

# STORMWATER MANAGEMENT REPORT

87 Stirling Avenue, Ottawa

Prepared by

**E AU Structural & Environmental Services**

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Revision 0

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## **1. Introduction**

EAU Structural and Environmental Services Inc. was retained by Lindsay Blair to prepare a Stormwater Management study for the proposed new residential development at 87 Stirling, Ottawa. The proposed development consists of 3 story and a basement unit located in 87 Stirling Avenue, Ottawa, Ontario.

The pertinent property is currently housing an existing dwelling. The property is 12.2m width by 29.0m depth. Proposed development has been designed to be environmental friendly with permeable landscape around the building and grass in the rear.

## **2. Stormwater Design**

### **2.1. Design Criteria**

Design of the storm sewer system was completed in conformance with the City of Ottawa Design Guidelines (November 2012). Specifically, Section 5 “Storm and Combined Sewer Design” for runoff coefficients and an inlet time were referenced in this design.

The site is currently occupied by an existing residential building with an asphalt driveway. Pre-development conditions will be considered as the lesser of current conditions or conditions resulting in a runoff coefficient of 0.4. Based on the existing ground cover the pre-development runoff coefficient was calculated to be 0.50. However, the allowable release rate for the site is calculated using a runoff coefficient of 0.40, the 5 year storm event, time of concentration of 10 min and store up to the 100 years storm event as per direction from City of Ottawa Sewer Design Guideline.

During all construction activities, erosion and sediment shall be controlled by techniques outlined in Section 5 of this report.

### **2.2. Minor System Design Criteria**

1. The storm sewers and service laterals have been designed and sized based on the rational formula and the Manning’s Equation under free flow conditions for the 5-year storm using a 10-minute inlet time.
2. Inflow rates into the minor system are limited to the pre-development rates for up to the 100-year storm, and are based on a time of concentration of 10 minutes.

### **2.3. Major System Design Criteria**

1. The major system has been designed to accommodate on-site detention with sufficient capacity to attenuate the 100-year design storm. Excess runoff above the 100 year event will flow via driveway towards Stirling Avenue.
2. On site storage is provided and calculated for up to the 100-year design storm with maximum ponding of 150mm depth on the roofs. Calculation of the required on-site storage volumes has been supported by calculations provided in appendixes.
3. Calculation of the required storage volumes has been prepared based on the Modified Rational Method as identified in Section 8.3.10.3 of the City's Sewer Guidelines. The depth and extent of surface storage will be illustrated on the applicable grading plan and storm drainage plan.

## 2.4. Runoff Coefficients

The area for runoff coefficients used for either pre-development or post-development conditions were based on actual areas measured in CAD. Runoff coefficients for impervious surfaces such as roofs, asphalt, and concrete, were taken as 0.90,

The allowable pre-development runoff coefficients for the overall site is based on  $C=0.20$  in general this includes grass and tree areas.

## 2.5. Allowable Release Rate

As a condition of the site plan approval, the city of Ottawa requires that the storm runoff from the re-development site be released in a controlled manner equivalent to a runoff coefficient  $C=0.4$ . As such, the allowable release rate from the site was determined using the modified rational method with a 5 years storm, a runoff coefficient  $C=0.4$ , and a time of concentration of 10 minutes as follows;

- Time of Concentration = 10 minutes,
- Drainage Area = 0.035 ha

$$Q_{\text{allow}} = 2.78 C I A$$

Where:

$Q_{\text{allow}}$	=	Allowable release rate to storm sewer (L/sec)
$C$	=	Runoff Coefficient (dimensionless) =0.4
$I$	=	Average Rainfall Intensity for return period (mm/hr)
	=	$998.071 / (TC+6.053)^{0.814}$ (5-year) =104.2 mm/hr
$TC$	=	Time of concentration (minutes)
$A$	=	Drainage Area (hectares) = 0.035

$$Q_{\text{Allow}} = 2.03 \text{ L/sec}$$



Therefore the allowable release rate from the site is 2.03 L/sec

### **3. Stormwater Quantity Control**

Post development storm water management design for this site includes 3 general areas; Grass area, Roof and Driveway area.

- Grass area will sheet drain to rear of the property as per natural drainage pattern.
- Drive way dimension remains unchanged with compare to pre-development stage. But it will be converted from regular asphalt to permeable landscape. Any access rain will sheet drain to Stirling Avenue, same as pre-development.
- Roof: Storm runoff during 5yrs and 100yrs storm event will be stored on the roof. In order to ensure that the allowable release rate to the storm sewers is not exceeded, roof drain restrictors will be installed at the roof drains by limiting the rate at which storm runoff is release to the sewers, water will tend to pond upstream of the roof drain. To reduce the negative impact of this ponding will have on the use of the building, ponding depths were designed not to exceed 150 mm during the 100-year storm on the roofs. As ponds generally form the shape of the roof, the extend and depth of ponding resulting from the 100-year storm was determined using the following equation;

$$V=1/3 \times A \times d$$

Where:

V	=	Storage volume (cu. m.)
A	=	surface area of pond ( sq.m.)
D	=	pond depth at peak ( m )

The roof will be controlled to 2.03 L/sec, based on an estimated 2 roof drains at 1.00 L/sec each for the 5-year storm and 1.00 L/sec each for the 100-year storm. Based on calculation, the maximum volume required for the roof at post development stage for 100yrs storm event would be 5.41 m<sup>3</sup>. The maximum ponding height on the roof will come up to be 140mm. The discharge rate from all above connected structure will be controlled via an ICD which is selected based on design head and available manufacturer database, (see appendix) Watts RD100 roof drains with adjustable flow control weirs is selected.

### **4. Erosion and Sediment Control**

During all construction activities, erosion and sedimentation shall be controlled by the following techniques:

- installation of filter cloth between frame and cover of catch basins,
- a visual inspection shall be completed daily on sediment control barriers and any damage repaired immediately. Care will be taken to prevent damage during construction operations,
- in some cases barriers may be removed temporarily to accommodate the construction operations. The affected barriers will be reinstated at night when construction is completed,
- the sediment control devices will be cleaned of accumulated silt as required. The deposits will be disposed of as per the requirements of the contract,
- during the course of construction, if the engineer believes that additional prevention methods are required to control erosion and sedimentation, the contractor will install additional silt fences or other methods as required to the satisfaction of the engineer, and
- Construction and maintenance requirements for erosion and sediment controls to comply with Ontario Provincial Standard Specification OPSS 577, and City of Ottawa specifications.

## 5. Conclusions

This report addresses the storm water management of the proposed site. The proposed 0.035 hectare development, consists of 3 storey with a basement building. The following list below itemizes the conclusions of this report.

- The allowable release rate for the site is calculated using a runoff coefficient of 0.40, the 5 year storm event, time of concentration of 10 min and store up to the 100 years storm event. These allowable discharge rates of 2.03 L/sec for the 5-year, and the storm water runoff from the site will be detained on the roof so as not to exceed the allowable release rate
- During all construction activities, erosion and sedimentation shall be controlled by techniques outlined in this report.

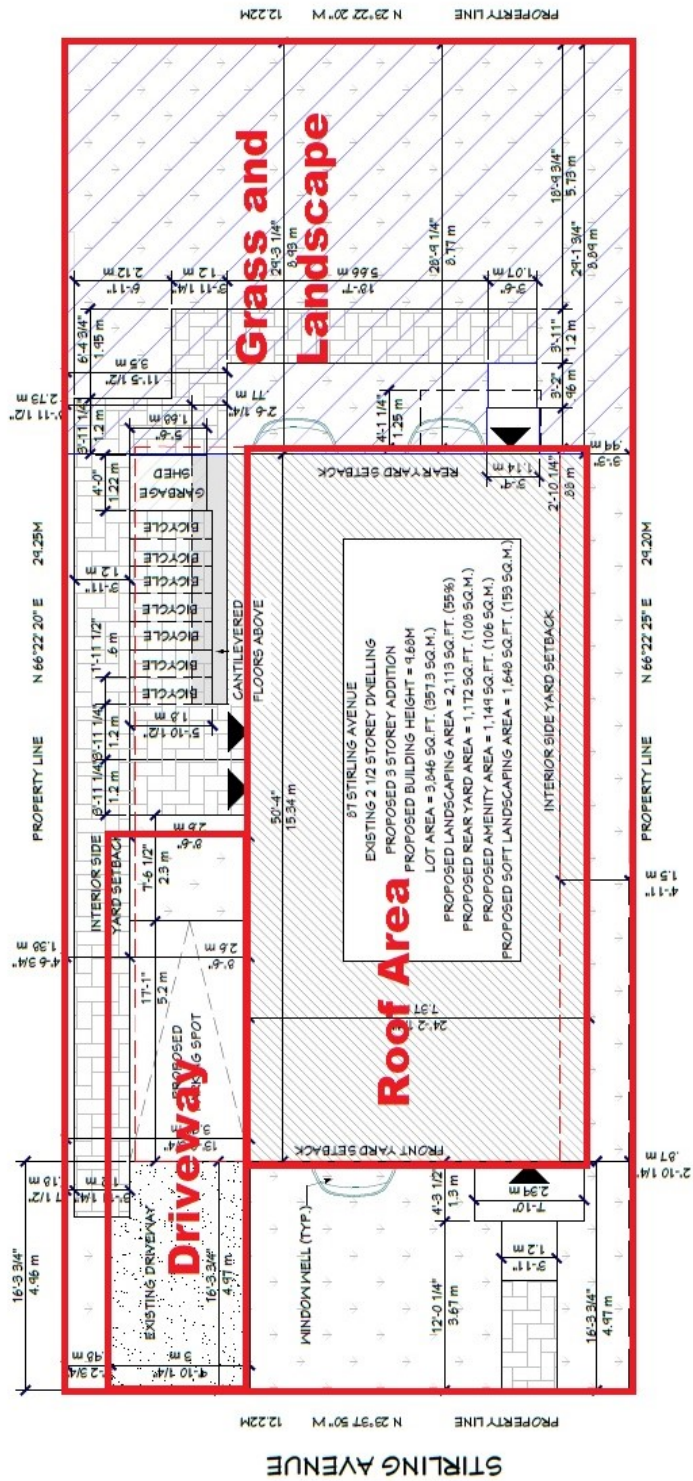
Should you have any question, do not hesitate to let us know.

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## APPENDIX A:

### Storm Drain Area



## APPENDIX B:

### Stormwater Management Calculation

C(max equiv)	I (5yr) mm/h	Area (ha)
0.2	104.2	0.035

Q(allow) 2.03 l/s

### SUMMARY OF STORMWATER FLOWS

I (5yr) mm/h	I (100yr) mm/h					
70.3	120					
Area ID	Area (ha)	Runoff 'C'	A x C	C (100yr) (Max of 1.0)	A x C	Type of Flow (Controlled/Uncontrolled)
A1: Proposed Building	0.011	0.9	0.0102	1.0	0.0113	Controlled
A2: Driveway	0.003	0.9	0.0027	1.0	0.0031	Controlled
A3: Grass area	0.021	0.2	0.0041	0.25	0.0052	Uncontrolled sheet drain
Total Site Area (ha)	0.035	---	0.0170	---	0.0195	Total
C(avg) 5-year =		0.49				
C(avg) 100-year =		0.56				

# STORAGE CALCULATIONS

C(5 yr)	C(100 yr)	Area (ha)
0.43	0.56	0.035

**Q(restricted) Vs = 2.03** ← enter restricted release rate

t(c)min	I(5yr) mm/h	Q(unrestricted) Vs	Q(restricted) Vs	Q(stored) Vs	V(stored) m <sup>3</sup>
5	141.2	6.63	2.03	4.66	1.40
10	104.2	4.34	2.03	2.31	1.75
15	83.6	3.36	2.03	1.33	1.74
20	70.3	3.33	2.03	1.30	1.56
25	60.9	2.83	2.03	0.86	1.29
30	53.9	2.56	2.03	0.53	0.95
35	48.5	2.30	2.03	0.27	0.57
40	44.2	2.03	2.03	0.07	0.16
45	40.6	1.33	2.03	-0.10	-0.28
50	37.7	1.78	2.03	-0.24	-0.73
55	35.1	1.66	2.03	-0.36	-1.20
60	32.9	1.56	2.03	-0.47	-1.68
65	31.0	1.47	2.03	-0.56	-2.17
70	29.4	1.33	2.03	-0.64	-2.67
75	27.9	1.32	2.03	-0.71	-3.18
80	26.6	1.26	2.03	-0.77	-3.63
85	25.4	1.20	2.03	-0.83	-4.21
90	24.3	1.15	2.03	-0.88	-4.73
95	23.3	1.10	2.03	-0.92	-5.26
100	22.4	1.06	2.03	-0.97	-5.79
105	21.6	1.02	2.03	-1.00	-6.33
110	20.8	0.93	2.03	-1.04	-6.87

**Max Vol stored 1.75** ← enter Vol(m<sup>3</sup>)

**STORAGE TABLE (100 Yr Storm)**

t(c)min	I(100yr) mm/h	Q(actual) Vs	Q(restricted) Vs	Q(stored) Vs	V(stored) m <sup>3</sup>
5	242.7	13.2	2.0	11.1	3.34
10	178.6	9.7	2.0	7.7	4.60
15	142.9	7.8	2.0	5.7	5.15
20	120.0	6.5	2.0	4.5	5.38
25	103.8	5.6	2.0	3.6	5.41
30	91.9	5.0	2.0	3.0	5.32
35	82.6	4.5	2.0	2.5	5.15
40	75.1	4.1	2.0	2.0	4.92
45	69.1	3.7	2.0	1.7	4.64
50	64.0	3.5	2.0	1.4	4.33
55	59.6	3.2	2.0	1.2	3.98
60	55.9	3.0	2.0	1.0	3.62
65	52.6	2.9	2.0	0.8	3.23
70	49.8	2.7	2.0	0.7	2.83
75	47.3	2.6	2.0	0.5	2.41
80	45.0	2.4	2.0	0.4	1.98
85	43.0	2.3	2.0	0.3	1.54
90	41.1	2.2	2.0	0.2	1.10
95	39.4	2.1	2.0	0.1	0.64
100	37.9	2.1	2.0	0.0	0.17
105	36.5	2.0	2.0	0.0	-0.30
110	35.2	1.9	2.0	-0.1	-0.78



**Max Vol  
stored**

**5.41**

← enter Vol(m³)



## APPENDIX C:

### Engineering Catalogue

# RD-100-O

Tag: \_\_\_\_\_

## Combined Roof Drain & Secondary Overflow System

**Components:**

**SPECIFICATION:** Watts Drainage Products RD-100-O combined roof drain and secondary overflow system, consisting of galvanized sump receivers; one large sump epoxy coated cast iron body, one small sump epoxy coated cast iron body, combined flashing rings and gravel stop, polyethylene dome strainers and one adjustable 4" (102) diameter ABS overflow standpipe.

**Order Code:** RD-10       -O-      

**Ex. RD-102P-O-K**

**Pipe Sizing (Select One)**

Suffix	Description	
2	2" (51) Pipe Size	<input type="checkbox"/>
3	3" (76) Pipe Size	<input type="checkbox"/>
4	4" (102) Pipe Size	<input type="checkbox"/>
5	5" (127) Pipe Size	<input type="checkbox"/>
6	6" (152) Pipe Size	<input type="checkbox"/>
8	8" (203) Pipe Size	<input type="checkbox"/>

**Outlet Type (Select One)**

Suffix	Description	
NH	No Hub (NH)	<input type="checkbox"/>
P	Push On	<input type="checkbox"/>
T	Threaded Outlet	<input type="checkbox"/>
X	Inside Caulk	<input type="checkbox"/>

**Options (Select One or More)**

Suffix	Description	
-A	Accutrol weir (specify # 1-6 slots)	<input type="checkbox"/>
-C	Secondary Membrane Clamp	<input type="checkbox"/>
-D	Underdeck Clamp	<input type="checkbox"/>
-E	Adjustable Extension	<input type="checkbox"/>
-GSS	Stainless Steel Ballast Guard	<input type="checkbox"/>
-H	Adj. to 6" RNA Ballast Guard	<input type="checkbox"/>
-K	Ductile Iron Dome	<input type="checkbox"/>
-K80	Aluminum Dome	<input type="checkbox"/>
-L	Vandal Proof Dome	<input type="checkbox"/>
-R	2" High External Water Dam	<input type="checkbox"/>
-SO	Side Outlet**	<input type="checkbox"/>
-V	Fixed Extension (1-1/2", 2", 3", 4")	<input type="checkbox"/>
-W-1	Waterproofing Flange	<input type="checkbox"/>
-Z	Extended Integral Wide Flange	<input type="checkbox"/>
-S	Sediment Bucket	<input type="checkbox"/>
-12	Galvanized Dome	<input type="checkbox"/>
-13	All Galvanized	<input type="checkbox"/>
-B3	Mesh Covered Dome	<input type="checkbox"/>
-113M	Special Epoxy from 3M Range	<input type="checkbox"/>

**Optional Body Material (NH Only)**

Suffix	Description	
-60	PVC Body w/Socket Outlet	<input type="checkbox"/>
-61	ABS Body w/Socket Outlet	<input type="checkbox"/>

**\*\* Side Outlet (-SO) option only available in 2" (51), 3" (76), 4" (102) pipe sizes. Underdeck Clamp (-BED and -D options) are not available when -SO is selected.**

Job Name \_\_\_\_\_ Contractor \_\_\_\_\_

Job Location \_\_\_\_\_ Contractor's P.O. No. \_\_\_\_\_


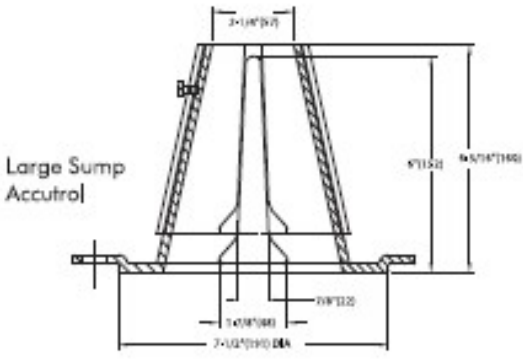
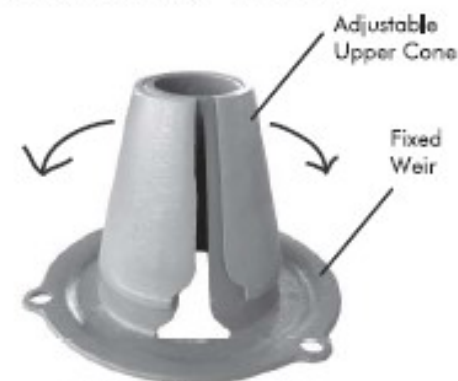


Engineer \_\_\_\_\_ Representative \_\_\_\_\_

WATTS Drainage reserves the right to modify or change product design or construction without prior notice and without incurring any obligation to make similar changes and modifications to products previously or subsequently sold. See your WATTS Drainage representative for any clarification. Dimensions and subject to manufacturing tolerances.

**WATTS DRAINAGE**

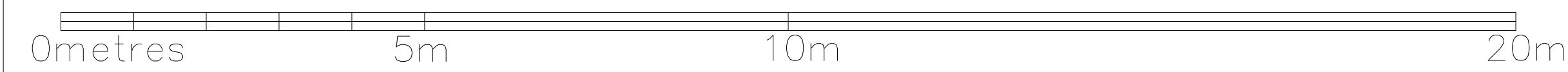
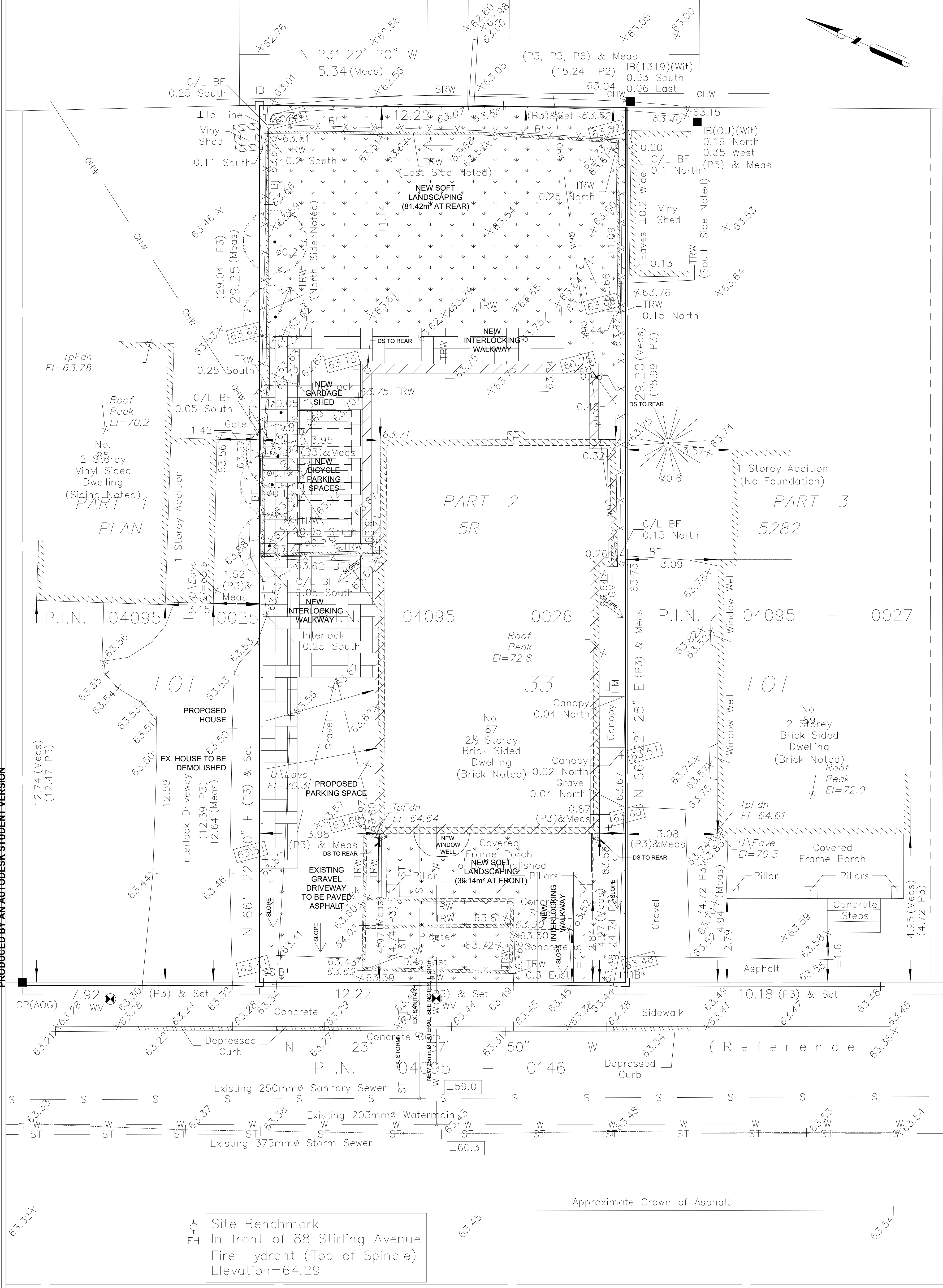
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CANADA, 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-332-6718 TOLL-FREE: 1-888-208-6727 Website: [www.wattsdrainage.ca](http://www.wattsdrainage.ca)

	<b>Adjustable Accutrol Weir</b> Tag: _____	<b>Adjustable Flow Control for Roof Drains</b>				
<p><b>ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)</b></p> <p>For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.</p> <p>Note: Flow rates are directly proportional to the amount of weir opening that is exposed.</p> <p><b>EXAMPLE:</b></p> <p>For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2" of head will be restricted to 2-1/2 gpm per inch of head.</p> <p>Therefore, at 3" of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:                  [ 5 gpm(per inch of head) x 2 inches of head ] + 2-1/2 gpm(for the third inch of head) = 12-1/2 gpm.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Large Sump Accutrol</p> </div> <div style="text-align: center;">  <p>Adjustable Upper Cone Fixed Weir</p> <p>1/2 Weir Opening Exposed Shown Above</p> </div> </div>						
TABLE 1. Adjustable Accutrol Flow Rate Settings						
<b>Weir Opening Exposed</b>	<b>Head of Water</b>					
	1"	2"	3"	4"	5"	6"
	<b>Flow Rate (gallons per minute)</b>					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	10	10	10	10	10
Job Name _____ Contractor _____ Job Location _____ Contractor's P.O. No. _____ Engineer _____ Representative _____						
Watts Drainage reserves the right to modify or change product design or construction without prior notice and without incurring any obligation to make similar changes and modifications to products previously or subsequently sold. See your Watts Drainage representative for any clarification. Dimensions are subject to manufacturing tolerances.						
<div style="display: flex; justify-content: space-between; align-items: center;">  <div>                         CANADA: 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-335-5718 TOLL FREE: 1-888-268-8927 Website: <a href="http://www.wattsdrainage.ca">www.wattsdrainage.ca</a> </div>  </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 5px;"> <span>© Watts Drainage 2005</span> <span>ES-WD-RD-ACCUTROL-ADJ CANADA 0512</span> <span>(Dimension) Denotes Millimeters</span> </div>						

## APPENDIX D: PLANS





## Notes & Legend

	Denotes	Survey Monument Planted	Inv.	Denotes	Invert
	"	Survey Monument Found	T/G	"	Top of Grate
SIB	"	Standard Iron Bar	BF	"	Board Fence
SSIB	"	Short Standard Iron Bar	C/L	"	Centreline
SSIB*	"	Short Standard Iron Bar 0.3m long	SRW	"	Stone Retaining Wall
IB	"	Iron Bar	TRW	"	Timber Retaining Wall
IB*	"	Iron Bar 0.3m long	TpFdn	"	Top of Foundation
IBØ	"	Round Iron Bar	U/Eave	"	Underside of Eave
CP	"	Concrete Pin			
(Wit)	"	Witness			
Meas	"	Measured			
○ MH-ST	"	Maintenance Hole (Storm)			
○ MH-S	"	Maintenance Hole (Sanitary)			
— ST	"	Underground Storm Sewer			
— S	"	Underground Sanitary Sewer			
— W	"	Underground Water			
— OHW	"	Overhead Wires			
⊗ WV	"	Water Valve			
□ GM	"	Gas Meter			
□ HM	"	Hydro Meter			
+ 65.00	"	Location of Elevations			
+ 65.00	"	Top of Concrete Curb/ Retaining Wall Elevation			
65.00	"	Location of Proposed Elevations			

### CONSTRUCTION NOTES:

- Metric Note:**  
Distances and coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Servicing to Be:**  
-25mm Ø soft copper, type K water service complete with curb stop located 300mm outside the property line within the boulevard.  
-100mm Ø PVC SDR 28 storm service @ 1% slope min.  
-125mm Ø PVC SDR 28 sanitary service @ 1% slope min.  
-Min. cover to services 2.4m or insulation as per City of Ottawa drawing S14, S14.1, S14.2
- Hard Surface Areas:**  
All proposed hard surface areas are to be permeable as per City of Ottawa Std. Dwg. SC27.
- No proposed alterations to grade on or beyond property line.
- Grading between 2%-7% or terrace to 3H:1V max.
- Trees to be protected before and during construction.
- Downspouts (DS) within 1.5m of property line. Must be equipped with splash pad.
- No excavation below grade to occur. Below grade is bedrock.

EAU STRUCTURAL & ENVIRONMENTAL SERVICES



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Tel. : 613- 869- 0523

GRADING & DRAINAGE PLAN  
87 STIRLING AVENUE  
OTTAWA, ON

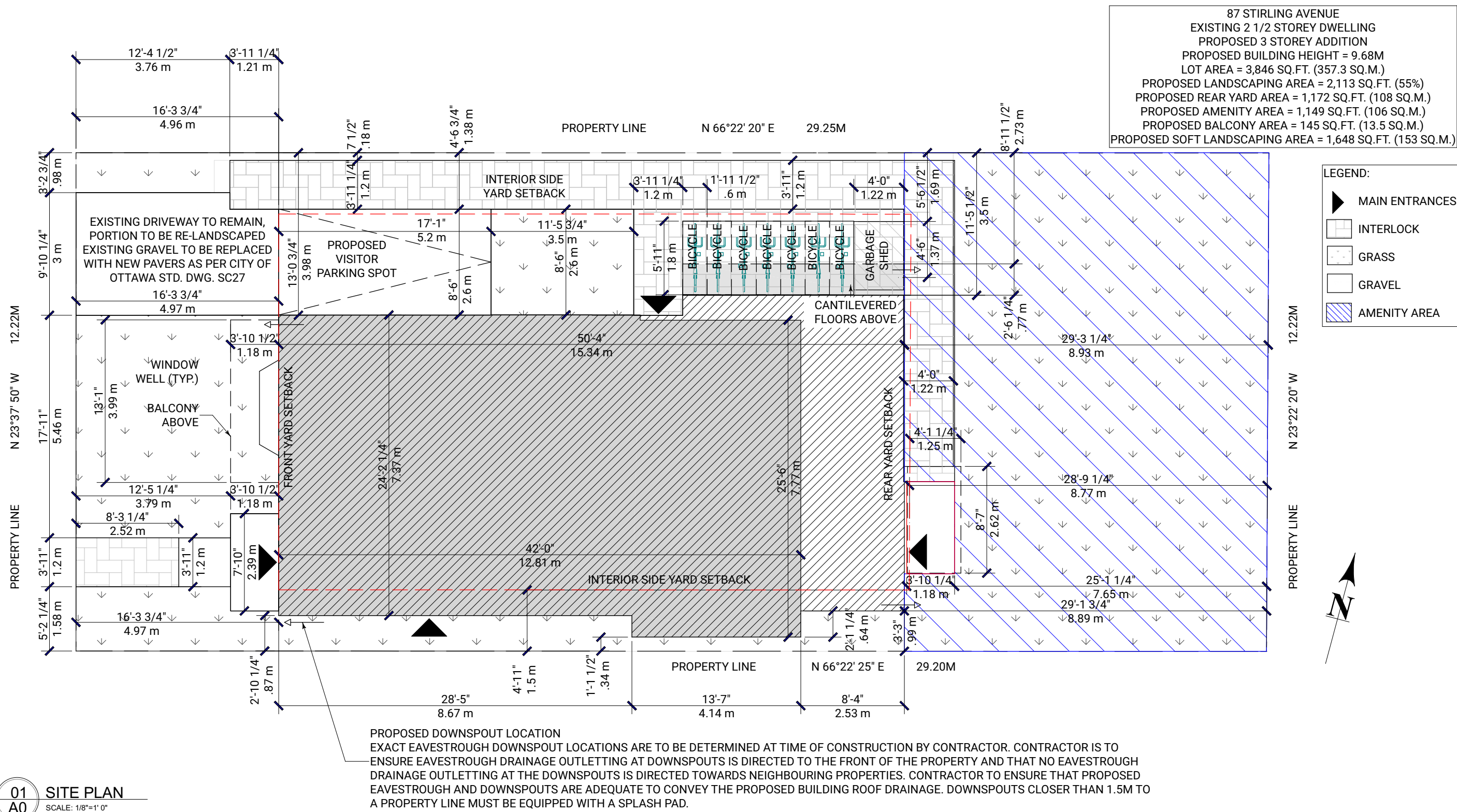
Drawn by: E.J.  
Date: Mar. 25, 2019

Checked By: D.C.  
Scale: 1:150

Plan number:

C1  
of  
C1





WALL ASSEMBLY NOTES:

- FW1** EXISTING RUBBLE / BLOCK FOUNDATION WALL  
-CEMENT PARING TO EXTEND 6" BELOW GRADE  
-PLATON DAMPROOFING SYSTEM BELOW GRADE  
-24" STONE FOUNDATION OR 8" CONCRETE BLOCK (SEE PLANS FOR THICKNESS)  
-#15 BUILDING PAPER FROM FINISHED GRADE TO SLAB.  
-1" AIR SPACE  
-2x4 STUDS 16" o.c.  
-SPRAY FOAM INSULATION 'POLYISO' MIN R10g W/ R12  
-6 mil. POLY VAPOUR BARRIER SEALED TO FOUNDATION WALL.  
-1/2" GYPSUM BOARD
- W1** MASONRY VENEER EXTERIOR WALL  
-EXISTING DOUBLE BRICK WALL c/w BRICK TIES PROVIDE WEEP/VENT HOLES AT 24" o.c.  
-EXISTING BRICK COVERED WITH 1X3 STRAPPING & CORRUGATED STEEL SIDING WHERE SHOWN  
-1" RIGID INSULATION - MIN R5 CI  
-2x4 STUDS @16" o.c  
-5 1/2" R24 BATT INSULATION  
-6 mil. POLY VAPOUR BARRIER  
-1/2" GYPSUM BOARD
- W2** MASONRY VENEER EXTERIOR WALL  
-STONE VENEER c/w BRICK TIES PROVIDE WEEP/VENT HOLES AT 24" o.c.  
-1" AIR SPACE  
-1" RIGID INSULATION - MIN R5 CI  
-TYVEK WEATHER AIR BARRIER  
-7/16" O.S.B. SHEATHING  
-2x6 STUDS @16" o.c  
-5 1/2" R24 BATT INSULATION  
-6 mil. POLY VAPOUR BARRIER  
-1/2" GYPSUM BOARD
- W3** METAL SIDING EXTERIOR WALL  
-METAL SIDING (AS PER CLIENT)  
-1X3 STRAPPING @ 16" O/C  
-1" RIGID INSULATION - MIN R5 CI  
-TYVEK WEATHER AIR BARRIER  
-7/16" O.S.B. SHEATHING  
-2x6 STUDS @16" o.c  
-5 1/2" R24 BATT INSULATION  
-6 mil. POLY VAPOUR BARRIER  
-1/2" GYPSUM BOARD
- W4** METAL SIDING EXTERIOR WALL - NON COMBUSTIBLE  
-METAL SIDING (AS PER CLIENT)  
-1X3 STRAPPING @ 16" O/C  
-1" RIGID INSULATION - MIN R5 CI  
-TYVEK WEATHER AIR BARRIER  
-5/8" TYPE X DENSGLASS FIREGUARD SHEATHING  
-2 LAYERS 5/8" TYPE X GYPSUM BOARD  
-2x6 STEEL STUDS @16" O/C  
-5 1/2" R24 ROXUL BATT INSULATION  
-6 mil. POLY VAPOUR BARRIER  
-2 LAYERS 5/8" TYPE X GYPSUM BOARD
- W5** 2x4 INTERIOR PARTITION  
-1/2" GYPSUM BOARD  
-2x4 STUDS @16" o.c. W/ SAFE N SOUND BATT INSULATION AROUND BATHS  
-1/2" GYPSUM BOARD
- W6** INTERIOR PARTITION - SB-3 - W4B: FRR 1 HR, STC 54  
-5/8" GYPSUM BOARD  
-2x4 OR 2X6 STUDS @16" o.c. W/ ROXUL BATT INSULATION  
-1/2" RESILIENT CHANNELS  
-RESILIENT METAL CHANNELS @ 16" O/C  
-2 LAYERS 5/8" TYPE X GYPSUM BOARD (CONTINUOUS)

FLOOR ASSEMBLY NOTES:

- F1** GROUND & SECOND FLOOR  
-FLOOR FINISH (AS PER OWNER'S INSTRUCTION)  
-EXISTING 2X10 OR 2X8 WD FLOOR JOISTS @ 20" O/C  
-ROXUL BATT INSULATION  
-RESILIENT METAL CHANNELS @ 16" O/C  
-2 LAYERS 5/8" TYPE X GYPSUM BOARD (CONTINUOUS)
- F2** ADDITION GROUND FLOOR  
-FLOOR FINISH (AS PER OWNER'S INSTRUCTION)  
-5/8" T&G, G1S OSB SUBFLOOR  
-PRE-ENGINEERED FLOOR JOISTS AS PER MANU. SPECS.  
-SPRAY FOAM INSULATION 'POLYISO' min. 5 1/2" THICK R-30  
-1/2" EXT. GRADE PLYWOOD
- F3** ADDITION FLOOR - SB-3 - F28C: 1 HR, FRR / STC 54  
-FLOOR FINISH (AS PER OWNER'S INSTRUCTION)  
-5/8" T&G, G1S OSB SUBFLOOR  
-PRE-ENGINEERED FLOOR JOISTS AS PER MANU. SPECS.  
-ROXUL BATT INSULATION  
-RESILIENT METAL CHANNELS @ 16" O/C  
-2 LAYERS 5/8" TYPE X GYPSUM BOARD (CONTINUOUS)

ROOF ASSEMBLY NOTES:

- R1** NEW FLAT ROOF  
-2PLY MODIFIED BITUMEN MEMBRANE  
-ICE / WATER SHIELD TO EXTEND 30" PAST OUTER WALL  
-7/16" O.S.B. SHEATHING INSTALLED WITH "H CLIPS" BETWEEN TRUSSES  
-PRE ENGINEERED STRUCTURAL ROOF TRUSS SYSTEM  
-SPRAY FOAM INSULATION 'POLYISO' - R-40 MIN.  
-INSULATION DEPRESSORS TO PROVIDE 2 1/2" OF VENTILATION ON ALL ROOF SLOPES  
-6 MIL. POLYETHYLENE VAPOR BARRIER  
-1"X3" STRAPPING @ 16" O.C.  
-1/2" GYPSUM BOARD

Layout Page Table	
Label	Title
A0	CONSTRUCTION NOTES, ASSEMBLIES & SITE PLAN
A3.0	PROPOSED BASEMENT FLOOR PLAN
A3.1	PROPOSED GROUND FLOOR PLAN
A3.2	PROPOSED SECOND FLOOR PLAN
A3.3	PROPOSED THIRD FLOOR PLAN
A4.0	EXTERIOR ELEVATION (FRONT)
A4.1	EXTERIOR ELEVATION (LEFT)
A4.2	EXTERIOR ELEVATION (RIGHT)
A4.3	EXTERIOR ELEVATION (REAR)
A5.0	BUILDING SECTION & DETAILS



#	REVISION	DATE
01	ISSUED FOR CLIENT REVIEW	01/28/19
02	ISSUED FOR ENGINEERING REVIEW	01/29/19
03	ISSUED FOR BUILDING PERMIT	03/04/19
04	REVISED FOR DEFICIENCY LETTER	03/25/19



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DESIGNER

O.G.

87 STIRLING AVENUE

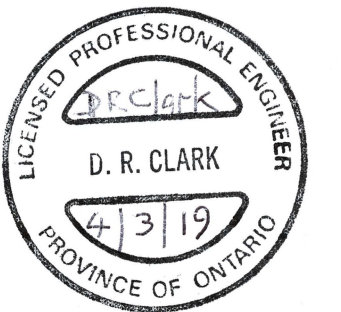
CONSTRUCTION NOTES,  
ASSEMBLIES & SITE PLAN

AS SHOWN  
JAN 30, 2019

A0



#	REVISION	DATE
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## LEGEND

PT.	PRESSURE TREATED LUMBER
PL	POINT LOAD ABOVE
P1	3X3X1/4" HSS
P2	2 - 2X6
P3	3 - 2X6
P4	4 - 2X6
B1	1/250X101 STEEL BEAM
B2	1/810X39 STEEL BEAM
B3	1/250X28 STEEL BEAM
B4	1/250X13 STEEL BEAM
L1	2 - 2X10 WND LINTEL
L2	2 - 2X12 WND LINTEL
L3	2 - 1 3/4" X 9 1/2" LVL 2.0 OE
F1	48"X48"X12" CONC. FOOTING W/ 3-15M E.M.
KEY TO SYMBOLS	
(F)	EXHAUST FAN
(CO/SD)	SMOKE DETECTOR / CARBON MONOXIDE DETECTOR

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DESIGNER

BCNL

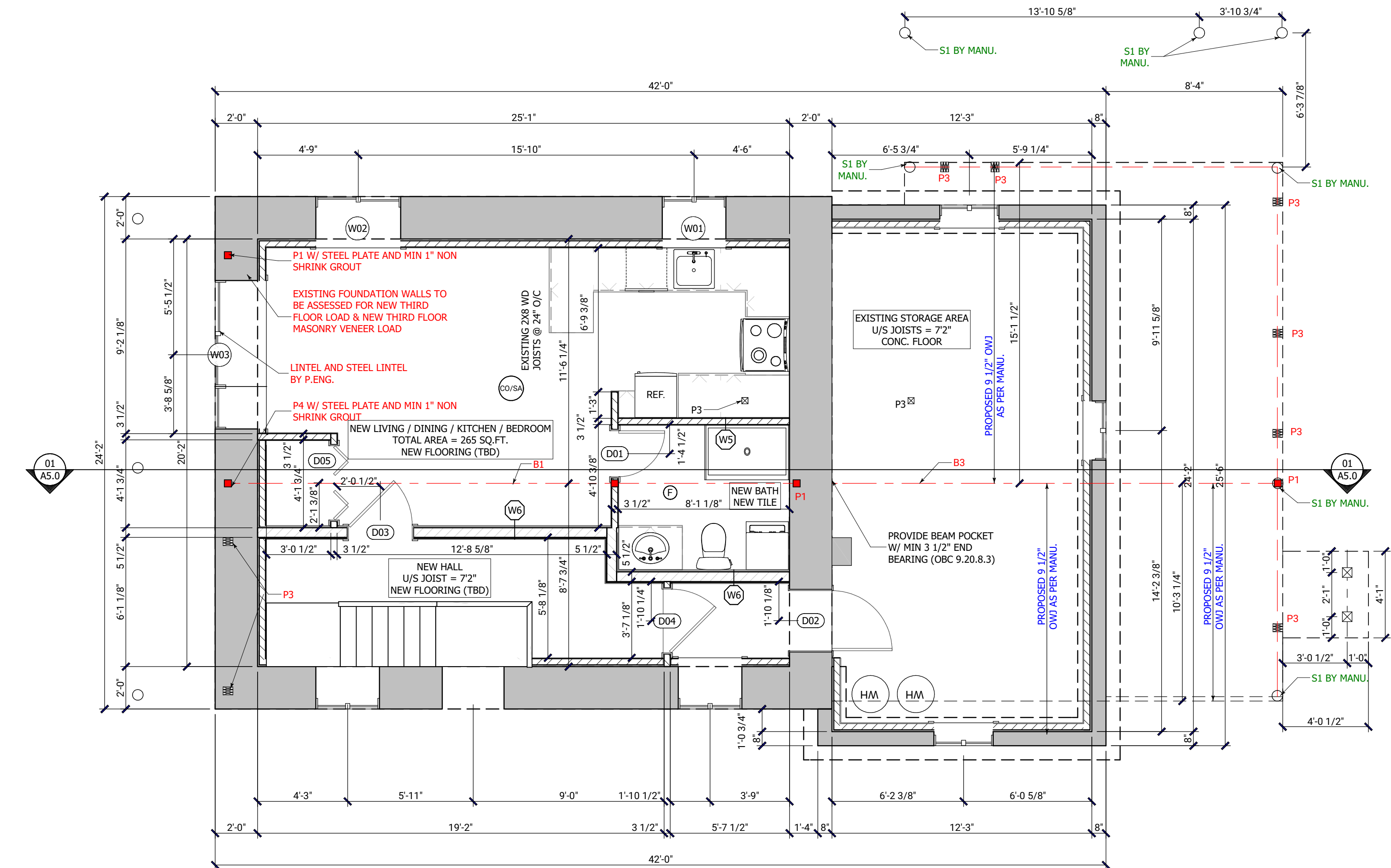
O.G.

BCNL

87 STIRLING AVENUE

PROPOSED BASEMENT  
FLOOR PLANAS SHOWN  
JAN 30, 2019

A3.0



DOOR SCHEDULE					
NUMBER	QTY	FLOOR	WIDTH	HEIGHT	DIMENSIONS
D01	1	0	26"	80"	26"X80"X1 3/8" L IN
D02	1	0	34"	80"	34"X80"X1 3/8" R IN
D03	1	0	36"	80"	36"X80"X1 3/8" L IN
D04	1	0	36"	80"	36"X80"X1 3/8" R IN
D05	1	0	42"	80"	(4) 10 1/2"X80"X1 3/8" L/R
D06	1	1	28"	80"	28"X80"X1 3/8" L IN
D07	1	1	30"	80"	30"X80"X1 3/8" L IN
D08	1	1	30"	80"	30"X80"X1 3/8" R IN
D09	1	1	32"	80"	32"X80"X1 3/8" R IN
D10	2	1	34"	80"	34"X80"X1 3/4" L EX
D11	1	1	36"	80"	(2) 18"X80"X1 3/8" L
D12	1	1	36"	80"	36"X80"X1 3/8" R IN
D13	1	1	36"	80"	36"X80"X1 3/4" L EX
D14	1	1	36"	80"	36"X80"X1 3/8" L IN
D15	3	1	48"	80"	(4) 12"X80"X1 3/8" L/R
D16	1	2	28"	80"	28"X80"X1 3/8" R IN
D17	1	2	30"	80"	(2) 15"X80"X1 3/8" L
D18	2	2	30"	80"	30"X80"X1 3/8" L IN
D19	1	2	30"	80"	30"X80"X1 3/8" R IN
D20	1	2	32"	80"	32"X80"X1 3/8" L IN
D21	1	2	32"	80"	32"X80"X1 3/8" R IN
D22	1	2	34"	84"	34"X84"X1 3/4" L EX
D23	1	2	36"	84"	36"X84"X1 3/4" L EX
D24	1	2	36"	80"	36"X80"X1 3/8" L IN
D25	1	2	36"	80"	(2) 18"X80"X1 3/8" L
D26	3	2	36"	80"	(2) 18"X80"X1 3/8" R
D27	1	3	21"	80"	(2) 10 1/2"X80"X1 3/8" L
D28	1	3	28"	80"	28"X80"X1 3/8" R
D29	3	3	30"	80"	30"X80"X1 3/8" R IN
D30	1	3	32"	80"	32"X80"X1 3/8" L IN
D31	1	3	32"	80"	32"X80"X1 3/8" R IN
D32	1	3	34"	84"	34"X84"X1 3/4" L EX
D33	2	3	36"	80"	36"X80"X1 3/8" L IN
D34	1	3	36"	84"	36"X84"X1 3/4" L EX
D35	2	3	48"	80"	(4) 12"X80"X1 3/8" L/R

WINDOW SCHEDULE					
NUMBER	QTY	FLOOR	WIDTH	HEIGHT	TOP
W01	1	0	36"	24"	88"
W02	1	0	48"	24"	88"
W03	1	0	84"	36"	84 1/2"
W04	1	1	24"	22"	102"
W05	1	1	24"	18"	80"
W06	1	1	24"	80"	80"
W07	1	1	34"	18"	98"
W08	1	1	36"	22"	102"
W09	1	1	60"	66"	96"
W10	2	1	69 15/16"	66"	98"
W11	1	1	84"	60"	102"
W12	2	2	24"	84"	84"
W13	2	2	60"	66"	96"
W14	2	2	69 15/16"	66"	84"
W15	1	2	60"	80"	84"
W16	1	3	24"	18"	80"
W17	1	3	60"	66"	96"
W18	2	3	69 15/16"	66"	84"
W19	1	3	60"	80"	84"
W20	2	3	24"	84"	84"

## DEMO NOTE:

ALL EXISTING INTERIOR WALLS TO BE REMOVED  
EXISTING REAR ADDITION TO BE REMOVED  
EXISTING STAIR TO SECOND FLOOR AND STAIR TO  
THIRD FLOOR TO BE REMOVED AND REPLACED  
EXISTING WINDOWS TO BE REMOVED AND FRAMED IN  
OR REPLACED WITH NEW WINDOWS UNLESS NOTED  
OTHERWISE  
SHADED EXTERIOR WALLS REPRESENT EXISTING WALLS  
TO REMAIN

## BATHROOM NOTE: (TYP.)

FINAL BATHROOM LAYOUT TO BE CONFIRMED BY OWNER/  
BATHROOM DESIGNER.

(F) EXHAUST FAN TO BE VENTED TO EXTERIOR.

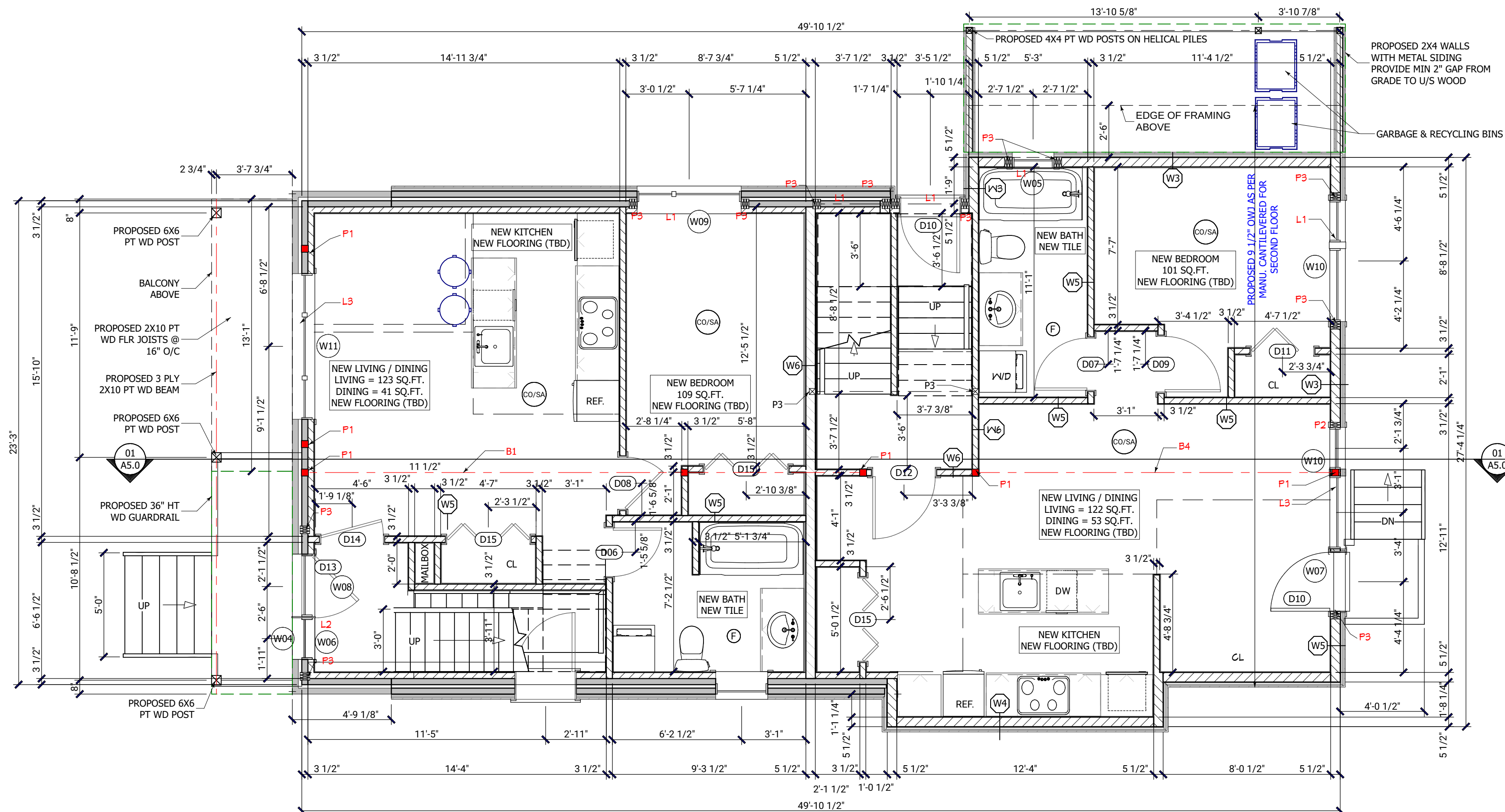
-PROVIDE STUD WALL REINFORCING TO PERMIT THE FUTURE  
INSTALLATION OF A GRAB BAR ON A WALL ADJACENT TO A  
WATER CLOSET, BATHTUB AND A SHOWER AS PER OBC 9.5.2.3.(1)  
-PROVIDE WATERPROOF WALL IN SHOWER STALLS (5'11") ABOVE  
THE RIM OF BATHTUBS EQUIPPED WITH SHOWERS (3'11") AND  
THE RIM OF BATHTUBS NOT EQUIPPED WITH SHOWERS (15 3/4")  
IN ACCORDANCE TO OBC 9.29.2.1.

## GENERAL NOTES:

- SMOKE DETECTORS TO HAVE A VISUAL SIGNALING  
COMPONENT AND CONFORM TO NFPA 72 - 18.5.3  
-ELECTRICAL OUTLET BOXES AND OTHER PARTY WALL  
PENETRATIONS SHALL BE OFFSET TO MAINTAIN INTEGRITY  
OF FIRE SEPARATION. TYPICAL ALL FLOORS.  
-CERAMIC TILE REQUIRES 5/8" UNDERLAY  
-WATER RESISTANT FLOORING REQUIRED IN BATHROOMS,  
LAUNDRY ROOMS, KITCHENS, GENERAL STORAGE AREAS &  
ENTRANCE (OBC 9.30.1.2.)

## STAIR NOTE: (TYP.)

STAIRS TO CONFORM TO OBC 9.8.9.  
MAX RISE = 7 7/8"  
MIN RUN = 8 1/4"  
MIN TREAD = 9 1/4"  
MIN HEADROOM = 6'5"  
HANDRAIL TO CONFORM TO OBC 9.8.7.  
MIN HT = 2'10"  
MAX HT = 3'0"  
GUARDRAIL TO CONFORM TO OBC 9.8.8.  
MIN HT = 2'11"



**DEMO NOTE:**  
ALL EXISTING INTERIOR WALLS TO BE REMOVED  
EXISTING REAR ADDITION TO BE REMOVED  
EXISTING STAIR TO SECOND FLOOR AND STAIR TO  
THIRD FLOOR TO BE REMOVED AND REPLACED  
EXISTING WINDOWS TO BE REMOVED AND FRAMED IN  
OR REPLACED WITH NEW WINDOWS UNLESS NOTED  
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SHADED EXTERIOR WALLS REPRESENT EXISTING WALLS  
TO REMAIN

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PENETRATIONS SHALL BE OFFSET TO MAINTAIN INTEGRITY  
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- WATER RESISTANT FLOORING REQUIRED IN BATHROOMS,  
LAUNDRY ROOMS, KITCHENS, GENERAL STORAGE AREAS &  
ENTRANCE (OBC 9.30.1.2.)

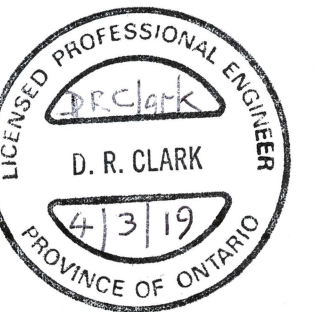
**BATHROOM NOTE: (TYP.)**  
FINAL BATHROOM LAYOUT TO BE CONFIRMED BY OWNER/  
BATHROOM DESIGNER.  
- EXHAUST FAN TO BE VENTED TO EXTERIOR.  
- PROVIDE STUD WALL REINFORCING TO PERMIT THE FUTURE  
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**LAUNDRY ROOM NOTE: (TYP.)**  
OWNER TO CONFIRM DOOR SWING OF  
APPLIANCES BEFORE ROUGH-IN.  
PROVIDE GALV. METAL PAN OR EQUAL  
C/W DRAIN @ WASHER.  
ENSURE PROPER DRYER VENTING TO  
EXTERIOR.

**STAIR NOTE: (TYP.)**  
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MAX RISE = 7 7/8"  
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MIN TREAD = 9 1/4"  
MIN HEADROOM = 6'5"  
HANDRAIL TO CONFORM TO OBC 9.8.7.  
MIN HT = 2'10"  
MAX HT = 3'0"  
GUARDRAIL TO CONFORM TO OBC 9.8.8.  
MIN HT = 2'11"

PROPOSED 2X4 WALLS  
WITH METAL SIDING  
PROVIDE MIN 2" GAP FROM  
GRADE TO U/S WOOD

GARBAGE & RECYCLING BINS

**LEGEND**

- PT. PRESSURE TREATED LUMBER  
PL POINT LOAD ABOVE  
P1 3X3X1/4" HSS  
P2 2 - 2X6  
P3 3 - 2X6  
P4 4 - 2X6  
B1 1/250X101 STEEL BEAM  
B2 1/810X39 STEEL BEAM  
B3 1/250X28 STEEL BEAM  
B4 1/250X13 STEEL BEAM  
L1 2 - 2X10 WD LINTEL  
L2 2 - 2X12 WD LINTEL  
L3 2 - 1 3/4" X 9 1/2" LVL 2.0 OE  
F1 48"X48"X12" CONC. FOOTING W/ 3-15M EMB.  
KEY TO SYMBOLS  
F EXHAUST FAN  
CO/SD SMOKE DETECTOR / CARBON  
MONOXIDE DETECTOR

The undersigned has reviewed and takes responsibility for this design and  
has the qualifications and meets the requirements set out in the Ontario  
Building Code to design the work shown in the attached documents.

DESIGNER BCIN

O.G. BCIN

87 STIRLING AVENUE

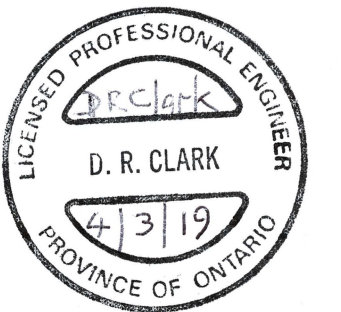
PROPOSED GROUND FLOOR  
PLAN

AS SHOWN  
JAN 30, 2019

A3.1



#	REVISION	DATE
01	ISSUED FOR CLIENT REVIEW	01/28/19
02	ISSUED FOR ENGINEERING REVIEW	01/29/19
03	ISSUED FOR BUILDING PERMIT	03/04/19
04	REVISED FOR DEFICIENCY LETTER	03/25/19



## LEGEND

PT.	PRESSURE TREATED LUMBER
PL	POINT LOAD ABOVE
P1	3X3X1/4" HSS
P2	2 - 2X6
P3	3 - 2X6
P4	4 - 2X6
B1	1/2X5X101 STEEL BEAM
B2	1/8X10X39 STEEL BEAM
B3	1/2X5X28 STEEL BEAM
B4	1/2X5X13 STEEL BEAM
L1	2 - 2X10 W/ND LINTEL
L2	2 - 2X12 W/ND LINTEL
L3	2 - 1 3/4" X 9 1/2" LVL 2.0 OE
F1	48"X48"X12" CONC. FOOTING W/ 3-15M E.M.
KEY TO SYMBOLS	
(F)	EXHAUST FAN
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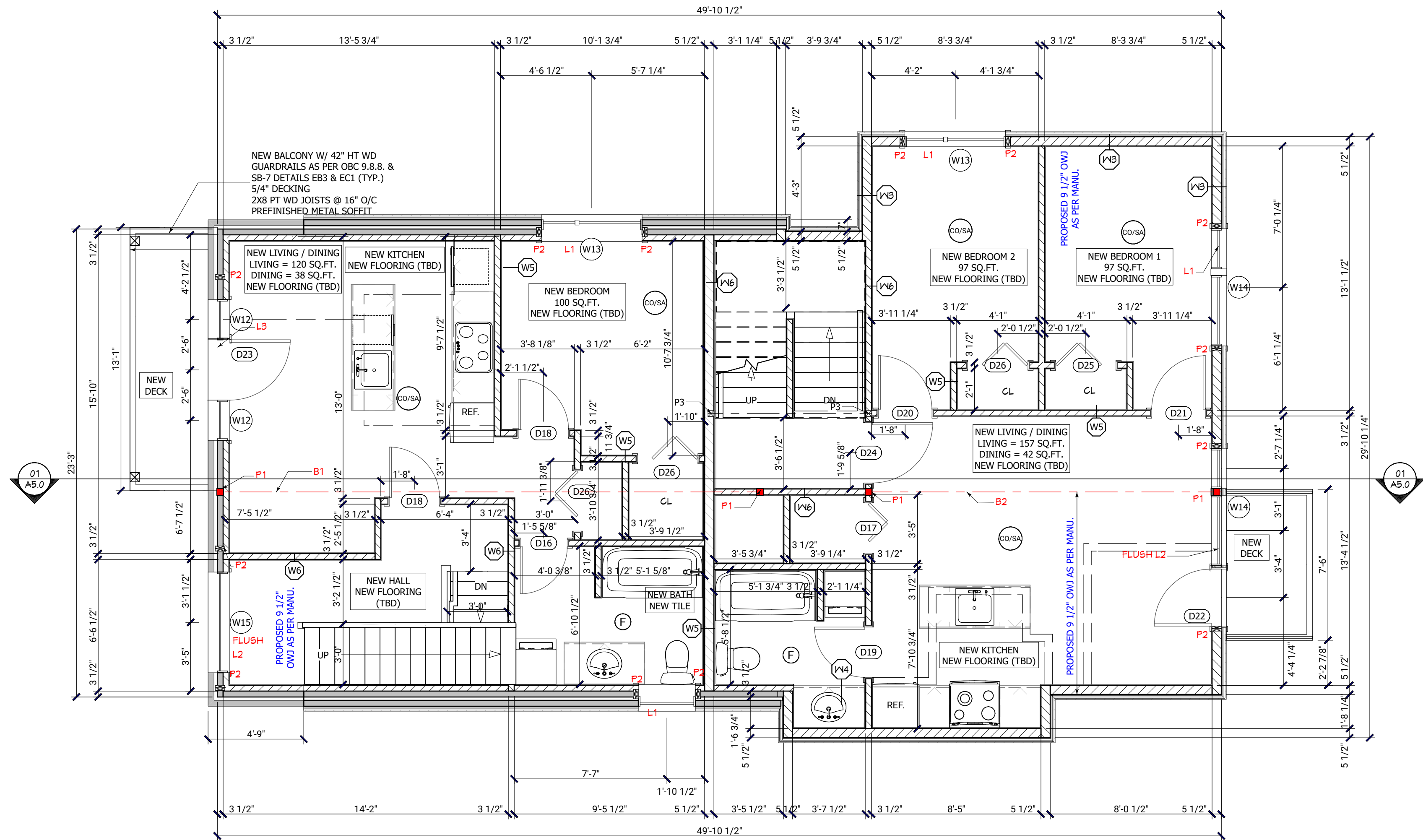
O.G.

BCN

87 STIRLING AVENUE

PROPOSED SECOND FLOOR  
PLANAS SHOWN  
JAN 30, 2019

A3.2



DEMO NOTE:  
ALL EXISTING INTERIOR WALLS TO BE REMOVED  
EXISTING REAR ADDITION TO BE REMOVED  
EXISTING STAIR TO SECOND FLOOR AND STAIR TO  
THIRD FLOOR TO BE REMOVED AND REPLACED  
EXISTING WINDOWS TO BE REMOVED AND FRAMED IN  
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- CERAMIC TILE REQUIRES 5/8" UNDERLAY  
- WATER RESISTANT FLOORING REQUIRED IN BATHROOMS,  
LAUNDRY ROOMS, KITCHENS, GENERAL STORAGE AREAS &  
ENTRANCE (OBC 9.30.1.2.)

BATHROOM NOTE: (TYP.)  
FINAL BATHROOM LAYOUT TO BE CONFIRMED BY OWNER/  
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LAUNDRY ROOM NOTE: (TYP.)  
OWNER TO CONFIRM DOOR SWING OF  
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PROVIDE GALV. METAL PAN OR EQUAL  
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PL	POINT LOAD ABOVE
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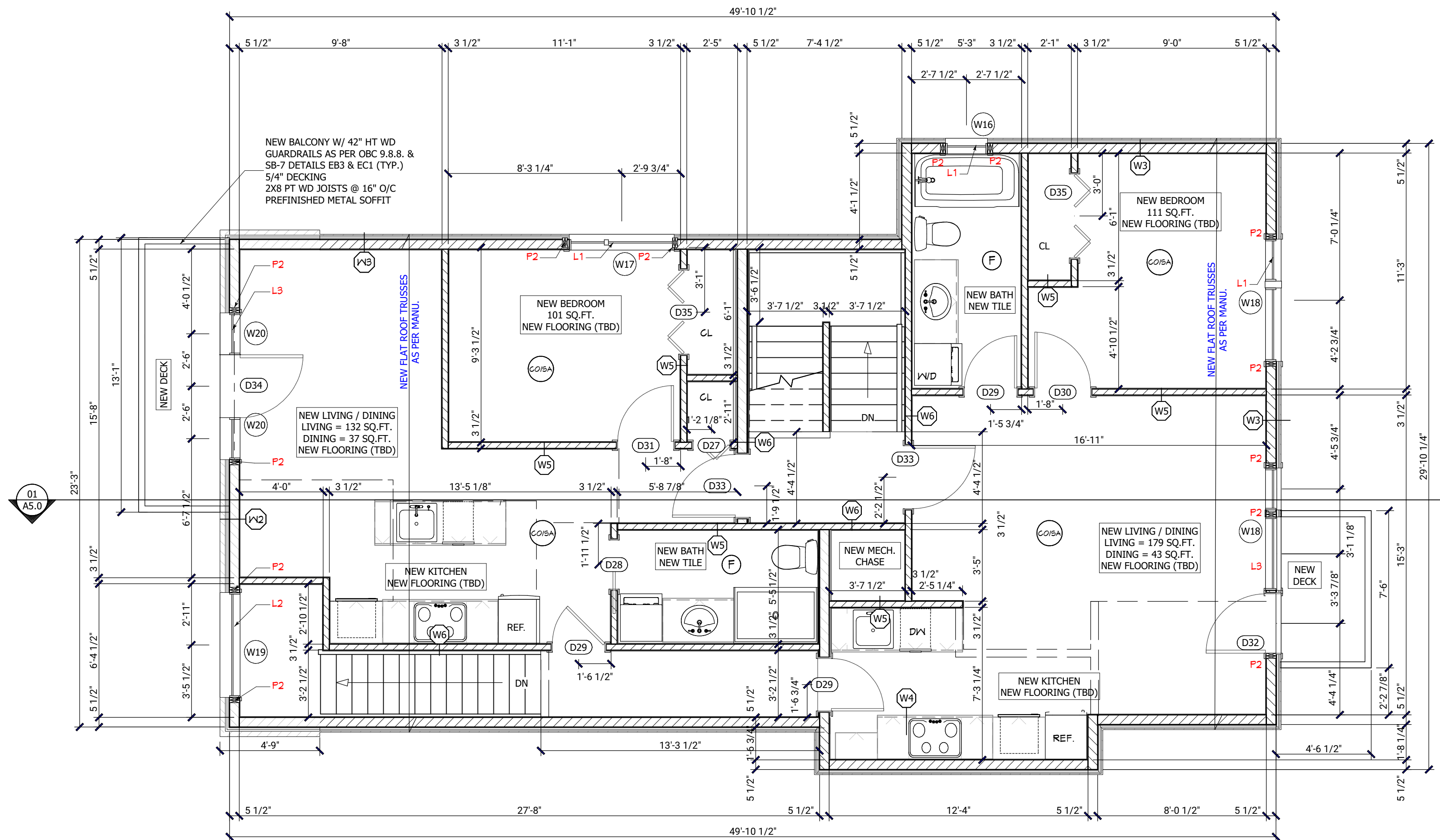
BCIN

87 STIRLING AVENUE

PROPOSED THIRD FLOOR  
PLAN

AS SHOWN  
JAN 30, 2019

A3.3



**DEMO NOTE:**  
ALL EXISTING INTERIOR WALLS TO BE REMOVED  
EXISTING REAR ADDITION TO BE REMOVED  
EXISTING STAIR TO SECOND FLOOR AND STAIR TO  
THIRD FLOOR TO BE REMOVED AND REPLACED  
EXISTING WINDOWS TO BE REMOVED AND FRAMED IN  
OR REPLACED WITH NEW WINDOWS UNLESS NOTED  
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TO REMAIN

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LAUNDRY ROOMS, KITCHENS, GENERAL STORAGE AREAS &  
ENTRANCE (OBC 9.30.1.2.)

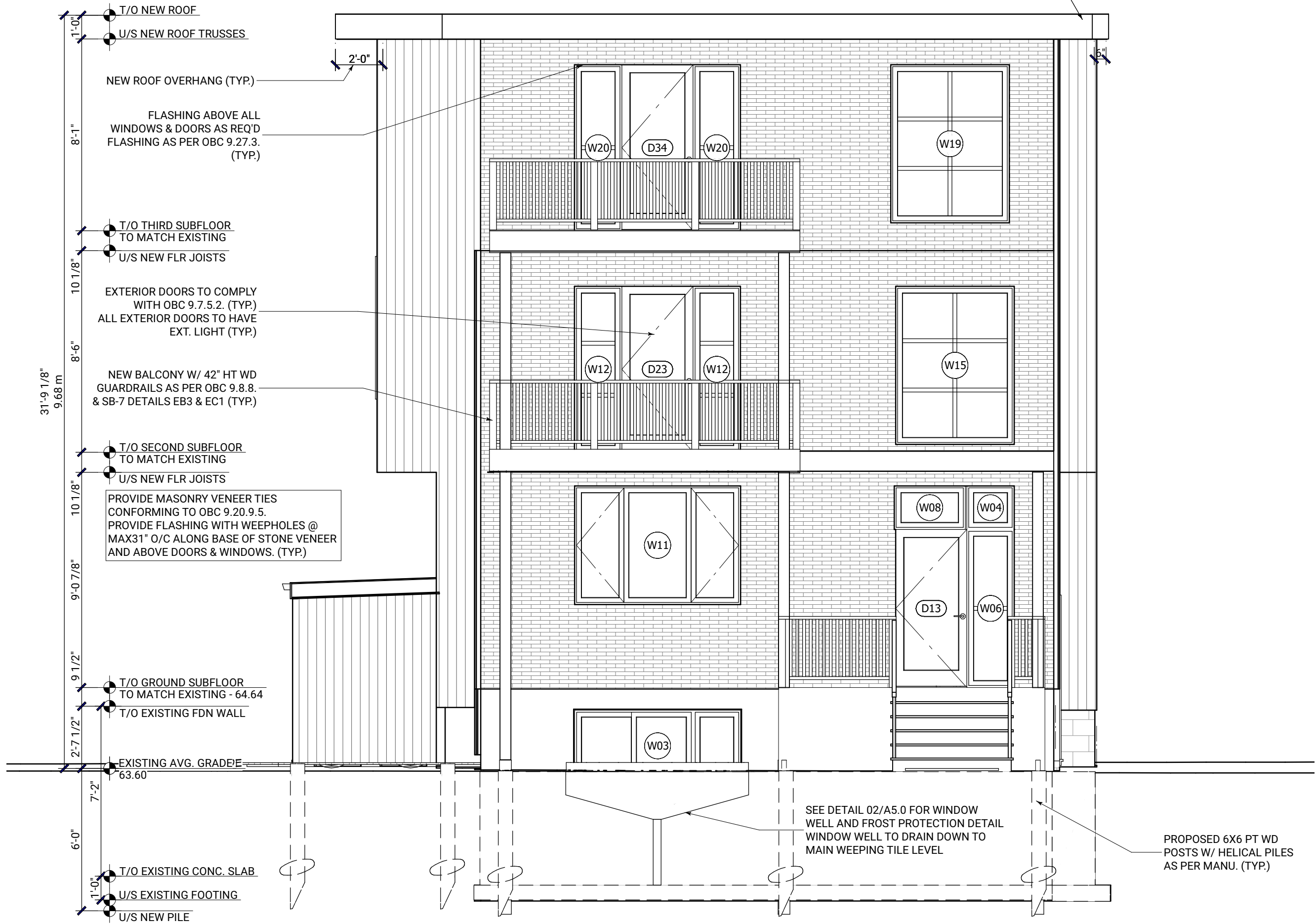
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- PROVIDE STUD WALL REINFORCING TO PERMIT THE FUTURE  
INSTALLATION OF A GRAB BAR ON A WALL ADJACENT TO A  
WATER CLOSET, BATHTUB AND A SHOWER AS PER OBC 9.5.2.3.(1)  
- PROVIDE WATERPROOF WALL IN SHOWER STALLS (5'11") ABOVE  
THE RIM OF BATHTUBS EQUIPPED WITH SHOWERS (3'11") AND  
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IN ACCORDANCE TO OBC 9.29.2.1.

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HANDRAIL TO CONFORM TO OBC 9.8.7.  
MIN HT = 2'10"  
MAX HT = 3'0"  
GUARDRAIL TO CONFORM TO OBC 9.8.8.  
MIN HT = 2'11"

UPO CALCULATION  
EBF AREA = 841 SQ.FT.  
LIMITING DISTANCE = 12.5M  
PERMITTED GLAZING = 100%

SEE DETAIL 03/A4.1



01  
A4.0  
EXTERIOR ELEVATION (FRONT)  
SCALE: 1/4"=1'-0"

23

DEVELOPMENTS

#	REVISION	DATE
01	ISSUED FOR CLIENT REVIEW	01/28/19
02	ISSUED FOR ENGINEERING REVIEW	01/29/19
03	ISSUED FOR BUILDING PERMIT	03/04/19
04	REVISED FOR DEFICIENCY LETTER	03/25/19



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DESIGNER

O.G.

BCN

87 STIRLING AVENUE

EXTERIOR ELEVATION  
(FRONT)

AS SHOWN  
JAN 30, 2019  
A4.0



#	REVISION	DATE
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DESIGNER BCIN

O.G.

BCIN

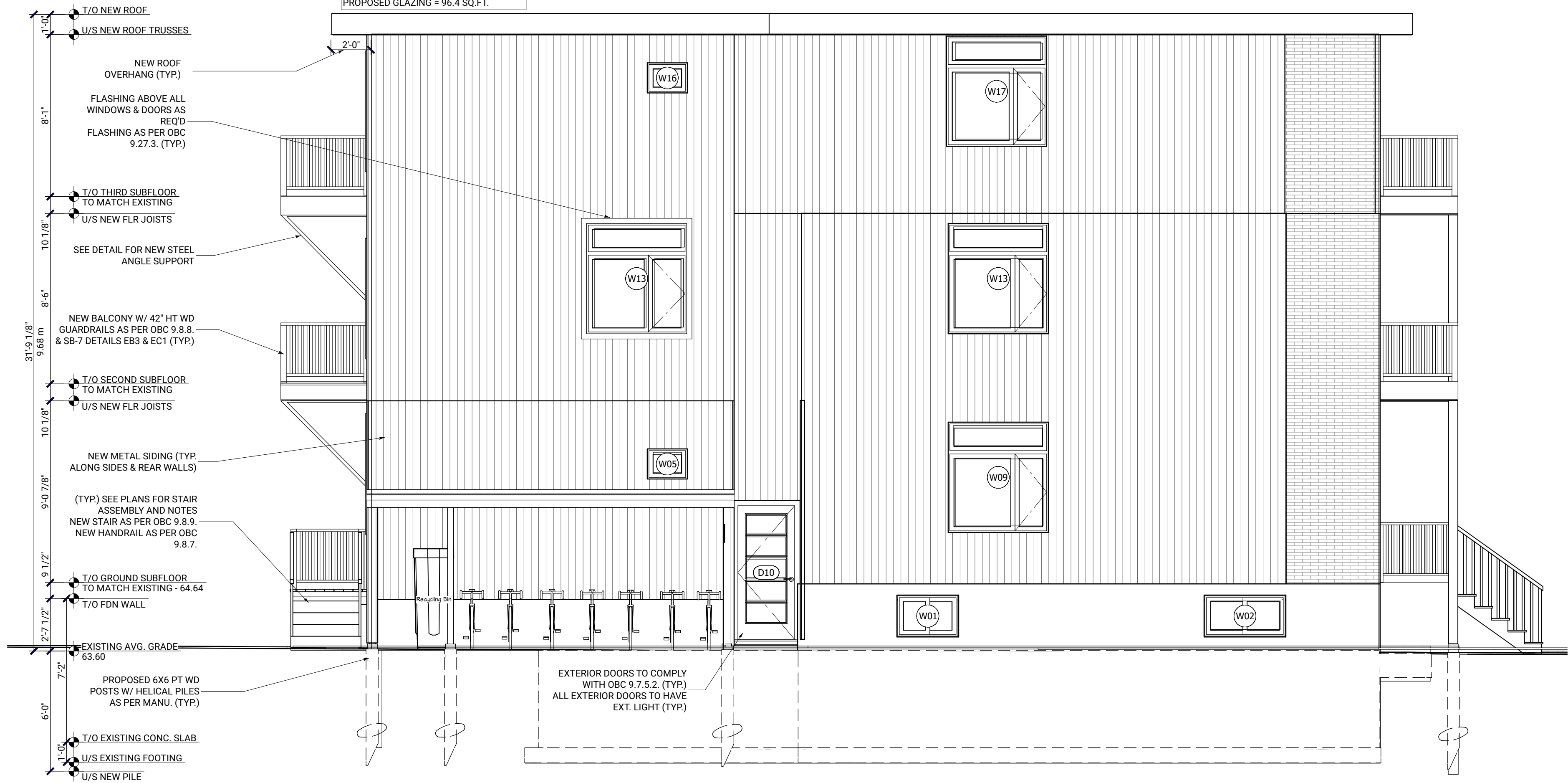
87 STIRLING AVENUE

EXTERIOR ELEVATION (LEFT)

AS SHOWN  
JAN 30, 2019

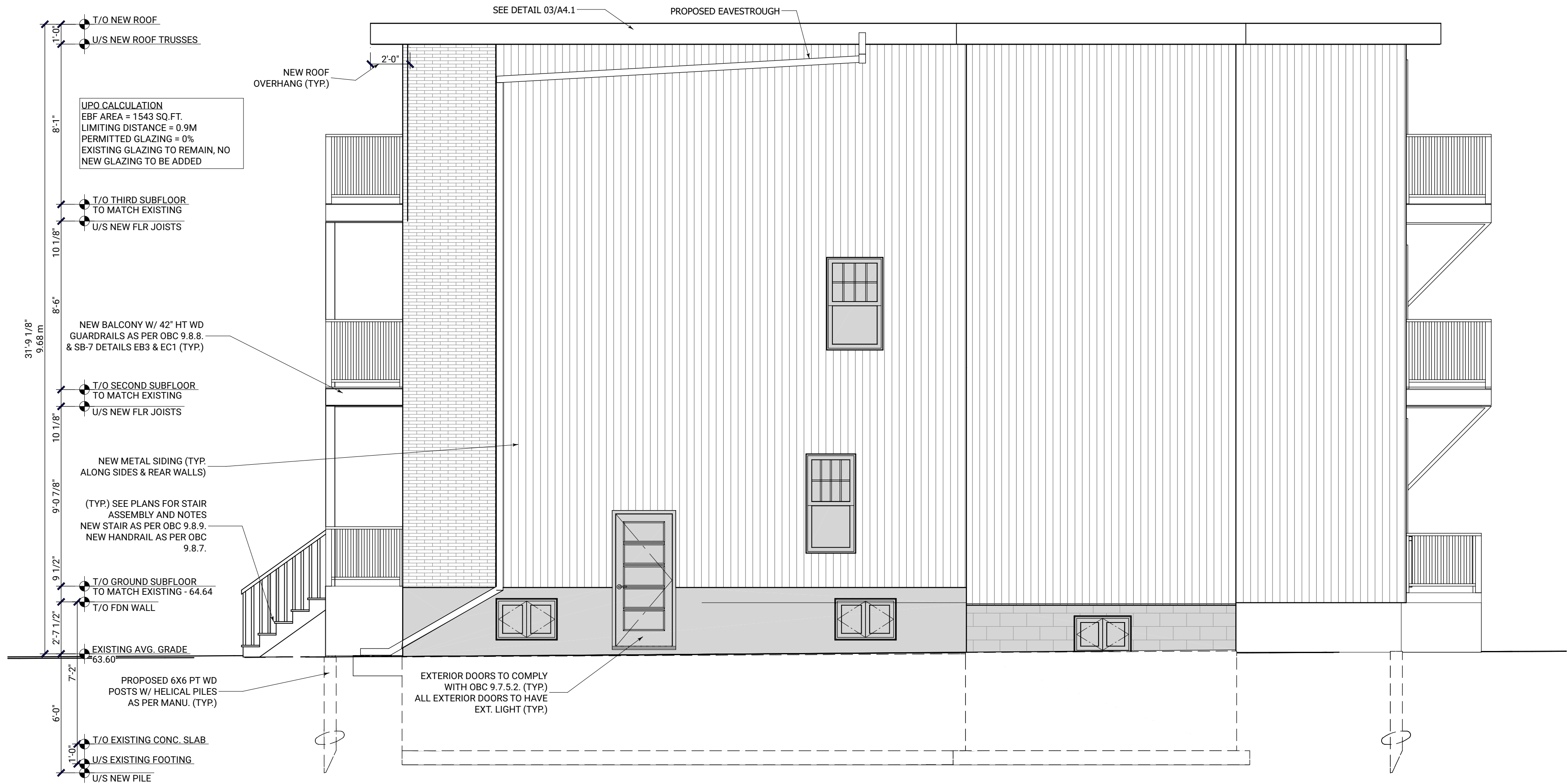
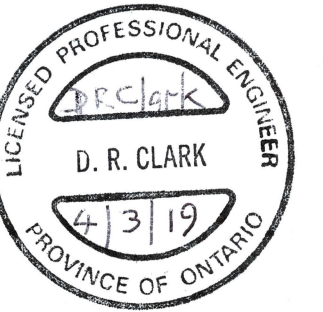
A4.1

UPO CALCULATION  
EBF AREA = 1543 SQ.FT.  
LIMITING DISTANCE = 2.73M  
PERMITTED GLAZING = 9.46% = 146 SQ.FT.  
PROPOSED GLAZING = 96.4 SQ.FT.

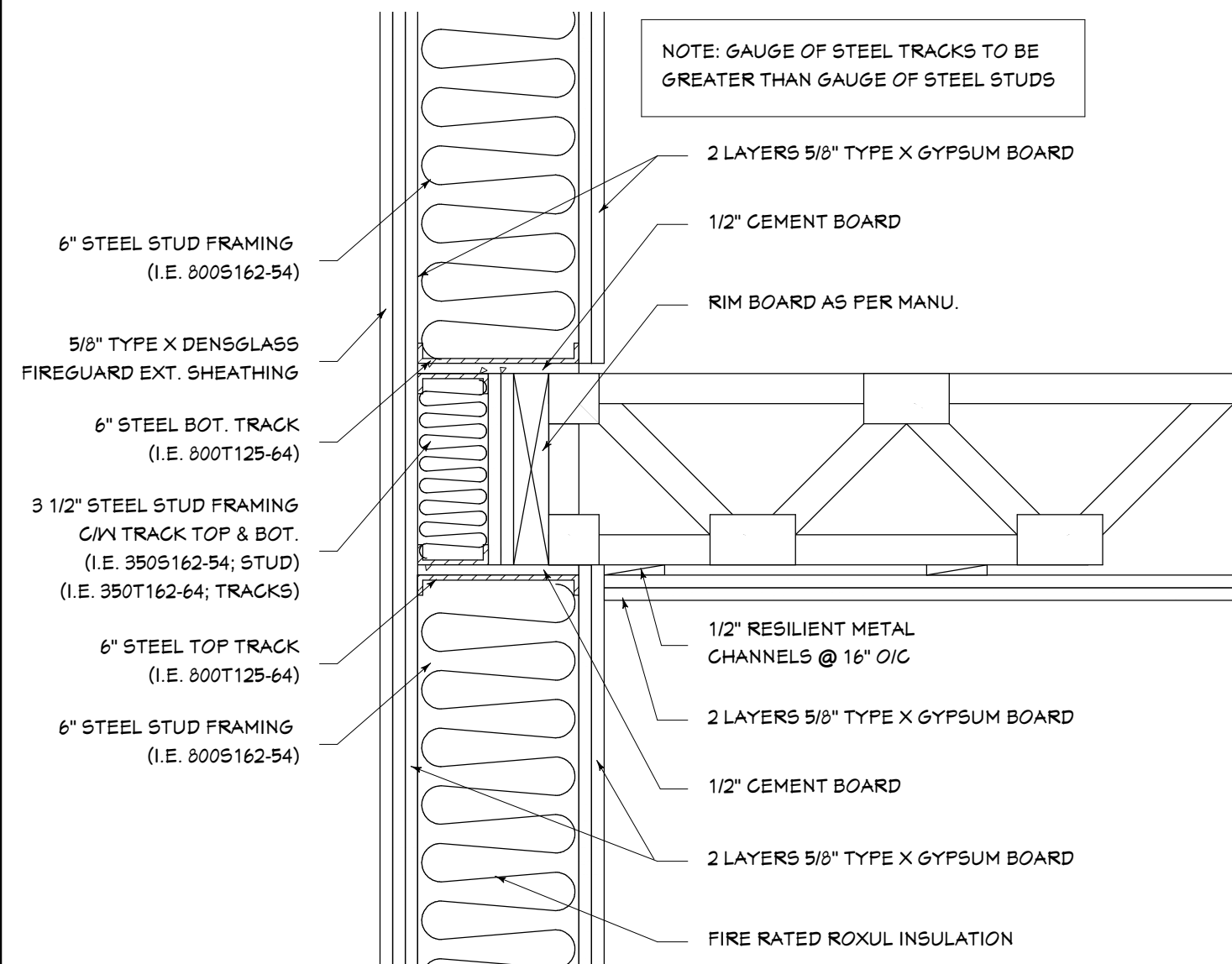


01 EXTERIOR ELEVATION (LEFT)  
A4.1 SCALE: 1/4"=1' 0"

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01  
A4.2 EXTERIOR ELEVATION (RIGHT)  
SCALE: 1/4"=1' 0"



02  
A4.2 STEEL STUD WALL DETAILS - TO BE CONFIRMED BY P.ENG.  
SCALE: 1-1/2"=1' 0"

DESIGNATIONS

MEMBER DEPTH IN 1/100THS INCHES. THUS 600 MEANS 600/100=6"

FLANGE WIDTH IN 1/100THS INCHES. THUS 162 MEAN 162/100=1.62" OR 1 5/8"

MIN. THICKNESS IN 1/1000THS INCHES. THUS 54 MEANS 54/1000=0.054"

STYLE:  
S= STUD OR JOIST SECTIONS  
T= TRACK SECTIONS  
U= CHANNEL SECTIONS  
F= FURRING CHANNEL SECTIONS

THICKNESS - STEEL COMPONENTS

MINIMUM THICKNESS (MILS)	DESIGN THICKNESS (IN)	DESIGN THICKNESS (MM)	REFERENCE ONLY GAUGE NO.
18	0.0188	0.477	25
27	0.0283	0.718	22
30	0.0312	0.792	20 - DRYWALL
33	0.0346	0.878	20 - STRUCTURAL
43	0.0451	1.145	18
54	0.0566	1.437	16
68	0.0713	1.811	14
97	0.1017	2.583	12

1. MATERIALS

MATERIAL FOR COLD FORMED STEEL STUDS, BRACING, BRIDGING CHANNELS AND CLIPS, ETC. SHALL MEET THE REQUIREMENTS OF CAN/CSA-S136-01. FOR MATERIAL 1.15mm AND THINNER, GRADE A YIELD STRENGTH 228MPa (33 Ksi), FOR MATERIAL 1.52mm AND THICKER, GRADE D, 345 MPa (50 Ksi)

FOR STUDS & TRACKS, HOT DIPPED GALVANIZED COATING TO BE 2275 MINIMUM.

2. STUD SIZES & DESIGNATIONS

STUDS - 8"x1 5/8"x5/8" - 0.0566" - (800s162-56) TYP. EXT. WALL. REFER TO STUD DESIGNATION DEFINITION BELOW. STUDS TO BE SECURED AT TOP WITH DIETRICH FASTCLIPS.

3. STUDS & TRACKS

UNLESS INDICATED, ALL TRACK IS TO BE SAME GAUGE AS STUDS, WITH A WIDTH TO MATCH STUD AND STANDARD LEGS. MATERIAL AS PER NOTE 1.

4. FASTENERS & CONNECTIONS

ALL FASTENERS BETWEEN STUDS, STUDS & TRACK TO BE #8-18 WAFER HEAD SCREWS CORROSION RESISTANT ZINC OR CADMIUM COATING (0.008mm) THICK.

5. BRIDGING CHANNEL & CLIPS

UNLESS INDICATED, BRIDGING REQUIRED ON CENTERLINE OF STUDS AS PER DETAIL AT 1200mm (48") O/C MAX. TO BE 38 (1.5")X13 (1/2")X1.15mm (0.045") "U" CHANNEL.

BRIDGING CLIPS TO BE 38 (1.5")X38 (1.5")X1.15mm (0.045") CONNECT WITH 2-#8-18 SCREWS TO BOTH STUD & BRIDGING CHANNEL MATERIAL AS PER NOTE 1.

6. VERTICAL DEFLECTION

ATTACH BUILDING ANCHORS TO THE STRUCTURE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED THROUGH THE EMBOSSEMENTS ON THE SCORED LINE OF THE CLIP AS SHOWN ON THE ATTACHED DRAWINGS. IN NO CASE SHALL ANCHORS BE INSTALLED MORE THAN 1" (25mm) FROM THE BEND ON THE SHORT LEG OF THE CLIP. IN CASE OF DISCREPANCY BETWEEN THIS INFORMATION AND THE DESIGN ENGINEER'S DETAILS, DESIGN ENGINEER'S DETAILS SHALL BE FOLLOWED. SCREWS SHALL BE DRIVEN THROUGH THE SLOTTED HOLES AND POSITIONED TO ALLOW FOR THE APPROPRIATE BUILDING DEFLECTION.

7. GENERAL NOTES

THESE SPECIFICATIONS & ATTACHED SKETCHES MUST BE READ IN CONJUNCTION WITH ALL CONTRACT DOCUMENTS FOR THIS PROJECT.

ALL HEIGHTS OF WALLS TO BE CONFIRMED ON SITE, MAXIMUM HEIGHTS USED FOR DESIGN OF STUDS.

STEEL STUD CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO PROCEEDING WITH WORK.

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DESIGNER

O.G.

87 STIRLING AVENUE

EXTERIOR ELEVATION (RIGHT)

AS SHOWN  
JAN 30, 2019

A4.2

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DESIGNERBCIN

O.G.

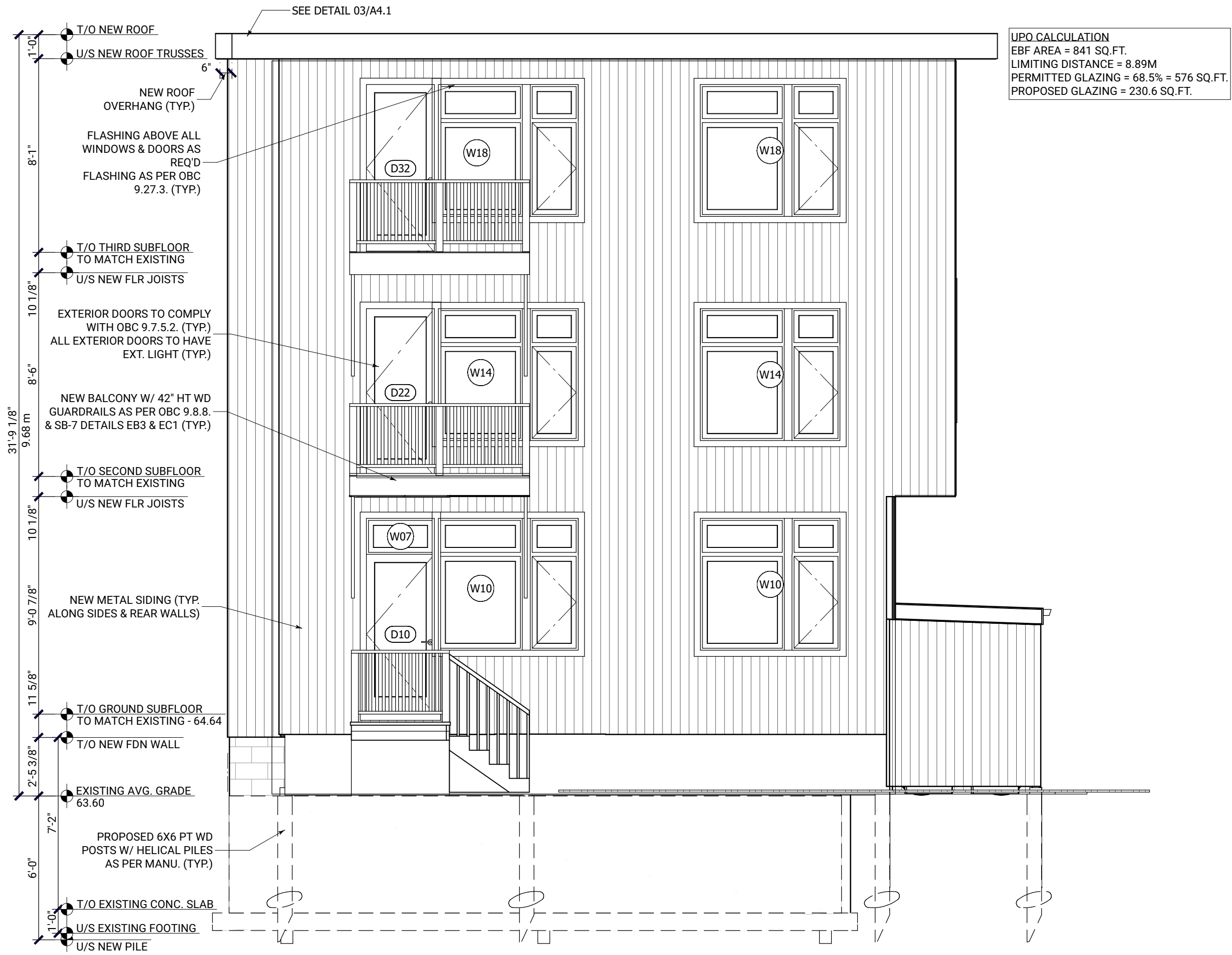
BCIN

87 STIRLING AVENUE

EXTERIOR ELEVATION (REAR)

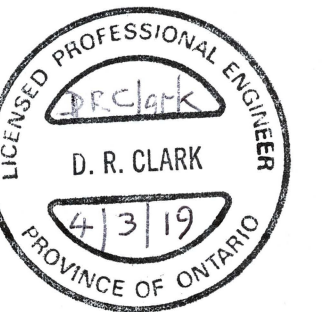
AS SHOWN  
JAN 30, 2019

A4.3





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## LEGEND

PT.	PRESSURE TREATED LUMBER
PL	POINT LOAD ABOVE
P1	3X3X1/4" HSS
P2	2 - 2X6
P3	3 - 2X6
P4	4 - 2X6
B1	W250X101 STEEL BEAM
B2	W810X34 STEEL BEAM
B3	W250X28 STEEL BEAM
B4	W250X13 STEEL BEAM
L1	2 - 2X10 WND LINTEL
L2	2 - 2X12 WND LINTEL
L3	2 - 1 3/4" X 9 1/2" LVL 2.0 OE
F1	48"X48"X12" CONC. FOOTING W/ 3-15M E.M.
KEY TO SYMBOLS	
(F)	EXHAUST FAN
(CO/SD)	SMOKE DETECTOR/ CARBON MONOXIDE DETECTOR

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DESIGNER

O.G.

BCIN

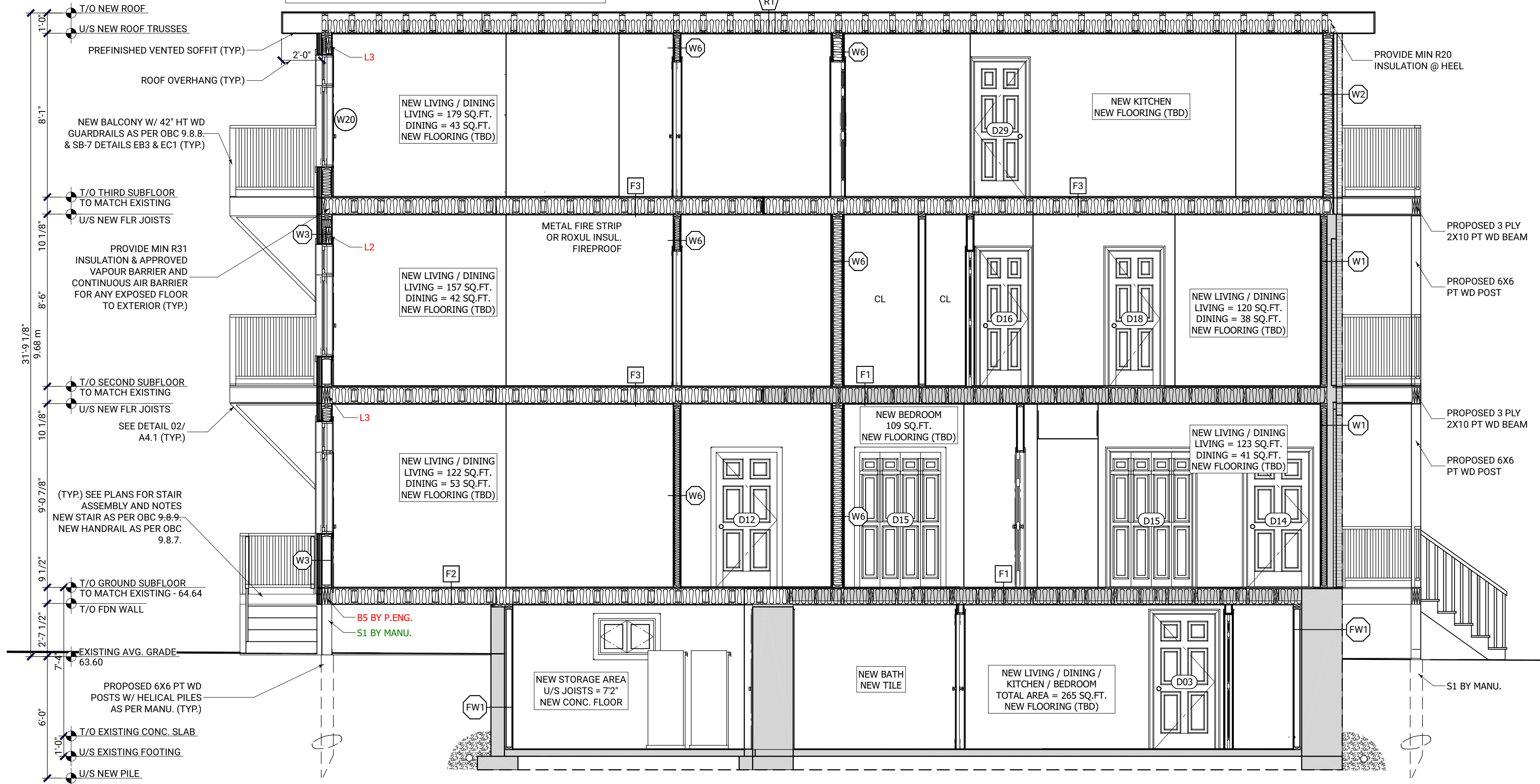
87 STIRLING AVENUE

## BUILDING SECTION &amp; DETAILS

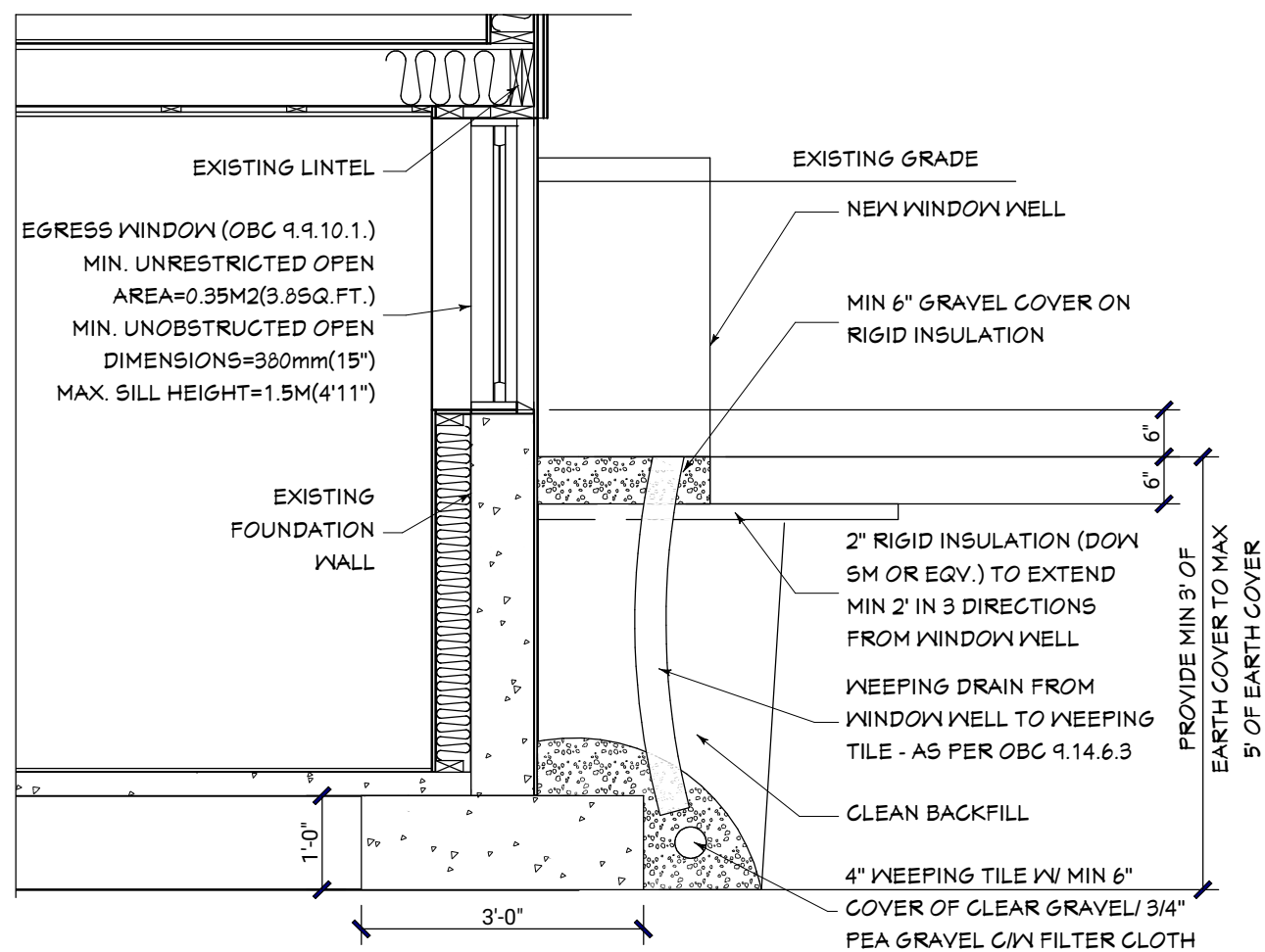
AS SHOWN  
JAN 30, 2019

A5.0

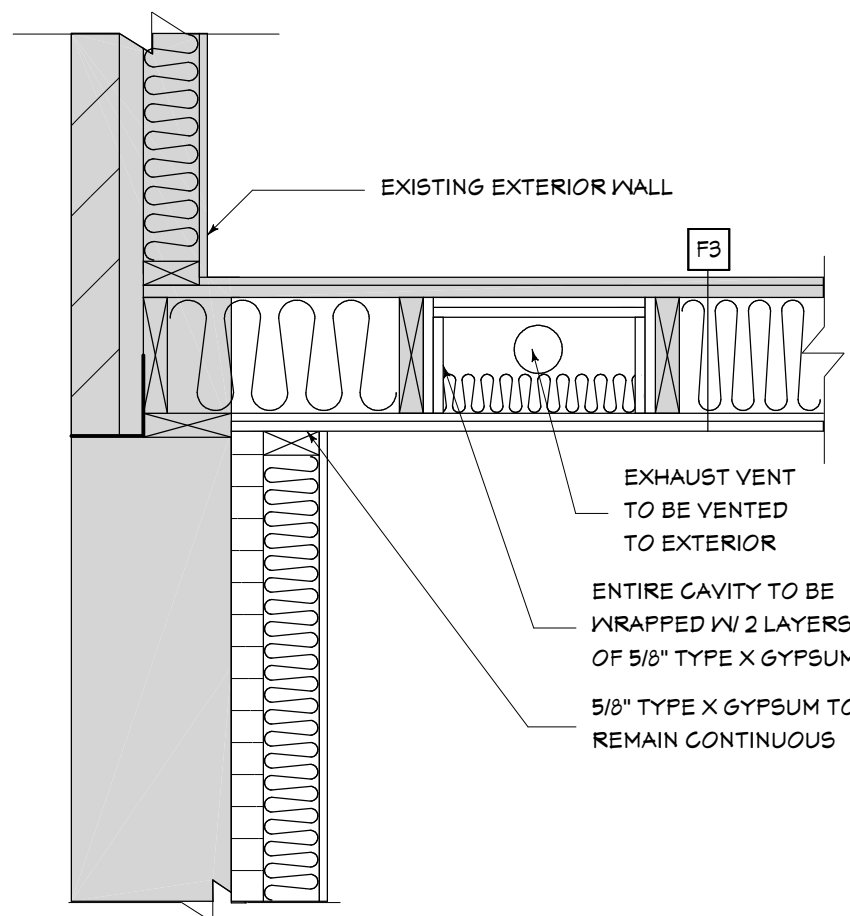
NOTE:  
-TRUSS DESIGN TO COMPLY WITH THE 2012 OBC AND CSA-086.1.  
-CONTRACTOR TO VERIFY TRUSS CONSTRUCTION & DIMENSIONS ON SITE  
-CONTINUOUS AIR BARRIER SYSTEM AS PER OBC 9.25.3.



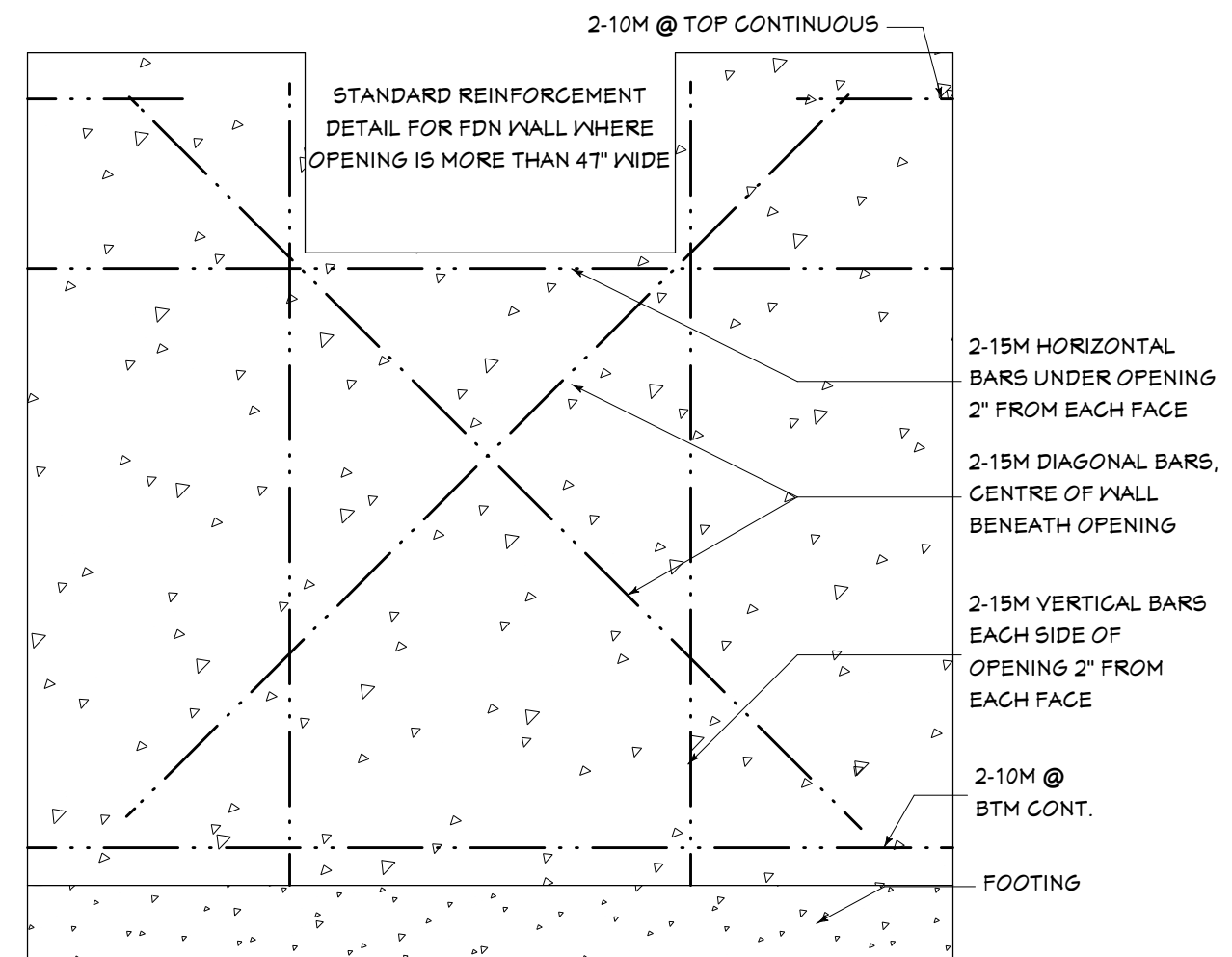
01 BUILDING SECTION  
A5.0 SCALE: 1/4\"=1' 0"



02 TYP. BASEMENT EGRESS WINDOW DETAIL  
A5.0 SCALE: 1/2\"=1' 0"



03 TYP. VENTING DETAIL  
A5.0 SCALE: 1 1/2\"=1' 0"



04 STANDARD REINFORCEMENT DETAIL  
A5.0 SCALE: 1/2\"=1' 0"