ABBREVIATIONS

ABV	ABOVE
A/C	AIR CONDITIONING
A.D.	AREA DRAIN
ADJ	ADJUSTABLE
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH.	ARCHITECTURAL
BA	BATHROOM
BD	BOARD
BF	BI-FOLD (DOOR)
BLDG	BUILDING
BLK	BLOCK (CMUs)
BLW	BELOW
BM	BEAM
BP	BI-PASS (DOOR)
BOT	BOTTOM
BTWN	BETWEEN
CAB	CABINET
CER	CERAMIC
C.J.	CONTROL JOINT OR CONSTRUCTION JOINT
CL	CLOSET OR CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC.	CONCRETE
C	CARPET
CR	CORROSION RESISTANT
CSMT	CASEMENT
C.T.	CERAMIC TILE
D	DRYER
DBL	DOUBLE
DH	DOUBLE HUNG
DIM	DIMENSION
DISP	DISPOSAL
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DW	DISH WASHER
DWG	DRAWING
E	EAST
EA	EACH
ELEV	ELEVATION
ELEC.	ELECTRICAL
EQ	EQUAL
EXT	EXTERIOR
FAU	FORCED AIR UNIT
F.G.	FLOOR CHANGE
F.D.	FLOOR DRAIN
FFL	FINISH FLOOR LINE
F.G.	FINISHED GRADE
FLR	FLOORING)
FL	FLOURESCENT (LIGHT)
FND	FOUNDATION
F.O.S.	FACE OF STUD
FTG	FOOTING
FX	FIXED GLASS
GALV	GALVANIZED
GAR	GARAGE
G.B.	GYPSUM BOARD
GD	GRADE OR GRADING
G.D.O.	GARAGE DOOR OPENER
GFI	GROUND FAULT INTERRUPTER
GL	GLASS OR GLAZING
GYP BD	GYPSUM BOARD
HB	HOSE BIBB
HD	HEAD OR HARD
HDR	HEADER
HGT	HEIGHT
HVAC	HEATING/VENTILATING/AIR COND.
HWD	HARDWOOD
INT	INTERIOR
JST	JOIST
JT	JOINT
KIT	KITCHEN
L	LENGTH
LA	LAUNDRY
LAV	LAVATORY
LVR	LOUVER
MAX	MAXIMUM
MECH	MECHANICAL
MFR.	MANUFACTURER
MIN	MINIMUM
MISC.	MISCELLANEOUS
N	NORTH
N.T.S.	NOT TO SCALE
O.S.D.	OVERHEAD GARAGE DOOR
OH	OVERHEAD
OPT.	OPTIONAL
PAR	PARALLEL
P.B.	PUSH BUTTON
PDR	POWDER
PED	PEDESTAL
PL	PLATE
PR	PAIR
P.T.	PRESSURE TREATED WOOD
PVC	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
P.W.	PRE-WIRE
PWD	PLYWOOD
R	RISER
RAG	RETURN AIR GRILL
REF	REFERENCE
REFR	REFRIGERATOR
REQ	REQUIRED
S	SOUTH
SD	SMOKE DETECTOR
S.F.	SQUARE FEET
S.G.D.	SLIDING GLASS DOOR
SH	SINGLE HUNG OR SHELF
SIM	SIMILAR
SL	SLOPE / SLIDING
S&P	SHELF AND POLE
SPEC.	SPECIFICATIONS
STD	STANDARD
STR	STRUCTURAL
SQ	SQUARE
SYM	SYMBOL
S4S	SMOOTH FOUR SIDES
T	TREAD (AT STAIRS) OR TILE
T.B.	TOWEL BAR
TEMP.	TEMPERED (GLASS)
T&G	TONGUE & GROOVE
T.O.C.	TOP OF CURB
TV	TELEVISION
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
V.B.	VAPOR BARRIER
VERT	VERTICAL
V.T.R.	VENT THRU ROOF
W	WASHING MACHINE
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WIC	WALK-IN CLOSET
W/ W/O	WITH OR WITHOUT
WP	WATERPROOF(ING)
WWM	WELDED WIRE MESH
@	PROPERTY LINE
ø	ROUND / DIAMETER
&	AND
℄	CENTERLINE
#	POUND / NUMBER

BUILDING CODE COMPLIANCE / PROJECT INFORMATION

ALL CONSTRUCTION TO COMPLY WITH LOCAL CODES AND ORDINANCES CURRENTLY IN USE WITH THE LOCAL JURISDICTION.

APPLICABLE CODES:
FOLLOW ALL APPLICABLE STATE AND LOCAL CODES.
2018 NORTH CAROLINA STATE SUPPLEMENTS AND AMENDMENTS

CONTRACTOR AND BUILDER SHALL REVIEW ENTIRE PLAN TO VERIFY CONFORMANCE WITH ALL CURRENT APPLICABLE CODES IN EFFECT AT TIME OF CONSTRUCTION. BY USING THESE DRAWINGS FOR CONSTRUCTION IT IS UNDERSTOOD THAT CONFORMANCE WITH ALL APPLICABLE CODES IS THE RESPONSIBILITY OF THE BUILDER AND CONTRACTOR.

PRODUCT:
SINGLE FAMILY RESIDENCE

OCCUPANCY CLASSIFICATION
RESIDENTIAL R-3

CONSTRUCTION TYPE:
TYPE VB

INDEX

MODEL 'HAYDEN'

ALL CONSULTANT DRAWINGS ACCOMPANYING THESE ARCHITECTURAL DRAWINGS HAVE NOT BEEN PREPARED BY OR UNDER THE DIRECTION OF GMD DESIGN GROUP, INC. GMD DESIGN GROUP INC. THEREFORE ASSUMES NO LIABILITY FOR THE COMPLETENESS OR CORRECTNESS OF THESE DRAWINGS.

EXPRESS HOMES
40' SERIES
MODEL - HAYEN 4 BR - RH

Mason Ridge
Lot 45
Spring Lake, NC 28390

PLAN CHANGES:

DATE:	DESCRIPTION:
02.22.21	INITIAL PLAN RELEASE
03.10.21	CLIENT REVISIONS
04.14.21	CLIENT REVISIONS
04.15.21	CLIENT REVISIONS
12.03.21	CLIENT REVISIONS
01.26.22	CLIENT REVISIONS
04.25.22	ADDED LIGHT OVER TUB/SHOWER IN BATH 2
06.08.22	STUDY ILO BEDOOM 4 - REOMVE CLOSET

CONSULTANTS:

GENERAL NOTES DESIGNER NORTH CAROLINA:

THESE DOCUMENTS ARE THE PROPERTY OF THE DESIGNER AND SHALL NOT BE COPIED, DUPLICATED, ALTERED, MODIFIED OR REVISED IN ANY WAY WITHOUT THE EXPRESSED WRITTEN APPROVAL OF THE DESIGNER.

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE AND ALL INCONSISTENCES SHALL BE BROUGHT TO THE ATTENTION OF THE DEVELOPER AND THE DESIGNER BEFORE PROCEEDING WITH WORK.

ANY ERRORS OR OMISSIONS FOUND IN THESE DRAWINGS SHALL BE BROUGHT TO DEVELOPERS AND DESIGNERS ATTENTION IMMEDIATELY.

DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

ALL DIMENSIONS ARE TO FACE OF STUD OR TO FACE OF FRAMING UNLESS OTHERWISE NOTED.

ALL TRUSS DRAWINGS TO BE REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO ISSUANCE OF BUILDING PERMIT.

ALL OR EQUAL SUBSTITUTIONS MUST BE SUBMITTED TO AND APPROVED BY CITY BUILDING OFFICIAL PRIOR TO INSTALLATION.

ALL ANGLED PARTITIONS ARE 45 DEGREES UNLESS OTHERWISE NOTED.

PROVIDE FIREBLOCKING. (PER LOCAL CODES.)

ALL ELECTRICAL AND MECHANICAL EQUIPMENT AND METERS ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS, CONTRACTOR TO VERIFY.

PROVIDE BLOCKING AND/OR BACKING AT ALL TOWEL BAR, TOWEL RING AND/OR TOILET PAPER HOLDER LOCATIONS, AS SHOWN PER PLAN. TYPICAL AT ALL BATHROOMS AND POWDER ROOMS. VERIFY LOCATIONS AT FRAMING WALK.

ELASTOMERIC SHEET WATERPROOFING: FURNISH AND INSTALL ALL WATERPROOFING COMPLETE. A 40 MIL. SELF-ADHERING MEMBRANE OF RUBBERIZED ASPHALT INTEGRALLY BONDED TO POLYETHYLENE SHEETING, OR EQUAL. INSTALL PER MANUFACTURE'S AND TRADE ASSOCIATION'S PRINTED INSTALLATION INSTRUCTIONS. 6" MINIMUM LAP AT ALL ADJACENT WALL SURFACES.

TO THE BEST OF THE DESIGNER'S KNOWLEDGE THESE DOCUMENTS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE BUILDING AUTHORITIES HAVING JURISDICTION OVER THIS TYPE OF CONSTRUCTION AND OCCUPANCY.

SHOP DRAWING REVIEW AND DISTRIBUSTION, ALONG WITH PRODUCT SUBMITTALS, REQUESTED IN THE CONSTRUCTION DOCUMENTS, SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR, UNLESS DIRECTED OTHERWISE UNDER A SEPARATE AGREEMENT.

DEVIATIONS FROM THESE DOCUMENTS IN THE CONSTRUCTION PHASE SHALL BE REVIEWED BY THE DESIGNER AND THE OWNER PRIOR TO THE START OF WORK IN QUESTION. ANY DEVIATIONS FROM THESE DOCUMENTS WITHOUT PRIOR REVIEW, SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND MATERIALS REPRESENTED ON THESE DOCUMENTS INCLUDING THE WORK AND MATERIALS FURNISHED BY SUBCONTRACTORS AND VENDORS.

THE BUILDER SHALL FURNISH ANY AND ALL REPORTS RECEIVED FROM THE GEOTECHNICAL ENGINEER (SOILS REPORT), ON THE STUDY OF THE PROPOSED SITE, TO THE DESIGNER, STRUCTURAL ENGINEER, AND GENERAL CONTRACTOR. IN THE EVENT THE GEOTECHNICAL REPORTS DO NOT EXIST, THE SOILS CONDITION SHALL BE ASSUMED TO BE A MINIMUM DESIGN SOIL PRESSURE STATED BY THE STRUCTURAL ENGINEER OF RECORD FOR THE PURPOSE OF STRUCTURAL DESIGN. GENERAL CONTRACTOR SHALL ASSURE THE SOIL CONDITIONS MEET OR EXCEED THE CRITERIA.

ALL WORK PERFORMED BY THE GENERAL CONTRACTOR SHALL COMPLY AND CONFORM WITH LOCAL AND STATE BUILDING CODES, ORDINANCES AND REGULATIONS, ALONG WITH ALL OTHER AUTHORITIES HAVING JURISDICTION. THE GENERAL CONTRCATOR IS RESPONSIBLE TO BE AWARE OF THESE REQUIREMENTS AND GOVERNING REGULATIONS.

PROVIDE AN APPROVED WASHER DRAIN PAN AT SECOND FLOOR ONLY THAT DRAINS TO EXTERIOR.

WINDOW SUPPLIER TO VERIFY AT LEAST ONE WINDOW IN ALL BEDROOMS TO HAVE A CLEAR OPENABLE AREA OF 4.0 SQ FT. THE MINIMUM NET CLEAR OPENING HEIGHT SHALL BE 22" AND THE MINIMUM NET CLEAR OPENING WIDTH SHALL BE 20". GLAZING TOTAL AREA OF NOT LESS THAN 5.0 SQ FT IN THE CASE OF A GROUND WINDOW AND NOT LESS THAN 5.7 SQ FT IN THE CASE OF AN UPPER STORY WINDOW. (PER NCRC SECTION R310.1.1)

ALL HANDRAIL BALLUSTERS TO BE SPACED SUCH THAT A 4" SPHERE CANNOT PASS BETWEEN BALLUSTERS. (PER LOCAL CODES.)

PROVIDE STAIR HANDRAILS AND GUARDRAILS PER LOCAL CODES.

BUILDER SET:

THE SCOPE OF THIS SET OF PLANS IS TO PROVIDE A "BUILDER'S SET" OF CONSTRUCTION DOCUMENTS AND GENERAL NOTES HEREINAFTER REFERRED TO AS "PLANS". THIS SET OF PLANS IS SUFFICIENT TO OBTAIN A BUILDING PERMIT, HOWEVER, ALL MATERIALS AND METHODS OF CONSTRUCTION NECESSARY TO COMPLETE THE PROJECT ARE NOT NECESSARILY DESCRIBED. THE PLANS DELINEATE AND DESCRIBE ONLY LOCATIONS, DIMENSIONS, TYPES OF MATERIALS, AND GENERAL METHODS OF ASSEMBLING OR FASTENING. THEY ARE NOT INTENDED TO SPECIFY PARTICULAR PRODUCTS OR OTHER METHODS OF ANY SPECIFIC MATERIALS, PRODUCT OR METHOD. THE IMPLEMENTATION OF THE PLANS REQUIRES A CLIENT / CONTRACTOR THOROUGHLY KNOWLEDGEABLE WITH THE APPLICABLE BUILDING CODES AND METHODS OF CONSTRUCTION SPECIFIC TO THIS PRODUCT TYPE AND TYPE OF CONSTRUCTION.

CONSTRUCTION REQUIREMENTS AND QUALITY: PROVIDE WORK OF THE SPECIFIC QUALITY, WHERE QUALITY LEVEL IS NOT INDICATED, PROVIDE WORK OF QUALITY CUSTOMARY IN SIMILAR TYPES OF WORK. WHERE THE PLANS AND SPECIFICATIONS, CODES, LAWS, REGULATIONS, MANUFACTURER'S RECOMMENDATIONS OR INDUSTRY STANDARDS REQUIRE WORK OF HIGHER QUALITY OR PERFORMANCE, PROVIDE WORK COMPLYING WITH THOSE REQUIREMENTS AND QUALITY. WHERE TWO OR MORE QUALITY PROVISIONS OF THOSE REQUIREMENTS CONFLICT WITH THE MOST STRINGENT REQUIREMENT, WHERE REQUIREMENTS ARE DIFFERENT BUT APPARENTLY EQUAL, AND WHERE IT IS UNCERTAIN WHICH REQUIREMENT IS MOST STRINGENT, OBTAIN CLARIFICATION FROM THE GMD DESIGN GROUP BEFORE PROCEEDING.

AREA CALCULATIONS:

MODEL 'HAYDEN' SQUARE FOOTAGES

AREA	ELEV 'F', 'K'
1st FLOOR	1066 SF
2nd FLOOR	1445 SF
TOTAL LIVING	2511 SF
GARAGE	422 SF
PORCH	109 SF
OPT. COVERED PORCH	80 SF
OPT. BASEMENT	1006 SF

BASEMENT AREA IS TAKEN TO INSIDE OF CONCRETE WALL

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:
40' Series

FOR CONSTRUCTION

CLIENTS NAME:
Express Homes

PROJECT NO: GMD17049

SHEET TITLE:
TITLE SHEET

PRINT DATE:
January 22, 2021

SHEET NO:
0

Front Elevation 'K'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

Front Elevation 'P'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

Front Elevation 'R'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express HOMES

PROJECT NO: GMDI7049

SHEET TITLE:

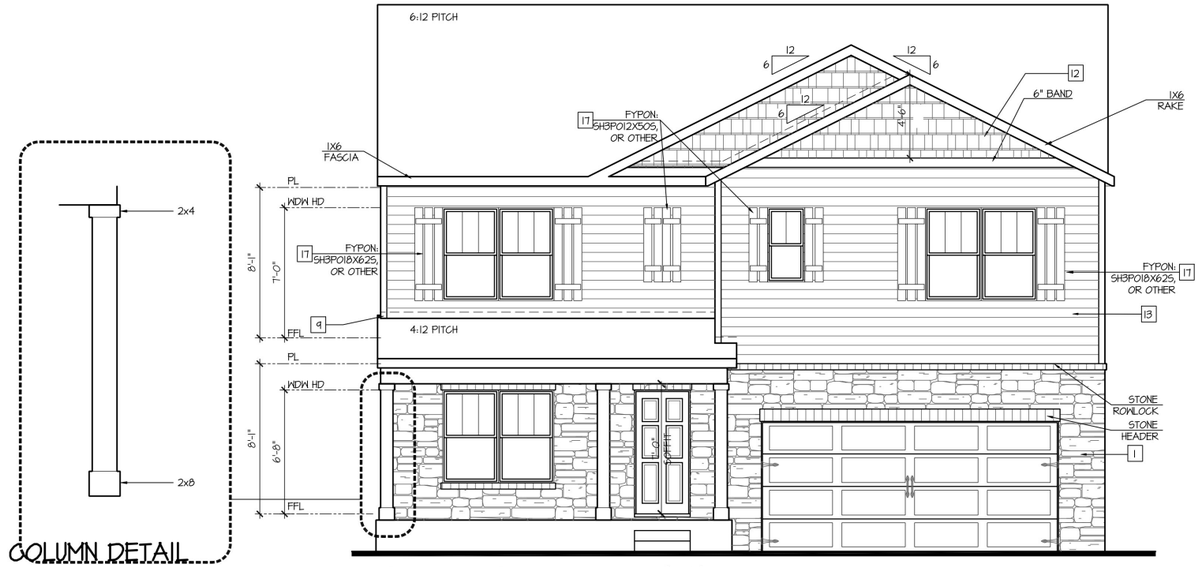
QUICK VIEW

PRINT DATE:

January 22, 2021

SHEET NO:

0.2



COLUMN DETAIL

Front Elevation 'K'
w/ Opt Crawl Space/ Basement

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

AVAILABLE WITH OPTIONAL
9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"

NOTES:

- GRADE CONDITIONS MAY VARY FOR INDIVIDUAL SITE FROM THAT SHOWN. BUILDER SHALL VERIFY AND COORDINATE PER ACTUAL SITE CONDITIONS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS
- ENTRY DOOR: AS SELECTED BY DEVELOPER.
- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
- ALL EXTERIOR MATERIALS TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROTECTION AGAINST DECAY:
  (ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION. PER TABLE N1102.1.2.

EXTERIOR WALLS:	R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE:	R-38 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE:	R-19 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL:	R-19 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING:	R-19 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

1 ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
2 MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
3 MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
4 8" SOLDIER COURSE.
5 ROWLOCK COURSE
6 N/A

TYPICALS:

7 CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED.
8 CODE APPROVED TERMINATION CHIMNEY CAP.
9 CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRC R905.2.8.3
10 STANDING SEAM METAL ROOF, INSTALL PER MANUFCATURER'S WRITTEN INSTRUCTIONS.
11 DECORATIVE WROUGHT IRON. SEE DETAILS.

SIDING:

12 VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS:
FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
13 VINYL LAP SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS:
FIBER CEMENT LAP SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
14 VINYL WAVY SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS:
FIBER CEMENT WAVY SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
15 VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER. (AT SPECIFIED LOCATIONS:
FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
16 VINYL TRIM SIZE AS NOTED (AT SPECIFIC LOCATIONS:
1X FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED
17 FYPON SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED. (AT SPECIFIC LOCATIONS: FALSE VINYL SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.)

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NCRC SECTION R312.2.1 AND R312.2.2.

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:
40' Series

FOR CONSTRUCTION

CLIENTS NAME:
Express Homes

PROJECT NO: GMDI7049

SHEET TITLE:
'HAYDEN'
EXTERIOR ELEVATIONS '4EPF-K'

PRINT DATE:
January 22, 2021

SHEET NO:
1K

ATTIC VENT CALCULATION FOR PLAN 'HAYDEN': 1:150 RATIO.

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, PROVIDED THAT AT LEAST 50 PERCENT AND NOT MORE THAN 80 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE THE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS.

EXCEPTIONS:

1. EXCLOSED ATTIC/RAFTER SPACES REQUIRING LESS THAN 1 SQ FT OF VENTILATION MAY BE VENTED WITH CONTINUOUS SOFFIT VENTILATION ONLY.
2. ENCLOSED ATTIC/RAFTER SPACES OVER UNCONDITIONED SPACE MAY BE VENTED WITH CONTINUOUS SOFFIT VENT ONLY.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 150 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 150 = SQ. IN. OF VENT REQUIRED

ROOF AREA 1:= 1488 SF
1488 SQ. FT. X 144 = 214272 SQ. IN.
214272 SQ. IN. / 150 = 1428.48 SQ. IN. OF VENT REQ'D

ROOF AREA 2:= 39 SF
39 SQ. FT. X 144 = 5616 SQ. IN.
5616 SQ. IN. / 150 = 37.44 SQ. IN. OF VENT REQ'D

ROOF AREA 3:= 180 SF
180 SQ. FT. X 144 = 25920 SQ. IN.
25920 SQ. IN. / 150 = 172.80 SQ. IN. OF VENT REQ'D

NOTES:

- ALL ROOF DRAINAGE SHALL BE PIPED TO STREET OR APPROVED DRAINAGE FACILITY.
- DASHED LINES INDICATE WALL BELOW.
- LOCATE GUTTER AND DOWNSPOUTS PER BUILDER.
- PITCHED ROOFS AS NOTED.
- TRUSS MANUFACTURER SHALL SUBMIT STRUCTURAL CALCS AND SHOP DRAWINGS TO THE BUILDER'S GENERAL CONTRACTOR AND BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATIONS.
- ALL PLUMBING VENTS SHALL BE COMBINED INTO A MINIMUM AMOUNT OF ROOF PENETRATIONS. ALL ROOF PENETRATIONS SHALL OCCUR TO THE REAR OF THE MAIN RIDGE.

ATTIC VENT CALCULATION FOR PLAN 'HAYDEN': 1:300 RATIO.

AS AN ALTERNATE TO THE 1/150 RATIO LISTED ABOVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS 1 OR II VAPOR RETARDER IS INSTALLED ON THE WARM - IN - WINTER SIDE OF THE CEILING.

GENERAL CONTRACTOR SHALL VERIFY THE NET FREE VENTILATION OF THE VENT PRODUCT SELECTED BY OWNER. VERIFY WITH MANUFACTURER OF HIGH AND LOW VENTS TO BE USED FOR MINIMUM CALCULATED VENTS REQUIRED. THE REQUIRED VENTILATION SHALL BE MAINTAINED. PROVIDE INSULATION STOP SUCH THAT INSULATION DOES NOT OBSTRUCT FREE AIR MOVEMENT AS REQUIRED BY THE BUILDING OFFICIAL.

ALL OVERLAP FRAMED ROOF AREAS SHALL HAVE OPENINGS BETWEEN THE ADJACENT ATTICS IN THE ROOF SHEATHING (AS ALLOWED BY THE STRUCTURAL ENGINEER) TO ALLOW PASSAGE AND ATTIC VENTILATION BETWEEN THE TWO OR ISOLATED ATTIC SPACES SHALL BE VENTED INDEPENDENTLY TO CBC REQUIREMENTS.

PER DEVELOPER, AT ALL CANTILEVERED FLOORS, CANTILEVERED ARCHITECTURAL POP-OUTS, AND ANY DOUBLE FRAMING PROJECTIONS THAT ARE SEPARATED FROM THE VENTING CALCULATIONS SHOWN ABOVE, PROVIDE A CONTINUOUS 2" CORROSION RESISTANT SOFFIT VENT AT UNDERSIDE OF FRAMED ELEMENT.

(PER SECTION R806.2)

1 SQUARE INCH VENT FOR EVERY 300 SQUARE INCHES OF CEILING
*144 SQ. IN. = 1 SQ. FT.
BLDG. CEILING (SF) X 144 = BLDG (SQ. IN.)
BLDG. (SQ. IN.) / 300 = SQ. IN. OF VENT REQUIRED
SQ. IN. OF VENT REQUIRED / 2 = 50% AT HIGH & 50% AT LOW.

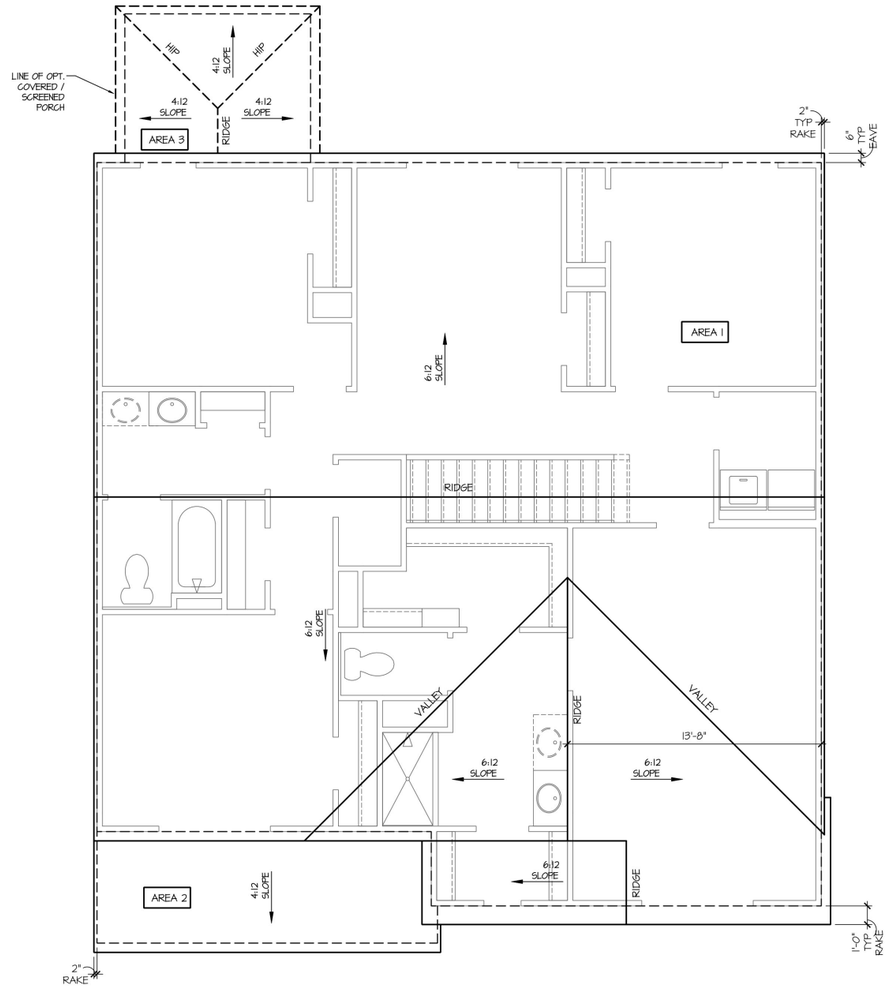
ROOF AREA 1: = 1488 SF
1488 SQ. FT. X 144 = 214272 SQ. IN.
214272 SQ. FT. / 300 = 714.24 SQ. IN. OF VENT REQ'D
714.24 SQ. IN. / 2 = 357.12 SQ. IN.
357.12 SQ. IN. OF VENT AT HIGH & 357.12 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 2: = 39 SF
39 SQ. FT. X 144 = 5616 SQ. IN.
5616 SQ. FT. / 300 = 18.72 SQ. IN. OF VENT REQ'D
18.72 SQ. IN. / 2 = 9.36 SQ. IN.
9.36 SQ. IN. OF VENT AT HIGH & 9.36 SQ. IN. OF VENT AT LOW REQUIRED.

ROOF AREA 3: = 180 SF
180 SQ. FT. X 144 = 25920 SQ. IN.
25920 SQ. FT. / 300 = 86.40 SQ. IN. OF VENT REQ'D
86.40 SQ. IN. / 2 = 43.20 SQ. IN.
43.20 SQ. IN. OF VENT AT HIGH & 43.20 SQ. IN. OF VENT AT LOW REQUIRED.

BUILDER TO PROVIDE (2) LAYERS OF UNDERLAYMENT AT ANY ROOF W/ A SLOPE FROM 2:12 TO LESS THAN 4:12

AT SINGLE FAMILY DETACHED PLANS:
PREFINISHED VENTED
SOFFIT AT EAVE PER MANUFACTURER.
(VERIFY FIRE SEPARATION DISTANCE FOR SOFFIT PROTECTION PER NCRC SECTION R302.1.1 AND TABLE R302.1)



Roof Plan 'K'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express Homes

PROJECT NO: GMD17049

SHEET TITLE:

'HAYDEN'
ROOF PLAN
'4EPF-K'

PRINT DATE:

January 22, 2021

SHEET NO:

1.1 K

NOTES:

- GRADE CONDITIONS MAY VARY FOR INDIVIDUAL SITE FROM THAT SHOWN. BUILDER SHALL VERIFY AND COORDINATE PER ACTUAL SITE CONDITIONS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.
- ROOFING: PITCHED SHINGLES PER DEVELOPER.
- WINDOWS: MANUFACTURER PER DEVELOPER. DIVIDED LITES AS SHOWN ON THE EXTERIOR ELEVATIONS
- ENTRY DOOR: AS SELECTED BY DEVELOPER.
- GARAGE DOORS: AS SELECTED BY DEVELOPER, RAISED PANEL AS SHOWN.
- ALL EXTERIOR MATERIALS TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROTECTION AGAINST DECAY:
  (ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POST, RAILS, PICKETS, STEPS AND FLOOR STRUCTURE.)
- INSULATION: PER TABLE N1102.1.2.

EXTERIOR WALLS:	R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE:	R-38 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE:	R-19 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL:	R-19 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING:	R-19 BATTS MINIMUM. VERIFY

KEY NOTES:

MASONRY:

1 ADHERED STONE VENEER AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
2 MASONRY FULL BRICK AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
3 MASONRY FULL STONE AS SELECTED BY DEVELOPER. HEIGHT AS NOTED.
4 8" SOLDIER COURSE.
5 ROWLOCK COURSE
6 N/A

TYPICALS:

7 CORROSION RESISTANT SCREEN LOUVERED VENTS, SIZE AS NOTED.
8 CODE APPROVED TERMINATION CHIMNEY CAP.
9 CORROSION RESISTANT ROOF TO WALL FLASHING. CODE COMPLIANT FLASHING PER NCRC R905.2.8.3
10 STANDING SEAM METAL ROOF, INSTALL PER MANUFCATURER'S WRITTEN INSTRUCTIONS.
11 DECORATIVE WROUGHT IRON. SEE DETAILS.

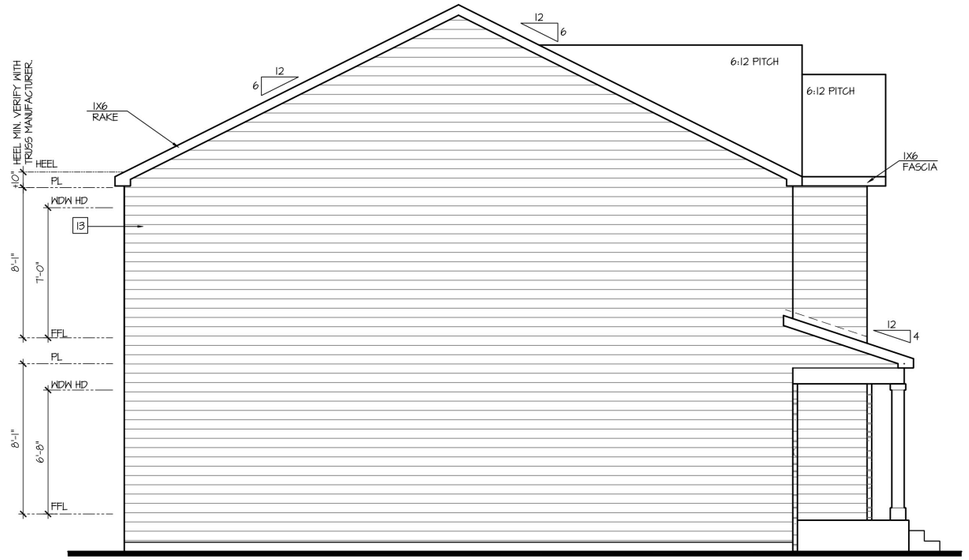
SIDING:

12 VINYL SHAKE SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT SHAKE SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
13 VINYL LAP SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT LAP SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
14 VINYL WAVY SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT WAVY SIDING PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
15 VINYL BOARD AND BATT SIDING PER DEVELOPER WITH VINYL CORNER TRIM PER DEVELOPER.
(AT SPECIFIED LOCATIONS:
FIBER CEMENT PANEL SIDING W/ 1X3 BATTS AT 12" O.C. PER DEVELOPER W/ 1X4 CORNER TRIM BOARD.)
16 VINYL TRIM SIZE AS NOTED
(AT SPECIFIC LOCATIONS:
1X FIBER CEMENT TRIM OR EQUAL, U.N.O. SIZE AS NOTED
17 FYPON SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.
(AT SPECIFIC LOCATIONS; FALSE VINYL SHUTTERS, TYPE AS SHOWN. SIZE AS NOTED.)

ALL WINDOWS WHOSE OPENING IS LESS THAN 24" ABOVE THE FINISH FLOOR AND WHOSE OPENING IS GREATER THAN 72" ABOVE THE OUTSIDE WALKING SURFACE MUST HAVE WINDOW OPENING LIMITING DEVICES COMPLYING WITH THE NCRC SECTION R312.2.1 AND R312.2.2.

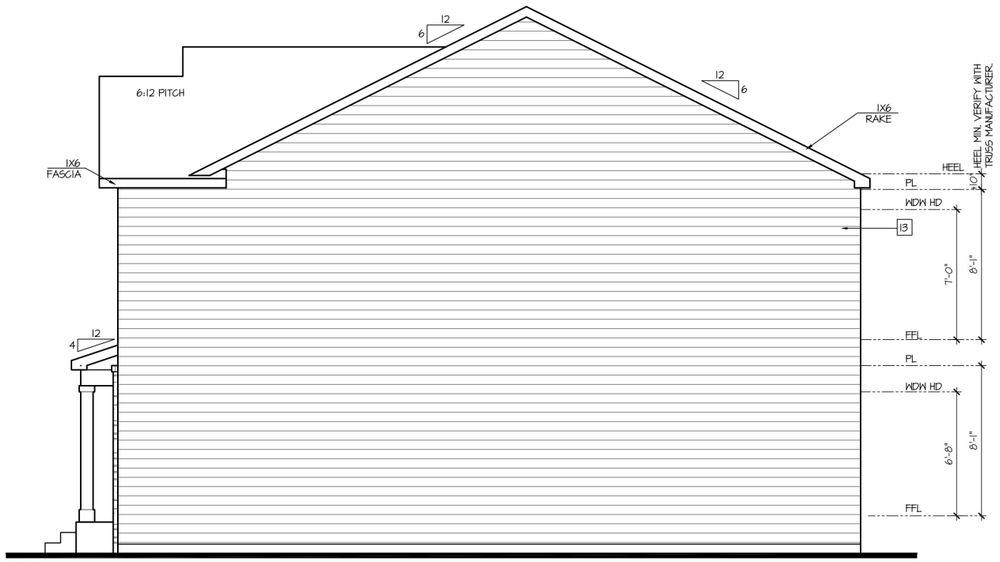
AVAILABLE WITH OPTIONAL
9'-1" FIRST FLOOR PLATE

NOTES AT OPT 9'-1" PLT:
- WDW HT SET AT 7'-6"
- INTERIOR SOFFITS AT 8'-0"
- EXTERIOR SOFFITS AT 8'-0"



Left Elevation 'K' w/ Opt Crawl Space

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



Right Elevation 'K' w/ Opt Crawl Space

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

Rear Elevation 'K' w/ Opt Crawl Space

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express HOMES

PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN'
EXTERIOR ELEVATIONS '4EPF-K'

PRINT DATE:

January 22, 2021

SHEET NO:

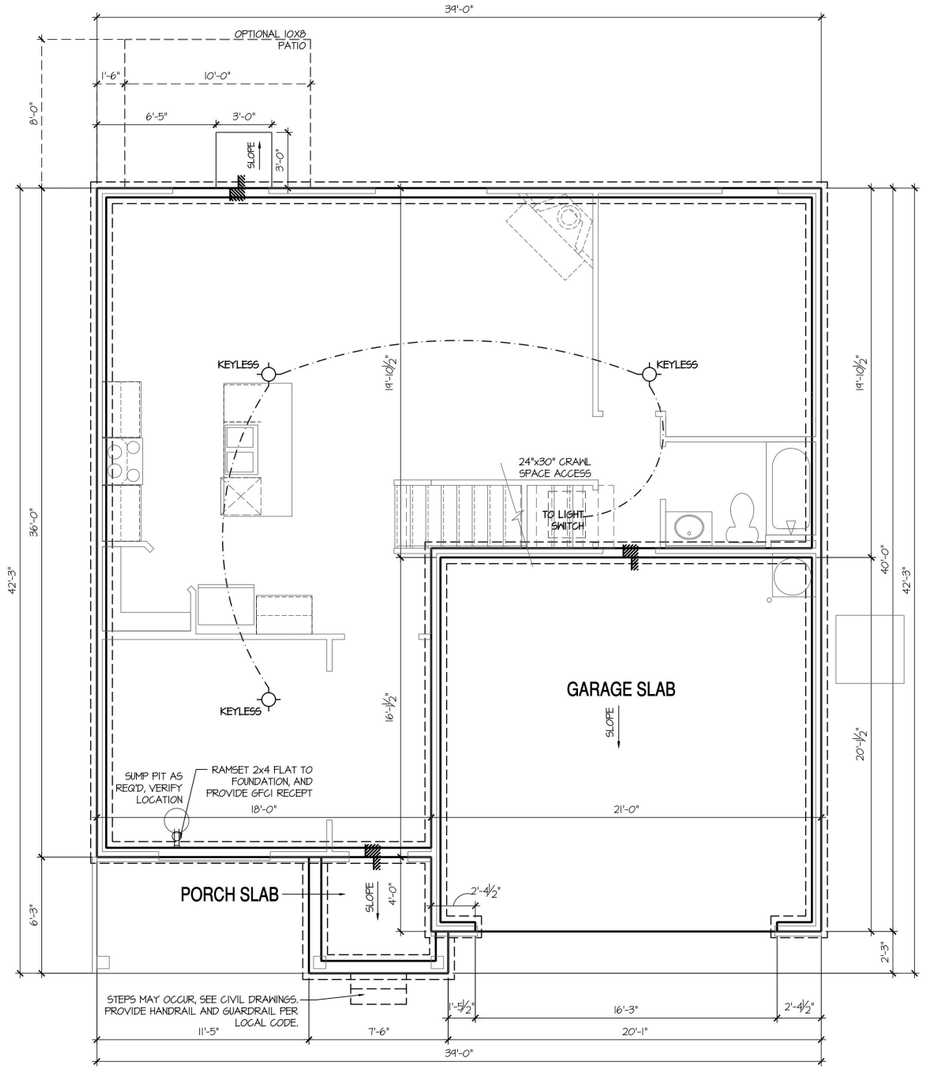
2.1 K

CRAWL SPACE NOTES NORTH CAROLINA:

- REFER TO STRUCTURAL DRAWINGS FOR INFORMATION NOT SHOWN ON THIS PLAN.
- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- PROVIDE FIREBLOCKING. (PER LOCAL CODES.)
- ALL ELECTRICAL AND MECHANICAL EQUIPMENT AND METERS ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS, CONTRACTOR TO VERIFY.
- VERIFY ALL DOOR THRESHOLD HEIGHTS TO HARD SURFACES. 8 1/4" MAX AT INSWING DOORS. (PER NCRC SECTION R311.3.1.)
- SLOPE ALL STOOPS AND HARDSCAPE MATERIAL AWAY FROM BUILDING - TYPICAL.
- SLOPE GARAGE FLOOR 1/8" PER FOOT TO GARAGE DOOR OPENING.
- VERIFY CURB CUT BLOCKOUT WITH GARAGE DOOR MANUFACTURER.
- REFER TO CIVIL DRAWINGS FOR FINISH SURFACE ELEVATIONS.
- TYP STOOP AT INSWING/SLIDER DOORS: 36" DEEP BY THE WIDTH OF THE DOOR SERVED, MINIMUM (PER NCRC SECTION R311.3.) PROVIDE A SLIP-RESISTANT FINISH.
- SOILS TREATMENT: BORACARE TERMITE TO BE APPLIED TO FRAMING PER PRODUCT SPECIFICATIONS. (PROVIDE CHEMICAL TREATMENT FOR PROTECTION FROM TERMITE INVESTATION ACCORDING TO LOCAL CODES.)
- AT VENTED CRAWL SPACE: APPLY AN APPROVED VAPOR RETARDER OR EQUIVALENT, 6 MIL POLY-VINYL, GROUND COVER OVER FINISH GRADE OR CRAWL SPACE PER NCRC SECTION 408.2.
- PROVIDE VENTS SPACED AROUND PERIMETER TO PROMOTE CROSS VENTILATION AT A RATE OF 1 SF VENT FOR EVERY 1500 SF OF CRAWL FLOOR AREA. ONE VENT MUST BE LOCATED WITHIN 3'-0" OF EACH CORNER OF THE BUILDING AND LOCATED TO ALLOW FOR CROSS VENTILATION. (PER NCRC SECTION R408.1.1 EXCEPTION.)
- PROVIDE AN ACCESS OPENING, MINIMUM SIZE OF 18"X24" FOR CRAWL ACCESS. COORDINATE WITH MECHANICAL CONTRACTOR FOR LARGER SIZE REQUIREMENTS IF MECHANICAL EQUIPEMENT IS LOCATED IN CRAWL. (PER NCRC SECTION 408.3.)
- WOOD CONTACTING CONCRETE OR MASONRY OR LESS THAN CODE REQUIRED SEPARATION TO GRADE SHALL BE PRESSURE TREATED OR FOUNDATION GRADE REDWOOD. SET ALL EXTERIOR WALL SILLS IN MASTIC.

KEY NOTES:

1. LINE OF SLAB ABOVE
2. LINE OF FRAMED WALL ABOVE
3. 16"X8" CRAWL SPACE VENT
4. CRAWL SPACE ACCESS PANEL
5. A/C CONDENSER PAD. (VERIFY)
6. TYPICAL CRAWL FOUNDATION WALL SHALL BE 8" CMU OR A COMBINATION OF 4" CMU WITH NOMINAL 4" BRICK. SEE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL ATTACHMENTS. ALL BLOCK CELLS AND SPACE BETWEEN BLOCK AND BRICK SHALL BE FILLED SOLID WITH CONCRETE. FOUNDATION WALL WITH FULL HEIGHT BRICK VENEER SHALL CONSIST OF 8" CMU WITH NOMINAL 4" BRICK. SEE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL ATTACHMENTS AND BRICK TIE SPACING. FILL VOIDS SOLID TO TOP OF CMU WALL. (MUST COMPLY WITH NCRC SECTION R404, TABLE R404.1.1(1) THROUGH R404.1.1(4) AND APPLICABLE SECTIONS OF R606, R607, R609.) VERIFY WITH STRUCTURAL DRAWINGS FOR WALL FOOTING SIZE AND DEPTH.



Crawl Space Plan 'K'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NO:	DATE:	REVISION:
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PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express Homes

PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN' CRAWL SPACE

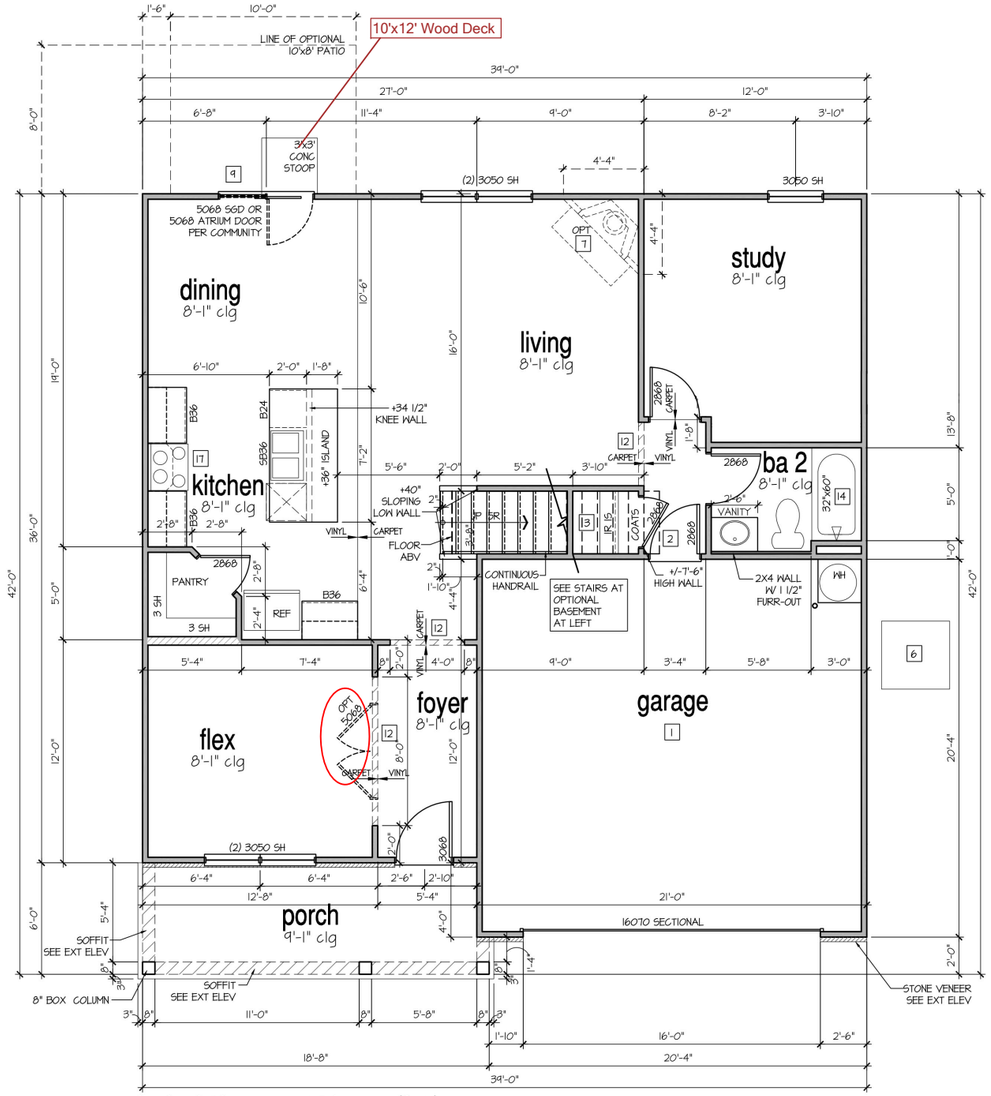
PLAN '4EPF-K'

PRINT DATE:

January 22, 2021

SHEET NO:

3 CS K



1st Floor Plan 'K'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

8'-9 1/2" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
15 TREADS AT 10" EACH VERIFY
16 RISERS AT +/- 7.50" = 120 1/4" TOTAL RISE VERIFY

9'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
16 TREADS AT 10" EACH VERIFY
17 RISERS AT +/- 7.27" = 123 3/4" TOTAL RISE VERIFY

8'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
14 TREADS AT 10" EACH VERIFY
15 RISERS AT +/- 7.45" = 111 3/4" TOTAL RISE VERIFY

- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.

ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO CENTERLINE.

WALL LEGEND:

- FULL HEIGHT 2X4 WOOD STUD PARTITION
- FULL HEIGHT 2X6 WOOD STUD PARTITION
- BRICK / STONE VENEER
- STUD WALL BELOW HEIGHT AND STUD SIZE AS NOTED
- LOW GYPSUM BOARD WALL HEIGHT AND STUD SIZE AS NOTED
- DRYWALL OPENING, HEIGHT AS NOTED ON PLAN.

KEY NOTES FOR NORTH CAROLINA:

FIRE PROTECTION:

1. HOUSE TO GARAGE FIRE SEPARATION. GARAGE/HOUSE SEPARATION AT VERTICAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 1/2" GYPSUM BOARD. (PER NCRC TABLE R302.6.)
   GARAGE/HOUSE SEPARATION AT HORIZONTAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD. (PER NCRC TABLE R302.6.)
2. HOUSE TO GARAGE DOOR SEPARATION. PROVIDE 1-3/8" SOLID CORE DOOR OR APPROVED 20 MINUTE RATED DOOR. (PER NCRC SECTION R302.5.1.)
3. BENEATH STAIRS AND LANDINGS, 1/2" GYPSUM BOARD ON WALLS AND CEILING OF ENCLOSED ACCESSIBLE AREAS. (PER NCRC SECTION R302.7.) IN CONCEALED SPACES BETWEEN STAIR STRINGERS PROVIDE FIREBLOCKING PER R302.11

MEP'S

4. GAS WATER HEATER ON 18" HIGH PLATFORM. (PER CHAPTER 5 NCRC-PLUMBING)
5. FAU 8'X8' PLATFORM. VERIFY WITH TRUSS MANUFACTURER. (6'-6" MIN. CLEAR HEIGHT TO HORIZONTAL MEMBERS, 2"X6" OVER 2"X4" BOTTOM CHORD. OF TRUSS, VERIFY W/ TRUSSES.)
6. A/C CONDENSER PAD. (VERIFY)
7. PRE-FABRICATED METAL FIREPLACE. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
8. ATTIC ACCESS LARGE ENOUGH TO REMOVE LARGEST PIECE OF EQUIPMENT BUT NOT LESS THAN 30"x22". FIRE RATED ACCESS AS NOTED. (PER NCRC 807.1) ATTIC ACCESS LADDER, VERIFY LOCATION AND SIZE WITH TRUSSES. (25 1/2" X 54" SIZE.) FOR GARAGE TO ATTIC SEPARATION PER NCRC 302.5.1 EXCEPTION.

TYPICALS:

9. TEMPERED SAFETY GLASS. (PER NCRC SECTION 308.4)
10. PLYWOOD SHELF ABOVE WITH DRYWALL FINISH OVER. HEIGHT AS NOTED.
11. HALF WALL, HEIGHT AS NOTED.
12. INTERIOR SOFFITS: FFL = 8'-1" U.N.O. SFL = 7'-6" U.N.O.

BATHS:

13. SHOWER. TEMPERED GLASS ENCLOSURE.
14. TUB-SHOWER COMBO. TEMPERED GLASS ENCLOSURE.
15. CERAMIC TILE SHOWER AND FLOOR. TEMPERED GLASS ENCLOSURE.
16. ACRYLIC TUB W/ CERAMIC PLATFORM

KITCHEN:

17. 30" SLIDE-IN ELECTRICAL RANGE W/ HOOD AND MICRO ABV. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
18. 30" GAS COOKTOP AND HOOD. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
19. ELECTRIC OVEN WITH MICROWAVE OVEN.

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PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express Homes

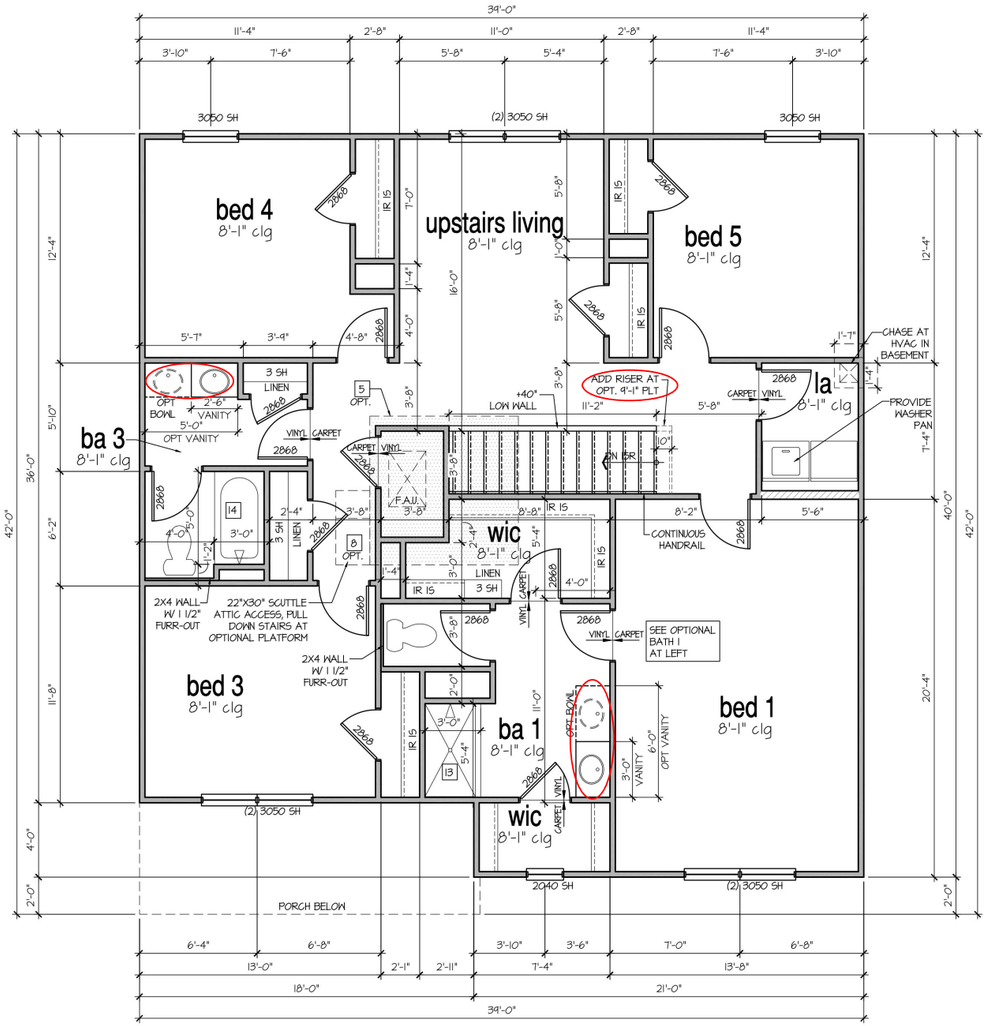
PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN'
1st FLOOR PLAN '4EPF-K'

PRINT DATE:
January 22, 2021

SHEET NO:
4 K



2nd Floor Plan 'K'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

9'-1" STAIR NOTE:
(USE 14" T.I. WITH 3/4" PLYWOOD SUBFLOOR)
16 TREADS AT 10" EACH VERIFY
17 RISERS AT +/- 7.27" = 123 3/4" TOTAL RISE VERIFY

8'-1" STAIR NOTE:
(USE 14" T.I. WITH 3/4" PLYWOOD SUBFLOOR)
14 TREADS AT 10" EACH VERIFY
15 RISERS AT +/- 7.45" = 111 3/4" TOTAL RISE VERIFY

- FOR ADDITIONAL NOTES SEE GENERAL NOTES ON TITLE SHEET AND DETAILS.
- WINDOW HEAD HEIGHTS:
  1ST FLOOR = 6'-8" U.N.O. ON ELEVATIONS.
  2ND FLOOR = 7'-0" U.N.O. ON ELEVATIONS.

ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO CENTERLINE.

WALL LEGEND:

- FULL HEIGHT 2X4 WOOD STUD PARTITION
- FULL HEIGHT 2X6 WOOD STUD PARTITION
- BRICK / STONE VENEER
- STUD WALL BELOW HEIGHT AND STUD SIZE AS NOTED
- LOW GYPSUM BOARD WALL HEIGHT AND STUD SIZE AS NOTED
- DRYWALL OPENING. HEIGHT AS NOTED ON PLAN.

KEY NOTES FOR NORTH CAROLINA:

FIRE PROTECTION:

1. HOUSE TO GARAGE FIRE SEPARATION. GARAGE/HOUSE SEPARATION AT VERTICAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 1/2" GYPSUM BOARD. (PER NCRC TABLE R302.6.) GARAGE/HOUSE SEPARATION AT HORIZONTAL SURFACES SHALL BE PROTECTED WITH ONE (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD. (PER NCRC TABLE R302.6.)
2. HOUSE TO GARAGE DOOR SEPARATION. PROVIDE 1-3/8" SOLID CORE DOOR OR APPROVED 20 MINUTE RATED DOOR. (PER NCRC SECTION R302.5.1.)
3. BENEATH STAIRS AND LANDINGS. 1/2" GYPSUM BOARD ON WALLS AND CEILING OF ENCLOSED ACCESSIBLE AREAS. (PER NCRC SECTION R302.7.) IN CONCEALED SPACES BETWEEN STAIR STRINGERS PROVIDE FIREBLOCKING PER R302.11

MEP'S

4. GAS WATER HEATER ON 18" HIGH PLATFORM. (PER CHAPTER 5 NCRC-PLUMBING)
5. FAU 8'X8' PLATFORM. VERIFY WITH TRUSS MANUFACTURER. (6'-6" MIN. CLEAR HEIGHT TO HORIZONTAL MEMBERS, 2"X6" OVER 2"X4" BOTTOM CHORD. OF TRUSS, VERIFY W/ TRUSSES.)
6. A/C CONDENSER PAD. (VERIFY)
7. PRE-FABRICATED METAL FIREPLACE. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
8. ATTIC ACCESS LARGE ENOUGH TO REMOVE LARGEST PIECE OF EQUIPMENT BUT NOT LESS THAN 30"x22". FIRE RATED ACCESS AS NOTED. (PER NCRC 807.1) ATTIC ACCESS LADDER, VERIFY LOCATION AND SIZE WITH TRUSSES. (25 1/2" X 54" SIZE.) FOR GARAGE TO ATTIC SEPARATION PER NCRC 302.5.1 EXCEPTION.

TYPICALS:

9. TEMPERED SAFETY GLASS. (PER NCRC SECTION 308.4)
10. PLYWOOD SHELF ABOVE WITH DRYWALL FINISH OVER. HEIGHT AS NOTED.
11. HALF WALL, HEIGHT AS NOTED.
12. INTERIOR SOFFITS: FFL = 8'-1" U.N.O. SFL = 7'-6" U.N.O.

BATHS:

13. SHOWER. TEMPERED GLASS ENCLOSURE.
14. TUB-SHOWER COMBO. TEMPERED GLASS ENCLOSURE.
15. CERAMIC TILE SHOWER AND FLOOR. TEMPERED GLASS ENCLOSURE.
16. ACRYLIC TUB W/ CERAMIC PLATFORM

KITCHEN:

17. 30" SLIDE-IN ELECTRICAL RANGE W/ HOOD AND MICRO ABV. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
18. 30" GAS COOKTOP AND HOOD. VENT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
19. ELECTRIC OVEN WITH MICROWAVE OVEN.

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PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express HOMES

PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN'
2nd FLOOR PLAN '4EPF-K'

PRINT DATE:

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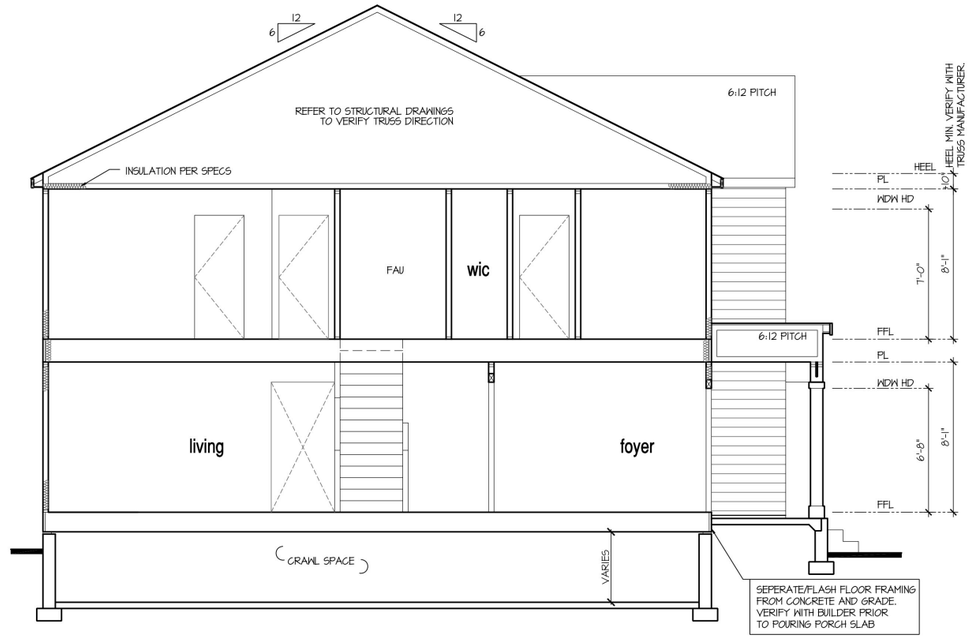
5 K



Building Section 1 at Crawl Space

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

9'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
16 TREADS AT 10" EACH VERIFY
17 RISERS AT +/- 7.27" = 123 3/4" TOTAL
RISE VERIFY

8'-1" STAIR NOTE:
(USE 14" TJI WITH 3/4" PLYWOOD SUBFLOOR)
14 TREADS AT 10" EACH VERIFY
15 RISERS AT +/- 7.45" = 111 3/4" TOTAL
RISE VERIFY

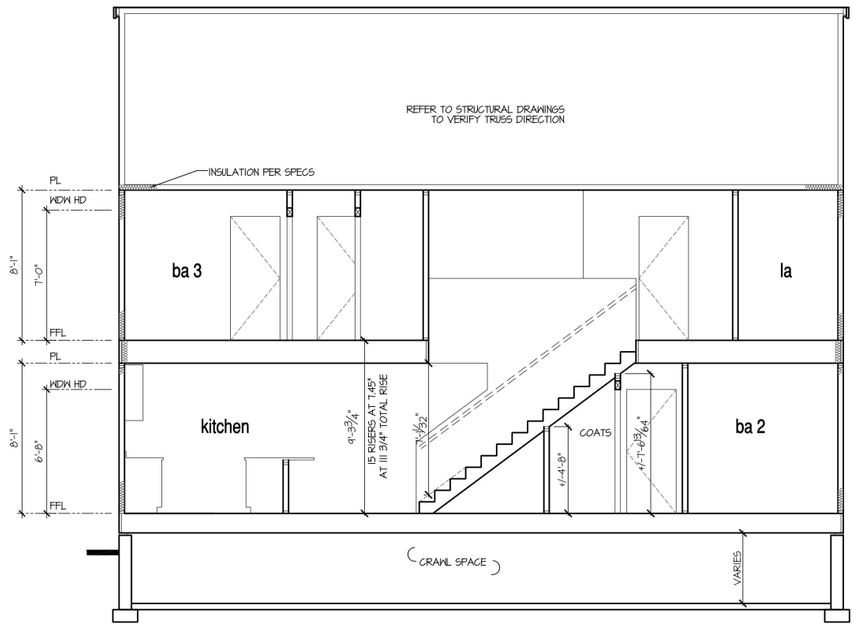
NOTES:

- REFER TO FLOOR PLAN NOTES FOR TYPICAL FIRE PROTECTION NOTES AND LOCATIONS.
- THESE BUILDING SECTIONS MAY VARY AT ALTERNATE ELEVATION STYLES AND AT "PLAN OPTION" CONDITIONS. REFER TO MAIN FLOOR PLAN AND ALTERNATE FLOOR PLANS FOR INFORMATION NOT SHOWN HERE.
- BUILDING SECTIONS SHOWN HERE DEPICT VOLUMN SPACES WITHIN THE STRUCTURE. REFER TO STRUCTURAL DRAWINGS, TRUSS DRAWINGS, STRUCTURAL DETAILS AND CALCULATIONS BY OTHER FOR ALL STRUCTURAL INFO.
- ROOFING: PITCHED SHINGLE ROOF. REFER TO ROOF PLAN FOR TYPICALS.
- WOOD FLOORS: FLOOR SHEATHING OVER FLOOR JOIST. REFER TO STRUCTURAL AND TRUSS DRAWINGS BY OTHERS.
- VERIFY STAIRS MINIMUM AND MAXIMUM REQUIREMENTS FOR CONSTRUCTION CLEARANCES WITH LOCAL CODES.
- INSULATION:

EXTERIOR WALLS ZONE 3:	R-13 BATTS MINIMUM. VERIFY
EXTERIOR WALLS ZONE 4:	R-15 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE COMPRESSED INSULATION:	R-38 BATTS MINIMUM. VERIFY
CEILING WITH ATTIC ABOVE UNCOMPRESSED INSULATION (HEELS IN TRUSSES):	R-30 BATTS MINIMUM. VERIFY
FLOOR OVER GARAGE:	R-19 BATTS MINIMUM. VERIFY
ATTIC KNEEWALL:	R-19 BATTS MINIMUM. VERIFY
CRAWL SPACE FLOORING:	R-19 BATTS MINIMUM. VERIFY

PER STATE RESIDENTIAL CODE COMPLIANCE METHOD TO BE DETERMINED BY BUILDER.

WINDOW GLAZING "U" FACTOR: 0.35



Building Section 2 at Crawl Space

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

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PROFESSIONAL SEAL:

PROJECT TITLE:
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FOR CONSTRUCTION

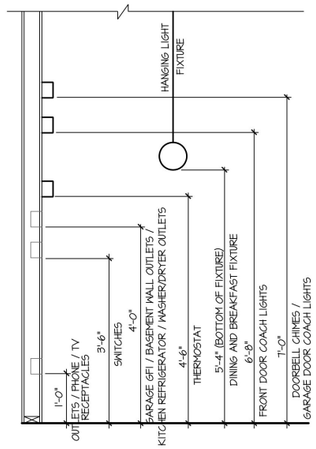
CLIENTS NAME:
Express Homes

PROJECT NO: GMDI7049

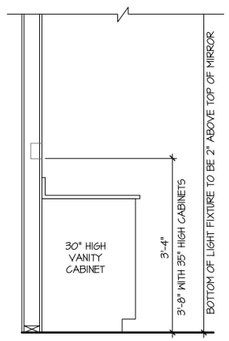
SHEET TITLE:
'HAYDEN'
BUILDING SECTIONS

PRINT DATE:
January 22, 2021

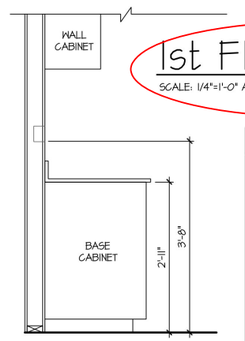
SHEET NO:
1.1.2A S



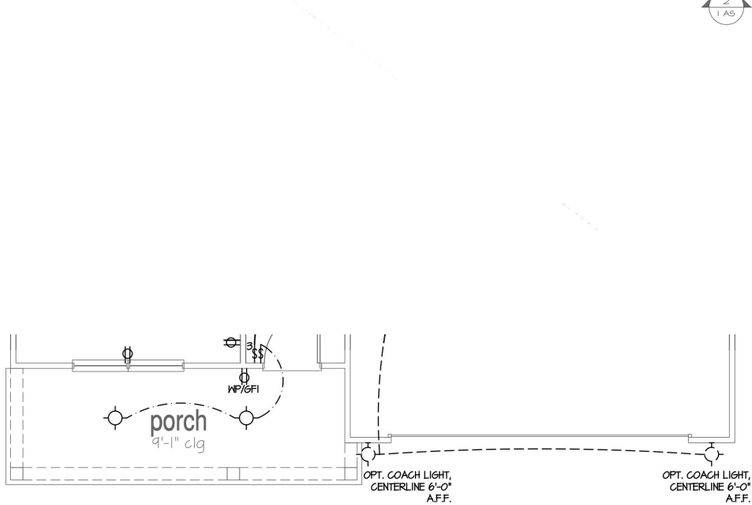
STANDARD ELECTRICAL BOX HEIGHTS



SWITCH AND RECEPTACLE BOXES OVER BATH CABINETS



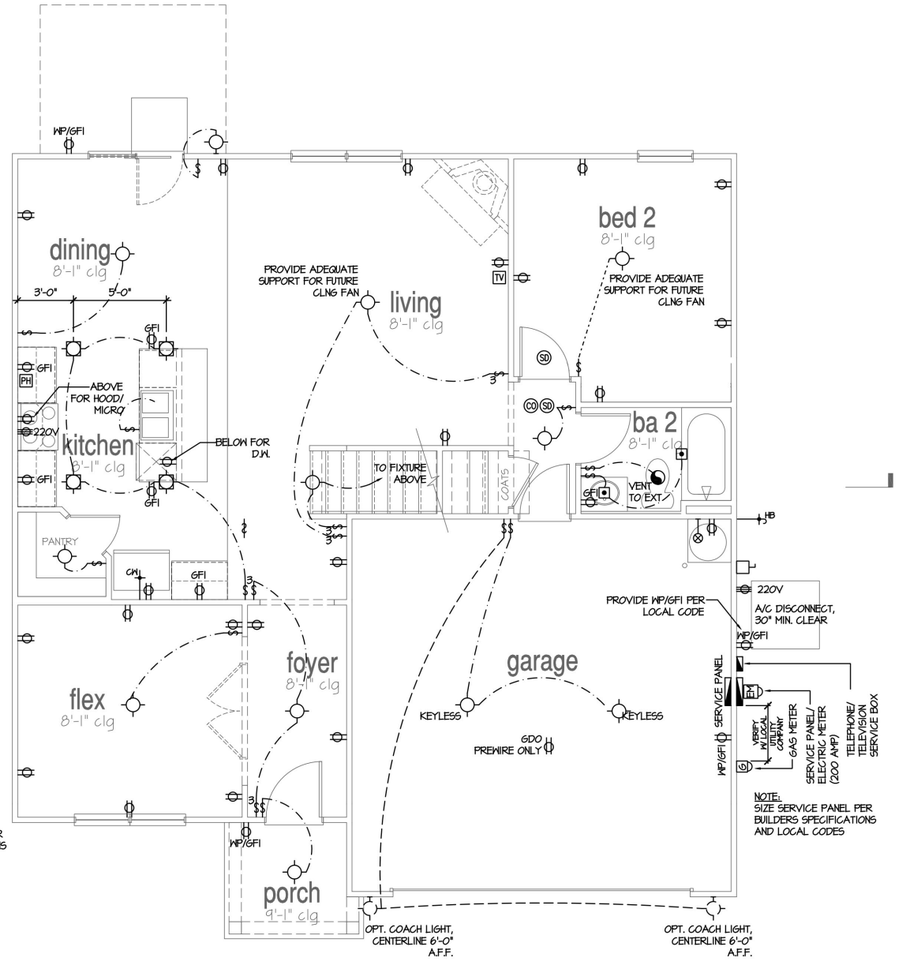
SWITCH AND RECEPTACLE BOXES OVER KITCHEN CABINETS



NOTE:
SIZE SERVICE PANEL PER BUILDERS SPECIFICATIONS AND LOCAL CODES

1st Floor Plan 'B'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT



NOTE:
SIZE SERVICE PANEL PER BUILDERS SPECIFICATIONS AND LOCAL CODES

1st Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NOTES:

- PROVIDE GROUNDING ELECTRICAL ROD PER LOCAL CODES.
- PROVIDE AND INSTALL ARC FAULT CIRCUIT-INTERRUPTERS (AFCI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ALL EXHAUST FANS SHALL HAVE BACKDRAFT DAMPERS.
- FAN/LIGHTS IN WET/DAMP LOCATIONS SHALL BE LABLED "SUITABLE FOR WET OR DAMP LOCATIONS."
- ELECTRICAL SYSTEMS ARE SHOWN FOR INTENT ONLY. THESE SYSTEMS SHALL BE ENGINEERED BY OTHERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND PLACEMENT.
- PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS AND CO2 DETECTORS AS REQUIRED BY NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- PROVIDE AND INSTALL GROUND FAULT CIRCUIT-INTERRUPTERS (GFI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ELECTRICAL CONTRACTOR TO PROVIDE REQUIRED DIRECT HOOK-UPS/CUTOFFS.
- HVAC CONTRACTOR TO VERIFY THERMOSTAT LOCATIONS.
- ALL ELECTRICAL AND MECHANICAL EQUIPMENT (FURNACES, A/C UNITS, ELECTRICAL PANELS, SANITARY SUMP PITS, DRAIN TILE SUMP, AND WATER HEATERS) ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS.
- PROVIDE POWER, LIGHT AND SWITCH AS REQUIRED FOR ATTIC FURNACE PER CODE AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

LEGEND:

	DUPLEX OUTLET		FLUSH-MOUNT LED CEILING FIXTURE	CH	CHIMES
WP/GFI	WEATHERPROOF GFI DUPLEX OUTLET		HANGING FIXTURE		PUSHBUTTON SWITCH
GFI	GROUND-FAULT CIRCUIT-INTERRUPTER DUPLEX OUTLET	CFP	FLUSH-MOUNT LED CEILING FIXTURE (PROVIDE CEILING FAN SUPPORT)	SD	110V SMOKE DETECTOR W/ BATTERY BACKUP
	HALF-SWITCHED DUPLEX OUTLET		2-LIGHT VANITY FIXTURE	CM	CO2 DETECTOR
220V	220 VOLT OUTLET		3-LIGHT VANITY FIXTURE	T	THERMOSTAT
J	REINFORCED JUNCTION BOX		4-LIGHT VANITY FIXTURE	PH	TELEPHONE
S	WALL SWITCH		WALL MOUNT FIXTURE	TV	TELEVISION
S3	THREE-WAY SWITCH		EXHAUST FAN (VENT TO EXTERIOR)		ELECTRIC METER
S4	FOUR-WAY SWITCH				ELECTRIC PANEL
					DISCONNECT SWITCH

	CEILING FAN (PROVIDE ADEQUATE SUPPORT)
GAS	GAS SUPPLY WITH VALVE
HB	HOSE BIBB
CW	1/4" WATER STUB OUT
	WALL SCONCE

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express HOMES

PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN'

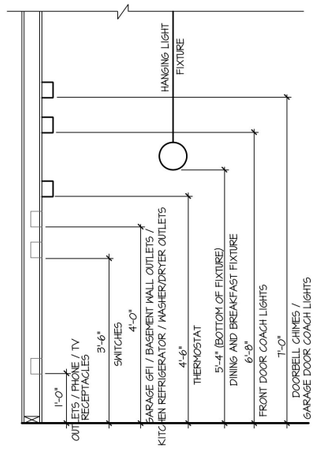
1st FLOOR UTILITY PLAN

PRINT DATE:

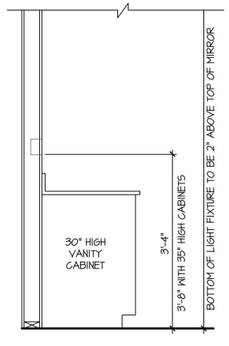
January 22, 2021

SHEET NO:

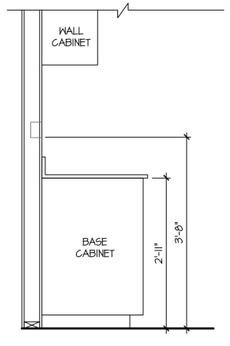
7



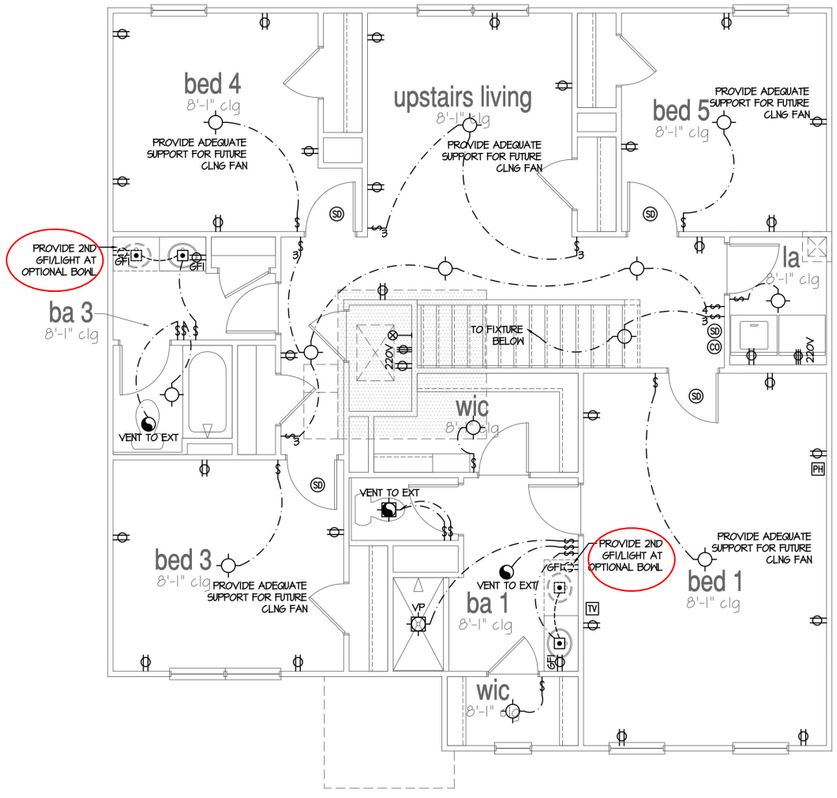
STANDARD ELECTRICAL BOX HEIGHTS



SWITCH AND RECEPTACLE BOXES OVER BATH CABINETS



SWITCH AND RECEPTACLE BOXES OVER KITCHEN CABINETS



2nd Floor Plan 'A'

SCALE: 1/4"=1'-0" AT 22"X34" LAYOUT 1/8"=1'-0" AT 11"X17" LAYOUT

NOTES:

- PROVIDE GROUNDING ELECTRICAL ROD PER LOCAL CODES.
- PROVIDE AND INSTALL ARC FAULT CIRCUIT-INTERRUPTERS (AFCI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ALL EXHAUST FANS SHALL HAVE BACKDRAFT DAMPERS.
- FAN/LIGHTS IN WET/DAMP LOCATIONS SHALL BE LABLED "SUITABLE FOR WET OR DAMP LOCATIONS."
- ELECTRICAL SYSTEMS ARE SHOWN FOR INTENT ONLY. THESE SYSTEMS SHALL BE ENGINEERED BY OTHERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND PLACEMENT.
- PROVIDE AND INSTALL LOCALLY CERTIFIED SMOKE DETECTORS AND CO2 DETECTORS AS REQUIRED BY NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- PROVIDE AND INSTALL GROUND FAULT CIRCUIT-INTERRUPTERS (GFI) AS REQUIRED BY NATIONAL ELECTRICAL CODE (NEC) AND MEETING THE REQUIREMENTS OF ALL GOVERNING CODES.
- ELECTRICAL CONTRACTOR TO PROVIDE REQUIRED DIRECT HOOK-UPS/CUTOFFS.
- HVAC CONTRACTOR TO VERIFY THERMOSTAT LOCATIONS.
- ALL ELECTRICAL AND MECHANICAL EQUIPMENT (FURNACES, A/C UNITS, ELECTRICAL PANELS, SANITARY SUMP PITS, DRAIN TILE SUMP, AND WATER HEATERS) ARE SUBJECT TO RELOCATION DUE TO FIELD CONDITIONS.
- PROVIDE POWER, LIGHT AND SWITCH AS REQUIRED FOR ATTIC FURNACE PER CODE AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

LEGEND:

	DUPLEX OUTLET		FLUSH-MOUNT LED CEILING FIXTURE	CH	CHIMES
WP/GFI	WEATHERPROOF GFI DUPLEX OUTLET		HANGING FIXTURE		PUSHBUTTON SWITCH
GFI	GROUND-FAULT CIRCUIT-INTERRUPTER DUPLEX OUTLET	CFP	FLUSH-MOUNT LED CEILING FIXTURE (PROVIDE CEILING FAN SUPPORT)	SD	110V SMOKE DETECTOR W/ BATTERY BACKUP
	HALF-SWITCHED DUPLEX OUTLET		2-LIGHT VANITY FIXTURE	CO	CO2 DETECTOR
220V	220 VOLT OUTLET		3-LIGHT VANITY FIXTURE	T	THERMOSTAT
J	REINFORCED JUNCTION BOX		4-LIGHT VANITY FIXTURE	PH	TELEPHONE
	WALL SWITCH		WALL MOUNT FIXTURE	TV	TELEVISION
3	THREE-WAY SWITCH		EXHAUST FAN (VENT TO EXTERIOR)		ELECTRIC METER
4	FOUR-WAY SWITCH				ELECTRIC PANEL
					DISCONNECT SWITCH

	CEILING FAN (PROVIDE ADEQUATE SUPPORT)
	GAS SUPPLY WITH VALVE
HB	HOSE BIBB
CH	1/4" WATER STUB OUT
	WALL SCONCE

NO:	DATE:	REVISION:
1	04.25.22	

PROFESSIONAL SEAL:

PROJECT TITLE:

40' Series

FOR CONSTRUCTION

CLIENTS NAME:

Express HOMES

PROJECT NO: GMDI7049

SHEET TITLE:

'HAYDEN'

2nd FLOOR UTILITY PLAN

PRINT DATE:

January 22, 2021

SHEET NO:

8

DESIGN SPECIFICATIONS:

Construction Type: Commerical ☐ Residential ☒

Applicable Building Codes:
- 2018 North Carolina Residential Building Code with All Local Amendments
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

Design Loads:
1. Roof Live Loads
   - 1.1. Conventional 2x ____ 20 PSF
   - 1.2. Truss ____ 20 PSF
     - 1.2.1. Attic Truss ____ 60 PSF
2. Roof Dead Loads
   - 2.1. Conventional 2x ____ 10 PSF
   - 2.2. Truss ____ 20 PSF
3. Snow ____ 15 PSF
   - 3.1. Importance Factor ____ 1.0
4. Floor Live Loads
   - 4.1. Typ. Dwelling ____ 40 PSF
   - 4.2. Sleeping Areas ____ 30 PSF
   - 4.3. Decks ____ 40 PSF
   - 4.4. Passenger Garage ____ 50 PSF
5. Floor Dead Loads
   - 5.1. Conventional 2x ____ 10 PSF
   - 5.2. I-Joist ____ 15 PSF
   - 5.3. Floor Truss ____ 15 PSF
6. Ultimate Design Wind Speed (3 sec. gust.) ____ 130 MPH
   - 6.1. Exposure ____ B
   - 6.2. Importance Factor ____ 1.0
   - 6.3. Wind Base Shear
     - 6.3.1. Vx =
     - 6.3.2. Vy =
7. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'
ZONE 1	16.7,-18.0	17.6,-18.9	18.3,-19.7	18.8,-20.2
ZONE 2	16.7,-21.0	17.6,-22.1	18.3,-22.9	18.8,-23.6
ZONE 3	16.7,-21.0	17.6,-22.1	18.3,-22.9	18.8,-23.6
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.8	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.2	20.4,-26.9

8. Seismic
   - 8.1. Site Class ____ D
   - 8.2. Design Category ____ C
   - 8.3. Importance Factor ____ 1.0
   - 8.4. Seismic Use Group ____ I
   - 8.5. Spectral Response Acceleration
     - 8.5.1. Sms = %g
     - 8.5.2. Sm1 = %g
   - 8.6. Seismic Base Shear
     - 8.6.1. Vx =
     - 8.6.2. Vy =
   - 8.7. Basic Structural System (check ons)
     - ☒ Bearing Wall
     - ☐ Building Frame
     - ☐ Moment Frame
     - ☐ Dual w/ Special Moment Frame
     - ☐ Dual w/ Intermediate R/C or Special Steel
     - ☐ Inverted Pendulum
   - 8.8. Arch/Mech Components Anchored ____ No
   - 8.9. Lateral Design Control: Seismic ☐ Wind ☒
9. Assumed Soil Bearing Capacity ____ 1000psf

SUMMIT
ENGINEERING LABORATORY TESTING

HAYDEN RH

PROJECT ADDRESS:
TBD

OWNER:
DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

DESIGNER:
GMD Design Group
102 Fountain Brook Circle
Suite C
Cary, NC 27511

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

PLAN ABBREVIATIONS:

AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
EW	EACH WAY	TJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TYP	TYPICAL
PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Roof truss and floor joist layouts, and their corresponding loading details, were not provided to SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by DR Horton, Inc. Subsequent plan revisions based on roof truss and floor joist layouts shall be noted in the revision list, indicating the date the layouts were provided. Should any discrepancies become apparent, the contractor shall notify SUMMIT immediately.

SHEET LIST:

REVISION LIST:

Revision No.	Date	Project No.	Description
1	4.19.21	T0177	Updated elevation names
			Added Stem Wall, Crawlspace, and Basement Foundations
2	6.14.21	T0177	Added OX-16 option and Updated OX-16 table framing
3	11.23.21	T0177	Updated the engineering in the first floor framing

DR HORTON PROJECT SIGN-OFF:

Manager	Signature
Operations	
Operations System	
Operations Product Development	

SUMMIT
ENGINEERING LABORATORY TESTING
3070 HAMMOND BUSINESS PLACE, SUITE 171
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OFFICE: 919.380.9991
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

DR Horton, Inc.
8001 Arrowridge Blvd.
Charlotte, NC 28273

Hayden RH
Coversheet

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049774 CHRISTOPHER T. BLACKWELL
11/24/21
STRUCTURAL MEMBERS ONLY

DATE: 9/23/2021
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT # 528-T0177
DRAWN BY: JCEF
CHECKED BY: CTB

22865 5/15/15

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
CS1

GENERAL STRUCTURAL NOTES:

1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
3. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
6. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
7. This structure and all construction shall conform to all applicable sections of the international residential code.
8. This structure and all construction shall conform to all applicable sections of local building codes.
9. All structural assemblies are to meet or exceed to requirements of the current local building code.

FOUNDATIONS:

1. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
2. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
3. Any fill shall be placed under the direction or recommendation of a licensed professional engineer.
4. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
5. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.

STRUCTURAL STEEL:

1. Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and the manual of Steel Construction "Load Resistance Factor Design" latest editions.
2. Structural steel shall receive one coat of shop applied rust-inhibitive paint.
3. All steel shall have a minimum yield stress (F_y) of 36 ksi unless otherwise noted.
4. Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shop and field welding shall be class E70XX. All welding shall be performed by a certified welder per the above standards.

CONCRETE:

1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'_c) at 28 days of 3000 psi, unless otherwise noted on the plan.
2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows:
   - 3.1. Footings: 5%
   - 3.2. Exterior Slabs: 5%
4. No admixtures shall be added to any structural concrete without written permission of the SER.
5. Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".
6. The concrete slab-on-grade has been designed using a subgrade modulus of k_s=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions.
7. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted.
8. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
9. Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint.
10. All welded wire fabric (WWF.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The WWF. shall be securely supported during the concrete pour.

CONCRETE REINFORCEMENT:

1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 1% by volume (15 pounds per cubic yard)
4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
5. Steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
7. Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
8. Lap reinforcement, as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
9. Where reinforcing dowels are required , they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 12 bar diameters into the footing.
10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:

1. Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Southern-Yellow-Pine (SYP) #2.
2. LVL or PSL engineered wood shall have the following minimum design values:
   - 2.1. E = 1,900,000 psi
   - 2.2. F_b = 2600 psi
   - 2.3. F_v = 285 psi
   - 2.4. F_c = 1100 psi
3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. All beams shall have full bearing on supporting framing members unless otherwise noted.
7. Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
8. Individual studs forming a column shall be attached with one 10d nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
9. Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C.
10. Four and five ply beams shall be bolted together with (2) rows of 1/2" diameter through bolts staggered @ 16" O.C. unless noted otherwise.

WOOD TRUSSES:

1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures," (ASCE 7-10), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction," (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
5. Any cheords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

EXTERIOR WOOD FRAMED DECKS:

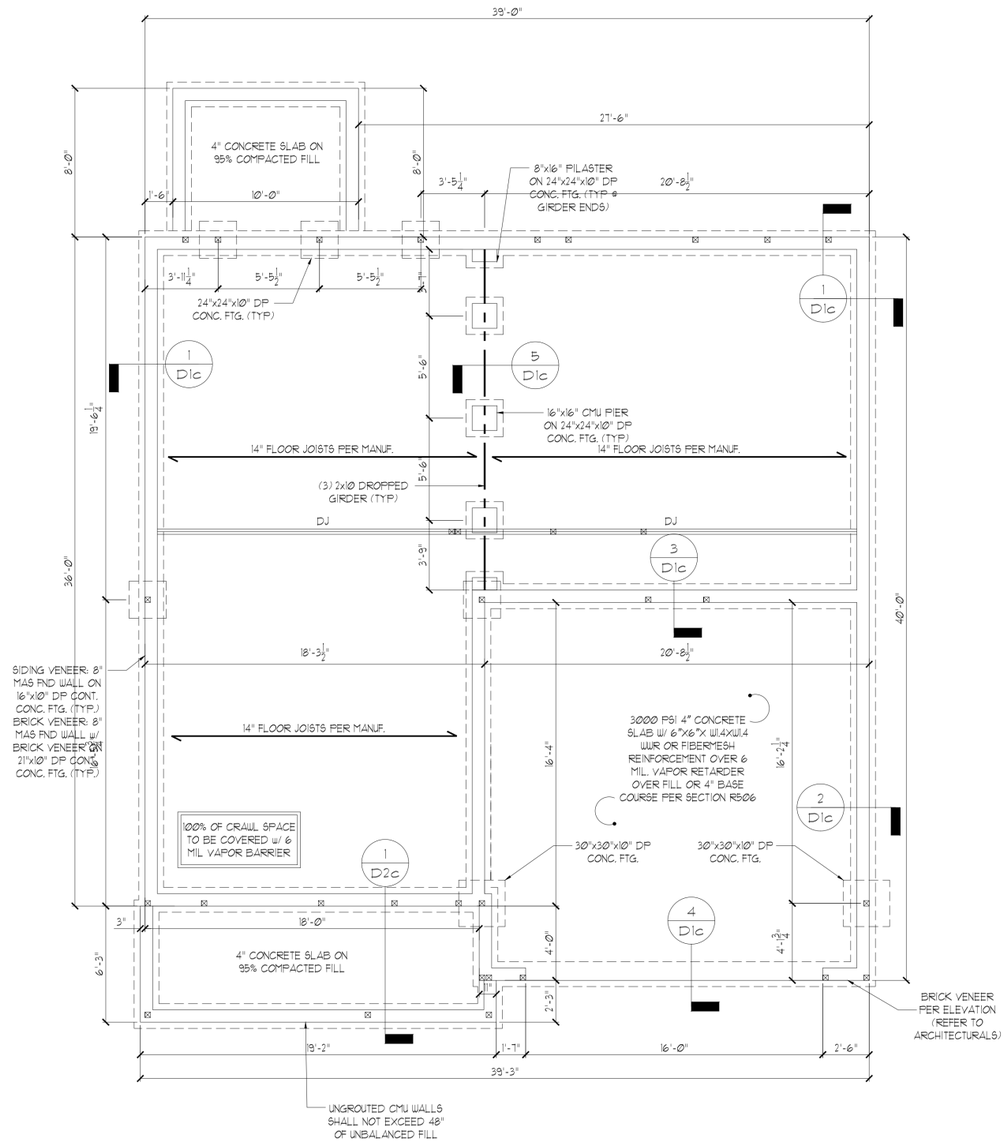
1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

WOOD STRUCTURAL PANELS:

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
2. All structurally required wood sheathing shall bear the mark of the APA.
3. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4. Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5. Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

STRUCTURAL FIBERBOARD PANELS:

1. Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable APA standards.
2. All structurally required fiberboard sheathing shall bear the mark of the APA.
3. Fiberboard wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information.
4. Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the APA.



ELEVATION B.F.K

STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

CRAWL SPACE FOUNDATION PLAN

SCALE: 1/4"=1'-Ø" ON 22"x34" OR 1/8"=1'-Ø" ON 11"x17"

SUMMIT
ENGINEERING LABORATORY TESTING
3070 HAMMOND BUSINESS PLACE, SUITE 171
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

DR Horton, Inc.
8801 Arrowridge Blvd.
Charlotte, NC 28273

Hayden RH
Crawl Space Foundation

NORTH CAROLINA PROFESSIONAL SEAL 042713 ENGINEER CHRISTOPHER T. BLACKWELL
11/24/21
STRUCTURAL MEMBERS ONLY

DATE: 11/23/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-19111
DRAWN BY: JCEP
CHECKED BY: CTB

2286-B 5/15/19

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S1.1c

REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
FF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.6.4	PER FIGURE R602.10.6.4
**OR EQUIVALENT PER TABLE R1Ø1.3.5				

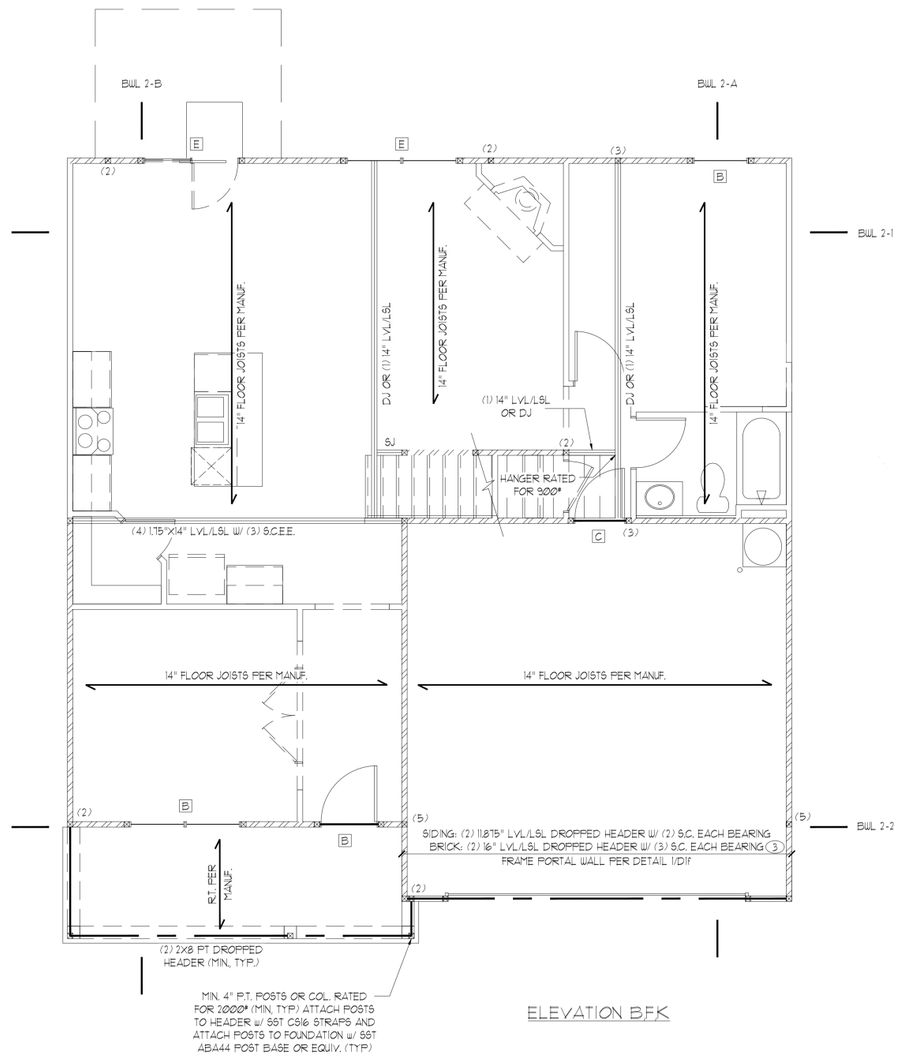
BRACED WALL NOTES:

1. WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2018 NORTH CAROLINA RESIDENTIAL CODE WITH ALL LOCAL AND STATE AMENDMENTS.
2. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND MAXIMUM WIND SPEEDS UP TO 130 MPH.
3. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
4. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH TABLE R602.10.1
5. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
6. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.1.
7. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
8. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
9. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
10. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 12 FEET OF EACH END OF A BRACED WALL LINE.
11. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 21 FEET.
12. MASONRY OR CONCRETE STEM WALLS w/ A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.4.3 OF THE 2018 NCRC.
13. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.4
14. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.5
15. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.4.6
16. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.1 (UNO)
17. ABBREVIATIONS:

GB = GYPSUM BOARD
CS-XXX = CONT. SHEATHED
FF = PORTAL FRAME
WSP = WOOD STRUCTURAL PANEL
ENG = ENGINEERED SOLUTION
FF-ENG = ENG. PORTAL FRAME

GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AND STATE AMENDMENTS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICRO=LAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = $1.9x10^6$ PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = $1.25x10^6$ PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. CONTRACTOR TO PROVIDED LOCKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
9. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
10. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2, DROPPED. (UNLESS NOTED OTHERWISE)



ELEVATION B.F.K

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 4/15/21. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT. SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

FIRST FLOOR BRACING (FT)		
CONTINUOUS SHEATHING METHOD		
	REQUIRED	PROVIDED
BWL 1-1	11.6	24.8
BWL 1-2	11.6	15.0
BWL 1-A	11.3	40.0
BWL 1-B	11.3	36.0

HEADER SCHEDULE		
TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)

NOTES:
1. HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION.
2. ALL HEADERS TO BE DROPPED (U.N.O.)
3. STUD COLUMNS NOTED ON PLAN OVERRIDE STUD COLUMNS LISTED ABOVE (U.N.O.).

KING STUD SCHEDULE	
MAXIMUM HEADER SPAN	MINIMUM KING STUDS E.E.
4'-0"	(1)
6'-0"	(2)
8'-0"	(2)
10'-0"	(3)
12'-0"	(3)
14'-0"	(3)
16'-0"	(4)
18'-0"	(4)

WALL STUD SCHEDULE (10 FT HEIGHT)				
STUD SIZE	STUD SPACING (O.C.)			
	ROOF ONLY	ROOF & 1 FLOOR	ROOF & 2 FLOORS	NON-LOAD BEARING
2x4	24"	16"	12"	24"
2x6	24"	24"	16"	24"

NOTES:
1. BRACED WALLS STUDS SHALL BE A MAX. OF 16" O.C.
2. STUDS SUPPORTS OPTIONAL WALK-UP ATTIC SHALL BE SPACED A MAX. OF 16" O.C.
3. TWO STORY WALLS SHALL BE FRAMED w/ 2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ HORIZ. BLOCKING @ 6'-0" O.C. VERTICALLY.

LINTEL SCHEDULE		
TAG	SIZE	OPENING SIZE
1	L3x3x1/4"	LESS THAN 6'-0"
2	L5x3x1/4"	6'-0" TO 10'-0"
3	L5x3-1/2x5/16"	GREATER THAN 10'-0"
4	L5x3-1/2x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS
SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR)		
ALL HEADERS WHERE BRICK IS USED, TO BE: (UNO)		

SHADED WALLS INDICATED LOAD BEARING WALLS

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

NOTE:
— — — DESIGNATES JOIST SUPPORTED LOAD BEARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

NOTE: MEMBERS NOTED AS PRESSURE TREATED MAY BE FRAMED WITH NON-PRESSURE TREATED LUMBER PROVIDED THE ENTIRETY OF THE MEMBER IS WRAPPED TO PREVENT MOISTURE INTRUSION.

INSTALL HOLD-DOWNS FOR BRACED WALL END CONDITIONS PER SECTION R602.10.8 & FIG. R602.10.1 OF THE 2018 NCRC.

NOTE: WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST THE CONTINUOUS WIND UPLIFT LOAD PATH IN ACCORDANCE WITH METHOD 3 OF SECTION R602.3.5 OF THE 2018 NCRC.

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

DR Horton, Inc.
8801 Arrowridge Blvd.
Charlotte, NC 28273

Hayden RH
First Floor Framing Plan

NORTH CAROLINA PROFESSIONAL SEAL 037215 ENGINEER CHRISTOPHER T. BLACKWELL
11/24/21
STRUCTURAL MEMBERS ONLY

DATE: 11/23/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-TBRTT
DRAWN BY: JCEF
CHECKED BY: CTB

2286-9 5/15/19

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S3.1

REQUIRED BRACED WALL PANEL CONNECTIONS

METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
FF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.6.4	PER FIGURE R602.10.6.4
**OR EQUIVALENT PER TABLE R1Ø03.5				

BRACED WALL NOTES:

1. WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2018 NORTH CAROLINA RESIDENTIAL CODE WITH ALL LOCAL AND STATE AMENDMENTS.
2. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND MAXIMUM WIND SPEEDS UP TO 130 MPH.
3. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
4. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN ACCORDANCE WITH TABLE R602.10.1
5. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
6. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.1.
7. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
8. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
9. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
10. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 12 FEET OF EACH END OF A BRACED WALL LINE.
11. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 21 FEET.
12. MASONRY OR CONCRETE STEM WALLS w/ A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.4.3 OF THE 2018 NCRC.
13. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.4
14. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.5
15. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10.4.6
16. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.1 (UNO)
17. ABBREVIATIONS:

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3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS:
   MICRO=LAM (LVL): F_b = 2600 PSI, F_v = 285 PSI, E = $1.9x10^6$ PSI
   PARALLAM (PSL): F_b = 2900 PSI, F_v = 290 PSI, E = $1.25x10^6$ PSI
5. ALL WOOD MEMBERS SHALL BE #2 SYP UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP (UNO).
6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
7. ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
8. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN PERPENDICULAR TO RAFTERS.
9. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
10. ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2, DROPPED. (UNLESS NOTED OTHERWISE)

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY DR HORTON COMPLETED/REVISED ON 4/15/21. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

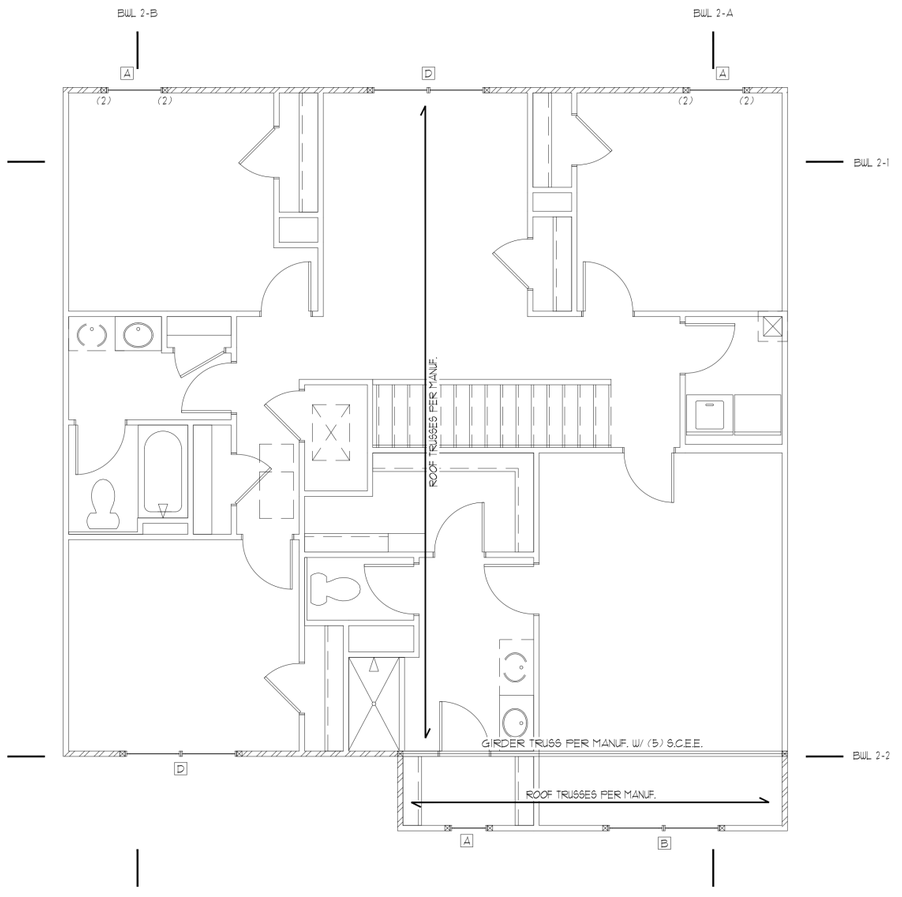
STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

SECOND FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



ELEVATION B,F,K

SECOND FLOOR BRACING (FT.)

	CONTINUOUS SHEATHING METHOD	
	REQUIRED	PROVIDED
BWL 2-1	6.0	27.0
BWL 2-2	6.0	25.0
BWL 2-A	5.8	40.0
BWL 2-B	5.8	36.0

HEADER SCHEDULE

TAG	SIZE	JACKS (EACH END)
A	(2) 2x6	(1)
B	(2) 2x8	(2)
C	(2) 2x10	(2)
D	(2) 2x12	(2)
E	(2) 9-1/4" LSL/LVL	(3)
F	(3) 2x6	(1)
G	(3) 2x8	(2)
H	(3) 2x10	(2)
I	(3) 2x12	(2)

NOTES:
1. HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION.
2. ALL HEADERS TO BE DROPPED (U.N.O.)
3. STUD COLUMNS NOTED ON PLAN OVERRIDE STUD COLUMNS LISTED ABOVE (U.N.O.).

KING STUD SCHEDULE

MAXIMUM HEADER SPAN	MINIMUM KING STUDS E.E.
4'-0"	(1)
6'-0"	(2)
8'-0"	(2)
10'-0"	(3)
12'-0"	(3)
14'-0"	(3)
16'-0"	(4)
18'-0"	(4)

WALL STUD SCHEDULE (10 FT HEIGHT)

STUD SIZE	STUD SPACING (O.C.)			
	ROOF ONLY	ROOF & 1 FLOOR	ROOF & 2 FLOORS	NON-LOAD BEARING
2x4	24"	16"	12"	24"
2x6	24"	24"	16"	24"

NOTES:
1. BRACED WALLS STUDS SHALL BE A MAX. OF 16" O.C.
2. STUDS SUPPORTS OPTIONAL WALK-UP ATTIC SHALL BE SPACED A MAX. OF 16" O.C.
3. TWO STORY WALLS SHALL BE FRAMED w/ 2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ HORIZ. BLOCKING @ 6'-0" O.C. VERTICALLY.

LINTEL SCHEDULE

TAG	SIZE	OPENING SIZE
(1)	L3x3x1/4"	LESS THAN 6'-0"
(2)	L5x3x1/4"	6'-0" TO 10'-0"
(3)	L5x3-1/2x5/16"	GREATER THAN 10'-0"
(4)	L5x3-1/2x5/16" ROLLED OR EQUIV.	ALL ARCHED OPENINGS

SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR (3))

ALL HEADERS WHERE BRICK IS USED, TO BE: (UNO)

SHADED WALLS INDICATED LOAD BEARING WALLS

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

NOTE: MEMBERS NOTED AS PRESSURE TREATED MAY BE FRAMED WITH NON-PRESSURE TREATED LUMBER PROVIDED THE ENTIRETY OF THE MEMBER IS WRAPPED TO PREVENT MOISTURE INTRUSION.

INSTALL HOLD-DOWNS FOR BRACED WALL END CONDITIONS PER SECTION R602.10.8 & FIG. R602.10.1 OF THE 2018 NCRC.

NOTE: WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST THE CONTINUOUS WIND UPLIFT LOAD PATH IN ACCORDANCE WITH METHOD 3 OF SECTION R602.3.5 OF THE 2018 NCRC.

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

DR Horton, Inc.
8601 Arrowridge Blvd.
Charlotte, NC 28273

Hayden Rd

Second Floor Framing Plan

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049719 CHRISTOPHER T. BLACKWELL
11/24/21
STRUCTURAL MEMBERS ONLY

DATE: 11/23/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-19171
DRAWN BY: JCEF
CHECKED BY: CTB

2286/3 5/15/19

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S4.1

TRUSS UPLIFT CONNECTOR SCHEDULE			
MAX. UPLIFT	ROOF TO WALL	FLOOR TO FLOOR	FLOOR TO FND
600 LBS	H2.5A	PER WALL SHEATHING & FASTENERS	
1200 LBS	(2) H2.5A	CS16 (END = 11")	DTT2Z
1450 LBS	HTS20	CS16 (END = 11")	DTT2Z
2000 LBS	(2) MTS20	(2) CS16 (END = 11")	DTT2Z
2900 LBS	(2) HTS20	(2) CS16 (END = 11")	HTT4
3685 LBS	LGT3-SDS2.5	MSTC52	HTT4

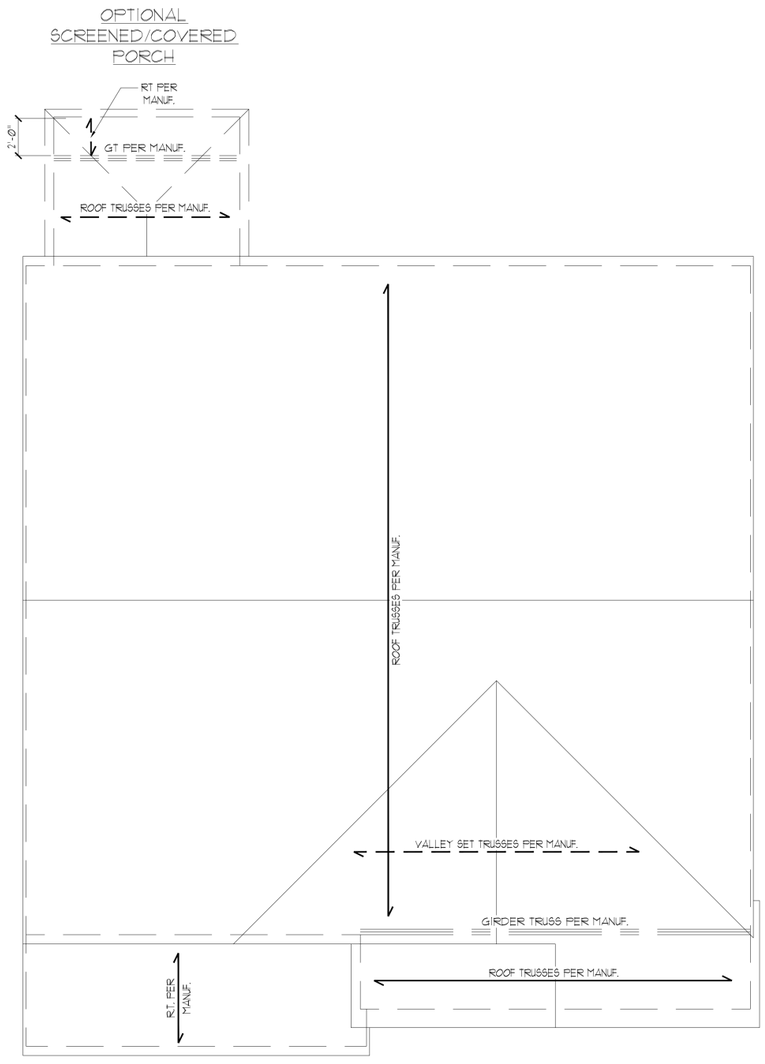
1. ALL PRODUCTS LISTED ARE SIMPSON STRONG-TIE. EQUIVALENT PRODUCTS MAY BE USED PER MANUFACTURER'S SPECIFICATIONS.
2. UPLIFT VALUES LISTED ARE FOR SYP #2 GRADE MEMBERS.
3. REFER TO TRUSS LAYOUT PER MANUF. FOR UPLIFT VALUES AND TRUSS TO TRUSS CONNECTIONS. CONNECTORS SPECIFIED BY TRUSS MANUFACTURER OVERRIDE THOSE LISTED ABOVE.
4. CONTACT SUMMIT FOR REQUIRED CONNECTORS WHEN LOADS EXCEED THOSE LISTED ABOVE.

NOTE: 1ST PLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP. UNO)

NOTE: ROOF TRUSSES SHALL BE SPACED TO SUPPORT FALSE FRAMED DORMER WALLS (TYP. UNO)

REFER TO DETAIL 5/D3F FOR EYEBROW, RETURN OR SHED ROOF FRAMING REQUIREMENTS. (TYP FOR ROOFS PROTRUDING MAXIMUM 24" FROM STRUCTURE)

NOTE: TRUSS UPLIFT LOADS SHALL BE DETERMINED PER TRUSS MANUFACTURER IN ACCORDANCE WITH SECTION R802.11.1. WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST THE WIND UPLIFT LOAD PATH IN ACCORDANCE WITH METHOD 3 OF SECTION R602.3.5 OF THE 2018 NCRC. REFER TO BRACED WALL PLANS FOR SHEATHING AND FASTENER REQUIREMENTS.



ELEVATION B.F.K

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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

SUMMIT
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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

D.R. Horton, Inc.
8801 Arrowridge Blvd.
Charlotte, NC 28273

Hayden RH

Roof Framing Plan

NORTH CAROLINA PROFESSIONAL SEAL 040475 ENGINEER CHRISTOPHER T. BLACKWELL
11/24/21
STRUCTURAL MEMBERS ONLY

DATE: 5/23/2021
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-TBRTT
DRAWN BY: JCEF
CHECKED BY: CTB

2286/9 5/15/15

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
S5.1

DESIGN SPECIFICATIONS:

Construction Type: Commerical ☐ Residential ☒

Applicable Building Codes:

- 2018 North Carolina Residential Building Code with All Local Amendments
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures

Design Loads:

1. Roof Live Loads
   - 1.1. Conventional 2x .... 20 PSF
   - 1.2. Truss .... 20 PSF
     - 1.2.1. Attic Truss .... 60 PSF
2. Roof Dead Loads
   - 2.1. Conventional 2x .... 10 PSF
   - 2.2. Truss .... 20 PSF
3. Snow .... 15 PSF
   - 3.1. Importance Factor 1.0
4. Floor Live Loads
   - 4.1. Typ. Dwelling .... 40 PSF
   - 4.2. Sleeping Areas .... 30 PSF
   - 4.3. Decks .... 40 PSF
   - 4.4. Passenger Garage .... 50 PSF
5. Floor Dead Loads
   - 5.1. Conventional 2x .... 10 PSF
   - 5.2. I-Joist .... 15 PSF
   - 5.3. Floor Truss .... 15 PSF
6. Ultimate Wind Speed (3 sec. gust) .... PER PLAN
   - 6.1. Exposure .... B
   - 6.2. Importance Factor 1.0
   - 6.3. Wind Base Shear
     - 6.3.1. Vx =
     - 6.3.2. Vy =
7. Component and Cladding (in PSF)

MEAN ROOF HT.	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'
ZONE 1	16.7,-18.0	17.5,-18.9	18.2,-19.6	18.7,-20.2
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.7	20.4,-21.3
ZONE 5	18.2,-24.0	19.2,-25.2	19.9,-26.1	20.4,-26.9

8. Seismic
   - 8.1. Site Class .... D
   - 8.2. Design Category C
   - 8.3. Importance Factor 1.0
   - 8.4. Seismic Use Group 1
   - 8.5. Spectral Response Acceleration
     - 8.5.1. Sms = %g
     - 8.5.2. Sml = %g
   - 8.6. Seismic Base Shear
     - 8.6.1. Vx =
     - 8.6.2. Vy =
   - 8.7. Basic Structural System (check one)
     - ☒ Bearing Wall
     - ☐ Building Frame
     - ☐ Moment Frame
     - ☐ Dual w/ Special Moment Frame
     - ☐ Dual w/ Intermediate R/C or Special Steel
     - ☐ Inverted Pendulum
   - 8.8. Arch/Mech Components Anchored .... No
   - 8.9. Lateral Design Control: Seismic ☐ Wind ☒
9. Assumed Soil Bearing Capacity 2000psf

SUMMIT
ENGINEERING LABORATORY TESTING

STRUCTURAL PLANS PREPARED FOR:

STANDARD DETAILS

PROJECT ADDRESS:
TBD

OWNER:
DR Horton Carolinas Division
8001 Arrowridge Blvd
Charlotte, NC 28273

ARCHITECT/DESIGNER:
GMD Design Group
1845 Satellite Blvd.
Duluth, GA 30097

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

PLAN ABBREVIATIONS:

AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
EW	EACH WAY	TJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TYP	TYPICAL
PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Roof truss and floor joist layouts, and their corresponding loading details, were not provided to SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by DR Horton, Inc. Subsequent plan revisions based on roof truss and floor joist layouts shall be noted in the revision list, indicating the date the layouts were provided. Should any discrepancies become apparent, the contractor shall notify SUMMIT immediately.

SHEET LIST:

Sheet No.	Description
CS1	Cover Sheet, Specifications, Revisions
D1m	Monolithic Slab Foundation Details
D1s	Stem Wall Foundation Details
D1c	Crawl Space Foundation Details
D1b	Basement Foundation Details
D1f	Framing Details

DR HORTON PROJECT SIGN-OFF:

Manager	Signature
Operations	
Operations System	
Operations Product Development	

REVISION LIST:

Revision No.	Date	Project No.	Description
1	5.11.17		Added box bay detail (2/D2f). Added deck options with basement. Revised deck options with stem wall and crawl space foundations
2	7.12.17		Revised stem wall insulation note.
3	2.15.18		Revised garage door detail, NC only
4	2.28.18		Added high-wind foundation details
5	12.19.18		Revised per 2018 NCRC
6	2.19.19		Revised per Mecklenburg County Comments
7	3.1.19		Revised stem wall deck attachment and roof sheathing on wall sections.
8	3.6.19		Corrected dimensions at perimeter footings
9	3.2.20		Added tall turndown detail
10	3.18.20		Added balloon framing detail
11	10.20.20		Added alternate two-pour detail for slab and added note for crawl girder above grade
12	3.1.21		Added OX-15 Standard Details
13	5.18.21		Updated OX-15 Standard Details
14	02.14.23		Added 4/D2m - Tall Slab Detail w/ Siding

GENERAL STRUCTURAL NOTES:

1. The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity.
2. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
3. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
4. Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
5. Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
6. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings.
7. This structure and all construction shall conform to all applicable sections of the international residential code.
8. This structure and all construction shall conform to all applicable sections of local building codes.
9. All structural assemblies are to meet or exceed to requirements of the current local building code.

FOUNDATIONS:

1. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.
2. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
3. Any fill shall be placed under the direction or recommendation of a licensed professional engineer.
4. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
5. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.

STRUCTURAL STEEL:

1. Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and the manual of Steel Construction "Load Resistance Factor Design" latest editions.
2. Structural steel shall receive one coat of shop applied rust-inhibitive paint.
3. All steel shall have a minimum yield stress (F_y) of 36 ksi unless otherwise noted.
4. Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shop and field welding shall be class E70XX. All welding shall be performed by a certified welder per the above standards.

CONCRETE:

1. Concrete shall have a normal weight aggregate and a minimum compressive strength (f'_c) at 28 days of 3000 psi, unless otherwise noted on the plan.
2. Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows:
   - 3.1. Footings: 5%
   - 3.2. Exterior Slabs: 5%
4. No admixtures shall be added to any structural concrete without written permission of the SER.
5. Concrete slabs-on-grade shall be constructed in accordance with ACI 302.1R-96: "Guide for Concrete Slab and Slab Construction".
6. The concrete slab-on-grade has been designed using a subgrade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions.
7. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted.
8. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished
9. Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint.
10. All welded wire fabric (W.W.F.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The W.W.F. shall be securely supported during the concrete pour.

CONCRETE REINFORCEMENT:

1. Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.
2. Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
3. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard)
4. Fibermesh shall comply with ASTM C1116, any local building code requirements, and shall meet or exceed the current industry standard.
5. Steel reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures"
7. Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice.
8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.
9. Where reinforcing dowels are required , they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 20 bar diameters into the footing.
10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:

1. Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Spruce-Yellow-Pine (SYP) #2.
2. LVL or PSL engineered wood shall have the following minimum design values:
   - 2.1. E = 1,900,000 psi
   - 2.2. F_b = 2600 psi
   - 2.3. F_v = 285 psi
   - 2.4. F_c = 700 psi
3. Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. All beams shall have full bearing on supporting framing members unless otherwise noted.
7. Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum of one king stud shall be placed at each end of the header. King studs shall be continuous.
8. Individual studs forming a column shall be attached with one 10d nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
9. Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C.
10. Flitch beams, 4-ply beams and 3-ply side loaded beams shall be bolted together with (2) rows of 1/2" diameter through bolts staggered @ 16" O.C. unless noted otherwise. Min. edge distance shall be 2" and (2) bolts shall be located a min. 6" from each end of the beam.

WOOD TRUSSES:

1. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
2. The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures." (ASCE 7-05), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
3. The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction." (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
4. The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings. Also, the shop drawings shall show the required attachments for the trusses.
5. Any chords or truss webs shown on these drawings have been shown as a reference only. The final design of the trusses shall be per the manufacturer.

EXTERIOR WOOD FRAMED DECKS:

1. Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

WOOD STRUCTURAL PANELS:

1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
2. All structurally required wood sheathing shall bear the mark of the APA.
3. Wood wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4. Roof sheathing shall be APA rated sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5. Wood floor sheathing shall be APA rated sheathing exposure 1 or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshank nail at 6"o/c at panel edges and at 12"o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T&G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
6. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.

STRUCTURAL FIBERBOARD PANELS:

1. Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable AFA standards.
2. All structurally required fiberboard sheathing shall bear the mark of the AFA.
3. Fiberboard wall sheathing shall comply with the requirements of local building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information.
4. Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the AFA.

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-15)
Coversheet

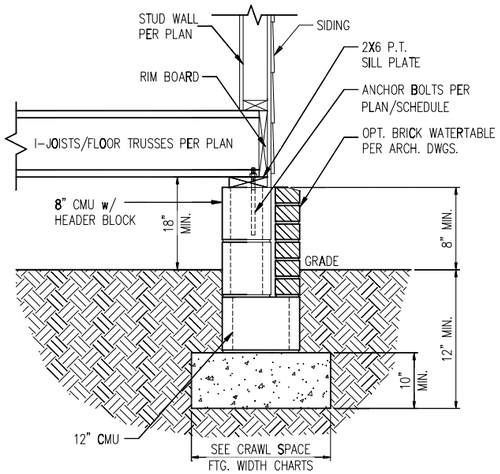
NORTH CAROLINA
053883
ENGINEER
HENRY KUEHR-MCLAREN
2/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 02/14/2023
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R
DRAWN BY: JCEF
CHECKED BY: BCP

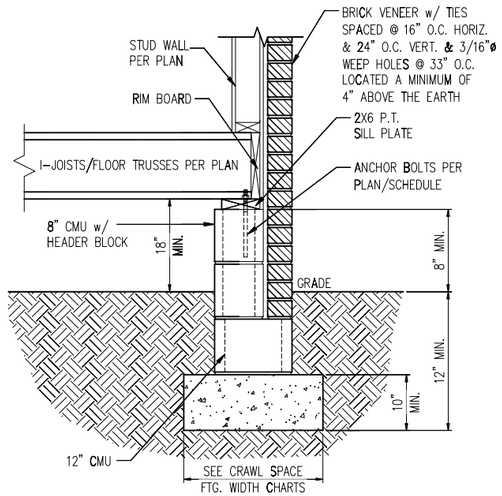
ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
CS1

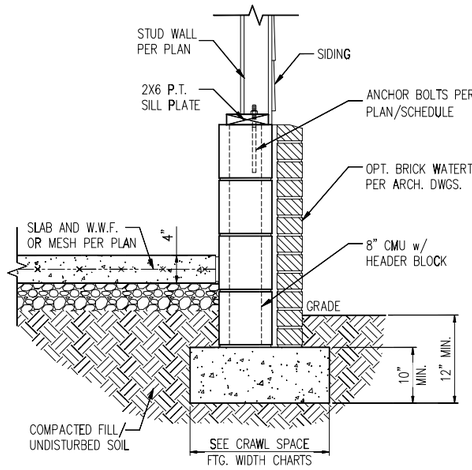


STANDARD – SIDING



STANDARD – BRICK

1 D1c TYP. FOUNDATION WALL DETAIL
N.T.S.



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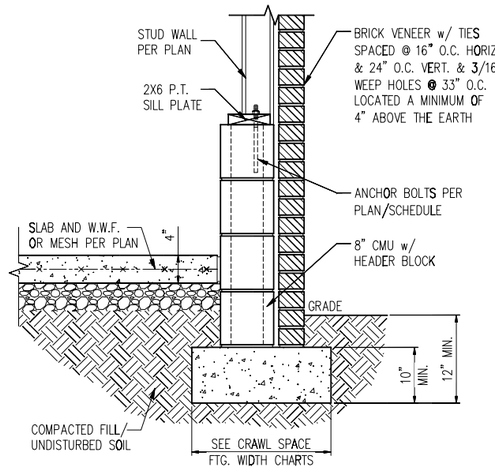
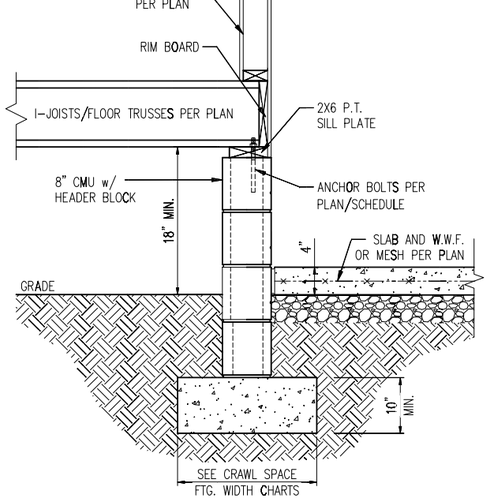
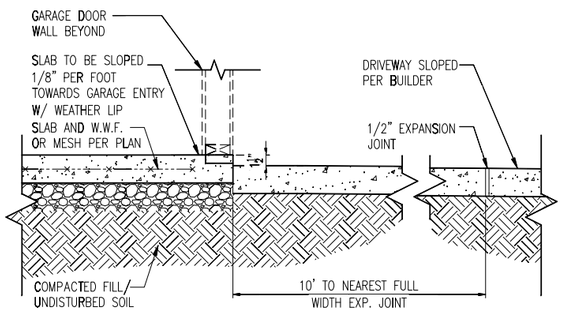


STANDARD – BRICK

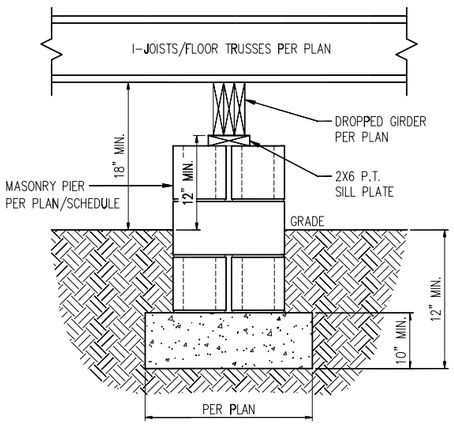
2 D1c TYP. GARAGE CURB DETAIL
N.T.S.



3 D1c HOUSE/GARAGE WALL DETAIL
N.T.S.



4 D1c SLAB AT GARAGE DOOR
N.T.S.



5 D1c TYP. PIER & GIRDER DETAIL
N.T.S.

PIER SIZE AND HEIGHT SCHEDULE

SIZE	HOLLOW	SOLID
8"X16"	UP TO 32" HEIGHT	UP TO 5'-0" HEIGHT
12"X16"	UP TO 48" HEIGHT	UP TO 9'-0" HEIGHT
16"X16"	UP TO 64" HEIGHT	UP TO 12'-0" HEIGHT*
24"X24"	UP TO 96" HEIGHT	UP TO 12'-0" HEIGHT*
*(4) #4 CONT. REBAR w/ #3 STIRRUPS @ 16" O.C. AND 24" MIN. LAP JOINTS		

CRAWL SPACE FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*
*5" BRICK LEDGE HAS BEEN ADDED TO THE CRAWL SPACE FOOTING WIDTH FOR BRICK SUPPORT			

WALL ANCHOR SCHEDULE

TYPE OF ANCHOR	MIN. CONC. EMBEDMENT	SPACING EMBEDMENT	INTERIOR WALL	EXTERIOR WALL
1/2"ø A307 BOLTS w/ STD. 90° BEND	7"	6'-0"	YES	YES
SST – MAS	4"	5'-0"	NO	YES
HILTI KWIK BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
1/2"ø HILTI THREADED ROD w/ HIT HY150 ADHESIVE	7"	6'-0"	YES	YES

NOTE: INSTALL ALL ANCHORS 12" MAX. FROM ALL BOTTOM PLATE ENDS AND JOINTS.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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NORTH CAROLINA SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454 CERTIFICATE OF AUTHORIZATION

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-15)

Crawl Space Foundation Details

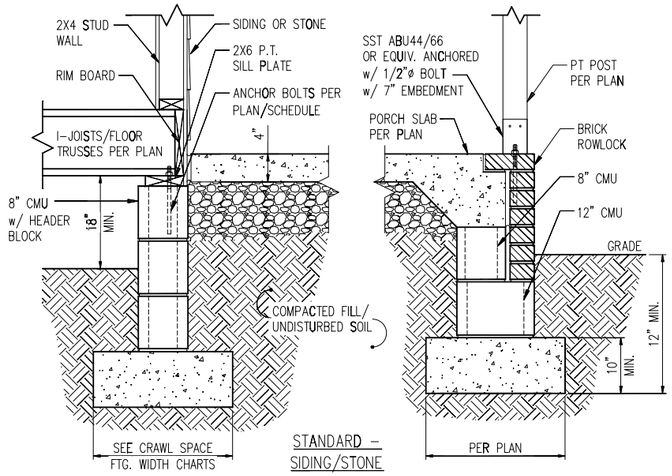
NORTH CAROLINA 053883 ENGINEER HENRY KUEHL MCLAREN 7/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 07/14/2023
SCALE: 22x34 1/4"=1'-0" 8½" 1/8"=1'-0"
PROJECT #: 528-0RR
DRAWN BY: JCEP
CHECKED BY: BCP

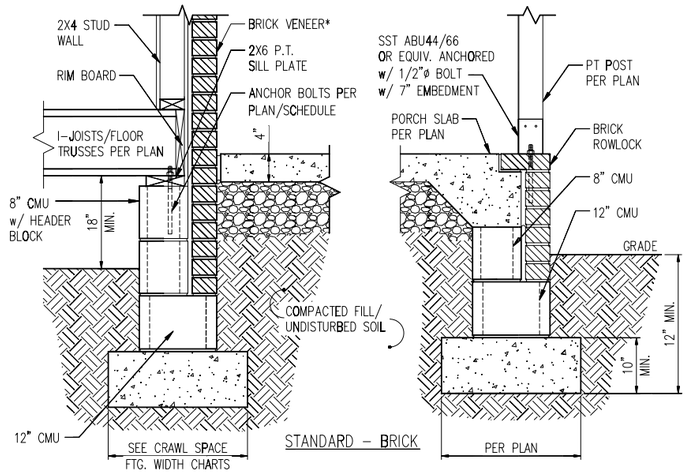
ORIGINAL INFORMATION
PROJECT # DATE 10/30/21

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D1c



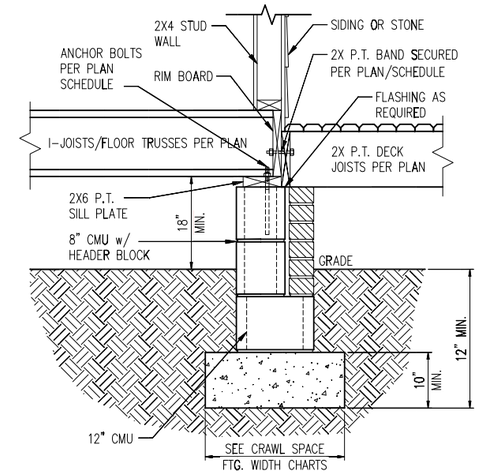
STANDARD – SIDING/STONE



STANDARD – BRICK

1 D2c TYP. FRONT PORCH DETAIL

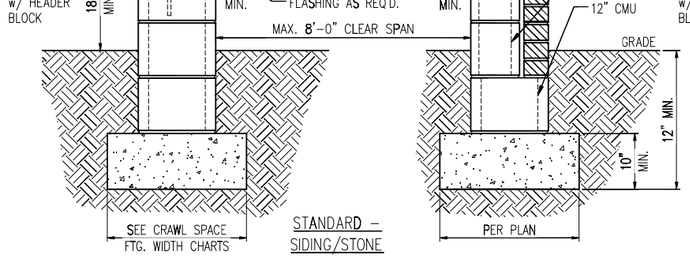
N.T.S.



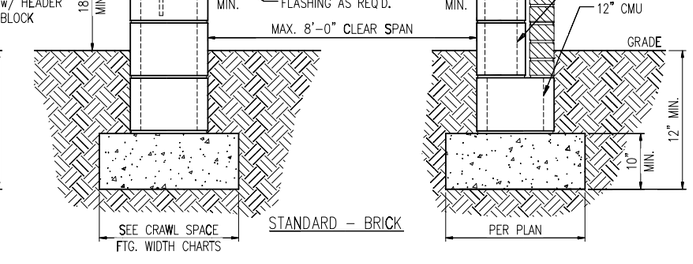
STANDARD – SIDING/STONE

2 D2c DECK ATTACHMENT DETAIL

N.T.S.



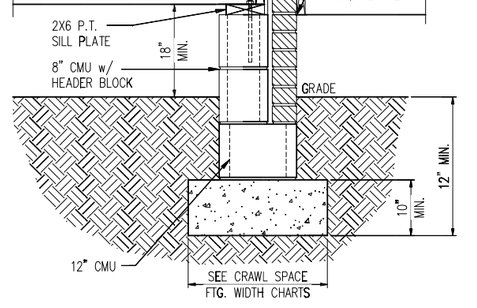
STANDARD – SIDING/STONE



STANDARD – BRICK

1a D2c FRONT PORCH DETAIL w/ SUSPENDED SLAB

N.T.S.



STANDARD – BRICK

3 D2c DECK ATTACHMENT DETAIL W/ BRICK

N.T.S.

DECK ATTACHMENT SCHEDULE (ALL STRUCTURES EXCEPT BRICK)

FASTENERS	MAX. 8'–0" JOIST SPAN	MAX. 16'–0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 3'–6" O.C.	(1) @ 1'–8" O.C.
AND	AND	AND
12d COMMON GALV. NAILS[c]	(2) @ 8" O.C.	(3) @ 6" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".
c. NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF 1½"

DECK ATTACHMENT SCHEDULE (BRICK STRUCTURES)

FASTENERS	MAX. 8'–0" JOIST SPAN	MAX. 16'–0" JOIST SPAN
5/8" GALV. BOLTS w/ NUT & WASHER[b]	(1) @ 2'–4" O.C.	(1) @ 1'–4" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED.
b. MINIMUM EDGE DISTANCE FOR BOLTS IS 2½".

CRAWL SPACE FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY		
	1500 PSF	2000 PSF	2500 PSF
1 STORY – STD.	16"	16"	16"
1 STORY – BRICK VENEER	21"*	21"*	21"*
2 STORY – STD.	16"	16"	16"
2 STORY – BRICK VENEER	21"*	21"*	21"*
3 STORY – STD.	23"	18"	18"
3 STORY – BRICK VENEER	32"*	24"*	24"*

*5" BRICK LEDGE HAS BEEN ADDED TO THE CRAWL SPACE FOOTING WIDTH FOR BRICK SUPPORT

*BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT. AND 3/16"ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS–ON–GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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ENGINEERING LABORATORY TESTING
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WWW.SUMMIT-COMPANIES.COM

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
SUMMIT Engineering Laboratory & Testing, Inc. No. F-1454

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-15)

Crawl Space Foundation Details

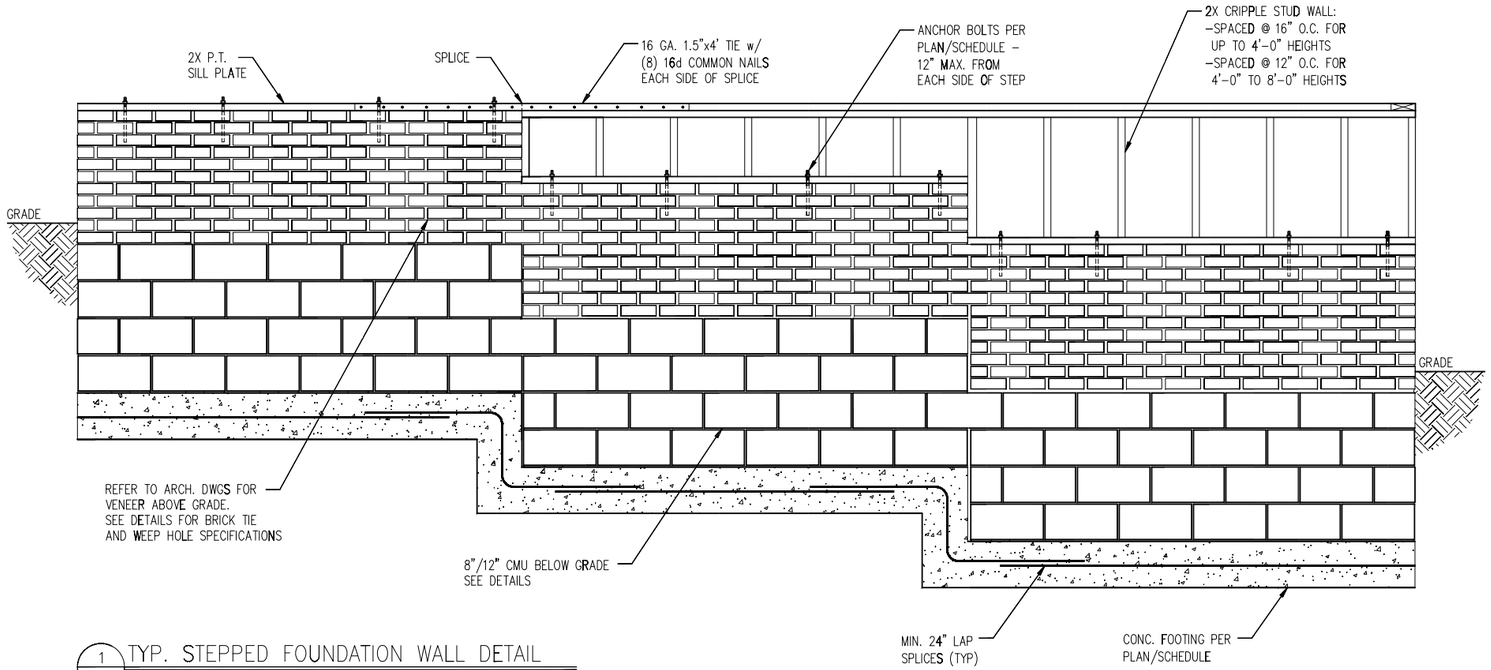
NORTH CAROLINA
053883
HENRY KUEHS-MCLAREN
ENGINEER
2/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 01/16/2023
SCALE: 22x34 1/4"=1'-0" 11x17 1/8"=1'-0"
PROJECT #: 528-6R
DRAWN BY: JCEP
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D2c



1 D3c TYP. STEPPED FOUNDATION WALL DETAIL
N.T.S.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS–ON–GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
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SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-15)
Crawl Space Foundation Details

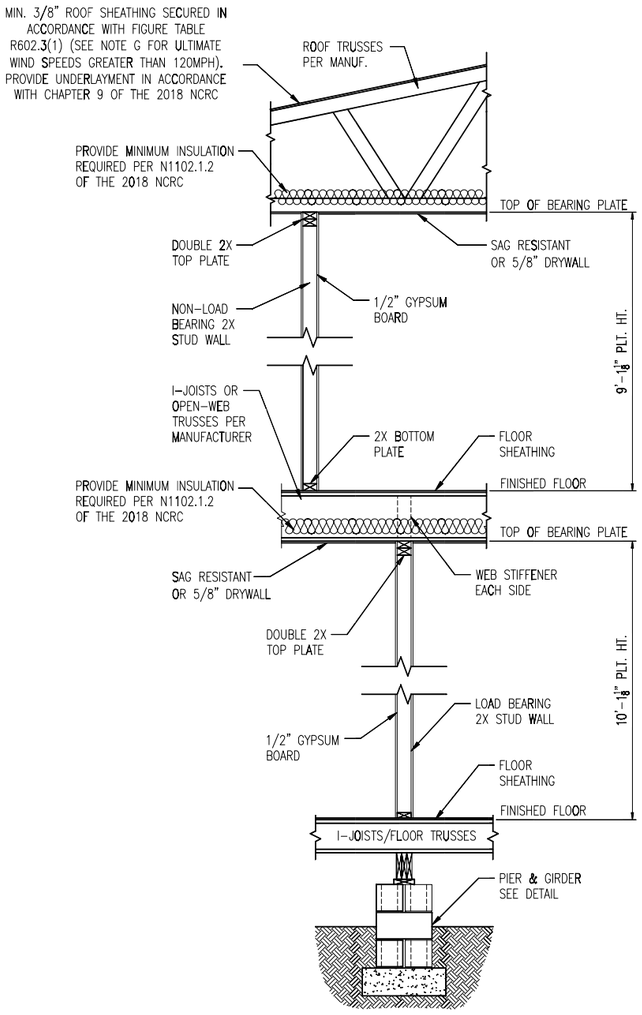
NORTH CAROLINA
053883
ENGINEER
HENRY KUEHS-MCLAREN
2/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 01/16/2023
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-06R
DRAWN BY: JCEF
CHECKED BY: BCP

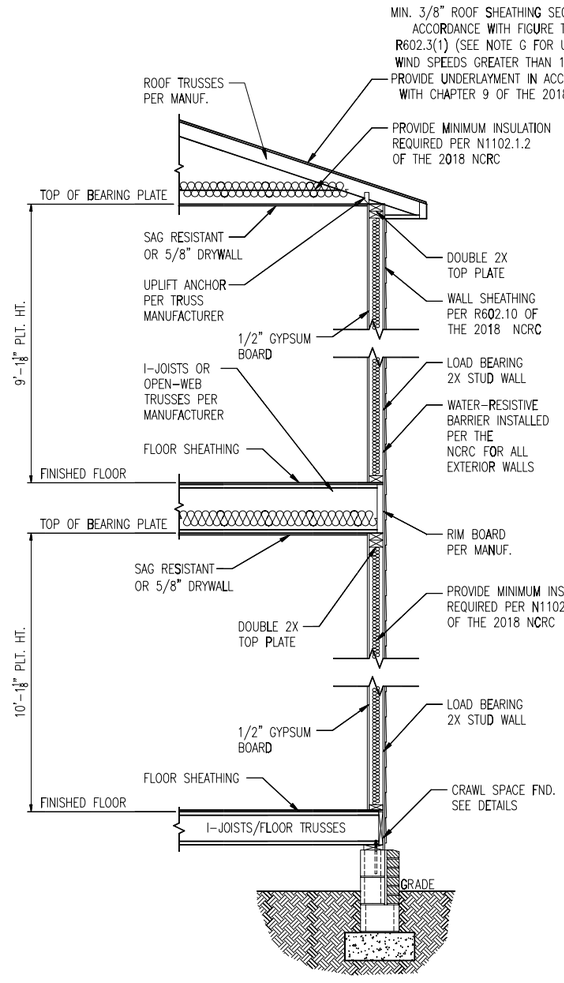
ORIGINAL INFORMATION
PROJECT #: DATE: 1/31/2011

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3c



1 D4c TYP. INTERIOR LOAD BEARING WALL SECTION
3/4" = 1'-0"



2 D4c TYP. EXTERIOR LOAD BEARING WALL SECTION
3/4" = 1'-0"

-SIMILAR w/ BRICK AND STONE
-BRICK TIES SPACED @ 16" O.C. HORIZ. & 24" O.C. VERT.
-MIN. 3/16"ø WEEP HOLES @ 33" O.C.

NOTES:
1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE 2018 NCRC

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No. F-1464

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

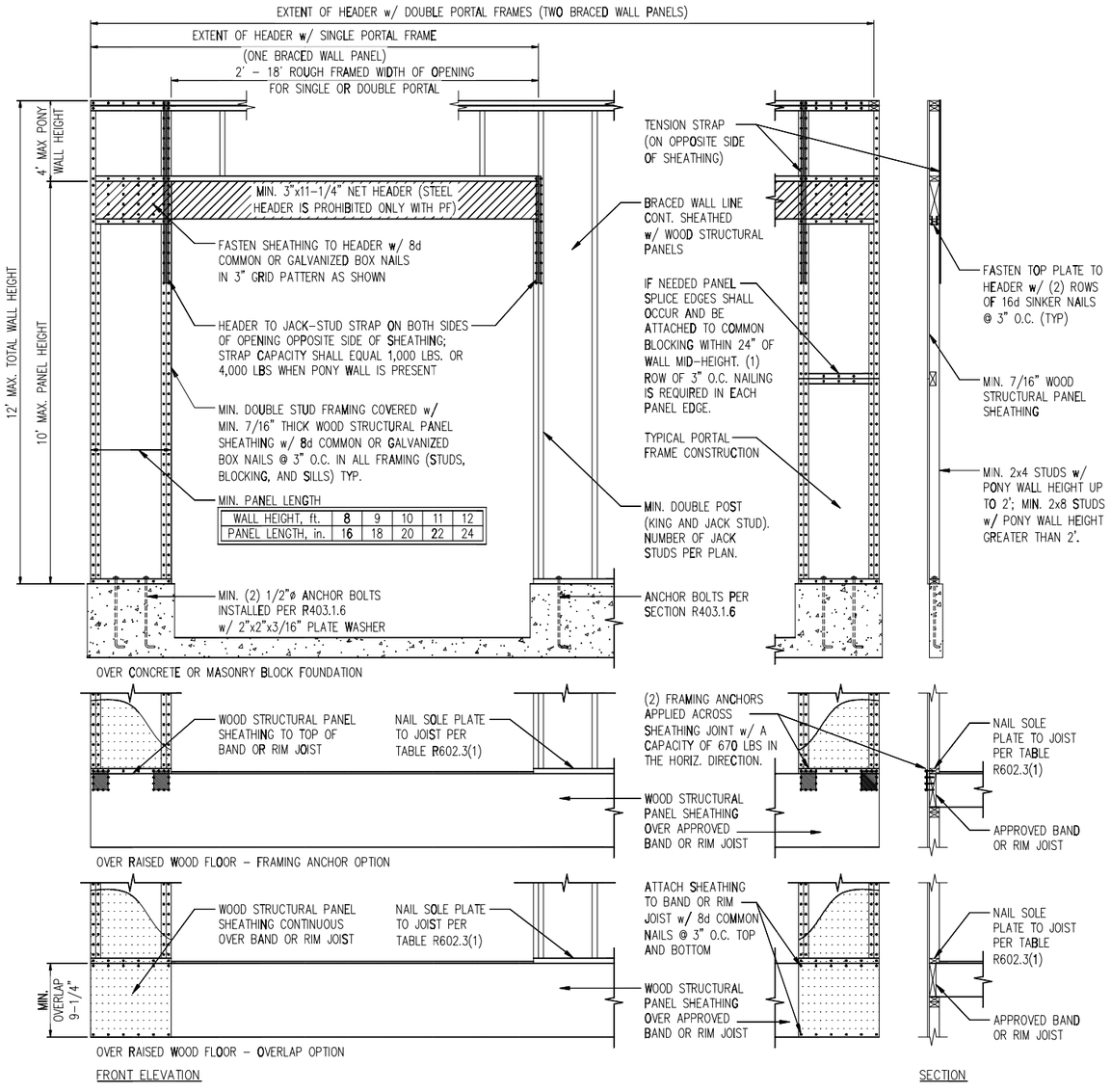
PROJECT:
Standard Details (OX-16)
Crawl Space Foundation Details

DRAWING
DATE: 07/14/2023
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-6NR
DRAWN BY: JCEP
CHECKED BY: BCP

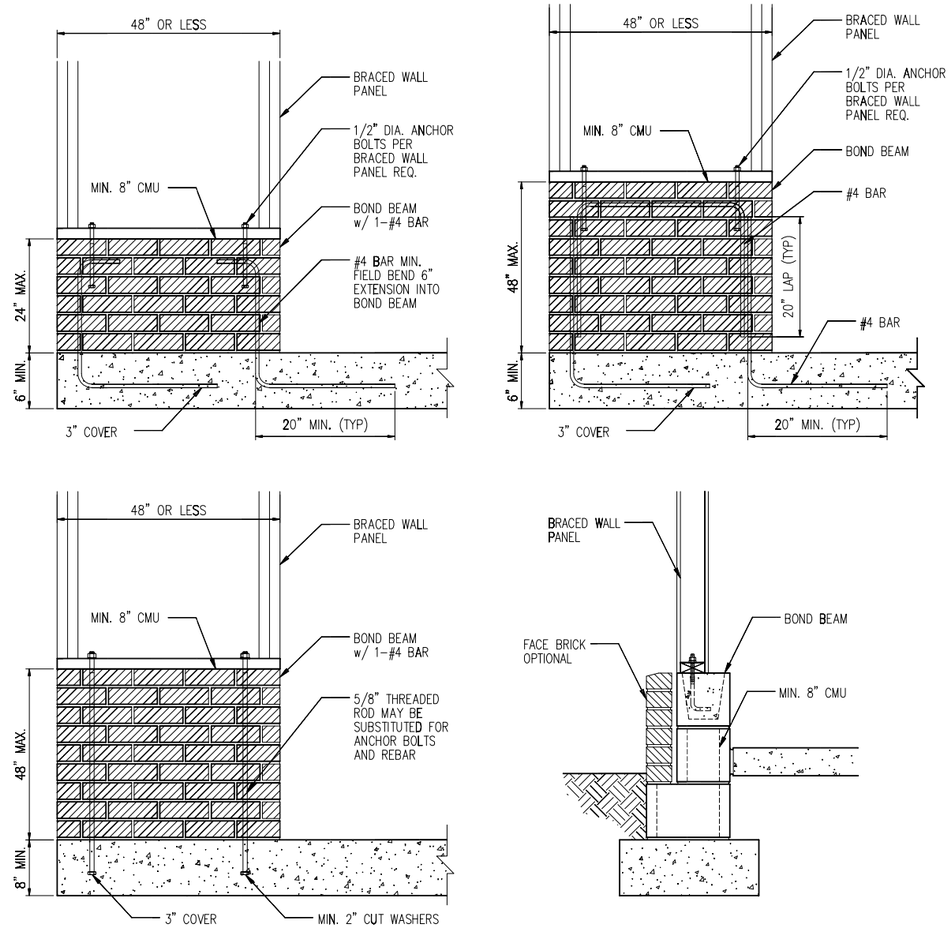
ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D4c



1 D1f METHOD PF: PORTAL FRAME DETAIL
3/8" = 1'-0"



2 D1f MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS
NTS

NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

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CLIENT:
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PROJECT:
Standard Details (OX-16)
Framing Details

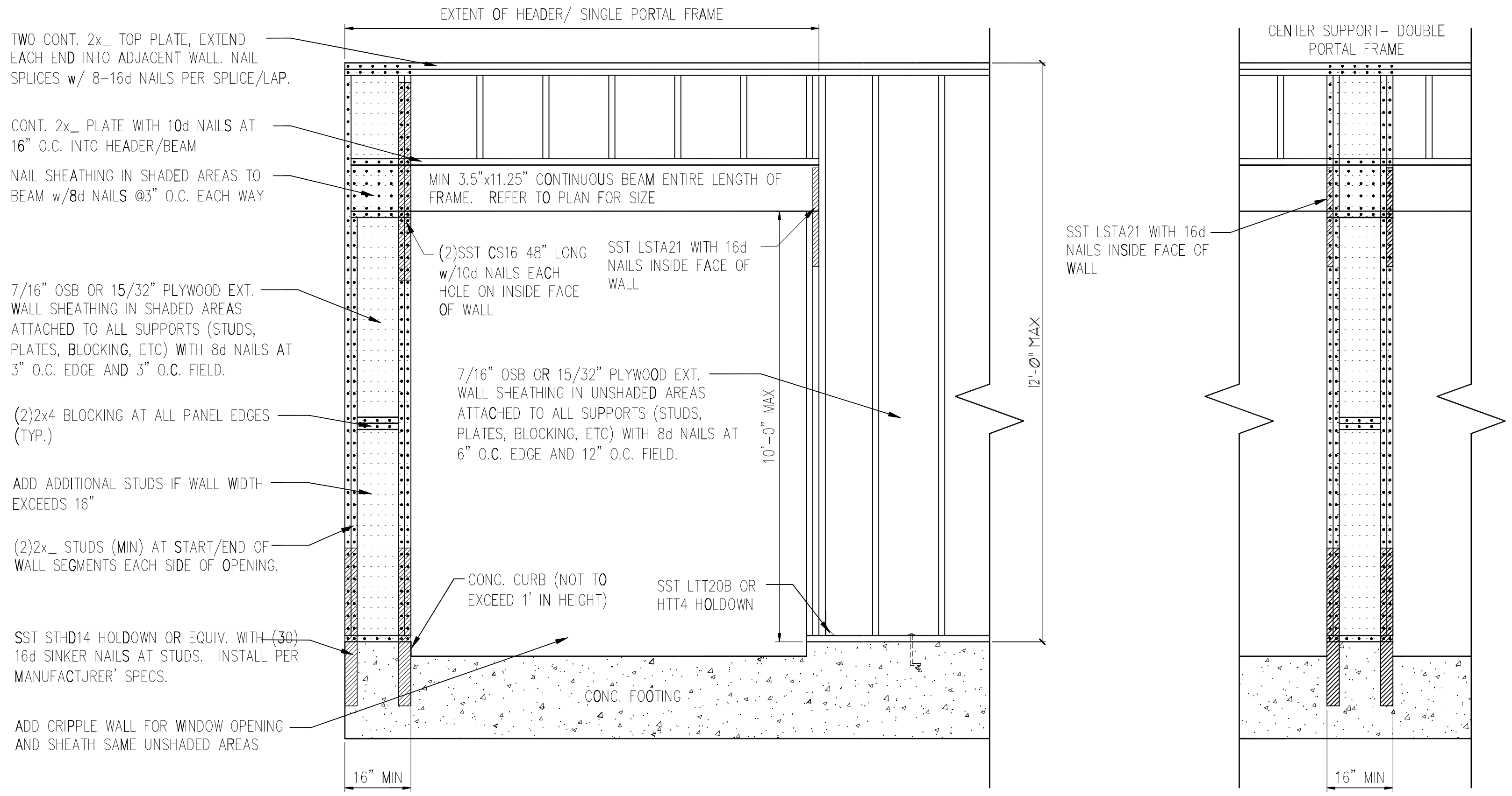
NORTH CAROLINA
053883
ENGINEER
HENRY KUEHREN MCLAREN
07/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 07/14/2023
SCALE: 22x34 1/4"=1'-0"
8x11 1/8"=1'-0"
PROJECT #: 528-6968
DRAWN BY: JCEP
CHECKED BY: ECP

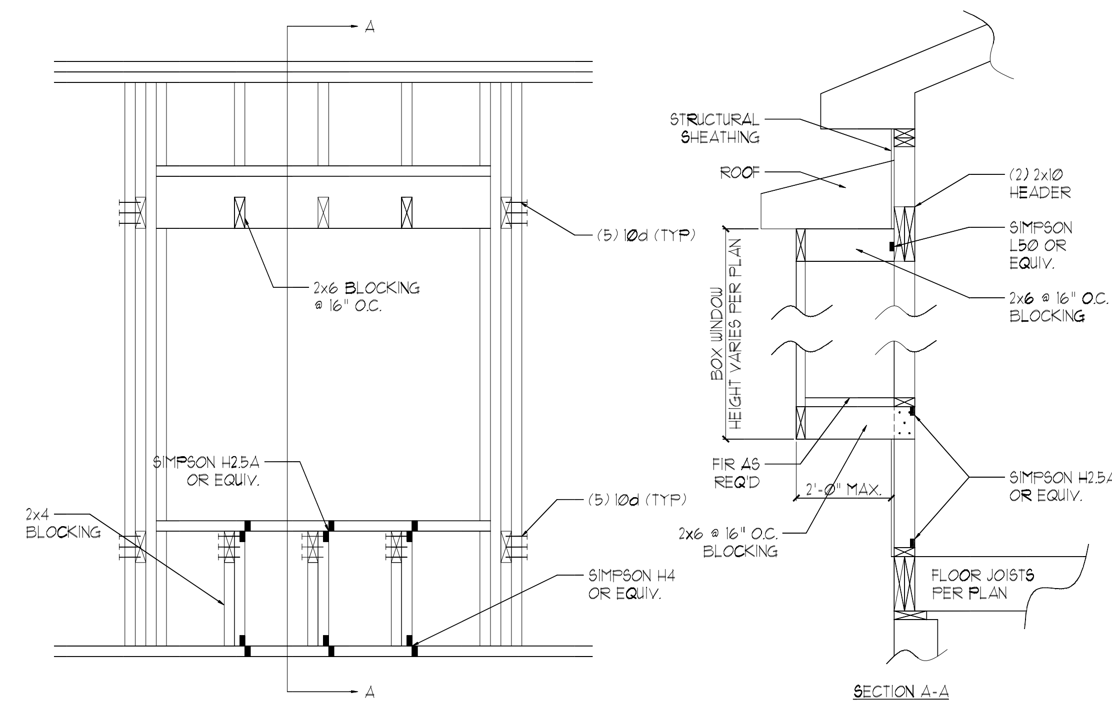
ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

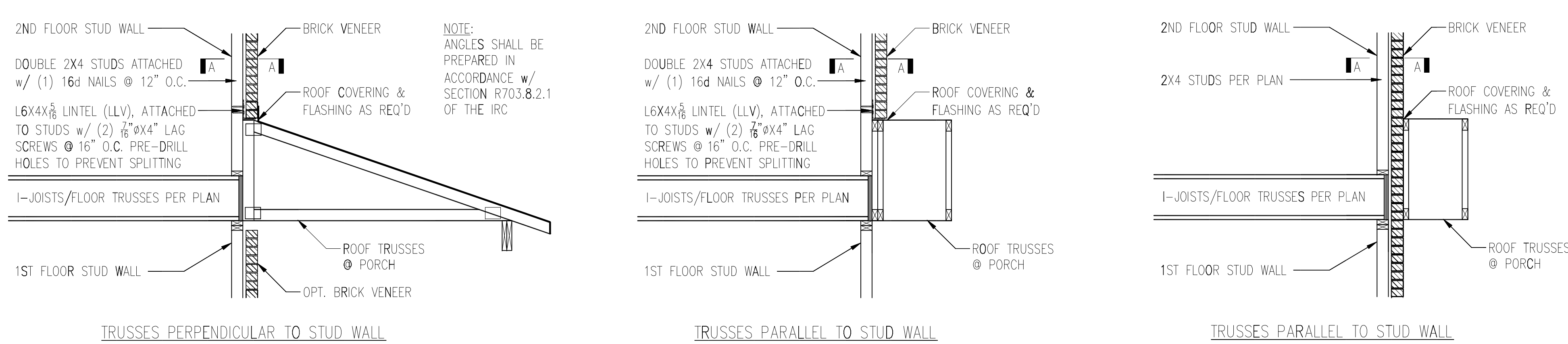
SHEET
D1f

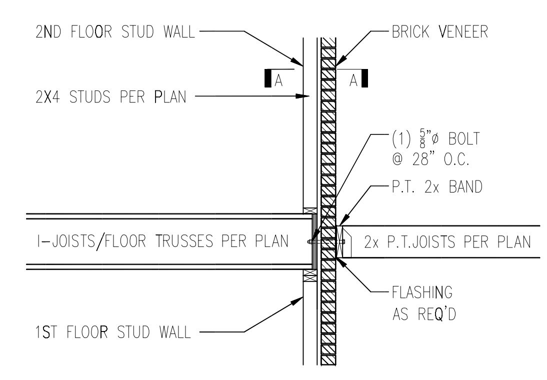


1 D2f METHOD PF: PORTAL FRAME DETAIL w/ HOLD-DOWNS
3/4" = 1'-0"



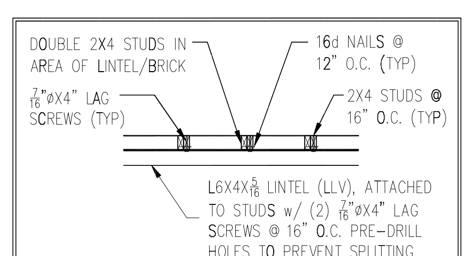
2 D2f BOX WINDOW DETAIL
N.T.S





4 D2f BALCONY JOIST ATTACHMENT
NTS

3 D2f BRICK SUPPORT ABOVE STORAGE/PORCH ROOF DETAIL
NTS



SECTION A-A
NTS

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SUMMIT Engineering, Laboratory & Testing, Inc.
No. F-1454

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-15)
Framing Details

053883
ENGINEER
HENRY KUEHR-MCLAREN
2/14/2023
STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 02/14/2023
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R
DRAWN BY: JCEF
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

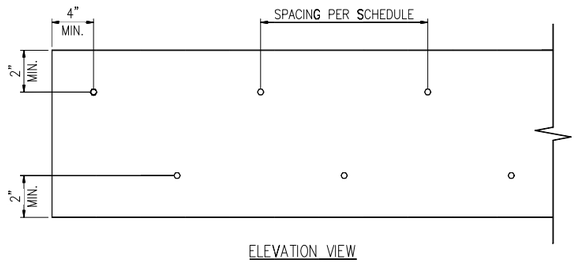
SHEET
D2f

MINIMUM FASTENING REQUIREMENTS FOR TOP- AND SIDE-LOADED MEMBERS

FASTENER TYPE	LVL DEPTH	3½" WIDE	5¼" WIDE		7" WIDE		
		2-Ply 1¾"	3-Ply 1¾"	1¾" + 3½"	4-Ply 1¾"	2-Ply 1¾" + 3½"	2-Ply 3½"
10d (0.128" x 3") Nails	7¼"≤d<14"	3 rows @ 12" o.c.	3 rows @ 12" o.c. (ES)	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. (ES)	-
	d≥14"	4 rows @ 12" o.c.	4 rows @ 12" o.c. (ES)	4 rows @ 12" o.c.	-	4 rows @ 12" o.c. (ES)	-
16d (0.162" x 3½") Nails	7¼"≤d<14"	2 rows @ 12" o.c.	2 rows @ 12" o.c. (ES)	2 rows @ 12" o.c.	-	2 rows @ 12" o.c. (ES)	-
	d≥14"	3 rows @ 12" o.c.	3 rows @ 12" o.c. (ES)	3 rows @ 12" o.c.	-	3 rows @ 12" o.c. (ES)	-
½" Through Bolts	d≥7¼"	2 rows @ 24" o.c.	2 rows @ 24" o.c.		2 rows @ 24" o.c.		
SDS ¼" x 3½", WS35, 3⅜" TrussLok		2 rows @ 24" o.c.	2 rows @ 24" o.c. (ES)	2 rows @ 24" o.c.	-	2 rows @ 24" o.c. (ES)	-
SDS ¼" x 6", WS6		-	-		2 rows @ 24" o.c. (ES)		
5" TrussLok		-	2 rows @ 24" o.c.		-		
6¾" TrussLok		-	-		2 rows @ 24" o.c.		

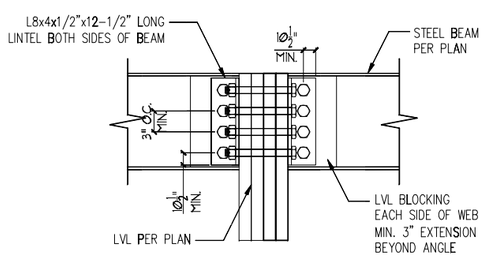
NOTES:

1. All fasteners must meet the minimum requiremenes in the table above. Side-loaded multiple-ply members must meet the minimum fastening and side-loading capacity requirements given on page 48.
2. Minimum fastening requirements for depths less than 7¼" require special consideration. Please contact your technical representative.
3. Three general rules for staggering or offsetting for a certain fastener schedule:
   (1) if staggering or offsetting is not referenced, then none is required;
   (2) if staggering is referenced, then fasteners installed in adjacent rows on the front side are to be staggered up to one-half the o.c. spacing, but maintaining the fastener clearances above; and
   (3) if "ES" is referenced, then the fastener schedule must be repeated on each side, with the fasteners on the back side offset up to one-half the o.c. spacing of the front side (whether or not it is staggered).

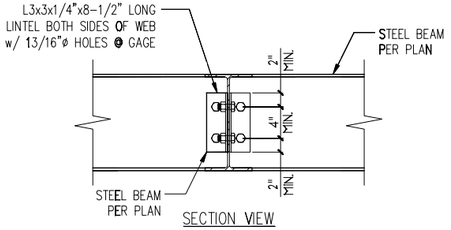


ELEVATION VIEW

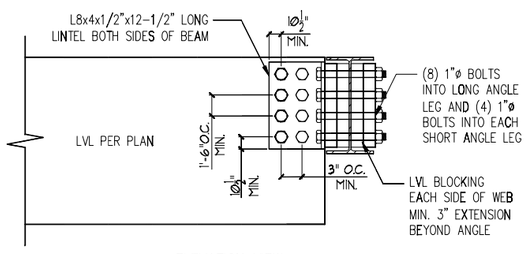
1 D3f MULTI-PLY BEAM CONNECTION DETAIL N.T.S



SECTION VIEW

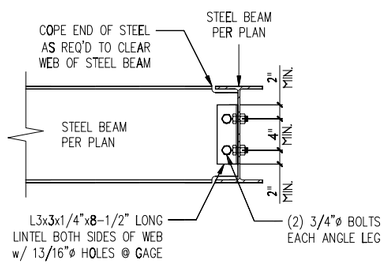


SECTION VIEW



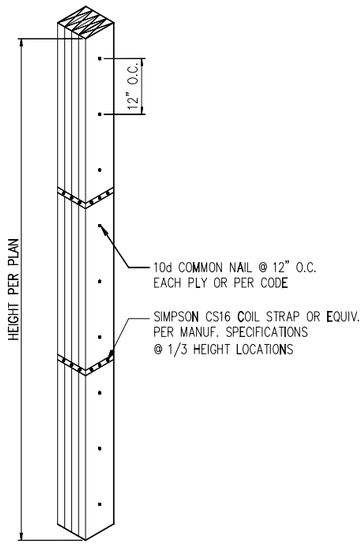
ELEVATION VIEW

3 D3f LVL TO STEEL DETAIL N.T.S

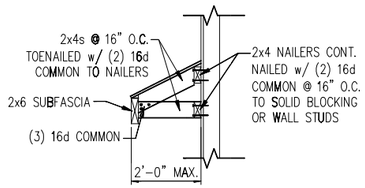


ELEVATION VIEW

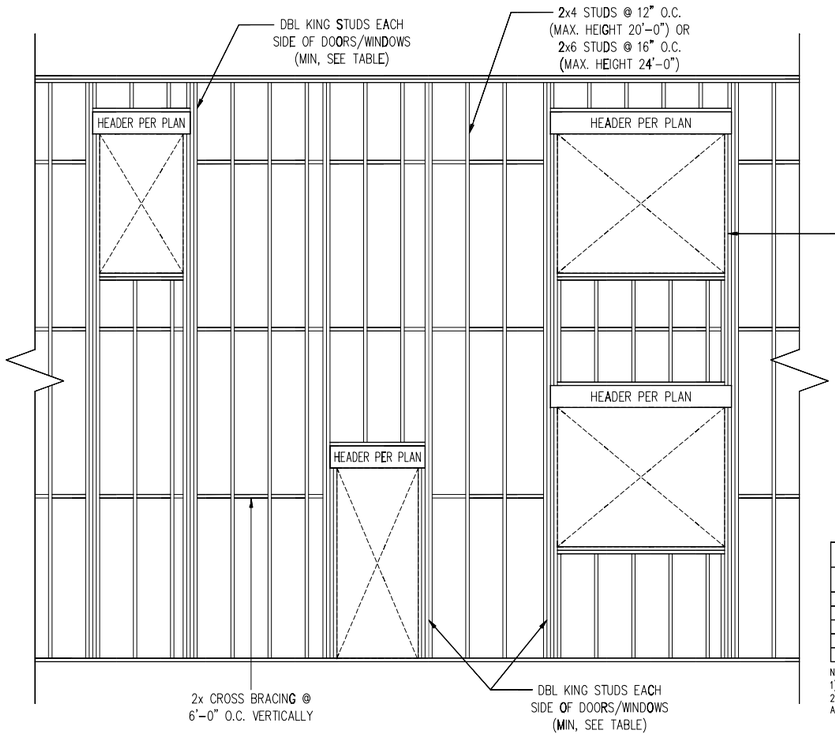
4 D3f STEEL TO STEEL DETAIL N.T.S



2 D3f MULTI-PLY STUD CONNECTION DETAIL N.T.S 4+ PLIES



5 D3f GABLE ROOF RETURN N.T.S.



KING STUDS AT EACH END OF HEADERS	
MAX. HEADER SPAN	STUDS (MIN.)
3'-0"	1
4'-0"	2
8'-0"	3
12'-0"	5
16'-0"	6

NOTES:
1) FOR UP TO 130 MPH, EXPOSURE B
2) KING STUD REQUIREMENTS DO NOT APPLY TO PORTAL FRAMED OPENINGS

6 D3f TYP. BALLOON FRAMING DETAIL N.T.S

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SUMMIT Engineering, Laboratory & Testing, Inc. No. F-1454

CLIENT:
DR Horton Carolina Division
8200 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details (OX-16)
Framing Details

NORTH CAROLINA
053883
ENGINEER
HENRY KUEHS MCLAREN
6/14/2023
STRUCTURAL MEMBERS ONLY

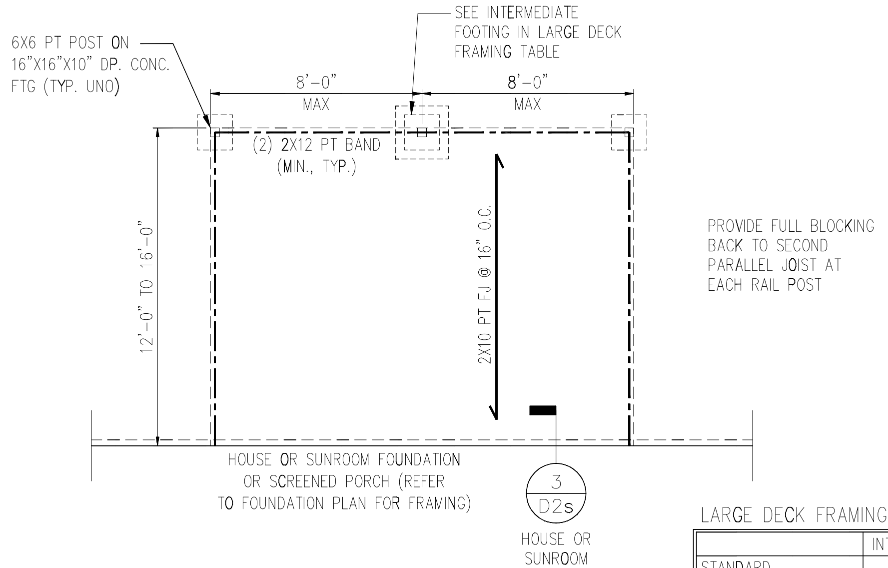
DRAWING
DATE: 05/16/2023
SCALE: 22x34 1/4"=1'-0" 8x11 1/8"=1'-0"
PROJECT #: 528-6968
DRAWN BY: JCEP
CHECKED BY: BCP

ORIGINAL INFORMATION
PROJECT # DATE 1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3f

NOTE: BRACE POSTS PER CODE

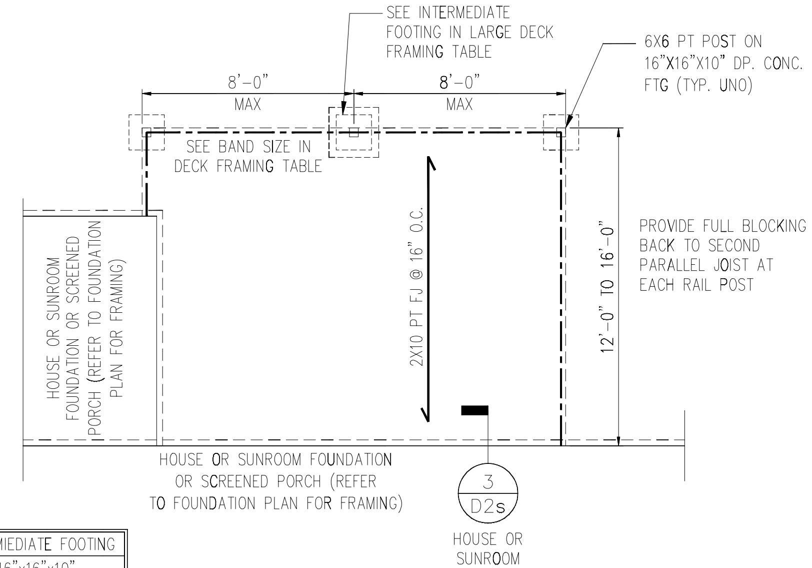


TYP. LARGE REAR DECK PLAN

N.T.S.

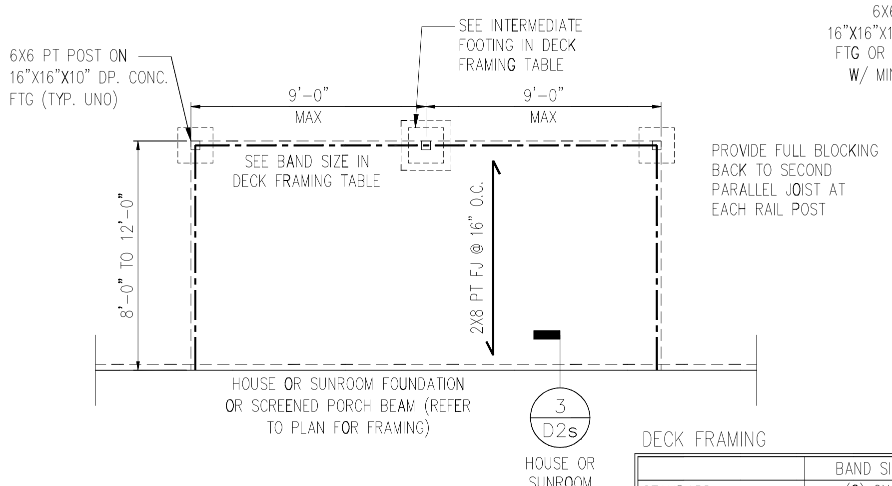
LARGE DECK FRAMING

	INTERMIEDIATE FOOTING
STANDARD	16"x16"x10"
W/ 8'X8' GRILL DECK	24"x24"x10"



TYP. LARGE SIDE DECK PLAN

N.T.S.



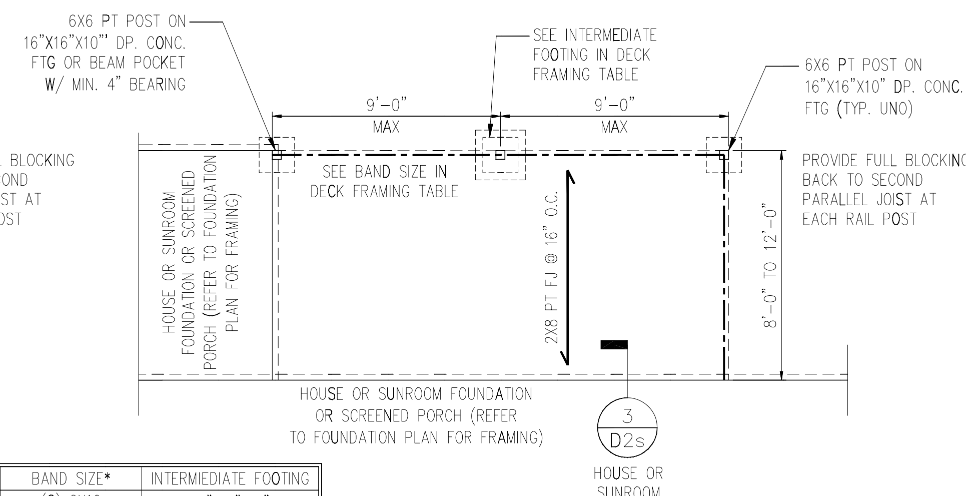
TYP. REAR DECK PLAN

N.T.S.

DECK FRAMING

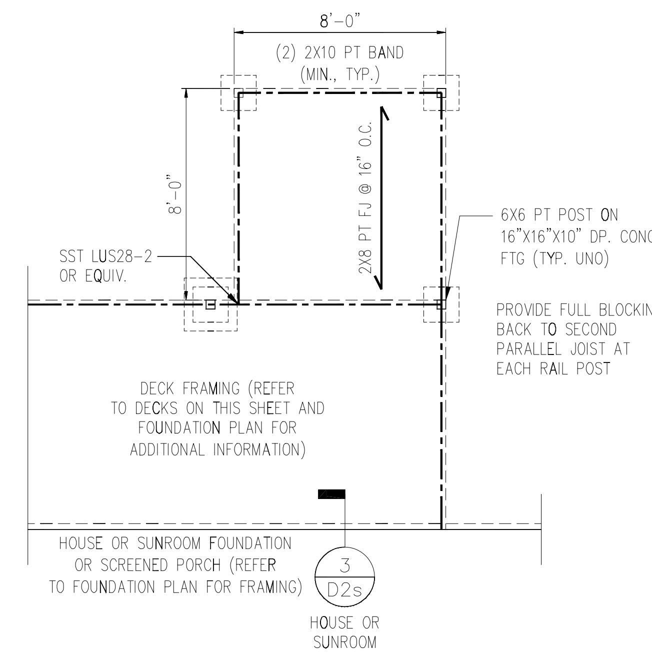
	BAND SIZE*	INTERMIEDIATE FOOTING
STANDARD	(2) 2X10	16"x16"x10"
W/ 8'X8' GRILL DECK	(3) 2X10	24"x24"x10"

* SOUTHERN PINE #2 PT LUMBER



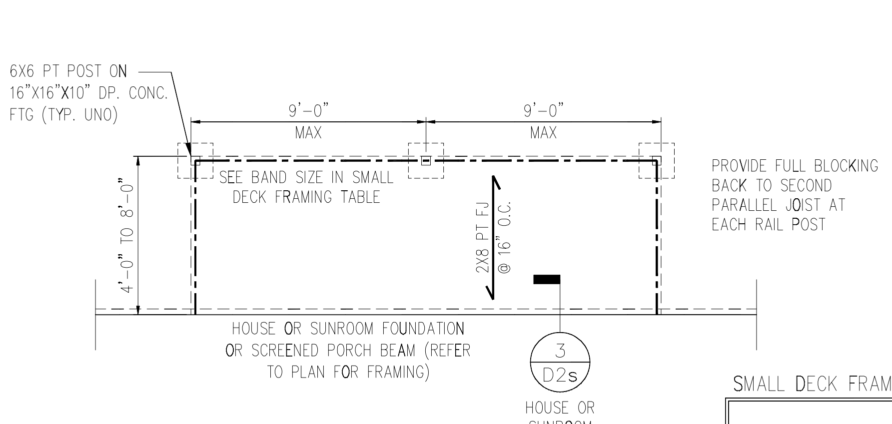
TYP. SIDE DECK PLAN

N.T.S.



TYP. DECK PLAN W/ 8'X8' GRILL DECK

N.T.S.



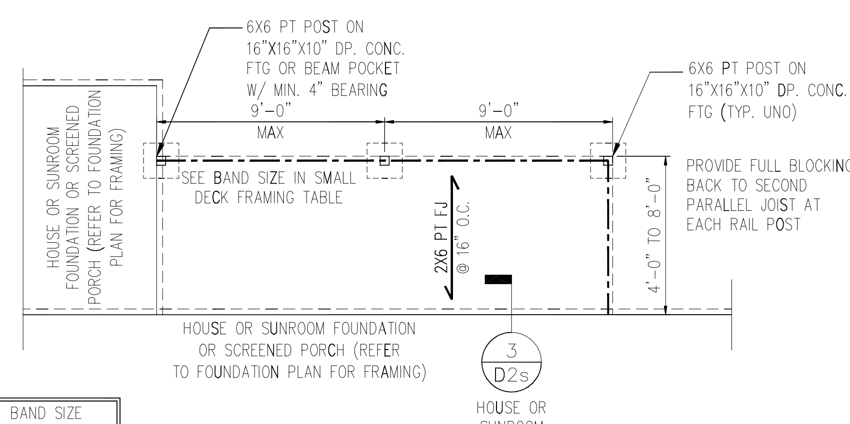
TYP. SMALL REAR DECK PLAN

N.T.S.

SMALL DECK FRAMING

	BAND SIZE
STANDARD	(2) 2X10
W/ 8'X8' GRILL DECK	(3) 2X10

* SOUTHERN PINE #2 PT LUMBER



TYP. SMALL SIDE DECK PLAN

N.T.S.

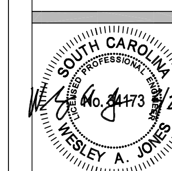
NOTES:

1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE.
3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS, SLOPES AND DEPRESSIONS.
4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.1.2 OF THE IRC

SUMMIT
ENGINEERING LABORATORY TESTING
120 PENMARC DR., SUITE 108
RALEIGH, NC 27603
OFFICE: 919.380.9991
FAX: 919.380.9993
WWW.SUMMIT-COMPANIES.COM

CLIENT:
DR Horton Carolina Division
8001 Arrowridge Blvd.
Charlotte, NC 28273

PROJECT:
Standard Details
Stem Wall Foundation Details



STRUCTURAL MEMBERS ONLY

DRAWING
DATE: 3/2/2020
SCALE: 22x34 1/4"=1'-0"
11x17 1/8"=1'-0"
PROJECT #: 528-06R
DRAWN BY: LAG
CHECKED BY: WAJ

ORIGINAL INFORMATION
PROJECT # DATE
1/31/2017

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

SHEET
D3s

General Notes:

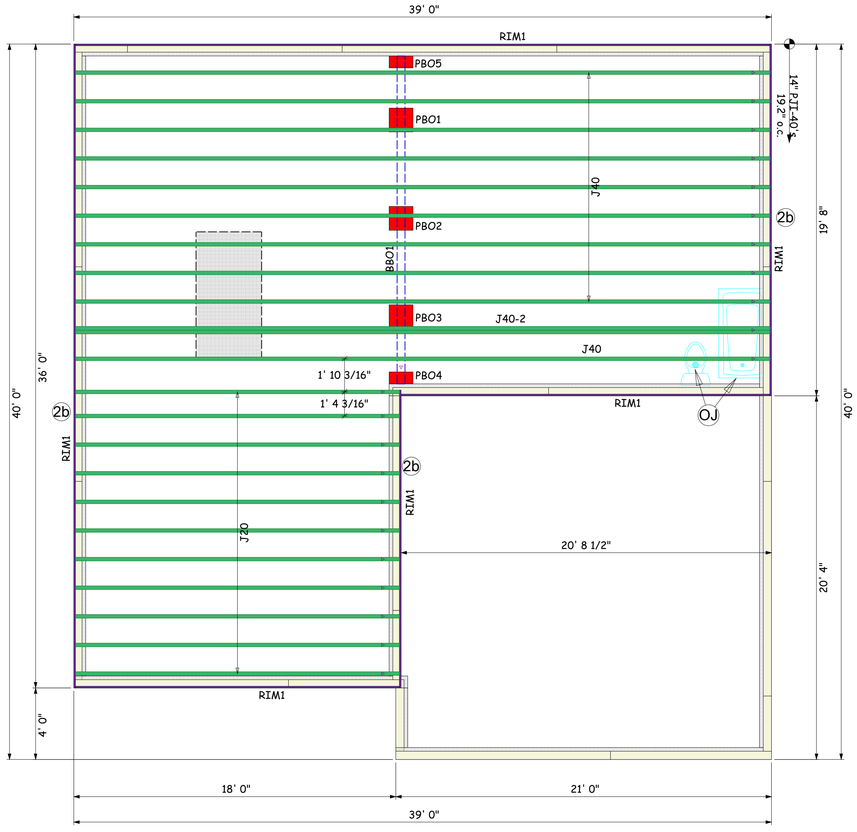
** CUTTING OR DRILLING OF COMPONENTS SHOULD NOT BE DONE WITHOUT CONTACTING COMPONENT SUPPLIER FIRST. CUSTOMER TAKES FULL RESPONSIBILITY FOR COMPONENTS IF CUT BEFORE AUTHORIZATION.

** LVL AND JOISTS MUST BE FULLY CONNECTED TOGETHER PRIOR TO ADDING ANY LOADS.

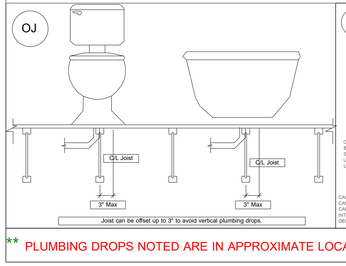
Products				
Net Qty	Plies	Product	Length	PlotID
10	1	14" PJI-40	40' 0"	J40
2	2	14" PJI-40	40' 0"	J40-2
11	1	14" PJI-40	20' 0"	J20
13	1	1 1/8" x 14" APA Rim Board	12' 0"	RIM1

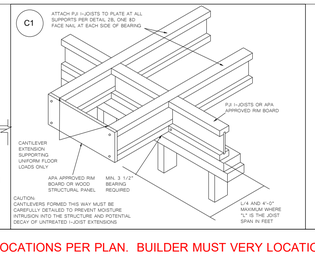
Accessories				
Net Qty	Plies	Product	Length	PlotID
34	1	3/4" 4x8 OSB		

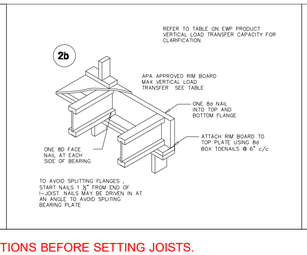
KEMPSVILLE BUILDING MATERIALS IS NOT RESPONSIBLE FOR THE DESIGN OR CALCULATION OF ANY AND ALL I-JOIST AND LVL/PSL BEAM MATERIAL. ALL ENGINEERING AND INFORMATION FOR THIS MATERIAL IS TO BE PROVIDED BY THE ENGINEER OF RECORD MARKED ON APPROVED SET OF PLANS. ALL BEAM PLACEMENTS ARE PER THE ENGINEERING RECEIVED. ALL CONNECTION DETAILS TO BE PROVIDED BY ENGINEER OF RECORD. REFER TO ENGINEER OR RECORD FOR ALL MULTI-PLY LVL/ I-JOIST CONNECTION PATTERNS. BUILDER TO VERIFY ALL MATERIAL LENGTHS, QUANTITIES, AND SIZES PRIOR TO ORDERING.

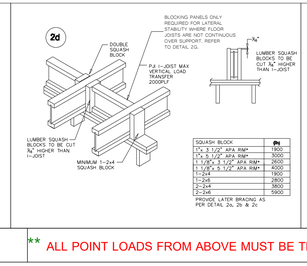


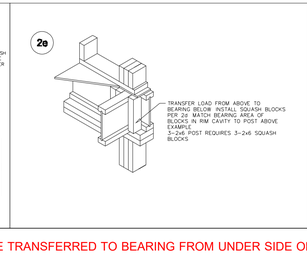
1ST FLOOR LAYOUT

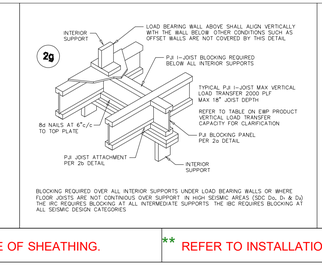


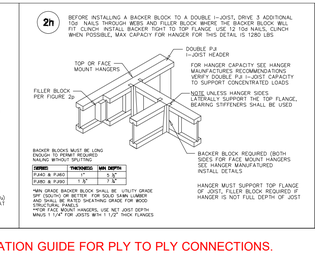












LABEL LEGEND

BBO = Beam by Others
PBO = Post by Others
GBO = Girder by Others
J = I-Joist
FB = Flush Beam
DB = Dropped Beam
RB = Roof Beam
BP = Blocking Panels
SB = Squash Blocks

** PLUMBING DROPS NOTED ARE IN APPROXIMATE LOCATIONS PER PLAN. BUILDER MUST VERY LOCATIONS BEFORE SETTING JOISTS.

** ALL POINT LOADS FROM ABOVE MUST BE TRANSFERRED TO BEARING FROM UNDER SIDE OF SHEATHING.

** REFER TO INSTALLATION GUIDE FOR PLY TO PLY CONNECTIONS.

** FRAMER MUST REFER TO PLANS WHILE SETTING COMPONENTS.

** DIMENSIONS ARE READ AS: FOOT-INCH-SIXTEENTH.

** DAMAGED FLOOR JOISTS SHOULD NOT BE INSTALLED UNLESS APPROVED BY COMPONENT PLANT.

Revisions	
09/20/23	DW
00/00/00	Name
00/00/00	Name
00/00/00	Name
00/00/00	Name

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Kempsville Building Materials
A Division of the Carter Lumber Company

DR Horton
45 Mason Ridge
Hayden K
FLOOR JOIST LAYOUT

Scale: **1/4" = 1'-0"**
Date: **// 06/04/24**
Designer: **DW**
Project #: **24050245**
Sheet Number:
1 / 2

General Notes:

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Products				
Net Qty	Plies	Product	Length	PlotID
9	1	14" PJI-40	40' 0"	J40
3	1	14" PJI-40	22' 0"	J22
18	1	14" PJI-40	20' 0"	J20
4	2	14" PJI-40	20' 0"	J20-2
6	1	14" PJI-40	16' 0"	J16
1	1	14" PJI-40	2' 0"	J2
2	2	2.1 RigidLam SP LVL 1-3/4 x 9-1/4	8' 0"	DB3-2
2	2	2.1 RigidLam SP LVL 1-3/4 x 9-1/4	6' 0"	DB2-2
4	4	2.1 RigidLam SP LVL 1-3/4 x 14	20' 0"	FB1-4
1	1	2.1 RigidLam SP LVL 1-3/4 x 14	2' 0"	FB6
2	2	2.1 RigidLam SP LVL 1-3/4 x 16	22' 0"	DB4-2
16	1	1 1/8" x 14" APA Rim Board	12' 0"	RIM1
2	1	14" PJI-40	2' 0"	BP1

Accessories				
Net Qty	Plies	Product	Length	PlotID
46	1	3/4" 4x8 OSB		

Connector Summary					
Web Stiff	Backer Blocks	Product	Manuf	Qty	PlotID
No	No	HUS1.81/10	Simpson	1	H1
No	2 and Filler	IUS2.56/14	Simpson	1	H2
No	No	IUS2.56/14	Simpson	10	H3
No	No	MIU5.12/14	Simpson	1	H4

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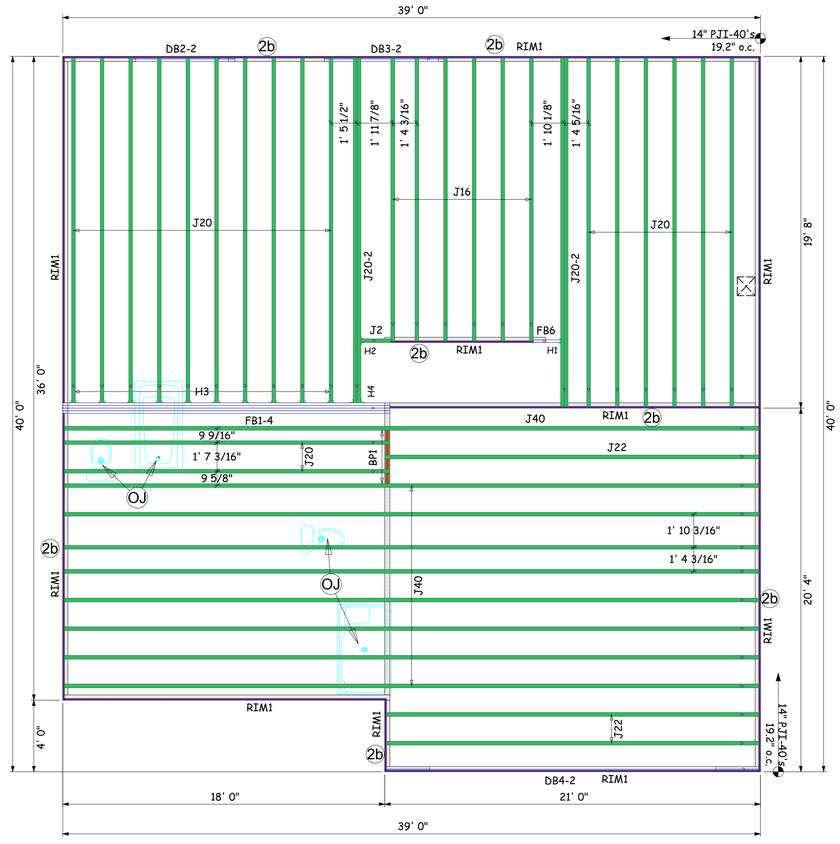
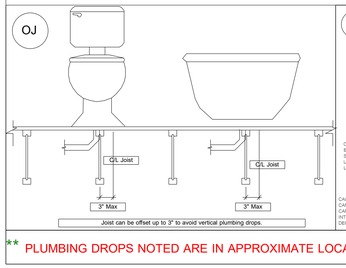
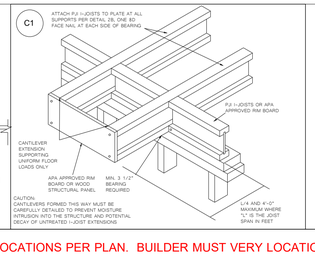
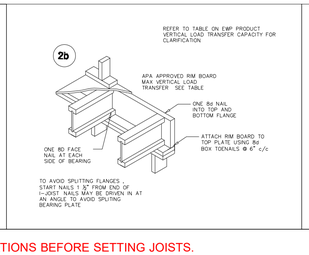
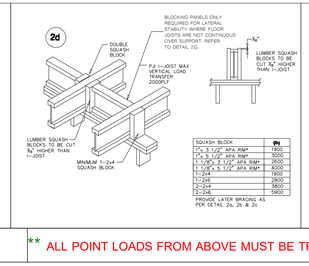


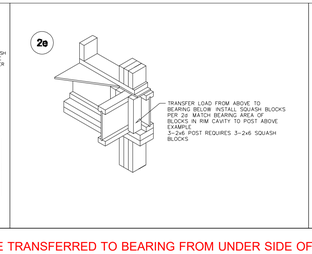
2ND FLOOR LAYOUT

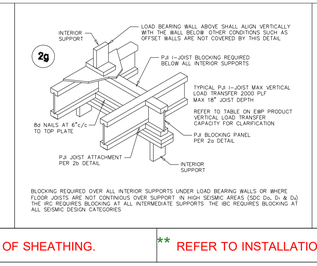


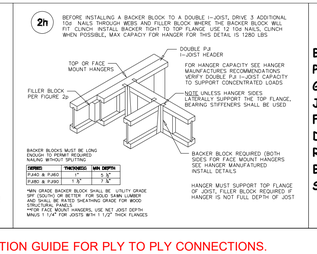












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09/20/23	DW
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DR Horton
45 Mason Ridge
Hayden K

FLOOR JOIST LAYOUT

Scale: **1/4" = 1'-0"**

Date: **// 06/04/24**

Designer: **DW**

Project #: **24050245**

Sheet Number:

2 / 2