

MASTER PLAN

INDIAN LAKE PARKS

Worcester, Massachusetts

Presented to:

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

Presented by:



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Indian Lake Parks Master Plan, 2014

Morgan Landing, Shore Park, Indian Lake Beach, 149 West Boylston Drive



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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 neighbors and representatives of various community organizations, including the Indian Lake Watershed Association, Greendale YMCA, Bancroft School and City Councilor Economou 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 for the Indian Lake community which will revitalize these valuable assets.

2.0 INTRODUCTION

In September 2013, Beals and Thomas, Inc. (B+T) submitted a proposal to the Department of Public Works and Parks for land surveying services and for the preparation of a comprehensive Indian Lake Parks Master Plan for three existing parks (Morgan Landing, Shore Park, and Indian Lake Beach) and one additional parcel (149 West Boylston Drive) that has recently been leased from the Massachusetts Department of Transportation, all located on Indian Lake. This master planning process is a continuation of the Parks Department initiative to prepare master plans for each of its properties, in order to best identify, maintain, manage, and prioritize the critical needs of its parks. The Master Plan is used as a general guidebook for future improvements. All improvements outlined in the Master Plan are recommendations only and are subject to refinement and adjustment as necessary to meet actual site conditions and funding availability.

Beginning in October 2013, and for the following four months, the Parks Division and B+T worked with neighborhood residents and representatives from the Indian Lake Watershed Association, the Greendale YMCA, Bancroft School, and other community development groups and interested parties to develop a series of conceptual master plans for each of the parcels. The preliminary plans were generated based upon initial community discussion of the needs and concerns of the neighborhood and City during several public forums. Preliminary plans were then refined into final preferred master plans based upon feedback and further discussion. At the same time, B+T performed a full topographic and boundary survey of the four parcels in order to best assess their current condition and site resources, as well as identify property line and ownership issues.

The Draft Master Plan represents the collaborative efforts of the community to refresh these parks by providing safe and universal access to the lake, active and passive recreation areas, and discouraging illicit activities by creating positive, family-friendly neighborhood environments. The Master Plan addresses the individual critical concerns and needs associated with each park 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 BACKGROUND¹

Indian Lake, once known as North Pond, is located in the northwest portion of the city, surrounded by the following major roadways: Grove Street (Route 122A) to the south and west, Shore Drive to the north, and Interstate 190 and West Boylston Street to the east. North Pond was the peak source of water for the Blackstone River. In 1828, a dam was built at the outlet of the pond to increase the amount of water for use by the Blackstone Canal. This new reservoir was part of a system of lakes and ponds used to control the flow of water in the Blackstone Canal. However, the canal was a short lived project that vanished due to the rising use of the rail system and complaints from mill owners within the Blackstone River watershed.

Indian Lake was also home to a local ice harvesting operation. During the days before automated ice-making machines, the harvesting of ice on local lakes and ponds was a big business employing hundreds of local residents. During a few short weeks in the winter, men would begin the harvest in mid-January or when the ice was about eighteen inches thick. Ice harvesting began in Worcester in 1848, with Dr. Benjamin F. Heywood harvesting ponds and providing ice to the local establishments. A few years later, Benjamin Walker bought the ice harvesting business and in 1855, established the Walker Ice Company with Samuel S. Sweetser. A storage facility was established on the western shore of Indian Lake, where Morgan Park is now located. This facility would harvest approximately 15,000 to 18,000 tons of ice per year. The Walker Coal and Ice Company continued to harvest ice from Indian Lake, until its storage facility burned down in 1935.

From the early days as the power source used for mills during the industrial revolution, to today’s recreational uses, this body of water, now nearly two hundred acres (193 acres) in total, has played a significant role in Worcester’s history. As the city has developed, the land around Indian Lake has remained primarily residential in nature.

Today, activities on Indian Lake include boating (motorized and non-motorized), swimming, fishing, ice fishing, skating, snowmobiling.

¹ Portions of this section taken from the Indian Lake Watershed Association website

4.0 COMMUNITY PARTICIPATION

In order to best understand and assess the current condition of the parks, the neighborhood demographics, the recreational needs of the park users, and to discuss the priorities of the Master Plan, the Parks Department and B+T conducted a series of community engagement meetings. Over a period of four months, the project team met with community members, neighbors, representatives from the Greendale YMCA and the, Indian Lake Watershed Association, 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 three conceptual master plans, one for each of the existing parks, based upon objectives and preliminary goals derived from the initial meeting. Representatives from the City of Worcester Police Department were in attendance at the third meeting to address neighborhood safety concerns. Based upon feedback from all three previous meetings, and input from the YMCA, a refined conceptual Master Plan for each park was presented at the fourth meeting.

Schedule of Public Meetings		
Date	Location	Meeting Objective
October 1, 2013	Greendale YMCA	Project Introduction
October 28, 2013	Greendale YMCA	Present Preliminary Master Plan Concepts
December 2, 2013	Greendale YMCA	Discuss Safety Concerns with Worcester PD
December 16, 2013	Greendale YMCA	Present Refined Preliminary Master Plan Concepts
February 6, 2014	Parks, Recreation, and Cemetery Div. Admin. Office	Present Draft Master Plan to Parks & Recreation Commission

5.0 EXISTING CONDITIONS

B+T began the master planning process by performing an on-the-ground survey and site reconnaissance of the four properties to understand and evaluate the existing conditions and resources of each one.

5.1 Morgan Landing

5.1.1 Neighborhood Context

Morgan Landing is a linear park, approximately eleven (11) acres in total, which extends along the western bank of Indian Lake. Grove Street (Route 122A), a relatively busy road with continuous vehicle traffic, bounds the western and southern edge of Morgan Landing. Beyond Grove Street are single family residential homes and a single parcel, zoned for Business.

5.1.2 Topography

In general, the majority of the Morgan Landing parcel is relatively flat. There is an average grade change of approximately eight (8) feet from Grove Street down to the mean annual high water elevation, with the exception of the bank of the lake and the northernmost corner of the property which slopes up from the lake nearly fifteen (15) feet to reach street level.

5.1.3 Soils

The majority of the Morgan Landing, primarily the developed areas, is comprised of Udorthents soils. 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 vegetation is generally limited to lawns and ornamental trees and shrubs.

The northernmost corner of the park, where the land has remained undeveloped and kept essentially natural, is comprised of Woodbridge fine sandy loam. The Woodbridge soil series is moderately well drained and typically found on slopes of 3 to 8 percent and in cleared, wooded, or lightly developed areas.

5.1.4 Vegetation and Wildlife

In general, the vegetation at Morgan Landing is comprised of lawn and select ornamental and street trees, presumably all planted at one time by the Parks



Division or former property owners. The northernmost section of the park becomes shadier as it becomes narrower due to the proximity of the street trees along Grove Street and the trees growing long the bank of the lake.

Additional vegetation includes scrub growth along the bank of the lake at both the northern and southernmost ends of the park. These areas

are allowed to grow naturally but are minimally maintained as necessary by volunteers of the Indian Lake Watershed Association.

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 fish and turtles. Additionally, the park's open lawn areas and lake environment has created a desirable habitat for geese.

5.1.5 Site Utilities

Existing site utilities are limited to electrical for the tennis court lights and street lighting. A system of drainage structures and pipes are located throughout the park, collecting street runoff from Grove Street, and discharging into Indian Lake.

5.1.6 Access and Circulation

As previously mentioned, Morgan Landing is bounded to the west and to the south by a heavily traveled Route 122A/Grove Street. At the northernmost point of the park, Grove Street bears left and is intersected by Holden Street, which continues to follow the Lake in a northeast direction. The parking lot is located in the middle of the park, at the widest point and is accessed via two driveway entrances, both with a swing gate to restrict after hours vehicular access. A significant feature of Morgan Landing is the boat launch, which is accessed via this parking area. The parking lot is wide enough to facilitate truck turning for backing onto the boat ramp as well as providing designated trailer parking. However, neighbors voiced their concerns of overcrowding, lack of parking, and dangerous vehicular movement in the parking lot during peak times.

A sidewalk along Grove Street allows for easy pedestrian access to the park. Aside from a metal guardrail that extends along the park side of this sidewalk, and wooden posts around the parking lot, there is little to no site security or access restrictions.



Within the park, a worn footpath extends from the Grove Street sidewalk south

of the onsite tennis court, to the southern edge of the parking lot where it ends. It begins again at the northern edge of the parking lot and continues to the northernmost point at the intersection of Grove and Holden Streets. Although compacted and generally flat, it is recommended to replace this path with a paved walkway in order to prevent erosion and wearing of the lawn as well as to ensure universal accessibility.

5.1.7 Site Amenities and Recreational Uses

Morgan Landing is a mixed-use park consisting of areas for active and passive recreation. As previously stated, Morgan Landing is the site of the lake's only public boat launch which is actively used during the summer months. A small pier next to the boat ramp is used by boaters and for fishing.



Additionally, there is a tennis court in good condition adjacent to the parking lot. Along the banks of the lake are concrete pads with benches and picnic tables. Approximately half of the picnic table areas include a grill, where at the other half of the picnic areas the grill is missing, either removed by vandals or by park staff due to damage, with only the post remaining. A single bicycle

rack is located proximate to the parking lot. All of the benches and picnic areas are located within the lawn and are not directly accessible in accordance with Massachusetts Architectural Access Board (MAAB) and Americans with Disabilities Act (ADA) standards.

5.2 Shore Park

5.2.1 Neighborhood Context

Shore Park, approximately five (5) acres in total, is located on the northern bank of Indian Lake with frontage along Shore Drive. Shore Drive is a heavily travelled road, carrying traffic to and from The Bancroft School, which is located just north of the park, and the Greendale YMCA, which is located to the east of the park.



5.2.2 Topography

There is an approximately fifteen (15) foot grade change across the park, from Shore Drive down to Indian Lake. The topography is steepest in the eastern and western corners of the property where there are the narrowest points between Shore Drive and the edge of the lake. The center of the park is relatively flat to accommodate a parking lot, open field, and restroom building.

5.2.3 Soils

Shore Park soils 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.

5.2.4 Vegetation and Wildlife

The vegetation at Shore Park is generally comprised of open lawn areas and areas of large canopy trees with lawn beneath. There is denser growth along the bank of the lake at the western and eastern edges of the park.



Due to the open nature of the park and relatively urban surroundings, the observed wildlife appears limited to small species such as squirrels and chipmunks, birds, insects, and aquatic animals such as fish and turtles. Additionally, the park's open lawn areas and lake environment has created a desirable habitat for geese.

5.2.5 Site Utilities

Observed site utilities within the park include electric, water and sanitary sewer (broken grinder pump(s)).

5.2.6 Access and Circulation

Shore Park is accessed by a single driveway into the parking lot. Vehicles traveling west to east have a tight right hand turn off of Shore Drive into the park. Once inside the park, the bituminous concrete access drive continues past the parking lot, through a pipe gate to a dead end near the restroom building.



Paved sidewalks connect the parking lot to the building pad for pedestrian access to the beach. Along Shore Drive, a paved sidewalk extends easterly from the driveway towards the YMCA. A dirt shoulder along the edge of Shore Drive extending in a westerly direction from the driveway, serves as the only pedestrian access. The proposed future reconstruction of Shore Drive

includes the construction of a new sidewalk in place of the dirt shoulder. Additionally, an informal, unpaved foot path extends from the tree line west of the beach, continues along the lake edge through the wooded area, and extends northerly to Shore Drive.

5.2.7 Site Amenities and Recreational Uses

Shore Park is used primarily for its beach, where swimming is allowed during particular times in the summer. There is also a non-motorized kayak and canoe only boat launch. The wooded area contains picnic tables and stone grills/fireplaces that are in a state of disrepair. Several benches and picnic tables surround the restroom building, which is oversized



and is located such that it restricts views from Shore Drive to the beach and to the lake. The open lawn area is used as a field for informal games.

5.3 Indian Lake Beach

5.3.1 Neighborhood Context

Indian Lake Beach is located on the eastern bank of Indian Lake. The small, approximately 1.6 acre park, is situated in an entirely residential neighborhood, at the end of three dead end streets. The limited amount of parking and small beach area often leads to overcrowding in the summer. Additionally, the park is routinely the site of reportedly constant illicit activities.

5.3.2 Topography

The site slopes gradually down from the three adjoining streets and across the parking lot. Beyond the parking lot, there is a six (6) foot average grade change where the beach slopes from east to west down to a concrete retaining wall. The approximate two (2) foot high wall bisects the beach, running north to south. West of the wall, the beach continues to slope down into the lake.



5.3.3 Soils

The soils found at Indian Lake Beach are distinguished as a Paxton-Urban land complex. This soil complex is a mix of both Paxton Soils and Urban land which are found so closely together and in detailed patterns that they cannot practically be mapped separately. Paxton soils, the state soil of Massachusetts, can be found at nearly level to steep slopes. These soils are well suited to lawns and landscaping. Urban land occurs in areas where the original soil has been covered with impervious surfaces. Where this soil complex is found, the land is appropriately suited for residential and commercial uses.



5.3.4 Vegetation and Wildlife

Indian Lake Beach has heavily wooded growth on the northwest and southwest corners of the property, proximate to the lake edge. All other areas that are not paved, gravel, or beach are lawn.

Due to the open nature of the park and relatively urban surroundings, the observed wildlife appears limited to small species such as squirrels and chipmunks, birds, insects, and aquatic animals such as fish and turtles.

5.3.5 Site Utilities

Site utilities include water, electric, and sewer. A waterline extends onto the property from Clason Road; overhead wires connect from Clason Road and Sherburne Avenue to three different utility poles on the park property; and a twelve inch (12") underground sewer line connects Sherburne Avenue to Stowell Avenue.

5.3.6 Access and Circulation

There are two vehicular access points into the park: from Sherburne Avenue to the south and Clason Road to the east, which are connected by a gravel driveway through the park property. Access from Stowell Avenue, which bounds the park to the north, is limited to pedestrians via a bituminous concrete walkway. There is a small bituminous concrete parking lot with no designated parking spaces.



The parking lot pavement is cracked, allowing the growth of weeds in many locations. Seasonally, boulders are placed to limit vehicular access into the parking lot when the beach is closed.

5.3.7 Site Amenities and Recreational Uses

Aside from the beach, the park's only other site amenity is a small restroom building which is continuously being covered in graffiti. Recently installed lights provide some illumination of the parking lot. During the summer months, the parking lot and beach are filled with people until late into the night. Neighbors have reported finding garbage and the remains of bonfires in the surrounding wooded areas.

5.4 149 West Boylston Drive

5.4.1 Neighborhood Context

In September of 2013, 149 West Boylston Drive, a Massachusetts Department of Transportation (MADOT) parcel created as a result of the construction of Interstate 190, was transferred to the Parks Division via a 99 year lease. The triangular parcel is bounded to the east by Interstate 190, to the west by Indian Lake, and to the south by single family residences on Mattson Avenue.

5.4.2 Topography

There is an approximate ten (10) foot grade change on the site, rising gradually from West Boylston Drive up to a retaining wall along the edge of Indian Lake. This concrete retaining wall, six to seven feet in height, stretches approximately 335' in length. Where the retaining wall ends, there is a low point. Based upon the documented 100-year flood elevation, flood waters could enter the site at this low point and potentially flood the majority of the property.



5.4.3 Soils

Most likely due to its proximity to Interstate 190, this property is comprised entirely of Urban land. Urban land is characterized as excavated and/or filled land, and manufactured surfaces. Although the parcel appears essentially pervious and “natural” in its current state, the construction of Interstate 190 likely facilitated the need for the native soils to have been removed or filled over.



5.4.4 Vegetation and Wildlife

149 West Boylston Drive is heavily vegetated with dense shrub growth across most of the property. Larger deciduous trees provide a buffer along the rear property lines of the Mattson Avenue residences.

5.4.5 Site Utilities

There are no observed dedicated services; however, overhead wires extend from a utility pole at the corner of West Boylston Drive and Mattson Avenue diagonally across the site's access driveway. The wires then continue westerly towards Indian Lake, running parallel to and just south of the southern property line, on the abutting residential properties.

5.4.6 Access and Circulation

The only access into and out of 149 West Boylston Drive is via a driveway in the southeast corner of the property at the intersection of Mattson Avenue and West Boylston Drive. The paved driveway ends just past a chain link gate, beyond



which it transitions into a grass path, utilized by maintenance vehicles only to access the outfall structure located in the southwest corner of the property. Two footpaths extend from particular residential properties to the grass pathway. The property is enclosed entirely by a 6' chain link fence and the adjacent Interstate 190 retaining wall.

5.4.7 Site Amenities and Recreational Uses

Currently no site amenities exist on the property. The site is undeveloped and not used for anything other than access for maintenance of a concrete outlet control structure and occasional unauthorized passive use of the site (i.e.: dog walking, fishing).

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 the three separate parks. Major site constraints and issues were summarized into the following categories:

- Safety and security (*lighting, cameras, site access, illicit activities, traffic and overcrowding, illegal swimming*)
- Undersized or inadequate facilities (*unsafe boat ramp, lack of restrooms, limited parking, playgrounds*)

- Maintenance (*vandalism, trash, dumping in the lake, limited Parks Division resources,*)
- Indian Lake (*water quality, sediment/dredging, dangerous boater activity*)
- Demographics (*Residential neighborhood vs. city-wide public access*)

Once the group identified the major site constraints and topics of concern, the discussion 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.

- Re-locate and/or re-construct the boat launch at Morgan Landing.
- 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 safety of each element without hindering the experience of other park users or abutting residences.
- Provide measures to prevent illicit and unsafe activities around the lake.
- Replace and add site amenities.
- Develop an overall site security plan, incorporating both vehicular and pedestrian safety concerns.

In summary, the community and the Parks Division recognize these four parks as neighborhood and city-wide assets. With the positive support of the park users and surrounding residents, it is anticipated that the implementation of the Master Plan and associated improvements will create successful and sustainable amenities within the City that may be utilized by all.

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 overall existing use and purpose of each park while enhancing the functionality with general upgrades and additions to lighting, security, seating, etc. 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. Additionally, detailed engineering, including stormwater management will be addressed appropriately in the design development phase of each park project. The Master Plan site improvements have been identified for each individual park as outlined below.

7.1 **Morgan Landing**

The main concern at Morgan Landing was the unsafe combination of the boat ramp use with the general park use by non-boaters, specifically with regards to the parking area. Additionally, the community was concerned with the unrestricted access to the water by swimmers.

- Relocation of the existing boat ramp.
- Removal of the existing tennis court.
- Creation of a boat launch and parking lot separate from the regular (non-boater) passenger car parking lot.
- Re-striping of the existing parking lot with a relocated parking lot entrance.
- Installation of new light poles and security cameras within the parking lots.
- Construction of a guard house at the boat launch parking lot entrance.
- Construction of two concrete pads for portable toilets to be located at the park.
- Installation of three accessible fishing piers.
- Removal of all benches, picnic tables, and grills and replaced with new benches and picnic tables on accessible concrete pads.
- Installation of a permanent retaining wall edge along the bank of the lake with four (4) foot high ornamental fencing.
- Paved walkway along the entire length of the ornamental fencing and connection to a new walking path loop.
- Installation of a playground area with poured-in-place rubber safety surfacing, and a picnic pavilion.
- New gates at parking lot entrances/exits.
- Placement of “no swim” rocks along shoreline to deter illegal swimming.
- Stabilization of shoreline with large boulders where necessary.
- Installation of signage clearly outlining park rules and regulations.

7.2 **Shore Park**

The Shore Park improvements include vehicular access, circulation and parking enhancements, as well as the addition of several park amenities in order to create an all-inclusive active park that caters to a variety of users.

- Widened driveway entrance off of Shore Drive with a guard house and swing gates.
- Relocation of the parking lot northerly, closer to Shore Drive.
- Creation of a driveway connection between the YMCA parking lot and Shore Park parking lot.
- Installation of new light poles and security cameras within the parking lot.
- Demolition and removal of existing bath house.

- Construction of a new restroom/concessions building and associated picnic area patio.
- Construction of a new boat house building for storage of small non-motorized boats and/or Parks Department equipment, life guard chairs, etc.
- Installation of a new playground area with poured-in-place rubber safety surfacing.
- Installation of two new tennis courts with associated lighting and fencing, along with a multipurpose field adjacent to Shore Drive and to the west of the parking lot.
- Installation of a new volleyball court.
- Enhancement of existing walking trails and creation of new walking trail loop.
- Stabilization of shoreline with large boulders where necessary.

7.3 Shore Park to YMCA Driveway Alternatives

In order to take advantage of the adjacent parking areas and to share the common resources, the YMCA expressed an interest in having a connection created between the parking area at Shore Park and the parking area at the YMCA. This would provide a small amount of additional parking, but primarily serve to provide a way for users of the YMCA to park in the Shore Park parking area during the winter months when Shore Park would not be used and potentially provide additional parking for visitors to Shore Park at the YMCA parking lot during the peak summer months. B+T prepared a series of alternatives for this potential connection to evaluate the advantages and concerns of various configurations of the driveway connection.

7.3.1 Alternative A

Alternative A provides a one-way, thirteen (13') foot wide driveway, with single loaded, diagonal parking. Thirteen (13) parking spaces are provided across both the Shore Park and YMCA properties. A four (4') foot wide sidewalk on the south side of the driveway provides pedestrian circulation between Shore Park and the YMCA parking lot. A retaining wall of approximately eight (8') feet at the tallest point would be required. Work would be entirely within Conservation Commission jurisdiction as it is within ten feet of the bordering vegetated wetland (BVW).

7.3.2 Alternative B

Alternative B provides a two-way, 22' foot wide driveway, with single loaded, perpendicular parking. Seventeen (17) parking spaces are provided across both the Shore Park and YMCA properties. A four (4') foot wide sidewalk on the south side of the driveway provides pedestrian circulation between Shore Park and the YMCA parking lot. A retaining wall of approximately ten (10') feet at the tallest point would be required. Work would be entirely within Conservation Commission jurisdiction and would require approximately 120 square feet of wetland filling.

7.3.3 **Alternative C**

Alternative C provides a two-way, 24' foot wide driveway, with double loaded, perpendicular parking. Thirty-two (32) parking spaces are provided across both the Shore Park and YMCA properties. A four (4') foot wide sidewalk on the south side of the driveway provides pedestrian circulation between Shore Park and the YMCA parking lot. A retaining wall of approximately twelve (12') feet at the tallest point would be required. Work would be entirely within Conservation Commission and would require approximately 750 square feet of wetland filling.

7.4 **Indian Lake Beach**

Indian Lake Beach is unique in its location, which is nestled within a single family residential community at the end of several dead end streets. Therefore, ensuring the proper development of this park is incredibly important to the abutters and vital to the well-being of the neighborhood. Security and maintenance of the park were the two highest priorities.

- Re-paved and re-striped parking lot to include ADA accessible parking spaces.
- Paved driveway connection from Clason Road to the parking lot with gated access and designated police parking spaces.
- Paved driveway connection from Shelburne Avenue with additional parking spaces and gated access.
- Installation of new light poles and security cameras within the parking lot.
- Paved sidewalk connection from Clason Road, Shelburne Avenue, and Stowell Avenue with new benches overlooking the beach area.
- Removal and disposal of existing restroom building and replacement with a new restroom building, re-oriented for better visibility from Clason Avenue.
- Installation of an ADA accessible ramp for access to the lower beach area.
- New wooden guardrail along the Stowell Avenue property line and surrounding entire parking lot.
- Installation of 6-8' high security fencing along the Clason Road and Shelburne Avenue property lines, contingent on agreement with abutters.
- Clean up of woods at the northwest and southwest corners of the property.
- Placement of "no swim" rocks along northwest and southwest shoreline of property to deter illegal swimming.

7.5 **149 West Boylston Drive**

Currently, master planning of this property has not been completed. Community meetings dedicated solely to this property will be conducted by the Parks Department. Following these meetings, a master plan will be developed and presented to the Parks Commission for approval and added as a supplemental section to this Report.

8.0 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. The City’s top priorities for the first phase of implementation will be determined based upon the most logical and immediately necessary improvements that would be acceptable to the neighborhoods, will not conflict with future phases of construction, be economically feasible with current funding options, and coordinate with other neighborhood/lake projects (i.e.: Shore Drive reconstruction, potential dredging of Indian Lake).

9.0 PRELIMINARY COST ESTIMATE

A breakdown of the total project program elements and associated preliminary cost estimates for each park are listed below.

Cost estimates include “soft costs” which equal approximately 20% of the total construction cost and typically include engineering and project management services, construction contingency, printing and advertising and other efforts associated with the implementation of a project.

Morgan Landing - Target Budget	
Work Description	Budget
Parking Lot Construction	
Boat Launch Construction (including dredging)	
Tennis Court Demolition	
New Lighting and Security	
Accessible Walking Path Construction	
Shoreline Retaining Wall and Ornamental Fencing	
New Playground with Picnic Pavilion Structure	
Fishing Piers and “No Swim Rocks”	
Miscellaneous Site Amenities (Benches, Tables, Signage)	
TOTAL Morgan Landing	**\$3,200,000.00

**2014 dollars

Shore Park - Target Budget		
Work Description	Budget	
Parking Lot and Driveway Re-construction		
Restroom Building Demolition		
New Lighting and Security		
Tennis Courts		
Volleyball Court		
New Playground		
Accessible Walking Path Construction		
Beach Upgrades		
Building Construction (Restrooms, Lifeguard Facilities, Storage)†		
Miscellaneous Site Amenities (Benches, Picnic Tables, Sail Structure, Guardrails and Gates)		
TOTAL Shore Park <i>excluding Shore Park to YMCA Driveway</i>		**\$4,000,000.00

**2014 dollars

†Cost of the building construction may vary greatly due to the type of construction (wood structure, pre-fabricated, masonry, etc.)

Shore Park to YMCA Driveway Alternatives – Target Budget***	
Driveway Alternative A	**\$225,000
Driveway Alternative B	**\$500,000
Driveway Alternative C	**\$700,000

**2014 dollars

***Shore Park to YMCA Driveway cost is in addition to the total Shore Park budget

Indian Lake Beach - Target Budget	
Work Description	Budget
Parking Lot and Driveway Re-construction	
Restroom Building Demolition	
New Lighting and Security	
Accessible Walking Path and Ramp Construction for Beach	
Building Construction (Restrooms, Lifeguard Facilities, Storage) †	
Miscellaneous Site Amenities (Benches, Fencing, Guardrails and Gates)	
TOTAL Indian Lake Beach	

**2014 dollars

†Cost of the building construction may vary greatly due to the type of construction (wood structure, pre-fabricated, masonry, etc.)

Appendices

Appendix A: Locus Map

Appendix B: Attendance Sheets

Appendix C: Topographic Plans

Appendix D: Master Plan Exhibits

Morgan Landing Concept Plan

Shore Park Concept Plan

Alternative A Shore to YMCA

Alternative B Shore to YMCA

Alternative C Shore to YMCA

Indian Lake Beach Concept Plan

Appendix A

Locus Map

Indian Lake Parks - Master Planning

Existing Conditions: Overall Site Context Plan



Appendix B

Attendance Sheets

DPW & Parks - Parks, Recreation and Cemetery Division

Indian Lake Park Facilities Master Plan Public Hearing # 1

YMCA of Central Mass, Greendale Branch - September 30, 2013 @ 6:30 PM

Robert C. Antonelli Jr., Assistant Commissioner



	Name	Address	Phone No.	Affiliation/Resident
1	Lauren Mack			
2	Juanth Mende			
3	Jessiah Mcke			
4	Toumof Loumbo			
5	Edmund Jordan			
6	Kim Richard Williams			
7	KARLBIORK			
8	Sally Matthews			
9	Cynthia Dubois			
10	Ed Pabos			Resident
11	Maritza Cruz			Resident
12	LouAnn Branche			Resident
13	Loana Garrison			Resident
14	ROBERT GATES			"
15	Meg Mulhern			Resident + Parks
16	EDWARD G. ROBINSON			
17	Frederic/Patricia Gibb			Resident
18	ARON AND CATHY			
19	NICHOLAS LEWIS			
20	DAVID HILL			Resident

	Name	Address	Phone No.	Affiliation/Resident
21	Daniel & Anita Callahan			Resident
22	David & Dave Hoheldin-Schi			Resident
23	Jacqueline Doherty MAHAN			Resident
24	Mychal Sande			Resident
25	Roy Simonds			Resident
26	Brian Luby			Resident
27	Ann + Dave Carlson			Resident
28	Gail L. Granum			Resident
29	HAZEL HOPKINS			Resident
30	James Varces			Resident
31	Herbert H. Williams			Resident
32	Nirvanu Judy Gow			Resident
33	Richard Zeeck			Resident
34	Joanne Sabudetta			Resident
35	Terrence Smith			Resident
36	Michael S. Smith			Resident
37	Jc Ann + Bill Clouberly			Resident
38	Green Olanion			Resident
39	Carol Tucker			Resident
40	LISHA FORKVO			Resident
41	Leah Frangese-Wood			Resident
42	LINDA HALL			Resident
43	Kara Goodall			Resident
44	Carol Williams			Resident
45	DeKay Williams			Resident
46	Alexis Williams			Resident
47	Rob + Lisa Benoit			Resident
48	Michelle Kiley			Resident
49	Rob Hopp			Resident

	Name	Address	Phone No.	Affiliation/Resident
50				
51	Trevor Williams			YMCA
52	Martha Westerland			Resident
53	Donna Walsh			Resident
54	Janet Pastkawskas			Resident
55	Beth Provo			Resident
56	PETER McKONE			BRUNNEN SPALM
57	Rob Colman			Resident
58	Elizabeth Fitzpatrick			Resident
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DPW & Parks - Parks, Recreation and Cemetery Division

Indian Lake Park Facilities Master Plan Public Hearing # 2

YMCA of Central Mass, Greendale Branch - October 28, 2013 @ 6:30 PM

Robert C. Antonelli Jr., Assistant Commissioner



	Name	Address	Phone No.	Affiliation/Resident
1	Ronald A. Smith			
2	Bob Lamerick			
3	KARL BORK			
4	EDWARD G. ROBINSON			
5	DONNA GREENE			
6	Jon Greene			
7	Donna Goranson			
8	Melanie Lamoureux			
9	Peter Lamoureux			
10	Beth Proko			ILWIA
11	Matthew Brown			
12	MIKE BEVORT			
13	Ron Cormier			
14	HAREN CORMIER			
15	Michelle Sloan			ILWIA
16	Neg Mulhern			Parks
17	John Feenouliou			D-1 COUNCILOR
18	Christina Clougherty			
19	John Sensabagh			
20	Suzanne Loring			

	Name	Address	Phone No.	Affiliation/Resident
21	PETER MCKONE			
22	TICJOR WILLIAMS			
23	KURT ALTON			
24	CHRISTOPHER CABANA			
25	STEPHEN McWALKY			
26	BRIAN LAPELLE			
27	JACQUELINE DUBOIS MAHAW			
28	GARY BURNETT			
29	Jeanne Frohock			
30	Michelle Simone			
31	Daniel & Anita Callahan			
32	Kim Lynn Stamm			
33	Wendy Campbell			
34	Kim D. Hall			
35	MARC ALLEN			
36	Margie Carpenter			
37	John Carpenter			
38	Laurie Abled Carpenter			
39	Cheryl Cory			
40	ROY SIMONDS			
41	Susan + Frank Minersia			
42	James Vargas			
43	Roy Mikkelsen			
44	Lawrence B Johnson			
45	David Lajoie			
46	Gunther Dubois			
47	BO DUBOIS			
48	Elizabeth Fitzpatrick			
49				

DPW & Parks - Parks, Recreation and Cemetery Division

Indian Lake Park Facilities Public Hearing Number 3

YMCA of Central MA, Grendale Family Branch, 75 Shore Drive, Worcester MA 01605

Robert C. Antonelli Jr., Assistant Commissioner

December 02, 2013 @6:30 PM



	Name (PLEASE PRINT)	Address	Phone No.	E-Mail Address
1	ROBERT E GATES			
2	Michelle Sloan			
3	Trevor Williams			
4	Justin Forkuo			
5	Hanna			
6	Adler			
7	JANNA WARD			
8	Sam Caputo			
9	Maritza Cruz			
10	Hanna & Ronald Carmo			
11	Dr. Sam Nassar			
12	Bob Lawrence			
13	Jody Branch			
14	Dorcas Branch			
15	Emily Davis			
16	ED DUBOIS			
17	Zoe Anne Branche			
18	Jeanne Frisock			
19	Melissa Simone			
20	FRANK D. MINOIA			

	Name	Address	Phone No.	E-Mail Address
21	Andrew Minasian			
22	David Lesar			
23	Peter Lamoureux			
24	JOANN Clouston			
25	Melanie Lamoureux			
26	Iony Economou			
27	Kim Richard Williams			
28	PAT SAUVAGE			
29	Ronald A. Smith			
30	Robert J. Smith			
31	Steve Paul Smith			
32	Brian H. Deke			
33	Carol Tucker			
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DPW & Parks - Parks, Recreation and Cemetery Division

Indian Lake Park Facilities Public Hearing Number 4

YMCA of Central MA, Grendale Family Branch, 75 Shore Drive, Worcester MA 01605
 Robert C. Antonelli Jr., Assistant Commissioner
 December 16, 2013 @6:30 PM



	Name (PLEASE PRINT)	Address	Phone No.	E-Mail Address
1	Bob Saunders			
2	STANLEY V. KULESZA			
3	James E. Vercos			
4	LINDA HOLL			
5	Freder Williams			
6	Albano Rosario Jr			
7	MARGH RABARIC			
8	Vincent Charpentier			
9	Leone Foleo			
10	Robert Cohane			
11	Dave Lutail			
12	Gurdy Dubois			
13	Ed Dubois			
14	Bob Gates			
15	RANT BJORR			
16	Donna Lutzberg			
17	Prigit Lette-Toney			
18	CHARL GOMES			
19	Loanne Branch			
20	MEL GOSS			

	Name	Address	Phone No.	E-Mail Address
21	Diane Mohieldis-Shwartz			
22	David Schwartz			
23	Melanie Lamoureux			
24	Peter Lamoureux			
25	Richard + Kim Williams			
26	Acqueline Osherty			
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Appendix C

Topographic Plans

PREPARED FOR:
CITY OF WORCESTER
 DEPARTMENT OF
**PUBLIC WORKS &
 PARKS**
 50 SKYLINE DRIVE,
 WORCESTER, MA,
 01605

RECORD OWNER:
**CITY OF
 WORCESTER**



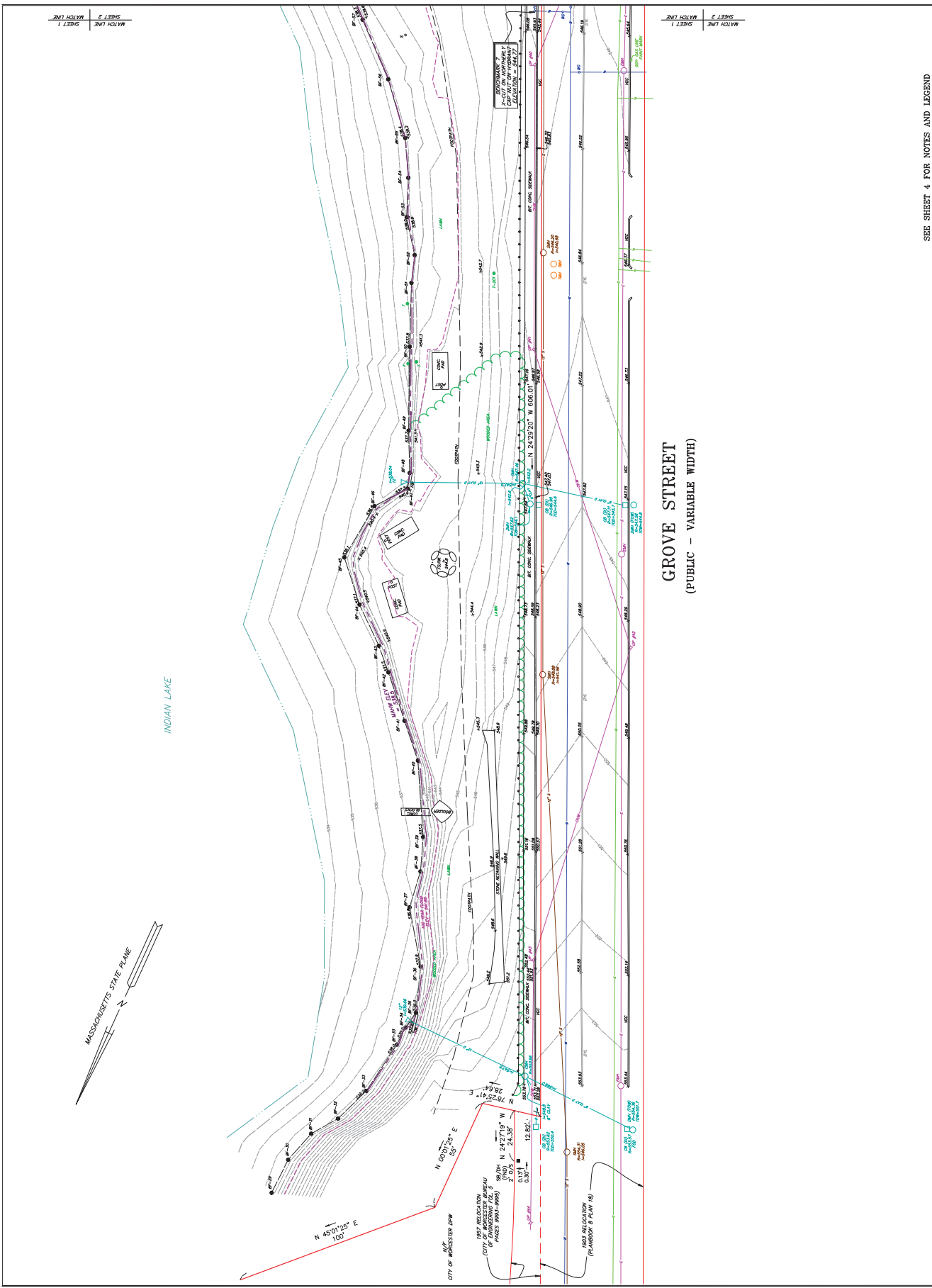
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**TOPOGRAPHIC
 PLAN OF LAND
 MORGAN PARK
 WORCESTER, MASS.
 (WORCESTER COUNTY)**

PREPARED BY:
BEALS + THOMAS
 Civil Engineers & Landscapers
 244 North Main Street
 Worcester, Massachusetts 01779-2096
 T: (508) 853-1000 | www.beals-thomas.com

DATES: DATE: JULY 11, 2013
 SCALE: 1" = 20'
 B-T PLAN NO. 236P003A-001
 SHEET 1 OF 4



SEE SHEET 4 FOR NOTES AND LEGEND

PREPARED FOR:
CITY OF WORCESTER
 DEPARTMENT OF
**PUBLIC WORKS &
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 50 SKYLINE DRIVE,
 WORCESTER, MA,
 01605

RECORD OWNER:
**CITY OF
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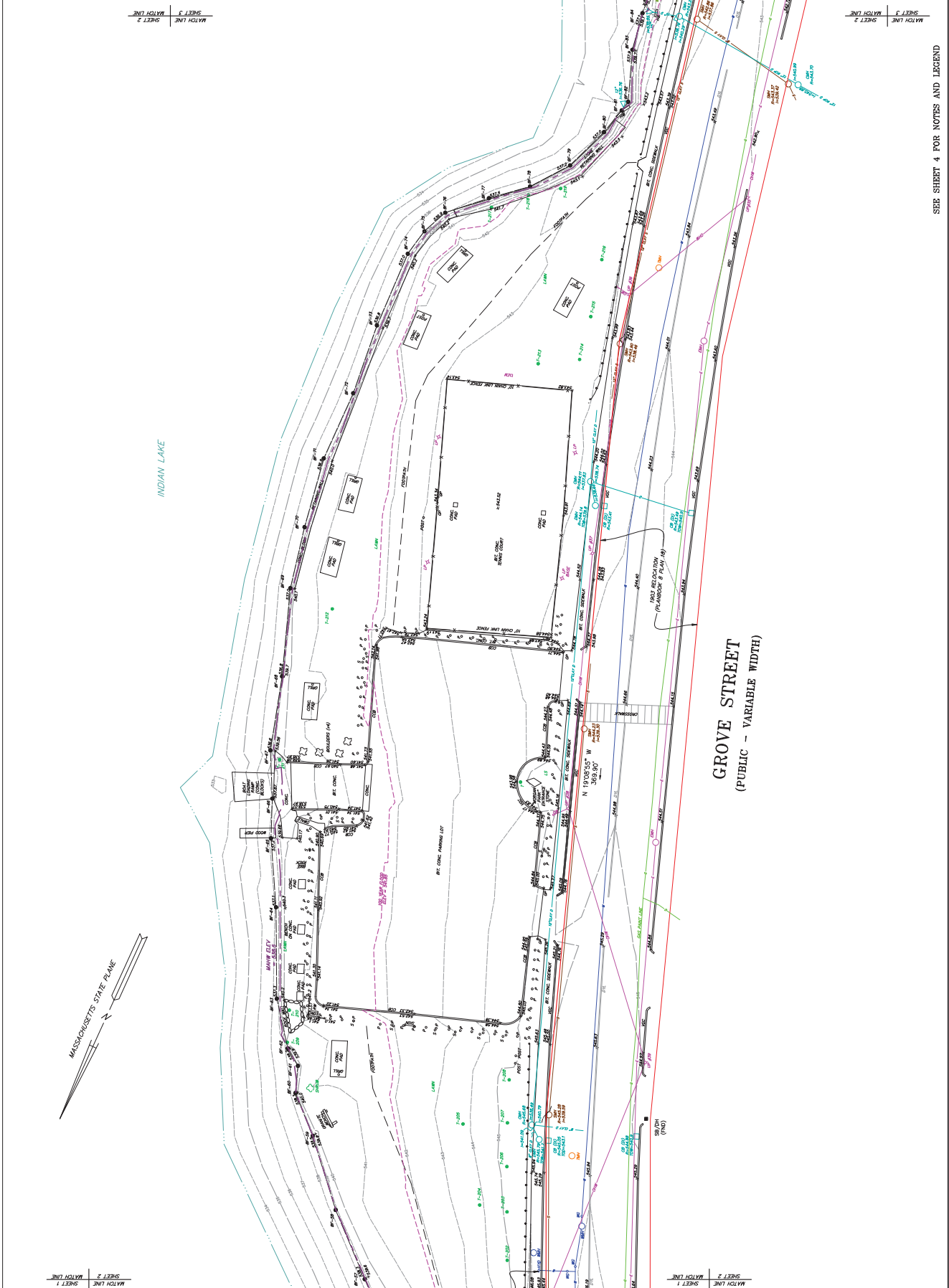


TOPOGRAPHIC
 PLAN OF LAND
MORGAN PARK
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PREPARED BY:
BEALS & THOMAS
 Civil Engineers & Landscaping Architects
 244 North Main Street
 Worcester, Massachusetts 01609-3006
 T: (508) 853-1100 F: (508) 853-1101
 www.bealsandthomas.com

DATE: JULY 11, 2013
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TP-2
 SHEET 2 OF 4



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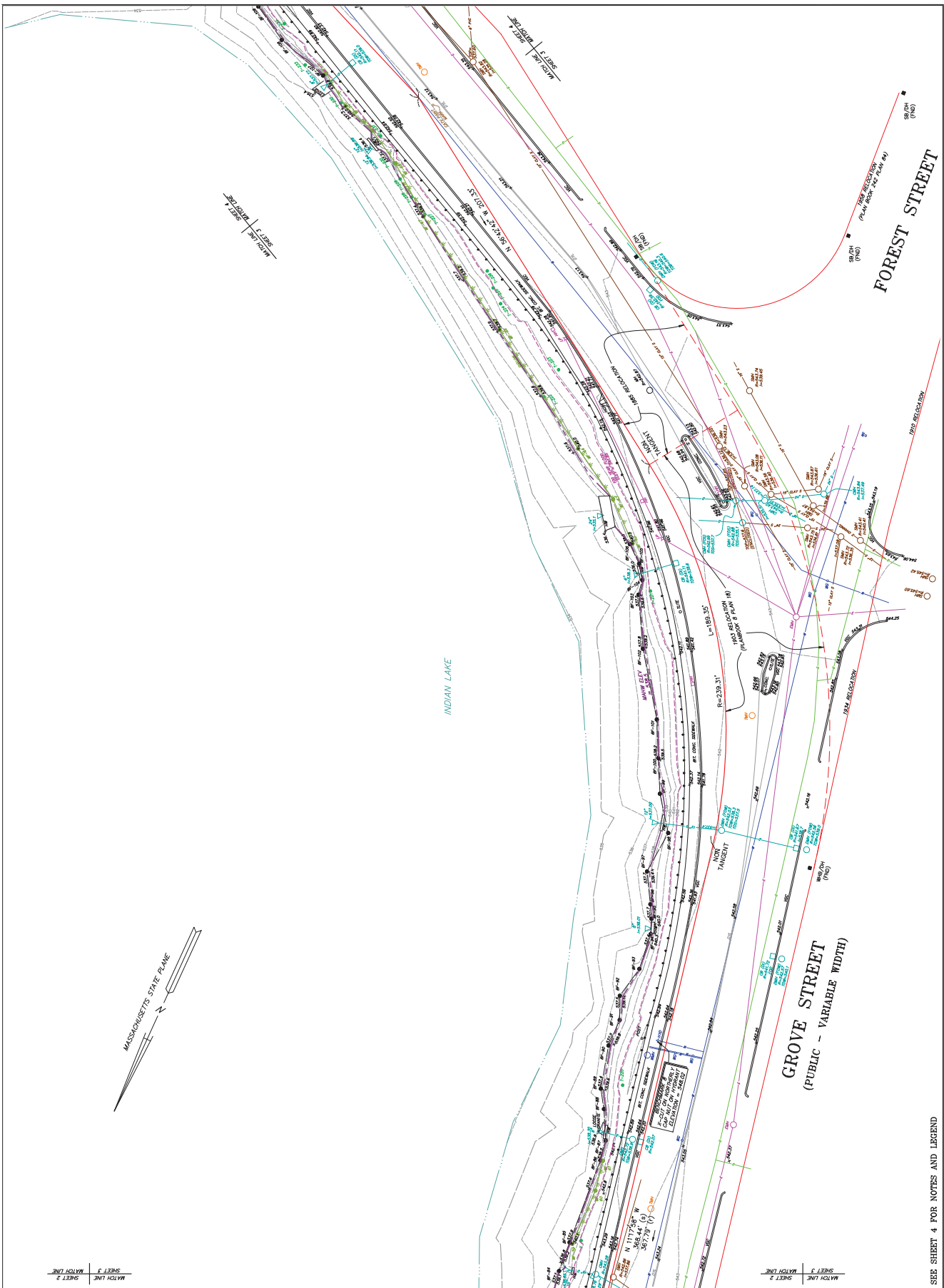


**TOPOGRAPHIC
 PLAN OF LAND
 MORGAN PARK
 WORCESTER, MASS.
 (WORCESTER COUNTY)**

PREPARED BY:
BEALS+THOMAS
 Civil Engineers & Landscape Architects
 244 North Main Street
 Worcester, Massachusetts 01779-2006
 Telephone: (508) 853-1100
 Fax: (508) 853-1101
 www.beadstomas.com

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 SHEET NO. 236P030A-003

TP-3
 SHEET 3 OF 4



MATCH LINE SHEET 2

MATCH LINE SHEET 3

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 50 SKYLINE DRIVE,
 WORCESTER, MA,
 01605

RECORD OWNER:
**CITY OF
 WORCESTER**

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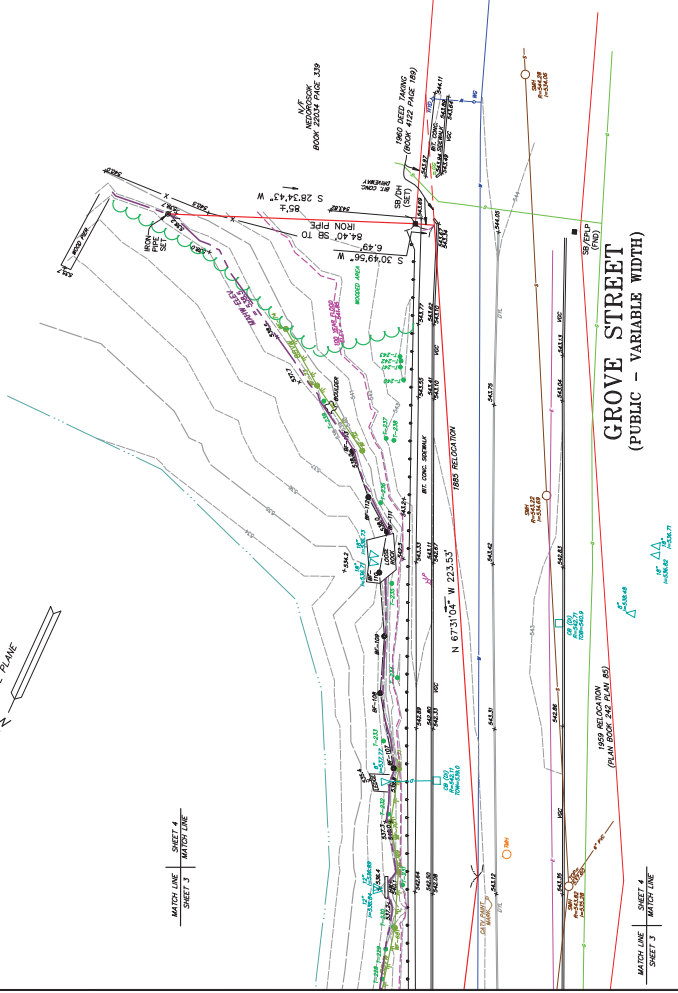
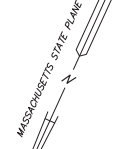


**TOPOGRAPHIC
 PLAN OF LAND
 MORGAN PARK
 WORCESTER, MASS.**
 (WORCESTER COUNTY)

PREPARED BY:
BEALS + THOMAS
 Civil Engineers & Landscape Architects
 244 Hampshire Road
 Northborough, Massachusetts 01561
 Phone: 508-853-1100 | www.beals-thomas.com

DATE: JULY 11, 2013
 SCALE: 1" = 20'
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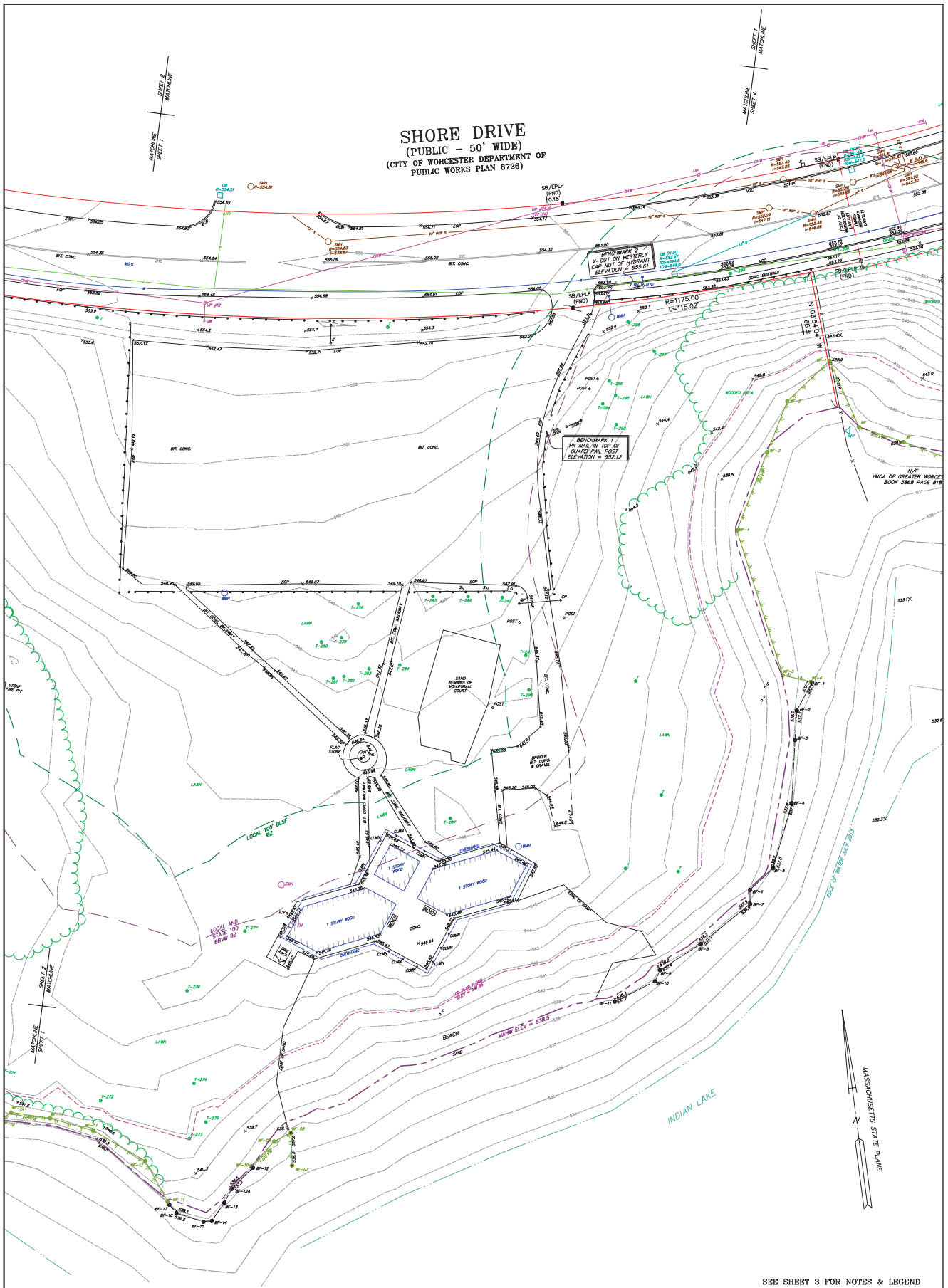
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TELEPHONE MANHOLE	TP	FIELDSTONE
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ELECTRIC MANHOLE	EM	HANDICAP RAMP
ELECTRIC WIRE	EW	HEADWALL
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GUY WIRE	GW	HEADWALL
POST	PT	POLYVINYL CHLORIDE
GATE POST	GP	RETAINING WALL
MISC. MANHOLE	MM	STONE & MORTAR
MISC. LIGHT	ML	TOP OF WATER
FENCE	FC	TOP OF DEBRIS
METAL GUARDRAIL	GR	TOP OF WATER
WOOD BEAM	WB	CONCRETE CURB
TREE LINE	TL	WORCESTER HIGHWAY BOUND
BUILDING	BLD	ESCUTCHEON PIN, LEAD PLUG
BOUNDARY OF BORDERING	BLD	DEBRIS
VEGETATED WETLAND	VEG	DEBRIS
BANK/BANK FLAG	BF	CENTER
MAJOR CONTOUR	CT	100 YEAR FLOOD ELEVATION
SPOT ELEVATION	SE	MEAN ANNUAL HIGH
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NOTES

- UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE AND SUBSURFACE INDICATIONS AND ARE SHOWN AS APPROXIMATE CONSTRUCTION CALL TOG SAFE. 1-888-344-7233.
- THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING A ZEISS ELTA TOTAL STATION BETWEEN NOVEMBER 5, 2012 AND NOVEMBER 27, 2012.
- WETLAND RESOURCE AREAS DELINEATED BY BEALS AND THOMAS, INC. ON NOVEMBER 1, 2012.
- ALL ELEVATIONS REFER TO THE CITY OF WORCESTER SEWER DATUM.
- NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS-SPUS METHODS.
- ENTIRE PARCEL IS WITHIN THE LOCAL 100' BORDERING LAND SUBJECT TO FLOODING BUFFER ZONE.
- THIS PLAN SHOWS AS LOCATED TO ZONE AE (SPECIAL FLOOD HAZARD AREAS) WITH AN ANNUAL CHANCE FLOOD BASE FLOOD ELEVATIONS OF 10.0 FEET AND A 100 YEAR FLOOD RATE MAP, WORCESTER COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 52 OF 1075. MAP NUMBER 250270001ZL, EFFECTIVE DATE JULY 4, 2011.

TP-4
 SHEET 4 OF 4

SHORE DRIVE
(PUBLIC - 50' WIDE)
(CITY OF WORCESTER DEPARTMENT OF
PUBLIC WORKS PLAN 8726)



SEE SHEET 3 FOR NOTES & LEGEND

PREPARED FOR:
CITY OF WORCESTER
DEPARTMENT OF PUBLIC
WORKS & PARKS
50 SKYLINE DRIVE,
WORCESTER, MA
01605

RECORD OWNER:
CITY OF WORCESTER
PARKS & RECREATION
DEPARTMENT
BOOK 11283 PAGE 76

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PREPARED BY:	
BEALS + THOMAS	
Civil Engineers • Landscape Architects • Soil Scientists • Planners • and Surveyors • Geologists	
BEALS AND THOMAS, INC. Beaumont Corporate Center 545 Vermont Road Southborough, Massachusetts 01777-0394 781.386.0200 www.btlwb.com	

**TOPOGRAPHIC PLAN
OF LAND**

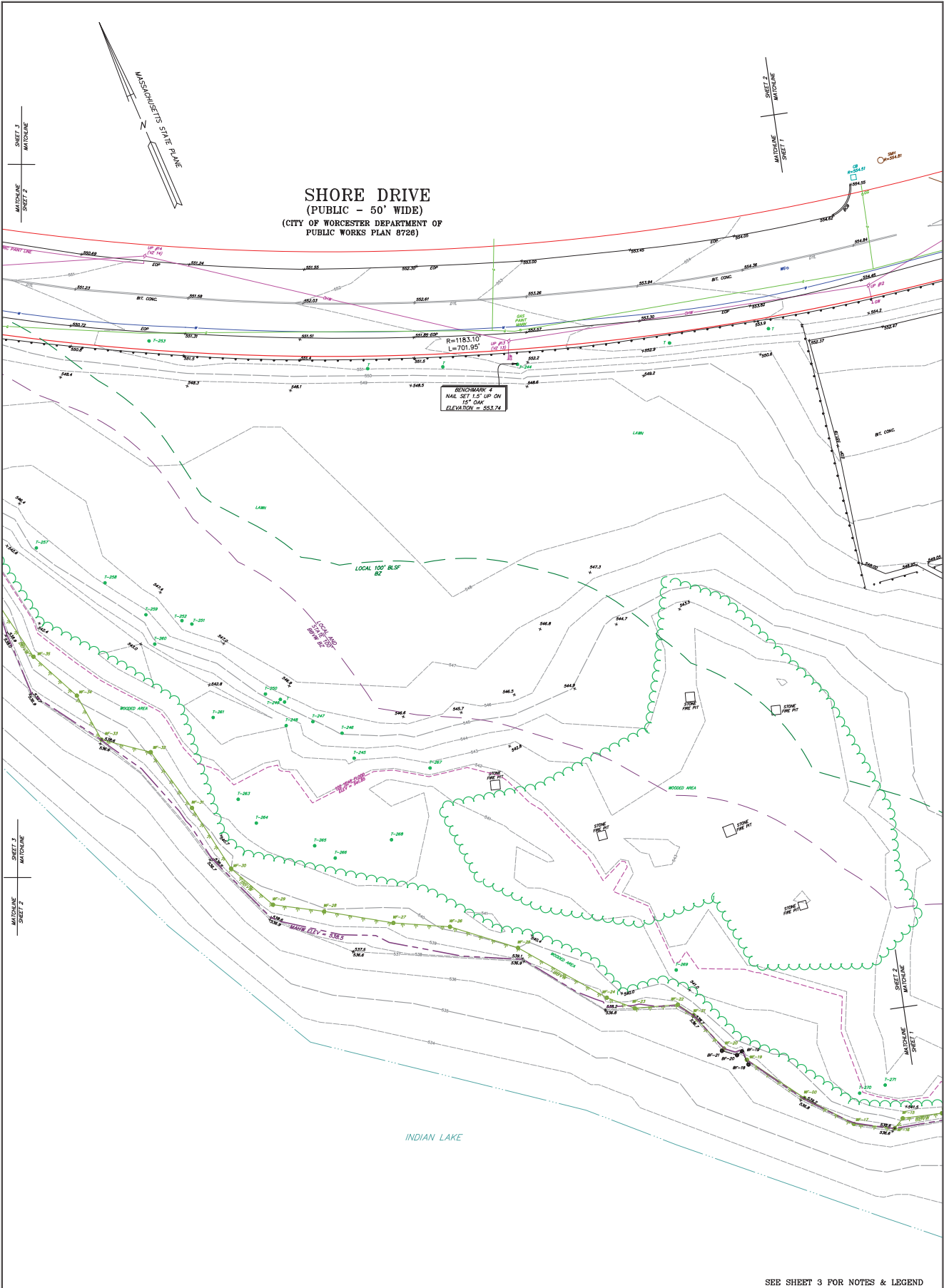
**SHORE PARK
WORCESTER, MASS.
(WORCESTER COUNTY)**

DATE: JULY 11, 2013

SCALE: 1" = 20'

Sheet No. 1 of 4

TP-1



SHORE DRIVE
(PUBLIC - 50' WIDE)
(CITY OF WORCESTER DEPARTMENT OF
PUBLIC WORKS PLAN 8726)

BENCHMARK 4
NAIL SET 1.5' UP ON
1ST GRAV
ELEVATION = 583.74

SEE SHEET 3 FOR NOTES & LEGEND

PREPARED FOR:
CITY OF WORCESTER
DEPARTMENT OF PUBLIC
WORKS & PARKS
50 SKYLINE DRIVE,
WORCESTER, MA
01605

RECORD OWNER:
CITY OF WORCESTER
PARKS & RECREATION
DEPARTMENT
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TOPOGRAPHIC PLAN OF LAND

SHORE PARK
WORCESTER, MASS.
(WORCESTER COUNTY)

PREPARED BY:
BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Architectural Consultants

BEALS AND THOMAS, INC.
Research Corporate Center
545 Hamilton Road
Southborough, Massachusetts 01773-2194
781.326.0200 | www.btl.com

DATE: JULY 11, 2013

SCALE: 1" = 20'

B-T JOB No. 2368.01
B-T PLAN No. 2368P0018-002
SHEET No. 2 OF 3

TP-2

PREPARED FOR:
CITY OF WORCESTER
 DEPARTMENT OF
**PUBLIC WORKS &
 PARKS**
 50 SKYLINE DRIVE,
 WORCESTER, MA
 01605

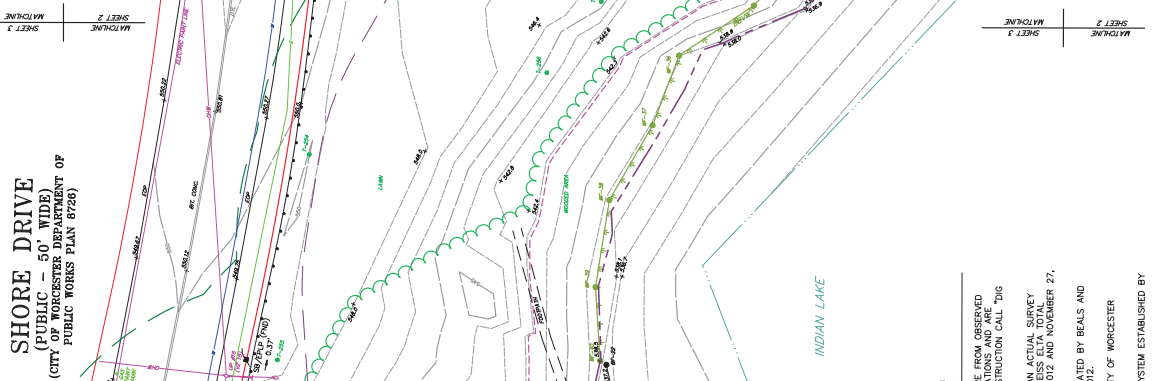
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**CITY OF
 WORCESTER
 PARKS &
 RECREATION
 DEPARTMENT**
 BOOK 11289 PAGE 76

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**TOPOGRAPHIC
 PLAN OF LAND**
**SHORE PARK
 WORCESTER, MASS.**
 (WORCESTER COUNTY)

PREPARED BY:
BEALS & THOMAS
 Civil Engineers & Land Surveyors
 244 Thurgood Road
 Worcester, Massachusetts 01794-0406
 Telephone: 867-2200
 Fax: 867-2201
 Website: www.bealsandthomas.com

DATE: JULY 11, 2013
 SCALE: 1" = 20'
 SHEET NO. 238B01B-003
 B+T PLAN NO. 238B01B-003
 SHEET 3 OF 4



**SHORE DRIVE
 (PUBLIC - 50' WIDE)
 (CITY OF WORCESTER DEPARTMENT OF
 PUBLIC WORKS PLAN 8726)**

REVISIONS:
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NOTES:

1) UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE AND SUBSURFACE INDICATIONS AND ARE NOT TO BE CONSIDERED AS A GUARANTEE OF ACCURACY. THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. CALL 'DIG BEFORE YOU DIG' AT 888-344-7333.

2) THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING A ZEISS ELTA TOTAL STATION BETWEEN NOVEMBER 5, 2012 AND NOVEMBER 27, 2012.

3) NEIGHBORING AREAS DELIMITED BY BEALS AND THOMAS INC. ON NOVEMBER 4, 2012.

4) ALL ELEVATIONS REFER TO THE CITY OF WORCESTER SEWER DATUM.

5) NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS-OPUS METHODS.

6) THE PARCEL SHOWN IS LOCATED IN ZONE AE (SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE FLOODING OF AN ADJACENT WATERWAY OR LAKE OR RIVER). THE FLOOD HAZARD ZONE MAP IS AVAILABLE FROM THE MAPS DIVISION, MASSACHUSETTS (ALL MAPS ARE AVAILABLE AT: www.mass.gov). MAP NUMBER: 802-001-0001. EFFECTIVE DATE: JULY 4, 2011.

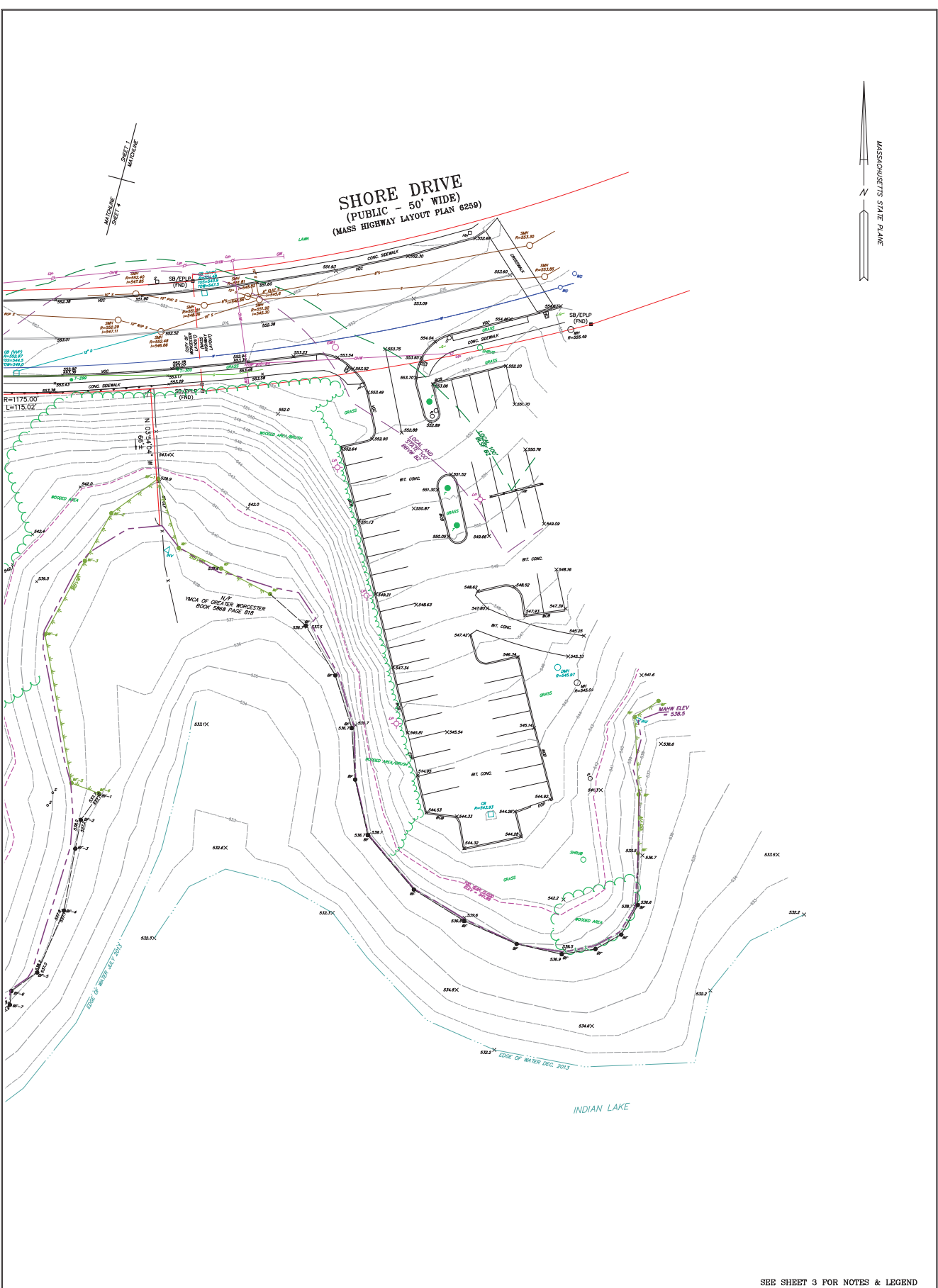
LEGEND

	SEWER LINE/MANHOLE
	CHAIN LINK FENCE
	CONCRETE
	DOUBLE YELLOW LINE
	ELECTRIC METER
	FLAG POLE
	HYDRANT
	ELECTRIC LINE/MANHOLE
	OVERHEAD WIRE
	POLE
	SIGN
	FLAG POLE
	WOOD GUARDRAIL
	FENCE POST
	GRANITE CURB
	BRITISH CONCRETE BERM
	TREE LINE
	BUILDING
	BOUNDARY OF BORROWING VEGETATED WETLAND
	BANK/BANK FLAG
	MINOR CONTOUR
	MAJOR CONTOUR
	EDGE OF WATER
	FOOTPATH

100 YEAR FLOOD ELEVATION
 MEAN ANNUAL HIGH
 LOCAL AND STATE 100' BUFFER ZONE
 LOCAL AND STATE 100' BUFFER ZONE

MASSACHUSETTS STATE PLANE

MASSACHUSETTS STATE PLANE



SEE SHEET 3 FOR NOTES & LEGEND

PREPARED FOR:
CITY OF WORCESTER
 DEPARTMENT OF PUBLIC
 WORKS & PARKS
 50 SKYLARK DRIVE,
 WORCESTER, MA
 01605

RECORD OWNER:
CITY OF WORCESTER
 PARKS & RECREATION
 DEPARTMENT
 BOOK 11283 PAGE 76

5			
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1	12/18/2013	ADDITIONAL TOPO	
0	7/11/2013	INITIAL ISSUE	
	ISSUE DATE	DESCRIPTION	
	JJ/CEM	CEM	RJB
	FLD	CALC	DWN
		CHK'D	

BEALS + THOMAS <small>Civil Engineers + Landscape Architects + Land Surveyors + Planners + Environmental Scientists</small>	
<small>Regional Corporate Center 545 Northgate Road Southborough, Massachusetts 01772-2194 T 978.389.0200 www.btl.com</small>	

**TOPOGRAPHIC PLAN
 OF LAND**

**SHORE PARK
 WORCESTER, MASS.
 (WORCESTER COUNTY)**

PREPARED BY: **BEALS + THOMAS** DATE: JULY 11, 2013

SCALE: 1" = 20'

B+T JOB No. 2368.01
 B+T PLAN No. 2368P001B-004
 SHEET No. 4 OF 4

TP-4

PREPARED FOR:
CITY OF WORCESTER
 DEPARTMENT OF
**PUBLIC WORKS &
 PARKS**
 50 SKYLARK DRIVE,
 WORCESTER, MA,
 01609

RECORD OWNER:

**CITY OF
 WORCESTER**

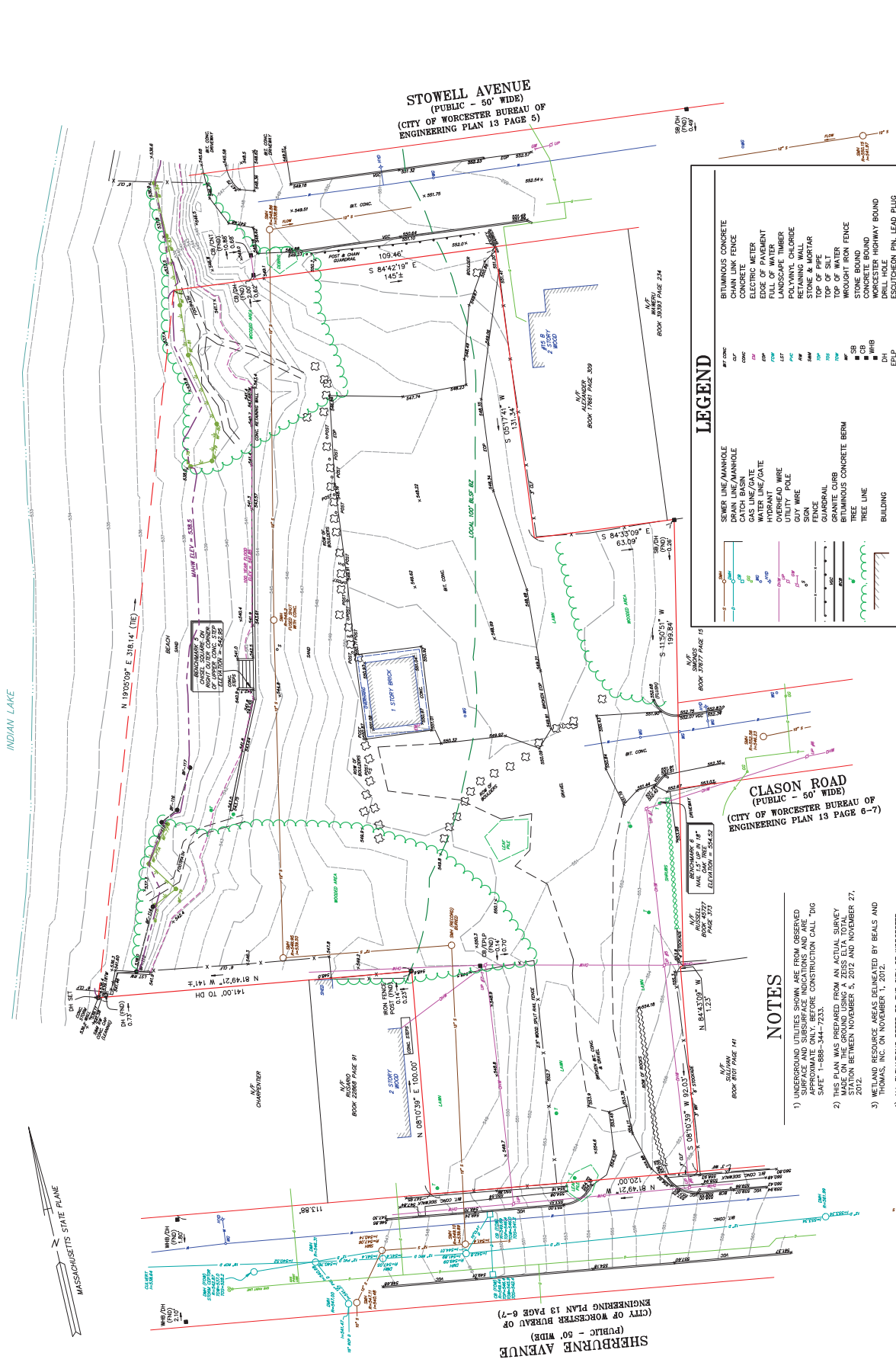
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		APR	APR	RIB			
		FID	CALC	DWN	CHK'D		



**TOPOGRAPHIC
 PLAN OF LAND**
INDIAN LAKE PARK
WORCESTER, MASS.
 (WORCESTER COUNTY)

PREPARED BY:
BEALS & THOMAS, INC.
 Civil Engineers & Land Surveyors
 244 Hampshire Road
 North Andover, Massachusetts 01857-2506
 Telephone: (978) 851-7791
 Fax: (978) 851-7792
 Website: www.bealsandthomas.com

DATE: JULY 11, 2013
 SHEET NO. 236902A-001
 SCALE: 1" = 20'
 B-T JOB NO. 2368.00
TP-1
 SHEET 1 OF 1



LEGEND

[Symbol]	SEWER LINE/MAINHOLE	[Symbol]	BITUMINOUS CONCRETE
[Symbol]	DRAIN LINE/MAINHOLE	[Symbol]	CHAIN LINK FENCE
[Symbol]	GAS LINE/GATE	[Symbol]	ELECTRIC METER
[Symbol]	WATER LINE/GATE	[Symbol]	EDGE OF PAVEMENT
[Symbol]	HYDRANT	[Symbol]	FULL OF WATER
[Symbol]	UTILITY WIRE	[Symbol]	LANDSCAPE TIMBER
[Symbol]	UTILITY POLE	[Symbol]	RETAINING WALL
[Symbol]	SION	[Symbol]	STONE & MORTAR
[Symbol]	GUARDRAIL	[Symbol]	TOP OF PIPE
[Symbol]	GRANITE CURB	[Symbol]	TOP OF WATER
[Symbol]	BITUMINOUS CONCRETE BERM	[Symbol]	WROUGHT IRON FENCE
[Symbol]	TREE LINE	[Symbol]	STONE BOUND
[Symbol]	BOUNDARY OF PRESERVING	[Symbol]	CONCRETE BOUND
[Symbol]	BANK/BANK FLAG	[Symbol]	CONCRETE BOUND
[Symbol]	VEGETATED WETLAND	[Symbol]	DRILL HOLE
[Symbol]	MINOR CONTOUR	[Symbol]	ESCUITHEON PIN, LEAD PLUG
[Symbol]	MAJOR CONTOUR	[Symbol]	FOUND
[Symbol]	SPOT ELEVATION	[Symbol]	100 YEAR FLOOD ELEVATION
[Symbol]	WATER	[Symbol]	SUBJECT TO FLOODING BUFFER ZONE
[Symbol]	FOOTPATH	[Symbol]	MEAN ANNUAL HIGH
[Symbol]	BOULDER	[Symbol]	WATER ELEVATION

- ### NOTES
- UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURVEY. APPROXIMATE ONLY. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233.
 - THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING A ZEISS ELTA TOTAL STATION BETWEEN NOVEMBER 3, 2012 AND NOVEMBER 27, 2012.
 - WETLAND RESOURCE AREAS DELINEATED BY BEALS AND THOMAS, INC. ON NOVEMBER 1, 2012.
 - ALL ELEVATIONS REFER TO THE CITY OF WORCESTER SEWER DATUM.
 - NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS-OPUS METHODS.
 - THE PARCEL SHOWN IS LOCATED IN ZONE AE (SPECIAL FLOOD HAZARD AREA) AS SHOWN ON THE MASSACHUSETTS 1% ANNUAL CHANCE FLOOD. BASE FLOOD ELEVATION IS DETERMINED, AS SHOWN ON "FLOOD INSURANCE RATE MAP" (FIRM) FOR THE CITY OF WORCESTER, MASSACHUSETTS (MS-10-01-0001-A) PANEL B16 607S (LUMBER JURISDICTION) PANEL B16 607S (LUMBER JURISDICTION) PANEL B16 607S, EFFECTIVE DATE JULY 4, 2011.

PREPARED FOR:
CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS &
PARKS
 50 SCULPIN DRIVE,
 WORCESTER, MA
 01605

RECORD OWNER:
COMMONWEALTH OF
MASSACHUSETTS
HIGHWAY
DEPARTMENT
 800 STATE ST., 4TH FLOOR
 PLAN BOOK 980 PLAN 21

NO.	DATE	DESCRIPTION
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1		
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3		

ISSUE DATE	DESCRIPTION	ICW	ICW	RJB	CHK'D
JJ					
PLD					

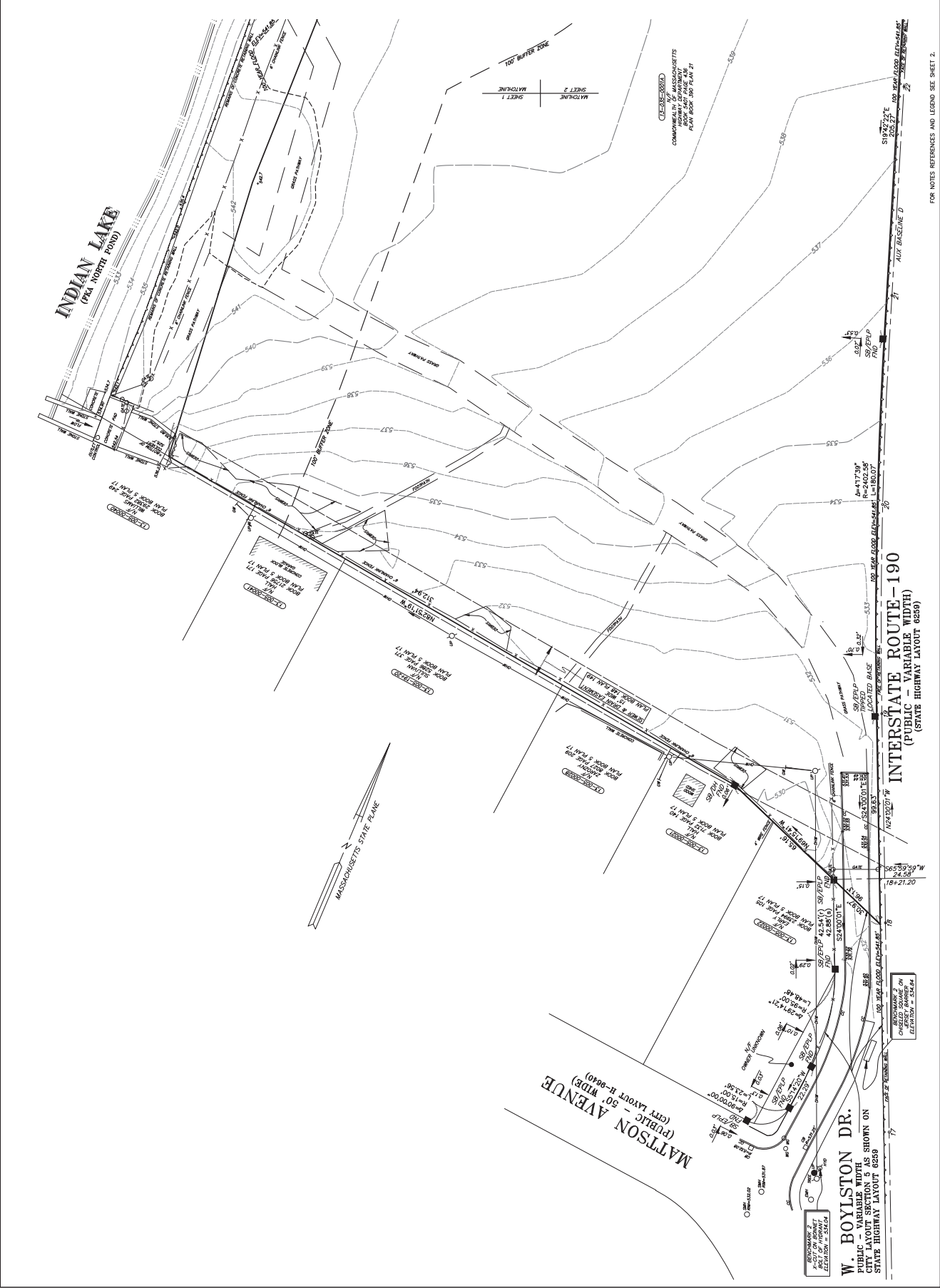


TOPOGRAPHIC
PLAN OF LAND
MA DOT PARCEL
WORCESTER, MA
(WORCESTER COUNTY)

PREPARED BY:
BEALS & THOMAS
 Environmental Specialists
 BEALS AND THOMAS, INC.
 144 Temple Road
 Worcester, MA 01604
 T 508.366.0500 | www.btwb.com

DATE: JANUARY 6, 2014
 SCALE: 1" = 20' 0"
 METERS: 1:1250
 FEET: 1:200

B+T JOB NO. 2487/00
 B+T PLAN NO. 001
 SHEET 1 OF 2

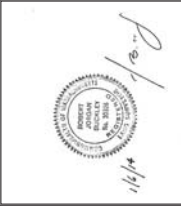


PREPARED FOR:
CITY OF WORCESTER
DEPARTMENT OF
PUBLIC WORKS &
PARKS
 50 SKELTON DRIVE,
 WORCESTER, MA
 01605

RECORD OWNER:
COMMONWEALTH OF
MASSACHUSETTS
HIGHWAY
DEPARTMENT
 800 STATE ST., 14TH FL.,
 PLAN BOOK 380 PLAN 21

NO.	DATE	DESCRIPTION
0	07/05/2014	INITIAL ISSUE
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ISSUE NO.	ISSUE DATE	DESCRIPTION
JJ	ICW	RJB
PLD	CALC	DWN
		CHR'D



TOPOGRAPHIC
PLAN OF LAND
MA DOT PARCEL
WORCESTER, MA
(WORCESTER COUNTY)

PREPARED BY:
BEALS + THOMAS
 Environmental Engineers & Planners
 Environmental Specialists
 BEALS AND THOMAS, INC.
 144 Temple Road
 Worcester, MA 01605
 T: 508.865.0500 | www.btwi.com

DATE: JANUARY 6, 2014
 SCALE: 1" = 20'
 METERS
 FEET
 B+T JOB NO. 2487.00
 B+T PLAN NO. 001

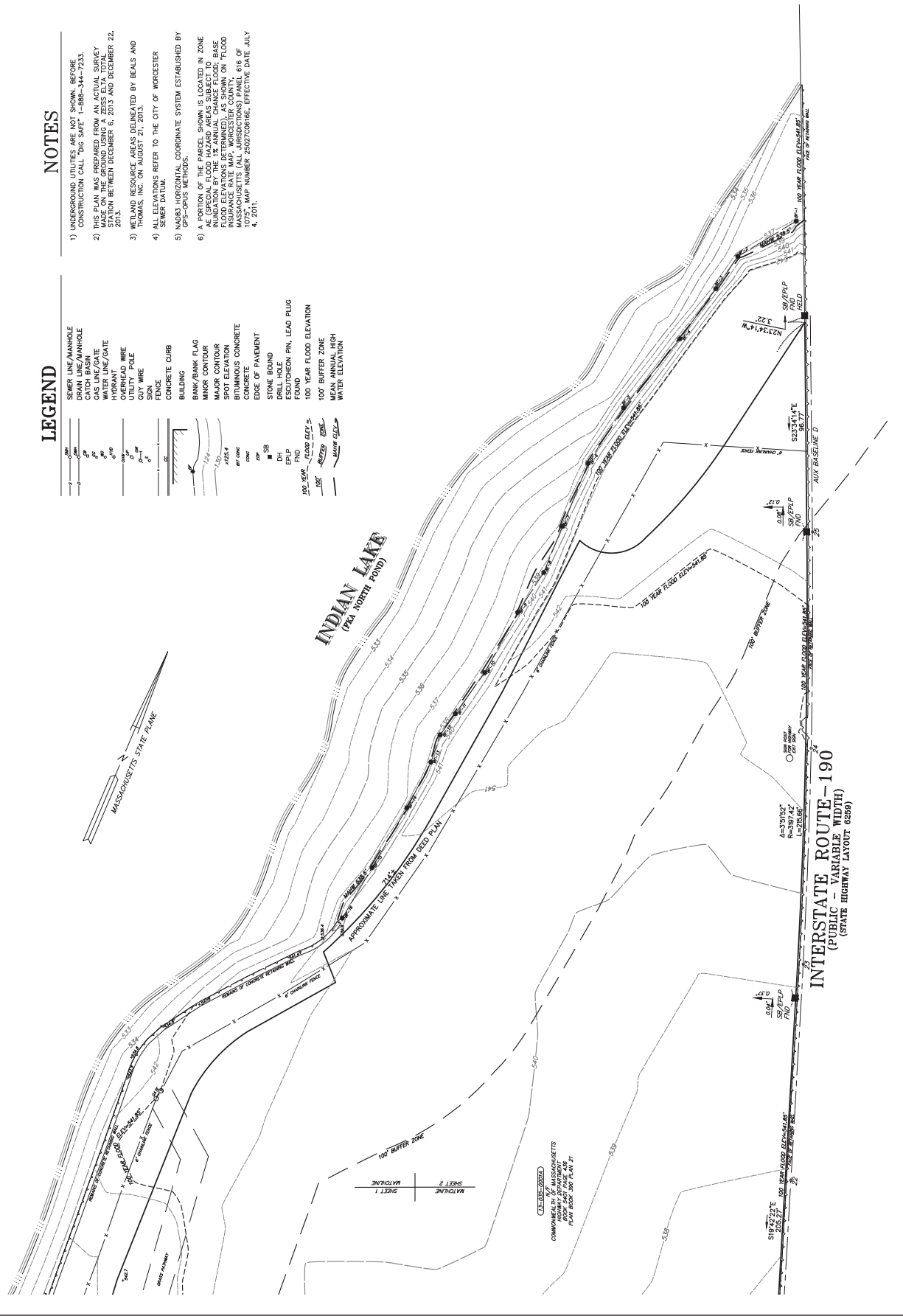
PL-1

NOTES

- UNDERGROUND UTILITIES ARE NOT SHOWN BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233.
- THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND USING A ZEISS ELTA TOTAL STATION ON BETWEEN DECEMBER 6, 2013 AND DECEMBER 22, 2013.
- WETLAND RESERVE AREAS DESIGNATED BY BEALS AND THOMAS, INC. ON AUGUST 21, 2013.
- ALL ELEVATIONS REFER TO THE CITY OF WORCESTER SEWER DATUM.
- NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS-OPUS METHODS.
- A PORTION OF THE PARCEL SHOWN IS LOCATED IN ZONE AE (SPECIAL FLOOD HAZARD AREAS SUBJECT TO FLOOD DAMAGE AND LOSS OF USE DURING FLOOD INSURANCE RATE MAP, WORCESTER COUNTY, 10757, MAP NUMBER 2502700816, EFFECTIVE DATE JULY 4, 2011).

LEGEND

- SEWER LINE/MANHOLE
- DRAIN LINE/MANHOLE
- CATCH BASIN
- WATER LINE/GATE
- HYDRANT
- UTILITY POLE
- GUY WIRE
- CONCRETE CURB
- BUILDING
- BANK/BANK FLAG
- MINOR CONTOUR
- MAJOR CONTOUR
- SPRING
- BITUMINOUS CONCRETE
- CONCRETE
- EDGE OF PAVEMENT
- STONE BOUND
- DRILL HOLE
- ESCUTCHEON PIN, LEAD PLUG
- EHP
- 100' BUFFER ZONE
- 100' YEAR FLOOD ELEVATION
- MEAN ANNUAL HIGH WATER ELEVATION



INTERSTATE ROUTE - 190
 (PUBLIC - VARIABLE WIDTH)
 (STATE HIGHWAY LAYOUT 6259)

INDIAN LAKE
 (PFA NORTH POND)

COMMONWEALTH OF MASSACHUSETTS
 PLAN BOOK 380 PLAN 21

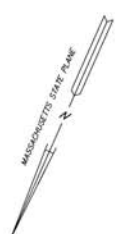
Appendix D

Master Plan Exhibits

Morgan Landing Concept Plan
Shore Park Concept Plan
Alternative A Shore to YMCA
Alternative B Shore to YMCA
Alternative C Shore to YMCA
Indian Lake Beach Concept Plan

Indian Lake Parks- Master Planning

Morgan Landing Concept Plan



BEALS + THOMAS

DATE: FEBRUARY 2014, FINAL
BTI FILE NO. 240701P006B-001



City of Worcester
Department of Public Works & Parks
Parks, Recreation & Cemetery Division

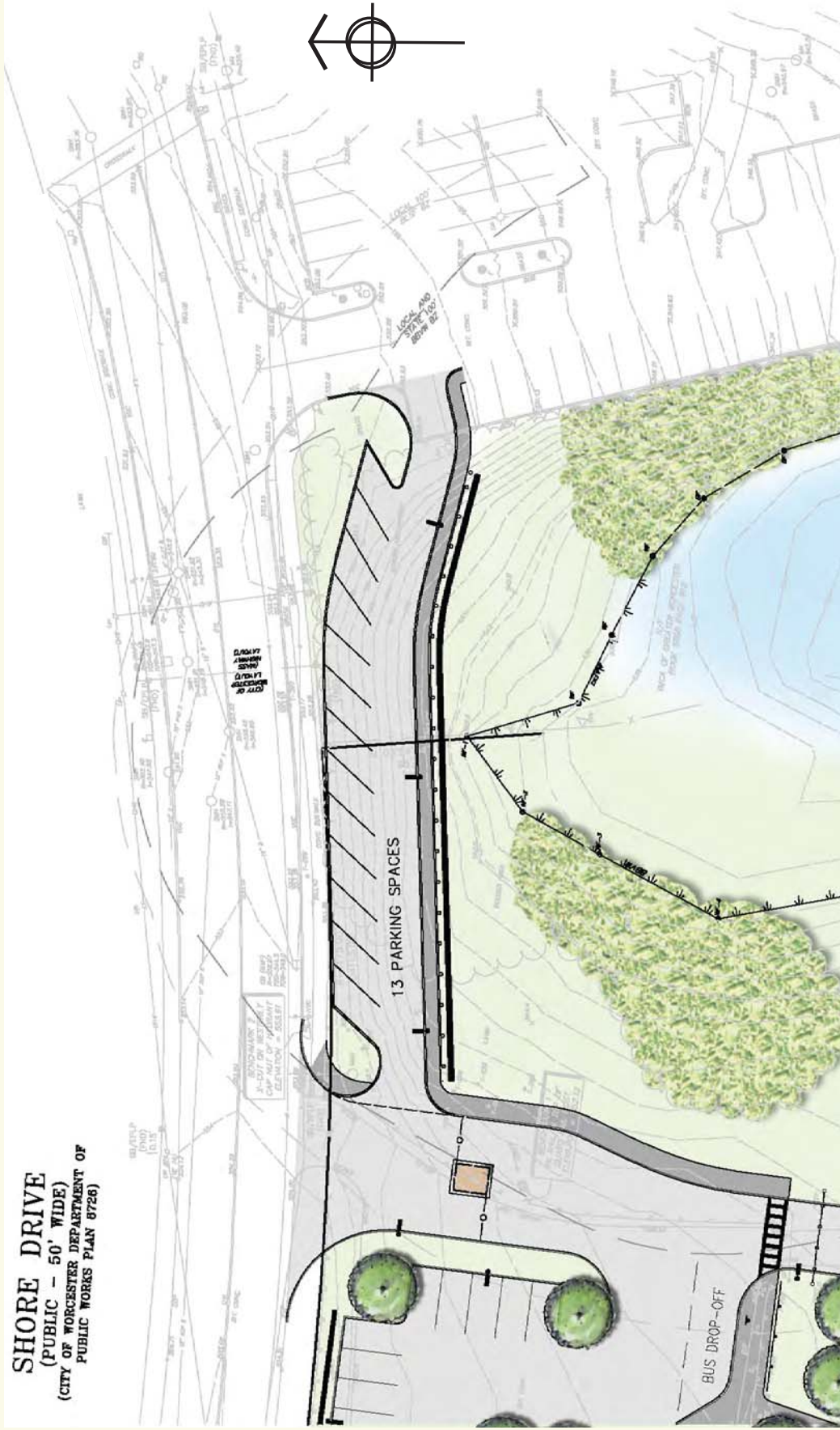
Indian Lake Parks- Master Planning

Shore Park Concept Plan



Indian Lake Parks - Master Planning

Alternative A - Shore Park to YMCA



SHORE DRIVE
(PUBLIC - 50' WIDE)
(CITY OF WORCESTER DEPARTMENT OF
PUBLIC WORKS PLAN 8728)



BEALS + THOMAS

DATE: FEBRUARY 2014, FINAL
BTI FILE NO: 240701P011A-001

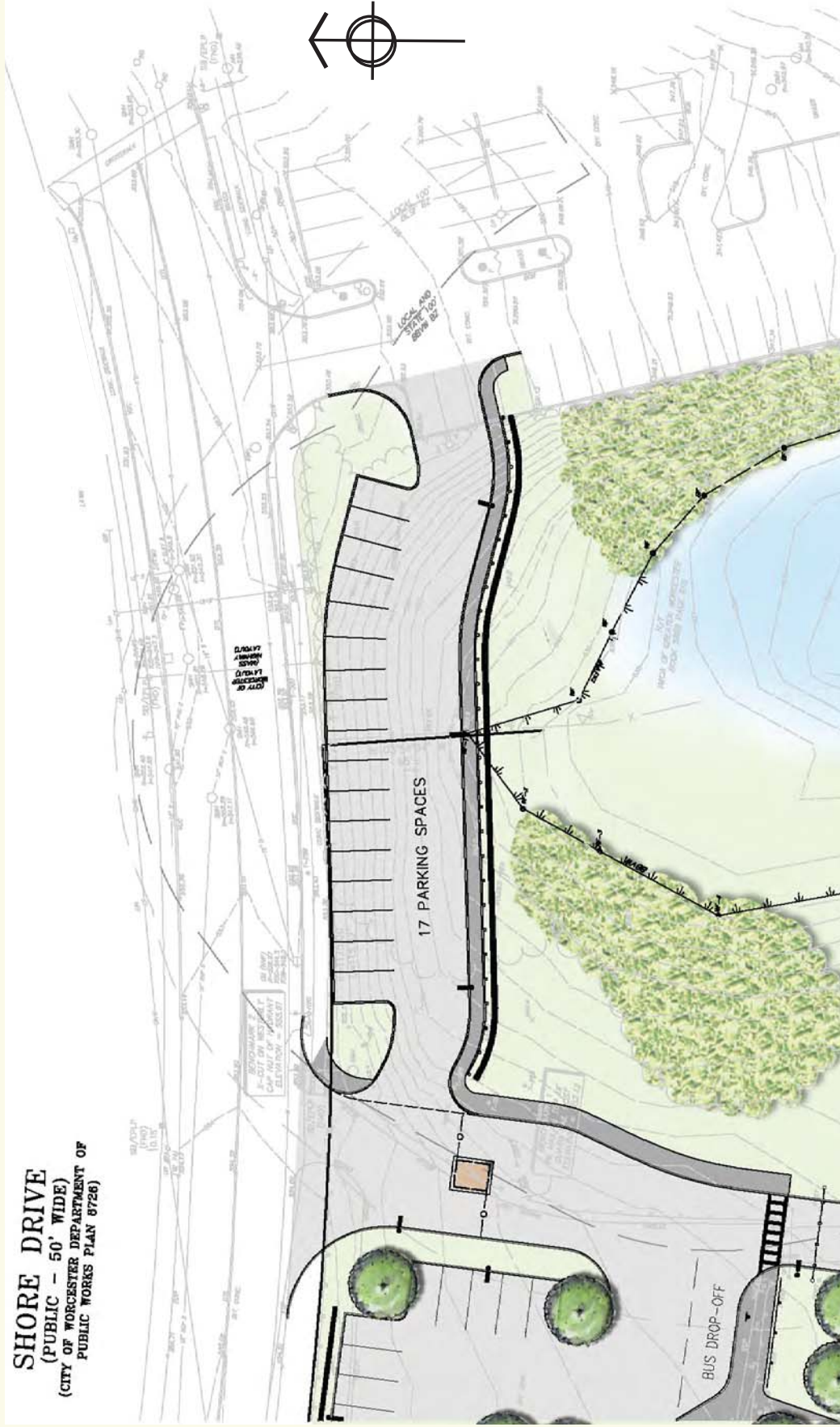


City of Worcester
Department of Public Works & Parks
Parks, Recreation & Cemetery Division

Indian Lake Parks - Master Planning

Alternative B - Shore Park to YMCA

SHORE DRIVE
(PUBLIC - 50' WIDE)
(CITY OF WORCESTER DEPARTMENT OF
PUBLIC WORKS PLAN 8726)



BEALS + THOMAS

DATE: FEBRUARY 2014, FINAL
BTI FILE NO: 240701P011A-002



City of Worcester
Department of Public Works & Parks
Parks, Recreation & Cemetery Division

Indian Lake Parks - Master Planning

Alternative C - Shore Park to YMCA



SHORE DRIVE
(PUBLIC - 50' WIDE)
(CITY OF WORCESTER DEPARTMENT OF
PUBLIC WORKS PLAN 8726)



BEALS + THOMAS

DATE: FEBRUARY 2014, FINAL
BTI FILE NO: 240701P011A-003



City of Worcester
Department of Public Works & Parks
Parks, Recreation & Cemetery Division

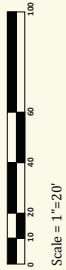
Indian Lake Parks- Master Planning

Indian Lake Beach Concept Plan



BEALS + THOMAS

DATE: FEBRUARY 2014, FINAL
BTI FILE NO. 240701P008B-001



City of Worcester
Department of Public Works & Parks
Parks, Recreation & Cemetery Division

Master Plan Approved by
**Worcester Parks and
Recreation Commission**

February 6, 2014

Master Plan Approved by
**Worcester
City Council**

March 25, 2014