

## 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

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Escuela: Cristobal Colon

Código: (70425)

Municipio: Bayamon

Fecha de:  
Inspección 12-Jan-20

Nombre del Ingeniero que emite la recomendación: Ing. William Rosario Charriez

### 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: Calle Tulipan, 4ta Seccion, Lomas Verdes
City: Bayamon State: Puerto Rico Zip: 00956
2. School Name: Cristobal Colon
3. Date of inspection: January 12, 2020
4. Inspector's Name: William Rosario Charriez, P.E.

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 house. 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 natural 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 house)
Steeply sloping (greater than 4-foot ground surface elevation difference across house)

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

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

## OCULAR INSPECTION CHECKLIST

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?  YES       NO

### 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): 1970

b) Total square footage (best estimate): \_\_\_\_\_

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

If yes, describe \_\_\_\_\_  YES       NO

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 \_\_\_\_\_

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

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

17. Roof configuration:
- a. Gable
  - b. Hip
  - c. Flat or very low slope
  - d. Shed
  - e. Other, describe \_\_\_\_\_

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 Not Available

18. Roof covering:
- a. Asphaltic membrane
  - b. Wood shingle or shake
  - c. Concrete
  - d. Metal
  - e. Elastomeric
  - f. Other, describe Not Inspected  
Not Inspected

## OCULAR INSPECTION CHECKLIST

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### D. EXTERIOR BUILDING INSPECTION

	YES	NO	N/A
<b>19. General: (if yes, provide description and photos)</b>			
a. Collapse, partial collapse, or building off foundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Obvious lean in any story?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>20. Exterior walls: (if yes, provide description and photos)</b>			
a. Fresh cracking at corners of door and window openings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Fresh cracking at building corners?	<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. Broken glass in windows or doors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Wall leaning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Bulging or delamination of stucco?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Pattern of cracking that extends from the ground surface, through foundation, and wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Evidence of recent relative movement at mudsill line?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Collapse, partial collapse, or separation of masonry veneer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
k. Severe cracking, separations, or offsets at building irregularities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>21. Foundation: (if yes, provide description and photos)</b>			
a. Fresh cracking of exposed perimeter foundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Relative movement between slab and footing in "two-pour" slab-on-grade foundations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Ask homeowner if any earthquake retrofits have been done to the home?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If Y describe: _____			
d. If the answer to c is Y, were bolts added to connect the home to the foundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. If the answer to c is Y, were plywood or sheathing added to any cripple walls under the home?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## OCULAR INSPECTION CHECKLIST

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### D. EXTERIOR BUILDING INSPECTION (continued)

**22. Kitchen Hook (if yes, provide description and photos)**

YES                  NO                  N/A

- |   |                          |                                     |                                     |
|---|--------------------------|-------------------------------------|-------------------------------------|
| a. Present on external wall?                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" 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 checked="" type="checkbox"/> | <input type="checkbox"/>            |

**23. Roof: (if yes, provide description and photos)**

- |   |                          |                          |                                     |
|---|--------------------------|--------------------------|-------------------------------------|
| a. Shifted or dislodged or concrete damage?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Impact damage to roof from falling object?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Displaced rooftop HVAC units?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Significantly sagging roof ridgelines?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Signs of movement between rafter tails and wall finishes at eaves?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input checked="" type="checkbox"/> |
| g. Tearing of roof membrane or deck waterproofing at re-entrant corners?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of rooftop mechanical equipment?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Shifting of or damage to solar panels?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## OCULAR INSPECTION CHECKLIST

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### 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 type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b. Evidence of recent settlement or displacement of exterior steps, patios, or walkways relative to the building?                            | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" 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 type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of air conditioning condenser unit(s)?                          | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" 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 Concrete \_\_\_\_\_

## OCULAR INSPECTION CHECKLIST

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### E. INTERIOR INSPECTION (continued)

27. Walls: (if yes, provide description and photos)	YES	NO	N/A
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 checked="" 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"/>
28. Ceilings: (if yes, provide description and photos)	YES	NO	N/A
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)

	YES	NO	N/A
<b>29. Floors: (if yes, provide description and photos)</b>			
a. Evidence of recent sloping, sagging, settlement or displacement of floors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" 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"/>
<b>30. Mechanical systems: (if yes, provide description and photos)</b>			
a. Displaced connection of appliance flues connected to chimneys?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" 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 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 checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" 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 de Entrada  
a Inspección:

11:00 A.M.

Hora de Salida de  
Inspección:

12:50 P.M.

Escuela:

CRISTOBAL COLÓN

Código:

70425

Municipio:

Bayamón

Fecha de Inspección:

Abrir Escuela (Verde)

Abrir Parcialmente la Escuela (Amarillo)

No Abrir la Escuela (Rojo)

Comentarios:

SE REALIZÓ INSPECCIÓN OCULAR;  
NO SE INSPECCIONARON LOS TECHOS,  
LA ESCUELA NO REPRESENTA  
PELIGRO.

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.

William Rosario Chárriez

Preparado por: Nombre (Letra de Molde)

Firma

Licencia

79204

Víctor M. Rodríguez

Revisado por: Nombre (Letra de Molde)

Firma

21770  
Licencia



# OCULAR INSPECTION CHECKLIST

## ANEJO A

Nombre de la Escuela: CRISTOBAL COLON

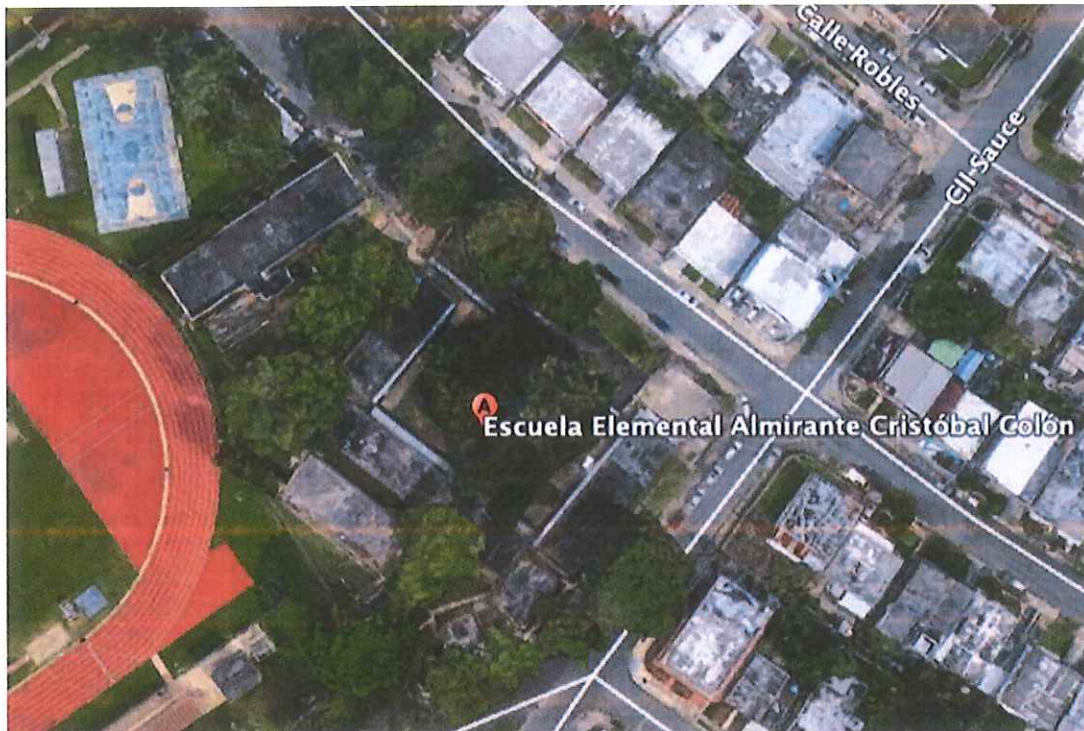
Fecha de Inspección: 1/12/2020

Código de la Escuela: \_\_\_\_\_

Nombre de Inspector: WILLIAM ROSARIO CHARRIEZ

### Plano de Sitio

Descripción: Vista aérea de la escuela / Plano de planta de escuela para identificar las áreas evaluadas.



# OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Edificio: <b>1</b>	
Descripción:	
Edificio: <b>2</b>	
Descripción:	
Edificio: <b>3</b>	
Descripción:	
Edificio: <b>4</b>	
Descripción:	

# OCULAR INSPECTION CHECKLIST

ANEJO A (cont.)

Edificio: 5		
Descripción:		
Edificio: 6		
Descripción:		
Edificio: 7		
Descripción:		
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. Victor Rodriguez Ortiz, PE



Práctica de: Ingeniería  
Licencia: 21770  
Renglón: Certificación  
Descripción del Trabajo: Inspección y Verificación de Instalaciones  
Fecha de Emisión: 2020-01-20  
Monto Emitido: \$5  
Número de Serie: 9855-0052-1717-7635  
Número de Caso: 70425  
Proyecto / Unidad: 70425 Esc. Cristóbal Colón  
Rol del Profesional: Evaluador

**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*