# Payson Park Improvement Project

Payson Park has begun to see reduced functionality over the years because of a few factors. The park's location between the two major roadways, Ocean Ave and Baxter Boulevard, means that the park is often used as a throughway, particularly for vehicles attempting to get onto I-295. Additionally, a few parts of the park such as at the sledding hill, the area along the multipurpose field and Arboretum Road, and the parking area by the public bathroom have had drainage problems such as perpetual wetness and standing water in some locations. The two major parking lots in the park also have degraded over time. This improvement project aims to provide solutions to these problems as well as designs for new and improved amenities, including an improved skating pond, additional pedestrian pathways, and an open-air pavilion design. The outcome of the project is to improve the functionality of the park through increased pedestrian safety, pedestrian accessibility, and overall improvements to park amenities that will benefit the average park user.

# Parking Lot Improvements

## Demolition and New Construction Plans

The Parking Lot Demolition and New Construction Plans serves as the first step in rehabilitating two of the deteriorating parking lots at Payson Park and adding two ADA compliant parking spaces to service the Park's botanical gardens at the southeast end of Arboretum Rd.

The Sledding Hill Parking Lot and Baseball Field Lot Demolition drawings CD-100 and CD-101 respectively, outline the limit of work and standard procedures to execute the demolition of the existing parking structures in accordance with Maine State laws and regulations. As asphalt demolition is an extremely invasive activity, we make certain that the contractor understands our goals to rehabilitate the existing spaces while causing minimal harm to the existing park. Outlined in the general notes of C-100 and C-101, the contractor is to execute all required sediment and erosion control procedures as well as standard tree protection measures in order to limit the disturbance to the park's natural beauty and drainage infrastructure. Prior to construction ensuing, a Building Permit, Esplanade Excavation Permit and Street Occupancy Permit are to be submitted and approved by the City of Portland.

Drawings C-110, C-111 and C-112 outline the location and dimensions of the proposed parking lots as well as outlining the proper execution of bituminous concrete installation at the proposed sites. Drawing C-110 outlines the renovation of the existing Sledding Hill Lot. The proposed lot has a slightly different configuration than the existing lot as the available parking space is expanded to accommodate two rows of parking rather than the one row the existing lot can service. The improved lot will contain 15% less impervious area than the existing lot, maximizing its serviceability and further contributing to limiting impervious area on the park's surface. Currently, cars headed south on Catafalque Drive have to

make a tight right hand turn to enter the existing sledding hill lot. Additionally, cars leaving the sledding hill lot are serviced by the same stop sign that services Catafalque Drive resulting in congestion at this intersection, especially during events at the park. The congestion at this intersection is accompanied by traffic from Fernald St. which interferes with cars making a left-hand turn out of the sledding hill lot. The Sledding Hill Lot access has been rerouted 75 ft. north of the existing access road to mitigate congestion at this intersection at peak traffic hours. The new access road is designed for a 93 ft. stopping sight distance, versus the existing access road which has a stopping sight distance of 125 ft., making the new access road both safer and more efficient in handling traffic flow. The designed stopping sight distance of the new access road translates to a 20 mph speed limit, however we propose a 15 mph limit to further promote vehicular and pedestrian safety. Figure 1 below shows the location of the proposed Sledding Hill Parking Lot overlaying the existing parking structure.

***Figure 1*** **- Proposed Sledding Hill Parking Lot Location**

The rehabilitation of the existing Baseball Field Parking Lot mainly involves resurfacing the parking lot as the only concern with the safety and serviceability of the lot is the failing existing layer of asphalt. We decided to keep the geometry of the proposed lot similar to the geometry of the existing lot due to the necessity of larger baseball field maintenance vehicles required to maneuver within the lot without disrupting parked vehicles on the perimeter of the lot. The improvements to the Baseball Field Lot are outlined in drawing C-111.

The parking upgrades to Payson Park feature an additional lot located at the southeast corner of the park along Arboretum Rd. defined in drawing C-112 as Arboretum Rd. ADA Parking. This lot provides handicapped citizens with closer parking to the park's popular botanical gardens. These two spaces are dimensioned and accessible per ADA standards. These are the only parking spaces along Arboretum Rd. that can be legally installed as expanded street parking along the entire northern end of

Arboretum Rd. would lie inside the 15 ft. property line buffer requirements depicted in the City of Portland's zoning laws for zone ROS in which the park resides.

## Pavement Striping & Final Grading

The Pavement Striping and Final Grading Plans including pavement and site details serve as the final steps to fully rehabilitate the two deteriorating parking lots as well as furnish and install two ADA compliant parking spaces to service Payson Park's botanical gardens.

At project completion, the three new parking lots will feature a total of 89 rehabilitated and new parking spaces, 81 of which are conventional parking spaces, 4 umpire parking spaces and 4 ADA compliant spaces. The improved Sledding Hill Parking Lot can service up to 46 conventional vehicles, 21 more than the capacity of the existing lots. The proposed Baseball Field Lot lot can service a total of 41 vehicles, 4 of which are reserved for umpire parking and one ADA compliant car space and one ADA compliant van space. The two ADA parking spaces are able to be added due to the asphalt walking path connecting to the northern end of the parking lot. The last two ADA parking spaces are located in the proposed accessible lot at the south east end of Arboretum Rd. All parking spaces will be marked with fast-dry water based traffic paint conforming to AASHTO M247 type I standard. Each accessible parking space features the International Symbol of Access striped in white pavement marking paint using the 4 in. stroke width required.

The Sledding Hill Lot, Baseball Field Lot and ADA Compliant Parking all feature an 8 in. deep, 9 in. tall bituminous concrete curb per Maine DOT 502.04 standard details, helping control the shedding of water, directing water flow to its intended areas. The bituminous concrete curb is proposed at the perimeter of all improved and added parking lots and can be seen in Figure 2 below.

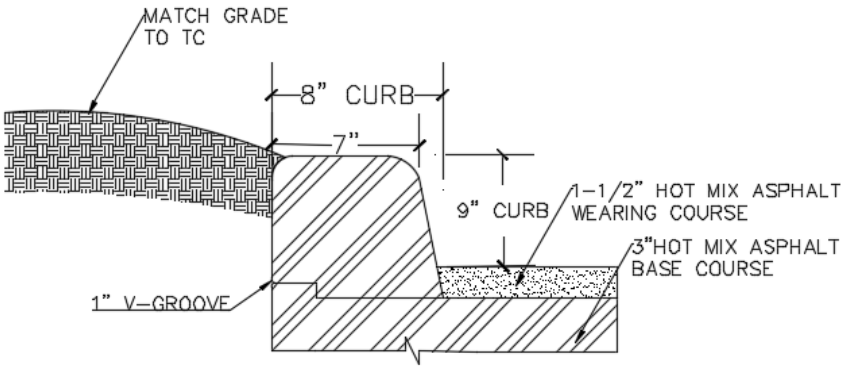



***Figure 2*** **- Proposed Bituminous Concrete Curb**

Due to the rapid flow of water off the existing sledding hill and onto the pavement directly south, the parking lot is designed at a slope of 5% from north to south due to the limited risk of water pooling and freezing during the winters. With the 5% slope, this water will make its way to the three catch basins at the south end of the lot prior to freezing over. Per detail 2 on C-502, grading is required up to the asphalt curb on all sides of the lot to allow the parking lot to accept the runoff from the sledding hill the additional drainage infrastructure is designed to manage. The Baseball Field Lot is sloped at 1% to a gutter system in the center of the lot at 19 ft. above sea level, running to the only catch basin featured in the lot on its south side. The Baseball Field Lot is not subject to as much runoff as the sledding hill lot allowing us to use a 1% minimum slope in both east and west directions towards the "gutter system". The ADA compliant street parking slopes towards the existing catch basin on the left hand side of the Arboretum Rd. right-of-way, similar to the area's existing grade, shedding all of its water to the catch basin and down Arboretum Rd. to additional catch basins 100 ft. down the road.

# Drainage Improvements

## Rain Garden

The client identified the area along Arboretum Road to the northeast side between the multipurpose field and the road itself as a drainage problem. This area drains slowly and remains wet for long periods of time. To mitigate this issue we propose the installation of a rain garden along the northeast side of Arboretum Road. Installing a rain garden instead of traditional stormwater management infrastructure such as a catch basin will treat the stormwater more effectively for discharge into Back Bay, treat the stormwater closer to its source, and serve to uphold the natural beauty of the park environment. The rain garden was designed in accordance with chapter 7.2 of volume III of the Maine Stormwater Best Practices Manual.

The proposed rain garden will have a bottom area of 1500 square ft. It will be roughly 8 ft. wide by 187.5 ft long and run parallel to Arboretum road. This size and shape will provide effective drainage, while also ensuring that there is enough space between it and the multipurpose field for spectators. Some upgradient water will be guided away from the rain garden by our proposed swale extension to prevent over inundation of the plants in the rain garden. A rock forebay should be installed to reduce inflow velocity, preventing erosion. Due to the hydrologic soil group where the rain garden will be sited as well as the small depth to seasonal high groundwater table, it will require an impervious liner and underdrain pipe for stormwater discharge rather than draining into the natural soil below. The liner should be Mirafi 170N or equivalent and have a minimum overlap of seams of 12 in. The underdrain pipe will run parallel to Arboretum road until it connects into the existing catch basin drainage lines. We recommend that the piping should be rigid schedule 40 PVC with an 8 in. diameter slotted every 6 in. and have a 1.5% gradient. A restrictive orifice should be utilized to achieve a 24-48 hour release time. The rain garden will be 38 in. deep in total. From the bottom up the rain garden will consist of 12 in. of pipe bedding material,

18 in. of soil filter material, 2 in. of mulch, and 6 in. of open area below the ground surface to allow for ponding.The proposed cross section can be seen in Figure 3 below. We recommend the pipe bedding material be coarse gravel meeting the MEDOT standard 703.22 for underdrain backfill type B. We recommend the soil filter bed be a silty sand soil mixed with 20-25% by volume fine shredded wood fiber mulch. The filter soil should have more than 8% of material passing the 200 sieve, but have less than 2% clay. The minimum acceptable porosity of this material is 0.39.

The vegetation planted in the rain garden should be tolerable of well drained soils and frequent inundation. Avoid using invasive species. Native plants should be chosen for their tolerance to urban runoff, moisture fluctuation, pollutant loading, light amount, temperature and ph. Full sized plants should be spaced no more than 18 in. to 3 ft. apart in the center. Full plant cover should be achieved within one year. We suggest a landscape designer or architect, and the City of Portland arborist should be involved to select the appropriate plants for site conditions. A table of vegetation options and key characteristics is below. Recommendations are taken from the University of Maine Cooperative Extension: Garden and Yard.

The rain garden should be inspected semi-annually and after major rain events. Debris, sediment, and weeds should be removed. Mulch should be changed annually. If ponding in the rain garden exceeds 48 hours, then the rain garden can be rototilled or the top few inches of the filter media can be replaced to ensure proper drainage.

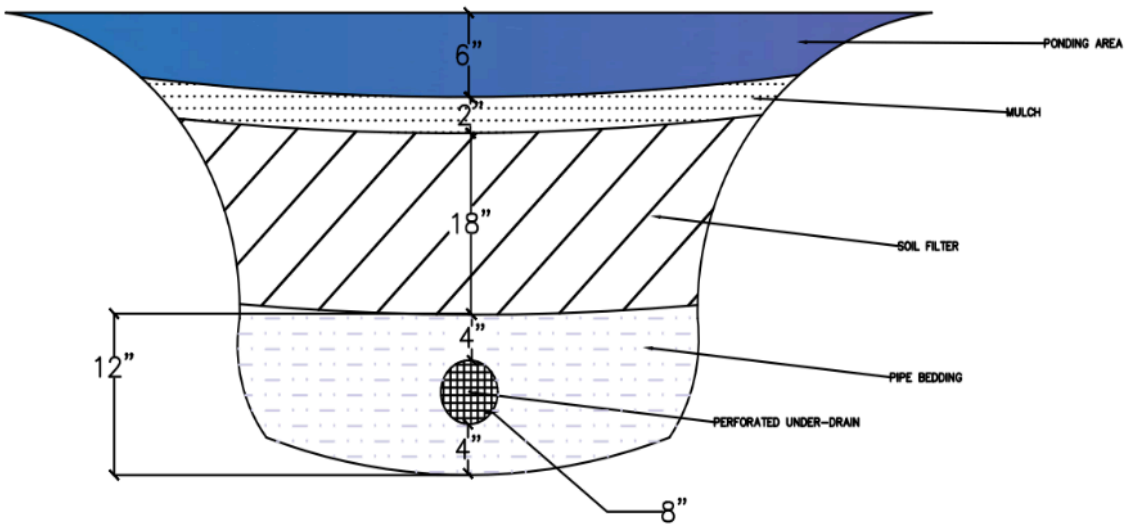



***Figure 3*** **- Rain garden cross section**

**Table 1**: Rain Garden Vegetation Options

| Scientific Name | Common Name | Key Characteristics |
|---|---|---|
| **Shrubs** | | |
| *Clethra alnifolia* | Summersweet | Low maintenance, can tolerate full sun and heavy shade, prefers constantly moist sandy soils (bloom May to June) |
| *Hamamelis virginiana* | Common Witchhazel | Low maintenance, thrives in moderately moist, well drained soils (bloom October to December) |
| *Ilex verticillata* | Winterberry | Low maintenance, easily grows in moist organic loams (blooms June to July) |
| *Viburnum dentatum* | Arrowwood | Prefers moist loam, grows in variety of soils (bloom May to June) |
| **Perennials** | | |
| *Asclepias incarnata* | Swamp Milkweed | Easily grown in wet soils and full sun (bloom July to August) |
| *Chelone glabra* | White Turtlehead | Low maintenance, grows best in wet soil with part shade (bloom August to October) |
| *Iris versicolor* | Blue Flag | Low maintenance, easily grows in wet soils and full sun (bloom May to June) |
| *Zizia aurea* | Golden Alexanders | Medium maintenance, grows in well drained soils (blooms May to June) |
| **Clump Grasses** | | |
| *Carex stricta* | Tussock Sedge | Low maintenance, Grows in moist to wet soils, good ground cover |
| *Juncus effusus* | Common Rush | Easily grown in wet soil and full sun, Low maintenance |
| *Panicum virgatum* | Switchgrass | Prefers moist sandy soils and full to part sun, low maintenance |
| **Ferns** | | |

| | | |
|---|---|---|
| *Matteuccia struthiopteris* | Ostrich Fern | Easily grown in medium to wet soils |
| *Osmunda claytoniana* | Interrupted Fern | Easily grown in wet soils, Low maintenance |
| *Osmundastrum cinnamomeum* | Cinnamon Fern | Easily grown in wet soils and part to full shade, Low maintenance |

## Vegetated Swales

Two other major problem areas identified by the client were at the base of the sledding hill and the parking lot located close to the bathroom area. Both these areas fail to drain quickly and water pools at the top of the parking area by the bathroom closest to the baseball field. In order to retain open areas for park usage and preserve the park's natural beauty, we primarily focused on low impact development solutions. We propose that the existing vegetated swale that loops around the baseball field be extended in both directions. One side will extend along the new sledding hill parking lot and continue into the open field and curve up towards the intersection of Arboretum Road and Ocean Ave in order to direct some water away from the proposed rain garden. We also propose that another smaller vegetated swale extension be constructed as a solution for the drainage problem in the area by the bathroom parking lot. This extension will run from the edge of Catafalque road to the woods, where there is a natural area of lower elevation the swale can discharge into. The swales will relocate water away from the problem areas and bring it to this natural area of lower elevation where water already tends to collect.

The swale extensions were designed in accordance with section 8.1 of volume III of the Maine Stormwater Best Practices Manual. They have been designed to reduce the peak flow of a 10-year storm to 3 ft./sec. At maximum. The 10-year peak flows were calculated using the rational method as recommended by the Maine Stormwater Best Practices Manual. The design parameters for both of the proposed swales can be seen in the figures below. We recommend each swale have a downswale grade of 2% and side slopes of 3H:1V.

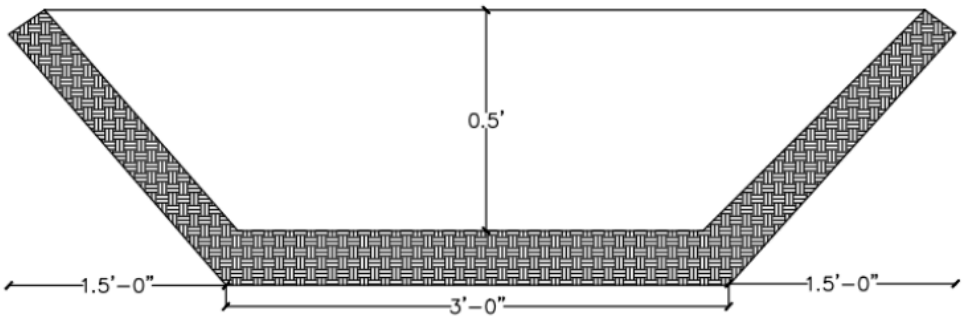



***Figure 4*** **- Sledding hill lot swale cross section**

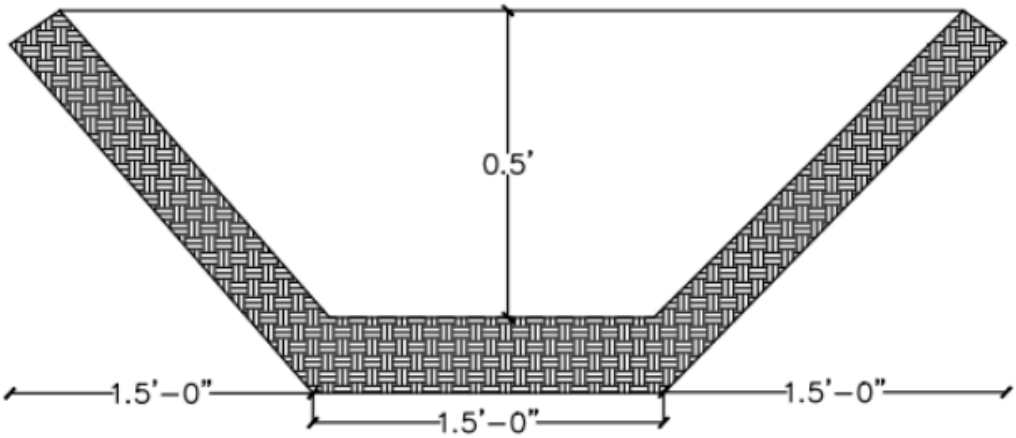



***Figure 5*** **- Bathroom lot swale cross section**

## Sledding Hill Lot Catch Basin Installations and Relocation

When the sledding hill parking lot is reconstructed, we propose that two additional catch basins be installed and connected to the existing drainage system. Two catch basins currently exist in the sledding hill lot. We propose that the basin closer to Catafalque Road, in the middle of the lot, be relocated to be aligned with the newly installed catch basins. The other existing basin will be located outside of the newly designed lot, and will remain in its place to serve as an area drain for stormwater passing along the side of the new lot. The area surrounding this catch basin will be regraded so that the basin can effectively receive incoming stormwater.

## Stormwater Asset Maintenance

We completed a survey of the existing drainage infrastructure that we could locate in the park in order to get a sense of their current condition. We rated these assets based on a few criteria, which can be observed in the existing drainage infrastructure spreadsheet, and determined an overall score from 1-20, with a higher score signifying an asset is in greater need of replacement or rehabilitation. This should be a useful tool in identifying where to spend money in order to maintain and improve the existing drainage infrastructure system. On this spreadsheet we also provided a table from the Maine Stormwater Best Management Practices manual, which outlines a maintenance schedule and procedures for various stormwater management assets.

# Open-Air Pavilion

## Structural Layout and Location

Per your request, we are providing a design for a 20 ft. x 40 ft. timber framed pavilion. The design consists of eight perimeter columns and a gable roof with 2 ft. overhangs. The roof consists of ½ in. plywood and asphalt shingles and is at a pitch of 8/12.


***Figure 6* - Proposed pavilion location**

Figure 6 shows the proposed pavilion location. It is adjacent to the existing skating pond and just across the street from the tennis courts. Access to the pavilion is provided via the nearby walking trail and also parking just off of Catafalque Dr. We believe this is a desirable location as it could provide space for people to change into ice skates during the winter. It can also be used as a seating area for park-goers to relax and enjoy the nearby amenities.

## Material Selection

As we were creating our vision for the open-air pavilion, a few different materials were considered. Wood, concrete and steel were each considered for the primary material selection. To decide on a material, we performed a multi-criteria decision analysis. This involved ranking each of the materials based on factors that we felt were important. These included cost, aesthetics, structural performance and practicality. We used a color coding system to indicate which materials perform better in each category, with red being the worst, green being the best, and yellow being mediocre. These results are shown in Table 2. It was difficult to estimate the cost without knowing the quantities of each material, so we based it on the average cost of a pavilion of similar size. We used our knowledge of stress strain curves to rank structural performance based on compressive strength. Ultimately, practicality and aesthetics were the deciding factors, as we believe a wood pavilion will be the optimal choice.

**Table 2:** Material Multi-Criteria Decision Analysis

| Material | Cost | Aesthetics | Structural Performance | Practicality |
|---|---|---|---|---|
| Wood | | | | |
| Steel | | | | |
| Concrete | | | | |

## Structural Design

We designed the pavilion framing members in accordance with the 2024 Nation Design for Wood Construction. Any necessary assumptions that we made are documented in the calculations appendix. We propose that all framing members are spruce-pine-fir lumber of grade 1. This is a lumber type that is widely available in Maine. Drawings S-101 and S-102 show the proposed framing plan. Drawings S-201 and S-202 provide an elevation view of the structure from both the northeast side and the northwest side. Drawing S-601 contains a 3D model to help visualize the structure.

## Foundation Design

We propose that the pavilion foundation will consist of concrete pilasters and footings at the base of each post. We designed the foundation in compliance with ACI 318 and ASCE-7 code. Isolated footings are proposed to carry the loads from the pavilion posts into the ground below. This design will allow for protection against frost heave and potential soil movement. The pilasters will extend 3 ft. into the ground and sit 1 ft. above ground to prevent the wooden posts from making contact with the ground. This will mitigate the potential for the wooden posts to rot. Drawings S-501 and S-502 show details of the proposed foundation system.

# Skating Pond Improvements

As part of our amenities improvement plan, we have provided our suggested improvements to the existing skating pond. As is, the skating pond doesn't efficiently hold water. To solve this problem, information about the type of soil at the base of the pond was required. The USDA Natural Resource Conservation Service web soil survey was utilized to determine this. The type of soil that makes up the majority of the base of the pond was determined to be lamoine silt loam. This soil has a moderately high saturated hydraulic conductivity at the surface and the conductivity decreases as we move deeper underground. This means that when the soil is fully saturated the water can pass through it relatively quickly. There are two limiting factors for the solution. The first is that the majority of the soil in the park is contaminated which makes it more expensive to dispose of. The second is that we don't want ponding during the summer months so the soil will have to be able to drain when the pond isn't frozen. We determined that the most viable solution would be to install a plastic ice rink liner before flooding the area. This option will make the area retain a much higher percentage of water as well as allowing the area to properly drain in summer months and will not require any soil to be excavated or any new soil to be brought in. The rink liner will need to be replaced each year due to wear and tear from a season of use.

The other portion of this upgrade plan is to expand the skating pond. The site plans showed that the existing skating pond was restricted by a pedestrian walkway, a little league field, and the tree line on the edge of the property. Due to these factors and to avoid moving any other obstacles the only way to expand the skating pond was to lengthen it towards West Kidder Drive. By lengthening the pond by 30ft it will increase the area by over 520 square yards. With this expansion the total volume of soil that will need to be moved off side will be about 175 cubic yards of soil. The expansion plan is drawn on SP-100.

# Traffic Calming

## Short Term Solution

Arboretum Rd is the main focus for our traffic calming report because this is the main road used to go from Ocean Ave to I 295. The peak volume of traffic is during the morning and afternoon commute,

around 8:00 AM and 5:00 PM, shown in Figure 7. To reduce the daily volume of traffic and vehicle speed on Arboretum Rd we propose to narrow the roadway by removing 5-feet of pavement from the eastern side of the road and installing a pedestrian walkway with the new area. Narrowing the road way will allow space for the pedestrian walkway, which will be permeable stone dust and lead to a raised pedestrian crossing to provide access to the proposed arboretum parking lot.

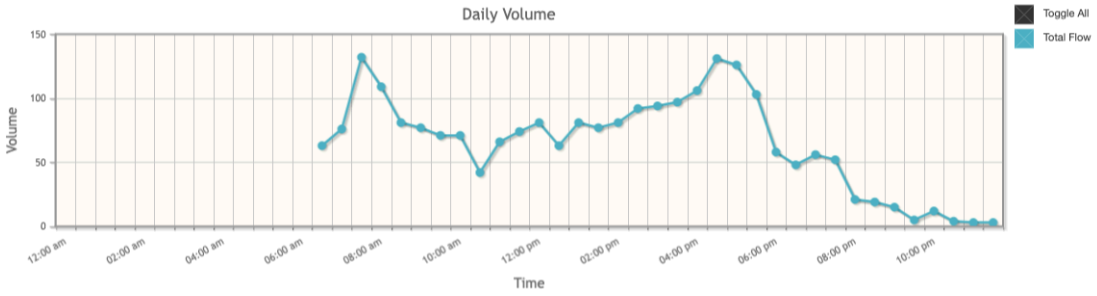



***Figure 7* - Daily volume of cars on Arboretum Road (4/26/22)**

Narrowing the roadway will provide space for the pedestrian walkway. Studies have also shown that narrowing the roadway can reduce vehicle speed which increases pedestrian safety. A 2022 study on Safer Pedestrian Crossing Facilities on Low-Speed Roads focused on ways to increase the drivers' awareness of pedestrian crossings. The study consisted of 55 participants that used a simulation to compare a control with the use of physical narrowing and marking narrowing, as well as other methods. After the simulation the participants were asked to score the methods from 1 (least effective) to 5 (most effective). The mean ratings for physical and marking narrowing were 3.8 and 3.5 respectively. In addition their data showed the mean speed was reduced 3.6 mph for physical narrowing and about 2 mph for marking narrowing (Hussain). Given this data we suggest reducing the road width to 15-feet which allows for Maine DOT minimum 11-foot lane width with a 2-foot shoulder width on each side. The marked lane will be noticeably more narrow and the overall width of the road will be reduced by about 5-feet until it reaches the arboretum.

The reduction in width of Arboretum Rd provides enough space to meet the minimum sidewalk width of 5-feet as stated in the City of Portland Technical Manual. The pedestrian walkway will extend from Ocean Ave down Arboretum Rd and end at a crosswalk to provide access to the Arboretum and proposed Arboretum parking lot. The walkway will also branch off to connect to the existing asphalt pedestrian walkway to reach the sledding hill parking lot. Additional walkways go from the Baxter Blvd crosswalk to the dirt parking lot along Inlet Rd and from the Inlet Rd parking lot to Catafalque Dr, where it will cross at the baseball field parking lot to provide safe access to the existing pedestrian walkway along Catafalque Dr, as well as a walkway to the proposed pavilion. All walkways are shown in Figure 8 below. Walkway 1 is from Ocean Ave to the arboretum. Walkway 2 is from Arboretum Rd to the sledding hill pedestrian path. Walkway 3 is from the Inlet Rd parking lot to Baxter Blvd. Walkway 4 is from the Inlet Rd parking lot to the baseball field parking lot, and Walkway 5 is from the sidewalk along Catafalque Rd to the proposed pavilion.


***Figure 8*** **- Locations of pedestrian walkways**

The surface of the pedestrian walkways will be composed of graded aggregate base overlain by stone dust (details are shown in C-700). The proposed plan adds two crosswalks to the park in order for pedestrians to safely move from one side of the park to the other. The crosswalk on Arboretum Rd will be raised to encourage slower vehicle speeds and pedestrian safety. The crosswalk on Catafalque Rd will be perpendicular to the northmost corner of the existing baseball field parking lot to provide access to the existing walkway and be far enough away from the Catafalque Rd and Inlet Rd intersection.

We have not conducted a traffic study on the park and recommend conducting one before utilizing any of the proposed solutions. The use of a traffic study will give more accurate information on the daily volume of cars and how they may be impacted by the proposed traffic calming methods. The study may also be useful to analyze the impact on surrounding roads that may see an increase in daily volume caused by the calming methods within the park.

# Conceptual Park Plan

## Objectives

We are seeking to provide the client with a conceptual park plan that provides an ideal park layout in terms of traffic and pedestrian flow, accessibility, and usage. These parameters are focused primarily around pedestrian and park user safety and overall accessibility to the park.

## Design Summary

The redesign of Payson Park helps to mitigate existing concerns of high congestion throughout populated areas of the park at high speeds, leading to questions about pedestrian safety. The design primarily revolves around the relocation and expansion of Catafalque Rd. along the east border of the park. Currently, Catafalque Road splits the park in half, serving as an alternate route for commuters to access the I-295 junction just south of the park via Baxter Boulevard. This forces pedestrians and users of Payson Park to cross the road unsafely if they want to access different parts of the park. Moving Catafalque Road to the easternmost side of the park reduces the risk for pedestrians as all recreational facilities, aside from the community garden, will now lie west of the proposed relocation. We propose turning Catafalque Road into a full 2-way street spanning from Ocean Ave on the north end and Baxter Boulevard on the south end. The newly configured Catafalque Road to be able to handle traffic flow and give commuters a passage between Ocean Ave and Baxter Boulevard while also reducing the need for pedestrians to cross the busy street. Catafalque Road will be able to support similar traffic flows, meaning there should not be an increase in traffic volume along Washington Ave, which could potentially require additional solutions to accommodate an increase in traffic volume. The relocation of Catafalque Road will benefit not just pedestrians but motor vehicles and residents and businesses within the immediate surrounding areas of the park.

With Catafalque Road now capable of handling 2-way traffic, we were able to cut 815 LF off the south end of Arboretum Road and incorporate a 1-way jug-handle loop at the end of the road. Arboretum Road is reconfigured to become a 2-way from its north side hitting Ocean Ave to the jug handle that turns cars around to the opposite lane. The main purpose of Arboretum Road is to provide access to the arboretum and its ADA parking spaces, and to give a second access point to the sledding hill parking lot. By removing the connection between Arboretum Road and Catafalque Road, the existing issue of vehicles traveling very quickly down Arboretum Road will be mitigated as these vehicles will instead travel down Catafalque Road to reach Baxter Boulevard. The sledding hill parking lot was slightly reconfigured as we propose the lot be connected to both Arboretum Road and Catafalque Road via access roads providing 66 parking spaces for park users. The same parking lot configuration is used twice along the east side connecting to Catafalque Road and serves as access to the park's ammenities. A last parking lot is proposed at the end of Inlet Road. Inlet Road is cut similarly to Arboretum Road, however instead of a jug-handle, a parking lot is proposed at the end of the road serving 33 cars and still providing access to the lake in the park's southwest corner. In total, we propose 231 new parking spaces as a result of the proposed transportation upgrades, resulting in limited or no street parking being necessary.

Lastly, the park's conceptual plan includes many new and relocated amenities such as three new baseball fields and a baseball complex, tennis courts, three basketball courts, an enlarged skating pond and an open air pavilion. Connecting these amenities is a 10 foot wide stone-duct walking path network that will enhance park-goers experience and increase pedestrian safety and access to the park. As noted, all walking paths are located west of the relocated Catafalque Road, preventing the chance of pedestrian safety being risked by traffic flow through the park. At any walking path intersection point with either Arboretum Rd. or Catafalque Road, crosswalks are proposed to facilitate safe pedestrian traffic. Crosswalks are dimensioned and striped per Maine DOT standard.

# Cost

Table 3 outlines the cost breakdown for each of the suggested improvements. In total, we expect the project to cost just over $614,000. The parking lot improvements throughout the park are the most expensive improvement with an estimated cost of over $441,000. The majority of the cost comes from the striping, final grading and details portion totalling about $390,000 and about 84% of that is for asphalt.

The proposed drainage improvements to the park, excluding the catch basin installation and relocation as they were factored into the parking lot rehabilitation costs, would be just under $45,000. We estimated that the rain garden construction would cost about $29,000. The largest costs involved would be excavation, the cost of underdrain piping, and the cost of cover plants. We estimate swale construction would cost approximately $15,000. For vegetated swales, the biggest cost we estimated was the cost of silt fences due to the long affected area. The cost of the swales themselves excluding environmental protection measures was only about $4,000.

The expansion and the liner for the ice rink will be a total of about $11,000 the first year then about $4,300 each year for the new liner. These improvements will add more space for the skating pond and make sure that it efficiently holds water when flooded.

For the short term traffic calming the total cost will be about $19,000. This is the estimated cost to narrow the roadway on Arboretum Rd, install multiple walkways throughout the park and install a raised pedestrian crosswalk to the arboretum. The largest expense for this is the excavation and labor to narrow the roadway.

The proposed open air pavilion is expected to cost approximately $40,000. This factors in the cost of materials, labor and excavation. Since the design utilizes timbers of unusual dimensions, the cost for the cross beams and longitudinal beams may be inaccurate for the Portland area. 8x20 and 6x14 beams are unavailable at local lumber yards, so there may be an additional cost to transport the required materials to the site.

**Table 3:** Total Project Cost

| Total Project Cost | |
|---|---|
| Striping, Final Grading and Details | $392,988 |
| Parking Lot Demo | $48,882 |
| Drainage Improvements | $47,871 |
| Skating Pond | $10,091 |
| Traffic Calming | $18,549 |
| Open Air Pavilion | $40,000 |
| **Subtotal** | **$558,381** |
| **Contingency (10%)** | **$55,838** |
| **Total** | **$614,219** |

# Other Considerations and Next Steps

Due to the limited accuracy of soil information used in the design of the rain garden, we would suggest that a subsurface investigation be performed prior to construction to verify the depth to seasonal high groundwater table and depth to bedrock as well as verifying the hydrologic soil group of the soil in that location. These parameters have an effect on whether an impermeable liner and underdrain piping system will be required. If possible, using an impermeable liner should be avoided to reduce overall construction cost. The proposed extension of the swale is essential in diverting some upgradient water away from the rain garden to stay under the maximum allowable area that can drain into a rain garden. The rain garden as designed should not be constructed unless a swale or some other measure is first implemented to divert some water away from the rain garden.

We designed the pavilion foundation based on an assumption for allowable bearing capacity. As aforementioned, we used the NRCS Web Soil Survey to determine that the soil in the proposed location is lamoine silt loam. We assumed that this soil falls under the “silty clay” category when making an assumption for bearing capacity. We recommend that a more comprehensive geotechnical study is conducted before proceeding with the proposed foundation design. We also recommend considering an alternative design that utilizes glulam cross beams instead of sawn lumber. The provided design consists of only sawn lumber, but it became apparent that unusually large dimensions for beams would be necessary to meet the design requirements. Another potential solution would be to add a row of columns below the ridge line, but we wanted to keep the interior open, as it would allow the park to utilize the space in any way that they please. Time constraints prohibited us from looking into these other solutions.

The proposed conceptual park design seeked to provide an optimized park layout. Its implementation would be a major project requiring significant reorganization of the park and its

amenities. It is not compatible with all the other proposed solutions in this improvement plan. The new proposed roadway would have to cut through where the existing drainage pond is, forcing it to be partially relocated. It would also alter the amount of previous area draining into proposed stormwater management assets, which would affect whether or not they would be able to handle the necessary volumes of water. Due to time constraints, little design work was performed surrounding the conceptual park plan. Proposed relocations of amenities are suggestions based on optimizing space and do not consider practical issues such as soil type and drainage. Should the city of Portland opt to undertake this project or something similar, then applicable professional guidance should be sought, such as from a landscape and transportation engineer.

OCEAN AVENUE

PROPERTY LINE AT ROAD EDGE

PROPERTY LINE AT ROAD EDGE

15'

15 FT. PROPERTY LINE SETBACK PER MAINE LAW

REMOVE EXISTING SAPLING

EXISTING SLEDDING HILL

59

56

53

50

47

44

41

38

35

32

CATAFALQUE DRIVE

R10'-2"

30'-6"

136'-6"

PRESERVE EXISTING ASPHALT PEDESTRIAN WALKWAY

EXISTING PARKING STRUCTURE (TO BE DEMOLISHED)

PRESERVE EXISTING TREES

SAW-CUT WHERE PARKING LOT ACCESS MEETS CATAFLAQUE DRIVE

CATAFALQUE DRIVE

2'-4"

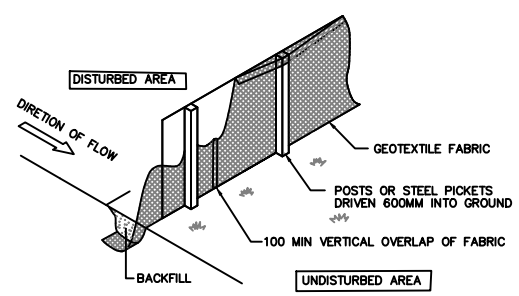
2'-7"

PRESERVE EXISTING CATCH BASIN FOR FUTURE RELOCATION

PRESERVE EXISTING CATCH BASIN

PRESERVE EXISTING TREES

23'-9"




SEDIMENT FENCE DETAIL

NOT TO SCALE

General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

EXISTING SLEDDING HILL LOT DEMOLITION PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | CD-100 |
| Date: 2/2/24 | |
| Scale: 1" = 40' | |

PRESERVE EXISTING ASPHALT PEDESTRIAN WALKWAY

PRESERVE EXISTING STONE DUST PEDESTRIAN WALKWAY

EXISTING FENCE TO REMAIN

PRESERVE EXISTING TREES

ARBORETUM RD.

CATAFLAQUE DRIVE

180'–8"

89'–5"

52'–5"

244'–5"

EXISTING PARKING STRUCTURE (TO BE DEMOLISHED)

EXISTING STRUCTURE TO REMAIN

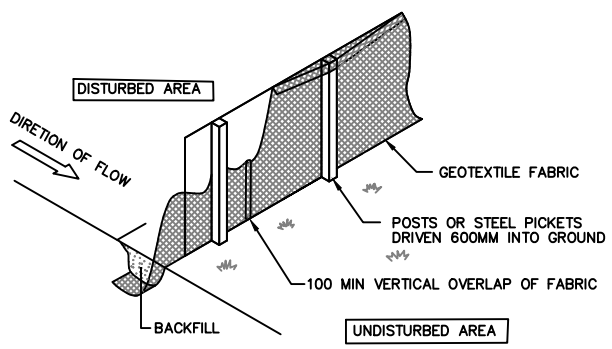
PRESERVE EXISTING CHAIN–LINK FENCE

SAW–CUT WHERE PARKING LOT ACCESS MEETS CATAFLAQUE DRIVE

EXISTING BASEBALL FIELD TO REMAIN

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL PROTECT ALL SURROUNDING TREES INDICATED IN THE DRAWINGS BY WRAPPING ENTIRE TRUNK WITH 2X4 LUMBER OR OTHER PROTECTIVE MATERIAL.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EROSION CONTROL MEASURES BEFORE IMPROVEMENTS CAN TAKE PLACE. THIS INCLUDES BUT IS NOT LIMITED TO SILT FENCES, SILT SACKS AND CATCH BASIN SILT SACKS.
4. DEMOLITION TO ONLY OCCUR TO BITUMINOUS CONCRETE PAVEMENT AT THE DIMENSIONS SPECIFIED IN THE DRAWINGS
5. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT–OF–WAY.
6. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 50 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
7. SAW–CUT AT JOINTS WHEN NECESSARY.




SEDIMENT FENCE DETAIL

NOT TO SCALE

General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

EXISTING BASEBALL FIELD LOT DEMOLITION PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |


Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473


Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CD–101 |
| Date: 2/2/24 | |
| Scale: 1" = 40' | |

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EROSION CONTROL MEASURES BEFORE IMPROVEMENTS CAN TAKE PLACE. THIS INCLUDES BUT IS NOT LIMITED TO SILT FENCES, SILT SACKS AND CATCH BASIN SILT SACKS.
3. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT-OF-WAY.
4. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 50 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
5. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
6. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58-28/PG64-28 AT A RATED TEMPERATURE OF 275-325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
7. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR PER MAINE DOT SECTION 401.

OCEAN AVENUE US RT-9

PROPERTY LINE AT ROAD EDGE

PROPERTY LINE AT ROAD EDGE

15 FT PROPERTY LINE SETBACK PER MAINE LAW

59 56 53 50 47 44 41 38 35 32

EXISTING SLEDDING HILL

FILL AS NEEDED TO MATCH GRADE OF TOP OF BIT. CONCRETE CURB (BCC)

PROPOSED 28.4' ROAD CUT MATCH PAVEMENT ELEVATIONS

PROPOSED BITUMINOUS CONCRETE DRIVEWAY

CATAFALQUE DRIVE

BITUMINOUS CONCRETE CURB (BCC)

207'-8"

221'-9"

21'

18'

21'

30'-7"

47'-8"

38'-8"

60'

24'

EXISTING PARKING STRUCTURE TO BE DEMOLISHED (SEE CD-100)

PROPOSED BITUMINOUS CONCRETE PARKING

PRESERVE AND MAINTAIN EXISTING CATCH BASIN

DEMOLISHED AREA TO BE FILLED AND GRADED PER FINAL GRADING PLANS

General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PROPOSED SLEDDING HILL PARKING LOT

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

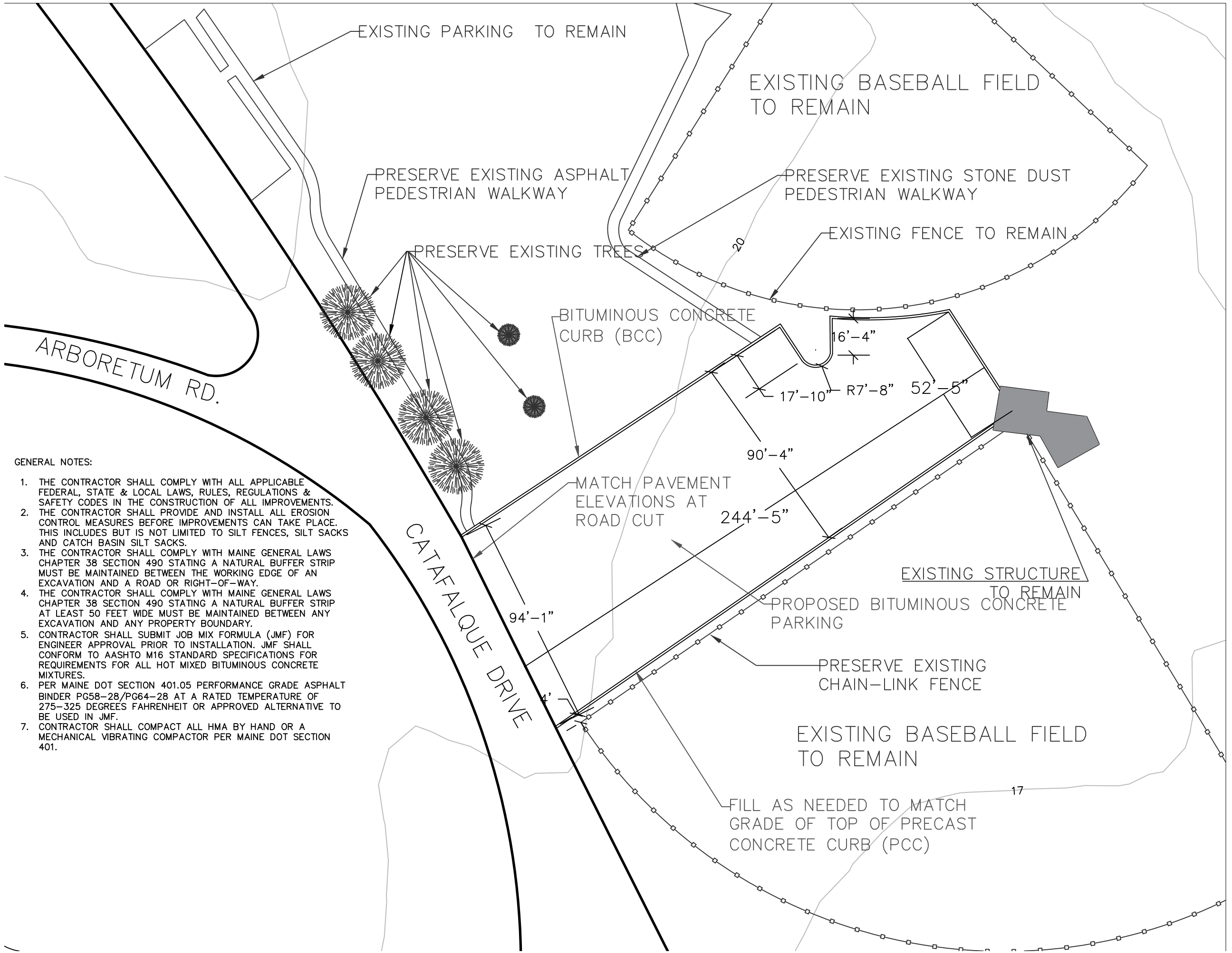
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-110 |
| Date: 2/2/24 | |
| Scale: 1" = 40' | |




GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EROSION CONTROL MEASURES BEFORE IMPROVEMENTS CAN TAKE PLACE. THIS INCLUDES BUT IS NOT LIMITED TO SILT FENCES, SILT SACKS AND CATCH BASIN SILT SACKS.
3. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT–OF–WAY.
4. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 50 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
5. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
6. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58–28/PG64–28 AT A RATED TEMPERATURE OF 275–325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
7. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR PER MAINE DOT SECTION 401.

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PROPOSED BASEBALL FIELD PARKING LOT

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

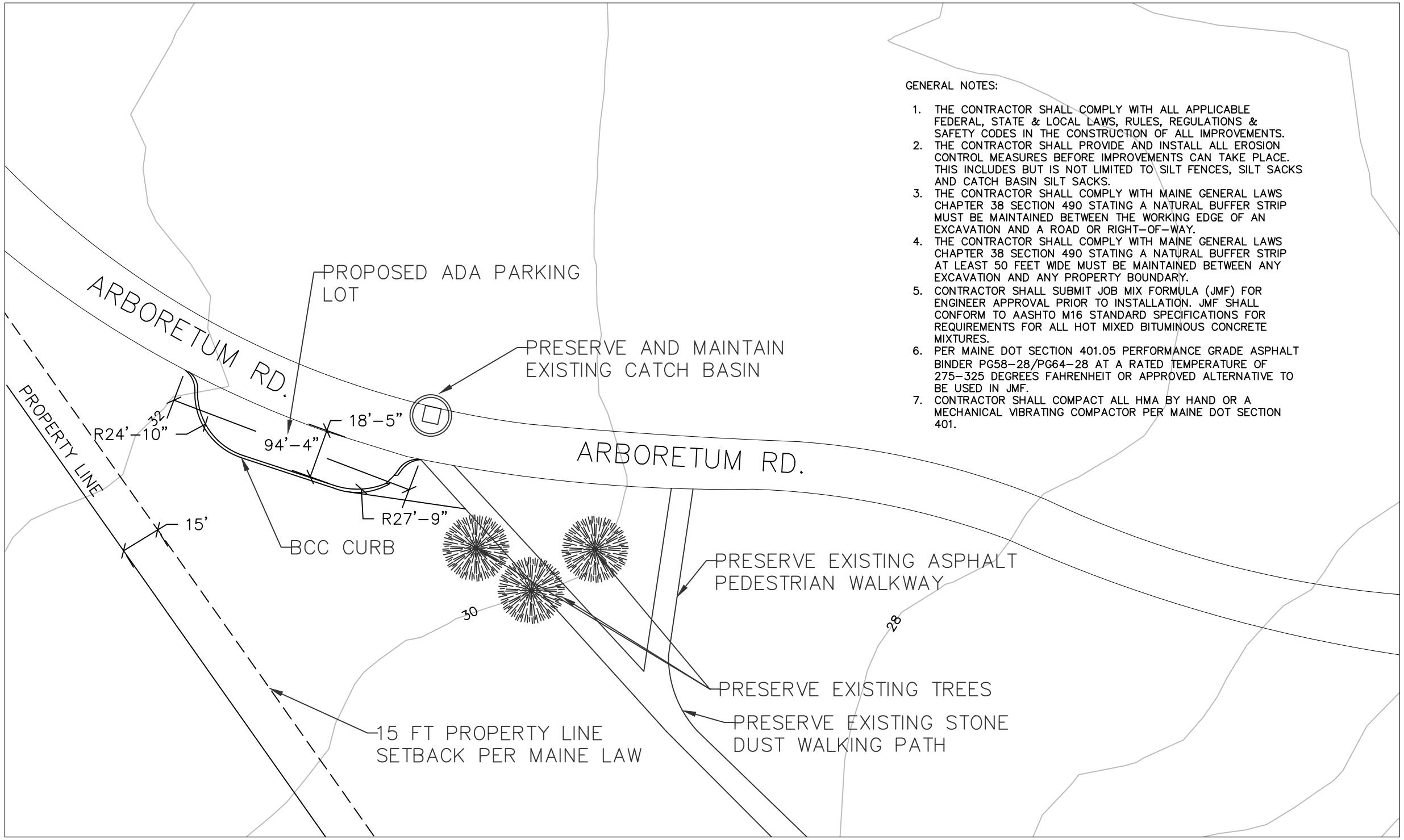
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C–111 |
| Date: 2/2/24 | |
| Scale: 1" = 40' | |




GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EROSION CONTROL MEASURES BEFORE IMPROVEMENTS CAN TAKE PLACE. THIS INCLUDES BUT IS NOT LIMITED TO SILT FENCES, SILT SACKS AND CATCH BASIN SILT SACKS.
3. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT-OF-WAY.
4. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 50 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
5. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
6. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58-28/PG64-28 AT A RATED TEMPERATURE OF 275-325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
7. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR PER MAINE DOT SECTION 401.

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PROPOSED ARBORETUM RD. ADA STREET PARKING

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

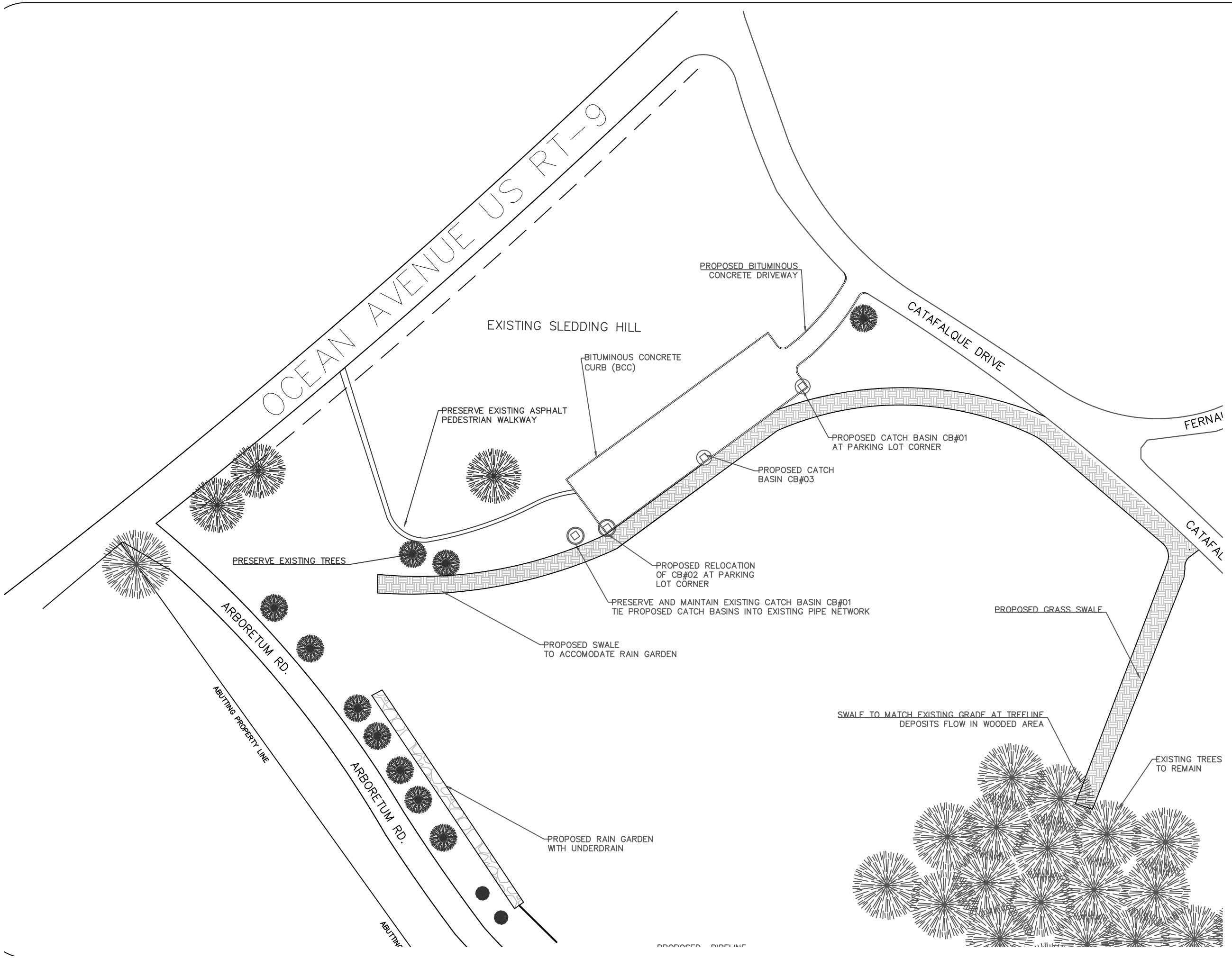
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-112 |
| Date: 2/2/24 | |
| Scale: 1" = 40' | |




General Notes

BACK ROW ENGINEERING

NEW DRAINAGE PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

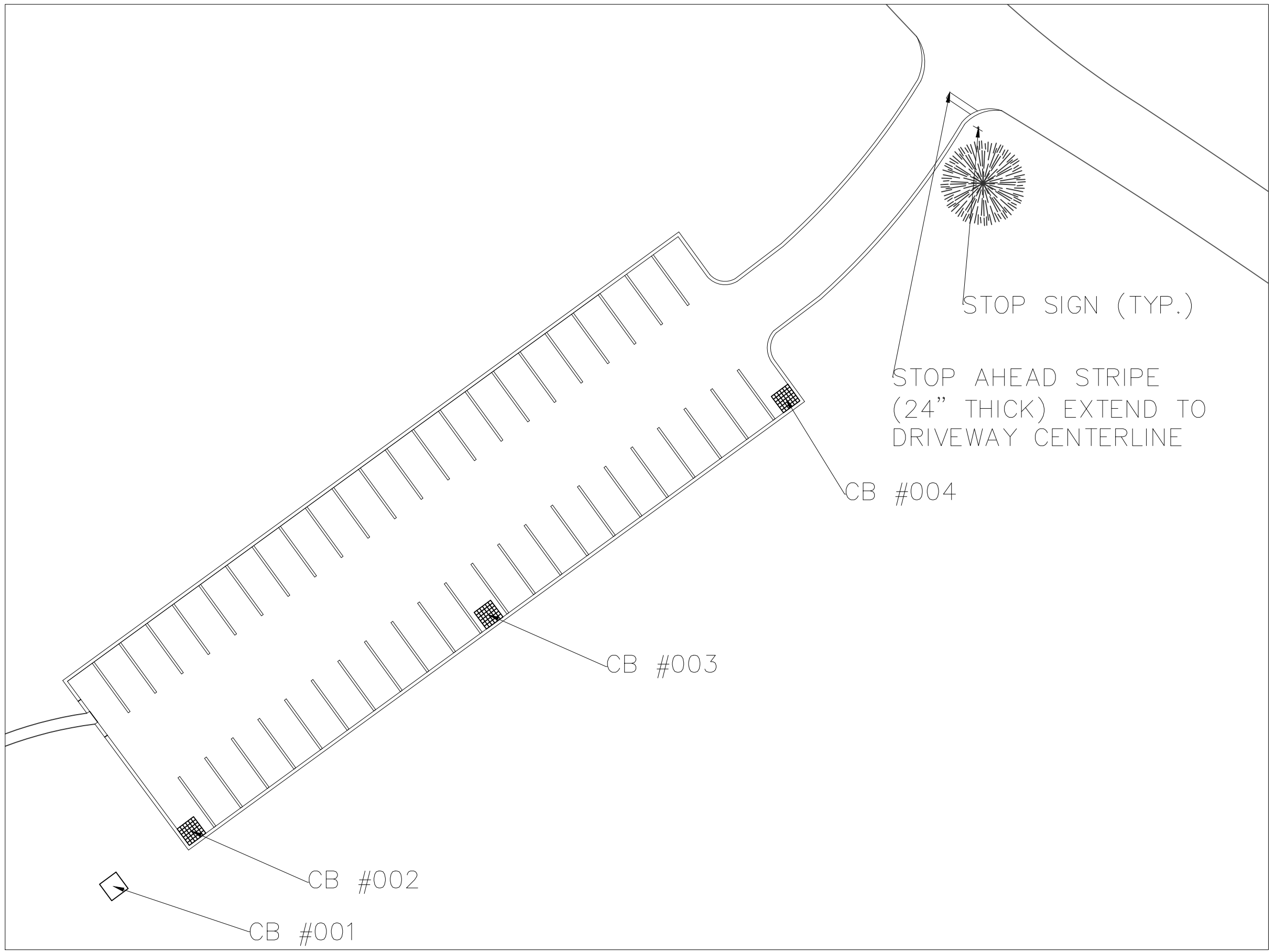
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-202 |
| Date: 03/01/24 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW
ENGINEERING
UNIVERSITY OF MAINE

SLEDDING HILL LOT STRIPING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

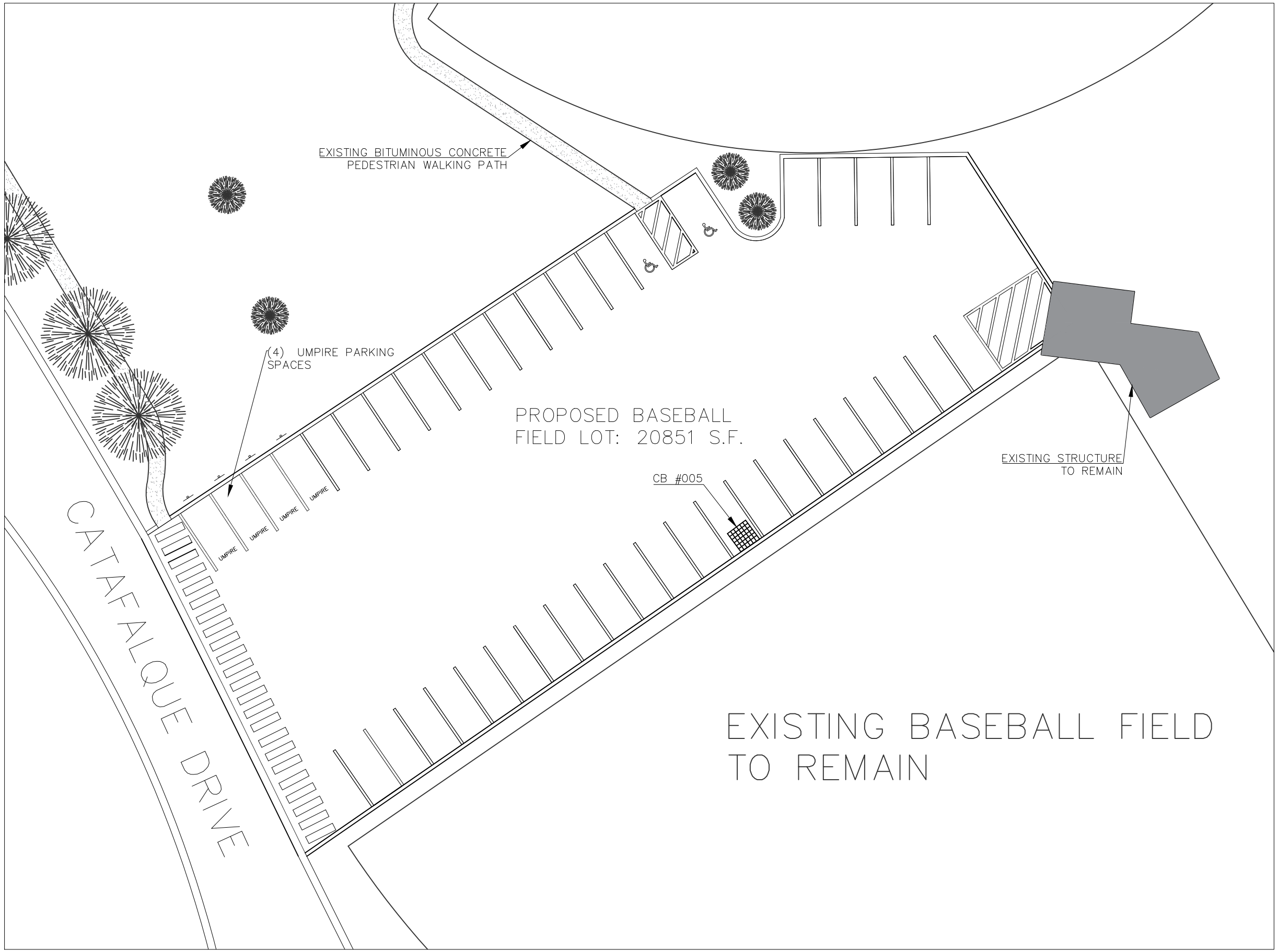
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-301 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

BASEBALL LOT STRIPING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

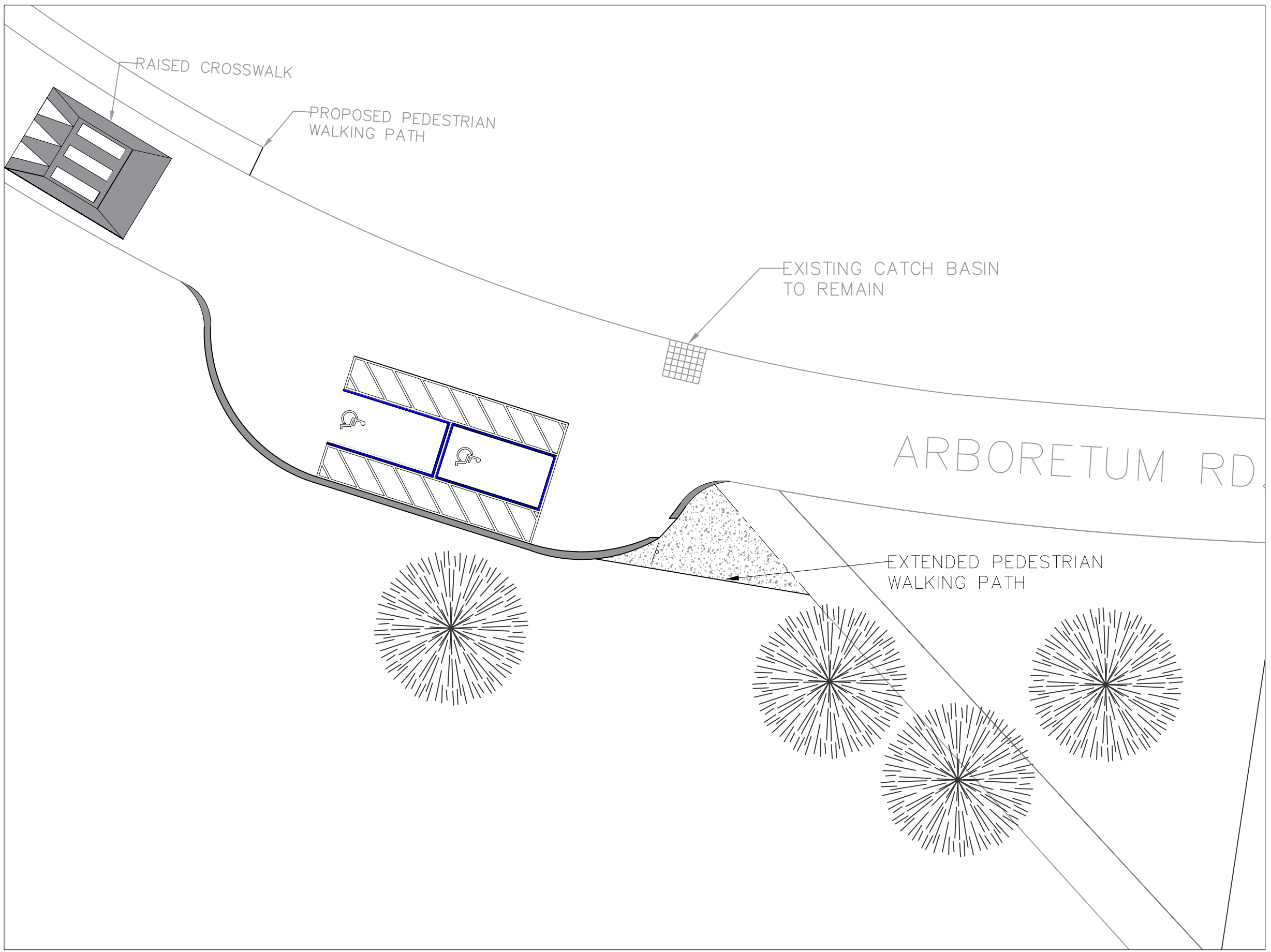
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-302 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

ADA STREET LOT STRIPING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

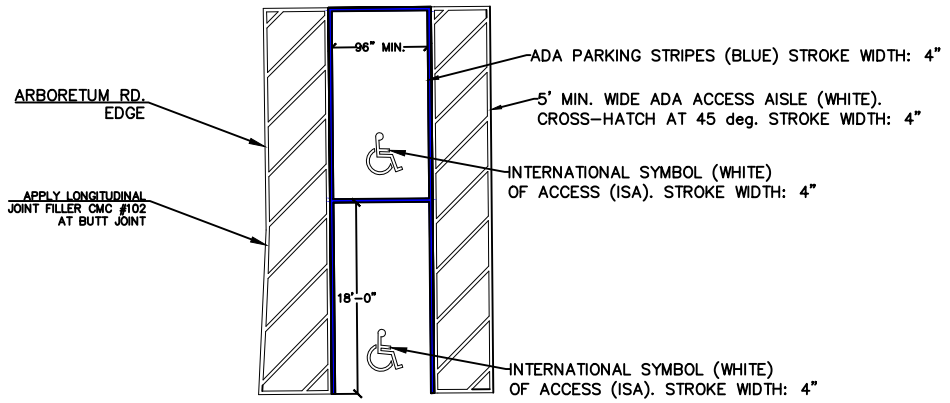
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

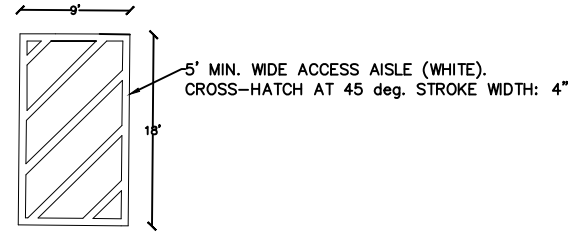
Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

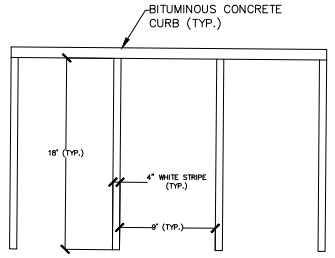
| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-303 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |



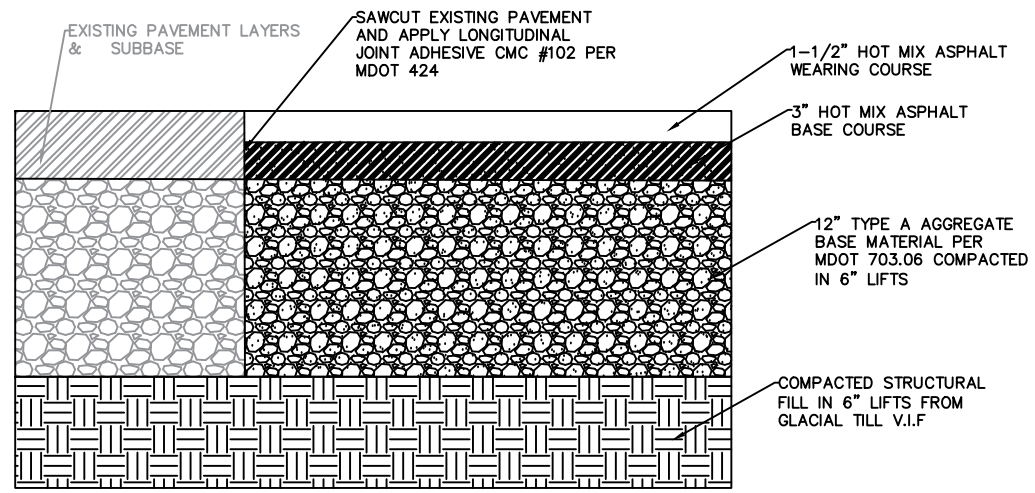

1 ACCESSIBLE PARKING DETAIL




2 TYPICAL –ACCESS AISLE DETAIL




3 TYPICAL – PARKING STRIPING DETAIL




4 BITUMINOUS CONCRETE PAVEMENT (TWO COURSES)

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
3. ANY CONTAMINATED BASE SHALL BE REMOVED DOWN TO CLEAN, SOUND MATERIAL. REMOVED MATERIAL SHALL BE REPLACED WITH AGGREGATE BASE MATERIAL PER MDOT SECTION 703.06 TYPE A. ALL NEW MATERIAL TO BE EVENLY COMPACTED IN LIFTS NOT EXCEEDING 6" TO A MINIMUM OF 95%OF THE MATERIAL'S MAXIMUM DENSITY PER ASTM D1557.
4. HOT MIX ASPHALT BASE COURSE SHALL BE 2" THICK MEETING THE REQUIREMENTS OF MDOT 703.09 TYPE B
5. HOT MIX ASPHALT WEARING COURSE (TOPCOAT) SHALL BE 1" THICK MEETING THE REQUIREMENTS OF MDOT 703.09 TYPE D
6. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58-28/PG64-28 AT A RATED TEMPERATURE OF 275-325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
7. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR PER MAINE DOT SECTION 401.
8. LONGITUDINAL JOINT FILLER CMC #102 TO BE APPLIED AT ANY BUTT JOINT BETWEEN EXISTING PAVEMENT AND NEWLY INSTALLED PAVEMENT
9. PAINT FOR FINAL PAVEMENT MARKING SHALL MEET THE REQUIREMENTS OF THE MDOT MAINTENANCE FAST-DRY WATER BASED TRAFFIC PAINT AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M247 TYPE I.

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PAVEMENT SECTIONS & DETAILS

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

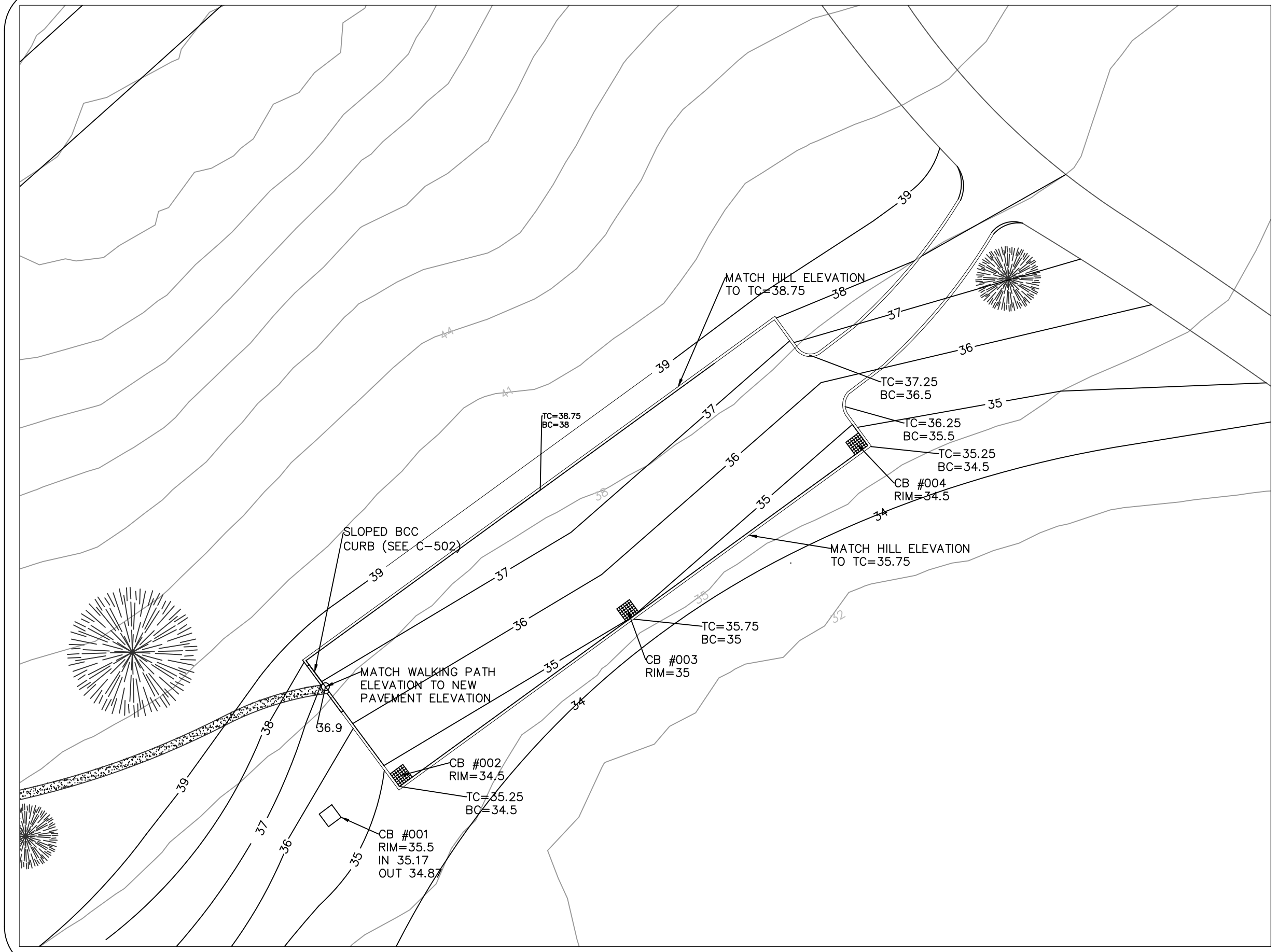
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| | |
|---|---|
| Project: PAYSON PARK UPGRADES | Sheet: C-501 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW
ENGINEERING
UNIVERSITY OF MAINE

SLEDDING HILL LOT STRIPING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

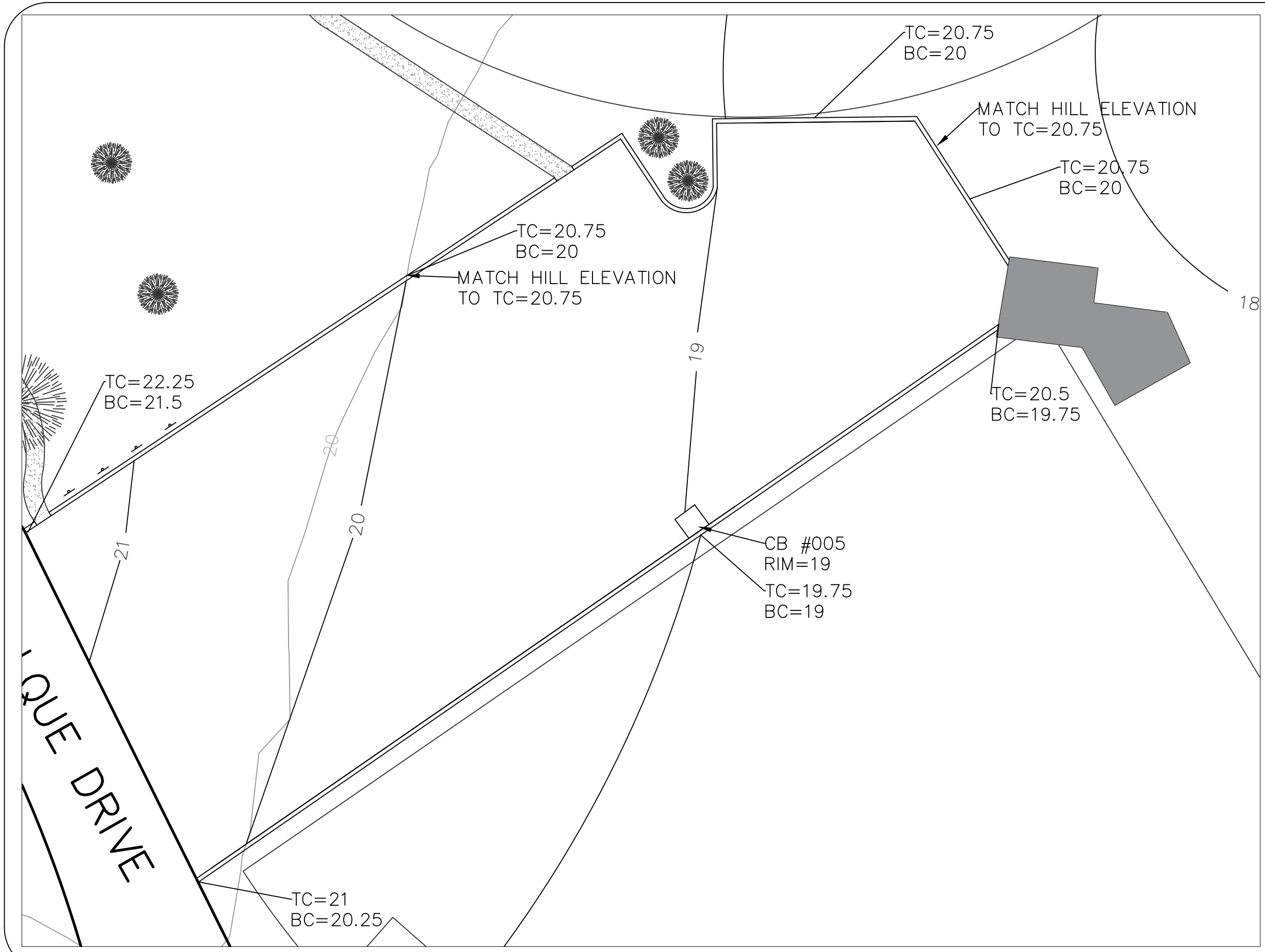
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-401 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

BASEBALL LOT STRIPING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

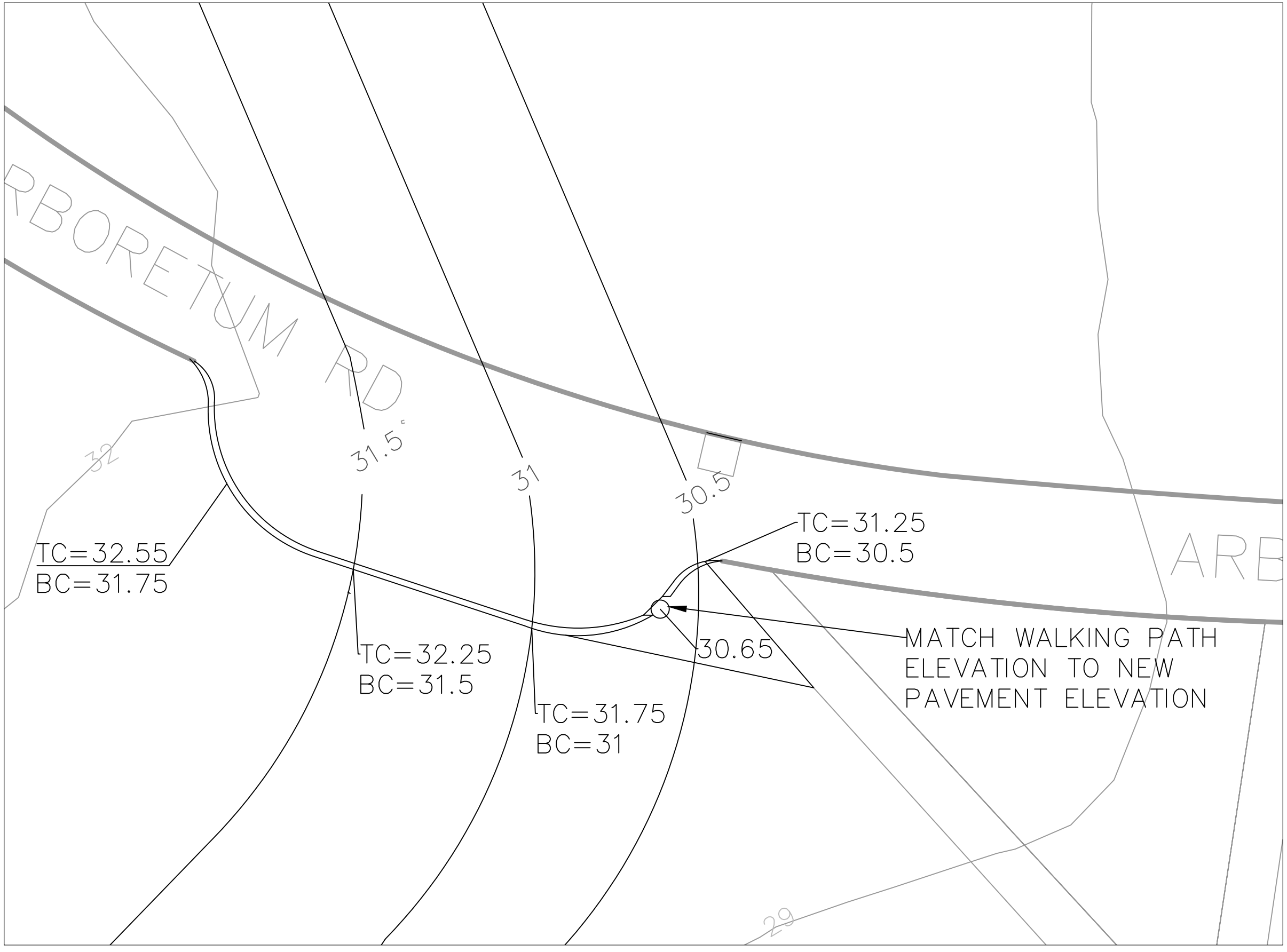
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-402 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW
ENGINEERING
UNIVERSITY OF MAINE

ADA STREET LOT GRADING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

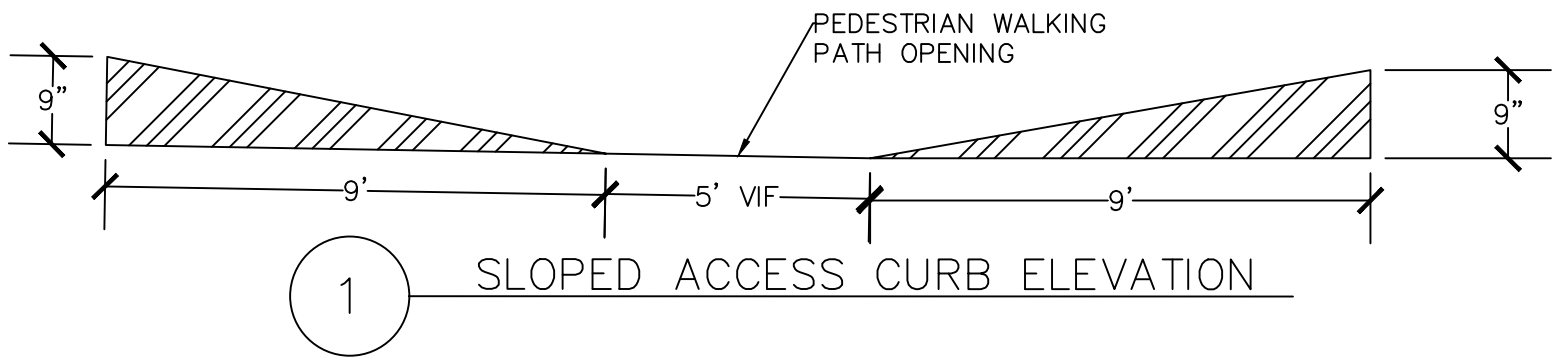
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

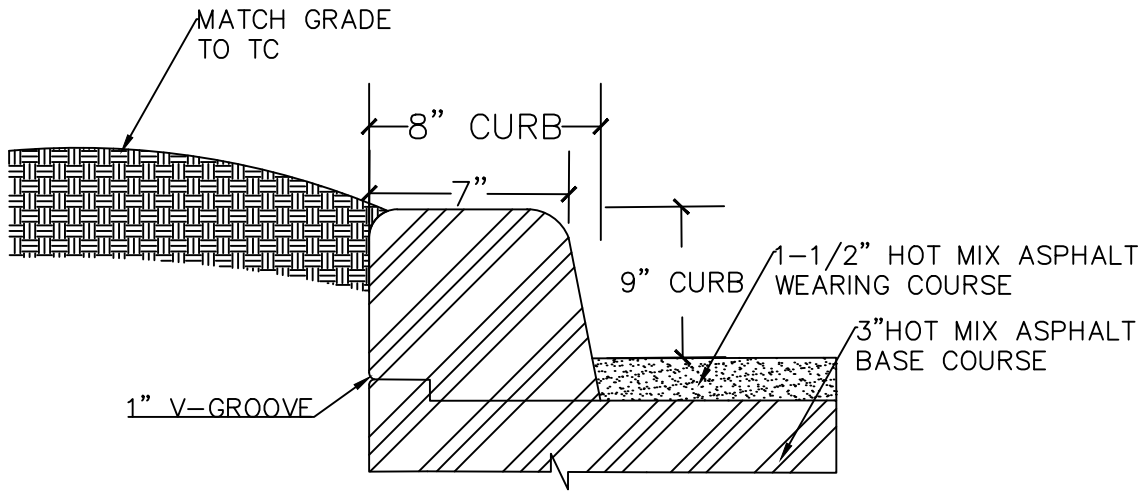
Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C-403 |
| Date: 3/4/2024 | |
| Scale: 1" = 40' | |




1 SLOPED ACCESS CURB ELEVATION




2 STANDARD MDOT BCC CURB

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT-OF-WAY.
3. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 15 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
4. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
5. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58-28/PG64-28 AT A RATED TEMPERATURE OF 275-325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
6. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR
7. PER MAINE DOT SECTION 401.
8. ADA PARKING LOT SLOPE TO NOT EXCEED 2.08% IN ALL DIRECTIONS
9. ALL GRADING AROUND HOT MIX ASPHALT CURBING MUST BE LEVEL WITH THE TOP OF THE CURB
10. ALL SLOPED ACCESS CURBS TO HAVE A MAXIMUM SLOPE OF 12:1 OR 8.33% PER MDOT
11. SLOPE TO AREA DRAIN (CB #001) MUST BE 1.5:1 WITHIN A 1.5' RADIUS FROM THE CENTER OF THE RIM

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

SITE DETAILS

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

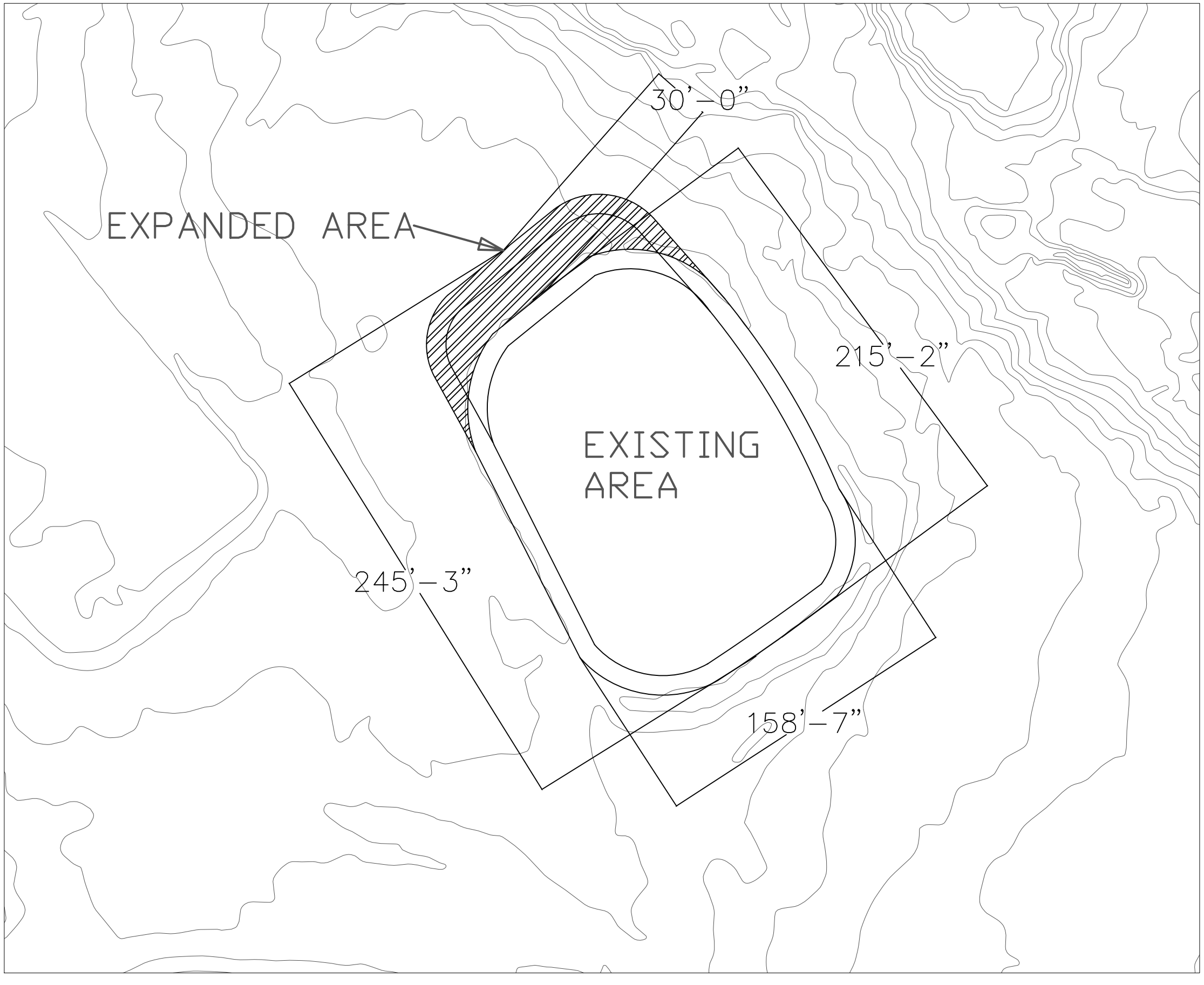
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

Project: PAYSON PARK UPGRADES
Date: 3/4/2024
Scale: 1" = 40'
Sheet: C-502




General Notes

N

BACK ROW
ENGINEERING

UNIVERSITY OF
MAINE

PROPOSED SKATING
POND EXPANSION PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |
| | | |

Firm Name and Address

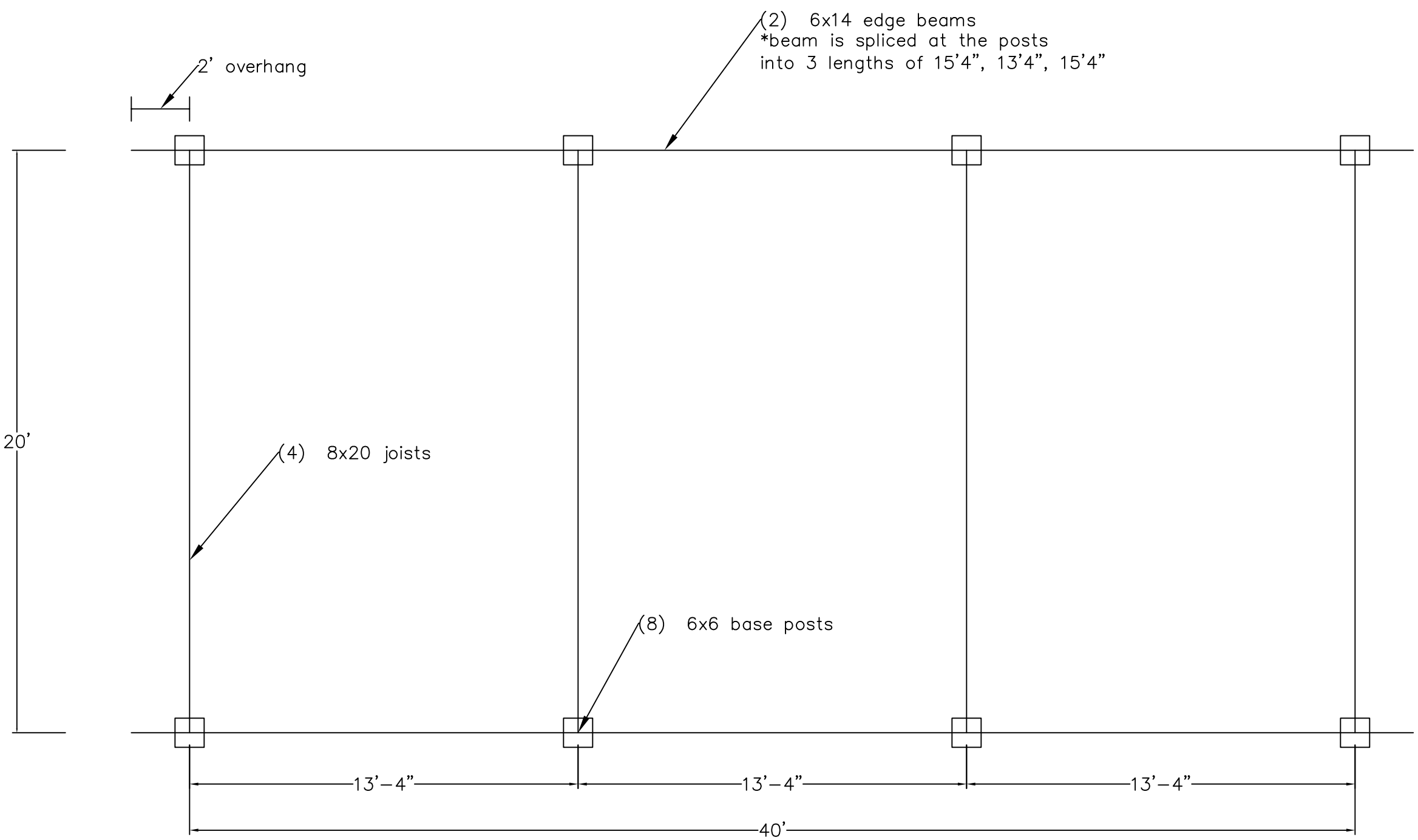
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | SP–100 |
| Date: 4/27/24 | |
| Scale: 1” = 50’ | |




# PAVILION: LOWER FRAMING PLAN

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PAVILION: LOWER
FRAMING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

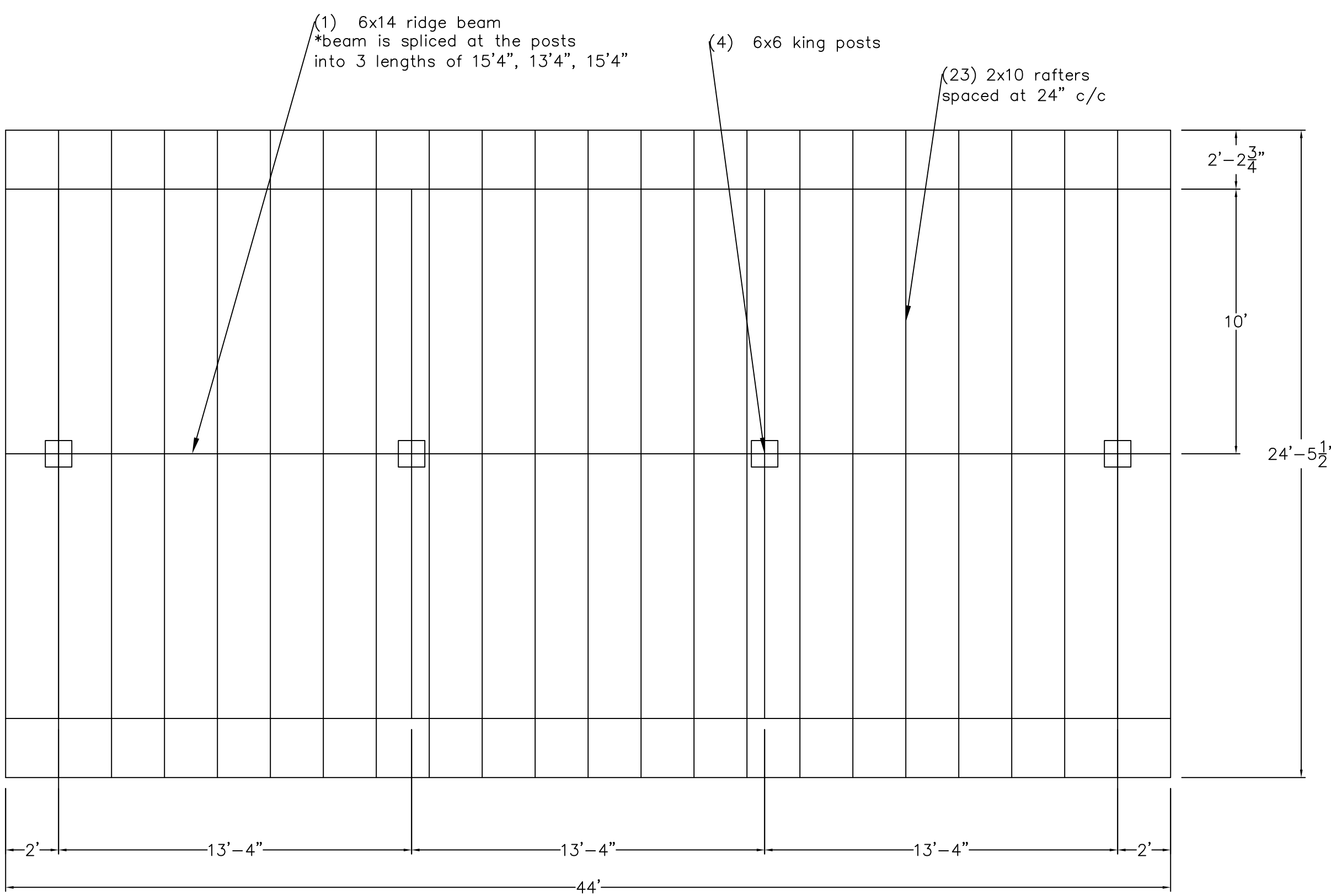
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S-101 |
| Date: 3/30/24 | |
| Scale: 1/4" = 1'-0" | |




PAVILION: UPPER FRAMING PLAN

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PAVILION: UPPER FRAMING PLAN

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

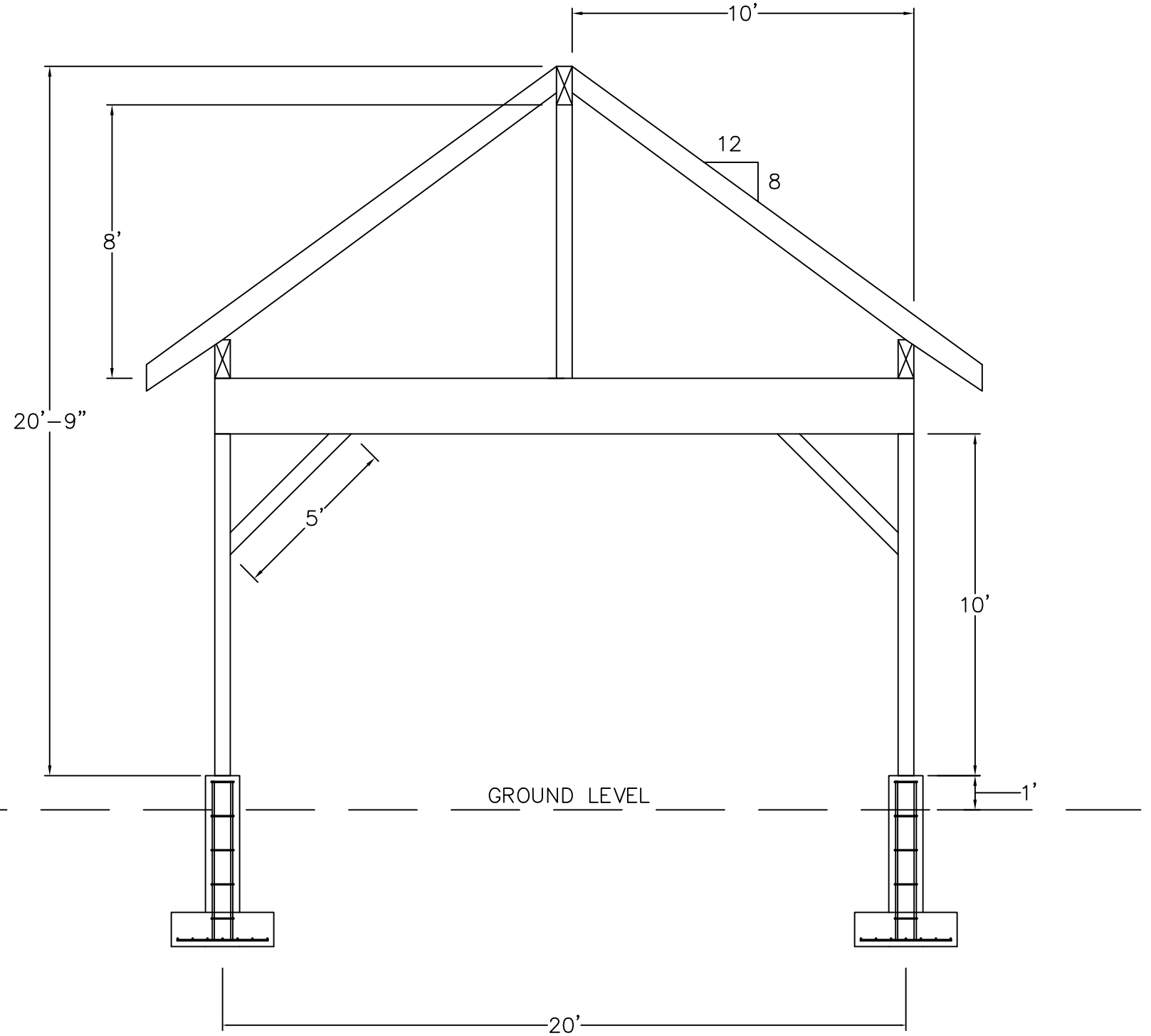
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S-102 |
| Date: 3/30/24 | |
| Scale: 1/4" = 1'-0" | |




NORTHEAST ELEVATION (20’ FACE)

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

NORTHEAST ELEVATION

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

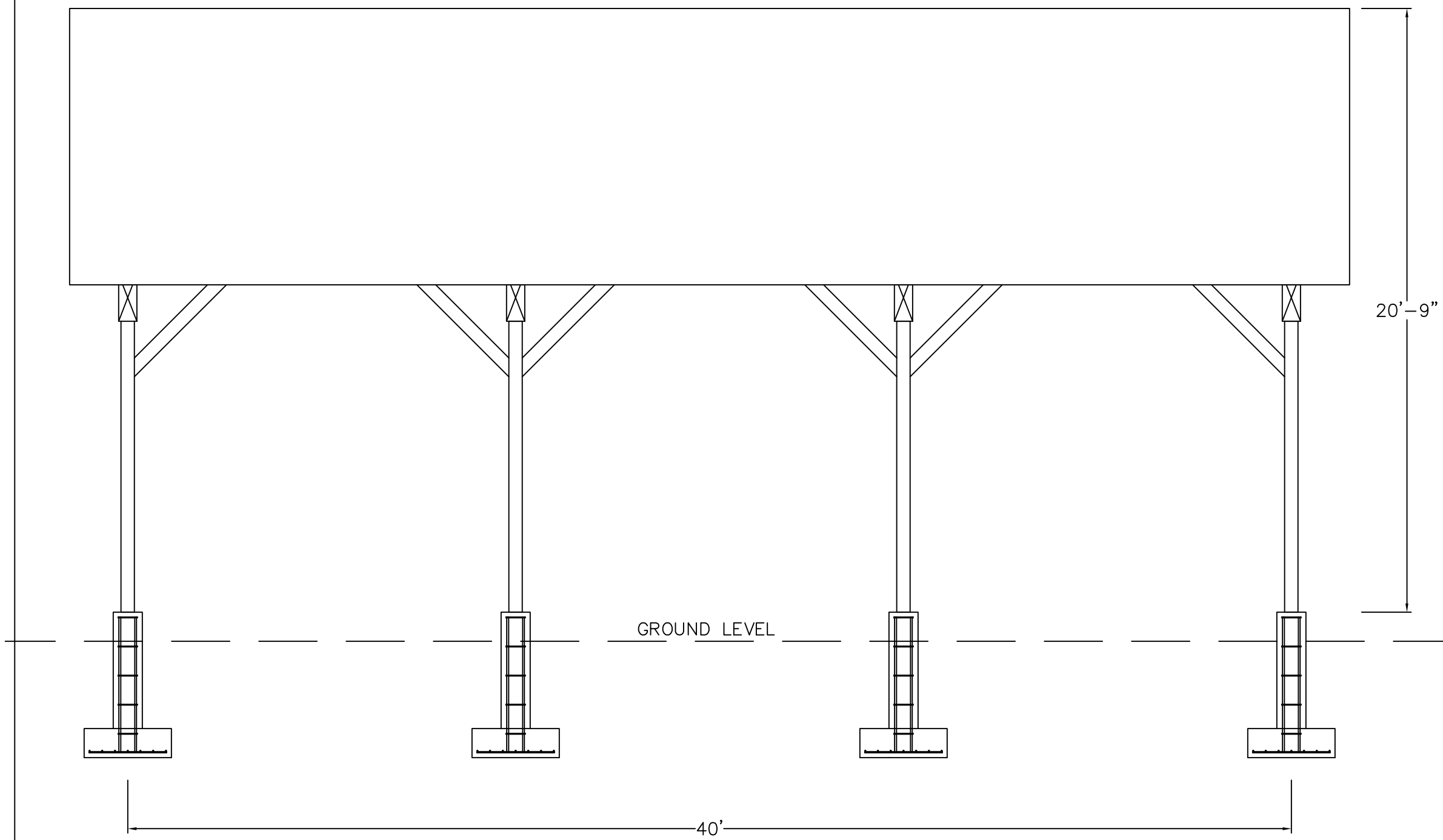
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S–201 |
| Date: 3/29/24 | |
| Scale: 1/4” = 1’–0” | |




NORTHWEST ELEVATION (40’ FACE)

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

NORTHWEST ELEVATION

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

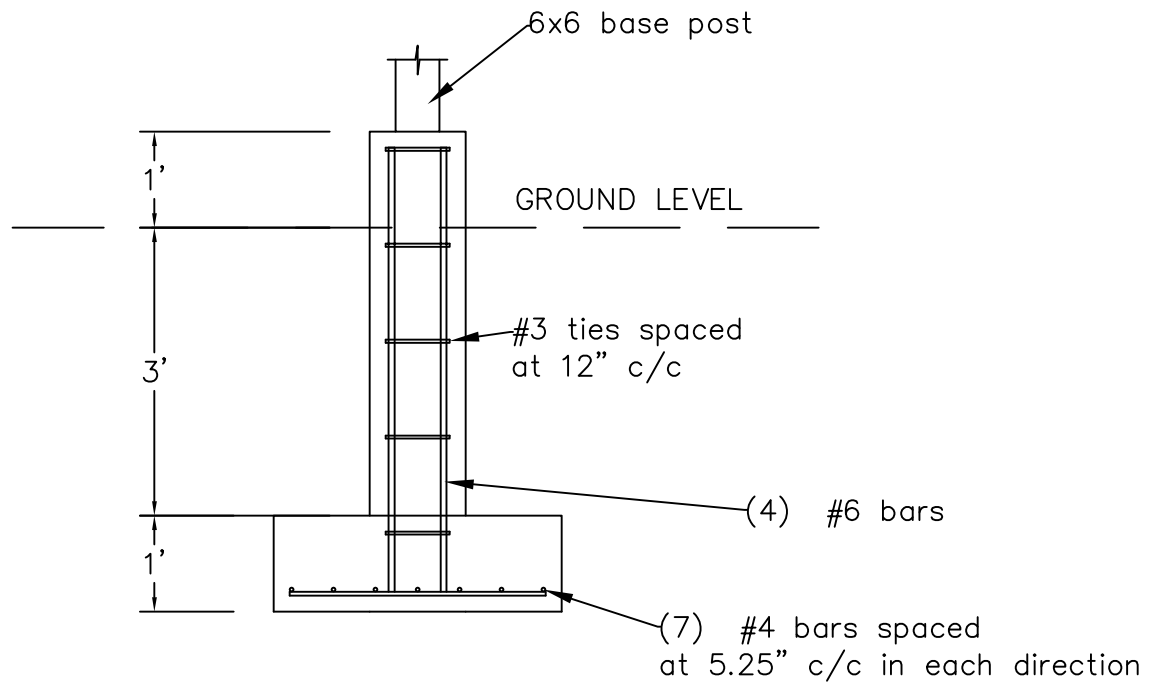
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S–202 |
| Date: 3/29/24 | |
| Scale: 1/4” = 1’–0” | |




# PAVILION FOUNDATION DETAIL

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PAVILION FOUNDATION DETAIL

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

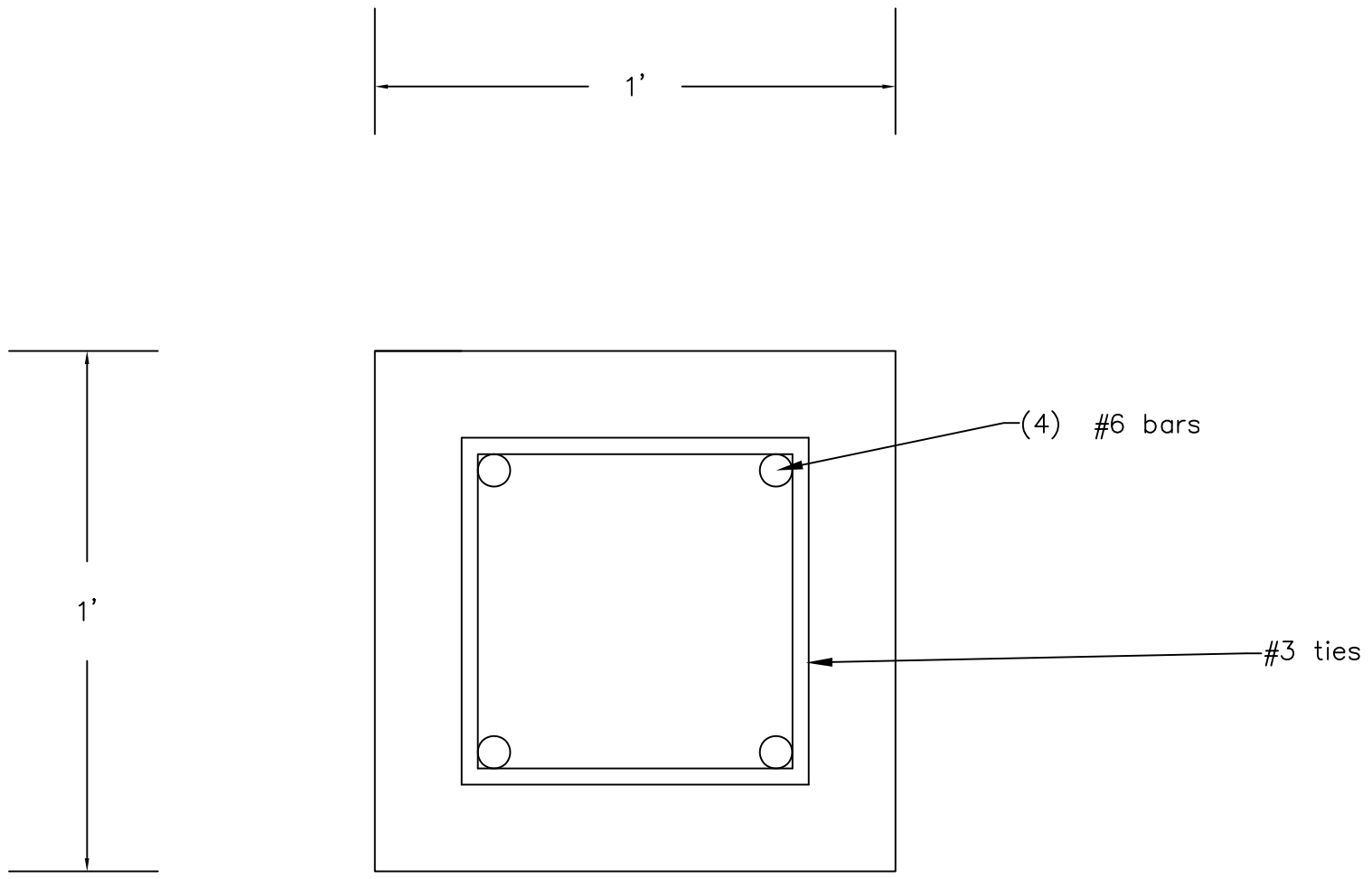
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S-501 |
| Date: 3/31/24 | |
| Scale: 1/2" = 1'-0" | |




PILASTER CROSS SECTION

General Notes

N

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

PAVILION FOUNDATION DETAIL

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

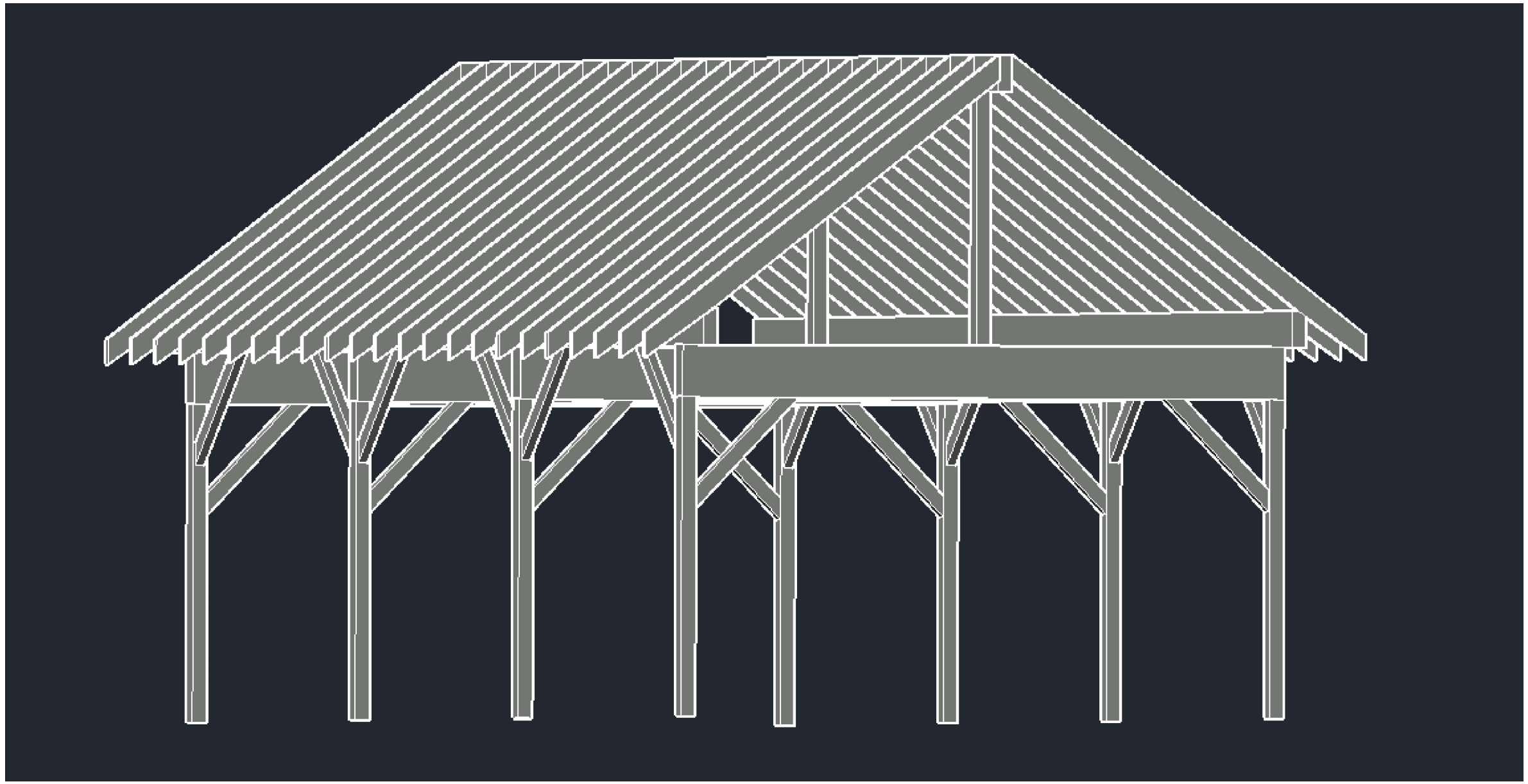
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S-502 |
| Date: 3/31/24 | |
| Scale: 3" = 1'-0" | |



PAVILION 3D MODEL

General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAVILION 3D MODEL

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

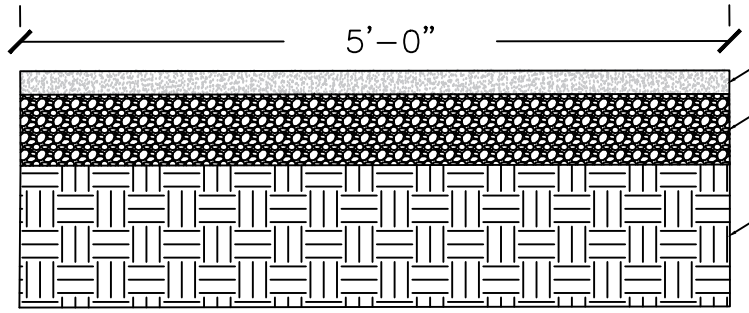
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME,
04473

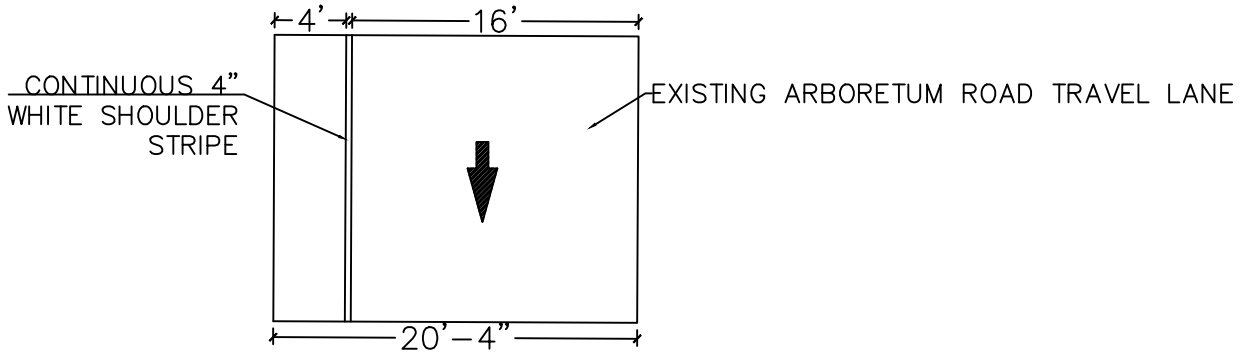
Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

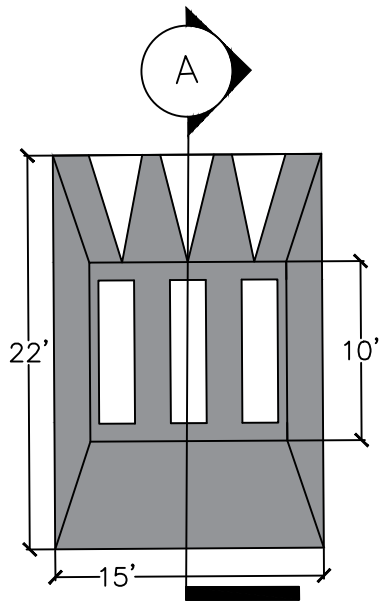
| Project | Sheet |
|---|---|
| PAYSON PARK UPGADES | S-601 |
| Date: 3/31/24 | |
| Scale: | |



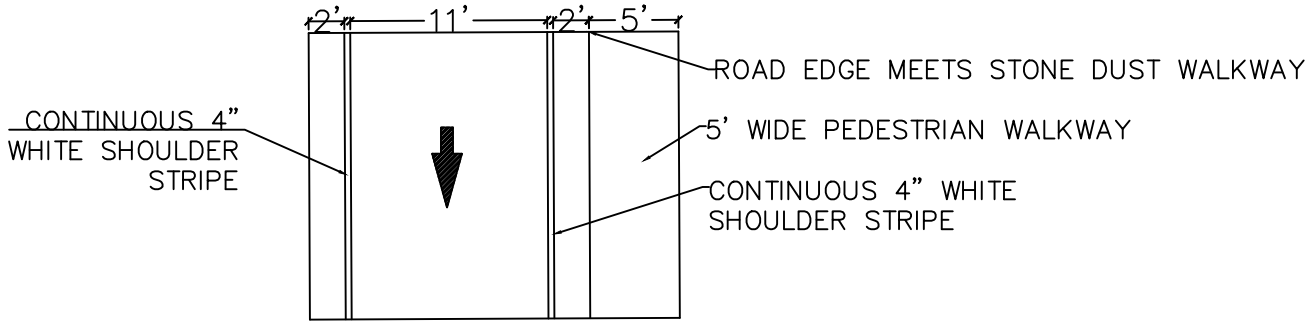

1 PROPOSED STONE DUST PEDESTRIAN WALKWAY CROSS–SECTION



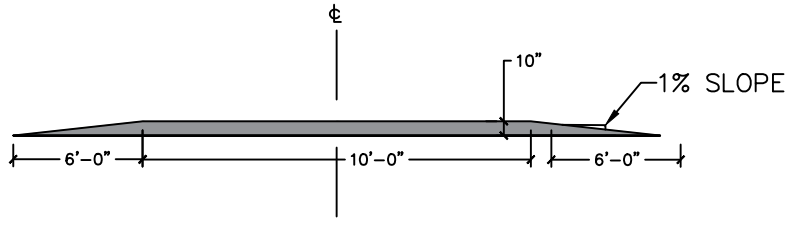

2 EXISTING PLAN VIEW OF ARBORETUM ROAD




4 PROPOSED RAISED CROSSWALK




3 PROPOSED PLAN VIEW OF ARBORETUM ROAD




A PROPOSED RAISED CROSSWALK CROSS–SECTION

General Notes

BACK ROW ENGINEERING
UNIVERSITY OF MAINE

TRAFFIC CALMING DETAILS

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | C–701 |
| Date: 3/25/24 | |
| Scale: 1" = 40' | |

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS, RULES, REGULATIONS & SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
2. THE CONTRACTOR SHALL PROTECT ALL SURROUNDING TREES INDICATED IN THE DRAWINGS BY WRAPPING ENTIRE TRUNK WITH 2X4 LUMBER OR OTHER PROTECTIVE MATERIAL.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EROSION CONTROL MEASURES BEFORE IMPROVEMENTS CAN TAKE PLACE. THIS INCLUDES BUT IS NOT LIMITED TO SILT FENCES, SILT SACKS AND CATCH BASIN SILT SACKS.
4. ALL PROPOSED WALKING PATHS TO BE 6" COMPACTED STONE DUST. MATERIAL AND APPLICATION CONFORMING WITH ASTM D1241 STANDARDS AND TO BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION OF ANY NEW IMPROVEMENTS.
5. FILL REQUIRED FOR NEW BASEBALL FIELDS TO CONFORM WITH ASTM D1241 AND TO BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION OF ANY NEW IMPROVEMENTS. .
6. DEMOLITION TO ONLY OCCUR TO BITUMINOUS CONCRETE PAVEMENT AT CATAFALQUE DRIVE, EXISTING BASEBALL FIELDS, BASKET BALL COURT AND TENNIS COURTS.
7. FENCING TO BE PROVIDED TO ENCLOSE ALL NEW BASEBALL FIELDS, BASKETBALL COURTS AND TENNIS COURTS.
8. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP MUST BE MAINTAINED BETWEEN THE WORKING EDGE OF AN EXCAVATION AND A ROAD OR RIGHT-OF-WAY.
9. THE CONTRACTOR SHALL COMPLY WITH MAINE GENERAL LAWS CHAPTER 38 SECTION 490 STATING A NATURAL BUFFER STRIP AT LEAST 15 FEET WIDE MUST BE MAINTAINED BETWEEN ANY EXCAVATION AND ANY PROPERTY BOUNDARY.
10. PROPOSED CATAFALQUE ROAD EXTENSION TO BE A TOTAL OF 24 FT. WIDE. (2) 10 FT. WIDE LANES AND A 2 FT.
11. CONTRACTOR SHALL SUBMIT JOB MIX FORMULA (JMF) FOR ENGINEER APPROVAL PRIOR TO INSTALLATION. JMF SHALL CONFORM TO AASHTO M16 STANDARD SPECIFICATIONS FOR REQUIREMENTS FOR ALL HOT MIXED BITUMINOUS CONCRETE MIXTURES.
12. INDIVIDUAL JMF SUBMITTALS REQUIRED FOR CATAFALQUE RD, BASKATBALL COURT BASE AND TENNIS COURT BASE.
13. ANY CONTAMINATED BASE SHALL BE REMOVED DOWN TO CLEAN, SOUND MATERIAL. REMOVED MATERIAL SHALL BE REPLACED WITH AGGREGATE BASE MATERIAL PER MDOT SECTION 703.06 TYPE A. ALL NEW MATERIAL TO BE EVENLY COMPACTED IN LIFTS NOT EXCEEDING 6" TO A MINIMUM OF 95%OF THE MATERIAL'S MAXIMUM DENSITY PER ASTM D1557.
14. HOT MIX ASPHALT BASE COURSE SHALL BE 2" THICK MEETING THE REQUIREMENTS OF MDOT 703.09 TYPE B
15. HOT MIX ASPHALT WEARING COURSE (TOPCOAT) SHALL BE 1" THICK MEETING THE REQUIREMENTS OF MDOT 703.09 TYPE D
16. PER MAINE DOT SECTION 401.05 PERFORMANCE GRADE ASPHALT BINDER PG58-28/PG64-28 AT A RATED TEMPERATURE OF 275-325 DEGREES FAHRENHEIT OR APPROVED ALTERNATIVE TO BE USED IN JMF.
17. CONTRACTOR SHALL COMPACT ALL HMA BY HAND OR A MECHANICAL VIBRATING COMPACTOR PER MAINE DOT SECTION 401.
18. LONGITUDINAL JOINT FILLER CMC #102 TO BE APPLIED AT ANY BUTT JOINT BETWEEN EXISTING PAVEMENT AND NEWLY INSTALLED PAVEMENT
19. PAINT FOR FINAL PAVEMENT MARKING SHALL MEET THE REQUIREMENTS OF THE MDOT MAINTENANCE FAST-DRY WATER BASED TRAFFIC PAINT AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M247 TYPE I.
20. ALL NEW PARKING LOTS TO BE STRIPED PER A-501 PAVEMENT STRIPING DETAILS.

General Notes

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

CONCEPTUAL PLAN GENERAL NOTES

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CP-100 |
| Date: 4/5/2024 | |
| Scale: 1" = 40' | |


General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAYSON PARK CONCEPTUAL PLAN
SITE LAYOUT

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

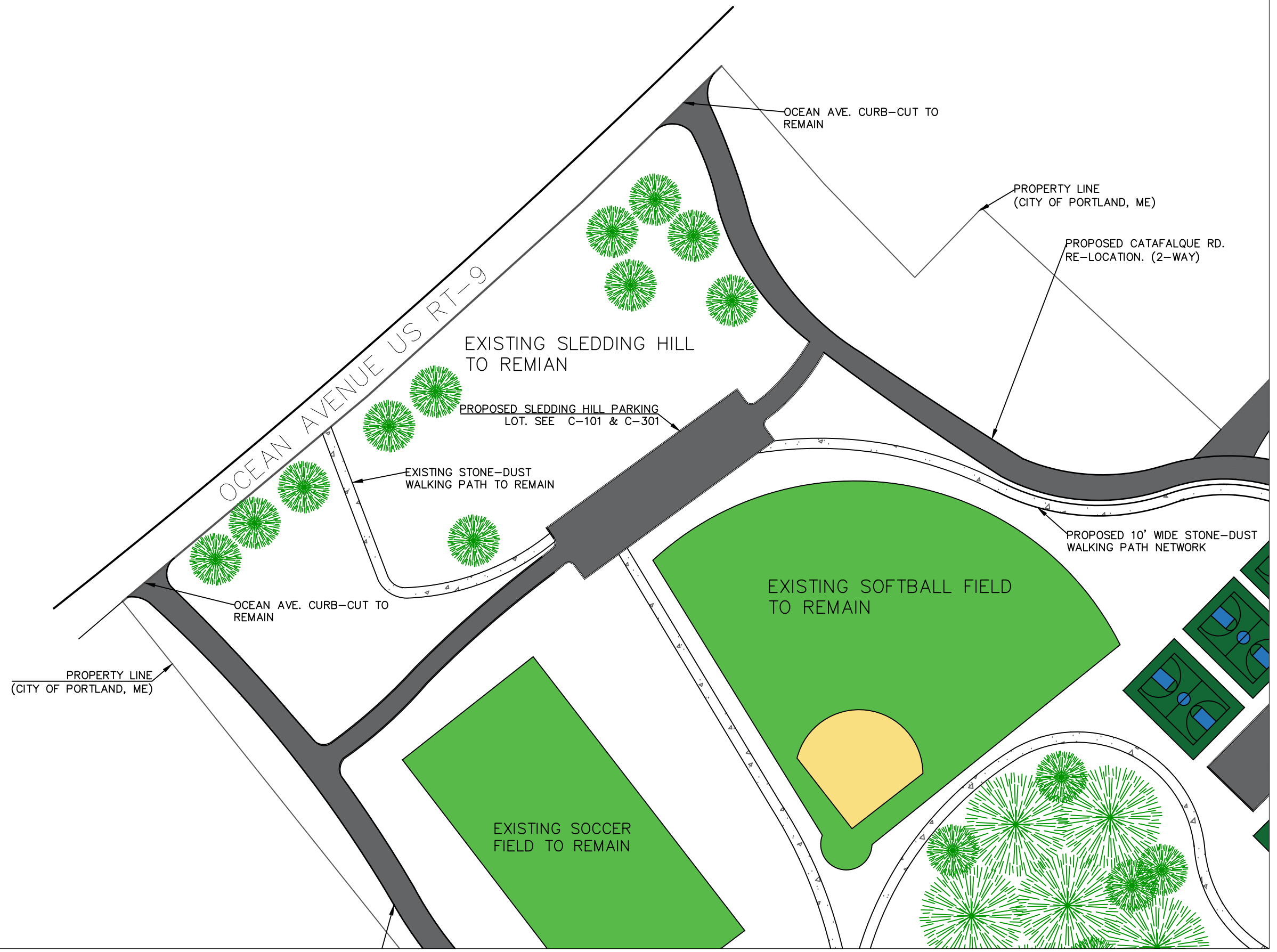
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CP-101 |
| Date: 4/5/2024 | |
| Scale: 1" = 40' | |




General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAYSON PARK CONCEPTUAL PLAN (NORTH)

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

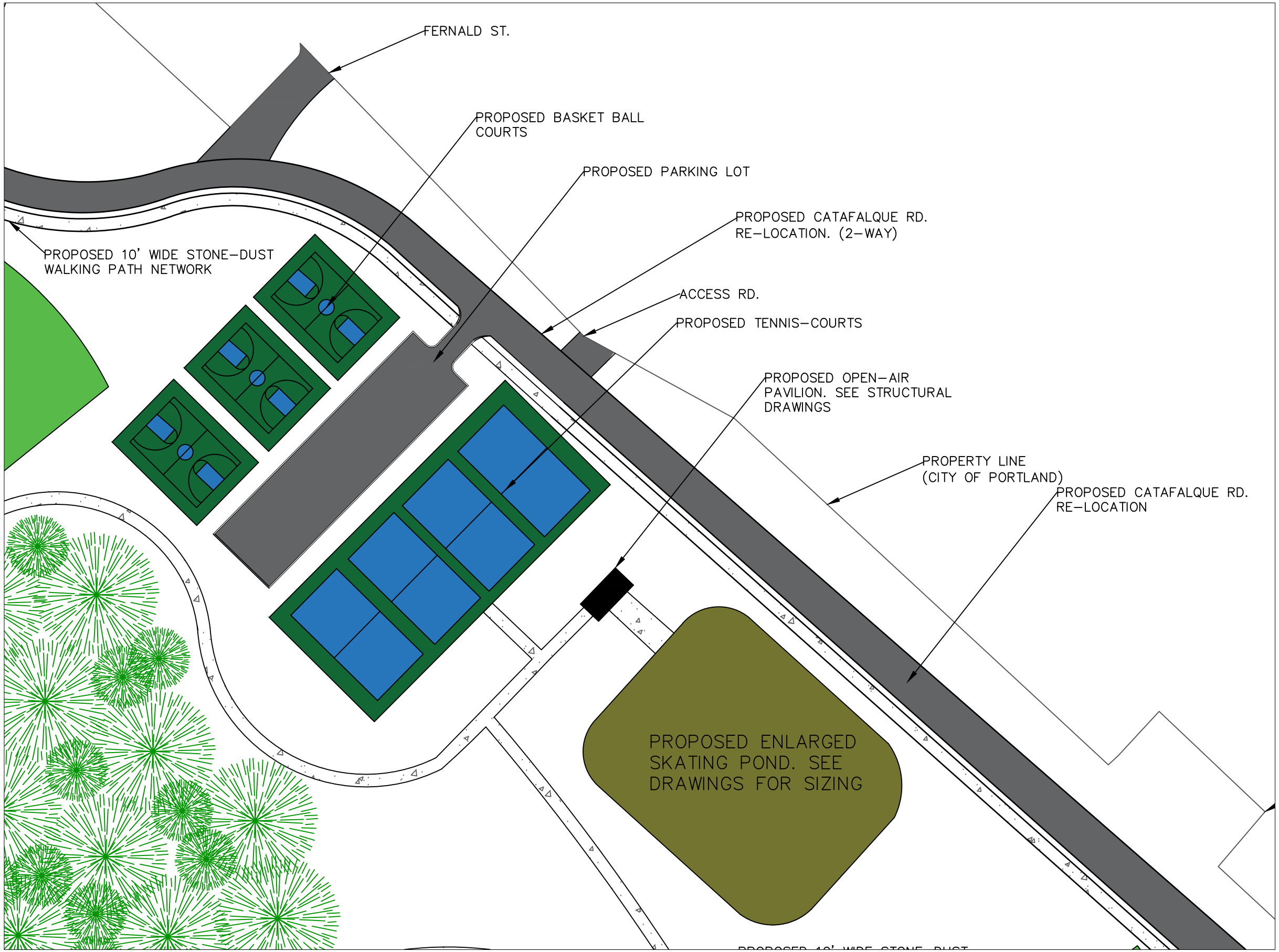
EDWARD PAYSON PARK
PORTLAND, ME 04103

Project: PAYSON PARK UPGRADES

Date: 4/5/2024

Scale: 1" = 40'

Sheet: CP-102




General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAYSON PARK CONCEPTUAL PLAN (EAST)

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

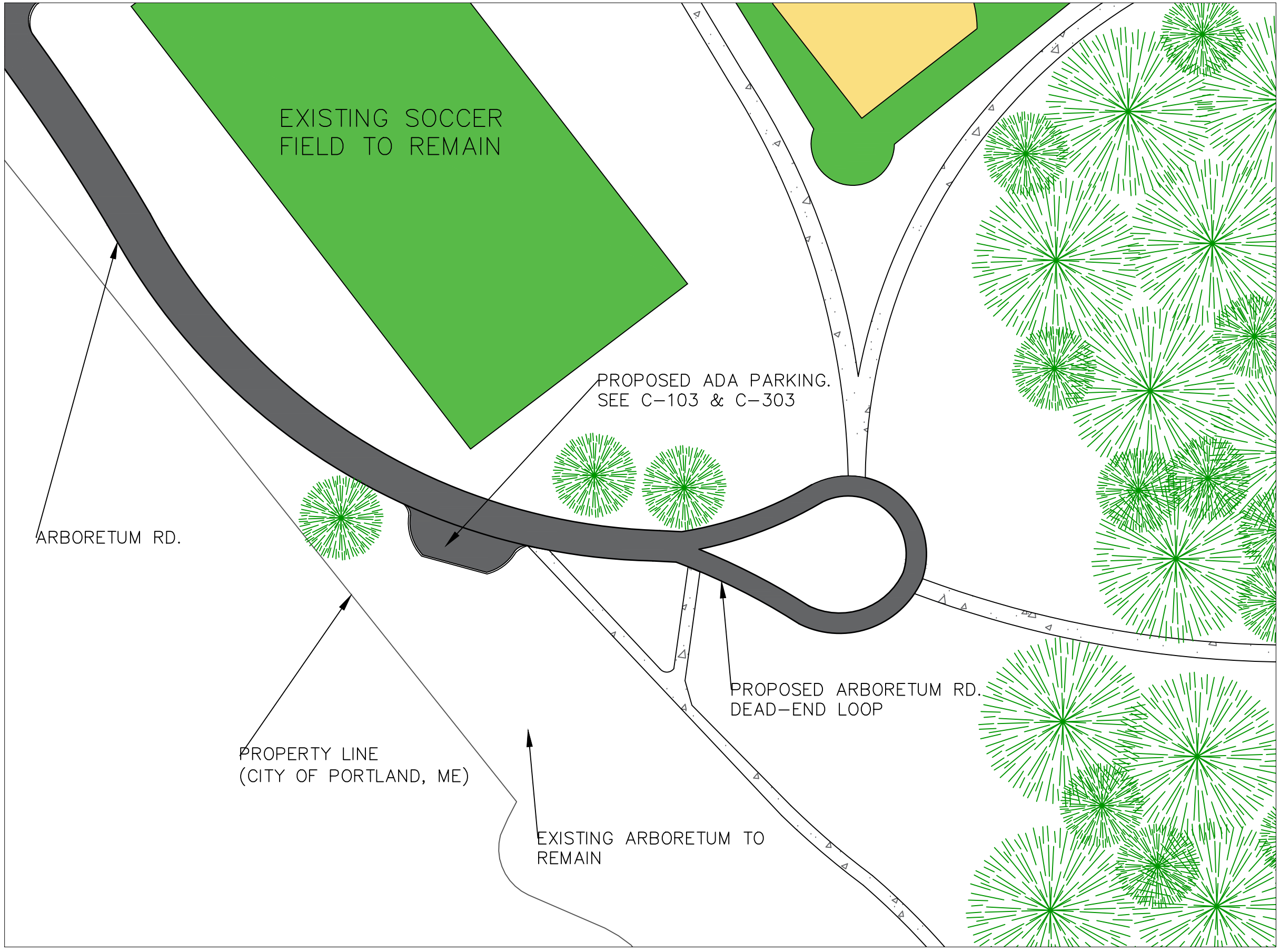
BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CP-103 |
| Date: 4/5/2024 | |
| Scale: 1" = 40' | |




General Notes

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAYSON PARK CONCEPTUAL PLAN (WEST)

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CP–104 |
| Date: 4/5/2024 | |
| Scale: 1" = 40' | |

PROPOSED ENLARGED SKATING POND. SEE DRAWINGS FOR SIZING

PROPERTY LINE (CITY OF PORTLAND, ME)

PROPOSED CATAFALQUE RD. RE-LOCATION. (2-WAY)

PROPOSED 10' WIDE STONE-DUST WALKING PATH NETWORK

PROPOSED BASEBALL COMPLEX & SNACK-STAND

PROPOSED PARKING LOT

PROPOSED BASEBALL FIELD #3

EXISTING SOFTBALL FIELD TO REMAIN

PROPOSED BASEBALL FIELD #2

PROPOSED BASEBALL FIELD #1

PROPERTY LINE (CITY OF PORTLAND, ME

EXISTING PLAYGROUND TO REMAIN

PROPOSED 10' WIDE STONE-DUST WALKING PATH NETWORK

PERTY LINE
Y OF PORTLAND, ME)

PROPOSED INLET RD CUT & PARKING LOT

EXISTING LAKE TO REMAIN

EXISTING BAXTER BOULEVARD STREET PARKING TO REMAIN

PROPOSED BAXTER BOULEVARD CURB-CUT

PROPERTY LINE (CITY OF PORTLAND, ME)

BAXTER BOULEVARD

## General Notes

N

BACK ROW ENGINEERING

UNIVERSITY OF MAINE

PAYSON PARK CONCEPTUAL PLAN (SOUTH)

| No. | Revision/Issue | Date |
|---|---|---|
| | | |
| | | |

Firm Name and Address

BACK ROW ENGINEERING

UNIVERSITY OF MAINE
168 COLLEGE AVE ORONO, ME, 04473

Project Name and Address

EDWARD PAYSON PARK
PORTLAND, ME 04103

| Project | Sheet |
|---|---|
| PAYSON PARK UPGRADES | CP-105 |
| Date: 4/5/2024 | |
| Scale: 1" = 40' | |