

Long Lake Boat Landing Design Summary

Long Lake Town Hall Boat Landing Improvements

Town of Long Lake, Wisconsin

SEH No. LONPA 117298

September 2011

Long Lake Boat Landing Design Summary

Long Lake Town Hall Boat Landing Improvements
Town of Long Lake, Wisconsin

Prepared for:
Town of Long Lake
Birchwood, Wisconsin

Prepared by:
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Executive Summary

Over the course of the last 24 months beginning in 2010, discussion has been had between the Long Lake Preservation Association, Town of Long Lake, WDNR, and SEH regarding potential improvements to be made at the boat landing below the Long Lake Town Hall on Long Lake in Washburn County. Early on in this process a task force met to determine deficiencies and set goals for the site. The following goals for the landing:

- Provide parking for as many vehicles/boat stalls as possible
- Provide storm water improvements that will set an example for the public using the facility
- Improve safety of the site and the access to the site
- Preserve the existing environment as much as possible

Three separate projects and part of fourth have been, or are in the process of being completed to address concerns at this site. The first produced a conceptual drawing of the landing that included many examples of practices to address the original goals of the overall project. A preliminary estimate for the cost of this project was placed at greater than \$500,000, but was not based on actual data collected, as none existed. At this time it was suggested that the Town of Long Lake and the Long Lake Preservation Association apply for separate small-scale lake management planning grants to collect more complete data at the site. This was done leading to two additional projects.

The second project focused on completing a topographic survey and wetland delineation. Based on this project the original estimate of cost for the original concept for improvements was reduced to just over \$200,000. Though better, this was still too cost prohibitive to consider viable.

Data collected as a part of the topographic survey and wetland delineation was used in the third project to re-evaluate the runoff potential at the landing. It was determined that existing runoff control measures at the site were adequately taking care of much of the runoff. At this point the goals set for the overall project were revised. Increasing parking at the landing and implementing large-scale runoff management practices were considered less important, and the safety issue was one that would remain even if all the original ideas were completed. After a site visit in July 2011 and a meeting with the Town of Long Lake and the Long Lake Preservation Association in early August 2011, it was decided that some additional work could be done to improve or re-direct runoff from the immediate area on top of the hill surrounding the Long Lake Town Hall itself.

A new plan was provided that recommended reshaping the “depression” that channels water from Hwy M across the Town Hall parking lot and into the woods, placing a rain garden on the down-hill side of the Town Hall parking area, installing a boat wash station near this rain garden, and paving the Town Hall parking area with some pervious paver system would all improve conditions at the site and provide community and lake user education. Total project cost for this new option is just shy of \$70,000 and is considered viable by all parties involved.

The Town of Long Lake and the Long Lake Preservation Association may pool their resources to complete installation of the rain garden and boat wash facility that is part of this plan in the fall of 2011. More details need to be worked out, but the potential for doing so does exist.

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Long Lake Boat Landing Design Summary

Long Lake Town Hall Boat Landing Improvements

Prepared for Town of Long Lake

1.0 Background

The Long Lake Town Hall boat ramp is highly utilized by many people for boating and recreational use of Long Lake. The boat ramp is the closest public access to Rice Lake and many of the surrounding communities. The access has land availability for parking for those utilizing the facility. Currently, there is parking along the road accessing Long Lake. The road access is narrow, curvy and steep going from County Road M to the boat access and it makes parking difficult.

Previously, the Long Lake Town Board and the Long Lake Preservation Association designated a Task Force to evaluate the existing boat landing site and surrounding properties to determine options for improvements to the site.

The Task Force met to determine the existing deficiencies of the site and set goals for the evaluation. From the Task Force meetings, it was determined that the following items were goals to be met in the evaluation:

- Provide parking for as many vehicle/boat stalls as possible
- Provide storm water improvements that will set an example for the public using the facility
- Improve the safety of the site and the access to the site
- Preserve the existing environment as much as possible

The overall goal of the task force is to improve the water quality of the lake. All site improvements and public education will help obtain this goal.

The purpose of this evaluation was to determine the site improvements necessary at the boat landing to accommodate the goals of the Town Board and the Long Lake Preservation Association as stated above.

Two alternatives were presented and discussed with the Task Force, Option A (Appendix A) was recommended and later, February 2011, a very rough cost of around \$505,000 was estimated before actual field survey was completed.

2.0 Topography and Wetland Delineation

In April 2011 SEH coordinated to have topography collected and wetlands identified on the site, to better design and estimate improvements. Topography and wetlands can be found in Appendix B.

3.0 Alternatives

After topography was complete and wetlands identified, SEH began design basing from the Option A - early conceptual and accommodating the goals of the Town Board and Long Lake Preservation Association.

3.1 Alternative No. 1

During design of Alternative No. 1 it was determined a grit chamber would not be adequate because it required maintenance that the Township was not capable of. Also designing to preserve as much of the existing environment as possible, held SEH to keeping the existing grade to the road profile and ditches eliminating the option of infiltration ditches.

Storm water runoff from proposed improvements and disturbances is contained in existing and new ditches with stone ditch checks to new rain gardens and/or infiltration basins.

Vehicle and boat parking increases significantly from existing due to widening of the road between Town Hall and the landing, also improving safety for vehicles to turn around at. Improvements at the Town Hall also increase parking and safety where more accommodating grades replace the steeper grades of today. Both areas require a sufficient amount of excavation and grading.

The costs of Alternative No. 1, above, are estimated around \$210,000. An itemized cost estimate and design concept can be found in Appendix C.

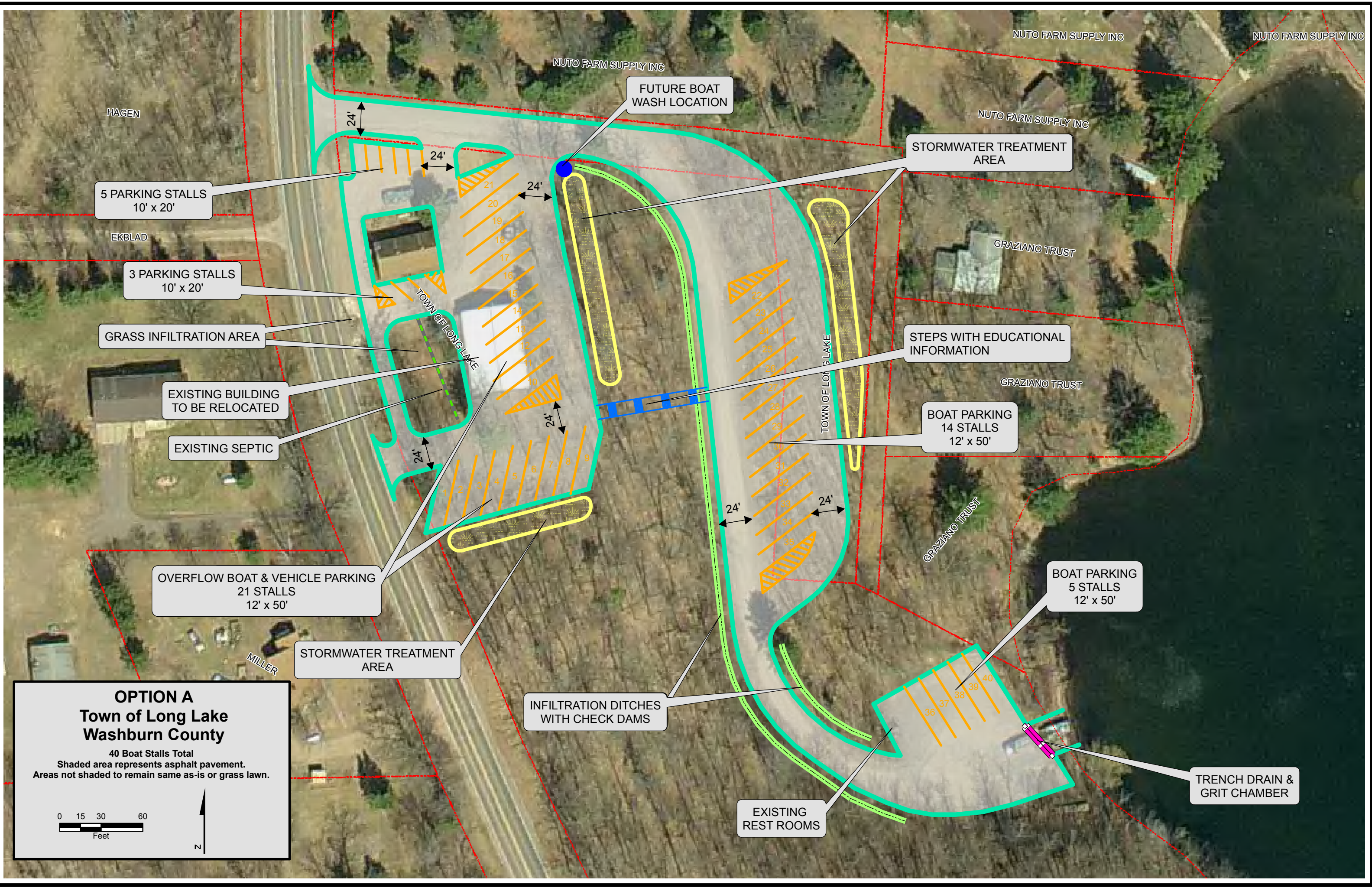
3.2 Alternative No. 2

In July 2011, a field progress meeting was setup, and it discussed that existing conditions were taking care of storm water runoff efficiently. Also parking was not a top priority any more along the road between the Town Hall and Landing. Eliminating any design improvements east of the Town Hall and focusing all improvements at the Town Hall.

Alternative No. 2 drops overall cost and disturbance for improvements, while still meeting the goals set out by the Task Force. With increased parking, a rain garden to catch storm water runoff, preserving majority of the existing environment, improving safety, and proposing installation of a boat wash station and educational signs. The costs of Alternative No. 2 are estimated around \$70,000. An itemized cost estimate and design concept can be found in Appendix D.

Appendix A

Option A Early Conceptual
Option A Cost Estimate



5 PARKING STALLS
10' x 20'

3 PARKING STALLS
10' x 20'

GRASS INFILTRATION AREA

EXISTING BUILDING
TO BE RELOCATED

EXISTING SEPTIC

OVERFLOW BOAT & VEHICLE PARKING
21 STALLS
12' x 50'

STORMWATER TREATMENT
AREA

INFILTRATION DITCHES
WITH CHECK DAMS

EXISTING
REST ROOMS

FUTURE BOAT
WASH LOCATION

STORMWATER TREATMENT
AREA

STEPS WITH EDUCATIONAL
INFORMATION

BOAT PARKING
14 STALLS
12' x 50'

BOAT PARKING
5 STALLS
12' x 50'

TRENCH DRAIN &
GRIT CHAMBER

OPTION A
Town of Long Lake
Washburn County

40 Boat Stalls Total
Shaded area represents asphalt pavement.
Areas not shaded to remain same as-is or grass lawn.

0 15 30 60
Feet

N



PRELIMINARY CONSTRUCTION COST ESTIMATE
TOWN OF LONG LAKE, WASHBURN COUNTY
OPTION A, BOAT LANDING & PARKING IMPROVEMENTS
February 11, 2011

BOAT LANDING & PARKING IMPROVEMENTS

NOTE: Parking area includes 40 total, 12' x 50' boat stalls.

ITEM	UNIT	QUANTITY	UNIT PRICE	COST
MOBILIZATION	L.S.	1	\$20,000.00	\$20,000.00
MAINTENANCE OF TRAFFIC	L.S.	1	\$500.00	\$500.00
CLEARING & GRUBBING	ACRE	1.5	\$2,500.00	\$3,750.00
TRACKING PAD	EACH	2	\$500.00	\$1,000.00
SILT FENCE, DELIVERED, INSTALLED AND MAINTAINED	L.F.	650	\$2.50	\$1,625.00
EROSION BALES	EACH	25	\$6.00	\$150.00
EROSION MAT CLASS 1, TYPE B	S.Y.	800	\$3.00	\$2,400.00
STORM SEWER PIPE, RCP, CLASS III, 24-INCH	L.F.	80	\$40.00	\$3,200.00
24" RCP APRON ENDWALL W/ TRASH GUARD	EACH	4	\$1,500.00	\$6,000.00
STORMWATER GRIT CHAMBER	EACH	1	\$25,000.00	\$25,000.00
BORROW EXCAVATION	C.Y.	8,500	\$6.00	\$51,000.00
COMMON EXCAVATION	C.Y.	4,850	\$5.00	\$24,250.00
CRUSHED AGGREGATE BASE COURSE DENSE, 10-INCH	TONS	5,150	\$15.00	\$77,250.00
ASPHALTIC CONCRETE PAVEMENT, 3-INCH, TYPE E-3	TONS	1,500	\$70.00	\$105,000.00
TACK COAT	GAL	215	\$4.00	\$860.00
INFILTRATION DITCHES	L.F.	700	\$30.00	\$21,000.00
RAIN GARDENS	S.Y.	750	\$40.00	\$30,000.00
PAVEMENT MARKING EPOXY, 4-INCH YELLOW	L.F.	2500	\$2.00	\$5,000.00
TURF ESTABLISHMENT	S.Y.	6,900	\$3.00	\$20,700.00
SUBTOTAL				\$398,690.00
CONTINGENCY (10%)				\$39,870.00
ENGINEERING AND CONSTRUCTION (15%)				\$65,780.00
TOTAL ESTIMATED CONSTRUCTION COST				\$504,340.00

NOTE: -Borrow Excavation and Common Excavation quantities are very roughly estimated until actual field survey is completed in the spring 2011.
 -Does not include boat wash station.

Appendix B

Topography and Wetland Delineation

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ARTHUR H HAGEN

LEON E EKBLAD

TODD J SOLOMAN

STEWART A MILLER

PAUL A HOGAN

NUTO FARM SUPPLY INC

NUTO FARM SUPPLY INC

NUTO FARM SUPPLY INC

NUTO FARM SUPPLY INC

KAREN R GRAZIANO TRUST

KAREN R GRAZIANO TRUST

KAREN R GRAZIANO TRUST

WETLAND BOUNDARY

WETLAND BOUNDARY

WILLIAM OLMSTED

CTH "M"/"D"

CTH "M"/"D"

TOWN OF LONG LAKE

TOWN OF LONG LAKE

TOWN HALL

POLE SHED



DRAWN: JLK
DESIGNED: DAP
CHECKED: DAP

NO.	BY	DATE	REVISIONS



PHONE: 715.236.4000
1701 WEST KNAPP STREET
SUITE B
RICE LAKE, WI 54868

BOAT LANDING IMPROVEMENTS
TOWN OF LONG LAKE, WISCONSIN

OVERALL SITE MAP

FILE NO.
LLAKE116295
DATE
6-3-2011

Appendix C

Alternative No. 1 Design
Alternative No. 1 Cost Estimate

P:\KOL\116295\116295.dgn CONCEPTUAL RMO PLN.dgn



CTH "M" / "D"

CTH "M" / "D"



DRAWN: JLK
DESIGNED: DAP
CHECKED: DAP

NO.	BY	DATE	REVISIONS



PHONE: 715.236.4000
1701 WEST KNAPP STREET
SUITE B
RICE LAKE, WI 54868

BOAT LANDING IMPROVEMENTS TOWN OF LONG LAKE, WISCONSIN

ALTERNATIVE NO. 1

FILE NO.
LLAKE116295
DATE
6-3-2011



**CONSTRUCTION COST ESTIMATE
 ALTERNATIVE NO. 1
 TOWN OF LONG LAKE, WASHBURN COUNTY
 TOWN HALL BOAT LANDING STORM WATER IMPROVEMENTS
 June 27, 2011**

BOAT LANDING STORM WATER IMPROVEMENTS

ITEM	UNIT	QUANTITY	UNIT PRICE	COST
MOBILIZATION	L.S.	1	\$18,000.00	\$18,000.00
MAINTENANCE OF TRAFFIC	L.S.	1	\$500.00	\$500.00
CLEARING & GRUBBING	ACRE	1.5	\$2,500.00	\$3,750.00
TRACKING PAD	EACH	1	\$600.00	\$600.00
SILT FENCE, DELIVERED, INSTALLED AND MAINTAINED	L.F.	1,050	\$2.00	\$2,100.00
STONE DITCH CHECKS	EACH	17	\$135.00	\$2,295.00
EROSION MAT CLASS I, TYPE A	S.Y.	3,800	\$1.00	\$3,800.00
EROSION MAT CLASS I, TYPE B	S.Y.	130	\$2.00	\$260.00
EROSION MAT CLASS III, TYPE C	S.Y.	340	\$5.50	\$1,870.00
RCP STORM SEWER, 24-INCH	L.F.	195	\$42.00	\$8,190.00
RCP APRON END WALL w/TRASH GUARD, 24-INCH	EACH	3	\$1,200.00	\$3,600.00
STORM MANHOLE, TYPE B w/OVERFLOW GRATE	EACH	3	\$2,000.00	\$6,000.00
GEOTEXTILE FABRIC, TYPE R	S.Y.	285	\$3.00	\$855.00
RIP RAP MEDIUM	C.Y.	165	\$45.00	\$7,425.00
COMMON EXCAVATION	C.Y.	900	\$5.00	\$4,500.00
CRUSHED AGGREGATE BASE COURSE DENSE, 10-INCH	TONS	2,530	\$9.00	\$22,770.00
ASPHALTIC CONCRETE PAVEMENT, 3-INCH, TYPE E-3	TONS	740	\$70.00	\$51,800.00
TACK COAT	GAL	100	\$5.00	\$500.00
TURF ESTABLISHMENT	S.Y.	8,300	\$3.00	\$24,900.00
SUBTOTAL				\$163,720.00
CONTINGENCY (10%)				\$16,370.00
ENGINEERING AND CONSTRUCTION (15%)				\$27,010.00
TOTAL ESTIMATED CONSTRUCTION COST				\$207,100.00

NOTE: - Does not include boat wash station.
 - Stone Ditch Checks approximately +/-3.0 C.Y. per each
 - Total Common Excavation quantity is 2150 C.Y. Total Borrow Excavation quantity is 1250 C.Y.
 1250 C.Y. of Common is assumed good material and is to be wasted on site as fill.

Appendix D

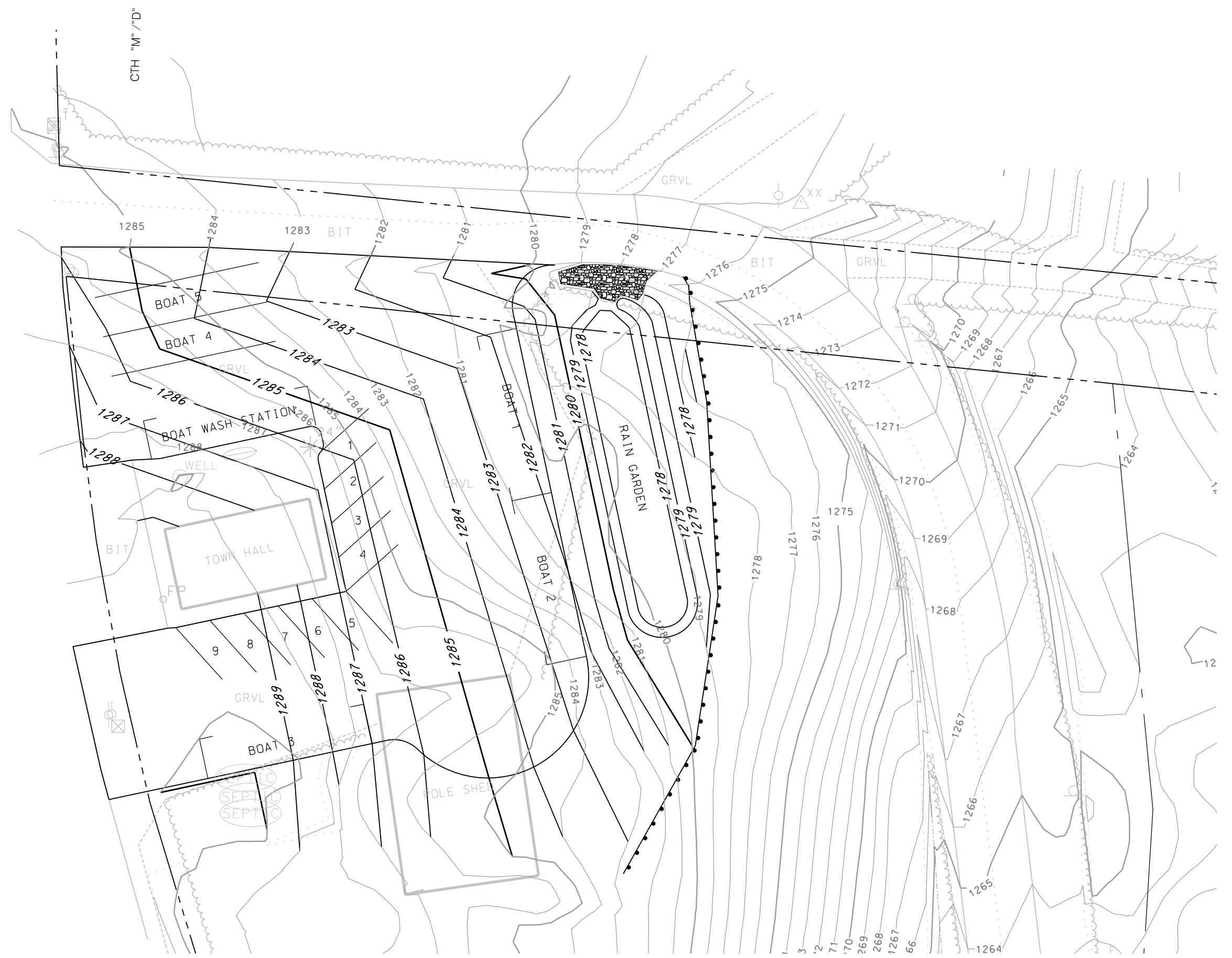
Alternative No. 2 Design
Alternative No. 2 Cost Estimate

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CTH "M"/"D"

CTH "M"/"D"



DRAWN: JLK
 DESIGNED: DAP
 CHECKED: DAP

NO.	BY	DATE	REVISIONS

SEH
 PHONE: 715.236.4000
 1701 WEST KNAPP STREET
 SUITE B
 RICE LAKE, WI 54868

**PARKING & STORM WATER IMPROVEMENTS
 TOWN OF LONG LAKE, WISCONSIN**

SITE MAP

FILE NO.
 LLAKE116295
 DATE
 6-3-2011



**CONSTRUCTION COST ESTIMATE
 ALTERNATIVE NO. 2
 TOWN OF LONG LAKE, WASHBURN COUNTY
 TOWN HALL PARKING & STORM WATER IMPROVEMENTS
 July 29, 2011**

PARKING & STORM WATER IMPROVEMENTS

ITEM	UNIT	QUANTITY	UNIT PRICE	COST
MOBILIZATION	L.S.	1	\$5,500.00	\$5,500.00
MAINTENANCE OF TRAFFIC	L.S.	1	\$300.00	\$300.00
CLEARING & GRUBBING	ACRE	0.25	\$2,500.00	\$625.00
SILT FENCE, DELIVERED, INSTALLED AND MAINTAINED	L.F.	200	\$2.00	\$400.00
EROSION MAT CLASS I, TYPE B	S.Y.	200	\$2.00	\$400.00
REMOVE EXISTING POLE SHED	L.S.	1	\$3,000.00	\$3,000.00
BOAT WASH STATION	L.S.	1	\$1,500.00	\$1,500.00
GEOTEXTILE FABRIC, TYPE R	S.Y.	25	\$3.00	\$75.00
RIP RAP MEDIUM	C.Y.	15	\$45.00	\$675.00
COMMON EXCAVATION	C.Y.	100	\$5.00	\$500.00
CRUSHED AGGREGATE BASE COURSE DENSE, 10-INCH	TONS	600	\$9.00	\$5,400.00
ASPHALTIC CONCRETE PAVEMENT, 3-INCH, TYPE E-3	TONS	360	\$70.00	\$25,200.00
TACK COAT	GAL	50	\$5.00	\$250.00
NATIVE VEGETATION RAIN GARDEN PLANTINGS	S.F.	1,700	\$3.00	\$5,100.00
TURF ESTABLISHMENT	S.Y.	1,400	\$2.00	\$2,800.00
SUBTOTAL				\$51,730.00
CONTINGENCY (10%)				\$5,170.00
ENGINEERING AND CONSTRUCTION (15%)				\$8,540.00
TOTAL ESTIMATED CONSTRUCTION COST				\$65,440.00

NOTE: - Common is assumed good material and is to be wasted on site as fill.

Appendix E

Project Transition



MEMORANDUM

TO: Long Lake Township and the Long Lake Preservation Association

FROM: Dave Blumer, Lake Scientist SEH

DATE: August 25, 2011

RE: Long Lake Town Hall Boat Landing on Long Lake

On August 23, 2011 a draft Summary Report covering three separate projects related to the Boat Landing on Long Lake at the Long Lake Town Hall in Washburn County, was delivered to the Town of Long Lake Planning Commission and the Long Lake Preservation Association. After going through this document with these parties it was requested that an additional document be added that described the transition between the three projects referenced in the original document. This memo serves as this transitional document.

Project One – LLAKE 112859 (\$3,000.00)

In the spring of 2010, a preliminary site visit was made by SEH to the boat landing at the Long Lake Town Hall at the request of the Long Lake Preservation Association and in cooperation with the Town of Long Lake. The purpose of this preliminary visit was to brainstorm possible ideas for making improvements to the site including runoff management, increased parking, improved safety, native habitat protection, aquatic invasive species prevention, and community education.

From this visit, an agreement for services was signed between the Town of Long Lake and SEH with a total project budget of \$3,000.00. The purpose of the project was to come up with a conceptual design for the Town Hall landing that would incorporate ideas to accomplish those goals set forth in the preliminary site visit. Two alternatives were presented, the first option (Appendix A) was chosen. A preliminary estimate of the cost to implement this plan was completed. The total cost was in excess of \$500,000 but was based solely on “best guesses”. With this price tag, the project was not possible. At this point it was suggested that a topographic survey, wetland delineation, and a more complete site plan be completed. With more complete information, a more accurate cost estimate could be completed. It was recommended that the Town of Long Lake and the Long Lake Preservation Association both apply for a small-scale lake management planning grant from the WDNR to complete these tasks.

Two small-scale lake management planning grants were prepared by SEH and submitted to the WDNR on August 1, 2010. The first was sponsored by the Town of Long Lake with a total project cost of \$3500.00. The second was sponsored by the Long Lake Preservation Association with a total project cost of \$4000.00.

The Town of Long Lake project was awarded in late October 2010. The Long Lake Preservation Association project was not, due to the opinion of the WDNR that it was part of a phased project, which cannot be funded in the small-scale lake management planning grant program. This second grant was resubmitted in February 2011, and was awarded in April 2011.

Project Two – LLAKE 116295 DNR Grant # SPL-249-11 (\$3,500.00)

Topography of the Town Hall Landing was officially surveyed by SEH technicians and wetland delineation was completed as a part of this project. Survey work was completed in the late spring and early summer 2011. A complete topographic map of the site was created and the wetlands delineated added to it (Appendix B). With the topographic work done, a more accurate estimate for total costs was created based on the original Option A shown in Appendix A. The additional data showed that a great deal less excavation was needed to complete the design in the original option. The total estimated cost was just over \$200,000 (Appendix C), still too much to consider this option viable.

Project Three – LONPA 117298 DNR Grant # SPL-269-11 (\$4,000.00)

Further data collected in this project showed that the amount of storm water that was presently flowing down the roadway toward the landing was in part being adequately taken care of by existing runoff control measures, including a rock-lined ditch along the uphill side of the existing roadway to the actual landing, by a rock catch basin at the bottom end of the ditch, and by minor excavation up on top near the town hall that moved and shaped the gravel parking area to divert a substantial portion of the runoff into the woods on top of the hill, effectively preventing it from flowing down the roadway and into the lake.

During a site visit completed in July of 2011 by SEH, the Town of Long Lake, and the Long Lake Preservation Association for the purpose of reviewing all new data and how it impacted the desire to reduce runoff, improve parking and safety, protect native habitat, help prevent the introduction of new aquatic invasive species, and community education, some new decisions were made. Due to the high costs associated with the original plan, increasing parking at the landing was considered less important. Due to the fact that the existing runoff management system was effectively handling most runoff at the site, large-scale runoff management practices were considered less important, and the safety issue was one that would remain even if all the original ideas were completed.

It was decided that some additional work could be done to improve or re-direct runoff from the immediate area on top of the hill surrounding the Long Lake Town Hall itself. Reshaping the “depression” that channels water from Hwy M across the Town Hall parking lot and into the woods, placing a rain garden on the down-hill side of the Town Hall parking area, installing a boat wash station near this rain garden, and paving the Town Hall parking area with some pervious paver system would all improve conditions at the site and provide community and lake user education. This revised approach to making improvements to the Town Hall area was taken back to SEH where a new option (Appendix D) was completed, including a budget. Total project cost for this new option is just shy of \$70,000 and includes a boat wash, rain garden, reshaping of the parking area and the existing runoff depression, and paving of the Town Hall parking area.

Related Information

In addition to funding provided by these three previously mentioned projects, the Long Lake Preservation Association has funding in another grant project (AEPP-264-11) (LONPA 115341) to design and install a larger Aquatic Invasive Species Information Kiosk near the existing Town Hall or potentially near the new boat wash station that is being planned. Since the cost of installing the rain garden and the boat wash station is expected to be in the \$3,000 to \$5,000 range it has been suggested that the Town of Long Lake and the Long Lake Preservation Association pool existing resources to complete this part of the overall

Long Lake Town Hall Boat Landing on Long Lake

August 25, 2011

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improvement plan in the fall of 2011 and not wait to seek funding from another grant application or some other source to do so.

At a meeting between the WDNR and the Long Lake Preservation Association on August 24, 2011 to discuss the existing budget associated with AEPP-264-11, the Long Lake Preservation Association was given the go ahead by the DNR to use money from this grant to fund the installation of the boat wash station and the associated rain garden, assuming there is money available. It was the opinion of those present at the August 23, 2011 meeting, that the Town of Long Lake might very well be agreeable to a property deed restriction that says any rain garden installed will be maintained for a minimum of 10 years.

Next steps include determining the final location of the rain garden and boat wash station. Installation will be completed by the Town of Long Lake and the Long Lake Preservation Association.

DLB

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