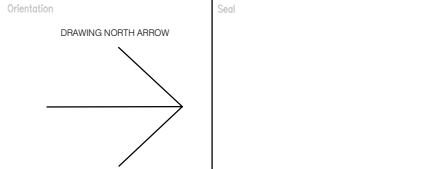


3	ELEVATION OPTION 2	JULY 13 2022
2	66% DESIGN	JUNE 10/22
1	33% DESIGN	MAY 16 /22
No	Revisions	Date



The Contractor shall check and verify all dimensions and report all errors and omissions to the Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A	A Detail No
B	B Sheet No where detailed

ARCHITECT:
ATRIA ARCHITECTS & ENGINEERS INC.
36 BY PASS COURT
TORONTO, ONTARIO, M1T 1L1
TEL: 416 304 0155; FAX: 416 264 2485
EMAIL: pqa@archatrla.ca



THE CORPORATION
OF THE
CITY OF ELLIOT LAKE

AMIS N B

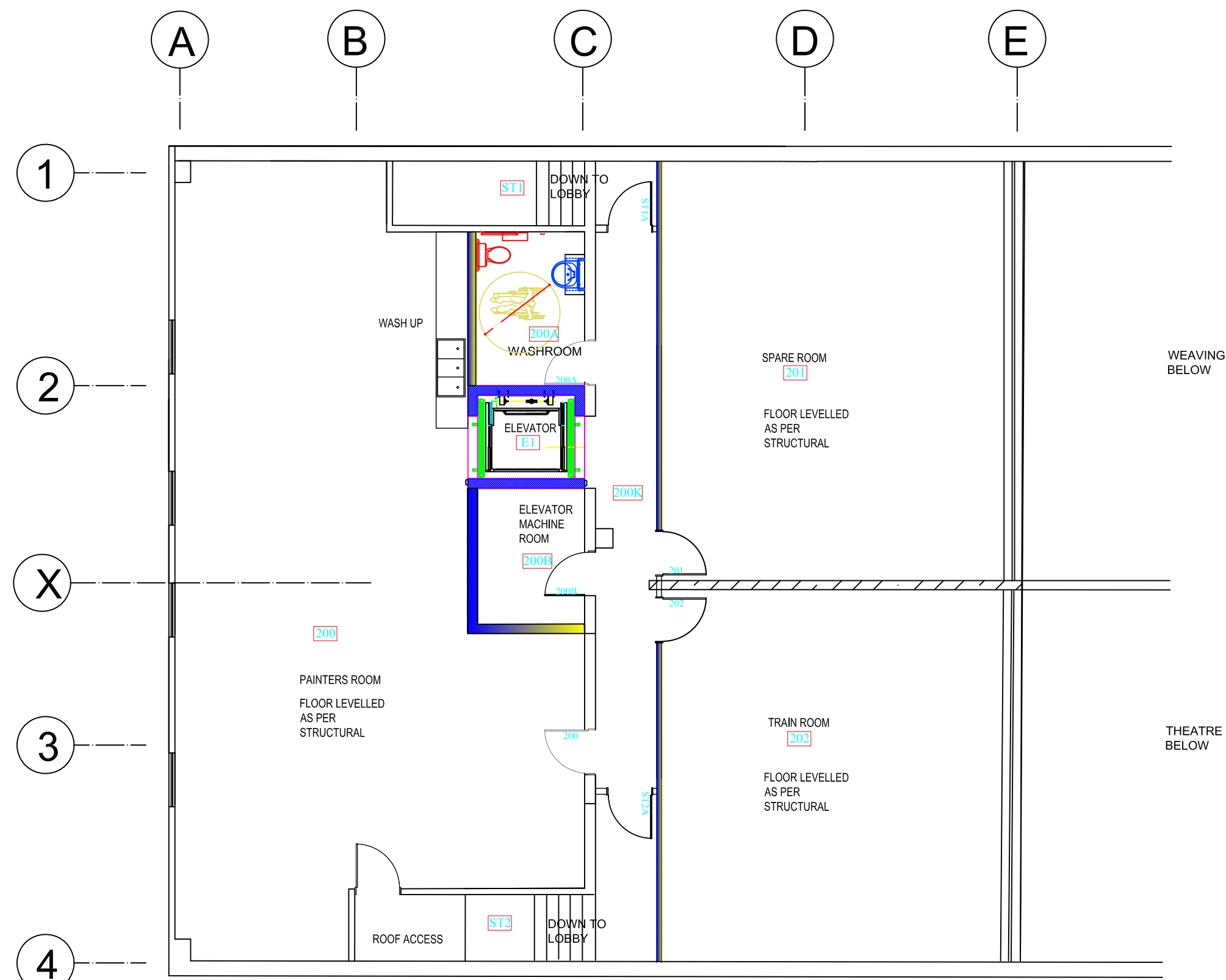
Project
THEATRE RENO
Location
16 Elizabeth Walk,
Elliot Lake, ON P5A 1Z3
Project No Site No Building No

Client
THE CITY OF ELLIOT LAKE

Revision Title
PROPOSED SOUTH ELEVATION
OPTION 2

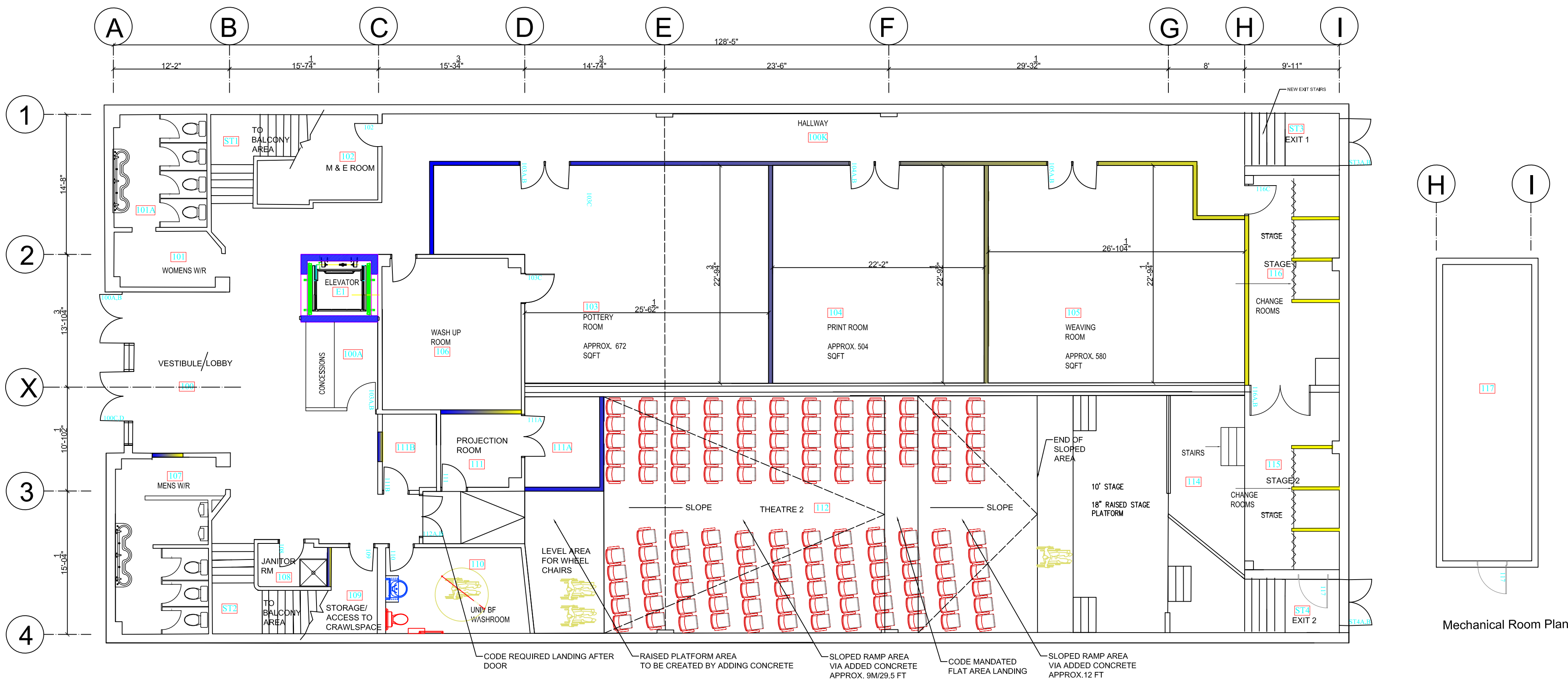
Scale AS SHOWN	Date MAY10/22
Drawn by VQ	Substantial Performance Date
Designed by PQ	Drawing No A6.1 of 6
Approved by PQ	CADD File NAME

2 PROPOSED SOUTH ELEVATION OPTION 2
A-6.1 SCALE: NTS



Balcony Floor Plan

1 BALCONY- PROPOSED PLAN
A-2
SCALE: 1/8" = 1'-0"

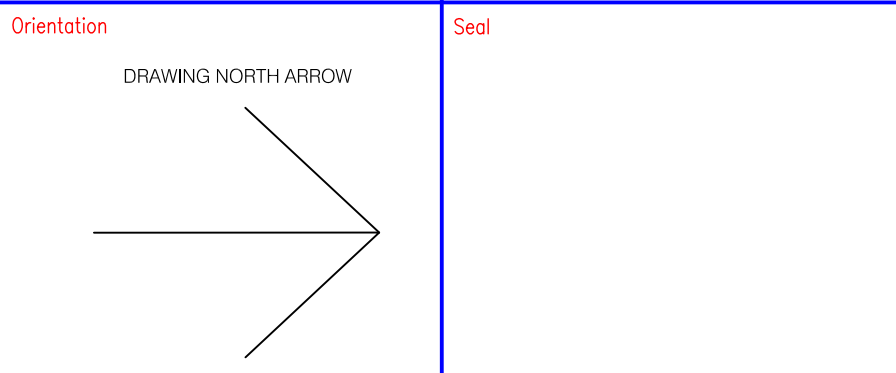


Mechanical Room Plan

2 MAIN FLOOR- PROPOSED PLAN
A-2
SCALE: 1/8" = 1'-0"

OPTION #1

3	OPTION #1	29/07/22
2	66% REVISED	MAY 27/22
1	33% DESIGN	MAY 11 /22
No	Revisions	Date



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A	A Detail No
B	B Sheet No where detailed

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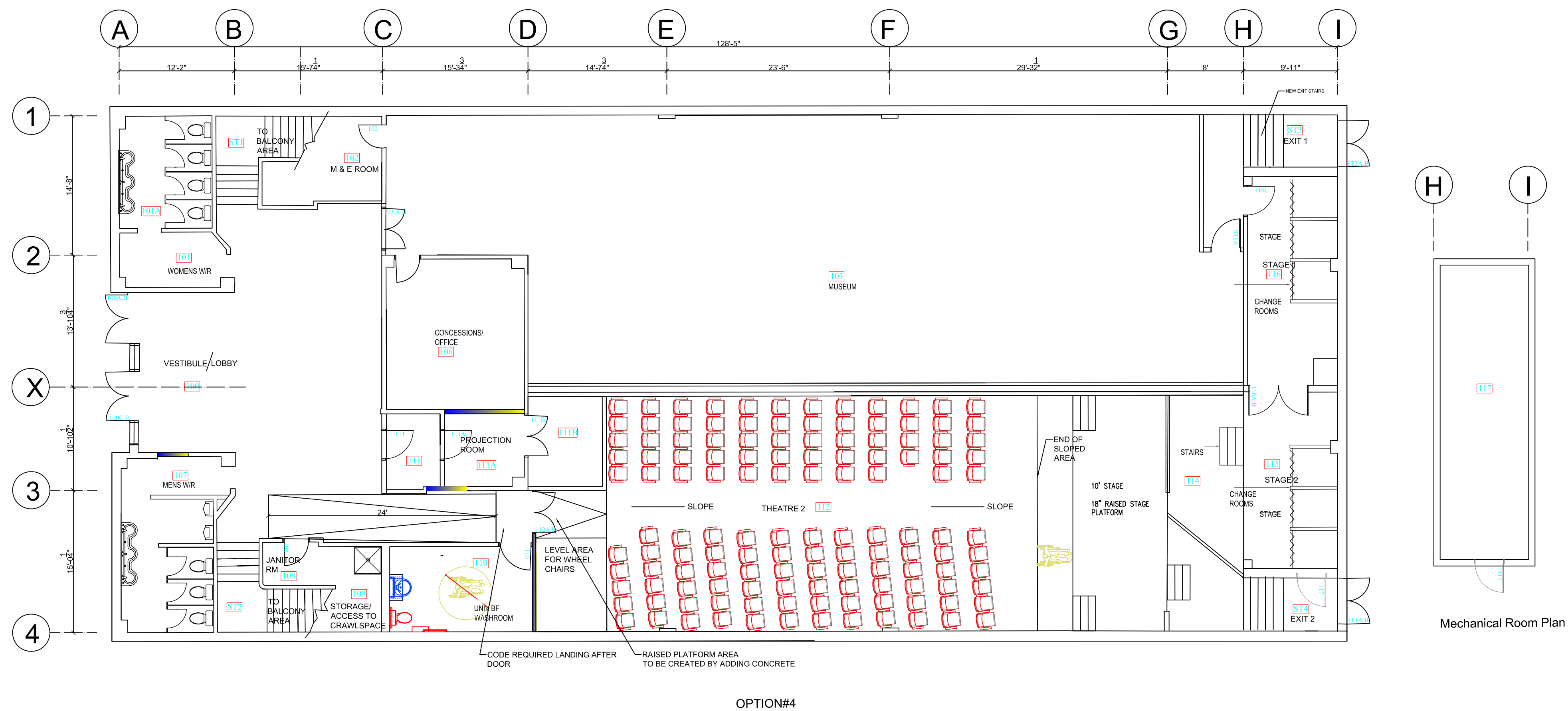
AMIS N B

Project
THEATRE RENO
Location
16 Elizabeth Walk,
Elliot Lake, ON P5A 1Z3
Project No Site No Building No

Client
THE CITY OF ELLIOT LAKE

Drawing Title
PROPOSED
FLOOR PLANS
OPTION #1

Scale AS SHOWN	Date MAY10/22
Drawn by VQ	Substantial Performance Date
Designed by PQ	Drawing No OP1 of 4
Approved by PQ	CADD File NAME



OPTION#2

3	OPTION#2	29/07/22
2	66% REVISED	MAY 27/22
1	33% DESIGN	MAY 11 /22
No	Revisions	Date

Orientation	Seal
DRAWING NORTH ARROW	

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A	A Detail No
B	B Sheet No where detailed

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CITY OF ELLIOT LAKE

AMIS N B

Project

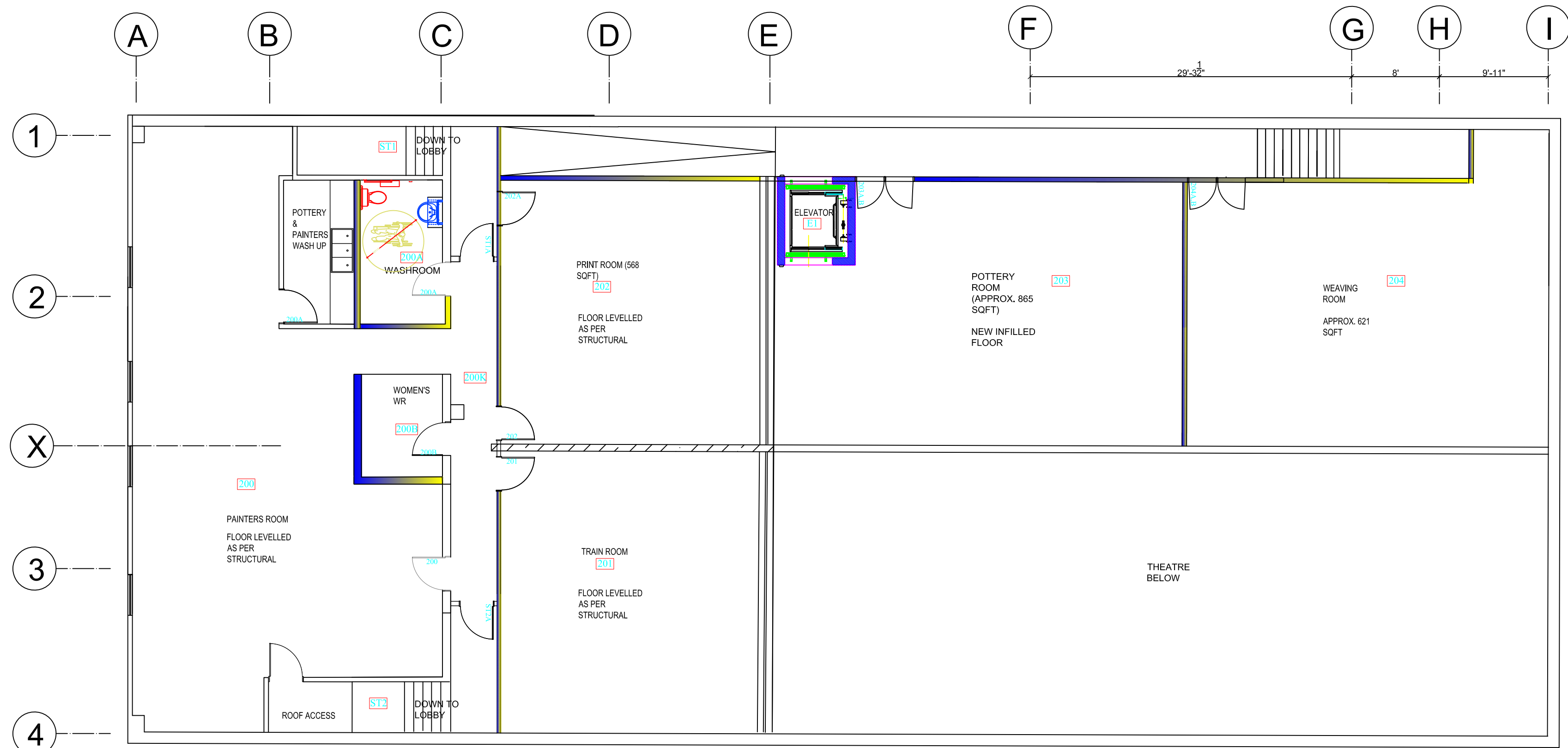
THEATRE RENO

Location
16 Elizabeth Walk,
Elliot Lake, ON P5A 1Z3
Project No Site No Building No

Client
THE CITY OF ELLIOT LAKE

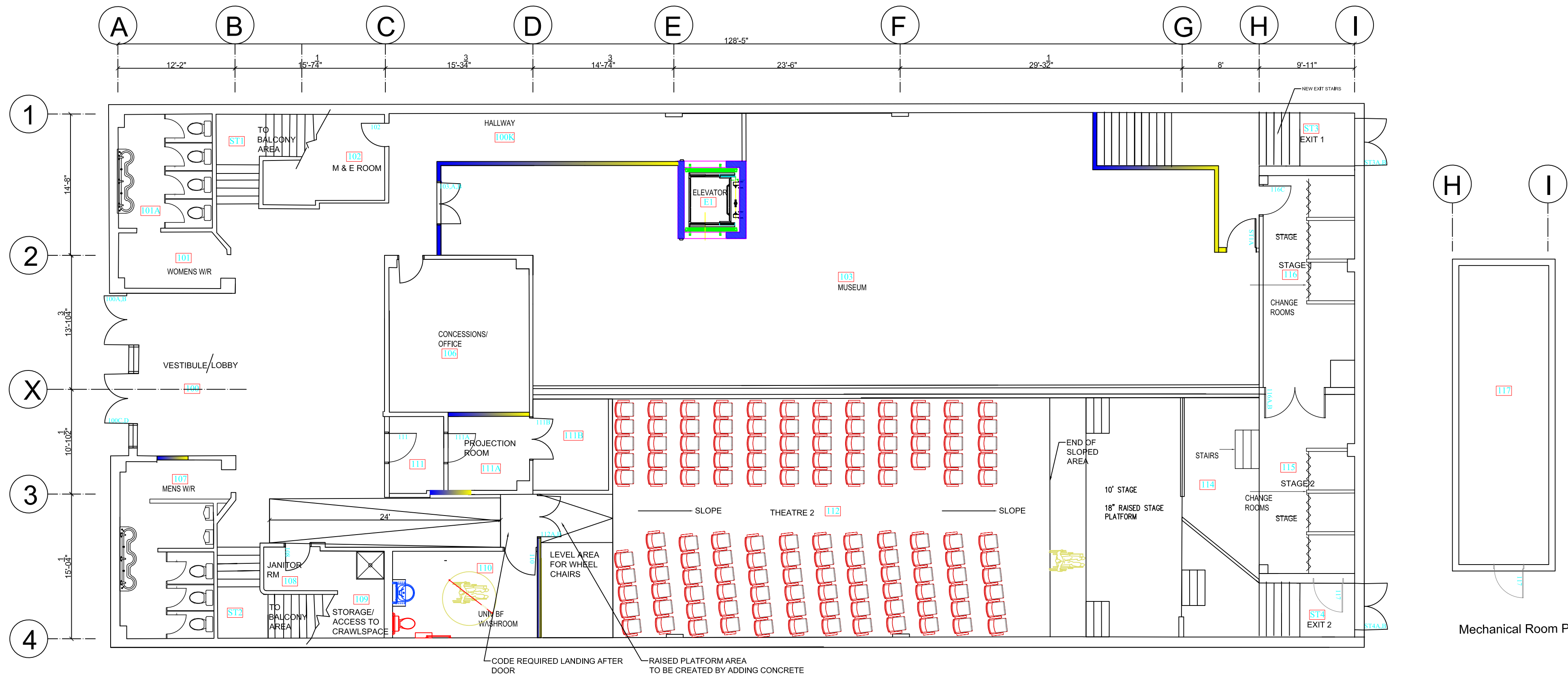
Drawing Title
PROPOSED
INFILLED 2nd FLOOR
OPTION#2

Scale AS SHOWN	Date MAY10/22
Drawn by VQ	Substantial Performance Date
Designed by PQ	Drawing No OP2 of 4
Approved by PQ	CADD File NAME



Balcony Floor Plan

1 BALCONY- PROPOSED PLAN
A-6
SCALE: 1/8" = 1'-0"

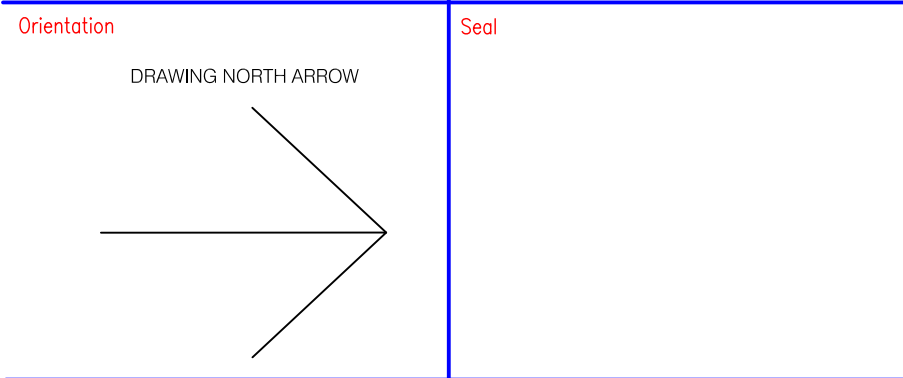


OPTION#3

2 MAIN FLOOR- PROPOSED PLAN
A-6
SCALE: 1/8" = 1'-0"

OPTION#3

3	OPTION#3	29/07/22
2	66% REVISED	MAY 27/22
1	33% DESIGN	MAY 11 /22
No	Revisions	Date



The Contractor shall check and verify all dimensions and report all errors and omissions to the Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A Detail No
B Sheet No where detailed

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THE CORPORATION
OF THE
CITY OF ELLIOT LAKE

AMIS N B

Project
THEATRE RENO
Location
16 Elizabeth Walk,
Elliot Lake, ON P5A 1Z3
Project No Site No Building No

Client
THE CITY OF ELLIOT LAKE

Drawing Title
PROPOSED
INFILLED 2nd FLOOR
OPTION #3

Scale AS SHOWN	Date MAY10/22
Drawn by VQ	Substantial Performance Date
Designed by PQ	Drawing No OP3 of 4
Approved by PQ	CADD File NAME



MET ENERGY SYSTEMS

Consulting Engineering

477 Queen Street East, Suite 304

Sault Ste. Marie, ON P6A 1Z5

Tel (705)942-3344

Fax. (705)942-1477

**STRUCTURAL REPAIRS- BUDGET
REEL TO REEL THEATRE**

MET Project No. 22M11

Budget Pricing As Per Structural Report

1	Remove and dispose of entrance canopy	\$10,000
2	Reinstate brick veneer on Northeast corner, or repair transition and clad-over	\$30,000
3	North drain downspout extension	\$5,000
4	Roof Deck Partial Replacement	\$50,000
5	Rebuild Wood Staircase	\$10,000
Sub-Total		\$105,000
Permits		\$10,000
15% Contingency		\$15,750
15% Overhead/Profit		\$15,750
Engineering Fees (Est. 9%)		\$9,450
Room and Board		\$10,000
Total Budget Price: (HST Extra)		\$165,950

Pricing on material and labour vary based on location and availability and many other factors



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Tel (705)942-3344

Fax. (705)942-1477

PRELIMINARY BUDGET REEL TO REEL THEATRE

MET Project No. 22M11

Budget Pricing including Arts Groups

1	General Condition & Mobilization	\$25,000
2	Demolition & Removals	\$75,000
3	New Electrical Service	\$55,000
4	New Distribution Panels	\$60,000
5	New Lighting	\$80,000
6	New Emergency Lighting	\$15,000
7	HVAC Modifications	\$70,000
8	New Washrooms	\$155,000
9	New Universal Washroom	\$30,000
10	New Fire Alarm System	\$30,000
11	Barrier Free doors to enter building	\$35,000
12	New Ceiling tiles (remove tiles for open ceiling)	\$20,000
13	Opening in Partion Wall (on stage)	\$7,500
14	Updates to front entrance for barrier free	\$75,000
15	Façade upgrades	\$150,000
16	Level floor in Theatre 1	\$80,000
17	Level floor in Theatre 2	\$100,000
18	New Elevator	\$250,000
19	Flooring Finishes	\$100,000

Upper Level mezzanine

19	Demolition & Removals	\$25,000
20	New Distribution Panels	\$15,000
21	New Lighting	\$20,000
22	New Emergency Lighting	\$5,000
23	New HVAC and HRV	\$95,000
24	New Washroom	\$30,000
25	New Doors and walls	\$35,000
26	Ceiling finishes	\$25,000
27	Plumbing upgrades	\$10,000
28	Level floor in mezzanines	\$90,000
29	Flooring Finishes	\$40,000
30	Permits	\$15,000
31	Asbestos Removal	\$25,000
32	Gas Piping	\$7,500

Sub-Total	\$1,817,500
15% Contingency	\$272,625
15% Overhead/Profit	\$272,625
Engineering Fees (Est. 9%)	\$163,575
Room and Board	\$50,000
Total Budget Price:	\$2,576,325
(HST Extra)	
<i>Pricing on material and labour vary based on location and availability and many other factors.</i>	



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PRELIMINARY BUDGET REEL TO REEL THEATRE

MET Project No. 22M11

Budget Pricing including Museum

1	General Condition & Mobilization	\$15,000
2	Demolition & Removals	\$50,000
3	New Electrical Service	\$55,000
4	New Distribution Panels	\$45,000
5	New Lighting	\$70,000
6	New Emergency Lighting	\$15,000
7	HVAC Modifications	\$70,000
8	New Washrooms	\$155,000
9	New Universal Washroom	\$30,000
10	New Fire Alarm System	\$30,000
11	Barrier Free doors to enter building	\$35,000
12	New Ceiling tiles (remove tiles for open ceiling)	\$20,000
13	Opening in Partion Wall (on stage)	\$7,500
14	Updates to front entrance for barrier free	\$75,000
15	Façade upgrades	\$150,000
16	Level floor in Theatre 1	\$80,000
17	Level floor in Theatre 2	\$100,000
18	New Elevator (Rough in for Future)	\$60,000
19	Flooring Finishes	\$100,000

Upper Level mezzanine

19	Demolition & Removals	\$10,000
20	New Distribution Panels	\$5,000
21	New Lighting	\$10,000
22	New Emergency Lighting	\$5,000
23	New HVAC and HRV	\$60,000
24	New Washroom (Rough In Only)	\$10,000
25	New Doors and walls	\$10,000
26	Ceiling finishes	\$5,000
27	Plumbing upgrades	\$10,000
30	Asbestos Removal	\$25,000
31	Gas Piping	\$7,500

Sub-Total	\$1,287,500
Permits	\$15,000
15% Contingency	\$193,125
15% Overhead/Profit	\$193,125
Engineering Fees (Est. 9%)	\$115,875
Room and Board	\$50,000
Total Budget Price: (HST Extra)	\$1,854,625

Pricing on material and labour vary based on location and availability and many other factors



MET ENERGY SYSTEMS

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Fax. (705)942-1477

PRELIMINARY BUDGET REEL TO REEL THEATRE

MET Project No. 22M11

Budget Pricing including Arts Groups Museum, Theatre, and Second Floor

1	General Condition & Mobilization	\$25,000
2	Demolition & Removals	\$75,000
3	New Electrical Service	\$55,000
4	New Distribution Panels	\$60,000
5	New Lighting	\$80,000
6	New Emergency Lighting	\$15,000
7	HVAC Modifications	\$70,000
8	New Washrooms	\$155,000
9	New Universal Washroom	\$30,000
10	New Fire Alarm System	\$30,000
11	Barrier Free doors to enter building	\$35,000
12	New Ceiling tiles (remove tiles for open ceiling)	\$20,000
13	Opening in Partion Wall (on stage)	\$7,500
14	Updates to front entrance for barrier free	\$75,000
15	Façade upgrades	\$150,000
16	Level floor in Theatre 1	\$80,000
17	Level floor in Theatre 2	\$100,000
18	New Elevator	\$250,000
19	Flooring Finishes	\$100,000

Subtotal 1 \$1,412,500

Upper Level mezzanine

19	Demolition & Removals	\$25,000
20	New Distribution Panels	\$15,000
21	New Lighting	\$20,000
22	New Emergency Lighting	\$5,000
23	New HVAC and HRV	\$95,000
24	New Washroom	\$30,000
25	New Doors and walls	\$35,000
26	Ceiling finishes	\$25,000
27	Plumbing upgrades	\$10,000
28	Level floor in mezzanines	\$90,000
29	Flooring Finishes	\$40,000
30	Permits	\$15,000
31	Asbestos Removal	\$25,000
32	Gas Piping	\$7,500

Subtotal 2 \$437,500

Structural Repairs		
33	Remove and dispose of entrance canopy	\$10,000
34	Reinstate brick veneer on Northeast corner, or repair transition and clad-over	\$30,000
35	North drain downspout extension	\$5,000
36	Roof Deck Partial Replacement	\$50,000
37	Rebuild Wood Staircase	\$10,000
Subtotal 3		\$105,000
Second Floor Construction		
38	Additional Footings for new floor (Pier to bedrock 10x\$4000 each)	\$40,000
39	Columns to support floor (W8x20 @ \$3000 eachx10)	\$30,000
40	5x main beams east-west W14x68 @ 19,750 each	\$98,750
41	12x edge mid-span beams north-south W10x49 @ \$11,000 each	\$132,000
42	2550 sq ft PaverDeck 600s1200-68 @ \$25/sq.ft.	\$63,750
Subtotal 4		\$364,500
Mechanical/Plumbing/Electrical		
43	New HVAC (estimated 7.5 ton)	\$45,000
44	Additional HRV	\$25,000
45	Additional Lighting	\$25,000
46	Additional Electrical	\$25,000
47	Additional Washrooms	\$50,000
48	Additional Flooring	\$30,000
Subtotal 5		\$200,000
Total of all sections		\$2,519,500
15% Contingency		\$377,925
15% Overhead/Profit		\$377,925
Engineering Fees (Est. 9%)		\$226,755
Room and Board		\$100,000
Total Budget Price:		\$3,602,105
(HST Extra)		
<i>Pricing on material and labour vary based on location and availability and many other factors.</i>		

Estimated Operational Costs Elliot Lake Theatre Elliot Lake Ontario	
Approximate Square Footage	
Main Floor - Approximate Square Footage	6,694
Upper Floor - Approximate Square Footage	3,140
Total Approximate Square Footage	9,834
Estimated Utilities Cost	
Hydro	\$24,000.00
Gas	\$30,000.00
Water	\$3,000.00
Total	\$57,000.00
Cost per Square foot - \$57,000/9,834 ft²	\$5.80
ALL PRICES EXCLUDE HST	
Energy Saving Measures	
<p>If the following Energy Savings measures were applied there would be savings on the overall estimated utilities cost;</p> <ol style="list-style-type: none"> 1. Insulate Exterior End Walls 2. Insulate All Existing Roof Openings 3. Install All New Windows 4. Update HVAC Controls <p>Based on completing the above Energy Savings Measures we are estimating that a total of 30% savings can be applied to the overall estimated utilities cost;</p>	
Estimated Utilities Cost	\$57,000.00
Energy Saving Measures	30%
Total Estimated Utilities Cost with Cost Saving Measures	\$39,900.00
<p>** All prices above are assumed based on the information that was provided. Prices shown above are estimated only and may increase or decrease</p> <p>** Hydro costs are based on 5 Watts per square foot, 8 hours/day at 365 days/year</p> <p>** Gas consumption is assumed based on existing Gas bill provided showing existing heating costs</p> <p>** Water consumption is assumed</p>	

Estimated Operational Costs Elliot Lake Theatre Elliot Lake Ontario	
Approximate Square Footage	
Main Floor - Approximate Square Footage	6,694
Upper Floor - Approximate Square Footage	5,540
Total Approximate Square Footage	12,234
Estimated Utilities Cost	
Hydro	\$29,000.00
Gas	\$33,000.00
Water	\$3,500.00
Total	\$65,500.00
Cost per Square foot - \$65500/12,234 ft²	\$5.35
ALL PRICES EXCLUDE HST	
Energy Saving Measures	
<p>If the following Energy Savings measures were applied there would be savings on the overall estimated utilities cost;</p> <ol style="list-style-type: none"> 1. Insulate Exterior End Walls 2. Insulate All Existing Roof Openings 3. Install All New Windows 4. Update HVAC Controls <p>Based on completing the above Energy Savings Measures we are estimating that a total of 30% savings can be applied to the overall estimated utilities cost;</p>	
Estimated Utilities Cost	\$65,500.00
Energy Saving Measures	30%
Total Estimated Utilities Cost with Cost Saving Measures	\$45,850.00
<p>** All prices above are assumed based on the information that was provided. Prices shown above are estimated only and may increase or decrease</p> <p>** Hydro costs are based on 5 Watts per square foot, 8 hours/day at 365 days/year</p> <p>** Gas consumption is assumed based on existing Gas bill provided showing existing heating costs</p> <p>** Water consumption is assumed</p>	



PRELIMINARY STRUCTURAL CONDITION ASSESSMENT

14 Elizabeth Walk – the former “Reel 2
Reel Theatre”

Elliot Lake, ON

PREPARED BY: Jeff A.T. Allen, CD, MASc, P.Eng.

FOR: The City of Elliot Lake

Attn: Doreen McInnes, Facilities Manager

Distribution List

# of Hard Copies	PDF Required	Association / Company Name
	1	Ms. Doreen McInnes, City of Elliot Lake

Revision Log

Revision #	Revised By	Date	Issue / Revision Description


TULLOCH Signatures



Report Prepared By:

Jeff Allen, CD, MASc, P.Eng.
Structural Engineer

Report Reviewed By:



Randy Beltramin, P. Eng.
Senior Structural Engineer

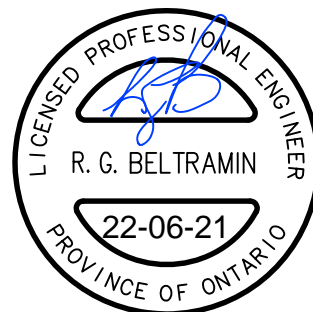


TABLE OF CONTENTS

1.	Introduction and Executive Summary	2
2.	Purpose	2
3.	Background Information	2
4.	Methodology	4
5.	Document Review	5
6.	Building Examination	5
7.	Analysis	11
8.	Discussion	11
9.	Conclusions and Recommendations	12

LIST OF APPENDICES

Appendix A - Definitions
Appendix B – Photographs

1. INTRODUCTION AND EXECUTIVE SUMMARY

The City of Elliot Lake has retained TULLOCH Engineering to conduct a preliminary structural condition assessment (PSCA) of a commercial property located at 14 Elizabeth Walk, Elliot Lake, Ontario, formerly known as the “Reel 2 Reel” Theatre. The field assessment was conducted on June 10, 2022 with the intent to gather facts to submit a report outlining the overall condition of the structure and any issues related to the structure warranting immediate repair, replacement or remediation. In addition, TULLOCH is providing structural engineering services to support the planned renovation of the Theatre. Where discoveries were made that could affect the renovation as planned, they have been made known in the following report. Observations and photographs drawn from two site visits in April 2022 are included where relevant.

This structure was constructed over 60 years ago and has seen a major renovation with the construction of an interior dividing wall to form two viewing theatres in the early 1990’s. It shows evidence that regular maintenance was performed. Some areas of distress, such as cracking of loadbearing masonry walls, should be checked routinely as part of a structural health monitoring plan. Other issues, such as a section of corroded roof deck, should be accurately mapped-out and replaced prior to commencing renovations.

Considering the quality and age of the building elements, workmanship, occupancy and maintenance/repairs completed to-date, a moderate investment would be required to correct the issues noted in this report. No deficiencies were observed that would, in our opinion, compromise the viability of the planned renovation but they may, due to their cost, force a postponement.

2. PURPOSE

Tulloch Engineering was retained by the City of Elliot Lake to undertake a Preliminary Structural Condition Assessment of 14 Elizabeth Walk, Elliot Lake, formerly known as the Reel 2 Reel Theatre. The findings of this report will assist the City in their capital project planning for a planned renovation for the building. It is subject to the disclosures and limitations listed herein.

3. BACKGROUND INFORMATION

3.1 General Description of Structure

The subject of this PSCA is a two-storey commercial building occupying approximately 7,000 square feet and fronting on Elizabeth Walk. All evidence and file review suggests that the structure was originally designed and built to serve as a movie theatre and has not been substantially re-purposed (in terms of building occupancy types) or altered. The year of construction of the original structure is estimated at 1960-62, and it currently consists of two theatre spaces sharing an interior dividing wall, a divided balcony section, lobby, washrooms,

projection, storage, and mechanical rooms. A portion of the second storey includes two washrooms and an open space that may have served as a general assembly or residential occupancy. Changes of use for parts of this building are foreseen based on the renovation plan. This has triggered several structural analyses to verify the capacity of floors based on new occupant loading as prescribed by Code.

The building is a loadbearing masonry structure with a flat, steel-framed roof. Roof structure is a combination of modified bitumen and gravel-ballasted built-up roof atop steel decking and welded steel trusses. Walls consist mainly of 8 x 16-inch (nominal) concrete masonry units (CMU) atop cast-in place concrete walls. The building is founded on a conventional concrete foundation, predominately slab-on-grade. There is a section of light-framed (2x4) exterior wall on the south elevation second storey. The balcony structure is comprised of segmented, concrete-topped steel panels supported by cranked steel beams in turn supported by a riveted plate girder and masonry walls.

3.2 Disclosures

3.2.1 Items Reviewed

The scope of work for this assessment encompasses the two-storey commercial building fronting on Elizabeth Walk. TULLOCH Engineering attended the subject building to visually review the following items:

- Accessible structural framing;
- Accessible foundation and masonry;
- Attics and crawl spaces, if any;
- Roofing, siding, windows, and doors;
- Interior finishes, ceilings and walls; and
- Review of any existing drawings and available documents.

3.2.2 Limitations and Exclusions

This assessment is limited to the primary structural elements and building envelope of the property in question. Where other building elements were thought to offer clues as to underlying structural deficiencies (for example: binding of doors and windows), they were investigated.

The inspection was visual and non-destructive in nature. However, in some cases interior or exterior finishes were removed to confirm the presence of structural members. This was completed to further inform the client as to structural upgrades required to support renovations. No destructive testing was completed on building materials or structural components.

3.2.3 *Outstanding or Past Orders/Requirements Issued by government or regulatory authorities*

File review revealed an Order to Remedy issued by the City of Elliot Lake on October 12, 2016. This order, and attached photographs, referred to deteriorated brick veneer on the east elevation of the building, where it projects above and beyond the adjoining unit to the east. No documents were found which indicate that the issue has been remedied. These areas were investigated further and findings/recommendations are included in this report.

3.2.4 *Specific Codes, Regulations and Technical Standards applied to this assessment*

- Professional Engineers Ontario, *Structural Condition Assessments of Existing Buildings and Designated Infrastructures Guideline*, November 2016.
- ASTM E2018-15, *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Practice*, August 2015.
- Ontario Building Code Compendium, Volumes 1 and 2, 2012.
- Canadian Wood Council, *Wood Design Manual, Volumes 1 and 2*, 2017.
- Canadian Institute of Steel Construction, *Handbook of Steel Construction, 11th Edition*, 2016.

3.2.5 *Identification and Role of Sub-Consultants*

Not Applicable

4. METHODOLOGY

This PSCA field investigation took place primarily during a site visit on June 10, 2022 and involved a structural engineer holding a valid professional engineering license in the Province of Ontario. This assessment relied primarily on qualitative visual assessment of accessible structural elements and set out to define the condition of building elements as laid out in Appendix A and the relevant references.

Specialized instrumentation, inspection devices, and testing equipment was used to a limited extent during this PSCA. The presence of any visible defect or deterioration of structural elements and/or coverings was used to evaluate the causes and effects of this deterioration and identify, where applicable, the need for further investigation or remediation. Field measurements were obtained by laser measuring device, tapes, calipers, rules and thickness gauges where appropriate.

In some cases, invasive investigation involving the removal of finishes or coverings was conducted to identify hidden structural components or gain insight to support renovations planning.

For clarity, the imperial measure of common construction methods and building materials (such as square footage and dimensions of timber framing members and masonry units) has been used.

5. DOCUMENT REVIEW

The building transferred from a long period of private ownership to City ownership in November 2016. Review of records held by the City of Elliot Lake revealed the following documents:

- A permit to “remove two walls in emergency exit hallways,” July 1993;
- A permit application for interior renovations, including the construction of a soundproof interior dividing wall, in October 1993;
- Faxes of technical details from the consultant to support the interior wall construction project, 1993;
- A permit for roof replacement, October 1993; and
- An Order to Remedy related to brick veneer on the east elevation, October 2016.

To our knowledge the identity of the original architect, engineer and/or builder is unknown and no original building design drawings were available for reference.

6. BUILDING EXAMINATION

6.1 General

The examination of the subject building was conducted with the assistance of a Public Works employee on June 10, 2022. Weather conditions at the time of assessment were partly cloudy, 20 degrees C.

As an overview, the engineer inspected the north and south elevations from ground level and from a ladder. The entire west wall is shared with an adjoining building. Much of the east wall is also shared, apart from a 4-foot stepped roof and section of exposed exterior wall at the northeast corner. The rooftop was accessible by a built-in ladder and roof hatch. The ceiling was accessed in various locations with the use of a mobile elevated work platform, or by stepladder in the balcony areas. All other interior structural components were accessed with the aid of a ladder. No crawlspaces were present.

6.2 Site Orientation Diagram

Image Source: Google Earth, August 2020.



6.3 Observations by Area

6.3.1 South Elevation

- Main floor exterior wall is loadbearing masonry (CMU), brick infill, vinyl siding “panels” covering older windows, and a central recessed entrance with two sets of double doors and a backlit sign board (Figure 1).
- A steel beam spans the opening above the doors and supports the concrete-topped steel deck above it. This beam is mostly enclosed from the interior but is visible through the sign board. It is in good condition, with no signs of corrosion or deformation.
- Building envelope is generally in fair to poor condition, with evidence of chipped masonry units, spalled concrete (Figure 2), corroding reinforcement, damaged door frames and windows, missing steel siding and exposed strapping at parapet and wall edges.
- A horizontal projection extends 36 inches to form an entrance canopy and runs the width of the building. It relies structurally on a cantilevered extension of steel floor decking, suspected to be Robertson Q-Deck (available during period of original construction). This projection had two inches of ponding water on top of the asphalt roll roofing layer at the time of inspection (Figure 3). A portion of OSB (Aspenite) panel comprising the soffit was removed for inspection. The soffit was decayed and coal tar pitch was noted above it. Tentest sheeting (possibly two layers) above the Q-Deck was soft and saturated.

- The second floor exterior wall is light-framed (2x4) construction, clad in steel siding in fair condition, with newer vinyl-framed windows. Areas of plywood sheathing and wood strapping are exposed and weathered (Figure 4).

6.3.2 North Elevation

- Wall construction includes CMU and brick veneer atop cast-in-place, parged concrete walls. Masonry on the north elevation is in good condition, with some localized deterioration around roof drain spouts and door. (Figure 5, 6).
- Both sets of exterior double exits are original, heavy-gauge steel doors, frames and hardware that show deterioration befitting their age. Frames and hinges are corroded, and surrounding cementitious grout is cracked and spalled.

6.3.3 East Elevation

- The east elevation is mostly obscured by the commercial building to the east. However, these units do not share a common wall.
- A four-foot step and approximately 20 feet of exterior wall at the northeast corner of the building are exposed. This exposed masonry had been the subject of the City Order to Remedy of October 2016. Currently, the loadbearing CMU is open to the elements on the north part of the wall. The CMU wall presents several voids and reveals the steel baseplates and ends of the roof trusses. No corrosion was noted on the truss ends or baseplates at the time of inspection (Figure 8-12).
- Evidence of the original brick veneer remains at the northeast corner, and brick ties were observed. The remainder of the step is strapped with 2x4, sheathed with plywood and covered with roll roofing. The covering was sound, firmly affixed to the wall and in good condition during the time of inspection. However, its north edge was unfinished and open to the elements (Figure 11).

6.3.4 West Elevation

- The entire west wall is covered by the neighboring commercial unit to the west and was not visible to inspect. The neighboring unit was not entered during this PSCA.

6.3.5 Roofing

- Two roofing types are present on the building, which uses a flat roof with a 36-inch sloped elevation drop at the approximate mid-point (refer to site orientation diagram).
- An earlier asphalt roll roofing system (modified bitumen) covers the south portion of the roof up to and including the sloped elevation transition (Figure 13). According to the building permit, it was completed sometime after October 1993.
- Numerous roof projections exist on the older part of the roof. Aside from drains, these relate to older, unused heating and ventilation systems. Sealants are present but are cracked and weathered. It had rained prior to the site inspection but no ponding was

observed. Roof drain strainers appear to match the date of re-roofing and are in good condition. (Figure 14)

- A built-up roof with gravel ballast covers the north portion of the building. Date of installation is believed to be between 2012-13. No relevant documentation was available during file review. Newer rooftop units (RTU) were installed in December 2020 (Figure 15). Parapets, flashings, curbs and roof surface are all in good condition, with no evidence of ponding.

6.3.6 Roof Structure

- Roof structure consists of a 1-1/2-inch 20-gauge corrugated steel deck, laid in a continuous arrangement with flutes oriented north-south, atop welded parallel-chord steel trusses.
- Roof trusses are either primed or painted, bottom-chord bearing on 5/8-inch plates laid in the east and west CMU walls. Cross-bracing is present on all truss quarter-spans. The roof trusses are in good condition, with no signs of corrosion or distress (Figure 16-18).
- Roof deck condition was found to vary widely during the inspection.
- Deck undersides in the south roof section are in very good condition, with no signs of deterioration.
- Roof deck in the west theatre (Theatre 1) was visually inspected from a mobile elevated work platform and was sounded for deterioration. Deck underside in this area is painted and no signs of deterioration were observed.
- Roof deck in the east theatre (Theatre 2) was also visually inspected and sounded from the platform. A perforation due to corrosion was visible from ground level in the northwest corner of the seating area. An area covering approximately 750 square feet displayed light discolouration and some pitting of the painted deck underside. Upon further investigation, localized sections of roof deck were completely corroded (Figure 20).
- Roof deck in the south seating portion of Theatre 2 was inspected and sounded. This section of deck is also painted but does not show signs of discolouration or pitting. No significant corrosion was detected in this area.
- Several ceiling tiles in both theatres show evidence of roof leaks. However, the location of a stained or water-damaged tile did not necessarily correlate with a visible leak location in the roof deck.
- The roof access ladder and hatch are located near the southeast corner of the building (Figure 21). The welded steel ladder is in good condition, but lag screw connections to the hatch frame are loose. The hatch is of robust wood-framed construction with galvanized sheet metal covering. Due to some bent sheet metal and a lack of interior grab handles, it fits poorly and is difficult to close.

6.3.7 Entrance, Lobby and Washrooms

- Entrance and lobby ceiling is a combination of suspended ceiling tiles and a drywalled, undulating ceiling finish in the lobby. Stained acoustic tiles along the south part of the ceiling were noted.
- Q-Deck underside is painted in all accessible locations (washrooms, vestibule, ticket booth and stairwells). Deck is heavy gauge (0.059-in) steel but badly corroded in some areas that are closest to the south exterior wall (Figure 22).
- Interior walls consist of CMU. The east-west wall running between the washrooms, inner doors, and main lobby area is load-bearing CMU and supports a W12 steel section spanning the inner door opening. The steel beam is completely clad but was uncovered for inspection and found to be in good condition. Q-Deck overlaps at this loadbearing line. Masonry along this loadbearing wall is in good condition.
- Cracks in mortar, loose blocks and shifted blocks were noted in the CMU non-loadbearing partition walls behind the snack bar counter (Figure 23). These walls are identified for removal in the renovation plan.
- Exposed areas of floor slab were inspected and sounded. No cracking or delamination was noted.

6.3.8 Projection and Storage Rooms

- A portion of the projection room's north wall was assessed to be loadbearing CMU. It is in good condition.
- Vertical cracks were noted adjacent to the lintel spanning the Theatre 2 entrance hallway. These cracks propagated through a joint between loadbearing units and the adjacent partition wall (Figure 24).

6.3.9 Stairs and Stairwells

- Stairs to the second floor are carpeted, cast-in-place concrete. These stairs are visible from the underside from the west mechanical room and east storage area. No signs of deterioration or distress were noted.
- Stairwell walls are painted CMU in good condition.
- Below the east stair, a descending staircase (wood-framed) leads to a small, unused area. This stair is in fair condition, with inadequate stringer support noted.

6.3.10 Theatres and Dividing Wall

- The dividing wall consists of sand-filled CMU atop an 8-in footing, with double 5/8-inch drywall and soundproofing insulation intersecting the trusses, as shown in drawings. Year of construction is 1993, and it is in good condition.

- The dividing wall between stages consists of a double 5/8-inch drywall and ½-inch fiberglass noise-stop board on either side of a 6-inch metal stud wall, as per drawings. It is in good condition.
- A vertical joint was noted on the upper east wall of Theatre 2, forward of the balcony. 3/8-inch plywood was observed in the joint and no gaps were observed. This joint did not run the entire height of the wall, but terminated above eight courses of CMU and the cast concrete portion of the wall (Figure 25). Some CMU to the north of the joint were cracked vertically.
- A continuous, shallow vertical crack was noted in the west wall of Theatre 1, forward of the balcony. This crack propagated through both the base concrete and upper masonry unit walls (Figure 27).

6.3.11 Balcony

- Balcony framing consists of eight W12x16 steel sections, angled and running north-south, supported by W12x45 cross beams, loadbearing masonry walls, and a substantial riveted plate girder running east-west at the balcony forward edge. All exposed steel is painted and shows minimal corrosion. Bolted connections are all free from corrosion. Beam bearing locations in masonry walls show no signs of distress or displacement.
- An unknown decking system, comprised of galvanized steel panels of various widths and a concrete topping, was observed to span approximately eight feet between W12x16 beams. It is in good condition.
- Seating on the balcony is stepped and is mounted on risers, which are suspected to be cast-in-place concrete, with an inner void created by formwork. Nominal thickness of risers is estimated to be three inches. Electrical conduit and junction boxes were noted on some risers.

6.3.12 Second Floor Common Room and Washrooms

- The south exterior wall is comprised of 2x4 wood studs on 16-inch centers, OSB (Aspenite) sheathing, fiberglass batt insulation, vapour barrier and drywall. This wall is in fair condition, with no signs of water intrusion noted in the test-cut areas.
- The north interior wall of the common room is constructed of CMU and is in good condition.

6.3.13 Basements, Foundations and Slabs

- No basement exists at 14 Elizabeth Walk. Low points include mechanical and storage areas under each stairwell, and a larger mechanical room under the stage. Foundation walls are cast-in place concrete and no signs of distress, water intrusion or settlement were noted in these areas.

- Visible components of the foundation consist of a slab on grade of unknown thickness. Drawing review (1993) and investigation of penetrations in the slab suggest a nominal thickness of six inches. Reinforcement type and layout is unknown.
- Floor slabs are in generally good condition, but some areas are poorly finished (northwest exit stair) or undulating. A 32-inch wide, shallow services trench is present in both theatres (Figure 28). This trench was further investigated in Theatre 2, where it extended to the low point line forward of the stage. The status of conduits and piping observed inside these trenches is unknown.

7. ANALYSIS

Engineering calculations were not performed in support of any assessments herein. The assessments contained in this report are of a qualitative nature only.

8. DISCUSSION

8.1 Exterior

The south elevation will require a variety of repairs to reinstate the building envelope. The entrance canopy which projects across the width of the south elevation retains water due to a failed waterproof membrane and clogged drains. Either the saturated (absorbent) layer of sheeting beneath the membrane, or the slight slope of the cantilevered Q Deck, is allowing water to enter the second-floor decking and cause corrosion.

Masonry and concrete on the north elevation is generally in good condition but the shortened drain spout on the west side of the north wall is causing premature deterioration of the parging and may lead to accelerated deterioration of the concrete wall.

The exposed CMU wall at the northeast corner of the Theatre will lead to corrosion of primary roof framing and deterioration of the loadbearing wall if left unaddressed. Proper tie-in between a new wall covering, the brick veneer to the north, and the roof step cladding to the south, is essential. The status of the brick ties at the northeast corner of the building is not known and it should be inspected.

The partial roof replacement occurred sometime between 2012 and 2013. While the modified bitumen roof on the south portion (approximately 3,200 square feet) is twenty years older, it is performing well. Flashings and seals around all unused vents and projections should be inspected and repaired by a roofing contractor.

8.2 Interior

The suspected cause of roof deck corrosion may be linked to previous roof leaks, saturated roof sheeting, trapped water, lack of building climate control, or a combination of these factors. Since it is unknown whether the corroded deck is due to current roof leaks or from leakage that occurred prior to the latest reroofing, we recommend further investigation of the roofing in this area. The extent of corroded roof deck is not visually apparent from the underside at ground level. It should be mapped out accurately by removing all suspended ceiling tiles and completing a thorough survey of the deck with an ultrasonic thickness gauge. This will require the removal of most fixed seating in the theatres, and the use of an elevated work platform. Depending on the extent and severity of corrosion, partial roof deck replacement may be necessary.

Cracked and displaced non-loadbearing CMU partition walls to the north of the lobby are earmarked for removal during the renovation and are not a concern. After removal, the slab will be inspected in this area and repair details will be provided if necessary.

The effects of removing portions of non-loadbearing partition wall south of the projection room's south (loadbearing) wall will be analyzed and accounted-for in the renovation design, as the cause of vertical cracks and separations next to these lintels is not yet known.

The wood-framed staircase should be further investigated to determine whether repairs or replacement is appropriate.

The vertical crack below the joint in Theatre 2's east wall was likely caused by minor differential settlement and a concentration of shear forces in the intersecting block. Continuous vertical cracks in the west wall of Theatre 1 appear to be shrinkage cracks and do not appear to be active. These cracks are not a structural concern at present, but they should be gauged and monitored periodically.

9. CONCLUSIONS AND RECOMMENDATIONS

Considering the quality and age of the building elements, workmanship, occupancy and maintenance/repairs completed to-date, moderate investment could correct the faults identified and help to ensure the continued performance of the building.

A suggested list of the assessor's recommendations are as follows: These recommendations are not prioritized in this report. For example, while the detailed evaluation of the roof deck might be linked to a greater risk event and be a higher priority than dealing with minor masonry repairs, the latter may be sequenced first due to a number of factors. We encourage further coordination between TULLOCH, the City, and the primary consultant for theatre renovation prior to sequencing repair or renovation efforts.

- The south elevation projection and entrance canopy, supported by approximately 36 inches of cantilevered Q Deck, should be removed. Any repair/replacement of exterior claddings on the south wall shall account for this detail and prevent further water intrusion that could result in deterioration of floor decking and masonry walls, or leaks.
- The exposed CMU wall at the northeast corner of the theatre must be cladded and tied-in to adjacent north wall masonry and east wall cladding. Details may be furnished on renovation structural drawings. The northeast corner requires further inspection to inspect the condition of brick ties and confirm a method of tie-in.
- The north drain downspout should be extended to a splashpad to prevent further deterioration of the concrete wall and parging.
- All degraded or missing building cladding items or damaged block, brick veneer and concrete surfaces should be repaired to restore the building envelope.
- Plan and conduct a detailed mapping of roof deck condition in the Theatre. Submit the findings to the City to enable budget and tendering of partial roof deck replacement.
- Hire a roofing contractor to inspect and repair roof penetrations on the south end, and to inspect the north roof to identify the cause of leaks.
- Perform a detailed inspection of the wood-framed staircase to determine what repairs may be required, or if replacement is necessary.
- Install crack-monitoring gauges at Theatre 2's east wall control joint, and both vertical cracks noted in Theatre 1's west wall. Include these gauge readings in an annual structural health monitoring plan.

APPENDIX A

Definitions

Appendix A to Preliminary Structural Condition Assessment

Structural Condition Assessments of Existing Buildings and Designated Structures

DEFINITION GUIDELINE

The definitions of the key words and phrases used in this report are those assigned to them in the following statutes, regulations, codes, standards and commentaries in the priority in which they are listed:

1. The Professional Engineer's Act and the regulations made under it.
2. The Building Code Act and the Building Code, Ontario Regulation 332/12 under the Building Code Act.
3. The Occupational Health and Safety Act, R.S.O. 1990, c O.1
4. The National Building Code (NBCC) of Canada.
5. The technical standards referenced in the Building Code applicable to the design, construction, renovation, occupancy and use of buildings referenced therein.
6. Those listed below to which specific meaning have been assigned in this report.
7. The meanings that are commonly assigned to them by dictionaries, within the context in which they are used by engineers, technicians, builders and the skilled trades that implement structural engineering work.

Primary structural system: A combination of primary structural elements that support a building's self weight and applicable live loads based on occupancy, use of the space and environmental loads, such as wind, snow and seismic forces.

Structural integrity: Defined in the Structural Commentary L of the 2015 edition of the NBCC-Part 4 of Division B, to mean the ability of a structure to absorb local failure without widespread collapse.

Structurally adequate: Buildings are deemed to be structurally adequate provided they satisfy the evaluation criteria prescribed by Commentary L of the User's Guide – NBCC of the Structural Commentaries (Part 4 Division B).

Structurally sufficient: Buildings and other designated structures that are designed and built to the minimum structural requirements of the current Building Code, in compliance with a valid building permit and where applicable, with the design and general review requirements of the Building Code are deemed to be "structurally sufficient".

Structurally sound: A building or other structure exhibiting no evidence of defects, damage, deterioration or distress that might impair its structural function or its present occupancy and use. Sound is not the same as adequate. Sound simply means undamaged.

Structurally unsafe: As per article 15.9 (2) of the Ontario Building Code Act, “A building is unsafe if the building is:

- a. Structurally inadequate or faulty for the purpose for which it is used; or
- b. In a condition that could be hazardous to the health or safety of persons in the normal use of the building, persons outside of the building or persons whose access to the buildings has not been reasonably prevented.”

This report makes use of qualitative assessments. The following terms from Ontario’s Structure Inspection Manual (OSIM) published by the Ministry of Transportation and dated October 2000 (revised November 2003 and April 2008) is used:

Excellent: This refers to an element (or part of an element) that is in “new” (as constructed) condition, with no visible deterioration-type defects present. Remedial action is not required on this element and minor construction defects do not count as visible deterioration type defects.

Good: This refers to an element (or part of an element) where the first sign of “light” (minor) defects are visible. This usually occurs after the structure has been in service for a number of years. These types of defects would not normally trigger any remedial action since the overall performance of the element is not affected.

Fair: This refers to an element (or part of an element) where medium defects are visible. These types of defects may trigger a “preventative maintenance” type of remedial action where it is economical to do so.

Poor: This refers to an element (or part of an element) where severe or very severe defects are visible. In concrete, any type of spalling or delamination would be considered “poor” since these defects usually indicate more serious underlying problems in the material. These types of defects would normally trigger rehabilitation or replacement if the extent and location affect the overall performance of that element.

REFERENCES

Professional Engineers Ontario (November 2016). *Structural Condition Assessments of Existing Buildings and Designated Structures Guideline*.

ASTM E2018-15 (2018). *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process*.

APPENDIX B

Photographs

Appendix B to Preliminary Structural Condition Assessment Photographs



Figure 1 – Street view, south elevation, July 2021. *Source: MET*



Figure 2: Exposed and corroding reinforcing steel, south elevation.



Figure 3: Eave projection along south elevation. Note continuation of steel floor decking and water ponding issues.



Figure 4: Upper east corner of south elevation, exposed sheathing and strapping at parapet.



Figure 5: View of north elevation, east side.



Figure 6: North elevation, deteriorated exit door and roof drain.



Figure 7: Masonry on north elevation of building, east side.



Figure 8: Exposed loadbearing masonry, east elevation, north side.



Figure 9: Exposed loadbearing masonry on northeast corner.



Figure 10: Roof step between theatre and neighboring unit to the east.



Figure 11: Transition from asphalt roll roofing-covered plywood skirt to exposed masonry wall, east elevation.



Figure 12: Exposed truss top chord, northeast corner.



Figure 13: Older (unused) roof projections, south end.



Figure 14: Older roof drain and strainer, south end of building.



Figure 15: North roof parapet and newer RTU, April 2022.



Figure 16: Roof trusses, roof deck and termination in masonry wall, south end of building.



Figure 17: Roof truss and bracing, south end of building.



Figure 18: Truss terminating at loadbearing masonry wall, Theatre 2 east wall.



Figure 19: 1-1/2 inch roof deck in Theatre 2, north end.



Figure 20: Close-up of corroded and perforated roof deck, Theatre 2.



Figure 21: Roof access hatch, southeast corner.



Figure 22: Images of Q-Deck corrosion as a result of ponding and leaks through projection.

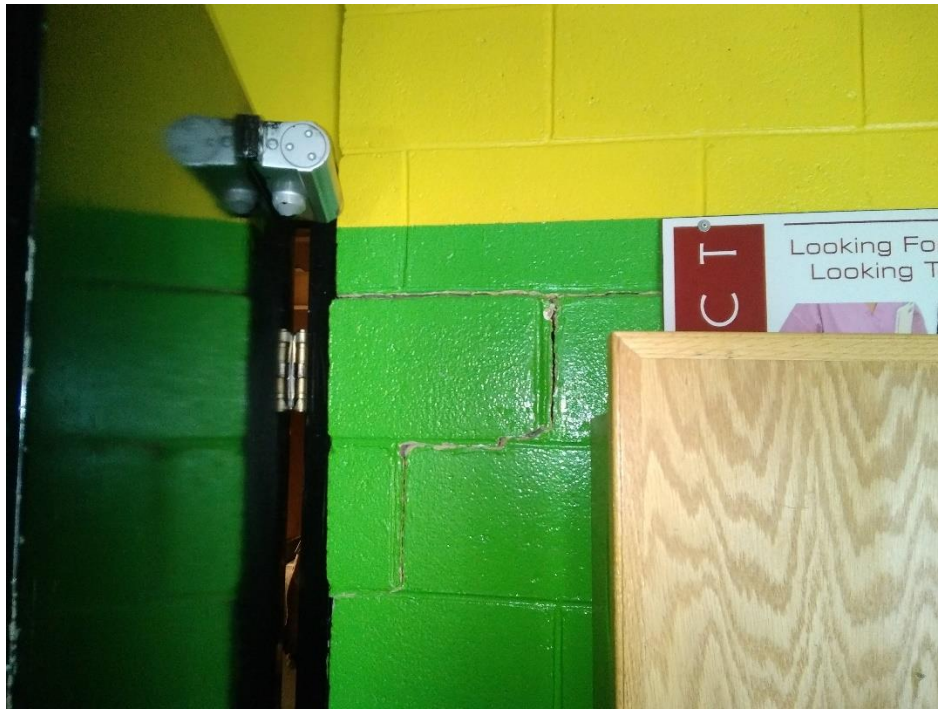


Figure 23: Cracks and loose CMU noted in lobby partition walls.



Figure 24: Images of lintel across loadbearing interior wall. Note cracks in mortar joints in adjacent partition walls.



Figure 25: Control joint and vertical cracking observed in Theatre 2 east wall.



Figure 26: Continuous crack in Theatre 1 west wall.

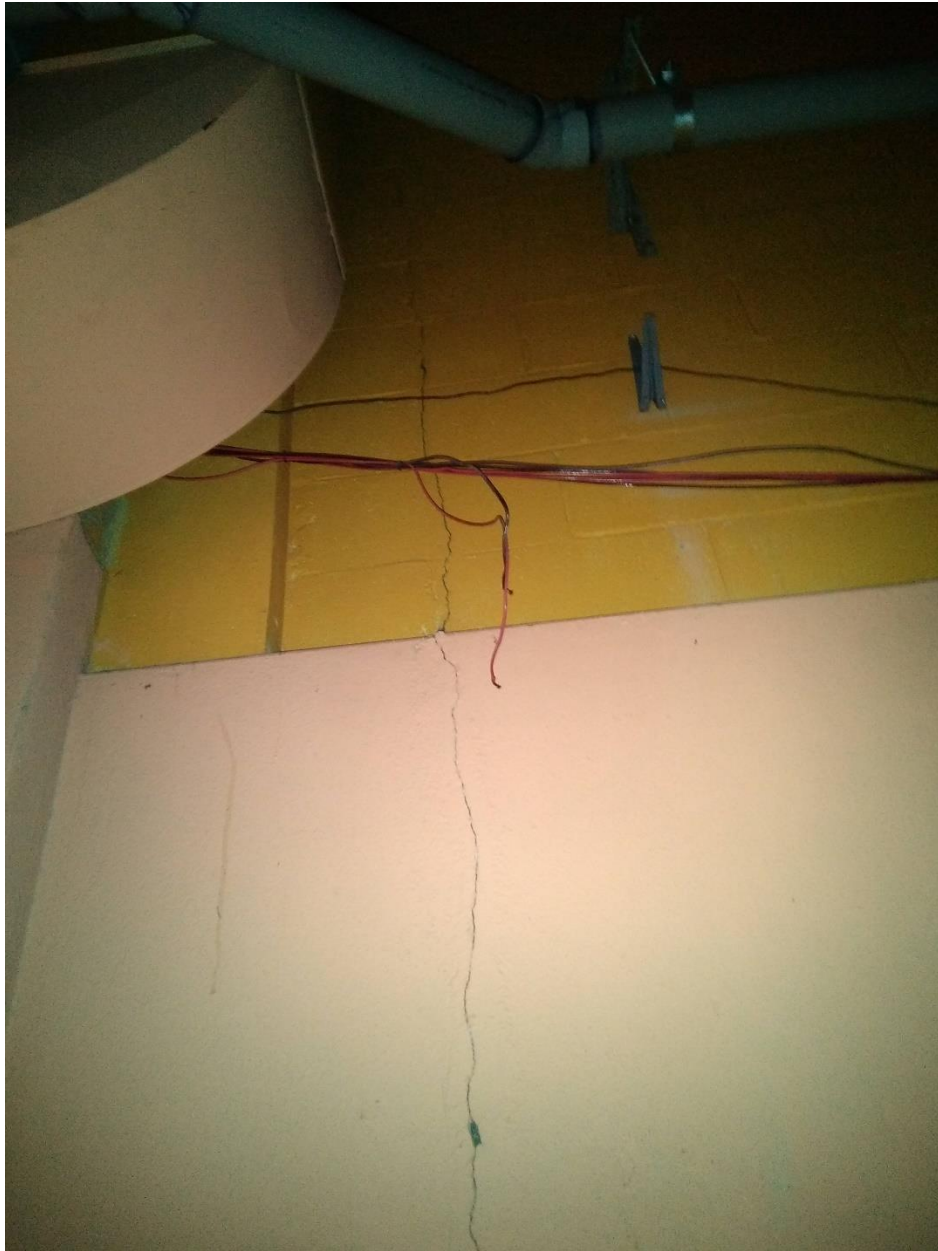


Figure 27: Continuous crack through cast-in-place wall and CMUs, Theatre 1 west wall.



Figure 28: Images of utilities trench investigation, Theatre 2.