



City of Boyne City

Founded 1856

319 N. Lake Street

Boyne City, Michigan 49712
www.cityofboynecity.com

Phone 231-582-6597
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AGENDA

BOYNE CITY PLANNING COMMISSION

Monday June 15, 2020 5:00 p.m.

Due to the COVID-19 situation and per the Governor's Executive Orders, this meeting will be held electronically. To participate via Zoom, connect to:

<https://us02web.zoom.us/j/84137356032?pwd=aDNZdmtjemdyREFGdmoxOHJNdUVHdz09>

Meeting ID: 841 3735 6032
Password: 892853

One tap mobile
+19292056099,,637299401# US (New York)
+13126266799,,637299401# US (Chicago)

For this and the other meetings below you can dial by your location using the phone numbers below and the highlighted meeting id for that meeting:

+1 929 205 6099 US (New York)
+1 312 626 6799 US (Chicago)
888 475 4499 US Toll-free
877 853 5257 US Toll-free

Find your local number: <https://us02web.zoom.us/u/kduAzbXtbn>

The public will be allowed to comment during the usual public comment opportunities during the meeting per City Commission policy and practice. All other times the public will be muted.

1. Call to Order
2. Roll Call - Excused Absences
3. Consent Agenda

The purpose of the consent agenda is to expedite business by grouping non-controversial items together to be acted upon by one Commission motion without discussion. Any member of the Commission, staff, or the public may ask that any item(s) on the consent agenda be removed to be addressed immediately following action on the remaining consent agenda items. Such requests will be respected.

Approval of minutes from the February 17, 2020 Boyne City Planning Commission meeting.

4. Hearing Citizens Present (*Non-Agenda Items*)
5. Reports of Officers, Boards, Standing Committees
6. Unfinished Business

An Equal Opportunity Provider and Employer
Hometown Feel, Small Town Appeal

7. New Business
 - A. 526 N Lake Development Plan Review.
8. Staff Report
9. Good of the Order
10. Adjournment – Next Meeting July 20, 2020

Individuals with disabilities requiring auxiliary aids or services in order to participate in municipal meetings may contact Boyne City Hall for assistance: Cindy Grice, City Clerk/Treasurer, 319 North Lake Street, Boyne City, MI 49712; phone (231) 582-0334

Approved:

**Meeting of
February 17, 2020**

Record of the proceedings of the Boyne City Planning Commission meeting held at Boyne City Hall, 319 North Lake Street, on Monday February 17, 2020 at 5:00 pm.

Call to Order

Vice Chair Ross called the meeting to order at 5:00 p.m.

Roll Call

Present: Larry Chute, Skylar MacNaughton, Nichole Moblo, Tom Neidhamer, Aaron Place and Jeff Ross
Absent: Monica Kroondyk, Rose Newton
Vacancy: One

**Excused Absences
Motion**

2020-2-17-2
Neidhamer moved, Ross seconded, PASSED UNANIMOUSLY, to excuse the absences of Kroondyk and Newton

Meeting Attendance

City Officials/Staff: Planning and Zoning Director Scott McPherson, Mayor Pro Tem Ron Grunch and Recording Secretary Pat Haver
Public Present: Three

**Consent Agenda
Motion**

2020-2-17-3
Ross moved, Chute seconded PASSED UNANIMOUSLY, a motion to approve the consent agenda, the Planning Commission minutes from January 20, 2020 as presented, with the typographical error corrected.

**Citizen comments on
Non-Agenda Items**

None

**Reports of Officers,
Boards and Standing
Committees**

Planning Director McPherson reported that the Marijuana Taskforce has met and set the next meeting for Monday, February 24, 2020 at 5:30 pm to continue discussion, they hope to update the City Commission in February and set a date for public engagement sessions.

Unfinished Business

None

New Business

**Great Lakes Connection
301 Air Industrial
Drive Development
Plan Review**

Planning Director Scott McPherson reviewed his staff report included in the agenda packet. The request is for a 60 ft. x 90 ft. addition on the west side of the current building, after removal of the existing 1,000 sq. ft. addition, and is proposed for cold storage. This proposed use is a principal allowed use, the site plan is in compliance with all ordinance requirements, in regards to placement, size, height, building materials and lot coverage. The existing driveway layout and site drainage will not be impacted nor anticipated to increase, and the existing parking currently exceeds ordinance standards, with no additional parking demands proposed. The new structure will match the existing building.

Steve Drake Chief Financial Officer for Great Lakes Energy – The structure will be used for storage of construction materials for various projects that we have anticipated for the next few years in the immediate area, and then surrounding areas, so will be used long term.

Jay Wangeman – Colwell Wangeman Construction, LLC – Reviewed the proposed plan and layout with the board. The fence will remain at the property line.

Chute – Is Great Lakes Connections a subsidiary to Great Lakes Energy?

Drake – Great Lakes Connections is 100% fiber optics subsidiary of Great Lakes Energy.

Motion

Place – closed public comment and facilitated the board’s review of Section 19.40 Development Plan Approval Criteria. After board review, **motion by Chute, seconded by Moblo** to approve the Great Lakes Energy/Great Lakes Connection building addition as per the Findings of Fact and as presented.

Roll Call:

2020-2-17 7A

Ayes: Chute, MacNaughton, Moblo, Neidhamer, Place and Ross

Nays: None

Absent: Kroondyk and Newton

Abstain: None

Vacancy: One

Motion Carries

2020 – 2025 Capital Improvement Plan Review

Planning Director McPherson facilitated review of the CIP Plan included in the agenda packet. This plan has more focus on Capital Improvements and not so much on maintenance; making the report more concise and complete. Chute had questions about how the road projects were determined. This is done by the PASER ratings report, grants or other funding methods, and the amount of traffic. It can be a balancing act between the size and scope and the amount of funding available. Moblo asked about the duplication of vehicle replacement from different years. At different stages, vehicles are replaced due to wear and tear; for example the squad cars are replaced at approximately 100,000 miles, the Water Wastewater and DPW work trucks and plow trucks with equipment as needed. Duplication of squad car numbers from various years, is that anticipated replacement timing or possible incorrect reported numbers? Staff will verify the duplication of vehicle numbers in the report with the respective department heads. Sidewalks are assessed and updated annually for replacement. It would be nice to have continuous sidewalks, and not ones that go nowhere. Road maintenance is done by various methods based on assessments, such as crack and fill, slurry seal, mill and fill and determined on the funding available. Stripping of streets is done annually and again based on available funds. Ross had questions about possible marina maintenance and having to change out electrical boxes due to the elevated lake levels. Staff was not aware of any problems, but questions should be directed to Barb Brooks the Harbor Master.

Motion

After board discussion, **motion by Ross, seconded by Moblo**, to recommend to the City Commission the adoption of the 2020 – 2025 Capital Improvement Plan as presented after review of possible vehicle duplications in the report by staff and various department heads.

Roll Call:

2020-2-17 7B

Ayes: Chute, MacNaughton, Moblo, Neidhamer, Place and Ross

Nays: None

Absent: Kroondyk and Newton

Abstain: None

Vacancy: One

Motion Carries

2019 Planning and Zoning Report

Planning Director McPherson reviewed the report in the agenda packet. It is a comprehensive reporting of the department’s activities for the previous year. Questions were asked about the status of the vacation of Balsam Place? McPherson – we are still waiting for updated parcel descriptions and signed easements. MDEQ has some concerns about prior contamination of the Lakeview Village proposed building sites along Lake Street, so at this point, nothing will be built there, however, Phase I of the

project will begin with the expansion of sites along Park St. We have seen some activity on the Macksey property with tax payoffs, so it may have been sold. The previous zoning will stay with the property. Chair Place asked for a refresher on the exact zoning that is attached to the land. McPherson indicated that whatever new plans are developed, they will come before this board, and a refresher will be done at that time. The 12 new residential buildings is impressive, in years past it has only been 5 or 6; the boost of 7 million in SEV should give the city a bump in the income/revenue totals, but the increase is limited by the Headlee Amendment; which keeps taxes from increasing more than the rate of inflation. Neidhamer expressed his appreciation for the review and what the department and commission has been up to these past 12 months.

Staff Report

- The next Housing Solutions meeting has been set for Monday, February 24th at 1 pm. It will be a joint meeting with Charlevoix, East Jordan and the Boyne City housing groups. Sara Lucas from Traverse City will be on hand to answer any questions. All are welcome to attend.

Good of the Order

- Place received the MAP bulletin and indicated that there was a good article on parking. Several other members had received the bulletin also, however, Moblo has not, staff will check into the updated list.
- Moblo asked what the webinar times and dates were, staff will get that information and email it to all of the board members.

Adjournment****Motion**

The next regular meeting of the Boyne City Planning Commission is scheduled for Monday, March 16, 2020 at 5:00 p.m.

2020-2-17-10

Neidhamer moved, MacNaughton seconded, PASSED UNANIMOUSLY a motion to adjourn the February 17, 2020 meeting at 5:42 pm

Chair Aaron Place

Recording Secretary Pat Haver

CITY OF BOYNE CITY

To: Chair Aaron Place and fellow Planning Commissioners

From: Scott McPherson, Planning Director

Date: June 15, 2020

Subject: Lakeview Village Development Plan Review



BACKGROUND

In August 2019 Northern Properties Mobile Home Park LLC received development plan review for a proposed expansion. After issues arose with the residential development of the area along Lake Street a new plan has been developed and submitted for review. A contaminated site that has been remediated is located on corner of N Lake Street and Lakeview park access drive. While it does not pose a hazard as it is currently, there are concerns in regards to placing homes in this area that could lead to long term exposures from the collection and concentration of hazardous materials over time in enclosed spaces. The expansion plan was redesigned to incorporate nonresidential uses in this space which would include a community building, maintenance facility and activity areas. With the relocation of the maintenance building from the Park street side, additional dwelling units were added on this side and a new access to Park Street is being proposed.



DISCUSSION

As the proposed use is a principal allowed use in the MHD district the Planning Commission must approve the proposed site plan if a finding is made the plan is in compliance with the development requirements of BCZO section 7.40 and article 19 Development plan requirements. To assist the planning commission with this review a draft findings of fact has been prepared for each of the referenced sections.

PROCESS

The application requires development plan review as per article 19 Development Plan Requirements. Plans were distributed to all department heads and the city manager for review and no issues or concerns were noted.

RECOMMENDATION

The Planning Commission should then review the development plan requirements of 7.40 and article 19. On each item of the findings the Commission needs to make a determination based on the relevant facts if the standard is met, not met or met with conditions. The Planning Commission can approve the application, approve the application with conditions or deny the application. If approved with conditions the conditions must be listed, if denied the reasons for denial must be stated.

**DEVELOPMENT SITE PLAN REVIEW STANDARDS
FINDINGS OF FACT
LAKEVIEW VILLAGE**

Section 19.40 Development Plan Approval Criteria.

In order that buildings, open space and landscaping will be in harmony with other structures and improvements in the area, and to ensure that no undesirable health, safety, noise and traffic conditions will result from the development, the Planning Commission shall determine whether or not the development plan meets the following criteria, unless the Planning Commission determines that one or more of such criteria are inapplicable:

ORDINANCE REQUIREMENT	FACTS	FINDINGS
<p><u>A. General.</u> All elements of the development plan shall be designed to take into account the site's topography, the size and type of plot, the character of adjoining property, and the traffic operations of adjacent streets. The site shall be developed so as not to impede the normal and orderly development or improvement of surrounding property for uses permitted in this Ordinance. The development plan shall conform with all requirements of this Ordinance, including those of the applicable zoning district(s).</p>	<p>A development plan for Northern Properties Lake View Village was approved in 1996. The proposed development plan amendment would develop 19 additional sites to the existing 151 for a total of 170 sites. The proposed sites would be located on the east and west sides of the existing development. The subject property is located at 526 N Lake and is owned by Northern Properties. The property planned for and zoned MHD and the proposed use is a principle permitted use in the district. Primary vehicle access to the new sites will be from existing interior roads from the park, the exiting public access points at Lake St and Park St will remain unchanged.</p>	
<p><u>B. Building Design.</u> The building design shall relate to the surrounding environment in regard to texture, scale, mass, proportion, and color. High standards of construction and quality materials will be incorporated into the new development. In addition to following design guidelines adopted in specific district or sub-area plans, the building design shall meet the architectural and building material requirements of this Ordinance.</p>	<p>Of the 19 sites 14 of the units located along Park St., 11 will be single wide models, and 3 will be double wide. There will be 5 units adjacent to Lake St that will be double wide units. The style and design of the units will be typical of what is found currently in the park.</p>	
<p><u>C. Preservation of Significant Natural Features.</u> Judicious effort shall be used to preserve the integrity of the land, existing topography, and natural, historical, and architectural features as defined in this Ordinance, in particular wetlands designated /regulated by the Michigan Department of Environmental Quality, and, to a lesser extent, wetlands which are not regulated by the Department.</p>	<p>The site does not have any significant natural features.</p>	
<p><u>D. Streets.</u> All streets shall be developed in accordance with the City of Boyne City Subdivision Control Ordinance and City Municipal Standards, unless developed as a private road in accordance with the requirements of the City.</p>	<p>New sites to be accessed by new private streets in accordance with standards of BCZO section 7.40 D. 4.</p>	

**DEVELOPMENT SITE PLAN REVIEW STANDARDS
FINDINGS OF FACT
LAKEVIEW VILLAGE**

<p><u>E. Access, Driveways and Circulation.</u> Safe, convenient, uncongested, and well defined vehicular and pedestrian circulation within and to the site shall be provided. Drives, streets, parking and other elements shall be designed to discourage through traffic, while promoting safe and efficient traffic operations within the site and at its access points. All driveways shall meet the design and construction standards of the City. Access to the site shall be designed to minimize conflicts with traffic on adjacent streets, particularly left turns into and from the site. For uses having frontage and/or access on a major traffic route, as defined in the City of Boyne City Comprehensive Plan, the number, design, and location of access driveways and other provisions for vehicular circulation shall comply with the access management provisions of this Ordinance.</p>	<p>New access drive proposed on Park Street.</p>	
<p><u>F. Emergency Vehicle Access.</u> All buildings or groups of buildings shall be arranged so as to permit necessary emergency vehicle access as required by the Fire Department, Ambulance Department and Police Department.</p>	<p>Site accessibility has been reviewed by BCPD, Fire Dept and Ambulance Dept.</p>	
<p><u>G. Sidewalks, Pedestrian and Bicycle Circulation.</u> The arrangement of public or common ways for vehicular and pedestrian circulation shall be connected to existing or planned streets and sidewalks/pedestrian or bicycle pathways in the area. There shall be provided a pedestrian circulation system which is separated from the vehicular circulation system. In order to ensure public safety, special pedestrian measures, such as crosswalks, crossing signals and other such facilities may be required in the vicinity of primary and secondary schools, playgrounds, local shopping areas, fast food/service restaurants and other uses which generate a considerable amount of pedestrian or bicycle traffic.</p>	<p>Sidewalk not shown on new proposed streets. Pedestrian access to be developed in accordance R125.1928 Rule 928</p>	
<p><u>H. Barrier-Free Access.</u> The site has been designed to provide barrier-free parking and pedestrian circulation.</p>	<p>Site shall be constructed in compliance with Act No. 8 of the Public Acts of 1973, being S 125.1361 of the Michigan Compiled Laws.</p>	

**DEVELOPMENT SITE PLAN REVIEW STANDARDS
FINDINGS OF FACT
LAKEVIEW VILLAGE**

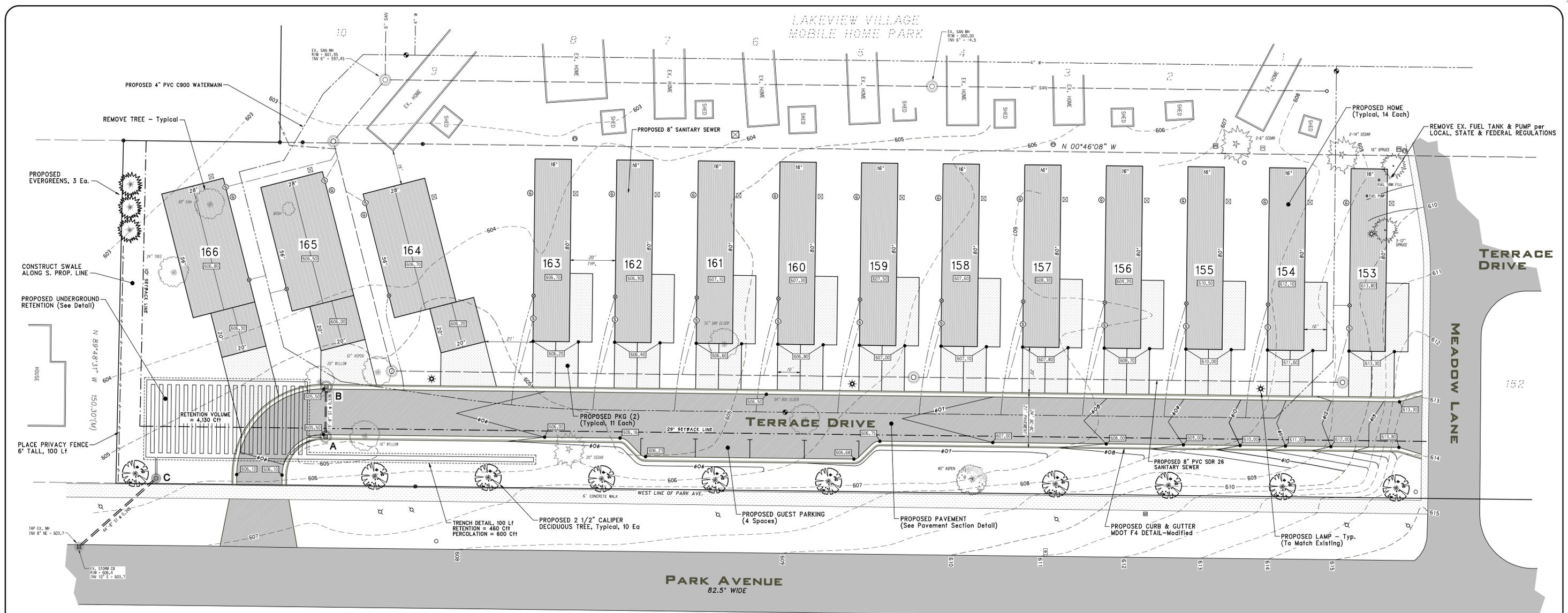
<p><u>I. Parking.</u> The number and dimensions of off-street parking [spaces] shall be sufficient to meet the minimum required by this Ordinance. However, where warranted by overlapping or shared parking arrangements, the Planning Commission may reduce the required number of parking spaces, as provided in this Ordinance.</p>	<p>2 spaces per unit and 33 additional guest spaces provided.</p>	
<p><u>J. Loading.</u> All loading and unloading areas and outside storage areas, including refuse storage stations, shall be screened in accordance with this Ordinance.</p>	<p>No dumpsters proposed</p>	
<p><u>K. Landscaping, Screening, and Open Space.</u> The landscape shall be preserved in its natural state, insofar as practical, by removing only those areas of vegetation or making those alterations to the topography which are reasonably necessary to develop the site in accordance with the requirements of this Ordinance. Landscaping shall be preserved and/or provided to ensure that proposed uses will be adequately buffered from one another and from surrounding public and private property. Landscaping, landscape buffers, greenbelts, fencing, walls and other protective barriers shall be provided and designed in accordance with the landscaping provisions of this Ordinance. Recreation and open space areas shall be provided in all multiple-family residential and educational developments.</p>	<p>Landscaping plan provided. Additional landscaping along ROW and near community building and parking areas is needed.</p>	
<p><u>L. Soil Erosion Control.</u> The site shall have adequate lateral support so as to ensure that there will be no erosion of soil or other material. The final determination as to adequacy of, or need for, lateral support shall be made by the Planning Director or City Engineer, and have a valid Charlevoix County Soil Erosion permit.</p>	<p>Soil erosion permit must be obtained if required.</p>	

**DEVELOPMENT SITE PLAN REVIEW STANDARDS
FINDINGS OF FACT
LAKEVIEW VILLAGE**

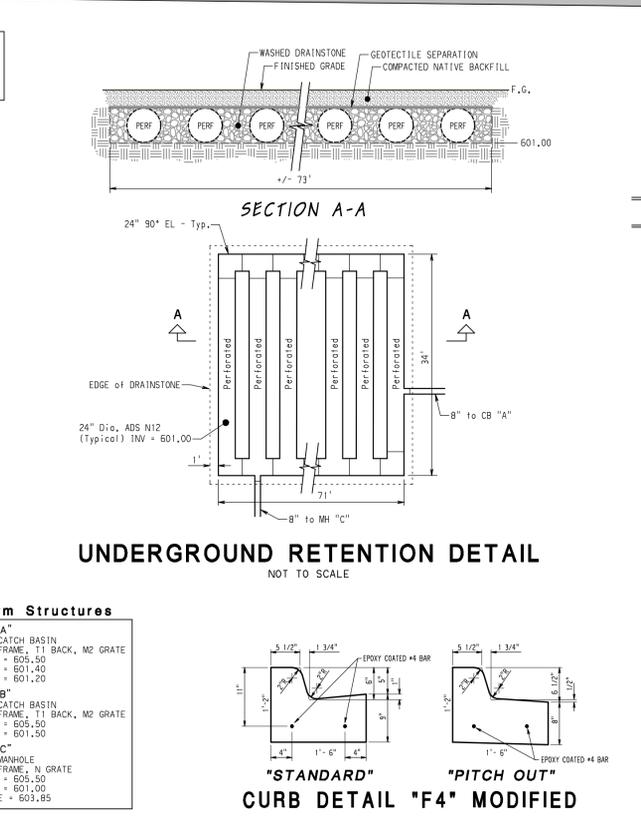
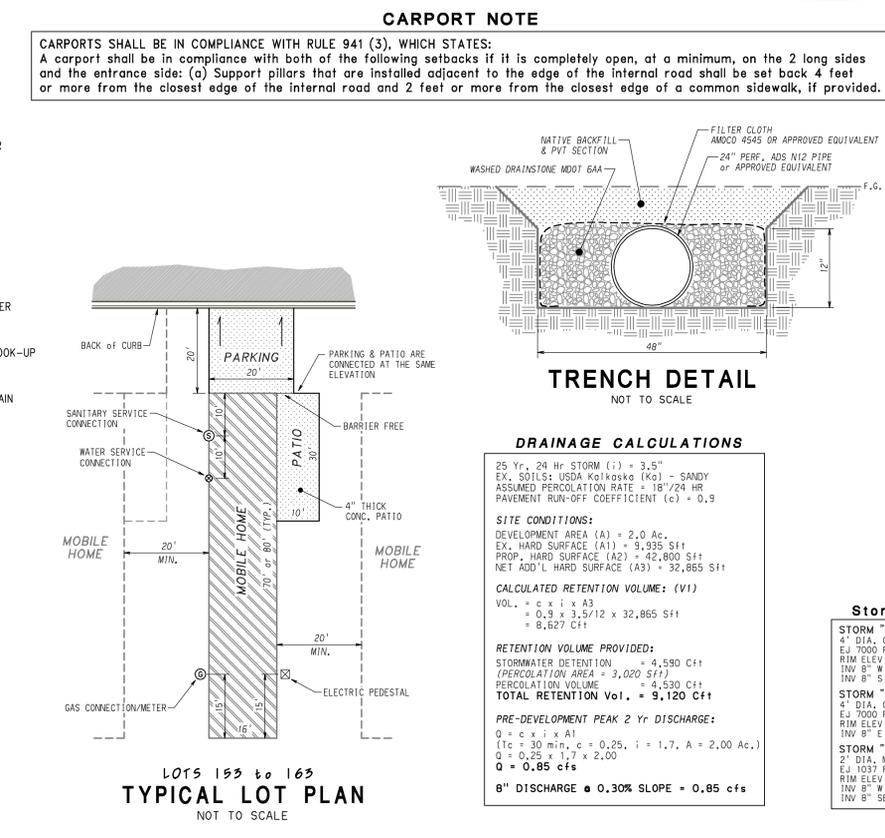
<p><u>M. Stormwater Management.</u> Appropriate measures shall be taken to ensure that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Provisions shall be made to accommodate stormwater which complements the natural drainage patterns and wetlands, prevent erosion and the formation of dust. Sharing of stormwater facilities with adjacent properties shall be encouraged. The use of detention/retention ponds may be required. Surface water on all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic or create standing water. All such measures shall comply with the Charlevoix County Stormwater Ordinance.</p>	<p>Storm water plan provided.</p>	
<p><u>O. Lighting.</u> Exterior lighting shall be arranged so that it is directed preferably downward onto the subject site and deflected away from adjacent properties. Lighting shall not impede the vision of traffic along adjacent streets. Flashing or intermittent lights shall not be permitted.</p>	<p>Lighting fixture details and locations provided.</p>	
<p><u>P. Noise.</u> The site has been designed, buildings so arranged, and activities/equipment programmed to minimize the emission of noise, particularly for sites adjacent to residential districts.</p>	<p>Proposed uses are anticipated to produce noise that is typical of the current use.</p>	
<p><u>Q. Mechanical Equipment.</u> Mechanical equipment, both roof and ground mounted, shall be screened in accordance with the requirements of this Ordinance.</p>	<p>Mechanical equipment no shown</p>	
<p><u>R. Signs.</u> The standards of the City of Boyne City's Sign Ordinance are met.</p>	<p>No signage shown on plan.</p>	
<p><u>S Hazardous Materials or Waste.</u> For businesses utilizing, storing or handling hazardous material such as automobile service and automobile repair stations, dry cleaning plants, metal plating industries, and other industrial uses, documentation of compliance with state and federal requirements shall be provided.</p>	<p>No hazardous materials or waste</p>	

**DEVELOPMENT SITE PLAN REVIEW STANDARDS
FINDINGS OF FACT
LAKEVIEW VILLAGE**

<p><u>T. Other Agency Reviews.</u> The applicant has provided documentation of compliance with other appropriate agency review standards, including, but not limited to, the Michigan Department of Natural Resources, Michigan Department of Environmental Quality, Michigan Department of Transportation, Charlevoix County Drain Commissioner, Northwest Michigan Community Health Agency, Charlevoix County Building Department, and other federal and state agencies, as applicable.</p>	<p>County permits and City W/WW and DPW approval required.</p>	
<p><u>U. Approval Process.</u> The development plan shall be reviewed by the Planning Commission. If disapproval is recommended, the Planning Commission shall cite reasons for such disapproval. If the Planning Commission finds a development plan not in conformity with this section, it may, at its discretion, return the development plan to the applicant with a written statement of the modifications necessary to obtain approval. Upon resubmission of the modified development plan, the Planning Commission shall review the plan. The Commission may approve, disapprove or approve subject to compliance with such modifications and conditions as may be deemed necessary to carry out the purpose of this Ordinance and other ordinances and resolutions of the City. If disapproved, the Planning Commission shall cite reasons for such disapproval.</p>		



- LEGEND:**
- = SIGN
 - ⊕ = UTILITY POLE w/ GUY WIRE
 - ⊙ = TELEPHONE PEDESTAL
 - ⊞ = ELECTRIC PEDESTAL
 - ⊚ = CABLE TV PEDESTAL
 - ⊛ = LAMP POLE
 - ⊜ = MAIL BOX
 - ⊝ = GAS MARKER
 - ⊞ = FIRE HYDRANT
 - ⊞ = STORM SEWER CATCH BASIN
 - = MANHOLE COVER
 - = PROPERTY LINE
 - = FENCE
 - = APPROXIMATE WATERMAIN
 - = APPROXIMATE SANITARY SEWER
 - = FOUND SURVEY IRON
 - ▨ = EX. CONCRETE SURFACE
 - ▨ = EX. ASPHALT SURFACE
 - ▨ = PROPOSED ASPHALT SURFACE
 - ▨ = PROPOSED CONCRETE SURFACE
 - ⊙ = PROPOSED SANITARY RISER
 - ⊙ = PROPOSED WATER SERVICE RISER
 - ⊙ = PROPOSED GAS METER
 - ⊙ = PROPOSED ELEC. TV, PHONE HOOK-UP
 - = PROPOSED WATER MAIN
 - = PROPOSED SANITARY SEWER MAIN
 - = PROPOSED STORM SEWER
- NOTES:**
- UNDERGROUND UTILITY LOCATIONS SHOWN ON THIS PLAN SHALL BE CONSIDERED APPROXIMATE. CALL MISS DIG (3) FULL WORK DAYS PRIOR TO EXCAVATION.
- RETENTION AREAS SHALL BE CLEANED & RAKED OF LEAVES & DEBRIS IN THE SPRING & AUTUMN ANNUALLY TO MAINTAIN SOIL PERMEABILITY.
- STORM SEWER STRUCTURES AND PIPE SHALL BE INSPECTED AND CLEANED OUT ANNUALLY AS NEEDED TO MAINTAIN PROPER FUNCTIONALITY.
- STORM SEWER SHALL BE ADS N12 OR APPROVED EQUIVALENT.
- WATER MAIN & SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH STATE & CITY SPECIFICATIONS AND REQUIREMENTS.
- THE OWNER SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE OF MICHIGAN FOR THE PROPOSED PARK EXPANSION.
- SITE NOTES:**
- SITE AREA: +/- 1.98 Ac.
 BUILDING COVERAGE: 0.46 Ac. (23.2%)
 GREENSPACE: 1.00 Ac. (50.5%)



SITE & GRADING PLAN
 Proposed Expansion
 Lakeview Village Mobile Home Park

PART OF GOVERNMENT LOT 1, SECTION 26,
 TOWNSHIP 33 NORTH, RANGE 6 WEST,
 CITY OF BOYNE CITY, CHARLEVOIX COUNTY, MICHIGAN.

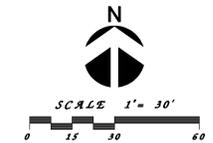
BENCHMARK ENGINEERING INC.
 SURVEYORS • CIVIL ENGINEERS

607 E. LAKE ST.
 HARBOR SPRINGS, MICHIGAN 49740
 PHONE: (231) 526-2100 FAX: (231) 526-7257
 benchmark607@gmail.com

Client: Northern Properties
 Project Mgr: B. NOLAN
 Drawn By: B. NOLAN
 Field By:
 CAD File: SP PARK 18-206 June2020.Gxd
 Job #: 18-206
 Sheet #: 1 of 2

Date: (revisions) by
 JUNE 8, 2020

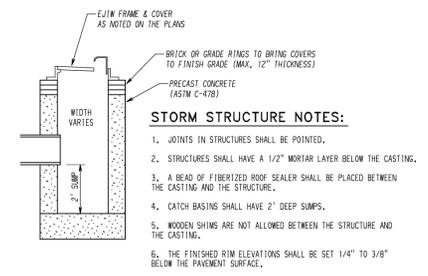
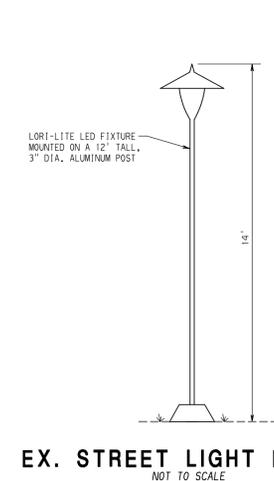
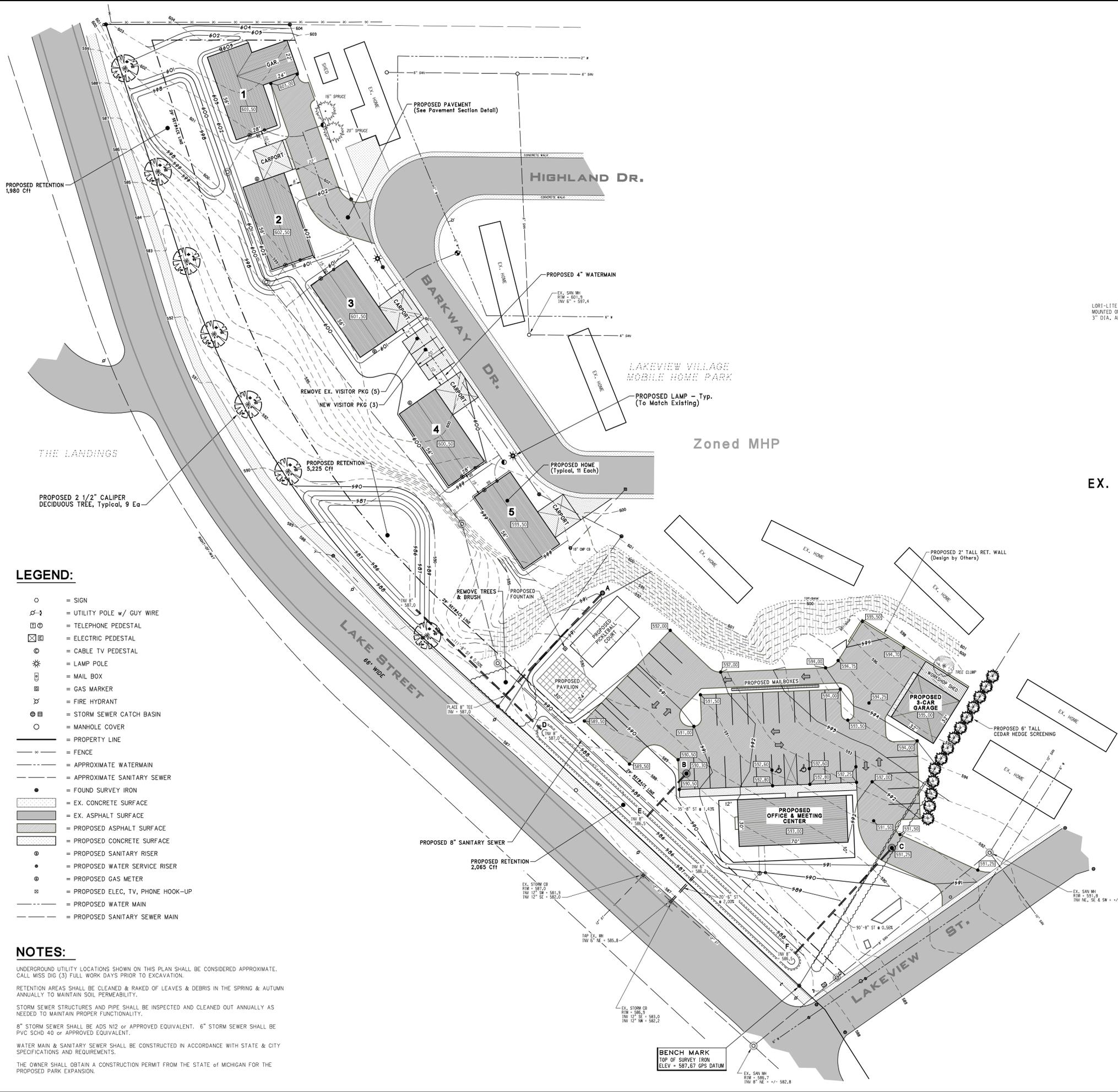
SITE & GRADING PLAN
 Proposed Expansion - Lakeview Village MHP, Boyne City



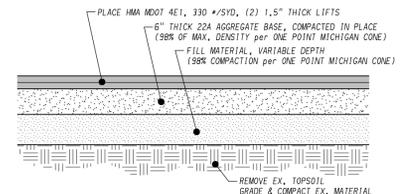
SITE & GRADING PLAN

Proposed Expansion Lakeview Village Mobile Home Park

PART OF GOVERNMENT LOT 1, SECTION 26,
TOWNSHIP 33 NORTH, RANGE 6 WEST,
CITY OF BOYNE CITY, CHARLEVOIX COUNTY, MICHIGAN.



CATCH BASIN DETAIL
NOT TO SCALE



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 - ⊙ = PROPOSED GAS METER
 - ⊙ = PROPOSED ELEC, TV, PHONE HOOK-UP
 - - - = PROPOSED WATER MAIN
 - - - = PROPOSED SANITARY SEWER MAIN

NOTES:

UNDERGROUND UTILITY LOCATIONS SHOWN ON THIS PLAN SHALL BE CONSIDERED APPROXIMATE. CALL MISS DIG (3) FULL WORK DAYS PRIOR TO EXCAVATION.

RETENTION AREAS SHALL BE CLEANED & RAKED OF LEAVES & DEBRIS IN THE SPRING & AUTUMN ANNUALLY TO MAINTAIN SOIL PERMEABILITY.

STORM SEWER STRUCTURES AND PIPE SHALL BE INSPECTED AND CLEANED OUT ANNUALLY AS NEEDED TO MAINTAIN PROPER FUNCTIONALITY.

8" STORM SEWER SHALL BE ADS N12 OR APPROVED EQUIVALENT. 6" STORM SEWER SHALL BE PVC SCHD 40 OR APPROVED EQUIVALENT.

WATER MAIN & SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH STATE & CITY SPECIFICATIONS AND REQUIREMENTS.

THE OWNER SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE OF MICHIGAN FOR THE PROPOSED PARK EXPANSION.

DRAINAGE CALCULATIONS

25 Yr., 24 Hr. STORM (1) = 3.5"
EX. SOILS: USDA Kalkaska (Ks) - SANDY
ASSUMED PERCOLATION RATE = 12"/24 HR
PAVEMENT RUN-OFF COEFFICIENT (c) = 0.9

SITE CONDITIONS:
DEVELOPMENT AREA (A) = 2.40 Ac
EX. HARD SURFACE (A1) = 0 SF
PROP. HARD SURFACE (A2) = 37,044 SF
NET ADD'L HARD SURFACE (A3) = 37,044 SF

CALCULATED RETENTION VOLUME: (V1)
VOL. = c x i x A3
= 0.9 x 3.5/12 x 37,044 SF
= 9,724 CF

RETENTION VOLUME PROVIDED:
STORMWATER DETENTION = 9,270 CF

PRE-DEVELOPMENT PEAK 2 Yr DISCHARGE:
Q = c x i x A
(Tc = 30 min, c = 0.25, i = 1.7, A = 2.40 Ac.)
Q = 0.25 x 1.7 x 2.4
Q = 1.02 cfs

6" DISCHARGE @ 2.00% SLOPE = 1.00 cfs

SITE NOTES:

SITE AREA: +/- 2.40 Ac.
BUILDING COVERAGE: 0.35 Ac. (14.8%)
GREENSPACE: 1.55 Ac. (64.6%)

BENCH MARK
TOP OF SURVEY IRON
ELEV = 587.67 GPS DATUM

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG
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CAD File: SP LAKE 18-206 June2020.grd
Job #: 18-206
Sheet #: 2 of 2

Date: (revisions) by
JUNE 8, 2020

SITE & GRADING PLAN
Proposed Expansion - Lakeview Village MHP, Boyne City

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