

16 August, 2023

### Addendum 3

#### Renovations to ABC Newport

The following addendum shall supersede previous information and does hereby become part of the contract documents.

- Clarification: Roof pitch is 5 in 12.
- Clarification: Owner will pay electrical bill during construction.
- Clarification: Owner will pay tap fees and building permit fee.
- Clarification: Existing sales counter to be removed by Contractor.
- Clarification: Owner will remove merchandise and gondolas.
- Clarification: Impact glazing is not a requirement for this project.
- Clarification: There are some hard tile and portions of carpet to be removed by the General Contractor, under the existing shelving.
- SD-2, Bike Rack: See attached specification sheet.
- Metal Roofing: See attached specification for Bengel Lock 1500 for approved metal roof selection or approved equal.
- Clarification: See attached BD-1 for additional soffit information.
- Carpet Tile: Shaw Contract, Carpet Tile, Space Worx – See attached. Base to be Roppe 4" Vinyl cove or equal.
- Clarification: New Interior partitions are to be 3-5/8" metal studs @ 16" o.c. with 5/8" GWB on each side. Run to the underside of the existing roof deck.
- Clarification: For existing brick to be painted, the paint color will be similar to the color of the new brick. Exact colors to be made from sample panels in the field.
- Clarification: Specification 01020; 1.2A: Contingency allowance of \$40,000.00 shall include sales taxes, but not overhead and profit which shall be included in the base bid amount.
- Specifications, 01020, Allowances: Add \$7,500.00 for 3<sup>rd</sup> party testing for soil compacting, concrete and steel.
- Specifications, 01020, Allowances: Landscaping allowance of \$20,000.00 shall include planting, mulching, and edging.
- Clarification: Concrete slab to be on top of 4" #57 stone or 4" granular base (sand suitable for building pad). Vapor barrier shall be "Moistop Ultra 10" vapor barrier or approved equal. (Poly is not acceptable)
- See attached BD-2 for typical window head and sill detail.
- Specifications, 03300, 2.5.C.1: Floor slabs to be 3500 PSI.
- Clarification: Provide to locate, trace and inspect all sewer lines in the bid price. Report any existing issues to the Architect for review.
- Clarification: Sheet P-2, detail 2/P-2 shows the demolition required. The existing information note on the top right corner of sheet P-2 indicates the Contractors responsibility.

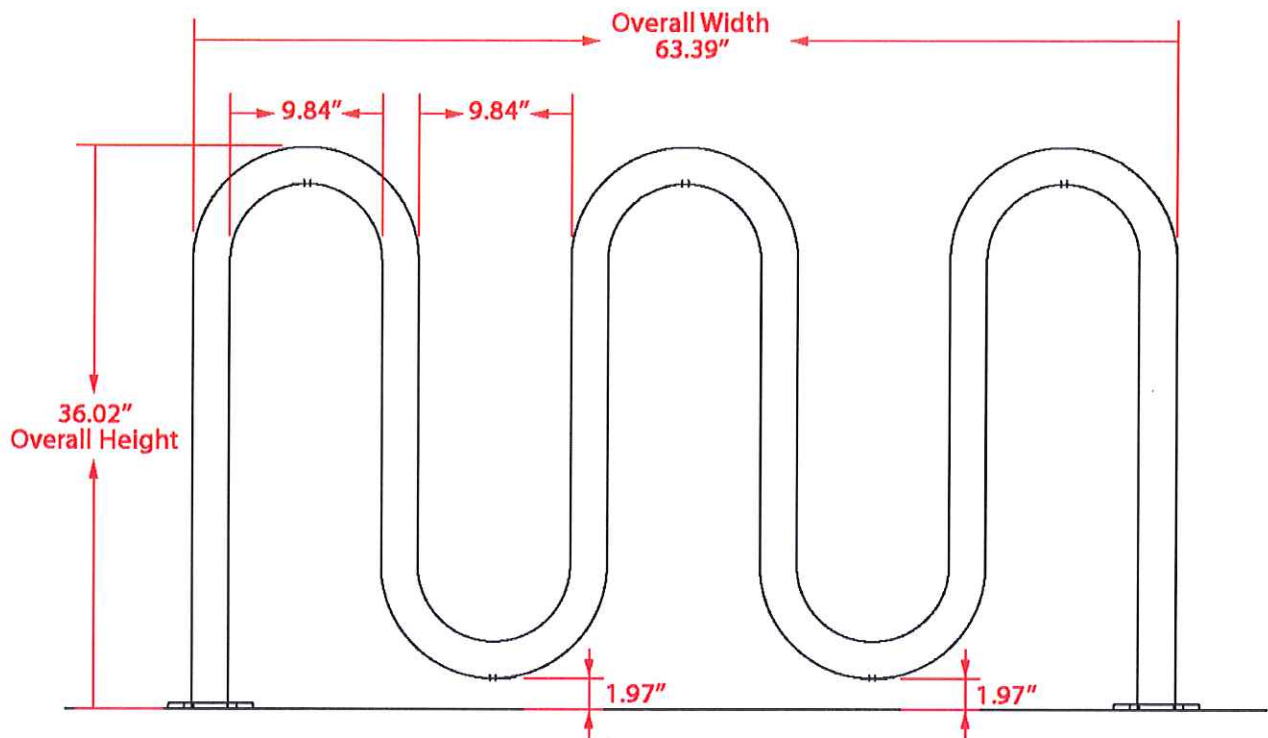
- See attached EBD-1 for the Lift Station electrical requirements. Intercept existing 4" sewer line running to the building and redirect to pump station. Provide new 4" PVC sewer to building from pump.
- New Site Utility water line to be ¾" PVC.
- Clarification: Building Sign and monument sign to be provided by Owner. Sign allowance in specifications 01020, 1.2C to be reduced to \$1,500.00 material only for interior door signages.
- Contractor to provide a sign circuit at new façade at location of building sign. Provide time clock, junction box, and switch for sign circuit. Switch shall be located within sight of sign or be capable of being locked in the open position per NEC 600.6. Coordinate location with Tenant. Wire to new breaker A-37. Provide a sign circuit at new monumental sign, wire to new breaker A-39. See site plan for location.
- Clarification: Maintain existing exterior parking lot lighting circuits for parking lights to be relocated provide traffic rated junction box and extent wiring as required.

**End of Addendum 3**

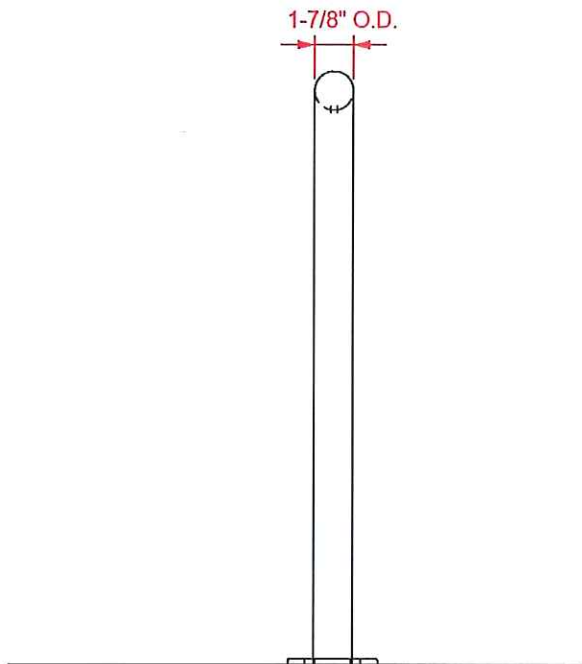
# Newport ABC Bike Rack

## Specification Sheet

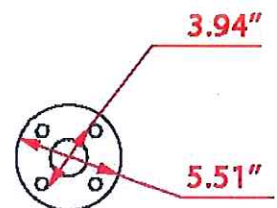
### Park-It 7 Bike Rack, Surface Mount



Front View



Side View



Surface Mount Plate

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Material	Finish	Dimensions	Weight
Steel tubing	Galvanized PLUS clear coat finish	63.39" w x 36.02" h Footprint: 66.54" w x 36.02" h	53 lbs.
Type of Mount:	Surface mount		
Size of Tubing:	1-7/8" O.D. x 11-gauge		



# RED SHIELD WARRANTY



## METAL PAINT FINISH LIMITED WARRANTY

Warranty No: {ins#0} Firestone Project (FBPCO) # {ins#1}  
Purchaser: {ins#3}  
Building Identification: {ins#4}  
Building Address: {ins#5}  
Warranty Period Of: 20 Years Beginning on: {ins#6}  
Roofing Contractor: {ins#7}

For the warranty period indicated above, Firestone Building Products Company, LLC ("Firestone"), an Indiana limited liability company, warrants to the Purchaser that, subject to the Terms, Conditions and Limitations set forth below, the exterior paint finish ("Finish") on the UNA-CLAD brand cold-coated metal ("UNA-CLAD Metal") supplied by Firestone as part of the Firestone Project (FBPCO) Number listed above, will not exhibit the following exterior surface conditions: 1) Peeling, checking or cracking, except for crazing or cracking that may occur on formed edges or bends of the metal roofing panels and trim; 2) Chalking in excess of a numerical rating of Vertical Eight (8), Non-Vertical Eight (8), when measured in accordance with ASTM D 4214 "Standard Methods of Evaluating Degree of Chalking of Exterior Paints," or 3) Fade or change in color in excess of Vertical Five (5), Non-Vertical Five (5) color difference units, as measured on exposed surfaces which have been cleaned of external deposits and chalk and the corresponding values measured on the original or unexposed painted surfaces when tested in accordance with ASTM D 2244 3.7.1 and 3.8.4, "Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates."

### TERMS, CONDITIONS AND LIMITATIONS

1. **Product Usage.** This Metal Paint Finish Limited Warranty (the "Limited Warranty") is limited exclusively to metal roofing panels and trim fabricated from UNA-CLAD Metal and installed in accordance with Firestone technical specifications.
2. **Notice.** In the event any peeling, checking, cracking, chalking, fading or excessive color change are observed by the Purchaser, the Purchaser must give notice in writing or by telephone to Firestone within thirty (30) days of any such observation. Written notice may be sent to Firestone at the street address or fax number shown on the reverse side of this Limited Warranty. By so notifying Firestone, the Purchaser authorizes Firestone or its designee to investigate the surface condition of the UNA-CLAD Metal.
3. **Investigation and Remedy.** If upon investigation, Firestone determines that the surface condition of the UNA-CLAD Metal is not excluded under the Terms, Conditions and Limitations set forth in this Limited Warranty, the Purchaser's sole and exclusive remedy and Firestone's total liability shall be limited to the refinishing of the UNA-CLAD Metal as determined by Firestone to require refinishing. Any and all refinishing work so performed by Firestone in compliance with this warranty shall be performed by using any standard finishing practices and materials. If the investigation reveals that the surface condition of the UNA-CLAD Metal trim is excluded under the Terms, Conditions and Limitations, the Owner shall be responsible for payment of the investigation costs. Failure by Purchaser to pay for these costs shall render this Limited Warranty null and void.
4. **Disputes.** Any dispute, controversy or claim between the Purchaser and Firestone concerning this Limited Warranty shall be settled by mediation. In the event that the Purchaser and Firestone do not resolve the dispute, controversy or claim in mediation, the Purchaser and Firestone agree that neither party will commence or prosecute any suit, proceeding, or claim other than in the courts of Hamilton County in the state of Indiana or the United States District Court, Southern District of Indiana, Indianapolis Division. Each party irrevocably consents to the jurisdiction and venue of the above-identified courts.
5. **Paint Finish Colors.** This warranty shall extend only to standard colors identified as such in Firestone published literature at the date of issuance of this Limited Warranty or as approved in writing by Firestone. Colors identified as "metallic" by Firestone are not warranted against fade or change in color. Firestone standard color "Regal Red" is warranted against fade or color change for a maximum period of ten (10) years.
6. **Payment Required.** Firestone shall have no obligation under this Limited Warranty unless and until Firestone has been paid in full for all materials, supplies, services, approved written change orders, warranty costs and other costs which are included in, or incidental to, the fabrication and installation of the UNA-CLAD Metal.
7. **Exclusions.** Firestone shall have no obligation under this Limited Warranty, or any other liability, now or in the future if peeling, checking, cracking, chalking, fading or excessive color change of the UNA-CLAD Metal is caused by: (a) Natural forces, disasters, or acts of God including, but not limited to wind, hurricanes, tornados, hail, wind-blown debris, lightning, earthquakes, volcanic activity, atomic radiation, insects or animals; (b) Any act(s), conduct or omission(s) by any person; or act(s) of war, terrorism or vandalism, which damage the UNA-CLAD Metal; (c) Failure by the Purchaser to use reasonable care in maintaining the UNA-CLAD Metal, said maintenance to include, but not limited to those items listed in the "Firestone / UNA-CLAD Paint Finish Cleaning and Maintenance Guide" on the reverse side of this Limited Warranty; (d) Deterioration or failure of building components, including, but not limited to, the roof substrate, walls, mortar, HVAC units, etc.; (e) Condensation or moisture infiltration in, through, or around the walls, ceilings, rooftop, hardware or equipment, building structure or underlying or surrounding materials; (f) Any acid, oil, harmful chemical, chemical or physical reaction and the like which comes in contact with the UNA-CLAD Metal, including but not limited to chemical fumes, salt water spray, surface temperatures that exceed 200 degrees Fahrenheit, airborne sand abrasion, metal shavings, standing water or the continuous spray of water; (h) Alterations or repairs to the metal roofing panels and trim not approved in writing by Firestone; (i) Any failure caused by the attachment or mounting of any item or device to or near the metal roofing panels and trim, or by improper handling during fabrication and installation, including but not limited to, improper equipment fabrication, storage, transportation, erection, placement or failure to immediately remove strippable protective film coatings; (j) Failure to give proper notice as set forth in paragraph 1(a) above.
8. **Transfer.** This Limited Warranty shall be transferable subject to Firestone's inspection and written approval, and to Purchaser's payment of the current transfer fee set by Firestone.
9. **Term.** The term of this Limited Warranty shall be for the period set forth above and such term shall not be extended under any circumstances.
10. **Access.** During the term of this Limited Warranty, Firestone's designated representative or employees shall have free access to the UNA-CLAD Metal during regular business hours. In the event that access is limited due to security or other restrictions, Purchaser shall reimburse Firestone for all reasonable cost incurred during inspection and/or refinishing of the UNA-CLAD Metal that are due to delays associated with said restrictions. Owner shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, as necessary to expose the UNA-CLAD Metal for inspection and/or refinishing.
11. **Waiver.** Firestone's failure to enforce any of the terms or conditions stated herein shall not be construed as a waiver of such provision or of any other terms and conditions of this Limited Warranty.
12. **Governing Law.** This Limited Warranty shall be governed by and construed in accordance with the laws of the State of Indiana without regard to that State's rules on conflict of laws.
13. **Severability.** If any portion of this Limited Warranty is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall nevertheless continue in full force.

FIRESTONE DOES NOT WARRANT PRODUCTS INCORPORATED OR UTILIZED IN THIS INSTALLATION THAT WERE NOT FURNISHED BY FIRESTONE. FIRESTONE SPECIFICALLY DISCLAIMS LIABILITY UNDER ANY THEORY OF LAW ARISING OUT OF THE INSTALLATION OF, PERFORMANCE OF, OR DAMAGES SUSTAINED BY OR CAUSED BY, PRODUCTS NOT FURNISHED BY FIRESTONE.

THIS LIMITED WARRANTY SUPERSEDES AND IS IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND FIRESTONE HEREBY DISCLAIMS ALL SUCH WARRANTIES. THIS LIMITED WARRANTY SHALL BE THE OWNER'S SOLE AND EXCLUSIVE REMEDY AGAINST FIRESTONE, AND FIRESTONE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGES TO THE BUILDING OR ITS CONTENTS OR THE ROOF DECK. THIS LIMITED WARRANTY CANNOT BE AMENDED, ALTERED OR MODIFIED IN ANY WAY EXCEPT IN WRITING SIGNED BY AN AUTHORIZED OFFICER OF FIRESTONE. NO OTHER PERSON HAS ANY AUTHORITY TO BIND FIRESTONE WITH ANY REPRESENTATION OR WARRANTY WHETHER ORAL OR WRITTEN.

Firestone Building Products Company, LLC  
By: John R. Geary

Authorized  
Signature:  
Title: Vice President, Quality, Technology & Product Development





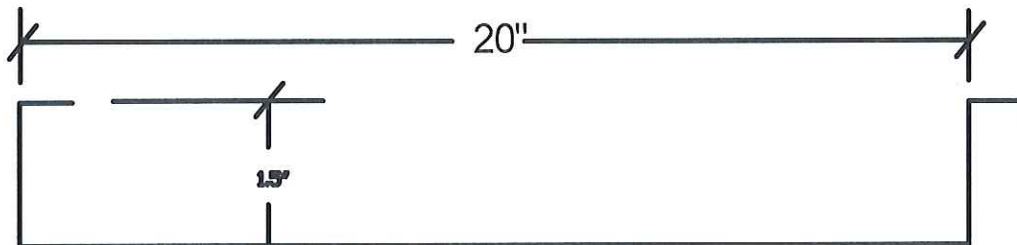
R. E. BENDEL SHEET METAL CO., INC

1311 NORTH CRAVEN  
NEW BERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX

## BENGEL LOCK 1500 SERIES PANEL

## PRODUCT INFORMATION

### GENERAL DESCRIPTION



COVERAGE WIDTH- 20"

MINIMUM SLOPE - 1:12

PANEL ATTACHMENT - 26 GAUGE CLEAT

PANEL SUBSTRATE - GALVALUME

24 GAUGE METAL

FINISHES - SMOOTH, STRIATED

ALL GALVANIZED STEEL PRODUCTS AND ACCESSORIES ARE ASTM-446/H G-90

COATINGS - KYNAR/HYLAR/PVE 500'

### CAUTION

Diaphan capabilities and purlin stability are not provided by the Bengel Lock roof system. Therefore, other bracing may be required to conform to A.I.S.C. or A.I.S.I. specifications.

TITLE- PANEL CATALOG DATA  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE

PAGE-



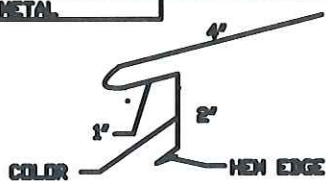
R. E. BENDEL SHEET METAL CO., INC

1311 NORTH CRAVEN  
NEWBERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX

## BENGEL LOCK 1500

ACCESSORIES- 24 GAUGE METAL

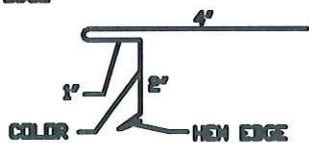
EAVE METAL



VALLEY



EAVE METAL  
RAVES EDGE

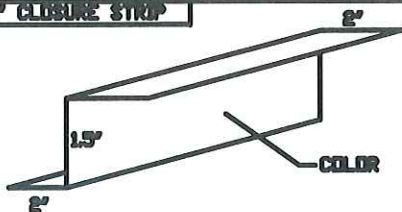


HIP CAP FLASHING  
RIDGE FLASHING

10" +/- EACH SIDE



2" CLOSURE STOP



vented ridge

TITLE- ACCESSORIES  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE PAGE-



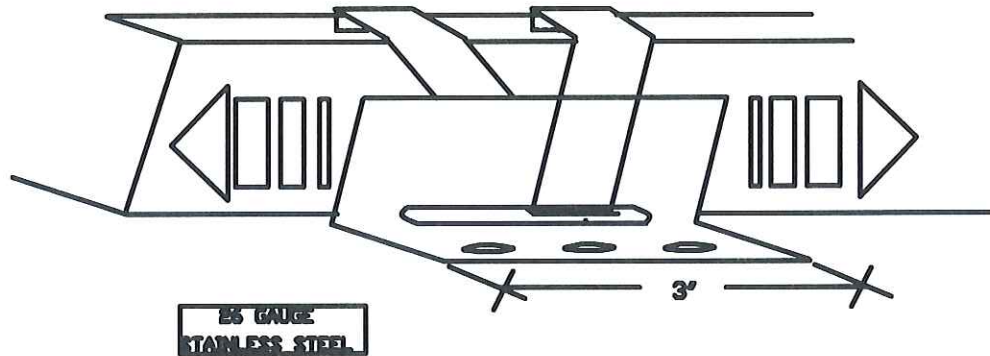
**R. E. BENDEL SHEET METAL CO., INC**

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NEW BERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX

**BENGEL LOCK  
1500 SERIES PANEL**

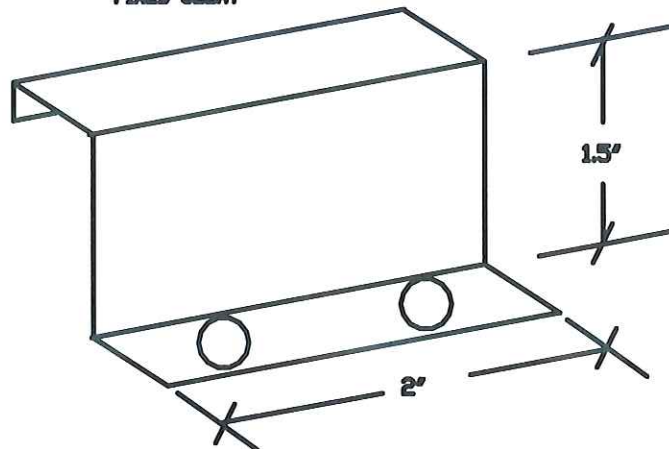
**ATTACHMENT CLIPS**

**EXPANSION CLEAT**



**FIXED CLEAT**

**26 GAUGE  
GALVANIZED STEEL**



TITLE-  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE

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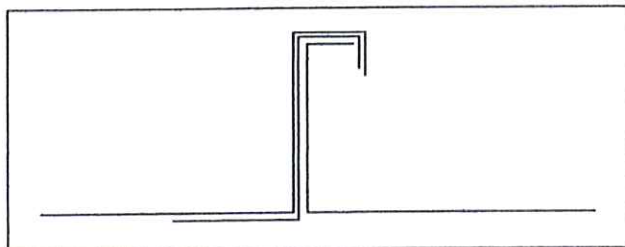


R. E. BENDEL SHEET METAL CO., INC

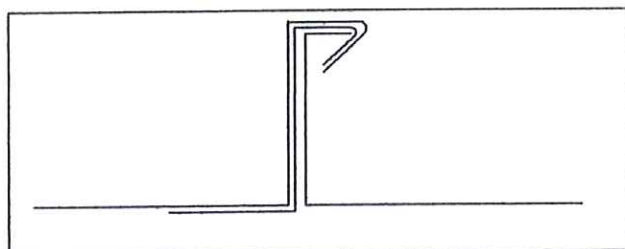
1311 N. Craven St.  
New Bern, NC 28570

PHONE 252-637-3404 FAX 252-637-2721

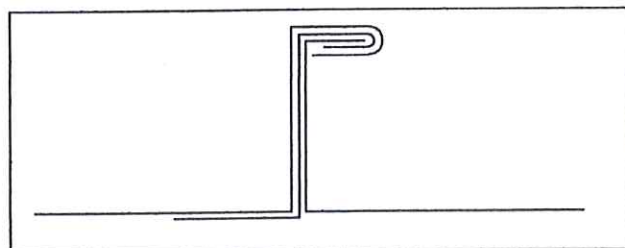
DVGRPSD/SEAM



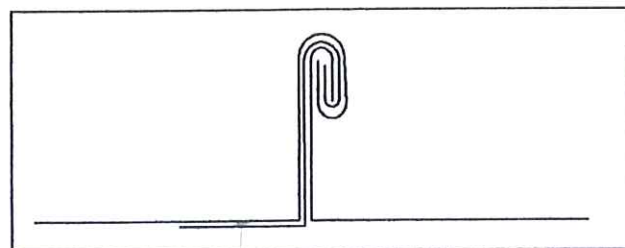
STEP 1  
INTERLOCK BOTH PANELS  
AND THE FIXED CLEAT



STEP 2  
FOLD ENDS 45° INSIDE



STEP 3  
FOLD COMPLETE 90° BEND.  
(FULL SINGLE LOCK)



STEP 4  
FOLD SINGLE LOCK 90°  
(FULL DOUBLE LOCK)  
OPTIONAL

TITLE- DOUBLE LOCK SEAM

DATE- MARCH, 2003

JOB- PHYSICAL FITNESS CENTER

LOCATION- CAMP LEJEUNE, NC

FOR- BLUE ROCK

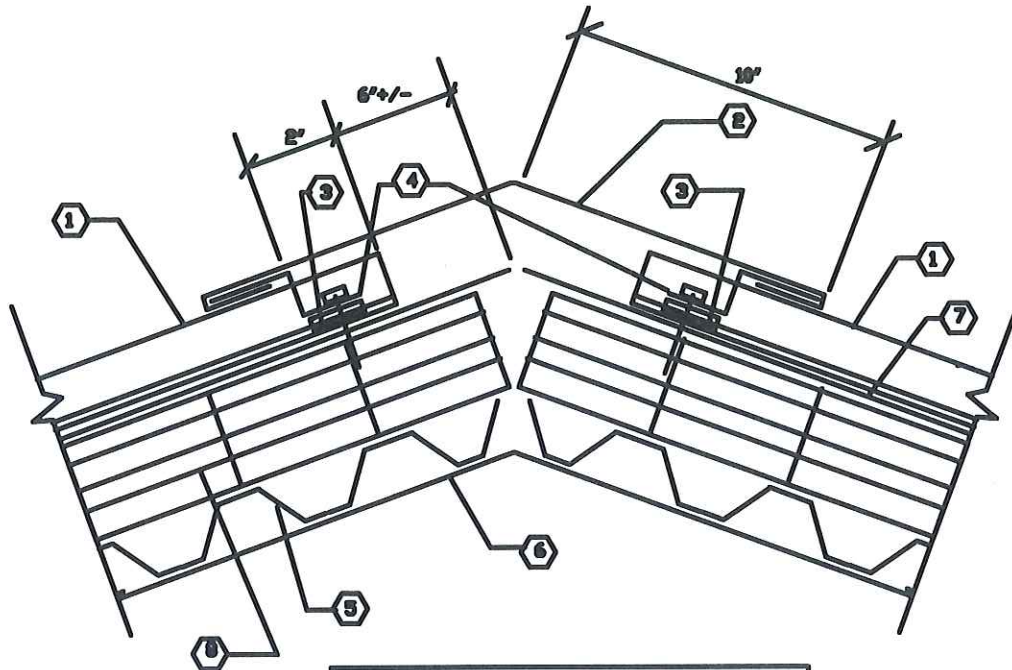
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- ① BENDEL LOCK PANEL - 15' SEAM
- ② RIDGE CAP FLASHING
- ③ TAPE SEALER
- ④ PANEL END "Z" CLOSURE STRIP
- ⑤ METAL DECKING (BY OTHERS)
- ⑥ SUPPORT FRAMING (BY OTHERS)
- ⑦ #30 FELT (BY OTHERS)
- ⑧ 3" ISO

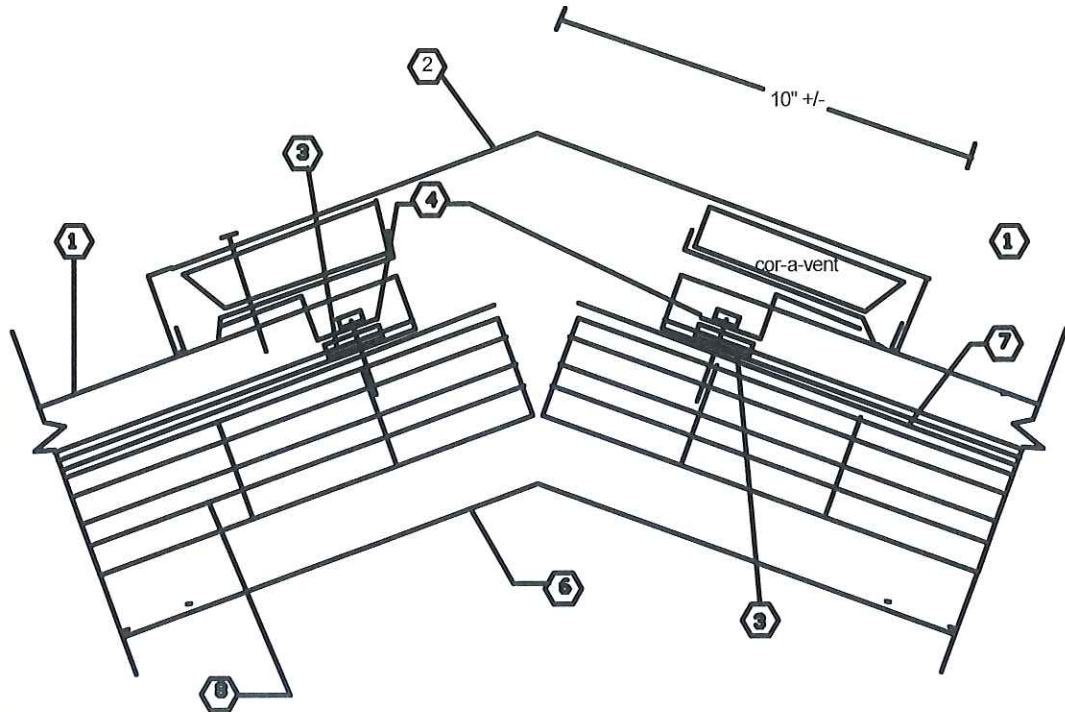
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JOB-  
FOR-

DATE-  
LOCATION-  
SCALE-NONE PAGE-



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1311 NORTH CRAVEN  
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252-637-3404 PH  
252-637-2721 FAX



- 1** BENDEL LOCK PANEL - 15' SEAM
- 2** RIDGE CAP FLASHING
- 3** TAPE SEALER
- 4** PANEL END 'Z' CLOSURE STRIP
- 5**
- 6** SUPPORT FRAMING (BY OTHERS)
- 7** 30 pound felt
- 8** 3/4" plywood

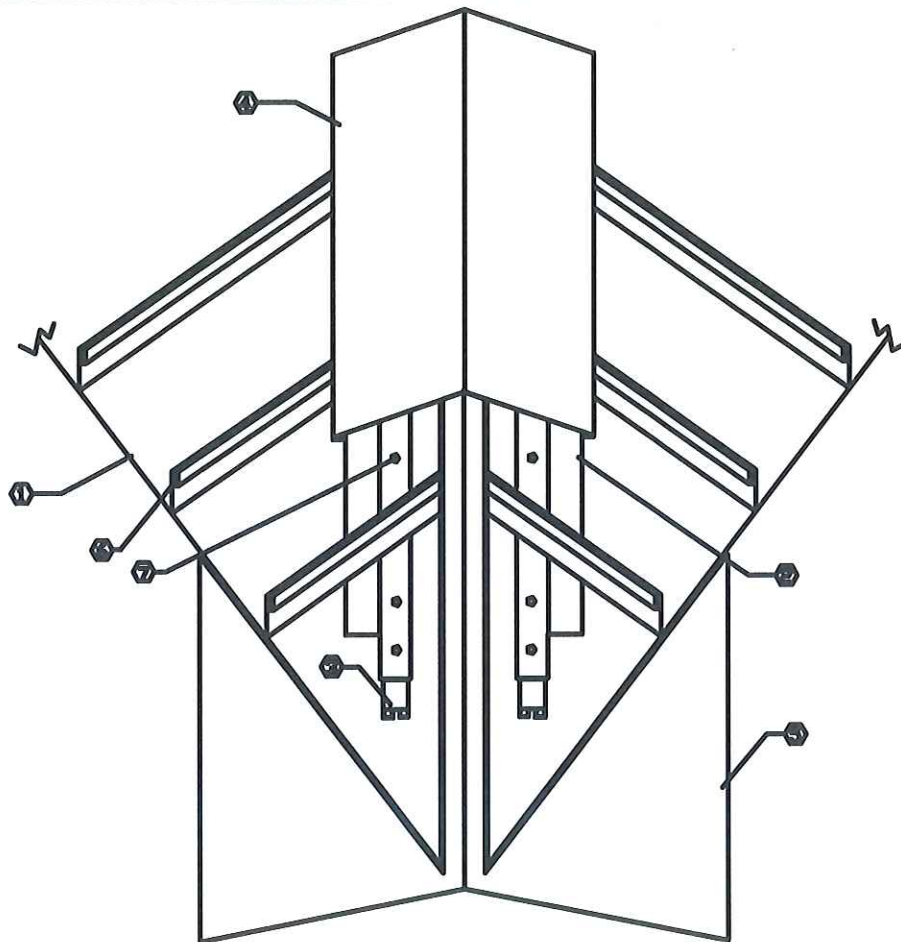
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JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE PAGE-



**R. E. BENDEL SHEET METAL CO., INC**

1311 NORTH CRAVEN  
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252-637-3404 PH  
252-637-2721 FAX



- 1** BENDEL LOCK PANEL - 15' SEAM
- 2** 2' CLOSURE, FIELD MITERED
- 3** TAPE SEALER
- 4** HIP CAP FLASHING
- 5** #30 ASPHALTIC ROOFING FELT
- 6** STANDING SEAM
- 7** #12 X 1' ZAC

TITLE- HIP CAP  
JOB-  
FOR-

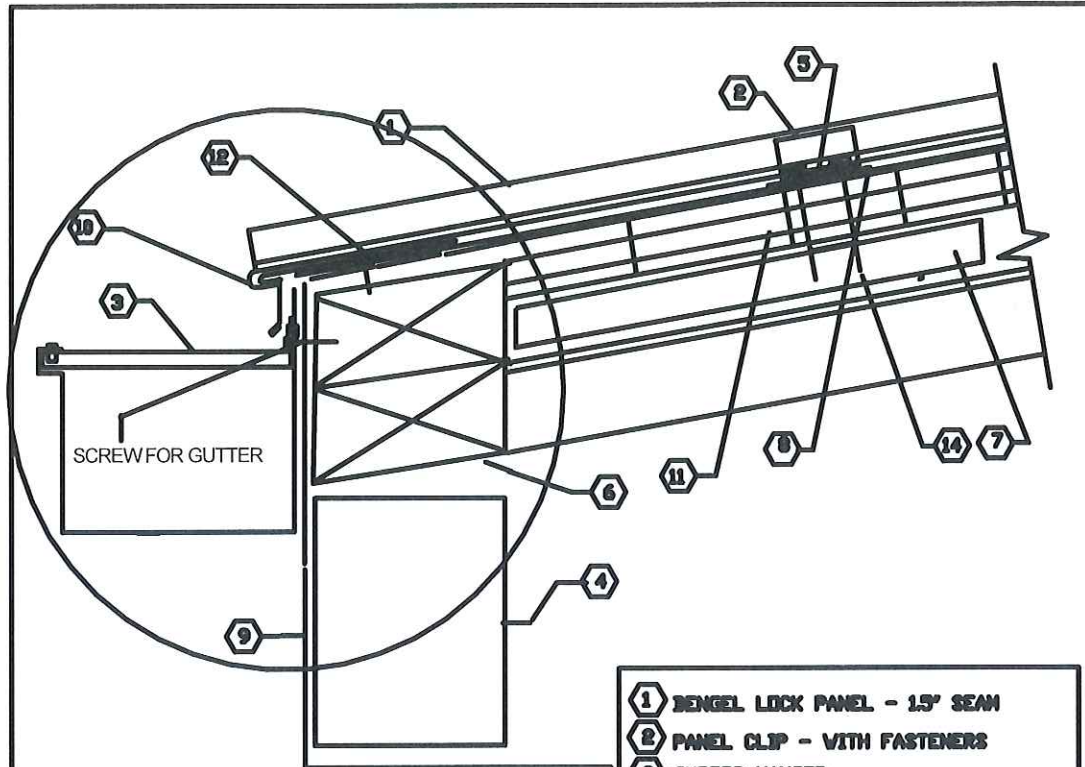
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252-637-3404 PH  
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30LB FELT  
ROSIN PAPER IF REQUIRED

- 1** BENDEL LOCK PANEL - 15" SEAM
- 2** PANEL CLIP - WITH FASTENERS
- 3** GUTTER HANGER
- 4** WALL
- 5**
- 6** WOOD BLOCKING (BY OTHERS)
- 7**
- 8** 30LB FELT
- 9**
- 10** "T" EDGE PANEL STARTER
- 11**
- 12** SCREW #12 X 1" PANCAKE HEAD
- 13**
- 14** #12 SCREW

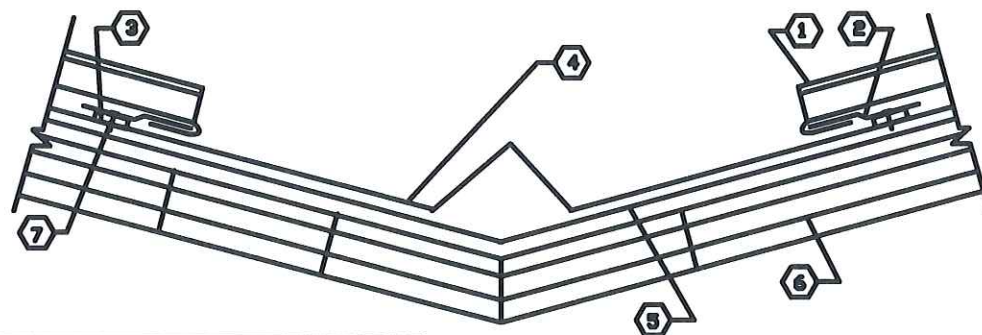
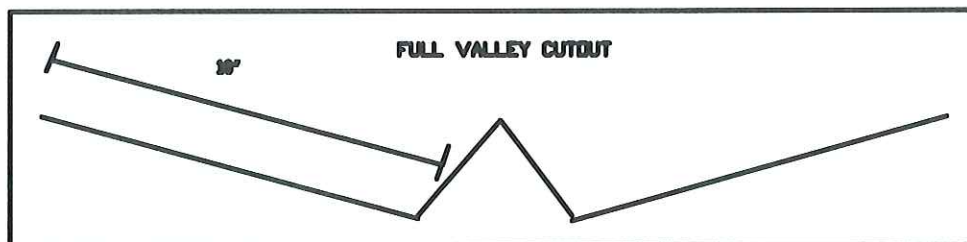
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JOB-  
FOR-

DATE-  
LOCATION-  
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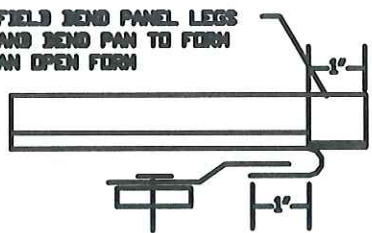
**R. E. BENDEL SHEET METAL CO., INC**

1311 NORTH CRAVEN  
NEWBERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX



- 1 BENDEL LOCK PANEL - 1.5' SEAM
- 2 CONTINUOUS CLEAT
- 3 DOUBLE DEAD TAPE SEALER
- 4 VALLEY FLASHING
- 5 30 POUND FELT
- 6 4 1/2" ISO W/ OSB
- 7 #12 X 1" SCREW 12" O.C.

**FIELD BEND PANEL LEGS  
AND BEND PAN TO FORM  
AN OPEN FORM**



TITLE- VALLEY  
JOB-  
FOR-

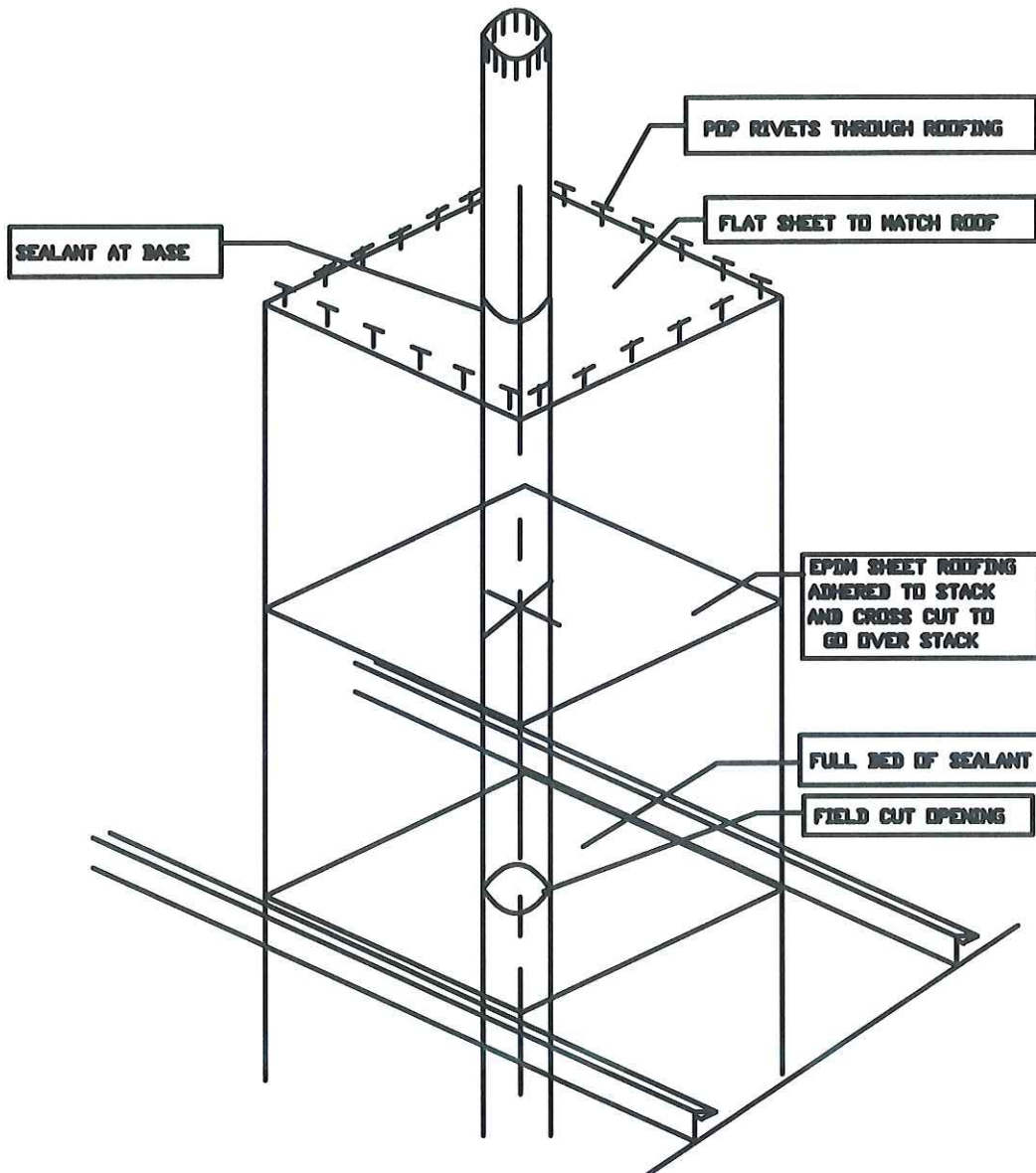
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**R. E. BENDEL SHEET METAL CO., INC**

1311 NORTH CRAVEN  
NEWBERN, NC 28560  
252-637-3403 PH  
252-637-2721 FAX



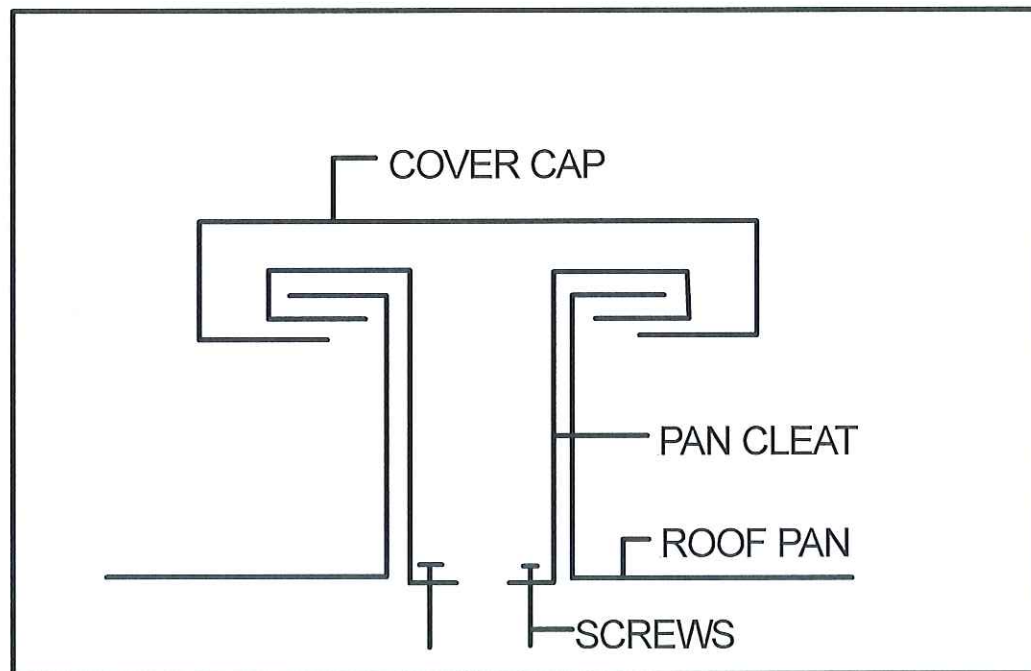
TITLE- VENT PIPE FLASHING  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE PAGE-



**R. E. BENDEL SHEET METAL CO., INC**

1311 NORTH CRAVEN  
NEW BERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX

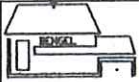


TITLE- EXPANSION JOINT  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE

PAGE-

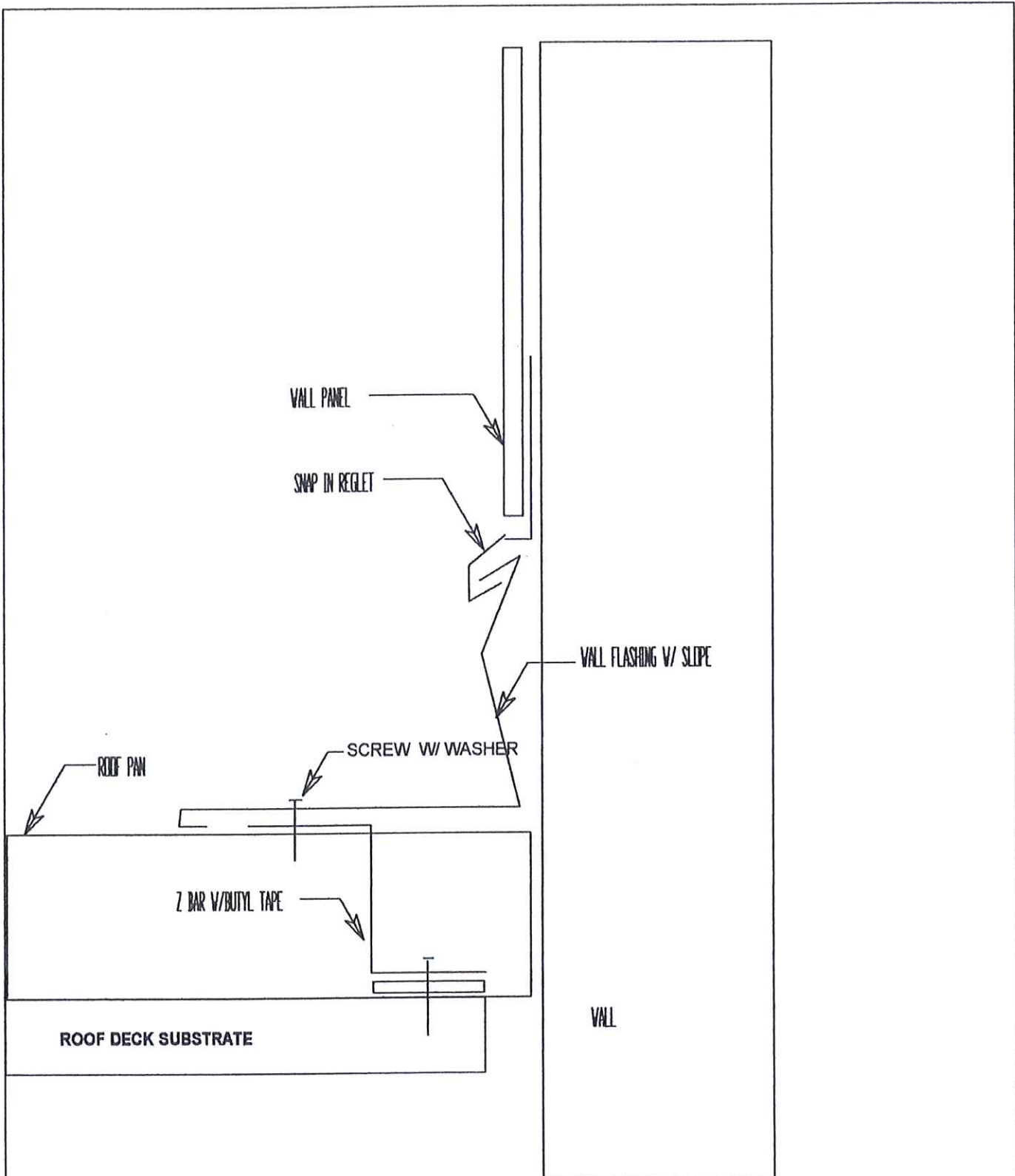




R. E. BENDEL SHEET METAL CO., INC

252-637-3404 252-637-2721 FAX

1311 N. Craven St.  
New Bern, NC 28560



TITLE- WALL DETAIL

DATE- JUNE 2003

JOB- PHYSICAL FITNESS CENTER

LOCATION- CAMP LEJEUNE

FOR - BLUE ROCK

SCALE - NONE



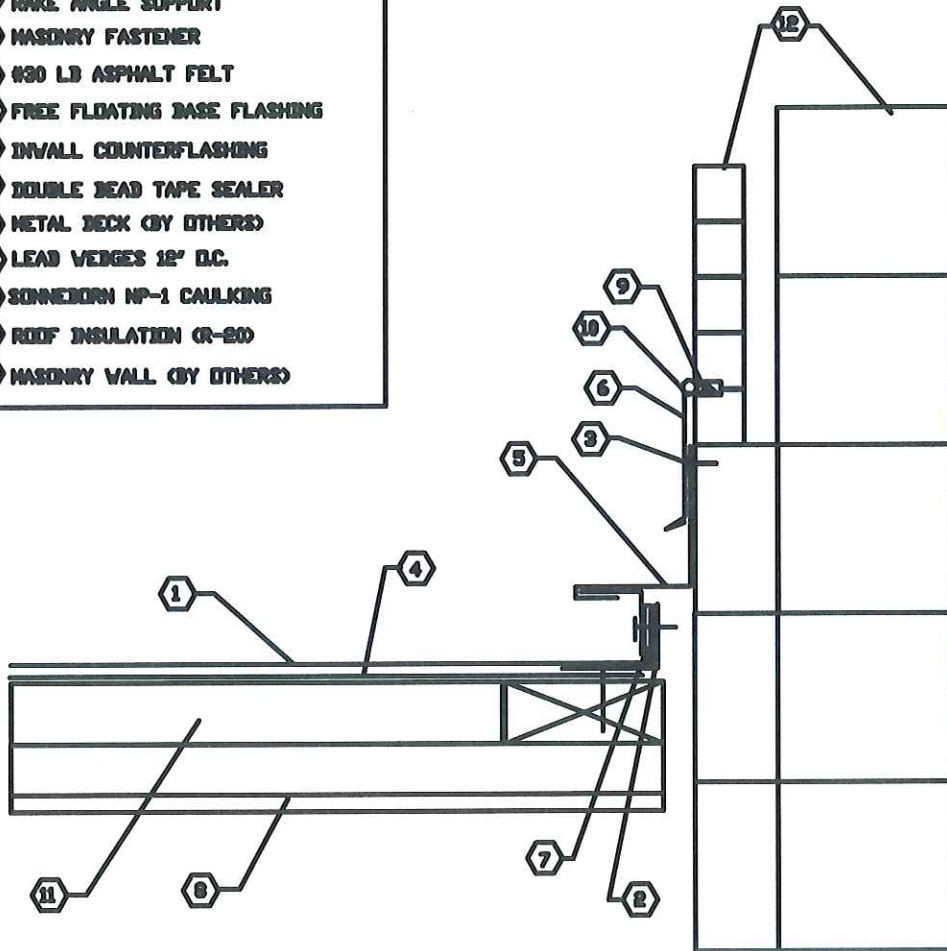
R. E. BENDEL SHEET METAL CO., INC

Phone (919) 637 3404

Fax (919) 637 2721

1311 N. Craven St.  
New Bern, NC 28570

- 1 BENDEL 1500 SERIES PANEL
- 2 RAKE ANGLE SUPPORT
- 3 MASONRY FASTENER
- 4 #30 LB ASPHALT FELT
- 5 FREE FLOATING BASE FLASHING
- 6 INVALL COUNTERFLASHING
- 7 DOUBLE BEAD TAPE SEALER
- 8 METAL DECK (BY OTHERS)
- 9 LEAD VEDGES 12" O.C.
- 10 SONNEDORN NP-1 CAULKING
- 11 ROOF INSULATION (R-20)
- 12 MASONRY WALL (BY OTHERS)

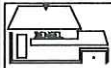


TITLE- WALL FLASHING

DATE-

LOCATION-

SCALE- NONE

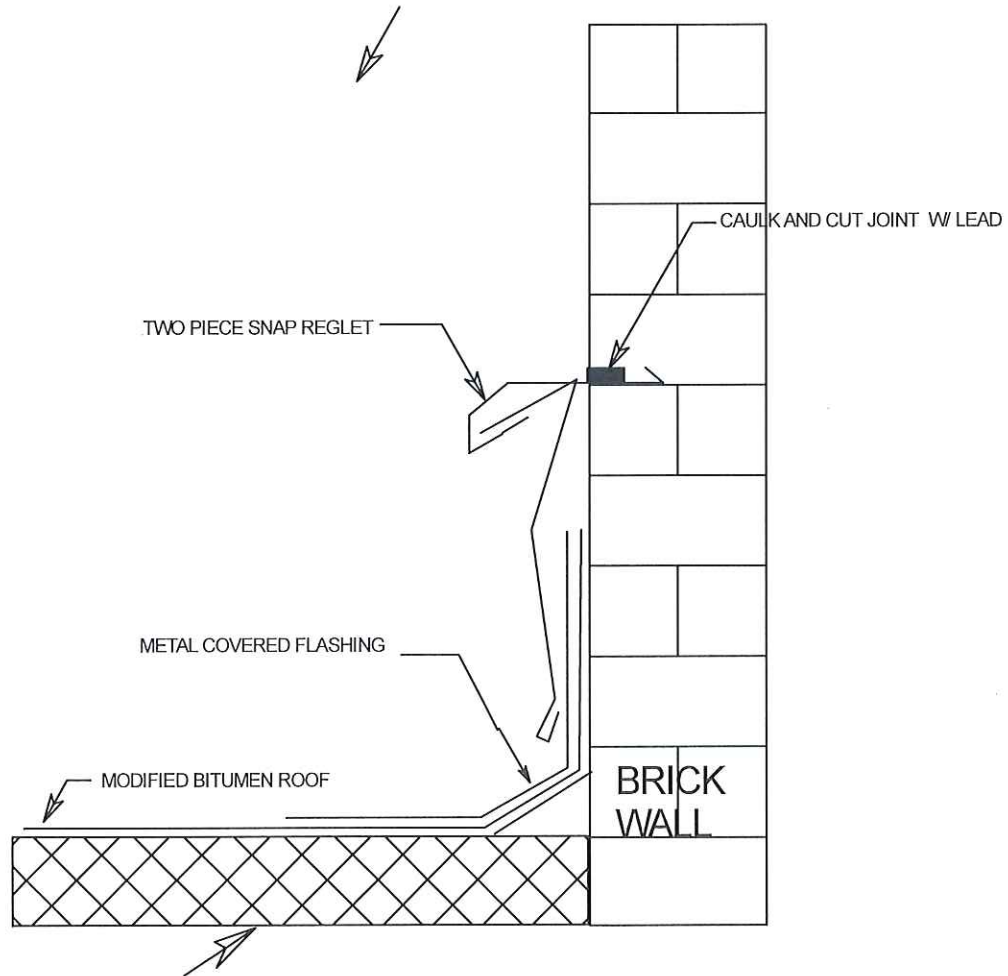


R. E. BENDEL SHEET METAL CO., INC

PHONE 252-637-3404

FAX 252-637-2721

1311 N. Craven St.  
New Bern, NC 28560



TITLE- REGLET

DATE-

JOB-

LOCATION-

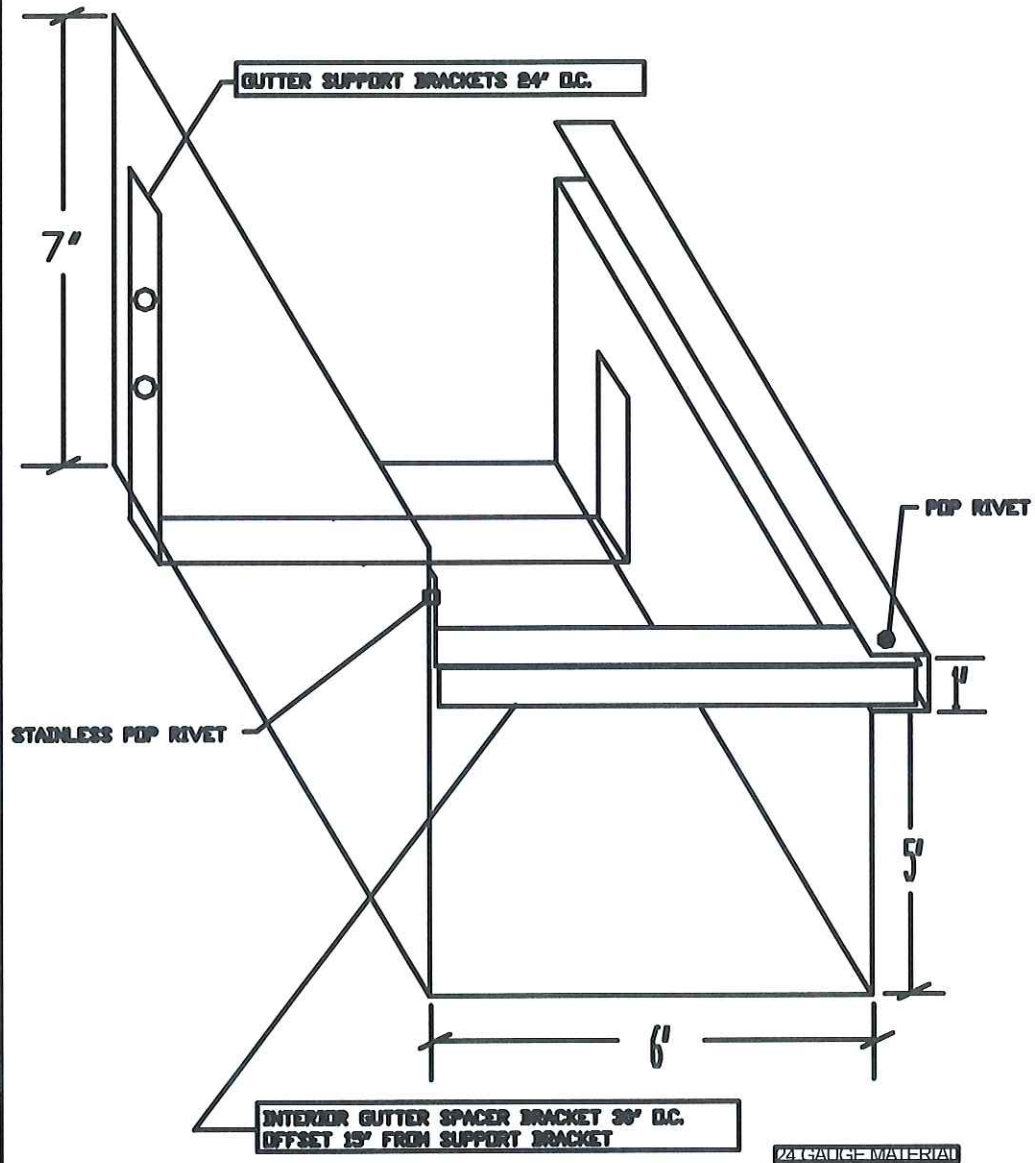
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SCALE- NONE



R. E. BENDEL SHEET METAL CO., INC

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NEW BERN, NC 28560  
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252-637-2721 FAX



TITLE- GUTTER

DATE-

JOB-

LOCATION-

FOR-

SCALE- NONE PAGE-

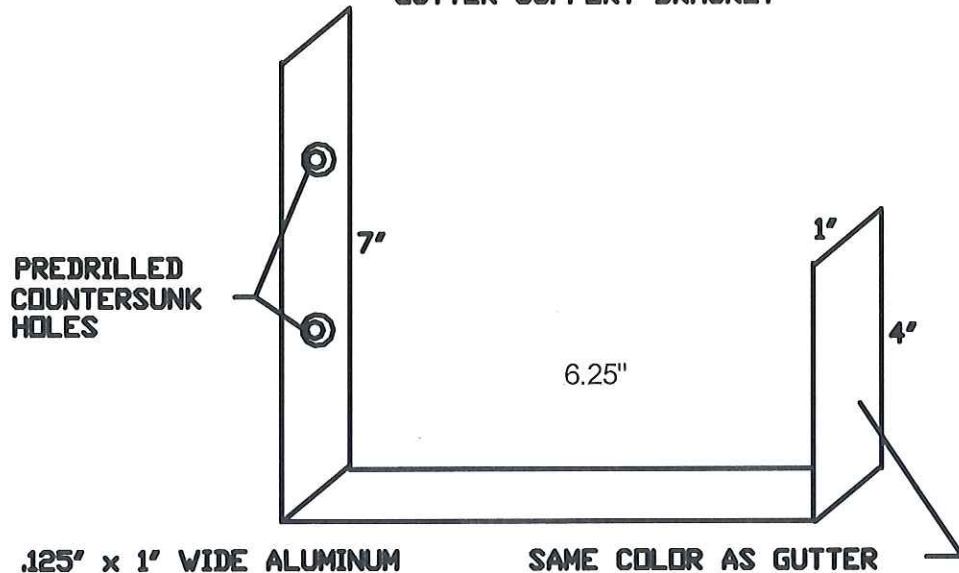




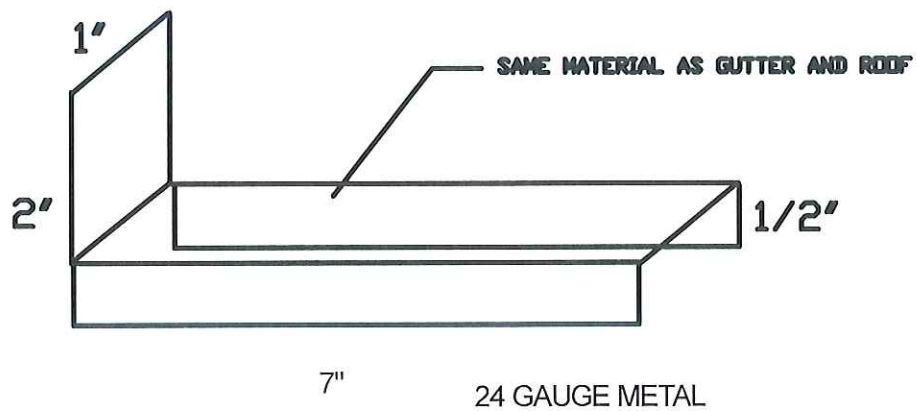
**R. E. BENDEL SHEET METAL CO., INC**

1311 NORTH CRAVEN  
NEW BERN, NC 28560  
252-637-3404 PH  
252-637-2721 FAX

### GUTTER SUPPORT BRACKET



### INTERIOR GUTTER SPACER BRACKET



TITLE- GUTTER BRACKET  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE PAGE-

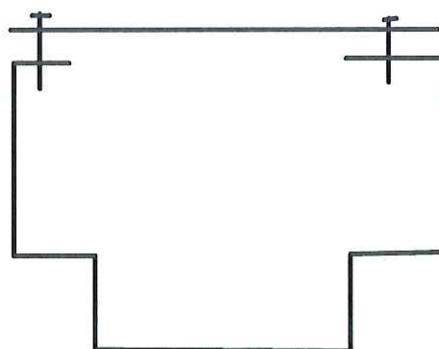
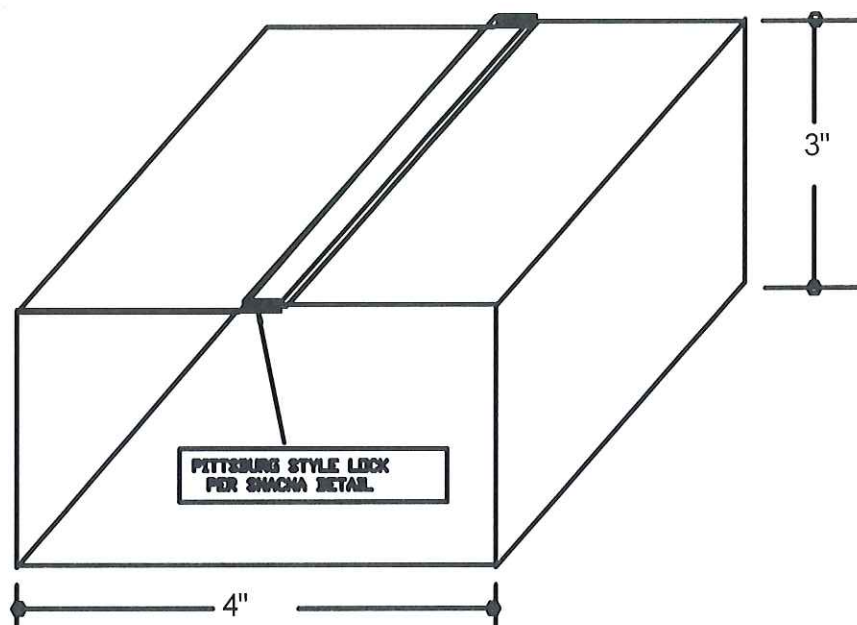


**R. E. BENDEL SHEET METAL CO., INC**

Phone (919) 637 3404

Fax (919) 637 2721

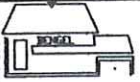
1311 N. Craven St.  
New Bern, NC 28560



NOTES  
MATERIAL 24 GAUGE KYNAR FINISH  
JOINTS LAPPED AND RIVETED

TITLE- DOWNSPOUT AND BRACKET  
JOB-  
FOR-

DATE-  
LOCATION-  
SCALE- NONE PAGE-



R. E. BENDEL SHEET METAL CO., INC

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NEW BERN, NC 28560  
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CEILING FRAMING

SOFFIT

J CHANNEL ATTACHED  
WITH SCREWS 12" ON  
CENTER. SOFFIT IS  
ATTACHED TO J CHANNEL  
WITH POP RIVETS 12" ON  
CENTER.

FASCIA

WALL

TITLE- SOFFIT & WALL PANELS  
JOB- PHYSICAL FITNESS CENTER  
FOR- BLUE ROCK

DATE- MARCH, 2003  
LOCATION- CAMP LEJEUNE  
SCALE- NONE PAGE-



## APPENDIX A-4

### SHEET METAL ROOF TEST REPORT

#### Introduction

The time tested performance of the double lock standing seam and batten seam metal roof is demonstrated by thousands of squares successfully installed by SMACNA contractors over the last century. With the proliferation of pre-manufactured roof systems and the specification requirements of UL Standard 580 and Factory Mutual performance criteria, the SMACNA Architectural Sheet Metal Committee determined it was necessary to test the performance of the metal roof geometries depicted in the Architectural Sheet Metal Manual.

The roof specimens were assembled in accordance with the SMACNA Architectural Sheet Metal Manual. Testing was performed at the Construction Consulting Laboratories in Carrollton, Texas. All tests were witnessed by members of the Architectural Sheet Metal Committee of SMACNA.

It was the intent of the Committee to subject the metal roofing to performance tests as severe or more severe than those required by the industry.

The test specimen evaluated one inch (25 mm) high double lock standing seams and 1 1/2 inch (38 mm) batten seams. Transverse seams were used in unsealed flat lock form and in soldered form.

At the onset air infiltration and exfiltration measurements were attempted but difficulties with the technique and chamber calibration made the results unreportable. It was apparent, however, that fascia edge conditions contribute more air leakage than roof surface seams.

Each metal roofing system was subjected to a static-pressure/water-penetration test. This test is similar to tests performed on curtain walls and is a severe test of metal roof seam performance. In another test the effects of dynamic wind loads induced by a slipstream of air generated by a turboprop engine were evaluated while a constant spray of water was introduced over the surface of each metal roof specimen. The metal roof specimens were also subjected to structural load tests. Severe incremental positive and negative (uplift) loads were induced onto the outer surface of the metal roofing in an attempt to demonstrate the ability of SMACNA metal roof configurations to resist uplift loads exceeding

those imposed by the UL 90 classification requirements.

#### METAL ROOF DESCRIPTION

The systems were constructed as follows: (see diagrams)

Test Specimen	6 ft (1.82 m) by 19 ft-5 in (5.9 m)
Roof Pitch	4/12
Seam Height	1 in. (25 mm) standing; 1 1/2 in. (38 mm) batten
Pan Width	20.75 in. (520 mm) at center, 15.25 in (380 mm) at rakes
Seaming	Double lock standing seam or batten seam conforming to SMACNA's Architectural Sheet Metal Manual
Fasteners	2 in. (51 mm) wide cleats at 12 in. (305 mm) center, nailed with 2 ring shank nails per clip
Underlayment	Rosin saturated building paper, 5 lbs per 100 sf (24.4 kg per 100 sq m) lapped 2 in. (51 mm) and nailed approximately 36 in. (91 mm).
	Over 30 lb. (13.6 kg) felt, lapped 2 in. (51 mm) and nailed 24 in. (610 mm) o.c.
	Over 1/2 in. (13 mm) plywood, American Plywood Association (APA) Rated, anchored with #12 fasteners 18 in. (460 mm) o.c.
	Over 3.5 in. (89 mm) thick isocyanurate insulation with perlite board laminated, anchored with #12 fasteners 5 in. (127 mm) in length.
	Over 22 gage (.7594 mm) 1.5 in. (38 mm) steel deck, type F, welded to structure 12 in. (305 mm) o.c. at edges and 18 in. (46 mm) at center supports, laps fastened with #12 screws.



Maximum sheet length used was 120 in. (3100 mm). Transverse seams were used to provide pan-lengths as indicated on diagrams. Edge conditions were flashed with cleated 5 in. (127 mm) fascia, lapped 4 in. (102 mm) at the rake and were continuous strips at the eave and ridge. The panels and associated flashings were fabricated and tested in each of the following metals.

16 Oz.(.548 mm) Copper

- i. Standing seam
- ii. Batten seam

24 gage(.607 mm) galvanized Steel

- i. Standing seam

0.032 in.(.812 mm) Aluminum

- i. Standing seam

0.015 in.(.381 mm) terne-coated Stainless Steel

- i. Standing seam

#### STATIC WATER PENETRATION TEST

The static water penetration test is similar to ASTM E331 which is used for curtain walls. This test subjects the specimen and chamber to a constant vacuum pressure equivalent to a 2 in. (.5 kpa) water head pressure. Water is uniformly sprayed on the roof at a rate of 5 gallons per hour per square foot (56.5 ml per second per sq meter) of surface. This test simulates what could be expected in a severe storm condition with high winds and rapidly changing exterior pressures.

An observer would remain inside the test chamber for the 15 minute duration of the test to observe and record and water leakage through the system.

Duration of test	15 minutes
Vacuum on inside of chamber	10.4 psf (2 in. (.5 kpa) of water)

#### Results

All systems passed. No uncontrolled water infiltration was observed for any of the metal types or systems with the exception of the eave and rake junction with the chamber on the TCS roof system. This was attributed to imperfect connections of fascia junction.

#### DYNAMIC WATER PENETRATION TEST

For this test the roof system is subjected to dynamic loading and water exposure similar to what the roof would go through in a rainstorm. The test is similar to the Architectural Aluminum Manufacturers Association(AAMA) Standard 501.1 for metal curtain walls.

In this test, water is applied to the exterior of the test specimen at a minimum rate of 5 gallons per hour per square foot (56.5 ml per second per sq meter) of roof surface while an 80 to 85 mile an hour (129 to 137 km per hr.) slipstream of air is applied. The slipstream of air flow is produced by a turboprop engine positioned approximately 20 ft. (6.1 m) from the eave of the specimen.

An observer inside the chamber inspects the interior of the specimen during the test and the exterior of the system is inspected after the test.

Duration of test	15 minutes
------------------	------------

Dynamic load produced by an airstream induced from a turboprop engine in combination with 5 gph per square foot (56.5 ml/second/sq m) water spray

#### Results

All roof systems passed. No uncontrolled water infiltration was observed for any of the metal types or systems with the exception of the eave and rake junction with the chamber on the TCS roof system. This was attributed to an imperfect connection of the fascia junction.

No system damage or deformation occurred

#### UNIFORM STRUCTURAL LOAD AND DEFLECTION TESTS

For this test series, a second pressure chamber was applied over the metal roof specimen but was not in contact with it. Vacuum and blower pumps and ducting were connected to the chambers to create negative pressures (uplift pressures) on the top of the roof and positive pressures (downward loads) on demand.

All systems were tested in load intervals, both positive and negative, of 20 psf(105 kg per sq m), 40 psf (210), 60 (315), and 90 psf (473). Each load level was applied, held for ten seconds then released to atmospheric level. All systems were subjected to negative loads of 125 psf (657 kg per sq m). The galvanized steel, aluminum,



terne-coated stainless steel and the copper batten seam system were subjected to a 150 psf (735) up lift load. The terne-coated stainless steel and the copper batten seam systems were taken as high as 190 psf (931) uplift load in an attempt to take the systems to structural failure. Deflection recordings were taken at the standing seam and at the midpoint of the panels.

**Table of Maximum Loads**

<u>Material Type</u>	<u>Seam Style</u>	<u>Max. Load</u>
	lb/sq ft (kg/sq m)	
Aluminum	Standing	150 (788)
Copper	Standing	190 (999)
Copper	Batten	190 (999)
Galvanized	Standing	150 (788)
Terne-Coated Stainless	Standing	190 (999)

#### Comments

1. The maximum load associated with a UL Standard 580 class 90 rating is 105 psf (552 kg/sq m).
2. The centers of the pans deflected as much as 3/4 in. (19 mm) at loads up to 125 psf (657 kg/sq m).
3. Upon removal of the top pressure chamber, close inspection of metal systems revealed no permanent deformation or damage or loosening of fasteners.
4. The capacity of the pressurization apparatus was exceeded before structural failure of the roof system occurred.

## CONCLUSIONS

From these tests, one can conclude that the correct installation of the SMACNA details on custom fabricated metal roofing will perform adequately when subjected to simulated storm conditions.

The SMACNA roof assemblies were tested in loading situations superior to the demands of the UL 90 requirements. We did not test the roof systems with Underwriters Laboratories because this would have locked the particular geometry and makeup to precisely what was tested. Since our systems are for customized architectural roofs that allow the designer to work within a series of variables, we tested what was felt to be the more vulnerable extremes.

In general, thin architectural metal roofing will work in concert with the metal decking and continuous nailable substrate to resist both positive and uplift pressures applied to the roof system.

\* From the tests we found the critical areas of metal roof design to be the transitions or edge conditions. Special care must be taken at the edge conditions to seal the roof underlayments to the vertical walls and to tightly fit the metal roof to the edge conditions.

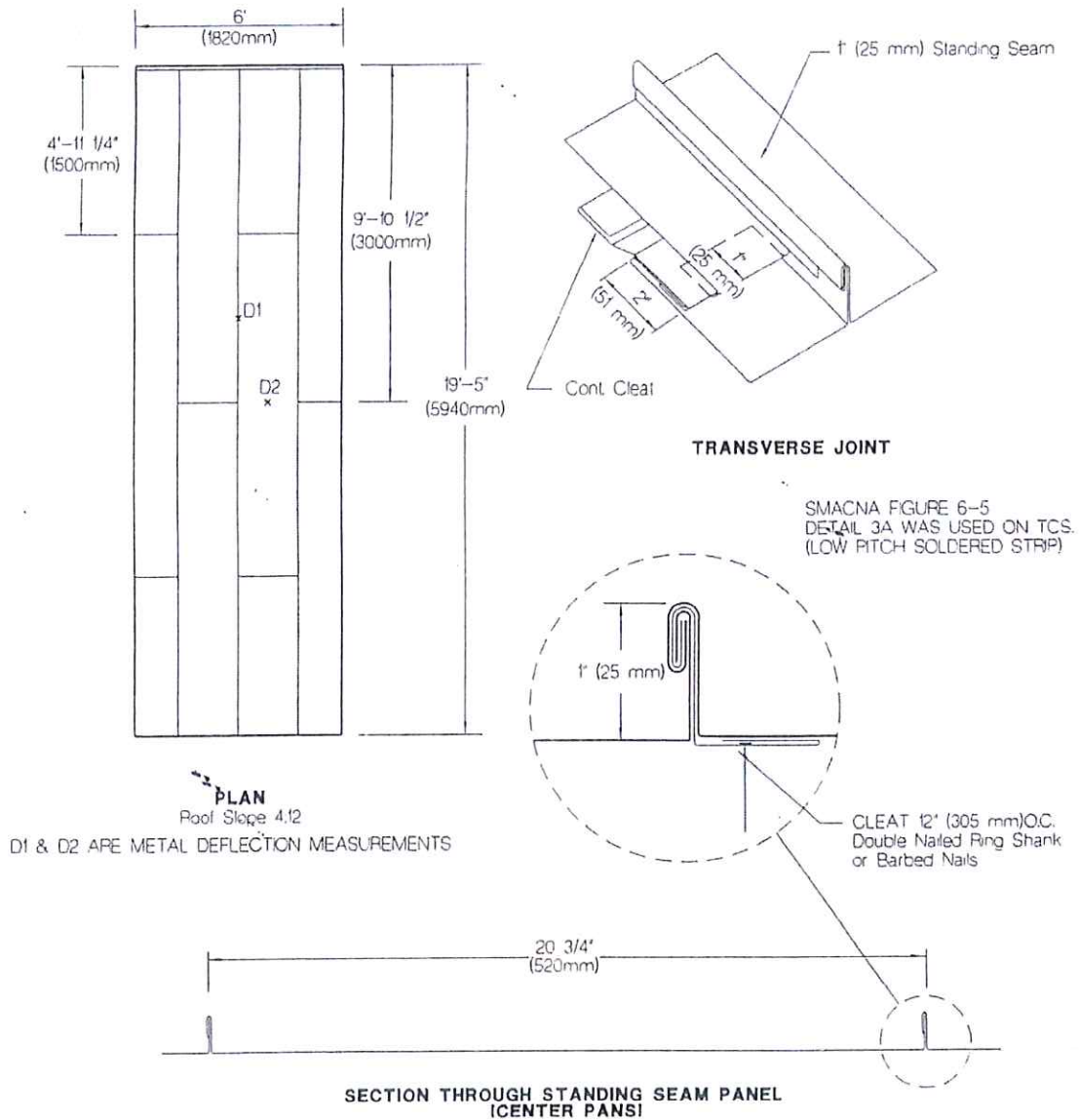
\* Roofing felts are a necessary secondary barrier for the metal roofing system and should not be eliminated.

\* The transverse seams should be as detailed on the Architectural Sheet Metal Manual with full closure and continuous cleating from standing seam to standing seam. Sealant at the corners of the fold will prevent moisture from entering behind the panels.

The SMACNA systems that have had such a satisfactory service record are supportable by laboratory tests.

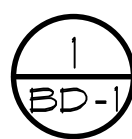
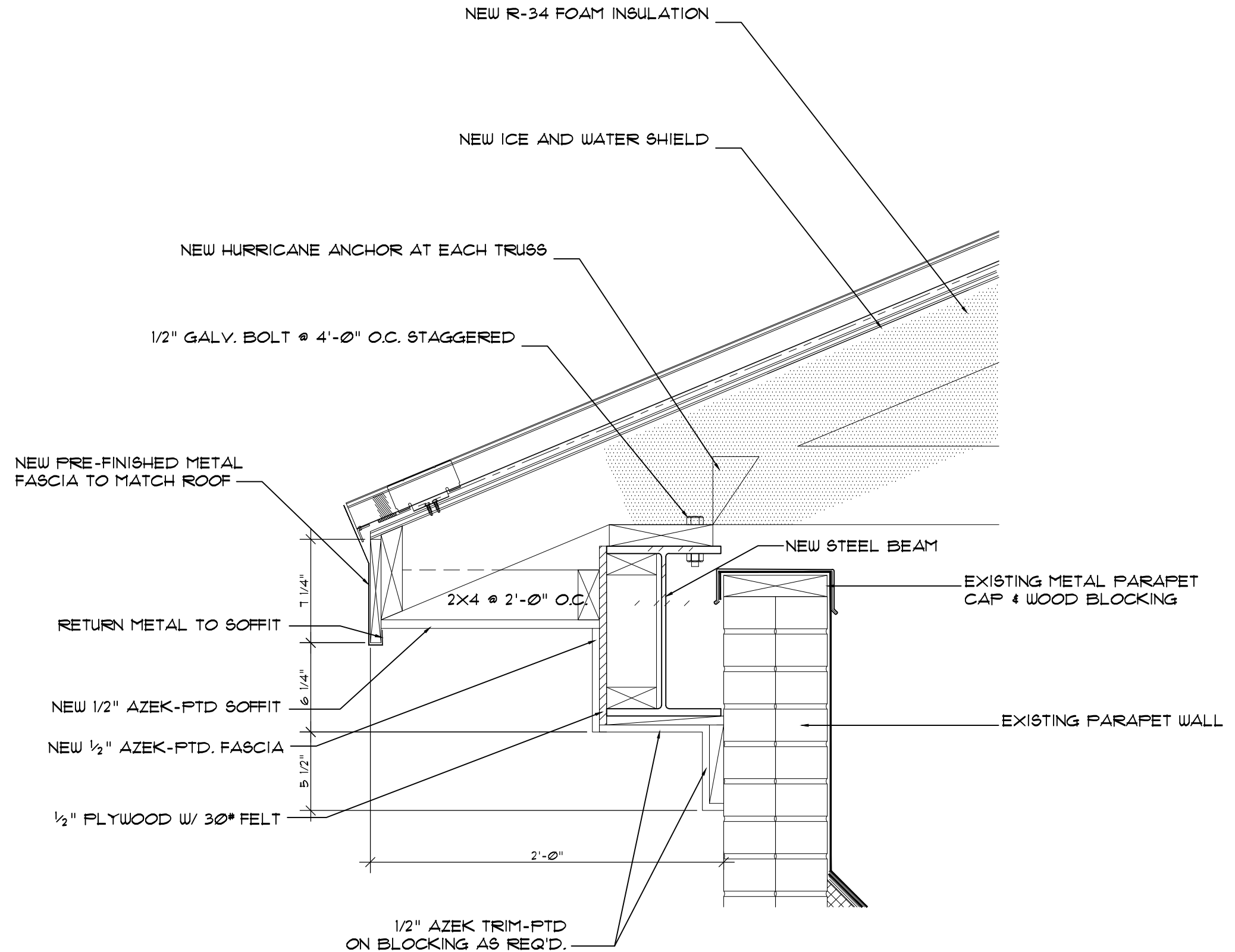


DIMENSIONS WERE ADJUSTED TO FIT TEST CHAMBER



SHEET METAL ROOF TEST REPORT

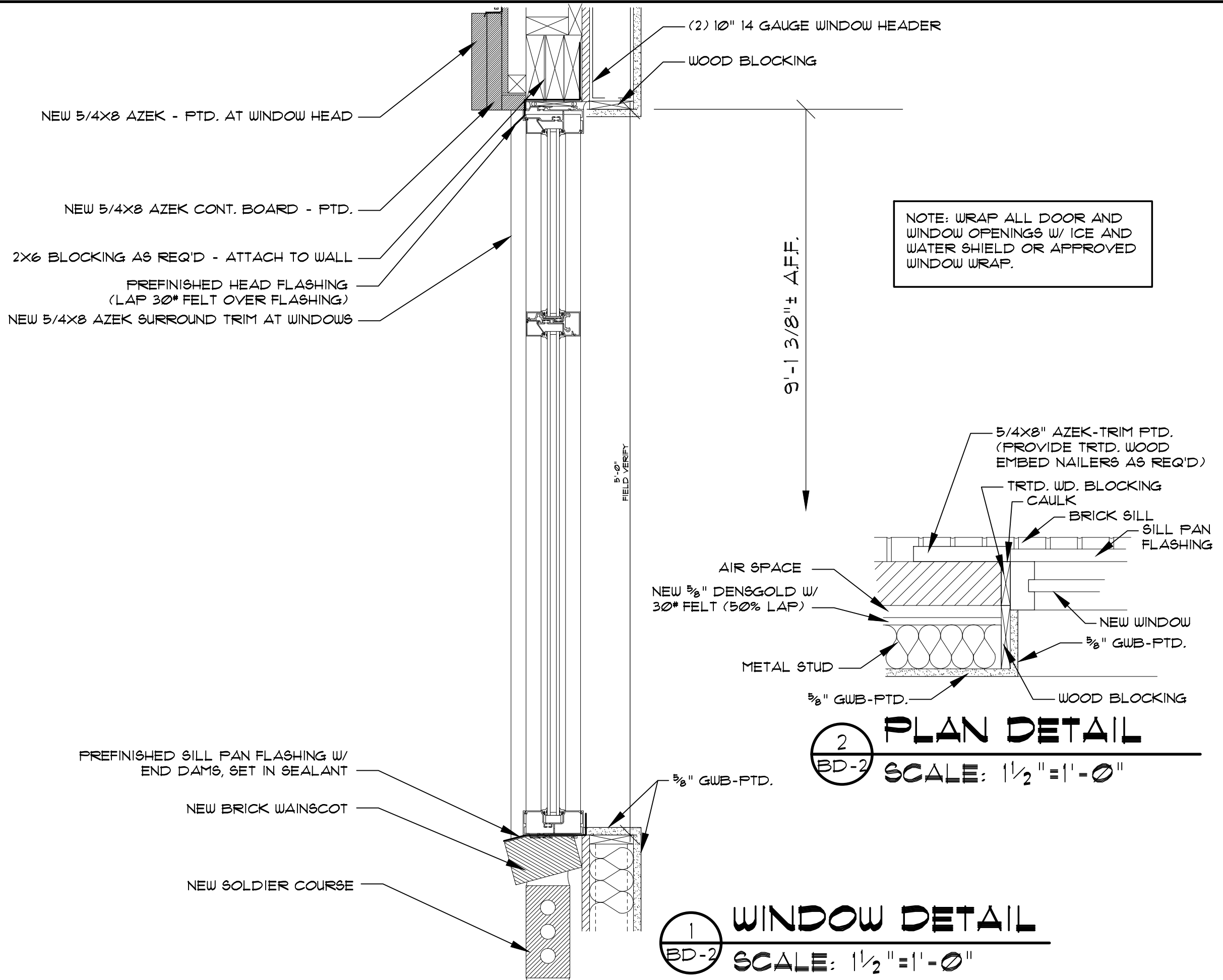
FIGURE 9-1



# REVISED FASCIA DETAIL

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





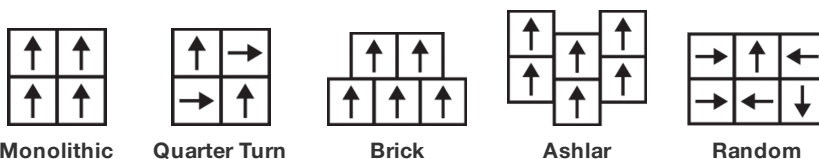
## Basic Tile

Product Type	<b>Carpet Tile</b>
Collection	<b>Space Worx</b>
Style Number	<b>5T121</b>
Construction	<b>Multi-Level Pattern Loop</b>
Fiber	<b>Ecosolution Q100™ Nylon</b>
Dye Method	<b>100% Solution Dyed</b>
Primary Backing	<b>Synthetic</b>
Secondary Backing	<b>Ecworx® Tile</b>
Protective Treatments	<b>SSP® Shaw Soil Protection</b>
Recommended Adhesive	<b>LokWorx+ Carpet Tile Adhesive 4 gallon, LokWorx+ Carpet Tile Adhesive 1 gallon, LokWorx+ Multi-Use Adhesive, LokDots, LokWorx Adhesive Tabs, Shaw 3800 or LokWorx Carpet Tile Adhesive</b>



	u.s.	metric
Product Size	<b>24 in x 24 in</b>	<b>61 cm x 61 cm</b>
Area per Carton	<b>48 ft²</b>	<b>4.46 m²</b>
Pieces per Carton	<b>12 pcs</b>	
Gauge	<b>1/10 in</b>	<b>39.4 per 10 cm</b>
Stitches	<b>8.5 per in</b>	<b>34.5 per 10 cm</b>
Finished Pile Thickness	<b>0.105 in</b>	<b>2.67 mm</b>
Average Density	<b>4457 oz/yd³</b>	<b>0.165 g/cm³</b>
Kilotex		<b>7.51</b>
Total Thickness	<b>0.228 in</b>	<b>5.79 mm</b>
Tufted Weight	<b>13 oz/yd²</b>	<b>440.8 g/m²</b>

## Recommended Installation Method



## Performance + Testing

Radiant Panel	<b>Class I</b>
NBS Smoke	<b>Less Than 450</b>
Electrostatic Propensity	<b>Less Than 3.5 kv</b>
CRI Green Label Plus (GLP)	<b>USA CRI Green Label Plus (GLP)   GLP9968   China GLP1263</b>
Pill Test	<b>Pass*</b>
ADA Compliance	<b>&gt;0.6, meets the recommended static coefficient of friction for ADA walking surfaces and accessible routes***</b>

Test Reports may be included or listed by the manufacturing/inventory style number as opposed to the noted selling style number.

## Warranties

[Lifetime Commercial Limited Warranty](#)

## Coordinating Products

Carpet Tile: **Primary Tile, Centric Tile, Surround Tile, Surround Strataworx**

Corporate Headquarters +1 800 257 7429 | +1 706 532 7984 | Atlanta +1 404 853 7429 | Bengaluru +91 80 6773 0202 | Beijing +86 10 6568 588 | Chicago +1 312 467 1331 | Dubai +971 4 584 6956 | Hong Kong +852 2623 0371 | Latin America (Miami) +1 305 827 5912 | London +44 207 961 4120 | Los Angeles +1 800 233 1614 | Melbourne +61 3 9939 8543 | Mexico City +55 5010 7600 | Mumbai +91 22 6284 5050 | Nantong +86 400 800 7429 | New York +1 212 953 7429 | Paris +33 (0) 1 81 22 44 39 | San Francisco +1 415 955 1920 | Santiago +562 2431 5000 x 550 | São Paulo +55 11 3071 1702 | Shanghai +86 21 3338 4000 | Singapore +65 6733 1811 | Sydney +1 800 556 302

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August 16, 2023

1 of 3

Diversity, Equity & Inclusion

We believe all humans are equal. Individually and collectively, we need to proactively create and promote opportunities that give everybody an equal footing in life. We nurture an environment where every voice and perspective can be heard, and proactively promote accessibility and inclusivity inside our network and beyond. One proof point is our ability to meet the criteria of the Social Fairness pillar of the Cradle to Cradle Product Standard. At Shaw Industries, we promote supplier participation that is reflective of Shaw's diverse customer base and local community. More than 42% of our spend\*\*\*\*\* is with small and diverse businesses. We believe having a strong Supplier Diversity Program is strategic for bringing more innovation to our businesses and openingnew markets for growth.

Material Health & Environmental Certifications

Certifications below apply exclusively to the carpet tile rug itself and not the LokWorx Tabs adhesive

Health & Wellbeing

Material Ingredient Transparency

Cradle to Cradle Certified® | Silver Level (Version 4.0)  
Health Product Declaration (HPD) | 1,000 ppm Disclosure  
Living Building Challenge (LBC) | Free of Red List Chemicals  
Declare | LBC Compliant  
NSF 140 | Gold

Indoor Air Quality

CRI Green Label Plus (GLP) | GLP9968

Climate Impact

Environmental Product Declaration (EPD)

3rd Party Certified in Accordance with ISO14044, ISO14025 & EN15804

Embodied Carbon (Cradle to Gate)

4.3 kg CO2/m²

Life-Cycle Carbon Emissions

Carbon Neutral

Total Recycled Content

56% (Pre-Consumer 56% | Post-Consumer 0%)

Product Packaging

100% Recyclable

Global Product Assessment

Building Research Establishment (BRE) | Certified USA

Singapore Green Label | Certified

GSA | Approved

CE Marking (EN 14041) | 3rd Party Certified

Environmental Guarantee\* | Re[turn] Reclamation Program\* | Through Our Environmental Guarantee, Shaw Pledges to Transport And Recycle Any Ecoworx Carpet Within The United States And Canada At No Cost to The Customer.

Country of Origin\*\* | USA & China

Leed v4 Contribution Credits

MR Credit: Building Product Disclosure and Optimization  
Environmental Product Declarations - Option 1: Environmental Product Declaration (EPD)

3rd Party Certified in Accordance with ISO14044, ISO14025 & EN15804

MR Credit: Building Product Disclosure and Optimization  
Material Ingredients - Option 1: Material Ingredient Reporting

C2C Silver Level (Version 4.0)

MR Credit: Building Product Disclosure and Optimization  
Material Ingredients - Option 2: Material Ingredient Optimization

3rd Party Certified in Accordance with ISO14044, ISO14025 & EN15804

MR Credit: Building Product Disclosure and Optimization  
Sourcing of Raw Materials - Option 2: Leadership Extraction Practices

Environmental Guarantee: Re[turn] Reclamation Program\* | Through Our Environmental Guarantee, Shaw Pledges to Transport And Recycle Any Ecoworx Carpet Within The United States And Canada At No Cost to The Customer.










Green Label Plus Certification: GLP9968

EQ Credit: Low Emitting Materials  
Option 1: Product Category Calculations

MR Credit: Interiors Life-Cycle Impact Reduction  
Option 3: Design for Flexibility

Ecoworx Tile with Lokdots Installation System

### Light Reflectance Value

					
LRV 9.6 Blue Herring 17481	LRV 5.4 Denim 17496	LRV 5.3 Brown Bark 17500	LRV 2.8 Raven 17505	LRV 13.1 Limestone 17530	LRV 10.8 Dove Grey 17557
					
LRV 7.6 Storm Cloud 17597	LRV 12.1 Slate 17760	LRV 12.0 Khaki 17761			

### Additional Information

\* To learn more about the recyclability of our products and our re[TURN], please visit [shawcontract.com/sustainability](https://shawcontract.com/sustainability).

\*\*Meets or exceeds all local and national regulations in country of manufacture.

\*\*\*This carpet is manufactured to be ADA compliant, but to be fully ADA compliant, the end-user must ensure the carpet is adhered to the floor and installed as outlined in the ADA standards.

[Installation Guidelines](#)

[Maintenance Guidelines](#)

Specifications are subject to nominal manufacturing variance. Material supply and/or manufacturing processes may necessitate changes without notice.

This product is an exclusive design and may not be duplicated in any manner. Use of this design in the creation of another product design is also strictly prohibited.

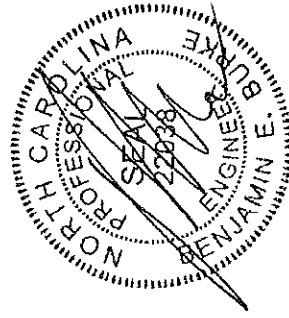
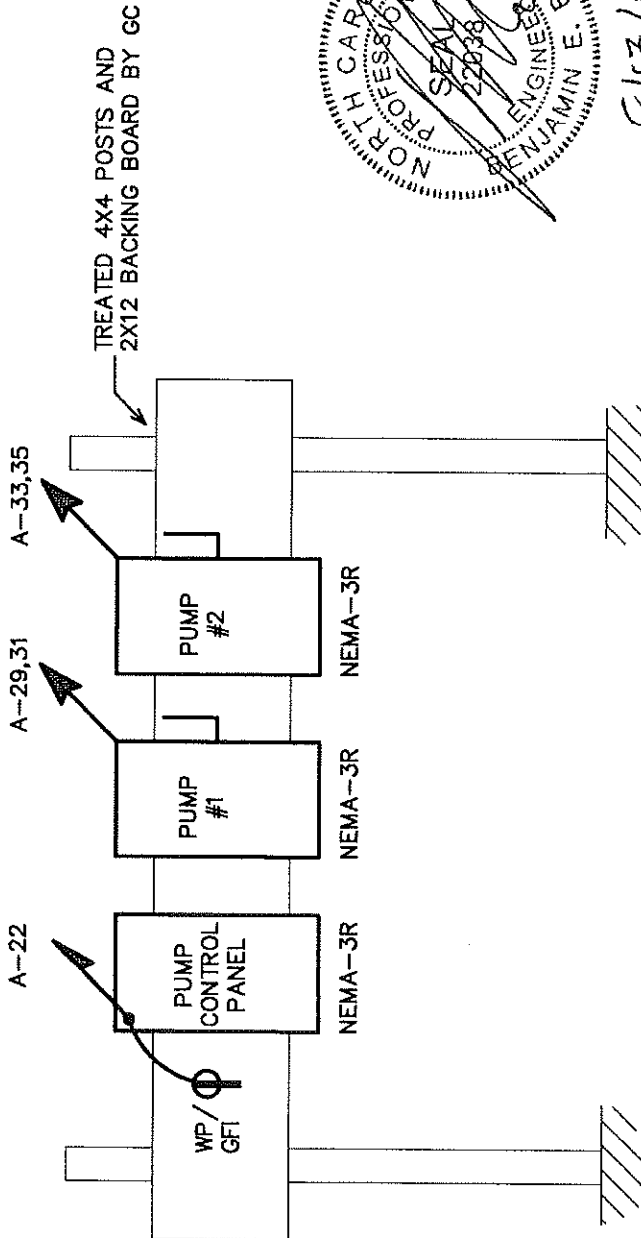
Visit [shawcontract.com/testing](https://shawcontract.com/testing) for more information.



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NOTE:

PROVIDE CIRCUITS AND NEW BREAKERS IN  
PANEL 'A' AS SCHEDULE BELOW.



8/17/23

1 LIFT STATION DETAIL  
BD-1 SCALE: NOT TO SCALE

ABC Newport Add. E5

## EQUIPMENT WIRING SCHEDULE

EQUIPMENT	FLA	MOC	VOLTS	PH	WIRE SIZE
(2) 2HP GRINDER PUMPS	12.0A	25A	240V	1	2-#10, 1-#10 GND IN 1/2" CONDUIT
PUMP CONTROL PUMP	-	20A	120V	1	2-#12, 1-#12 GND IN 3/4" 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.

**BD-1**

DATE 08/17/23

ADDITION TO  
ABC NEWPORT  
NEWPORT, NORTH CAROLINA

**GUM**

BURKE DESIGN GROUP, PA  
3305-109 DURHAM DRIVE  
RALEIGH, NC 27603  
PHONE: (919) 771-1918  
FAX: (919) 778-0826  
email: ben@bdg-nc.com