
JOEL GILLELAND PORTFOLIO

- Junior Architectural Technologist -

Pg. 2-6

LIBRARY DESIGN PROJECT

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EMS HEADQUARTERS

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WESTMOUNT OFFICE

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BLUE PARROT RENOVATION

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DESIGNS & RENDERINGS



JOEL GILLELAND



CASTLE DOWNS PUBLIC LIBRARY



THE GATHERING PLACE

The Castle Downs Public Library design is intended to be a community hub where everyone feels welcome to come relax, connect, or learn. The building features an angular, modern design that contrasts the landscaped park that will grow up around the library. Large glass facades welcome guests and provide views of the surrounding park. The site is designed to integrate with and connect people to the adjacent rec-center and transit station.

LIBRARY DESIGN PROJECT

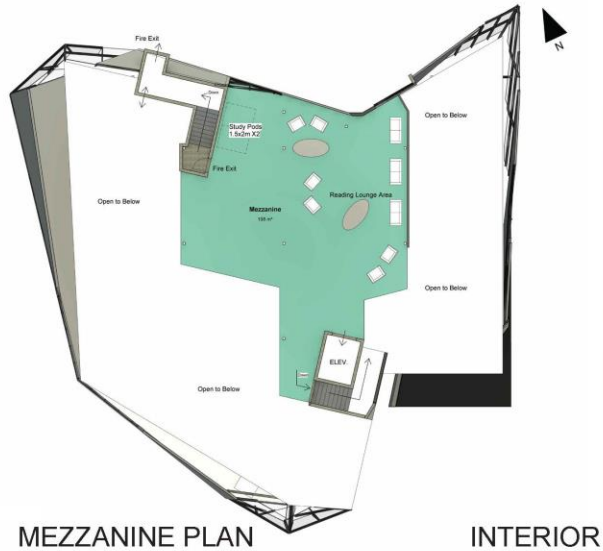


LAYOUT

To create a welcoming environment, the library has an open layout with large glass exterior walls.

On the main floor one can find print materials, a children's area and a computer lounge, along with chairs and tables for reading or working.

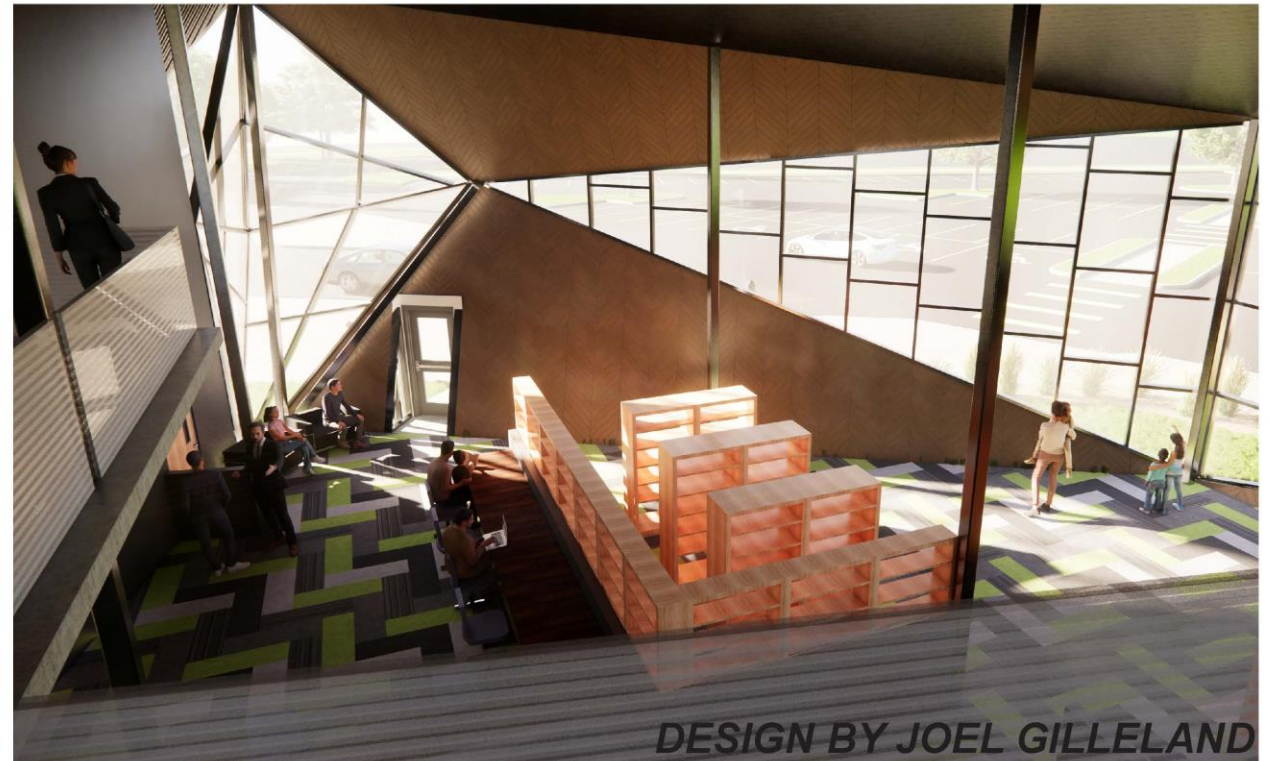
The mezzanine has a lounge area for quietly enjoying a book.



SUSTAINABILITY

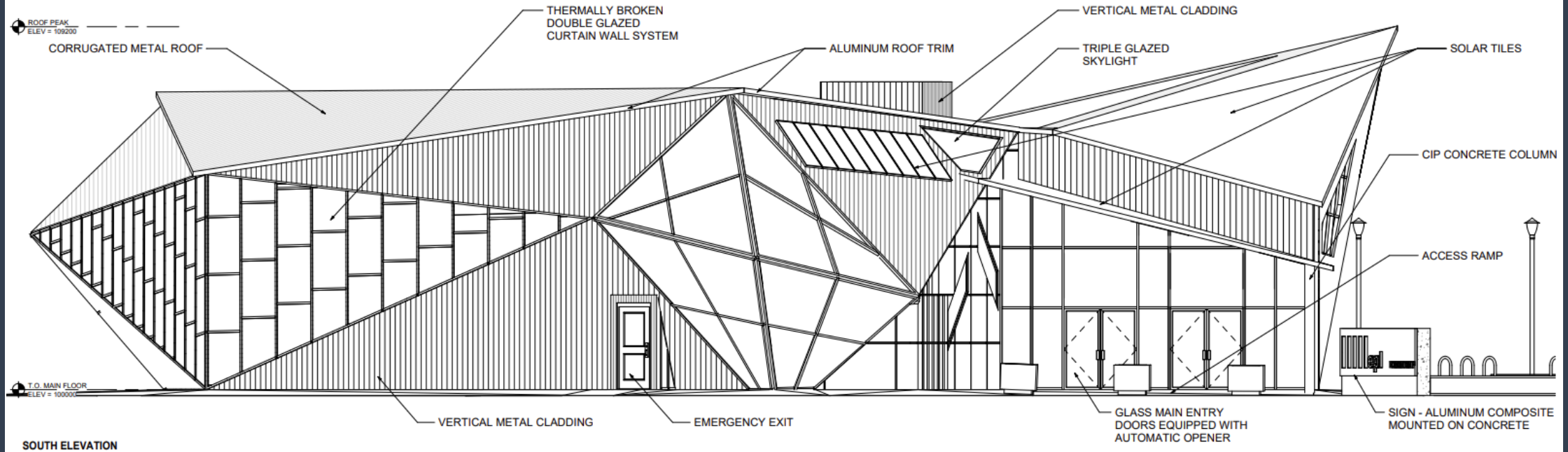
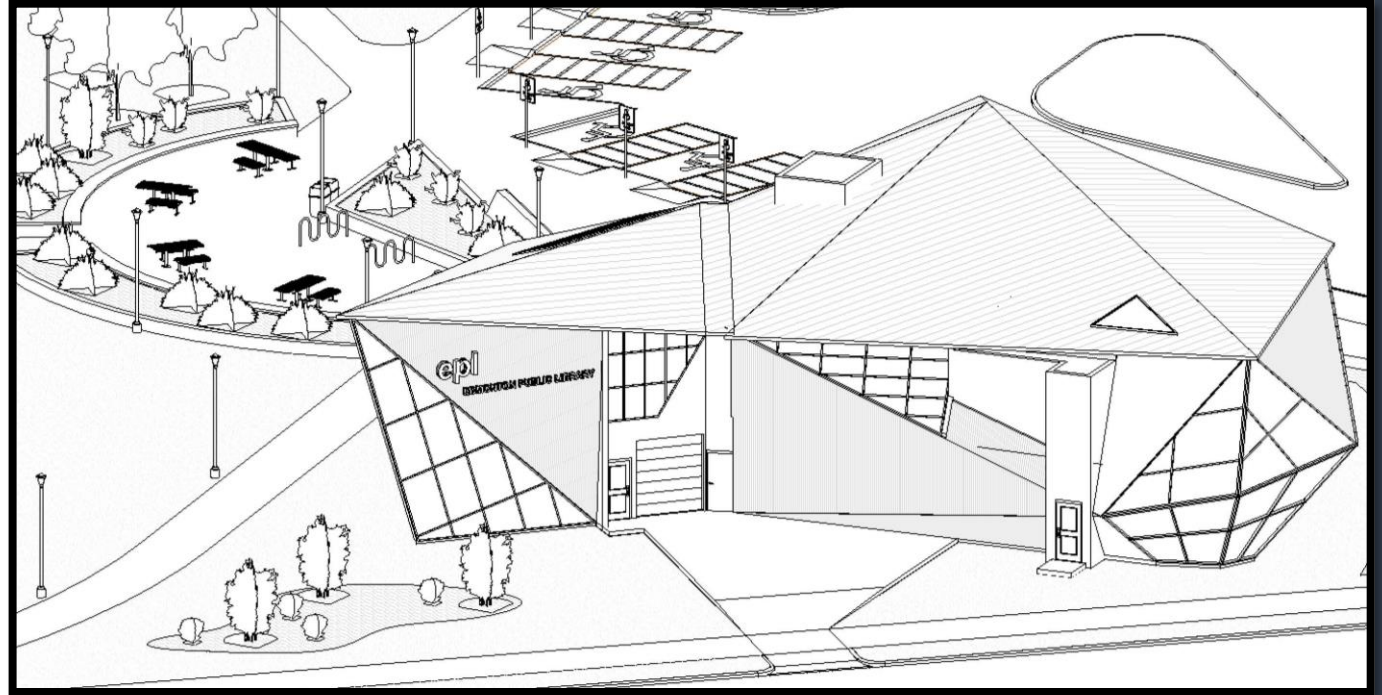
To align with our community's values, the Castle Downs Library includes many environmentally conscious design elements, including:

- Solar panels and solar tile south roof
- A 'living roof'
- Pedestrian & bike friendly
- New planting areas
- Thermally broken, triple glazing
- Geothermal heating
- Large reliance on natural light
- Recycled cladding materials

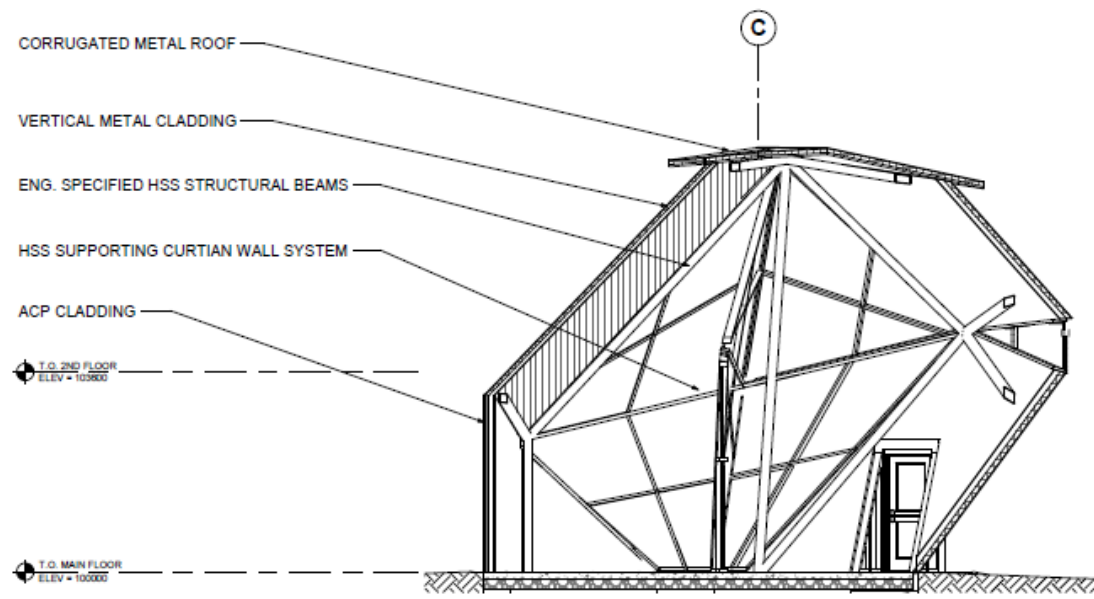


LIBRARY DESIGN PROJECT

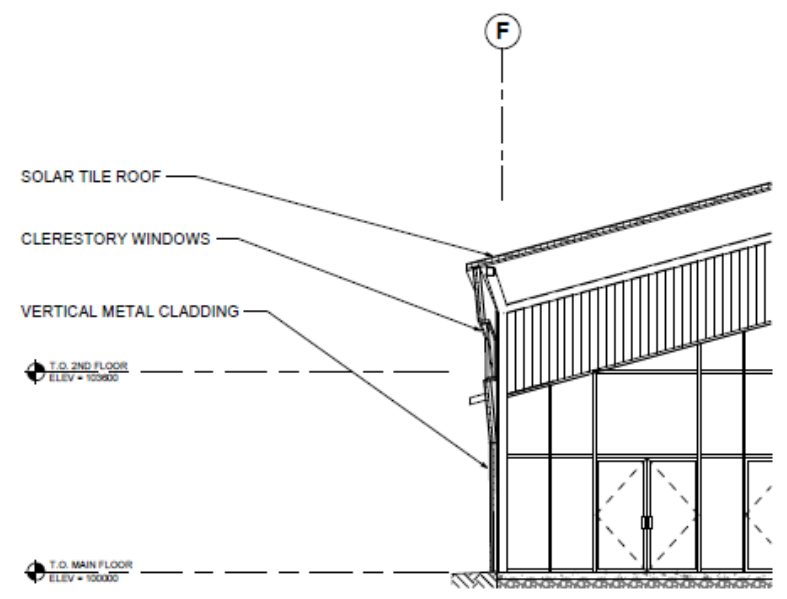
This project was part of a design course with the objective of designing a new public library for the Castle Downs neighborhood. I chose to use Revit to model my design and Enscape to create the renderings.



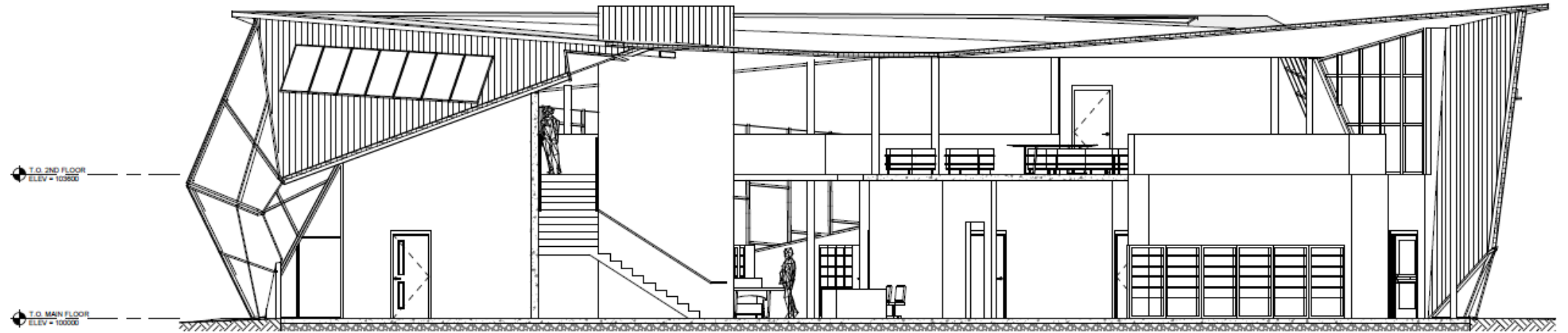
LIBRARY DESIGN PROJECT



1 FRONT CURTAIN WALL SECTION
SCALE = 1:50



2 ENTRYWAY SECTION
SCALE = 1:50



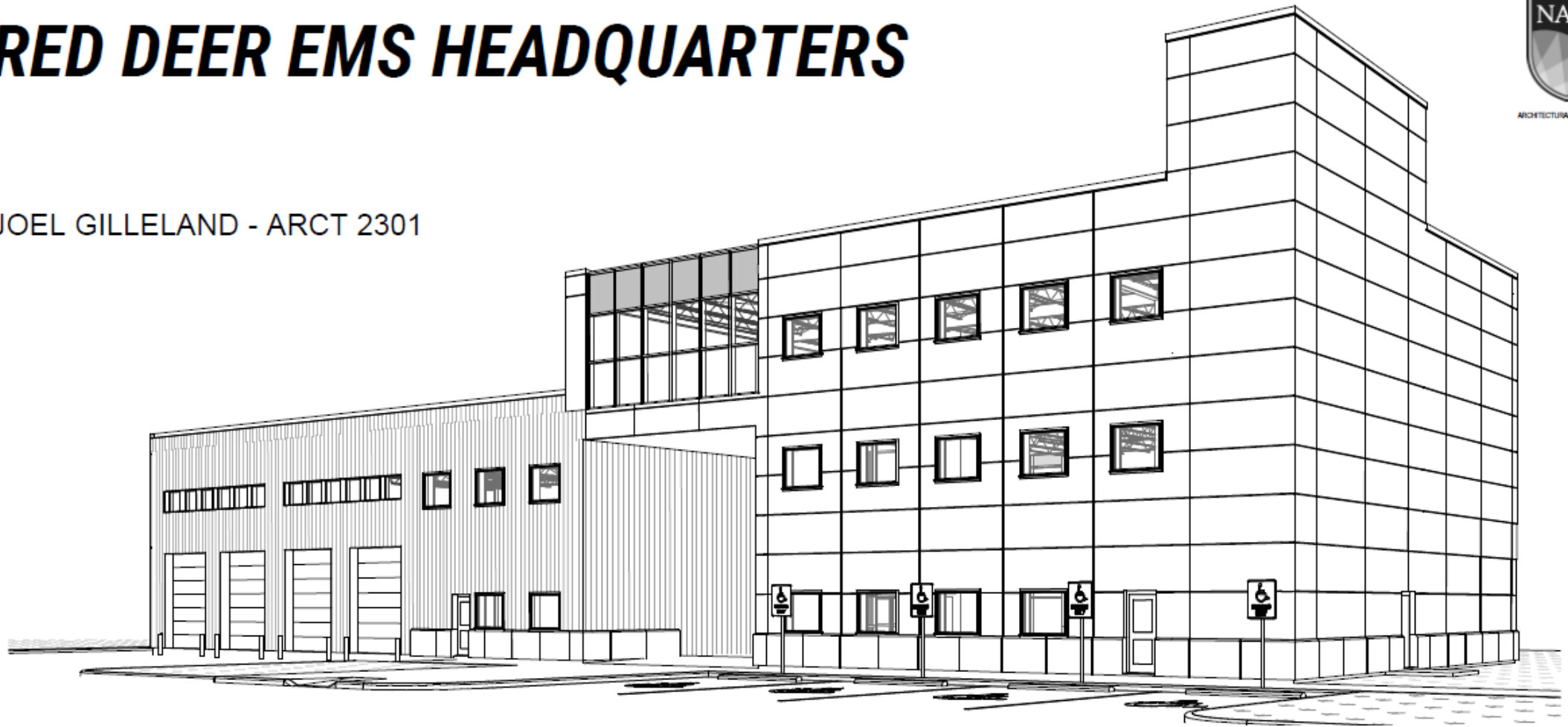
3 WEST FACING SECTION
SCALE = 1:50

6



RED DEER EMS HEADQUARTERS

JOEL GILLELAND - ARCT 2301



In this academic project, I used Revit to create schedules, wall sections, and building sections for the envelope of an ambulance station. I also created construction details using AutoCAD. This design is not my own, as the main focus of the project was on modeling and drafting.

EXTERIOR WALL ASSEMBLIES	
WALL TYPE	CONSTRUCTION ASSEMBLY
W1	6 ACRYLIC STUCCO 100 RIGID ISULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W2	PREFINISHED VERTICAL METAL CLADDING 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ 600 O.C. VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W3	6 ACRYLIC STUCCO W/MESH REINFORCED BASE COAT 13 CEMENT BOARD 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ 600 O.C. VAPOUR BARRIER (SELF ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W4	ALUMINUM COMPOSITE PANNELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARRS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W5	100 PRECAST CONCRETE PANELS 25 AIR SPACE 100 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W6	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCRETE
W7	100 PRECAST CONCRETE PANELS 25 AIR SPACE 100 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCERTE
W8	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C.

PARAPET ASSEMBLIES	
WALL TYPE	CONSTRUCTION ASSEMBLY
PT1	6 ACRYLIC STUCCO 100 RIGID INSULATION SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT2	PREFINISHED VERTICAL METAL CLADDING 25 AIR SPACE 100 RIGID INSULATION 125 HORIZONTAL Z-BARS @ 600 O.C. SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT3	6 ACRYLIC STUCCO W/ MESH REINFORCED BASE COAT 13 CEMENT BOARD 25 AIR SPACE 100 RIGID INSULATION 125 HORIZONTAL Z-BARS @ 600 O.C. SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT4	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT5	190 ALUMINUM CURTAIN WALL, THERMALLY BROKEN SINGLE PANE INSULATED SPANDREL PANEL 25 AIR SPACE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 PLYWOOD VAPOUR BARRIER (SELF-ADHERED) 64 Z-BARS VERTICAL @ PERIMETER OF STUDS 64 RIGID INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER FLASHING

ROOF ASSEMBLIES	
ROOF TYPE	CONSTRUCTION ASSEMBLY
R1	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 250 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD 38 STEEL DECK
R2	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 250 RIGID INSULATION (SLOPED) VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCRETE
R3	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 200 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD 38 STEEL DECK
SOFFIT ASSEMBLIES	
SOFFIT TYPE	CONSTRUCTION ASSEMBLY
S1	900 x 900 ALUMINUM COMPOSITE PANEL 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 22 HAT SECTION FURRING @ 600 O.C., PARALELL TO OWSJ 38 CARRYING CHANNELS @ 600 O.C. SUSPENSION RODS @ 1200 O.C.

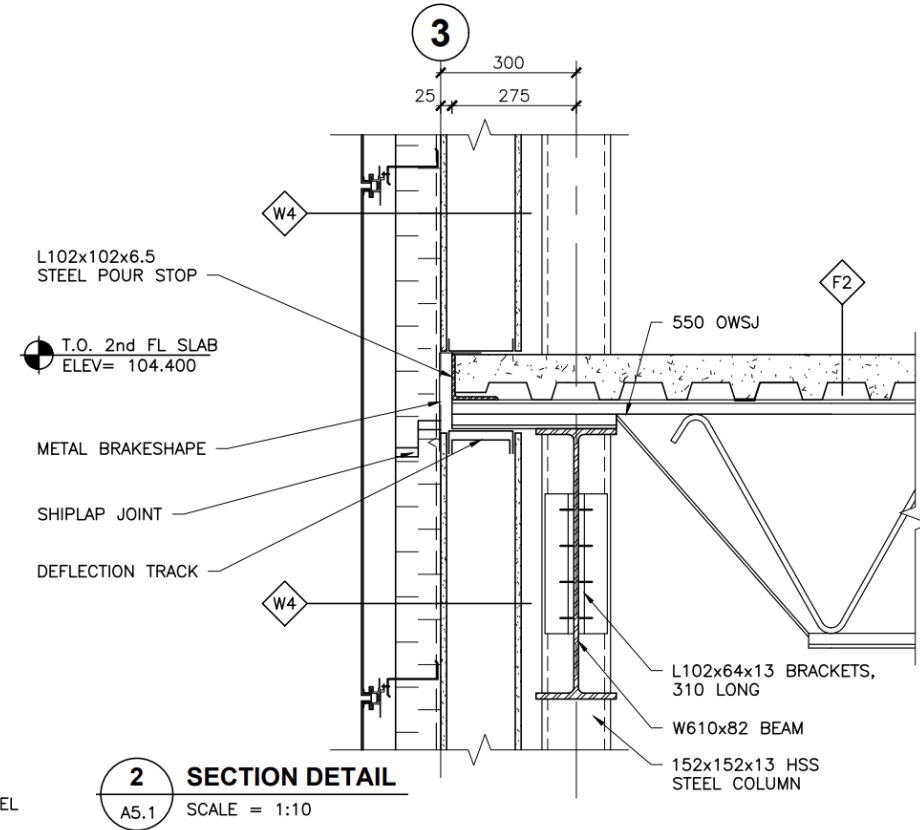
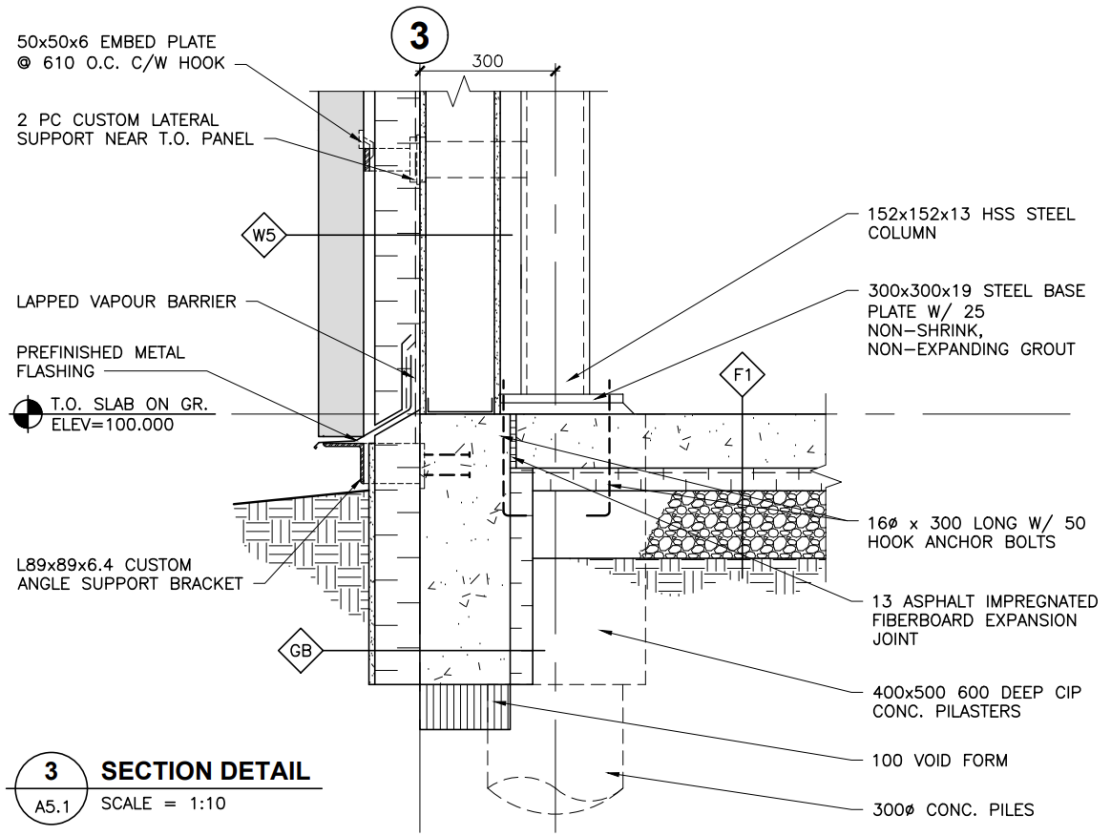
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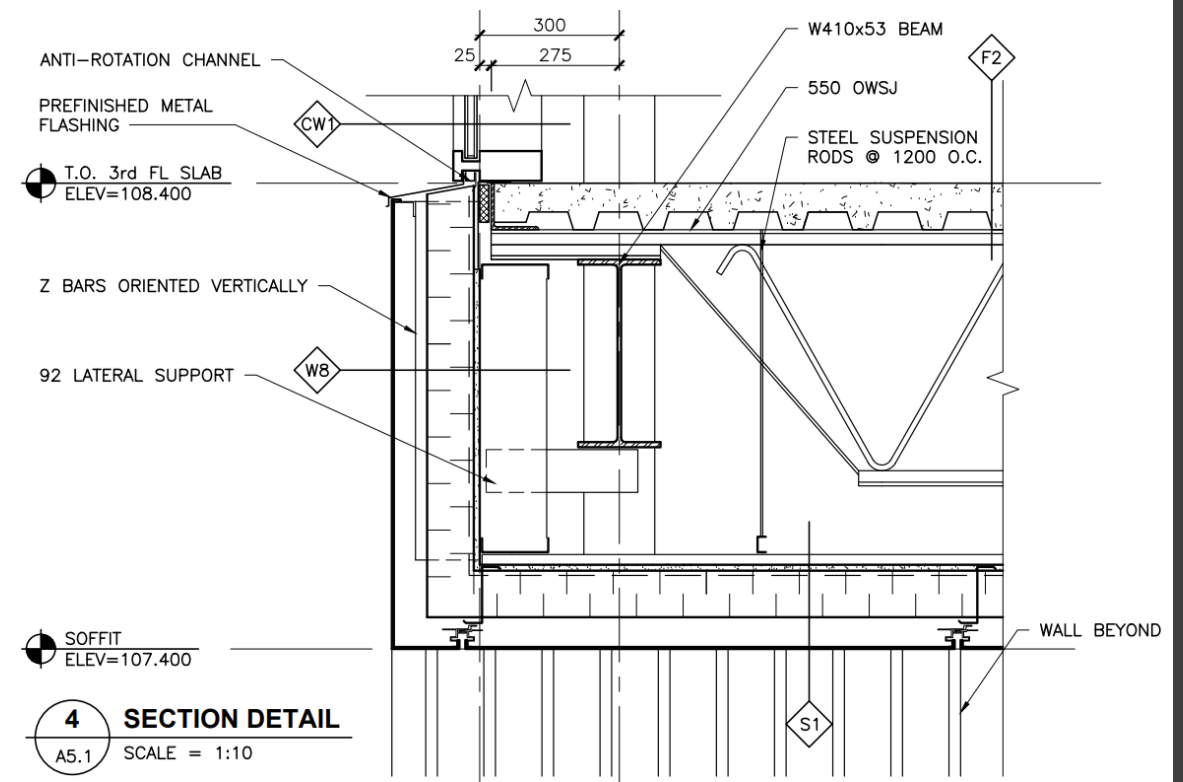
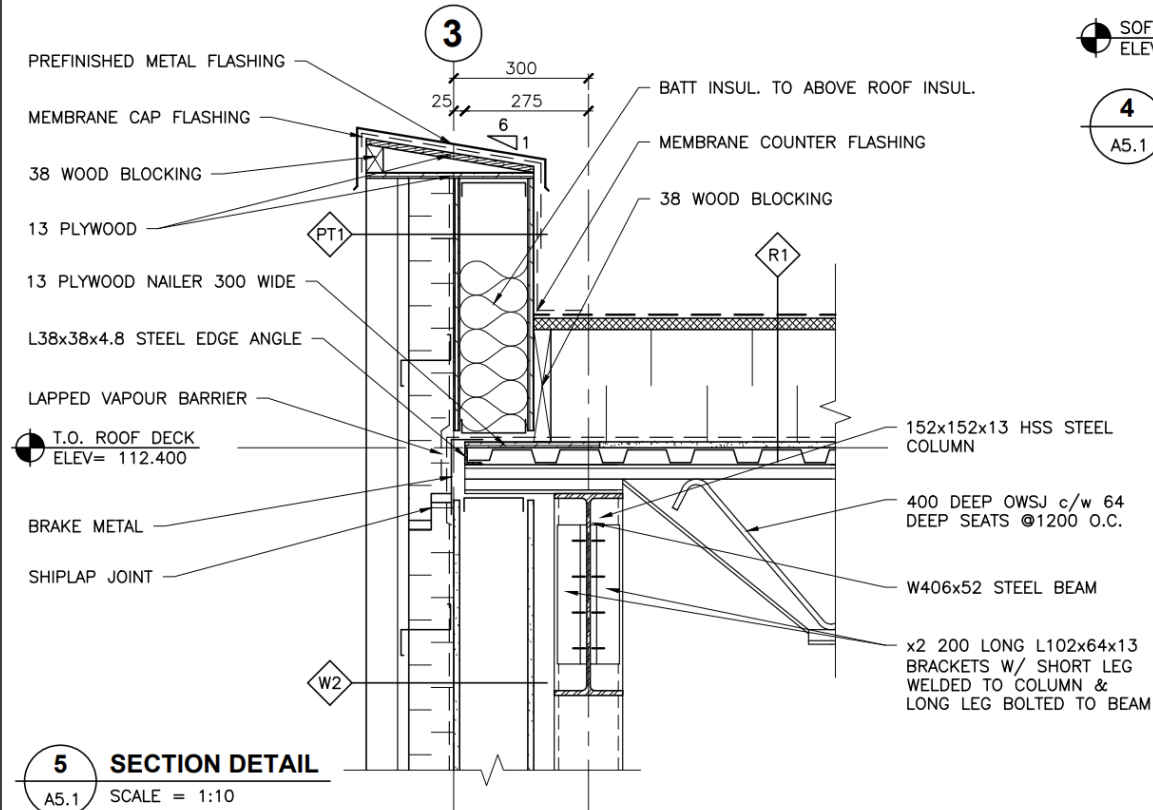
The image displays four architectural section drawings of a building facade, labeled 3, D, 1, and 1. Each drawing shows the vertical profile of the building, including the roof deck, third floor, second floor, and main floor. Key features and dimensions are as follows:

- Section 3:** Shows a section with a roof deck at elevation 112400, third floor at 108400, second floor at 104400, and main floor at 100000. Dimensions include 300, 600, 1400, 1600, 4000, 1600, 1000, 4000, 13000, and 4400. Components labeled include R1, PT5, CW1, F2, W8, and S1.
- Section D:** Shows a section with a roof deck at elevation 112400, third floor at 108400, second floor at 104400, and main floor at 100000. Dimensions include 600, 4000, 13000, 4000, 1000, 1468, 1400, 1100, 1300, 1032, and 1100. Components labeled include PT3, R1, W3, F2, S1, W2, and F1.
- Section 1 (Left):** Shows a section with a roof deck at elevation 112400, third floor at 108400, second floor at 104400, and main floor at 100000. Dimensions include 300, 600, 1568, 4000, 1500, 1400, 1100, 1100, 1500, 1400, 1100, 1300, 2132, and 150. Components labeled include PT5, R1, CW1, F1, and F2.
- Section 1 (Right):** Shows a section with a roof deck at elevation 112400, third floor at 108400, second floor at 104400, and main floor at 100000. Dimensions include 300, 600, 4000, 1200, 1000, 13000, 4000, 1200, 1000, 150, and 1000. Components labeled include PT4, R1, F2, W4, F2, F1, and W5.



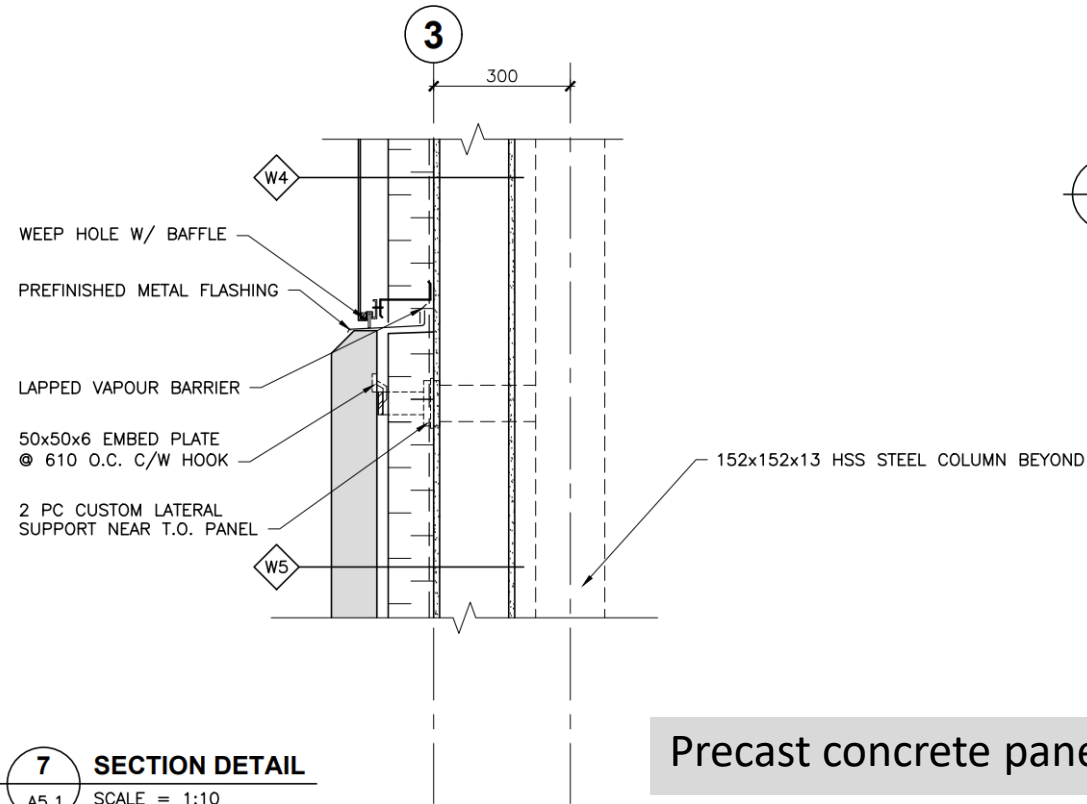
2nd floor detail with ACP cladding

Precast concrete panel
base connection

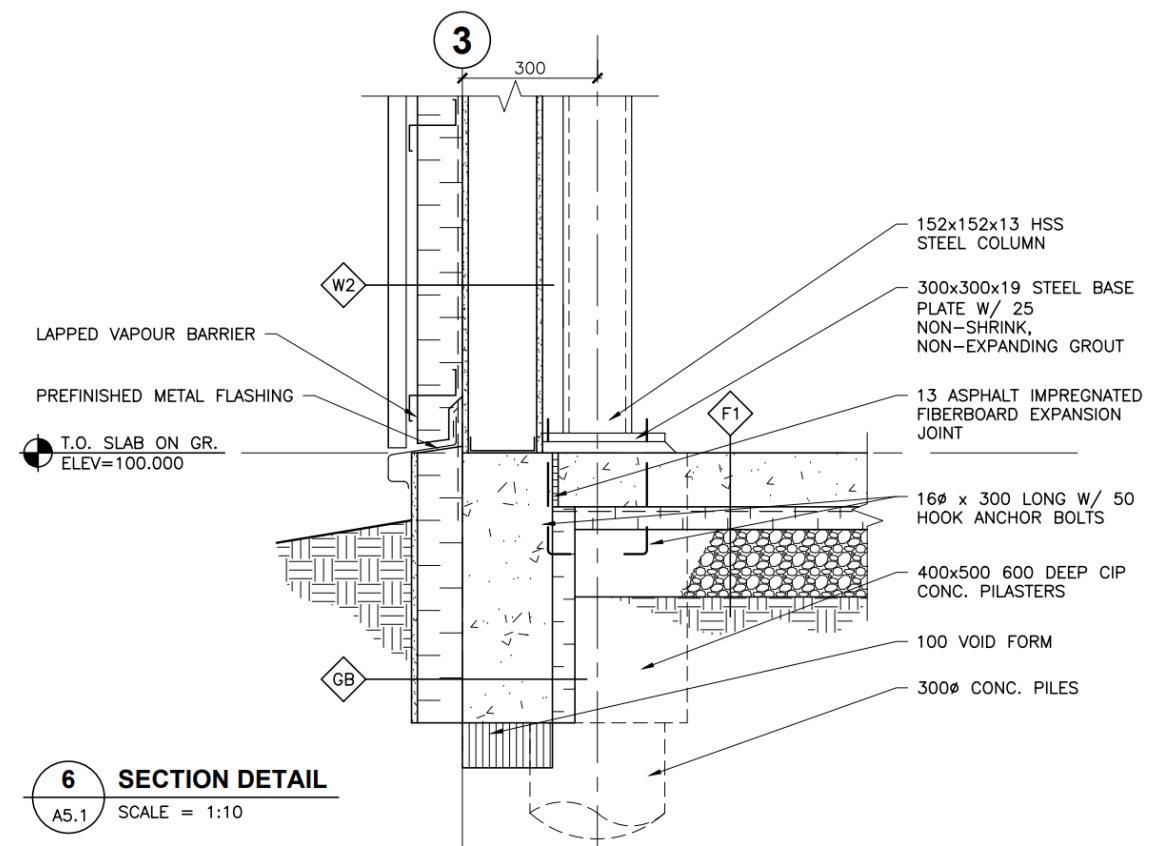


Warm soffit with ACP finish

Steel stud infill wall at parapet with vertical metal cladding finish



Precast concrete panel and ACP connection

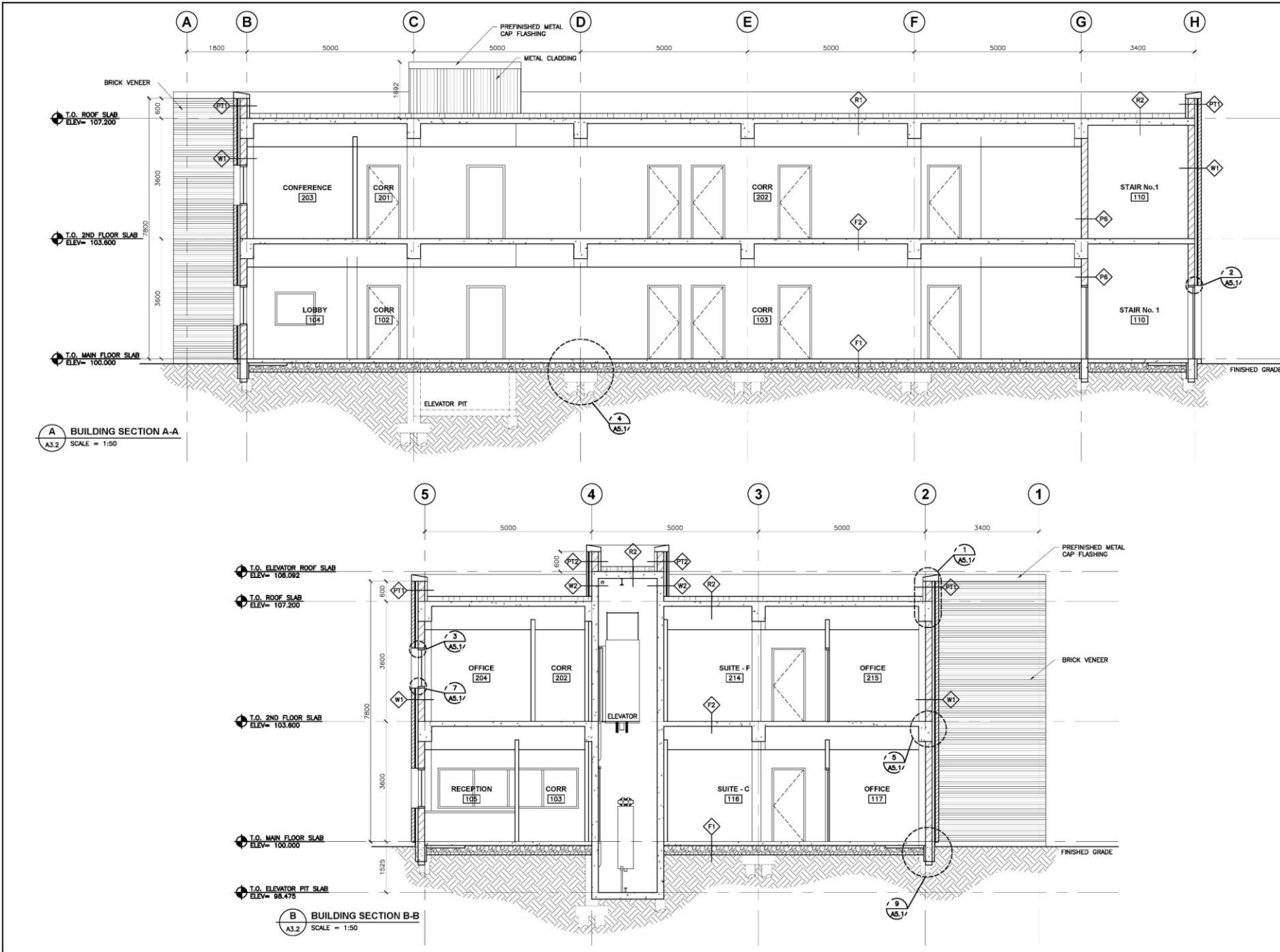



Vertical metal cladding base detail

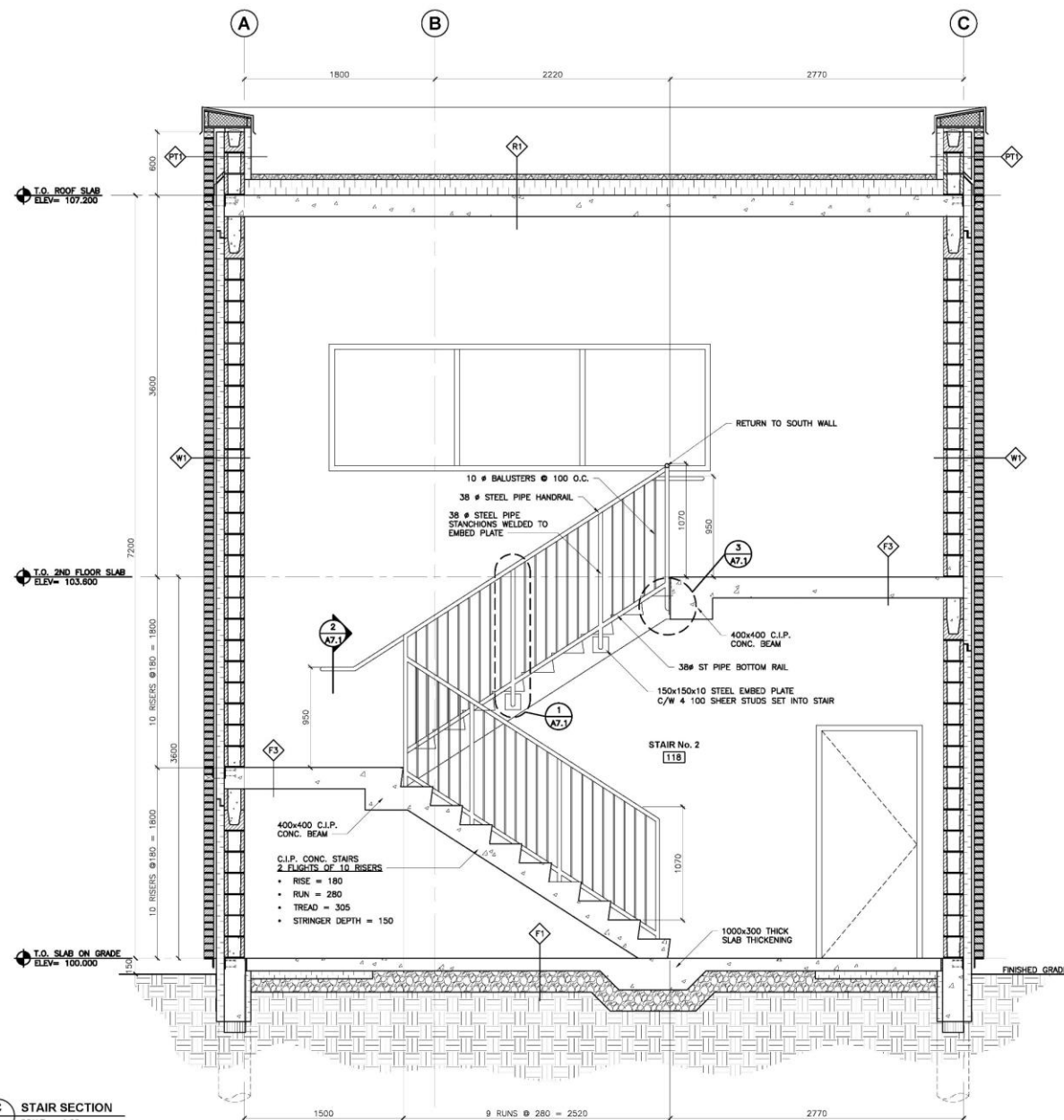
This project involved creating AutoCAD construction drawings for an office building. The envelope used a masonry cavity wall structure and parapet walls which I created details for.

1 MAIN FLOOR PLAN
SCALE = 1:50

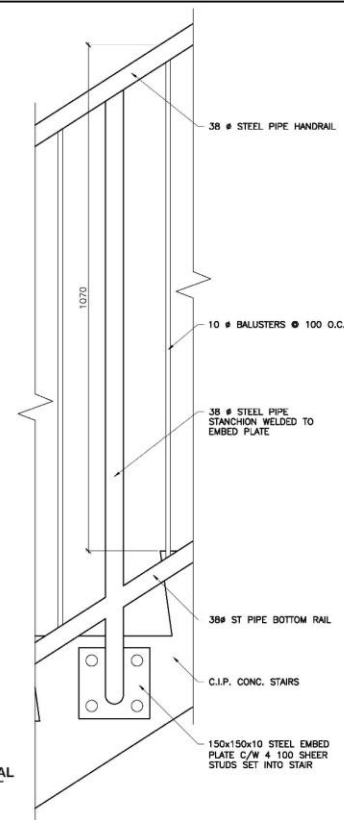
 SCHOOL OF APPLIED SCIENCE AND TECHNOLOGY ARCHITECTURAL TECHNOLOGY		
CONSULTANTS		
NOTES		
No.	DATE	DESCRIPTION
PROJECT		
WESTMOUNT OFFICE CENTRE		
DRAWING		
MAIN FLOOR PLAN		
DESIGNED BY: NAIT		
CHECKED BY: BRUCE TUCHSEN		
DRAWN BY: JOEL GILLELAND		
DATE: 2023 APRIL 21		
COURSE: ARCT 12D1		
CLASS: A03		
INSTRUCTOR: BRUCE TUCHSEN		
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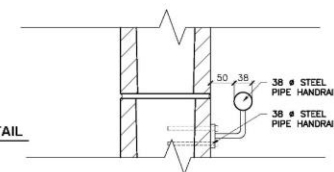
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CONSULTANTS		
NOTES		
REVISIONS		
No.	DATE	DESCRIPTION
PROJECT		
WESTMOUNT OFFICE CENTRE		
DRAWING		
BUILDING SECTIONS		
DESIGNED BY: NAIT		
CHECKED BY: BRUCE TUCHSEN		
DRAWN BY: JOEL GILLELAND		
DATE: 2023 APRIL 21		
COURSE: ARCT 1201		
CLASS: A03		
INSTRUCTOR: BRUCE TUCHSEN		
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CAD FILE:		



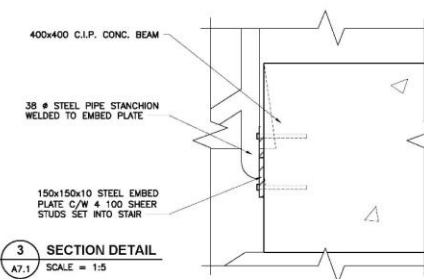
1 ELEVATION DETAIL
A7.1 SCALE = 1:5



2 SECTION DETAIL
A7.1 SCALE = 1:5



3 SECTION DETAIL
A7.1 SCALE = 1:5



CONSULTANTS

NOTES

REVISIONS

[illegible]

No.	DATE	DESCRIPTION
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PROJECT			
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WESTMOUNT

WESTMOUNT
OFFICE

OFFICE

CENTRE

DRAWING

DRAWING

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. International Trade in Goods and Services*, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

STAIR SECTION

DESIGNED BY: NAIT

CHECKED BY: BRUCE TUCHSEN

DRAWN BY: JOEL GILLELAND

DATE: 2023 APRIL 21

COURSE: ARCT 1201

COURSE: ARCT 1201

CLASS: A03

INSTRUCTOR: BRUCE TUCHSEN

SCALE: 1:20 & 1:5

SET: SHEET 1/1

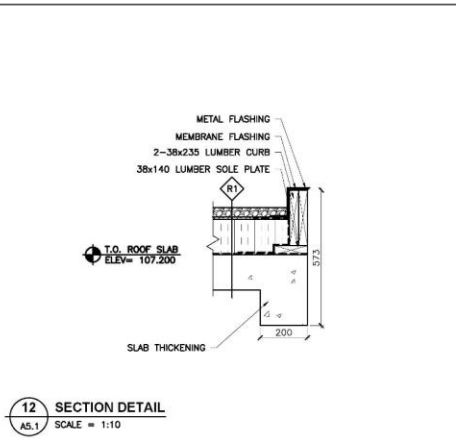
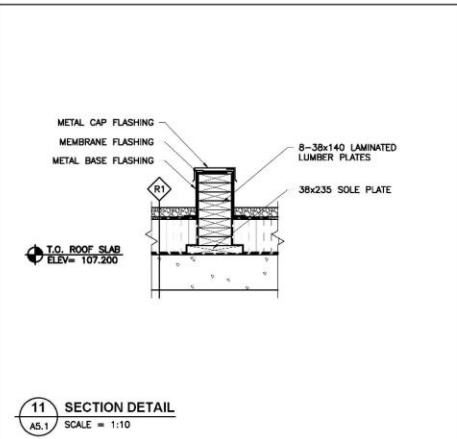
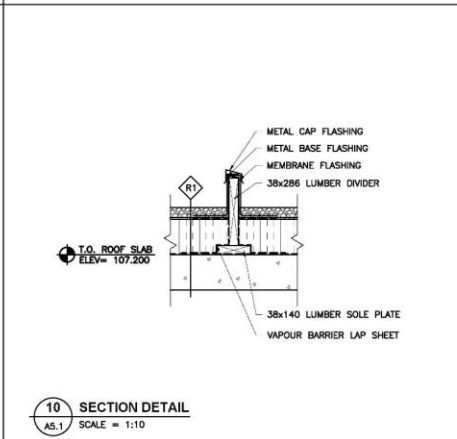
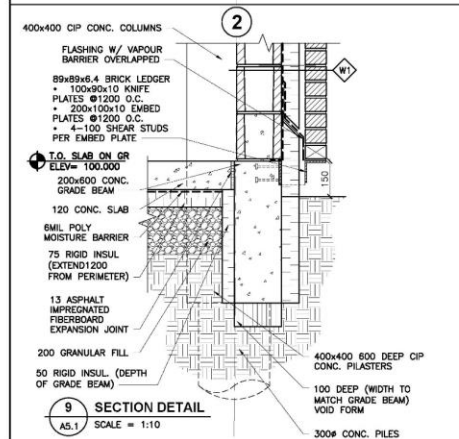
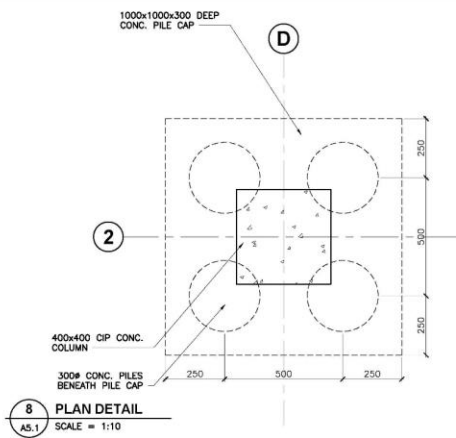
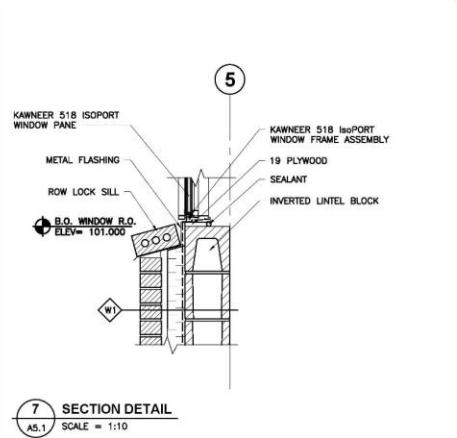
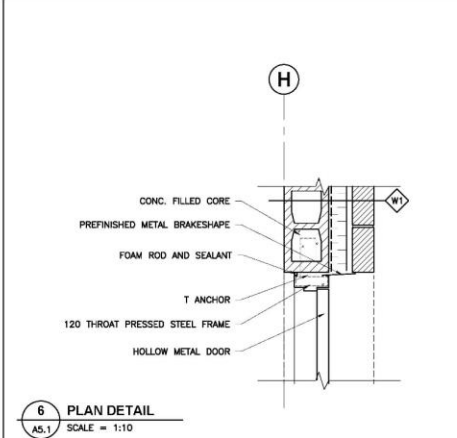
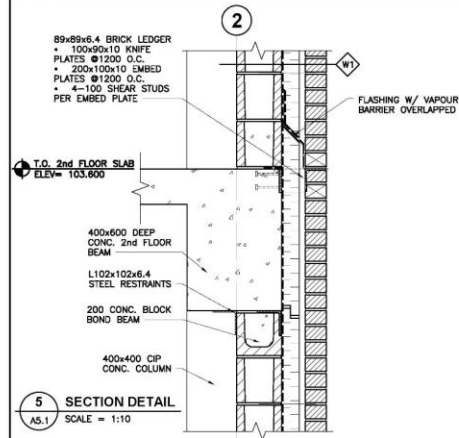
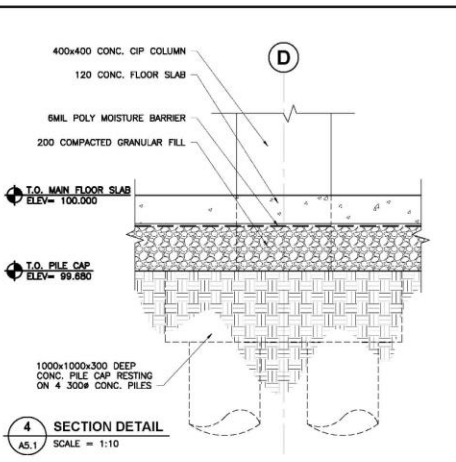
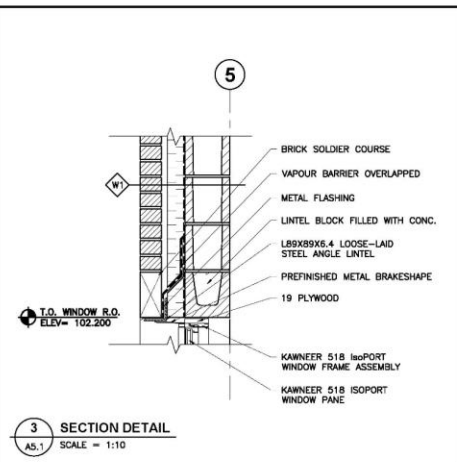
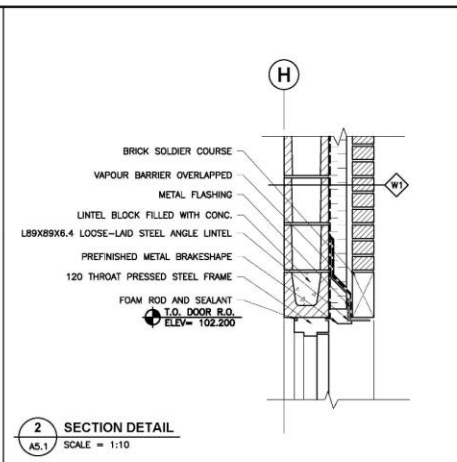
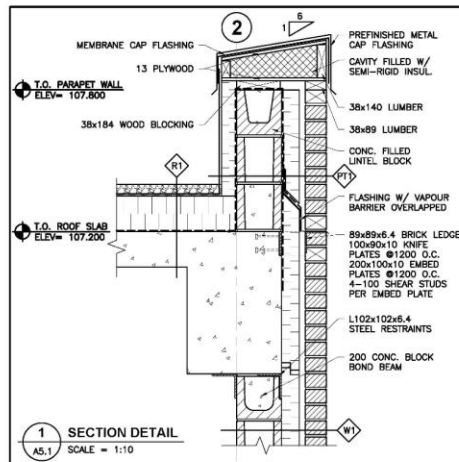
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A3

CAD FILE: **A7**

A7.1



SCHOOL OF APPLIED
SCIENCE AND TECHNOLOGY
ARCHITECTURAL TECHNOLOGY

CONSULTANTS

NOTES

REVISIONS

No. DATE DESCRIPTION

PROJECT

WESTMOUNT
OFFICE
CENTRE

DRAWING

DETAILS

DESIGNED BY: NAIT
CHECKED BY: BRUCE TUCHSEN
DRAWN BY: JOEL GILLELAND
DATE: 2023 APRIL 21
COURSE: ARCT 1201
CLASS: A03
INSTRUCTOR: BRUCE TUCHSEN
SCALE: 1:10
SET: SHEET 1/1

PROJECT No. SHEET No.

1

CAD FILE:

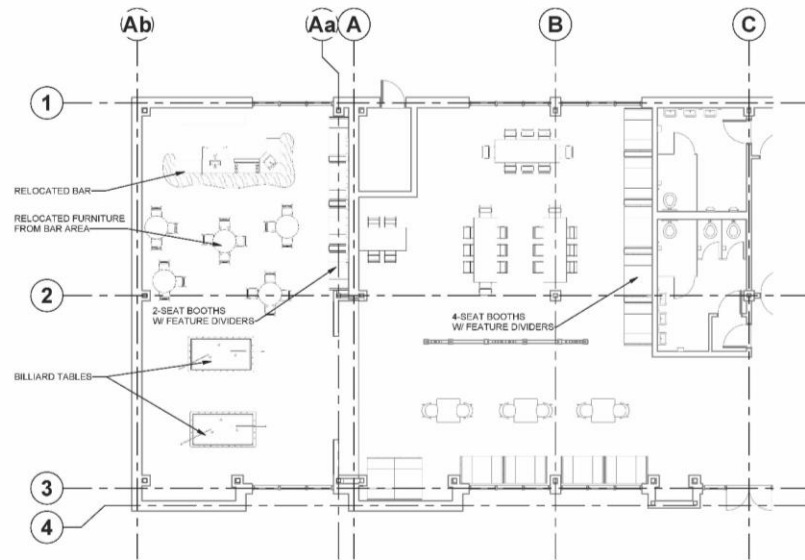
A5.1

BLUE PARROT RENOVATION

The Blue Parrot was a Revit project where I used design options and phasing to create several different layouts and an expansion to an existing restaurant. I had already modeled the original building in a previous semester. The next two pages show two layout/design options for the proposed restaurant renovation.



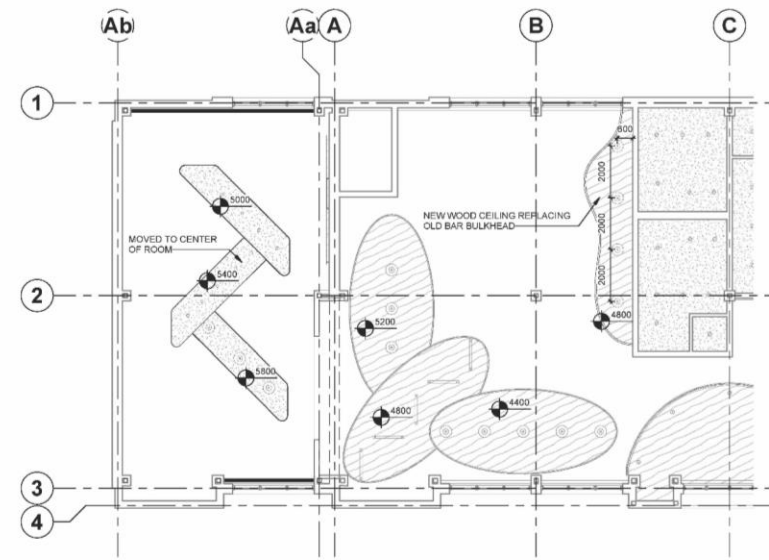
BLUE PARROT RENOVATION



1 MFP NEW CONSTRUCTION - OPTION 1
A2.4 SCALE = 1 : 100



3 **OPTION 1 FEATURE WALL**
A2.4 SCALE =



2 RCP NEW CEILING - OPTION 1
A2.4 SCALE = 1 : 100



SCHOOL OF SUSTAINABLE BUILDING
AND ENVIRONMENTAL MANAGEMENT
ARCHITECTURAL TECHNOLOGY

[illegible]

NAIT

BLUE PARROT

DESIGN OPTION 1

Class Number	ENDS 2430 A01
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Date	3/17/2024
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Drawn by **J. GILLELAND**

Instructor	D. HOLLIDAY
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A2.4

Scale	1 : 100
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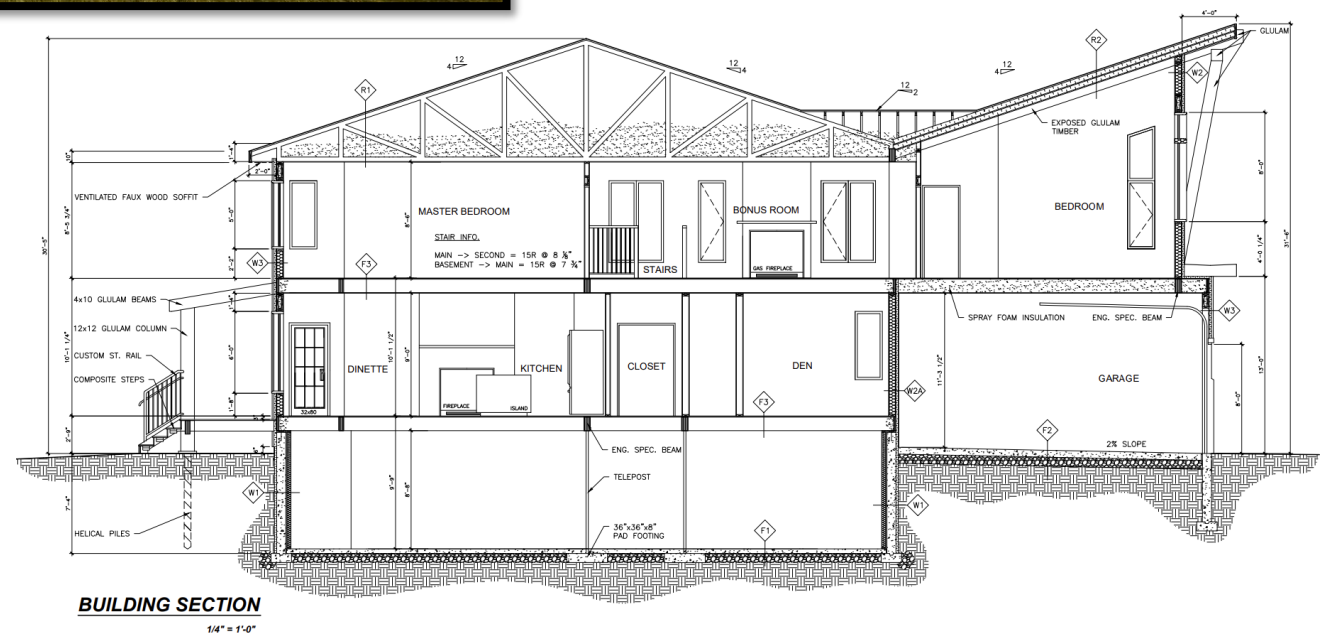


These are some of my renderings that were part of an academic group project where we redesigned a small-scale commercial façade. Our main challenge during the project was creating uniformity along the strip as each member worked on different parts of the project.



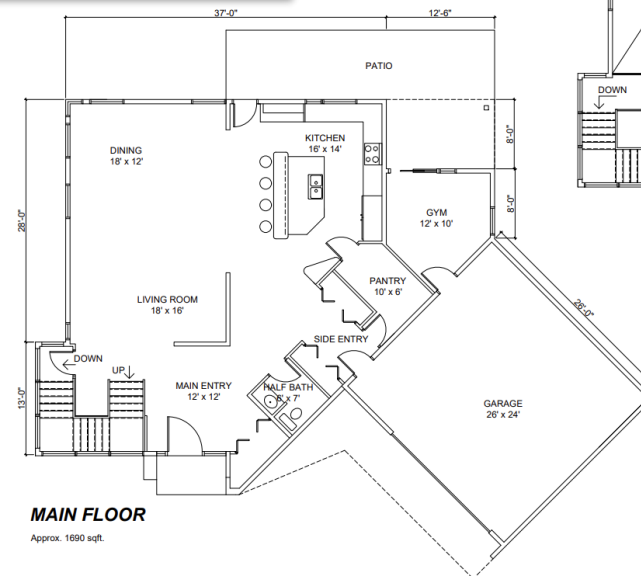


This was one of my designs for a residential design course. I wanted to combine an alpine architectural style with a modern theme. I used AutoCAD to create the construction drawing package which included plans, elevations, and the section shown on the right.



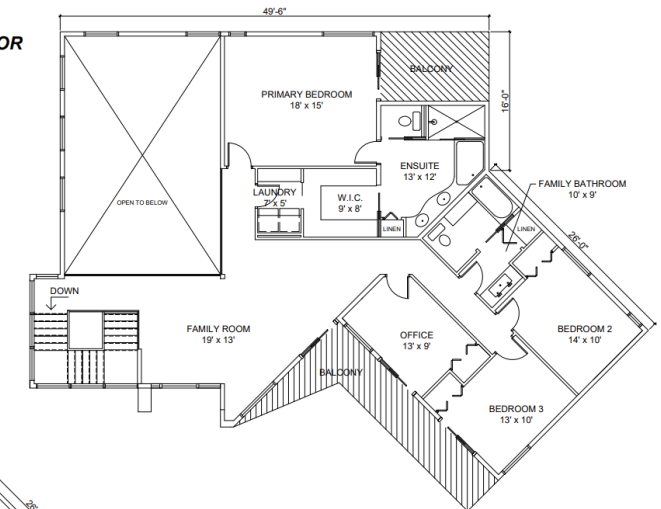


Here is another custom home design I created for my residential design course. I used SketchUp to create the model and AutoCAD to draw the floor plans. A complete construction document package was not created as this was a design project only.



SECOND FLOOR

Approx. 1680 sqft.



TOTAL SIZE
Approx. 3370 sqft
+ 630 sqft Garage

