



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, DETROIT DISTRICT
REGULATORY BRANCH
477 MICHIGAN AVENUE
DETROIT, MICHIGAN 48226-2550

June 9, 2022

Regulatory Branch
File No. LRE-2020-01805-41-S20

Scott & Debra Law
9915 East 300 South
Zionsville, Indiana 46077

Dear Mr. and Ms. Law:

We are enclosing Department of the Army Permit No. LRE-2020-01805-41-S20. **We invite your special attention to Paragraph 2.a. under Further Information, which states that "This permit does not obviate the need to obtain Federal, state, or local authorizations required by law."** We suggest that you contact the Michigan Department of Environment, Great Lakes, and Energy in the Gaylord District Office, at (989) 731-4920; and Hayes Township at (231) 497-4701 to determine if state and local approvals are required. **You should not begin work until valid State and local approvals are obtained.**

We require that you inform this office immediately when you begin construction. When you have completed work, fill in and return the enclosed COMPLETION REPORT.

Any material changes in the location or plans of the work authorized herein must be submitted to the District Engineer prior to commencement of work. As required by law, the revised plans must have written approval of the Department of the Army.

You are responsible for assuring that your contractor abides by the conditions of this permit. Should you have any questions on this matter, please contact April Champion at the above address, by e-mail at april.r.champion@usace.army.mil, or by telephone at (313) 226-5380. In all communications, please refer to File Number LRE-2020-01805-41-S20.

We are interested in your thoughts and opinions concerning your experience with the Detroit District, Corps of Engineers Regulatory Program. If you are interested in letting us know how we are doing, you can complete an electronic Customer Service Survey from our web site at: <https://regulatory.ops.usace.army.mil/customer-service-survey/>. Or, you may contact us and request a paper copy of the survey that you may complete and return to us by mail or fax. Thank you for taking the time to complete the survey, we appreciate your feedback.

Sincerely,



Charles M. Simon
Chief, Regulatory Branch
Operations Division

Enclosures

Copy Furnished

EGLE – Gaylord District Office,
Site Name: 15-10034 Anglers Cove-Hayes Twp (via e-mail)
Sault Ste. Marie Field Office (via e-mail)
NOAA (via e-mail ocs.ndb@noaa.gov)
Great Lakes Ecosystems – Bert Ebbers (via e-mail)

STANDARD PERMIT COMPLETION REPORT

CELRE-ORW

Chief, Compliance and Enforcement Section
Regulatory Branch
U.S. Army Corps of Engineers
477 Michigan Avenue
Room 603
Detroit, Michigan 48226-2550

Dear Sir:

You are hereby notified that work under Department of the Army Permit No. LRE-2020-01805-41-S20 to construct a boathouse and marina basin, and to dredge at 10034 Anglers Cove, Charlevoix, Charlevoix County, Michigan, issued to Scott & Debra Law was completed in accordance with the permit on:

(Date work completed)

(Permittee's Signature)

IMPORTANT

1. This COMPLETION REPORT MUST BE MAILED to the above addressee within 10 days after completion of work covered by the FEDERAL PERMIT to ensure an accurate Government record of data affecting navigation.

2. Where dredging soundings are made of projects which include dredging, a copy of the soundings should accompany this report. If the soundings are measured from the water surface and have not been corrected to International Great Lakes Datum plane, the hour and date soundings was made should be noted on sounding reports.

NOTE: Although permits authorizing structures carry an expiration date, REPAIRS that conform to the permit plans are also within the scope of the authorization. Therefore, it is recommended that expired permits NOT be destroyed, but retained as proof that the work to be repaired has received the Corps of Engineers' approval.

DEPARTMENT OF THE ARMY PERMIT

Permittee Scott & Debra Law

Permit No. LRE-2020-01805-41-S20

Issuing Office U.S. Army Engineer District, Detroit

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Dredge an access channel in Lake Charlevoix and construct a boathouse and docking structures within an excavated inland boat basin as follows:

OHWM = Ordinary High Water Mark (581.5 feet) LWD = Low Water Datum (577.5 feet)

Datum = International Great Lakes Datum (IGLD), 1985

ACCESS CHANNEL

Site-Specific Location	Activity	Length feet (Average)	Width feet (Average)	Area square feet	Depth feet (Average)	Volume Cubic yards	Notes	Sheet No.
Entrance Channel Lakeward of OHWM	Dredge	130	15	1,950	5.75	415	In Lake	5 & 10
Entrance Channel Sides (2) Lakeward of OHWM	Dredge	130	14	1,820	3.0	202	In Lake	5 & 10
Total Dredge Quantities				3,770		617		

BASIN CONSTRUCTION

Site-Specific Location	Activity	Length feet (Average)	Width feet (Average)	Area square feet	Depth feet (Average)	Volume Cubic yards	Notes	Sheet No.
Entrance Channel Landward of OHWM	Excavation	55	15	825	16	489	Upland Area	5 & 11
Entrance Channel Sides Landward of OHWM	Excavation	55	28	1,540	8	456	Upland Area	5 & 11
Inland Basin 7.5 feet < LWD	Excavation	90	80	7,200	20	5,333	Upland Area	5-6, 8-9 & 12
Inland Basin E & W Tapered Sides 1:1 Slope	Excavation	90	40	3,600	10	1,333	Upland Area	5 & 12
Boathouse Basin	Excavation	90	60	5,400	32	6,400	Upland Area	5 - 8
Total Excavation Quantities				18,565		14,011		
Cobble Lining Bottom of Inland Entrance Channel	construction material*	55	15	825	1.0	31	Upland Area	9 & 11
Cobble Lining Sides of Inland Entrance Channel	construction material*	55	28	1,540	0.5	29	Upland Area	11
Cobble Lining Bottom of Inland Basin	construction material*	90	80	7,200	1.0	267	Upland Area	8-9 & 12
Cobble Along E & W Sides of Inland Basin	construction material*	90	40	3,600	1.0	133	Upland Area	12
Cement Floor/compressed material Under Boathouse	construction material*	90	60	5,400	2.0	400	Upland Area	8, 16 & 17
Total Construction Material Quantities				18,565		860		

* Construction material would be placed prior to connection to Lake Charlevoix; not subject to Section 404 review

Access Channel: Install a 310-foot-long turbidity curtain as preparation for dredging, and mechanically dredge approximately 617 cubic yards of sediment to construct an approximate 130-foot-long access channel waterward and perpendicular to the Ordinary High Water Mark (OHWM). The base width of the channel will be 15 feet wide, with side slopes up to 14 feet wide on each side, for a maximum top channel width of 43 feet at the entrance of the marina basin, tapering to 15 feet in width at the waterward limit of the dredge area. Material will be dredged using a barge-mounted, long-arm crane positioned inside the turbidity curtain and placed in an adjoining barge. The barge, which will stay inside the turbidity curtain perimeter, will be maneuvered toward shore for off-loading. All dredged material will be placed into trucks

and transferred to the upland area shown on Sheet 3 of the plans.

Basin & Entrance Channel: Excavate a 55-foot-long by 43-foot-wide entrance channel and a basin up to 160-foot-long and up to 100-foot-wide in the dry, with a 25-foot-long by 43-foot-wide earthen plug left in place landward of the OHWM. The slopes of the channel and basin outside the boathouse will be tapered and planted with native vegetation for bank stabilization. All excavated material will be placed in the upland area shown on Sheet 3.

Boathouse & Docking Structures: On the north end of the basin, construct a 90-foot-long by 60-foot-wide, 2-story boathouse with a peak height of 51 feet above Low Water Datum, IGLD 1985. The boathouse will contain: two 58-foot-long by 4-foot-wide floating piers; four 12-foot-long by 5-foot-wide floating boat hoists; a 4-foot-long by 5-foot-wide staircase; a 118-foot-long by 6-foot-wide open-pile fixed deck along the north and west perimeter of the boathouse; a 4-foot-long by 20-foot-wide open-pile fixed deck north of the boat hoists; a 30-foot-long by 5-foot-wide open-pile fixed deck east of the boat hoists; and a 102-foot-long by 5-foot-wide L-shaped boardwalk along the east side of the basin.

Upon completion of the basin, boathouse, piers and decks, pump water from Lake Charlevoix into the constructed basin, and excavate the earthen plug to connect the basin to the lake.

Project Location:

In Lake Charlevoix, offshore property at 10034 Anglers Cove, Charlevoix, Michigan.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2025**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately stop work in that area and notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. Your signature, as permittee, indicates that, as consideration for the issuance of this permit, you voluntarily accept and agree to comply with all of the terms and conditions of this permit.
2. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. All in-water work or dredging is prohibited during the period May 15th to July 15th and between November 1 and ice-off as designated in the issued Michigan Department of Environment, Great Lakes, and Energy (EGLE) permit. If the EGLE modifies the work/dredge window, the permittee must provide a copy of such modification to the Corps of Engineers prior to the start of any work or dredging.
5. Prior to beginning any in-water work, the permittee shall install commercial-grade turbidity curtains that extend from a floating boom on the lake surface down to the bed of the waterway. The turbidity curtain shall continuously and completely enclose the work areas. The turbidity curtain shall be properly anchored onshore, and anchored offshore at 25-foot intervals to provide a stable and functional barrier. The turbidity curtain shall be maintained in effective working condition until all work is completed and turbidity has returned to background levels. In the event that the turbidity curtain remains in place overnight, the applicant will coordinate proper marking of the turbidity curtain with the USCG and their requirements (e.g. lighting, reflective paints, etc.) will become special conditions under this permit.
6. Erosion controls, such as silt fencing, shall be placed in upland work and equipment use areas along the shoreline to prevent construction material from entering wetlands or waterways. These must be erected prior to starting work, and their effectiveness must be maintained until all work at the site is completed and the area has been stabilized against erosion.

7. No timbers treated with creosote or other petroleum-based preservatives and no arsenic-based, pressure-treated lumber shall be used in the construction of structures that come in contact with the surface water of Lake Charlevoix.
8. Cobble shall consist of clean, inert materials from an upland source, or reused on-site dredged material. The material must be free from toxic substances, fines, oil and grease, debris, wood, general refuse, plaster, and other pollutants, and shall contain no broken asphalt, oil-based material, or metal.
9. All dredged and/or excavated materials will be placed in upland location(s) landward of the Ordinary High Water Mark with no placement in, or return to, any waterway or wetland. Liability for proper placement of all materials, including those placed off-site by any party, notwithstanding ownership, remains with the permittee.
10. Temporary and/or permanent sidecasting of dredged and/or excavated material and/or placement of construction material into the waterway or wetland for any purpose, including operating and/or placing equipment, is not authorized.
11. After completion of construction, the tapered slopes of the inland entrance channel and sides of the boat basin shall be permanently stabilized by seeding with native plants and/or by the planting of trees or shrubs native to the area and, if possible, already represented on the site.
12. The permittee shall pipe stormwater run-off from the boathouse roof away from the lake, into a non-wetland area.

Further Information:

1. Congressional Authorities: You have been so authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899.

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain Federal, state, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modifications, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance of the information you provided.

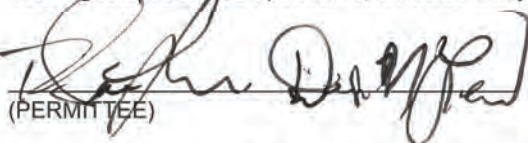
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.


6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


(PERMITTEE)

5/26/22
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


Charles M. Simon for:
(DISTRICT ENGINEER)
Scott M. Katalenich
Lieutenant Colonel, U.S. Army

9 Jun 2022
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

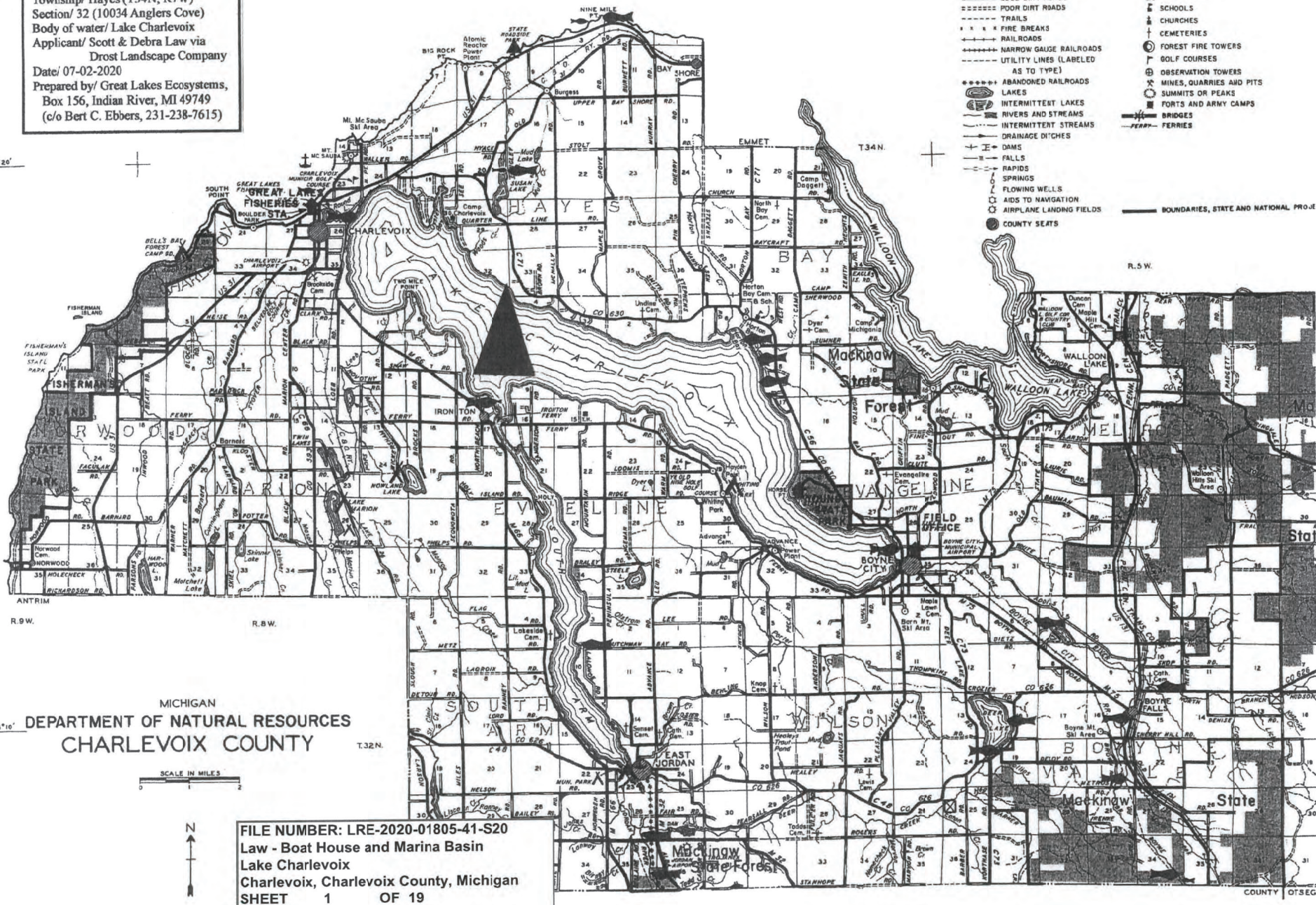
(TRANSFEREE)

(DATE)

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
 Township/ Hayes (T34N, R7W)
 Section/ 32 (10034 Anglers Cove)
 Body of water/ Lake Charlevoix
 Applicant/ Scott & Debra Law via
 Drost Landscape Company
 Date/ 07-02-2020
 Prepared by/ Great Lakes Ecosystems,
 Box 156, Indian River, MI 49749
 (c/o Bert C. Ebbers, 231-238-7615)

- == DIVIDED ROADS
- == INTERCHANGES
- == GRADE SEPARATIONS
- == PAVED ROADS
- == GRAVELED ROADS
- == GOOD DIRT ROADS
- == POOR DIRT ROADS
- == TRAILS
- == FIRE BREAKS
- == RAILROADS
- == NARROW GAUGE RAILROADS
- == UTILITY LINES (LABELED AS TO TYPE)
- == ABANDONED RAILROADS
- == LAKES
- == INTERMITTENT LAKES
- == RIVERS AND STREAMS
- == INTERMITTENT STREAMS
- == DRAINAGE DITCHES
- == DAMS
- == FALLS
- == RAPIDS
- == SPRINGS
- == FLOWING WELLS
- == AIDS TO NAVIGATION
- == AIRPLANE LANDING FIELDS
- COUNTY SEATS
- TOWNS
- RECREATIONAL LODGES OR CAMPS
- LANDMARKS, FOUR CORNERS, ETC.
- TOWN HALLS
- SCHOOLS
- CHURCHES
- CEMETERIES
- FOREST FIRE TOWERS
- GOLF COURSES
- OBSERVATION TOWERS
- MINES, QUARRIES AND PITS
- SUMMITS OR PEAKS
- FORTS AND ARMY CAMPS
- == BRIDGES
- == FERRIES
- == BOUNDARIES, STATE AND NATIONAL PROJ.



FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
 SHEET 1 OF 19

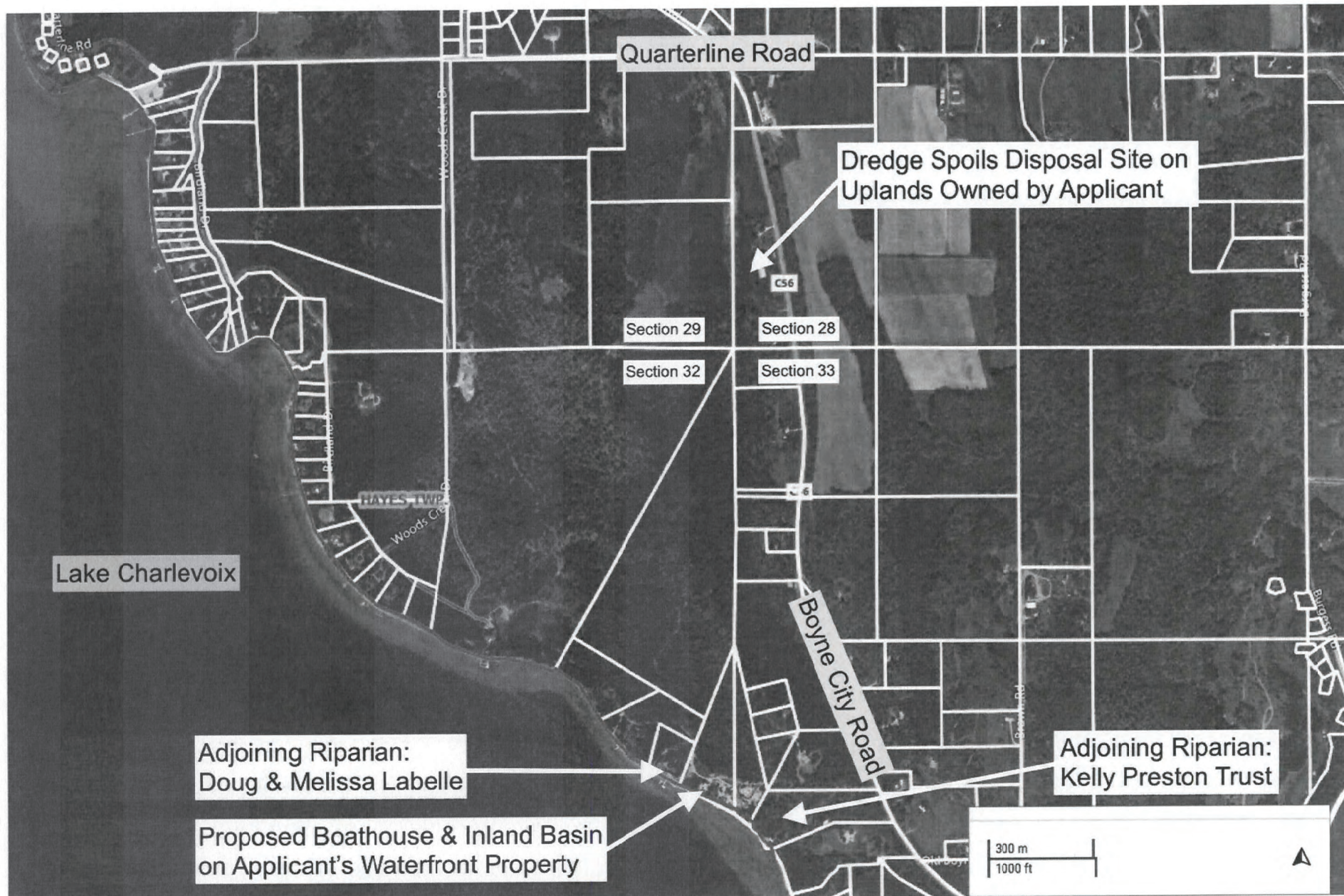


Data Search



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FILE NUMBER: LRE-2020-01805-41-S20
Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 2 OF 19



PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
 Township/ Hayes (T34N, R7W)
 Section/ 32 (10034 Anglers Cove)
 Body of water/ Lake Charlevoix
 Applicant/ Scott & Debra Law via
 Drost Landscape Company
 Date/ 07-02-2020 Mod. 11-17-21
 Prepared by/ Groat Lakes Ecosystems,
 Box 156, Indian River, MI 49749
 (c/o Ben C. Ebberts, 231-238-7615)

FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boathouse and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
 SHEET 3 OF 19



Project Name and Address	Project 111853	Sheet Sp Site Plan
Law Residence 10034 Anglers Cove Charlevoix, MI 49720	Date 2/14/22 *	
	Design by Drost Landscape	

FILE NUMBER: LRE-2020-01805-41-S20

Law - Boat House and Marina Basin

Lake Charlevoix

Charlevoix, Charlevoix County, Michigan

SHEET 6 OF 19

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix

Township/ Hayes (T34N, R7W)

Section/ 32 (10034 Anglers Cove)

Body of water/ Lake Charlevoix

Applicant/ Scott & Debra Law via

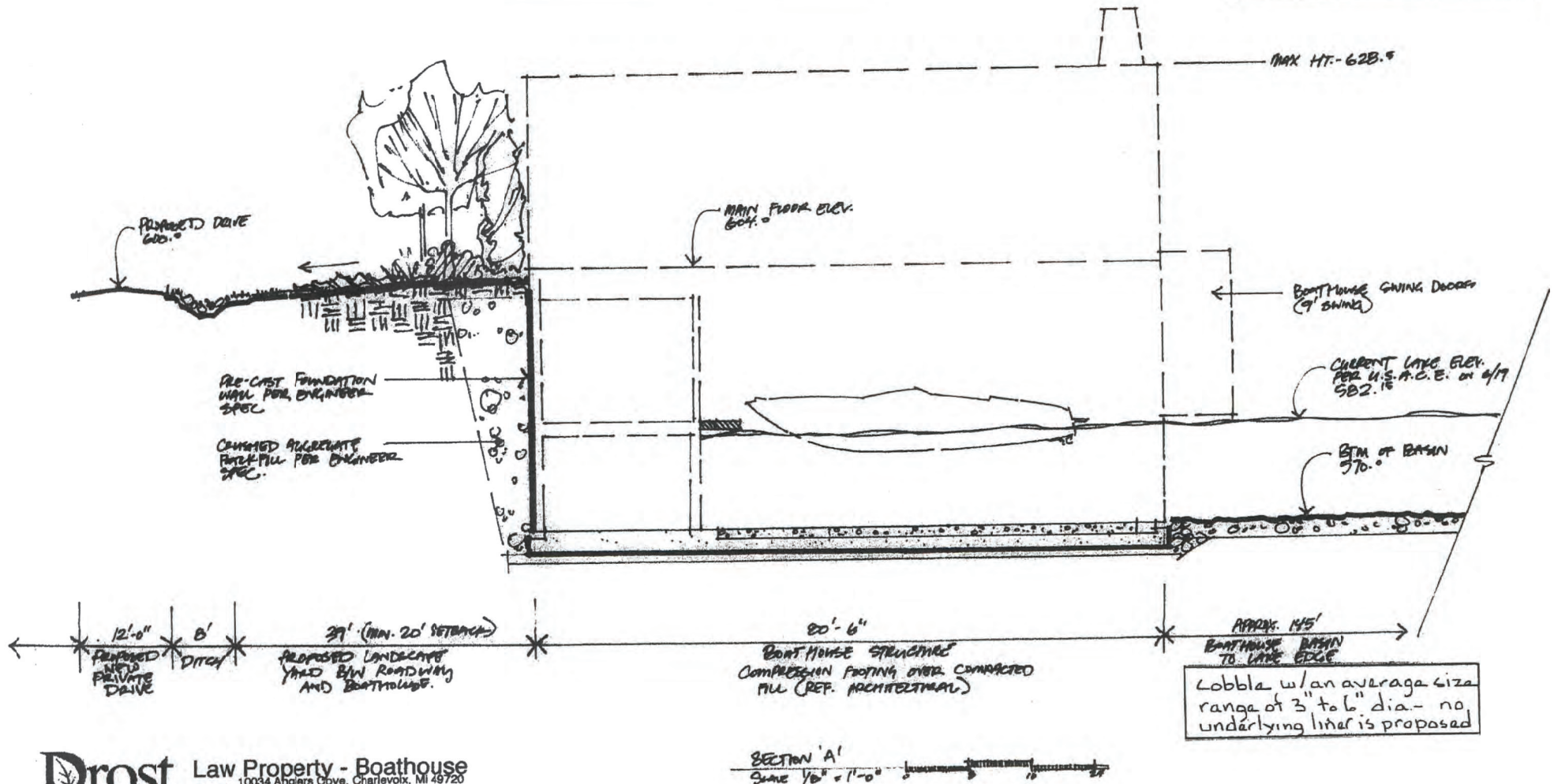
Drost Landscape Company

Date/ 01-11-2022

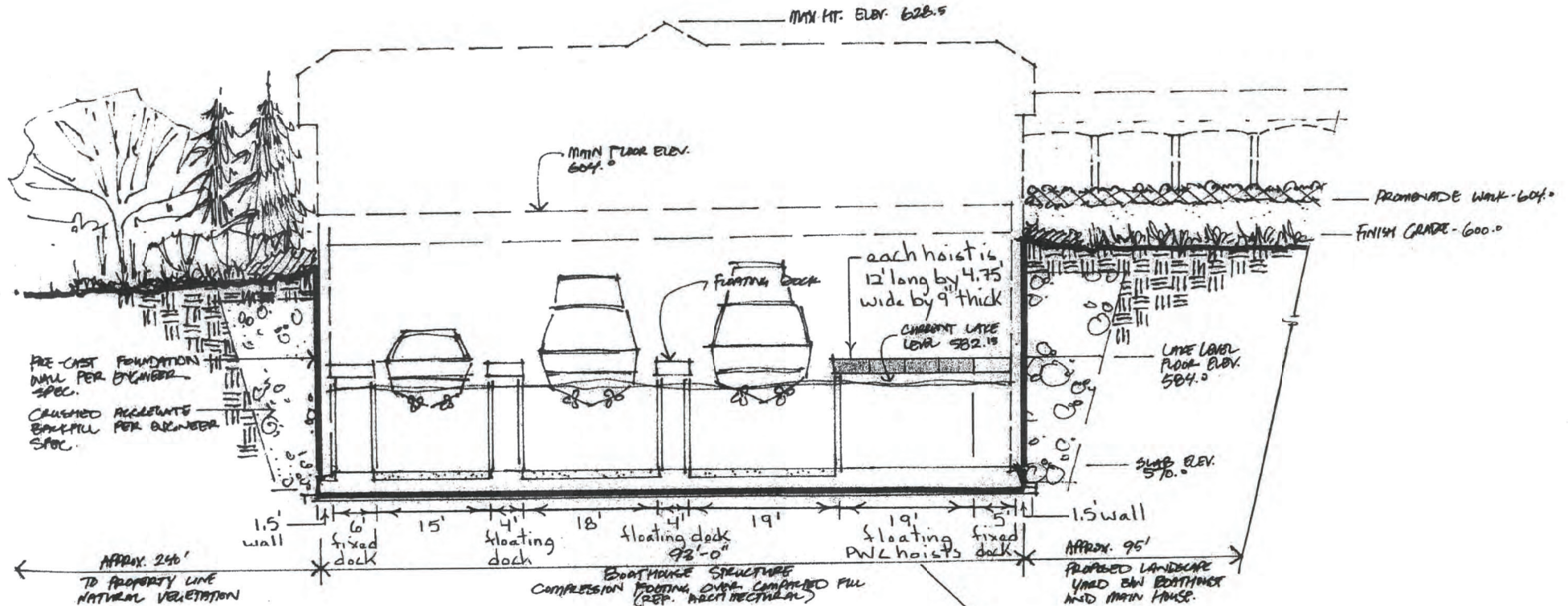
Prepared by/ Great Lakes Ecosystems,

Box 156, Indian River, MI 49749

(c/o Bert C. Ebberts, 231-238-7615)



FILE NUMBER: LRE-2020-01805-41-S20
Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 7 OF 19



Drost Law Property - Boathouse
10034 Anglers Cove, Charlevoix, MI 49720
& Basin June 2020

SECTION 'B'

STATE: $1/B'' = 1 - 0''$

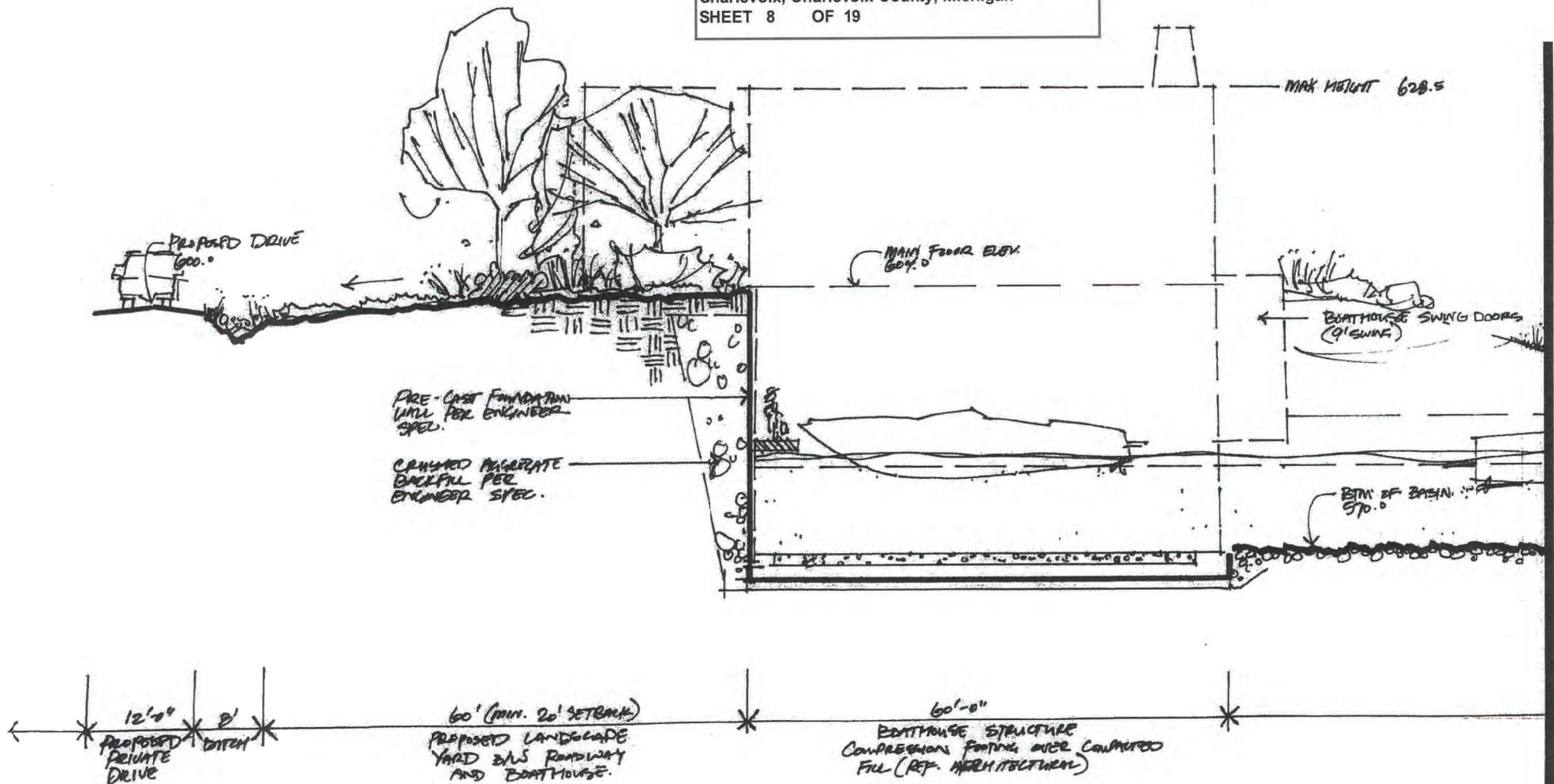


4 hoists total,
each about 4.75'
wide by 12' long,
clipped together
and made of $\frac{1}{2}$ "
thick plastic that
is hollow so it floats
(to support personal
watercrafts or PWCs)

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
Township/ Hayes (T34N, R7W)
Section/ 32 (10034 Anglers Cove)
Body of water/ Lake Charlevoix
Applicant/ Scott & Debra Law via
Drost Landscape Company
Date/ 01-11-2022
Prepared by/ Great Lakes Ecosystems,
Box 156, Indian River, MI 49749
(c/o Bert C. Ebbers, 231-238-7615)

FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
 SHEET 8 OF 19



SECTION 'C'

Scale: 1/8" = 1'-0"

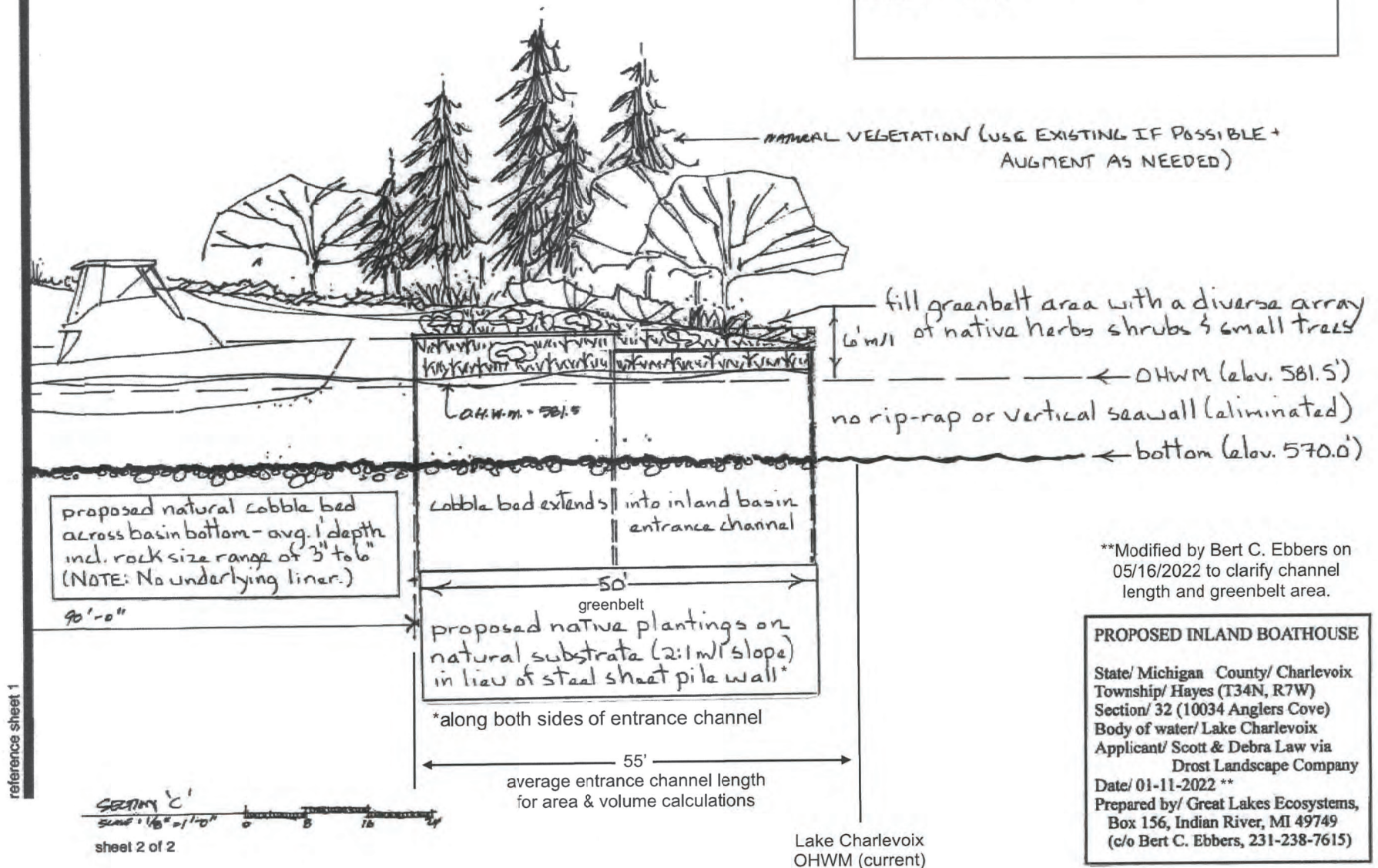
sheet 1 of 2

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
 Township/ Hayes (T34N, R7W)
 Section/ 32 (10034 Anglers Cove)
 Body of water/ Lake Charlevoix
 Applicant/ Scott & Debra Law via
 Drost Landscape Company
 Date/ 01-11-2022
 Prepared by/ Great Lakes Ecosystems,
 Box 156, Indian River, MI 49749
 (c/o Bert C. Ebberts, 231-238-7615)

NOTE: All distances, measurements, elevations & quantities shown on this multi-sheet site plan are conceptual and approximate, intended for Michigan Department of EGLE & U.S. Army Corps of Engineers permitting purposes only (i.e. not a licensed survey degree of accuracy).

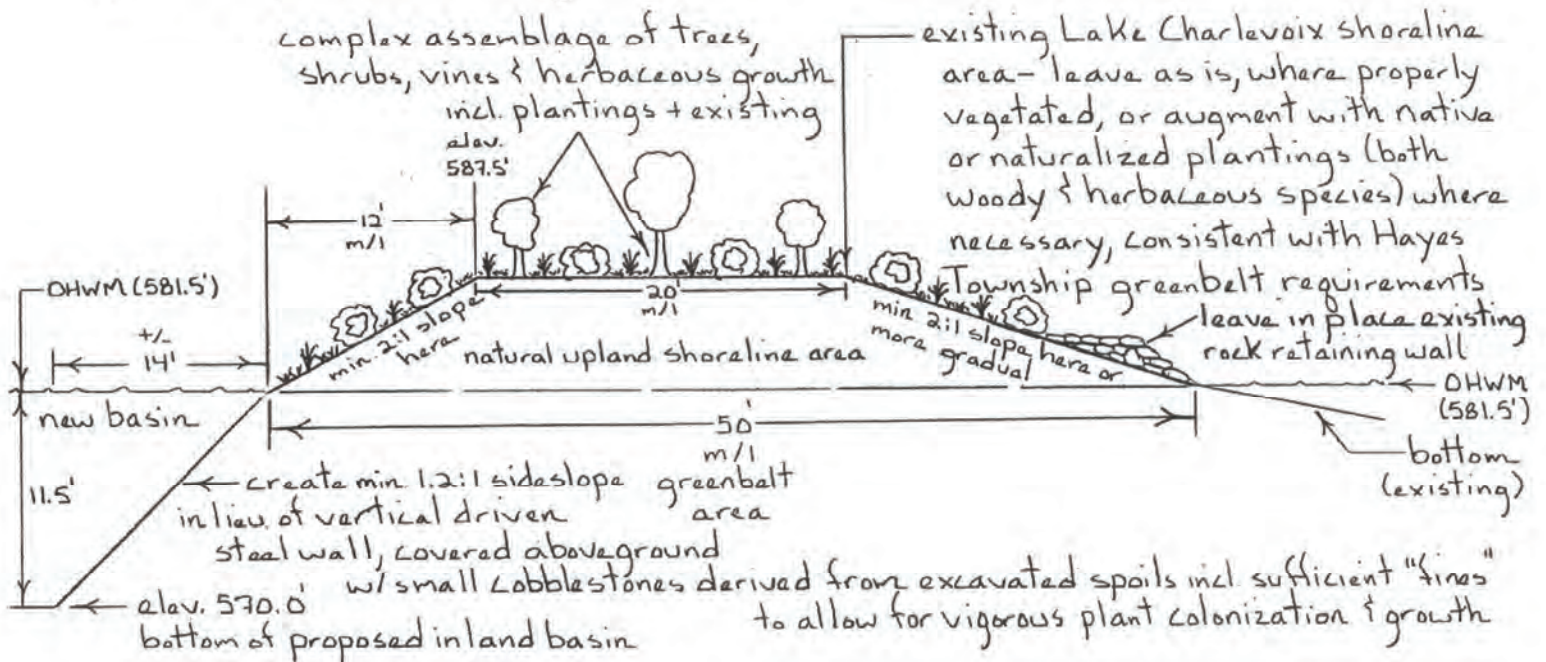
FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
 SHEET 9 OF 19



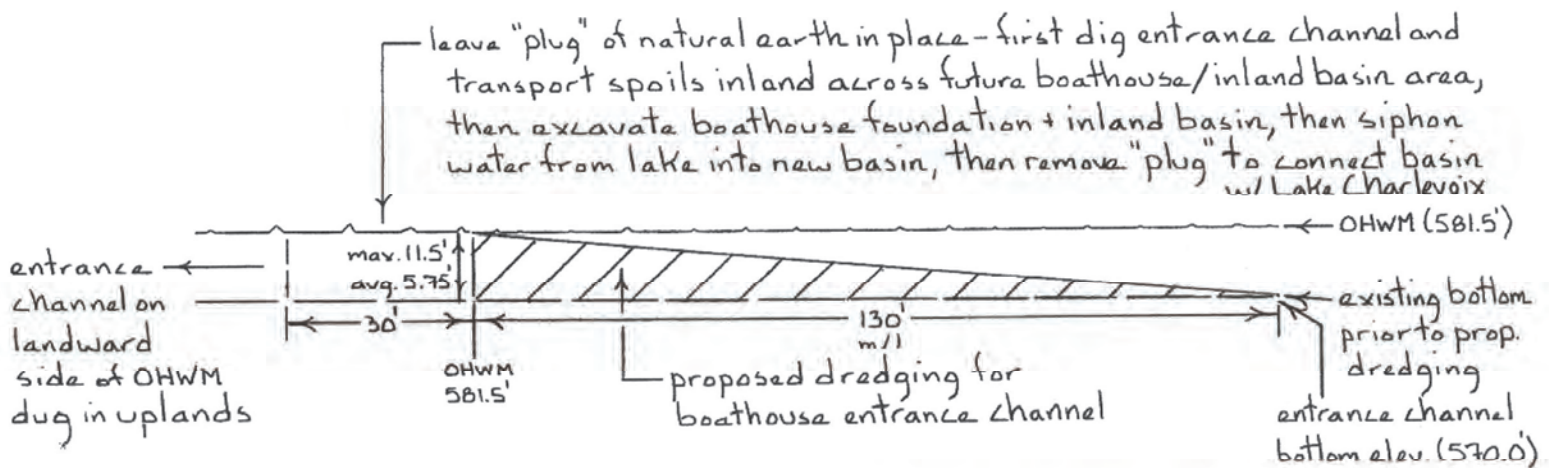
PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
 Township/ Hayes (T34N, R7W)
 Section/ 32 (10034 Anglers Cove)
 Body of water/ Lake Charlevoix
 Applicant/ Scott & Debra Law via
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 Date/ 01-11-2022 **
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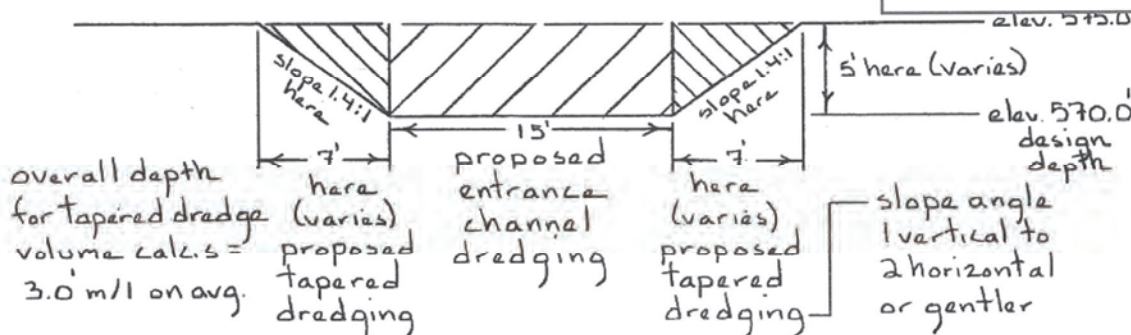
Section D: Scale 1" = 10'
Typical Representative Design



Section H: Scale 1" = 30' (Typical Design)



Section I: Scale 1" = 10' (Typical Design)



FILE NUMBER: LRE-2020-01805-41-S20
Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 10 OF 19

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
Township/ Hayes (T34N, R7W)
Section/ 32 (10034 Anglers Cove)
Body of water/ Lake Charlevoix
Applicant/ Scott & Debra Law via
Drost Landscape Company
Date/ 01-11-2022; mod. 2/14/22
Prepared by/ Great Lakes Ecosystems,
Box 156, Indian River, MI 49749
(c/o Bert C. Ebberts, 231-238-7615)

native plantings continue ← 53' → native plantings continue

top of bank at elev. 584.0 or higher
after implementing native plantings
instead of vertical steel sheet pile wall

43' proposed
channel width at elev. 581.5'
after implementing soft-
shore protection (plantings)
instead of steel sheet piling

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
Township/ Hayes (T34N, R7W)
Section/ 32 (10034 Anglers Cove)
Body of water/ Lake Charlevoix
Applicant/ Scott & Debra Law via
Drost Landscape Company
Date/ 01-11-2022
Prepared by/ Great Lakes Ecosystems,
Box 156, Indian River, MI 49749
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NOTE: All distances, measurements,
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and approximate, intended for
Michigan Department of EGLE &
U.S. Army Corps of Engineers
permitting purposes only (i.e. not a
licensed survey degree of accuracy).

DHWM (elev 581.5' IGLD1985)

proposed sideslope covered
with diverse native plantings, no
steeper than 1 horizontal: 1 vertical
(45% angle) and possibly gentler -
extend new plantings down to DHWM
or farther lakeward if conditions allow.
Include both herbaceous & woody species.

CHERRY LAKE
Elev. = 582.15'

O.H.W.M. = 581.5'

CHANNEL BTM/
TOP OF DREDGE
570.0'

15' proposed
bottom width
of channel as
modified on 1/11/22

Plant slopes on each side with
diverse array of native or
naturalized plantings (both
herbaceous and woody species)
on substrate native to the site
including small cobblestones
derived from excavated
spoils incl. marl
or similar sized smaller
necessary for vigorous
vegetative colonization

APPROX. 220'-0"
TO PROPERTY LINE
NATURAL VEGETATION

15'-0"
CHANNEL FROM
LAKE CHARLEVOIX TO
BOATHOUSE BASIN
TO BE LINED W/ FIELDSTONE

APPROX. 100'-0"

NATURAL VEGETATION
RESTORATION B/W CHANNEL
AND MAIN HOUSE LANDSCAPE.

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Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 11 OF 19

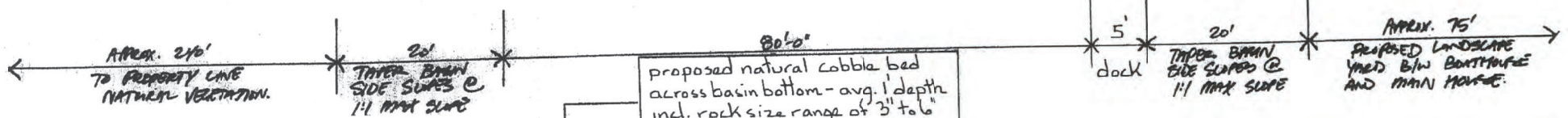
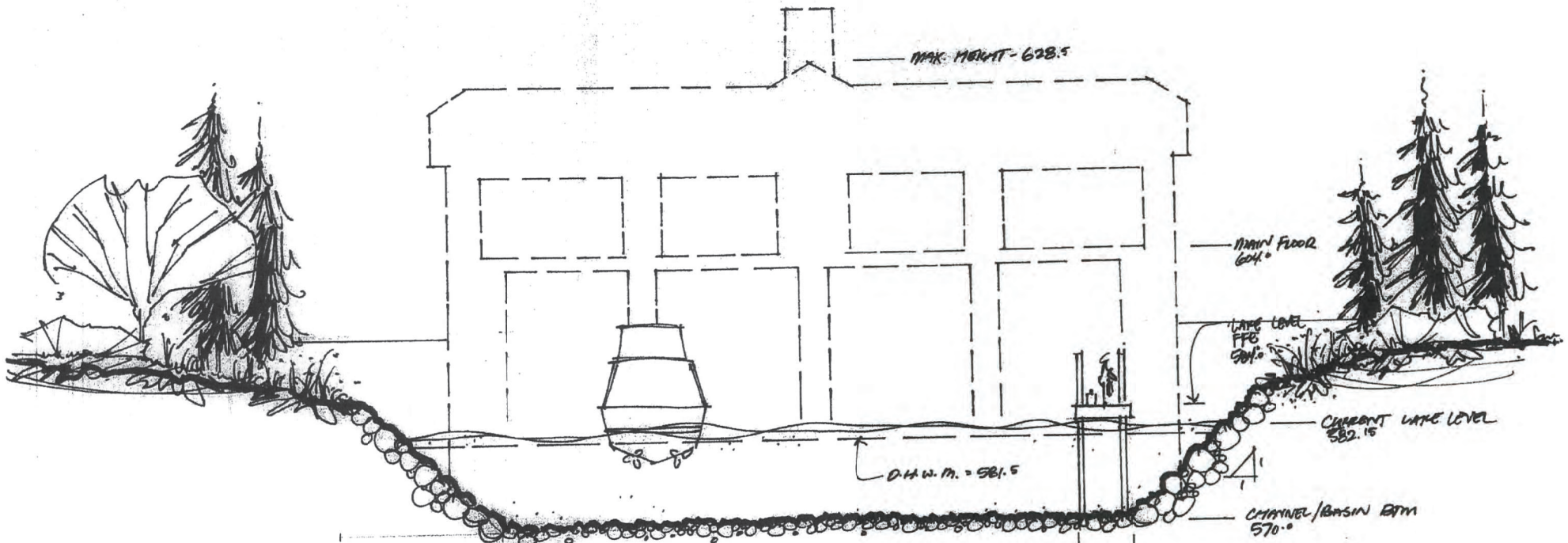
Cobble w/ an average size
range of 3" to 6" dia - no
underlying liner is proposed

NOTE: proposed natural cobble
bed extends up tapered sides
of inland entrance channel
to near the DHWM elevation
where it will merge into plantings

SECTION 'F'

SCALE: 1/8" = 1'-0"

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 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
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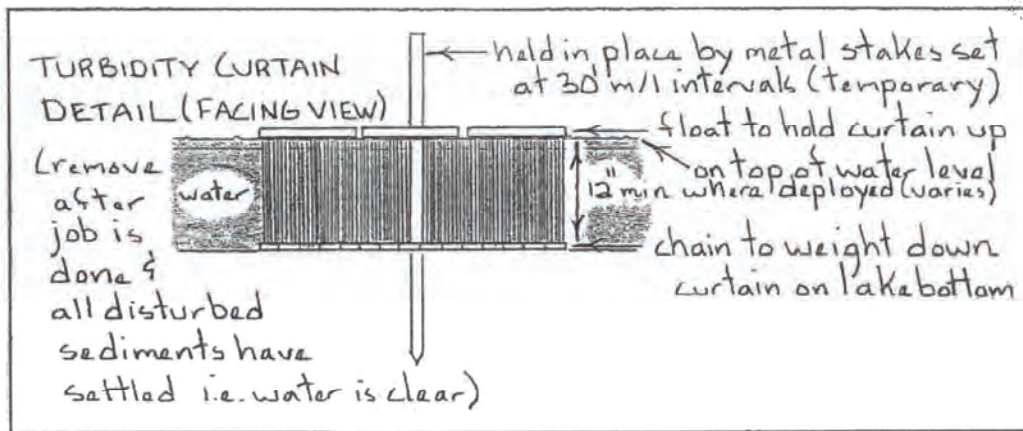
SECTION 'G'
 scale: 1/8" = 1'-0"

NOTE: Proposed natural cobble bed extends up tapered sides of basin to near the OHWM elevation where it will merge into native or naturalized species plantings

Drost Law Property - Boathouse
 10034 Anglers Cove, Charlevoix, MI 49720
 & Basin 2020

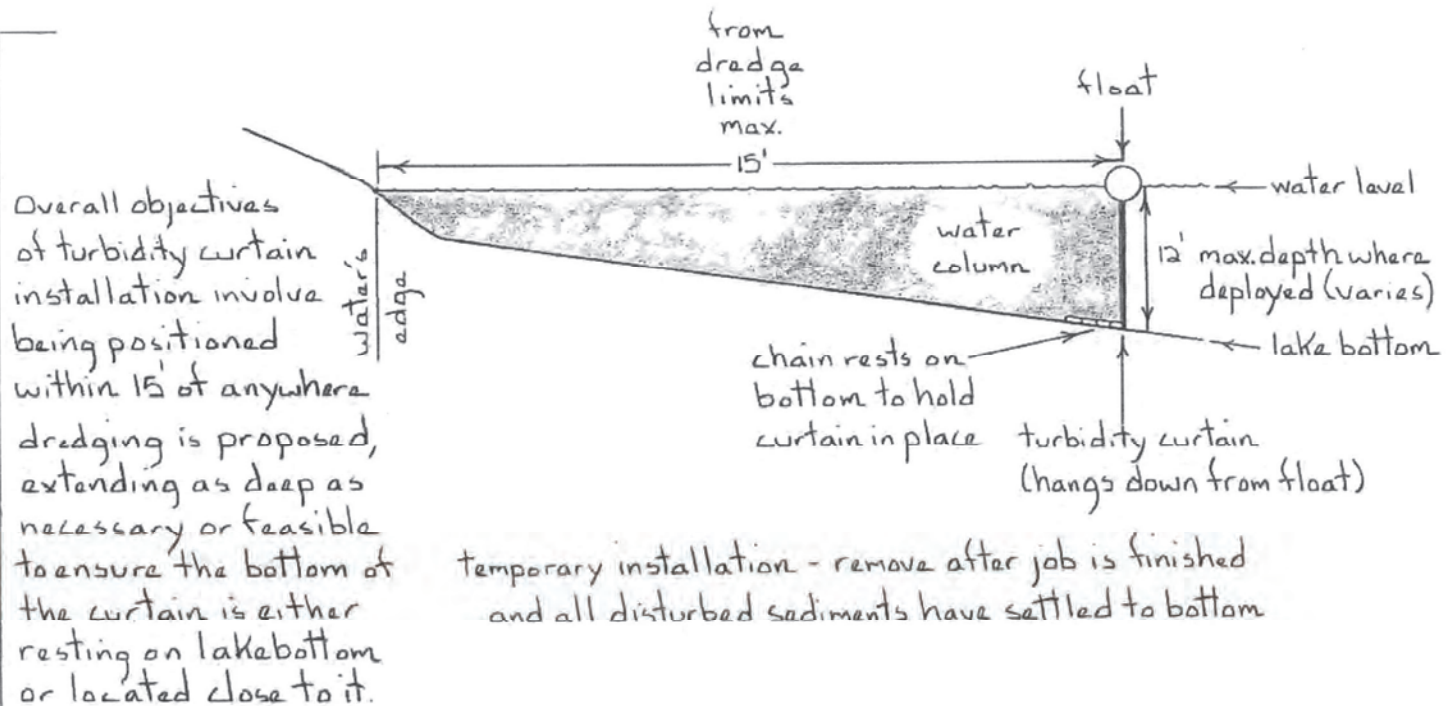
PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
 Township/ Hayes (T34N, R7W)
 Section/ 32 (10034 Anglers Cove)
 Body of water/ Lake Charlevoix
 Applicant/ Scott & Debra Law via
 Drost Landscape Company
 Date/ 01-11-2022
 Prepared by/ Great Lakes Ecosystems,
 Box 156, Indian River, MI 49749
 (c/o Bert C. Ebbers, 231-238-7615)



FILE NUMBER: LRE-2020-01805-41-S20
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Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
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TURBIDITY CURTAIN DETAIL (PROFILE VIEW) - Typical Installation

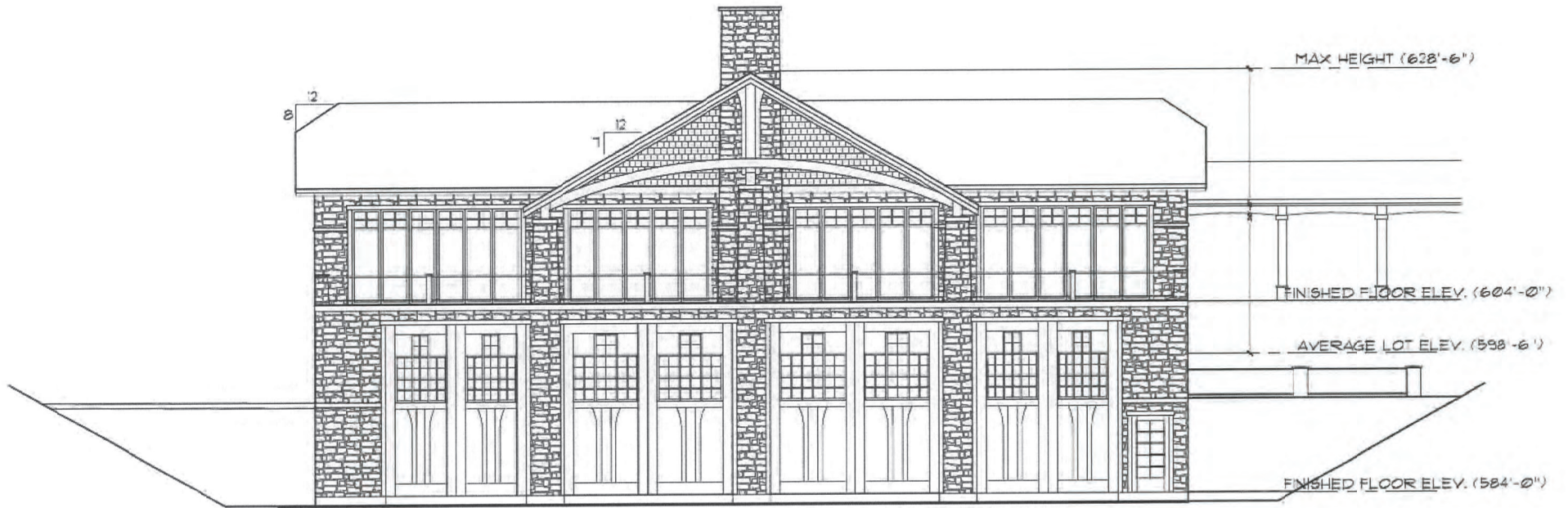


NOTE: All distances, measurements, elevations & quantities shown on this multi-sheet site plan are conceptual and approximate, intended for Michigan Department of EGLE & U.S. Army Corps of Engineers permitting purposes only (i.e. not a licensed survey degree of accuracy).

PROPOSED INLAND BOATHOUSE

State/ Michigan County/ Charlevoix
Township/ Hayes (T34N, R7W)
Section/ 32 (10034 Anglers Cove)
Body of water/ Lake Charlevoix
Applicant/ Scott & Debra Law via
Drost Landscape Company
Date/ 07-02-2020; mod 12/06/21
Prepared by/ Great Lakes Ecosystems,
Box 156, Indian River, MI 49749
(c/o Bert C. Ebberts, 231-238-7615)

FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
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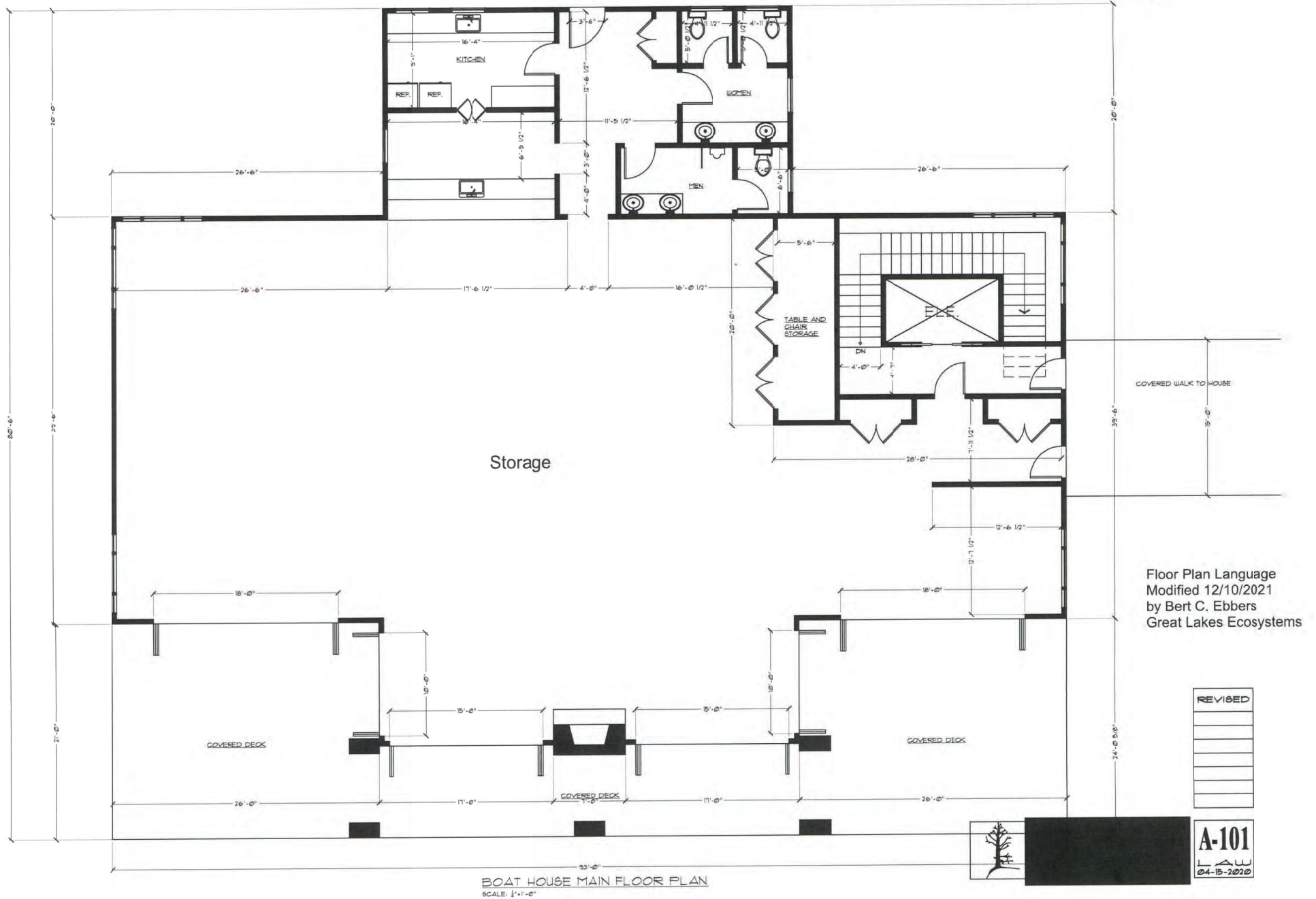


BOATHOUSE LAKE SIDE ELEVATION
 SCALE 3/4"=1'-0"

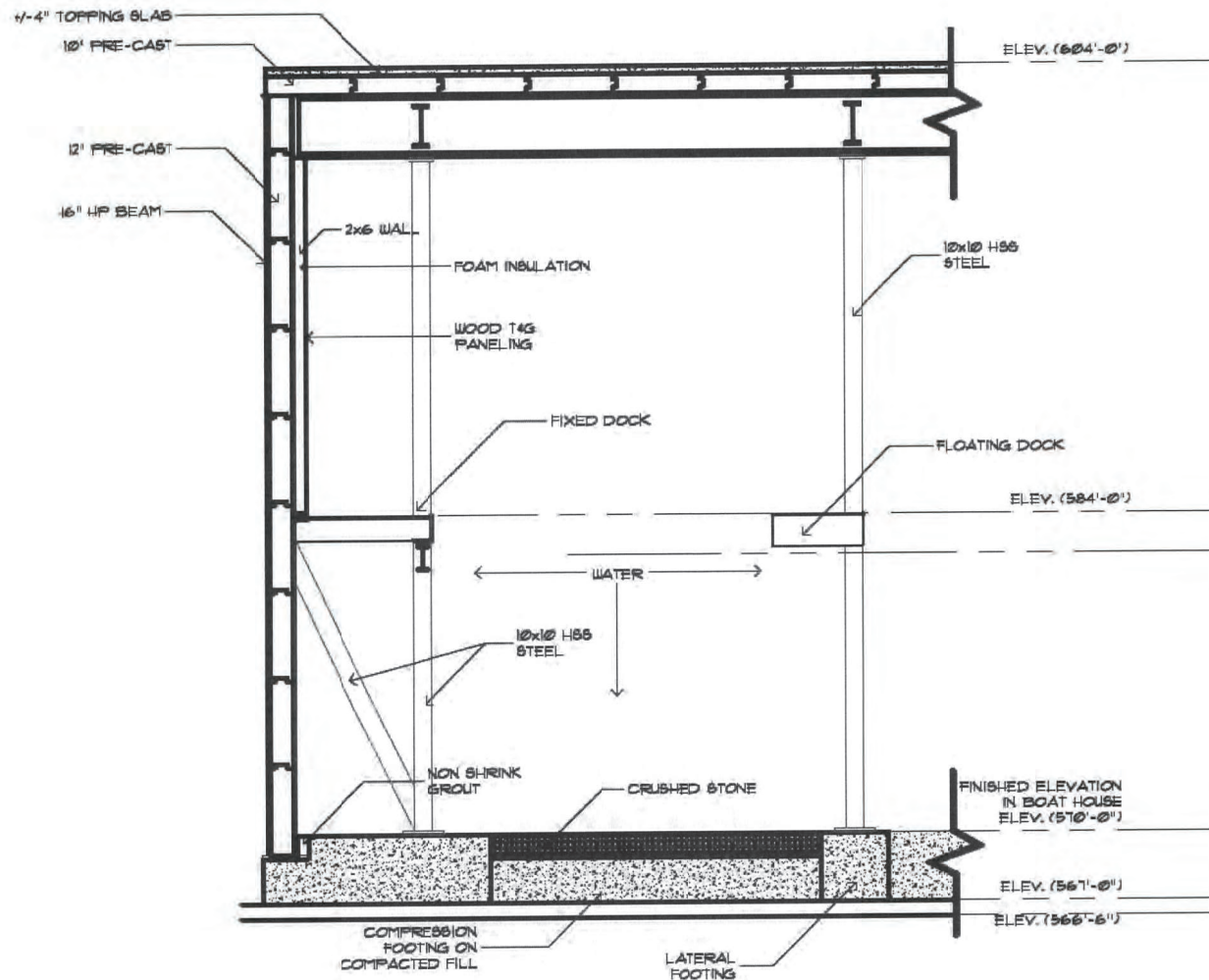
REVISED



A-201
 LAW
 04-18-2020



SHEET 16 OF 19



SECTION A
SCALE: $\frac{1}{8}" = 1'-0"$

REVISED

03/01/2020

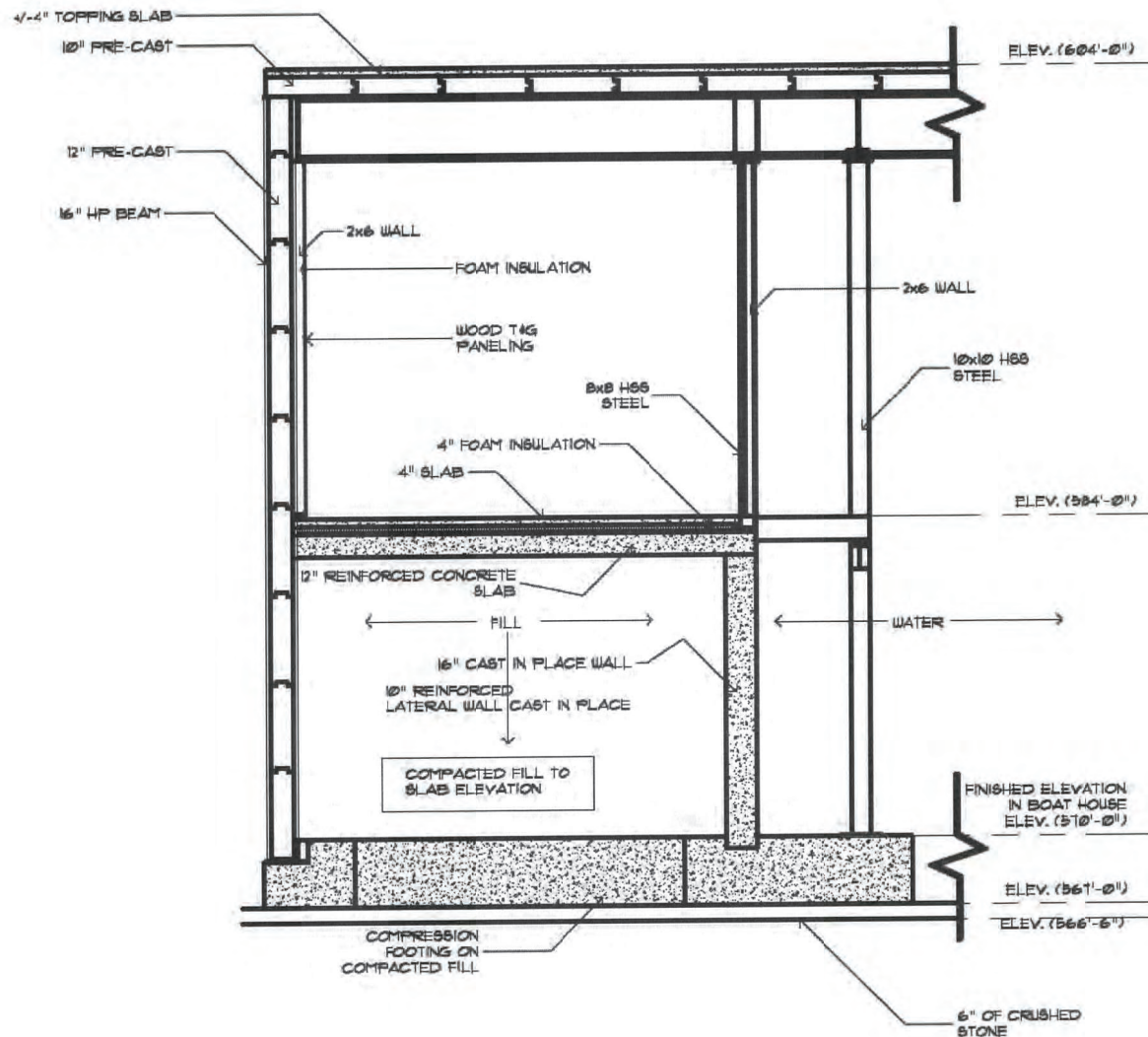
A-301

LAW

04-5-2020

FILE NUMBER: LRE-2020-01805-41-S20
Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 17 OF 19





SECTION B
SCALE: $\frac{1}{8}" = 1'-0"$

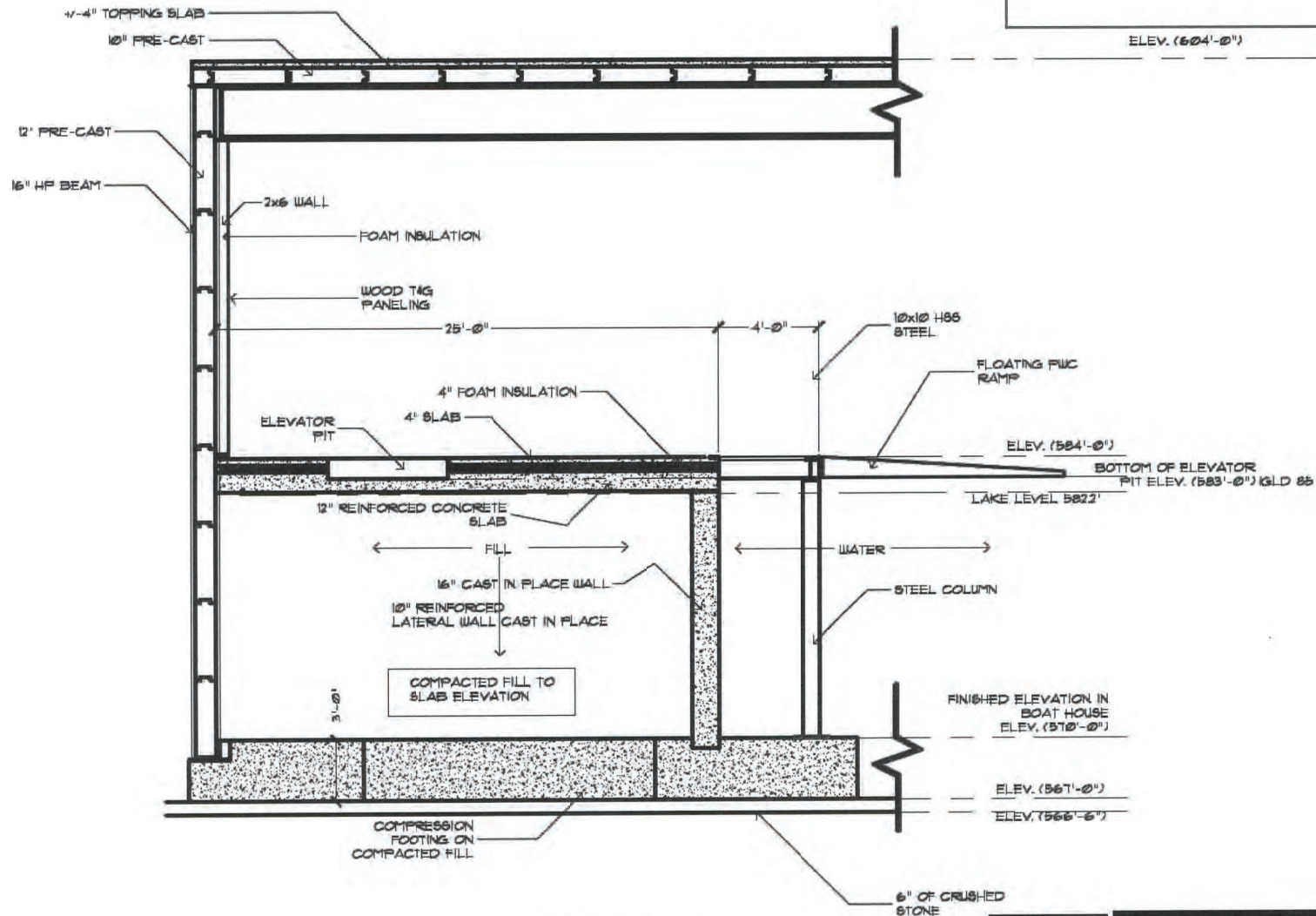
FILE NUMBER: LRE-2020-01805-41-S20
Law - Boat House and Marina Basin
Lake Charlevoix
Charlevoix, Charlevoix County, Michigan
SHEET 18 OF 19



REVISED
03/01/2020

A-302
LAW
04-5-2020

FILE NUMBER: LRE-2020-01805-41-S20
 Law - Boat House and Marina Basin
 Lake Charlevoix
 Charlevoix, Charlevoix County, Michigan
 SHEET 19 OF 19



SECTION C
 SCALE: 1/8" = 1'-0"



REVISED
03/01/2020

A-303
 LAW
 04-5-2020