Sandra McCready

From: Mara Chouela <mara.chouela@gmail.com>
Sent: Tuesday, November 13, 2018 12:49 PM
To: Rosendo Prieto
Subject: Champlain Tower south
Attachments: image001.png; CTS-MEPConditionsReport&EstimateRev_181008.pdf; MC-CTS-SurveyReport&EstimateRev_181008.pdf

---------- Forwarded message ---------
From: **Maggie** <gatormaggie@aol.com>
Date: Mon, Oct 8, 2018 at 2:37 PM
Subject: Fwd: CTS - Revised Reports and Estimates
To: <mara.chouela@gmail.com>

Sent from my iPhone

Begin forwarded message:

> **From:** Frank Morabito <frank@morabitoconsultants.com>
> **Date:** October 8, 2018 at 2:27:40 PM EDT
> **To:** "Maggie Manrara (gatormaggie@aol.com)" <gatormaggie@aol.com>
> **Subject: CTS - Revised Reports and Estimates**
>
> Maggie: these 2 revised reports contain 3 items that are not a part of the base report that I sent to you a few minutes ago, these revised reports include:
>
> - façade entrance drive soffit replacement
> - balcony railing painting
> - fire pump frame replacement.
>
> This report/estimate was prepared for your information so you know our full recommended scope of remediation.
>
> Please call w/questions. Ciao.
>
> **Frank P. Morabito, PE SECB**
>
> 131 Isle Verde Way | Palm Beach Gardens, FL 33418-1710
>
> 952 Ridgebrook Rd, Ste 1700 | Sparks, MD 21152-9472
>
> FL: 561-316-7660 | MD: 410-773-0233 | Mobile: 410-241-2020
>
> www.morabitoconsultants.com

THOMAS E. HENZ, PE,INC.
CONSULTING ENGINEERS
WWW.HENZ.COM

Air Conditioning Engineering
Plumbing Engineering
Fire Protection Engineering
Life Safety Engineering
Electrical Engineering

October 5, 2018

Champlain Tower South Condominium
8777 Collins Avenue
Surfside, FL 33154

During the electrical 40 Years electrical Inspection and the mechanical systems evaluation inspection at the above-mentioned property, we inspected the conditions of the electrical, mechanical, plumbing, fire alarm and fire sprinkler systems.

We observed that in general all the different systems look in good conditions with some necessary repairs. The major issues we found were with equipment located in the generator room and the roof mounted HVAC equipment. The repairs are required do to corrosion which can be expected for exposed equipment next to the ocean. The generator room has a large intake louver than allows the corrosive salt air from the ocean to get onto the equipment.

Electrical:
The Electrical service is in good conditions with some required minor repairs.

- The path of egress lighting on every typical floor required to be enhanced to accomplish the 1 foot-candle minimum required by code.
- There are no smoke detectors on the typical floors and storage areas
- The pool deck, which is also a path of egress required new lighting (currently there are no lights) and new fire alarm devices.
- The roof mounted AC compressors required some electrical repairs
- The busway for the tenant meter centers is rusted and shall be repainted.
- The emergency generator and some other equipment in the generator room shall be replaced with new.
- The enclosed deck garage at the main level require fire alarm devices.

Mechanical:
The common building owner mechanical systems are showing their age. The individual owner condensing units on the roof are installed are aluminum stands that are not original. These stands are in good condition and the condensing units are tied down. The split AC units for the office and lobby have been replaced this year with new. The rest of the mechanical systems require repair due to corrosion.

- The AC unit for the recreation room AHU-8/CU-8 is at end of its useful life. AHU has rust at base of unit. It is the original Weather King model installed when building was built. It should be replaced with new. The disconnects for AHU-8 don't have the code required clearances.
- Office AC unit AHU-6 has been replaced with new but was installed on the original wood stand. Wood stands are not allowed per code in a return air plenum. Also, no storage is allowed in AC closets.

- The underground garage has exhaust fans for ventilation. 2 of the existing fans require repairs. The SE fan is missing a belt and the NW fan has heavy vibration.
- On the roof the refrigerant lines for the owner's condensing units are not insulated or have insulation that is falling off.
- On the roof only 4 out of the 16 roof exhaust fans are working.
- The primary air handling unit for the common corridors is in fair condition. It was installed in 2010 and is beginning to show signs of rust on the air handler and condensing unit. The exterior ductwork is also rusting. At the rate the equipment is rusting it will have to be replaced within the next 2-5 years.

Plumbing:
The plumbing systems are is good condition. In the garage the cast iron sanitary and storm drainage piping have been replaced with PVC which will last for many years. The domestic water booster pumps are working. The domestic water supply piping is copper. Piping appears to be in good condition.

- The domestic water booster pumps are mostly original. One motor has been replaced and one of the pump casing/impeller has been replaced. This pump system can continue to work for several years but there are newer more efficient systems.

Fire Sprinkler:
The fire sprinkler piping and sprinklers are in good condition. The only things that need repair are in the generator room due to corrosion.

- The fire pump base frame has severe rusting. The alignment of the pump motor and shaft can become misaligned under load. The fire pump should be replaced.
- The first 10ft of 6"dia. Sprinkler pipe after the fire pump is rusting. This section of pipe should be replaced.
- The rest of the fire sprinkler piping is in good condition. Only touch up painting is required.

THOMAS E. HENZ, P.E.,
PRESIDENT

240 Commercial Blvd, 2A Lauderdale-By-The-Sea, Florida 33308 T 954.523.4933 F 954.523.5052
www.henz.com

#	ELECTRICAL VIOLATION	REPAIR	COMMENT	Total Estimate
1	The new added water heater main shall be remove and relocated to a house panel to keep 6 mains maximum	Connect the water heater to panel 'HA' in the same room		$5,000
2	Panel #(HB is rusted (See picture 3)	Replace with new panel		$5,000
3	Missing branch circuit identification partially in the following panels: HA (pic 35), XA (pics 36 & 37),	Trace existing circuits and provide new labels for each panel	Need to hire an electrician to trace the circuits.	$2,000
4	Pool deck egress illumination insufficient. (See pic 4)	Provide pool deck turtle friendly lighting (pole lighting)	Permit plans required	$40,000
5	Typical apartment corridors egress illumination insufficient. (See pic 5)	New corridor lighting	There is a corridor improvement project with	
6	Missing fire alarm devices from following areas: deck garage, pool deck	Add fire alarm devices to the these two areas	Permit plans required	$30,000
7	There are no smoke detectors in the tenant storage rooms, apartment meter rooms pool room, typical	Add smoke detectors	Permit plans required	$60,000
8	Missing exit signs in the Gym, main lobby (See Pic.6), garage areas (See Pic.9,10), pool deck (See Pic.8), first floor corridor	Add exit signs. Connect to a generator circuit		$1,000
9	Exit sign leading to stairwell in typical corridors blocked by wall. Located more than 5 feet from door (See Pic.8)	Relocate exit signs to next to exit door across the corridor	There is a corridor improvement project with	$6,000
10	Exit signs in typical corridors mounted too low in the path of egress (See Pic.12)	Relocate exit signs to walls across the corridor	There is a corridor improvement project with	$6,000
11	Generator metal cover and day tank are rusted. (See pic. 13 & 14).	Replace the 40 years old generator and associated fuel tank with new 200KW		$110,000
12	Open junction box in parking garage (see pic.15)	provide cover		$100
13	AC's in garage rooms without safety disconnect means (Pic 19)	Add safety disconnect switches for each unit		$1,000
14	Some roof AC compressors disconnect switches are broken or without cover (Pics 20 & 21)	Replace with new nema 4x	$1300 each. These disconnect switches are for	$158,000
15	Roof mounted conduits for fans and some AC equipment not properly attached to roof. (Pic. 22 &	Provide new roof mounted conduits attached to roof as required.		$2,000
16	Broken pipe and exposed wiring on roof (see pic.24)	replace with new		$500
17	Some roof light fixtures are broken (see pic.25)	replace with new		$500
18	Open junction box at the roof. (see pic 26)	replace with new nema 4x		$200
19	Meter rooms typical deficiencies rusted bus duct in some areas (See pic.27)	Remove the existing paint, prepare the surfaces for the application of (2) coats of		$50,000
20	Improper fire penetration for meter from FPL vault to main electrical room (see pic 29)	Provide a two hour fire proof		$1,000
21	Open holes between different rooms (see pic 32)	Cover with hole with 1 hour fire rated		$600
22	Low voltage wiring attached to busway (see pic 33)	relocate low voltage wiring		$1,000
23	Rusted disconnect switch in generator room (see pic 30)	replace with new nema 4x		$4,000
24	Rusted wireway at the roof and damaged disconnect switches (see pic 31)	replace with new nema 4x and remove unused		$8,000
25	Open junction box in main electrical room (see pic 34)	provide proper cover		$100
ENGINEER'S INITIAL ELECTRICAL ESTIMATE				**$492,000.00**
CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)			**3.00%**	**$14,760.00**
ENGINEER'S CONTINGENCY AND INFLATION			**25.00%**	**$123,000.00**
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST			**$629,760.00**	

#	MECHANICAL VIOLATION	REPAIR	COMMENT	Total Estimate
1	Existing AHU-8/CU-8 are at end of useful life. AHU has Rust at base of unit. Original Weather King model installed when building was built.	Replace air handler and codesign unit . 10-ton system. Dual circuit and variable speed fan for part load control. Motorized outside air damper for unoccupied cooling.	$15, 000 unit, $5,000 labor	$20,000
2	Garage ventilation fans. SE fan missing belt and NW has heavy vibration.	Provide new belt. New bearings and balance		$1,500
3	Refrigerant lines on roof are not insulated. Suction line insulation is damaged and has fallen off.	Re-insulated refrigerant lines on roof. Typical for 88 units.	Cost $100 x 88	$8,800
4	Roof toilet exhaust fans: Only 4 out of the 16 roof exhaust fans for the toilet exhaust risers are working. EF-1 is missing its weather cap completely.	Replace all the toilet exhaust fans on the roof with new. All 16 fans should be replaced.	cost for each fan $1,000, labor $1,000	$32,000
5	Office AC unit has wood in return air plenum. Stand is built out of wood.	Remove wood stand and provide aluminum stand. No storage in AC closet	This air handler was replaced this year. The wood stand should have been replaced.	$1,000
6	Primary Air handling Unit. The air handler and condensing unit have signs of rust and cracking. The air handler is not designed for this coastal environment. The filters are exposed to the elements. System was installed in 2010.	In the next 2-5 years this unit will need to be replaced along with the exterior ductwork on the roof. Provide new 80 split DX system with corrosion protection on all equipment.	Unit: $120,000, duct: $5,000, labor and crane: $10,000	$135,000

ENGINEER'S INITIAL MECHANICAL ESTIMATE		**$198,300.00**
CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)	**3.00%**	**$5,949.00**
ENGINEER'S CONTINGENCY AND INFLATION	**25.00%**	**$49,575.00**
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST	**$253,824.00**	

#	PLUMBING VIOLATION	REPAIR	COMMENT	Total Estimate
1	Domestic water pump is original. It is working but should be planeded for replacement in the next 5 years.	Replace duplex domestic water booster pump with new duplex pump system with VFD. (2) 10hp motors	New VFD pump motors will operate much more efficeintly.	$30,000

ENGINEER'S INITIAL PLUMBING ESTIMATE		$30,000.00
CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)	3.00%	$900.00
ENGINEER'S CONTINGENCY AND INFLATION	25.00%	$7,500.00
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST	$38,400.00	

#	SPRINKLER VIOLATION	REPAIR	COMMENT	Total Estimate
1	Fire Pump base frame is severely rusted. This will affect alignement of the pump shaft and result in bearing failure.	Replace fire pump with new. 60hp, 750 gpm	Price includes labor and material	$60,000
2	6" sprinkler main after fire pump is rusting	Replace 10ft section 6" pipe and paint		$2,000
3	Paint on exposed sprinkler piping in garage is flaking off in some spots.	paint touch up		$2,000

ENGINEER'S INITIAL SPRINKLER ESTIMATE		**$64,000.00**
CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)	**3.00%**	**$1,920.00**
ENGINEER'S CONTINGENCY AND INFLATION	**25.00%**	**$16,000.00**
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST	**$81,920.00**	

October 8, 2018

Champlain Towers South
8777 Collins Avenue
Surfside, FL 33154

Attention: Ms. Maggie Manrara
Treasurer

Re: ***Champlain Towers South Condominium***
Structural Field Survey Report
MC Job# 18217

Dear Ms. Manrara:

Morabito Consultants, Inc. (MC) is pleased to submit this structural engineering report of the Field Survey completed at the existing Champlain Towers South Condominium Complex (CTS) in Surfside, FL. The scope of this project includes a review of the existing 12 story plus penthouse 136-unit residential building, below-grade parking garage and at-grade exterior entrance drive, pool and recreation area. MC reviewed a representative sample of ~68 condominium units (half of the total units found in the building) along with the roof, exterior façade (observed from the balconies surveyed), parking garage, pool deck, and general common areas. The goal of our study was to understand and document the extent of structural issues that require repair and/or remediation in the immediate and near future. As a part of this report, MC has prepared an estimate (that is attached to this report) of the probable construction cost to construct the required structural repairs & maintenance that MC recommends being completed. These documents will enable the Condominium Board to adequately assess the overall condition of the building, notify tenants on how they may be affected, and provide a safe and functional infrastructure for the future.

To assist our office in the review of this project, MC has reviewed the following documents:

- Architectural contract drawings A1-A30 prepared by William M. Friedman & Associates Architects, Inc. last revised 11/27/1979.
- Structural contract drawings S1-S14 prepared by Breiterman Jurado & Associates, Consulting Engineers dated 08/22/1979.
- Various HVAC, Plumbing, Electrical, Plumbing and Landscape drawings.

The following conditions that require future repairs and maintenance were observed.

A. MC understands some unit owners have complained of flooding into the interior space of their unit during a hurricane event. MC has concluded that this infiltration is occurring through the balcony sliding glass doors & windows due to the lack of proper flashing at the sill of these doors & windows and deteriorated exterior perimeter sealant between the window/door frames and masonry/concrete walls. MC recommends that the exterior sealant be removed / replaced at the sliding glass door & window perimeter to assist in providing a water-tight condition. Unfortunately, the new sliding doors in unit 209 and above were not installed properly and were fabricated too tall to allow the base flashing to be properly installed, so these unit owners have no choice but to discard the newly purchased doors and have them completely refabricated.

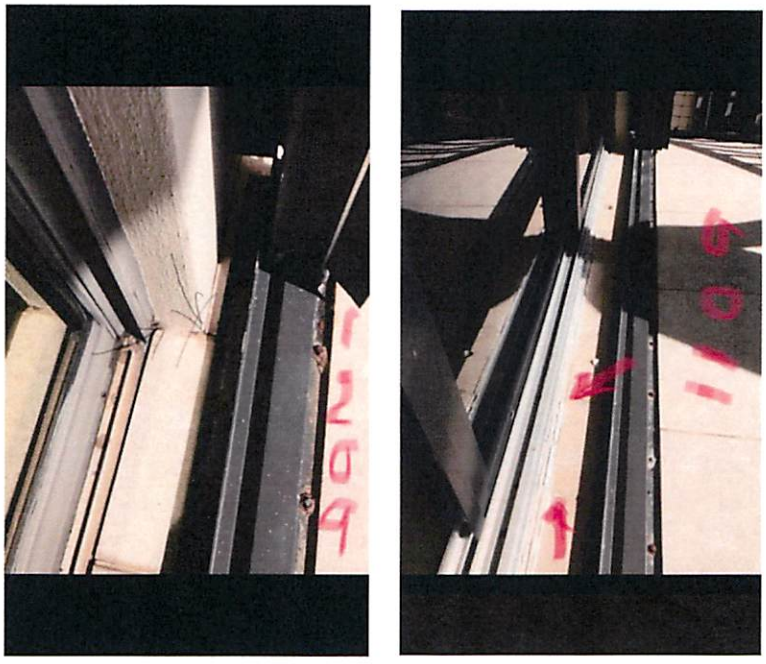

Figure A1: Exterior sealant past its serviceable lifespan at sealant between the window/door frames and masonry/concrete walls & balcony floors

Figure A2: Newly installed sliding door at unit 209 that was not properly flashed

B. MC observed that the majority of the balconies were furnished with tile or some other floor covering by choice of the tenant, making it impossible to observe the condition of the topside of the balcony slabs. Several instances were noted where balcony tile was damaged, such as in Unit 1008. Based on MC experience, cracked tile usually means structural damage exists to the balcony slab that must be repaired per the requirements of the International Concrete Repair Institute (ICRI) prior to the installation of a pedestrian waterproofing membrane.

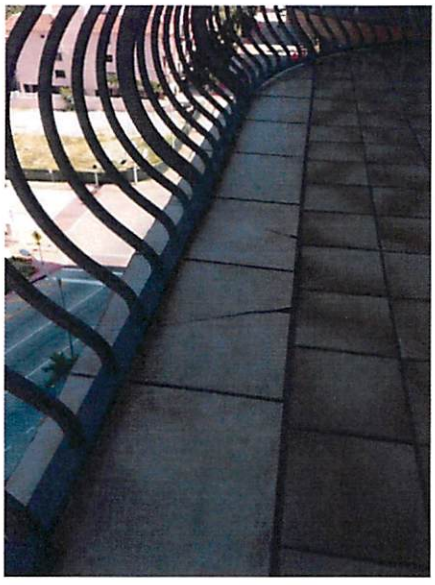

Figure B: Damaged balcony tile that must be removed to fix structural damage

C. MC found it fairly typical that the concrete slab edges of the balconies are experiencing concrete spalling or cracking. MC sees this as a common source of water infiltration and a main cause of the commonly found, sub-surface deterioration at the exterior soffits under the railings. MC requires that the balcony slab edges be further investigated and repaired in accordance with the recommendations of the ICRI to prevent future water penetration.

Figure C: Concrete spall at balcony slab edge in units 1008 & 211

D. Approximately half of the balcony soffits reviewed by MC show evidence of deterioration under the painted finished surface. These areas were identified by sounding the concrete with a golf club, checking for solidarity. In some cases, the paint finish had formed a bubble or pocket that was retaining water, while in other areas the painted soffit was peeled away leaving the concrete surface exposed. The extensive soffit damage is a systemic issue that can only be repaired by removing all of the balcony tile, repairing the damaged concrete surfaces at the top and bottom of the slab and protecting the slab by installing a pedestrian waterproofing membrane on all top-side balcony surfaces. Partial/full depth concrete repairs in these areas shall be performed in accordance with the recommendations of ICRI. It is important to note that installing tile on top of the concrete balcony surfaces results in the railing having inadequate height to meet the minimum guardrail height of 42" required by the Florida Building Code.

Figure D: Balcony Soffit paint spalling in units 208, 703, & 1301.

E. Several areas of the entrance drive soffits under the second floor were observed by MC to have deteriorated black plywood. This condition was also observed at several light fixtures in the entrance soffit. MC could not get access into the soffit areas to observe the extent of the deteriorated soffits and support framing as CTS maintenance was too busy to assist us. MC is concerned that mold exists above these soffit areas and the soffit support framing is deteriorated which will require the complete removal and replacement of the entrance suspended soffit. Further investigation into this area is warranted.

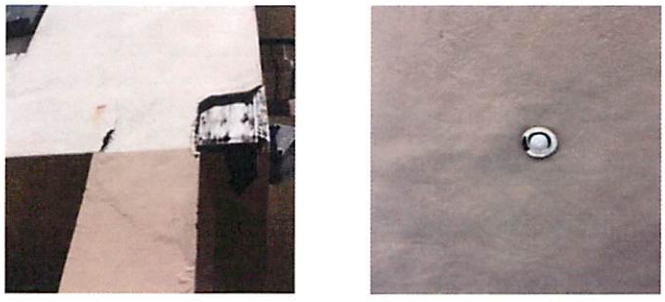

Figure E: Deteriorated plywood soffit above entrance drive.

F. It was brought to MC's attention that several units are experiencing water infiltration through the window frames and glazing as the windows are near the end of their functional lifespan. It is recommended that the window frame glazing (metal to glass), and perimeter sealant (metal to metal or metal to masonry/concrete) be removed and replaced for the entirety of the building to reduce future water penetration and minimize damage during hurricane events. MC recommends that the BOD strongly consider the replacement of all exterior windows and doors with impact resistant units.

Figure F: Exterior sealant at window frame that has aged past its serviceable lifespan

G. Significant cracking in the stucco exterior façade often occurs at the mortar bed joint between the top of the concrete floor slab and first block masonry course. Although MC does not see this crack as a source of water infiltration into the condominium units, such cracks need to be routed and repointed to prevent future water permeation. All significant façade stucco cracking is to be repaired in accordance with the recommendations of ICRI.

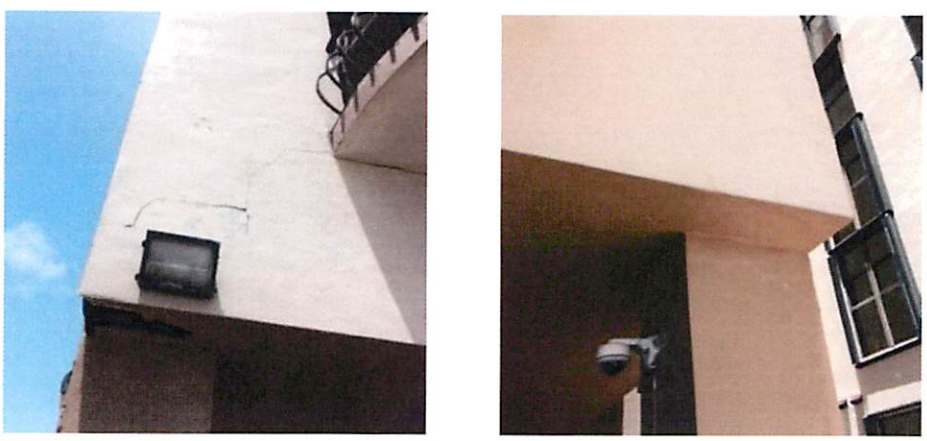

Figure G: Typical cracking in the stucco exterior facade.

H. MC observed the non-existence of window washing / suspension hooks that should have been installed face-mounted to the underside of the top-level balconies and spread throughout the roof of this building structure. This failure to have suspension hooks is a violation of the present-day **Occupational Safety and Health Administration (OSHA) Rules and Regulations 29 CFR Part 1910 "Walking-Working Surfaces and Personal Protective Equipment (Fall Protection systems)"** requirements and **ANSI/IWCA I-14.1-2001 "Window Cleaning Safety Standard"**. MC recommends that new hooks be installed and waterproofed on the roof structural slab and underside of the top-level balcony slabs that meet the requirements of **OSHA 29 CFR Part 1926.502 "Fall Protection Systems Criteria and Practices"** and **ANSI/IWCA 1-14.1** prior to the commencement of façade and balcony restoration. Furthermore, MC recommends that our office meet with the contractor who is to perform the façade restoration work and the present window washing contractor so that the new fall protection system anchor quantity and location can be agreed upon to assure adequate anchor coverage for all future contractors who will be suspended on the exterior of the Champlain Towers South Condominium.

Figure H: No suspension hooks at the underside of the balconies and on the roof.

I. MC understands that the BOD plans to pressure wash and paint the entire building façade to improve the building's aesthetics. MC recommends this work be performed following the conclusion of the aforementioned structural façade repairs.

MC was able to briefly survey the roof of the building at the 13th/14th level. The roof levels appear to be in satisfactory condition, and MC was told by maintenance personal that no present roof leaks are known to exist. The only damage noted was minor cracking at the parapet walls and some minor spalling at the stair tower walls. All identified cracking shall be routed and sealed with a urethane sealant, and all spalls repaired per the recommendations of ICRI. In addition, all mechanical equipment support steel shall be cleaned and coated with a zinc-rich galvanizing paint.

The Pool Deck and Entrance Drive areas were reviewed to observe the condition of the concrete knee walls, planters, pavers, decorative stamped concrete and railings. Minor cracking in the knee walls was found around the pool deck, which shall be routed and sealed with a urethane sealant. The handrails and rail post connections at the pool deck knee walls did not appear to be damaged and are not in need of repair at this time. Many of the existing pavers on the pool deck are cracked and showing moderate wear and tear from years of being exposed to the elements. The pavers do not appear to pose any hazard to the building occupants and are currently not in need of replacement. The joint sealant was

observed to be beyond its useful life and are in need of complete replacement. However, the waterproofing below the Pool Deck & Entrance Drive as well as all of the planter waterproofing is beyond it useful life and therefore must all be completely removed and replaced. The failed waterproofing is causing major structural damage to the concrete structural slab below these areas. Failure to replace the waterproofing in the near future will cause the extent of the concrete deterioration to expand exponentially. MC approach to the repair of this structure is different from what is specified in contract documents in numerous aspects, which are briefly described below.

a. The main issue with this building structure is that the entrance drive/pool deck / planter waterproofing is laid on a flat structure. Since the reinforced concrete slab is not sloped to drain, the water sits on the waterproofing until it evaporates. This is a major error in the development of the original contract documents prepared by William M. Friedman & Associates Architects, Inc. and Breiterman Jurado & Associates, Consulting Engineers.
b. It is also important to note that the replacement of the existing deck waterproofing will be extremely expensive as removal of the concrete topping slab to gain access to the waterproofing membrane will take time, be disruptive and create a major disturbance to the occupants of this condominium building. Please note that the installation of deck waterproofing on a flat structure is a systemic issue for this building structure.

MC correct repair approach includes removing all pavers, decorative concrete paving, setting beds, concrete topping slab and waterproofing down to the reinforced concrete structure; repairing the concrete structure as deemed necessary; pouring a sloped bonded concrete overlay that will be sloped to drain; installing a new waterproofing membrane, protection board and drainage panels on the new sloped surface; and placing new pavers/decorative concrete slabs over a sand setting bed. New stainless-steel dual-level drains will be installed at all existing drain locations that will collect rain water at the surface of the pavers and at the waterproofing level. This system will assure that all water that penetrates to the waterproofing layer will be able to flow freely to the deck drains, resulting in an extended life for the replacement waterproofing membrane. This system also provides extra protection for the existing reinforced concrete structure and allows future membrane repair/replacement to be completed more economically. The repairs to all planters will be completed in a similar manner.

The condition of the Parking Garage levels was reviewed specifically noting any cracked or spalled concrete members, condition of the concrete slabs and joint sealant conditions. MC was able to identify the presence of previous epoxy injections and patch repairs which were evaluated for their long-term effectiveness. MC's review of the Parking Garage revealed signs of distress/fatigue as described below:

J. Abundant cracking and spalling of varying degrees was observed in the concrete columns, beams, and walls. Several sizeable spalls were noted in both the topside of the entrance drive ramp and underside of the pool/entrance drive/planter slabs, which included instances with exposed, deteriorating rebar. Though some of this damage is minor, most of the concrete deterioration needs to be repaired in a timely fashion. All cracking and spalling located in the parking garage shall be repaired in accordance with the recommendations of ICRI.

Figure J1: Typical cracking and spalling at parking garage columns

Figure J2: Spalling with exposed steel reinforcement at topside of garage deck.

K. MC visual observations revealed that many of the previous garage concrete repairs are failing resulting in additional concrete cracking, spalling and leaching of calcium carbonate deposits. At the underside of Entrance/Pool deck where the slab had been epoxy-injected, new cracks were radiating from the originally repaired cracks. The installed epoxy is not continuous as observed from the bottom of the slab, which is evidence of poor workmanship performed by the previous contractor. The injection ports were not removed, and the surfaces were not ground smooth at the completion of the injection. Leaching of calcium carbonate deposits in numerous areas has surely caused CTS to pay to repaint numerous cars. This leaching will continue to increase until proper repairs are completed. MC is convinced that the previously installed epoxy injection repairs were ineffective in properly repairing the existing cracked and spalled concrete

slabs. MC recommends that the Entrance/Pool deck concrete slabs that are showing distress be removed and replaced in their entirely. Unfortunately, all of these failed slab areas are under brick pavers, decorative stamped concrete and planters which require completed waterproofing replacement. All repaired concrete slabs located in the parking garage are to be repaired in accordance with the recommendations of ICRI.


Figure K1: Previously installed failed injection repairs with leaching forming


Figure K2: More previously installed failed injection repairs with leaching forming

MC trusts this initial report will assist the Costa Brava Condominium in understanding the required maintenance that is needed to properly maintain this existing residential property. MC is available to further discuss the recommended repair work and how it coincides with the owner's desires and constraints. We look forward to working with you in maintaining the structural integrity of the Champlain Towers South Condominium.

Very truly yours,

MORABITO CONSULTANTS, INC.

FRANK MORABITO LICENSED No. 35230 STATE OF FLORIDA PROFESSIONAL ENGINEER

Frank Morabito, PE, SECB
President
FPM/18217/Documents/MC/MC-CTS-SurveyReport_181008.pdf

MORABITO CONSULTANTS, INC.
STRUCTURAL ENGINEERS PARKING CONSULTANTS
131 Isle Verde Way, Palm Beach Gardens, FL 33418-1710

REMEDIATION OF THE CHAMPLAIN TOWERS CONDOMINIUM **10/7/2018**
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST **CTS_RemediationEstimateRev.xlsx**

#	ITEM	SUMMARY OF REMEDIATION PROBABLE CONSTRUCTION COST	Phased Estimate	Total Estimate
1	FAC	Façade Remediation		$3,191,312.00
2	GEP	Garage, Entrance and Pool Deck Remediation		$3,825,217.60
3	ELEC	Building Electrical Remediation		$629,760.00
4	MECH	Building Mechanical Remediation		$253,824.00
5	PLUMB	Building Plumbing Remediation		$38,400.00
6	SPRINK	Building Sprinkler Remediation		$81,920.00
7	SC	Project Soft Costs		$1,108,000.00
	A	Permits Fees 2.5%	$175,000.00	
	B	Permit Expeditor	$10,000.00	
	C	Concrete Cylinder Testing	$5,000.00	
	D	Mold, Asbestos Lead Testing	$5,000.00	
	E	Valet Charges	$10,000.00	
	F	A/E Design Fees	$160,000.00	
	G	A/E CA Fees	$296,000.00	
	H	Structural Threshold Inspector	$180,000.00	
	I	Furniture, Fixtures & Equipment	$150,000.00	
	J	Temporary Storage & Movers	$5,000.00	
	K	Additional Building Management	$48,000.00	
	L	Additional Building Security	$24,000.00	
	M	Attorney Fees	$40,000.00	
TOTAL SUMMARY OF REMEDIATION PROBABLE CONSTRUCTION COST				**$9,128,433.60**

MORABITO CONSULTANTS, INC.

STRUCTURAL ENGINEERS PARKING CONSULTANTS

131 Isle Verde Way, Palm Beach Gardens, FL 33418-1710

STRUCTURAL REPAIRS TO CHAMPLAIN TOWERS CONDOMINIUM
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST

10/7/2018
CTS_FacadeRepairEstimateRev.xlsx

#	ITEM	FAÇADE REPAIR ITEMS AND SCOPE	Estimated Quantity		Unit Price		Total Estimate
1	MOB	Mobilization Includes Mobilization/Demobilization	1	LS	$45,000.00	LS	$45,000.00
2	GC	General Conditions Includes Project Management, Phasing, Traffic Control, Drone Imagery, Swing Stage/Boom Lift/Rolling Scaffold, Overhead Protection, Supervision, Etc.	1	LS	$325,000.00	LS	$325,000.00
3	SAB	Complete Field Survey of Exterior, Patch Logs and Prepare Digital As-Builts Includes sounding and field marks in chalk for review by MC	1	LS	$11,000.00	LS	$11,000.00
4	ST	Topside Surface Slab Spall Repair Detail ST - Includes shoring, prep, concrete, rebar, & sealant	1,200	SF	$55.00	/SF	$66,000.00
5	SF	Full Depth Slab Repair Detail SF - Includes shoring, prep, concrete, rebar, & sealant	500	SF	$95.00	/SF	$47,500.00
6	SU	Underside Concrete Slab Spall Repair Detail SU - Includes shoring, prep, concrete, & rebar	150	SF	$105.00	/SF	$15,750.00
7	SER	Concrete Full Depth Slab Edge Repair Details SFT & SFE - Includes shoring, prep, concrete, & rebar	3,000	LF	$100.00	/LF	$300,000.00
8	CS	Concrete Spall Repair on Existing Columns and Walls Detail CS - Includes shoring, prep, concrete, & rebar	50	CF	$300.00	/CF	$15,000.00
9	NJS	New Joint Sealant at New Concrete Cracks Detail JS - Rout and seal new cracks with joint sealant	2,500	LF	$5.25	/LF	$13,125.00
10	RJS	Remove/Replace Joint Sealant at all Masonry/Stucco Walls to Metal Frames Detail JS - Replace /install joint sealant to assure a water-tight condition	14,000	LF	$5.75	/LF	$80,500.00
11	RMS	Remove/Replace Wet Seal at all Metal/Metal and Metal/Glass Conditions Detail JS - Replace /install joint sealant to assure a water-tight condition	27,250	LF	$6.25	/LF	$170,312.50
12	EI	Pressure Injection of Cracks with Low-Viscosity Epoxy Adhesive Detail EI - Includes epoxy crack injection measured on one side only	200	LF	$55.00	/LF	$11,000.00
13	NWM	New Traffic Bearing Waterproofing Membrane (Residential Balconies) Includes surface prep, full system installation and 5 year warantee	37,000	SF	$6.00	/SF	$222,000.00
14	MWR	Partial Depth Masonry Block Wall Repairs at Exterior Detail MWR - Includes sawcut, demo, prep, and approved repair mortar	25	SF	$80.00	/SF	$2,000.00
15	BR	Block Wall Joint and Crack Repairs Under Stucco Detail BR - Includes routing & tuckpointing of masonry cracks & joints	200	LF	$7.75	/LF	$1,550.00
16	SWR	Stucco Repair Over Masonry / Concrete Surfaces Includes stucco removal, surface prep, touch-up brown coat and new finish coat	10,000	SF	$20.00	/SF	$200,000.00
17	SMC	New Stucco Over Masonry / Concrete Surfaces Includes stucco removal, surface prep, new brown coat and finish coat	600	SF	$20.00	/SF	$12,000.00
18	SSC	Repair of Stucco Cracks Less Than 1/8" Wide Includes cleaning, prep, bonding agent, and stucco coat	1,000	LF	$5.50	/LF	$5,500.00
19	SLC	Repair of Stucco Cracks Greater Than 1/8" Wide Includes rout, cleaning, prep, and stucco mix	1,500	LF	$6.50	/LF	$9,750.00
20	RRC	Balcony and Roof Railing Repair Includes installation of clips, fasteners and missing members as required	250	LF	$40.00	/LF	$10,000.00
21	SBR	Shore/Support Existing Balcony Railing During Structural Repairs Includes steel plates, angles, and other material to avoid removal of existng railing systems	3,500	LF	$10.00	/LF	$35,000.00
22	PRA	New Permanent Window Washing Roof Anchorages Includes fabrication & installation of new anchorages and repair of roofing	855	LF	$315.00	/LF	$269,325.00
23	PR	Paint Existing Balcony Railings Includes cleaning, priming and painting	1	LS	$65,000.00	/LF	$65,000.00
24	PRA	Remove and Replace Existing Suspended Soffits Below 2nd Floor Exterior Slabs Includes fabrication & installation of new anchorages and repair of roofing	12,800	Sf	$28.00	/SF	$358,400.00
25	PTF	Clean, Caulk, & Paint Entire Exterior of Building Façade, Garage, Planter Walls, etc. Scope shall be as defined in specification section 09 9120, paragraph 1.2	135,000	SF	$1.50	LS	$202,500.00
		ENGINEER'S INITIAL FAÇADE REPAIR ESTIMATE					**$2,493,212.50**
		CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)			3.00	%	**$74,796.38**
		ENGINEER'S CONTINGENCY AND INFLATION			25.00	%	**$623,303.13**
		ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST					**$3,191,312.00**

MORABITO CONSULTANTS, INC.

STRUCTURAL ENGINEERS PARKING CONSULTANTS

131 Isle Verde Way, Palm Beach Gardens, FL 33418-1710

STRUCTURAL REPAIRS TO CHAMPLAIN TOWERS CONDOMINIUM — 10/7/2018

ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST — CTS-GarageEntrancePoolDeckEstimate.xlsx

ITEM	NOTE	GARAGE, ENTRANCE, PLAZA & POOL DECK REPAIR ITEMS AND SCOPE	Estimated Quantity		Unit Price		Total Estimate
1	MOB	Mobilization Includes Mobilization/Demobilization	1	LS	$45,000.00	LS	$45,000.00
2	GC	General Conditions Includes Project Management, Phasing, Traffic Control, Drone Imagery, Swing Stage/Boom Lift/Rolling Scaffold, Overhead Protection, Supervision, Etc.	1	LS	$275,000.00	LS	$275,000.00
3	SAB	Complete Field Survey of Exterior, Patch Logs and Prepare Digital As-Builts Includes sounding and field marks in chalk for review by MC	1	LS	$6,000.00	LS	$6,000.00
A	**Entrance, Plaza & Pool Deck - New Pavers & Waterproofing**						
4	DPW	Remove Existing Pavers, Slabs, and Waterproofing Membrane in Plaza/Pool Includes removal and disposal of existing materials down to structural slab	26,500	SF	$6.50	/SF	$172,250.00
5	ST	Topside Surface Slab Spall Repair Detail ST - Includes shoring, prep, concrete, rebar, & sealant	1,000	SF	$55.00	/SF	$55,000.00
6	SF	Full Depth Slab Repair (includings at new deck drains) Detail SF - Includes shoring, prep, concrete, rebar, & sealant	2,500	SF	$95.00	/SF	$237,500.00
7	SE	Full Depth Slab Edge Repair at Building Expansion Joints Detail SE - Includes shoring, prep, coating of tendon ends, concrete, rebar & sealant	200	LF	$105.00	/LF	$21,000.00
8	EI	Pressure Injection of Cracks with Low-Viscosity Epoxy Adhesive Detail EI - Includes epoxy crack injection measured on one side only	50	LF	$55.00	/LF	$2,750.00
9	RJS	Replace Existing Joint Sealant Detail JS - Includes removal/replacement of joint sealant at existing joints and cracks	1,800	LF	$5.75	/LF	$10,350.00
10	NJS	Install New Crack and Construction Joint Sealant Detail JS - Includes the routing of cracks & construction joints and installation of sealant	2,000	LF	$5.25	/LF	$10,500.00
11	CJ	Install / Replace Cove Joint Sealant at elevated levels Install new cove joint around columns, along perimeter walls and curbs	750	LF	$6.25	/LF	$4,687.50
12	SCT	Install New Concrete Bonded Overlay Sloped to Drain Includes surface prep, dowels, reinforcing and sloped concrete topping (up to 7" thick)	26,500	SF	$8.50	/SF	$225,250.00
13	DLD	Replace All Deck Drains with new Dual Level Deck Drains Connected to Existing Piping Detail DLD - Includes new deck drain tied to waterproofing and existing piping system	15	EA	$1,100.00	EA	$16,500.00
14	DDP	Add / Replace Horizontal and Vertical Deck Drain Piping Includes new drain piping to new drains and existing pipe risers (piping to match ex.)	600	LF	$50.00	/LF	$30,000.00
15	WP	Install Waterproofing Membrane on New Sloped Bonded Overlay Includes surface prep, cove base sealant, 550 ft of backer-rod expansion joint with additional layers of sheet membrane, waterproofing membrane, drainage board and termination detail	26,500	SF	$8.50	/SF	$225,250.00
16	SBP	Install Brick/Shellock Pavers in Plaza/Pool to Match Existing Pavers Includes surface prep, sand/cement setting bedding & new pavers	13,700	SF	$10.00	/SF	$137,000.00
17	DFC	Install New Decorative Concrete Slab to Match Existing Finish Includes surface prep, reinforcement, and decorative concrete slab	12,800	SF	$18.00	/SF	$230,400.00
B	**Garage and Underside of Pool - Structural Repairs**						
18	CS	Concrete Spall Repair on Existing Columns, Beams and Walls Detail CS - Includes shoring, prep, concrete, & rebar	45	CF	$300.00	/CF	$13,500.00
19	SU	Underside Concrete Slab Spall Repair Detail SU - Includes shoring, prep, concrete, & rebar	2,000	SF	$105.00	/SF	$210,000.00
20	TS	New Traffic Striping to match existing striping layout (elevated levels) Install new traffic striping after all repairs are complete on elevated levels	139	SP	$30.00	/SP	$4,170.00
21	RG	Remove Gutters Under Slab Cracks Includes removal/disposal of existing gutter, patching and painting of concrete surface	1	LS	$2,500.00	LS	$2,500.00
22	PW	Pressure Wash and Clean Entire Garage (all levels) Includes cleaning all garage overhead decks, walls, S.O.G., etc. at repair completion	115,000	SF	$0.20	/SF	$23,000.00

MORABITO CONSULTANTS, INC.
STRUCTURAL ENGINEERS PARKING CONSULTANTS
131 Isle Verde Way, Palm Beach Gardens, FL 33418-1710

STRUCTURAL REPAIRS TO CHAMPLAIN TOWERS CONDOMINIUM — 10/7/2018
ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST — CTS-GarageEntrancePoolDeckEstimate.xlsx

ITEM	NOTE	GARAGE, ENTRANCE, PLAZA & POOL DECK REPAIR ITEMS AND SCOPE	Estimated Quantity		Unit Price		Total Estimate
C		**Entrance, Plaza & Pool - Planter Landscaping & Waterproofing**					
23	RPM	Remove Existing Planter Soil, Gravel, Drains, Sprinklers and Lights Includes removal and disposal of existing materials down to existing waterproofing	850	CY	$80.00	/CY	$68,000.00
24	RPW	Remove Existing Planter Soil, Gravel, Drains, Sprinklers, Lights and Waterproofing Includes removal and disposal of existing materials down to structural post-tensioned slab	11,250	SF	$3.00	/SF	$33,750.00
25	LA	Landscaping Allowance Includes landscaping removal & disposal, installation of drainage rock and filter fabric; new soil material; and installation of new like-kind planting materials	11,250	SF	$30.00	/SF	$337,500.00
26	ST	Topside Surface Slab Spall Repair Detail ST - Includes shoring, prep, concrete, rebar, & sealant	120	SF	$60.00	/SF	$7,200.00
27	RJS	Replace Existing Joint Sealant Detail JS - Replace joint sealant at existing joints and cracks	900	LF	$5.75	/LF	$5,175.00
28	NJS	Install New Crack and Construction Joint Sealant Detail JS - Includes the routing of cracks & construction joints and installation of sealant	400	LF	$5.25	/LF	$2,100.00
29	SCT	Install New Concrete Bonded Overlay Sloped to Drain Includes surface prep, dowels, reinforcing and new sloped concrete topping (up to 4" thick)	11,250	SF	$8.00	/SF	$90,000.00
30	PWR	Partial Depth Concrete/Masonry Planter Wall Repairs Detail MWR - Includes sawcut, demo, prep, and approved repair mortar	50	SF	$80.00	/SF	$4,000.00
31	PW	Install Planter Waterproofing on Concrete Bonded Overlay & Walls Includes surface prep, cove base sealant, waterproofing membrane, drainage board, root mat and termination detail	11,250	SF	$9.00	/SF	$101,250.00
32	SD	Planter Stem Drains Includes removal/replacement of planter stem drains to match existing	30	EA	$1,100.00	EA	$33,000.00
33	SDP	Add / Replace Horizontal and Vertical Stem Drain Piping Includes new drain piping to new drains and existing pipe risers (piping to match ex.)	200	LF	$50.00	/LF	$10,000.00
34	PLS	Planter Lighting and Electrical System Includes installation of new lights and electrical outlets to match existing system	1	LF	$45,000.00	/LF	$45,000.00
35	PIS	Planter Irrigation System Includes installation of new sprinkler system to match existing	1	LF	$30,000.00	/LF	$30,000.00
D		**Entrance, Plaza & Pool Deck and Garage - Miscellaneous Repairs**					
36	MWR	Partial Depth Concrete/Masonry Wall Repairs Under Stucco At Building Perimeter Detail MWR - Includes sawcut, demo, prep, and approved repair mortar	100	SF	$80.00	/SF	$8,000.00
37	BR	Block Wall Joint and Crack Repairs Under Stucco Detail BR - Includes routing & tuckpointing of masonry cracks & joints	125	LF	$7.75	/LF	$968.75
38	SMC	New Stucco Over Masonry / Concrete Surfaces Includes stucco removal, surface prep, new brown coat and finish coat	500	SF	$20.00	/SF	$10,000.00
39	SSC	Repair of Stucco Cracks Less Than 1/8" Wide Includes cleaning, prep, bonding agent, and stucco coat	300	LF	$5.50	/LF	$1,650.00
40	SLC	Repair of Stucco Cracks Greater Than 1/8" Wide Includes rout, cleaning, prep, and stucco mix	500	LF	$6.50	/LF	$3,250.00
41	SWR	Stucco Repair Over Masonry / Concrete Surfaces Includes stucco removal, surface prep, touch-up brown coat and new finish coat	500	SF	$20.00	/SF	$10,000.00
42	RAR	Railing Members And Base Anchorage Repair Remove railing & base shoe, repair damage members, clean, powder coat and reinstall	50	EA	$100.00	EA	$5,000.00
43	PRF	Pool Repairs and Finishes Remove/Replace Diamond Bright finish, pool waterproofing, pool equipment, drains, railings, stairs and other finishes.	1	LS	$225,000.00	LS	$225,000.00
		ENGINEER'S ESTIMATE SUBTOTAL					**$2,988,451.25**
		CONTRACTOR'S PERFORMANCE BOND (with Labor and Material Clauses)			3.00	%	**$89,653.54**
		ENGINEER'S CONTINGENCY AND INFLATION			25.00	%	**$747,112.81**
		ENGINEER'S ESTIMATE OF THE PROBABLE CONSTRUCTION COST					**$3,825,217.60**