Coastal Architecture

# THE KOHALA RANCH

## MOREHEAD CITY, NORTH CAROLINA

## INDEX TO DRAWINGS






Coastal Architecture PLLC

- Architectural Design
- Planning
- Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557

www.CoastalArchitecture.net


THE KOHALA RANCH
2316 COUNTRY CLUB RD.
MOREHEAD CITY, NORTH CAROLINA

COASTAL ARCHITECTURE, PLLC — NORTH CAROLINA — CERT. NO. 52792 — MOREHEAD CITY, NC

LEE D. DIXON, JR. — REGISTERED ARCHITECT — NORTH CAROLINA — 6419 — MOREHEAD CITY

COVER SHEET

21033

| | |
|---|---|
| ISSUED: | 06/09/2023 |
| DWG BY: | MES |
| CKD BY: | LDD |
| REVISIONS | |

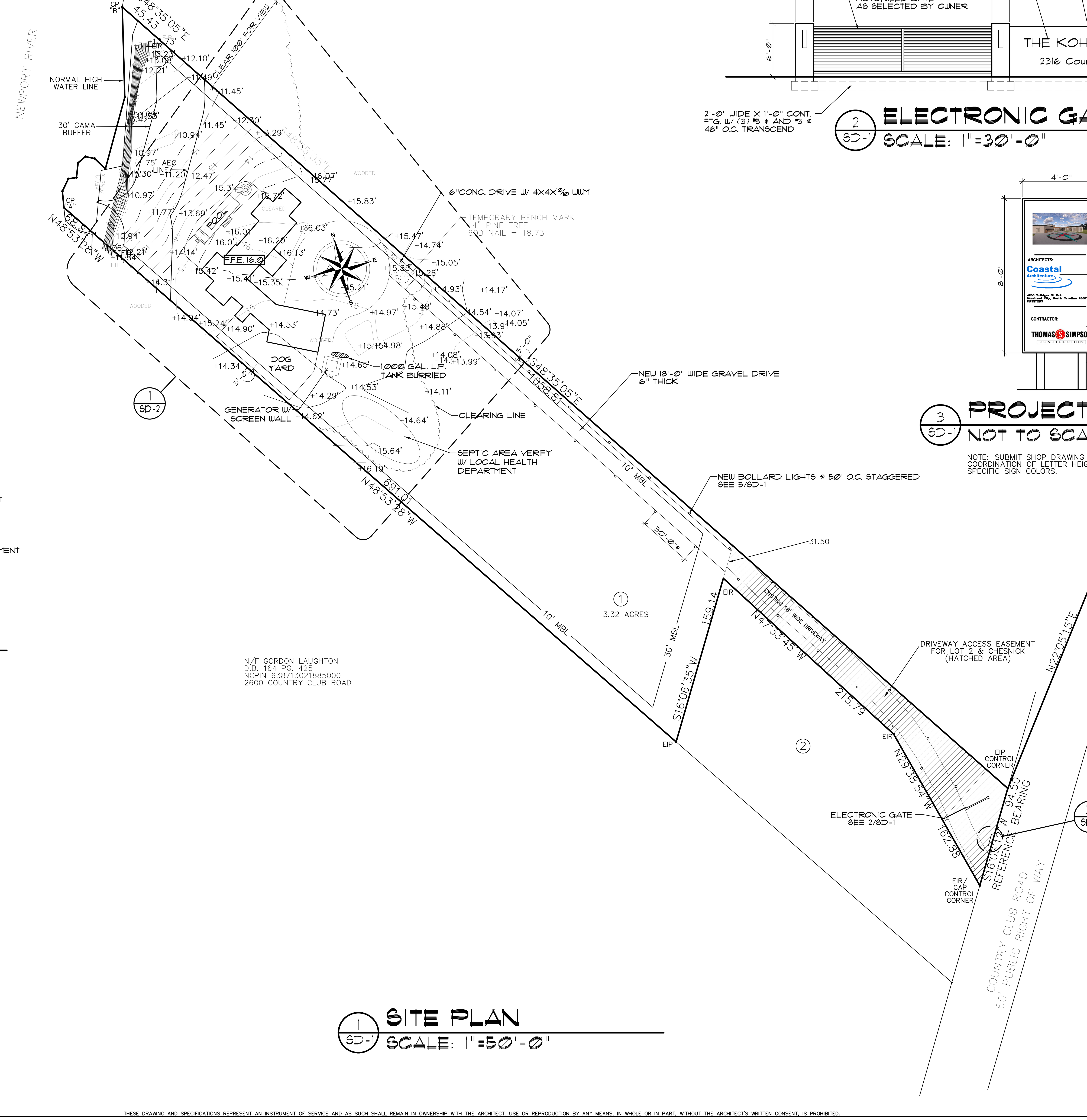
SHEET NO.
CS
OF

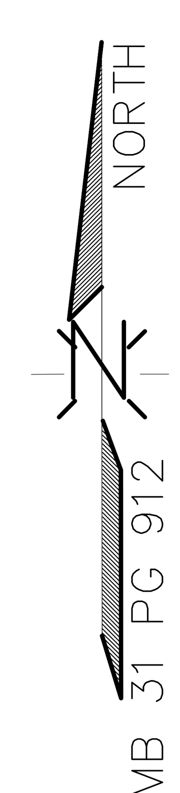
NOTES:

1. AREA BY COORDINATES.
2. PROPERTY IS LOCATED IN A FLOOD ZONE X & AE(7).
3. LOT IS VACANT.
4. SETBACKS LOT 1 – FRONT = 30', SIDE 10' REAR(NEWPORT RIVER) 30' FROM NORMAL HIGH WATER LINE.
5. ZONING = R–20
6. THIS MAP IS NOT FOR RECORDING.
7. NO POINTS SET ALONG NORMAL HIGH WATER LINE.
8. FLOOD ZONE LINES SCALED FROM CARTERET COUNTY GIS MAP.

LINE TABLE FOR NORMAL HIGH WATER LINE CP"A" TO CP"B"

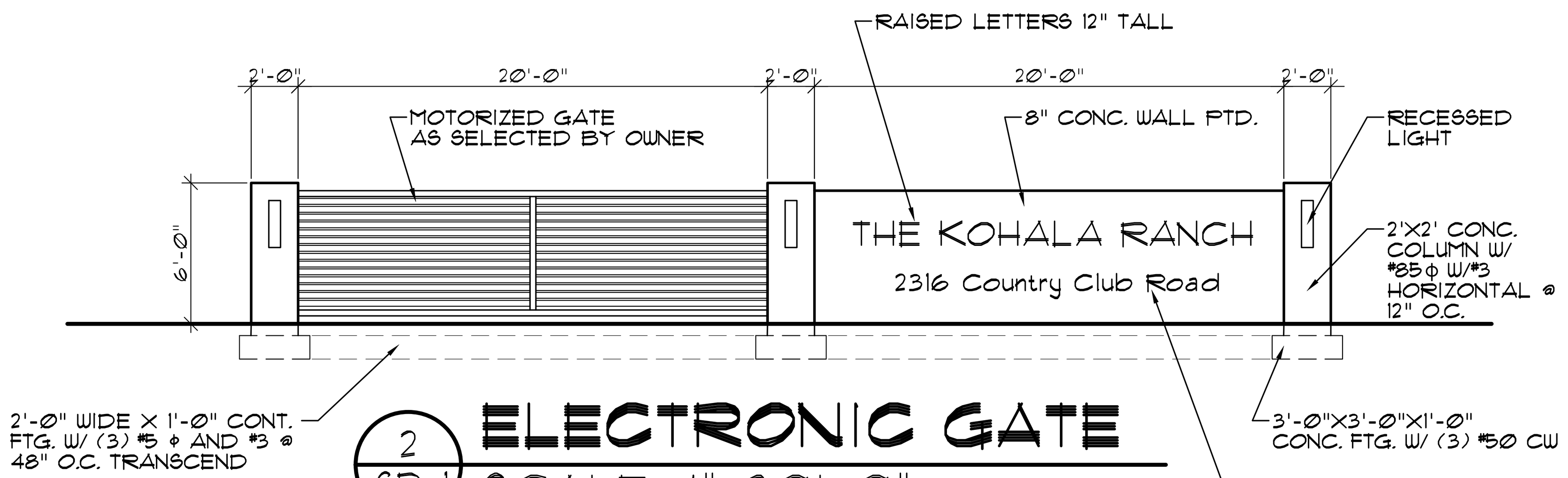
| | |
|---|---|
| N05^31'26"W | 15.26 |
| N25^35'30"E | 12.98 |
| N81^33'35"E | 7.65 |
| N06^17'12"E | 13.88 |
| N49^58'36"E | 8.96 |
| S78^18'01"E | 8.82 |
| S45^42'24"E | 13.93 |
| N15^11'18"E | 69.47 |
| N01^34'21"W | 84.35 |



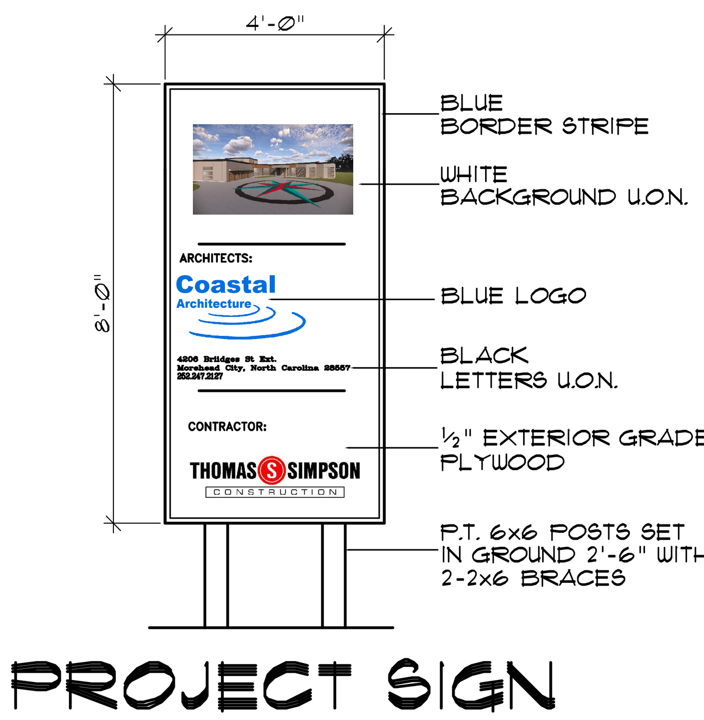




THIS SITE PLAN TAKEN FROM SURVEY BY THE CULLIPHER GROUP, DATED 06/01/22.

1 SD-1 SITE PLAN
SCALE: 1"=50'-0"

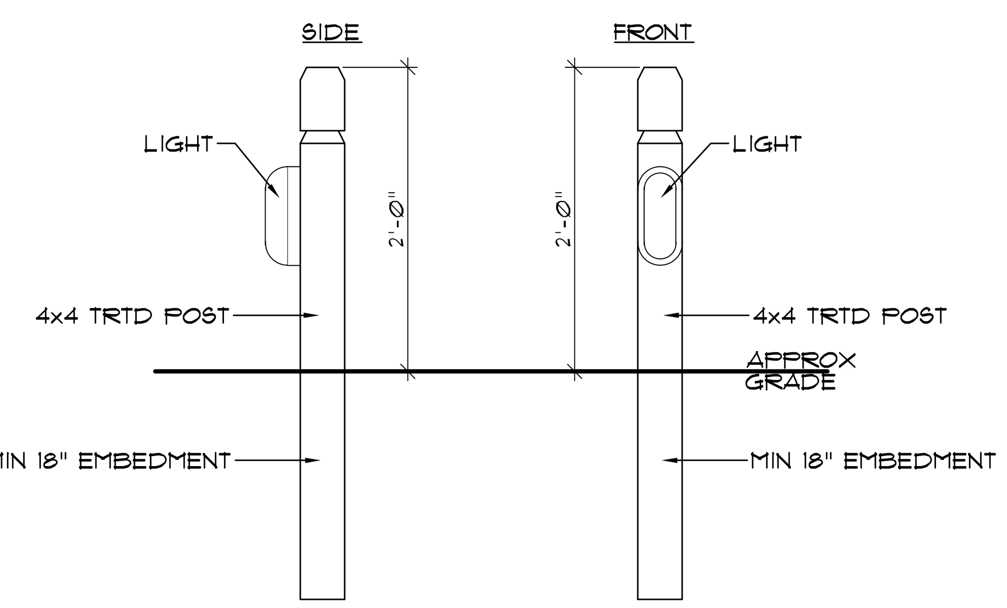



2 SD-1 ELECTRONIC GATE
SCALE: 1"=30'-0"




3 SD-1 PROJECT SIGN
NOT TO SCALE

NOTE: SUBMIT SHOP DRAWING FOR COORDINATION OF LETTER HEIGHTS SPECIFIC SIGN COLORS.




5 SD-1 BOLLARD LIGHT
SCALE: 1"=1'-0"

LEGEND

| | |
|---|---|
| EIR | EXISTING IRON ROD |
| EIP | EXISTING IRON PIPE |
| EPK | EXISTING PK NAIL |
| ECM | EXISTING CONC. MON. |
| ERRS | EXISTING R/R SPIKE |
| SIR | SET IRON ROD |
| CP | CALCULATED POINT |
| MHW | MEAN HIGH WATER |
| N/F | NOW OR FORMERLY |
| MB | MAP BOOK |
| DB | DEED BOOK |
| PG | PAGE |
| PP | POWER POLE |
| LP | LIGHT POLE |
| OE | OVERHEAD ELECTRIC |
| ELEC | ELECTRICAL PEDESTAL |
| TRANS | ELEC. TRANSFORMER |
| TEL | TELEPHONE PEDESTAL |
| TV | CABLE TV PEDESTAL |
| WM | WATER METER |
| CO | CLEAN OUT |
| MBL | MINIMUM BUILDING LINE |
| SSMH | SANITARY SEWER MANHOLE |
| WV | WATER VALVE |
| FH | FIRE HYDRANT |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MOREHEAD CITY, NORTH CAROLINA

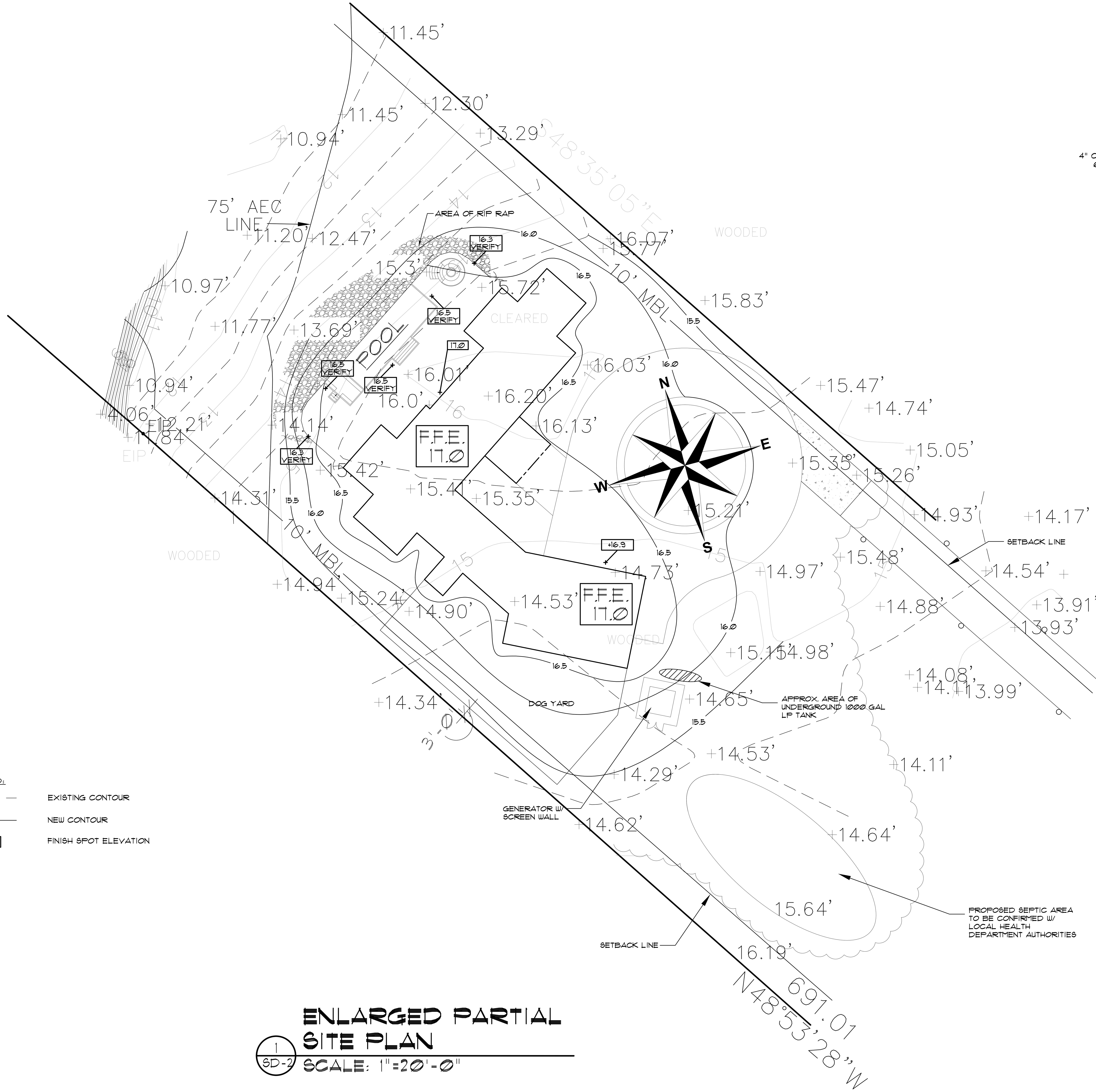
SITE PLAN

21033

| | |
|---|---|
| ISSUED: | 06/09/2023 |
| DWG BY: | MES/SKC |
| CKD BY: | LDD |

REVISIONS

SHEET NO.
SD-1
OF

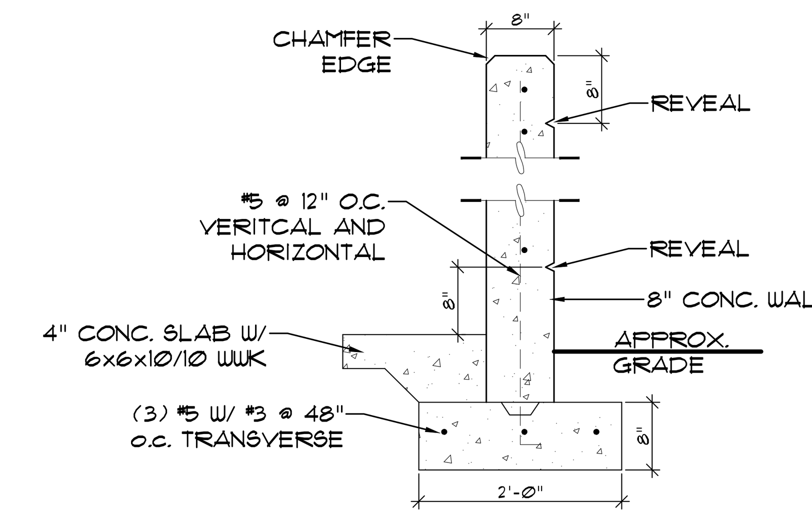



LEGEND:

- — — — EXISTING CONTOUR
- ——— NEW CONTOUR
- 16.0 FINISH SPOT ELEVATION

## ENLARGED PARTIAL SITE PLAN

1 / SD-2 SCALE: 1"=20'-0"

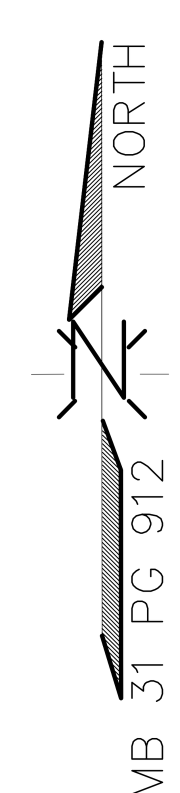



## GENERATOR WALL DETAIL

2 / SD-2 SCALE: 3/4"=1'-0"

NOTES:

- STAKE OUT HOUSE AND POOL WITH FFE ALSO FOR OWNER AND ARCHITECT TO REVIEW AND APPROVE.
- SEED ALL AREAS DISTURBED BY CONSTRUCTION.
- PROVIDE EROSION CONTROL MEASURES AS REQUIRED.
- LANDSCAPING WILL BE MINIMAL AS DIRECTED BY OWNER
- GC TO COORDINATE WATER LINE TO CONNECTION AT THE ROAD.
- ELECTRICAL SERVICE TO BE UNDERGROUND - COORDINATE TRANSFORMER LOCATION

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ENLARGED SITE PLAN

21033

ISSUED: 06/09/2023
DWG BY: SKC
CKD BY: LDD
REVISIONS

SHEET NO.
SD-2
OF

NOTE:

- DIMENSIONS ARE GIVEN FACE OF STUD TO FACE OF STUD, OR FACE OF MASONRY WALL TO FACE OF MASONRY WALL.
- ALL INTERIOR WALLS ARE 3⅝ METAL STUD WALLS WITH ⅝" MILDEW RESISTANCE GYPSUM BOARD ON BOTH SIDES. (UNLESS OTHERWISE NOTED).
- ALL EXTERIOR WALLS ARE 12" THICK. SEE WALL SECTIONS FOR WALL MAKEUP.
- THE CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BUILDING.
- THE CONTRACTOR SHALL CONFORM TO ALL BUILDING CODES AND LOCAL ORDINANCES.
- SUBMIT SAMPLES FOR COMPASS DRIVEWAY GRAPHIC-DECORATIVE CONCRETE COATING.
- ALL FINISHES/ COLORS TO BE SELECTED BY ARCHITECT AND OWNER.
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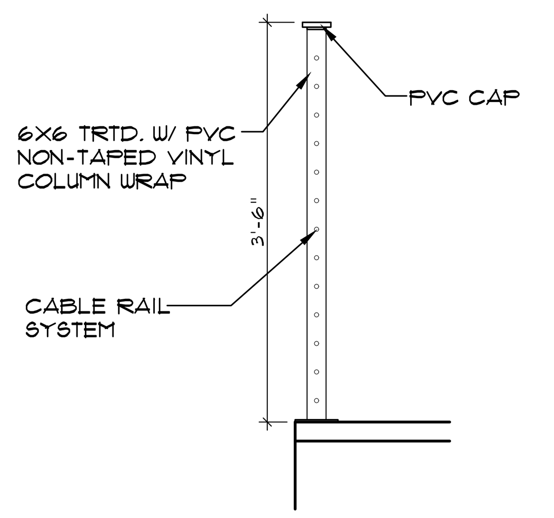
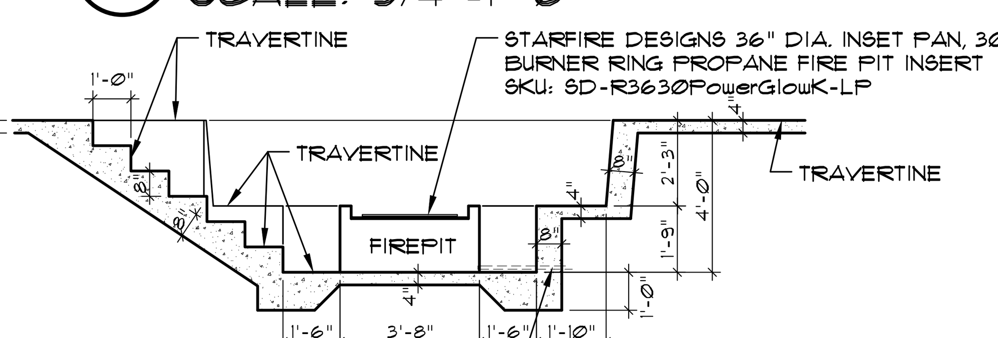
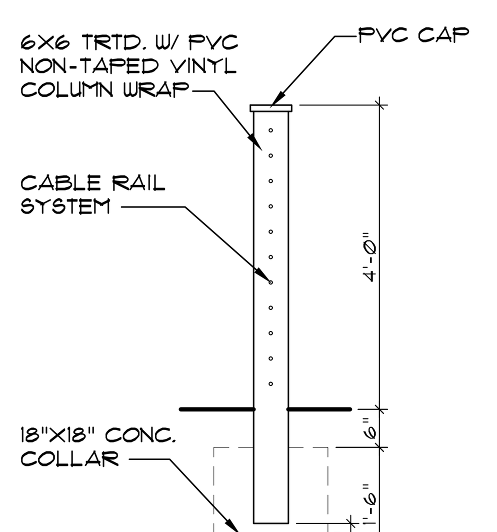
- GAS LINEAR FIREPLACE AS SELECTED BY OWNER.
- ALL DOOR HARDWARE TO BE SELECTED BY ARCHITECT AND OWNER.
- ALL INTERIOR GWB WALLS TO HAVE ROUNDED CORNERS. -SEE 3/A-3



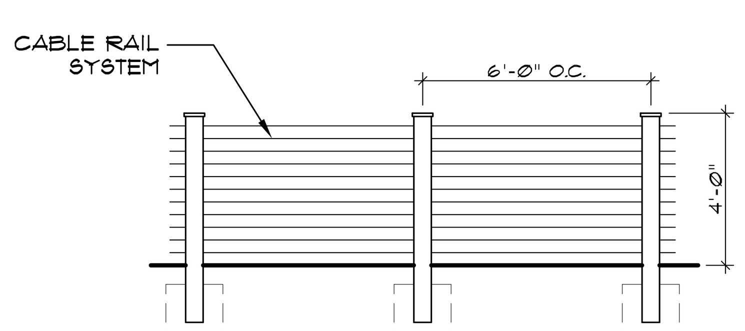

5 A-1 POOL FENCE CABLE RAIL
SCALE: 3/4"=1'-0"



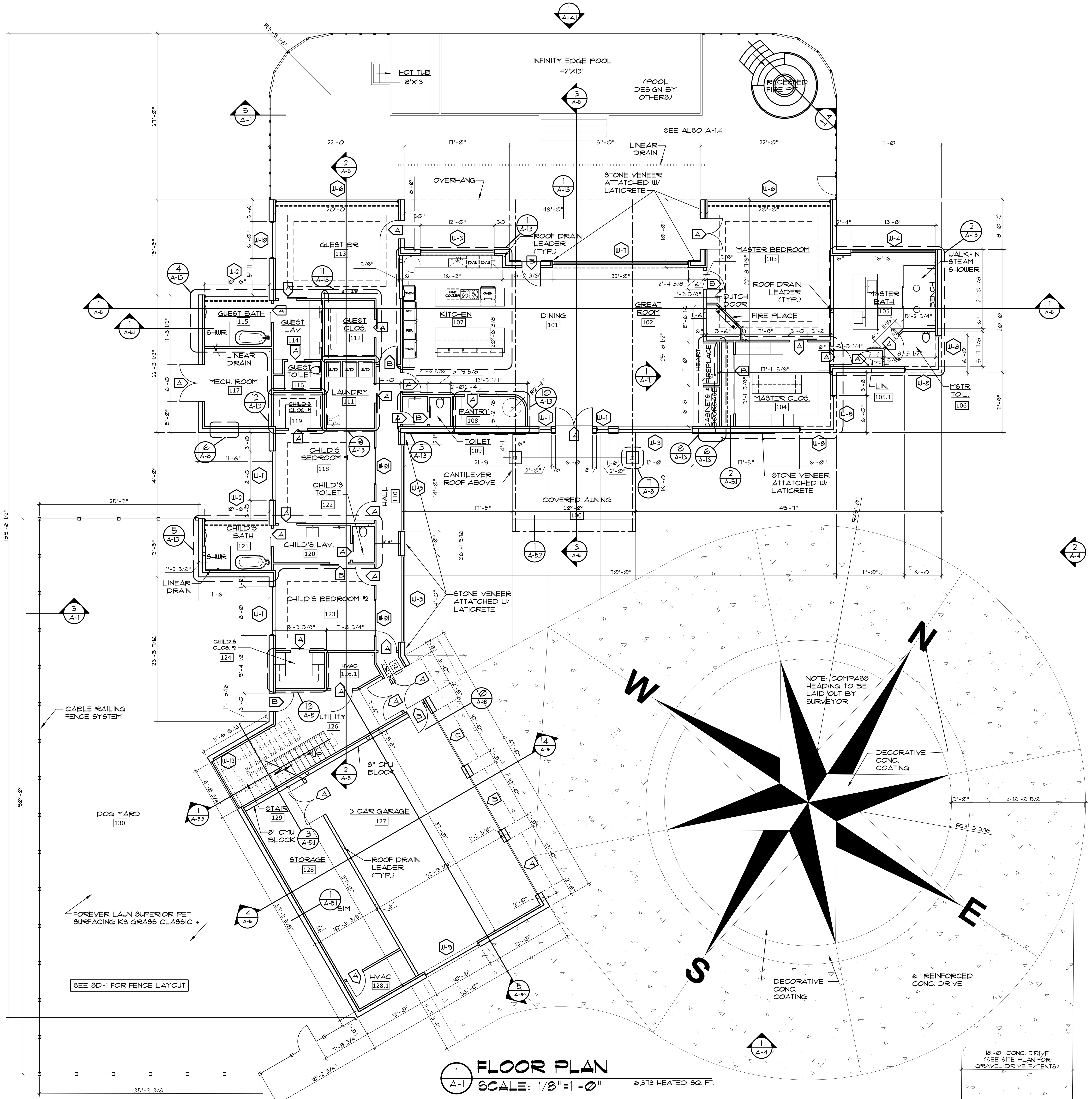

4 A-1 FIRE PIT
SCALE: 1/4"=1'-0"




3 A-1 DOG FENCE CABLE RAIL
SCALE: 1/2"=1'-0"




2 A-1 DOG FENCE CABLE RAIL
SCALE: 1/4"=1'-0"




1 A-1 FLOOR PLAN
SCALE: 1/8"=1'-0"
6,373 HEATED SQ. FT.



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FLOOR PLAN

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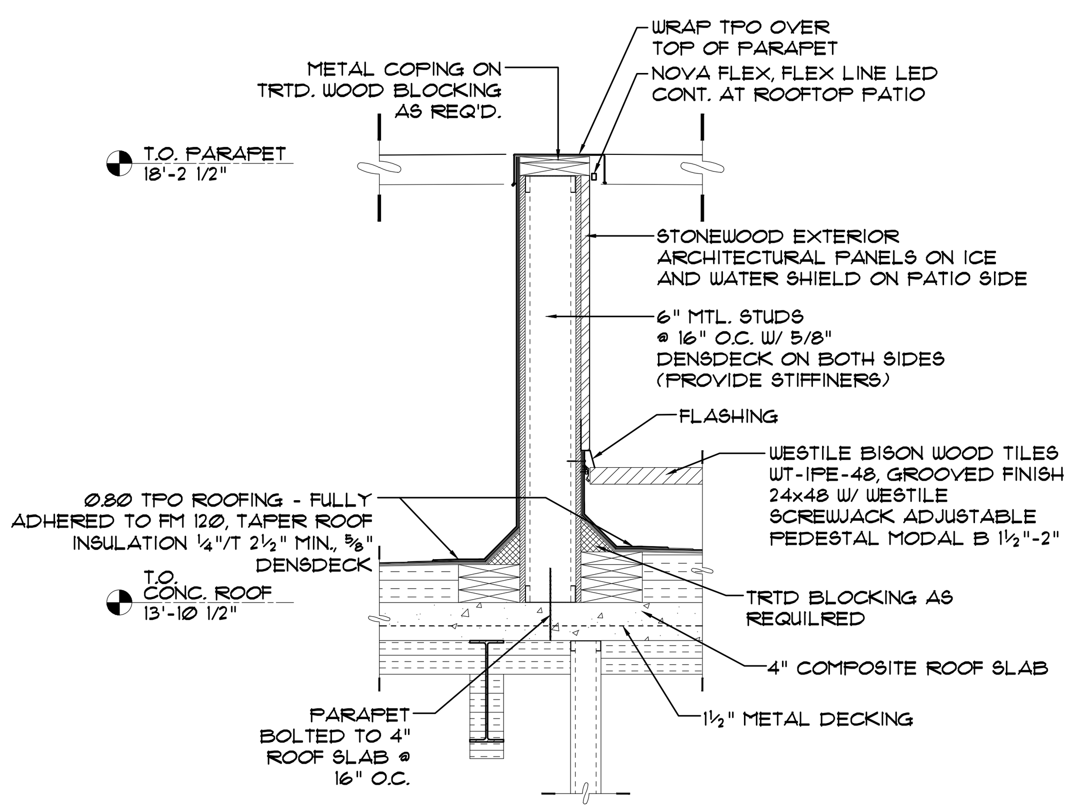
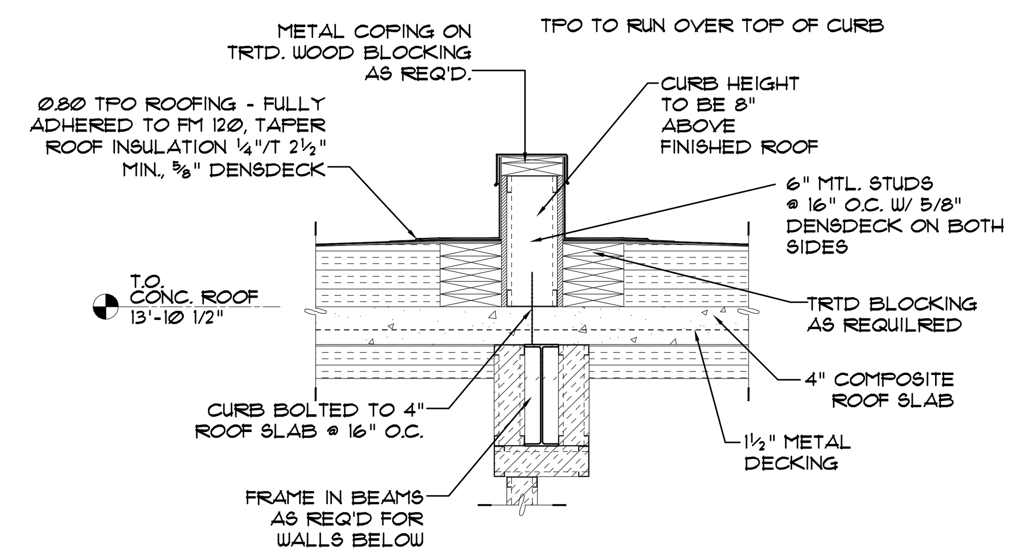
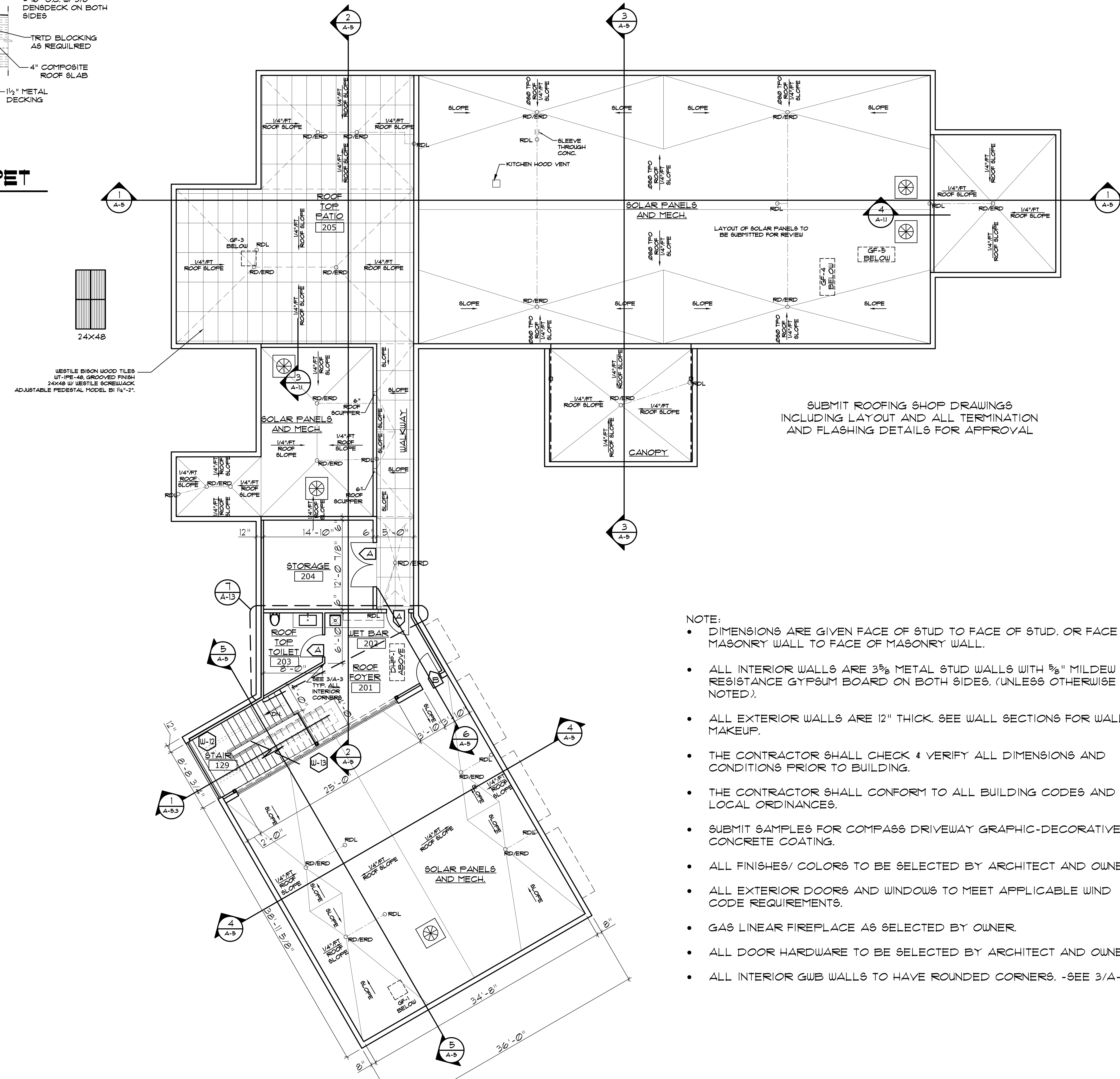



3 A-1.1 PATIO PARAPET
SCALE: 3/4"=1'-0"




4 A-1.1 PATIO PARAPET
SCALE: 3/4"=1'-0"




NOTE:
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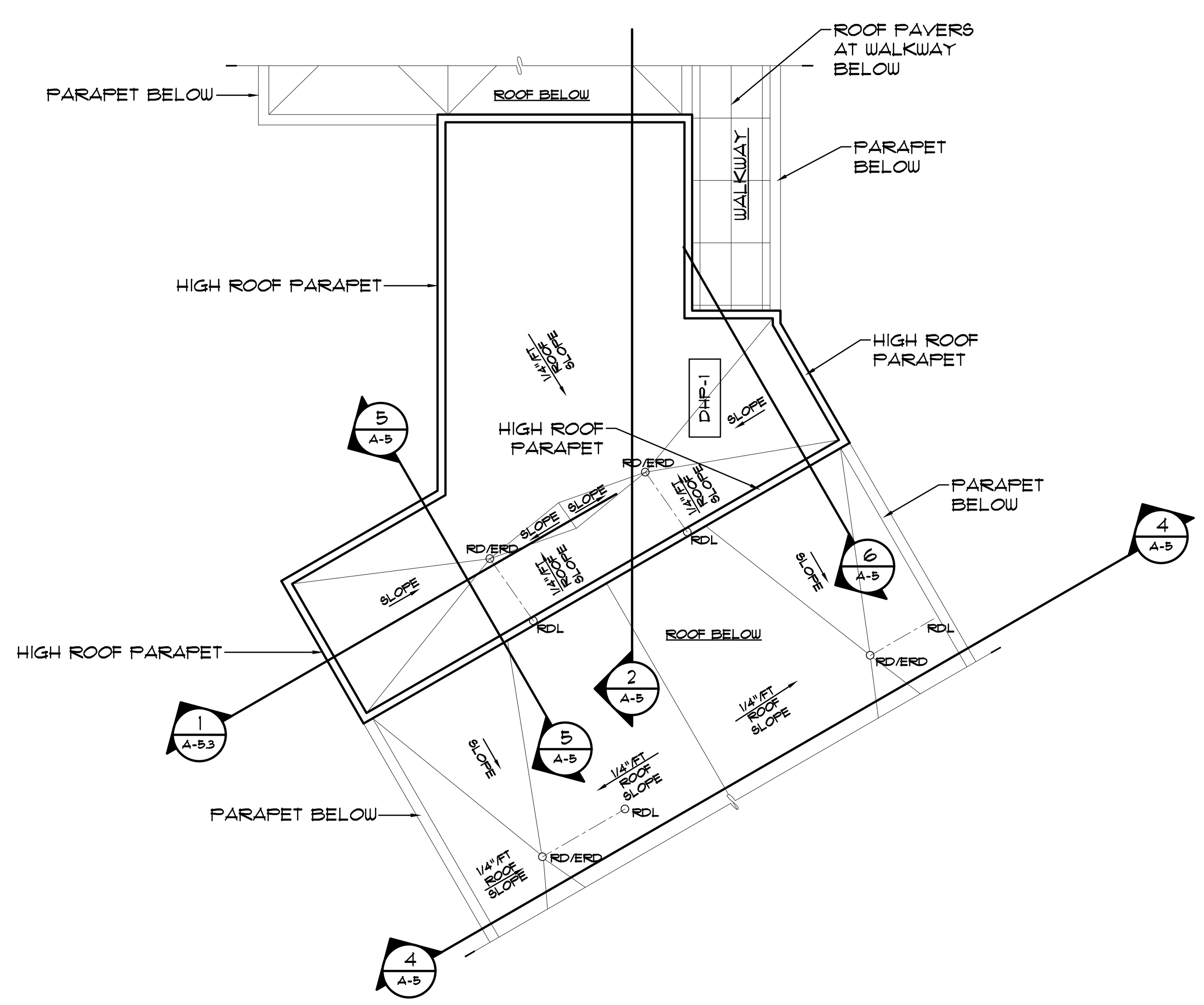
1 A-1.1 ROOF TOP FLOOR PLAN
SCALE: 1/8"=1'-0"




2 A-1.1 HIGH ROOF PLAN
SCALE: 1/8"=1'-0"

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ROOF TOP FLOOR PLAN

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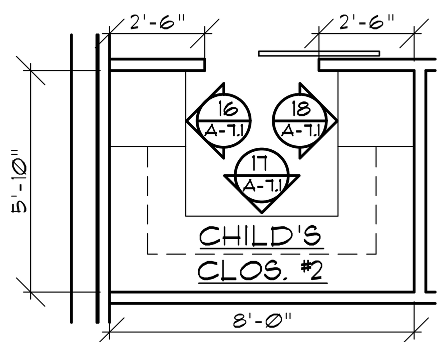
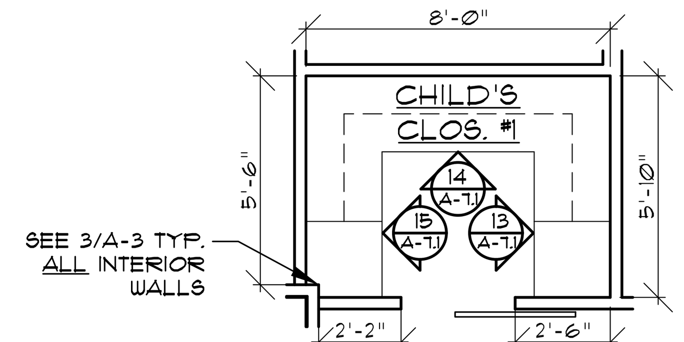
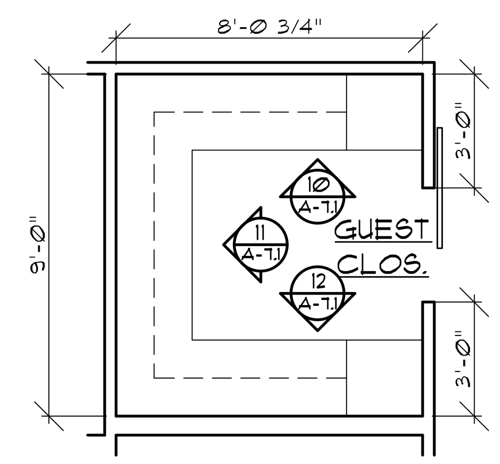


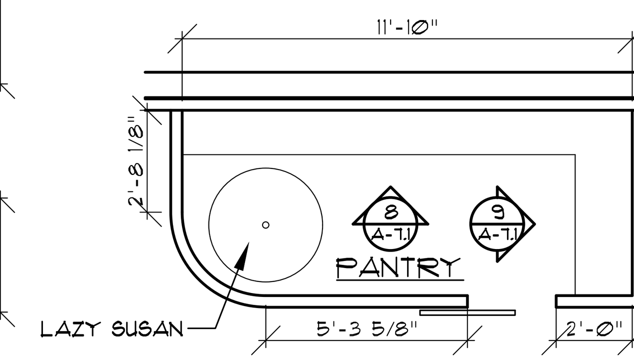
13 A-1.3 CHILD'S CLOS. #2
SCALE: 1/4"=1'-0"



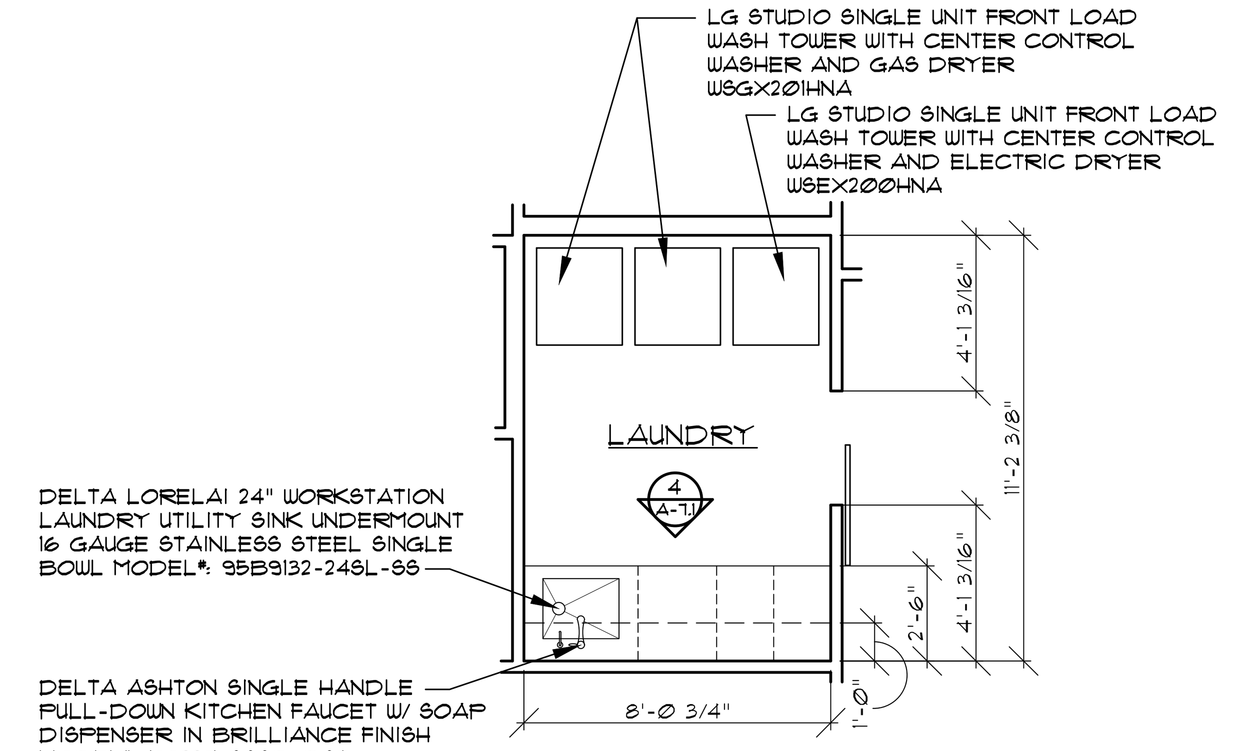
12 A-1.3 CHILD'S CLOS. #1
SCALE: 1/4"=1'-0"



11 A-1.3 GUEST CLOSET
SCALE: 1/4"=1'-0"

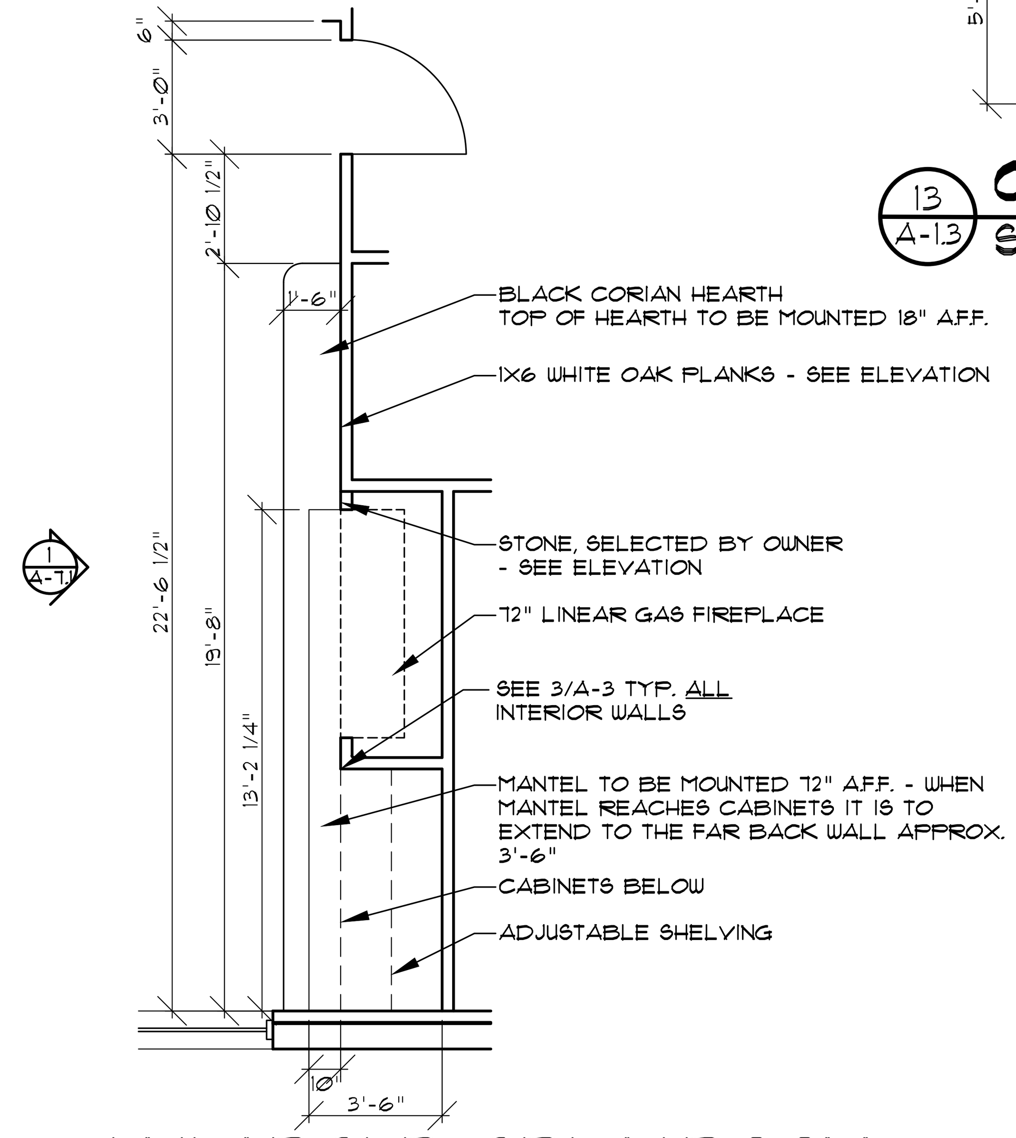


10 A-1.3 PANTRY
SCALE: 1/4"=1'-0"

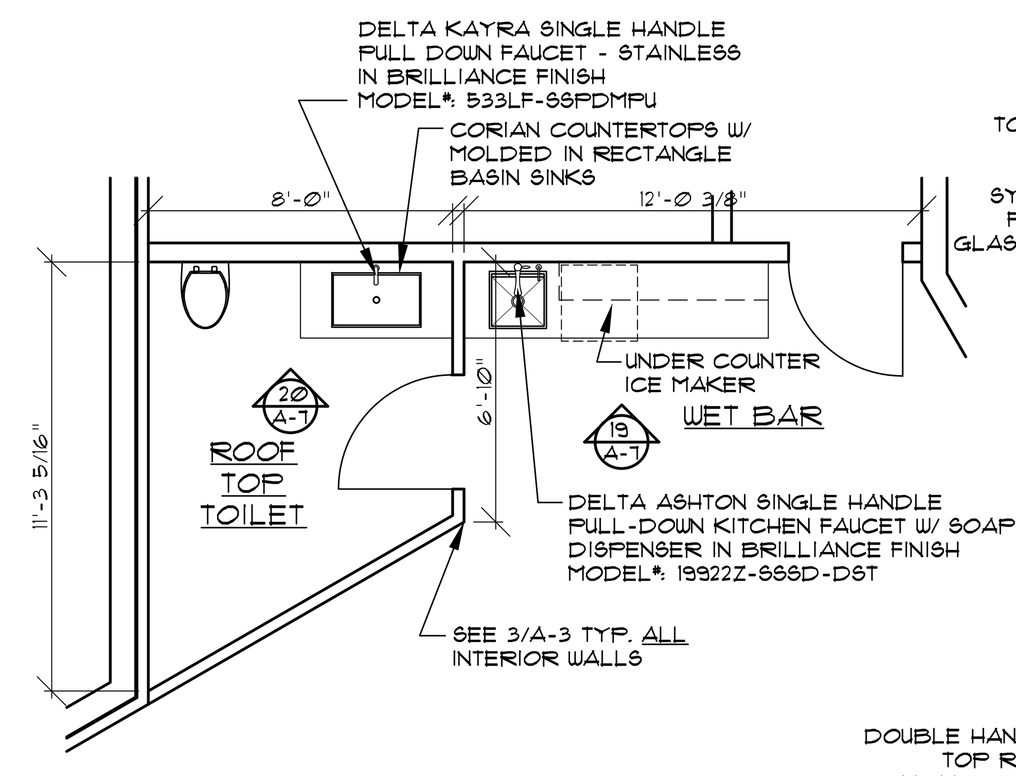


9 A-1.3 ENLARGED LAUNDRY PLAN
SCALE: 1/4"=1'-0"

NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



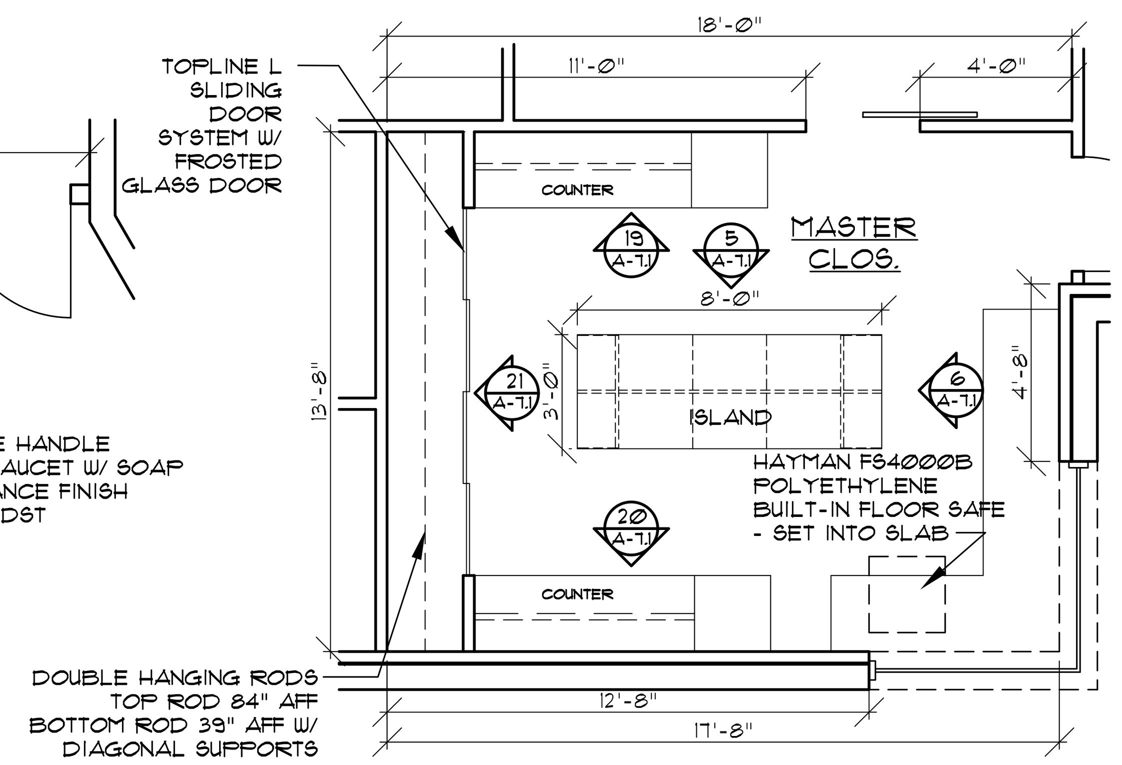
8 A-1.3 ENLARGED GREATROOM ENTERTAINMENT WALL
SCALE: 1/4"=1'-0"



7 A-1.3 ENLARGED ROOF TOP TOILET AND WET BAR PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

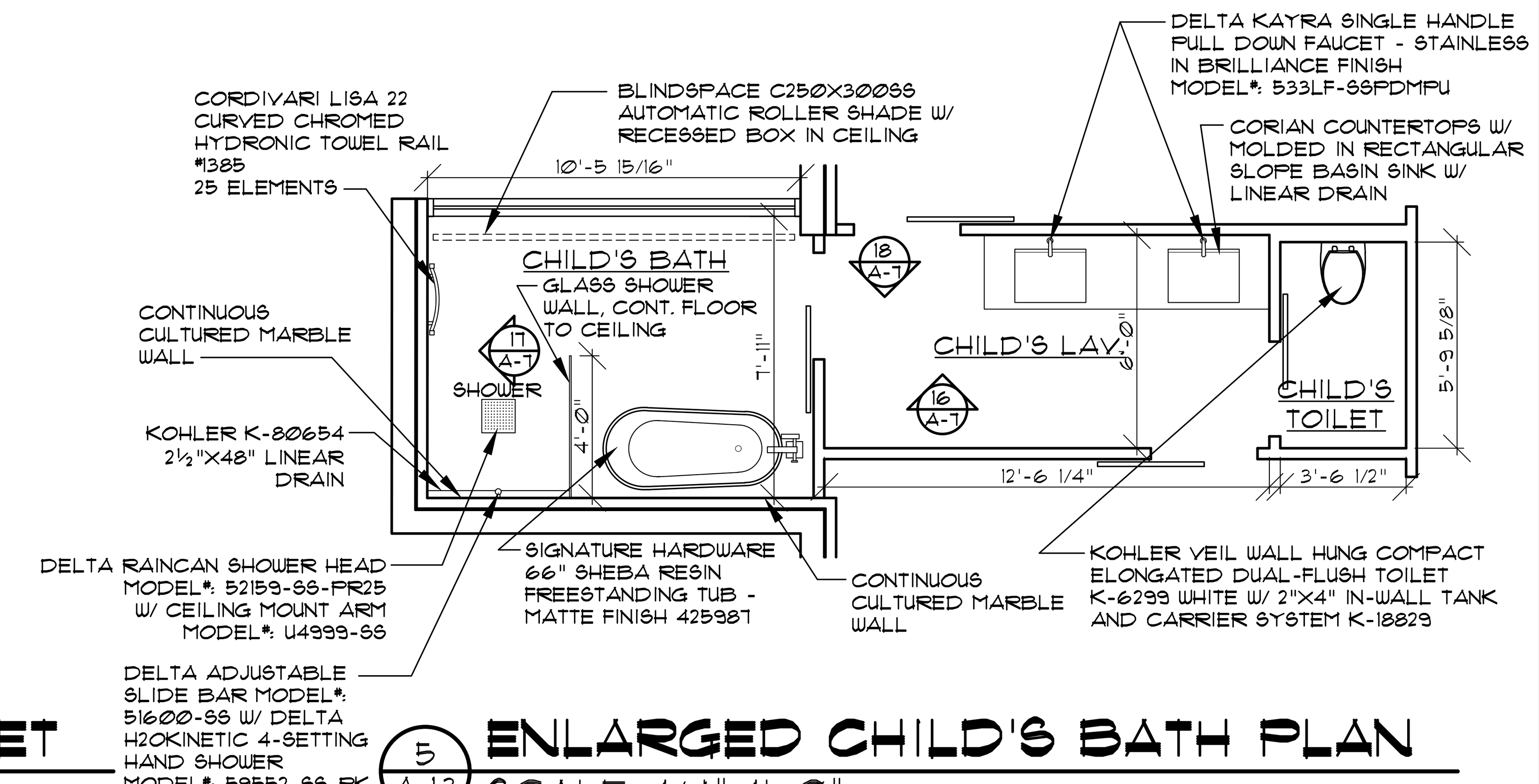
NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



6 A-1.3 ENLARGED MASTER CLOSET
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

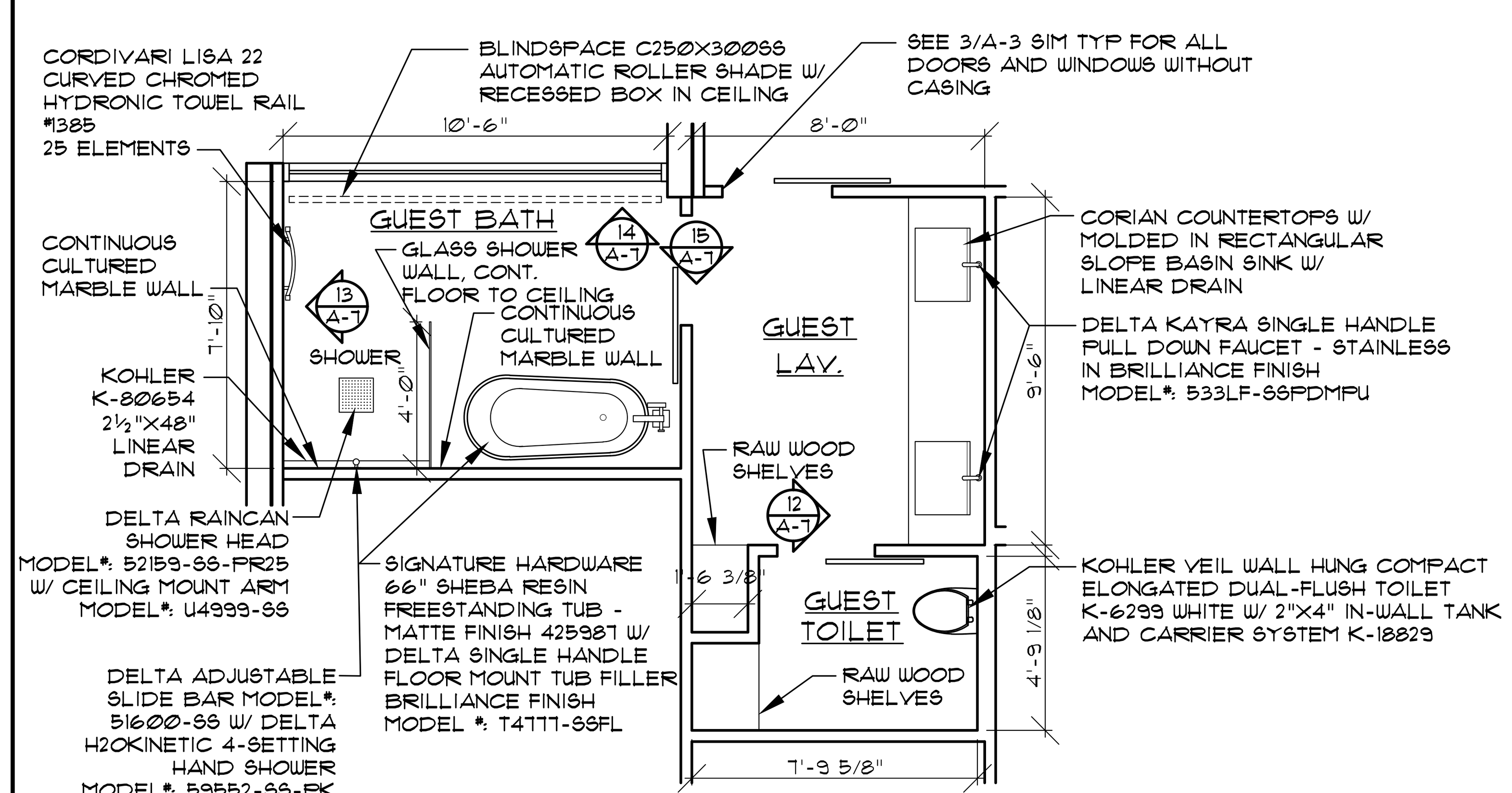
NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



5 A-1.3 ENLARGED CHILD'S BATH PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

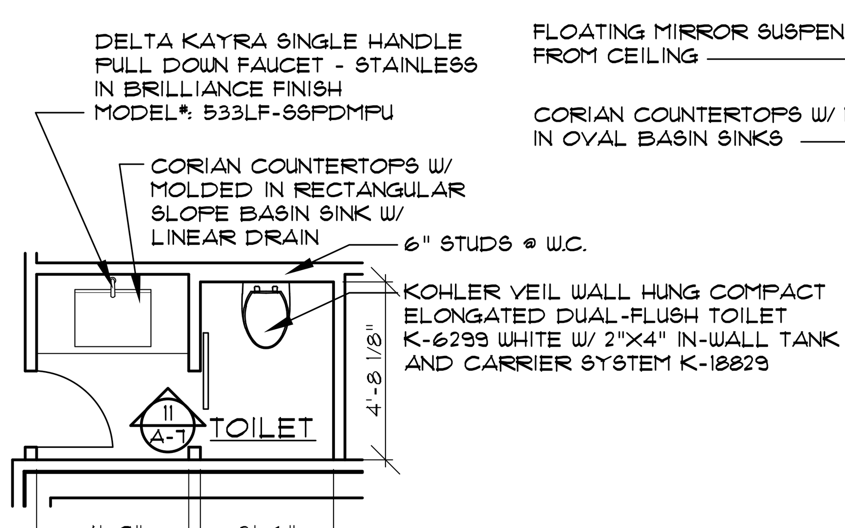
NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



4 A-1.3 ENLARGED GUEST BATH PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

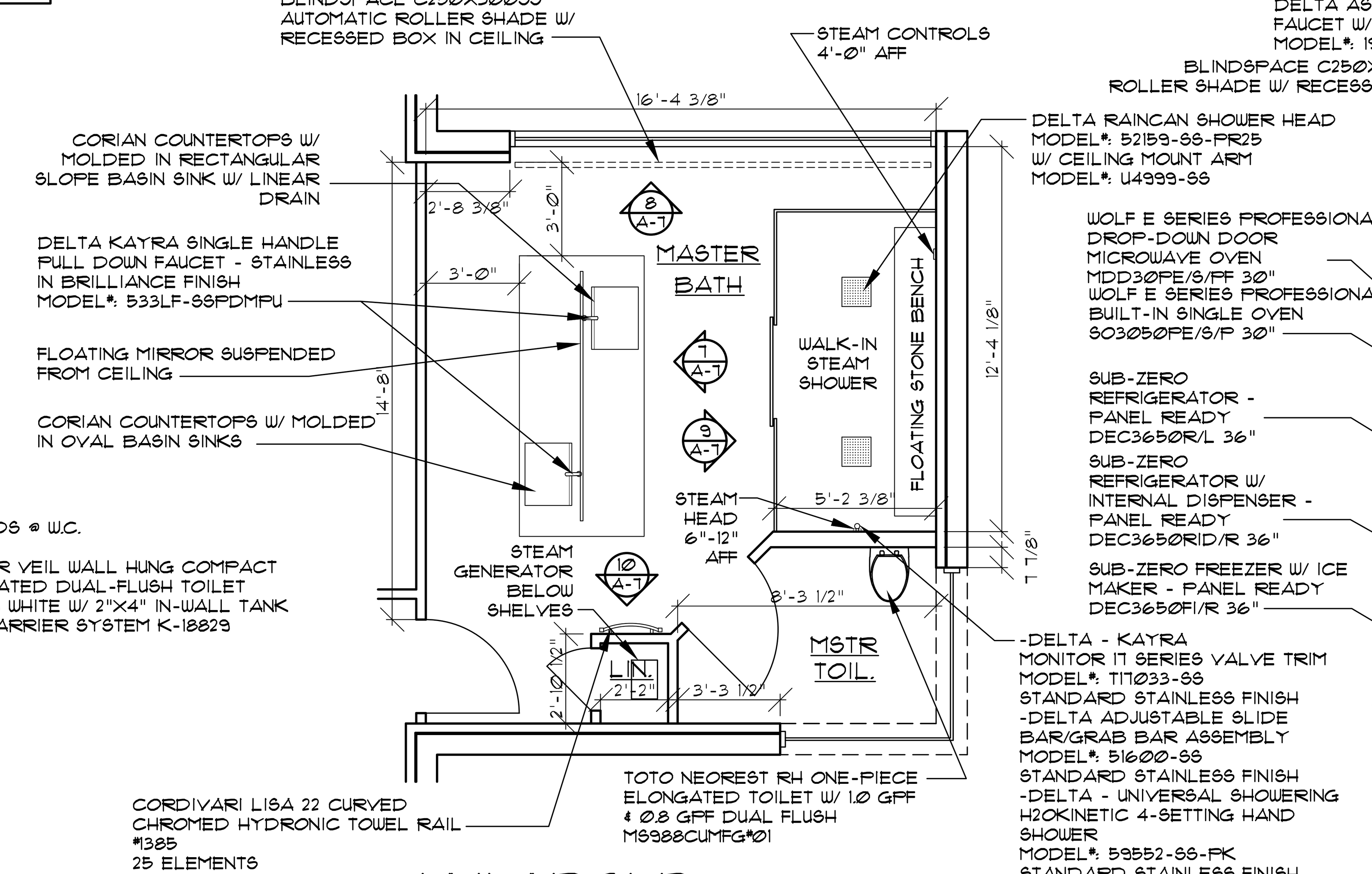
NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



3 A-1.3 ENLARGED TOILET 109 PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

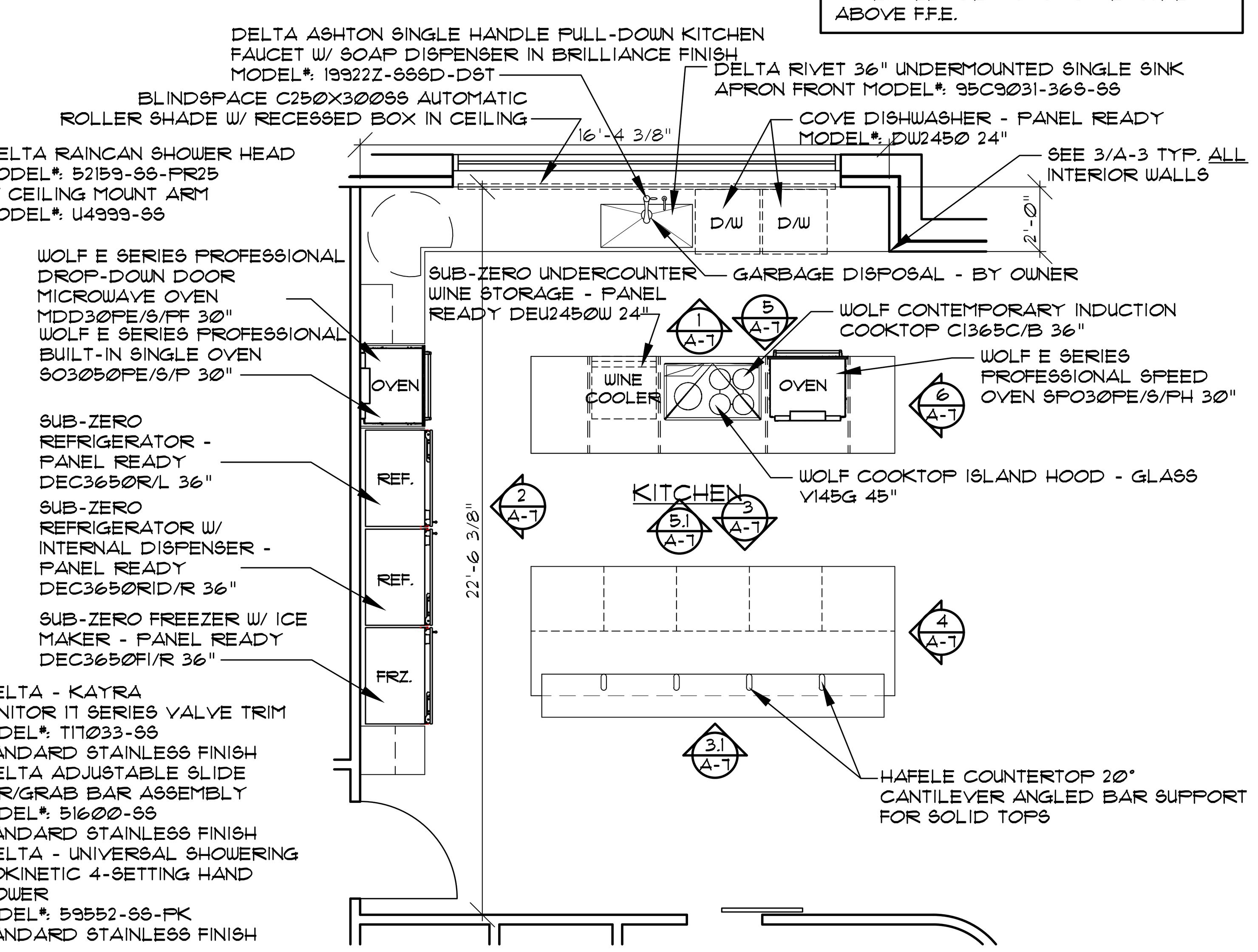
NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



2 A-1.3 ENLARGED MASTER BATH PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.



1 A-1.3 ENLARGED KITCHEN PLAN
SCALE: 1/4"=1'-0"

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

NOTE: ALL TOE KICKS TO MEASURE 4" ABOVE F.F.E.

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ENLARGED PLAN AND DETAILS

21033

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REVISIONS

SHEET NO.
A-1.3

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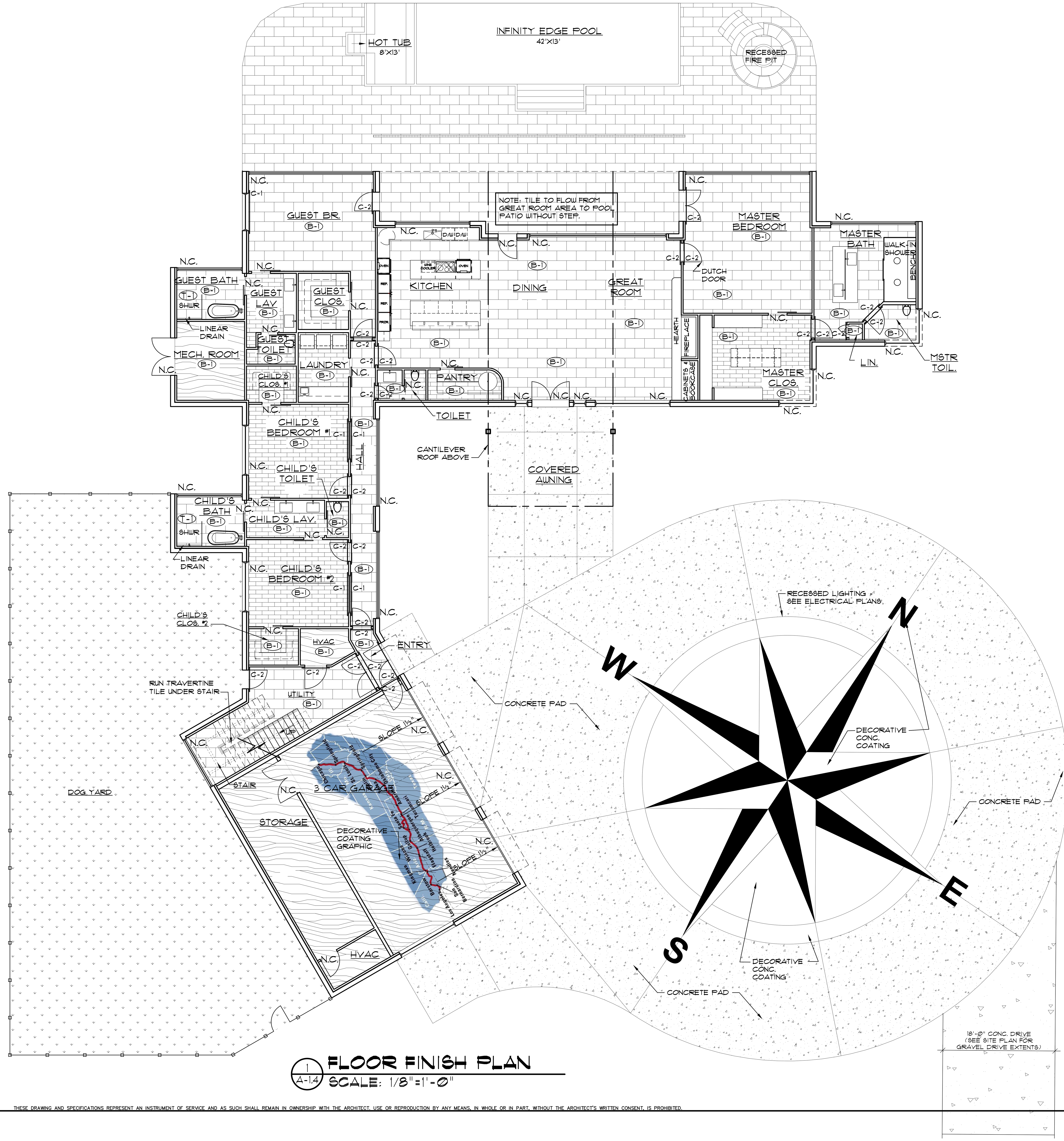


# 1 / A-1.4 FLOOR FINISH PLAN
SCALE: 1/8"=1'-0"

LEGEND

| | |
|---|---|
| | TRAVERTINE - 18"X36" |
| | LVP - LUXURY VINYL PLANK (8"-10" WIDE PLANKS) |
| | EPOXY |
| | CONCRETE-SEALED |
| | SYNTHETIC GRASS - DOG YARD |
| N.C. | NO CASING (GWB. JAMBS, HEADS AND SILL WHERE APPLICABLE) |
| C-1 | CASING - SEE DETAIL 4/A-3 |
| C-2 | CASING - SEE DETAIL 5/A-3 |
| B-1 | 1X6 W/ QUARTER ROUND |
| T-1 | TILE BASE |

NOTE: ALL BARN DOOR JAMBS AND HEADS TO BE ROUNDED CORNERS. SEE DETAIL 3/A-3



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252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

THE KOHALA RANCH
2316 COUNTRY CLUB RD.
MOREHEAD CITY, NORTH CAROLINA

FLOOR FINISH PLAN

21033

| | |
|---|---|
| ISSUED: | 06/09/2023 |
| DWG BY: | MLR |
| CKD BY: | LDD |

REVISIONS

SHEET NO.
A-1.4
OF

NOTE:
- DIMENSIONS ARE GIVEN FACE OF STUD TO FACE OF STUD, OR FACE OF MASONRY WALL TO FACE OF MASONRY WALL.
- ALL INTERIOR WALLS ARE 3⅝ METAL STUD WALLS WITH ⅝" MILDEW RESISTANCE GYPSUM BOARD ON BOTH SIDES. (UNLESS OTHERWISE NOTED).
- ALL EXTERIOR WALLS ARE 12" THICK. SEE WALL SECTIONS FOR WALL MAKEUP.
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- SUBMIT SAMPLES FOR COMPASS DRIVEWAY GRAPHIC-DECORATIVE CONCRETE COATING.
- ALL FINISHES/ COLORS TO BE SELECTED BY ARCHITECT AND OWNER.
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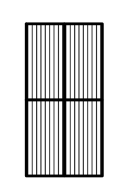
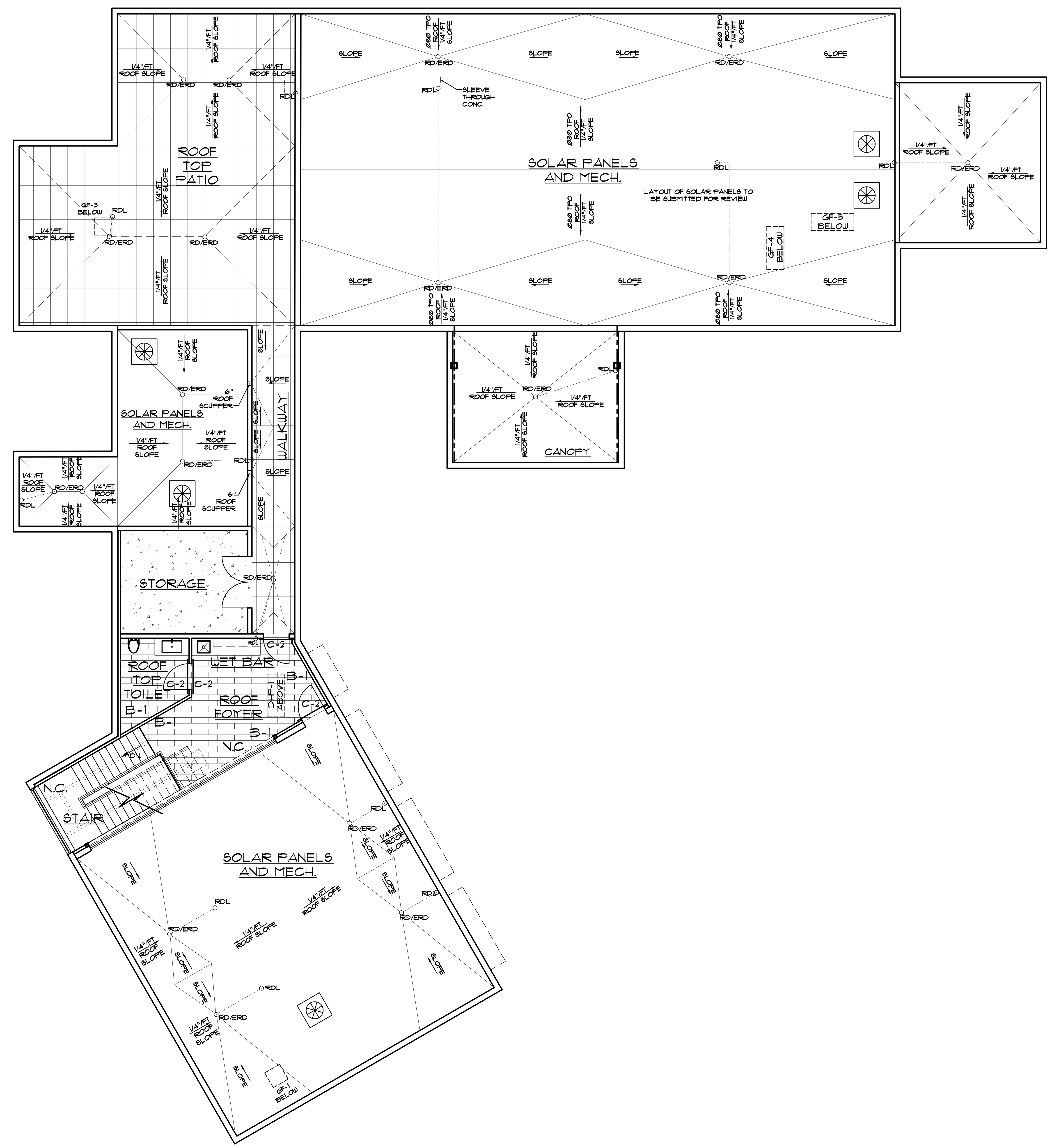
- ALL INTERIOR GWB WALLS TO HAVE ROUNDED CORNERS. -SEE 3/A-3



24X48

WESTILE BISON WOOD TILES
WT-IPE-48, GROOVED FINISH
24X48 W/ WESTILE SCREWJACK
ADJUSTABLE PEDESTAL MODEL B1 1¼"-2".




LEGEND

| | |
|---|---|
| | TRAVERTINE - 18"X36" |
| | LVP - LUXURY VINYL PLANK (8"-10" WIDE PLANKS) |
| | EPOXY |
| | CONCRETE-SEALED |
| N.C. | NO CASING (GWB. JAMBS, HEADS AND SILL WHERE APPLICABLE) |
| C-1 | CASING - SEE DETAIL 4/A-3 |
| C-2 | CASING - SEE DETAIL 5/A-3 |
| B-1 | 1X6 W/ QUARTER ROUND |
| T-1 | TILE BASE |

NOTE: ALL BARN DOOR JAMBS AND HEADS TO BE ROUNDED CORNERS. SEE DETAIL 3/A-3

1 / A-1.5 ROOF TOP FLOOR FINISH PLAN
SCALE: 1/8"=1'-0"



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ROOF TOP FLOOR FINISH PLAN

21033

ISSUED: 06/09/2023
DWG BY: MLR/MES
CKD BY: LDD
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SHEET NO.
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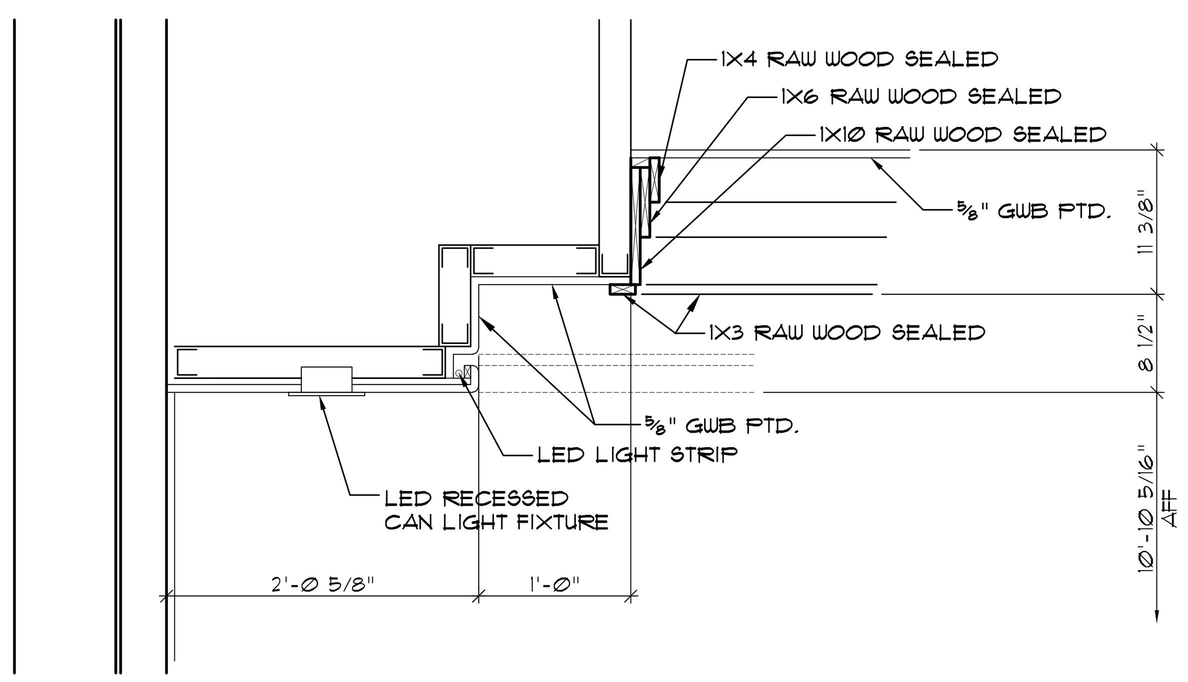
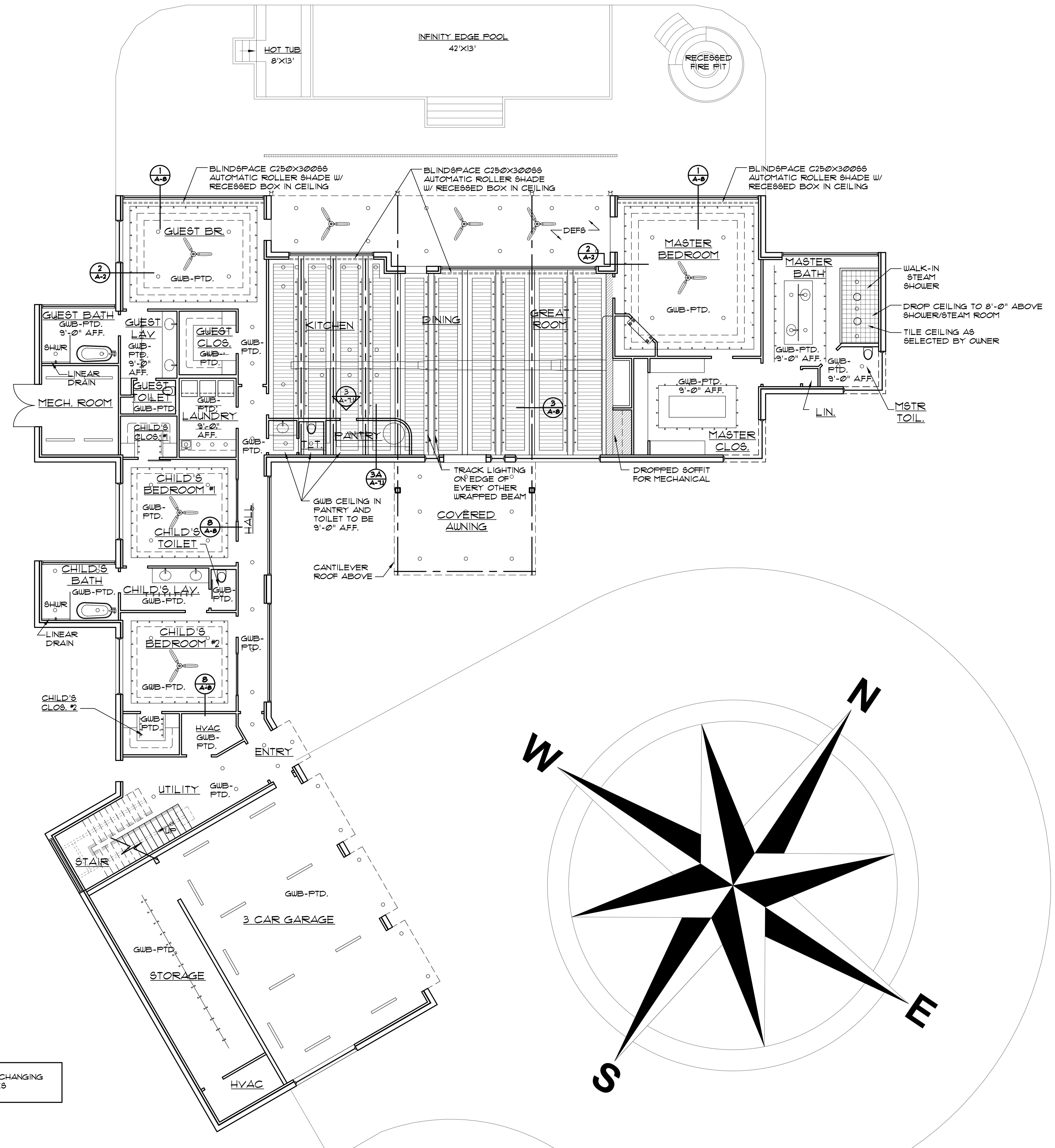



## TRAY CEILING TRIM DETAIL

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

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- ALL INTERIOR GWB WALLS TO HAVE ROUNDED CORNERS. -SEE 3/A-3

NOTE: PROVIDE LED COLOR CHANGING LIGHT UNDER ALL TOE SPACES

## FIRST FLOOR RCP

1 A-2 SCALE: 1/8"=1'-0"



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FIRST FLOOR REFLECTED CEILING PLAN

21033

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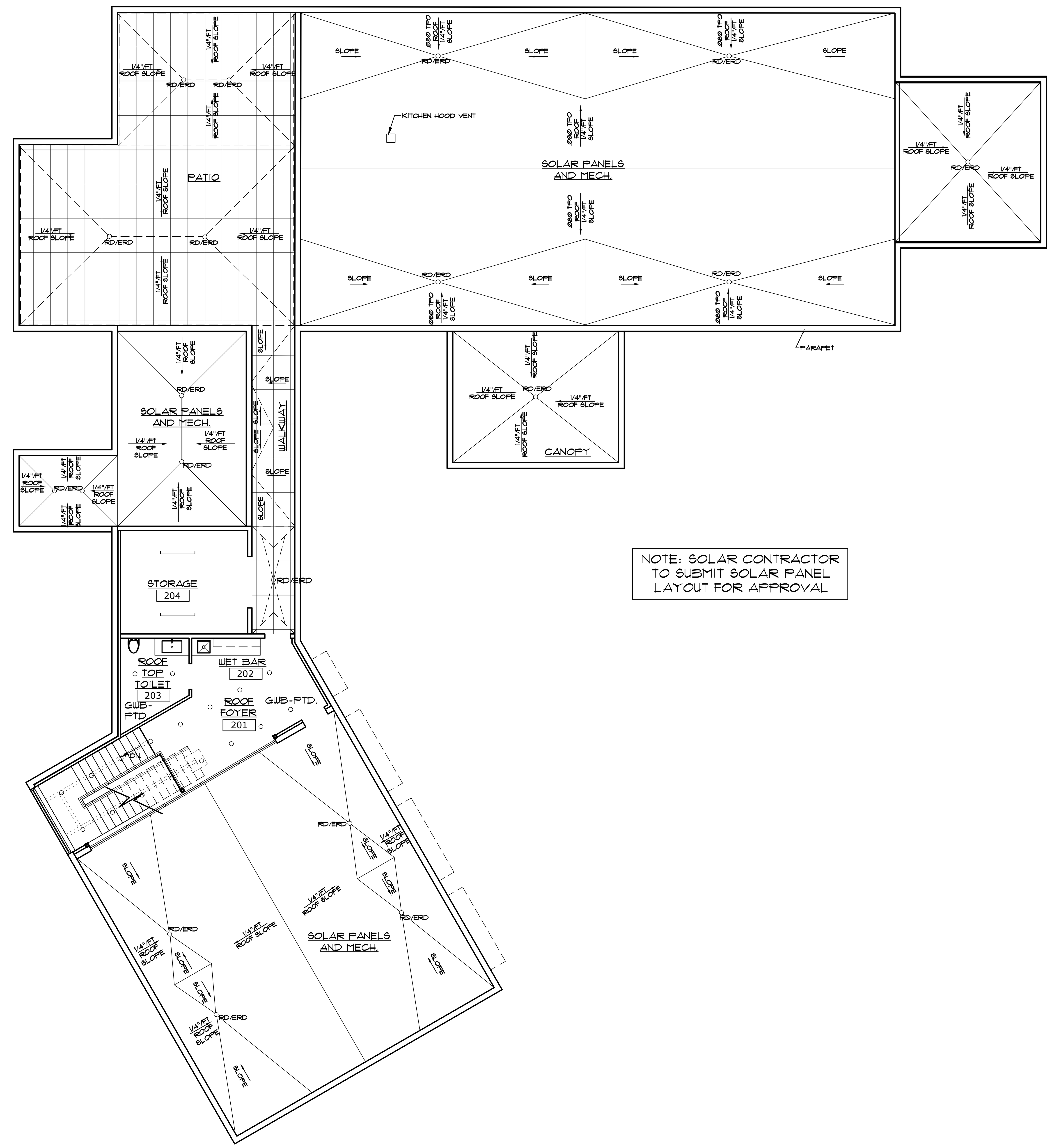


NOTE: SOLAR CONTRACTOR TO SUBMIT SOLAR PANEL LAYOUT FOR APPROVAL

1
A-2.1
**ROOF TOP RCP**
SCALE: 1/8"=1'-0"



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ROOF TOP RCP

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SHEET NO.
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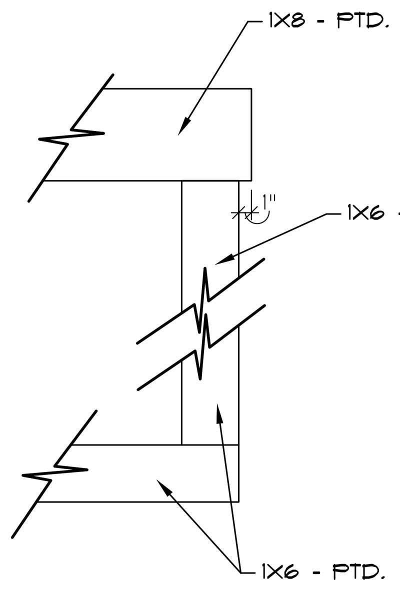
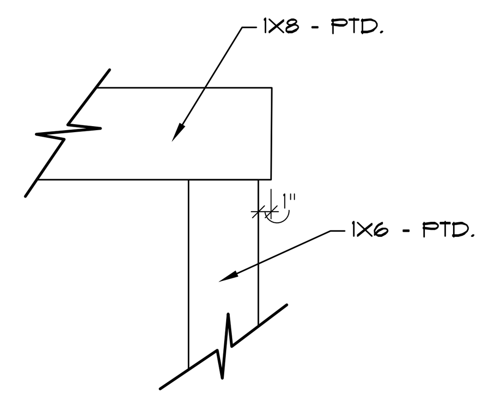
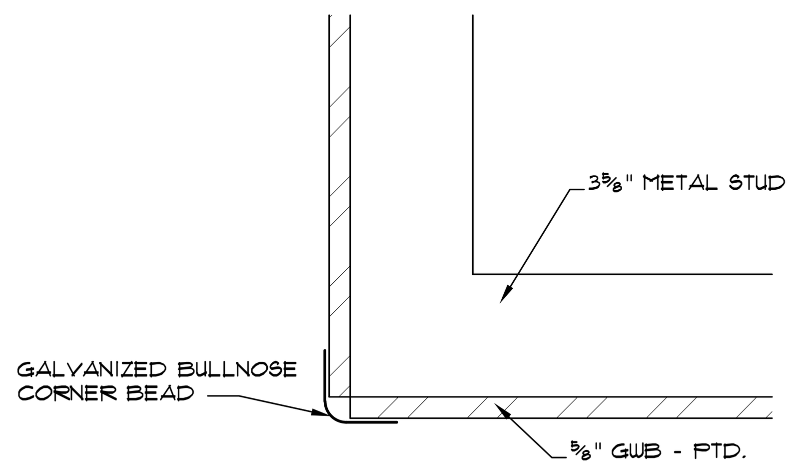
OF




4 A-3 WINDOW CASING
SCALE: 3"=1'-0"




5 A-3 DOOR CASING
SCALE: 3"=1'-0"




3 A-3 ROUNDED GWB CORNERS
SCALE: 3"=1'-0"

# DOOR SCHEDULE

| DOOR NO. | SIZE | DOOR TYPE | DOOR FRAME | REMARKS |
|---|---|---|---|---|
| 101A | (2) 3'-0" X 8'-0" | 2 | B | |
| 101B | 3'-0" X 8'-0" | 3 | C | |
| 103A | (2) 3'-0" X 8'-0" | 2 | G | |
| 103B | 3'-0" X 8'-0" | 6 | E | DUTCH DOOR |
| 104A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 104B | 9'-8" X 8'-0" | 12 | - | SEE INTERIOR ELEVATION 21/A-7.1 |
| 105A | 3'-0" X 8'-0" | 5 | E | |
| 105.1A | 2'-0" X 8'-0" | 9 | F | |
| 106A | 3'-0" X 8'-0" | 5 | E | |
| 107A | 3'-0" X 8'-0" | 6 | E | DUTCH DOOR |
| 108A | 2'-4" X 8'-0" | 8 | - | BARN DOOR |
| 109A | 2'-0" X 8'-0" | 9 | F | |
| 109B | 2'-0" X 8'-0" | 9 | - | BARN DOOR |
| 110A | 3'-0" X 8'-0" | 5 | E | |
| 111A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 112A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 113A | 3'-0" X 8'-0" | 3 | J | |
| 113B | 3'-0" X 8'-0" | 5 | E | |
| 114A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 115A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 116A | 2'-8" X 8'-0" | 7 | - | BARN DOOR |
| 117A | (2) 3'-0" X 8'-0" | 4 | K | |
| 118A | 3'-0" X 8'-0" | 5 | E | |
| 119A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 120A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 120B | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 121A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 122A | 2'-8" X 8'-0" | 7 | - | BARN DOOR |
| 123A | 3'-0" X 8'-0" | 5 | E | |
| 124A | 3'-0" X 8'-0" | 5 | - | BARN DOOR |
| 125A | (2) 3'-0" X 8'-0" | 2 | G | |
| 125B | 3'-0" X 8'-0" | 10 | E | |
| 126A | (2) 3'-0" X 8'-0" | 5 | L | |
| 126B | 3'-0" X 8'-0" | 4 | D | |
| 126.1A | 3'-6" X 8''-0" | 11 | H | |
| 127A | 10'-0" X 8'-0" | 1 | A | |
| 127B | 10'-0" X 8'-0" | 1 | A | |
| 127C | 10'-0" X 8'-0" | 1 | A | |
| 128A | (2) 3'-0" X 8'-0" | 10 | L | |
| 128.1A | 3'-0" X 8'-0" | 10 | E | |
| | | | | |
| 201A | 3'-0" X 8'-0" | 3 | J | |
| 201B | 3'-0" X 8'-0" | 4 | D | |
| 203A | 3'-0" X 8'-0" | 5 | E | |
| 204A | (2) 3'-0" X 8'-0" | 4 | K | |

## DOOR SCHEDULE REMARKS

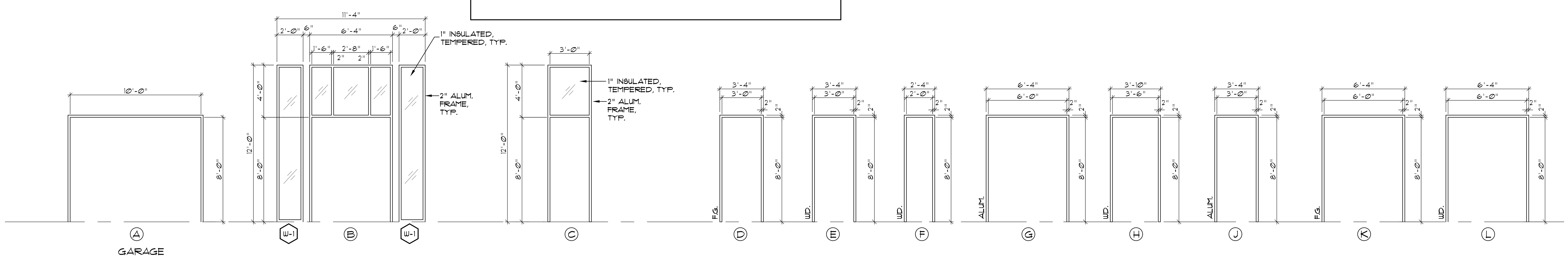
- ALL BARN DOORS TO HAVE, RUSTICA - NO SHOW BARN DOOR HARDWARE IN BRUSHED STEEL.
- ALL BARN DOOR JAMBS AND HEADS TO BE ROUNDED CORNERS. SEE DETAIL 3/A-3.

# ROOM FINISH SCHEDULE

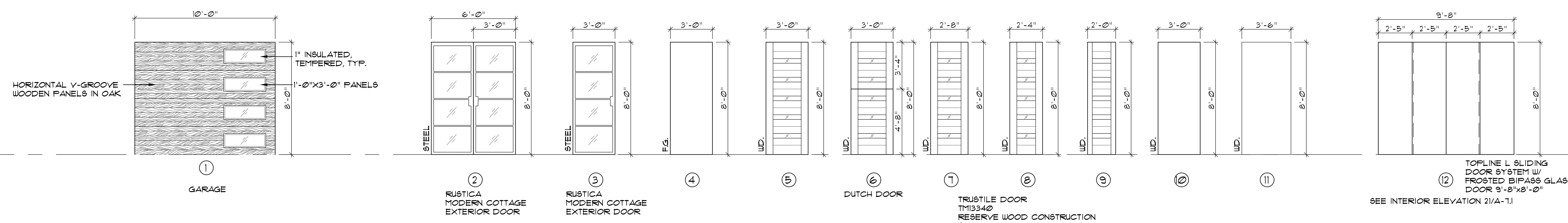
| ROOM NUMBERS | ROOM | FLOORS | BASE | WALLS | CEILINGS | HEIGHT (NOMINAL) | REMARKS |
|---|---|---|---|---|---|---|---|
| 100 | COVERED AWNING | CONC. | - | - | DEFS | 12'-0" | |
| 101 | DINING ROOM | TRAVERTINE | 1X6 WD. W/ ¼ RD. | GWB-PTD. | WD. - SEE DETAIL 3/A-8 | 13'-4 1/2" | |
| 102 | GREAT ROOM | | | GWB-PTD/WD./STONE | WD. - SEE DETAIL 3/A-8 | 13'-4 1/2" | SEE INT. ELEV. 1/A-7.1 |
| 103 | MASTER BEDROOM | | | GWB-PTD. | GWB-PTD - SEE DETAIL 1/A-8 & 2/A-2 | 11'-10 1/2" | SEE INT. ELEV. 2/A-7.1 |
| 104 | MASTER CLOSET | LVP | | | GWB-PTD. | 9'-0" | |
| 105 | MASTER BATH | TRAVERTINE | | | | 9'-0" | |
| 105.1 | LINEN CLOSET | | | | | 9'-0" | |
| 106 | MASTER TOILET | | | | | 9'-0" | |
| 107 | KITCHEN | | | GWB PTD/CORIAN | WD.-SEE DETAIL 3/A-8 | 13'-4 1/2" | SEE INT. ELEV. 1&2/A-7 |
| 108 | PANTRY | LVP | | GWB-PTD. | GWB-PTD. | 9'-0" | |
| 109 | TOILET | LVP | | GWB-PTD. | | 9'-0" | |
| 110 | HALL | TRAVERTINE | | GWB-PTD. | | 11'-10" | |
| 111 | LAUNDRY | LVP | | GWB PTD/TILE | | 9'-0" | SEE INT. ELEV. 4/A-7.1 |
| 112 | GUEST CLOSET | TRAVERTINE | | GWB-PTD. | | 9'-0" | |
| 113 | GUEST BEDROOM | TRAVERTINE | | GWB-PTD. | GWB-PTD - SEE DETAIL 1/A-8 & 2/A-2 | 12'-4" | STEPPED TRAY CEILING |
| 114 | GUEST LAV | LVP | | GWB-PTD. | GWB-PTD. | 9'-0" | |
| 115 | GUEST BATH | TRAVERTINE | TILE BASE | GWB/MARBLE | | 9'-0" | SEE INT. ELEV. 15/A-7 |
| 116 | GUEST TOILET | LVP | 1X6 WD. W/ ¼ RD. | GWB-PTD. | | 9'-0" | |
| 117 | MECHANICAL ROOM | EPOXY | | | | 12'-5 7/8" | |
| 118 | CHILD'S BED ROOM #1 | LVP | | | GWB-PTD - SEE DETAIL 8/A-8 | 12'-4" | TRAY CEILING |
| 119 | CHILD'S CLOSET #1 | | | | GWB-PTD. | 9'-0" | |
| 120 | CHILD'S LAV | | | | | 9'-0" | |
| 121 | CHILD'S BATH | TRAVERTINE | TILE BASE | GWB/MARBLE | | 9'-0" | SEE INT. ELEV. 18/A-7 |
| 122 | CHILD'S TOILET | LVP | 1X6 WD. W/ ¼ RD. | GWB-PTD. | | 9'-0" | |
| 123 | CHILD'S BEDROOM #2 | | | | GWB-PTD - SEE DETAIL 8/A-8 | 12'-4" | TRAY CEILING |
| 124 | CHILD'S CLOSET #2 | | | | GWB-PTD. | 9'-0" | |
| 125 | ENTRY | TRAVERTINE | | | | 12'-4 1/2" | |
| 126 | UTILITY | TRAVERTINE | | | | 12'-4 1/2" | |
| 126.1 | HVAC | EPOXY | | | | 12'-4 1/2" | |
| 127 | 3 CAR GARAGE | | | | | 12'-4 1/2" | |
| 128 | STORAGE | | | | | 12'-4 1/2" | |
| 128.1 | HVAC | | | | | 12'-4 1/2" | |
| 129 | STAIR | STAINED POPLAR | | | | 24'-0" | |
| 130 | DOG YARD | SYNTHETIC GRASS | - | CABLE RAIL FENCE | - | - | SEE INT. ELEV. 2/A-1 |
| | | | | | | | |
| 201 | ROOF FOYER | TRAVERTINE | 1X6 WD. W/ ¼ RD. | GWB-PTD. | GWB-PTD. | 8'-8 1/4" | |
| 202 | WET BAR | | 1X6 WD. W/ ¼ RD. | GWB-PTD./TILE | | 8'-8 1/4" | SEE INT. ELEV. 19/A-7 |
| 203 | ROOF TOP TOILET | | 1X6 WD. W/ ¼ RD. | GWB-PTD. | | 8'-8 1/4" | |
| 204 | STORAGE | CONC. | - | GWB-PTD. | | 8'-8 1/4" | |
| 205 | ROOF TOP PATIO | WOOD TILES | - | - | - | - | |

## ROOM FINISH SCHEDULE REMARKS

- SEE ALSO INTERIOR ELEVATIONS.




2 A-3 DOOR FRAME ELEVATIONS
SCALE: 1/4"=1'-0"




1 A-3 DOOR ELEVATIONS
SCALE: 1/4"=1'-0"



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DOOR AND ROOM FINISH SCHEDULES

21033

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SHEET NO.
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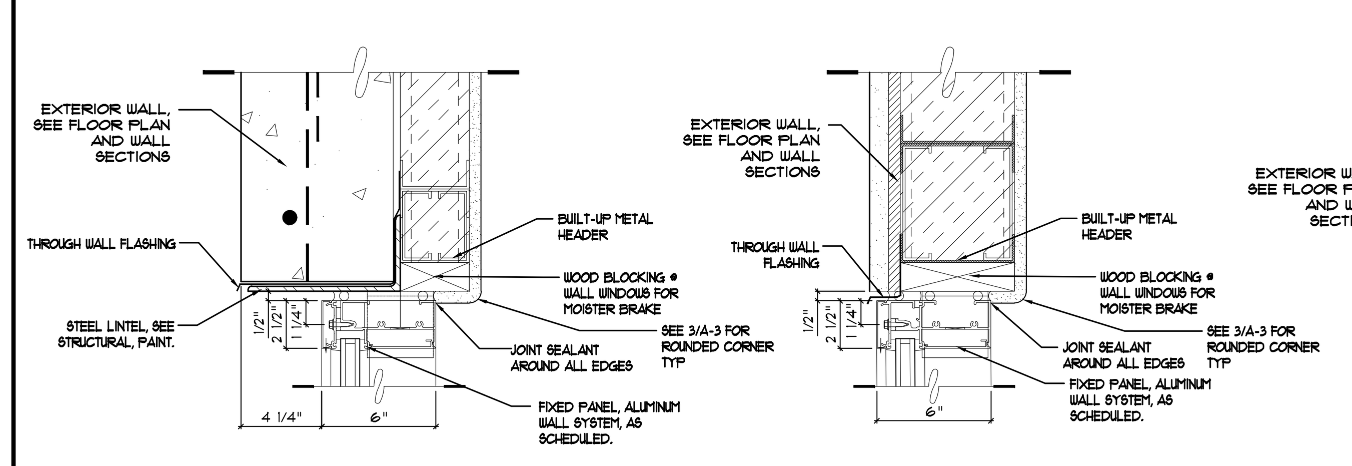
OF

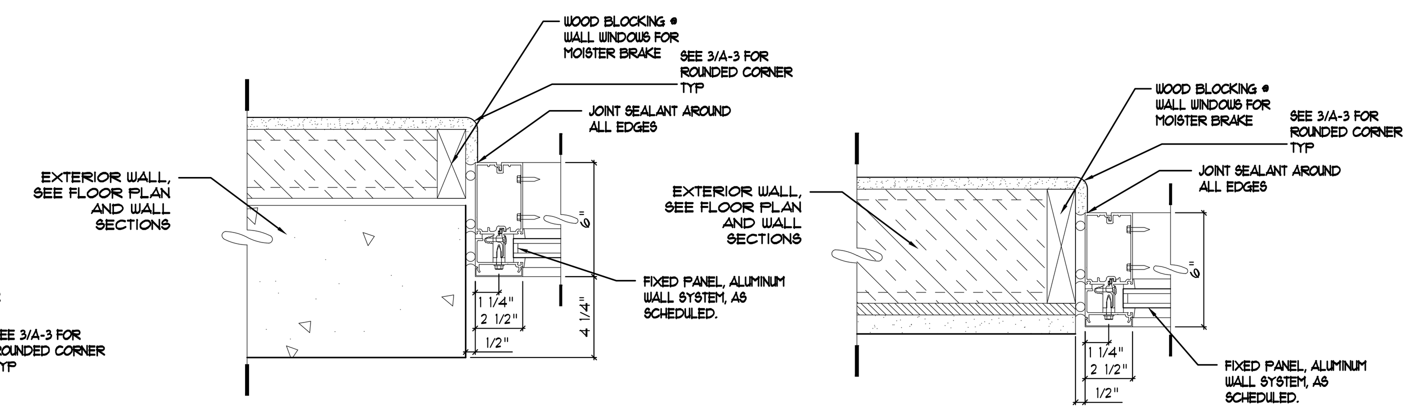
## WINDOW SCHEDULE

| MARK | TYPE | SIZE (NOMINAL) | MODEL | REMARKS |
|---|---|---|---|---|
| W-1 | KAWNEER | 2'-0"W x 12'-0"H | CLEARWALL CURTAIN WALL SYSTEM | MEET REQ'D WIND LOAD |
| W-2 | | 10'-6"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-3 | | 12'-0"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-4 | | 13'-8"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-5 | | 14'-0"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-6 | | 20'-0"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-7 | | 22'-0"W x 12'-0"H | | MEET REQ'D WIND LOAD |
| W-8 | | SEE WINDOW ELEVATION | | MEET REQ'D WIND LOAD |
| W-9 | | SEE WINDOW ELEVATION | | MEET REQ'D WIND LOAD |
| W-10 | | 6'-0"W x 3'-0"H | | MEET REQ'D WIND LOAD |
| W-10.1 | | 6'-0"W x 3'-0"H | STOREFRONT ALUM. FRAMING | MEET REQ'D WIND LOAD |
| W-11 | | SEE WINDOW ELEVATION | CLEARWALL SYSTEM | MEET REQ'D WIND LOAD |
| W-12 | | 8'-8¾"W x 2'-4"H | | MEET REQ'D WIND LOAD |
| W-13 | | SEE WINDOW ELEVATION | | MEET REQ'D WIND LOAD |

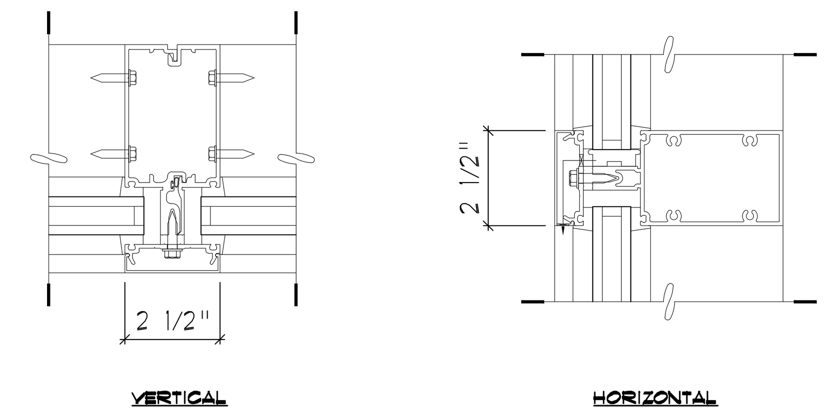
ALL EXTERIOR GLAZING TO BE MIRROR GLAZING - IMPACT RESISTANT



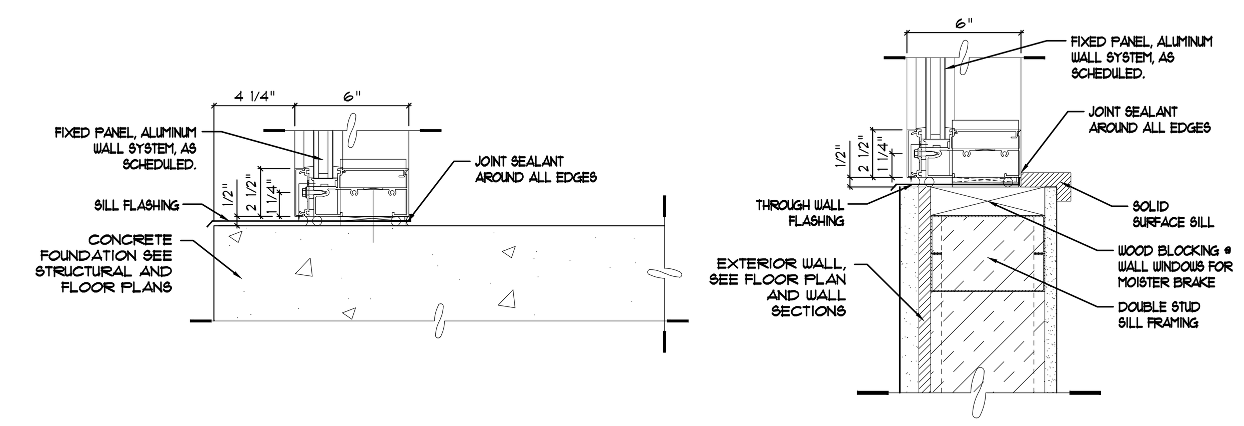

3/A-3.1 **HEAD DETAILS**
SCALE: 1 1/2"=1'-0"



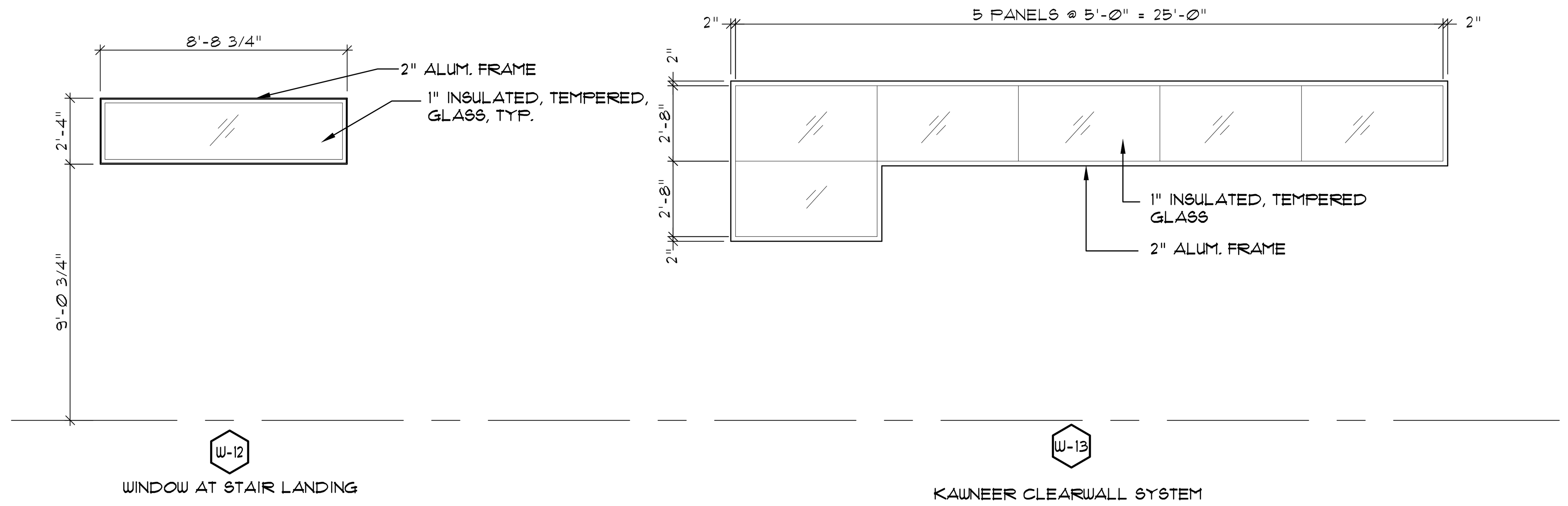

4/A-3.1 **JAMB DETAILS**
SCALE: 1 1/2"=1'-0"

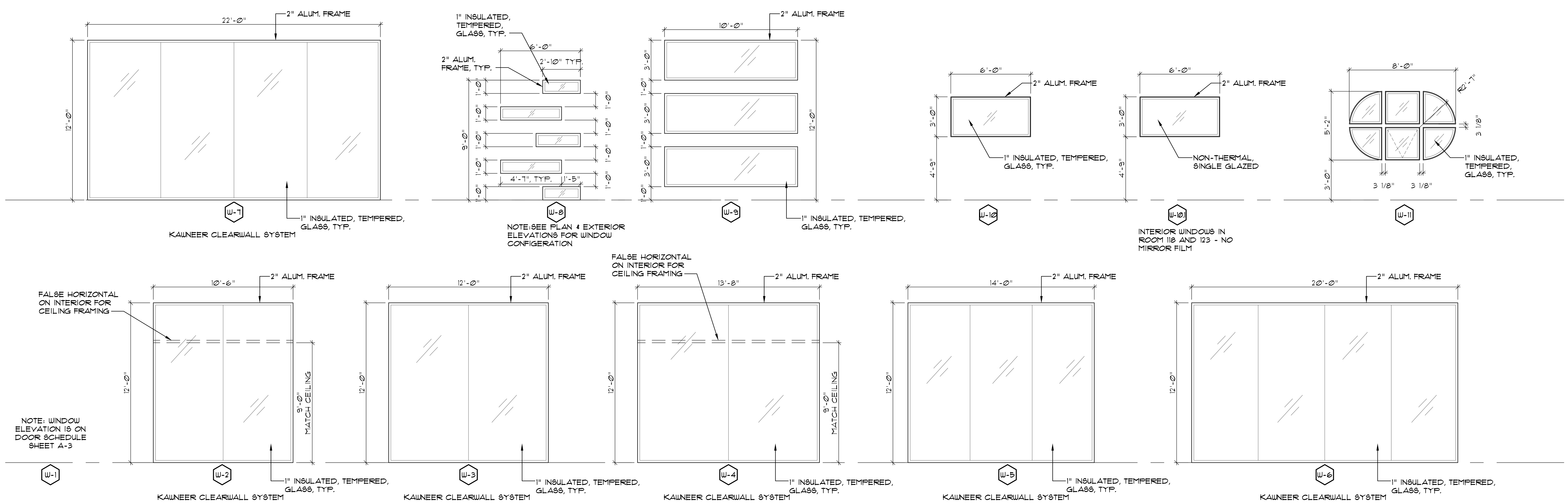



5/A-3.1 **TYPICAL MULLION DETAILS**
SCALE: 3"=1'-0"




2/A-3.1 **SILL DETAILS**
SCALE: 1 1/2"=1'-0"




1/A-3.1 **EXTERIOR WINDOW ELEVATIONS**
SCALE: 1/4"=1'-0"

SUBMIT SHOP DRAWINGS FOR APPROVAL

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# THE KOHALA RANCH
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WINDOW SCHEDULE AND DETAILS

21033

ISSUED: 06/09/2023
DWG BY: BLS
CKD BY: LDD
REVISIONS

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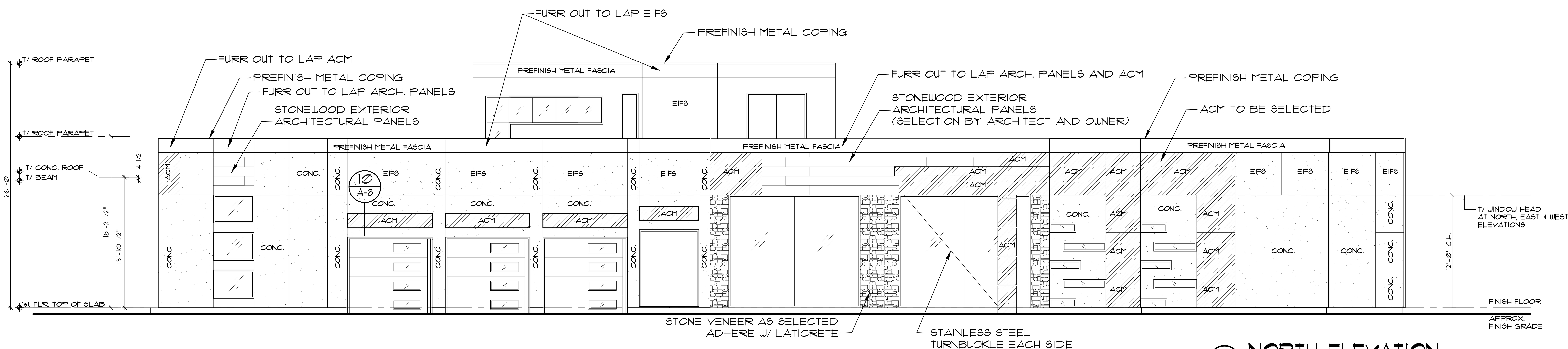
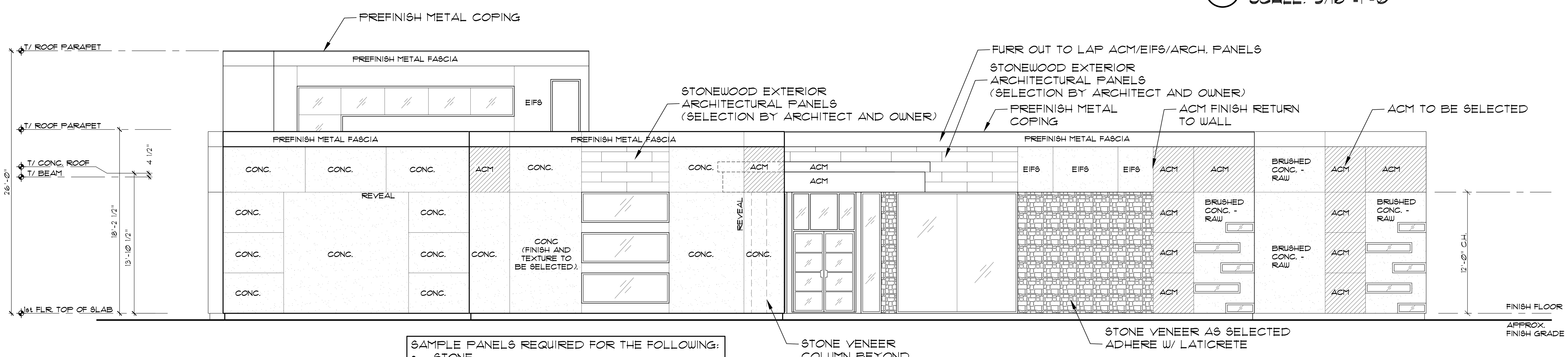
- ALL DOOR HARDWARE TO BE SELECTED BY ARCHITECT AND OWNER.
- ALL INTERIOR GWB WALLS TO HAVE ROUNDED CORNERS. -SEE 3/A-3




2
A-4
## NORTH ELEVATION
SCALE: 3/16"=1'-0"




NOTE: PROVIDE HEAD FLASHING AT ALL EXTERIOR DOORS AND WINDOWS

SAMPLE PANELS REQUIRED FOR THE FOLLOWING:
- STONE
- STONEWOOD PANELS
- ACM
- BRUSHED CONC.-RAW
- CONC. (FINISH/TEXTURE TO BE SELECTED)

1
A-4
## EAST ELEVATION
SCALE: 3/16"=1'-0"

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Lee D. Dixon, Jr., AIA
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lee@coastalarchitecture.net

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EXTERIOR ELEVATIONS

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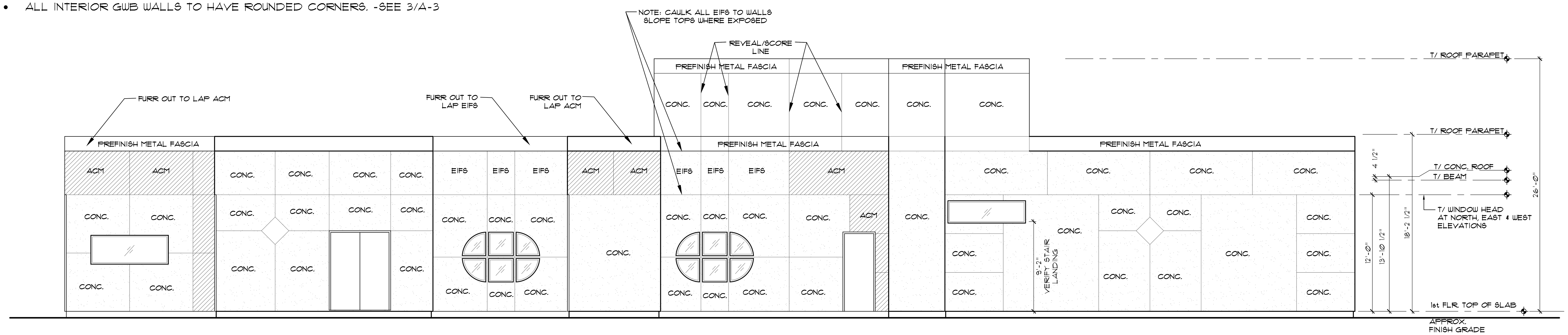
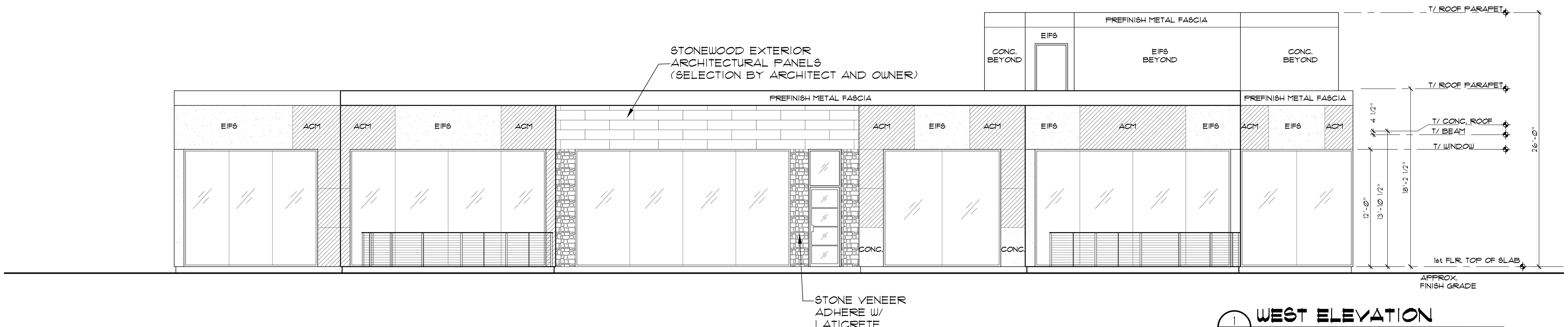
NOTE:
- DIMENSIONS ARE GIVEN FACE OF STUD TO FACE OF STUD, OR FACE OF MASONRY WALL TO FACE OF MASONRY WALL.
- ALL INTERIOR WALLS ARE 3⅝" METAL STUD WALLS WITH ⅝" MILDEW RESISTANCE GYPSUM BOARD ON BOTH SIDES. (UNLESS OTHERWISE NOTED).
- ALL EXTERIOR WALLS ARE 12" THICK. SEE WALL SECTIONS FOR WALL MAKEUP.
- THE CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BUILDING.
- THE CONTRACTOR SHALL CONFORM TO ALL BUILDING CODES AND LOCAL ORDINANCES.
- SUBMIT SAMPLES FOR COMPASS DRIVEWAY GRAPHIC-DECORATIVE CONCRETE COATING.
- ALL FINISHES/ COLORS TO BE SELECTED BY ARCHITECT AND OWNER.
- ALL EXTERIOR DOORS AND WINDOWS TO MEET APPLICABLE WIND CODE REQUIREMENTS.
- GAS LINEAR FIREPLACE AS SELECTED BY OWNER.
- ALL DOOR HARDWARE TO BE SELECTED BY ARCHITECT AND OWNER.
- ALL INTERIOR GWB WALLS TO HAVE ROUNDED CORNERS. -SEE 3/A-3




2 A-4.1 **SOUTH ELEVATION**
SCALE: 3/16"=1'-0"




1 A-4.1 **WEST ELEVATION**
SCALE: 3/16"=1'-0"

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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

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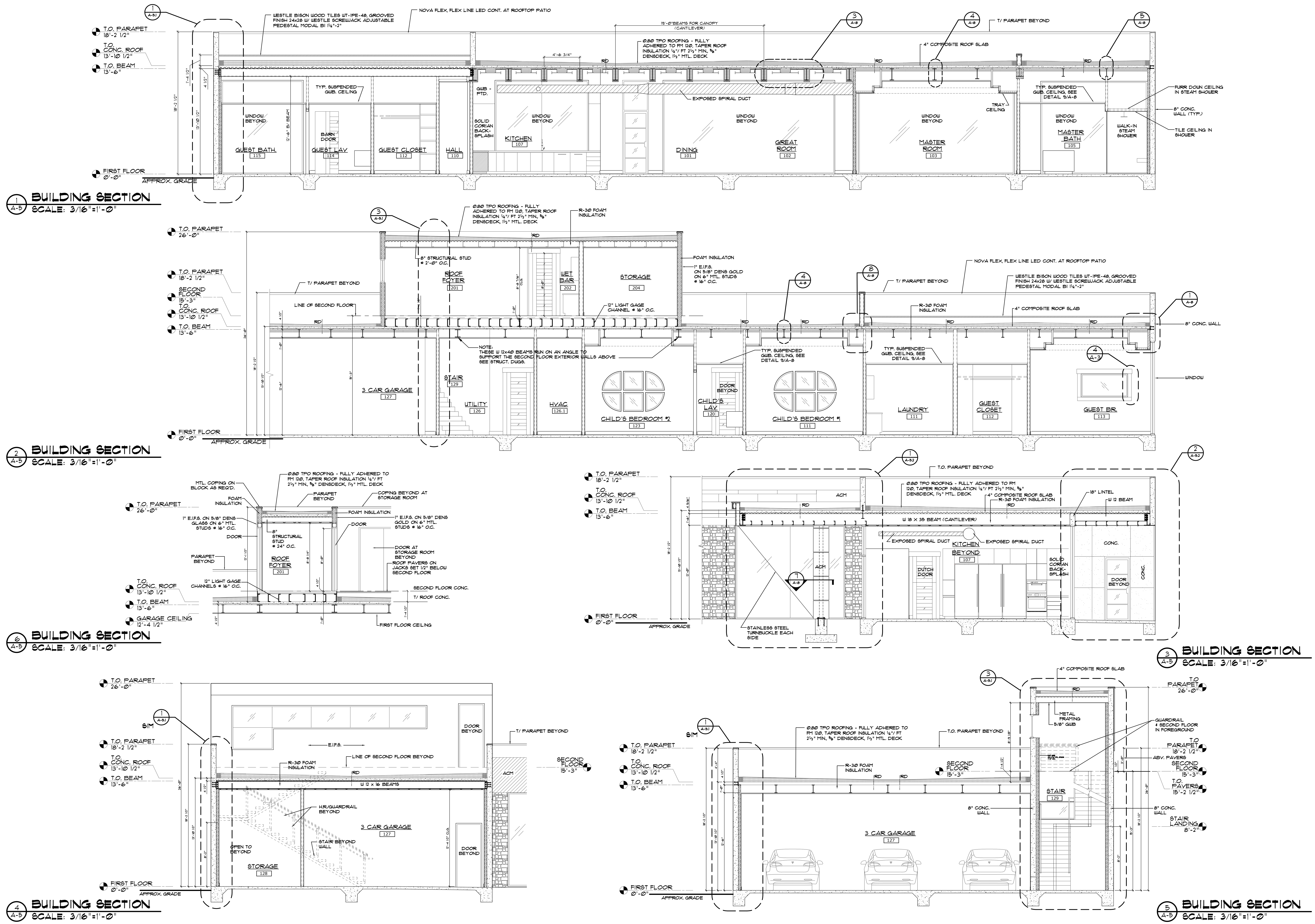



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Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
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# THE KOHALA RANCH
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BUILDING SECTIONS

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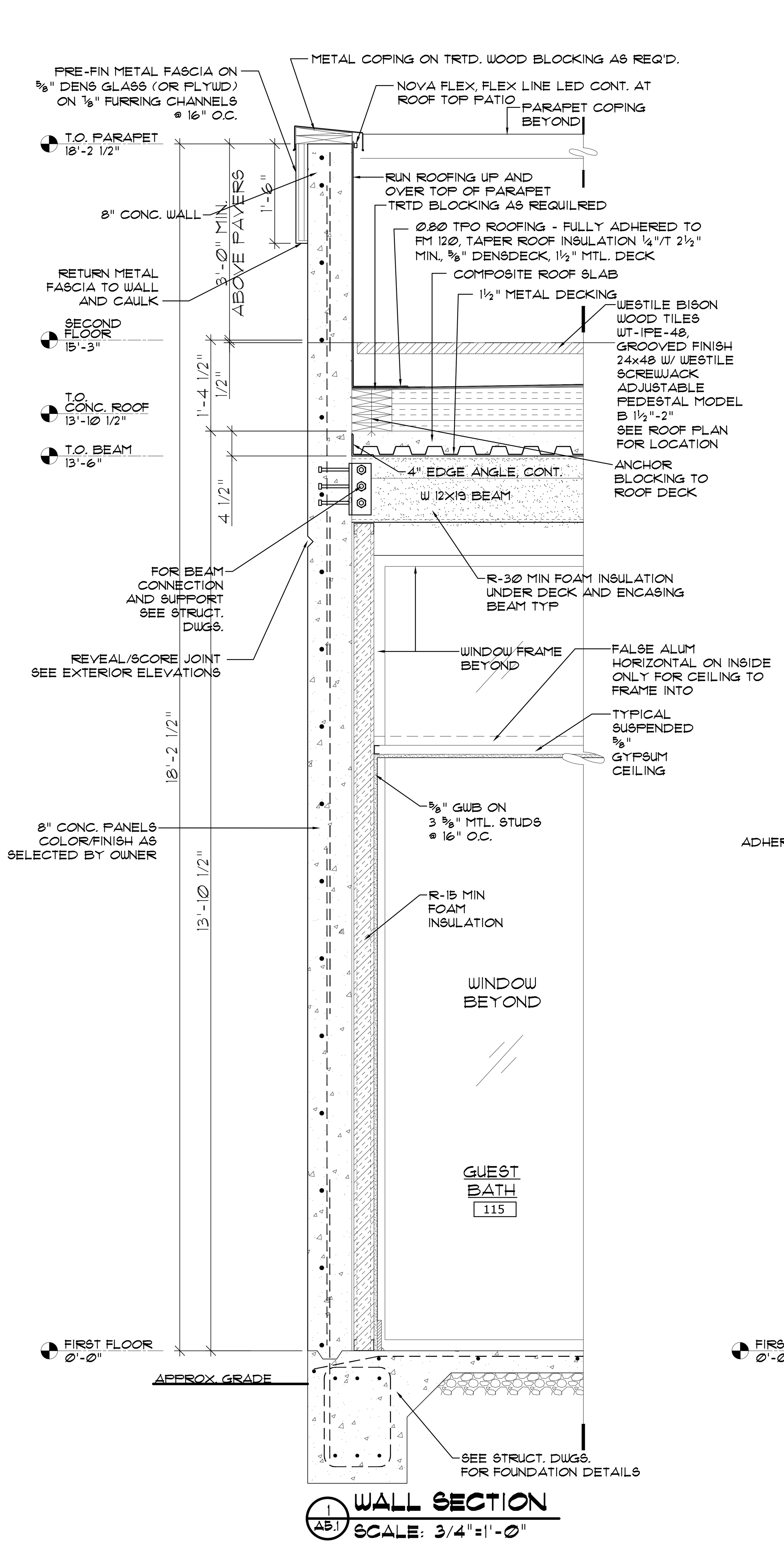

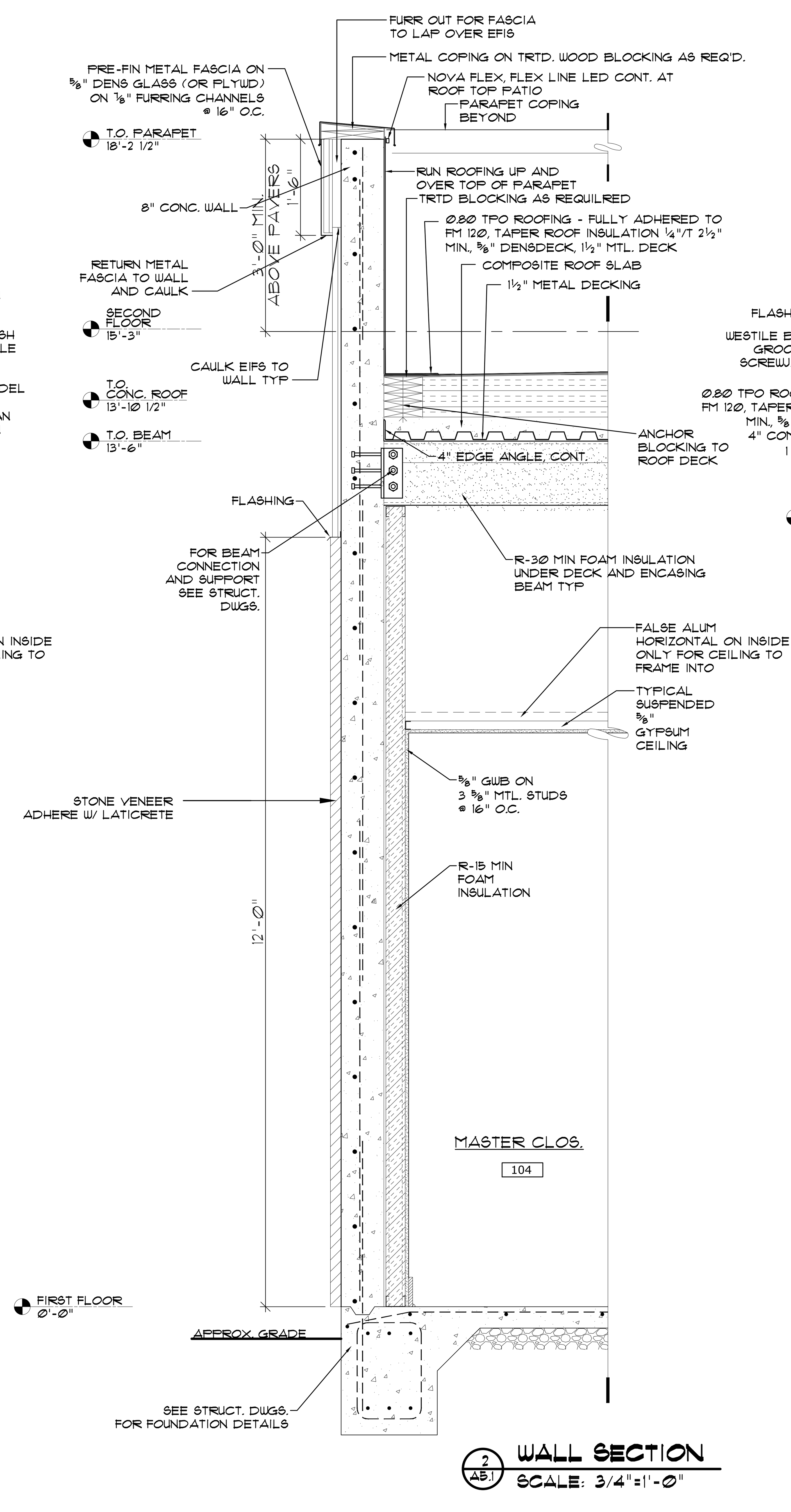

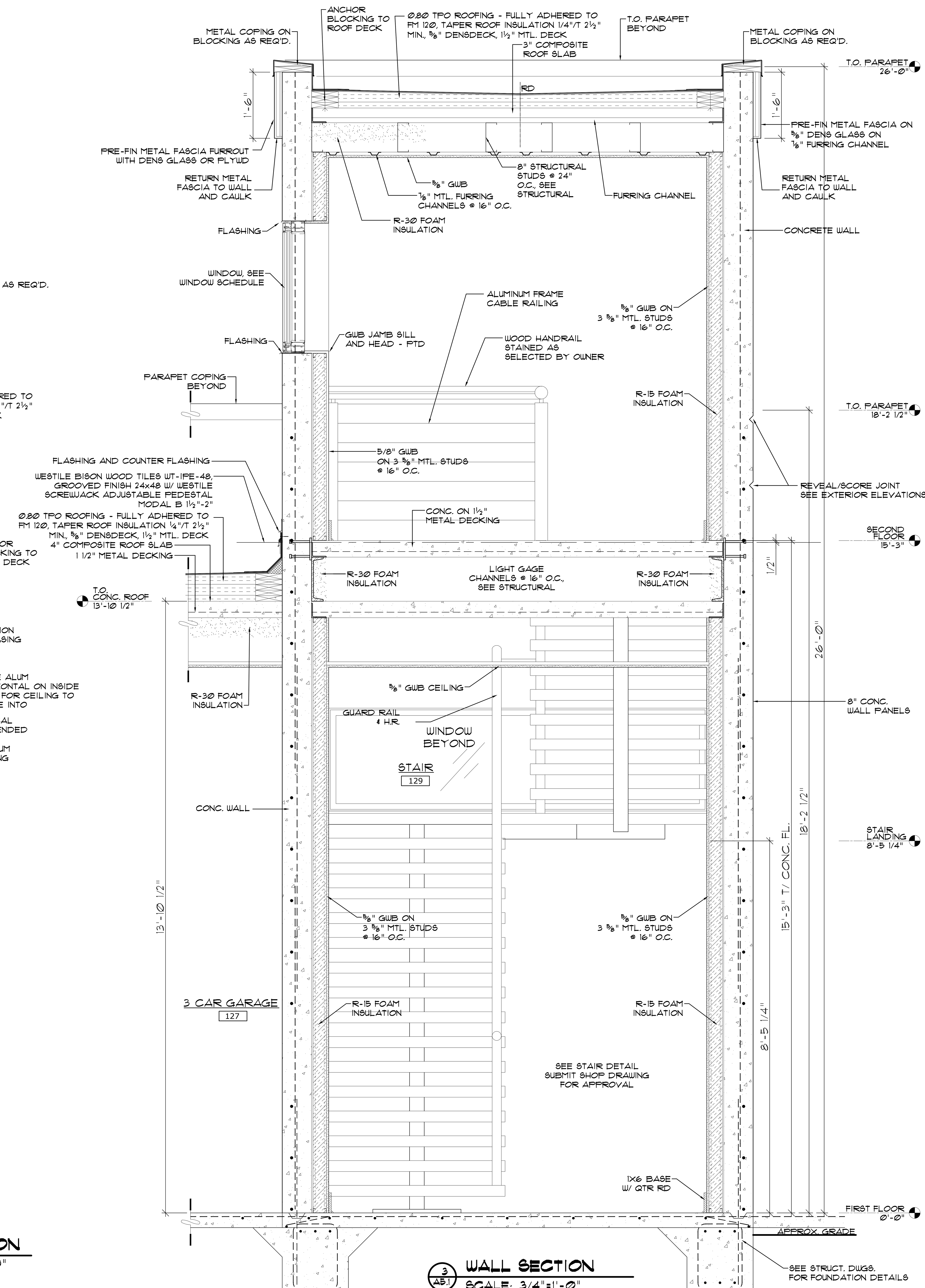




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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

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WALL SECTIONS

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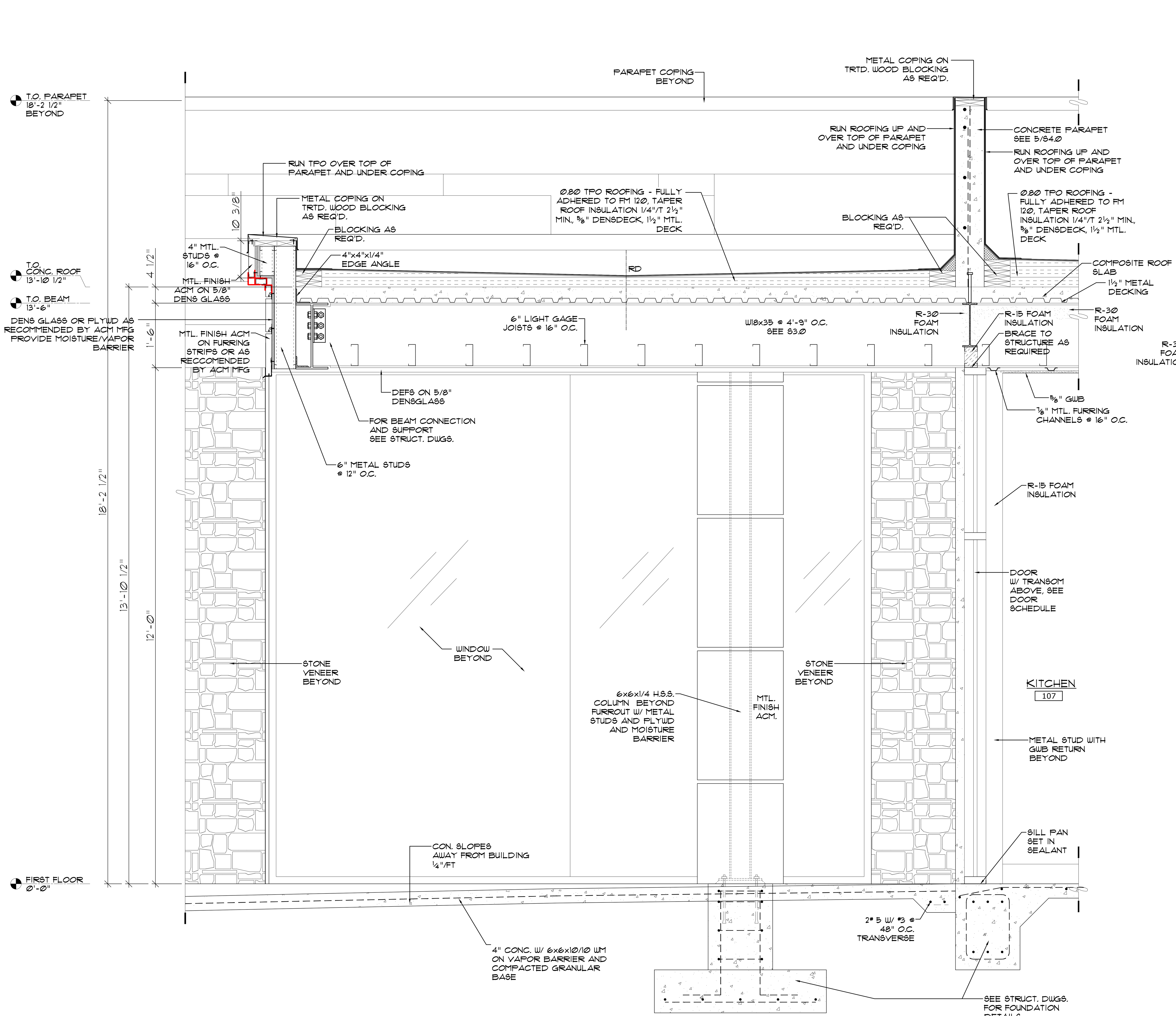
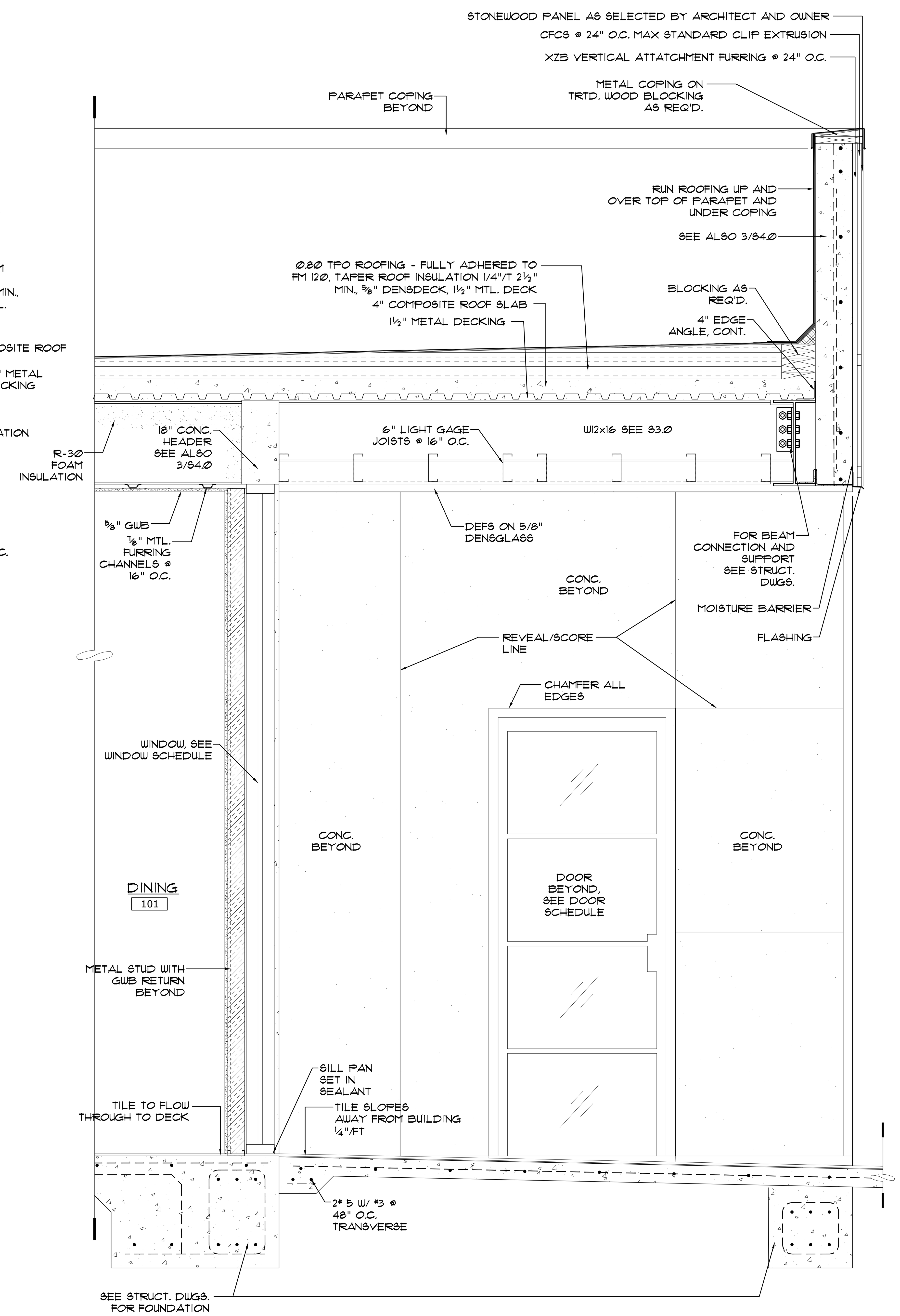



1 A5.2 **WALL SECTION**
SCALE: 3/4"=1'-0"




2 A5.2 **WALL SECTION**
SCALE: 3/4"=1'-0"



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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
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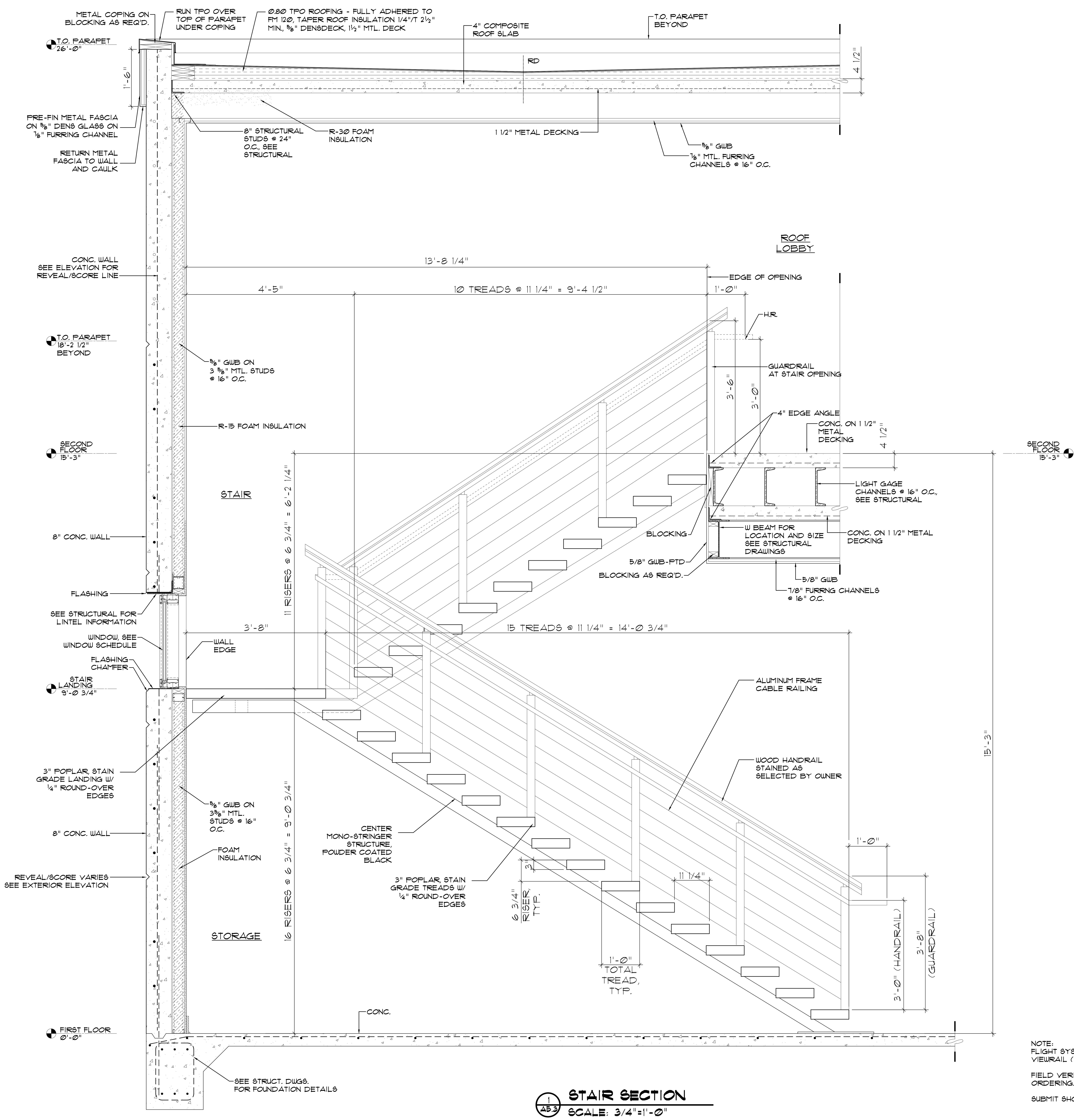


1 A5.3 **STAIR SECTION**
SCALE: 3/4"=1'-0"

NOTE:
FLIGHT SYSTEM, OPEN RISER MONO-STRINGER STRUCTURE, BY VIEWRAIL (866) 330-0221 OR VIEWRAIL.COM

FIELD VERIFY ALL REQUIRED STAIR DIMENSIONS BEFORE ORDERING.

SUBMIT SHOP DRAWING FOR APPROVAL.



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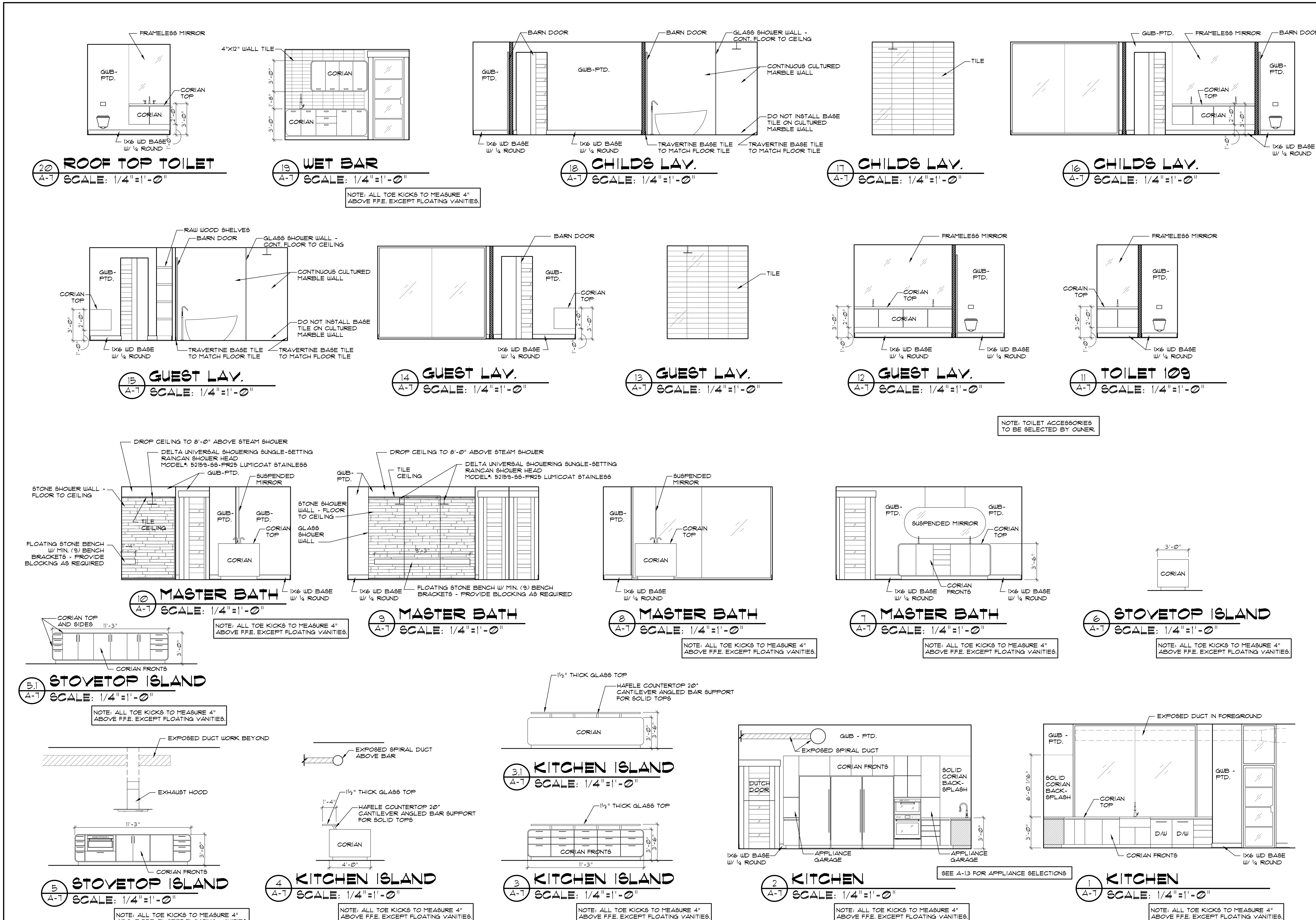
OF



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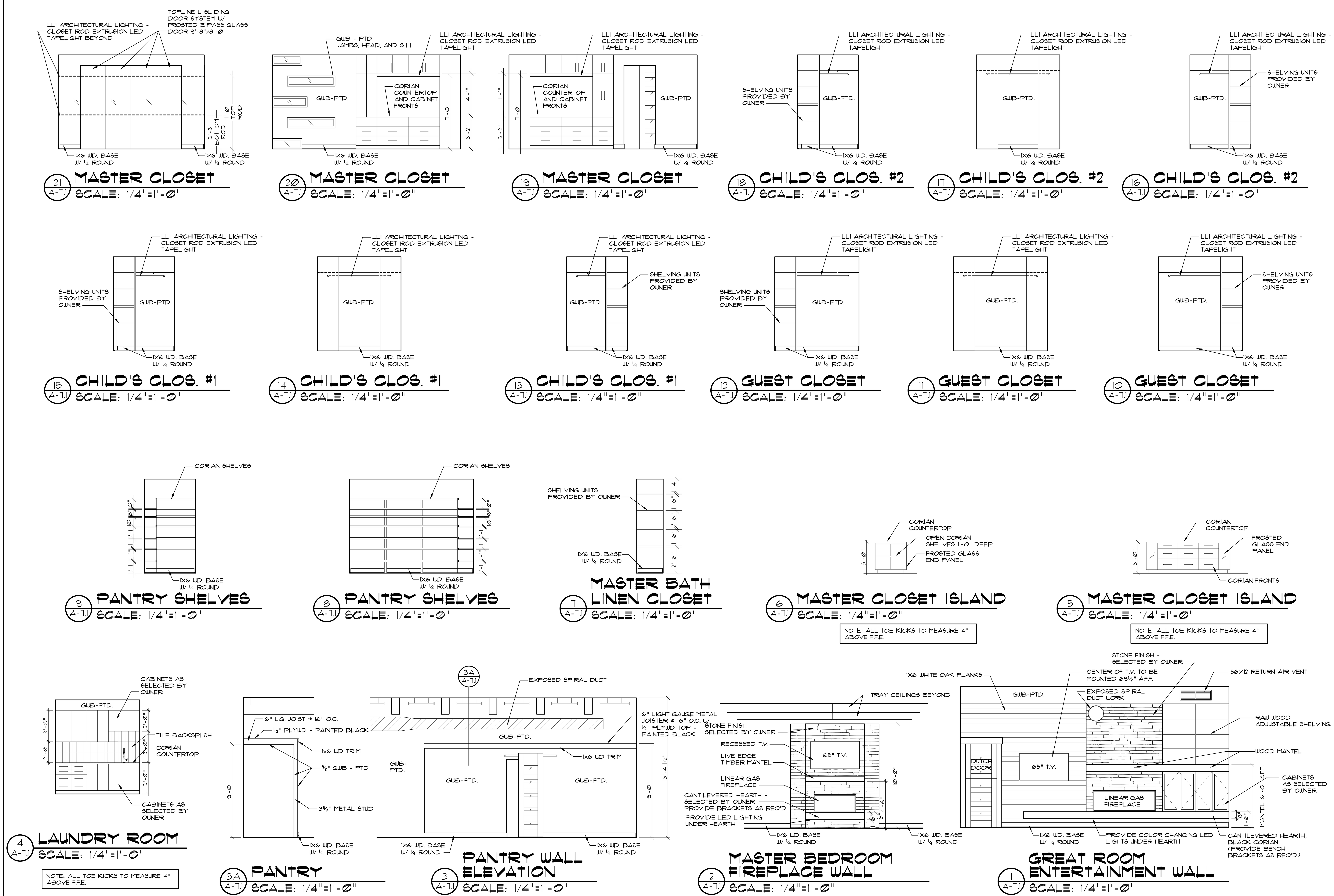



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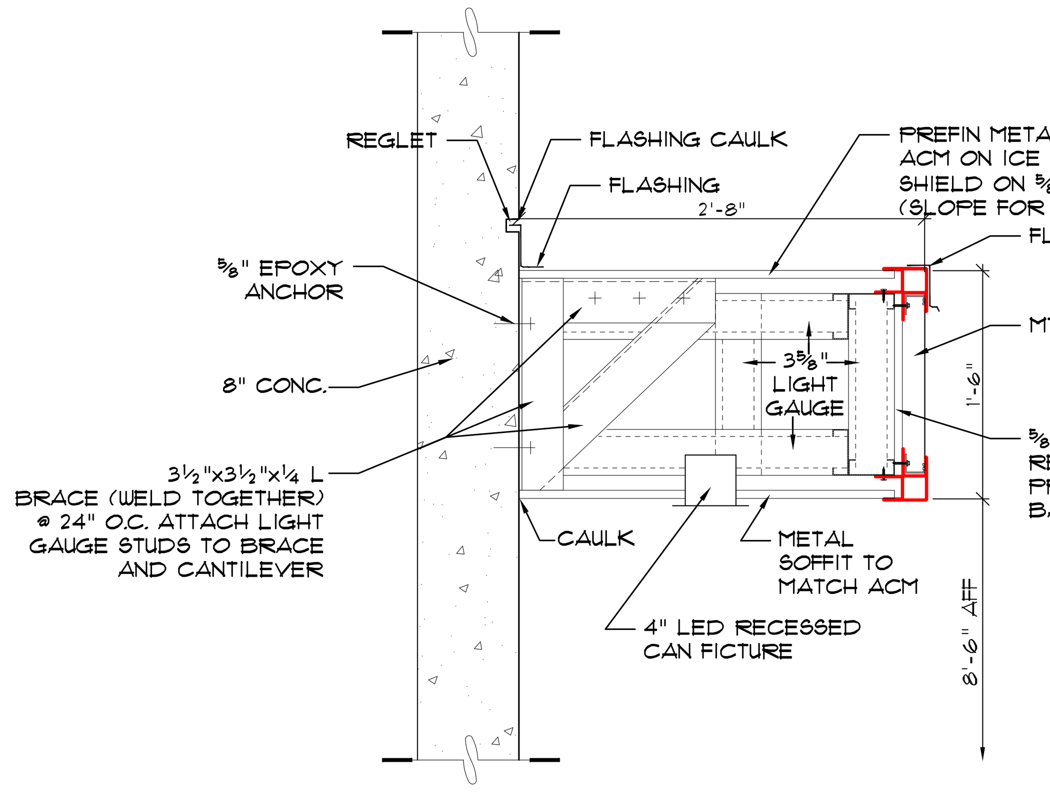
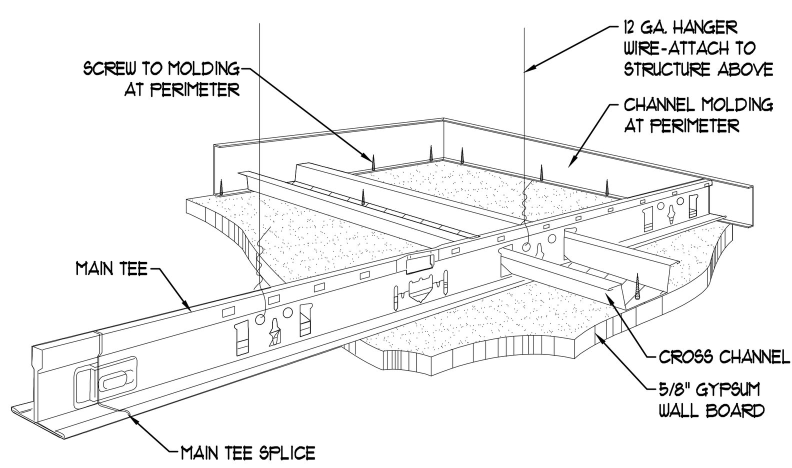
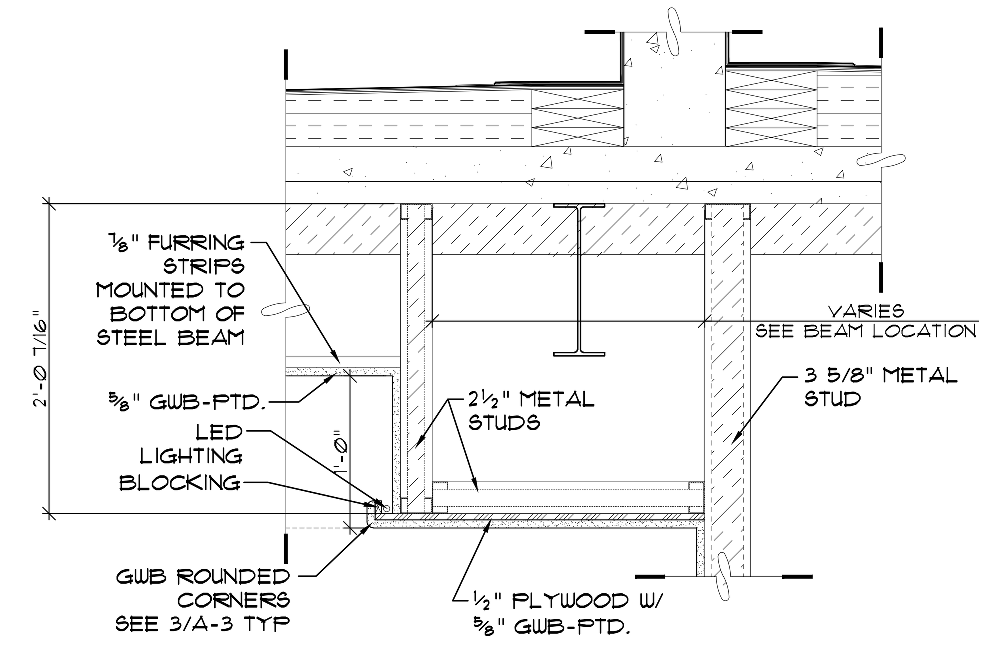
A-7.1
OF



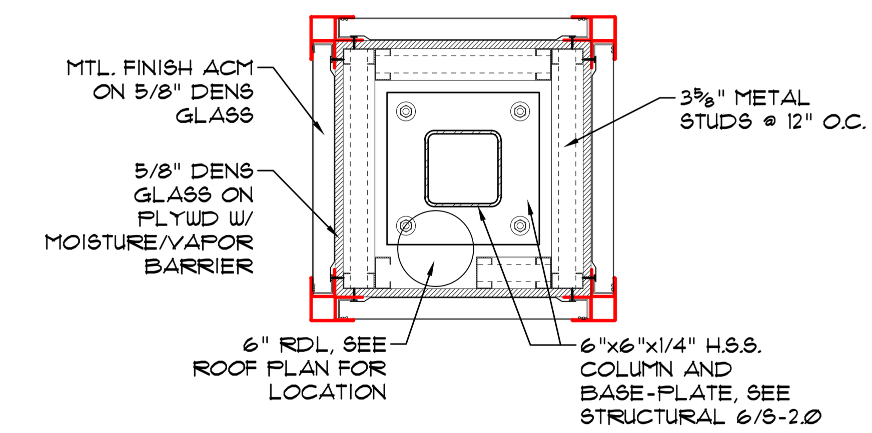

## GARAGE DOOR AWNING DETAIL
10 A-8
SCALE: 1"=1'-0"



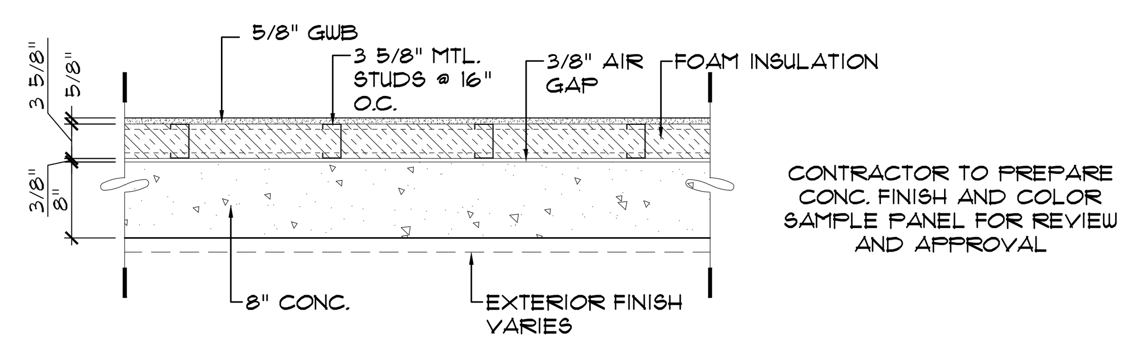

## TYPICAL SUSPENDED CEILING DETAIL
9 A-8
SCALE: 1"=1'-0"



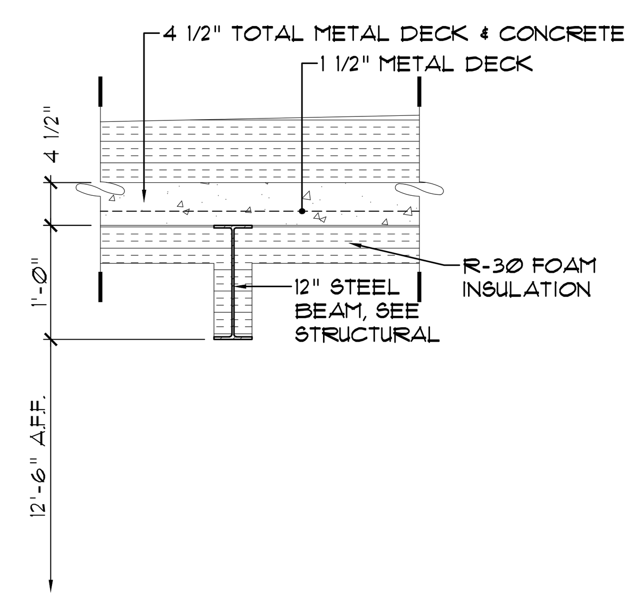

## TRAY CEILING DETAIL
8 A-8
SCALE: 1"=1'-0"



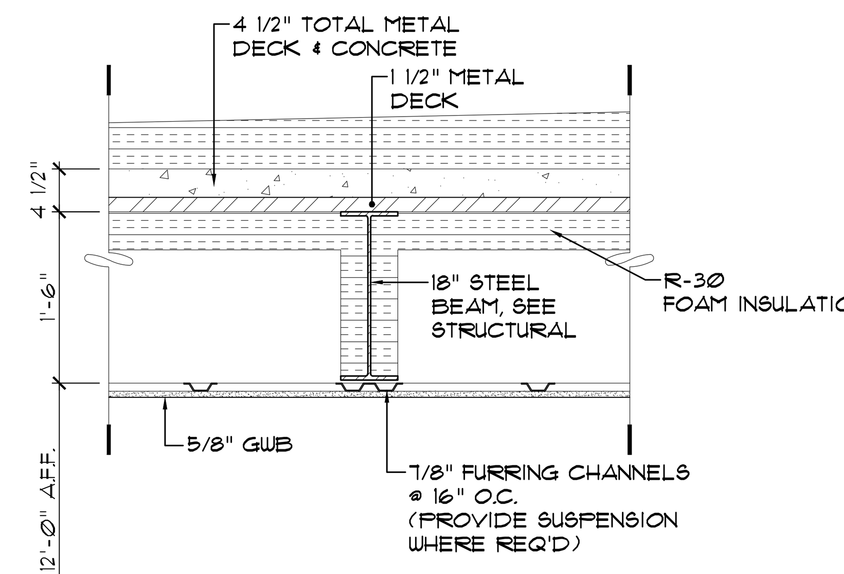

## TYPICAL COLUMN WRAP DETAIL
7 A-8
SCALE: 1"=1'-0"



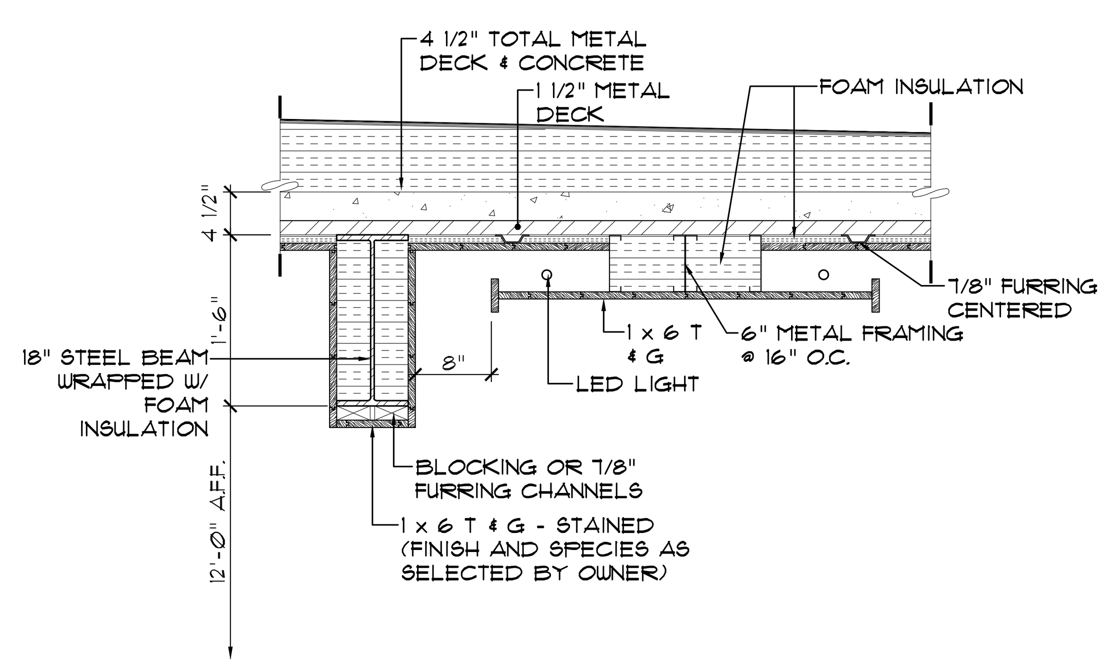

## TYPICAL EXT. CONCRETE WALL PLAN DETAIL
6 A-8
SCALE: 3/4"=1'-0"



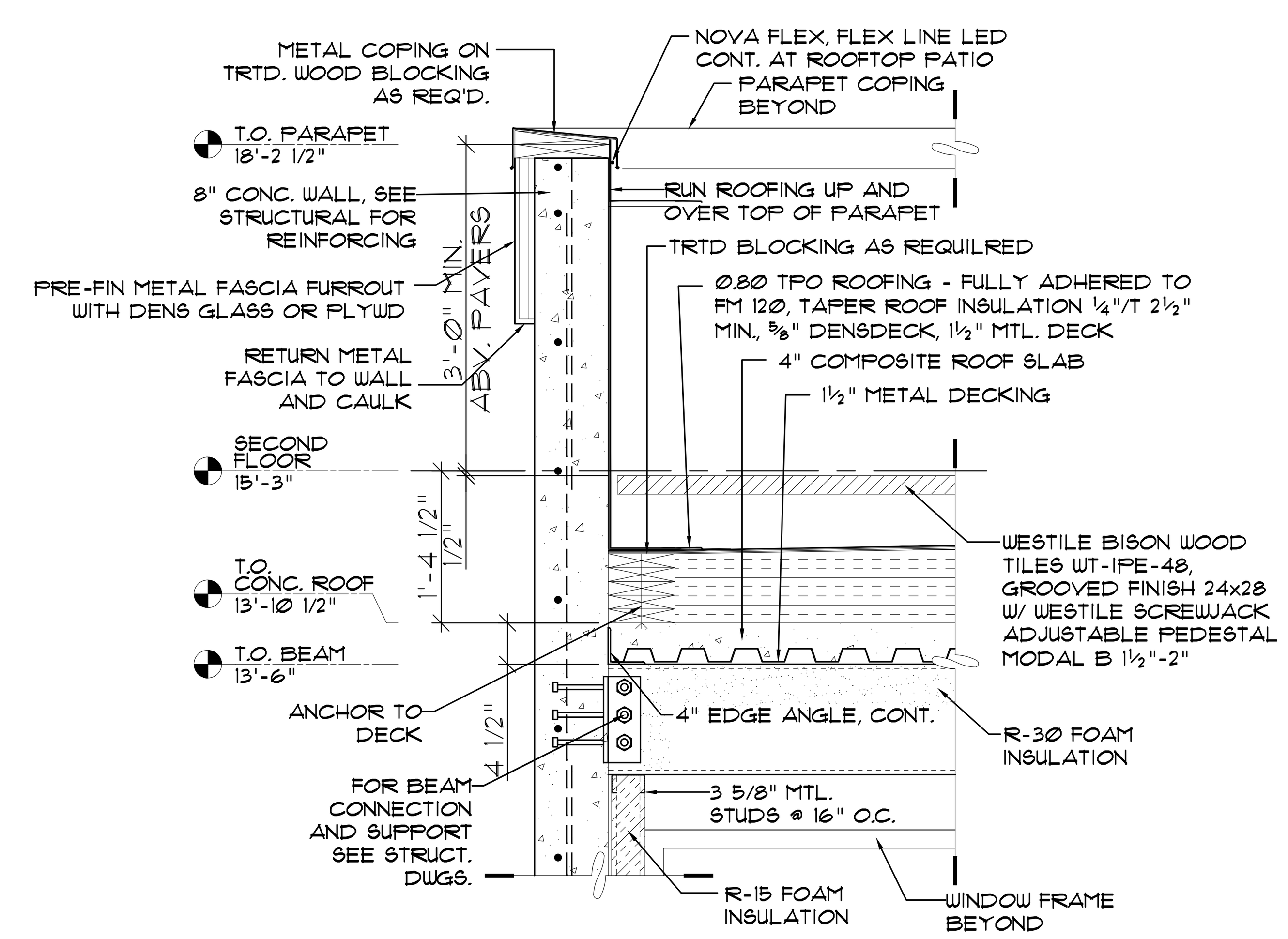

## COMPOSITE ROOF DETAIL
5 A-8
SCALE: 3/4"=1'-0"



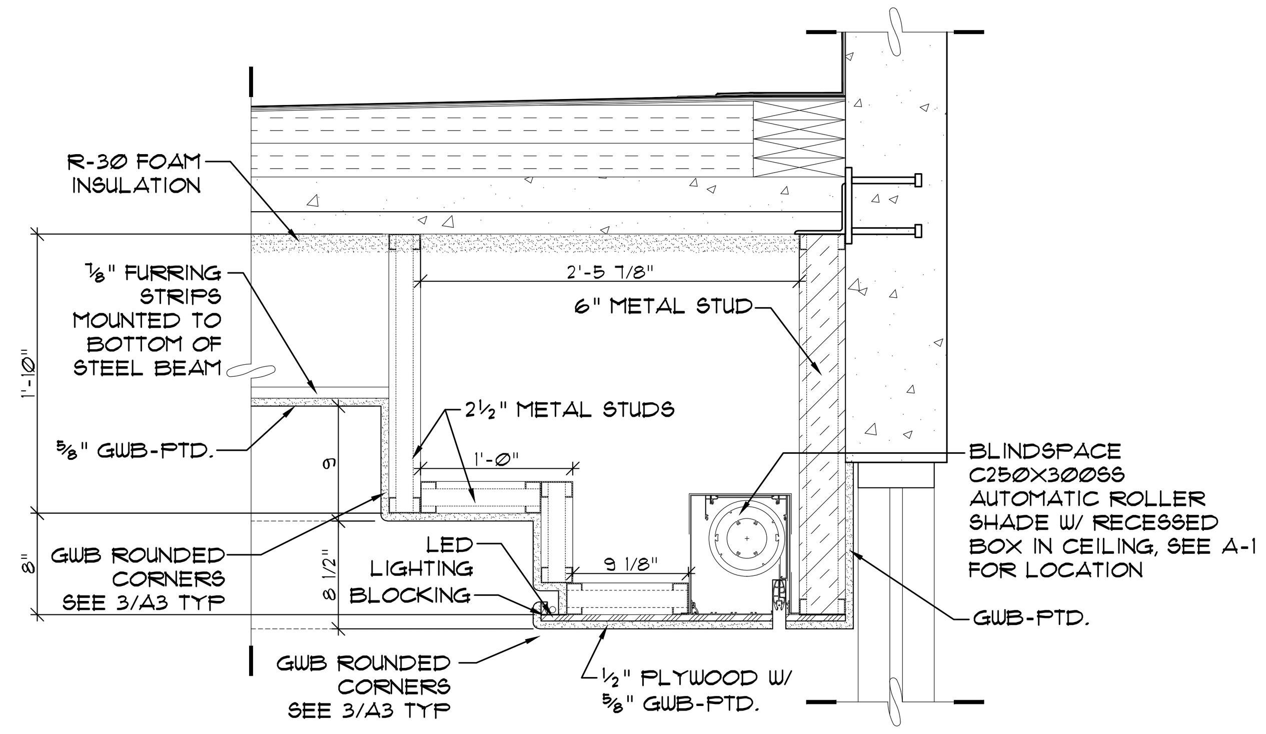

## BEDROOM CEILING DETAIL
4 A-8
SCALE: 3/4"=1'-0"




## GREAT ROOM CEILING DETAIL
3 A-8
SCALE: 3/4"=1'-0"




## PARAPET DETAIL
2 A-8
SCALE: 3/4"=1'-0"




## STEPPED TRAY CEILING DETAIL
1 A-8
SCALE: 1"=1'-0"



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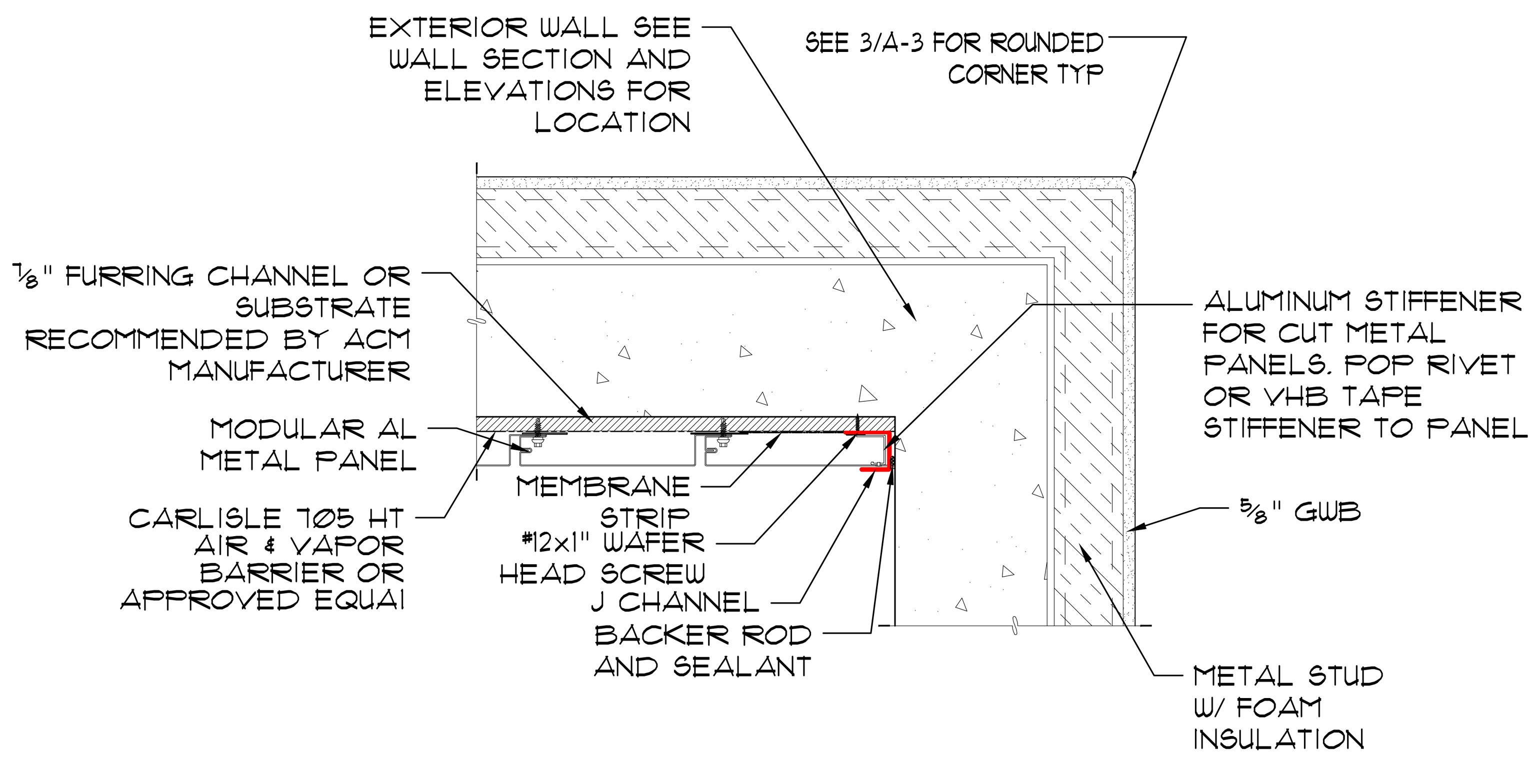
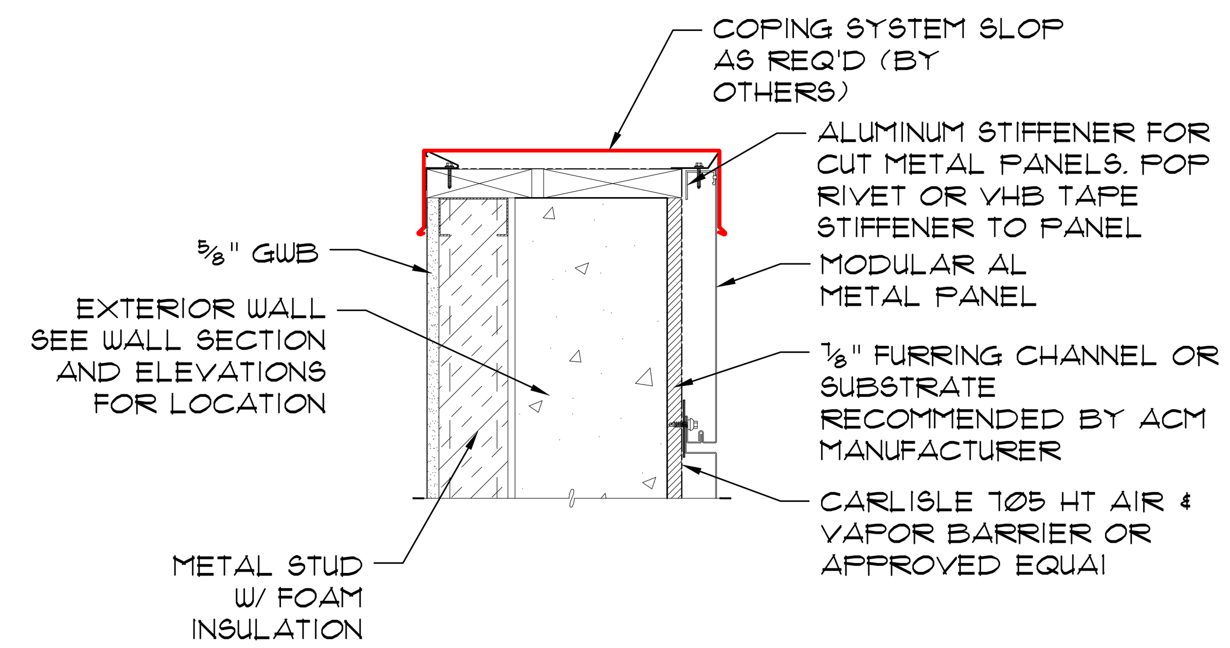
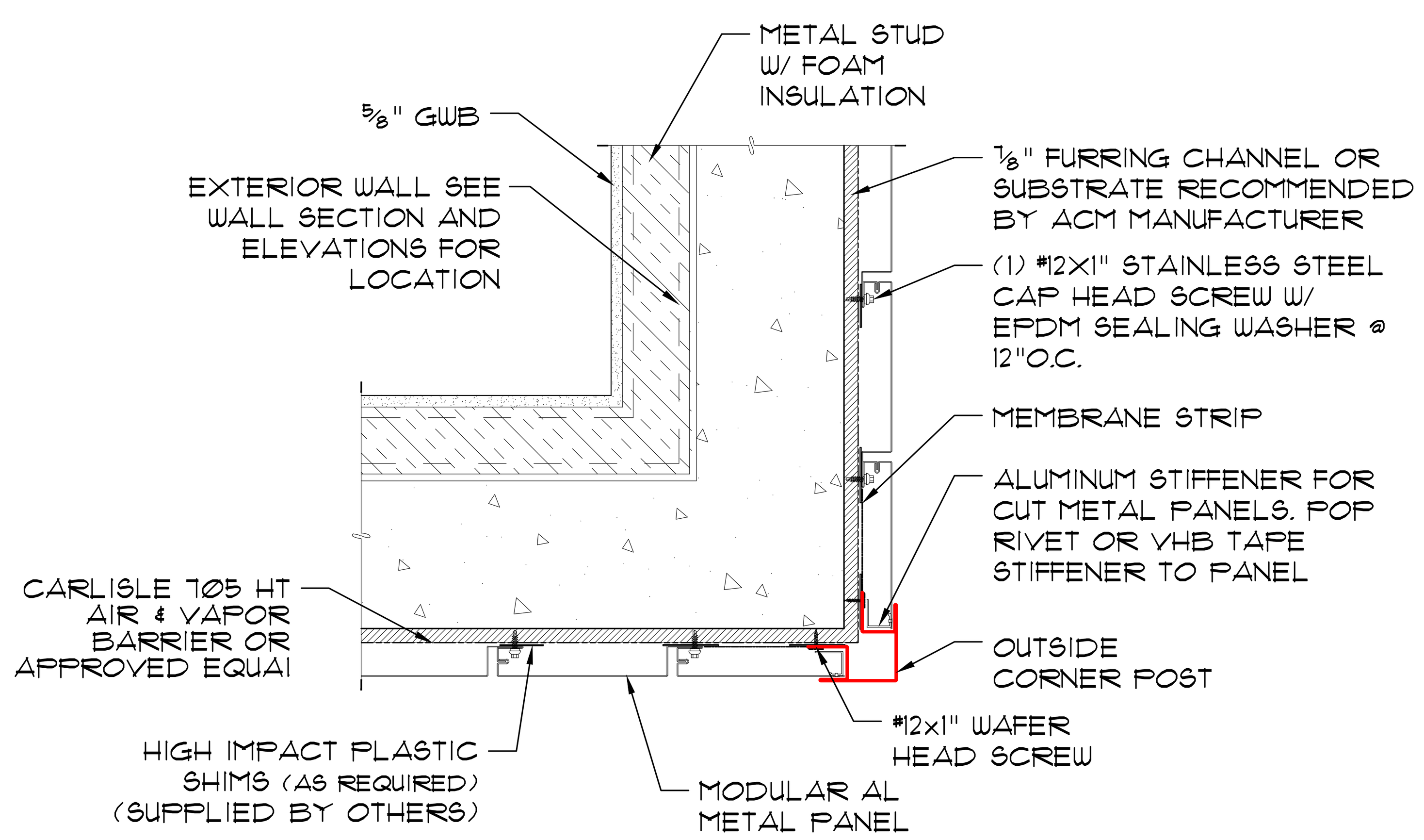
NOTE:
SHIMS ARE NOT REQUIRED FOR METAL PANEL UNLESS THERE ARE IMPERFECTIONS IN WALL CONSTRUCTION. IF IMPERFECTIONS NOTED, USE HIGH IMPACT PLASTIC SHIMS. (IF STANDARD WALL CONSTRUCTION DEVIATION IS LESS THAN 1/4" IN 20'-0" IN ALL DIRECTIONS).



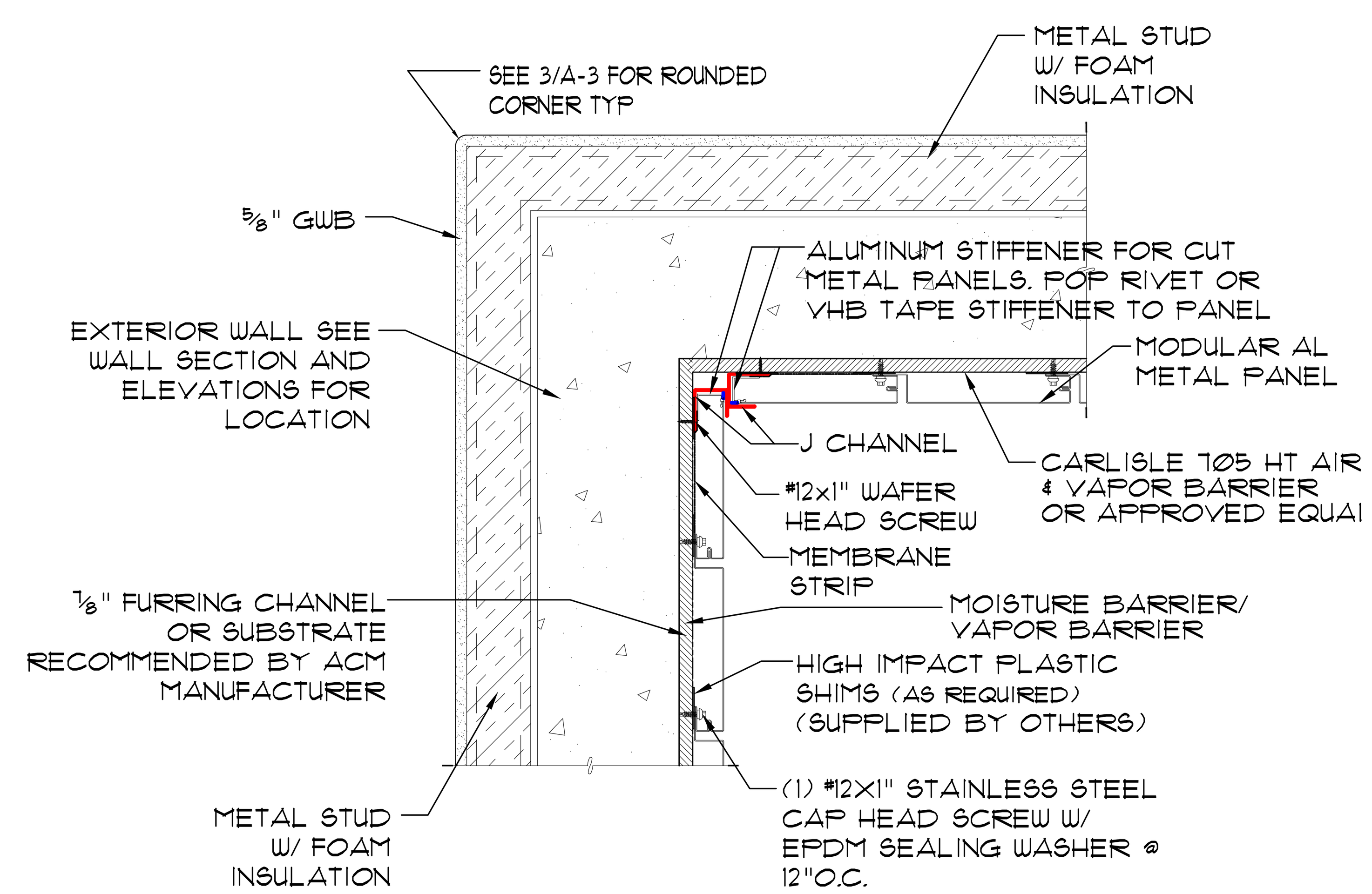

5
A-8.1
TYPICAL ACM END WALL DETAIL
SCALE: 1 1/2"=1'-0"



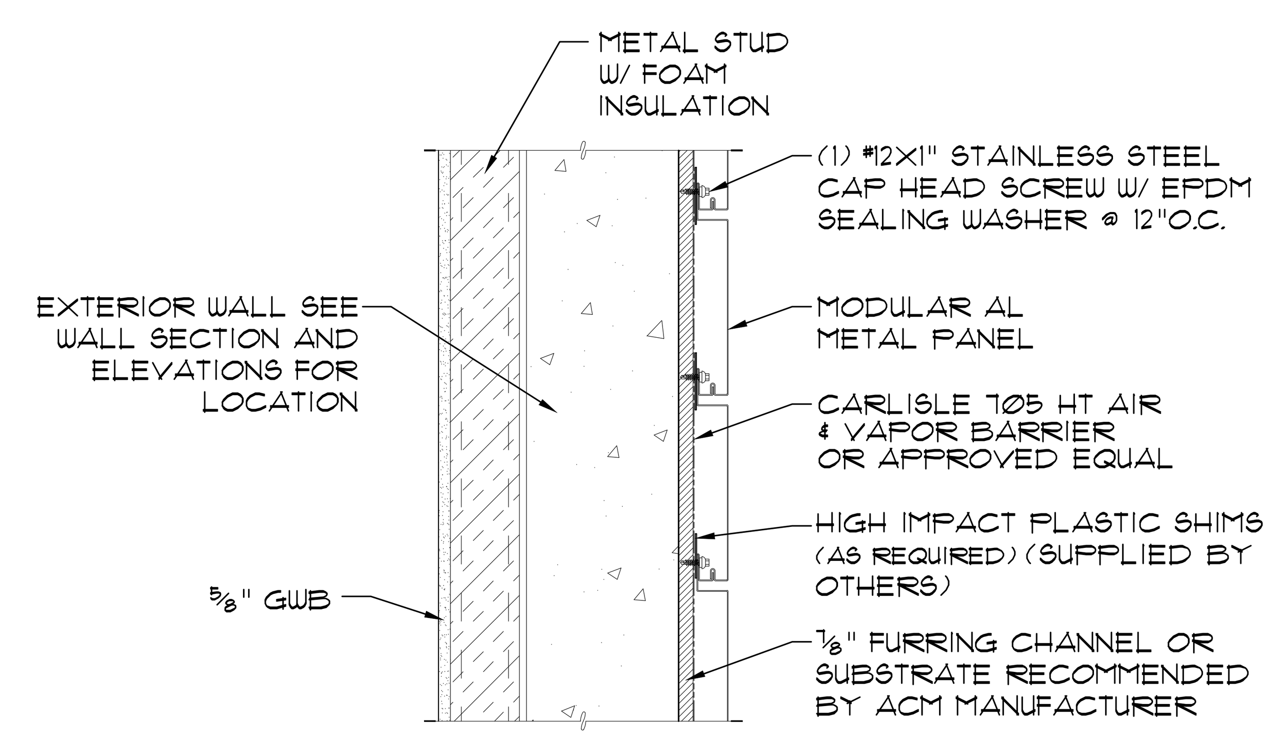

4
A-8.1
TYPICAL ACM TOP OF WALL DETAIL
SCALE: 1 1/2"=1'-0"




3
A-8.1
TYPICAL OUTSIDE CORNER DETAIL
SCALE: 1 1/2"=1'-0"




2
A-8.1
TYPICAL INSIDE CORNER DETAIL
SCALE: 1 1/2"=1'-0"




1
A-8.1
TYPICAL ACM WALL DETAIL
SCALE: 1 1/2"=1'-0"

SUBMIT ACM SHOP DRAWINGS FOR REVIEW AND APPROVAL. (INCLUDING INSTALLATION DETAILS)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ACM WALL DETAILS

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# STRUCTURAL NOTES

GENERAL NOTES:

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR SLEEVES, DEPRESSIONS AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

2. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD AND WITH ALL OTHER DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

3. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING (AND ACCOMPANYING FOOTINGS), GUYS OR TIEDOWNS.

4. ADDITIONAL OBSERVATIONS AS A RESULT OF REJECTION OF WORK COMPLETED AND/OR ADDITIONAL OBSERVATIONS DUE TO THE DEFICIENCIES IN WORK OBSERVED WILL BE AT THE EXPENSE OF THE CONTRACTOR.

5. ALL STRUCTURAL SHOP DRAWINGS TO BE REVIEWED BY JOB SUPERINTENDENT IN ADDITION TO ALL PERSONNEL DEEMED NECESSARY BY CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER FOR APPROVAL.

6. ALL SHOP DRAWING RESUBMITTALS SHALL INCLUDE A WRITTEN DETAILED LIST OF LOCATIONS AND DESCRIPTIONS OF ALL CHANGES MADE FROM PREVIOUS SUBMITTAL. LIST SHALL BE SPECIFIC AND GENERAL NOTES SUCH AS 'DIMENSIONS CORRECTED' ARE NOT ACCEPTABLE.

DESIGN CODES:

2015 NORTH CAROLINA STATE BUILDING CODE.

ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.

AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN.

SJI STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS.

SDI DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS (PUBLICATION No. 30).

2005 NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION

DESIGN LOADS:

THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED WITH THE FOLLOWING SUPERIMPOSED LOADINGS:

| | LIVE LOAD (PSF) | DEAD LOAD (PSF) |
|---|---|---|
| ROOMS | 40 | 15 |
| STAIRS | 40 | 10 |
| EXTERIOR BALCONIES | 60 | 15 |
| DECKS | 40 | 15 |
| ROOF | 20 | 15 |

| | | |
|---|---|---|
| WIND | BASIC WIND SPEED | 144 MPH |
| | EXPOSURE CATEGORY | C |
| | IMPORTANCE FACTOR | 1.0 |

COMPONENT & CLADDING:
ALL BUILDING COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR WIND LOADS DETERMINED PER THE NORTH CAROLINA STATE BUILDING CODE FOR THE BASIC DESIGN WIND VELOCITY, IMPORTANCE FACTOR AND EXPOSURE LISTED ABOVE.

| | | |
|---|---|---|
| SEISMIC | USE GROUP | II |
| | DESIGN CATEGORY | B |
| | SITE CLASSIFICATION | D |

FOUNDATIONS:

FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 2,000 psf. ON EXISTING SOILS. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SUBSURFACE INVESTIGATION, A CERTIFIED TESTING LABORATORY, WHOSE REPORT SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. ABOVE REPORT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW BEFORE FOUNDATION CONSTRUCTION BEGINS.

CONCRETE TESTING:

1. CONCRETE TESTING SHALL BE PAID FOR BY THE OWNER. TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST-IN-PLACE CONCRETE:

A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE."
B) ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS." A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE AS FOLLOWS:

1 AT 7 DAYS
2 AT 28 DAYS

PROVIDE ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

CONCRETE MIX DESIGN:

1. SHALL BE MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

| | |
|---|---|
| 3,500 psi - | SLAB-ON GRADE, GRADE BEAMS, AND WALLS |
| 3,500 psi - | LIGHTWEIGHT CONCRETE DECK |

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

3. CONCRETE SHALL UTILIZE TYPE I/II CEMENT UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER OR GEOTECHNICAL REPORT.

4. THE CONCRETE STRENGTHS SHOWN IN THE SECTION ABOVE AND IN THE SPECIFICATIONS ARE MINIMUM COMPRESSIVE STRENGTHS. THE ENGINEER SHALL DETERMINE IF THE CONCRETE IS ACCEPTABLE, OR TO BE REMOVED, OR TO RECEIVE SPECIAL CURING IF THE COMPRESSIVE STRENGTHS ARE LESS THAN SPECIFIED.

5. ALL CONCRETE EXPOSED TO WEATHER OR EARTH SHALL BE AIR ENTRAINED TO 5% TO 7%.

6. WATER REDUCING AGENTS MAY BE USED IN THE CONCRETE MIX. PLASTICIZERS AND SUPER-PLASTICIZERS MAY BE USED ONLY WHEN WRITTEN PERMISSION OF THE ENGINEER IS GIVEN.

7. NO SALTS OF ANY KIND MAY BE USED IN CONCRETE BEFORE OBTAINING THE ENGINEER'S WRITTEN PERMISSION FOR THEIR USE.

8. CONCRETE FOR TROWEL-FINISHED INTERIOR CONCRETE FLOORS SHALL NOT INCLUDE AN AIR-ENTRAINING ADMIXTURE; THE MAXIMUM AIR CONTENT IN THESE SLABS SHALL NOT EXCEED 3%.

CONCRETE AND REINFORCING PLACEMENT:

1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 301 AND ACI 117 EXCEPT AS MODIFIED BELOW:

ACI 117 ITEM 4.3.1.1
ELEVATIONS OF SLABS-ON-GRADE TOP OF SLAB ELEVATION SHALL BE WITHIN A 3/8" ENVELOPE EITHER SIDE OF THE THEORETICAL DESIGN SURFACE.

ACI 117 ITEM 4.5.7
FLOOR FINISH TOLERANCES AS MEASURED BY PLACING A FREESTANDING (UNLEVELED) 10 FT. STRAIGHTEDGE ANYWHERE ON THE SLAB AND ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 28 DAYS AFTER SLAB CONCRETE PLACEMENT. THE GAP AT ANY POINT BETWEEN THE STRAIGHTEDGE AND THE FLOOR SHALL NOT EXCEED 1/4".

2. ALL REINFORCING STEEL TO BE ASTM A615, GRADE 60 (#4 AND LARGER), EXCEPT WHERE NOTED OTHERWISE. REINFORCING SHALL NOT BE WELDED.

3. WELDED WIRE FABRIC TO CONFORM TO ASTM A185 AND SHALL BE FREE FROM OIL, SCALE AND RUST. PLACE WWF IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND THE SPECIFICATIONS. MINIMUM LAPS SHALL BE ONE SPACE PLUS 2".

4. ALL REINFORCING STEEL BARS TO BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ACI MANUALS.

5. LAP ALL REINFORCING SPLICES IN CONCRETE A MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER, UNLESS NOTE OTHERWISE ON DRAWINGS (CLASS B SPLICE).

6. PROVIDE CORNER BARS OF SAME BAR DIAMETER AS SPECIFIED FOR THE WALL, BEAM OR FOOTING. PROVIDE MINIMUM OF 40 BAR DIAMETER LAP FOR ALL CORNER BARS, UNLESS NOTED OTHERWISE.

7. PROVIDE FOUNDATION DOWELS AS SHOWN. MINIMUM SIZE DOWELS TO BE # 4, UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING STEEL IN COLUMNS AND PIERS, OR VERTICAL REINFORCING IN WALLS, SHALL BE DOWELED INTO THE FOOTINGS WITH SAME SIZE AND QUANTITY DOWEL AS THE VERTICAL REINFORCING.

8. WHERE SHOWN ON THE DRAWINGS, PROVIDE WELD PLATES, WELDMENTS, OR CONCRETE INSERTS FOR FASTENING AND SECURING OTHER COMPONENTS. CONCRETE INSERTS SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM AND INSTALLED BY THE CONTRACTOR CASTING THE CONCRETE AROUND THEM. CLIP ANGLES SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM.

9. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS:

| DESCRIPTION | MINIMUM COVER |
|---|---|
| CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH | 3" |
| EXPOSED TO EARTH OR WEATHER | |
| #6 THROUGH #18 BARS | 2" |
| #5 BARS OR SMALLER | 1 1/2" |
| NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND, SLABS AND WALLS | |
| #11 BARS OR SMALLER | 3/4" |
| #14 AND #18 | 1 1/2" |
| BEAMS AND COLUMNS | 1 1/2" |

10. PROVIDE TWO (2) #5'S, ONE AT EACH FACE, UNLESS NOTED OTHERWISE, AROUND ALL OPENINGS GREATER THAN 12"x12" IN CAST-IN-PLACE CONCRETE. EXTEND REINFORCING 2'-0" BEYOND OPENING IN BOTH DIRECTIONS. CONTACT ENGINEER FOR ALL OPENINGS GREATER THAN 12"x12" FOR DESIGN.

11. COLD WEATHER AND HOT WEATHER PROVISIONS OF ACI 306 AND 305 (CURRENT EDITIONS), RESPECTIVELY, SHALL BE MAINTAINED.

12. CONTRACTOR TO FURNISH AND INSTALL 500 LINEAR FT. EACH OF ADDITIONAL #4 & #5 REINFORCING STEEL TO BE USED AT ENGINEER'S DISCRETION.

FORMWORK AND SHORING:

NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 301 AND 347.

PLUMBING SLEEVES:

MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER TO THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

CHEMICAL ANCHORS:

SHALL BE A POLYMER INJECTION SYSTEM SUCH AS RAMSET "EPCON", MOLLY "PARAMOUNT HVC", SIKA "SIKADUR INJECTION SEL", "HILTI-HIGH STRENGTH EPOXY", OR APPROVED EQUAL, INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

ANCHOR BOLTS:

SHALL BE A36 THREADED ROD. PROVIDE HOT DIP GALVANIZE FINISH ON ALL ANCHOR BOLTS PERMANENTLY EXPOSED TO EXTERIOR.

PENETRATIONS:

NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE ENGINEER.

STRUCTURAL STEEL:

1. STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi) FOR ALL W-SHAPES, AND ASTM A36 (Fy=36 ksi) FOR ALL OTHER MISCELLANEOUS SHAPES AND PLATES. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B (Fy=46 ksi). STRUCTURAL PIPE SHALL CONFORM TO ASTM A53, GRADE B, TYPE "E" OR "S" (Fy=42 ksi).

2. STEEL SHALL CONFORM TO THE LATEST EDITION OF "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC (AISC).

3. ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR SHALL BE HOT-DIPPED GALVANIZED.

4. ALL SHOP CONNECTIONS TO BE WELDED (UTLIZING E70XX ELECTRODES) AND FIELD CONNECTIONS TO BE BOLTED, UNLESS OTHERWISE NOTED. STEEL TO RECEIVE ONE SHOP COAT AND ONE FIELD TOUCH UP COAT OF APPROVED PAINT, EXCEPT WHERE GALVANIZED IS INDICATED ON THE DRAWINGS.

5. WELDS FOR ALL EXPOSED STRUCTURAL STEEL SHALL BE GROUND SMOOTH UNLESS NOTED OTHERWISE.

6. ALL BOLTED CONNECTIONS SHALL CONSIST OF 3/4" DIAMETER (MIN.) ASTM A325 HIGH STRENGTH BOTLTS, UNLESS NOTED OTHERWISE. BEAM CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR TO SUPPORT AN END REACTION OF Wc/2L KIPS IN ACCORDANCE WITH PART 2 - "BEAM AND GIRDER DESIGN" OF THE MANUAL OF STEEL CONSTRUCTION (9th EDITION), BUT CONNECTIONS SHALL NOT HAVE LESS THAN 2 ROWS OF BOLTS. SEE ALSO DOUBLE ANGLE AND SHEAR TAB CONNECTION SCHEDULE(S) WHERE APPLICABLE.

7. CONTRACTOR TO FURNISH AND INSTALL 500 lbs. OF ADDITIONAL MISCELANEOUS STEEL TO BE USED AT ENGINEER'S DISCRETION.

SHEAR STUD CONNECTORS:

1. SHEAR STUD CONNECTORS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE", SECTION 7 - STUD WELDING. STUDS SHALL BE TYPE "B", HEADED STUDS, HAVING A MINIMUM TENSILE STRENGTH OF 60,000 psi, AND SHALL BE OF LENGTH AND DIAMETER SHOWN ON THE DRAWINGS.

COMPOSITE STEEL FORM DECK:

1. COMPOSITE FORM DECK SHALL BE THE SIZE INDICATED ON STRUCTURAL DRAWINGS, GAGE G60 CORRUGATED STEEL COMPOSITE DECK AND SHALL CONFORM TO THE PROVISIONS OF THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS FOR COMPOSITE STEEL DECK.

STEEL ROOF DECK:

1. STEEL ROOF DECK SHALL BE THE SIZE INDICATED ON STRUCTURAL DRAWINGS, PAINTED WIDE RIBBED STEEL ROOF DECK AND SHALL CONFORM TO THE PROVISIONS OF THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS FOR STEEL ROOF DECK.

2. STEEL ROOF DECKS ARE DESIGNED AS HORIZONTAL DIAPHRAGMS AND SHALL BE ATTACHED TO SUPPORTS WITH HILTI X-EDNK THQ12 FASTENERS @ 12" O.C. (36/4 FASTENER PATTERN). PROVIDE ONE (2) HILTI SLC SIDE LAP FASTENERS FOR EACH SPAN OF DECK, TYPICAL UNLESS NOTED OTHERWISE. ATTACH DECK TO PERIMETER SUPPORTS WIT HILTI X-EDN-19 L15 FASTENERS @ 12" O.C. AT ROOF EDGES

COLD FORMED LIGHT GAGE STRUCTURAL STEEL:

1. STEEL STUD AND LINTEL MEMBERS SHALL BE OF TYPE SHOWN ON THE DRAWINGS AND IN SPECIFICATIONS AND SHALL CONFORM TO ASTM A446, GRADE C (MINIMUM YIELD POINT OF 50,000 psi), WITH HOT DIPPED GALVANIZED COATING CONFORMING TO ASTM A525, CLASS G60.

2. STEEL RUNNER TRACK SHALL BE OF TYPE SHOWN ON THE DRAWINGS AND IN SPECIFICATIONS AND SHALL CONFORM TO ASTM A446, GRADE A (MINIMUM YIELD POINT OF 33,000 psi), WITH HOT DIPPED GALVANIZED COATING CONFORMING TO ASTM A525, CLASS G60.

3. ALL FRAMING MEMBERS SHALL BE CUT SQUARELY OR AT AN ANGLE AS REQURIED TO FIT SQUARELY AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY IN PLACE UNTIL PROPERLY JOINED.

4. JOINING OF STRUCTURAL MEMBERS SHALL BE MADE WITH SELF-DRILLING SCREWS OR WELDED. WIRE TYING OF FRAMING MEMBERS IN STRUCTURAL APPLICATIONS SHALL NOT BE PERMITTED.

5. ATTACHMENT OF COLLATERAL MATERIALS TO STEEL MEMBERS SHALL BE MADE WITH SELF-DRILLING SCREWS OR HARDENED SCREW SHANK NAILS. METAL LATH MAY ALSO BE CONNECTED TO STEEL BY STAPLES OR OTHER FASTERNERS, IF APPROVED BY LOCAL BUILDING CODES.

6. STUDS SHALL SIT SQUARELY IN THE TOP AND BOTTOM RUNNER TRACK WITH ABUTMENT AGAINST TRACK WEBS. STUDS SHALL BE ALIGNED OR PLUMBED AND SECURELY FASTENED TO THE FLANGES OF BOTH TOP AND BOTTOM RUNNER TRACKS.

STRUCTURAL ABBREVIATIONS:

| ABBREV. | DEFINITION |
|---|---|
| AB | ANCHOR BOLTS |
| ADJ | ADJACENT |
| AFF | ABOVE FINISHED FLOOR |
| ALT | ALTERNATE |
| ARCH | ARCHITECT |
| BCX | BOTTOM CHORD EXTENSION |
| BFF | BELOW FINISHED FLOOR |
| BOT | BOTTOM |
| B.O.xx | BOTTOM OF xx |
| BOS | BOTTOM OF STEEL |
| BLDG | BUILDING |
| BM | BEAM |
| BRG | BEARING |
| CANT | CANTILEVER |
| CL | CENTERLINE |
| CJ | CONTROL JOINT |
| CLR | CLEAR |
| CMU | CONCRETE MASONRY UNIT |
| COL | COLUMN |
| CONC | CONCRETE |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| CP | COMPLETE PENETRATION |
| d | NAIL PENNY WEIGHT |
| DBA | DEFORMED BAR ANCHOR |
| DBL | DOUBLE |
| DEG | DEGREE |
| DET,DTL | DETAIL |
| DIA | DIAMETER |
| DIAG | DIAGONAL |
| DIM | DIMENSION |
| DK | DECK |
| DN | DOWN |
| DWGS | DRAWINGS |
| DWL | DOWEL |
| EA | EACH |
| EF | EACH FACE |
| EJ | EXPANSION JOINT |
| EL, ELEV | ELEVATION |
| EMBED | EMBEDDED / EMBEDMENT |
| ENGR | ENGINEER |
| EOD | EDGE OF DECK |
| EOS | EDGE OF STEEL |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EW | EACH WAY |
| EXIST | EXISTING |
| EXP | EXPANSION |
| EXT | EXTERIOR |
| FIN | FINISH |
| FLR | FLOOR |
| FD | FLOOR DRAIN |
| FND | FOUNDATION |
| FOM | FACE OF MASONRY |
| FOW | FACE OF WALL |
| FS | FOOTING STEP |
| FTG | FOOTING |
| FV | FIELD VERIFY |
| GA | GAUGE |
| GALV | GALVANIZED |
| GB | GRADE BEAM |
| HI | HIGH |
| HORZ | HORIZONTAL |
| HSE | HIGH STRENGTH EPOXY |
| HSS | HOLLOW STRUCTURAL SECTION |
| IF | INSIDE FACE |
| INT | INTERIOR |
| JT | JOINT |
| K | KIPS = 1000 LBS |
| KB | KNEE BRACE |
| KSI | KIPS PER SQUARE INCH |
| KLF | KIPS PER LINEAR FOOT |
| LBS | POUNDS |
| LLH | LONG LEG HORIZONTAL |
| LLV | LONG LEG VERTICAL |
| LO | LOW |
| LOC | LOCATIONS |
| LSL | LAMINATED STRAND LUMBER |
| LVL | LAMINATED VENEER LUMBER |
| LW | LONG WAY |
| LWC | LIGHT WEIGHT CONCRETE |
| MAS | MASONRY |
| MAX | MAXIMUM |
| MC | MOMENT CONNECTION |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MID | MIDDLE |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MP | MASONRY PILASTER |
| MTL | METAL |
| No / # | NUMBER |
| NOM | NOMINAL |
| NTS | NOT TO SCALE |
| NWC | NORMAL WEIGHT CONCRETE |
| OC | ON CENTER |
| OF | OUTSIDE FACE |
| OH | OPPOSITE HAND |
| OPNG | OPENING |
| PAF | POWDER ACTUATED FASTENER |
| PC | PRECAST |
| P/E | PRE-ENGINEERED |
| PL | PLATE |
| PLF | POUNDS PER LINEAR FOOT |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PSL | PARRALEL STRAND LUMBER |
| PT | PRESSURE TREATED |
| R | RADIUS |
| REF | REFERENCE |
| REINF | REINFORCEMENT |
| REQD | REQUIRED |
| REV | REVISION |
| SC | SLIP CRITICAL |
| SCHD | SCHEDULE |
| SDS | SELF DRILLING SCREW |
| SECT | SECTION |
| SHT | SHEET |
| SIM | SIMILAR |
| SL | SLAB |
| SOG | SLAB ON GRADE |
| SP | SPECIAL JOIST |
| SPEC | SPECIFICATION |
| SQ | SQUARE |
| STD | STANDARD |
| STL | STEEL |
| SW | SHORT WAY |
| SYM | SYMMETRICAL |
| TCX | TOP CHORD EXTENSION |
| T&B | TOP AND BOTTOM |
| TOC | TOP OF CONCRETE |
| TOS | TOP OF STEEL |
| TOW | TOP OF WALL |
| T.O.xx | TOP OF xx |
| THK | THICKNESS |
| TJ | TIE JOIST |
| TYP | TYPICAL |
| UNO | UNLESS NOTED OTHERWISE |
| VERT | VERTICAL |
| VIF | VERIFY IN FIELD |
| WWF | WELDED WIRE FABRIC |
| WWM | WELDED WIRE MESH |


FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL SEAL 035655 HEATH M. HENDRICK
Digitally signed by Heath M. Hendrick
Date: 2023.06.20 13:01:27 -04'00'

NORTH CAROLINA PROFESSIONAL CORPORATION P-1418 FDR ENGINEERS, PLLC

Project Name
THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

Sheet Title
GENERAL NOTES

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|---|---|
| DESIGNED BY: | JCK |
| DRAWN BY: | JCK |
| APPROVED BY: | HH |
| PROJECT #: | 22-130 |
| DATE: | JUNE 2023 |

| No. | Revision | Date |
|---|---|---|
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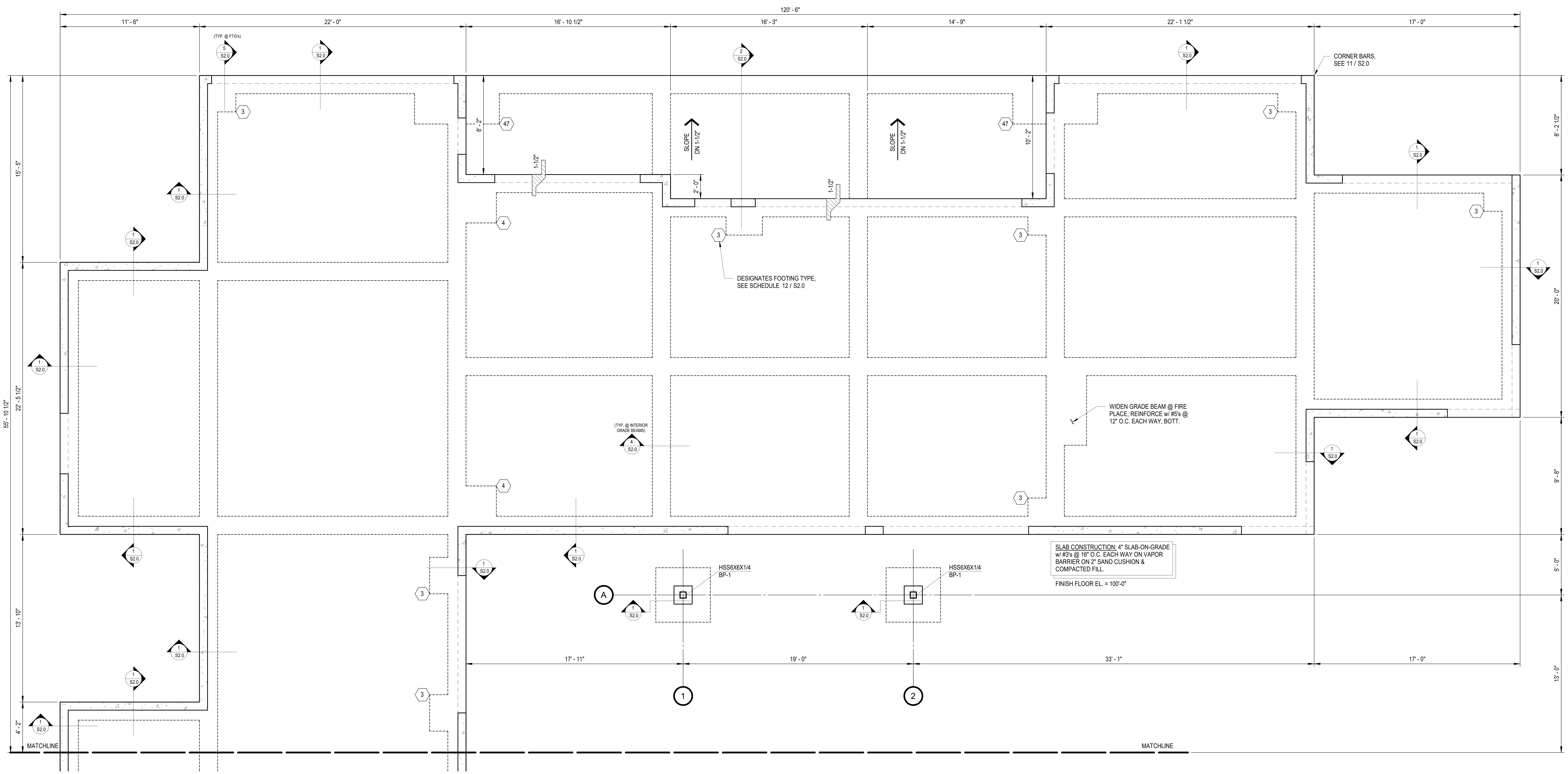


## FOUNDATION PLAN - WEST

1/4" = 1'-0"


FDR ENGINEERS

13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035655 HEATH M. HENDRICK

NORTH CAROLINA PROFESSIONAL CORPORATION P-1418 FDR ENGINEERS, PLLC

Project Name

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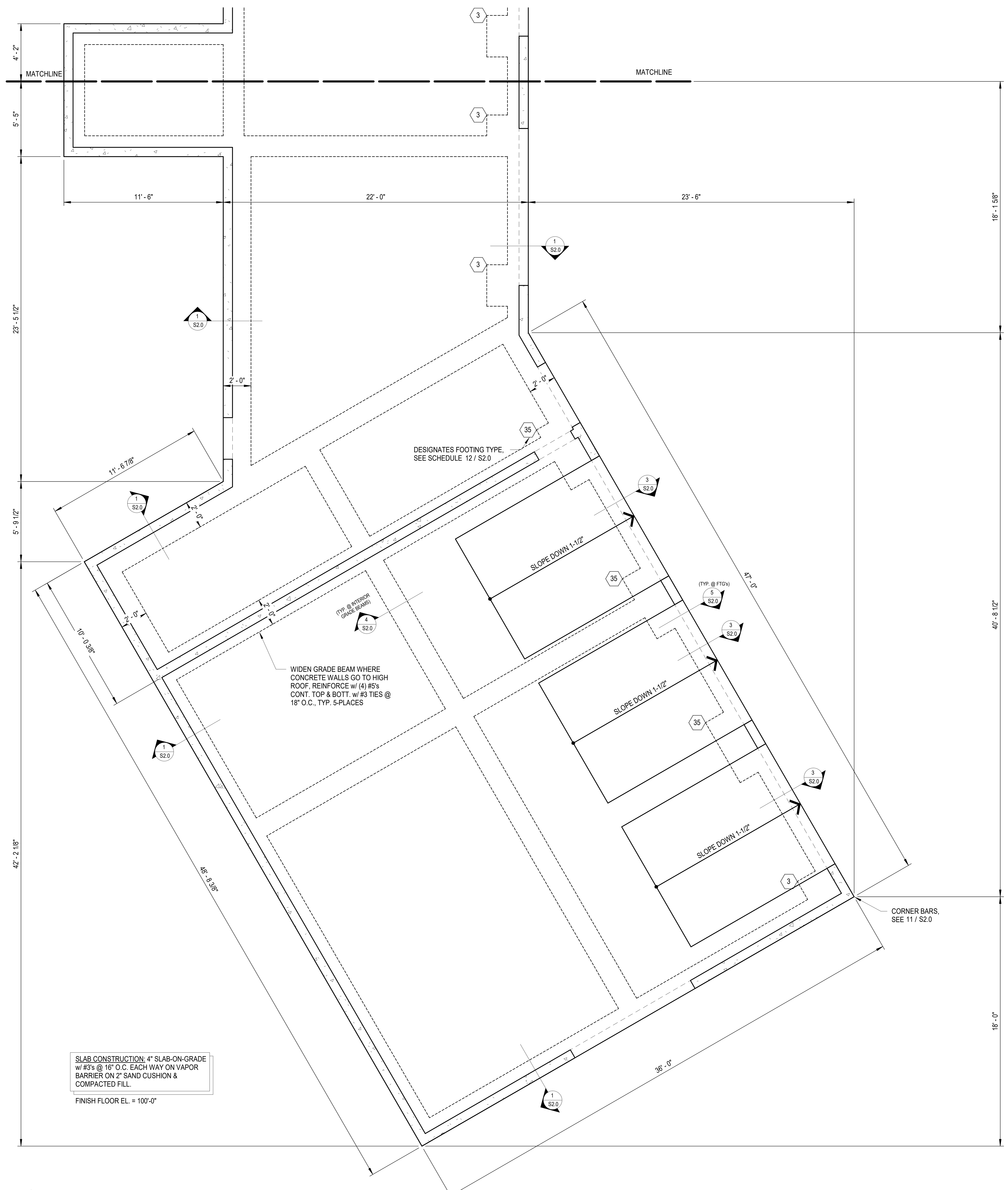


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## FOUNDATION PLAN - EAST

1/4" = 1'-0"

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FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035655 HEATH M. HENDRICKS

NORTH CAROLINA PROFESSIONAL CORPORATION P-1418 FDR ENGINEERS PLLC

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THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

Sheet Title
FOUNDATION PLAN

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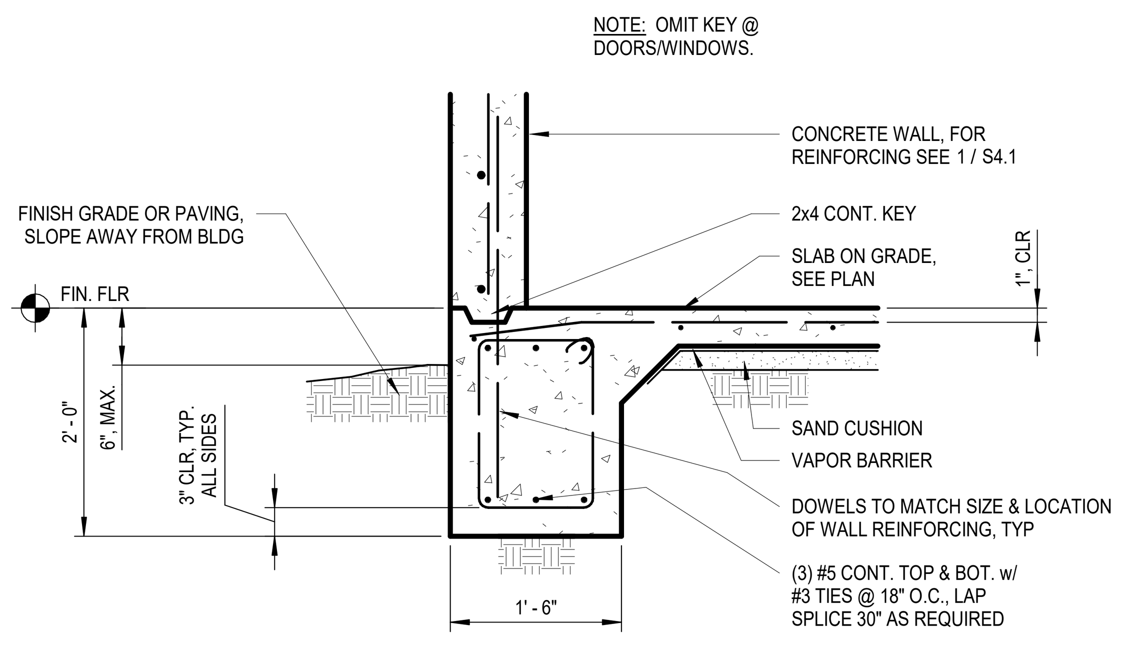
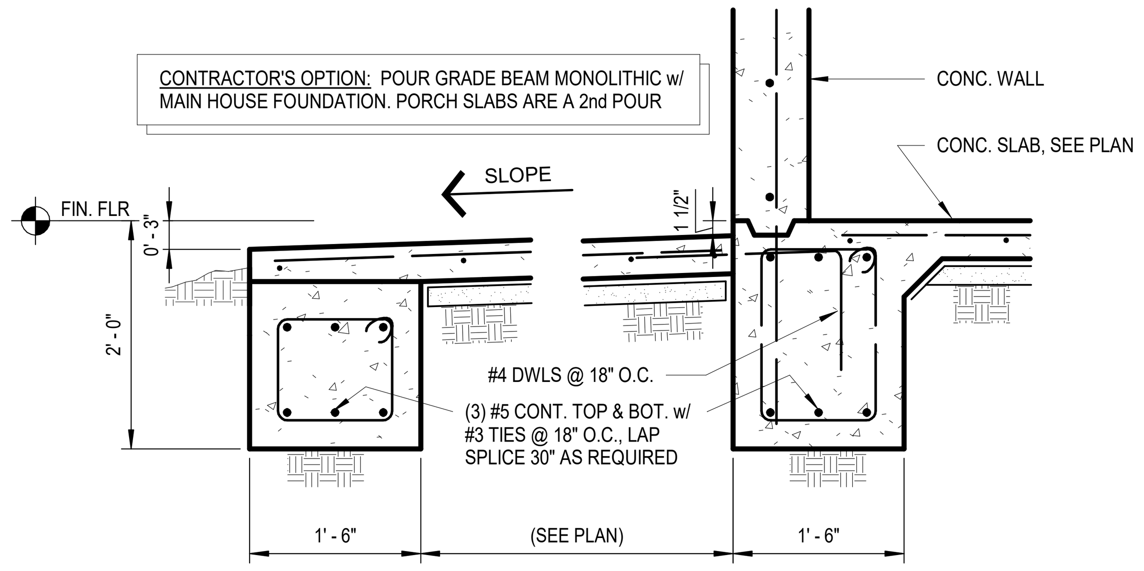
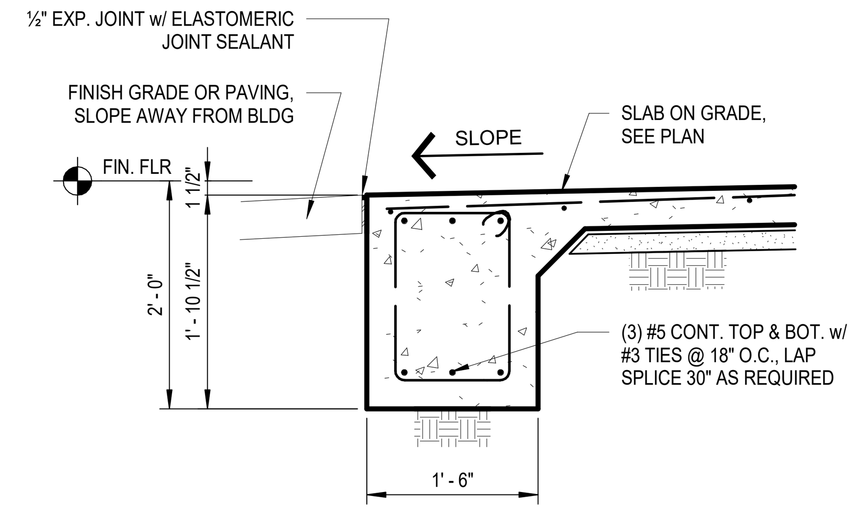


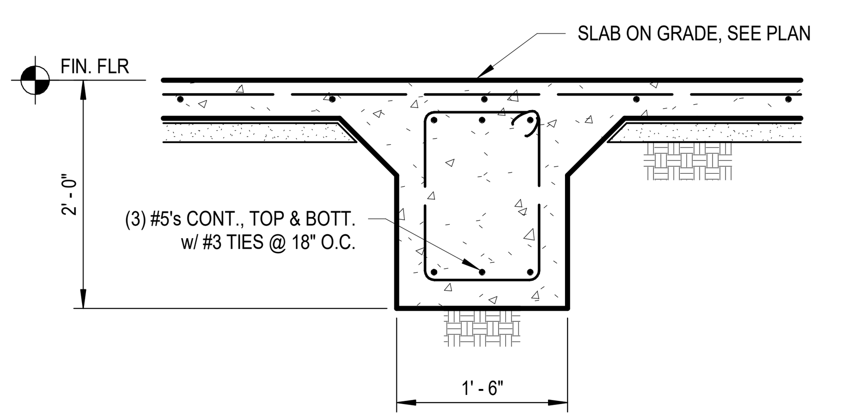

1 / S2.0 *GRADE BEAM TYP.*
3/4" = 1'-0"



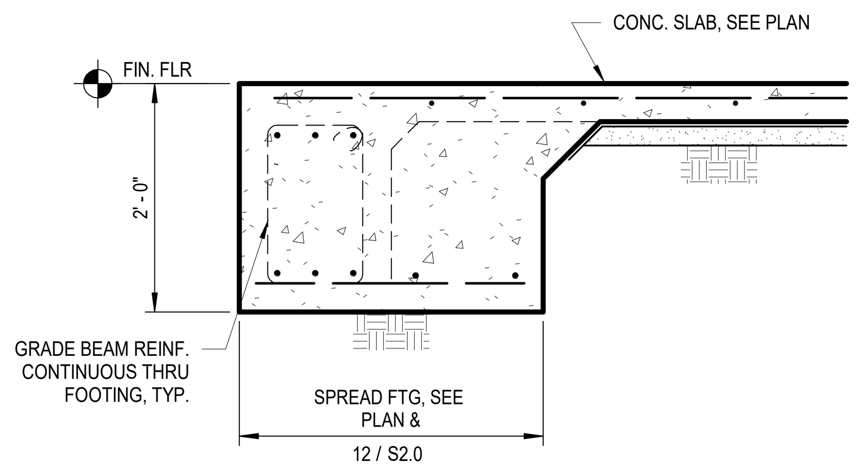

2 / S2.0 *GRADE BEAM PORCH*
3/4" = 1'-0"



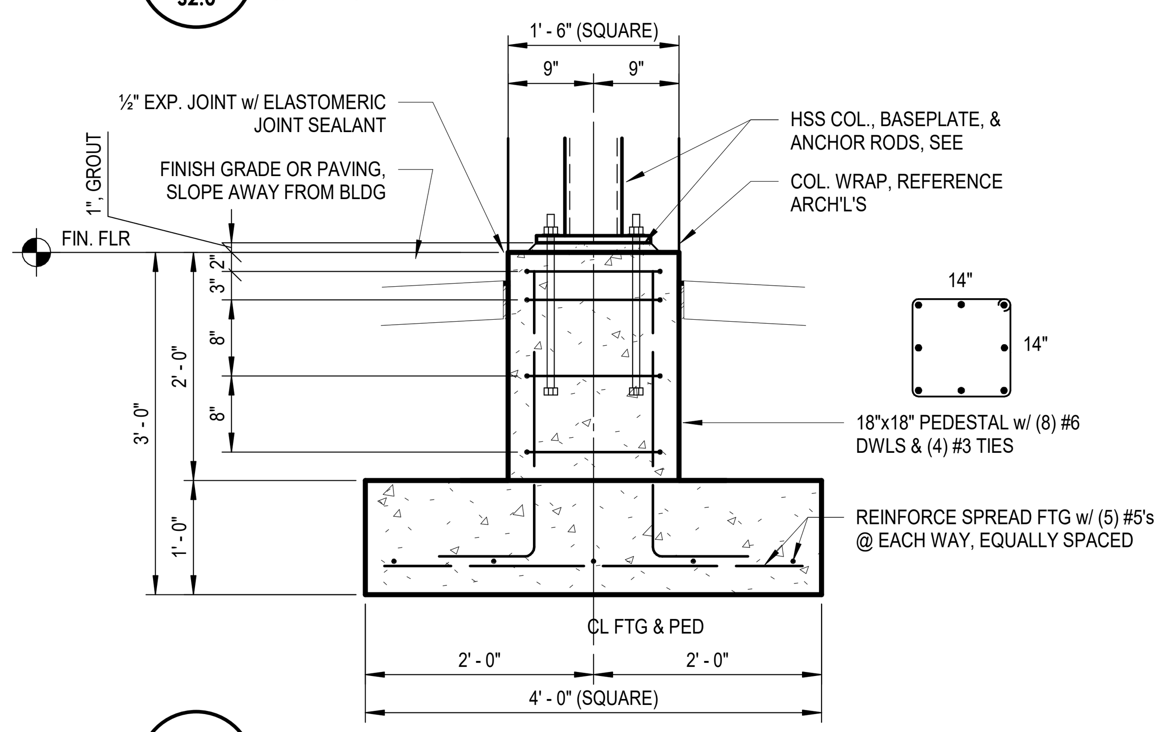

3 / S2.0 *GRADE BEAM GARAGE*
3/4" = 1'-0"



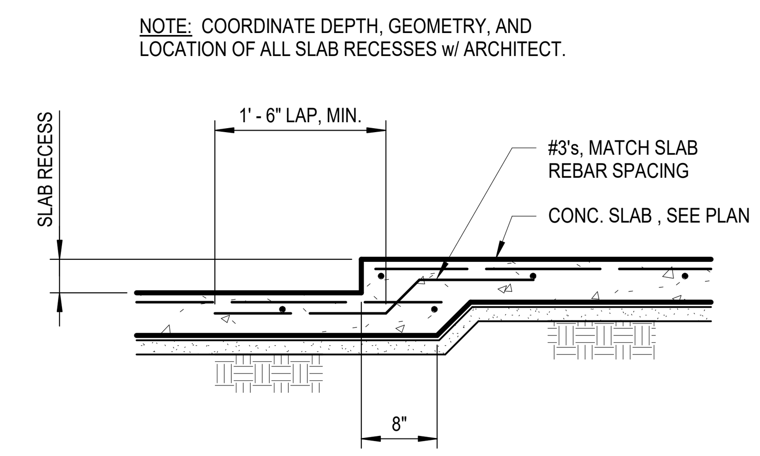

4 / S2.0 *GRADE BEAM INTERIOR*
3/4" = 1'-0"



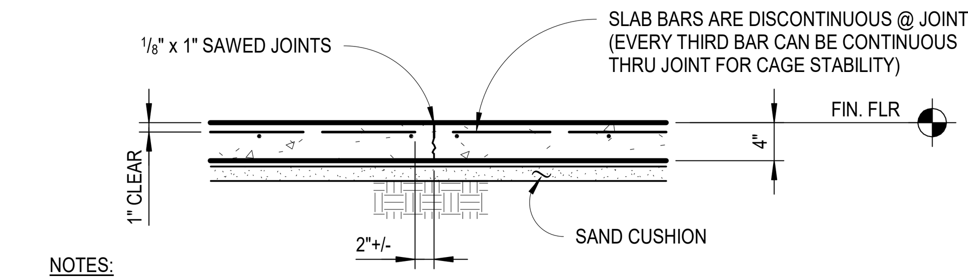

5 / S2.0 *FOOTING*
3/4" = 1'-0"




6 / S2.0 *SPREAD FTG @ CANOPY*
3/4" = 1'-0"



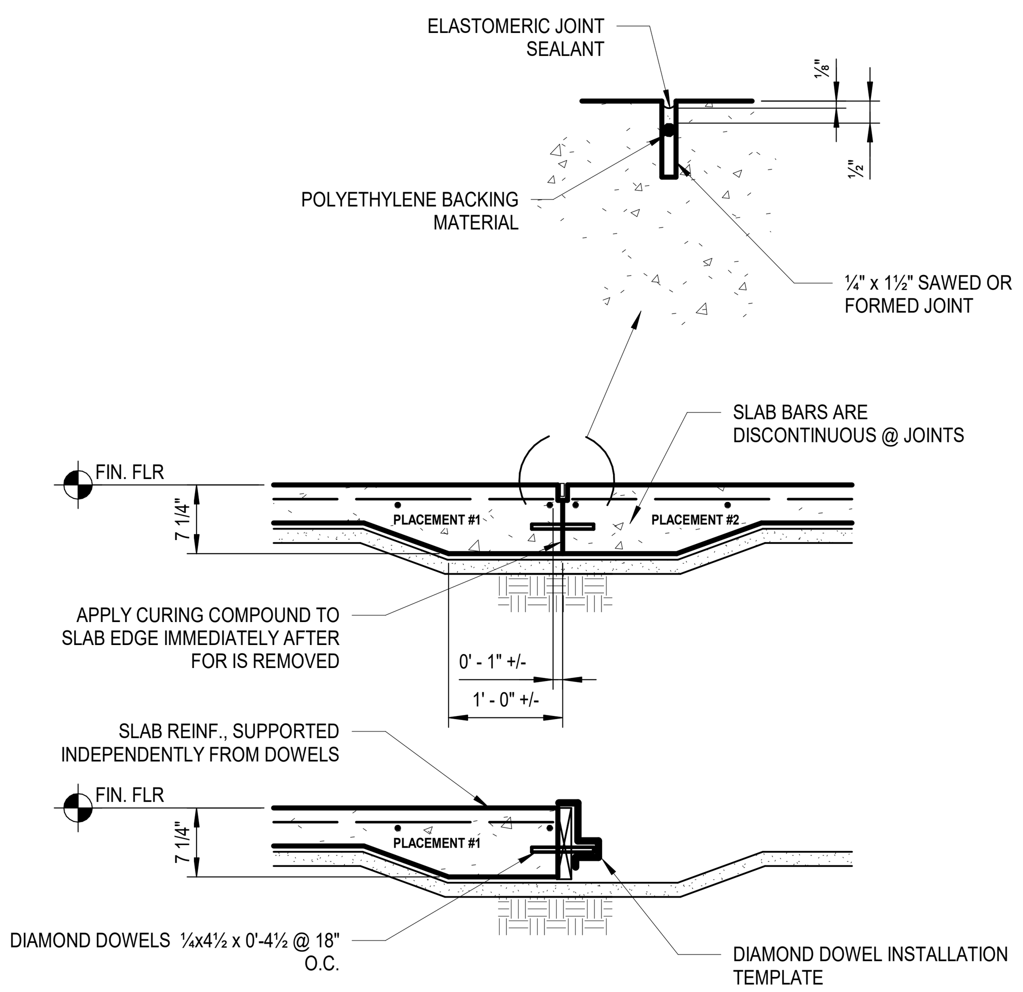

7 / S2.0 *DETAAIL - SLAB RECESS*
3/4" = 1'-0"




NOTES:

1. SAWED JOINTS SHOULD BE CUT 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED IN AN AREA, 4 HOURS IN HOT WEATHER AND 12 HOURS IN COLD WEATHER.
2. ALL SUBGRADE RUTTING SHALL BE REPAIRED PRIOR TO SLAB PLACEMENT.
3. JOINT SEALANT NOT REQUIRED.
4. SPACE CONTRACTION JOINTS @ 16-FT O.C. (MAX.) IN EACH DIRECTION.

8 / S2.0 *DETAIL - SLAB-ON-GRADE CONTRACTION JOINT (C.J.) 4"*
3/4" = 1'-0"

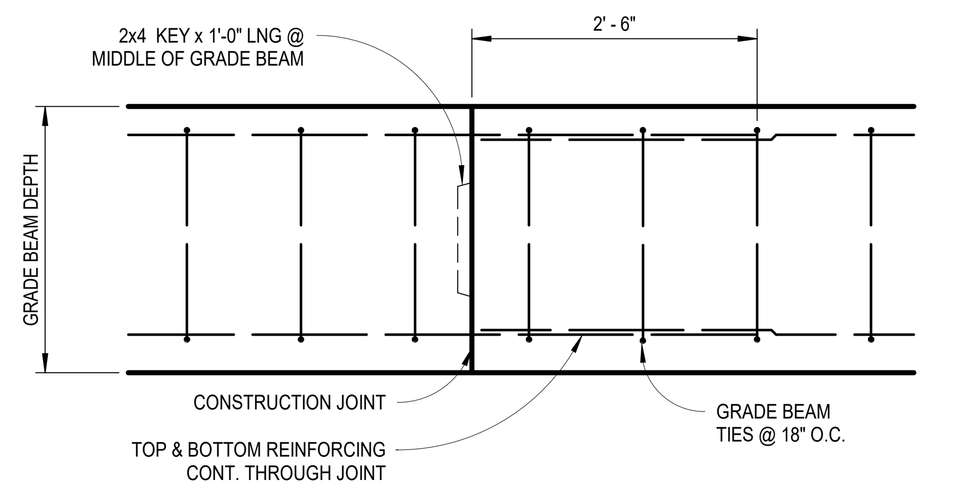



NOTES:

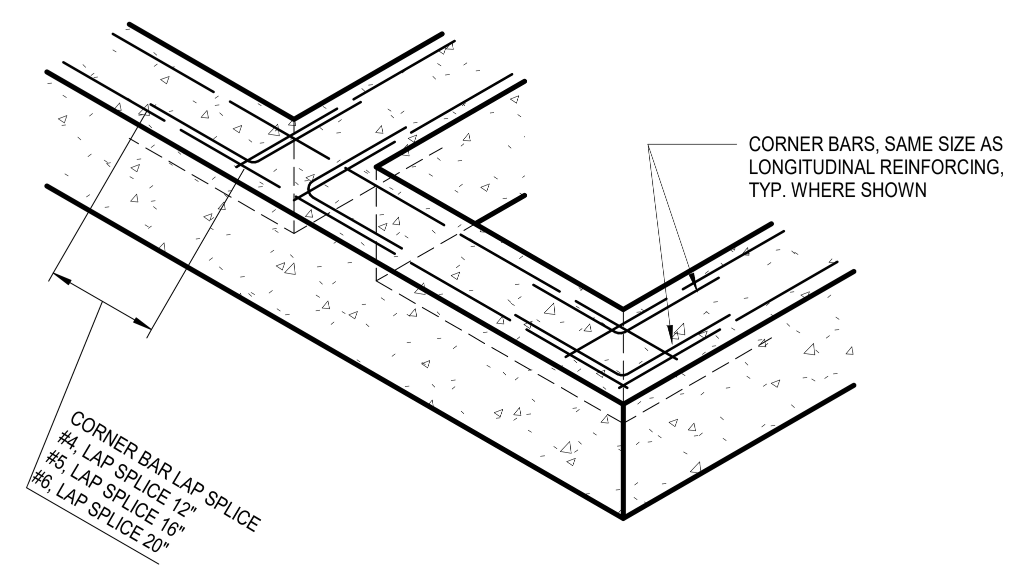
1. DOWELS SHALL BE SMOOTH, ALIGNED, AND SUPPORTED SO THAT THEY WILL REMAIN PARALLEL IN BOTH THE HORIZONTAL AND VERTICAL PLANES DURING PLACING AND FINISHING OF THE CONCRETE. ALL DOWELS SHALL HAVE SAWN AND DEBURRED EDGES.

2. ALL SUBGRADE RUTTING SHALL BE REPAIRED PRIOR TO SLAB PLACEMENT.

9 / S2.0 *DETAIL - SLAB-ON-GRADE DOWELED CONSTRUCTION JOINT (D.J.) 2-POUR*
3/4" = 1'-0"




10 / S2.0 *DETAIL - GRADE BEAM CONSTRUCTION JOINT*
3/4" = 1'-0"




NOTES:

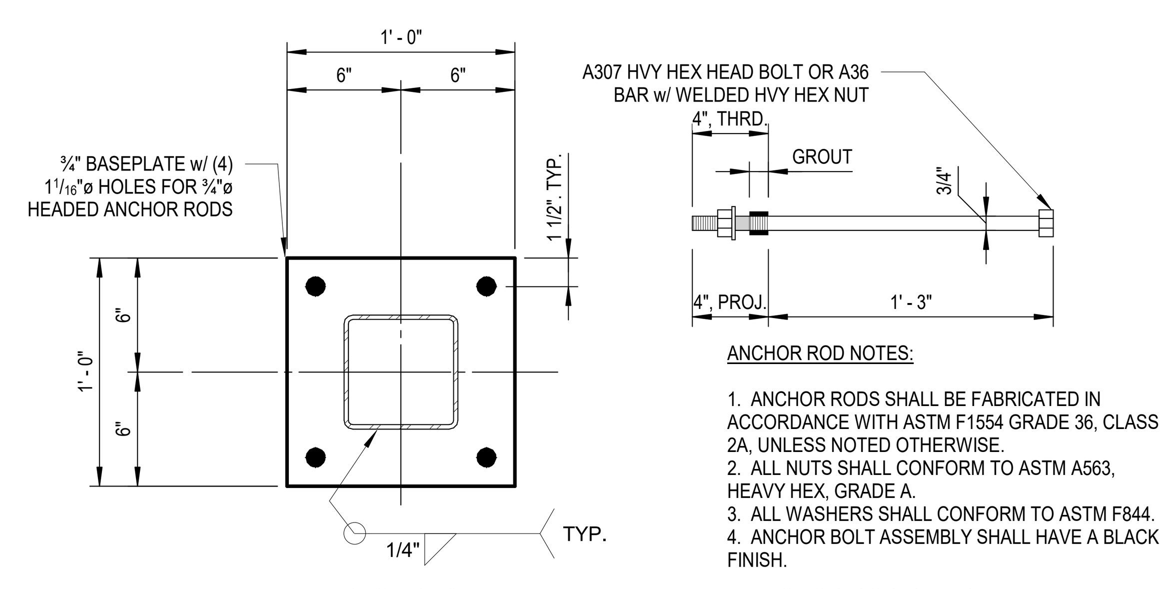
1. CORNER BARS ARE REQUIRED IN ALL CONCRETE BEAMS, WALLS, AND CMU BONDBEAMS.
2. TOP STEEL ONLY IS DEPICTED IN THIS DETAIL, BUT CORNER BARS ARE REQUIRED FOR ALL LEVELS OF LONGITUDINAL REBAR.

11 / S2.0 *DETAIL - CORNER BARS*
3/4" = 1'-0"

## SPREAD FOOTING SCHEDULE

| MARK | SIZE | 'T' | REINFORCING | REMARKS |
|---|---|---|---|---|
| 3 | 3'-0" x 3'-0" | 2'-0" | (4) #5 EACH WAY, BOT. | |
| 4 | 4'-0" x 4'-0" | 2'-0" | (5) #5 EACH WAY, BOT. | |
| 35 | 3'-0" x 5'-0" | 2'-0" | (4) #5 IN LONG DIRECTION, & (6) #5 IN SHORT DIRECTION | |
| 47 | 4'-0" x 7'-0" | 2'-0" | (5) #5 IN LONG DIRECTION, & (8) #5 IN SHORT DIRECTION | |
| | | | | |
| | | | | |

12 / S2.0 *SCHEDULE - SPREAD FOOTINGS*
3/4" = 1'-0"




ANCHOR ROD NOTES:

1. ANCHOR RODS SHALL BE FABRICATED IN ACCORDANCE WITH ASTM F1554 GRADE 36, CLASS 2A, UNLESS NOTED OTHERWISE.
2. ALL NUTS SHALL CONFORM TO ASTM A563, HEAVY HEX, GRADE A.
3. ALL WASHERS SHALL CONFORM TO ASTM F844.
4. ANCHOR BOLT ASSEMBLY SHALL HAVE A BLACK FINISH.

13 / S2.0 *DETAIL - BASE PLATES & ANCHOR RODS*
1 1/2" = 1'-0"


FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035655 KEITH M. HENDRIX

NORTH CAROLINA PROFESSIONAL CORPORATION FDR ENGINEERS, PLLC P-1418

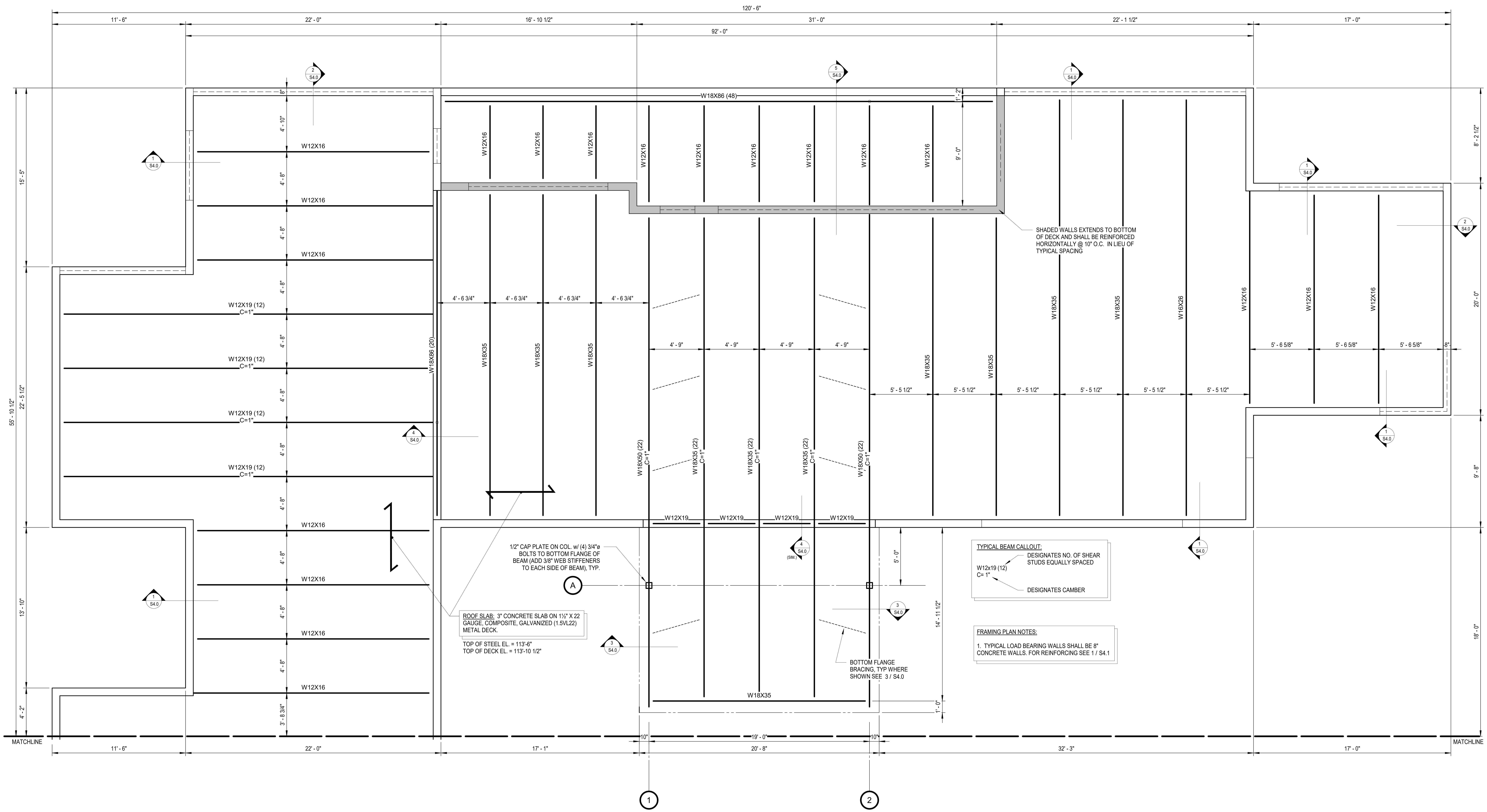
Project Name
THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

Sheet Title
FOUNDATION SECTIONS & DETAILS

| | |
|---|---|
| DESIGNED BY: | JCK |
| DRAWN BY: | JCK |
| APPROVED BY: | HH |
| PROJECT #: | 22-130 |
| DATE: | JUNE 2023 |

| No. | Revision | Date |
|---|---|---|
| | | |

Sheet
S2.0




TYPICAL BEAM CALLOUT:

W12x19 (12) — DESIGNATES NO. OF SHEAR STUDS EQUALLY SPACED

C= 1" — DESIGNATES CAMBER

FRAMING PLAN NOTES:

1. TYPICAL LOAD BEARING WALLS SHALL BE 8" CONCRETE WALLS. FOR REINFORCING SEE 1 / S4.1

ROOF - WEST

1/4" = 1'-0"

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13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035655 KEITH M. HENDRICK

NORTH CAROLINA PROFESSIONAL CORPORATION P-1416 FDR ENGINEERS, LLC

Project Name

THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

Sheet Title

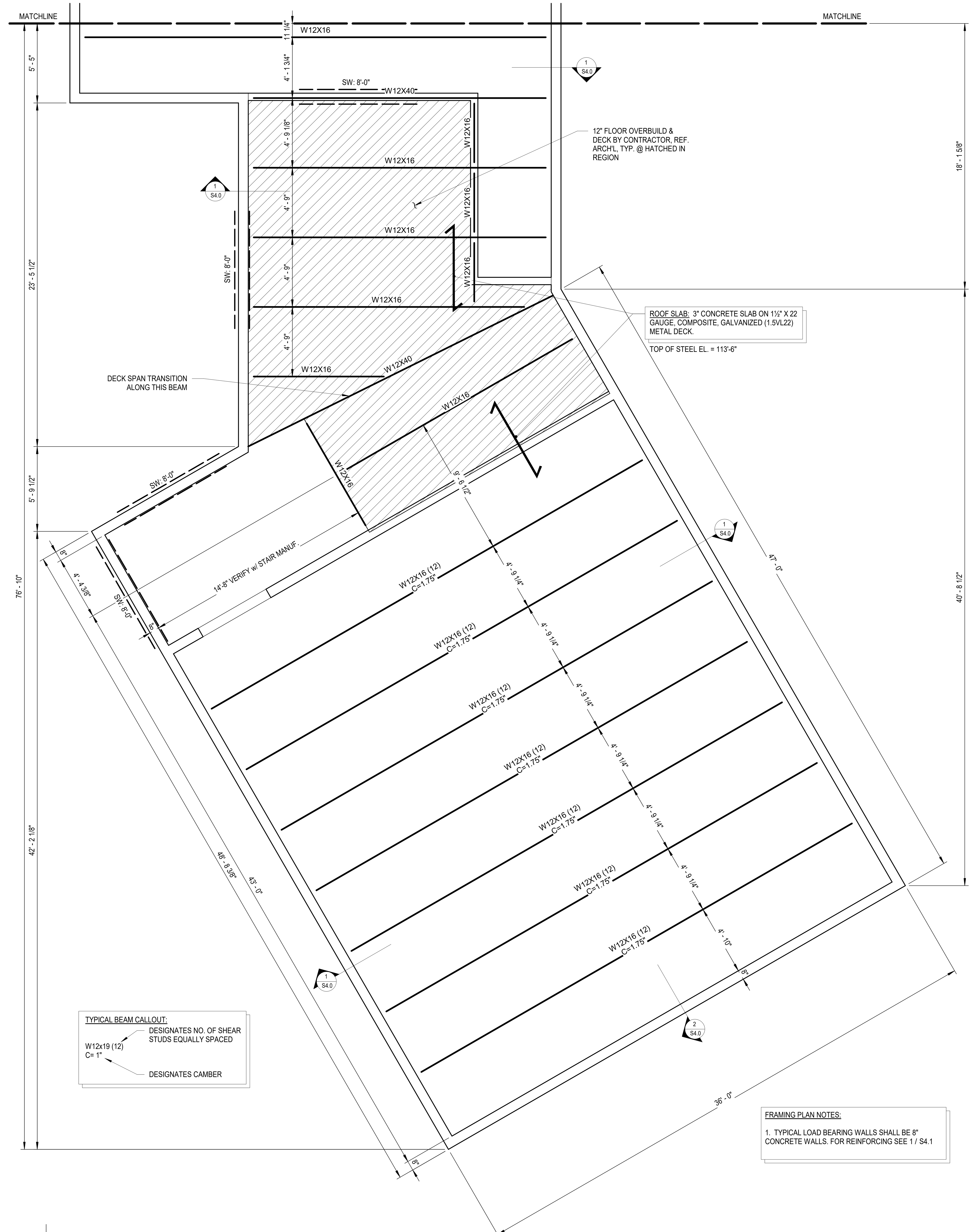
ROOF FRAMING PLAN

| | |
|---|---|
| DESIGNED BY: | JCK |
| DRAWN BY: | JCK |
| APPROVED BY: | HH |
| PROJECT #: | 22-130 |
| DATE: | JUNE 2023 |

| No. | Revision | Date |
|---|---|---|

Sheet

S3.0




**TYPICAL BEAM CALLOUT:**

W12x19 (12) — DESIGNATES NO. OF SHEAR STUDS EQUALLY SPACED

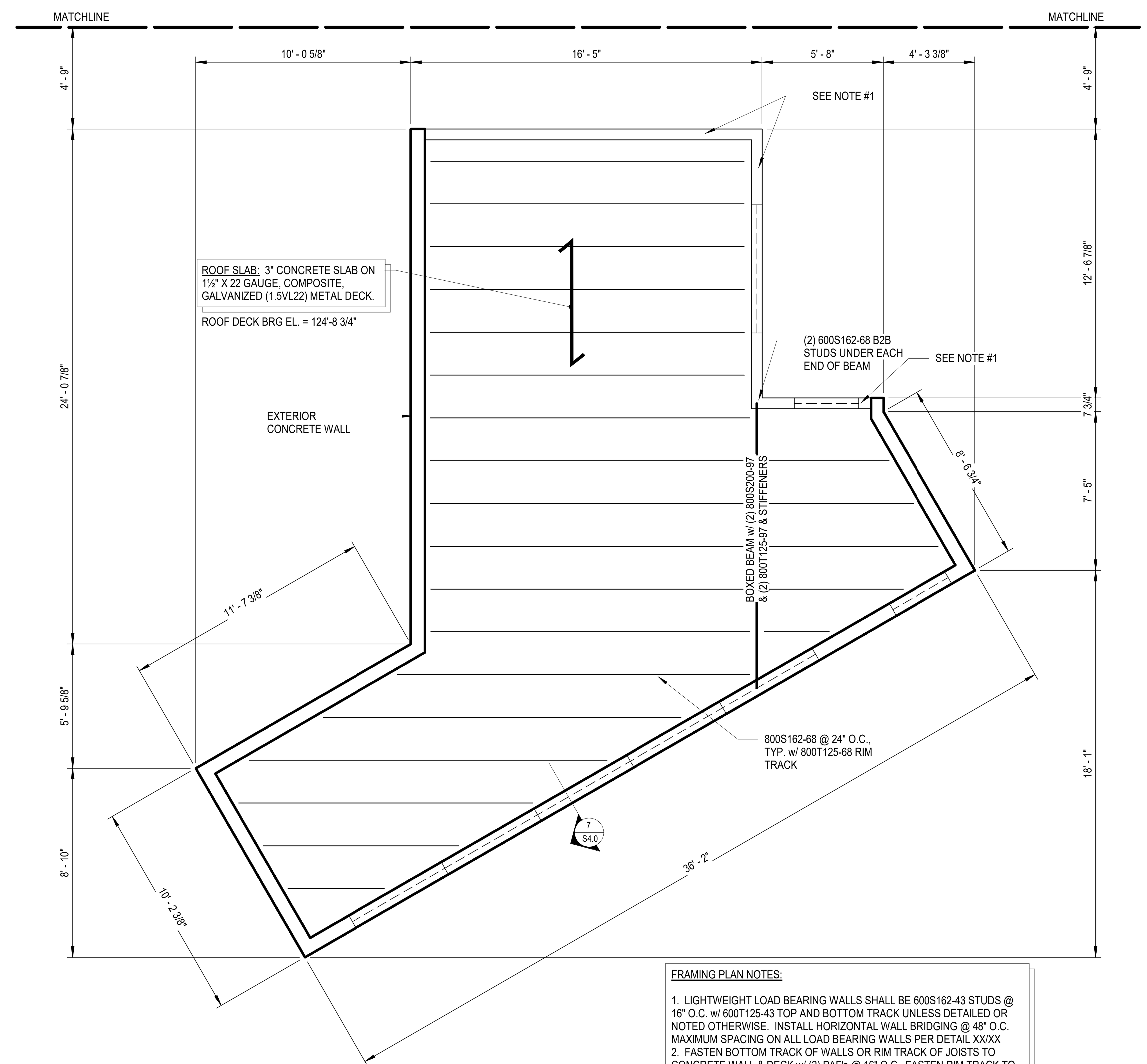
C= 1" — DESIGNATES CAMBER

**FRAMING PLAN NOTES:**

1. TYPICAL LOAD BEARING WALLS SHALL BE 8" CONCRETE WALLS. FOR REINFORCING SEE 1 / S4.1

## ROOF - EAST

1/4" = 1'-0"




**FRAMING PLAN NOTES:**

1. LIGHTWEIGHT LOAD BEARING WALLS SHALL BE 600S162-43 STUDS @ 16" O.C. w/ 600T125-43 TOP AND BOTTOM TRACK UNLESS DETAILED OR NOTED OTHERWISE. INSTALL HORIZONTAL WALL BRIDGING @ 48" O.C. MAXIMUM SPACING ON ALL LOAD BEARING WALLS PER DETAIL XX/XX
2. FASTEN BOTTOM TRACK OF WALLS OR RIM TRACK OF JOISTS TO CONCRETE WALL & DECK w/ (2) PAF's @ 16" O.C. FASTEN RIM TRACK TO EACH WALL STUD w/ (4) #12 SCREWS.
4. JOIST BRIDGING SEE 6 / S4.0

## HIGH ROOF

1/4" = 1'-0"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13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER HEATH M. HENDRICK

NORTH CAROLINA PROFESSIONAL CORPORATION P-1418 FDR ENGINEERS, PLLC

Project Name

# THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

Sheet Title

## FRAMING PLANS

| | |
|---|---|
| DESIGNED BY: | JCK |
| DRAWN BY: | JCK |
| APPROVED BY: | HH |
| PROJECT #: | 22-130 |
| DATE: | JUNE 2023 |

| No. | Revision | Date |
|---|---|---|

Sheet

S3.1

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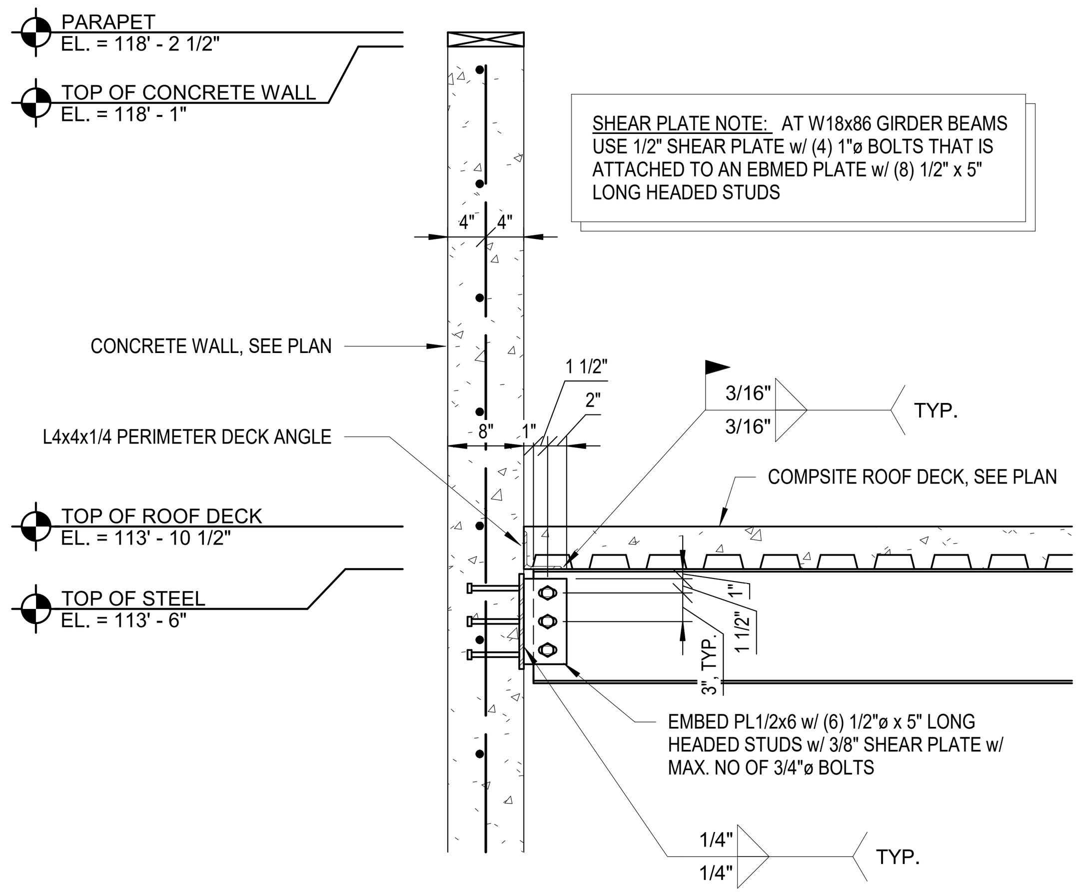
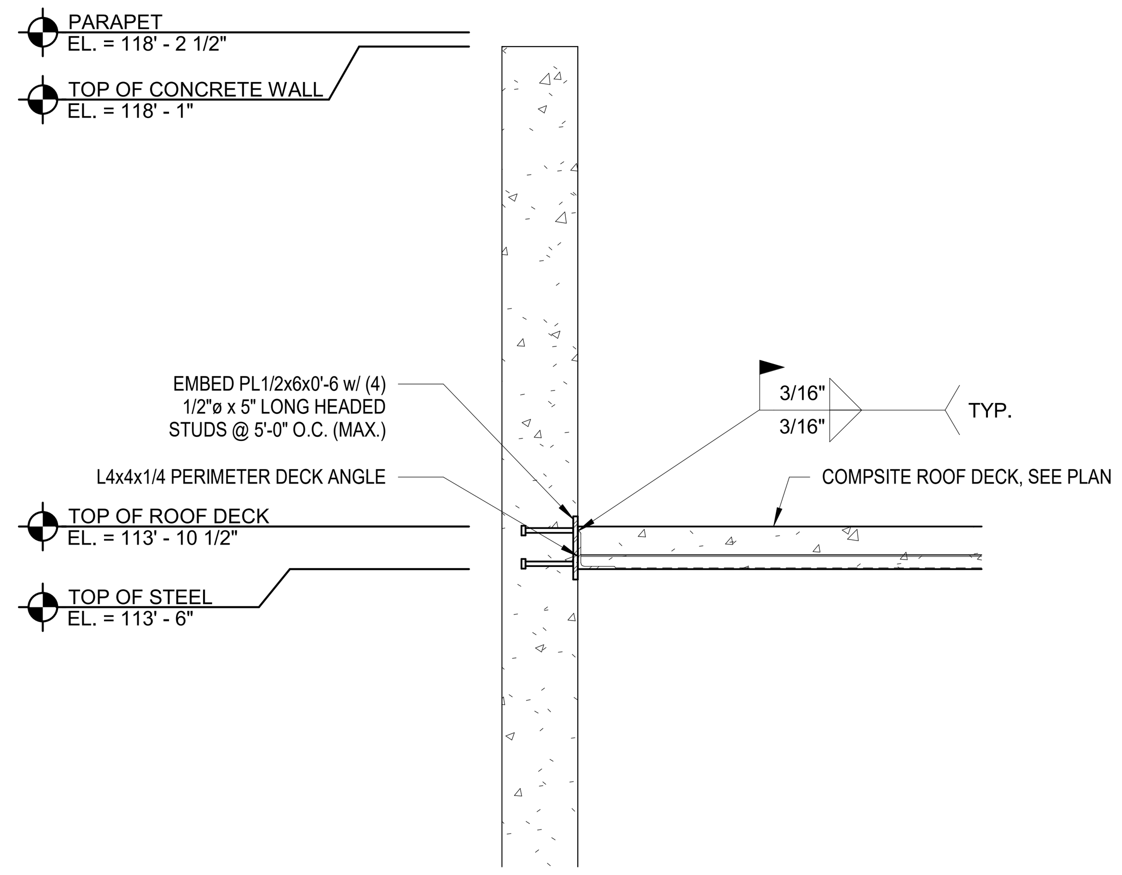
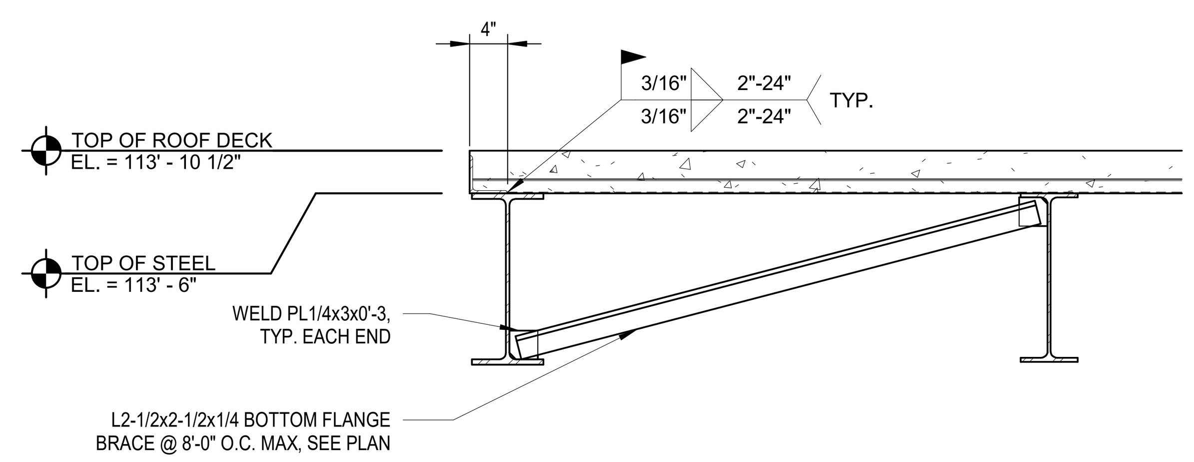


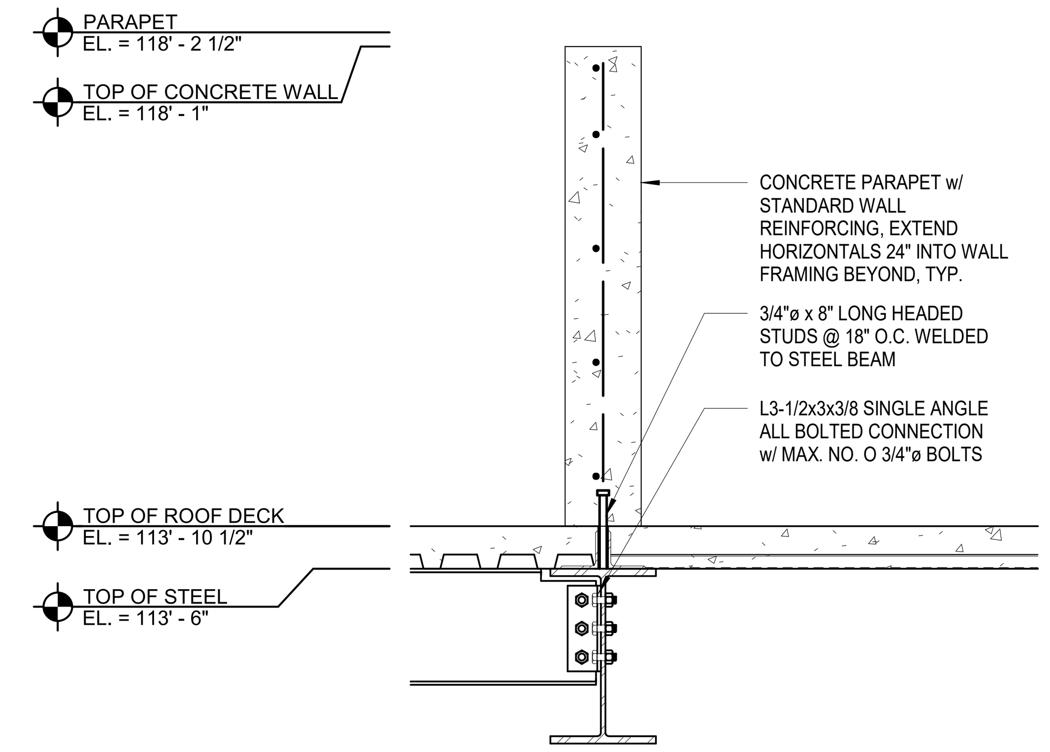

1 SECTION
S4.0 3/4" = 1'-0"



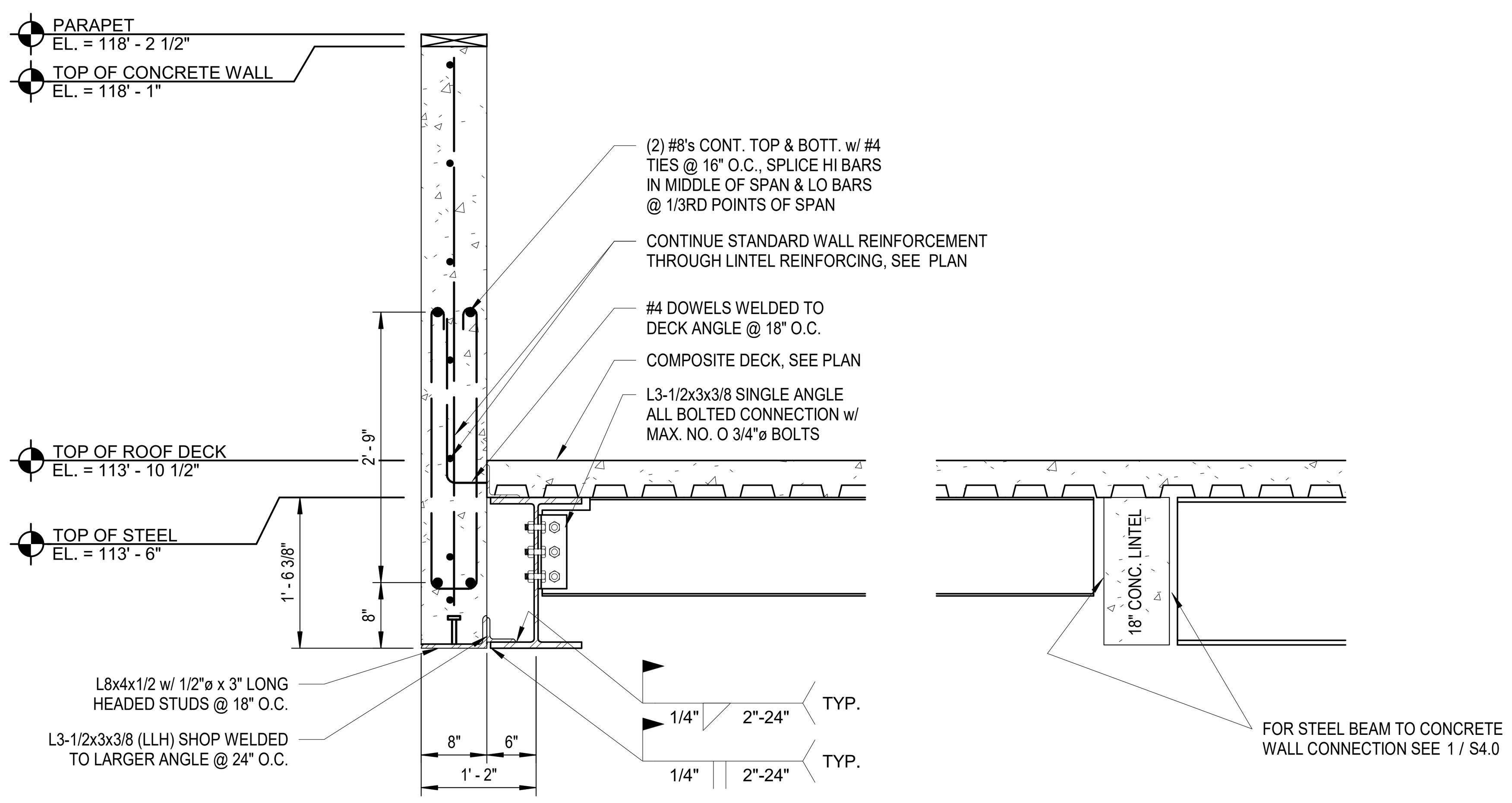

2 SECTION
S4.0 3/4" = 1'-0"



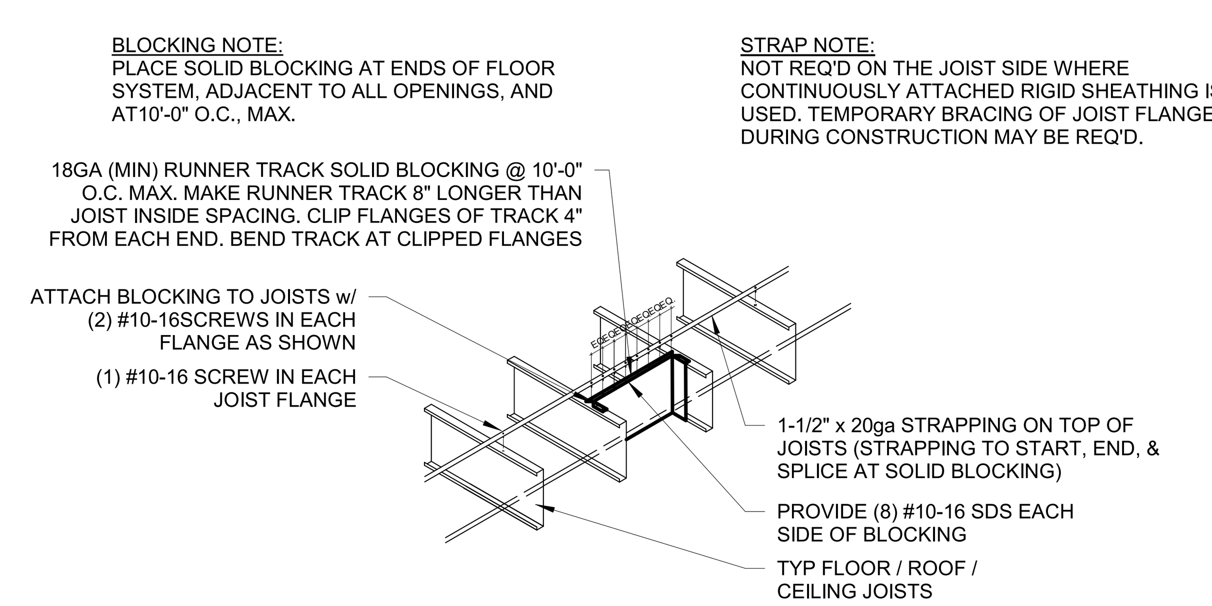

3 SECTION
S4.0 3/4" = 1'-0"



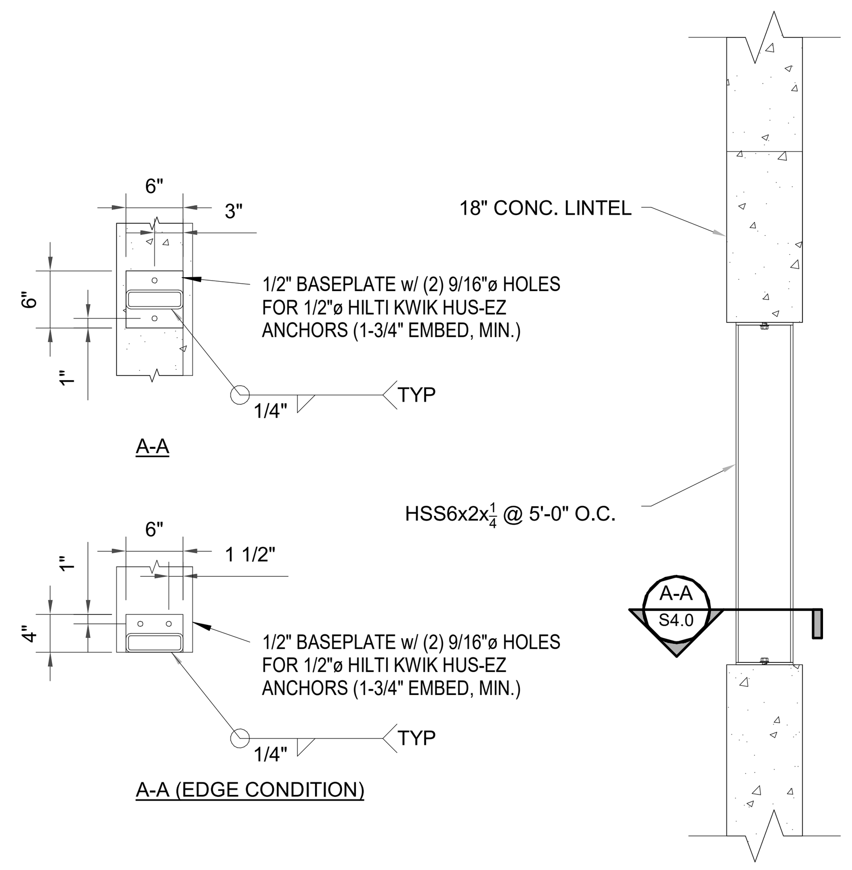

4 SECTION
S4.0 3/4" = 1'-0"




5 PORCH SECTION
S4.0 3/4" = 1'-0"




6 TYP JOIST BRIDGING
S4.0 3/4" = 1'-0"




7 OPENING REINFORCEMENT DETAIL
S4.0 3/4" = 1'-0"

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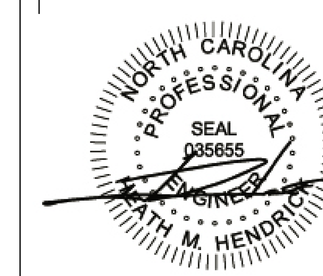


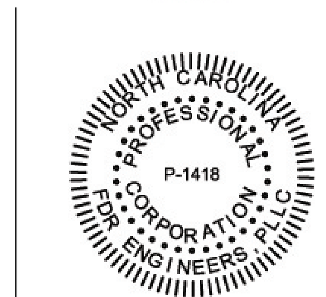


Project Name
THE KOHALA RANCH
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Sheet Title
FRAMING SECTIONS & DETAILS

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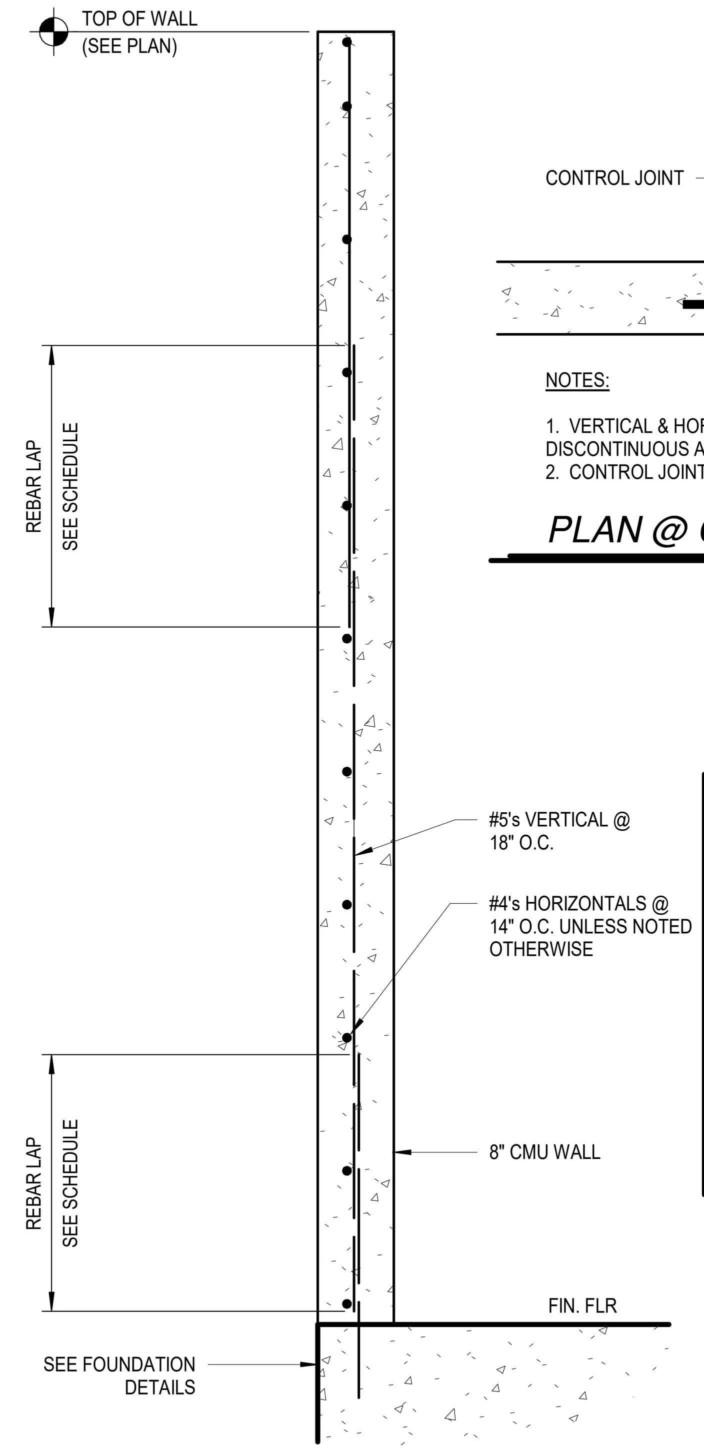
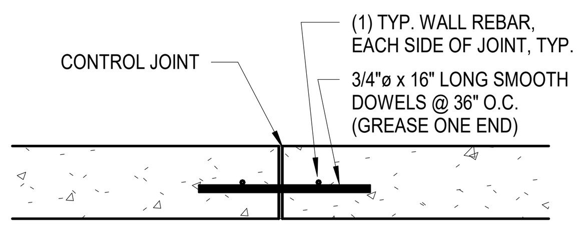
| | | |

Sheet
S4.0

## TYPICAL CONCRETE WALL




SECTION

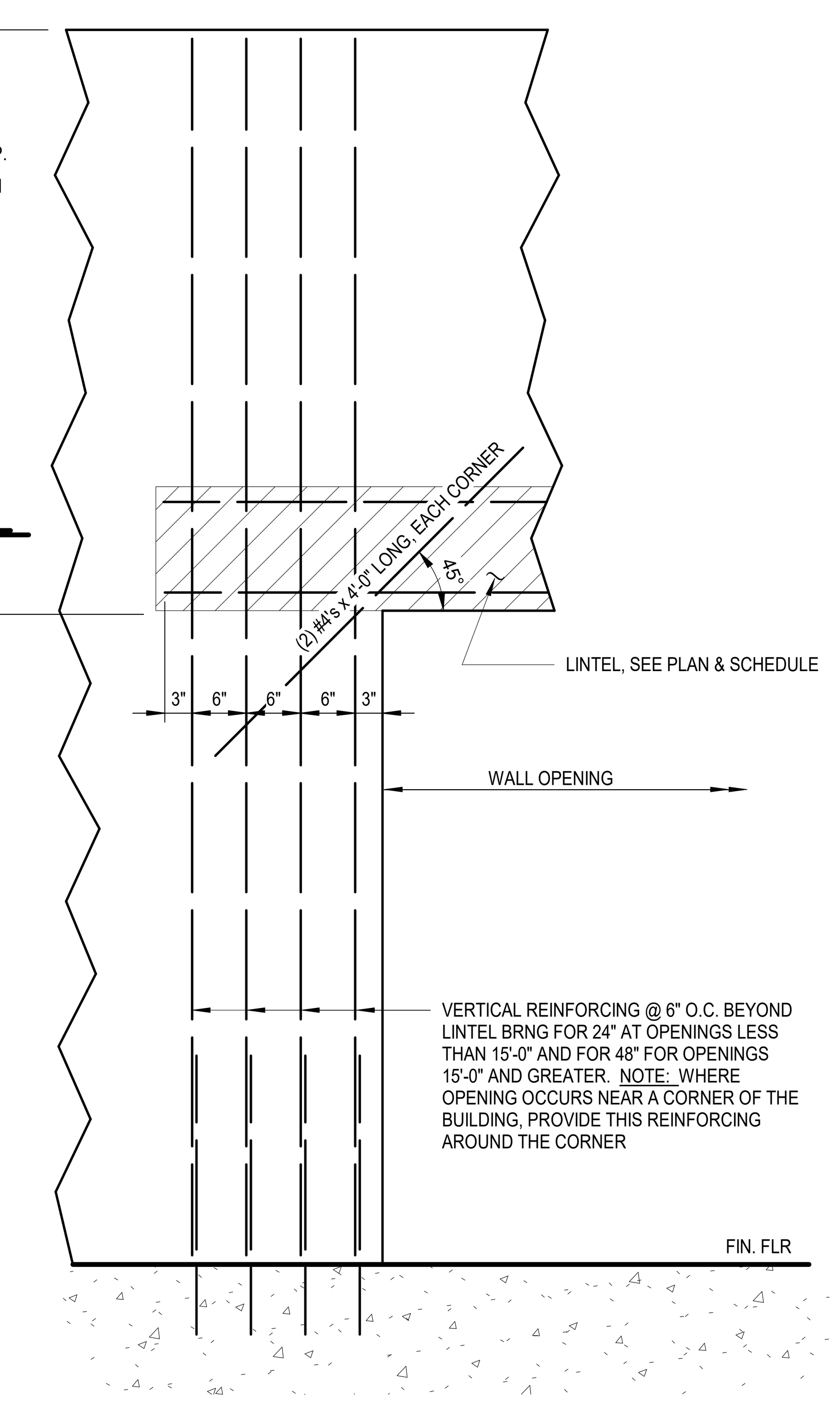



NOTES:

1. VERTICAL & HORIZONTAL REINF. SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 20-ft.

PLAN @ CONTROL JOINTS

| REBAR LAP SCHEDULE | |
|---|---|
| BAR SIZE | LAP |
| #3 | 24" |
| #4 | 24" |
| #5 | 30" |
| #6 | 36" |
| #8 | 48" |




ELEVATION

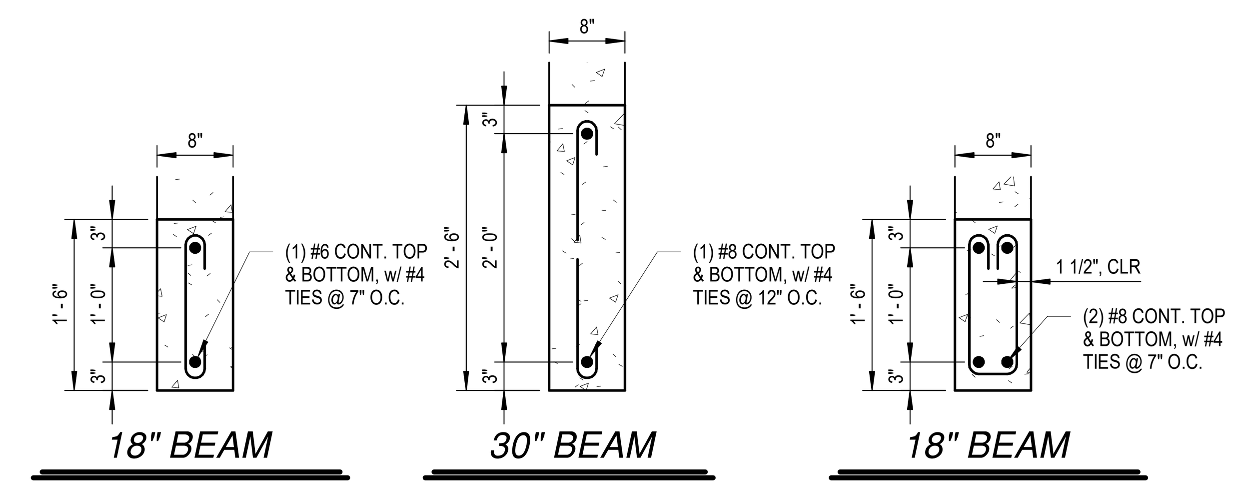
1 S4.1 TYPICAL CONCRETE WALL
3/4" = 1'-0"

## LINTEL SCHEDULE

| WALL TYPE | LESS THAN OR EQUAL TO 12'-6" OPNG | 12'-7" TO 20'-0" OPNG | 20'-1" TO 23'-0" OPNG |
|---|---|---|---|
| 8" CONC. | 18" BEAM w/ (1) #6 CONT. TOP & BOTT. | 30" BEAM w/ (1) #8 CONT. TOP & BOTT. | 18" BEAM w/ (2) #8 CONT. TOP & BOTT. |
| | | | |

NOTES:

1. LINTEL SCHEDULE APPLIES UNLESS NOTED OR DETAILED OTHERWISE.
2. EXTEND #6 HORIZONTAL REINFORCING 24" AND #8 HORIZONTAL REINFORCING 48" BEYOND OPENING, WRAP AROUND CORNERS AS REQUIRED.
3. CONTINUE WALL REINFORCING THROUGH BEAM, TYP.




3 S4.1 LINTEL SCHEDULE
3/4" = 1'-0"


FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com


NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER ... M. HENDR...

NORTH CAROLINA PROFESSIONAL CORPORATION P-1418 FDR ENGINEERS, PLLC

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| | | |

Sheet
S4.1

FDR 24X36

# DIVISION 15A – PLUMBING

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
   1. Plumbing fixtures, water heaters, and any other equipment necessary.
   2. Cold and hot water piping and insulation.
   3. DWV piping.
   4. LP gas piping.
   5. Connection of all equipment; drain, vent, water, gas.

B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
   1. The National Electrical Code.
   2. 2018 N.C. Building Code: Plumbing, and all applicable category codes.
   3. American Society of Sanitary Engineering Standard 1010.
   4. All local codes and ordinances.

C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

D. The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.

1.2 INTENT

A. The intent of these specifications and accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Plumbing Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner. The PC shall determine and coordinate with existing conditions.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The Plumbing Contractor shall refer to the architectural drawings for placement of equipment, fixtures, etc. Where locations are not clear, the Contractor shall obtain the exact locations from the Architect.

C. Coordinate all exterior piping connections w/Architect, site contractor/plans. Verify manhole elevations and provide backwater valves as required if flood level rims are below next upstream manhole cover elevation. Fixtures with flood level rims above upstream manhole shall not discharge thru bw valve. Notify engineer of backwater valve requirement, any issue prior to bid.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 – PRODUCTS

2.1 FIXTURES

A. Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.

B. Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.

C. All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.

D. Provide shutoff valves for all sinks, water heaters, toilets, washing machines, refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures.

E. Provide trap primers for all floor drains in areas not served by hose bibbs.

2.2 PIPING

A. Drain–Waste–Vent: All DWV piping shall be Schedule 40 PVC–DWV u.o.n., with the following exceptions: Use cast iron piping in all return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a temperature greater than 140 deg. F for a minimum distance of 10'–0".

B. Hot and cold water piping above grade: Type "L" copper w/solder joints (ASTM–B88), hard drawn with wrought copper fittings (ANSI B16.22). PEX piping with copper fittings may be used with owner/tenant approval and as allowed per code. Copper piping shall be used in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. Coordinate steam water piping type/fittings with equipment mfr and code.

C. Cold water piping below grade: Type "K" copper (ASTM–88A) soft drawn.

D. LP gas piping shall be black steel pipe with screwed or welded joints. Support all piping as required by code. Use commercial style hangers, pipe strapping will not be allowed. Provide dirtleg, union, shut–off valve and flexible connection to all equipment. Pressure test all piping prior to putting into use. Verify size requirements prior to installation. Coordinate requirements with local gas company prior to submitting bid. Provide all components necessary for a complete operation system. Label piping per code. Paint exterior and exposed gas lines per code and building owner.

E. Hangers: Use pipe hangers where required on 8–foot centers with saddles to avoid crushing insulation.

F. Solder: 95/5. Lead free.

G. Unions: Provide unions where indicated on drawings, in long runs of piping (except drainage) and at equipment to provide convenient disassembly. Provide dielectric unions when connecting copper tubing to equipment and piping made of ferrous materials.

2.3 CLEANOUTS

A. Hex plugs in rough areas: Recessed plugs with cover plates in exposed locations.

2.4 SHOCK ARRESTERS

A. Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for qualify construction. Provide for all quick closing valves.

PART 3 – EXECUTION

3.1 CONNECTIONS

A. This contract includes complete connection of cold water, hot water, drain, vent, and natural gas piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.

B. The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.

C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.

3.2 SERVICE ACCESS

A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.

3.3 ROUTING OF PIPING

A. Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.

B. Space pipe hangers per NCSBC– Plumbing Sect. 308.5 and Fuel Gas Code Sect. 415.1.

C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.

3.4 INSULATION

A. All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R–6.5 min.) in unconditioned areas. See NCSBC–Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSBC 2018 Energy Conservation Code.

B. Provide pre–fabricated insulation kits for all sink and lavatory exposed drain and supply piping.

3.5 INSPECTIONS AND TESTS

A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water– and air–tight.

B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.

3.6 STERILIZATION OF PIPING

A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.

3.7 SERVICE PRESSURE

A. Provide approved water–pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSBC–Plumbing Sect. 604.8.

3.8 DRAINDOWN

A. Contractor to provide for complete plumbing system drain down.

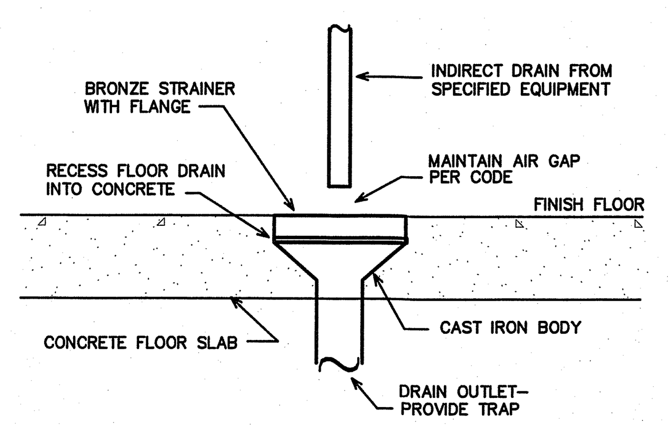
3.9 CLEAN UP

A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.

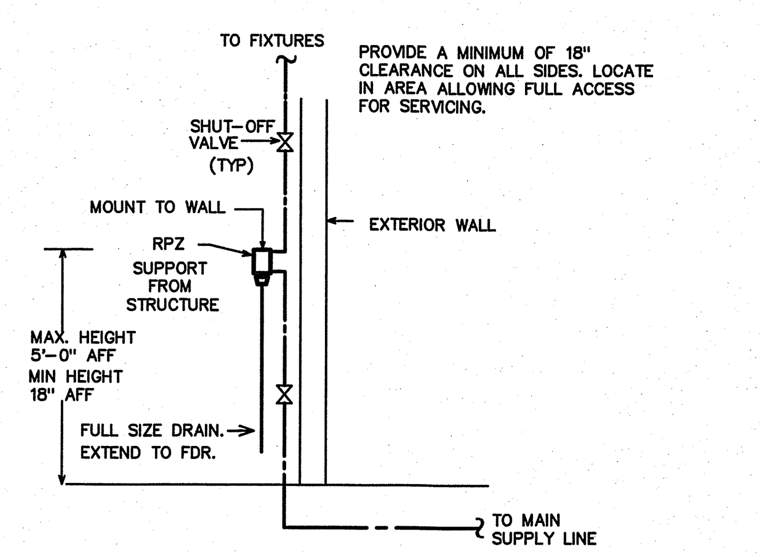
3.10 GUARANTEES

A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.

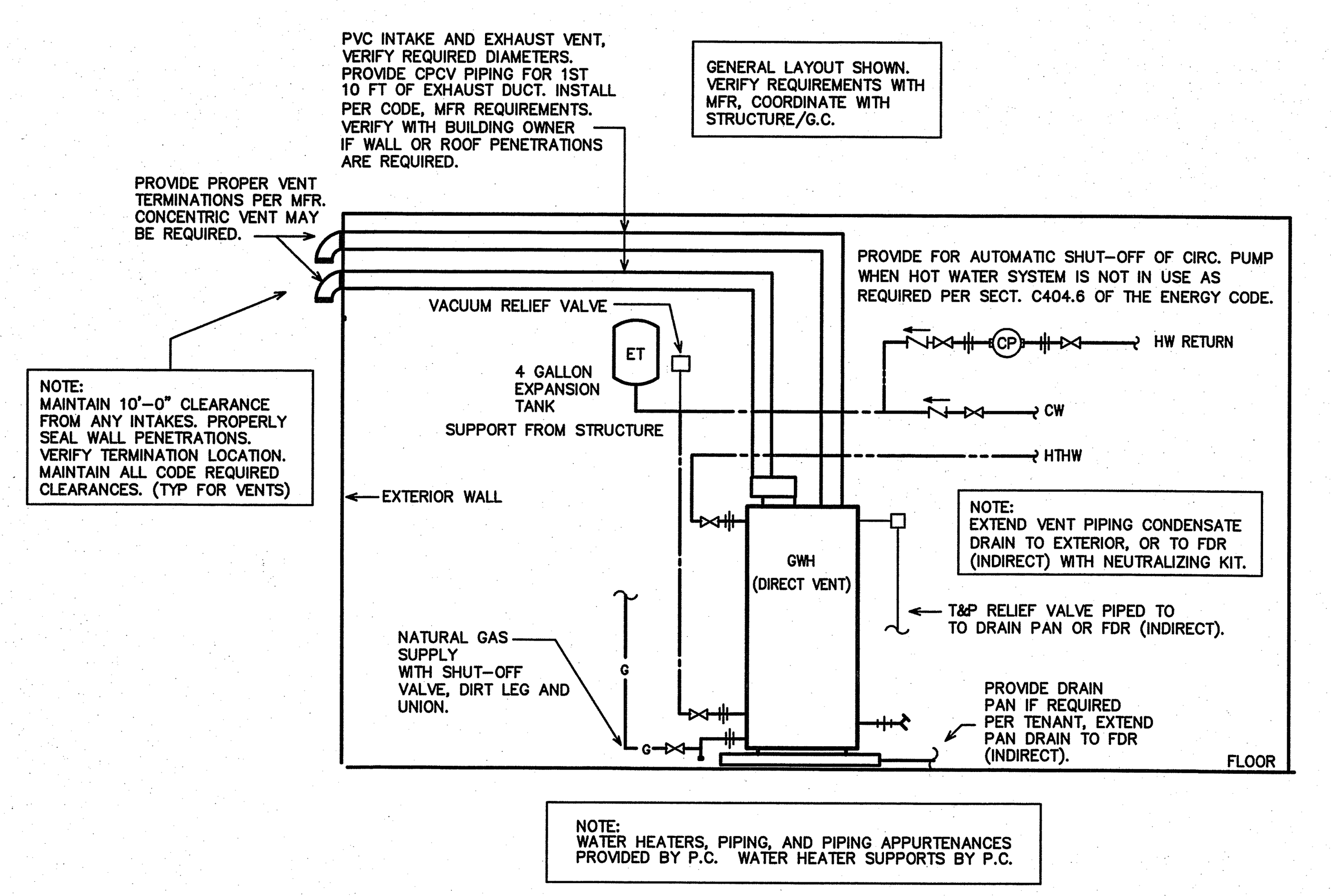
B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.




3 / P-1 FDR/FDSG DETAIL
SCALE: NTS




1 / P-1 RPZ-P MOUNTING DETAIL
SCALE: NTS




2 / P-1 GWH DETAIL
SCALE: NTS

## GENERAL NOTES – PLUMBING

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
3. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
4. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISC. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. FOR DIMENSIONS REFER TO ARCHITECTURAL PLANS.
5. THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTCHEON PLATES AT ALL FINISHED LOCATIONS.
6. ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
7. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR A MINIMUM OF 15 MINUTES AT A MINIMUM OF 100 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
8. PROVIDE MIN. 18" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
9. VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
10. PROVIDE CUT SHEETS ON ALL PLUMBING FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
11. PROVIDE HOT WATER TO FIXTURES AT 120 DEGREES (MAX) F.
12. PROVIDE CLEANOUTS AS REQUIRED BY CODE. NOT MORE THAN 100 FEET FOR 4" DRAIN.

## SYMBOL LEGEND – PLUMBING

| SYMBOL | DESCRIPTION (U.O.N.) |
|---|---|
| | WASTE PIPING (W) |
| | VENT PIPING (V) |
| | COLD WATER PIPING (CW) |
| | HOT WATER PIPING (HW) |
| S | STEAM WATER PIPING (S) |
| | SHUT–OFF VALVE |
| | DIELECTRIC UNION |
| G | LP GAS PIPING (G) |
| COFF | CLEANOUT FINISH FLOOR |
| WCO/HCO | WALL/HORIZONTAL CLEANOUT |
| COFG | CLEANOUT FINISH GRADE–PROVIDE FLUSH CONCRETE COLLAR AND BRONZE COVER |
| | VENT THRU ROOF (VTR) |
| | FREEZE PROOF, HOSE BIBB (FPHB/HB) |
| A.F.F. | ABOVE FINISHED FLOOR |
| U.O.N. | UNLESS OTHERWISE NOTED |

## FIXTURE SCHEDULE – PLUMBING *

CP * CIRCULATING PUMP
TACO MODEL 110, 115 VOLT, 1/12 HP. SECURELY SUPPORT FROM STRUCTURE. PROVIDE AQUASTAT, TIMER, CHECK VALVES AS REQUIRED.

ET * EXPANSION TANK
AMTROL MODEL ST–12, 4.4 GALLON, STEEL CONSTRUCTION, NON–ASME CODE RATED.

GWH * LP WATER HEATER
AO SMITH MODEL BTXL–100, DIRECT VENT, LP, 100,000 BTUH, 75 GALLON, 1" INLET AND OUTLET, 115 GPH RECOVERY AT 100 DEGREE RISE. PROVIDE EXHAUST AND INTAKE VENTS PER MANUFACTURERS RECOMMENDATION. VERIFY INSTALLATION CLEARANCES PRIOR TO ORDERING.

FD * FLOOR DRAIN
ZURN MODEL Z415 WITH HEEL–PROOF TYPE B STRAINER, CAST IRON W/NICKEL BRONZE TOP, 5" STRAINER WITH 3" CONNECTION. PROVIDE TRAP PRIMER CONNECTION IF REQUIRED.

FDR, * FDSG FLOOR DRAIN W/FLANGE, RECESSED INTO FLOOR
ZURN MODEL Z415–I, 5" DRAIN, 2" CONNECTION. PROVIDE RAISED FLANGE W/NICKEL BRONZE GRATE, CAST IRON BODY. PROVIDE TRAP PRIMER CONNECTION IF REQUIRED. RECESS INTO FLOOR/SLAB, TOP OF FLANGE TO BE FLUSH W/FINISH FLOOR.

FDX * FLOOR DRAIN– EXTERIOR
ZURN MODEL Z415K WITH TYPE 7K STRAINER, CAST IRON W/NICKEL BRONZE TOP WITH 4" CONNECTION.

FPHB * FREEZE PROOF HOSE BIBB
WOODFORD MODEL #19, FREEZE PROOF HOSE BIBB WITH BACKFLOW PREVENTER. COORDINATE MOUNTING W/TENANT. PROVIDE TEE KEY OR LOCK SL–17 IF REQUIRED. VERIFY MOUNTING LOCATION, COORDINATE STEM LENGTH PER WALL THICKNESS.

HB * WALL HOSE BIBB
WOODFORD MODEL #24 ANTI–SIPHON HOSE BIBB W/TEE KEY. COORDINATE MOUNTING W/TENANT. PROVIDE STEM LOCK SL–24 IF REQUIRED.

L1 * LAVATORY (COUNTERTOP)
CORIAN COUNTERTOPS W/MOLDED IN RECTANGULAR SLOPE BASIN SINK W/LINEAR DRAIN. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. PROVIDE DELTA KAYRA SINGLE HANDLE PULL DOWN FAUCET STAINLESS IN BRILLIANCE FINISH, MODEL#: 533LF–SSPDMPU. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

L2 * LAVATORY (COUNTERTOP)
CORIAN COUNTERTOPS W/MOLDED IN RECTANGULAR SLOPE BASIN SINK W/LINEAR DRAIN. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. PROVIDE DELTA KAYRA SINGLE HANDLE PULL DOWN FAUCET STAINLESS IN BRILLIANCE FINISH, MODEL#: 533LF–SSPDMPU. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

L3 * LAVATORY (COUNTERTOP)
CORIAN COUNTERTOPS W/MOLDED IN RECTANGULAR SLOPE BASIN SINK W/LINEAR DRAIN. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. PROVIDE DELTA KAYRA SINGLE HANDLE PULL DOWN FAUCET STAINLESS IN BRILLIANCE FINISH, MODEL#: 533LF–SSPDMPU. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

RPZ–P * 3/4" REDUCED PRESSURE BACKFLOW PREVENTER FOR POOL EQUIPMENT
WATTS MODEL #LF009M3QT, 3/4" REDUCED PRESSURE BACKFLOW PREVENTER, 'LEAD FREE' CONSTRUCTION. VERIFY INSTALLATION LOCATION/CLEARANCES.

S1 * SINGLE BASIN COUNTER SINK
COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. COORDINATE SIZE WITH CABINETRY PRIOR TO ORDERING. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

S2 * SINGLE BASIN KITCHEN SINK
DELTA RIVET 36" UNDERMOUNTED SINGLE SINK MODEL#: 95C9031–36S–SS. PROVIDE DELTA ASHTON SINGLE HANDLE PULL–DOWN KITCHEN FAUCET WITH SOAP DISPENSER IN BRILLIANCE FINISH MODEL#: 19922Z–SSSD–DST. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

S3 * SINGLE BASIN COUNTER SINK
DELTA RIVET 30" UNDERMOUNTED SINGLE SINK MODEL#: 95C9031–30S–SS. PROVIDE DELTA ASHTON SINGLE HANDLE PULL–DOWN KITCHEN FAUCET WITH SOAP DISPENSER IN BRILLIANCE FINISH MODEL#: 19922Z–SSSD–DST. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

SH1 * SHOWER (DRAIN/FAUCET– VERIFY STALL PER OWNER)
DELTA RAINCAN SHOWER HEAD MODEL#: 52159–SS–PR25 W/CEILING MOUNT ARM MODEL#: U4999–SS. DELTA ADJUSTABLE SLIDE BAR MODEL#: 51600–SS W/ DELTA H2OKINETIC 4–SETTING HAND SHOWER MODEL#: 59552–SS–PK, KOHLER K–80654 2\"X48" LINEAR DRAIN. ROUTE SUPPLY LINES PER UNIT HANDING AS REQUIRED, REGARDLESS OF HOW SHOWN ON PLANS– COORDINATE W/OWNER, ARCH. VERIFY DRAIN LOCATION/REQUIREMENTS, COORDINATE W/UNIT PROVIDED.

SH2 * STEAM SHOWER (VERIFY QUANTITY/LOCATION OF ALL PLUMBING COMPONENTS)
PROVIDE DELTA RAINCAN SHOWER HEADS MODEL #52159–SS–PR25 W/CEILING MOUNT ARM MODEL # U4999–SS, DELTA STNLSS STEEL HAND SHOWER #59552–SS–PK. PROVIDE STEAM CONNECTIONS AS REQUIRED. PROVIDE DELTA KAYRA MONITOR 17 VALVE TRIM #T17033–SS, DELTA BAR ASSEMBLE #51600–SS. PROVIDE HAND SHOWER PER OWNER/ARCH. VERIFY ALL COMPONENTS, ACCESSORIES, AS REQUIRED. ROUTE DWV/SUPPLY LINES PER UNIT CONFIGURATION, REGARDLESS OF HOW SHOWN ON PLANS– SEE ARCH. DRAWINGS. PROVIDE DRAIN– VERIFY TYPE, LOCATION, CONNECTION REQUIREMENTS, COORDINATE W/UNITS PROVIDED. COORDINATE ALL UNIT DWV AND SUPPLY CONNECTIONS WITH OWNER, ARCHITECT, AND G.C.

T1 * TUB/FAUCET
SIGNATURE HARDWARE 66" SHEBA RESIN FREESTANDING TUB – MATTE FINISH 425987 W/DELTA SINGLE HANDLE FLOOR MOUNT TUB FILLER BRILLIANCE FINISH MODEL #: T4777–SSFL PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED. ROUTE DWV/SUPPLY LINES PER UNIT CONFIGURATION, REGARDLESS OF HOW SHOWN ON PLANS– SEE ARCH. DRAWINGS.

TD * TRENCH DRAIN
J. R. SMITH MODEL #9930 POLYPROPYLENE SLOPED TRENCH DRAIN SYSTEM, 4" OUTLET, 1 METER SECTIONS, STAINLESS STEEL GRATE 9870–450–SS. PROVIDE 9870–447–SSADA MODEL GRATE IF ADA COMPLIANCE IS REQUIRED (VERIFY). PROVIDE REQUIRED NUMBER OF CHANNEL SECTIONS BY LENGTH NEEDED FOR EACH TRENCH DRAIN. FIELD TRIM AT SHALLOW END OF CHANNEL AS NEEDED. PROVIDE STRAINER OR SEDIMENT BASKET AT ALL LOCATIONS. INSTALL PER MFR'S SPECS. PROVIDE MITER/CUSTOM SECTIONS if REQUIRED. VERIFY EXACT MODEL/GRATE WITH OWNER/ARCH.

VB * ICE MAKER VALVE BOX
OATEY VALVE BOX WITH 3/8" BRONZE SHUT–OFF VALVE. FLUSH TO WALL.

WB * WASHING MACHINE WALL BOX
SUPPLY AND DRAIN FIXTURE: POLYSTYRENE BOX WITH 2" DRAIN, 1/4 TURN BRASS BALL VALVES. OATEY OR APPROVED EQUAL.

WC * WATER CLOSET (FLUSH TANK)
KOHLER VEIL WALL HUNG COMPACT ELONGATED DUAL–FLUSH TOILET K–6299 WHITE W/ 2"X4" IN–WALL TANK AND CARRIER SYSTEM K–18829. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

WCM * WATER CLOSET– MASTER BATH (FLUSH TANK)
TOTO NEOREST RH ONE PIECE ELONGATED DUAL FLUSH TOILET #MS988CUMFG, 120 V, 1290 W, COLOR #01 COTTON. PROVIDE DWV, SUPPLY LINES/SHUT–OFF VALVES AS REQUIRED.

* OR APPROVED EQUAL. SUBMIT ALL ITEMS FOR APPROVAL BY OWNER AND ARCHITECT PRIOR TO ORDERING.
ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE OWNER AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED.


ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE

PLUMBING SPECIFICATIONS

21033

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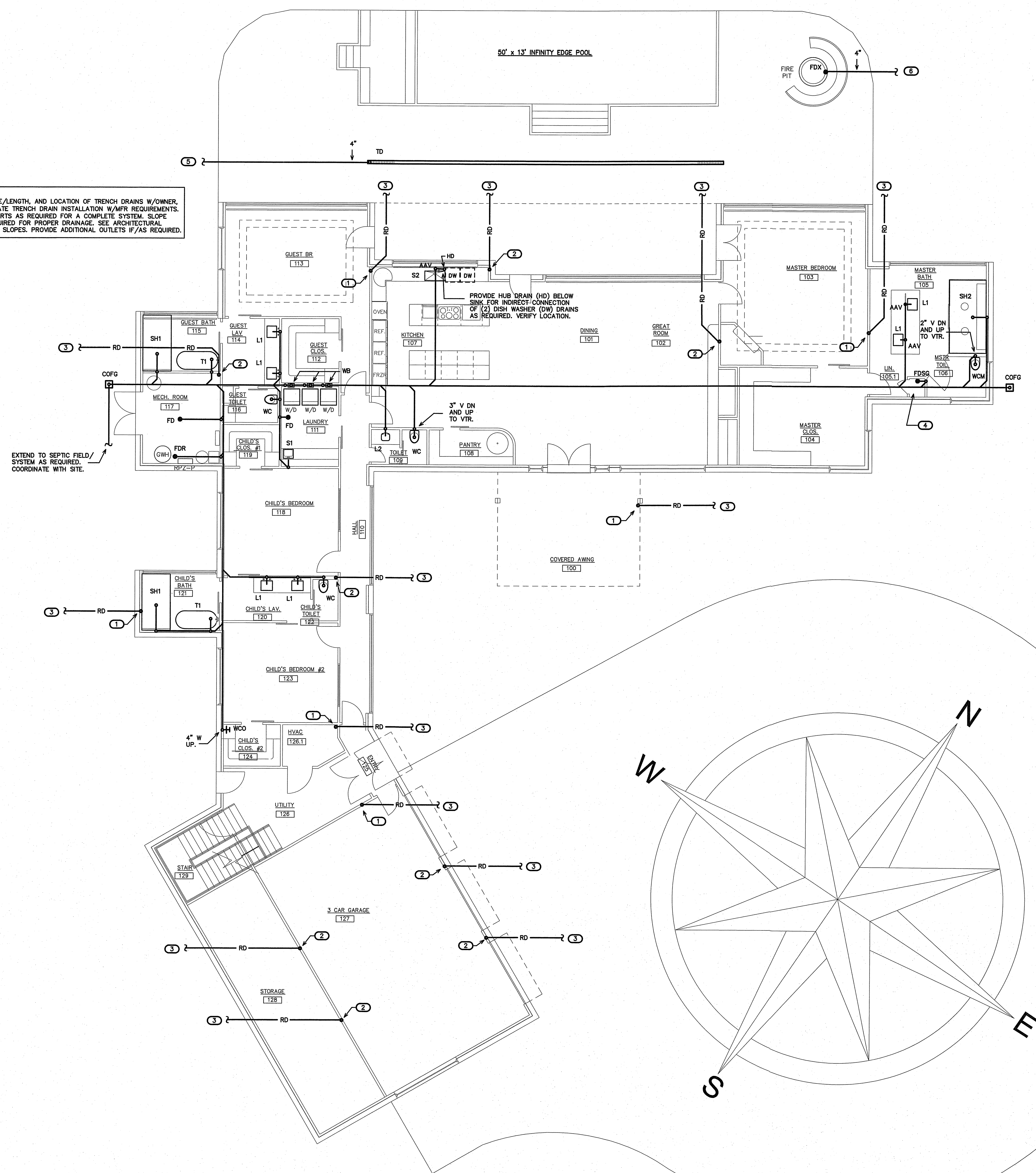
SHEET NO.
P-1

NOTE:
COORDINATE SIZE/LENGTH, AND LOCATION OF TRENCH DRAINS W/OWNER, ARCH. COORDINATE TRENCH DRAIN INSTALLATION W/MFR REQUIREMENTS. PROVIDE ALL PARTS AS REQUIRED FOR A COMPLETE SYSTEM. SLOPE DRAINS AS REQUIRED FOR PROPER DRAINAGE. SEE ARCHITECTURAL FOR ANY FLOOR SLOPES. PROVIDE ADDITIONAL OUTLETS IF/AS REQUIRED.




## DWV PLAN

1/P-2 SCALE: 1/8"=1'-0"

NOTE:
ALL HORIZONTAL/VERTICAL ROOF DRAIN PIPING (RD) SHALL BE CAST IRON AND PROPERLY INSULATED THRU ALL FLOORS UNLESS OTHERWISE REQUIRED, COORDINATE PIPING MATERIAL W/OWNER AND ARCHITECT. PROVIDE INSULATION ON ALL EXPOSED PIPING PER CODE AND BLDG. STANDARD. ALL PIPING OFFSETS MAY NOT BE SHOWN, VERIFY ROUTING OF ALL PIPING THRU ALL FLOORS. COORDINATE W/STRUCTURE, ALL TRADES, ETC. COORDINATE ALL EXPOSED PIPING, CLEANOUTS (LOCATIONS, ROUTING, LABELING/INSULATION/PAINTING, ETC.), WITH ARCHITHECT, OWNER, GC.
(TYP)

KEY NOTES FOR SHEET P-2

1. 3" RD PIPING FROM ABOVE DOWN TO RUN BELOW GRADE OR AS REQUIRED. VERIFY LOCATION/ROUTING, COORDINATE W/OWNER AND ARCHITECT. SEE SHEET P-3.2 FOR CONTINUATION TO ROOF.
2. 3" RD PIPING FROM ABOVE DOWN TO RUN BELOW GRADE OR AS REQUIRED. VERIFY LOCATION/ROUTING, COORDINATE W/OWNER AND ARCHITECT. SEE SHEET P-3.2 FOR CONTINUATION TO ROOF.
3. EXTEND RD PIPING BELOW OR ABOVE GRADE AS REQUIRED TO DAYLIGHT. COORDINATE WITH OWNER, ARCHITECT, G.C., ETC. FOR ROOF DRAIN EXTERIOR CONTINUATION– VERIFY ROUTING AND TERMINATION LOCATION. PROVIDE SPLASH-BLOCK AT TERMINATION POINT IF/AS REQUIRED, PROVIDE RIP RAP IF REQUIRED TO ACCEPT RUN-OFF, COORDINATE W/OWNER, ARCH, GC, SITE. PROVIDE COFG IF PIPING TO RUN BELOW GRADE.
4. COORDINATE LOCATION OF FDSG WITH STEAM GENERATOR (SG– NOT SHOWN FOR CLARITY) FOR INDIRECT CONNECTION OF UNIT DRAIN. PROVIDE CAST IRON OR ABS PIPING FROM FDSG FOR A MINIMUM OF 10'-0" IF SG DISCHARGE MAY BE ABOVE 140 DEG. (F), VERIFY WITH EQUIPMENT MFR AND OWNER.
5. PROVIDE 4" PVC DRAIN (NO TRAP REQ'D) FROM TRENCH DRAIN. EXTEND TO DAYLIGHT– VERIFY ROUTING, TERMINATION LOCATION W/OWNER, ARCHITECT, SITE. PROVIDE PROPER SPLASH-BLOCK AT TERMINATION POINT IF REQUIRED, PROVIDE RIP RAP IF REQUIRED TO ACCEPT ALL RUN-OFF. PROVIDE COFG IF/WHERE REQUIRED.
6. PROVIDE 4" CAST IRON DRAIN (NO TRAP REQ'D) FROM FDX– VERIFY UNIT LOCATION. EXTEND TO DAYLIGHT– VERIFY ROUTING, TERMINATION LOCATION WITH OWNER, ARCHITECT, SITE. PROVIDE PROPER SPLASHBLOCK AT TERMINATION POINT IF REQUIRED, PROVIDE RIP RAP IF REQUIRED TO ACCEPT ALL RUN-OFF. PROVIDE COFG IF/WHERE REQUIRED.

NOTE:
ALL MECH. ROOM EQUIPMENT MAY NOT BE SHOWN. VERIFY ALL CLEARANCES. COORDINATE FD/FDR/FDSG LOCATIONS W/EQUIPMENT SERVED. COORDINATE W/ ARCHITECT FOR ANY FLOOR SLOPES.


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural
Design
Planning
Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


# THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE

DWV PLAN

21033

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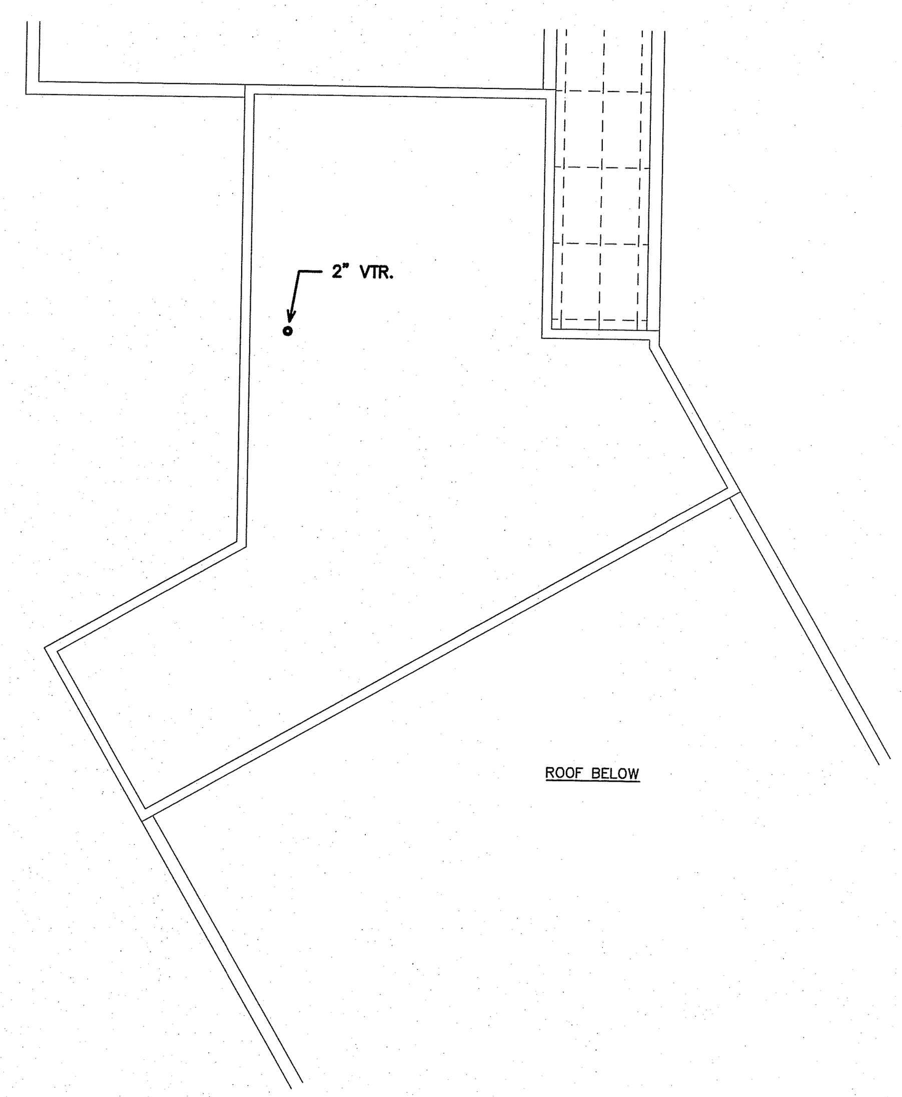
|---|---|
| ISSUED: | 6-20-2023 |
| DWG BY: | DS |
| CKD BY: | BEB |

REVISIONS

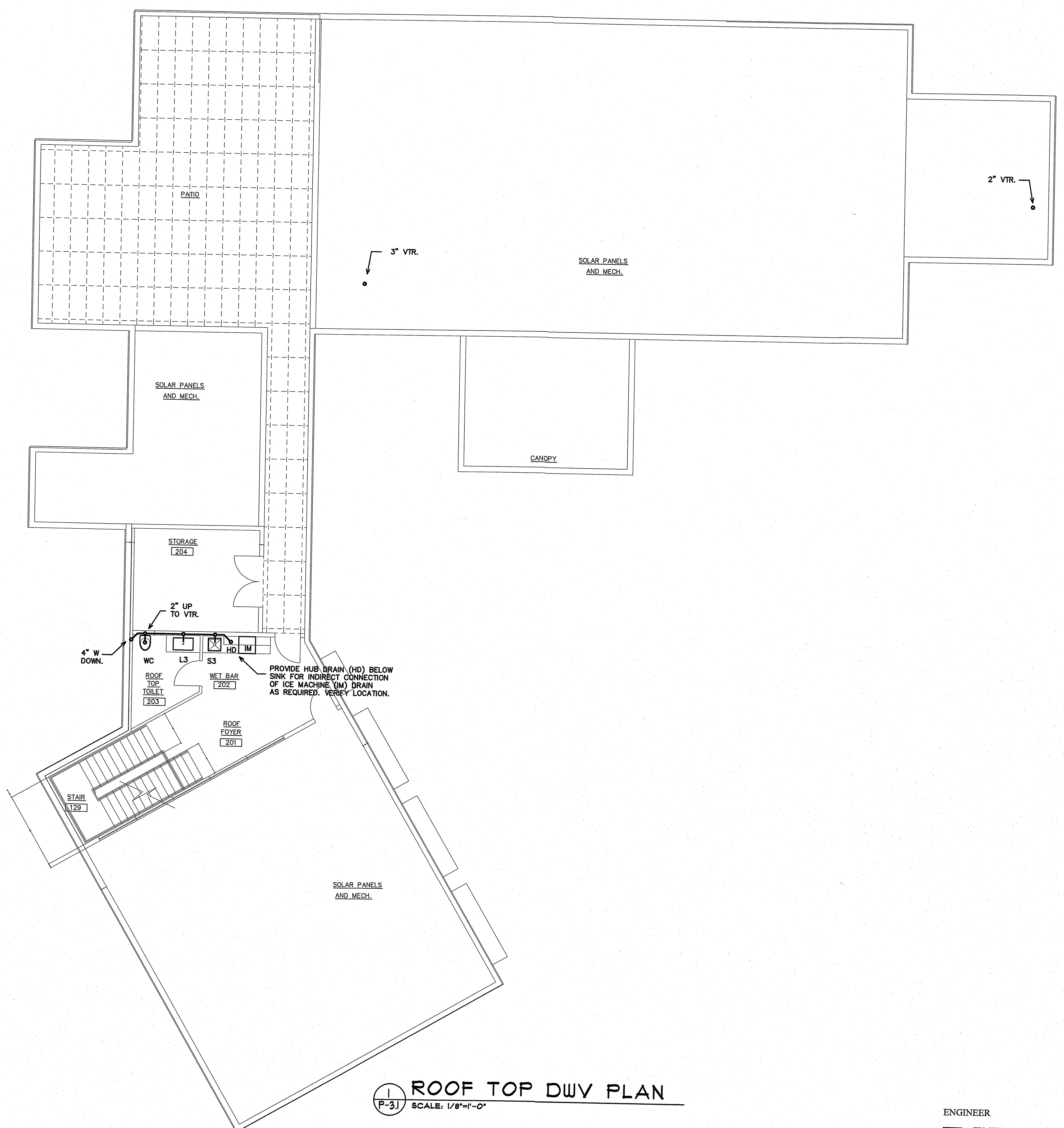
SHEET NO.
P-2

NOTE:
SEE ARCH. DRAWINGS FOR VERIFICATION OF ROOF PLAN, SLOPES, ETC. COORDINATE WITH G.C., ALL TRADES. ALL ROOF FEATURES, EQUIPMENT, ETC., MAY NOT BE SHOWN.

NOTE:
VERIFY TERMINATION LOCATION OF ALL VENTS THRU ROOF (VTR). COORDINATE W/OWNER, ARCHITECT.




2 P-3.1 HIGH ROOF DWV PLAN
SCALE: 1/8"=1'-0"




1 P-3.1 ROOF TOP DWV PLAN
SCALE: 1/8"=1'-0"


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22058 ENGINEER BENJAMIN E. BURKE

ROOF TOP DWV PLAN

21033

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SHEET NO.
P-3.1

## ROOF DRAIN SIZING SCHEDULE *

| ROOF DRAIN # | DRAINAGE AREA (SQ. FT.) ROOF | PARAPETS AND/ OR WALLS (1/2 OF TOTAL PER CODE) | TOTAL | MINIMUM PIPE DIA. SIZE (IN.) RD/ERD |
|---|---|---|---|---|
| RD-1/ ERD-1 | 634 | 120 | 754 | 3"/ 4" |
| RD-2/ ERD-2 | 634 | 120 | 754 | 3"/ 4" |
| RD-3/ ERD-3 | 634 | 105 | 739 | 3"/ 4" |
| RD-4/ ERD-4 | 634 | 105 | 739 | 3"/ 4" |
| RD-5/ ERD-5 | 324 | 147 | 471 | 3"/ 3" |
| RD-6/ ERD-6 | 324 | 147 | 471 | 3"/ 3" |
| RD-7/ ERD-7 | 324 | 81 | 405 | 3"/ 3" |
| RD-8/ ERD-8 | 324 | 81 | 405 | 3"/ 3" |
| RD-9/ ERD-9 | 340 | 109 | 449 | 3"/ 4" |
| RD-10/ ERD-10 | 403 ** | 105 ** | 508 | 3"/ 3" |
| RD-11/ ERD-11 | 160 | 57 | 217 | 3"/ 3" |
| RD-12/ ERD-12 | 160 | 57 | 217 | 3"/ 3" |
| RD-13/ ERD-13 | 308 | 129 | 437 | 3"/ 3" |
| RD-14/ ERD-14 | 297 | 57 | 354 | 3"/ 3" |
| RD-15/ ERD-15 | 298 ** | 184 ** | 482 | 3"/ 3" |
| RD-16/ ERD-16 | 298 ** | 223 ** | 521 | 3"/ 3" |
| RD-17/ ERD-17 | 96 | 77 | 173 | 3"/ 3" |
| RD-18/ ERD-18 | 119 ** | 179 ** | 298 | 3"/ 3" |
| RD-19/ ERD-19 | 432 | 22 | 454 | 3"/ 3" |
| RD-20/ ERD-20 | 213 | 13 | 226 | 3"/ 3" |

* PRIMARY ROOF DRAIN SIZING PER 2018 NCSBC– PLBG, CH. 11, SIZES BASED ON RAINFALL RATE FOR 5"/HR, 2% SLOPE. SECONDARY (EMERGENCY) ROOF DRAIN SIZING BASED ON 8"/HR. ROOF DRAIN UNITS/PIPING DESIGN SIZE MAY BE LARGER THAN (MIN.) SIZE SHOWN. SEE ROOF DRAIN PLAN AND SPECIFICATIONS. ANY/ALL COMBINATION ROOF DRAIN UNITS SHALL HAVE THE MINIMUM OUTLET SIZE (FOR BOTH RD AND ERD) AS LISTED FOR ERD PER THIS SCHEDULE.

** INCLUDES ADDITIONAL TOTAL FROM WALKWAY ROOF AREA.

### KEY NOTES FOR SHEET P-3.2

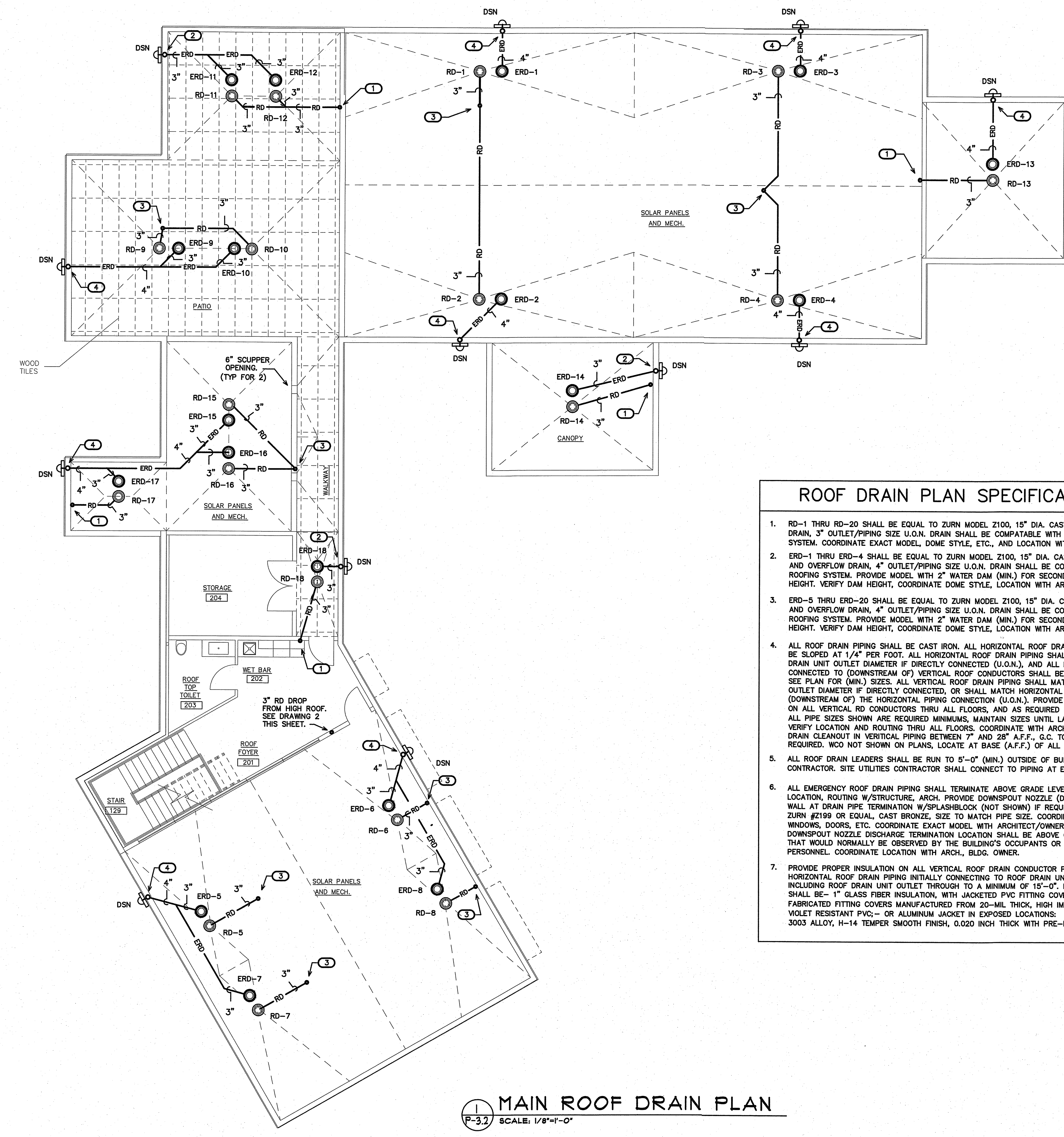
1. 3" RD PIPING DROP THRU STRUCTURE TO RUN BELOW GRADE OR AS REQUIRED. VERIFY LOCATION/ROUTING THRU THE BUILDING. SEE CONTINUATION ON SHEET P-2.
2. 3" ERD PIPING DROP THRU STRUCTURE TO DOWNSPOUT NOZZLE (DSN). VERIFY LOCATION, ROUTING THRU THE BUILDING. COORDINATE TERMINATION LOCATION WITH OWNER, ARCH., G.C., AND FOR TO PROVIDE WCO AT BASE OF VERITICAL PIPING BETWEEN 7" AND 28" A.F.F., G.C. TO PROVIDE ACCESS PANEL IF REQUIRED.
3. 4" RD PIPING DROP THRU STRUCTURE TO RUN BELOW GRADE OR AS REQUIRED. VERIFY LOCATION/ROUTING THRU THE BUILDING. SEE CONTINUATION ON SHEET P-2.
4. 4" ERD PIPING DROP THRU STRUCTURE TO DOWNSPOUT NOZZLE (DSN). VERIFY LOCATION, ROUTING THRU THE BUILDING. COORDINATE TERMINATION LOCATION WITH OWNER, ARCH., G.C., AND FOR TO PROVIDE WCO AT BASE OF VERITICAL PIPING BETWEEN 7" AND 28" A.F.F., G.C. TO PROVIDE ACCESS PANEL IF REQUIRED.

NOTE:
ALL HORIZONTAL/VERTICAL ROOF DRAIN CONDUCTORS SHALL BE CAST IRON AND PROPERLY INSULATED THRU ALL FLOORS UNLESS OTHERWISE REQUIRED, COORDINATE PIPING MATERIAL W/OWNER AND ARCHITECT. PROVIDE INSULATION ON ALL EXPOSED PIPING PER CODE AND BLDG. STANDARD. ALL PIPING OFFSETS MAY NOT BE SHOWN, VERIFY ROUTING OF ALL PIPING THRU ALL FLOORS. COORDINATE W/STRUCTURE, ALL TRADES, ETC. COORDINATE ALL EXPOSED PIPING, CLEANOUTS (LOCATIONS, ROUTING, LABELING/INSULATION/PAINTING, ETC.), WITH ARCHITHECT, OWNER, GC.
(TYP)

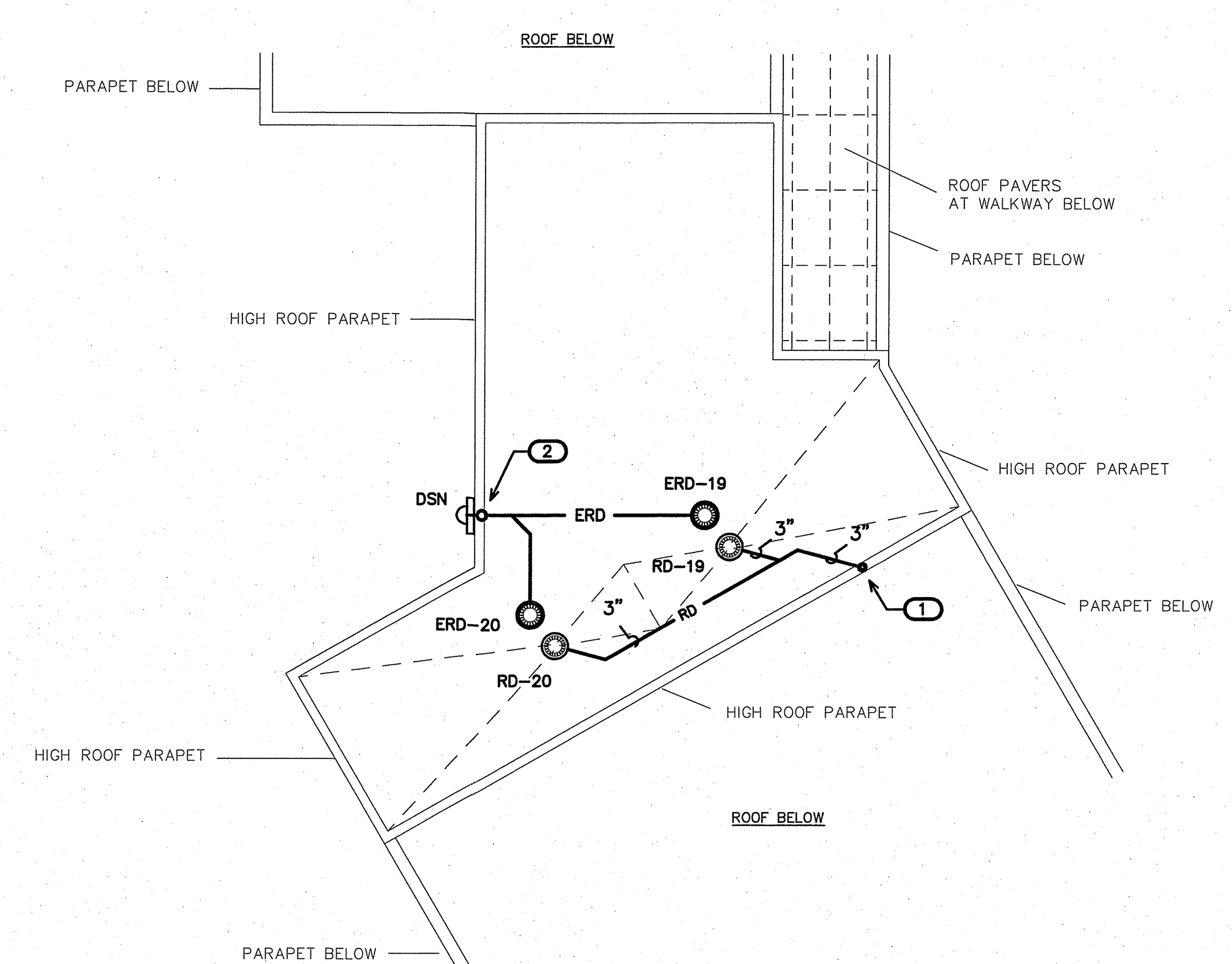
NOTE:
SEE ARCH. DRAWINGS FOR VERIFICATION OF ROOF PLAN, SLOPES, ETC. COORDINATE WITH G.C., ALL TRADES. ALL ROOF FEATURES, EQUIPMENT, ETC., MAY NOT BE SHOWN.

### ROOF DRAIN LEGEND

| | |
|---|---|
| RD | PRIMARY ROOF DRAIN PIPING (RD) |
| ERD | EMERGENCY ROOF DRAIN PIPING (ERD) |
| DSN | DOWNSPOUT NOZZLE (DSN) |
| RD–x | ROOF DRAIN (SEE PLAN/SPECS FOR 'x') |
| ERD–x | EMERGENCY ROOF DRAIN (SEE PLAN/SPECS FOR 'x') |




1 P-3.2 MAIN ROOF DRAIN PLAN
SCALE: 1/8"=1'-0"




2 P-3.2 HIGH ROOF DRAIN PLAN
SCALE: 1/8"=1'-0"

### ROOF DRAIN PLAN SPECIFICATIONS

1. RD-1 THRU RD-20 SHALL BE EQUAL TO ZURN MODEL Z100, 15" DIA. CAST IRON ROOF DRAIN, 3" OUTLET/PIPING SIZE U.O.N. DRAIN SHALL BE COMPATABLE WITH THE ROOFING SYSTEM. COORDINATE EXACT MODEL, DOME STYLE, ETC., AND LOCATION WITH ARCHITECT/G.C.
2. ERD-1 THRU ERD-4 SHALL BE EQUAL TO ZURN MODEL Z100, 15" DIA. CAST IRON ROOF AND OVERFLOW DRAIN, 4" OUTLET/PIPING SIZE U.O.N. DRAIN SHALL BE COMPATABLE WITH ROOFING SYSTEM. PROVIDE MODEL WITH 2" WATER DAM (MIN.) FOR SECONDARY DRAINAGE HEIGHT. VERIFY DAM HEIGHT, COORDINATE DOME STYLE, LOCATION WITH ARCHITECT/G.C.
3. ERD-5 THRU ERD-20 SHALL BE EQUAL TO ZURN MODEL Z100, 15" DIA. CAST IRON ROOF AND OVERFLOW DRAIN, 4" OUTLET/PIPING SIZE U.O.N. DRAIN SHALL BE COMPATABLE WITH ROOFING SYSTEM. PROVIDE MODEL WITH 2" WATER DAM (MIN.) FOR SECONDARY DRAINAGE HEIGHT. VERIFY DAM HEIGHT, COORDINATE DOME STYLE, LOCATION WITH ARCHITECT/G.C.
4. ALL ROOF DRAIN PIPING SHALL BE CAST IRON. ALL HORIZONTAL ROOF DRAIN PIPING SHALL BE SLOPED AT 1/4" PER FOOT. ALL HORIZONTAL ROOF DRAIN PIPING SHALL MATCH ROOF DRAIN UNIT OUTLET DIAMETER IF DIRECTLY CONNECTED (U.O.N.), AND ALL HORIZONTAL PIPING CONNECTED TO (DOWNSTREAM OF) VERTICAL ROOF CONDUCTORS SHALL BE SIZED AS NOTED. SEE PLAN FOR (MIN.) SIZES. ALL VERTICAL ROOF DRAIN PIPING SHALL MATCH ROOF DRAIN UNIT OUTLET DIAMETER IF DIRECTLY CONNECTED, OR SHALL MATCH HORIZONTAL RD PIPING AFTER (DOWNSTREAM OF) THE HORIZONTAL PIPING CONNECTION (U.O.N.). PROVIDE PROPER INSULATION ON ALL VERTICAL RD CONDUCTORS THRU ALL FLOORS, AND AS REQUIRED PER NOTE #4. ALL PIPE SIZES SHOWN ARE REQUIRED MINIMUMS, MAINTAIN SIZES UNTIL LARGER SIZE REACHED. VERIFY LOCATION AND ROUTING THRU ALL FLOORS. COORDINATE WITH ARCH/GC, TO PROVIDE ROOF DRAIN CLEANOUT IN VERITICAL PIPING BETWEEN 7" AND 28" A.F.F., G.C. TO PROVIDE WCO AS REQUIRED. WCO NOT SHOWN ON PLANS, LOCATE AT BASE (A.F.F.) OF ALL RD STACKS.
5. ALL ROOF DRAIN LEADERS SHALL BE RUN TO 5'-0" (MIN.) OUTSIDE OF BUILDING BY PLUMBING CONTRACTOR. SITE UTILITIES CONTRACTOR SHALL CONNECT TO PIPING AT END LOCATION.
6. ALL EMERGENCY ROOF DRAIN PIPING SHALL TERMINATE ABOVE GRADE LEVEL. COORDINATE EXACT LOCATION, ROUTING W/STRUCTURE, ARCH. PROVIDE DOWNSPOUT NOZZLE (DSN) TIGHT AGAINST WALL AT DRAIN PIPE TERMINATION W/SPLASHBLOCK (NOT SHOWN) IF REQUIRED. NOZZLE SHALL BE ZURN #Z199 OR EQUAL, CAST BRONZE, SIZE TO MATCH PIPE SIZE. COORDINATE LOCATION WITH WINDOWS, DOORS, ETC. COORDINATE EXACT MODEL WITH ARCHITECT/OWNER. ERD TERMINATION/ DOWNSPOUT NOZZLE DISCHARGE TERMINATION LOCATION SHALL BE ABOVE GRADE IN A LOCATION THAT WOULD NORMALLY BE OBSERVED BY THE BUILDING'S OCCUPANTS OR MAINTENANCE PERSONNEL. COORDINATE LOCATION WITH ARCH., BLDG. OWNER.
7. PROVIDE PROPER INSULATION ON ALL VERTICAL ROOF DRAIN CONDUCTOR PIPING, AND HORIZONTAL ROOF DRAIN PIPING INITIALLY CONNECTING TO ROOF DRAIN UNIT FROM AND INCLUDING ROOF DRAIN UNIT OUTLET THROUGH TO A MINIMUM OF 15'-0". INSULATION SHALL BE– 1" GLASS FIBER INSULATION, WITH JACKETED PVC FITTING COVERS: FACTORY– FABRICATED FITTING COVERS MANUFACTURED FROM 20-MIL THICK, HIGH IMPACT, ULTRA– VIOLET RESISTANT PVC;– OR ALUMINUM JACKET IN EXPOSED LOCATIONS: ASTM B 209, 3003 ALLOY, H-14 TEMPER SMOOTH FINISH, 0.020 INCH THICK WITH PRE-FORMED ELBOWS.


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE

ROOF DRAIN PLAN

21033

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SHEET NO.
P-3.2

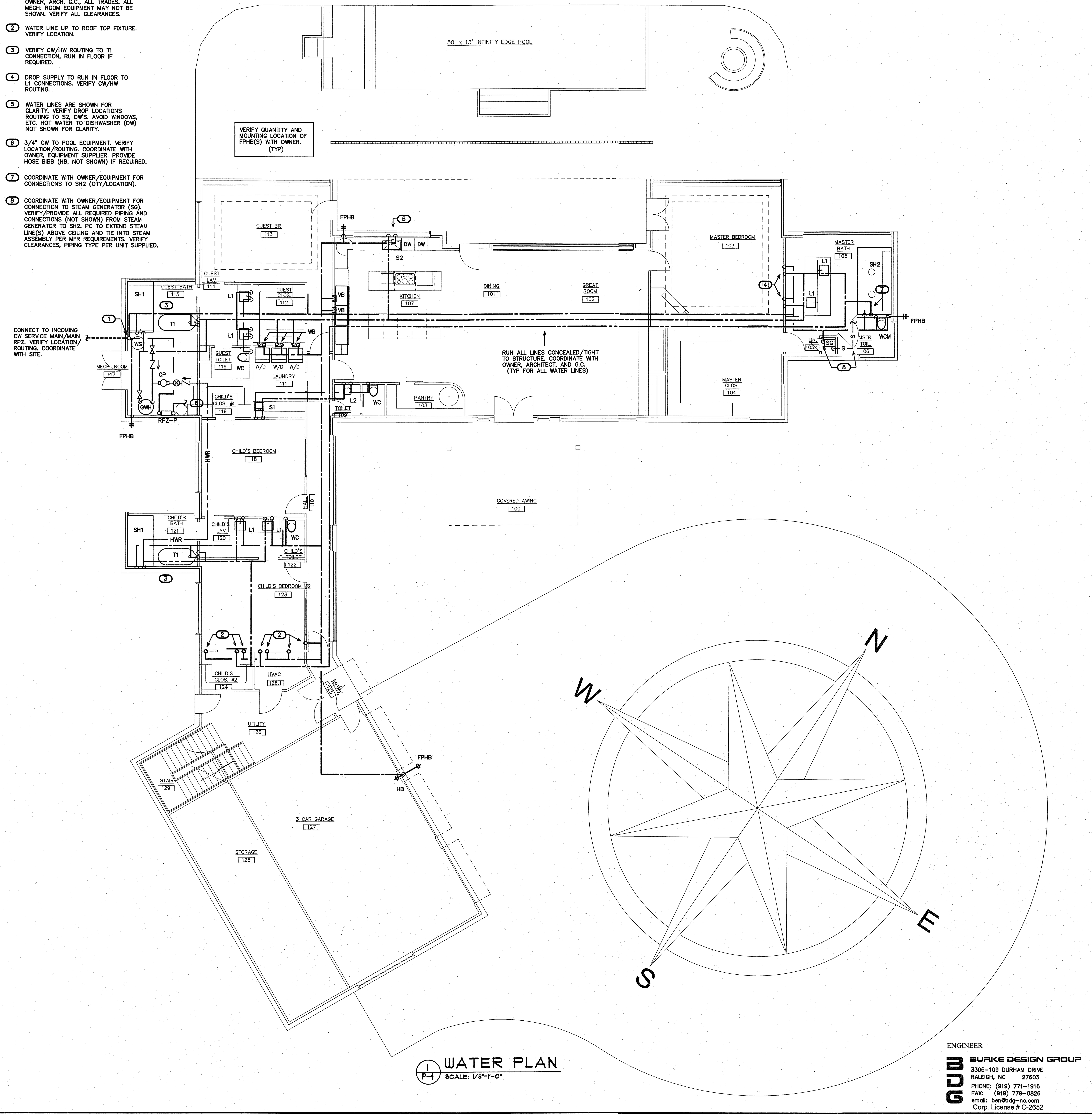
KEY NOTES FOR SHEET P4

1. RISE TO MAIN SHUT OFF VALVE AFF. RISE TO RUN ABOVE CEILING. ROUTE INCOMING WATER MAIN THRU WATER SOFTENER SYSTEM (WS) AS REQUIRED. LINES TO WS NOT SHOWN FOR CLARITY. VERIFY LOCATION, COORDINATE WITH OWNER, ARCH. G.C., ALL TRADES. ALL MECH. ROOM EQUIPMENT MAY NOT BE SHOWN. VERIFY ALL CLEARANCES.
2. WATER LINE UP TO ROOF TOP FIXTURE. VERIFY LOCATION.
3. VERIFY CW/HW ROUTING TO T1 CONNECTION, RUN IN FLOOR IF REQUIRED.
4. DROP SUPPLY TO RUN IN FLOOR TO L1 CONNECTIONS. VERIFY CW/HW ROUTING.
5. WATER LINES ARE SHOWN FOR CLARITY. VERIFY DROP LOCATIONS ROUTING TO S2, DW'S. AVOID WINDOWS, ETC. HOT WATER TO DISHWASHER (DW) NOT SHOWN FOR CLARITY.
6. 3/4" CW TO POOL EQUIPMENT. VERIFY LOCATION/ROUTING. COORDINATE WITH OWNER, EQUIPMENT SUPPLIER. PROVIDE HOSE BIBB (HB, NOT SHOWN) IF REQUIRED.
7. COORDINATE WITH OWNER/EQUIPMENT FOR CONNECTIONS TO SH2 (QTY/LOCATION).
8. COORDINATE WITH OWNER/EQUIPMENT FOR CONNECTION TO STEAM GENERATOR (SG). VERIFY/PROVIDE ALL REQUIRED PIPING AND CONNECTIONS (NOT SHOWN) FROM STEAM GENERATOR TO SH2. PC TO EXTEND STEAM LINE(S) ABOVE CEILING AND TIE INTO STEAM ASSEMBLY PER MFR REQUIREMENTS. VERIFY CLEARANCES, PIPING TYPE PER UNIT SUPPLIED.

NOTE:
COORDINATE WITH DWV PLAN, PROVIDE TRAP PRIMERS (NOT SHOWN) FOR FLOOR DRAINS IN AREAS NOT SERVED BY HOSE BIBBS.

NOTE:
PROPERLY PROTECT/INSULATE WATER PIPING IN UNCONDITIONED AREAS. VERIFY ROUTING OF ALL WATER LINES W/ARCH., OWNER. ALL LINES, VALVES, CP, ETC., SHOWN FOR CLARITY, VERIFY LOCATIONS OF ALL COMPONENTS.
(TYP)

NOTE:
VERIFY QUANTITY AND MOUNTING LOCATION OF HB/FPHB W/OWNER, ARCH.
(TYP)




WATER PLAN
1/P-4 SCALE: 1/8"=1'-0"


Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

WATER PLAN

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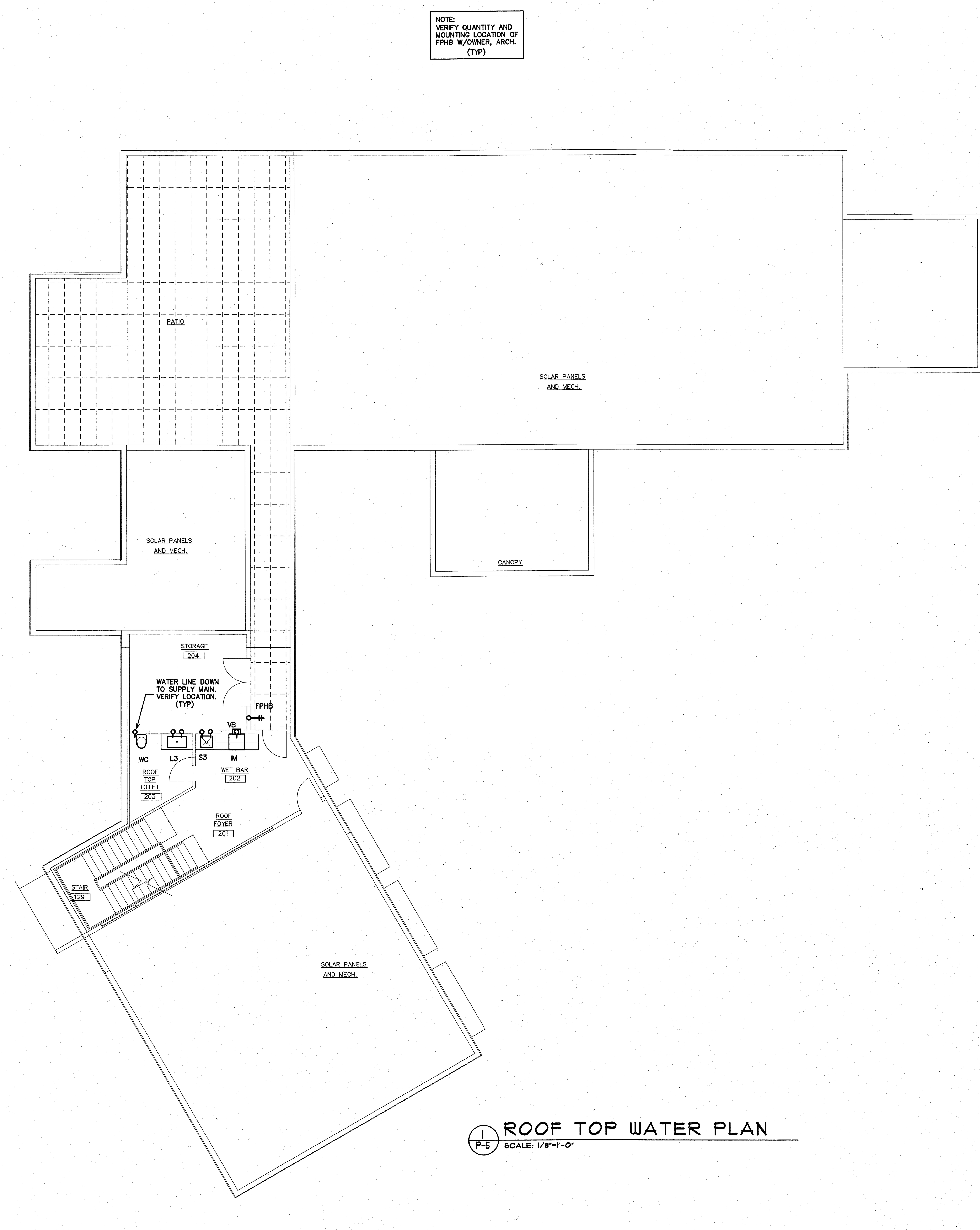
ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652


SHEET NO.
P-4




1/P-5 ROOF TOP WATER PLAN
SCALE: 1/8"=1'-0"

ENGINEER

**BURKE DESIGN GROUP**
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C-2652

**Coastal** Architecture PLLC

Architectural
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AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext.,
Suite C
Morehead City, NC
28557
www.CoastalArchitecture.net

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ROOF TOP WATER PLAN

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SHEET NO.
P-5

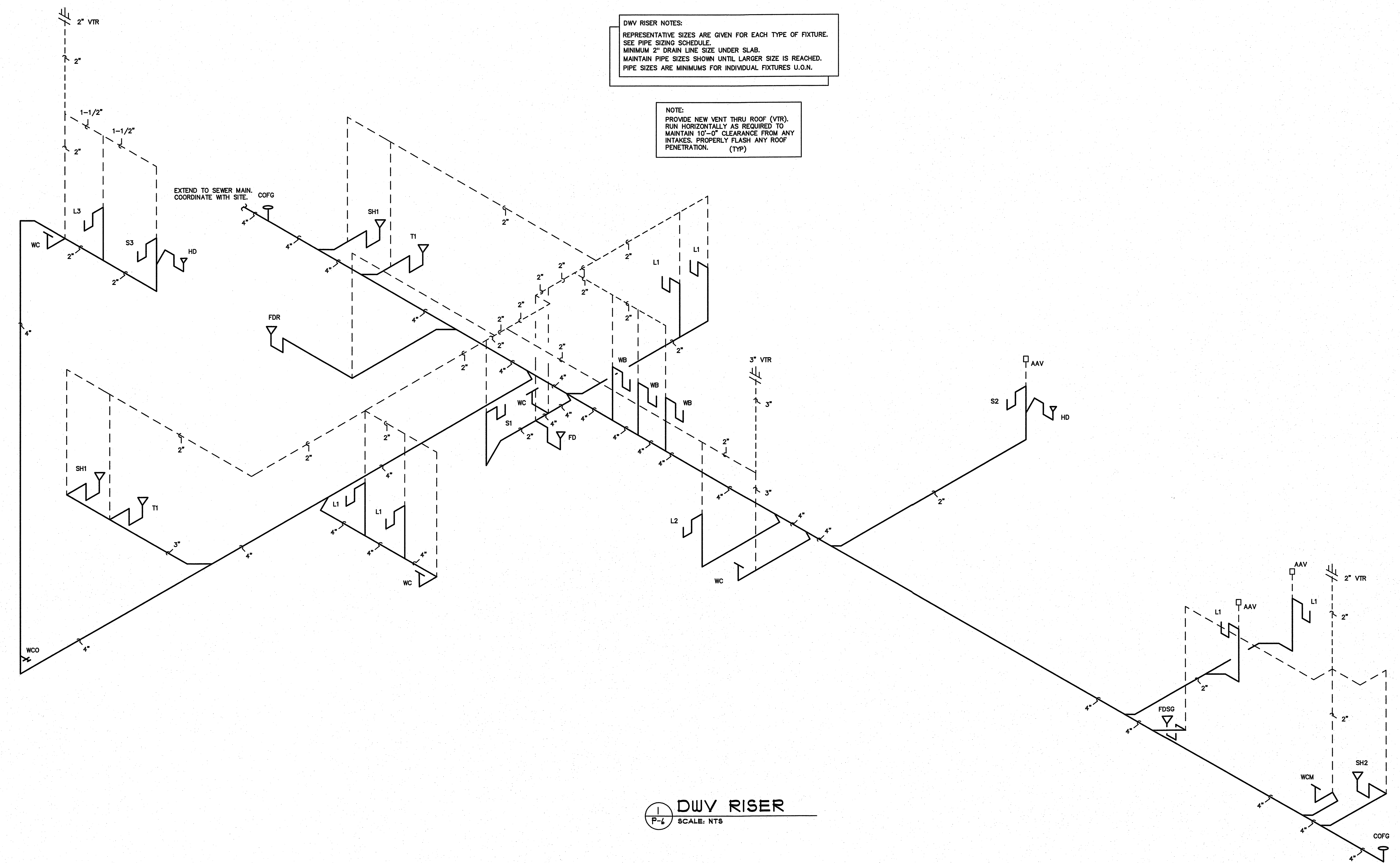
( VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH–IN )

| PIPE SIZING SCHEDULE | | |
|---|---|---|
| FIXTURE TYPE | DRAIN | VENT |
| (FD) FLOOR DRAIN | 3" | 1 1/2" |
| (FDR/FDSG) FLOOR DRAIN | 2" | 1 1/4" |
| (HD) HUB DRAIN | 1 1/2" | 1 1/4" |
| (L) LAVATORY | 1 1/2" | 1 1/4" |
| (SH) SHOWER | 2" | 1 1/4" |
| (S) SINK | 1 1/2" | 1 1/4" |
| (T) TUB | 2" | 1 1/4" |
| (WB) WASHING MACHINE BOX | 2" | 1 1/2" |
| (WC/WCM) FLUSH TANK WATER CLOSET | 3" | 1 1/2" |

DWV RISER NOTES:

REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
PROVIDE NEW VENT THRU ROOF (VTR). RUN HORIZONTALLY AS REQUIRED TO MAINTAIN 10'–0" CLEARANCE FROM ANY INTAKES. PROPERLY FLASH ANY ROOF PENETRATION. (TYP)




1 / P-6 DWV RISER
SCALE: NTS

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AIA

Member of the American Institute of Architects


Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext.,
Suite C
Morehead City, NC
28557
www.CoastalArchitecture.net


# THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

6/20/23

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

DWV PLAN

21033

ISSUED: 6–20–2023
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CKD BY: BEB
REVISIONS

ENGINEER


BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg-nc.com
Corp. License # C-2652


SHEET NO.
P-6

( VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH–IN )

| PIPE SIZING SCHEDULE | | |
|---|---|---|
| FIXTURE TYPE | CW | HW |
| (FPHB) FREEZE PROOF HOSE BIBB | 1/2" | – |
| (HB) HOSE BIBB | 1/2" | – |
| (L) LAVATORY | 1/2" | 1/2" |
| (SH) SHOWER | 1/2" | 1/2" |
| (S) SINK | 1/2" | 1/2" |
| (SG) STEAM GENERATOR | 1/2"* | – |
| (WB) WASHING MACHINE BOX | 1/2"* | 1/2"* |
| (WC/WCM) FLUSH TANK WATER CLOSET | 1/2" | – |
| (VB) VALVE BOX | 1/2"* | – |

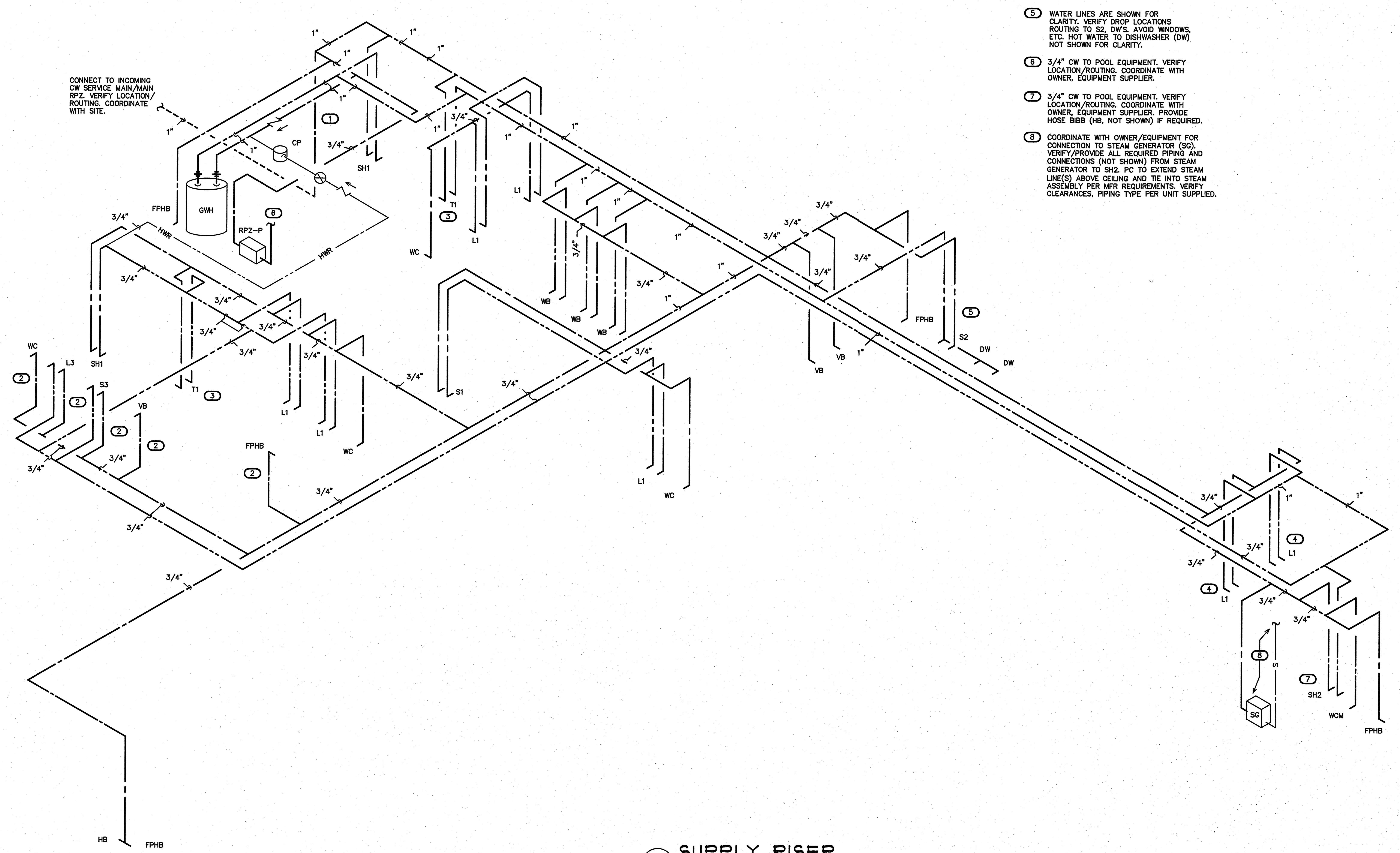
* PROVIDE BACKFLOW PREVENTER PER NCSBC–PLUMBING SECT. 608.3, ASSE 1024 (WATTS SERIES 7 OR EQUAL) OR ASSE 1022 (WATTS SERIES SD–3 OR EQUAL) WHERE REQUIRED IF NOT AN INTEGRAL PART OF THE EQUIPMENT.

WATER RISER NOTES:

REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE. SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

KEY NOTES FOR SHEET P7

1. RISE TO MAIN SHUT OFF VALVE AFF. RISE TO RUN ABOVE CEILING. ROUTE INCOMING WATER MAIN THRU WATER SOFTENER SYSTEM (WS) AS REQUIRED. LINES TO WS NOT SHOWN FOR CLARITY.
2. WATER LINE UP TO ROOF TOP FIXTURE. VERIFY LOCATION.
3. VERIFY CW/HW ROUTING TO T1 CONNECTION, RUN IN FLOOR IF REQUIRED.
4. DROP SUPPLY TO RUN IN FLOOR TO L1 CONNECTIONS. VERIFY CW/HW ROUTING.
5. WATER LINES ARE SHOWN FOR CLARITY. VERIFY DROP LOCATIONS ROUTING TO S2, DW'S. AVOID WINDOWS, ETC. HOT WATER TO DISHWASHER (DW) NOT SHOWN FOR CLARITY.
6. 3/4" CW TO POOL EQUIPMENT. VERIFY LOCATION/ROUTING. COORDINATE WITH OWNER, EQUIPMENT SUPPLIER.
7. 3/4" CW TO POOL EQUIPMENT. VERIFY LOCATION/ROUTING. COORDINATE WITH OWNER, EQUIPMENT SUPPLIER. PROVIDE HOSE BIBB (HB, NOT SHOWN) IF REQUIRED.
8. COORDINATE WITH OWNER/EQUIPMENT FOR CONNECTION TO STEAM GENERATOR (SG). VERIFY/PROVIDE ALL REQUIRED PIPING AND CONNECTIONS (NOT SHOWN) FROM STEAM GENERATOR TO SH2. PC TO EXTEND STEAM LINE(S) ABOVE CEILING AND TIE INTO STEAM ASSEMBLY PER MFR REQUIREMENTS. VERIFY CLEARANCES, PIPING TYPE PER UNIT SUPPLIED.




1 P-7 SUPPLY RISER
SCALE: NTS


Coastal Architecture PLLC
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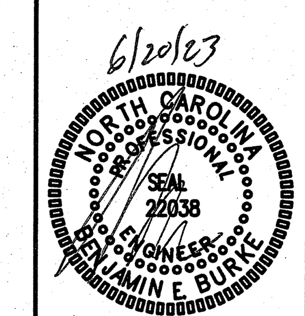
Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


# THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA




SUPPLY RISER

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ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C-2652

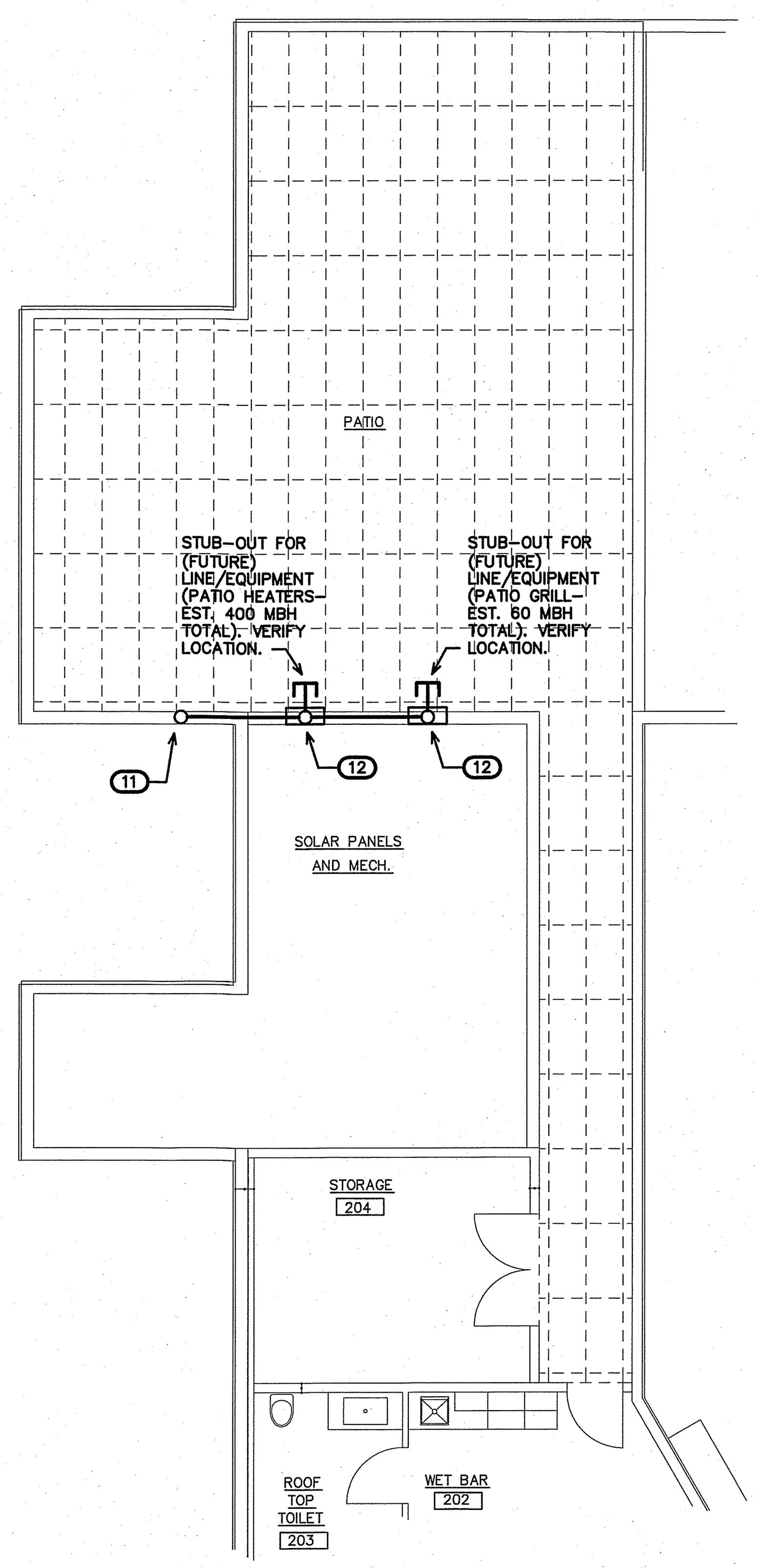

SHEET NO.
P-7

NOTE:
VERIFY GAS TANK LOCATION PRIOR TO BID. VERIFY EQUIPMENT LOADS/TOTAL DEVELOPED LINE LENGTHS (TDL). NOTIFY ENGINEER OF ANY DISCREPANCIES FOR POSSIBLE REVIEW AND/OR RE-SIZING OF GAS LINES. SOME LP EQUIPMENT INPUT REQURIEMENTS MAY BE ESTIMATED- VERIFY ALL UNIT GAS LOADS.

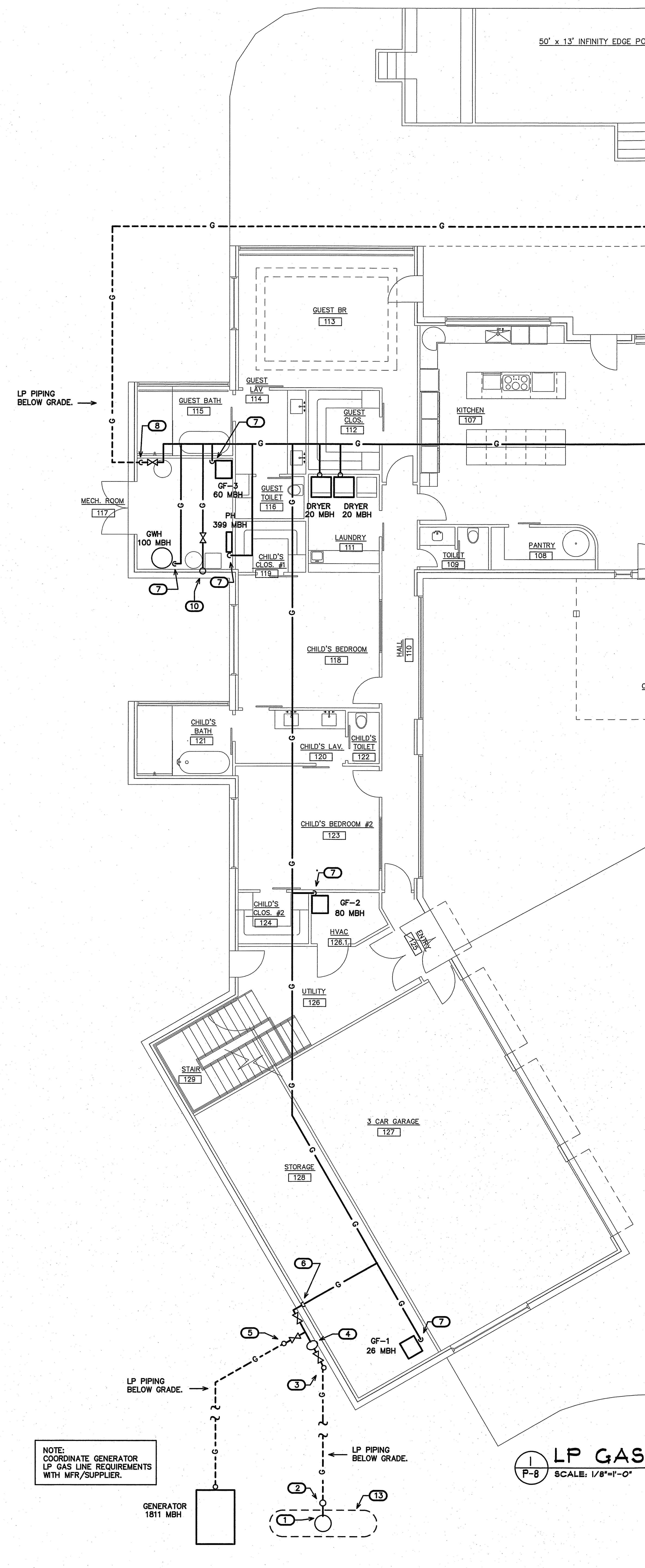
NOTE:
GAS LINES SHOWN FOR CLARITY. VERIFY ROUTING OF ALL GAS LINES TO EQUIPMENT. PROVIDE PROPER PIPING, CORROSION PROTECTION, ETC. FOR BELOW GRADES LINES AND PAINT ANY EXPOSED LINES PER CODE AND BUILDING STANDARD.
(TYP)

NOTE:
COORDINATE W/G.C FOR PROVIDING GUARD BOLLARDS FOR TANK AND 2ND STAGE REGULATOR/SERVICE LINE ON EXTERIOR OF BUILDING.

NOTE:
ALL LP GAS LINES MAY NOT BE UNNECESSARILY EXPOSED. EXPOSED LINES SHALL BE INSTALLED SO THEY DO NOT OBSTRUCT OR PREVENT CLEANING OF THE FLOORS, WALLS, OR CEILINGS. EXPOSED HORIZONTAL GAS LINES MAY NOT BE INSTALLED ON THE FLOOR. PROVIDE ANY GAS LINE STAND-OFFS WHERE/AS REQUIRED PER CODE. RUN GAS LINES TIGHT AND/OR CONCEALED UNDER ALL EQUIPMENT, OR TIGHT TO/IN WALLS AS REQUIRED. ALL SHUT-OFF VALVES, HOOD FIRE SUPPRESSION VALVES, AND REGULATORS MUST BE ACCESSSIBLE. PAINT ANY INTERIOR OR EXTERIOR EXPOSED GAS LINES PER CODE AND BUILDING STANDARD. PROVIDE PROPER STAND-OFFS/SUPPORTS FOR GAS LINES ON ROOF/EXTERIOR WALLS, BELOW ROOF, ETC. PROPERLY SEAL ROOF/EXT. WALL PENETRATIONS SO AS NOT TO VOID ANY WARRANTIES. PROVIDE PROPER CARBON MONOXIDE DETECTOR(S) WHERE/AS REQUIRED. PROVIDE PROPER LINE SHUT-OFF VALVES. VALVES, REGULATORS, ETC. MAY NOT BE SHOWN.

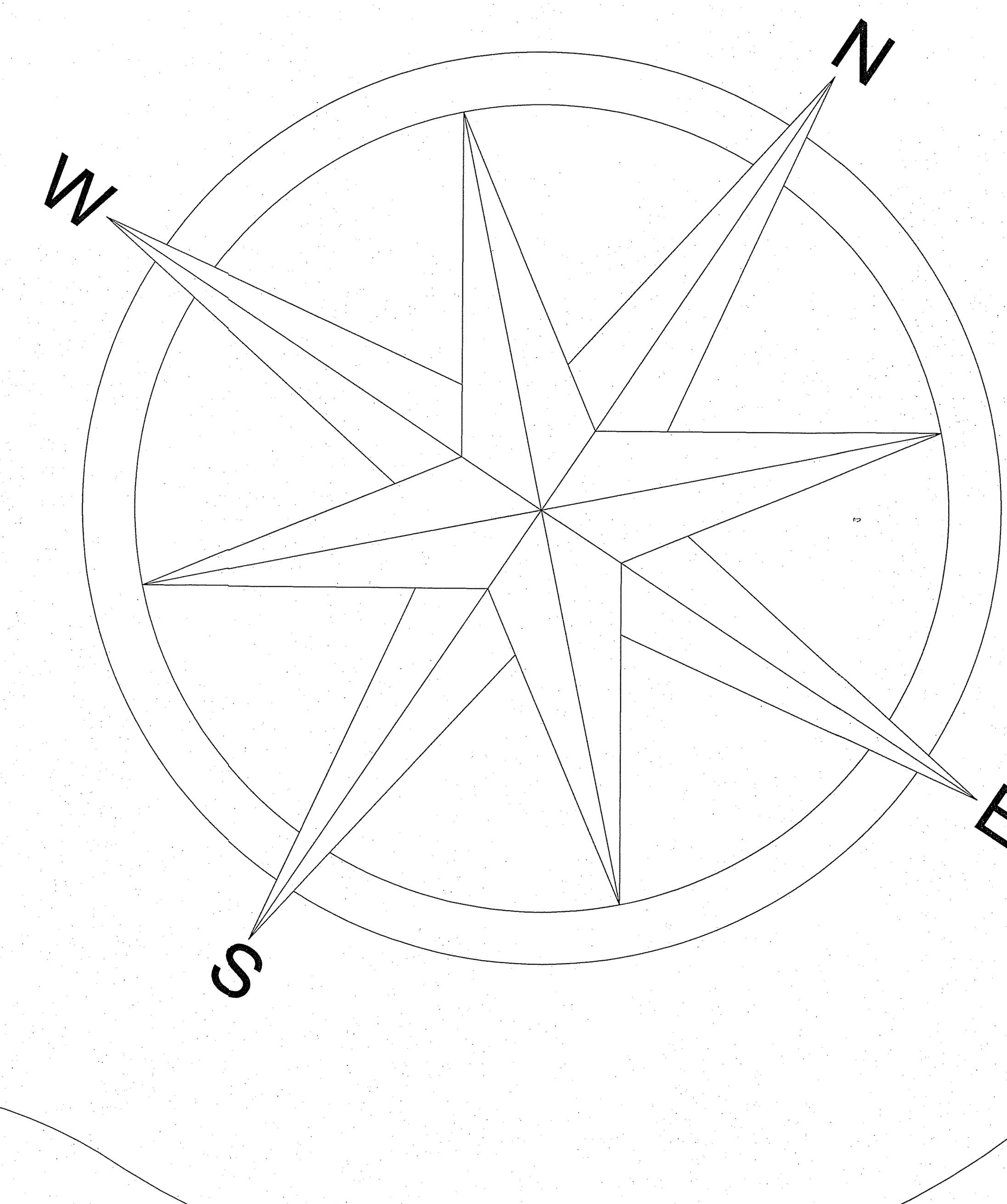



2 P-8 ROOF TOP LP GAS PLAN
SCALE: 1/8"=1'-0"




NOTE:
COORDINATE GENERATOR LP GAS LINE REQUIREMENTS WITH MFR/SUPPLIER.

1 P-8 LP GAS PLAN
SCALE: 1/8"=1'-0"




KEY NOTES FOR SHEET P-8

1. CONNECT TO FIRST STAGE GAS REGULATOR ON LP GAS TANK. TANK (BY OTHERS) TO BE BELOW GRADE, VERIFY TANK LOCATION. VERIFY CONNECTION LOCATION.
2. DROP (IF ABOVE GRADE CONNECTION) AND RUN PIPING BELOW GRADE FROM LP GAS TANK. COORDINATE W/OWNER FOR PATH AND DISTANCE.
3. RISE TO SECOND STAGE REGULATOR ABOVE GRADE. SHUT-OFF VALVE BEFORE PIPE ENTERS BUILDING. VERIFY LOCATION.
4. SECOND STAGE GAS REGULATOR. VERIFY BTUH CAPACITY, 10 PSI TO 11"W.C. PROVIDE GAS SHUT-OFF VALVE BEFORE PIPE ENTERS BUILDING.
5. DROP TO RUN BELOW GRADE TO GENERATOR. VERIFY LOCATION/ROUTING.
6. RISE TO RUN ABOVE CELING. VERIFY LOCATION/ROUTING.
7. DROP TO CONNECT TO GAS FURNACE (GF), POOL HEATER (PF), GAS WATER HEATER (GWH), OR FIREPLACE (FP). VERIFY LOCATION, COORDINATE W/UNIT.
8. DROP TO RUN BELOW GRADE TO FIRE PIT. VERIFY LOCATION/ROUTING/CONNECTION LOCATION. COORDINATE WITH UNIT.
9. CONNECT TO HVAC GAS FURNACE (GF) ABOVE CEILING. VERIFY LOCATION, COORDINATE WITH UNIT.
10. RISE THRU STRUCTURE TO ROOF PATIO. VERIFY LOCATION, COORDINATE WITH OWNER, ARCHITECT, G.C. SEE KEY NOTE #11 AND DRAWING 2 THIS SHEET FOR CONTINUATION.
11. LP GAS LINE FROM BELOW UP TO RUN IN WALL OR AS REQURIED TO STUB-OUTS.
12. PROVIDE PROPER TERMINATION STUB-OUT W//SHUT-OFF VALVE IN WALL BOX W/LOCKABLE ACCESS DOOR A.F.F./IN PATIO WALL FOR FUTURE EQUIPMENT/LINE CONNECTION AS NOTED. LOCATION. PROVIDE QUICK CONNECT FITTING OR AS REQUIRED- COORDINATE WITH OWNER, ARCHITECT, G.C. LOCATE ACCESS ON EXTERIOR (PATIO) SIDE OF WALL.
13. LP TANK (BY OTHERS). VERIFY LOCATION. MAINTAIN PROPER CLEARANCES PER NFPA 58 PER SIZE OF TANK- MIN. DISTANCE FROM BUILDING/IGNITION SOURCE, ETC.


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
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AIA
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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23

LP GAS PLAN

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SHEET NO.
P-8

KEY NOTES FOR SHEET P-9

1. CONNECT TO FIRST STAGE GAS REGULATOR ON LP GAS TANK. TANK (BY OTHERS) TO BE BELOW GRADE, VERIFY TANK LOCATION. VERIFY CONNECTION LOCATION.
2. DROP (IF ABOVE GRADE CONNECTION) AND RUN PIPING BELOW GRADE FROM LP GAS TANK. COORDINATE W/OWNER FOR PATH AND DISTANCE.
3. RISE TO SECOND STAGE REGULATOR ABOVE GRADE. SHUT-OFF VALVE BEFORE PIPE ENTERS BUILDING. VERIFY LOCATION.
4. SECOND STAGE GAS REGULATOR. VERIFY BTUH CAPACITY, 10 PSI TO 11"W.C. PROVIDE GAS SHUT-OFF VALVE BEFORE PIPE ENTERS BUILDING.
5. DROP TO RUN BELOW GRADE TO GENERATOR. VERIFY LOCATION/ROUTING.
6. RISE TO RUN ABOVE CELING. VERIFY LOCATION/ROUTING.
7. DROP TO CONNECT TO GAS FURNACE (GF), POOL HEATER (PF), GAS WATER HEATER (GWH), OR FIREPLACE (FP). VERIFY LOCATION, COORDINATE W/UNIT.
8. DROP TO RUN BELOW GRADE TO FIRE PIT. VERIFY LOCATION/ROUTING/CONNECTION LOCATION. COORDINATE WITH UNIT.
9. CONNECT TO HVAC GAS FURNACE (GF) ABOVE CEILING. VERIFY LOCATION, COORDINATE WITH UNIT.
10. RISE THRU STRUCTURE TO ROOF PATIO. VERIFY LOCATION, COORDINATE WITH OWNER, ARCHITECT, G.C. SEE KEY NOTE #11 AND DRAWING 2 THIS SHEET FOR CONTINUATION.
11. LP GAS LINE FROM BELOW UP TO RUN IN WALL OR AS REQURIED TO STUB-OUTS.
12. PROVIDE PROPER TERMINATION STUB-OUT W//SHUT-OFF VALVE IN WALL BOX W/LOCKABLE ACCESS DOOR A.F.F./IN PATIO WALL FOR FUTURE EQUIPMENT/LINE CONNECTION AS NOTED. LOCATION. PROVIDE QUICK CONNECT FITTING OR AS REQUIRED- COORDINATE WITH OWNER, ARCHITECT, G.C. LOCATE ACCESS ON EXTERIOR (PATIO) SIDE OF WALL.
13. LP TANK (BY OTHERS). VERIFY LOCATION. MAINTAIN PROPER CLEARANCES PER NFPA 58 PER SIZE OF TANK- MIN. DISTANCE FROM BUILDING/IGNITION SOURCE, ETC.

2018 NCSBC, FUEL GAS CODE- TABLE 402.4(25)

NOTE:
1ST STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 10 PSI AND A PRESSURE DROP OF 1 PSI AT 100 FEET IN TOTAL LENGTH. PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER. TOTAL CONNECTED LOAD (OVERALL W/EST. FUTURE LOAD) = 3,376,000 BTUH

2018 NCSBC, FUEL GAS CODE- TABLE 402.4(28)

NOTE:
2ND STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 11" WC AND A PRESSURE DROP OF 1/2" WC AT 60 FEET IN TOTAL LENGTH. PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER. TOTAL CONNECTED LOAD (LINE TO GENERATOR ONLY) = 1,811,000 BTUH

2018 NCSBC, FUEL GAS CODE- TABLE 402.4(28)

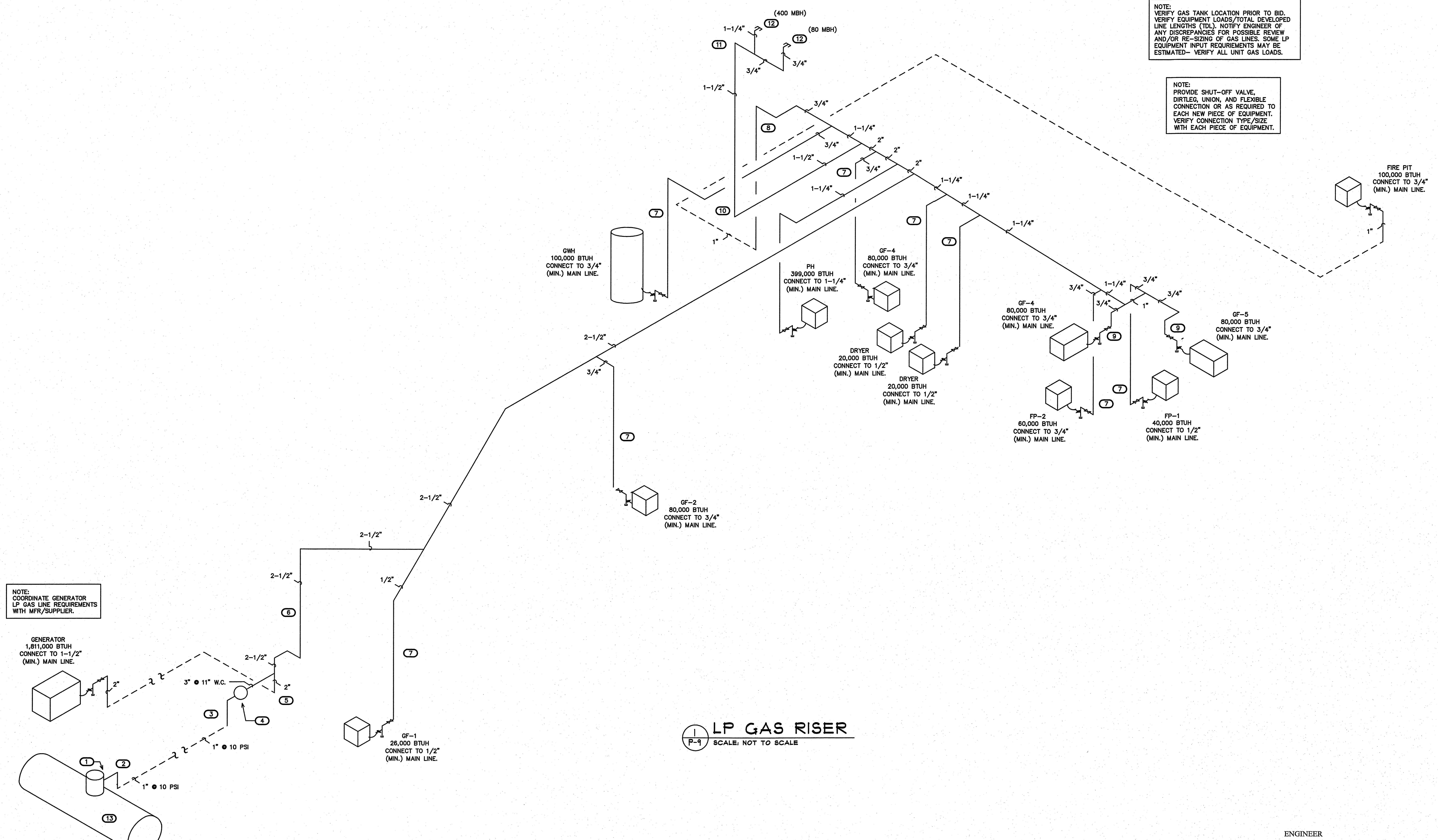
NOTE:
2ND STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 11" WC AND A PRESSURE DROP OF 1/2" WC AT 300 FEET IN TOTAL LENGTH. PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER. TOTAL CONNECTED LOAD (HOUSE LINE W/EST. FUTURE LOAD ONLY) = 1,165,000 BTUH

NOTE:
NEW GAS PIPING SHALL BE BLACK STEEL, SCHEDULE 40 WITH SCREWED (LESS THAN 2-1/2" DIA. PIPING) OR WELDED (GREATER THAN OR EQUAL TO 2-1/2" DIA. PIPING) FITTINGS. TEST, LABEL AND INSTALL ALL PIPING PER THE NCSBC.

NOTE:
VERIFY GAS TANK LOCATION PRIOR TO BID. VERIFY EQUIPMENT LOADS/TOTAL DEVELOPED LINE LENGTHS (TDL). NOTIFY ENGINEER OF ANY DISCREPANCIES FOR POSSIBLE REVIEW AND/OR RE-SIZING OF GAS LINES. SOME LP EQUIPMENT INPUT REQURIEMENTS MAY BE ESTIMATED- VERIFY ALL UNIT GAS LOADS.

NOTE:
PROVIDE SHUT-OFF VALVE, DIRTLEG, UNION, AND FLEXIBLE CONNECTION OR AS REQUIRED TO EACH NEW PIECE OF EQUIPMENT. VERIFY CONNECTION TYPE/SIZE WITH EACH PIECE OF EQUIPMENT.

NOTE:
COORDINATE GENERATOR LP GAS LINE REQUIREMENTS WITH MFR/SUPPLIER.




## LP GAS RISER
SCALE: NOT TO SCALE

ENGINEER


BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
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LP GAS RISER

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| DWG BY: | MH |
| CKD BY: | BEB |
| REVISIONS | |

SHEET NO.
P-9

Kohala Ranch M1

## HVAC EQUIPMENT SCHEDULE

| | |
|---|---|
| HVAC SYSTEM #1 | |
| GF #1<br>LP GAS<br>CONDENSING<br>FURNACE | * CARRIER MODEL #59SP5A026-140DELUXE, 4 WAY, MULTIPOISE, DIRECT VENT, CONDENSING, LP GAS FURNACE. 95% AFUE 600 CFM NOMINAL. PROVIDE PVC VENTS TO EXTERIOR. 1.5 TON. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 115V, 1 PHASE, 4.4A FLA MOTOR, 7.3A UNIT MCA, 15A MOCP. INSTALL FURNACE IN HORIZONTAL POSITION. 26,000 BTUH LP GAS INPUT. |
| COOLING<br>COIL | * CARRIER MODEL CAPMP18, CASED COOLING COIL. VERIFY REQUIRED POSITION PRIOR TO ORDERING UNIT. 1.5 TON. |
| CU #1<br>OUTDOOR AIR-<br>CONDITIONING UNIT | * CARRIER MODEL #24ACC618A0030, 1.5 TON OUTDOOR CONDENSING UNIT, 16 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240V, 1 PHASE 9A COMPRESSOR RLA, 11.8A UNIT MCA, 20A MOCP. |
| HVAC SYSTEM #2 | |
| GF #2<br>LP GAS<br>CONDENSING<br>FURNACE | * CARRIER MODEL #59SP5A080-16 DELUXE, 4 WAY, MULTIPOISE, DIRECT VENT, CONDENSING, LP GAS FURNACE. 95% AFUE. 1400 CFM NOMINAL. PROVIDE PVC VENTS TO EXTERIOR. 3.5 TON. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 115V, 1 PHASE, 9.3A FLA MOTOR, 13.5A UNIT MCA, 15A MOCP. INSTALL FURNACE IN HORIZONTAL POSITION. 80,000 BTUH LP GAS INPUT. |
| COOLING<br>COIL | * CARRIER MODEL CAPMP42, CASED COOLING COIL. VERIFY REQUIRED POSITION PRIOR TO ORDERING UNIT. 3.5 TON. |
| CU #2<br>OUTDOOR AIR-<br>CONDITIONING UNIT | * CARRIER MODEL #24ACC642A0030, 3.5 TON OUTDOOR CONDENSING UNIT, 16 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240V, 1 PHASE 17.9A COMPRESSOR RLA, 23.6A UNIT MCA, 40A MOCP. |
| GF #3<br>LP GAS<br>CONDENSING<br>FURNACE | * CARRIER MODEL #59SP5A060-14 DELUXE, 4 WAY, MULTIPOISE, DIRECT VENT, CONDENSING, LP GAS FURNACE. 95% AFUE. 1200 CFM NOMINAL. PROVIDE PVC VENTS TO EXTERIOR. 3 TON. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 115V, 1 PHASE, 9.9A FLA MOTOR, 14.2A UNIT MCA, 15A MOCP. INSTALL FURNACE IN HORIZONTAL POSITION. 60,000 BTUH LP GAS INPUT. |
| COOLING<br>COIL | * CARRIER MODEL CAPMP36, CASED COOLING COIL. VERIFY REQUIRED POSITION PRIOR TO ORDERING UNIT. 3 TON. |
| CU #3<br>OUTDOOR AIR-<br>CONDITIONING UNIT | * CARRIER MODEL #24ACC636A0030, 3 TON OUTDOOR CONDENSING UNIT, 16 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240V, 1 PHASE 14.1A COMPRESSOR RLA, 18.1A UNIT MCA, 30A MOCP. |
| GF #4<br>LP GAS<br>CONDENSING<br>FURNACE | * CARRIER MODEL #59SP5A080-20 DELUXE, 4 WAY, MULTIPOISE, DIRECT VENT, CONDENSING, LP GAS FURNACE. 95% AFUE. 1600 CFM NOMINAL. PROVIDE PVC VENTS TO EXTERIOR. 4 TON. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 115V, 1 PHASE, 12.3A FLA MOTOR, 17.2A UNIT MCA, 20A MOCP. INSTALL FURNACE IN HORIZONTAL POSITION. 80,000 BTUH LP GAS INPUT. |
| COOLING<br>COIL | * CARRIER MODEL CAPMP48, CASED COOLING COIL. VERIFY REQUIRED POSITION PRIOR TO ORDERING UNIT. 4 TON. |
| CU #4<br>OUTDOOR AIR-<br>CONDITIONING UNIT | * CARRIER MODEL #24ACC648A0030, 4 TON OUTDOOR CONDENSING UNIT, 16 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240V, 1 PHASE 19.9A COMPRESSOR RLA, 26.1A UNIT MCA, 40A MOCP. |
| GF #5<br>LP GAS<br>CONDENSING<br>FURNACE | * CARRIER MODEL #59SP5A080-16 DELUXE, 4 WAY, MULTIPOISE, DIRECT VENT, CONDENSING, LP GAS FURNACE. 80,000 BTUH INPUT. 1400 CFM NOMINAL. PROVIDE PVC VENTS TO EXTERIOR. 3.5 TON. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 115V, 1 PHASE, 9.3A FLA MOTOR, 13.5A UNIT MCA, 15A MOCP. INSTALL FURNACE IN HORIZONTAL POSITION. 80,000 BTUH LP GAS INPUT. |
| COOLING<br>COIL | * CARRIER MODEL CAPMP42, CASED COOLING COIL. VERIFY REQUIRED POSITION PRIOR TO ORDERING UNIT. 3.5 TON. |
| CU #5<br>OUTDOOR AIR-<br>CONDITIONING UNIT | * CARRIER MODEL #24ACC642A0030, 3.5 TON OUTDOOR CONDENSING UNIT, 16 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240V, 1 PHASE 17.9A COMPRESSOR RLA, 23.6A UNIT MCA, 40A MOCP. |

* OR APPROVED EQUAL

NOTE: PROVIDE WITH THERMOSTAT/HUMIDISTAT THAT IS COMPATIBLE WITH THE CARRIER "SMARTEVAP" TECHNOLOGY TO PROVIDE DEHUMIDIFICATION.

## AIR DISTRIBUTION SCHEDULE

| MARK | * MANUFACTURER | MODEL NO. | NECK SIZE | FACE SIZE | MATERIAL | SERVICE | NOTES |
|---|---|---|---|---|---|---|---|
| A | CARNES | RTDBH | 12" X 5" | 14" X 7" | STEEL | SUPPLY | WHITE, SIDE WALL OR CEILING MOUNTED REGISTER *** |
| B | CARNES | RTDBH | 12" X 7" | 14" X 9" | STEEL | SUPPLY | WHITE, SIDE WALL MOUNTED REGISTER *** |
| C | CARNES | RTDBH | 12" X 5" | 14" X 7" | STEEL | SUPPLY | WHITE, DUCT MOUNTED REGISTER COLOR SELECTED BY ARCHITECT. |
| D | CARNES | RTDBH | 9" X 4" | 11" X 6" | STEEL | SUPPLY | WHITE, CEILING OR DUCT MOUNTED REGISTER *** |
| RA | CARNES | RSABH | 24" X 30" | 26" X 32" | STEEL | RETURN | WHITE, SIDEWALL MOUNTED |
| RB | CARNES | RSABH | 24" X 36" | 26" X 38" | STEEL | RETURN | WHITE, SIDEWALL MOUNTED |
| RC | CARNES | RSABH | 24" X 24" | 26" X 36" | STEEL | RETURN | CEILING MOUNTED, WHITE |

* OR APPROVED EQUAL

** COORDINATE BORDER TYPE WITH THE CEILING / WALL TYPE. SEE ARCH SHEETS PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

*** SEE PLANS FOR WALL, CEILING OR DUCT MOUNTED POSITION OF REGISTER.

## GENERAL NOTES - MECHANICAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
5. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
6. THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
7. THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
9. INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
11. THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
12. PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
13. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
14. PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

## LEGEND - MECHANICAL

| | |
|---|---|
| 12 X 8 | RECTANGULAR DUCTWORK. INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT) |
| | FLEXIBLE DUCTWORK |
| 12" DIA. | ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED. |
| 12" DIA. | DOUBLE WALLED GALVANIZED STEEL SPIRAL DUCT INSIDE CLEAR DIMENSION INDICATED. |
| | DUCT MOUNTED SUPPLY AIR DIFFUSER |
| | SUPPLY DIFFUSER |
| | RETURN GRILLE |
| T<br>AHU-1 | WALL MOUNTED THERMOSTAT (UNIT SERVED IS INDICATED) |
| X<br>XXX | GRILLE TYPE<br>MIN. CFM |
| —D—D— | CONDENSATE PIPING |
| —R—R— | REFRIGERANT PIPING |

Kohala Ranch M1

## DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

| | |
|---|---|
| DHP-1<br>OUTDOOR HEAT<br>PUMP UNIT | * MITSUBISHI MODEL #MXZ-3B24NA, 1.5 TON OUTDOOR HEAT PUMP UNIT, 16 SEER. 208 VOLT, 1 PHASE, CONDENSING UNIT 17.2A MCA, 20A MOCP. FAN COIL UNIT IS POWERED VIA FIELD PROVIDED WIRING FROM OUTDOOR UNIT. SERVES (2) INDOOR FAN-COIL UNITS (DFC-1.1, DFC-1.2). |
| DFC-1.1<br>DIRECT EXPANSION<br>FAN COIL UNIT | * MITSUBISHI MODEL #MSZ-GE06NA FAN COIL UNIT. NET COOLING CAPACITY = 6,000 BTUH, 145 CFM LO TO 400 CFM HI. 0.5 TON NOMINAL. PROVIDE WIRED PROGRAMMABLE THERMOSTAT, AND CONDENSATE PUMP. FAN MOTOR 0.76, FLA 240 VOLT. SINGLE PH. |
| DFC-1.2<br>DIRECT EXPANSION<br>FAN COIL UNIT | * MITSUBISHI MODEL #SLZ-KF09NA FAN COIL UNIT. NET COOLING CAPACITY = 9,000 BTUH, 230 CFM LO TO 300 CFM HI. 0.75 TON NOMINAL. PROVIDE WIRED PROGRAMMABLE THERMOSTAT, AND CONDENSATE PUMP. FAN MOTOR 0.20, FLA 208 VOLT. SINGLE PH. |

* OR APPROVED EQUAL

## OUTDOOR AIR CALCULATIONS

OUTSIDE AIR PROVIDED BY NATURAL VENTILATION PER NCSBC: MECHANICAL CODE, SECTION 402. 4,830 SQ.FT. TOTAL X 0.04 = 193 SQ.FT. REQUIRED FREE AREA. OPERABLE DOORS AND WINDOWS TO EXTERIOR PROVIDE 240 SQ.FT. OF FREE AREA.

APPENDIX B

## 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

### MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone

winter dry bulb 16F
summer dry bulb 93F

Interior Design Conditions

winter dry bulb 72F
summer dry bulb 75F
relative humidity 50%

Building Heating Load (Tenant space only) 92,000 BTU/hr

Building Cooling Load (Tenant space only) 145,600 BTU/hr

Mechanical Spacing Conditioning System

Unitary – The tenant space is served the following systems:
(1) 1.5 Ton split system gas furnace with dx cooling coil.
(1) 3 Ton split system gas furnace with dx cooling coil.
(2) 3.5 Ton split system gas furnaces with dx cooling coil.
(1) 4 Ton split system gas furnace with dx cooling coil.
(1) 1.5 Ton ductless split system heat pump unit

Boiler – Not applicable to this project.

Chiller – Not applicable to this project.

Equipment efficiencies

Efficiencies and outputs are listed on equipment schedules – See drawings.

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## EXHAUST FAN SCHEDULE

| | |
|---|---|
| EXHAUST FANS #1 – 8<br>(EF-1 – 9) | * CARNES MODEL# VCDD010C EXHAUST FAN, 93 CFM @ 1/4" SP, 640 RPM, 1.1 AMPS, 120V. CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO WALL / ROOF CAP. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES. |

* OR APPROVED EQUAL

NOTE: RUN EXHAUST DUCTS HORIZONTALLY AS REQUIRED TO MAINTAIN 10'-0" MINIMUM SEPARATION FROM ANY INTAKES.

## FLEXIBLE DUCTWORK NOTES

1) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.
2) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS.
3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.
4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS 75% OF ORIGINAL VOLUME.
5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.
6) EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOW IS NOT OBTAINED.
7) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.

## FLEXIBLE DUCTWORK SIZES

MAXIMUM CFM'S

| SIZES | SUPPLY | RETURN |
|---|---|---|
| 6" | 100 | 100 |
| 8" | 175 | 175 |
| 10" | 250 | 250 |
| 12" | 400 | 350 |
| 14" | 550 | 500 |
| 16" | NA | 900 |

(CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED TO GET NEW CFM'S SHOWN)

Kohala Ranch M1

## POWER VENTILATER FAN SCHEDULE

| | |
|---|---|
| POWER VENTILATER #<br>(PV- ** ) | * Tjernlund MODEL #LB2 160 cfm, Duct Diameter 4 in, Motor Output Power 7.5 W, Voltage 120V AC, Phase 1, Number of Speeds 1, Application Dryer, Housing Material Galvanized Steel, Motor Speed 1,600 RPM, Includes LED Status Panel, Maximum Inlet Air Temperature 140 Degrees F, |

* OR APPROVED EQUAL

** AS REQUIRED

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

Coastal Architecture PLLC
Architectural
Design
Planning
Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext.,
Suite C
Morehead City, NC
28557
www.CoastalArchitecture.net

THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA
PROFESSIONAL
SEAL
22038
ENGINEER
BENJAMIN E. BURKE

NEW SECOND FLOOR
HVAC PLAN

21033

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| DWG BY: | CS |
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M-1

DRYER EXHAUST DUCT NOTES:

(CHAPTER 504 OF 2018 NORTH CAROLINA MECHANICAL CODE)

504.1 Installation

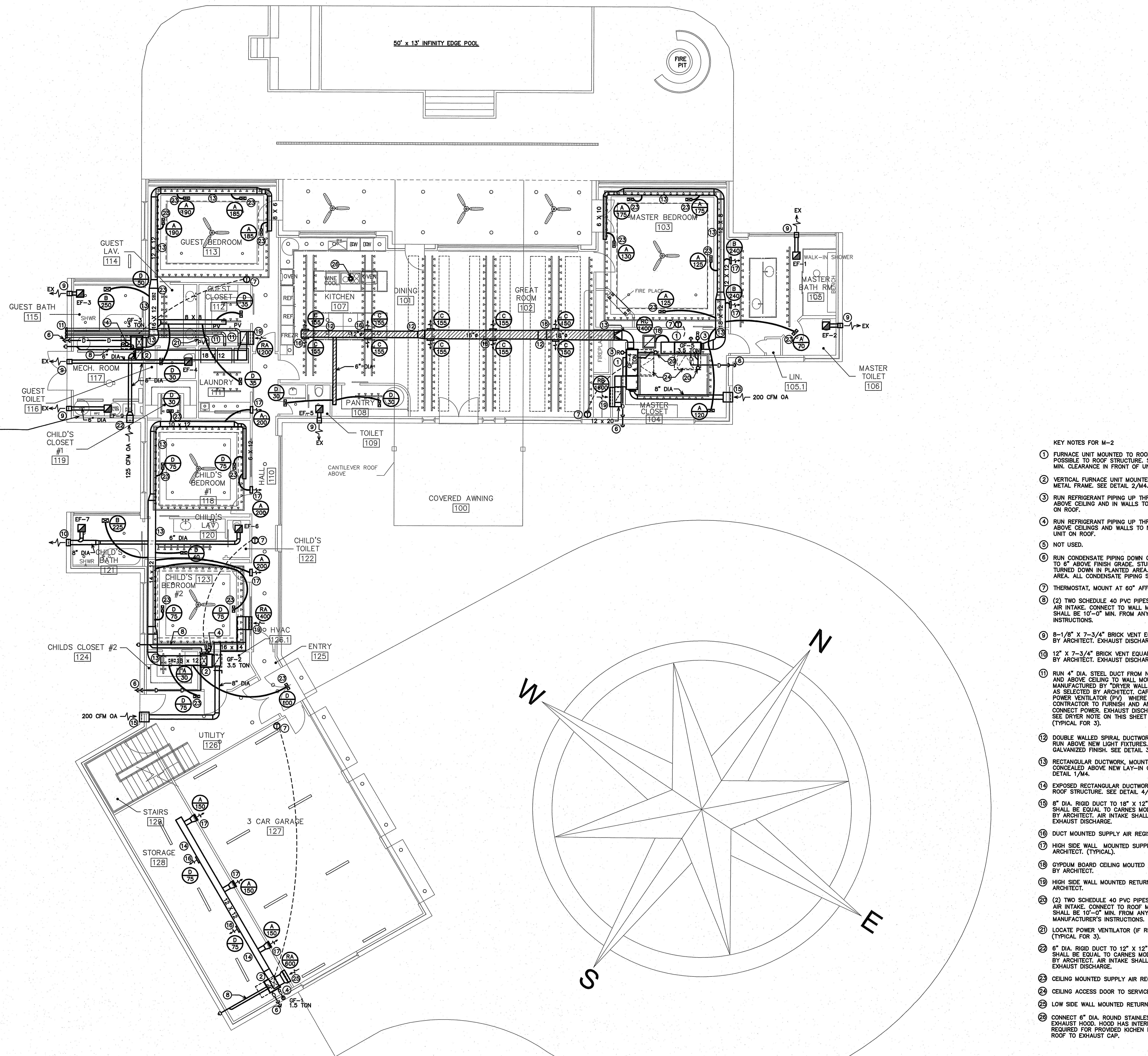
Clothes dryers shall be exhausted in accordance with the manufacturer's instructions. Dryer exhaust systems shall be independent of all other systems and shall convey the moisture and any products of combustion to the outside of the building

504.8.4.2 Manufacturer's Instructions

The maximum length of the exhaust duct shall be determined by the dryer manufacturer's installation instructions. The code official shall be provided with a copy of the installation instructions for the make and model of the dryer. Where the exhaust duct is to be concealed, the installation instructions shall be provided to the code official prior to the concealment inspection. In the absence of fitting equivalent length calculations from the clothes dryer manufacturer, Table 504.8.4.1 shall be used.

NOTE:

NO POOL CHEMICALS SHALL BE STORED IN MECHANICAL ROOM THAT HAS DUCTWORK AND FURNACE UNIT.




## 1 HVAC PLAN
SCALE: 1/8" = 1'-0"

KEY NOTES FOR M-2

1. FURNACE UNIT MOUNTED TO ROOF STRUCTURE. MOUNT AS HIGH AS POSSIBLE TO ROOF STRUCTURE. SEE DETAIL 1/M4. PROVIDE 30" MIN. CLEARANCE IN FRONT OF UNIT FOR SERVICE.
2. VERTICAL FURNACE UNIT MOUNTED TO CONCRETE FLOOR ON METAL FRAME. SEE DETAIL 2/M4.
3. RUN REFRIGERANT PIPING UP THROUGH ROOF DECK. RUN CONCEALED ABOVE CEILING AND IN WALLS TO NEW CORRESPONDING HEAT PUMP ON ROOF.
4. RUN REFRIGERANT PIPING UP THROUGH WALL AND CONCEALED ABOVE CEILINGS AND WALLS TO NEW CORRESPONDING CONDENSING UNIT ON ROOF.
5. NOT USED.
6. RUN CONDENSATE PIPING DOWN CONCEALED IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE. STUB-OUT OF WALL WITH ELBOW TURNED DOWN IN PLANTED AREA. DO NOT DISCHARGE ON PAVED AREA. ALL CONDENSATE PIPING SHALL BE 2" PVC PIPE.
7. THERMOSTAT, MOUNT AT 60" AFF.
8. (2) TWO SCHEDULE 40 PVC PIPES, ONE FOR EXHAUST AND ONE FOR COMBUSTION AIR INTAKE. CONNECT TO WALL MOUNTED CONCENTRIC VENT. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE. PIPE SIZES PER MANUFACTURER'S INSTRUCTIONS.
9. 8-1/8" X 7-3/4" BRICK VENT EQUAL TO CARNES MODEL VXCCB12051S. COLOR SELECTED BY ARCHITECT. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
10. 12" X 7-3/4" BRICK VENT EQUAL TO CARNES MODEL VXCCB1501S. COLOR SELECTED BY ARCHITECT. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
11. RUN 4" DIA. STEEL DUCT FROM NO-TURN DRYER VENT BOX, CONCEALED IN WALL AND ABOVE CEILING TO WALL MOUNTED DRYER EXHAUST CAP. CAP SHALL BE MANUFACTURED BY "DRYER WALL VENT" MODEL NUMBER DWV4K. FACTORY COLOR AS SELECTED BY ARCHITECT. CAP HAS INTEGRAL BACKDRAFT DAMPER. PROVIDE IN-LINE POWER VENTILATOR (PV) WHERE DUCT LENGTH EXCEED CODE REQUIRED MAXIMUM. MECHANICAL CONTRACTOR TO FURNISH AND AND INSTALL POWER VENTILATOR, ELECTRICAL CONTRACTOR TO CONNECT POWER. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE. SEE DRYER NOTE ON THIS SHEET FOR ADDITIONAL INFORMATION. (TYPICAL FOR 3).
12. DOUBLE WALLED SPIRAL DUCTWORK, MOUNTED TO ROOF STRUCTURE. RUN ABOVE NEW LIGHT FIXTURES. DUCT SHALL HAVE "PAINT-GRIP" GALVANIZED FINISH. SEE DETAIL 3/M4.
13. RECTANGULAR DUCTWORK, MOUNTED TO ROOF STRUCTURE. RUN CONCEALED ABOVE NEW LAY-IN OR LOWERED CEILING FEATURE. SEE DETAIL 1/M4.
14. EXPOSED RECTANGULAR DUCTWORK, MOUNTED AS HIGH AS POSSIBLE TO ROOF STRUCTURE. SEE DETAIL 4/M4.
15. 8" DIA. RIGID DUCT TO 18" X 12" OUTSIDE AIR INTAKE LOUVER. LOUVER SHALL BE EQUAL TO CARNES MODEL FKDC. LOUVER COLOR SELECTED BY ARCHITECT. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE EXHAUST DISCHARGE.
16. DUCT MOUNTED SUPPLY AIR REGISTER. COLOR PER ARCHITECT. (TYPICAL).
17. HIGH SIDE WALL MOUNTED SUPPLY AIR REGISTER. COLOR SELECTED BY ARCHITECT. (TYPICAL).
18. GYPDUM BOARD CEILING MOUTED RETURN AIR GRILLE. COLOR SELECTED BY ARCHITECT.
19. HIGH SIDE WALL MOUNTED RETURN AIR GRILLE. COLOR & MATERIAL PER ARCHITECT.
20. (2) TWO SCHEDULE 40 PVC PIPES, ONE FOR EXHAUST AND ONE FOR COMBUSTION AIR INTAKE. CONNECT TO ROOF MOUNTED CONCENTRIC VENT. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE. PIPE SIZES PER MANUFACTURER'S INSTRUCTIONS.
21. LOCATE POWER VENTILATOR (IF REQUIRED) IN MECHANICAL ROOM. (TYPICAL FOR 3).
22. 6" DIA. RIGID DUCT TO 12" X 12" OUTSIDE AIR INTAKE LOUVER. LOUVER SHALL BE EQUAL TO CARNES MODEL FKDC. LOUVER COLOR SELECTED BY ARCHITECT. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE EXHAUST DISCHARGE.
23. CEILING MOUNTED SUPPLY AIR REGISTER.
24. CEILING ACCESS DOOR TO SERVICE FURNACE.
25. LOW SIDE WALL MOUNTED RETURN AIR GRILLE.
26. CONNECT 6" DIA. ROUND STAINLESS STEEL DUCT TO DUCT COLLAR ON RANGE EXHAUST HOOD. HOOD HAS INTERNAL EXHAUST FAN. VERIFY DUCT SIZE REQUIRED FOR PROVIDED KICHEN HOOD. RUN EXHAUST DUCT UP THROUGH ROOF TO EXHAUST CAP.


ENGINEER

BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC

Architectural
Design
Planning
Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext.,
Suite C
Morehead City, NC
28557
www.CoastalArchitecture.net


# THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

6/20/23

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

HVAC PLAN

21033

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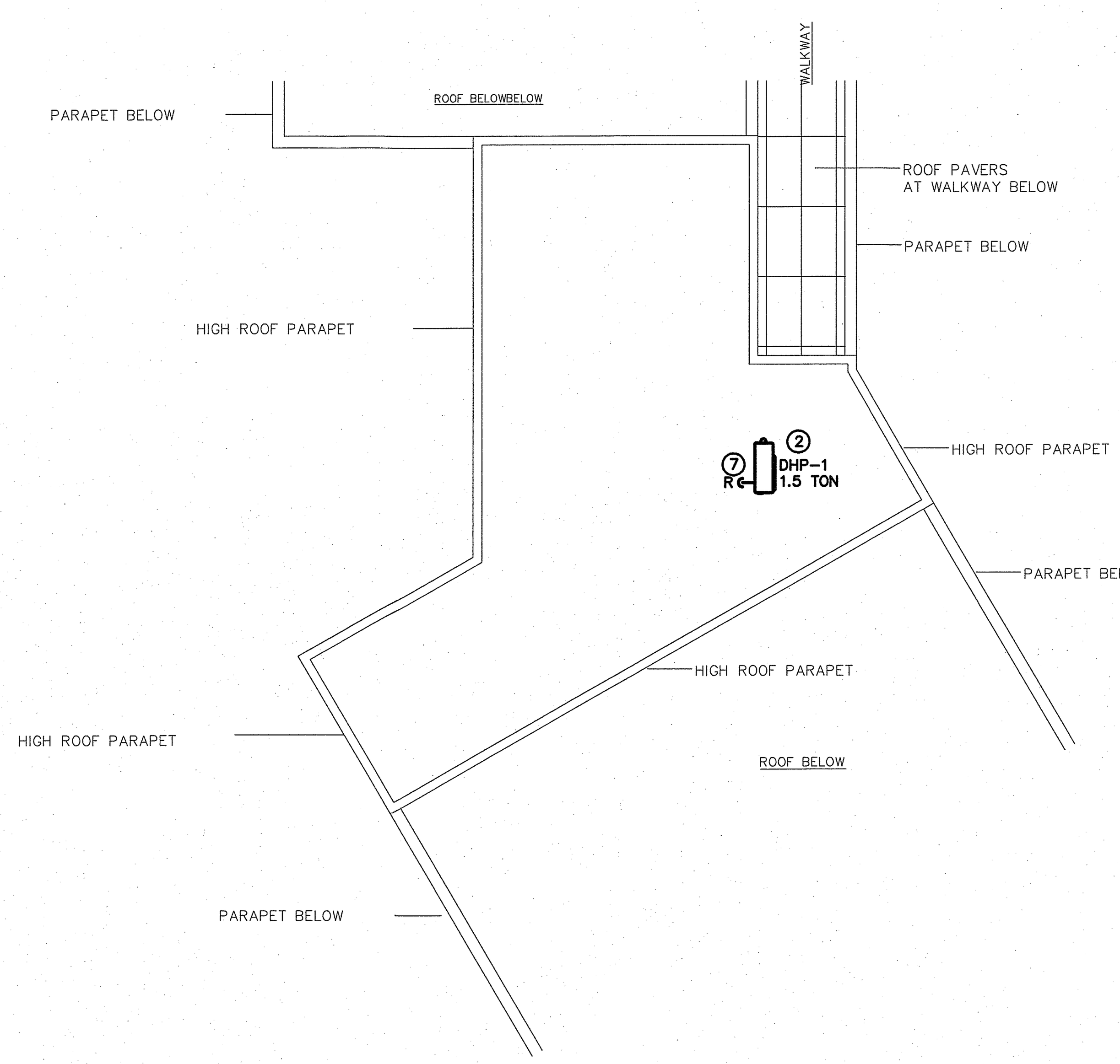
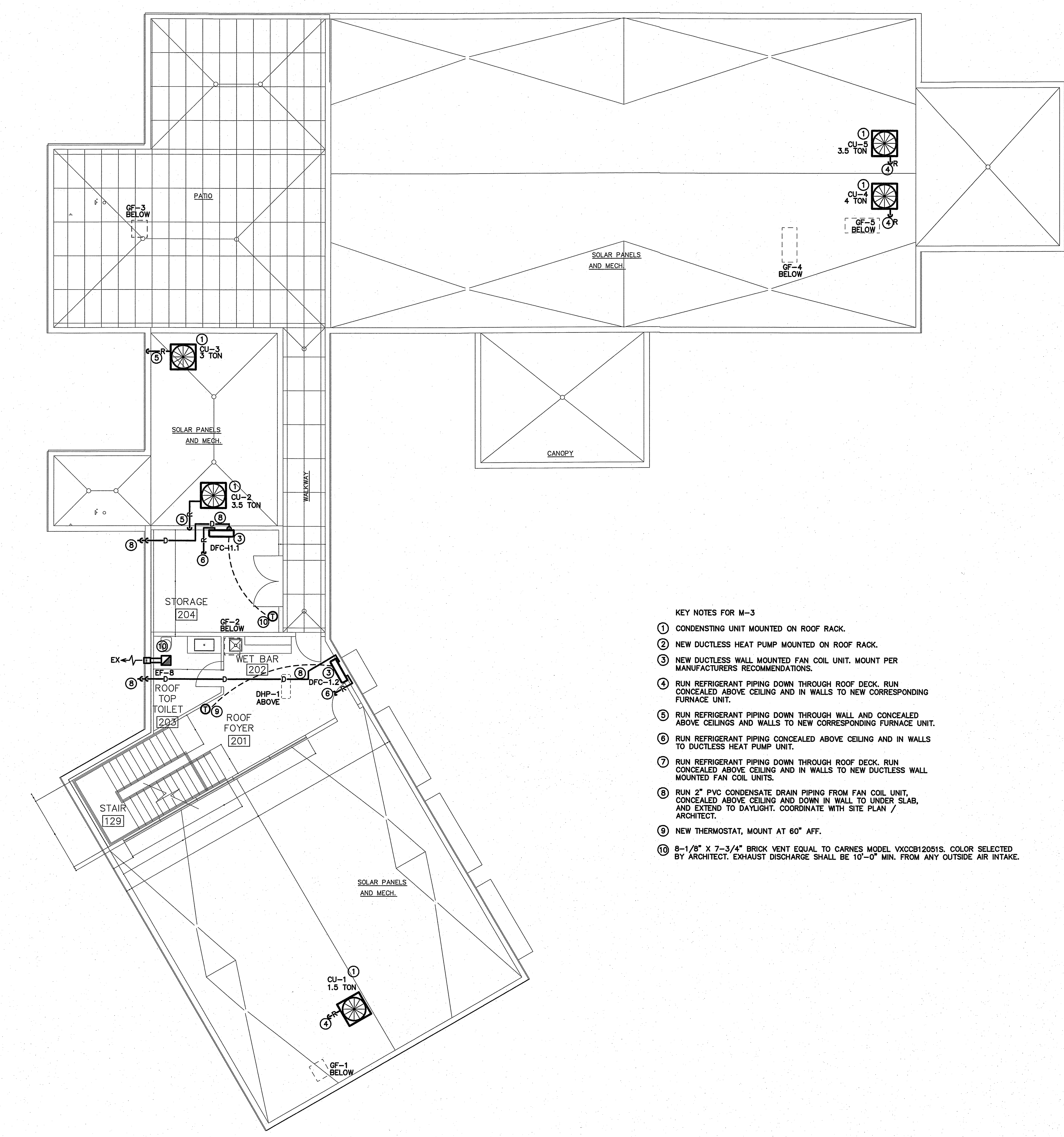
| ISSUED: | 6/20/23 |
| DWG BY: | CS |
| CKD BY: | BEB |
| REVISIONS | |

SHEET NO.

M-2




2 HIGH ROOF PLAN
SCALE: 1/8" = 1'-0"




1 ROOF TOP HVAC PLAN
SCALE: 1/8" = 1'-0"

KEY NOTES FOR M-3

1. CONDENSTING UNIT MOUNTED ON ROOF RACK.
2. NEW DUCTLESS HEAT PUMP MOUNTED ON ROOF RACK.
3. NEW DUCTLESS WALL MOUNTED FAN COIL UNIT. MOUNT PER MANUFACTURERS RECOMMENDATIONS.
4. RUN REFRIGERANT PIPING DOWN THROUGH ROOF DECK. RUN CONCEALED ABOVE CEILING AND IN WALLS TO NEW CORRESPONDING FURNACE UNIT.
5. RUN REFRIGERANT PIPING DOWN THROUGH WALL AND CONCEALED ABOVE CEILINGS AND WALLS TO NEW CORRESPONDING FURNACE UNIT.
6. RUN REFRIGERANT PIPING CONCEALED ABOVE CEILING AND IN WALLS TO DUCTLESS HEAT PUMP UNIT.
7. RUN REFRIGERANT PIPING DOWN THROUGH ROOF DECK. RUN CONCEALED ABOVE CEILING AND IN WALLS TO NEW DUCTLESS WALL MOUNTED FAN COIL UNITS.
8. RUN 2" PVC CONDENSATE DRAIN PIPING FROM FAN COIL UNIT, CONCEALED ABOVE CEILING AND DOWN IN WALL TO UNDER SLAB, AND EXTEND TO DAYLIGHT. COORDINATE WITH SITE PLAN / ARCHITECT.
9. NEW THERMOSTAT, MOUNT AT 60" AFF.
10. 8-1/8" X 7-3/4" BRICK VENT EQUAL TO CARNES MODEL VXCCB12051S. COLOR SELECTED BY ARCHITECT. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural
Design
Planning
Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22036 BENJAMIN E. BURKE

2ND FLOOR/ROOF HVAC PLAN

21033

| | |
|---|---|
| ISSUED: | 6/20/23 |
| DWG BY: | CS |
| CKD BY: | BEB |
| REVISIONS | |

SHEET NO.
M-3

DIVISION 15 B – HEATING, VENTILATING AND AIR CONDITIONING

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Heating, ventilation, and air conditioning equipment.
2. Ductwork.
3. Grilles and diffusers.
4. Controls and control wiring.
5. Condensate piping.

B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply:

1. ASHRAE Guide
2. National Electric Code.
3. 2018 NC State Building Code: Mech Code.
4. The Electrical Specifications for this project.
5. SMACNA HVAC Duct Construction Standards.
6. All local codes and ordinances.
7. ARI rating.
8. 2018 NC State Building Code: Energy Conservation Code.

C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

A. The intent of these specification and the accompanying drawing is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The HVAC Contractor shall take this into consideration and include in his bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.

B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.

C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this type of work.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for all major items of equipment, These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified. Shop drawings shall include but are not limited to the following:

1. All equipment and accessories.
2. Grilles and diffusers.
3. Unit sizes and requirements.

PART 2 –PRODUCTS

2.1 EQUIPMENT

A. All air handling devices must have the manufacturer's recommended filter rack, for 1" thick filters.

2.2 PIPING

A. Condensate drain piping shall be PVC pipe. Provide tee and plug at changes in direction. Route pipe to proper termination point. All condensate piping shall be insulated with flexible elastomeric insulation. Provide copper piping in plenum areas.

2.3 DUCTWORK

A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.

B. Seal all sheet metal joints with fiber impregnated mastic.

C. Support from building structure on strap hangers not over 8 feet apart.

D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.

E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.

F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have manufactured side take off, adjustable quadrant damper at all accessible locations and shall be of Owens Corning INL–25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik–set) and is not to be mounted in side take–off.

2.4 DUCT INSULATION (LOW PRESSURE)

A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.

B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code

C. All supply and return ductwork shall be completely insulated, either internally or externally.

D. Rectangular ductwork shall be lined with two–inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.

E. As an alternative to duct liner rectangular duct may be wrapped with Class I – 2", 3/4 lb. density (R–6.5) thick reinforced foil back fiberglass insulation, Owens–corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.

F. Exhaust air duct does not require insulation, unless otherwise noted on the plans.

G. Insulation shall be held inplace with adhesive and welding pins 16" on center.

H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.5 THERMOSTATS

A. Provide programmable electronic thermostats.

B. Submit proposed thermostats for approval.

2.6 ROOF PENETRATIONS

A. Provide pre–manufactured roof flashings compatible with equipment served.

B. Coordinate roof work with roof system used. Provide proper flashing as required.

C. Provide 1 year warranty on all roof work performed.

2.7 DUCT SMOKE DETECTORS

A. Duct detectors are not required since units air flows are 2000 cfm or less per NCSBC: Mechanical Code, Section 606.2.

PART 3 – EXECUTION

3.1 PIPING

A. The HVAC Contractor shall coordinate such routing with others, to line his work true to adjacent spaces and in a workmanlike manner and to use only short radius 90 degree elbows. Where required, piping to be sturdily supported and separated in a manner satisfactory to the Engineer.

B. The HVAC Contractor shall paint all exterior refrigerant piping. with UV resistant paint as recommended by the closed cell insulation manufacturer.

C. Insulate all condensate lines for their entire length with 1/2" closed cell insulation. Install insulation per the manufacturers recommendations.

3.2 ELECTRICAL WORK

A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.

B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment including control wiring.

C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as–built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.

D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.

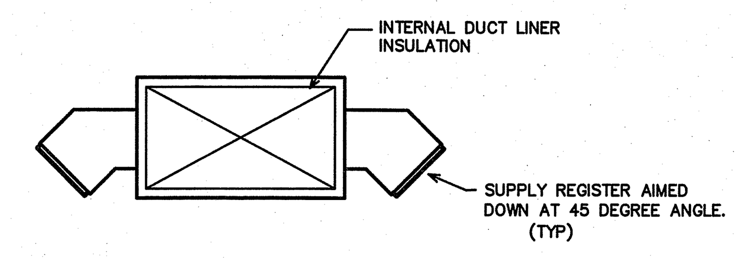
B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.

C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

3.5 GUARANTEE

A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.

B. All air flows must be measured and balanced to within 10% of design airflows. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re–balance to occupant comfort after 90 days from close–out Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats themostats if required for occupancy comfort.

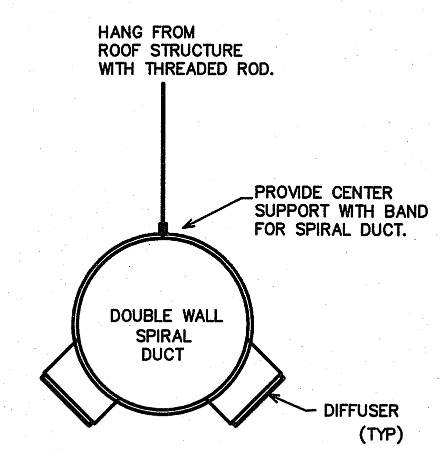



NOTE:

ALL EXPOSED DUCT SHALL HAVE DUCT LINER INSULATION.

5 DUCT MOUNTED REGISTER DETAIL

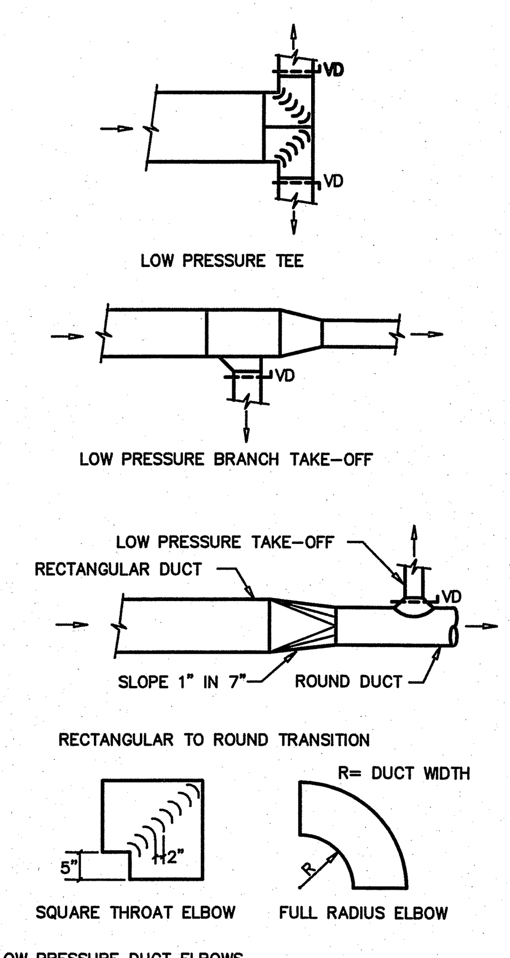
SCALE: NOT TO SCALE




NOTE:
DUCT SHALL HAVE "PAINT–GRIP" GALVANIZED FINISH. FINAL PAINTING BY GENERAL CONTRACTOR.

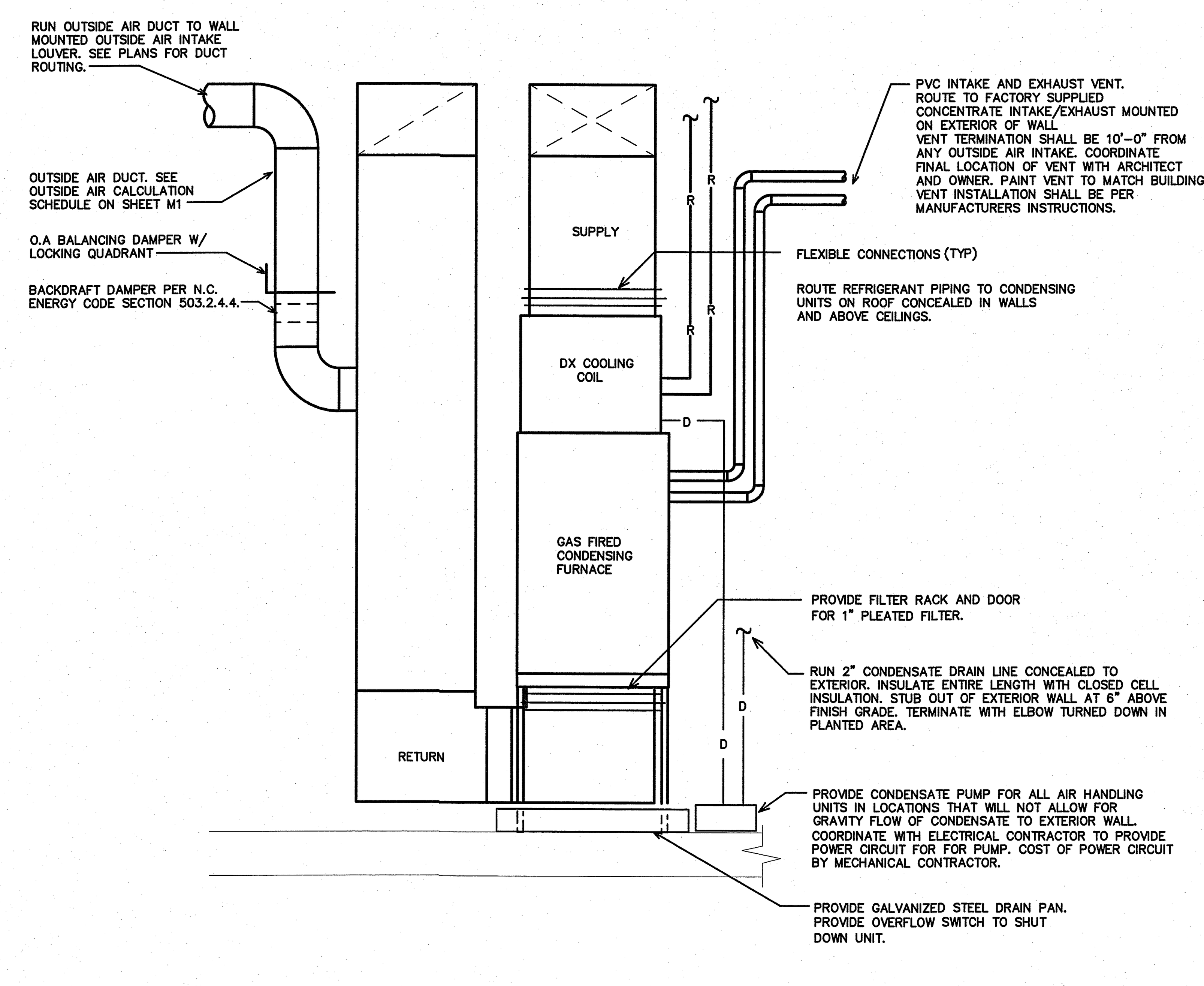
4 SPIRAL DUCT DETAIL

SCALE: NOT TO SCALE




3 DUCT CONSTRUCTION DETAIL

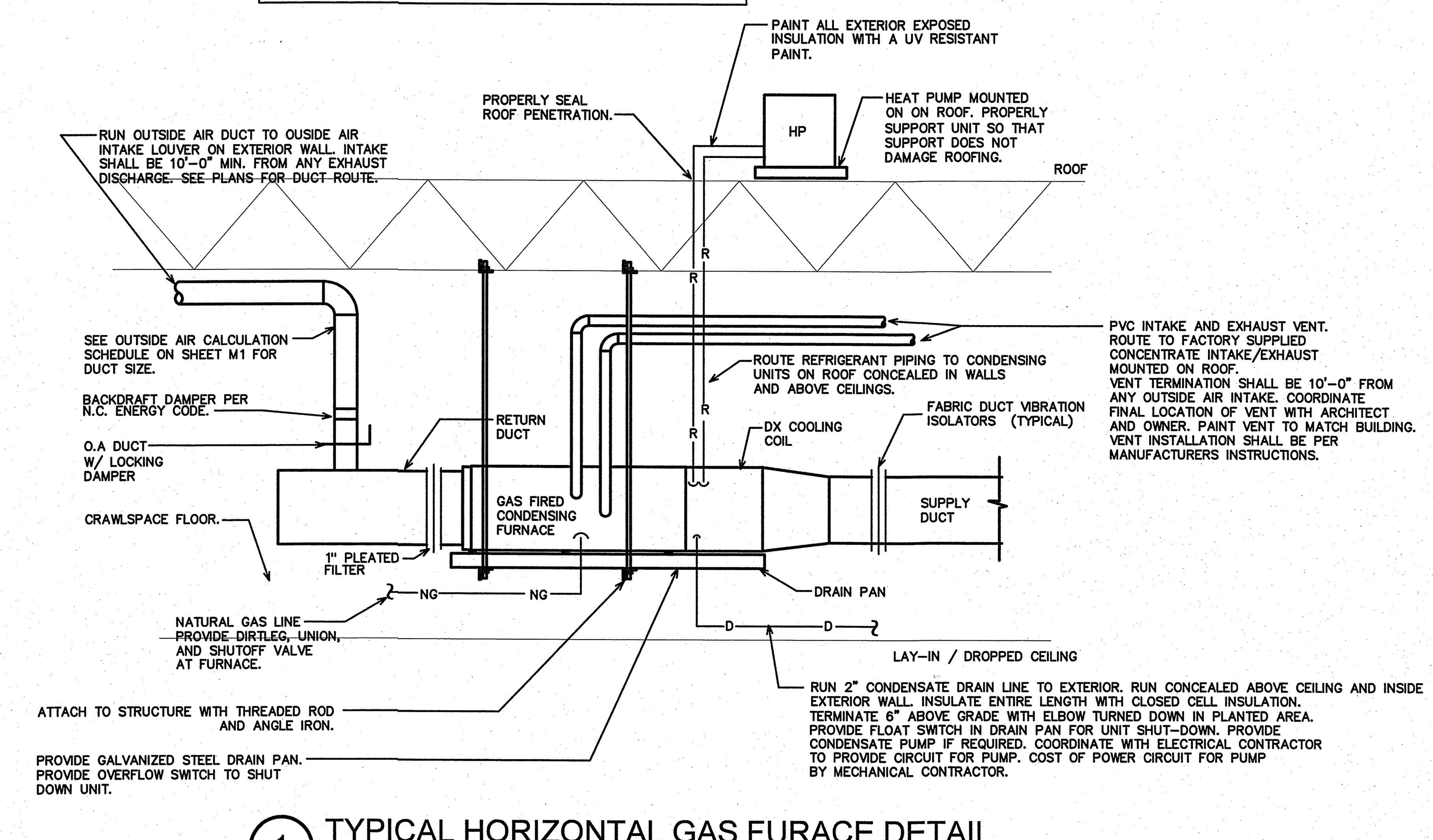
SCALE: NOT TO SCALE




2 TYPICAL VERTICAL AIR HANDLING UNIT DETAIL

SCALE: NOT TO SCALE

ROOFING NOTE:
THE ROOFING CONTRACTOR WILL BE RESPONSIBLE FOR THOROUGHLY SEALING ANY AND ALL MECHANICAL ROOF PENETRATIONS.




1 TYPICAL HORIZONTAL GAS FURACE DETAIL

SCALE: NOT TO SCALE


Coastal Architecture PLLC

Architectural Design Planning Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH

MOREHEAD CITY, NORTH CAROLINA

6/20/23

NORTH CAROLINA PROFESSIONAL SEAL 12038 ENGINEER BENJAMIN E. BURKE

HVAC SPECIFCATONS & DETAILS

21033

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| DWG BY: | CS |
| CKD BY: | BEB |
| REVISIONS | |


ENGINEER

BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg-nc.com
Corp. License # C-2652


SHEET NO.

M-4

# DIVISION 16 – ELECTRICAL

PART 1 – GENERAL

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
   1. Electrical service and service equipment.
   2. Lighting and power distribution system.
   3. Provide lighting fixtures selected by owner with lamps to match.
   4. Wiring devices, boxes, cover plates, etc.
   5. Source of power for all items of equipment.
   6. Grounding.
   7. Other requirements and/or systems where shown.

B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.

C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:
   1. The 2020 National Electrical Code.
   2. The National Electrical Safety Code.
   3. Underwriter's Laboratories, Inc., Standards and approved listings.
   4. Electrical Testing Labatories standards.
   5. North Carolina Building Code, Latest Edition and Revisions.
   6. All local codes and ordinances.

D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.

F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Electrical Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough–in.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for panels and service equipment, lighting, wiring devices, and cover plates. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 – PRODUCTS AND MATERIALS

2.1 GENERAL

A. All material shall be new and shall bear the manufacturer's name, trade name, and UL label where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.
   1. Boxes installed in concealed locations shall be set flush with the finished surfaces.
   2. Provide rated boxes in all fire barriers & walls installed per code.

2.2 NOT USED

2.3 CONDUCTORS

A. Conductors shall be color coded, sizes #8 and larger may be color taped on the job. Color coding shall be: Standard Practice.

B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be UL approved.

C. Metallic sheathed "MC" cable may be used where allowed by N.E.C.

D. Conductors shall be spliced and taped as follows:
   1. Size #10 and #12, use Ideal "Wing Nuts" or T&B "Piggy" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures.
   2. Size #8 and larger shall be solderless screw and screw–clamping type, smoothly covered and shaped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall be UL approved.
   3. No split–bolt type connectors may be used.

E. All branch wire and connections shall be copper and sized per National Electric Code.

F. All conductors shall be continuous without splice between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.

G. All wiring in mechanical spaces shall be plenum rated.

H. Provide GFI protection within 6'–0" of any sink.

I. All multi–wire branch circuits shall comply with 2017 NEC, 210.4(B).

J. All wiring at medical facilities shall comply with 2017 NEC, 517.1.

2.4 PANELBOARDS, SAFETY SWITCHES

A. Panelboards shall comply with NEMA Standard PB 1 – Latest Edition and as manufactured by Square D or ITE–Siemens.

B. The contractor shall be responsible for correctly phasing the circuits in the panelboards.

C. Safety switches shall be general duty type, size and rating as required for lead service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.5 NOT USED

2.6 WIRING DEVICES

A. Wiring devices shall be commercial grade by Bryant, Leviton, or approved equal. With matching cover. Color by Architect.

B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.

C. Wiring devices installed over counters shall comply with ANSI A117.1.

2.7 NOT USED

2.8 CONDUIT

A. PVC conduit will be allowed where N.E.C. approved.

B. All service conduit shall be rigid where exposed below 8'–0" AFF or exposed to the elements or hazardous conditions.

PART 3 – EXECUTION

3.1 CIRCUIT GROUNDING

A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250–95 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

A. Outlets and switches shall be solidly grounded to equipment grounding system with a green colored insulated conductor. Electrical connections shall be continuous from equipment ground bus in panelboard to the hex nut on the convenience outlet or switch.

3.3 MOTORS

A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight conduit.

3.4 NOT USED

3.5 EQUIPMENT LABELING

A. Provide permanent name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.

B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.

C. All empty conduit runs shall be identified and indicated where they terminate.

D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.6 NOT USED

3.7 NOT USED

3.8 JUNCTION AND/OR PULL BOXES

A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

3.9 PULL WIRE

A. Leave pull wire in each empty conduit run.

3.10 NOT USED

3.11 GROUNDING

A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:
   1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
   2. Equipment ground continuity shall be maintained through flexible metal conduit.
   3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
   4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
   5. All equipment enclosures, and non–current–carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
   6. All equipment enclosures, and non–current–carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.

3.12 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

A. PLUMBING WORK: The Electrical Contractor shall furnish and install switches and devices as shown and electrically connect electric water heaters, etc. All other electrical work required will be performed by the PLUMBING CONTRACTOR.

B. HEATING AND AIR CONDITIONING WORK: The Electrical Contractor shall provide all disconnect switches, starters, and associated hardware for the equipment furnished including all line and load side wiring and conduit. Final connections to the equipment will be by the HVAC contractor. All control wiring will be accomplished by the HVAC contractor. Coordinate all work associated with the HVAC contractor.

3.13 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.14 GUARANTEE

A. Guarantee all materials and labor included in the electrical work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.

## GENERAL NOTES

1 ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION.

2 ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER (SERVICE CONDUCTORS MAY BE ALUMINUM WITH SAME AMPACITY AS COPPER CONDUCTORS. RE–SIZE CONDUCTERS AND CONDUIT PER NEC.)

3 ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 8'–0" A.F.F.

4 ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.

5 CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.

6 ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.

7 THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.

8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.

9 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED.

10 ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.

11 IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.

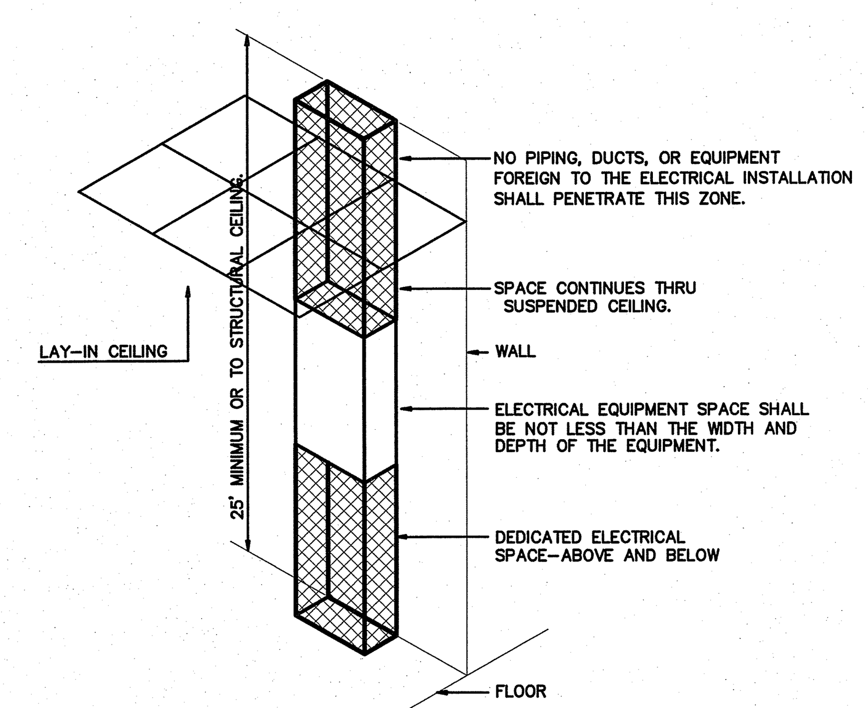
12 PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER.

13 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURES RECOMMENDATIONS AND FUSED PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.

14 THE EC SHALL MEET WITH THE ARCHITECT/OWNER PRIOR TO INSTALLING OUTLET BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE OUTLETS.

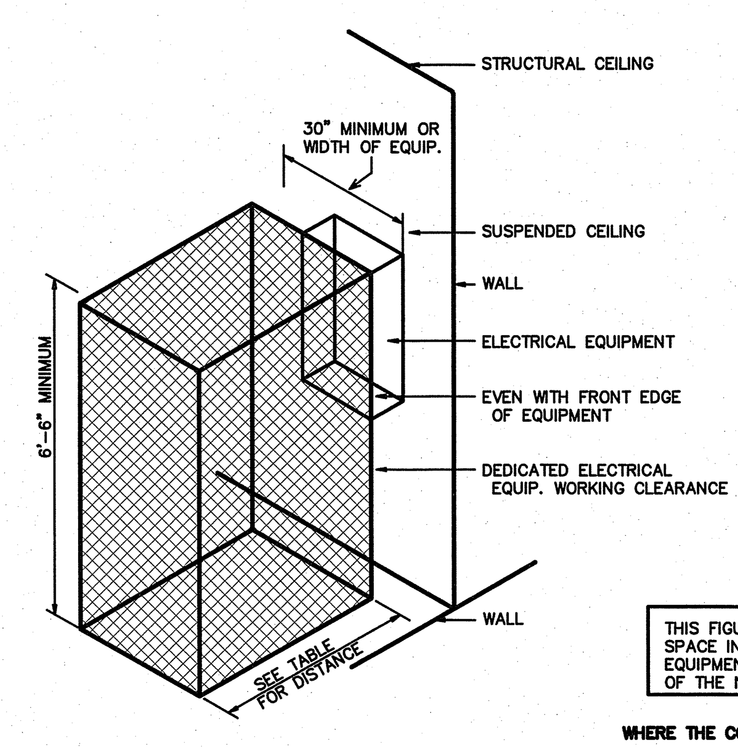
## ELECTRICAL LEGEND

| | |
|---|---|
| $O_X$ | LIGHT FIXTURE: LETTER DENOTES FIXTURE TYPE (REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE). NL = NIGHT LIGHT (NOT SWITCHED/ALWAYS ON) |
| U WP/GFI | DUPLEX RECEPTACLE – 120V; MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE; 'WP' INDICATES WEATHER PROOF, 'GFI' INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. 'U' INDICATES RECEPTACLE WITH (2) USB PORTS. |
| | QUADRAPLEX RECEPTACLE – 120V |
| | FLOOR/CEILING MOUNTED 120V RECEPTACLE AND CAT 7 NETWORK CABLE CONNECTION AS REQUIRED |
| | SPECIAL PURPOSE RECEPTACLE – REFER TO POWER PLAN AND PANEL SCHEDULE |
| S | LIGHT SWITCH |
| $S_M$ | SWITCH WITH INTEGRAL PIR/US MOTION SENSOR FOR AUTOMATIC SHUT–OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY. |
| $S_D$ | DIMMABLE LIGHT SWITCH |
| S | MOTOR RATED SWITCH |
| J | JUNCTION BOX |
| | TELE/DATA OUTLET – PROVIDE JUNCTION BOX WITH CONDUIT BACK TO MTP. PROVIDE (1) TELEPHONE JACK AND (1) CAT 5 DATA JACK |
| | SINGLE–POLE HOMERUN TO PANELBOARD |
| | TWO–POLE OR 3–POLE HOMERUN TO PANELBOARD |
| PC | PHOTOCELL (LED COMPLIANT) |
| | BRANCH CIRCUIT WIRING |
| | SWITCH LEG |
| | GROUND CONNECTION |
| PANEL A | DISTRIBUTION PANELBOARD |
| | DISCONNECTING MEANS AS REQUIRED BY CODE |
| WS | WALL STATION SWITCH BY LIGHTING CONTROL VENDOR. VERIFY QUANITY AND LOCATION PRIOR TO ROUGH–IN. (WP= WATER PROOF) |
| SD | COMBONATION SMOKE/ CO DETECTOR |




ELECTRICAL EQUIPMENT DEDICATED SPACE PER ARTICLE 110.26.F.1 OF N.E.C.

1 DEDICATED SPACE
SCALE: NTS




THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110–16 OF THE N.E.C.

ELECTRICAL EQUIPMENT WORKING CLEARANCE PER ARTICLE 110–26 OF N.E.C.

| WORKING CLEARANCES | | | |
|---|---|---|---|
| VOLTAGE TO GROUND NOMINAL | MIN. CLEAR DISTANCE IN FEET | | |
| | CONDITION: 1 | 2 | 3 |
| 0–150 | 3 | 3 | 3 |
| 151–600 | 3 | 3–1/2 | 4 |

**WHERE THE CONDITIONS ARE AS FOLLOWS:**

1 EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.

2 EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.

3 EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

2 ELECTRICAL CLEARANCES
SCALE: NTS


ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg-nc.com
Corp. License # C-2652



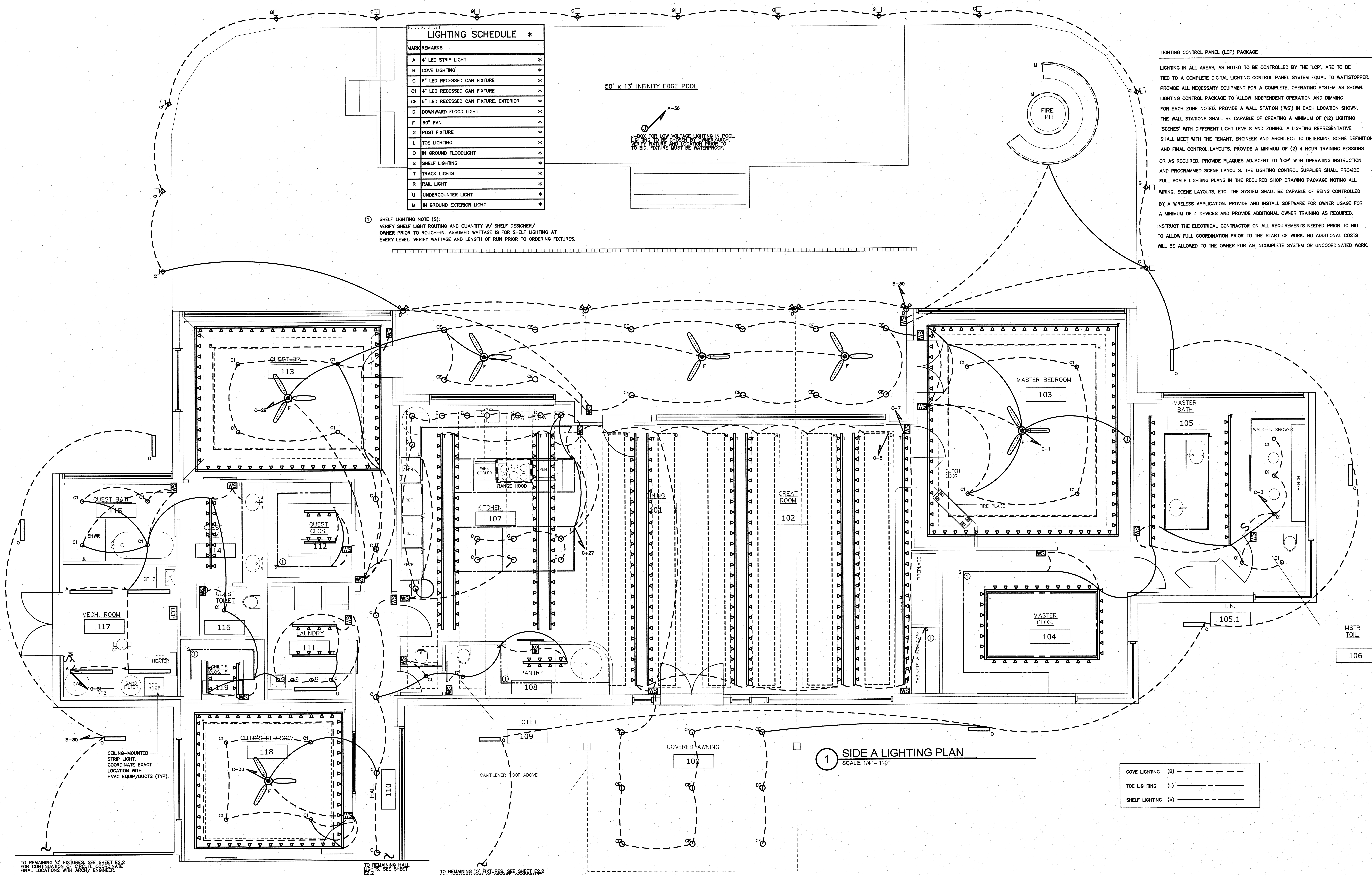
Coastal Architecture PLLC
Architectural Design
Planning
Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE

21033
ISSUED: 6–20–2023
DWG BY: LS
CKD BY: BEB
REVISIONS

SHEET NO.
E-1




## LIGHTING SCHEDULE *

| MARK | REMARKS | |
|---|---|---|
| A | 4' LED STRIP LIGHT | * |
| B | COVE LIGHTING | * |
| C | 6" LED RECESSED CAN FIXTURE | * |
| C1 | 4" LED RECESSED CAN FIXTURE | * |
| CE | 6" LED RECESSED CAN FIXTURE, EXTERIOR | * |
| D | DOWNWARD FLOOD LIGHT | * |
| F | 60" FAN | * |
| G | POST FIXTURE | * |
| L | TOE LIGHTING | * |
| O | IN GROUND FLOODLIGHT | * |
| S | SHELF LIGHTING | * |
| T | TRACK LIGHTS | * |
| R | RAIL LIGHT | * |
| U | UNDERCOUNTER LIGHT | * |
| M | IN GROUND EXTERIOR LIGHT | * |

(1) SHELF LIGHTING NOTE (S):
VERIFY SHELF LIGHT ROUTING AND QUANTITY W/ SHELF DESIGNER/ OWNER PRIOR TO ROUGH-IN. ASSUMED WATTAGE IS FOR SHELF LIGHTING AT EVERY LEVEL. VERIFY WATTAGE AND LENGTH OF RUN PRIOR TO ORDERING FIXTURES.

## LIGHTING CONTROL PANEL (LCP) PACKAGE

LIGHTING IN ALL AREAS, AS NOTED TO BE CONTROLLED BY THE 'LCP', ARE TO BE TIED TO A COMPLETE DIGITAL LIGHTING CONTROL PANEL SYSTEM EQUAL TO WATTSTOPPER. PROVIDE ALL NECESSARY EQUIPMENT FOR A COMPLETE, OPERATING SYSTEM AS SHOWN. LIGHTING CONTROL PACKAGE TO ALLOW INDEPENDENT OPERATION AND DIMMING FOR EACH ZONE NOTED. PROVIDE A WALL STATION ('WS') IN EACH LOCATION SHOWN. THE WALL STATIONS SHALL BE CAPABLE OF CREATING A MINIMUM OF (12) LIGHTING 'SCENES' WITH DIFFERENT LIGHT LEVELS AND ZONING. A LIGHTING REPRESENTATIVE SHALL MEET WITH THE TENANT, ENGINEER AND ARCHITECT TO DETERMINE SCENE DEFINITIONS AND FINAL CONTROL LAYOUTS. PROVIDE A MINIMUM OF (2) 4 HOUR TRAINING SESSIONS OR AS REQUIRED. PROVIDE PLAQUES ADJACENT TO 'LCP' WITH OPERATING INSTRUCTION AND PROGRAMMED SCENE LAYOUTS. THE LIGHTING CONTROL SUPPLIER SHALL PROVIDE FULL SCALE LIGHTING PLANS IN THE REQUIRED SHOP DRAWING PACKAGE NOTING ALL WIRING, SCENE LAYOUTS, ETC. THE SYSTEM SHALL BE CAPABLE OF BEING CONTROLLED BY A WIRELESS APPLICATION. PROVIDE AND INSTALL SOFTWARE FOR OWNER USAGE FOR A MINIMUM OF 4 DEVICES AND PROVIDE ADDITIONAL OWNER TRAINING AS REQUIRED.

INSTRUCT THE ELECTRICAL CONTRACTOR ON ALL REQUIREMENTS NEEDED PRIOR TO BID TO ALLOW FULL COORDINATION PRIOR TO THE START OF WORK. NO ADDITIONAL COSTS WILL BE ALLOWED TO THE OWNER FOR AN INCOMPLETE SYSTEM OR UNCOORDINATED WORK.

## 1 SIDE A LIGHTING PLAN
SCALE: 1/4" = 1'-0"

COVE LIGHTING (B)
TOE LIGHTING (L)
SHELF LIGHTING (S)


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural Design Planning Interiors
Member of the American Institute of Architects
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252-247-2127
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# THE KOHALA RANCH
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POWER PLAN

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SHEET NO.
E2.1

Kohala Ranch E2.2

## LIGHTING SCHEDULE *

| MARK | MANUFACTURER | CATALOG NO. | VOLT. | LAMPS NO. | LAMPS TYPE | LAMPS W | BALLAST TYPE | W/ FIXTURE | REMARKS | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | COLUMBIA | MPS4–35LW–CW–EDU | 120 | – | LED | – | – | 40 | 4' LED STRIP LIGHT (MS= MOTION SENSOR) | * |
| B | CHOSEN BY OWNER/ARCH; PROVIDED BY EC | | 120 | – | LED | – | – | 4.5W/FT | COVE LIGHTING ($35/FT ALLOWANCE) | * |
| C | PRESCOLITE | LTR–6RD–H–ML15L–DMTW | 120 | – | LED | – | – | 25 | 6" LED RECESSED CAN FIXTURE | * |
| C1 | PRESCOLITE | LTR–4RD–H–ML15L–DMTW | 120 | – | LED | – | – | 25 | 4" LED RECESSED CAN FIXTURE | * |
| CE | PRESCOLITE | LTR–6RD–H–ML15L–DMTW | 120 | – | LED | – | – | 25 | 6" LED RECESSED CAN FIXTURE, EXTERIOR | * |
| D | CHOSEN BY OWNER/ARCH; PROVIDED BY EC | | 120 | – | LED | – | – | 30 | DOWNWARD FLOOD LIGHT ($300 ALLOWANCE EA.) | * |
| F | VISUAL COMFORT & CO. | 71F86 MAVERICK WHITE MODERN LED | 120 | – | LED | – | – | 50 | 60" FAN | * |
| G | CHOSEN BY OWNER/ARCH; PROVIDED BY EC | | 120 | – | LED | – | – | 50 | POST FIXTURE ($400 ALLOWANCE EA.) | * |
| L | CHOSEN BY OWNER/ARCH; PROVIDED BY EC | | 120 | – | LED | – | – | 4.5W/FT | TOE LIGHTING ($50/FT ALLOWANCE) | * |
| O | LE LED | LE–MDL–9 | 120 | – | LED | – | – | 18 | IN GROUND FLOODLIGHT | * |
| S | CHOSEN BY OWNER/ARCH; PROVIDED BY EC | | 120 | – | LED | – | – | 4.5W/FT | SHELF LIGHTING ($20/FT ALLOWANCE) | * |
| T | NUVO | R20 BULLET CYLINDER | 120 | – | LED | – | – | 10W/FT | TRACK LIGHT HEADS | * |
| | JUNO | JUNO–T327W–WH | 120 | – | LED | – | – | – | TRACK | * |
| R | NOVA FLEX | NF–LINE2–O–80–120V–3500K | 120 | – | LED | – | – | 4.5W/FT | RAIL LIGHT | * |
| U | COLUMBIA | CUC4–CS–ED120 | 120 | – | LED | – | – | 25 | UNDERCOUNTER LIGHT | * |
| M | ALUZ | A8–ZUFI–FLX | 120 | – | LED | – | – | 3.3W/FT | IN GROUND EXTERIOR LIGHT (TO HAVE A DRIVE RATED COVER) | * |

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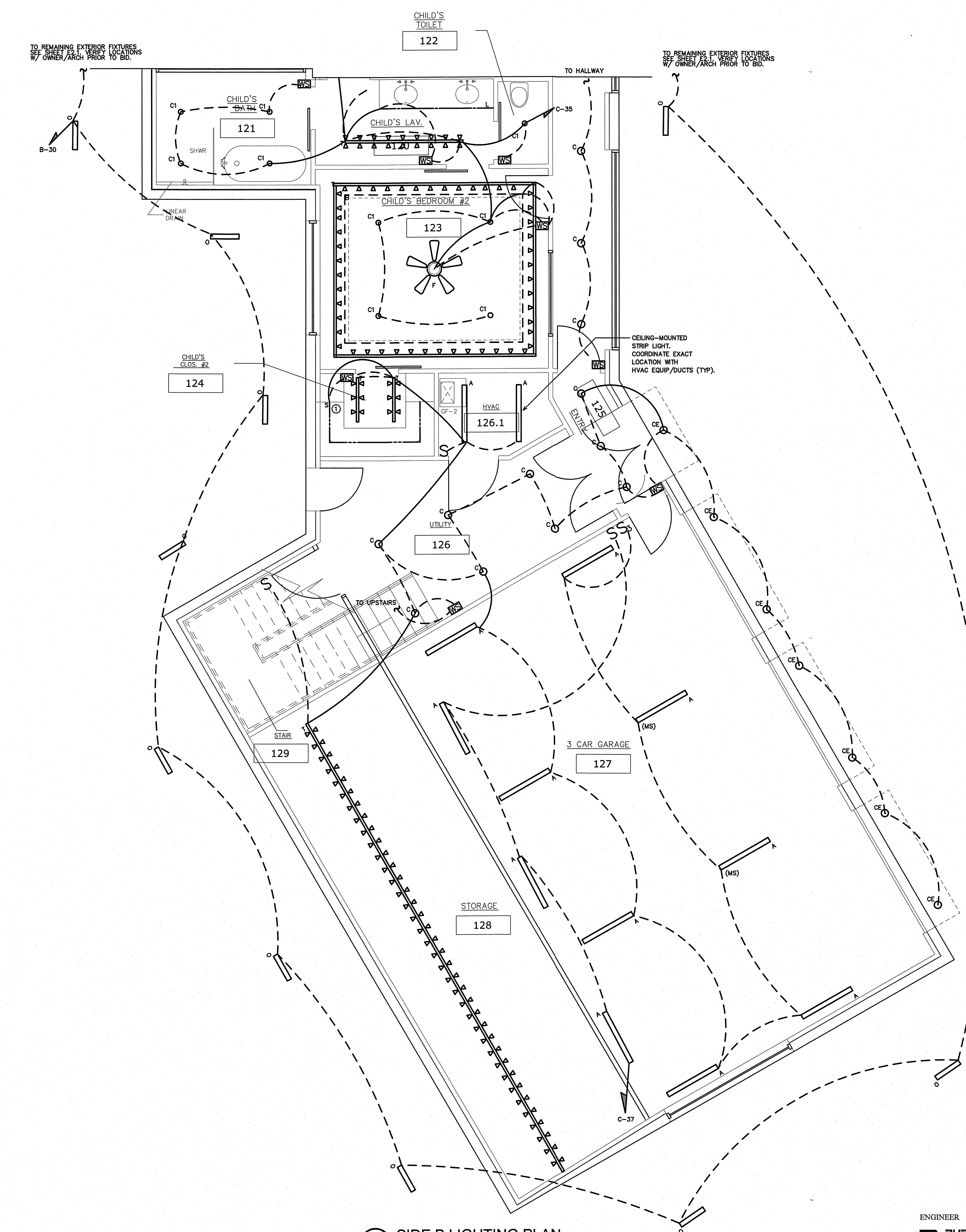
VERIFY SHELF LIGHT ROUTING AND QUANTITY W/ SHELF DESIGNER/
OWNER PRIOR TO ROUGH–IN. ASSUMED WATTAGE IS FOR SHELF LIGHTING AT
EVERY LEVEL. VERIFY WATTAGE AND LENGTH OF RUN PRIOR TO ORDERING FIXTURES.




1 SIDE B LIGHTING PLAN
SCALE: 1/4" = 1'-0"

ENGINEER


BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
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6/20/23
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POWER PLAN

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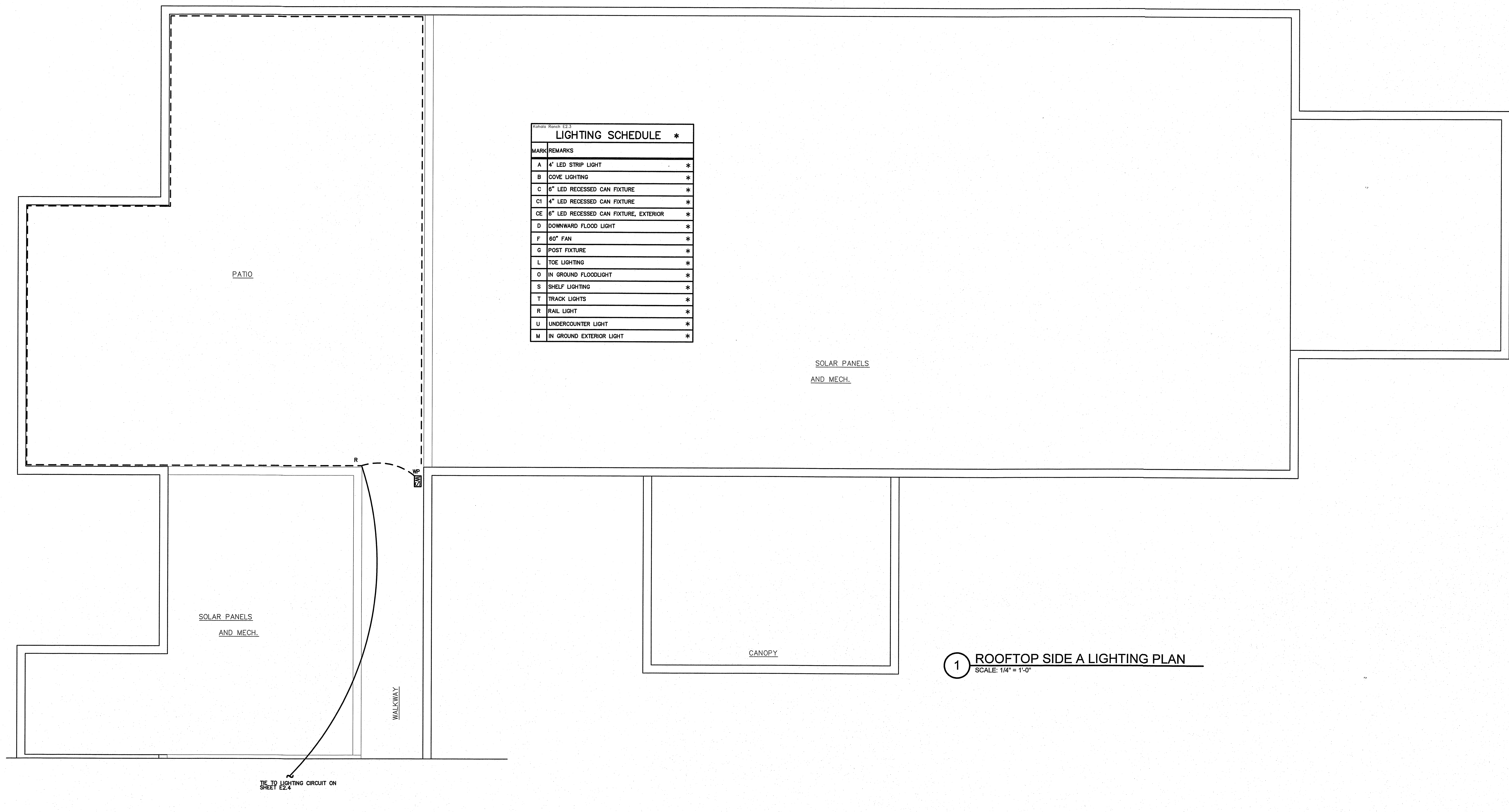


Kohala Ranch E2.3

## LIGHTING SCHEDULE *

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| C1 | 4" LED RECESSED CAN FIXTURE | * |
| CE | 6" LED RECESSED CAN FIXTURE, EXTERIOR | * |
| D | DOWNWARD FLOOD LIGHT | * |
| F | 60" FAN | * |
| G | POST FIXTURE | * |
| L | TOE LIGHTING | * |
| O | IN GROUND FLOODLIGHT | * |
| S | SHELF LIGHTING | * |
| T | TRACK LIGHTS | * |
| R | RAIL LIGHT | * |
| U | UNDERCOUNTER LIGHT | * |
| M | IN GROUND EXTERIOR LIGHT | * |

1 ROOFTOP SIDE A LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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3305–109 DURHAM DRIVE
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6/20/23
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22030 BENJAMIN E. BURKE

POWER PLAN

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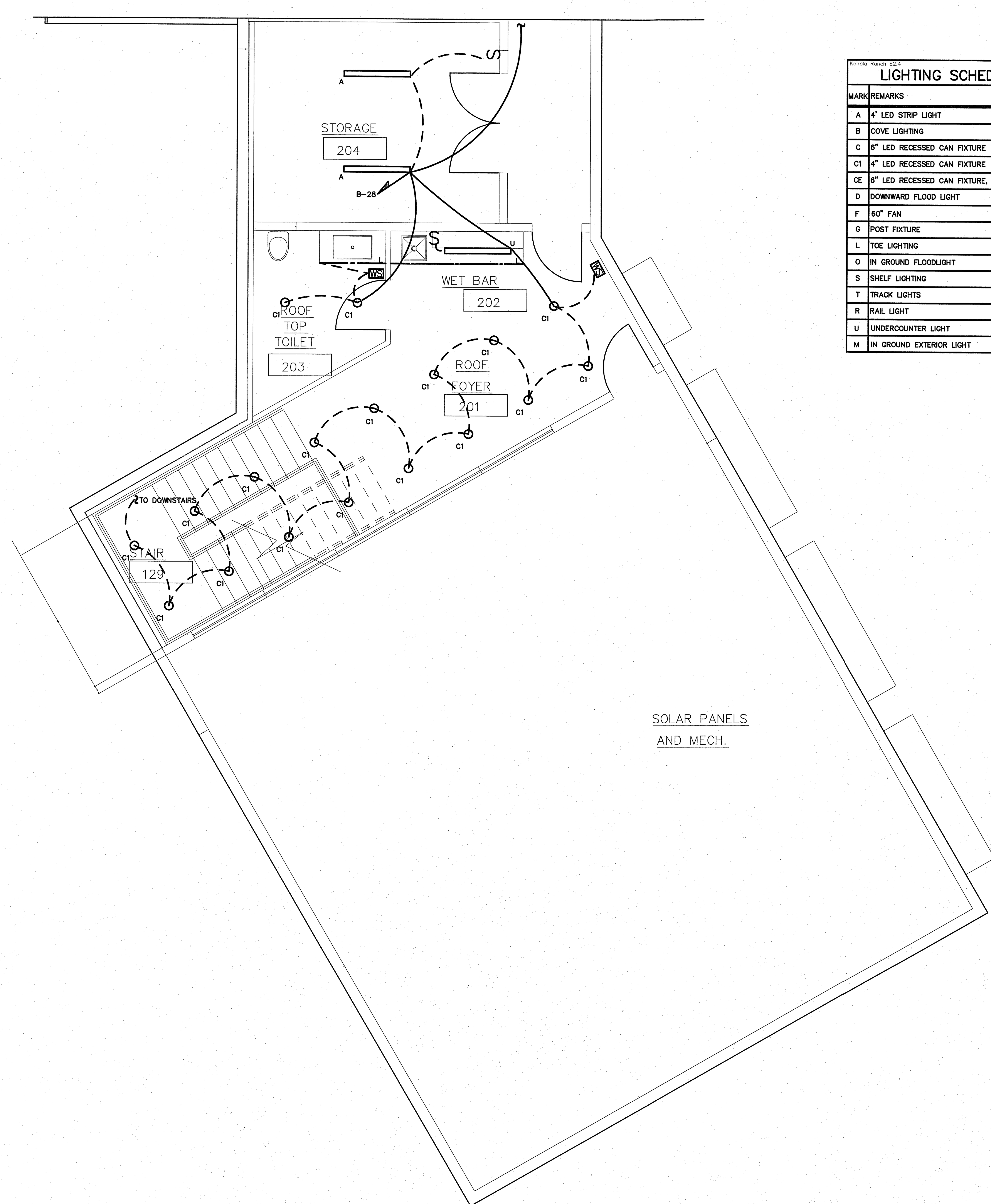


1 ROOFTOP SIDE B LIGHTING PLAN
SCALE: 1/4" = 1'-0"

Kohala Ranch E2.4

## LIGHTING SCHEDULE *

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| C | 6" LED RECESSED CAN FIXTURE | * |
| C1 | 4" LED RECESSED CAN FIXTURE | * |
| CE | 6" LED RECESSED CAN FIXTURE, EXTERIOR | * |
| D | DOWNWARD FLOOD LIGHT | * |
| F | 60" FAN | * |
| G | POST FIXTURE | * |
| L | TOE LIGHTING | * |
| O | IN GROUND FLOODLIGHT | * |
| S | SHELF LIGHTING | * |
| T | TRACK LIGHTS | * |
| R | RAIL LIGHT | * |
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| M | IN GROUND EXTERIOR LIGHT | * |


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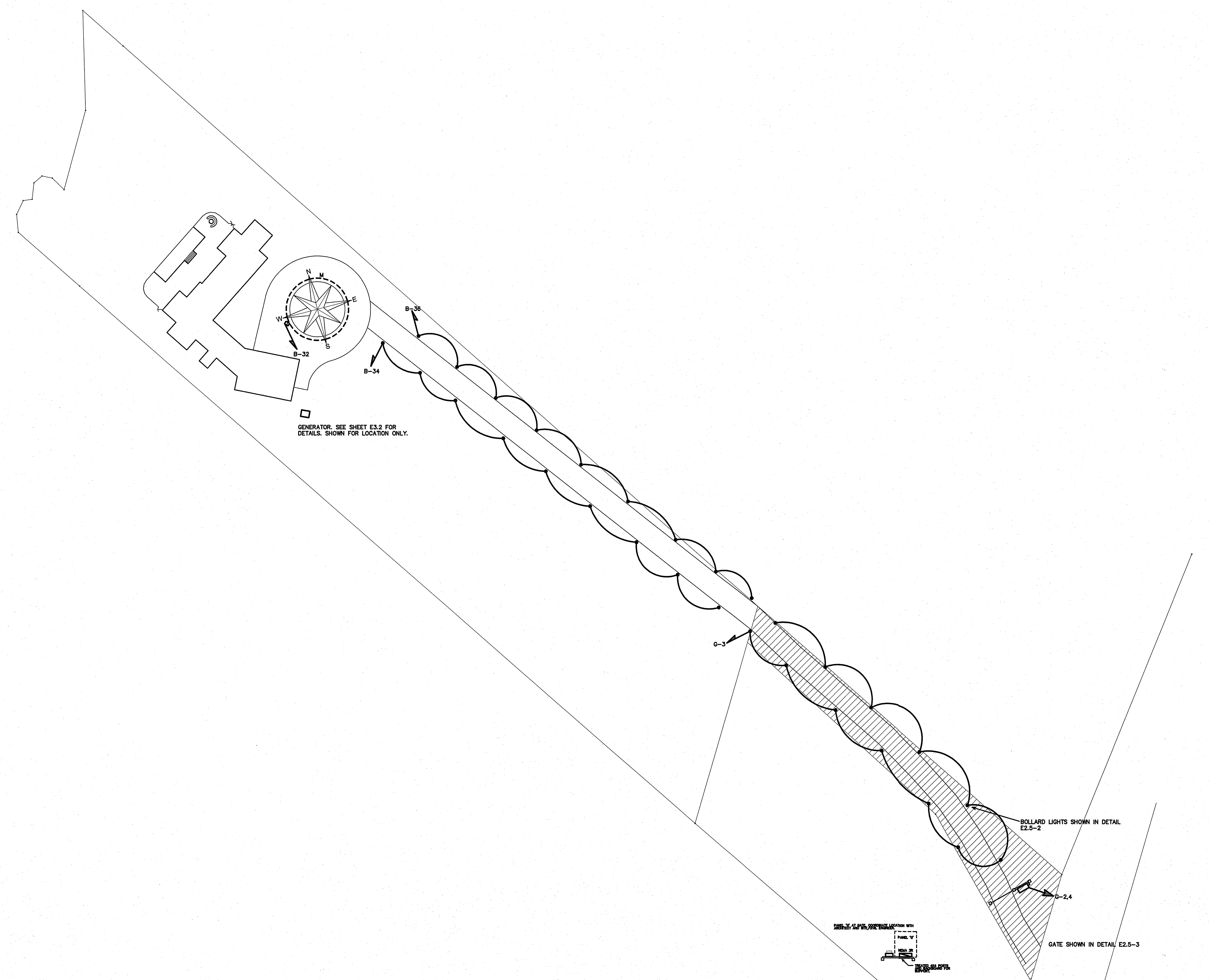
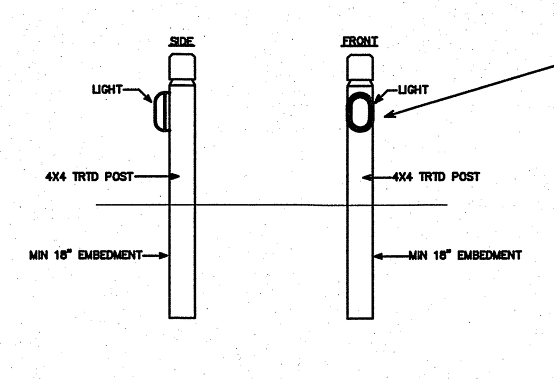
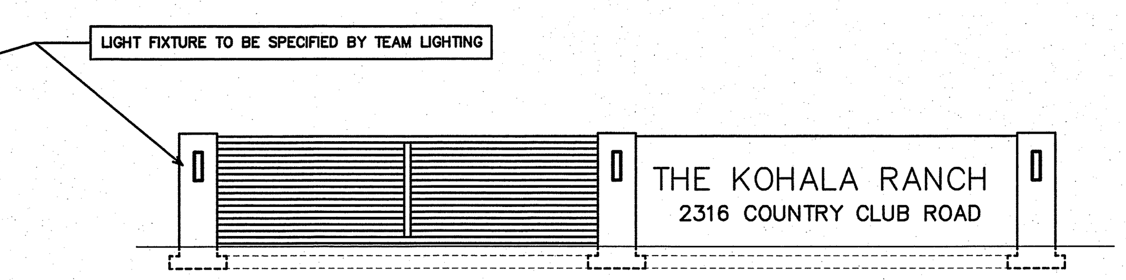



1 SITE ELECTRICAL PLAN
SCALE: 1" = 50'-0"




2 BOLLARD DETAIL
SCALE: NTS




3 GATE DETAIL
SCALE: NTS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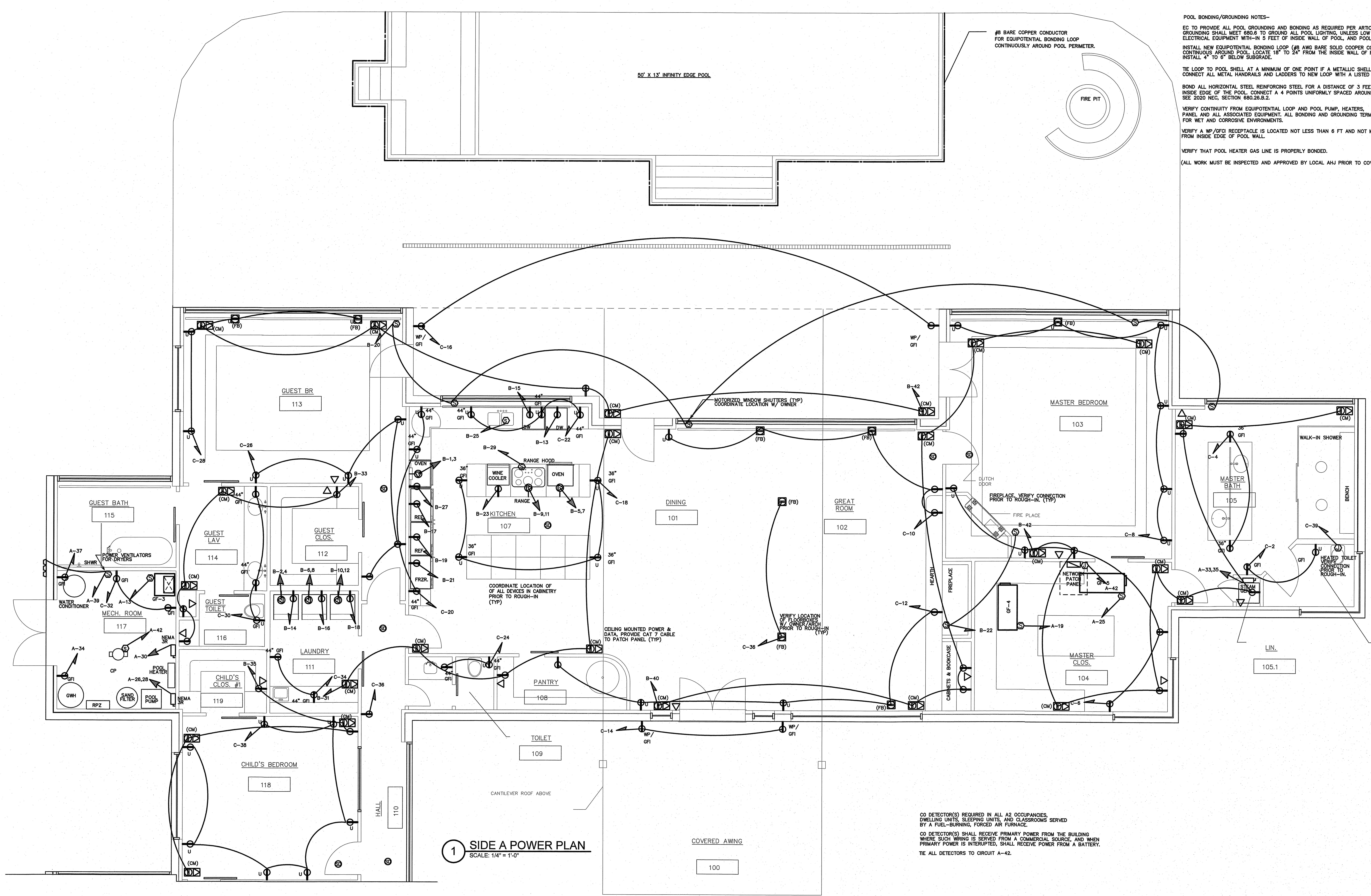


1 SIDE A POWER PLAN
SCALE: 1/4" = 1'-0"

POOL BONDING/GROUNDING NOTES–

EC TO PROVIDE ALL POOL GROUNDING AND BONDING AS REQUIRED PER ARTICLE 680 OF 2020 NEC GROUNDING SHALL MEET 680.6 TO GROUND ALL POOL LIGHTING, UNLESS LOW VOLTAGE), ANY ELECTRICAL EQUIPMENT WITH–IN 5 FEET OF INSIDE WALL OF POOL, AND POOL SYSTEM COMPONENTS.

INSTALL NEW EQUIPOTENTIAL BONDING LOOP (#8 AWG BARE SOLID COOPER CONDUCTOR) CONTINUOUS AROUND POOL. LOCATE 18" TO 24" FROM THE INSIDE WALL OF POOL. INSTALL 4" TO 6" BELOW SUBGRADE.

TIE LOOP TO POOL SHELL AT A MINIMUM OF ONE POINT IF A METALLIC SHELL IS UTILIZED. CONNECT ALL METAL HANDRAILS AND LADDERS TO NEW LOOP WITH A LISTED CONNECTOR.

BOND ALL HORIZONTAL STEEL REINFORCING STEEL FOR A DISTANCE OF 3 FEET FROM THE INSIDE EDGE OF THE POOL. CONNECT A 4 POINTS UNIFORMLY SPACED AROUND THE POOL/SPA. SEE 2020 NEC, SECTION 680.26.B.2.

VERIFY CONTINUITY FROM EQUIPOTENTIAL LOOP AND POOL PUMP, HEATERS, PANEL AND ALL ASSOCIATED EQUIPMENT. ALL BONDING AND GROUNDING TERMINALS SHALL BE LISTED FOR WET AND CORROSIVE ENVIRONMENTS.

VERIFY A WP/GFCI RECEPTACLE IS LOCATED NOT LESS THAN 6 FT AND NOT MORE THAN 20 FEET FROM INSIDE EDGE OF POOL WALL.

VERIFY THAT POOL HEATER GAS LINE IS PROPERLY BONDED.

(ALL WORK MUST BE INSPECTED AND APPROVED BY LOCAL AHJ PRIOR TO COVERING WORK)

CO DETECTOR(S) REQUIRED IN ALL A2 OCCUPANCIES, DWELLING UNITS, SLEEPING UNITS, AND CLASSROOMS SERVED BY A FUEL–BURNING, FORCED AIR FURNACE.

CO DETECTOR(S) SHALL RECEIVE PRIMARY POWER FROM THE BUILDING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE, AND WHEN PRIMARY POWER IS INTERUPTED, SHALL RECEIVE POWER FROM A BATTERY.

TIE ALL DETECTORS TO CIRCUIT A–42.


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AIA
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POWER PLAN

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ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
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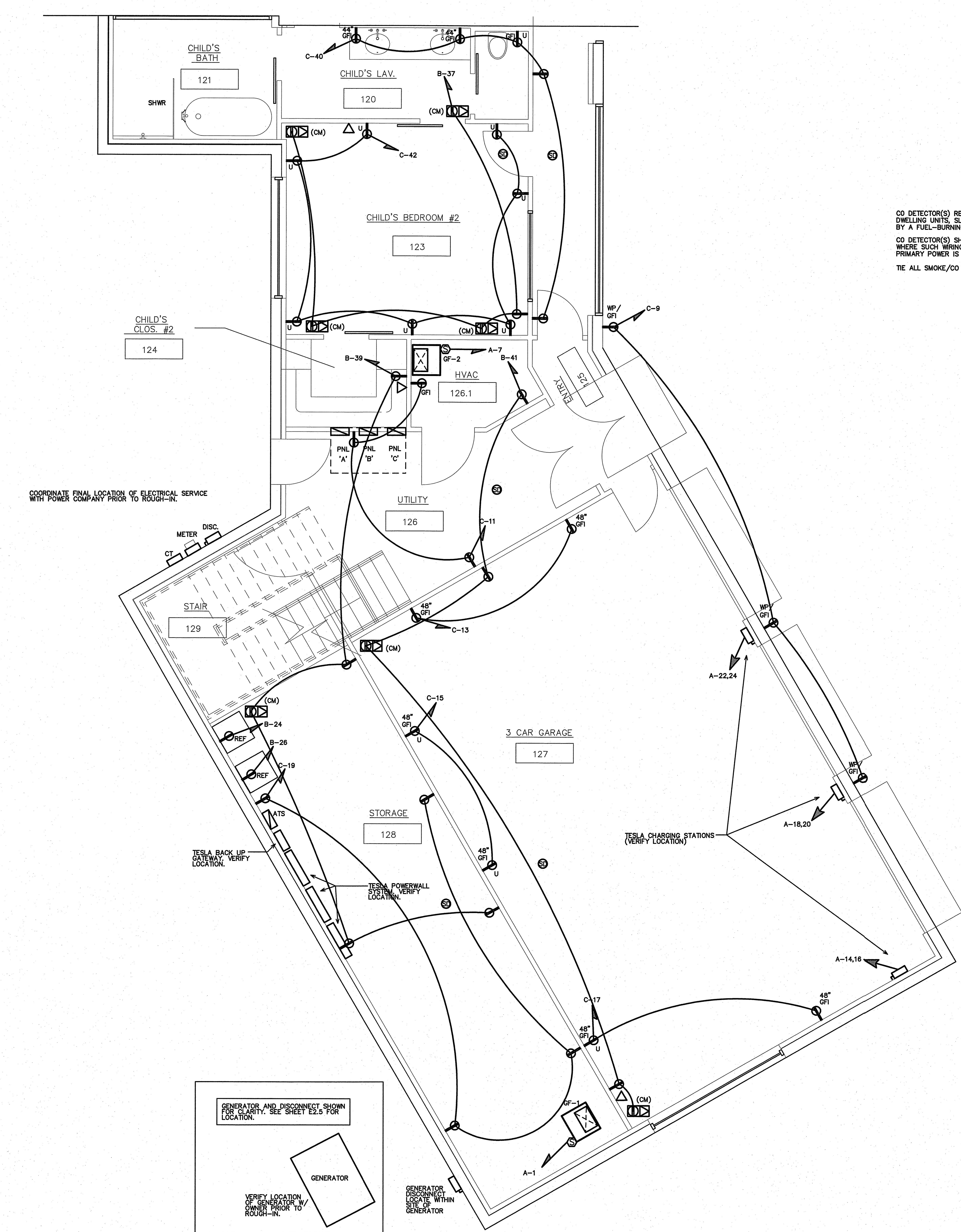
CO DETECTOR(S) SHALL RECEIVE PRIMARY POWER FROM THE BUILDING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE, AND WHEN PRIMARY POWER IS INTERUPTED, SHALL RECEIVE POWER FROM A BATTERY.

TIE ALL SMOKE/CO DETECTORS TO CIRUCIT A-42




1 SIDE B POWER PLAN
SCALE: 1/4" = 1'-0"

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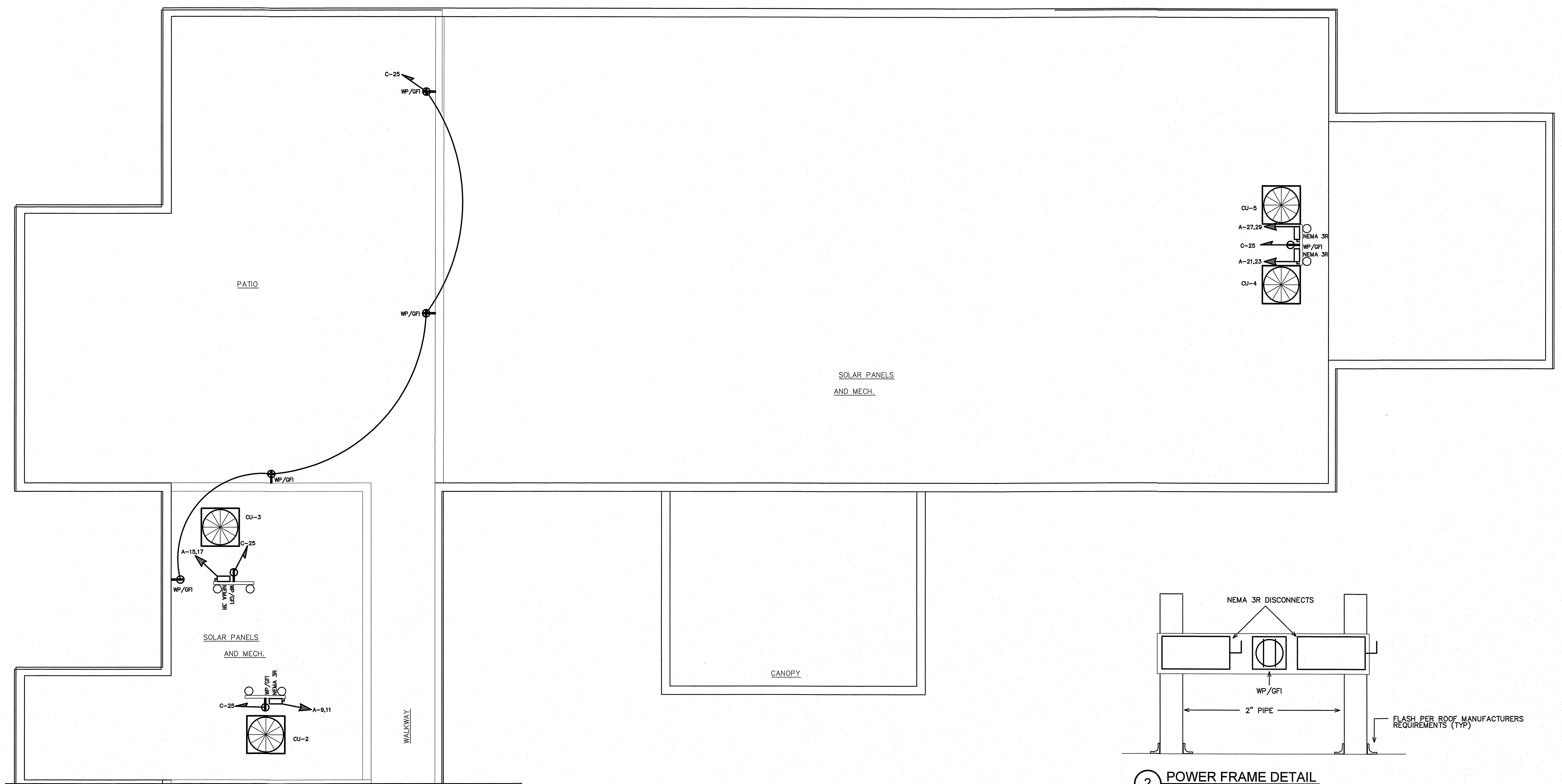


1 ROOFTOP SIDE A POWER PLAN
SCALE: 1/4" = 1'-0"



2 POWER FRAME DETAIL
SCALE: NTS

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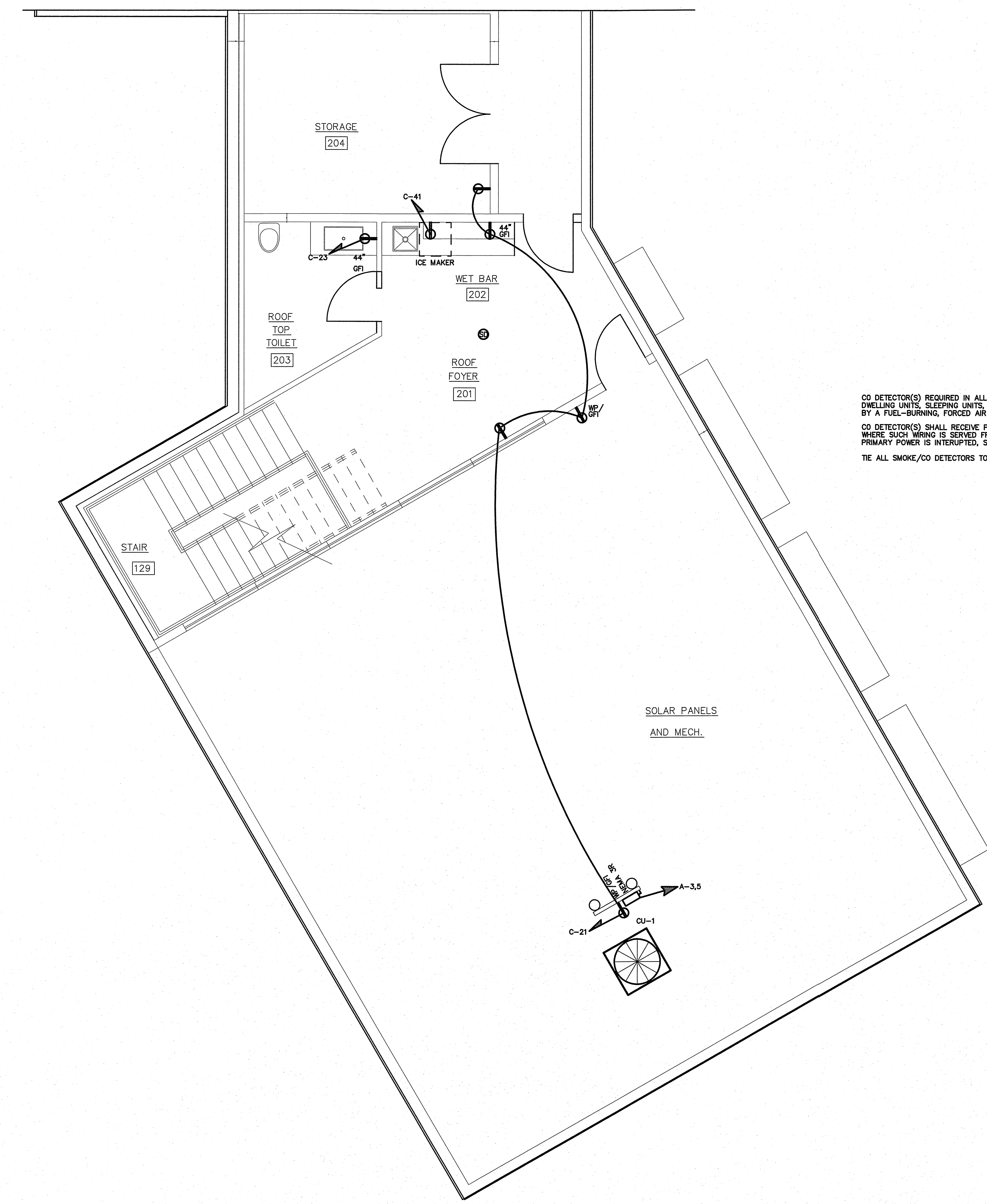


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CO DETECTOR(S) SHALL RECEIVE PRIMARY POWER FROM THE BUILDING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE, AND WHEN PRIMARY POWER IS INTERUPTED, SHALL RECEIVE POWER FROM A BATTERY.

TIE ALL SMOKE/CO DETECTORS TO CIRUCIT A-42

1 ROOFTOP SIDE B POWER PLAN
SCALE: 1/4" = 1'-0"

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Kohala Ranch E4

## NEW PANEL- 'A'

MAKE: CUTLER HAMMER | TYPE: PRL1a | OR APPROVED EQUAL
RATING: 120/240V 1 PHASE 3 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 22,000A
MLO MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

| LOAD SERVICE | CKT BRKR | WATTS PER PHASE A | WATTS PER PHASE B | CKT NO | NEUTRAL A B | CKT NO | WATTS PER PHASE A | WATTS PER PHASE B | CKT BRKR | LOAD SERVICE |
|---|---|---|---|---|---|---|---|---|---|---|
| GF-1 | 15A | 876 | | 1 | | 2 | 17287 | | 200A | PANEL 'B' |
| CU-1 | 20A | | 1416 | 3 | | 4 | | 14317 | | . |
| . | | 1416 | | 5 | | 6 | 37325 | | 400A | PANEL 'C' |
| GF-2 | 15A | | 1628 | 7 | | 8 | | 33875 | | (SUB-FED, NOT A-6,8) |
| CU-2 | 40A | 2832 | | 9 | | 10 | 2064 | | 20A | DHP-1 |
| . | | | 2832 | 11 | | 12 | | 2064 | | . |
| GF-3 | 15A | 1704 | | 13 | | 14 | 5364 | | 80A | TESLA CHARGER |
| CU-3 | 30A | | 2172 | 15 | | 16 | | 5364 | | . |
| . | | 2172 | | 17 | | 18 | 5364 | | 80A | TESLA CHARGER |
| GF-4 | 20A | | 2064 | 19 | | 20 | | 5364 | | . |
| CU-4 | 40A | 3132 | | 21 | | 22 | 5364 | | 80A | TESLA CHARGER |
| . | | | 3132 | 23 | | 24 | | 5364 | | . |
| GF-5 | 15A | 1620 | | 25 | | 26 | 1250 | | 30A | POOL PUMP |
| CU-5 | 40A | | 2832 | 27 | | 28 | | 1250 | | . |
| . | | 2832 | | 29 | | 30 | 1250 | | 20A | POOL HEATER |
| BATTERY CHARGER | 20A | | 400 | 31 | | 32 | | --- | 20A | SPARE |
| STEAM GENERATOR | 60A | 5500 | | 33 | | 34 | 180 | | 20A | GWH |
| . | | | 5500 | 35 | | 36 | | --- | 20A | SPARE |
| WATER SOFTENER | 20A | 100 | | 37 | | 38 | --- | | | (FUTURE SOLAR CONNECTION) |
| POWER VENTS FOR DRYERS | 20A | | 23 | 39 | | 40 | | --- | | . |
| SPARE | 20A | --- | | 41 | | 42 | --- | | 20A | SMOKE/ CO DETECTORS |

| NOTES | | A | B | | | A | B | | |
|---|---|---|---|---|---|---|---|---|---|
| (L) LOCKING BREAKER | SUB-TOTALS 'B' | 22084 | 21576 | 600A | BUS | 79204 | 71848 | SUB-TOTALS 'A' | TOTAL CONNECTED LOAD |
| | | | | 600A | LUGS | 22084 | 21576 | SUB-TOTALS 'B' | |
| | | | | 600A | FEED | 101288 | 93424 | GRAND TOTAL | |
| | | | | VERIFY | SIZE | 844A | 779A | AMPS/PHASE | |

Kohala Ranch E4

## NEW PANEL- 'B'

MAKE: CUTLER HAMMER | TYPE: PRL1a | OR APPROVED EQUAL
RATING: 120/240V 1 PHASE 3 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 22,000A
MLO MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

| LOAD SERVICE | CKT BRKR | WATTS PER PHASE A | WATTS PER PHASE B | CKT NO | NEUTRAL A B | CKT NO | WATTS PER PHASE A | WATTS PER PHASE B | CKT BRKR | LOAD SERVICE |
|---|---|---|---|---|---|---|---|---|---|---|
| OVEN | 40A | 4000 | | 1 | | 2 | 2500 | | 30A | DRYER |
| . | | | 4000 | 3 | | 4 | | 2500 | | . |
| OVEN | 40A | 4000 | | 5 | | 6 | 2500 | | 30A | DRYER |
| . | | | 4000 | 7 | | 8 | | 2500 | | . |
| RANGE | 40A | 4000 | | 9 | | 10 | 2500 | | 30A | DRYER |
| . | | | 4000 | 11 | | 12 | | 2500 | | . |
| (G) DISHWASHER | 20A | 1000 | | 13 | | 14 | 1440 | | 20A | WASHER (G) |
| (G) DISHWASHER | 20A | | 1000 | 15 | | 16 | | 1440 | 20A | WASHER (G) |
| (G) REFRIGERATOR | 20A | 1800 | | 17 | | 18 | 1440 | | 20A | WASHER (G) |
| (G) REFRIGERATOR | 20A | | 1800 | 19 | | 20 | | 250 | 20A | ROLLER SHADES |
| (G) FREEZER | 20A | 1800 | | 21 | | 22 | 500 | | 20A | FIREPLACES |
| (G) WINE COOLER | 20A | | 500 | 23 | | 24 | | 1800 | 20A | STORAGE REF. (G) |
| GARBAGE DISPOSAL | 20A | 1000 | | 25 | | 26 | 1800 | | 20A | STORAGE REF. (G) |
| MICROWAVE | 20A | | 1800 | 27 | | 28 | | 1005 | 20A | LTS- ROOF |
| HOOD FAN | 20A | 250 | | 29 | | 30 | 1435 | | 20A | LTS- OUTSIDE |
| A/V- KITCHEN/LAUNDRY | 20A | | 900 | 31 | | 32 | | 500 | 20A | LTS- DRIVEWAY CIRCLE |
| A/V- GUEST TOILET/CLOSET | 20A | 900 | | 33 | | 34 | 500 | | 20A | LTS- DRIVEWAY |
| A/V- CHILDS BEDROOM/CLOSET | 20A | | 900 | 35 | | 36 | | 500 | 20A | LTS- DRIVEWAY |
| A/V- CHILDS BEDROOM 2/BATHROOM | 20A | 900 | | 37 | | 38 | 1260 | | 20A | A/V- MASTER BATH/CLOSET |
| A/V- STORAGE | 20A | | 900 | 39 | | 40 | | 1080 | 20A | A/V- MASTER BED/ GREATROOM |
| A/V- GARAGE | 20A | 900 | | 41 | | 42 | 900 | | 20A | A/V- GUEST ROOM/ PATIO |

| NOTES | | A | B | | | A | B | | |
|---|---|---|---|---|---|---|---|---|---|
| (G) GFCI BREAKER | SUB-TOTALS 'B' | 20550 | 19800 | 400A | BUS | 16775 | 14075 | SUB-TOTALS 'A' | TOTAL CONNECTED LOAD |
| | | | | 400A | LUGS | 20550 | 19800 | SUB-TOTALS 'B' | |
| | | | | 400A | FEED | 37325 | 33875 | GRAND TOTAL | |
| | | | | VERIFY | SIZE | 311A | 282A | AMPS/PHASE | |

Kohala Ranch E4

## NEW PANEL- 'C'

MAKE: CUTLER HAMMER | TYPE: PRL1a | OR APPROVED EQUAL
RATING: 120/240V 1 PHASE 3 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 22,000A
MLO MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

| LOAD SERVICE | CKT BRKR | WATTS PER PHASE A | WATTS PER PHASE B | CKT NO | NEUTRAL A B | CKT NO | WATTS PER PHASE A | WATTS PER PHASE B | CKT BRKR | LOAD SERVICE |
|---|---|---|---|---|---|---|---|---|---|---|
| LTS- MASTER BEDROOM | 20A | 1220 | | 1 | | 2 | 360 | | 20A | REC- 105 |
| LTS- MASTER BATH/CLOSET | 20A | | 933 | 3 | | 4 | | 360 | 20A | REC- 105 |
| LTS- GREAT ROOM COVE LIGHTING | 20A | 1418 | | 5 | | 6 | 720 | | 20A | REC- 103,104 |
| LTS- GREAT ROOM TRACK | 20A | | 1680 | 7 | | 8 | | 1080 | 20A | REC- 103 |
| REC- EXTERIOR | 20A | 540 | | 9 | | 10 | 900 | | 20A | REC- 101,102 |
| REC- 126 | 20A | | 540 | 11 | | 12 | | 900 | 20A | REC- 101,102,108 |
| REC- 127 | 20A | 360 | | 13 | | 14 | 360 | | 20A | REC- 100 PATIO |
| REC- 127 | 20A | | 360 | 15 | | 16 | | 360 | 20A | REC- EXTERIOR |
| REC- 127 | 20A | 360 | | 17 | | 18 | 720 | | 20A | REC- 107 |
| REC- 128 | 20A | | 720 | 19 | | 20 | | 540 | 20A | REC- 107 COUNTER |
| REC- 201,202,204 | 20A | 720 | | 21 | | 22 | 540 | | 20A | REC- 107 COUNTER |
| REC- 203 | 20A | | 180 | 23 | | 24 | | 360 | 20A | REC- 109 |
| REC- PATIO | 20A | 540 | | 25 | | 26 | 900 | | 20A | REC- 113 |
| LTS- KITCHEN | 20A | | 1432 | 27 | | 28 | | 720 | 20A | REC- 113 |
| LTS- GUEST ROOM/ PATIO | 20A | 1470 | | 29 | | 30 | 540 | | 20A | REC- 114,116 |
| LTS- 111,112,114,115,116,117,119 | 20A | | 1092 | 31 | | 32 | | 360 | 20A | REC- 117 |
| LTS- CHILDS ROOM 1/ HALLWAY | 20A | 1319 | | 33 | | 34 | 360 | | 20A | REC- 111 |
| LTS- CHILDS ROOM 2/CHILDS BATH | 20A | | 1260 | 35 | | 36 | | 540 | 20A | REC- 110 |
| LTS- GARAGE/ ENTRY | 20A | 1420 | | 37 | | 38 | 1260 | | 20A | REC- 118 |
| (G) MASTER TOILET | 20A | | 1090 | 39 | | 40 | | 900 | 20A | REC- 120 |
| (G) WET BAR ICE MACHINE | 20A | 500 | | 41 | | 42 | 1260 | | 20A | REC-123 |

| NOTES | | A | B | | | A | B | | |
|---|---|---|---|---|---|---|---|---|---|
| (G) GFCI BREAKER | SUB-TOTALS 'B' | 9367 | 9287 | 200A | BUS | 7920 | 6120 | SUB-TOTALS 'A' | TOTAL CONNECTED LOAD |
| | | | | 200A | LUGS | 9367 | 9287 | SUB-TOTALS 'B' | |
| | | | | 200A | FEED | 17287 | 15407 | GRAND TOTAL | |
| | | | | VERIFY | SIZE | 144A | 128A | AMPS/PHASE | |

## KOHALA RANCH

### DIVERSIFIED LOAD PER NEC ARTICLE 220-83(B)

A. SPACE HEATING & AIR CONDITIONING = **34616W**

ELECTRICAL HEAT: 100% OF NAMEPLATE RATING = 0W
AIR CONDITIONING: 100% OF NAME PLATE RATING = 34616W

B. ALL OTHER LOADS = **56434W**

GENERAL LIGHTING: 5827 SQ. FT. X 3 W/SQ. FT. = 17481W
2 – 20A APPLIANCE CKTS @ 1500W EACH = 3000W
1 – ELECTRIC WATER HEATER = 6000W
3 – WASHER UNIT – 4320W
3 – DRYER UNIT – 15000W
2 – DISH WASHER = 2000W
1 – ELECTRIC RANGE = 8000W
4 – REFRIGERATOR = 7200W
2 – MICROWAVE = 3600W
2 – OVEN = 12000W
1 – POOL PUMP = 2500W
1 – POOL HEATER = 2500W
3 – TESLA CHARGER = 32184W
1 – FREEZER = 1800W
1 – WINE COOLER = 500W
1 – STEAM GENERATOR = 11000W

FIRST 8KW @ 100% = 8000W
REMAINDER @ 40% = 48434W

REQUIRED DEMAND LOAD = **91050W**

REQUIRED SERVICE CAPACITY = **379 AMPS**

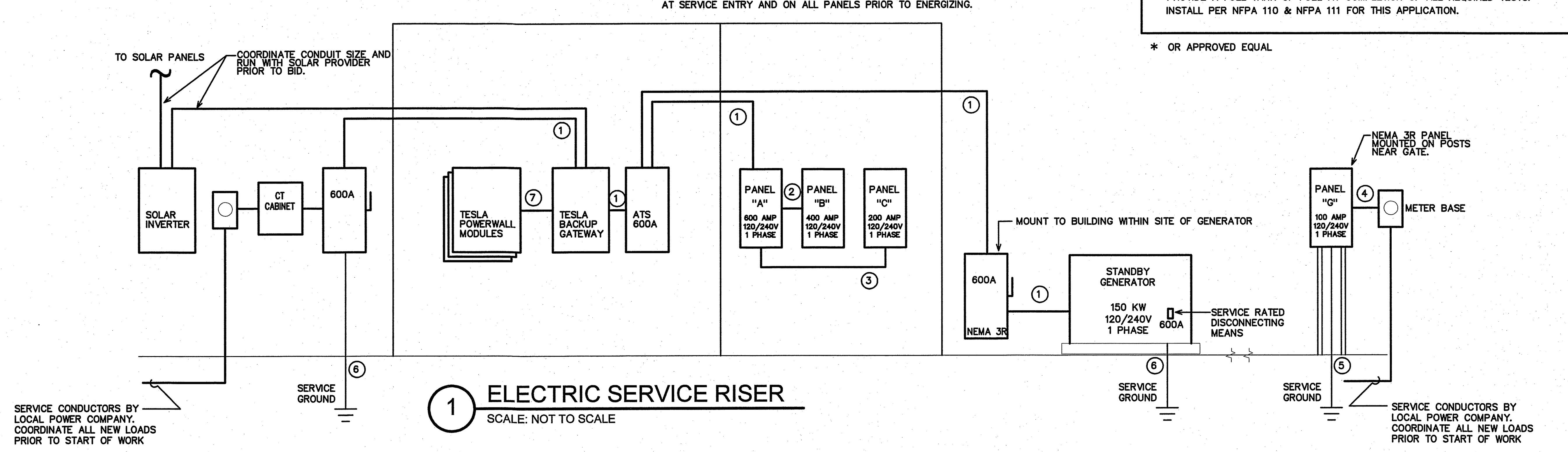
91050W @ 240V 1PH = 379.4A

## RISER WIRING SCHEDULE

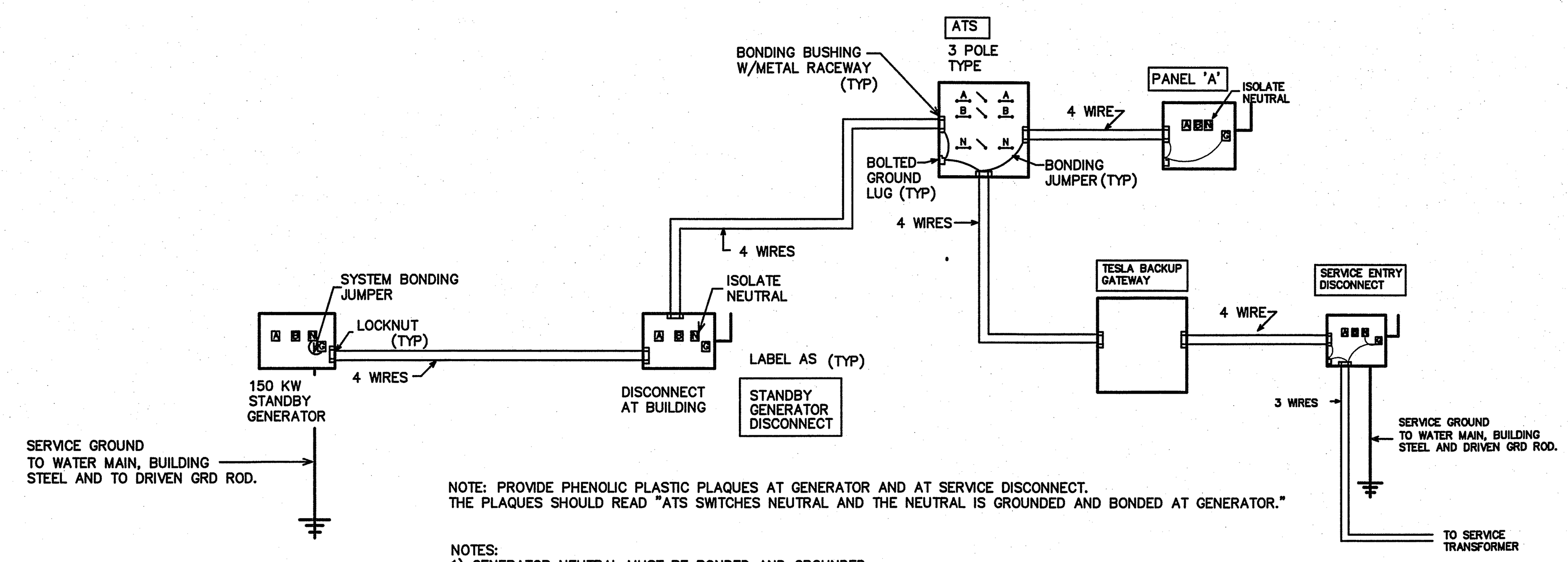
1. 600A: (2 SETS) 3–#350MCM IN (2) 2 1/2" CONDUIT
2. 400A: 3–#500MCM IN 2 1/2" CONDUIT
3. 200A: 3–#3/0 IN 2" CONDUIT
4. 100A: 3–#3 IN 1" CONDUIT
5. #8 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND METALLIC WATER MAIN AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD
6. #1/0 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND METALLIC WATER MAIN AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD
7. VERIFY WIRING FOR POWERWALL MODULES WITH VENDOR PRIOR TO START OF WORK.

NOTE:
UNLESS OTHERWISE NOTED ALL OTHER CIRCUITS ARE 20A, 120VOLT. PROVIDE 2–#12, 1–#12 CU GND IN 1/2" CONDUIT.
SEE EQUIPMENT SCHEDULES FOR ADDITIONAL WIRE SIZES.

VERIFY AVAILABLE FAULT CURRENT AT SERVICE LOCATION WITH LOCAL POWER COMPANY. PROVIDE INFORMATION TO ENGINEER TO CALCULATE MINIMUM PANEL AIC RATING PRIOR TO RELEASING GEAR. AIC RATING ON PANELS ARE FOR PERMIT REVIEW AND PRICING ONLY. EC SHALL PROVIDE LABELING INDICATING FAULT CURRENT AT SERVICE ENTRY AND ON ALL PANELS PRIOR TO ENERGIZING.




1 ELECTRIC SERVICE RISER
SCALE: NOT TO SCALE




NOTE: PROVIDE PHENOLIC PLASTIC PLAQUES AT GENERATOR AND AT SERVICE DISCONNECT. THE PLAQUES SHOULD READ "ATS SWITCHES NEUTRAL AND THE NEUTRAL IS GROUNDED AND BONDED AT GENERATOR."

NOTES:
1) GENERATOR NEUTRAL MUST BE BONDED AND GROUNDED.
2) GENERATOR SHALL BE SUPPLIED WITH MAIN CIRCUIT BREAKER.
3) ALL GROUNDING AND BONDING SHALL BE PER NEC SECTION 250.

2 GENERATOR GROUNDING DETAIL
SCALE: NOT TO SCALE

Kohala Ranch E4

## (ATS) AUTOMATIC TRANSFER SWITCH SCHEDULE

ATS–1 * AUTOMATIC TRANSFER SWITCH, OPEN TRANSITION. 600 AMP, 120/240 VOLT, 1 PHASE. UNIT SHALL TRANSFER POWER WITH-IN 10 SEC. PER NCFC 604.1

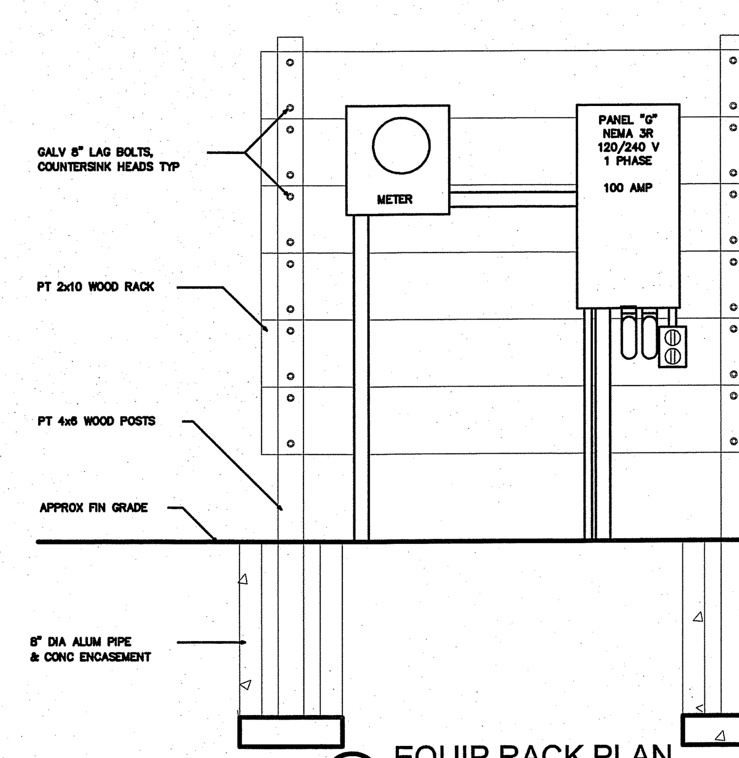
## STANDBY GENERATOR SCHEDULE

150 KW PROPANE FUELED STANDBY GENERATOR *

PROVIDE A "GENERAC" MODEL RG15090 STANDBY GENERATOR WITH (1) "LIFE SAFETY" AUTOMATIC TRANSFER SWITCH. THE GENERATOR SHALL BE CAPABLE OF RUNNING ON PROPANE VAPOR WITH A 72 HOUR MIN RUN CAPACITY. PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. THE ENGINE SHALL HAVE A MINIMUM OF 229 HP AT 1800 RPM WITH AND ENCLOSED MUFFLER. THE DELIVERY VOLTAGE SHALL BE 120/240 VOLT, 1 PHASE. PROVIDE 10A DUAL RATE BATTERY CHARGER, AUTOMATIC VOLTAGE REGULATOR, AUTOMATIC LOW OIL PRESSURE AND HIGH TEMPERATURE SHUTDOWN. THE AUTOMATIC TRANSFER SWITCH SHALL TRANSFER FROM THE UTILITY AUTOMATICALLY WITH-IN 10 SECONDS. PROVIDE A SERVICE RATED DISCONNECTING MEANS WITH OVERCURRENT PROTECTION AT THE GENERATOR LOCATION. PROPERLY GROUND THE GENERATOR AND SERVICE EQUIPMENT PER THE NEC. PROVIDE INITIAL START UP AND OWNER TRAINING. THE PROPANE FUEL TANK BY OTHERS. PROVIDE A DIGITAL CONTROL PANEL, UNIT VIBRATION ISOLATION, AND A LEVEL 1 ACOUSTIC WEATHER PROTECTIVE ENCLOSURE. PROVIDE A LOAD TEST, START-UP AND OWNER TRAINING BY THE GENERATOR MANUFACTURER'S FACTORY TRAINED REPRESENTATIVE.

PROVIDE AN ADJUSTABLE 7-DAY/24-HOUR EXERCISE TIMER.
PROVIDE A FULL TANK OF FUEL AT COMPLETION OF ALL REQUIRED TESTS.
INSTALL PER NFPA 110 & NFPA 111 FOR THIS APPLICATION.

* OR APPROVED EQUAL




2 EQUIP RACK PLAN
SCALE: 3/4" = 1'-0"

Kohala Ranch E4

## NEW PANEL- 'G'

MAKE: CUTLER HAMMER | TYPE: PRL1a | OR APPROVED EQUAL
RATING: 120/240 1 PHASE 3 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 22,000A
100A MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☒YES ☐NO

| LOAD SERVICE | CKT BRKR | WATTS PER PHASE A | WATTS PER PHASE B | CKT NO | NEUTRAL A B | CKT NO | WATTS PER PHASE A | WATTS PER PHASE B | CKT BRKR | LOAD SERVICE |
|---|---|---|---|---|---|---|---|---|---|---|
| GATE LIGHTS | 20A | 500 | | 1 | | 2 | 1500 | | 20A | GATE POWER |
| DRIVEWAY LIGHTS | 20A | | 500 | 3 | | 4 | | 1500 | | . |
| SPACE | | --- | | 5 | | 6 | --- | | | SPACE |
| SPACE | | | --- | 7 | | 8 | | --- | | SPACE |
| SPACE | | --- | | 9 | | 10 | --- | | | SPACE |
| SPACE | | | --- | 11 | | 12 | | --- | | SPACE |
| SPACE | | --- | | 13 | | 14 | --- | | | SPACE |
| SPACE | | | --- | 15 | | 16 | | --- | | SPACE |
| SPACE | | --- | | 17 | | 18 | --- | | | SPACE |
| SPACE | | | --- | 19 | | 20 | | --- | | SPACE |
| SPACE | | --- | | 21 | | 22 | --- | | | SPACE |
| SPACE | | | --- | 23 | | 24 | | --- | | SPACE |

| NOTES | | A | B | | | A | B | | |
|---|---|---|---|---|---|---|---|---|---|
| NEMA 3R | SUB-TOTALS 'B' | 500 | 500 | 60A | BUS | 1500 | 1500 | SUB-TOTALS 'A' | TOTAL CONNECTED LOAD |
| | | | | 60A | LUGS | 500 | 500 | SUB-TOTALS 'B' | |
| | | | | 60A | FEED | 2000 | 2000 | GRAND TOTAL | |
| | | | | VERIFY | SIZE | 17A | 17A | AMPS/PHASE | |

### NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON-COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

### DIVERSIFIED LOAD SUMMARY

| LOAD TYPE | | DEMAND FACTOR (1) | A | B | TOTAL DIVERSIFIED LOAD |
|---|---|---|---|---|---|
| GENERAL LIGHTING (2) | | 125% | 625 | 625 | 1250 |
| TRACK LIGHTING | | 125% | --- | --- | --- |
| GENERAL USE RECEPTACLES | | ≤10KVA@100% | --- | --- | --- |
| | | >10KVA@50% | --- | --- | --- |
| MOTORS AND EQUIPMENT | LARGEST | 125% | 1875 | 1875 | 3750 |
| | ALL OTHERS | 100% | --- | --- | --- |
| WATER HEATERS | | 125% | --- | --- | --- |
| KITCHEN EQUIPMENT (3) | | 100% | --- | --- | --- |
| FIX. ELEC. SPACE HEAT. (4) | | 100% | --- | --- | --- |
| SHOW WINDOW LIGHTS (5) | | 125% | --- | --- | --- |
| SIGN | | 125% | --- | --- | --- |
| MISC | | 100% | --- | --- | --- |
| PHASE (TOTAL VA) | | | --- | --- | --- |
| | | TOTAL AMPS | ---A | ---A | VOLT AMPS / VOLTS = ---A TOTAL AMPS |

Kohala Ranch E4

## EQUIPMENT WIRING SCHEDULE

| EQUIPMENT | MCA | MOCP | VOLTS | PH | WIRE SIZE |
|---|---|---|---|---|---|
| GF-1 | 7.3A | 15A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| CU-1 | 11.8A | 20A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| GF-2 | 13.5A | 15A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| CU-2 | 23.6A | 40A | 240V | 1 | 2-#8, 1-#10 GND IN 3/4" CONDUIT |
| GF-3 | 14.2A | 15A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| CU-3 | 18.1A | 30A | 240V | 1 | 2-#10, 1-#10 GND IN 3/4" CONDUIT |
| GF-4 | 17.2A | 20A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| CU-4 | 26.1A | 40A | 240V | 1 | 2-#8, 1-#10 GND IN 3/4" CONDUIT |
| GF-5 | 13.5A | 15A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| CU-5 | 23.6A | 40A | 240V | 1 | 2-#8, 1-#10 GND IN 3/4" CONDUIT |
| DHP-1 | 17.2A | 20A | 240V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| TESLA CHARGER (X3) | 45A | 80A | 240V | 1 | 3-#4, 1-#8 GND IN 1 1/4" CONDUIT |
| POOL PUMP | (2.5KW) | 30A | 240V | 1 | 2-#10, 1-#10 GND IN 3/4" CONDUIT |
| POOL HEATER | 1250W | 20A | 120V | 1 | 2-#12, 1-#12 GND IN 1/2" CONDUIT |
| OVEN | (8KW) | 40A | 240V | 1 | 3-#8, 1-#10 GND IN 3/4" CONDUIT |
| RANGE | (8KW) | 40A | 240V | 1 | 2-#8, 1-#10 GND IN 3/4" CONDUIT |
| DRYER | (8KW) | 40A | 240V | 1 | 3-#8, 1-#10 GND IN 3/4" CONDUIT |
| EWH | (6KW) | 30A | 240V | 1 | 2-#10, 1-#10 GND IN 3/4" CONDUIT |
| GATE | (1KW) | 20A | 240V | 1 | 3-#12, 1-#12 GND IN 1/2" CONDUIT |
| STEAM GENERATOR | (11KW) | 60A | 240V | 1 | 3-#6, 1-#10 GND IN 1" CONDUIT |

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.


ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net


# THE KOHALA RANCH
MOREHEAD CITY, NORTH CAROLINA

6/20/23
NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE

ELECTRICAL PANELS & RISER

21033
ISSUED: 6-20-2023
DWG BY: LS
CKD BY: BEB
REVISIONS

SHEET NO.
E-4