

## CARTA DE TRAMITE

Para: Departamento de Educación  
Dr. Eligio Hernández Pérez  
Secretario de Educación

De: ROV Engineering Services PSC  
100 Road 165 Suite 203 CIM Tower 1 Guaynabo, PR 00968  
787-230-7171  
Víctor M. Rodríguez Ortiz, P.E., CPIA, CPIU



---

Escuela: **Ralph W. Emerson**

Código: **(10967)**

Municipio: **Camuy**

Fecha de:  
Inspección **13-enero-20**

Nombre del Ingeniero que emite la recomendación: **Ing. Iván D. Hernández González**

### Anejos:

1. Recomendación al Secretario.
2. Estampilla Digital Especial emitida por el CIAPR.
3. Informe de inspección Ocular.



## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### A. GENERAL INFORMATION

1. **Street Address of the School:** State Road PR-2 km 93.4 Membrillo Ward  
**City:** Camuy PR **State:** Puerto Rico **Zip:** 00627
2. **School Name:** Ralph W. Emerson
3. **Date of inspection:** Jan 13, 2020 10:30AM-12:30PM
4. **Inspector's Name:** Iván D. Hernández González, PE-MEM

### B. BUILDING SITE INSPECTION

5. **Utility Service Safety:**

IMPORTANT—Immediately following an earthquake, check the entire property, especially near appliances, for the smell of gas. If gas odor is detected, turn off the gas at the meter where it enters the building. Locate and repair leaks before turning gas back on. If the gas odor persists after the gas has been shut off, vacate the building and contact the gas utility company immediately.

IMPORTANT—Before entering a damaged, vacant building verify that gas is off. Check the gas meter for damage and position of main gas valve, either a manual valve or a seismically-activated gas shut-off valve. Do not enter the building if gas odor is detected.

- a. Odor of gas leakage?     YES     NO       b. Downed powerlines?     YES     NO

6. **Surrounding topography: (check one)**

- Flat  
 Gently sloping (easily walkable)  
 Steeply sloping (difficult or impossible to walk in some areas)

7. **Building pad: (check one)**

- Flat  
 Terraced or multilevel  
 Gently sloping (less than 4-foot ground surface elevation difference across building)  
 Steeply sloping (greater than 4-foot ground surface elevation difference across building)

- |   | YES                      | NO                                  |
|---|--------------------------|-------------------------------------|
| 8. <b>Geotechnical Issues: (if yes, provide description and photos)</b>                           |                          |                                     |
| a. New cracks in the ground?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Signs of fresh cracking in or movement of hardscape?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Signs of fresh cracking in or movement of retaining walls?                                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Patterns of cracking that extend through the ground surface, hardscape, and improvements?      | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Evidence of sand boils or other fresh-appearing deposits of sand or mud?                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Unusual slumping, rising, or bulging of the ground surface?                                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g. Evidence of rock falls or slope instability above site?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h. Ground movement or wet areas indicating possible broken underground utility lines?             | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Other phenomena (e.g., septic tanks surfacing, differential settlement, ground consolidation)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |



## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### D. EXTERIOR BUILDING INSPECTION

#### 19. General: (if yes, provide description and photos)

YES                  NO                  N/A

a. Collapse, partial collapse, or building off foundation?

b. Obvious lean in any story?

#### DI. Exterior walls: (if yes, provide description and photos)

a. Fresh cracking at corners of door and window openings?

b. Fresh cracking at building corners?

c. Door or window openings racked out of square?

d. Broken glass in windows or doors?

e. Wall leaning?

f. Bulging or delamination of stucco?

g. Pattern of cracking that extends from the ground surface, through foundation, and wall?

h. Evidence of recent relative movement at mudsill line?

i. At locations where the exterior stucco is continuous from the framing down over the

foundation, is there cracking of stucco along the mudsill level accompanied by indications of permanent displacement (sliding) of the building relative to the foundation?

j. Collapse, partial collapse, or separation of masonry veneer?

k. Severe cracking, separations, or offsets at building irregularities?

#### DII. Foundation: (if yes, provide description and photos)

a. Fresh cracking of exposed perimeter foundation?

b. Relative movement between slab and footing in "two-pour" slab-on-grade foundations?

c. Ask School Director (or Rep.) if any earthquake retrofits have been done to the building?

If Y describe: \_\_\_\_\_

d. If the answer to c is Y, were bolts added to connect the building to the foundation?

e. If the answer to c is Y, were plywood or sheathing added to any cripple walls under the building?



## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### D. EXTERIOR BUILDING INSPECTION (continued)

	YES	NO	N/A
<b>22. Kitchen Hood (if yes, provide description and photos)</b>			
a. Present on external wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Present at internal location?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Collapse or partial collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Visible damage or cracking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Visible tilting or separation from building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Shifted or loose and displaced	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Deterioration or deformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>23. Roof: (if yes, provide description and photos)</b>			
a. Shifted or dislodged or concrete damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Impact damage to roof from falling object?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Displaced rooftop HVAC units?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Significantly sagging roof ridgelines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Signs of movement between rafter tails and wall finishes at eaves?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Buckled/dislodged flashing or tearing of roof membrane, roof/wall intersections in split level buildings, additions, or other building irregularities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Tearing of roof membrane or deck waterproofing at re-entrant corners?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of rooftop mechanical equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Shifting of or damage to solar panels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### D. EXTERIOR BUILDING INSPECTION (continued)

	YES	NO	N/A
<b>24. Attached or abutting improvements: (if yes, provide description and photos)</b>			
a. Collapse, partial collapse, or separation of attached porches, carports, Gazebos, or awnings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Evidence of recent settlement or displacement of exterior steps, patios, or walkways relative to the building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Signs of movement between building floor and/ or exterior hardscape or retaining wall along the uphill side of hon steeply sloping sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of air conditioning condenser unit(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>25. Independent exterior improvements: (if yes, provide description and photos)</b>			
a. Damaged detached gazebo?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Damage to fences / privacy walls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Damage to retaining walls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Damage to walkway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Evidence of leakage from water supply lines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Toppling, shifting, or damage/leakage at fuel connection of propane tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Others damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### E. INTERIOR INSPECTION

#### 26. General information

a. If interior access not possible, identify reason

- i. Red tag
- ii. Hazardous materials
- iii. Other hazardous condition, describe \_\_\_\_\_

iv. Other, describe \_\_\_\_\_

b. Typical wall and ceiling finish

- i. Drywall
- ii. Plaster on gypsum lath
- iii. Plaster on wood lath
- iv. Other, describe M. Blocks w/Cement plaster finish

## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### E. INTERIOR INSPECTION (continued)

	YES	NO	N/A
<b>27. Walls: (if yes, provide description and photos)</b>			
a. Fresh cracking, buckling, spalling, or detachment of interior wall finish at corners of door and window openings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Fresh cracking of wall finishes at wall corners or wall/ceiling intersections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Door or window openings racked out of square?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Wall leaning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Pattern of cracking that extends from the floor slab through the wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Movement or sliding of walls relative to the floor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Severe cracking, separations, or offsets at building irregularities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Doors damaged, difficult to operate, or inoperable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Windows damaged, difficult to operate, or inoperable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>28. Ceilings: (if yes, provide description and photos)</b>			
a. Collapse of ceiling finish?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Fresh cracking of ceiling finishes, especially at re-entrant corners; cracks along corner bead at stairwell openings; cracking or tearing of finishes at ceiling/wall juncture; or multiple "nail pops"?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Damage to ceiling finishes in vicinity of corridors or commons places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Separations or cracks in ceiling finishes at split-levels, re-entrant corners, additions, appendages, or other building discontinuities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Water damage or evidence of recent leakage from plumbing lines or roofing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### E. INTERIOR INSPECTION (continued)

29. Floors: (if yes, provide description and photos)	YES	NO	N/A
a. Evidence of recent sloping, sagging, settlement or displacement of floors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. In slab-on-grade locations, fresh cracking of floor slab or floor finishes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Significant sagging or unusual bounciness of floors frames?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Separations or cracks in floor finishes at split-levels, re-entrant corners, additions, appendages, or other building discontinuities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Signs of movement between floor and exterior hardscape or retaining wall along the uphill side of homes on steeply sloping sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. A pattern of fresh cracks, gaps, or joint separations in floor finishes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Impact damage to floor finishes from falling contents?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30. Mechanical systems: (if yes, provide description and photos)			
a. Displaced connection of appliance flues connected to chimneys?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Toppling, shifting, leakage from tank, leakage from water connections displaced flue connection or damage/leakage at gas line or electrical connection of water heater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Shifting, damage/leakage at gas line, flue connection, electrical connection, refrigerant line, and condensate drain connection of furnace or air conditioning fan-coil unit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Damage to gas line of gas stoves or gas fueled clothes dryers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Damage to toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Decreased or restricted water pressure at appliances, faucets, or toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Toppling or shifting of free-standing wood stove and/or flue?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Toppling, shifting, damage/leakage at fuel connection of fuel oil tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Other Damage in the dining room	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Damage near the gas tank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

### E. INTERIOR INSPECTION (continued)

- |   | YES                      | NO                                  | N/A                      |
|---|--------------------------|-------------------------------------|--------------------------|
| 31. Architectural woodwork and special finishes: (if yes, provide description and photos)                                       |                          |                                     |                          |
| a. Shifting of or damage to kitchen or bathroom cabinetry?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Impact damage to countertops from falling objects?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Cracking of ceramic tile in showers or tub/shower enclosures consistent with<br>earthquake damage to adjacent wall finishes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### F. CONTINGENT INSPECTIONS

- |  | YES                      | NO                                  | N/A                      |
|--|--------------------------|-------------------------------------|--------------------------|
| 32. Retaining Tank Wall damage?                      | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 33. Water tank or other field subterranean structure | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## OCULAR INSPECTION CHECKLIST

### G. RECOMENDACIÓN AL SECRETARIO

Departamento de Educación  
Dr. Eligio Hernández Pérez  
Secretario de Educación

Hora: 10:30 AM - 12:30 PM

Código: 10967

Escuela: Ralph W. Emerson

Fecha de Inspección: 13- January-2020

Municipio: Camuy PR

- Abrir Escuela (Verde)  
 Abrir Parcialmente la Escuela (Amarillo)  
 No Abrir la Escuela (Rojo)

#### Comentarios:

A tenor con los resultados de la inspección ocular realizada por este servidor, utilizando mi mejor apreciación y criterio técnico concluyó que las estructuras que conforman el plantel escolar no aparentan haber sufrido daños en sus elementos estructurales a causa de los eventos sísmicos ocurridos en el periodo entre el pasado 28 de diciembre de 2019 y la fecha de mi inspección.

Sin embargo, aún cuando el plantel se encuentre en buen estado, el plantel requiere un plan de mantenimiento de estructuras que le permita que los edificios que componen la escuela estar en un mejor estado. Existen grietas en el edificio en paredes no estructurales, juntas mecánicas entre estructuras que requieren que sean reparadas y/o reemplazadas al igual que problemas con filtraciones de agua en algunos edificios.

Las observaciones de daños incluidos en este reporte se refieren a daños relacionados única y exclusivamente con los eventos dentro del periodo del 28 de diciembre de 2019 al día de la visita de inspección. Daños identificados como preexistentes no están incluidos en el listado que forma parte del reporte.

(Ver Anejo A para más detalle)

Se debe entender que este informe está basado solamente en una inspección ocular de las facilidades con el propósito de observar en las escuelas la presencia de daños significativos causados por los eventos sísmicos registrados hasta la fecha de este informe. La determinación de la adecuación estructural de las escuelas y su cumplimiento con los códigos aplicables de diseño o construcción, al igual que el desarrollo de recomendaciones para la rehabilitación de las facilidades, requerirá una evaluación detallada.

Iván D. Hernández González, PE-MEM

Nombre (Letra de Molde)

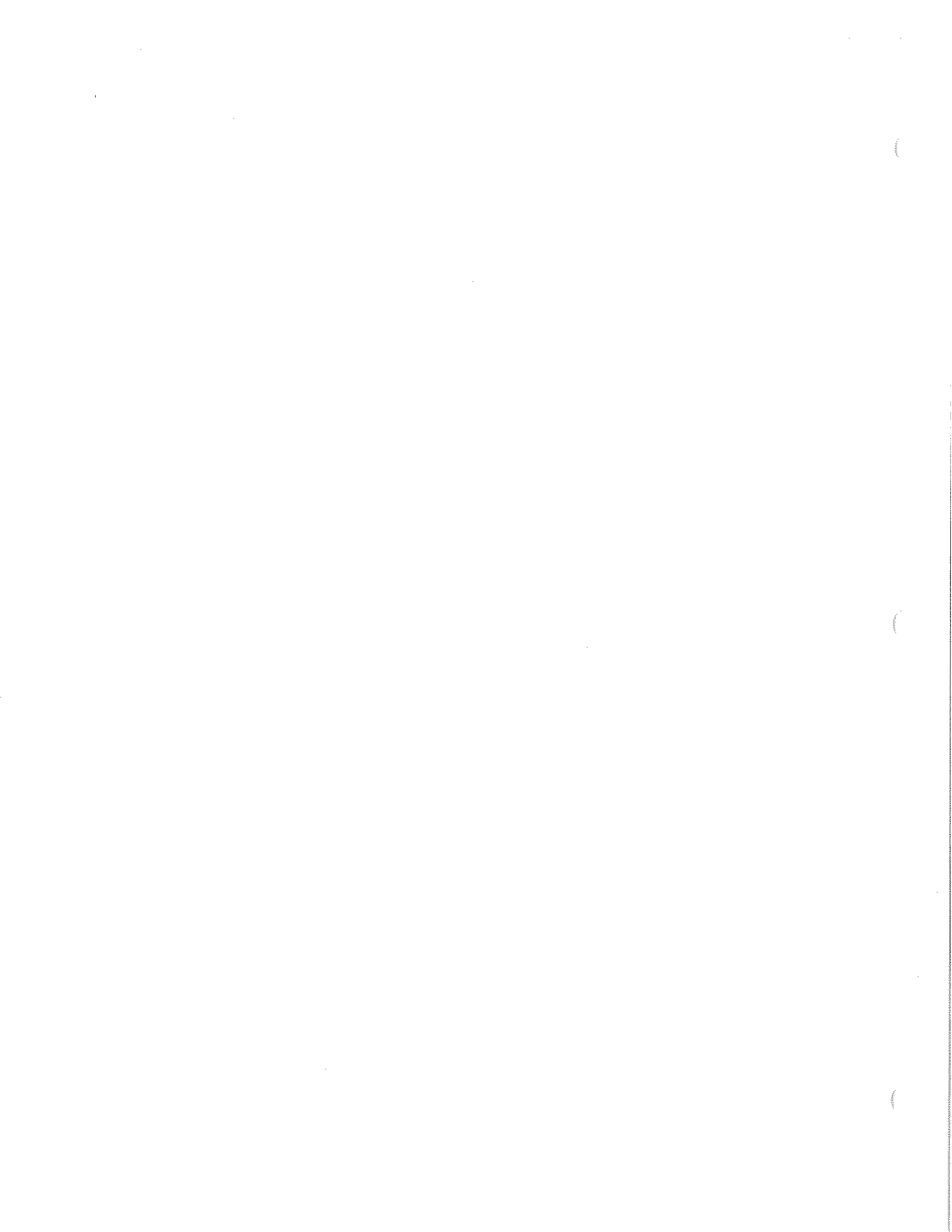
Firma

Iván D. Hernández González, P.E MEM

14265-PE

# Licencia





## OCULAR INSPECTION CHECKLIST

### ANEJO A

Nombre de la Escuela: Ralph W Emerson

Fecha de Inspección: 13-enero-2020

Código de la Escuela: 10967

Nombre de Inspector: Iván D. Hernández, PE-MEM

#### Comentarios:

A tenor con los resultados de la inspección ocular realizada por este servidor, utilizando mi mejor apreciación y criterio técnico concluyó que las estructuras que conforman el plantel escolar no aparentan haber sufrido daños en sus elementos estructurales a causa de los eventos sísmicos ocurridos en el periodo entre el pasado 28 de diciembre de 2019 y la fecha de mi inspección.

Sin embargo, aun cuando el plantel se encuentra en buen estado, el plantel requiere un plan de mantenimiento de estructuras que le permita que los edificios que componen la escuela estar en un mejor estado. Existen grietas en el edificio en paredes no estructurales, juntas mecánicas entre estructuras que requieren que sean reparadas y/o reemplazadas al igual que problemas con filtraciones de agua en algunos edificios.

Las observaciones de daños incluidos en este reporte se refieren a daños relacionados única y exclusivamente con los eventos dentro del periodo del 28 de diciembre de 2019 al día de la visita de inspección. Daños identificados como preexistentes no están incluidos en el listado que forma parte del reporte.



# OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Plano de Sitio	Nombre de Escuela Ralph W. Emerson
Descripción:	Vista aérea de la escuela / Plano de planta de escuela para identificar las áreas evaluadas.







18.4723166, -66.873226

28 m

© 2019 Google





## OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Edificio: <b>1</b>	Descripción: <b>No se observaron daños.</b>	
Edificio: <b>2</b>	Descripción: <b>No se observaron daños.</b>	
Edificio: <b>3</b>	Descripción: <b>Se observaron daños significativos en el edificio.</b>	
Edificio: <b>4</b>	Descripción: <b>No se observaron daños.</b>	
Edificio: <b>5</b>		

## OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Descripción:	No se observaron daños.	
Edificio: 6 Descripción:	No se observaron daños.	
Edificio: 7 Descripción:	Se observaron daños significativos en el edificio.	
Edificio: 8 Descripción:	No se observaron daños.	





COLEGIO DE INGENIEROS Y AGRIMENSORES  
DE PUERTO RICO

PO Box 363845 \* San Juan, Puerto Rico \* 00936-3845  
Tel. 787-758-2250 \* Fax. 787-758-7639

ESTAMPILLA DIGITAL ESPECIAL (EDE)

Ing. Ivan D Hernandez Gonzalez, PE



Práctica de: Ingeniería  
Licencia: 14265  
Renglón: Servicio Profesional  
Descripción del Trabajo: Investigaciones  
Fecha de Emisión: 2020-01-20  
Monto Emitido: \$5  
Número de Serie: 8746-8827-7868-1477  
Número de Caso: 10967  
Proyecto / Unidad: Escuela Ralph W Emerson - Inspeccion pos Terremoto  
Rol del Profesional: Analista

Certificación:

El profesional certifica con la emisión de la estampilla digital especial del Colegio de Ingenieros y Agrimensores de Puerto Rico el haber cumplido con las disposiciones de la Sección 11 de la Ley 319 del 15 de mayo de 1938, según enmendada.

*La colocación del sello profesional constituye la cancelación de la estampilla digital especial*

