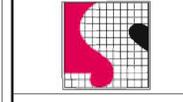


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Point One Design, Ltd.
 Consulting Engineers

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DEMOLITION GENERAL NOTES

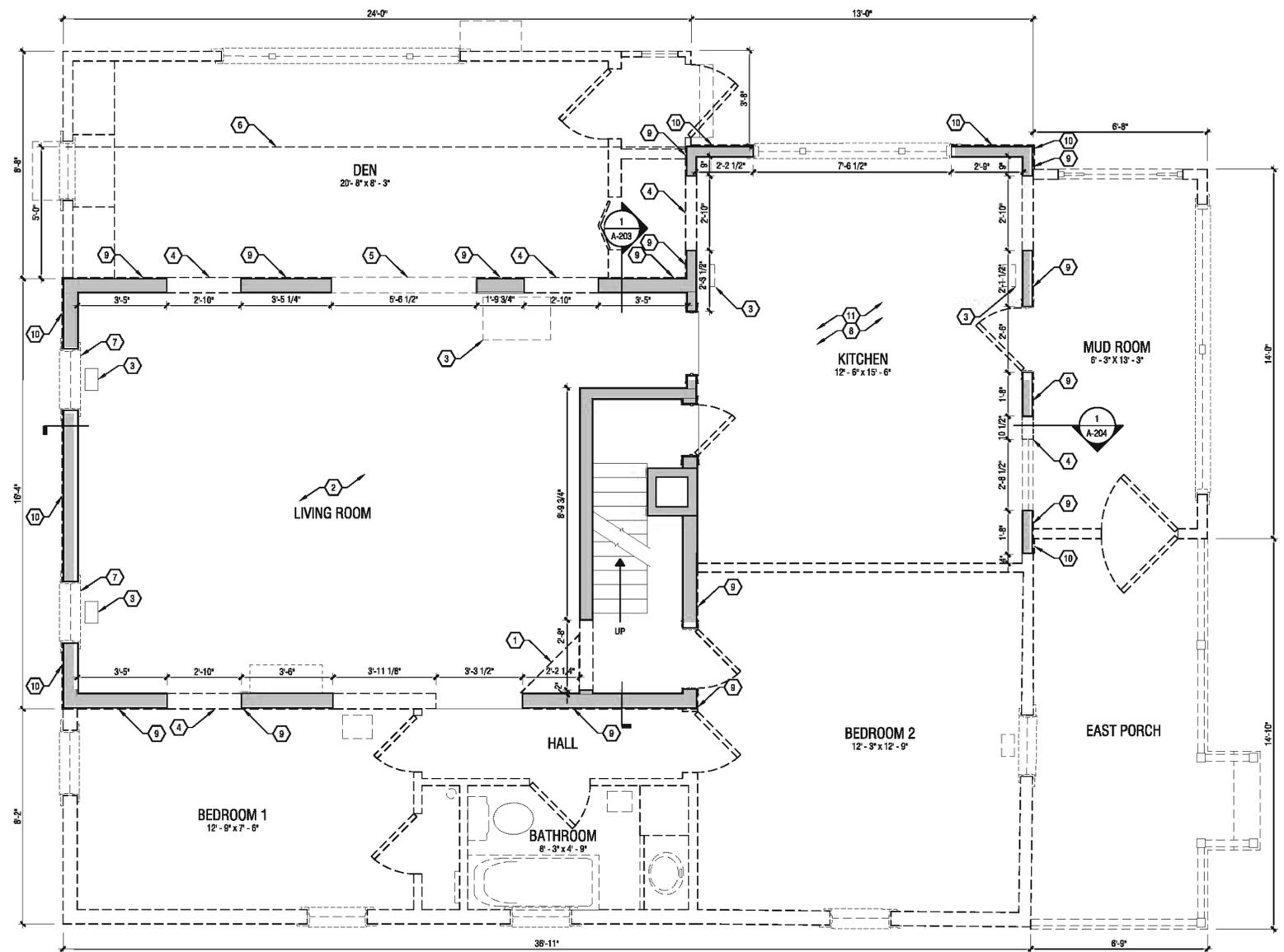
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- CONTRACTOR SHALL TEMPORARILY SHORE EXISTING DRY STACKED LIMESTONE FOUNDATION PRIOR TO DEMOLITION.

CODED NOTES

- REMOVE CORNER CABINET
- EXISTING CARPET, PADDING & TACK STRIPS TO BE REMOVED THROUGHOUT; MAY BE USED AS PARTIAL PROTECTION OF EXISTING WOOD FLOOR DURING CONSTRUCTION AT CONTRACTOR'S DISCRETION; REMOVE EXISTING WALL BASE AND TRIM
- EXISTING HVAC OPENINGS
- DEMO EXISTING WALL FOR NEW WINDOW OPENING (SEE DEMOLITION GENERAL NOTES)
- DEMO EXISTING HEADER FOR NEW DOOR
- SAW CUT EXISTING CONCRETE SLAB
- DEMO EXISTING WINDOWS TO STUD
- EXISTING LAMINATE FLOOR TO BE REMOVED THROUGHOUT; REMOVE EXISTING BASE AND TRIM
- DEMO EXISTING GYPSUM BOARD/LATH & PLASTER TO STUD
- DEMO EXISTING SIDING
- DEMO EXISTING CEILING; GYPSUM AND CEILING JOISTS

LEGEND

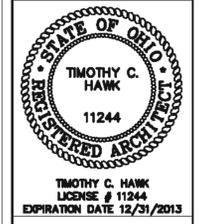
- WALL TO BE DEMOLISHED
- EXISTING WALL TO REMAIN
- DOOR TO BE REMOVED
- FLOOR AIR SUPPLY
- FLOOR AIR RETURN



1 1ST FLOOR DEMO PLAN
 3/8" = 1'-0"



HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016



TIMOTHY C. HAWK
 LICENSE # 11244
 EXPIRATION DATE 12/31/2013

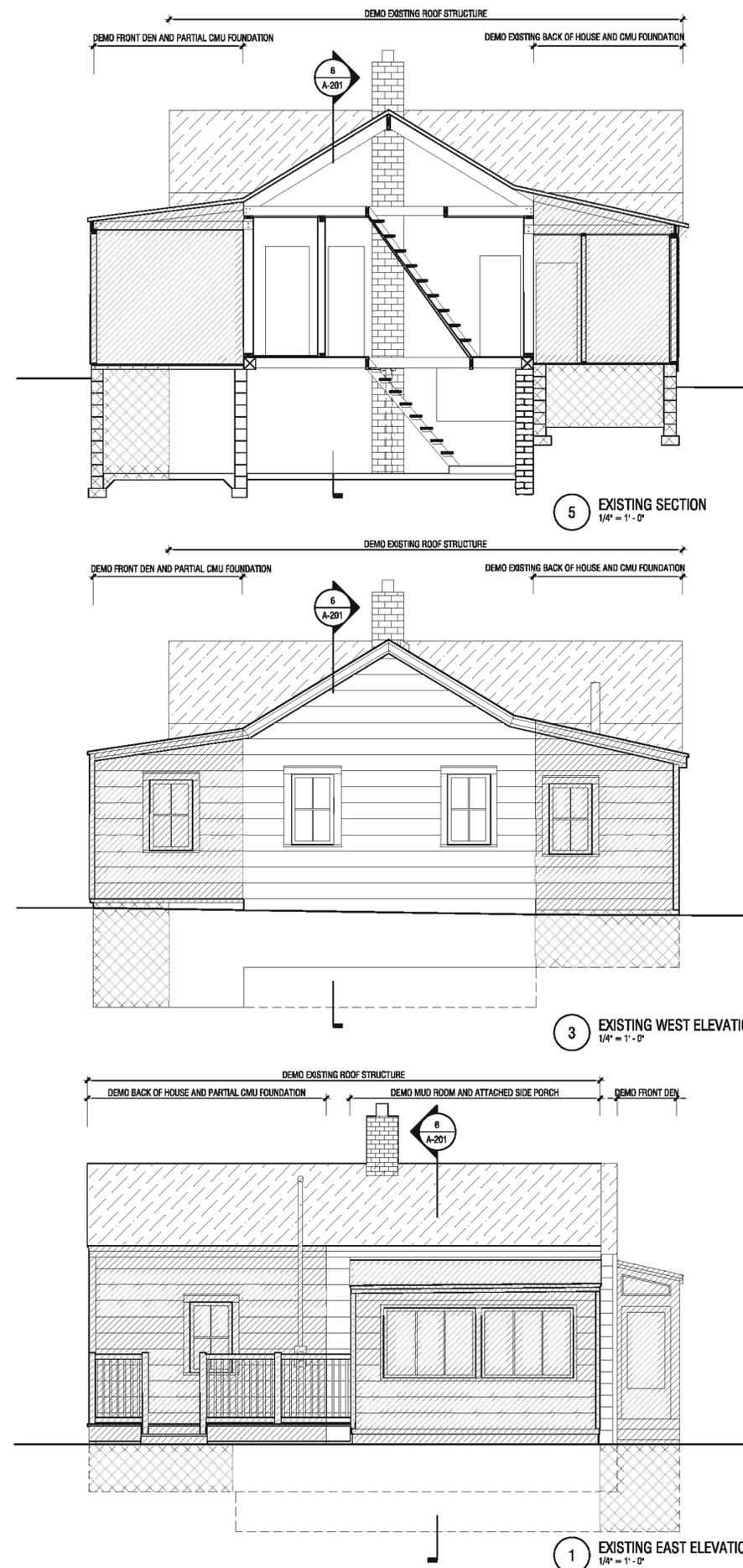
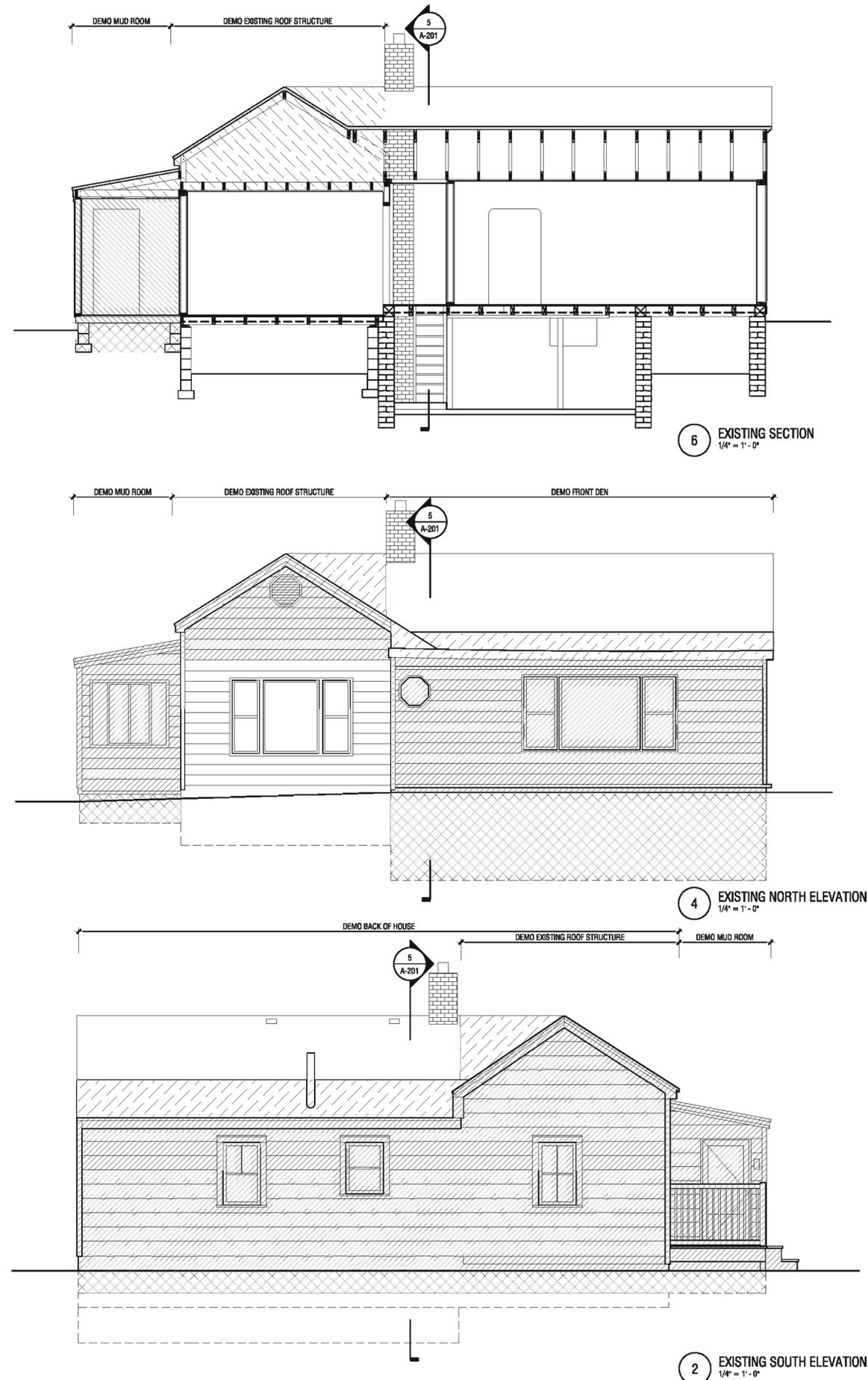
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FIRST FLOOR DEMO PLAN

D-102

THESE DRAWINGS ARE FOR GENERAL REFERENCE ONLY - SEE DEMOLITION PLANS D-101 & D-102 FOR DETAILED EXTENTS OF DEMOLITION



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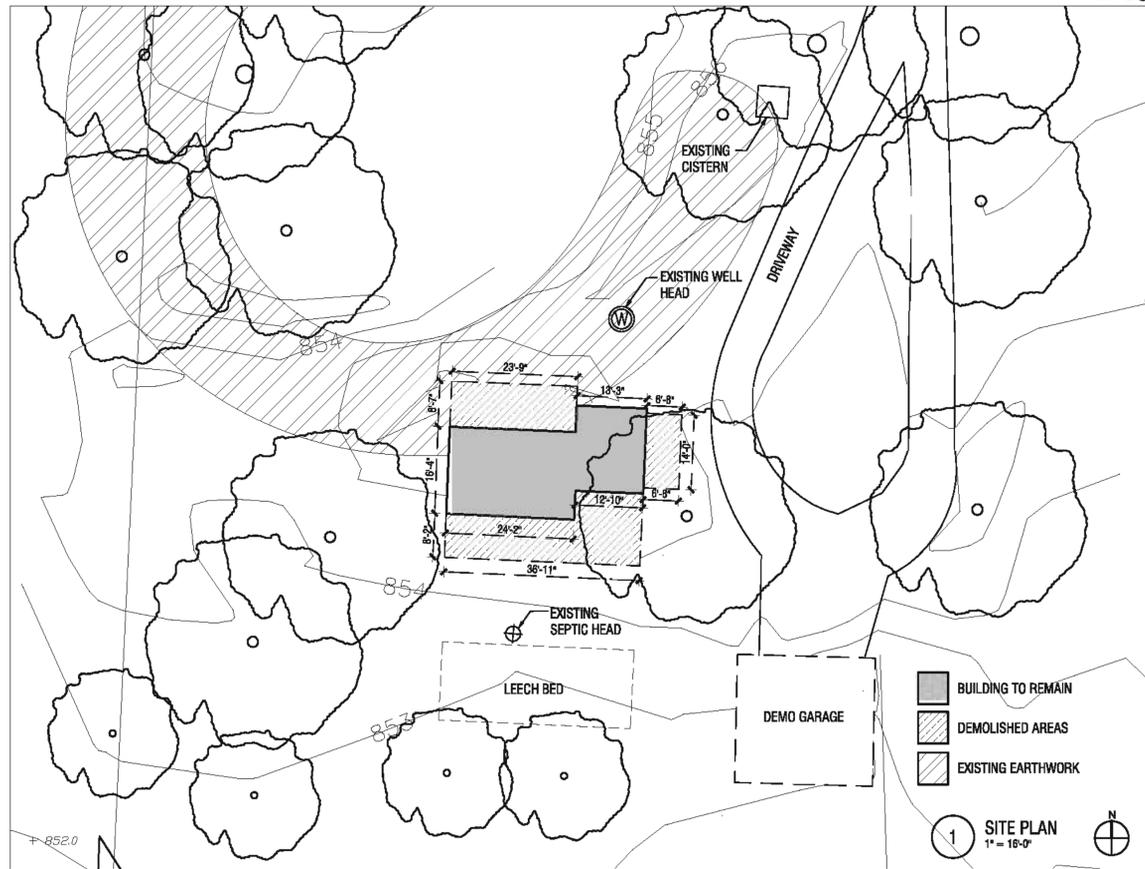
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LEGEND



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1 SITE PLAN
1" = 60'-0"

1 SITE PLAN
1" = 18'-0"

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WSA STUDIO

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City of Dublin

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Consulting Engineers

HOLDER-WRIGHT HOUSE

4729 BRIGHT ROAD, DUBLIN, OH 43016

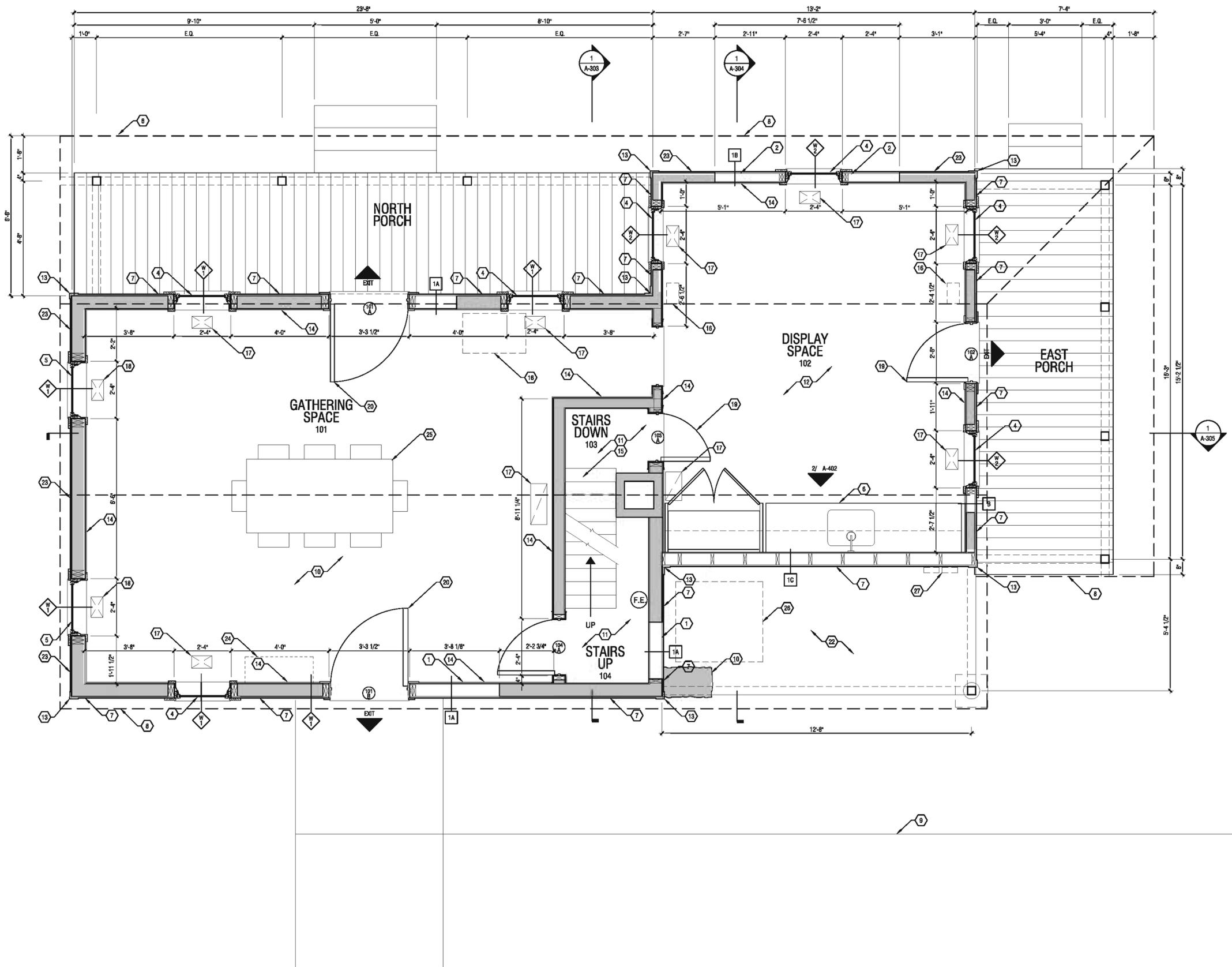
STATE OF OHIO
REGISTERED ARCHITECT
TIMOTHY C. HAWK
11244
TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

DATE PLOTTED: 06.17.2013
PROJECT NUMBER: 201205.00

DRAWN BY: CHECKED:

SITE PLAN
A-100

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1 1ST FLOOR PLAN
1/2" = 1' - 0"



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- ### CODED NOTES
- INRILL EXISTING DOOR FRAME
 - INRILL EXISTING WINDOW FRAME
 - NEW DOOR FRAME IN EXISTING ARCH; RAISE HEADER FOR NEW DOOR
 - NEW WINDOW
 - REPLACE EXISTING WINDOW IN EXISTING FRAME
 - NEW KITCHENETTE; SEE A-402 FOR DETAILS
 - 1/2" OSB WALL SHEATHING W/ 4MIL VAPOR BARRIER & 5 1/4" HARDIE PLANK WITH 3" LAT
 - ROOF LINE ABOVE
 - 4" CONCRETE SLAB ON GRADE; ADA ACCESSIBLE SIDEWALK; 1:20 MAX SLOPE; COORDINATE LOCATION IN FIELD WITH LANDSCAPE ARCHITECT
 - EXISTING LIMESTONE FOUNDATION WALL TO REMAIN
 - REFINISH EXISTING WOOD FLOOR THROUGHOUT
 - LAY NEW UNFINISHED WOOD FLOOR THROUGHOUT; STAIN TO MATCH EXISTING WOOD FLOORING IN GATHERING SPACE, ROOM 101
 - NEW 1X4 HARDIE TRIM
 - NEW 3" WOOD TRIM THROUGHOUT; PROFILE SAME AS EXISTING OR SIMILAR; COORDINATE PROFILE WITH ARCHITECT
 - REINFORCE STAIRS IF NEEDED
 - INRILL EXISTING HVAC OPENINGS; MATCH EXISTING FLOORING AT GATHERING SPACE
 - NEW HVAC OPENING; CENTERED ON WINDOW/WALL
 - REUSE EXISTING HVAC OPENING
 - NEW DOOR IN EXISTING DOOR FRAME
 - NEW DOOR & NEW DOOR FRAMING
 - 4" SLAB ON GRADE
 - NEW 1/4" HARDIE PLANK WITH 3" LAT; REPLACE AND/OR PATCH & REPAIR EXISTING SHEATHING AS NEEDED
 - CONTRACTOR TO PHOTOGRAPH FLOORING OF POTENTIAL HEARTH AREA; CONTACT ARCHITECT TO DETERMINE COURSE OF ACTION
 - PERIOD TABLE AND CHAIRS PROVIDED BY OWNER
 - NEW H.V.A.C. UNIT
 - NEW ELECTRIC SERVICE
 - 4x4 POST; SEE A-403

- ### LEGEND
- NEW WALL
 - EXISTING WALL TO REMAIN
 - EXISTING LIMESTONE WALL TO REMAIN
 - NEW DOOR
 - EXISTING DOOR

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HOLDER-WRIGHT HOUSE

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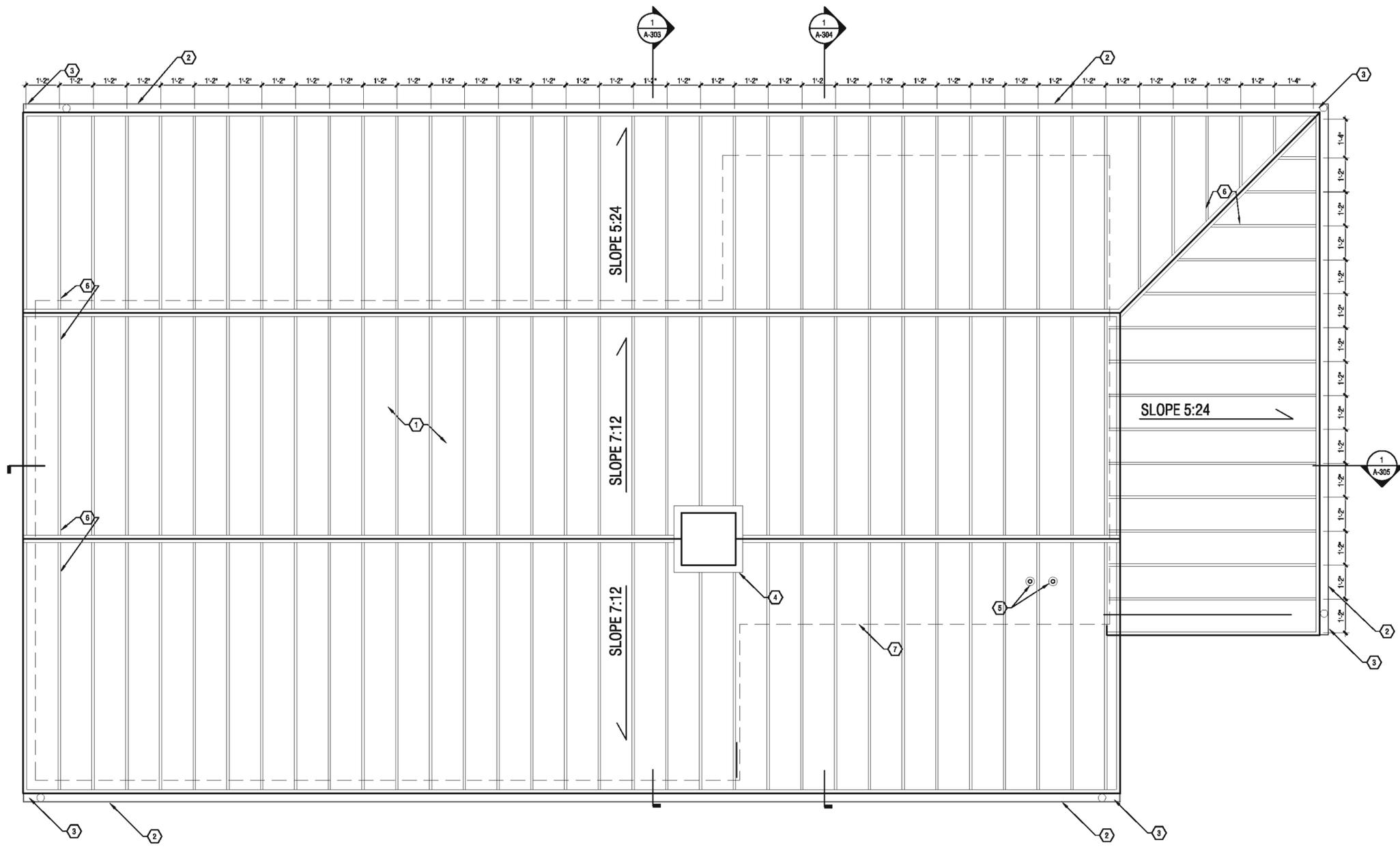
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FIRST FLOOR PLAN
A-102

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STUDIO 147022828 Holder-Wright House Project/PROJECT/CLIENT/OWNER/DATE/TO/DATE/NO



1 ROOF PLAN
1/2" = 1'-0"



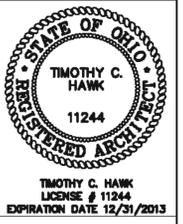
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CODED NOTES

- 1 NEW STANDING SEAM METAL ROOF @ 14" O.C., TYP.
- 2 NEW GALVANIZED STEEL GUTTERS, SECURED EVERY 2'-0" MIN.
- 3 NEW GALVANIZED DOWNSPOUTS, REFERENCE ELEVATIONS FOR LOCATION
- 4 STEP FLASH & TUCK POINT EXISTING CHIMNEY
- 5 FLASH PLUMBING PENETRATIONS
- 6 ALIGN SEAMS
- 7 BUILDING EXTENTS BELOW

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016

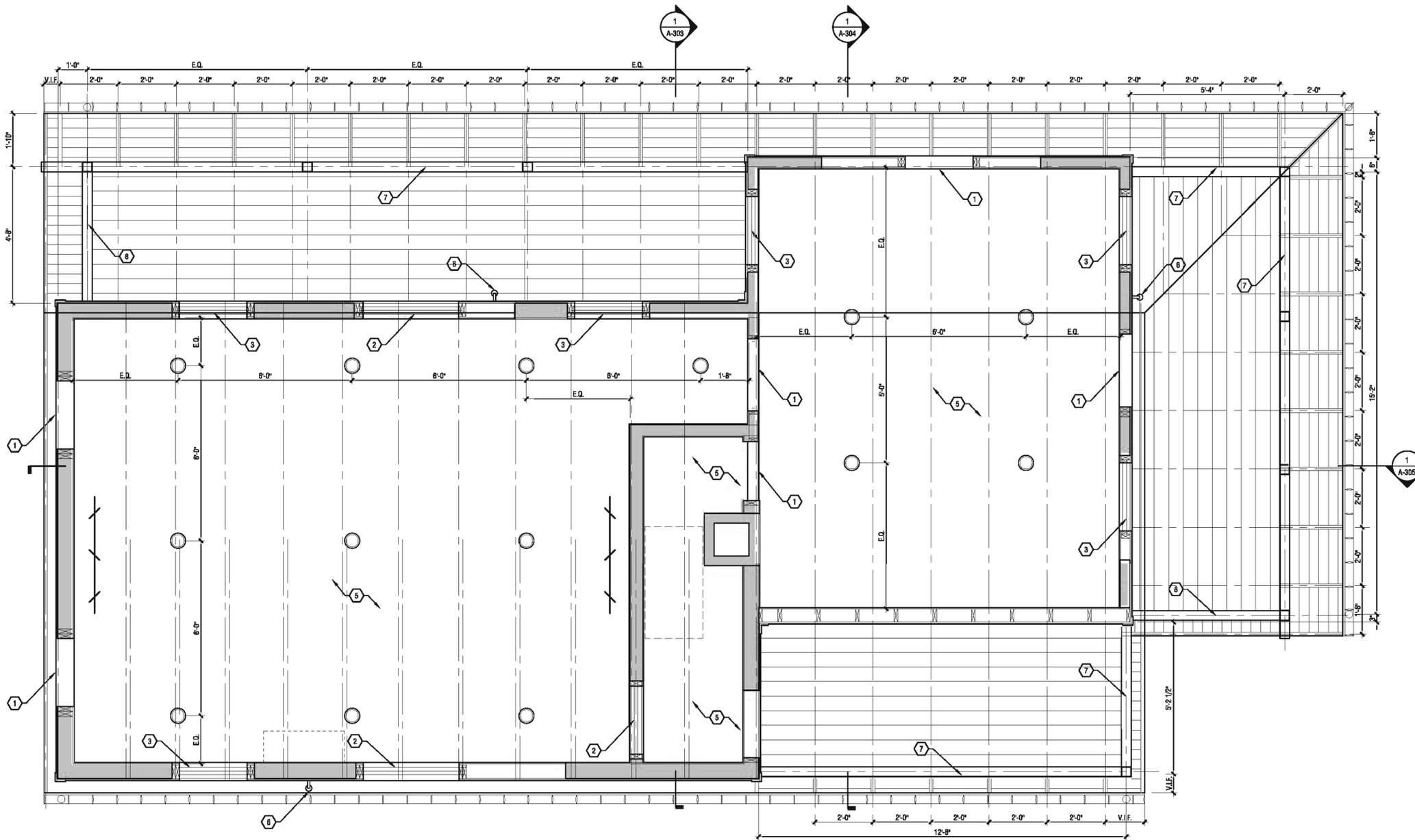


Issue Date: 06.17.2010
Project Number: 201285.00

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5/12/2013 14:30:28:38 Holder-Wright House Project: DIMENSIONS: A-201 - PLAN-04



1 1ST FLOOR REFLECTED CEILING PLAN
1/2" = 1'-0"



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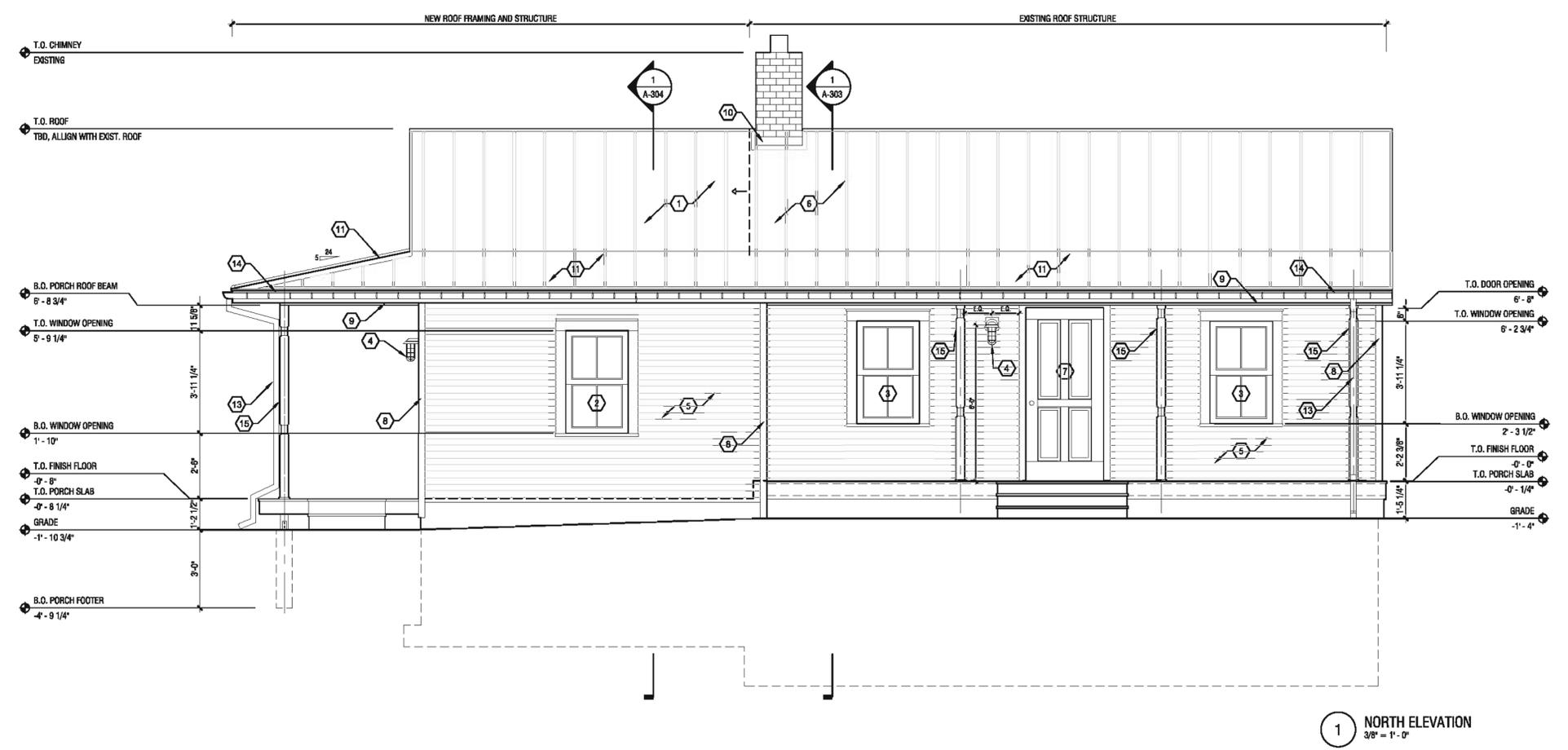
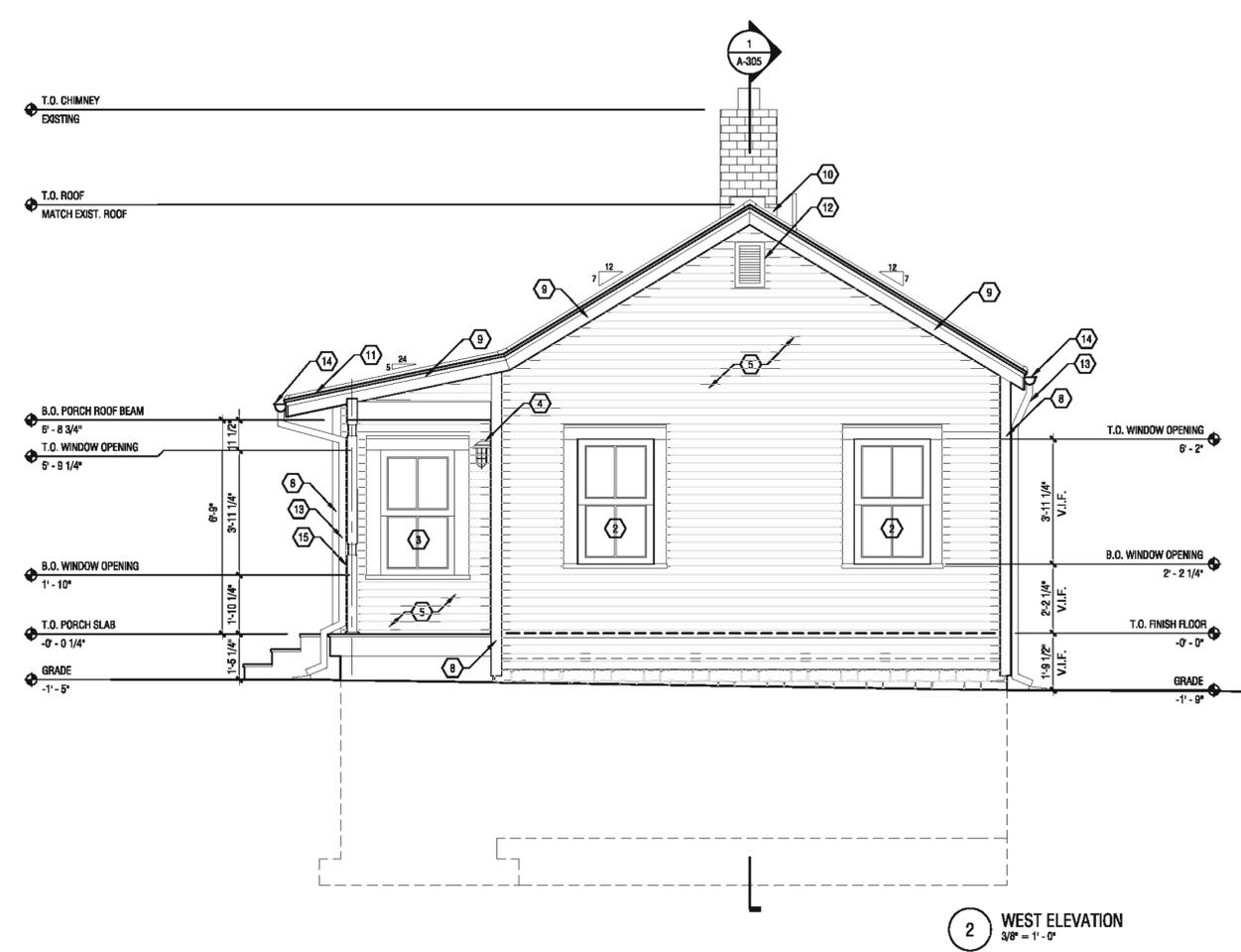
CODED NOTES

- 1 EXISTING HEADER TO REMAIN
- 2 NEW (3) 2x6 HEADER
- 3 NEW (2) 2x6 HEADER
- 4 RAISE EXISTING HEADER TO
- 5 PATCH AND REPAIR EXISTING LATH & PLASTER CEILING AS NEEDED
- 6 NEW EXTERIOR LIGHT; USE MODEL 10HW106 FROM BARN LIGHTING CO. FINISH: ST-ARCHITECTURAL BRONZE, GLASS: AMBER HYDE, OR EQUIVALENT
- 7 4x6 STRUCTURAL BEAM; SEE STRUCTURAL DRAWINGS
- 8 4x6 DECORATIVE BEAM

LEGEND

- 4" CAN LIGHT
- EXTERIOR LIGHT
- TRACK LIGHTING

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 - BOLTING OF WOOD TO STRUCTURAL MEMBERS OR MASONRY SHALL BE IN GENERAL WITH A MIN. OF 1/2" DIA. BOLTS @ 4" O.C. EXCEPT WHERE SHOWN OTHERWISE. SITUATIONS REQUIRING SPECIAL BOLTING SHALL BE WITH THE SIZE AND SPACING OF BOLTS TO SUIT THE CONDITIONS.
 - PROVIDE LINTELS OVER ALL OPENINGS INCLUDING THOSE REQUIRED FOR DUCTWORK, PIPES, LOUVERS, GRILLS, DAMPERS, ETC. FILL ANY MASONRY VOIDS WHERE ANCHORS OCCUR.

- ### CODED NOTES
- NEW GABLED ROOF STRUCTURE & NEW STANDING SEAM METAL ROOF @ 14" O.C.
 - NEW WINDOW
 - NEW WINDOW & OPENING
 - NEW EXTERIOR LIGHT; USE MODEL 10HW108 FROM BARN LIGHTING CO. FINISH: S1-ARCHITECTURAL BRONZE; GLASS: AMBER HYDE; OR EQUIVALENT.
 - NEW 5/4" HARDY PLANK WITH 3" LAT
 - NEW STANDING SEAM METAL ROOF @ 14" O.C. OVER EXISTING STRUCTURE; PATCH AND REPAIR SHEATHING AS NEEDED
 - NEW DOOR AND OPENING
 - NEW 1x4 HARDIE TRIM
 - NEW 1x6 HARDIE TRIM FASCIA; PAINTED
 - STEP FLASH & TUCK POINT EXISTING CHIMNEY
 - NEW STANDING SEAM SHED ROOF
 - NEW 14" x 8" ROOF VENT
 - NEW GALVANIZED STEEL DOWNSPOUT
 - NEW GALVANIZED STEEL GUTTER; SECURED EVERY 2'-0" MIN.
 - NEW 4x4 TURNED POST; SEE A-403

WSA STUDIO
 982 S. FRONT STREET
 COLUMBUS, OHIO 43206
 614.824.1633
 www.WSASTUDIO.com

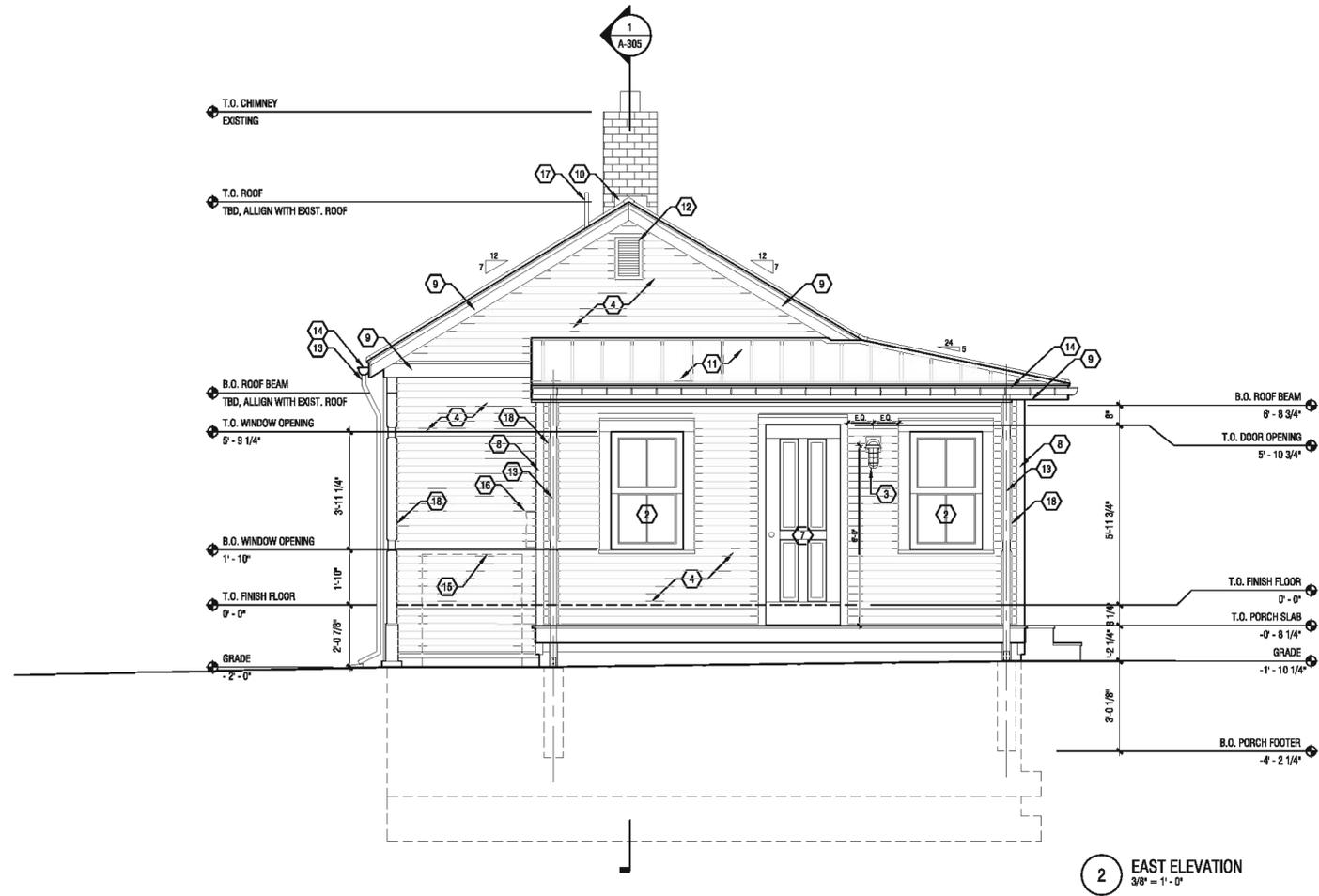
 Point One Design, Ltd.
 Consulting Engineers

HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016

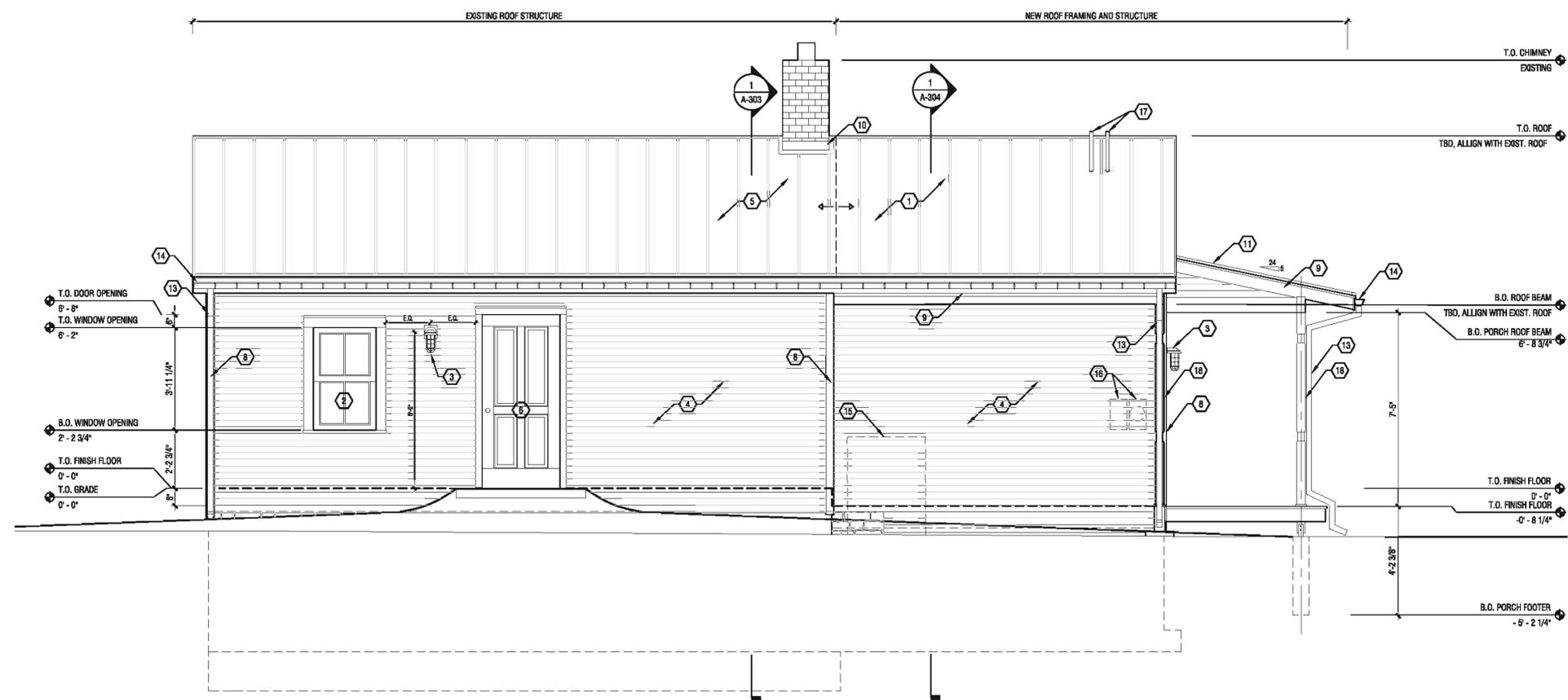
STATE OF OHIO
 REGISTERED ARCHITECT
TIMOTHY C. HAWK
 11244
 TIMOTHY C. HAWK
 LICENSE # 11244
 EXPIRATION DATE 12/31/2013

Date/Print: 06.17.2019
 Project Number: 201285.00
 DRAWN BY: CHECKED:
 ELEVATIONS
A-301

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2 EAST ELEVATION
3/8" = 1'-0"



1 SOUTH ELEVATION
3/8" = 1'-0"

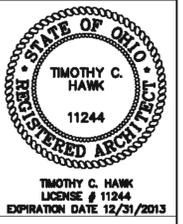
GENERAL NOTES

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5. ALL INTERIOR DOOR OPENINGS SHALL BE LOCATED 4" FROM ADJACENT WALL U.N.O.
6. ALL WALLS TO BE TYPE 1A UNLESS OTHERWISE NOTED.
7. COORDINATE LOCATIONS AND/OR ELEVATIONS OF FLOOR DRAINS, REGISTERS, GRILLS, LOUVERS, CONNECTORS, CABINET UNIT HEATERS, PANELS, ETC. WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
8. BOLTING OF WOOD TO STRUCTURAL MEMBERS OR MASONRY SHALL BE IN GENERAL WITH A MIN. OF 1/2" DIA. BOLTS @ 4'-0" O.C. EXCEPT WHERE SHOWN OTHERWISE. SITUATIONS REQUIRING SPECIAL BOLTING SHALL BE WITH THE SIZE AND SPACING OF BOLTS TO SUIT THE CONDITIONS.
9. PROVIDE LINTELS OVER ALL OPENINGS INCLUDING THOSE REQUIRED FOR DUCTWORK, PIPES, LOUVERS, GRILLS, DAMPERS, ETC.
10. FILL ANY MASONRY VOIDS WHERE ANCHORS OCCUR.

CODED NOTES

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- 2 NEW WINDOW & OPENING
- 3 NEW EXTERIOR LIGHT; USE MODEL 10HW1CG FROM BARN LIGHTING CO. FINISH: 61-ARCHITECTURAL BRONZE; GLASS: AMBER HYDE, OR EQUIVALENT.
- 4 NEW 5 1/4" HARDY PLANK WITH 9" LAT
- 5 NEW STANDING SEAM METAL ROOF @ 14" O.C. OVER EXISTING STRUCTURE; PATCH AND REPAIR SHEATHING AS NEEDED
- 6 NEW DOOR AND OPENING
- 7 NEW DOOR; REUSE EXISTING OPENING
- 8 NEW 1x4 HARDIE TRIM
- 9 NEW 1x6 HARDIE TRIM FASCIA
- 10 STEP FLASH & TUCK POINT EXISTING CHIMNEY
- 11 NEW STANDING SEAM SHED ROOF
- 12 NEW 14" x 8" ROOF VENT
- 13 NEW GALVANIZED STEEL DOWNSPOUT
- 14 NEW GALVANIZED STEEL GUTTER; SECURED EVERY 2' - 0" MIN.
- 15 NEW ACU LOCATION; SEE MECHANICAL SHEET M2
- 16 NEW ELECTRIC BOX LOCATION; SEE ELECTRICAL SHEET E2
- 17 PLUMBING STACK AND FLASHING BOOT; SEE PLUMBING SHEET P2
- 18 NEW 4x4 TURNED POST; SEE A-403

HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016

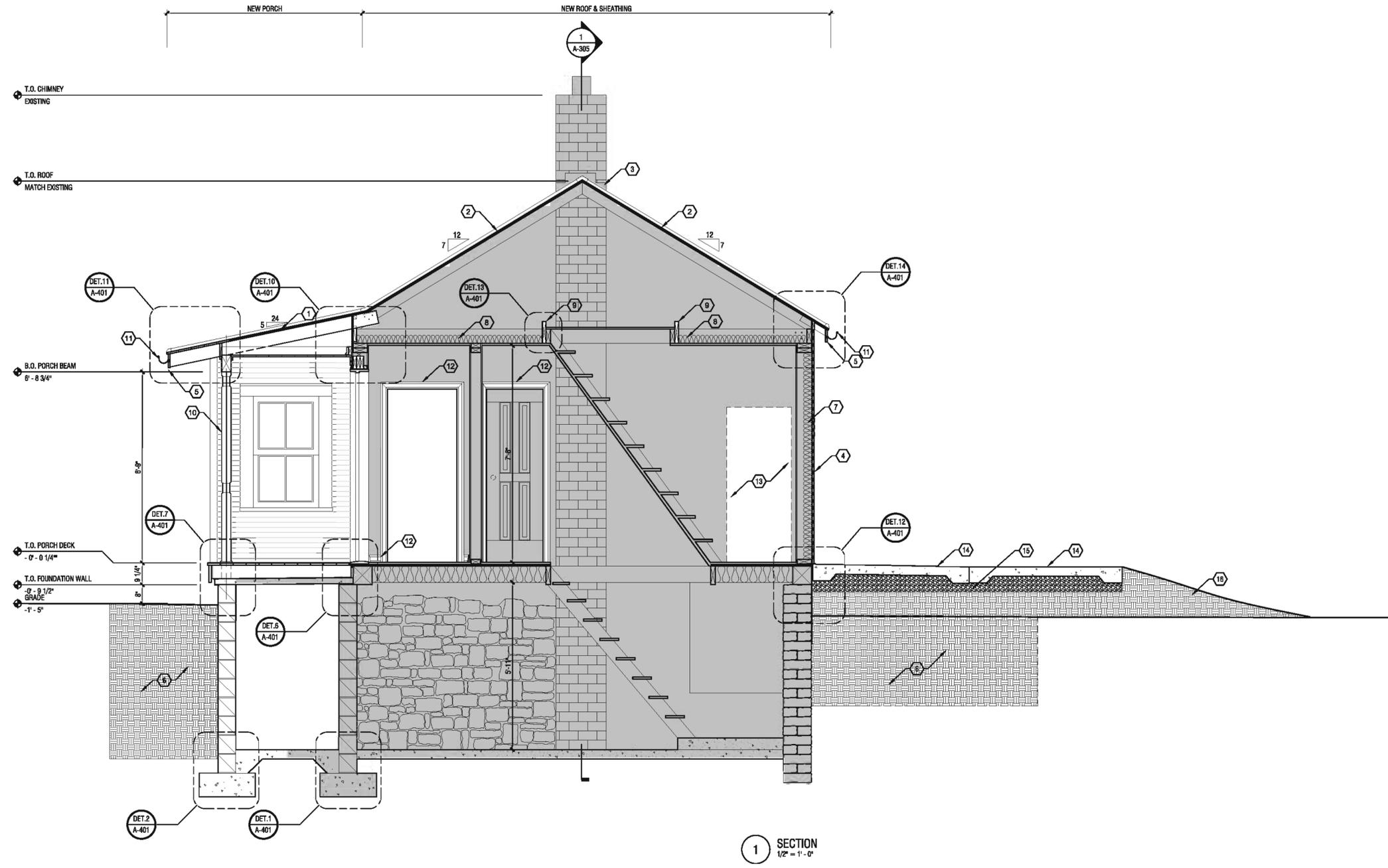


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Project Number 201205.00

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ELEVATIONS
A-302

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1 SECTION
1/2" = 1'-0"

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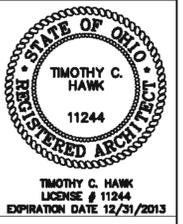
CODED NOTES

- 1 NEW SHED ROOF STRUCTURE & NEW STANDING SEAM METAL ROOF @ 14" O.C.
- 2 NEW STANDING SEAM METAL ROOF @ 14" O.C. OVER EXISTING STRUCTURE; PATCH AND REPAIR SHEATHING AS NEEDED
- 3 STEP FLASH & TUCK POINT EXISTING CHIMNEY
- 4 NEW 5/4" HARDY PLANK WITH 3" LAT
- 5 NEW 1x6 HARDIE TRIM FASCIA; PAINTED
- 6 BACKFILL CRAWLSPACE
- 7 WHEREVER STUDS ARE EXPOSED PLACE R-19 BATT INSULATION; FOR ALL OTHER WALLS BLOW IN R-19 INSULATION FROM THE EXTERIOR TO THE GREATEST EXTENT POSSIBLE
- 8 REMOVE EXISTING INSULATING MATERIAL & REPLACE WITH R-50 BLOWN IN INSULATION
- 9 BOX OUT EXISTING ATTIC OPENING; SEE A-402/13
- 10 NEW 4x4 TURNED POST; SEE A-403
- 11 NEW GALVANIZED STEEL GUTTER; SECURED EVERY 2' - 0" MIN.
- 12 NEW 3" WOOD TRIM; PAINTED
- 13 INFILL EXISTING DOORWAY; WALL TYPE 1A
- 14 4" CONCRETE SLAB ON GRADE; ADA ACCESSIBLE SIDEWALK; 1:20 MAX SLOPE; COORDINATE LOCATION IN FIELD WITH LANDSCAPE ARCHITECT
- 15 GRAVEL BED
- 16 NEW EARTHEN GRADING FROM EXISTING GRADE TO T.O. FINISH FLOOR; COORDINATE LOCATION IN FIELD WITH LANDSCAPE ARCHITECT

LEGEND



HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016



Date/Print: 06.17.2019
 Project Number: 201285.00

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SECTION C
A-303

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GENERAL NOTES

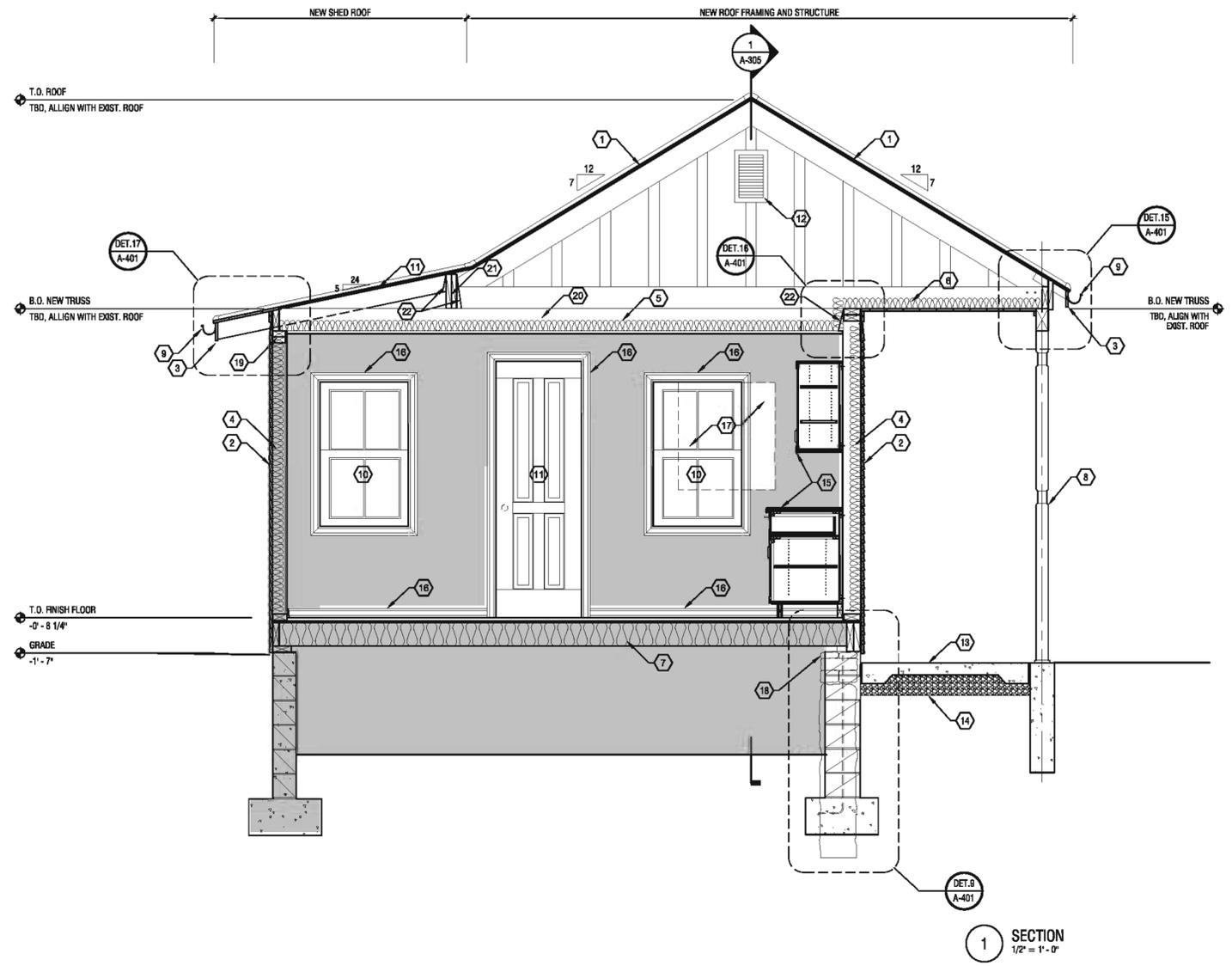
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CODED NOTES

- NEW GABLED ROOF STRUCTURE & NEW STANDING SEAM METAL ROOF @ 14" O.C.
- NEW 5 1/4" HARDY PLANK WITH 3" LAT
- NEW 1x6 HARDIE TRIM FASCU, PAINTED
- WHEREVER STUDS ARE EXPOSED PLACE R-19 BATT INSULATION; FOR ALL OTHER WALLS BLOW IN R-19 INSULATION FROM THE EXTERIOR TO THE GREATEST EXTENT POSSIBLE.
- REMOVE EXISTING INSULATING MATERIAL & REPLACE WITH R-50 BLOWN IN INSULATION
- NEW R-50 BLOWN IN INSULATION
- PROVIDE R-15 BATT INSULATION BETWEEN EXISTING FLOOR JOISTS
- NEW 4x4 TURNED POST; SEE A-403
- NEW GALVANIZED STEEL GLITTER; SECURED EVERY 2' - 0" MIN.
- NEW WINDOW & OPENING
- NEW DOOR; RE-USE EXISTING OPENING
- NEW 14" x 8" ROOF VENT
- 4" SLAB ON GRADE
- GRAVEL BED
- NEW BASE AND OVERHEAD CABINETS; SEE ELEVATION 2/A-402
- NEW 3" WOOD TRIM; PAINTED
- INFILL EXISTING WINDOW OPENING
- DRY STACK SITE FOUND LIMESTONE; SEE 9/A-401
- NEW TOP PLATE
- NEW 2x8 CEILING JOISTS
- NEW LVL; SEE STRUCTURAL DRAWINGS
- SIMPSON HANGER; TYP.

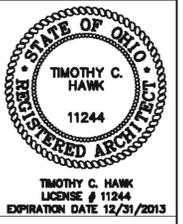
LEGEND

EXISTING STRUCTURE



1 SECTION
 1/2" = 1'-0"

HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016

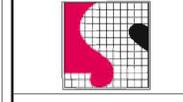


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A-304

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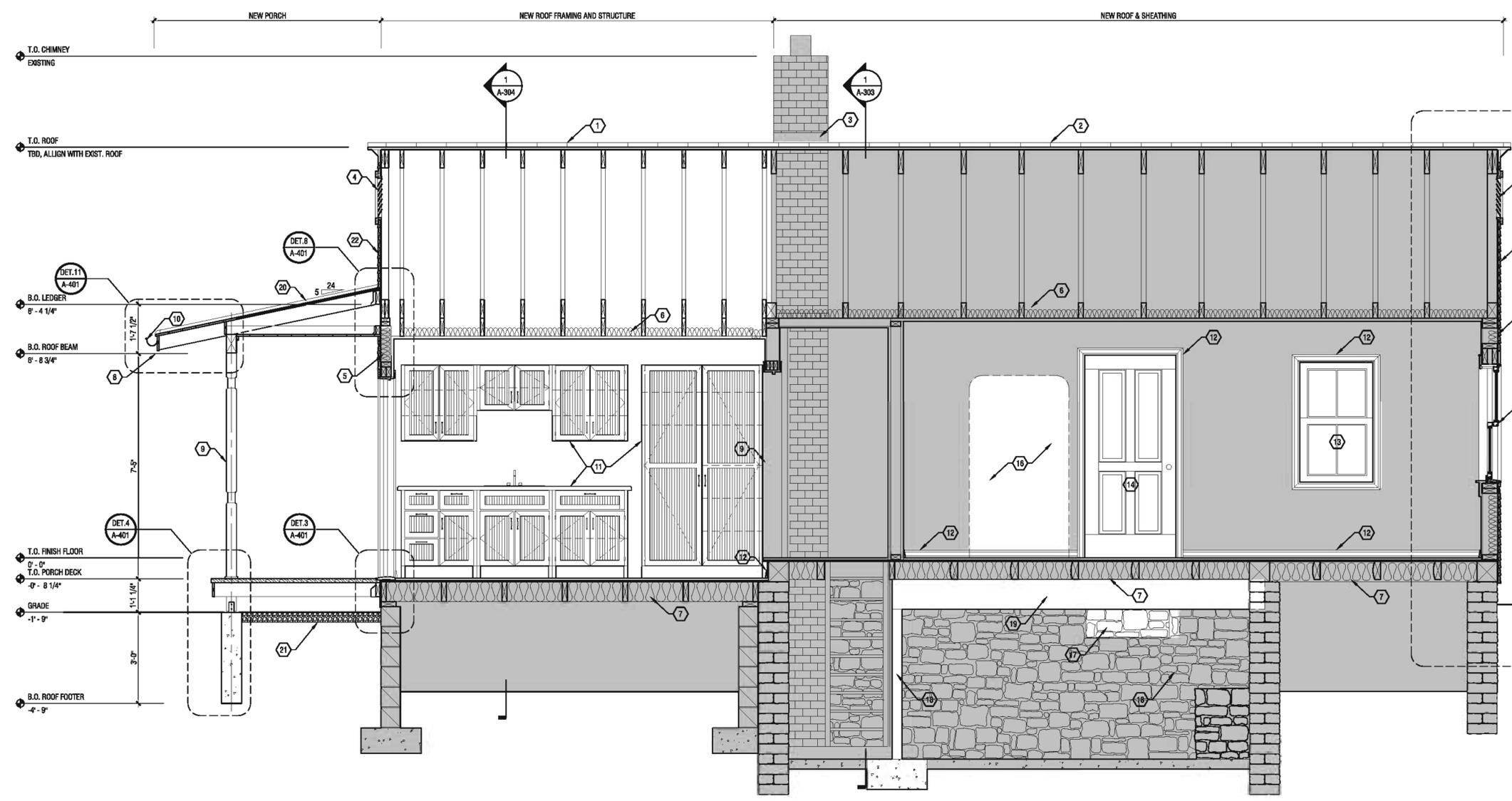
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CODED NOTES

- NEW GABLED ROOF STRUCTURE & NEW STANDING SEAM METAL ROOF @ 14" O.C.
- NEW STANDING SEAM METAL ROOF @ 14" O.C. OVER EXISTING STRUCTURE; PATCH AND REPAIR SHEATHING AS NEEDED
- STEP FLASH & TUCK POINT EXISTING CHIMNEY
- NEW 14" x 8" ROOF VENT
- WHEREVER STUDS ARE EXPOSED PLACE R-19 BATT INSULATION; FOR ALL OTHER WALLS BLOW IN R-19 INSULATION FROM THE EXTERIOR TO THE GREATEST EXTENT POSSIBLE
- REMOVE EXISTING INSULATING MATERIAL & REPLACE WITH R-50 BLOWN IN INSULATION
- PROVIDE R-15 BATT INSULATION BETWEEN EXISTING FLOOR JOISTS
- NEW 1x6 HARDIE TRIM FASCIA; PAINTED
- NEW 4x4 TURNED POST; SEE A-403
- NEW GALVANIZED STEEL GUTTER; SECURED EVERY 2' - 0" MIN.
- NEW BASE AND OVERHEAD CABINETS; SEE ELEVATION A-402/2
- NEW 3" WOOD TRIM; PAINTED
- NEW WINDOW & OPENING
- NEW DOOR & OPENING
- NEW WINDOW; RE-USE EXISTING OPENING
- INFILL EXISTING ARCHWAY
- INFILL EXTERIOR LIMESTONE FOUNDATION WALL GAPS W/ DRY STACKED SITE FOUND LIMESTONE TO THE GREATEST EXTENT POSSIBLE; CONTRACTOR SHALL PHOTO DOCUMENT BEFORE AND AFTER CONDITIONS; IF ADDITIONAL STONE IS NEEDED, NATURAL LIMESTONE OF A COMPLIMENTARY BUT VISUALLY DIFFERENT COLOR SHALL BE USED; ALTERNATELY, CONTRACTOR CAN PHOTO DOCUMENT NEW VS. SITE FOUND LIMESTONE.
- NEW STEEL POSTS AND FOOTERS; SEE STRUCTURAL DRAWINGS FOR DETAILS
- NEW LVL BEAM; SEE STRUCTURAL DRAWINGS FOR DETAILS
- NEW STANDING SEAM SHED ROOF
- NEW GRAVEL BED UNDER NEW PORCH STRUCTURE
- NEW 5 1/4" HARDY PLANK WITH 3" LAT

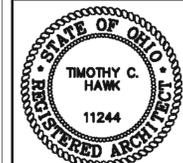
LEGEND

EXISTING STRUCTURE



1 SECTION
 1/2" = 1'-0"

HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016



TIMOTHY C. HAWK
 LICENSE # 11244
 EXPIRATION DATE 12/31/2013

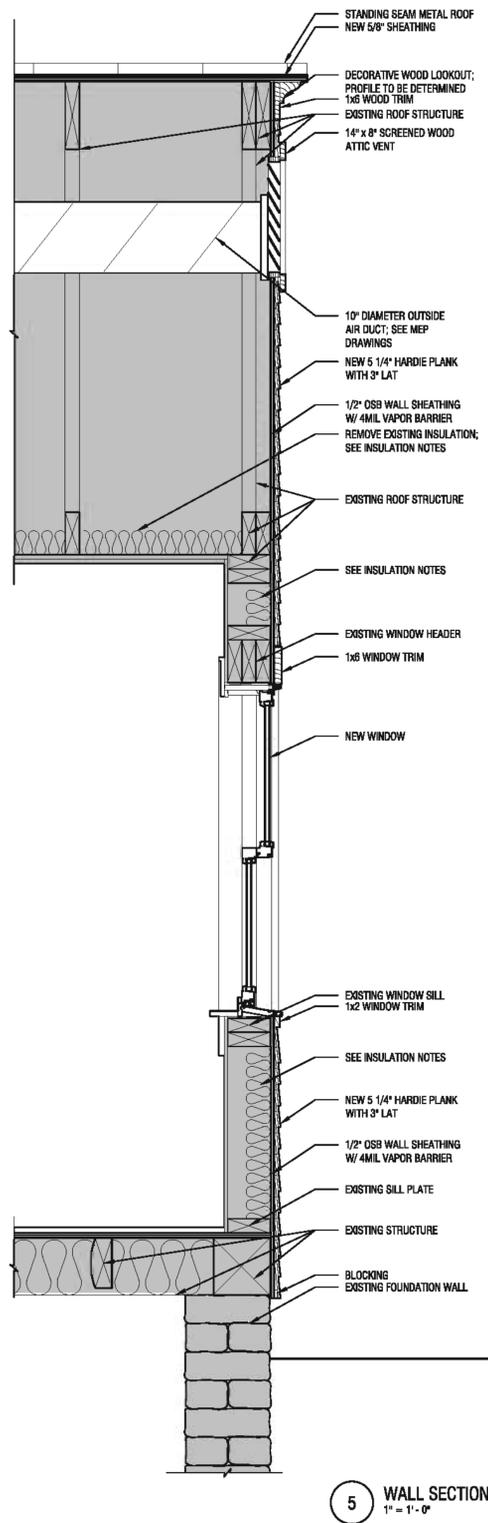
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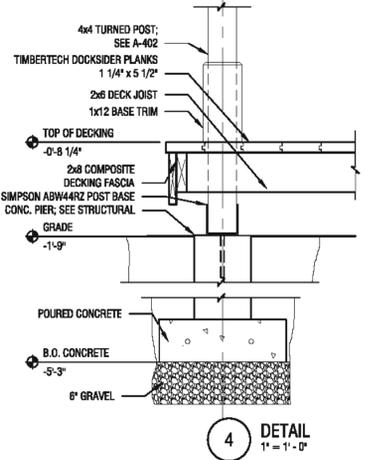
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A-305

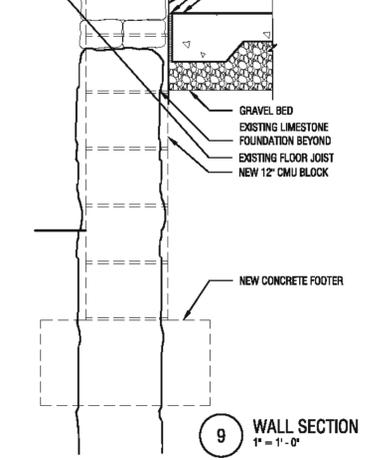
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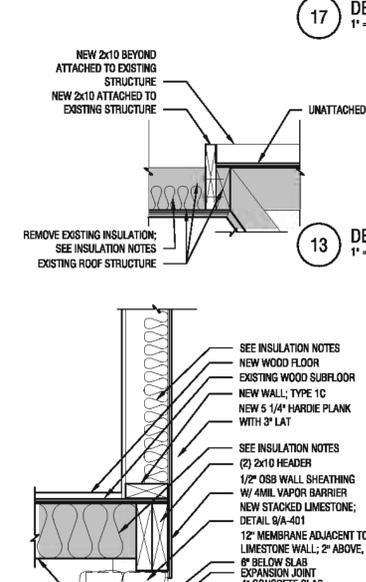
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1" = 1'-0"



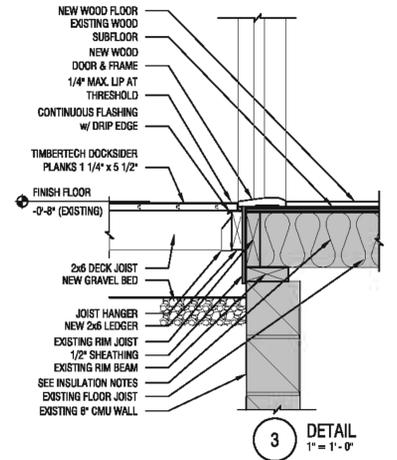
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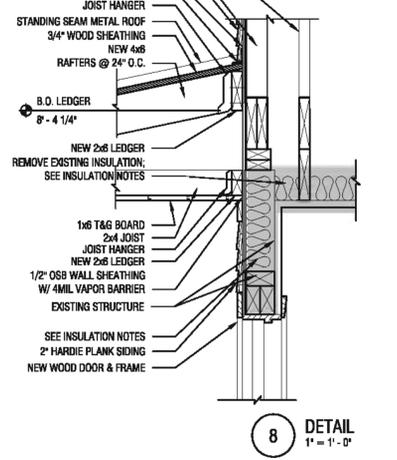
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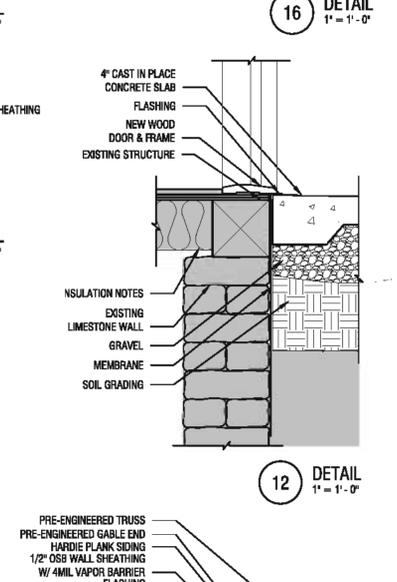
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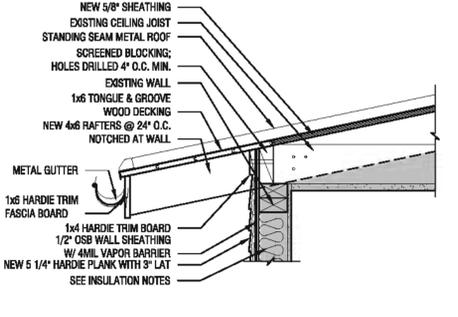
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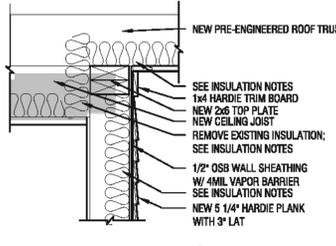
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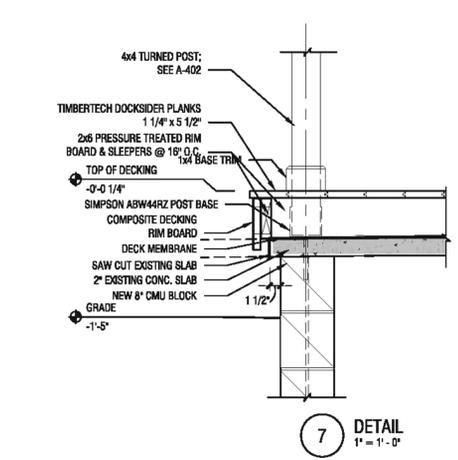
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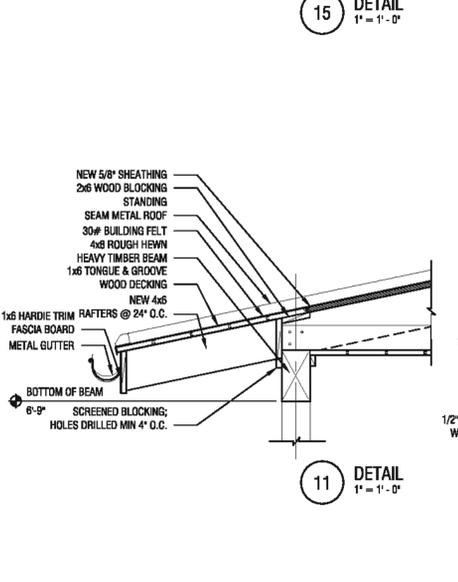
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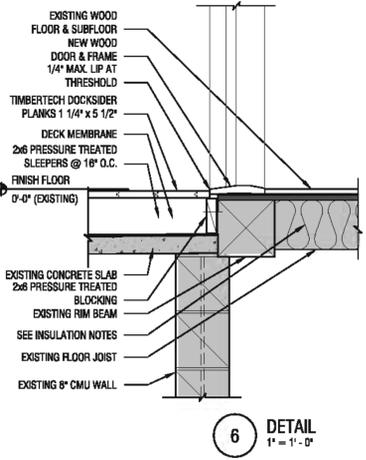
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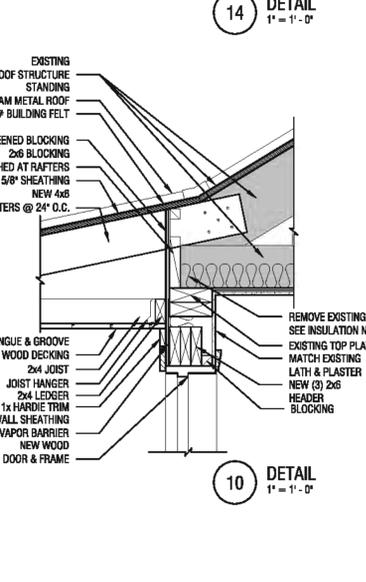
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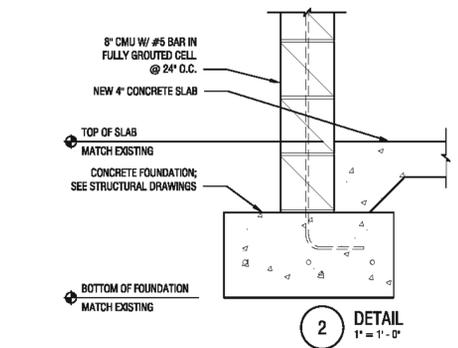
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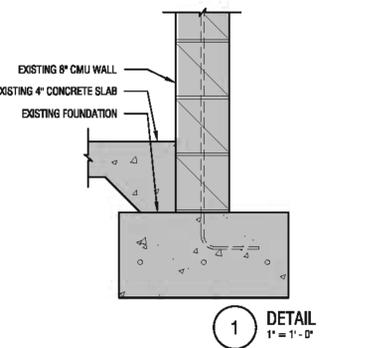
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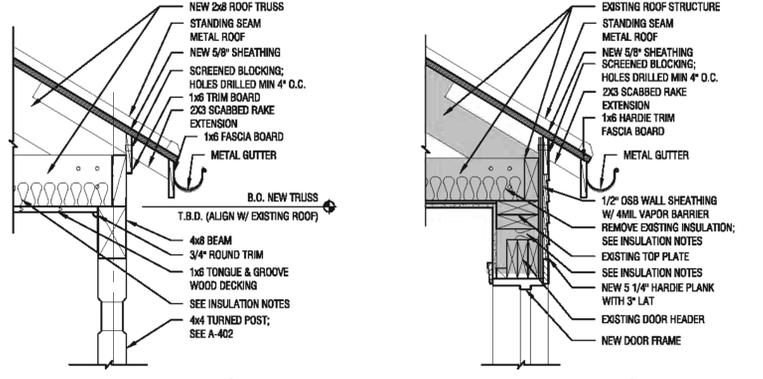
10 DETAIL
1" = 1'-0"



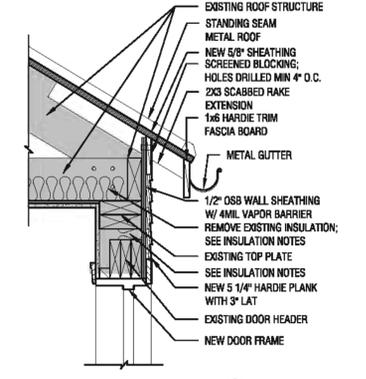
2 DETAIL
1" = 1'-0"



1 DETAIL
1" = 1'-0"



15 DETAIL
1" = 1'-0"



14 DETAIL
1" = 1'-0"

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 - FILL ANY MASONRY VOIDS WHERE ANCHORS OCCUR.

- ### INSULATION GENERAL NOTES
- FOR ALL WALLS; WHEREVER STUDS ARE EXPOSED PLACE R-19 BATT INSULATION; FOR ALL OTHER WALLS BLOW IN R-19 INSULATION FROM THE EXTERIOR TO THE GREATEST EXTENT POSSIBLE.
 - FOR THE ROOF: REMOVE EXISTING INSULATING MATERIAL & REPLACE WITH R-50 BLOW IN INSULATION.
 - FOR THE BASEMENT: PROVIDE R-16 BATT INSULATION.

WSA STUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com

City of Dublin

Point One Design, Ltd.
Consulting Engineers

HOLDER-WRIGHT HOUSE

4729 BRIGHT ROAD, DUBLIN, OH 43016

STATE OF OHIO
REGISTERED ARCHITECT
TIMOTHY C. HAWK
11244
TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

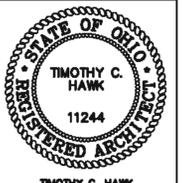
Drawn By: _____ Checked: _____

BUILDING DETAILS

A-401

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HOLDER-WRIGHT HOUSE
 4729 BRIGHT ROAD, DUBLIN, OH 43016


TIMOTHY C. HAWK
 LICENSE # 11244
 EXPIRATION DATE 12/31/2013

GENERAL NOTES

- THIS DRAWING IS INTENDED TO BE USED IN CONJUNCTION WITH ALL OTHER PROVIDED DRAWINGS AND DOCUMENTS FOR THIS PROJECT.
- CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS PRIOR TO BEGINNING DEMOLITION AND REPORT ANY DISCREPANCIES WITH THE DRAWINGS AND/OR SPECIFICATIONS TO THE ARCHITECT.
- ALL DIMENSIONS MUST BE VERIFIED ON THE JOB AND THE ARCHITECT MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS.
- DIMENSIONS ARE WITNESSED TO FACE OF STUD UNLESS OTHERWISE NOTED.
- ALL INTERIOR DOOR OPENINGS SHALL BE LOCATED 4" FROM ADJACENT WALL U.O.
- ALL WALLS TO BE TYPE 1A UNLESS OTHERWISE NOTED.
- COORDINATE LOCATIONS AND/OR ELEVATIONS OF FLOOR DRAINS, REGISTERS, GRILLS, LOUVERS, CONNECTORS, CABINET UNIT HEATERS, PANELS, ETC. WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
- BOLTING OF WOOD TO STRUCTURAL MEMBERS OR MASONRY SHALL BE IN GENERAL WITH A MIN. OF 1/2" DIA. BOLTS @ 4'-0" O.C. EXCEPT WHERE SHOWN OTHERWISE. SITUATIONS REQUIRING SPECIAL BOLTING SHALL BE WITH THE SIZE AND SPACING OF BOLTS TO SUIT THE CONDITIONS.
- PROVIDE LINTELS OVER ALL OPENINGS INCLUDING THOSE REQUIRED FOR DUCTWORK, PIPES, LOUVERS, GRILLS, DAMPERS, ETC.
- FILL ANY MASONRY VOIDS WHERE ANCHORS OCCUR.

WINDOW SCHEDULE

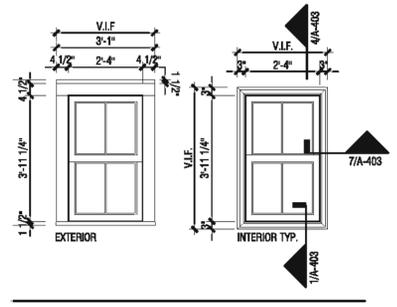
WINDOW			DETAILS				MISC.
NO.	SIZE	TYPE	ELEV.	JAMB DEPTH	HEAD DETAIL	SILL DETAIL	JAMB DETAIL
W1	2'-4" x 3'-11 1/4"	WOOD	A	7 3/4"	4	1	5
W2	2'-4" x 3'-11 1/4"	WOOD	A	5"	4	1	5

ROOM FINISH SCHEDULE -

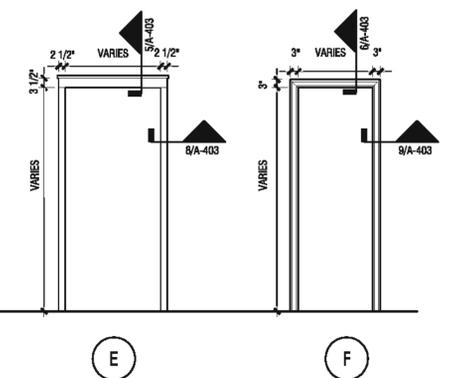
NO.	NAME	FLOOR	BASE	WALLS	CEILING	CLG. HT.	REMARKS
001	ORIGINAL BASEMENT	EXISTING	-	-	EXISTING	EXISTING	-
002	ROOM A	EXISTING	-	-	EXISTING	EXISTING	-
003	ROOM B	EXISTING	-	-	EXISTING	EXISTING	-
101	GATHERING SPACE	-	-	-	EXISTING	EXISTING	-
102	DISPLAY SPACE	-	-	-	EXISTING	EXISTING	-
103	STAIRS DOWN	-	-	-	EXISTING	EXISTING	-
104	STAIRS UP	-	-	-	EXISTING	EXISTING	-

DOOR SCHEDULE - ADA COMPLIANT LEVER TYPE HARDWARE

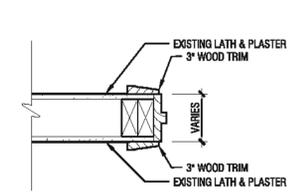
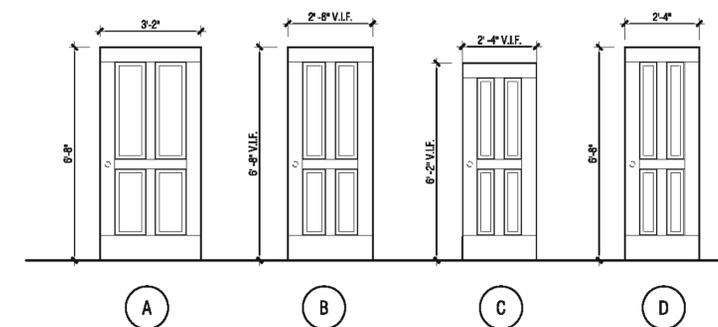
DOOR		FRAME		DETAIL		HDW.	MISC.				
NO.	SIZE	TYPE	ELEV.	JAMB DEPTH	FACE THK.	REAR/JAMB ELEV.	SET NO.				
101 A	3'-2" x 6'-8" x 2"	WOOD	A	-	WOOD	V.I.F.	2"	E/F	5/8"	-	EXTERIOR DOOR
101 B	3'-2" x 6'-8" x 2"	WOOD	A	-	WOOD	V.I.F.	2"	E/F	5/8"	-	EXTERIOR DOOR
102 A	2'-8" x 6'-8" x 2"	WOOD	B	-	WOOD	V.I.F.	2"	E/F	5/8"	-	EXTERIOR DOOR/EXISTING OPENING, V.I.F.
103 A	2'-4" x 6'-2" x 2"	WOOD	C	-	WOOD	V.I.F.	2"	F	3/8"	-	INTERIOR DOOR/EXISTING OPENING, V.I.F.
104 A	2'-4" x 6'-8" x 2"	WOOD	D	-	WOOD	V.I.F.	2"	F	3/8"	-	INTERIOR DOOR



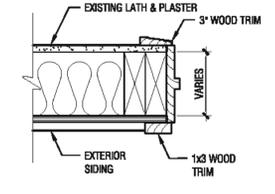
WINDOW ELEVATIONS
3/8" = 1'-0"



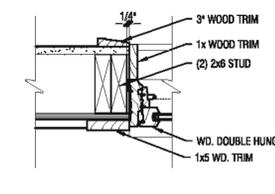
DOOR & FRAME ELEVATIONS
3/8" = 1'-0"



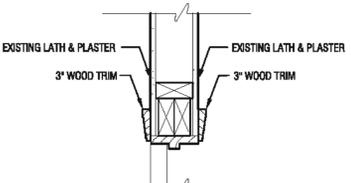
9 INTERIOR DOOR JAMB DETAIL
1 1/2" = 1'-0"



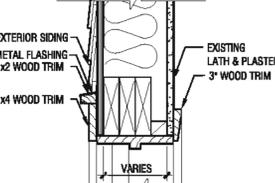
8 EXTERIOR DOOR JAMB DETAIL
1 1/2" = 1'-0"



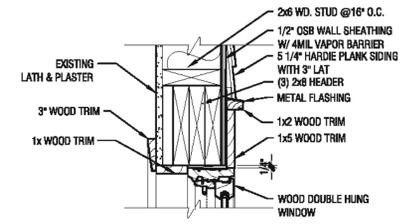
7 WINDOW JAMB DETAIL
1 1/2" = 1'-0"



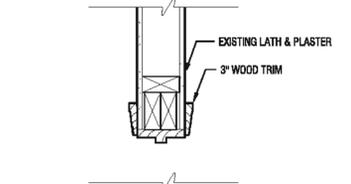
6 INTERIOR DOOR HEAD DETAIL
1 1/2" = 1'-0"



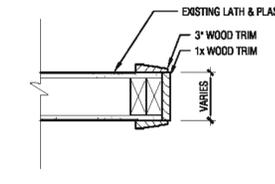
5 EXTERIOR DOOR HEAD DETAIL
1 1/2" = 1'-0"



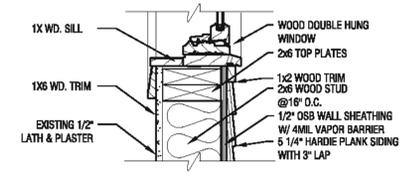
4 WINDOW HEAD DETAIL
1 1/2" = 1'-0"



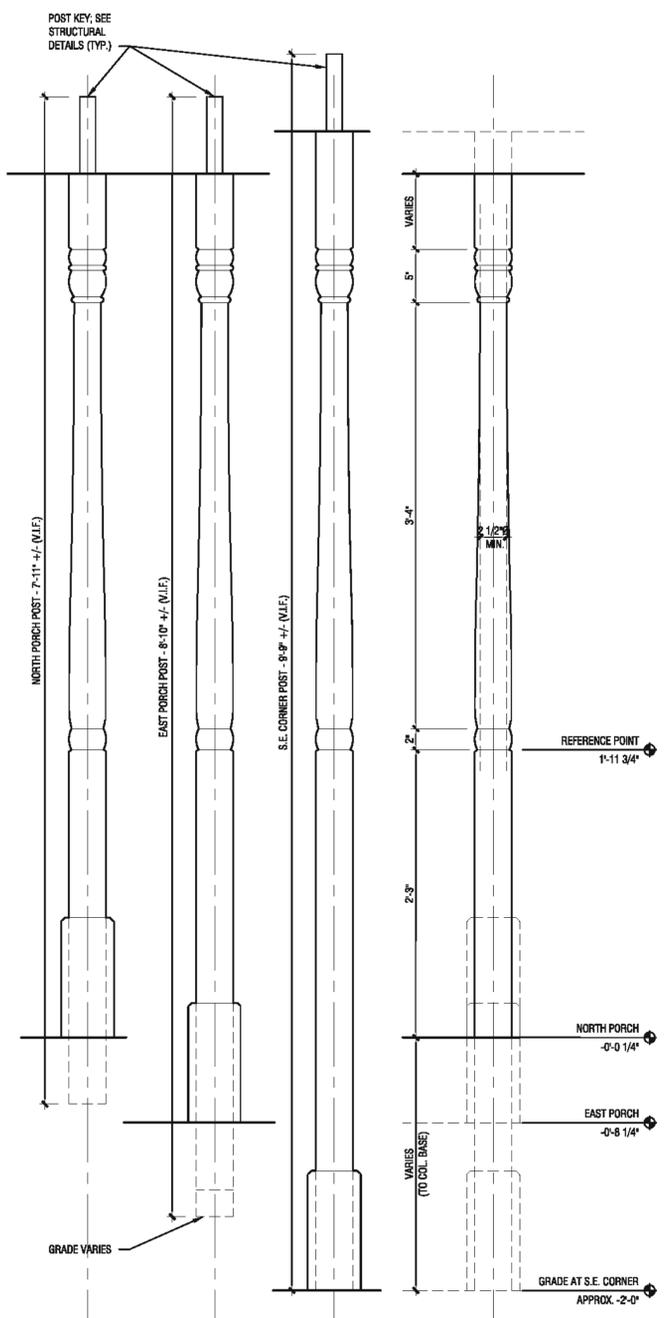
3 CASED OPENING HEAD DETAIL
1 1/2" = 1'-0"



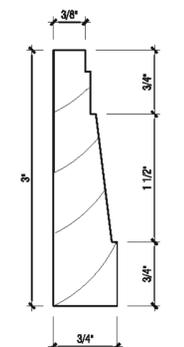
2 CASED OPENING JAMB
1 1/2" = 1'-0"



1 WINDOW SILL DETAIL
1 1/2" = 1'-0"



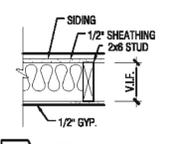
10 COLUMN PROFILE DETAILS
1 1/2" = 1'-0"



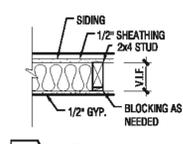
11 TYPICAL TRIM DETAIL
1" = 1'-0"

WALL TYPE SCHEDULE -

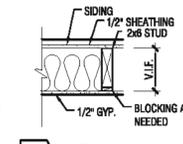
DTL NO.	STUD SIZE	STUD SPC'G	MAX HT.	FIRE RATING/DESIGN	INSUL THK/STC RATING	WALL THK.	HEAD DTL.	SILL DTL.	REMARKS
1A	2"x6"	16" OC	-	-	R-19	V.I.F.	-	-	-
1B	2"x4"	16" OC	-	-	R-19	V.I.F.	-	-	-
1C	2"x6"	16" OC	-	-	R-19	V.I.F.	-	-	-



1C NEW WALL
1" = 1'-0"



1B NEW WALL
1" = 1'-0"



1A NEW WALL
1" = 1'-0"

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SELECTIVE DEMOLITION 04119 - 5

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Demolition and removal of selected portions of building or structure.
 2. Demolition and removal of selected site elements.
 3. Salvage of existing items to be reused or recycled.

1.2 DEFINITIONS

- B. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- C. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- D. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- E. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Predemolition Photographs or Video: Submit before Work begins.
- C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.4 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.6 FIELD CONDITIONS

- B. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. Hazardous materials will be removed by Owner before start of the Work.
 2. If suspected hazardous materials are encountered, do not disturb; Immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
3. Hazardous material remediation is specified elsewhere in the Contract Documents.
 4. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
- F. Storage or sale of removed items or materials on-site is not permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.8 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs or preconstruction videotapes

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
2. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 4. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated to be removed.
- a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
- b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment when appropriate, reinstall, reconnect, and make equipment operational.
- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- D. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- E. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- F. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 5. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area.
 5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repainting. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- E. General: Except for items or materials indicated to be used, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an approved landfill.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chutes, hoist, or other device that will convey debris to grade level in a controlled descent.

3.6 CLEANING

- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

BRICK MASONRY REPOINTING 040120.64 - 4

1.1 SUMMARY

- A. Section includes repointing joints with mortar.

1.2 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

- C. Quality-control program.

1.5 QUALITY ASSURANCE

- A. Brick Masonry Repointing Specialist Qualifications: Engage an experienced brick masonry repointing firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repointing work.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.
- C. Mockups: Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Repointing: Rake out joints in two separate areas, each approximately 36 inches (900 mm) high by 48 inches (1200 mm) wide, unless otherwise indicated, for each type of repointing required, and repoint one of the areas.

PART 2 - PRODUCTS

2.1 MORTAR MATERIALS

- D. Portland Cement: ASTM C 150/C 150M, Type I or Type II, except Type III may be used for cold-weather construction; white, or gray, or both where required for color matching of mortar.
2. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- E. Hydrated Lime: ASTM C 207, Type S.
- F. Masonry Cement: ASTM C 91/C 91M.
3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
- a. Cemex S.A.B. de C.V.; Brikset Type N
 - b. Esroc Italcement Group; Brick-Lok
 - c. Holcim (US) Inc.; Rainbow Mortar Custom Buff Cement
 - d. Lafarge North America Inc.; Lafarge Masonry Cement

- e. Lehigh Hanson, Inc.; Lehigh Masonry Cement

- D. Mortar Cement: ASTM C 1329/C 1329M.

2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Lafarge North America Inc.; Lafarge Mortar Cement

- E. Mortar Sand: ASTM C 144.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.

- F. Mortar Pigments: ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Davis Colors, Inc.; True Tone Mortar Colors
- b. Larssen Corporation; Bayferrox Iron Oxide Pigments
- c. Solomon Colors, Inc.; SGS Mortar Colors

- G. Water: Potable.

2.2 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
4. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened mortar.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
5. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
4. Pointing Mortar by Type: ASTM C 270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime. Add mortar pigments to produce mortar colors required.

PART 3 - EXECUTION

3.1 REPOINTING MASONRY

- A. Rake out and repoint joints to the following extent:
5. All joints in areas indicated.
 6. Joints Indicated as sealant-filled joints. Seal joints according to Section 079200 "Joint Sealants."
 7. Joints at locations of the following defects:
 - a. Holes and missing mortar.
 - b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
 - c. Cracks 1/8 inch or more in width and of any depth.
 - d. Hollow-sounding joints when tapped by metal object.
 - e. Eroded surfaces 1/4 inch or more deep.
 - f. Deterioration to point that mortar can be easily removed by hand, without tools.
 - g. Joints filled with substances other than mortar.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
1. Remove mortar from joints to depth of joint width plus three times joint width but not less than 1/2 inch or not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spill edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.
3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

F. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.2 FINAL CLEANING

- G. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter, use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low pressure spray.
1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120.64

STONE REPOINTING 040100.62 - 5

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes repointing joints with mortar.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings.
- C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

- D. Quality-control program.

1.4 QUALITY ASSURANCE

- A. Stone Repointing Specialist Qualifications: Engage an experienced stone repointing firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing standard unit masonry or new stone masonry is insufficient experience for stone repointing work.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging stonework. Include provisions for supervising performance and preventing damage.
- C. Mockups: Prepare mockups of stone repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Repointing: Rake out joints in two separate areas each approximately 36 inches high by 48 inches wide unless otherwise indicated for each type of repointing required, and repoint one of the areas.

PART 2 - PRODUCTS

2.1 MORTAR MATERIALS

- D. Portland Cement: ASTM C 150/C 150M, Type I or Type II, except Type III may be used for cold-weather construction; white where required for color matching of mortar.
2. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- E. Hydrated Lime: ASTM C 207, Type S.
- F. Masonry Cement: ASTM C 91/C 91M.
3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
- a. Cemex S.A.B. de C.V.; Brikset Type N
 - b. Esroc Italcement Group; Brick-Lok
 - c. Holcim (US) Inc.; Rainbow Mortar Custom Buff Cement
 - d. Lafarge North America Inc.; Lafarge Masonry Cement
 - e. Lehigh Hanson, Inc.; Lehigh Masonry Cement
- D. Mortar Cement: ASTM C 1329/C 1329M.
4. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
- a. Lafarge North America Inc.; Lafarge Mortar Cement

- E. Mortar Sand: ASTM C 144.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.

- F. Mortar Pigments: ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in stone mortars.

3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Davis Colors, Inc.; True Tone Mortar Colors
- b. Larssen Corporation; Bayferrox Iron Oxide Pigments
- c. Solomon Colors, Inc.; SGS Mortar Colors

- G. Water: Potable.

2.2 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened mortar.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
2. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
1. Pointing Mortar by Volume: ASTM C 270, Proportion Specification, [1 part portland cement, 1 part lime, and 6 parts sand] <insert proportions>. [Add mortar pigments to produce mortar colors required.]
 4. Pointing Mortar by Type: ASTM C 270, Proportion Specification, [Type N] <insert Type> unless otherwise indicated; with cementitious material limited to [portland cement and lime] [masonry cement] [or] [mortar cement]. [Add mortar pigments to produce mortar colors required.]
 5. Pointing Mortar by Property: ASTM C 270, Property Specification, [Type N] <insert Type> unless otherwise indicated; with cementitious material limited to [portland cement and lime] [masonry cement] [or] [mortar cement]. [Add mortar pigments to produce mortar colors required.]

PART 3 - EXECUTION

3.1 REPOINTING STONEMWORK

- A. Rake out and repoint joints to the following extent:
6. All joints in areas indicated.
 7. Joints Indicated as sealant-filled joints. Seal joints according to Section 079200 "Joint Sealants."
 8. Joints at locations of the following defects:
 - a. Holes and missing mortar.
 - b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
 - c. Cracks 1/8 inch or more in width and of any depth.
 - d. Hollow-sounding joints when tapped by metal object.
 - e. Eroded surfaces 1/4 inch or more deep.
 - f. Deterioration to point that mortar can be easily removed by hand, without tools.
 - g. Joints filled with substances other than mortar.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
1. Remove mortar from joints to depth of joint width plus 1/8 inch, but not less than 1/2 inch or not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
 2. Remove mortar from stone surfaces within raked-out joints to provide reveals with square backs and to expose stone for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spill edges of stone units or widen joints. Replace or patch damaged stone units as directed by Architect.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose stone, rotted wood, rusted metal, and other deteriorated items.
- E. Pointing with Mortar:
1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.

3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing stone has worn or rounded edges, slightly recess finished mortar surface below face of stone to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed stone surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.
- F. Where repointing work precedes cleaning of existing stone, allow mortar to harden at least 30 days before beginning cleaning work.

3.2 FINAL CLEANING

- G. After mortar has fully hardened, thoroughly clean exposed stone surfaces of excess mortar and foreign matter, use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.
1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.

END OF SECTION 040100.62

CONCRETE UNIT MASONRY 042200 - 13

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- d. Section Includes:
1. Concrete masonry units (CMUs).
 2. Steel reinforcing bars.

1.2 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
 2. Mortar Test (Property Specification): For each mix required, according to ASTM C 109/C 109M for compressive strength, ASTM C 150B for water retention, and ASTM C 91 for air content.
 3. Mortar Test (Property Specification): For each mix required, according to ASTM C 780 for compressive strength.
 4. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
5. Product Certificates for Credit MR 6: For products and materials required to comply with requirements for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
- C. Shop Drawings: For reinforcing steel. Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
- D. Samples: For each type and color of exposed masonry unit.

1.4 INFORMATIONAL SUBMITTALS

- E. Material Certificates: For each type and size of product indicated. For masonry units include data on material properties.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 150B for water retention, and ASTM C 91 for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

1.5 QUALITY ASSURANCE

- A. Masonry Standards: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

1.6 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

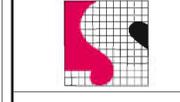
- A. Shapes: Provide shapes indicated and for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. Integral Water Repellent: Provide units made with liquid polymeric, integral water repellent admixture that does not reduce flexural bond strength for exposed units and where indicated.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ADM Chemistries, Inc.; RainBloc
 - b. BASF Aktiengesellschaft; Rheopel Plus
 - c. Grace Construction Products, W. R. Grace & Co. Conn.; Dry-Bloek

- C. CMU: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi
2. Density Classification: Normal weight unless otherwise indicated.

WSA STUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com



Point One Design, Ltd.
Consulting Engineers

CONCRETE UNIT MASONRY 042200 - 13
SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- d. Section Includes:
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1.3 INFORMATIONAL SUBMITTALS

A. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates/

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Certified participant in AWI's Quality Certification Program.

1.5 FIELD CONDITIONS

A. Weather Limitations for Exterior Work: Proceed with installation of exterior wood trim only when edging and forecasted weather conditions permit work to be performed and at least one coat of specified finish to be applied without exposure to rain, snow, or dampness.

B. Environmental Limitations for Interior Work: Do not deliver or install interior wood trim until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 WOOD TRIM, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of wood trim indicated for construction, finishes, installation, and other requirements.

1. Provide certificates AWI certification program indicating that woodwork complies with requirements of grades specified.

2.2 EXTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH

A. Grade: Economy.

B. Wood Species: Western red cedar

2.3 INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH

A. Grade: Economy.

B. Wood Species and Cut: Match species and cut indicated for other types of transparent-finished architectural woodwork located in same area of building unless otherwise indicated.

1. Species: White oak.

2. Cut: Plain slice/plain sawn.

2.4 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of wood trim and quality grade specified unless otherwise indicated.

1. Wood Moisture Content for Exterior Materials: 10 to 15 percent.

2. Wood Moisture Content for Interior Materials: 8 to 13 percent.

B. Water-Repellent Preservative Treated Materials: Comply with AWWA N1 (dip, spray, flood, or vacuum-pressure treatment) for exterior wood trim indicated to receive water-repellent preservative treatment.

1. Preservative Chemicals: 3-Iodo-2-propynyl butyl carbamate (IPBC), combined with an insecticide containing chlorpyrifos (CPF)

2. Extent of Water-Repellent Preservative Treatment: Treat all exterior wood trim unless otherwise indicated.

2.5 MISCELLANEOUS MATERIALS

A. Exterior Blocking, Shims, and Nailers: Softwood or hardwood lumber, pressure-preservative treated, kiln dried to less than 15 percent moisture content.

1. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC3b.

a. Kiln dry lumber after treatment to a maximum moisture content of 19 percent.

b. Mark lumber with treatment quality mark of an inspection agency approved by the American Lumber Standards Committee's (ALSC) Board of Review.

B. Interior Furring, Blocking, Shims, and Hanging Strips: kiln dried to less than 15 percent moisture content.

C. Nails for Exterior Use: hot-dip galvanized

D. Screws for Exterior Use: hot-dip galvanized

E. Provide self-drilling screws for metal-framing supports.

F. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

G. Adhesives: Do not use adhesives that contain urea formaldehyde.

2.6 FABRICATION

A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

B. Fabricate wood trim to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Edges of Solid-Wood (Lumber) Members: 1/16 inch unless otherwise indicated.

2. Edges of Rails and Similar Members More Than 3/4 inch Thick: 1/8 inch.

C. Backcut or groove backs of flat trim members and kerf backs of other wide, flat members except for members with ends exposed in finished work.

D. Assemble casings in shop except where shipping limitations require field assembly.

2.7 SHOP PRIMING

A. Exterior Wood Trim for Opaque Finish: Shop prime with one coat of wood primer specified in Section 099113 "Exterior Painting."

B. Interior Wood Trim for Transparent Finish: Shop seal with stain (if required), other required pretreatments, and first coat of finish as specified in Section 099300 "Staining and Transparent Finishing."

C. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing wood trim, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of wood trim. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.

2.8 SHOP FINISHING

A. General: Finish wood trim at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

B. General: Drawings indicate items that are required to be shop finished. Finish such items at fabrication shop as specified in this Section. Refer to Section 099123 "Interior Painting" and Section 099300 "Staining and Transparent Finishing" for field finishing wood trim not indicated to be shop finished.

C. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing wood trim, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of wood trim. Apply two coats to end-grain surfaces.

D. Opaque Finish for Exterior Trim: Comply with Section 099113 "Exterior Painting."

E. Transparent Finish for Interior Trim:

1. Staining: Match Architect's sample

2. Sheen: Satin. 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition wood trim to average prevailing humidity conditions in installation areas.

3.2 INSTALLATION

A. Grade: Install wood trim to comply with same grade as item to be installed.

B. Install wood trim level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

C. Scribe and cut wood trim to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

D. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.

E. Preservative-Treated Wood: Where cut or drilled in field, treat cut ends and drilled holes according to AWPA M4.

F. Anchor wood trim to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails (or finishing screws) for exposed fastening, countersunk and filled flush with woodwork.

1. For shop-finished items, use filler matching finish of items being installed.

G. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long except where shorter single-length pieces are necessary.

1. Install wall railings on indicated metal brackets securely fastened to wall framing.

2. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches.

END OF SECTION 064600

THERMAL INSULATION 072100 - 4

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Glass-fiber blanket insulation.

2. Loose-fill insulation.

3. Vapor retarders.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Research/evaluation reports.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corporation.

2. Guardian Building Products, Inc.

3. Johns Manville.

4. Knud Insulation.

5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 865, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Polypropylene-Scrim-Kraft-Faced, Glass-Fiber Blanket Insulation: ASTM C 865, Type II (non-reflective facing), Class A (faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier).

D. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide cross ventilation between insulated attic spaces and vented eaves.

2.2 LOOSE-FILL INSULATION

A. Cellulose-Fiber Loose-Fill Insulation: ASTM C 739, chemically treated for flame-resistance, processing, and handling characteristics.

B. Glass-Fiber Loose-Fill Insulation: ASTM C 764, Type I for pneumatic application; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.

2.3 VAPOR RETARDERS

A. Polyethylene Vapor Retarders: ASTM D 4397, 10 mils thick with maximum permeance rating of 0.13 perm.

B. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove protrusions that interfere with placement.

D. Provide sizes for fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Foam-Plastic Board Insulation: Seal joints between units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are stowed into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Glass-Fiber Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.

2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

5. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.

6. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:

a. With faced blankets having stapling flanges, secure insulation by inset, stapling flanges to sides of framing members.

b. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

7. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.

a. Exterior Walls: Set units with facing placed toward interior of construction.

b. Interior Walls: Set units with facing placed as indicated on Drawings

D. Loose-Fill Insulation: Apply according to ASTM C 1015 and manufacturer's written instructions. Level horizontal applications to uniform thickness as indicated, lightly settle to uniform density, but do not compact excessively.

1. For cellulose-fiber loose-fill insulation, comply with CIMA's Bulletin #2, "Standard Practice for Installing Cellulose Insulation."

E. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Loose-Fill Insulation: Compact to approximately 40 percent of nominal maximum volume equating a density of approximately 2.5 lb/cu. ft.

2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1837.

3.3 INSTALLATION OF VAPOR RETARDERS

A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage systems as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by taping no fewer than two studs.

1. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 18 inches o.c.

2. Before installing vapor retarders, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.

3. Firmly attach vapor retarders to metal framing and solid substrates with vapor-retarder fasteners as recommended by vapor-retarder manufacturer.

C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.

D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

END OF SECTION 072100

STANDING-SEAM METAL ROOF PANELS 074113.16 - 8

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes standing-seam metal roof panels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

C. Samples: For each type of metal panel indicated.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Warranties: Sample of special warranties.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

C. Special Weatherlightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weatherlight, including leaks, within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Solar Reflectance Index: Not less than [78] [29] when calculated according to ASTM E 1890.

B. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for low-slope roof products.

C. Energy Performance: Provide roof panels according to one of the following when tested according to CRRC-1:

1. Three-year, aged solar reflectance of not less than 0.55 and emissivity of not less than 0.75.

2. Three-year, aged Solar Reflectance Index of not less than 84 when calculated according to ASTM E 1990.

D. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:

1. Wind Loads: As indicated on Drawings.

2. Other Design Loads: As Indicated on Drawings.

3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

E. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 1890 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lb/sq. ft.

F. Water Penetration under Static Pressures: No water penetration when tested according to ASTM E 1648J or ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lb/sq. ft.

G. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E 2140.

H. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

The higher the value in the options in "Uplift Rating" Subparagraph below, the greater the uplift resistance.

1. Uplift Rating: UL 60

2. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-120

2. Hall Resistance: SH

J. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstrapping of components, failure of joint sealants, failure of connectors, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weatherlight installation.

1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1514.

2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1837.

B. Vertical-Ribs, Seamed-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and at pan between ribs, designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings comparable product by one of the following:

a. Advanced Architectural Products.

b. ATAS International, Inc.

c. CENTRIA Architectural Systems.

d. Dimensional Metals, Inc.

e. Engler, Inc.

f. Firestone Metal Products, LLC.

3. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A 653/A 653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A 792/A 792M, Class AZ50 coating designation; structural quality. Prepared by the coil-coating process to comply with ASTM A 753/A 753M.

a. Nominal Thickness: 0.034 inch.

b. Exterior Finish: Three-coat fluoropolymer

c. Color: As selected by Architect from manufacturer's full range

4. Aluminum Sheet: Coil-coated sheet, ASTM B 209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

a. Thickness: 0.032 inch

b. Surface: Smooth, flat finish.

c. Exterior Finish: Three-coat fluoropolymer.

d. Color: As selected by Architect from manufacturer's full range.

5. Clips: One-piece (fixed to accommodate thermal movement).

a. Material: 0.064-inch nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.

b. Material: 0.062-inch-thick, stainless-steel sheet.

6. Joint Type: [Single folded] [Double folded] [As standard with manufacturer].

7. Panel Coverage: 14 inches

8. Panel Height: 1.5 inches.

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at 240 deg F (116 deg C); ASTM D 1970.

2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (-29 deg C); ASTM D 1970.

3. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

a. Carlisle Residential, a division of Carlisle Construction Materials; WP 300HT.

b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra

c. Kirsch Building Products, LLC; Sharkskin Ultra SA.

d. Metal-Fab Manufacturing, LLC; MetShield.

e. Owens Corning; WeatherLock Metal High Temperature Underlayment.

B. Felt Underlayment: ASTM D 226/D 22M, Type II (No. 30), asphalt-saturated organic felts.

C. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.4 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 coating designation or ASTM A 792/A 792M, Class AZ50 coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weatherlight panel system including trim, copings, fascias, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closure: Provide closures at eaves and ridges, fabricated of same metal as metal panels.

2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.

3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or preformed to match metal panel profile. Provide closure strips where indicated or necessary to ensure weatherlight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fascias, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Gutters and Downspouts: Formed from same material as roof panels according to SMACNA's "Architectural Sheet Metal Manual." Finish to match metal roof panels.

E. Roof Curbs: Fabricated from same material as roof panels, 0.048-inch nominal thickness, with bottom of skirt profiled to match roof panel profiles and with welded top box and integral full-length cricket. Fabricate curb and subframing to withstand indicated loads of size and height indicated. Finish roof curbs to match metal roof panels.

F. Panel Fasteners: Self-tapping screws designed to withstand design loads.

G. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.

2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.

3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

2.5 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by factory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weatherlight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.6 FINISHES

A. Panels and Accessories:

1. Three-Coat Fluoropolymer: AAMA 621 Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.

2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at localities indicated within free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the roof area indicated below:

a. Roof perimeter for a distance up from eaves of 24 inches beyond interior wall line.

b. Valleys, from lowest point to highest point, for a distance on each side of 18 inches overlap ends of sheets not less than 6 inches.

c. Rake edges for a distance of 18 inches.

d. Hips and ridges for a distance on each side of 12 inches.

e. Roof-to-wall intersections for a distance from wall of 18 inches.

f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of 18 inches.

B. Felt Underlayment: Apply at locations indicated, in shingle fashion to shed water, and with lapped joints of not less than 2 inches.

1. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than 3 inches, in shingle fashion to shed water.

C. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

D. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.3 METAL PANEL INSTALLATION

A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.

2. Install pressure plates at locations indicated in manufacturer's written installation instructions.

3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.

4. Seamed Joint: Clamp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

5. Weatherlight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommended in writing by manufacturer as needed to mate panels weatherlight.

b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

B. Accessory Installation: Install accessories with positive anchorage to building and weatherlight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weatherlight and weather resistant.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and stripable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074113.16

FIBER-CEMENT SIDING 074646 - 3

SECTION 074646 - FIBER-CEMENT SIDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fiber-cement siding.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For fiber-cement siding including related accessories.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Research/evaluation reports.

D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

1. Build mockup of typical wall area as shown on Drawings.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FIBER-CEMENT SIDING

A. General: Fabricate and finish fiber-cement siding, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by factory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weatherlight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.6 FINISHES

A. Panels and Accessories:

1. Three-Coat Fluoropolymer: AAMA 621 Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.

2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at localities indicated within free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the roof area indicated below:

a. Roof perimeter for a distance up from eaves of 24 inches beyond interior wall line.

b. Valleys, from lowest point to highest point, for a distance on each side of 18 inches overlap ends of sheets not less than 6 inches.

c. Rake edges for a distance of 18 inches.

d. Hips and ridges for a distance on each side of 12 inches.

e. Roof-to-wall intersections for a distance from wall of 18 inches.

f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of 18 inches.

B. Felt Underlayment: Apply at locations indicated, in shingle fashion to shed water, and with lapped joints of not less than 2 inches.

1. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than 3 inches, in shingle fashion to shed water.

C. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

D. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.3 METAL PANEL INSTALLATION

A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.

2. Install pressure plates at locations indicated in manufacturer's written installation instructions.

3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.

4. Seamed Joint: Clamp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

5. Weatherlight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommended in writing by manufacturer as needed to mate panels weatherlight.

b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

B. Accessory Installation: Install accessories with positive anchorage to building and weatherlight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weatherlight and weather resistant.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and stripable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074113.16

FIBER-CEMENT SIDING 074646 - 3

SECTION 074646 - FIBER-CEMENT SIDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fiber-cement siding.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For fiber-cement siding including related accessories.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Research/evaluation reports.

D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

1. Build mockup of typical wall area as shown on Drawings.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FIBER-CEMENT SIDING

A. General: Fabricate and finish fiber-cement siding, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by factory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weatherlight seal and prevent metal-to-metal contact, and that minimize noise from movements.

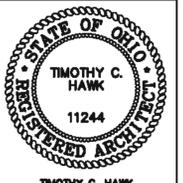
WSA STUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com


City of Dublin


Point One Design, Ltd.
Consulting Engineers

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016


TIMOTHY C. HAWK
11244
TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

11/20/2013 10:52:08 AM Holder-Wright House/PRODUCTION/CLIENT DRAWING/ARCHITECTURE

Drawn By: ASTM C 1185, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a. CertainTeed Corporation.

b. GAF Materials Corporation.

c. James Hardie Siding Products.

SPECIFICATIONS

SPEC-4

COPYRIGHT RESERVED BY WSA STUDIO. THE DRAWING AND THE DESIGN EXPRESSLY HEREBY ARE AND SHALL REMAIN THE SOLE PROPERTY OF WSA STUDIO. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE EXPRESS WRITTEN PERMISSION BY WSA STUDIO.

Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186 by a qualified testing agency acceptable to authorities having jurisdiction.

A. Nominal Thickness: Not less than 5/16 inch.

B. Horizontal Pattern: Boards 5-1/4 inches wide in plain style.

1. Texture: Smooth.

E. Factory Priming: Manufacturer's standard acrylic primer.

2.2 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

B. Flashing: Provide aluminum flashing complying with Section 076200 "Sheet Metal Flashing and Trim" at window and door heads and where indicated.

1. Finish for Aluminum Flashing: Factory-prime coating

C. Fasteners:

1. For fastening to wood, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1 inch into substrate.

2. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch or three screw-threads, into substrate.

3. For fastening fiber cement, use hot-dip galvanized fasteners.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

1. Install fasteners no more than 24 inches o.c.

B. Install joint sealants as specified in Section 079200 "Joint Sealants" and to produce a weathertight installation.

3.2 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 07464

SHEET METAL FLASHING AND TRIM 076200 - 9

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured reglets.

2. Formed roof-drainage sheet metal fabrications.

3. Formed wall sheet metal fabrications.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.

2. Distinguish between shop- and field-assembled work.

3. Include identification of finish for each item.

4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Employ a skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.6 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain weathertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209 alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

1. As-Milled Finish: Standard one-side bright.

2. Color: As selected by Architect from manufacturer's full range

C. Metallic-Coated Steel Sheet: Provide galvanized steel sheet according to ASTM A 653/A 653M, G90 coating designation prepainted by coil-coating process to comply with ASTM A 755/A 755M.

1. Surface: Manufacturer's standard clear acrylic coating on both sides.

2. Color: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

B. Synthetic Underlayment: Laminated or reinforced, woven polyethylene or polypropylene, synthetic roofing underlayment; bitumen free; slip resistant; suitable for high temperatures over 220 deg F and complying with physical requirements of ASTM D 226/D 226M for Type I and Type II felts.

Retain "Products" Subparagraph and list of manufacturers and products below to require specific products or a

comparable product from other manufacturers.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Atlas Roofing Corporation; Summit.

b. Engineered Coated Products; Nova-Seal II.

c. Kirsch Building Products, LLC; Sharkskin Comp.

d. SDP Advanced Polymer Products Inc; Palisade.

C. Self-Adhering, High-Temperature Sheet: Minimum 30 mil thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SIS-modified asphalt adhesive, with release-paper backing, specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.

Retain "Products" Subparagraph and list of manufacturers and products below to require specific products or a comparable product from other manufacturers.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Carlisle Residential, a division of Carlisle Construction Materials; WIP 300HT.

b. Grace Construction Products, a unit of W. R. Grace & Co.-Comm.; Grace Ice and Water Shield HT.

c. Henry Company; Blueskin PE200 HT.

d. Kirsch Building Products, LLC; Sharkskin Ultra SA.

e. Metal-Fab Manufacturing, LLC; MetShield.

f. Owens Corning; WeatherLock Specialty Tile & Metal Underlayment.

g. Polyguard Products, Inc.; Deck Guard HT.

h. Protecto Wrap Company; Protecto Jiffy Seal Ice & Water Guard HT.

i. SDP Advanced Polymer Products Inc; Palisade SA-HT.

2. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F or higher.

3. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F or lower.

D. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.

b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

c. Spikes and Ferrules: Same material as gutter, with spike with ferrule matching internal gutter width.

2. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.

3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

5. Fasteners for Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 163/A 163M or ASTM F 2329.

C. Solder:

1. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sns50, 50 percent tin and 50 percent lead with maximum lead content of 0.2 percent.

2. Sealant Taps: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nonoxid, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

E. Elastomeric Sealant: ASTM C 820, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain weathertight.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED REGLETS

A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions of same metal as reglet.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Cheney Flashing Company.

b. Fry Reglet Corporation.

c. Hickman Building Products, Inc.

d. Hickman, W. P. Company.

e. Hohmann & Barnard, Inc.

f. Keystone Flashing Company, Inc.

g. National Sheet Metal Systems, Inc.

h. Sandell Manufacturing.

2. Material: Galvanized steel, 0.022 inch thick.

3. Finish: Mill

2.6 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.

2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.

3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

2. Use lapped expansion joints only where indicated on Drawings.

C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Downspouts: Fabricate rectangular downspouts to dimensions indicated, complete with mitered elbows. Finish with metal hangers from same material as downspouts and anchors.

B. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch wide wall flanges to interior, and base extending 4 inches beyond curb or tapered strip into field of roof. Fabricate from the following materials:

1. Galvanized Steel: 0.028 inch thick.

C. Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape required, complete with outlet tubes. Fabricate from the following materials:

1. Galvanized Steel: 0.028 inch thick.

2.8 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch long, but not exceeding 12-foot long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch high, and dams. Fabricate from the following materials:

1. Copper: 16 oz./sq. ft.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

B. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturer's written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.

C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller. Cover underlayment within 14 days.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, sealants, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Band tabs over fasteners.

4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.

5. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protector: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrate, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws (substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance).

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed work.

1. Do not solder metallic-coated steel sheet.

2. Do not use torches for soldering.

3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

4. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.

H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.3 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 90 inches o.c.

C. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over curbs or tapered edge strips, and under roofing membrane.

D. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch below scupper discharge.

3.4 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently weathertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.

C. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.

D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Inset counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches.

3.5 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Opening Flashings in Frame Construction: Install continuous head, sill, and similar flashings to extend 4 inches beyond wall openings.

3.6 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and stripable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 076200

JOINT SEALANTS079200 - 5

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.

2. Nonstaining silicone joint sealants.

3. Urethane joint sealants.

4. Immersible joint sealants.

5. Mildew-resistant joint sealants.

6. Latex joint sealants.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples: For each kind and color of joint sealant required.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.

2. Joint-sealant manufacturer and product name.

3. Joint-sealant formulation.

4. Joint-sealant color.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Preconstruction laboratory test reports.

C. Preconstruction field-adhesion-test reports.

D. Field-adhesion-test reports.

E. Sample warranties.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.5 PRECONSTRUCTION TESTING

A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Adhesion Testing: Use ASTM C 794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

2. Compatibility Testing: Use ASTM C 1087 to determine sealant compatibility when in contact with glazing and gasket materials.

3. Stain Testing: Use ASTM C 1248 to determine stain potential of sealant when in contact with stone and masonry substrates.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C 1193 or Method A, Tall Procedure, in ASTM C 1521.

1.6 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] (available products that may be incorporated into the Work include, but are not limited to, the following):

a. Dow Corning Corporation; 791.

b. GE Construction Sealants; SCS2000 SIIPrf.

c. Sika Corporation U.S.; Sikasil MS-295

2.3 MILDEW-RESISTANT JOINT SEALANTS

Coordinate paragraphs in this article with "Joint-Sealant Schedule" Article.

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] (available products that may be incorporated into the Work include, but are not limited to, the following):

a. Dow Corning Corporation; 786-M White.

b. GE Construction Sealants; SCS1700 Sanitary.

c. Tremco Incorporated; Tremflex 200.

2.4 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Construction Chemicals, LLC, Building Systems; Sonolac.

b. Pecora Corporation; AC-20.

c. Shenwh-Williams Company (The); 850A

d. Tremco Incorporated; Tremflex 834.

2.5 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a. BASF Construction Chemicals, LLC, Building Systems.

b. Construction Foam Products, a division of Nomaco, Inc.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabrasive material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove lint and form-release agents from concrete.

2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.3 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

a. Perform one test for each 100 feet of joint length thereafter.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tall Procedure, in ASTM C 1521.

B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

C. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

a. Construction joints in cast-in-place concrete.

b. Control and expansion joints in unit masonry.

c. Joints in dimension stone cladding.

d. Other joints as indicated on Drawings.

2. Joint Sealant: Silicone

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement[<JS-#>].

1. Joint Locations:

a. Control joints on exposed interior surfaces of exterior walls.

b. Perimeter joints between interior wall surfaces and frames of interior doors/windows.

c. Other joints as indicated on Drawings.

Insert type of joint in "Joint Sealant" Subparagraph below; coordinate with Part 2. First option is example only.

2. Joint Sealant: Acrylic latex.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors

END OF SECTION 079200

STILE AND RAIL WOOD DOORS 081433 - 5

SECTION 081433 - STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior stile and rail wood doors.

2. Interior stile and rail wood doors.

3. Fitting stile and rail wood doors to frames and machining for hardware.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For stile and rail wood doors. Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and other pertinent data.

C. Samples: Represent typical range of color and grain for each species of veneer and solid lumber required.

1.3 INFORMATIONAL SUBMITTALS

A. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is a certified participant in AWI's Quality Certification Program.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Use only materials that comply with referenced standards and other requirements specified. Assemble exterior doors with wet-wood adhesives.

2.2 EXTERIOR STILE AND RAIL WOOD DOORS

A. General: Fabricate: Maximum whole fenestration product U-factor of 0.25 Inset Blu/sq. ft. x h x deg F according to AAMA 1503, ASTM E 1423, or NFRC 100.

WSA STUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com


City of Dublin


Point One Design, Ltd.
Consulting Engineers

HOLDER-WRIGHT HOUSE

4729 BRIGHT ROAD, DUBLIN, OH 43016



TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

DRAWN BY: _____ CHECKED: _____

SPECIFICATIONS

SPEC-5

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A. Exterior Sill and Rail Wood Doors Type SRD- $\langle\# \rangle$: Interior (stock) (custom) doors complying with (the AWA, AWMACs, and WAs "Architectural Woodwork Standards," (AWMA 1.5 BA, "Industry Standard for Architectural Sill and Rail Doors," and with other requirements specified.

Basic-of-Design Product: Subject to compliance with requirements, provide (product indicated on Drawings) or comparable product by one of the following:

Alzona Hardwoods, Inc.
Belenty Doors LLC.
Dimension Millworks.
Egers Industries.
Harting Doors.
Malman Company (The).
Marshfield DoorSystems, Inc.

2. Grade: Premium.

3. Finish: Transparent.

4. Wood Species and Cut for Transparent Finish: Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels

5. Door Construction for Transparent Finish:

a. Sill and Rail Construction: Clear lumber; may be edge glued for width.

b. Sill and Rail Construction: Veneered, structural composite lumber or veneered, edge- and end-glued clear lumber.

c. Raised-Panel Construction: Clear lumber; edge glued for width.

d. Raised-Panel Construction: Edge-glued, clear lumber; glued to both sides of a wood-based panel product.

e. Raised-Panel Construction: Veneered, wood-based panel product with mitered, raised rims made from matching clear lumber.

f. Raised-Panel Construction: Veneered, shaped, wood-based panel product with veneer conforming to raised-panel shape.

6. Raised-Panel Thickness: 1-3/4 inches

2.3 INTERIOR STILE AND RAIL WOOD DOORS

A. Interior Sill and Rail Wood Doors Type SRD- $\langle\# \rangle$: Interior (stock) (custom) doors complying with (the AWA, AWMACs, and WAs "Architectural Woodwork Standards," (AWMA 1.5 BA, "Industry Standard for Architectural Sill and Rail Doors," and with other requirements specified.

1. Manufacturers: Subject to compliance with requirements, (provide products by the following) (provide products by one of the following) (available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following):

Basic-of-Design Product: Subject to compliance with requirements, provide (product indicated on Drawings) - (insert manufacturer's name, product name or designation)- or comparable product by one of the following:

Alzona Hardwoods, Inc.
Belenty Doors LLC.
Dimension Millworks.
Egers Industries.
Harting Doors.
Malman Company (The).
Marshfield DoorSystems, Inc.

3. Grade: Premium

4. Finish: Transparent

5. Wood Species and Cut for Transparent Finish: Red oak, quarter sawed/sliced stiles and rails, plain sawed/sliced panels

6. Door Construction for Transparent Finish:

a. Sill and Rail Construction: Clear lumber; may be edge glued for width.

b. Sill and Rail Construction: Veneered, structural composite lumber or veneered, edge- and end-glued clear lumber.

c. Raised-Panel Construction: Clear lumber; edge glued for width.

d. Raised-Panel Construction: Edge-glued, clear lumber; glued to both sides of a wood-based panel product.

e. Raised-Panel Construction: Veneered, wood-based panel product with mitered, raised rims made from matching clear lumber.

f. Raised-Panel Construction: Veneered, shaped, wood-based panel product with veneer conforming to raised-panel shape.

g. Flat-Panel Construction: Veneered, wood-based panel product.

7. Raised-Panel Thickness: 1-3/4 inches

8. Flat-Panel Thickness: 1/2 inch

Options in "Glass" Subparagraph below are examples only.

2.4 STILE AND RAIL WOOD DOOR FABRICATION

A. Fabricate stile and rail wood doors in sizes indicated for field fitting.

B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels unless otherwise indicated:

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/2 inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide not more than 3/8 inch from bottom of door to top of threshold.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.

C. Factory machine doors for hardware that is not surface applied.

D. Exterior Doors: Factory treat exterior doors after fabrication with water-repellent preservative to comply with WDMA 1.5.4. Flash top of overhanging doors with manufacturer's standard metal flashing.

E. Prehung Doors: Provide stile and rail doors complete with frames, (weather stripping,) and hardware.

1. Provide hardware that complies with Section 067100 "Door Hardware."

2.5 SHOP PRIMING

A. Doors for Opaque Finish: Shop prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in Section 099113 "Exterior Painting," and " Section 099123 "Interior Painting."

2.6 FINISHING

A. Finish wood doors at factory that are indicated to receive transparent finish.

B. For doors indicated to be factory finished, comply with (the AWA, AWMACs, and WAs "Architectural Woodwork Standards," and with other requirements specified.

C. Use only paints and coatings that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Transparent Finish:

1. Grade: Premium.

2. Finish: AWAs, AWMACs, and WAs "Architectural Woodwork Standards" (System 9, UV curable, acrylated epoxy, polyester, or urethane

3. Staining: As selected by Architect from manufacturer's full range.

4. Effect: Open-grain finish

5. Sheen: Satin

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1. Install fire-rated doors according to NFPA 80.

2. Install smoke- and draft-control doors according to NFPA 105.

B. Job-Filled Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 3/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 3/8 inch from bottom of door to top of threshold unless otherwise indicated.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.

C. Factory-Filled Doors: Align in frames for uniform clearance at each edge.

END OF SECTION 061433

WOOD WINDOWS 085200 -

SECTION 085200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes (aluminum-clad) (vinyl-clad) wood windows.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sash installation.

C. Product Schedule: For wood windows. Use same designations indicated on Drawings.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Sample warranties.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.

1. Warranty Period:

a. Window: 10 years from date of Substantial Completion.

b. Glazing Units: 10 years from date of Substantial Completion.

c. Aluminum-Cladding Finish: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basic-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

Aluminum-Clad Wood Windows:

Hurd Windows and Doors, Inc.
JELD-WEN, Inc.
Kolbe & Kolbe Millwork Co., Inc.
Marvin Windows and Doors.
Peachtree Doors and Windows.
Pella Corporation.

2.2 WINDOW PERFORMANCE REQUIREMENTS

A. Product Standard: AAMA/WDMA/CSA 101/S.2/A440.

1. Minimum Performance Class: As Indicated on Drawings

2. Minimum Performance Grade: 35

B. Thermal Transmittance: NFRC 100 maximum whole-window U-factor 0.32 Btu/sq. ft. x h deg F

C. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.30

2.3 WOOD WINDOWS

A. Operating Types: As Indicated on Drawings

B. Frames and Sashes: Fire-grained wood lumber complying with AAMA/WDMA/CSA 101/S.2/A440, kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide; water-repellent preservative treated.

1. Exterior Finish: Aluminum-clad wood.

a. Aluminum Finish: Manufacturer's standard fluoropolymer two-coat system with fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight and complying with AAMA 2605.

b. Color: As selected by Architect from manufacturer's full range.

2. Interior Finish: Unfinished

a. Exposed Unfinished Wood Surfaces: Manufacturer's standard species

b. Color: As selected by Architect from manufacturer's full range

C. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3

1. Safety Glass: Provide Kind FT, fully tempered, labeled safety glass adjacent to doors and in windows located below 36 inches.

D. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.

a. Tint: Clear

b. Safety Glass: Provide Kind FT, fully tempered, labeled safety glass adjacent to doors and in window locations below 36 inches.

2. Lites: Two

3. Filling: Fill space between glass lites with argon

4. Low-E Coating: Sputtered on second surface.

E. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

F. Hardware, General: Manufacturer's standard corrosion-resistant hardware sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range

G. Projected Window Hardware:

1. Gear-Type Rotary Operators: Complying with AAMA 901 when tested according to ASTM E 405, Method A. Provide operators that function without requiring the removal of interior screens or using screen wickets.

a. Type and Style: As selected by Architect from manufacturer's full range of types and styles

2. Hinges: Manufacturer's standard type for sash weight and size indicated.

3. Single-Handle Locking System: Operates positive-acting arms that pull sash into locked position. Provide one arm on sashes up to 29 inches tall and two arms on taller sashes.

4. Limit Devices: Limit clear opening to 6 inches for ventilation; with custodial key release.

H. Hung Window Hardware:

1. Counterbalancing Mechanism: AAMA 902.

2. Locks and Latches: Operated from the Inside only.

3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis.

I. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

J. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 ACCESSORIES

A. Dividers (False Mullins): Provide divider grilles in designs indicated for each sash lite.

1. Quantity and Type: One per sash, removable from exposed surface of interior lite

2. Material: Manufacturer's standard

3. Pattern: As indicated on Drawings.

4. Profile: As selected by Architect from manufacturer's full range.

5. Color: As selected by Architect from manufacturer's full range.

2.5 INSECT SCREENS

A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are permitted.

1. Type and Location: Full, inside for project-out sashes.

B. Aluminum Frames: Complying with SMA 1004 or SMA 1201.

1. Finish for Interior Screens: Based-on organic coating in color selected by Architect from manufacturer's full range

2. Finish for Exterior Screens: Matching color and finish of cladding

C. Glass-Fiber Mesh Fabric: 18-by-16 mesh complying with ASTM D 3656.

1. Mesh Color: Manufacturer's standard.

2.6 FABRICATION

A. Fabricate wood windows in sizes indicated. Include a complete system for installing and anchoring windows.

B. Glaze wood windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scrubbing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

C. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

D. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

E. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 085200

GYPSSUM VENEER PLASTERING 092613 - 2

SECTION 092613 - GYPSSUM VENEER PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Gypsum veneer plaster and gypsum base for veneer plaster.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitation: Obtain gypsum veneer plaster products, including gypsum base for veneer plaster, joint reinforcing tape, and embedding material, from single manufacturer.

2.2 GYPSSUM VENEER PLASTER

A. Two-Component Gypsum Veneer Plaster: ASTM C 587, with separate formulations; one for base-coat application and one for finish-coat application over substrates.

1. Base Coat:

a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

1) National Gypsum Company; Kal-Kote Plaster Base.

2) USG Corporation; Diamond Veneer Basecoat Plaster.

2. Smooth Finish Coat:

a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

1) National Gypsum Company; Kal-Kote Smooth Finish.

2) USG Corporation; Diamond Interior Finish Plaster.

2.3 PANEL PRODUCTS

A. Gypsum Base for Veneer Plaster: ASTM C 1398/C 1398M.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. CertainTeed Corp.; ProRock Veneer Plaster Base.

b. Georgia-Pacific; Gypsum LLC, Subsidiary of Georgia Pacific; Tough Rock Veneer Plaster Base.

c. Lafarge North America Inc.; Plasterbase.

d. National Gypsum Company; Kal-Core Regular.

e. USG Corporation; Imperial Regular Gypsum Base.

2. Thickness: 1/2 inch

B. Backing Panels for Multilayer Applications: ASTM C 1396/C 1396M gypsum base or gypsum board, as recommended by gypsum veneer plaster manufacturer, for application method and thicknesses indicated.

1. Core: Matching face layer unless otherwise indicated.

2. Thickness: Matching face layer unless otherwise indicated.

2.4 TRIM ACCESSORIES

A. Standard Trim: ASTM C 1047, provided or approved by manufacturer for use in gypsum veneer plaster applications indicated.

1. Material: Galvanized-steel sheet or aluminum-coated steel sheet or rolled zinc

2.5 JOINT REINFORCING MATERIALS

A. General: Comply with joint strength requirements in ASTM C 587 and with gypsum veneer plaster manufacturer's written recommendations for each application indicated.

B. Joint Tape: As recommended by gypsum veneer plaster manufacturer for applications indicated

C. Embedding Material for Joint Tape: As recommended by gypsum veneer plaster manufacturer for use with joint-tape material and gypsum veneer plaster applications indicated.

2.6 AUXILIARY MATERIALS

A. Bonding Agent: ASTM C 631, polyvinyl acetate.

B. Laminating Adhesive: Adhesive or joint compound recommended by manufacturer for directly adhering gypsum-base, face-layer panels to backing-layer panels in multilayer construction.

1. Adhesives shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 69, Subpart D (EPA Method 24).

2. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 854 for fastening panels to steel members from 0.033 to 0.112 inch thick.

D. Sound Attenuation Blankets: ASTM C 685, Type I. Comply with mineral-fiber requirements of assembly.

E. Acoustical Joint Sealant: As specified in Section 079200 "Joint Sealants."

F. Patching Mortar: Dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

PART 3 - EXECUTION

3.1 INSTALLING PANELS

A. Gypsum Base for Veneer Plaster: Apply according to ASTM C 844 unless manufacturer's written recommendations are more stringent.

1. Erection Tolerance: No more than 1/16-inch offsets between planes of gypsum base panels, and 1/8 inch in 8 feet noncumulative, for level, plumb, warp, and bow.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, or mold damaged.

C. Install trim with back flanges intended for fasteners, and attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

D. Control Joints: Install at locations indicated on Drawings

E. Gypsum Base: Reinforce interior angles and flat joints with joint tape and embedding material to comply with ASTM C 843 and with gypsum veneer plaster manufacturer's written recommendations.

3.2 GYPSSUM VENEER PLASTERING

A. Bonding Agent: Apply bonding agent on dry monolithic concrete according to gypsum veneer plaster manufacturer's written recommendations.

B. Gypsum Veneer Plaster Mtdng: Mechanically mix gypsum veneer plaster materials to comply with ASTM C 843 and with gypsum veneer plaster manufacturer's written recommendations.

C. Gypsum Veneer Plaster Application: Comply with ASTM C 843 and with veneer plaster manufacturer's written recommendations.

1. One-Component Gypsum Veneer Plaster: Trowel apply base coat over substrate to uniform thickness. Fill all voids and imperfections. Immediately double back with same mixer batch of plaster to a uniform total thickness of 1/16 to 3/32 inch

2. Two-Component Gypsum Veneer Plaster:

a. Base Coat: Hand trowel or machine apply base coat over substrate to a uniform thickness of 1/16 to 3/32 inch. Fill all voids and imperfections.

b. Finish Coat: Trowel apply finish-coat plaster over base-coat plaster to a uniform thickness of 1/16 to 3/32 inch.

3. Where gypsum veneer plaster abuts only windows, and other units, groove finish coat to eliminate spalling.

4. Do not apply veneer plaster to gypsum base if paper facing has degraded from exposure to sunlight. Before applying veneer plaster, use remedial methods to restore bonding capability to degraded paper facing according to manufacturer's written recommendations.

D. Concealed Surfaces: Do not omit gypsum veneer plaster behind cabinets, furniture, furnishings, and similar removable items. Omit veneer plaster in the following areas where it will be concealed from view in the completed Work unless otherwise indicated or required to maintain fire-resistance and STC ratings:

E. Gypsum Veneer Plaster Finish: Smooth-troweled finish unless otherwise indicated.

END OF SECTION 092613

SECTION 096400 - WOOD FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes wood flooring.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each type of wood flooring and accessory.

1.3 QUALITY ASSURANCE

A. Hardwood Flooring: Comply with NORMA's "Official Flooring Grading Rules" for species, grade, and cut.

B. Build mockup of typical flooring area.

1.4 PRECONDITIONING

A. Projecting conditions begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.

1. Environmental Conditioning: Maintain an ambient temperature between 65 and 75 deg F and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.

2. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.

a. Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.

b. Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.

B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

C. Install factory-finished wood flooring after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. FloorScore Compliance: Wood floors shall comply with requirements of FloorScore Standard.

2.2 WOOD FLOORING

A. Solid-Wood Flooring: Kiln dried to 6 to 9 percent maximum moisture content, tongue and groove end and

matched, and with backs channeled.

Basic-of-Design Product: Subject to compliance with requirements, provide (product indicated on Drawings) - (insert manufacturer's name, product name or designation)- or comparable product by one of the following:

Anderson Hardwood Floors.
Armstrong World Industries, Inc.
Carlisle Wide Plank Floors.
International Hardwood Flooring, Inc.
Kentucky Wood Floors.
Miller and Company, Inc.

2. Species and Grade: No. 1 Common red oak

3. Cut: Plain sawn.

4. Thickness: 3/4 inch.

5. Face Width: 2-1/4 inches.

6. Lengths: Manufacturer's standard.

7. Finishing: Field.

2.3 FIELD FINISHING

A. Urethane Finish System: Complete solvent-based, oil-modified system of compatible components that is recommended by finish manufacturer for application indicated.

1. Stain: Penetrating and nonfading type.

a. Color: As selected by Architect from manufacturer's full range.

2. Floor Sealer: Pliable, penetrating type.

3. Finish Coats: Formulated for multicoat application on wood flooring.

B. Wood Filler: Compatible with finish system components.

2.4 ACCESSORY MATERIALS

A. Vapor Retarder: ASTM D 4397, polyethylene sheet not less than 8.0 mils thick.

B. Asphalt-Saturated Felt: ASTM D 4869, Type II.

C. Wood Flooring Adhesive: Mastic recommended by flooring and adhesive manufacturers for application indicated.

D. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by wood flooring manufacturer.

E. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring."

F. Thresholds and Saddles: To match wood flooring. Tapered on each side.

G. Reducor Strips: To match wood flooring. 2 inches wide, tapered, and in thickness required to match height of flooring.

H. Feature Strips: 2-inch wide, square-edged walnut strips, furnished in lengths as long as practical and in thickness to match wood flooring.

I. Metal Feature Strips: 1/8-by-1/8-inch solid-brass strips, designed for inlaying into routed reveal in wood flooring surface.

J. Wood Air Vents and Grilles: To match wood flooring and in sizes and design indicated on Drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. Concrete Slabs: Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

1. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than two tests in each installation area and with test areas evenly spaced in installation areas.

a. Perform anhydrous calcium chloride test per ASTM F 1869, as follows:

1) Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 4.5 lb of water/1000 sq. ft. in 24 hours.

b. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

B. Concrete Slabs: Grind high spots and fill low spots to produce a maximum 1/8-inch deviation in any direction when checked with a 10-foot straight edge.

1. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

C. Remove coatings, including curing compounds, and other substances on substrates that are incompatible with installation adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Broom or vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

B. Provide expansion space at walls and other obstructions and terminations of flooring of not less than 3/4 inch.

C. Vapor Retarder: Comply with NORMA's "Installing Hardwood Flooring" for vapor retarder installation and the following:

1. Wood Flooring Nailed to Wood Subfloor: Install flooring over a layer of asphalt-saturated felt.

2. Wood Flooring Nailed to Sleepers over Concrete: Install flooring over a layer of polyethylene sheet with edges overlapped over sleepers and turned up behind baseboards.

D. Solid-Wood Flooring: Blind nail or staple flooring to substrate.

1. For flooring of face width more than 3 inches:

a. Install countersunk screws at each end of each piece in addition to blind nailing. Cover screw heads with wood plugs glued flush with flooring.

b. Install no fewer than two countersunk nails at each end of each piece, spaced not more than 18 inches along length of each piece, in addition to blind nailing. Fill holes with matching wood filler.

3.3 FIELD FINISHING

A. Machine-sand flooring to remove offsets, ridges, cups, and sending-machine marks that would be noticeable after finishing. Vacuum and tack with a clean cloth immediately before applying finish.

1. Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

B. Fill open-grained hardwood.

C. Fill and repair wood flooring seams and defects.

D. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and three finish coats.

1. Apply stains to achieve an even color distribution matching approved Samples.

2. For water-based finishes, use finishing methods recommended by finish manufacturer to minimize grain raise.

E. Cover wood flooring before finishing.

F. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

3.4 PROTECTION

A. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.

END OF SECTION 096400

WSA STUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com


City of Dublin


Point One Design, Ltd.
Consulting Engineers

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016


TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

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LICENSE # 11244
EXPIRATION DATE 12/31/2013

ISSUED: 06.17.2013
PROJECT NUMBER: 201285.00

DRAWN BY: _____ CHECKED: _____

SPECIFICATIONS

SPEC-6

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3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, 4 inches deeper elsewhere, to allow for bedding course.

D. Trenches In Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-line spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.6 SURGRADE INSPECTION

A. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Place and compact initial backfill of subbase material free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utility bedding.

D. Place and compact final backfill of satisfactory soil to final subgrade elevation.

E. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.

2. Under walks, use satisfactory soil material.

3. Under footings and foundations, use engineered fill.

3.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under walkways, scarify and recompact top 8 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.

2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.

3. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.13 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.

2. Walks: Plus or minus 1 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.14 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course under pavements and walks as follows:

1. Shape subbase course to required crown elevations and cross slope grades.

2. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

3. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.15 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

A. Place drainage course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:

1. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

2. Compact each layer of drainage course to required cross sections and thicknesses to not less than [95] <insert number> percent of maximum dry unit weight according to ASTM D 698.

3.16 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Where settling occurs before Project completion period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000
TERMITE CONTROL 313116 - 5
SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

Adjust list below to suit Project.

1. Soil treatment with termiticide.

2. Bat-station system.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include the EPA-Registered Label for termiticide products.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Soil Treatment Application Report: Include the following:

1. Date and time of application.

2. Moisture content of soil before application.

3. Termiticide brand name and manufacturer.

4. Quantity of undiluted termiticide used.

5. Dilutions, methods, volumes used, and rates of application.

6. Areas of application.

7. Water source for application.

C. Bat-Station System Application Report: Include the following:

1. Location of areas and sites conducive to termitite feeding and activity.

2. Plan drawing showing number and locations of bat stations.

3. Dated report for each monitoring and inspection occurrence indicating level of termitite activity, procedure, and treatment applied before time of Substantial Completion.

4. Termiticide brand name and manufacturer.

5. Quantities of termiticide used.

6. Schedule of inspections for one year from date of Substantial Completion.

D. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termitite control treatment and products in jurisdiction where Project is located and who employs workers trained and approved by manufacturer to install manufacturer's products.

B. Regulatory Requirements: Formulate and apply termiticide and termiticide devices according to the EPA-Registered Label.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.

B. Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

C. Install bat-station system after construction, including landscaping, is completed.

1.6 WARRANTY

A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termitite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Three years from date of Substantial Completion.

1.7 MAINTENANCE SERVICE

A. Continuing Service: Beginning at Substantial Completion, provide 12 months continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity. Provide a standard continuing service agreement. State services, obligations, conditions, terms for agreement period, and terms for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: Provide an EPA-Registered termiticide, complying with requirements of authorities having jurisdiction. In an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to products' EPA-Registered Label.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

a. BASF Corporation, Agricultural Products;

b. Bayer Environmental Science;

c. FMC Corporation, Agricultural Products Group;

d. Syntex;

2. Service Life of Treatment: Soil treatment termiticide that is effective for not less than three years against infestation of subterranean termites.

2.2 BAT-STATION SYSTEM

A. Provide bat stations based on the dimensions of building perimeter indicated on Drawings, according to manufacturer's EPA-Registered Label for product, manufacturer's written instructions, and the following:

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

a. BASF Corporation, Agricultural Products; Subterfuge;

b. Down AgroSciences LLC, Santricon System;

c. Ensystem, Inc.; Baterra System;

d. FMC Corporation, Agricultural Products Group, First Line;

e. Whitmill Micro-Gen Research Laboratories, Inc.; Advance TBS;

2. No fewer than one bat station per 8 linear feet.

3. No fewer than one cluster of bat stations per 20 linear feet, consisting of no fewer than three bat stations per cluster.

PART 3 - EXECUTION

3.1 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.2 APPLYING SOIL TREATMENT

A. Examine subgrade, areas, and conditions, with Applicator present, for compliance with requirements for interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting performance of termitite control.

B. Proceed with application only after unsatisfactory conditions have been corrected.

C. Soil Treatment Preparation: Remove foreign matter and impervious soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

1. Fit filling hoses connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

D. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to a continuous horizontal and vertical termiticide barrier or treated zone is established around and under building construction. Distribute treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

2. Foundations: Adjoint soil, including soil along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing. Avoid soil wastage around footings.

3. Crawspaces: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.

4. Masonry: Treat voids.

5. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

6. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

E. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

G. Post warning signs in areas of application.

H. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.3 INSTALLING BAT-STATION SYSTEM

A. Place bat stations according to the EPA-Registered Label for the product and manufacturer's written instructions. In the following areas that are conducive to termitite feeding and activity:

1. Conduive sites and locations indicated on Drawings.

2. In and around infested trees and stumps.

3. In mulch beds.

4. Where wood directly contacts soil.

5. Areas of high soil moisture.

6. Near irrigation sprinkler heads.

7. Each area where roof drainage system, including downspouts and scuppers, drains to soil.

8. Along drip-lines of roof overhangs without gutters.

9. Where condensate lines from mechanical equipment drip or drain to soil.

10. At plumbing penetrations through ground-supported slabs.

11. Other sites and locations as determined by licensed installer.

B. Inspect and service bat stations from time of their application until Substantial Completion according to the EPA-Registered Label for product and manufacturer's written instructions for termitite management system and bat products.

1. Service Frequency: Inspect bat stations not less than once every three month(s).

END OF SECTION 313116
CONCRETE PAVING 321313 - 6
SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Walks.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Action Submittals:

1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.3 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. ACl Publications: Comply with ACl 301 unless otherwise indicated.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.

C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

D. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

E. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

F. Deformed-Steel Wire: ASTM A 498/A 498M.

G. Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars; zinc coated (galvanized) after fabrication according to ASTM A 767/A 767M, Class I coating. Cut bars true to length with ends square and free of burrs.

H. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSIs "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.2 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C 150, white portland cement Type VII. Supplement with the following:

a. Fly Ash: ASTM C 618, Class C.

b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

2. Blended Hydraulic Cement: ASTM C 995, Type IS, portland blast-furnace slag cement.

B. Normal-Weight Aggregates: ASTM C 33, Class 4M, uniformly graded. Provide aggregates from a single source.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures adopted by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

2.3 FIBER REINFORCEMENT

A. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete paving, complying with ASTM C 1116/C 1116M, Type II, 1/2 to 1-1/2 inches long.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or wicks burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 308, Type 1, Class B, dispersing.

F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dispersing.

2.5 RELATED MATERIALS

A. Joint Fills: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.

B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent feldspar oxide, unaffected by freezing, moisture, and cleaning materials.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACl 301, with the following properties:

1. Compressive Strength (28 Days): 3500 psi.

2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.

3. Slump Limit: 5 inches, plus or minus 1 inch.

4. Air Content: 5-1/2 percent plus or minus 1.5 percent.

B. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

C. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.

2.7 CONCRETE MOING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M [and ASTM C 1116/C 1116M]. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSIs "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angle to centerline unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminations at isolation joints.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving.

E. Edging: After initial floating, tool edges of paving, curbs, and joints in concrete with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Moistan subbase to provide a uniform dampened condition at time concrete is placed.

B. Comply with ACl 301 requirements for measuring, mixing, transporting, placing, and consolidating concrete.

C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

D. Screed paving surface with a straightedge and strike off.

E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface planes before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.

2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by strating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

C. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions.

1. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.

2. After curing, lightly work surface with a steel wire brush or abrasive stone and water to expose nonslip aggregate.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACl 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbing concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing.

3.8 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313
TURF AND GRASSES 329200 - 4
SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding.

1.2 DEFINITIONS

A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

1.3 INFORMATIONAL SUBMITTALS

A. Certification of grass seed.

1. Certification of each seed mixture for turfgrass sod.

B. Product certificates.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

2. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:

a. Landscape Industry Certified Technician - Exterior.

b. Landscape Industry Certified Lawncare Manager.

c. Landscape Industry Certified Lawncare Technician.

3. Pesticide Applicator: State licensed, commercial.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:

1. Quality: State-certified seed of grass species as listed below for solar exposure.

2. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed.

3. Sun and Partial Shade: Proportioned by weight.

C. Grass-Seed Mix: Proprietary seed mix as follows:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Scotts.

b. Pennington

c. Anpac

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorus, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorus, and 2 percent potassium, by weight.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorus, and 10 percent potassium, by weight.

2.3 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.4 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil.

B. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Moistan prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph.

1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

2. Do not use wet seed or seed that is moldy or otherwise damaged.

3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Sow seed at a total rate of 3 to 4 lb/1000 sq. ft.

C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas.

1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.

E. Protect seeded areas from hot, dry weather or drying winds by applying straw mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

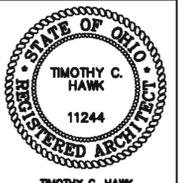
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982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com


City of Dublin


Point One Design, Ltd.
Consulting Engineers

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016


TIMOTHY C. HAWK
LICENSE # 11244
EXPIRATION DATE 12/31/2013

DRAWN BY: CHECKED:

SPECIFICATIONS

SPEC-8

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3.3 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

END OF SECTION 329200

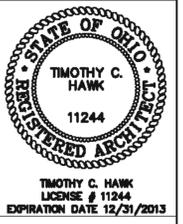
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 COLUMBUS, OHIO 43206
 614.824.1633
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 4729 BRIGHT ROAD, DUBLIN, OH 43016

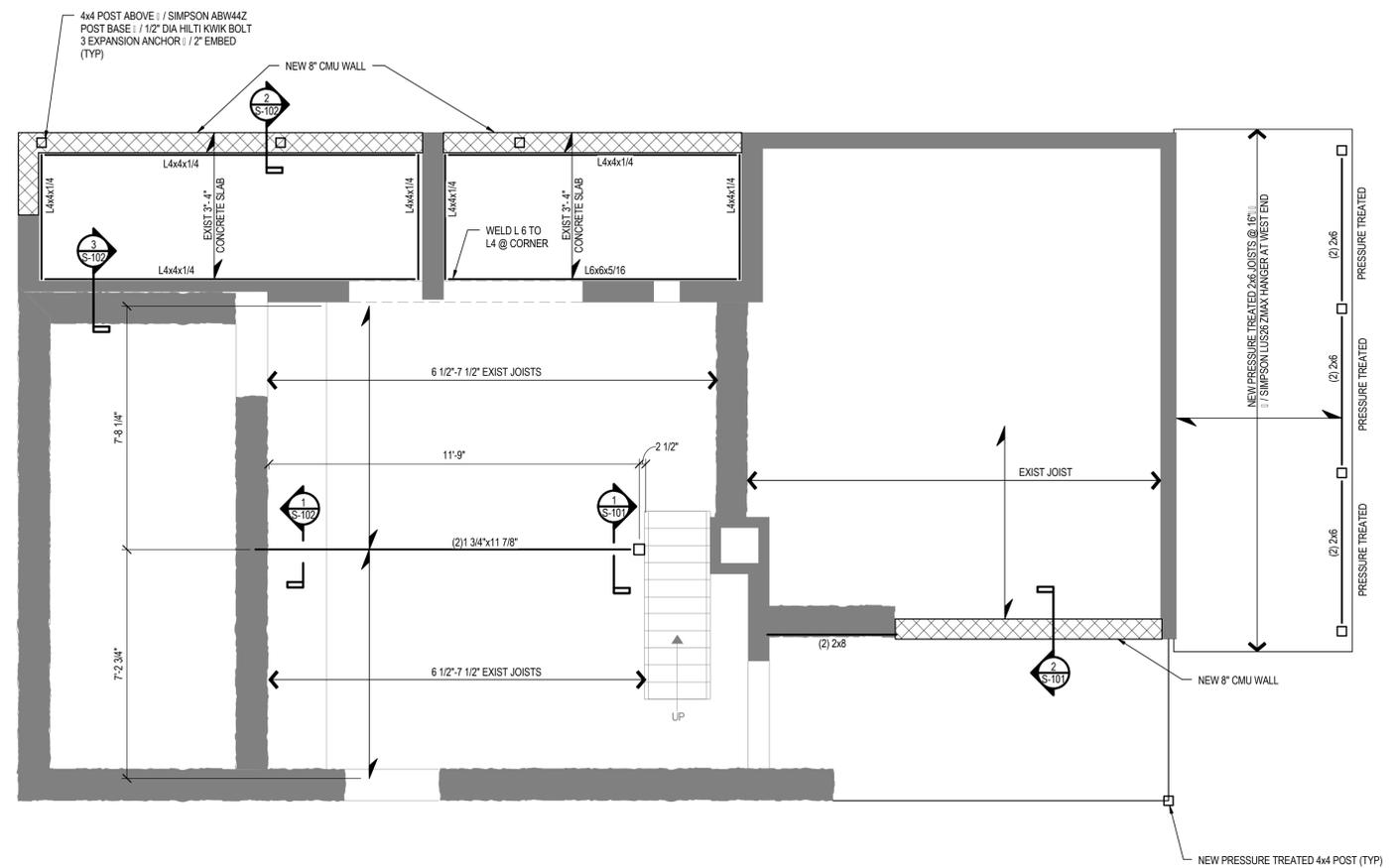
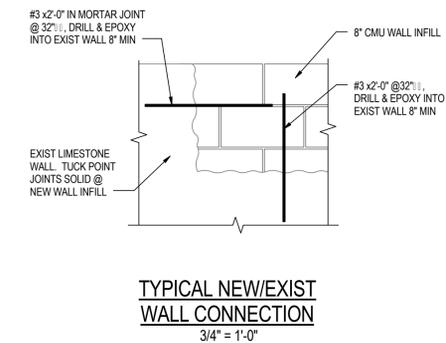
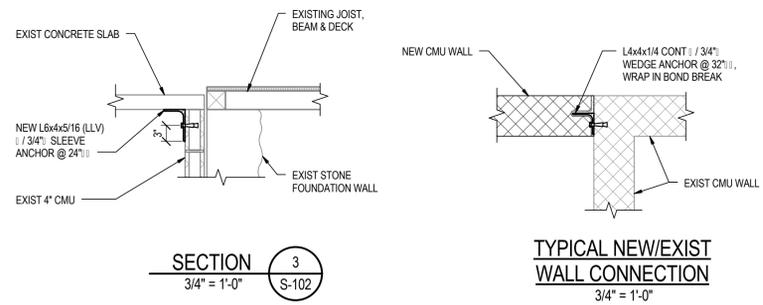
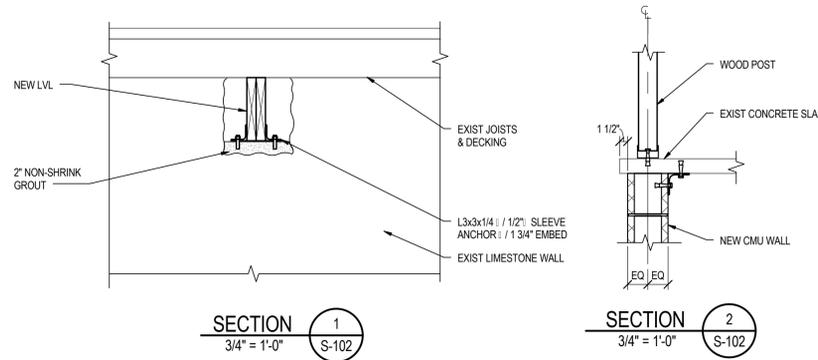


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SPECIFICATIONS
SPEC-9

14/01/2013 14:50:13:08.68 Holder-Wright House (PRODUCTION) CLIENT: PRINCE GEORGE COUNTY, MD



FIRST FLOOR FRAMING PLAN
3/8" = 1'-0"

- PLAN NOTES:**
1. FLOOR SHEATHING EL TO MATCH EXISTING.
 2. DOORS AND WINDOWS ARE SHOWN IN APPROXIMATE LOCATIONS. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.
 3. SEE SHEET S-101 FOR ABBREVIATIONS & LEGEND (SYMBOLS).

WSASTUDIO

982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com

STRUCTURAL ENGINEERS
800.542.3302
schaefer-inc.com

schaefer

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
CARRIE C. BREMER
E-73975
Carrie C. Bremer
5/16/13

Issue Date: 05.16.2013
Project Number: 201285.00

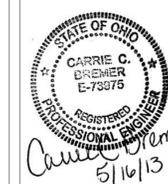
DRAWN BY: B.J.H. | CHECKED: C.C.B.
FIRST FLOOR FRAMING PLAN AND SECTIONS

S-102

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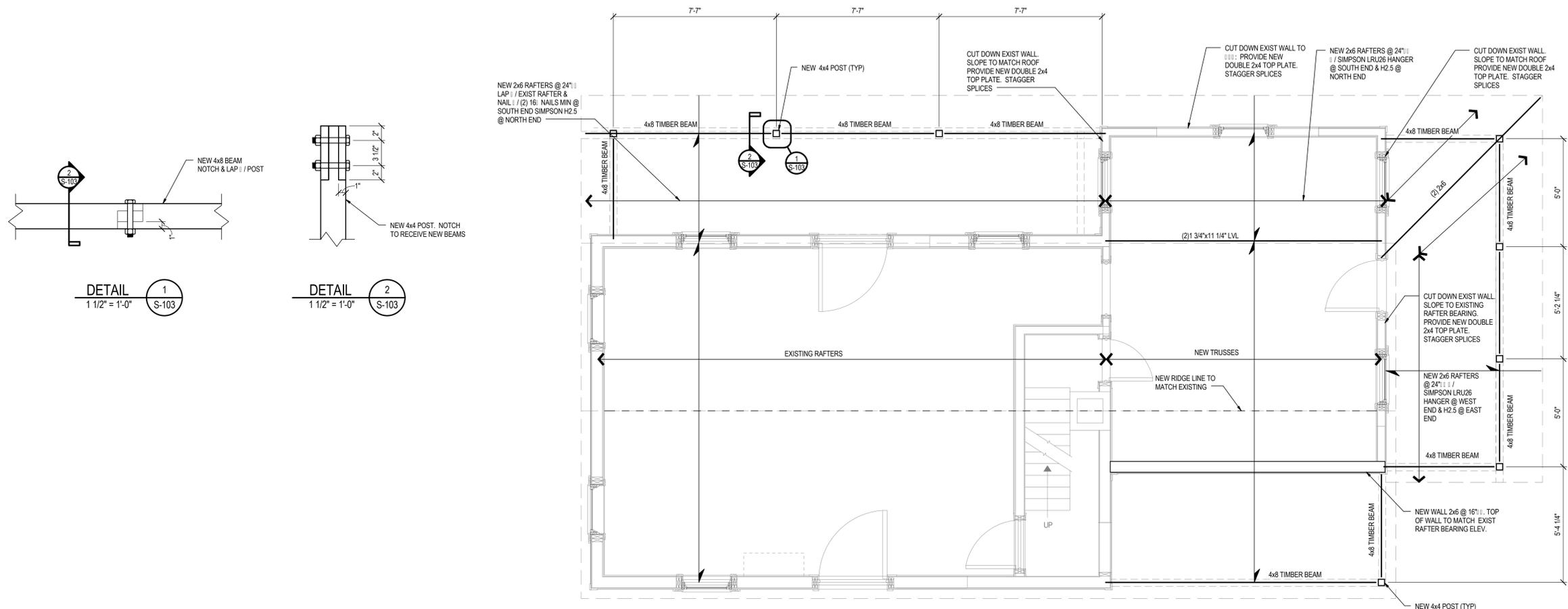


Issue Date: 05.16.2013
Project Number: 201285.00

DRAWN BY: BJH | CHECKED: CCB

ROOF FRAMING PLAN AND SECTIONS

S-103

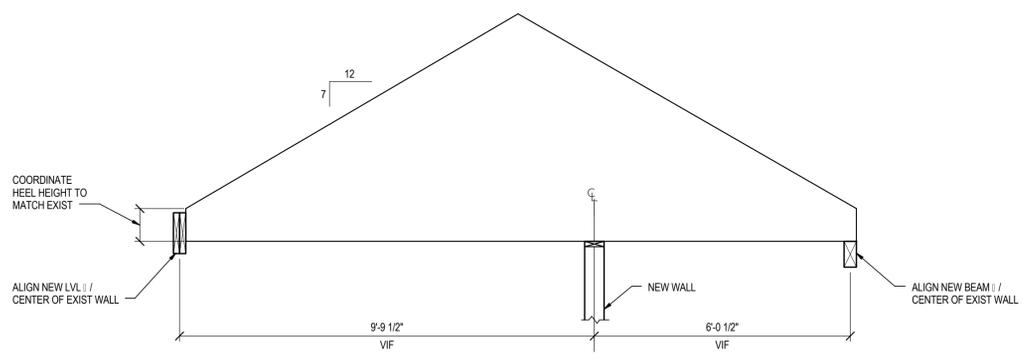


DETAIL 1
1 1/2" = 1'-0" S-103

DETAIL 2
1 1/2" = 1'-0" S-103

ROOF FRAMING PLAN
3/8" = 1'-0"

- PLAN NOTES:
1. DOOR AND WINDOWS ARE SHOWN IN APPROXIMATE LOCATIONS. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.
 2. SEE SHEET S-101 FOR ABBREVIATIONS & LEGEND (SYMBOLS).
 3. PROVIDE (1) 2X4 MIN BEARING STUD AND (1) 2X4 MIN KING STUD AT EACH LVL & BEAM BEARING LOCATION. PROVIDE SOLID BLOCKING IN FLOOR SPACE.
 4. PROVIDE 19/32" APA RATED ROOF SHEATHING AT ROOF TRUSSES.
 5. PROVIDE 23/32" APA RATED ROOF SHEATHING AT PORCH ROOFS.

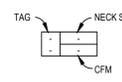


TRUSS PROFILE
NTS

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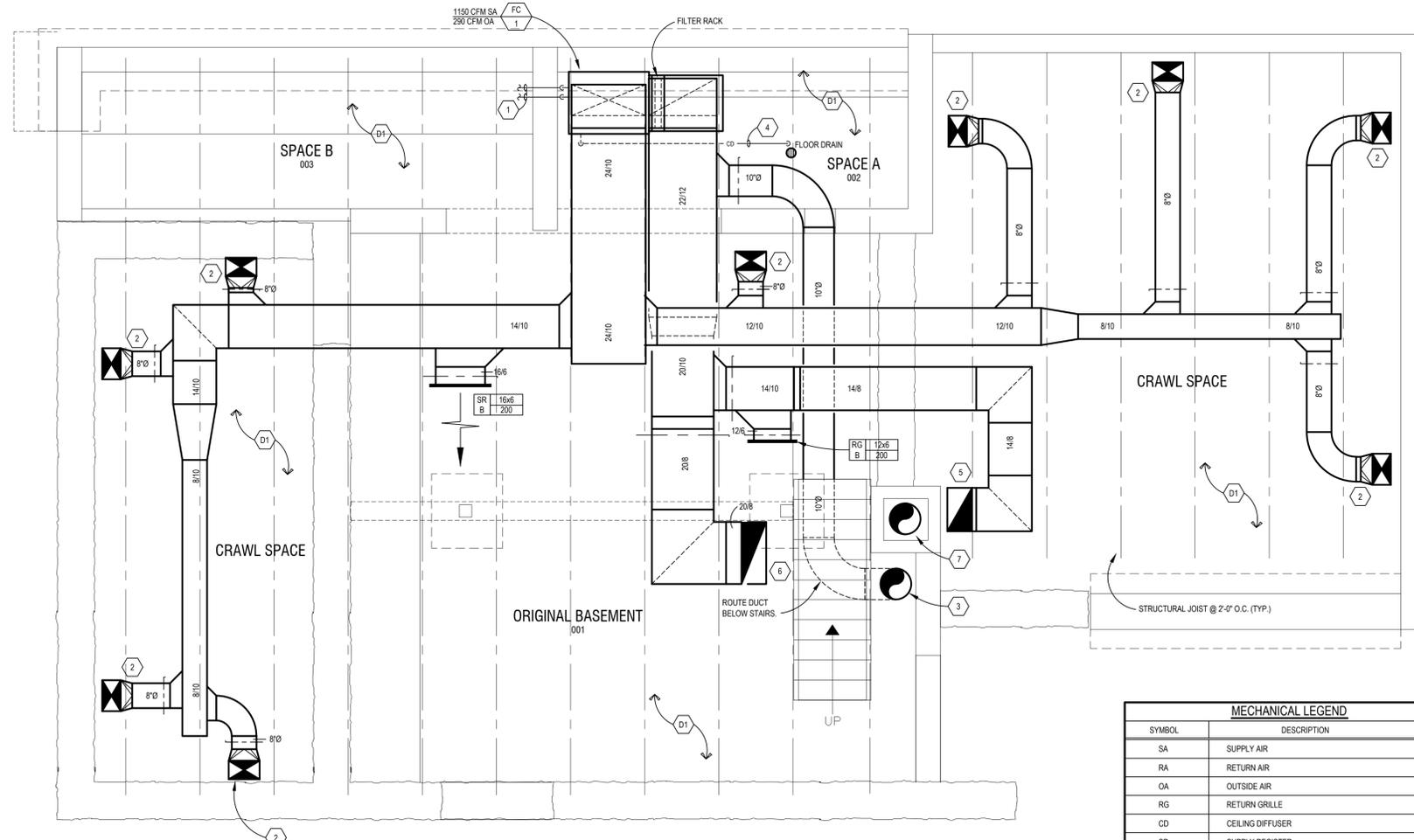
GRILLE, REGISTER AND DIFFUSER SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	CFM	AIR PATTERN	NECK SIZE	DAMPER	FRAME STYLE	PANEL SIZE	MAXIMUM NC LEVEL	FINISH	MATERIAL	REMARKS
SR A	SIGNATURE HARDWARE #282511	AS NOTED	AS SHOWN	AS NOTED	ADJUSTABLE BLADE	FLOOR SURFACE	NECK SIZE 1-1/2"	25	(1)	CAST IRON	 NOTE: (1) MATTE BLACK POWDER COAT FINISH. (2) WITHOUT ADJUSTABLE LOUVER.
SR B	HART & COOLEY 681	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	DUCT SURFACE	NECK SIZE 1-3/4"	25	WHITE	STEEL	
RG A	SIGNATURE HARDWARE #203352	AS NOTED	RETURN	AS NOTED	(2)	FLOOR SURFACE	NECK SIZE 1-1/2"	25	(1)	CAST IRON	
RG B	SIGNATURE HARDWARE WHITTINGTON #203341	AS NOTED	RETURN	AS NOTED	(2)	DUCT SURFACE	NECK SIZE 1-1/2"	25	(1)	CAST IRON	

SPLIT SYSTEM HEAT PUMP SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER		NOMINAL TONNAGE	CFM	ESP (IN.)	OUTDOOR AIR	COOLING CAPACITY		HEATING CAPACITY		INDOOR UNIT										OUTDOOR UNIT				REMARKS
	INDOOR UNIT	OUTDOOR UNIT					EAT DBWB	COOLING (MBH)	HEATING @ 17°F DB (MBH)	S/A FAN HP	AUXILIARY HTR COIL KW	VOLTAGE	MCA	MOCP	VOLTAGE	MCA	MOCP	AMB TEMP.	SEER	COP LOW					
FC 1	CARRIER FE4ANB00300	CARRIER Z5HC8336A0031	3.0	1150	1.0	290	80	67	34.2	22.34	1/2	15.0	208V, 1PH	98.9	100.0	208V, 1PH	22.3	35.0	95	14.0	2.58	SEE NOTES 1 THRU 17			

- FURNISH WITH THE FOLLOWING:**
- CARRIER MODEL #33CS220 DEBONAIR PROGRAMMABLE AND AUTO CHANGEOVER HEATCOOL TSTAT
 - 2 SETS OF 1" PLEATED THROW AWAY FILTERS
 - REFRIGERANT ACC AND LINE SIZE KIT SUCTION LINE TO BE INSULATED
 - LOW AMBIENT KIT OF 0: F
 - CYCLE PROTECTOR
 - EVAPOTATOR FREEZE TSTAT
 - FILTER DRYER
 - LOW PRESSURE SWITCH
 - OUTDOOR AIR TEMP. SENSOR
 - WINTER START CONTROL
 - HIGH PRESSURE SWITCH
 - DEFROST CONTROL
 - CRANKCASE HEATER
 - R-410A REFRIGERANT
 - FUSED TWO STAGE ELECTRIC HEAT
 - INTERLOCKING DISCONNECT SWITCH-FAN COIL
 - SINGLE POINT WIRING KIT.



- MECHANICAL CODED NOTES:**
- EXTEND REFRIGERANT PIPING FROM HEAT PUMP UNIT (HP-1) TO DX COOLING COIL OF INDOOR FAN COIL UNIT (FC-1) LOCATED IN BASEMENT.
 - PROVIDE SQUARE TO ROUND DUCT TRANSITION IN SUPPLY AIR DUCT. EXTEND 6"/10 SUPPLY AIR DUCT UP THROUGH FLOOR TO SUPPLY AIR REGISTER (SR-A).
 - 10" DIAMETER OUTSIDE AIR DUCT UP TO FIRST FLOOR.
 - EXTEND 3/4" CONDENSATE DRAIN TO FLOOR DRAIN AND TERMINATE WITH 2" AIR GAP.
 - EXTEND 1/4" RETURN AIR DUCT UP THROUGH FLOOR TO RETURN AIR GRILLE (RG-A).
 - EXTEND 20/9 RETURN AIR DUCT UP THROUGH FLOOR TO RETURN AIR GRILLE (RG-A).
 - ALTERNATE #1: EXTEND 10" DIAMETER OUTSIDE AIR DUCT UP IN EXISTING CHIMNEY TO FIRST FLOOR.

- MECHANICAL GENERAL NOTES:**
- MECHANICAL CONTRACTOR SHALL SAFEWASTE D.X. COOLING COIL AND FAN COIL CONDENSATE DRAIN W/2" AIR GAP.
 - MECHANICAL CONTRACTOR TO EXTEND & CONNECT REFRIGERANT PIPING FROM HEAT PUMP UNIT TO RESPECTIVE D.X. COOLING COIL AT FAN COIL UNIT. SEAL WALL PENETRATION WEATHERTIGHT. SIZE PIPING PER MANUFACTURERS RECOMMENDATIONS.
 - MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER AND VOLTAGE REQUIREMENTS.
 - ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL DISCONNECT SWITCH AND CONV. OUTLET AT HP-1.
 - MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF HP & FC UNITS WITH ARCHITECT AND OWNER.
 - THE MECHANICAL CONTRACTOR SHALL ACCURATELY COORDINATE THE SIZES AND LOCATION OF ALL DUCTWORK, PIPING, AND EQUIPMENT WITH THE LOCATION OF LIGHTING FIXTURES, STRUCTURAL MEMBERS, AND WORK OF ALL OTHER TRADES TO PREVENT CONFLICT. DUCTWORK CONFLICTING WITH LIGHTING FIXTURE LOCATIONS SHALL BE MOVED AT THIS CONTRACTOR'S EXPENSE.
 - MOUNT THERMOSTATS AT 4'-0" A.F.F. OR AS DIRECTED BY ARCHITECT.
 - ALL DUCTWORK DIMENSIONS NOTED ON PLAN REFERS TO THE CLEAR INSIDE OPENING REQUIRED.
 - ALL WALL AND FLOOR CUTTING, PATCHING, AND FLASHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS SHALL BE MADE BY THE MECHANICAL CONTRACTOR.
 - ALL OUTSIDE AIR INTAKES FOR MECHANICAL EQUIPMENT SHALL BE LOCATED A MINIMUM OF 10 FEET FROM EXHAUST OUTLETS OF VENTILATION SYSTEMS, COMBUSTION EQUIPMENT STACKS, PLUMBING VENT AND PROPERTY LINES.
 - MOUNT HEAT PUMPS LEVEL IN ALL DIRECTIONS ON 6" THICK CONCRETE PADS BY MECHANICAL CONTRACTOR AND SHALL BE 6" LARGER THAN CONDENSING UNITS IN ALL DIRECTIONS.

- MECHANICAL DEMOLITION CODED NOTE:**
- ALL EXISTING HEATING AND VENTILATION SYSTEMS AND ASSOCIATED EQUIPMENT (FURNACE, DUCTWORK, AIR DISTRIBUTION DEVICES, FUEL OIL PIPING, THERMOSTAT, TEMPERATURE CONTROLS, ETC.) TO BE DISCONNECTED, REMOVED AND DISPOSED OF IN ITS ENTIRETY UNLESS OTHERWISE INDICATED TO REMAIN AND BE REUSED.

- MECHANICAL DEMOLITION GENERAL NOTES:**
- THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING DUCTWORK, PIPING AND EQUIPMENT REQUIRING DEMOLITION. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE ARCHITECT AND WITH THE OWNER.
 - EXISTING PIPING, DUCTWORK, TEMPERATURE CONTROLS, AND EQUIPMENT ARE TO BE DISCONNECTED, REMOVED AND DISPOSED OF UNLESS OTHERWISE INDICATED TO REMAIN AND BE REUSED.
 - THE MECHANICAL DEMOLITION WITH SHALL BE PERFORMED EXCLUSIVELY BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE INDICATED.
 - THE MECHANICAL DEMOLITION WORK SHALL CONSIST OF THE FOLLOWING: DISCONNECT, REMOVAL, AND DISPOSAL OF FOLLOWING DUCTWORK, SUPPORTS AND ACCESSORIES: 1) SUPPLY AIR DUCTWORK, DIFFUSERS AND GRILLES, 2) RETURN AIR DUCTWORK AND GRILLES, 3) EXHAUST AIR DUCTWORK AND GRILLES.
 - THE MECHANICAL DEMOLITION WORK SHALL CONSIST OF THE FOLLOWING: DISCONNECT, REMOVAL, AND DISPOSAL OF FOLLOWING EQUIPMENT AND ACCESSORIES: 1) FURNACE, 2) TEMPERATURE CONTROLS.
 - THE MECHANICAL DEMOLITION WORK SHALL CONSIST OF THE FOLLOWING: DISCONNECT, REMOVAL, AND DISPOSAL OF FOLLOWING PIPING SUPPORTS AND ACCESSORIES: 1) FUEL OIL PIPING.
 - REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
 - ALL PATCHING AND SEALING OF WALLS, FLOORS, ETC. TO BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND PERFORMED BY THE MECHANICAL CONTRACTOR.

DUCTWORK SCHEDULE

DUCT SYSTEM	SMACNA PRESSURE CLASS	SMACNA SEAL CLASS	DUCT MATERIAL	INSULATION
SUPPLY AIR DUCTWORK	2"	A	G-60 GALVANIZED STEEL	2" THICK DUCT WRAP W/ASJ
RETURN AIR DUCTWORK	1"	A	G-60 GALVANIZED STEEL	1" THICK DUCT LINING
OUTSIDE AIR DUCTWORK	2"	A	G-60 GALVANIZED STEEL	2" THICK DUCT WRAP W/ASJ

NOTE: ALL DUCTWORK SIZES ARE AIRWAY DIMENSIONS

BASEMENT MECHANICAL PLAN
SCALE: 1/2" = 1'-0"



WSASTUDIO
982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com

City of Dublin

Point One Design, Ltd.
Consulting Engineers
8841 York Road, Cleveland, Ohio 44133
440.226.1800 Fax: 440.226.1801
www.pointonedesign.com
893 High Street, Suite 106, Worthington, Ohio 43085
614.444.8300 Fax: 614.444.8302
www.pointonedesign.com

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016



Issue Date: 05-17-2013
Project Number: 201285.00

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BASEMENT MECHANICAL PLAN
M-1

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Point One Design, Ltd.
Consulting Engineers
9841 York Road, Cleveland, Ohio 44133
440.235.1600 Fax 440.235.1201
www.pointonedesign.com
850 High Street, Suite 106, Worthington, Ohio 43082
614.649.2800 Fax 614.649.2810
info@pointonedesign.com

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016



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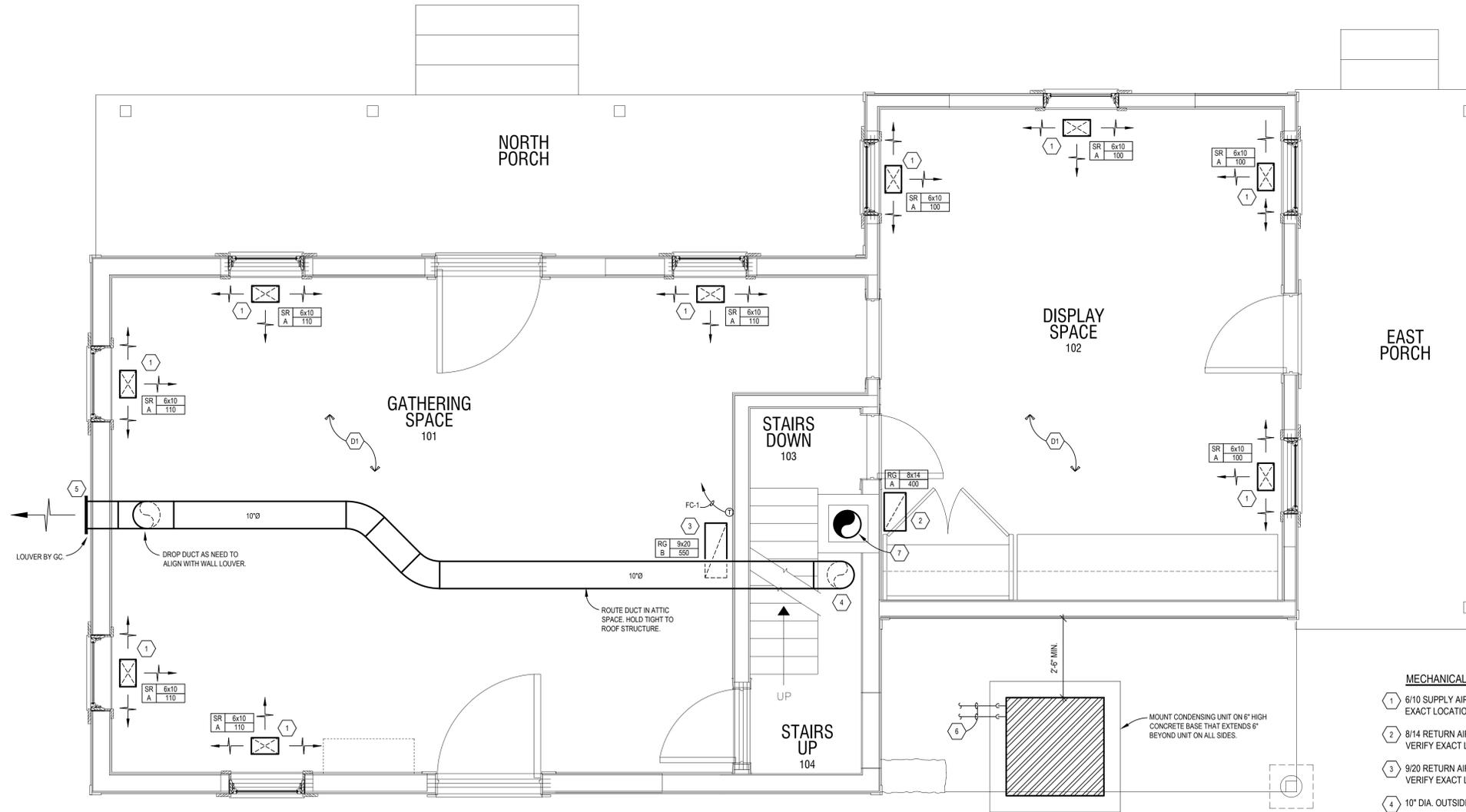
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FIRST FLOOR MECHANICAL PLAN

M-2

VENTILATION AIR REQUIREMENT												
HVAC UNIT	ZONE DESCRIPTION	ZONE FLOOR AREA (SQ. FT.) Az	AREA OUTDOOR AIR RATE (CFMSQ.FT) Ra	PEOPLE OUTDOOR AIR RATE (CFM/PERSON) Rp	ZONE POPULATION (# OF PEOPLE) Pz	BREATHING ZONE OUTDOOR AIR FLOW (CFM) Vz	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	ZONE OUTDOOR AIR FLOW (CFM) Vz	SYSTEM VENTILATION EFFICIENCY Ev	MINIMUM OUTDOOR AIR INTAKE FLOW (CFM) Vza	DESIGN OUTDOOR AIR INTAKE FLOW (CFM)	REMARKS
	GATHERING SPACE	300	0.06	7.5	12	108	0.8	135	1	135	139	
	DISPLAY SPACE	200	0.06	7.5	8	72	0.8	90	1	90	101	
	BASEMENT	315	0.12	0	0	37.8	0.8	47.25	1	47.25	50	
						TOTAL		217.8		272.25	290	

NOTE: MECHANICAL AIR VENTILATION REQUIREMENTS BASED ON OHIO MECHANICAL CODE - 2011 EDITION



MECHANICAL CODED NOTES:

- 1 6/10 SUPPLY AIR DUCT UP FROM BASEMENT TO SUPPLY AIR REGISTER (SR-A). VERIFY EXACT LOCATION AND POINT OF CONNECTION IN FIELD.
- 2 8/14 RETURN AIR DUCT DOWN TO BASEMENT FROM RETURN AIR GRILLE (RG-A). VERIFY EXACT LOCATION AND POINT OF CONNECTION IN FIELD.
- 3 9/20 RETURN AIR DUCT DOWN TO BASEMENT FROM RETURN AIR GRILLE (RG-B). VERIFY EXACT LOCATION AND POINT OF CONNECTION IN FIELD.
- 4 10" DIA. OUTSIDE AIR DUCT UP FROM BASEMENT TO ATTIC.
- 5 EXTEND NEW 10" DIA. OUTSIDE AIR DUCT UP TO LOUVER IN EXISTING EXTERIOR WALL. LOUVER TO BE FURNISHED AND INSTALLED BY GC. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 6 EXTEND REFRIGERANT PIPING FROM HEAT PUMP UNIT (HP-1) TO DX COOLING COIL OF INDOOR FAN COIL UNIT (FC-1) LOCATED IN BASEMENT.
- 7 ALTERNATE #1: EXTEND 10" DIAMETER OUTSIDE AIR DUCT UP IN EXISTING CHIMNEY TO NEW WEATHER CAP MOUNTED ON TOP OF CHIMNEY. VERIFY EXACT SIZE OF CAP IN FIELD. COLOR AND FINISH OF CAP TO BE SELECTED BY ARCHITECT.

MECHANICAL DEMOLITION CODED NOTE:

- D1 ALL EXISTING HEATING AND VENTILATION SYSTEMS AND ASSOCIATED EQUIPMENT (FURNACE, DUCTWORK, AIR DISTRIBUTION DEVICES, FUEL OIL PIPING, THERMOSTAT, TEMPERATURE CONTROLS, ETC.) TO BE DISCONNECTED, REMOVED AND DISPOSED OF IN ITS ENTIRETY UNLESS OTHERWISE INDICATED TO REMAIN AND BE REUSED.

FIRST FLOOR MECHANICAL PLAN

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



ELECTRICAL SPECIFICATIONS

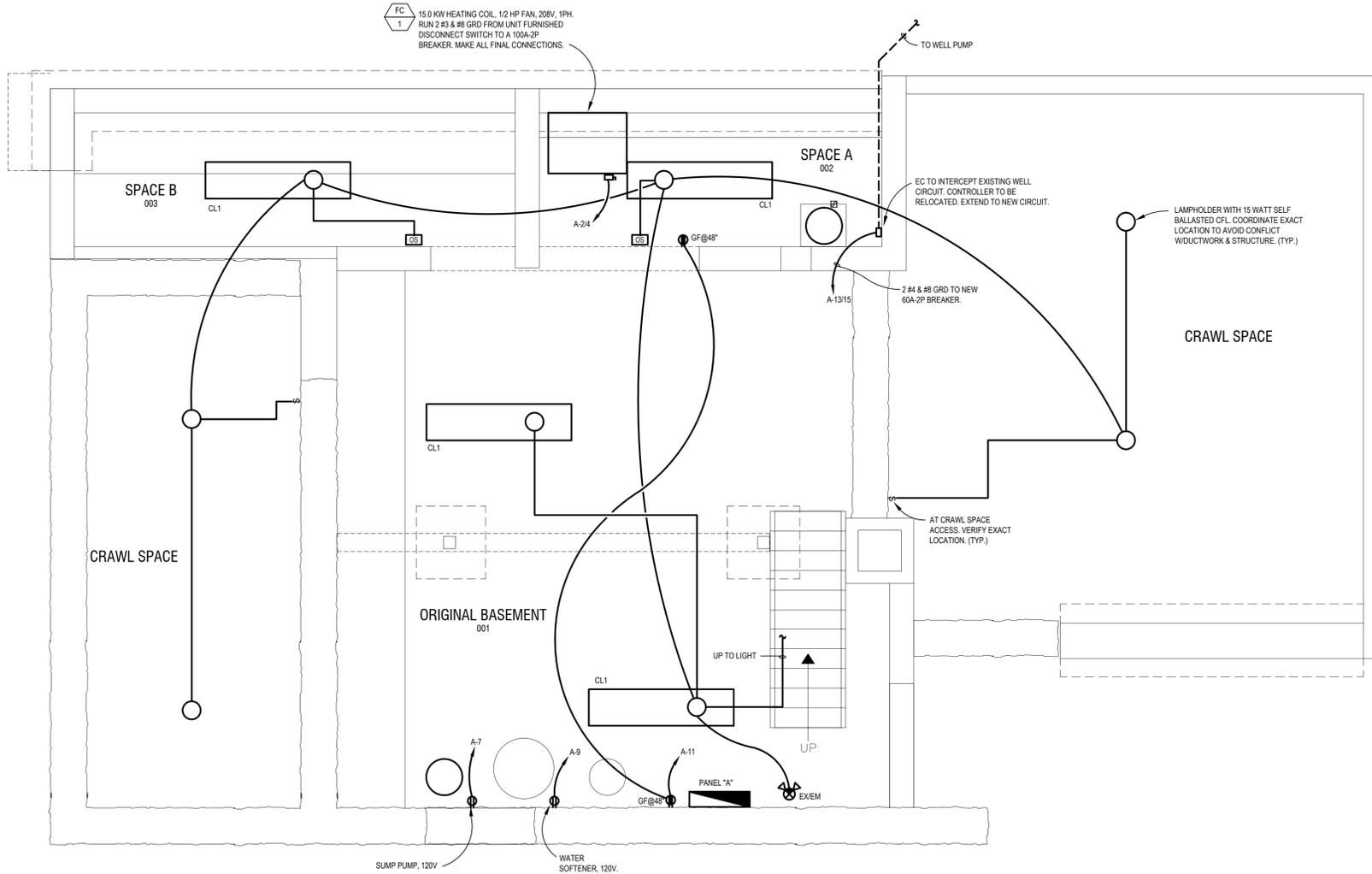
- THE REQUIREMENTS AS SET FORTH UNDER GENERAL CONDITIONS, INSTRUCTIONS TO BIDDERS AND GENERAL REQUIREMENTS ARE A PART OF THIS CONTRACT. BIDS SHALL BE BASED ON A COMPLETE SET OF DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH WORK PERFORMED BY OTHER TRADES.
- CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL BE BASED ON EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL EXISTING ELECTRICAL LOCATIONS, CONDITIONS ETC. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY IN THE PERFORMANCE OF THE ELECTRICAL WORK. BEGINNING OF WORK INDICATES ACCEPTANCE OF EXISTING CONDITIONS.
- FURNISH ALL LABOR, MATERIALS, TESTING, EQUIPMENT, INCIDENTALS AND TOOLS TO PERFORM ELECTRICAL WORK SHOWN, NOTED OR SCHEDULED FOR A COMPLETE AND FINISHED INSTALLATION. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND AS SUCH APPEAR ON THE UNDERWRITERS LABORATORIES LIST OF APPROVED ITEMS AND SHALL BE SIZED IN CONFORMANCE WITH REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES, WHOEVER ARE MORE STRINGENT.
- ALL WORK IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. ALL ELECTRICAL EQUIPMENT & MATERIALS SHALL BE U.L. LABELED AND LISTED PER NEC 110.3(A)(1).
- SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, ASSESSMENTS AND INSPECTION CERTIFICATES THAT RELATE TO THE ELECTRICAL CONTRACT. FURNISH APPROVED CERTIFICATE OF FINAL INSPECTION, AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.
- THESE ELECTRICAL PLANS ARE DIAGRAMMATIC, NOT SHOWING EVERY ITEM IN EXACT LOCATION OR DETAIL. MEASUREMENTS AND LOCATIONS MUST BE FIELD-VERIFIED AND COORDINATED WITH ARCHITECTURAL, PLUMBING, HVAC, FIRE PROTECTION, STRUCTURAL AND OTHER BUILDING DRAWINGS.
- CONDUIT SHALL BE STANDARD STEEL RIGID OR EMT (THIN WALL) ACCORDING TO LOCAL CODE REQUIREMENTS. CONDUIT SHALL BE CONCEALED IN FINISHED AREAS, EXCEPT AS OTHERWISE APPROVED BY THE ARCHITECT. THE USE OF SURFACE RACEWAY EXCEPT AS CALLED FOR ON DRAWINGS SHALL REQUIRE APPROVAL OF THE ARCHITECT. EMT CONNECTIONS SHALL BE COMPRESSION OR SET-SCREW TYPE. FLEXIBLE CONDUIT OR TYPE MC CABLE SHALL BE APPROVED FOR CONCEALED BRANCH CIRCUITING AND FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS AND VIBRATING EQUIPMENT AND WHERE SO USED TO BE GROUNDED WITH A SEPARATE FULL SIZED GREEN GROUNDING CONDUCTOR. EXPOSED FINAL TYPE MC/FLEX CONNECTIONS SHALL BE LIMITED TO 10'-0" IN LENGTH. ARRANGE CIRCUITS SO AS TO AVOID THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILING AREAS. JUNCTION BOXES LOCATED ABOVE LAY-IN CEILINGS ARE ACCEPTABLE. CONCEALED TYPE NM WIRING IS ALSO APPROVED. NO EXPOSED NM WIRING WILL BE ALLOWED.
- MINIMUM SIZES OF CONDUITS SHALL BE 1/2"
- PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL WORK. ALL CORE DRILLING OR CUTTING OF FIRE-RATED FLOORS, SHAFTS AND WALLS SHALL BE FIRE-STOPPED PRIOR TO FINISH PATCHING. ALL PENETRATIONS SHALL BE FIRE SEALED TO MATCH THE FIRE RATING OF THE FLOOR, SHAFT OR WALL PENETRATED.
- WIRE SHALL BE SINGLE CONDUCTOR COPPER WITH 600 VOLT INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG. ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE BROUGHT TO THE SITE IN UNBROKEN PACKAGES. INCREASE CONDUCTOR SIZE BY ONE SIZE FOR EVERY 150' INCREMENT OF DISTANCE FROM THE PANEL BOARD FOR 120 VOLT CIRCUITS. GENERAL WIRING SHALL BE THIN, THIN, THIN, OR RHW. ALUMINUM CONDUCTORS ARE NOT PERMITTED FOR BRANCH CIRCUIT WIRING. ALUMINUM WIRING OF EQUIPMENT SIZE TO COPPER SPECIFIED IS APPROVED FOR SECONDARY SERVICE CABLES AND PANEL FEEDERS ONLY.
- FURNISH AND INSTALL A COMPLETE WIRING GROUNDING SYSTEM FOR ELECTRICAL SERVICE ENTRANCE, ELECTRICAL EQUIPMENT AND CIRCUITS AS SHOWN ON THE DRAWINGS AND REQUIRED PER N.E.C. ARTICLE 250. ALL GROUNDING CONDUCTORS SHALL BE GREEN, WHERE EXPOSED IN PANEL, OUTLETS, BOXES, ETC.
- RECEPTACLES SHALL BE 20 AMP, 3-WIRE GROUNDING TYPE EQUAL TO HUBBELL 532. WALL SWITCHES SHALL BE 20 AMP SPECIFICATION GRADE. ALL DEVICE COVERPLATES SHALL BE PASS AND SEYMOUR OR EQUAL.
- PROVIDE BRANCH CIRCUIT PANELS WHICH SHALL BE OF THE BOLTED CIRCUIT BREAKER TYPE WITH SOLID COPPER BUSSING FULL SIZED NEUTRAL, 25' GROUND BUSSING, OVERALL HINGED, LOCKABLE DOOR, AND TYPEWRITTEN DIRECTORY INSIDE DOOR. ALL SERVICE ENTRANCE EQUIPMENT SHALL BEAR THE MANUFACTURER'S LABEL WHICH SHALL STATE THAT THE EQUIPMENT IS RATED FOR SERVICE ENTRANCE APPLICATION IN ACCORDANCE WITH N.E.C. #230-70. LOAD BALANCE ALL ELECTRICAL PHASES AT PANEL. TWO AND THREE POLE BREAKERS SHALL BE COMMON TRIP TYPE. SQUARE D OR EQUAL BY EATON, CUTLER-HAMMER, OR GENERAL ELECTRIC.

ELECTRICAL SPECIFICATIONS (CONT.)

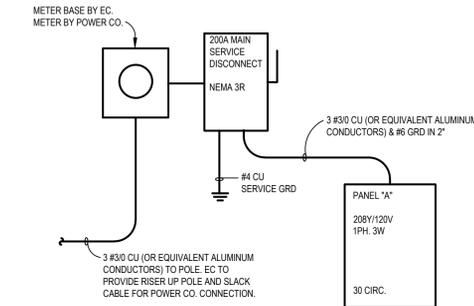
- PROVIDE SAFETY AND DISCONNECT SWITCHES, FUSED OR NON-FUSED, AS CALLED FOR ON DRAWINGS AND AS REQUIRED BY CODE. FUSES AS MANUFACTURED BY BUSSMAN OR EQUAL. DISCONNECT SWITCHES THAT ARE INSTALLED AT AIR CONDITIONING EQUIPMENT, HEAT PUMPS, ETC SHALL BE IN ACCORDANCE WITH THE EQUIPMENT'S NAME PLATE REQUIREMENTS PER N.E.C. 440-21 & 110-38. SWITCHES SHALL BE HEAVY DUTY, QUICK MAKE/BREAK TYPE, FUSIBLE OR NON-FUSIBLE. LOAD AND HORSEPOWER RATED AS MANUFACTURED BY SQUARE D, EATON, CUTLER-HAMMER, OR GENERAL ELECTRIC, WEATHERPROOF WHERE APPLICABLE.
- PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL ELECTRICAL EQUIPMENT INCLUDING SWITCHBOARDS, PANELBOARDS, MOTOR CONTROLLERS, AND ANY OTHER EQUIPMENT LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED. THE LABELS SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION.
- OUTLET BOXES AND COVERS SHALL BE GALVANIZED, ONE-PIECE PRESSED STEEL KNOCKOUT. JUNCTION, PULL BOXES AND COVERS SHALL BE GALVANIZED STEEL, CODE GAUGE SIZE. INSTALL BOXES RIGIDLY ON BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE APPROPRIATE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF WALLS ETC. ALL OUTLET BOXES TO HAVE SUITABLE BLOCKING BEHIND THEM TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.
- PROVIDE ELECTRICAL SERVICE AS SHOWN ON THE DRAWINGS. FIELD VERIFY EXACT REQUIREMENTS PRIOR TO BIDS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OWNER OR POWER COMPANY SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. COORDINATE ENTIRE INSTALLATION WITH POWER COMPANY. PROVIDE EQUIPMENT THAT IS COMPATIBLE WITH AVAILABLE FAULT CURRENT LEVELS AND PROVIDE "CABLE LIMITERS" IF NECESSARY FOR SYSTEM COORDINATION. FIELD VERIFY EXACT TYPE, SIZE, LOCATION, ETC. OF EXISTING UTILITIES PRIOR TO BIDDING PROJECT.
- ALL ELECTRIC WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS CHANNELS, RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK AND SHALL BE FASTENED TO BUILDING STEEL, CONCRETE OR MASONRY, BUT NOT PIPING OR DUCTWORK. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. CONDUITS SHALL BE IN STRAIGHT LINES PARALLEL WITH OR AT RIGHT ANGLES TO COLUMN LINES OR BEAMS AND SEPARATED AT LEAST 3 INCHES FROM WATER LINES WHEREVER THEY RUN ALONGSIDE OR ACROSS SUCH LINES. ALL CONDUCTORS SHALL BE IN CONDUIT, DUCTS OR OTHER CODE APPROVED RACEWAYS.
- MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS APPEARING IN THAT PERIOD SHALL BE CORRECTED AT THE ELECTRICAL CONTRACTOR'S EXPENSE. FOR THE SAME PERIOD, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THE ELECTRICAL CONTRACTOR.
- IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL, OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED.
- THE ELECTRICAL SERVICE SHOWN ON THE PLAN IS SHOWN FOR INTENT, ONLY. THE ELECTRICAL CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL COMMUNICATION AND COORDINATION WITH THE UTILITY COMPANY, INCLUDING THE EXACT LOCATION FOR CONNECTING TO THE INCOMING PRIMARY SERVICE AND THE REQUIREMENTS FOR PRIMARY ELECTRICAL SERVICE. THE EXACT LOCATION OF THE TRANSFORMER AND CT ENCLOSURE, THE METER, GROUNDING REQUIREMENTS AND THE REQUIREMENTS FOR THE SECONDARY CONDUITS AND CONDUCTORS.

ELECTRICAL LEGEND

LIGHTING		POWER	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⌘	WALL SWITCH @48" A.F.F., 20A, 120V	⊕	DUPLEX RECEPTACLE @18" A.F.F., 20A, 125V
⌘ ³	THREE-WAY SWITCH @48" A.F.F., 20A, 120V	⊕ ³	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER @18" A.F.F., 20A, 125V
⊕	OCCUPANCY SENSOR WALL MOUNTED @48" A.F.F.	⊕ ^{WP}	DUPLEX RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER @18" A.F.F. OR A.F.C. 20A, 125V
⊕	OCCUPANCY SENSOR CEILING MOUNTED	⊕	SPECIAL RECEPTACLE AMPERAGE, @18" A.F.F. COORDINATE NEMA CONFIG. WITH EQUIPMENT FED.
⊕	FLOURESCENT LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE.	⊕	JUNCTION BOX MOUNTED AS NOTED.
⊕ NL	LIGHT FIXTURE ON NIGHT LIGHT	⊕	SAFETY DISCONNECT SWITCH @60" A.F.F. TO TOP
⊕	CEILING LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE.	⊕	PANELBOARD, SURFACE MOUNTED @6'-0" A.F.F. TO TOP
⊕	WALL LIGHTING OUTLET @ HEIGHT PER FIXTURE SCHEDULE OF ARCHITECTURAL ELEVATIONS.	⊕	PANELBOARD, FLUSH MOUNTED @6'-0" A.F.F. TO TOP
⊕	EMERGENCY EXIT LIGHT, SINGLE FACE, CLG. MOUNTED.	⊕ ^{EF}	CEILING EXHAUST FAN BY M.C. WIRED BY (FURN. E.C.) MAKE ALL CONNECTIONS AS INDICATED ON DRAWING.
⊕	EMERGENCY EXIT LIGHT, SINGLE FACE, WALL MOUNTED.	⊕	4" SQ. BOX W/IG PLASTER RING @18" A.F.F. FOR TELEPHONE OUTLET. COVER/PLATE WIRING & TERMINATION BY OWNER RUN 3/4" C. FROM BOX UP IN WALL TO ABOVE ACCESSIBLE CEILING
⊕	COMBINATION EMERGENCY EXIT/EGRESS LIGHT, SINGLE FACE, CEILING MOUNTED		
⊕	EMERGENCY EGRESS LIGHT @90" A.F.F. WALL MOUNTED		
⊕ EMR	EMERGENCY REMOTE HEAD FOR EXIT DISCHARGE		
⊕	SELF CONTAINED BATTERY		



PANEL: "A"		LOCATION: 001 BASEMENT SURFACE		VOLTAGE: 120/240, 1 PHASE, 3 WIRE					
LOAD DESCRIPTION		VA	CB/P	NO.	PH	NO.	CB/P	VA	LOAD DESCRIPTION
BSMT LIGHTING	296	201	1	A	2	1002		8228	FAN COIL UNIT
1ST FLR LIGHTING	546	201	3	B	4			8228	
EXT FLR LIGHTING	300	201	5	A	6	352		1872	HEAT PUMP COND. UNIT
SUMP PUMP	500	201	7	B	8			1872	
SOFTENER	200	201	9	A	10	201	720		RECEPTACLES
BSMT RECEPTS.	360	201	11	B	12	201	180		RECEPTACLES
WELL PUMP	4160	602	13	A	14	201	540		RECEPTACLES
	4160		15	B	16	201	540		RECEPTACLES
WATER HEATER	2400	302	17	A	18	201	-		SPARE
	2400		19	B	20	201	-		SPARE
SPACE	-	-	21	A	22	201	-		SPARE
SPACE	-	-	23	B	24	201	-		SPARE
SPACE	-	-	25	A	26	-	-		SPACE
SPACE	-	-	27	B	28	-	-		SPACE
SPACE	-	-	29	A	30	-	-		SPACE
SPACE	-	-	29	B	30	-	-		SPACE
DEMAND LOAD:								CONNECTED LOAD:	
37602/240 = 156.6 x 1.25 = 195.8								PHASE A 18816 W	
								PHASE B 18786 W	
								TOTAL CONNECTED LOAD: 37602 W	



ELECTRICAL RISER DIAGRAM
NO SCALE

BASEMENT ELECTRICAL PLAN

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



982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com



Point One Design, Ltd.
Consulting Engineers
9841 York Road, Suite 100, Dublin, Ohio 43015
614.824.1633
www.pointonedesign.com

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016



Issue Date: 05-17-2013
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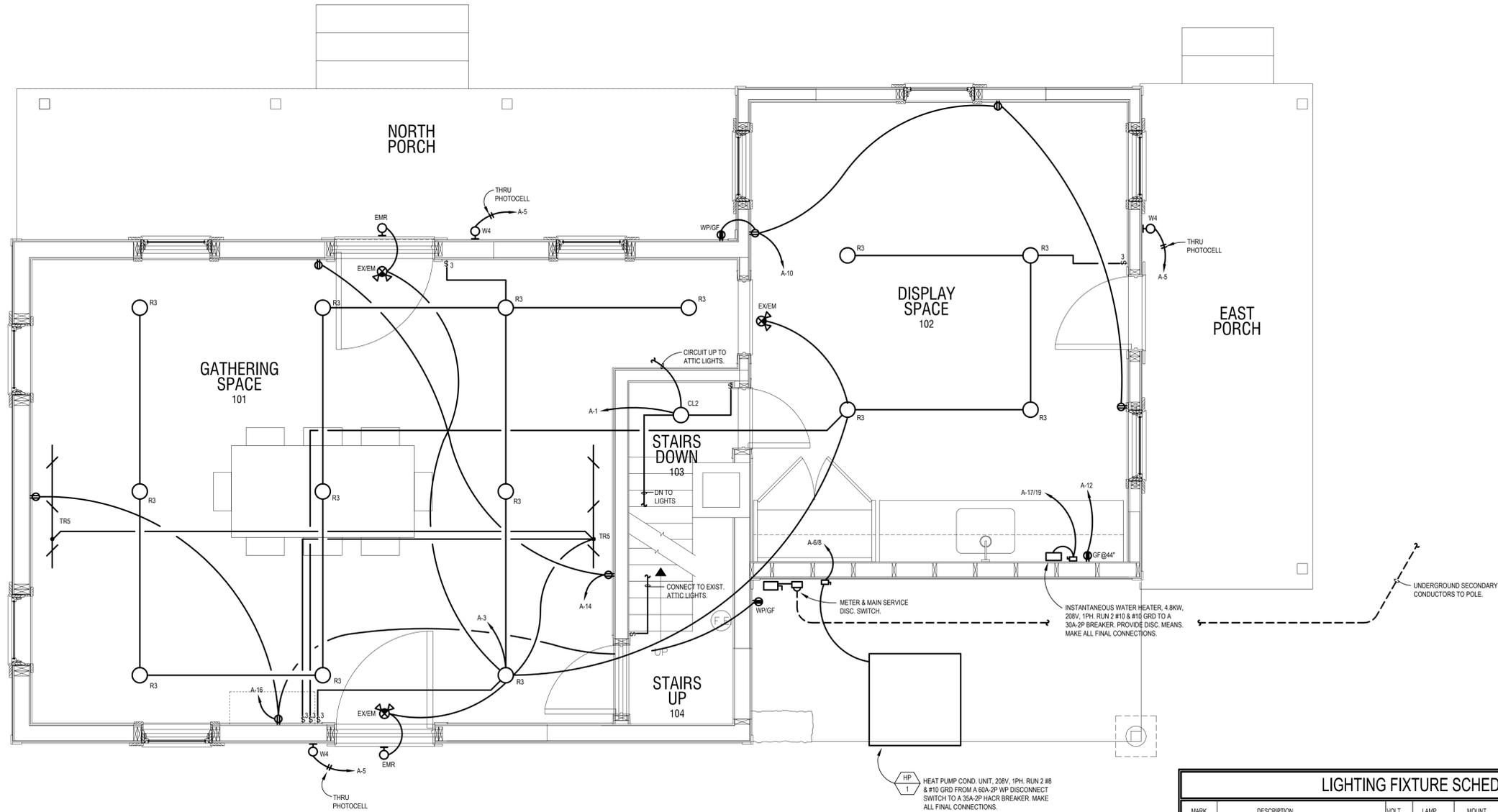
DRAWN BY: MLT CHECKED: JAK

BASEMENT ELECTRICAL PLAN

E-1

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FIRST FLOOR ELECTRICAL PLAN

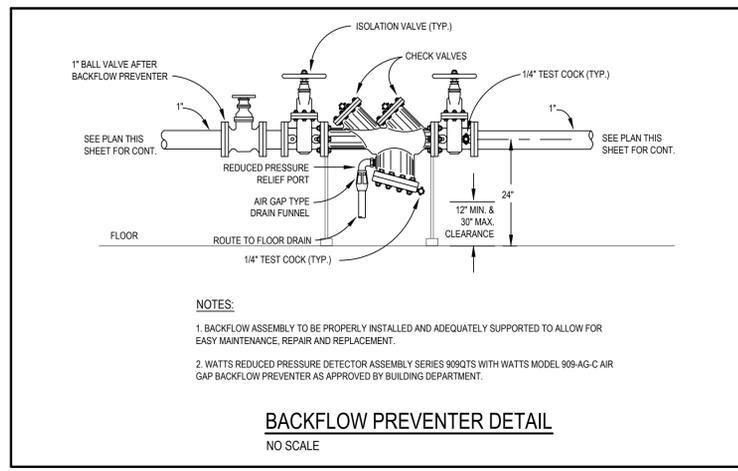
SCALE: 1/2" = 1'-0"



LIGHTING FIXTURE SCHEDULE					
MARK	DESCRIPTION	VOLT	LAMP	MOUNT	MANUFACTURER
CL1	4' FLUORESCENT WRAPAROUND, T8 LAMPS, ELECTRONIC BALLAST	120	(2) F032	SURFACE CEILING	LITHONIA LB-232-MVOLT-GE8101S
CL2	ROUND CEILING LIGHT FLUORESCENT, OPAL WHITE DIFFUSER, 11" DIA.	120	(1) 22W CIRCLINE	SURFACE CEILING	LITHONIA FM22-ACL-R-LP
R3	6" RECESSED SHALLOW HOUSING CFL, IC RATED DOWNLIGHT, WHITE BAFFLE	120	(1) 32TRT	RECESSED CEILING (DRYWALL)	LITHONIA L16F-32TRT-MVOLT-681W
W4	EXTERIOR PERIOD LANTERN	120	(1) 100A	EXT. WALL	SELECTED BY OWNER
TR5	SINGLE CIRCUIT TRACK LIGHTING	120	(1) 75 PAR 30	CEILING	LITHONIA LTC-FRSD-PAR30-WH
EXEM	SELF CONTAINED EMERGENCY EXIT COMBO UNIT, WHITE HOUSING, SIDE MOUNTED HEADS ONLY, 9-7/8" HEIGHT MAXIMUM	120	LED/INCAN.	UNIVERSAL	LITHONIA LHQM-S-W-R-HO
EMR	EXIT DISCHARGE EMERGENCY REMOTE HEAD POWERED FROM EXEM	6V	FURN. W/UNIT	EXT. WALL ABOVE DOOR	LITHONIA ELA-T-MR24-K0606

NOTES:
 1. CONNECT ALL EXIT & EMERGENCY LIGHTS TO LOCAL AREA LIGHTING CIRCUIT AHEAD OF ANY SWITCHING.
 2. PROVIDE BALLAST DISCONNECT IN ALL LINEAR FLUORESCENT LIGHT FIXTURES PER N.E.C. 410.130 (G).
 3. EQUAL FIXTURES BY COOPER, HUBBELL OR LSI.

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NOTES:
 1. BACKFLOW ASSEMBLY TO BE PROPERLY INSTALLED AND ADEQUATELY SUPPORTED TO ALLOW FOR EASY MAINTENANCE, REPAIR AND REPLACEMENT.
 2. WATTS REDUCED PRESSURE DETECTOR ASSEMBLY SERIES 909QTS WITH WATTS MODEL 909-AG-C AIR GAP BACKFLOW PREVENTER AS APPROVED BY BUILDING DEPARTMENT.

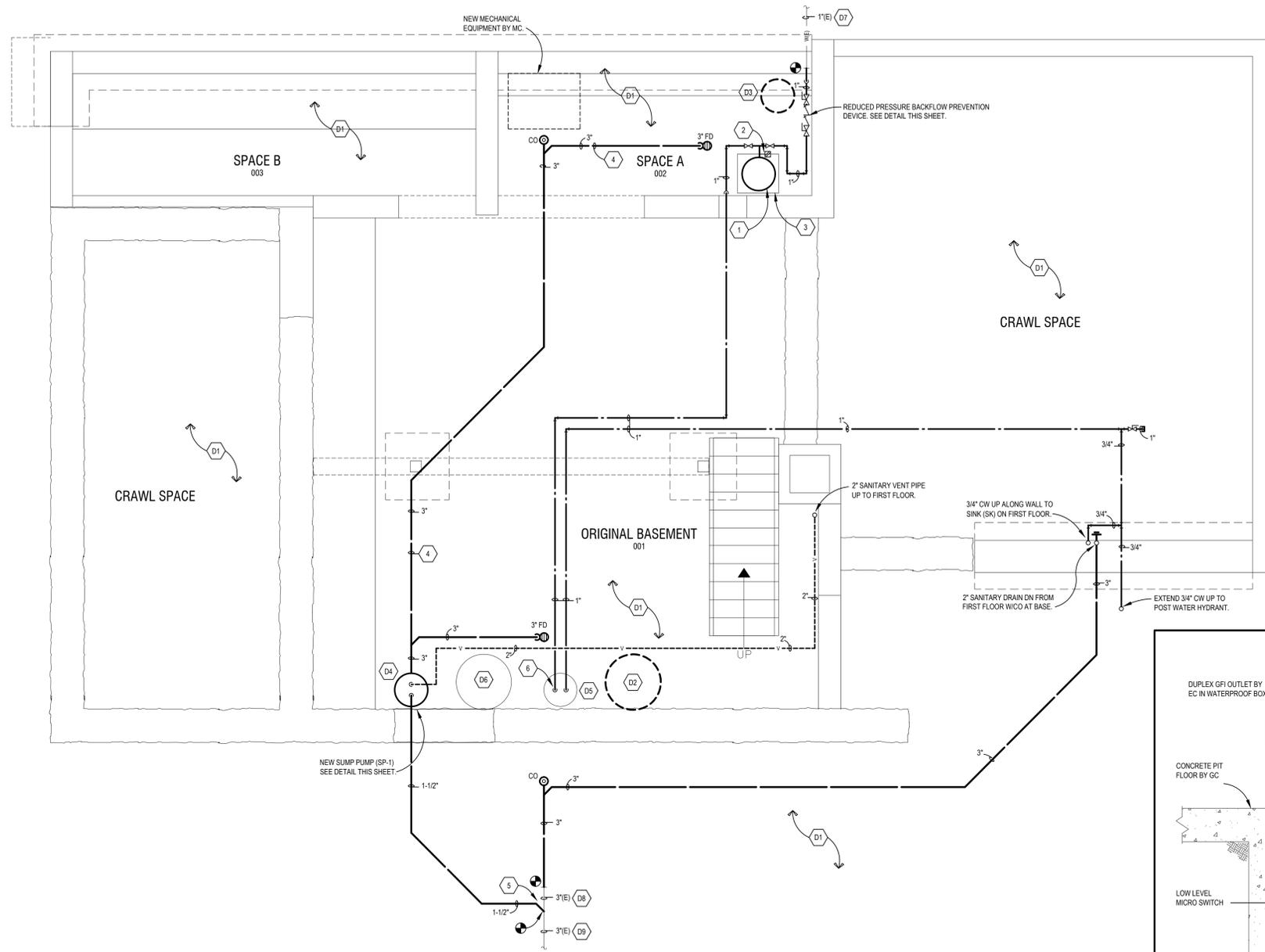
BACKFLOW PREVENTER DETAIL
NO SCALE

- PLUMBING GENERAL NOTES:**
1. PLUMBING CONTRACTOR SHALL COORDINATE EXACT LOCATION OF SERVICES IN BUILDING PRIOR TO STARTING ANY WORK.
 2. ALL NEW ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED A MINIMUM OF 12" ABOVE THE ROOF. ALL VENTS SHALL BE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE.
 3. ALL WATER LINES INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED INSIDE OF WALL INSULATION AND INSULATED INDIVIDUALLY TO PROTECT FROM FREEZING.
 4. THE PLUMBING CONTRACTOR TO MAKE ALL FINAL PLUMBING CONNECTIONS TO FIXTURES AND EQUIPMENT.
 5. EXISTING PIPING AND EQUIPMENT LOCATIONS ARE SCHEMATIC. VERIFY EXACT LOCATION AND ELEVATIONS IN FIELD.
 6. ALL PATCHING AND SEALING OF WALLS, FLOORS, CEILINGS, ETC., TO BE DONE BY THE PLUMBING CONTRACTOR.
 7. COORDINATE THE ROUTING OF ALL PIPING WITH MECHANICAL CONTRACTOR AND ELECTRICAL CONTRACTOR. NO PIPING SHALL BE INSTALLED ABOVE ELECTRICAL PANELS AND EQUIPMENT.
 8. COORDINATE ALL ROUGH-IN LOCATIONS WITH ARCHITECTURAL PLANS AND OWNER.
 9. REFER TO MECHANICAL DRAWING M-3 FOR PLUMBING SPECIFICATIONS.

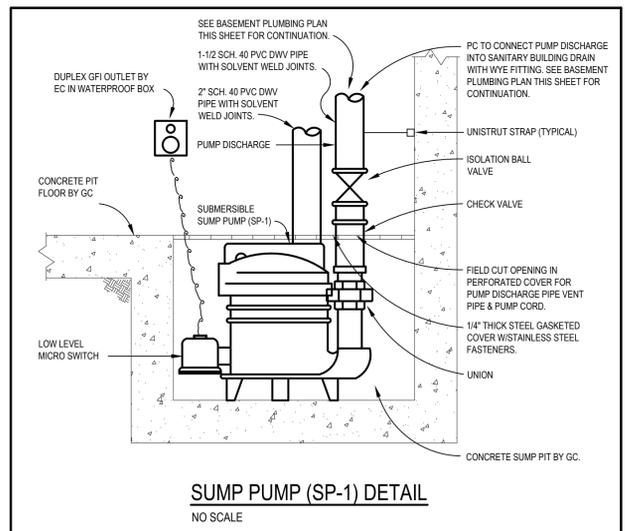
- PLUMBING CODED NOTES:**
- 1 RELOCATED PRESSURIZED WELL TANK. PC TO FURNISH AND INSTALL ALL PIPING, VALVES, ACCESSORIES, ETC. AS REQUIRED FOR A FULLY OPERATIONAL SYSTEM. TEST AND ADJUST WELL TANK FOR OPTIMUM PERFORMANCE.
 - 2 RELOCATED WELL PUMP CONTROLLER. PC TO FURNISH AND INSTALL ALL PIPING, ACCESSORIES, ETC. AS REQUIRED FOR A FULLY OPERATIONAL UNIT. IF CONTROLLER IS FOUND TO BE DEFECTIVE THE PC TO REPLACE SUCH WITH A NEW CONTROLLER OF EQUAL CAPACITY PERFORMANCE AND TYPE. TEST AND ADJUST CONTROLLER FOR OPTIMUM PERFORMANCE.
 - 3 PC TO PROVIDE 4" CONCRETE PAD FOR RELOCATED WELL TANK. THE PAD TO EXTEND SIX (6') BEYOND ALL SIDES OF TANK.
 - 4 NEW SANITARY DRAIN PIPE TO BE LOCATED BELOW EXISTING BASEMENT CONCRETE FLOOR.
 - 5 CONNECT NEW SANITARY DRAIN PIPE INTO EXISTING SANITARY DRAIN PIPE WITH A WYE FITTING LOCATED AT THE TOP OF THE DRAINAGE PIPE IN ACCORDANCE WITH OPC SECTION 712.3.5.
 - 6 EXTEND AND CONNECT NEW 1" DOMESTIC COLD WATER PIPING TO EXISTING WATER SOFTENING SYSTEM CONTROLLER. PROVIDE ALL TRANSITIONS, FITTINGS, ETC. AS REQUIRED FOR FINAL CONNECTION TO THE SYSTEM.

- PLUMBING DEMOLITION GENERAL NOTES:**
1. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING PIPING, EQUIPMENT AND FIXTURES REQUIRING DEMOLITION. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE ARCHITECT, GENERAL CONTRACTOR, AND WITH THE OWNER.
 2. EXISTING PIPING, FIXTURES AND EQUIPMENT ARE TO REMAIN AND BE REUSED UNLESS OTHERWISE INDICATED TO BE DISCONNECTED, REMOVED AND DISPOSED OF.
 3. THE PLUMBING DEMOLITION WORK SHALL BE PERFORMED EXCLUSIVELY BY THE PLUMBING CONTRACTOR UNLESS OTHERWISE INDICATED.
 4. THE PLUMBING DEMOLITION WORK SHALL INCLUDE THE DISCONNECT, REMOVAL AND DISPOSAL OF THE FOLLOWING PIPING AND ASSOCIATED VALVES, FITTINGS, ACCESSORIES AND SUPPORTS: 1) DOMESTIC COLD WATER, 2) DOMESTIC HOT WATER, 3) SANITARY VENT, 4) SANITARY DRAIN.
 5. THE PLUMBING DEMOLITION WORK SHALL INCLUDE THE DISCONNECT, REMOVAL AND DISPOSAL OF THE FOLLOWING PLUMBING FIXTURES AND EQUIPMENT: 1) SINK.
 6. EXISTING PIPING AND EQUIPMENT LOCATIONS ARE SCHEMATIC. VERIFY EXACT LOCATIONS AND ELEVATIONS IN FIELD.
 7. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
 8. ALL PATCHING AND SEALING OF WALLS, FLOORS AND ROOF, ETC... IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR AND SHALL BE PERFORMED BY THE PLUMBING CONTRACTOR.

- PLUMBING DEMOLITION CODED NOTES:**
- D1 ALL EXISTING PLUMBING PIPING, FIXTURES, AND EQUIPMENT TO BE DISCONNECTED, REMOVED AND DISPOSED OF IN ITS ENTIRETY UNLESS INDICATED TO REMAIN AND BE REUSED.
 - D2 EXISTING ELECTRIC WATER HEATER AND ALL ASSOCIATED PIPING, ETC. TO BE DISCONNECTED, REMOVED AND DISPOSED OF IN ITS ENTIRETY. THE PLUMBING CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR DISCONNECTING POWER.
 - D3 EXISTING PRESSURIZED WELL TANK AND WELL PUMP CONTROLLER TO BE DISCONNECTED, RELOCATED AND REUSED. THE PLUMBING CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR DISCONNECTING POWER.
 - D4 EXISTING SUMP PUMP AND ALL ASSOCIATED PIPING, CONTROLS, ETC. TO BE DISCONNECTED, REMOVED AND DISPOSED OF IN ITS ENTIRETY.
 - D5 EXISTING WATER SOFTENER SYSTEM BRINE TANK AND CONTROLLER TO REMAIN AND BE REUSED. DISCONNECT AND DISPOSE OF ALL DOMESTIC COLD WATER PIPING, FITTINGS, ETC. TO CONTROLLER.
 - D6 EXISTING WATER SOFTENER SYSTEM SALT STORAGE TANK AND TUBING CONNECTORS TO BRINE TANK, CONTROLLER, ETC. TO REMAIN AND REUSED.
 - D7 EXISTING DOMESTIC WATER SERVICE PIPING FROM WELL HEAD TO REMAIN AND BE REUSED. SIZE OF PIPE IS AS SHOWN ON DRAWING. REFER TO PLUMBING SITE PLAN ON DWG. P-2 FOR CONTINUATION.
 - D8 EXISTING UNDERGROUND SANITARY DRAIN PIPE TO REMAIN AND BE REUSED. SIZE OF PIPE IS AS SHOWN ON DRAWING.
 - D9 EXISTING UNDERGROUND SANITARY DRAIN PIPE TO SEPTIC TANK SYSTEM. REFER TO PLUMBING SITE PLAN FOR CONTINUATION.



BASEMENT PLUMBING PLAN
SCALE: 1/2" = 1'-0"



SUMP PUMP (SP-1) DETAIL
NO SCALE

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
---	COLD WATER PIPING
---	HOT WATER PIPING
---	SANITARY SEWER (BELOW GRADE)
FD	FLOOR DRAIN
CO	FLOOR CLEANOUT
-v-	SANITARY VENT PIPING
]	CAP ON END OF PIPE
⊥	SHUT-OFF VALVE
⊥	CHECK VALVE
⊥	SHUT-OFF VALVE IN RISER
⊥	RISER DOWN (ELBOW)
⊥	RISER UP (ELBOW)
⊥	BRANCH-TOP CONNECTION
⊥	BRANCH-BOTTOM CONNECTION
⊥	TEE
⊥	ELBOW
RP2	REDUCED PRESSURE BACKFLOW PREVENTER
SK	SINK
SP	SUMP PUMP
WH	WATER HEATER
PC	PLUMBING CONTRACTOR
SC	SITE CONTRACTOR
GC	GENERAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
(E)	EXISTING
(R)	RELOCATED
⊕	CONNECT TO EXISTING
AFF	ABOVE FINISHED FLOOR
VTR	VENT THRU ROOF

WSASTUDIO
 982 S. FRONT STREET
 COLUMBUS, OHIO 43206
 614.824.1633
 www.WSASTUDIO.com

City of Dublin

Point One Design, Ltd.
 Consulting Engineers
 9841 York Road, Suite 100, Dublin, Ohio 43015
 614.270.1900 Fax 614.270.1701
 www.pointonedesign.com
 883 High Street, Suite 106, Worthington, Ohio 43085
 614.649.2800 Fax 614.649.2814
 www.pointonedesign.com

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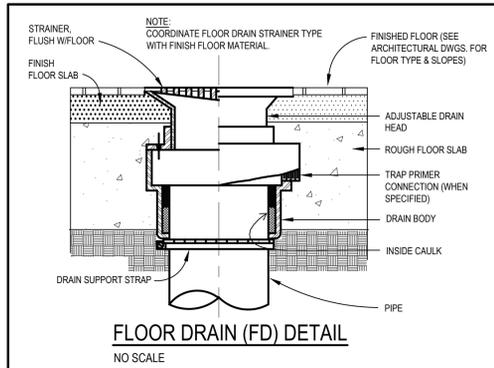
STATE OF OHIO
 KEVIN K HERBERT
 E-53288
 REGISTERED PROFESSIONAL ENGINEER

Issue Date: 05.17.2013
 Project Number: 201285.00

DRAWN BY: MLT | CHECKED: KKH

BASEMENT PLUMBING PLAN
P-1

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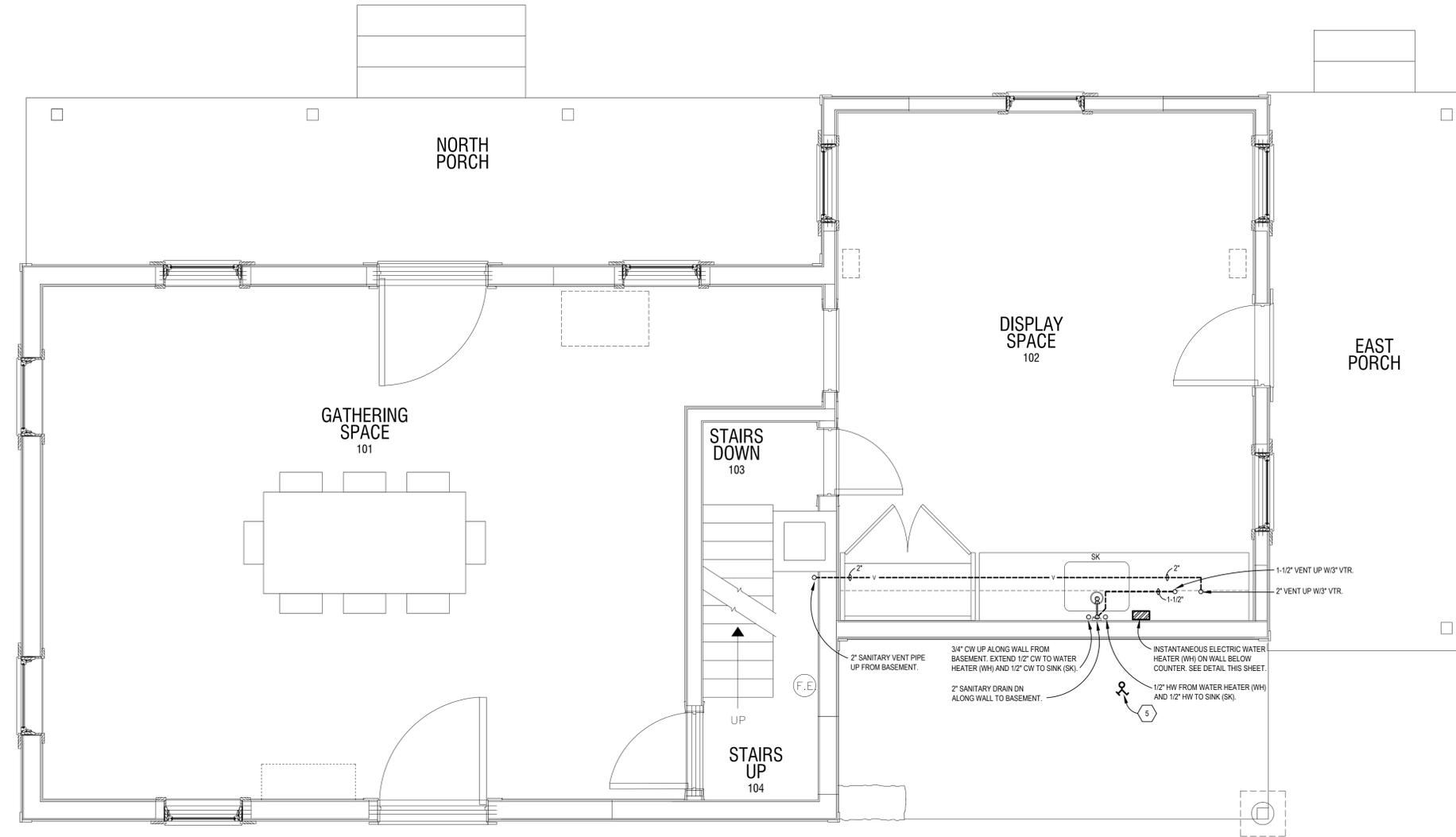
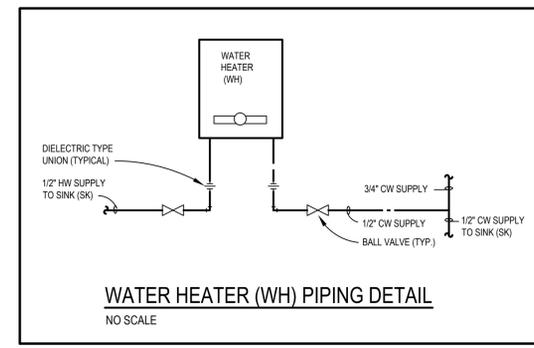


PUMP SCHEDULE									
TAG	MANUFACTURER & MODEL NUMBER	SERVICE	TYPE	GPM	HEAD (FT)	MOTOR DATA			REMARKS
						HP	VOLTAGE	RPM	
SP 1	ZOELLER #31-059/M53	WASTE SUMP	PRE-FABRICATED SUMP WITH SUBMERSIBLE PUMP	20	15	1/3	115V, 1PH	1550	SEE NOTES BELOW

- NOTES:**
- ZOELLER MODEL #55 AUTOMATIC TYPE SUBMERSIBLE PUMP
 - ZOELLER MODEL #31-059 POLYETHYLENE SEALED BASIN, 16"x30" SIZE WITH SOLID STEEL COVER AND PIPE SEAL HUB/THREE BOLT HUB FITTING, 4" INLET HUB.
 - BASIN COVER TO BE RADON TYPE AND INCLUDE 2" VENT FLANGE, 2" DISCHARGE FLANGE AND GASKETTING.
 - PUMP TO INCLUDE BRONZE SWITCH CASE, MOTOR AND PUMP HOUSING, THERMOPLASTIC BASE, GLASS FILLED PLASTIC IMPELLER WITH METAL INSERT, STAINLESS STEEL GUARD AND HANDLE, LOWER/UPPER OIL FILLED BRONZE BEARING, 1-1/2" NPT DISCHARGE, 3/4" WIRE UL LISTED CORD & PLUG, FLOAT-OPERATED 2-POLE MECHANICAL SWITCH, AUTOMATIC RESET THERMAL OVERLOAD PROTECTION.
 - BASIN TO SET IN NEW BASEMENT CONCRETE SUMP. PC TO FURNISH AND INSTALL NEW SUMP, BASIN, PUMP, ETC. AND TO INCLUDE CONCRETE AND BACKFILL. REFER TO 'SUMP PUMP DETAIL' FOR ADDITIONAL INFORMATION.

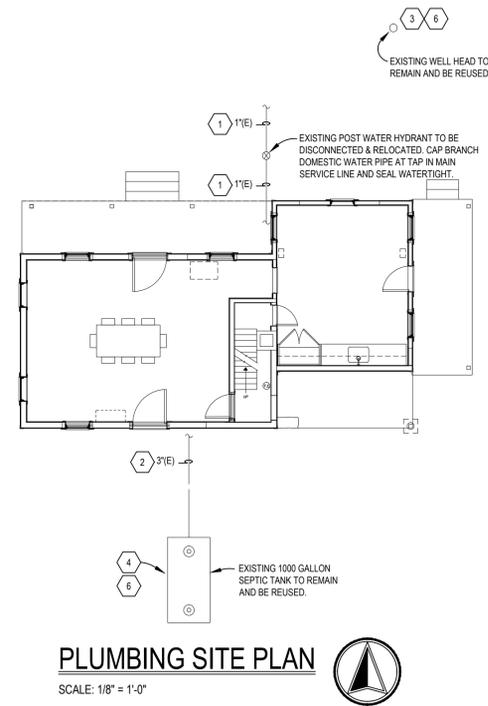
PLUMBING FIXTURE SCHEDULE									
MARK	ITEM	FIXTURE	FAUCET/VALVE	MTG. HT.	CW	HW	TRAP	ACCESSORIES	
SK	SINK (SINGLE BOWL)	KOHLER K-3333-NA	KOHLER K-7337-4	COUNTER	1/2"	1/2"	1-1/2"	NOTE-1	

- NOTE:**
- COUNTERTOP MOUNTED SINGLE BOWL 22"x17-1/2" NOMINAL SIZE, 7-1/2" DEEP BOWL, STAINLESS STEEL, FINISH WITH KOHLER MODEL #K-681314 BASKET STRAINER WITH RUBBER STOPPERS, KOHLER MODEL #K-6807 UNDERMOUNT KIT, GOOSENECK DECK FAUCET WITH 4" LEVER HANDLES AND SWING SPOUT, 0.5 GPM SWIVEL AERATOR, WASTE DRAIN AND TRAP, SUPPLIES AND STOPS.
- PLUMBING EQUIPMENT SCHEDULE:**
- CLEANOUT (CO):**
J.R. SMITH MODEL #4020 DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP. NOTE: WHERE CLEANOUTS ARE INSTALLED IN CARPETED AREAS PROVIDE WITH CARPET CLAMPING FRAME (SUFFIX-X).
- FLOOR DRAIN (FD):**
J.R. SMITH MODEL #2110, DUCO CAST IRON BODY WITH WITH FLASHING COLLAR AND ADJUSTABLE NICKEL BRONZE STRAINER HEAD AND ROUND TOP.
- WATER HEATER (WH):**
CHRONAMITE MODEL #SR-200, ELECTRIC TANKLESS TYPE, 4800 WATTS, 240 VOLT, 1 PHASE, 20.0 AMPS, 0.50 GPM FLOW RATE @ 65°F TEMPERATURE RISE, 140°F MAXIMUM OPERATING TEMPERATURE, FLOW SWITCH TO ACTIVATE HEATING COIL AT 0.40 GPM AND DE-ACTIVATE HEATING COIL @ 0.35 GPM. MOUNT UNIT ON WALL. UNIT WEIGHT IS APPROXIMATELY 5 LB.



FIRST FLOOR PLUMBING PLAN
SCALE: 1/2" = 1'-0"

- PLUMBING CODED NOTES:**
- EXISTING UNDERGROUND DOMESTIC WATER SERVICE PIPE FROM WELL HEAD TO REMAIN AND BE REUSED. SIZE OF PIPE IS AS SHOWN ON DRAWING.
 - EXISTING UNDERGROUND SANITARY DRAIN PIPE TO SEPTIC TANK SYSTEM TO REMAIN AND BE REUSED. SIZE OF PIPE IS AS SHOWN ON DRAWING.
 - EXISTING SUBMERSIBLE WELL PUMP FOR DOMESTIC WATER SERVICE TO REMAIN AND BE REUSED. THE PC TO TEST AND ADJUST PUMP FOR OPTIMUM PERFORMANCE. IF PUMP IS FOUND TO BE DEFECTIVE OR INOPERABLE THE PC TO REPLACE SUCH WITH ONE OF EQUAL CAPACITY, PERFORMANCE AND TYPE.
 - THE PC TO INTERNALLY CLEAN EXISTING SEPTIC TANK UNIT OF SLUDGE AND REPLACE AND OR REPAIR ANY COMPONENTS (CLEANOUTS, COVERS, BAFFLES, FILTERS, ETC.) IF FOUND TO BE DEFECTIVE.
 - RELOCATED POST WATER HYDRANT. EXTEND NEW UNDERGROUND 3/4" DOMESTIC COLD WATER PIPE FROM BASEMENT CRAWL SPACE AND CONNECT TO HYDRANT. REFER TO BASEMENT PLUMBING PLAN ON DWG. P-1 FOR CONTINUATION.
 - THE PC TO INSPECT AND TEST EXISTING WATER WELL SYSTEM AND SANITARY SEPTIC TANK SYSTEM IN ACCORDANCE WITH EPA AND LOCAL CODE REQUIREMENTS. THE PC TO PROVIDE A CERTIFIED REPORT FROM THE EPA INDICATING THE OPERATIONAL STATUS AND APPROVAL OF WELL SYSTEM AND SEPTIC TANK SYSTEM.



PLUMBING SITE PLAN
SCALE: 1/8" = 1'-0"

WSASTUDIO
982 S. FRONT STREET
COLUMBUS, OHIO 43206
614.824.1633
www.WSASTUDIO.com

City of Dublin

Point One Design, Ltd.
Consulting Engineers
9841 York Road, Suite 100, Dublin, Ohio 43015
614.824.1633
9801 High Street, Suite 100, Worthington, Ohio 43082
614.824.1633
www.pointonedesign.com

HOLDER-WRIGHT HOUSE
4729 BRIGHT ROAD, DUBLIN, OH 43016



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FIRST FLOOR PLUMBING PLAN
P-2