



Public Works Committee Agenda
Wednesday, May 27, 2020 at 4:00pm

Whitefish Bay
KLODE PARK BEACH

1. Call to Order
2. Review and Approve minutes of February 25, 2020 Public Works Committee Meeting
3. Review and Possible Recommendation – Klode Beach Erosion Restoration Plan
(attachments: Klode Beach Erosion Repair memo dated August 12, 1997 and 2010 photos)
4. Next scheduled meeting – to be determined
5. Adjournment

Cc: Village Board; Village Manager, Department Heads; Village Attorney

Posted: 5/22/2020 Note: It is possible that members and/or possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; action will not be taken by any governmental body at the above-stated meeting other than the governmental body specifically referred to above in the notice.



Public Works Committee Minutes
Tuesday, February 25, 2020, at 5:00 pm
Whitefish Bay Village Board Room

I. Call to Order and Roll Call:

Meeting was called to order at 5:17.

Present: Trustee Serebin, Trustee Buckley, Trustee Davis

Also Present: John Edlebeck – Public Works Director, Paul Boening – Village Manager, Tim Blakeslee – Assistant Village Manager, Spencer Charczuk – Staff Engineer.

Absent: Tom Kindschi

II. Review and Approve minutes of January 28, 2020 Public Works Committee Meeting:

Trustee Buckley moved to approve the minutes of the January 28, 2020 Public Works Committee Meeting. Trustee Davis seconded. Motion passed 3-0.

III. Review and Possible Recommendation - Village 2020 Pilot Foundation Drain Disconnect (FDD) Program

Public Works Director Edlebeck provided a summary of the proposed program for the High School students in the audience. There was discussion about the comments provided from MMSD, preferred locations, battery backups or other backup options, and the proposed cost split with MMSD. The Public Works Committee believed that a \$2,500 grant from MMSD plus a \$2,250 grant from the Village was a good amount. The Village would also supply an additional \$250 grant if a battery back is installed. The battery backup portion is not funded by MMSD. There was a discussion about the future of lateral lining and sump pump programs at MMSD. Trustee Serebin opened the floor for public comments.

Robert Crawford (5017 N Palisades Rd) said that he doesn't feel that battery backups work well and that he had to install a generator.

Trustee Buckley moved the Village Board to consider the 2020 Pilot Foundation Drain Disconnect (FDD) Program for approval. Trustee Davis Seconded. Motion passed 3-0

IV. Review 2020 Project Update - Public Works Director Edlebeck provided a summary of current projects.

V. Adjournment Trustee Davis moved to adjourn at 6:11 pm. Trustee Buckley seconded.
Motion passed 3-0.



Map data ©2020 Imagery ©2020 , Maxar Technologies, U Report a map error

Lat Long

Klode Park Beach
and
Shoreline

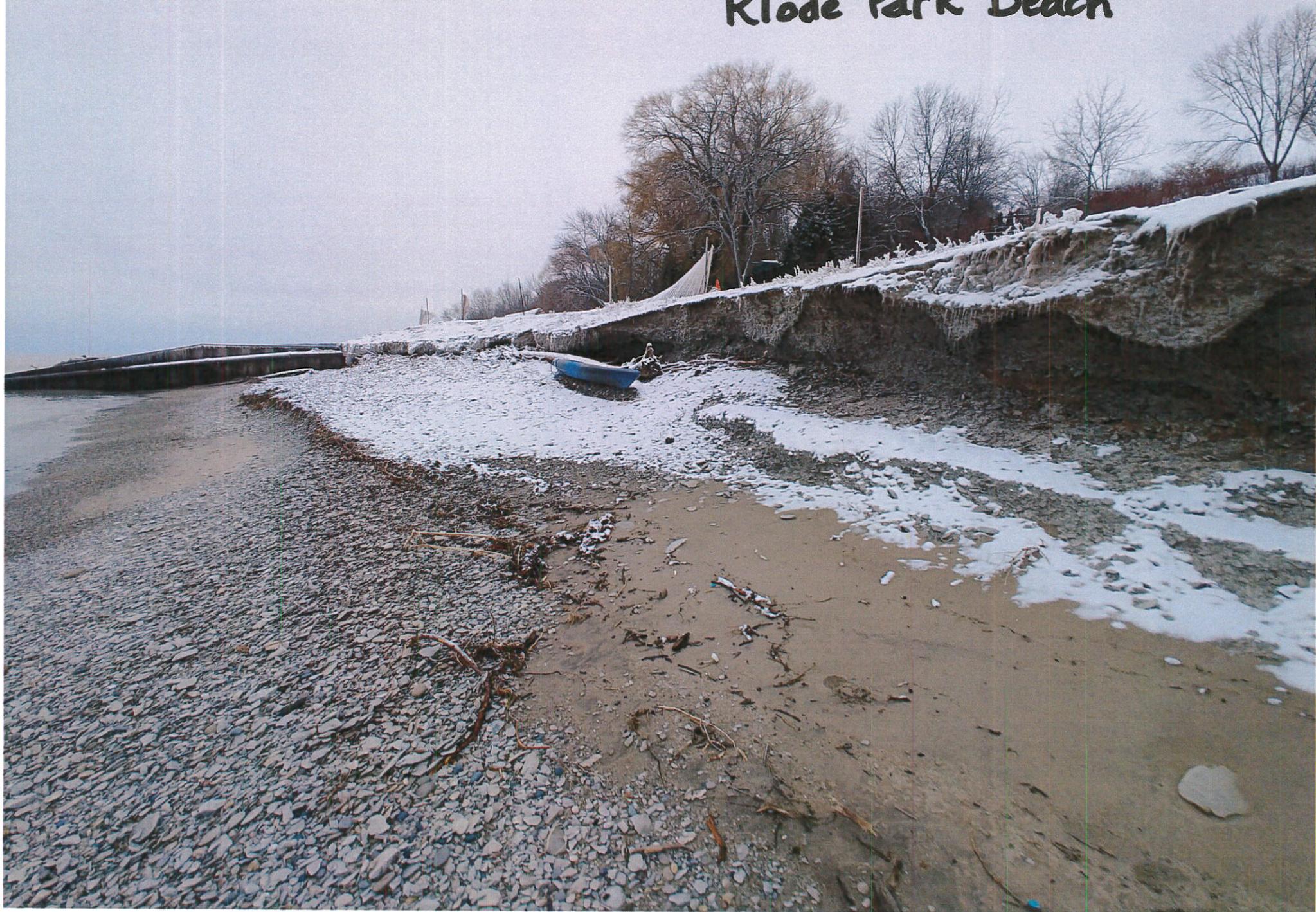
(43.124734, -87.899882)

GPS Coordinates

43° 7' 29.0424" N

87° 53' 59.5752" W

1-16-20
Klode Park Beach

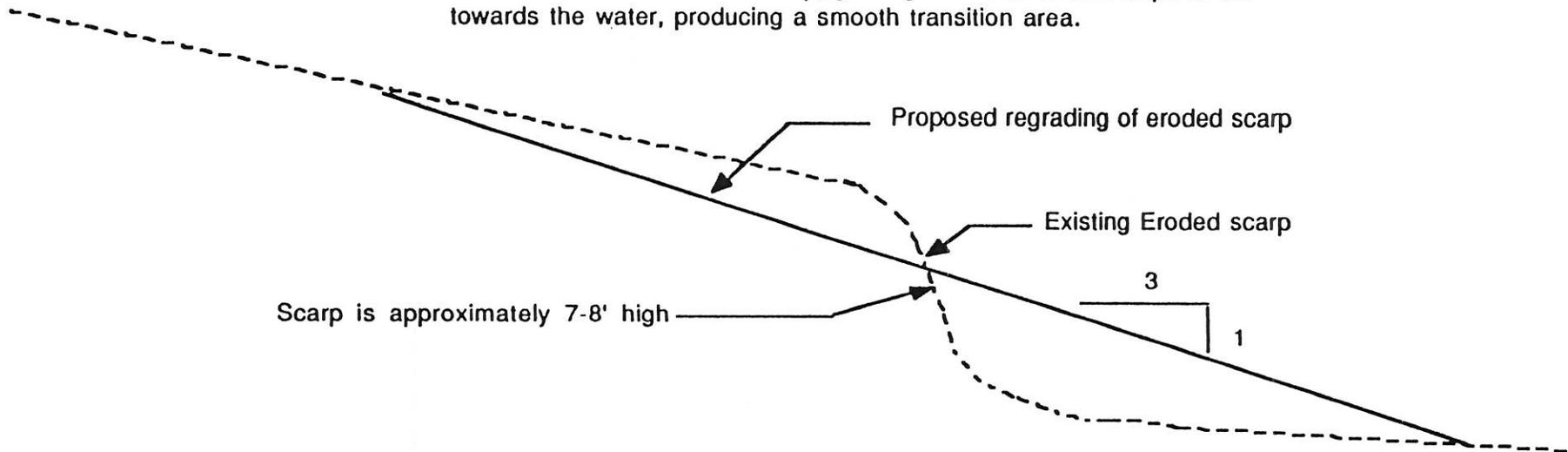


1-16-20
Klode Park Beach



(current situation)*

NOTE: Regrading of existing eroded scarp will begin approximately 12' west of the face of the scarp, grading the material at a slope of 3:1 towards the water, producing a smooth transition area.



Section Through Eroded Scarp - Section E-E

Scale: 1"=4'

3 to 1 slope = un natural

NOTE: There exists at the southern end of the project, south of the southern most steel sheetpile groin, a similar erosion scarp as that noted above. Grading will also be required at this location also and should be included in the base bid. The length of the scarp is approximately 100 feet.

MEMO

TO: Zoning, Parks and Buildings Committee
FROM: Edmund Henschel, Village Manager *EHS*
RE: Klode Beach Erosion Repairs
DATE: August 13, 1997

On July 14th, Oscar Dittrich made a presentation to the Zoning, Parks and Buildings Committee proposing a more permanent solution to the erosion that occurs in the north cell of Klode Beach. He presented a great deal of information and staff was asked to summarize this information and make a recommendation to the Committee.

Based on the annual survey conducted since the late 1980's by Baird Coastal Engineers, the north cell has eroded back approximately 19' and is getting uncomfortably close to the buried retaining wall. We need to take some action to ensure that the retaining wall is not undermined. We have annually regraded the original tunnel rock to create a better slope, but Dale Solon states he has not added any new material in recent years to replace that which has been washed away.

Mr. Dittrich has proposed a two phase approach to solving this problem.. The first is the installation of "Z" shaped blocks laid on their side which would lock together. The blocks would be 6' long with 12" steps going from lake level to the top of the bank (see sketch). Each block would weigh approximately one ton. Mr. Dittrich feels that their weight and the fact that they are locked together will prevent them from being moved by wave action.

Tews Lime and Gravel would make these blocks out of surplus concrete for \$30.00/per block. The total cost of material and installation would be approximately \$50,000. Mr. Dittrich feels this would prevent erosion, improve aesthetic appearance and be safer than the existing 6' or more drop off from the bank to water level.

The second phase would be to construct submerged rock piles between and approximately 100' further out from the existing exposed rock piles in the lake. These would have the effect of creating a permanent barrier to absorb wave energy before the waves reach the shore. A cost estimate for Phase 2 work is not available.

President Gormley noted that when Klode Park was rebuilt in 1986, a certain amount of erosion was anticipated, requiring on-going maintenance. In order to restore the north cell to its original dimensions, would require approximately 600-700 cubic yards of stone placed back into the cell. This would cost approximately \$15,000 - \$20,000.

This material would provide a more uniform slope from the top of the bank to the water and again provide protection to the buried retaining wall. The Public works Department would then have additional material to annually reshape the slope until new fill would have to be added again. This annual maintenance would cost approximately \$1,000/year. The total estimate for a 10 year period would be approximately \$25,000 - \$30,000. (This assumes no new material would be required during this 10 year period.

Based on the above costs, it appears that it would be more cost effective to install additional fill material rather than "Z" blocks. However, assuming the blocks do not move or get undermined as a result of wave action, they would be a more aesthetically pleasing solution.

EMH/pjv

Revetments

Revetments are onshore structures built to protect the toe of a bluff/bank from erosion caused by wave action. These structures are constructed at a stable slope angle and create a covering of erosion resistant material from the toe of the bluff up to a point where wave action typically does not reach. Since material eroded from the bluff/bank is one source of beach-building sand, some regulatory agencies may require that one of the design components for a revetment to be the inclusion of sand pre-filling in the amount equal to that which would have been added to the system by erosion of the bluff/bank over the life of the structure.

Typically consisting of armor stone, precast concrete block, or concrete modules, revetment slopes can be smooth or rough depending design of the structure. The toe or most lakeward part of a revetment is usually located on or buried in the lakebed. Burying the toe in the lakebed lessens the chance for damage to the structure due to scouring, or erosion, at the base of the structure. The crest or most landward part of a revetment is designed to a height where waves will no longer be a threat to the land. The crest height must be high enough to reduce the chances of waves removing the soils above or behind the structure. This upper extent of the revetment should be determined on a site-by-site basis according to the wave conditions.

Depending on the design, revetments can be permeable, allowing water to move through the structure, or impermeable, where the waves and water run off the face of the structure. In the case of the permeable structure, a proper filter layer of smaller stone and filter fabric must be included in the structure. If the filter layer is improperly designed or constructed, or not included, erosion behind the revetment is likely to occur because the water will move too quickly through the structure, eroding the less resistant materials underneath.

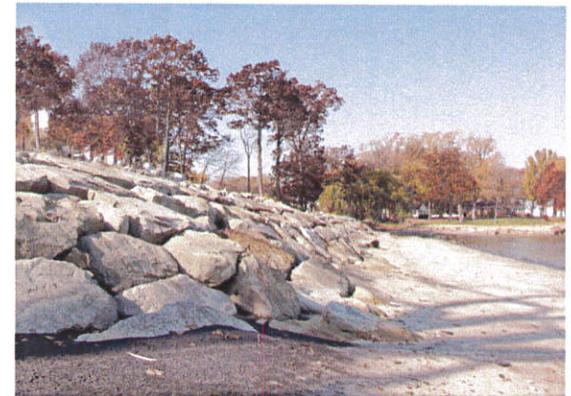
Revetments are built on areas adjacent to the bluff toe. The area covered by a revetment usually includes the beach area and/or the shallow nearshore, which is typically the same area where beach building occurs. Once the revetment is built, however, the area where a beach could build up in front of the structure will be deeper because it is further offshore. The likelihood of a new beach forming in this deeper area is lower than before construction because it would require the build up of much more sand due to the greater depth. Additionally, the sand which would have eroded from the area now covered by the revetment will need to be replenished within the system.

To maintain a revetment, periodic monitoring of the structure is necessary. This may include re-positioning or replacing the armor units.

Revetment construction requires the proper placement of large armor units along a specified slope. Due to these conditions, the design and construction of a revetment requires the services of a professional engineer and a contractor. Maintenance of these structures will likely also require a contractor's services.



Revetment

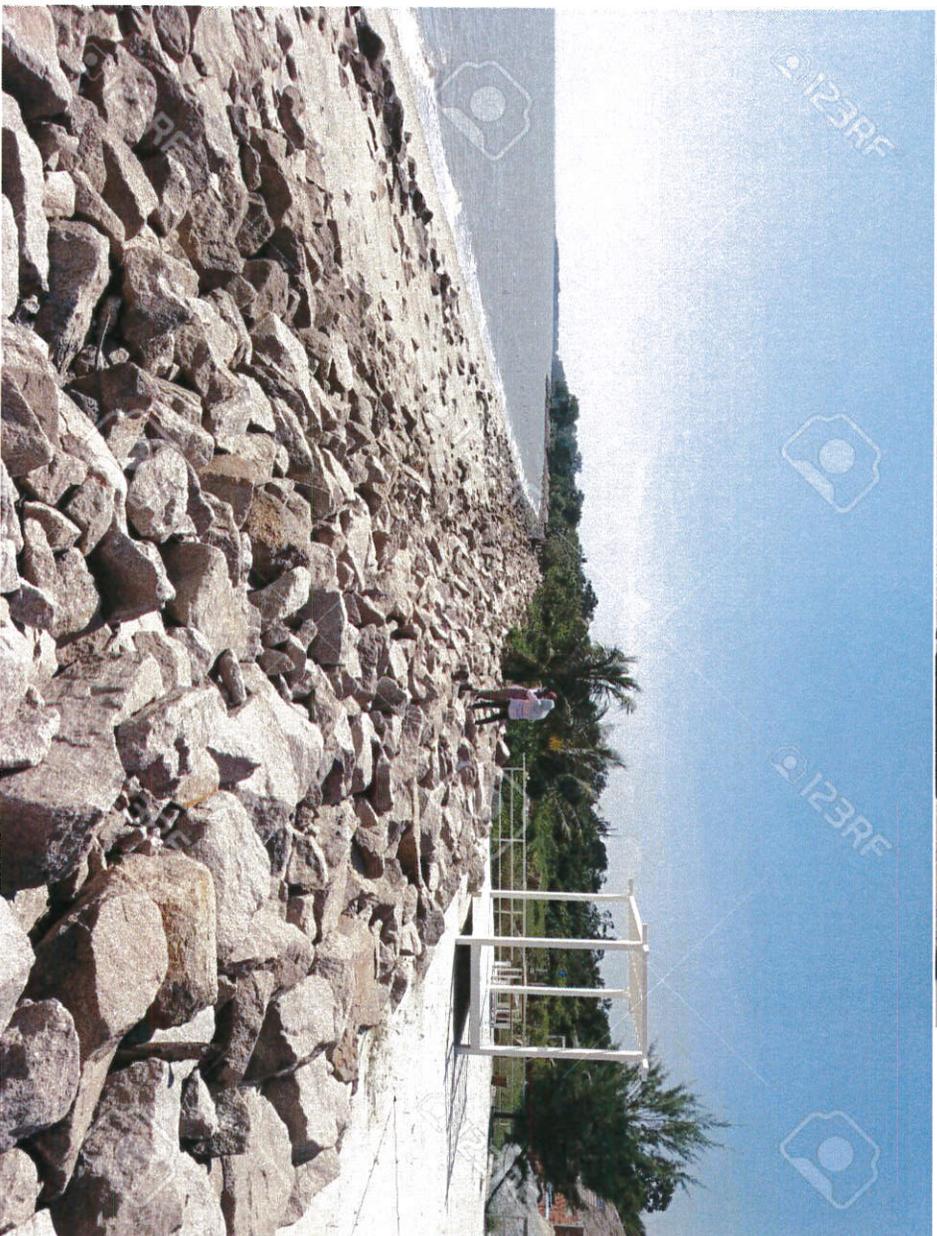


Revetment



Revetment

Revetment Examples



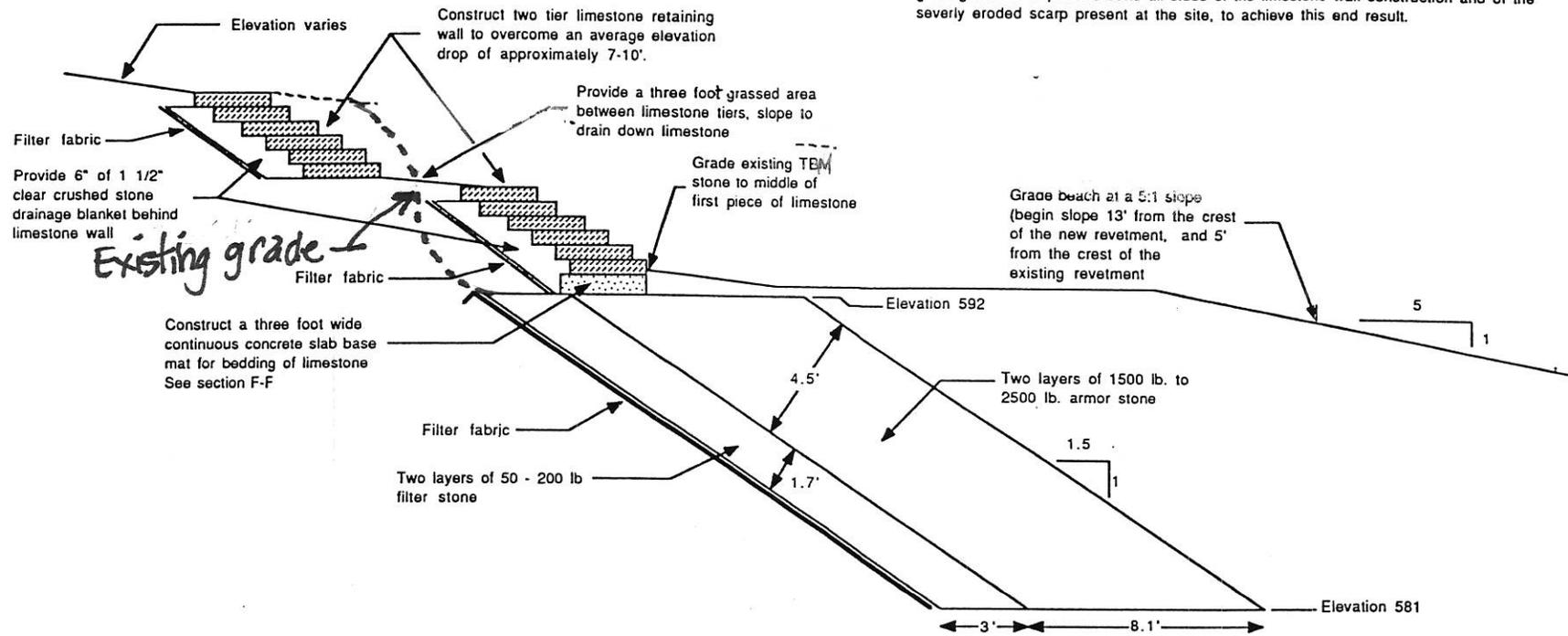


* (typical revetment project)

NOTE: There is approximately 4.5' of TBM Spoil material existing above the proposed new grades, east of the new and existing revetment sections. In addition, approximately 11' of additional excavation will be required to construct the new revetment.

The additional material between existing and new grades will be graded towards the lake and evenly distributed in this general area. The Contractor may encounter a cohesive general fill, substantially different than the stone fill, sandwiched between layers of TBM Spoil material, if this is the case, the Contractor will rebury this general fill material after completion of the new revetment section and cover with TBM Spoil material.

The intent of the limestone wall is to overcome the obvious elevation difference and to provide an aesthetically pleasing overlook area for pedestrian use, additional meticulous grading will be required around all sides of the limestone wall construction and of the severely eroded scarp present at the site, to achieve this end result.



Section Through New Revetment - Section D-D

SCALE 1" = 4'

* Note: Beach access an issue