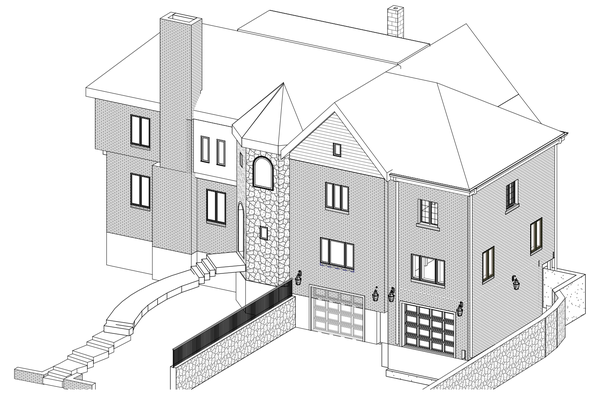
# 111 GORDON ROAD ADDITION
**WABAN, MASSACHUSETTS 02468**

## APRIL 1, 2021 PERMIT SET



1 3D VIEW 1

SPALDING TOUGIAS ARCHITECTS, INC.
WWW.STA-INC.COM

241 A Street, Suite 200
Boston, Massachusetts 02210
617-542-4522

## 111 GORDON

GENERAL NOTES, STANDARDS AND CONDITIONS:

CODES:

2015 INTERNATIONAL RESIDENTIAL BUILDING CODE
780CMR MASSACHUSETTS STATE BUILDING CODE 9TH EDITION
CITY OF NEWTON ZONING ORDINANCES SECTION 30

GENERAL NOTES:

1. ALL PERMITS AND LICENSES SHALL BE SECURED BY THE CONTRACTOR. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MA STATE BUILDING CODE AND ALL OTHER CODES, ORDINANCES AND STANDARDS NOTED ABOVE. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE CONTRACT DOCUMENTS AND PROCEED AFTER THEY ARE RESOLVED.
2. CONTRACTOR AND ALL SUBS SHALL BE LICENSED AND PRESENT ADEQUATE GENERAL LIABILITY AND WORKMANS COMP INSURANCE TO THE OWNER AND ARCHITECT.
3. CONTRACTOR SHALL PREPARE A SCHEDULE OF VALUES AND SUBMIT PERCENTAGES OF COMPLETION ALONG WITH THE MONTHLY REQUISITION FOR PAYMENT.
4. CONTRACTOR SHALL COORDINATE ALL ARCHITECTURAL, STRUCTURAL, MEP/FP, CIVIL AND LANDSCAPE WORK PERFORMED BY SUBCONTRACTORS IN ACCORDANCE WITH THE INTENT OF THE CONTRACT DRAWINGS AND SUBMIT SHOP DRAWINGS DEMONSTRATING COORDINATION AND UNDERSTANDING.
5. ALL NOTATIONS AND INDICATIONS ON THE DRAWINGS APPLYING TO ONE AREA OR CONDITION SHALL APPLY TO OTHER SIMILAR AREAS OR CONDITIONS ON THE DRAWINGS UNLESS OTHERWISE NOTED.
6. PROVIDE SEALANT AT ALL INTERIOR AND EXTERIOR JOINTS, TYPICAL.
7. PROVIDE FLASHINGS AT ALL OPENINGS, WINDOWS, DOORS, CONNECTIONS AND TRANSITIONS TO INSURE A WATERTIGHT BUILDING WIDE INSTALLATION.
8. PROVIDE ALL ACCESS PANELS AS REQUIRED BY CODE AND REQUIRED BY ARCHITECTURAL, MEP/FP EQUIPMENT AND INSTALLATIONS WHETHER OR NOT INDICATED ON THE PLANS. ACCESS PANELS SHALL BE FLUSH AND LOCATIONS COORDINATED WITH THE ARCHITECT.
9. ALL PENETRATIONS THROUGH RATED WALLS, CEILINGS AND FLOORS SHALL BE FIRE STOPPED AND SMOKE SEALED WITH AN APPROVED RATED ASSEMBLY OR WITH MECHANICAL FIRE DAMPERS.

SITE WORK/EXISTING CONDITIONS
1. TEMPORARY SHORING: PROVIDE AND MAINTAIN SHORING, BRACING AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN AND/OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED. EXCAVATION AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS.
2. TEMPORARY FACILITIES: PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE, DAMAGE TO ADJACENT PARCELS AND/OR FACILITIES TO REMAIN.
3. UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS: MAINTAIN AS REQUIRED FOR OCCUPIED FACILITIES AND/OR CAPPED/DISCONTINUED AS REQUIRED.
4. HAZARDOUS MATERIALS: IF ENCOUNTERED OWNER SHALL REMOVE UNDER A SEPARATE CONTRACT.
5. CONTRACTOR SHALL PROTECT ALL ON-SITE ITEMS AND MATERIALS FROM WEATHER AND MOISTURE. THIS INCLUDES PROTECTING THE BUILDING FROM WEATHER AND MOISTURE THROUGHOUT THE COURSE OF CONSTRUCTION DURING WHICH TIMES THE BUILDING IS EXPOSED.
6. CONTRACTOR SHALL IMPLEMENT A STRATEGY FOR DRYING MATERIALS AND PRODUCTS PRIOR TO INSTALLATION WHICH MAY HAVE A HIGH MOISTURE CONTENT.

DEMOLITION, CONSTRUCTION WASTE MANAGEMENT, NOISE MITIGATION, DUST
1. OFFSITE DISPOSAL SHALL BE DEPOSITED, RECYCLED OR RECLAIMED IN A LANDFILL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL MITIGATE TO THE EXTENT POSSIBLE DUST, DEBRIS AND NOISE THROUGHOUT THE DEMOLITION AND CONSTRUCTION PROCESS. THE SITE SHALL BE MAINTAINED IN AN ORDERLY CONDITION ON A DAILY BASIS INCLUDING ALL SURROUNDING AREAS AND ADJACENT PARCELS AFFECTED BY THE SCOPE OF WORK.

2 GENERAL NOTES
1/4" = 1'-0"

## PROPOSED BUILDING AREA CALCULATION

| | |
|---|---|
| BASEMENT | 301 GSF |
| FIRST FLOOR | 301 GSF |
| SECOND FLOOR | 348 GSF |
| TOTAL | 950 GSF |

## DRAWING INDEX



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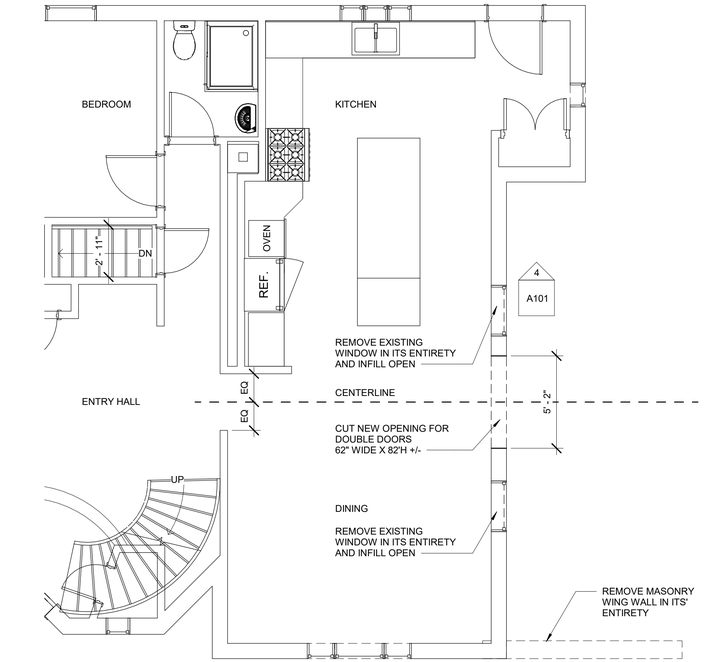
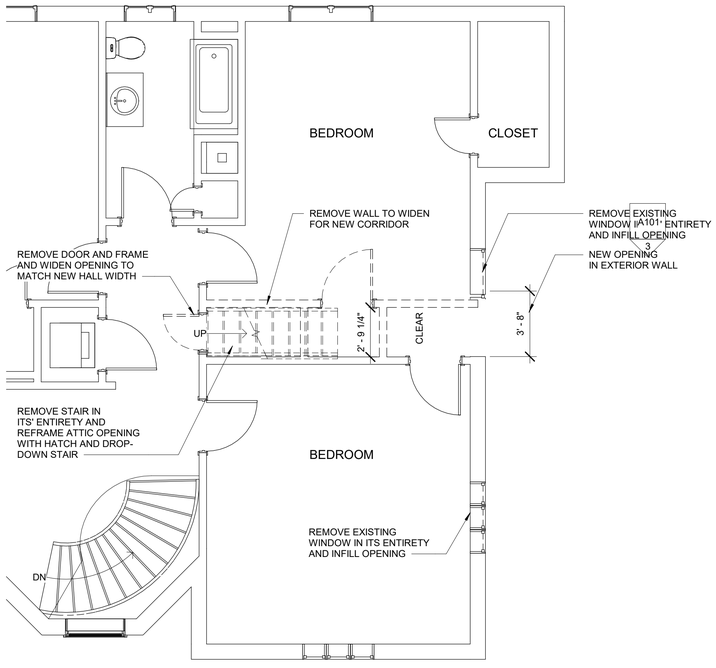
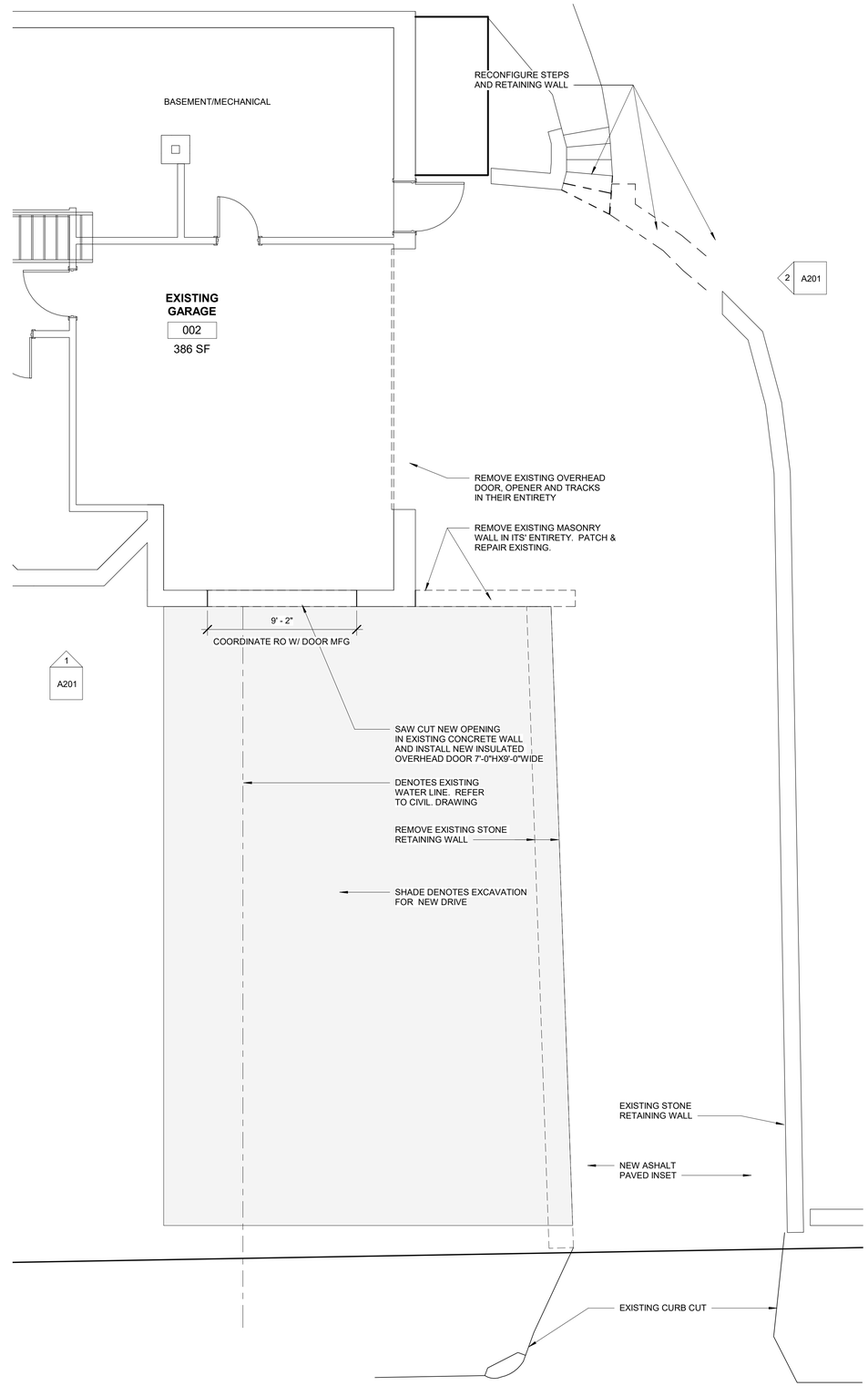



2 FIRST FLOOR PLAN DEMOLITION
1/4" = 1'-0"




3 SECOND FLOOR DEMOLITION
1/4" = 1'-0"




1 BASEMENT DEMOLITION
1/4" = 1'-0"

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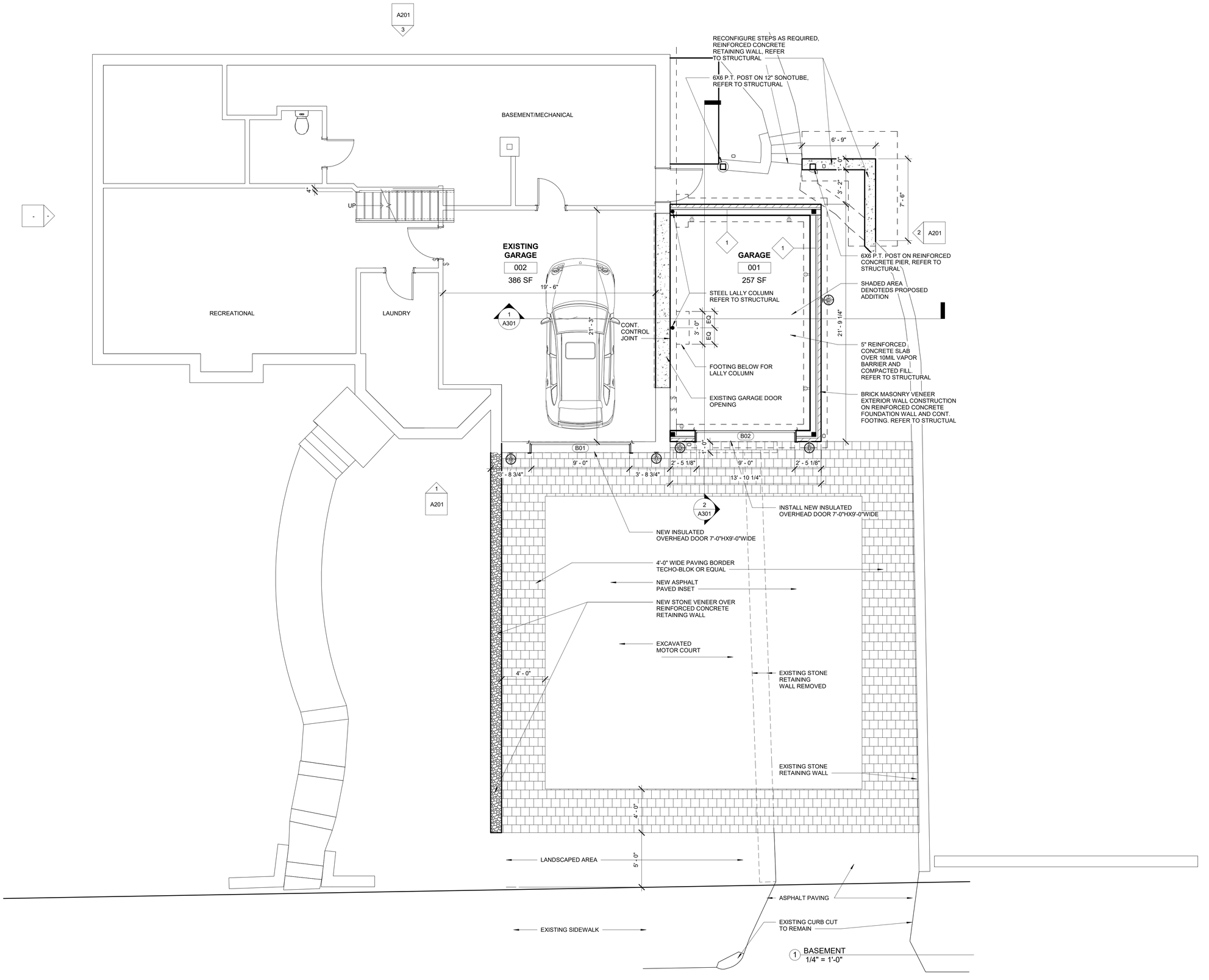
No. | Date | Revision

Seal

Drawing Title

## DEMOLITION PLANS

Project No. 111G 7 20
Date 04 01 2021
Scale 1/4" = 1'-0"
Drawn By Author | Checked By Checker
Drawing No. D100

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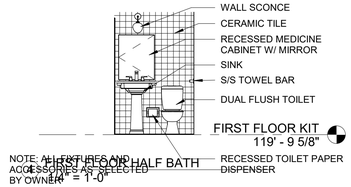
|---|---|---|

Seal

Drawing Title

## BASEMENT PROPOSED GARAGE

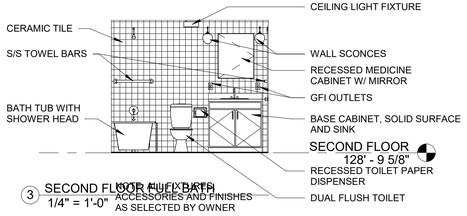
| | |
|---|---|
| Project No. | 111G 7 20 |
| Date | 04 01 2021 |
| Scale | 1/4" = 1'-0" |
| Drawn By | Author |
| Checked By | Checker |
| Drawing No. | A100 |




FIRST FLOOR KIT
119' - 9 5/8"

FIRST FLOOR HALF BATH
1/4" = 1'-0"

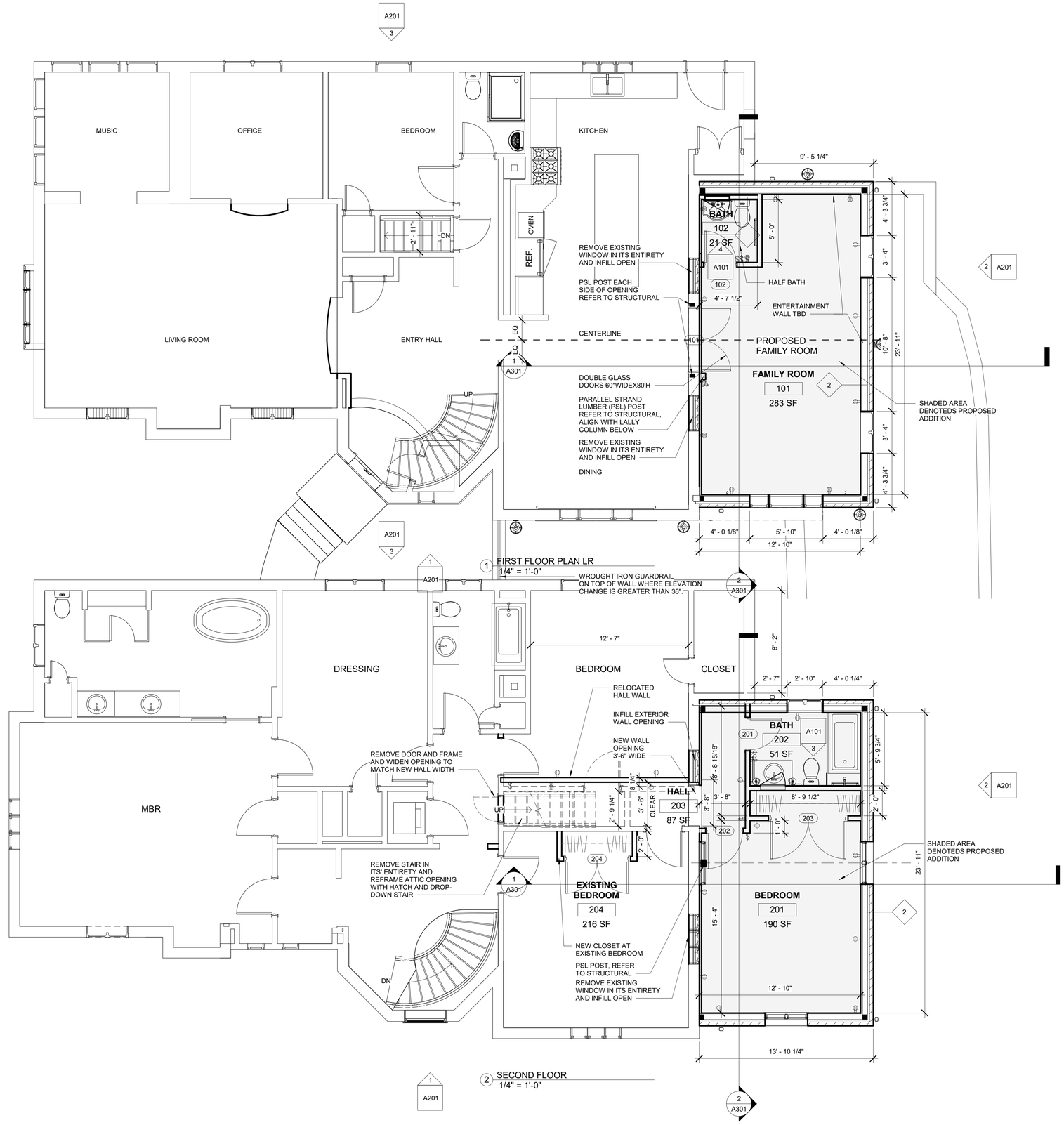
NOTE: ALL FIXTURES AND ACCESSORIES AS SELECTED BY OWNER




3 SECOND FLOOR BATH
1/4" = 1'-0"

NOTE: ALL FIXTURES AND ACCESSORIES AND FINISHES AS SELECTED BY OWNER

SECOND FLOOR
128' - 9 5/8"

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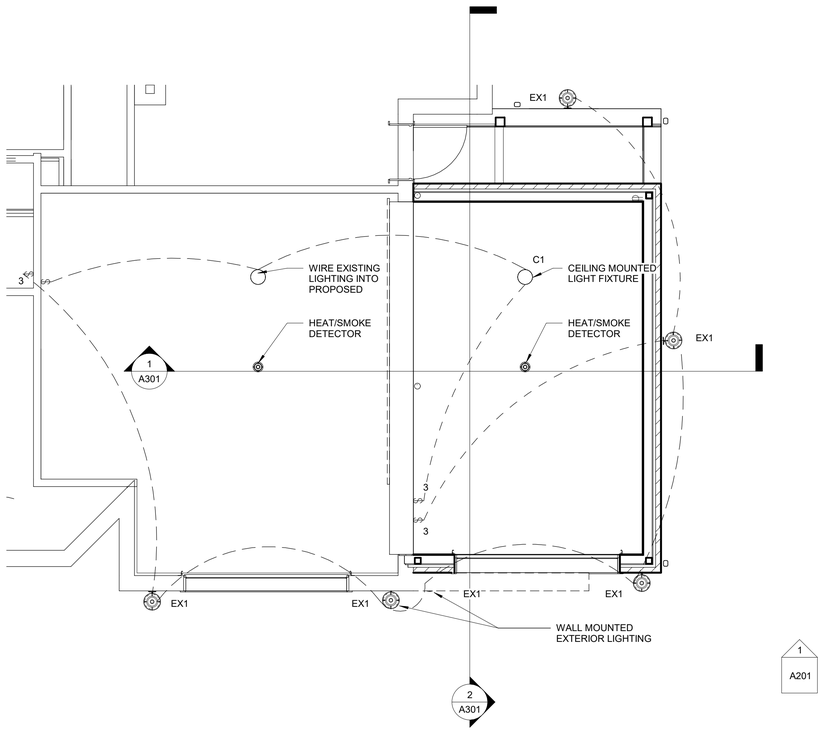
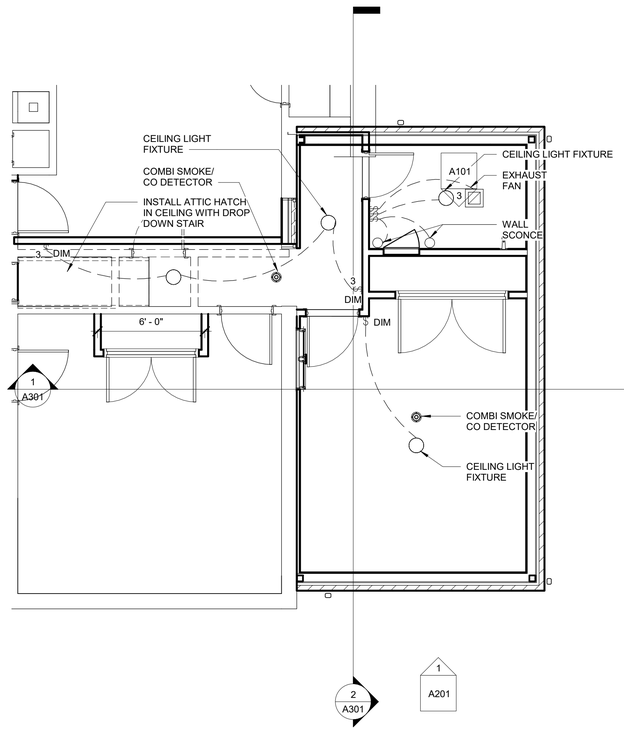
## FIRST FLOOR PROPOSED FAMILY ROOM & SECOND FLOOR BEDROOM

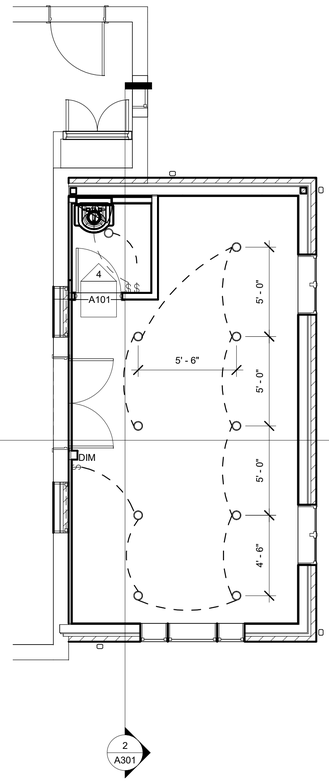
Project No. 111G 7 20
Drawing No. A101
Date 04 01 2021
Scale 1/4" = 1'-0"
Drawn By Author
Checked By Checker



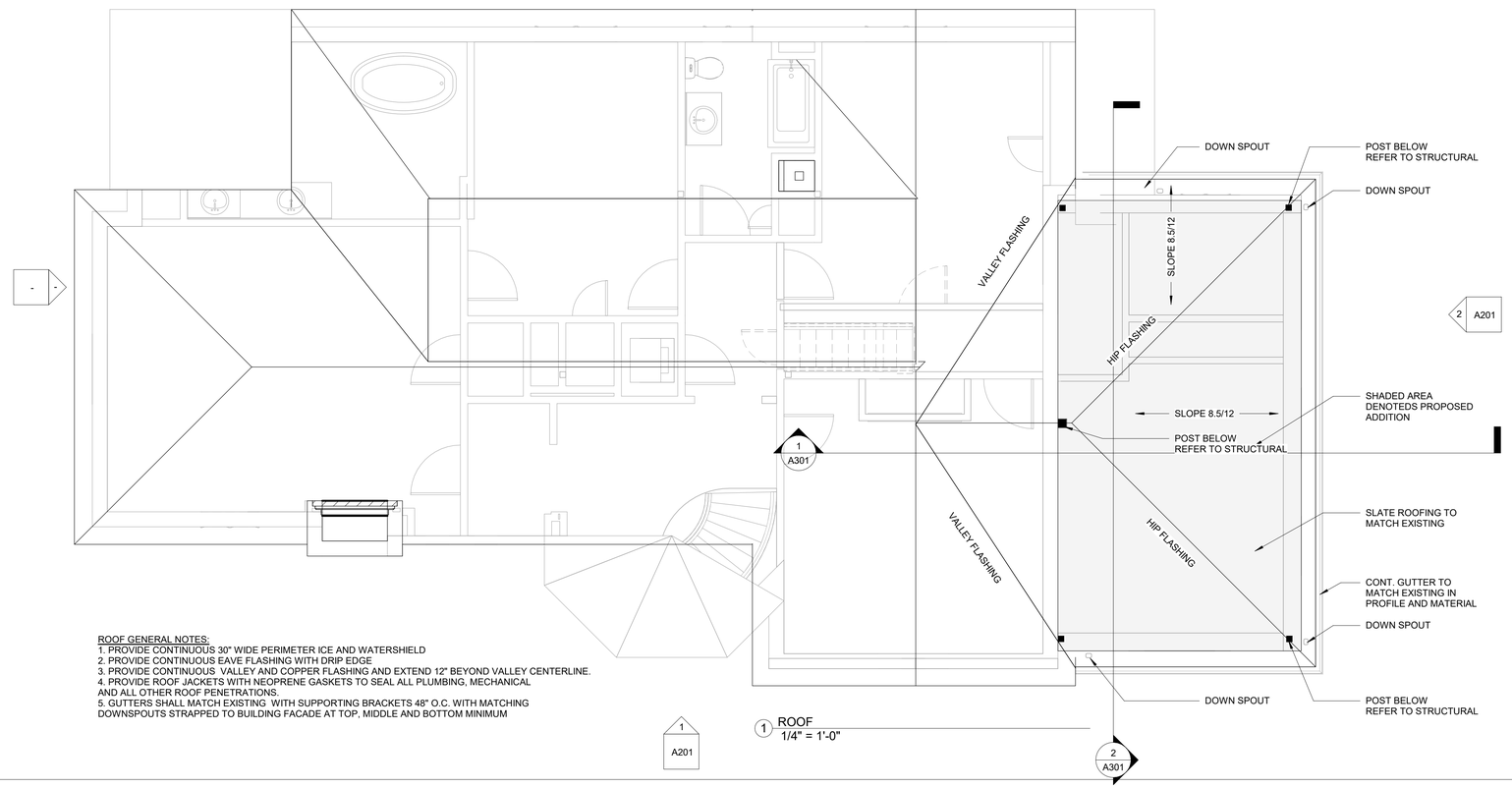

4 BASEMENT
1/4" = 1'-0"




3 SECOND FLOOR
1/4" = 1'-0"




2 FIRST FLOOR RCP
1/4" = 1'-0"




ROOF GENERAL NOTES:
1. PROVIDE CONTINUOUS 30" WIDE PERIMETER ICE AND WATERSHIELD
2. PROVIDE CONTINUOUS EAVE FLASHING WITH DRIP EDGE
3. PROVIDE CONTINUOUS VALLEY AND COPPER FLASHING AND EXTEND 12" BEYOND VALLEY CENTERLINE.
4. PROVIDE ROOF JACKETS WITH NEOPRENE GASKETS TO SEAL ALL PLUMBING, MECHANICAL AND ALL OTHER ROOF PENETRATIONS.
5. GUTTERS SHALL MATCH EXISTING WITH SUPPORTING BRACKETS 48" O.C. WITH MATCHING DOWNSPOUTS STRAPPED TO BUILDING FACADE AT TOP, MIDDLE AND BOTTOM MINIMUM

1 ROOF
1/4" = 1'-0"

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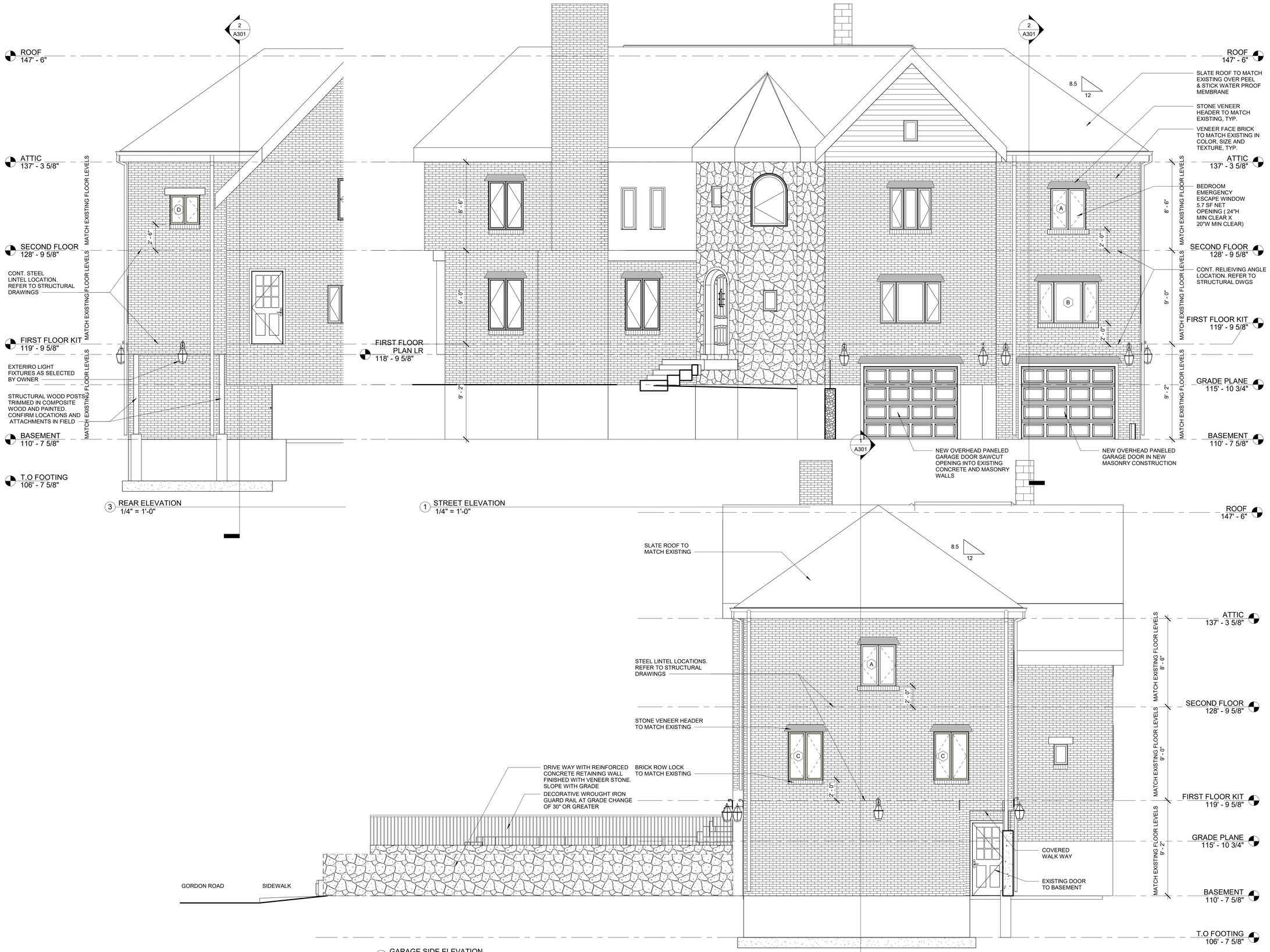
## ROOF PLAN AND REFLECTED CEILING PLANS

Project No. 111G 7 20
Date 04 01 2021
Scale 1/4" = 1'-0"
Drawn By Author
Checked By Checker
Drawing No. A102

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Drawing Title

## BUILDING ELEVATIONS

Project No. 111G 7 20
Date 04 01 2021
Scale 1/4" = 1'-0"
Drawn By Author | Checked By Checker
Drawing No. A201

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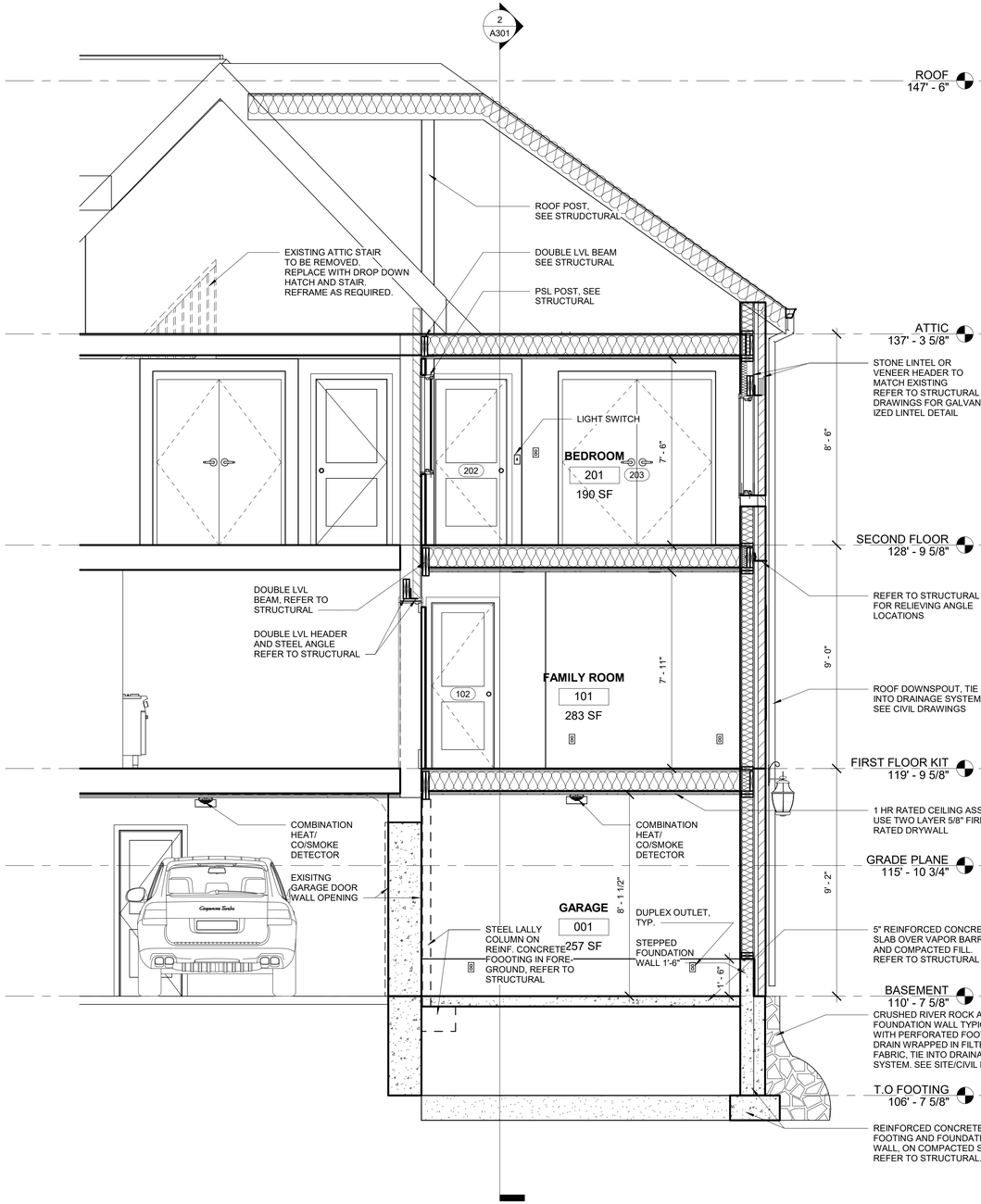
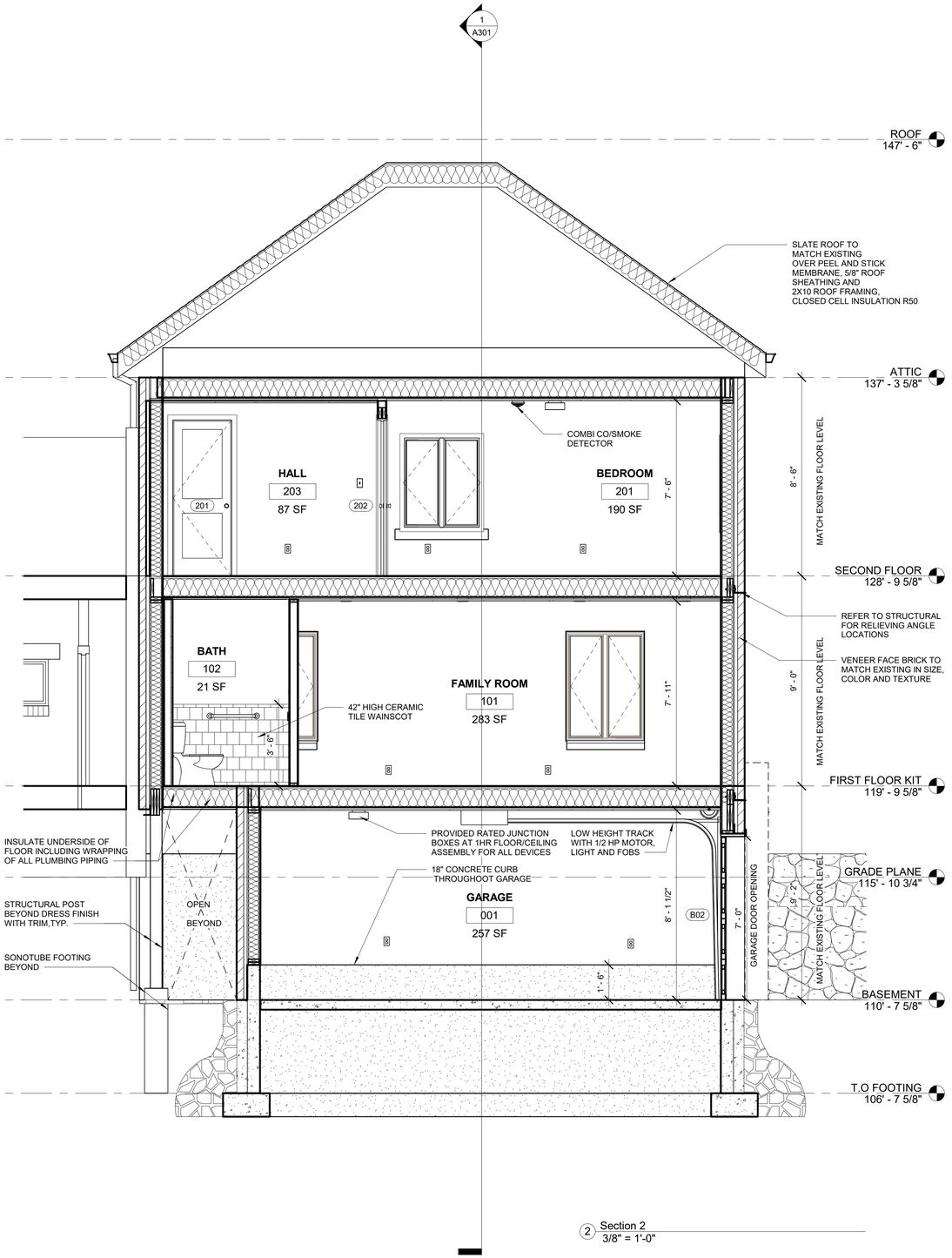



1 Section 1
3/8" = 1'-0"




2 Section 2
3/8" = 1'-0"

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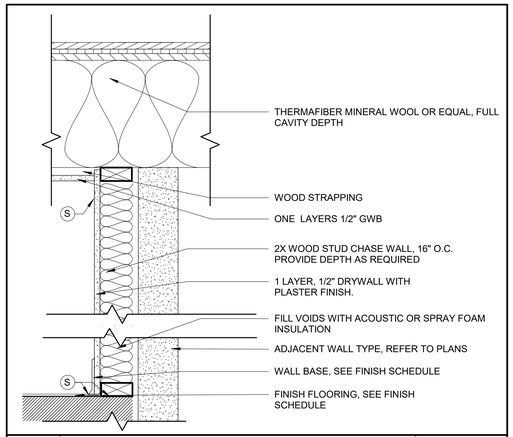
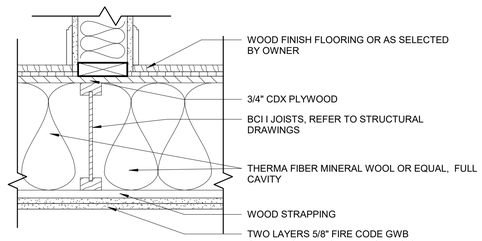
## BUILDING SECTIONS

Project No. 111G 7 20
Drawing No. A301
Date 04 01 2021
Scale 3/8" = 1'-0"
Drawn By Author
Checked By Checker

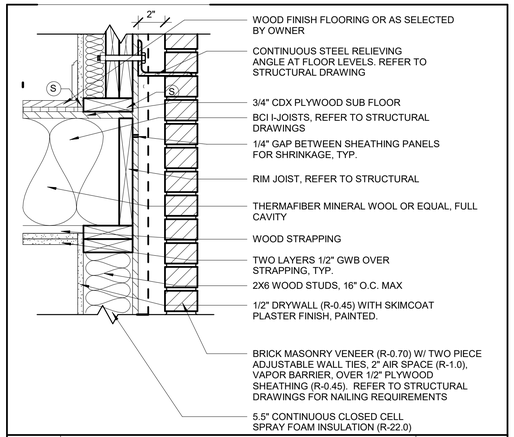



**4 CHASE WALL**



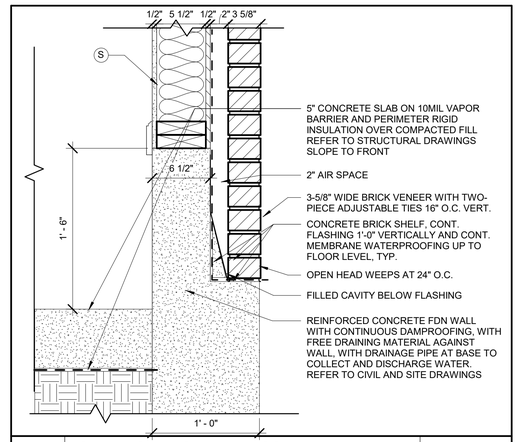

**3 GARAGE 1 HR FLOOR/CEILING**

UL DESIGN L547




**2 EXTERIOR WALL/FLOOR ASSEMBLY BRICK**

R VALUE: 24.60




**1 GARAGE FOUNDATION WALL**

REFER TO STRUCTURAL DETAILS FOR ADDITIONAL INFORMATION

4 WALL TYPE 4
1 1/2" = 1'-0"

3 WALL TYPE 3
1 1/2" = 1'-0"

2 WALL TYPE 2
1 1/2" = 1'-0"

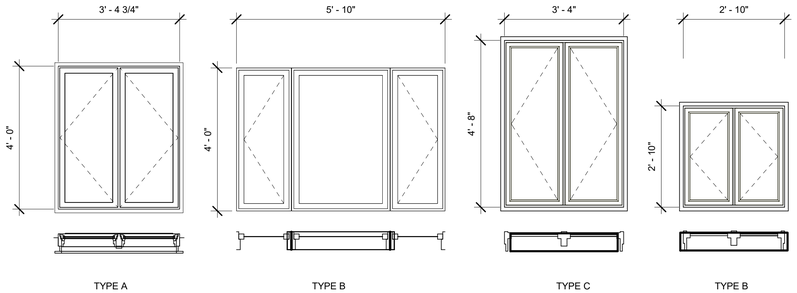
1 WALL TYPE 1
1 1/2" = 1'-0"

**Door Schedule**

| Level | Mark | Width | Height | Frame Type | Finish | Comments |
|---|---|---|---|---|---|---|
| BASEMENT | B01 | 9' - 0" | 7' - 0" | STEEL TRACK | MFG | MOTOR, TRACK, FOB, LIGHT,WEATHERPROOF |
| BASEMENT | B02 | 9' - 0" | 7' - 0" | STEEL TRACK | MFG | MOTOR, TRACK, FOB, LIGHT,WEATHERPROOF |
| FIRST FLOOR KIT | 101 | 5' - 0" | 6' - 8" | WOOD | PAINT | FULL GLASS, TEMPERED, DIVIDED LITES |
| FIRST FLOOR KIT | 102 | 2' - 6" | 6' - 8" | WOOD | PAINT | PANELS, MATCH EXISTING |
| SECOND FLOOR | 201 | 2' - 6" | 6' - 8" | WOOD | PAINT | PANELS, MATCH EXISTING |
| SECOND FLOOR | 202 | 2' - 10" | 6' - 8" | WOOD | PAINT | PANELS, MATCH EXISTING |
| SECOND FLOOR | 203 | 6' - 0" | 6' - 8" | WOOD | PAINT | PANELS, MATCH EXISTING |
| SECOND FLOOR | 204 | 5' - 0" | 6' - 8" | WOOD | PAINT | PANELS, MATCH EXISTING |

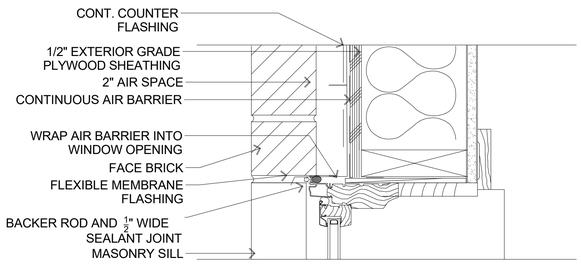
**Room Schedule**

| Level | Number | Name | Floor Finish | Base Finish | Wall Finish | Ceiling Finish | Comments |
|---|---|---|---|---|---|---|---|
| Not Placed | | | | | | | |
| BASEMENT | 001 | GARAGE | CONCRETE | CONRETE 18" | PAINT | PAINT | CO/SMOKE DETECTOR |
| BASEMENT | 002 | EXISTING GARAGE | | | PAINT | | CO/SMOKE DETECTOR |
| FIRST FLOOR PLAN LR | 101 | FAMILY ROOM | WOOD | WOOD | PAINT | PAINT | |
| FIRST FLOOR PLAN LR | 102 | BATH | CERAMIC TILE | CERAMIC TILE | TILE/PAINT | PAINT | |
| SECOND FLOOR | 201 | BEDROOM | WOOD | WOOD | PAINT | PAINT | CO/SMOKE DETECTOR |
| SECOND FLOOR | 202 | BATH | CERAMIC TILE | CERAMIC TILE | TILE/PAINT | PAINT | |
| SECOND FLOOR | 203 | HALL | WOOD | WOOD | PAINT | PAINT | CO/SMOKE DETECTOR |
| SECOND FLOOR | 204 | EXISTING BEDROOM | | | PAINT | | NEW CLOSET |




CONFIRM WINDOW SIZE COMPLIES WITH EMERGENCY ACCESS REQUIREMENT MIN 20"W CLEAR X 24"W HIGH AND 5.7 MIN SF OPENING.

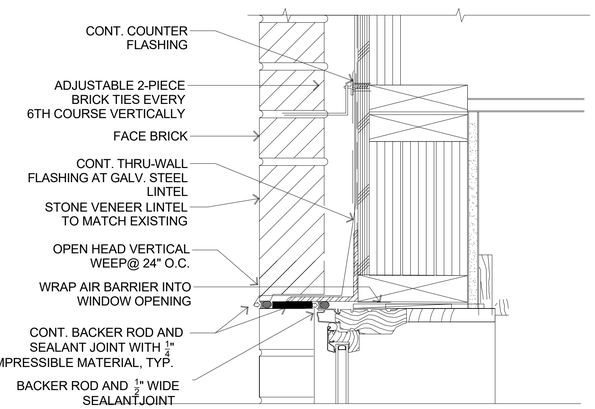
WINDOW SCHEDULE
1/2" = 1'-0"




## 2 JAMB AT BRICK

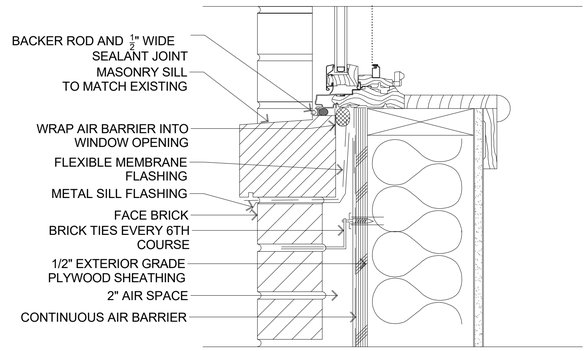
SCALE: 3"=1'-0"

WINDOW BASIS OF DESIGN
ANDERSEN 400 SERIES LOW E
U VALUE 0.30
SHGC 0.32




## 3 HEAD AT BRICK

SCALE: 3"=1'-0"




## 1 SILL AT BRICK

SCALE: 3"=1'-0"

WINDOW DETAILS
3" = 1'-0"

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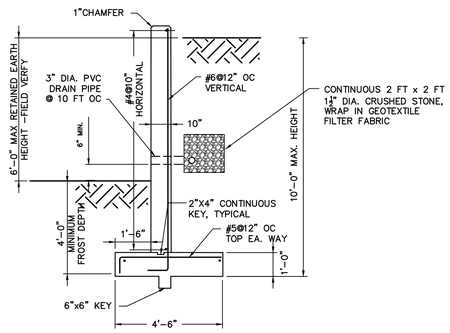
Drawing Title

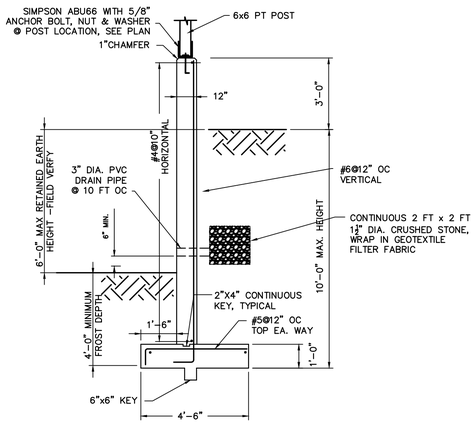
## WALL TYPES AND WINDOW DETAILS

Project No. 111G 7 20
Date 04 01 2021
Scale As indicated
Drawn By Author | Checked By Checker
Drawing No. A 401



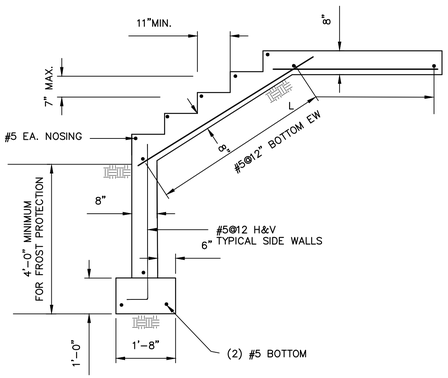

## SECTION A
## EXTERIOR RETAINING WALL

SCALE 3/8" =1'-0"



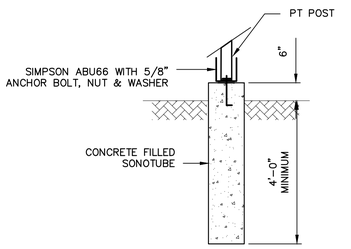

## RETAINING WALL SECTION–B

SCALE 3/8" =1'-0"



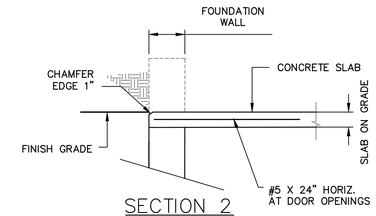

## SECTION C: EXTERIOR CONCRETE STAIR

SCALE: ½"=1'-0"



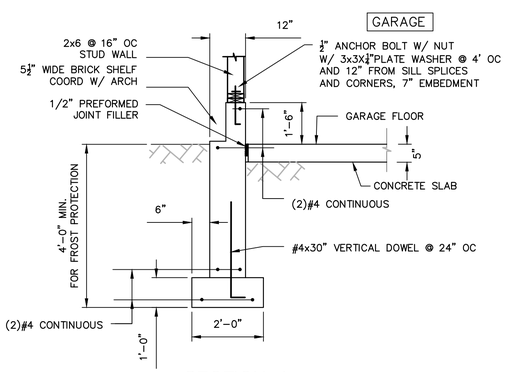

## SONOTUBE FOUNDATION

SCALE: 1/2"=1'-0"



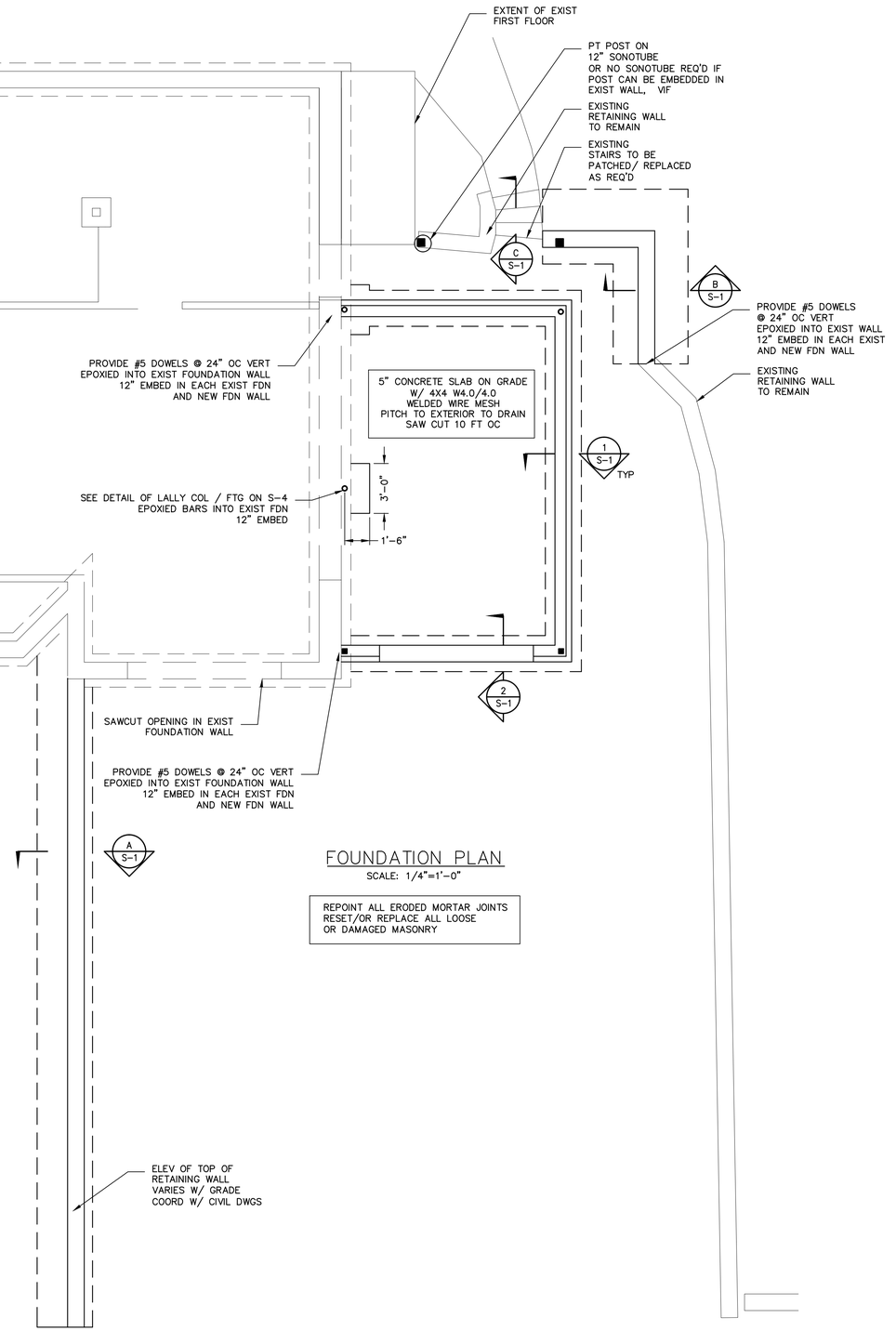

## SECTION 2
## GARAGE DOOR/ENTRYWAY

SCALE: ½"=1'-0"




## SECTION 1
## GRADE WALL @ GARAGE

SCALE: ½"=1'-0"




## FOUNDATION PLAN

SCALE: 1/4"=1'-0"

REPOINT ALL ERODED MORTAR JOINTS RESET/OR REPLACE ALL LOOSE OR DAMAGED MASONRY

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

1. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.

2. THESE PLANS AND SPECIFICATIONS ARE ARE THE PROPERTY OF LEON A. BOMBARDIER, PE ANY USE WITHOUT WRITTEN CONSENT IS PROHIBITED.

ARCHITECT:

GEORGE TOUGIAS
SPALDING TOUGIAS ARCHITECTS

OWNER:

**BOMBARDIER**
STRUCTURAL ENGINEERING

| # | REVISIONS | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |


LEON A. BOMBARDIER, PE
Structural Engineer
131 Lincoln Street
Abington, MA 02351

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PROJECT:

RESIDENTIAL ADDITION

111 GORDON RD.
WABAN, MA

DRAWING TITLE:

FOUNDATION PLAN, DETAILS & SECTIONS

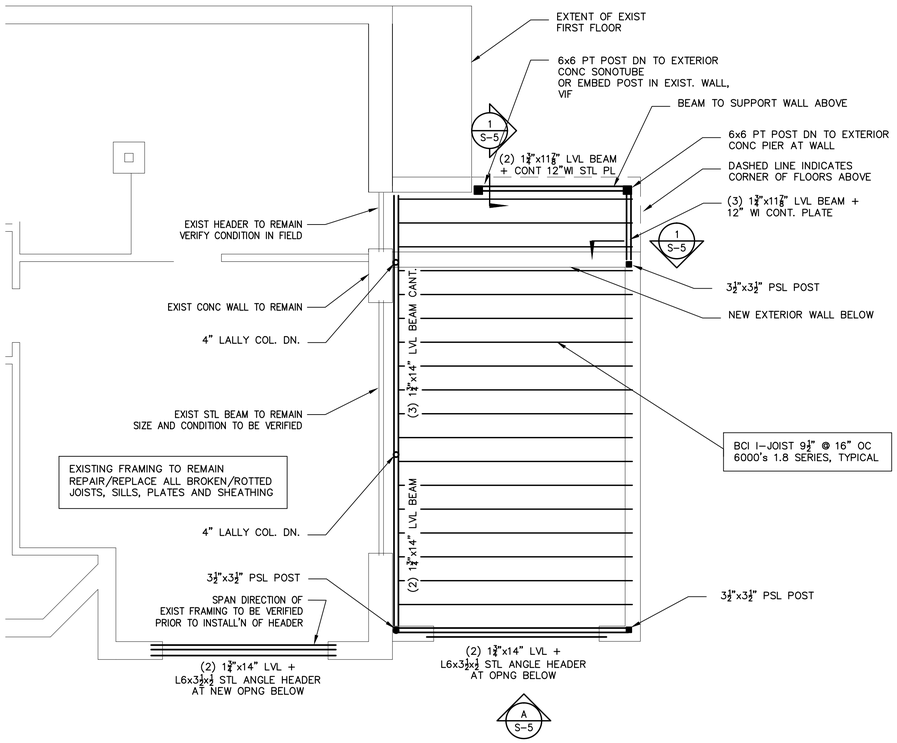
STAMP:

COMMONWEALTH OF MASSACHUSETTS
LEON A. BOMBARDIER
No. 27618
REGISTERED PROFESSIONAL ENGINEER

APRIL 1, 2021

| | |
|---|---|
| SCALE: | AS NOTED |
| DATE: | 4/01/21 |
| DRAWN BY: | JKS |
| CHECKED BY: | LAB |
| PROJECT #: | 2021-11 |

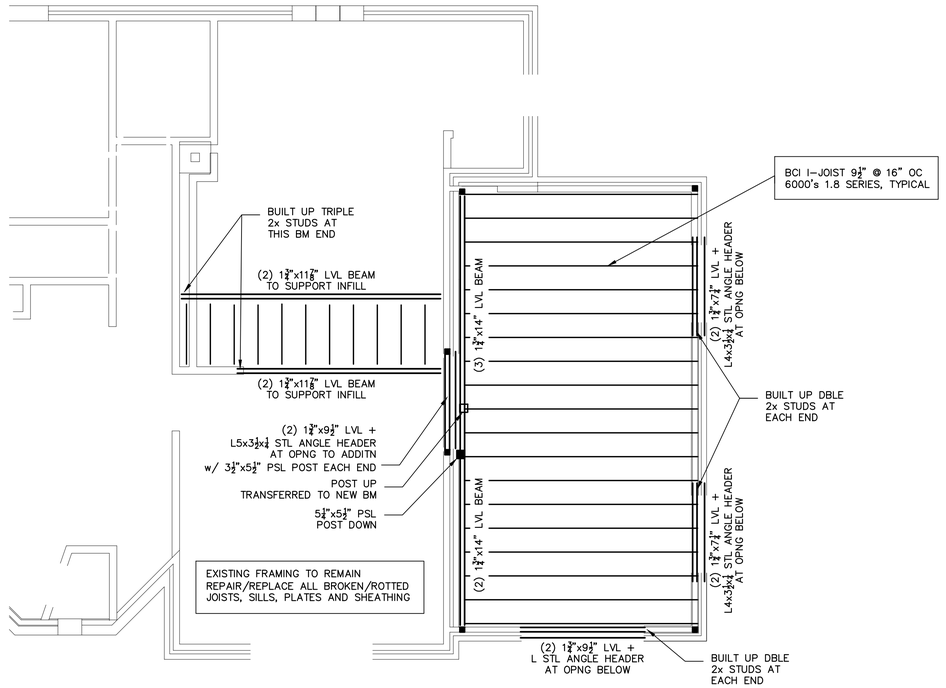
S-1




## FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0"

AT EACH FLOOR LEVEL PROVIDE RELIEVING ANGLE FOR MASONRY: SEE TYPICAL DETAIL ON S-5




## SECOND FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0"

AT EACH FLOOR LEVEL PROVIDE RELIEVING ANGLE FOR MASONRY: SEE TYPICAL DETAIL ON S-5

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

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OWNER:

**BOMBARDIER**
STRUCTURAL ENGINEERING

| # | REVISIONS | DATE |
|---|---|---|
| | | |

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PROJECT:

RESIDENTIAL ADDITION

111 GORDON RD.
WABAN, MA

DRAWING TITLE:

FRAMING PLANS:

FIRST FLOOR AND SECOND FLOOR

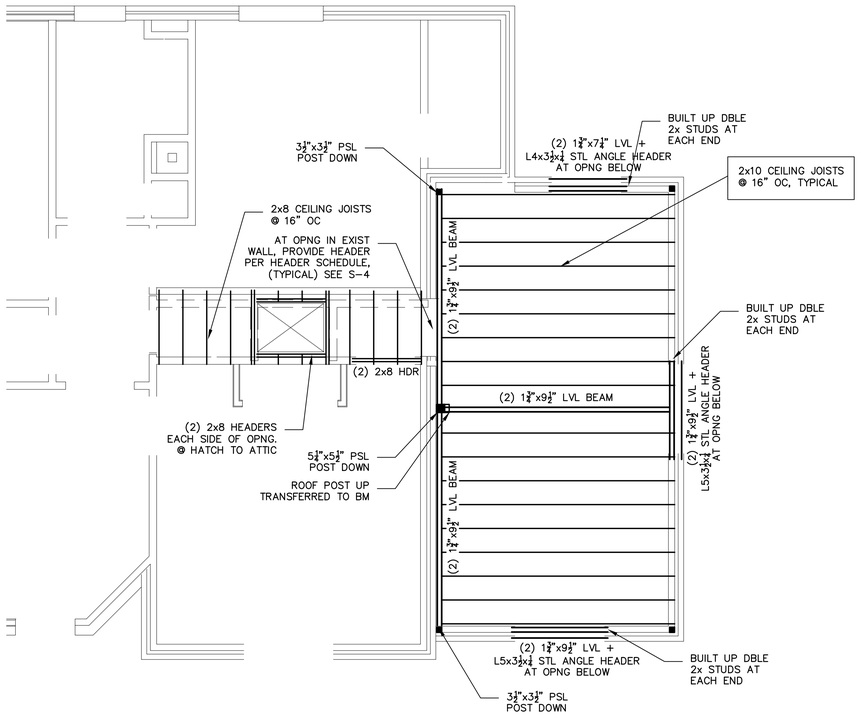
STAMP:

COMMONWEALTH OF MASSACHUSETTS
LEON A. BOMBARDIER
No. 27615
REGISTERED PROFESSIONAL ENGINEER

APRIL 1, 2021

| | |
|---|---|
| SCALE: | AS NOTED |
| DATE: | 4/01/2021 |
| DRAWN BY: | JKS |
| CHECKED BY: | LAB |
| PROJECT #: | 2021-11 |

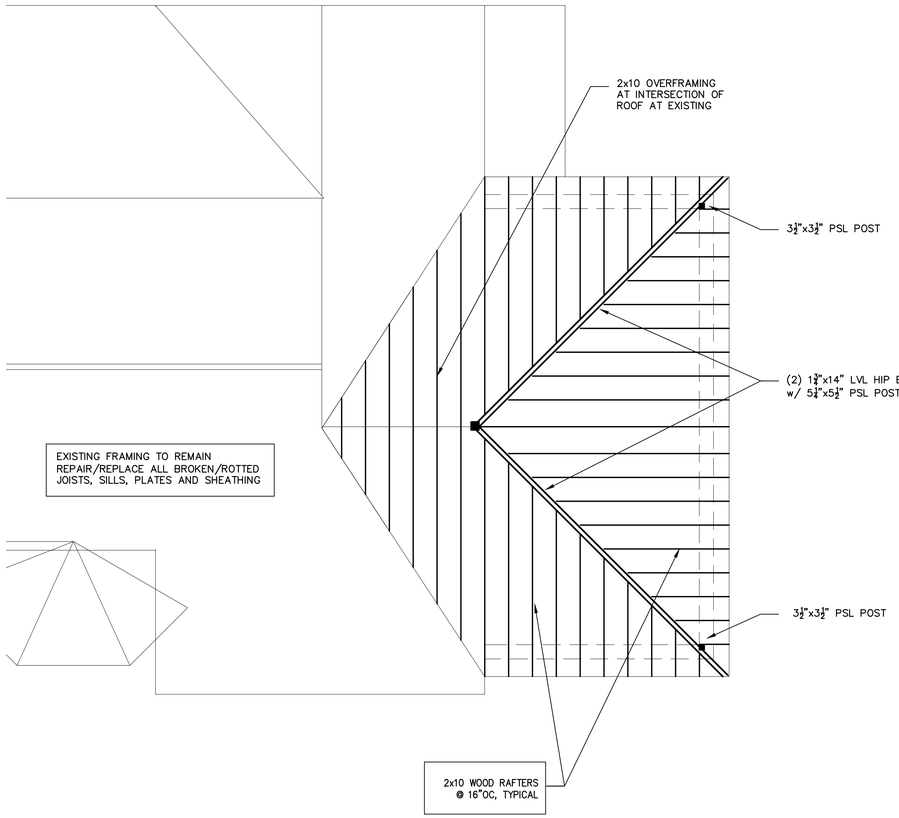
S-2




ATTIC FRAMING PLAN

SCALE: 1/4"=1'-0"

HORIZONTAL FLOOR DIAPHRAGMS
¾" TOUNGE AND GROOVE PLYWOOD
W/ 10d NAILS @ 4" ON CENTERS




ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

INDICATES BEARING WALL BELOW

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

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ARCHITECT:

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SPALDING TOUGIAS ARCHITECTS

OWNER:

**BOMBARDIER**
STRUCTURAL ENGINEERING

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PROJECT:

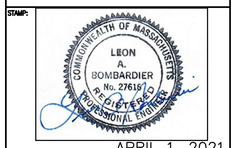
RESIDENTIAL ADDITION

111 GORDON RD.
WABAN, MA

DRAWING TITLE:

FRAMING PLANS:
ATTIC AND ROOF

STAMP:




APRIL 1, 2021

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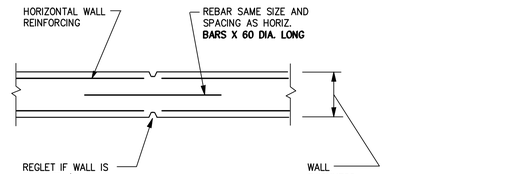
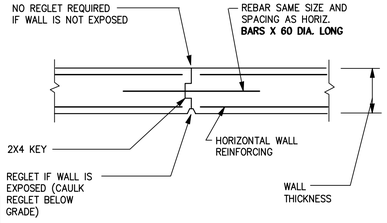
|---|---|
| SCALE: | AS NOTED |
| DATE: | 4/01/2021 |
| DRAWN BY: | JKS |
| CHECKED BY: | LAB |
| PROJECT #: | 2021-11 |

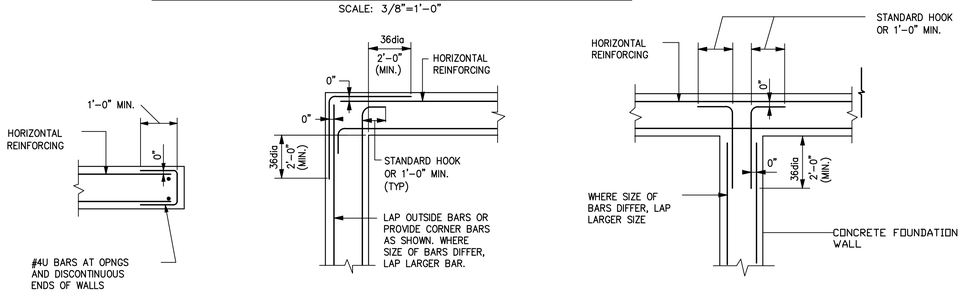
S-3



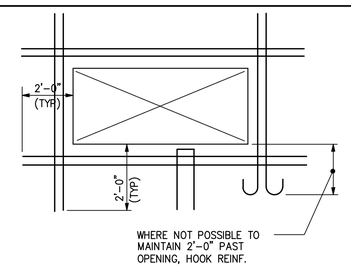

## CONCRETE CONSTRUCTION & CONTROL JOINTS

SCALE: 3/8"=1'-0"



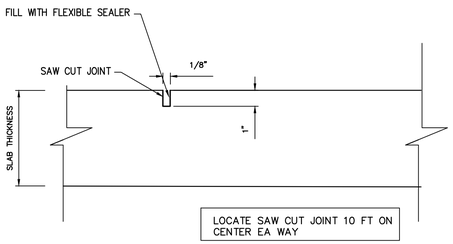

## CONCRETE REINFORCING STEEL DETAILS

SCALE: 3/8"=1'-0"



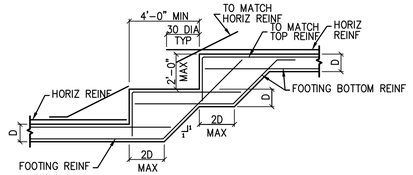

## REINFORCING STEEL @ WALL OPENINGS

SCALE: 3/8"=1'-0"




## SLAB ON GRADE SAW CUT DETAIL

SCALE: 3/8"=1'-0"



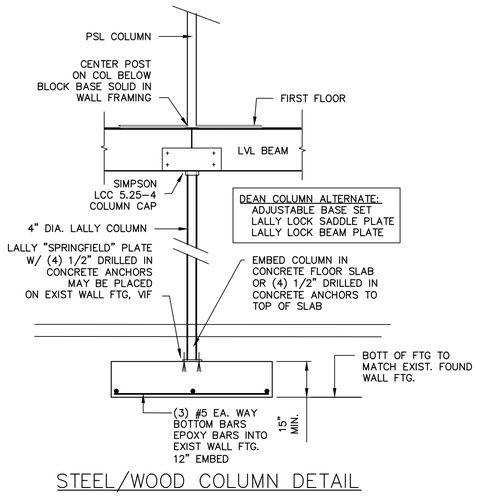

## TYPICAL STEPPED CONCRETE FOOTING ELEVATION

SCALE: 3/8"=1'-0"

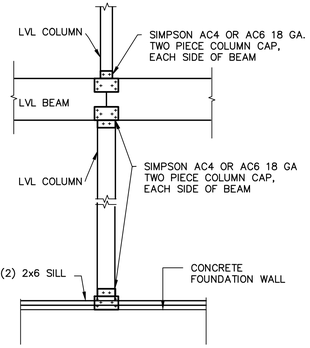
### REINFORCING LAP SCHEDULE

| BAR SIZE | LAP SPLICES IN ALL CONCRETE | LAP SPLICE IN TENSION ZONE | | | |
|---|---|---|---|---|---|
| | | fc =3,000 PSI | | fc =4,000 PSI | |
| | | TOP BARS | OTHER BARS | TOP BARS | OTHER BARS |
| #3 | 18" | 28" | 21" | 24" | 19" |
| #4 | 18" | 37" | 29" | 32" | 25" |
| #5 | 23" | 46" | 36" | 40" | 31" |
| #6 | 27" | 56" | 43" | 48" | 37" |
| #7 | 32" | 81" | 63" | 70" | 53" |
| #8 | 36" | 93" | 72" | 79" | 61" |
| #9 | 42" | 105" | 48" | 48" | 48" |
| #10 | 48" | 118" | 91" | 101" | 78" |
| #11 | 52" | 131" | 101" | 112" | 86" |

NOTES:
1. ALL SPLICES TO BE "LAP SPLICES" UNLESS NOTED OTHERWISE IN SECTIONS.
2. TENSION LAP SPLICE WILL BE INDICATED ON PLANS AND SECTIONS.
3. A TOP BAR IS A HORIZONTAL WITH AT LEAST 12" OF FRESH CONCRETE BELOW




## STEEL/WOOD COLUMN DETAIL




## LVL POST BASE @ FOUNDATION WALL DETAIL

SCALE: 1/2" = 1'-0"

### HEADER SCHEDULE AT INTERIOR BEARING WALLS
(UNLESS OTHERWISE NOTED ON DRAWINGS)

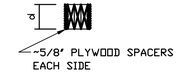
| SPAN | SUPPORTING ROOF | | | SUPPORTING ROOF+ 1 FLOOR | | | SUPPORTING ROOF+ 2 FLOORS | | |
|---|---|---|---|---|---|---|---|---|---|
| | HEADER | JACK | JAMB | HEADER | JACK | JAMB | HEADER | JACK | JAMB |
| 0'-0" TO 3'-0" | 3-2x6 | 2-2x6 | 1-2x6 | 3-2x8 | 2-2x6 | 1-2x6 | 3-2x8 | 2-2x6 | 1-2x6 |
| 3'-1" TO 5'-0" | 3-2x10 | 2-2x6 | 1-2x6 | 3-2x12 | 2-2x6 | 1-2x6 | 3-2x12 | 2-2x6 | 3-2x6 |
| 5'-1" TO 8'-0" | 3-2x12 | 2-2x6 | 1-2x6 | 3-1 3/4X 7 1/4" LVL | 2-2x6 | 1-2x6 | 3-1 3/4X 9 1/2" LVL | 3-2x6 | 3-2x6 |
| 8'-1" TO 10'-0" | 3-2x12 | 2-2x6 | 1-2x6 | 3-1 3/4X 14 LVL | 2-2x6 | 2-2x6 | 3-1 3/4X 18" LVL | 3-2x6 | 3-2x6 |

### HEADER SCHEDULE AT EXTERIOR BEARING WALLS
(UNLESS OTHERWISE NOTED ON DRAWINGS)

| SPAN | SUPPORTING ROOF | | | SUPPORTING ROOF+ 1 FLOOR | | | SUPPORTING ROOF+ 2 FLOORS | | |
|---|---|---|---|---|---|---|---|---|---|
| | HEADER | JACK | JAMB | HEADER | JACK | JAMB | HEADER | JACK | JAMB |
| 0'-0" TO 3'-0" | 3-2x6 | 2-2x6 | 1-2x6 | 3-2x8 | 2-2x6 | 1-2x6 | 3-2x8 | 2-2x6 | 1-2x6 |
| 3'-1" TO 5'-0" | 3-2x10 | 2-2x6 | 1-2x6 | 3-2x12 | 2-2x6 | 2-2x6 | 3-2x12 | 2-2x6 | 3-2x6 |
| 5'-1" TO 8'-0" | 3-2x12 | 2-2x6 | 2-2x6 | 3-1 3/4X 7 1/4" LVL | 2-2x6 | 2-2x6 | 3-1 3/4X 9 1/2" LVL | 3-2x6 | 3-2x6 |
| 8'-1" TO 10'-0" | 3-2x12 | 2-2x6 | 2-2x6 | 3-1 3/4X 9 1/2" LVL | 2-2x6 | 2-2x6 | 3-1 3/4X 11 7/8" LVL | 3-2x6 | 3-2x6 |

LVL EQUIVALENTS:
(3)-2x6 =(1) 1¾"x7¼" LVL
(3)-2x8 =(1) 1¾"x7¼" LVL
(3)-2x10 =(1) 1¾"X9½" LVL
(3)-2x12 =(1) 1¾"X11⅞" LVL
(3)-1¾"x7¼ =(2) 1¾"X9½" LVL
(3)-1¾"X9½" =(2) 1¾"X11⅞" LVL
(3)-1¾"X11⅞" =(2) 1¾"X14" LVL

NOTE: HEADERS AT FLOOR LEVELS ARE SIZED ASSUMING OPENING ABOVE IS EQUAL OR LARGER THAN OPENING BELOW




TYPICAL BUILT UP HEADER

### STEEL ANGLE LINTEL SCHEDULE

| | WALL THICKNESS | | | |
|---|---|---|---|---|
| | 4" WALL | 6" WALL | 8" WALL | 12" WALL |
| 3'-0" | 1-L3½X3½X¼ | 2-L3X2½X¼ | 2-L3½X3½X¼ | 3-L3½X3½X¼ |
| 4'-0" | 1-L4X3½X¼ | 2-L3X2½X¼ | 2-L4X3½X¼ | 3-L4X3½X¼ |
| 5'-0" | 1-L4X3½X¼ | 2-L3½X2½X¼ | 2-L5X3½X¼ | 3-L5X3½X¼ |
| 6'-0" | 1-L5X3½X¼ | 2-L3½X2½X¼ | 2-L5X3½X¼ | 3-L5X3½X¼ |
| 8'-0" | ——— | 2-L3½X2½X¼ | 2-L6X3½X⅜ | 3-L6X3½X⅜ |

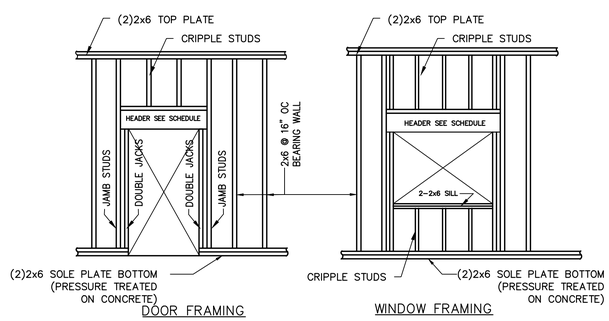
PROVIDE AND INSTALL LINTEL ANGLES FOR MASONRY OPENINGS IN ACCORDANCE WITH THE SCHEDULE ABOVE.
INSTALL LONG LEG VERTICAL. SEE ARCHITECTURAL and MECHANICAL PLANS FOR LOCATIONS.

PROVIDE 6" MINIMUM BEARING AT EACH END BUT NOT LESS THAN 1" PER FOOT OF SPAN. FILL 2 COURSES OF MASONRY BELOW BEARING WITH MORTAR.

WHERE MINIMUM BEARING CANNOT BE PROVIDED, ATTACH SECURELY TO ADJACENT STRUCTURAL MEMBERS OR PROVIDE SEPARATE SUPPORTS.

WHERE LINTELS OCCUR IN EXTERIOR WALLS AND GARAGE MINIMUM THICKNESS SHALL BE 5/16" AND ANGLES SHALL BE HOT DIPPED GALVANIZED.

WHERE WALL THICKNESS EXCEEDS 12" PROVIDE 1 ADDITIONAL ANGLE FOR EACH ADDITIONAL 4" OF WALL.




## FRAMING @ BEARING WALLS

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

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ARCHITECT:
GEORGE TOUGIAS
SPALDING TOUGIAS ARCHITECTS

OWNER:

**BOMBARDIER**
STRUCTURAL ENGINEERING

| # | REVISIONS | DATE |
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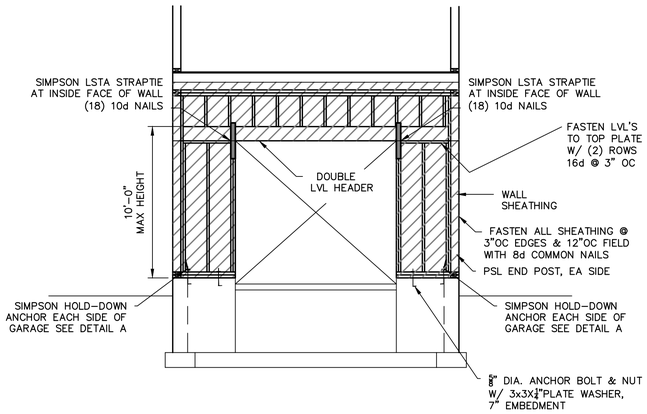
PROJECT:
RESIDENTIAL ADDITION
111 GORDON RD.
WABAN, MA

DRAWING TITLE:
TYPICAL DETAILS

STAMP:
COMMONWEALTH OF MASSACHUSETTS
LEON A. BOMBARDIER
No. 27616
REGISTERED PROFESSIONAL ENGINEER
APRIL 1, 2021

SCALE: AS NOTED
DATE: 4/01/2021
DRAWN BY: JKS
CHECKED BY: LAB
PROJECT #: 2021-11

S-4



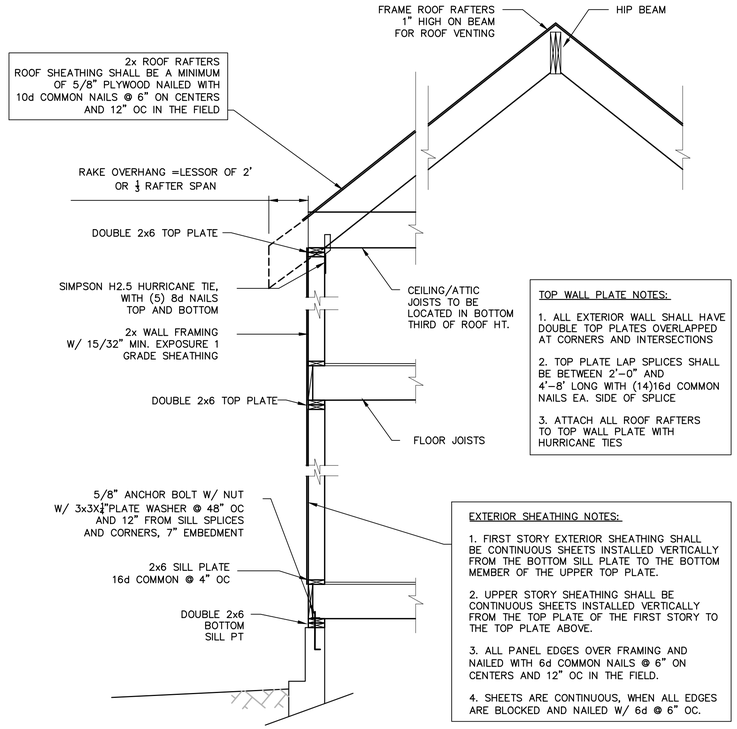

ELEVATION A: GARAGE DOOR OPENING
APA PORTAL FRAME

SCALE: 1/4"=1'0"

## FASTENER SCHEDULE *

| | |
|---|---|
| 1/2" ROOF SHEATHING | 6" OC –INTERMEDIATE SUPPORTS<br>4" OC –48" FROM EDGES & EAVES<br>8d COMMON NAILS |
| 1/2" WALL SHEATHING | 12" OC –INTERMEDIATE SUPPORTS<br>6" OC –48" FROM EDGES & EAVES<br>6d COMMON NAILS |
| 3/4" FLOOR SHEATHING OR LESS | 12" OC –INTERMEDIATE SUPPORTS<br>6" OC –48" FROM EDGES<br>1 1/2" RING OR SCREW NAIL (.099") 12 1/2 GA. |
| JOISTS TO SILL OR GIRDER | TOE NAIL (3) 8d NAILS |
| STUD TO SOLE PLATE | TOE NAIL (3)8d OR (2)16d NAILS |
| DOUBLE STUDS | FACE NAIL 10d 24" O.C. |
| DOUBLE TOP PLATES | FACE NAIL 10d 24" O.C. 24" MIN ,OFFSET OF END JOINTS/LAPS AT CORNERS AND INTERSECTIONS, FACE NAIL (2)–10d |
| RIM JOIST TO TOP PLATE | TOE NAIL 8d 6" O.C. |
| BUILT–UP HEADER | TWO PIECES WITH 1/2" SPACER 16d 16" O.C.<br>TO STUD: TOE NAIL (4) 8d |
| CEILING JOIST | LAPS OVER PARTITIONS AND PARALLEL TO RAFTERS: FACE NAIL (3) 10d<br>TO PLATE: TOE NAIL (3) 8d |
| RAFTER TO PLATE | TOE NAIL (2) 16d |
| BUILT–UP CORNER STUDS | 10d 24" O.C. |

* FOR COMPLETE TABLE SEE 780 CMR TABLE 5602.3(1)




TOP WALL PLATE NOTES:

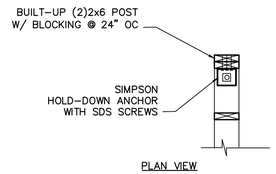
1. ALL EXTERIOR WALL SHALL HAVE DOUBLE TOP PLATES OVERLAPPED AT CORNERS AND INTERSECTIONS
2. TOP PLATE LAP SPLICES SHALL BE BETWEEN 2'–0" AND 4'–8' LONG WITH (14)16d COMMON NAILS EA. SIDE OF SPLICE
3. ATTACH ALL ROOF RAFTERS TO TOP WALL PLATE WITH HURRICANE TIES

EXTERIOR SHEATHING NOTES:

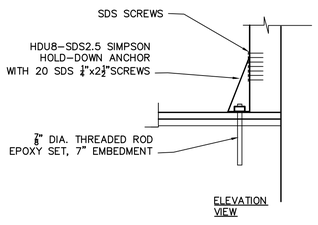
1. FIRST STORY EXTERIOR SHEATHING SHALL BE CONTINUOUS SHEETS INSTALLED VERTICALLY FROM THE BOTTOM SILL PLATE TO THE BOTTOM MEMBER OF THE UPPER TOP PLATE.
2. UPPER STORY SHEATHING SHALL BE CONTINUOUS SHEETS INSTALLED VERTICALLY FROM THE TOP PLATE OF THE FIRST STORY TO THE TOP PLATE ABOVE.
3. ALL PANEL EDGES OVER FRAMING AND NAILED WITH 6d COMMON NAILS @ 6" ON CENTERS AND 12" OC IN THE FIELD.
4. SHEETS ARE CONTINUOUS, WHEN ALL EDGES ARE BLOCKED AND NAILED W/ 6d @ 6" OC.

TYPICAL WALL SECTION

SCALE: 1/2"=1'–0"

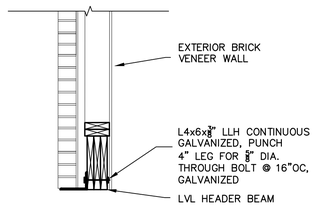



PLAN VIEW



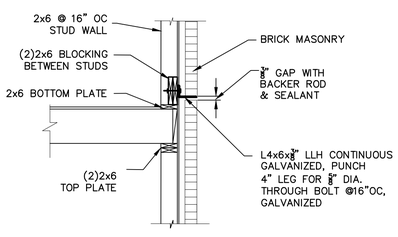

ELEVATION VIEW

SEISMIC HOLD DOWN ANCHOR
DETAIL A




SECTION 1

SCALE: 3/4"=1'0"



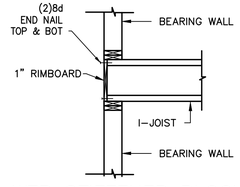

NOTE: LOCATE AT EVERY FLOOR

ANGLE SIZE TO SUIT SPACE BETWEEN BRICK AND SHEATHING

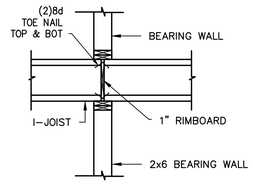
RELIEVING ANGLE AT FLOOR LEVEL

TYPICAL RELIEVING ANGLE DETAIL
BRICK ON WOOD STUD

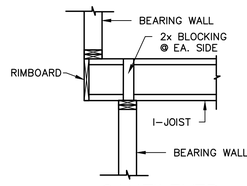
SCALE: 1/2"=1'–0"



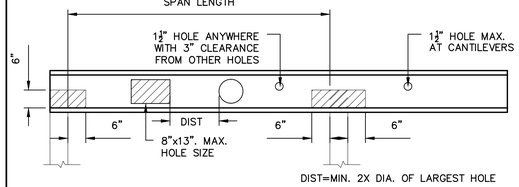

WEB STIFFENER BLOCKING
AT EXTERIOR
BEARING WALL




WEB STIFFENER BLOCKING
AT INTERMEDIATE
BEARING WALL




CANTILEVER
BLOCKING AT EXTERIOR
BEARING WALL



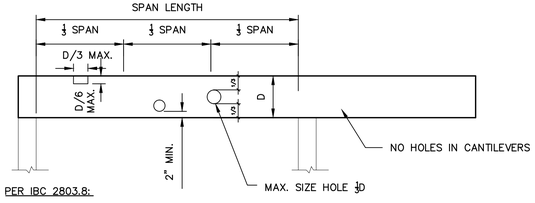

DIST=MIN. 2X DIA. OF LARGEST HOLE

BCI I–JOIST 11 7/8", 14" AND 16" DEPTHS

HOLE CUTTING NOTES;

1. A 1 1/2" DIA. HOLE MAY BE CUT ANYWHERE OUTSIDE OF HATCHED ZONE.
2. FOR OTHER HOLES SEE THE HOLE DISTANCE CHART IN THE ALLJOIST SPECIFIERS GUIDE.
3. OTHER LOCATIONS MUST BE APPROVED BY A BOISE–CASCADE REPRESENTATIVE AND APPROVED BY THE ENGINEER.

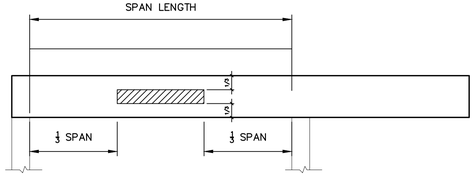
I–JOISTS ALLOWABLE HOLES




PER IBC 2803.8:

1. ROUND HOLES MAY BE DRILLED OR CUT WITH WITH A HOLE SAW ANYWHERE ALONG THE BEAM A MINIMUM OF 2 INCHES FROM TOP AND BOTTOM OF JOIST
2. THE HORIZONTAL DISTANCE BETWEEN ADJACENT HOLES MUST BE AT LEAST TWO TIMES THE SIZE OF THE LARGER HOLE.
3. THE MAXIMUM ROUND HOLE DIAMETER PERMITTED IS 1/3 THE DEPTH OF THE JOIST
4. RECTANGULAR NOTCHES MAY BE CUT AT THE 1/3 LENGTHS AT END SPANS OF THE JOIST.
5. MAX LENGTH OF NOTCH 1/3 DEPTH OF JOIST AND MAXIMUM DEPTH OF NOTCH 1/8 DEPTH OF JOIST

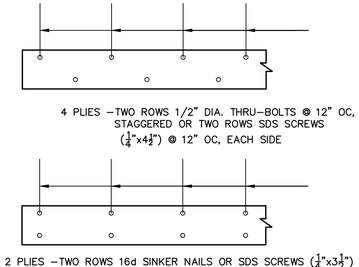
ALLOWABLE HOLES IN SOLID SAWN LUMBER




ALLOWABLE HOLES IN BOISE VERSA–LAM BEAMS
HOLE CUTTING NOTES;

1. SQUARE OR RECTANGULAR HOLES NOT PERMITTED
2. ROUND HOLES MAY BE DRILLED OR CUT WITH WITH A HOLE SAW ANYWHERE WITHIN THE SHADED AREA
3. THE HORIZONTAL DISTANCE BETWEEN ADJACENT HOLES MUST BE AT LEAST TWO TIMES THE SIZE OF THE LARGER HOLE.
4. DO NOT DRILL MORE THAN THREE ACCESS HOLES IN ANY FOUR FOOT LONG SECTION OF BEAM.
5. THE MAXIMUM ROUND HOLE DIAMETER PERMITTED IS 2".
6. FOR LARGER HOLES CONTACT BOISE ENGINEERED WOOD PRODUCT ENGINEERING.

LVL – ALLOWABLE HOLES



4 PLIES –TWO ROWS 1/2" DIA. THRU–BOLTS @ 12" OC, STAGGERED OR TWO ROWS SDS SCREWS (1/4"x4 1/2") @ 12" OC, EACH SIDE

2 PLIES –TWO ROWS 16d SINKER NAILS OR SDS SCREWS (1/4"x3 1/2") @ 12" OC,

3 PLIES –TWO ROWS 16d SINKER NAILS OR SDS SCREWS (1/4"x3 1/2") @ 12" OC, TWO ROWS, EACH SIDE

MULTIPLE MEMBER FASTENING
SIDE AND TOP LOADED LVL

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

1. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.
2. THESE PLANS AND SPECIFICATIONS ARE ARE THE PROPERTY OF LEON A. BOMBARDIER, PE ANY USE WITHOUT WRITTEN CONSENT IS PROHIBITED.

ARCHITECT:

GEORGE TOUGIAS
SPALDING TOUGIAS ARCHITECTS

OWNER:

BOMBARDIER
STRUCTURAL ENGINEERING

| # | REVISIONS | DATE |
|---|---|---|
| | | |

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Structural Engineer
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phone. (508) 631–3332 fax. (781) 871–2062

PROJECT:

RESIDENTIAL ADDITION

111 GORDON RD.
WABAN, MA

DRAWING TITLE:

FRAMING DETAILS

STAMP:

COMMONWEALTH OF MASSACHUSETTS
LEON A. BOMBARDIER
No. 27615
REGISTERED PROFESSIONAL ENGINEER

APRIL 1, 2021

SCALE: AS NOTED
DATE: 4/01/2021
DRAWN BY: JKS
CHECKED BY: LAB
PROJECT #: 2021–11

S-5

GENERAL

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS RESIDENTIAL BUILDING CODE (780 CMR) NINTH EDITION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDITIONS AND DIMENSIONS AFFECTING THE WORK. DISCREPANCIES SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER

3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN, IN THE COURSE OF THE WORK, CONDITIONS ARE UNCOVERED WHICH ARE UNANTICIPATED OR OTHERWISE APPEAR TO PRESENT A DANGEROUS CONDITION.

4. STRUCTURAL MATERIALS AND COMPONENTS SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. MATERIAL SAMPLES OR CERTIFICATES AND INSTALLATION SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL PARTS OF THE WORK FOR APPROVAL, ALLOWING SUFFICIENT TIME FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

5. MODIFICATIONS TO THE WORK SHALL NOT BE PERFORMED WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.

6. STRUCTURAL CONSTRUCTION SHALL BE PRECEDED BY ADEQUATE SHORING AND TEMPORARY BRACING UNTIL ALL MEMBERS ARE PLACED AND TRUE TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT.

7. THE CONTRACTOR SHALL EXAMINE ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS (INCLUDING OWNER FURNISHED EQUIPMENT DRAWINGS) FOR VERIFICATION, LOCATION, AND DIMENSIONS OF EMBEDDED ITEMS, SLEEVES, CHASES, INSERTS, WASHES, DRIPS, REVEALS, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS EFFECTING THE STRUCTURAL WORK.

8. OPENINGS SHOWN ON DRAWINGS SHALL NOT BE REVISED OR NEW OPENINGS ADDED TO THE WORK WITHOUT PRIOR APPROVAL OF THE ENGINEER

9. TYPICAL DETAILS AND NOTES ON THE STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK.

TESTING BY CERTIFIED TESTING AGENCIES

1. COMPACTION TESTS SHALL BE CONDUCTED ON ALL FILL MATERIAL PLACED UNDER THE BUILDING FOUNDATIONS OR FLOOR SLABS AND SUBMITTED TO THE ENGINEER FOR REVIEW.

2. CONCRETE CYLINDERS SHALL BE TAKEN FOR EVERY DAYS POUR AND FOR EVERY 50 YARDS PLACED PER DAY. CYLINDERS SHALL BE A MINIMUM OF THREE, COMPRESSION TESTED AT 7 AND 28 DAYS.

3. REINFORCING STEEL, STRUCTURAL STEEL BOLTING, AND ALL WELDING SHALL BE VISUALLY INSPECTED. IF REQUIRED, BY THE INSPECTION AGENCY ADDITIONAL TESTING WILL BE CONDUCTED.

SHOP DRAWINGS

1 SUBMIT SHOP DRAWINGS, REVIEWED AND APPROVED BY STAMPING BY THE GENERAL CONTRACTOR. SUBMITALS SHALL BE PROVIDED FOR CONCRETE REINFORCING STEEL, STRUCTURAL STEEL, AND PREFABRICATED WOOD TRUSSES AND SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ARCHITECT FOR APPROVAL BEFORE FABRICATION, MANUFACTURE, DELIVERY AND ERECTION CAN PROCEED.

STRUCTURAL DESIGN LOADS (NEWTON)

1. SNOW LOADS 40 PSF GROUND SNOW
   30 PSF FLAT ROOF SNOW
2. WIND LOADS BASIC WIND SPEED Vultimate 127 MPH
   RISK CATEGORY II
3. SEISMIC DESIGN
   SOIL FACTOR S1=0.068, Ss=0.208
   SEISMIC HAZARD EXPOSURE GROUP I
   SEISMIC PERFORMANCE CATEGORY C
   BUILDING STRUCTURE IS LIGHT WOOD FRAMED BEARING WALL SYSTEM WITH WOOD HORIZONTAL DIAPHRAGMS AND WOOD SHEAR WALLS. RESPONSE MODIFICATION FACTOR R=6.5, DEFLECTION AMPLIFICATION FACTOR Cd=4.0
   ON CONCRETE FOOTINGS AND GRADE WALLS.
4. LIVE LOADS
   SLAB-ON-GRADE.....50 PSF
   LIVING AREAS .....40 PSF
   SLEEPING AREAS .....30 PSF
   ATTIC .....20 PSF

GEOTECHNICAL AND SITE ENGINEERING

1. NO GEOTECHNICAL ENGINEERING REPORT WAS AVAILABLE DURING THE DESIGN AND PREPARATION OF THESE DRAWINGS. SUBSURFACE SOIL CONDITIONS ARE UNKNOWN. ALLOWABLE BEARING PRESSURE IS ASSUMED TO BE 3,000 PSF AS APPLICABLE FOR LOOSE SANDS & GRAVELS, SILT, AND MEDIUM CLAYEY SOILS. EXISTING SOILS HAVE BEEN ASSUMED TO BE SUITABLE FOR GRADE WALL AND ISOLATED COLUMN FOOTING FOUNDATIONS.

2. FOR THIS STRUCTURAL DESIGN IT HAS BEEN ASSUMED THAT THE HIGH GROUNDWATER ELEVATION IS BELOW THE LOWEST FLOOR ELEVATION AND THE SITE IS GRADED SUCH THAT IT WILL NOT BE ADVERSELY AFFECTED BY SURFACE WATER RUNOFF. IT IS ALSO ASSUMED THAT THE SITE IS NOT LOCATED IN A FEMA DESIGNATED FLOOD ZONE.

3. IT IS THE OWNER'S RESPONSIBILITY TO RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS TO CONFIRM FOUNDATION TYPE, SOIL BEARING PRESSURE, AND GROUNDWATER ELEVATIONS.

FOUNDATIONS

1. EXTERIOR CONSTRUCTION SHALL BE CARRIED DOWN BELOW FINISHED EXTERIOR GRADE TO A MINIMUM DEPTH OF 4'-0", UNLESS OTHERWISE NOTED.

2. NO SOIL EXPLORATION OR TESTING HAS BEEN PERFORMED ON SITE. SOIL BEARING CAPACITY ASSUMED TO BE 3,000 PSF TO BE CONFIRMED BY THE CONTRACTOR AND/OR OWNER PRIOR TO CONSTRUCTION.

3. SURFACE AND SUBSURFACE WATER SHALL BE CONTROLLED DURING CONSTRUCTION TO ENSURE THAT ALL FOUNDATION CONCRETE WORK IS DONE IN DRY CONDITIONS. IF REQUIRED, PROVIDE SHEETING, WELL POINTS, AND/OR DE-WATERING WELLS AS REQUIRED FOR PROPER EXCAVATION AND PLACEMENT OF CONCRETE.

4. CONCRETE SHALL BE PLACE ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL MATERIALS, APPROVED BY THE ENGINEER.

5. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SUB-GRADE MATERIAL.

6. IN-PLACE FOUNDATIONS AND SLABS SHALL BE PROTECTED FROM FROST PENETRATION UNTIL THE PROJECT IS COMPLETE.

7. REMOVAL OF DISTURBED AND UNSUITABLE MATERIALS AND PLACING, COMPACTING AND TESTING OF COMPACTED FILL SHALL ONLY BE PERFORMED BY THE GENERAL CONTRACTOR WHILE A PROFESSIONAL GEOTECHNICAL ENGINEER, REGISTERED IN THE STATE OF MASSACHUSETTS AND RETAINED BY THE OWNER, IS OBSERVING THE WORK.

8. BOTTOM OF FOOTING ELEVATIONS SHOWN ON THE CONTRACT DOCUMENTS ARE MINIMUM DEPTHS AND ARE NOT TO BE CONSTRUED AS LIMITING IN ANY WAY THE AMOUNT OF EXCAVATION NECESSARY TO REACH A SUFFICIENT BEARING STRATUM.

SHORING AND BRACING

1. THE OWNER AND HIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SHORING AND BRACING OF EXCAVATIONS, FOUNDATIONS, AND ALL CONSTRUCTION IN THE WORK.

2. TEMPORARY SHORES SHALL BE INDIVIDUALLY DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED BY THE CONTRACTOR TO SAFELY SUPPORT ALL LOADS BEING CARRIED BY ALL STRUCTURE MEMBERS AND THEIR FOUNDATIONS BEING REMOVED, ALTERED, AND/OR UNDERMINED BY THE WORK.

EARTHWORK AND COMPACTED FILL

1. FOLLOWING EXCAVATION TO FOOTING BEARING ELEVATION, THE EXPOSED SOIL SHALL BE SURFACE COMPACTED WITH A LEAST 6 PASSES OF A WALK BEHIND VIBRATORY ROLLER HAVING A DYNAMIC FORCE RATED NOT LESS THAN 10,000 POUNDS (MIKASA MVH-306 OR EQUIVALENT)

2. BEFORE PLACEMENT OF CONCRETE FLOOR SLAB ON GRADE, THE SOIL SHALL BE SURFACE SHALL BE PROOF ROLLED WITH A LEAST 6 PASSES OF A LARGE VIBRATORY ROLLER HAVING A DRUM WEIGHT OF AT LEAST 10,000 POUNDS AND A DYNAMIC FORCE OF AT LEAST 20,000 POUNDS.

3. STRUCTURAL FILL, OVER-EXCAVATED, UNSUITABLE, OR DISTURBED SOIL SHOULD BE REPLACED WITH "SELECT STRUCTURAL FILL" AND COMPACTED IN INDIVIDUAL LIFTS TO 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557. LOOSE LIFT THICKNESS SHALL BE 6 INCHES FOR HAND OPERATED EQUIPMENT AND 12 INCHES FOR LARGE VIBRATORY ROLLERS.

4. "SELECT STRUCTURAL FILL" SHALL BE GRAVELLY SAND OR SANDY GRAVEL, GRADED WITHIN FOLLOWING LIMITS:

| SIEVE SIZE IN. OR NO. | PERCENT PASSING BY WEIGHT |
|---|---|
| 1/2 | 50-85 |
| #4 | 40-75 |
| #10 | 30-60 |
| #40 | 10-35 |
| #100 | 5-20 |
| #200 | 0-8 |

5. COMPACTION TESTS SHALL BE PERFORMED ON ANY STRUCTURAL FILL TO BE PLACED IN THE FOUNDATION AND SLAB ON GRADE AREA. A MINIMUM OF TWO TESTS PER 6" LIFT SHALL BE PERFORMED. A SUFFICIENT SAMPLE OF FILL MATERIAL SHALL BE SUPPLIED TO THE TESTING AGENCY.

COLD WEATHER EARTHWORK PROTECTION

1. ALL FOUNDATIONS EXPOSED TO FREEZING TEMPERATURES WILL BE INSTALLED 4 FEET BELOW FINAL GRADE FOR FROST PROTECTION.

2. DURING CONSTRUCTION EARTHWORK THE CONTRACTOR MUST BE PREPARED TO PROVIDE PROTECTION AND/OR THAWING OF FOUNDATION BEARING SOILS AGAINST FREEZING BEFORE ANY FILL AND/OR PLACEMENT OF THE SLAB BASE IS COMPLETED

A. FOOTINGS: INSULATION BLANKETS AND/OR GROUND HEATING HOSES SHOULD BE UTILIZED IF FOOTING SUBGRADE IS EXPOSED TO FREEZING DURING COLD WEATHER PERIODS.

B. LOWEST LEVEL SLABS: SLAB SUBGRADE AREAS SHALL BE THAWED ONCE BASIC FRAMING IS UP BY PROVIDING HEATERS AFTER ENCLOSING THE LOWEST LEVEL IN PLASTIC SHEETING.

CONCRETE

1. CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) – "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI-318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI-301).

2. ALL STRUCTURAL CONCRETE, UNLESS OTHERWISE NOTED, SHALL BE NORMAL WEIGHT (145 PCF) AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF:

A) SLAB ON GRADE, SPREAD FOOTINGS, AND FOUNDATION WALLS = 3,500 PSI

3. CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY, AS REQUIRED BY STATE CODE. TEST CYLINDERS SHALL BE TAKEN AT A MINIMUM OF 4 FOR EVERY DAYS CONCRETE PLACEMENT AND FOR EVERY 50 YARDS PLACED THAT DAY.

4. ALL CONCRETE EXPOSED TO WEATHER, INCLUDING FOUNDATION WALLS, SHALL BE AIR ENTRAINED.

5. CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON DRAWINGS. REQUEST FOR ANY CHANGE SHALL BE IN WRITING TOGETHER WITH DRAWING INDICATING LOCATIONS FOR ENGINEER'S APPROVAL.

6. CONCRETE PLACEMENTS SHALL BE LIMITED TO THE FOLLOWING:

A) FOOTINGS AND WALLS 30 FOOT LENGTH MAXIMUM TO CONSTRUCTION JOINT
B) SLABS ON GRADE 30 FOOT MAXIMUM PANEL DIMENSION

7. ADJACENT CONCRETE PLACEMENTS SHALL BE AFTER 72 HOURS OF CURING TIME.

8. HORIZONTAL CONSTRUCTION JOINTS SHALL BE LOCATED ONLY WHERE SHOWN ON DRAWINGS OR AS APPROVED BY THE ENGINEER.

9. CONCRETE SLABS SHALL BE PLACED WITH A UNIFORM SLAB THICKNESS AS SHOWN ON THE DRAWINGS.

10. MINIMUM PROTECTIVE COVER FOR CONCRETE REINFORCING STEEL SHALL BE AS FOLLOWS:

A) UNFORMED SURFACES CAST AGAINST EARTH – 3 INCHES
B) FORMED SURFACES NOT IN CONTACT TO EARTH OR EXPOSED TO WEATHER, WALLS AND SLABS, #11 BARS OR SMALLER – 3/4 INCHES
C) FORMED SURFACES IN CONTACT TO EARTH OR EXPOSED TO WEATHER, WALLS AND SLABS,
   #6 TO #18 BARS – 2 INCHES
   #5 AND SMALLER – 1 1/2 INCHES

COLD WEATHER CONCRETE WORK

1. COLD WEATHER CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) 306.

2. COLD WEATHER CONCRETE PROCEDURES SHALL BE EMPLOYED WHEN THERE IS A CHANCE OF FREEZING TEMPERATURES WITHIN 24 HOURS OF PLACEMENT AND/OR MEAN DAILY TEMPERATURE LESS THAN 40 DEGREES FAHRENHEIT, AND DURING PERIODS OUTLINED IN ACI 306, SECTIONS 1.3 AND 1.4.

3. DETAILS OF HANDLING AND PROTECTING CONCRETE DURING COLD WEATHER SHALL BE SUBJECT TO ENGINEERS' APPROVAL AND DIRECTION.

4. CONCRETE SHALL NOT BE PLACED ON ICE, SNOW, OR FROZEN GROUND. FROZEN MATERIAL AND MATERIAL CONTAINING ICE SHALL NOT BE EMPLOYED IN CONCRETE.

5. CONCRETE AFTER PLACING SHALL BE PROTECTED BY COVERING, HEATING, OR BOTH. CONCRETE SHALL BE MAINTAINED AT TEMPERATURE EQUAL TO 50 TO 70 DEGREES FAHRENHEIT (10 TO 21 DEGREES CENTIGRADE) FOR REQUIRED CURING PERIOD AND AS INDICATED IN ACI 306, TABLE 1.4.1.

6. ARRANGEMENTS FOR HEATING, COVERING, INSULATING, HOUSING, AND CURING SHALL BE MADE IN ADVANCE OF CONCRETE PLACEMENT.

7. COMBUSTION HEATERS SHALL BE VENTED TO PREVENT EXPOSURE OF CONCRETE TO EXHAUST GASES CONTAINING CARBON DIOXIDE.

8. TEMPERATURE RECORDS SHALL BE MAINTAINED THROUGHOUT CONCRETE PLACEMENT PERIOD DURING COLD WEATHER, LISTING AIR TEMPERATURE INSIDE AND OUTSIDE ENCLOSURE, GENERAL WEATHER CONDITIONS (CALM, WINDY, CLEAR, CLOUDY, ETC.), AND RELATIVE HUMIDITY.

SLAB ON GRADE SAW CUT JOINTS

1. SLABS SHALL BE SAW CUT WITH 24 HOURS OF PLACEMENT OF CONCRETE.

2. JOINTS SHALL BE CLEANED AND FILLED WITH BASF SONOLASTIC SL1, A ONE-COMPONENT SELF-LEVELING NON-PRIMING POLYURETHANE SEALANT DESIGNED FOR JOINTS IN CONCRETE FLOORS TO PROVIDE FLEXIBILITY AS WELL AS ABRASION AND PUNCTURE RESISTANCE.

CONCRETE SLAB SEALER

1. CONCRETE SLABS ON GRADE SHALL RECEIVE A SLAB SEALER AND CURING COMPOUND.

CONCRETE SEALER SHALL BE WATERBASED HARDENER, SEALER KURSEAL 309 FORMULA BY A. H. HARRIS AND SONS, RAYNHAM, MA

VAPOR BARRIER, FOUNDATION & UNDER-SLAB INSULATION

1. INSULATION SHALL BE A MINIMUM OF 4 INCH THICK EXTRUDED POLYSTYRENE WITH A MINIMUM R VALUE OF 5.0 PER INCH AND A COMPRESSIVE STRENGTH OF 20 PSI OWENS CORNING "CELLFORT 200" OR APPROVED EQUAL.

2. VAPOR BARRIER SHALL BE GRIFFOLYN F-65 BY REEF INDUSTRIES, INC. OR EQUAL. THE MATERIAL SHALL HAVE A 3-PLY, HIGH DENSITY POLYETHYLENE AND NYLON YARN LAMINATE, WITH SIDE AND END JOINTS SHALL BE LAPPED AT LEAST 6". LAPS SHALL BE SEALED USING FAB TAPE. ANY PUNCTURES OR TEARS ARE TO BE REPAIRED USING GRIFFOLYN'S GRIFF TAPE, FAB TAPE OR EQUAL.

WATER STOP FOR CONCRETE FOUNDATION WALLS

1. WATERSTOP SHALL BE VOLCLAY RX, FORMULATED MIXTURE OF NATURAL SODIUM BENTONITE AND BUTYL RUBBER. IT SHALL CONSIST OF NATURAL SODIUM BENTONITE, A NON-TOXIC, CHEMICALLY INERT SWELLING CLAY OF VOLCANIC ORIGIN, WITH THE CHARACTERISTICS OF SWELLING MANY TIMES ITS DRY VOLUME WHEN IN CONTACT WITH WATER, TO FORM AN IMPENETRABLE GEL.

2. ALTERNATE PVC OR RUBBER WATERSTOPS ARE ACCEPTABLE. WATERSTOP SHALL BE SECURED VERTICALLY OR STEEL REINFORCED TO PREVENT HORIZONTAL BENDING DURING CONCRETE PLACEMENT.

CONCRETE AND MASONRY REINFORCING

1. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.

2. ALL WELDED WIRE MESH (WWF) SHALL BE SMOOTH BARS CONFORMING TO ASTM A185. OVER TWO OR MORE SPANS. LAPS OF INDIVIDUAL SHEET SHALL BE 8" MINIMUM.

WOOD FRAMING

1. ALL SAWN LUMBER FRAMING MEMBERS SHALL BE SPRUCE-PINE-FIR WITH THE FOLLOWING MINIMUM GRADES:
A. JOISTS, RAFTERS, SOLID AND BUILT-UP BEAMS, WALL STUDS AND LINTELS; NO. 1& NO.2 GRADE.
B. SILLS AND PLATES; STUD GRADE.
C. SOLID WOOD POSTS; NO. 1 GRADE.
D. BRIDGING, BLOCKING AND NAILERS; STUD GRADE.
E. NON-BEARING STUD WALLS SHALL BE STUD GRADE.
F. ENGINEERED LUMBER SHALL HAVE A MINIMUM MODULUS OF ELASTICITY OF 2,000,000 PSI AND A BENDING STRESS OF 3,100 PSI FOR BEAMS AND A MINIMUM MODULUS OF ELASTICITY OF 1,700,000 PSI AND A BENDING STRESS OF 2,650 PSI FOR COLUMNS. LVL BEAMS AND PSL COLUMNS SHALL BE BOISE CASCADE VERSALAM OR EQUAL.

2. UNLESS OTHERWISE NOTED, ALL NAILING AND FASTENING SHALL BE IN ACCORDANCE WITH TABLE 2305.2, FASTENING SCHEDULE, MASSACHUSETTS STATE BUILDING CODE. SHEAR WALL FASTENING SHALL BE IN ACCORDANCE WITH THE FASTENING SCHEDULE ON THE DRAWINGS.

3. WOOD SILLS BENEATH ALL INTERIOR AND EXTERIOR BEARING WALLS AND ALL MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE "AMERICAN WOOD PRESERVERS ASSOCIATION, STANDARD C1".

4. ALL STUD WALLS, BEARING AND NON-BEARING, SHALL HAVE ONE ROW OF CONTINUOUS 2X SOLID BLOCKING BETWEEN STUDS AT MID-HEIGHT. BLOCKING SIZE TO MATCH STUD SIZE. FRAMING MEMBERS SHALL NOT BE NOTCHED, CUT OR ALTERED IN THE FIELD WITHOUT THE SPECIFIC APPROVAL OF THE ENGINEER.

5. ALL METAL CONNECTORS FOR WOOD CONSTRUCTION SHALL BE HOT- DIPPED GALVANIZED METAL SHAPES AS MANUFACTURED BY "SIMPSON STRONG-TIE COMPANY, INC." AND BE ATTACHED BY THE GENERAL CONTRACTOR AS PER THE "SIMPSON STRONG-TIE" SPECIFICATIONS.

6. LEAD HOLES FOR WOOD SCREWS AND LAG BOLTS SHALL BE DRILLED 7/8 OF THE SHANK DIAMETER FOR THE DEPTH OF SHANK EMBEDMENT AND 7/8 OF THE THREADED PORTION DIAMETER FOR THE DEPTH OF THE THREAD EMBEDMENT.

7. DOUBLE TOP PLATES ON ALL EXTERIOR AND BEARING PARTITIONS (NOT OTHERWISE DETAILED). PLATES SHALL LAP 4'-0"

FLOOR AND WALL SHEATHING

1. EXTERIOR WALL AND SHEAR WALL SHEATHING SHALL BE A MINIMUM OF 15/32 INCH EXPOSURE 1, EXTERIOR SHEATHING, APA RATED SHEATHING 32/16. NAIL 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. . SHEATHING MAY BE PLYWOOD, OSB, OR COMPOSITE MATERIAL. PLYWOOD SHEATHING SHALL BE DFPA GRADE STAMPED, TYPE CDS 5 PLY WITH EXTERIOR GLUE UNLESS OTHERWISE NOTED ON PLANS.

2. SHEAR WALL SHEATHING SHALL BE A MINIMUM OF 15/32 INCH EXPOSURE 1, EXTERIOR APA RATED SHEATHING 32/16. FASTENING SHALL BE PER THE SHEAR WALL FASTENING SCHEDULE ON THE DRAWINGS. SHEATHING MAY BE PLYWOOD, OSB, OR COMPOSITE MATERIAL. ALL SHEAR WALL SHEATHING EDGES SHALL BE BLOCKED AND NAILED PER THE SHEAR WALL SCHEDULE.

3. ALL ROOF SHEATHING SHALL BE 5/8 INCH APA RATED PLYWOOD SHEATHING 32/16. USE EXPOSURE 1 PANELS, EXCEPT USE EXTERIOR PANELS FOR STARTER STRIPS ALONG EAVES AND WHEN LONG CONSTRUCTION DELAYS ARE ANTICIPATED. APPLY PANELS WITH THE FACE GRAIN PERPENDICULAR TO THE RAFTERS OR TRUSSES AND CONTINUOUS OVER TWO OR MORE SPANS. ATTACH PANELS WITH GLUE AND 6d RING OR SCREW SHANK NAILS AT 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. AS AN OPTION, ½" SHEATHING MAY BE USED WITH PANEL CLIPS ALONG PANEL ENDS BETWEEN EACH RAFTER OR TRUSS.

4. ALL FLOOR SHEATHING SHALL BE 3/4 INCH TONGUE AND GROOVE, APA RATED "STURD-I-FLOOR", 48/24 SPAN RATING, EXPOSURE 1 PANELS. APPLY PANELS WITH THE FACE GRAIN PERPENDICULAR TO THE JOISTS OR TRUSSES AND CONTINUOUS OVER TWO OR MORE SPANS AND ATTACH PANELS BY GLUE-NAILING AS FOLLOWS:
A. SPREAD GLUE IN ACCORDANCE WITH RECOMMENDATIONS OF GLUE MANUFACTURER AND INDUSTRY PRACTICE.
B. STAGGER END JOINTS IN EACH SUCCEEDING ROW, LEAVING 1/8 INCH SPACE BETWEEN ALL END AND EDGE JOINTS, INCLUDING TONGUE AND GROOVE EDGES.
C. COMPLETE ALL NAILING OF EACH PANEL BEFORE GLUE SETS WITH 6d RING OR SCREW-SHANK NAILS AT 12 INCHES ON CENTER AT PANEL EDGES AND INTERMEDIATE SUPPORTS.

CONCRETE RETAINING WALL

WORK INCLUDES ALL EXCAVATION, LEVELING PAD, RETAINING WALL BACKFILL, THE FABRIC ABOVE THE CRUSHED AGGREGATE BACKFILL, WEEP PIPES AND ALL OTHER MATERIALS, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

1. CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) – "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI-318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI-301).

2. ALL STRUCTURAL CONCRETE, UNLESS OTHERWISE NOTED, SHALL BE NORMAL WEIGHT (145 PCF) AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI.

3. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.

4. CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON DRAWINGS. REQUEST FOR ANY CHANGE SHALL BE IN WRITING TOGETHER WITH DRAWING INDICATING LOCATIONS FOR ENGINEER'S APPROVAL.

5. CONCRETE PLACEMENTS SHALL BE LIMITED TO A 30 FOOT LENGTH MAXIMUM TO CONSTRUCTION JOINT.

6. ADJACENT CONCRETE PLACEMENTS SHALL BE AFTER 72 HOURS OF CURING TIME.

7. HORIZONTAL CONSTRUCTION JOINTS SHALL BE LOCATED ONLY WHERE SHOWN ON DRAWINGS OR AS APPROVED BY THE ENGINEER.

8. MINIMUM PROTECTIVE COVER FOR CONCRETE REINFORCING STEEL SHALL BE AS FOLLOWS:

A) UNFORMED SURFACES CAST AGAINST EARTH – 3 INCHES
B) FORMED SURFACES NOT IN CONTACT TO EARTH OR EXPOSED TO WEATHER, WALLS AND SLABS, #11 BARS OR SMALLER – 3/4 INCHES
C) FORMED SURFACES IN CONTACT TO EARTH OR EXPOSED TO WEATHER, WALLS AND SLABS,
   #6 TO #18 BARS – 2 INCHES
   #5 AND SMALLER – 1 1/2 INCHES

10. GEOSYNTHETIC GRID POLYMER REINFORCEMENT SHALL BE MARAFI 8XT OR EQUAL.

A. GRID SHOULD NOT BE TORN, OR CUT DURING INSTALLATION.
B. GRID SHALL BE, PLACED PERPENDICULAR TO THE WALL FACE.
C. ALL SLACK IN THE REINFORCEMENT SHOULD BE REMOVED PRIOR TO PLACING THE BACKFILL OVER IT, AND POLYMER REINFORCEMENT SHOULD HAVE SOME TENSION PLACED IN THE REINFORCEMENT.
D. THE REINFORCEMENT SHALL BE CONNECTED TO THE WALL IN ACCORDANCE WITH THE GRID MANUFACTURERS INSTRUCTIONS. DETAIL OF CONNECTION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
E. GRID SHALL BE PLACED CONTINUOUS ALONG THE LENGTH OF THE WALL.

11. FILTER FABRIC SHALL BE PLACED AS SHOWN ON THE DRAWINGS. INDIVIDUAL SHEETS OF FABRIC SHALL OVERLAP A MINIMUM OF 18 INCHES. FABRIC SHALL MEET THE MINIMUM REQUIREMENTS FOR FILTRATION PER AASHTO M-288.

12. FILTER MATERIAL FILL FOR THE CONCRETE BLOCK UNIT AND BEHIND THE WALL SHALL BE WASHED, CRUSHED STONE BACKFILL MATERIAL CONFORMING TO THE FOLLOWING:

| U.S. SIEVE NO. | PERCENT PASSING |
|---|---|
| 25MM | 100-75 |
| 19MM | 50-75 |
| NO. 4 | 0-60 |
| NO. 40 | 0-50 |
| NO. 200 | 0-5 |

13. STRUCTURAL FILL SHALL BE SELECT GRANULAR MATERIAL CONFORMING TO THE FOLLOWING

| U.S. SIEVE NO. | PERCENT PASSING |
|---|---|
| 102MM | 100 |
| NO. 40 | 0-60 |
| NO. 200 | 0-15 |

14. BACKFILL BEHIND THE WALL SHALL BE PLACED IN LAYERS NOT TO EXCEED 9 INCHES AND COMPACTED TO 95% OPTIMUM DENSITY AND MOISTURE CONTENT. COMPACTION EQUIPMENT USED WITHIN 3 FEET OF THE WALL SHOULD BE A VIBRATORY ROLLER OR PLATE WEIGHING LESS THAN 1,000 POUNDS. FROM BEYOND 3 FEET OF THE WALL FACING PANELS, A ROLLER UP TO 8 TONS MAY BE USED. SHEEP'S FOOT OR GRID ROLLERS, ARE NOT ACCEPTABLE.

15. DRAINAGE PIPING SHALL BE A MINIMUM OF 4" HIGH DENSITY PVC PIPE, SEE DRAWINGS.

16. LEVELING BASE FOUNDATION FOR THE STRUCTURE SHALL BE PROOF ROLLED AND GRADED LEVEL. SOFT OR LOOSE MATERIAL THAT IS ENCOUNTERED SHOULD BE COMPACTED OR REMOVED AND REPLACED WITH STRUCTURAL FILL

CLIENT:

111 GORDON ROAD
WABAN, MA

DRAWING NOTES:

1. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.

2. THESE PLANS AND SPECIFICATIONS ARE ARE THE PROPERTY OF LEON A. BOMBARDIER, PE ANY USE WITHOUT WRITTEN CONSENT IS PROHIBITED.


ARCHITECT:
GEORGE TOUGIAS
SPALDING TOUGIAS ARCHITECTS

OWNER:

BOMBARDIER
STRUCTURAL ENGINEERING


| # | REVISIONS | DATE |
|---|---|---|
| | | |


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PROJECT:

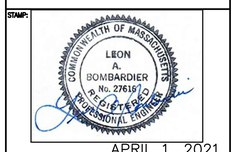
RESIDENTIAL ADDITION

111 GORDON RD.
WABAN, MA

DRAWING TITLE:

STRUCTURAL GENERAL NOTES

STAMP:




APRIL 1, 2021

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|---|---|
| SCALE: | AS NOTED |
| DATE: | 4/01/2021 |
| DRAWN BY: | JKS |
| CHECKED BY: | LAB |
| PROJECT #: | 2021-11 |

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