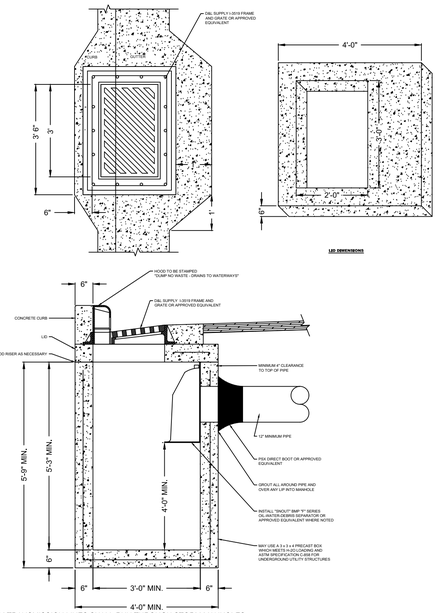
## 7 | 2" PRESSURIZED IRRIGATION METER




**STANDARD CLEANOUT BOX**

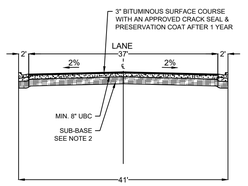
**NOTES:**
1. GRATE SHALL BE BICYCLE SAFE AND TRAFFIC RATED.
2. BOX SHALL BE SIZED ACCORDING TO TABLE ON STANDARD #29.

## 4 | STORM DRAIN CLEANOUT BOX



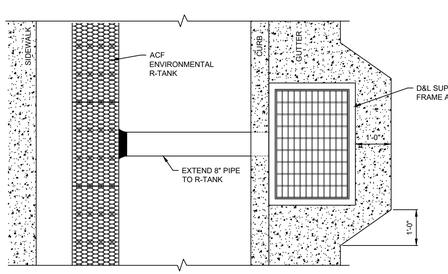

**NOTES:**
1. ALL STORM TRANSMISSION LINES SHALL RUN THROUGH STORM MANHOLES.
2. BOX SHALL BE SIZED ACCORDING TO TABLE ON STANDARD #32.
3. UNLESS OTHERWISE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER, #4 REBAR WILL BE SPACED AT MINIMUM OF 12" O.C. IN ALL DIRECTIONS IN CONCRETE. ALL REBAR SHALL OVERLAP A MINIMUM OF 14".
4. KNOCKOUT BOXES SHALL BE ALLOWED WITH CONCRETE COLLARS.

## 8 | STORM DRAIN INLET

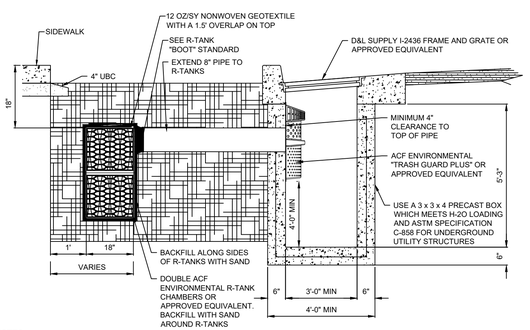



**NOTES:**
1. SEE STANDARD DRAWINGS FOR SIDEWALKS.
2. SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT.
3. MINIMUM OF 8" UNTREATED BASE COURSE UNDER STREET PAVEMENT AND CURB & GUTTER UNLESS MORE REQUIRED BY SOILS REPORT, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.

## 9 | ACCESS ROAD X-SECTION

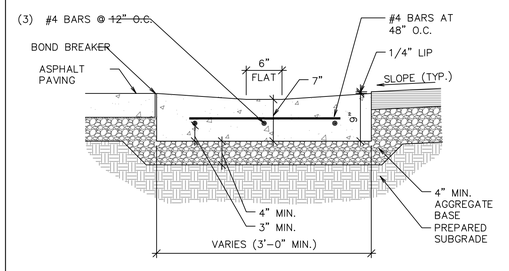



## 10 | R-TANK DETAIL

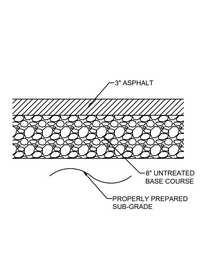



**NOTES:**
1. DETAILED ENGINEERING SHALL BE SUBMITTED TO THE CITY FOR APPROVAL ON ALL CAST IN PLACE BOXES.
2. "SNOUT" OIL-WATER-DEBRIS SEPARATOR SHALL BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS.
3. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.

## RESIDENTIAL LID COLLECTOR




## 10 | CONCRETE WATERWAY - FLAT DRAINAGE STRUCTURE




## 11 | ASPHALT PAVING SECTION


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NOT FOR CONSTRUCTION

# WILLOWBROOK PRELIMINARY
SPANISH FORK, UTAH

# DETAILS

| REVISIONS |
|---|
| 1 - |
| - - |
| 2 - |
| - - |
| 3 - |
| - - |
| 4 - |
| - - |
| 5 - |
| - - |

LEI PROJECT #: 2019-0021
DRAWN BY: BSR
DESIGNED BY: BTG
SCALE: 1"=NA
DATE: 11/30/2022
SHEET: C401


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