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: **Luis Muñoz Rivera I**

Código: **(13425)**

Municipio: **Utuado**

Fecha de: Inspección **9-enero-20**

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

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:** #124 Dr. Cueto Street , Utuado Urban Center

   City: Utuado **State:** Puerto Rico **Zip:** 00641

2. **School Name:** Luis Muñoz Marín (Siglo 21)

3. **Date of inspection:** January 9 - 2020 9:00 AM

4. **Inspector's Name:** Iván D. Hernández, 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)

8. **Geotechnical Issues: (if yes, provide description and photos)**

	YES	NO
a. New cracks in the ground?	☐	☑
b. Signs of fresh cracking in or movement of hardscape?	☐	☑
c. Signs of fresh cracking in or movement of retaining walls?	☐	☑
d. Patterns of cracking that extend through the ground surface, hardscape, and improvements?	☐	☑
e. Evidence of sand boils or other fresh-appearing deposits of sand or mud?	☐	☑
f. Unusual slumping, rising, or bulging of the ground surface?	☐	☑
g. Evidence of rock falls or slope instability above site?	☐	☑
h. Ground movement or wet areas indicating possible broken underground utility lines?	☐	☑
i. Other phenomena (e.g., septic tanks surfacing, differential settlement, ground consolidation)?	☐	☑

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

B. BUILDING SITE INSPECTION (continued)

		YES	NO
9.	Evidence of earthquake-induced permanent ground deformation in the immediate vicinity of the property?	☐	☑

C. GENERAL BUILDING INFORMATION

10. Safety Assessment Tag: (check one) ☑ None ☐ Green ☐ Yellow ☐ Red

(others): ☐ Yellow ☐ Red

11. a) Year of original construction (best estimate): 2012

b) Total square footage (best estimate): 125000 sf

		YES	NO
12.	Have any repairs, modifications, or demolition been performed since the earthquake?	☐	☑

If yes, describe _____

13. Building configuration:
- ☑ a. Single story
- ☑ b. Combination one and two story
- ☑ c. Full two story
- ☐ d. Three story
- ☐ e. Split level
- ☐ f. Typical
- ☐ g. Other, describe _____

14. Exterior wall finish:
- ☐ a. Stucco
- ☐ b. Panel siding
- ☐ c. Metal siding
- ☐ d. Masonry veneer
- ☑ e. Other, describe Cement Plaster

15. Foundation configuration:
- ☐ a. Slab-on-grade
- ☐ b. Crawlspace without cripple walls
- ☐ c. Crawlspace with cripple walls
- ☐ d. Exposed piers or posts
- ☑ e. Typical
- ☐ f. Metal
- ☐ g. Other, describe _____

16. Sill bolting:
- ☐ a. Structure bolted to foundation
- ☐ b. Structure not bolted to foundation
- ☑ c. Don't know

17. Roof configuration:
- ☐ a. Gable (Dos Aguas)
- ☐ b. Hip (Cuatro Aguas)
- ☑ c. Flat or very low slope
- ☐ d. Shed (Un Agua)
- ☐ e. Other, describe _____

18. Roof covering:
- ☐ a. Asphaltic membrane
- ☐ b. Wood shingle or shake
- ☑ c. Concrete
- ☐ d. Metal
- ☐ e. Elastomeric
- ☐ f. Other, describe _____

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

D. EXTERIOR BUILDING INSPECTION

	YES	NO	N/A
19. General: (if yes, provide description and photos)			
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?	☐	☑	☐

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

D. EXTERIOR BUILDING INSPECTION (continued)

22. **Kitchen Hood (if yes, provide description and photos)**	YES	NO	N/A
a. Present on external wall?	☐	☑	☐
b. Present at internal location?	☐	☑	☐
c. Collapse or partial collapse?	☐	☑	☐
d. Visible damage or cracking?	☐	☑	☐
e. Visible tilting or separation from building?	☐	☑	☐
f. Shifted or loose and displaced	☐	☑	☐
g. Deterioration or deformation	☐	☑	☐

23. Roof: (if yes, provide description and photos)			
a. Shifted or dislodged or concrete damage?	☐	☑	☐
b. Impact damage to roof from falling object?	☐	☑	☐
c. Displaced rooftop HVAC units?	☐	☑	☐
d. Significantly sagging roof ridgelines?	☐	☑	☐
e. Signs of movement between rafter tails and wall finishes at eaves?	☐	☑	☐
f. Buckled/dislodged flashing or tearing of roof membrane, roof/wall intersections in split level buildings, additions, or other building irregularities?	☐	☑	☐
g. Tearing of roof membrane or deck waterproofing at re-entrant corners?	☐	☑	☐
h. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of rooftop mechanical equipment?	☐	☑	☐
i. Shifting of or damage to solar panels?	☐	☑	☐

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
24. Attached or abutting improvements: (if yes, provide description and photos)			
a. Collapse, partial collapse, or separation of attached porches, carports, Gazebos, or awnings?	☐	☑	☐
b. Evidence of recent settlement or displacement of exterior steps, patios, or walkways relative to the building?	☐	☑	☐
c. Signs of movement between building floor and/ or exterior hardscape or retaining wall along the uphill side of hon steeply sloping sites?	☐	☑	☐
d. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of air conditioning condenser unit(s)?	☐	☑	☐
25. Independent exterior improvements: (if yes, provide description and photos)			
a. Damaged detached gazebo?	☐	☑	☐
b. Damage to fences / privacy walls?	☐	☑	☐
c. Damage to retaining walls?	☐	☑	☐
d. Damage to walkway?	☐	☑	☐
e. Evidence of leakage from water supply lines?	☐	☑	☐
f. Toppling, shifting, or damage/leakage at fuel connection of propane tanks?	☐	☑	☐
g. Others damage	☐	☑	☐

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 Cement Plaster

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

E. INTERIOR INSPECTION (continued)

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

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?	☐	☑	☐
b. In slab-on-grade locations, fresh cracking of floor slab or floor finishes?	☐	☑	☐
c. Significant sagging or unusual bounciness of floors frames?	☐	☑	☐
d. Separations or cracks in floor finishes at split-levels, re-entrant corners, additions, appendages, or other building discontinuities?	☐	☑	☐
e. Signs of movement between floor and exterior hardscape or retaining wall along the uphill side of homes on steeply sloping sites?	☐	☑	☐
f. A pattern of fresh cracks, gaps, or joint separations in floor finishes?	☐	☑	☐
g. Impact damage to floor finishes from falling contents?	☐	☑	☐

30. Mechanical systems: (if yes, provide description and photos)			
a. Displaced connection of appliance flues connected to chimneys?	☐	☑	☐
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?	☐	☑	☐
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?	☐	☑	☐
d. Damage to gas line of gas stoves or gas fueled clothes dryers?	☐	☑	☐
e. Damage to toilets?	☐	☑	☐
f. Decreased or restricted water pressure at appliances, faucets, or toilets?	☐	☑	☐
g. Toppling or shifting of free-standing wood stove and/or flue?	☐	☑	☐
h. Toppling, shifting, damage/leakage at fuel connection of fuel oil tank?	☐	☑	☐
i. Other Damage in the dining room	☐	☑	☐
j. Damage near the gas tank	☐	☑	☐

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

E. INTERIOR INSPECTION (continued)

31.	Architectural woodwork and special finishes: (if yes, provide description and photos)	YES	NO	N/A
	a. Shifting of or damage to kitchen or bathroom cabinetry?	☐	☑	☐
	b. Impact damage to countertops from falling objects?	☐	☑	☐
	c. Cracking of ceramic tile in showers or tub/shower enclosures consistent with earthquake damage to adjacent wall finishes?	☐	☑	☐

F. CONTINGENT INSPECTIONS

		YES	NO	N/A
32.	**Retaining Tank Wall damage?**	☑	☑	☐
33.	Water tank or other field subterranean structure	☐	☑	☐

G. RECOMENDACIÓN AL SECRETARIO

Departamento de Educación
Dr. Eligio Hernández Pérez
Secretario de Educación

Hora: 9:00AM

Código: 13425

Escuela: Luis Muñoz Rivera (Siglo 21)

Fecha de Inspección: 9 de enero de 2020

Municipio: Utuado

- [ ] Abrir Escuela (Verde)
- [x] 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 encuente en buen estado, existen grietas significativas en una escalera de acceso al segundo piso donde aparenta ser que se construyó una covacha para almacenar artículos de limpieza. Esa covacha se construyó cerrando el espacio bajo la escalera para crear este espacio. Sin embargo, existen grandes grietas en las paredes de la covacha que nos dan la posibilidad de colapso de las paredes. Nuestra recomendación es que no se utilice esta área tan pronto se pueda verificar si la construcción de esta covacha es segura y no representa un riesgo a la seguridad de la población escolar.

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.**

Ivan D. Hernández González,PE
Nombre (Letra de Molde)

Firma Iván D. Hernández González,P.E MEM

14265-PE
Licencia

Sello

IVAN D. HERNANDEZ
INGENIERO LICENCIADO
LIC. 14265
PUERTO RICO

OCULAR INSPECTION CHECKLIST

ANEJO A

Nombre de la Escuela:	Luis Muñoz Rivera	Fecha de Inspección:	9 de Enero de 2019
Código de la Escuela:	13425	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, aún cuando el plantel se encuente en buen estado, existen grietas significativas en una escalera de acceso al segundo piso donde aparenta ser que se construyó una covacha para almacenar artículos de limpieza. Esa covacha se construyó cerrando el espacio bajo la escalera para crear este espacio. Sin embargo, existen grandes grietas en las paredes de la covacha que nos dan la posibilidad de colapso de las paredes. Nuestra recomendación es que no se utilice esta área tan pronto se pueda verificar si la construcción de esta covacha es segura y no representa un riesgo a la seguridad de la población escolar.

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.

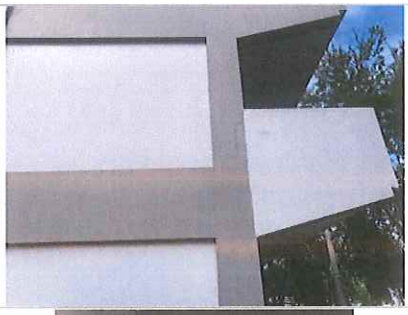
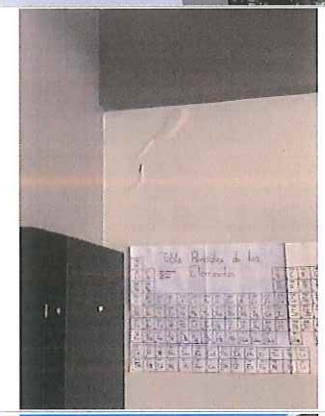
OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Plano de Sitio	**Nombre de Escuela Luis Muñoz Rivera**
Descripción:	Vista aérea de la escuela / Plano de planta de escuela para identificar las áreas evaluadas.

OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Edificio:	1	
Descripción:	No se observaron daños.	
Edificio:	2	
Descripción:	No se observaron daños.	
Edificio:	3	
Descripción:	Se observaron daños significativos en el edificio. Grietas en covacha de escalera.	
Edificio:	4	
Descripción:	No se observaron daños.	

Edificio:	5	

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:	2020-01-21
Monto Emitido:	$5
Número de Serie:	8086-8037-2619-2728
Número de Caso:	13425
Proyecto / Unidad:	Escuela Luis Muñoz Rivera S21 Utuado - Inspeccion pos Temblc
Rol del Profesional:	Evaluador

$5

INGENIERO LICENCIADO
IVAN D. HERNANDEZ
LIC. 14265
PUERTO RICO

SELLO PROFESIONAL

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