
University Park

2011 Master Plan



City of Worcester
Department of Public Works and Parks
Parks, Recreation and Cemetery Division
50 Skyline Drive
Worcester, MA 01605



BEALS + THOMAS

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, MA 01772-2104

T 508.366.0560
F 508.366.4391
mail@btiweb.com | www.btiweb.com
Regional Office: Plymouth, MA

Table of Contents

TABLE OF CONTENTS I

1.0 ACKNOWLEDGEMENTS 1

2.0 INTRODUCTION 2

3.0 BACKGROUND..... 2

4.0 COMMUNITY PARTICIPATION..... 3

5.0 EXISTING CONDITIONS..... 4

5.1 NEIGHBORHOOD CONTEXT..... 4

5.2 TOPOGRAPHY 4

5.3 SOILS..... 4

5.4 VEGETATION AND WILDLIFE..... 5

5.5 SITE UTILITIES..... 5

5.6 ACCESS AND CIRCULATION 6

5.7 POND..... 7

5.8 SITE AMENITIES AND RECREATIONAL USES..... 8

6.0 SITE CONSTRAINTS AND GOALS..... 8

7.0 MASTER PLAN SPECIFIC SITE IMPROVEMENTS 9

7.1 MAIN STREET AREA..... 10

7.2 POND AREA..... 10

7.3 VOLLEYBALL COURT AND PICNIC AREA 11

7.4 BASKETBALL COURT AND HANDBALL COURT..... 11

7.5 PLAYGROUND AREA..... 12

7.6 SPRAY PARK..... 12

7.7 ADDITIONAL SITE IMPROVEMENTS..... 13

8.0 POND RECOMMENDATIONS 13

9.0 PHASING AND IMPLEMENTATION 14

10.0 PRELIMINARY COST ESTIMATE 14

1.0 **ACKNOWLEDGEMENTS**

We wish to thank the City of Worcester's Department of Public Works and Parks and more specifically, the Parks, Recreation, and Cemetery Division for their guidance throughout this project.

Additionally we are grateful for the administration, faculty, and students of Clark University as well as Councilor Barbara Haller, the neighbors, and representatives of various community organizations for their interest and input throughout the master planning process. Their support and participation was essential in the creation of a functional, appropriate, and attainable Master Plan to excite and to best suit the needs of the community.



2.0 INTRODUCTION

In February 2011, Beals and Thomas, Inc. (B+T) submitted a proposal for survey services and for the preparation of a comprehensive Master Plan for University Park to the Department of Public Works and Parks. This Master Planning initiative was a result of the City of Worcester and Clark University's 20-year voluntary "Payment in Lieu of Taxes" (PILOT) agreement in which much needed funds would go directly to the 1.5 million dollar redevelopment project at University Park.

Beginning in April 2011, and for the following six months, the Parks Division and B+T worked with representatives from Clark, neighborhood residents, and other community development groups and interested parties to develop a series of conceptual master plans. The preliminary plans were generated based upon initial community discussion of the needs and concerns of the neighborhood during a public forum. Preliminary plans were then refined into a final preferred Master Plan based upon feedback and further discussion. At the same time, B+T performed a full topographic and boundary survey of the approximately fifteen acre park in order to best assess the condition of the park and site resources, as well as identify property line and ownership issues.

The final Master Plan, which was presented to the Parks Commission on December 22, 2011, represents the collaborative efforts of the community to re-invigorate this park by providing safe active and passive recreation areas, preserving and enhancing the site's natural features, and creating a positive neighborhood identity. The Master Plan addresses the critical concerns and needs of this diverse community in the most practical and efficient way possible, while understanding that the proposed improvements will be implemented in a phased manner. Descriptions of the community's goals, specific site improvements, and a proposed phasing plan are outlined in further detail later in this report.

3.0 BACKGROUND

University Park, known as Crystal Park by Worcester natives, is an approximately fifteen (14.7 ac) acre park in the Main South neighborhood of Worcester. The land was purchased by the City in 1887 and 1889, making University Park one of the City's older acquisitions. University Park was a popular community gathering space in the 40s, 50s, and 60s. The park offered organized activities for children including arts and crafts, and swimming lessons. Other park activities included swimming in the summer, ice-skating in the winter, picnicking, and fishing.

Located directly across from Clark University, the park has frontage along the south side of Main Street and is bounded by Crystal Street to the west, Illinois Street to the south and Gates Street to the east. The park is punctuated in the middle with the 2.1 acre Crystal Pond, formerly used for recreational activities such as swimming and ice skating. Today, activities on Crystal Pond are limited to occasional paddle boating or toy boat races.

Historically the park was used for passive recreation, however, over the years, active recreational amenities such as a swimming pool, basketball court, volleyball/tennis court, and playground have been added to the park. Recently the swimming pool has been abandoned with plans to demolish it, while the tennis court has fallen into disrepair. The basketball courts and playground, despite being undersized, remain popular site amenities.

Furthermore, University Park serves as the venue for the Main South Community Development Corporation’s (CDC) annual “Main South Celebrates” festival, a successful event to bring together local organizations and residents. Despite the popularity of the park and although heavily used during certain times of the year and day, University Park remains victim to vandalism and illicit activities, leaving many community members and residents fearful of using the park and feeling helpless against further vandalism.

4.0 COMMUNITY PARTICIPATION

In order to best understand and assess the current condition of University Park, the demographic of the park, the recreational needs of the community, and to discuss what the priorities of the Master Plan should be, the Parks Department and B+T conducted a series of community engagement meetings. Over a period of seven months, the project team met with representatives from Clark University, residential abutters, Main South CDC representatives, and other interested parties. The initial meeting was to introduce the project and solicit ideas, concerns, and comments from the group. At the second meeting, the Parks Division and B+T presented two conceptual master plans based upon objectives and preliminary goals derived from the initial meeting. A refined conceptual Master Plan was presented at the third meeting based upon feedback received in the second meeting. A fourth meeting with the Parks Division was conducted to determine the development program for Phase 1, based upon the target budget of 1.5 million dollars. A fifth and final public forum was conducted in order to achieve neighborhood consensus on the Phase 1 development plan.

Schedule of Public Meetings		
Date	Location	Meeting Objective
April 13, 2011	Clark University	Project Introduction
May 12, 2011	Clark University	Present Preliminary Master Plan Concepts
June 16, 2011	Clark University	Present Refined Preliminary Master Plan Concept
September 26, 2011	Clark University	Discuss Target Budget and Phase 1 improvements
October 24, 2011	Clark University	Discuss and finalize Phase 1 improvements
December 22, 2011	Parks, Recreation, and Cemetery Div. Admin. Office	Present Final Master Plan to Parks & Recreation Commission

5.0 **EXISTING CONDITIONS**

B+T began the master planning process by performing an on-the-ground survey of the park property to understand and evaluate the existing conditions and resources of the park.

5.1 **Neighborhood Context**

University Park is uniquely located in both a residential neighborhood and directly adjacent to a college campus. The park is mainly surrounded by single and multi-family residential properties. This location creates a diversified demographic, including young families with children, college students, and seniors who have lived in the neighborhood for decades. Consequently, the park master plan must consider the multi-generational and multi-cultural interests of the community.

5.2 **Topography**

In general, the site slopes down from north to south, with an approximate 25 foot elevation change across the park. More specifically the topography divides the park into several distinct areas.

The northernmost portion of the park, from Main Street down to the north edge of the pond, gently slopes at approximately 5%, comfortable for walking and minor recreational activities, such as Frisbee and picnicking. This area is used for a temporary stage and various booths at the Main South CDC's annual "Main South Celebrates" festival.



The paths and area surrounding the pond is relatively flat with some steep banks on the southern side of the pond. Just beyond the southern edge of the pond, there is an abrupt change in topography, steeply rising up over 25 feet in elevation with slopes in excess of 10%, forming a large hill in the southern portion of the park. This hill creates a division between the southeast and southwest corners of the property and blocks views to and from the northern and southern sides of the park.

The steep slopes are unsuitable for any major recreational activities besides potential sledding opportunities in the winter. Currently distinct areas of erosion and rutting are occurring on the north side of the hill as a result of vehicle traffic up the steep slope. Slope stabilization will be necessary if continued vehicular use is anticipated.

5.3 **Soils**

The soils of the southern portion of the property, which is comprised primarily of the large hill, are a Paxton fine sandy loam, which is characterized by well drained loamy

soils very deep to bedrock. Paxton soils, the state soil of Massachusetts, can be found at nearly level to steep slopes.

The remaining portion of the park, mainly the northernmost portion and developed areas to the east and west of the large hill are comprised of Udorthents and Urban land. Udorthents are soils characterized by nearly level and gently sloping areas where the original soils have been cut away or covered with a loamy fill material. Slopes can range from 0 to 25 percent but are dominantly 0 to 5 percent. In most areas Udorthents are used for parks, recreation fields, and building sites. The properties of these soils vary greatly with depth; however, they are generally well suited to use as building sites. These soils are fairly suited to lawns, landscaping, and vegetable gardens. The Urban land soil unit is typical to built-up and densely populated areas of cities or suburbs. The vegetation is generally limited to lawns and ornamental trees and shrubs. Suitability of this soil for anything other than passive recreation would require further investigation.

5.4 Vegetation and Wildlife

In general, the vegetation at University Park is comprised of lawn and mature deciduous shade trees, presumably all planted at one time by the Parks Division or former property owners. No native woodlands exist on the property. The predominant tree species include sugar maple and black oak, with smaller amounts of American beech, pin oak, and spruce trees. Several additional specimen trees including cherry, birch, hickory, aspen, and red oak are planted throughout the park. The distribution of vegetation is relatively even across the property, but with the majority of more mature trees planted on the hill and along the abutting streets. Newly planted trees line the sidewalk between Main and Crystal Streets.

Due to the open nature of the park, the observed wildlife appears limited to small species such as squirrels and chipmunks, birds, insects, and aquatic animals such as turtles. The park's open lawn areas and large pond creates a desirable habitat for geese. The geese have become the dominant wildlife at University Park, often creating a deterrent to human users of the park, due to their noise and the mess the birds leave in the lawn and pond. In the past, the Parks Division has utilized dogs in an attempt to scare the geese away from the park. Continued programs such as these, as well as selective landscaping around the pond could help in discouraging geese from inhabiting the park.



5.5 Site Utilities

Existing site utilities are limited to site lighting for pathway lights and the basketball court lights; water service off of Gates Street to the former pool area; and overhead electric service wires along the eastern edge of the park. Transformers are located at either end of the stone retaining wall at the eastern side of the pond. A system of

drainage structures and pipes are located throughout the park. Water, sewer, and electrical services are located in all four surrounding streets.

Because of the park's use for festivals and in order to encourage future events at the park, residents and representatives from Main South CDC have requested greater electrical capacity in the northern portion of the park. With minimal site disturbance, a designated electrical service could be brought from the existing manhole in Gates Street, around the stone wall, and to an electrical cabinet centrally located to reach the majority of the north portion of the park.

5.6 Access and Circulation

University Park is surrounded on all four sides by public streets and sidewalks, with on-street parking located along Crystal Street, portions of Illinois Street, and Gates Street. Residents on Crystal Street have voiced concerns about the danger of the narrowed street when vehicles are parked on either side of Crystal Street. A request of the neighbors has been to encourage parking along Illinois Street in order to alleviate the congestion on Crystal Street. The existing parking on Illinois Street is not delineated by any signage or striping. Incorporating either one or both of these items along Illinois Street could assist in directing drivers where to park.



The frontage along Main Street does not have any parking, but does have an active bus stop. Vehicular access into the park is prohibited; however unauthorized vehicles have been known to drive into the park via Crystal Street. A priority of the Parks Division is to secure the site from unauthorized vehicles, without preventing the ability for the Worcester Police Department, emergency vehicles, and the Parks Division from accessing the park as necessary.

One portion of the east side of the park is bound by a stone retaining wall separating the park from residential properties along Gates Street. Aside from this walled property line,



all other pedestrian access into the park is relatively unrestricted. In fact, the abutting 4-6 Gates Street building has located a portion of its driveway and upper level balcony on City property. Additionally, fragmented sections of wooden posts and chains surround the park, providing little to no site security.

The major pedestrian thoroughfare is a concrete sidewalk from the corner of Gates and Main Streets, diagonal across to Crystal Street.

Although functioning adequately, sections of the concrete walk are crumbling and require repair. An equally travelled path perpendicularly intersects this sidewalk, from Crystal Street to Gates Street. This travelled way is not paved, but is evident based upon the worn path in the lawn. In order to prevent further erosion and wearing of the lawn, installation of a paved sidewalk in this location is recommended.

A bituminous concrete sidewalk system circulates pedestrians around the pond, past the Petty Playground and to the basketball courts. Currently there is no designated sidewalk or access to the top of this hill. Previous master plans explored the idea of providing access to this area, but the idea has been generally discouraged as this area cannot be monitored from the street level. In general, the combination of the existing sidewalk system in the park and those adjacent to the park is sufficient to circulate users throughout and between the various park components. However, the section of sidewalk between the retaining wall and the east edge of the pond is considered to be uncomfortable for park users. Widening this walk, moving it further away from the wall, and providing additional lighting could increase the sense of security and safety. Finally, particular sections of the sidewalk system do not meet ADA/MAAB regulation, while others are in disrepair. Improvements to the park will require reconstruction to meet accessibility standards.



considered to be uncomfortable for park users. Widening this walk, moving it further away from the wall, and providing additional lighting could increase the sense of security and safety. Finally, particular sections of the sidewalk system do not meet ADA/MAAB regulation, while others are in disrepair. Improvements to the park will require reconstruction to meet accessibility standards.

5.7 Pond

The main focal point and recognizable feature of University Park is the approximately 2.1 acre Crystal Pond. The water level is between elevation 495 and 496 with a maximum depth of approximately 4.5 feet. At its widest, Crystal Pond is nearly 290 feet wide and at its longest, nearly 400 feet. The entire perimeter of the pond is open to the elements, making it vulnerable to trash accumulation along the edges as well as surface run-off from the surrounding landscape. During summer months, when the water levels are low, the pond sometimes produces a strong unpleasant smell. The odor may be a result of increased nutrient levels in the pond caused by stormwater run-off or direct geese excrement or by low dissolved oxygen levels and caused by sedimentation, decomposition and anaerobic conditions on the bottom of the pond. An existing fountain provides minimal aeration of the



pond; however because of the shallow nature of the pond, the aeration system may not be functioning to its highest potential.

Annually, the southeast corner of the pond develops excessive reed and cattail growth. This dense vegetation grows to a height which can obstruct views from Crystal Street as well as accumulate concentrated amounts of litter. Hand removal is tedious and often ineffective in removing the vegetation. In the summer of 2011, the Parks Division utilized mechanized removal strategies in order to fully eradicate the vegetation. Ongoing observation and inspection of this area should be undertaken in order to preclude any re-growth of vegetation. Additional dredging and/or installation of a benthic barrier along the pond bottom may be necessary to prevent future plant growth.

5.8 Site Amenities and Recreational Uses

As previously stated, University Park is primarily a “passive recreation” or unstructured recreational facility, with benches, walking trails and open lawn areas. Select areas of “organized” recreation include the Petty Playground, the basketball court area, with one full size and one half size court, and the tennis court. The former pool area remains intact, but closed, with plans for demolition. Although the park is victim to vandalism: spray paint on the signs, stolen benches, stolen and broken swings, and litter, the park is active and vibrant during certain times of the year. The existing tennis court is slated for demolition and re-construction of a new volleyball court is planned. The location of this new court has been evaluated, as the Crystal Street residents prefer to relocate it elsewhere to reduce the associated parking on Crystal Street. The location currently being considered is at the southern end of the park adjacent to Illinois Street, where a court had previously been located.



Many community members expressed the desire for more basketball courts with seating and an expanded playground facility.

6.0 SITE CONSTRAINTS AND GOALS

During the public meetings, a series of neighborhood concerns and site constraints were discussed and assessed. Although consensus is often difficult to achieve in a public setting, where community members have different perceptions and priorities, all were able to agree on the issues that need addressing at University Park. Major site constraints and issues were summarized into the following categories:

- Physical Features: Crystal Pond and southern hill physically divide park into separate areas; size and shape of park; and topography (*visibility issues, disconnect of park amenities, etc.*)
- Safety and security (*lighting, cameras, site access, abutters' encroachment*)
- Maintenance (*vandalism, trash, limited Parks Division resources, retaining wall/walkway repairs*)
- Lack of unity or site identity (*no consistent signage or gateways into park*)
- Undersized or inadequate facilities (*basketball courts, playground, volleyball court*)
- Crystal Pond (*smell, vegetation, trash accumulation, geese*)
- Diverse Demographic (*multi-generational and multi-cultural users*)
- Reputation (*history of gang activities, drugs, and violence overshadow the Park's good qualities*)

Once the group identified the major site constraints and topics of concern, the discussion was ultimately transitioned into a discussion of the ways to resolve and work around these limitations, consequently resulting in a series of general Master Plan goals and focus areas.

- Create a park identity through a single focal feature and unifying elements throughout the park, including signage, paving, benches, etc.
- Cluster and rearrange activities in a way to appropriately locate the active and passive recreational elements in the park so as to enhance the functionality and capacity of each element without hindering the experience of other park users or abutting residences.
- Provide flexibility in the design in order to accommodate various types of people and inevitable changes in park use.
- Rejuvenate and supplement existing site amenities.
- Develop an overall site security plan, incorporating both vehicular and pedestrian safety concerns.
- Design so as to retain a natural feel with little to no environmental impacts and minimal maintenance requirements.

In summary, the community and the Parks Division recognize the potential and value of one of the City's oldest parks and envision the implementation of the Master Plan and associated improvements will further create a desirable amenity within the City that can be engaged by many.

7.0 **MASTER PLAN SPECIFIC SITE IMPROVEMENTS**

With the basic goals in mind and particular requests from the Parks Division and the community, a complete Master Plan has been established which includes site improvements ranging from specific components to general park-wide enhancements or maintenance requirements. The Master Plan strives to retain the existing passive areas of the park as they function today with general upgrades and additions to lighting, security,

seating, etc. while grouping the active areas of the park within close proximity to each other but with adequate separation between different user groups. The various site improvements as identified are intended to be a guide for future development and are subject to change as specific implementation plans are commenced. The Master Plan site improvements have been broken into seven different categories as outlined below.

7.1 Main Street Area

The Main Street Area encompasses the area between Main Street and the north side of Crystal Pond. It was the desire of the community to retain the “campus quad” look of this area, with only minor enhancements to address visibility, pedestrian circulation, and site security.

- Repair of the existing concrete sidewalk stretching from Main Street to Crystal Street is proposed.
- Installation of a new sidewalk from Crystal Street to Gates Street, where the worn path exists now, is proposed. Minimal re-grading at the Gates Street end of the walk will be required to ensure the sidewalk remains universally accessible. Three new light poles are proposed along this walkway.
- An ornamental fence along the Main Street frontage and portions of Gates Street and Crystal Street will provide a more visible demarcation of the park’s boundary as well as create a sense of arrival. The bus stop and benches along Main Street will be moved as necessary to accommodate the fence and other improvements planned along Main Street.
- The diagonal sidewalks on either corner of the park property are proposed to be removed. Currently the Crystal Street corner is a location for illicit activities and removal of this section of sidewalk and benches is a high priority of the City.
- The slope will be re-graded and replaced with lawn. On the opposite side, the diagonal sidewalk and low planting areas will be removed in order to accommodate a larger decorative plaza and entryway into the park.
- The granite post will be relocated to the side of the plaza and replaced with a flush granite property bound.
- A new electrical service is proposed to be installed from the existing electric line in Gates Street and extend underground to a new electrical cabinet located at the northern corner of the existing retaining wall. This location will service the electrical needs of any future events in the park.
- In order to prevent future encroachment, a guardrail will be installed along the property line between the park property and 4-6 Gates Street.

7.2 Pond Area

The Crystal Pond improvements include general, on-going maintenance recommendations as well as permanent upgrades to improve the sense of security, pond health, and increase the park user’s experience and enjoyment of the pond.

- A major concern of the community was the “tunnel” feeling along the walkway between the east edge of Crystal Pond and the retaining wall. To minimize this feeling, a re-configuring of the water’s edge to project towards the center of the pond and widening and moving the walkway and benches closer to the edge of the pond has been proposed. This also achieves a greater interaction between the park user and the pond, incorporating the pond into the park user’s experience.
- A permanent retaining wall edge along the entire perimeter of the pond is proposed. The purpose of such an edge treatment is to alleviate stormwater runoff and trash accumulation in the pond, minimize erosion and sedimentation through shoreline stabilization, and provide a curb up to which a walkway may be paved.
- During the Master Planning process the Parks Division mechanically removed the vegetation on the south side of the pond. Supplementary dredging or installation of a benthic barrier may be necessary to prevent future re-growth in this location.

See Section 8.0 for additional general pond health and maintenance recommendations.

7.3 Volleyball Court and Picnic Area

The southwest side of University Park is an area of high priority for many of the neighbors. The parking associated with the existing volleyball court was a major concern of the neighborhood. By re-locating the volleyball court, the goal is to re-distribute the parking as well. In addition, this enhances the passive environment of the proposed picnic grove.

- The existing tennis court/volleyball court on Crystal Street will be demolished and restored as a lawn area for informal use.
- Concrete pads with picnic tables are proposed for the wooded area south of the pond, between the former volleyball court area and park entrance off of Crystal Street.
- The new volleyball court is proposed on the southwest corner of the park parallel to Illinois Street. An existing flat area is an ideal location for the court, as well as encourages parking along Illinois Street as opposed to Crystal Street.
- An accessible sidewalk is required to access the court. A 10’ high chain link fence along the Illinois side of the court and associated lighting is proposed.

7.4 Basketball Court and Handball Court

The existing basketball court area is one of the most active portions of the park. It was the community’s desire to expand and provide extra amenities for this area in order to increase the capacity of users as well as improve the experience for both players and spectators. In addition, handball courts were desired by the community.

- An expansion to the basketball court area will replace the existing 1½ courts with two full size courts. Re-orientation of the basketball hoops will be required.

- As assessment of the existing sports lights and the potential need for relocation or installation of additional lights is required to ensure adequate and safe lighting for nighttime use of the courts.
- A low retaining wall is proposed in order to provide informal seating for spectators along the top of the wall, as well as provide room for bleachers and/or team benches.
- Currently, access to the basketball courts does not meet ADA or MAAB accessibility requirements. Re-grading and installation of several ramp sections will achieve universal access to the basketball courts.
- New handball courts are proposed for the area just east of the basketball courts, parallel to Gates Street. A single concrete wall in the center will serve two game courts, one on either side.
- Fencing and lighting associated with the handball courts is proposed.

7.5 Playground Area

The community voiced the need for an expanded playground, with more swings and different play areas for various age groups. The existing Petty playground is fairly new and in good shape, therefore it made sense to leave the existing playground where it is and develop a new play area proximate to it. Due to its shape, location, and topography, the former pool area adjacent to the Petty playground is an ideal location for re-development of a centralized play area.

- Slightly raising the grade of the north half of the pool area creates a clearer visible and physical connection between the existing playground and a proposed playground.
- A low retaining wall bisected by an accessible walk separates the former pool area into quadrants. The lower two quadrants are proposed to contain a “tot lot” and a swing set area. From the new upper playground, adults are able to supervise all play areas from one location.
- The playground equipment and layout is to be determined by the resources of the City.
- Additional site amenities in this area will include resilient play surfacing, benches, site lighting, fencing, and shade trees.

7.6 Spray Park

In conjunction with the City’s replacement of aquatic facilities, a spray park is proposed to replace the former pool. An area allocated to a spray park has been proposed in the northeast quadrant of the former pool area. Adjacent to the spray park is a proposed building to house bathroom facilities and mechanical equipment necessary to operate the spray fixtures. Although the actual design of the spray park will be performed under separate contract, it is recommended that the park be designed as a plaza with ground jet water features instead of above-ground structures. This recommendation is made in order to discourage vandalism as well as increase the functionality and flexibility of the space;

during off-seasons when the spray feature is not being used, the space can serve as a plaza instead of looking like an abandoned playground. Additionally, ground jets may be able to be capped and the plaza flooded for ice skating in the winter.

7.7 Additional Site Improvements

Aside from the aforementioned specific areas, a series of overall site improvements are proposed for throughout the entire University Park. These improvements include:

- Security cameras on light poles
- Additional site and sport lighting
- Emergency call boxes
- Sidewalk repairs
- Wood guardrail surrounding entire property with vehicular access gates and bollards where appropriate
- Granite post with “University Park” signage at each major entry
- Decorative plaza areas at each major park entry, utilizing stamped concrete or stamped bituminous concrete
- Cleaning, repair, and re-pointing of retaining wall
Park benches, picnic tables, bleachers, and aluminum team benches where needed.

8.0 POND RECOMMENDATIONS

The first and most critical step in assessing the health of a body of water is to perform water quality monitoring and testing. Typical water quality tests measure nutrient levels, dissolved oxygen levels, and total suspended solids (TSS) levels. Testing is best performed during the spring and during the summer months when the pond system is at its most stressed. Results from the water quality monitoring and testing will likely reveal the best course of action to improve the pond health. Based upon the results, the following actions may be appropriate to repair, resolve, or prevent water quality problems.

- Dredging can be used to remove unwanted vegetation and/or silt build-up on the bottom of the pond. Additionally, dredging can create appropriate depths in the water body necessary to optimize aeration systems. However, dredging can often be expensive and require extensive permitting.
- Choosing the correct aeration system or understanding whether or not to use one altogether is a critical piece of knowledge. In shallow water bodies, aeration systems may not function at their highest potential. Furthermore, an inappropriate aeration system can cause scour and erosion along the banks. Finally, maintenance, vandalism, and available power are considerations when choosing the type of aeration system.
- Herbicide and algacide products are available and may be appropriate for particular applications.
- An edge treatment, whether structural in nature or landscaping, will help reduce

nutrient accumulation from sheet flow into the pond, sedimentation and erosion, and trash accumulation.

- Finally, the existing drainage structure in the southeast end of Crystal Pond should be repaired or replaced as necessary, potentially incorporating a weir with removable flashboards to regulate the water elevation in the pond.

9.0 **PHASING AND IMPLEMENTATION**

From the beginning of the master planning process it was indicated and understood that all of the desired improvements would not be economically feasible in a single capital improvement project. Two public meetings were conducted to discuss and reach a consensus on the community's and the City's top priorities for the first phase of implementation. The goal was to determine the most logical and immediately necessary improvements that would be acceptable to the neighborhood, meet the currently available 1.5 million dollar budget from the PILOT program, and coordinate with other neighborhood projects (ie: the Main Street streetscape improvement project). Beyond Phase 1 it is difficult to determine phases for the remaining project improvements as they will be developed as a function of available funding.

In general, the Phase 1 program includes the following:

- Main Street area improvements
 - Repair/replace existing concrete walk
 - New guardrail along Gates Street and abutting property
 - New electric service and electrical cabinet
- North pond improvements
 - New walkway
 - Concrete block revetment along edge
 - Repair and clean existing stone retaining wall
- Demolition/construction of new volleyball court
- Expansion of existing playground area
- Expansion of basketball courts
- Security camera installation
- Addition of benches and tables throughout the park
- Addition of select site lighting throughout the park

10.0 **PRELIMINARY COST ESTIMATE**

As discussed above, the goal of Phase 1 was to identify improvements of the highest priority for safety, security, and to enhance existing park functions and amenities, while being accomplished within the 1.5 million dollar PILOT budget. A breakdown of the proposed Phase 1 and total project program elements and associated cost estimates are listed below.

University Park Phase 1 Improvement Program - Target Budget	
Work Description	Budget
Main Street to Crystal Street Pathway Repair	\$50,000.00
New Electrical Service for Main Street Area	\$75,000.00
New Lighting and Security	\$300,000.00
North Pond Area Path Improvements	\$350,000.00
Relocate Volleyball Court to Illinois Street (no lights)	\$200,000.00
Upgrade/Add to Ex. Basketball Court (keep existing lights)	\$175,000.00
Expand Existing Petty Playground	\$100,000.00
Repair and Clean Existing Stone Wall	\$200,000.00
Miscellaneous Site Amenities (Benches and Tables)	\$50,000.00
TOTAL PHASE 1	**\$1,500,000.00

**2011 dollars

University Park Total Improvement Program - Preliminary Cost Estimate	
Work Description	Cost
Main Street Area	\$313,950.00
Pond Area	\$1,073,800.00
Volleyball and Picnic Area	\$450,775.00
Basketball and Handball Court	\$656,850.00
Playground Area	\$856,700.00
Spray Park	\$1,000,000.00
Additional Site Improvements	\$1,245,400.00
SUBTOTAL	**\$5,597,475.00
Phase 1 Improvements	**-\$1,500,000.00
TOTAL PROJECTED COSTS	**\$4,097,475.00

**2011 dollars

Appendices

Appendix A: Locus Map

Appendix B: Attendance Sheets

Appendix C: Topographic Plans

Appendix D: Master Plan Exhibits

IN Index Sheet

EX-1 Main Street Area

EX-2 North Pond Area

EX-3 South Pond Area

EX-4 Picnic Grove Area

EX-5 Spray Park Area

EX-6 Playground Area

EX-7 Ball Court Area

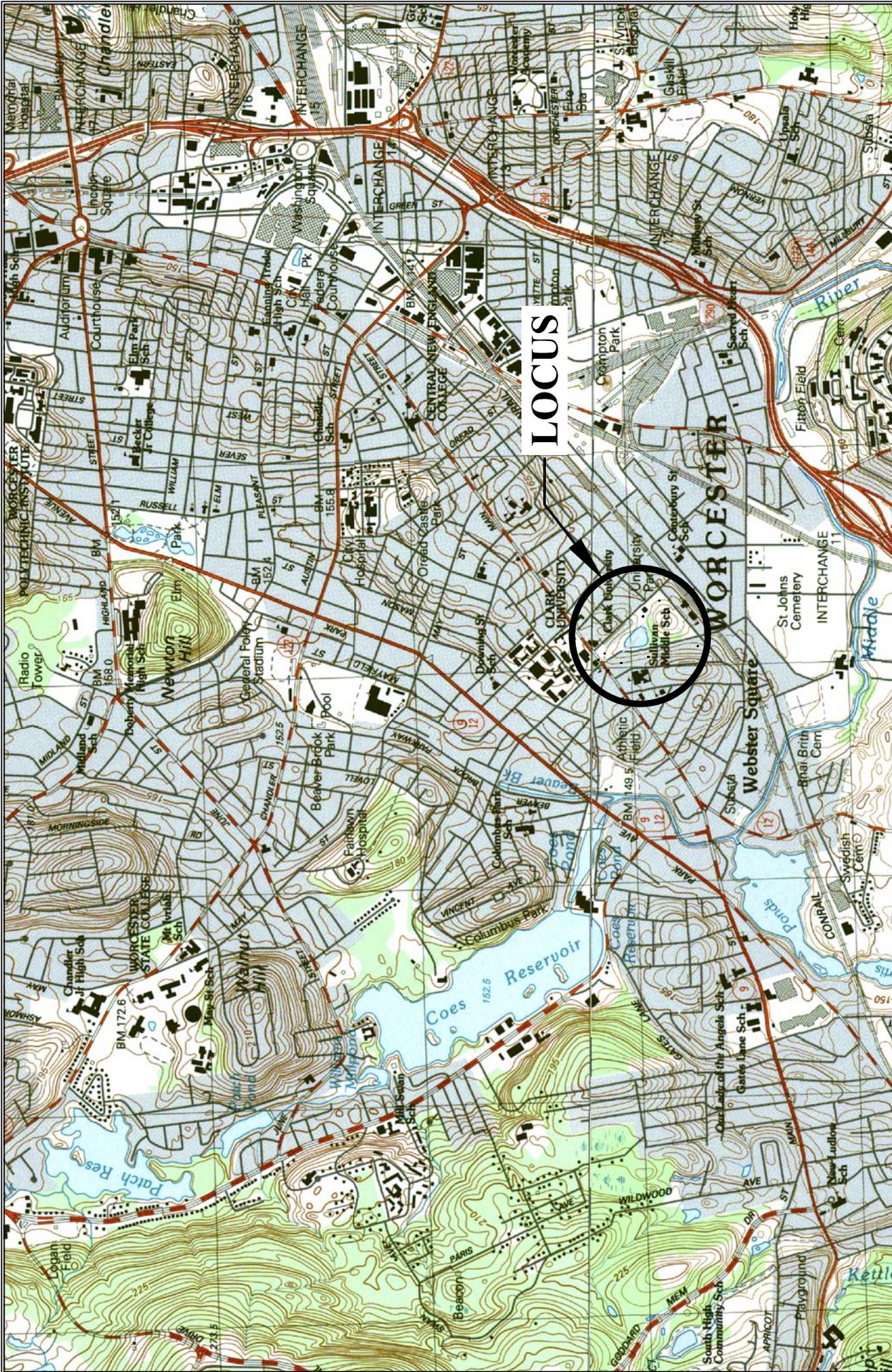
EX-8 Volleyball Area

EX-9 Crystal/Illinois Area

EX-10 Crystal Street Area

Appendix A

Locus Map



LOCUS

WORCESTER

UNIVERSITY PARK MASTER PLAN

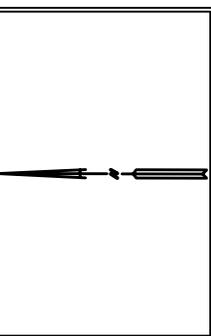
USGS LOCUS MAP

SCALE: 1" = 40' DATE: DEC 22, 2011 B+T JOB NO. 2271.00

0 METERS 10 20 80 B+T PLAN NO. 227100P006B-012

0 FEET 20 40 80

LOCUS



BEALS + THOMAS

Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

COPYRIGHT © BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED.

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**

50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS

Appendix B

Attendance Sheets

DPW & Parks - Parks, Recreation and Cemetery Division

University Park Master Plan Update Public Hearing # 1

Clark University, Higgins Student Center - Wednesday, April 13, 2011 @ 6:30 PM

Robert C. Antonelli Jr., Assistant Commissioner



	Name	Address	Phone No.	Affiliation/Resident
1	Casey Starr			MSCDC / Resident
2	Jack Foley			Clark/cdc
3	Bill B. Swank			C.D.C. - M.S.A
4	STEVE TEASDALE			CDC - No.
5	Micki Davis			Clark
6	DAVE SULLIVAN			RESIDENT
7	JOE CLEMMEY			RESIDENT
8	Greg Chavito			RESIDENT
9	TOM BRIGHAM			OWNER
10	Harrison Bass			Clark student
11	Justin Boyle			Clark
12	Khedya Alderman			Resident Dixon/Clark/Clark
13	Angela Marshall			Clark student
14	Lauren Smith			Clark student
15	Colin Oldenburg			Clark student
16	Victoria Corke			Clark student
17	Barbara Haller			City Council
18	Regan Harold			Beals and Thomas
19	David LaPointe			Beals and Thomas
20	AFAF Mohamed			Resident

	Name	Address	Phone No.	Affiliation/Resident
21	Theona Lourens			Resident
22	BARMARY ADOLPHE			Resident
23	GISELA CASTILLO			Resident
24	ROGER MARCHAND			Resident
25	ALBERT ROBICHAUD			Resident
26	ESTELLE BERNIER			Resident
27	Carol Marchand			Resident
28	Aria DiSalvo			Resident
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				

DPW & Parks - Parks, Recreation and Cemetery Division

University Park Master Plan Update Public Hearing # 2

Clark University, Higgins Student Center - Thursday, May 12, 2011 @ 6:30 PM

Robert C. Antonelli Jr., Assistant Commissioner



	Name	Affiliation/Resident
1	Peggy Muddaugh	Forest Tree Fruit
2	SAGE FOLEY	CLUB
3	Deborah Sanchez	RESIDENT
4	ALBERT + ELIZABETH ROBICI	RESIDENT
5	Carol Marchand	RESIDENT
6	TOM BRIGHAM	OWNER
7	Ann Blumette	
8	ESTELLE BERNIER	
9	Bill Braant	OWNER
10	Steve Peasdale	M.S.A - C.P.C.
11	Carol Starr	Main South CDC
12	Kathleen Holden	RESIDENT
13	William Sweetey	RESIDENT
14	John Reed	
15	Barbara Haller	
16	Peggy Muddaugh	Frank Brook W. H. S. / Spirit
17	Frank Blumette	allerb@worcesterma.gov
18	Lianne Gaudner	Gardner & Clark
19	JOE CLEMMERY	RESIDENT
20	Thuonn So	Clark Student

	Name	Address	Phone No.	Affiliation/Resident
21	<i>David Sullivan</i>			<i>resident</i>
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				

DPW & Parks - Parks, Recreation and Cemetery Division

University Park Master Plan Update Public Hearing # 3

Clark University, Higgins Student Center - Thursday, June 16, 2011 @ 6:30 PM
 Robert C. Antonelli Jr., Assistant Commissioner



	Name
1	Stephanie Choquette
2	Roger Marchant
3	ESTELLE BERNIER
4	ALBERT-ELIZABETH ROBINSON
5	Miranda Mura
6	Micki Davis
7	Tina Le
8	Bianah Hiser
9	Jairo Reyes Vega
10	Casey Starc
11	Paul R. Scahill
12	Theresa S. Scahill
13	Lianne Gardner
14	TOM BRIGHAM ✓
15	BILL SWENERY
16	DAVE SULLIVAN
17	Deborah Sanchez
18	Aria DiSalvo
19	Carol Marchant
20	

Affiliation/Resident
Resident
Clark
University Park Campus.
University Park Campus
U.P. C.S.
Resident / MSCOC
MSA - MSCOC
Main South Resident
Boys Girls Club / MS&S.
OWNER
RESIDENT

DPW & Parks - Parks, Recreation and Cemetery Division

University Park Master Plan Update Public Hearing # 4

Clark University, Higgins University Center - Monday, September 26, 2011 @ 6:00 PM

Robert C. Antonelli Jr., Assistant Commissioner



Name	Affiliation/Resident	
1	Allyson Elizabeth Abbott	Resident
2	Amy Chumley	Resident
3	Elizabeth Bennett	Resident
4	TOM BRIGHAM	OWNER
5	JACOB MOYER	RESIDENT
6	Katy Cleminson	Resident/student
7	Ali Canino	Resident/student
8	Patrick Shanley	Intern
9	Deborah Sanchez	Resident
10	Sara Hazare	Resident
11	VARY JAEN	CDC
12	CASEY STARR	MSCDC
13	MICKI DAVIS	Clark
14	Reay Midauch	Resident
15	Carole Marchand	Resident
16	Jack Foley	Clark
17	Joe Petty	City Council
18	Jixian He	Clark
19	MIRO REYES VEGA	STUDENT
20	Barbara Haller	Resident
21	Eileen Schenborg	Resident
22	Roger Marchand	Resident

	Name	Address	Phone No.	Affiliation/Resident
21	Sandi Burren			Resident
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				

DPW & Parks - Parks, Recreation and Cemetery Division

University Park Master Plan Update Public Hearing # 5

Clark University, Higgins University Center - Monday, October 24, 2011 @ 6:00 PM
 Robert C. Antonelli Jr., Assistant Commissioner



	Name	Affiliation/Resident
1	Deborah Sanchez	Resident
2	Clyde Talley	Church Pastor
3	BILL BRADLEY	RESIDENT
4	BILL ROSENBERG	RESIDENT
5	Thana Nguyen	Resident
6	Estelle Butler	Resident
7	Carol Marchand	Resident
8	Albert & Elizabeth Habuchee	Resident
9	Barbara Haller	city & wove, district 4
10	JOE Cleary	RESIDENT
11	TOM BRIGHAM	OWNER
12	Edward Kwiyep	OWNER
13	Rigan Ballantyne	
14	DAVE LAPOINTE	
15	ROBERT MARCHAND	RESIDENT
16		
17		
18		
19		
20		

Appendix C

Topographic Plans

PREPARED FOR

CITY OF WORCESTER
Department of Public
Works and Parks
200 Worcester Street
Worcester, MA 01604

RECORD OWNER

CITY OF WORCESTER
City Hall
455 South Main Street
Worcester, MA 01606
Assessor: David D.
[01-207-0116]

NO.	DATE	BY	DESCRIPTION
1	01/15/03	W. J. WILSON	PREPARED FOR RECORD
2	01/15/03	W. J. WILSON	REVISIONS
3	01/15/03	W. J. WILSON	REVISIONS
4	01/15/03	W. J. WILSON	REVISIONS
5	01/15/03	W. J. WILSON	REVISIONS
6	01/15/03	W. J. WILSON	REVISIONS
7	01/15/03	W. J. WILSON	REVISIONS
8	01/15/03	W. J. WILSON	REVISIONS
9	01/15/03	W. J. WILSON	REVISIONS
10	01/15/03	W. J. WILSON	REVISIONS



PROJECT NO. 03-001
DATE: 01/15/03

TOPOGRAPHIC INDEX PLAN
UNIVERSITY PARK
WORCESTER, MA
(WORCESTER COUNTY)

PREPARED BY
BEALS & THOMAS
Civil Engineers & Landscapers
144 South Main Street
Worcester, MA 01604
Tel: 781-853-0000 Fax: 781-853-0001
www.bealsandthomas.com



TP-1
SHEET 2 OF 6



SEE SHEET 1 OF 6 (TP-2) FOR BOUNDARY INFORMATION.
SEE SHEET 2 OF 6 (TP-3) FOR BOUNDARY INFORMATION.
SEE SHEET 3 OF 6 (TP-4) FOR BOUNDARY INFORMATION.
SEE SHEET 4 OF 6 (TP-5) FOR BOUNDARY INFORMATION.

PREPARED FOR:

CITY OF WORCESTER
Department of Public Works
100 State Street
Worcester, MA 01604

RECORD OFFICE:

CITY OF WORCESTER
City Hall
450 Main Street
Worcester, MA 01609
Assessor Parcel ID
[07-007-01-02]

NO.	DATE	DESCRIPTION	BY	CHK'D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				



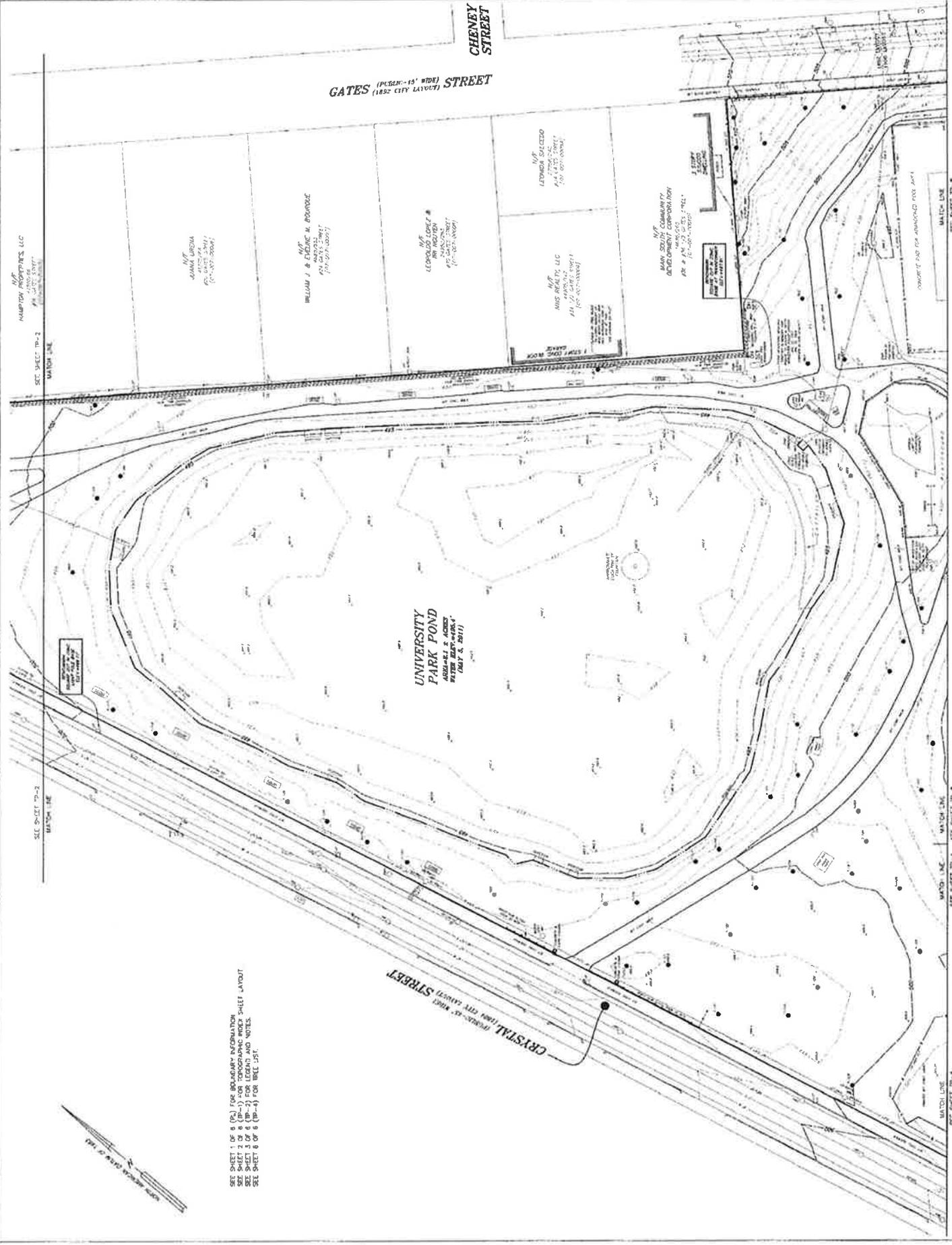
TOPOGRAPHIC PLAN

UNIVERSITY PARK
WORCESTER, MA
(WORCESTER COUNTY)

PREPARED BY:
SEALS & THOMAS
INCORPORATED
1000 State Street
Worcester, MA 01609
Tel: 508-853-1111
Fax: 508-853-1112
www.sealsandthomas.com

DATE: JAN 15, 2011
SCALE: AS SHOWN
SHEET NO. 237 OF 26
PROJECT NO. 1000000000

TP-3
SHEET 2 OF 4



PREPARED FOR

CITY OF WORCESTER

Department of Public
Works & Engineering
20 East Worcester Street
Worcester, Ma 01604

DESIGNED BY

CITY OF WORCESTER

City Hall
455 Main Street
Worcester, Ma 01600
Assessor Parcel ID
[91-001-01100]

1	PROJECT NO.	1000000001
2	DATE	08/20/2013
3	SCALE	AS SHOWN
4	PROJECT	UNIVERSITY PARK
5	DATE	08/20/2013
6	SCALE	AS SHOWN
7	PROJECT	UNIVERSITY PARK
8	DATE	08/20/2013
9	SCALE	AS SHOWN
10	PROJECT	UNIVERSITY PARK
11	DATE	08/20/2013
12	SCALE	AS SHOWN
13	PROJECT	UNIVERSITY PARK
14	DATE	08/20/2013
15	SCALE	AS SHOWN
16	PROJECT	UNIVERSITY PARK
17	DATE	08/20/2013
18	SCALE	AS SHOWN
19	PROJECT	UNIVERSITY PARK
20	DATE	08/20/2013
21	SCALE	AS SHOWN
22	PROJECT	UNIVERSITY PARK
23	DATE	08/20/2013
24	SCALE	AS SHOWN
25	PROJECT	UNIVERSITY PARK
26	DATE	08/20/2013
27	SCALE	AS SHOWN
28	PROJECT	UNIVERSITY PARK
29	DATE	08/20/2013
30	SCALE	AS SHOWN



Seal's Thomas
Professional Engineer
No. 1000000001
State of Massachusetts

TOPOGRAPHIC PLAN

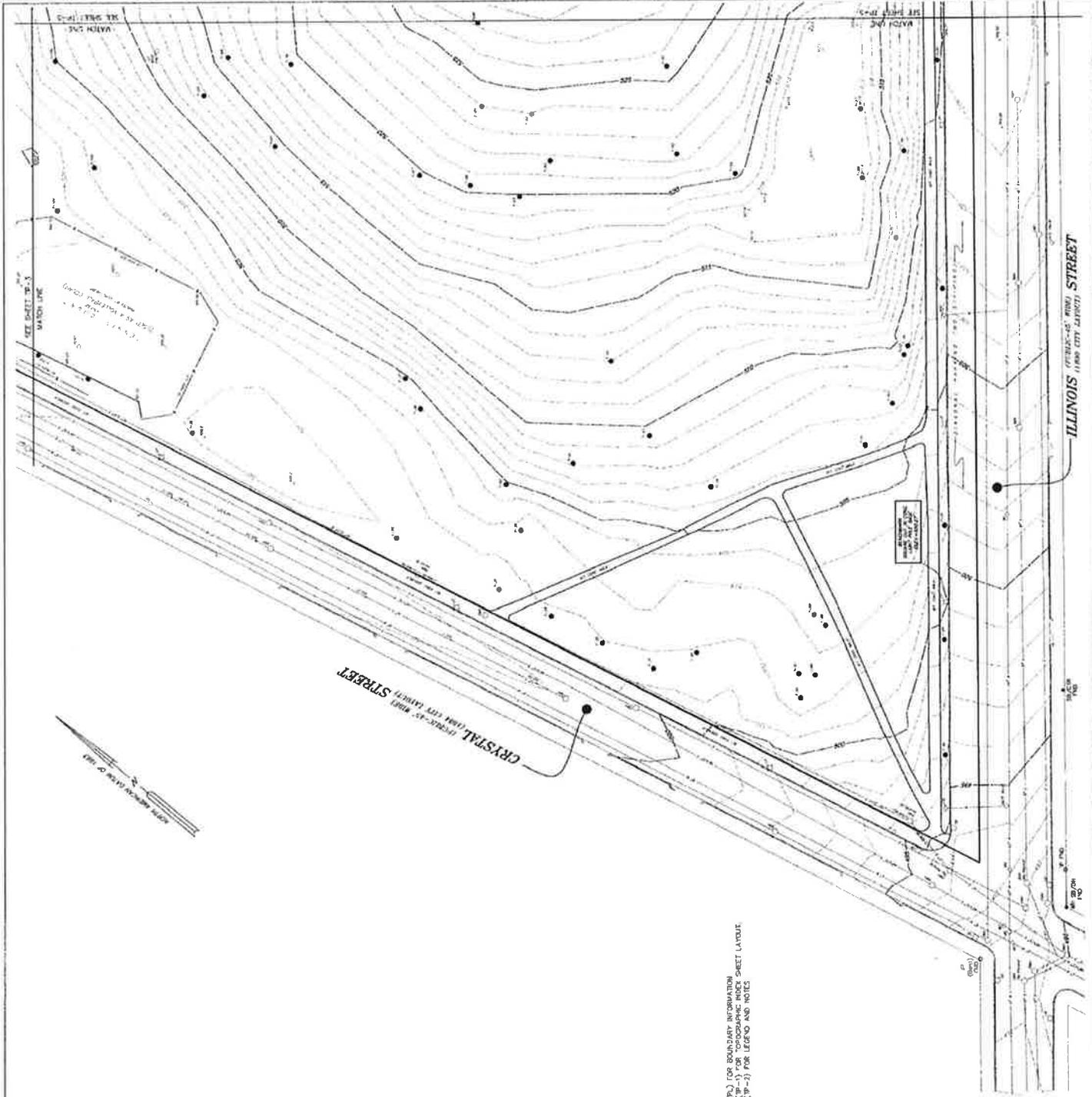
UNIVERSITY PARK
WORCESTER, MA
WORCESTER COUNTY

PREPARED BY:
SEAL'S THOMAS
1000000001
1000000001

SEAL'S THOMAS, INC.
144 Lyndale Ave. North
Worcester, MA 01604
Tel: 508-853-1100
Fax: 508-853-1101

DATE: 08/20/13
BY: J.M.N. 2013
1000000001
1000000001
PAGE 1 OF 4

TP-4



SEE SHEET 1 OF 6 (P1) FOR BOUNDARY INFORMATION
SEE SHEET 2 OF 6 (P2-1) FOR TOPOGRAPHIC INDEX SHEET LAYOUT
SEE SHEET 3 OF 6 (P3-2) FOR LEGEND AND NOTES

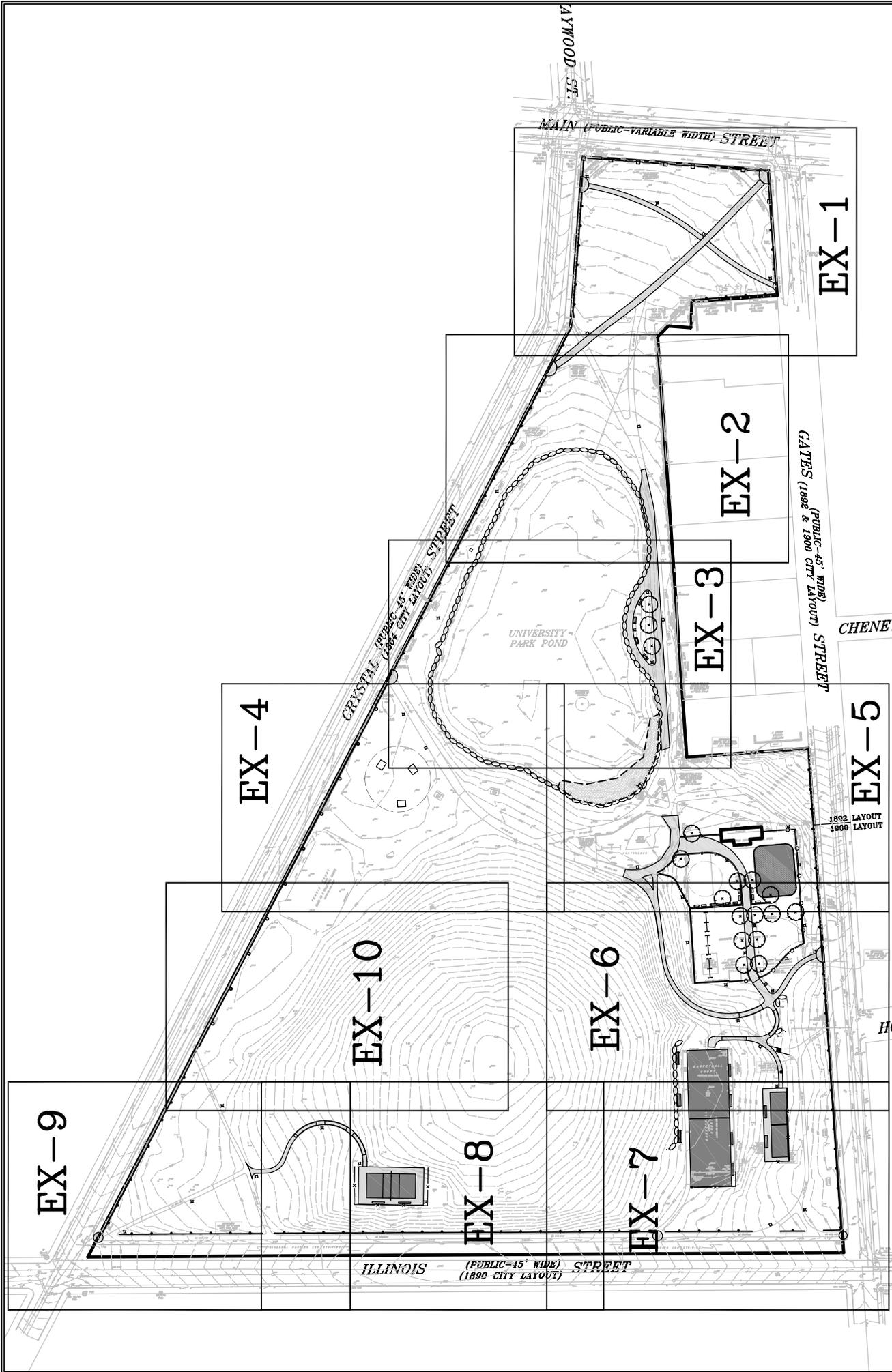
TREE LIST

NO.	DATE	SP. NO.	TRUNK DBH	HEIGHT	SPECIES	STATUS
1	08/20/13	1000000001	12.0	15.0	Q. ROBUR	1
2	08/20/13	1000000001	10.0	12.0	F. PRIN	1
3	08/20/13	1000000001	8.0	10.0	L. GLAUC	1
4	08/20/13	1000000001	6.0	8.0	A. NIGRA	1
5	08/20/13	1000000001	4.0	6.0	P. MAR	1
6	08/20/13	1000000001	3.0	5.0	C. ALBA	1
7	08/20/13	1000000001	2.0	4.0	S. BICOLOR	1
8	08/20/13	1000000001	1.0	3.0	R. PRIN	1
9	08/20/13	1000000001	1.0	3.0	T. AMERIC	1
10	08/20/13	1000000001	1.0	3.0	V. QUINQUE	1
11	08/20/13	1000000001	1.0	3.0	U. AMERIC	1
12	08/20/13	1000000001	1.0	3.0	W. AMERIC	1
13	08/20/13	1000000001	1.0	3.0	X. AMERIC	1
14	08/20/13	1000000001	1.0	3.0	Y. AMERIC	1
15	08/20/13	1000000001	1.0	3.0	Z. AMERIC	1
16	08/20/13	1000000001	1.0	3.0	AA. AMERIC	1
17	08/20/13	1000000001	1.0	3.0	AB. AMERIC	1
18	08/20/13	1000000001	1.0	3.0	AC. AMERIC	1
19	08/20/13	1000000001	1.0	3.0	AD. AMERIC	1
20	08/20/13	1000000001	1.0	3.0	AE. AMERIC	1
21	08/20/13	1000000001	1.0	3.0	AF. AMERIC	1
22	08/20/13	1000000001	1.0	3.0	AG. AMERIC	1
23	08/20/13	1000000001	1.0	3.0	AH. AMERIC	1
24	08/20/13	1000000001	1.0	3.0	AI. AMERIC	1
25	08/20/13	1000000001	1.0	3.0	AJ. AMERIC	1
26	08/20/13	1000000001	1.0	3.0	AK. AMERIC	1
27	08/20/13	1000000001	1.0	3.0	AL. AMERIC	1
28	08/20/13	1000000001	1.0	3.0	AM. AMERIC	1
29	08/20/13	1000000001	1.0	3.0	AN. AMERIC	1
30	08/20/13	1000000001	1.0	3.0	AO. AMERIC	1
31	08/20/13	1000000001	1.0	3.0	AP. AMERIC	1
32	08/20/13	1000000001	1.0	3.0	AQ. AMERIC	1
33	08/20/13	1000000001	1.0	3.0	AR. AMERIC	1
34	08/20/13	1000000001	1.0	3.0	AS. AMERIC	1
35	08/20/13	1000000001	1.0	3.0	AT. AMERIC	1
36	08/20/13	1000000001	1.0	3.0	AU. AMERIC	1
37	08/20/13	1000000001	1.0	3.0	AV. AMERIC	1
38	08/20/13	1000000001	1.0	3.0	AW. AMERIC	1
39	08/20/13	1000000001	1.0	3.0	AX. AMERIC	1
40	08/20/13	1000000001	1.0	3.0	AY. AMERIC	1
41	08/20/13	1000000001	1.0	3.0	AZ. AMERIC	1
42	08/20/13	1000000001	1.0	3.0	BA. AMERIC	1
43	08/20/13	1000000001	1.0	3.0	BB. AMERIC	1
44	08/20/13	1000000001	1.0	3.0	BC. AMERIC	1
45	08/20/13	1000000001	1.0	3.0	BD. AMERIC	1
46	08/20/13	1000000001	1.0	3.0	BE. AMERIC	1
47	08/20/13	1000000001	1.0	3.0	BF. AMERIC	1
48	08/20/13	1000000001	1.0	3.0	BG. AMERIC	1
49	08/20/13	1000000001	1.0	3.0	BH. AMERIC	1
50	08/20/13	1000000001	1.0	3.0	BI. AMERIC	1
51	08/20/13	1000000001	1.0	3.0	BJ. AMERIC	1
52	08/20/13	1000000001	1.0	3.0	BK. AMERIC	1
53	08/20/13	1000000001	1.0	3.0	BL. AMERIC	1
54	08/20/13	1000000001	1.0	3.0	BM. AMERIC	1
55	08/20/13	1000000001	1.0	3.0	BN. AMERIC	1
56	08/20/13	1000000001	1.0	3.0	BO. AMERIC	1
57	08/20/13	1000000001	1.0	3.0	BP. AMERIC	1
58	08/20/13	1000000001	1.0	3.0	BQ. AMERIC	1
59	08/20/13	1000000001	1.0	3.0	BR. AMERIC	1
60	08/20/13	1000000001	1.0	3.0	BS. AMERIC	1
61	08/20/13	1000000001	1.0	3.0	BT. AMERIC	1
62	08/20/13	1000000001	1.0	3.0	BV. AMERIC	1
63	08/20/13	1000000001	1.0	3.0	BW. AMERIC	1
64	08/20/13	1000000001	1.0	3.0	BX. AMERIC	1
65	08/20/13	1000000001	1.0	3.0	BY. AMERIC	1
66	08/20/13	1000000001	1.0	3.0	BZ. AMERIC	1
67	08/20/13	1000000001	1.0	3.0	CA. AMERIC	1
68	08/20/13	1000000001	1.0	3.0	CB. AMERIC	1
69	08/20/13	1000000001	1.0	3.0	CC. AMERIC	1
70	08/20/13	1000000001	1.0	3.0	CD. AMERIC	1
71	08/20/13	1000000001	1.0	3.0	CE. AMERIC	1
72	08/20/13	1000000001	1.0	3.0	CF. AMERIC	1
73	08/20/13	1000000001	1.0	3.0	CG. AMERIC	1
74	08/20/13	1000000001	1.0	3.0	CH. AMERIC	1
75	08/20/13	1000000001	1.0	3.0	CI. AMERIC	1
76	08/20/13	1000000001	1.0	3.0	CJ. AMERIC	1
77	08/20/13	1000000001	1.0	3.0	CK. AMERIC	1
78	08/20/13	1000000001	1.0	3.0	CL. AMERIC	1
79	08/20/13	1000000001	1.0	3.0	CM. AMERIC	1
80	08/20/13	1000000001	1.0	3.0	CN. AMERIC	1
81	08/20/13	1000000001	1.0	3.0	CO. AMERIC	1
82	08/20/13	1000000001	1.0	3.0	CP. AMERIC	1
83	08/20/13	1000000001	1.0	3.0	CQ. AMERIC	1
84	08/20/13	1000000001	1.0	3.0	CR. AMERIC	1
85	08/20/13	1000000001	1.0	3.0	CS. AMERIC	1
86	08/20/13	1000000001	1.0	3.0	CT. AMERIC	1
87	08/20/13	1000000001	1.0	3.0	CV. AMERIC	1
88	08/20/13	1000000001	1.0	3.0	CW. AMERIC	1
89	08/20/13	1000000001	1.0	3.0	CX. AMERIC	1
90	08/20/13	1000000001	1.0	3.0	CY. AMERIC	1
91	08/20/13	1000000001	1.0	3.0	CZ. AMERIC	1
92	08/20/13	1000000001	1.0	3.0	DA. AMERIC	1
93	08/20/13	1000000001	1.0	3.0	DB. AMERIC	1
94	08/20/13	1000000001	1.0	3.0	DC. AMERIC	1
95	08/20/13	1000000001	1.0	3.0	DD. AMERIC	1
96	08/20/13	1000000001	1.0	3.0	DE. AMERIC	1
97	08/20/13	1000000001	1.0	3.0	DF. AMERIC	1
98	08/20/13	1000000001	1.0	3.0	DG. AMERIC	1
99	08/20/13	1000000001	1.0	3.0	DH. AMERIC	1
100	08/20/13	1000000001	1.0	3.0	DI. AMERIC	1

Appendix D

Master Plan Exhibits

IN	Index Sheet
EX-1	Main Street Area
EX-2	North Pond Area
EX-3	South Pond Area
EX-4	Picnic Grove Area
EX-5	Spray Park Area
EX-6	Playground Area
EX-7	Ball Court Area
EX-8	Volleyball Area
EX-9	Crystal/Illinois Area
EX-10	Crystal Street Area

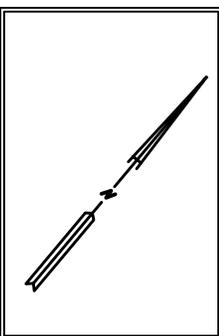


**UNIVERSITY PARK
MASTER PLAN**

INDEX SHEET

SCALE: 1" = 160'	DATE: DEC 22, 2011
0 METERS	0 40 80 160 320
0 FEET	0 40 80 160 320

B+T JOB NO. 2271.00	IN
B+T PLAN NO. 227100P006B-001	SHEET 1 OF 11



BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

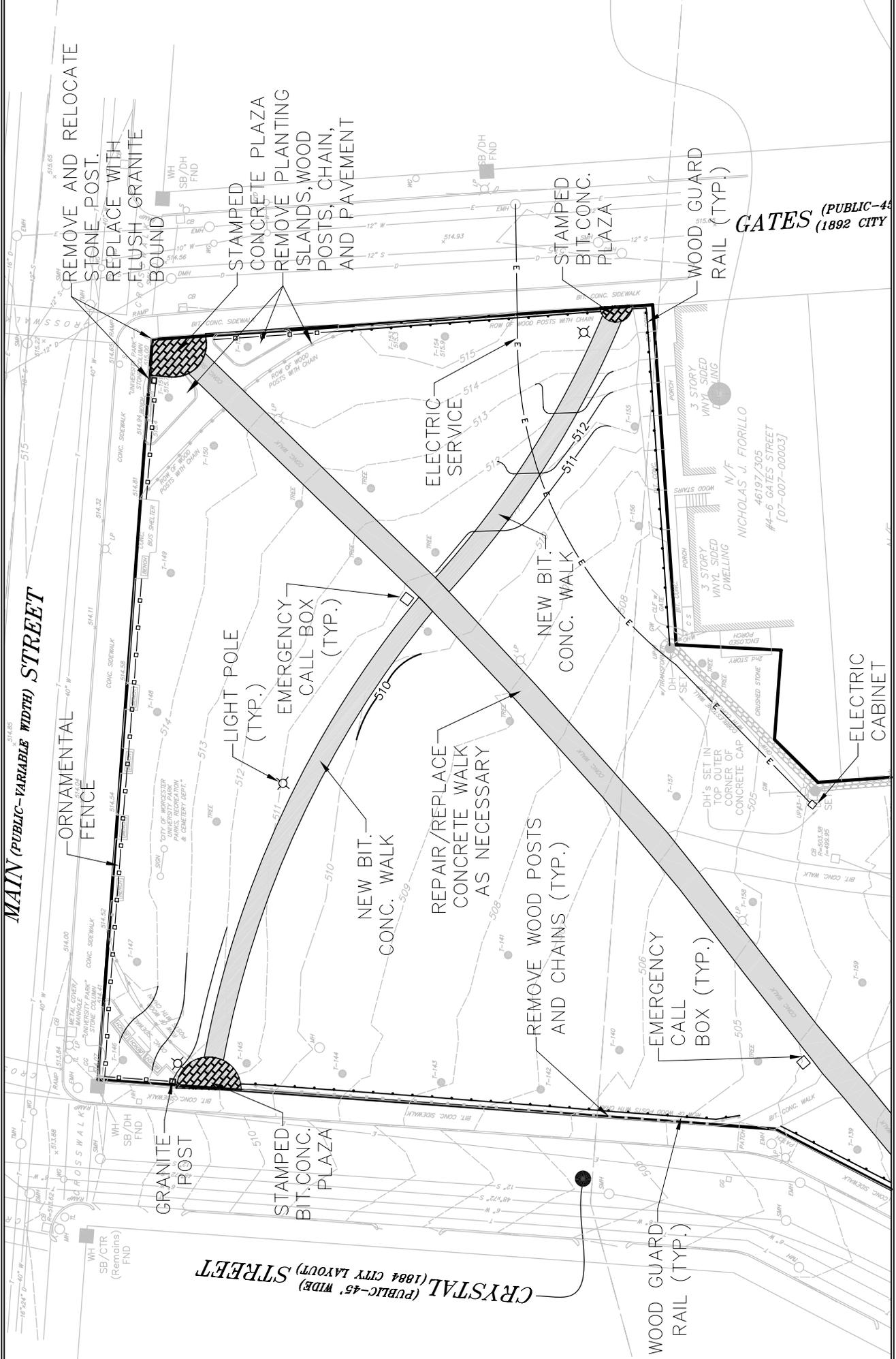
BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

COPYRIGHT © BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**

50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS

MAIN (PUBLIC-VARIABLE WIDTH) STREET



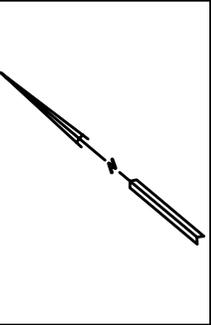
UNIVERSITY PARK MASTER PLAN

MAIN STREET AREA

SCALE: 1" = 40' DATE: DEC 22, 2011

0 METERS 10 20 80
0 FEET 20 40 80

B+T JOB NO. 271.00
B+T PLAN NO. 227100P006B-002
SHEET 2 OF 11



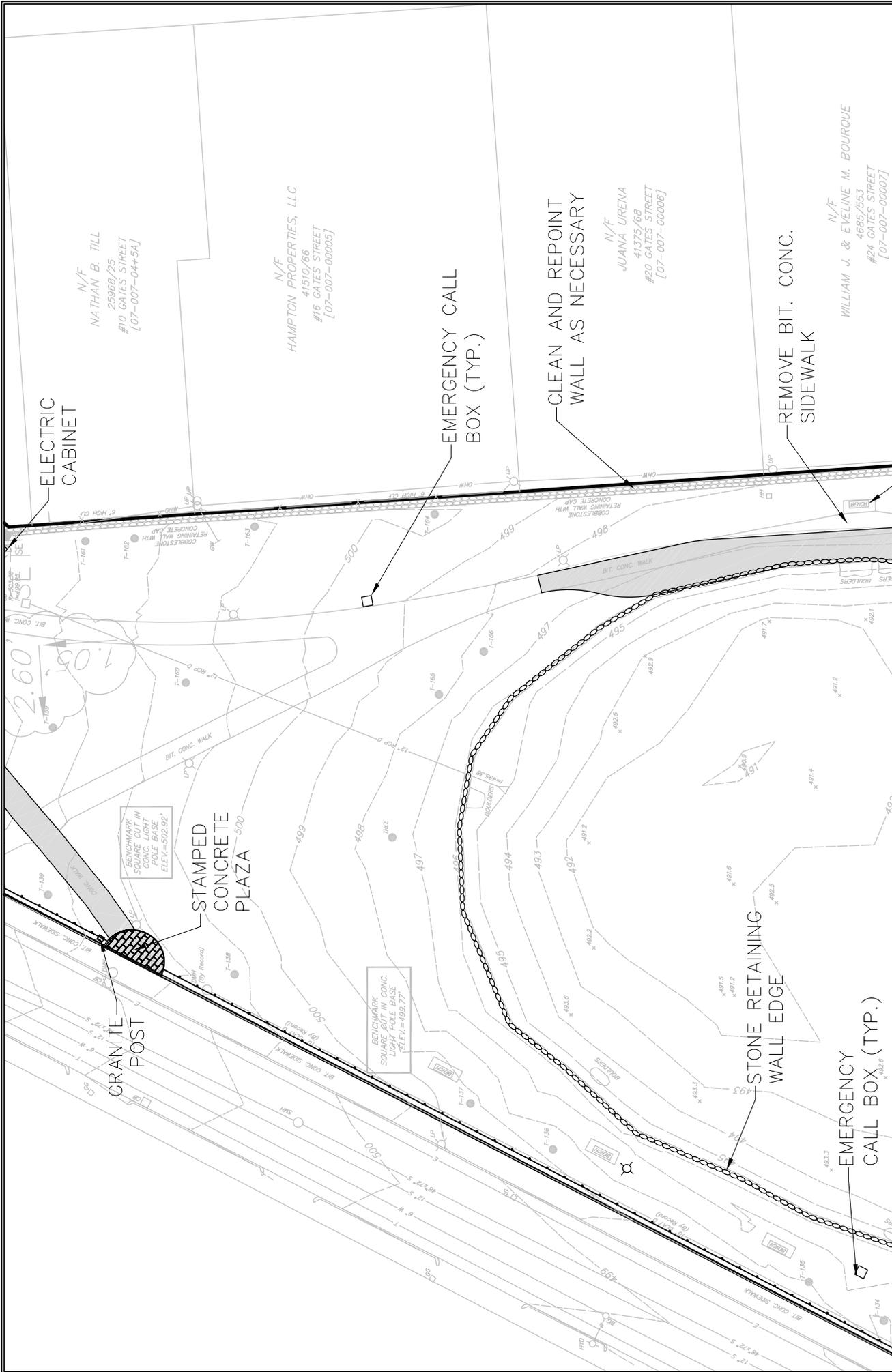
BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

COPYRIGHT © BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**

50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS



UNIVERSITY PARK MASTER PLAN

NORTH POND AREA

SCALE: 1" = 40' DATE: DEC 22, 2011

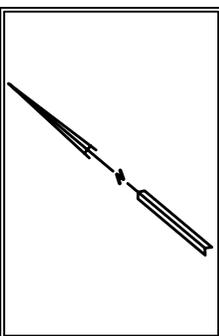
B+T JOB NO. 2271.00

B+T PLAN NO. 227100P06B-003

SHEET 3 OF 11

0 METERS 10 20 80

0 FEET 20 40 80



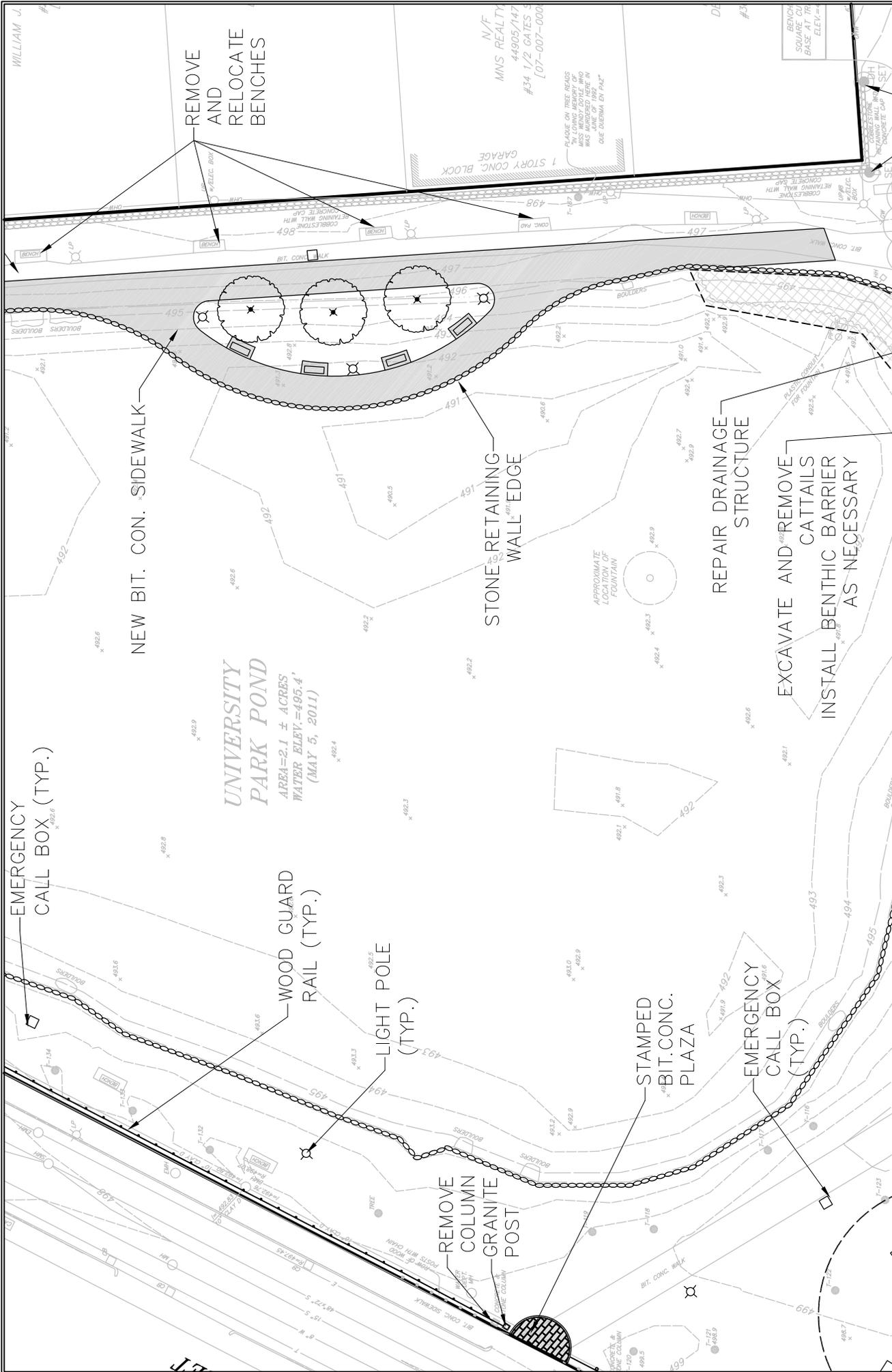
BEALS + THOMAS
 Civil Engineers + Landscape Architects +
 Land Surveyors + Planners +
 Environmental Specialists

BEALS AND THOMAS, INC.
 Reservoir Corporate Center
 144 Turnpike Road
 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
 ALL RIGHTS RESERVED

**CITY OF WORCESTER
 DEPARTMENT OF
 PUBLIC WORKS AND
 PARKS**

50 SKYLINE DRIVE
 WORCESTER, MASSACHUSETTS



**UNIVERSITY PARK
MASTER PLAN**

SOUTH POND AREA

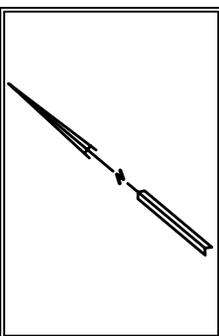
SCALE: 1" = 40' DATE: DEC 22, 2011

B+T JOB NO. 2271.00

B+T PLAN NO. 227100P006B-004

SHEET 4 OF 11

0 METERS 10 20 80
0 FEET 20 40



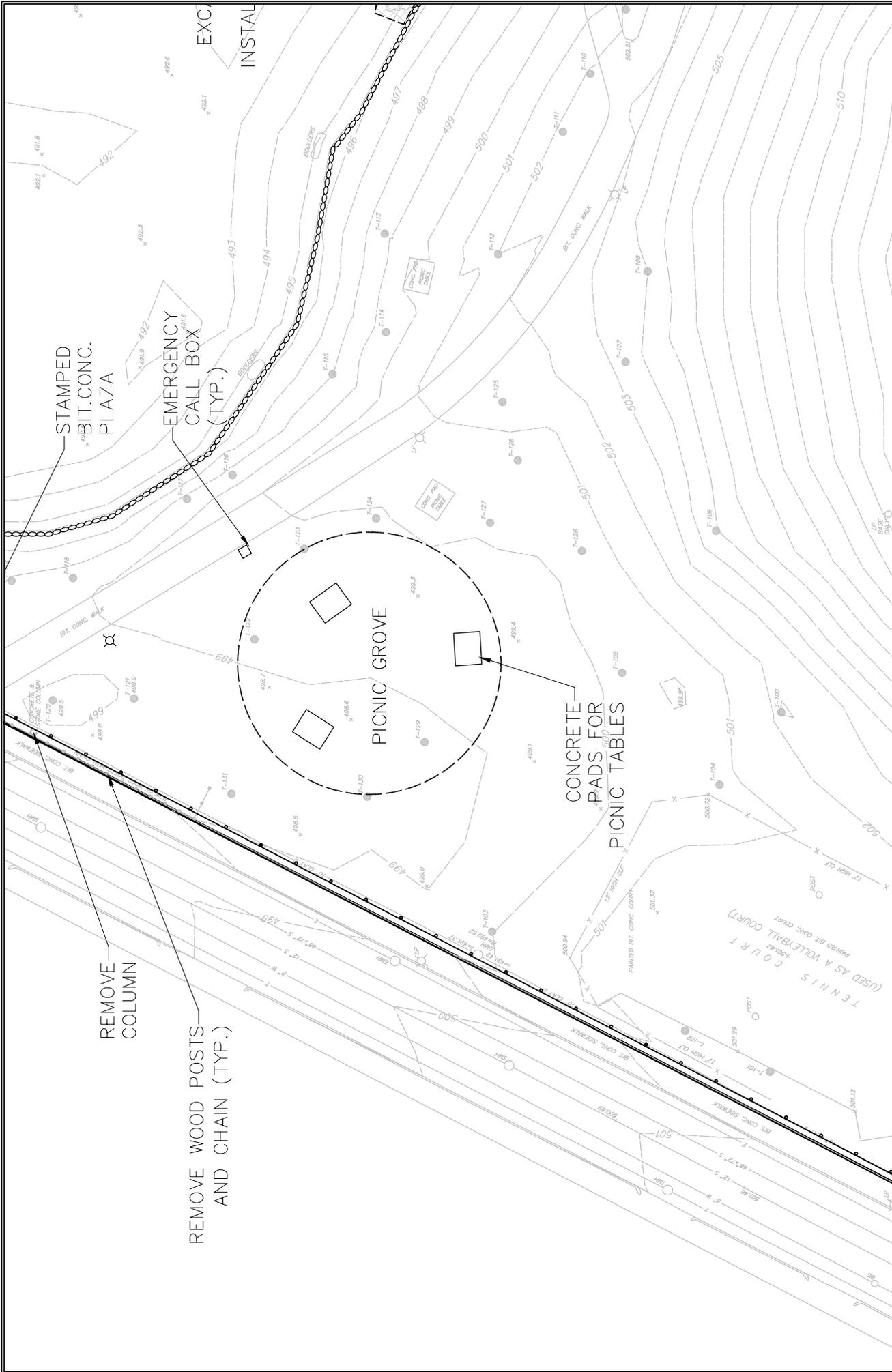
BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

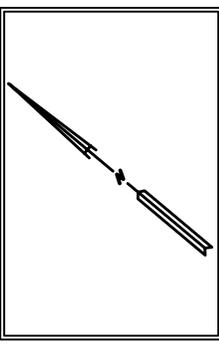
COPYRIGHT © BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**

50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS



UNIVERSITY PARK MASTER PLAN		PICNIC GROVE AREA	
SCALE: 1" = 40'	DATE: DEC 22, 2011	B+T JOB NO. 2271.00	EX-4
0 METERS	0 10 20	B+T PLAN NO. 227100P006B-005	
0 FEET	0 20 40 80	SHEET 5 OF 11	



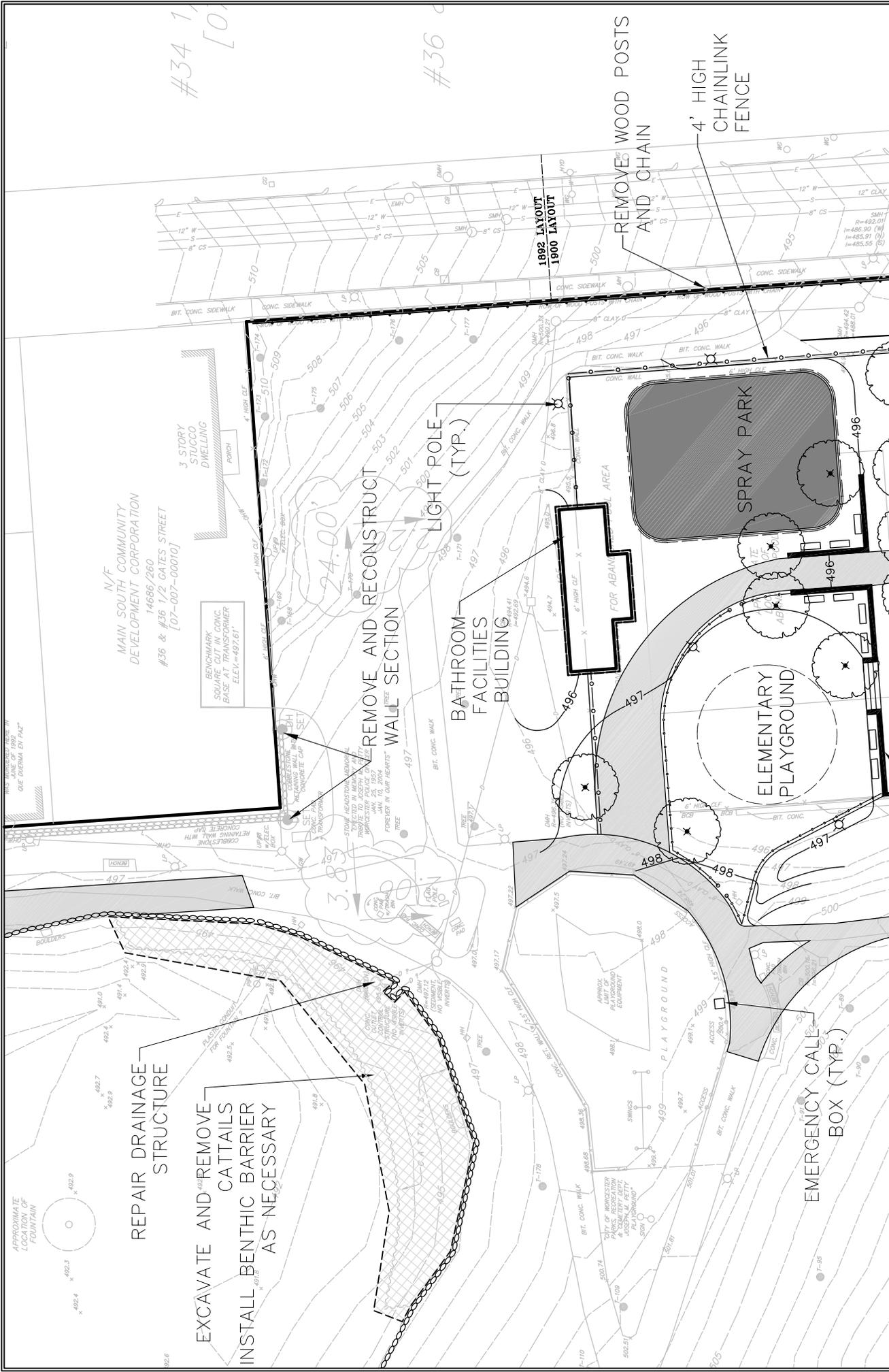
BEALS + THOMAS
 Civil Engineers + Landscape Architects +
 Land Surveyors + Planners +
 Environmental Specialists

BEALS AND THOMAS, INC.
 Reservoir Corporate Center
 144 Turnpike Road
 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
 ALL RIGHTS RESERVED.

**CITY OF WORCESTER
 DEPARTMENT OF
 PUBLIC WORKS AND
 PARKS**

50 SKYLINE DRIVE
 WORCESTER, MASSACHUSETTS



N/F
 MAIN SOUTH COMMUNITY
 DEVELOPMENT CORPORATION
 146866/260
 #36 & #36 1/2 GATES STREET
 [07-007-00010]

REPAIR DRAINAGE
 STRUCTURE

EXCAVATE AND REMOVE
 CATTAILS
 INSTALL BENTHIC BARRIER
 AS NECESSARY

REMOVE AND RECONSTRUCT
 WALL SECTION

BATHROOM
 FACILITIES
 BUILDING

LIGHT POLE
 (TYP.)

REMOVE WOOD POSTS
 AND CHAIN

4' HIGH
 CHAINLINK
 FENCE

ELEMENTARY
 PLAYGROUND

SPRAY PARK

EMERGENCY CALL
 BOX (TYP.)

1892 LAYOUT
 1900 LAYOUT

CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS 50 SKYLINE DRIVE WORCESTER, MASSACHUSETTS	BEALS + THOMAS Civil Engineers + Landscape Architects + Land Surveyors + Planners + Environmental Specialists BEALS AND THOMAS, INC. Reservoir Corporate Center 144 Turnpike Road Southborough, Massachusetts 01772-2104 T 508.366.0560 www.btiweb.com COPYRIGHT © BY BEALS AND THOMAS, INC. ALL RIGHTS RESERVED.		UNIVERSITY PARK MASTER PLAN		SPRAY PARK AREA	
			SCALE: 1" = 40' 0 METERS 10 20 30 40 50 60 70 80 0 FEET 20 40 60 80	DATE: DEC 22, 2011	B+T JOB NO.2271.00	B+T PLAN NO. 227100P006B-006



CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS
 50 SKYLINE DRIVE
 WORCESTER, MASSACHUSETTS

UNIVERSITY PARK
MASTER PLAN

BEALS + THOMAS
 Civil Engineers + Landscape Architects +
 Land Surveyors + Planners +
 Environmental Specialists

BEALS AND THOMAS, INC.
 Reservoir Corporate Center
 144 Turnpike Road
 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
 ALL RIGHTS RESERVED.

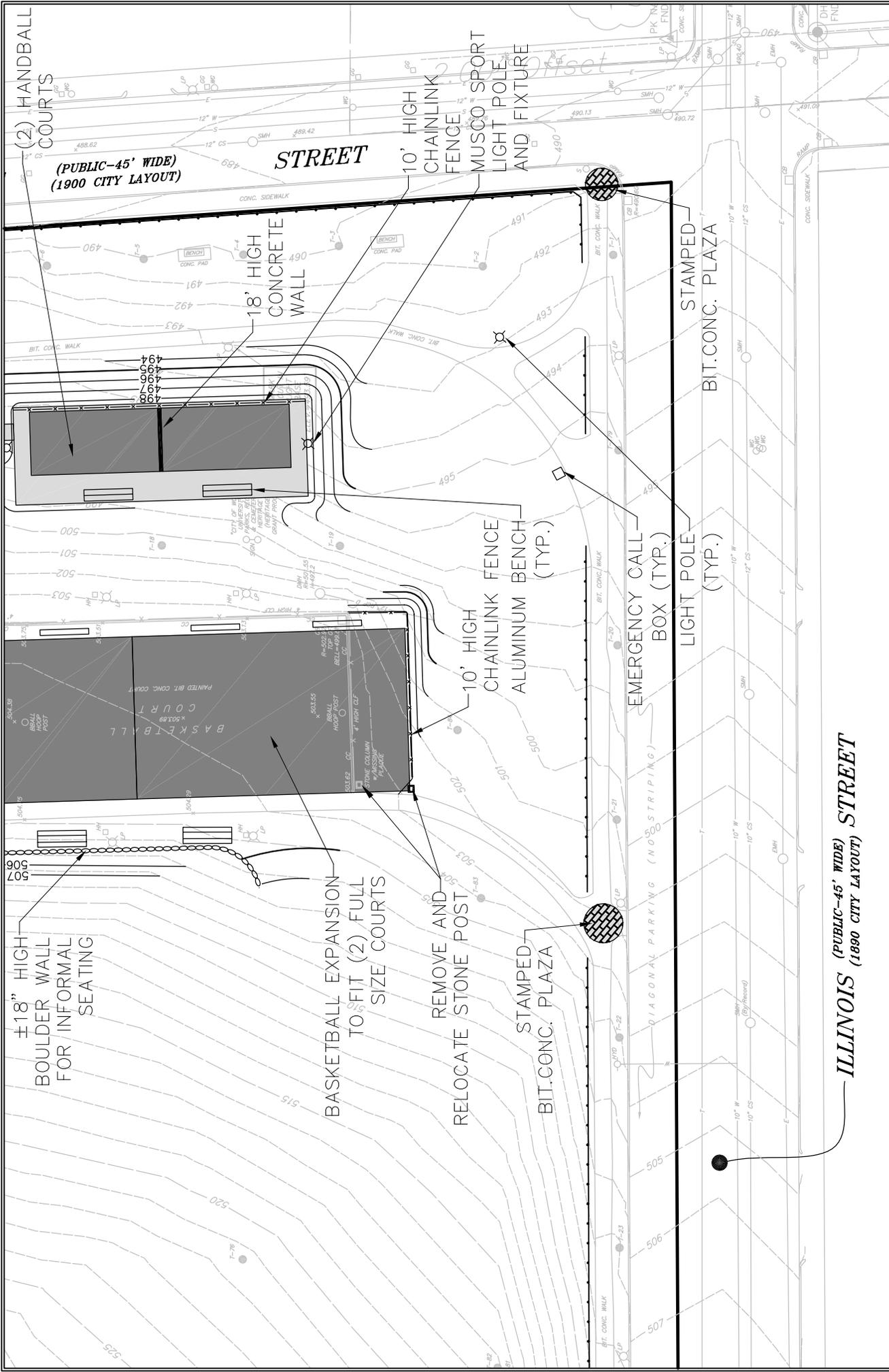
PLAYGROUND AREA

SCALE: 1" = 40' DATE: DEC 22, 2011

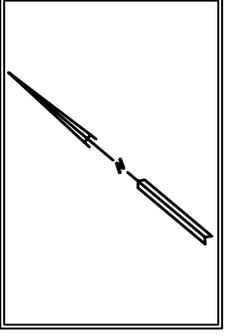
0 METERS 10 20 40 80
 0 FEET 20 40 80

B+T JOB NO. 2271.00
 B+T PLAN NO. 227100P006B-007
 SHEET 7 OF 11

EX-6



CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS 50 SKYLINE DRIVE WORCESTER, MASSACHUSETTS	UNIVERSITY PARK MASTER PLAN	BALL COURT AREA
SCALE: 1" = 40' DATE: DEC 22, 2011		B+T JOB NO. 2271.00
		B+T PLAN NO. 227100P006B-008
		SHEET 8 OF 11

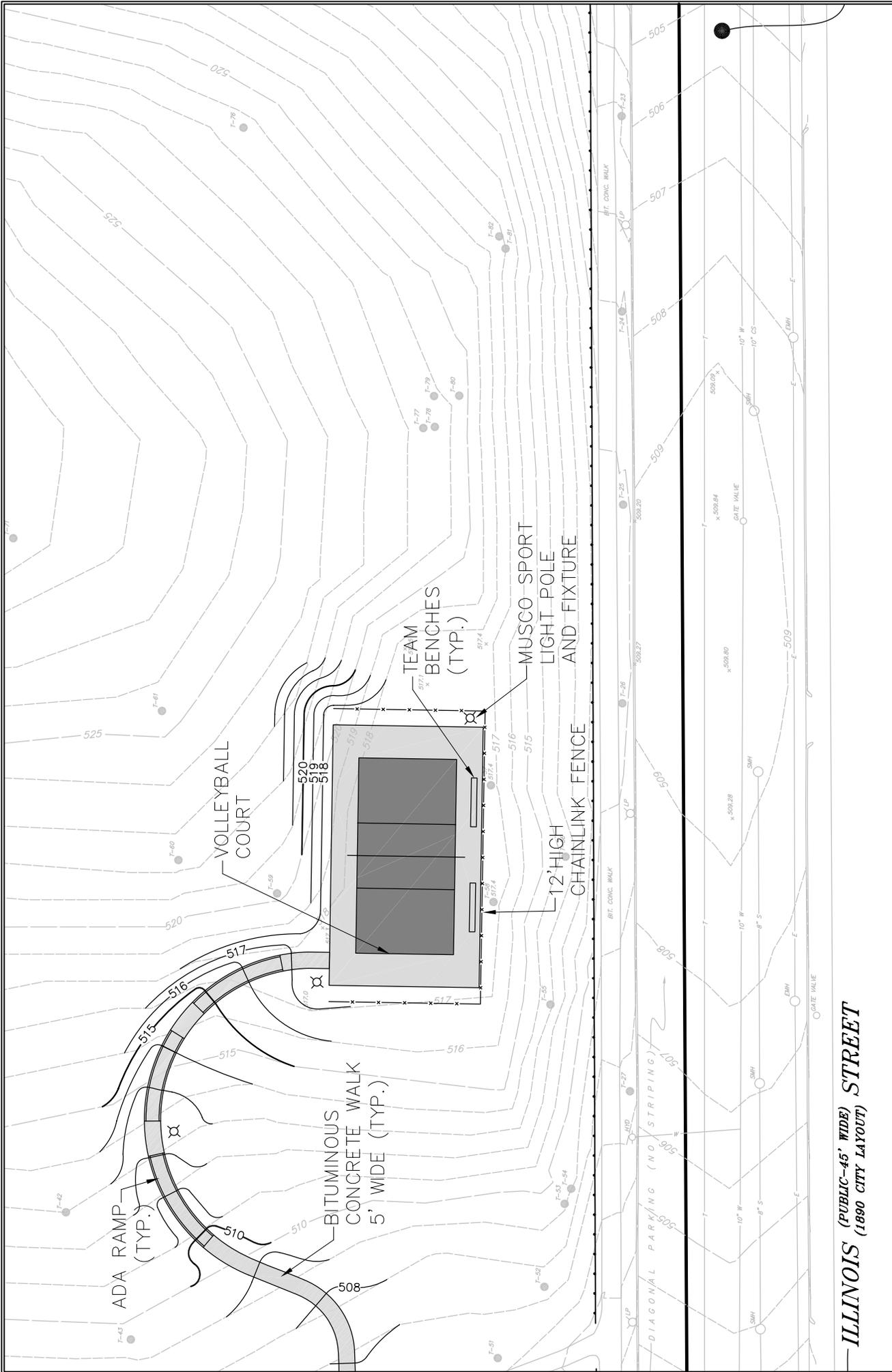


BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED.

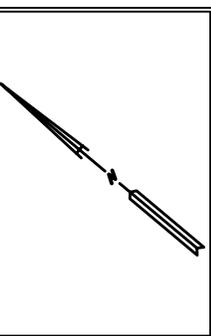
**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**
50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS



ILLINOIS (PUBLIC-45' WIDE) STREET

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**
50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS

BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists
BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com
COPYRIGHT (C) BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED



**UNIVERSITY PARK
MASTER PLAN**

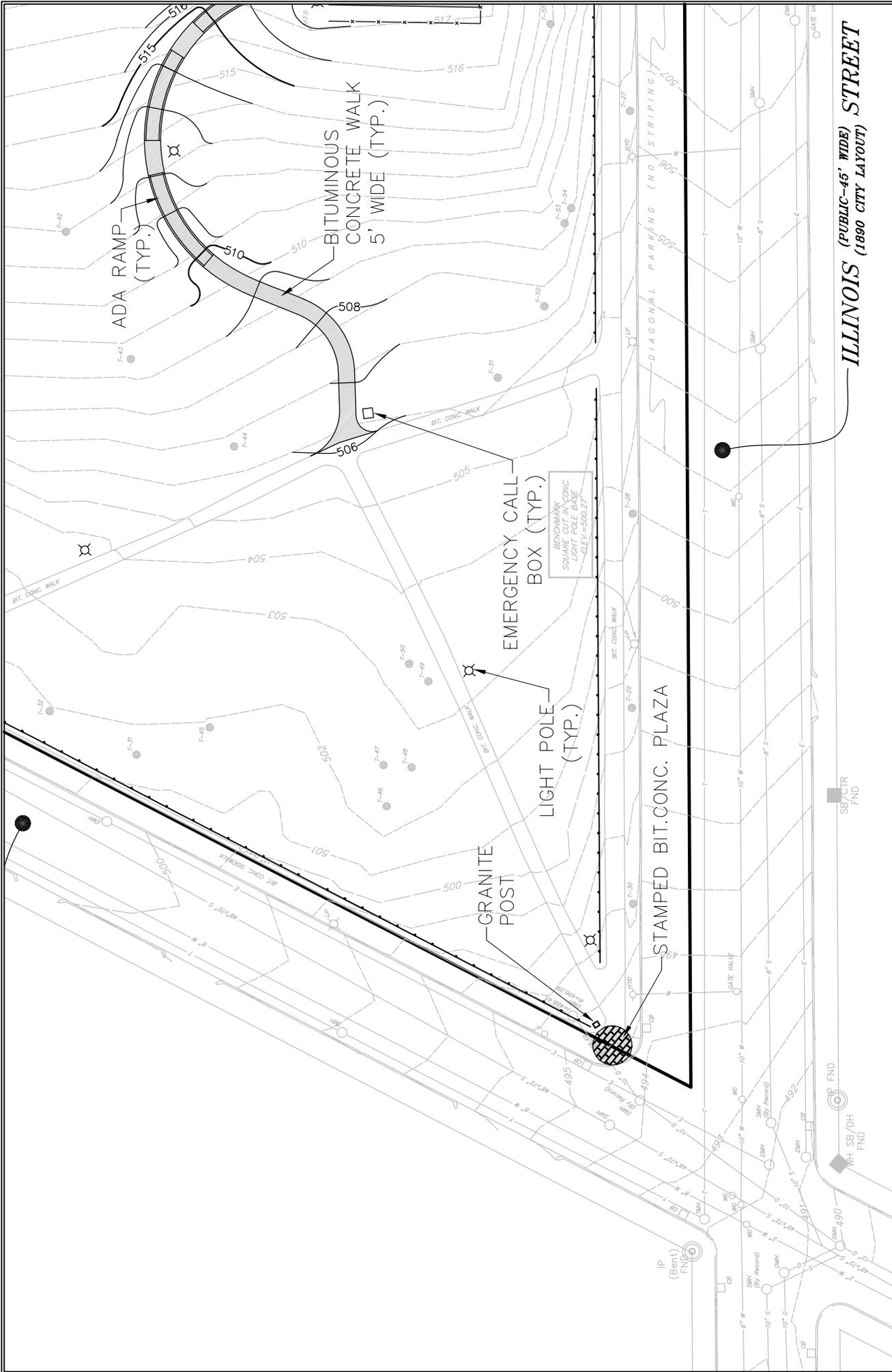
SCALE: 1" = 40' DATE: DEC 22, 2011

0 METERS 10 20 80
0 FEET 20 40 80

VOLLEYBALL AREA

B+T JOB NO.2271.00
B+T PLAN NO.
227100P006B-009
SHEET 9 OF 11

EX-8



UNIVERSITY PARK MASTER PLAN

CRYSTAL/ILLINOIS AREA

SCALE: 1" = 40' DATE: DEC 22, 2011

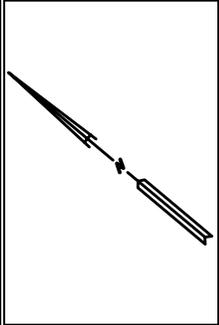
B+T JOB NO. 2271.00

B+T PLAN NO. 227100P006B-010

SHEET 10 OF 11

0 METERS 10 20 30 40 50 60 70 80

0 FEET 20 40 60 80



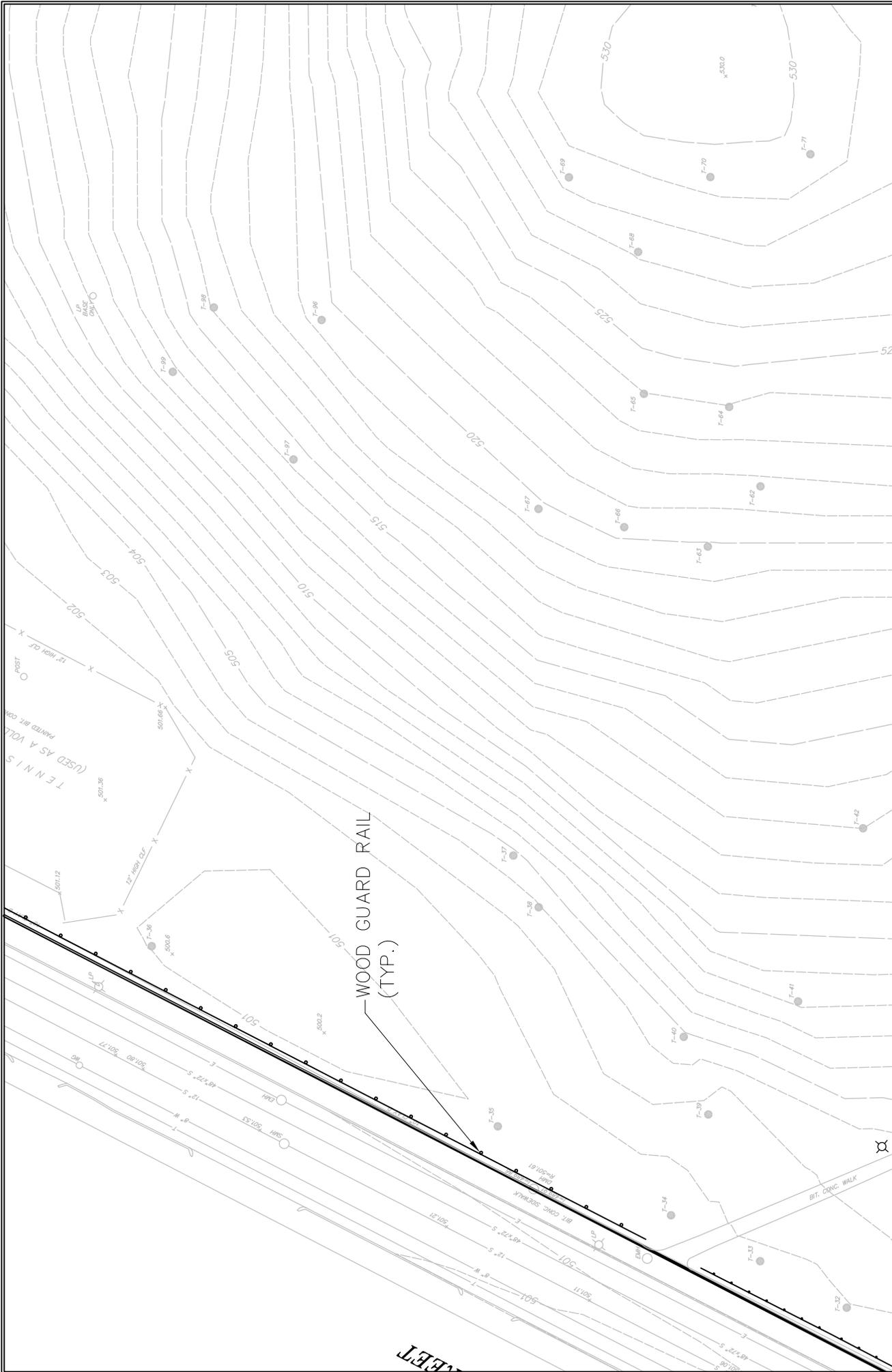
BEALS + THOMAS
 Civil Engineers + Landscape Architects +
 Land Surveyors + Planners +
 Environmental Specialists

BEALS AND THOMAS, INC.
 Reservoir Corporate Center
 144 Turnpike Road
 Southborough, Massachusetts 01772-2104
 T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
 ALL RIGHTS RESERVED

**CITY OF WORCESTER
 DEPARTMENT OF
 PUBLIC WORKS AND
 PARKS**

50 SKYLINE DRIVE
 WORCESTER, MASSACHUSETTS

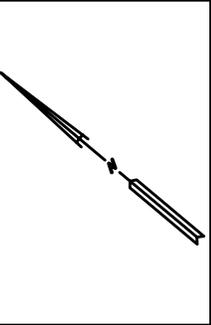


**UNIVERSITY PARK
MASTER PLAN**

CRYSTAL STREET AREA

SCALE: 1" = 40'	DATE: DEC 22, 2011
0 METERS	0 FEET
10	20
20	40
40	80

B+T JOB NO.2271.00	EX-10
B+T PLAN NO. 227100P006B-011	SHEET 11 OF 11



BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.btiweb.com

COPYRIGHT (C) BY BEALS AND THOMAS, INC.
ALL RIGHTS RESERVED.

**CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS AND
PARKS**

50 SKYLINE DRIVE
WORCESTER, MASSACHUSETTS

Master Plan Approved by
**Worcester Parks
Commission**

December 22, 2011

Master Plan Approved by
**Worcester
City Council**

May 29, 2012