



HIGHLAND CITY

HIGHLAND CITY COUNCIL WORK SESSION MINUTES

Tuesday, April 12, 2022

Approved June 7, 2022

Highland City Council Chambers, 5400 West Civic Center Drive, Highland Utah 84003

VIRTUAL PARTICIPATION



YouTube Live: <http://bit.ly/HC-youtube>



Email comments prior to meeting: council@highlandcity.org

7:00 PM WORK SESSION

Call to Order – Mayor Kurt Ostler

The meeting was called to order by Mayor Kurt Ostler as a regular session at 7:07 pm. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting.

PRESIDING: Mayor Kurt Ostler

COUNCIL MEMBERS

PRESENT: Timothy A. Ball, Brittney P. Bills, Sarah D. Petersen, Kim Rodela, Scott L. Smith

CITY STAFF PRESENT: City Administrator/Community Development Director Nathan Crane, Assistant City Administrator Erin Wells, City Engineer Andy Spencer, City Attorney Rob Patterson, City Recorder Stephannie Cottle, Finance Director Tyler Bahr, Assistant Public Works Director Jeff Murdoch

OTHERS PRESENT: Jon Hart, Rachelle Bell, Marcus Blair, Stephen Stowe, Scott Fuller, Eric Rasband, Rochelle Broadhead

1. UDOT - 4800 WEST

Eric Rasband, UDOT, will lead a discussion regarding the safety and operation of the 4800 West intersection. This item is presented for discussion only. No formal action will be taken.

Utah Department of Transportation (UDOT) Region Three Planning Manager Rasband used the aid of a PowerPoint transportation to discuss the project encompassing access points in and around the Timpanogos Highway. The project was funded by the Mountainland Association of Governments (MAG) Transportation Improvement Program (TIP) at the request of Alpine and Highland cities. The project did the following:

- Evaluated alternative routes to Timpanogos Highway in Northeast Utah County.
- Evaluated existing and proposed access points to Timpanogos Highway.
- Projected year 2050 transportation growth trends based on local government land-use plans.

He presented a map of the study area to identify potential connection locations and alternative routes and noted that adjustments have been made to existing traffic signals. He noted after adjusting traffic signals, timing teams noticed some interesting behavior at the intersection of 4800 West; the southbound approach backs up quite a bit, primarily in the morning. The team set up a 'time of day' timing plan and noticed that as people get into the queue at the intersection, they become distracted and only three cars get through the intersection. Aggressive timing changes have been made for the southbound traffic, but the anticipated benefit has not been realized. During peak travel times, when only three to six cars get through the light on a green signal, traffic will continue to back up. If there is less than three to four seconds between cars, the traffic light would stay green for up to a minute, but once the signal notes more than four seconds between cars, it will turn yellow.

Council Member Ball asked if the software for the signal can be adjusted to change according to the time of day rather than the gap between vehicles. Mr. Rasband answered yes; from 7:00 to 10:00 a.m., the light will stay green for 60 seconds, but for the rest of the day, it is green for 45 seconds. Council Member Ball asked if the signal can be programmed to stay green for an entire minute from 4:00 to 6:00 p.m. Mr. Rasband answered yes but noted that doing so will penalize the other movements at the intersection. He stated that distracted driving should be addressed through enforcement, not by extending signal times. Signal timing is a challenge throughout the State of Utah and UDOT tries to work closely with local communities to educate drivers about distracted driving and traffic congestion. This led to high level discussion among the Council and Mr. Rasband regarding methods of educating young drivers about the dangers of distracted driving, after which Council Member Rodela noted that after this project was presented to the public and discussed during a public City Council meeting, there was a great deal of concern expressed by residents. During a meeting, a former UDOT employee addressed the Council and indicated that the road does not need to be widened and that the City should consider the Alpine Highway as an alternative. Mr. Rasband stated that he knows that individual and has heard about the comments he made; he worked for UDOT for two to four years under a training program and has since moved into structural engineering, not traffic engineering. He is a smart individual, but he disagrees with his observations. North County Boulevard is a five-lane road and is the east side belt route for northeast Utah County and it feeds this road. The Alpine Highway is a three-lane road and travels into the center of American Fork. It does not have freeway access. He then noted that out of 10,000 intersections in the State of Utah, this intersection is the 152nd in terms of the number of crashes in the State, and the 20th in Utah County. From 2016 to March of 2022, there were 33 front to rear accidents, 30 angle accidents, six head on accidents, and seven sideswipes. He presented a graphic that projects the offset of traffic lanes at the intersection, noting that both the north and south bound movements, the offsets do not conform with current standards. This is the reason for the high number of accidents, particularly angles and sideswipes. He noted the Mayor has asked UDOT to consider restriping and signage, but those will not fix the underlying safety issue. He concluded that UDOT will add the intersection to its MAG transportation plan and will address it as soon as funding is available.

Council Member Rodela asked Mr. Rasband his recommendation for addressing the safety issues at the intersection. Mr. Rasband stated that the intersection concept designs that were presented to the Council recently are based upon recommendations of UDOT professionals and he stands by those recommendations.

Mayor Ostler asked if two northbound lanes are truly necessary or if the safety of the intersection can be improved with one lane that is straightened out. Mr. Rasband stated that may be a possibility, but when UDOT undertakes projects like this one, they consider the need for the next 20 to 30 years and that is why the project includes two northbound lanes. UDOT seeks to complete a project correctly the first time.

Council Member Smith stated he understands UDOT's position, but the City has a great number of residents who do not want this road to be a five-lane road all the way to the roundabout in Alpine. He is not sure there is a great justification for the widening based upon projected buildout of both Highland and Alpine. He stated the Council is struggling to find the appropriate location for a transition, but Highland will bear the brunt of the project more than Alpine. He stated that he was a member of the Council when North County was built into a five-lane road, and he watched traffic double in the area. It is his philosophy that 'if you build it, they will come', and there

comes a point when building is no longer an option. He asked if UDOT can consider a compromise that honors the concerns of the residents. Mr. Rasband stated that UDOT makes compromises often; five-lanes are ideal, but at the most the two-lane center turn lane is needed and a road shoulder for vehicles and bicycles is important.

Council Member Bills asked Mr. Rasband to summarize the minimal improvements possible that would maximize safety, but not function. Mr. Rasband stated that there is a demand for two left turn lanes from northbound to westbound; one through lane may be adequate, however. That would be a compromise, but he does believe widening of the intersection needs to occur to move the curb line.

Mayor Ostler stated he wants to make a decision on a project based upon safety; he does not want to make a decision that is inadequate and results in someone being hurt. Mr. Rasband stated he would prefer to focus on the geometric design of the intersection; the proposal that was submitted to MAG would have a cost of \$10 million, but it may not be necessary to pursue that full project scope. If the Council and the residents are truly opposed to a five-lane road, UDOT and City officials can continue to work together to find an alternative. Mayor Ostler asked if there are other funding sources besides MAG. Mr. Rasband answered yes but noted that MAG is the most immediate and easiest to tap into; they are currently evaluating projects, including this one, and if this project were to rise to the top of the list, it could be funded in 2024. Alternatively, UDOT can consider highway safety improvement program funding, but that fund is programmed out to 2026. The final funding source is the State's transportation investment fund and projects that qualify for that funding must be over \$5 million and included on the long-range transportation plan, which will be updated in 2023 to include this project. The State Legislature just allocated an additional \$700 million in funding to fast track needed transportation projects that were programmed out to 2030; remaining funding will be prioritized on a regional basis, which would include this project.

Discussion then shifted to the way the proposed project will impact properties along the roadway. Mr. Rasband stated that the corner properties will be impacted and if it is necessary for the City to acquire the property, the owners will receive fair market value; UDOT will also pay relocation costs to those who are forced to move out of their home due to this type of project. Mayor Ostler stated the original proposal did not include the elimination of any homes; he noted the updated proposal seems to be less impactful than what was initially proposed. Mr. Rasband stated that UDOT will hire designers that will focus on minimizing the impact of these types of projects on residential properties.

Mayor Ostler asked what is needed of Highland City at this time. Mr. Rasband stated that depends on the funding source the City wants to pursue for the project. If the decision is to take advantage of MAG funding, the City needs to incorporate the project into its pertinent planning documents. He reiterated that if MAG funds the project, funding could be available in 2024; if the City waits for other funding sources, the project may not be funded until 2030.

Mayor Ostler and Council Member Smith thanked Mr. Rasband for his fairness and for being open minded tonight.

Council Member Bills asked if it is possible to shift lanes on the south side rather than the north side, which would result in the taking of homes. Mr. Rasband stated that may be possible and he suggested that a designer be enlisted to look at those options.

Council Member Ball referenced technology used in Seattle, Washington to change the direction of traffic during different rush hour times of day. He asked Mr. Rasband if he is familiar with that technology and if it could be used in Utah. Mr. Rasband stated that UDOT uses that technology on 5400 South in Taylorsville and Salt Lake City from Interstate 215 to Bangerter Highway. The system uses overhead automated signs, and it requires a great deal of technology; it also requires a directional split wherein 65 percent of traffic is going in one direction. Council Member Ball asked if that tool would be overkill for the Highland intersection. Mr. Rasband stated that

those systems are ideal for long sections of roadway, not intersections; he actually believes it would create more safety challenges at an intersection.

Mayor Ostler then asked the Council if they would like to proceed with discussions with MAG about the scope and funding for the project. Council Member Smith stated he would like to see just one lane north and south, but he supports examining a review of the intersection and whether some widening is needed. He also feels that education for the young drivers in the area would be imperative. Council Member Rodela agreed; she inquired as to the point in the process that the City could begin to refine the design of the intersection. Public Works Director/City Engineer Spencer stated that once funding has been allocated for the project, the next step would be to refine the design of the project. The following steps would be property acquisition and construction. The City Council would have the ability to be involved in the design of the project if funding is awarded. The most important information to communicate to MAG is whether the project has the Council's support. City Administrator/Community Development Director Crane stated it is not necessary for the Council to consider a General Plan amendment to provide that direction, but they could take an official vote during a future meeting. The Council concluded they are supportive of adjustments that will address safety, but they are not as concerned with structural adjustments. Council Member Bills stated that it is a great suggestion to pursue education of young drivers, but only parents can change their children's behavior. Council Member Ball stated that costly traffic citations may incentivize a parent to address the behavior of their children.

Mayor Ostler stated that he will include an item on a future agenda to allow for additional Council discussion and a potential action on any information to be provided to MAG about the project.

Council Member Bills stated she welcomes feedback from residents who are concerned about this issue.

2. FISCAL YEAR 2022-2023 BUDGET REVENUE PROJECTIONS

Finance Director Tyler Bahr will present an overview of all revenue projections, including a review of prior sales tax revenue and projections of future trends. This item is presented for discussion only. No formal action will be taken.

Tyler Bahr, Finance Director, used the aid of a PowerPoint presentation to present revenue projections that will be used to inform the Fiscal Year (FY) 2022-2023 budget; sales tax revenues have exceeded projections dating back to FY2018 and the revenue projection Administration plans to include in the FY2023 budget is \$3.6 million, which represents a six percent increase. This led to brief high-level discussion regarding the factors that are contributing to increasing sales tax revenues each year. Mr. Bahr then noted that for property tax revenue, the FY2023 forecast is \$1.9 million; this is a four percent increase over the FY2022 budget of \$1.82 million. The Council and staff briefly touched on the State of Utah's methodology for increasing property tax rates and the fact that property taxes are not automatically adjusted to capture inflation. Mr. Bahr noted that in order to capture inflation, the City needs to proceed through the Truth in Taxation process and advertise a potential tax increase.

Mr. Bahr then addressed the status of the Public Safety fee; Cedar Hills left the Lone Peak Public Safety District (LPPSD) in 2020, which caused the remaining members to consider an increase. Residents communicated they preferred a fee increase rather than a property tax increase. The monthly fee was increased to \$11.50, which generates \$650,000. The draft budget includes expenses of \$1.3 million and to cover these costs, the fee will need to be increased to \$23. Mayor Ostler stated the Council can consider the budget and determine which expenses truly need to be funded; the \$1.3 million is just an estimate in the draft budget and it may be possible to decrease that budget. Council Member Smith stated that he would like to have some measurable data that can be used to evaluate the budget requests; he would like to understand call volume and other statistics. Mr. Bahr stated he can pass that request on to the District.

Mr. Bahr then discussed one time funding sources and the City's American Rescue Plan Act (ARPA) allocation; one-time fees include building permits and building plan check fees, totaling \$900,000. The City's FY 2023 ARPA allocation will be \$1,134,657; this is in addition to the same amount the City received in July of 2022. He concluded his presentation by reviewing enterprise and capital funds.

Council Member Bills then noted that Alpine currently pays \$0 for dispatch services and Highland pays \$92,000; she inquired as to the cause of that difference. Mr. Bahr stated it may be based upon the timing of payments from each of the cities. Council Member Bills asked how much of the Public Safety budget is divided based upon percentage versus actual use. Mr. Bahr stated the District is funded by assessments to each City; another source is service charges for Emergency Medical Services (EMS). He is anticipating \$400,000 in revenue next year, which will reduce the amount charged to cities by assessment. He stated that the assessments for Police service are based strictly upon population; the assessment for fire service is 45 percent based upon population and 45 percent on equivalent residential units (ERUs), and the remaining 10 percent is split evenly between Alpine and Highland. Council Member Bills asked if the difference in home size is considered in that calculation. Mayor Ostler stated that square footage is taken into consideration in the determination of total ERUs. Council Member Bills stated she would like more information about the formulas used to determine the amount charged to each City before considering such a dramatic budget increase.

Mayor Ostler inquired as to the percentage of LPPSD costs Highland City is covering, to which Mr. Bahr answered 71 percent, including dispatch. Council Member Bills asked if that considers new growth, to which City Administrator/Community Development Director Crane answered no. There was a brief high-level discussion about the way the LPPSD budget is developed, with the Council reaching consensus that they need more detailed call volume data, mutual aid response, and personnel costs before making meaningful decisions regarding the City's funding level for the District. Council Member Bills inquired as to the last time the assessment formula was adjusted, to which Mr. Crane answered 2010-2011. Mayor Ostler stated it is reasonable for the Council to wish to discuss the budget further and evaluate the assessment formula; the Council has control over whether to adopt the City's portion of the LPPSD budget. Council Member Bills stated she is not saying that a change is necessarily needed, but she wants to have a greater understanding of the City's financial participation in the District.

Mayor Ostler noted that the Mountain Ridge Park discussion will occur later in the meeting.

4. PI WATER MESSAGING

Assistant City Administrator Erin Wells and Assistant Public Works Director Jeff Murdoch will lead a discussion regarding water conservation and public outreach methods. This item is presented for discussion only. No formal action will be taken.

Assistant City Administrator Wells presented the proposed communications plan regarding water conservation; this includes weekly social media updates and monthly email/text alert, newsletter articles, and website updates. Content included in the communications will reference Utah Division of Water resources, water storage levels, the need for conservation, water amount used to date, and a pressurized irrigation schedule.

There was brief discussion among the Mayor, Council, and Ms. Wells regarding the City's following on social media and efforts to increase public access to information produced by the City.

Public Works Director Murdoch then provided an update regarding the City's plans for installation of pressurized irrigation water meters; the City will be applying for grant funds to aid in proceeding with the project, including a Smart Water Grant, State of Utah American Rescue Plan Act (ARPA) funds, and Federal funding. Phase one of

the project will include the installation of 300 water meters this year on existing development. All new development will include meters.

Council Member Rodela stated she has heard that it will be difficult to secure meters due to supply issues; she wondered if the City can get a jump on securing water meters at this time rather than waiting until funding has been awarded. Mr. Murdoch stated that he has already ordered water meters and he will continue to add meters to that order. There is a long waiting period for the meters due to a shortage of micro-chips. There was brief discussion about the timing of grant awards, with Mr. Murdoch noting that the City can order and pay for meters now and reimburse City funds with grant funds once available.

5. GARBAGE RATES

Assistant City Administrator Erin Wells will discuss the cost proposed increase in garbage rates as outlined in the existing contract. This item is presented for discussion only. No formal action will be taken.

Assistant City Administrator Wells reported in 2020 the City contracted with Waste Management for garbage hauling services. At that time, the City Council set rates with the anticipation of having \$50,000 in net revenue, which would make it possible to absorb inflation for a few years before needing to increase customer rates. Unfortunately, those plans have not come to fruition and in the first year of using Waste Management, the City only realized \$15,000 net revenue. In FY2022, the City is budgeting a deficit in the garbage account. If rates are not adjusted before next FY, the City will be subsidizing the service by \$122,000. This is a result of the City having an inaccurate can count at the time that the contract was switched from Republic Service to Waste Management. Additionally, Waste Management has a different charging methodology than Republic Service did; they charge for additional services, such as Christmas tree pickup, spring cleanup, and dumpster collection at City parks. This adds approximately \$100,000 to annual costs. Another contributing factor is that Waste Management has delayed charging services and Administration was not aware of the increased costs until after the FY2022 budget was adopted. Inflation will also impact the City's garbage hauling costs and Waste Management has suggested an 8 to 11 percent inflationary increase this year. Finally, anticipated housing growth will increase the City's costs. Ms. Wells then provided an analysis of the garbage fund; it totals \$1.17 million and is made of three main components:

- ~\$282,000 – North Pointe tipping fees
- ~\$830,000 – Waste Management hauling contract
- ~\$58,000 – salaries, billing, credit card fees, etc.

She then presented a chart including the actual costs for service per can and compared those costs with current rates. The first garbage can actually costs the City \$10.70, but the current rate is \$9.61. The deficit is \$1.09 and there is a similar deficit for both the second garbage can and recycling cans. Options available to the Mayor and Council include maintaining rates at a cost of \$122,000; increasing fees to the 'break-even' point; or increasing rates to generate an additional \$50,000 to cover inflation in future years. This would result in increasing the first garbage can rate to \$11.08, second can to \$7.85, and recycling can to \$7.48.

The Mayor and Council engaged in philosophical discussion and debate regarding the current contract terms with Waste Management and the impact of increasing rates; they concluded that they need public discussion of the matter to give residents the ability to provide input regarding a possible fee increase.

Mayor Ostler recessed the meeting at 9:19 p.m.

The meeting reconvened at 9:31 p.m.

3. MOUNTAIN RIDGE PARK

The City Council will discuss the budget for Mountain Ridge Park, including funding sources, estimated maintenance costs, fundraising, potential public/private partnership for soccer and baseball field(s), and the cost for Phase 1. This item is presented for discussion only. No formal action will be taken.

Public Works Director/City Engineer Spencer reported on the bid opening for utility services for the Mountain Ridge Park project. The project has been broken into phases, with phase one being utility services including bathrooms and frontage landscaping. The base bid was \$1.3 million and there are two bid alternatives: eastern parking (\$432,000) and western parking (\$385,000). The total cost is \$2.1 million.

City Administrator/Community Development Director Crane then presented an image of the revised playground area; remaining major elements include:

- Playground: \$2 Million
- Restroom: \$400k
- 8 Pickleball Courts: \$750k
 - Lighting add: \$300k
 - Shade and Furniture add: \$175k
- Sports Fields: \$1.5 Million
- Perimeter Walkway w/ Furniture
 - \$275k
- Pavilions (1 large and 2 small)
 - \$350k
- Remaining landscaping: \$450k
- Estimated Total: \$7.8 Million
 - October Estimate: \$7.9 Million

Mr. Crane then summarized City revenue sources totaling \$5,392,486:

- \$1,402,668 – Spring Creek Park Sales
- \$358,055 – Patterson Storage Units Sale
- \$400,00 – Dry Creek Property Sale
- \$95,700 – Street Tree Account
- \$87,300 – Enterprise Fund Eligible Portions
- \$144,390 – B&C Road Eligible Portions
- \$10,000 – Patterson Donation
- \$2,269,373 – AARP Funds
- \$625,00 – One-time Revenue Over Expenses FY2021

Non-City revenue sources include a \$20,000 donation for a swing and possibility an additional \$1 million in donations for the playground. Other possible financial contributions could come from Surf Soccer and Chad Christofferson. He concluded that the total confirmed funding is \$5.4 million; phase one has a cost of \$2.1 million and the playground will be approximately \$2 million. The restroom facility has an estimated cost of \$400,000. The top three components to be completed total \$4.5 million, leaving \$800,000 to \$900,000 in discretionary funds. This does not include contingency monies, additional landscaping, and other expenses. Administration feels that the project cannot be completed without additional funding or donations. One question Administration would like the Council to discuss tonight is whether to proceed with all three phases or just two; if the Council supports just two, Administration recommends phase one and bid alternate two – western parking area.

Mayor Ostler asked if it is more cost effective to complete all work at one time while a contractor is on-site. Mr. Spencer stated that the cost of the additional work will definitely increase if it is delayed; the City would pay less if all work were performed at the same time. He expects that the City will pay at least an additional 20 percent if one area of the project were delayed.

Council Member Smith inquired as to why the restroom facility will cost \$400,000. Mr. Crane stated that cost estimate is based upon the actual cost of the restroom that was built at Highland Glen Park; it is a concrete building with stainless steel fixtures and two ADA compliant restrooms. Mayor Ostler stated that it would be hard to fundraise for a restroom facility, but it may be easier to fundraise for certain recreational elements of the project. The Council ultimately concluded they feel it would be best to bid the entire project together with the hope that it will be possible to pursue fundraising to complete the entire project.

Mayor Ostler then invited input from Brian Braithwaite, Chairman of the Parks, Trails and Tree Committee, regarding the project. Mr. Braithwaite agreed it would be easier to fundraise for the actual playground structure or perhaps a pickleball court; he advised the City to dedicate its secured funding sources to the infrastructure for the project with the hopes that it will be possible to secure donors to complete pavilions or a play surface, if necessary.

Mayor Ostler asked the Council if they would be comfortable offering naming rights to large donors. Mr. Braithwaite stated that offering naming rights or a plaque that recognizes the donors is very important; flexibility is key in negotiating donations from large donors. This led to a discussion of the types of monuments or signage that is best for recognize donors, after which Mr. Crane presented a few sketches of a possible donator wall.

Discussion then shifted to the use of soccer field space by SURF soccer; Mr. Braithwaite explained they would like to secure the fields as much as possible and are concerned about other organized teams or leagues using the space as they may damage it. Staff has recommended that signs be placed in the park to advertise that during the months of March, April, May, September, October, and November, Monday through Thursday from 3:00 p.m. to dark. On Friday, there will be no organized sports allowed on the fields and it will be left open for resident use only. On Saturday, SURF will have the field from 7:00 a.m. to 4:00 p.m. and it will be open for resident use the remainder of the weekend. During the summer, the field space will be 'rested' for three to four weeks. There will be no organized games or practices on the field during this time, but SURF does not care if other unorganized activities occur on the field space during that time. He emphasized that SURF is going to maintain the soccer areas at no cost to the City. He then summarized the summer usage schedule:

- Monday through Thursday, 7:00 a.m. to 2:00 p.m. (both fields), and 5:00 p.m. to 9:00 p.m. (one field).
- Saturday, one field will be used from 8:00 to 12:00 noon and available for public use after that; the other field will be open the entire day.
- Sunday, both fields are open for public use.

Mr. Braithwaite then stated that SURF is seeking a 10-year contract, with an additional year for the buildout; they are paying for the infrastructure and maintenance of the field space. The cost per field is approximately \$200,000 to \$300,000. He indicated he will send a detailed list of the cost of the work to be completed by SURF, including the installation of a fence that will restrict access to the areas they are improving. The fence will not restrict people from accessing the field space, but it will keep motorized vehicles out.

The group then engaged in high level discussion regarding verbal commitments the City has received for donations for the project, with the Council emphasizing their support for a marketing campaign regarding the project aimed at securing needed financial support for the project.

Assistant City Administrator Wells then discussed ongoing estimated ongoing maintenance costs for the park/playground project; Administration recommends a \$43,000 allocation for maintenance in the first year, with expected eight percent increases each year.

Council Member Ball asked why it will be necessary to consider playground replacement after 20 years if all the vendors have communicated a lifetime warranty for their product. Ms. Wells stated that the warranty does not cover the moving components; additionally, some park elements may not be available at 20 years, and it may be necessary to buy new components or structures. Council Member Ball advised staff to look into whether any of the vendors offer an extended warranty for their product.

Ms. Wells concluded that she would perform a more thorough analysis of the costs of maintaining all elements of the Park each year and present that information to the Council for inclusion of a dollar amount in the FY2023 budget.

6. CLOSED SESSION

The City Council may recess to convene in a closed session to discuss pending or reasonably imminent litigation, as provided by Utah Code Annotated §52-4-205.

At 10:30 pm Council Member Scott L. Smith MOVED that the City Council recess to convene in a closed session to discuss pending or reasonably imminent litigation, as provided by Utah Code Annotated §52-4-205.

Council Member Timothy A. Ball SECONDED the motion.

The vote was recorded as follows:

<i>Council Member Timothy A. Ball</i>	<i>Yes</i>
<i>Council Member Brittney P. Bills</i>	<i>Yes</i>
<i>Council Member Sarah D. Petersen</i>	<i>Yes</i>
<i>Council Member Kim Rodela</i>	<i>Yes</i>
<i>Council Member Scott L. Smith</i>	<i>Yes</i>

The motion passed unanimously.

Council Member Sarah D. Petersen MOVED to adjourn the CLOSED SESSION and Council Member Brittney P. Bills SECONDED the motion. All voted in favor and the motion passed unanimously.

The CLOSED SESSION adjourned at 11:00 pm.

ADJOURNMENT

Council Member Kim Rodela MOVED to adjourn the work session and Council Member Brittney P. Bills SECONDED the motion. All voted in favor and the motion passed unanimously.

The meeting adjourned at 11:01 pm.

I, Stephannie Cottle, City Recorder of Highland City, hereby certify that the foregoing minutes represent a true, accurate and complete record of the meeting held on April 12, 2022. This document constitutes the official minutes for the Highland City Council Meeting.



Stephannie Cottle
City Recorder

HIGHLAND CITY

Welcome to the Highland City Council Work Session

April 12, 2022

HIGHLAND CITY

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HIGHLAND CITY

7:00 PM WORK SESSION

Call to Order – Mayor Kurt Ostler

2

HIGHLAND CITY

UDOT – 4800 W

Item 1 – Discussion
Presented by – Eric Rasband, UDOT

3

UDOT

Aligning Utah's Future

Timpanogos Hwy/North County Blvd/Canyon Crest Road
Northeast Utah County

UDOT

Aligning Utah's Future

UDOT

Aligning Utah's Future

UDOT

Aligning Utah's Future

1. Project funded through the Mountainland Association of Governments (MAG) Transportation Improvement Program (TIP) at the request of Alpine and Highland

• Evaluated alternative routes to Timpanogos Hwy in NE Utah County

• Evaluated existing and proposed access points to Timpanogos Hwy

• Projected year 2050 transportation growth trends based on local government land-use plans

4

UDOT

Aligning Utah's Future

Timpanogos Hwy/North County Blvd/Canyon Crest Road
Northeast Utah County

UDOT

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UDOT

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CONNECTIVITY IMPROVES MOBILITY

Within this guide's case studies each 1% increase of connectivity yields the same travel time benefit as 1 lane mile of roadway

CONNECTIVITY CREATES TRANSPORTATION CHOICE

High intersection density is the best predictor for use of active transportation

CONNECTIVITY IMPROVES EMERGENCY SERVICE

Adding 300 feet of roadway between two intersections in Charleston, NC, improves service area by 17 percent

CONNECTIVITY IMPROVES SAFETY

The highest risks of fatal or severe crashes tend to occur in areas with low intersection densities

CONNECTIVITY IMPROVES THE ECONOMY

Compact, connected, walkable neighborhoods can command a price premium of 40 to 150 percent compared to nearby less connected neighborhoods

5

UDOT

Aligning Utah's Future

Timpanogos Hwy/North County Blvd/Canyon Crest Road
Northeast Utah County

UDOT

Aligning Utah's Future

UDOT

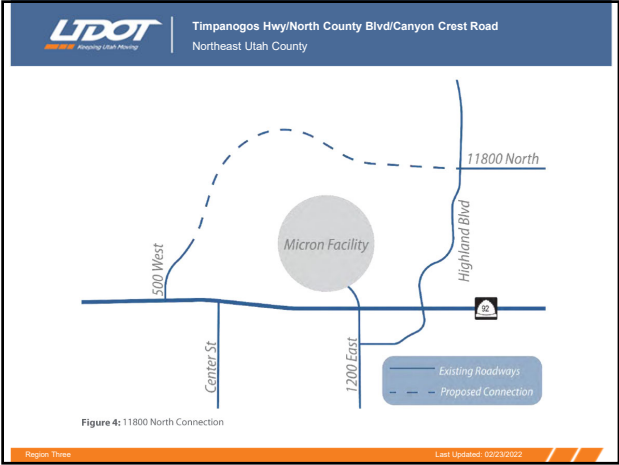
Aligning Utah's Future

UDOT

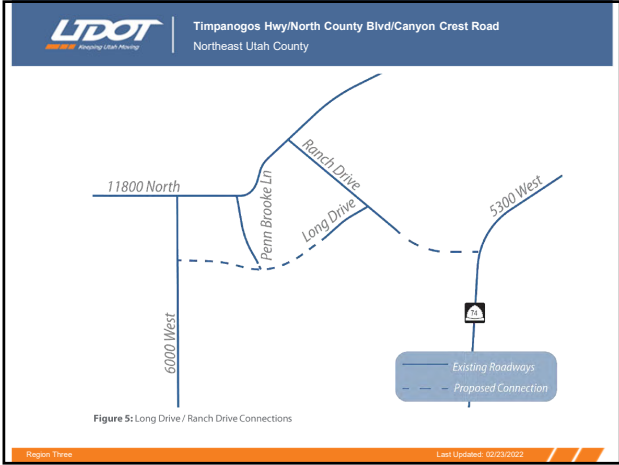
Aligning Utah's Future

Figure 3: Potential Connection Locations

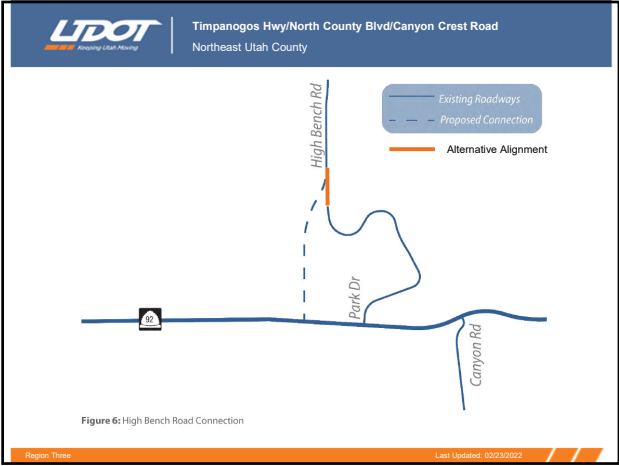
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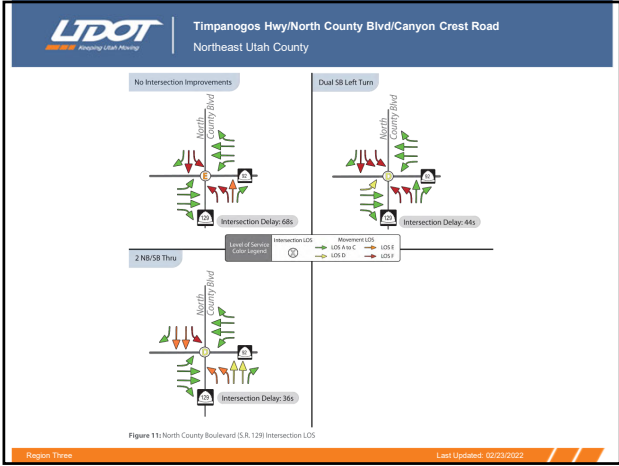
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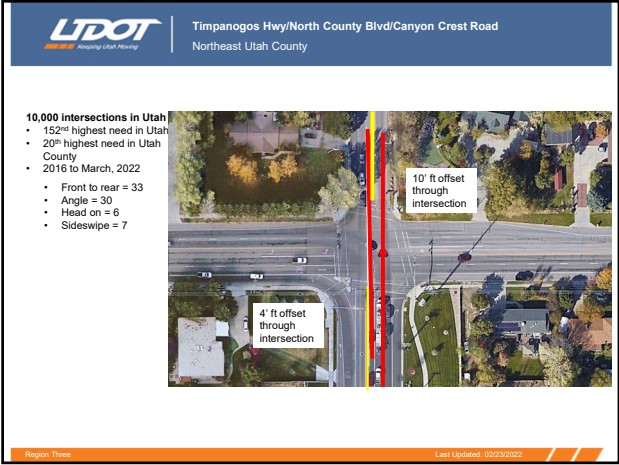
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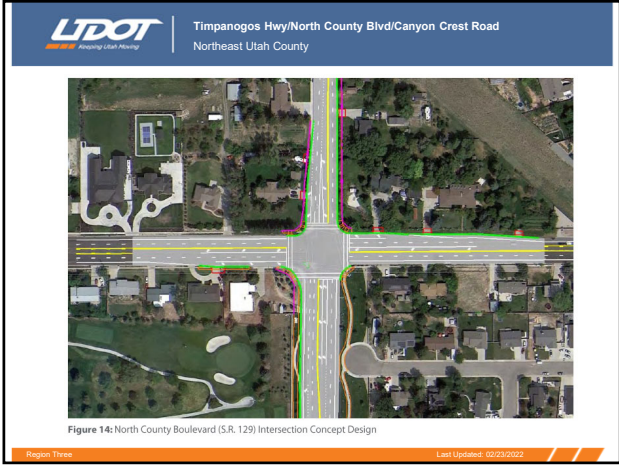
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10



11



12



FISCAL YEAR 2022-2023 BUDGET REVENUE PROJECTIONS

Item 2 – Discussion
Presented by – Tyler Bahr
Finance Director

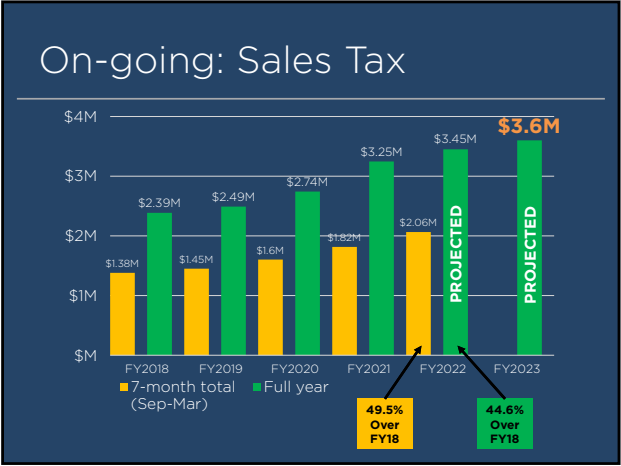
13

Objective

- Discuss **revenue projections** relative to development of FY2022-2023 budget
- Distinguish between **ongoing** & **one-time** revenue sources



14



15

On-going: Property Tax

	FY2018	FY2019	FY2020	FY2021	FY2022 YTD	FY2022 Budget	FY2023 Budget
Current Year Taxes	1,687,033	1,725,138	1,726,951	1,850,469	1,841,684	1,825,000	1,900,000
Delinquent Taxes	125,555	103,937	146,314	138,412	109,963	125,000	125,000
FY Total	1,812,588	1,829,075	1,873,264	1,988,880	1,951,647	1,950,000	2,025,000
% Increase over prior year		1%	2%	6%			

Property Taxes: \$1.9M (FY2023 forecast) =
2.7% increase over FY2021 actual \$1.85M
4.1% increase over FY2022 budget \$1.825M

*Delinquent Property Taxes average \$128K (FY18-21)

16

On-going: Public Safety Fee

- Cedar Hills exit – FY2020
- Residents supported fee over property tax increase
- Monthly fee of \$11.50 generates \$650K
- Draft budget includes \$1.3M – monthly fee to \$23



17

One time: Building & ARPA

Development Related

- Building permits – \$700K
- Building plan check fees – \$200K

ARPA

- FY23 allocation of \$1,134,657 anticipated in July – in addition to July 2022 receipt (same amount)

18

Enterprise & Capital Funds

Service Charges

- Anticipating incremental growth consistent with utility rate studies

PY Carryover

- Indicates use of fund balance, savings from prior years to complete capital projects

19

Enterprise & Capital Funds

Impact Fees

- Road - \$134,500 (\$538 each)
- Sewer - \$400,000 (avg. \$1,600 each)
- PI - \$500,000 (avg. \$2,000 each)
- Culinary - \$150,750 (\$602 each)
- Park - \$1,463,500 (\$5,854 each - for debt service)
- Building \$61,250 (\$245 each - for debt service)

20

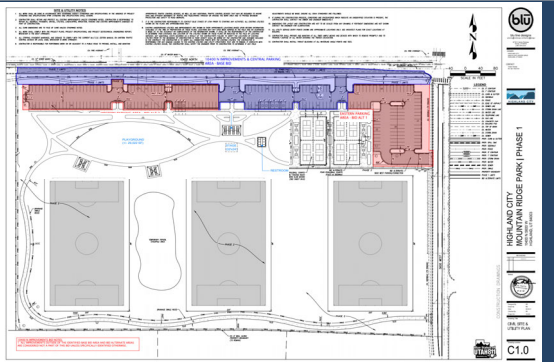


MOUNTAIN RIDGE PARK

Item 3 - Discussion
Presented by - Nathan Crane, AICP
City Administrator/Community Development Director
Erin Wells
Assistant City Administrator

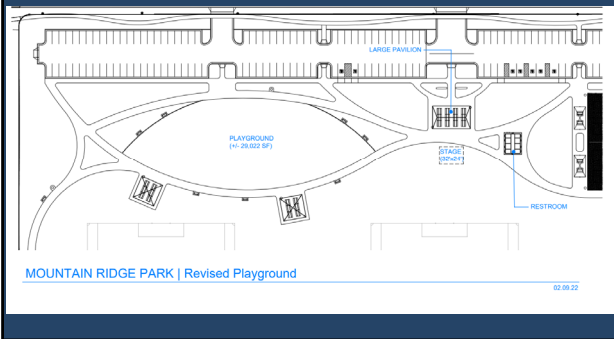
21

Phase 1



22

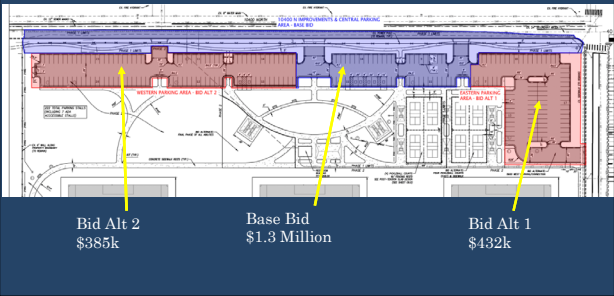
Revised Playground Area



23

Phase 1 Bids

Total Cost: \$2.1 Million



24

Remaining Major Elements

- Playground: \$2 Million
- Restroom: \$400k
- 8 Pickleball Courts: \$750k
 - Lighting add: \$300k
 - Shade and Furniture add: \$175k
- Sports Fields: \$1.5 Million
- Perimeter Walkway w/ Furniture
 - \$275k
- Pavilions (1 large and 2 small)
 - \$350k
- Remaining landscaping: \$450k

- Estimated Total: \$7.8 Million
 - October Estimate: \$7.9 Million

25

City Revenue Sources

- Estimated Total: \$5,392,486
 - \$1,402,668 - Spring Creek Park Sales
 - \$358,055 -Patterson Storage Units Sale
 - \$400,00 - Dry Creek Property Sale
 - \$95,700 - Street Tree Account
 - \$87,300 - Enterprise Fund Eligible Portions
 - \$144,390 - B&C Road Eligible Portions
 - \$10,000 - Patterson Donation
 - \$2,269,373 - AARP Funds
 - \$625,00 - One-time Revenue Over Expenses FY2021

26

Non-City Revenue Sources

- \$20,000 Donation for swing
- \$1,000,000 for the Playground*
- Other
 - Surf Soccer
 - Chad Christofferson

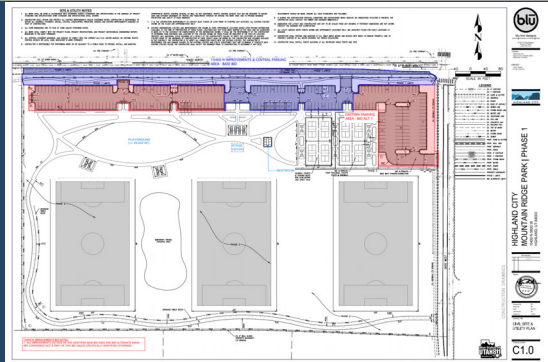
27

Big Picture

- City Funding: \$5.4 Million
 - Phase 1: \$2.1 Million
 - Playground: \$2 Million
 - Restroom: \$400k
- “Top Three” Total: \$4.5 Million
 - \$800-\$900k in “discretionary”
 - Can’t build the complete park without donations

28

Phase 1 - ??



29



ESTIMATED MAINTENANCE COSTS

Erin Wells, Assistant City Administrator

30

Ongoing Costs by Element Type*

- Grass – current budget per acre
- Pavilion/ Restrooms – 20% of current budget
- Parking Lot – Surface treatment and restriping every 10 years
- Playground Elements – Warranty expirations at 3 years, 5 years, 10 years

31

Ongoing Costs by Element Type* (continued)

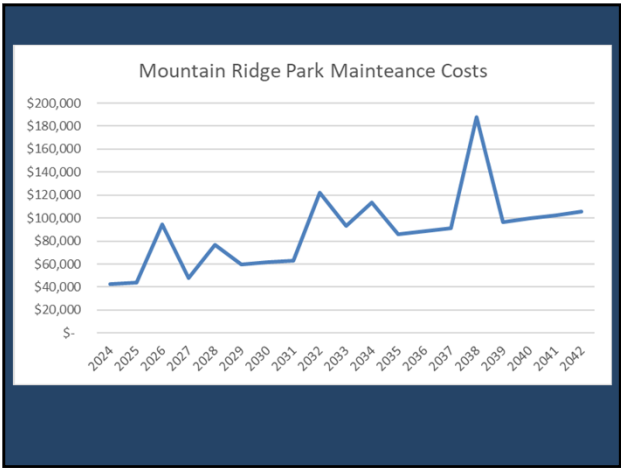
- Playground Surface – Surface treatment after 2 years and then every 6 years
- Pickleball Courts – resurfacing every 4 years
- Shade structures – warranty expirations at 5 years
- *Inflation at 3%

32

Rough Costs Estimate

- \$43,000 per year in FY 2024
- 8% average annual increase over 19 years
 - 3% O&M
 - Playground element and shade structure cost increases as warranties expire
- “Balloon” years
 - Playground resurfacing
 - Pickleball court resurfacing
 - Parking lot resurfacing
- Playground replacement at year 20

33



34

Staff Recommendation

- General Fund to cover normal O & M increases
- Put money from General Fund into Parks Capital Fund for “balloon” capital expenses

35

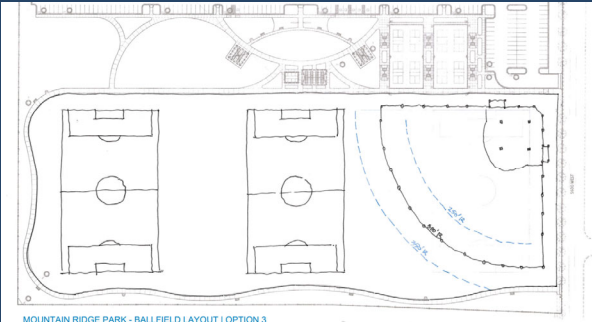


PLAY FIELD PARTNERSHIPS

Kurt Ostler, Mayor
Brian Braithwaite, Parks Committee Chairman

36

Play Fields



MOUNTAIN RIDGE PARK - BALLFIELD LAYOUT | OPTION 3

37

**PI WATER MESSAGING**

Item 4 - Discussion
Presented by - Erin Wells
Assistant City Administrator
Jeff Murdoch
Assistant Public Works Director

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Communication Plan

- Monthly Communication Outline
 - PW & Communication Team
- Communication Plan
 - Weekly - Social Media
 - Monthly - Email/text alert, newsletter article, website update
- Communication Content
 - Utah Division of Water Resources
 - Water Storage Levels
 - Need for Conservation
 - Water Amount Used
 - PI Schedule

39

PI Meters Update

- Phase 1 Installation Plans
- Grant Applications
 - State ARPA
 - Federal

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**GARBAGE RATES**

Item 5 - Discussion
Presented by - Erin Wells
Assistant City Administrator

41

Historical Context

- July 2020 - switch to Waste Management
 - New rates set with ~\$50,000 net revenue
 - Approximate average of previous years
 - Unexpected increases
 - Absorbtion inflationary increases for a time

Budget Year	~ Net Revenue
FY 2021	\$15,000
FY 2022 Budget	(\$7,000)
FY 2023 Draft Budget	(\$122,000)

42

Expense Impacts

- Inaccurate can count
- Different charging methodology
 - Non-can costs ~ \$100,000
- Delay in WM charges
- Annual inflation increase in contract
 - FY 23 initial estimates between 8 and 11%
- Anticipated housing growth with Ridgeview

43

Garbage Department Analysis

- \$1.17 million total expenses
 - ~\$282,000 – North Pointe tipping fees
 - ~\$830,000 – WM hauling contract
 - ~\$58,000 – salaries, billing, credit card fees, etc.

	Monthly Can Cost to City (FY23 Estimate)	Current Can Rate	Deficit
First Garbage	\$10.70	\$9.61	(\$1.09)
Second Garbage	\$7.47	\$6.76	(\$0.71)
Recycling	\$7.10	\$6.27	(\$0.83)

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Rate Options

	No Rate Change	Break Even	Rates Allowing for Inflation
First Garbage	\$9.61	\$10.70	\$11.08
Second Garbage	\$6.76	\$7.47	\$7.85
Recycling	\$6.27	\$7.10	\$7.48
Monthly Resident Increase	--	\$2.64	\$3.76
Annual Resident Increase	--	\$31.64	\$45.14
-City Net Revenue	(\$122,000)	\$0	\$50,000

45

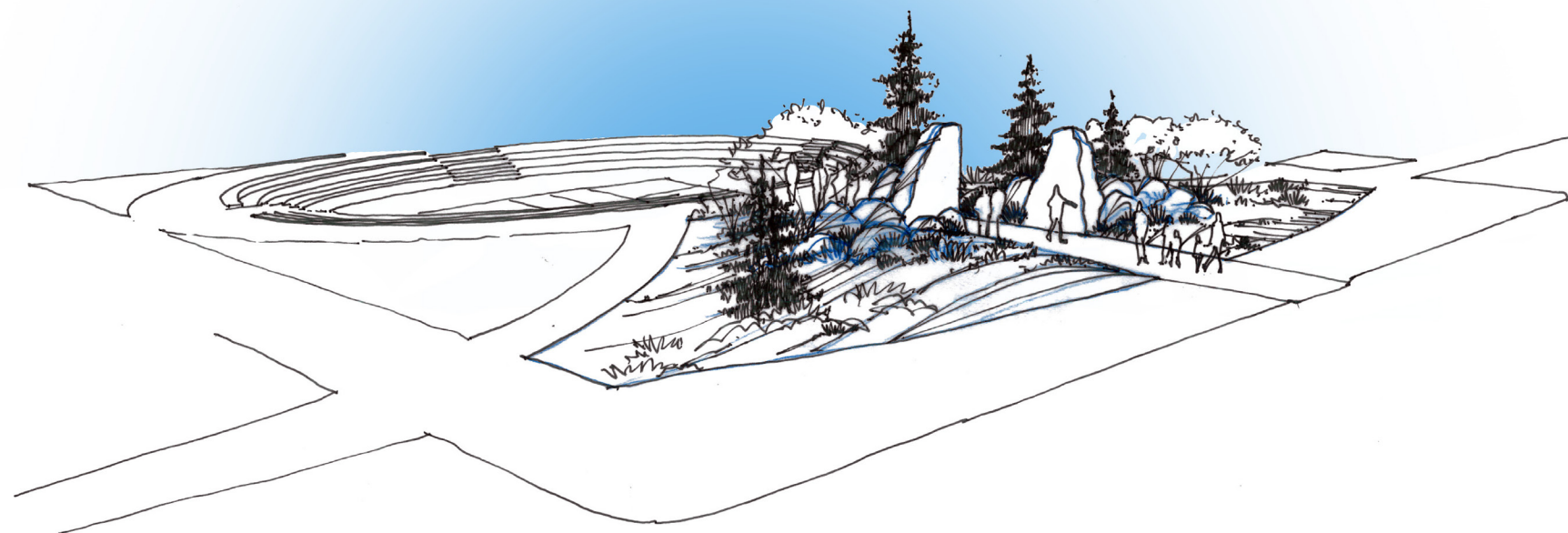


CLOSED SESSION

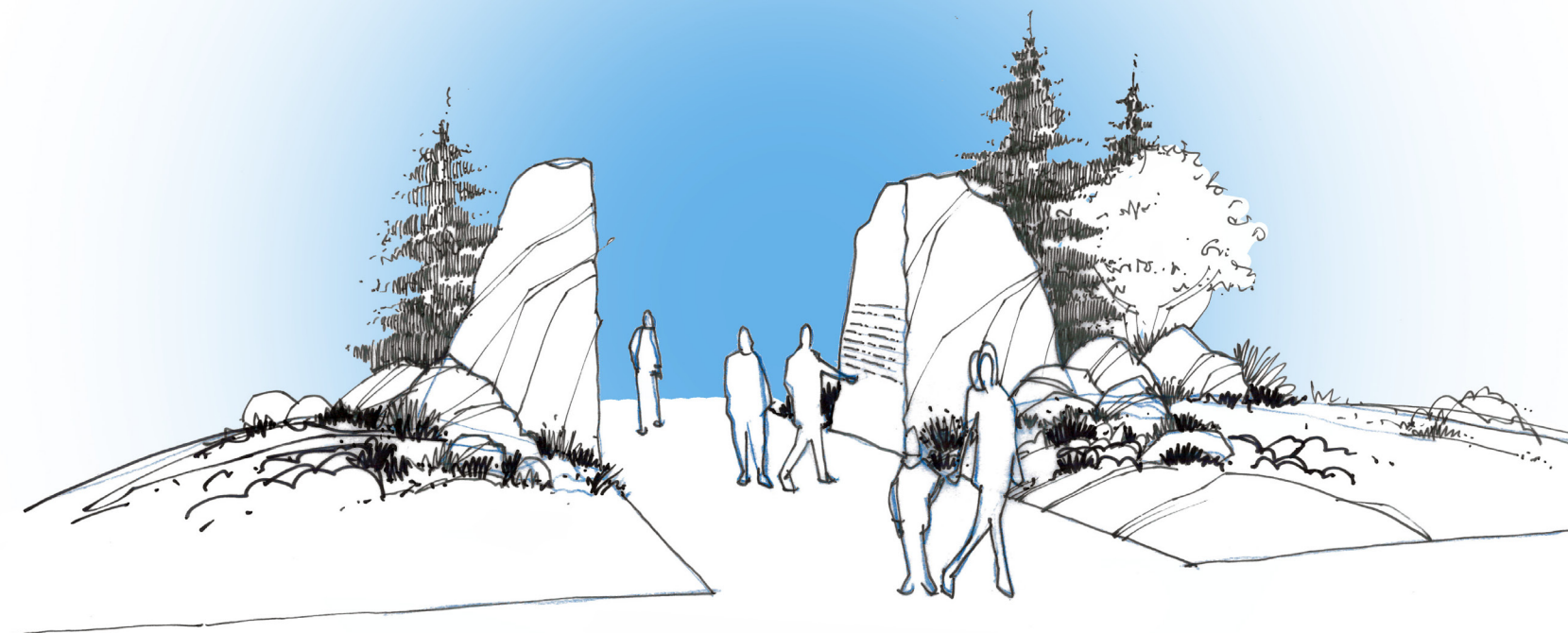
The Highland City Council has recessed the City Council Work Session to convene in a closed session to discuss pending or reasonably imminent litigation, as provided by Utah Code Annotated §52-4-205.

The City Council Work Session will adjourn immediately following the ending of the closed session.

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Gateway & Patriots Gallery - Sketch 1



Gateway & Patriots Gallery - Sketch 2

Mountain Ridge Park

10400 N Improvements

10400 N 5600 W

Highland City, UT 84003



HIGHLAND CITY



construction documents
bid set

February 18, 2022

sheet index

project team

general notes

1	CO1.0 - cover sheet
2	CO1.1 - general notes & sheet index
3	DP1.0 - existing site & demo plan
4	SP1.1 - overall site plan phase 1
5	SP5.2 - site details
6-15	C1.0 - C7.1 - civil plans and details
16-30	EE0.1 - ES603 - electrical notes, plans & details
31-34	L1.1 - L5.2 - landscape plans, notes & details
35-40	LI1.0 - LI5.3 - irrigation plans, notes & details

OWNER

Highland City

5400 W Civic Center Drive

Highland City, Utah 84003

P: 801.756.5751

F: --

CONTACT: Todd Trane

E-MAIL: todd@highlandcity.org



LANDSCAPE ARCHITECT

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8719 S. Sandy Parkway

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P: 801.703.6383

F: --

CONTACT: Rob Donigan

E-MAIL: rob@blulinedesigns.com



SURVEY/ CIVIL

PEPG Consulting

9270 South 300 West, Suite A-2

Sandy, Utah 84070

P: 801.562.2521

F: 801.562.2551

CONTACT: Ryan Betz

E-MAIL: Ryan.Betz@pepg.net



ELECTRICAL ENGINEER

Spectrum Engineers

324 S. State Street, Suite 400

Salt Lake City, Utah 84111

P: 801.401.8495

F: --

CONTACT: Spencer Little

E-MAIL: scl@spectrum-engineers.com



1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND HIGHLAND CITY STANDARDS, SPECIFICATIONS, AND DETAILS. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THESE ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

2. EXISTING UTILITIES, EASEMENTS, AND STRUCTURES SHOWN ON THE DRAWINGS ARE IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE, TYPE, AND STRUCTURES TO BE ENCOUNTERED ON THE PROJECT PRIOR TO ANY EXCAVATION AND CONSTRUCTION IN THE VICINITY OF THE EXISTING UTILITIES AND STRUCTURES.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL REQUIRED PERMITS, LICENSES, AND APPROVALS REQUIRED TO LEGALLY AND RESPONSIBLY COMPLETE THE WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, DISPOSAL, OR RELOCATION OF ALL OBSTRUCTIONS AND DEBRIS WITHIN THE DELINEATED CONSTRUCTION AREA PRIOR TO STARTING NEW CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY DEBRIS RESULTING FROM NEW CONSTRUCTION.

5. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGE TO EXISTING FEATURES AND FACILITIES SCHEDULED TO REMAIN AS PART OF THE FINISHED CONSTRUCTION. REPAIR, REPLACEMENT, AND/OR REMOVAL AS DETERMINED BY OWNER SHALL BE AT THE CONTRACTOR'S EXPENSE.

6. THE CONTRACTOR SHALL BE RESPONSIBLE TO ADJUST THE TOPS OF ALL EXISTING MANHOLES, CATCH BASINS, INLETS, COVERS, AND SIMILAR STRUCTURES TO FINISH GRADE.

7. THE CONTRACTOR SHALL CALL BLUE STAKES AT 1-800-662-4111 FOR UNDERGROUND UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.

8. ALL NEW UNDERGROUND UTILITIES SHALL HAVE UNDERGROUND UTILITY WARNING TAPE. INSTALL UNDERGROUND UTILITY WARNING TAPE A MAXIMUM OF 12 INCHES ABOVE THE UTILITY PIPE CROWN. TAPE SHALL BE A MINIMUM 3 INCH WIDTH. TAPE SHALL BE ACID AND ALKALI RESISTANT, REINFORCED FOR 100 LB. TENSILE STRENGTH AND METALLIC SUCH THAT THE TAPE CAN BE DETECTED WITH A STANDARD SURVEY-TAPE METAL DETECTOR TO A DEPTH OF 6 FEET. TAPE COLORS SHALL BE BLUE FOR WATER AND GREEN FOR SEWER. IMPRINT WITH THE WORD 'CAUTION' AT A MAXIMUM OF 2 FOOT INTERVALS, IDENTIFYING THE UTILITY LINE BEING PROTECTED, IRRIGATION MAINLINES INCLUDED.

9. THE PROJECT SHALL NOT BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT, AND SIDEWALKS HAVE BEEN SWEEPED CLEAN OF ALL DIRT AND DEBRIS.

10. CONTRACTOR SHALL ROUGH GRADE TO WITHIN +/- A TENTH OF A FOOT FROM FINISH GRADE UNLESS OTHERWISE NOTED.

11. ALL SPOT ELEVATIONS ARE FINISH GRADE UNLESS OTHERWISE NOTED.

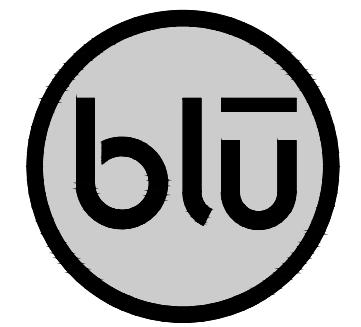
12. ALL CLARIFICATIONS OF DISCREPANCIES BETWEEN THE DRAWINGS AND THE SITE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING OF WORK.

13. CROSS SLOPES ON ALL NEW HARDSCAPE AND PAVEMENT SHALL NOT EXCEED 2% UNLESS OTHERWISE SHOWN.

14. ALL AREAS WITHIN AND AFFECTED BY THIS PROJECT SHALL HAVE POSITIVE DRAINAGE. POSITIVE DRAINAGE SHALL BE PROVIDED TO DIRECT STORMWATER AWAY FROM ALL STRUCTURES.

15. CONTRACTOR SHALL PROVIDE AND MAINTAIN A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY HIGHLAND CITY AND THE STATE OF UTAH.

16. ALL CONSTRUCTION SHALL ADHERE TO THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT COMPLETED BY CMT ENGINEERING LABORATORIES INCLUDING OVEREXCAVATION, COMPACTION, AND TREATMENT OF UNDOCUMENTED FILL. REPORT SHALL BE PROVIDED BY THE OWNER.



blu line designs
planning | landscape architecture | design

8719 S. Sandy Parkway
Sandy, UT 84070
p 801.679.3157

OWNER:
HIGHLAND CITY
5400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

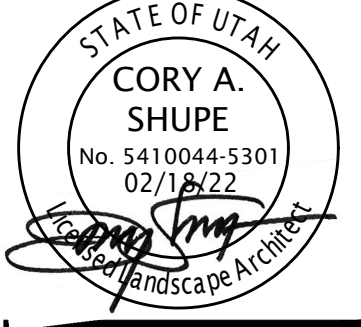
CONTACT:
ANDY SPENCER
PH: 801-772-4508



HIGHLAND CITY | MOUNTAIN RIDGE
PARK | 10400 N IMPROVEMENTS
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: RBD
Drawn By: BP
Date: 02.18.22
Checked By: CAS
Project No: 18-224

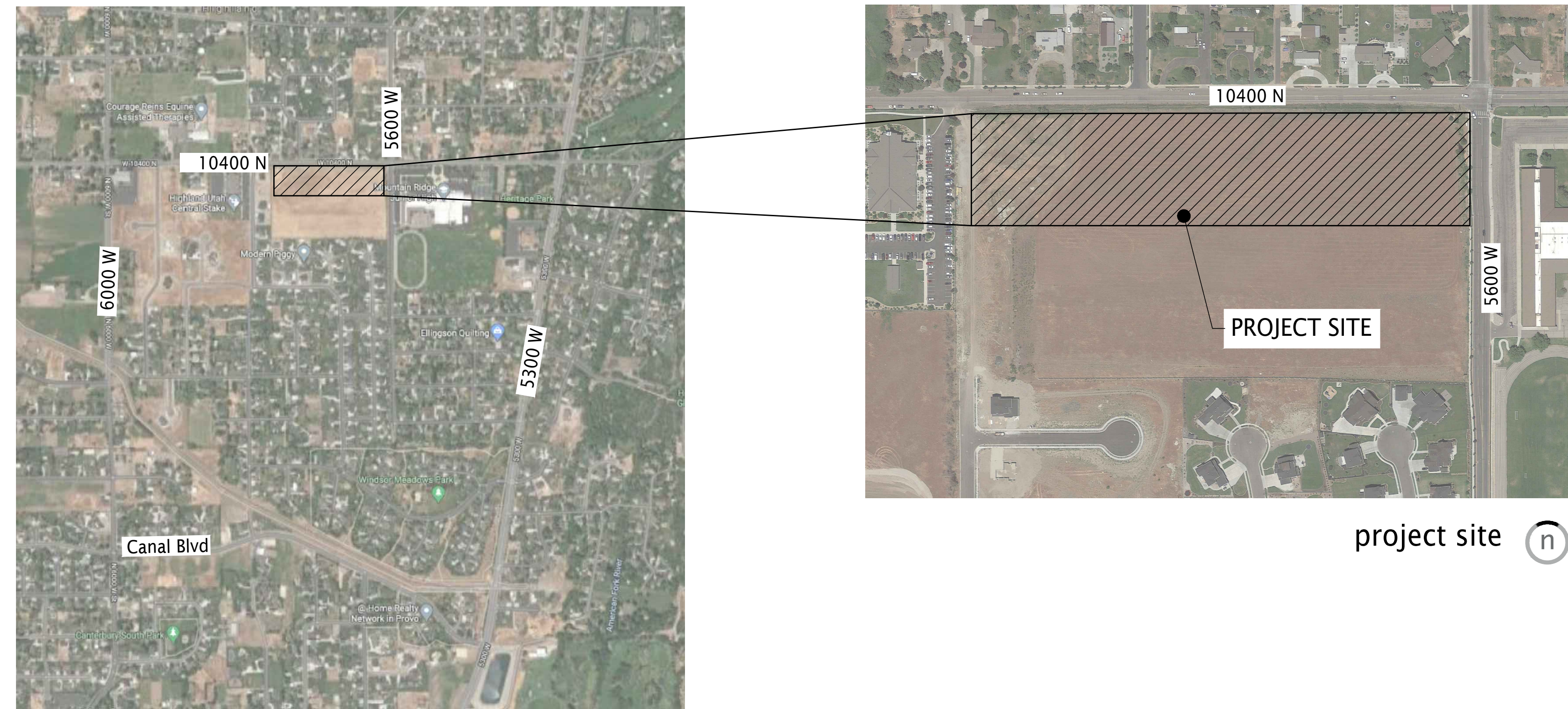
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GENERAL
NOTES &
SHEET INDEX

Drawing number

CO1.1

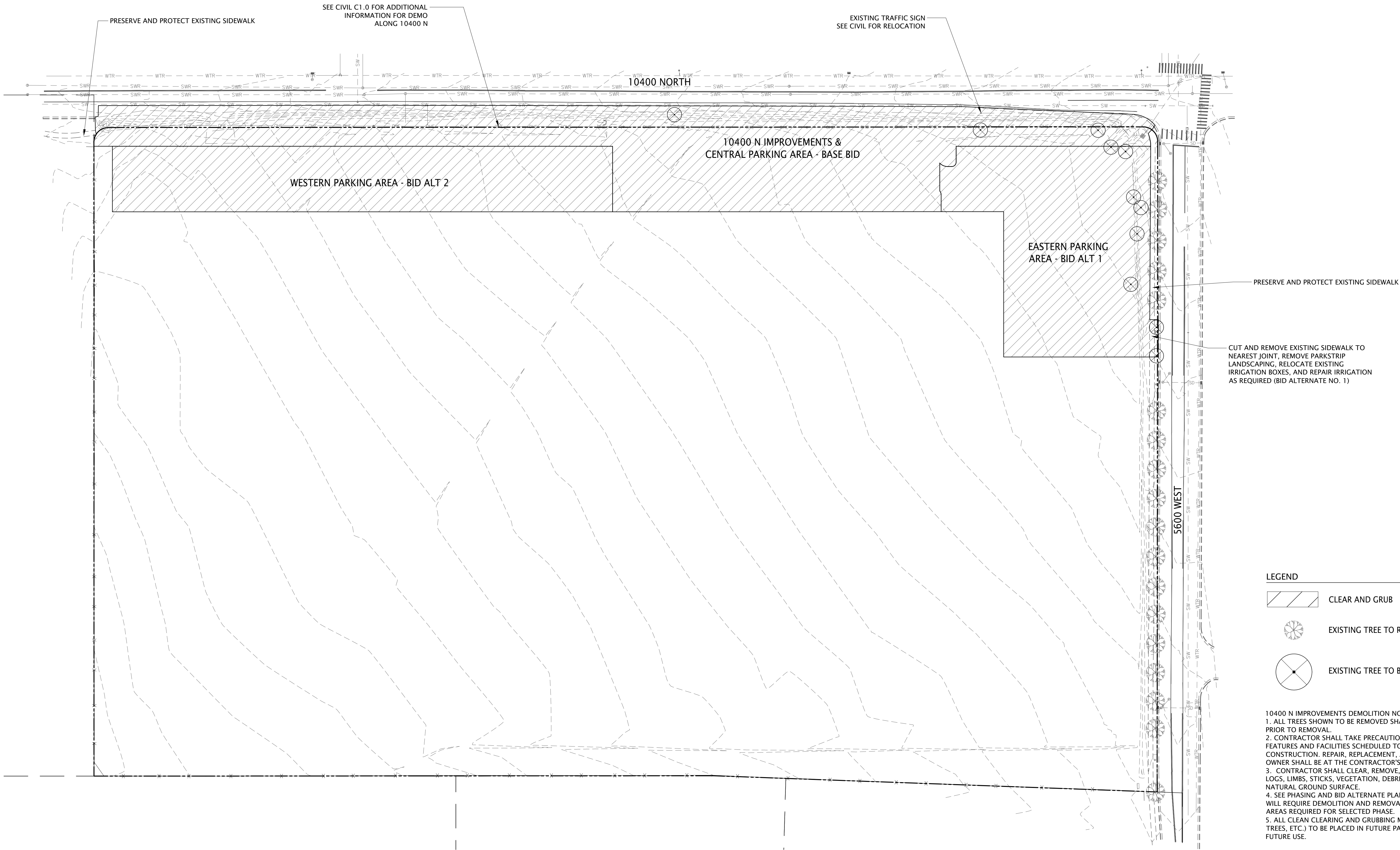
project location



vicinity map

project site n

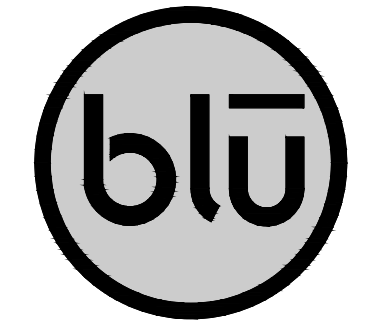
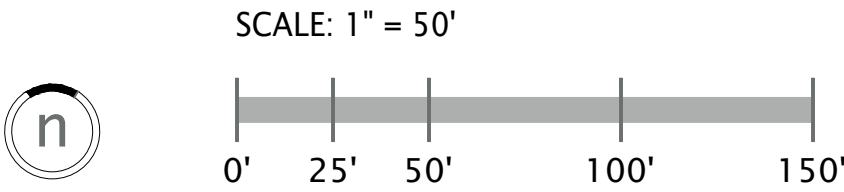
CONSTRUCTION DRAWINGS



- LEGEND
- CLEAR AND GRUB
 - EXISTING TREE TO REMAIN AND BE PROTECTED
 - EXISTING TREE TO BE REMOVED

10400 N IMPROVEMENTS DEMOLITION NOTES:

1. ALL TREES SHOWN TO BE REMOVED SHALL BE VERIFIED IN FIELD WITH OWNER PRIOR TO REMOVAL.
2. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGE TO EXISTING FEATURES AND FACILITIES SCHEDULED TO REMAIN AS PART OF THE FINISHED CONSTRUCTION. REPAIR, REPLACEMENT, AND/OR REMOVAL AS DETERMINED BY OWNER SHALL BE AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL CLEAR, REMOVE, AND DISPOSE OF TREES, STUMPS, LOGS, LIMBS, STICKS, VEGETATION, DEBRIS AND OTHER MATERIAL ON THE NATURAL GROUND SURFACE.
4. SEE PHASING AND BID ALTERNATE PLANS FOR SPECIFIC AREAS OF WORK THAT WILL REQUIRE DEMOLITION AND REMOVAL. LIMIT DEMO AND REMOVAL TO ONLY AREAS REQUIRED FOR SELECTED PHASE.
5. ALL CLEAN CLEARING AND GRUBBING MATERIAL (EXCLUDING DEBRIS, STUMPS, TREES, ETC.) TO BE PLACED IN FUTURE PARK AREA SOUTH OF PARKING LOT FOR FUTURE USE.



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CONTACT:
ANDY SPENCER
PH: 801-772-4508



HIGHLAND CITY | MOUNTAIN RIDGE PARK | 10400 N IMPROVEMENTS

10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION



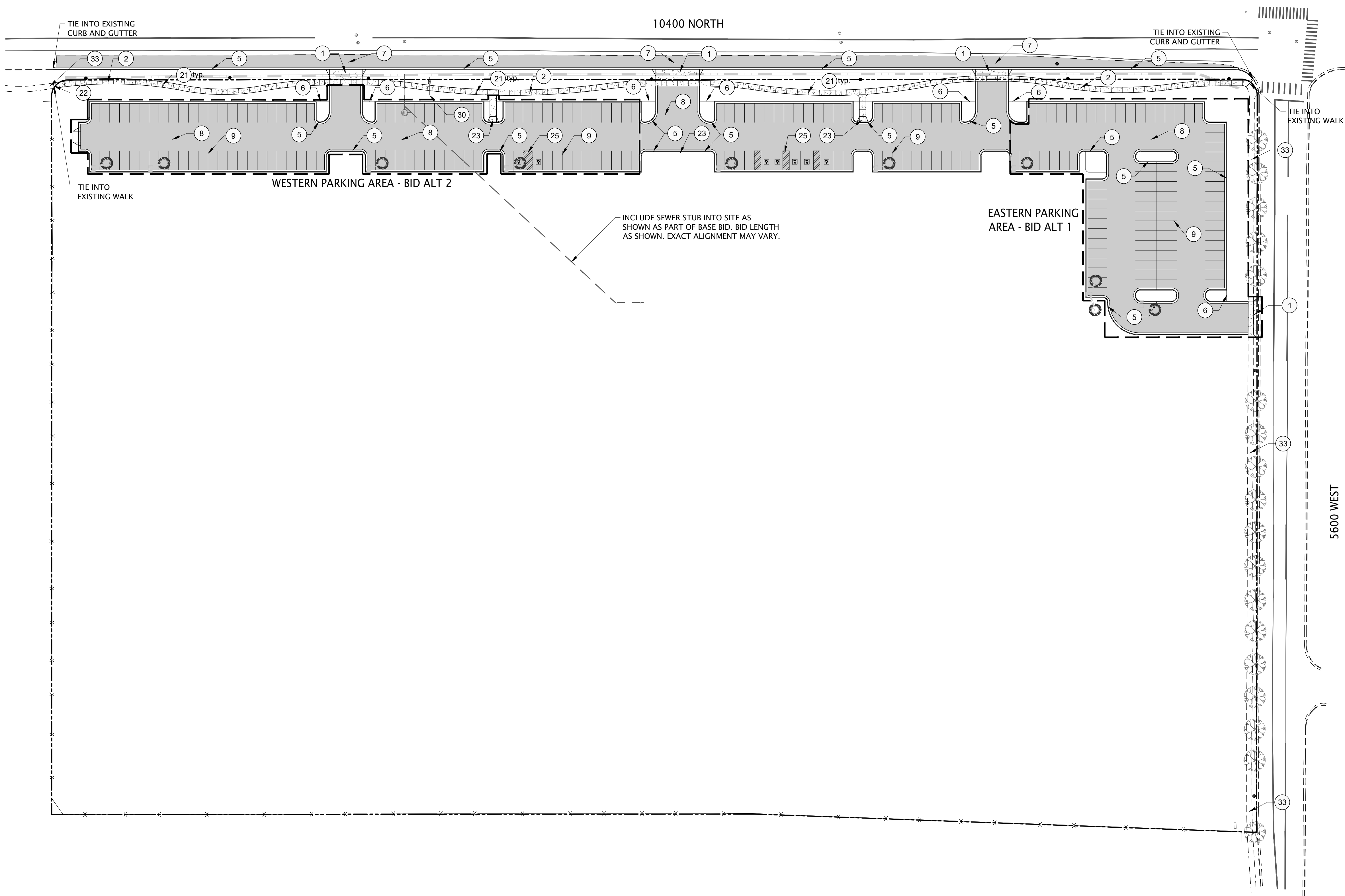
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Drawn By: BP
Date: 02.18.22
Checked By: CAS
Project No: 18-224

Drawing Title
EXISTING
SITE AND
DEMO PLAN

Drawing number

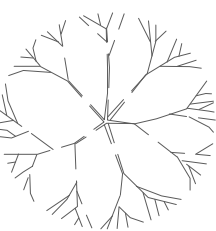
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CONSTRUCTION DRAWINGS

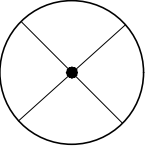


REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	DETAIL
1	CONCRETE DRIVE APPROACH	SEE CIVIL
2	5" CONCRETE WALK	1/SP5.2
3	6" CONCRETE WALK	1/SP5.2
4	10" CONCRETE WALK	1/SP5.2
5	CURB AND GUTTER	SEE CIVIL
6	6" CONCRETE EDGER	2/SP5.2
7	ASPHALT ROAD	SEE CIVIL
8	ASPHALT PARKING	SEE CIVIL
9	PARKING LOT STRIPING	SEE CIVIL
10	PICKLEBALL COURT	1/SP5.1
11	PICKLEBALL FENCE	2, 4-6/SP5.1
12	PARK BENCH	3/SP5.2
13	PICNIC TABLE	--
14	TRASH RECEPTACLE	4/SP5.2
15	RESTROOM	SEE CXT PLANS
16	ENTRY MONUMENT	7-8/SP5.2
17	PLAYGROUND, EQUIP. & SURFACING BY OTHERS (N.I.C.)	5/SP5.2
18	SHADE STRUCTURE	3/SP5.3
19	PAVILION	2/SP5.3
20	LARGE PAVILION	1/SP5.3
21	CONCRETE CONTROL JOINT	1/SP5.2
22	CONCRETE EXPANSION JOINT	1/SP5.2, 6/SP5.2
23	ADA RAMP	SEE CIVIL
24	PEDESTRIAN CROSSING	SEE CIVIL
25	ADA STRIPING/SIGNAGE	SEE CIVIL
26	BIKE RACK	--
27	WATER LINE	SEE CIVIL
28	SEWER LINE	SEE CIVIL
29	STORM LINE	SEE CIVIL
30	IRRIGATION POC	SEE CIVIL, IRRIGATION
31	PICKLEBALL COURT LIGHT	SEE ELECTRICAL
32	OVERHEAD LIGHT	SEE ELECTRICAL
33	EXISTING CONCRETE WALK TO REMAIN	--

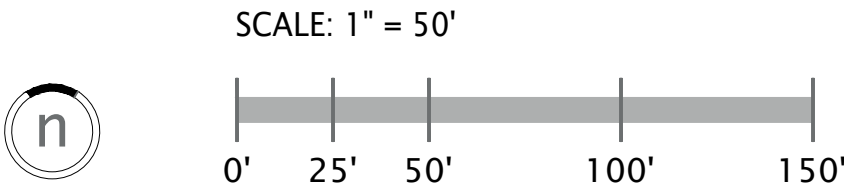


EXISTING TREE TO REMAIN AND BE PROTECTED



EXISTING TREE TO BE REMOVED

- BASE BID/ BID ALTERNATES NOTES:
- ALL GRADING, INFRASTRUCTURE, UTILITIES, STUBS, CONDUIT, ETC. NECESSARY TO COMPLETE IDENTIFIED 10400 N BASE BID IMPROVEMENTS AND TO ALLOW FOR FUTURE IMPROVEMENTS WITHOUT DAMAGE TO 10400 N BASE BID IMPROVEMENTS SHALL BE CONSIDERED PART OF BASE BID.
 - GENERALLY, 10400 N BASE BID IMPROVEMENTS INCLUDE:
 - 10400 NORTH IMPROVEMENTS (PIPE DITCH, CURB AND GUTTER, DRIVE ENTRIES, SIDEWALK, STREET LIGHTING, LANDSCAPING, AND IRRIGATION.
 - SHOWN CENTRAL PARKING LOT IMPROVEMENTS, CURB AND GUTTER, LIGHTING, LANDSCAPE, AND IRRIGATION.
 - ALL NECESSARY DEMO, EARTHWORK, AND GRADING FOR IDENTIFIED IMPROVEMENTS.
 - 10400 N BID ALTERNATE NO. 1 (EASTERN PARKING AREA) IMPROVEMENTS INCLUDE:
 - CURB, GUTTER, ASPHALT, AND DRIVE APPROACH FOR EASTERN PARKING LOT.
 - PARKING LOT LIGHTING.
 - LANDSCAPING AND IRRIGATION.
 - 10400 N BID ALTERNATE NO. 2 IMPROVEMENTS INCLUDE:
 - CURB, GUTTER, ASPHALT, AND MAINTENANCE RAMP FOR WESTERN PARKING LOT.
 - PARKING LOT LIGHTING.
 - LANDSCAPING AND IRRIGATION.



CONSTRUCTION DRAWINGS

OWNER:
HIGHLAND CITY
5400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

CONTACT:
ANDY SPENCER
PH: 801-772-4508



HIGHLAND CITY | MOUNTAIN RIDGE
PARK | 10400 N IMPROVEMENTS

10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp

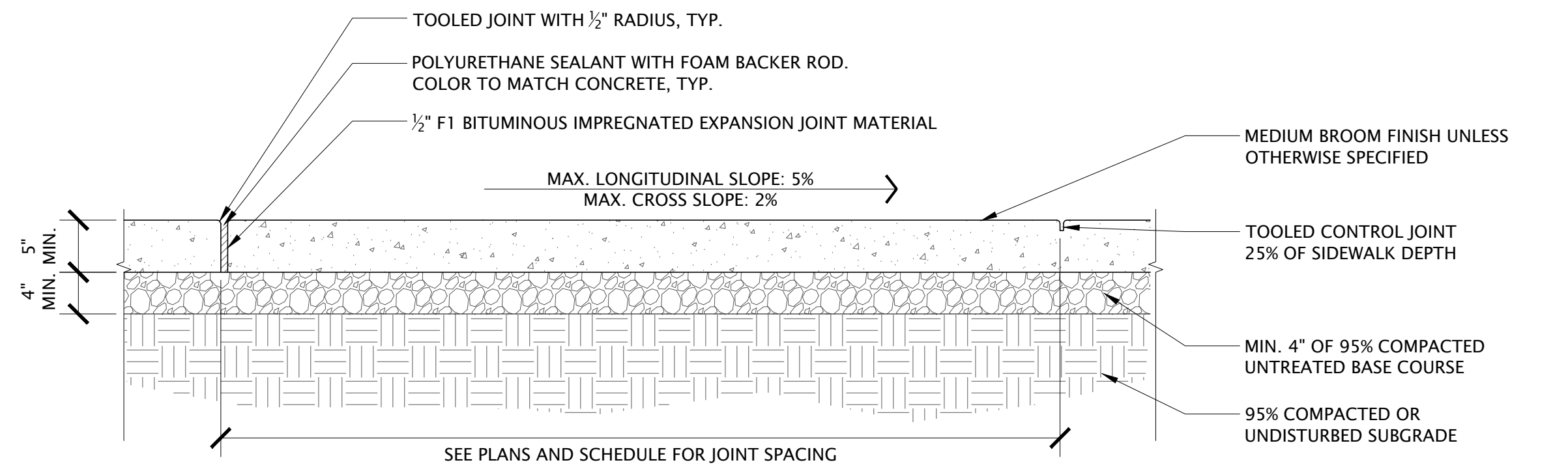
STATE OF UTAH
CORY A. SHUPE
No. 3410044-5301
02/18/22

Designed By: RBD
Drawn By: BP
Date: 02.18.22
Checked By: CAS
Project No: 18-224

OVERALL
SITE PLAN
PHASE 1

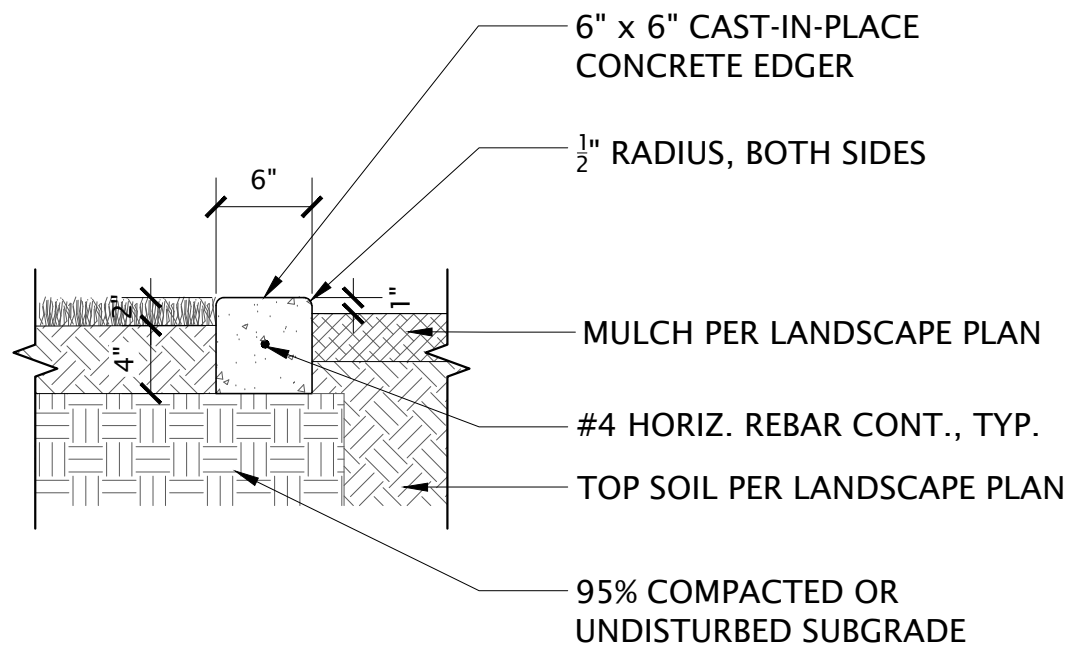
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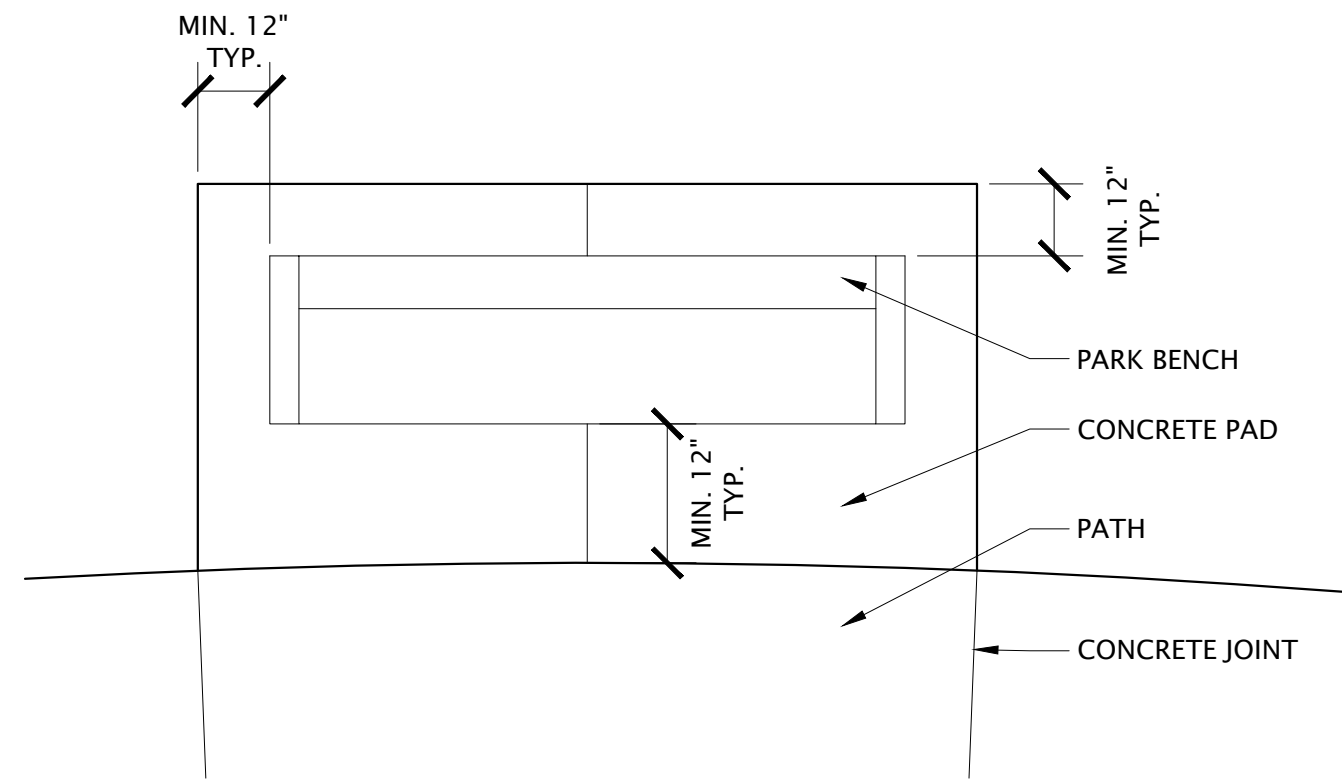


- NOTES:
1. JOINT SPACING TO BE AS SHOWN IN SCHEDULE UNLESS OTHERWISE INDICATED ON PLANS.
 2. MAX. SLOPES TO BE PER DETAIL UNLESS OTHERWISE SHOWN ON PLAN.
 3. IF CONCRETE IS TO BE POURED NEXT TO A CURB, #4 REBAR TO BE DOWELED 3" INTO CURB AND 4" INTO ADJACENT CONCRETE. REBAR TO BE DOWELED A MINIMUM OF 2" FROM TOP OF CONCRETE AND CURB 24" O.C.

JOINT SPACING SCHEDULE		
WALK WIDTH	EXPANSION JT.	CONTROL JT.
10'	50' O.C.	10' O.C.
8'	50' O.C.	8' O.C.
6'	50' O.C.	6' O.C.
5'	50' O.C.	5' O.C.



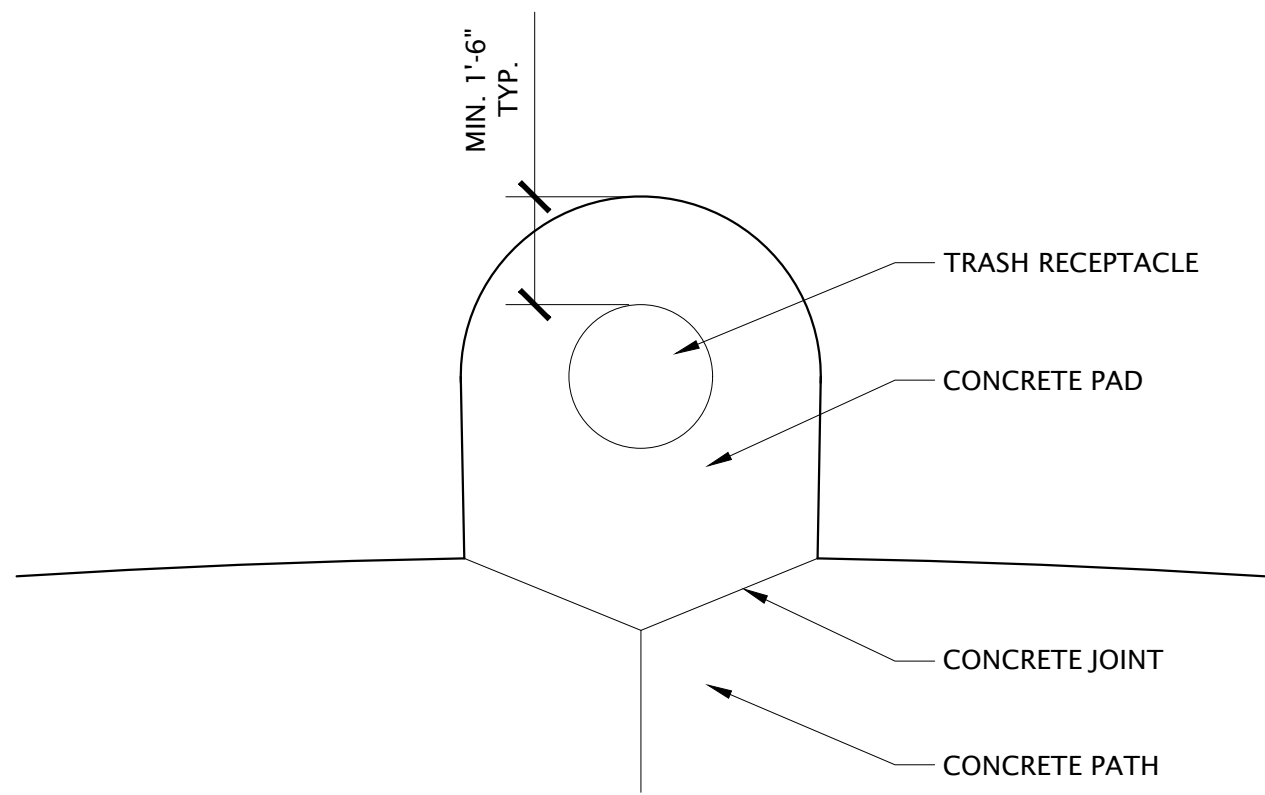
- NOTES:
1. EDGER TO BE FLUSH WITH ADJACENT WALK, PATH, PAVEMENT OR CURB.
 2. ALL LAYOUT AND FORM WORK TO BE APPROVED BY OWNER PRIOR TO PLACING CONCRETE.
 3. CONCRETE TO MEET ALL CITY AND APWA SPECIFICATIONS.
 4. PLACE EXPANSION JOINTS @ 30' O.C., CONTROL JOINTS @ 10' O.C. UNLESS OTHERWISE SHOWN ON PLAN.
 5. ALL CURVES IN EDGER TO BE TANGENT TO EACH OTHER AND STRAIGHT SECTIONS OF CURB.
 6. CONCRETE EDGER TO BE FORMED AND CAST IN PLACE, NOT PRE-CAST OR EXTRUDED.



- NOTES:
1. EXACT BENCH DIMENSIONS VARY BASED ON SELECTED PRODUCT. ADJUST SIZE OF BENCH PAD AS NECESSARY TO MEET MINIMUM OFFSET REQUIREMENTS.
 2. INSTALL BENCH PER MANUFACTURER'S RECOMMENDATIONS.
 3. SEE SPECIFICATIONS FOR BENCH MODEL AND MANUFACTURER.

1 CONCRETE SIDEWALK/PLAZA

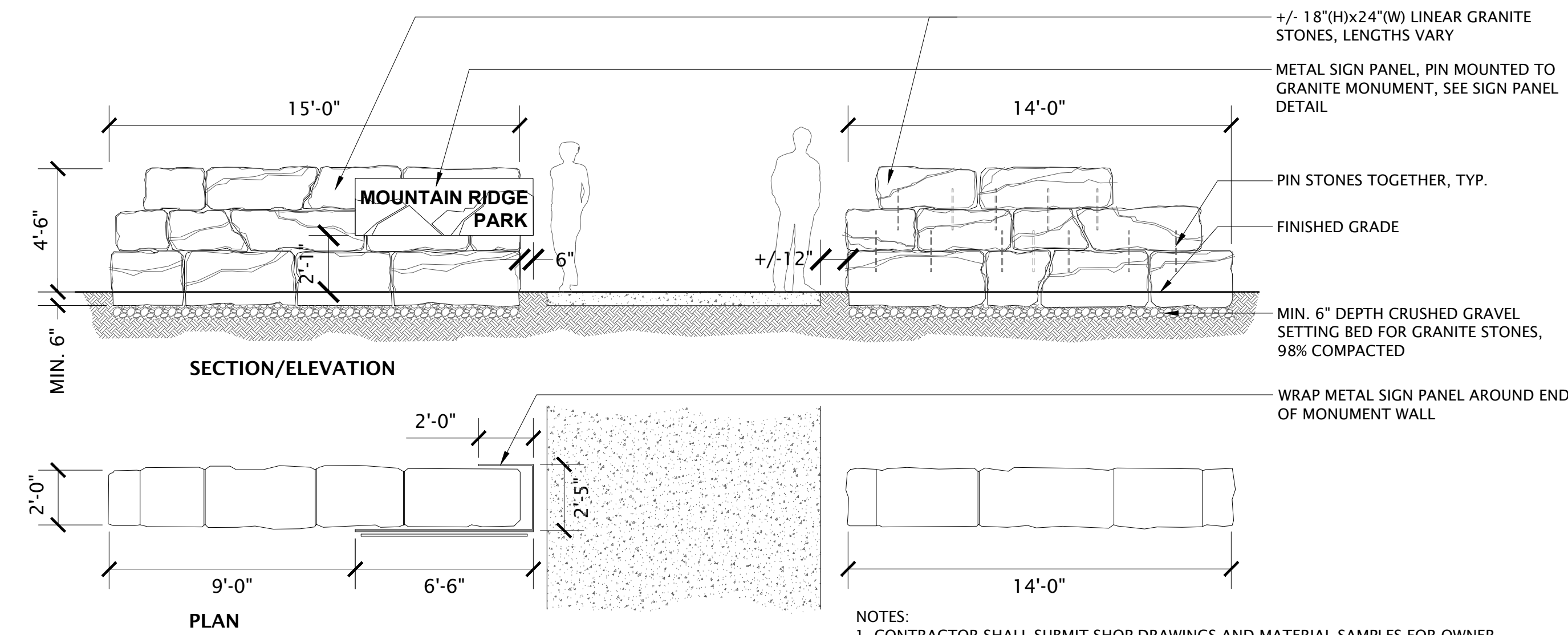
NOT TO SCALE



- NOTES:
1. TRASH RECEPTACLE SIZE MAY VARY BASED ON SELECTED PRODUCT. ADJUST SIZE OF PAD AS NECESSARY TO MEET MINIMUM OFFSET REQUIREMENTS.
 2. INSTALL TRASH RECEPTACLE PER MANUFACTURER'S RECOMMENDATIONS.
 3. POUR CONCRETE PAD MONOLITHICALLY WITH ADJACENT CONCRETE PATH.
 4. SEE SPECIFICATIONS FOR TRASH RECEPTACLE MODEL AND MANUFACTURER.

4 TRASH RECEPTACLE PAD - TYP.

NOT TO SCALE



- NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MATERIAL SAMPLES FOR OWNER REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
 2. CONTRACTOR TO PIN GRANITE STONES TOGETHER AND EPOXY GROUT, MIN. 2' O.C. AND AT LEAST TWO PER STONE.
 3. ALL GRANITE SHALL BE SALT AND PEPPER GRANITE OR APPROVED EQUAL. CUT/FINISH TO BE ROUGH/FRACTURED AS APPROVED BY OWNER.

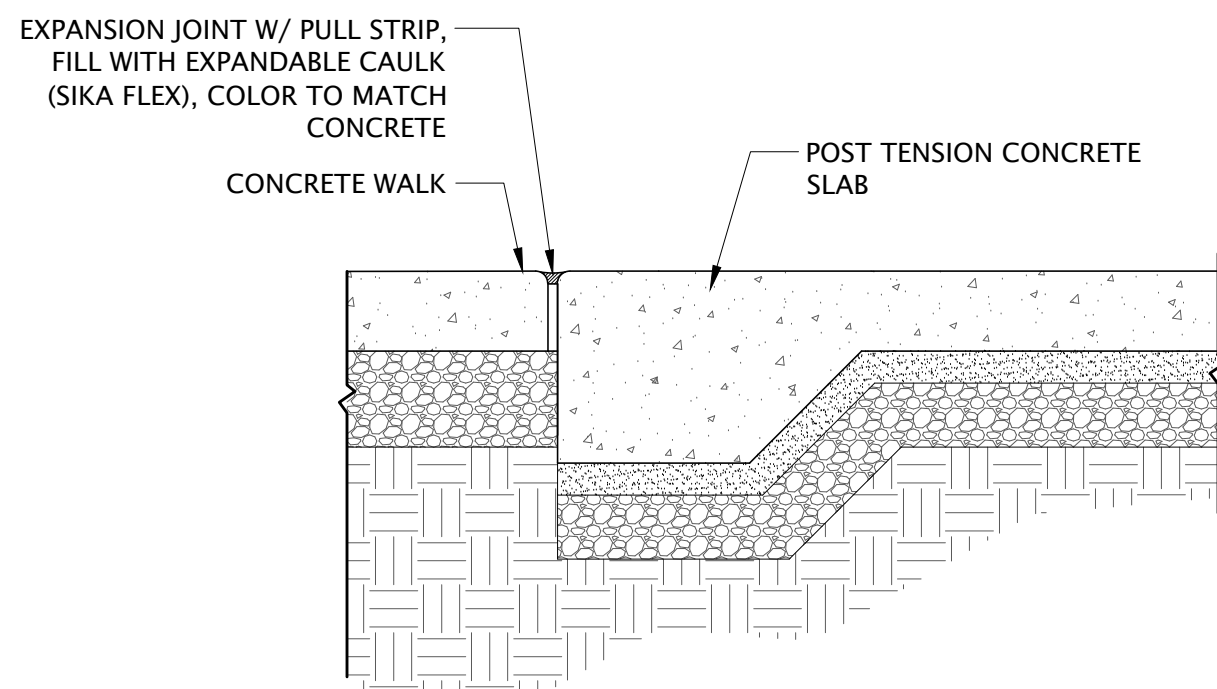
7 PARK ENTRY MONUMENT SIGN

1/4" = 1'-0"

P-18-224-25

2 6" CONCRETE EDGER

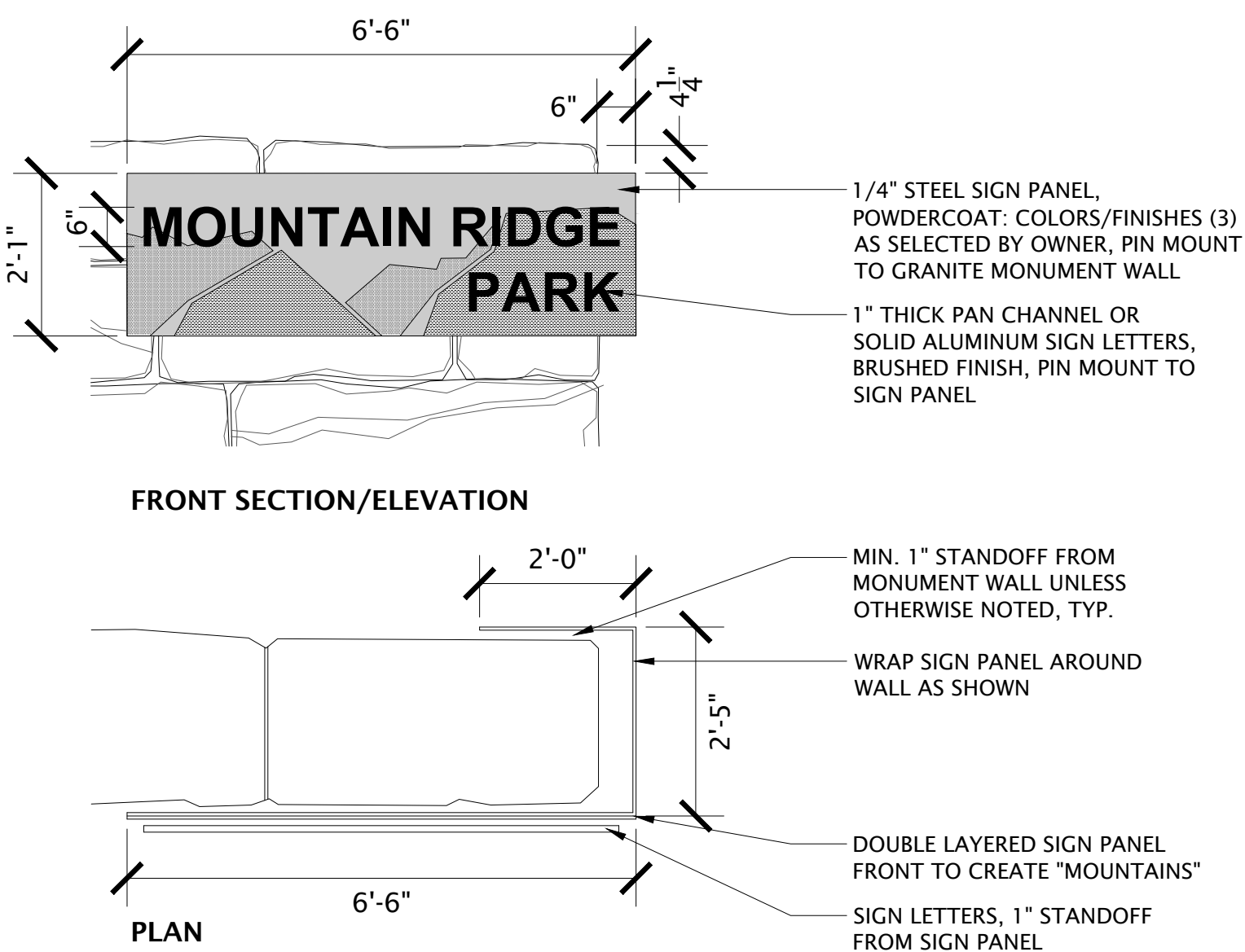
NOT TO SCALE



- NOTES:
1. CONCRETE SHALL MEET ALL CITY AND APWA SPECIFICATIONS.
 2. EXPANSION JOINT BETWEEN PT SLAB AND ADJACENT CONCRETE WALK SHALL BE FILLED WITH SIKA FLEX EXPANDABLE CAULK AS APPROVED BY OWNER.

6 EXPANSION JOINT AT POST TENSIONED SLAB

NOT TO SCALE

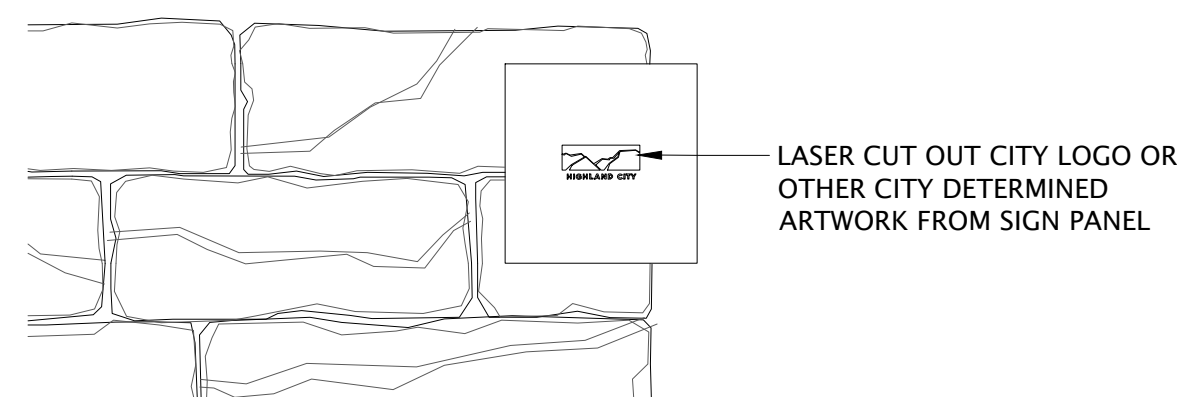


8 PARK SIGN PANEL

1/2" = 1'-0"

3 BENCH PAD

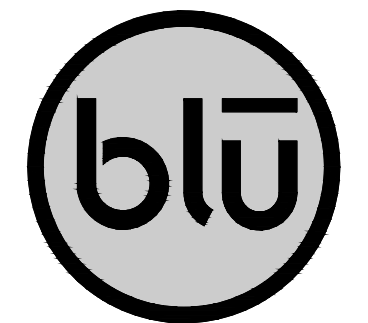
NOT TO SCALE



BACK SECTION/ELEVATION

- SIGN PANEL NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MATERIAL/FINISH SAMPLES FOR OWNER REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
 2. SIGN PANEL SHALL CONSIST OF UP TO THREE (3) COLORS/FINISHES, POWDERCOATED AS SELECTED BY OWNER.
 3. ALL ARTWORK AND FONTS SHALL BE PROVIDED TO CONTRACTOR BY CITY.

- COLOR/FINISH 1
- COLOR/FINISH 2
- COLOR/FINISH 3



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p 801.913.7994

OWNER:
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5400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
PH: 801-756-5751



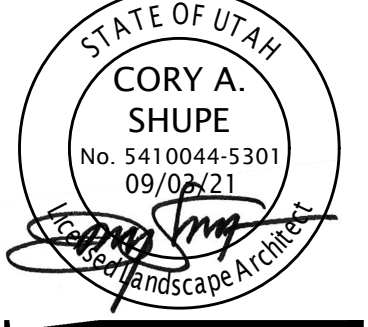
HIGHLAND CITY MOUNTAIN RIDGE PARK | PHASE 1

10400 N 5600 W
HIGHLAND, UT 84003

CONSTRUCTION DRAWINGS

REVISIONS	
NO.	DESCRIPTION

Stamp

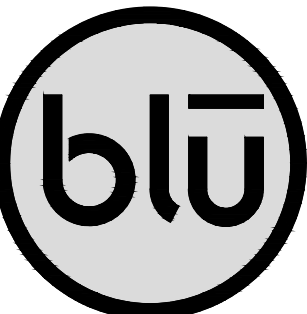


Designed By: RBD
Drawn By: BP
Date: 09.03.21
Checked By: CAS
Project No: 18-224

Drawing Title
SITE DETAILS

Drawing number

SP5.2



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PH: 801-756-5751

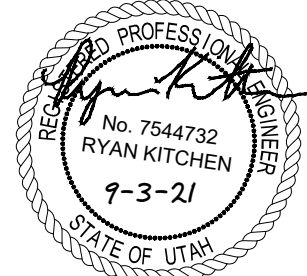


HIGHLAND CITY MOUNTAIN RIDGE PARK | PHASE 1 10400 N 5600 W HIGHLAND, UT 84003

REVISIONS

NO.	DESCRIPTION

Stamp



Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

CIVIL SITE &
UTILITY PLAN

Drawing number

C1.0



LEGEND

---	EX. 5' CONTOUR
---	EX. 1' CONTOUR
---	EX. CURB & GUTTER
---	EX. SIDEWALK
---	EX. FENCE
---	EX. EDGE OF ASPHALT
---	EX. SEWER LINE
---	EX. STORM DRAIN LINE
---	EX. WATER LINE
---	EX. TELEPHONE LINE
---	EX. GAS LINE
---	EX. CONCRETE PAD
---	EX. BUILDING PAD
---	EX. TOP OF BANK
---	EX. WATER
---	EX. STORM DRAIN
---	EX. SEWER
---	PROP. CURB & GUTTER
---	PROP. SPILL G&G
---	PROP. SIDEWALK
---	PROP. FENCE
---	PROP. 5' CONTOUR
---	PROP. 1' CONTOUR
---	PROP. STORM DRAIN
---	PROP. WATER
---	PROP. SEWER
---	PROP. SWALE
---	PROPERTY BOUNDARY
---	PHASE 1 LIMITS
---	BID ALTERNATE LIMITS

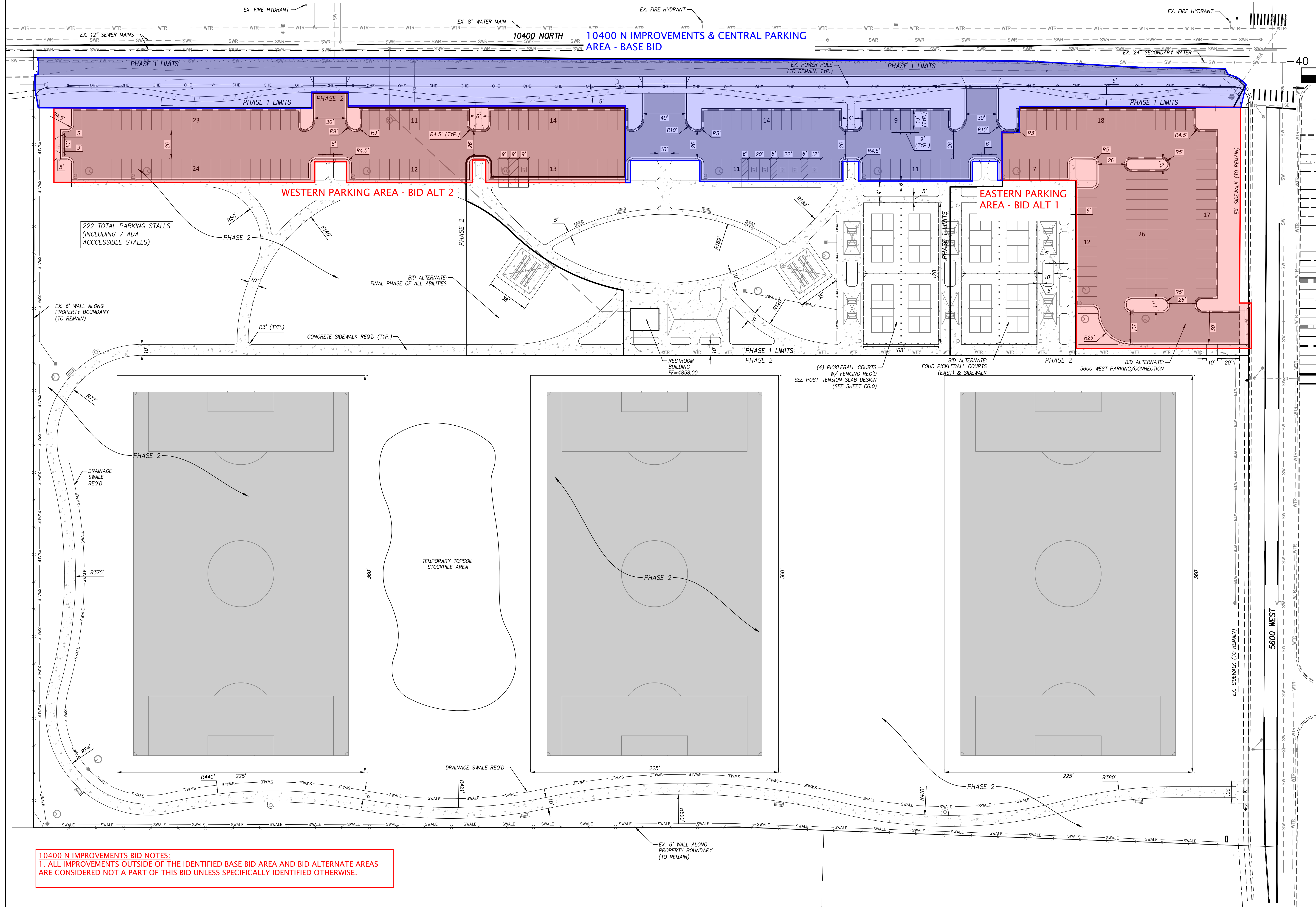
SITE & UTILITY NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND SPECIFICATIONS. IN THE ABSENCE OF PROJECT STANDARD AND SPECIFICATIONS APWA STANDARD AND SPECIFICATIONS SHALL GOVERN.
- CONTRACTOR SHALL RETAIN AND PROTECT ALL EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE TO REPAIR ALL SIDEWALK, PAVEMENT, GRAVEL, UTILITIES, LANDSCAPING, IRRIGATION, FENCING AND EXISTING IMPROVEMENTS DAMAGED AS PART OF CONSTRUCTION.
- ALL CURB DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL WORK SHALL COMPLY WITH THE PROJECT PLANS, PROJECT SPECIFICATIONS, AND PROJECT GEOTECHNICAL ENGINEERING REPORT, WHICHEVER IS THE MOST STRINGENT.
- ALL STRIPING, PAVEMENT MARKINGS, AND SIGNAGE TO COMPLY WITH THE CURRENT M.U.T.C.D. EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR LOCAL CODE, WHICHEVER IS MORE STRINGENT.
- CONTRACTOR IS RESPONSIBLE FOR PERFORMING WORK ON OR ADJACENT TO A PUBLIC ROAD TO PROVIDE, INSTALL, AND MAINTAIN

- APPROPRIATE TRAFFIC CONTROL DEVICES, AS WELL AS ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT MAY BE REQUIRED TO INSURE SAFE AND EFFICIENT MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA AND TO PROVIDE MAXIMUM PROTECTION AND SAFETY TO ROAD WORKERS.
- IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT BLUE STAKES OF UTAH PRIOR TO STARTING ANY ACTIVITIES. ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATIONS ONLY.
 - EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THEN EXISTENCE AND LOCATION OF THE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO VERIFY THE LOCATIONS OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT. THE CONTRACTOR IS TO VERIFY ALL CONNECTION POINTS WITH THE EXISTING UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE EXISTING UTILITIES AND UTILITY STRUCTURES THAT ARE TO REMAIN. IF CONFLICTS WITH EXISTING UTILITIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION TO DETERMINE IF ANY FIELD

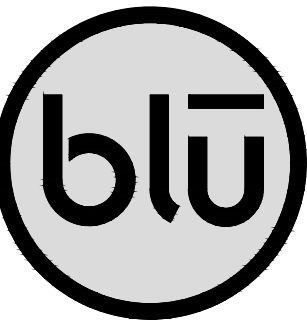
ADJUSTMENTS SHOULD BE MADE. ENSURE ALL OSHA STANDARDS ARE FOLLOWED.

- IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE OWNER AND ENGINEER IMMEDIATELY.
- DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN CONTACT THE ENGINEER FOR CLARIFICATION.
- ALL UTILITY SERVICE ENTRY POINTS SHOWN ARE APPROXIMATE LOCATIONS ONLY. SEE ARCHITECT PLANS FOR EXACT LOCATIONS AT BUILDING.
- CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES AMPLE MEANS AND DEVICES WITH WHICH TO REMOVE PROMPTLY AND TO PROPERLY DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION.
- CONTRACTOR SHALL INSTALL THRUST BLOCKING AT ALL WATERLINE ANGLE POINTS AND TEES.



10400 N IMPROVEMENTS BID NOTES:
1. ALL IMPROVEMENTS OUTSIDE OF THE IDENTIFIED BASE BID AREA AND BID ALTERNATE AREAS ARE CONSIDERED NOT A PART OF THIS BID UNLESS SPECIFICALLY IDENTIFIED OTHERWISE.





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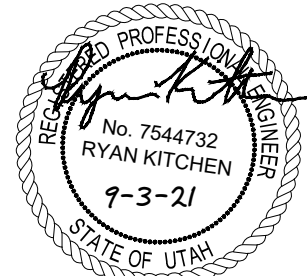
OWNER:
HIGHLAND CITY
8400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
PH: 801-756-5751



HIGHLAND CITY MOUNTAIN RIDGE PARK | PHASE 1 10400 N 5600 W HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION



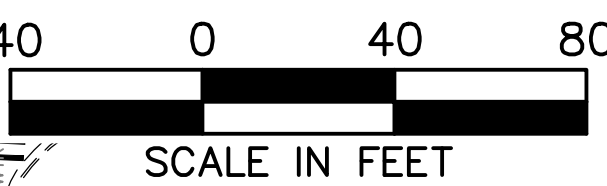
Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

CIVIL SITE &
UTILITY PLAN

Drawing number

C1.1



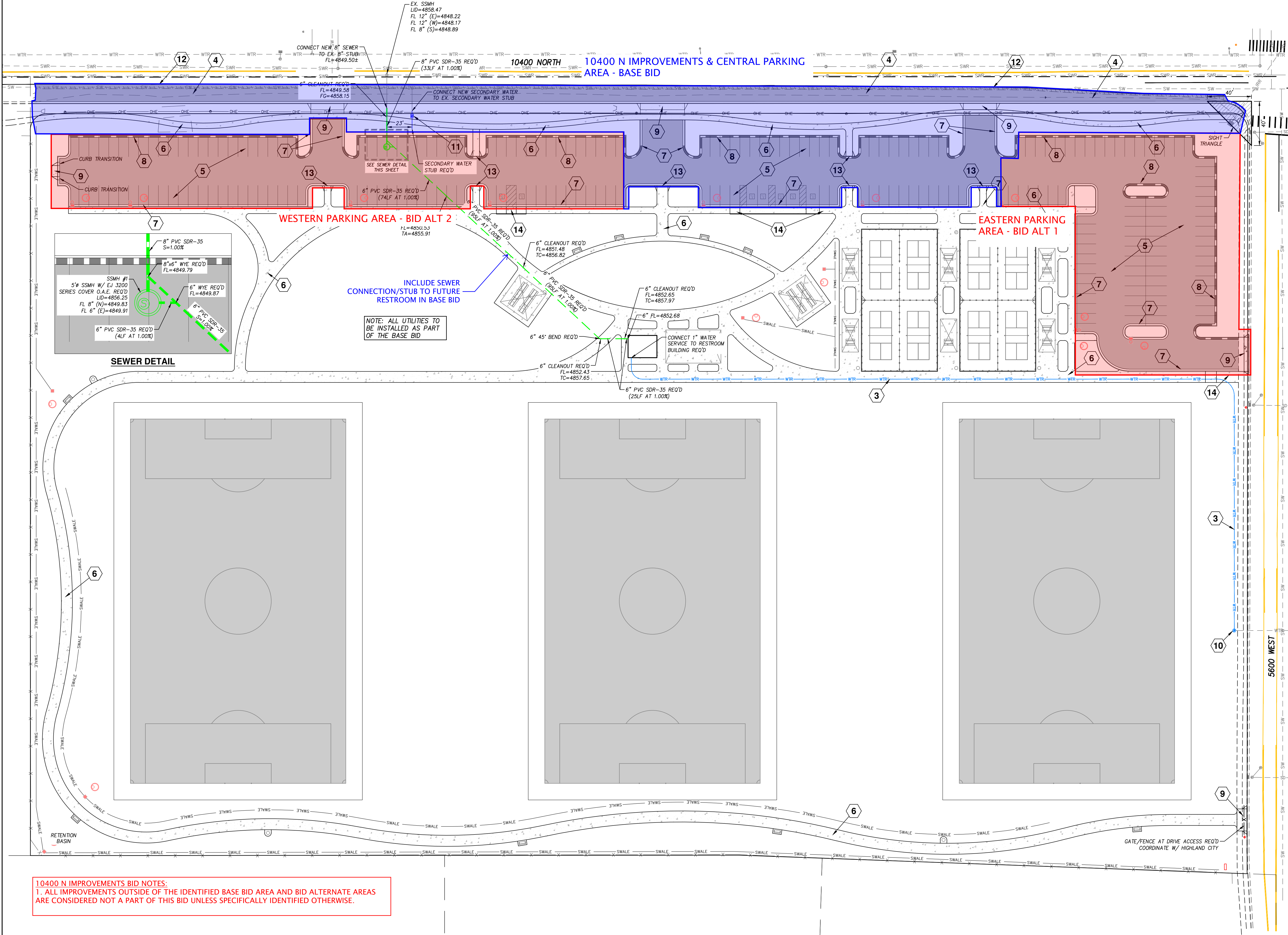
LEGEND

- 5200 EX. 5' CONTOUR
- 5201 EX. 1' CONTOUR
- EX. CURB & GUTTER
- EX. SIDEWALK
- EX. FENCE
- EX. EDGE OF ASPHALT
- EX. SEWER LINE
- EX. STORM DRAIN LINE
- EX. WATER LINE
- EX. TELEPHONE LINE
- EX. GAS LINE
- EX. CONCRETE PAD
- EX. BUILDING PAD
- EX. TOP OF BANK
- EX. WATER
- EX. STORM DRAIN
- EX. SEWER
- PROP. CURB & GUTTER
- PROP. SPILL C&G
- PROP. SIDEWALK
- PROP. FENCE
- PROP. 5' CONTOUR
- PROP. 1' CONTOUR
- PROP. STORM DRAIN
- PROP. WATER
- PROP. SEWER
- PROP. SWALE
- PROPERTY BOUNDARY
- PHASE 1 LIMITS
- BID ALTERNATE LIMITS

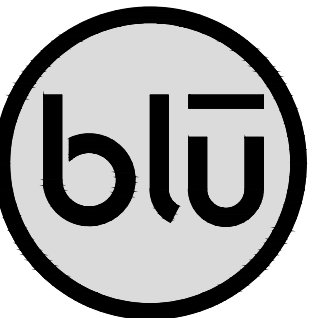
KEYNOTE LEGEND

- 1 CONNECT TO EX. 4" PI STUB REQ'D
- 2 CONNECT TO EX. WATER STUB REQ'D
- 3 1" POLY WATER SERVICE W/ TRACER WIRE REQ'D
- 4 ASPHALT ROADWAY REQ'D (SEE DETAIL-1 ON SHEET C7.0)
- 5 ASPHALT PARKING LOT REQ'D (SEE DETAIL-1 ON SHEET C7.0)
- 6 CONCRETE SIDEWALK REQ'D (SEE DETAIL-1 ON SHEET C7.0)
- 7 24" CURB AND GUTTER REQ'D (SEE DETAIL-2 ON SHEET C7.0)
- 8 24" SPILL CURB AND GUTTER REQ'D (SEE DETAIL-2 ON SHEET C7.0)
- 9 DRIVEWAY APPROACH REQ'D (SEE DETAIL-3 ON SHEET C7.0)
- 10 2" WATER METER REQ'D (SEE DETAIL-5 ON SHEET C7.0)
- 11 4" SECONDARY WATER METER REQ'D (SEE DETAIL-7 ON SHEET C7.0)
- 12 ASPHALT SAWCUT REQ'D
- 13 CURB CUT ASSEMBLY REQ'D (SEE DETAIL-8 ON SHEET C7.0)
- 14 CURB CUT ASSEMBLY REQ'D (SEE DETAIL-9 ON SHEET C7.1)

CONSTRUCTION DRAWINGS



10400 N IMPROVEMENTS BID NOTES:
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TODD TRANE
PH: 801-756-5751



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MOUNTAIN RIDGE PARK | PHASE 1
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION



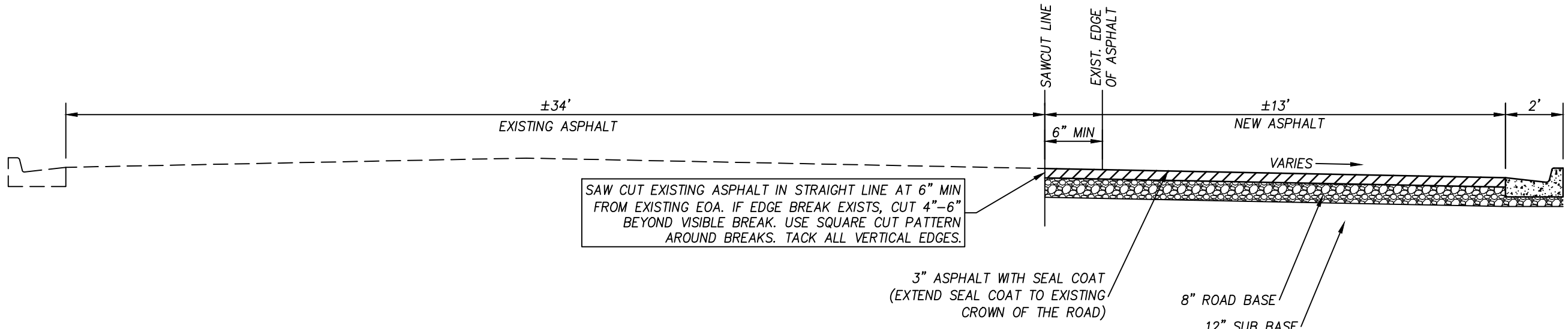
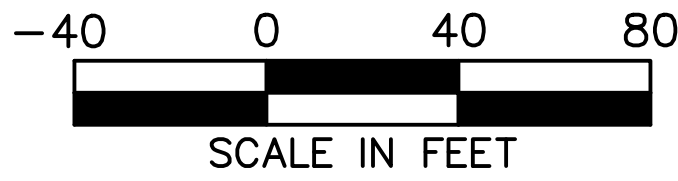
Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

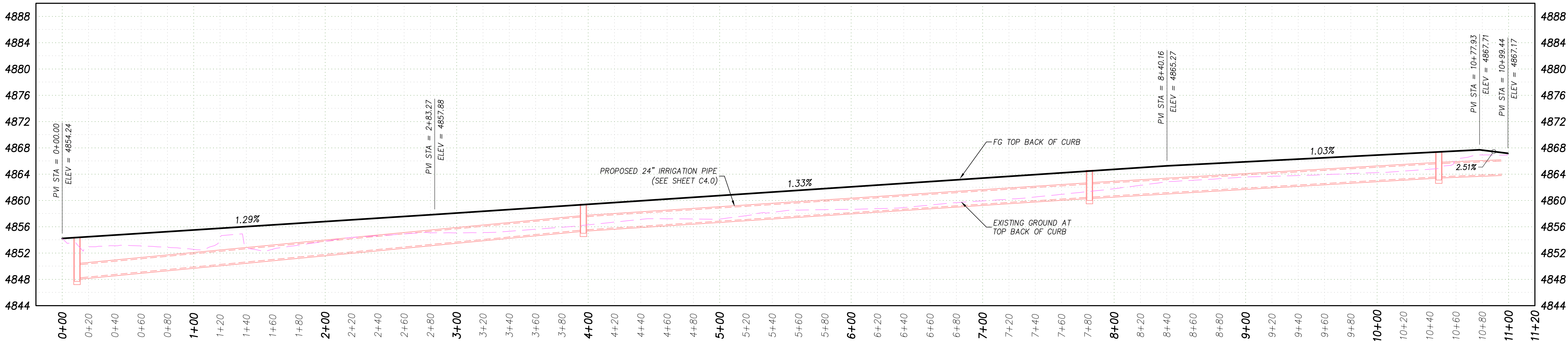
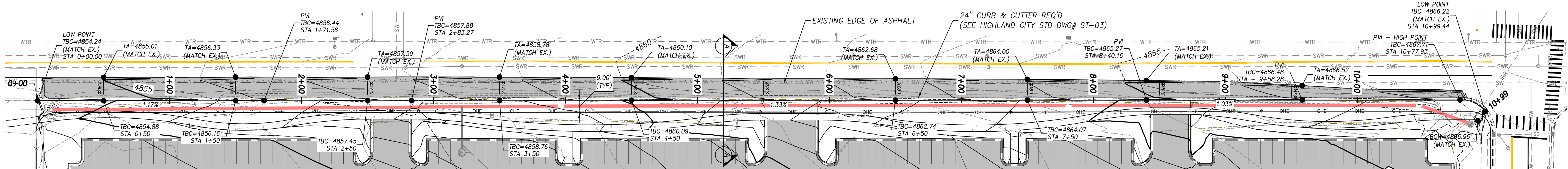
10400 N
CURB & GUTTER
PLAN & PROFILE

Drawing number

C2.0



SECTION A-A

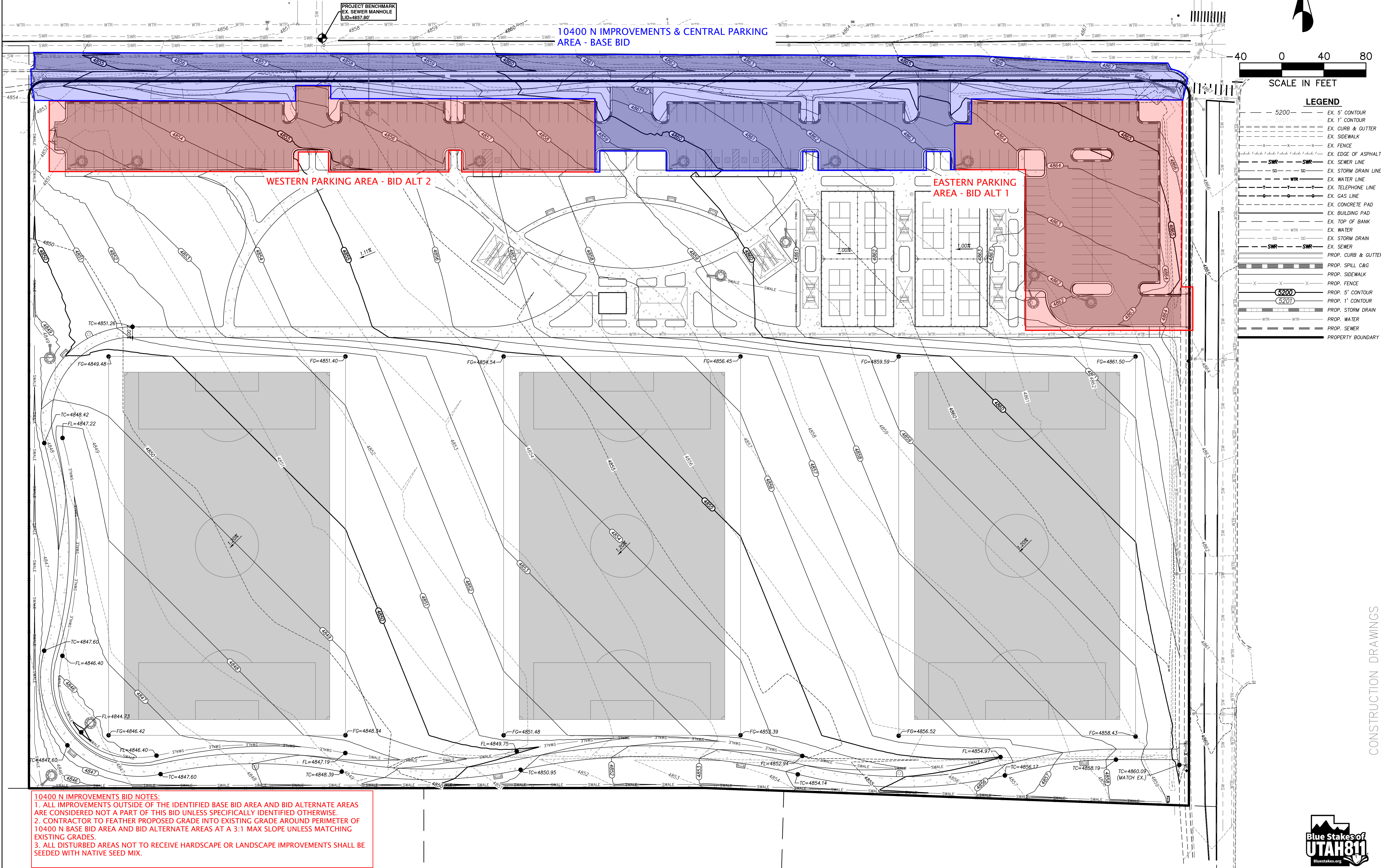


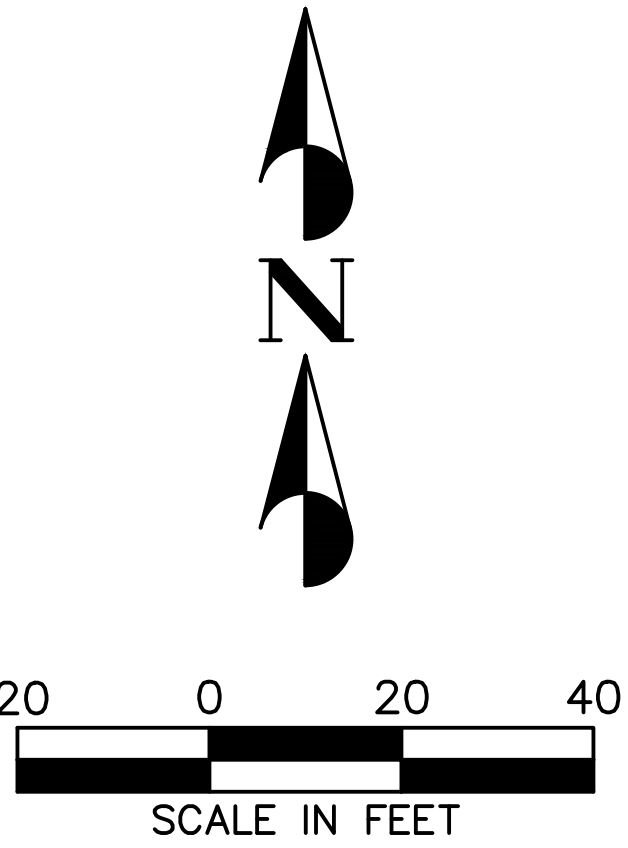
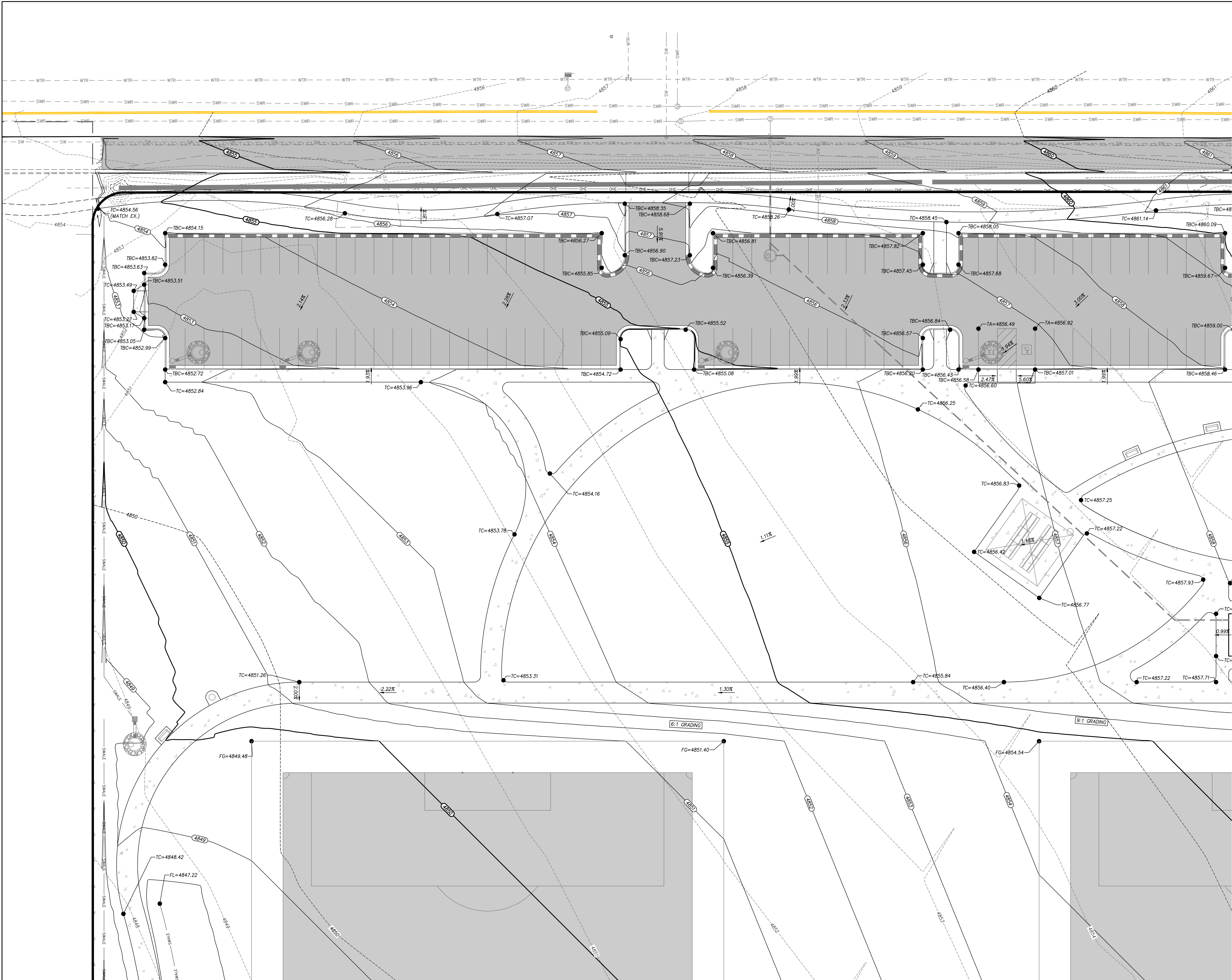
CONSTRUCTION DRAWINGS



GRADING NOTES

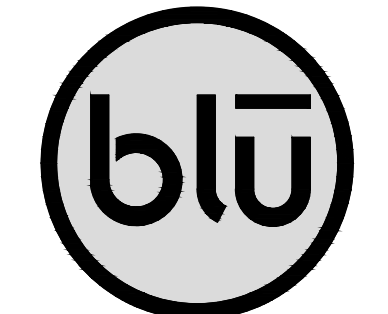
- ALL IMPROVEMENTS MUST COMPLY WITH ADA STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL STRIP AND CLEAR THE TOPSOIL, MAJOR ROOTS AND ORGANIC MATERIAL FROM ALL PROPOSED BUILDING AND PAVEMENT AREAS PRIOR TO SITE GRADING. (THE TOPSOIL MAY BE STOCKPILED FOR LATER USE IN LANDSCAPED AREAS.)
- THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL GRADE THE PROJECT SITE TO PROVIDE A SMOOTH TRANSITION BETWEEN NEW AND EXISTING ASPHALT, CURB AND GUTTER, AND ADJOINING SITE IMPROVEMENTS.
- CONTRACTOR SHALL ENSURE FINISHED GRADE SLOPES AWAY FROM ALL STRUCTURES ACCORDING TO BUILDING CODES AND AS SHOWN ON THIS PLAN.





LEGEND

---	EX. 5' CONTOUR
---	EX. 1' CONTOUR
---	EX. CURB & GUTTER
---	EX. SIDEWALK
---	EX. FENCE
---	EX. EDGE OF ASPHALT
---	EX. SEWER LINE
---	EX. STORM DRAIN LINE
---	EX. WATER LINE
---	EX. TELEPHONE LINE
---	EX. GAS LINE
---	EX. CONCRETE PAD
---	EX. BUILDING PAD
---	EX. TOP OF BANK
---	EX. WATER
---	EX. STORM DRAIN
---	EX. SEWER
---	PROP. CURB & GUTTER
---	PROP. SPILL C&G
---	PROP. SIDEWALK
---	PROP. FENCE
---	PROP. 5' CONTOUR
---	PROP. 1' CONTOUR
---	PROP. STORM DRAIN
---	PROP. WATER
---	PROP. SEWER
---	PROPERTY BOUNDARY



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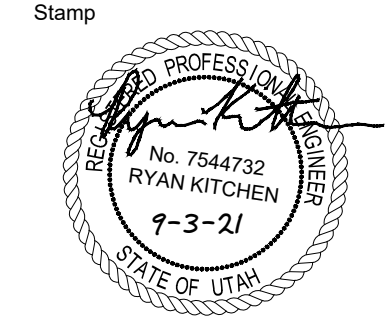
CONTACT:
TODD TRANE
PH: 801-756-5751



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NO.	DESCRIPTION
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Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

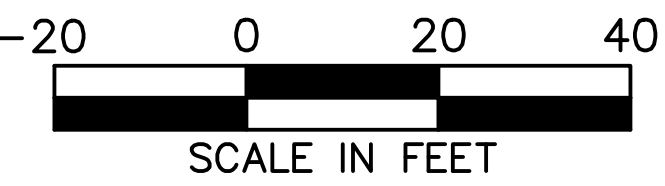
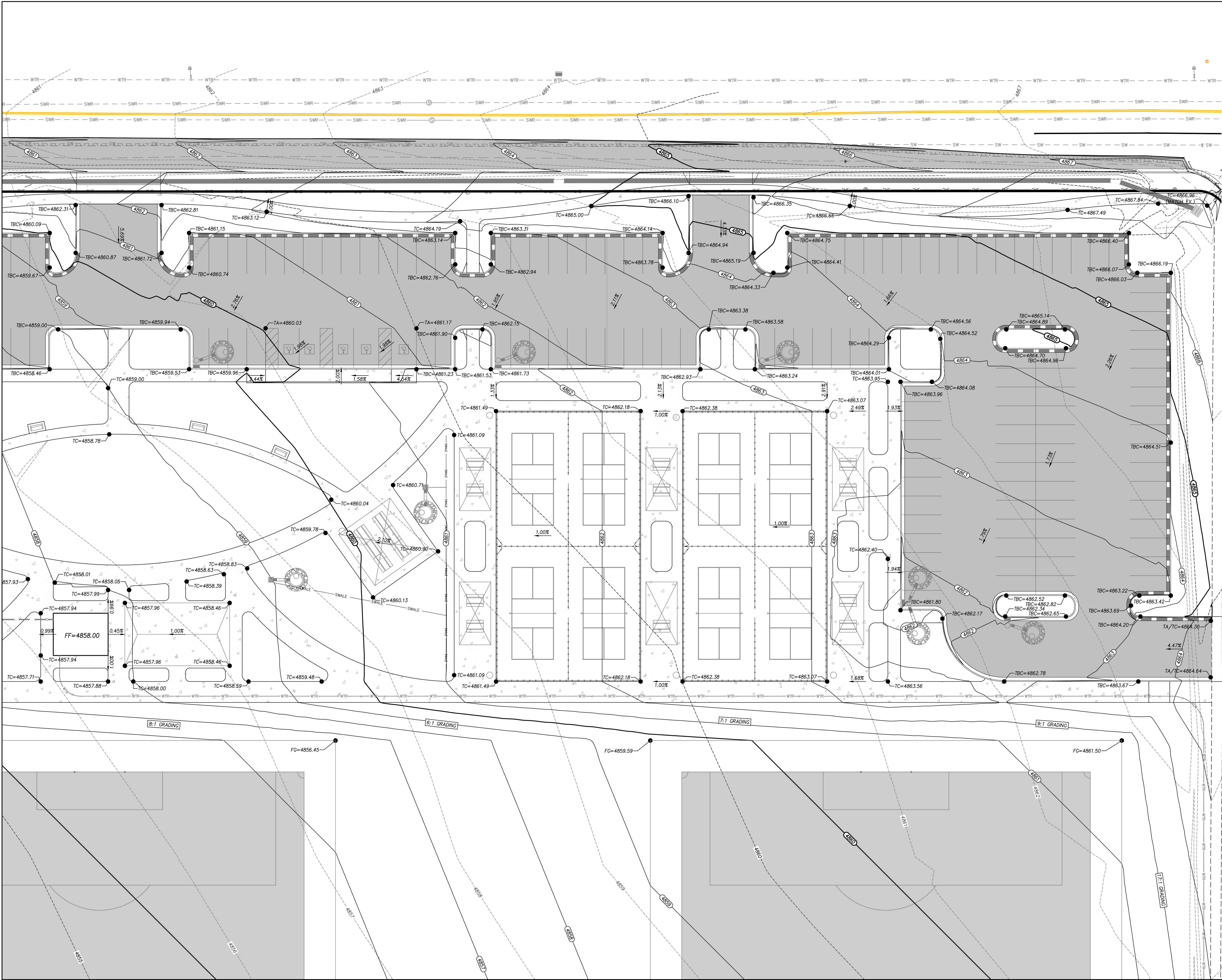
Drawing Title
GRADING
PLAN

Drawing number

C3.1

CONSTRUCTION DRAWINGS



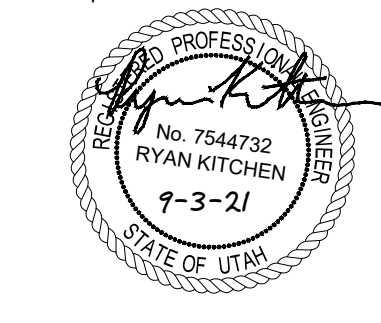


- LEGEND**
- 5200 EX. 5' CONTOUR
 - 5201 EX. 1' CONTOUR
 - EX. CURB & GUTTER
 - EX. SIDEWALK
 - EX. FENCE
 - EX. EDGE OF ASPHALT
 - SWR EX. SEWER LINE
 - SD EX. STORM DRAIN LINE
 - WTR EX. WATER LINE
 - EX. TELEPHONE LINE
 - EX. GAS LINE
 - EX. CONCRETE PAD
 - EX. BUILDING PAD
 - EX. TOP OF BANK
 - WTR EX. WATER
 - SD EX. STORM DRAIN
 - SWR EX. SEWER
 - PROP. CURB & GUTTER
 - PROP. SPILL C&G
 - PROP. SIDEWALK
 - PROP. FENCE
 - 5200 PROP. 5' CONTOUR
 - 5201 PROP. 1' CONTOUR
 - PROP. STORM DRAIN
 - PROP. WATER
 - PROP. SEWER
 - PROPERTY BOUNDARY



**HIGHLAND CITY
MOUNTAIN RIDGE PARK | PHASE 1**
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION



Designed By:	RB
Drawn By:	RB
Date:	09.03.21
Checked By:	RK
Project No:	18-224

Drawing Title
**GRADING
PLAN**

Drawing number
C3.2

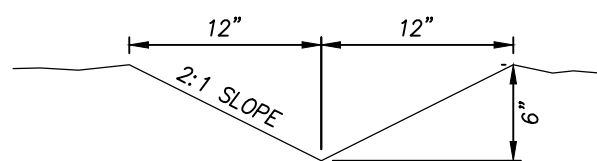
CONSTRUCTION DRAWINGS



KEYNOTE LEGEND

- 1 PERIMETER SWALE REQ'D (SEE DETAIL THIS SHEET)
- 2 SELF-CONTAINING DRAINAGE AREA (6" DEPTH REQ'D)

PERIMETER SWALE DETAIL



10400 N IMPROVEMENTS BID NOTES:

1. ALL IMPROVEMENTS OUTSIDE OF THE IDENTIFIED BASE BID AREA AND BID ALTERNATE AREAS ARE CONSIDERED NOT A PART OF THIS BID UNLESS SPECIFICALLY IDENTIFIED OTHERWISE.



SCALE IN FEET
-40 0 40 80

LEGEND

- EX. CURB & GUTTER
- EX. SIDEWALK
- EX. FENCE
- EX. EDGE OF ASPHALT
- EX. SEWER LINE
- EX. STORM DRAIN LINE
- EX. WATER LINE
- EX. CONCRETE PAD
- EX. WATER
- EX. STORM DRAIN
- EX. SEWER
- PROP. CURB & GUTTER
- PROP. SPILL C&G
- PROP. SIDEWALK
- PROP. FENCE
- PROP. STORM DRAIN
- PROP. WATER
- PROP. SEWER
- PROPERTY BOUNDARY

WESTERN PARKING AREA - BID ALT 2

EASTERN PARKING AREA - BID ALT 1

NOTE: 8LF 15" RCP SD AT 1.00% MINIMUM SLOPE REQUIRED BETWEEN ALL CATCH BASINS/INLETS AND STORM DRAIN SUMPS.

RETENTION VOLUME REQ'D
(100 YEAR STORM): 11,273 FT³
SUMP RETENTION VOLUME PROVIDED: 6,870 FT³
LANDSCAPE RETENTION VOLUME PROVIDED: 10,000 FT³
TOTAL RETENTION VOLUME PROVIDED: 16,870 FT³

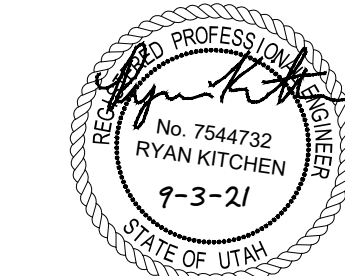
NOTE: SUMP #1 & CB #1 TO BE INSTALLED AS PART OF THE BASE BID

HIGHLAND CITY MOUNTAIN RIDGE PARK | PHASE 1

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HIGHLAND, UT 84003

REVISIONS

NO.	DESCRIPTION



Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

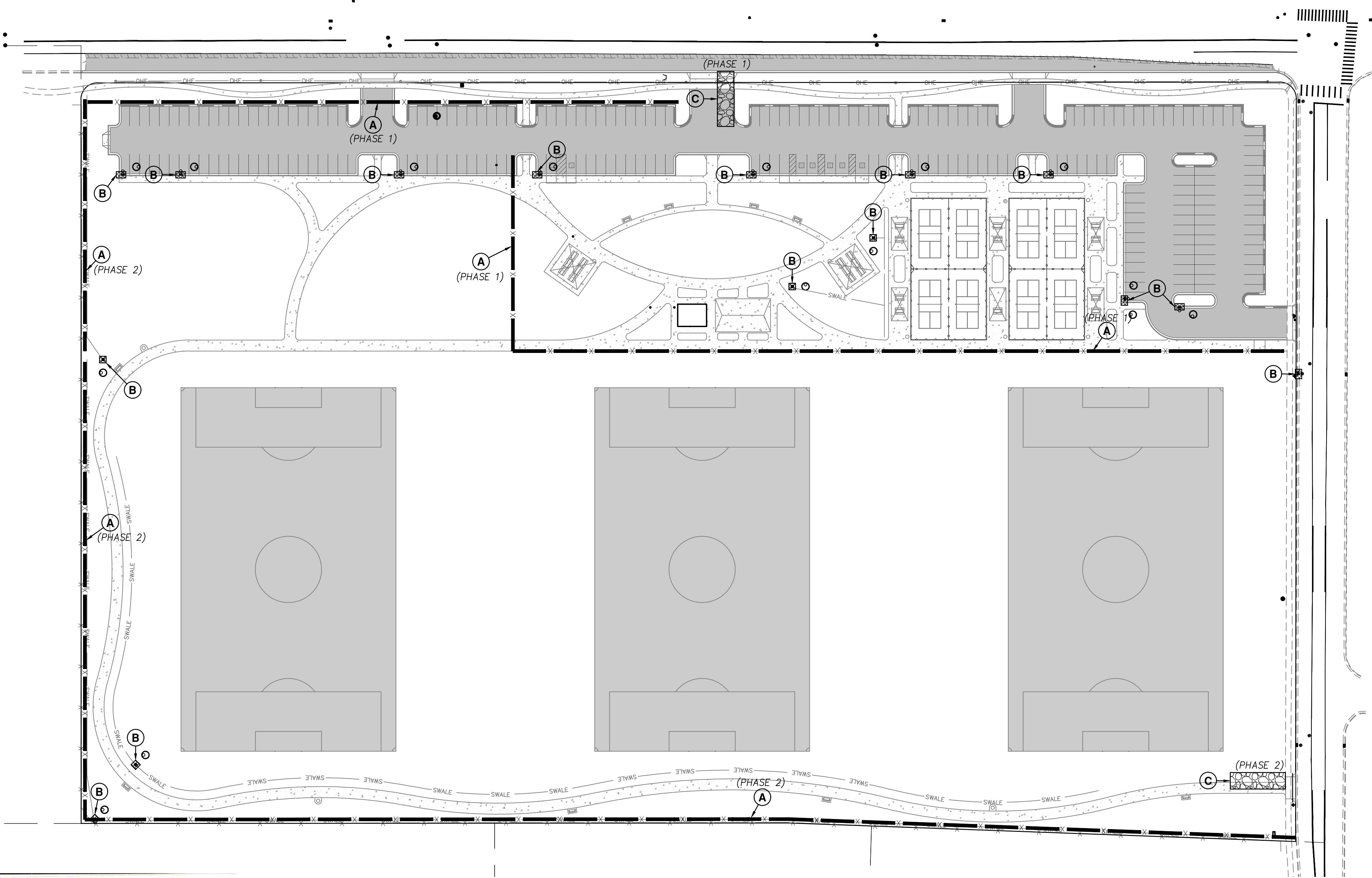
DRAINAGE PLAN

Drawing number

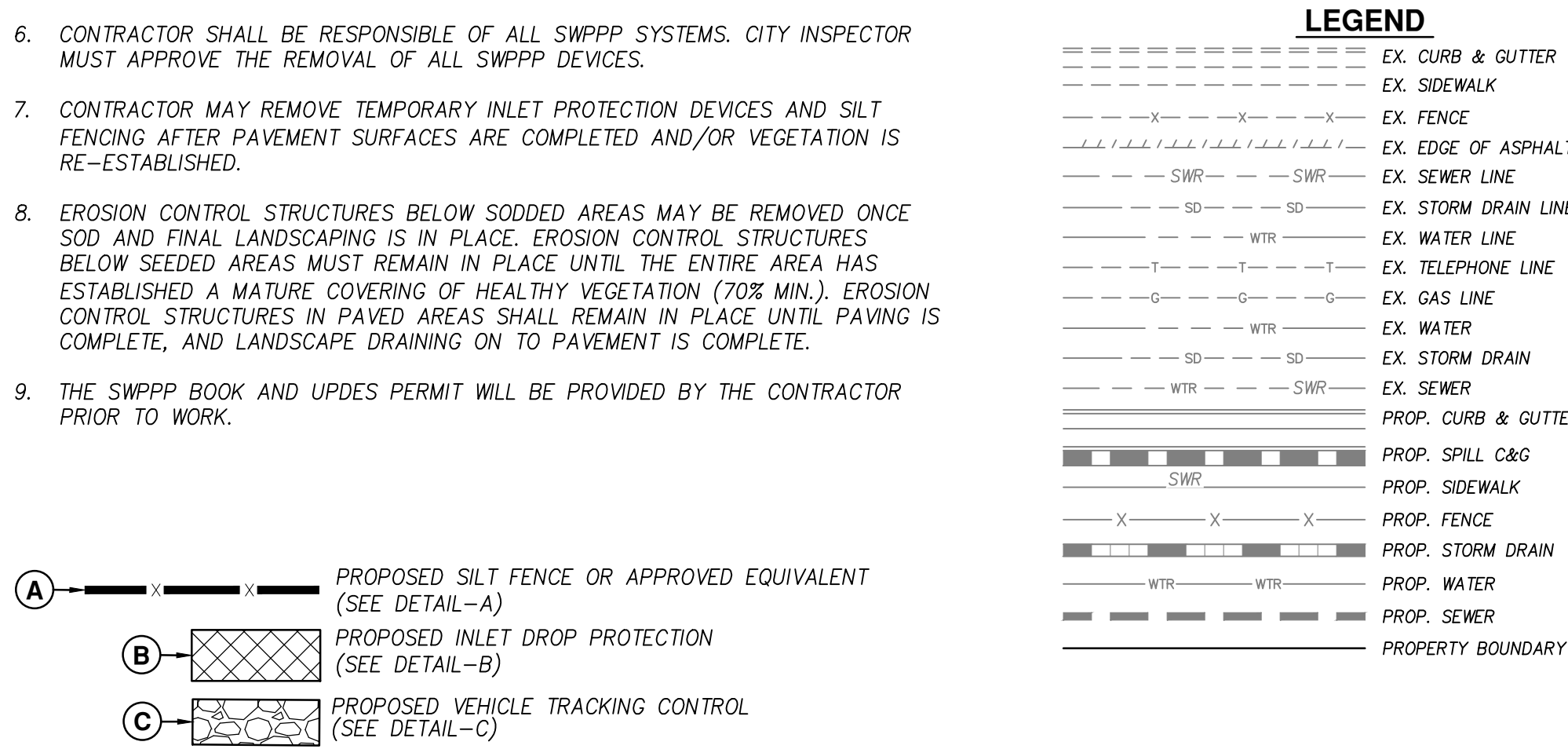
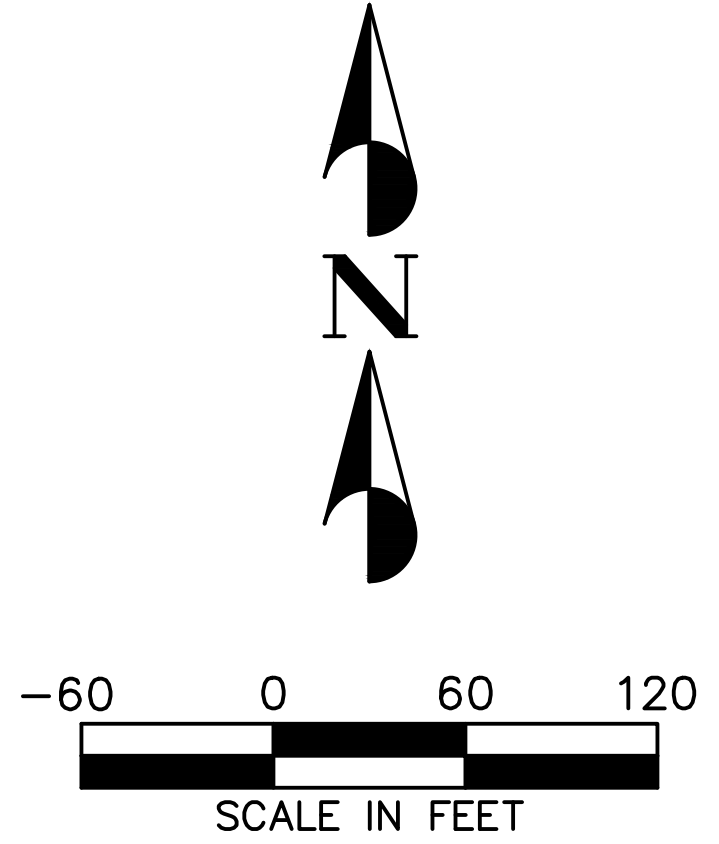
C4.0



CONSTRUCTION DRAWINGS

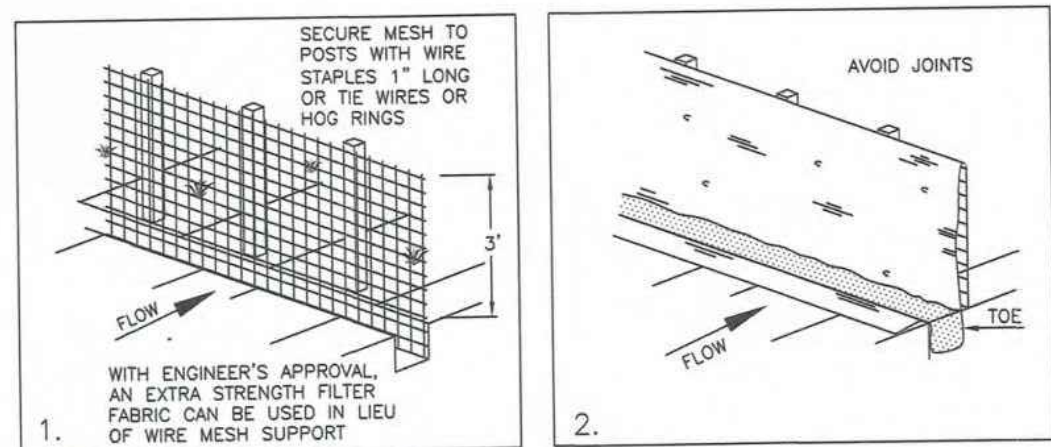


- EROSION NOTES**
1. THIS PLAN HAS BEEN PREPARED AS A GUIDE FOR THE INSTALLATION OF STORM WATER POLLUTION PREVENTION SYSTEMS. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH ALL U.P.D.E.S. PERMIT REQUIREMENTS AND TO ADJUST PLAN AS NECESSARY TO MEET SITE SURFACE WATER PROTECTION OBJECTIVES.
 2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING ONSITE EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM SITE TRAFFIC. IN ADDITION TO REGULAR CONTRACTOR INSPECTIONS, STREETS SHALL BE SWEEPED UPON CITY AND OWNER REQUEST.
 4. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY, AND REMOVED AT COMPLETION OF PROJECT.
 5. ADDITIONAL EROSION CONTROL MEASURES MAY BE DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A REPRESENTATIVE OF THE CITY OR COUNTY PUBLIC WORKS DEPARTMENT MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
 6. CONTRACTOR SHALL BE RESPONSIBLE OF ALL SWPPP SYSTEMS. CITY INSPECTOR MUST APPROVE THE REMOVAL OF ALL SWPPP DEVICES.
 7. CONTRACTOR MAY REMOVE TEMPORARY INLET PROTECTION DEVICES AND SILT FENCING AFTER PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
 8. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION (70% MIN.). EROSION CONTROL STRUCTURES IN PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE, AND LANDSCAPE DRAINING ON TO PAVEMENT IS COMPLETE.
 9. THE SWPPP BOOK AND UPDES PERMIT WILL BE PROVIDED BY THE CONTRACTOR PRIOR TO WORK.



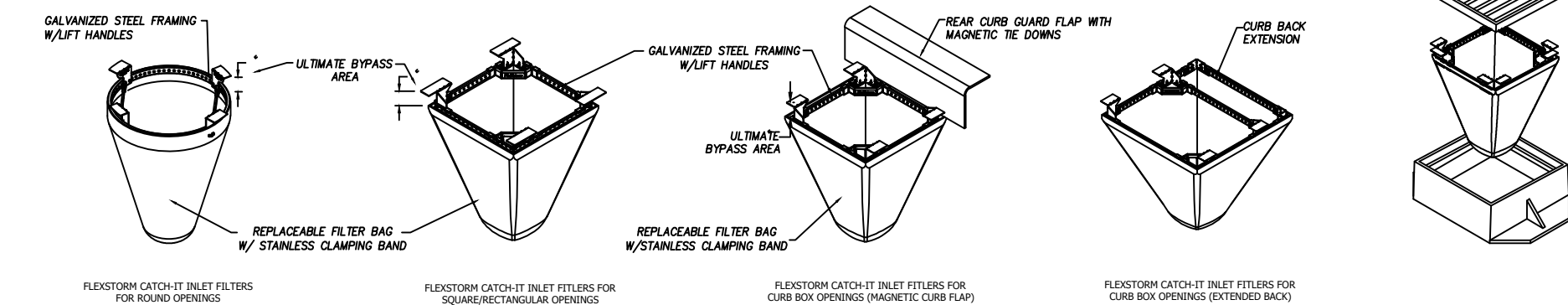
10400 N IMPROVEMENTS BID NOTES:
1. ALL IMPROVEMENTS OUTSIDE OF THE IDENTIFIED BASE BID AREA AND BID ALTERNATE AREAS ARE CONSIDERED NOT A PART OF THIS BID UNLESS SPECIFICALLY IDENTIFIED OTHERWISE.

NARRATIVE: THIS PLAN MAY BE USED FOR THE CONSTRUCTION OF A STORM WATER BEST MANAGEMENT PRACTICE (BMP). IT IS NOT INCLUSIVE OF ALL PRACTICES AVAILABLE AND IS ONLY SPECIFIC TO THE CONSTRUCTION OF THIS TYPE. MAINTENANCE OF THIS TYPE OF INSTALLATION IS IMPORTANT AND SHOULD BE CONTINUOUSLY MONITORED BY THE CONTRACTOR AND ENGINEER. DETAILS SHOWN HERE HIGHLIGHT IMPORTANT PARTS OF CONSTRUCTION, AND SHOULD BE MODIFIED AS NEEDED.



INSTALLATION SEQUENCE

FLEXSTORM CATCH-IT FILTERS FOR TEMPORARY INLET PROTECTION
PRODUCT SELECTION AND SPECIFICATION DRAWING



Product selection for FLEXSTORM CATCH-IT Filters (Temporary Inlet Protection)							
Standard	Inlet Type	Grate Size	Opening Size	Bag Cap. (m³)	Flow Ratings (CFS)		ADS P/N
12' x 12' precast catch basin	Concrete Box (HD)	15 x 15	12 x 12	0.9	1.0	2.6	625012FX
16' x 16' precast catch basin	Concrete Box (HD)	21 x 18	18 x 18	2.1	1.5	3.9	625016FX
24' x 24' precast catch basin	Concrete Box (HD)	27 x 24	24 x 24	3.4	1.9	5.0	625024FX
36' x 36' precast catch basin	Concrete Box (HD)	35.5x18	33x15.5	3.4	2.0	4.6	625036FX
30' x 24' precast catch basin	Concrete Box (HD)	40 x 24	36 x 24	5.6	2.5	6.5	625030FX
30' x 24' Combination inlet	Concrete Box (HD)	40 x 24	36 x 32	4.5	2.3	5.9	625030CBFX
48' x 18 drop inlet	Frame and Grate (SG)	48x18	44x18	4.7	2.6	5.5	62504818FX
36' x 36' precast catch basin	Concrete Box (HD)	40 x 36	36 x 36	7.6	4.4	10.0	625036FX
48' x 48' precast catch basin	Concrete Box (HD)	52 x 48	48 x 48	13.8	5.4	12.0	625048FX

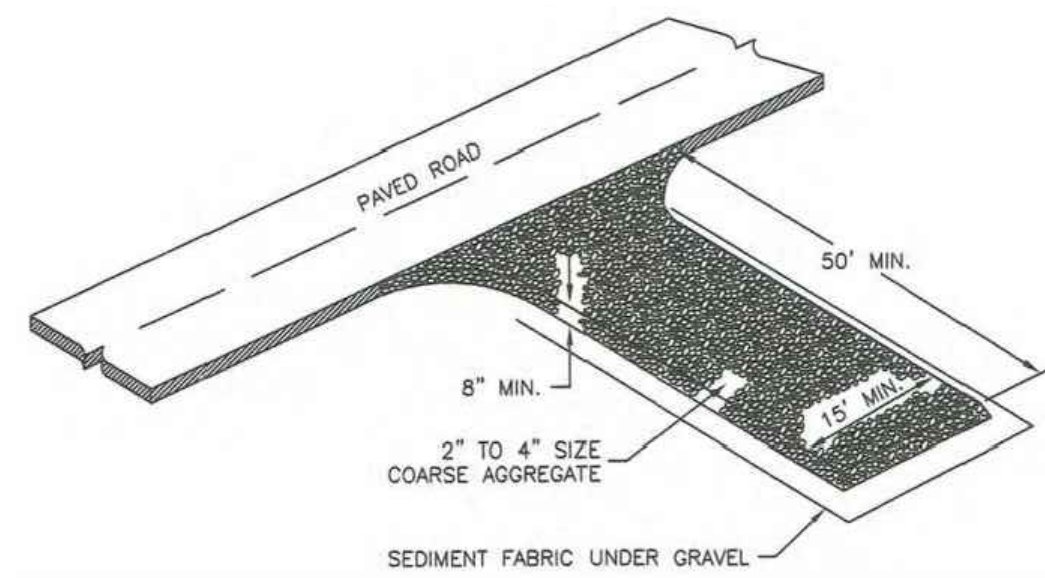
NOTES

1. ALL FRAMING IS CONSTRUCTED OF CORROSION RESISTANT STEEL FRAMING FOR PROLONGED PRODUCT LIFE.
2. TOTAL BYPASS CAPACITY WILL VARY WITH EACH SIZED DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE. CONCRETE STRUCTURES MAY REQUIRE ADDITIONAL REVIEW.
3. UPON ORDERING THE ADS P/N CONFIRMATION OF THE DOT CALLOUT, FLEXSTORM ITEM CODE, CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED.
4. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

INSTALLATION:

1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

DETAIL-B
INLET DROP PROTECTION
FLEXSTORM CATCH-IT INLET FILTER REQ'D
(OR APPROVED EQUAL)



Stabilized roadway entrance

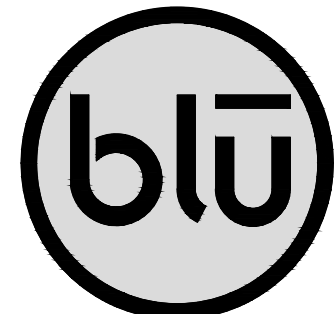
1. **GENERAL**
 - A. Description. A temporary stabilized pad of gravel for controlling equipment and construction vehicle access to the site.
 - B. Application. At any site where vehicles and equipment enter the public right of way.
2. **PRODUCT** (Not used)
3. **EXECUTION**
 - A. Clear and grub area and grade to provide maximum slope of 1 percent away from paved roadway.
 - B. Compact subgrade.
 - C. Place filter fabric under stone if desired (recommended for entrance area that remains more than 3 months).
 - D. Maintenance.
 - 1) Prevent tracking or flow of mud into the public right-of-way.
 - 2) Periodic top dressing with 2-inch stone may be required, as conditions demand, and repair any structures used to trap sediments.
 - 3) Inspect daily for loss of gravel or sediment buildup.
 - 4) Inspect adjacent area for sediment deposit and install additional controls as necessary.
 - 5) Expand stabilized area as required to accommodate activities.

DETAIL-C
STABILIZED ROADWAY ENTRANCE
(SEE APWA STANDARD DRAWING 126)



Plan
122
February 2006

DETAIL-A
SILT FENCE
(SEE APWA STANDARD DRAWING 122)



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Sandy, UT 84070
p 801.679.3157

OWNER:

HIGHLAND CITY
8400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

CONTACT:

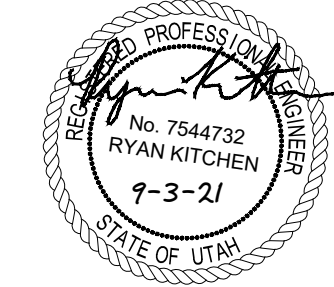
TODD TRANE
PH: 801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK | PHASE 1
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



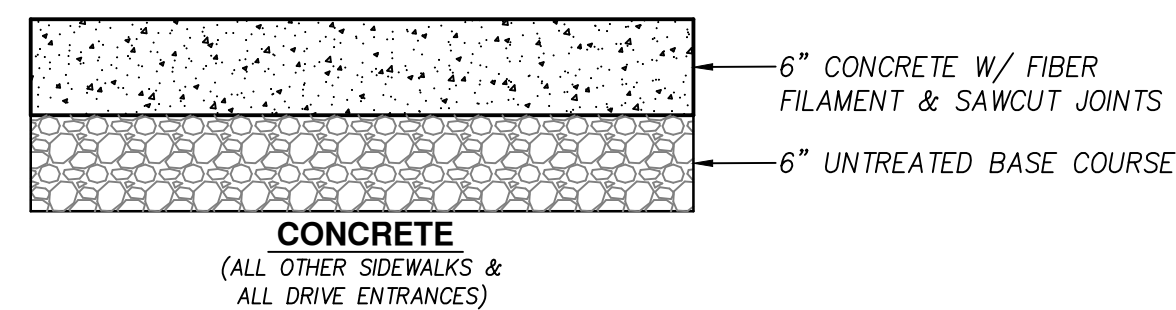
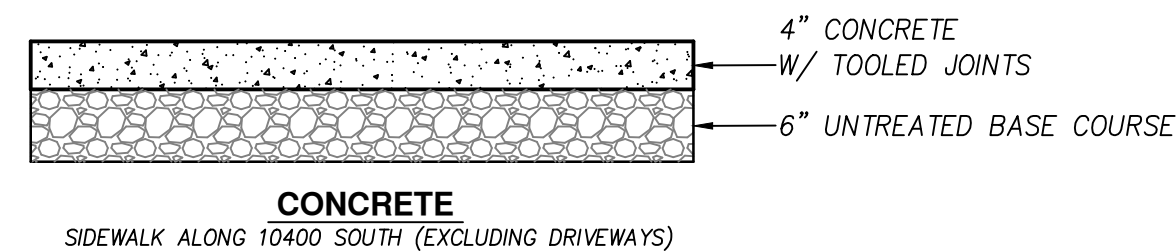
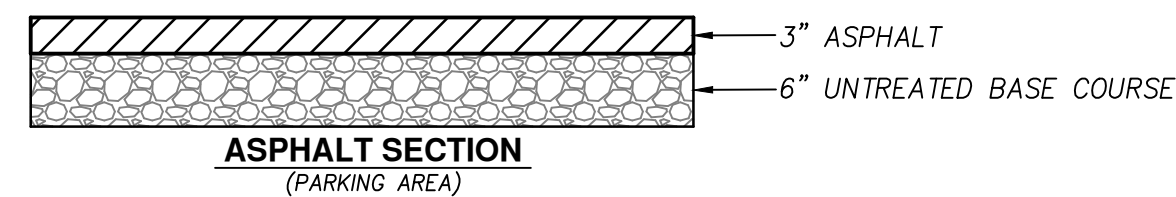
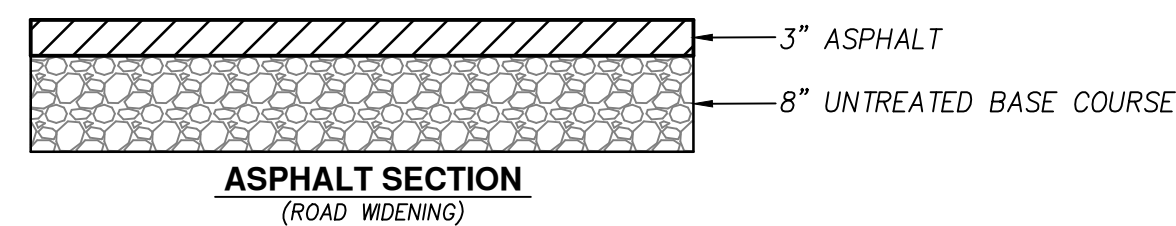
Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

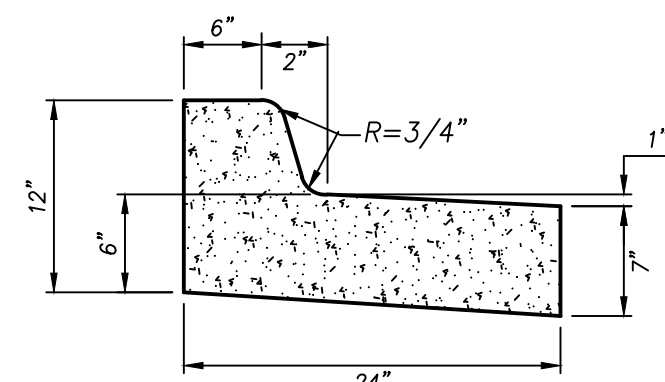
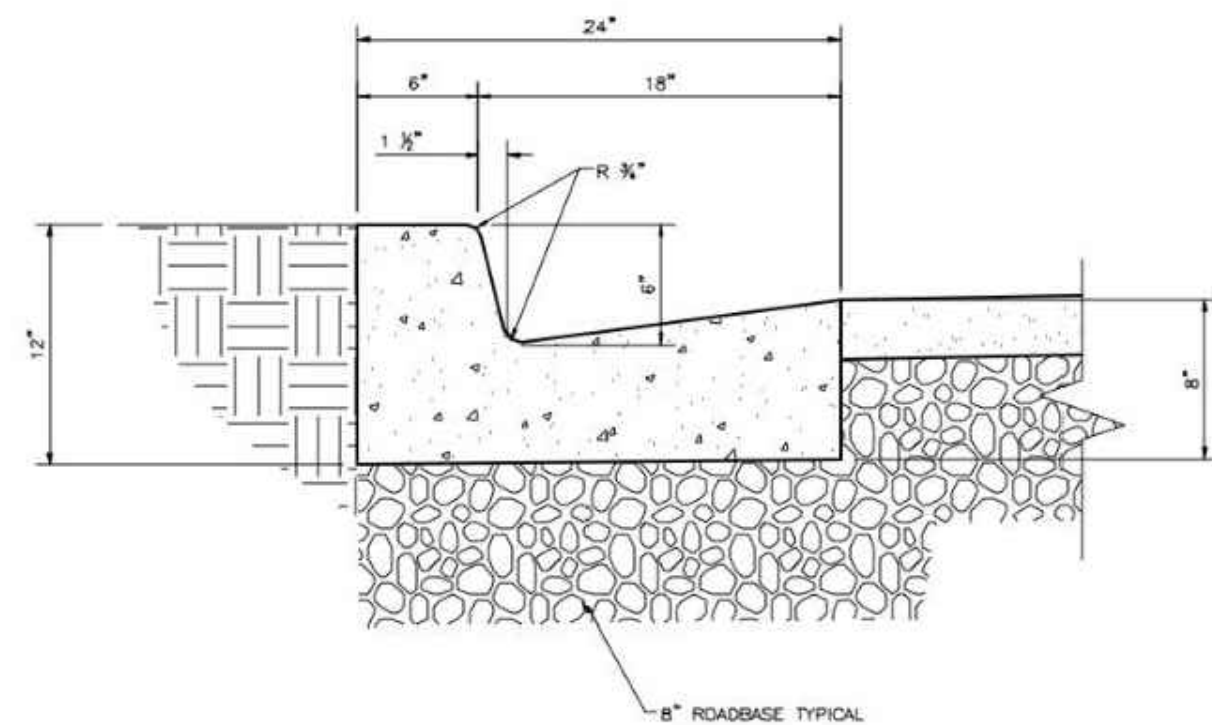
EROSION
CONTROL
PLAN

Drawing number

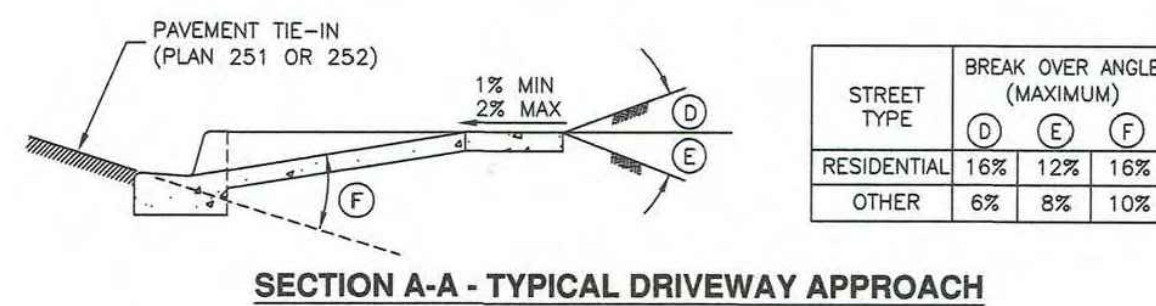
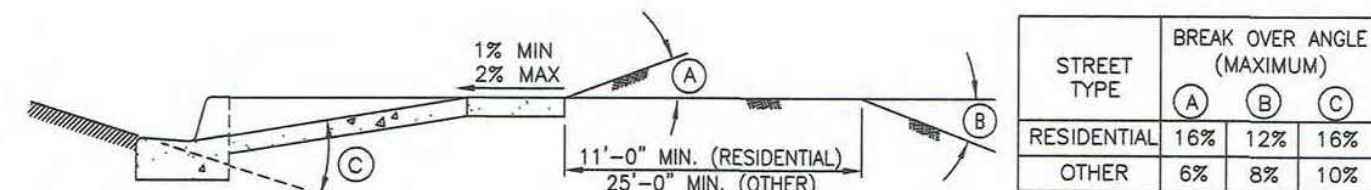
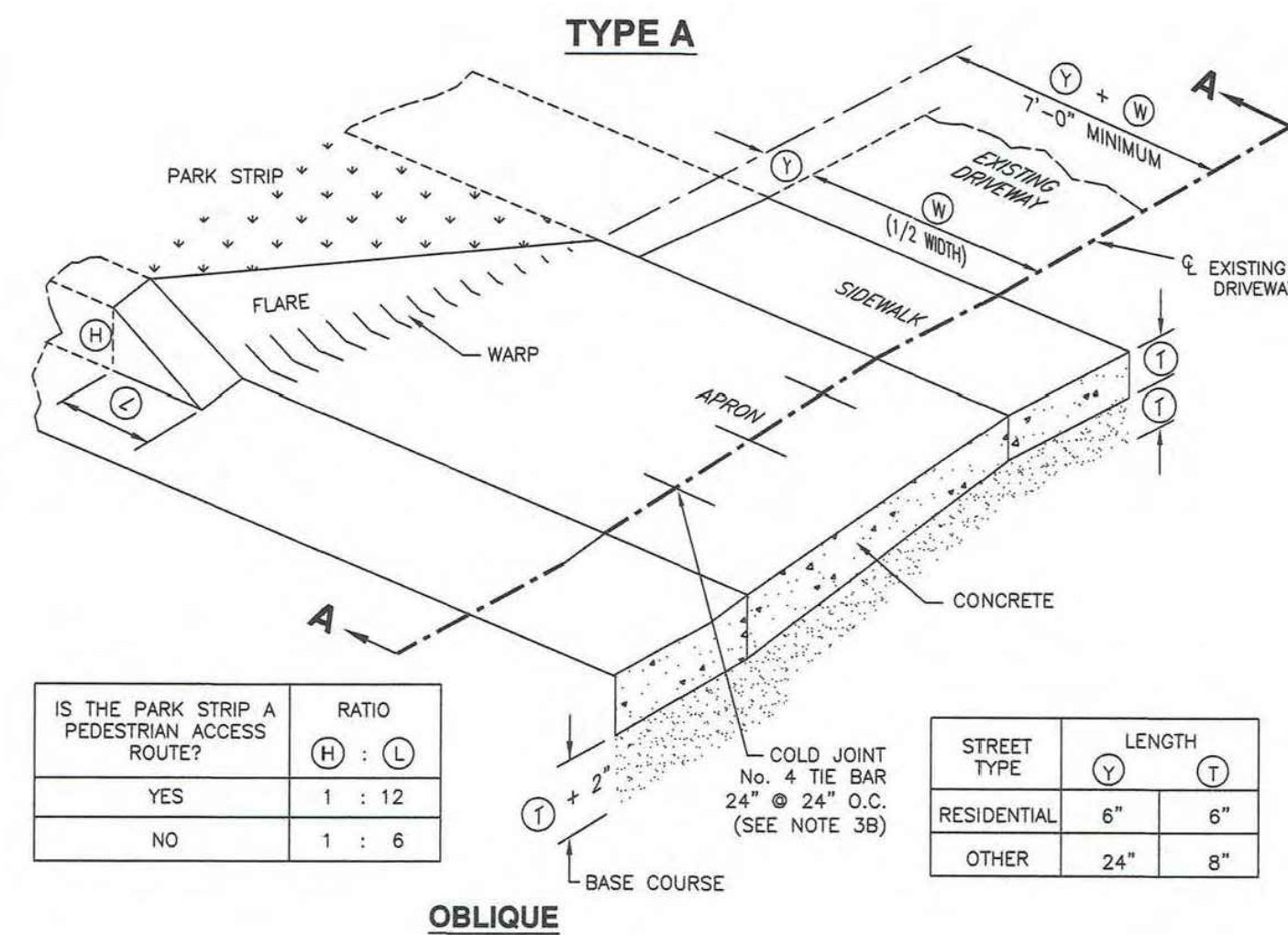
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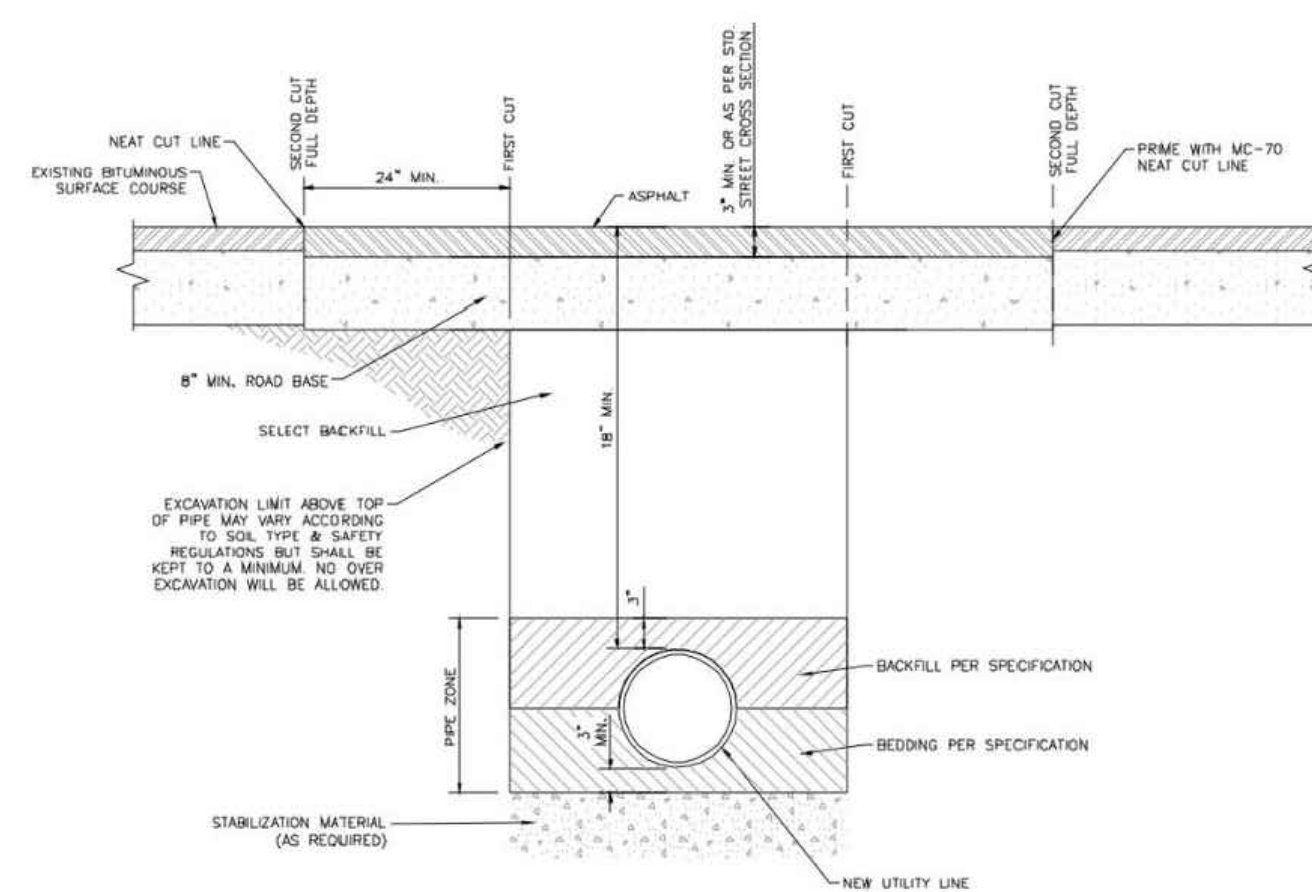
DETAIL-1
PAVEMENT SECTIONS
(NOT TO SCALE)



DETAIL-2
CURB AND GUTTER
(SEE HIGHLAND CITY STD DWG ST-03)



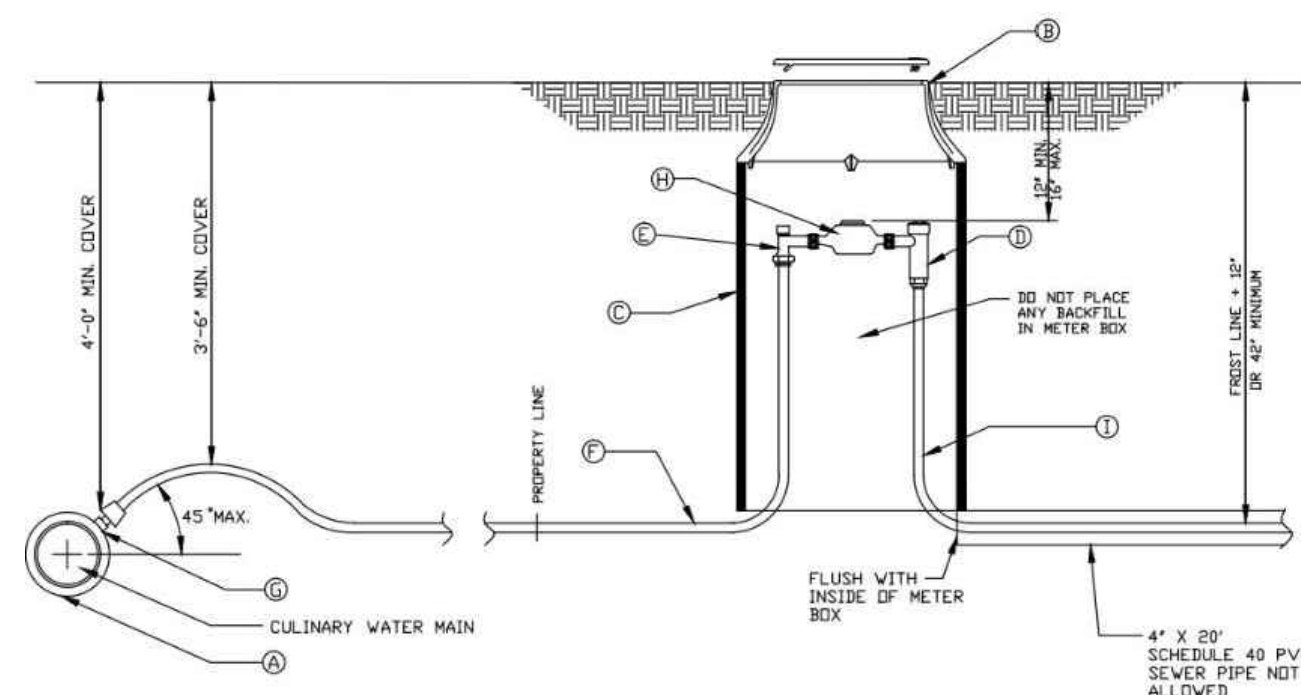
DETAIL-3
DRIVEWAY APPROACH
(SEE APWA DRAWING NO. 221.1)



NOTE:

1. NO SAW CUT JOINT SHALL BE IN THE TIRE PATH. IF PATCH JOINT ENDS WITHIN 2' OF CURB, PATCH MUST GO TO CURB
2. USE APWA AS GUIDE (PLAN # 255).
3. PG 58-28 PERFORMANCE GRADED ASPHALT.

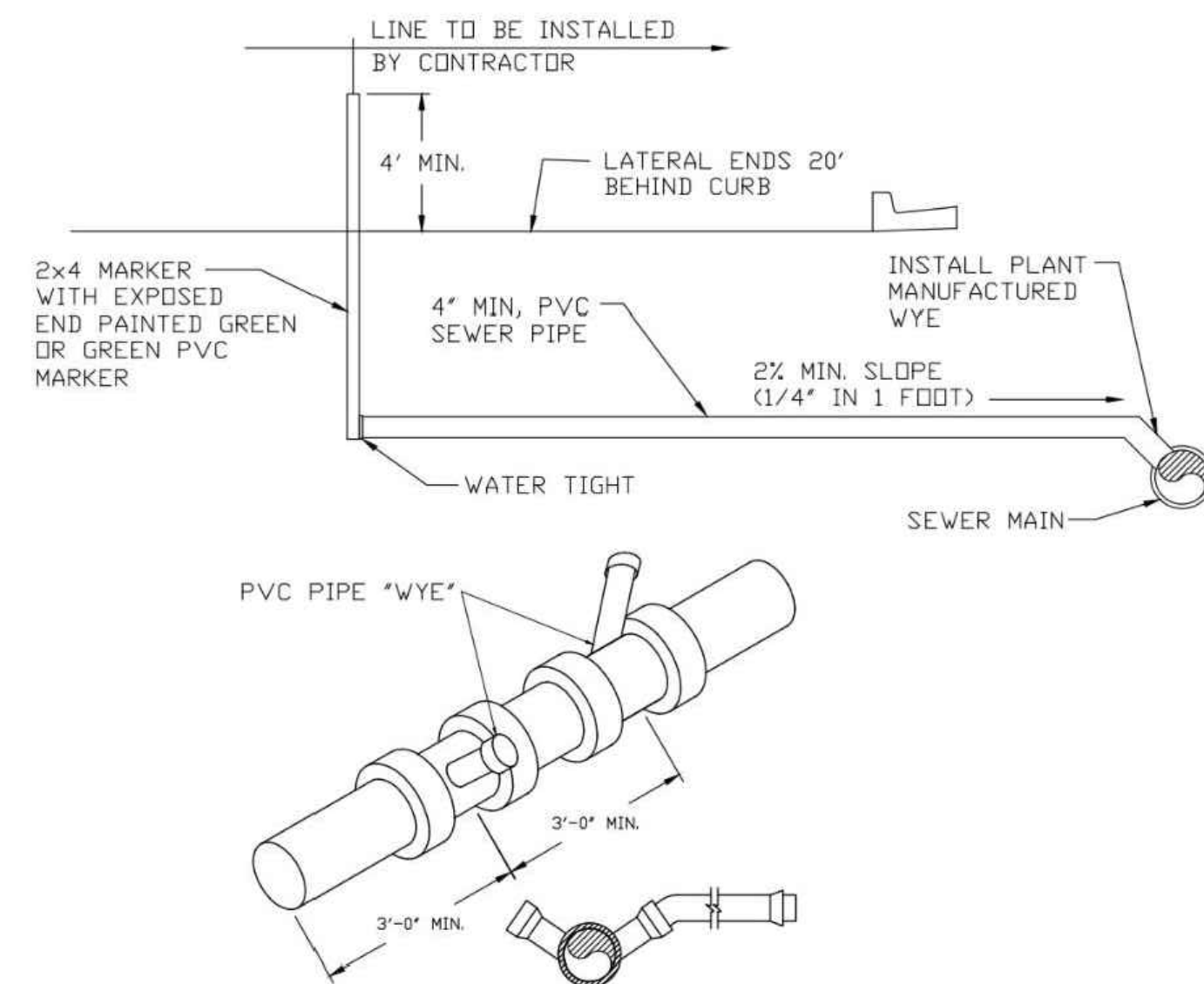
DETAIL-4
UTILITY TRENCH CROSS SECTION
(SEE HIGHLAND CITY STD DWG U-03)



LEGEND			
No.	✖	ITEM	NOTE
Ⓐ		MUELLER DR RDMAC WITH IP TAP	STAINLESS STEEL BAND WITH TEFLON COATING
Ⓑ		RING AND COVER	CAST IRON COVER (grass) WITH KNOCKOUT DUCTILE COVER (driveway) WITH RADIO READ HOLE
Ⓒ		METER BOX (18" DIAMETER) (36" DEEP)	METER BARRELS A.D.S. WHITE IN COLOR
Ⓓ	✖	RESIDENTIAL DUAL CHECK	INSTALLED BY WATER DEPT. AT METER SET
Ⓔ		3/4" PACK JOINT (P.J.) ANGLE METER VALVE	FORD 300 BALL ANGLE METER VALVE
Ⓕ		COPPER PIPE 3/4"	TYPE K (SDF) 3/4" (UPGRADE TO 1" IF OVER 50')
Ⓖ		CORPORATION STOP PACK JOINT X IRON PIPE SIZE	MUELLER 300 BALL TYPE CORPORATION STOP DR FORD F8100
Ⓗ	✖	WATER METER	INSTALLED BY WATER DEPT. AT METER SET
Ⓘ		COPPER DR POLY PIPE	CTS (COPPER TUBE SIZE) OR IPS (IRON PIPE SIZE)

NOTE:
COMMERCIAL WATER SERVICES REQUIRE
21" METER BOX AND LID, AND 1" COPPER
AND FITTINGS.

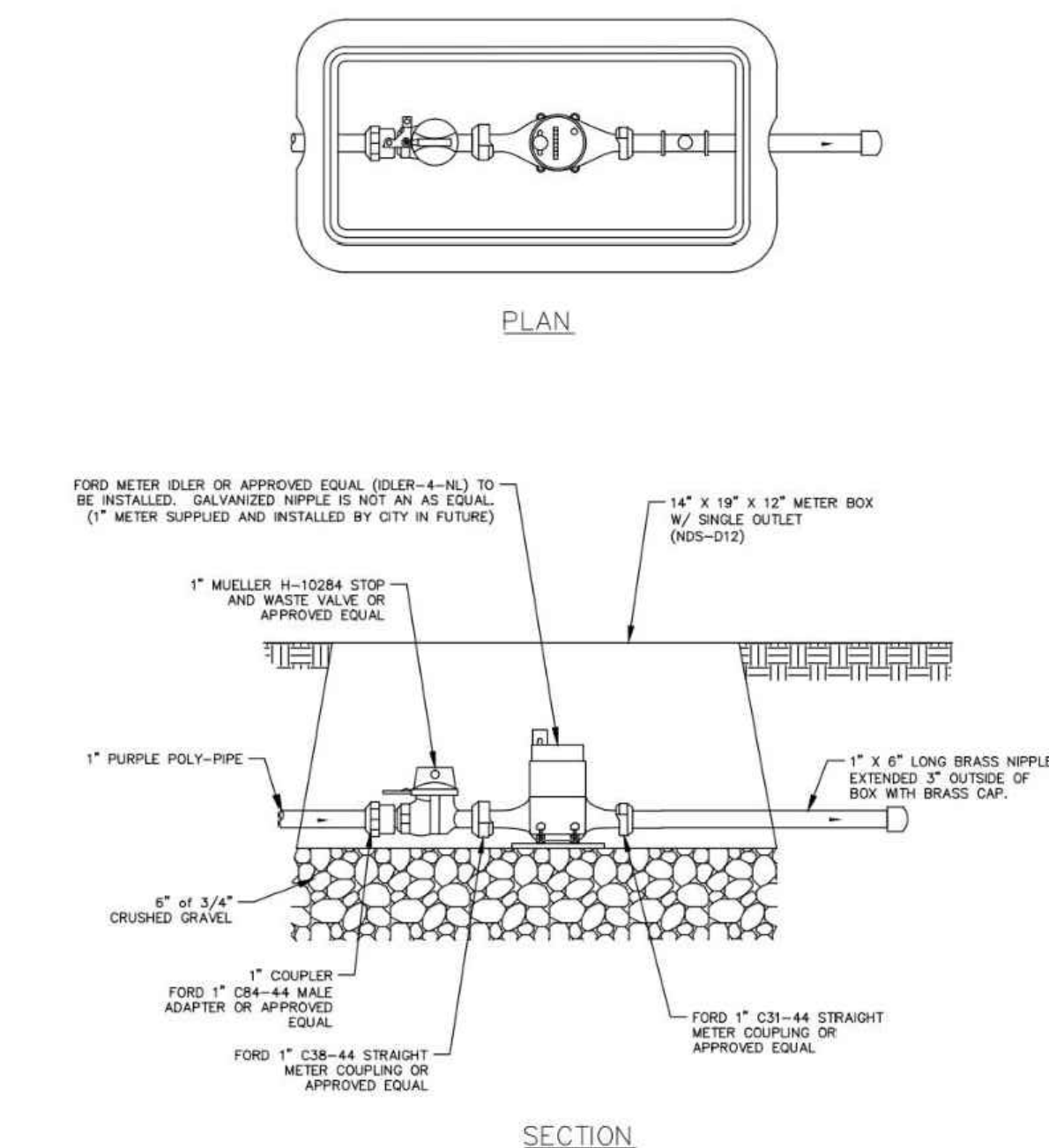
DETAIL-5
WATER METER
(SEE HIGHLAND CITY STD DWG DW-01)



NOTES:

1. SANITARY SEWER SERVICE TAPS SHALL BE LOCATED ON THE MAIN AT THE 2 O'CLOCK OR 10 O'CLOCK POSITION.
2. THE MINIMUM DISTANCE BETWEEN ANY TWO CONSECUTIVE FITTINGS SHALL BE 3 FEET, MEASURED BETWEEN FITTING CENTERLINES.
3. SANITARY SEWER SERVICE TAPS SHALL NOT BE MADE WITHIN 3 FEET OF A PIPE JOINT, OR 5 FEET FROM EDGE OF MANHOLE BASE.
4. A MAXIMUM OF FOUR SERVICE TAPS ARE ALLOWED PER 200 FOOT LENGTH OF PIPE.
5. ANY WORK USING "K" OR "Y" STYL FITTINGS, TESTS ARE NOT ALLOWED.
6. LATERAL SHALL NOT ENTER MANHOLES, UNLESS APPROVED BY CITY ENGINEER AND CITY PUBLIC WORKS DEPT.
7. ALL SERVICE TAPS SHALL BE USED ON NEW MAIN LINE INSTALLATIONS 18" OR SMALLER.
8. TAPS INSTALLED IN STAGGERED CONFIGURATION AT 10 O'CLOCK OR 2 O'CLOCK POSITION.

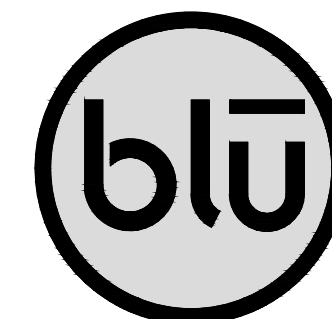
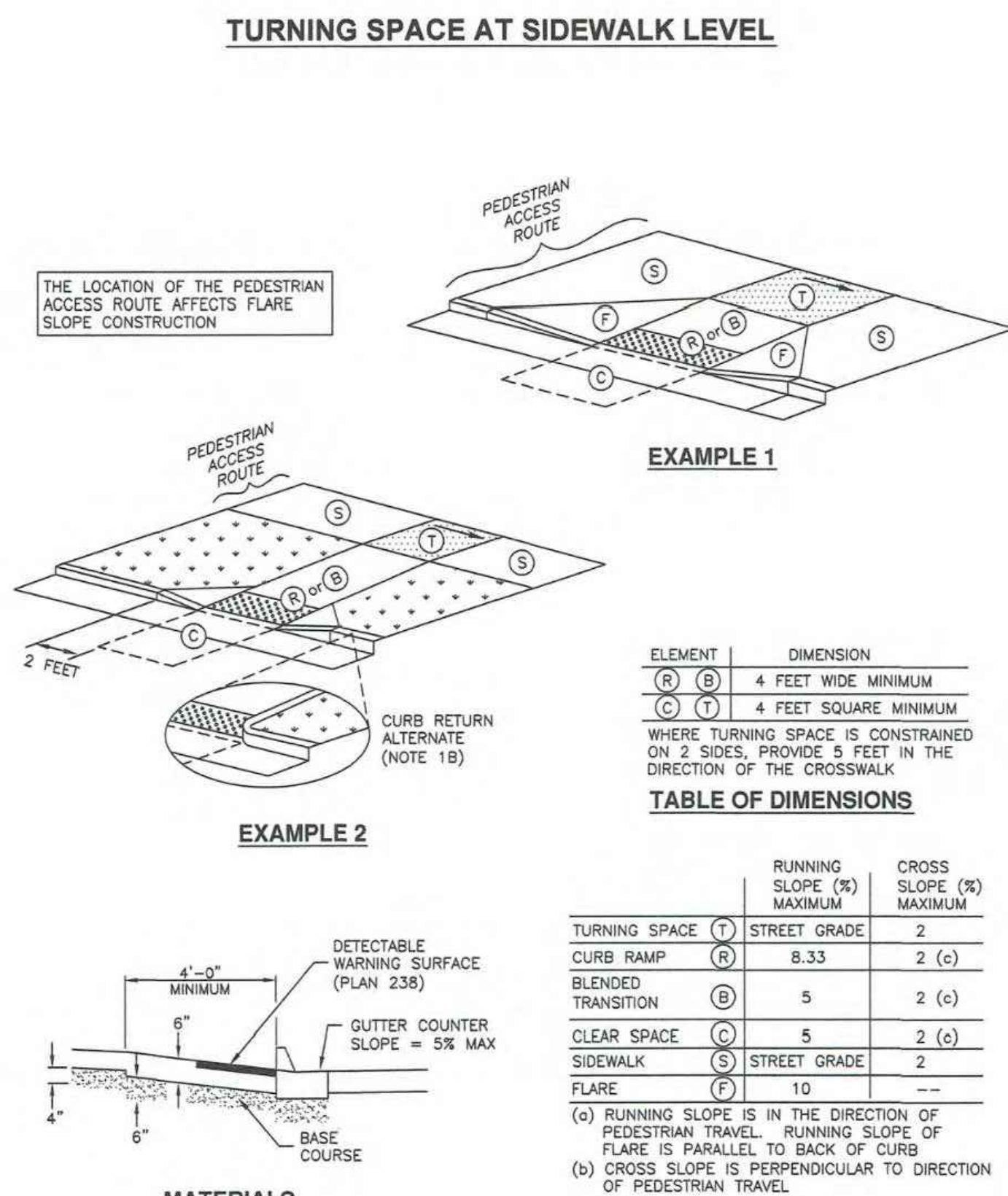
DETAIL-6
SEWER LATERAL
(SEE HIGHLAND CITY STD DWG SS-01)



NOTES:

1. 1" METER PROVIDED BY CITY IN FUTURE
2. ALL PIPES SHALL BE BURIED WITH 14 GAUGE STRANDED THIN TRACE WIRE
3. PROPERTY OWNERS SHALL NOT REMOVE/MODIFY ANY PORTION OF THE METER BOX.

DETAIL-7
PRESSURIZED IRRIGATION METER BOX
(SEE HIGHLAND CITY STD DWG PI-02)



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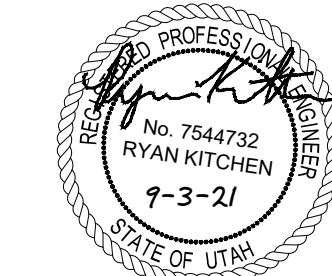
CONTACT:
TODD TRANE
PH: 801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK | PHASE 1
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By:	RB
Drawn By:	RB
Date:	09.03.2
Checked By:	RK
Project No:	18-224

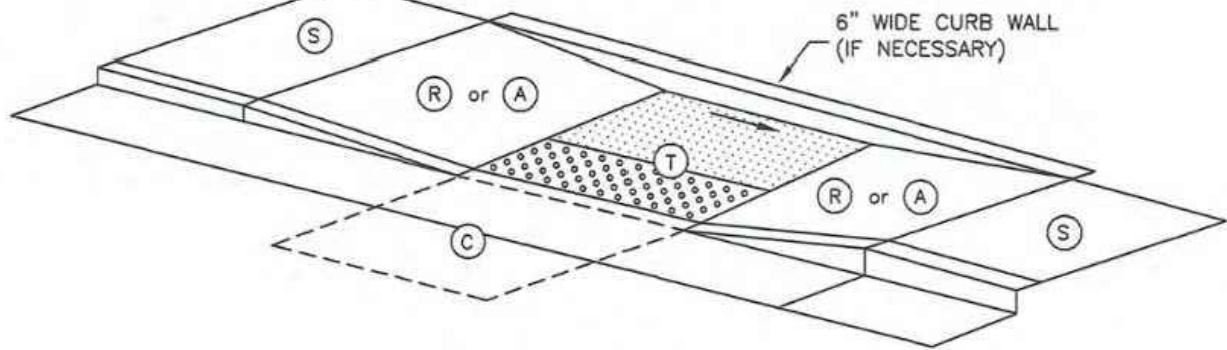
Drawing Title

TYPICAL SECTIONS & DETAILS

Drawing number:

C7.0

TURNING SPACE AT STREET LEVEL



EXAMPLE 5

ELEMENT	DIMENSION
(R) (A)	4 FEET WIDE MINIMUM
(C) (T)	4 FEET SQUARE MINIMUM

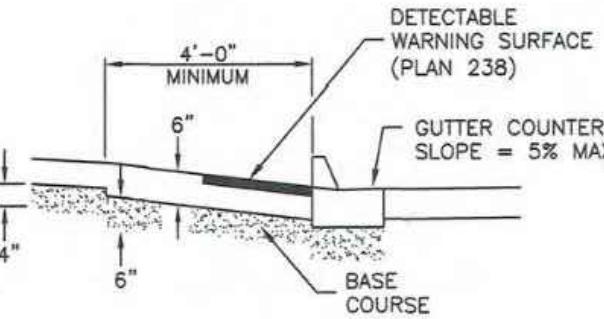
WHERE TURNING SPACE IS CONSTRAINED ON 2 SIDES, PROVIDE 5 FEET IN THE DIRECTION OF THE CROSSWALK

TABLE OF DIMENSIONS

TURNING SPACE	(T)	RUNNING SLOPE (%) MAXIMUM	CROSS SLOPE (%) MAXIMUM
CURB RAMP	(R)	8.33	2
CLEAR SPACE	(C)	5	STREET GRADE
SIDEWALK	(S)	STREET GRADE	2
APPROACH	(A)	8.33	2

- (a) RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE OF FLARE IS PARALLEL TO BACK OF CURB
(b) CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL

SLOPE TABLE



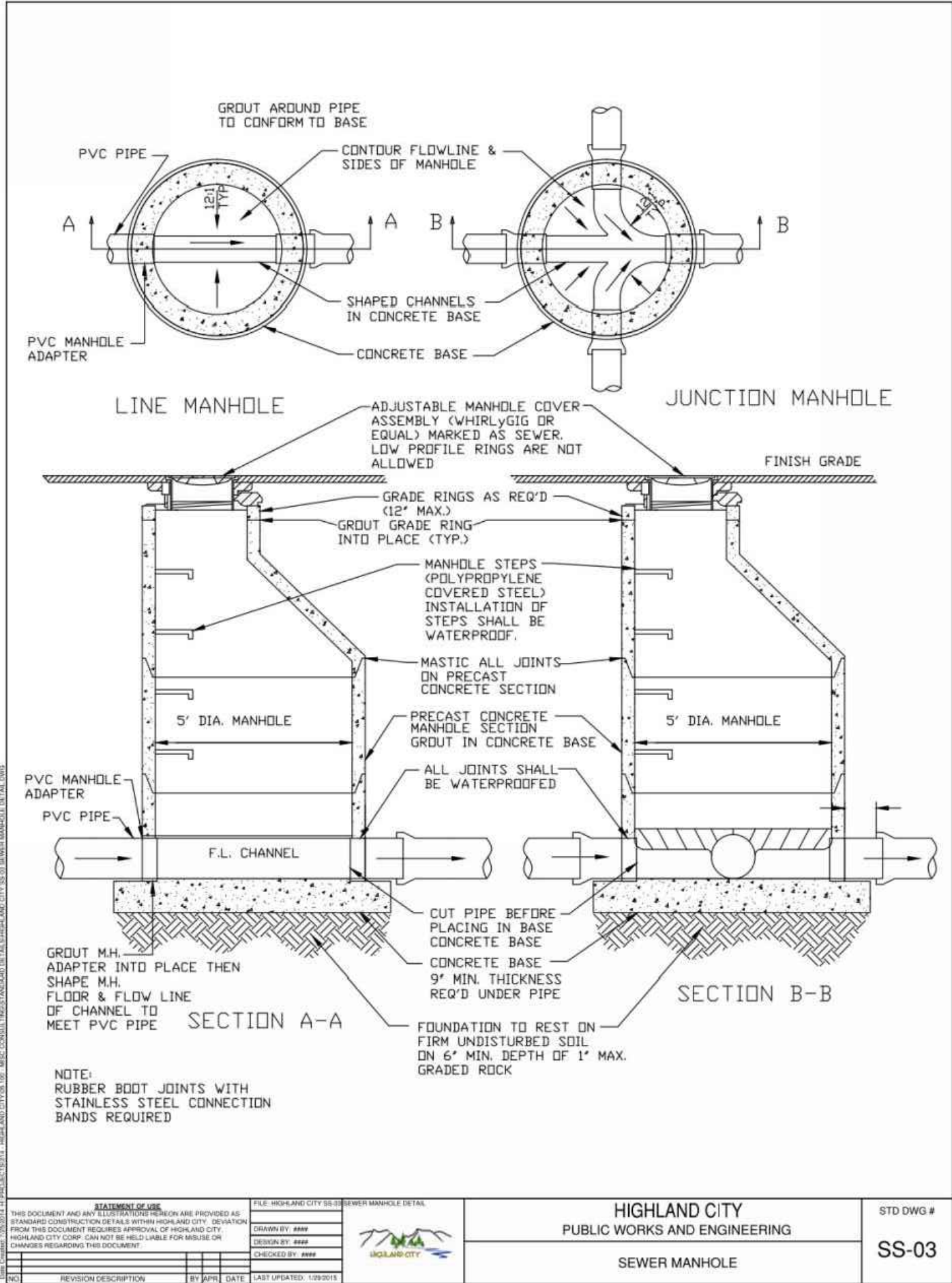
MATERIALS



Mid-block curb cut assembly

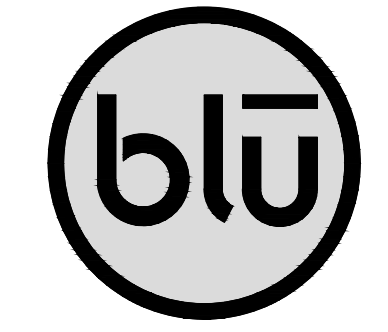
DETAIL-9
CURB CUT ASSEMBLY
(SEE APWA DRAWING NO. 236.3)

Plan
236.3
September 2011



THIS DOCUMENT AND ANY INFORMATION CONTAINED HEREIN ARE PROVIDED FOR THE USE OF THE USER. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.	DESIGNED BY: RB DRAWN BY: RB CHECKED BY: RK PROJECT NO: 18-224	DATE: 09.03.21
REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	09.03.21

DETAIL-10
SEWER MANHOLE
(SEE HIGHLAND CITY STD DWG SS-03)



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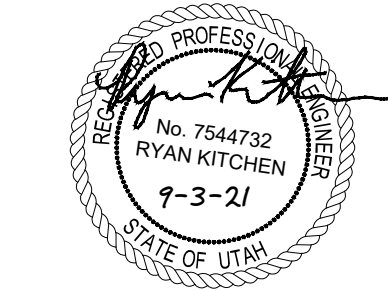
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HIGHLAND, UT 84003

CONTACT:
TODD TRANE
PH: 801-756-5751



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Designed By: RB
Drawn By: RB
Date: 09.03.21
Checked By: RK
Project No: 18-224

Drawing Title

TYPICAL
SECTIONS
& DETAILS

Drawing number

C7.1

DEFERRED SUBMITTALS

Delegated Deferred Design Submittals to be provided by Contractor

OVERCURRENT PROTECTIVE DEVICE STUDY AND ARC-FLASH STUDY REPORT & LABELING

Provide the following items listed below and comply with additional requirements as provided. See specifications.

1. Coordination-study input data, including completed computer program input data sheets.
2. Study and equipment evaluation reports.
3. Overcurrent protective device coordination study report; signed, dated, and sealed by a qualified professional engineer. Overcurrent protection shall coordinate to 0.3 seconds on normal power and to 0.1 seconds on emergency power.
4. Arc-flash study input data, including completed computer program input data sheets.
5. Arc-flash study report; signed, dated, and sealed by a qualified professional engineer.
 - a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that the selection of devices and associated characteristics is satisfactory.

SEISMIC CONTROL FOR ELECTRICAL SYSTEMS

Provide the following items listed below and comply with additional requirements as provided. See specifications.

- A. Product Data: For each type of product.
 1. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of seismic-restraint component used.
 - a. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an agency acceptable to authorities having jurisdiction.
 - b. Annotate to indicate application of each product submitted and compliance with requirements.
 - B. Delegated-Design Submittal: For each seismic-restraint device.
 1. Include design calculations and details for selecting seismic restraints complying with performance requirements, design criteria, and analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 2. Design Calculations: Calculate static and dynamic loading caused by equipment weight, operation, and seismic and wind forces required to select seismic and wind restraints and for designing vibration isolation bases.
 - a. Coordinate design calculations with wind load calculations required for equipment mounted outdoors. Comply with requirements in other Sections for equipment mounted outdoors.
 3. Seismic-Restraint Details:
 - a. Design Analysis: To support selection and arrangement of seismic restraints. Include calculations of combined tensile and shear loads.
 - b. Details: Indicate fabrication and arrangement. Detail attachments of restraints to the restrained items and to the structure. Show attachment locations, methods, and spacings. Identify components, list their strengths, and indicate directions and values of forces transmitted to the structure during seismic events. Indicate association with vibration isolation devices.
 - c. Coordinate seismic-restraint and vibration isolation details with wind-restraint details required for equipment mounted outdoors. Comply with requirements in other Sections for equipment mounted outdoors.
 - d. Preapproval and Evaluation Documentation: By an agency acceptable to authorities having jurisdiction, showing maximum ratings of restraint items and the basis for approval (tests or calculations).
- C. Deferred Submittals for the Authority Having Jurisdiction (AHJ) shall be as required by IBC 106.3.4.2.
1. Deferred submittals of seismic restraint of nonstructural components must be submitted to the AHJ a minimum of two weeks prior to the planned installation in order to allow for plan review and forwarding to inspectors. In the event that the submittal is deficient additional time may become necessary.
 2. No deferred submittal element shall be installed until AHJ approval has been received.
 3. If seismic restraints of nonstructural components are installed prior to receiving AHJ approval they shall not be covered or concealed until plan review and inspection approval. Further, installers are proceeding at their own risk until plan review and inspection approval occurs.
 4. Deferred Submittals are required for:
 - a. Electrical distribution equipment (switchboards, panelboards, transformers, ATS, MCC's etc.).
 - b. Generators, batteries, UPS.
 - c. Conduit racks.
 - d. Cable trays.
 - e. Lighting fixtures.
 - f. Control Panels

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE	KV	KILOVOLT
1PH	SINGLE-PHASE	kVA	KILOVOLT AMPERE
1WAY	ONE-WAY	kVAR	KILOVOLT AMPERE REACTIVE
2/C	TWO-CONDUCTOR	kW	KILOWATT
2WAY	TWO-WAY	kWh	KILOWATT HOUR
3/C	THREE-CONDUCTOR	LED	LIGHT EMITTING DIODE
3WAY	THREE-WAY	LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
4OUT	QUADRUPLE RECEPTACLE OUTLET	LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
4PDT	FOUR-POLE DOUBLE THROW	LPS	LOW PRESSURE SODIUM
4PST	FOUR-POLE SINGLE THROW	LRA	LOCKED ROTOR AMPS
4W	FOUR-WIRE	LTG	LIGHTING
4WAY	FOUR-WAY	LV	LOW VOLTAGE
A	ABOVE COUNTER	MATV	MASTER ANTENNA TELEVISION SYSTEM
AC	ARMORED CABLE	MAX	MAXIMUM
ADA	AMERICANS WITH DISABILITIES ACT	MC	METAL CLAD
ADJ	ADJACENT	MCA	MINIMUM CIRCUIT AMPS
AFB	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISHED GRADE	MCC	MOTOR CONTROL CENTER
AIC	AMPERE INTERRUPTING CAPACITY	MCP	MOTOR CIRCUIT PROTECTION
ALUM	ALUMINUM	MDP	MAIN DISTRIBUTION PANEL
AMP	AMPERE	MG	MOTOR GENERATOR
ANN	ANNUNCIATOR	MH	MANHOLE
AP	ACCESS POINT (WIRELESS DATA)	MIN	MINIMUM
AR	AS REQUIRED	MLO	MAIN LUGS ONLY
ASC	AMPS SHORT CIRCUIT PROTECTION	MOCP	MAXIMUM OVERCURRENT PROTECTION
ATS	AUTOMATIC TRANSFER SWITCH	NA	NOT APPLICABLE
AV	AUDIO VISUAL	NC	NORMALLY CLOSED
AWG	AMERICAN WIRE GAGE	NEC	NATIONAL ELECTRICAL CODE
BB	BUCK-BOOST TRANSFORMER	NEMA	NATIOANL ELECTRICAL MANUFACTURERS ASSOCIATION
XFMR	C	NFC	NATIONAL FIRE CODE
C	CEILING MOUNTED	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CATV	COMMUNAL ANTENNA TELEVISION	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
CBBA	CUSTOM COLOR AS SELECTED BY ARCHITECT	NO	NORMALLY OPEN
CCTV	CLOSED CIRCUIT TELEVISION	NTS	NOT TO SCALE
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	OC	ON CENTER
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED	OCP	OVER CURRENT PROTECTION
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	OFCI	OWNER FURNISHED/ CONTRACTOR INSTALLED
CKT	CIRCUIT	OFOI	OWNER FURNISHED/ OWNER INSTALLED
CM	CONSTRUCTION MANAGER	OPF	OBTAIN FROM PLANS
CND	CONDUIT	OH DR	OVERHEAD (COILING) DOOR
CO	CONVENIENCE OUTLET	OL	OVERLOAD
COR	CONTRACTING OFFICER'S REPRESENTATIVE	PB	PUSHBUTTON
CP	CONTROL PANEL	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH	PHASE
CTV	CABLE TELEVISION	PNL	PANEL
CU	COPPER	PT	POTENTIAL TRANSFORMER
dBa	UNIT OF SOUND LEVEL	PTZ	PAN/TILT/ZOOM
DPDT	DOUBLE POLE, DOUBLE THROW	QTY	QUANTITY
DS	DISCONNECT SWITCH	R	REMOVE
EA	EACH	RCP	REFLECTED CEILING PLAN
EM	EMERGENCY	RMC	RIGID METAL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	RNC	RIGID NONMETAL CONDUIT
ENT	ELECTRIC NONMETALLIC TUBING	RPM	REVOLUTIONS PER MINUTE
EPO	EMERGENCY POWER OFF EQUIPMENT	RR	REMOVE AND RELOCATE
EX	EXISTING	S/S	START/STOP
F	FURNITURE MOUNTED	SCA	SHORT CIRCUIT AMPS
FA	FIRE ALARM	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
FCP	FIRE ALARM CONTROL PANEL	SF	SQUARE FOOT (FEET)
FLA	FULL LOAD AMPS	SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
FMC	FLEXIBLE METAL CONDUIT	SPDT	SINGLE POLE, DOUBLE THROW
FOB	FREIGHT ON BOARD	SPEC	SPECIFICATION
FVNR	FULL VOLTAGE NON-REVERSING	SPST	SINGLE POLE, SINGLE THROW
FVR	FULL VOLTAGE REVERSING	ST	SINGLE THROW
G	GROUND	SWBD	SWITCHBOARD
GEN	GENERATOR	SWGR	SWITCHGEAR
GFCI	GROUND FAULT INTERRUPTER	TL	TWIST LOCK
GFP	GROUND FAULT PROTECTION	TP	TELEPHONE POLE
HD	HEAVY DUTY	TP	TWISTED PAIR
HID	HIGH INTENSITY DISCHARGE	TTB	TELEPHONE TERMINAL BOARD
HOA	HAND-OFF-AUTOMATIC	TV	TELEVISION
HP	HORSE POWER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
HPF	HIGH POWER FACTOR	TYP	TYPICAL
HPS	HIGH PRESSURE SODIUM	UF	UNDERFLOOR
HV	HIGH VOLTAGE	UGND	UNDERGROUND
HZ	HERTZ	UPS	UNINTERRUPTIBLE POWER SUPPLY
I/O	INPUT/ OUTPUT	V	VOLTS
IG	ISOLATED GROUND	VA	VOLT AMPERE
IMC	INTERMEDIATE METAL CONDUIT	VFC/VF	VARIABLE FREQUENCY MOTOR CONTROLLER
IN/IS	INSULATED/ ISOLATED	W	WITH
IR	INFRARED	W/O	WITHOUT
J-BOX	JUNCTION BOX	WP	WEATHERPROOF
		XFMR	TRANSFORMER

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", "AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
 - A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
 - B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
 - C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.
7. TAKE OFF QUANTITIES SHOWN IN SCHEDULE(S) ARE FOR REFERENCE ONLY. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OF THE DEVICES, FIXTURES, EQUIPMENT, RACEWAYS, CONDUCTORS, CABLING, ETC. SHOWN AND SPECIFIED IN THE CONTRACT DOCUMENTS INCLUDING THE EXTRA MATERIAL SPECIFIED.

ELECTRICAL SHEET INDEX

EE001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES
EE002	SYMBOLS LEGEND
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EE502	ELECTRICAL DETAILS
EE503	ELECTRICAL SITE LIGHTING DETAILS
ES101	ELECTRICAL SITE PLAN OVERALL
ES102	ELECTRICAL SITE PLAN ENLARGED
ES103	ELECTRICAL SITE PLAN ENLARGED WALKWAY
ES104	ELECTRICAL SITE PLAN ENLARGED (BID ALT)
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ES501	SITE ELECTRICAL DETAILS
ES502	SITE ELECTRICAL DETAILS
ES600	ELECTRICAL SCHEDULES
ES601	SITE PHOTOMETRIC PLAN
ES602	EXTERIOR LIGHTING FIXTURE SCHEDULE
ES603	SCHEDULES



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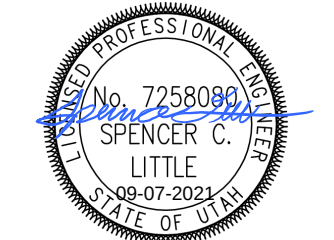


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CONSTRUCTION DOCUMENTS

REVISIONS	
NO.	DESCRIPTION

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SHEET INDEX,
ABBREVIATIONS,
AND GENERAL
NOTES

Drawing number

EE001

D

C

B

A

1

2

3

4

5

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	TRANSFER SWITCH (ONE-LINE DIAGRAM).
	DIGITAL MULTIMETER (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
	GENERATOR, POWER (ONE-LINE DIAGRAM).
	METER.
	DISCONNECT SWITCH, FUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	PUSHBUTTON.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
	DISTRIBUTION PANEL OR SWITCHBOARD.
	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
	TRANSFORMER: NUMBER INDICATES KVA.
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
	EMERGENCY.
	EGRESS DIRECTION ARROW (EXIT SIGNS).
	LOW VOLTAGE LIGHTING TRANSFORMER.
	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
	FIXTURE ID:(D420) INDICATES FIXTURE TYPE AS SCHEDULED "1C1" INDICATES ROOM/DIMMING CONTROLLER CIRCUITING "z1" INDICATES ZONE CIRCUITING.
	FIXTURE ID:(D420) INDICATES FIXTURE TYPE AS SCHEDULED "1C1e" INDICATES ROOM/DIMMING CONTROLLER CIRCUITING "z1" INDICATES ZONE CIRCUITING. EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED
WIRING METHODS	
	WIRING.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE.
	WIRING AND/OR RACEWAY: THIN LINE. WHERE "X" = : CATV = CABLE TELEVISION NC = NURSE CALL CCTV = CLOSED CIRCUIT P = POWER TELEVISION RC = RIGID CONDUIT FA = FIRE ALARM S = SOUND FO = FIBER OPTICS T = TELEPHONE I = INTERCOM TV = TELEVISION OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
	LOW VOLTAGE WIRINGS: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
	JUNCTION BOX.
	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
	JUNCTION BOX, SECURITY SYSTEM. PROVIDE CONDUIT AND ROUGH-IN PER SECURITY DRAWINGS.
	CABLE TRAY ABOVE ACCESSIBLE CEILING.
	EARTH GROUND (ONE-LINE DIAGRAM).
	JUNCTION BOX, CEILING.
	LADDER RACK.
	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	FUSE WITH RATING (ONE-LINE DIAGRAM).
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
	OVERLOAD RELAY (ONE-LINE DIAGRAM).
	STARTER (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT PROTECTION (ONE-LINE DIAGRAM).
	MOTOR.
	COMBINATION RESIDENTIAL EXHAUST FAN/LIGHT.
	TRANSFORMER (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
SITE ELECTRICAL AND COMMUNICATIONS UTILITIES	
	ELECTRIC LINE: THIN LINE. 1Ø = SINGLE PHASE, 2Ø = 2-PHASE, 3Ø = 3-PHASE, O = OVERHEAD, U = UNDERGROUND, P = PRIMARY, S = SECONDARY
	LIGHTNING ARRESTOR.
	UTILITY POLE.
	UTILITY, DISTRIBUTION SWITCH OR SWITCHING STATION.
	UTILITY, PRIMARY ELECTRICAL GROUND SLEEVE.
	UTILITY SERVICES, MANHOLE.
	UTILITY, COMMUNICATIONS MANHOLE.
	UTILITY, ELECTRICAL MANHOLE.
	UTILITY, TELEPHONE MANHOLE.
	PRECAST CONCRETE, MANHOLE, TRANSFORMER VAULT.
	PRECAST CONCRETE, TRANSFORMER PAD.
	SUBSTATION.
	TRANSFORMER.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
	KEYNOTE INDICATOR.
	REVISION INDICATOR.
	MECHANICAL EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XMDP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
	BREAK, ROUND
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
	EXISTING TO REMAIN LINE: THIN LINE.
	DEMOLITION LINE: DASHDOT, MEDIUM LINE
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
	KITCHEN EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XKP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
STRUCTURED CABLING	
	TELEPHONE, WALL MOUNTED ("X" INDICATES QUANTITY OF CABLES).
	DATA CONNECTION: WIRELESS ACCESS POINT (WAP). REQUIRES (2) DATA DROPS PER DEVICE
	TELEPHONE, WALL MOUNTED: WALL PHONE.
	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES)
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
	TWO-WAY EMERGENCY COMMUNICATION DEVICE PER IBC, WALL MOUNTED IN RECESSED BOX.
	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
	LAN RACK, FLOOR STANDING.
	DATA CABLE, CATEGORY 5 (ONE-LINE DIAGRAM).
	VOICE CABLE, CATEGORY 3 (ONE-LINE DIAGRAM).
LIGHTING CONTROL	
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	OCCUPANCY SENSOR CONTROL RELAY.
	VACANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	PHOTOCELL.
	TIME CLOCK.
	EMERGENCY LIGHTING CONTROL UNIT. WATTSTOPPER (ELCU-200)
	CEILING FAN.
	OCCUPANCY SENSOR, SWITCH PACK.
	SWITCH/OCCUPANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
	SWITCH/VACANCY SENSOR COMBO, DUAL TECHNOLOGY, WALL.
	DIGITAL PLUG LOAD CONTROLLER
	LIGHTING NETWORK SWITCH.
	LIGHTING NETWORK ROUTER.
	LIGHTING NETWORK SEGMENT MANAGER
	LIGHTING SPACE CONTROL TYPE. X INDICATES TYPE. SEE SCHEDULE / DIAGRAM.
	DIGITAL LIGHTING DIMMING CONTROLLER, "1C1" IS A UNIQUE CONTROLLER IDENTIFICATION TAG
	DIGITAL LIGHTING ROOM CONTROLLER, "1C2" IS A UNIQUE CONTROLLER IDENTIFICATION TAG
	LOW VOLTAGE DIGITAL LIGHTING CONTROL SWITCH: LETTER "z1,z2" INDICATES ZONING WHERE SHOWN (REFER TO PLANS, SCHEDULES, AND DETAILS FOR EXACT BUTTON CONFIGURATION AND PROGRAMMING REQUIREMENTS)

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
WIRING DEVICES	
	RECEPTACLE, DUPLEX: NEMA 5-20R.
	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX, CONNECTED TO UPS: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, CONNECTED TO UPS: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
	RECEPTACLE, SPECIAL PURPOSE ON EMERGENCY POWER. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
	RECEPTACLE, DRYER: NEMA 14-30R.
	RECEPTACLE, RANGE: NEMA 14-50R.
	MULTI-OUTLET ASSEMBLY: NEMA 5-20R.
	DROP CORD. SEE DETAIL.
	FLUSH FLOOR BOX. "F" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
	FLUSH FIRE RATED POKE THRU. "F" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
	SWITCH, SINGLE POLE ("X" INDICATES FIXTURES CONTROLLED).
	SWITCH, DOOR.
	SWITCH, KEY OPERATED.
	SWITCH, WEATHERPROOF.
	RECEPTACLE, DUPLEX, TAMPER RESISTANT: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, CONNECTED TO UPS: NEMA 5-20R.
	RECEPTACLE, SINGLE PLEX, WITH USB OUTLET
	RECEPTACLE, DULEX, RECESSED, NEMA 5-20R, AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
	RECEPTACLE, QUADRAPLEX, RECESSED, NEMA 5-20R, AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
	INDICATES A RECEPTACLE IS AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
CCTV	
	CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
SECURITY	
	CARD READER.
TV DISTRIBUTION	
	TV OUTLET.



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REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

Drawing Title

SYMBOLS
LEGEND

Drawing number

EE002

CONSTRUCTION DOCUMENTS

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GENERAL REQUIREMENTS:

CODE ANALYSIS
ENERGY CODE: IECC

Comply with the requirements of all required building codes, including, but not limited to the National Electrical Code, International Building Code, International Energy Conservation Code, Local Codes, and International Building Codes.
Provide and pay for all required permits. Bidders shall view the site and shall include all costs incurred by existing conditions in the bid proposal.

Materials other than those specified may be accepted providing a written request is submitted to the engineer at this least 10 working days prior to bid opening. Approved products will be listed in the addendum.
All equipment shall be new and contain the manufacturer's name, model number and electrical characteristics.
All equipment shall be UL listed for it's intended use and/or approved by the authority having jurisdiction.
Provide Original electronic PDF format, bound, bookmarked (each section and product), and highlighted.
Job name and subcontractor shall be on the front cover. Prepare an index of equipment submitted in each tab.
Electronic submittals shall be submitted to the Architect within 21 days of award on the contract, unless otherwise directed by Architect.

SUBMITTALS:

Submittals shall include all electrical material provided as it related to this project and shall specifically include but is not limited to: wiring devices, raceways, Surface Raceways, floorboxes, lighting fixtures, lighting controls, panels and breakers, disconnects, telephone/data structured cabling systems, fire alarm systems, access controls system, intrusion detection system, and lightning protection systems.

Provide as-built drawings to Architect before application for final payment. Request a clean set of drawings from Architect and prepare these drawings in a quality equal to that of the original drawings.

INSTALLATION REQUIREMENTS:

Electrical plans are diagrammatic. Verify exact equipment locations for all equipment. Coordinate with architectural and mechanical drawings and existing conditions to avoid conflicts. All work shall be installed in a neat, inconspicuous, workmanlike manner. Conduit runs shall be parallel and perpendicular to structural lines where exposed.
Outlet boxes, fixtures and equipment shall be securely mounted and supported.
The site shall be left clean and free of dirt and debris. Panels, fixtures, outlets and equipment shall be left clean and free of foreign materials and dirt.
Panels, switches, and all controls shall be clearly and permanently labeled with laminated engraved labels. Where changes are made in existing panels, distribution centers, etc., the labeling and schedules shall be accurately corrected to reflect the changes. New typed panel schedules shall be provided for all existing panelboards that have changes.
Receptacles and light switch cover plates shall be labeled with a permanent adhesive typed label indicating the panel and circuit number.
Phone & data outlet covers shall be labeled with a permanent adhesive typed label indicating the unique telecom ID.
The structured cabling shall be labeled at both ends with the unique ID. The patch panel shall be labeled with the unique ID. A computer generator color coded map shall be provided by the Contractor to the Owner showing all jack ID's along with their location on a building floorplan.
All wiring shall be installed in raceways except where otherwise specifically shown on the Drawings.

SAFETY:

The Engineer has not been retained or compensated to provide construction review related to the Contractor's safety precautions or to means, methods, sequences, or procedures required for the contractor to complete the work.

SEISMIC BRACING AND SUPPORTS:

Contractor shall be responsible to seismically brace all equipment, feeders, lights, cabletray, and other electrical items in accordance with prevailing codes. Deferred submittals of seismic bracing shall be required upon request and shall comply with ASCE 7-02 for support and bracing of non-structural systems. This shall include seismic design deferred submittals of the site lighting pole base details.

GUARANTEE:

Guarantee the electrical installation against all defects in materials, equipment and workmanship, for one year after the date of acceptance of the work. Defects shall be promptly remedied to the satisfaction of the Architect at no cost to the Owner. All equipment and products shall carry a minimum 1 year warranty from the date of final acceptance by the Owner.

MATERIALS AND METHODS:

Electrical metallic tubing may be used in dry locations not subject to mechanical injury. Provide EMT in 3/4" minimum size. All conduit exposed in occupied spaces shall be EMT, unless specifically noted otherwise.
Surface metal raceway is not permitted unless approved in writing by architect or specifically allowed in the drawings.
Flexible metal conduit is permitted where flexibility is necessary and when connecting to equipment subject to vibration such as motors or transformers.
MC cable is allowed where concealed in walls or above dropped ceilings (such as acoustical lay-in tile ceiling) for lengths no longer than 6 feet.
EMT connectors to be steel, zinc or cadmium coated, factory pre-insulated. Conduit bushings to be heavy duty, insulated.

Wire shall be copper THHN/THWN-2 for copper sizes #2 and smaller. Aluminum XHHW-2 wire may be used for aluminum sizes 1/0 and larger. Unless otherwise shown on the Drawings, copper #12 is the minimum size for lighting and power use. Size wire as indicated on the drawings, or appropriate to carry the entire load per the NEC.
Provided dedicated neutral wiring for all branch circuits, common (shared) neutral wiring is not permitted. For branch circuiting longer than 100 feet, increase wire size by one size to control voltage drop. All wiring shall be color coded with solid coloring or for sizes above #6 may have colored tape bands at all accessible locations and ends, color coding shall be as follows:
Phase A - Black; Neutral A - White with/Black stripe
Phase B - Red; Neutral B - White with/Red stripe
Phase C - Blue; Neutral C - White with/Blue stripe
Ground - Green

Boxes to be 4 inch octagonal for lighting outlets and 4 inch square backboxes (minimum 1-1/2 inches depth) with appropriate device covers for device outlets in concealed work. Provide single gang mud rings for single gang outlets. Do not install outlet boxes back to back in the same stud space. Outlet boxes shall be installed not more than 1/8 inch back in sheetrock and plumb.

MC cabling may be used in concealed locations for branch circuiting. Home runs shall be in conduit and the remaining circuiting may be in MC cabling.

WIRING DEVICES:

Install wiring devices to the following heights (heights to center of device unless noted otherwise) unless noted otherwise on the drawings, see typical mounting height details:
Switch - 45"
Standard Receptacle OR Phone/Data Outlet - 18"
Receptacle OR Phone/Data Outlet (above counter) - 3" above backsplash
Panelboard, FACP - 72" to top
Fire Alarm Notification Device - 96"
Phone/Data - 18"
Consult architectural elevations and millwork shop drawings to determine exact mounting height of all outlets above counter. Coordinate with millwork installer to provide grommets where outlets are located below counter.
Wall switches for general use to be 20 ampere, 120 volt AC rated, quiet acting, equal to Hubbell 1221 series.
Duplex receptacles to be 20 ampere specification grade, equal to Hubbell No. 5362.
Wall Switch Sensor Switches shall be WattStopper LMDW-101.
Dimmer switches shall be 0-10 Volt WattStopper LMDM-101.
Multi-Button Dimmer Switches shall be 0-10 Volt WattStopper LMSW-10X.
Selection of color and plate material shall be by architect. Plate material may be either stainless steel, or Nylon, include worst case (most expensive) in bid. Stainless steel plates shall be required in kitchen and restroom areas.

FLOOR BOXES:

Provide flush floor box, concrete tight, of cast metal or steel construction, with carpet rings and plates, as provided by Hubbell or Wiremold. Equip with minimum two simplex power receptacles rated at 20 amps. Equip with two category 6 phone/data modular outlets where shown (to be wired by separate contract).

OCCUPANCY SENSORS:

Provide occupancy sensors of Sensor Switch, Mytech, or Hubbell. Sensors shall be dual technology infrared/ultrasonic in all areas, but ultrasonic only in restrooms. Provide ceiling sensors of low profile, non-adjustable style, oriented to cover the room. Mount sensors a minimum of 3 feet away from air diffusers. Provide all power packs required. Provide dual technology wall mount/switch sensors with manual override in small areas oriented towards the center of the room, where wall mount occupancy sensors are indicated.
Adjust sensors to operate effectively when someone enters the room, and remain on while they are in the room.
Test each room independently. Visit the site 3 months after occupancy and readjust as required.
Low voltage wiring installed in inaccessible ceiling area must be run in EMT conduit. The conduit may stop short of the sensor or power pack (within 6 inches).

ELECTRICAL PANELBOARDS, SWITCHBOARDS & BREAKERS:

Provide spec grade, door in door, specification grade panelboards of Square D NQOD, or equal of Cutler Hammer, Siemens, or Eaton. Provide bolt on breakers. Provide aluminum bussing, 100% rated neutral bus, and bonded ground bus. Provide isolated ground bus where indicated. Provide typed panel schedule. Provide permanent engraved panel ID label on the outside of each panelboard and switchboard.
Panel and breakers shall be fully rated for the fault current values indicated in the drawings, series rating is not permitted. Provide NEMA-3R enclosures for any panelboard or switchboard installed outside.

EQUIPMENT CONNECTIONS:

Connect each item of mechanical or other types of equipment shown on the Drawings, providing all power requirements. Verify equipment electrical requirements prior to roughing-in and ordering equipment.
Furnish all code required disconnects under this work, whether specifically shown or not.
Control devices and control wiring will be furnished and installed under other work unless specifically called for on the electrical drawings.

LIGHTING FIXTURES:

All lighting shall be LED.
Fixtures shall be adequately supported with a safety factor of four. Fixtures shall be stabilized or locked into place to resist seismic forces. Support all recessed fixtures independently of the ceiling system, using wire tied from two corners of the fixture to the structure above. For suspended fixtures on dropped ceiling, locate boxes at the dropped ceiling level and support independent of the ceiling. Fixtures shall all be clean and in proper operation at the time of acceptance of the work.

Provide emergency illumination of 1 foot candle in the path of egress for minimum of 90 minutes. Provide emergency battery packs in fixtures specified capable of operating lamps for minimum of 90 minutes or provide a lighting inverter sized to power all emergency fixtures for 90 minutes.
Do not install power raceways or telecommunications raceways within 5 inches of any fluorescent or HID fixture.

LIGHTING CONTROL RELAY PANEL:

Provide lighting control relay panel complete with all functions, features, and accessories as indicated in the drawings for a fully functioning and programmed system meeting the Owner requirements.

LIGHTING COMMISSIONING:

The contractor shall perform or shall engage a party to perform the following tests and inspections with the assistance of a factory-authorized service representative.
Ensure that the lighting controls for automatic lighting systems comply with 2015 IECC section C408.3.
Ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturer's installation instructions.
Where required by the code official, an approved party independent form the design or construction of the project shall be responsible for the functional testing and shall provide documentation to the code official certifying that the installed lighting controls meet the provisions of 2015 IECC section C405.
Provide the following procedures for each; occupant sensor, time switch, programmable schedule control, photosensor, and daylighting control.
Confirm that the placement, sensitivity, and time-out adjustments for the occupant sensor s yield acceptable performances.
Confirm that the time switches and programmable schedule controls are programmed to turn the lights off.
Confirm that the placement and sensitivity adjustments for the photosensor controls reduce electric light based on the amount of usable daylight in the space as specified.

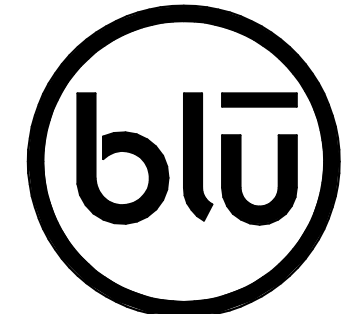
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CONSTRUCTION DOCUMENTS



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8719 S. Sandy Parkway
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OWNER:
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HIGHLAND, UT 8003

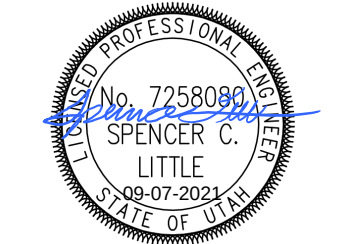
CONTACT:
TODD TRANE
PH: 801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK
10400 N 5600 W
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REVISIONS	
NO.	DESCRIPTION

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Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

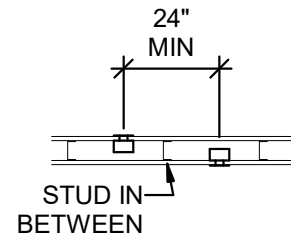
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ELECTRICAL
SPECIFICATIONS

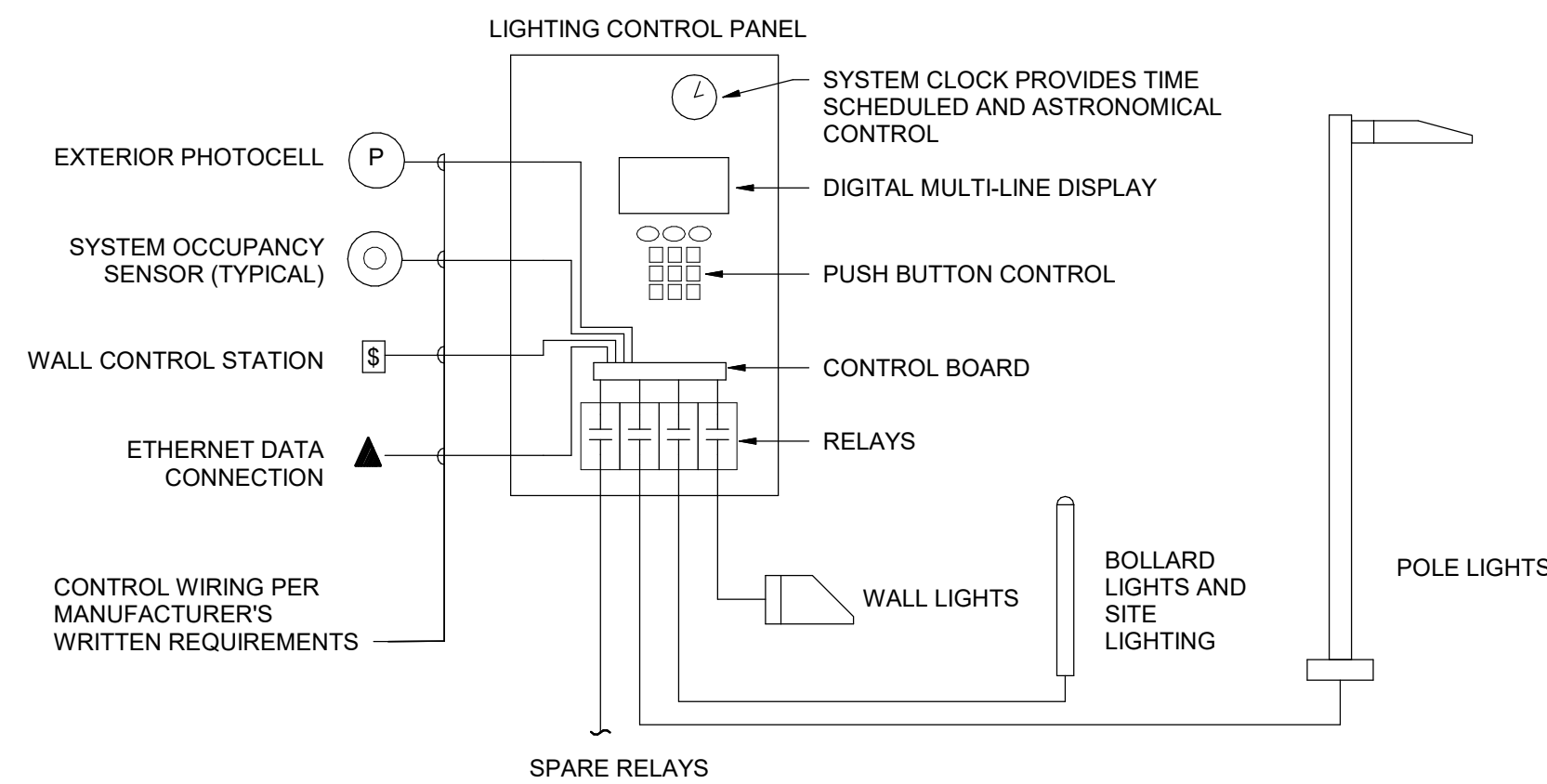
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EE004

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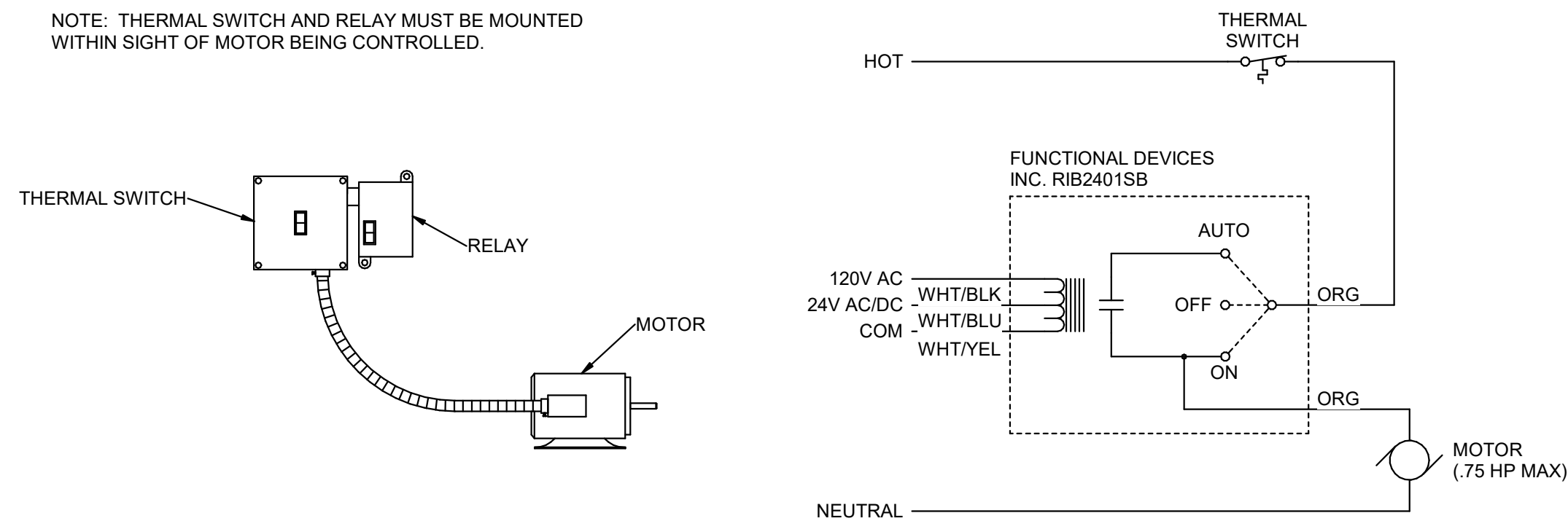


BOXES ON OPPOSITE SIDES OF WALL
8 BOX MOUNTING DETAILS
SCALE: NTS



MANUFACTURER'S:
WATTSTOPPER - LPX PEANUT LIGHTING CONTROL PANELS
HUBBELL - CX LIGHTING CONTROL PANELS
OR APPROVED EQUAL

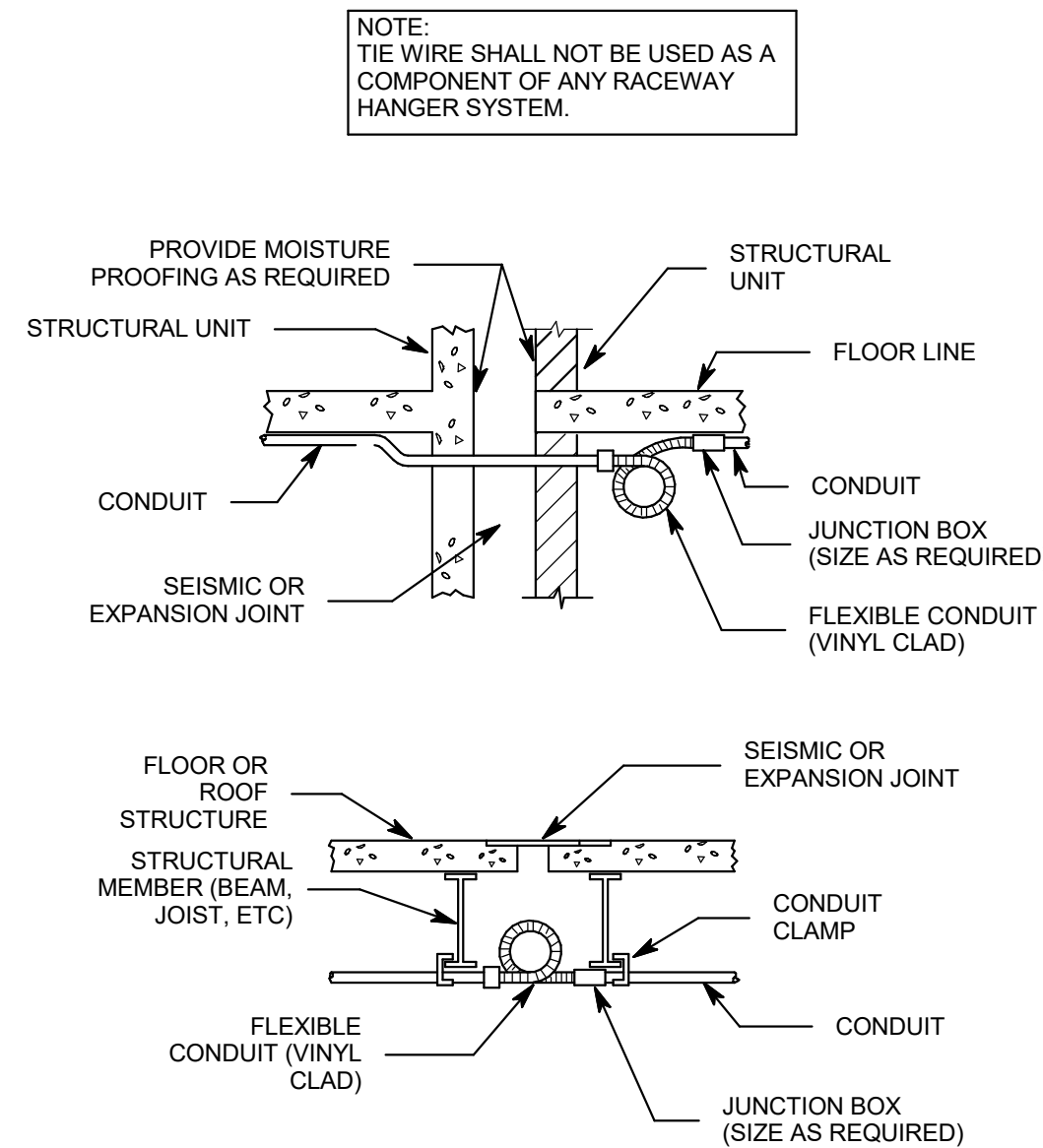
4 LIGHTING CONTROL PANEL RISER DIAGRAM (TYPICAL)
SCALE: NTS



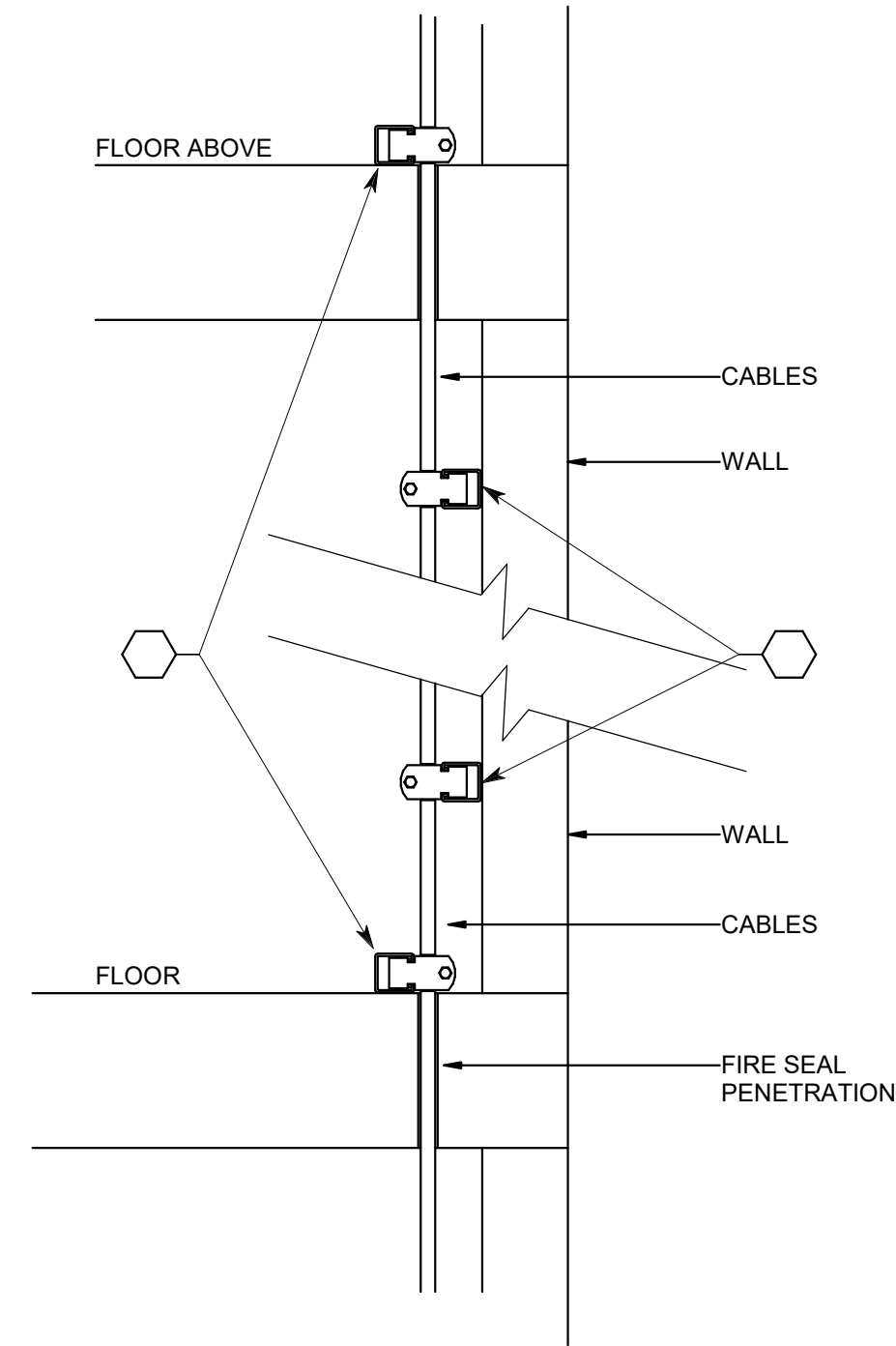
LAYOUT DIAGRAM

SCHEMATIC DIAGRAM

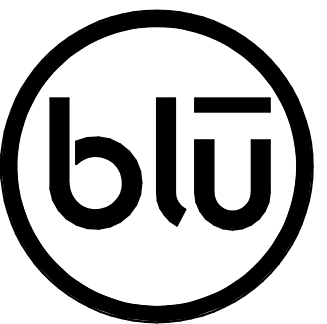
1 120V FRACTIONAL MOTOR CONTROL
SCALE: NTS



5 CONDUIT EXPANSION JOINT DETAIL
SCALE: NTS



6 CABLE SUPPORT DETAIL
SCALE: NTS



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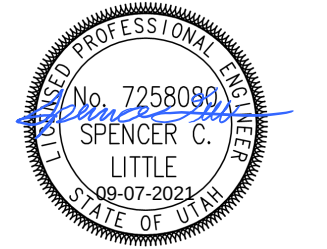


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CONSTRUCTION DOCUMENTS

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Date: 09.01.2021
Checked By: SCL
Project No: 18-224

Drawing Title

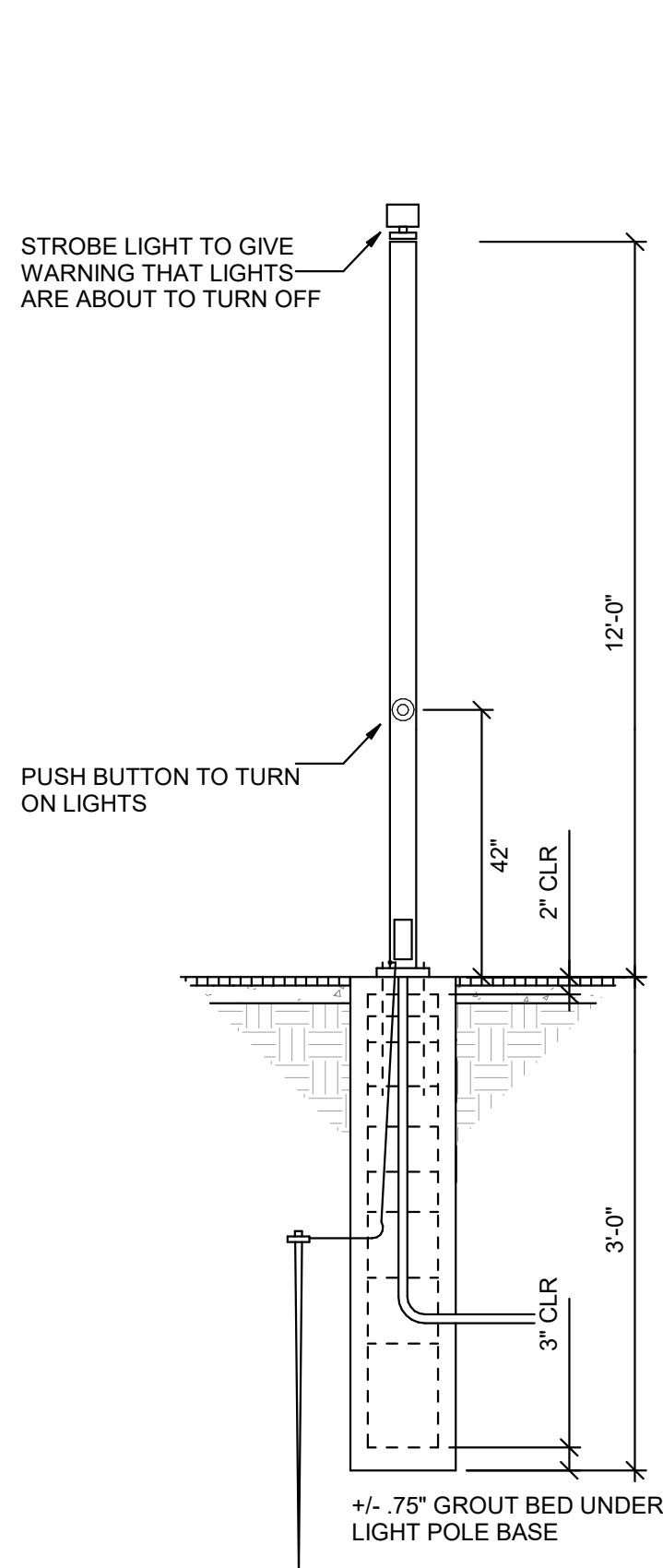
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DETAILS

Drawing number

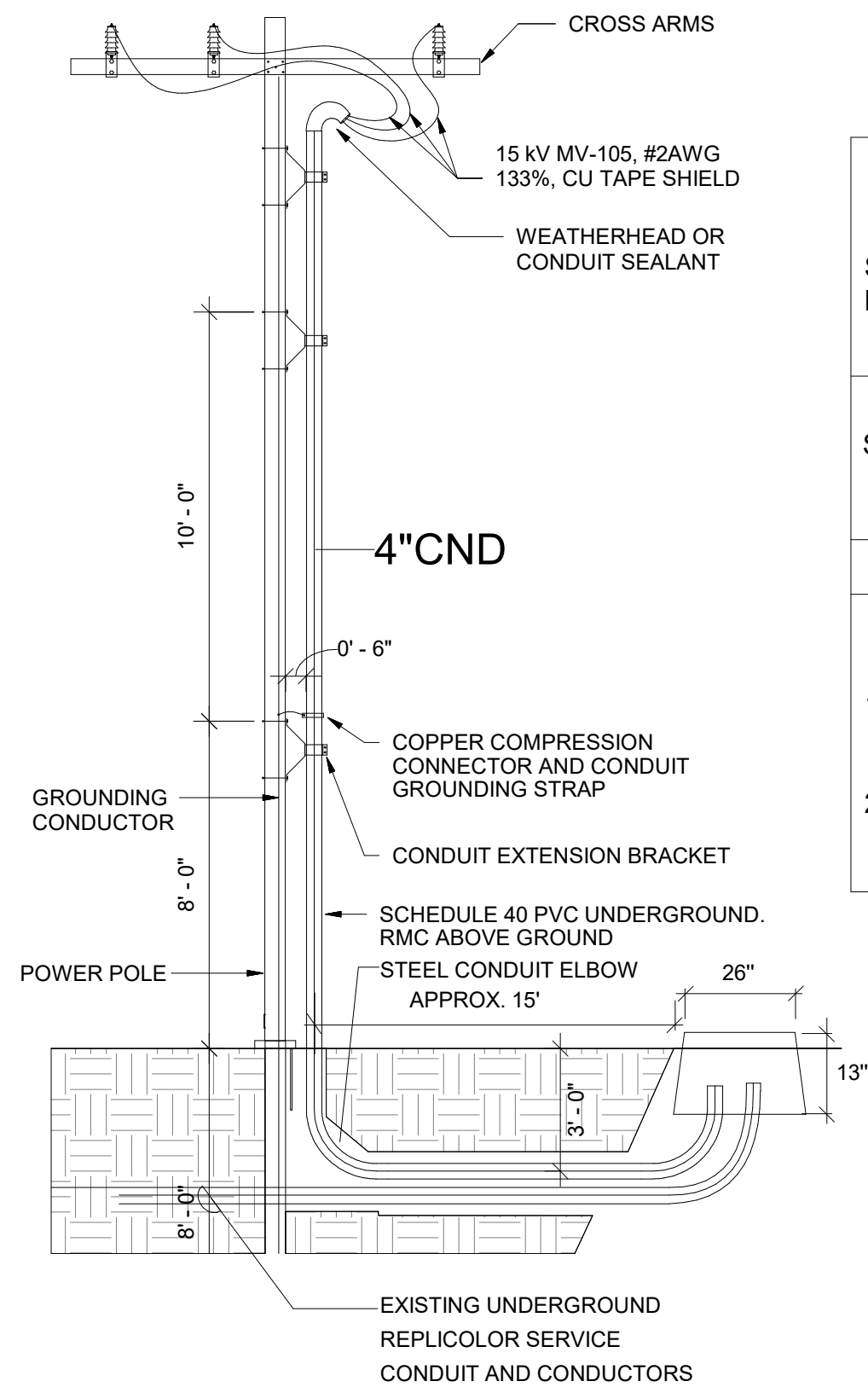
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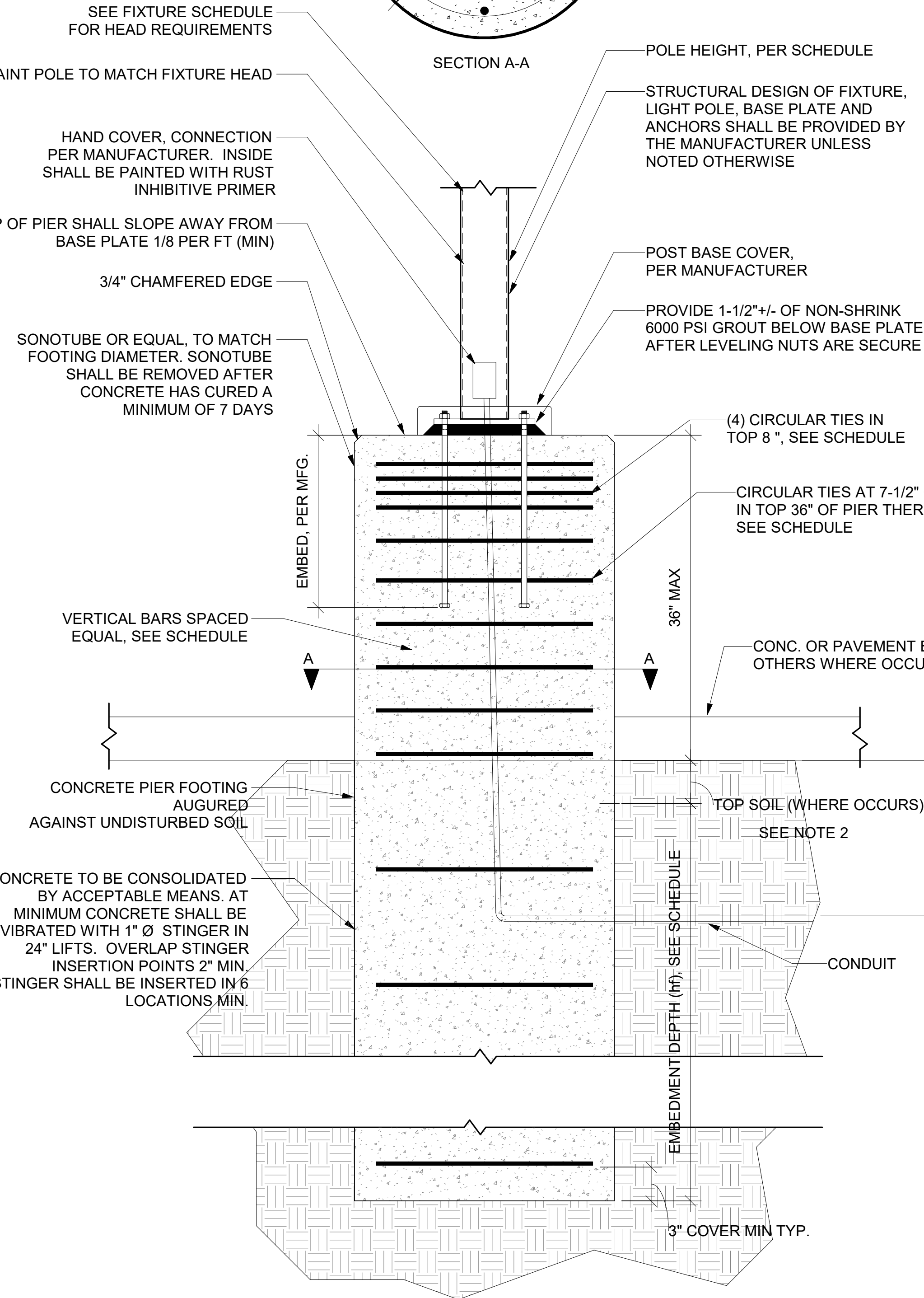
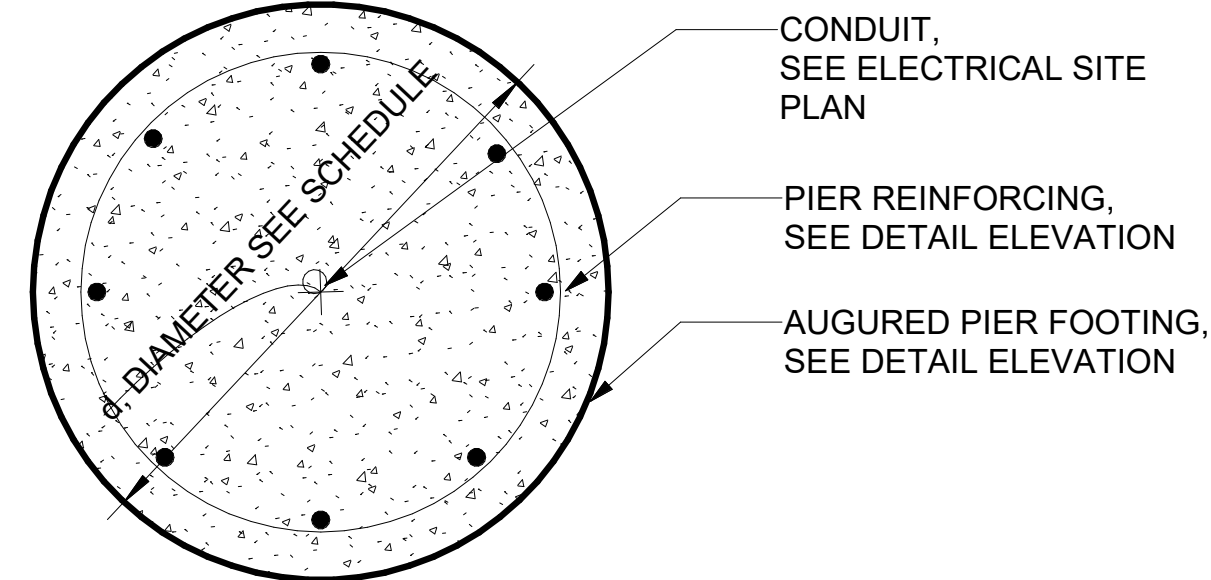


5 ACTUATOR POLE & BASE DETAIL
SCALE: NTS

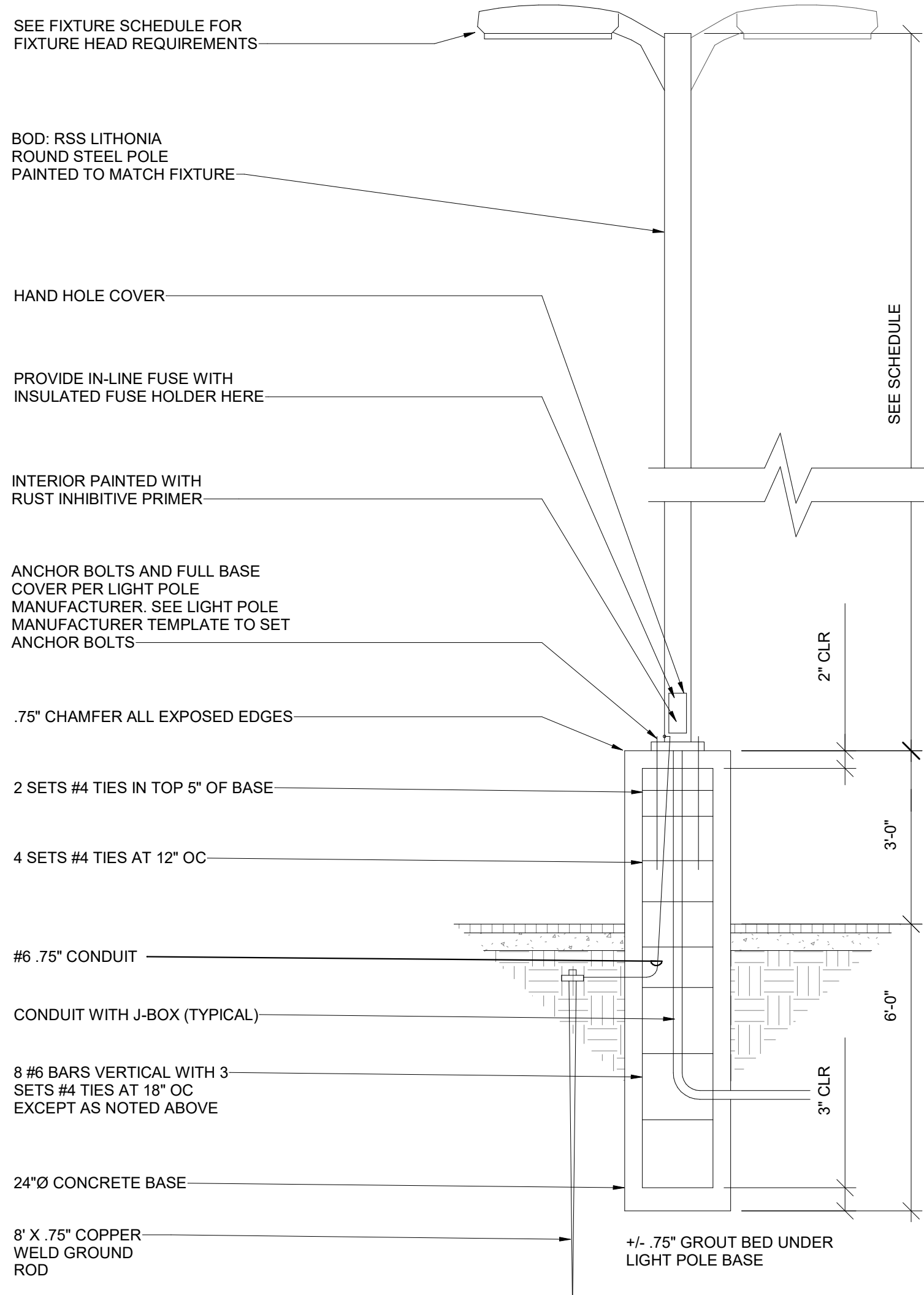


3 CONDUIT POWER POLE DETAIL
SCALE: 1/8" = 1'-0"

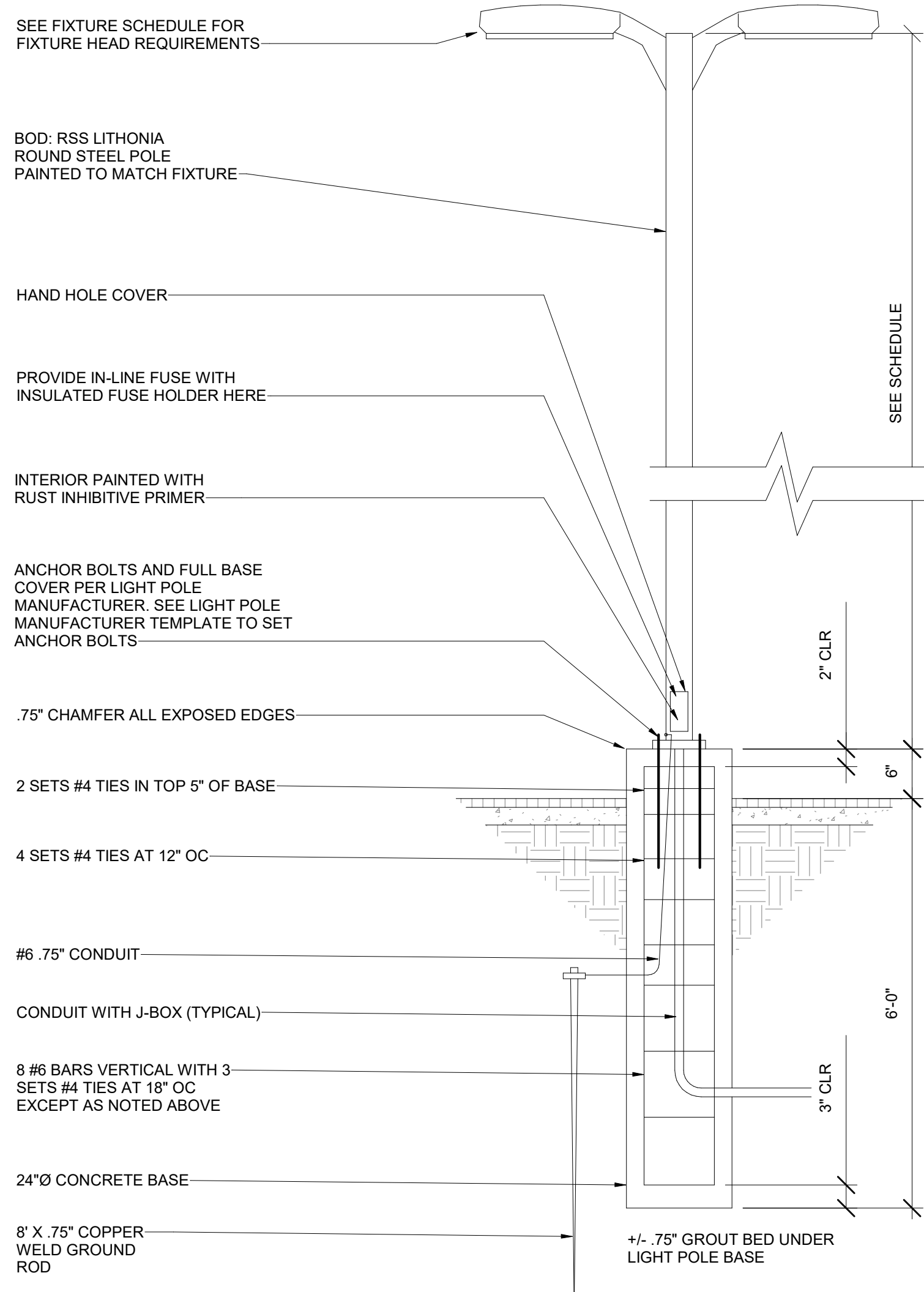
LIGHT POLE PIER FOOTING SCHEDULE										
1										
SCHEDULE LEGEND										
X ¹ ← SUPERSCRIPT, SEE CORRESPONDING NOTE										
WIND SPEED (mph)	MAX EPA (FT ²)	LIGHT POLE HEIGHT (ft)	LIGHT POLE DIA (in) max	FOOTING DIAMETER, d (in)	MIN. FOUNDATION EMBED DEPTH (ft)	VERTICAL REINF. BAR SIZE	VERTICAL BAR QUANTITY	CIRCULAR TIE BAR SIZE	CIRCULAR TIE SPACING (in)	
115	2	30	5	24	5'-0"	#5	8	#4	12" O.C.	
NOTE:										
1. SCHEDULE ASSUMES GRANULAR SOILS CONDITIONS WITH SEISMIC SITE CLASS D OR E. SOIL PARAMETERS PER SOILS REPORT										
2. TOP SOIL SHALL NOT BE USED TO RESIST LATERAL LOAD IN FOOTING. THE EMBED DEPTH IN THE TABLE SHALL BE BEGIN BELOW THE BASE OF THE TOP SOIL AS SHOWN IN THE ELEVATION.										



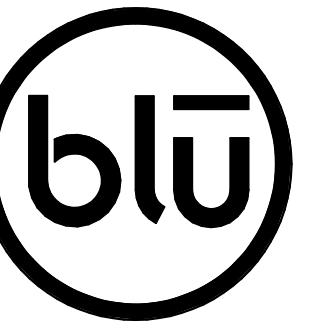
1 TYPICAL LIGHT POLE FOOTING SCHEDULE
SCALE: 1" = 1'-0"



4 PARKING LOT LIGHT POLE BASE DETAIL1
SCALE: 3/16" = 1'-0"



2 WALKWAY LIGHT POLE BASE DETAIL - POLE TOP
SCALE: 3/16" = 1'-0"



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275 WEST MAIN STREET
SANTAQUIN, UT 84655

CONTACT:
Jon Lundell
P: 801-754-3211



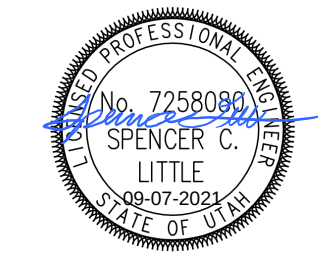
Celebrating 35 years of Engineering Excellence

Project Name

Enter address here

REVISIONS		
NO.	DATE	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: SAC
Date: Issue Date
Checked By: SCL
Project No: 21-105

Drawing Title

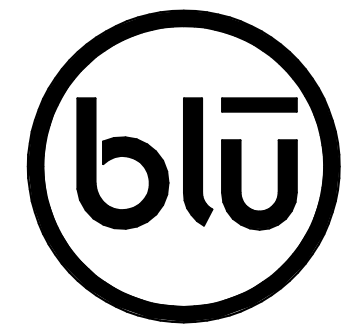
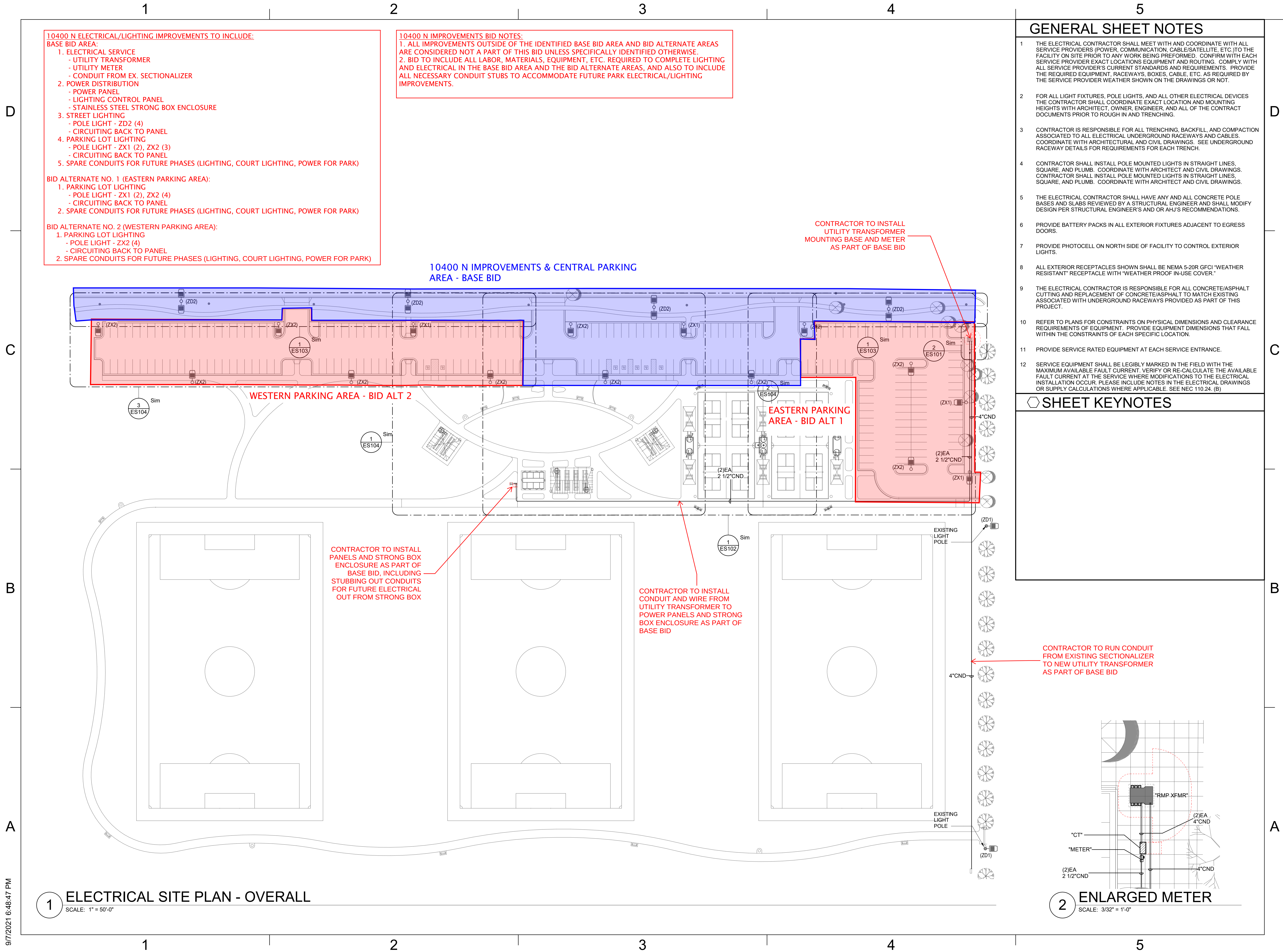
ELECTRICAL
SITE LIGHTING
DETAILS

Drawing number

EE503

Project Status

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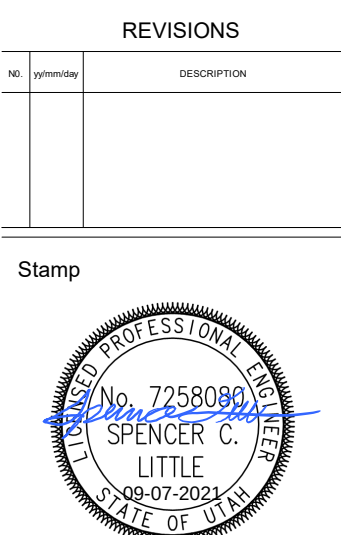
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DRIVE
HIGHLAND, UT 8003

CONTACT:
TODD TRANE
PH:
801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK
10400 N 5600 W
HIGHLAND, UT 84003



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

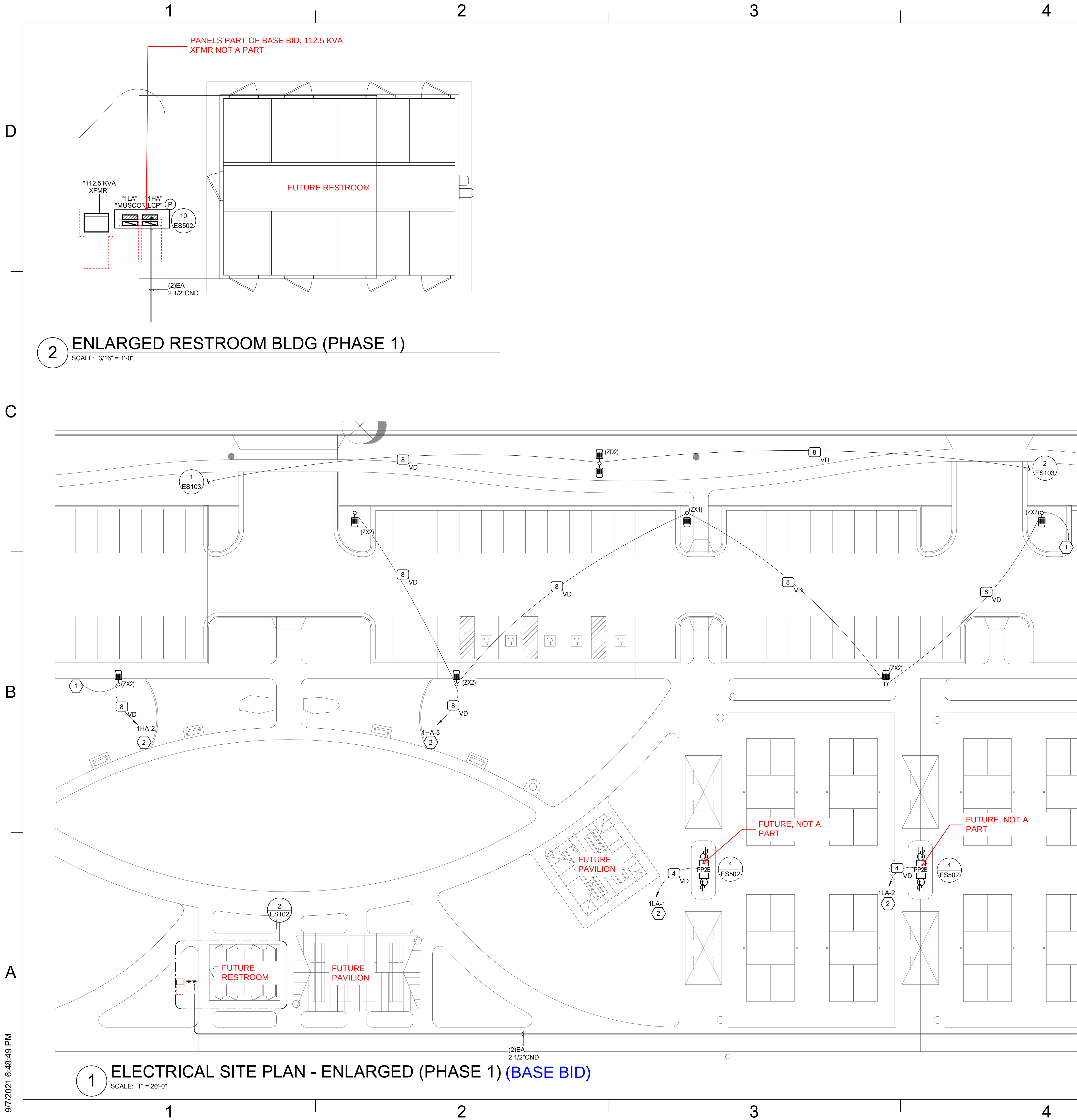
Drawing Title
**ELECTRICAL
SITE PLAN
OVERALL**

Drawing number

ES101

CONSTRUCTION DOCUMENTS

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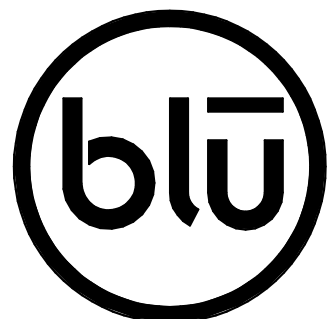


GENERAL SHEET NOTES

- 1 THE ELECTRICAL CONTRACTOR SHALL MEET WITH AND COORDINATE WITH ALL SERVICE PROVIDERS (POWER, COMMUNICATION, CABLE/SATELLITE, ETC.) TO THE FACILITY ON SITE PRIOR TO ANY WORK BEING PERFORMED. CONFIRM WITH EACH SERVICE PROVIDER EXACT LOCATIONS EQUIPMENT AND ROUTING. COMPLY WITH ALL SERVICE PROVIDER'S CURRENT STANDARDS AND REQUIREMENTS. PROVIDE THE REQUIRED EQUIPMENT, RACEWAYS, BOXES, CABLE, ETC. AS REQUIRED BY THE SERVICE PROVIDER WEATHER SHOWN ON THE DRAWINGS OR NOT.
- 2 FOR ALL LIGHT FIXTURES, POLE LIGHTS, AND ALL OTHER ELECTRICAL DEVICES THE CONTRACTOR SHALL COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS WITH ARCHITECT, OWNER, ENGINEER, AND ALL OF THE CONTRACT DOCUMENTS PRIOR TO ROUGH IN AND TRENCHING.
- 3 CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL, AND COMPACTION ASSOCIATED TO ALL ELECTRICAL UNDERGROUND RACEWAYS AND CABLES. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS. SEE UNDERGROUND RACEWAY DETAILS FOR REQUIREMENTS FOR EACH TRENCH.
- 4 CONTRACTOR SHALL INSTALL POLE MOUNTED LIGHTS IN STRAIGHT LINES, SQUARE, AND PLUMB. COORDINATE WITH ARCHITECT AND CIVIL DRAWINGS. CONTRACTOR SHALL INSTALL POLE MOUNTED LIGHTS IN STRAIGHT LINES, SQUARE, AND PLUMB. COORDINATE WITH ARCHITECT AND CIVIL DRAWINGS.
- 5 THE ELECTRICAL CONTRACTOR SHALL HAVE ANY AND ALL CONCRETE POLE BASES AND SLABS REVIEWED BY A STRUCTURAL ENGINEER AND SHALL MODIFY DESIGN PER STRUCTURAL ENGINEER'S AND OR AHJ'S RECOMMENDATIONS.
- 6 PROVIDE BATTERY PACKS IN ALL EXTERIOR FIXTURES ADJACENT TO EGRESS DOORS.
- 7 PROVIDE PHOTOCELL ON NORTH SIDE OF FACILITY TO CONTROL EXTERIOR LIGHTS.
- 8 ALL EXTERIOR RECEPTACLES SHOWN SHALL BE NEMA 5-20R GFCI "WEATHER RESISTANT" RECEPTACLE WITH "WEATHER PROOF IN-USE COVER."
- 9 THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONCRETE/ASPHALT CUTTING AND REPLACEMENT OF CONCRETE/ASPHALT TO MATCH EXISTING ASSOCIATED WITH UNDERGROUND RACEWAYS PROVIDED AS PART OF THIS PROJECT.
- 10 REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
- 11 PROVIDE SERVICE RATED EQUIPMENT AT EACH SERVICE ENTRANCE.
- 12 SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. VERIFY OR RE-CALCULATE THE AVAILABLE FAULT CURRENT AT THE SERVICE WHERE MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR. PLEASE INCLUDE NOTES IN THE ELECTRICAL DRAWINGS OR SUPPLY CALCULATIONS WHERE APPLICABLE. SEE NEC 110.24. (B)

SHEET KEYNOTES

- 1 PROVIDE SPARE CONDUIT STUBBED OUT FOR FUTURE LIGHTING CIRCUIT EXPANSION.
- 2 CIRCUIT THROUGH LIGHTING CONTROL RELAY PANEL. COORDINATE WITH CITY AND ARCHITECT FOR EXACT PROGRAMMING AND CONTROL SETTINGS.



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TODD TRANE
PH:
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MOUNTAIN RIDGE PARK
10400 N 5600 W
HIGHLAND, UT 84003

CONSTRUCTION DOCUMENTS

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

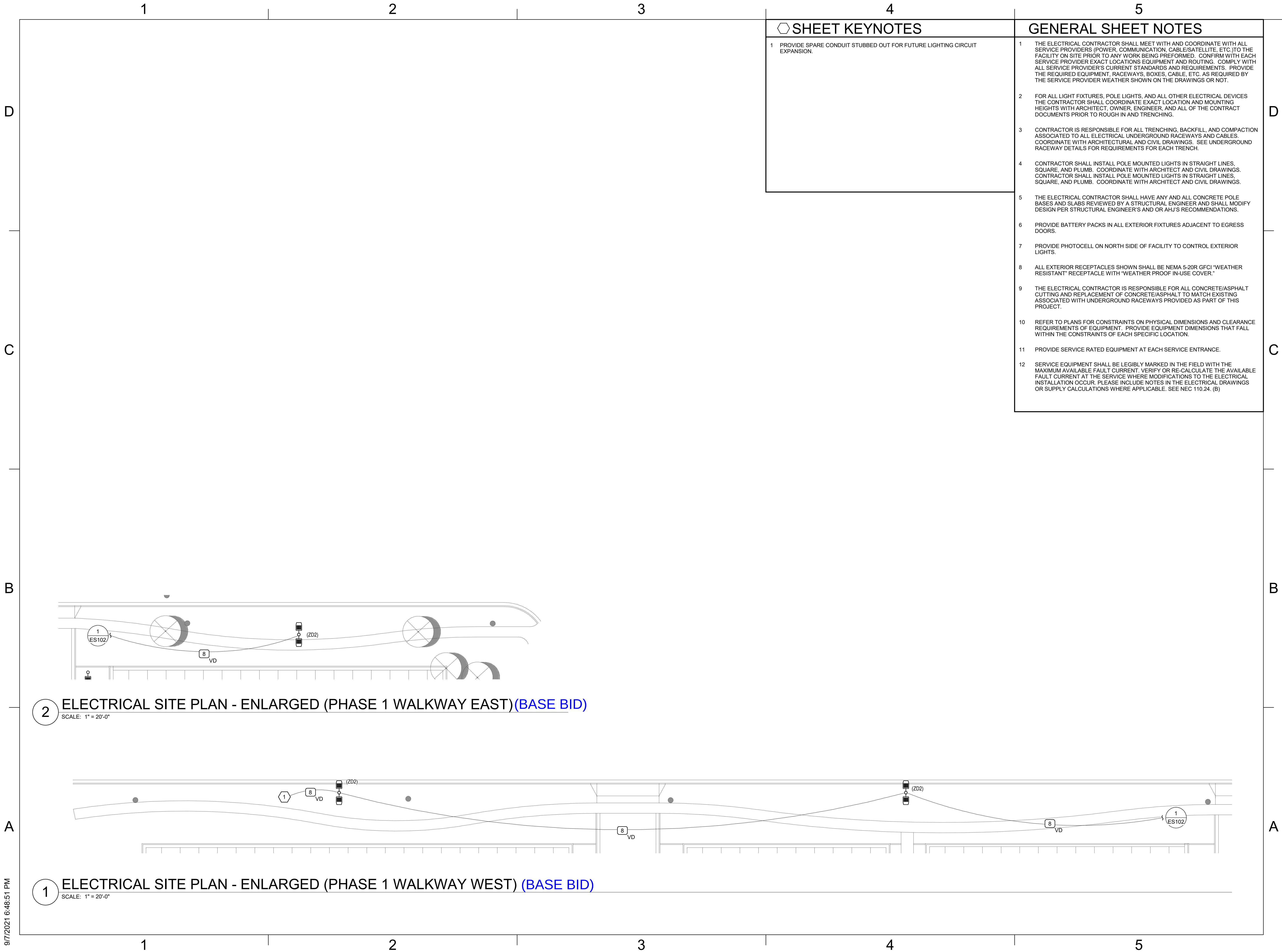
Drawing Title

ELECTRICAL
SITE PLAN
ENLARGED

Drawing number

ES102

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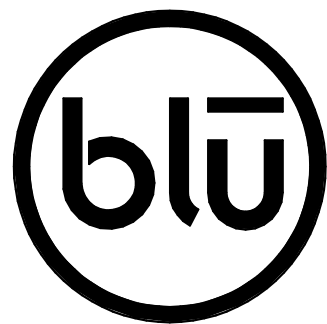


SHEET KEYNOTES

- 1 PROVIDE SPARE CONDUIT STUBBED OUT FOR FUTURE LIGHTING CIRCUIT EXPANSION.

GENERAL SHEET NOTES

- 1 THE ELECTRICAL CONTRACTOR SHALL MEET WITH AND COORDINATE WITH ALL SERVICE PROVIDERS (POWER, COMMUNICATION, CABLE/SATELLITE, ETC.) TO THE FACILITY ON SITE PRIOR TO ANY WORK BEING PERFORMED. CONFIRM WITH EACH SERVICE PROVIDER EXACT LOCATIONS EQUIPMENT AND ROUTING. COMPLY WITH ALL SERVICE PROVIDER'S CURRENT STANDARDS AND REQUIREMENTS. PROVIDE THE REQUIRED EQUIPMENT, RACEWAYS, BOXES, CABLE, ETC. AS REQUIRED BY THE SERVICE PROVIDER WEATHER SHOWN ON THE DRAWINGS OR NOT.
- 2 FOR ALL LIGHT FIXTURES, POLE LIGHTS, AND ALL OTHER ELECTRICAL DEVICES THE CONTRACTOR SHALL COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS WITH ARCHITECT, OWNER, ENGINEER, AND ALL OF THE CONTRACT DOCUMENTS PRIOR TO ROUGH IN AND TRENCHING.
- 3 CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL, AND COMPACTION ASSOCIATED TO ALL ELECTRICAL UNDERGROUND RACEWAYS AND CABLES. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS. SEE UNDERGROUND RACEWAY DETAILS FOR REQUIREMENTS FOR EACH TRENCH.
- 4 CONTRACTOR SHALL INSTALL POLE MOUNTED LIGHTS IN STRAIGHT LINES, SQUARE, AND PLUMB. COORDINATE WITH ARCHITECT AND CIVIL DRAWINGS. CONTRACTOR SHALL INSTALL POLE MOUNTED LIGHTS IN STRAIGHT LINES, SQUARE, AND PLUMB. COORDINATE WITH ARCHITECT AND CIVIL DRAWINGS.
- 5 THE ELECTRICAL CONTRACTOR SHALL HAVE ANY AND ALL CONCRETE POLE BASES AND SLABS REVIEWED BY A STRUCTURAL ENGINEER AND SHALL MODIFY DESIGN PER STRUCTURAL ENGINEER'S AND OR AHJ'S RECOMMENDATIONS.
- 6 PROVIDE BATTERY PACKS IN ALL EXTERIOR FIXTURES ADJACENT TO EGRESS DOORS.
- 7 PROVIDE PHOTOCELL ON NORTH SIDE OF FACILITY TO CONTROL EXTERIOR LIGHTS.
- 8 ALL EXTERIOR RECEPTACLES SHOWN SHALL BE NEMA 5-20R GFCI "WEATHER RESISTANT" RECEPTACLE WITH "WEATHER PROOF IN-USE COVER."
- 9 THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONCRETE/ASPHALT CUTTING AND REPLACEMENT OF CONCRETE/ASPHALT TO MATCH EXISTING ASSOCIATED WITH UNDERGROUND RACEWAYS PROVIDED AS PART OF THIS PROJECT.
- 10 REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
- 11 PROVIDE SERVICE RATED EQUIPMENT AT EACH SERVICE ENTRANCE.
- 12 SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. VERIFY OR RE-CALCULATE THE AVAILABLE FAULT CURRENT AT THE SERVICE WHERE MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR. PLEASE INCLUDE NOTES IN THE ELECTRICAL DRAWINGS OR SUPPLY CALCULATIONS WHERE APPLICABLE. SEE NEC 110.24. (B)



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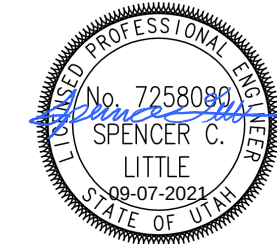
CONTACT:
TODD TRANE
PH:
801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

Drawing Title

ELECTRICAL
SITE PLAN
ENLARGED
WALKWAY

Drawing number

ES103

CONSTRUCTION DOCUMENTS

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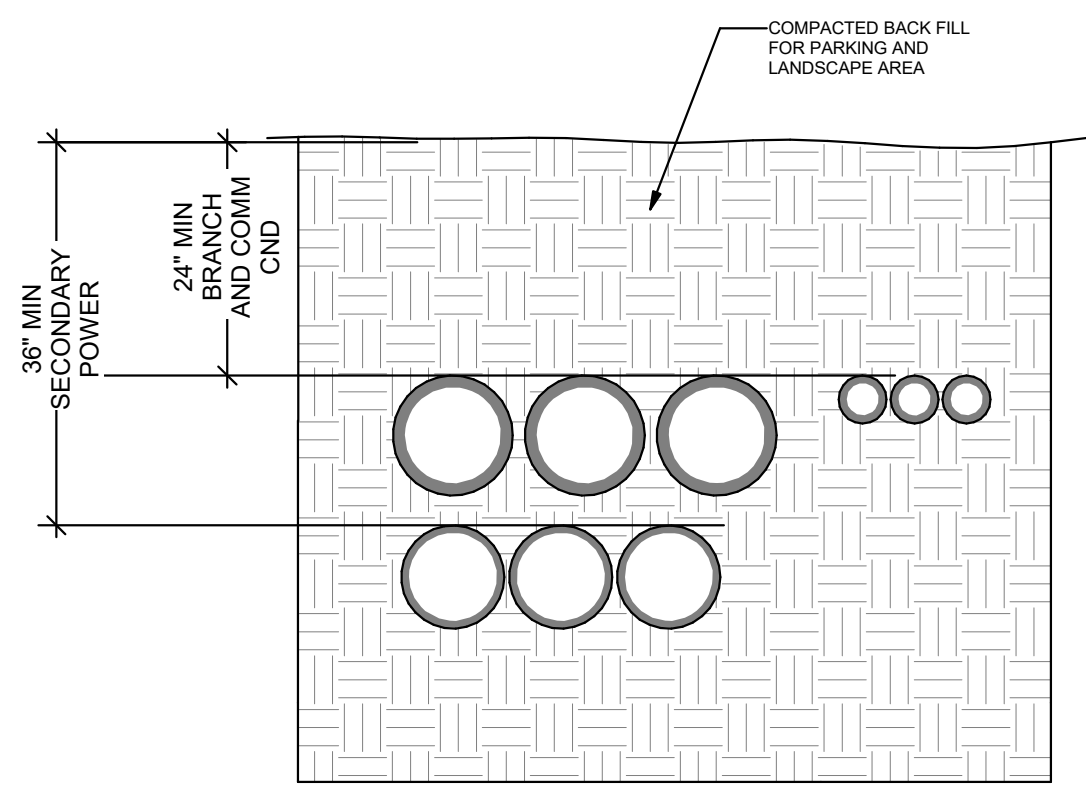
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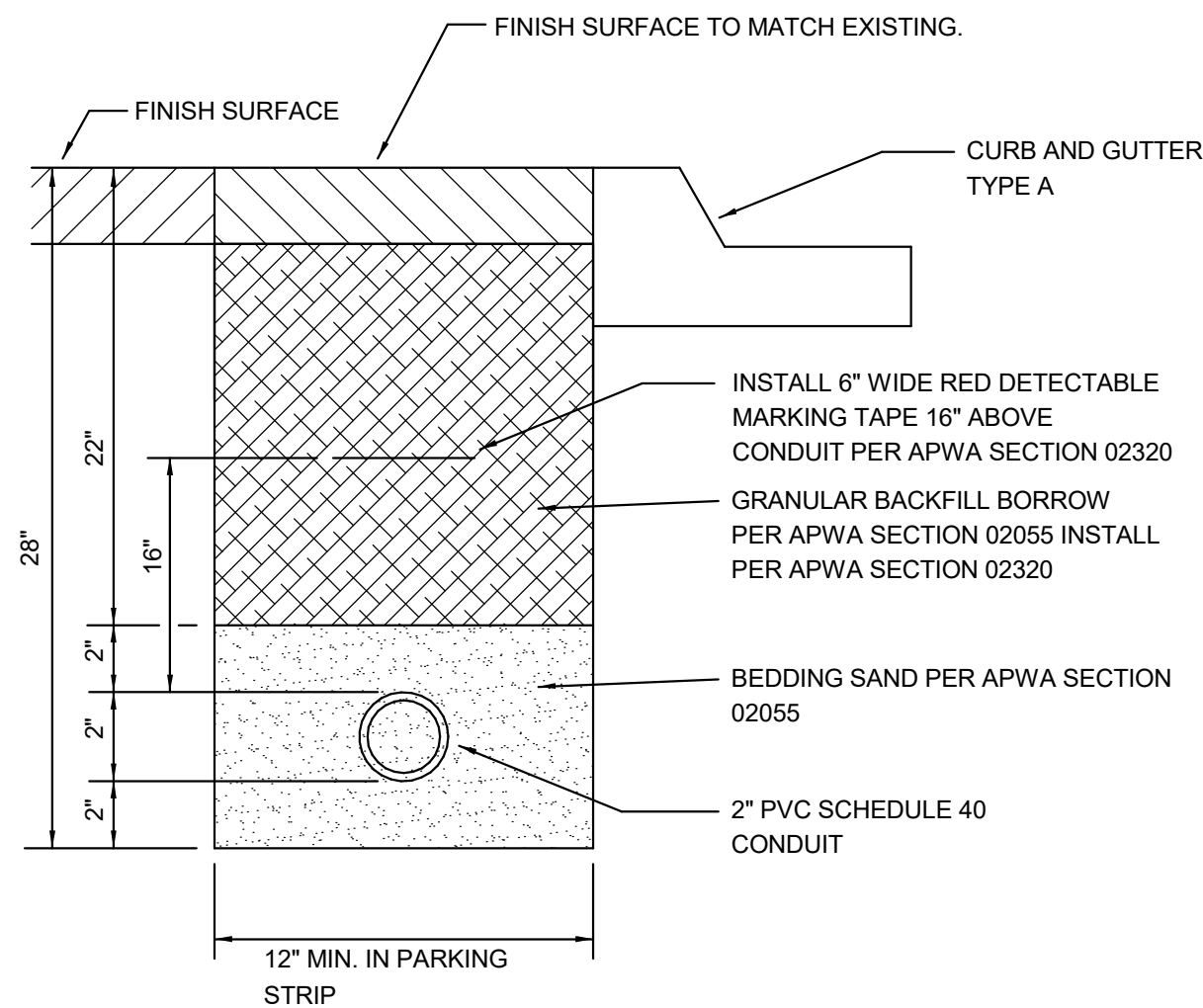
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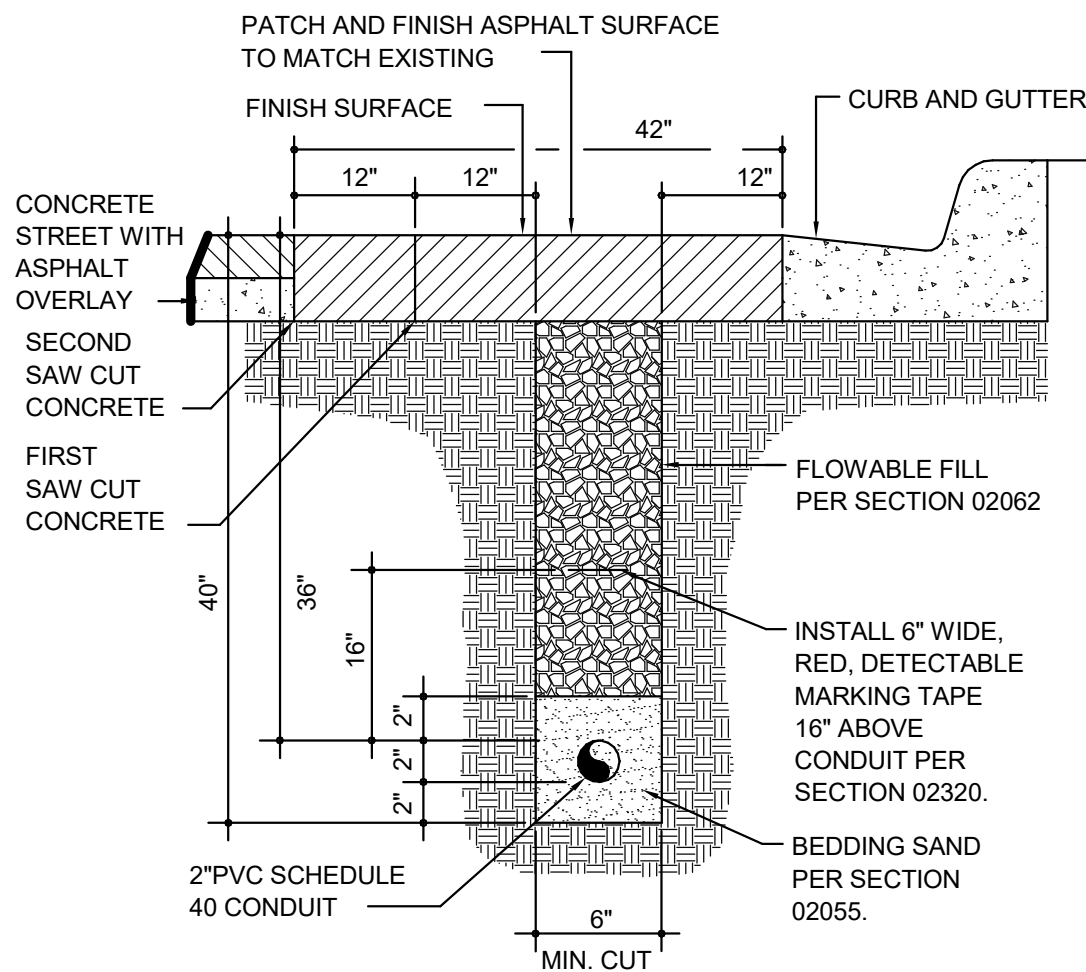


- NOTES:
1. ALL BENDS SHALL BE LARGE RADIUS.
 2. ALL CONDUIT ABOVE GROUND, ALL BENDS AND FIRST 10' BELOW GROUND SHALL BE PVC WRAPPED RMC. CONDUIT BELOW GROUND, MAY BE PVC.
 3. PROVIDE POLYPROPYLENE PULL ROPE IN EMPTY CONDUITS.

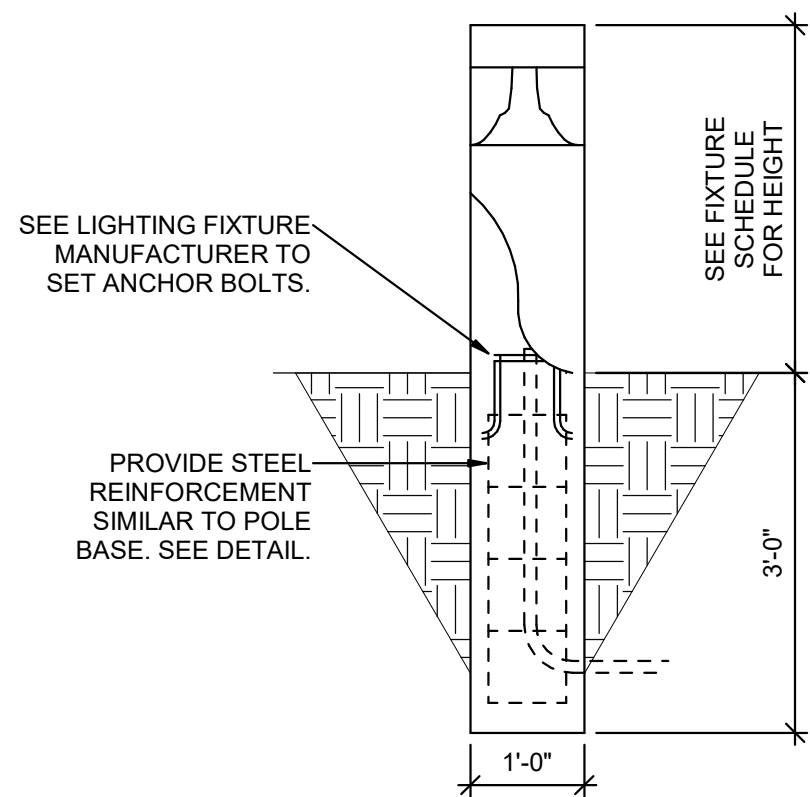
9 TYPICAL CONDUIT DIRECT BURY DETAIL
SCALE: NTS



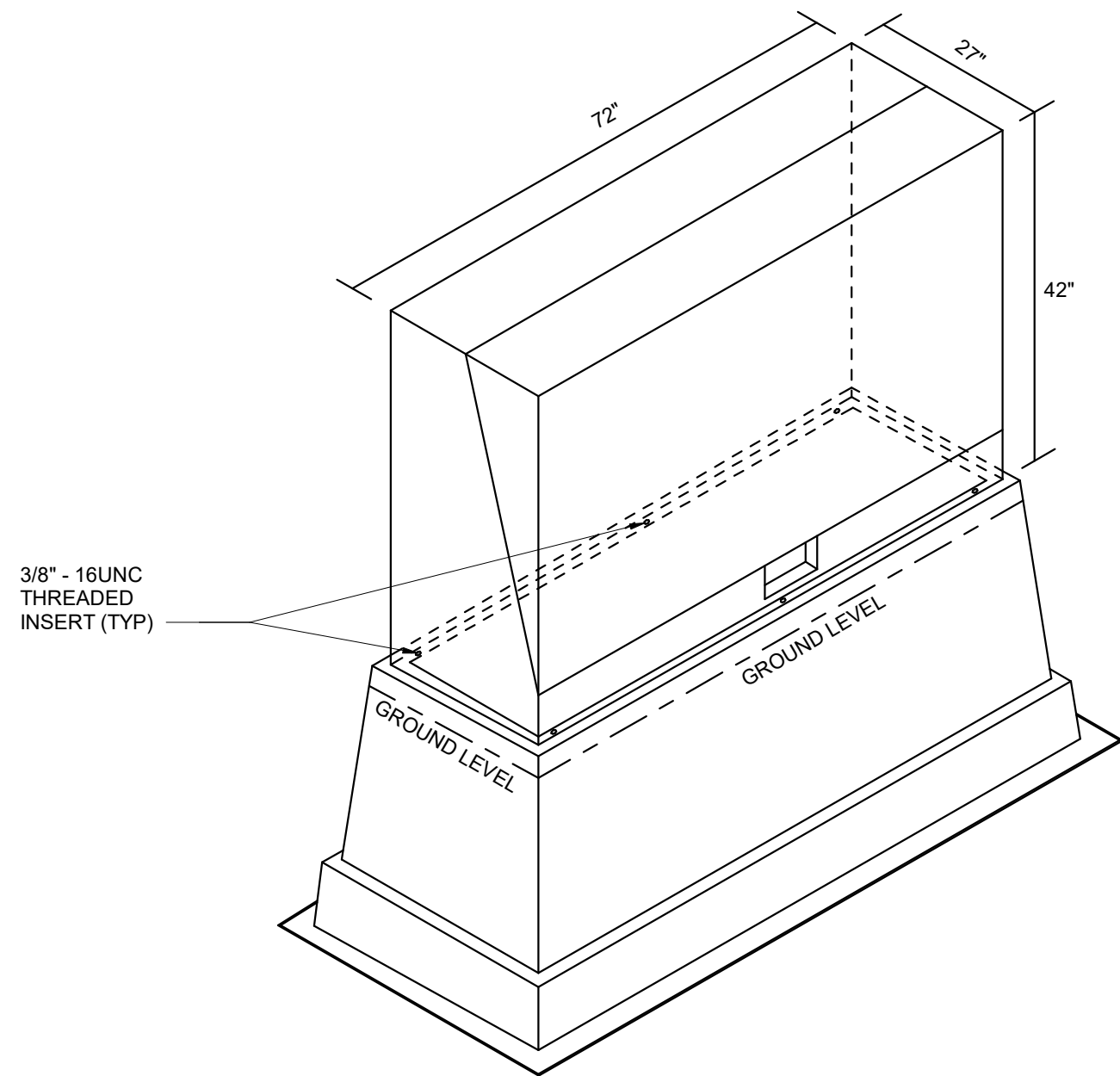
7 TRENCH DETAIL - NON TRAFFIC AREA
SCALE: NTS



6 TRENCH DETAIL - IN STREET
SCALE: NTS



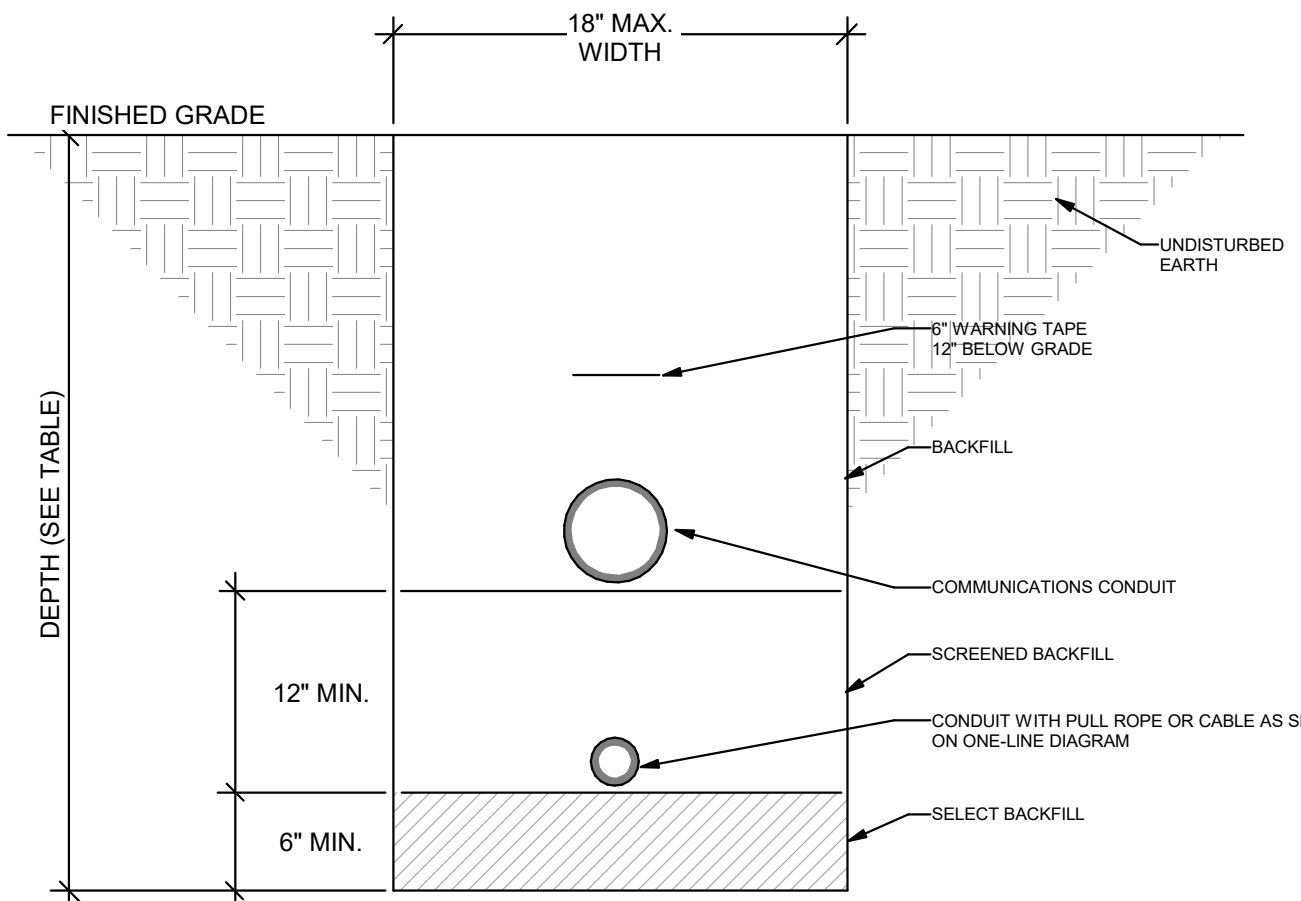
3 BOLLARD MOUNTING DETAIL
SCALE: NTS



5 RMP GROUND SLEEVE DETAIL
SCALE: NTS

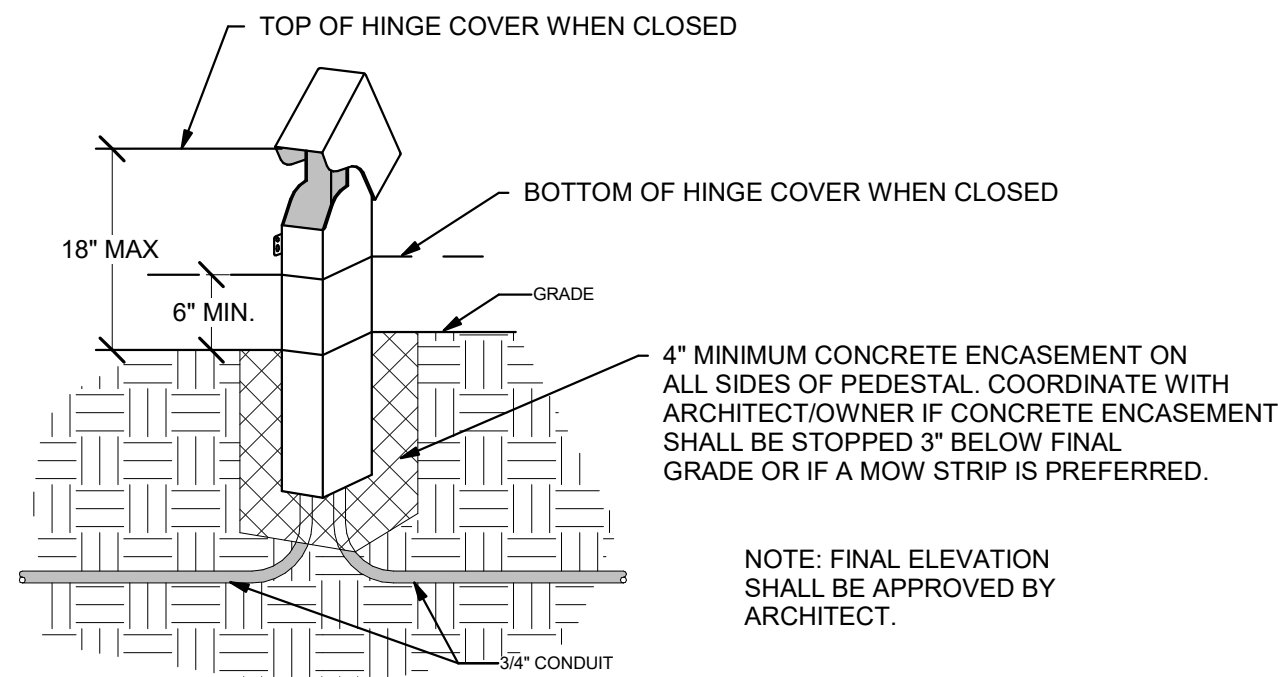
LOCATION DESCRIPTION	DEPTH
BELOW CONCRETE SLAB (NOT TRAFFIC)	14 INCHES
BELOW TRAFFIC SURFACES	34 INCHES
PARKING LOT (PAVED OR NON-PAVED)	34 INCHES
OTHER LOCATIONS	28 INCHES
UTILITY SECONDARY	34 INCHES
UTILITY PRIMARY	48 INCHES*

(SEE NEC TABLE 300.5)
*VERIFY ALL DIMENSIONS WITH LOCAL POWER COMPANY STANDARDS AND SPECIFICATIONS

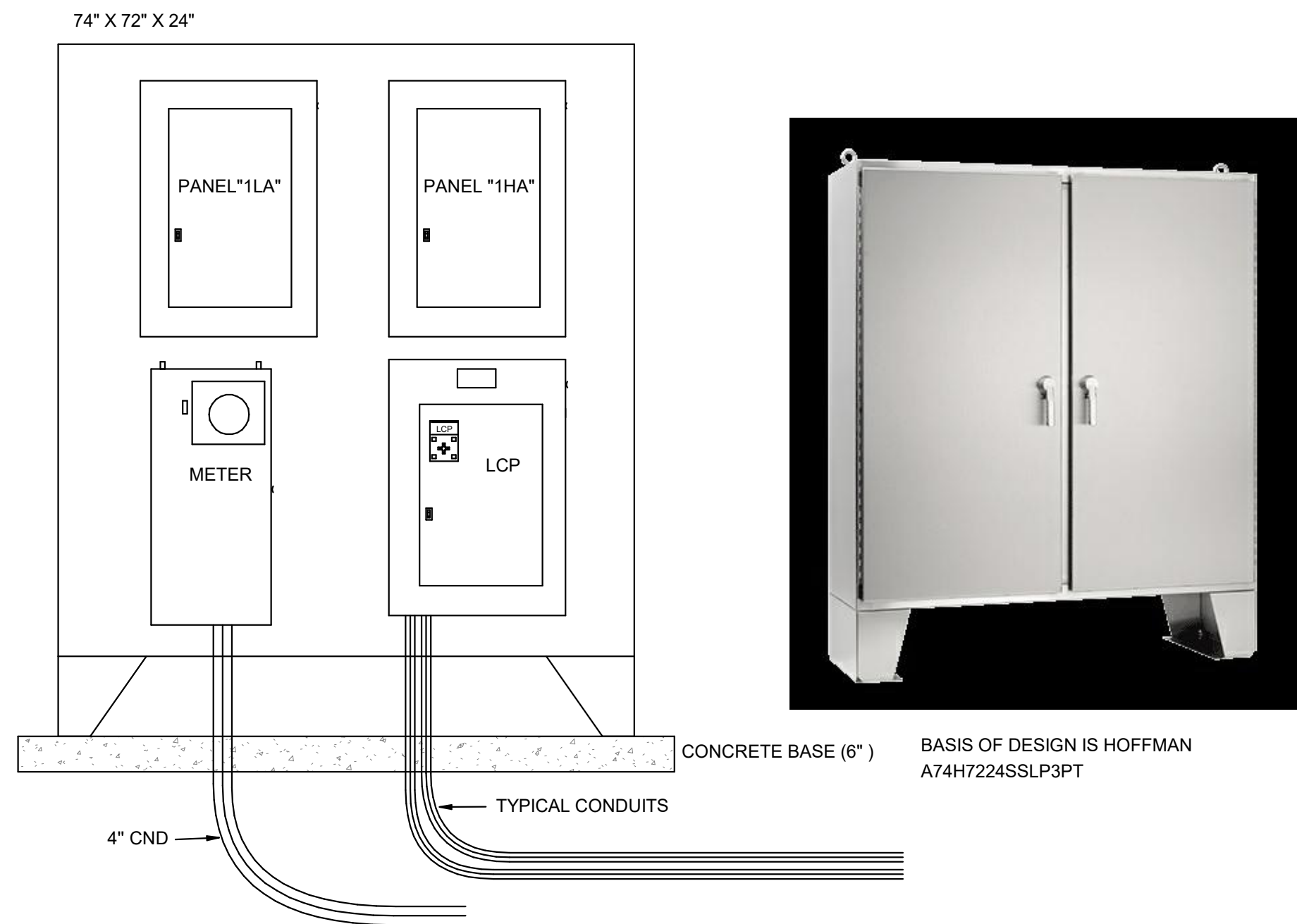


8 TRENCHING DETAIL
SCALE: NTS

HINGE TOP POWER PEDESTAL		
TAG	MANUFACTURER	CATALOG NUMBER
PP1G	PEDOC POWER SOLUTIONS	142-C-HT-B OR APPROVED EQUAL
PP1B	PEDOC POWER SOLUTIONS	1P18-C-HT-B OR APPROVED EQUAL
PP2G	PEDOC POWER SOLUTIONS	542-C-HT-3-B OR APPROVED EQUAL
PP2B	PEDOC POWER SOLUTIONS	5P18-C-HT-3-B OR APPROVED EQUAL

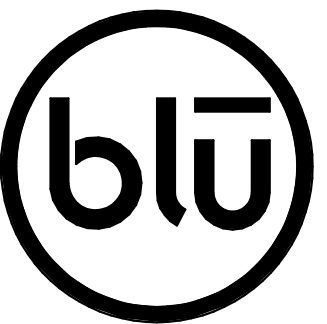


4 HINGE TOP POWER PEDESTAL DETAIL AND SCHEDULE
SCALE: NTS



- GENERAL NOTES:
1. PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE.
 2. ELECTRICAL CONTRACTOR MUST CONFIRM ENCLOSURE WITH ELECTRICAL ENGINEER BEFORE INSTALLATION.

10 FREESTANDING STRONG BOX WITH PANEL AND GEAR DETAIL
SCALE: NTS



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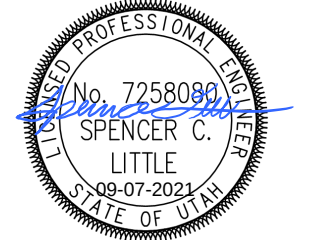
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HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

Drawing Title

SITE
ELECTRICAL
DETAILS

Drawing number

ES502

CONSTRUCTION DOCUMENTS

1

D

C

B

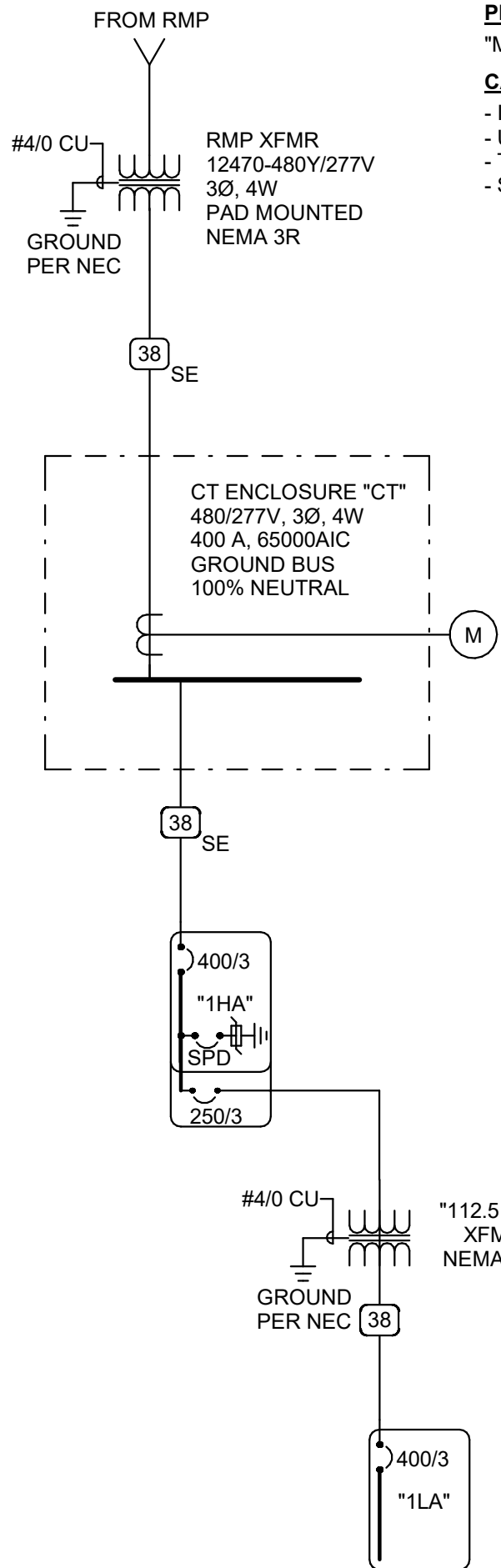
A

EQUIPMENT NAMEPLATE SCHEDULE

EQUIPMENT ID SCHEME	FIRST DIGIT - BUILDING LEVEL (0, 1, 2, ETC) SECOND DIGIT - PANEL TYPE M - MECHANICAL H - (277/480) L - (120/208) E - EMERGENCY S - STANDBY Q - EQUIPMENT U - UPS K - KITCHEN (120/208) THIRD DIGIT - BUILDING AREA (A, B, C, ETC) FOURTH DIGIT - SEQUENCE # (1,2,3,...)
LABEL FORMAT	[NAME] [SYSTEM] [VOLTAGE] [FED FROM] [SOURCE(S)]
LABEL EXAMPLE	PANEL "4LA1" STANDBY POWER 120/208V FED FROM BUS-A / XFMR 4TA
BUSWAY	LABEL BUSWAY EVERY 6' WHERE EXPOSED TO VIEW AND EVERY 15' WHERE NOT EXPOSED TO VIEW
OTHER	

COLOR SCHEME

SYSTEM	EQUIPMENT	NAMEPLATE COLOR	TEXT	BACKGROUND
NORMAL POWER	ALL GEAR NOT INCLUDED BELOW	WHITE	BLACK	
STANDBY POWER	MDPS1 AND ALL DOWNSTREAM GEAR, EXCEPT UPS GEAR AS NOTED	WHITE	ORANGE	
EMERGENCY POWER	GDPI, GDP2, ATS-E AND ALL DOWNSTREAM GEAR	WHITE	RED	
LEGALLY-REQUIRED STANDBY POWER	ATS-S AND ALL DOWNSTREAM GEAR	RED	WHITE	
UPS "A" POWER	UPSA AND ALL DOWNSTREAM GEAR	WHITE	BLUE	
UPS "B" POWER	UPSB AND ALL DOWNSTREAM GEAR	BLACK	YELLOW	



ONE LINE DIAGRAM

SCALE: NTS

2

PANEL LOAD SUMMARY					
PANEL (BY LEVEL)	MAINS RATING	LOAD		DIVERSIFIED	
		CONNECTED KVA	AMPS	KVA	AMPS
LEVEL 1					
1HA	400	6.4	8	8.0	10
1LA	400	1.4	4	1.4	4

FAULT CURRENT TABLE			
BUS	FAULT CURRENT	CALCULATED	CABLE LENGTH
1HA	10000		
1LA	10000		
112.5 KVA XFMR	10000		
CT	22000		
METER	22000		
RMP XFMR		4995	

PROVIDE FULLY RATED CIRCUIT BREAKERS IN PANELBOARDS FOR THE FAULT CURRENT SHOWN. SERIES RATINGS WITH NEXT LEVEL UPSTREAM OVERCURRENT PROTECTIVE DEVICES ARE PERMITTED SUBJECT TO FACTORY UL DOCUMENTATION OF SERIES RATING SUBMITTED TO ENGINEER. THE CONTRACTOR SHALL PROVIDE THE AIC RATINGS REQUIRED BASED ON ACTUAL CONDITIONS, CABLE LENGTHS, TRANSFORMER IMPEDANCE, AND CONTRACTOR PROVIDED FAULT CURRENT CALCULATIONS. IF DEVICE OR EQUIPMENT FAULT CURRENT RATING IS NOT SHOWN, ASSUME 100,000 AIC.

BRANCH CIRCUIT CONDUCTOR AND CONDUIT SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	CONDUCTOR SIZE (PHASE, NEUTRAL AND GR)	CONDUIT SIZE
20A/120V	0' - 60'	#12 AWG	0.75" Ø
20A/120V	60' - 95'	#10 AWG	0.75" Ø
20A/120V	95' - 150'	#8 AWG	1" Ø
20A/120V	150' - 240'	#6 AWG	1.25" Ø
20A/277V	0' - 140'	#12 AWG	0.75" Ø
20A/277V	140' - 220'	#10 AWG	0.75" Ø
20A/277V	220' - 350'	#8 AWG	1" Ø
20A/277V	350' - 550'	#6 AWG	1.25" Ø

NOTES:

- WIRE SIZING IS BASED ON COPPER CONDUCTORS SUPPLYING A 20A, 120V CIRCUIT A THE INDICATED VOLTAGE, ASSUMED TO BE 80% LOAD (16A), WITH MAXIMUM VOLTAGE DROP OF 3% AT THE LOAD.
- DOWN-SIZE WIRE AT DEVICE/LOAD AS REQUIRED AND TERMINATE CONDUCTORS IN A SAFE AND CODE COMPLIANT MANNER.
- CONDUIT SIZE IS BASED ON A MAXIMUM OF 3 CIRCUITS PER CONDUIT, EACH WITH A SEPARATE NEUTRAL CONDUCTOR.

3

ALUMINUM CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5) (E.G. 5 IG)

SYM	AMP	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	SIZE	G	IG	SE	NOTES
1A	130	2	3	2/0	4	1/0	4	2,7
2A	130	2	4	2/0	4	1/0	4	2,7
3A	150	2	3	3/0	4	1/0	4	2,7
4A	150	2	4	3/0	4	1/0	4	2,7
5A	175	2	3	4/0	4	1/0	2	2,7
6A	175	2.50	4	4/0	4	1/0	2	2,7
7A	200	2.50	3	250	4	1/0	2	2,7
8A	200	3	4	250	4	1/0	2	2,7
9A	230	2.50	3	300	2	1/0	1/0	2,7
10A	230	3	4	300	2	1/0	1/0	2,7
11A	250	3	3	350	2	2/0	1/0	2,7
12A	250	3	4	350	2	2/0	1/0	2,7
13A	310	3	3	500	1	3/0	1/0	2,7
14A	310	4	4	500	1	3/0	1/0	2,7
15A	380	2 EA 2 50	3	250	1	4/0	3/0	2,7
16A	380	2 EA 3	4	250	1	4/0	3/0	2,7
17A	400	2 EA 2 50	3	250	1/0	4/0	3/0	2,7
18A	400	2 EA 2 50	4	250	1/0	4/0	3/0	2,7
19A	500	2 EA 3	3	350	1/0	300	3/0	2,4,7
20A	500	2 EA 3	4	350	1/0	300	3/0	2,4,7
21A	620	2 EA 3	3	500	3/0	300	3/0	2,4,7
22A	620	2 EA 4	4	500	3/0	300	3/0	2,4,7
23A	750	3 EA 3	3	350	3/0	300	4/0	2,4,7
24A	750	3 EA 3	4	350	3/0	300	4/0	2,4,7
25A	810	3 EA 3	3	400	4/0	300	250	2,4,7
26A	810	3 EA 4	4	400	4/0	300	250	2,4,7
27A	1000	4 EA 3	3	350	4/0	300	250	4,7
28A	1000	4 EA 3	4	350	4/0	300	250	4,7
29A	1140	4 EA 4	3	500	250	300	250	4,7
30A	1140	4 EA 4	4	500	250	300	250	4,7
31A	1240	4 EA 4	3	500	350	300	250	4,7
32A	1240	4 EA 4	4	500	350	300	250	4,7
33A	1620	6 EA 4	4	400	400	350	250	4,7
34A	2170	7 EA 4	4	500	400	500	250	4,7
35A	2695	7 EA 4	4	750	600	750	750	4,7
36A	3080	8 EA 4	4	750	600	750	750	4,7
37A	4235	11 EA 4	4	750	800	750	750	4,7
38A	-	5 EA 4	-	-	-	-	-	6
39A	-	5	-	-	-	-	-	6
40A	-	10 EA 4	-	-	-	-	-	6

CONDUIT AND CONDUCTOR SCHEDULE NOTES

- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
 - PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
 - PROVIDE #10 NEUTRALS FOR MULTIWIRED BRANCH CIRCUITS SERVING COMPUTERS.
 - GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
 - SYMBOL SUBSCRIPTS:
 - RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.
- "2N": INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.
- "FG": FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
- "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY.
- "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
- "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
- "VD": INCREASE GROUNDING CONDUCTOR FOR SAME SIZE CONDUCTOR AS CURRENT CARRYING CONDUCTOR PER NEC 250.122(B).
7. ALUMINUM CONDUCTORS NOT TO BE USED FOR CONNECTION TO MOTORS OR MOTOR DRIVEN EQUIPMENT.

4

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5) (E.G. 5 IG)

SYM	AMP	HH AMPS	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	SIZE	G	IG/HH	SE	NOTES
1	20	-	.75	2	12	12	12	8	2
2	20	-	.75	3	12	12	12	8	2,3
3	20	24	.75	4	12	12	12	8	2,3
4	30	-	.75	2	10	10	10	8	2
5	30	-	.75	3	10	10	10	8	2
6	30	32	.75	4	10	10	10	8	2
7	40	-	1	2	8	10	8	6	2
8	40	-	1	3	8	10	8	6	2
9	40	44	1	4	8	10	8	6	2
10	55	-	1	2	6	10	8	4	2
11	55	-	1	3	6	10	8	4	2
12	60	125	4	4	6	10	8	4	2
13	70	-	1	2	4	8	4	2	2
14	70	-	1.25	3	4	8	4	2	2
15	70	76	1.25	4	4	8	4	2	2
16	85	-	1.25	2	3	8	3	2	2
17	85	-	1.25	3	3	8	3	2	2
18	85	92	1.25	4	3	8	3	2	2
19	95	-	1.25	3	2	8	2	2	2
20	95	104	1.50	4	2	8	2	2	2
21	130	-	1.50	3	1	6	2	2	2
22	130	116	1.50	4	1	6	2	2	2
23	150	-	2	3	1/0	6	2	1/0	2
24	150	136	2	4	1/0	6	2	1/0	2
25	175	-	2	3	2/0	6	2	2/0	2
26	175	156	2	4	2/0	6	2	2/0	2
27	200	-	2	3	3/0	6	2	2/0	2
28	200	180	2.50	4	3/0	6	2	2/0	2
29	230	-	2.50	3	4/0	4	2	2/0	2
30	230	208	2.50	4	4/0	4	2	2/0	2
31	255	-	2.50	3	250	4	1	2/0	2
32	255	232	2.50	4	250	4	1	2/0	2
33	310	-	3	3	350	3	1/0	3/0	2
34	310	280	3	4	350	3	1/0	3/0	2
35	380	-	3.50	3	500	3	3/0	3/0	2
36	380	344	4	4	500	3	3/0	3/0	2
37	400	-	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	360	2 EA 2 50	4	3/0	3	3/0	3/0	2
39	510	-	2 EA 2 50	3	250	1	4/0	3/0	2
40	510	464	2 EA 3	4	250	1	4/0	3/0	2
41	620	-	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	560	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	-	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	688	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	-	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	768	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	-	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	912	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	-	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	1032	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	-	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	1120	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	1520	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	1824	6 EA 4	4	400	250	250	250	4
55	2660	2408	7 EA 4	4	500	350	350	350	4
56	3040	2752	8 EA 4	4	500	500	500	500	4
57	4180	3784	11 EA 4	4	500	500	500	500	4
58	-	-	5 EA 4	-	-	-	-	-	6
59	-	-	5	-	-	-	-	-	6
60	-	-	10 EA 4	-	-	-	-	-	6

CONDUIT AND CONDUCTOR SCHEDULE NOTES

- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
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- "VD": INCREASE GROUNDING CONDUCTOR FOR SAME SIZE CONDUCTOR AS CURRENT CARRYING CONDUCTOR PER NEC 250.122(B).
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

GENERAL SHEET NOTES

- PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
- REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
- ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
- PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER 2014 NEC 230.95(C).
- SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. VERIFY OR RE-CALCULATE THE AVAILABLE FAULT CURRENT AT THE SERVICE WHERE MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR. PLEASE INCLUDE NOTES IN THE ELECTRICAL DRAWINGS OR SUPPLY CALCULATIONS WHERE APPLICABLE. SEE NEC 110.24 (A), (B).
- THE OVERCURRENT PROTECTION DEVICES SHALL BE RATED THE SAME FAULT CURRENT RATING AS THE RATING OF THE PANEL OR SWITCHGEAR THEY ARE LOCATED WITHIN.
- SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. VERIFY OR RE-CALCULATE THE AVAILABLE FAULT CURRENT AT THE SERVICE WHERE MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR. PLEASE INCLUDE NOTES IN THE ELECTRICAL DRAWINGS OR SUPPLY CALCULATIONS WHERE APPLICABLE. SEE NEC 110.24, (B).
- CIRCUIT BREAKERS RATED 1200 AMPS OR MORE SHALL BE PROVIDED WITH ARC ENERGY REDUCTION. COMPLY WITH NEC 240.87.
- PROVIDE GROUNDING AND BONDING PER NEC 250.
- PROVIDE FULLY RATED CIRCUIT BREAKERS IN ALL ELECTRICAL GEAR BASED ON ACTUAL CONDITIONS, CABLE LENGTHS, TRANSFORMERS IMPEDANCE, AND CONTRACTOR PROVIDED FAULT CURRENT CALCULATIONS.
- PROVIDE A COORDINATED OVER-CURRENT PROTECTION ELECTRICAL SYSTEM TO 1.0 SECOND ON THE NORMAL POWER DISTRIBUTION SYSTEM AND TO 0.3 SECONDS ON EMERGENCY DISTRIBUTION SYSTEMS.

SHEET KEYNOTES



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8719 S. Sandy Parkway
Sandy, UT 84070
p 801.679.3157

OWNER:

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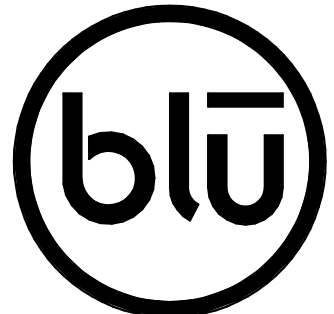
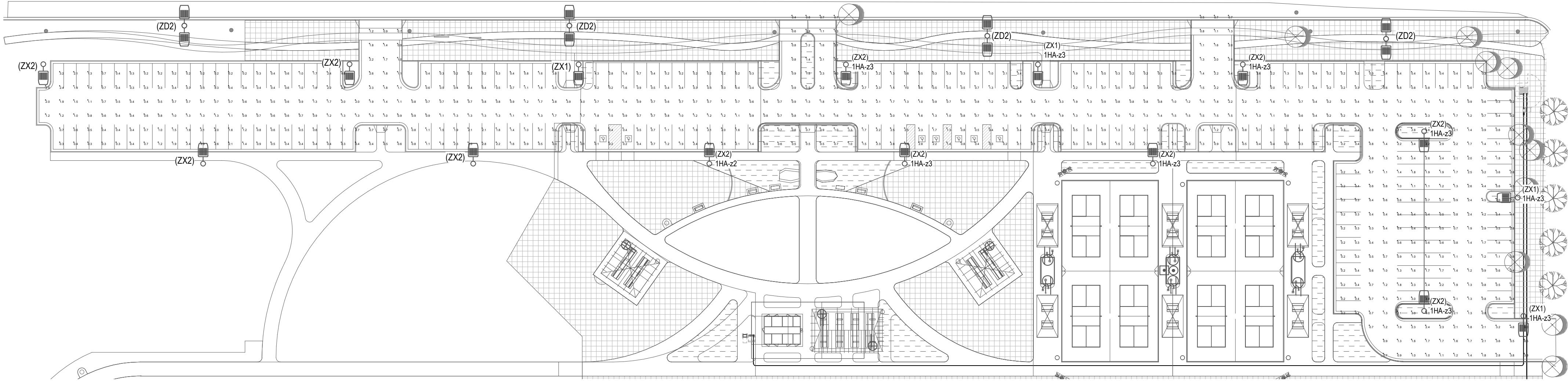
2 PARKING CALCULATION SUMMARY

SCALE: NTS

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Lot	Illuminance	Fc	1.26	8.0	0.1	12.60	80.00

1 PARKING PHOTOMETRIC PLAN

SCALE: 1" = 50'-0"



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8719 S. Sandy Parkway
Sandy, UT 84070
p 801.679.3157

OWNER:
HIGHLAND CITY
5400 W CIVIC CENTER
DRIVE
HIGHLAND, UT 8003

CONTACT:
TODD TRANE
PH:
801-756-5751

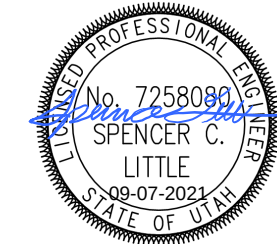


HIGHLAND CITY
MOUNTAIN RIDGE PARK
10400 N 5600 W
HIGHLAND, UT 84003

CONSTRUCTION DOCUMENTS

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

Drawing Title

SITE
PHOTOMETRIC
PLAN

Drawing number

ES601

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EXTERIOR LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS

LUMINAIRE

ARHR - AIR RETURN AND HEAT REJECTION
DL - DAMP LOCATION
EQC - EARTHQUAKE CLIPS
F - FUSING
HLD - HINGED AND LATCHED DOOR
HS - HOUSE SIDE SHIELD
PS - PHOTOCELL SWITCH
QRS - QUARTZ RESTRIKE
ST - STATIC
WG - WIRE GUARD
WL - WET LOCATION

EMERGENCY

NE - NORMAL AND EMERGENCY CONNECTIONS
EB - EMERGENCY BATTERY PACK
ET - EMERGENCY TRANSFER DEVICE

BALLAST

IS - INSTANT START
RS - RAPID START
PS - PROGRAM START, PARALLEL LAMP OPERATION
PSMH - PULSE START METAL HALIDE (CWA OR ELECTRONIC)
PPLF - PROVIDE POWER LINE FILTER
LVTM - LOW VOLTAGE TRANSFORMER (MAGNETIC)
LVTE - LOW VOLTAGE TRANSFORMER (ELECTRONIC)

DIMMING BALLAST

D2 - 2 WIRE DIMMER
D3 - 3 WIRE DIMMER
D4 - 4 WIRE DIMMER
DD - DIGITAL DIMMER
SDP - STEP DIMMER BALLAST

FINISH

MW - MATTE WHITE
BL - BLACK
SL - SILVER
G - GOLD
CL - CLEAR
PW - PAINTED WHITE
EA - EXTRUDED ALUMINUM
S - STEEL
GS - GALVANIZED STEEL
C - CAST
CBA - COLOR BY ARCHITECT
SCBA - STANDARD COLOR BY ARCHITECT
CCA - CUSTOM COLOR BY ARCHITECT
FS - MEETS FEDERAL STANDARD 209D
TP - THERMALLY PROTECTED
FL - FLUSH
R - REGRESS
M - MITERED

LENS

#A - ACRYLIC #THICK
#OA - ACRYLIC #THICK (OPAL)
CC - GLASS (CLEAR)
GO - GLASS (OPAL)
GF - GLASS (FROSTED)
SGL - SOFT GLOW LENS
HPL - HIGH PERFORMANCE LENS
DO - DROP OPAL
CGL - CONVEX GLASS LENS
S - SATIN LENS

REFLECTOR AND DISTRIBUTION

I - TYPE I
II - TYPE II
III - TYPE III
IV - TYPE IV
V - TYPE V
VSO - TYPE V SQUARE
SA - SPUN ALUMINUM
SR - SEGMENTED REFLECTOR
BWF - NEMA BEAM WIDTH 1 THRU 7

CUTOFF CLASSIFICATION

FC - FULL CUTOFF
CO - CUTOFF
SC - SEMI CUTOFF
NC - NONCUTOFF

MOUNTING

B - BASE
C - CEILING
F - FLANGE
G - GRID
P - PENDANT
PL - POLE
R - RECESSED
S - SURFACE
W - WALL

CONFIGURATION

BA - BANNER ARMS
BH - BULL HORN
DL - 2 1" SHAPE
DS - 2 @ 180
PT - INLINE POST TOP
Q - QUAD
SH - SHEPHERDS HOOK
SL - SINGLE
T - 3" T SHAPE

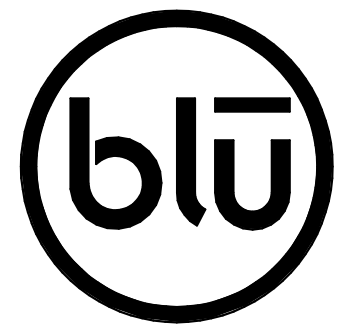
POLE

RS - ROUND STRAIGHT
RT - ROUND TAPERED
SS - SQUARE STRAIGHT
ST - SQUARE TAPERED

NOTES

1. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER.
2. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.

ID	IMAGE	TYPE	LUMINAIRE					LAMP		BALLAST		FINISH			DIFFUSER		REFLECTOR		MOUNTING					MANUFACTURER (CATALOG SERIES)				ALLOWANCE							
			BUG RATING			SIZE (NOMINAL)				COLOR	TYPE	LUMINAIRE LUMENS	INPUT VOLTS	ANSI WATTS	HOUSING	TRIM	OTHER	TYPE	FINISH	CONFIGURATION	OPTIONS	DISTRIBUTION TYPE	FINISH	EFFICIENCY	TYPE	CONFIGURATION	POLE BASE HEIGHT		POLE HEIGHT	WIND RATING	OPTIONS	OPTION 1	OPTION 2	OPTION 3	
			BACK	UP	GLARE	LENGTH	WIDTH	DEPTH	DIAMETER / APERTURE																										OPTIONS
(W4)		SURFACE MOUNTED VANDAL WRAP, LED				48"	14"	3"	-	3500K	LED	3600	277	63	SCBA	SCBA	SCBA																XTRALIGHT (VIGOR)	HUBBELL LIGHTING	COOPER LIGHTING
(ZD1)		ACORN STYLE LED POST TOP LANTERN				32"	18"	7"		3500K	LED	14384	277	140	SCBA	SCBA	SCBA					IV		0			3' - 0"	12' - 0"				HOLOPHANE (ARE2)	-	-	
(ZD2)		ACORN STYLE LED POST TOP LANTERN				32"	18"	7"		3500K	LED	26084	277	300	SCBA	SCBA	SCBA					III		0			3' - 0"	27' - 0"				HOLOPHANE (ARE2)	-	-	
(ZX1)		MODERN STYLE, LED POLE LIGHT, CUTOFF SINGLE HEAD, TYPE 4M DISTRIBUTION				32"	18"	7"		3500K	LED	14384	277	140	SCBA	SCBA	SCBA					IV		0			3' - 0"	12' - 0"				LITHONIA (DSX1 LED)	VISIONAIRE LIGHTING (VLX-1)	COOPER LIGHTING (GALLEON LED)	
(ZX2)		MODERN STYLE, LED POLE LIGHT, CUTOFF SINGLE HEAD, TYPE 5W DISTRIBUTION				32"	18"	7"		3500K	LED	15257	277	140	SCBA	SCBA	SCBA					V		0			3' - 0"	12' - 0"				LITHONIA (DSX1 LED)	VISIONAIRE LIGHTING (VLX-1)	COOPER LIGHTING (GALLEON LED)	
AP1		6" ROUND STEEL POLE, 12' TALL WITH HAND HOLE COVER; PROVIDE PUSH BUTTON FOR LIGHTING CONTROLS (B.O.D. 4EVR PUSH-BUTTON BY TRAFFIC SAFETY CORP); TENON MOUNT FOR STROBE LIGHT PROVIDED BY MUSCO; FINISH BLACK								BLACK	STROBE	0	0	0										0			0' - 6"	12' - 0"							
P1		MUSCO LIGHT POLE				14"	13"	5"	-			0	480	0									0	P, ST	BH, PT	0' - 0"	25' - 0"	13							



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p 801.679.3157

OWNER:
HIGHLAND CITY
5400 W CIVIC CENTER
DRIVE
HIGHLAND, UT 8003

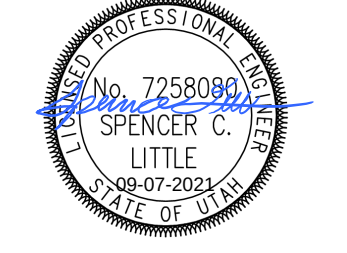
CONTACT:
TODD TRANE
PH:
801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp



Designed By: MCF
Drawn By: MCF
Date: 09.01.2021
Checked By: SCL
Project No: 18-224

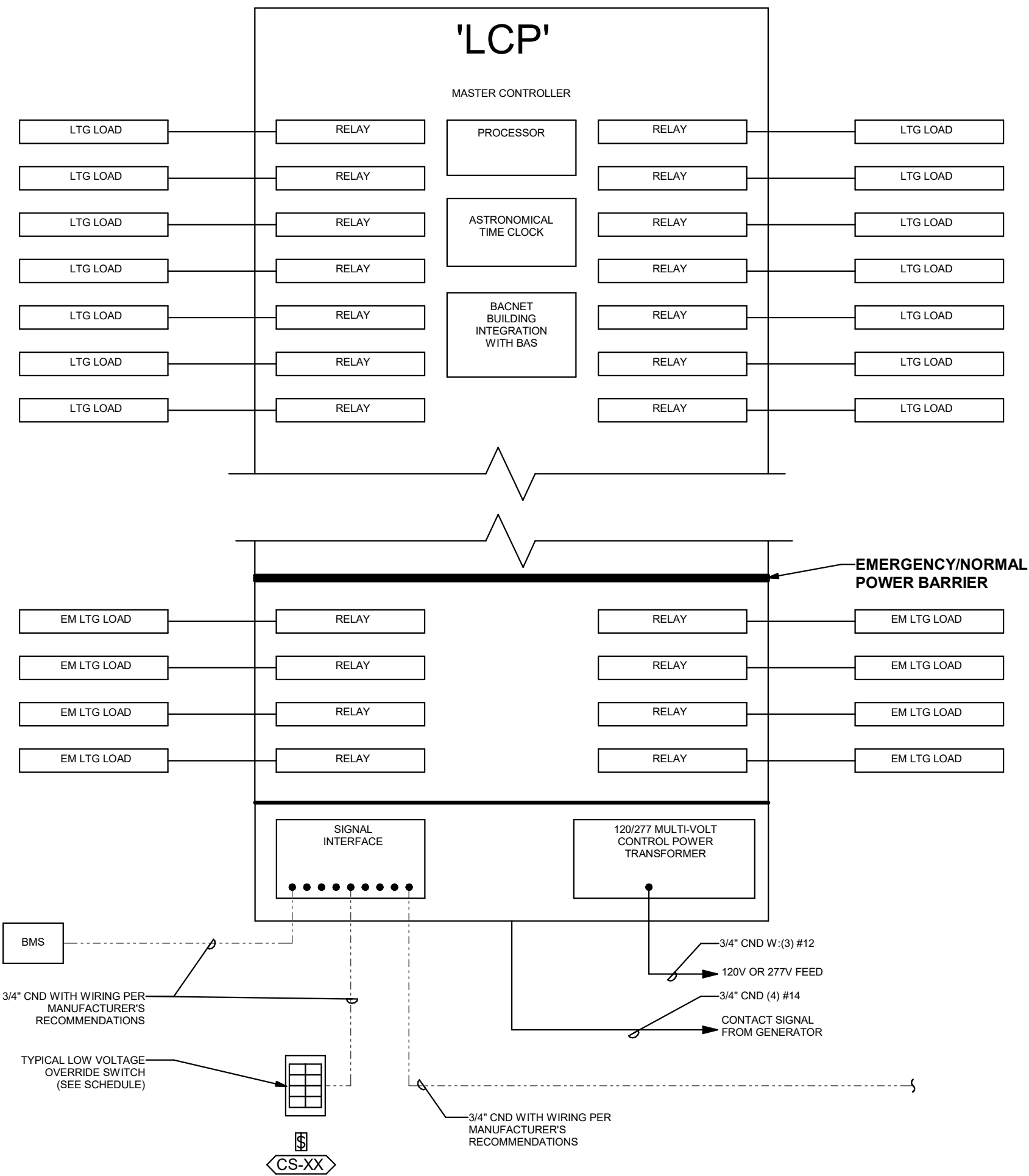
Drawing Title

EXTERIOR
LIGHTING
FIXTURE
SCHEDULE

Drawing number

ES602

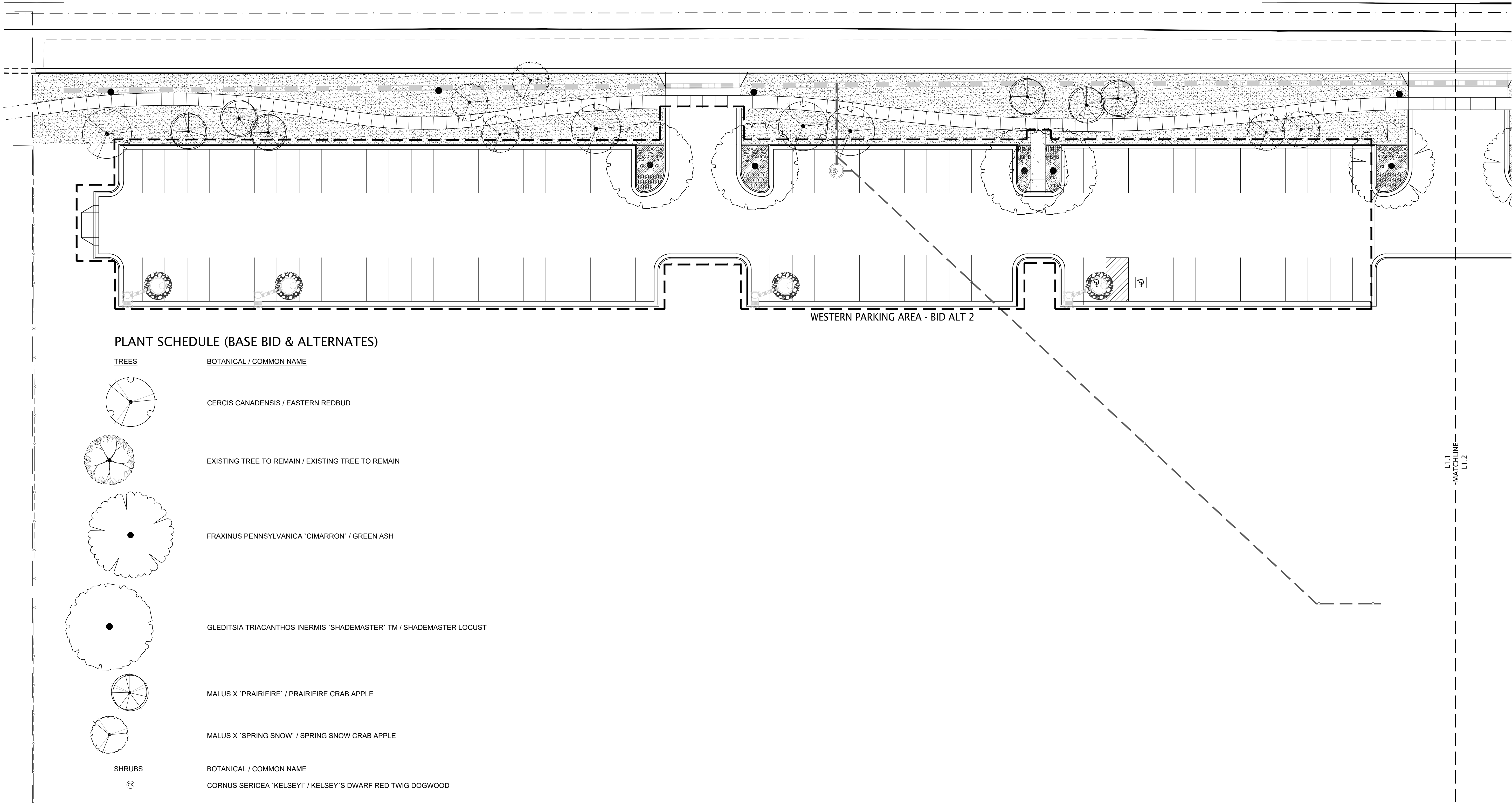
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1 TYPICAL MASTER LIGHTING RELAY PANEL
SCALE: NTS

PANEL: "1HA"																													
VOLTS/PHASE/WIRE:				PANEL SIZE & TYPE:				MAIN SIZE AND TYPE:				LOCATION:				CABINET:				NOTES:									
480/277 V, 3 PH 4 WIRE				22" W x 6" D, BOLT-ON				400 AMPERE MAIN CB								SURFACE													
ACCESSORIES:												PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR												AIC RATING: 10000					
CKT	NO	AMP	OCP	POLE	LOAD (KVA)			DESCRIPTION	PHASE LOAD			DESCRIPTION	LOAD (KVA)			OCP		AMP	CKT NO										
					LTG	PWR	CO		A	B	C		CO	PWR	LTG	POLE													
1	20	1	1.2	0.0	0.0			LIGHTING	1.2	0.8			LIGHTING	0.0	0.0	0.8	1	20	2										
3	20	1	1.3	0.0	0.0			LIGHTING		1.3	0.0		SPARE	--	--	--	1	20	4										
5	20	3	1.9	0.0	0.0			MUSCO LIGHTING			0.6	0.0	SPARE	--	--	--	1	20	6										
7	--	--	--	--	--			--	0.6	0.4			PAVILION LIGHTING	0.0	0.0	0.4	1	20	8										
9	--	--	--	--	--			--		0.6	0.5		PAVILION LIGHTING	0.0	0.0	0.5	1	20	10										
11	20	1	--	--	--			SPARE				0.0	PAVILION LIGHTING	0.0	0.0	0.4	1	20	12										
13	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	14										
15	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	16										
17	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	18										
19	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	20										
21	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	22										
23	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	24										
25	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	26										
27	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	28										
29	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	30										
31	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	32										
33	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	34										
35	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	36										
37	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	38										
39	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	40										
41	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	42										
43	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	44										
45	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	46										
47	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	48										
49	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	50										
51	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	52										
53	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	54										
55	20	1	--	--	--			SPARE	0.0	0.0			SPARE	--	--	--	1	20	56										
57	20	1	--	--	--			SPARE		0.0	0.0		SPARE	--	--	--	1	20	58										
59	20	1	--	--	--			SPARE			0.0	0.0	SPARE	--	--	--	1	20	60										
TOTALS:									CONNECTED KVA PER PHASE			3	2	1	CONNECTED TOTAL KVA = 6														
									CONNECTED AMPS PER PHASE			12	9	4	AVERAGE CONNECTED AMPS PER PHASE = 8														
NEC DIVERSIFIED LOAD CALCULATIONS																													
LIGHTING & CONTINUOUS LOADS: 6.4 kVA @ 125% = 8.0 kVA - 100% CONNECTED LOAD PLUS 25% DIVERSIFIED TOTAL KVA = 8																													
RECEPTACLES: - FIRST 10kVA @ 100%, REMAINDER @ 50% AVERAGE AMPS PER PHASE = 10																													
ALL OTHER LOADS @ 100%: 0.0 kVA - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC																													

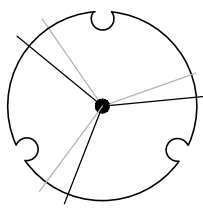
PANEL: "1LA"																							
VOLTS/PHASE/WIRE:				PANEL SIZE & TYPE:				MAIN SIZE AND TYPE:				LOCATION:				CABINET:				NOTES:			
120/208V, 3 PH 4 WIRE				22" W x 6" D, BOLT-ON				400 AMPERE MAIN CB								SURFACE							
ACCESSORIES:				PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR												AIC RATING: 10000							
CKT	NO	OCP	POLE	LOAD (KVA)			DESCRIPTION	PHASE LOAD				DESCRIPTION	LOAD (KVA)			OCP		AMP	CKT NO				
				LTG	PWR	CO		A	B	C	CO		PWR	LTG	POLE								
1	20	1		0.0	0.0	0.2	USB CO	0.2	0.2			USB CO	0.2	0.0	0.0	1	20	2					
3	20	1		0.0	0.0	0.2	CO		0.2	0.2		PAVILION CO	0.2	0.0	0.0	1	20	4					
5	20	1		0.0	0.0	0.1	CO			0.1	0.1	CO	0.1	0.0	0.0	1	20	6					
7	20	1		0.0	0.0	0.2	CO	0.2	0.2			PAVILION CO	0.2	0.0	0.0	1	20	8					
9	20	1		0.0	0.0	0.2	PAVILION CO		0.2	0.0		POWER	0.0	0.0	0.0	1	20	10					
11	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	12					
13	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	14					
15	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	16					
17	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	18					
19	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	20					
21	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	22					
23	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	24					
25	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	26					
27	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	28					
29	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	30					
31	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	32					
33	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	34					
35	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	36					
37	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	38					
39	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	40					
41	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	42					
43	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	44					
45	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	46					
47	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	48					
49	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	50					
51	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	52					
53	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	54					
55	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	56					
57	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	58					
59	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	60					
61	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	62					
63	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	64					
65	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	66					
67	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	68					
69	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	70					
71	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	72					
73	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	74					
75	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	76					
77	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	78					
79	20	1	--	--	--	--	SPARE	0.0	0.0			SPARE	--	--	--	1	20	80					
81	20	1	--	--	--	--	SPARE		0.0	0.0		SPARE	--	--	--	1	20	82					
83	20	1	--	--	--	--	SPARE			0.0	0.0	SPARE	--	--	--	1	20	84					
TOTALS:								CONNECTED KVA PER PHASE				1	1	0	CONNECTED TOTAL KVA = 1								
								CONNECTED AMPS PER PHASE				6	5	2	AVERAGE CONNECTED AMPS PER PHASE = 4								
NEC DIVERSIFIED LOAD CALCULATIONS																							
LIGHTING & CONTINUOUS LOADS:																							
RECEPTACLES: 1.4 kVA @ 100% = 1.4 kVA																							
ALL OTHER LOADS @ 100% : 0.0 kVA																							
- 100% CONNECTED LOAD PLUS 25%																							
- FIRST 10kVA @ 100%, REMAINDER @ 50%																							
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC																							
DIVERSIFIED TOTAL kVA = 1																							
AVERAGE AMPS PER PHASE = 4																							



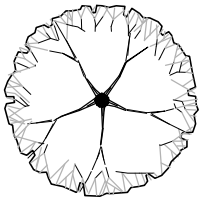
PLANT SCHEDULE (BASE BID & ALTERNATES)

TREES

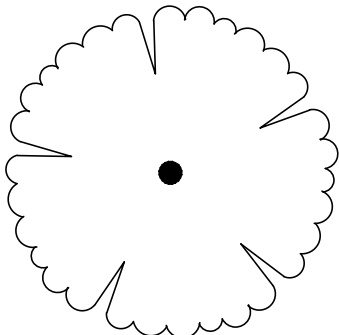
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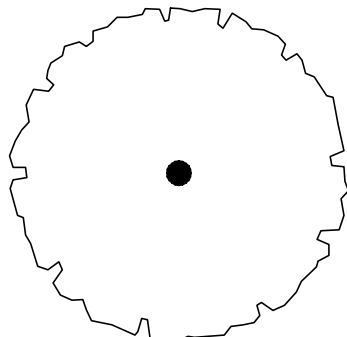
CERCIS CANADENSIS / EASTERN REDBUD



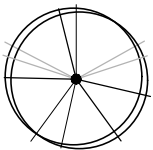
EXISTING TREE TO REMAIN / EXISTING TREE TO REMAIN



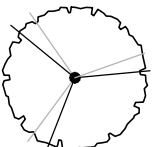
FRAXINUS PENNSYLVANICA 'CIMARRON' / GREEN ASH



GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' TM / SHADEMASTER LOCUST



MALUS X 'PRAIRIFIRE' / PRAIRIFIRE CRAB APPLE



MALUS X 'SPRING SNOW' / SPRING SNOW CRAB APPLE

SHRUBS

BOTANICAL / COMMON NAME



CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED TWIG DOGWOOD



RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC

ANNUALS/PERENNIALS

BOTANICAL / COMMON NAME



HEMEROCALLIS X 'STELLA DE ORO' / STELLA DE ORO DAYLILY

GRASSES

BOTANICAL / COMMON NAME



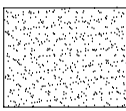
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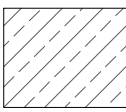
HELICOTRICHON SEMPERVIRENS 'BLUE OATS' / BLUE OAT GRASS

GROUND COVERS

BOTANICAL / COMMON NAME

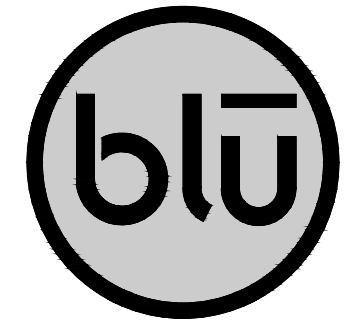


POA PRATENSIS / KENTUCKY BLUEGRASS



SHREDDED BARK MULCH / SHREDDED BARK MULCH

Scale: 1" = 20'-0"



blu line designs
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8719 S. Sandy Parkway
Sandy, UT 84070
p 801.679.3157

OWNER:
HIGHLAND CITY
5400 W CIVIC CENTER DRIVE
HIGHLAND, UT 84003

CONTACT:
ANDY SPENCER
PH: 801-772-4508



HIGHLAND CITY | MOUNTAIN RIDGE
PARK | 10400 N IMPROVEMENTS
10400 N S600 W
HIGHLAND, UT 84003

REVISIONS

NO.	DATE	DESCRIPTION

Stamp



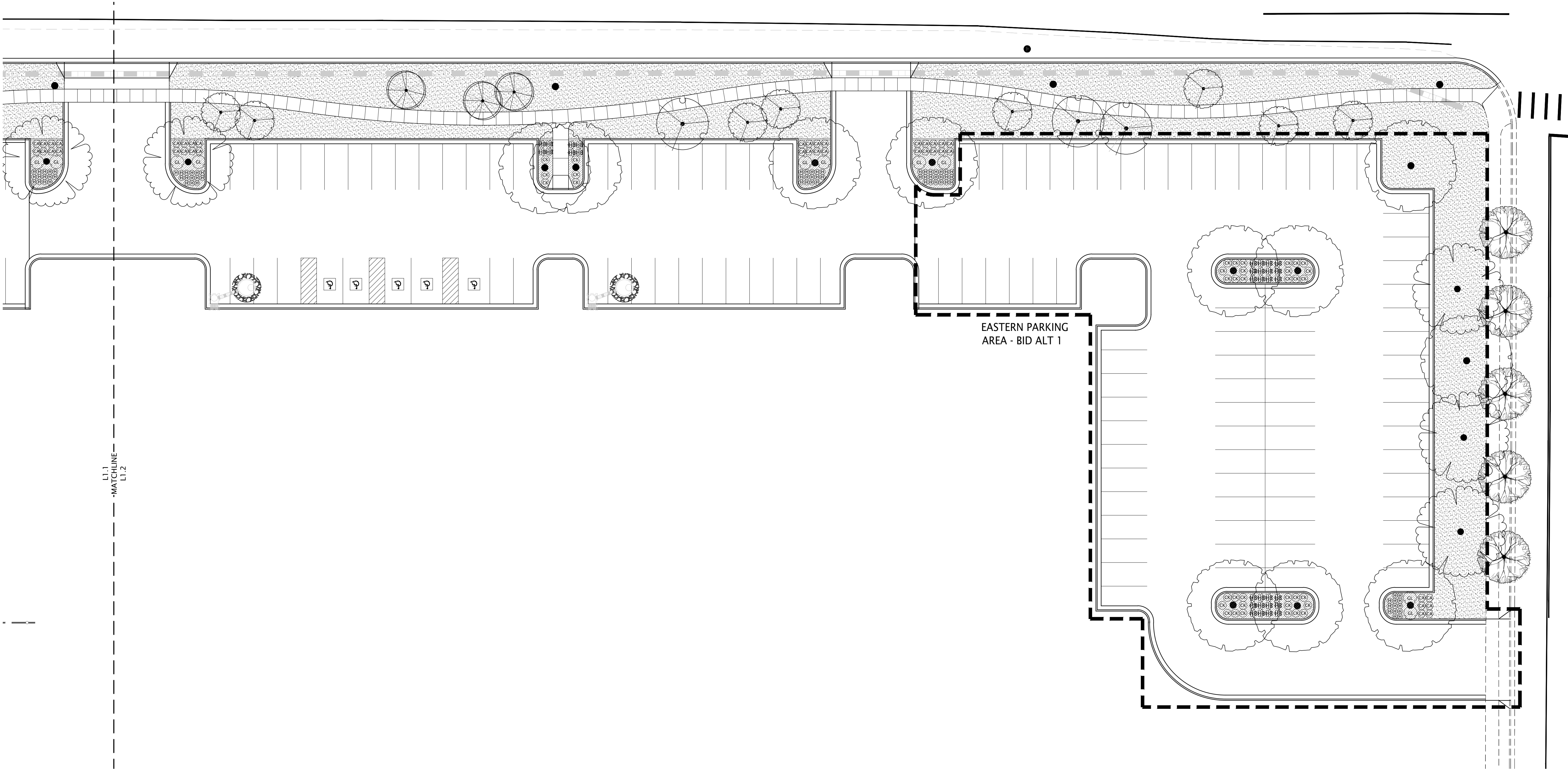
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Drawn By: BP
Date: 02.18.22
Checked By: CAS
Project No: 18-224

Drawing Title
PLANTING
ENLARGEMENT
PHASE 1

Drawing number

L1.1

CONSTRUCTION DRAWINGS



PLANT SCHEDULE (BASE BID & ALTERNATES)

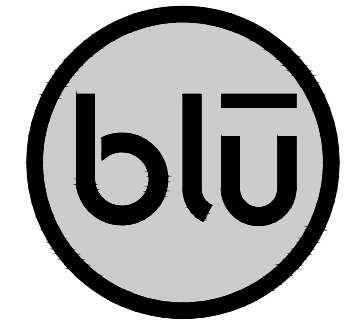
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	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' TM / SHADEMASTER LOCUST
	MALUS X 'PRAIRIFIRE' / PRAIRIFIRE CRAB APPLE

	MALUS X 'SPRING SNOW' / SPRING SNOW CRAB APPLE
SHRUBS	BOTANICAL / COMMON NAME
	CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED TWIG DOGWOOD
	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
ANNUALS/PERENNIALS	BOTANICAL / COMMON NAME
	HEMEROCALLIS X 'STELLA DE ORO' / STELLA DE ORO DAYLILY
GRASSES	BOTANICAL / COMMON NAME
	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / FEATHER REED GRASS
	HELICOTRICHON SEMPERVIRENS 'BLUE OATS' / BLUE OAT GRASS
GROUND COVERS	BOTANICAL / COMMON NAME
	POA PRATENSIS / KENTUCKY BLUEGRASS
	SHREDDED BARK MULCH / SHREDDED BARK MULCH

Scale: 1" = 20'-0"



CONSTRUCTION DRAWINGS



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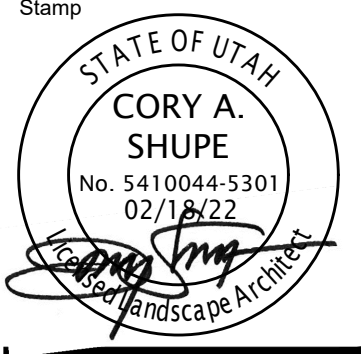
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HIGHLAND, UT 84003

CONTACT:
ANDY SPENCER
PH: 801-772-4508



HIGHLAND CITY | MOUNTAIN RIDGE
PARK | 10400 N IMPROVEMENTS
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

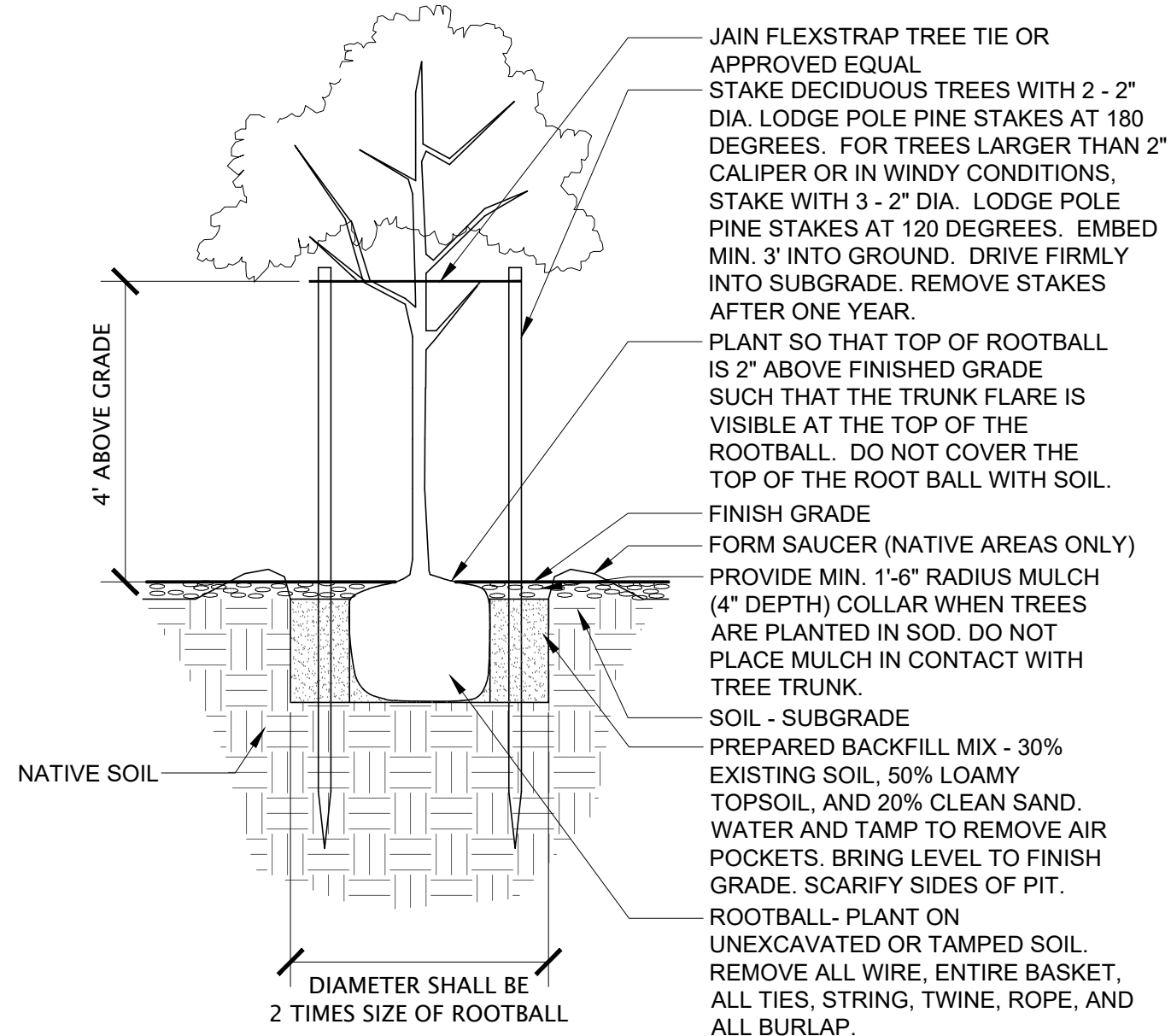


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Date: 02.18.22
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Project No: 18-224

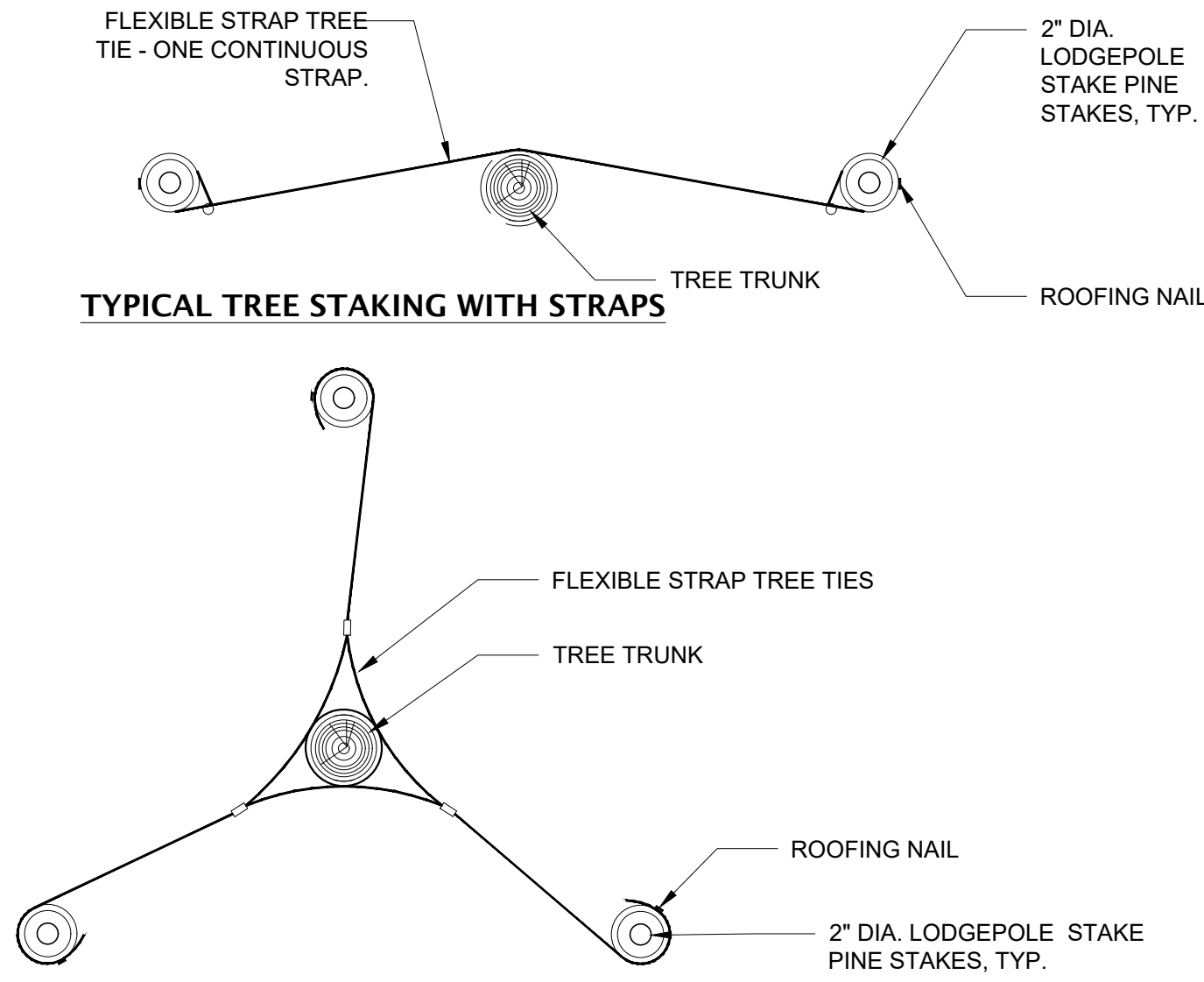
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PLANTING
ENLARGEMENT
PHASE 1

Drawing number

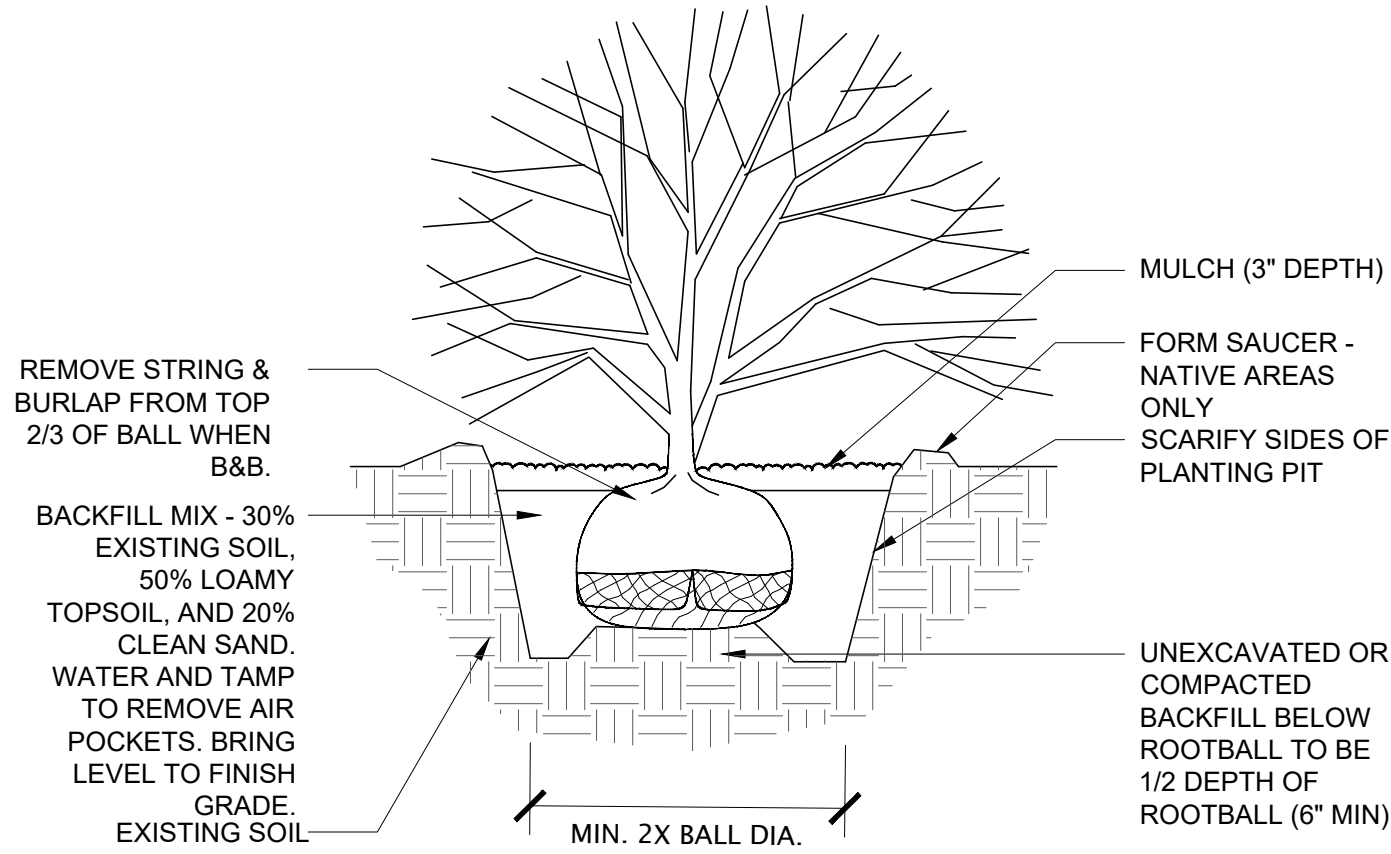
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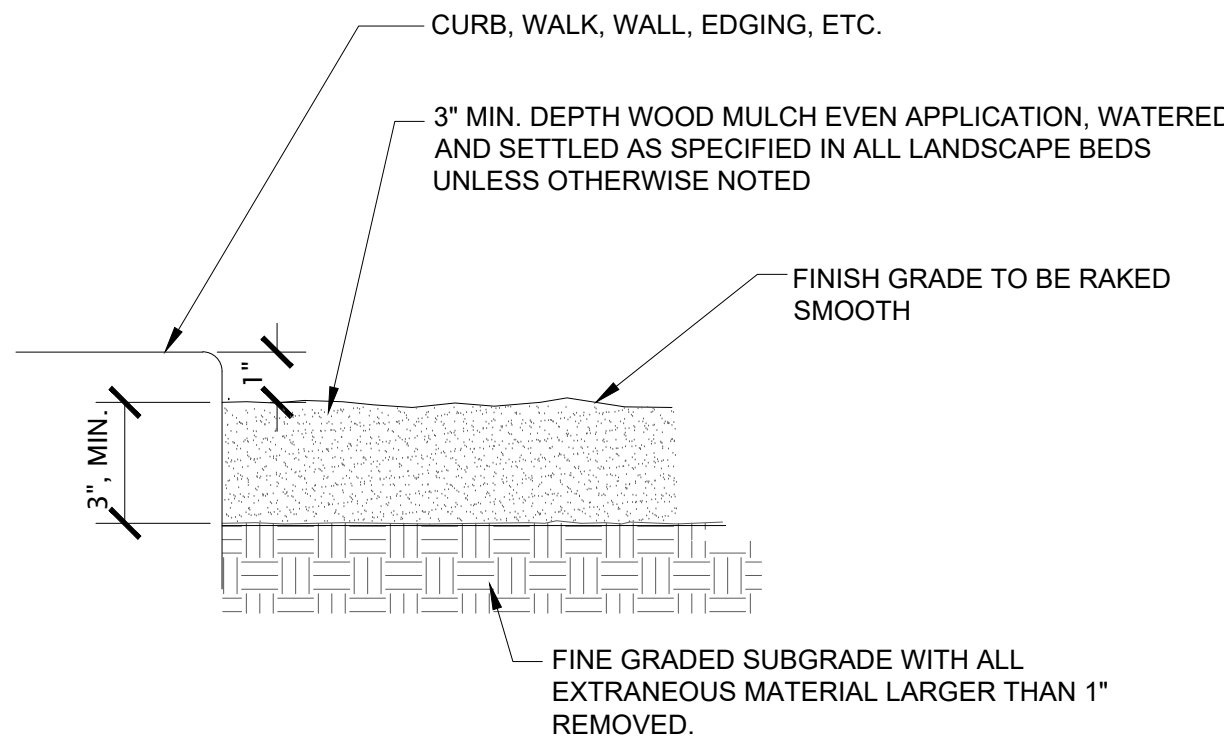
1 TREE PLANTING - FLEX STRAP
NOT TO SCALE



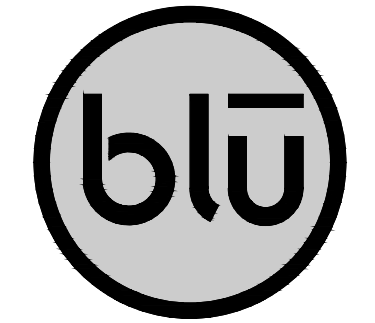
2 TYPICAL TREE STAKING WITH STRAPS
TREES IN WINDY CONDITIONS OR LARGER THAN 2\"/>



3 SHRUB DETAIL
NOT TO SCALE



4 WOOD MULCH
NOT TO SCALE
P-18-224-20



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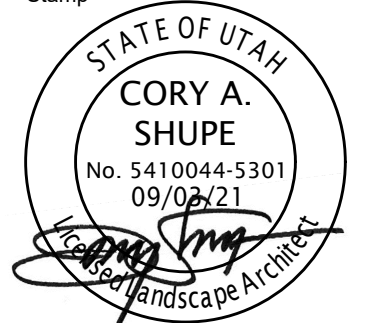
CONTACT:
TODD TRANE
PH: 801-756-5751



HIGHLAND CITY
MOUNTAIN RIDGE PARK | PHASE 1
10400 N S600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

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Drawn By: BP
Date: 09.03.21
Checked By: CAS
Project No: 18-224

Drawing Title

LANDSCAPE
DETAILS

Drawing number

L5.2

CONSTRUCTION DRAWINGS



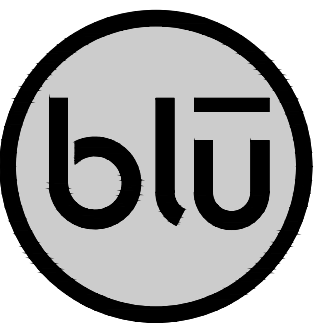
IR1.0

IR1.4

EASTERN PARKING
AREA - BID ALT 1

0 20 40 80 120

CONSTRUCTION DRAWINGS



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MOUNTAIN RIDGE PARK | PHASE 1
10400 N 5600 W
HIGHLAND, UT 84003

REVISIONS	
NO.	DESCRIPTION

Stamp

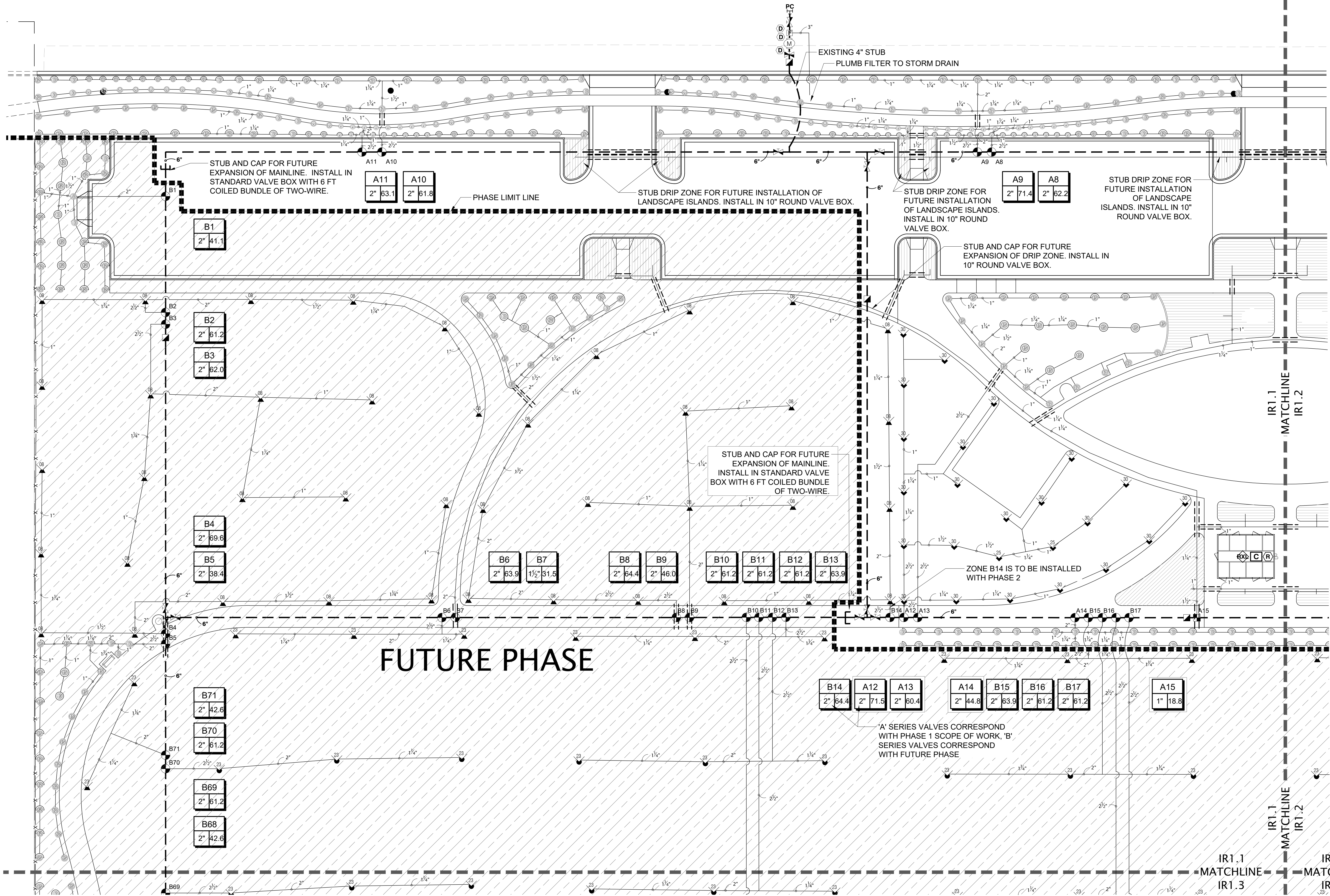


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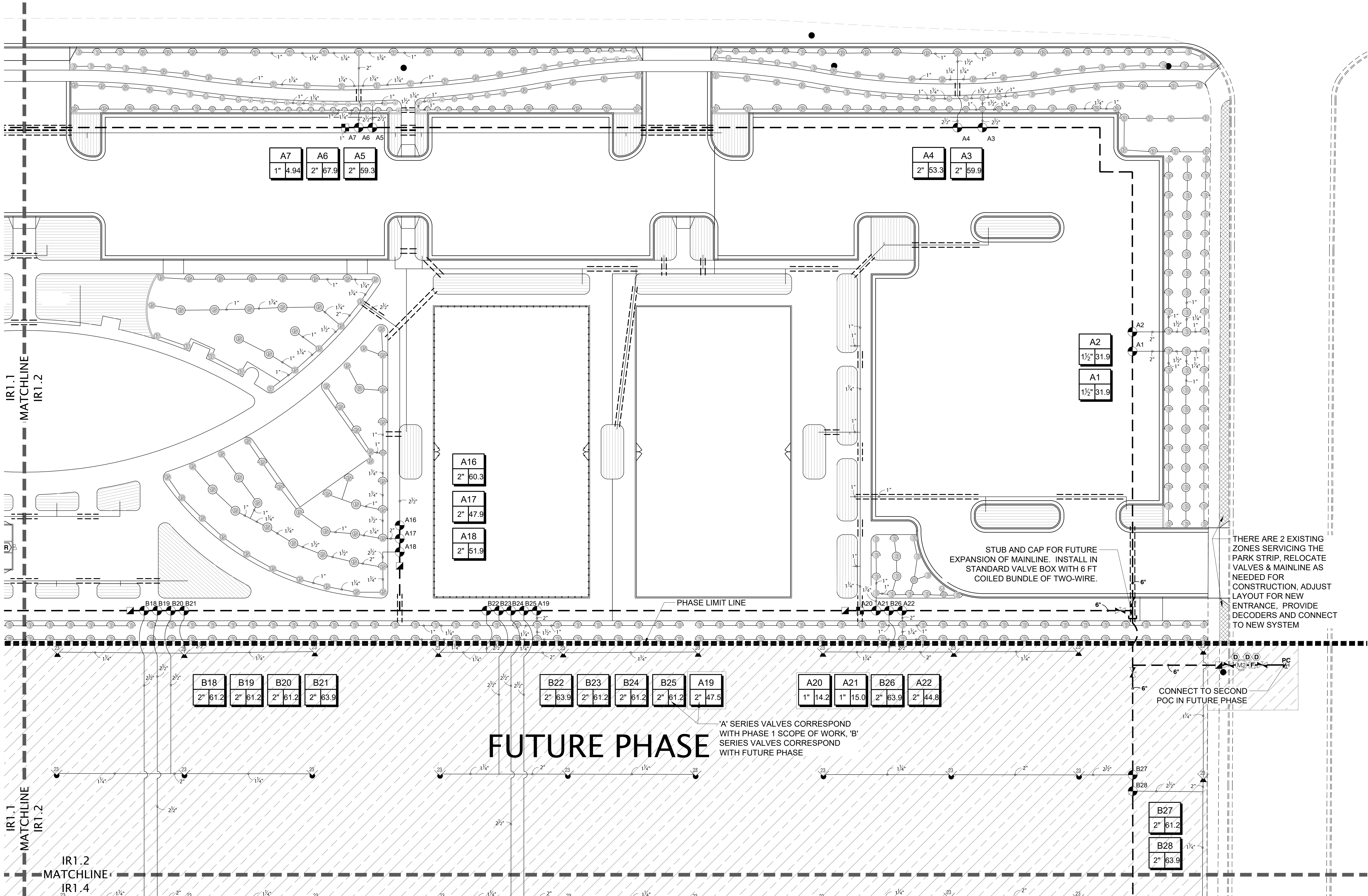
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IRRIGATION
PLAN

Drawing number

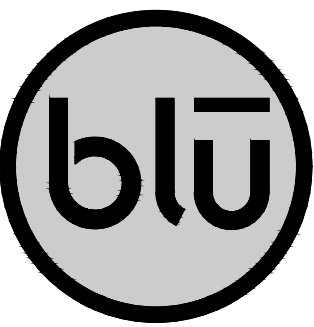
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CONSTRUCTION DRAWINGS



Scale: 1" = 20'-0"



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MOUNTAIN RIDGE PARK | PHASE 1
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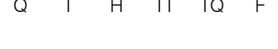
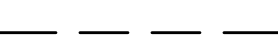
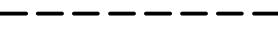
IRRIGATION
PLAN

Drawing number

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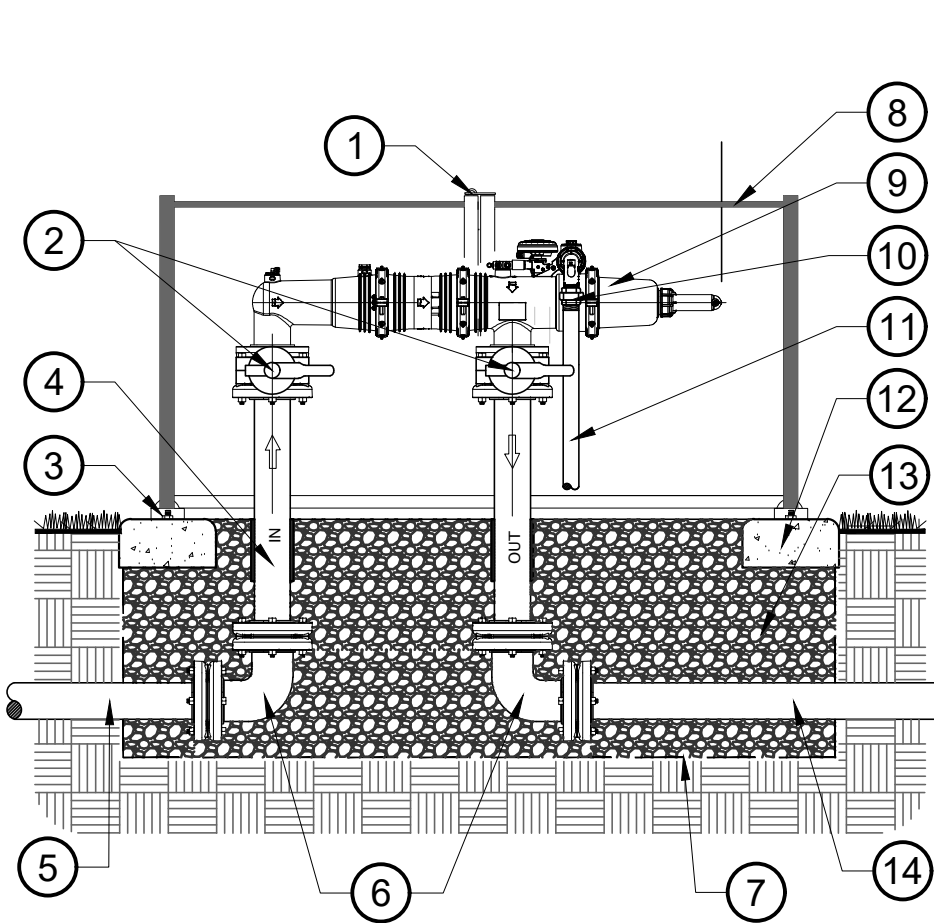
CONSTRUCTION DRAWINGS

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI		
	HUNTER PROS-06-PRS30-CV-F 8" RADIUS TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
	HUNTER PROS-06-PRS30-CV-F 10" RADIUS TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
	HUNTER PROS-06-PRS30-CV-F 12" RADIUS TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
	HUNTER PROS-06-PRS30-CV-F 15" RADIUS TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
	HUNTER PROS-06-PRS30-CV-F 17" RADIUS TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
	HUNTER PROS-06-PRS30-CV-F ADJUSTABLE ARC TURF SPRAY, 30 PSI REGULATED 6" POP-UP WITH FACTORY INSTALLED DRAIN CHECK VALVE & FLOGUARD. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30		
SYMBOL	MANUFACTURER/MODEL	PSI	GPM	RADIUS
	HUNTER I-20-06-SS-PRB-MPR	45		25'
	HUNTER I-20-06-SS-PRB-MPR	45		30'
	HUNTER I-20-06-SS-PRB-MPR	45		35'
	HUNTER I-40-06-SS	50	8.40	45'
	HUNTER I-40-06-SS	60	21.3	62'
	HUNTER I-40-06-SS-ON	60	20.4	65'
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION			
	HUNTER ICZ-101-25 DRIP CONTROL ZONE KIT. 1" ICV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.			
	AREA TO RECEIVE DRIPLINE NETAFIM TLDL-04-18 TECHLINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE. 0.4 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. SURFACE AND SUB SURFACE INSTALLATIONS. UV RESISTANT.			
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION			
	HUNTER ICV-G-FS WITH HARCO LATERAL VALVE 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET. FOR COMMERCIAL/MUNICIPAL USE WITH FILTER SENTRY. INSTALL WITH HARCO LATERAL ISOLATION VALVE AND SWIVEL TEE.			
	HUNTER HQ-44LRC QUICK COUPLER VALVE, YELLOW RUBBER LOCKING COVER, RED BRASS AND STAINLESS STEEL, WITH 1" NPT INLET, 2-PIECE BODY.			
	ISOLATION VALVE - MUELLER GATE VALVE RESILIENT WEDGE GATE VALVE WITH SQUARE OPERATING NUT. SAME SIZE AS MAINLINE PIPE.			
	MASTER VALVE/FLOW SENSOR - NETAFIM/FLOMEC 4" 4" NETAFIM PRESSURE REDUCING, ELECTRIC OPERATION, NORMALLY CLOSED MASTER VALVE LV61PRMELN4IF-HP WITH FLOMEC QS200-40 ULTRASONIC FLOW METER.			
	MASTER VALVE/FLOW SENSOR - NETAFIM/FLOMEC 4" 4" NETAFIM PRESSURE REDUCING, ELECTRIC OPERATION, NORMALLY CLOSED MASTER VALVE LV61PRMELN4IF-HP WITH FLOMEC QS200-40 ULTRASONIC FLOW METER.			
	MANUAL DRAIN - FORD B11-333			
	HUNTER A2C-150D-M WITH ATC-LTE SERVICE PLAN 150-STATION DECODER CONTROLLER WITH ONE (1) A2C-D75 MODULE IN AN OUTDOOR METAL WALL MOUNT ENCLOSURE AND A2C-LTE CELL CONNECTION.			
	HUNTER ROAMXL-R RECEIVER. ROAM REMOTE ALLOWS FOR CONTROLLER OPERATION UP TO 2 MILES. CONTRACTOR, LARGE-SCALE SITES. WORKS WITH HUNTER ACC, I-CORE, PRO-C, PCC, AND X-CORE CONTROLLERS. REQUIRES A SMARTPORT CONNECTION.			
	HUNTER WR-CLIK RAIN SENSOR, INSTALL WITHIN 1000 FT OF CONTROLLER, IN LINE OF SIGHT. 22-28 VAC/DC 100 MA POWER FROM TIMER TRANSFORMER. MOUNT AS NOTED.			
	AMIAD FILTOMAT M104LP WITH STRONG BOX ENCLOSURE AMIAD 4" FILTOMAT WITH 130 MICRON SCREEN. INSTALL IN STRONG BOX ALUMINUM ENCLOSURE (SIZE TO FIT). PLUMB 3" FILTER FLUSH LINE TO STORM DRAIN.			
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40			
	IRRIGATION MAINLINE: PVC CLASS 200 GASKETED PIPE			
	PIPE SLEEVE: PVC SCHEDULE 40			
	Valve Callout			
	Valve Number			
	Valve Flow			
	Valve Size			

IRRIGATION NOTES

- THIS DRAWING IS DIAGRAMMATIC AND IS INTENDED TO CONVEY THE GENERAL LAYOUT OF IRRIGATION SYSTEM COMPONENTS. ALL IRRIGATION EQUIPMENT SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE. LOCATE MAINLINE AND VALVES NEAR WALKS WHERE FEASIBLE. ALL MAIN LINE AND VALVES TO BE MINIMUM 10' FROM TREE.
- THE CONTRACTOR SHALL VERIFY THE AVAILABLE WATER PRESSURE AT THE SITE PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND ACTUAL PRESSURE READINGS AT THE POINT OF CONNECTION TO THE LANDSCAPE ARCHITECT. WATER PRESSURE AT THE CULINARY WATER POINT OF CONNECTION IS EXPECTED TO BE A MINIMUM OF 70 PSI. WATER PRESSURE AT THE SECONDARY WATER POINT OF CONNECTION IS EXPECTED TO BE A MINIMUM OF 120 PSI. IN THE EVENT THAT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL STRUCTURES, SITE IMPROVEMENTS, WALKS, UTILITIES, AND GRADE CHANGES. COORDINATE LAYOUT OF THE IRRIGATION SYSTEM WITH OTHER TRADES SO THAT CONSTRUCTION CAN CONTINUE IN A NORMAL SEQUENCE OF EVENTS. ADJUSTMENTS MAY BE NECESSARY TO MAINTAIN FULL COVERAGE DEPENDING ON ACTUAL SITE CONDITIONS. ANY SIGNIFICANT CHANGES WILL REQUIRE WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO PLACEMENT. ALL MODIFICATIONS SHALL BE RECORDED ON 'AS-BUILT' DRAWINGS.
- DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM WHEN IT IS APPARENT IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADING DIFFERENCES MAY NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS AND EXISTING IRRIGATION SYSTEM (IF ANY). IN THE EVENT THAT THE CONTRACTOR DAMAGES, DISPLACES OR OTHERWISE CAUSES OTHER TRADES WORK TO BE REINSTALLED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM PERFORMANCE. INSTALL HEADS WITH THE APPROPRIATE ARC AND RADIUS FOR THE AREA TO BE COVERED. ADJUST NOZZLES TO ELIMINATE OVERSPRAY ONTO WALKS, BUILDINGS, ETC.
- IRRIGATION CONTROLLER(S) AND DECODERS SHALL BE GROUNDED PER ESTABLISHED ASIC GUIDELINES.
- IRRIGATION CONTROL WIRES REFER TO SUPPLEMENTAL 2-WIRE IRRIGATION NOTES.
- ALL MAINLINES, LATERAL LINES, AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES.
- ALL MAINLINE AND LATERAL LINE PIPE SHALL BE SCHEDULE 40 PVC THROUGH 3" PIPE. 4" TO 6" PIPE SHALL BE GASKETED PIPE, CLASS 200 PVC. ALL LATERAL LINE FITTINGS SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED. ALL MAINLINE FITTINGS UNDER 3" SHALL BE SCHEDULE 80 PVC. MAINLINE FITTINGS 3" AND LARGER SHALL BE HARCO DUCTILE IRON, RESTRAIN PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL USE WELD-ON P-70 PRIMER AND 711 LOW VOC CEMENT FOR ALL SOLVENT WELDED JOINTS.
- ALL LINES SHALL SLOPE TO DRAIN. ADD MANUAL DRAINS AT ALL MAINLINE LOW POINTS AS NECESSARY FOR COMPLETE DRAINAGE OF THE ENTIRE SYSTEM. INDICATE ALL DRAIN LOCATIONS ON 'AS-BUILT' DRAWINGS.
- ALIGN VALVE BOXES PARALLEL WITH EDGE OF PAVEMENT/PLANTING BEDS. WHERE FEASIBLE, LOCATE THE EDGE OF VALVE BOX 12"-18" FROM EDGE OF PAVEMENT.
- ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE. HEADS SHALL BE LOCATED 1" AWAY FROM AND 1/2" BELOW ADJACENT CURBS, WALLS, WALKS, AND MOWSTRIPS.
- DRIP DISTRIBUTION TUBING TO BE INSTALLED PER DETAILS. EMITTERS SHALL BE LOCATED ON UPHILL SIDE OF PLANTS.
- GUARANTEE: ALL WORK SHALL BE GUARANTEED AND MAINTAINED FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT, AND WORKMANSHIP. GUARANTEE SHALL COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT, OR WORKMANSHIP TO THE SATISFACTION OF THE OWNER. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AND AT NO ADDITIONAL COST TO THE OWNER.
- SEE DETAILS FOR ADDITIONAL INFORMATION. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.



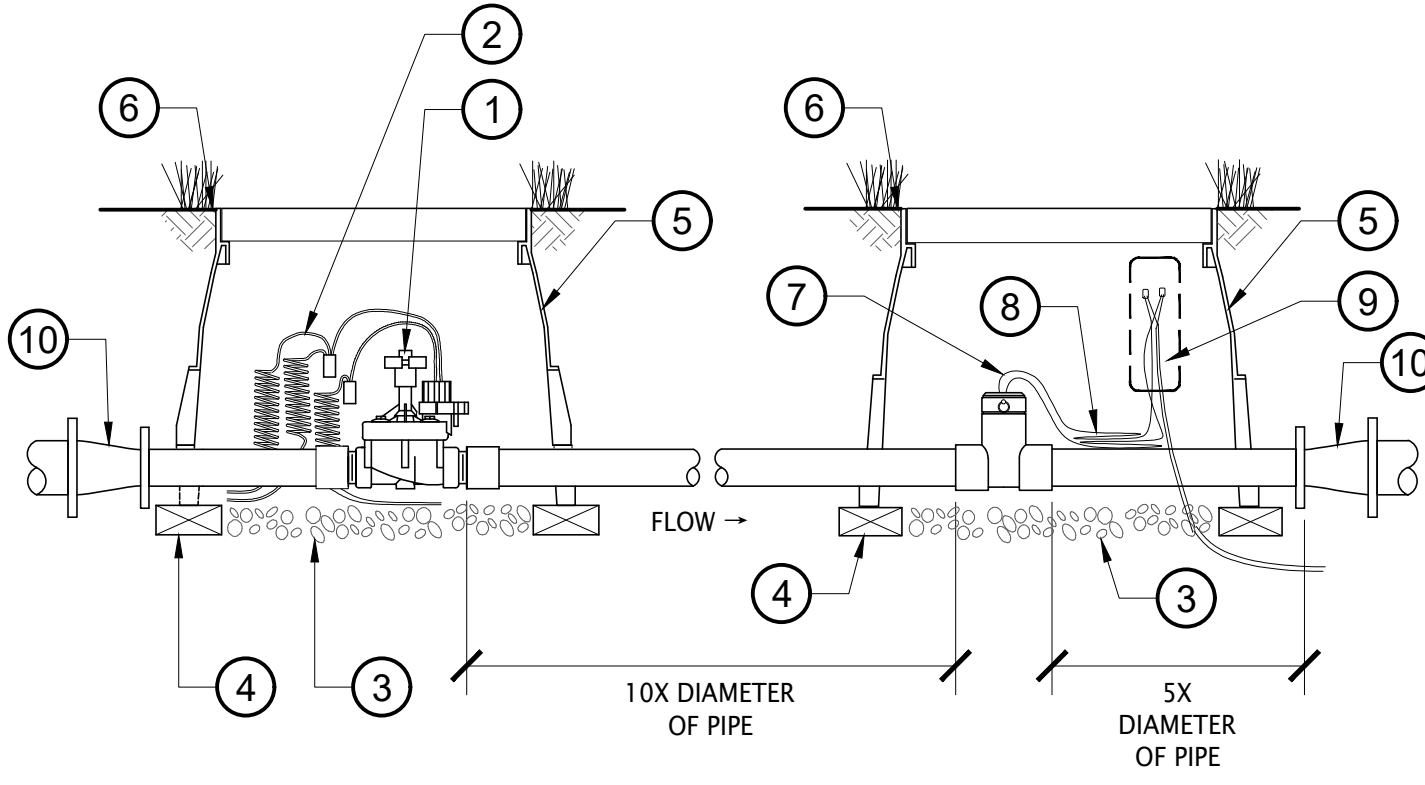
3 AUTOMATIC FILTER >3"
1/2" = 1'-0"

DETAIL-FILE

SUPPLEMENTAL 2-WIRE IRRIGATION NOTES

- DECODERS:
1. ALL VALVES SHALL BE CONNECTED TO SYSTEM VIA DECODERS.
2. CONTRACTOR SHALL LAY OUT DECODERS AS REQUIRED BY SYSTEM. NO TWO VALVES ARE TO SHARE THE SAME ADDRESS. ALL VALVES MUST BE WITHIN 10' OF THE DECODER TO WHICH THEY ARE CONNECTED.
3. MASTER VALVE TO BE CONNECTED VIA SINGLE STATION DECODER. FLOW SENSOR TO BE CONNECTED VIA SENSOR DECODER.
4. DECODERS SHALL BE MOUNTED BY BRACKET TO INSIDE WALL OF VALVE BOX WITH DECODER ID ORIENTED TOWARD THE TOP OF VALVE BOX.
- MODELS:
1 VALVE - HUNTER ICD-100 (INCLUDES BUILT-IN SURGE PROTECTOR)
SENSOR - HUNTER ICD-SEN
- SURGE PROTECTION AND GROUNDING:
1. SURGE PROTECTION AND GROUNDING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AT A MINIMUM OF EVERY 1000' OR 12 DECODERS, WHICHEVER IS SHORTER. ADDITIONALLY, SURGE PROTECTION AND GROUNDING IS TO BE INSTALLED ALONG THE 2-WIRE PATH AT THE CONTROLLER AND AT THE END OF EACH 2-WIRE SPUR LONGER THAN 50'.
2. WHERE POSSIBLE, GROUNDING TO BE INSTALLED AT RIGHT ANGLES FROM THE 2-WIRE PATH.
3. SEE DETAILS FOR GROUNDING ROD DETAIL. ALL GROUNDING RODS SHALL ALLOW FOR 10 OHMS OF RESISTANCE OR LESS.
- WIRE:
1. INSTALL 2-WIRE PATH IN 1" CONDUIT.
2. WIRE FROM CONTROLLER TO DECODERS SHALL BE HUNTER ID TWISTED WIRE PER MANUFACTURER'S RECOMMENDATIONS. SUPPLEMENTAL WIRE RUNS FROM DECODER TO VALVE(S) (NOT TO EXCEED 10' IN LENGTH) SHALL BE 14 AWG DIRECT BURIAL WIRE. WIRE CONNECTIONS AND SPLICES SHALL BE MADE WITH 3M DBRY-6 CONNECTORS.
3. FOR TROUBLESHOOTING PURPOSES, A STAR CONFIGURATION IS TO BE USED FOR WIRING AS OPPOSED TO A LOOPED CONFIGURATION.
4. 3M DECODER CABLE FUSE DEVICE (DCFD) TO BE INSTALLED AT ALL SPLITS IN THE 2-WIRE PATH WHERE MORE THAN TWO RUNS OF COME TOGETHER. INSTALL DCRD AND EXTRA CABLE IN STANDARD SIZE VALVE BOX.
5. EACH 2-WIRE BRANCH IS TO BE EITHER A DIFFERENT COLOR OF WIRE, OR MARKED WITH COLORED TAPE AT ALL SPLICES FOR TROUBLESHOOTING PURPOSES.
5. 3' OF EXTRA CABLE LENGTH TO BE INSTALLED AT ALL SPLICES.

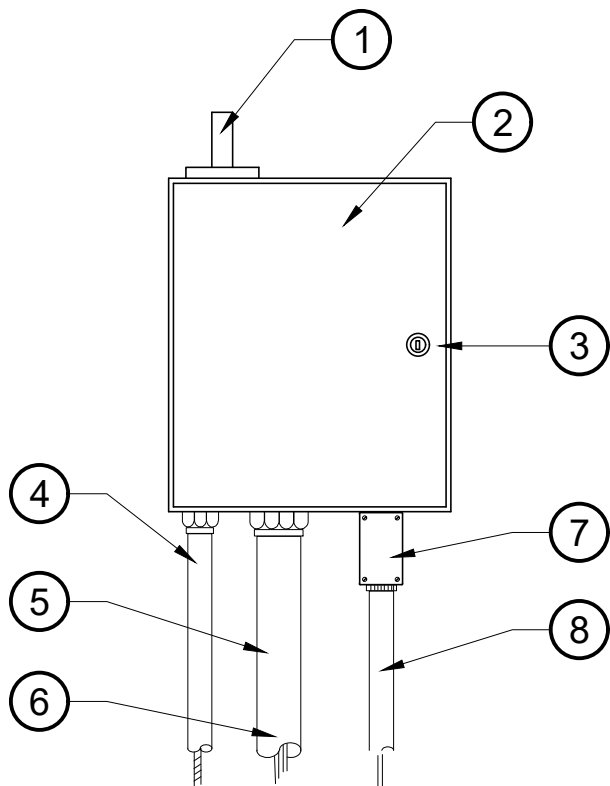
- CONDUIT:
1. ALL ID WIRE TO BE INSTALLED IN 3/4" GRAY CONDUIT WITH SWEEPS.
2. ALL CONDUIT/WIRE SPLICES TO BE INSTALLED IN STANDARD SIZE VALVE BOX WITH EXTRA CABLE AS NOTED IN WIRE SECTION.



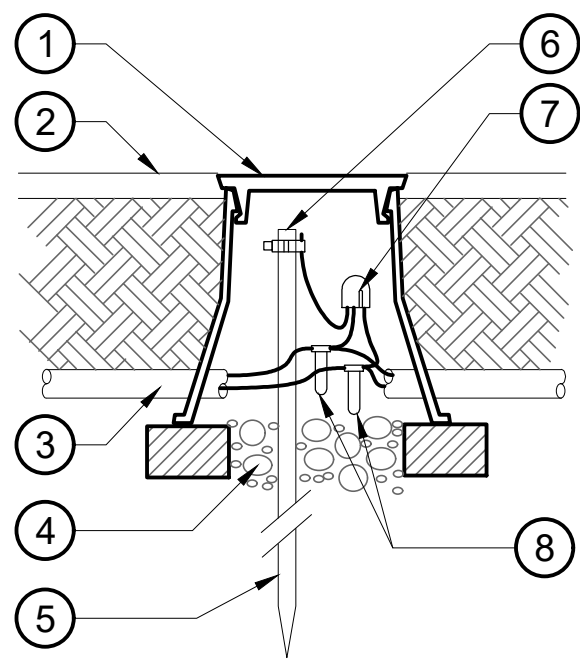
- NOTE:
1. ALL IRRIGATION CONTROL WIRE SPICES ARE TO BE MADE USING 3M DBR-Y SPLICE.
2. ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. VALVE BOXES AND LIDS IN BARK MULCH AND LAWN AREAS TO BE STANDARD GREEN.

4 MASTER VALVE/FLOW SENSOR
NOT TO SCALE

NOT TO SCALE



1 CONTROLLER WITH WALL MOUNT
NOT TO SCALE



2 LIGHTING ARRESTOR - TWO WIRE SYSTEM
1/2" = 1'-0"

DETAIL-FILE

- MASTER VALVE - INSTALL UNIONS ON EACH SIDE (THREADED MODELS)
- 24" LENGTH OF COILED WIRE
- 3" MIN. DEPTH WASHED GRAVEL
- BRICK (4 PER BOX)
- CARSON STANDARD SIZE VALVE BOX
- FINISH GRADE
- FLOW SENSOR
- 24" LENGTH OF COILED COMMUNICATION CABLE
- COMMUNICATION CABLE SPLICE PER MANUFACTURER'S RECOMMENDATIONS
- CONCENTRIC REDUCER (WHERE REQUIRED FOR TRANSITION BETWEEN PIPE SIZES)

CONSTRUCTION DRAWINGS



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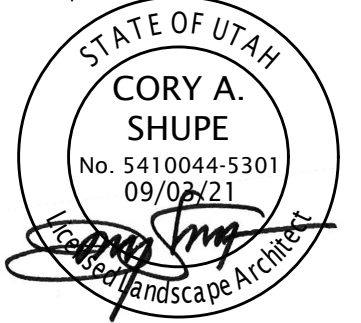
HIGHLAND CITY

HIGHLAND CITY
MOUNTAIN RIDGE PARK | PHASE 1

10400 N S600 W
HIGHLAND, UT 84003

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NO.	DESCRIPTION

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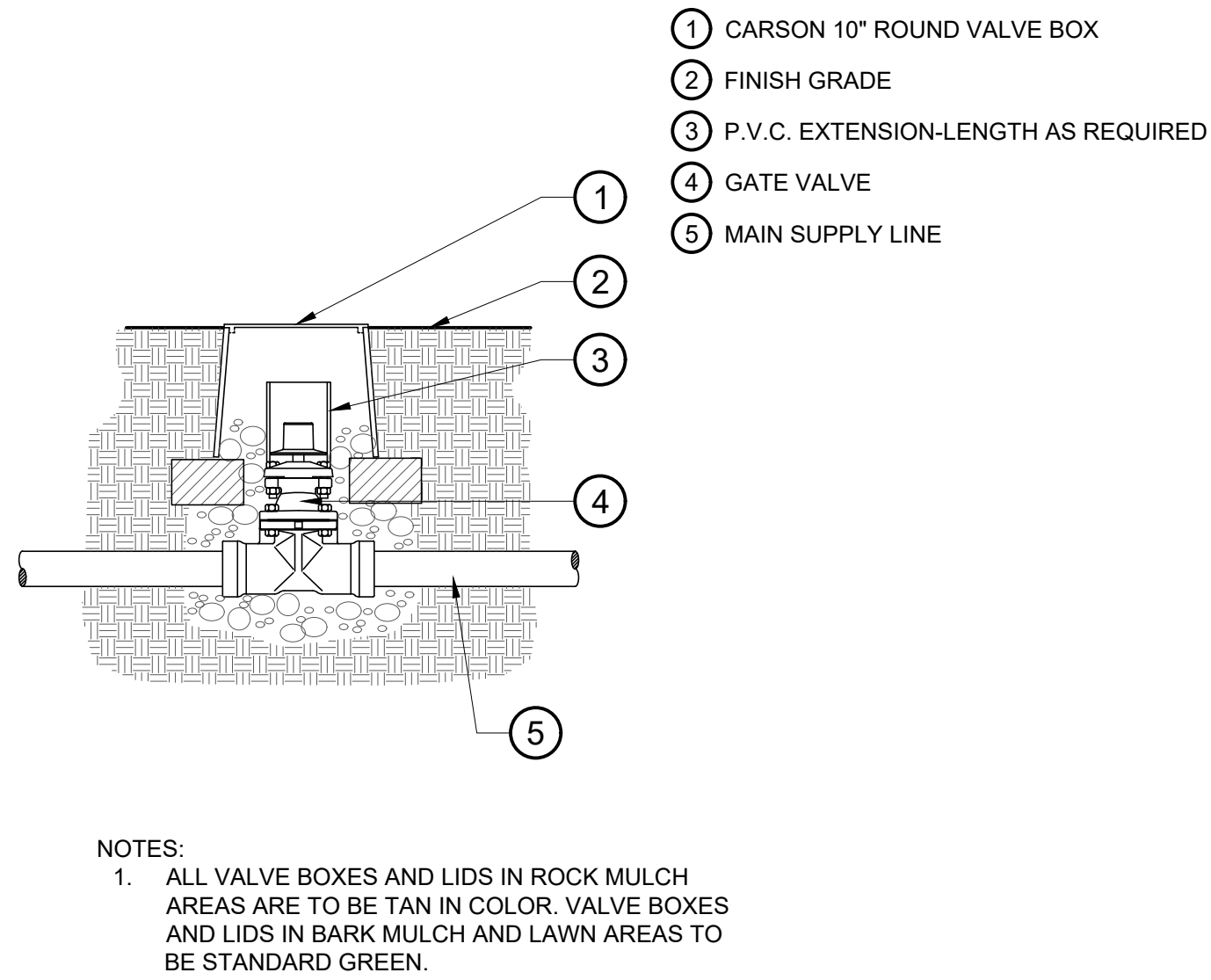
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Drawn By: BP
Date: 09.03.21
Checked By: CAS
Project No: 18-224

Drawing Title

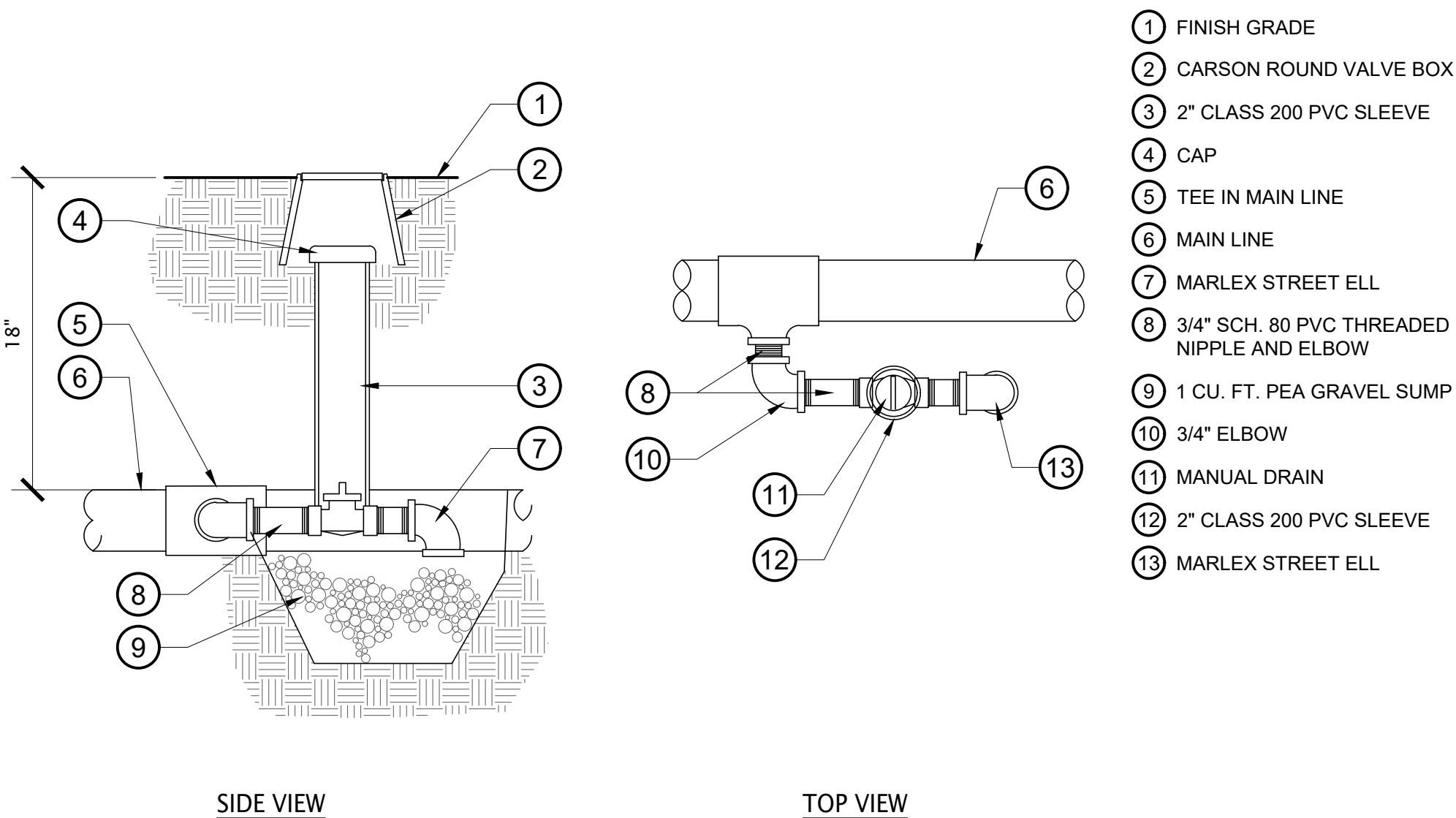
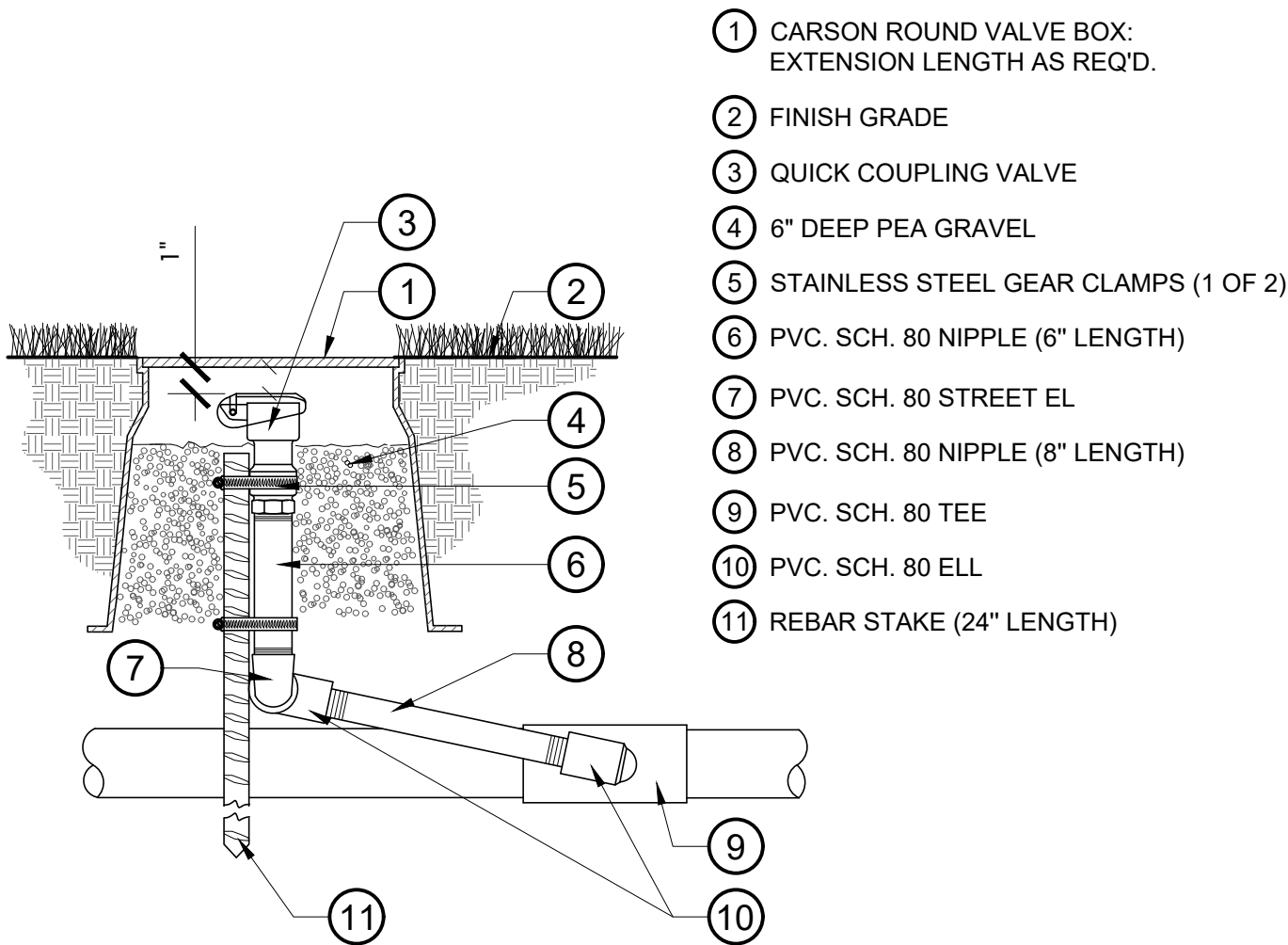
IRRIGATION
SCHEDULE
AND NOTES

Drawing number

IR5.1

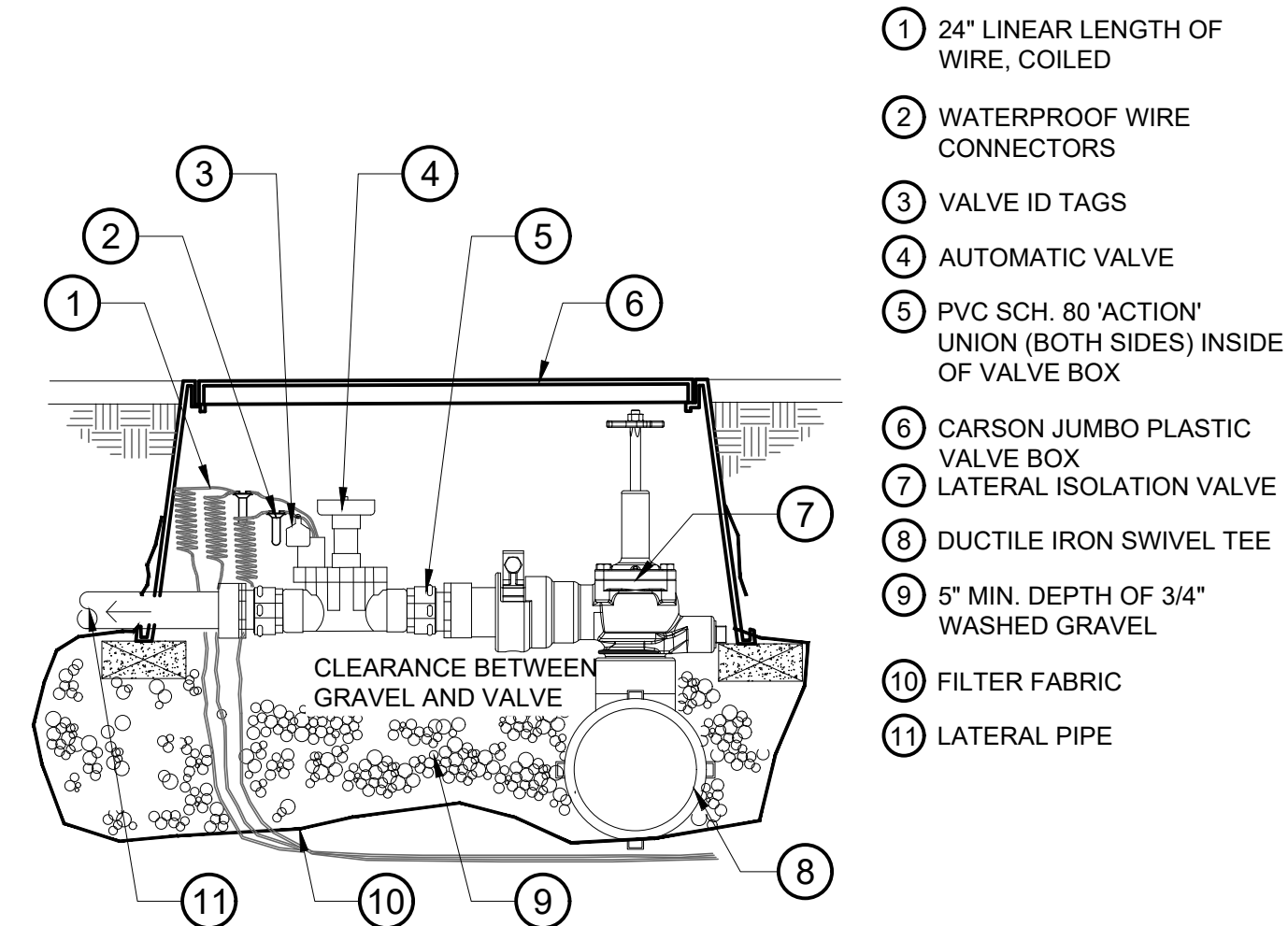


NOTES:
1. ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. VALVE BOXES AND LIDS IN BARK MULCH AND LAWN AREAS TO BE STANDARD GREEN.



1 RESILIENT WEDGE GATE VALVE

NOT TO SCALE



NOTES:
1. LIMIT 1 CONTROL VALVE PER BOX. INSTALL ONE LATERAL VALVE PER CONTROL VALVE.
2. ENSURE ADEQUATE CLEARANCE IN VALVE BOX FOR LATERAL VALVE TO BE FULLY OPEN WITH THE LID CLOSED.

4 CONTROL VALVE WITH LATERAL ISOLATION VALVE

NOT TO SCALE

DETAIL-FILE

HARCO JOINT RESTRAINT

SELECTION GUIDE

Tables below list number of adjacent pipe joints to be restrained for basic fitting configurations. These were calculated using the joint restraint calculator available at www.harcofittings.com for a set of assumptions that will envelop many applications. Check that the assumptions listed below meet or exceed your application. If your situation is not covered by the assumptions or a more refined restraint scheme is desired, use the restraint calculator at www.harcofittings.com.

Bends, Reducers, Caps, and Valves

Size	Bends	Reductions	Dead Ends
2	11%	22%	45
3	2%	—	—
4	—	—	—
6	—	—	—
8	—	—	—
10	—	—	—
12	—	—	—
14	—	—	—
16	—	—	—

Tees (Branch Size)

Run Size	2	2 1/2	3	4	6	8	10	12	14	16
2	—	—	—	—	—	—	—	—	—	—
2 1/2	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—	—	—

Bends & Caps/Dead Ends:

Restrain all bells and the adjacent joints listed in table (both directions for bends).

Reducers:

Restrain large bell and adjacent joints listed in table.

Valves:

Treat as Dead End. Use Valve Restrain and restrain adjacent upstream joints listed in table. If closed valve can have pressure from either side, restrain adjacent joints both sides per table.

Restraint Calculation Assumptions:

Maximum pressure: 120psi
Restrained Lengths: Each restraint connects 20' length of pipe
Soil Type: Type GM, gravel-sand-silt mixture
Minimum Burial Depth: 2'-2 1/2', 18" cover: 2'-6", 24" cover: 10'-12", 30" cover: 14'-18", 36" cover:
Trench Type: 3, pipe bedded in 4 inches minimum loose soil. Backfill lightly consolidated to top of the pipe.
Safety Factor: 1.5

Tees - Branch bell only restrained:

Use joint restraint ONLY on branch. Number below is number of 20' joints to be restrained with pipe to pipe restraints.

Tees - Branch bell only restrained:

Use joint restraint on ALL three branches of tee. Number below is number of 20' joints to be restrained with pipe to pipe restraints in branch only direction.

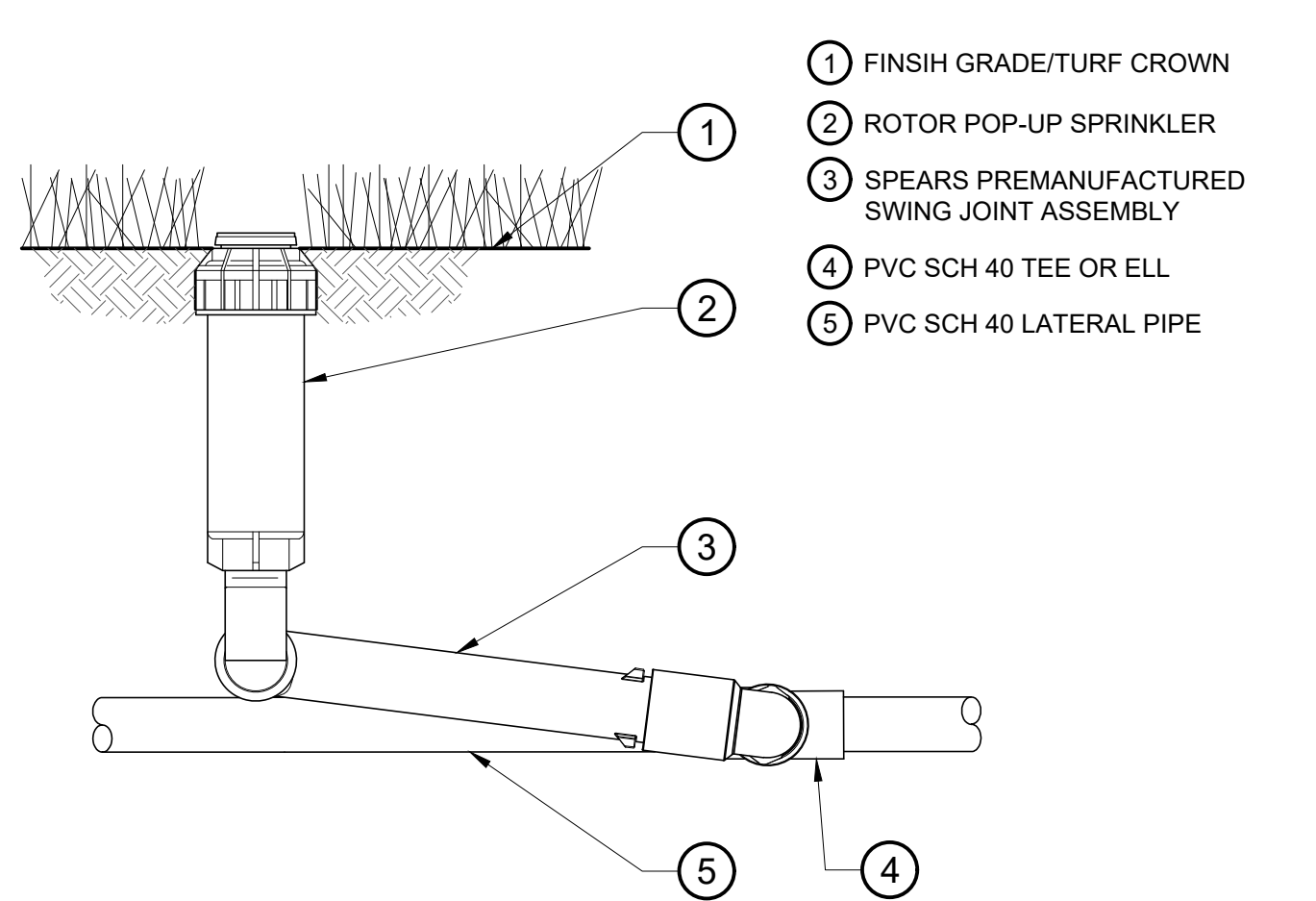
Tees - With Run Reductions:

Restrain all bells and adjacent branch joints noted. Treat run reduction as a reducer. Restrain as noted adjacent joints to large bell per reducer table.

5 IRRIGATION PULL BOX

NOT TO SCALE

DETAIL-FILE



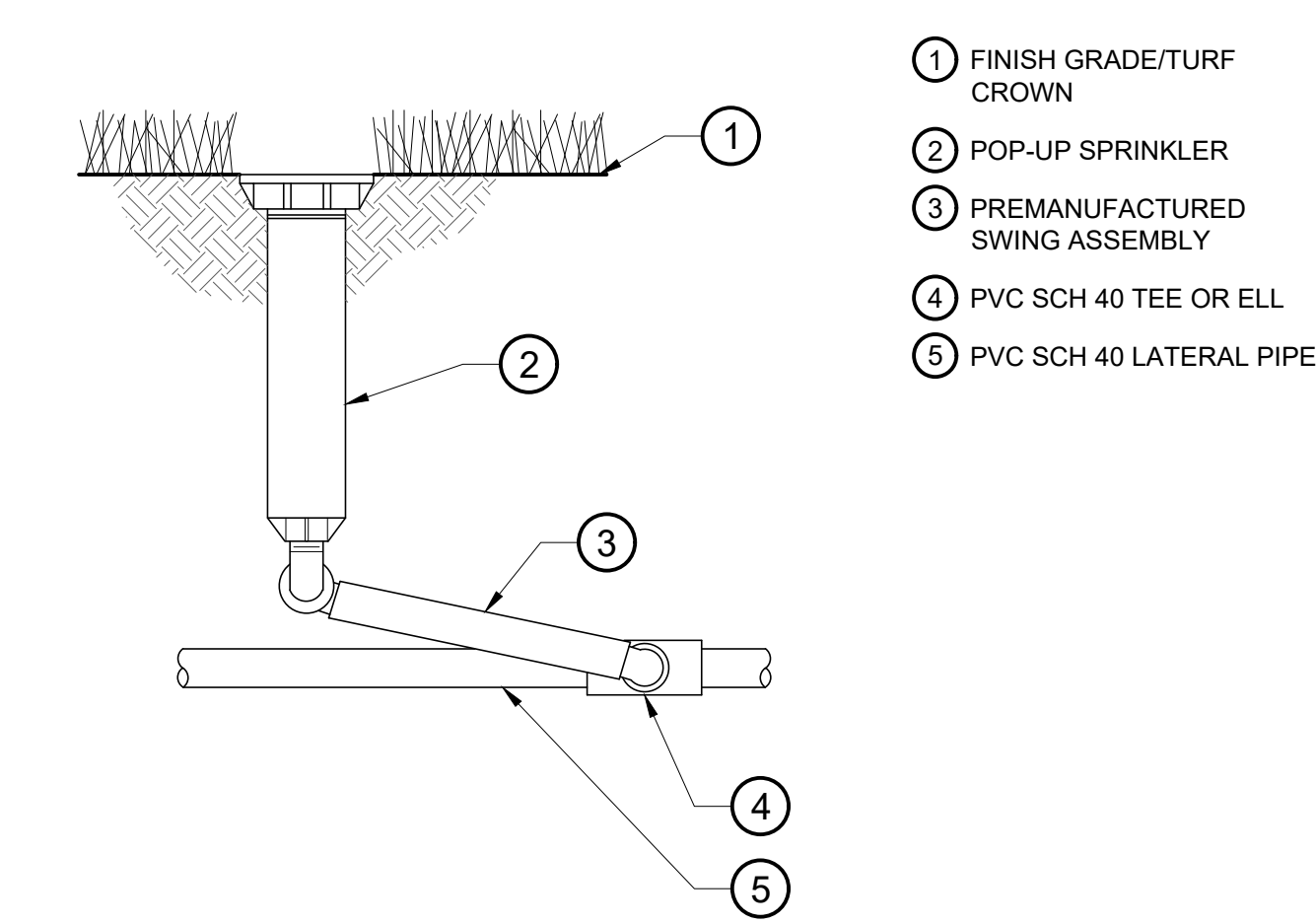
NOTES:
1. SWING JOINT ASSEMBLY: TWO SPIRAL BARB ELBOWS, 12-24" SWING PIPE, AND ONE 1/2" MARLEX STREET ELBOW.
2. USE NOZZLE SPECIFIED ON PLAN.

8 POP UP ROTOR

NOT TO SCALE

6 PIPE TRENCH

NOT TO SCALE



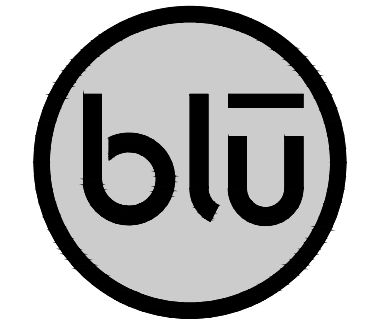
NOTES:
1. SWING JOINT ASSEMBLY: TWO SPIRAL BARB ELBOWS, 12-24" SWING PIPE, AND ONE 1/2" MARLEX STREET ELBOW.
2. USE FIXED SPRAY NOZZLES WHENEVER POSSIBLE.

9 POP-UP SPRAY/ROTARY

NOT TO SCALE

7 JOINT RESTRAINT GUIDE

SCALE: NOT TO SCALE



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STATE OF UTAH

CORY A. SHUPE

No. 54110044-5301

09/02/21

Designed By:

Drawn By:

Date:

Checked By:

Project No:

RBD

BP

09.03.21

CAS

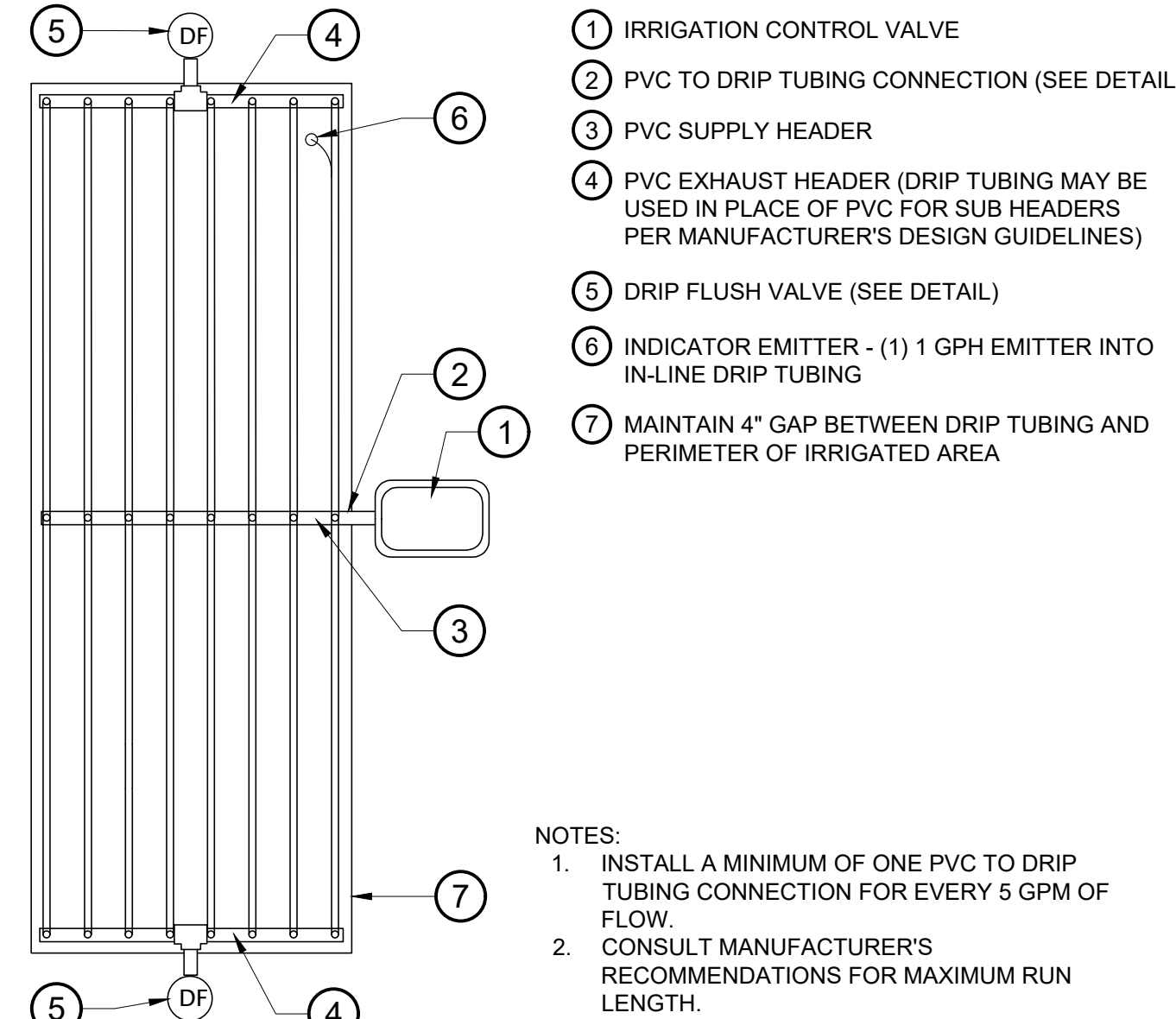
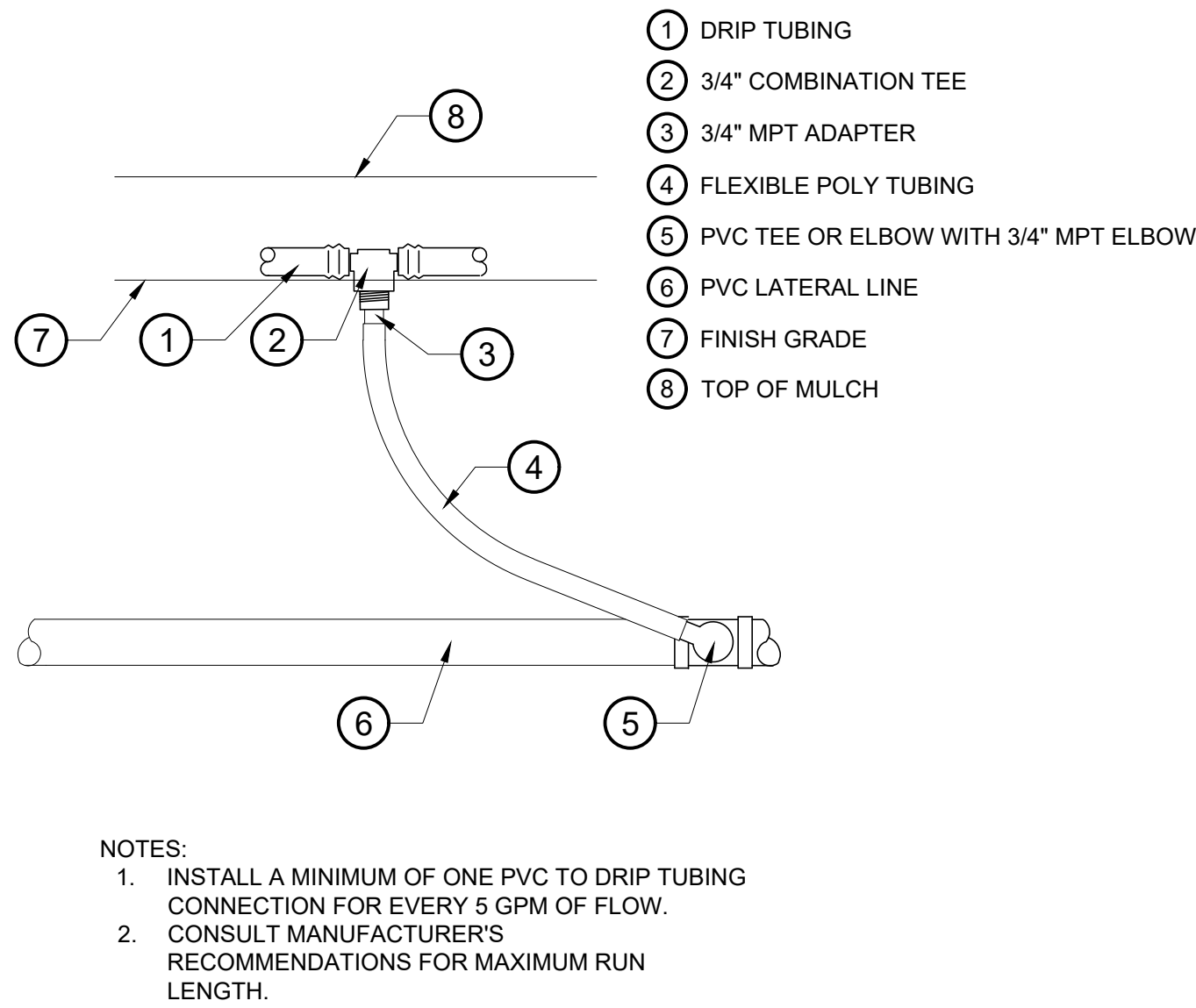
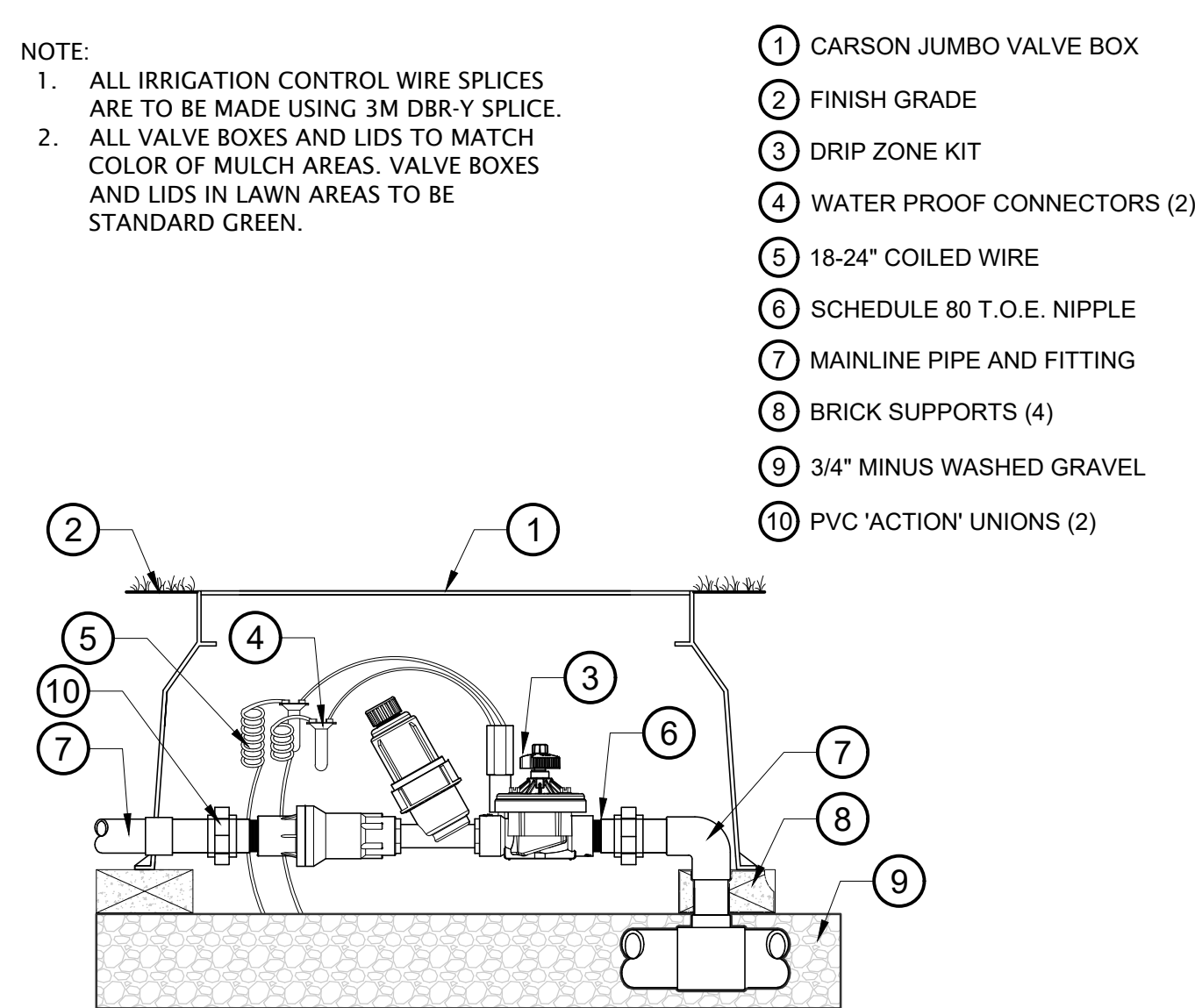
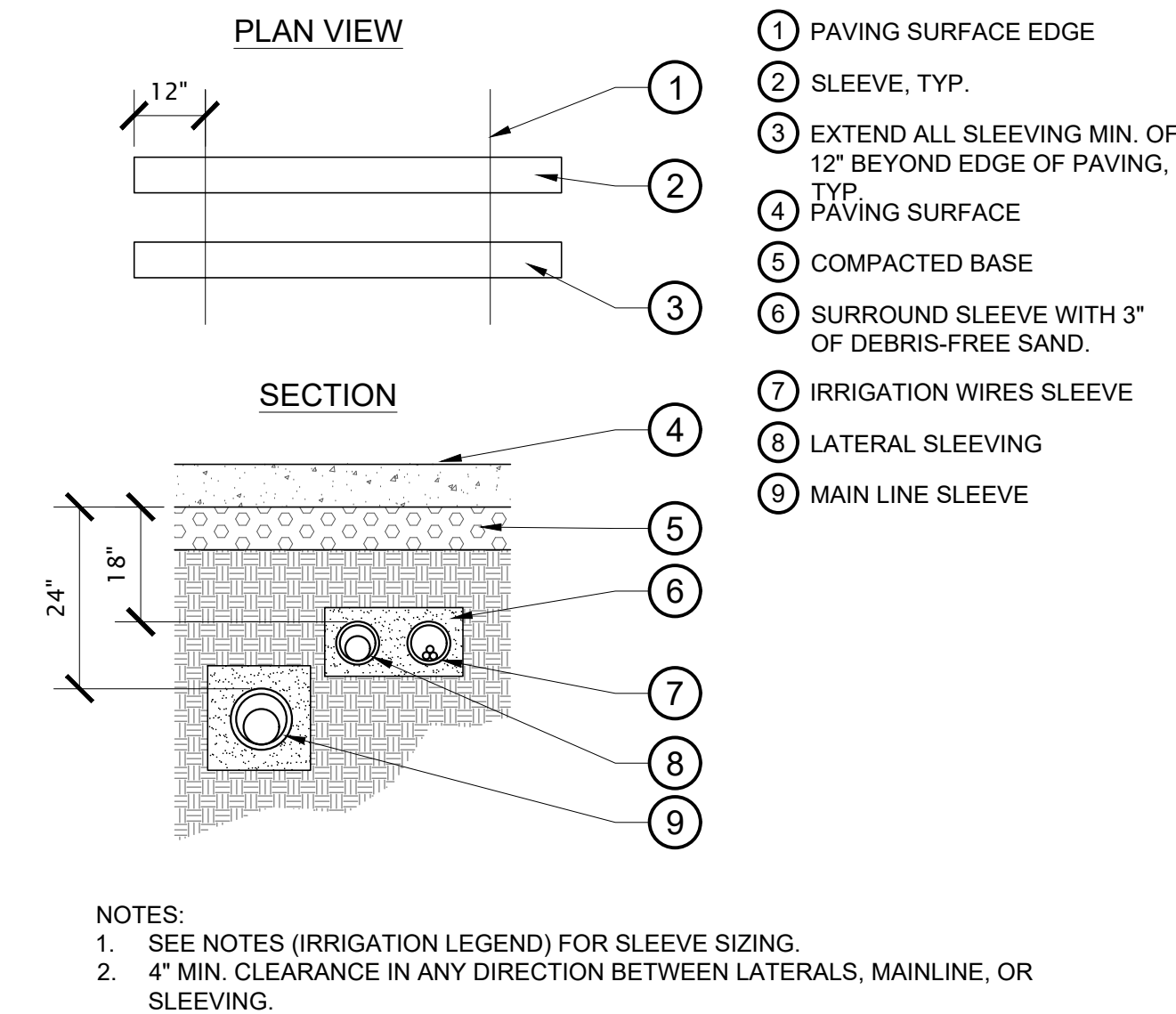
18-224

Drawing Title
IRRIGATION
DETAILS

Drawing number

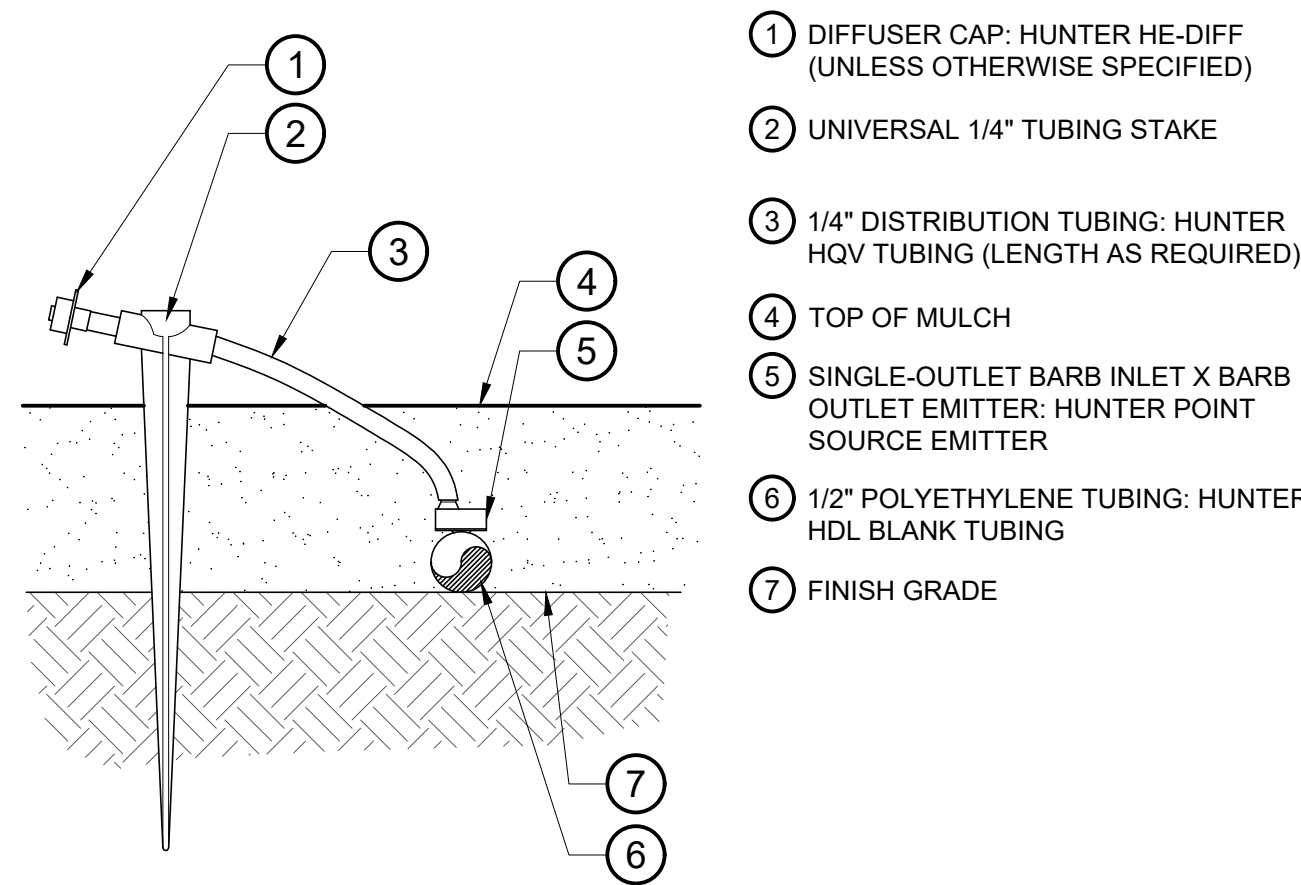
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CONSTRUCTION DRAWINGS



1 PIPE SLEEVE

NOT TO SCALE



NOTES:

- USE HUNTER EMITTER MULTI-TOOL TO INSERT EMITTER DIRECTLY INTO 1/2" POLYETHYLENE TUBING.

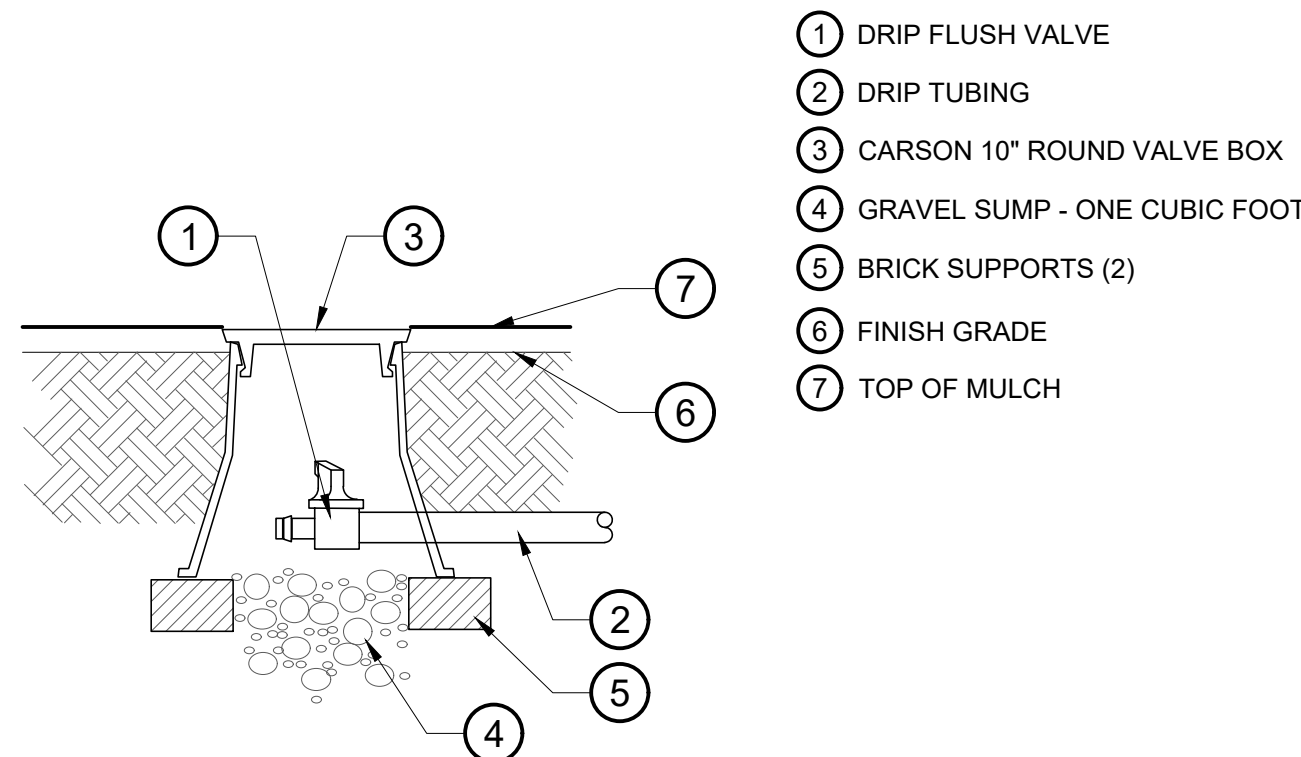
5 DRIP EMITTER (HUNTER)

NOT TO SCALE

2 DRIP CONTROL VALVE ASSEMBLY (HUNTER)

NOT TO SCALE

DETAIL-FILE



NOTES:

- INSTALL DRIP FLUSH VALVE(S) AT LOW POINT OF EACH DRIP ZONE AND AT END OF LINES.
- ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. VALVE BOXES AND LIDS IN BARK MULCH AND LAWN AREAS TO BE STANDARD GREEN.

3 DRIP FLUSH VALVE

NOT TO SCALE

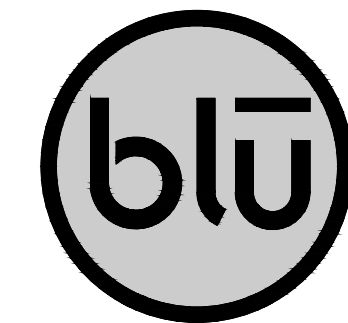
3 PVC TO DRIP TUBING CONNECTION

NOT TO SCALE

4 CENTER FEED IN LINE DRIP

NOT TO SCALE

CONSTRUCTION DRAWINGS



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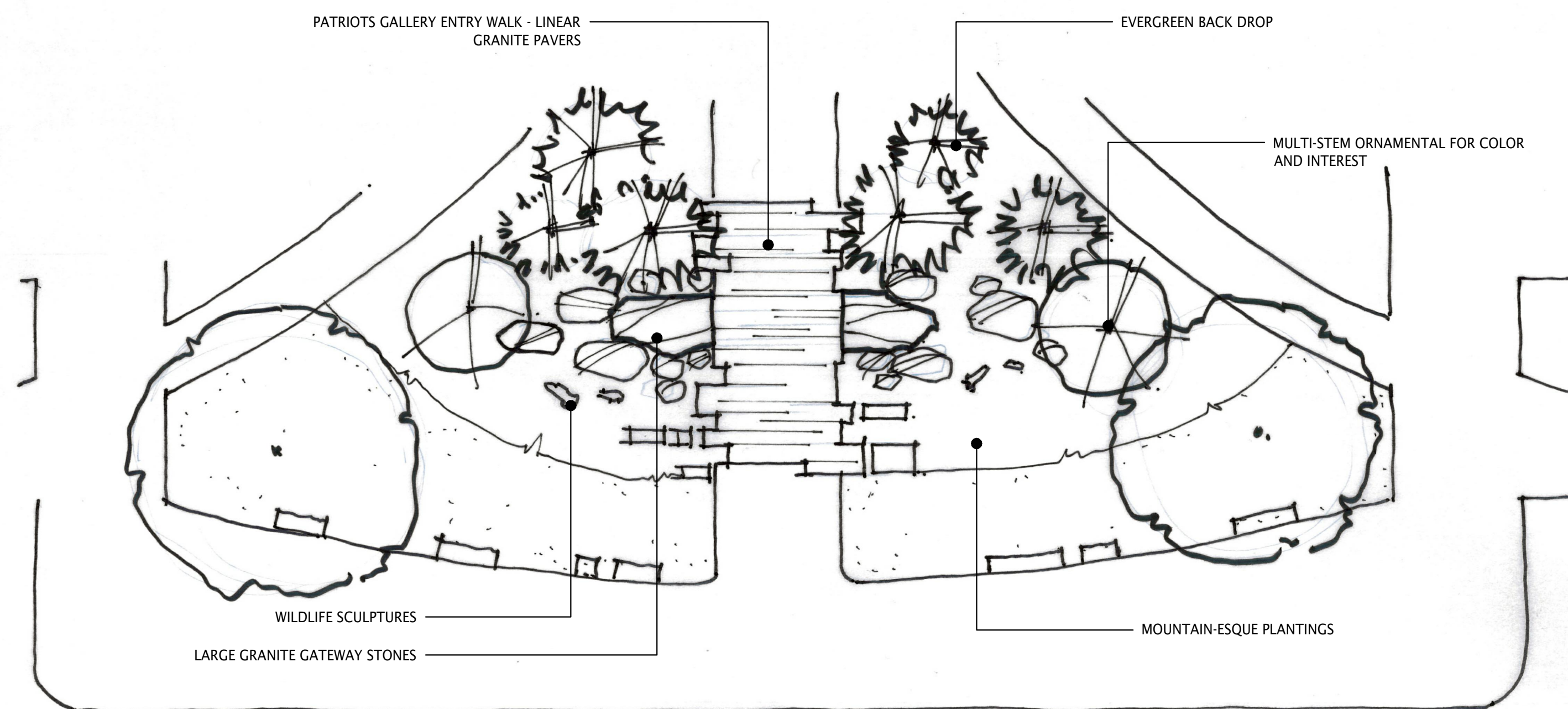
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CORY A. SHUPE
No. 54110044-5301
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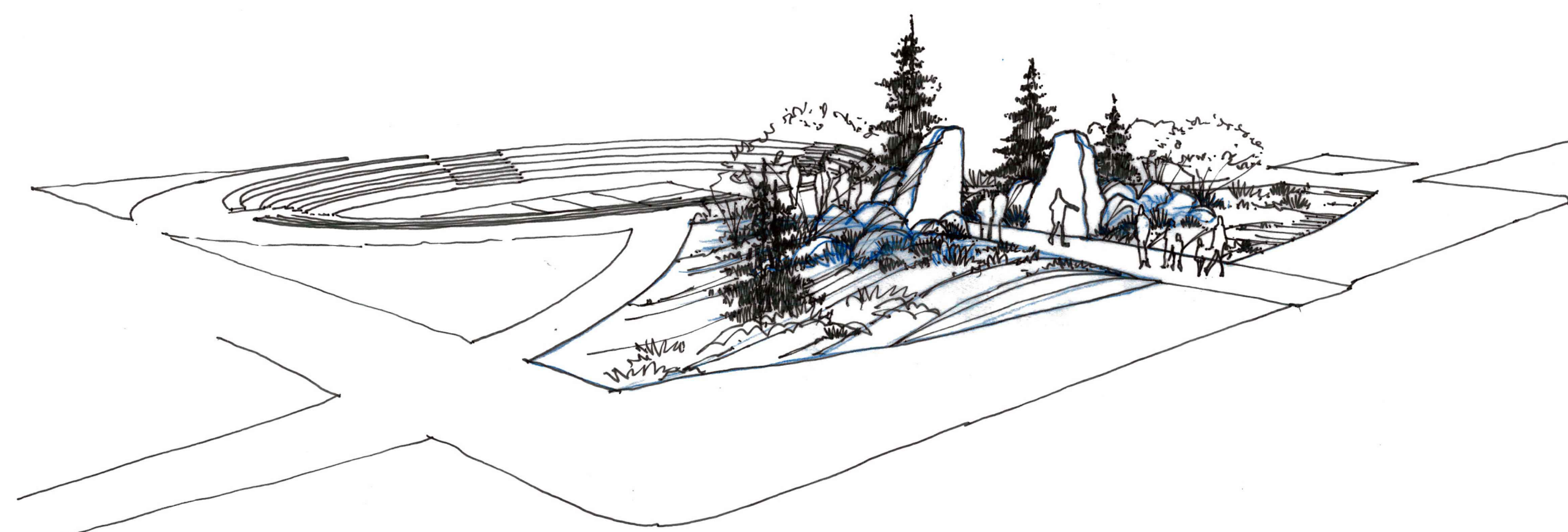
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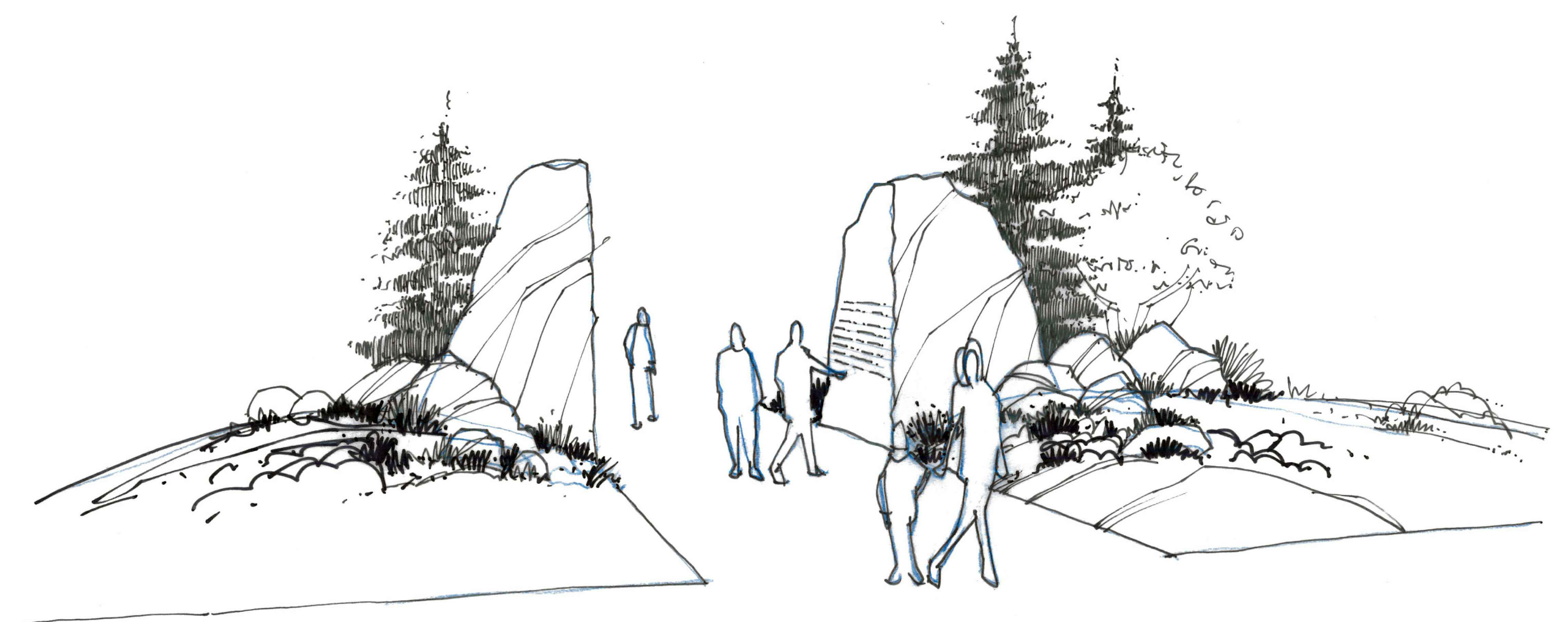
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Gateway & Patriots Gallery - Plan



Gateway & Patriots Gallery - Sketch 1



Gateway & Patriots Gallery - Sketch 2



Gateway & Patriots Gallery - Sketch



Gateway & Patriots Gallery - 3D Visualization

