TRANSITION STUDY REPORT

HOME OWNER ASSOCIATION

Prepared for:

Prepared by:

CRITERIUM ENGINEERS
5 Depot Street, Suite 23
Freeport, ME 04032
1-866-966-1969
www.criterium-engineers.com

MEMBER OF community ASSOCIATIONS INSTITUTE

November 17, 2020

TABLE OF CONTENTS

1.0 INTRODUCTION

At your request, Criterium Engineers has provided a Transition Study for the Homeowner Association (HOA) known as . The full scope of this study is discussed in our proposal attached in Appendix A.

2.0 DESCRIPTION

The , located at
is an Active Adult Community consisting of roughly 800 planned homes, of which approximately 450 are completed and sold.

Based on your RFP and our subsequent work, we have included the following list of components and assets in our studies. This list will be revised and updated as necessary as the Studies progress to ensure accurate, quality results for the HOA.

For the purposes of our study, this complex will be divided into three segments:

1. The **Lodge**, including the Lodge, Pavilion and Tennis operations building
2. The **Amenities** including the pool (indoor and outdoor), pickleball courts and tennis courts
3. The **Site**, including the paving (except public portions), landscaping, irrigation, retaining walls and storm water management system (including ponds, lake and dam)

- *Lodge Complex Exterior*
  - General Structural Review (Where is visible)
  - Roof Coverings
  - Exterior Building Maintenance
  - Exterior Energy Efficiency/Thermal Insulation Adequacy
  - Exterior Pool Surface Maintenance, Decking, Fencing, Pumps and Filters
  - Exterior Spa, Heater, Decking
  - Exterior Fire Pit
  - Exterior Grills
  - Exterior Deck and Patio Furniture
  - Dumpster and Fencing
  - Pool/Courts Equipment Building
  - Pool/Courts Restrooms
  - 4 Clay Tennis Courts: Surface Maintenance, Accessories, Fence, Lighting
  - Tennis Court Maintenance Equipment
  - 8 Pickleball Courts: Surface Maintenance, Accessories, Fence, Lighting

- Pickleball Court Maintenance Equipment
- Parking Lot: Sealing, Resurfacing, Striping, Lighting
- Lodge Decks, Patios and Breezeways
- Lodge Sidewalks
- Landscape Lighting
- Flag Pole Refurbishment

- *Lodge Complex- Interior*
  - Telephone/ Voice systems
  - Computers/ Printers/ Networks
  - Alarm Systems
  - Building Security/Access Systems
  - Office Furniture
  - Ballroom Audio/Video Equipment
  - Ballroom Furniture
  - Interior Building Maintenance and Painting
  - Indoor Floor Coverings
  - HVAC Systems, including exterior condensers
  - Plumbing Systems
  - Water Heaters
  - Interior Restrooms
  - Kitchen Refrigerator
  - Kitchen Microwave
  - Game Room/ Conference Room Furniture
  - Fitness Center Exercise Equipment, Accessories, TVs
  - Indoor Pool Surface Maintenance, Decking, Pumps, Filter, Heater
  - Electrical System

- *Grounds and Landscaping*
  - Monuments and Lodge Signage
  - Lake
  - Sidewalks
  - Berms
  - Pocket Parks Sidewalks and Furniture
  - Irrigation System (Pumps, Controllers and Liners)
  - Retaining Walls (Concreate Block, Stone, Fencing)
  - Detention/Retention Pond Structure
  - Detention/Retention Pond Pumps and Drainage
  - Common Area Fencing

3.0 EXECUTIVE SUMMARY

The project is well built, typical of other projects we have worked on. There are, however, as with any project of this scale, some conditions that will need to be resolved before the project can be considered substantially complete and ready for acceptance by the Association. These include the following:

1. Resolve Lodge HVAC concerns
   a. Conduct infrared scan of the perimeter
2. Resolve Natatorium HVAC concerns
3. Further investigation and resolution of the Lodge north wall siding concerns
4. Provide safe, OSHA compliant access to the Lodge mechanical spaces
5. Correct site erosion issues
6. Correct retaining wall deficiencies
7. Develop a plan to address the deterioration and eventual failure of the large earth dam
8. Develop plan to resolve Pond concerns
9. Assure effective performance of storm water management system, including ponds
10. Develop a "punch list" for the smaller items with an action plan for how those things will be done and by whom

Most of the rest of our findings are typical for this type of project. The report that follows discusses these areas.

4.0 METHODOLOGY

The inspection and evaluation of this building was conducted by members of the Criterium Engineers team including:

H. Alan Mooney, P.E.
Glenn Sollie, P.E.
Dan Dormady, P.E.

Resumes are provided in Appendix E.

Inspections were conducted on the following dates:

July 8 & 9, 2020	Dormady
July 8 & 9, 2020	Mooney
July 30, 2020	Sollie
August 4 & 5, 2020	Mooney
August 27, 2020	Dormady

In addition, we have reviewed numerous documents related to this project. Those include:

- Retaining wall plans
- Landscaping plans
- shop drawings and submittals
- Asset list
- 2019 Retaining Wall Observation reports by

See Appendix D for the complete list.

In addition to our onsite time and various meetings with the Transition Study task force, we conducted a review of our findings for the Amenity Center complex with representatives from the contractor, , and the developer, on August 5, 2020. Our memo summarizing that tour and subsequent discussion with the Builder and the Developer is included in Appendix C.

5.0 STANDARDS AND LIMITATIONS

Criterium Engineers shall perform duties to at least the professional standards consistent with a Licensed Professional Engineer, but does not guarantee or warrant that all adverse conditions concerning the property can be or will be discovered and included in the Report. We are not responsible for conditions that could not be seen or were not within the scope of our service at the time of the inspection.

This Report summarizes our professional evaluation of the systems and components of The HOA. It is based on visual evidence available during a diligent inspection of all reasonably accessible areas and a thorough review of the documents provided. No surfaces were disturbed, no furnishings or fixtures were moved, and no material sampling or laboratory testing was performed.

In some cases, our findings are based on observation of a representative sample of a particular component, assembly or system. Further, for some concealed features, we may report the suspected configuration based on our experience with typical construction of similar facilities. We cannot be responsible for exceptions in either case.

6.0 LODGE, PAVILION & TENNIS OPERATIONS BUILDING

6.1 Building structure and exterior

These buildings are conventional, wood framed structures with concrete foundations, slab on grade floors and prefabricated wood trusses for roof framing.

In general, the cement board siding on these three buildings is in good condition and appears to be properly installed. The flashing is installed at horizontal joints. The siding joints appear to be properly caulked and the siding boards appear to be well-attached.

The siding on the right (north) gable wall of the Lodge is wavy. There are several possible causes for this including improper installation, movement in the underlayment and the configuration of the gable wall framing. Additionally there may be some humidity dynamics involved because of the way the insulation is installed under the roof instead of at the ceiling level.

As noted in our memo in Appendix C, this condition deserves further investigation.

At the wood columns near the left front corner of the clubhouse, there are gaps between the column and lower wood trim wrap. Water will seep into this gap and cause the trim to warp and detach prematurely.

The adhered faux stone siding appears to be installed properly, and there is a weep screed at the bottom edge of the stone. A stone has become detached and is missing near the left front portion of the clubhouse.

Manufactured stone veneer is the exterior finish at many locations around the lodge. MVMA, Manufactured Veneer Manufacturers Association, as well as most manufactured stone veneer installation instructions require 4" - 6" clearance between softscape and the bottom of the stone veneer application. This is to prevent capillary action from wicking moisture up into the wall cavity. There are several locations (in the photos we have reviewed) where this clearance has not been maintained. The grade at these areas should modified to assure proper clearance.

While we were in the attic spaces, it is worth noting that in the areas of the attic we entered, we did not observe any instances of where the pre-manufactured trusses had been cut or modified by the HVAC installers. The locations of the air handlers and ductwork appeared to be well laid out to prevent this from happening. This is consistent with good construction practice.

Overall, with the exception of the north wall, the condition of the structure and exterior of the buildings is good.

6.2 Roof

The roofs are primarily composite shingles. There are a few areas, mostly at the dormers, where standing seam metal roofing has been used.

The metal roofing appears to be well installed; we did not observe any significant deficiencies.

For the composite shingle roofing, we checked several locations around the building eaves, and found the drip edge flashing to be installed over the felt paper on the roof decking, rather than being shingled beneath the felt. This is not compliant with applicable roofing standards and codes and could cause leaks in wind-driven rain and shingle displacement at the eaves.

Also, while on the flat roof (near the mechanical equipment), we observed a similar condition that the drip edge was installed with staples to the roof decking and that the felt paper was installed underneath the drip edge. As noted, this is a code compliance issue since the felt underlayment should be installed over the top of the drip edge to provide shingle style overlaps so that water does not get trapped behind the drip edge and cause deterioration of the structural sheathing.

At some wall/roof joints, kick-out flashing is installed at the lower end of the flashing to direct storm water to the gutters. However, this detail is not present at all roof/wall flashing intersections.

Construction debris remains on the clubhouse roof surface (nails, shingle scraps, etc.)

Overall, with the exceptions noted about, the roofing systems are well installed and in good condition. The drip edge and flashing should be corrected.

6.3 Mechanical

LODGE

The Lodge building is heated and cooled by split system air conditioning with natural gas-fired furnaces. The condensing units are located on the right side of the building on pads and on the flat roof area on the central left portion of the building and the gas furnaces are located in the attic spaces. There are a total of nine York systems in the Lodge. Based on the drawings reviewed, the following condensing units and gas furnaces were specified for the Lodge:

Location	Condensing Unit	Cooling (tons)	Furnace Unit	Heating (MBH)
Fitness Center	YCE48B21S	4	TM9V080C16MP11C	80
Fitness Center	YCE48B21S	4	TM9V080C16MP11C	80
Ballroom A		5	TM9V120D20MP11C	120
Ballroom B		5	TM9V120D20MP11C	120
Conference Room/Offices	YCE48B21S	4	TM9V080C16MP11C	80
Restrooms/Kitchen/Storage /Corridor		2	TM9V060B12MP11C	60

Lobby/Reception/Corridor/ Office	YCE42B21H	3.5	TM9V080C16MP11C	80
Locker Rooms/ Corridor/Storage Rooms		2	TM9V060B12MP11C	60
Yoga/Massage/Corridor		3	TM9V080C16MP11C	80

Based on the condensing units actually installed on the right end of the building on pads, the two Ballroom units are a different York model number: YCE60B21SA and the condensing unit for the Restrooms/Kitchen/Corridor and Storage room is a different York model number: YCE24B22SA. These are both the same size as the original specified.

Based on the condensing units actually installed on the flat roof area, a different York model number was installed for the Locker Rooms/Corridor/Storage: YCE24B22SA and for the Yoga Room: YCE36B2HA. These are both the same size as the original specified.

The HVAC systems are controlled by individual, digital, programmable thermostats. A building energy management system was not reported or observed, nor was it referenced on the drawings reviewed.

All of the units actually installed have the same cooling capacity of the originally designed units and, therefore, we are not concerned about the model number changes that indicate different factories of origin, dates of manufacture, etc. However, due to the added volume of air required to be heated/cooled (see below regarding attic insulation), there may be areas of the building that will not achieve goal (or normal design) temperatures of 74-76-degree indoor temps on very warm days.

In the attic of the Lodge, according to the drawing provided for review, R-38 faceless, fiberglass batt insulation was to be installed throughout the floor of the attic. However, based on visual observations, no fiberglass batt insulation was installed in the attic and spray foam insulation was installed in between the roof rafters at the roof level.

We have not reviewed any heat/cooling load calculations however, it is likely the added volume to heat/cool the attic space was not in the original design configuration. Correctly sized equipment would include this attic volume if the thermal envelope was going to include the attic. Undersized equipment will result in areas of the building that cannot achieve goal temperatures of 74-76-degree indoor temps on very warm, humid days. We recommend that the Mechanical Engineer of record provide heating and cooling load calculations that reflect the current insulation condition.

Also, since we saw some light coming from the outside along the eaves while we were in the attic above the Lodge, we recommend an infrared scan of the perimeter to confirm the continuity of the

building envelope, any air leaks along the eave will compromise the performance of the HVAC system.

The small room on the right side at the end of the corridor near the entrance to the indoor pool room contains the fire alarm control panel, electrical panels, the phone system and internet modems and other electronic equipment for the building. Based on the drawings reviewed and field observation, no air supply duct was provided for this room. While this configuration appears to conform with the drawings, small rooms such as this one that contain electronics become hot in the summer months and can result in premature equipment failure. The installation of a small supply duct into this room is recommended.

NATATORIUM

The indoor swimming pool room, also known as a natatorium, located at the south end of The Lodge building is heated and cooled and dehumidified by a split system with a condensing unit located on a pad at the rear of the building and the air handling unit is located on the flat roof area adjacent to the natatorium. The system components were manufactured by Seresco and are designed to provide climate control for indoor swimming pool rooms. The following components are listed in the drawings reviewed:

Location	Condensing Unit	Cooling (tons)	Furnace Unit	Heating (MBH)
Indoor Pool Room	NG-V-31	22	NP-020-PB-XA3EB	300

Based on our discussions with the site folks, there have been two system failures in the past nine (9) months. One was related to a condensate drain line plugging up and the second was due to a failed sensor on the outdoor condensing unit. Both of these issues are considered normal operational problems and not considered transition issues.

Although the Seresco unit is designed to provide climate and humidity control to natatoriums, there has not been any commissioning (see next paragraph) of this unit to confirm that it is operating as designed and the HOA has not been provided operating instructions. Humidity control even minimally out of specification over many months in rooms that have large amounts of moisture can be problematic for indoor air quality, condensation and mold.

For reference, in simple terms, commissioning is a process where the mechanical systems in a building are tested and adjusted to the specific requirements of the design for that building. Simply installing a piece of equipment according to the manufacturers standards does not mean it will perform as expected in that building.

In our review of the construction design documentation, we have concerns regarding the design of the walls and roof of the natatorium section of the lodge. Further, we do not know anything about the actual placement of an air/vapor barrier, if any. It is a common problem for natatoriums in this climate region to have accelerated deterioration due to condensation forming in the walls due to incorrectly designed wall assemblies. The location of the air/vapor barrier is critical and the operation of the indoor temperature/humidity is critical to prevent this from occurring.

Based on our review of the design, there was thoughtful selection of materials within the wall cavities and interior paint selection to provide some resistance to organic growth. However, there was not a design for an air/vapor between the natatorium and the adjacent section of the lodge. This may cause a tremendous amount of moisture to be transported through that common wall condensing within the wall due to the temperature difference between the natatorium and finished lodge area adjacent.

Condensation within the wall can eventually lead to mold and organic growth. Our suggestion at this time is for the developer to provide a Dew Point Analysis to confirm the construction sequence is adequate to assure that the components will remain dry throughout the wall. This DPA will suggest what, if any, additional corrective actions are recommended to prevent potential damage as noted earlier.

All exterior windows appear to be blanketed with supply air as required to prevent condensation.

The construction documentation specifications calls for rigid roof insulation at the natatorium. There is not a specific detail to call out what is recommended for other layers of that assembly. However, it appears as though the two layers of roof insulation (staggered seams) are sandwiched between an OSB (Oriented Strand Board, an alternative to plywood) layer to the exterior and a plywood or OSB layer to the interior of the insulation. This staggered seam configuration can behave as a vapor barrier.

It is unknown what type of slip sheet is installed between the asphalt shingles and the upper layer of OSB – there are some materials that would be considered a vapor barrier – however, there are indications that it is 15# felt paper which is not a vapor barrier.

In summary, the design intent and actual execution of the vapor barrier for the natatorium is largely unknown. We don't know how many or where vapor barriers occur in this assembly. There could be more than one vapor barrier making it impossible for the roof assembly to dry out. The paint, insulation, and a slip sheet could all potentially be acting as vapor barriers. The lack of specific detailed requirements for the vapor barrier in the construction documents does not provide the confidence that this assembly has been thoughtfully analyzed and planned.

We have confirmed with the architect of record that a WUFI or dew point analysis has not been performed on any of the wall/roof assemblies. Additionally, some changes to the interior surface finishes were done after the architect design had been finalized. As indicated above, a dew point analysis would provide the HOA direction as to the amount of maintenance and/or remedial construction changes that will be required for this assembly as well as assurance that there is minimal potential for mold growth within the wall cavities.

We did not see any evidence of HVAC operating requirements or instructions for the natatorium nor any testing of any equipment to any ASHRAE design standards for natatoriums. The Mechanical Engineer of record provided design services and yet could not provide information as to the testing, balancing, or operational exercises that were performed.

Humidity control is required 24 h a day, year-round. AHRI *Standard* 910 establishes requirements for testing and rating moisture removal capacity and moisture removal efficiency of indoor pool dehumidifiers. ASHRAE Standard 190 prescribes test methods for rating these units. These guidelines are produced due to the large moisture content of the air in a natatorium, since such an environment needs to be closely controlled to prevent moisture accumulation in the wall and HVAC equipment assemblies.

Typically natatoriums should be controlled by both relative humidity and temperature to maintain the space dew-point temperature at the design level year round and to provide adequate air circulation to comply with minimum air change rates. Controlling on temperature alone will not be adequate for a natatorium. The construction documentation does not indicate that any other control mechanism was installed for the natatorium other than a traditional thermostat.

We acknowledge the dedicated Serosco HVAC system designed for the natatorium is a unit that is marketed for a natatorium application. However, the HVAC designer could only confirm sizing, but could not confirm that it is controlling the dew point (temperature and humidity), and what the limits for operating the HVAC system should include.

If the system is not operating as designed, condensation can be occurring within walls and ductwork which will lead to optimal environment to encourage mold growth.

The onsite folks we talked to mentioned that a supplemental indoor swimming pool gas-fired heating unit was added in order to achieve the 85 degree F design water temperature in the pool. According to the drawings reviewed, a Hayward H400FDN gas heater with a heating capacity of 400,000 BTU was the specified unit for the pool. The supplemental heater that was added appears to be a Hayward H250FDN unit with a heating capacity of 250,000 BTU. The fact that a supplemental heater was required to be installed additionally provides evidence that the pool natatorium and the pool itself is not being operated with the correct parameters.

ROOFTOP MECHANICAL ACCESS

The air handling unit for the indoor swimming pool as well as five (5) of the Lodge's condensing units are located on the flat roof area in the left central portion of the building, i.e. above the corridor where the Fitness Center and Locker Rooms are located. In order to access this flat roof area, there is an opening in the corridor ceiling that is covered with plywood that requires a 10 foot ladder to reach and remove. Then a 12 foot ladder is required to go up through the opening to access and open the metal roof hatch. Once this hatch is open, reaching the roof is difficult, requiring one to stand on the top of the 12 foot ladder. In addition to normal maintenance, there are filters on the outside air inlet vent for the air handling unit which will require periodic access to change the filters. Further investigation is warranted to determine the corrective design and structural changes needed to provide safe, OSHA compliant access to maintain the equipment. This is a code requirement and prudent risk and safety management action for the HOA

On the roof and in the attic, we observed that the gas furnaces were provided with concentric vents/air intake devices that allows both furnace venting and fresh air intake with only one roof penetration verses two for each furnace unit.

PAVILLION NOISE CONTROL

The operating noise from the pool room condensing unit is fairly loud and noticeable. This unit is located at the rear of the building near the pool and the pool equipment building and Pavilion. The installation of sound barrier walls or other practical sound dampening measures can be considered at a fairly low cost to direct the sound vertically, reducing the effect of the sound to the surrounding areas and thereby reducing impact to nearby residents, social events and activities.

TENNIS OPERATIONS BUILDING

Based on the drawings reviewed, the Tennis Building was specified to be heated and cooled by one split system air conditioner with a natural gas furnace as follows:

Location	Condensing Unit	Cooling (tons)	Furnace Unit	Heating (MBH)
Tennis Building	YCJB18S41S1	1.5	TM9V040A10MP11C	40

Based on the field observations, the Tennis Building is heated and cooled by a split system heat pump, York model YHE18B21SA. The attic space of the Tennis Building was not readily accessible; however, since the system was changed to a heat pump, no gas furnace is needed. This is an apparent change from the design drawings. While not shown in the design documents, the heat pump may actually be a better for this building.

The heat pump unit is not level. This can affect performance and service life and should be corrected.

7.0 AMENITIES

We reviewed the plans by for the pools and spa amenities. The pools and spa appear to be well designed and constructed.

We reviewed the tennis and pickleball courts. We have not seen construction documents for these facilities. One of the tennis courts, C, is dry, indicating that the water system under the playing surface is not functioning properly.

The net poles and some fence poles at both the pickleball courts and the tennis courts are not vertical/plumb. These were noted near the entrance to pickleball Court 7 and between the tennis courts and nearby retaining wall. For a new facility this is not typical. It is both an aesthetic concern and a practical concern; premature deterioration of the court surface and nets is likely. This should be corrected and that may require excavation and creating new bases for the posts.

In the Pool House Pavilion, the granite counter tops in the grill area are uneven at their butt joints.

8.0 SITE

8.1 Landscaping

There is extensive and complex landscaping throughout the common areas. We have reviewed the approved landscaping plans prepared by . It is a comprehensive plan and appears to be well installed. This landscaping will require a comprehensive maintenance program going forward and periodic shrubbery/plant replacement.

We noted that the plans call for a weed inhibitor (Preen or equivalent) for all planting beds. We recommend confirming the application of the weed inhibitor.

8.2 Site drainage

In general, site drainage appears to be well-planned. However, several areas do not appear to be functioning as planned. Some swales do not appear to be handling storm water effectively and there are significant areas of erosion. We recommend retaining a surveyor to evaluate the compliance with the site design.

Further, this review of storm water drainage performance will need to be repeated as additional sections of the project are completed.

In addition, as follows, there are some other site deficiencies.

8.3 Site Irrigation

The lawn was saturated between the tennis courts and the south end of Retaining Wall #10. This area was near an apparent irrigation piping connection, and we suspect there may be an irrigation piping leak.

Further, there are reported problems with the common area irrigation system. We spoke with the landscaping contractor who said he was in charge of the irrigation system operation. He told us that the site was split into two areas: approximately 80% of the community was irrigated by the man-made lake (flows into) near the front entrance to the community and approximately 20% was irrigated from the . He reported isolated problems with irrigation valves not closing and then leaking, flooding small areas. He did not report any problems with piping leaks or failures.

We observed that the irrigation pump by the Lake located behind some shrubs along the south side of the main boulevard was cycling on and off every 20-30 seconds. We watched the pressure gage decay and then re-pressurize when the pump started. This is a symptom/result of the leaking or open irrigation valves when the system is off where some amount of system leakage is causing the pump to cycle to maintain its pressure set point. This will reduce the service life of the pump significantly. The irrigation pump at the was off when we were there and the pressure gage did not move, so that system appeared to be tight (leak free).

After the known leaks are repaired, the site irrigation system should be fully commissioned and tested.

8.4 Retaining Walls

There are several locations above retaining walls where the swales do not extend beyond the ends of the walls, and some locations where the swales end well short of the wall ends. Consequently, negative slopes in these areas are resulting in erosion around the ends of some walls. Also, negative slopes are causing some washing over the walls. This spillover condition is most prominent where perpendicular swales from between houses intersect the walls (Retaining Walls #6 & #7, & #9). Some re-shaping is needed.

The retaining walls appear to be MSE (mechanically stabilized earth) walls, so any re-shaping should consider the potential for damage to subsurface geogrid reinforcement.

Similarly, construction of homes is continuing in areas near Retaining Wall #9, and there may be other areas where there will be construction near these retaining walls. Construction easements and/or restrictions to protect against damage to the subsurface geogrid should be in place. This should be confirmed.

Criterium Engineers was provided with 11 retaining wall reports prepared by in September of 2019. was hired by to complete post-construction observation reports of the Mechanically Stabilized Earth (MSE) retaining walls currently constructed in the community. At the time of our site visit, we had not yet been provided with the design drawings for the MSE retaining walls. As a result, the following comments are limited to our review of the reports and observations of selected retaining walls:

1. Nine of the 11 retaining wall observation reports listed issues and/or potential issues with the retaining walls. The majority of the issues were soil erosion and storm water overtopping the retaining walls as evidenced by visible staining on the exposed site of the retaining walls.
2. We selected Retaining Walls #2, 6, 7, 9 and 11 for field investigation based on our review of the reports. We also observed Retaining Walls 8 and 10 because they were adjacent to others we observed. In general, in many of the reported locations where erosion was reported in the September 2019 reports, we observed that sod or grass seed mats had been placed in an attempt to prevent or stop the soil erosion that was occurring, primarily at the ends of the retaining walls. At the time of our inspection, this remedial work did not appear to be effective.
3. The retaining walls are topped with pre-finished, tubular metal fencing which provides a fall barrier for the retaining wall. The fencing is not installed directly on top of the retaining wall, but rather it is installed in the ground, close to the retaining wall. We took measurements of the height of the fencing on the horizontal portions, which were typically the sections closest to the sidewalks or streets. We were able to determine that the majority of the fencing was at 48 inches; however, at Retaining Wall 11, the fencing was less than 42 inches high.
4. We observed an approximate six-foot long section of fencing to be missing at the south end of Retaining Wall 10.

At some of the retaining wall areas, the construction silt screen fencing has not yet been removed. In some locations, there is still on-going construction work; however, in some areas, there is no activity and the screen fencing should be removed.

8.5 Earth dams and ponds

There are several earthen dams in the drainage ponds scattered around the property. These dams appear to be in good condition. However, there are some concerns

1. At or pond, a few drain pipes discharge into a small, upper pond section, which drains over a rock apron into the larger pond section. There is apparent erosion in this rock apron. While this does not appear to be a serious problem, it is visible and has apparently generated some concern among the residents. Modifications are needed to stabilize the erosion. In general, any persistent erosion should be controlled.
2. The water level performance in the is a concern. There is a potential issue with the construction of this pond as water drains faster than expected after filling, indicating the pond may be connected to the underlying aquafer. Further investigation is needed to determine if there are any possible regulatory or environmental implications.
3. There are new trees planted on several earthen dams. This is generally not recommended and could cause future problems if these trees die after growing larger and roots rot within the dam.
4. The Lake Dam at the north end of the man-made lake is an earth dam that is reportedly 100+ years old. The dam was observed from the lake side as well as the downstream side. As noted in our photos, there is serious erosion occurring around the culvert that controls the water level behind the dam. Further, the folks on site reported that within the past couple of years there have been occasions where the lake fills up after a heavy rain storm and the dam is overtopped and water runs across and into , which is the outfall point for the lake via a corrugated pipe.
5. Two concerns have been identified:
    a. The property drainage regulation from the Lake via the outfall pipe and
    b. The condition of the dam and the potential for dam failure and the subsequent legal liability and financial costs associated with the loss of lake water for common area irrigation. Developing an effective plan to address the eventual failure of the dam should be high priority.
6. There are a number of temporary erosion control structures remaining in various locations (waddles, silt fences, bundles of fence posts, etc.) Some of these structures are overgrown or partially submerged in retention ponds. These structures should be removed where construction has been completed.
7. At the time of inspection, the water level in the retention pond located north of Wall #8 was higher than the top of the inlet and outlet drains. The normal water level should be determined. If it is regularly higher, this could cause erosion for the head walls. Further investigation of this condition is needed.

There is a stone-covered drainage path between the east end of Retaining Wall #1 and the concrete block entry sign. Some of these stones are enclosed in a wire basket. It appears that storm water flows through this area, adjacent to the toe of the retaining wall. This is an area that will require regular maintenance.

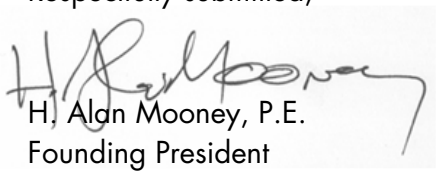
9.0 CONCLUSION

In summary, in our opinion, is a well-built project with some normal issues and a few unique and significant issues to be resolved. The significant issues include the big lake dam, the Lodge, attic HVAC and Natatorium HVAC concerns.

This completes our Transition Study. If you have any questions, please feel free to contact me.

Thank you for the opportunity to be of service.

Respectfully submitted,



H. Alan Mooney, P.E.
Founding President
Criterium Engineers

APPENDIX A – PROPOSAL FOR SERVICES

APPENDIX B – PROJECT PHOTOS

APPENDIX C – DEVELOPER TOUR MEMO

APPENDIX D – DOCUMENTS REVIEWED

APPENDIX E – RESUMES