



SOUTH HAVEN AREA REGIONAL PARK TECHNICAL MASTER PLAN

31 JANUARY 2011

103rd Ave & 71st St, South Haven, MI 49090

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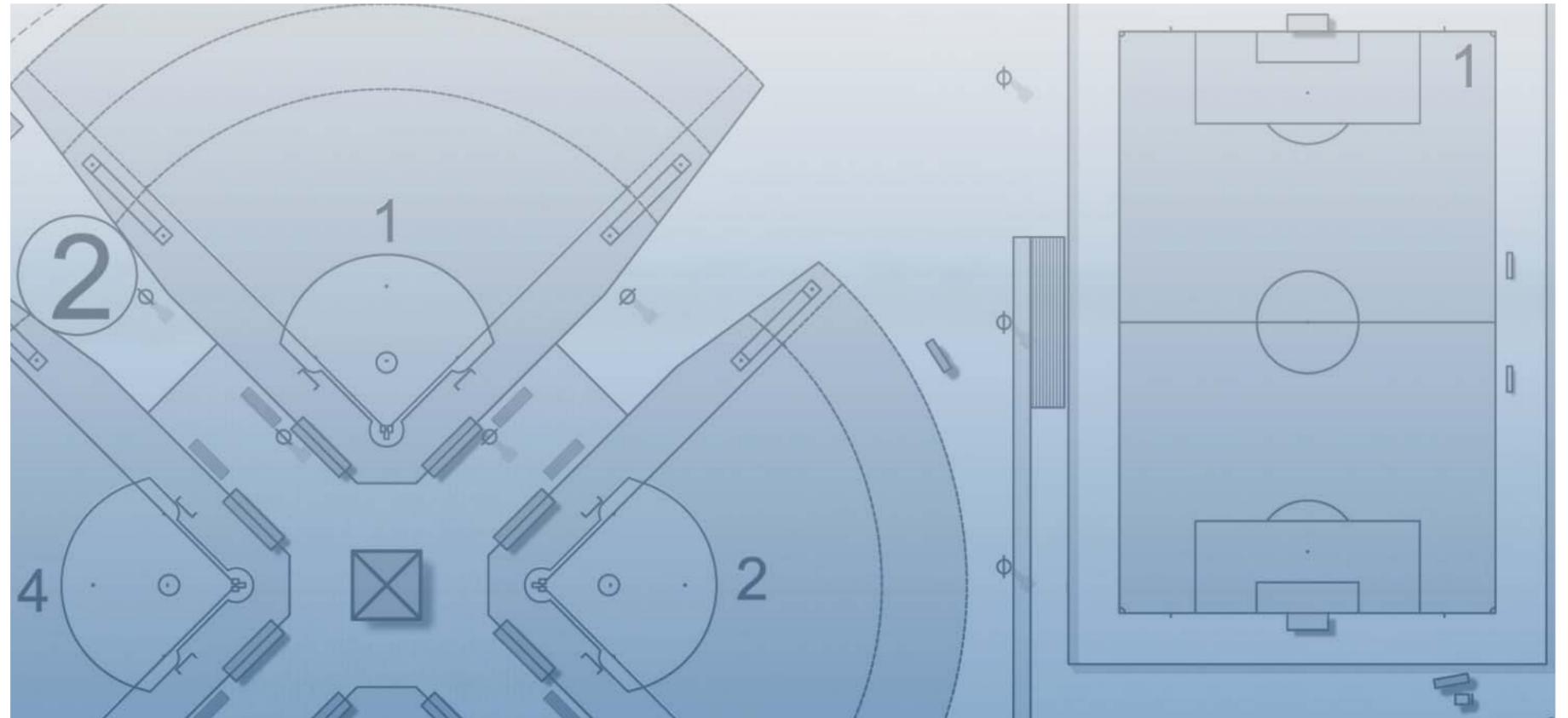


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A. PROJECT UNDERSTANDING

OVERVIEW

A group of South Haven area coaches, parents and community leaders introduced a concept for a consolidated recreational park that would accommodate the needs of a rapidly growing region. These individuals understood the personal, social and economic benefits that a quality regional recreational park would provide to the area.

The South Haven and neighboring communities participate extensively in youth and adult recreational programs. These programs include Rocket Football leagues, Junior Youth League baseball and softball, AYSO soccer, WMYSA soccer, as well as school-based athletics. Community growth and participation in the many recreational programs has increased the demand for more suitable facilities. Currently, recreational activities take place at over five facilities dispersed throughout the City of South Haven, South Haven Township and Casco Township, primarily owned by the public school district.

In 2002, a committee first convened to pursue the goal of creating an outdoor recreational park for youth and adult sports programs. The project, the South Haven Area Regional Park (SHARP), is envisioned to provide for quality environments for participation in team sports to meet the growing needs of the community. Although the park will have an emphasis on sports recreation, plans also include maintaining natural landscaping, existing ponds, and other features for rest, relaxation and contemplation.

The pursuit of this goal has been an on-going effort. Over time, the process has achieved a number of important milestones, including developing fund raising strategies, establishing important benchmark data, developing a preliminary program, and purchasing of a 96.3 acre property to be the future home for SHARP.

With the purchase of this property, the SHARP steering committee identified the need to develop a technical Master Plan as an important next step toward realizing their goal. The technical Master Plan will provide the road map for the phased development of the site, one that dovetails with SHARP's fund raising abilities.

The technical Master Plan addresses the programmatic needs, the specific site constraints and the order of magnitude budget estimate of the full development,



and includes the preferred phasing strategy for the initial development (Phase I 'minimum' and Phase I 'maximum'). Importantly, the master plan also includes site development strategies for grading, roadways, parking fields, lighting and other utility infrastructure needs (i.e. water, sanitary and electrical) as well as stormwater management systems.

From this technical Master Plan report, the SHARP steering committee can focus their fund raising strategies with targeted goals, and guide the design development efforts to achieve those goals.

B. METHODOLOGY

PROGRAMMING AND PLANNING METHODOLOGY

The technical Master Plan was developed over a four month period, from October 2010 to January 2011. The SHARP committee provided the Design Team with background information gathered over a three year period including a Land Survey, Soils Maps, Land Use and Natural Features Maps, site and aerial photography, Township Zoning regulations and preliminary programmatic information in preparation for the effort to create the technical Master Plan.

The Design Team conducted three workshops with the SHARP steering committee and representatives from the various user groups. The agenda for the first meeting was a discussion of the recreation park program, the user group goals and priorities, and a review of the site characteristics, development issues and community concerns. This meeting was mostly a fact-finding session, with the Design Team offering guidance and professional insight to help facilitate the discussion.

The agenda of the second meeting was a review of the on-going engineering investigations pertaining to the various regulatory and site issues, and a presentation and discussion of five Master Plan development options. The development issues reviewed during this meeting are discussed in Section D. Site Analysis of this report. After reviewing the attributes of the five options, the steering committee and Design Team agreed to a hybrid scheme incorporating the preferred elements from the five options. This became the basis of the final Master Plan scheme, which is discussed in Section E. Final Scheme of this report.

The agenda of the third meeting was a presentation of the final Master Plan scheme, development phasing and the order of magnitude budget estimate. The Phasing is described in Section F. Phasing Strategies, and the Order of Magnitude Budget Estimate is included in Section H.

The technical Master Plan is a culmination of information collected from the design meetings as well as from preliminary discussions conducted with the Road Commission, the Drain Commission, the Health Dept, the Utility Company, soil testing labs and other entities. This report also includes vital input from various sport management personnel to ensure we were on track with the goals of the community's plans for future sports programming.

C. PROGRAM

COMMUNITY PROGRAM NEEDS

The final program is a result of a need for quality youth athletic facilities in South Haven with the opportunity to also introduce adult facilities. There are currently many youth programs that would benefit from this park - South Haven Junior Youth League Baseball/Softball (550 registered), Rocket Football (80 players), Rocket Cheerleading (40 participants), AYSO Soccer (400 players) and WMYSA (100 players). The primary focus in the development of this program is on youth athletics.

A base program of 7 Soccer Fields and 4 Baseball Fields was developed. The 4 baseball fields have a base path of 60' with variable outfield dimensions of 200' - 250' making them compatible for both softball and youth baseball.

Of the 11 fields, 1 Soccer Field and 1 Youth Baseball/Adult Softball Field will be premier level fields with added features such as sports lighting, upgraded field drainage, higher seating capacity, and fencing.

In addition to the main sports fields, the site development would include other amenities to appeal to a wider group of users. These program elements would consist of a concession stand, restrooms, a childrens playground, tennis courts, a bike trail and a dog park. The benefit of these components would provide the community with a space for socializing, exercising and recreation.



PROGRAM ELEMENTS

1 PREMIUM SOCCER FIELD (225' X 330')

- Field including drainage and irrigation systems
- Sports Lighting
- Perimeter Fencing
- (1) Permanent Bleachers (500 people)
- (2) Aluminum Players Benches
- (1) Scoreboard

5 FULL SOCCER FIELDS (225' X 330')

- Fields including drainage and irrigation system
- (2) 30 Person Portable Bleachers per field
- (2) Aluminum Players Benches per field

1 FOOTBALL/SOCCER FIELD (225' X 360')

- Field including drainage and irrigation system
- (2) 60 Person Portable Aluminum Bleachers
- (2) Aluminum Players Benches
- (1) Scoreboard

1 PREMIUM YOUTH BASEBALL/ADULT SOFTBALL FIELD - 300 FT

- Field including drainage and irrigation systems
- Sports Lighting
- Fence/Backstop/Overhead Netting in Spectator Areas
- (2) 60 Person Portable Aluminum Bleachers
- (2) Concrete Block Dugouts (including storage closet, lights and outlets)
- (1) Scoreboard
- Foul Poles and Bases

3 YOUTH BASEBALL FIELDS - 250 FT

- Field including drainage and irrigation system
- Fence/Backstop/Overhead Netting in Spectator Areas
- (2) 60 Person Portable Aluminum Bleachers per field
- (2) Concrete Block Dugouts per field (including storage closet, lights and outlets)
- (1) Scoreboard per field
- Foul Poles and Bases

1 T-BALL FIELD - 120 FT

- Portable Backstop

4 BATTING CAGES

8 TENNIS COURTS

- Courts including fence

1 BIKE TRAIL

- Gravel Trail 1.55 miles, 10' wide

1 CONCESSION STAND/RESTROOM BUILDING

- Concrete Block Building with basic utilities
- (4) P.O.S. Concession and Prep Area
- Women's Room
 - 6 water closets
 - 2 lavs
- Men's Room
 - 2 water closets
 - 2 urinals
 - 2 lavs
- Storage Closet
- Electrical Closet
- Janitors Closet
- Plaza Gathering Space
- Kid's Play Area

2 MAINTENANCE BUILDINGS

- Softball Maintenance Building with Outdoor Material Storage Bins
- Soccer Maintenance Building

PASSIVE RECREATION AREA

- (6) Picnic Pavilions with Storage Area, Lights and Outlets
- (30) Picnic Tables
- (6) BBQ Pits/Grills

DOG PARK

- 5 Acres with a perimeter fence

4 PARKING LOTS WITH LIGHTS

- Main Lot (300 Spaces)
- Softball Lot (15 Spaces)
- Soccer Maintenance Building/Tennis Lot (15 Spaces)
- Dog Park Lot (40 Spaces)

OPTIONAL PROGRAM ELEMENTS

SOFTBALL PRESS TOWER

- Foul Ball Netting
- PA Speaker System

D. SITE ANALYSIS

SITE CHARACTERISTICS

The project site is 96.3 acres of open land located three miles northeast of downtown South Haven. Interstate 196 borders the west side of the property. A residential and agricultural property is located along the north edge of the site. 71st Street forms the east boundary and 103rd Avenue forms the southern boundary. There are three residential properties within these boundaries, one at the northeast corner of the site, one at the southwestern corner of the site and one centered along the east property line. Residential properties are located across 71st Street and 103rd Avenue.

The property was previously used for agricultural purposes but has been inactive for a number of years. The southern half of the property was once used as a tree orchard; the northern portion has been used as pasture. Invasive scrub vegetation, primarily grassy weeds including thistle, wheat grass, scrub-brush and milk weed is the established plant material currently covering the majority of the site. There are only three areas of mature tree growth; a small wooded area south of the irrigation ponds at the low point of the site, a larger grouping of trees at the southwest corner, and a line of trees running east-west which divides the site into two parcels. A very small wetland area has been identified within the group of trees directly to the north of the residential property centered along 71st Street. There are no existing buildings, or other remnants of any previous development on this site. Although the site is open, there are a few elements that will impact development of the site for athletic fields which are illustrated in the Site Analysis Diagram.

PROXIMITY TO RESIDENTIAL PROPERTIES

Concerns about noise, traffic, lights and trash are some of the common concerns associated with developing the property for active athletic use adjacent to residential communities. As such, the location of the parking areas, the maintenance areas, the lighted playing fields, the dog park, etc. should consider the issues related to the adjacent community.

PROXIMITY TO HIGHWAY

The regional park will be visible to passing motorists along Interstate 196 which will be beneficial for promotional purposes; however, the proximity of the highway will create some undesirable background noise associated with the fast moving traffic. Hence, passive recreation areas, such as picnic areas, would be best located on the opposite side of the property from highway. For the active, athletic fields, the highway noise is less of an issue.

GRADING

The northern half of the site is the flattest area, with only minor changes in elevation. The southern half of the site is steeper - the sloped area transitions approximately 20 feet vertically over a length of 300 feet, ranging from 3% to 10%. The low point of the site is in the southeastern corner, where the existing irrigation ponds were built. The low point is 40 feet below the highest elevation. There is an area to the east of the irrigation ponds, approx. 10 acres in size, which is also relatively flat. (See Site Grading Narrative in Section G. Technical Narratives for further information.)

A typical soccer field requires a flat area approximately two acres in size. While terracing the fields is an acceptable design approach, it is not ideal. For one, terraced fields don't provide the same ease of access and visual continuity across the fields, which is especially desirable for tournament play. Terraced fields require the added cost of fencing between fields to try to contain errant balls. Terraced fields are also difficult and more expensive to maintain. Therefore, the athletic fields should be located to take advantage of the flatter topography of the site, to allow for as many fields as possible to be at the same elevation. This approach will result in minimal cost for grading.

VEHICULAR ACCESS

Vehicular access to the site is limited to two areas, one from the south off of 103rd Avenue and the other from the east off of 71st Street. The entrance off of 103rd Ave. cannot be too close to the intersection at 71st Street and will need to avoid the existing irrigation pond and the small grove of mature trees. As well, the 103rd Ave. entrance should avoid being too close to the residential property at the southwestern corner of the site.

Along 71st Street, the road rises along the northern portion of the property which does not allow for proper visibility, restricting the vehicular entrance to only the southern portion of the property. Similar to the entrance along 103rd Ave., the entrance along 71st Street should avoid being too close to the residential property along the eastern boundary of the property. Ideally, both vehicular entrances should allow for proper visibility, queuing, and conspicuous placement for signage.

CLIMATE

The sun in March and September sets slightly north of west. In June the sun sets significantly further to the north, almost equidistant between west and north.

Sports fields should be positioned to minimize the setting sun from affecting play. The sun is high in the sky throughout the day and is generally not a factor in the orientation of sports fields; however, the setting sun should not be in the eye of the most vulnerable position player - the goalie in soccer, the batter in baseball and the receivers in football. Therefore, the ideal orientation for the playing fields is either due north or northeast, although other orientations such as southeast and due south are also acceptable in the industry.

The wind is variable. The prevailing wind, averaging 10 miles per hour throughout the summer months, comes from the west off of Lake Michigan. The stronger storm-related winds typically come from the northwest. The site is exposed from the north and west, with few mature trees to break the wind.

Temperatures in the summer are mild, with an average high temperature of 78 degrees in July.

The amount of rainfall per month is fairly consistent throughout the year. Between April and November, the time frame associated with active outdoor recreational activities, the average rainfall is 3.5 inches per month. September is the wettest month with 4.08 inches of rainfall, and October is the driest with 2.75 inches of rainfall.

Despite the rainfall, the playing fields will still require supplemental irrigation to maintain the desired quality level during the dryer/warmer summer months, especially given the amount of play the fields will receive.

WALKING DISTANCE

Another important consideration in the development of a large athletic recreation park is the walking distance from the parking lots to the fields, as well as the distance from the closest field to the farthest field. At almost 100 acres in size, the distance across the site is significant. The dimension across the site, either east-west or north-south is approximately 2,400 feet which equates to about a 7 ½ minute walk.

For the convenience of the coaches and players, who will be bringing game equipment, it is desirable to minimize the distance they will have to walk to access the fields. The same is true for player's families and general spectators, who may also be toting portable chairs, food, etc.,. Spectators may also include young children and older adults, so the walking distance should be minimized.



71ST STREET

RESIDENTIAL NEIGHBORS - LIGHT, NOISE, TRAFFIC, QUALITY OF LIFE ISSUES

103rd Ave & 71st St, South

103RD AVENUE RESIDENTIAL NEIGHBORS - LIGHT, NOISE, TRAFFIC, QUALITY OF LIFE ISSUES



0 100 250 500

Site Analysis
17 November 2010



E. FINAL SCHEME

CONCEPT DEVELOPMENT

Five Site Plan schemes were developed to demonstrate a range of options for the key programmatic elements of the recreation park - Roads, Parking, Playing Fields, Concessions and Image. All of these elements were discussed during design sessions and were evaluated with respect to use, access, adjacencies, cost and maintenance. The feedback from the steering committee on each of design options led to the development of the Final Master Plan. The considerations given to each of the key programmatic elements, and the steering committees' preferences for the final arrangement of those elements, are enumerated below.

ROADS & PARKING

Decisions regarding parking and road access, and the relationship between these two vehicular components are critical program elements that inform the location of the playing fields and other recreational programmatic elements.

Considerations were given to whether the parking should be consolidated in one large, centralized lot or distributed in smaller lots around the site, and the cost associated with either option. Other considerations included the walking distance from the parking lot to the fields, the proximity of the Concession/Restroom building to the parking lot, and the cost and/or need for a more extensive roadway system to circumnavigate the site.

The steering committee's preference was for a minimally invasive internal roadway in a simple L-shaped loop configuration with consolidated parking centrally located to the soccer and baseball fields. The final arrangement, which utilizes the steeper portion of the site for the roadway, preserves the majority of the flat area of the site for sports development, and minimizes the cost to build the roadway. Building one large parking lot, as opposed to smaller lots is also more cost effective.

A short spur road off of the internal loop road serves a separate parking lot for the dog park. Having a separate parking lot for the dog park was deemed to be important by the steering committee, and having the parking lot accessed via the internal loop road (as opposed to directly from 103rd Ave. or 71st Street) was viewed as a prudent decision by the Design Team to limit the number of vehicular entrances off these two roads.

The smaller parking lot for the dog park can also serve the tennis courts and the grove of picnic pavilions adjacent the dog park.

Two other spur roads provide access to the parks' two Maintenance buildings which

have small parking lots associated with each.

The main entrance to the site is off of 103rd Avenue since this is the road with the best visibility and ease of access. The secondary entrance/exit is along 71st Street. (See Roadways and Parking Fields in Section G. Technical Narratives for further information.)

PLAYING FIELDS

As is mentioned above, decisions relating to the arrangement of the playing fields are inextricably linked to decisions pertaining to the layout of the internal road and the location of the parking lots.

The natural topography of the property is an obvious and important consideration with regard to the playing field layout, especially as it relates to cost. Another important consideration was whether or not the playing fields should be planned grouped together or distributed across the site. Lastly, other considerations included proximity to the adjacent residences, ease of access, ease of maintenance and the recreational park's image from the surrounding roadways.

The steering committee's preference was for the fields to be grouped together at the north end of the site to minimize the cost to build the fields and to create a single, consolidated sports complex for soccer, football, softball and baseball. It was felt that a consolidated arrangement will best facilitate logistics related to managing the movement of players and spectators to/from the fields, especially during tournament play.

The location of the fields takes advantage of the natural grades. The proposed layout allows all fields to be at the same elevation which supports the desire of the steering committee for a cohesive field arrangement.

The lighted premium fields for soccer and baseball/softball are purposely located furthest from the existing residences at the south and east.

CONCESSIONS AND AMENITIES

The location of the Concession/Restroom building is also directly linked to the location of the roads, parking lots and the arrangement of the fields.

The Concession/Restroom building will be the only structure built on the recreation park (besides the small Maintenance buildings), so invariably it will be an important



element in terms of the park's identity and image. Its prominent location in relation to the roadway, parking lots and playing fields is an important consideration for the park development.

It was imperative to the steering committee that the building be centrally located, to act as a 'gateway' to the athletic fields. The committee wanted the building to be a convenient meeting place for player registration or for family and friends to gather.

The location of the Concession/Restroom building allows the facility to become the park's focal point and to serve as an entry feature to the playing fields. The building is located at the center of the site, at the corner of the internal loop road, and at the nexus of the baseball fields and soccer fields. The location is within an easy 3 minute walk from the furthest field and is also convenient to all recreation activities on the site. For all users of the recreational park, the Concession building is conceived of as a meeting place for participants and families.

ACCESSIBILITY

All areas of the recreational park are planned to be accessible to meet current regulations, the details of which would be developed in a further during the design development stage.

1 SOCCER/FOOTBALL FIELDS

- 5 FULL SOCCER FIELDS 225' x 330' (FIELD 2,4,5,6,7)
- 1 SOCCER/FOOTBALL FIELD 225' x 360' (FIELD 3)
- 1 PREMIUM SOCCER FIELD 225' x 330' (FIELD 1) WITH LIGHTS, FENCE, BLEACHERS

2 SOFTBALL/BASEBALL FIELDS

- 3 BASEBALL FIELDS 250'
- 1 SOFTBALL FIELD 300' WITH LIGHTS
- 1 T-BALL FIELD 120' x 120'

3 TENNIS COURTS

- 8 TENNIS COURTS 36' x 78'

4 BIKE TRAIL

- 1.55 MILES = 1 LAP

5 CONCESSION/RESTROOMS 25' x 55'

- 1 CONCESSION STAND
- 1 WOMEN'S ROOM
- 1 MEN'S ROOM
- 1 CHILDREN'S PLAY AREA

6 PARKING

- 1 PARKING LOT - 300 CARS TOTAL
- 3 SATELLITE PARKING LOTS - 70 CARS TOTAL

7 DOG PARK

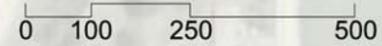
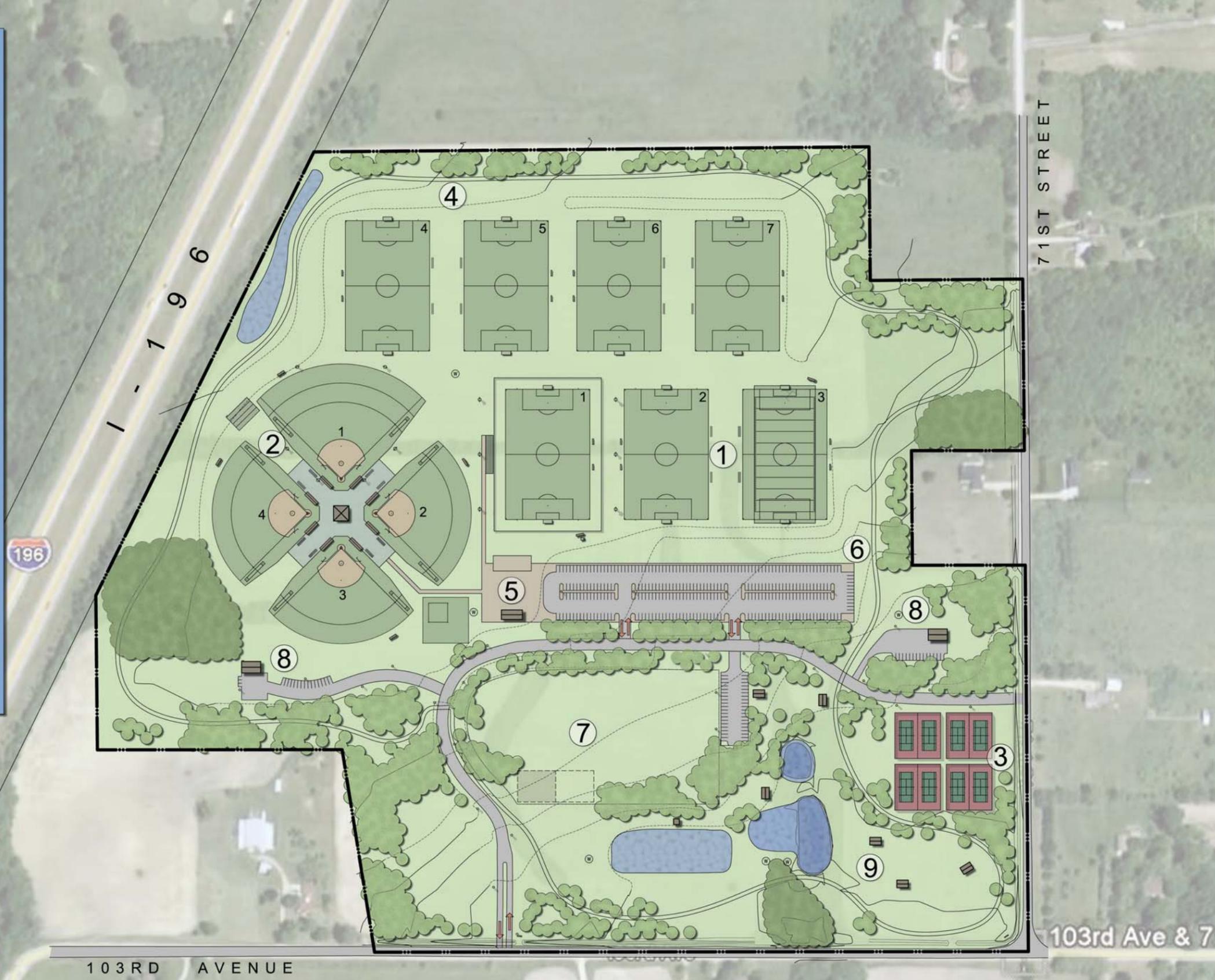
- 5 ACRES

8 MAINTENANCE

- MAINTENANCE BUILDING 1 - SOCCER - 50' x 30'
- MAINTENANCE BUILDING 2 - BASEBALL - 50' x 30'

9 PASSIVE RECREATION

- 13 ACRES
- 6 PICNIC PAVILIONS 20' x 30'



Final Scheme - Illustrative
31 January 2011



IMAGE

The image of the regional recreation park as seen from Interstate 196, to the west, and local roads 103rd Ave. and 71st Street, to the south and east respectively, was also an important consideration in the overall site development.

Although the park will have an emphasis on sports recreation, the steering committee's mission is also to include areas of natural vegetation and other features for rest, relaxation and contemplation.

The sites topography and unique location next to a major regional highway allow for the recreation park to be viewed from two very different vantage points, the highway and the park's entrance, each allowing for a slightly different image of the park, yet both consistent with the park's mission.

The playing fields are planned for the higher elevation of the park, to the west and north. There they will be highly visible from passing motorists on I-196 which is at nearly the same elevation as the property. If the actual turf cannot be seen, certainly the structures associated with the playing fields will be highly visible, such as the sports light poles, scoreboards, press tower, foul poles, fencing, bleachers and goals. The image from I-196 will be of a quality sports complex, and due to the high level of visibility, there is potential for desirable sponsorship of the taller sports elements.

Conversely, the passive recreation areas are planned for the lower elevations of the site to the south, which is readily visible from both 103rd Ave. and 71st Street (especially at the intersection) but not visible from I-196. The passive recreation areas are planned around the new and existing irrigation ponds and will utilize the natural, gently sloping topography. The passive recreation area will include a grove of open-air, covered picnic pavilions. Since the southern portion of the property has great visibility from both 103rd Ave. and 71st Street, the image of the regional park from those vantage points will be that of open and inviting parkland. Only the tallest elements of the athletic fields, such as the sports lights poles and possibly the scoreboards, would be visible from 103rd Ave or 71st Street.

OTHER DEVELOPMENT PROGRAM ELEMENTS

Tennis Courts

The tennis courts are located at the east side of the site. The local tennis coach suggested the arrangement of four groups of 2 tennis courts.

Bicycle/Jogging Trail

The steering committees' two main considerations with regard to planning the bicycle/jogging trail were to minimize the number of road crossings and to provide varied terrain. There was no final conclusion on whether or not the trail would be used for a cross country competition. (The current bicycle/jogging trail is 1.55 miles long, so that two laps would equal the 3.1 miles, the ideal length of a cross country trail.)

The circumferential layout of the trail means users will experience both environments of the park - the flatter, more open areas around the athletic fields to the north, and the gently sloped, more shaded and landscaped areas to the south. The two locations where the trail unavoidably crosses the internal road have been carefully chosen with safety in mind.

Dog Park

The SHARP committee requested a 5 acre parcel of the recreation park be developed as a dog park. The dog park would be managed by a local community group.

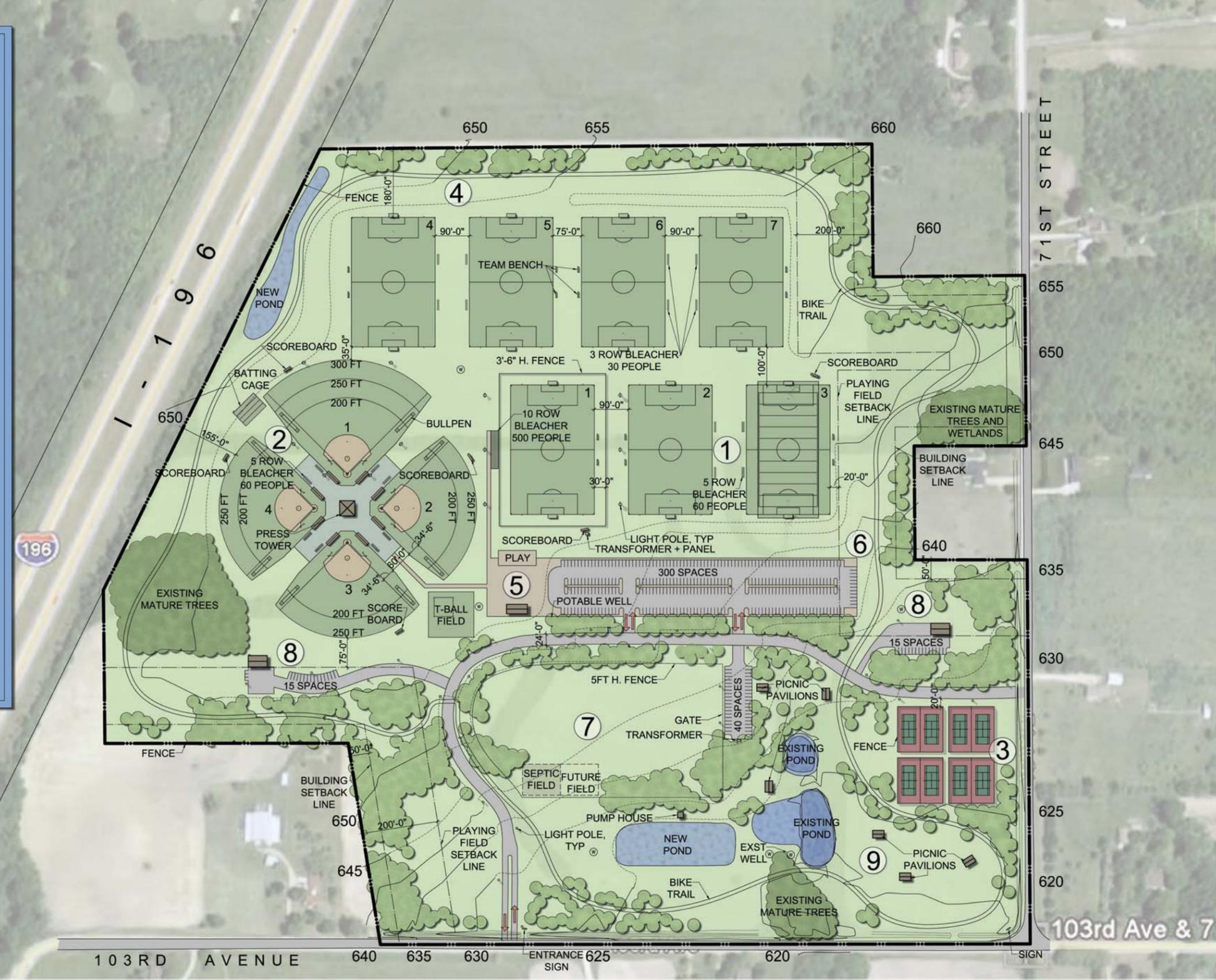
Though the steering committee embraces the idea of a dog park, maintaining a separation between the dogs and the other park elements was an important criteria both from a perspective of safety and potential nuisance. Therefore, the dog park will be located along the southern area of the site and will be surrounded by a fence. For the same reason, the dog park will also have its own dedicated parking area.

Maintenance Facilities

The Design Team recommended that two separate Maintenance buildings be planned, one for each type of sport - baseball and soccer - since the maintenance needs are different for each sport. Given the nature of these facilities, which will be used to store large lawn mowing equipment, landscape maintenance tools, materials such as fertilizers and other misc. equipment, they are best located as far from the general public gathering areas and major thoroughfares as possible, yet still convenient so as not to be a hardship for the maintenance crew.



- 1 SOCCER/FOOTBALL FIELDS**
 - 5 FULL SOCCER FIELDS 225' x 330' (FIELD 2,4,5,6,7)
 - 1 SOCCER/FOOTBALL FIELD 225' x 360' (FIELD 3)
 - 1 PREMIUM SOCCER FIELD 225' x 330' (FIELD 1) WITH LIGHTS, FENCE, BLEACHERS
- 2 SOFTBALL/BASEBALL FIELDS**
 - 3 BASEBALL FIELDS 250'
 - 1 SOFTBALL FIELD 300' WITH LIGHTS
 - 1 T-BALL FIELD 120' x 120'
- 3 TENNIS COURTS**
 - 8 TENNIS COURTS 36' x 78'
- 4 BIKE TRAIL**
 - 1.55 MILES = 1 LAP
- 5 CONCESSION/RESTROOMS 25' x 55'**
 - 1 CONCESSION STAND
 - 1 WOMEN'S ROOM
 - 1 MEN'S ROOM
 - 1 CHILDREN'S PLAY AREA
- 6 PARKING**
 - 1 PARKING LOT - 300 CARS TOTAL
 - 3 SATELLITE PARKING LOTS - 70 CARS TOTAL
- 7 DOG PARK**
 - 5 ACRES
- 8 MAINTENANCE**
 - MAINTENANCE BUILDING 1 - SOCCER - 50' x 30'
 - MAINTENANCE BUILDING 2 - BASEBALL - 50' x 30'
- 9 PASSIVE RECREATION**
 - 13 ACRES
 - 6 PICNIC PAVILIONS 20' x 30'



Final Scheme - Annotative
31 January 2011



0 100 250 500



F. PHASING STRATEGIES

PHASING

The entire recreation park will not be built at once; rather, it will be built phased over time as sources of funding become available. The technical Master Plan was developed with this in mind.

Cost effective phasing strategies were considered in the development of the Master Plan to maximize the available funds and to focus those funds on the first priority of developing first class youth athletic fields. The steering committee wants the initial phase of the SHARP project to have a big impact. They want the first fields to be of the highest quality to establish a positive image for the facility, which should in turn garner more community support for the park and aid in on-going fund raising efforts.

PHASE 1

There are two options for Phase 1, a Phase 1 'minimum' and Phase 1 'maximum'. The Phase 1 minimum includes the premium soccer field; the Phase 1 maximum includes the premium soccer field and the premium baseball/softball field.

In either scenario, the fields would be constructed at the central area of the site, distant from the residential properties and visible from the regional highway, I-196. The steering committees' preference is for the fields in Phase 1 to be lighted if adequate funds are available. This would enable more use of the field by extending the hours of available play time beyond sunset, and it would also lend to the desired premium character of the first Phase.

In order to use the fields in either Phase I build-out, the basic infrastructure of the park will have to be constructed. This would include site preparation - grading for the roadways, parking lots and playing fields, developing portions of the stormwater management system, installing utility infrastructure such as sanitary/septic systems, potable and irrigation water well system, and the primary and secondary electrical service, as well as existing soil conditioning.

The internal loop road would be constructed in Phase I and would include street lighting; however, since only one or two fields will be constructed, only a portion of the main parking lot would need to be constructed, the size of which would be determined by the number of fields, and the anticipated user volume. The parking lot would be lighted in Phase I for security purposes.

The steering committee desires the Concession/Restroom building to be constructed in the first phase of development, partly because this would

enhance the premium look and feel of the initial phase of the park, and also because the concession could be a source of revenue. Depending on the available funds, the structure could be built with only the concession area fully complete. The restroom portion of the building could be built as a shell space, ready to be fit-out in a future phase when more funds come on line.

The buffer tree plantings would be a required part of the Phase I build-out. In addition, the steering committee would prefer attractive landscaping to be installed at the main park entrance off of 103rd Avenue because the vehicular entrance will be the first impression users will have of the park and this will also help establish the quality and character of the park.

In general, the total scope of the Phase I minimum and Phase I maximum work is enumerated in the Order of Magnitude Budget Estimate in Section H. The final scope would be further refined in the design development stages of the project.

All other work beyond Phase I will be developed as funds become available. The scope can be implemented in as many phases as needed, dictated by the availability of funds.



- 1 SOCCER FIELDS**
 - 1 PREMIUM SOCCER FIELD 225' x 330'
- 5 CONCESSION/RESTROOMS 25' x 55'**
 - 1 CONCESSION STAND
 - 1 WOMEN'S ROOM
 - 1 MEN'S ROOM
- 6 PARKING**
 - 1 PARKING LOT - 200 CARS TOTAL



0 100 250 500

Final Scheme - Phase 1 Minimum
31 January 2011



G. TECHNICAL NARRATIVE

SOIL/SITE CHARACTERISTICS

Most areas of this site are currently used as cropland. Some of the acreage is idle land or woodland. From the Soil Survey of Allegan County, and as field verified by MCE, the property is predominately a Capac loam. This undulating, somewhat poorly drained soil is on broad flats, low ridges, knolls, and foot slopes. Individual areas are irregular in shape and range from 4 to 1,500 acres in size.

Typically, the surface layer is a dark grayish brown loam about 9 inches thick. The next 4 inches is a mixture of yellowish brown, mottled clay loam and light brownish gray sandy loam. The subsoil is yellowish brown, mottled clay loam about 14 inches thick. The substratum to a depth of about 60 inches is brown, firm clay loam and yellowish brown loam. In places the subsoil is less than 18 inches thick. In some areas the substratum is silty clay loam. In other areas it has bands of loamy sand. In places permeability is slow.

Included within the Capac Loam soil mapping are small areas of the well drained or moderately well drained Marlette soils, the somewhat poorly drained Blount soils, and the poorly drained Brookston soils. Marlette soils are on high ridges and the tops of knolls. Blount soils are finer textured than the Capac soil. They are in positions on the landscape similar to those of the Capac soil. Brookston soils are in drainage ways and depressions. Included soils make up 5 to 15 percent of the Capac Loam designation on the Soil Survey of Allegan County.

Permeability is moderately slow in the Capac soil. Available water capacity is high. Surface runoff is slow or medium. The seasonal high water table is at a depth of 1 to 2 feet from November through May and in extremely wet periods during the rest of the year.

SITE GRADING

The site grading plan has been designed to balance the earthwork as much as possible. The existing site has slopes ranging from 1% to 8%. The major elements of the project development have been located to the flatter northwest end of the site to minimize the earthwork.

The site has a ridge that runs northeast across the northern half of the site. Due to this high ridge, the site is divided into two areas split. The northwest portion of the site slopes naturally and gradually to the northwest and is proposed to continue to step or slope in this direction. The southeast portion of the site slopes at steeper grades to the southeast and will continue to slope in this direction. Primarily, the roads and main parking lot are in the central and south portion on the site.

It is anticipated that the grading of the project will be done in phases. A more detailed and phased grading plan will need to be planned when the project goes into design development.

Typically, the following procedure will be followed for each phase for the grading of the project. First, the existing site contains 2 to 6 inches of topsoil that will be initially stripped and stockpiled in a location outside the earthmoving operation. Second, soil will be cut out of sections that need to be lowered and placed in areas that are too low. This will be done with scrapers that remove 4 to 8 inches at a time and deposit the material in the lower areas that need fill. After the material is deposited, it would be anticipated that the material will be compacted with a sheeps-foot roller. Due to the soil material typically being a stiff clay, the material should be placed in thin layers and compacted. It is recommended that a soils engineering testing company be on-site to do compaction testing during the project. Third, after the site has been regraded, topsoil will be placed back onto the site and then seeded and mulched.

PLAYING FIELDS

All playing fields will be irrigated and will have under drain systems. Each sport, soccer and baseball, will have one 'premier' level field. The premier field will have sports lighting and a higher level capacity for usage due to an advanced under drain system. The remaining fields will have a less-extensive under drain system, but will be designed so that they can be upgraded in the future to a premier level as desired.

The under drain systems for all fields will be connected to an irrigation pond allowing the property to reuse existing water supplies to manage turf growth. The overall irrigation system will be highly efficient allowing each field to be irrigated with minimal water sources. Soil sensors will be installed throughout the fields to monitor the level of moisture and adjust the flow rates of water to each field.

1) Soccer Fields

A total of 7 soccer fields are planned for the recreation park, each 225' x 330' in size. One of those fields will be considered a premier field, which will include sports lighting, a permanent scoreboard, bleacher seating for up to 500 people and a perimeter fence.

Another field will be dual-purpose (225' x 360'), compatible for both soccer and

youth football. The dual-purpose field will include a permanent scoreboard and two sets of portable bleacher seating for up to 60 people each.

All other fields will have two sets of portable bleacher seating for up to 30 people each.

The soccer goals, field goal posts and team benches will be portable for all fields.

Premier Level Field

The finish grade will be a minimum 1% slope from side to side. The field will be constructed utilizing an imported and specified sand (rootzone) cap to a depth of 8 inches. The under drain system will be constructed of 4 inch drain tiles installed at 8 feet on center throughout the playing field. All drain piping will be installed perpendicular to the natural flow of surface water.

An irrigation system will be installed capable of providing the turf manager with the necessary data to implement best irrigation practices.

The field will be sodded with a mature high quality turfgrass, consisting of three different Kentucky Bluegrass varieties that will allow for minimal mowing, maximum disease resistance and be traffic tolerant.

Other Fields

The finish grade will be a minimum 1%-2% slope from side to side. The fields will be constructed utilizing existing soils from the property, if quantities allow. The existing soils will be amended as determined via a soil testing analysis to produce the best growing medium for turfgrass.

An irrigation system will be installed similar to the premier field.

The under drain system will be constructed of 8 inch peripheral perforated drain tiles that will completely surround each field backfilled with gravel. Every 40 feet there will be a quick drain installed to capture water draining off the field.

These fields will either be seeded or sodded using a Kentucky Blue/Fescue blend turfgrass.

2) Softball/Youth Baseball Fields

A total of 4 baseball fields will be constructed. These fields will have the ability to host both softball and youth baseball games. Each field will have 60' base paths with full, skinned infields.

For three of the fields, the outfield dimensions can vary from 200' to 250' via the use of portable outfield fencing. For the 4th premier level field, which is a dual-purpose field for youth baseball and adult softball, the outfield dimensions can vary from 200' to 300'.

The premier level field will include sports lighting, a permanent scoreboard, masonry dugouts, on-field bullpens and two sets of portable bleacher seating for up to 60 people each.

The other fields will have the same features as the premier field except they will not have sports lighting.

Overhead netting will protect the pinwheel-shaped spectator viewing area between the fields.

Space has been allotted for portable, netted batting tunnels. Space has also been allotted for a future Press Tower at the nexus of the four fields.

Premier Level Field

The field will consist of a crowned infield and it will be graded away from the high point at a minimum of 1%-2% slope. A under drain system will be installed utilizing 4 inch drain tiles installed at 8 feet on center throughout the playing field. All drains will be installed perpendicular to the natural flow of surface water. All drain lines will be backfilled with a high performance gravel and pipe will be properly bedded to decrease contamination potential.

An irrigation system will be installed capable of providing the turf manager with necessary data to implement best irrigation practices.

The field will be sodded with a mature high quality turfgrass, consisting of three different Kentucky bluegrass varieties that will allow for minimal mowing, maximum disease resistance and high traffic tolerance. A high quality infield skinned material will be specified.

Other Fields

The finish grade will be a minimum 1%-2% slope from side to side. The fields will be constructed utilizing existing soils from the property if quantities allow. The existing soils will be amended as determined via a soil testing analysis to produce the best growing medium for turfgrass.

An irrigation system will be installed similar to the premier field.

The under drain system will be constructed of 8 inch peripheral perforated drain

tiles that will completely surround each field backfilled with gravel. Every 40 feet there will be a quick drain installed to capture water draining off the field.

These fields will either be seeded or sodded using a Kentucky Blue/Fescue blend turfgrass.

3) Youth T-Ball

This "field" is basically a grassy area adjacent to the youth baseball/softball fields. It will be graded with a minimum slope of 1%-2% falling away from the pitching mound (high point). The field will be constructed utilizing existing soils on site and will be established utilizing a high quality Kentucky Bluegrass and Tall Fescue seed.

A portable backstop has been budgeted for this field.

STORM WATER MANAGEMENT

The existing site has a high ridge that goes northeast across the north half of the site. Due to this high ridge, the site is broken into two areas split by the high ridge. The northwest portion of the site slopes naturally and gradually to the northwest, which currently sheets storm run-off to the Michigan Department of Transportation right of way of I-196 Highway. The southeast portion of the site slopes at steeper grades to the southeast to a low area along 103rd Street and drains to the south through a roadway culvert. There are two existing ponds located at the southeast corner of the site that a portion of the run-off enters into.

The site will utilize drainage swales and underdrains to direct storm water to detention ponds at the northwest and southeast corners of the site. The Allegan County Drain Commissioners office will require detention basins to meter the site run-off and limit it to county standards. The existing ponds to the southeast will need to be expanded to contain the storm water per the county standards. These ponds will then outlet to a proposed irrigation pond and then the irrigation pond will have an overflow release to the existing low area along 103rd Street. The northwest pond will be sized to detain the storm water as required by the county standards. A permit may be required by the Michigan Department of Transportation depending on how the final storm water management system is designed.

The site will have storm water underdrains around and under the playing fields. These underdrains will be piped from the field areas to an expanded detention basin to the southeast and a proposed detention basin to the northwest.

The entire site will have swale ditches throughout the site, around the fields, and along the roadways to direct the storm water to the detention basins.

Best Management Practices for Michigan Watersheds are to be followed during the final storm water management design for the construction phase. A Soil Erosion and Sedimentation Plan will need to be prepared as part of the final design for permitting purposes and to ensure the proper guidelines are followed.

ROADWAYS

The recreational park's internal road will have two entrances, the primary entrance being on 103rd Avenue and a secondary entrance on 71st Street. The Allegan County Road Commission will require a passing flair added on the existing roads at the location of the two entrances. The final design of the entrance turning radii and length of passing flair will be approved by the Road Commission. The Road Commission has approved the locations of the two connecting points on the existing roadways. The Road Commission will not require a Traffic Study for this project.

The total length of the interior roadway from 103rd Avenue to 71st Street is 2,280 feet. The roadway will be constructed with a one foot sand sub-base, 8 inches of 22A gravel or crushed concrete for a base, and topped with a total of 3-1/2 inches of asphalt. The roadway will be paved 24 foot wide with swales on each side with no curbing. The roadway will have a centerline crown with a 2% slope on each lane. Culverts will be used to convey storm water across roadways.

Lighting for the roadways will consist of 35' wooden poles with cobra head style fixtures spaced approximately 150' on center.

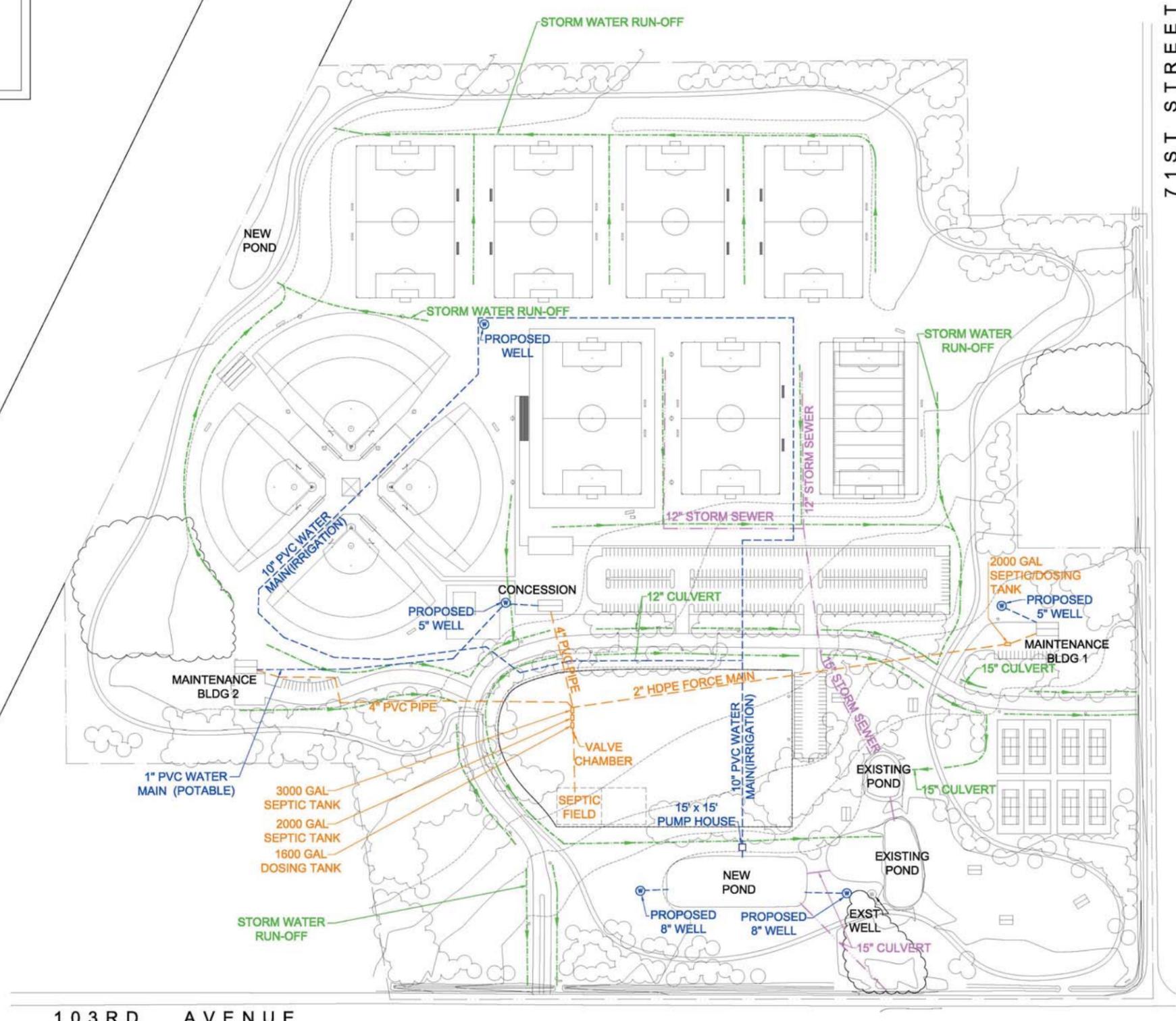
PARKING FIELDS

The proposed parking fields will consist of 8 inches of crushed concrete over 12 inches of sand sub-base for the initial phase of development. An optional 2-1/2 inches of asphalt could be placed at a later date for the final surface. The asphalt would help to keep dust down in the future.

The main parking lot in the middle of the site would also have 6 inch perforated underdrains placed at the bottom of the sand sub-base. The underdrains in the main parking area will help the gravel base and future asphalt have a longer life and will reduce maintenance costs.

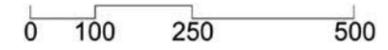
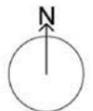
UTILITY LEGEND

- MAIN STORMWATER RUN-OFF (OPEN SWALE)
- MAIN UNDERGROUND STORM SEWER
- MAIN UNDERGROUND SANITARY
- MAIN UNDERGROUND WATERLINES (POTABLE AND IRRIGATION)



71ST STREET

103RD AVENUE



Final Scheme - Conceptual Civil Utility Plan
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No curbs are planned for any of the parking lots.

Lighting for the parking fields will consist of 35' wooden poles with cobra head style fixtures.

PLUMBING SYSTEMS

Plumbing piping systems will be provided as required to supply the recreation park's Concession/Restroom building and two Maintenance buildings. (The open-air picnic structures will not have water service.) These systems will consist of potable hot and cold water distribution, irrigation water systems, sanitary waste systems, and storm water conveyance systems. Currently, the property has no municipal water, sanitary, or storm water infrastructure. The water requirements will be provided by well water systems. An on-site sewage disposal system will be provided for sanitary waste water. Storm water will be transferred to the on-site pond and recharge areas where reuse for irrigation will be possible.

Sanitary Waste and Vent

A site visit was conducted with the Allegan County Health Department to determine a suitable area for the septic system. Due to the high water table and poor soils, only one area was approved by the Health Department as a suitable location for the septic system. The approved septic area is approximately 17,400 sq. ft. Of that area, approx. 8,700 sq. ft. will be utilized for the initial septic system and the remaining 8,700 sq. ft. will be dedicated as a reserve septic area per the requirements of the County Health Department.

A separate sanitary waste and vent system will be provided for all sanitary fixtures and equipment. The sanitary system will be designed to accommodate the water usage (approximately 4,200 gallons per day at peak usage) from a Concession/Restroom building and two Maintenance buildings. The following fixture types and quantities were assumed in the sanitary analysis:

Concession/Restroom building:

- 8 water closets
- 2 urinals
- 4 lavatories
- 1 mop receptor
- 1 pot sink
- 1 hand sink

Maintenance buildings:

- 1 utility sink each
- 1 hose reel each

In addition to the above, floor drains may be considered for water heater closets, food service areas and restrooms. Drains and traps that are subject to evaporation shall be provided with trap primers.

Using the Michigan Criteria for Subsurface Sewage Disposal to design the septic field, it was determined that an area of 8,260 sq. ft. will be required for the field.

The sewage from the Concession/Restroom building will flow to a series of septic tanks via a 4" PVC gravity pipe. Once the flow passes through the septic tanks it will enter a dosing chamber at which point the sewage will be pumped to the pressure dosed septic field. The septic field will have four separate zones due to the existing topography.

The waste water from the easterly Maintenance building will flow directly into a two-compartment septic/dosing tank. The waste water will then get pumped through a force main to the same series of septic tanks and dosing chamber used for the Concession/Restroom building where it will be forced to the septic field. The waste water from the westerly Maintenance building will gravity flow to the sanitary septic system and then be forced to the septic field as described above.

The sanitary drainage pipe sizes shall be based on drainage fixture unit values of the actual fixtures and appropriate code factors and allowances.

Building Storm Water Drainage

Building storm water drainage will be arranged to drain by gutters and downspouts away from the structures, to a storm water conveyance element such as a swale.

The building storm drainage system shall be sized in accordance with tables and flow rates as stated in the International Plumbing Code for a 3" / hr rainfall rate.

(Refer to the Storm Water Management for further information.)

Potable Water

To date there have not been any test wells performed on the site. Pump tests and water quality tests were performed on the existing 5" well on December 16, 2010. The test indicated that the existing well has a capacity of 100 gpm and satisfactory quality readings with the exception of hardness readings of 338mg/l and chloride readings of 340 mg/l. Both water quality readings are above the recommended

levels of 250 mg/l for hardness and 250 mg/l chlorides. It is anticipated that the elevated hardness could result in staining of concrete and fixtures, while the elevated chlorides would impart a salty taste to the water without treatment.

Potable water service will be extended from a new well water supply to the Concession/Restroom building and the west Maintenance building. The well water system will consist of a 5" well with a 3 hp submersible well pump having an approximate capacity of 40 gpm. The well pump will discharge to three pressurized bladder tanks that will be used to maintain system pressure in the 30 to 60 psi range. The pressure tank will have an NSF approved Neoprene bladder and will be pressurized with air at the factory to approximately 30 psi. The pressure tank will be equipped with a pressure switch that is arranged to activate the well pump at 30 psi and shut off the well pump at 60 psi tank pressure. A water treatment system will be provided to improve the well water quality.

A separate smaller well pump system will be provided for east Maintenance building. This well will also be supplied with a 3 hp pump and one bladder pressure tank. Due to the distance of the easterly Maintenance building from the Concession Stand/Bathroom, it was determined that installing an additional well was the most cost effective option compared to installing over 1000 feet of 2.5" HDPE water main to service this Maintenance building from the Concession/Restroom building well.

The potable cold water system shall be provided as required to fixtures and wall hydrants. The piping system will be arranged to be drained in the offseason.

The potable hot and cold water piping shall be sized to maintain a minimum pressure of 30 psig at the most remote fixture and shall be based on fixture unit values with appropriate diversity factors and actual equipment demands.

The potable hot water system shall provide service to plumbing fixtures and equipment requiring hot water. An electric storage type water heater will provide hot water for the Concession Building. Hot water will be stored at 140-deg. F. Mixing valves will be provided to reduce temperature at fixtures as required.

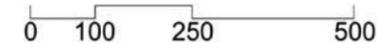
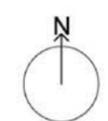
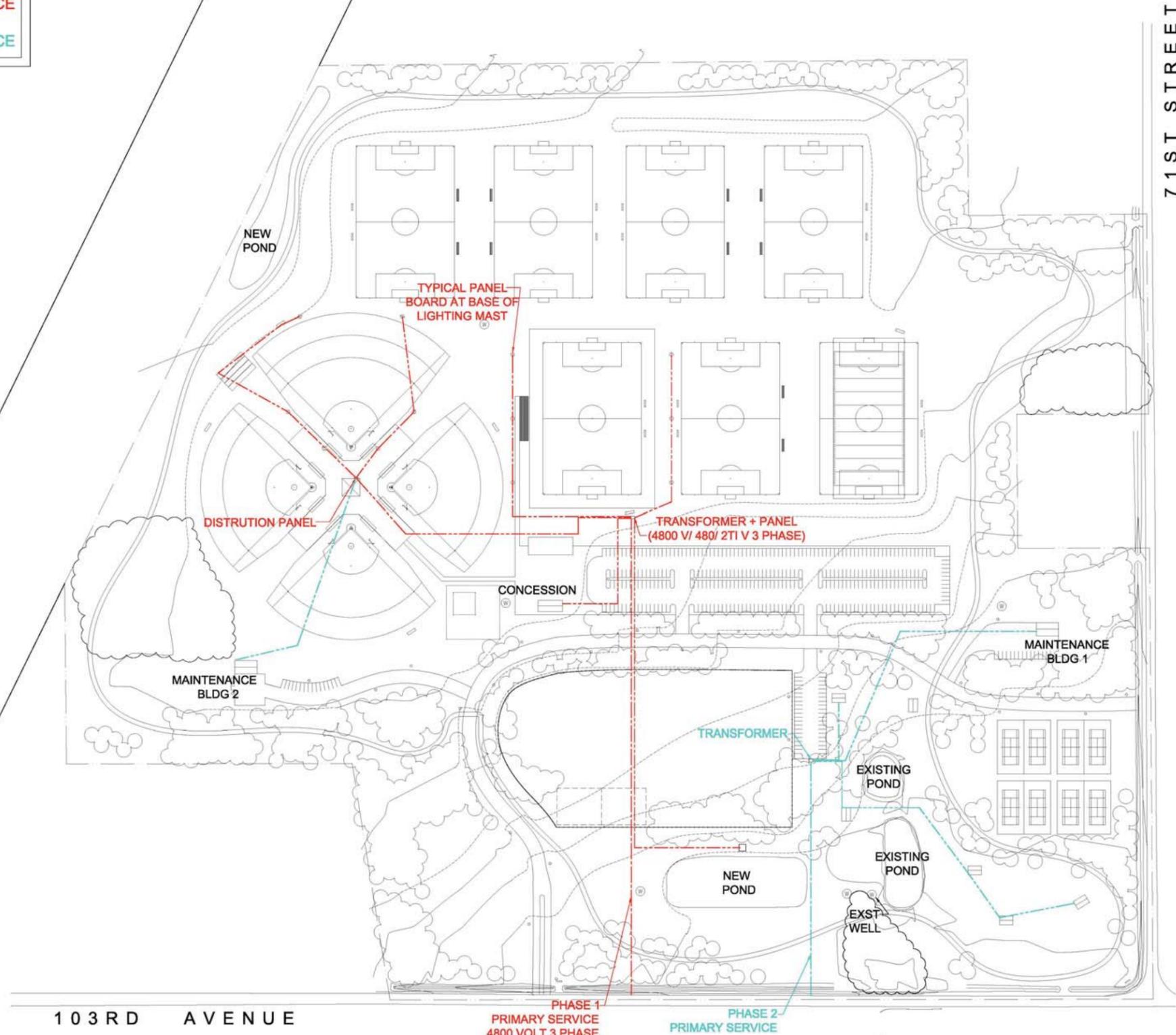
If it is determined that hot water is required for the Maintenance buildings, instantaneous-type electric water heaters can be provided.

All domestic water systems will be arranged to drain in the offseason.

Due to changes in ground formations and the underground aquifers, the final water production and water quality of the proposed wells will not be known until the test wells or the actual wells are installed.

UTILITY LEGEND

- PHASE 1 - UNDERGROUND PRIMARY ELECTRICAL SERVICE
- PHASE 1 - UNDERGROUND SECONDARY ELECTRICAL SERVICE
- PHASE 2 - UNDERGROUND PRIMARY ELECTRICAL SERVICE
- PHASE 2 - UNDERGROUND SECONDARY ELECTRICAL SERVICE



103RD AVENUE

71ST STREET

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Irrigation System

To date there have not been any test wells performed on the site. The existing 5" well, located near the southern end of the larger on-site pond, had a pump test performed on December 16, 2010. The pump test indicated that the 5" well would produce approximately 100 gpm as it currently exists.

The irrigation system will have a maximum design to irrigate 7 soccer fields and 4 baseball/softball fields. Each soccer and softball/baseball field will require approximately 35 sprinkler heads with each sprinkler head demanding 15 gpm. Two 8 inch wells are being proposed to fill a new irrigation pond from which two vertical turbine pumps will pump water throughout the irrigation system. Each 8 inch well will be assumed to be able to produce 400 gpm. The 8 inch wells will discharge into the new irrigation pond. The new irrigation pond is designed to hold approximately 464,000 gallons of water. The two vertical turbine pumps will be located in a pump house located on the north side of the irrigation pond which will supply the irrigation piping system with the require volume of water. The vertical turbine pumps will be rated at 2,625 gpm @ 70 TDH, and have a 60 hp vertical hollow shaft motor.

When required, the vertical turbine pumps will turn on, supplying the 10 inch water main loop with water for irrigation purposes. This 10 inch water main loop will be installed adjacent to all the ball fields from which the individual field irrigation system will draw water from. As the irrigation pumps are drawing water from the pond, the 8 inch wells will turn on replenishing the pond with fresh water. The 8" supply wells will be controlled using float controls, turning the wells on and off dependent on the pond water level.

The two existing ponds and the proposed new irrigation pond will work in a series to capture and use as much natural surface runoff and any water from the underdrain system from proposed fields. The existing ponds will need to be expanded for storm water detention purposes to contain the storm water per the Allegan County standards. The smaller pond will work as a sedimentation settling pond. These ponds will then outlet to the proposed new irrigation pond by a series of storm pipes. The irrigation pond will have an overflow release to the existing low area along 103rd Avenue. From the limited soils boring and the County soils maps, it is not anticipated that the proposed irrigation map will need to be lined. The clay soils will create an impermeable surface that will hold water.

Due to changes in ground formations and the underground aquifers, the final water production and water quality of the proposed wells will not be able to be determined until the test wells or the actual wells are installed.

ELECTRICAL SYSTEMS

Existing Electrical Service

At the present time, an existing 4800 volt aerial service line is running east to west within the properly line along 103rd Avenue. This service is provided by Consumers Energy.

The Owner and the Design Team have requested from the utility provider that the existing aerial services be relocated to an underground system or the aerial service be moved to the south side of 103rd Avenue. The most recent phone conversation with a representative of the utility company indicated that they are preparing a budget for the two options and will present the cost to the Owner.

New Electric Service and Distribution

Primary Service

For the Phase I build-out, the Design Team is recommending that a new 4800 volt, 3-phase underground electric service be provided by Consumers Energy from the relocated service point along 103rd Ave. to a new pad mounted liquid filled transformer. This service is sized to provide sufficient power for all site development elements north of the internal loop road - essentially all of the baseball and soccer fields, the Concession/Restroom building and all roadway and parking lot lighting. This transformer would be centrally located, near the Concession/Restroom building.

The underground primary service and transformer will be provided by Consumers Energy. Secondary metering equipment would be furnished by Consumers Energy and installed by the Electrical Contractor.

It is recommended that a second, smaller utility company transformer be provided in the later phases of the park development to supply power for the site elements south of the internal loop road. The site elements south of the loop road are expected to be developed last. The second transformer would be located near the dog park parking lot.

Secondary Distribution System

All secondary service equipment from the utility company transformer including underground feeders, distribution and appliance panelboards will be provided by the Electrical Contractor. Refer to Electrical Site Utility plan for the preliminary equipment, feeder locations and routing.





Sports Lighting

It is recommended that the field lighting design criteria meet all the guidelines of the Illuminating Engineering Society of North America and of ASHRAE/IESNA Standard 90.1.

As a basis of design, all sports lighting ballasts shall be located at its associated fixture, and all luminaires shall have an internal reflector to reduce glare and light pollution. External glare shields shall also be considered during design development to further reduce light spill toward the adjacent properties.

The field lighting systems will be controlled via the facility's main lighting control system through contactor controlled lighting panelboards feeding the masts. The control system, which will be located in the Concession/Restroom building, will control the sports lighting system for each lighted field.

Soccer

The horizontal foot candle levels shall be 30 fc maintained as measured at a 3-foot elevation above playing field.

The uniformity ratio shall be 3:1 or less max/min.

Six poles shall be provided around the field, located to avoid critical glare zones.

Softball

The horizontal foot candle levels shall be 50 fc maintained at the infield with a ground reduction to 30 fc maintained at the outfield. Illuminance readings shall be measured at a 3-foot elevation above playing field.

The uniformity ratio shall be 2:1 or less max/min in the infield and 2.5:1 or less max/min in the outfield.

Light shall be provided from multiple directions to minimize shadows and provide good modeling of the baseball and the players. Six poles shall be provided around the field located to avoid critical glare zones. The minimum mounting height to the bottom row of luminaires for all poles shall be 80 feet. During design development, it may be desirable to explore increasing this mounting height in order to avoid spill light.

Four of the six poles shall be designed with the structural capacity to account for the addition of future lights for the adjacent baseball fields (meaning lights in a back-to-back configuration on a single pole).

LANDSCAPING

Common Area Grasses and Landscape

Beyond the playing field limits the general use or common areas will be constructed using the native soils stockpiled from the initial grading. The soils will be amended with nutrients then spread over the existing subgrade to a minimum of 4 inches. Once the common area grading is completed it will be seeded with a Fescue/Bluegrass blend of seed. The common areas are not to be irrigated at this time. The level and type of landscaping plant materials will follow all local regulatory requirements set by the City or Township. An attractive entryway landscaping component including basic directional signage is included in the budget estimate.

Buffer Landscaping

The Casco Township Zoning Ordinances will require buffer landscaping along the boundary line between the two residential properties and the recreation park. The Township will ultimately dictate the type of landscaping required, and density, but the technical Master Plan includes a tree-lined buffer. Trees that are typical of the Upper Peninsula are the Eastern White Pine, which is the state tree, or the Eastern Hemlock.



H. ORDER OF MAGNITUDE BUDGET ESTIMATE

DEFINING THE BUDGET ESTIMATE

An order-of-magnitude budget estimate was prepared for the full development of the recreation park. The budget estimate includes a tally for the full development as well as a tally for the Phase I-minimum and Phase I-maximum development.

An empty column on the right hand side of the budget estimate is included so the SHARP committee can identify line items that could be sponsored, either via a direct monetary contribution or as an in-kind donation.

The level of detail for the schedule of values is commensurate with the level of detail of the technical Master Plan. The values are in 2011 dollars. The unit costs include Contractor general conditions and overhead & profit.

For sake of clarity, the following should be noted about various items on the schedule of values:

- SOV line item #3 - this item is for construction fencing which is assumed to be needed during the various phases of construction.
- SOV line items #5 & 8 - this value assumes the roadway and parking lighting will be 35' tall telephone poles with 'cobra head' style fixtures.
- SOV line item #61 & 62 - this value is a general Owner's allowance for trees and shrubbery. A landscape plan from which a quantitative budget estimate could be developed has not been done at this phase.
- SOV line item #45 - the unit cost for the Concession/Restroom building is based on a structure similar to the one at the Allegan sports complex.
- SOV line item #51 - this value reflects pourable rubber surfacing for the kids' playground.
- SOV line item #52 - the scope of kids' playground equipment is TBD. This value assumes 4 pieces of playground equipment at \$6250 each.
- SOV line item #53 - the unit cost for the Picnic Shelter is based on a structure similar to the one at the Allegan sports complex.
- SOV line items #55 & 56 - the unit cost for the Maintenance buildings are based on a simple, prefabricated 'Butler' type building.

- SOV line item #63 - the cost for maintenance equipment for the park is as yet unknown. We understand the park will be maintained by a local landscape contractor for the first three years utilizing their own equipment which would be trailored to the site.
- SOV line item #70 - there is an existing fence on the property along I-196, but its condition is unknown and it is assumed to be not well maintained; therefore, the budget includes monies for a new fence along that property line.

The budget estimate includes a 10% contingency. The adequacy of this contingency should be evaluated by the SHARP committee members based on the status of the project development and comfort level.



South Haven Area Recreational Park

Technical Master Plan

Order of Magnitude Budget Estimate

Project: South Haven Park Master Plan
 Location: South Haven, Michigan
 Architect: EwingCole
 Date: 31-Jan-11

Item	Description	Quantity	Unit Price	Phase 1 Min	Phase 1 Max	Total	Sponsor	
Site Infrastructure								
Site Preparation								
1	Cleaning and Erosion Control	1 LS	\$66,760	\$22,253	\$22,253	\$66,760	\$0	
2	Rough Grading for fields, roads and parking lots	1 LS	\$650,000	\$216,667	\$216,667	\$650,000	\$0	
3	Temporary Fencing	9,000 LF	\$6	\$54,000	\$54,000	\$54,000	\$0	
Paving								
4	Roads (asphalt with no curbs)			\$175,000	\$175,000	\$175,000	\$0	
5	Road Lighting	26 POLES	\$1,500	\$39,000	\$39,000	\$39,000	\$0	
6	Parking Lots (packed gravel)	370 EA	\$322	\$79,427	\$79,427	\$119,140	\$0	
7	Optional - upgrade to asphalt			\$0	\$0	\$219,200	\$0	
8	Parking Lighting	6 POLES	\$1,500	\$0	\$0	\$9,000	\$0	
Utilities								
9	Storm Sewer			\$0	\$0	\$34,135	\$0	
10	Street Access (i.e. culvert)			\$83,762	\$83,762	\$83,762	\$0	
11	Septic System	1 EA	\$40,000	\$40,000	\$40,000	\$40,000	\$0	
12	8" Supply Wells	2 EA	\$16,000	\$16,000	\$16,000	\$32,000	\$0	
13	5" Domestic Wells	3 EA	\$9,000	\$18,000	\$18,000	\$27,000	\$0	
13	Pump House, Controls, and Vertical Turbine Pumps	1 EA	\$100,000	\$100,000	\$100,000	\$100,000	\$0	
14	New Pond for irrigation and potable water (including excavation and piping)	1 EA	\$153,000	\$153,000	\$153,000	\$153,000	\$0	
15	Pipe infrastructure from wells to fields	4000 LF	\$8	\$16,000	\$16,000	\$32,000	\$0	
16	Pipe infrastructure from wells to concession and maintenance buildings	1220 FT	\$8	\$9,760	\$9,760	\$9,760	\$0	
17	Primary Electrical Service i.e. underground feeder + transformer (provided by Utility)	TBD	\$0	\$0	\$0	\$0	\$0	
18	Secondary Electrical Service (panels, conduit distribution)	1 LS	\$60,000	\$60,000	\$75,000	\$107,000	\$0	
19	Park Entry Signage	2 EA	\$10,000	\$10,000	\$10,000	\$20,000	\$0	
Athletic Fields								
Premier Soccer Field								
20	Field (incl. fine grading, drainage system, sod and irrigation system)	1 EA	\$350,000	\$350,000	\$350,000	\$350,000	\$0	
21	Lights	6 POLES	\$25,000	\$0	\$150,000	\$150,000	\$0	
22	Bleachers (10 Row - 150 People)	4 EA	\$11,690	\$0	\$46,760	\$46,760	\$0	
23	Fence	1,365 LF	\$12	\$0	\$16,380	\$16,380	\$0	
24	Scoreboard	1 EA	\$6,500	\$0	\$6,500	\$6,500	\$0	
Football/Soccer Field								
25	Field	1 EA	\$150,000	\$0	\$0	\$150,000	\$0	
26	Bleachers (5 Row - 60 People)	2 EA	\$5,000	\$0	\$0	\$10,000	\$0	
27	Scoreboard	1 EA	\$6,500	\$0	\$0	\$6,500	\$0	
Soccer Field								
28	Field (incl. sod, existing soil, drainage but no irrigation)	5 EA	\$150,000	\$0	\$0	\$750,000	\$0	
29	Players Bench	14 EA	\$700	\$0	\$0	\$9,800	\$0	
30	Bleachers (3 Row - 30 People)	10 EA	\$1,500	\$0	\$0	\$15,000	\$0	
Softball Field/Youth Baseball Fields								
31	Softball Field (incl. fine grading, drainage system, infield skin, sod, irrigation system)	1 EA	\$215,000	\$0	\$215,000	\$215,000	\$0	
32	Lights for Softball Field	6 POLES	\$25,000	\$0	\$150,000	\$150,000	\$0	
33	Youth Fields (incl. sod, excludes irrigation system, soil modifications, fencing, and dugouts)	3 EA	\$120,000	\$0	\$0	\$360,000	\$0	
34	Lights for Youth Fields	10 POLES	\$20,000	\$0	\$0	\$200,000	\$0	
35	Bleachers (5 Row - 60 People)	8 EA	\$5,000	\$0	\$0	\$40,000	\$0	
36	Foul Ball Netting between fields (38,000sf)	1 EA	\$10,000	\$0	\$0	\$10,000	\$0	
37	Fence and Backstop	1 EA	\$100,000	\$0	\$0	\$100,000	\$0	
38	Scoreboards	4 EA	\$5,000	\$0	\$0	\$20,000	\$0	
39	Dugouts	8 EA	\$15,000	\$0	\$0	\$120,000	\$0	
40	Batting Cages	4 EA	\$5,800	\$0	\$0	\$23,200	\$0	
41	Asphalt paving between fields	38000 SF	\$3	\$0	\$0	\$114,000	\$0	
42	T-Ball Field	1 EA	\$0	\$0	\$0	\$0	\$0	
Tennis Courts								
43	Courts (including fence)	8 EA	\$50,000	\$0	\$0	\$400,000	\$0	
Perimeter Bike/Jogging Trail								
44	Gravel (1.55 miles at 10' wide)	8750 SY	\$10	\$0	\$0	\$87,500	\$0	
45	Optional - Asphalt	8750 SY	\$12	\$0	\$0	\$105,000	\$0	
User Amenities								
46	Concession Stand/Restroom Structure	1,375 SF	\$98	\$134,750	\$134,750	\$134,750	\$0	
Food Service Equipment for Concession Stand								
47	Refrigerator	2 EA	\$2,162	\$4,324	\$4,324	\$4,324	\$0	
48	Hot Dog Grill	2 EA	\$712	\$1,424	\$1,424	\$1,424	\$0	
49	Popcorn Machine	1 EA	\$2,000	\$0	\$0	\$2,000	\$0	
50	Hand Sink	1 EA	\$200	\$0	\$0	\$200	\$0	
51	Grill	1 EA	\$1,000	\$0	\$0	\$1,000	\$0	
Playground								
52	Kids Playground	4000 SF	\$6	\$0	\$0	\$24,000	\$0	
53	Playground equipment	4 EA	\$6,250	\$0	\$0	\$25,000	\$0	
Picnic Shelter								
54	Picnic Shelter Structure	6 EA	\$25,000	\$0	\$0	\$150,000	\$0	
55	Picnic Shelter lights and outlets	6 EA	\$6,670	\$0	\$0	\$40,020	\$0	
Maintenance								
56	Maintenance Building #1 - Soccer	1,500 SF	\$50	\$0	\$0	\$75,000	\$0	
57	Maintenance Building #2 - Softball	1,500 SF	\$50	\$0	\$0	\$75,000	\$0	
Athletic Equipment								
58	Soccer Goals	12 EA	\$1,298	\$2,596	\$2,596	\$15,576	\$0	
59	Soccer/Football Goals	2 EA	\$1,350	\$0	\$0	\$2,700	\$0	
60	Softball Equipment (i.e. foul poles, bases, etc.)	1 EA	\$16,000	\$0	\$0	\$16,000	\$0	
61	T-Ball Portable Backstop	1 EA	\$400	\$0	\$0	\$400	\$0	
Landscaping								
62	Trees	1 EA	\$25,000	\$25,000	\$25,000	\$25,000	\$0	
63	Shrubbery	1 EA	\$10,000	\$0	\$0	\$10,000	\$0	
64	Grass Seed	50 AC	\$1,500	\$0	\$0	\$75,000	\$0	
Facility Maintenance Equipment								
65	Lawn Maintenance Equipment	EA		\$0	\$0	\$0	\$0	
Other								
66	Press Tower	1 EA	\$50,000	\$0	\$0	\$50,000	\$0	
67	Picnic Tables	30 EA	\$750	\$0	\$0	\$22,500	\$0	
68	BBQ Pits/Grill	6 EA	\$250	\$0	\$0	\$1,500	\$0	
69	Flagpole	1 EA	\$3,500	\$0	\$0	\$3,500	\$0	
70	Dog Park Fence	1,900 LF	\$10	\$0	\$0	\$19,000	\$0	
71	Fence at Perimeter of Site	8,000 LF	\$20	\$0	\$0	\$160,000	\$0	
72	Trash Cans	12 EA	\$630	\$1,260	\$1,260	\$7,560	\$0	
				Subtotal		\$1,612,223		
73	10% Estimating Contingency						\$221,186	
Total				\$1,773,445	\$2,433,049	\$7,004,636	\$0	

Note:

Contractor general conditions, overhead & profit included in unit costs
Not included Above:
 Hazardous material removal
 Design and other professional fees
 Escalation beyond 2011
 Sports equipment, other loose equipment, except as noted
 Does not include relocation of existing aerial electrical service