



ISSUED FOR CONSTRUCTION - OCT. 12, 2018

TURNBULL SCHOOL MUSIC ROOM ADDITION

1132 FISHER AVE. OTTAWA ON

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DRAWING LIST:

CIVIL DRAWINGS

C-001 SERVICING AND GRADING PLAN

ARCHITECTURAL DRAWINGS

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no.	date	revision
1	18/10/12	ISSUED FOR CONSTRUCTION

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All contractors must comply with all

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HOBIN
ARCHITECTURE

PROJECT
TURNBULL SCHOOL MUSIC ROOM ADDITION
1132 FISHER AVE.
OTTAWA, ON

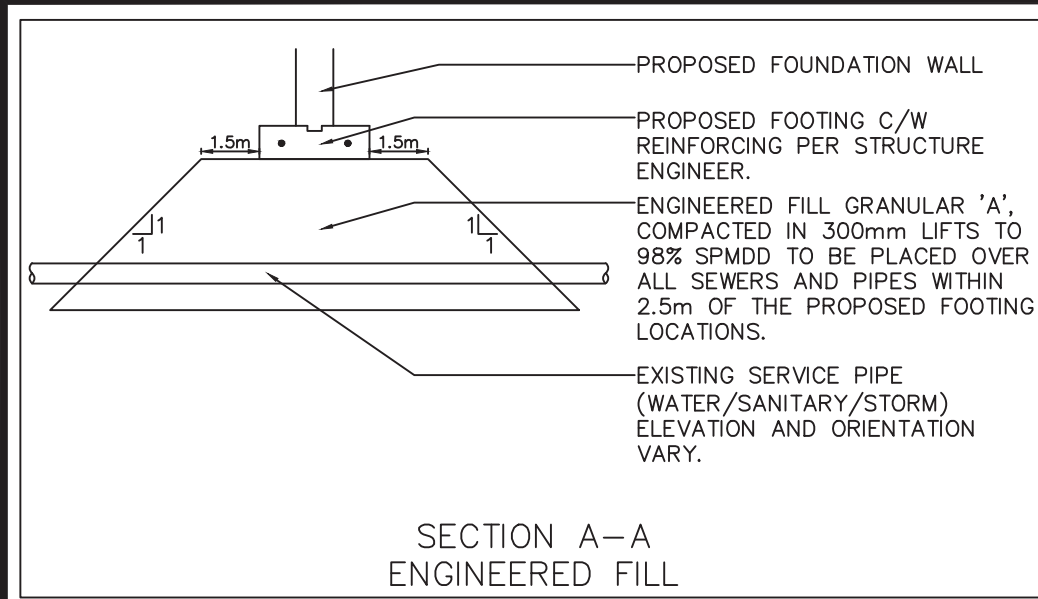
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COVER PAGE

DRAWN	DATE	SCALE
Author	10/15/18	

PROJECT
1705

DRAWING NO.
A0.00

REVISION NO.
1



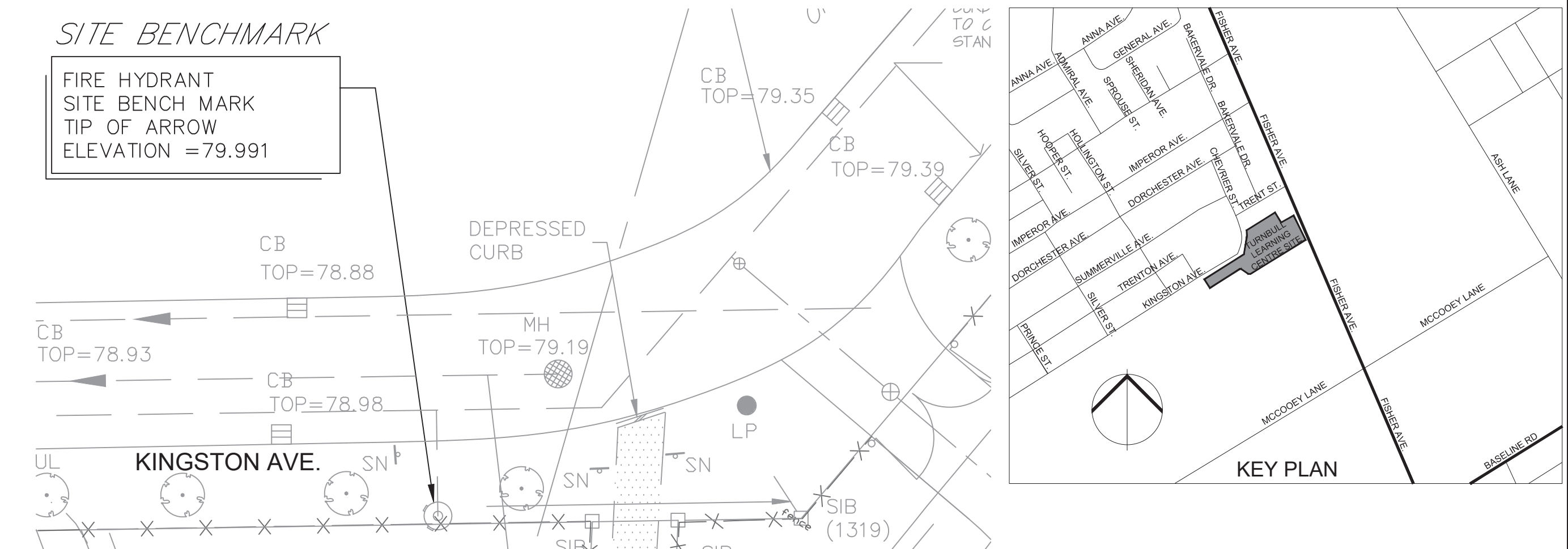
NOTES:

1. ALL MATERIALS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF OTTAWA STANDARD DRAWINGS & SPECIFICATIONS OR OPS/OPSS IF CITY DRAWINGS AND SPECIFICATIONS DO NOT APPLY.
2. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION AND SHALL PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS.
3. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
4. THESE DRAWINGS ARE NOT TO BE SCALED OR USED FOR LAYOUT PURPOSES.
5. THIS DRAWING IS A COMPILATION OF OTHER UTILITY DESIGNS AND DOES NOT INDICATE IN ANY WAY THAT THE PARTY SIGNING THIS DRAWING HAS DESIGNED OR APPROVED THE RESPECTIVE

- UTILITY PLANTS INDICATED ON THIS DRAWING. THE DRAWING WAS PREPARED TO BE USED AS REFERENCE ONLY AS PER REQUIREMENTS OF THE CITY OF OTTAWA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE IT HAS REVIEWED THE CURRENT AND EXISTING DESIGNS BY HYDRO, STREET LIGHTING BELL, CANADA POST, C.C. TRANSPO, CABLE TV AND ANY OTHER PARTIES INCLUDED BUT NOT MENTIONED AND COMPLETE THE INSTALLATION IN ACCORDANCE WITH THE REQUIREMENTS OF THE STAKEHOLDER UTILITY DESIGN.
6. SILT FENCE TO BE ERRECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
 7. ALL LEADS FOR STREET CBs TO AND CIBs% CONNECTED TO MAIN SHALL BE 250mmØ PVC DR35 @ MIN 2% SLOPE UNLESS NOTED OTHERWISE. ALL LEADS FOR RYCBs CONNECTED TO MAIN SHALL BE 200mmØ PVC DR35 @ MIN 1% SLOPE UNLESS NOTED OTHERWISE.
 8. WALKWAY PAVEMENT STRUCTURE (MINIMUM) 50mm SUPERPAVE 12.5 200mm GRANULAR "A"

SITE BENCHMARK

FIRE HYDRANT
SITE BENCH MARK
TIP OF ARROW
ELEVATION = 79.991



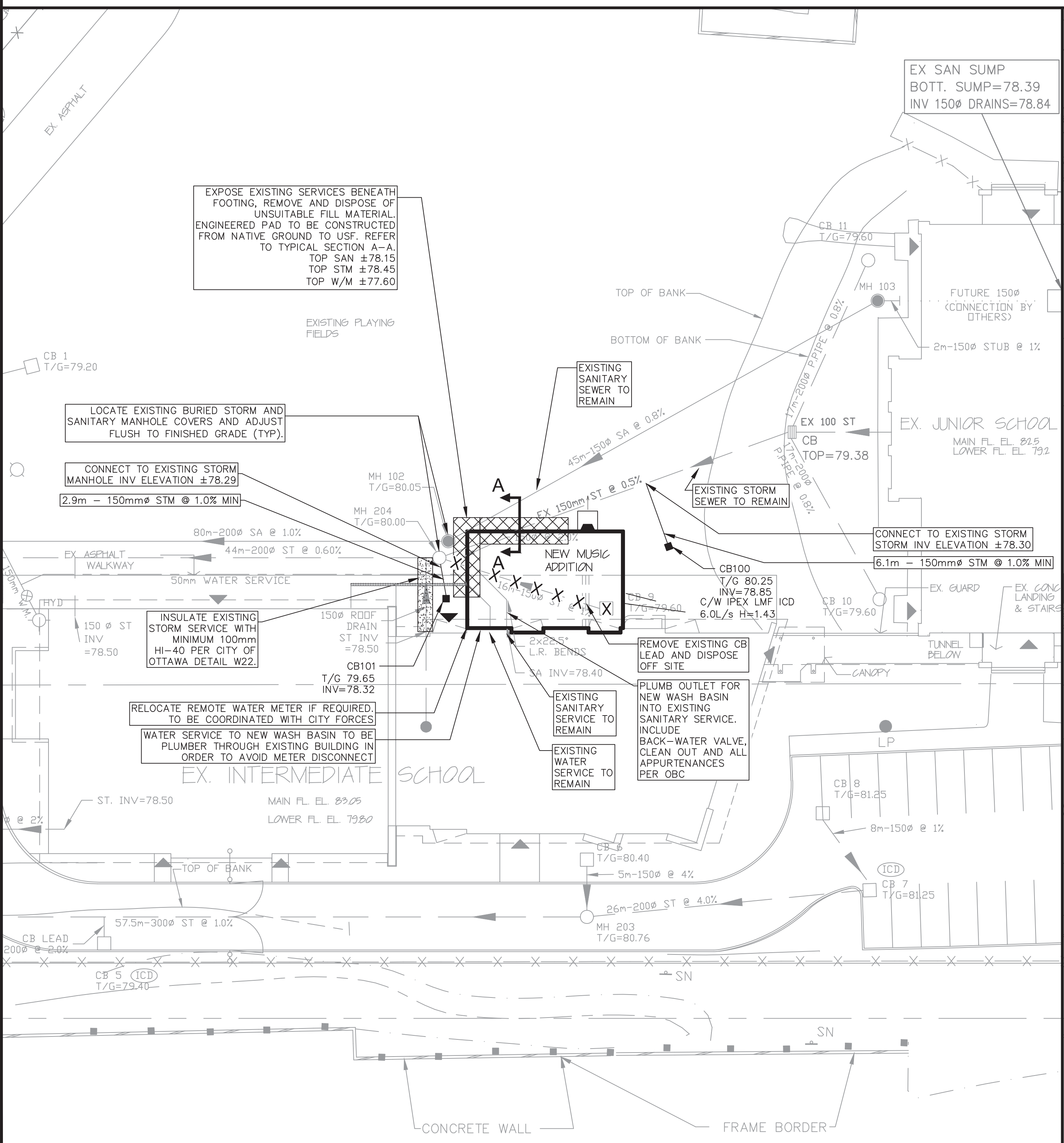
REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed _____
Date _____ 2018

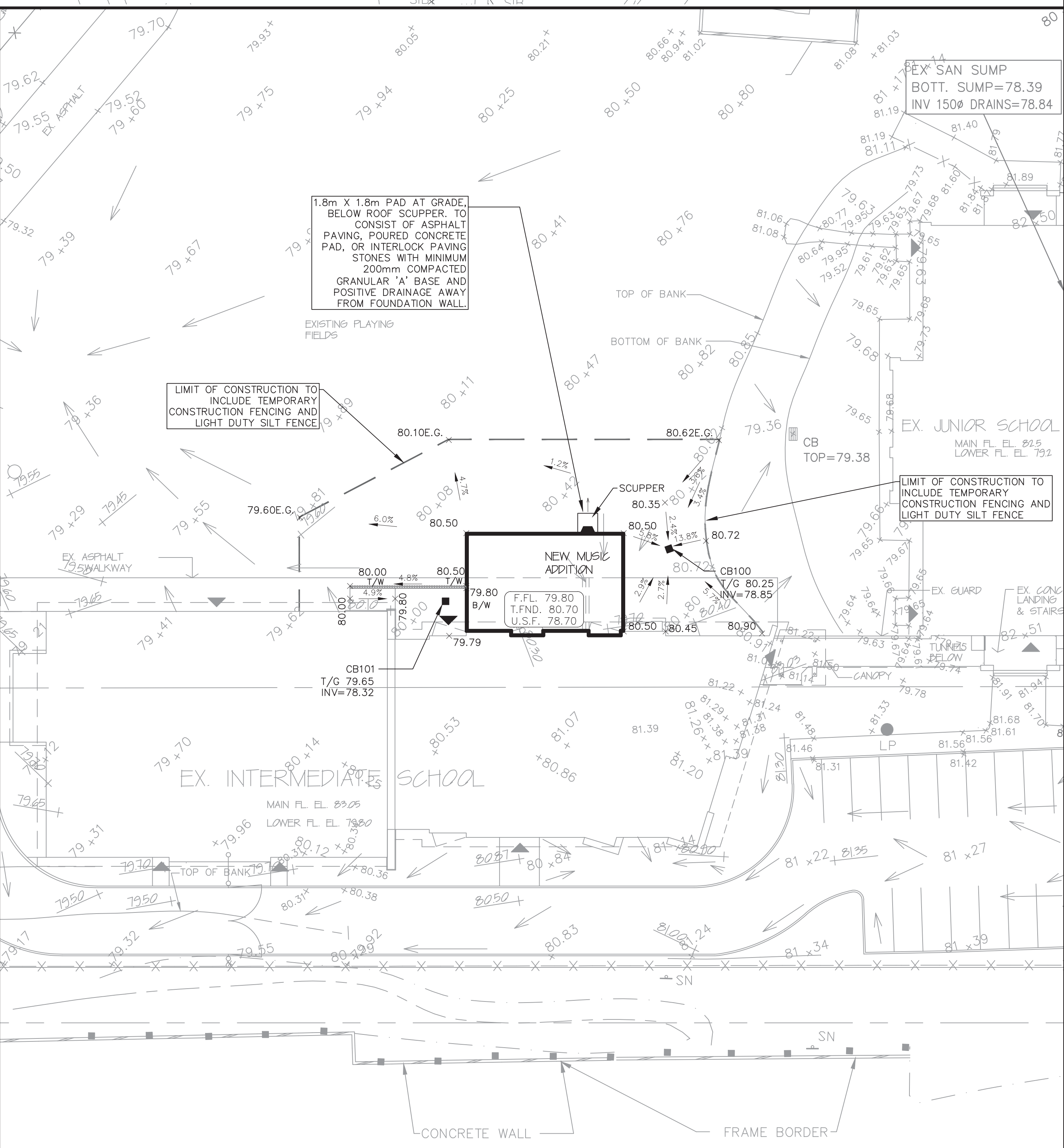
Plan Number _____

LEGEND

- 6.0% SLOPE CW FLOW DIRECTION
- 80.35x PROPOSED SPOT GRADE
- 81.89x EXISTING GRADE
- 80.50 T/Wx TOP OF RETAINING WALL GRADE
- 79.80 B/Wx BOTTOM OF RETAINING WALL GRADE
- Building Entrance
- Limit of Construction
- Silt Sack Placed Beneath CB Cover
- CB101 CONCRETE CATCH BASIN PER CITY OF OTTAWA S19, C/W TOP OF GRATE AND INVERT ELEVATION
- T/G 79.65 INV=79.32



SERVICING PLAN



GRADING PLAN

14		
13		
12		
11		
10		
9		
8		
7		
6		
5		
4		
3		
2	ISSUED FOR CONSTRUCTION	DGY 18.10.05
1	ISSUED FOR BUILDING PERMIT	DGY 18.06.26
No.	REVISIONS	By Date

**TURNBULL SCHOOL
1132 FISHER AVENUE**

IBI GROUP
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**NEW MUSIC
ADDITION**

Professional Engineer
D. Yannouloupoulos
2018/10/05
PROVINCE OF ONTARIO

**SERVICING AND
GRADING PLAN**

Scale 1:250

Design	R.M.	Date	JUNE 2018
Drawn	E.H.	Checked	D.G.Y.
Project No.	116598	Drawing No.	C-001

J:\116598_TurnbullSchool\Drawings\Grading\Grading-C-001 - Servicing and Grading Plan.dwg Plot Scale: 1:250 Printed At: 10/5/2018 7:34 AM Last Saved By: DIERRE Last Saved At: Jun 27, 18

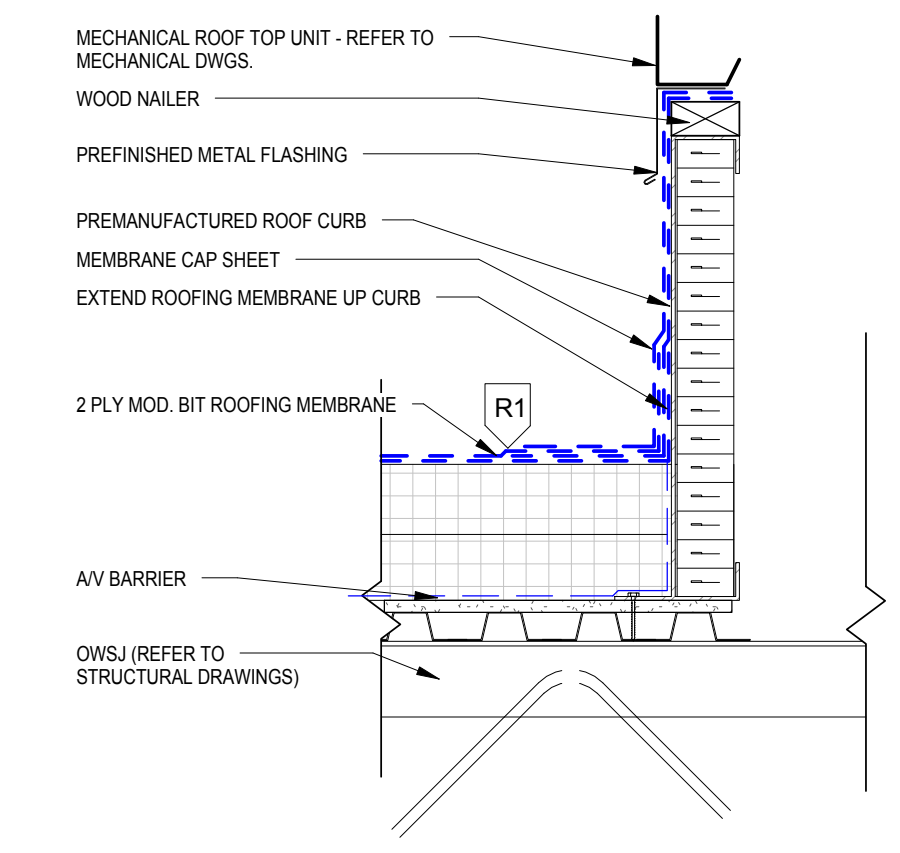
TURNBULL LEARNING CENTRE MUSIC ROOM ADDITION



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NAME OF PROJECT: TURNBULL SCHOOL MUSIC ROOM ADDITION
 LOCATION: 1132 FISHER AVENUE, OTTAWA, ON

ONTARIO BUILDING CODE MATRIX		PART 3	PART 4							
1	PROJECT DESCRIPTION MUSIC ROOM ADDITION <input type="checkbox"/> NEW <input checked="" type="checkbox"/> ADDITION <input type="checkbox"/> ALTERATION <input type="checkbox"/> CHANGE OF USE <input checked="" type="checkbox"/> PART 3 <input type="checkbox"/> PART 4 <input type="checkbox"/> PART II		2.1.1 4.10.1.3							
2	MAJOR OCCUPANCY(S) GROUP A2 ELEMENTARY SCHOOL	3.1.2.1.(1)	4.10.2							
3	AREA (m ²) BUILDING AREA: EXISTING+ 626 NEW+ 128 TOTAL+ 754 GROSS AREA: EXISTING+ 1,252 NEW+ 128 TOTAL+ 1,380	1.1.3.2	1.1.3.2							
4	NUMBER OF STOREYS ABOVE GRADE: 2 BELOW GRADE: 0	3.2.1.1 & 1.1.3.2	2.1.1.3							
5	HEIGHT OF BUILDING (m) 6.68m (EXISTING), 3.6m (ADDITION)		2.1.1.3							
6	NUMBER OF STREETS/ ACCESS ROUTES 1 STREET	3.2.2.10 & 3.2.5.5								
7	BLDG CLASSIFICATION 3.2.2.25	3.2.2.20-83	4.10.4							
8	SPRINKLER SYSTEM PROPOSED <input type="checkbox"/> ENTIRE BLDG <input type="checkbox"/> IN LIEU OF ROOF RATING <input type="checkbox"/> BASEMENT ONLY <input checked="" type="checkbox"/> NOT REQUIRED	3.2.2.20-83 3.2.1.5 3.2.2.17	4.10.8							
9	STANDPIPE REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	3.2.4								
10	FIRE ALARM REQ'D <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	3.2.4	4.10.17.2							
11	WATER SERVICE/ SUPPLY IS ADEQUATE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO									
12	HIGH BUILDING <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	3.2.6								
13	CONSTRUCTION TYPE PERMITTED CONSTR. <input type="checkbox"/> COMBUSTIBLE <input type="checkbox"/> NON-COMBUSTIBLE <input checked="" type="checkbox"/> BOTH ACTUAL CONSTR. <input type="checkbox"/> COMBUSTIBLE <input checked="" type="checkbox"/> NON-COMBUSTIBLE <input type="checkbox"/> BOTH	3.2.2.20-83	4.10.6							
14	MEZZANINE(S) AREA (m ²) N/A	3.2.1.1.(3-b)	4.10.4.1							
15	OCCUPANT LOAD BASED ON: <input checked="" type="checkbox"/> m ² /PERSON <input type="checkbox"/> DESIGN OF BUILDING BASEMENT: 64 pers. based on 1.85m ² /pers. 1ST FLOOR: NOTE: 2ND FLOOR: No additional occupant load imposed 3RD FLOOR: on existing school due to re-allocation of music room program.	3.1.1.6	4.4.1.3							
16	BARRIER-FREE DESIGN <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (EXPLAIN)	3.8	4.5.2							
17	HAZARDOUS SUBSTANCES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	3.3.1.2.(1) & 3.3.1.9.(1)	4.10.1.3							
18	REQUIRED FIRE RESISTANCE RATINGS (FRR) HORIZONTAL ASSEMBLIES LISTED DESIGN NO. OR DESCRIPTION (56-2) FLOORS: N/A HRS ROOF: N/A HRS MEZZANINE: N/A HRS SUPPORTING MEMBERS LISTED DESIGN NO. OR DESCRIPTION (56-2) FLOORS: N/A HRS ROOF: N/A HRS MEZZANINE: N/A HRS	3.2.2.20-83 3.2.1.4	4.10.8 4.10.9							
19	SPATIAL SEPARATION -- CONSTRUCTION OF EXTERIOR WALLS	3.2.3	4.10.14							
	WALL	AREA OF OPN (m ²)	L.D. (m)	L.H. OR H.L.	PERMITTED MAX. % OF OPENINGS	PROPOSED MAX. % OF OPENINGS	FRR (HOURS)	LISTED DESIGN OR DESCRIPTION	CODE CONSTR.	CODE CONSTR.
	NORTH									
	SOUTH									
	EAST									
	WEST									



3 RTU CURB / TYPICAL
 A0.01 SCALE: 1:10

no.	date	revision
3	18/10/12	ISSUED FOR CONSTRUCTION
2	18/07/12	ISSUED FOR PRICING
1	18/07/09	ISSUED FOR BUILDING PERMIT

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CONSTRUCTION ASSEMBLIES

INTERIOR PARTITIONS:

W1 - W1-92 Stud
16 GYP. BD. TO US OF DECK
92 METAL STUDS - 600 o.c. MAX.
FILL W/ BATT INSULATION
16 GYP. BD. TO US OF DECK

W2 - W2-92 Stud 2 layers side
16 GYP. BD. TO US OF DECK
92 METAL STUDS - 600 o.c. MAX.
FILL W/ BATT INSULATION
16 GYP. BD. TO US OF DECK

W1a - W1a-152 Stud
16 GYP. BD. TO US OF DECK
152 METAL STUDS - 600 o.c. MAX.
16 GYP. BD. TO US OF DECK

W2a - W2a-152 Stud 2 layers side
16 GYP. BD. TO US OF DECK
152 METAL STUDS - 600 o.c. MAX.
FILL W/ BATT INSULATION
16 GYP. BD. TO US OF DECK

W3 - W3-225 Stud- layers side
16 GYP. BD. TO US OF DECK
22 METAL STUDS - 400 o.c. MAX.

EXTERIOR WALLS:

W1 - W1-275mm FDN WALL
275 CAST-IN-PLACE CONC.
FOUNDATION WALL (REFER TO STRUCT)
203 STEEL STUDS - 400 o.c.
SPRAY FOAM MIN. 75mm DEPTH TO BACK
15 GYPSUM BOARD
(TAPED, SANDED, PRIMED READY FOR PAINT)

W2 - W2-HORZ. WOOD SIDING-SL
16 HORZ. PREFINISHED WOOD SIDING
22 VERT. METAL Z-GIRTS - 400 o.c.
90 HORZ. METAL Z-GIRTS - 400 o.c. c/w
89 SEMI-RIGID INSULATION
SELF-ADHESIVE AIR/VAPOUR BARRIER MEMBRANE
13 F.G.-FACED EXTERIOR GRADE GYP. BD.
152 STEEL STUDS - 400 o.c.
203 STEEL STUDS - 400 o.c.
15 GYPSUM BOARD US DECK
(TAPED, SANDED, PRIMED READY FOR PAINT)

W3 - W3-COMPOSITE ALUM SIDING-SL
COMPOSITE ALUMINUM PANEL c/w
INTEGRAL FRAMING SYSTEM
64 GALV. Z-GIRTS - 400 o.c. c/w
64 SEMI-RIGID INSULATION
SELF-ADHESIVE AIR/VAPOUR BARRIER MEMBRANE
13 F.G.-FACED EXTERIOR GRADE GYP. BD.
203 STEEL STUDS - 400 o.c.
15 GYPSUM BOARD US DECK
(TAPED, SANDED, PRIMED READY FOR PAINT)

W4 - W4-New Cement Board on Ex.
COMPOSITE CEMENT BOARD PANEL
c/w INTEGRAL HORZ. & VERT.
REVEAL SYSTEM
125 GALV. METAL X-GIRT - 400 o.c. HORZ. c/w SEMI-RIGID INSUL.
8A AIR BARRIER MEMBRANE
13 F.G.-FACED EXT. GRADE GYP. BD. OVER EXISTING 38x89 WD. STUD FRAMING

PARAPET ASSEMBLY

P2 - P2-HORZ. WOOD SIDING PARAPET
16 HORZ. PREFINISHED WOOD SIDING
22 VERT. METAL Z-GIRTS - 400 o.c.
90 HORZ. METAL Z-GIRTS - 600 o.c. c/w
89 SEMI-RIGID INSULATION
SELF-ADHESIVE AIR/VAPOUR BARRIER MEMBRANE
13 F.G.-FACED EXTERIOR GRADE GYP. BD.
152 STEEL STUDS - 400 o.c.
50x50 P.T. WOOD FRAMING FILL VOID w/
RIGID INSULATION
16 P.T. PLYWOOD SHEATHING
2-PLY MOD. BIT ROOFING MEMBRANE

P3 - P3-COMP ALUM PANEL PARAPET
COMPOSITE ALUMINUM PANEL c/w
INTEGRAL FRAMING SYSTEM
64 GALV. Z-GIRTS - 400 o.c. c/w
64 SEMI-RIGID INSULATION
SELF-ADHESIVE AIR/VAPOUR BARRIER MEMBRANE
13 F.G.-FACED EXTERIOR GRADE GYP. BD.
152 STEEL STUDS - 400 o.c.
50x50 P.T. WOOD FRAMING FILL VOID w/
RIGID INSULATION
16 P.T. PLYWOOD SHEATHING
2-PLY MOD. BIT ROOFING MEMBRANE

ROOF ASSEMBLY:

R1 - R1-TYPICAL ROOF ASSEMBLY
2-PLY MOD. BIT ROOFING MEMBRANE
SLOPED INSULATION (REFER TO ROOF PLAN)
2 x 75mm (STAGGERED) RIGID INSULATION c/w
INTEGRAL FACER OR OVERLAY BOARD
AIR VAPOUR BARRIER MEMBRANE
16mm ROOF DECK SHEATHING
STEEL DECK, REFER TO STRUCTURAL
SLOPED STRUCTURAL STEEL FRAMING/
SEE STRUCTURAL DWGS.

	PROJECT / LOCATION: TURNBULL SCHOOL MUSIC ROOM ADDITION 1132 Fisher Avenue, Ottawa	DRAWING NAME: OBC CODE MATRIX PART 3 PORTION	DATE: Aug. 14/18	DRAWN BY: RV	SCALE: N.T.S.
	Hobin Architecture Incorporated 63 Pamela Street T: 613-238-7200 Ottawa, ON K1S 3K7 F: 613-235-2005 hobinarc.com E: mail@hobinarc.com	PROJECT NO.: 1705	ASK NO.: ASK-002		

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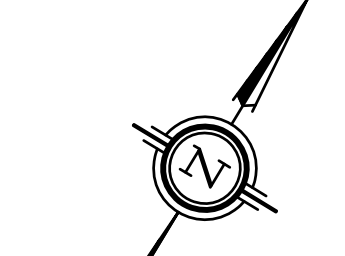
PROJECT: TURNBULL SCHOOL MUSIC ROOM ADDITION
 1132 FISHER AVE., OTTAWA, ON

DRAWING TITLE: CODE MATRIX - CONSTRUCTION ASSEMBLIES

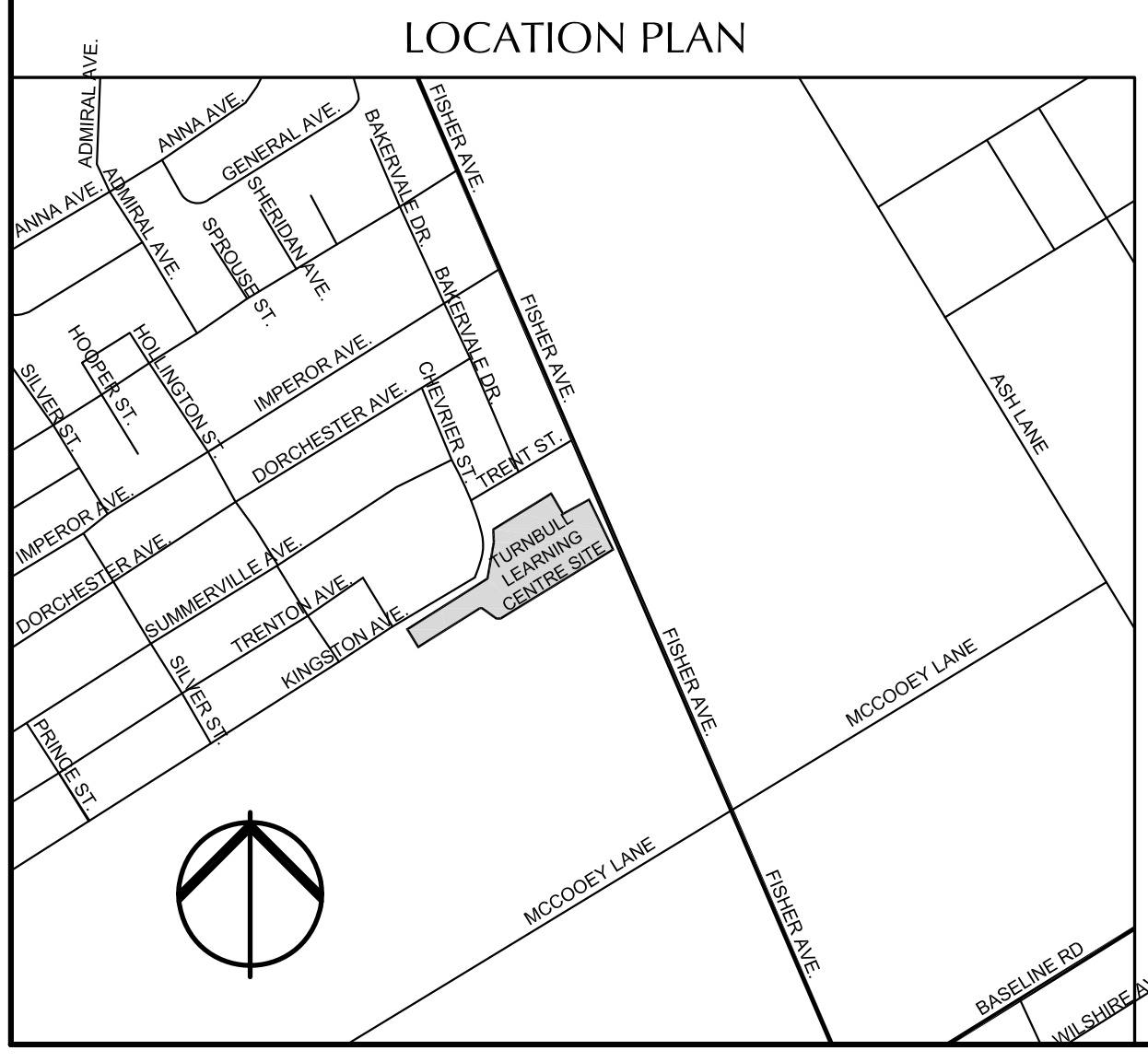
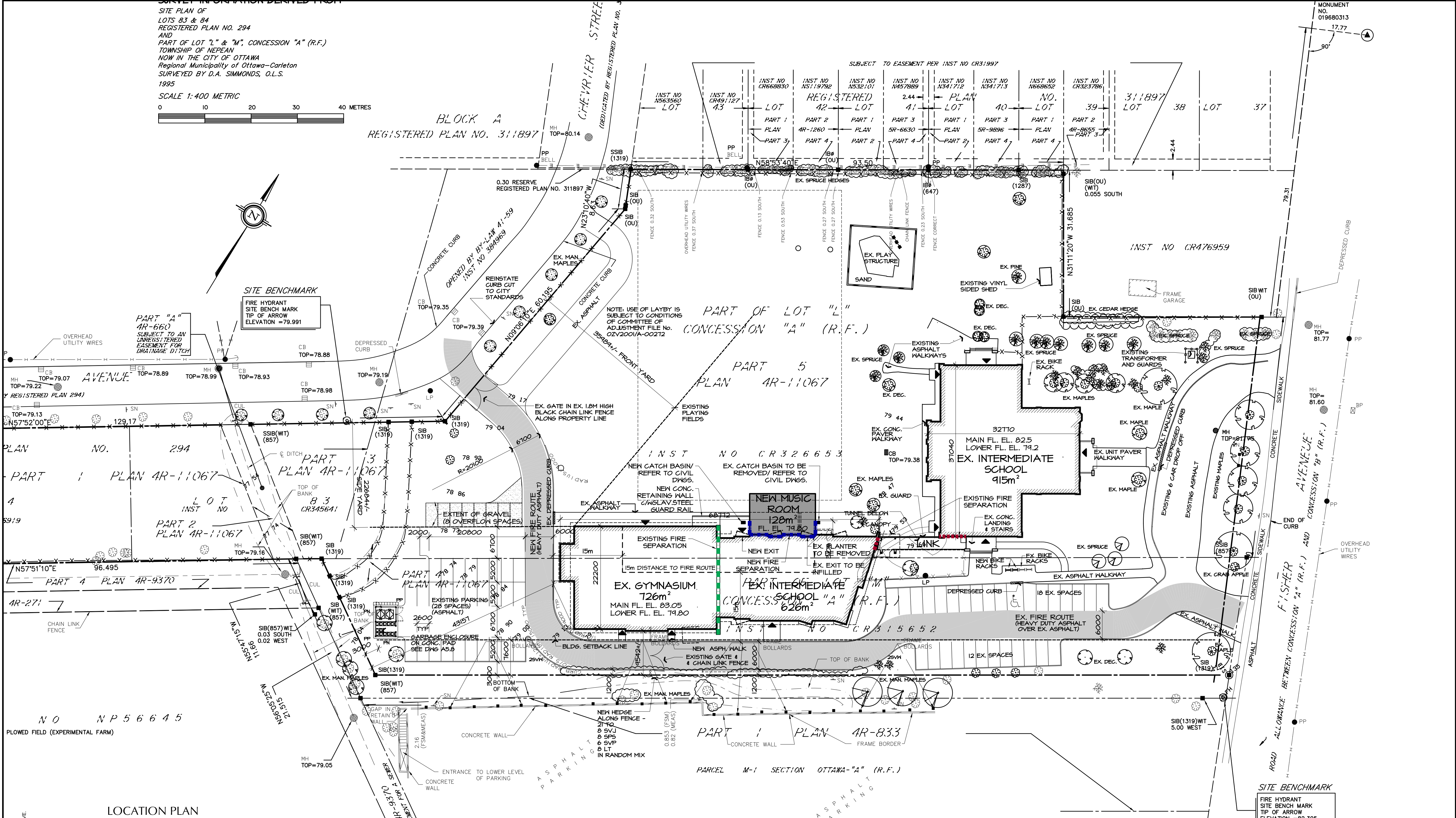
DRAWN	DATE	SCALE
SL/RV	08/01/18	As Indicated

PROJECT: 1705
 DRAWING NO.: A0.01
 REVISION NO.: 3

SITE PLAN OF
 LOTS 83 & 84
 REGISTERED PLAN NO. 294
 AND
 PART OF LOT "L" & "M", CONCESSION "A" (R.F.)
 TOWNSHIP OF NEPEAN
 NOW IN THE CITY OF OTTAWA
 Regional Municipality of Ottawa-Carleton
 SURVEYED BY D.A. SIMMONDS, O.L.S.
 1995



BLOCK A
 REGISTERED PLAN NO. 311897



- LEGEND:**
- EX. SHRUBS/TREE CANOPY
 - EX. CONIFEROUS TREE
 - EX. DECIDUOUS TREE
 - BUILDING ENTRY POINTS
 - RELOCATED CONIFEROUS TREE
 - NEW CONIFEROUS TREE
 - INDICATES EXTENT OF 2-HR. FIREWALL
 - INDICATES EXTENT OF 60mins. FRR FIRE SEPARATION
 - INDICATES EXTENT OF 45mins. FRR FIRE SEPARATION

SITE SUMMARY:		PARKING SUMMARY:		BIKE SUMMARY:	
CIVIL ADDRESS:	183 FISHER AVENUE, OTTAWA, ONTARIO	NO. OF CLASSROOMS:	JUNIOR SCHOOL: 2 INTERMEDIATE SCHOOL: 0 NEW MUSIC ROOMS: 50	GROUND FLOOR AREA:	9,543m²
ZONING:	TRADITIONAL MAINSTREET WITH EXCEPTION 2945 AND HEIGHT SCHEDULE 204 (TH (2945) 2044)	PARKING REQUIRED:	15 / ELEMENTARY 30 / INTERMEDIATE SCHOOL TOTAL: 45	PARKING PROVIDED (EXISTING):	24
SITE AREA:	2,029m²	PARKING PROVIDED:	54 + 0 OVERFLOW = 61 SPACES	PARKING PROVIDED (NEW):	12
LANDSCAPED SPACE:	15,023m²	COVERAGE:	11.6%	TOTAL:	36
BUILDING FOOTPRINT:	415m²				
JUNIOR SCHOOL:	1,202m²				
INTERMEDIATE SCHOOL:	1,202m²				
NEW MUSIC ROOMS:	2,925m²				
TOTAL:	2,925m²				

no.	date	revision
3	OCT. 15/18	ISSUED FOR CONSTRUCTION
2	AUG. 17/18	ZONING COMMENTS
1	JULY 9/18	ISSUED FOR BUILDING PERMIT

It is the responsibility of the appropriate contractor to check and verify all dimensions on site and report all errors and/or omissions to the architect.

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Do not scale drawings.

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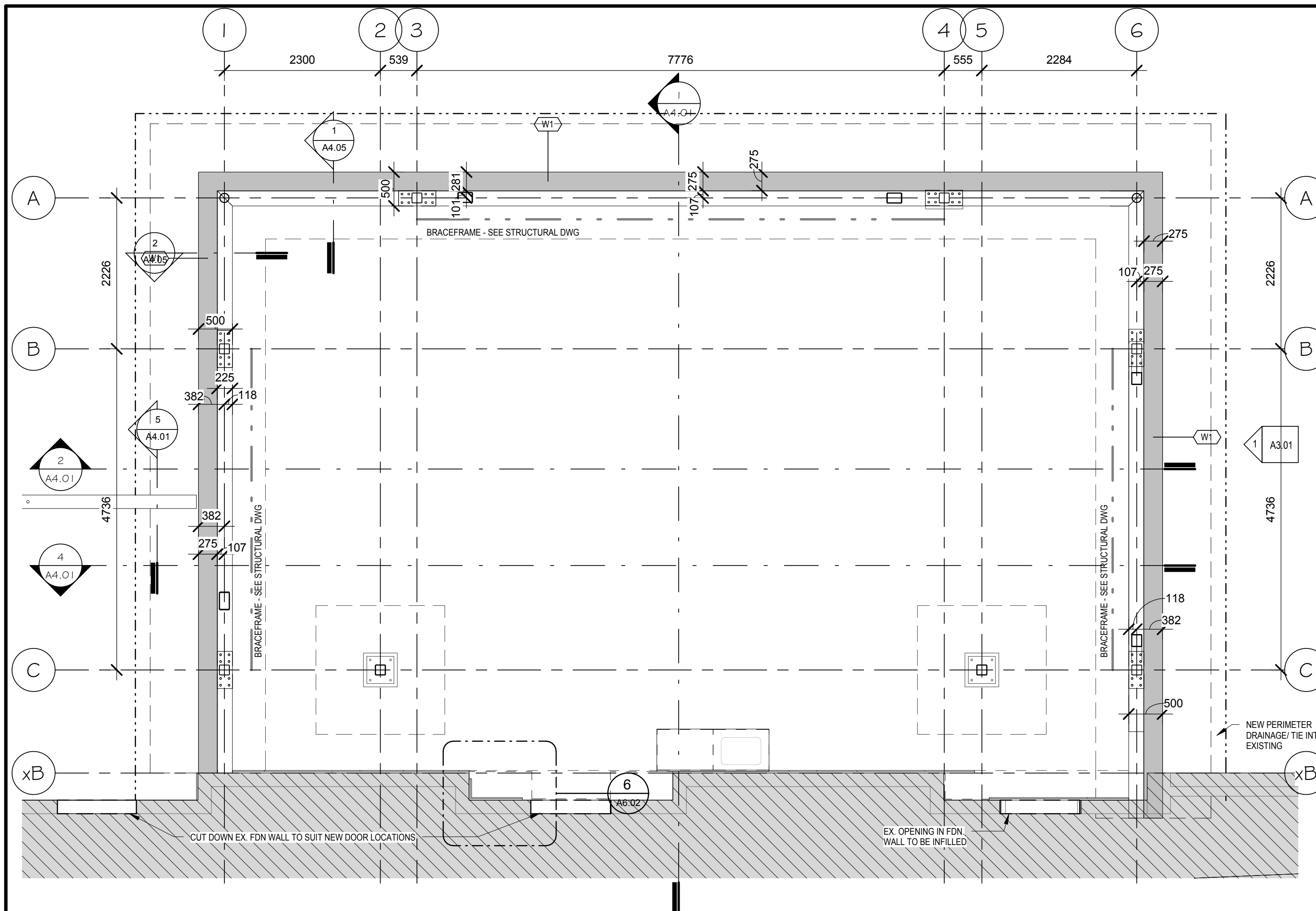
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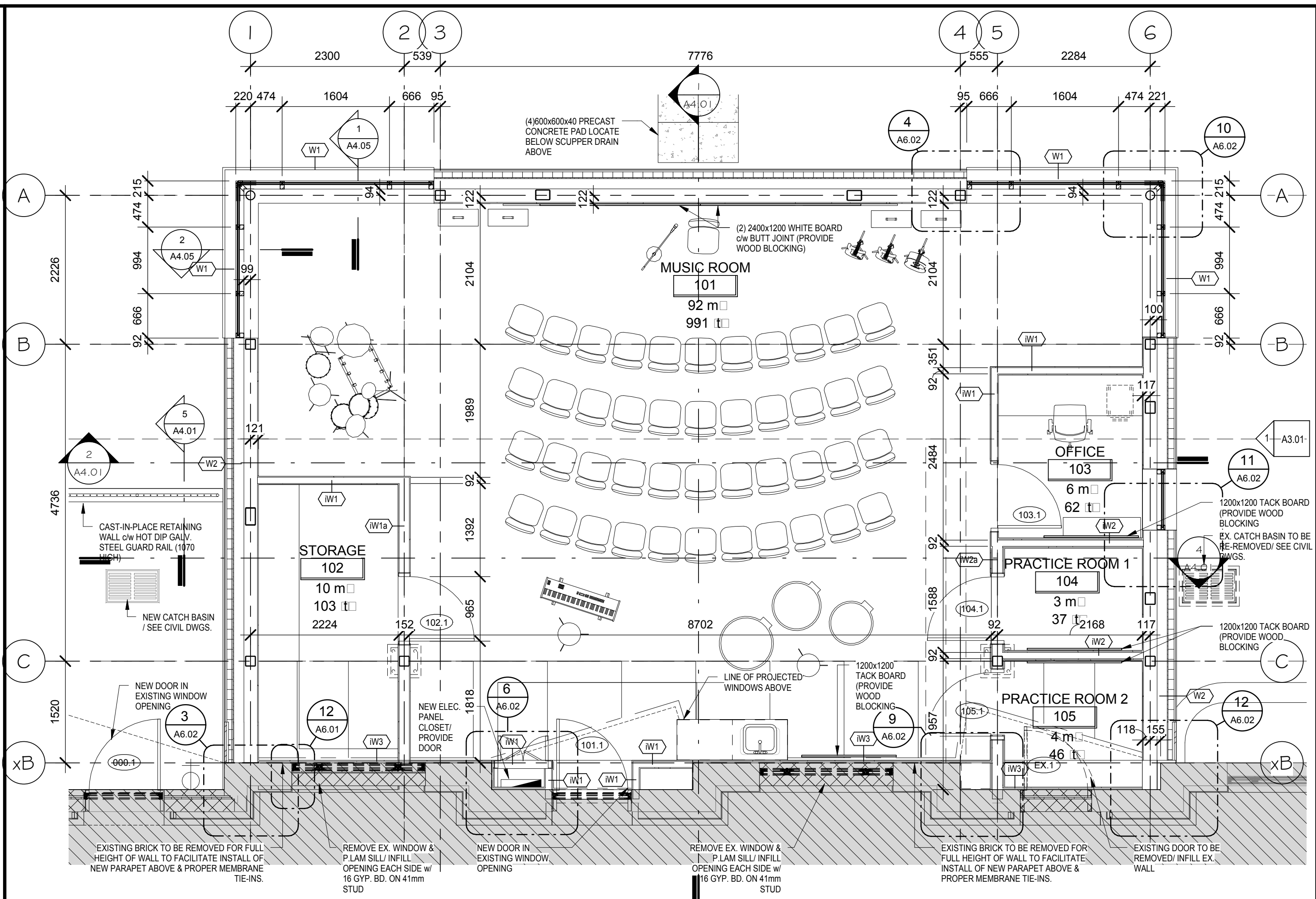
PROJECT/LOCATION:
 TURNBULL SCHOOL
 MUSIC ROOM ADDITION
 1132 FISHER AVENUE, OTTAWA, ON

DRAWING TITLE:
 SITE PLAN

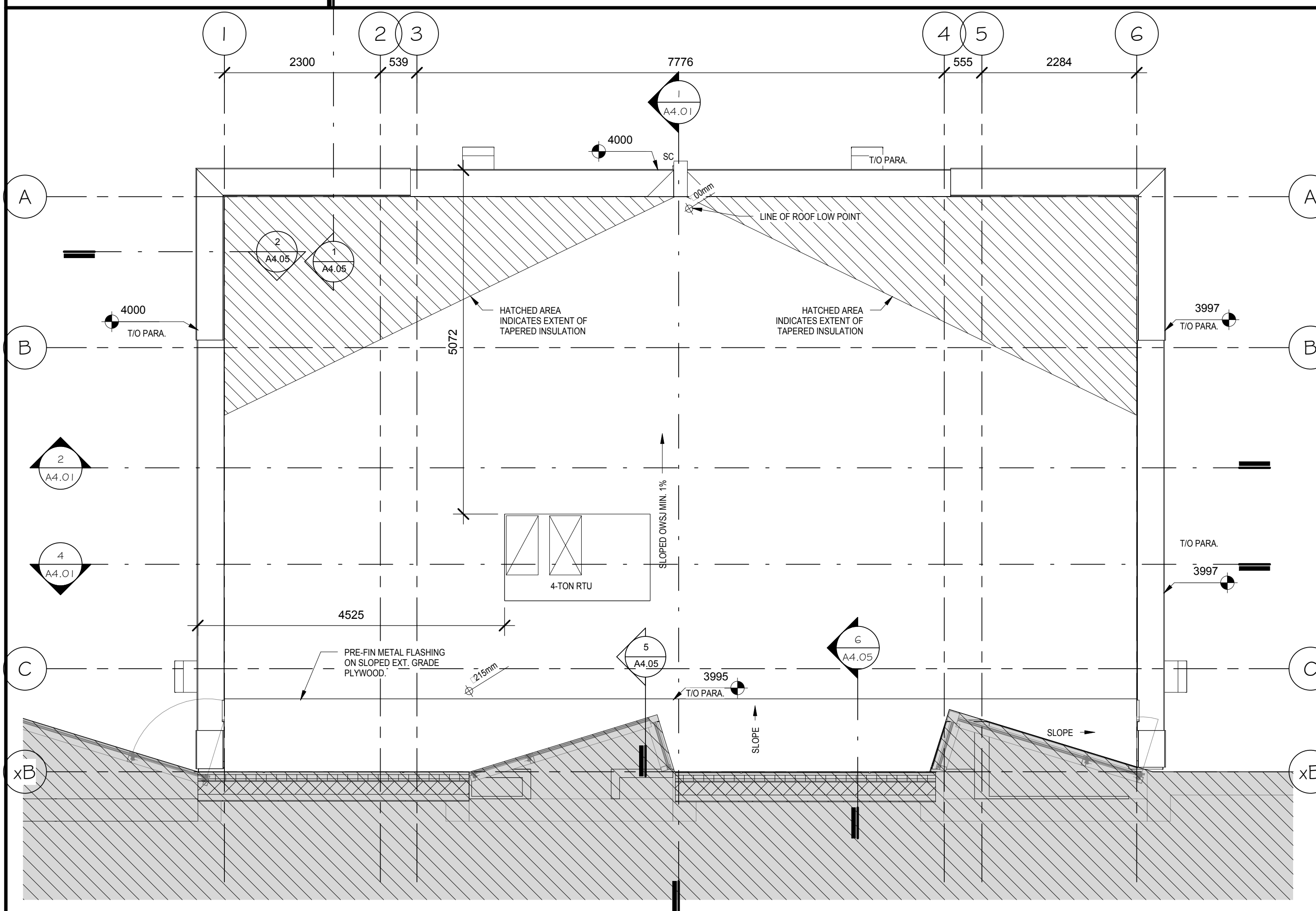
DRAWN BY: SL	DATE: JUNE/18	SCALE: 1:400
PROJECT: 1705	DRAWING NO.: A1.01	
REVISION NO.:		



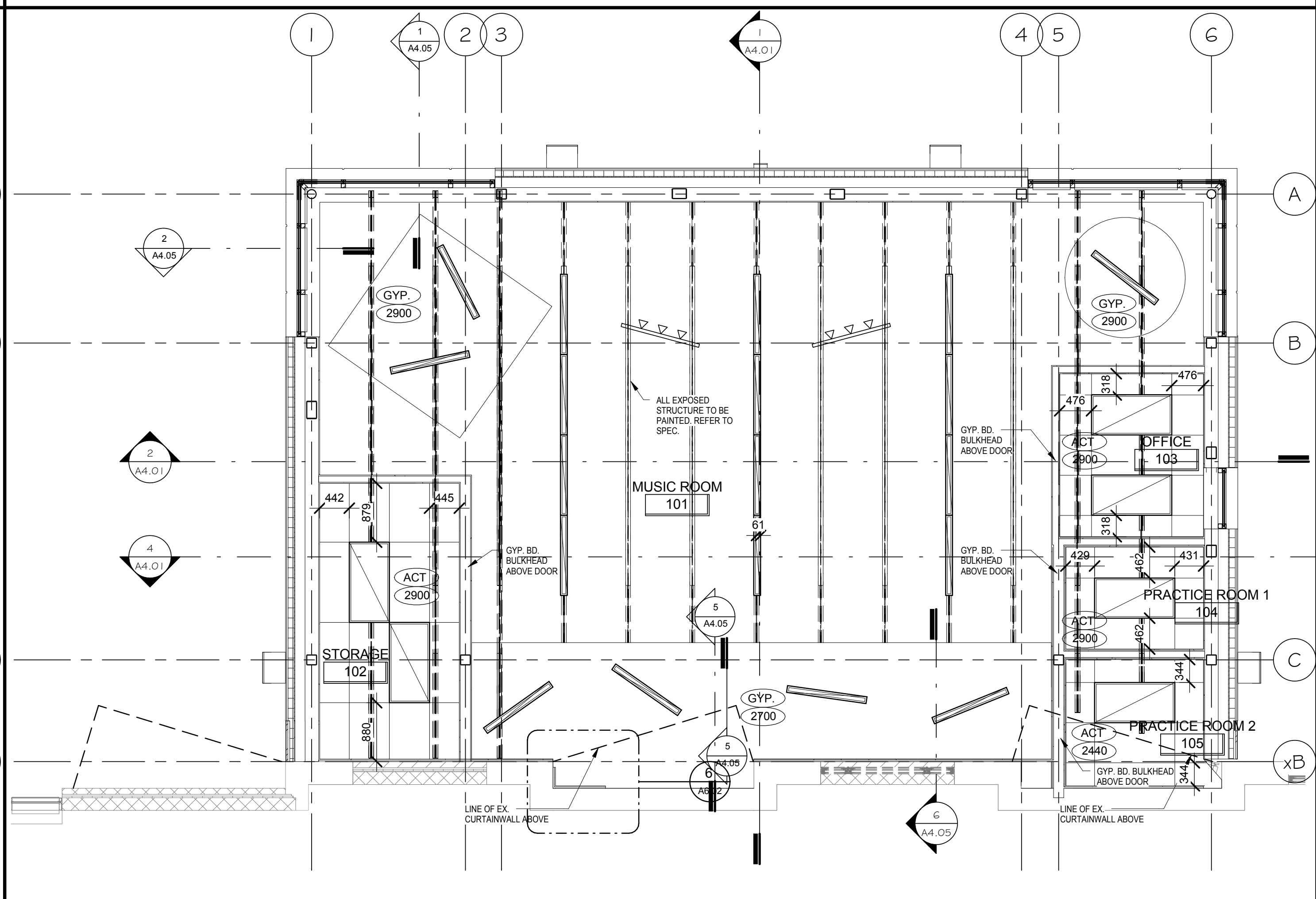
1 MUSIC ROOM ADDITION FOUNDATION PLAN
A2.01 SCALE: 1:50



2 MUSIC ROOM ADDITION FLOOR PLAN
A2.01 SCALE: 1:50



3 MUSIC ROOM ADDITION ROOF PLAN
A2.01 SCALE: 1:50



4 MUSIC ROOM ADDITION RCP
A2.01 SCALE: 1:50

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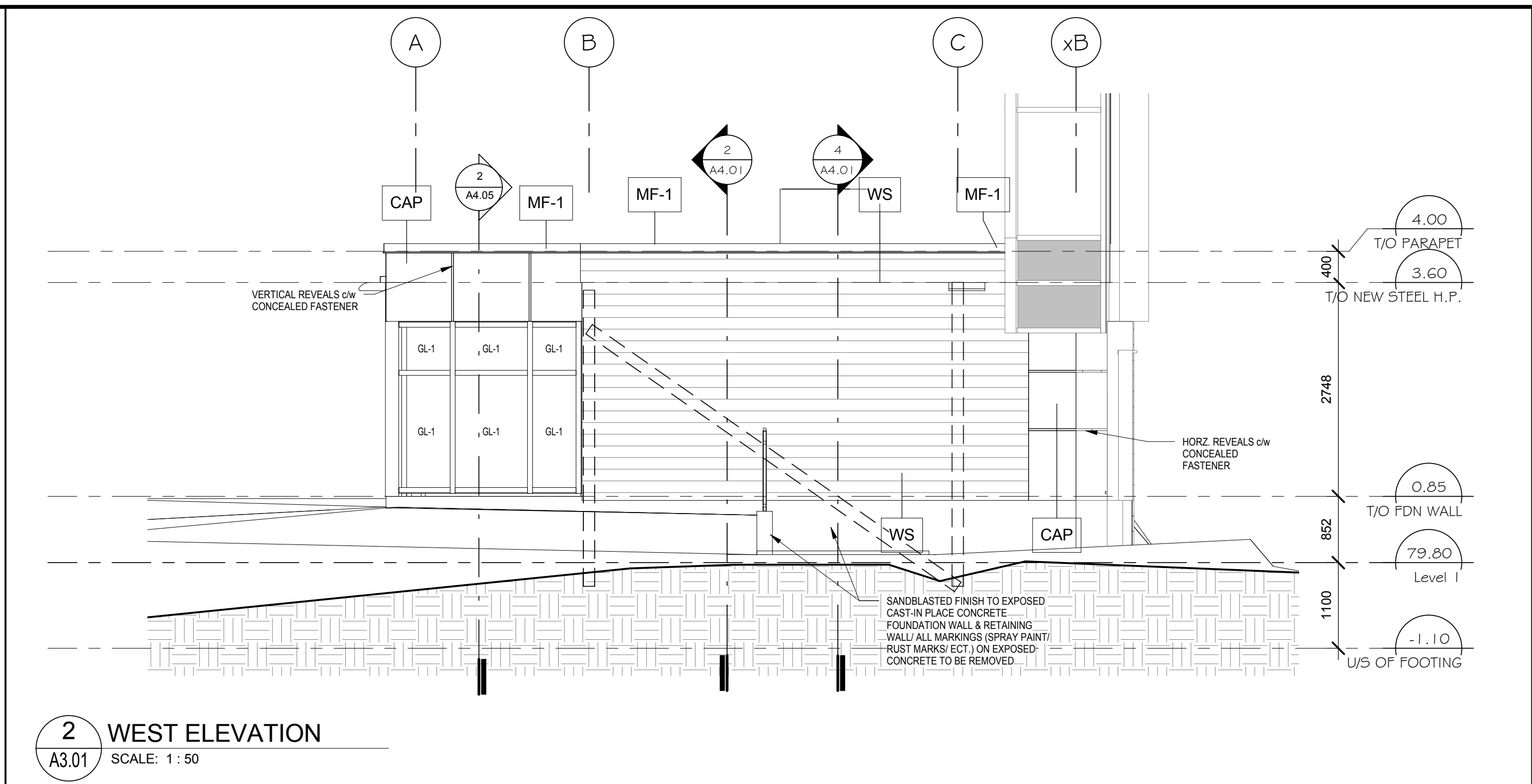
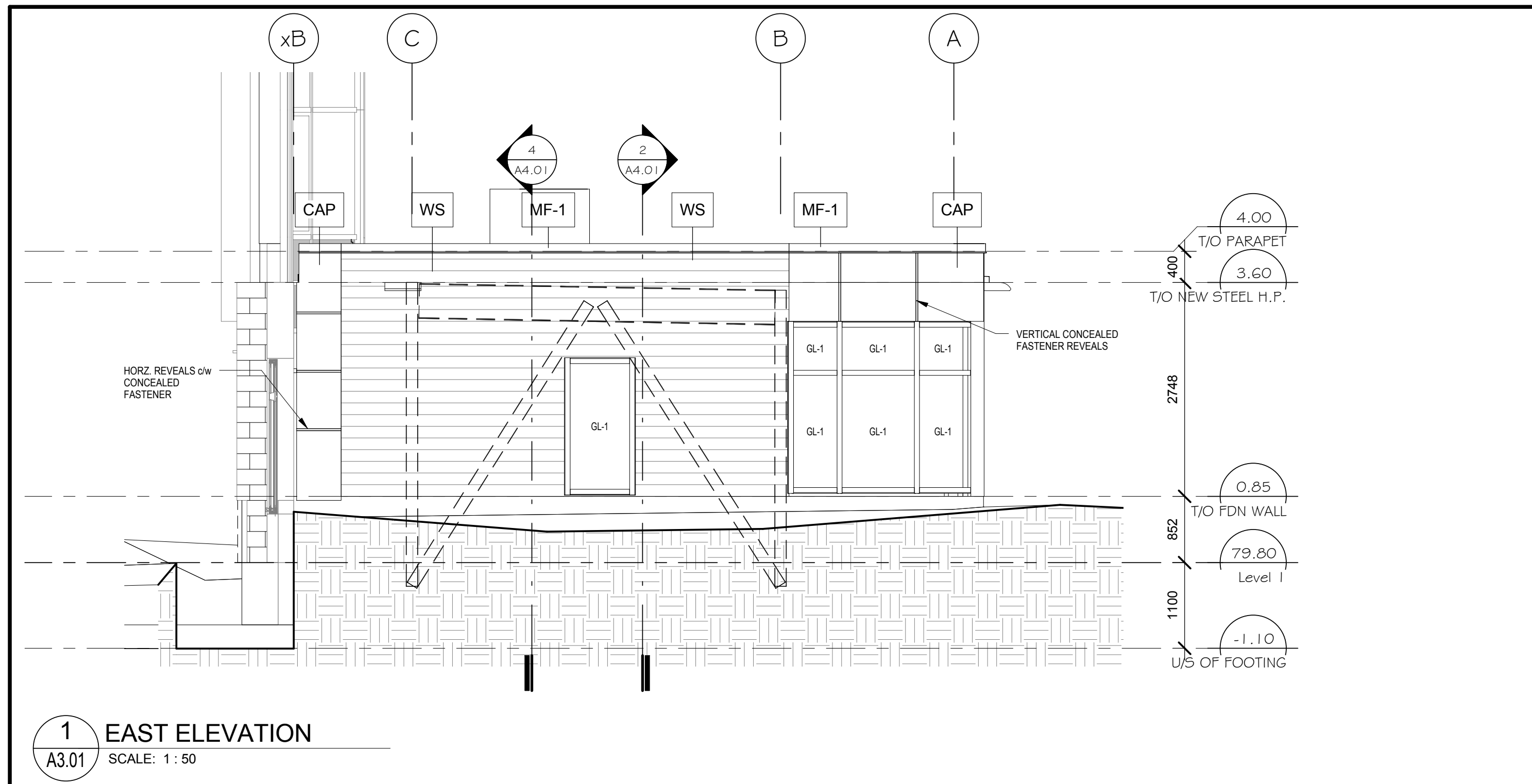
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TURNBULL SCHOOL MUSIC ROOM ADDITION
1132 HURON AVE., OTTAWA, ON

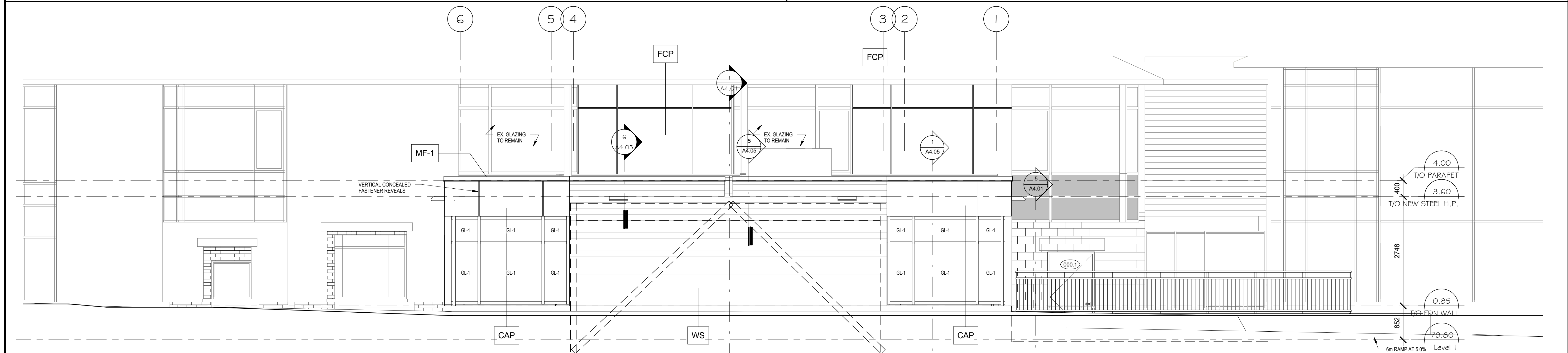
DRAWING TITLE
MUSIC ROOM ADDITION PLANS

DRAWN	DATE	SCALE
SL/RV	03/25/18	1:1:50
PROJECT		1705
DRAWING NO.		A2.01
REVISION NO.		3

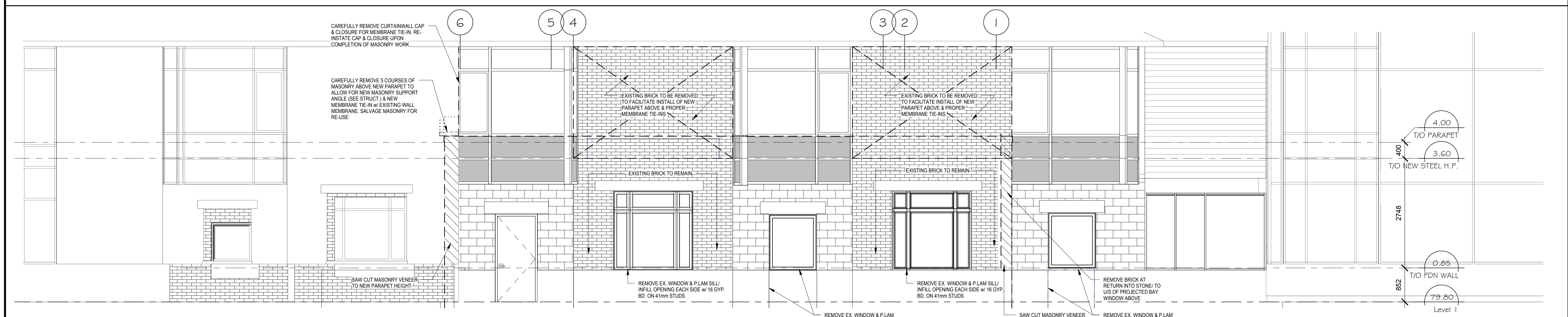


1 EAST ELEVATION
A3.01 SCALE: 1:50

2 WEST ELEVATION
A3.01 SCALE: 1:50



3 NORTH ELEVATION
A3.01 SCALE: 1:50



4 NORTH ELEVATION - DEMO
A3.01 SCALE: 1:50

EXTERIOR FINISHES LEGEND

CAP	COMPOSITE ALUMINUM PANEL c/w INTEGRAL FRAMING SYSTEM (DARK GREY) SUBMIT SAMPLE FOR APPROVAL
CW	CLEAR ANODIZED CURTAINWALL FRAMING
FCP	FIBRE REINFORCED CEMENTITIOUS PANELS
MF-1	METAL FLASHING STANDARD PROFILE
GL-1	LOW-E TEMPRED VISION GLASS
SC	PRE-FIN. METAL SCUPPER (TO MATCH SURROUNDING CLADDING, SUBMIT SAMPLE FOR ARCH. APPROVAL)
WS	HORZ. WOOD SMOOTH LAP SIDING (BLACK) SUBMIT SAMPLE FOR APPROVAL

no.	date	revision
3	18/10/12	ISSUED FOR CONSTRUCTION
2	18/07/12	ISSUED FOR PRICING
1	18/07/09	ISSUED FOR BUILDING PERMIT

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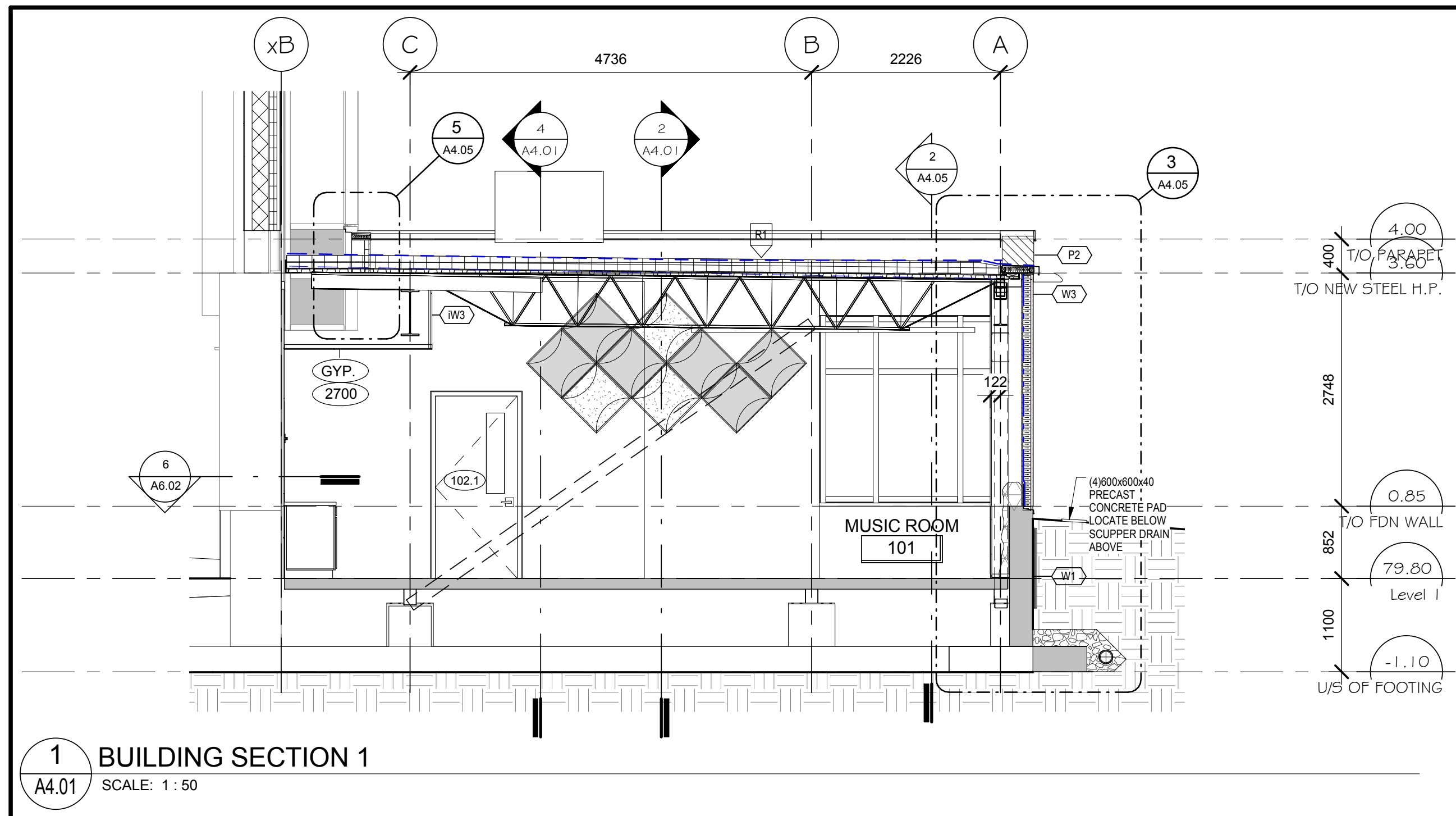
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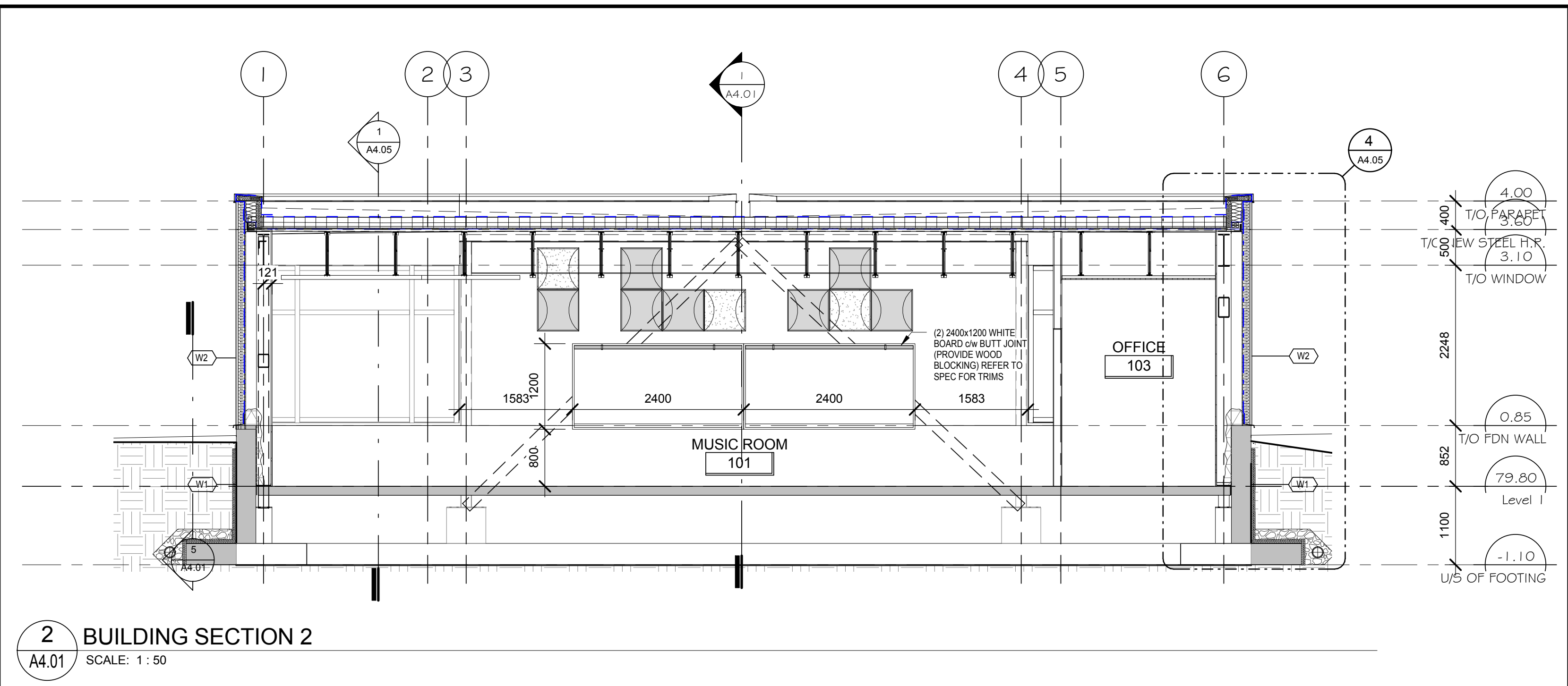
TURNBULL SCHOOL MUSIC ROOM ADDITION
1705
OTTAWA, ON

MUSIC ROOM ADDITION EXTERIOR ELEVATIONS

DRAWN SL/RV	DATE 10/09/14	SCALE As Indicated
PROJECT 1705		DRAWING NO. A3.01
REVISION NO. 3		



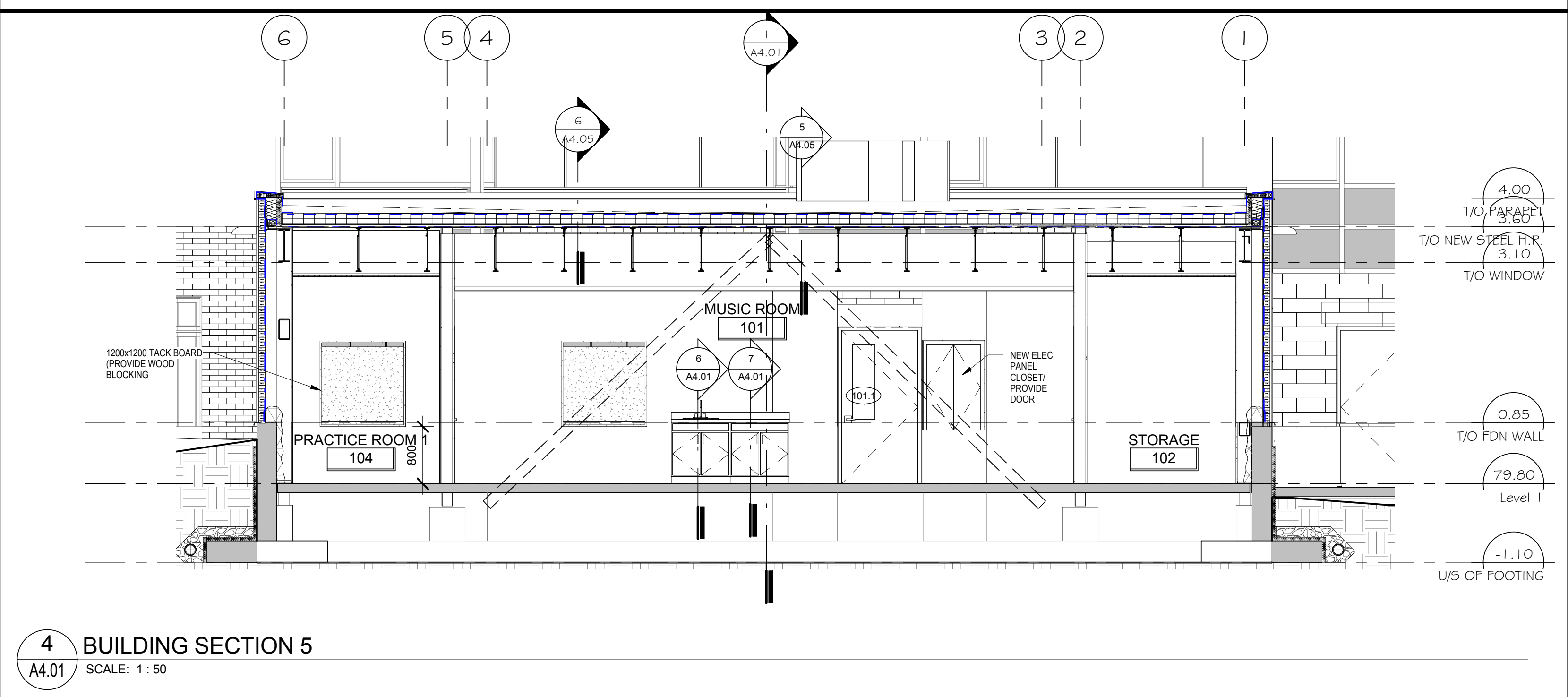
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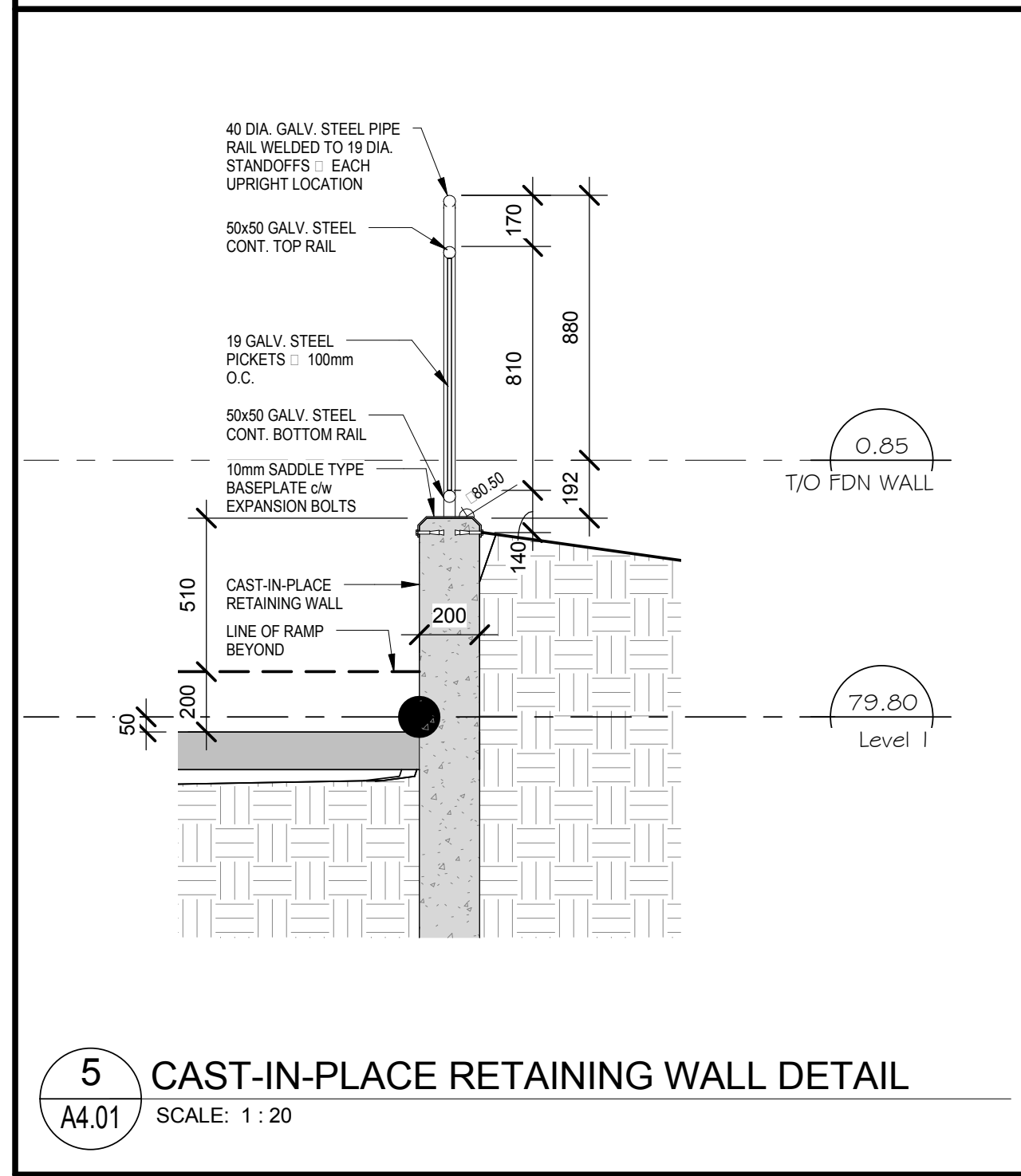
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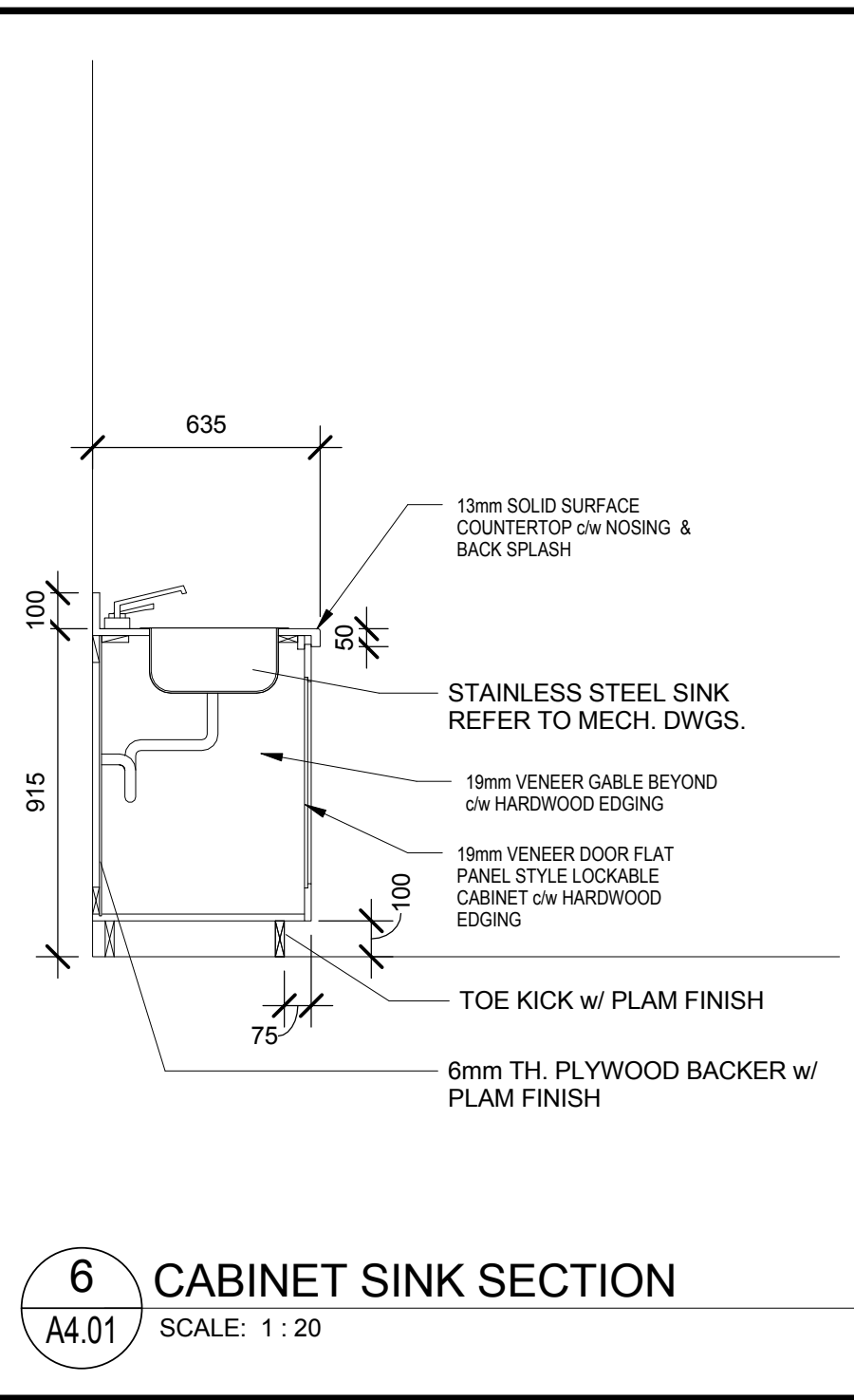
3 BUILDING SECTION 3
A4.01 SCALE: 1:50



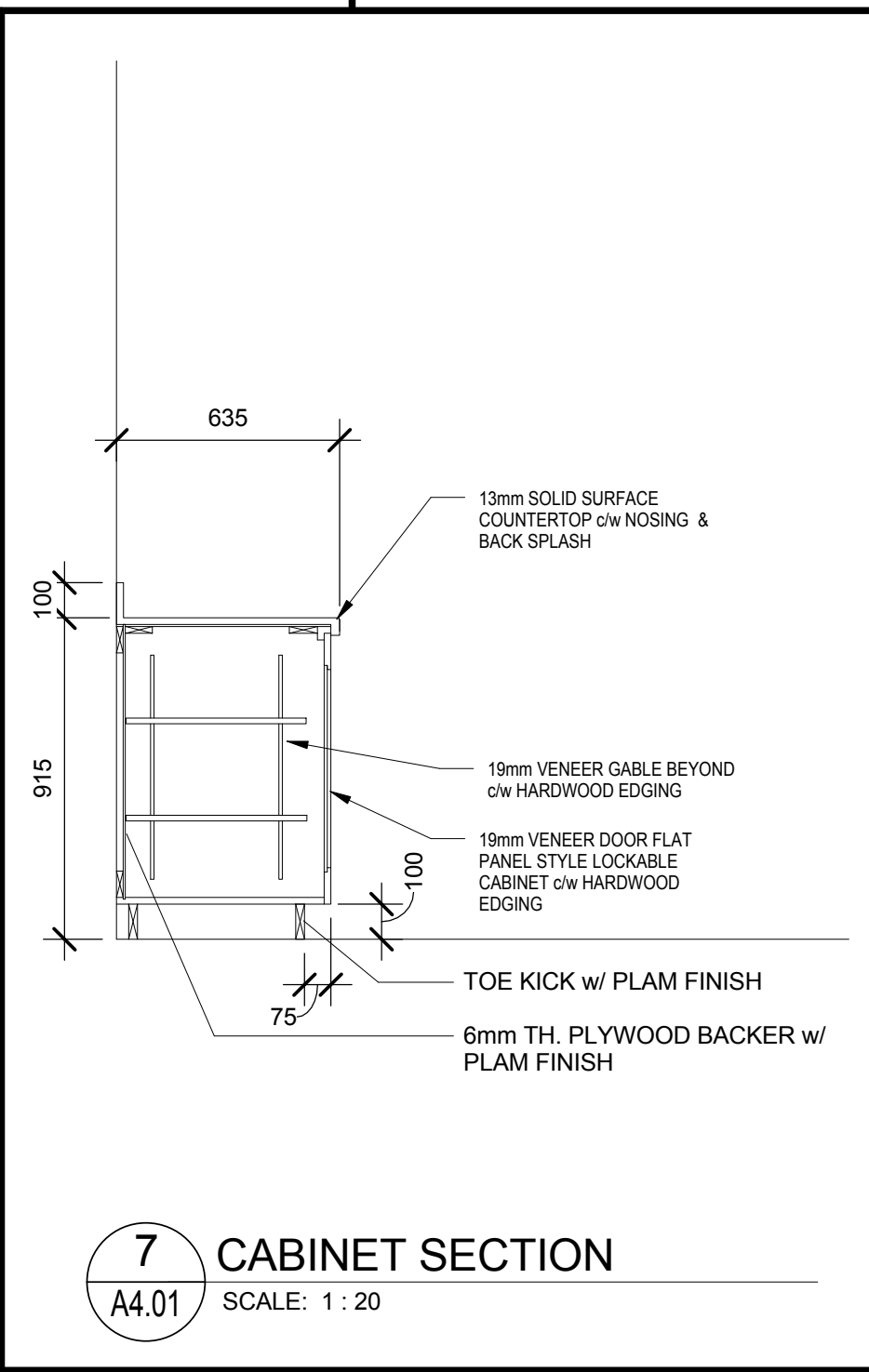
4 BUILDING SECTION 4
A4.01 SCALE: 1:50



5 CAST-IN-PLACE RETAINING WALL DETAIL
A4.01 SCALE: 1:20



6 CABINET SINK SECTION
A4.01 SCALE: 1:20



7 CABINET SECTION
A4.01 SCALE: 1:20

AURALIX HEMISPHERE MIDDLE 180 3D SOUND DIFFUSORS
MATERIAL: 0.125 THERMOFORMED COPOLYMER
SIZE: 23" x 23" x 7"
FINISH: OBISSIAN FABRIC COVERING
(PROVIDE PLYWOOD BLOCKING BEHIND GYP. BD. FOR TWO-PART CLIP SYSTEM MOUNTING)

AURALIX HEMISPHERE MIDDLE 180 3D SOUND DIFFUSORS
MATERIAL: 0.125 THERMOFORMED COPOLYMER
SIZE: 23" x 23" x 7"
FINISH: TEXTURED WHITE
(PROVIDE PLYWOOD BLOCKING BEHIND GYP. BD. FOR TWO-PART CLIP SYSTEM MOUNTING)

no.	date	revision
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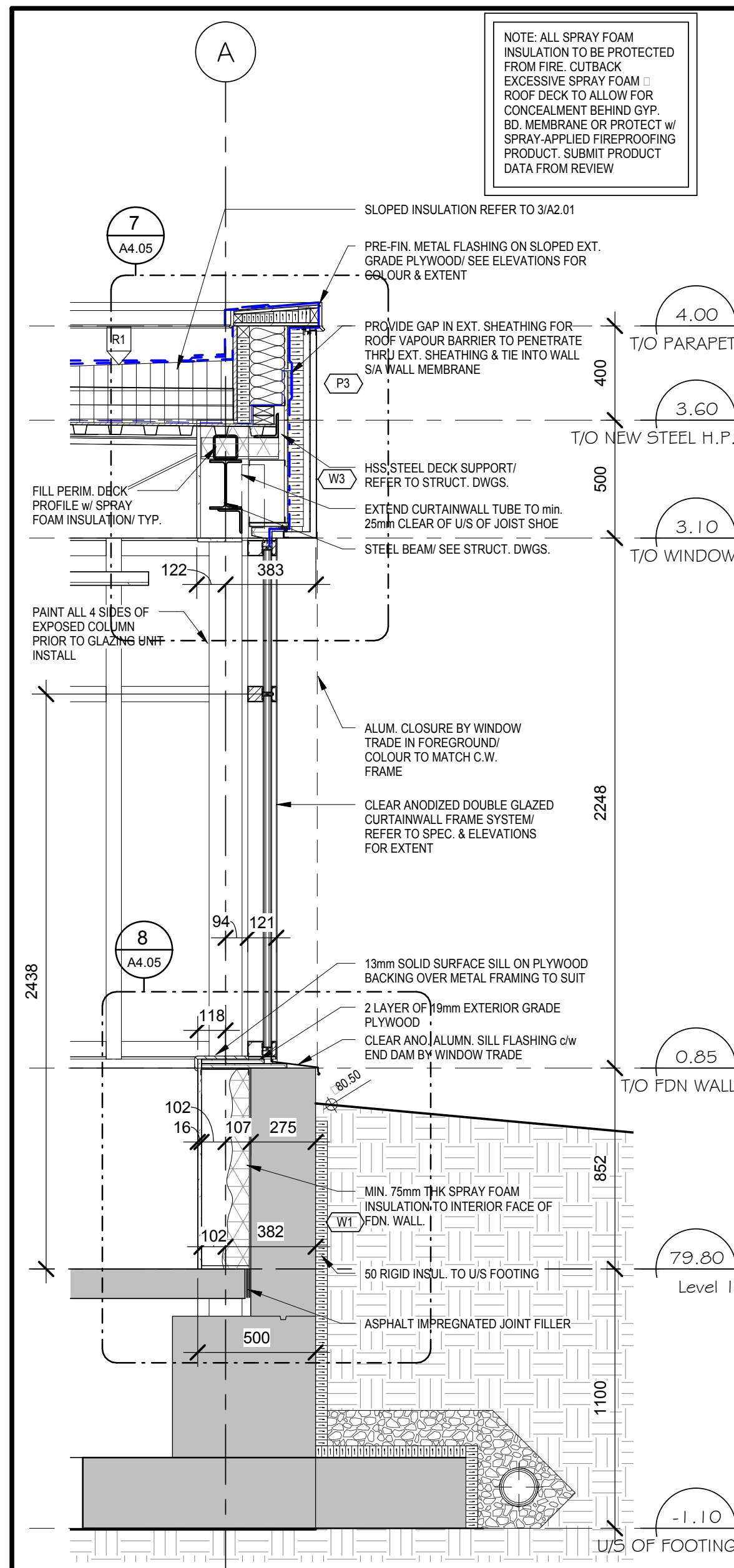
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PROJECT
TURNBULL SCHOOL MUSIC ROOM ADDITION
1152 HURON AVE., OTTAWA, ON

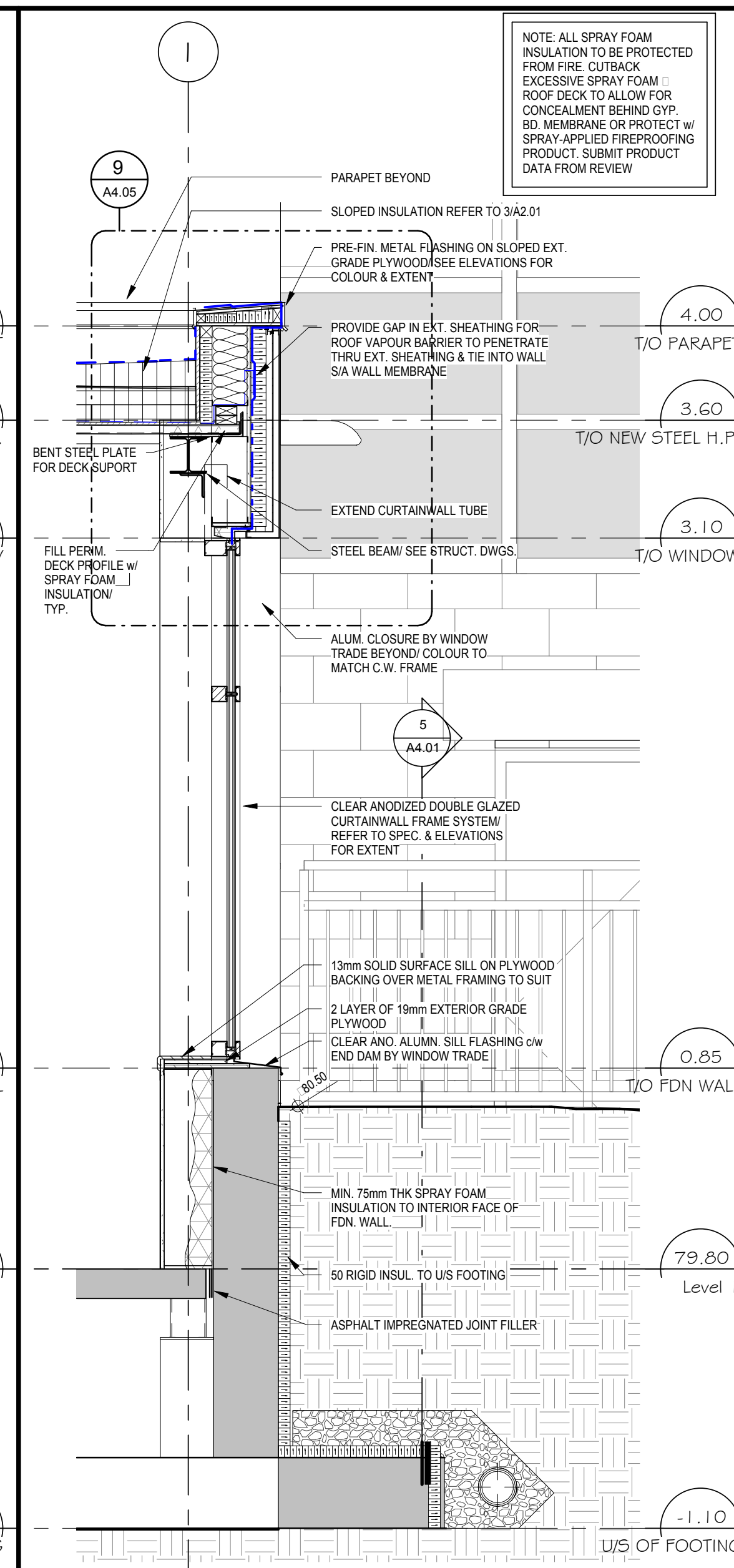
DRAWING TITLE
BUILDING SECTIONS

DRAWN	DATE	SCALE
SL/RV	03/28/18	As Indicated

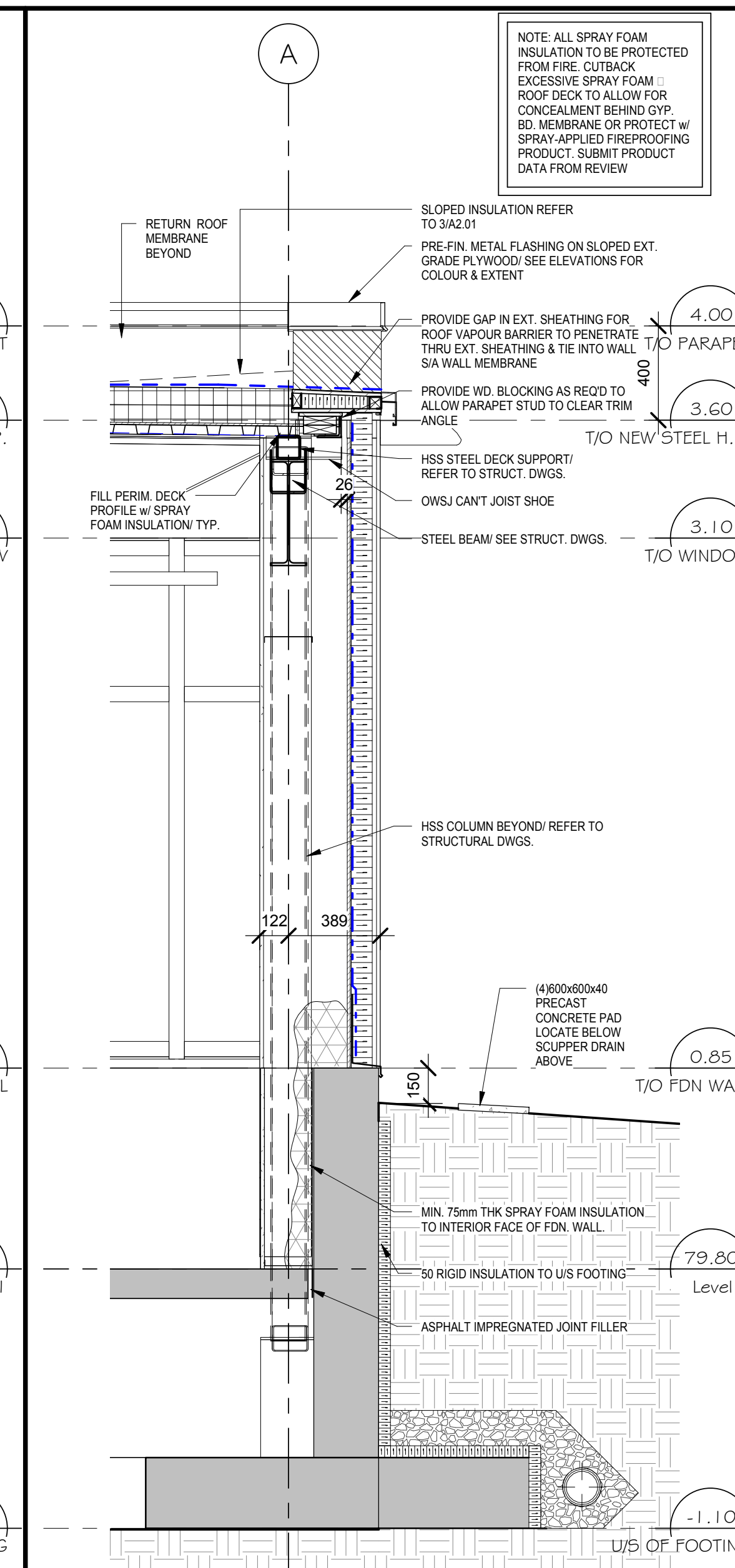
PROJECT: 1705
DRAWING NO.: **A4.01**
REVISION NO. 3



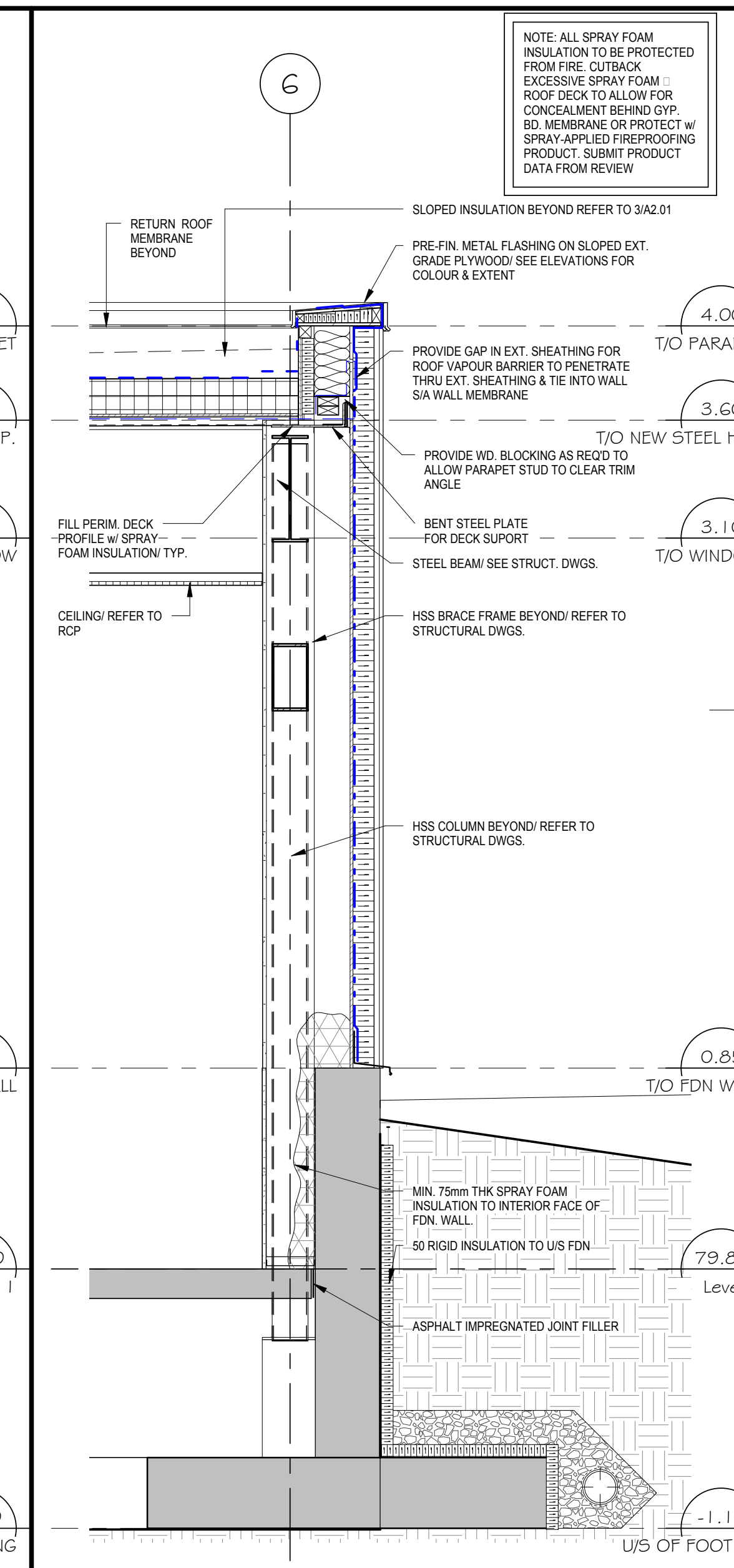
1 WALL SECTION 1
A4.05 SCALE: 1:20



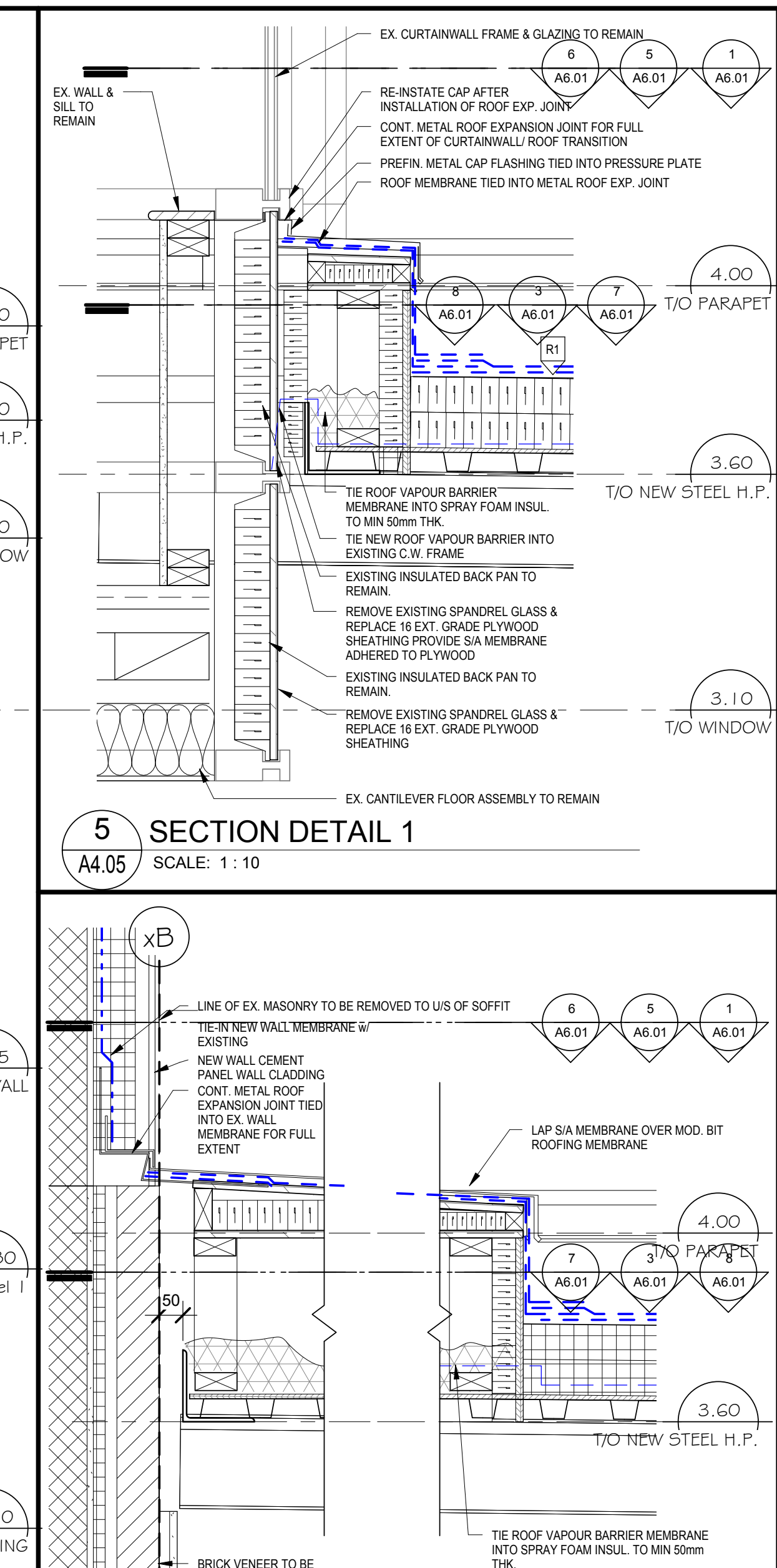
2 WALL SECTION 2
A4.05 SCALE: 1:20



3 WALL SECTION 3
A4.05 SCALE: 1:20



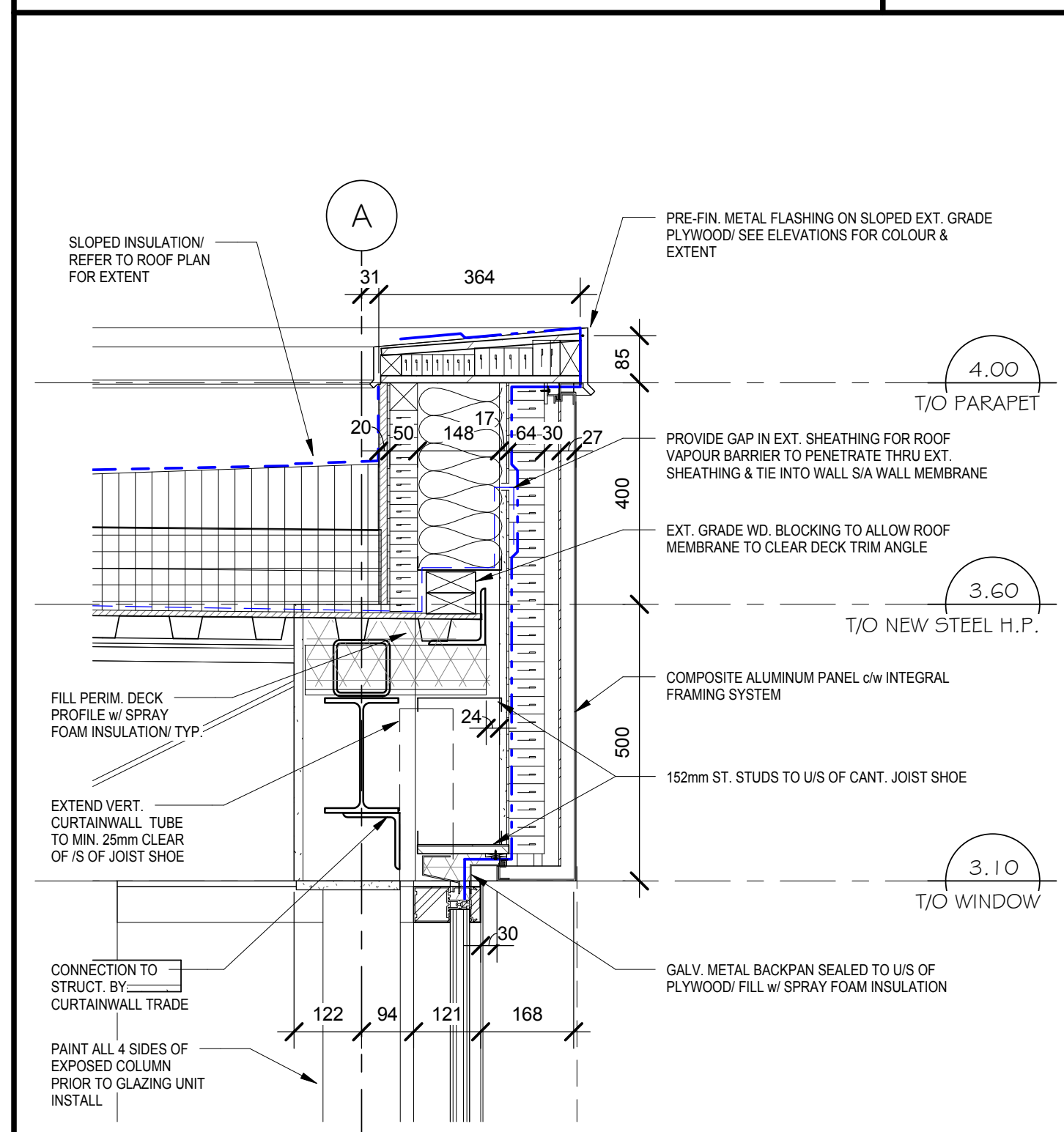
4 WALL SECTION 4
A4.05 SCALE: 1:20



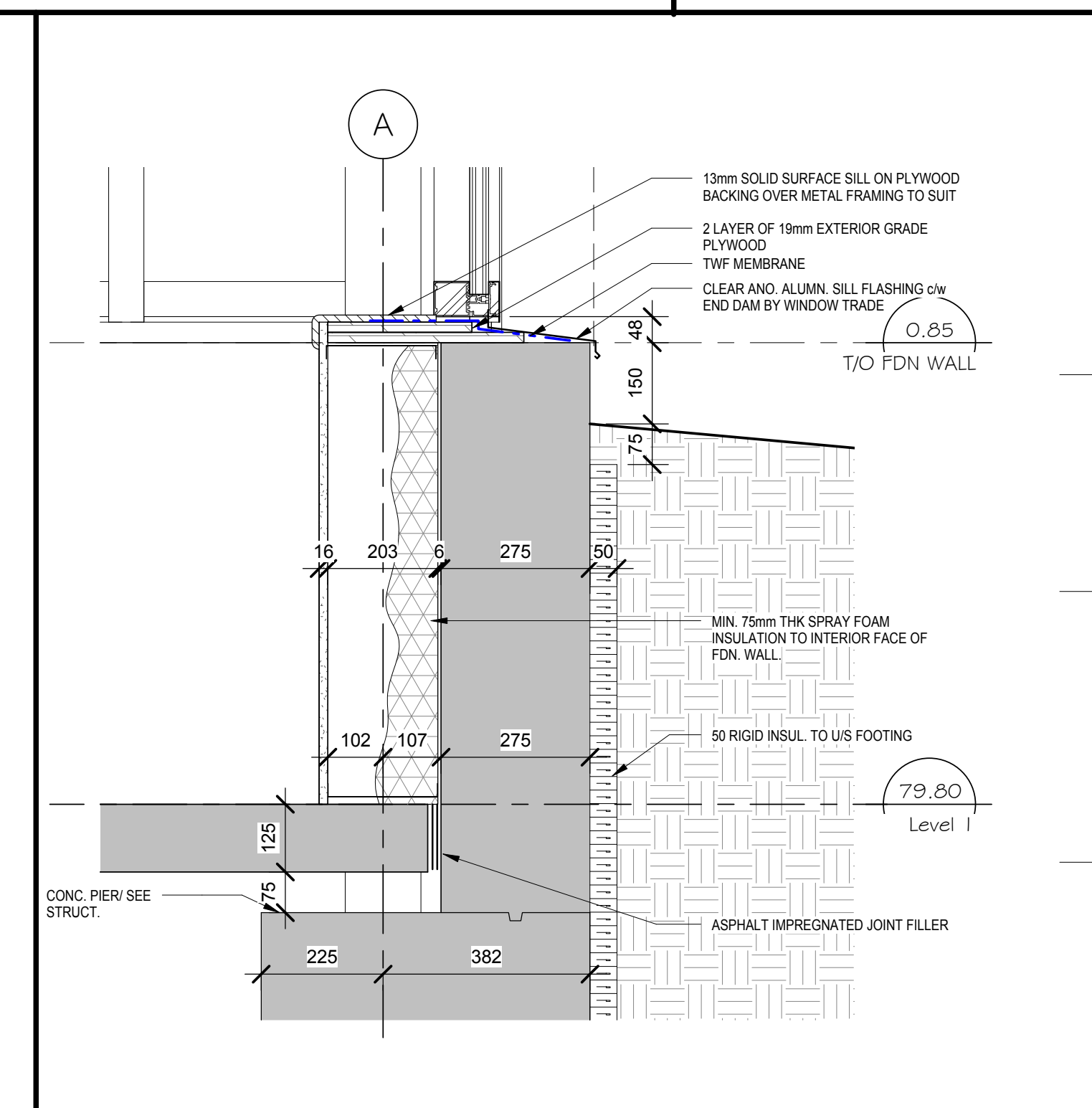
5 SECTION DETAIL 1
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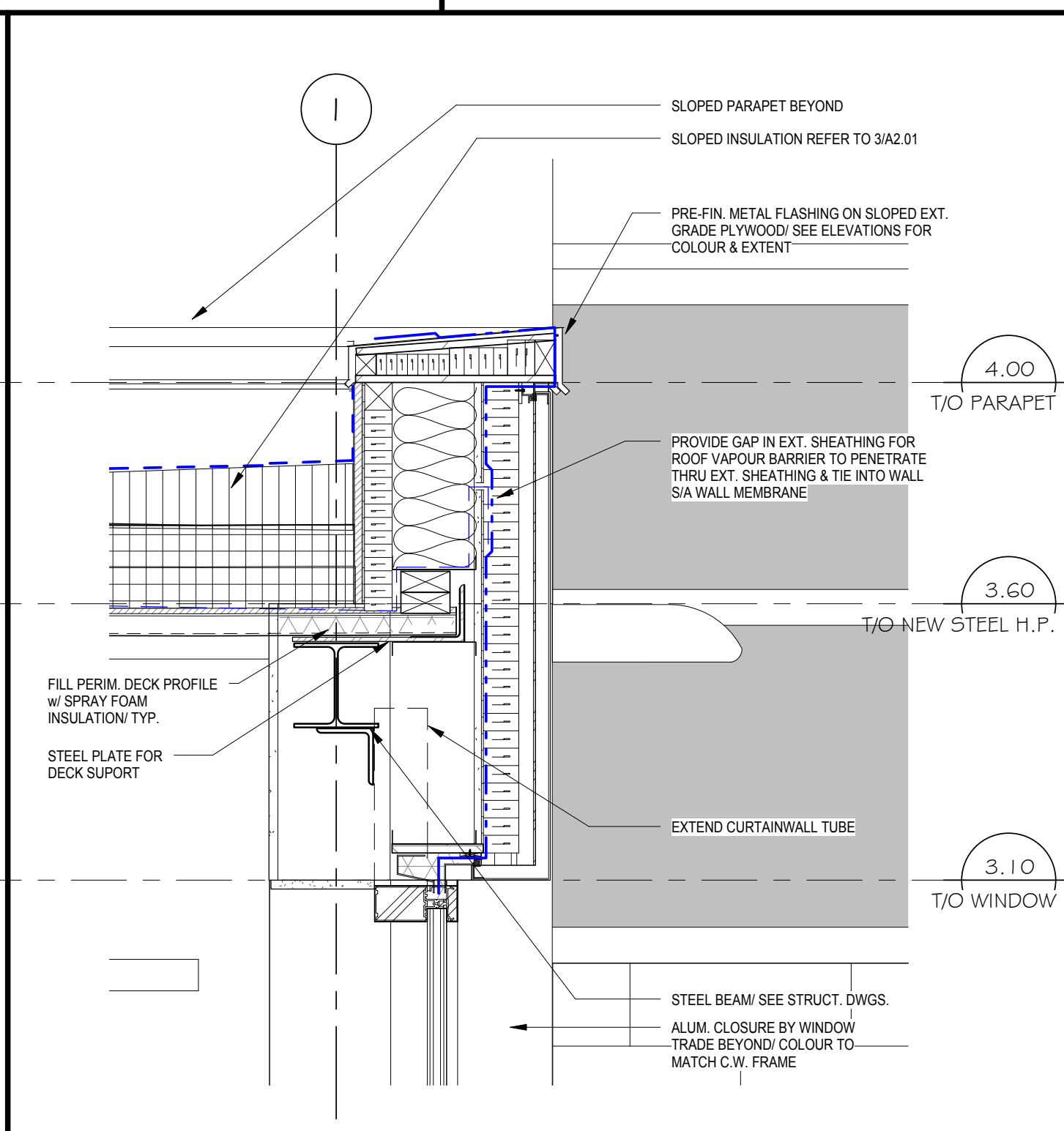
6 SECTION DETAIL 2
A4.05 SCALE: 1:10



7 PARAPET COMP. ALUM. SIDING 1
A4.05 SCALE: 1:10



8 FOUNDATION WALL C.W. SILL
A4.05 SCALE: 1:10



9 PARAPET COMP. ALUM. SIDING 2
A4.05 SCALE: 1:10

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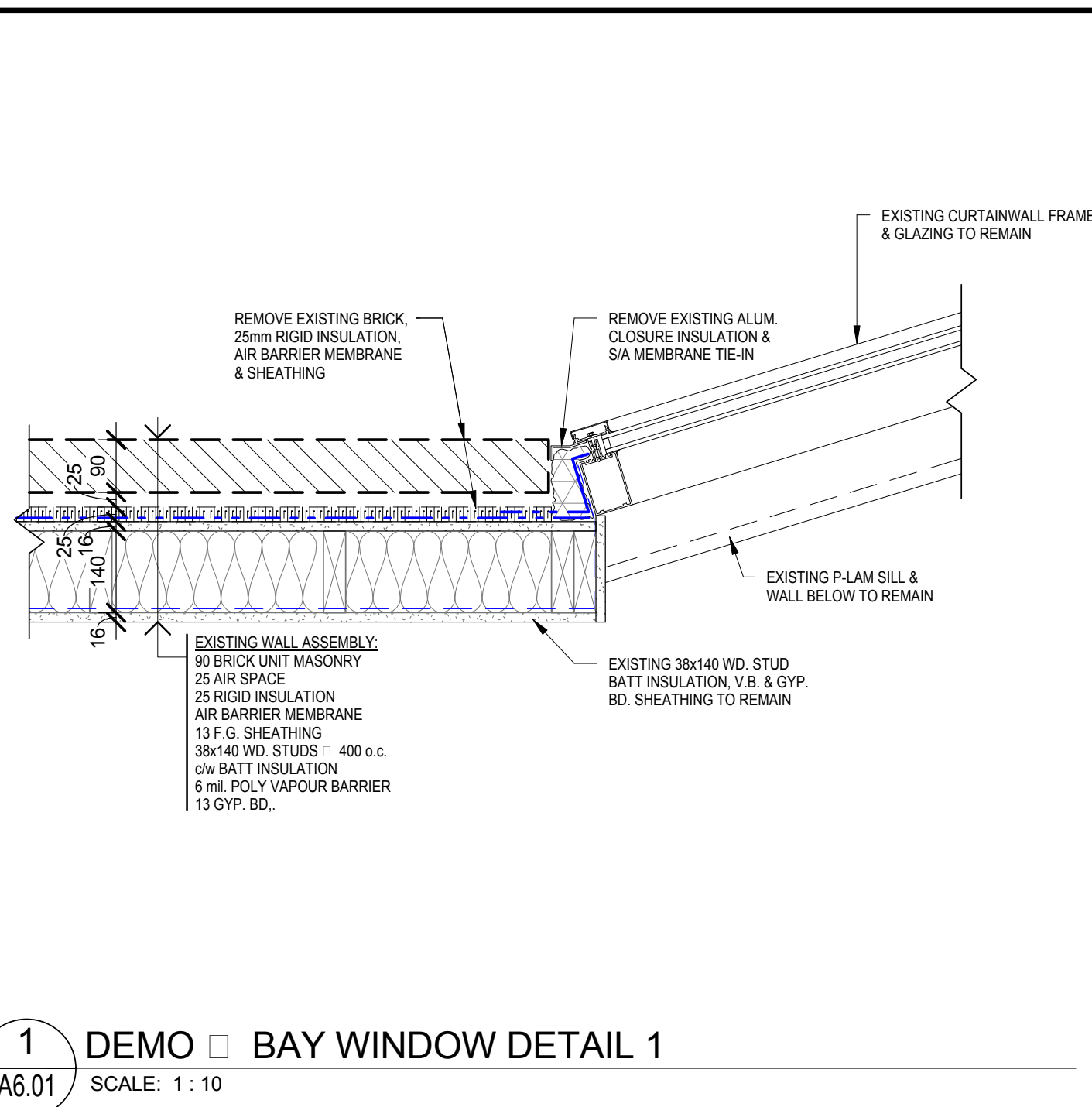
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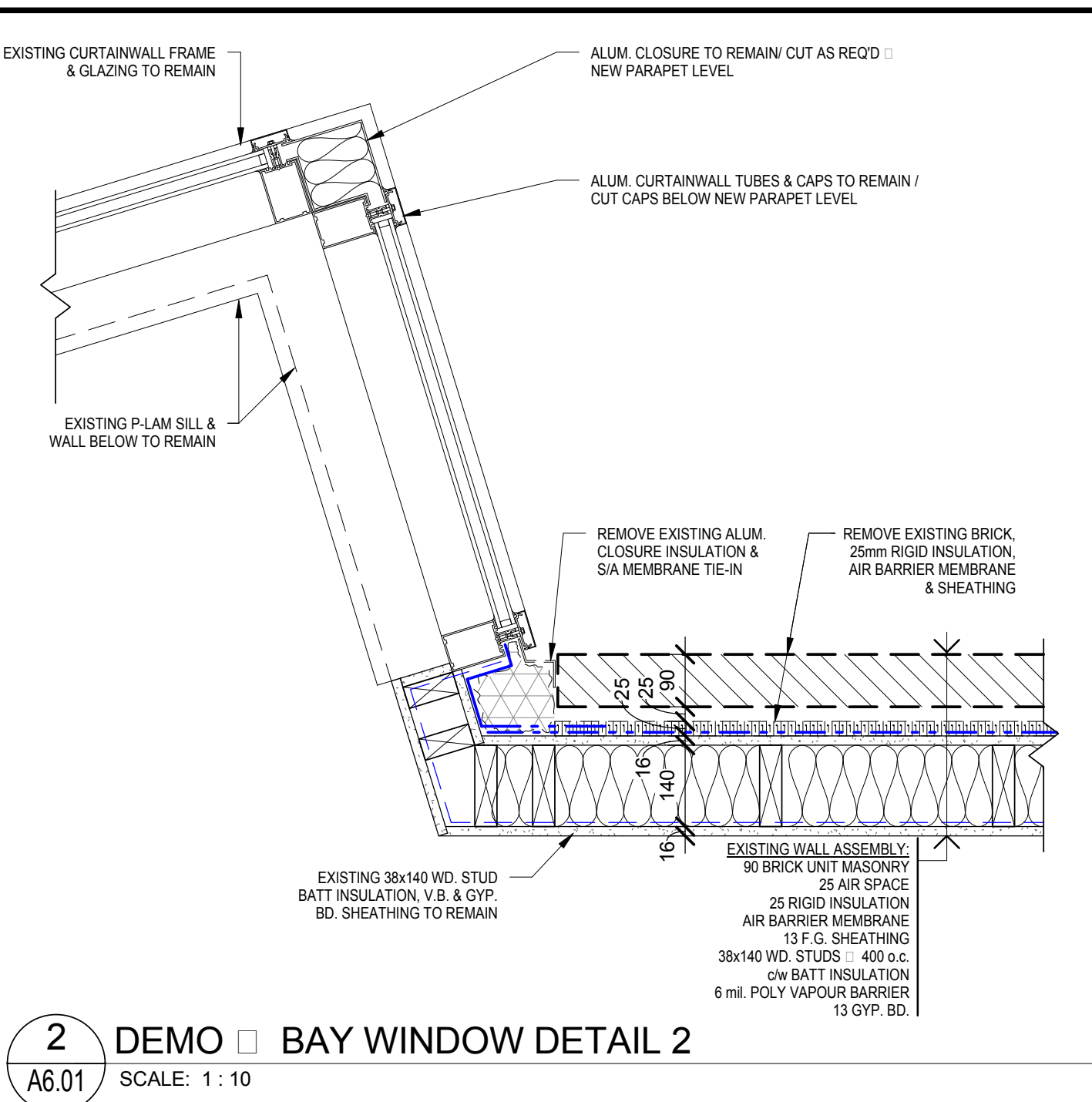
TURNBULL SCHOOL MUSIC ROOM ADDITION
1132 - 1134 LEVEL
OTTAWA, ON

WALL SECTIONS

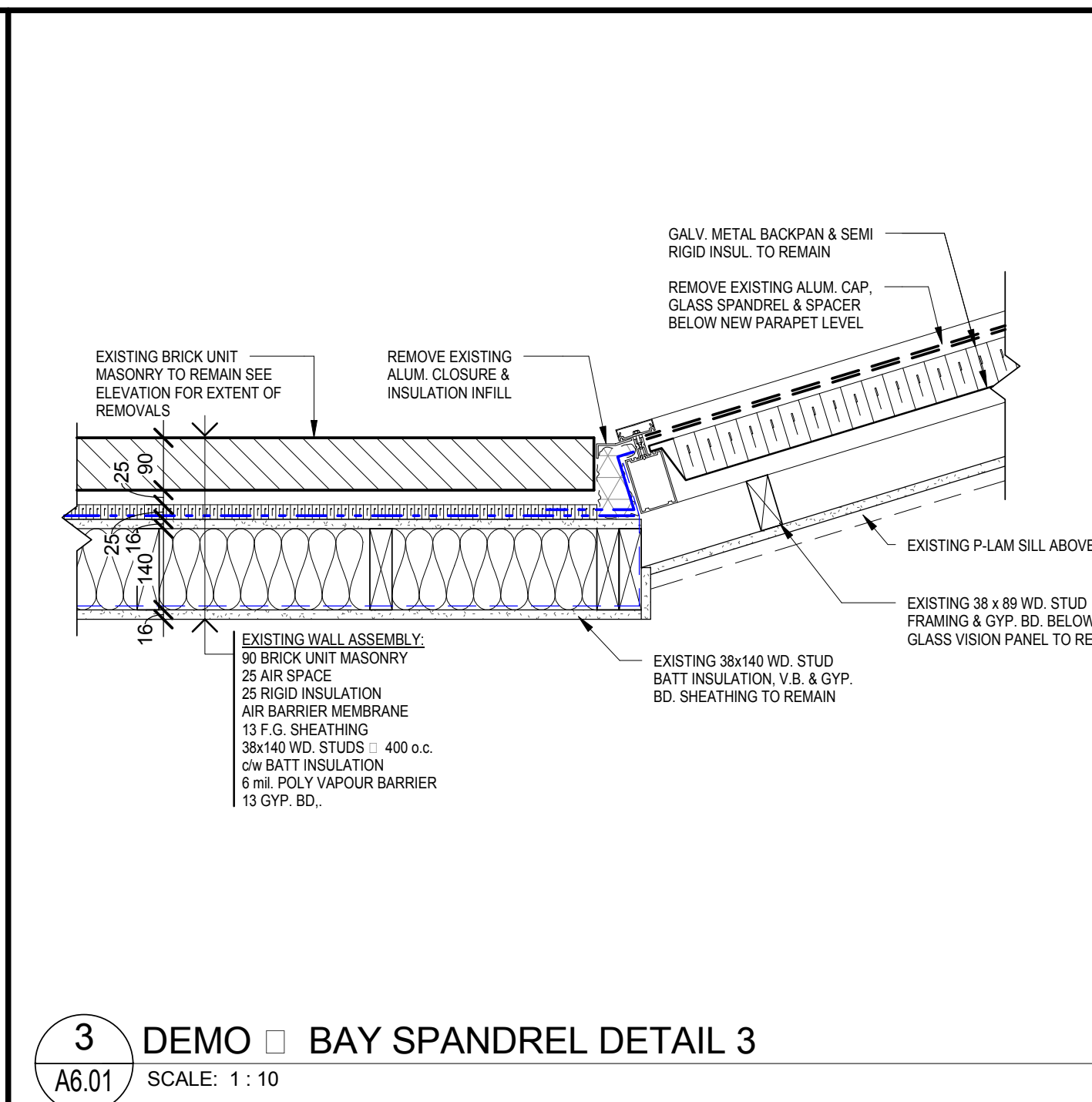
DRAWN: SL/RV DATE: 03/28/18 SCALE: As Indicated PROJECT: 1705 DRAWING NO: **A4.05** REVISION: NO. 3



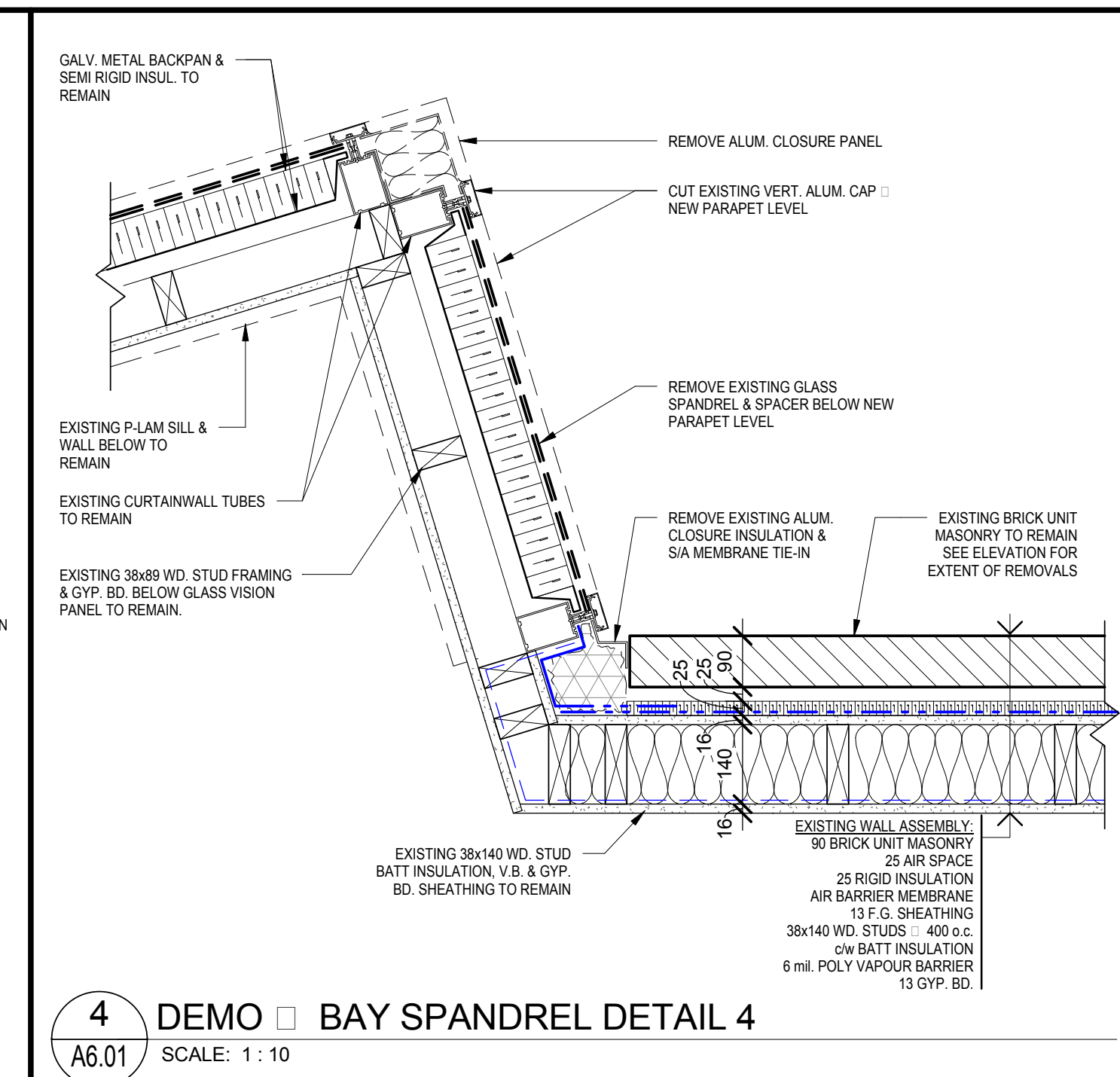
1 DEMO □ BAY WINDOW DETAIL 1
A6.01 SCALE: 1: 10



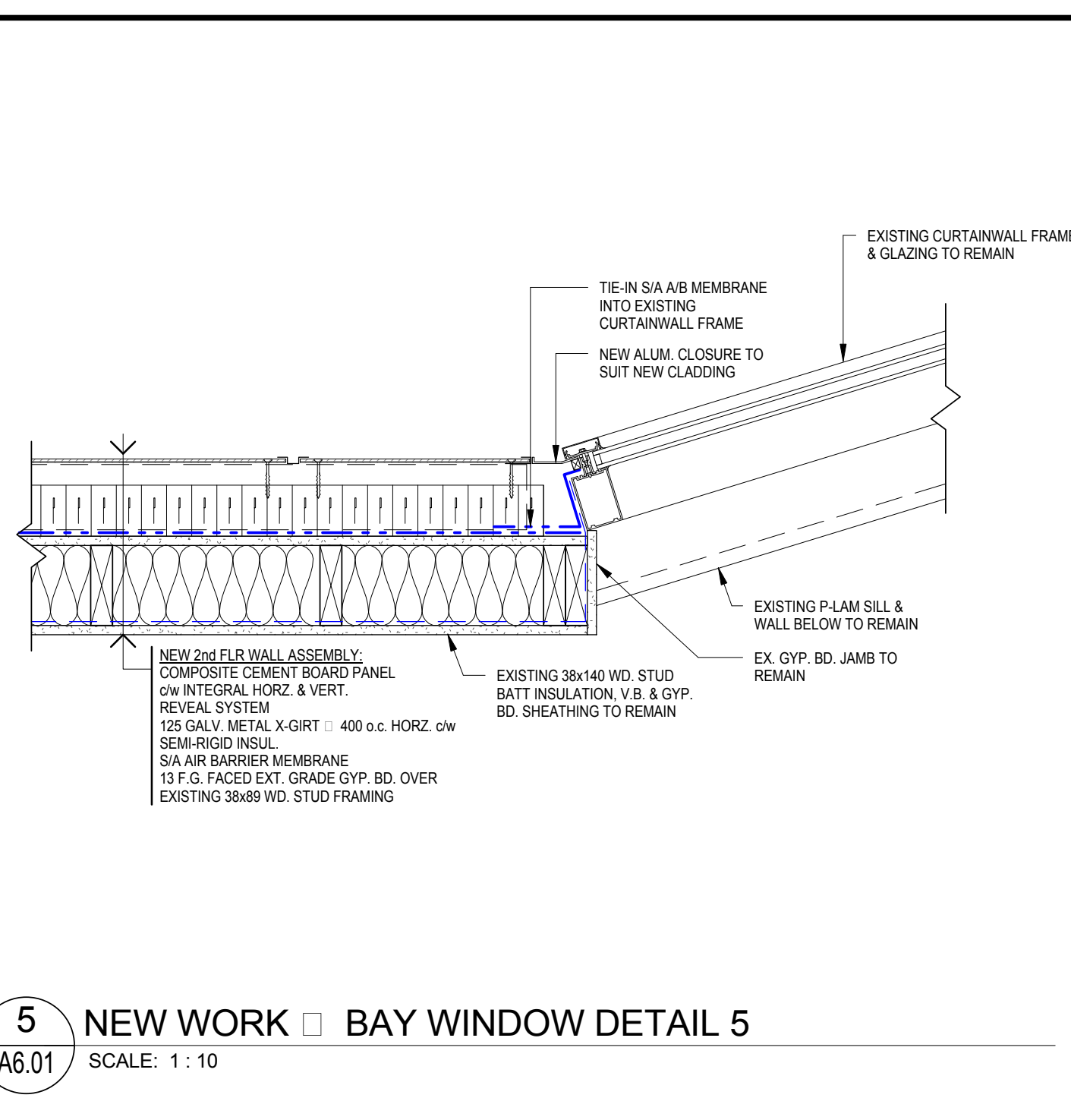
2 DEMO □ BAY WINDOW DETAIL 2
A6.01 SCALE: 1: 10



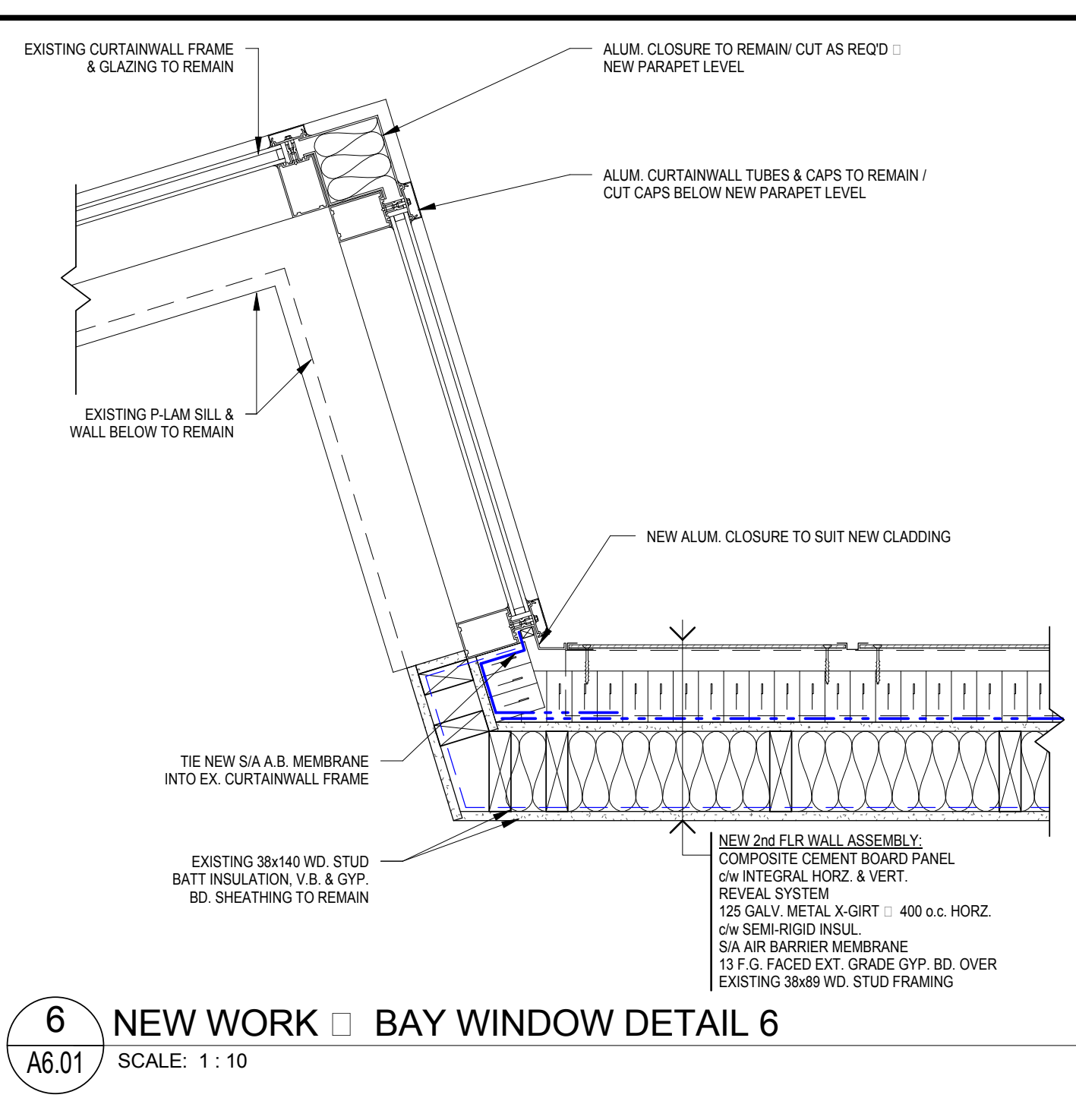
3 DEMO □ BAY SPANDREL DETAIL 3
A6.01 SCALE: 1: 10



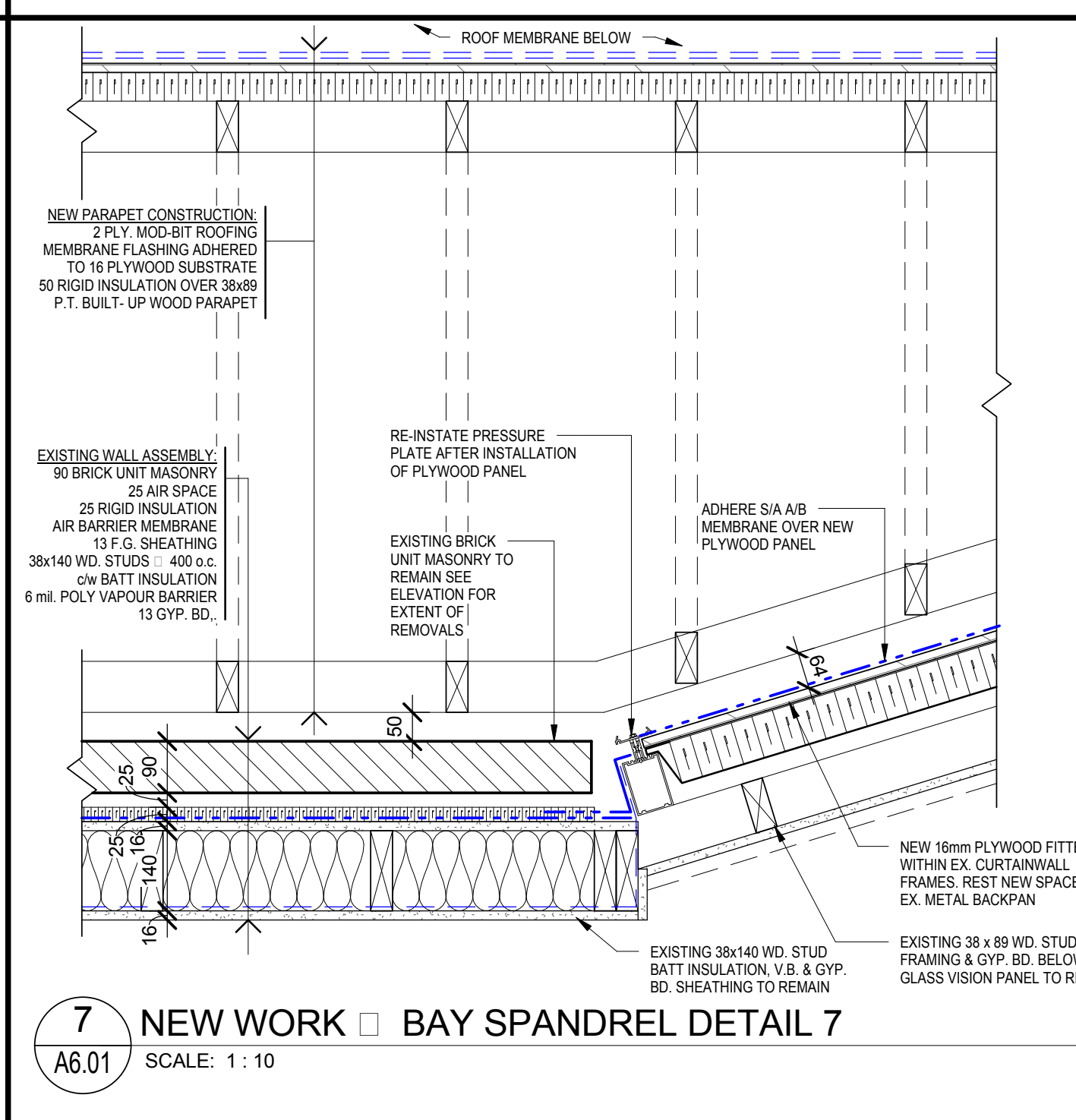
4 DEMO □ BAY SPANDREL DETAIL 4
A6.01 SCALE: 1: 10



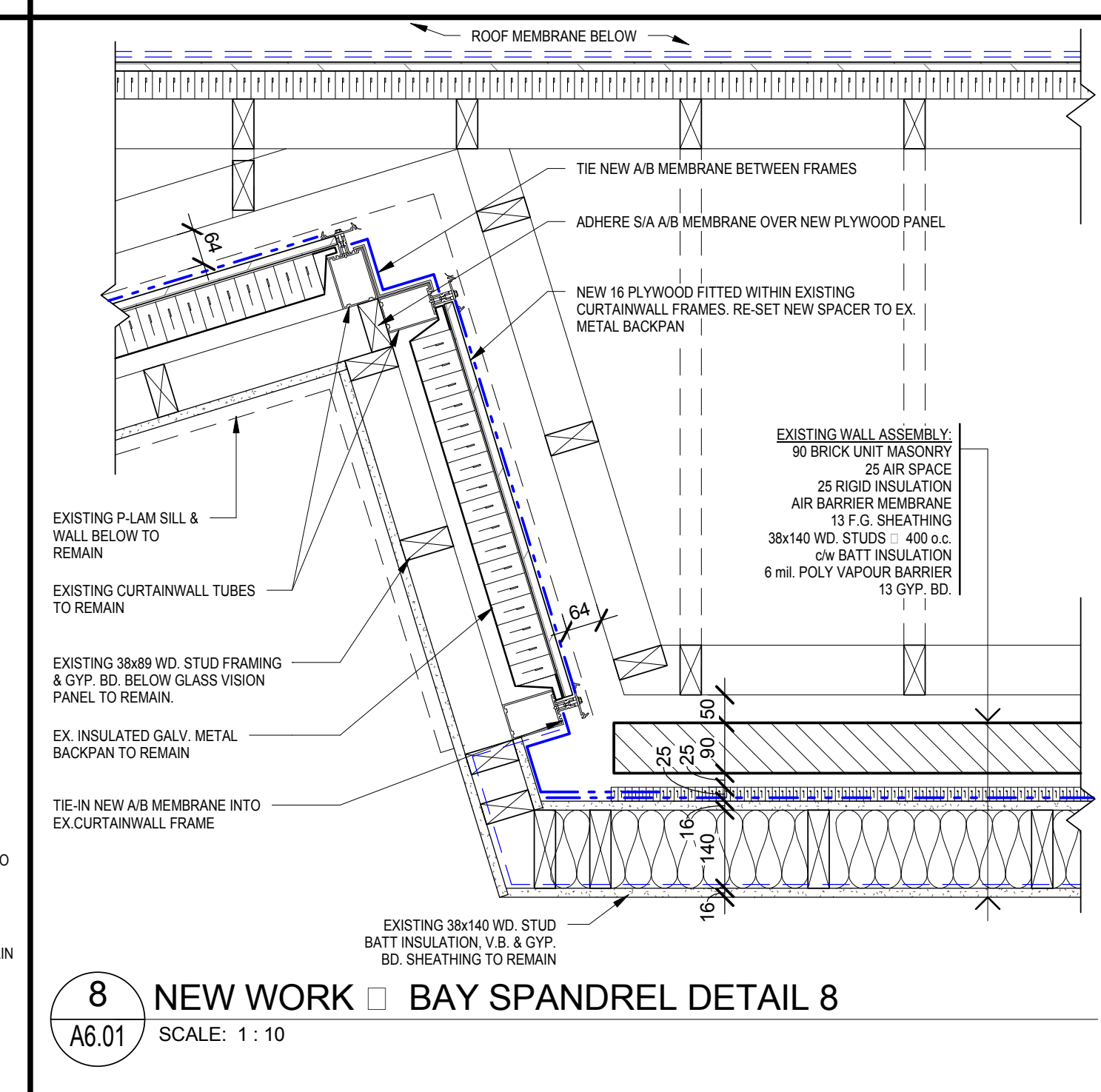
5 NEW WORK □ BAY WINDOW DETAIL 5
A6.01 SCALE: 1: 10



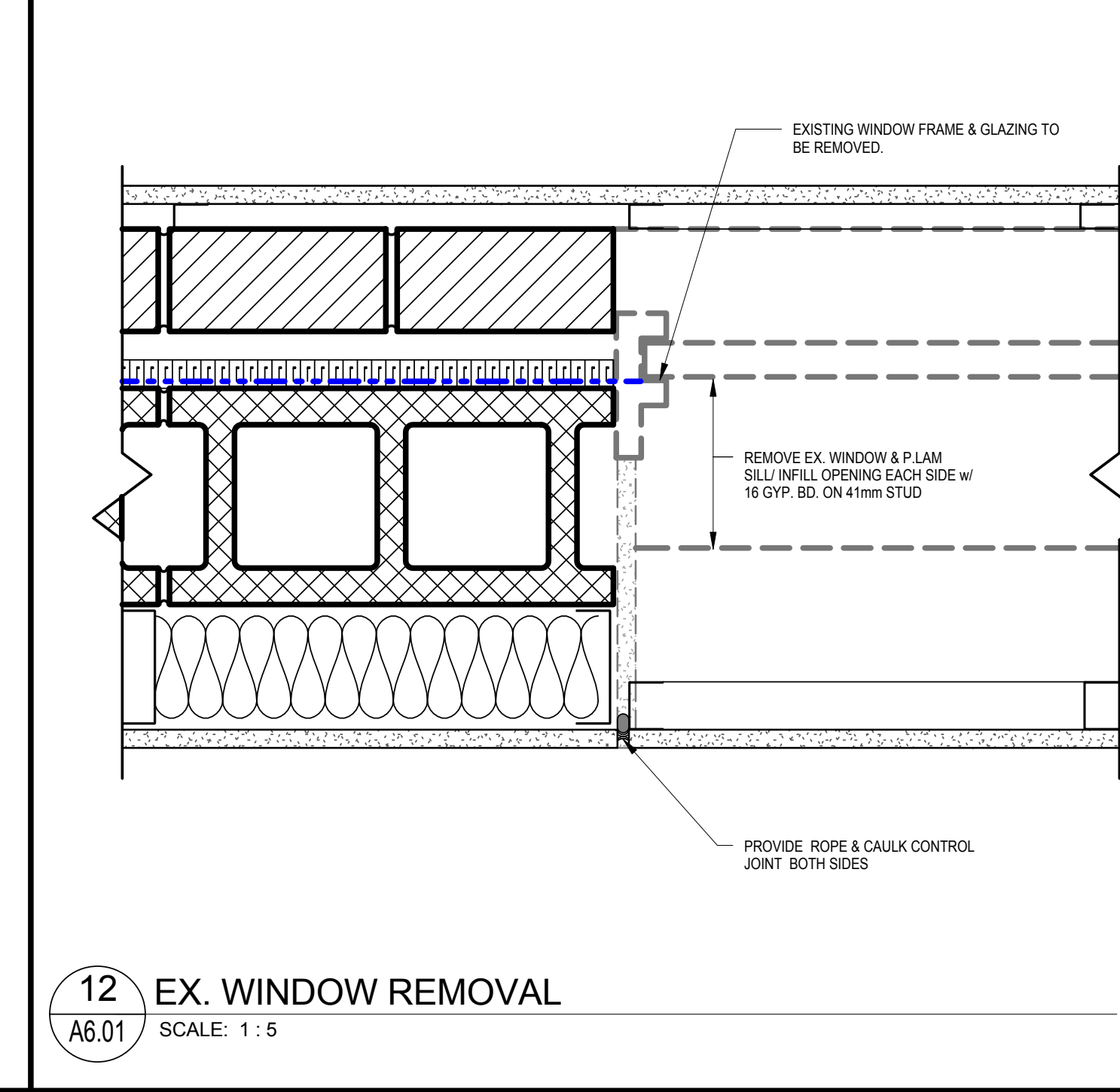
6 NEW WORK □ BAY WINDOW DETAIL 6
A6.01 SCALE: 1: 10



7 NEW WORK □ BAY SPANDREL DETAIL 7
A6.01 SCALE: 1: 10



8 NEW WORK □ BAY SPANDREL DETAIL 8
A6.01 SCALE: 1: 10



12 EX. WINDOW REMOVAL
A6.01 SCALE: 1: 5

3	18/10/12	ISSUED FOR CONSTRUCTION
2	18/07/12	ISSUED FOR PRICING
1	18/07/09	ISSUED FOR BUILDING PERMIT
no.	date	revision

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1	18/07/09	ISSUED FOR BUILDING PERMIT
no.	date	revision

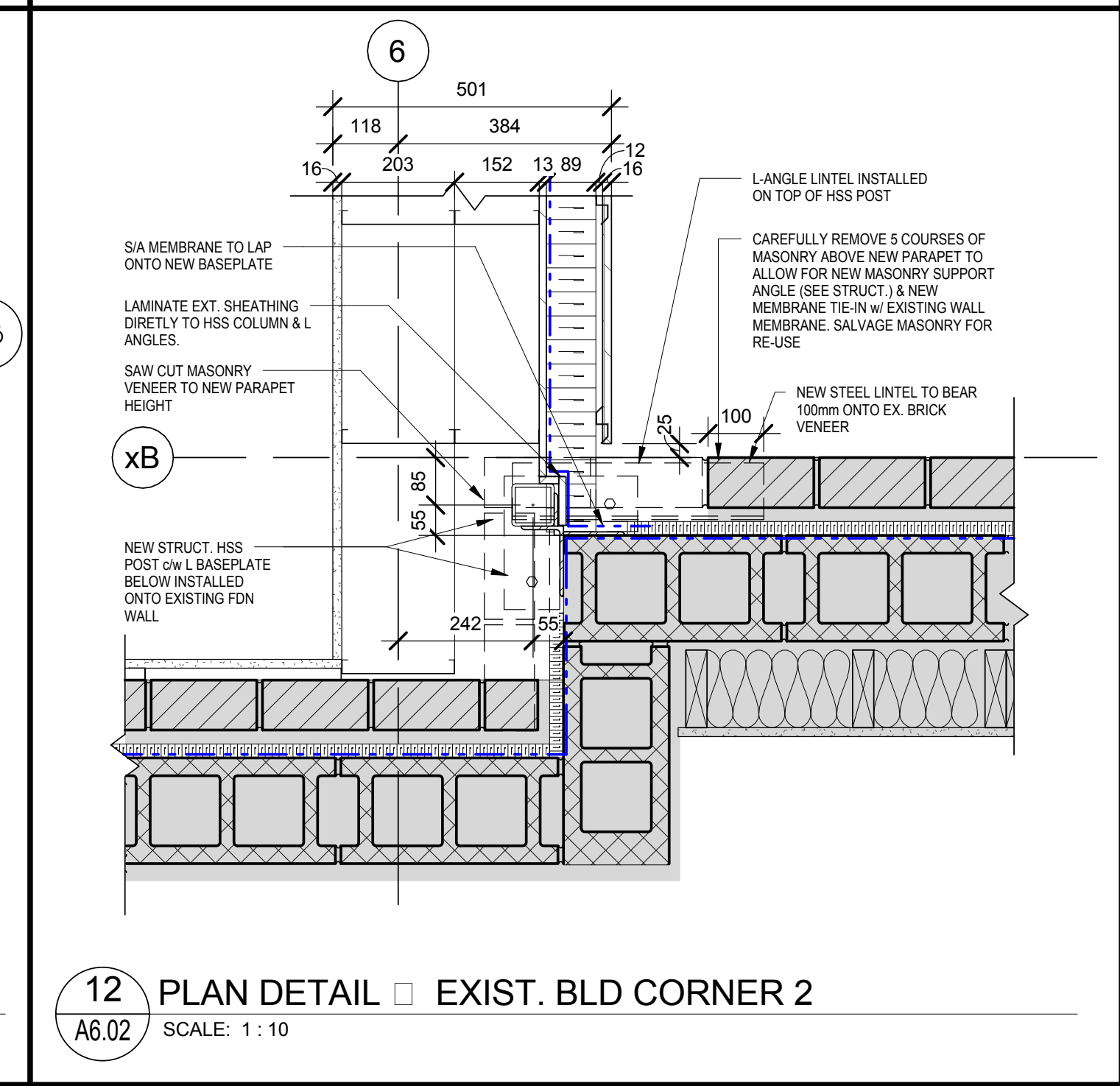
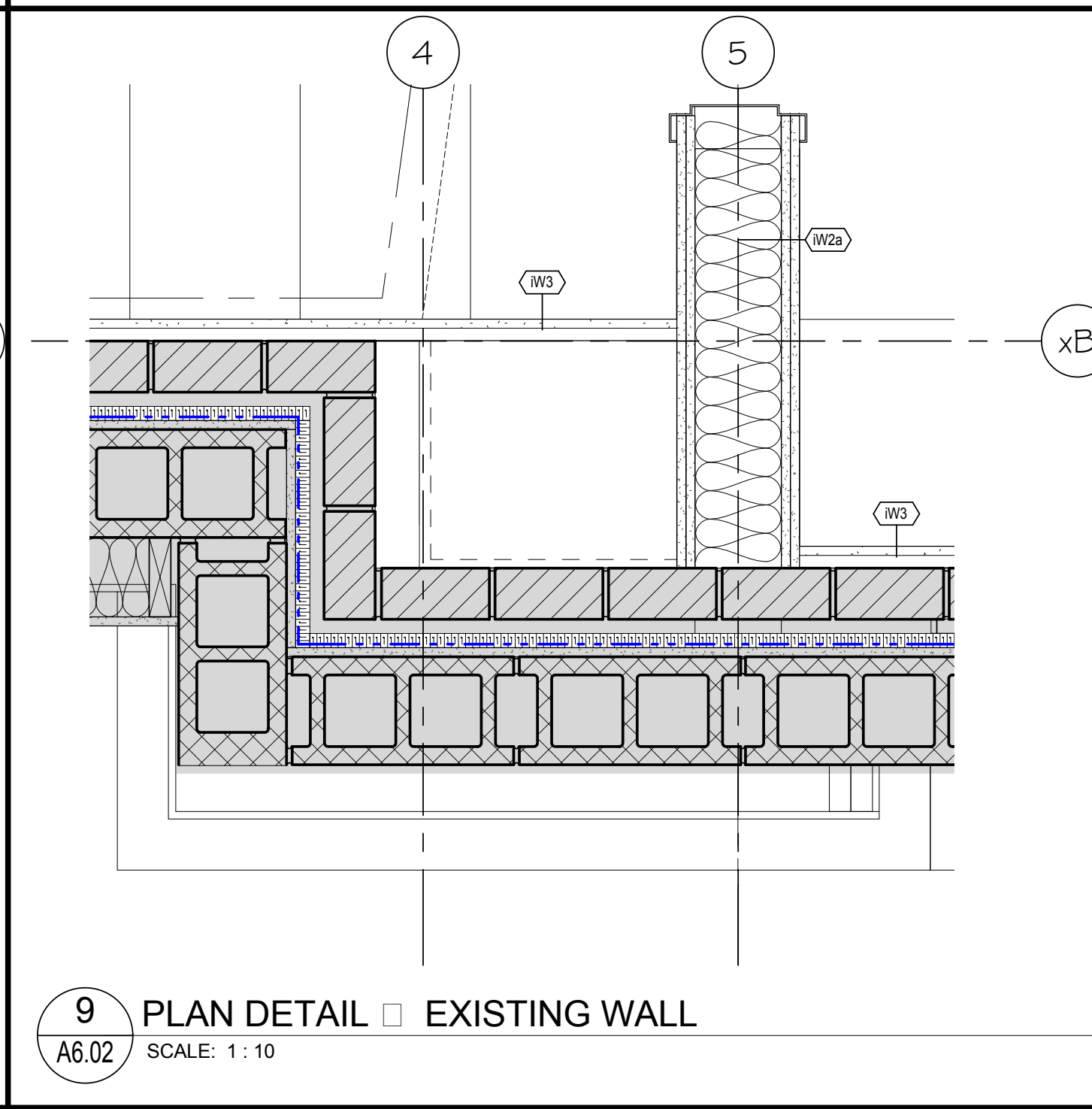
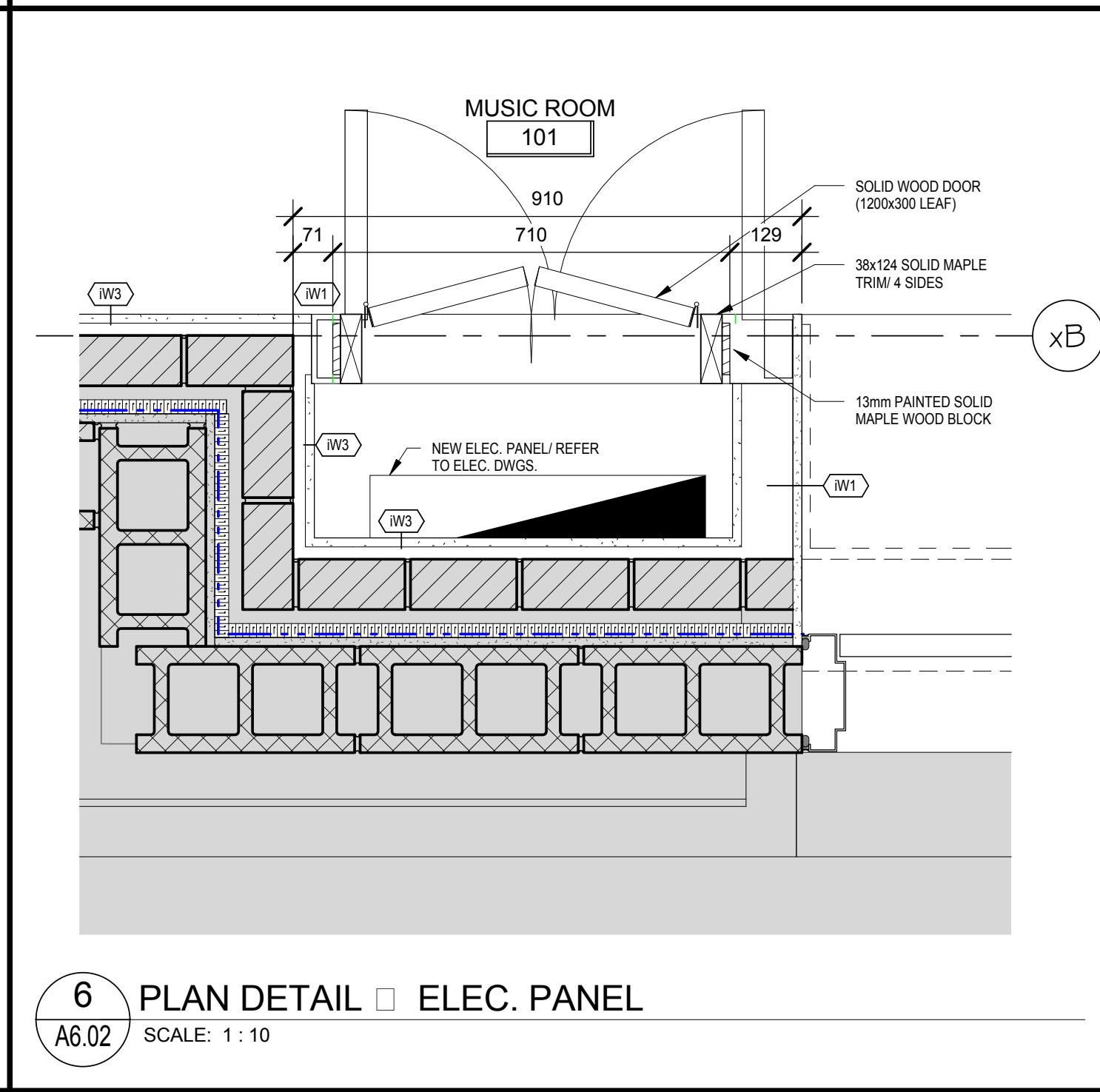
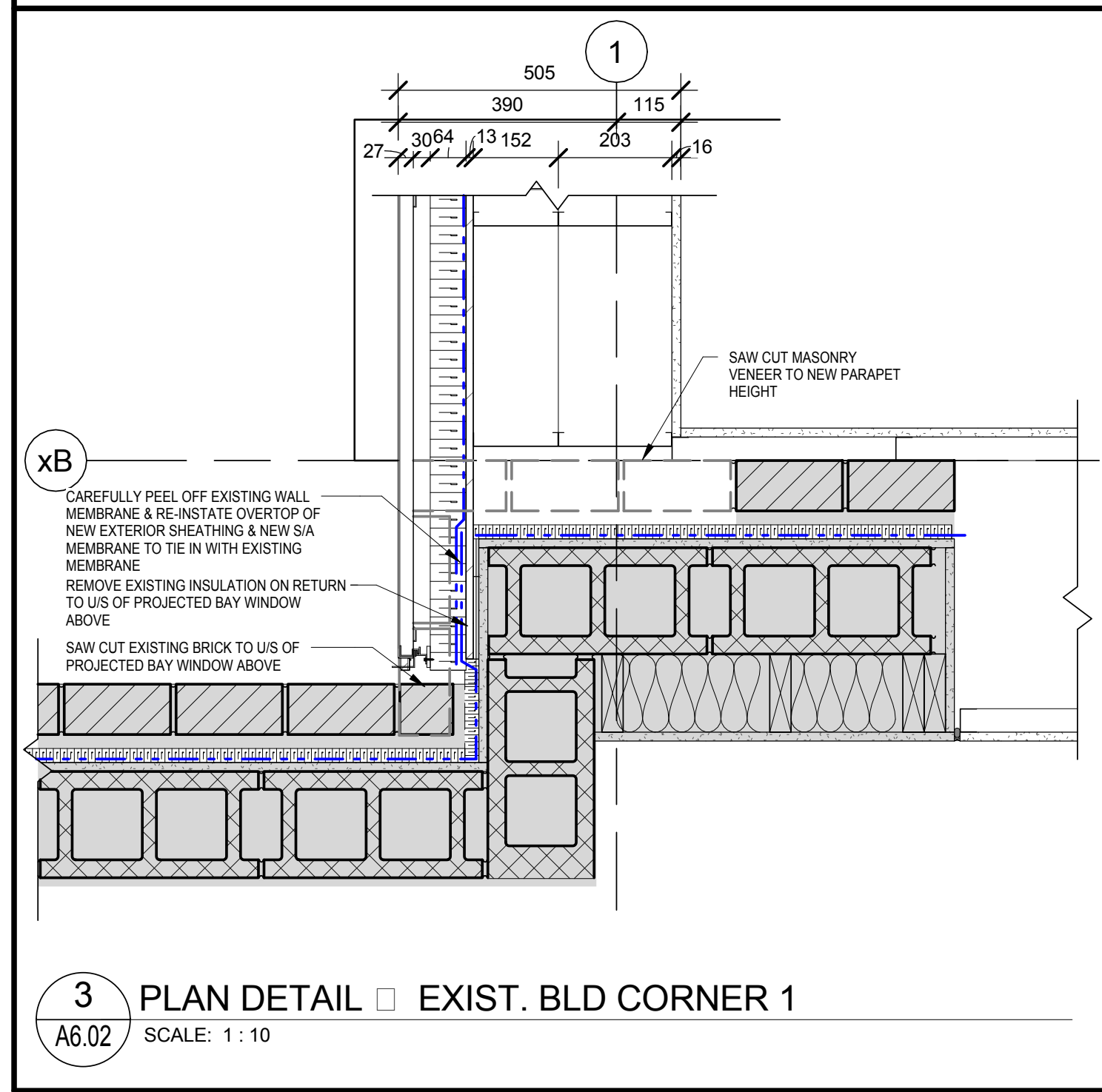
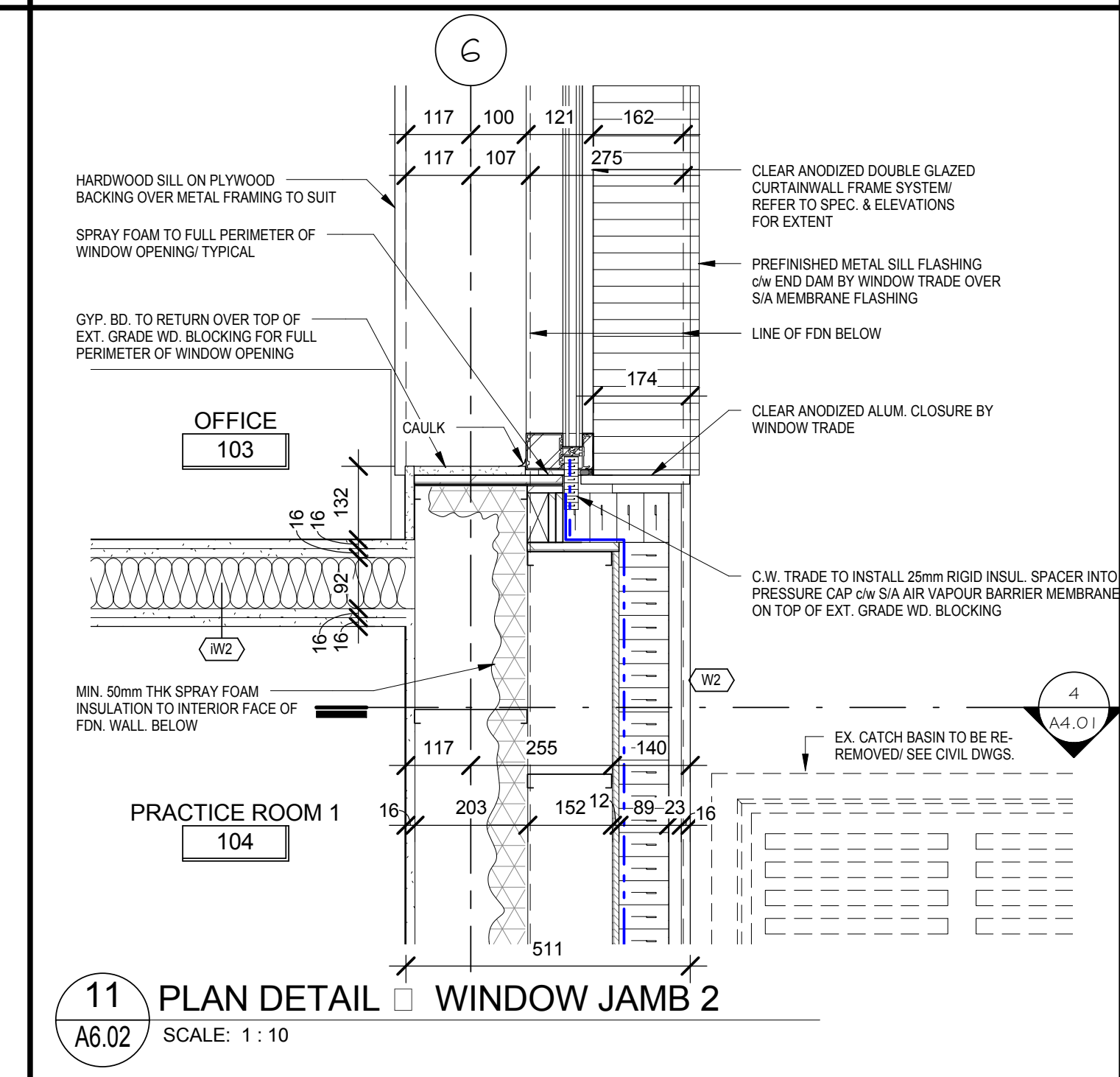
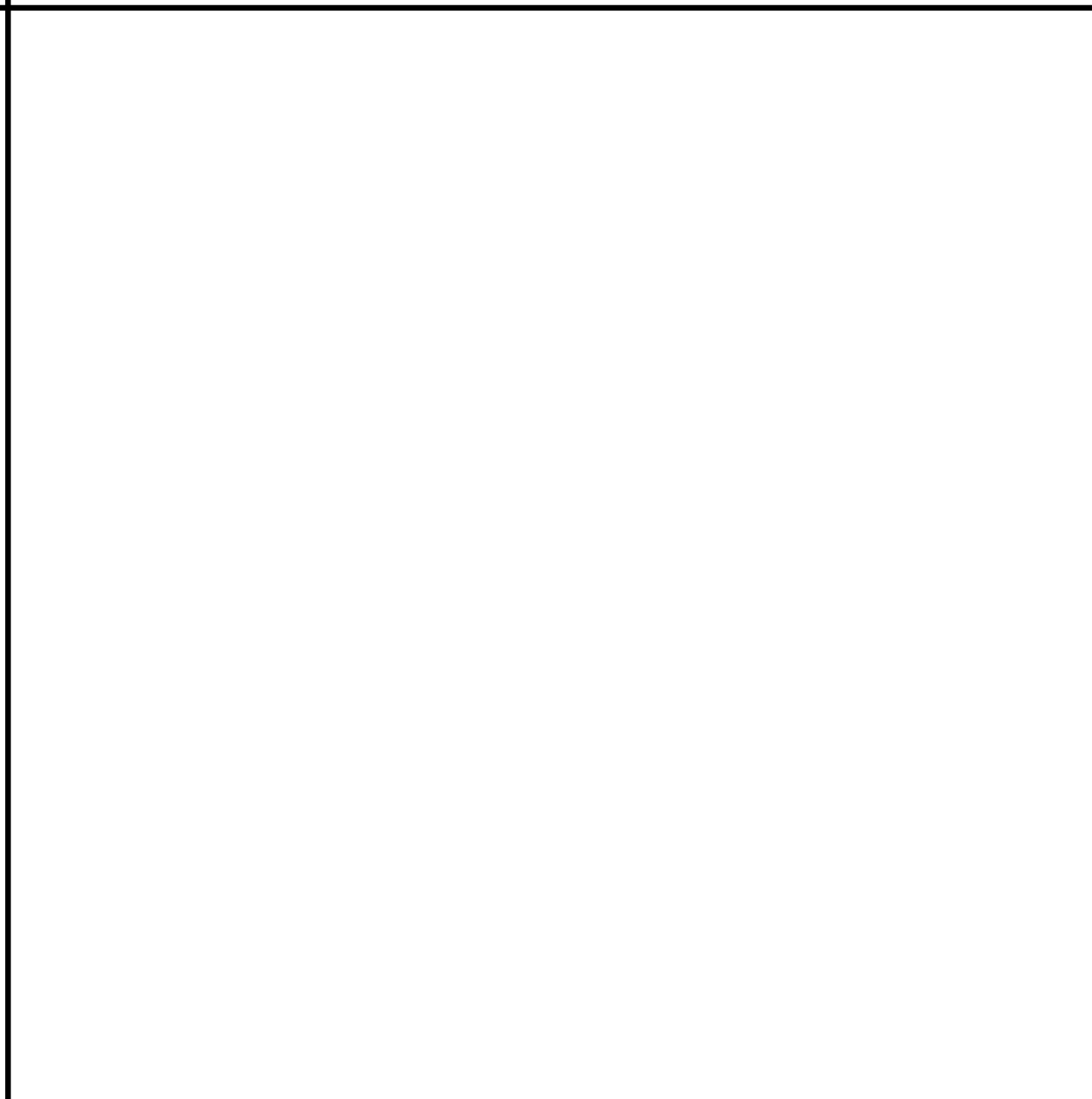
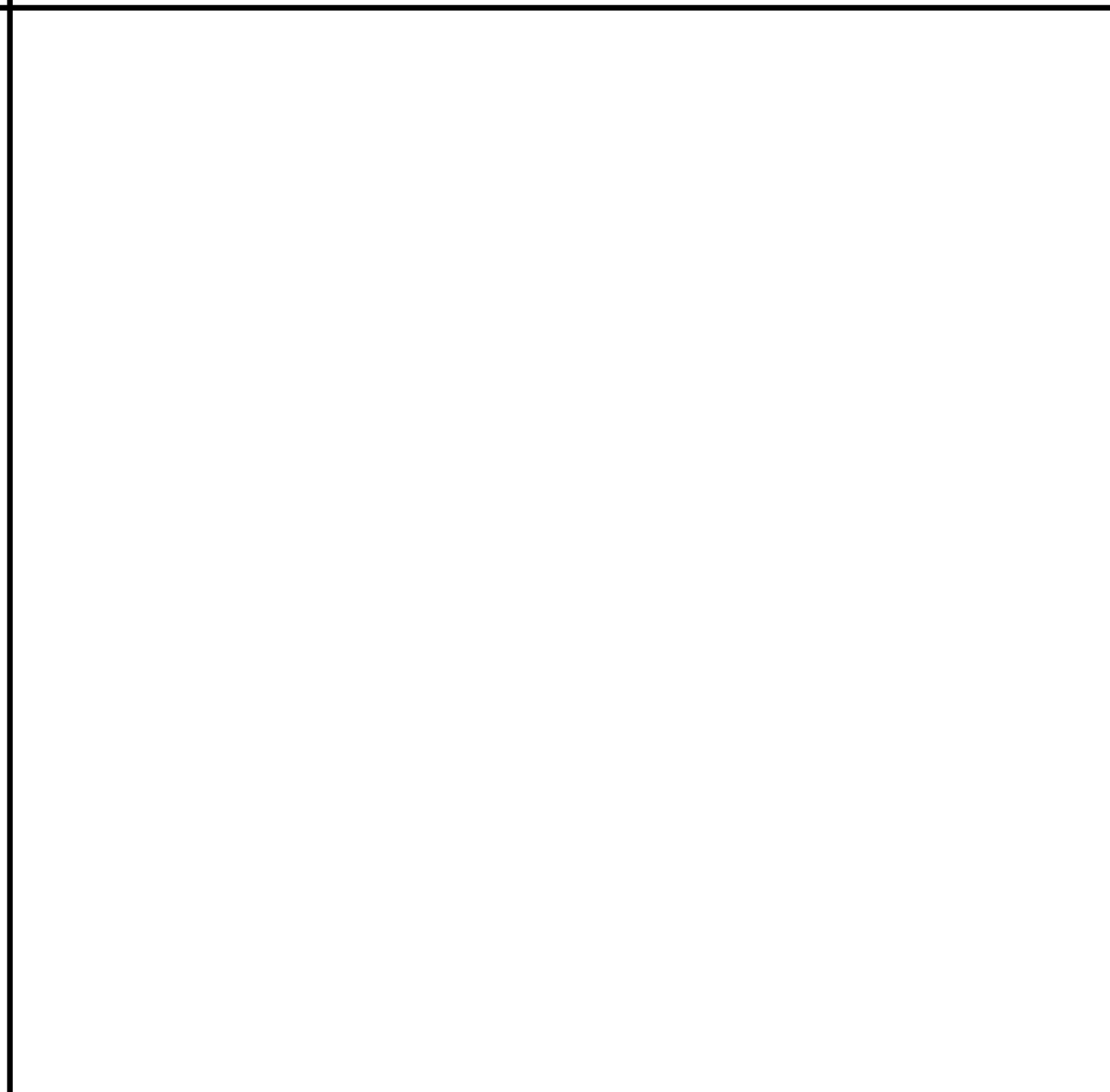
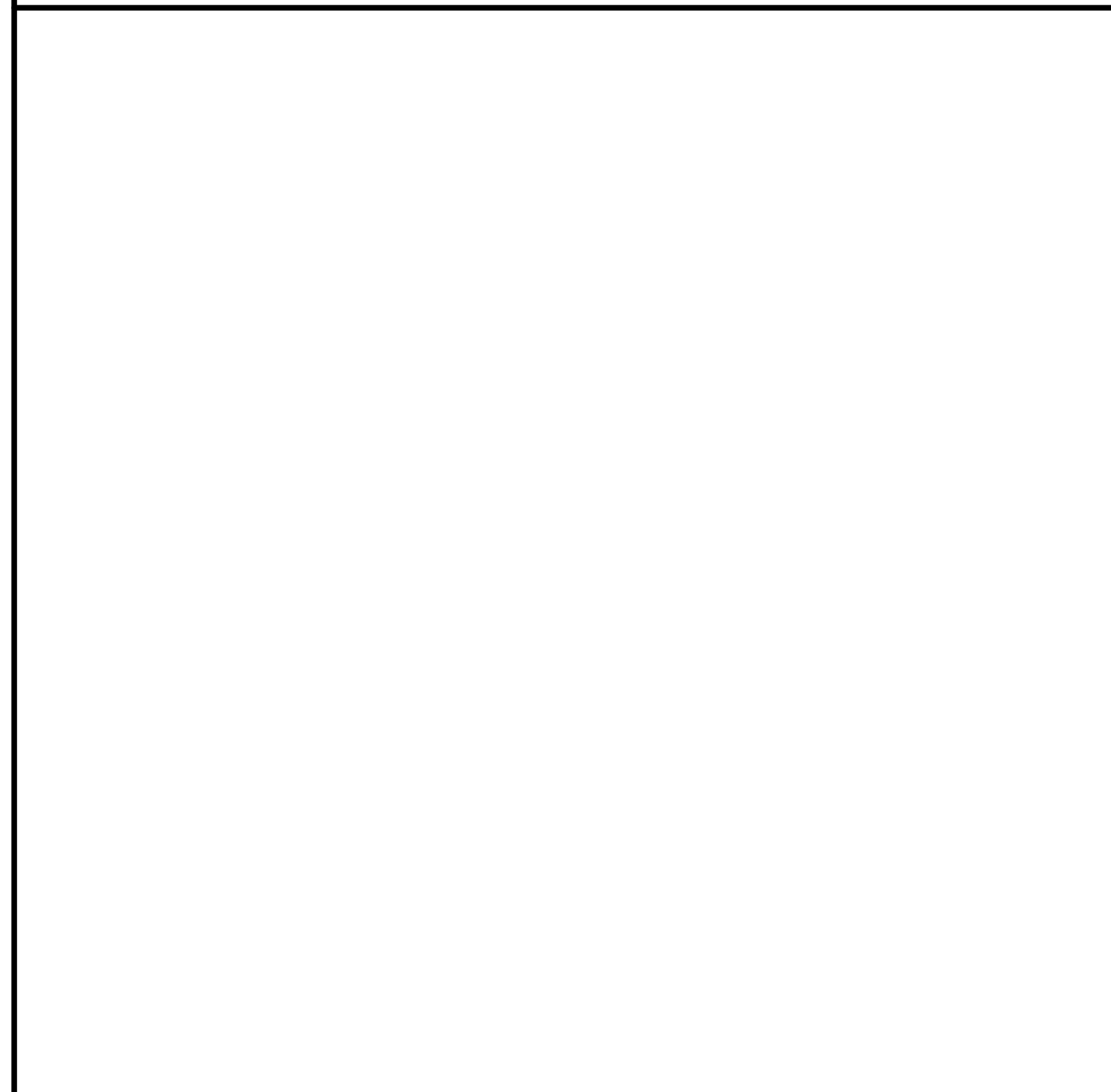
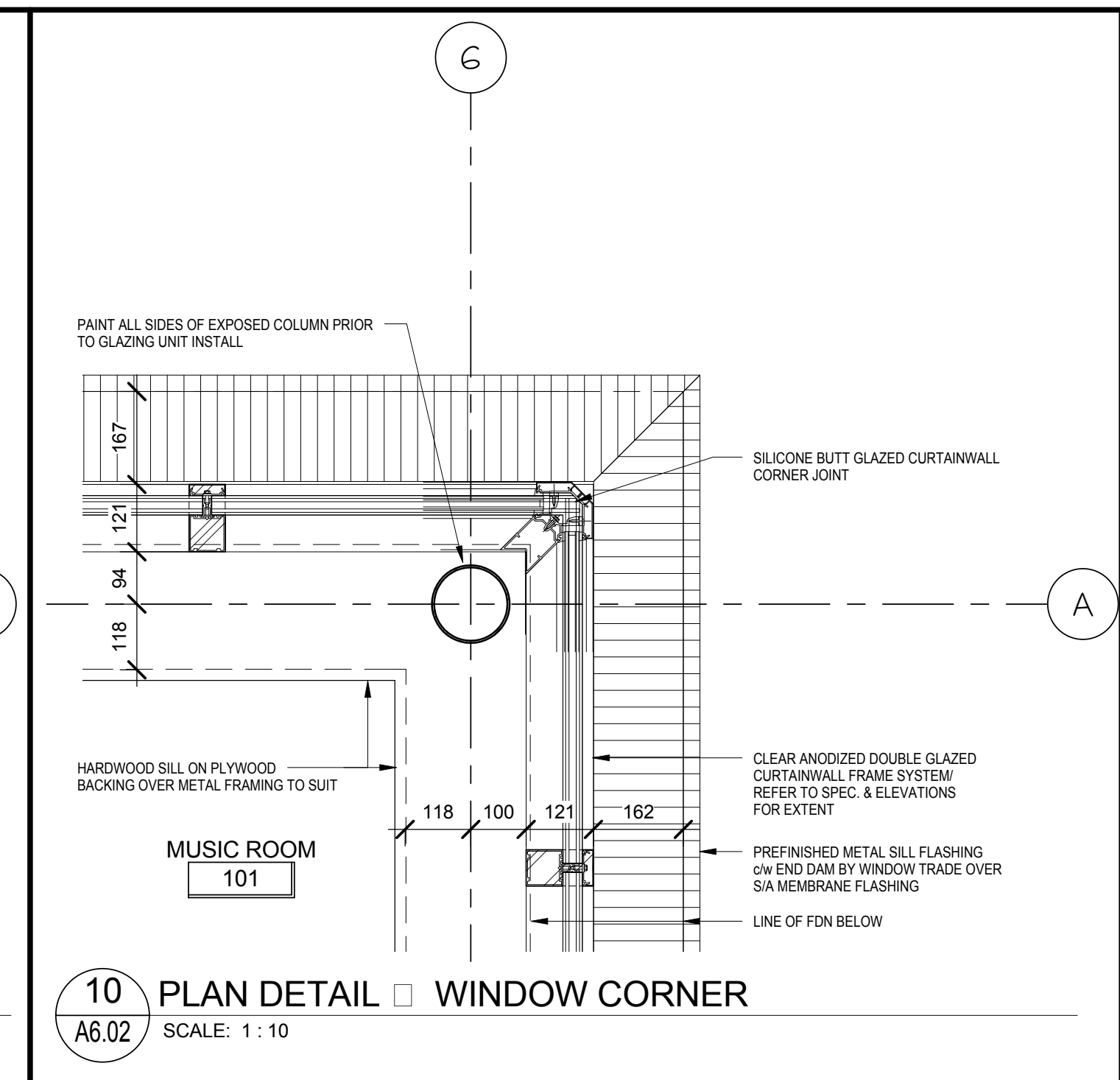
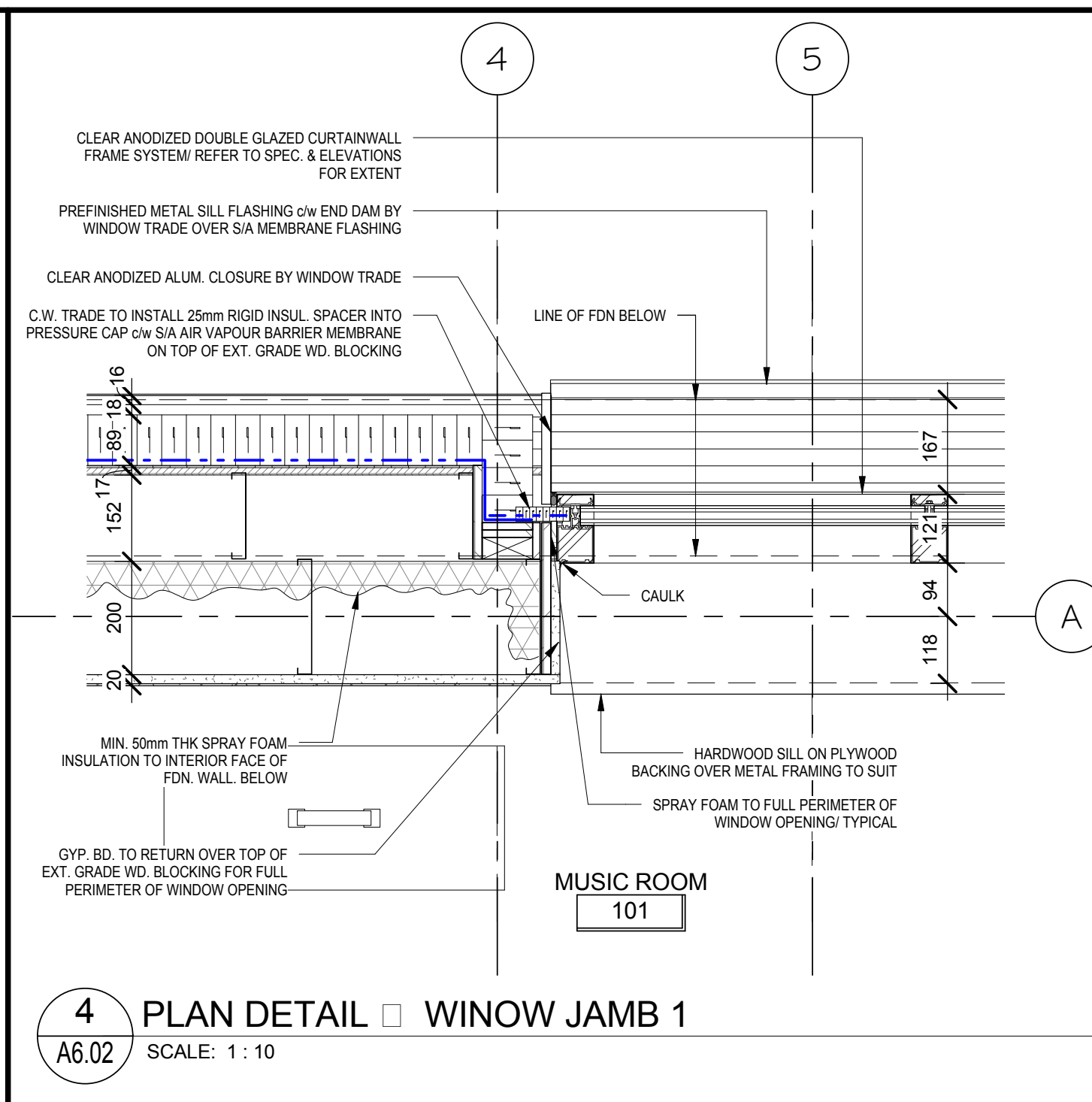
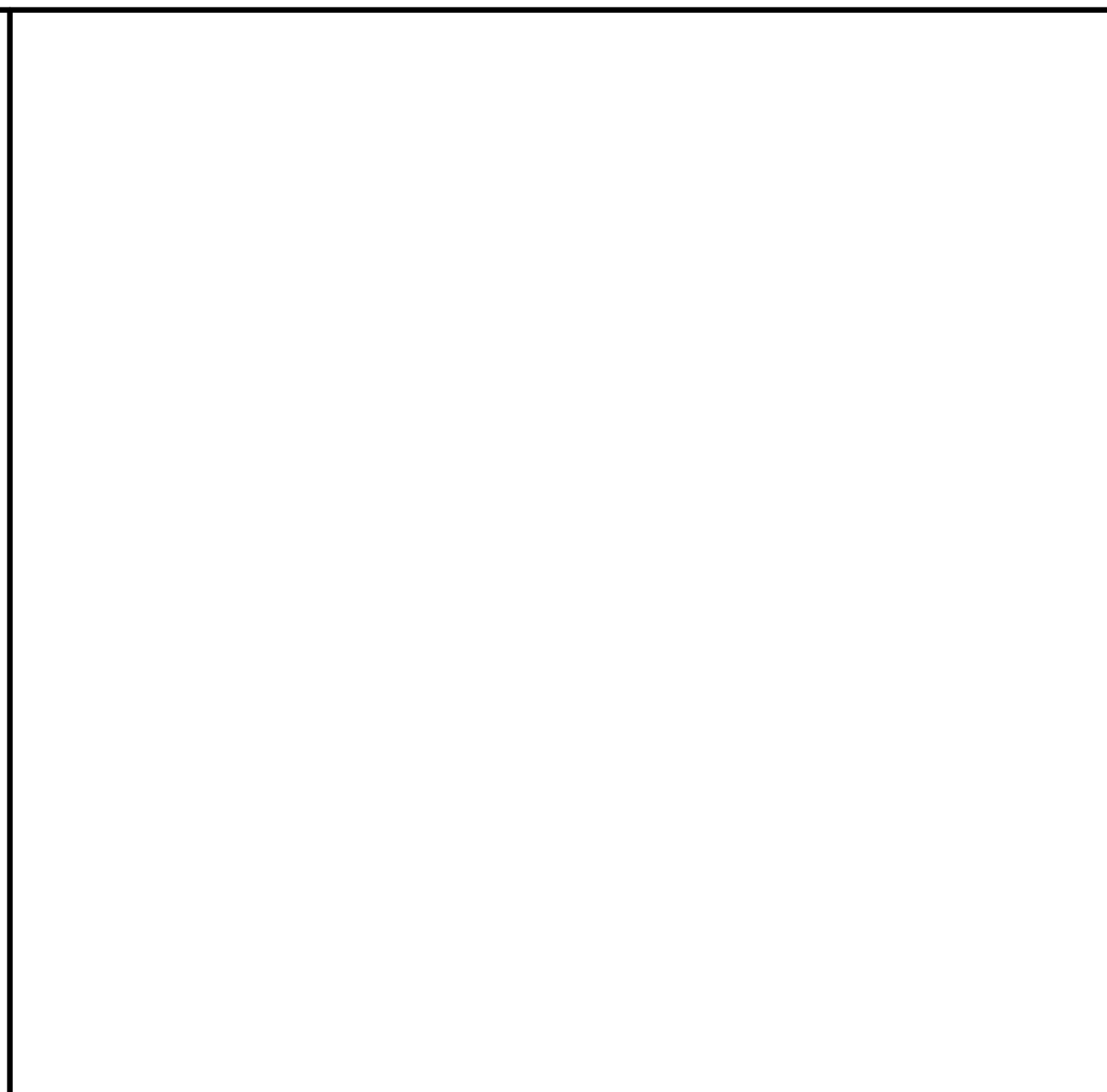
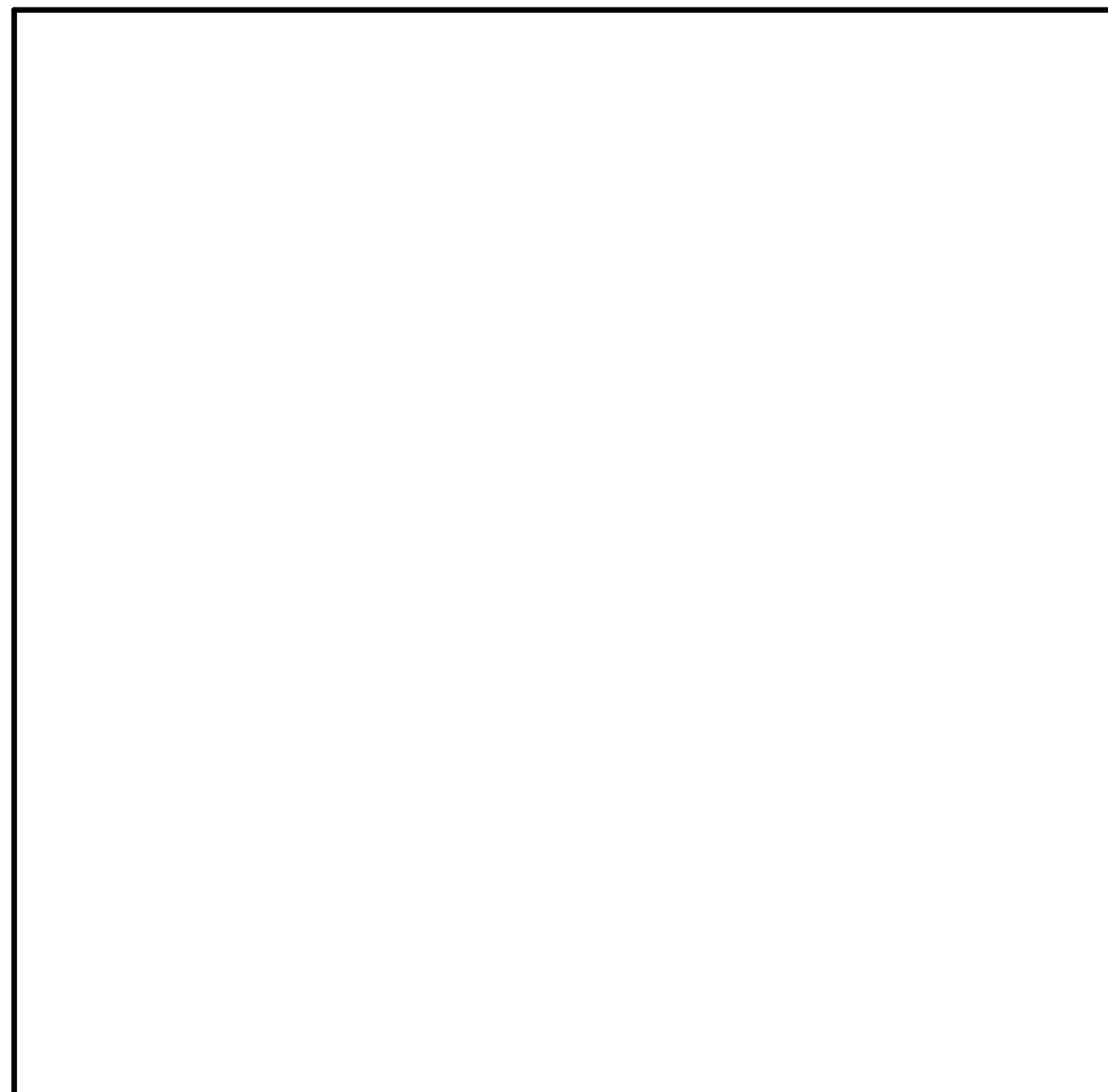
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PROJECT: **TURNBULL SCHOOL MUSIC ROOM ADDITION**
1152 HURON AVENUE, OTTAWA, ON

DRAWING TITLE: **PLAN DETAILS**

DRAWN	DATE	SCALE
Author	08/11/18	As Indicated

PROJECT: 1705
DRAWING NO. **A6.01**
REVISION NO. 3



3	18/10/12	ISSUED FOR CONSTRUCTION
2	18/07/12	ISSUED FOR PRICING
1	18/07/09	ISSUED FOR BUILDING PERMIT
no.	date	revision

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TURNBULL SCHOOL MUSIC ROOM ADDITION
 1132 HURON AVE.
 OTTAWA, ON

PLAN DETAILS

DRAWN	DATE	SCALE
SL	08/25/18	1:10

PROJECT: 1705
 DRAWING NO. **A6.02**
 REVISED: NO. 3

SEISMIC SYSTEM/LOADING DATA: MAIN BUILDING SEISMIC FORCE RESISTING SYSTEM (SFRS) SFRS: SYSTEM & CONNECTIONS: (2012 OBC CLAUSE 4.1.8.9/4.1.8.10) LATERAL LOAD RESISTING SYSTEM: CONVENTIONAL CONSTRUCTION (STEEL BRACED FRAMES) Rd = 1.5 Ro = 1.3 CSA STANDARD: CAN/CSA S16-09 APPLICABLE CLAUSE(S): 27.1.1 SFRS: DIAPHRAGMS & CONNECTIONS: (2012 OBC CLAUSE 4.1.8.15) CSA STANDARD: CAN/CSA S16-09 APPLICABLE CLAUSE(S): 27.1.1.1 (b) SFRS: SYSTEM FOUNDATIONS: (2012 OBC CLAUSE 4.1.8.16) CSA STANDARD: CAN/CSA A23.3-04 FOR ANCHORED FOOTINGS APPLICABLE CLAUSE(S): 21.1.1 FOR UNANCHORED FOOTINGS CONFIRMATION: FOUNDATIONS HAVE BEEN DESIGNED TO RESIST THE LATERAL LOAD CAPACITY OF THE SFRS INCLUDING ALL APPLICABLE AMPLIFICATION FACTORS SEISMIC IMPORTANCE FACTOR: (2012 OBC CLAUSE 4.1.8.5) Ie = 1.3 PROJECT CITY: (OTTAWA, CITY HALL) SITE CLASS: THE NOTED SITE CLASSIFICATION FOR SEISMIC SITE RESPONSE AND SHEAR WAVE VELOCITY PARAMETERS INDICATED ARE AS REPORTED IN THE GEOTECHNICAL REPORT # PG4528-MEMO.01 BY PATERSON GROUP REFER TO THE NOTED GEOTECHNICAL REPORT FOR V's, N60, AND/OR S_u VALUES USED TO DETERMINE SITE CLASSIFICATION. □ A □ B C □ D □ E □ F (SITE SPECIFIC SPECTRUM: CITY HALL) PGA: 0.320 RESPONSE SPECTRUM DATA: 5% DAMPED SPECTRAL RESPONSE ACCELERATION VALUES: (2012 OBC SUPPLEMENT STANDARD SB-1) Sa (0.2) = 0.640 Sa (0.5) = 0.310 Sa (1.0) = 0.140 Sa (2.0) = 0.046 DESIGN SPECTRAL RESPONSE ACCELERATION VALUES (DSRAV): (2012 OBC CLAUSE 4.1.8.4) CLASS C: (Fa=1.0/Fv=1.0) S (0) = 0.64 S (0.2) = 0.64 S (0.5) = 0.31 S (1.0) = 0.14 S (2.0) = 0.046 S (4.0) = 0.023 SYSTEM RESTRICTION VALUE: IeFaSa(0.2) = ????? ≥ 0.35 YES □ NO PERIOD DATA: STAT PERIOD: (2012 OBC CLAUSE 4.1.8.11(3)) Ta (STATIC) NS = 0.090 sec Ta (STATIC) EW = 0.090 sec DESIGN PERIODS/MODE & MOMENT FACTORS: (2012 OBC CLAUSE (4.1.8.11(5))) Sa(0.2) = 13.91 ≥ 8.0 YES □ NO Ta (DESIGN) NS = 0.09 sec MV = 1.00 J = 1.00 Ta (DESIGN) EW = 0.09 sec MV = 1.00 J = 1.00 DESIGN FUNDAMENTAL PERIOD BASED DSRAV: S(Ta) NS = 0.640 S(Ta) EW = 0.640 IRREGULARITY REVIEW (2012 OBC CLAUSE 4.1.8.6) 1. VERTICAL STIFFNESS: YES NO 2. WEIGHT: YES NO 3. VERTICAL GEOMETRIC: YES NO 4. IN PLANE DISCONTINUITY: YES NO 5. OUT OF PLANE: YES NO 6. WEAK STOREY: YES NO 7. TORSIONAL: YES NO B NS = 1.48 B EW = 1.41 8. NON-ORTHOGONAL: YES NO CONCLUSION: BUILDING IS REGULAR IRREGULAR DYNAMIC ANALYSIS: REQUIRED NOT REQUIRED DYNAMIC PROCEDURE METHOD: MODAL RESPONSE SPECTRUM NUMERICAL INTEGRATION TIME HISTORY N/A TORSIONAL ECCENTRICITY: ± 0.10 Dnx (4.1.8.11(10a)), B ≤ 1.7 EQUIV. STATIC FORCE PROCEDURE) ± 0.10 Dnx (4.1.8.12(4a)), B ≥ 1.7 ± 0.05 Dnx (4.1.8.12(4b)), B < 1.7, 3-D DYNAMIC ANALYSIS) STRUCTURAL SEPARATION: THE NEW AND EXISTING STRUCTURES HAVE BEEN SEPARATED IN ACCORDANCE WITH 4.1.8.14(1) OF THE 2012 O.B.C. N/A BASE SHEARS/MOMENTS: (2012 OBC CLAUSE 4.1.8.11) Vstatic = S(Ta)MvleW/(RdRo) = 270 kN W = 625 kN STATIC MAXIMUM/MINIMUM VALUES: NORTH-SOUTH: (↑) Vmin = S(2.0)MvleW/(RdRo) = 20 kN W = 625 kN Vmax = 2/3 S(0.2)leW/(RdRo) = 180 kN W = 625 kN EAST-WEST: (→) Vmin = S(2.0)MvleW/(RdRo) = 20 kN W = 625 kN Vmax = 2/3 S(0.2)leW/(RdRo) = 180 kN W = 625 kN

SEISMIC LOADS	
STATIC LOADS	DESIGN LOADS
NORTH-SOUTH: (↑)	
Vstns = 180 kN W = 625 kN Mstns = 650 kNm	Vdns = 180 kN Mdns = 650 kNm
EAST-WEST: (→)	
Vstew = 180 kN W = 625 kN Mstew = 650 kNm	Vdew = 180 kN Mdew = 650 kNm

NOTES:

1) DYNAMIC LOAD SCALING FACTOR
S.F. = $g \cdot \frac{I_e}{R_d R_o}$ = 0.667 g

2) DESIGN LOAD SHEAR VALUES ARE BASED ON THE EVALUATION OF Vst AND Vd IN ACCORDANCE WITH 4.1.8.12 (5),(6),(7),(8), AND (9) OF THE 2012 OBC. LOADS INDICATED SHOW THE DESIGN BASE SHEAR AND CORRESPONDING OVERTURNING MOMENT.

WIND UPLIFT (REF FIG I-9 NBC 2010 STRUCTURAL COMMENTARY I)

PNET = 1.4 (pe-pi) - 0.9 D
Pe = Iw q Ce Cp Cg Pf = 1.4 Pw NET - 0.9 Pd
Pi = Iw q Ce Cpi Cgi Pw NET = Pe - Pi
Pw NET INTERIOR = 1.04 kPa
Pw NET PERIMETER = 1.37 kPa
z = 1.5 m

DESIGN SNOW LOAD PARAMETERS
OTTAWA, ONTARIO, CANADA
S = Is [Ss(CbcWcSc)+Sr]
Ss = 2.4 kPa
Sr = 0.4 kPa
Is = 1.15
S = 1.15 [2.4(0.8x1.0x1.0)+0.4]
S = 2.67 kPa

WIND (2012 OBC 4.1.7, 2010 NBC COMMENTARY FIGURE I-7 TO I-9)

P = Iw q Ce Cp Cg Pf = 0.41 kPa
q = 0.41 kPa
Iw (uls) = 1.15 Iw (sls) = 0.75
Ce = 0.9
CpCg = 1.3 OR 1.95

N.S (↑)	E.W (→)	UNITS	
Mbase	29	18	KN
Mbase	105	65	KN.m

NORTH FOR THE PURPOSES OF THIS DATA IS AT THE TOP SIDE OF ALL PLANS IN THIS SET OF DRAWINGS

CONCRETE STRENGTH (MPa)	REINFORCING BAR LAP LENGTH (mm)							
	10M	15M	20M	25M	30M	35M	45M	55M
20	475	700	850	1325	1575	1875	2300	2975
25	425	600	750	1200	1400	1675	2050	2650
30	400	550	675	1100	1275	1525	1875	2425
35	375	525	625	1000	1200	1425	1750	2250
40	350	475	600	950	1125	1325	1625	2100
45	325	450	550	900	1050	1250	1525	1975
50	300	425	525	850	1000	1200	1450	1875
55	300	425	500	800	950	1150	1400	1800
60	300	400	475	775	925	1100	1325	1725
64	300	375	475	750	875	1050	1300	1650

FOR SPECIAL CONDITIONS MULTIPLY THE VALUES LISTED ABOVE BY THE FOLLOWING FACTORS:
1. EPOXY COATED REINFORCING (X 1.5)
2. HORIZONTAL REINFORCING WITH >300 mm CONCRETE BELOW (X 1.3)
3. FOR CONDITIONS 1 & 2 OCCURRING SIMULTANEOUSLY (X 1.7)

DESIGN & DETAILING CRITERIA FOR SUPPLIERS

1. STRUCTURAL STEEL CONNECTIONS
STRUCTURAL STEEL CONNECTIONS ARE TO BE DESIGNED AND DETAILED BY STRUCTURAL STEEL SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED FOR CONNECTIONS ONLY BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. INSPECTION OF WELDS, CONNECTIONS & INSTALLATION IS TO BE UNDERTAKEN BY A 3RD PARTY, CERTIFIED INSPECTION SERVICE.

2. COLD FORMED STEEL STUDS & JOISTS
STEEL STUDS & JOISTS ARE TO BE DESIGNED AND DETAILED BY STEEL STUDS & JOISTS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL STEEL STUD & JOIST WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE STEEL STUD & JOIST DESIGN ENGINEER.

3. MISCELLANEOUS METALS & STEEL STAIRS
MISC METALS & STEEL STAIRS ARE TO BE DESIGNED AND DETAILED BY MISC METALS & STEEL STAIRS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL MISC METAL & STEEL STAIR WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE MISC METALS & STEEL STAIRS DESIGN ENGINEER.

4. GUARDS & HANDRAILS
GUARDS & HANDRAILS ARE TO BE DESIGNED AND DETAILED BY STEEL SUPPLIER IN ACCORDANCE WITH THE CURRENT BUILDING CODE REQUIREMENTS. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL GUARDS & HANDRAIL WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE GUARD & HANDRAIL DESIGN ENGINEER.

5. SEISMIC RESTRAINT OF MECH'L EQUIPMENT & PIPING
SEISMIC RESTRAINT OF MECH'L EQUIPMENT & PIPING TO BE DETAILED BY MECH'L EQUIPMENT & PIPING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OF RECORD.

6. SEISMIC RESTRAINT OF SUSPENDED CEILING
SEISMIC RESTRAINT OF SUSPENDED CEILING TO BE DETAILED BY CEILING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OF RECORD.

7. TEMPORARY SHORING (FOR DEMOLITION AND/OR CONSTRUCTION)
TEMPORARY SHORING FOR THE PURPOSES OF DEMOLITION AND/OR CONSTRUCTION IS TO BE DESIGNED & DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO. SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. PERMIT REVIEW OF TEMPORARY SHORING BY CUNLIFFE & ASSOCIATES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND/OR DEMOLITION AND ALSO PRIOR TO REMOVAL OF TEMPORARY SHORING.

NOTE:
INSPECTION REPORTS CREATED AS A RESULT OF THE ABOVE NOTED WORK MUST BE SUBMITTED TO THE CONSTRUCTION MANAGER. CONSTRUCTION MANAGER IS TO PROVIDE COPIES TO THE CONSULTANTS.

GENERAL NOTES

1. ANY DEVIATION FROM THE CONDITIONS SHOWN ON THESE DRAWINGS MUST BE REPORTED TO THE ENGINEER.
2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF PART 4 OF THE O.B.C. (2012 EDITION) ONTARIO REGULATION 332/12 (AS AMENDED)
3. STANDARDS
-CSA STANDARD A23.3-04 DESIGN OF CONCRETE STRUCTURES
-CAN/CSA-S16-09 LIMIT STATES DESIGNS OF STEEL STRUCTURES
-CSA STANDARD S304.1-04 DESIGN OF MASONRY STRUCTURES
4. ANY MODIFICATIONS TO EXISTING STRUCTURES ARE TO BE LIMITED TO WORK NOTED ON THESE DRAWINGS. ANY ADDITIONAL OR PROPOSED MODIFICATIONS TO EXISTING STRUCTURES MUST BE APPROVED BY THE ENGINEER
5. FOUNDATIONS
1. ALL FOOTINGS ARE TO BEAR ON NATURAL UNDISTRICTED SOIL OR ENGINEERED FILL. SLS = 125 kPa/ULS = 175 kPa
2. BEARING CAPACITY USED IN THE FOOTING DESIGN IS ASSUMED TO BE
3. BEARING SURFACE IS TO BE INSPECTED BY GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.
4. FOR FURTHER INFORMATION SEE GEOTECHNICAL REPORT NO. PG4528-MEMO.01 PREPARED BY PATERSON GROUP
5. STEP FOOTINGS WHERE INDICATED ON PLAN AT THE RATE OF 1 HORIZONTAL TO 1 VERTICAL.
6. SLABS ON GRADE
1. SLABS ON GRADE TO BE UNREINFORCED UNLESS NOTED.
2. FOR COMPOSITION & COMPACTION OF FILL SUPPORTING SLABS ON GRADE SEE GEOTECHNICAL REPORT.
3. PROVIDE 12 mm ASPHALT IMPREGNATED FIBREBOARD BETWEEN SLABS ON GRADE & FOUNDATION WALLS OR COLUMNS.
4. SAWCUT SLAB ON GRADE TO (1/4 x SLAB DEPTH) 8 HOURS AFTER CONCRETE PLACEMENT.
5. SPACE SAWCUTS ON A 4500 mm x 4500 mm MAXIMUM GRID. AVOID LONG & NARROW SAWCUT PATTERNS. LOCATE SAWCUTS ALONG COLUMN LINES WHERE POSSIBLE. CONTRACTOR IS TO PROVIDE THE ENGINEER WITH DOCUMENTATION SHOWING PROPOSED SAWCUT LOCATIONS FOR APPROVAL UNLESS SAWCUTS LOCATIONS ARE OTHERWISE INDICATED ON THESE DRAWINGS.
7. MATERIALS
1. CONCRETE STRENGTH AT 28 DAYS TO BE AS NOTED ON THESE DRAWINGS AND SPECIFICATIONS.
2. REINFORCING STEEL TO BE DEFORMED GRADE 400R WITH Fy = 400 MPa
3. HOLLOW STRUCTURAL STEEL SECTIONS TO BE ASTM A500 GRADE C OR G40.21 350W CLASS C.
4. ALL "W" & "W" SHAPE STEEL SECTIONS TO BE GRADE G40.21 350W WITH Fy = 350 MPa.
5. ALL OTHER STRUCTURAL STEEL TO BE GRADE G40.21 300W WITH Fy = 300 MPa UNLESS NOTED OTHERWISE.
6. ALL STRUCTURAL STEEL TO RECEIVE 1 SHOP APPLIED COAT OF PRIMER UNLESS NOTED.
7. ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR IS TO BE HOT DIP GALVANIZED UNLESS NOTED.
8. ANCHOR BOLTS TO BE A307.
9. ALL OTHER BOLTS TO BE A325.
10. A325 BOLTS EXPOSED TO EXTERIOR ARE TO BE STAINLESS STEEL.
11. A307 BOLTS EXPOSED TO EXTERIOR ARE TO BE GALVANIZED.
12. CONCRETE BLOCK TO BE H/15/A/M
13. CONCRETE BLOCK MASONRY MORTAR TO BE 8.5 MPa TYPE 'S' U/N.
14. CONCRETE BLOCK MASONRY GROUT TO BE 12 MPa "HIGH SLUMP" (200-250 mm SLUMP)
8. CONCRETE COVER
1. FOOTINGS 75 mm BOTTOM
50 mm SIDES
2. WALLS 40 mm UNLESS NOTED OTHERWISE
3. COLUMNS 40 mm
9. REINFORCING STEEL DESIGNATION
8-20M x 1500 T/B
B = NUMBER OF BARS
20M = SIZE OF BARS
1500 = LENGTH OF BARS
T = BAR LOCATION - TOP
B = BAR LOCATION - BOT
LENGTH OF BARS DOES NOT INCLUDE HOOKS OR BENDS
10. DOWELS
DOWELS TO FOOTINGS TO BE OF SAME DIAMETER AS THE LOWEST LIFT OF VERTICAL REINFORCING IN COLUMNS, PIERS OR WALLS.
11. REINFORCING STEEL SPLICES
REINFORCING STEEL SPLICES TO BE AS NOTED IN REINFORCING BAR LAP LENGTH TABLE ON S01 U/N.
12. OPENINGS
1. AT OPENINGS IN WALLS PROVIDE 2-20M T & B OF OPENING EXTENDING 600 mm MIN. BEYOND CORNERS OF OPENINGS.
2. FOR ADDITIONAL OPENINGS 300 x 300 OR SMALLER SEE ARCHITECTURAL & MECHANICAL DRAWINGS.
3. REPORT ANY OPENINGS LARGER THAN 300 x 300 NOT SHOWN ON THESE DRAWINGS TO THE ENGINEER.

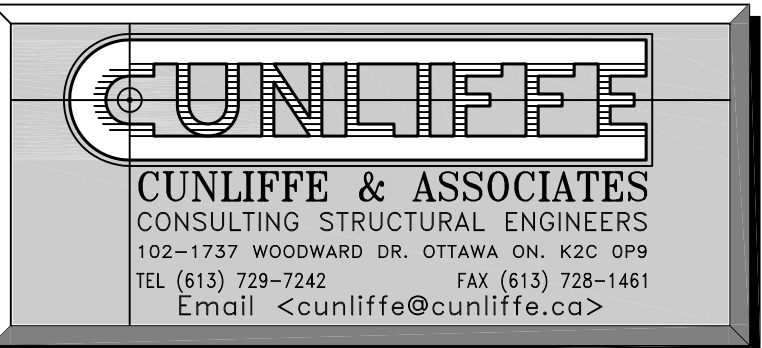
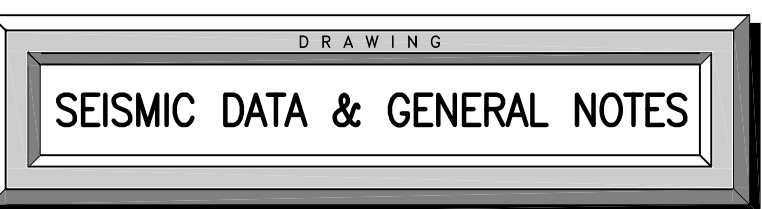
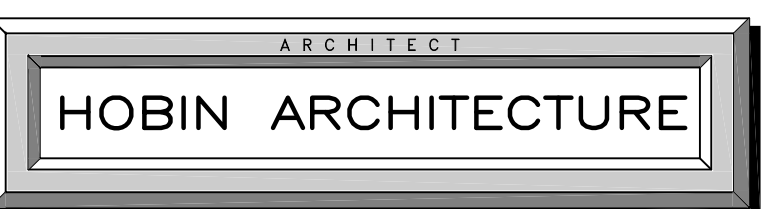
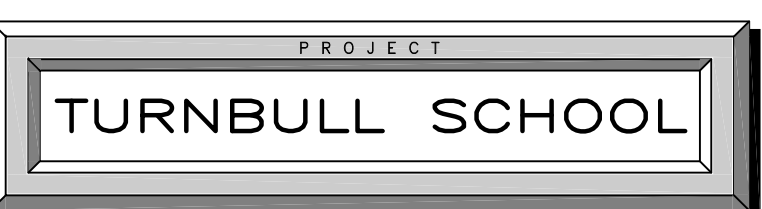
HILTI PRODUCT INSTALLATION REQUIREMENTS:
THE CONTRACTOR THAT WILL BE INSTALLING ANY HILTI PRODUCT SHALL BE TRAINED & CERTIFIED BY HILTI CANADA'S REPRESENTATIVE ON THE ACCEPTABLE INSTALLATION PROCEDURES FOR THE SPECIFIC HILTI PRODUCT BEING USED. THE CONTRACTOR IS TO PRESENT PROOF OF THIS TRAINING UPON REQUEST OF DEPARTMENTAL REPRESENTATIVE.

DRAWING LIST

- S01 SEISMIC DATA & GENERAL NOTES
S02 TYPICAL DETAILS
S100 FOUNDATION PLAN & ROOF PLAN
S200 BRACE FRAME ELEVATIONS
S300 SECTIONS & DETAILS
S301 SECTIONS & DETAILS

No.	REVISION	DATE
2	ISSUED FOR CONSTRUCTION	2018/10/12
1	ISSUED FOR PERMIT	2018/06/29

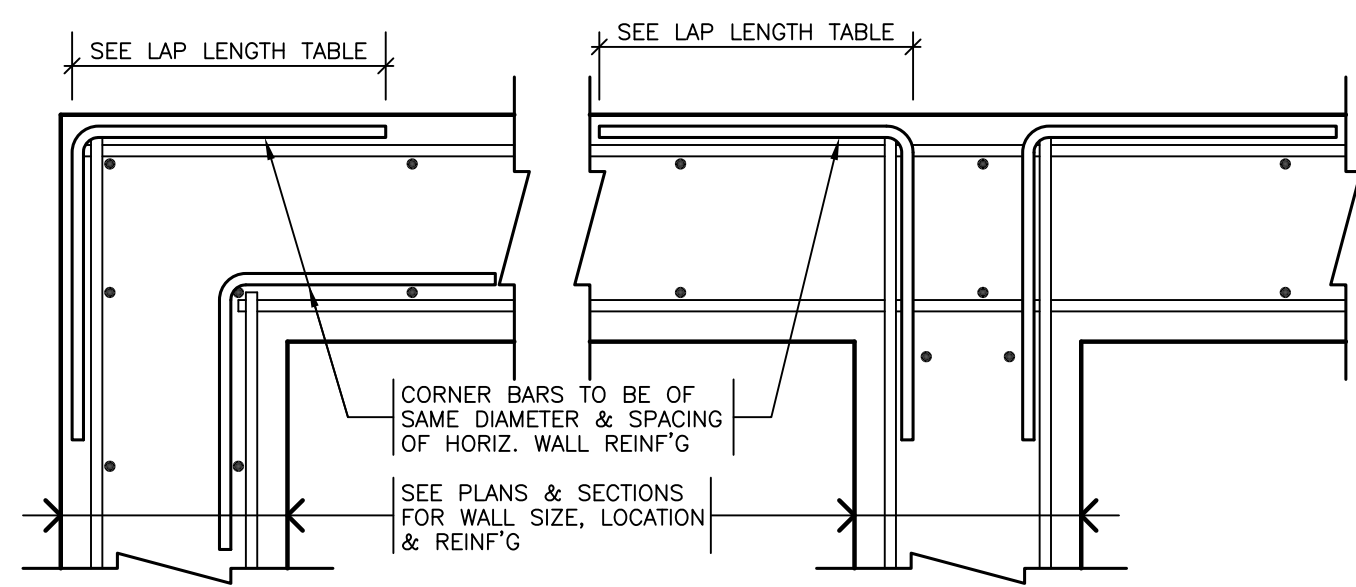
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4. DO NOT SCALE DRAWINGS.



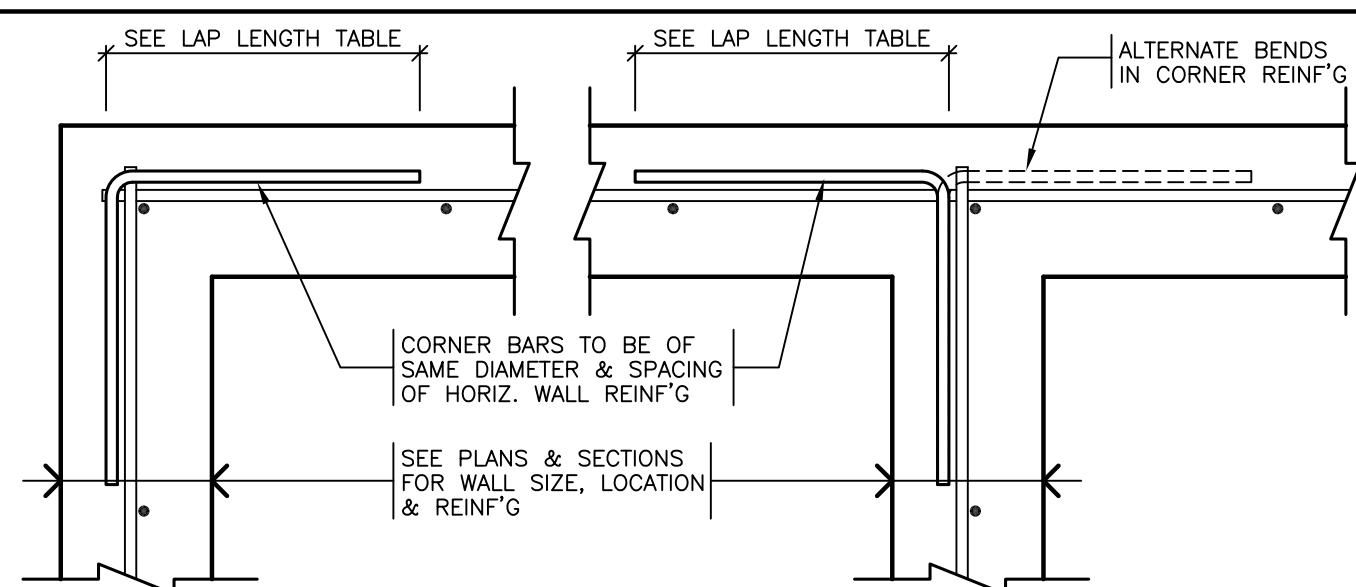
ENGINEER'S SEAL: [Signature] J.C. CUFF 100187411 OCT. 12, 2018 PROVINCE OF ONTARIO

SCALE: 1 : 100

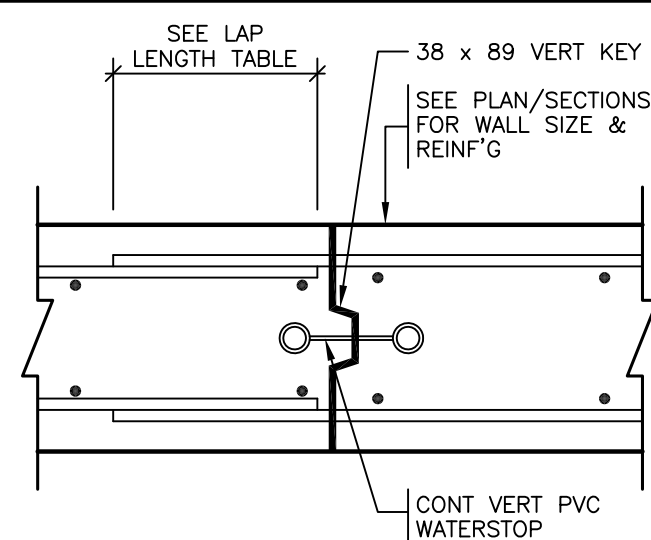
DRAWN A.M.	REVIEWED J.C.
PROJECT NO. 18-052	SHEET NO. S01
REVISION NO.	



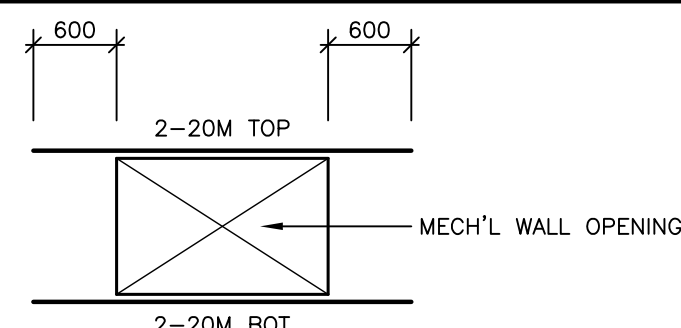
TYPICAL WALL INTERSECTION REINFORCEMENT
CONCRETE WALLS WITH 2 SHEETS OF REINFORCING (WALL THICKNESS GREATER THAN 215 mm)
NOT APPLICABLE TO SHEARWALLS. SEE SHEARWALL ELEVATION DRAWINGS



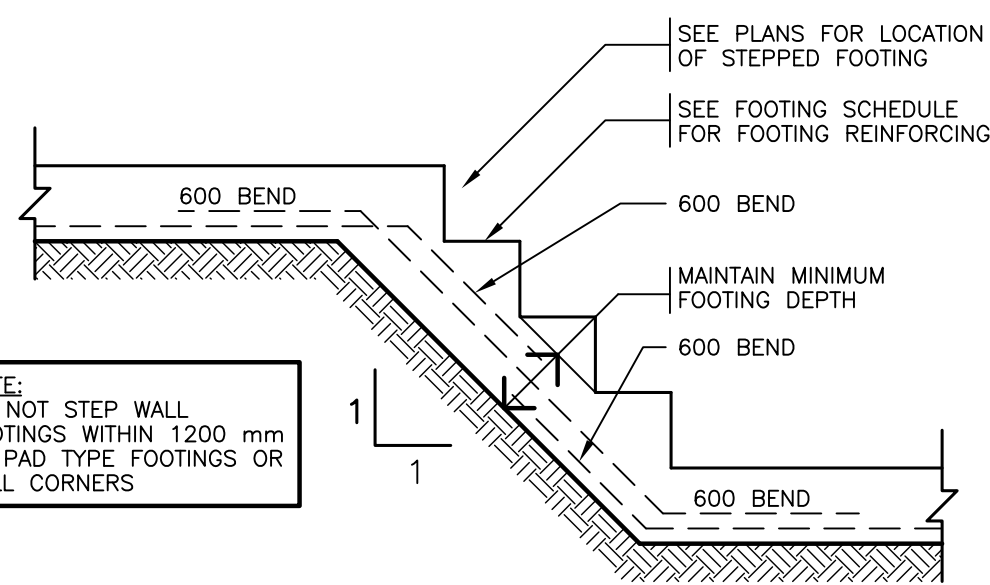
TYPICAL WALL INTERSECTION REINFORCEMENT
CONCRETE WALLS WITH 1 SHEET OF REINFORCING (WALL THICKNESS LESS THAN 215 mm)
NOT APPLICABLE TO SHEARWALLS. SEE SHEARWALL ELEVATION DRAWINGS



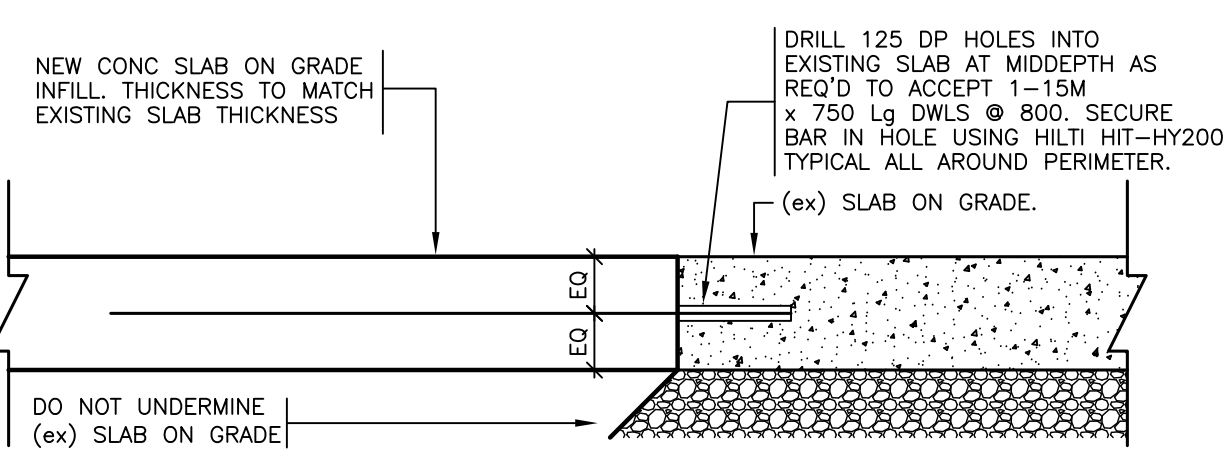
TYPICAL WALL CONSTRUCTION JOINT DETAIL
MAXIMUM SPACING OF CONSTRUCTION JOINTS TO BE 20 METERS



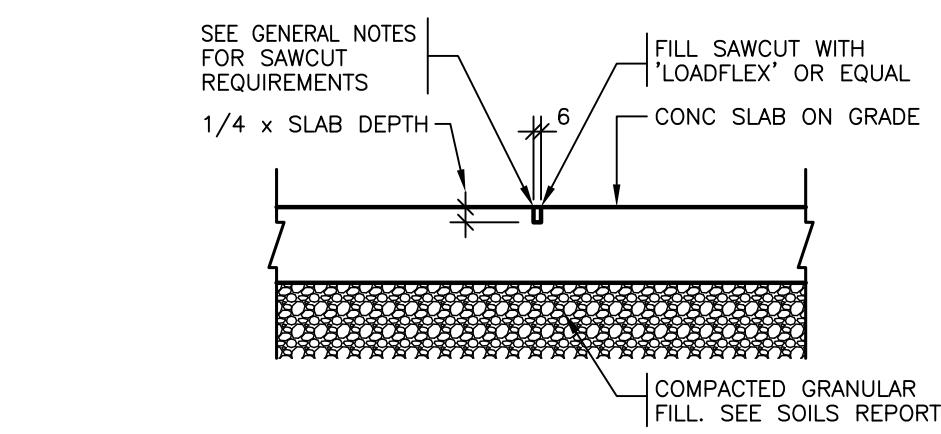
TYPICAL DETAIL AT CONCRETE WALL OPENING U/N



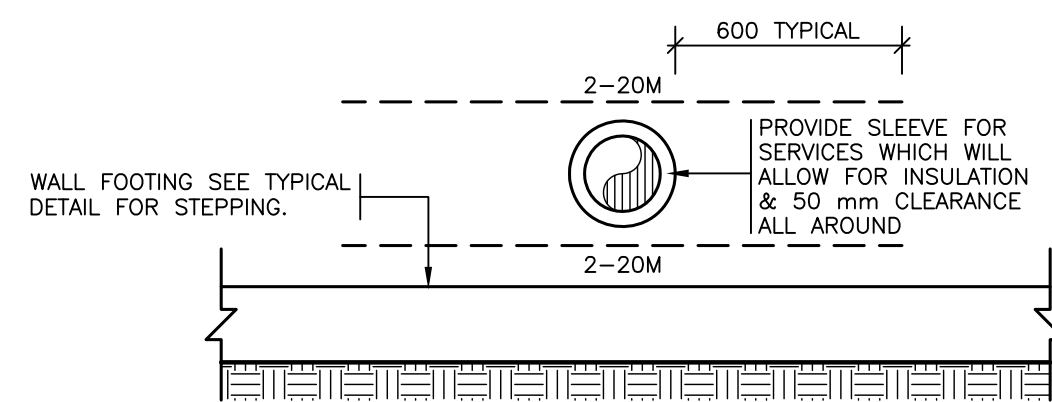
TYPICAL STEPPED WALL FOOTING DETAIL



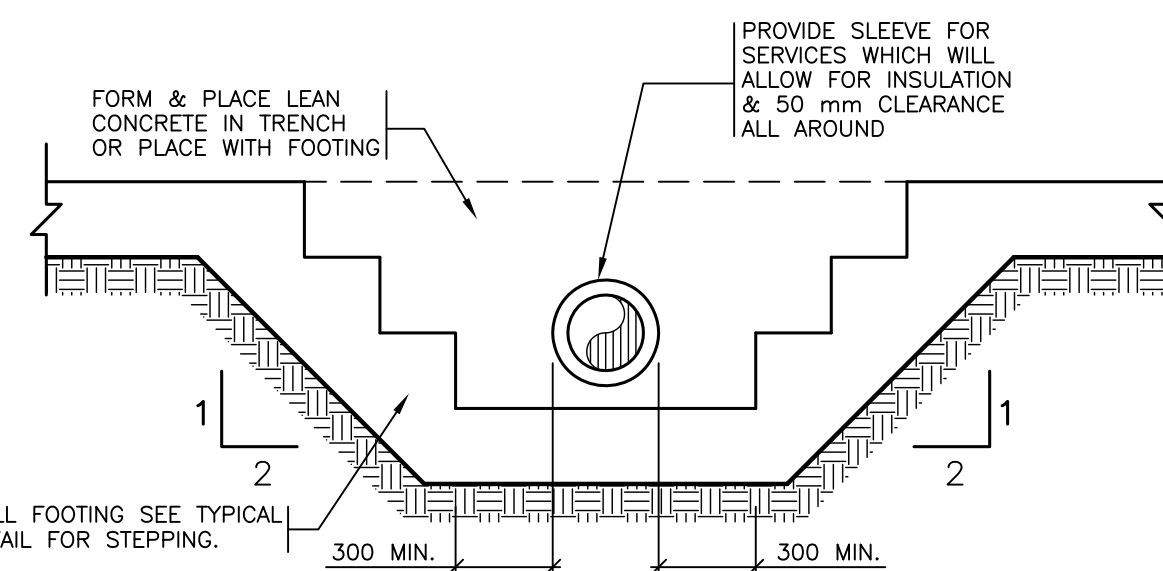
TYP. DETAIL- EXISTING SLAB ON GRADE INFILL



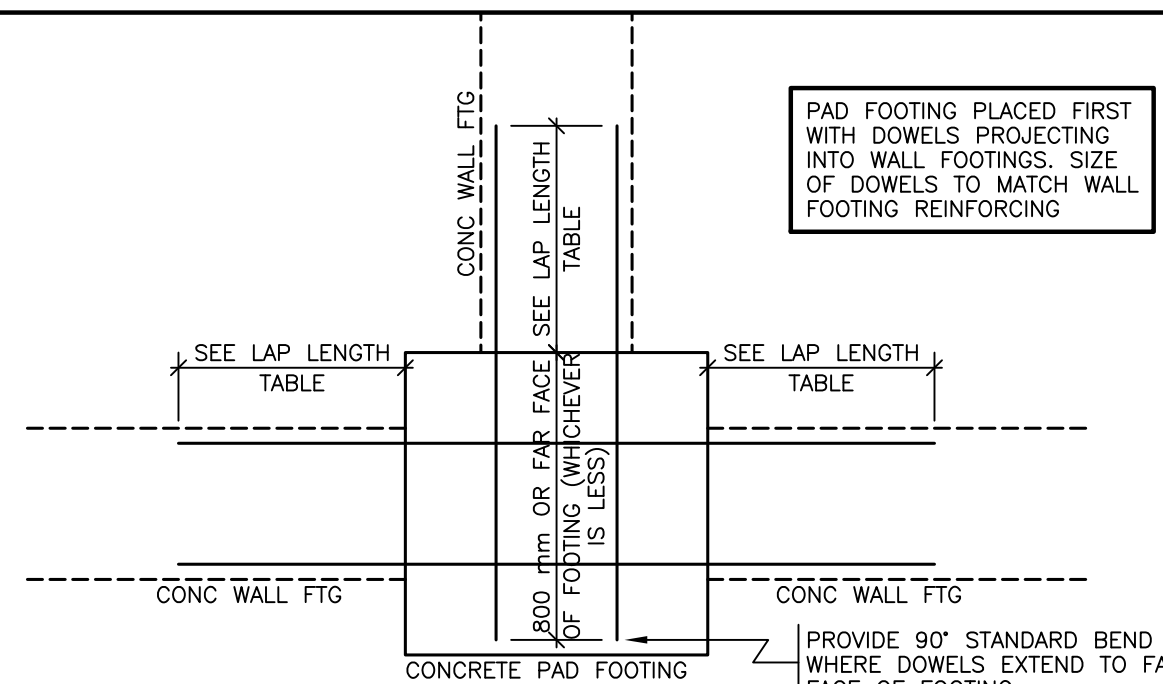
TYPICAL SAWCUT IN SLAB ON GRADE DETAIL



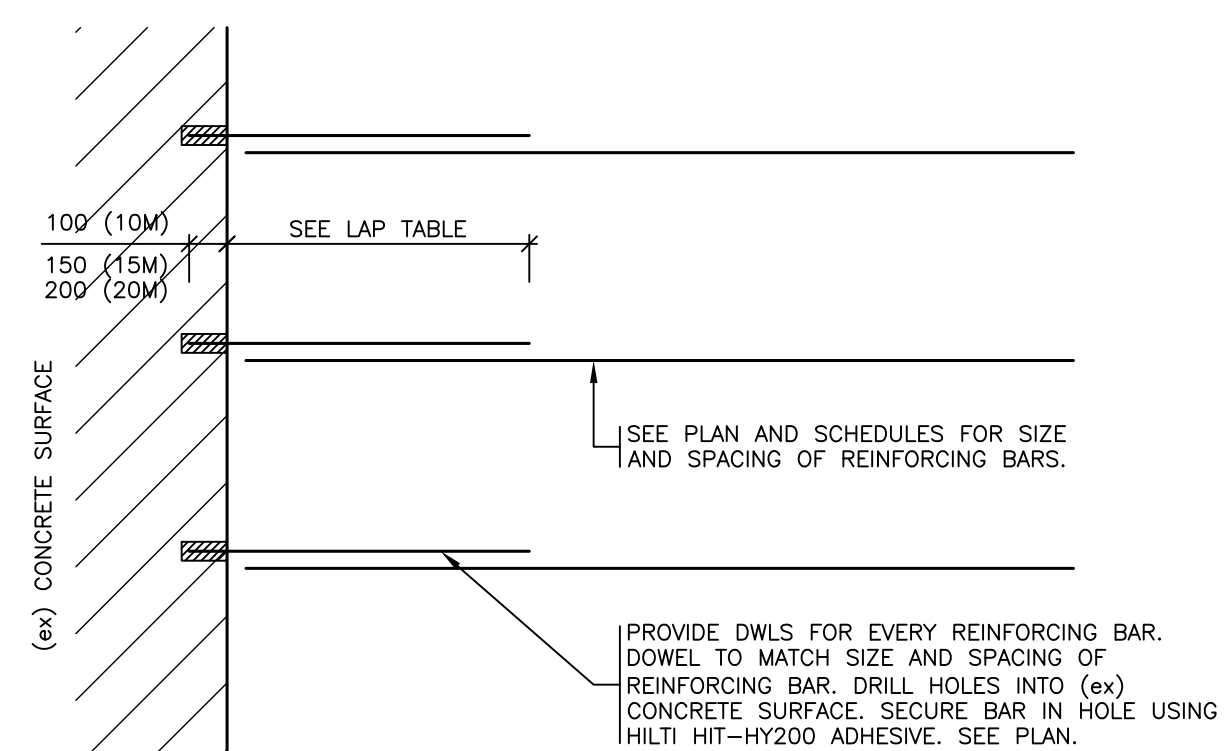
DETAIL-Foundation AT SAN & STORM ENTRY
SEE PLANS AND MECHANICAL FOR LOCATION



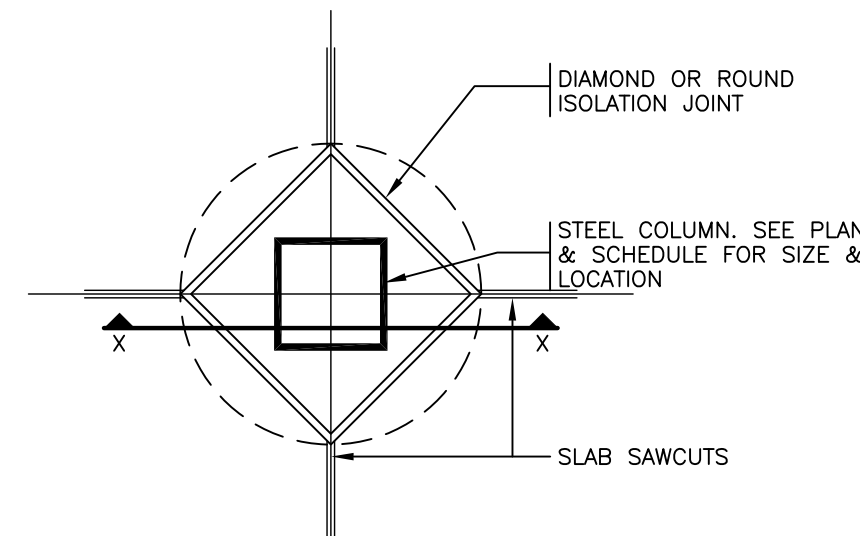
DETAIL-Foundation AT UNDERGROUND SERVICE ENTRY
SEE PLANS AND MECHANICAL FOR LOCATION



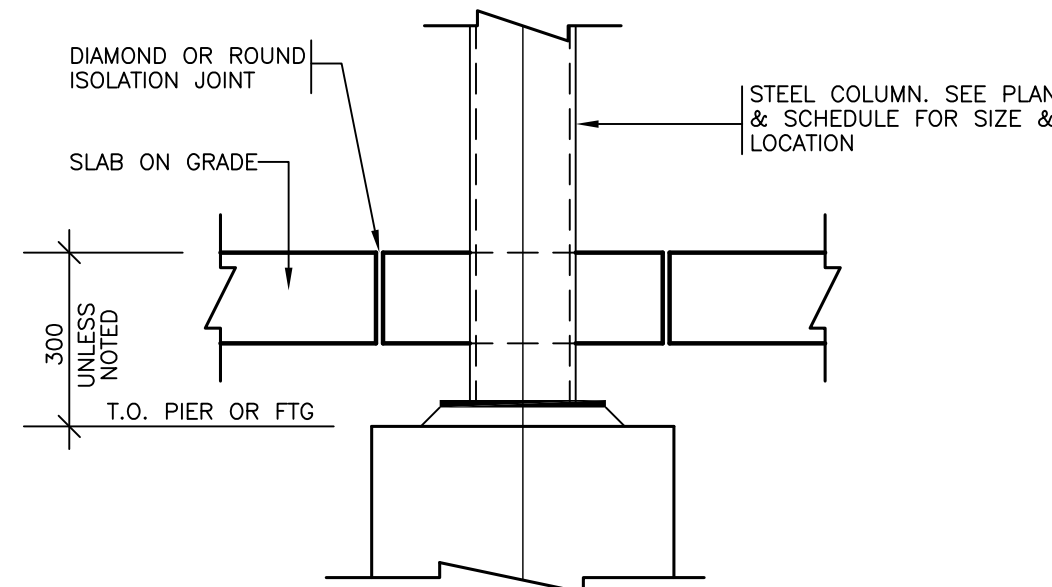
PLAN DETAIL AT INTERSECTION OF PAD FOOTING & WALL FOOTINGS



TYPICAL DETAIL FOR DOWELING INTO (ex) CONCRETE FOUNDATIONS

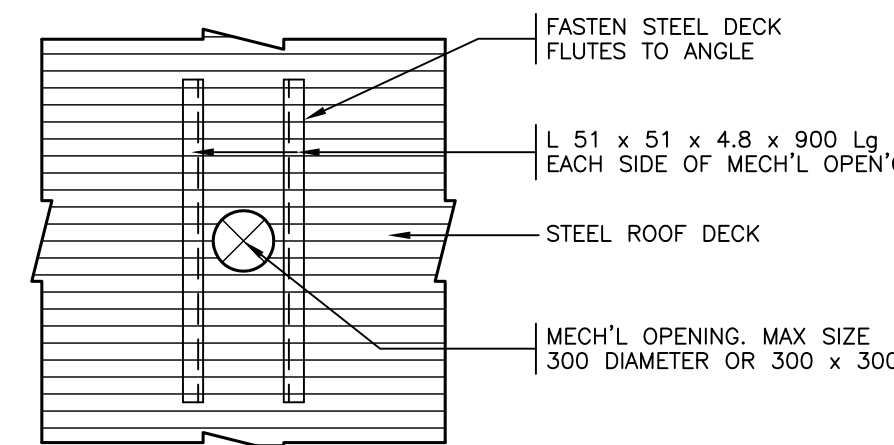


PLAN

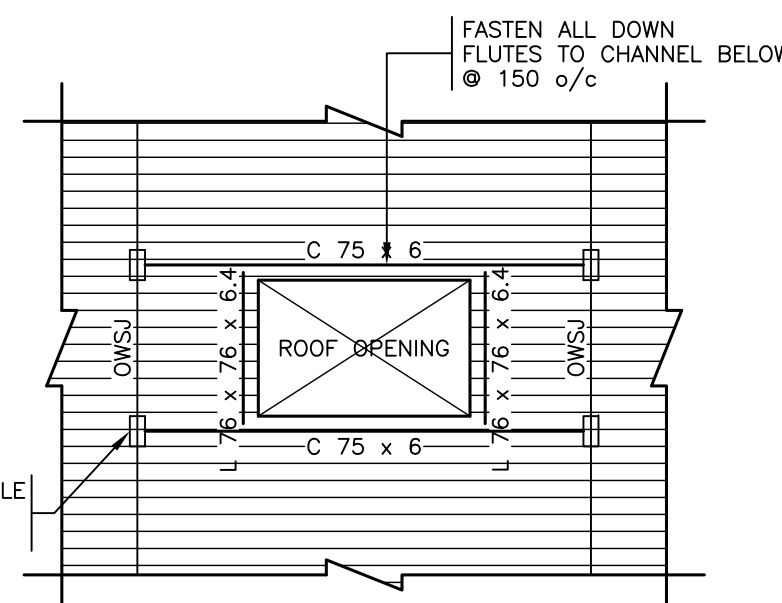


SECTION X-X

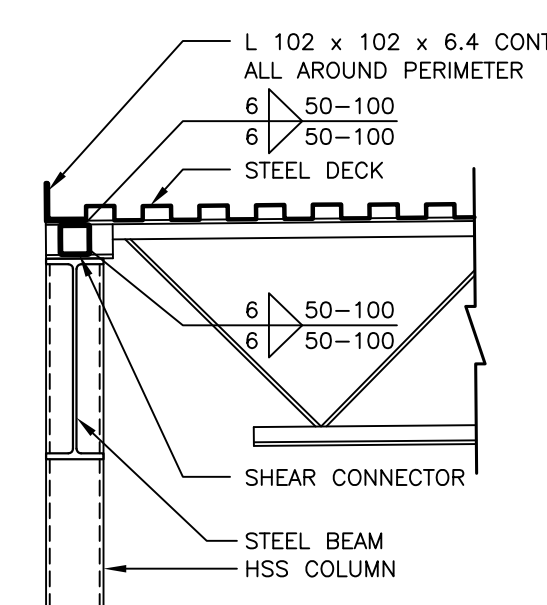
PLAN & SECTION AT COLUMN ISOLATION JOINTS IN SLABS ON GRADE



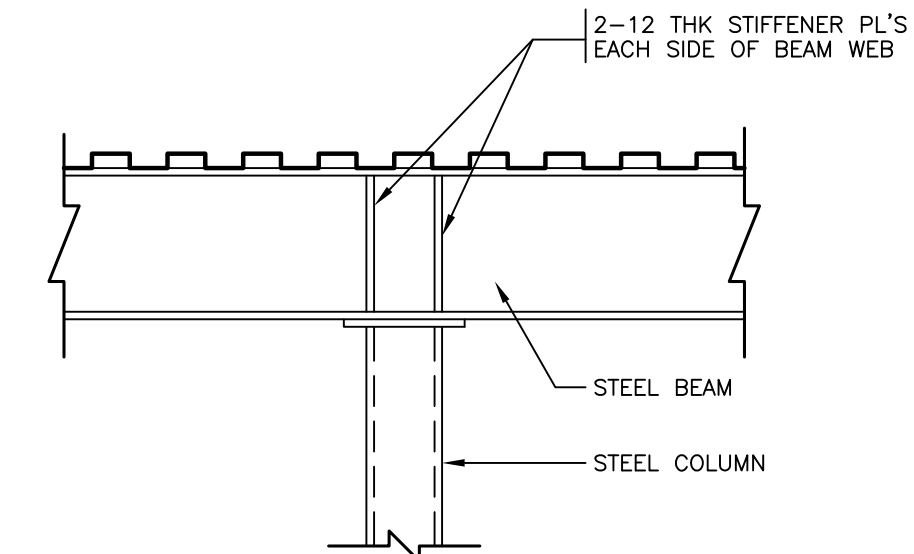
PLAN DETAIL-MECHANICAL OPENINGS



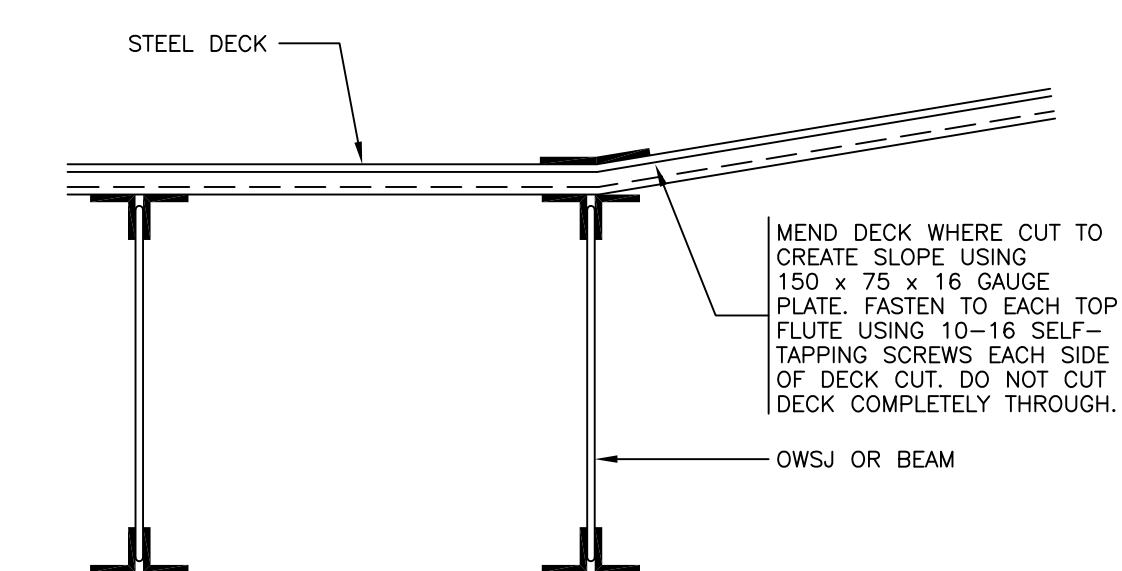
TYPICAL DETAIL- ADDITIONAL FRAMING AT ROOF OPENINGS



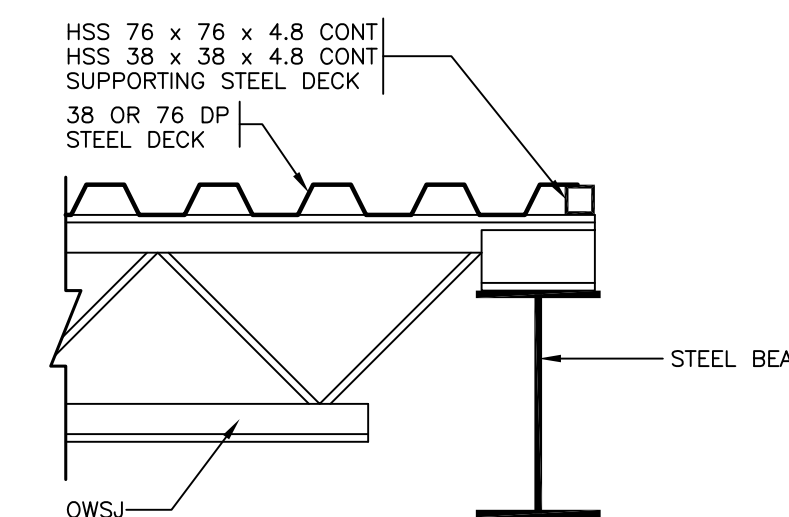
TYPICAL DETAIL SHEAR CONNECTION DETAIL



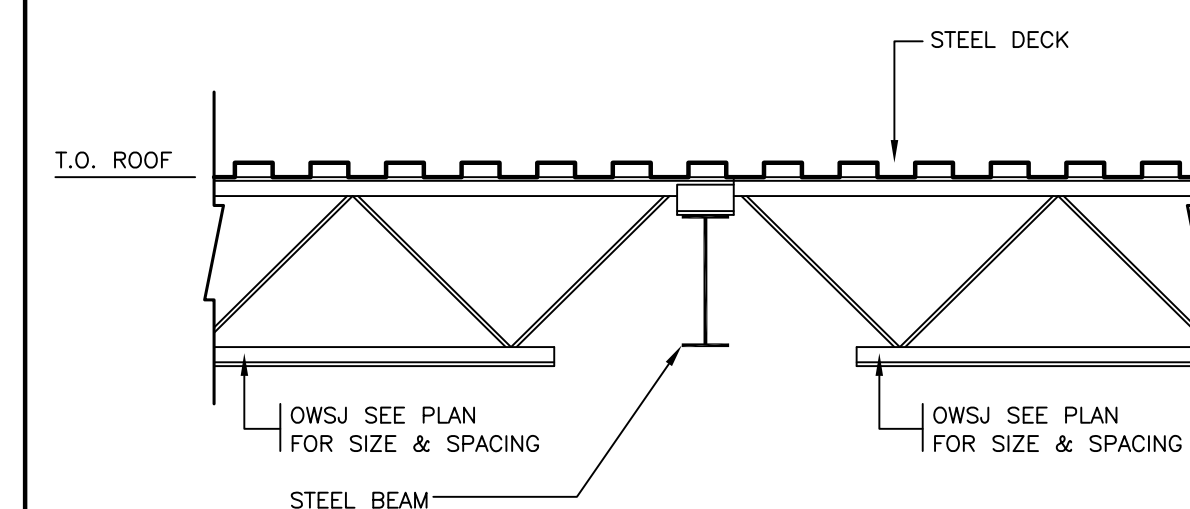
CANTILEVERED OR MULTI-SPAN BEAM DETAIL



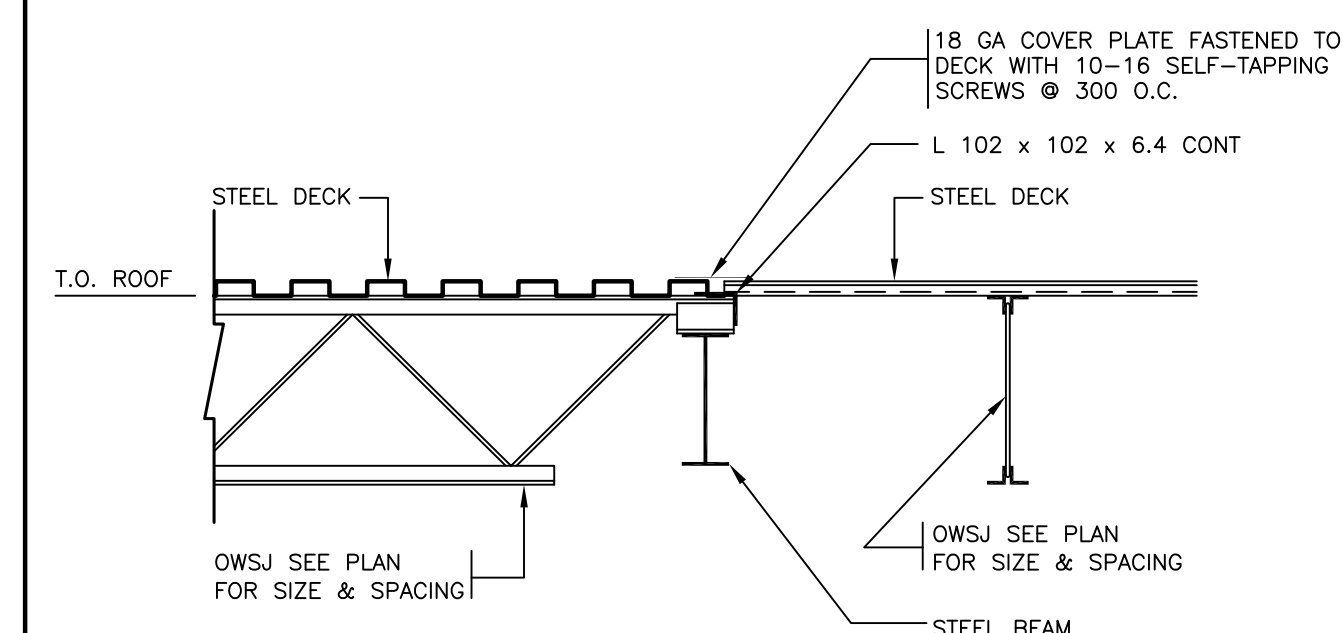
DETAIL-MENDING DECK AT CUT LINES



TYP. DETAIL-ALTERNATE SUPPORT OF STEEL DECK



TYPICAL SECTION-STEEL BEAM BELOW ROOF



TYPICAL SECTION-STEEL BEAM BELOW ROOF

2	ISSUED FOR CONSTRUCTION	2018/10/12
1	ISSUED FOR PERMIT	2018/06/29

No.	REVISION	DATE

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4. DO NOT SCALE DRAWINGS.

PROJECT
TURNBULL SCHOOL

ARCHITECT
HOBIN ARCHITECTURE

DRAWING
TYPICAL DETAILS

CUNLIFFE
CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
1022-1737 WOODWARD DR. OTTAWA, ON, K2C 0P9
TEL (613) 729-7242 FAX (613) 728-1461
Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL

SCALE
1 : 100

DRAWN
A.M.

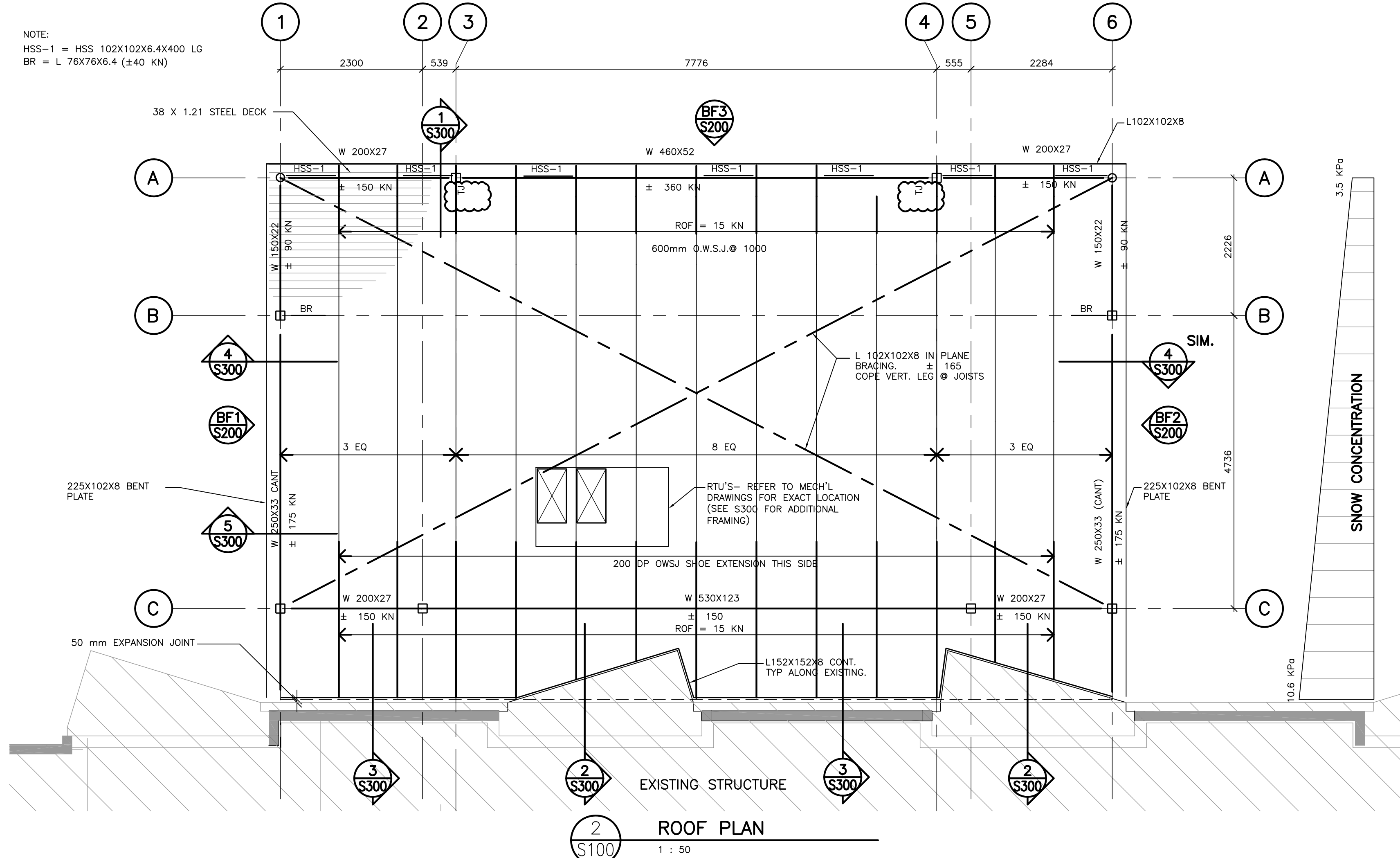
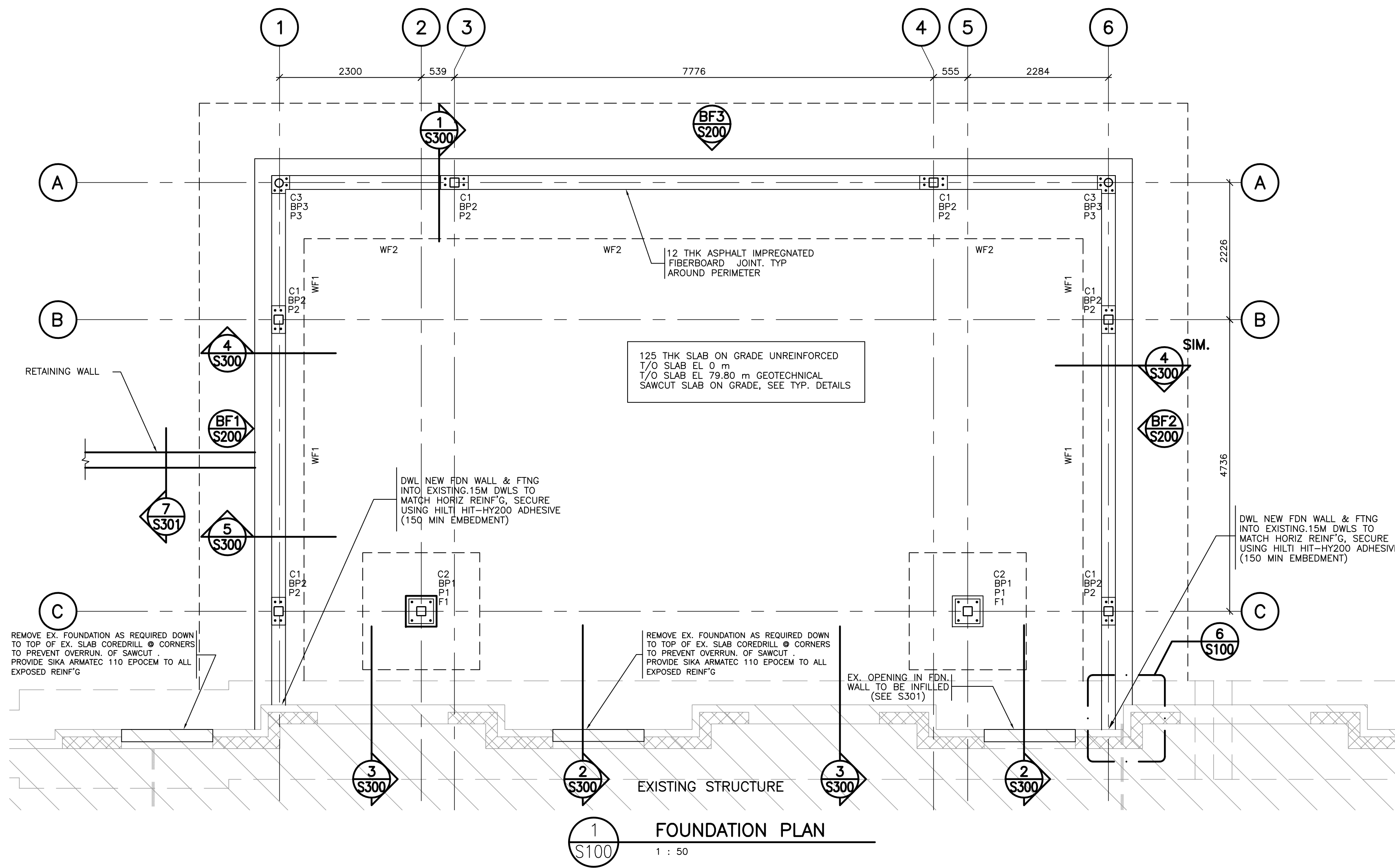
REVIEWED
J.C.

PROJECT NO.
18-052

SHEET NO.
S02

REVISION NO.

LICENSED PROFESSIONAL ENGINEER
OCT. 12, 2018
J.C. CUFF
100187411
PROVINCE OF ONTARIO



FOOTING SCHEDULE		
MARK	SIZE	REINF.
F1	1900X1900X250 DP	7-15M X1800 BEW(H)
WF1	1700X250 THK	5-15M BUL.TLL CONT 1-15M X1600 LG BLL @ 200 O/C (H) TUL @ 400 O/C (H)
WF2	2200X250 THK	8-15M BUL.TLL CONT 1-15M X2100 LG (H) BLL @ 200 O/C (H) TUL @ 400 O/C (H)

NOTES:
 1. SEE GENERAL NOTES ALSO.
 2. ALL FOOTINGS TO BE CENTERED UNDER PIERS, COLUMNS OR WALLS UNLESS NOTED.
 3. WALL FOOTINGS TO EXTEND BEYOND ENDS OF WALLS A DISTANCE EQUAL TO THE SIDE PROJECTIONS.

PIER SCHEDULE	
MARK	SIZE
P1	500X500 C/W 4-25M VERTS 10M TIE @ 300 4-25M DWLS
P2	325X550 LG C/W 4-25M VERTS (TO BE TIED WITHIN WALL, HORIZONTAL BARS ARE TO BE CONT) 4-25M DWLS
P3	SEE BP DETAIL FOR SIZE C/W 4-20M VERTS (TO BE TIED WITHIN WALL, HORIZONTAL BARS ARE TO BE CONT)

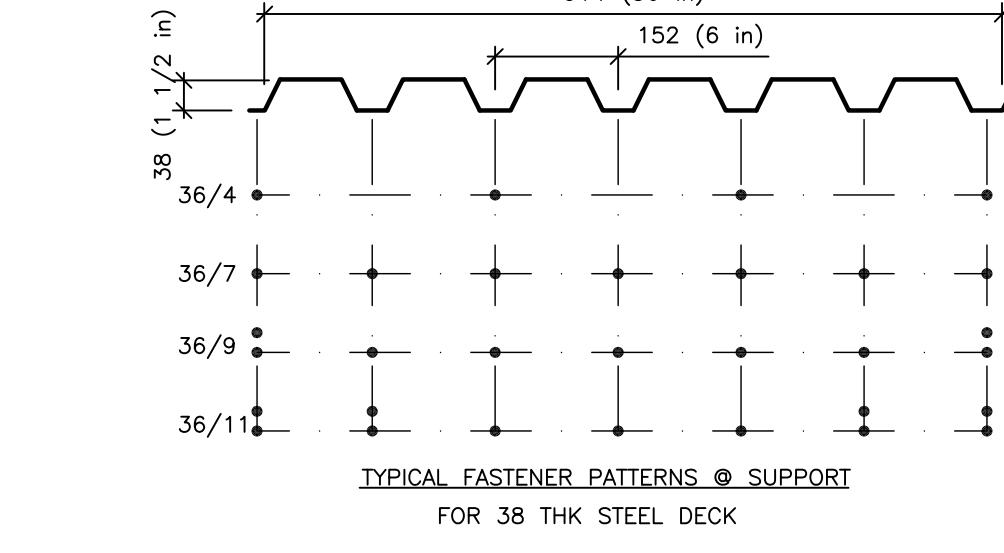
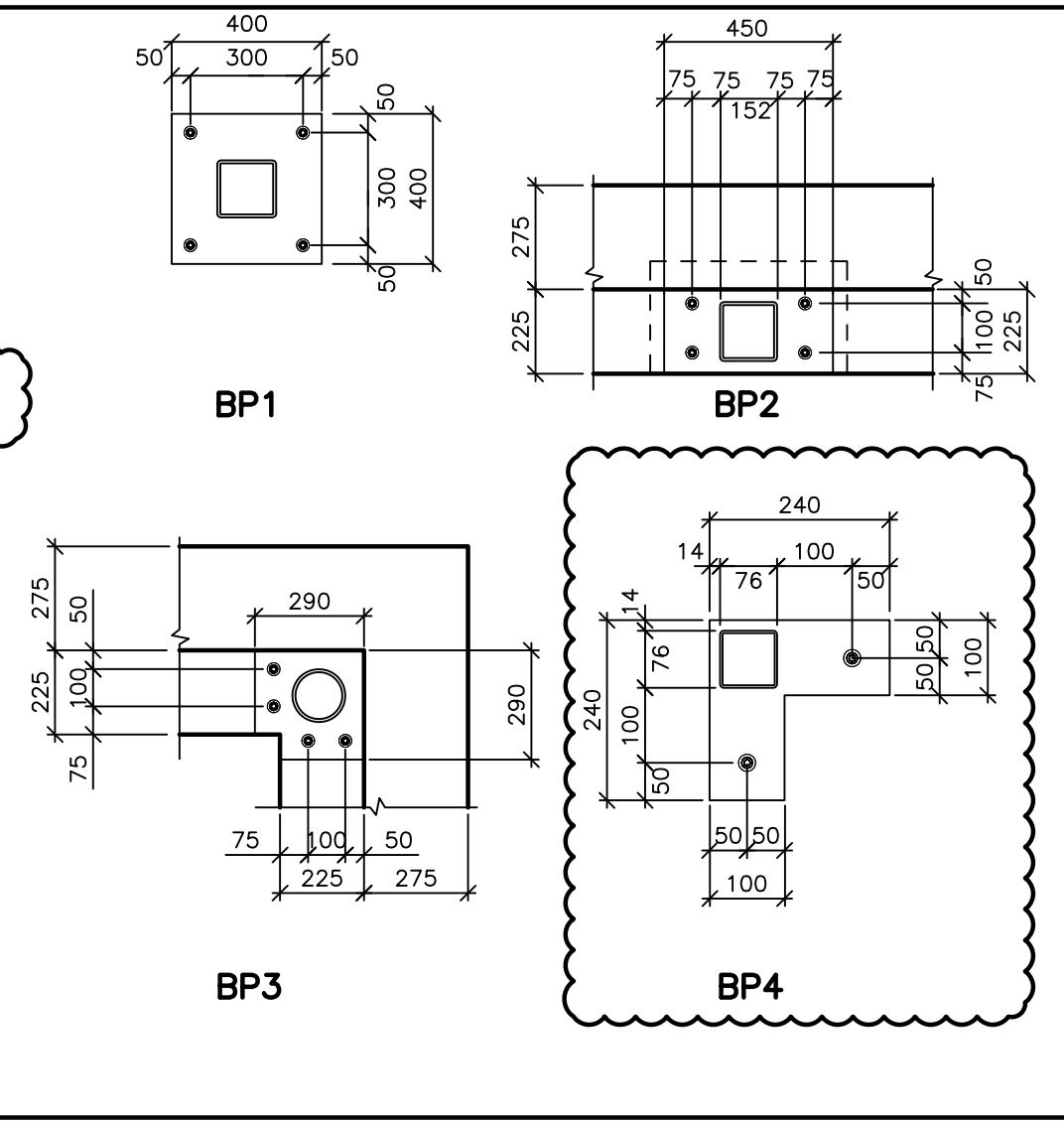
NOTES:
 1. PROVIDE DWLS INTO FTNG TO MATCH VERT. PIER REINFG
 2. PROVIDE 3 SETS OF TIES SPACED @ 75 O/C AT TOP OF PIERS.
 3. HORIZ FND WALL REINFG TO EXTEND THRU CONCRETE PIERS.
 4. TOP OF PIER TO BE 200 BELOW TOP OF SLAB TYP. U/N

COLUMN SCHEDULE	
MARK	SIZE
C1	HSS 152X152X6.4
C2	HSS 152X152X8
C3	ROUND HSS 141@X4.8 OR ROUND HSS 127@X6.4

CONCRETE STRENGTH	
EXT. FDN WALLS & PIERS	: 25 F-2
INT. PIERS	: 25 N
FOOTING	: 25 N
S.O.G.	: 25 N
RETAINING WALL	: 31 C-1

BASEPLATE SCHEDULE	
MARK	SIZE
BP1	400X400X25 THK PLATE C/W 4-19# AB (400 EMBED)
BP2	225X450X25 THK PLATE C/W 4-25# AB (625 EMBED)
BP3	SEE DETAIL X16 THK PLATE 4-19# AB (625 EMBED)
BP3	SEE DETAIL X8 THK PLATE C/W 2-16# HILTI HAS ANCS (143 EMBD) + HY 200 EPOXY.

NOTES:
 1. PROVIDE 25MM NON SHRINK GROUT OR DRYPACK BELOW BASEPLATES EXTENDING 25MM BEYOND PERIMETER OF PLATE AND FOR FULL AREA BELOW PLATE (NOT APPLICABLE TO CAST-IN PLATES)
 2. PROVIDE 50 MM ANCHOR BOLT PROJECTION ABOVE PLATE.
 3. ALL ANCHOR BOLTS TO BE A307 U/N
 4. ALL ANCHOR BOLTS TO BE HEADED
 5. ALL COLUMNS TO BE CENTERED ON BASEPLATES U/N
 6. USE STEEL TEMPLATES AND PRECISE SURVEYING TECHNIQUES TO ACCURATELY LOCATE BASE PLATE & ANCHOR BOLTS.
 7. PROVIDE 50 # x 5 THK WASHERS FOR ANCHORS UP TO 25 #.
 8. PROVIDE 75 # x 6 THK WASHERS FOR ANCHORS LARGER THAN 25 #.



STEEL DECK NOTES: TYPICAL ROOF DECK
 1. 38 x 1.21 INTERLOCKING (CANAM P-3615 OR EQUIVALENT)
 2. BUTTON PUNCH @ 150 o/c
 3. 36/9 FASTENER PATTERN
 4. 19mm PUDDLE WELDS TO SUPPORTING MEMBERS
 5. FASTENER SPACING AROUND PERIMETER & OPENINGS TO BE 150 o/c
 6. DECK BE 3 SPAN MINIMUM
 7. STEEL DECK IS NOT TO BE USED FOR SUPPORT OF ARCH'L, MECH'L OR ELECT'L ITEMS. USE STEEL STRUCTURE FOR SUPPORT.

MECHANICAL ROOF TOP UNIT LEGEND:
 RTU (763 lbs + 300 lbs (CURB) = 1063 lbs)
 1749 x 1124 x (921+356 (CURB)) mm TALL

MECHANICAL CONTRACTOR AND STEEL FABRICATOR TO COORDINATE EXACT DIMENSIONS.
 SEE DETAILS ON S300 FOR ADDITIONAL FRAMING

ROLLOVER FORCES		ROOF LOADS	
ROLLOVER FORCES (NOTED ON PLAN AS ROF=XX kN). DESIGN OF ROLLOVER FORCES NOTED ON PLAN HAVE BEEN MULTIPLIED BY Rd=1.5			
TYPICAL ROOF REINFG & INSUL BOARD	0.60 kPa	MECH'L/ELECT'L CONC LEVELING	3.00 kPa
38 STEEL DECK	0.10	62mm CONC. SLAB ON DECK	1.20
CEILING/MECH/MISC	0.15	ROOFING & INSULATION	1.75
	0.25	STEEL DECK STRUCTURE	0.10
	0.35	CEILING	0.25
		CEILING	0.15
AXIAL COLLECTOR LOADS		DEAD LOAD	7.05 kPa
AXIAL COLLECTOR LOADS (NOTED ON PLAN AS ± XX kN). DESIGN OF AXIAL COLLECTOR LOADS NOTED ON PLAN HAVE BEEN MULTIPLIED BY Rd=1.5		LIVE LOAD	2.67 kPa (OR SNOW)
DEAD LOAD	1.45 kPa	TOTAL LOAD	9.72 kPa (OR DL+SNOW)
LIVE LOAD	2.67 kPa (OR SNOW)		
TOTAL LOAD	4.12 kPa (OR DL+SNOW)		

- NOTES
- SEE DRAWING S01 FOR GENERAL NOTES
 - SEE DRAWING S02 FOR SCHEDULES
 - SEE DRAWING S03 FOR TYPICAL DETAILS
 - Q.W.S.J.'S
 - Q.W.S.J.L.E.G.E.N.D
 - TIE JOIST = TJ
 - PROVIDE 2-12 mm THK STIFFENER PLATES EACH SIDE OF ALL BEAM WEBS WHICH ARE CONTINUOUS OVER SUPPORTS (i.e. COLUMNS)
 - OWSJ TOP & BOTTOM CHORD BRIDGING
 - THE BRIDGING LINES INDICATED ON PLAN ARE TO BE CONSIDERED A MINIMUM
 - OWSJ MANUFACTURER TO REVIEW BRIDGING REQUIREMENTS WITH RESPECT TO ERECTION & WIND SUCTION ON THE ROOF AND ADD BRIDGING AS REQUIRED.
 - BRIDGING IS TO BE EQUALLY SPACED OVER LENGTH OF OPEN WEB STEEL JOISTS
 - PROVIDE DIAGONAL BRIDGING AT BEAMS & AT END SPACES.
 - OWSJ MANUFACTURER IS TO SPECIFY SIZE OF BRIDGING ANGLES BUT MINIMUM SIZE TO BE L35X35X3
 - BRIDGING TO BE NEATLY ERECTED IN ROOMS WITHOUT CEILINGS.
 - SEE TYPICAL DETAILS FOR MECH'L UNIT SUPPORT & MECH'L OPENING FRAMING UNLESS NOTED
 - ENSURE THAT WELDING PROCEDURES DO NOT DAMAGE OWSJ'S.
 - REFER TO ARCHITECTURAL DRAWINGS FOR SUPPLEMENTARY INFORMATION AND ALLOW FOR ARCHITECTURAL REVIEW PRIOR TO FABRICATION.
 - MECHANICAL OPENINGS SHOWN ON THIS PLAN ARE 300 x 300 mm IN SIZE OR LARGER. SEE MECH'L, ELECT'L & ARCH'L DWGS FOR SMALLER OPENINGS. CONFIRM SIZE OF OPENINGS WITH MECH'L DWGS. SEE TYPICAL DETAIL ON DWG S03 FOR ADDITIONAL OPENING FRAMING UNLESS NOTED

No.	REVISION	DATE
2	ISSUED FOR CONSTRUCTION	2018/10/12
1	ISSUED FOR PERMIT	2018/06/29

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4. DO NOT SCALE DRAWINGS.

PROJECT
TURNBULL SCHOOL

ARCHITECT
HOBIN ARCHITECTURE

DRAWING
FOUNDATION PLAN & ROOF PLAN

CUNLIFFE
 CUNLIFFE & ASSOCIATES
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 TEL (613) 729-7242 FAX (613) 728-1461
 Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL

SCALE
1 : 50

DRAWN
A.M.

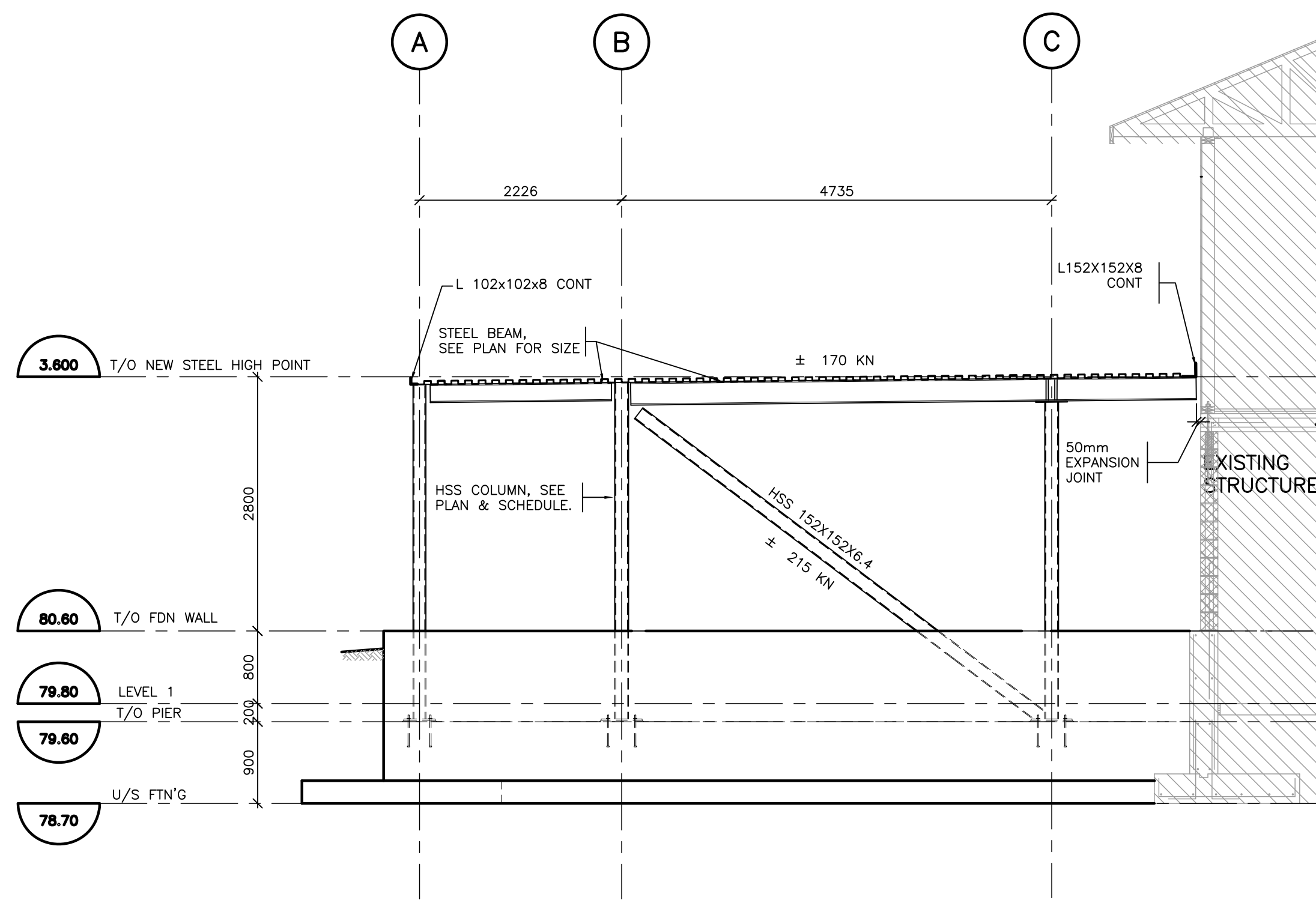
REVIEWED
J.C.

PROJECT NO.
18-052

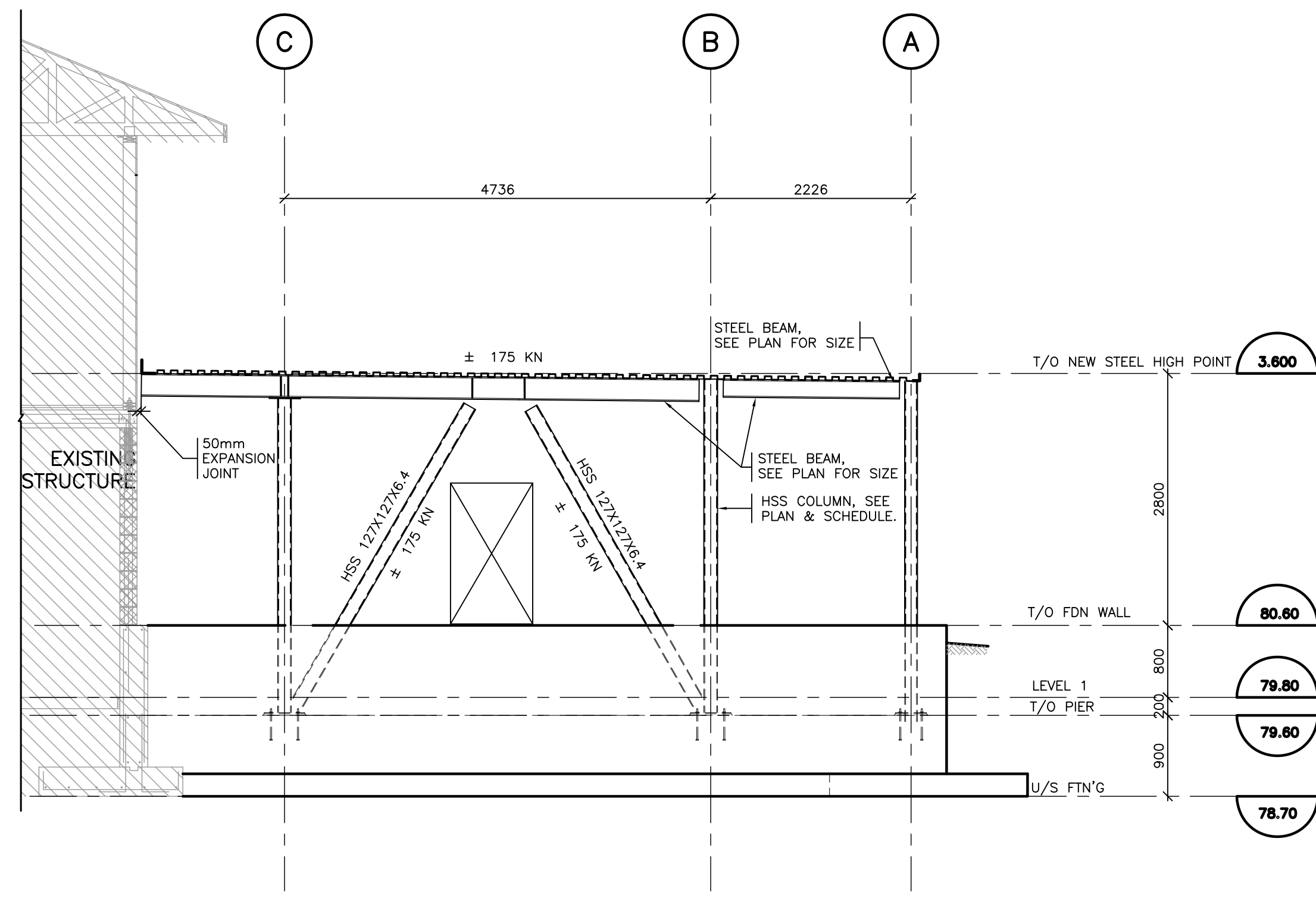
SHEET NO.
S100

REVISION NO.

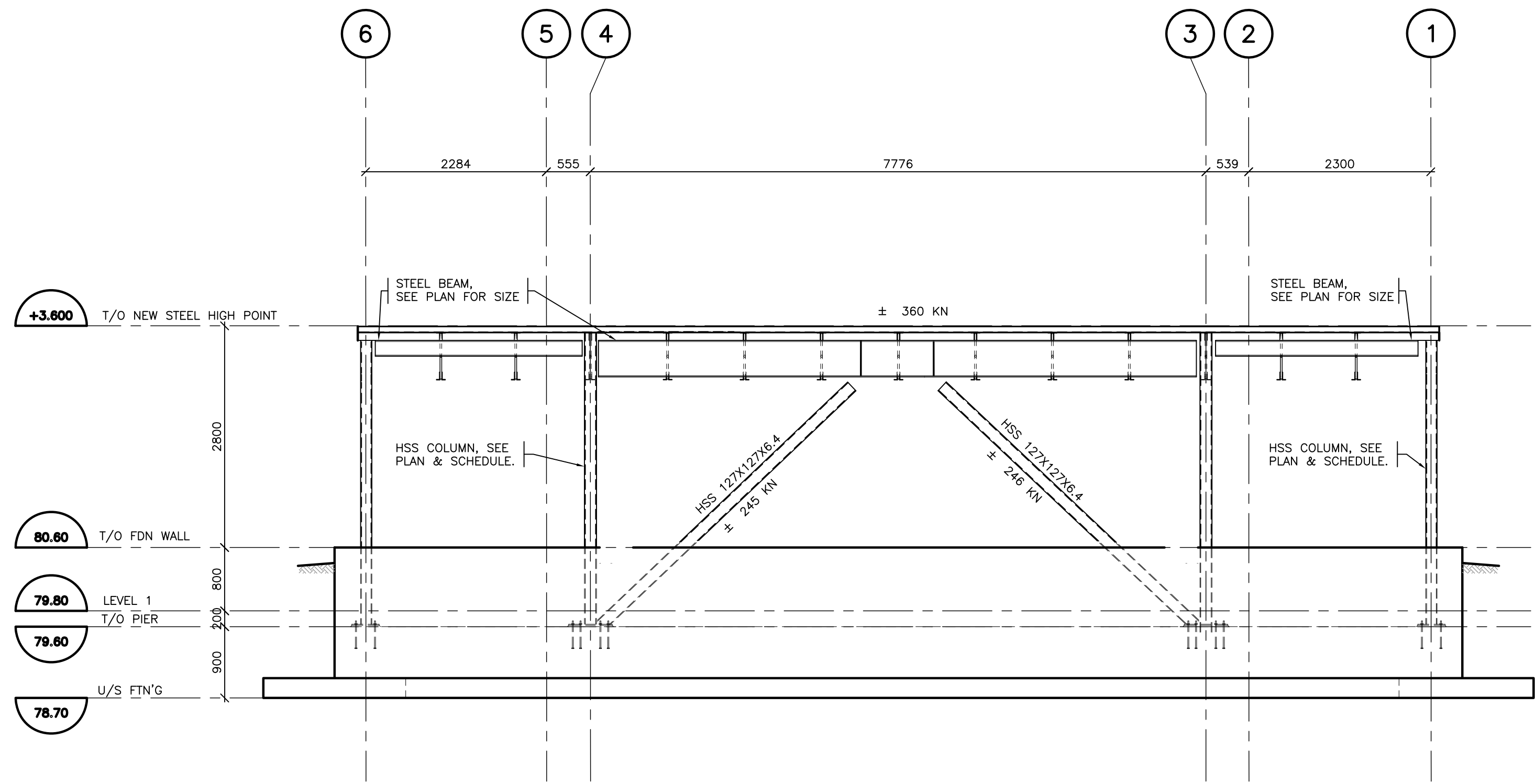
LICENSED PROFESSIONAL ENGINEER
 OCT. 12, 2018
 J.C. CUFF
 100187411
 PROVINCE OF ONTARIO



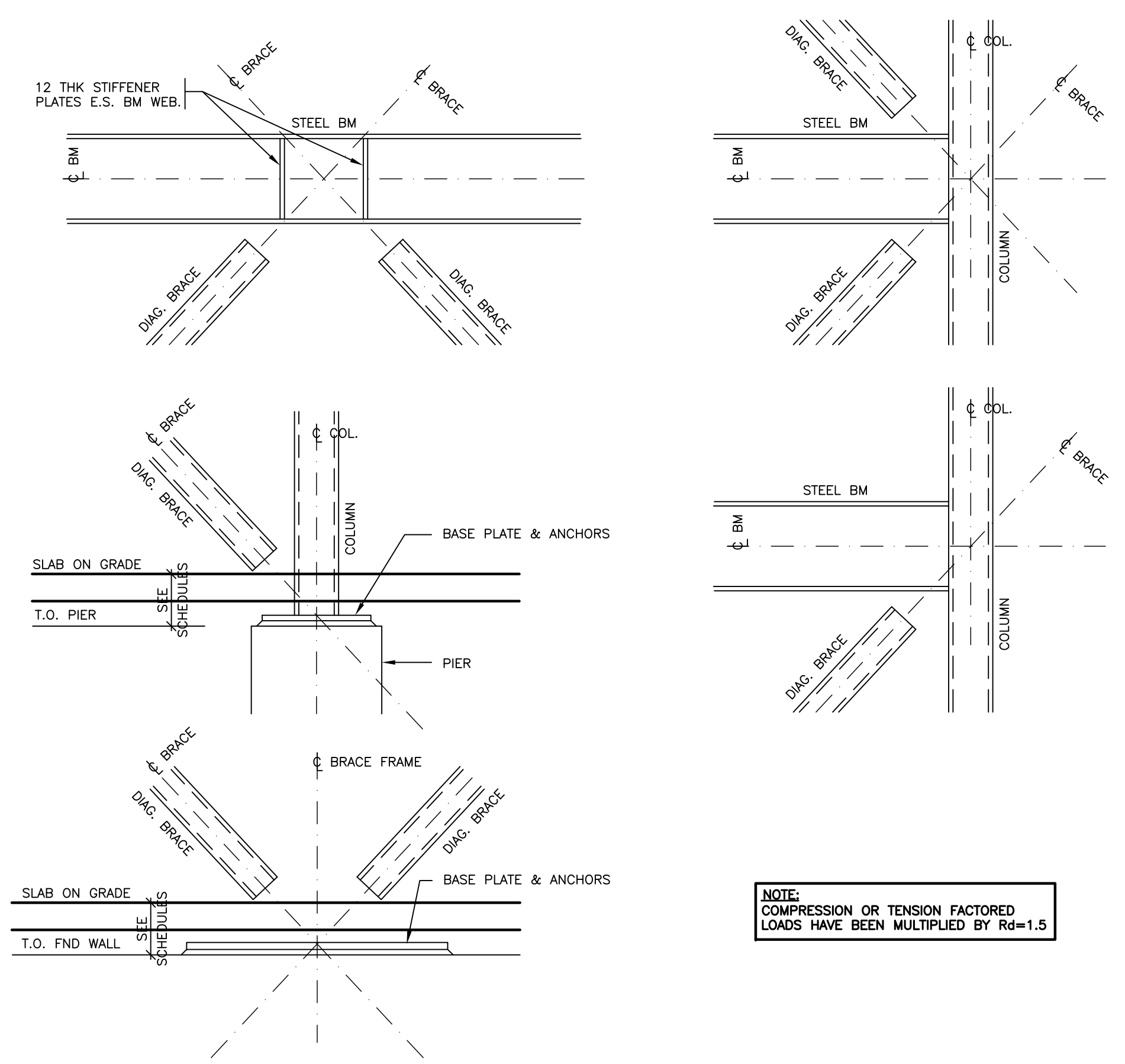
BF1 BRACE ELEVATION
S200 1 : 50



BF2 BRACE ELEVATION
S200 1 : 50



BF3 BRACE ELEVATION
S200 1 : 50



TYPICAL DETAILS @ DIAGONAL BRACE INTERSECTIONS

2	ISSUED FOR CONSTRUCTION	2018/10/12
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No.	REVISION	DATE
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PROJECT
TURNBULL SCHOOL

ARCHITECT
HOBIN ARCHITECTURE

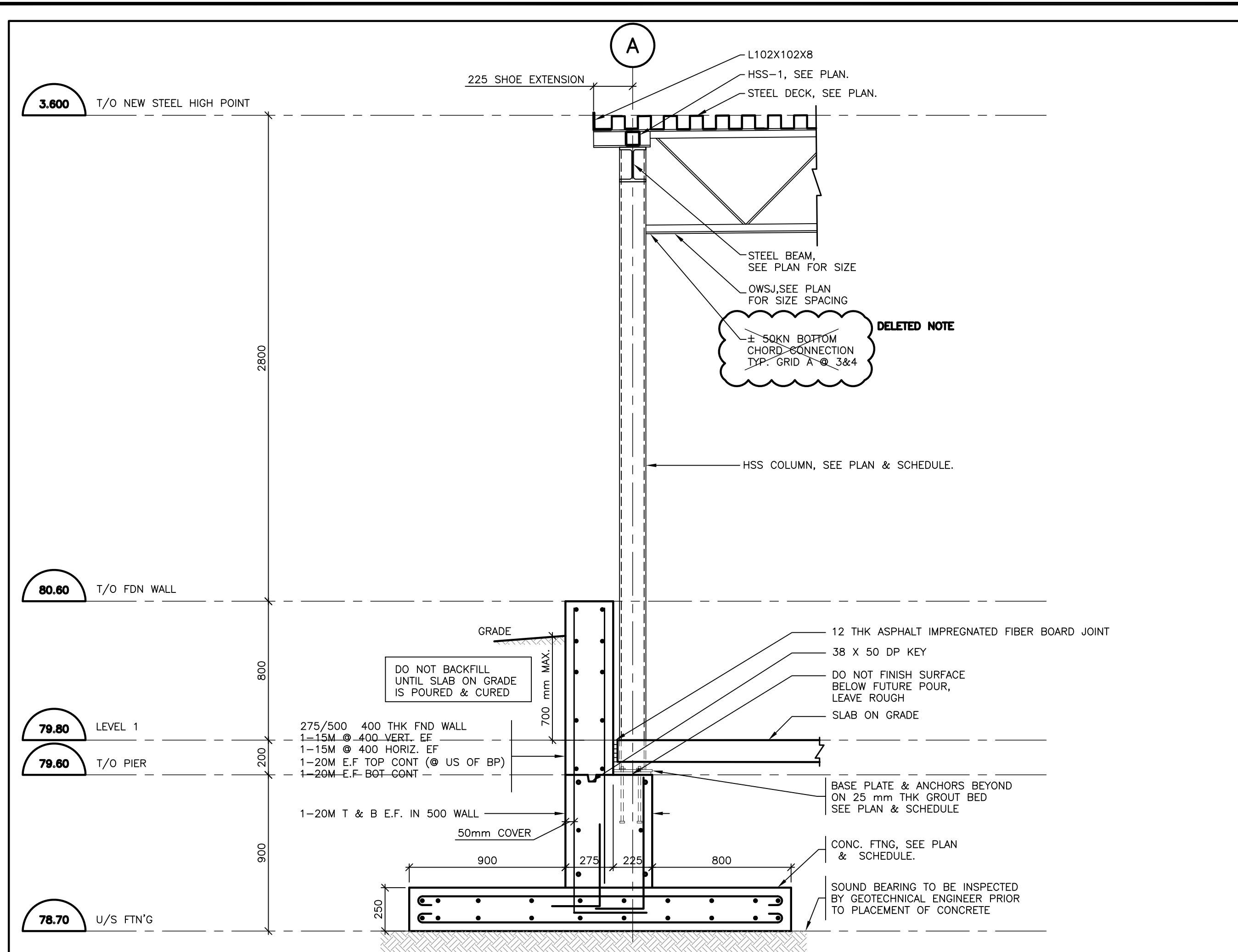
DRAWING
BRACE FRAME ELEVATIONS

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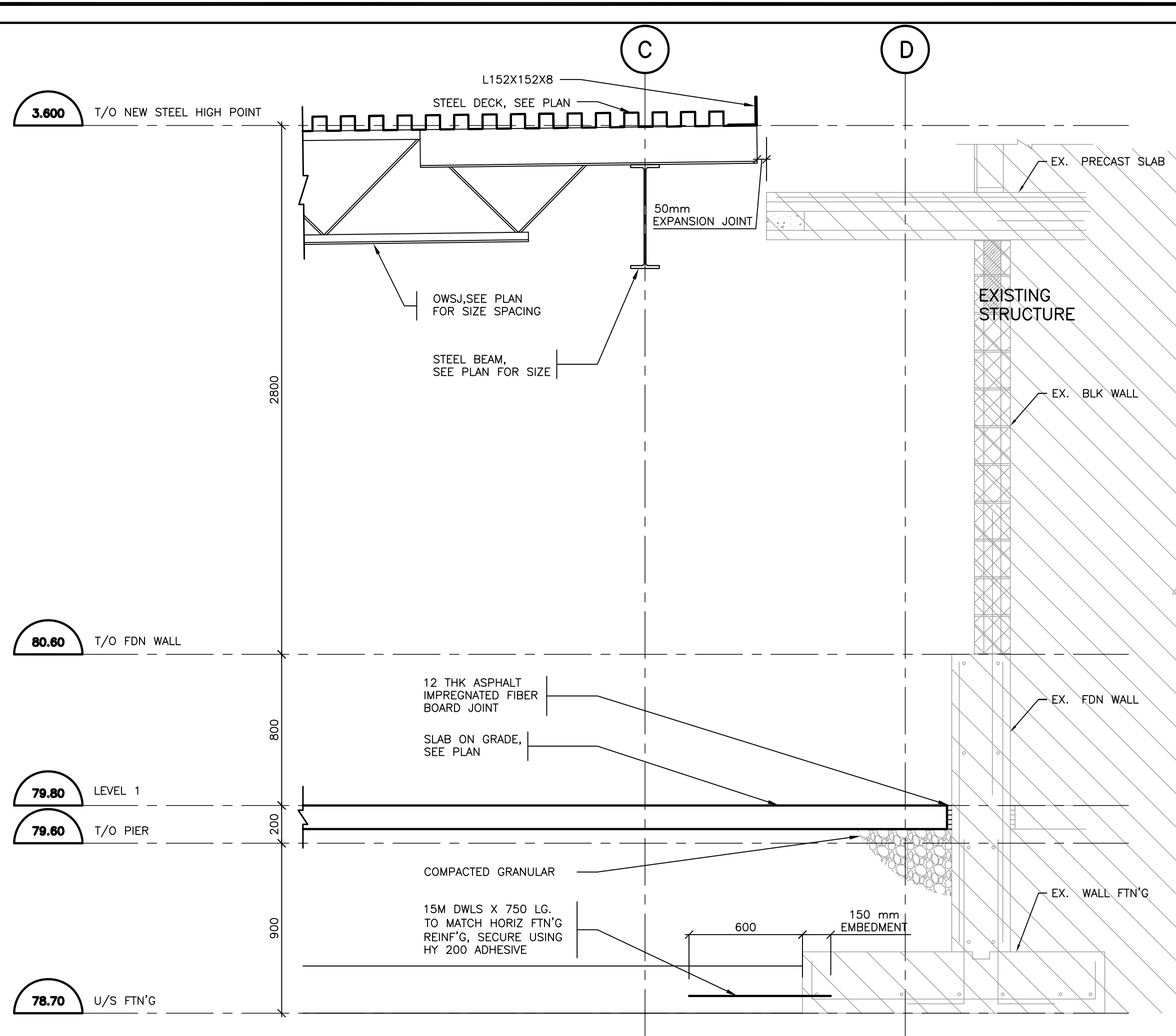
ENGINEER'S SEAL
SCALE
1 : 50

LICENSED PROFESSIONAL ENGINEER
OCT. 12, 2018
J.C. CUFF
100187411
PROVINCE OF ONTARIO

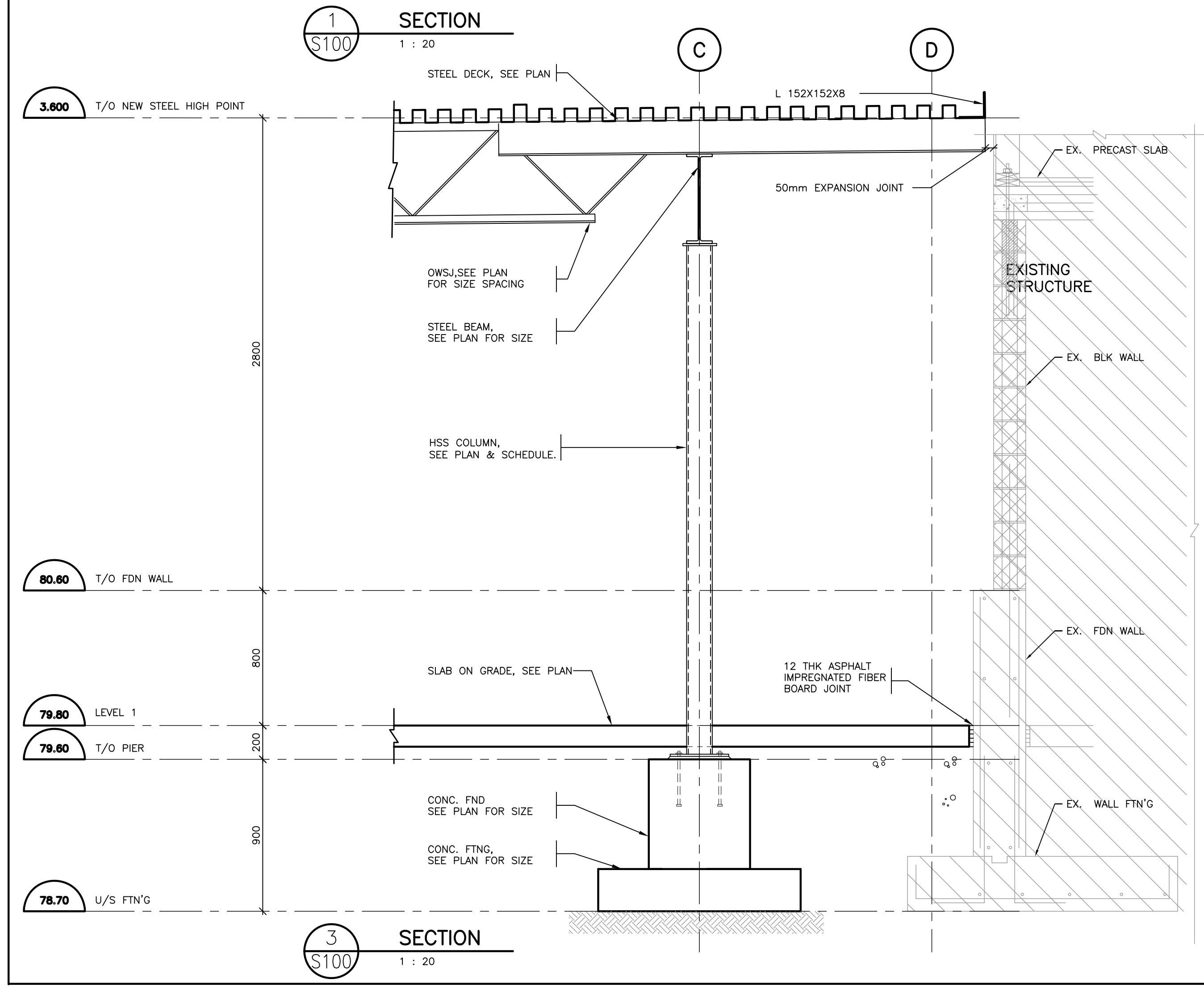
DRAWN A.M.	REVIEWED J.C.
PROJECT NO. 18-052	SHEET NO. S200
REVISION NO.	



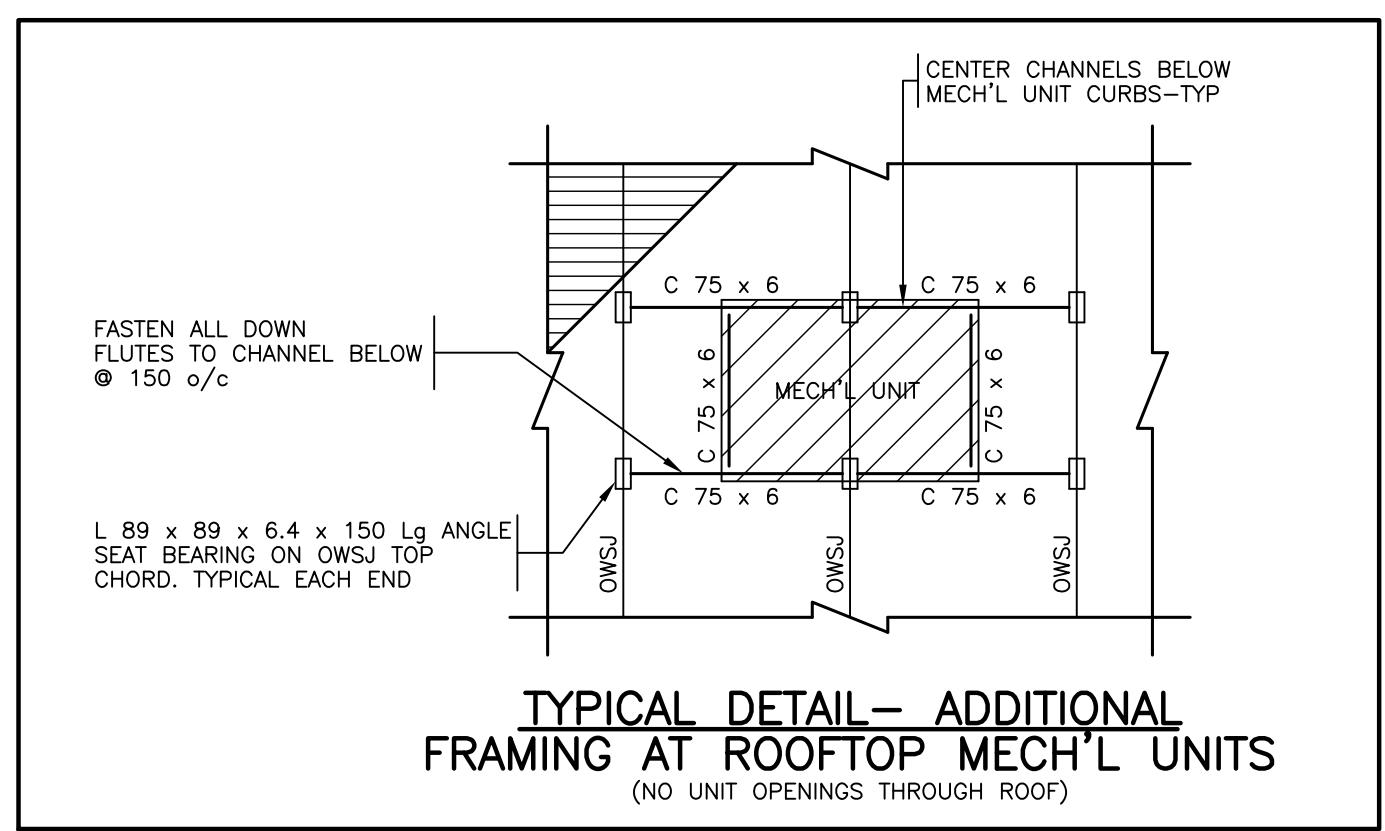
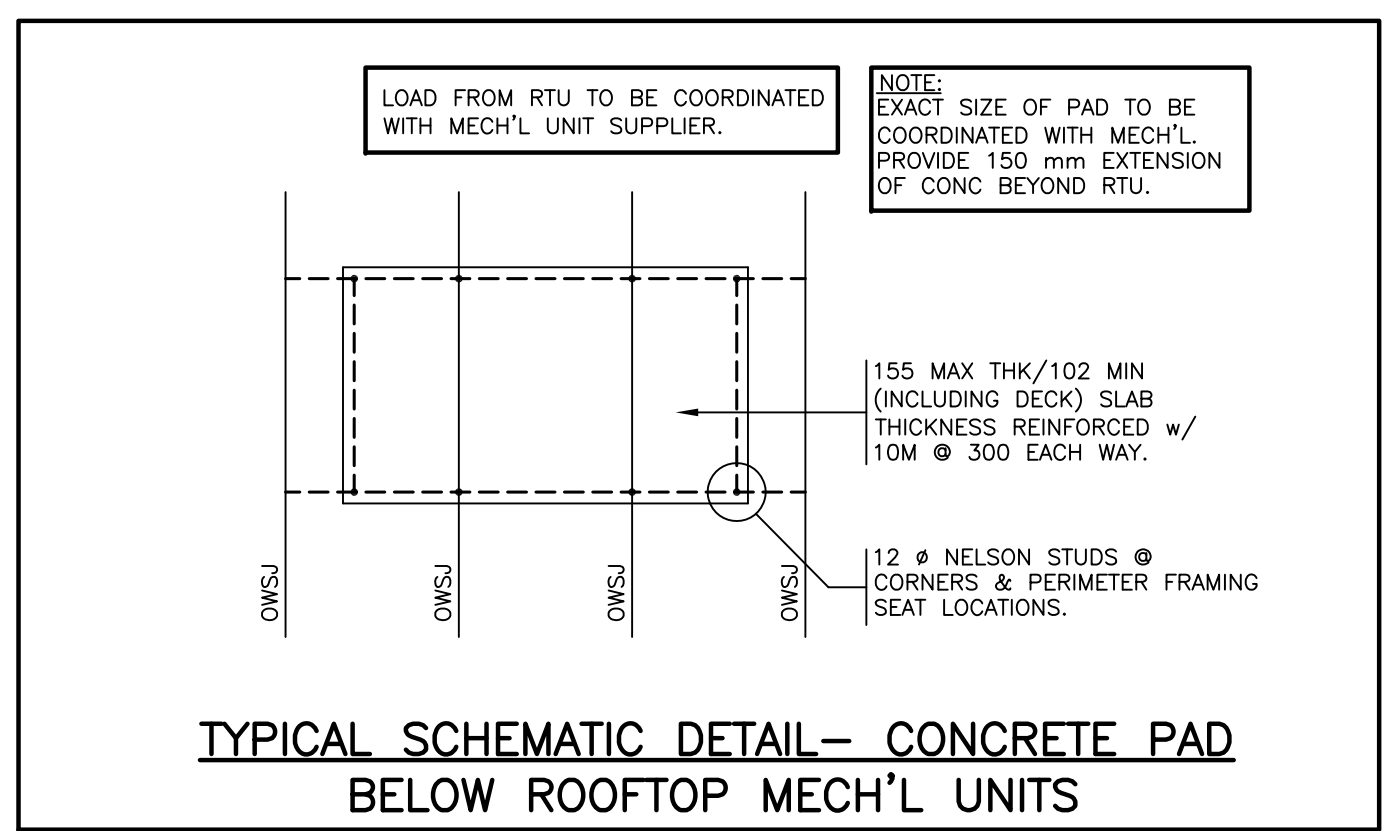
1 SECTION
S100 1:20



2 SECTION
S100 1:20



3 SECTION
S100 1:20



2	ISSUED FOR CONSTRUCTION	2018/10/12
1	ISSUED FOR PERMIT	2018/06/29

- | No. | REVISION | DATE |
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PROJECT
TURNBULL SCHOOL

ARCHITECT
BARRY J. HOBIN & ASSOCIATES

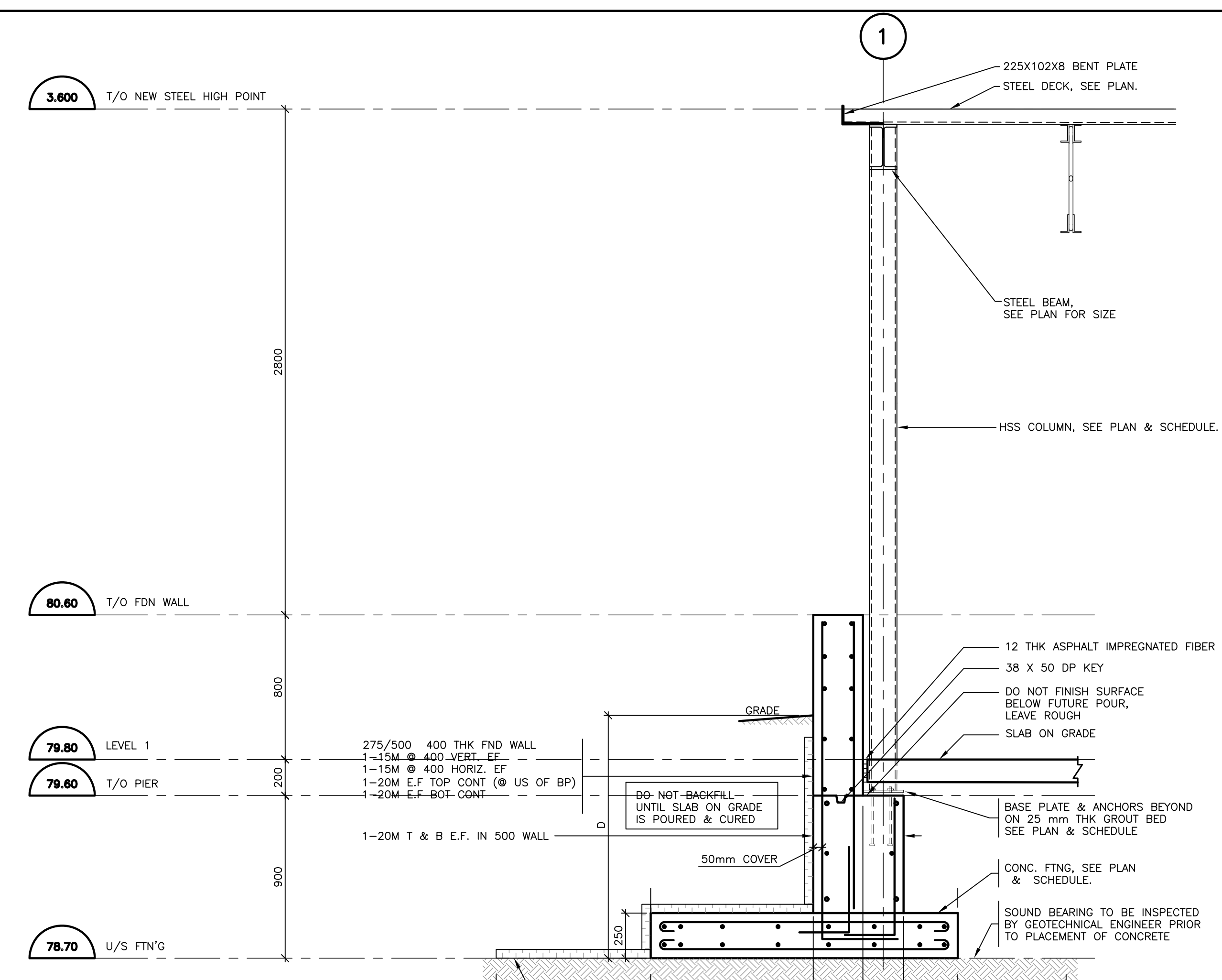
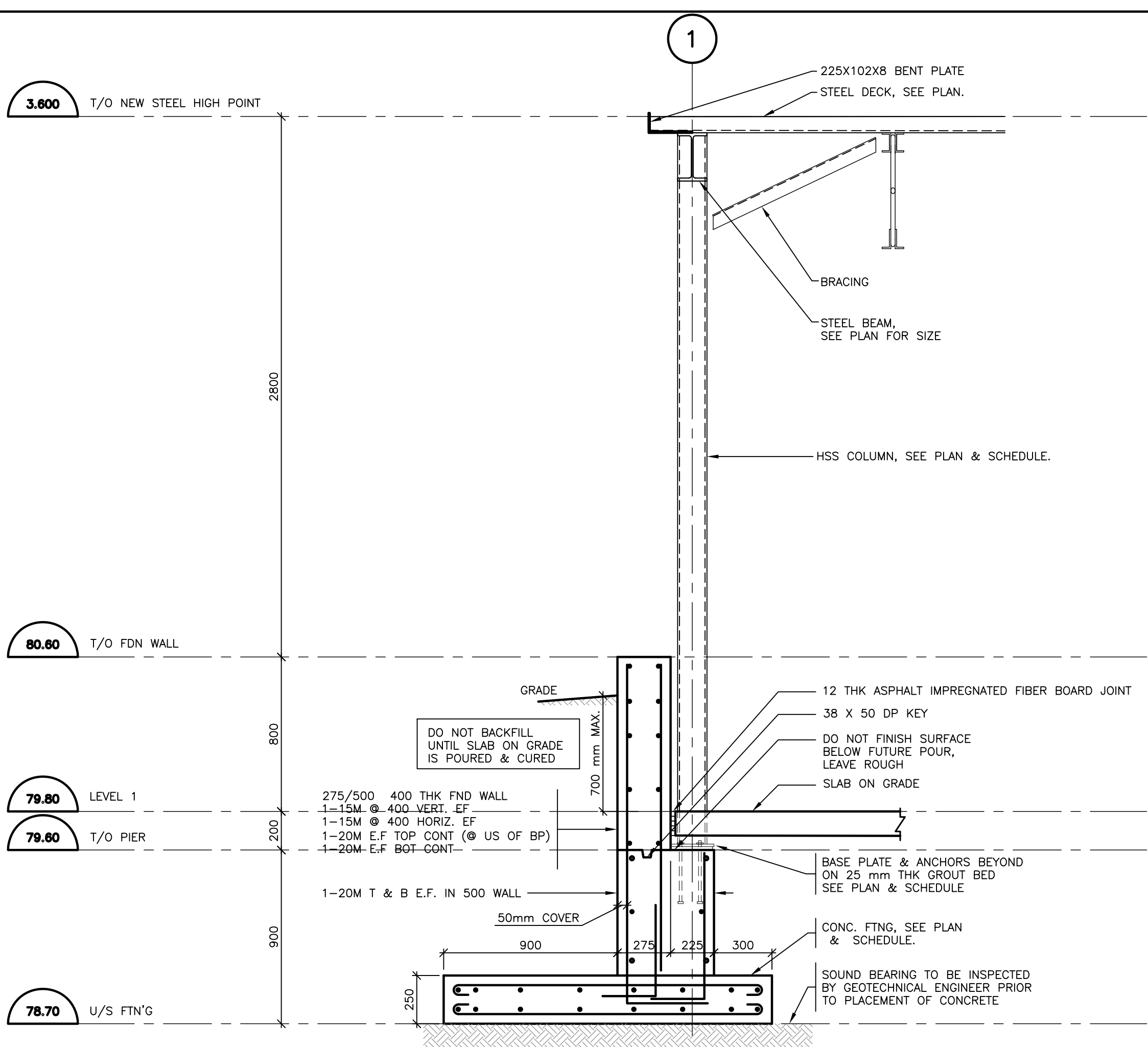
DRAWING
SECTIONS & DETAILS

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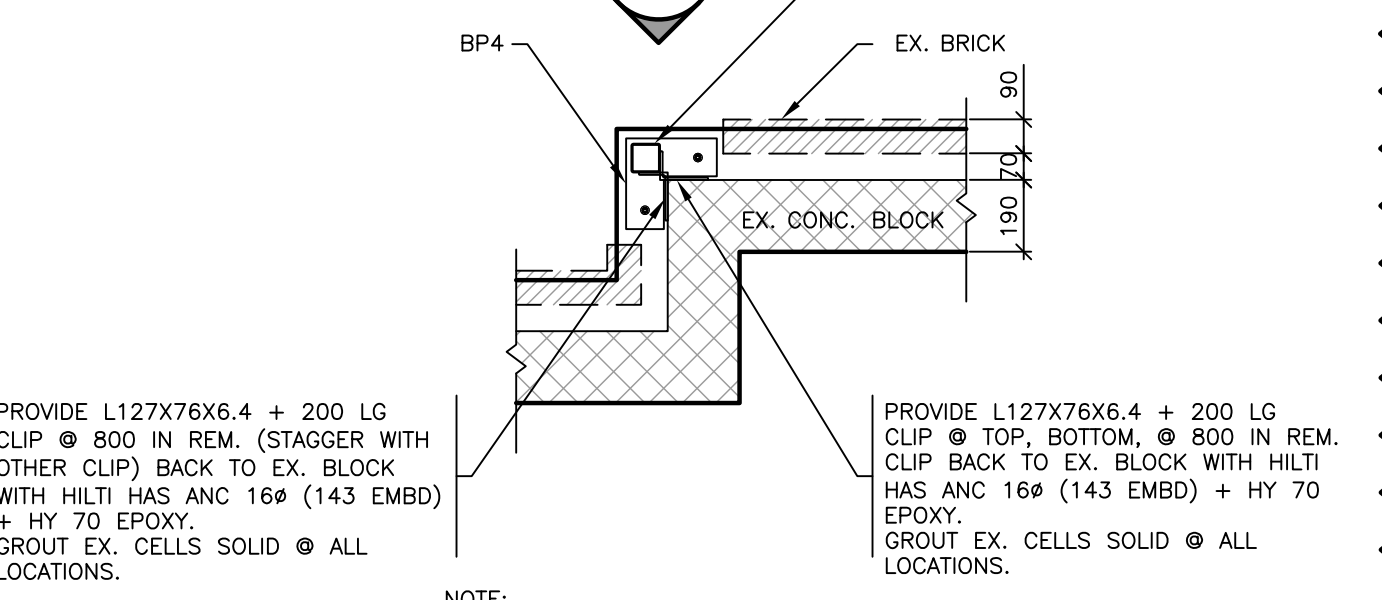
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SCALE: 1 : 20

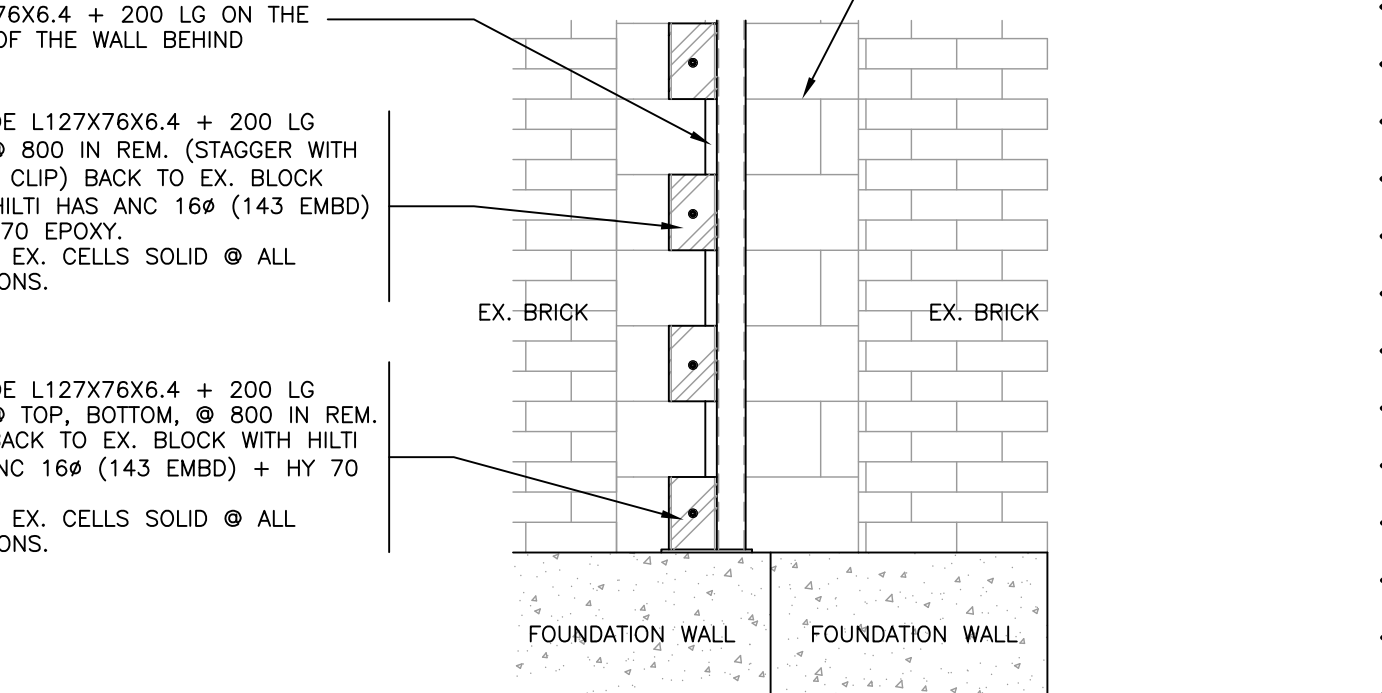
DRAWN A.M.	REVIEWED J.C.
PROJECT NO. 18-052	SHEET NO. S300
REVISION NO.	



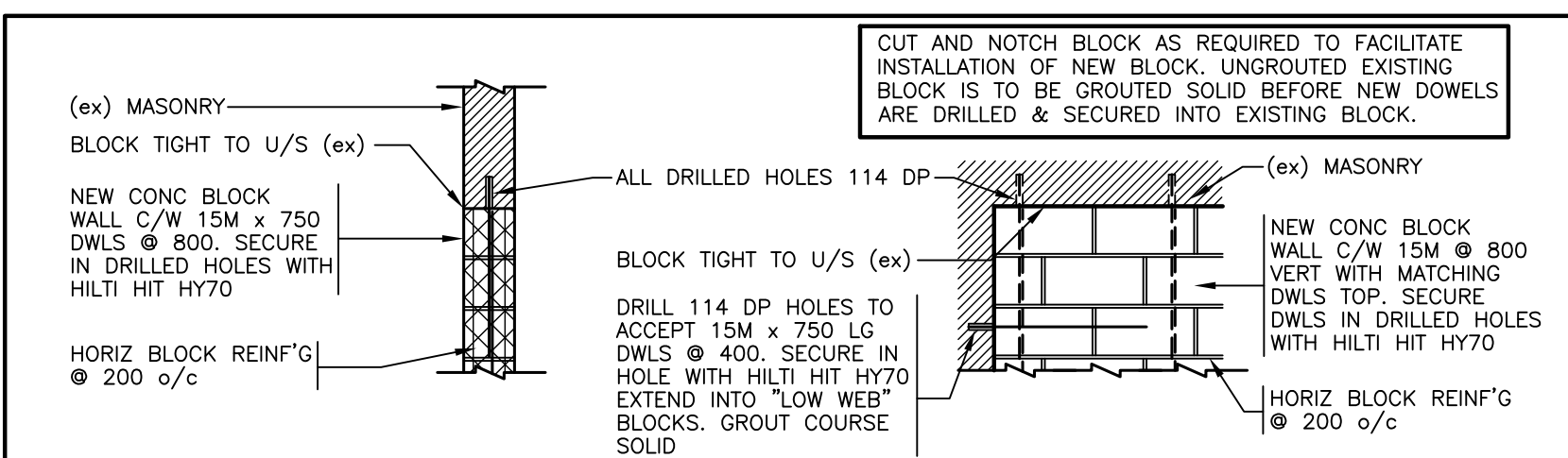
4 SECTION
S100
1 : 20



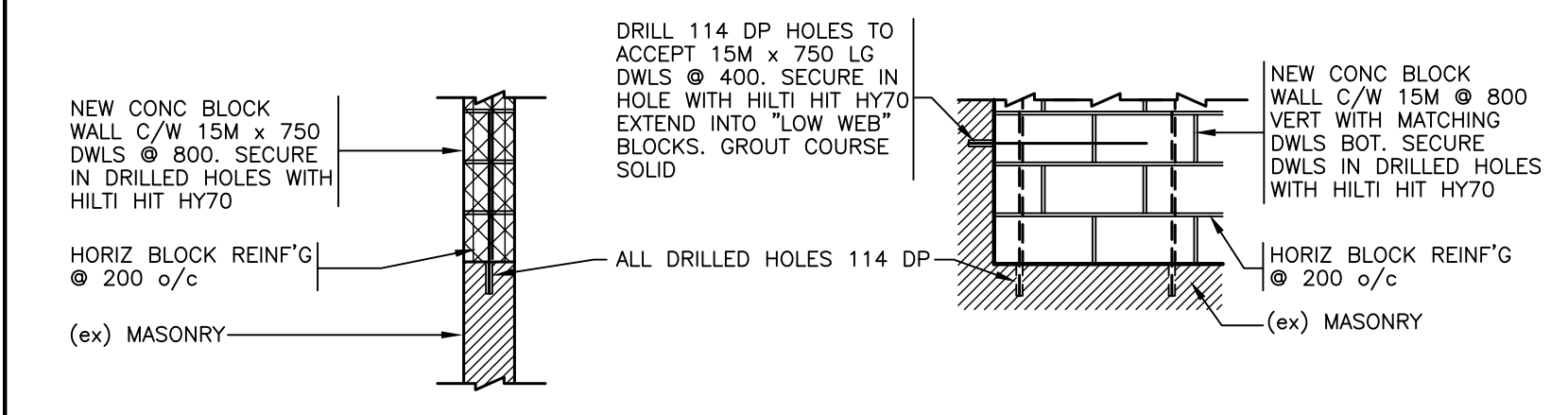
6 PLAN DETAIL
S100
1 : 20



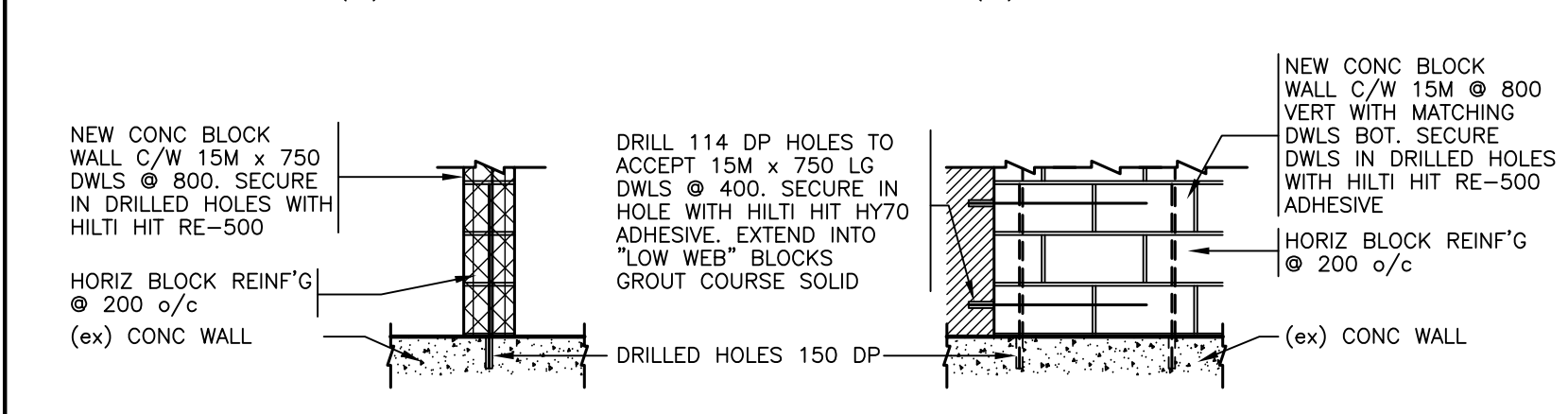
EL1 ELEVATION
S301
1 : 20



SECTION @ HEAD ELEVATION @ HEAD & SIDE



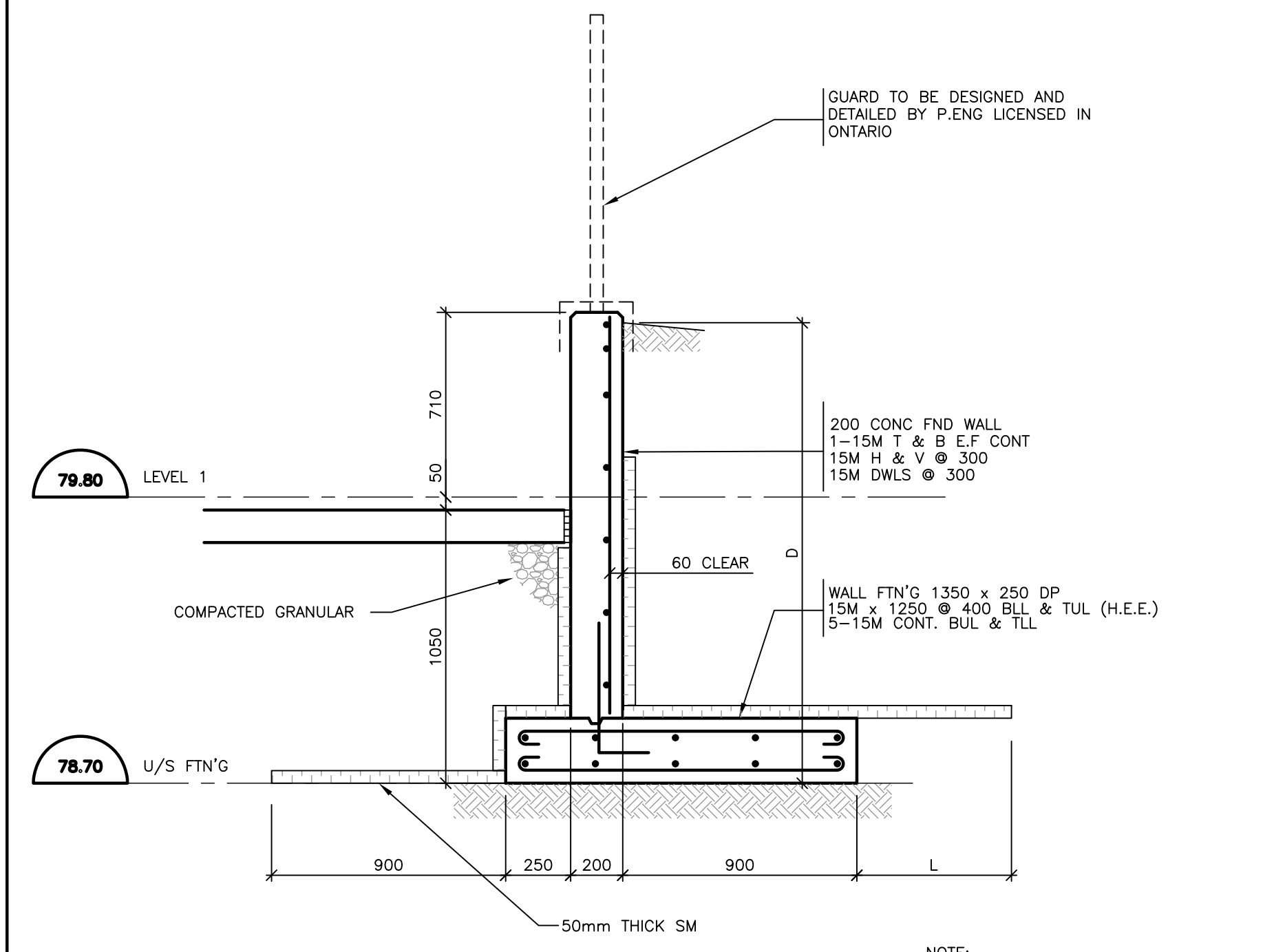
SECTION @ SILL ELEVATION @ SILL & SIDE



SECTION @ SILL ELEVATION @ SILL & SIDE

DETAILS FOR INFILLING (ex) OPENINGS IN BLOCK WALLS
SEE DWG S100 & ARCH'L DWGS FOR LOCATIONS OF OPENINGS TO BE INFILLED

5 SECTION
S100
1 : 20



7 SECTION
S100
1 : 20

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PROJECT
TURNBULL SCHOOL

ARCHITECT
BARRY J. HOBIN & ASSOCIATES

DRAWING
SECTIONS & DETAILS

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ENGINEER'S SEAL	SCALE 1 : 20
DRAWN A.M.	REVIEWED J.C.
PROJECT NO. 18-052	SHEET NO. S301
REVISION NO.	

SPECIFICATIONS

1. Comply with the OBC and local Codes and Bylaws.

2. General:
 1. The current Ontario Building Code is to be considered the bare minimum for construction compliance levels and where the Act or the OBC is exceeded by the requirements of the current drawings and/or specifications, this document shall govern unless revised in writing by the Engineer. Merely "Meeting the Code" will not be accepted as an argument to avoid provision of the mechanical systems as documented and the Contractor shall bear all and any costs associated with making the necessary revisions to the satisfaction of the Engineer.

2. Comply with the requirements of OBC SB-10 and ASHRAE 90.1 for (prescriptive) energy efficiency compliance (as used in the development of this document).

3. Bekolay & Associates retain the copyright to all drawings and specifications created for this project and said works (both hard copy and CAD files) are not to be copied or distributed without consent. Costs for consultation and/or distribution will be established upon written application to Bekolay & Associates for further copies.

4. Obtain all permits, make arrangements for inspections and effect repairs required by inspectors at no cost to the owner. Provide the consultant a Certificate of Approval from the inspecting authorities at completion of the work.

5. Examine the site and be aware of site conditions associated with this contract since extras related to site conditions will not be accepted.

6. Make arrangements with the building owner to install all roof mounted equipment so the warranty can be maintained.

7. Provide all hoisting, rigging and scaffolding associated with the installation of the equipment and material associated with this contract.

8. Repair or replace, at no cost to the owner, any defect in workmanship or materials which appear within a period of one year from the date of substantial completion of the work. Pay for all damage resulting from the deficiency which occurs within the warranty period. Contractor shall not be held liable for anything attributable to acts of the owner or his agents. Co-ordinate the work of this trade with the Electrical Contractor for timely completion.

9. Include Seismic Restraints for all mechanical equipment including piping, ductwork and equipment as required by OBC Part B, article 4.1.8.17. Elements of Structures, Non-Structural Components and Equipment. Provide suitable pre-engineered systems and include the services of a professional structural engineer (registered in Ontario) to design, sign and seal drawings for all seismic restraints including permit approval from the Authority having jurisdiction.

10. Motor Efficiencies for mechanical equipment shall comply with OBC SB-10, sentence 10.4.1 and tables 10.4.1 (a) or 10.4.1 (b).

11. Equivalents and Alternates:
 1. Manufacturer's names listed in these specifications set the standard for the material and energy efficiency requirements to comply with SB-10 but are not intended to exclude other manufacturers from bidding with equivalent products.
 2. Products not meeting all design requirements are considered alternates and they will be rejected until the specified item or equivalent meeting the energy efficiency requirements acceptable to the Engineer are provided. However, alternate products meeting the general intent accompanied by a savings allowance (including breakdown of material and labour) may be submitted for consideration provided they do not violate the SB-10 requirements.

12. Shop Drawings:
 1. Provide "PDF" files or 3 hard copies of shop drawings for review by the Engineer.
 2. Submit product data for all specified equipment or trim including but not limited to grilles, diffusers, plumbing fixtures & trim.

13. Record Drawings:
 1. Record all changes as work progresses and as changes occur on a set of clean prints.

14. Fire stopping:
 1. Provide fire stopping of all fire separations including fire dampers, retaining angles, sleeves and caulking.
 2. Caulking and Sealing Std: Hilti

15. Insulation:
 1. Piping:
 (a) Insulate all hot and cold potable water piping as follows:
 i. Pre-formed fiberglass in 300mm sections with all service jacket sealed with aluminum tape. Hangers shall be outside of jacket.
 ii. Thickness: (to ASHRAE 90.1 table 9-1)
 Pipe Size Heating & DHW DCW
 NPS 1/2" 5/8" 5/8"
 NPS 3/4" to 2" 1-1/2" 1"
 (b) Provide white, preformed PVC jacket for all exposed insulated pipe.
 (c) Hangers shall be outside of jacket.

2. Identification:
 1. 2" outside (or insulated) diameter: Provide all weather vinyl pipe markers and tags with arrows and tape bands to identify all piping (except sprinkler branch piping) including direction (and supply or return where applicable).
 2. 1" & smaller: pre-formed, curled vinyl sleeves with coloured letters & background
 3. Comply with ANSI standards for colours and identification requirements. Meet WHMIS tag requirements where applicable.
 4. Marker separation shall be such that any pipe can be readily identified and not exceed 25 feet between markings.
 5. Std: Brady, Top Tape & Label Ltd

16. HVAC:
 1. Duct Work:
 (a) Tape and seal all new supply air ductwork ductwork and comply with ASHRAE (low pressure standards), SMACNA and ICCH details and recommended practices. Ductwork shall be handled and installed in accordance with SMACNA's Duct Cleanliness for New Construction Guidelines (Advanced Level).
 2. All Supply, Return and Exhaust ducts:
 (a) Provide radused elbows (unless turning vanes are provided) and take-offs (r/D=1 min)
 (b) Bull head fittings, short and zero inside radius elbows (except where turning vanes are used) are entirely unacceptable and shall be replaced at the Contractor's expense.
 (c) Install the ductwork free of pulsation and chatter and make any repairs required when system is commissioned. Provide exhaust fan as shown on the drawings. Provide manual balancing dampers on all new branch duct take-offs as required for balancing.

2. Flexible Connections:
 1. Frame: galvanized sheet metal frame with fabric clamped by means of double locked seams.
 2. Material: Fire resistant, self extinguishing, neoprene coated glass fabric, temperature rated at minus 40 C to 90 C, density of 1.3 kg/m².
 3. Length of connection: 100mm with min 75 mm installed clearance between frames.

3. Flexible Ducts:
 1. Factory fabricated spiral wound flexible aluminum.
 2. Factory installed 12mm insulation with plastic jacket
 3. Minimum working pressure 2.5 MPa
 4. Maximum length in a branch run to a diffuser not to exceed 2 meters.
 5. Provide nylon tie wrap around flex at connection to branch duct and and sectional elbow at ceiling diffusers.

17. Duct Insulation:
 1. Acoustic Liner:
 (a) Increase duct dimensions to provide unobstructed sizes shown
 (b) Natural cotton fibre or rigid board glass fibre duct liner acoustic/thermal (R-2) duct liner with air side factory coated with black fire resistant and abrasion resistant liner over 100% of the exposed surface.
 (c) Microbial resistant (complying with ASTM G21 and G22) and moisture resistant (ASTM C1104) with a flame spread and smoke development rating not exceeding 25/50 respectively without emitting toxic fumes (complying with UL 181 and NFPA90A)
 (a) Thickness: 25mm (1") thick insulation on interior of supply and return ducts within 3m (10 ft) of fans and as indicated.
 (b) Std: Titus Enviroloc, Fibreglass Canada "Line Acoustic-R"
 2. Thermal:
 (a) 75mm thick rigid insulation pinned and fastened complete with aluminum waterproof jacket.
 (b) Std: Owens Corning Duct Wrap Type 75
 3. Adhesive & Sealant: to requirements of ANSI/NFPA 90A with same flame spread and smoke ratings as insulation.
 4. Fasteners: Weld or adhesive plated pins 2.0mm diameter, length to suit insulation with metal retaining clips, 32mm square.
 5. Joint Tape: Poly-vinyl treated open weave fibreglass membrane 50mm wide.

18. Turning Vanes:
 1. Factory or shop fabricated single and double thickness to recommendations of SMACNA, as indicated and in all elbows supply and return where the inside radius of the elbow is less than 1/2 the duct width.

16. Provide new diffusers as follows:
 1. Type "A"
 (a) Enameled round steel diffuser with balancing damper
 (b) Std: E.H.Price RCD
 2. Type "B"
 (a) Four way throw steel panel diffuser with balancing damper to set in tee bar (where room permits) or drywall ceiling
 (b) Std: E.H.Price SCA
 4. Type "C"
 (a) Aluminum grid suit tee bar ceiling or with border for drywall with integrated plenum
 (b) E.H.Price CRE-80SR
 5. Type "D" Return
 (a) Aluminum grid for side wall mounted
 (b) Std: E.H.Price CRE-80

17. Control Wiring:
 1. 120 / 240vac transformers supplied by mechanical contractor mounting to box and final 120v connection to transformer by electrical contractor
 2. 24vac wiring and connections by controls contractor. 24vac wiring to be plenum rated, supported at regular intervals and run parallel to building lines in a neat and tidy manner.
 3. Any surface or exposed wiring to be protected by EMT conduit

18. RTU-1: High Efficiency Package, gas fired rooftop air conditioning unit complete with:
 1. Capacities:
 (a) Mechanical: ARI Nominal 4 Tons (total cooling 58.6MBH, Sensible 38.7MBH, 1600cfm) cooling, 120MBH high efficiency heating, 12.0 SEER
 (b) Electrical: Voltage 208V, 3 phase fused at 40 amps
 2. One year warranty on entire unit, 5 year compressor warranty and 10 year heat exchanger warranty
 3. Electrical service with CSA approved through the base wiring. Include weatherproof disconnect for wiring by Div. 16.
 4. Compressors shall be direct drive, hermetic, scroll type with gear type oil pump, suction gas cooled, overload protection, vibration isolation.
 5. Natural gas connection
 6. Pleated 50mm throwaway filters equal to Farr 30-30.
 7. Accessories:
 (a) Programmable thermostat
 (b) Low leak Economize w/ CO2 sensor & control
 (c) Insulated double height roof curb (14" above roof min) & seismically reinforced
 (d) Vibration isolation rail (Vibro-Acoustics or equal)
 (e) Condensate drain & trap
 (f) Factory installed GFI 20A weather proof receptacle
 8. Std: York or equivalent by Trane or Carrier

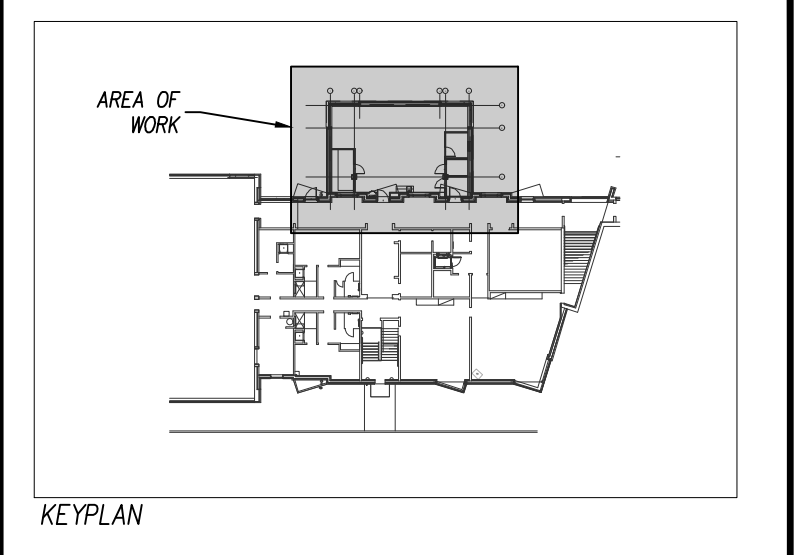
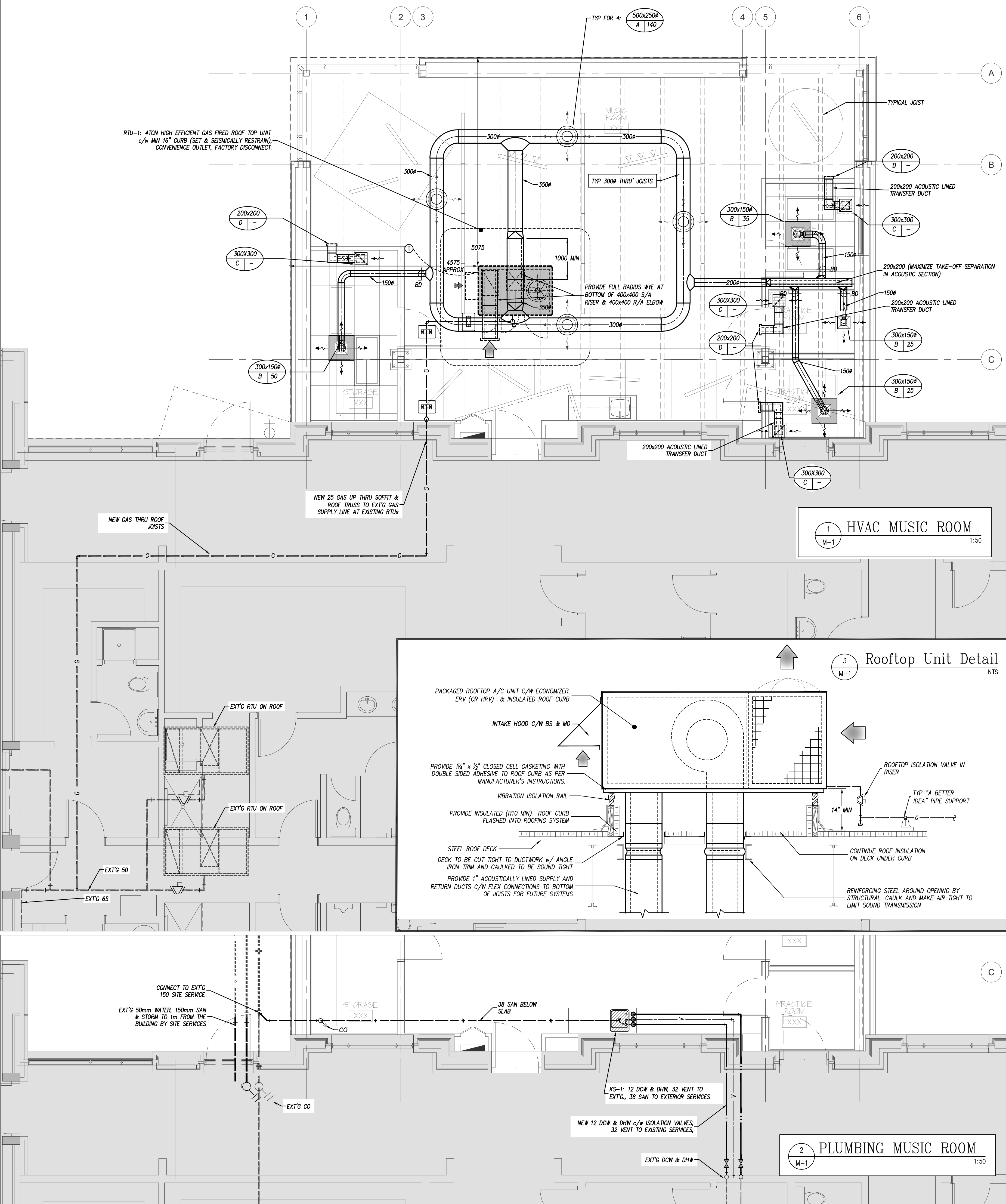
19. Natural Gas Piping:
 1. Modify natural gas piping to new Roof Top Unit.
 2. Conform to Ontario gas Utilization Code B149, (current version) including installation and testing.
 3. Piping:
 (a) Schedule 40 black iron
 i. complete with lubricated isolating valves and malleable iron fittings for exposed installation and welded fittings for ceiling or concealed installation.
 ii. Painting: Clean and epoxy prime paint bare piping followed by two coats of yellow enamel.
 4. Roof pipe supports:
 (a) UV resistant injection moulded polypropylene impact copolymer shell and type 3 extruded polystyrene non-marring base pipe supports.
 (b) Std: E-Z Steeper/Quick Block

20. Water Piping:
 1. Potable water piping shall be type "M" copper with 95-5 lead free solder joints and fittings.
 2. Isolating valves: equal to Crane 1324, 438 (gate) or 9322 (ball).
 3. Rigidly fasten water supplies to the internal wall structure and secure with wing back elbow.

21. Plumbing Piping:
 1. Plumbing and vent piping above grade:
 (a) NPS 1-1/2" and smaller DWV copper with solder joints NPS 2" and larger shall be cast iron with MJ neoprene couplings
 Or
 (b) System 15-50 PVC DWV solvent weld pipe and fittings with suitable fire Stopping. Note regular PVC is not acceptable and shall not be installed.
 (c) Extend vent piping from all plumbing fixtures to vent stacks through roof complete with weatherproof flashing to comply with OBC.
 (d) Provide plumbing and vent connectors to all fixtures with chrome plate traps with cleanouts. Brass or plastic not acceptable. Provide trap insulation for barrier free sinks.
 (e) Floor drain trap seal primer: all brass with integral vacuum breaker, NPS 12mm continuous soft copper line drip line connection with tapping on drain body
 2. Plumbing and vent piping below grade:
 (a) PVC or ABS with solvent weld joints or
 (b) SPO with ringite joints
 (c) Provide 150mm of compacted sand bedding in the bottom of all trenches. After inspection by the Engineer cover and compact at least 150mm of sand over piping. Granular fill in contact with the piping is not acceptable

22. Hangers:
 1. Uninsulated Copper Pipe (Any system):
 (a) Split Ring metal support ring with integral rod connection and EPDM corrugated pipe ring.
 (b) Clevis hangers and tape are not acceptable.
 (c) Std: Shall be Caddy Superflex Series 454
 (d) 32mm and smaller
 i. Swivel loop hanger with electro-zinc plated band with hanger rod nut
 ii. Std: Caddy Series 100
 (e) 38mm and larger
 i. epoxy coated split black iron clevis
 ii. Std: Caddy Series 401, 427 or 420

23. Plumbing Fixtures:
 1. SS Sinks KS-1
 i. Single bowl, 400x350x180mm (16"x14"x7") stainless steel, ledge back, kitchen sinks with strainer, trap
 ii. Std: Kohler, Steel Queen L53407
 iii. Faucet: single lever (barrier free compliant), stainless steel and brass construction chrome finish, pressure balanced replaceable cartridge with high arching spout equal to Delta model 190



NO.	REVISIONS	DATE
10.		
9.		
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3.	ISSUED FOR CONSTRUCTION	2018-10-12
2.	ISSUED FOR TENDER	2018-08-02
1.	ISSUED FOR PERMIT	2018-07-05
	City Permit Number: ###	

NO.	REVISIONS	DATE
10.		
9.		
8.		
7.		
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4.		
3.	ISSUED FOR CONSTRUCTION	2018-10-12
2.	ISSUED FOR TENDER	2018-08-02
1.	ISSUED FOR PERMIT	2018-07-05
	City Permit Number: ###	

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TURNBULL SCHOOL - MUSIC ROOM
 Fisher Ave

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 TEL: 613-723-0474 FAX: 613-723-0464
 www.bekolay.com
 9-Oct-18

PROJECT: TURNBULL SCHOOL - MUSIC ROOM
 Fisher Ave
 DRAWING: HVAC, PLUMBING & PIPING

DATE: 9-Oct-18
 AS SHOWN
 DRAWN BY: Staff
 DESIGNED BY: JRB
 JOB NO.: 2018-10
 CHECKED BY: JRB
 DRAWING NO.:
 M-1 of 1



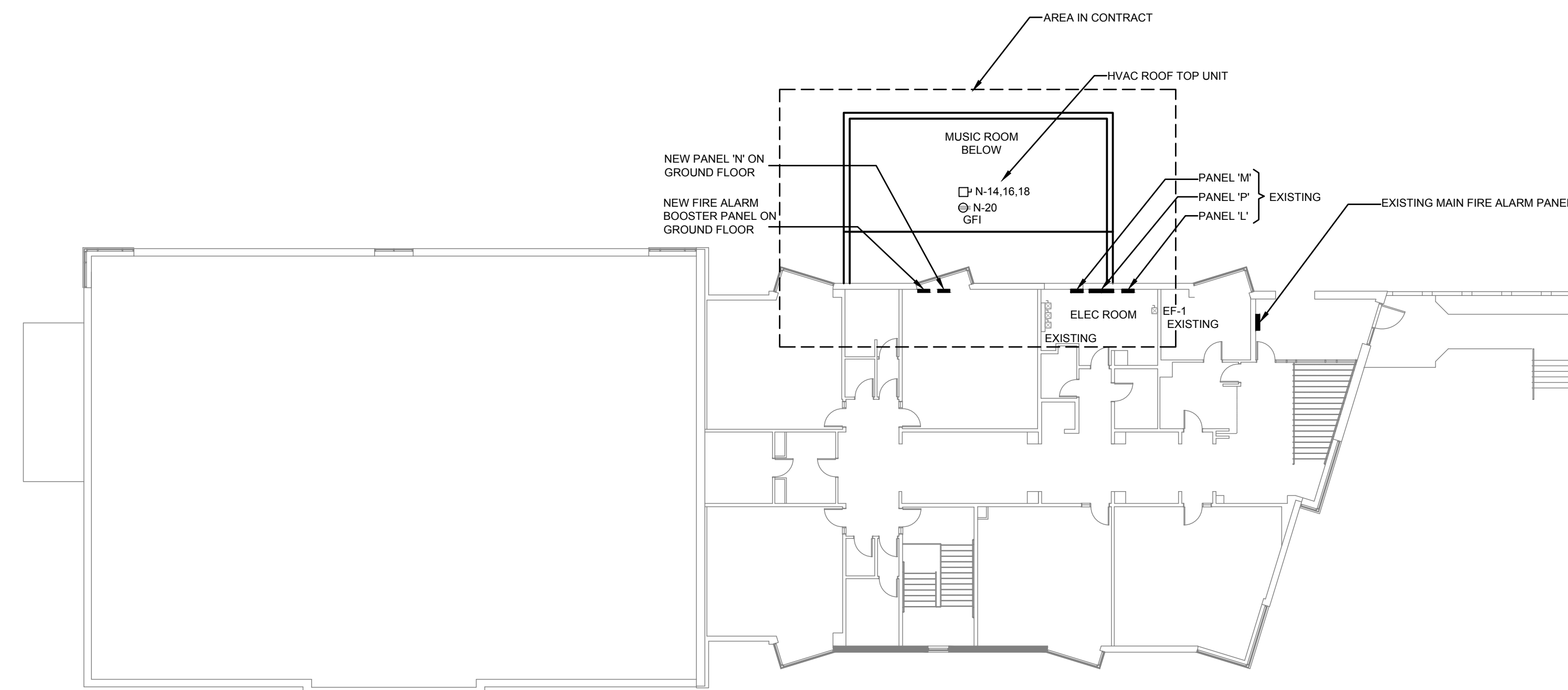
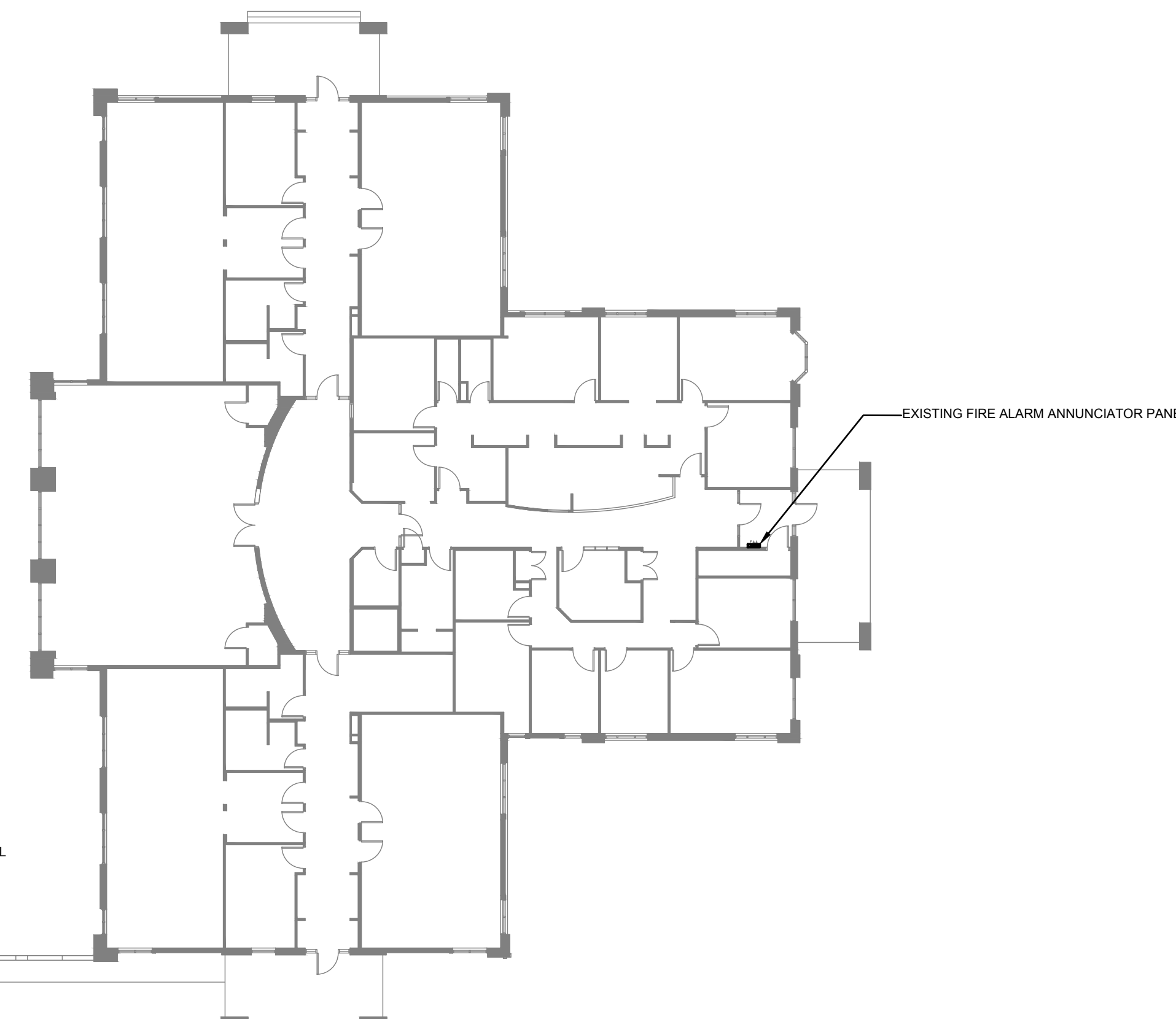
POWER SYMBOLS	
SYMBOL	DESCRIPTION
	DUPLEX U-GROUND 5-20R - 15A/20A, 125 VOLT, 2 POLE, 3 WIRE GROUNDING RECEPTACLE MOUNTED 400 mm ABOVE FINISHED LEVEL, UNLESS OTHERWISE NOTED
GFI	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE
C	DEVICE MOUNTED IN CEILING
F	DEVICE MOUNTED IN FLOOR MONUMENT
	SIMILAR TO ABOVE, BUT MOUNTED APPROXIMATELY 3'-6" (1050 mm) ABOVE FINISHED FLOOR LEVEL OR ABOVE COUNTER, UNLESS OTHERWISE NOTED
	QUAD (TWO DUPLEX) U-GROUND 15A, 125 VOLT, 2 POLE, 3 WIRE GROUNDING RECEPTACLE MOUNTED 400 mm ABOVE FINISHED FLOOR LEVEL (IN COMMON FACEPLATE) UNLESS OTHERWISE NOTED
	DATA OUTLET
L6-20R	20A-250V 2P-3W GROUNDED SINGLE RECEPTACLE (CSA L6-20R) TWIST LOCK MOUNTED 300mm ABOVE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
L6-30R	30A-250V 2P-3W GROUNDED SINGLE RECEPTACLE (CSA L6-30R) TWIST LOCK MOUNTED 300mm ABOVE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
	FURNITURE SYSTEM CONNECTION POLE
	120V CONNECTION TO EQUIPMENT
	208V, 1PH CONNECTION TO EQUIPMENT
	208V, 3PH CONNECTION TO EQUIPMENT
	SINGLE SURFACE MOUNTED PANELBOARD
	SINGLE RECESSED MOUNTED PANELBOARD
	JUNCTION BOX
	HORSE POWER RATED SWITCH
	PULL BOX
	DUAL CHANNEL (POWER AND DATA) SURFACE RACEWAY IN CARPET WIRE WAY - REFER TO SPECIFICATION - AT THE TRANSITION WALL BOX PROVIDE A 53MM (2") CONDUIT UP TO THE CEILING SPACE FOR DATA
	MOTOR
	DISCONNECT SWITCH UNLESS NOTED OTHERWISE
	MOTOR STARTER - MAGNETIC
	MAGNETIC STARTER & DISCONNECT SWITCH (COMBINATION STARTER)
	MOTOR STARTER - MANUAL
	DISCONNECT SWITCH AND CONNECTION TO DOOR OPERATOR
	DOOR OPERATOR BUTTON - BACK BOX AND 21MM EMT FOR LV CONTROL
	MOTOR c/w STARTER
	ELECTRIC BASEBOARD HEATER

LIGHTING SYMBOLS	
SYMBOL	DESCRIPTION
	(1200MM x 600MM) 2'X4' LUMINAIRE, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	(1200MM x 600MM) 2'X4' LUMINAIRE, SUPPLIED FROM EMERGENCY POWER SOURCE
	(1200MM x 600MM) 2'X4' LUMINAIRE, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE. NUMBER INDICATES CONTROLS (DAYLIGHT HARVESTING)
	STRIP LUMINAIRE, 1200MM, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	STRIP LUMINAIRE, 2400MM, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	RECESSED DOWNLIGHT, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	WALL MOUNTED LIGHT, LETTER INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	ONE, TWO, THREE AND FOUR GANG LINE VOLTAGE TOGGLE SWITCH MOUNTED 4'-0" (1200MM) ABOVE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
	3 - WAY SWITCH
	4 - WAY SWITCH
	LOW VOLTAGE SWITCH
	OCCUPANCY SENSOR - SWITCH MOUNTED
	VACANCY SENSOR - SWITCH MOUNTED
	OCCUPANCY SENSOR - CEILING MOUNTED
	DIMMER SWITCH WITH ON / OFF
	EXIT SIGN - WALL MOUNTED GREEN PICTOGRAM
	EXIT SIGN - CEILING MOUNTED GREEN PICTOGRAM
	EMERGENCY LIGHTING BATTERY PACK (BAT1) C/W TWO HEADS, RECEPTACLE CONNECTED TO LOCAL LIGHTING CIRCUIT
	EMERGENCY LIGHTING REMOTE SINGLE HEAD, CONNECTED TO BAT1
	EMERGENCY LIGHTING REMOTE TWIN HEAD, CONNECTED TO BAT1

FIRE ALARM SYMBOLS	
SYMBOL	DESCRIPTION
	RECESSED OR SURFACE MOUNTED FIRE ALARM CONTROL PANEL.
	RECESSED OR SURFACE MOUNTED FIRE ALARM ANNUNCIATOR PANEL.
	FIRE ALARM PULL STATION MOUNTED 4'-0" (1200) ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE NOTED.
	SIMILAR TO ABOVE, EXCEPT "CG" WHERE SHOWN, DENOTES DEVICE c/w CLEAR GUARD.
	FIRE ALARM SMOKE DETECTOR.
	FIRE ALARM HORN
	FIRE ALARM STROBE HORN COMBINATION.
	FIRE ALARM SHUTDOWN RELAY

GENERAL NOTES:

- THIS IS A COMPREHENSIVE LEGEND AND NOT ALL ITEMS APPEAR ON ELECTRICAL DRAWINGS



1 SECOND FLOOR PLAN LAYOUT
E100 1:200

ELECTRICAL DRAWING LIST	
SHEET NO.	DRAWING TITLE
E001	ELECTRICAL LEGEND AND, DRAWING LIST
E002	ELECTRICAL SPECIFICATION SHEET 1 OF 2
E003	ELECTRICAL SPECIFICATION SHEET 2 OF 2
E101	ELECTRICAL LIGHTING & POWER SYSTEMS
E201	ELECTRICAL SCHEDULES AND DETAILS

no.	date	revision
D	2018 10 05	ISSUED FOR CONSTRUCTION
C	2018 08 02	ISSUED WITH ADDENDUM No.2
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PROJECT/LOCATION:
**TURNBULL SCHOOL
MUSIC ROOM ADDITION**
1132 Fisher Avenue, Ottawa

DRAWING TITLE:
**ELECTRICAL
LEGEND
AND DRAWING LIST**

DRAWN BY: K. Mcl. DATE: APR. 2018 SCALE: AS SHOWN

PROJECT: 181-04865-00
DRAWING NO.: **E001**
REVISION NO.:

- 24.4 CONNECT LUMINAIRES TO CIRCUITS AND NEW OR EXISTING LIGHTING CONTROL EQUIPMENT AS REQUIRED. DO NOT OVERLOAD CIRCUITS BEYOND FIXTURE MANUFACTURER'S RECOMMENDATIONS.
- 24.5 ENSURE THAT PRODUCTS THAT ARE TO BE DIMMED ARE COMPATIBLE WITH EACH OTHER, AND OF ONE MANUFACTURER. ENSURE DIMMING PERFORMANCE LEVELS ARE ACCEPTABLE TO CONSULTANT. UNLESS OTHERWISE NOTED, LIGHTING TO BE DIMMED FROM 100% DOWN TO 10%.
- 24.6 ACCEPTABLE DRIVER MANUFACTURERS ARE ADVANCE, OSRAM SYLVANIA, AND UNIVERSAL.

25 WALL BOX DIMMERS

- 25.1 PROVIDE WALL BOX DIMMERS TO MATCH THE LIGHTING BEING CONTROLLED (i.e. OF THE SAME MANUFACTURER OR AS RECOMMENDED BY THE LIGHTING MANUFACTURER). DIMMERS TO BE OF TYPE AND CAPACITY TO SUIT INTENDED LOADS. EACH COMPLETE WITH CALIBRATED LINEAR SLIDE CONTROL WITH SILVER CONTACTS AND SILENT POSITIVE ON/OFF, FACEPLATE, EMI AND RFI FILTERING. REVIEW FINISHES WITH CONSULTANT PRIOR TO ORDERING.
- 25.2 INSTALL FLUSH WALL BOX DIMMERS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, AND CONNECT TO CONTROL LIGHTING. REVIEW EXACT LOCATIONS WITH CONSULTANT PRIOR TO ROUGHING IN. EQUIP EACH DIMMER WITH FACEPLATE. WHEN INSTALLATION IS COMPLETE, CHECK AND TEST OPERATION OF DIMMERS AND ADJUST AS REQUIRED.

26 LOW VOLTAGE RELAYS/CONTACTORS

- 26.1 NOT USED
- 26.2 MAGNETIC, FULL VOLTAGE CONTACTORS, SUITABLE FOR APPLICATIONS;
- 26.3 ELECTRICAL ENCLOSURES/BOXES SUITABLE FOR HOUSING COMPONENTS.

27 OCCUPANCY SENSORS

- 27.1 PROVIDE DEVICES TO MATCH THE LIGHTING BEING CONTROLLED. DEVICES TO BE CSA APPROVED AND TO PROVIDE AUTOMATIC CONTROL OF LIGHTING WITH FOLLOWING COMPONENTS:
- POWER AND SLAVE PACKS; LOW VOLTAGE OR LINE VOLTAGE OPERATION TO SUIT SPECIFIC APPLICATIONS;
 - DUAL TECHNOLOGY OCCUPANCY SENSORS;
 - VERRIDE SWITCHES TO BE WALL MOUNTING IN SINGLE GANG RECESSED OUTLET BOXES;
 - DAY LIGHT SENSORS TO BE PROVIDED WHERE REQUIRED FOR DIMMING OR CONTROLLING LIGHTS IN AREAS WITH WINDOWS AND ATRIUMS/SKY LIGHTS;
 - MOUNTING HARDWARE AND ANCILLARY DEVICES AS REQUIRED;
 - WIRING IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S REQUIREMENTS AND APPLICABLE LOCAL GOVERNING CODES AND STANDARDS.
- 27.2 DUAL TECHNOLOGY TYPE SENSORS AS FOLLOWS:
- COMBINATION PASSIVE INFRARED AND ULTRASONIC TECHNOLOGIES;
 - WHEN BOTH PIR AND ULTRASONIC TECHNOLOGIES DETECT OCCUPANCY, LIGHTS TURN ON AUTOMATICALLY; ONCE LIGHTS ARE ON, DETECTION BY EITHER TECHNOLOGY HOLDS LIGHTS ON UNTIL OCCUPANCY IS NO LONGER DETECTED AND TIME DELAY ELAPSES;
 - 360° LENS AREA COVERAGE, EXTENDING OUT UP TO 6 M AND AREA OF 92.9 M²;
 - LOW PROFILE CEILING MOUNTING DESIGN; INTEGRAL LIGHT SENSOR;
 - ADJUSTABLE SENSITIVITY AND DIGITAL TIME DELAY; WALK-THROUGH MODE; LED INDICATION OF OCCUPANCY DETECTION;
 - ISOLATED RELAY FOR INTERCONNECTION TO AUXILIARY CONTROL SYSTEMS WHERE REQUIRED.
- 27.3 FOR APPLICATIONS IN WASHROOMS AND SMALL STORAGE ROOMS; WALL MOUNTED DUAL TECHNOLOGY SENSORS AS FOLLOWS:
- WALL SWITCH SENSOR TURNS LIGHTS OFF AND ON BASED ON OCCUPANCY;
 - FACTORY DEFAULT OPERATION IS FOR MANUAL-ON MODE, SO THAT USERS TURN LIGHT ON ONLY WHEN NEEDED;
 - VARIETY OF CONTROL OPTIONS INCLUDING AUTO-ON OPERATION, WALK-THROUGH AND TEST MODE; ADDITIONAL SETTINGS ALLOW CHOICE OF WHICH SENSING TECHNOLOGIES HOLD ON OR RETRIGGER LIGHTING;
 - COLOUR MATCHED LENS AND LOW PROFILE DESIGN;
 - WIDE DISPERSION LENS AREA COVERAGE, EXTENDING OUT UP TO 10 M AND AREA OF 37 M²;
 - INFRARED AND ULTRASONIC TECHNOLOGIES;
 - ADJUSTABLE TIME DELAYS AND SENSITIVITY; MANUAL PUSHBUTTON OPERATION (OVERRIDE).
- 27.4 EXACT TYPE OF OCCUPANCY SENSORS AND TYPE OF LENSES TO BE VERIFIED BY MANUFACTURER/SUPPLIER TO ENSURE PROPER COVERAGE IN SENSING AREAS ONLY, AND COMPATIBILITY TO INTERCONNECTED SYSTEMS. CONFIRM WITH RESPECTIVE MANUFACTURERS.
- 27.5 PROVIDE, LOCATE, AND AIM APPROPRIATE SENSORS IN CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE WITHIN RANGE OF COVERAGE OF CONTROLLED AREAS PER MANUFACTURER'S RECOMMENDATIONS. ADJUST SENSITIVITY AND TIME DELAYS TO SUIT.
- 27.6 ACCEPTABLE MANUFACTURERS INCLUDE HUBBELL, PHILIPS, SENSOR SWITCH, LEVITON, WATTSTOPPER AND GE.

28 EMERGENCY LIGHTING BATTERY UNITS

- 28.1 PROVIDE EMERGH-LITE 12V DC, "ESL" SERIES LONG LIFE (10 YEAR) SEALED LEAD, BATTERY UNITS. UNITS SHALL BE COMPLETE WITH AUTO-DIAGNOSTIC CONTROLLER, SOLID STATE CHARGER, AC LINE CORD AND PLUG SET, NO. 18 GAUGE STEEL CABINET AND INTEGRAL 12V/6W LED ADJUSTABLE LAMP HEADS. UNLESS OTHERWISE NOTED, REMOTE SURFACE LAMP HEADS TO BE DISTINCTION DESIGNER SERIES TYPE EF150, 12V/6W MR16 LED SURFACE MOUNTED SINGLE/DUAL LAMP HEADS AND RECESSED UNITS TO MATCH BATTERY PACK, 12V/6W MR16 LED SURFACE, WITH ADJUSTABLE AIM. CONNECT COMPLETE, BACK TO BATTERY UNIT. CHARGER TO RESTORE BATTERIES TO FULL CHARGE WITHIN 12 HOURS. SYSTEM TO HAVE OBC REQUIRED DURATION OF OUTPUT CAPACITY FOR LOAD OF SYSTEM (BUT MINIMUM 30 MINUTES).
- 28.2 MOUNT UNIT IN AREA AS REQUIRED AND PLUG UNIT INTO ADJACENT RECEPTACLE. PROVIDE REMOTE LAMP HEADS WHERE REQUIRED AND PROVIDE WIRING IN CONDUIT TO BATTERY UNIT. CONFIRM EXACT LOCATIONS. SIZE CIRCUIT WIRING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS FOR VOLTAGE DROP PROTECTION. TEST, CHECK, AND ADJUST AS REQUIRED.
- 28.3 INCLUDE FOR MANUFACTURER TO PROVIDE TESTING OF SYSTEM AND MEASUREMENT OF LIGHT LEVELS TO OBTAIN LOCAL INSPECTION APPROVALS AND PERMITS. MANUFACTURER'S AUTHORIZED TECHNICIAN TO PREPARE AND PROVIDE SIGNED TEST REPORT VERIFYING THAT SYSTEM IS PROPERLY WORKING AND THAT LIGHT LEVELS MEET LOCAL CODE REQUIREMENTS. INCLUDE REQUIRED TEST MEASUREMENTS IN REPORT AND SUBMIT TO CONSULTANT.
- 28.4 ACCEPTABLE MANUFACTURERS INCLUDE LUMACELL, AIMLITE, BEGHELLI AND EMERGH-LITE.

29 LOW VOLTAGE LIGHTING CONTROL COMPONENTS

- 29.1 NOT USED

30 EXISTING FIRE ALARM SYSTEM WORK

- SIEMENS CONTACT: STEVE.WOZNY@SIEMENS.COM**
- Existing system: Edwards EST-6616 and Siemens TXL-1000
- 30.1 ENGAGE EXISTING FIRE ALARM SYSTEM VENDOR AS APPROVED BY OWNER, TO PROVIDE SYSTEM WORK. DISCONNECT, RELOCATE, AND RECONNECT REQUIRED DEVICES. WORK TO BE AN EXTENSION OF EXISTING SYSTEM. PROVIDE ADDITIONAL DEVICES, CONDUCTORS IN CONDUIT AND END OF LINE RESISTORS. PROVIDE ULC LISTED DEVICES TO MATCH EXISTING DEVICES AND BE COMPLETELY COMPATIBLE WITH EXISTING SYSTEM. PERFORM WORK IN ACCORDANCE WITH LATEST EDITION OF CANULC S524. SEQUENCE OF OPERATION OF NEW WORK TO FUNCTION AS PER EXISTING SYSTEM UNLESS OTHERWISE NOTED. MODIFY ANNUNCIATOR PANELS AS REQUIRED TO INCORPORATE REVISIONS AND ADDITIONS. PROVIDE AUDIBLE DEVICES AND ADJUST TO SOUND AT LEVELS AS PER LOCAL FIRE AUTHORITY REQUIREMENTS. PROVIDE ADDITIONAL DEVICES AS REQUIRED TO ACHIEVE SOUND LEVEL STANDARDS.
- 30.2 PROVIDE ADDITIONAL DEVICES OF TYPE TO SUIT APPLICATIONS AS RECOMMENDED BY SYSTEM SUPPLIER. INCLUDE REQUIRED ACCESSORIES FOR PROPER OPERATION AND INSTALLATION. REPROGRAM SYSTEM TO ACCOMMODATE ADDITIONS AND MODIFICATIONS. REBURN SOFTWARE AS REQUIRED BY LOCAL FIRE AUTHORITY. MODIFY ANNUNCIATOR PANELS AS REQUIRED TO INCORPORATE REVISIONS AND ADDITIONS. PROVIDE AUDIBLE DEVICES AND ADJUST TO SOUND AT LEVELS AS PER LOCAL FIRE AUTHORITY REQUIREMENTS. PROVIDE ADDITIONAL DEVICES AS REQUIRED TO ACHIEVE SOUND LEVEL STANDARDS.
- 30.3 DURING WORK TO EXISTING FIRE ALARM SYSTEM, TIME AND DURATION OF INTERRUPTION TO BE APPROVED BY OWNER AND ONLY ONE ZONE SHALL BE INTERRUPTED AT ANY ONE TIME. IN AREAS WHERE RENOVATION WORK REQUIRES SHUTDOWN OF ANY PART OF FIRE ALARM PROTECTION SYSTEM, PROVIDE MANUAL FIRE ALARM PROTECTION (FIRE WARDEN) BY MEANS OF SUPERVISING AREA AS APPROVED BY GOVERNING AUTHORITIES. AT NO TIME SHALL FIRE ALARM SYSTEM OR ANY ONE ZONE BE LEFT INOPERATIVE OVERNIGHT. PROVIDE REQUIRED BYPASS WIRING AND TEMPORARY WIRING AS MAY BE REQUIRED TO MAINTAIN ENTIRE FIRE ALARM SYSTEM OPERATIVE DURING CONSTRUCTION AND ALTERATIONS.
- 30.4 COVER EXISTING DETECTORS TO PROTECT FROM DEMOLITION/CONSTRUCTION DUST. REMOVE COVERS WHEN ALTERNATIVE FIRE ALARM PROTECTION IN AREA IS NOT AVAILABLE OVERNIGHT.

- 30.5 COORDINATE WORK WITH MECHANICAL DIVISION WITH REGARDS TO INTERCONNECTIONS TO AIR HANDLING SYSTEMS, FIRE SUPPRESSION SYSTEMS, SUPERVISORY VALVES AND FLOW SWITCHES, BUILDING AUTOMATION SYSTEM, ETC. PERFORM SUCH INTERCONNECTIONS TO STANDARDS OF EXISTING SYSTEMS AND DOCUMENT IN SHOP DRAWINGS.

- 30.6 WHEN FIRE ALARM SYSTEM WORK IS COMPLETE AND READY FOR ACCEPTANCE, EXISTING SYSTEM MANUFACTURER/VENDOR TO INSPECT, TEST, VERIFY AND CERTIFY WORK AND EQUIPMENT, INCLUDING INITIATING DEVICES, SIGNALLING DEVICES, CONTROL DEVICES AND WIRING.

- 30.7 TEST AND VERIFY THAT AUDIBLE SIGNALS ARE AT LEVELS ACCEPTABLE TO LOCAL FIRE AUTHORITY AND THAT BATTERIES ARE OF SUFFICIENT CAPACITY AS PER OBC. PROVIDE CERTIFICATE OF LIABILITY INSURANCE REGISTERED FOR THIS PROJECT TO SHOW SATISFACTORY PROOF OF MANUFACTURER'S LIABILITY COVERAGE FOR BOTH HIS PRODUCT AND PERSONNEL. CONDUCT WORK IN ACCORDANCE WITH LATEST EDITIONS OF CANULC S536 AND S537. TESTS TO BE CONDUCTED IN PRESENCE OF OWNER AND/OR CONSULTANT. PROVIDE TO CONSULTANT MINIMUM ONE HARD COPY AND ELECTRONIC COPY OF TEST REPORT WITH DETAILED SCHEDULES OF TESTED DEVICES. REPORTS SHALL BE SIGNED BY AUTHORIZED CERTIFIED TESTING TECHNICIAN. DIGITAL COPY OF REPORT TO BE PROVIDED IN COMPATIBLE FORMAT CONFIRMED WITH CONSULTANT.

- 30.8 OBTAIN FROM LOCAL FIRE AUTHORITY, APPROVAL CERTIFICATE AND SUBMIT TO CONSULTANT WITH REPORTS.

- 30.9 EMPLOY TECHNICIANS CERTIFIED BY CANADIAN FIRE ALARM ASSOCIATION AND/OR ONTARIO FIRE MARSHALL AS APPLICABLE AND TO REQUIREMENTS OF ONTARIO FIRE CODE.

31 GENERAL ELECTRICAL WORK TESTING

- 31.1 IN ADDITION TO TESTS REQUIRED BY GOVERNING AUTHORITIES AND REGULATIONS, TEST WORK TO ENSURE THERE ARE NO GROUNDS OR CROSSES. ENSURE DEVICES ARE COMMISSIONED AND OPERABLE. CONNECT CIRCUITS TO PANELBOARDS SO AS TO BALANCE ACTUAL LOADS (WATTAGE) WITHIN 5% IF REQUIRED, TRANSPOSE CIRCUITS WHEN WORK IS COMPLETE TO MEET THIS REQUIREMENT.
- 31.2 IN ADDITION, PERFORM FOLLOWING:
- CHECK COMPONENT CONNECTIONS AND OVERALL INSTALLATION;
 - ENSURE THAT DEVICES ARE COMMISSIONED AND OPERABLE;
 - TEST AND ADJUST SYSTEM AND ASCERTAIN THAT COMPONENTS ARE AS SPECIFIED AND ENSURE THAT PRODUCTS OPERATE AS DESIGNED;
 - PREPARE, DOCUMENT AND EVALUATE TEST RESULTS;
 - AUTHENTICATE TEST RESULTS WITH SIGNATURE OF AUTHORIZED TESTING ENGINEER/TECHNICIAN.
- 31.3 SUBMIT SIGNED REPORTS TO CONSULTANT.

32 SYSTEM TESTING, CO-ORDINATION AND VERIFICATION

- 32.1 PROVIDE ON-SITE ENGINEERING INSPECTION, TESTING AND VERIFICATION OF DISTRIBUTION EQUIPMENT AND OTHER SYSTEMS. REVIEW AND SURVEY EXISTING DISTRIBUTION SYSTEM PROTECTIVE DEVICES AS REQUIRED TO PROPERLY CO-ORDINATE ADDITIONAL SYSTEM DEVICES. FOR MAJOR DISTRIBUTION EQUIPMENT, PROVIDE PRELIMINARY COORDINATION STUDY AND AVAILABLE FAULT CURRENT CALCULATIONS AND SUPPLY TO CONSULTANT DURING SHOP DRAWING REVIEW PROCESS.
- 32.2 ENGINEERING INSPECTION AND TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING COMPANY AND INCLUDE WHERE APPLICABLE:
- TESTING, CLEANING WHEN NECESSARY, AND CALIBRATING RELAYS AND CIRCUIT BREAKER TRIP DEVICES (CALIBRATION OF PROTECTIVE DEVICES SHALL CONFORM TO REQUIREMENTS OF APPROVED COORDINATION CURVES);
 - FUNCTION TEST OF ASSOCIATED CONTROL DEVICES;
 - PROVIDE A COORDINATION STUDY PREPARED TO REVIEW REVISED DISTRIBUTION SYSTEM DEVICES INCLUDING EXISTING MAIN OVER CURRENT PROTECTION DEVICES FEEDING RESPECTIVE MCCS OR PANELS WHERE ADDITIONAL LOADS HAVE BEEN ADDED; REVIEW COORDINATION OF DEVICES AND RESE/ADJUST WHERE POSSIBLE AND AS REQUIRED;
 - REPLACEMENT OF FUSES DESTROYED DURING TESTING;
 - AN ACCEPTANCE TEST IN PRESENCE OF AND AT SATISFACTION OF CONSULTANT;
 - PRESENCE, FOR LENGTH OF TIME REQUIRED, OF QUALIFIED AND COMPETENT EQUIPMENT MANUFACTURER'S SERVICE REPRESENTATIVE DURING START UP;
 - ADJUSTMENTS, START-UP PROCEDURES AND VERIFICATION OF EQUIPMENT;
 - TESTING OF INSTALLED ELECTRICAL DEVICES, WHETHER OR NOT SUPPLIED BY ELECTRICAL DIVISION.
- 32.3 PROVIDE VISUAL AND MECHANICAL INSPECTION OF GROUND SYSTEM AND VERIFY THAT IT IS IN COMPLIANCE WITH ISSUED DOCUMENTS AND OESC REQUIREMENTS.
- 32.4 TESTING SHALL BE DOCUMENTED IN A REPORT SIGNED BY PROFESSIONAL ENGINEERS OF ONTARIO LICENSED TESTING ENGINEER AUTHORIZED BY TESTING COMPANY. INCLUDE FOR MINIMUM 2 HARD COPIES AND ELECTRONIC VERSION OF REPORT SUBMITTED TO CONSULTANT FOR REVIEW. REPORT TO INCLUDE TEST RESULTS WITH PROPERLY PLOTTED CURVES, IDENTIFIED TROUBLE AREAS OF COORDINATION, EXTENSIVE COMMENTS REGARDING TEST RESULTS AND RECOMMENDATIONS ON BEST REMEDIAL COURSE OF ACTION.
- 32.5 PRODUCT MANUFACTURER TO EXAMINE PLANS AND SPECIFICATIONS TO ENSURE THAT RELAYS AND PROTECTIVE DEVICES BEING INSTALLED IN DISTRIBUTION SYSTEM WILL PROVIDE SATISFACTORY COORDINATION.
- 32.6 ACCEPTABLE TESTING COMPANIES TO BE INDEPENDENT OF EQUIPMENT MANUFACTURERS/SUPPLIERS AND ARE G.T. WOODS LTD., AC TESLA, PELIKAN, EATON ELECTRIC AND SCHNEIDER ELECTRIC.

END

D	2018 10 05	ISSUED FOR CONSTRUCTION
C	2018 08 02	ISSUED WITH ADDENDUM No.2
B	2018 07 05	ISSUED FOR PERMIT & TENDER
A	2018 06 28	ISSUED FOR CO ORDINATION
no.	date	revision

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HOBIN
ARCHITECTURE

PROJECT/LOCATION:
**TURNBULL SCHOOL
MUSIC ROOM ADDITION**
1132 Fisher Avenue, Ottawa

DRAWING TITLE:
**ELECTRICAL
SPECIFICATION
SHEET 2 OF 2**

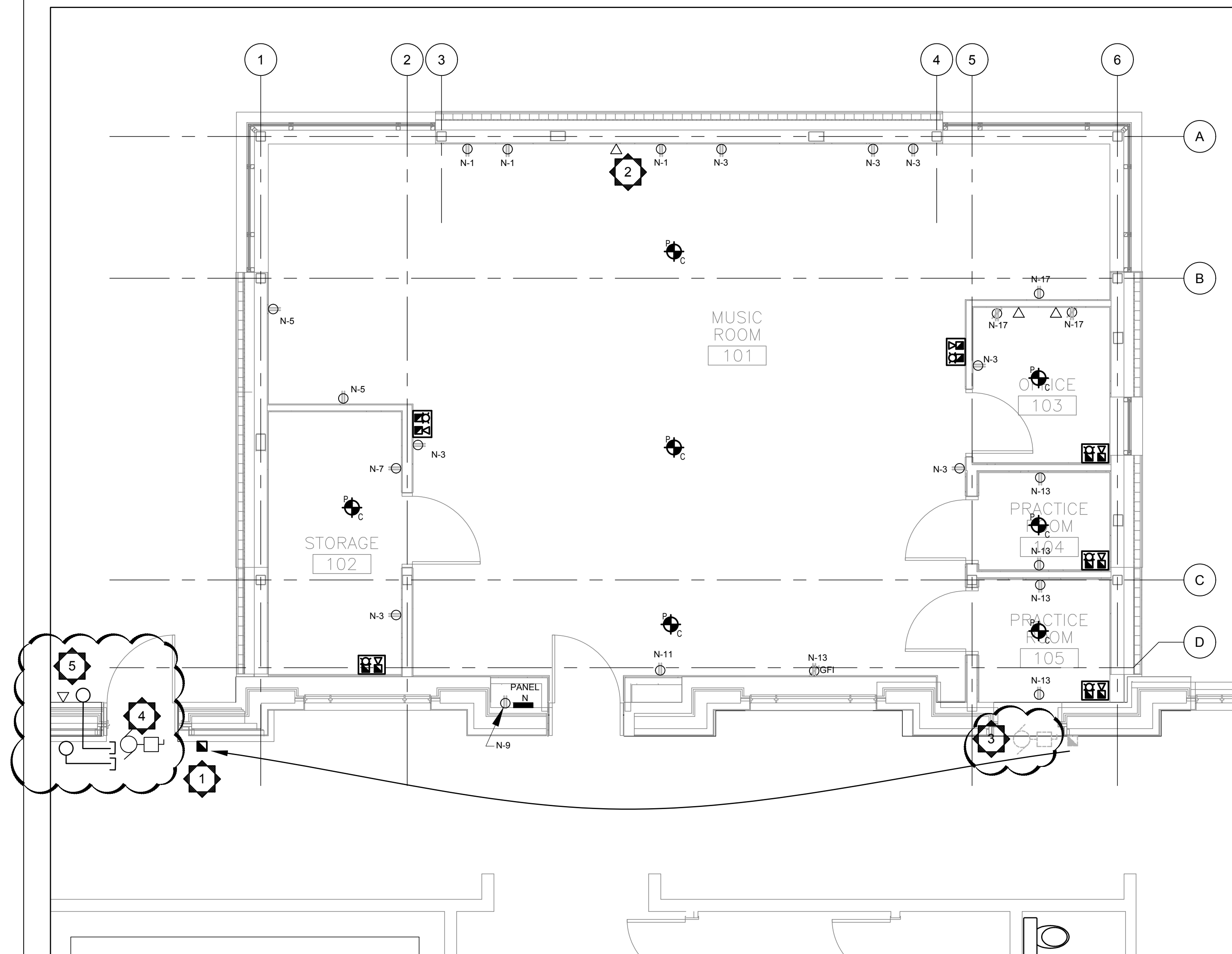
DRAWN BY: DATE: SCALE:
K. Mcl. APR. 2018 N.T.S.

PROJECT:
181-04865-00

DRAWING NO.:

E003

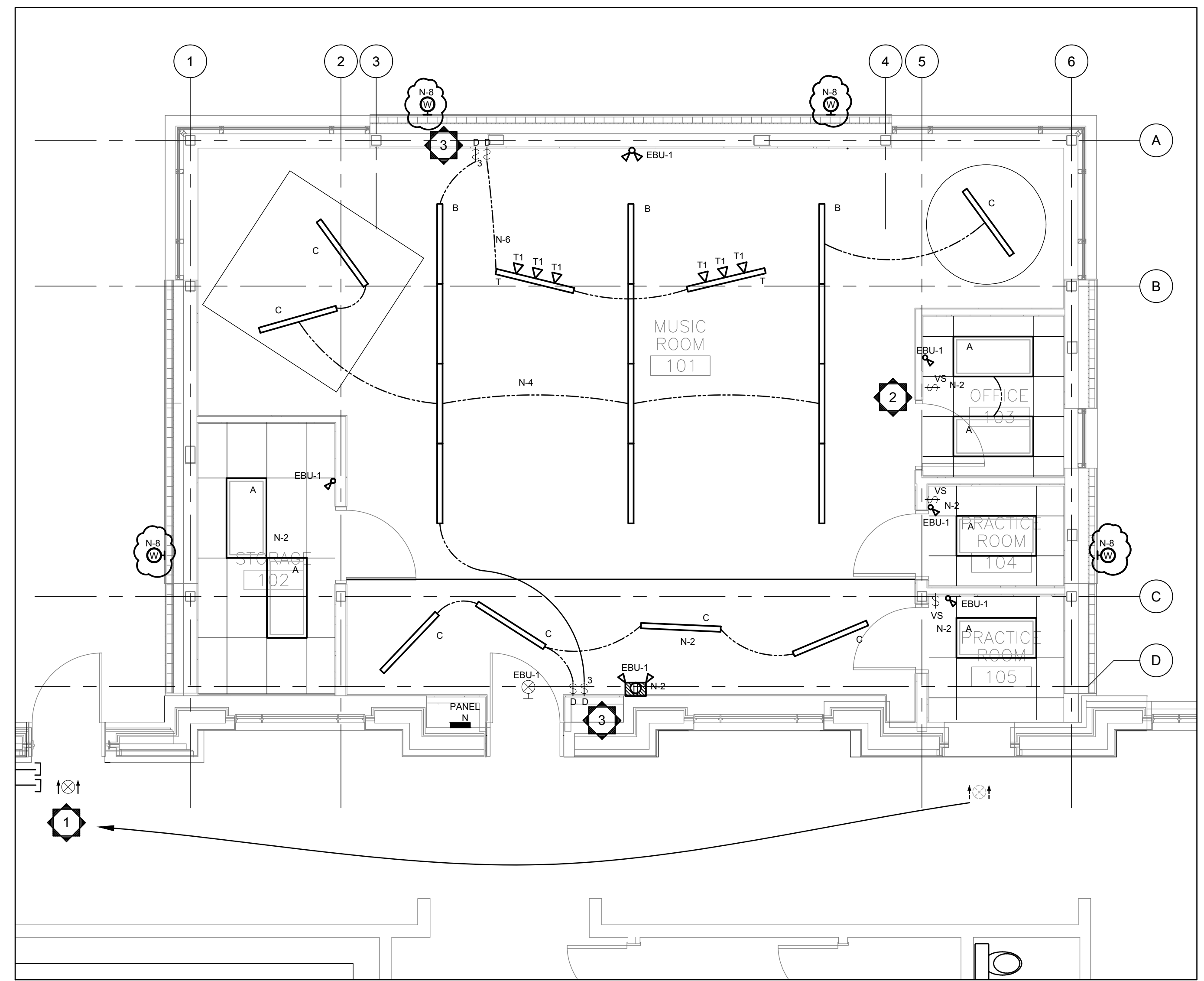
REVISION NO.:



1 PLAN VIEW POWER & SYSTEMS LAYOUT
E101 1:50

- # POWER AND SYSTEMS NOTES:**
1. RELOCATE FIRE ALARM PULL STATION TO NEW DOOR OPENING.
 2. FOR DATA OUTLETS PROVIDE DEVICE BOX AND 21mm EMPTY CONDUIT UP TO CEILING SPACE. TERMINATE IN A BOX.
 3. AT THE EXISTING DOOR OPERATOR LOCATION, DISCONNECT POWER AND MAKE SAFE FOR REMOVAL.
 4. DOOR OPERATOR: EXTEND POWER FROM THE REDUNDANT LOCATION TO THE NEW DOOR OPERATOR LOCATION AND PROVIDE FINAL CONNECTION. COORDINATE BACK BOXES FOR LOW VOLTAGE CONTROL PUSH BUTTONS WITH DOOR OPERATOR INSTALLER.
 5. SECURITY CARD READER: PROVIDE BACK BOX AND CONDUIT THROUGH WALL AND UP TO CEILING SPACE. TERMINATE IN A BOX. COORDINATE WITH SECURITY CONTRACTOR.

- GENERAL NOTES:**
1. CO ORDINATE DEVICE LOCATIONS AND HEIGHTS AFF WITH THE ARCHITECTURAL DRAWINGS AND DETAILS



2 PLAN VIEW LIGHTING LAYOUT
E101 1:50

- # LIGHTING NOTES:**
1. RELOCATE EXIT SIGN TO NEW DOOR OPENING.
 2. LIGHTING CONTROL AS FOLLOWS:
CLASSROOMS – OCCUPANCY CONTROL AND DIMMING
STORAGE ROOM – OCCUPANCY
PRACTICE ROOMS – VACANCY CONTROL
OFFICE, DIMMING AND VACANCY CONTROL
 3. WIRELESS LIGHT SWITCHES –
THE FUNCTION OF THE SWITCH IS INDICATED ON THE DRAWING:
D – DIMMER , OCCUPANCY, DAYLIGHT HARVESTING
VS – DIMMER , VACANCY, DAYLIGHT HARVESTING

- GENERAL NOTES:**
1. CO ORDINATE DEVICE LOCATIONS AND HEIGHTS AFF WITH THE ARCHITECTURAL DRAWINGS AND DETAILS

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PROJECT/LOCATION:
**TURNBULL SCHOOL
MUSIC ROOM ADDITION**
1132 Fisher Avenue, Ottawa

DRAWING TITLE:
**ELECTRICAL
LIGHTING
POWER AND SYSTEMS**

DRAWN BY: K. McI. DATE: APR 2018 SCALE: AS SHOWN

PROJECT:
181-04865-00

DRAWING NO.:

E101

REVISION NO.:

SCHEDULE OF LUMINAIRES						
TYPE	DESIGN BASED ON SPECIFIED MANUFACTURER AND CATALOG NUMBER	PRODUCT DESCRIPTION	VOLTS	LAMPS LUMENS WATTS COLOUR TEMPERATURE	MOUNTING	NOTES
A	PHILIPS DAYBRIGHT CFI FluxGrid 2FS G-42B 835 4D 120 DIM DAY OCC	610mm X 1220mm RECESSED SOFT OPAL DIFFUSER OL	120V	LED MODULE 4276 LUMENS 36.2 WATTS 3500K	RECESSED IN CEILING GRID	DAYLIGHT SENSING C/W DIMMING AND SELECTABLE OCCUPANCY (SPACEWISE)
B	PHILIPS LEADALITE TRUGROOVE 2901LBGN0471EW DIM DAY OCC	1200mm X 100mm RECESSED LINEAR	120V	LED MODULE 4576 LUMENS 40.9 WATTS 3500K	SUSPENDED	DAYLIGHT SENSING C/W DIMMING AND SELECTABLE OCCUPANCY (SPACEWISE)
C	PHILIPS LEADALITE TRUGROOVE 3901LBQS40471EW DIM SWZDT	1200mm X 100mm RECESSED LINEAR	120V	LED MODULE 4114 LUMENS 41.8 WATTS 3500K	RECESSED IN DRYWALL FEATURE	DAYLIGHT SENSING C/W DIMMING AND SELECTABLE OCCUPANCY (SPACEWISE)
§	PHILIPS WIRELESS SWITCH UID8451/10	SINGLE GANG SWITCH PROVIDES SELECTABLE FUNCTIONS DIMMER, VACANCY AND OCCUPANCY	SELF POWERED	N/A	RECESSED IN ELECTRICAL WALL BOX OR SURFACE MOUNTING	WIRELESS
T	PHILIPS LIGHTTOLIER LYTESPAN 6001NWH	1200mm LONG BASIC ONE CIRCUIT TRACK	120V	N/A	SUSPENDED (TBD)	CONTROLLED BY DIMMER TRAILING EDGE (ELV) DIMMING COMPATIBILITY PHILIPS CONTROLS SR400RPC120
T1	PHILIPS LIGHTTOLIER CorePro LT-08 RWF 830 WH VA	MICRO CYLINDER 57mm Dia X 114mm H COLOUR WHITE MOUNTED ON PIVOTING ARM	120V	LED MODULE 963 LUMENS 9 WATTS 3000K	MOUNTED ON TRACK	DIMMABLE TRACK LIGHTS
W	PHILIPS KEENE LytePro LPW167-BZ	315mm W X 130mm H X 145MM D WALL SCONCE COLOUR BRONZE	120V	LED MODULE 3374 LUMENS 36 WATTS TYPE 3 DISTRIBUTION	MOUNTED SURFACE AT 353MM AFF	PHOTO CELL CONTROL P105A

1 SCHEDULE OF LUMINAIRES
E201 N.T.S.

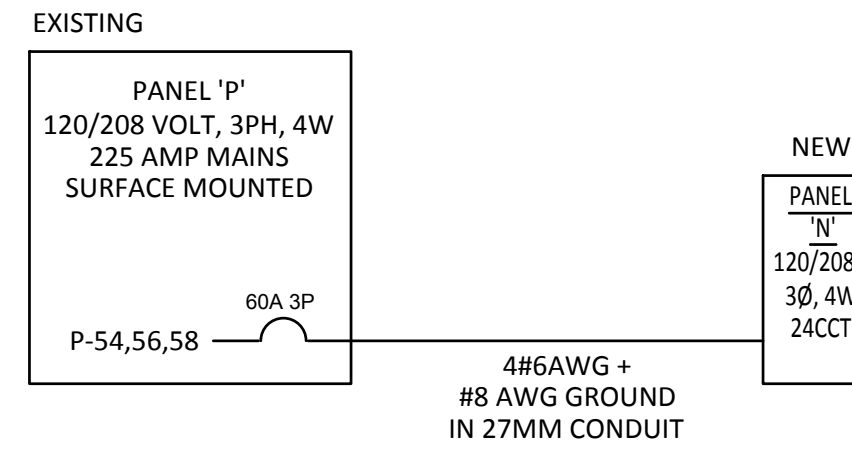
LIGHTING FIXTURE SCHEDULE NOTES:

- DESIGN IS BASED ON THE LUMINAIRES SPECIFIED. IN ALL CASES, ALTERNATIVE LUMINAIRES SHALL BE COMPARABLE TO THE SPECIFIED LUMINAIRE IN QUALITY, PERFORMANCE, AND VISUAL CHARACTERISTICS. ACCEPTABILITY WITH RESPECT TO VISUAL CHARACTERISTICS SHALL BE AT THE SOLE DISCRETION OF THE CONSULTANT. IF A PROPOSED ALTERNATIVE LUMINAIRE IS DEEMED TO BE NOT VISUALLY COMPARABLE, THE SPECIFIED LUMINAIRE SHALL BE PROVIDED.
- SUBJECT TO NOTE 1, ALTERNATIVES TO NOTED LUMINAIRES MANUFACTURED BY PHILIPS (AND AFFILIATES) OR BY LITHONIA ARE ACCEPTABLE, AND MAY BE SUPPLIED WITHOUT CREDIT TO CONTRACT AMOUNT. LUMINAIRES NOT SO NOTED SHALL BE PROVIDED AS SPECIFIED; PROPOSED ALTERNATIVES MAY BE ACCEPTED BY THE CONSULTANT, AND, IF THEY ARE, SHALL RESULT IN A CREDIT TO THE CONTRACT AMOUNT.
- SUBJECT TO NOTE 1, ALTERNATIVES TO NOTED LUMINAIRES MANUFACTURED BY EMERGH-LITE, COOPER (AND AFFILIATES), CANLITE (AND AFFILIATES) OR BY LITHONIA ARE ACCEPTABLE, AND MAY BE SUPPLIED WITHOUT CREDIT TO CONTRACT AMOUNT. LUMINAIRES NOT SO NOTED SHALL BE PROVIDED AS SPECIFIED; PROPOSED ALTERNATIVES MAY BE ACCEPTED BY THE CONSULTANT, AND, IF THEY ARE, SHALL RESULT IN A CREDIT TO THE CONTRACT AMOUNT.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT OF LUMINAIRES.

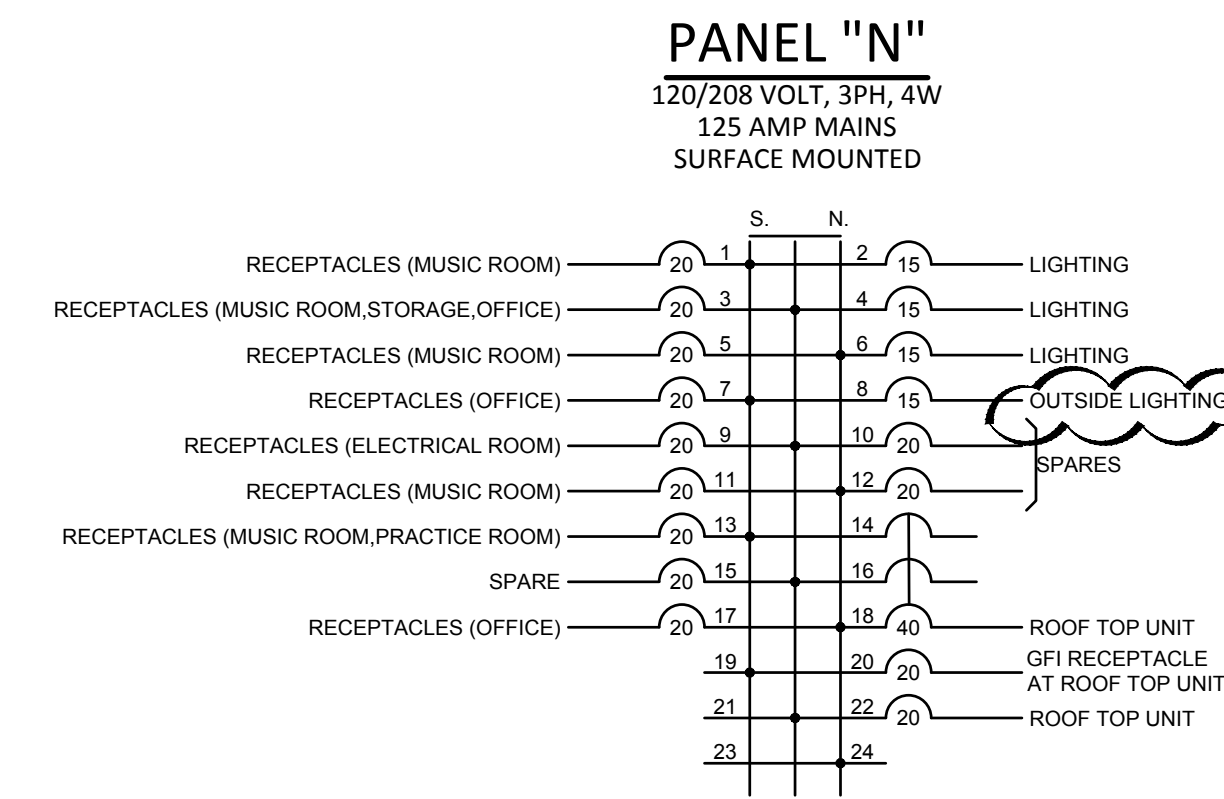
BATTERY PACK SCHEDULE							
TAG	DC VOLTS	TWIN HEAD ON BATTERY PACK	# OF TWIN REMOTE HEADS	# OF SINGLE REMOTE HEADS	# OF EXIT LIGHTS	EBU WATTAGE	DESCRIPTION
EBU-1	12VDC	1 OF 2 x 5W	1 OF 2 x 5W	4 OF 5W	1 SIGN 2W	72	EQUAL TO THOMAS & BETTS, EMERGI-LITE 12ESL72 U/2 LI WHITE FINISH

NOTES:
1. EMERGENCY BATTERY UNIT TO HAVE MINIMUM OF 60 MINUTES BACK UP POWER.
2. CONNECT EMERGENCY LIGHTING BATTERY PACKS TO LOCAL (UNSWITCHED) LIGHTING CIRCUIT.

4 BATTERY PACK SCHEDULE
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2 PARTIAL SINGLE LINE DIAGRAM
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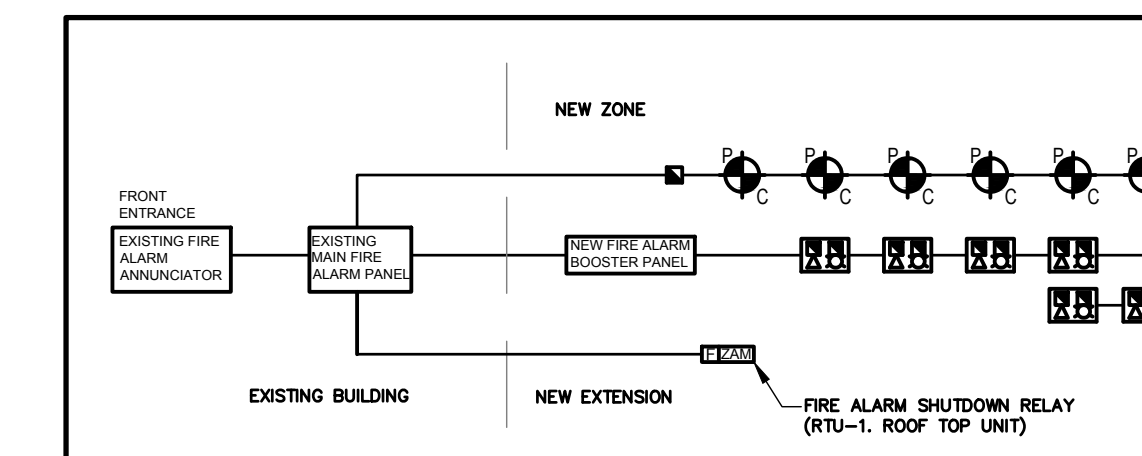
3 PANEL 'N'
E201 N.T.S.

MAXIMUM BRANCH WIRING DISTANCE FOR 120 VOLT SYSTEM AT 2% VOLTAGE DROP

WIRE SIZE	BREAKER SIZE (AMPERES)	15	20	30	40	50	60	70	80	100
	MAX. LOAD AT 80% (AMPERES)	12	16	24	32	40	48	56	68	80
NO.12	----	16.8	12.2	----	----	----	----	----	----	----
NO.10	----	25.9	19.0	12.9	----	----	----	----	----	----
NO.8	----	39.6	30.4	20.5	15.2	----	----	----	----	----
NO.6	----	62.4	47.2	32.0	23.6	19.0	16.0	----	----	----
NO.4	----	99.0	73.1	50.2	38.1	30.4	24.3	21.3	19.0	----
NO.2	----	----	114.3	77.2	57.9	47.2	38.8	33.5	28.9	22.8
NO.1	----	----	----	96.0	73.1	57.9	47.2	42.6	36.5	27.4
NO.1/0	----	----	----	----	85.3	68.5	56.3	48.7	41.9	33.5
NO2/0	----	----	----	----	102.8	80.7	67.0	57.9	50.2	40.3
NO3/0	----	----	----	----	----	95.2	79.2	68.5	59.4	47.2
NO4/0	----	----	----	----	----	92.9	79.2	70.1	56.3	----
250 MCM	----	----	----	----	----	102.8	86.8	76.2	60.9	----
300 MCM	----	----	----	----	----	----	100.5	88.3	70.1	----

NOTE: DISTANCES INDICATED IN METRES FROM PANEL TO LOAD FOR SINGLE PHASE.

5 120 VOLT SYSTEM AT 2% VOLTAGE DROP TABLE
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6 PARTIAL FIRE ALARM DIAGRAM
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D	2018 10 05	ISSUED FOR CONSTRUCTION
C	2018 08 02	ISSUED WITH ADDENDUM No.2
B	2018 07 05	ISSUED FOR PERMIT & TENDER
A	2018 06 28	ISSUED FOR CO ORDINATION

no.	date	revision

It is the responsibility of the appropriate contractor to check and verify all dimensions on site and report all errors and/or omissions to the architect.

All contractors must comply with all pertinent codes and by-laws.

Do not scale drawings.

This drawing may not be used for construction until signed.

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PROJECT/LOCATION:
TURNBULL SCHOOL MUSIC ROOM ADDITION
1132 Fisher Avenue, Ottawa

DRAWING TITLE:
ELECTRICAL LIGHTING SCHEDULES & DETAILS

DRAWN BY: K. Mcl. DATE: APR. 2018 SCALE: AS SHOWN

PROJECT: 181-04865-00

DRAWING NO.:

E201

REVISION NO.: