State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
1151 Punchbowl Street, Room 221
Honolulu, Hawaii 96813

ADDENDUM NO. 2

TO

Job No E00BH30A
HAWAII DISTRICT LAND OFFICE
RENOVATE SINGLE STORY OFFICE BUILDING
HILO, HAWAII

Jan 19, 2023

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned.

SPECIFICATIONS

1. Proposal - **DELETE** in its entirely and **REPLACE** with the attached Proposal
    a. Added Item No. 28 - 4" Concrete Topper and Additional Concrete for Ramps and Curbs on the Proposal

2. Section 01230 – Additive and Deductive Bid Items - **DELETE** in its entirely and **REPLACE** with the attached revised Section 01230.
    a. Replaced Alternates with Additive and Deductive Bid Items

3. Section 02361 – Termite Control - **DELETE** in its entirely and **REPLACE** with the attached revised Section 02361.
    a. Revised warranty from 5 years to 2 years.

4. Section 02740 – Flexible Pavement - **DELETE** in its entirely and **REPLACE** with the attached revised Section 02740.
    a. Revised Section 3.4.B to indicate ½ inch instead of ¼ inch.

5. Section 03300 – Cast-in-Place Concrete - **DELETE** in its entirely and **REPLACE** with the attached revised Section 03300.
    a. Revised extended warranty statement.

6. Section 10800 – Washroom Accessories - **DELETE** in its entirely and **REPLACE** with the attached revised Section 10800.
    a. Removed 15 years warranty from mirrors Standard manufacturer warranty remains.

PLANS

1. Revised Sheet T-003. See attached revised Sheet T-003
    a. Added HDS abbreviation – High Density Storage

2. Revised Sheet C-100. See attached revised Sheet C-100
    a. Coordinated Additive Bid No "1" with proposal and specifications

3. Revised Sheet C-110. See attached revised Sheet C-110
    a. Coordinated Additive Bid No "1" with proposal and specifications

4. Revised Sheet A-001. See attached revised Sheet A-001
    a. Coordinated Additive Bid No "1" with proposal and specifications

5. Revised Sheet A-101. See attached revised Sheet A-101
    a. Added approximate area to be sawcut for concrete ramps.
    b. Added note 'Z'
    c. Revised language in note 'R'
    d. Coordinated Additive Bid No "2" with proposal and specifications

6. Revised Sheet A-201. See attached revised Sheet A-201
    a. Added 4" concrete topper to support the HDS system.
    b. The addition of the 4" concrete topper required concrete curbs and ramps to enter the space.
    c. Details for concrete topper, ramps, and curbs can be found on Structural Drawings.
    d. Included notes 25 and 26.
    e. Revised language in note 4.
    f. Coordinated Additive Bid No "2" with proposal and specifications

7. Revised Sheet A-205. See attached revised Sheet A-205
    a. Revised legend to indicate "High Performance Tile" in lieu of VCT.

8. Revised Sheet A-401. See attached revised Sheet A-401
    a. Revised Section 1A to include the 4" concrete topper.
    b. Added Note 31
    c. Coordinated Additive Bid No "2" with proposal and specifications

9. Revised Sheet A-402. See attached revised Sheet A-402
    a. Revised Wall Section 2 to include the 4" concrete topper. Added note to see structural drawings.

10. Revised Sheet A-404. See attached revised Sheet A-404
    a. Revised Partition 'K' and 'M'

11. Revised Sheet A-503. See attached revised Sheet A-503
    a. Revised Interior Elevations to show 4" concrete topper and concrete ramps/curbs.
    b. Added note indicating changes shall only occur if Additive Bid Item 2 is implemented.
    c. Coordinated Additive Bid No "2" with proposal and specifications

12. Revised Sheet A-602. See attached revised Sheet A-602
    a. Revised finish schedule to show a change of floor tiles.

13. Revised Sheet S-001. See attached revised Sheet S-001
    a. Added note for concrete topper.

14. Revised Sheet S-002. See attached revised Sheet S-002
    a. Added Slab-on-Grade details.

15. Revised Sheet S-101. See attached revised Sheet S-101
    a. Revised Foundation Demolition Plan for the Secured Storage area.

16. Revised Sheet S-102. See attached revised Sheet S-102
    a. Revised Foundation Renovation Plan for the Secured Storage area.

17. Revised Sheet S-301. See attached revised Sheet S-301
    a. Included details for the addition of the concrete topper, ramps, and curbs.

18. Revised Sheet M-201. See attached revised Sheet M-201
    a. Revised location of fire extinguisher.

GENERAL INFORMATION

A. Clarification pertaining to the High Density Storage System:

   Please Note: The High Density Storage (HDS) System is scheduled as an Additive Bid Item. All revisions involving the HDS, including the additional 4" concrete topper and concrete ramps, shall only be required if Additive Bid Item No. 2 is implemented.

   See attached technical data of T Load Rail system for clarity on HDS rail system. Note: These details have not been included in the drawing set. Bidder shall review attached technical data, along with specification section 10676 for design and installation requirements.

B. Roofing Clarifications:

1. Question: Specs call for roofing insulation and coverboard to be adhered to metal decking. According to the Carlisle Rep adhering the insulation to the metal deck may not meet wind uplift requirements for the 30-year NDL Warranty. Carlisle is checking if they can warranty this system.
   Alternate #1: Mechanically Fasten ½" Dens Deck Prime cover board to metal deck, Adhere Carlisle 725 Temporary Roofing membrane, adhere 3.5" ISO Insulation, Adhere Tapered EPS Crickets, Adhere ½" Secureshield HD Coverboard, Adhere TPO Membrane

   Response: Erskine Architects, Inc. (EAI) contacted the Carlisle rep and they assured that the system can meet the 30 year warranty. See attached Carlisle documentation for more information. Alternate #1 that was proposed will not be applied.

   Response from Carlisle: *The proposed system is warranted by Carlisle for 30 years per specs. However, I noticed the spec indicated a requirement for the FM Class 1A-105 rating. The Nemo engineering reports provided are legitimate uplift approvals to validate the wind loads. It can be referred to as an equivalent to the FM ratings. FM ratings are only required for FM insured buildings as FM is an insurance company. There are no FM approvals with insulation adhered to metal decks, as FM always require mechanical securement of at least the first layer of insulation.*

2. Question: The Ledger angle shown on S-202 Detail 4/S-301 specifically, has a 3/16" bent plate welded to the top of the L4x4x1/4. Forming a 3/16" plate to match the slope cannot be done without a lot of extra work. Such as forming the plate and then trimming it down to size so that it matches the slope of the roof. The building is close to 100' long at both sides. This would be a lot of unnecessary extra costs. We wish to omit this design and offer as a ¼" formed plate to match the slope of the roof. Will this be acceptable?

   Response: It is structurally acceptable to provide a 1/4" steel bent plate with a minimum 4" vertical and horizontal leg to match the L4x4 angle size and the slope of the roof. Please note that this shall be at no additional cost to the State.

C. Warranty Clarifications:

3. Question: There are numerous extended warranty requirements for this project that will be challenging to secure at closeout, i.e. section 03300, Cast-In-Place Concrete/Project guarantee states, *"Provide extended warranty that is covered by a separate material and installation bond or by the manufacturer's product liability insurance policy specifically covering the work on this project. The Engineer shall have final approval of accepting the bond or manufacturer's insurance policy".* A separate material and installation bond is not available through the surety. The manufacture's product liability insurance policy does not cover the work of projects.

Response: The statement above has been removed from the specification 03300.

4. Question: Additionally, specific specification language is missing for this State of Hawaii project that has become a standard in the industry, i.e. ”The Surety will not be held liable beyond two years of the Project Acceptance Date”. This language would apply to the surety as well as the contractor.

   Response: This language will not be added for this project.

5. Question: Most specification requirements for manufacturer’s extended warranties are reasonable, however, there are a few extended manufacturer’s warranty requirements for the following sections that become challenging:, 15 years for mirrors, 10 years for flashings, 30 years for TPO roofing, 20 years for tubular daylighting, 25 years for photovoltaic system, 10 years for solar panels, 5 years for termite control, and life of installation for flush doors. Kindly advise if the language would apply to the various specification sections and consider reducing the manufacture’s extended warranties be reduced to a reasonable term.

   Response: The warranties/guarantees that are listed throughout the specifications are either pulled from Hawaii Technical Guides or product manufacturers. The warranties listed are revised as follows:

   1. Termite Control: Revised from 5 years to 2 years.
   2. Mirrors: Removed 15 year warranty. The specified warranty shall come from the manufacturer.

   The warranties that are to remain are as follows:

   1. Interior flush wood doors: For the doors specified, Lifetime warranties are the standard.
   2. Tubular Daylighting: The warranty is specified as 10 years (not 20), which is standard.
   3. Flashing: The 10 year warranty is specifically for the finish, which is standard.
   4. TPO Roofing: Erskine Architects confirmed with the Carlisle rep that a 30 year warranty is standard as specified.
   5. Photovoltaic Module: 25-year warranties are an industry standard.
   6. Photovoltaic Inverter: 10-year warranties are an industry standard.
   7. Photovoltaic Panel: 25-year manufacturer’s warranty is an industry standard.

   The above warranty requirements remain in effect.

D. Finish Clarifications:

6. Question: Specs call for Armstrong VCT with Diamond 10 finish, see below from supplier. All imperial texture with diamond 10 finish is discontinued and no longer available includes #s listed. How do we proceed?

   Response: See revised sheet A-602. VCT flooring has been replaced with an alternate selection.

E. AC Paving Clarifications:

7. Question: Is Prime coat required under AC Paving as called out in DPW Standard Specs? Ref: Asphalt Concrete Pavement Section 34.3. B. Preparing of Surface. All surfaces on or against which asphalt concrete wearing surface course is to be placed shall first be given a prime or tack coat as specified under Section 33, except clean surfaces of any course of asphaltic materials laid within the preceding 24 hours.

   Response: No Prime Coat is required. Only tack coat.

8. Question: How much cover over Permaloc Asphalt Edge is required?
   Ref: 02740.3.2.C. Finish height of asphalt shall be approximately 1/2 inch over the top of the pavement edging.
   Ref: 02740.3.4.B. Finish pavement elevation shall not exceed 1/4 inch above the top of pavement edging.

   Response: 1/2 inch. See revised specification section 02740, Section 3.4.B has been revised to ½ inch.

Engineering Division

Carty S. Chang

P R O P O S A L

FOR

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
State of Hawaii

JOB NO. E00BH30A
HAWAII DISTRICT LAND OFFICE
RENOVATE SINGLE STORY OFFICE BUILDING
HILO, HAWAII

_____, 20__

Chief Engineer
Engineering Division
Department of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary to complete sitework and demolition, landscape, work off-site or in the Public Right-of-way, building structure, enclosure and interior construction, interior finishes, abatement work, built-in casework and adjustable shelving, plumbing, HVAC, electrical, data/communications, and lighting, as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

JOB NO. E00BH30A
HAWAII DISTRICT LAND OFFICE
RENOVATE SINGLE STORY OFFICE BUILDING
HILO, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 25) of:

_____

_____Dollars ($_____)
and will fully complete all work under this contract within 300 consecutive calendar days from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

ALTERNATIVE BID ITEMS

The Bidder further proposes to incorporate in the work the Alternative Bid Items (Items 26-30) as described on the drawings and Specifications Section 01230 ADDITVE AND DEDUCTIVE BID ITEMS for the following amounts:

For the purposes of bid evaluation, the additives are listed in the order of priority in which they will be added to the Lump Sum Base Bid.

Additive Bid No. 1:

_____

_____Dollars ($_____)

Additive Bid No. 2:

_____

_____Dollars ($_____)

Additive Bid No. 3:

_____

_____Dollars ($_____)

The Bidder must completely fill in the dollar amounts for each Additive, where the work will be performed at no cost to the State, fill in "$0.00" as the dollar amount. If additive dollar amounts are left blank, the proposal will be rejected as being an "irregular proposal".

Deductive Bid No. 1:

_____

_____ Dollars ($_____)

The Bidder must completely fill in the dollar amounts for each Deductive, where the work will be performed at no cost to the State, fill in "$0.00" as the dollar amount. If deductive dollar amounts are left blank, the proposal will be rejected as being an "irregular proposal".

PROPOSAL

Item No.	Quantity	Unit	Description	Unit Price	Total
1.		LS	Temporary Erosion Control Measures, including installation, maintenance, and removal of BMPs including ingress/egress pads, filter socks, and all incidentals, in place complete.	LS	$
2		LS	Temporary facilities including, but not limited to temporary utilities, staging areas, protection of existing construction, safety signage, barricades, fencing, etc. and all other incidentals in place complete.	LS	$
3		LS	Select Demolition – Demolition of existing AC pavement, fencing, electrical equipment, receptacles, telecom cabling, conduits, wires, cables, conductors, including, but not limited to, all labor, trenching, hauling, disposal, materials, equipment and incidentals required to complete the work.	LS	$
4		LS	Hazardous materials removal including, but not limited to, testing, all labor, hauling, disposal, materials, equipment and incidentals as required to complete the work.	LS	$
5		LS	Termite Control & Wood Treatment, in place complete	LS	$
6		LS	Earthwork (Grading, Trenching & Backfilling, Erosion Control, etc.), in place complete	LS	$
7		LS	AC Paving & Parking Elements (Pavement Markings, Wheel Stops, & Site and Parking Signage, etc.), in place complete	LS	$
8		LS	CRM Wall, In place complete.	LS	$
9		LS	Concrete Work (Curbs, Sidewalks, Trenches, CLSM, Equipment Pads, etc.), in place complete	LS	$
10		LS	Site Utility (Water, Sewer, Storm Drainage, clean outs, drain inlets, etc.), in place complete	LS	$
11		LS	Site Electrical Infrastructure and other related work.	LS	$
12		LS	Landscaping (Plants, Soil Treatment, Irrigation, Gravel Bed, etc.), in place complete	LS	$

Item No.	Quantity	Unit	Description	Unit Price	Total
13		LS	Perimeter Enclosure & Security (Chainlink Fences, Chainlink Gates, CFM Wall, Electrical Chainlink Gate, Pipe Gates, Padlocks/Hardware, etc.), in place complete	LS	$
14		LS	Select Demolition – Demolish carport, entry canopy, corrugated roof, suspended ceiling panels, suspended ceiling grid, light fixtures, select doors, partitions, and flooring, including, but not limited to, all labor, saw cutting, trenching, hauling, disposal, materials, equipment and incidentals required to complete the work.	LS	$
15		LS	Renovation of Office Building, including but not limited to, roofing, gutters, downspouts, partitions, doors, finishes, structural work, in place complete.	LS	$
16		LS	Thermal & Moisture Protection (Moisture Vapor & Alkalinity Testing, Sealants, etc.), in place complete	LS	$
17		LS	Electrical Work – Light fixtures, cable and electrical outlets, and other related work.	LS	$
18		LS	Mechanical Work – VRF split AC system, ducting, registers, exhausts, fire dampers, testing air balance, and other related work.	LS	$
19		LS	Plumbing Work - fixtures, hose bibs, drains, cleanout, VTR, water heater, and other related work.	LS	$
20		LS	Traffic Control	LS	$
21		LS	Project Sign	LS	$
22	Allowance		HELCO New Meter Fee		$ 10,000.00
23	Allowance		Permit Fee		$ 6,205.00
24	Allowance		Field Office		$10,000.00
				Subtotal Base Bid (Items 1-24)	$
25		LS	Mobilization & Demobilization (not to exceed 10% of the Subtotal Base Bid Items 1-24)	LS	$
				Total Base Bid (Items 1-25)	$

Item No.	Quantity	Unit	Description	Unit Price	Total
ADDITIVE BID NO. 1					
26	4	EA	Bollards at Utility Pole	$	$
				Total Additive Bid No. 1 (Item 26)	$

ADDITIVE BID NO. 2					
27		LS	High Density Storage System	LS	$
28		LS	4” Concrete Topper and Additional Concrete for Ramps and Curbs	LS	$
				Total Additive Bid No. 2 (Item 27-28)	$

ADDITIVE BID NO. 3					
29		LS	Photovoltaic System*	LS	$
				Total Additive Bid No. 3 (Item 29)	$

DEDUCTIVE BID NO. 1					
30	1	LS	Cesspool Closure	LS	$
				Total Deductive Bid No. 1 (Item 30)	$

* Submit photovoltaic system concept drawings and specifications submissions as required in Section 16700 Photovoltaic System within 5 calendar days after bid opening.

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your selection of recycled or non-recycled product by indicating its cost FOB jobsite unloaded in the schedule below, including applicable General Excise & Use Taxes.

DESCRIPTION	RECYCLED PRODUCT COST	NONRECYCLED PRODUCT COST
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____

The bidder requesting a recycled product preference shall also complete and submit the form "CERTIFICATION OF RECYCLED CONTENT" as shown in the Interim General Conditions and provide all supporting information with this proposal. Additional information may be requested to qualify a product.

The following definitions are applicable to the CERTIFICATION OF RECYCLED CONTENT form:

"Post-consumer recovered material" means any product used by a consumer, including a business that purchases the material, that has served its intended end use, and that has been separated or diverted from the solid waste stream for the purpose of use, reuse, or recycling.

"Product" includes materials, manufactures, supplies, merchandise, goods, wares, and foodstuffs.

"Recovered material" means waste material and by-products that have been separated, diverted, or removed from the solid waste stream after a manufacturing process for the purpose of use, reuse, or recycling. Recovered material does not include those materials and by-products that are generated and normally reused on-site or within original manufacturing processes (such as mill broke, in the case of paper products).

"Recycled content" means the percentage of a product composed of recovered material, or post-consumer recovered material, or both.

"Recycled product" means a product containing recovered material, or post-consumer recovered material, or both.

The bidder agrees that preference for recycled products shall be taken into consideration to determine the low bidder in accordance with said Section and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive any preference.

APPRENTICESHIP AGREEMENT PREFERENCE

1. If applicable to this project, any bidder seeking the preference must be a party to an apprenticeship agreement registered with the State Department of Labor and Industrial Relations (DLIR) at the time the bid is submitted for each apprenticeable trade the bidder will employ to construct the project. "Employ" means the employment of a person in an employer-employee relationship.

    a. The apprenticeship agreement shall be registered with the DLIR and conform to the requirements of Hawaii Revised Statutes Chapter 372.

    b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain preference.

    c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.

2. A bidder seeking the preference must state the apprenticeable trade the bidder will employ for each trade to be employed to perform the work by submitting a completed signed original *Certification Form 1* verifying participation in an apprenticeship program registered with DLIR. "Apprenticeable trade" shall have the same meaning as "apprenticeable occupation" pursuant to Hawaii Administrative Rules (HAR) §12-30-5.

    a. The *Certification Form 1* shall be authorized by an apprenticeship sponsor listed on the DLIR list of registered apprenticeship programs. "Sponsor" means an operator of an apprenticeship program and in whose name the program is approved and registered with the DLIR pursuant to HAR §12-30-1.

    b. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.

    c. The completed signed original *Certification Form 1* for each trade must be submitted with the bid. Previous certifications shall not apply.

    d. When filling out the *Certification Form 1*, the name of Apprenticeable Trade and Apprenticeship Sponsor must be the same as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the DLIR website. "Registered apprenticeship program" means a construction trade program approved by the DLIR pursuant to HAR §12-301 and §12-30-4.

    e. The *Certificate Form 1* and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: http://hawaii.gov/labor/wdd.

3. Upon receiving the *Certification Form 1*, the Procurement Officer will verify that the apprenticeship program is on the List of Construction Trades in Registered Apprenticeship Programs and that the form is signed by an authorized official of the Apprenticeship Program Sponsor. If the programs and signature are not confirmed by the DLIR, the bidder will not qualify for the preference.

4. If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's bid

amount by five percent (5%) for evaluation purposes.

5. Should the bidder qualify for other preferences, all applicable preferences shall be applied to the bid price.

CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body.

CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid and Additive Bids in accordance with the "Information and Instruction to Bidders", Items K and L, and as selected by the Board of Land and Natural Resources.

It is understood and agreed that the Board of Land and Natural Resources reserves the right to reject any and/or all bids and waive any defects when, in the Board's opinion, such rejection or waiver will be for the best interest of the State of Hawaii.

In the event all bids exceed available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized in situations where time or economic considerations preclude resolicitation of work of a reduced scope to negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsible and responsive bidder, in order to bring the bid within the amount of available funds. It is understood and agreed upon that the head of the purchasing agency may delete a portion or all of any item(s) in the proposal at the stated unit or lump sum price as necessary to stay within the available funding. The bidder is responsible to make an earnest effort to represent the actual cost of each item, including all materials, labor, equipment, overhead and profit in their bid proposal to preclude claims of anticipated profit or loss of profit because of an unbalanced bid proposal.

It is also understood that if a mutually agreeable cost for the reduced scope of work necessitated by a lack of available funds cannot be agreed upon between the bidder and the head of the purchasing agency within 14 calendar days after the bid opening, then the bid may be rejected in the best interest of the purchasing agency, and the head of the purchasing agency may negotiate in progressive order (lowest to highest) with the next lowest responsible and responsive bidder.

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Board of Land and Natural Resources to hold all bids received for a period of one hundred eighty (180) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to one (1) year after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease, and that the undersigned will perform all quantities of work as either increased or decreased, in accordance with the provisions of the Contract Specifications.

It is also understood and agreed that the estimated quantities shown for the items for which a UNIT PRICE is asked in this Proposal are only for the purpose of comparing on a uniform basis, bids offered for the work under this contract, and the undersigned agrees that he is satisfied with and will at no time, dispute said estimated quantities as a means of claims for anticipated profit or loss of profit, because of a difference between the quantities of the various classes of work done or the materials and equipment installed, and the said estimated quantities. On UNIT PRICE bids, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

After the HIePRO bid due date and time, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. In the comparison of bids, words written in the proposal shall govern over figures and unit prices will govern over totals. Until the award of the contract, however, the right will be reserved to reject any and all proposals and to

waive any defects or technicalities as may be deemed best for the interest of the State.

It is also understood and agreed that liquidated damages in the amount of Three hundred and no/100 dollars ($ 300.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder must enter into and execute a contract with the Board of Land and Natural Resources and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to provisions of Section 103D-324 and 325, Hawaii Revised Statutes and any law applicable hereto.

It is also understood and agreed that the successful bidder will provide all necessary labor, materials, tools, equipment, and other incidentals necessary to do all the work and furnish all the materials specified in the contract in the manner and time herein prescribed, and according to the requirements of The Engineer as therein set forth.

It is understood that by submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past two years.

It is understood that by submitting this proposal in accordance with HAR 3-122-192, the undersigned is declaring that the price submitted is independently arrived without collusion.

It is also understood that by submitting this proposal, a Certification for Safety and Health Programs for bids in excess of $100,000 (in accordance with HRS 396-18), the undersigned certifies that his organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division (HIOSH).

It is further understood and agreed that the successful bidder shall comply with paragraph 3.1.a "SUBCONTRACTING" of the General Provisions which requires that the contractor shall perform with his own organization and with the assistance of workmen under his immediate superintendence, work of a value not less than twenty percent (20%) of the value of all work embraced in the Contract, except that certain contract items of work, if specifically referred to in the special provisions, will be exempted from said twenty percent requirement.

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State (DLNR, Engineering Division) required to demonstrate compliance with these subsections. Any bidder making a false affirmation or certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.

RECEIPT OF ADDENDA

The bidder also acknowledges receipt of any and all addenda issued by the Engineering Division, by recording the date of receipt of the respective addenda in the space provided below:

Addendum	Date Received	Addendum	Date Received
No. 1	_____	No. 5	_____
No. 2	_____	No. 6	_____
No. 3	_____	No. 7	_____
No. 4	_____	No. 8	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted.

It is also understood and agreed that if this Proposal is accepted and the undersigned should fail or neglect to contract as aforesaid, the Board may determine that the bidder has abandoned the Contract, and thereupon, forfeiture of the security accompanying his proposal shall operate and the same shall become the property of the Board.

JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder agrees that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes (HRS), who will be engaged by the Bidder on this project to perform the required work indicated pursuant to Section 103D-302, HRS. It is the sole responsibility of the contractor to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project. The Bidder certifies that the completed listing of joint contractors or subcontractors fulfills the requirements for the project and the Bidder, together with the listed subcontractors or joint contractors have all the specialty contractor's licenses to complete the work, except as provided for in HRS §103D-302(b). Failure of the Bidder to comply with this requirement may be just cause for rejection of the bid.

"A" General Engineering Contractors and "B" General Building Contractors are reminded that due to the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area in which the general contractor has no license. Although the "A" and "B" contractor may still bid on and act as the "prime" contractor on an "A" or "B" project (See, *HRS §*444-7 *for the definitions of an "A" and "B" project.*), respectively, the "A" and "B" contractor may only perform work in the areas in which they have the appropriate contractor's license (*An "A" or "B" contractor obtains "C" specialty contractor's licenses either on its own, or automatically under HAR § 16-77-32*). The remaining work must be performed by appropriately licensed entities.

General Engineering "A" Contractors automatically have these "C" specialty contractor's licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-49, C-56, C-57a, C-57b and C-61.

General Building "B" Contractors automatically have these "C" specialty contractor's licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-32a, C-42a and C-42b.

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor's nature and scope of work to be performed for this project and provide the complete firm name of the joint contractor or subcontractor in the respective columns. If the Bidder is a general contractor and providing the work of the required specialty contractor, fill in the Bidder's (general contractor's) name and nature and scope of work to be performed on this project.

List only one joint contractor or subcontractor per required specialty contractor's classification, unless within the same specialty, the work of each joint contractor or subcontractor can be described so that there is no overlap in work descriptions.

If a contractor's license is required by law for the performance of the work which is called for in this bid, the bidder and all subcontractors must have the required license before the submission of the bidder's proposal in the case of a non-federal aid project, and for federal-aid projects, the bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

BASE BID

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

JOINT CONTRACTORS OR SUBCONTRACTORS LIST FOR THE ADDITIVE(S):

Bidder agrees that for projects with additives(s), the Bidder, joint contractor or subcontractor listed in the completed "Joint Contractors or Subcontractors List for the Additives(s)" will perform work for the respective additives.

ADDITIVE BID ITEM 1

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

ADDITIVE BID ITEM 2

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

ADDITIVE BID ITEM 3

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

DEDUCTIVE BID ITEM 1

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

Enclosed herewith is a:

1.	Surety Bond (*1)	)	
2.	Legal Tender (*2)	)	
3.	Cashier's Check (*3)	)	
4.	Certificate of Deposit (*3)	)	in the
5.	Certified Check (*3)	)	amount
6.	Official Check (*3)	)	of
7.	Share Certificate (*3)	)	
8.	Teller's Check (*3)	)	
9.	Treasurer's Check (*3)	)	

(Cross Out Those Not Applicable)

_____

_____Dollars ($_____)

as required by law.

Respectfully submitted,

_____
Name of Company, Joint Venture
or Partnership

_____
Contractor's License No.

By _____
Signature (*4)

Title _____
Print Name _____
Date _____
Address _____
_____
Telephone No. _____
E-Mail Address _____

NOTES:

1. Surety bond underwritten by a company licensed to issue bonds in this State;

2. Legal tender; or

3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

   A. These instruments may be utilized only to a maximum of $100,000.

   B. If the required security or bond amount totals over $100,000, more than one instrument not exceeding $100,000 each and issued by different financial institutions shall be accepted.

4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company and also the names and residence addresses of all officers of the Company.

5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT, MISSING PAGES MAY INVALIDATE YOUR BID.

End of Proposal

SECTION 01230

ADDITIVE AND DEDUCTIVE BID ITEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for additive and deductive bid items.

B. The description of additive and deductive bid items is not intended to give a detailed description of all additional or deductive work required by the additive or deductive bid items, as only the principal features of such additional or deductive work are listed.

C. Should any one or all of the additive or deductive bid items become a part of the contract, the cost of all additional or deductive work required by the additive or deductive bid items, even though not specifically mentioned herein, are included in the lump sum bid price.

1.2 DEFINITIONS

A. Additive Bid Item and Deductive Bid Item: An amount proposed by Bidders (Offerors) and stated on the Bid Form for certain work defined herein that may be added to or deducted from the Total Lump Sum Bid Price amount if State decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each additive or deductive bid item is the net addition to or deduction from the Contract Sum to incorporate additive or deductive bid item into the Work. No other adjustments are made to the Total Lump Sum Bid Price.

1.3 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the additive or deductive bid item into the Project.

1. Include as part of each additive or deductive bid item, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of the additive or deductive bid item.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each additive or deductive bid item. Indicate if additive or deductive bid item have been accepted, rejected, or deferred for later consideration.

C. Execute accepted additive or deductive bid item under the same conditions as other work of the Contract.

D. Schedule: A Schedule of additive and deductive bid item is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 SCHEDULE OF ALTERNATES

A. Additive Bid No. 1: Bollards at the utility pole.

B. Additive Bid No. 2: High Density Storage System.

C. Additive Bid No. 3: All work involved with the installation of a photovoltaic system including the PV disconnect switch next to the electrical meter.

D. Deductive Bid No. 1: Cesspool closure. If no cesspool is located as indicated on the drawings, the Deductive Bid No. 1 shall be authorized.

END OF SECTION

SECTION 02361

TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Soil treatment with termiticide.

2. Wood treatment with borate.

B. Related Sections include the following:

1. Section 06100 "Rough Carpentry" for wood preservative treatment by pressure process.

2. Section 07620 "Sheet Metal Flashing and Trim" for custom-fabricated metal termite shields.

1.3 UNIT PRICES

A. Basis of Bids: Unit price for each termite bait station(s) provided.

1. See Division 01 – “Proposal” for list of unit prices.

1.4 PERFORMANCE REQUIREMENTS

A. Service Life of Soil Treatment: Soil treatment by use of a termiticide that is effective for not less than two years against infestation of subterranean termites.

1.5 SUBMITTALS

A. Product Data: For termiticide and bait-station system.

1. Include the EPA-Registered Label for termiticide products.

B. Product Certificates: For termite control products, signed by product manufacturer.

C. Qualification Data: For Installer of termite control products.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following:

1. Date and time of application.

2. Moisture content of soil before application.

3. Brand name and manufacturer of termiticide.

4. Quantity of undiluted termiticide used.

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

6. Areas of application.

7. Water source for application.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located, and who employs workers trained and approved by bait-station system manufacturer to install manufacturer's products.

B. Regulatory Requirements: Formulate and apply termiticides according to the EPA-Registered Label.

C. Source Limitations: Obtain termite control products through one source.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.

1.8 COORDINATION

A. Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

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

1.10 MAINTENANCE SERVICE

A. Continuing Service: Beginning at Substantial Completion, provide 12 months' continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity. Provide a standard continuing service agreement. State services, obligations, conditions, and terms for agreement period; and terms for future renewal options.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Termiticides:

a. Aventis Environmental Science USA LP; Termidor.

b. Bayer Corporation; Premise 75.

c. Dow AgroSciences LLC; Dursban TC or Equity.

d. FMC Corporation, Agricultural Products Group; Talstar, Prevail FT or Torpedo.

e. Syngenta; Demon TC.

2.2 SOIL TREATMENT

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control.

1. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparation before beginning application of termite control treatment. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

1. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Underground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, piers, and chimney bases; also along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.

3. Masonry: Treat voids.

4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION

SECTION 02740

FLEXIBLE PAVEMENT

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Provide all asphaltic concrete pavement as indicated on the drawings and as specified herein.

B. Related Sections include the following:

1. Section 02362 “Soil Treatment For Vegetation Control.”

2. Section 02580 “Pavement Markings.”

1.2 REFERENCES

A. The “STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION”, dated September 1986, as revised, except as amended in the plans and/or specifications herewith, of the Department of Public Works, as applicable to the County of Hawaii, hereafter referred to as the “DPW Standard Specifications”, or as herein specified. (Paragraphs concerning Measurement and Payment are not applicable to this project.)

1.3 SUBMITTALS

A. Submit in accordance with Section 01300 – Submittals.

B. Submit job-mix formula including base courses, affidavits from the manufacturers or suppliers of all materials proposed to be furnished and installed under this section certified that such material delivered to the project conforms to the requirements of these Specifications.

C. Material Product Data and Material Safety Data.

D. Test Reports: Submit test reports as directed by The State. Contractor shall verify all requirements prior to the start of earthwork operations.

E. Certification of Compaction: An independent geotechnical testing laboratory working under the supervision of a licensed civil engineer licensed in Hawaii shall test and certify all compaction work. Certifications and test results shall be submitted to The State within three (3) days of the test.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials for roads and parking areas shall be in accordance with the below-listed sections of

the DPW Standard Specifications, including all revisions, and shall govern all work except for the subsections of Measurement and Payment which shall not be applicable.

1. Roadway Excavation Section 12

2. Subgrade Section 29

3. Aggregate Base Course Section 31

4. Asphalt Concrete Pavement (Mix #4) Section 34

B. Tack coat shall be either SS1 or SS-1H emulsified asphalt conforming to the requirements under AASHTO M 140.

C. Pavement Edging: Pavement edging shall be Permaloc AsphaltEdge with mill finish or an approved equal. Anchors shall be 10-inch spiral steel spikes.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Contractor shall stake out the areas to be paved, using grade stakes on which the final finish elevations, base course and subgrade elevations are clearly marked. All such stakes and elevations shall be approved by The State before any work is done.

B. Apply weed killer on the prepared subgrade of the concrete pavement in accordance with Section 02362 – SOIL TREATMENT FOR VEGETATION CONTROL.

3.2 INSTALLATION

A. Install pavement in accordance with the applicable DPW Standard Specifications noted hereinbefore and as shown in Plans.

B. Install pavement edging with a 3/8 inch space between sections for expansion. Anchor spikes shall be installed at 12-inch spacing with additional anchors as necessary to firmly secure the edging.

C. Finish height of asphalt shall be approximately 1/2 inch over the top of the pavement edging.

D. Deposit hot mix asphalt in a manner that minimizes segregation. Lay, spread, and strike off hot mix asphalt upon prepared surface. Avoid stop-and-go operation. Minimize changing forward speed of paver during paving operation.

3.3 FILL COMPACTION TESTING

A. All subgrade and pavement section shall be tested by an independent testing agency retained by the Contractor and all test results submitted to The State for approval.

B. All cost of testing shall be borne by the Contractor. Testing shall be made throughout the area for each 6-inch compacted layer. All test results may be approved before the Contractor can proceed with placing of base course or select borrow subbase course. Testing shall be in accordance with ASTM D1557.

C. The Contractor shall be responsible for any corrective measure required as a result of inadequate compaction.

3.4 FINISHING

A. Smoothness. The finished surface of the pavement shall be true to grade and cross section, free from depressions and grainy spots, and of uniform texture. It shall not vary more than 3/16 of an inch from any point along the bottom of a 10-foot straightedge laid in any direction except across the crown or swale.

B. Finish pavement elevation shall not exceed 1/2 inch above the top of pavement edging.

C. Surface Tolerance. Thickness of finished pavement shall be within 1/4 inch of thickness indicated in the contract documents. Correct pavement exceeding specified tolerances by methods accepted by The State, including removal and replacement, at no increase in contract price or contract time.

D. Pavement shall be sloped to prevent ponding.

3.5 FINAL INSPECTION

A. At the time of final inspection of the work performed under the Contract, the work covered by this section shall be complete in every respect and operating as designed. All surplus materials of every character, resulting from the work of this section, shall have been removed. Any defects discovered in the work, subsequent to this inspection, shall be corrected prior to final acceptance.

B. Any existing asphaltic concrete pavements including roads and walkways that have been damaged by construction activities shall be repaired to the original condition and to the satisfaction of The State. Damage done by heavy equipment, especially on roads and yards not stable for such equipment, shall be repaired to the original condition and to the satisfaction of The State.

END OF SECTION

DIVISION 03 – CONCRETE

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

B. Related Sections include the following:

1. SECTION 02100 - SITE PREPARATION

2. SECTION 02200 - EARTHWORK

3. SECTION 02500 - CONCRETE CURBS

4. SECTION 09900 - PAINTING

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.3 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data:

1. Reinforcing steel: Certified mill test results or laboratory test results. Indicate bar size, yield strength, ultimate tensile strength, elongation and bend test.

C. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mix water to be withheld for later addition at project site.

D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, “Details and Detailing of Concrete Reinforcement.” Include material,

grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures. Also include location, sizes, and layout of any conduit to be placed within concrete. Shop Drawings shall be originally produced by the contractor. Any reproduction of the contract Drawings being used for shop drawings will be rejected.

E. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Form materials and form-release agents.

2. Steel reinforcement and reinforcement accessories.

3. Fiber reinforcement.

4. Bonding agents.

5. Adhesives.

6. Vapor retarders.

7. Joint-filler strips.

8. Repair materials.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

D. ACI Publications: Comply with the following, unless more stringent provisions are indicated and maintain a copy at the field office.

1. ACI 301, “Specification for Structural Concrete.”

2. ACI 117, “Specifications for Tolerances for Concrete Construction and Materials.”

3. ACI 347R “Guide to Formwork for Concrete.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

1. Avoid damaging coatings on steel reinforcement.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Comply with ACI 347R. Provide new or good finish form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other ACI 347R approved panel materials.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least 2 edges and one side for tight fit.

C. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4" by 3/4", minimum.

E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Form oils or waxes shall not be used for concrete surfaces intended to be painted.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than one inch to the plane of the exposed concrete surface.

2. Furnish ties that, when removed, will leave holes not larger than 1 1/2" in diameter in concrete surface.

3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed, unless otherwise noted on the drawings.

B. Plain-Steel Wire: ASTM A 82, as drawn.

2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place that will not puncture the vapor retarder. Use plastic straps or brightly colored tie wires to secure reinforcing. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports. Refer to paragraph 3.06 for chair support spacing.

B. Joint Dowel Bars: Plain-steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.

2.4 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type II.

B. Pozzolans

1. Fly ash: ASTM C 618, Class C or F.

2. Blended hydraulic cement: ASTM C 595M.

3. Ground granulated blast-furnace slag: ASTM C 989, Grade 100 or 120.

C. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:

1. Class: Moderate weathering region, but not less than 3M.

2. Aggregate size: No. 57 (One inch to No. 4).

3. Aggregate size: No. 67 (3/4 inch to No. 4).

D. Size of Coarse Aggregate: Except when otherwise specified or permitted, maximum size of coarse aggregate shall not exceed three-fourths of the minimum clear spacing between reinforcing bars (or bundled bars), one-fifth of the narrowest dimension between the sides of forms, or one-third of the thickness of slabs or toppings.

E. Water: Potable and complying with ASTM C 94 or non potable meeting ASTM C 94 Acceptance Criteria for Questionable Water Supply. Use only potable water for job site mixing.

2.5 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1% water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.

B. Water-Reducing Admixture: ASTM C 494, Type A.

C. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

D. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

E. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.8 VAPOR RETARDERS

A. Vapor Retarder: ASTM E 1745, Class A except as modified in subparagraph 1. below, nylon or polyester-cord-reinforced three-ply high-density polyethylene sheet, or one ply extruded polyolefin sheet; 15-mil minimum thickness. Compliance to ASTM standards shall be confirmed by an independent testing agency. Vapor barrier shall be Stego Wrap Vapor Barrier by Stego Industries, LLC or approved equal.

1. Permeance rating: ASTM E 96, ASTM E 154 not exceeding 0.01 grains/ft2/hr

2.9 CURING MATERIALS AND EVAPORATION RETARDERS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz/sq yd dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Solvent-Borne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18% to 22% solids.

G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.10 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C 881, 2-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.

2. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

3. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

D. Cementitious Coatings: Cement based polymer modified concrete finishing material, ProFinish by Bonded Materials or approved equal.

E. Reglets: Fabricate reglets of not less than (0.0217") thick galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

2.11 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8" and that can be feathered at edges to match adjacent floor elevations. Products shall contain no added gypsum.

1. Cement binder: ASTM C 50, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

3. Aggregate: Well-graded, washed gravel, 1/8" to 1/4" or coarse sand as recommended by underlayment manufacturer.

4. Compressive Strength: Not less than 4000 psi (27.6 MPa) at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Topping: Traffic-bearing, cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4". Products shall contain no added gypsum.

1. Cement binder: ASTM C 150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.

3. Aggregate: Well-graded, washed gravel, 1/8" to 1/4" or coarse sand as recommended by topping manufacturer.

4. Compressive strength: Not less than 5500 psi (39 MPa) at 28 days when tested according to ASTM C 109/C 109M.

2.12 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Footings and footing repairs: Proportion normal-weight concrete mix as follows:

1. Compressive strength (28 Days): 3000 psi.

C. Slabs-on-Grade and slab-on-grade repairs: Proportion normal-weight concrete mix as follows:

1. Compressive strength (28 Days): 3000 psi.

2. No fly ash shall be used in mixes for interior concrete floor slabs.

D. Electrical Ducts, Conduit Encasements; Sidewalks, Equipment Pads on Grade; Thrust Blocks and Trench Encasements:

3. Compressive strength (28 Days): 3000 psi.

E. Slab Vapor Emissions Rates: At the time of finished flooring installation, vapor emissions shall not exceed a maximum of 5 lbs per 1000 square feet per 24 hours or the maximum emission established by the flooring manufacturer whichever is less. If the vapor emission rate exceeds the limit specified, take measures specified in paragraph 3.17 to reduce the emissions to an acceptable level without delaying the project.

F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Combined fly ash and pozzolan: 10%

2. Combined fly ash or pozzolan and ground franulated blast-furnace slag: 50% Portland cement minimum, with fly ash or pozzolan not exceeding 10%.

G. Maximum Water-Cementitious Materials Ratio: 0.45 for concrete required to have low permeability, interior slabs with vapor sensitive floor coverings.

H. Do not add air entrainment to concrete of trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3%.

I. Limit water-soluble, chloride-ion content in hardened concrete per ACI 318 Chapter 4 for corrosion protection of reinforcing steel.

J. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and ASTM C 1116 and furnish batch ticket information. Batch ticket information shall include design mix reference, water that can be added at the job site, and admixtures. For transit mixing, complete not less than 70 revolutions of the drum at the manufacturer's rated mixing speed. Discharge concrete into its final position within 90 minutes after introduction of batch water to the cement. If a retarder admixture is used, the discharge time limit of 90 minutes may be increased by the time specified for retardation by the admixture manufacturer or the concrete supplier. Mix concrete a minimum of one minute at mixing speed immediately prior to discharge.

2.15 MATERIAL SELECTION FOR LEED COMPLIANCE

A. Provide products that contain the highest percentage available of post-consumer and/or post-industrial recycled content as defined by LEED-NC 2009.

B. Provide material that contains the highest percentage available of locally harvested, extracted,

and manufactured materials as defined by LEED-NC 2009.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8", for surfaces prominently exposed to public view, where appearance is especially important.

2. Class B, 1/4", for coarse-textured surfaces to receive plaster, stucco or wainscoating.

3. Class C, 1/2", for permanently exposed surfaces without additional finish.

4. Class D, one inch, for surfaces, usually permanently concealed, where roughness is not objectionable.

D. Construct forms to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds. Maintain the integrity of the vapor retarder membrane.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads

required in the work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required.

2. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3. Install dovetail anchor slots in concrete structures as indicated.

4. Install inserts, hangers, metal ties, nailing strips, blocking, grounds and other fastening devices needed for attachment of other work.

B. Locate electrical or mechanical conduits and fittings so that the strength of the concrete member is not impaired. “Conduits” include pipes, ducts, and electrical conduits. Unless required otherwise on the drawings, conform to the following:

1. Concrete columns: Do not embed conduits columns unless otherwise indicated on the drawings.

2. Concrete beams: Do not embed conduits larger than 1 1/2" outside diameter vertically in any beam. Place conduits in the middle third of the beam depth and space a minimum of 10 times their outside diameter. Do not embed conduits horizontally in beam lengthwise. Provide sleeve for conduits passing through beams.

3. Concrete slabs-on-grade: Do not embedded conduits within the thickness of any concrete slab on grade. Place conduits in the subgrade below the concrete slabs.

C. Obtain Engineer’s approval to install conduit or pipe penetrations that may unduly impair the strength of the structural member (for example, multiple pipe penetrations near the face of a column).

3.3 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 degrees F (10 degrees C) for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained. The 24-hour period may be reduced to 12 hours in compliance with ACI 347R with prior approval from the Engineer.

B. Leave formwork, for beam soffits and other structural elements, that supports weight of concrete in place until concrete has achieved the following:

1. 28-day design compressive strength.

C. Clean and repair surfaces of forms to be reused in the work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 SHORES AND RESHORES

A. Comply with ACI 318, ACI 318M, ACI 301, and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.

B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

A. Vapor Retarder: Place, protect, and repair vapor-retarder sheets according to ASTM E 1643 “Standard Practice for Installation of Water Vapor Retarders” and manufacturer’s written instructions. The more stringent shall apply.

1. Use the greatest widths and lengths practical to minimize lap joints. Seal laps joints and edges with tape or materials compatible with the vapor retarder. Remove and replace torn, punctured, or damaged vapor barrier materials, except when minor repairs or patches are allowed by manufacturer’s instructions.

2. Do not cut or puncture vapor retarder. No penetrations of the vapor barrier allowed except for reinforcing steel and permanent utilities. Seal all penetrations including pipes and reinforcing. Repair damage and reseal vapor retarder before placing concrete.

3. Do not leave the vapor retarder exposed to ultraviolet radiation for more than a few days

prior to the concrete pour. Remove standing water from the vapor retarder prior top concrete pour.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Support slab reinforcing bars and welded wire fabric (WWF) as follows:

BAR SIZE	MAXIMUM DISTANCE BETWEEN SUPPORTS
#3	2 feet
#4	3 feet
#5	4 feet
#3 at 12" E.W.	4'-6" o.c. each way

C. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

D. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

2. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

3. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

4. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:

1. Grooved joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8". Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8" wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

2. Terminate full-width joint-filler strips not less than 1/2" or more than one inch below finished concrete surface where joint sealants, specified in SECTION 07920 – JOINT SEALANTS, are indicated.

3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.

1. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed. Provide one day notification to Engineer for each scheduled pour.

B. Do not add water to concrete during delivery, at project site, or during placement, unless approved by Engineer.

C. Convey concrete from mixer to the place of final deposit rapidly by methods that prevent segregation or loss of ingredients and will insure the required quality of concrete. Use

conveying equipment, conveyors, hoppers, baffles, chutes, pumps that are sized and designed to prevent cold joints from occurring and prevent segregation in discharged concrete. Clean conveying equipment before each placement.

D. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

E. Deposit concrete in forms in horizontal layers with proper consolidation into previous layers and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints. For high wall pours (above 12 feet), Contractor must show its experience and demonstrate its proficiency before Engineer will permit pours in excess of 12 feet.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

3. Make construction joints only where located on drawings unless otherwise approved by the Engineer. Plan pours to continuously place concrete from one construction joint to another.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.

4. Slope surfaces uniformly to drains where required.

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleed-water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.9 CONCRETE SLABS-ON-GRADE

A. For interior areas, unless specified elsewhere, place concrete floor slabs directly over vapor retarder overlain atop granular fill-capillary barrier and reinforce slabs with grade 60, No. 10 (#3) steel bars at 12 inches on center each way.

1. Place floor slabs in alternate panels, long strip pattern, and following construction or contraction joints. "Keyed Kold Joint" may be used in lieu of placement in alternate panels in areas where floor covering is specified provided all shrinkage cracks are sealed prior to installation of floor covering.

2. Provide a bond-break filler strip, between concrete slab and abutting vertical surfaces and as detailed.

B. For exterior areas, unless specified elsewhere, place concrete floor slabs directly over granular fill and reinforce slabs with synthetic fibers. Provide isolation and contraction joints where detailed and, at intersections, corners and at abutments. Place contraction joints not more than 40 feet apart, unless detailed otherwise.\

1. Finish concrete true to grade, section and cross slope for sloped or crowned walks at 1.5% (1% minimum and 2% maximum). Round edges to 1/8" radius except saw-cut joints. Finish steps in connection with walks with same finish as walks.

3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8" in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing,

veneer plaster, or painting.

2. Do not apply rubbed finish to smooth-formed finish.

C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes.

1. Apply scratch finish to surfaces indicated and to surfaces to receive concrete floor topping or mortar setting beds for ceramic or quart tile, Portland cement terrazzo, and other bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low sports. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

D. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.

2. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155/E 1155M for a randomly trafficked floor surface:

a. Specified overall values of flatness, F(F) 35; and levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and levelness, F(L) 17; for slabs-on-grade.

3. Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10-foot-long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed he following:

a. 1/8 inch.

E. Broom Finish: Apply a broom finish to exterior concrete platforms, walkways, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

F. Slip-Resistive Aggregates Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq ft of dampened slip-resistive aggregate over surface in one or 2 applications. Tamp aggregate flush with surface, but do not force below surface.

2. After broadcasting and tamping, apply float finish.

3. After curing, lightly work surface with a steel wire brush or an abrasice stone, and water to expose slip-resistive aggregate.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

D. Electrical Work: Use 3/4" maximum size of aggregates for duct encasement. Unless detailed otherwise, encase underground ducts or conduits as follows:

1. Provide 3 inches minimum concrete cover around ducts or conduits. Use spacers to place and hold ducts. Provide 18 inches minimum earth cover over top of concrete encasement unless otherwise detailed.

2. For future connections, provide a one foot section of ducts or conduits to extend beyond concrete encasement and terminate with a coupling or end cap.

E. Concrete for Drainage, Sewer and Plumbing Systems:

1. Do not use calcareous coarse aggregates in sewerage structures or components

2. Unless specified elsewhere, construct sewer manholes in accordance with the latest adopted/amended edition of SECTION 23 SEWER MANHOLES of the "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".

3.13 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the curing methods listed in paragraph 3.13.D.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. Moisture curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.

   b. Continuous water-fog spray.

   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-retaining-cover curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than 7 days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

   a. Moist cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.

   b. Moist cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.

   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover

or a curing compound that the manufacturer recommends for use with floor coverings.

3. Curing compound: Apply uniformly in continuous operation by spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

4. Curing and sealing compound: Apply uniformly to floors and slabs indicated in a continuous operation by spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application where recommended by the manufacturer. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions. Defer joint filling as long as possible. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

3.15 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part Portland cement to two and one-half parts fine aggregate passing a No. 16 (1.2-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2" in any dimension in solid concrete but not less than one inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than

surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01" wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4" to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes one-inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4" clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

7. Repair random cracks and single holes one-inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Engineer's

approval.

3.16 DRYING CONCRETE SLABS TO LIMIT MOISTURE VAPOR EMISSIONS AND ALKALINITY

A. For concrete slabs (on grade or suspended) receiving floor finish susceptible to vapor emissions, protect, dry or seal concrete slabs to meet the required vapor emission level(s) of the intended floor finish systems. If choosing to use a floor sealing system, furnish submittals for approval.

1. Once slab drying has started, protect it from getting wet prior to floor finish installation. Test floor for moisture and alkalinity in accordance with SECTION 01450 - MOISTURE VAPOR AND ALKALINITY TESTING, Quality Requirements.

2. Test floor for vapor emission at locations and quantities recommended by the test kit manufacturer. Test pH levels of concrete.

3. If the concrete slab does not meet the vapor emission or alkalinity level(s), use other means such as mechanical drying or floor sealing system(s) (penetrants, coatings, or membranes) to achieve the required levels.

4. If the concrete floor slab does not meet the required alkalinity level, neutralize, cure, dry or seal concrete to bring the concrete to an acceptable alkalinity level.

5. Be aware that no additional time or costs will be granted to meet the required vapor emission levels or alkalinity levels of the concrete surfaces.

B. Floor Vapor Emission Control System:

1. Acceptable products: Subject to compliance with requirements, products that may be incorporated into the work include the following. Other products must be specifically approved by the Engineer for use in this project.

   a. Koster VAP I 2000 by Koster American Corporation

   b. VaporSeal 309 by Floorseal Technology, Inc.

   c. VapoSeal-DB by Dependable Floor Products.

2. Install per manufacturer’s requirements to achieve a guaranteed vapor emission rate that meets the finished flooring recommended rates. Treatment shall not provide detrimental conditions to the concrete slab or floor covering materials. Make sure flooring adhesives are compatible with the treatment materials.

3. Installer shall provide proof of installer’s certification by the treatment manufacturer.

4. Guarantee:

a. Manufacturer's guarantee: Warrant against bond failure with concrete and failure of the system due to vapor emission and alkalinity levels. Guarantee Period: Ten (10) years. This guarantee period supersedes the guarantee provisions of the Interim General Conditions.

b. Project guarantee: Replace original finished flooring materials and vapor emission control system due to failure of the vapor emission control system to control vapor emission and prevent unacceptable alkalinity levels.

3.17 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu yd (4 cu m), but less than 25 cu yd (19 cu m), plus one set for each additional 50 cu yd (38 cu m) or fraction thereof.

2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

3. Air content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 degrees F (4.4 degrees C) and below and when 80 degrees F (27 degrees C) and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.

   a. Cast and field cure one set of four standard cylinder specimens for each composite sample.

6. Compressive-strength tests: ASTM C 39; test 2 laboratory-cured specimens at 7 days and 2 at 28 days.

   a. Test 2 field-cured specimens at 7 days and 2 at 28 days.

b. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at age indicated.

C. When strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

D. Strength of each concrete mix will be satisfactory if every average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

E. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

F. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Engineer but will not be used as sole basis for approval or rejection of concrete.

G. Moisture Vapor Emission Test: Standard test method meeting ASTM F 1869.

H. Alkalinity (pH Level) Testing: Standard test required for floor slabs and all wall and ceiling surfaces to receive painted finishes. Testing of concrete to receive paint finish may be conducted under SECTION 09900 - PAINTING.

I. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by the Engineer.

END OF SECTION

SECTION 10800

WASHROOM ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Bathroom and handwash accessories.

2. Under-lavatory guards.

B. Related Sections include the following:

1. Section 09221 “Non-Structural Metal Framing.”

2. Section 09290 “Gypsum Board” for tile substrate and wall material.

3. Section 09300 "Tiling" for ceramic toilet and bath accessories.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.

2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.

3. Material and finish descriptions.

4. Features that will be included for Project.

5. Manufacturer's warranty.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated on Drawings.

C. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by State.

1.5 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.6 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.

B. Brass: ASTM B 19 flat products; ASTM B 16 (ASTM B 16M), rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.

C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.0359-inch (0.9-mm) minimum nominal thickness.

D. Galvanized Steel Sheet: ASTM A 653/A 653M, with G60 (Z180) hot-dip zinc coating.

E. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.

G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 1 1/4” (6.0 mm) thick.

I. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.2 BATHROOM ACCESSORIES

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

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. American Specialties, Inc

2. Bobrick Washroom Equipment, Inc.

3. Bradley Corporation

4. General Accessory Manufacturing Co. (GAMCO)

5. Seachrome Corporation.

D. Soap Dispenser (SD):

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-2111

3. Description: Designed for dispensing soap in liquid form.

4. Mounting: Vertically oriented, surface mounted.

5. Capacity: 40 oz.

6. Materials: Stainless steel tank-type soap dispenser, filled from the top. Valve is black molded plastic push button with antibacterial-soap-resistant plastic cylinder and stainless steel spring.

7. Refill Indicator: Window type.

E. Paper Towel Dispenser at Restroom (PTD-1):

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-2620

3. Description: Touch free pull towel dispenser, dispenses C-fold and multifold paper towels 3-18” to 3-13/16” (79-97mm) deep. TowelMate accessory Bobrick Part No.262-

130 shall be provided. TowelMate accessory allows for paper towels to dispense one at a time without bulging, sagging, or falling through the towel tray opening. Paper towels are dispensed with pull force of less than 5 pounds (22.2 N).

4. Mounting: Surface.

5. Minimum Capacity: 400 C-fold or 525 multifold paper towels. Slots in sides of cabinet indicate refill time.

6. Material and Finish: Type 304, 22 gauge stainless steel cabinet and door with all-welded construction; exposed surfaces shall have satin finish. Door shall be secured to cabinet with a full-length stainless steel piano-hinge and equipped with a knob latch. Paper towel tray shall have a hemmed opening to dispense paper towels without tearing.

7. Lockset: Knob latch.

F. Paper Towel Dispenser at Break Room (PTD-2):

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-2621

3. Description: Touch free pull towel dispenser, dispenses C-fold and multifold paper towels 3-18" to 3-13/16" (79-97mm) deep. TowelMate accessory Bobrick Part No.262-130 shall be provided. TowelMate accessory allows for paper towels to dispense one at a time without bulging, sagging, or falling through the towel tray opening. Paper towels are dispensed with pull force of less than 5 pounds (22.2 N).

4. Mounting: Surface.

5. Minimum Capacity: 200 C-fold or 275 multifold paper towels. Slots in sides of cabinet indicate refill time.

6. Material and Finish: Type 304, 22 gauge stainless steel cabinet and door with all-welded construction; exposed surfaces shall have satin finish. Door shall be secured to cabinet with a full-length stainless steel piano-hinge and equipped with a knob latch. Paper towel tray shall have a hemmed opening to dispense paper towels without tearing.

7. Lockset: Knob latch.

G. Grab Bar (GB):

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-6806 Series, see drawings for length.

3. Mounting: Flanges with concealed fasteners.

4. Material: Stainless steel, 0.05 inch (1.2 mm) thick.

a. Finish: Smooth, No. 4, satin finish.

5. Outside Diameter: 1-1/2 inches (38 mm).

6. Configuration and Length: As indicated on Drawings.

H. Toilet Tissue Dispenser (TPD):

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-2888

3. Description: Double-roll dispenser with door.

4. Mounting: Surface mounted.

5. Capacity: Designed for 4-1/2- or 5-inch- (114- or 127-mm-) diameter tissue rolls.

6. Material and Finish: Stainless steel, No. 4 finish (satin).

I. Mirror Unit:

1. Basis-of-Design Product: Bobrick Washroom Equipment, Inc.

2. Model: B-165 1830

3. Mirror: No. 1 quality, 1/4" (6mm) select float glass: selected for silvering, electrolytically copper-plated by the galvanic process. Back is protected by full-size, shock-absorbing, water-resistant, nonabrasive, polyethylene padding.

4. Frame: Stainless-steel channel.

a. Corners: Mitered and mechanically interlocked.

5. Concealed Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.

a. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

6. Size: 18” x 30”.

2.3 UNDERLAVATORY GUARDS

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

B. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Plumberex Specialty Products, Inc.

2. TCI Products.

3. Truebro, Inc.

C. Underlavatory Guard:

1. Basis-of-Design Product: Plumberex Specialty Products, Inc.

2. Model: Handy-shield

3. Description: Insulating pipe covering for supply and drain piping assemblies, that prevent direct contact with and burns from piping, and allow service access without removing coverings.

4. Material and Finish: Antimicrobial, molded-plastic, white.

2.4 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six (6) keys to State's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

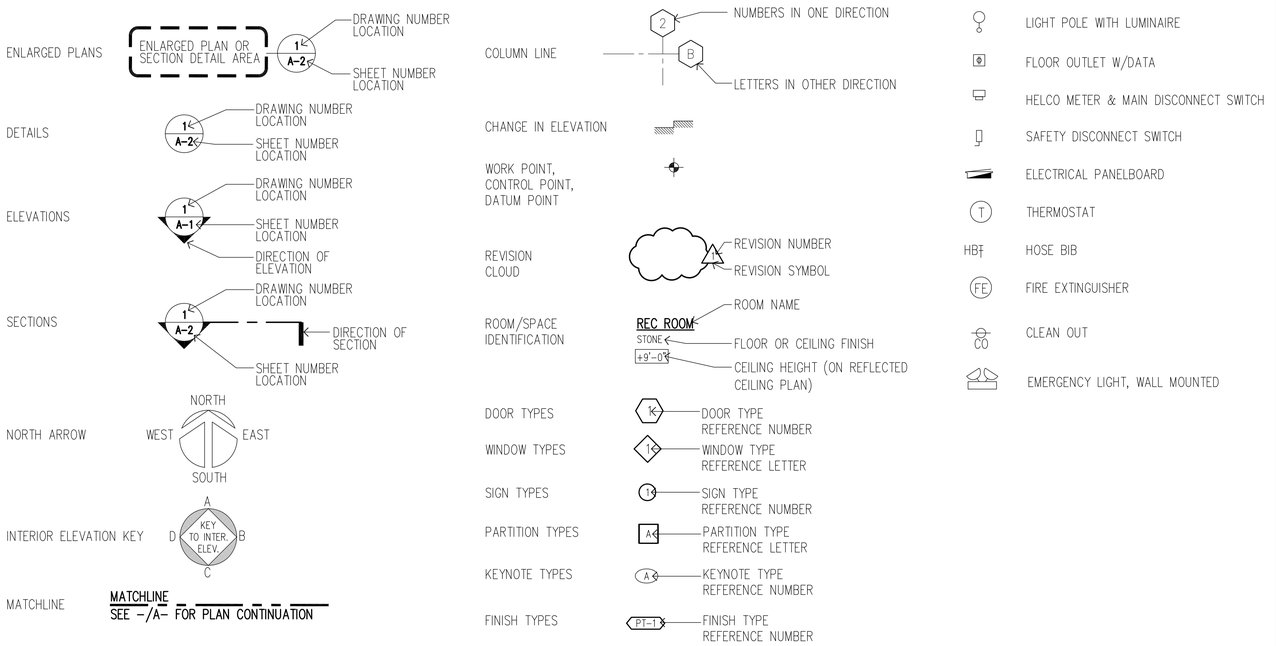
C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION

ABBREVIATIONS

ABV	ABOVE
AC	ASPHALT CONCRETE
A/C	AIR CONDITIONING
ACP	ACOUSTICAL PANEL CEILING
AD	AREA DRAIN
ADJ	ADJUSTABLE
ADMIN	ADMINSTRATION
AF	ACCESS FLOORING
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
ALT	ALTERNATE
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ASPH	ASPHALT
BCS	BABY CHANGING STATION
BD	BOARD
BLW	BELOW
BVL	BEVELED
BIT	BITUMINOUS
BKS	BACKSPLASH
BL	BUILDING LINE
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BS	BOTH SIDES
BTW	BETWEEN
C/C	CENTER TO CENTER
CAB	CABINET
CCC	COMMUNITY CONFERENCE CENTER
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT
CJT	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONT	CONTINOUS
CONX	CONNECTION
CONST	CONSTRUCTION
CORR	CORRIDOR
COUNS	COUNSELOR
CPT	CARPET
CRM	CONCRETE ROCK MASONRY
CSWK	CASEWORK
CT	CERAMIC TILE
CTR	CENTER
CTSK	COUNTER SINK
DAR	DEPARTMENT OF AQUATIC RESOURCES
DB	DECIBEL
DBL	DOUBLE
DEF'S	DIRECT APPLIED EXT FINISH SYSTEM
DF	DRINKING FOUNTAIN
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPLAY
DIV	DIVISION
DOCARE	DIVISION OF CONSERVATION AND RESOURCES ENFORCEMENT
DN	DOWN
DP	DAMPPROOFING
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DRWG	DRAWING
E	EAST
EA	EACH
EF	EXHAUST FAN
EFG	ENTRANCE FOOT GRILLE
ENG	ENGINEERING DIVISION
EG	EXISTING GRADE
EGS	EXPOSED GRID SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSED
EQ	EQUAL
EQPM	EQUIPMENT
EWS	EYE WASH STATION
EXH	EXHAUST
EXP	EXPOSED
EXPS	EXPANSION
EXST	EXISTING
EXT	EXTERIOR
EXTD	EXTRUDED
FAB	FABRIC
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIRE PROT	FIRE PROTECTION
FIN	FINISH
FL	FLOOR
FLEX	FLEXIBLE
FLASH'G	FLASHING
FLRG	FLOORING
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPRF	FIREPROOF
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FOOT/FEET
GALV	GALVANIZED
GB	GRAB BAR
GL	GLASS
GR	GRADE
GSF	GROSS SQARE FOOTAGE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HC	HANDICAPPED
HD	HEAD
HDS	HIGH DENSITY STORAGE
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HOUR
HGT	HEIGHT
HWH	HOT WATER HEATER
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IF	INSIDE FACE
IG	INSULATED GLASS
IN	INCHES
INSUL	INSULATION
INT	INTERIOR
ISO	ISOMETRIC
JAN	JANITOR
JT	JOINT
L	LEFT
LAM	LAMINATED
LAND	LANDSCAPE
LAV	LAVATORY
LH	LEFT HAND
LONG	LONGITUDINAL
LP	LOW POINT
LT	LIGHT
LTG	LIGHTING
LVR	LOUVER
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MET LKRS	METAL LOCKERS
MFR	MANUFACTURER
MH	MOUNTING HEIGHT
MIN	MINIMUM
MISC	MISCELLANEOUS
MLDG	MOLDING
MEZZ	MEZZANINE
MGR	MANAGER
MLWK	MILL WORK
MM	MILLIMETERS
MNT	MOUNT/MOUNTING
MO	MASONRY OPENING
MS	METAL STUD
MR	METAL RAILING
MTG	MEETING
MULL	MULLION
N	NORTH
N/A	NOT APPLICABLE
N/R	NON-RATED
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NSF	NET SQUARE FOOTAGE
NTE	NOT TRUE ELEVATION
NTS	NOT TO SCALE
O/O	OUT TO OUT
OA	OVERALL
OC	ON CENTER
OCC	OCCUPANT
OD	OVERFLOW DRAIN
OF	OUTSIDE FACE
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OPH	OPPOSITE HAND
OS	ONE SIDE
OVHG	OVERHANG
OVS	OVERFLOW SCUPPER
PJ	PANEL JOINT
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
PL	PROPERTY LINE
PNL	PANEL
POC	POINT OF CONNECTION
POL	POLISHED
PR	PAIR
PREFAB	PREFABRICATED
PRG	PROGRAMMABLE SQUARE FOOTAGE
PROJ	PROJECT
PT	POINT
PNT	PAINT
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PVMT	PAVEMENT
QTY	QUANTITY
R	RISER
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
REC	RECESSED
RECT	RECTANGULAR
REINF	REINFORCING
REMV	REMOVABLE
REQ'D	REQUIRED
REQMT(S)	REQUIREMEN(S)
REV	REVISION/REVISED
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROD	ROOF OVERFLOW DRAIN
ROOF'G	ROOFING
RT	RIGHT
RV	RELIEF VENT
S	SOUTH
SAT	SATURATED
SCHED	SCHEDULE
SCWD	SOLID CORE WOOD DOOR
SECT	SECTION
SF	SQUARE FOOT/FEET
SH	SHELF/SHELVES
SHPD	STATE HISTORIC PRESERVATION DIVISION
SHT	SHEET
SHWR	SHOWER
SIM	SIMILAR
SJ	SEISMIC JOINT
SLNT	SEALANT
SOG	SLAB ON GRADE
SL	SLOPE OR SLOPED
SP	DIVISION OF STATE PARKS
SQ	SQUARE
SST	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STAG	STAGGERED
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SYS	SYSTEM
T	TRANSFORMER
TRD	TREAD
T&B	TOP AND BOTTOM
TEMP	TEMPERED
TEX	TEXTURED
THK	THICK
THRESH	THRESHOLD
TKB	TACKBOARD
TLT	TOILET
TOC	TOP OF CONCRETE
TOE	TOP OF EAVE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOP	TOP OF PLATE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TOILET PARTITION
TPD	TOILET PAPER DISPENSER
TR	TRASH RECEPTACLE
TRTD	TREATED
TS	TUBE STEEL OR THIN SET
TWF	THROUGH-WALL FLASHING
TYP	TYPICAL
UC	UNDERCOUNTER
UGND	UNDERGROUND
UNEX	UNEXCAVATED
UNFIN	UNFINISHED
UON	UNLESS OTHERWISE NOTED
UR	URINAL
VCT	VINYL COMPOSITION TILE
VENT	VENTILATION
VERT	VERTICAL
VEST	VESTIBULE
VTR	VENT THROUGH ROOF
W	WEST
W/	WITH
W/O	WITHOUT
WO	WHERE OCCURS
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WM	WIRE MESH
WPFG	WATERPROOFING
WS	WOOD STUDS
WWF	WELDED WIRE FABRIC
YD	YARD

DRAWING SYMBOLS



HAWAI'I COUNTY ENERGY CODE

2015 IECC, HAWAI'I REVISED STATUTES HRS 107-24 TO 28 & HAWAI'I ADMINISTRATIVE RULES HAR 3-181.1

COMMERCIAL BUILDING ENERGY EFFICIENCY STANDARDS

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PROJECTS DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO THE **COMMERCIAL PROVISIONS FOR BUILDING ENVELOPE COMPONENTS (C402)** OF THE 2015 IECC WITH AMENDMENTS PER HAR 3 -181.1:

COMPLIANCE METHOD

- ☒ 2015 IECC as amended. Mandatory & Prescriptive
- ☐ 2015 IECC as amended. Mandatory & Total Building Performance
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Prescriptive
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Energy Cost Budget Method

INFORMATION IN CONSTRUCTION DOCUMENTS	Yes	N/A
Roof insulation R-value	☒	☐
Roof insulation type and location	☒	☐
Roof membrane solar reflectance and thermal emittance	☒	☐
Wall insulation R-value	☐	☒
Wall insulation type and location	☐	☒
Window SHGC	☒	☐
Window U-factor	☒	☐
Skylight SHGC	☒	☐
Skylight U-factor	☒	☐

NOTES

EXISTING EXTERIOR WALL TO REMAIN IS GROUTED CONCRETE MASONRY UNIT (CMU).

Signature:_____ Date:_____ Stamp, Date & Two-Part Statement

Name: FRED K. ERSKINE

Title : PRESIDENT

License No. : 10192

Project Name: HAWAII DISTRICT LAND OFFICE

Project TMK: (3) (3) 2-2-032: 011

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	1 OF 18	JAN 2023	
ADD-1	A1	ADDENDUM NO. 1	1 OF 6	DEC 2022	

FRED K. ERSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

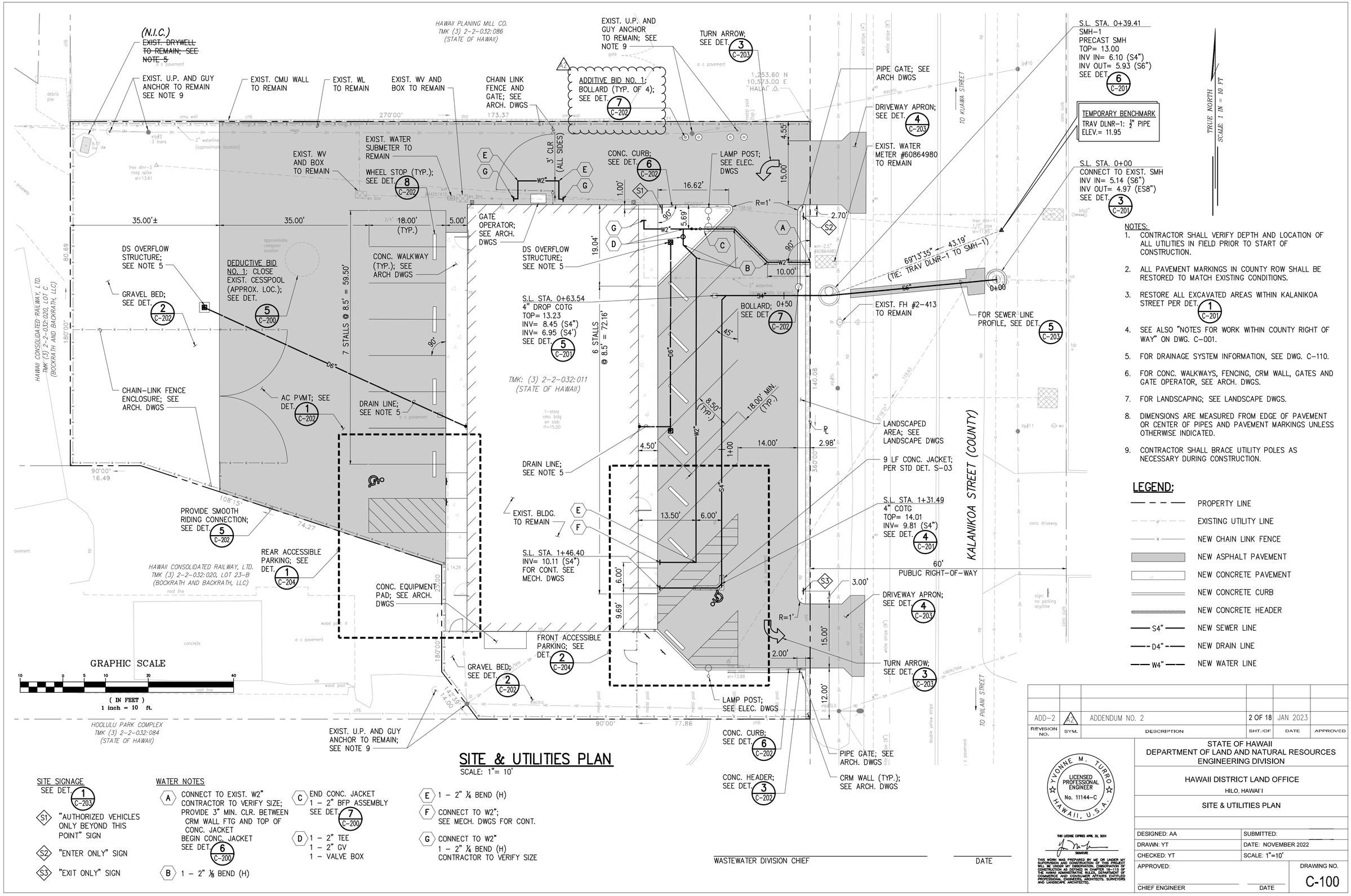
HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

ABBREVIATIONS, DRAWING SYMBOLS, PLOT PLAN

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED

APPROVED: _____ CHIEF ENGINEER _____ DATE

DRAWING NO. T-003



SITE & UTILITIES PLAN

SCALE: 1"= 10'

NOTES:

1. CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF ALL UTILITIES IN FIELD PRIOR TO START OF CONSTRUCTION.
2. ALL PAVEMENT MARKINGS IN COUNTY ROW SHALL BE RESTORED TO MATCH EXISTING CONDITIONS.
3. RESTORE ALL EXCAVATED AREAS WITHIN KALANIKOA STREET PER DET. 1 C-201
4. SEE ALSO "NOTES FOR WORK WITHIN COUNTY RIGHT OF WAY" ON DWG. C-001.
5. FOR DRAINAGE SYSTEM INFORMATION, SEE DWG. C-110.
6. FOR CONC. WALKWAYS, FENCING, CRM WALL, GATES AND GATE OPERATOR, SEE ARCH. DWGS.
7. FOR LANDSCAPING; SEE LANDSCAPE DWGS.
8. DIMENSIONS ARE MEASURED FROM EDGE OF PAVEMENT OR CENTER OF PIPES AND PAVEMENT MARKINGS UNLESS OTHERWISE INDICATED.
9. CONTRACTOR SHALL BRACE UTILITY POLES AS NECESSARY DURING CONSTRUCTION.

LEGEND:

- PROPERTY LINE
- EXISTING UTILITY LINE
- NEW CHAIN LINK FENCE
- NEW ASPHALT PAVEMENT
- NEW CONCRETE PAVEMENT
- NEW CONCRETE CURB
- NEW CONCRETE HEADER
- S4" NEW SEWER LINE
- D4" NEW DRAIN LINE
- W4" NEW WATER LINE

SITE SIGNAGE
SEE DET. 1 C-203

- S1 "AUTHORIZED VEHICLES ONLY BEYOND THIS POINT" SIGN
- S2 "ENTER ONLY" SIGN
- S3 "EXIT ONLY" SIGN

WATER NOTES

- A CONNECT TO EXIST. W2" CONTRACTOR TO VERIFY SIZE; PROVIDE 3" MIN. CLR. BETWEEN CRM WALL FTG AND TOP OF CONC. JACKET. BEGIN CONC. JACKET SEE DET. 6 C-200
- B 1 – 2" ⅛ BEND (H)
- C END CONC. JACKET 1 – 2" BFP ASSEMBLY SEE DET. 7 C-200
- D 1 – 2" TEE 1 – 2" GV 1 – VALVE BOX
- E 1 – 2" ¼ BEND (H)
- F CONNECT TO W2"; SEE MECH. DWGS FOR CONT.
- G CONNECT TO W2" 1 – 2" ¼ BEND (H) CONTRACTOR TO VERIFY SIZE

WASTEWATER DIVISION CHIEF — DATE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	2 OF 18	JAN 2023	

YVONNE M. TURRO — LICENSED PROFESSIONAL ENGINEER — No. 11144-C — HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION, OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

SITE & UTILITIES PLAN

DESIGNED: AA	SUBMITTED:
DRAWN: YT	DATE: NOVEMBER 2022
CHECKED: YT	SCALE: 1"=10'
APPROVED:	DRAWING NO. C-100
CHIEF ENGINEER — DATE	

HAWAII PLANING MILL CO.
TMK (3) 2-2-032:086
(STATE OF HAWAII)

HAWAII CONSOLIDATED RAILWAY, LTD.
TMK (3) 2-2-032:020, LOT 23-C
(BOCKRATH AND BACKRATH, LLC)

HAWAII CONSOLIDATED RAILWAY, LTD.
TMK (3) 2-2-032:020, LOT 23-B
(BOCKRATH AND BACKRATH, LLC)

TMK: (3) 2-2-032:011
(STATE OF HAWAII)

HOOLULU PARK COMPLEX
TMK (3) 2-2-032:084
(STATE OF HAWAII)

TO KUAWA STREET

TO PILIANI STREET

1,253.60 N
10,573.00 E
HALAI

13.5± EG, pavement

~~CLEAN EXIST. DRYWELL; E/TOP= 13.28 SEE NOTE 3.~~ *(N.I.C.)*

13.81 P
13.70 P/SW
13.81 P

14.03 SW
14.20 HP/P

4'-WIDE SWALE

3 / C-204 GRADE BREAK

MATCH EXIST. BW ELEV. ALONG EXIST. CMU WALL

LIMITS OF GRADING AND DISTURBED AREA

SW 12.10
SW 12.17

ADDITIVE BID NO. 1: BOLLARD (TYP.)

SEE NOTE 4.

13.30 SW
SW 13.58

ADJUST TOP OF EXIST. UTILITY BOX AS NECESSARY (TYP.)

SW 13.40
P 13.50

C/TC 13.66
BC 13.33

C 13.73
P 13.40

P 14.33
P 14.35

C 14.93
P 14.60

C 14.98
P 14.65

C 14.93
P 14.60

14.98 C

DS AND SPLASH BLOCK; SEE ARCH. DWGS

AD-1
DS OVERFLOW STRUCTURE W/DI GRATE AND CONC. APRON
TOP=13.67
INV=11.00 (D6")
SEE DET. 7 / C-201

AD-2
DS OVERFLOW STRUCTURE
TOP=12.70
INV=11.00 (D6")
SEE DET. 7 / C-201

14.00 TC
13.67 BC

DROP COTG

13.15 TC
12.82 BC

P 12.41

SMH

4 / C-204

COTG
TOP=14.38
INV=11.90 (D6")
SEE DET. 4 / C-201

CONNECT D6" TO DS
INV=12.00
(TYP. OF 2 LOC.)

COTG
TOP=14.12
INV=11.85 (D6")
SEE DET. 4 / C-201

13.90 SW

C 14.70

C 14.65
P 14.32

14.05 P

14.1± EG

14.0± EG

EXIST. FF = 15.00

C 14.98
C 14.98

14.93 C
14.60 P

SEE REAR ACCESSIBLE PARKING DET. 1 / C-204

13.56 P
15.4± TW
13.4± BW

EG/P 14.4±

14.98 C

SEE FRONT ACCESSIBLE PARKING DET. 2 / C-204

C 14.83
P 14.5±

12.4± P
12.5± P
12.7± P

13.60 TC
13.27 BC

13.25 C

C 14.97
FG 14.64

C 15.00
FG 14.60

C 14.92
FG 14.50

15.00 C
14.60 FG

12.6± P
12.4± P
12.4± P

15.2± TW
13.2± BW

EG 14.3±

C 14.92
FG 14.50

14.20 FG

14.10 SW

13.30 SW

EG 14.0±

EG 13.5±

14.33 TC
14.03 BC

14.9± TW
12.9± BW

EG 13.0±

CONC. EQUIPMENT PAD; SEE ARCH. DWGS

12.2± P
12.1± P
12.1± P
12.1± P

12.2± P
12.2± P
12.3± P

14.4± TW
12.4± BW

NOTES:

1. FOR LANDSCAPE AND IRRIGATION PLANS, SEE LANDSCAPE DRAWINGS.
2. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IN ALL DIRECTIONS.
3. ~~REMOVE EXIST. GRATE, CLEAN AND REMOVE ALL ACCUMULATED SEDIMENTS, DEBRIS, AND ORGANIC MATTER IN THE DRYWELL.~~ *(N.I.C.)*
4. CONTRACTOR TO BRACE UTILITY POLES IF NECESSARY DURING CONSTRUCTION.

TRUE NORTH
SCALE: 1 IN = 10 FT

LEGEND:

	PROPERTY LINE
	PROJECT LIMITS/LIMITS OF DISTURBANCE
D4"	NEW DRAIN LINE
x	NEW CHAIN LINK FENCE
14	NEW GRADE CONTOUR
14	EXIST. CONTOUR
	SWALE CENTERLINE
	GRADE BREAK
12.30	PROP. SPOT ELEVATION
x 12.30	EXIST. SPOT ELEVATION
	FLOW DIRECTION
1.5%	SLOPE
12.30 P	AC PAVEMENT
12.30 C	CONCRETE
12.30 FG	FINISH GRADE
12.30 TC	TOP CURB
11.80 BC	BOTTOM CURB
13.80 TW	TOP OF WALL
12.30 BW	BOTTOM OF WALL
12.30 HP	HIGH POINT
12.30 LP	LOW POINT
12.30 SW	SWALE

GRADING & DRAINAGE PLAN

SCALE: 1"= 10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	3 OF 18	JAN 2023	

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

GRADING & DRAINAGE PLAN

YVONNE M. TURRO
LICENSED PROFESSIONAL ENGINEER
No. 11144-C
HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024
SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION, (OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

DESIGNED: AA	SUBMITTED:
DRAWN: YT	DATE: NOVEMBER 2022
CHECKED: YT	SCALE: 1"=10'

APPROVED:
CHIEF ENGINEER — DATE

DRAWING NO. C-110

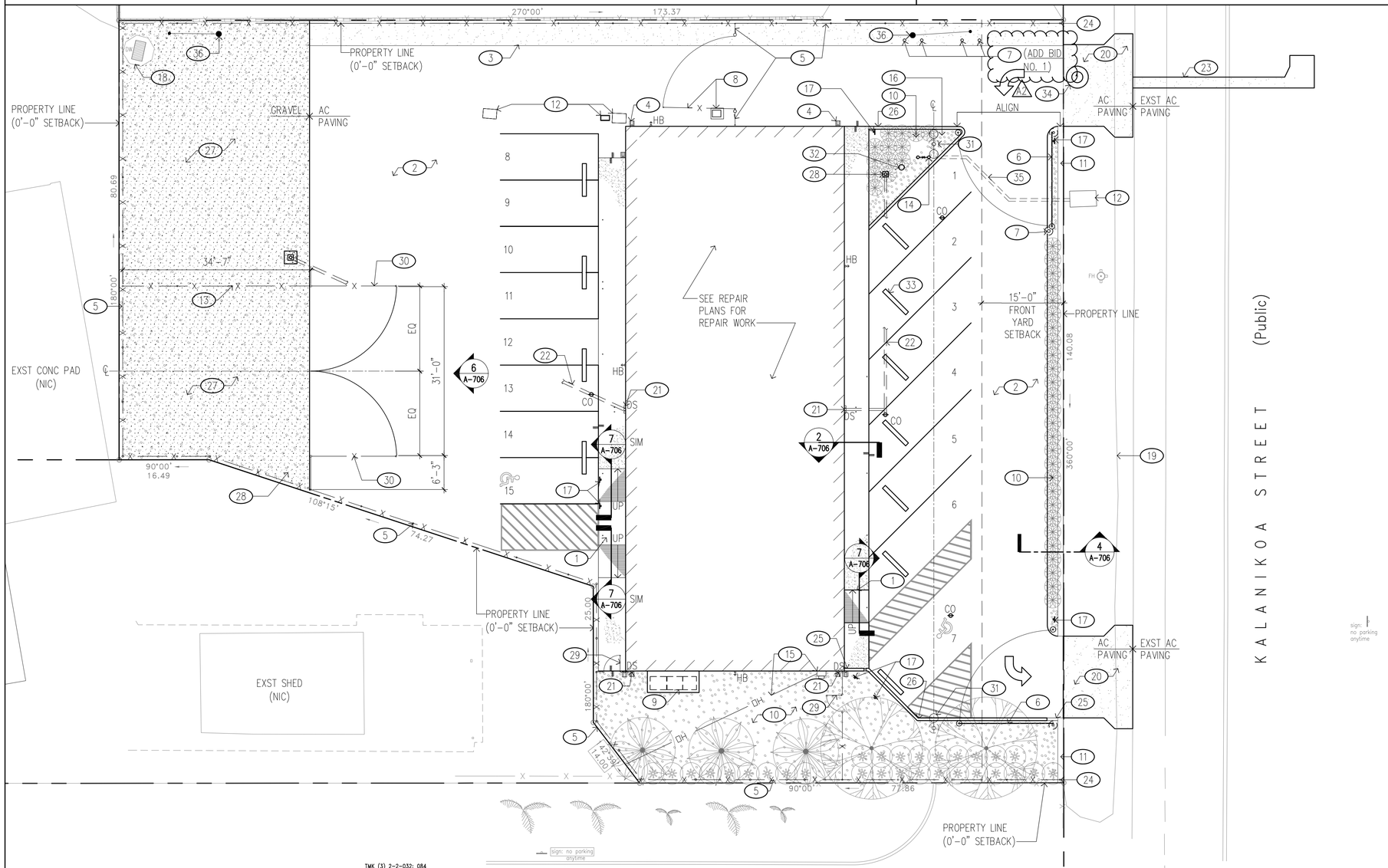
JOB NO. E00BH30A SHEET NO. 10 OF 77 SHEETS

GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
2. SEE SHEET T-002 FOR ADDITIONAL NOTES AND REQUIREMENTS.
3. SEE CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, & ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. CONCRETE/ASPHALT PAVED WALKWAYS SHALL NOT EXCEED THE FOLLOWING SLOPES:
   -IN DIRECTION OF TRAVEL 1:20, UNLESS OTHERWISE NOTED.
   -CROSS SLOPE OF 1:50.
5. ALL NON-PAVED AREAS DAMAGED AS A RESULT OF NEW WORK SHALL BE RE-PLANTED W/GRASS TO MATCH EXST. ADJACENT GRASS AREAS.
6. CONTRACTOR SHALL TONE ALL AREAS PRIOR TO PERFORMING ANY TRENCHING & EXCAVATION WORK. CONTRACTOR WILL BE RESPONSIBLE TO CORRECT ANY DAMAGE THAT OCCURS TO ANY UTILITY/POWER/COMMUNICATIONS LINES & OTHER BURIED INFRASTRUCTURE WITHOUT ADDITIONAL COMPENSATION.
7. ALL DIMENSIONS ARE TAKEN FROM THE FACE OF FINISH UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PAINT ALL UNFINISHED SURFACES, UNLESS OTHERWISE NOTED.

LEGEND

- ASPHALT PAVING
- 6" GRAVEL BED
- 12" DEEP THICK PACKED GRAVEL BED
- LAMP POST
- DS DOWNSPOUT
- DS DOWNSPOUT W/SPLASH BLOCK
- UTILITY POLE & GUY ANCHOR
- HB HOSE BIB
- SEWER MAN HOLE
- CO CLEAN OUT



KEYNOTE NO.	KEYNOTES (THIS SHEET)
1	CONC SIDEWALK. RAMP FOR ADA PARKING STALL ACCESS.
2	AC PAVING. PAINT PARKING STRIPES AND WHEEL STOP, SEE CIVIL DRWG.
3	AC PAVING SWALE. SEE CIVIL DRWG.
4	DOWNSPOUT & SPLASH BLOCK.
5	8'-0" H CHAIN LINK FENCE.
6	PIPE GATE W/ RECEIVING POSTS.
7	BOLLARD, SEE CIVIL DRWG.
8	GATE OPERATOR PAD FOR 8'-0" H ELECTRONIC GATE W/ GATE WHEEL, WELDED CHAINS, PADLOCK & MAGLOCK.
9	CONC MECHANICAL EQUIPMENT PAD FOR ACCU, SEE MECH DRWG.
10	LANDSCAPED AREA, SEE LAND DRWG.
11	CRM WALL.
12	EXISTING HANDHOLE TO REMAIN.
13	8'-0" H CHAIN-LINK FENCE ENCLOSURE.
14	RELOCATED BACKFLOW PREVENTOR, SEE CIVIL DRWG.
15	ELECTRICAL METER & OVERHEAD POWER LINE, SEE ELEC DRWG.
16	6" DEEP GRAVEL BED. SEE CIVIL & LAND DRWG.
17	SITE SIGNAGE, SEE CIVIL DRWG.
18	EXIST DRYWELL, SEE CIVIL DRWG FOR WORK INSIDE DRYWELL.
19	EDGE OF EXISTING ROAD, SEE CIVIL DRWG.
20	AC PAVED DRIVEWAY. SEE CIVIL DRWG.
21	DOWNSPOUT.
22	UNDERGROUND DRAIN TO LANDSCAPING, SEE CIVIL DRWG.
23	PATCH & REPAIR EXST STREET. SEE CIVIL DRWG.
24	END 8'-0" HIGH CHAIN LINK FENCE.
25	CONC CURB CUT. SEE CIVIL DRWG.
26	CONC CURB. SEE CIVIL DRWG.
27	12" DEEP GRAVEL BED, SEE CIVIL & LAND DRWG.
28	DOWNSPOUT OVERFLOW STRUCTURE.
29	8'-0" HIGH x 3'-4" WIDE CHAIN LINK PEDESTRIAN GATE W/ U-LATCH & PADLOCK.
30	8'-0" HIGH CHAIN LINK ENCLOSURE W/ GATE WHEELS, STRONG ARM LATCH & PADLOCK.
31	EXTERIOR LAMP POST, SEE ELEC DRWG.
32	VALVE BOX, SEE CIVIL DRWG.
33	PRE-CAST CONC WHEEL STOP, TYP.
34	PRE-CAST SHALLOW DROP MANHOLE.
35	CONC JACKET BLW.
36	EXST UTILITY POLE & GUY WIRE TO REMAIN.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	4 OF 18	JAN 2023	

1 OVERALL SITE PLAN
SCALE: 3/32" = 1'-0"

0 4' 8' 12' 16' 20' 24' 28' 32'
SCALE: 3/32" = 1'-0"

NORTH / WEST / EAST / SOUTH

FRED K. ERSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. (OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

OVERALL SITE PLAN

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: FEBRUARY 2021
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-001
CHIEF ENGINEER / DATE	

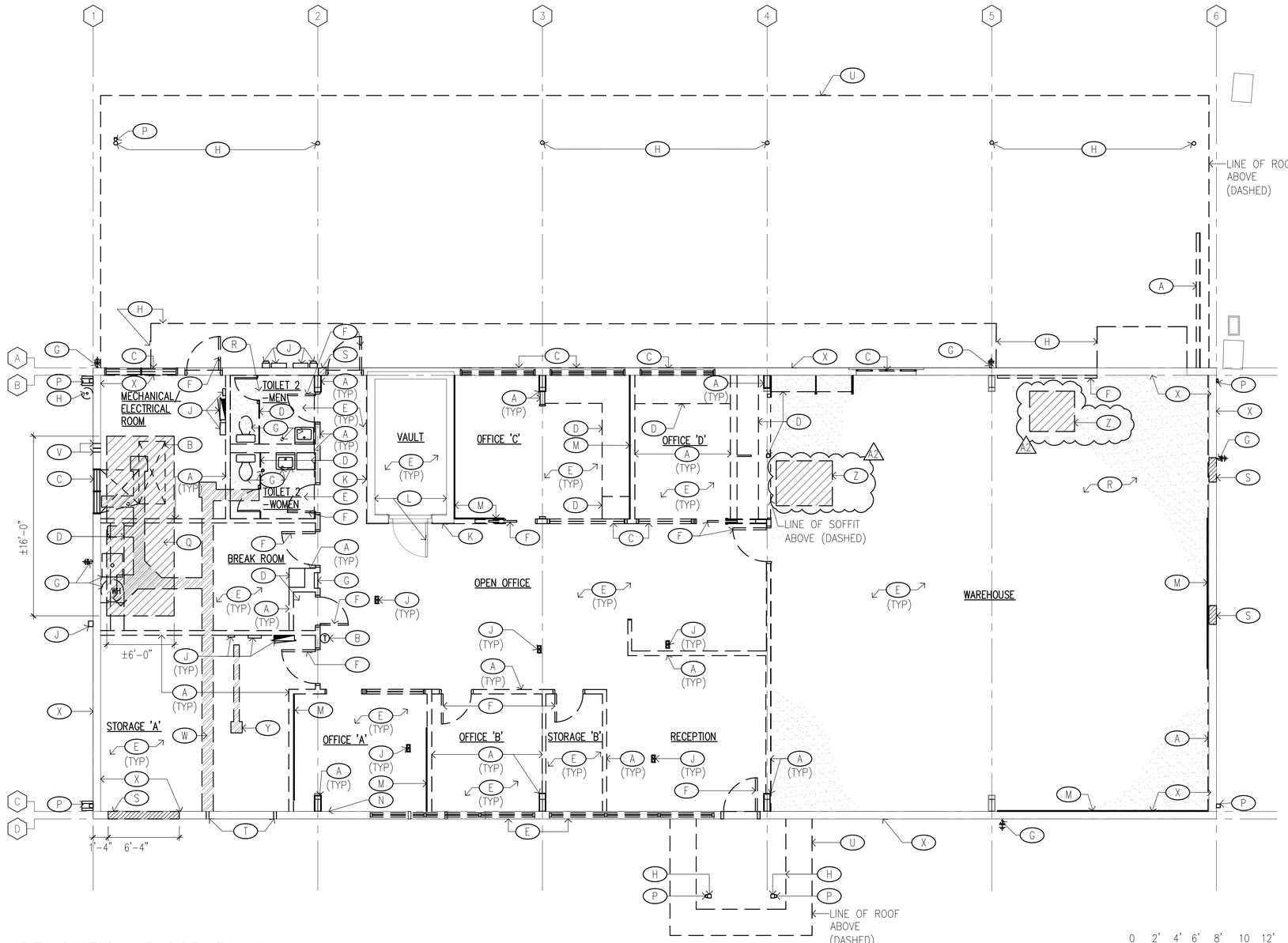
JOB NO. E00BH30A SHEET NO. 19 OF 77 SHEETS

DEMOLITION NOTES

1. SEE SHEET T-002 FOR ADDITIONAL NOTES & REQUIREMENTS.
2. PERFORM ALL DEMOLITION SO THAT EXISTING CONSTRUCTION TO REMAIN IS UNDAMAGED.
3. EXTENT OF REMOVAL AS INDICATED IS APPROXIMATE. CONTRACTOR SHALL VERIFY THE EXTENT OF REMOVAL WORK TO PROPERLY ACCOMMODATE THE METHOD OF REQUIRED NEW CONSTRUCTION. ADDITIONAL REMOVAL & PATCHING REQ'D TO ACCOMMODATE NEW CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THE NEW WORK CONTAINED HEREIN WITH NO ADDITIONAL COMPENSATION BEING PROVIDED.
4. PROPERLY PREPARE ALL SURFACES THAT ARE TO BE RE-PAINTED AS NEEDED TO MEET PRODUCT & MANUFACTURER'S REQUIREMENTS & RECOMMENDATIONS FOR A COMPLETE, SOUND & TIGHT JOB. ALLOW FOR CONSTRUCTION TOLERANCES IN ORDER TO MEET THE MINIMUM/MAXIMUM REQUIREMENTS AS SPECIFIED & INDICATED IN THE DRAWINGS & SPECIFICATIONS.
5. ALL DIMENSIONS SHOWN ARE APPROXIMATE & SHALL BE FIELD VERIFIED BY THE CONTRACTOR. SEE CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
6. CONTRACTOR SHALL TONE ALL AREAS AFFECTED BY THE WORK PRIOR TO SAWCUTTING, TRENCHING, EXCAVATION, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE THAT OCCURS TO ANY UTILITY/POWER/COMMUNICATIONS LINES & OTHER EXISTING INFRASTRUCTURE.
7. SEE HAZMAT REPORT AND SECTIONS IN SPECIFICATIONS FOR ABATEMENT WORK. CONTRACTOR IS RESPONSIBLE TO MEET THE REQUIREMENTS AS SPECIFIED & INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
8. ACTUAL EXTENT OF GRADING, TRENCHING, & EXCAVATION IS NOT DEPICTED. THE CONTRACTOR SHALL DETERMINE THE ACTUAL EXTENT OF TRENCHING & EXCAVATION REQUIRED TO ACCOMMODATE THE INSTALLATION OF NEW ELEC., TELECOM, DRAIN LINES, WATER LINES, ETC. PRIOR TO BID SUBMITTAL. SEE CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
9. EXTENT OF SAWCUTTING OF THE CONCRETE SLAB ON GRADE & EXCAVATION IS NOT DEPICTED. THE CONTRACTOR SHALL DETERMINE THAT ACTUAL EXTENT OF SAWCUTTING & EXCAVATION REQUIRED TO ACCOMMODATE THE WORK.
10. EXTENTS/LIMITS OF TRENCHING & EXCAVATION WORK IS NOT SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COSTS FOR TRENCHING & EXCAVATION WORK TO RELOCATE BURIED INFRASTRUCTURE.
11. THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES AROUND WORK AREA DURING CONSTRUCTION.

LEGEND (THIS SHEET)

- INDICATES EXISTING TO REMAIN
- INDICATES EXISTING TO BE DEMOLISHED/REMOVED/ALTERED
- INDICATE AREA OF CONC TO BE SAW CUT
- DEMO & PREPARE FOR FLOOR LEVELING
- INDICATE AREA OF CONC TRENCH TO BE SAW CUT



1 DEMOLITION FLOOR PLAN
SCALE: 3/16" = 1'-0"

0 2' 4' 6' 8' 10 12'
SCALE: 3/16" = 1'-0"

WEST SOUTH NORTH EAST

KEYNOTE NO.	KEYNOTES (THIS SHEET)
A	DEMOLISH FULL HEIGHT INTERIOR PARTITIONS COMPLETE & GYP BD FURRING AROUND COLUMNS. PATCH/REPAIR ADJACENT FLOORS & WALLS TO REMAIN. GYP BD MAY CONTAIN FIBERGLASS, CONTRACTOR USE CAUTION DURING REMOVAL & HANDLING. GYP BD JOINT COMPOUND, TEXTURE, & PAINT MAY CONTAIN ASBESTOS & LEAD, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
B	DEMOLISH AIR CONDITIONING UNIT & CONNECTIONS. SEE MECHANICAL DRAWINGS. FOIL WRAP INSULATION & BLACK VIBRATION CLOTH MAY CONTAIN FIBERGLASS, CONTRACTOR USE CAUTION DURING REMOVAL & HANDLING. PAINT ON METAL PIPES MAY CONTAIN LEAD, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
C	REMOVE WINDOW/LOUVER SYSTEM COMPLETE & PREPARE OPENING FOR NEW WINDOW INSTALLATION. PAINT ON WINDOW FRAME MAY CONTAIN LEAD, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
D	DEMOLISH BUILT-IN CABINETRY/STORAGE, RESTROOM PARTITIONS, & RESTROOM ACCESSORIES IN ENTIRETY.
E	REMOVE FLOOR TILE & WALL BASE THROUGHOUT. LEVEL & PREP FLOOR SURFACE FOR NEW FLOOR FINISH PER MANUFACTURER'S INSTRUCTIONS. FLOOR TILE & MASTIC UNDER WALL BASE MAY CONTAIN ASBESTOS, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
F	DEMOLISH DOOR LEAF, DOOR HARDWARE, & DOOR FRAME COMPLETE. PAINT ON DOORS & DOOR FRAMES MAY CONTAIN LEAD, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
G	DEMOLISH ALL PLUMBING FIXTURES, WATER HEATER, HOSE BIB, & FLOOR DRAIN/CLEAN OUT. PATCH & REPAIR ADJACENT FLOORS & WALLS TO REMAIN. SINK INSULATION MAY CONTAIN ASBESTOS, ABATE PER HAZMAT REPORT IN SPECIFICATIONS. SEE MECH DRWG.
H	DEMOLISH CONCRETE SIDEWALK, PAD, RAMP, METAL POST, & FOOTING COMPLETE.
J	DISCONNECT & REMOVE ELECTRICAL PANELS, CONDUITS, RECEPTACLES, SWITCHES, & FIXTURES. PATCH & REPAIR ADJACENT FLOORS & WALLS TO REMAIN. LIGHT INSULATION MAY CONTAIN FIBERGLASS, CONTRACTOR USE CAUTION DURING REMOVAL & HANDLING. PAINT ON ELECTRICAL PANELS & DEVICES MAY CONTAIN LEAD, ABATE PER HAZMAT REPORT IN SPECIFICATIONS. SEE ELEC DRWG.
K	DEMOLISH WALL COVERING & ADHESIVE COMPLETE. PREPARE WALL SURFACE ON WALLS TO REMAIN FOR NEW FINISH.
L	VAULT WALLS & DOOR TO REMAIN.
M	DEMOLISH CORKBOARD/CHALKBOARD, & ADHESIVE COMPLETE. CORKBOARD & MASTIC MAY CONTAIN ARSENIC, ABATE PER HAZMAT REPORT IN SPECIFICATIONS.
N	PATCH & REPAIR PENETRATIONS & CRACKS IN PERIMETER WALL. SEE STRUCT DRWG & SPECIFICATIONS.
P	DEMOLISH DOWNSPOUT, INTERNAL GUTTER, & SPLASH BLOCK.
Q	CUT & DEMO PORTION OF CONC SLAB FOR NEW DEPRESSED SLAB. SEE STRUCT DRWG.
R	CONTRACTOR SHALL PREPARE FLOOR TO BE SEALED & LEVELED AS REQUIRED. IF ADDITIVE BID NO. 2 IS IMPLEMENTED, CONTRACTOR SHALL SCARIFY AND PREPARE CONC SLAB FOR CONC TOPPER. AZ
S	CUT & DEMO CMU WALL FOR NEW WINDOW/LOUVER OPENING. SEE STRUCT DRWG.
T	CORE CONC WALL FOOTING FOR PLUMBING POC. SEE CIVIL, MECH & STRUCT DRWG.
U	DEMOLISH CARPORT & ENTRY CANOPY COMPLETE.
V	CORE CONC WALL FOR REFRIGERANT PIPING. AT ±9'-0" AFF. APPROXIMATELY 5" ø FOR GAS LINE AND 4-1/2" ø FOR LIQUID LINE. SEE MECH & STRUCT DRWG.
W	SAWCUT, EXCAVATE, & TRENCH CONC SLAB FOR NEW PLUMBING. SEE MECH DRWG.
X	REMOVE PAINT FROM CMU WALL SURFACE. PREP SURFACE TO RECEIVE NEW SEALER (INTERIOR) AND NEW PAINT (EXTERIOR).
Y	SAWCUT, EXCAVATE, & TRENCH CONC SLAB FOR NEW FLOOR OUTLET. SEE ELEC DRWG.
Z	ADDITIVE BID NO. 2 - SAWCUT PORTION OF CONC SOG IN PREPARATION OF CONC RAMP. SEE NOTE 'R' FOR ADDITIONAL INFO REGARDING CONC SOG PREP. AZ

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	AZ	ADDENDUM NO. 2	5 OF 18	JAN 2023	

FRED K. ERSKINE
LICENSED PROFESSIONAL ARCHITECT
No. 10192
HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

DEMOLITION FLOOR PLAN

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-101
CHIEF ENGINEER	DATE

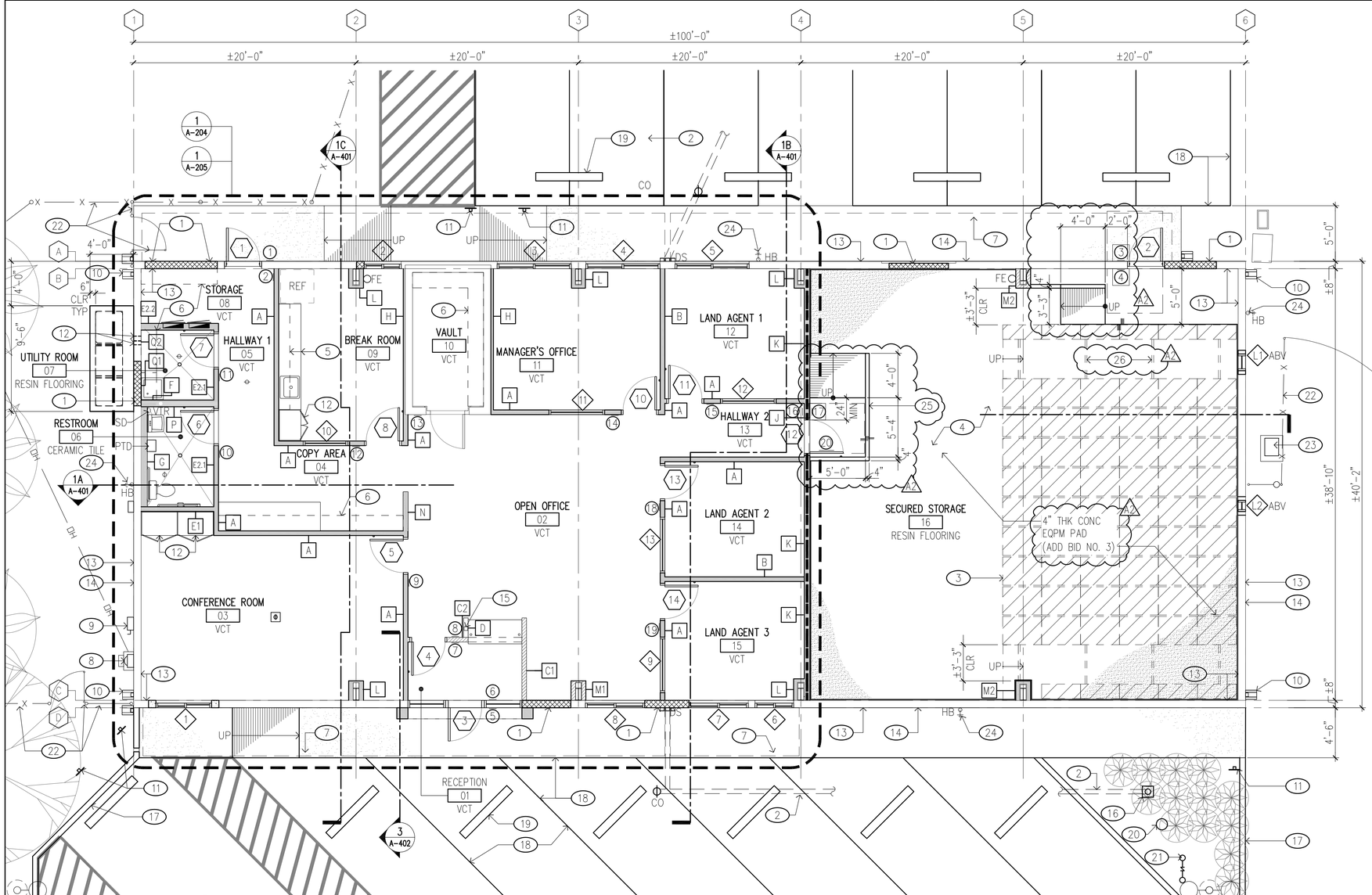
GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
2. SEE SHEET T-002 FOR ADDITIONAL NOTES AND REQUIREMENTS.
3. SEE CIVIL, LANDSCAPE, MECHANICAL, STRUCTURAL & ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. CONCRETE/ASPHALT PAVED WALKWAYS SHALL NOT EXCEED THE FOLLOWING SLOPES:
   -IN DIRECTION OF TRAVEL 1:20, UNLESS OTHERWISE NOTED.
   -CROSS SLOPE OF 1:50.
5. ALL NON-PAVED AREAS DAMAGED AS A RESULT OF NEW WORK SHALL BE RE-PLANTED W/GRASS TO MATCH EXST. ADJ. GRASS AREAS.
6. CONTRACTOR SHALL TONE FOR UTILITY LINES IN ALL AREAS OF THE SITE THAT WILL BE AFFECTED BY THE WORK.
7. ALL DIMENSIONS ARE TAKEN FROM THE FACE OF FIN. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PAINT ALL UNFINISHED SURFACES, UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND CONFIRM DIMENSIONS OF SHOP DRAWINGS PRIOR TO APPROVAL AND ORDERING OF HDS SYSTEM. CONTRACTOR SHALL PROVIDE ALL COMPONENTS TO SUPPORT THE HDS SYSTEM, INCLUDING (BUT NOT LIMITED TO) ANCHORS, BOLTS, RAILS, GROUT, POWER SUPPLY, J-BOXES, STRUCTURAL SUPPORT, ETC. CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION, ASSEMBLY, CONNECTIONS, AND COMPLETE INSTALLATION OF THE HDS SYSTEM AT NO ADDITIONAL COST TO THE STATE.

LEGEND (THIS SHEET)

- X — DOOR TYPE, SEE A-601
- X — WINDOW TYPE, SEE A-601
- X — SIGN TYPE
- XX — PARTITION TYPE, SEE A-403
- CONCRETE MASONRY UNIT INFILL
- FULL HEIGHT PARTITION, PAINT AS SPECIFIED
- PARTIAL HEIGHT PARTITION, PAINT AS SPECIFIED
- PARTIAL HEIGHT PARTITION, PAINT AS SPECIFIED, W/WOOD CAP
- 1-HR RATED PARTITION
- CO — CLEAN OUT
- FLOOR DRAIN
- FLOOR POWER & DATA OUTLET
- DS — DOWNSPOUT
- DS — DOWNSPOUT W/SPLASH BLOCK
- HB — HOSE BIB
- SITE SINAGE
- ADA SIGNAGE
- LAMP POST

KEYNOTE NO.	KEYNOTES (THIS SHEET)
1	INFILL OPENING WITH CMU. MATCH EXST PATTERN & BLOCK SIZE.
2	DOWNSPOUT DRAIN PIPE TO LANDSCAPED AREAS. SEE CIVIL DRWG.
3	ADDITIVE BID NO. 2. AREA FOR ELECTRONIC HIGH DENSITY STORAGE SYSTEM, CFCI. SEE ELEC DRWG & SPECIFICATION.
4	LEVEL & SEAL EXST CONC FLR. IF ADDITIVE BID ITEM NO. 2 IS IMPLEMENTED, PROVIDE LEVELED & SEALED CONC SLAB ON TOP OF EXST CONC SLAB. SEE STRUCT DRWGS. A2
5	BASE & WALL HUNG CABINETS.
6	OPEN SHELVING.
7	METAL AWNING W/ GUTTER AND DOWNSPOUT ABOVE. CONNECT TO DOWNSPOUT DRAINPIPE.
8	HELCO METER & MAIN DISCONNECT SWITCH. SEE ELEC DRWG.
9	ADDITIVE BID NO. 1 - PV DISCONNECT SWITCH.
10	DOWNSPOUT W/ PRE-CAST CONC SPLASH BLOCK.
11	SITE SIGNAGE, SEE CIVIL DRWG.
12	FULL HEIGHT STORAGE. SEE DETAIL 4/A-703.
13	APPLY SEALER TO CMU WALL AS SCHEDULED.
14	PAINT WALLS AS SCHEDULED.
15	PARTIAL HT WALL SUPPORT.
16	DOWNSPOUT OVERFLOW STRUCTURE.
17	CONC CURB, SEE CIVIL DRWG.
18	PARKING MARKING, SEE CIVIL DRWG.
19	PRE-CAST CONC WHEEL STOP, TYP.
20	VALVE BOX, SEE CIVIL DRWG.
21	BACKFLOW PREVENTER, SEE CIVIL DRWG.
22	CHAIN LINK FENCE AND GATE.
23	GATE OPERATOR.
24	CORE CMU WALL FOR HOSE BIBB WATER LINE. PATCH AND REPAIR WALL. SEAL AROUND PENETRATION.
25	2" HIGH CONC CURB (ADD BID ITEM NO. 2). A2
26	T LOAD RAIL FOR HDS. NOTE: DRWNG SET DOES NOT INCLUDE DETAILS FOR T LOAD RAIL. FOR MORE INFORMATION, SEE SPECIFICATION SECTION 10676 ALONG WITH SPACESAVER TECHNICAL DATA (ATTACHED TO ADDENDUM NO. 2). A2



1 REPAIR FLOOR PLAN
SCALE: 3/16" = 1'-0"

KEY TO INTER. ELEV. (A, B, C, D)

0 2' 4' 6' 8' 10 12'
SCALE: 3/16" = 1'-0"

WEST SOUTH NORTH EAST

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	6 OF 18	JAN 2023	
ADD-1	A1	ADDENDUM NO. 1	2 OF 7	JAN 2023	

FRED K. ERSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME, OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSTRUCTION. OBSTRUCTION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

REPAIR FLOOR PLAN

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-201
CHIEF ENGINEER	DATE

1 FURNITURE & FINISH FLOOR PLAN

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

KEY TO INTER. ELEV.

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

GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
2. SEE SHEET T-002 FOR ADDITIONAL NOTES AND REQUIREMENTS.
3. SEE MECHANICAL, STRUCTURAL & ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. CONCRETE/ASPHALT PAVED WALKWAYS SHALL NOT EXCEED THE FOLLOWING SLOPES:
   -IN DIRECTION OF TRAVEL 1:20, UNLESS OTHERWISE NOTED.
   -CROSS SLOPE OF 1:50.
5. ALL NON-PAVED AREAS DAMAGED AS A RESULT OF NEW WORK SHALL BE RE-PLANTED W/GRASS TO MATCH EXST. ADJ. GRASS AREAS.
6. CONTRACTOR SHALL TONE FOR UTILITY LINES IN ALL AREAS OF THE SITE THAT WILL BE AFFECTED BY THE WORK.
7. ALL DIMENSIONS ARE TAKEN FROM THE FACE OF FIN. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PAINT ALL UNFINISHED SURFACES, UNLESS OTHERWISE NOTED.
9. FF&E TO BE FURNISHED AND INSTALLED BY THE STATE.

LEGEND (THIS SHEET)

- CERAMIC TILE
- HIGH PERFORMANCE TILE VT-1
- HIGH PERFORMANCE TILE VT-2
- SEALED CONCRETE WITH EPOXY FLOORING SE-2
- FE FIRE EXTINGUISHER
- FULL HEIGHT PTN
- PARTIAL HEIGHT PTN
- PARTIAL HEIGHT PTN
- CONCRETE MASONRY
- FURNITURE, OFOI

KEYNOTES (THIS SHEET)

KEYNOTE NO.	
1	CHAINLINK GATE FOR MAINTENANCE
2	METAL AWNING ABOVE
3	TRANSACTION COUNTER
4	COUNTER TOP W/ CUBBY STORAGE BELOW

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	2	ADDENDUM NO. 2	7 OF 18	JAN 2023	

FRED K. EBSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

FURNITURE AND FINISH FLOOR PLAN

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-205
CHIEF ENGINEER	DATE

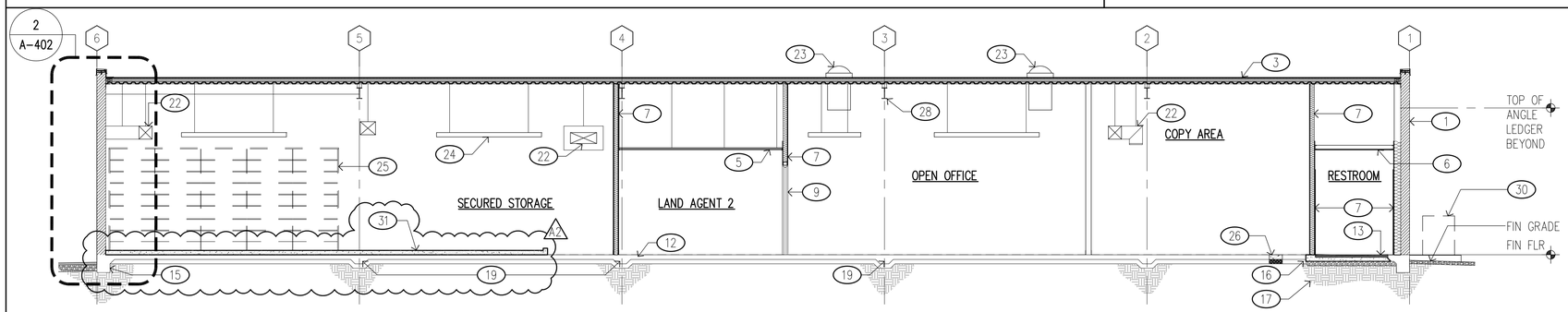
GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.
2. SEE SHEET T-002 FOR ADDITIONAL NOTES AND REQUIREMENTS.
3. SEE CIVIL, LANDSCAPING, MECHANICAL, STRUCTURAL & ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. CONCRETE/ASPHALT PAVED WALKWAYS SHALL NOT EXCEED THE FOLLOWING SLOPES:
   -IN DIRECTION OF TRAVEL 1:20, UNLESS OTHERWISE NOTED.
   -CROSS SLOPE OF 1:50.
5. ALL NON-PAVED AREAS DAMAGED AS A RESULT OF NEW WORK SHALL BE RE-PLANTED W/GRASS TO MATCH EXST. ADJ. GRASS AREAS.
6. CONTRACTOR SHALL TONE FOR UTILITY LINES IN ALL AREAS OF THE SITE THAT WILL BE AFFECTED BY THE WORK.
7. ALL DIMENSIONS ARE TAKEN FROM THE FACE OF FIN. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PAINT ALL UNFINISHED SURFACES, UNLESS OTHERWISE NOTED.

LEGEND (THIS SHEET)

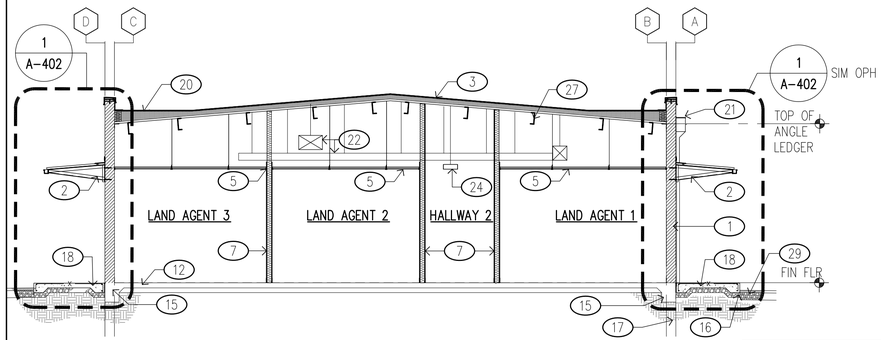
LIGHT FIXTURE

HVAC SYSTEM



1A LONGITUDINAL SECTION

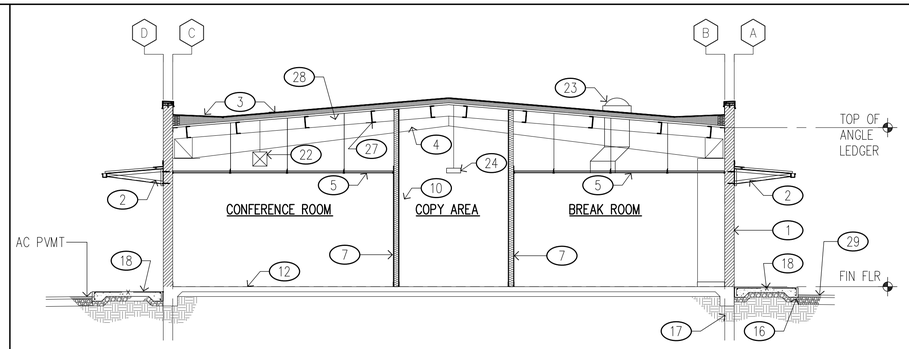
SCALE: 3/16" = 1'-0"



1B CROSS SECTION 1

SCALE: 3/16" = 1'-0"

NOTE: CONTRACTOR TO VERIFY LOCATION OF SCUPPERS WITH ARCHITECT AND STRUCTURAL.



1C CROSS SECTION 2

SCALE: 3/16" = 1'-0"

0 2' 4' 6' 8' 10 12'

SCALE: 3/16" = 1'-0"

KEYNOTE NO.	KEYNOTES (THIS SHEET)
1	EXST CMU WALL, TYP.
2	METAL AWNING.
3	TPO ROOF W/ RIGID INSULATION ON METAL DECKING, TYP.
4	NOT USED.
5	SUSPENDED ACOUSTIC TILE CEILING.
6	GYP BD CEILING.
7	PARTITION AS SCHED.
8	NOT USED.
9	DOOR AND FRAME WHERE OCCURS.
10	NOT USED.
11	NOT USED.
12	EXST CONC SOG WHERE OCCURS.
13	MORTAR BED REINFORCED W/ WIRE MESH AT DEPRESSED CONC SLAB, SEE STRUCT DRWG.
14	NOT USED.
15	EXST CONC FOOTING, TYP.
16	BASE COURSE, TYP.
17	EXST GRADE, TYP.
18	CONC WALKWAY, TYP.
19	EXST GRADE BEAMS, TYP.
20	CRICKET
21	LEADER BOX AND DOWNSPOUT BEYOND.
22	HVAC DUCT, SEE MECH DRWG. TYP.
23	TUBULAR DAYLIGHT DEVICE.
24	SUSPENDED LIGHT FIXTURE, SEE ELEC DRWG, TYP.
25	ADDITIVE ALTERNATE NO. 2: ELECTRONIC HIGH DENSITY STORAGE SYSTEM, SEE ELEC DRWG & SPECIFICATIONS.
26	PATCH CONC FLOOR WHERE OCCURS.
27	EXST METAL PURLIN.
28	EXST STEEL BEAM.
29	AC PAVEMENT.
30	CONDENSING UNIT, SEE MECH DRAWINGS.
31	ADDITIVE ALTERNATE NO. 2: 4" CONCRETE TOPPING

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	8 OF 18	JAN 2023	

FRED K. ERSKINE
LICENSED PROFESSIONAL ARCHITECT
No. 10192
HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

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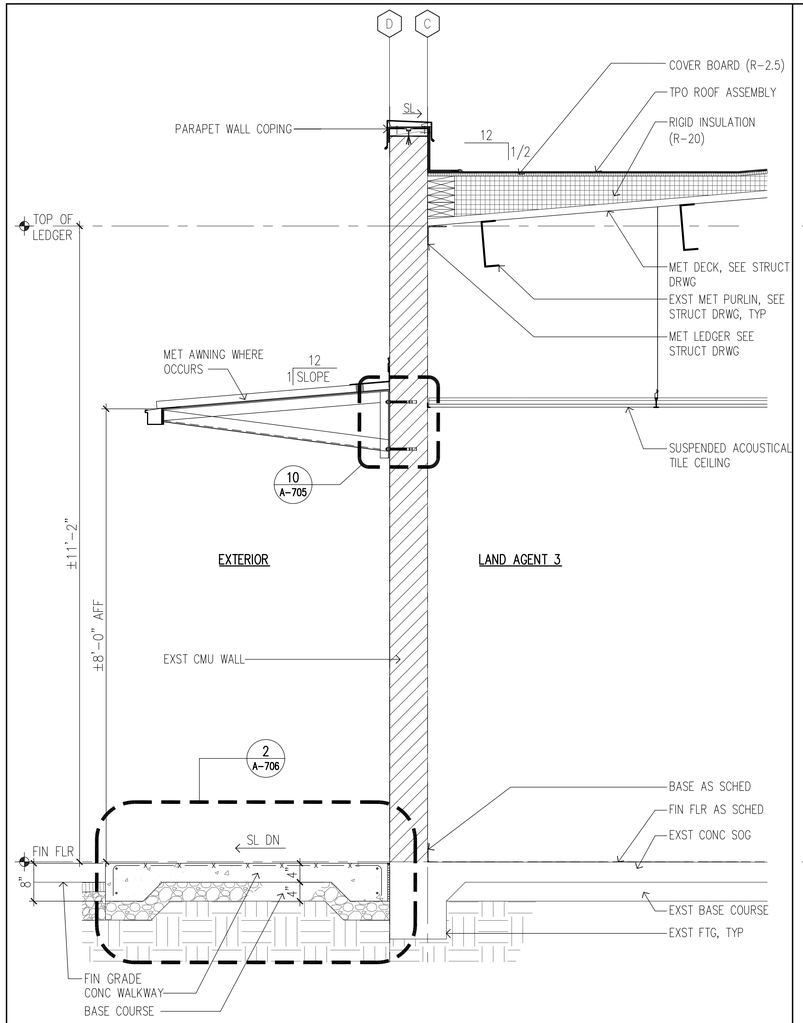
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

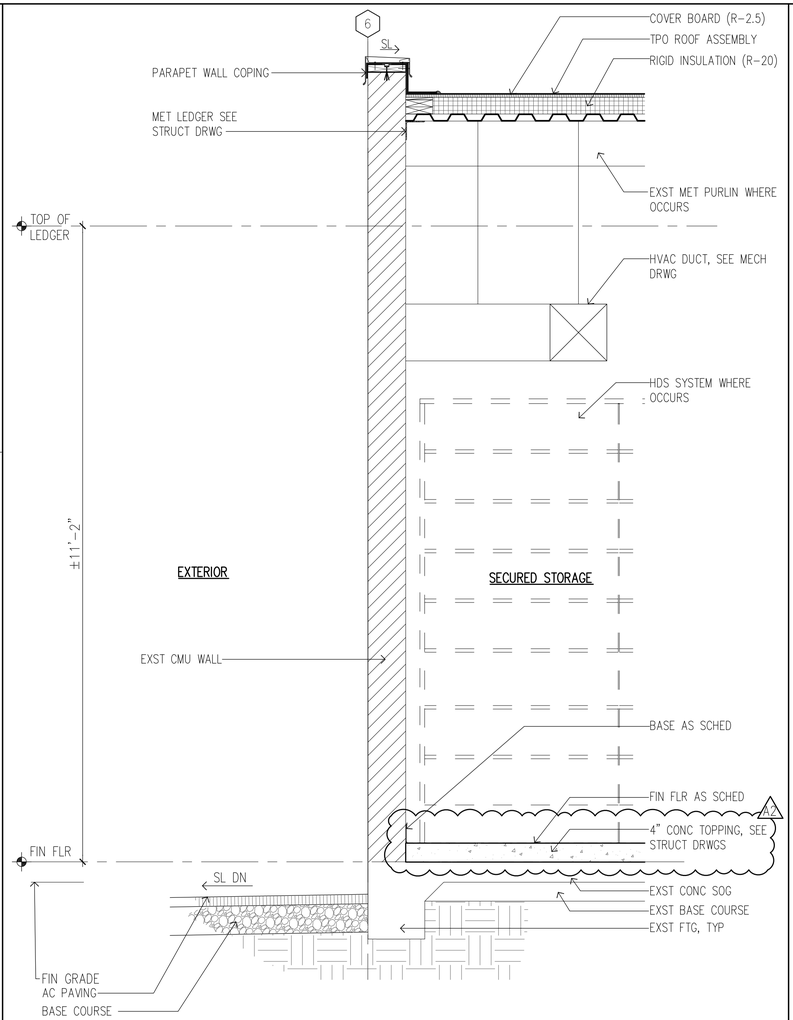
BUILDING SECTIONS

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-401
CHIEF ENGINEER	DATE



1 WALL SECTION

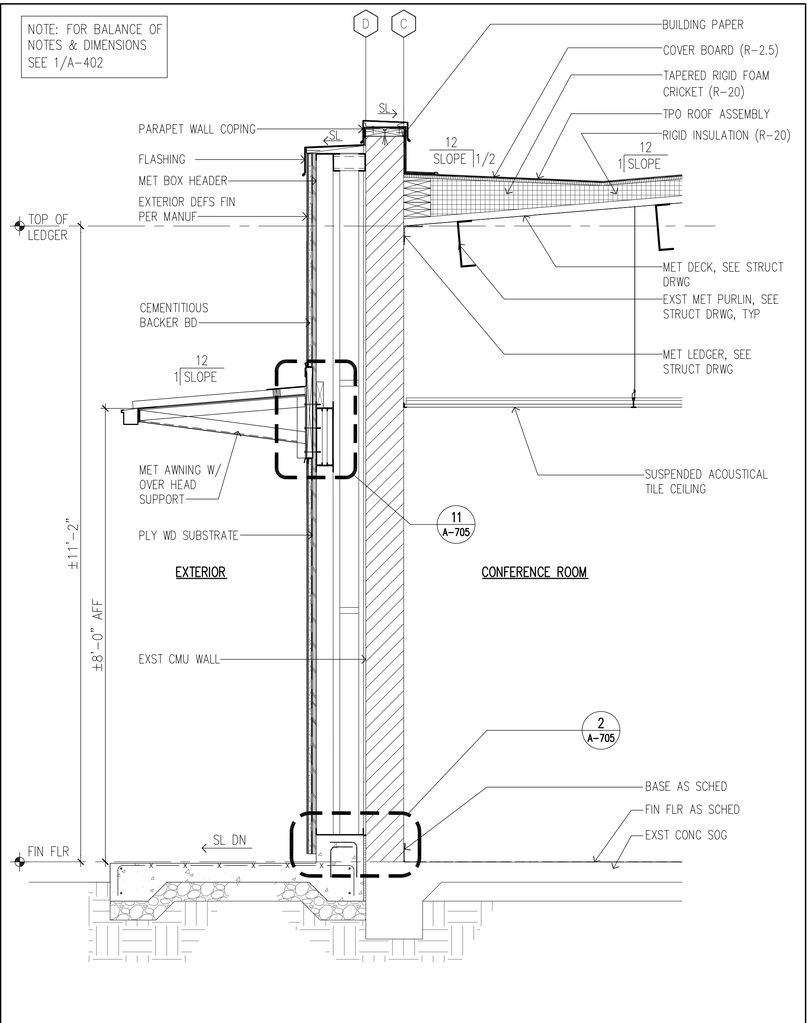
SCALE: 3/4" = 1'-0"



2 WALL SECTION

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

NOTE: FOR BALANCE OF NOTES & DIMENSIONS SEE 1/A-402



3 WALL SECTION AT DEFS ENTRY BUILD-OUT

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

0 1' 2' 3'

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

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	9 OF 18	JAN 2023	

LICENSED PROFESSIONAL ARCHITECT
No. 10192
FRED K. ERSKINE
HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

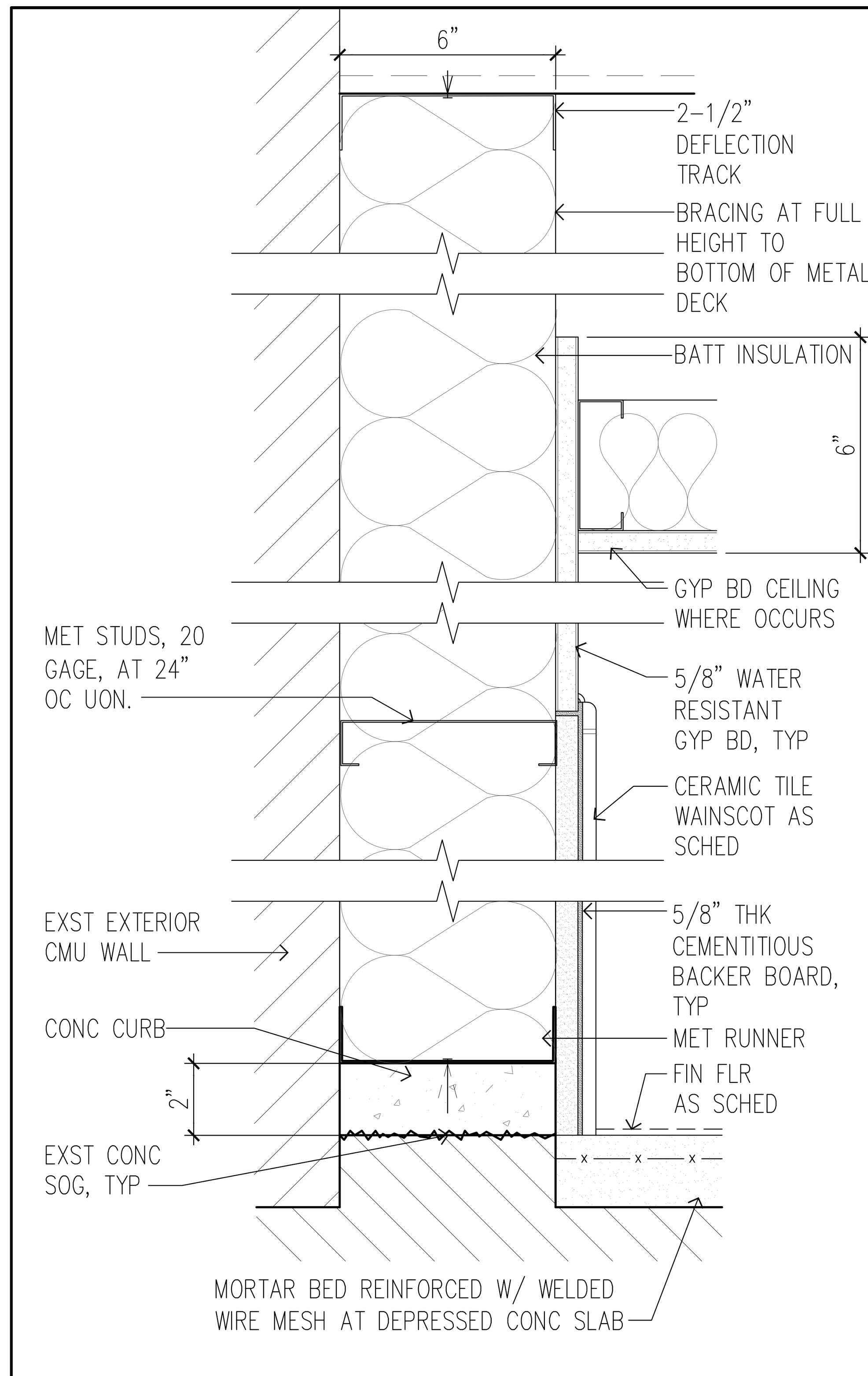
HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

WALL SECTIONS

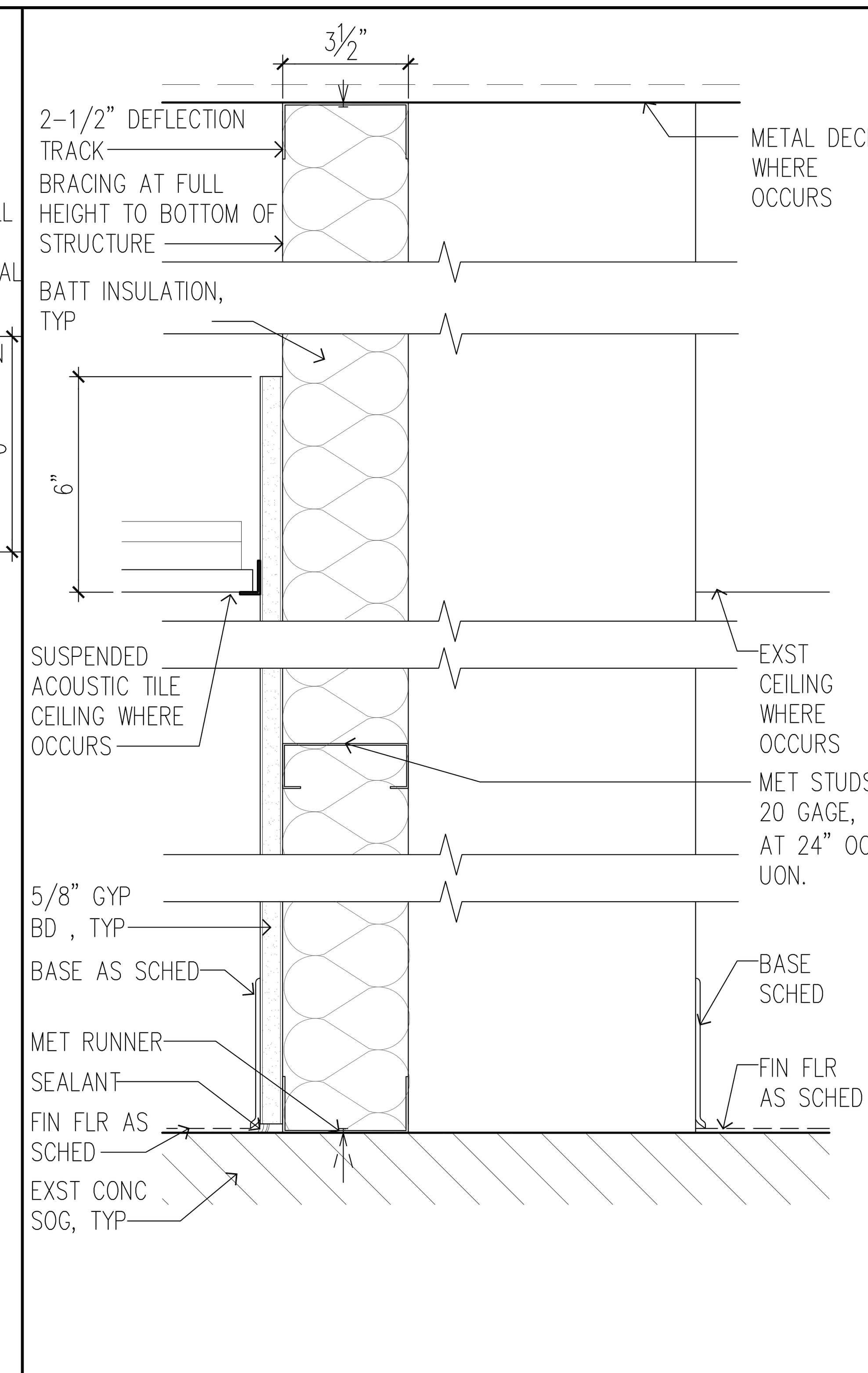
DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-402
CHIEF ENGINEER	DATE

JOB NO. E00BH30A

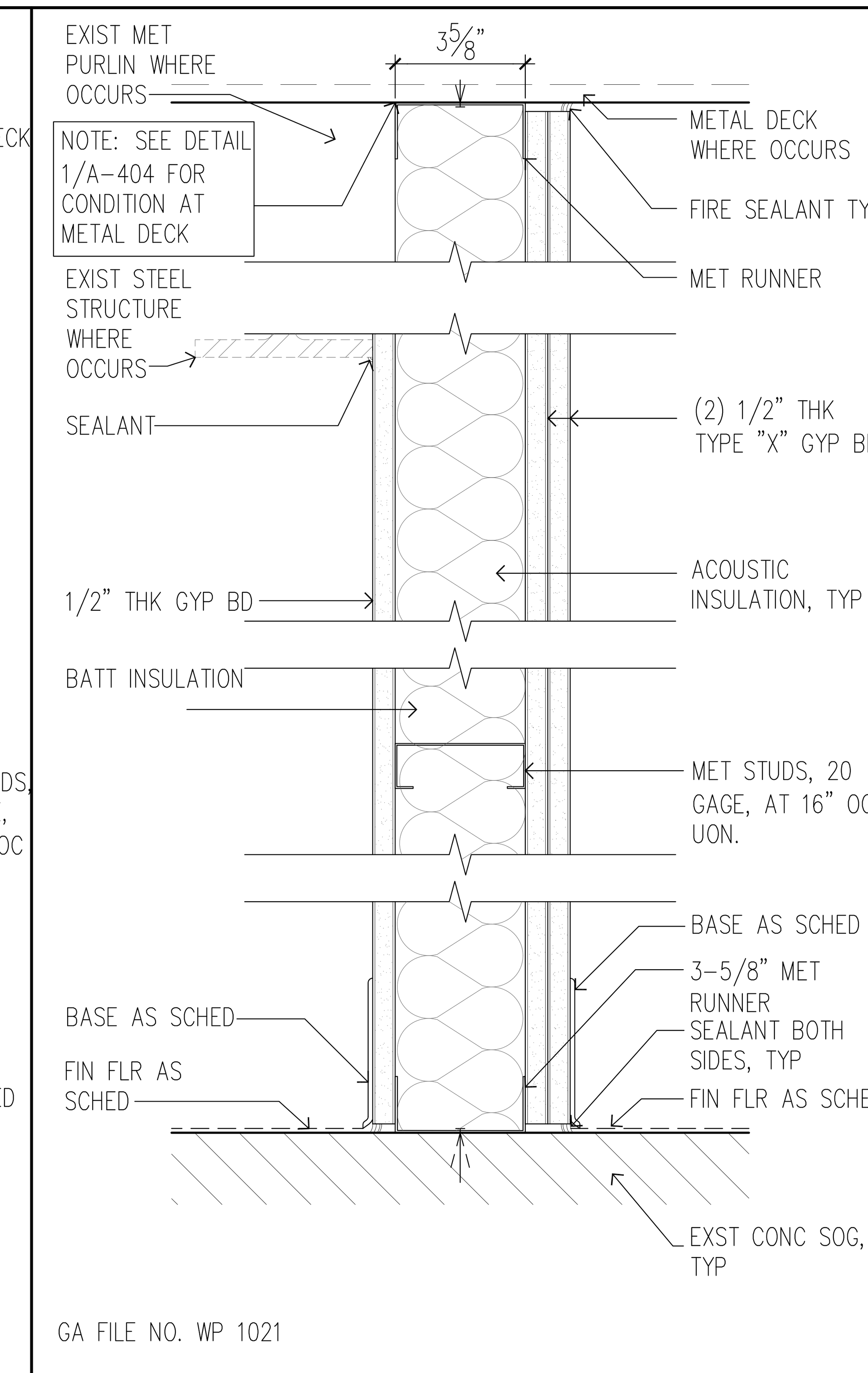
SHEET NO. 32 OF 77 SHEETS



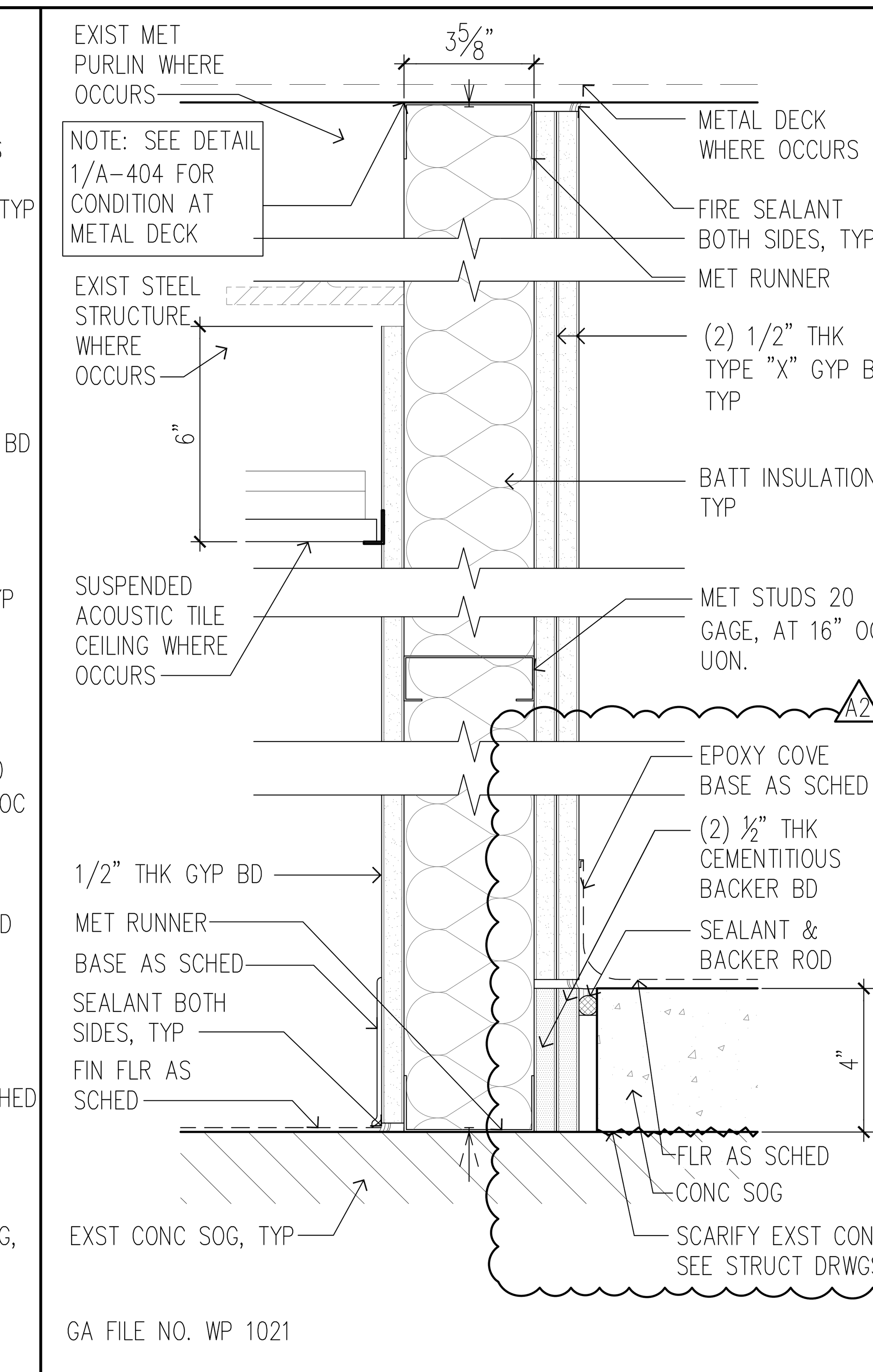
G FURRED WALL AT RESTROOM
SCALE: 3" = 1'-0"



H FURRED WALL AT VAULT
SCALE: 3" = 1'-0"



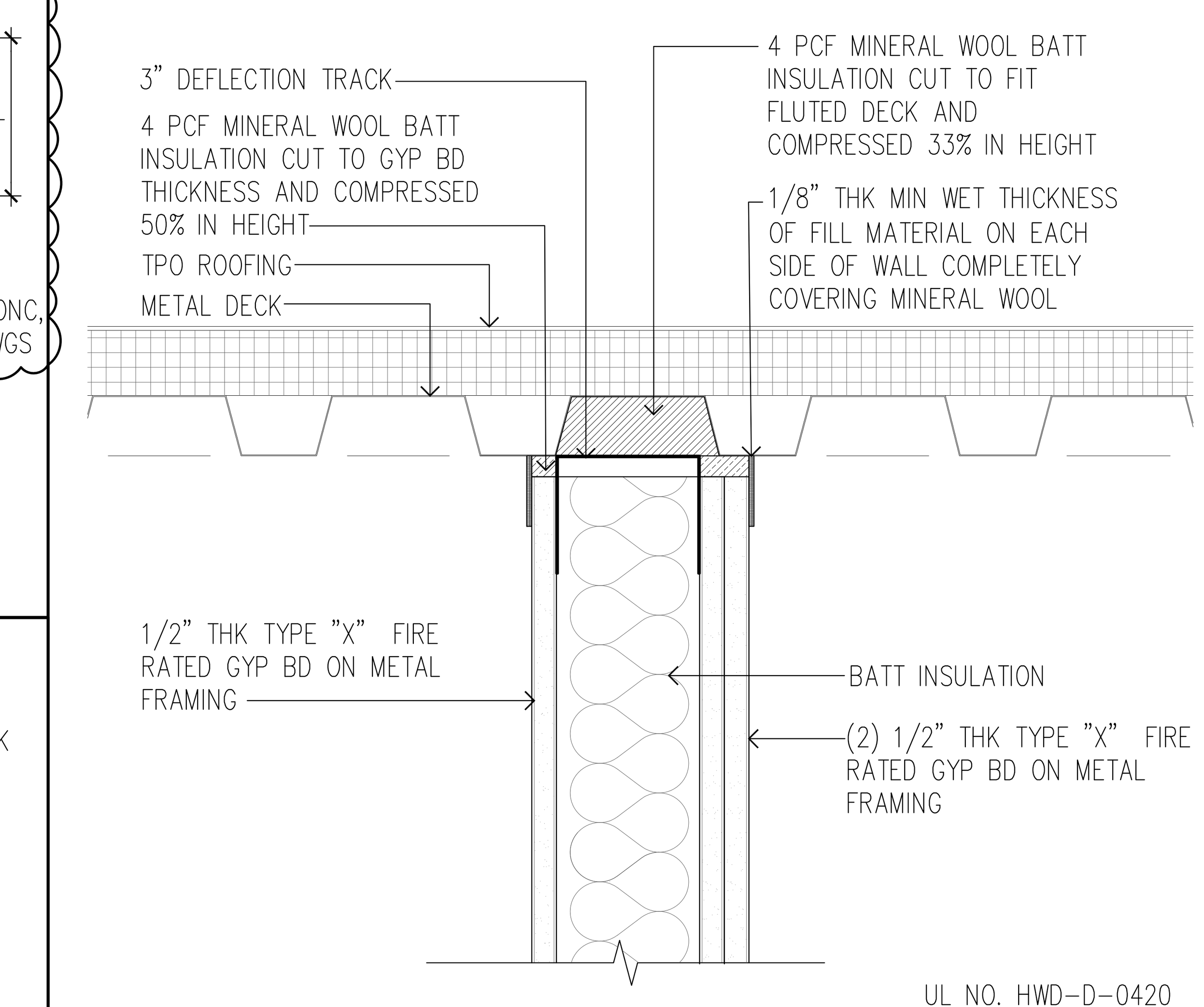
J 1-HR FIRE RATED PARTITION
SCALE: 3" = 1'-0"



K 1-HR FIRE RATED PARTITION
SCALE: 3" = 1'-0"

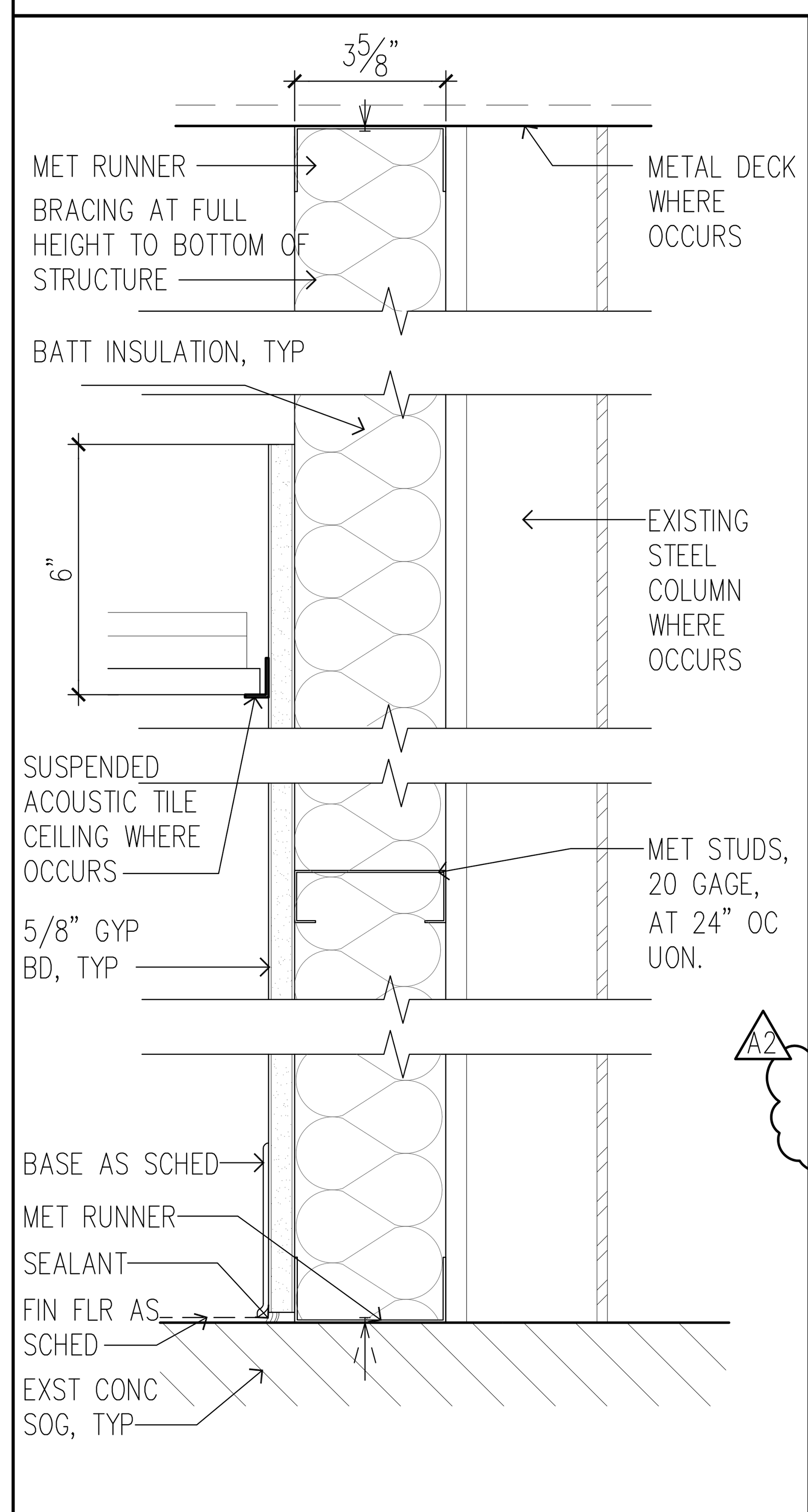
PARTITION SCHEDULE NOTES

1. PARTITION TYPES INDICATE GENERIC PARTITION CONSTRUCTION, UON.
2. CONTRACTOR SHALL FIELD VERIFY REQUIRED FLOOR/CEILING CONNECTION AND INSTALL PARTITIONS TO MAINTAIN SPECIFIED FIRE RATING.
3. GYP. BD.: 5/8" THK. TYPE "X" U.O.N.
4. SEE DET 1/A-403 FOR BACKING PLATE REQUIREMENTS FOR ARTWORK, TOILET ACCESSORIES, GRAB BARS, COUNTERS, CABINETRY AND SHELVING.
5. TYPICAL CONDITIONS (UON):
   - 5.1. TERMINATION: TERMINATE STUDS AT STRUCTURAL SOFFIT; ALLOW FOR DEFLECTION.
   - 5.2. PERIMETER RELIEF: WHERE PARTITIONS MEET STRUCTURE OR DISSIMILAR CONSTRUCTION, PROVIDE PERIMETER RELIEF.
6. FIRE RATED PARTITION FACE MATERIAL TERMINATIONS: CONTINUOUS FROM TOP OF FLOOR SLAB TO STRUCTURE ABOVE.
7. GYPSUM BOARD APPLICATION AND FINISHING SHALL BE PER GYPSUM ASSOCIATION PUBLICATIONS FOR USE AND INSTALLATION.
8. ACOUSTICAL PARTITION:
   - 8.1. TO BE INSTALLED PER ASTM E497, STANDARD PRACTICE FOR INSTALLING SOUND-ISOLATING GYPSUM BOARD PARTITIONS, AND ASTM C919, STANDARD PRACTICE FOR USE OF SEALANTS IN ACOUSTICAL APPLICATIONS.
   - 8.2. PARTITION SUBSTRATE MATERIAL TERMINATION IS CONTINUOUS FROM TOP OF FLOOR SLAB TO SOFFIT OF STRUCTURE ABOVE.
9. PROVIDE WATERPROOFING AT ALL CERAMIC TILE FLOORS AND WAINSCOTS.

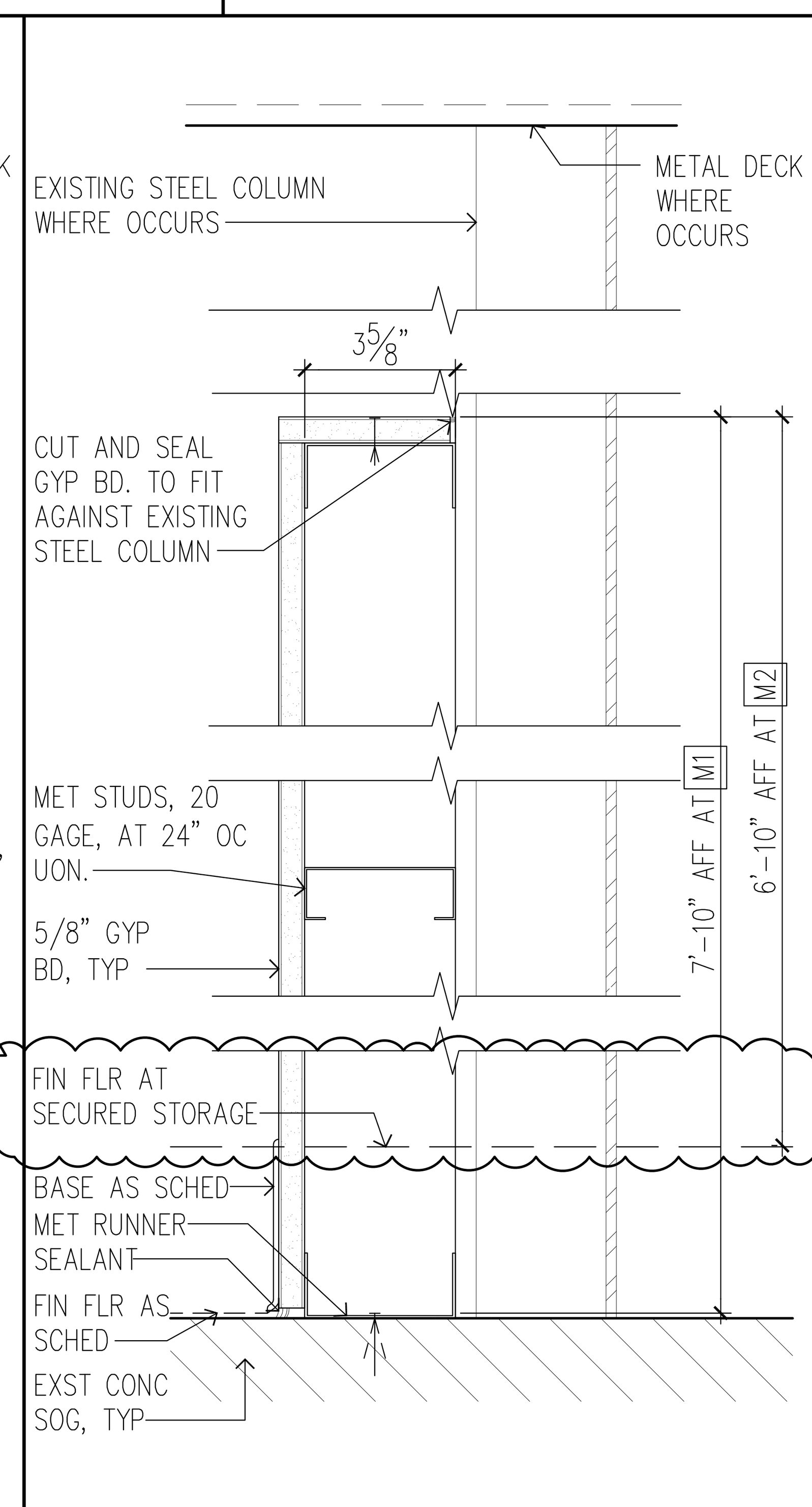


1 FIRE RATED PARTITION DETAIL AT METAL DECK
SCALE: 3" = 1'-0"

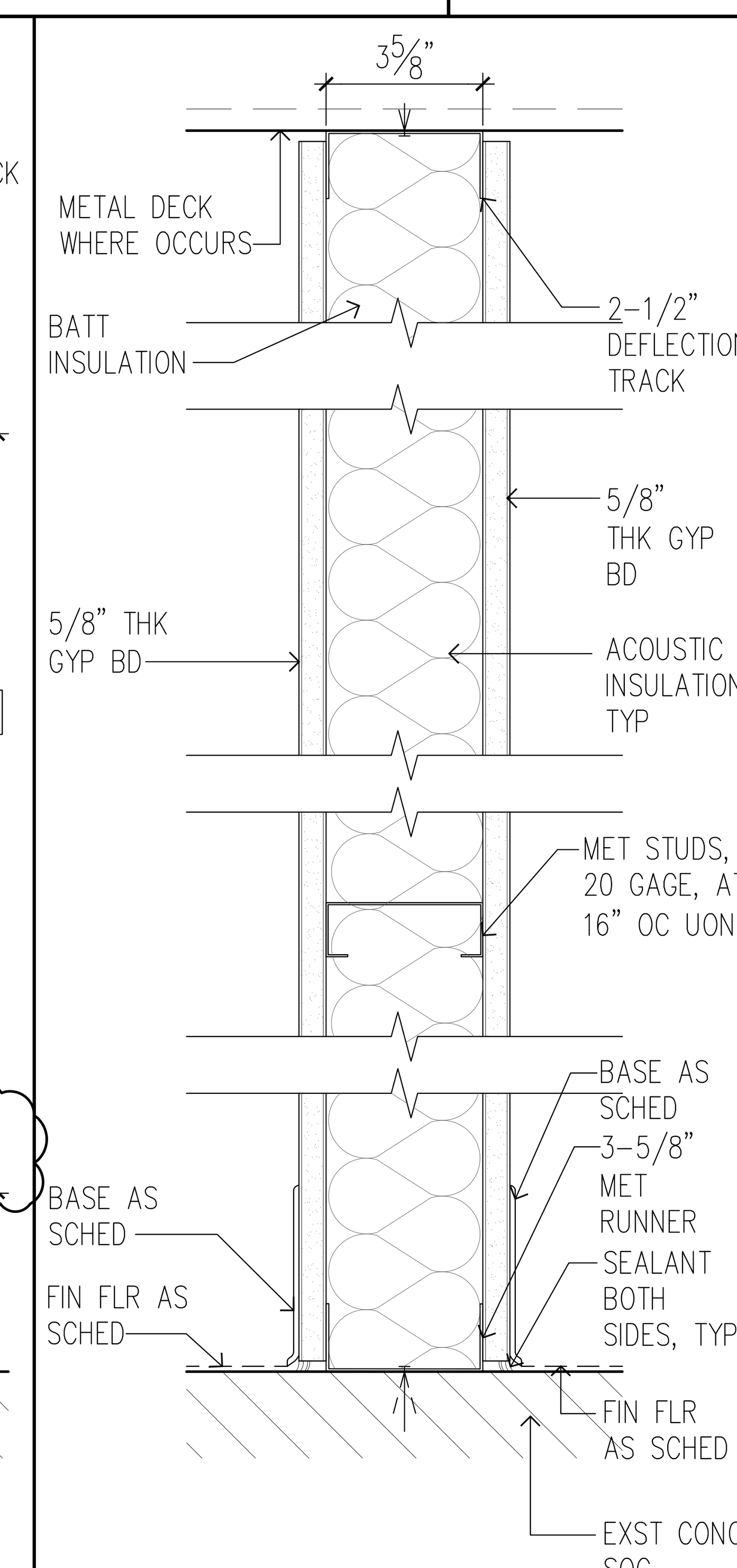
0 3" 6" 9" 1'
SCALE: 3" = 1'-0"



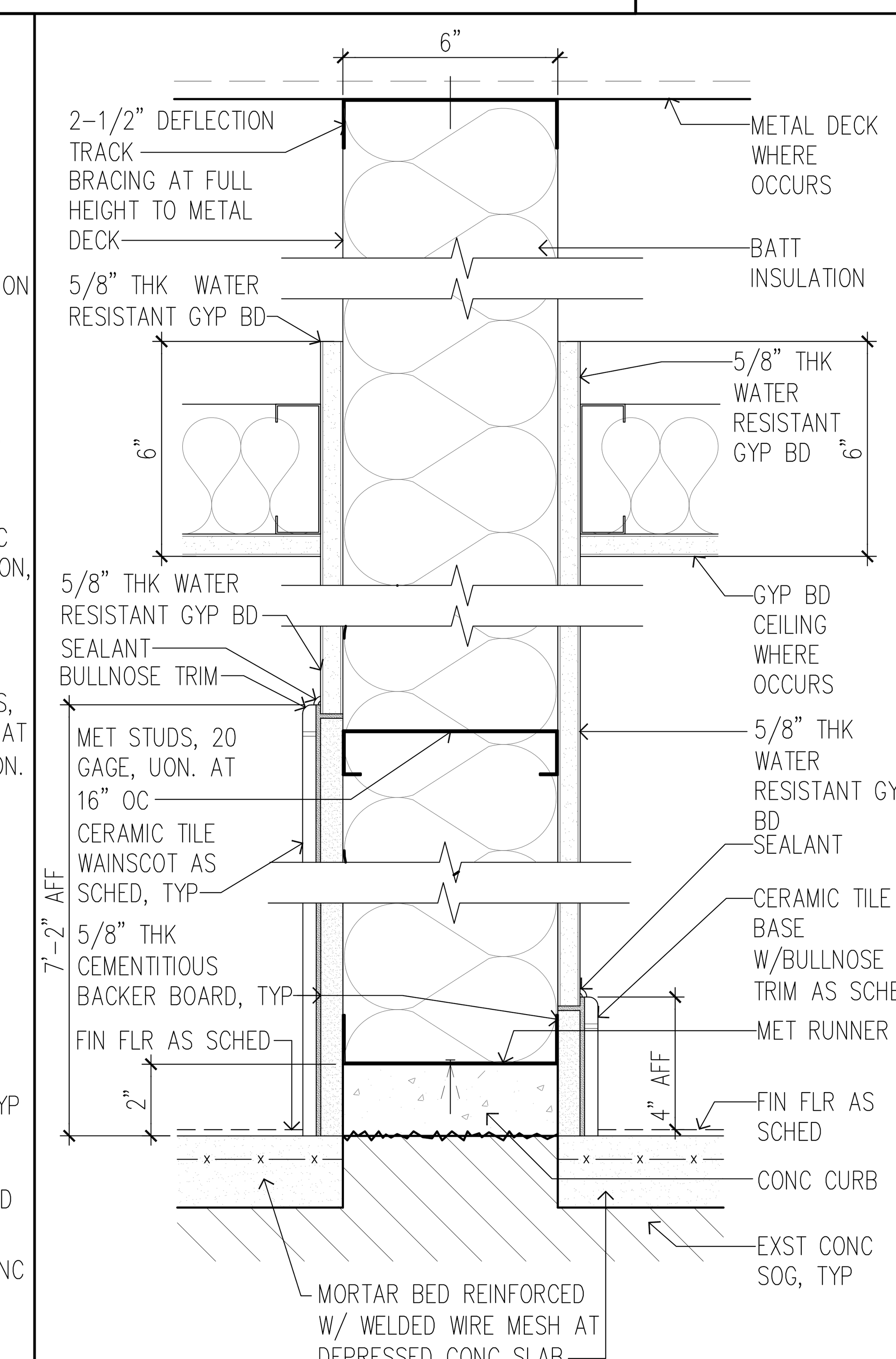
L FURRED WALL AT COLUMN
SCALE: 3" = 1'-0"



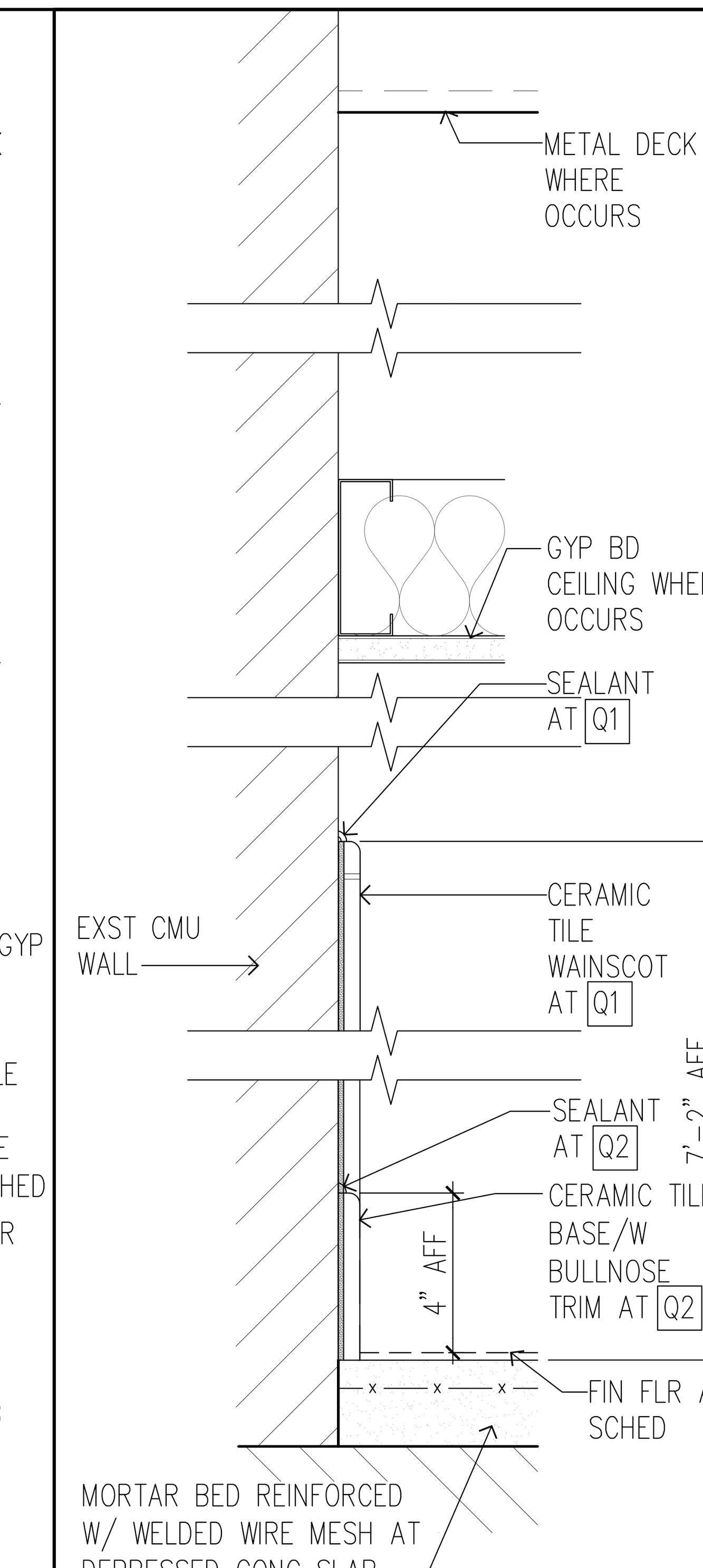
M FURRED WALL AT COLUMN
SCALE: 3" = 1'-0"



N FULL HEIGHT PARTITION
SCALE: 3" = 1'-0"



P CEMENTITIOUS PARTITION
SCALE: 3" = 1'-0"



Q CMU WALL AT UTILITY ROOM
SCALE: 3" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	10 OF 18	JAN 2023	

FRED K. ERSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

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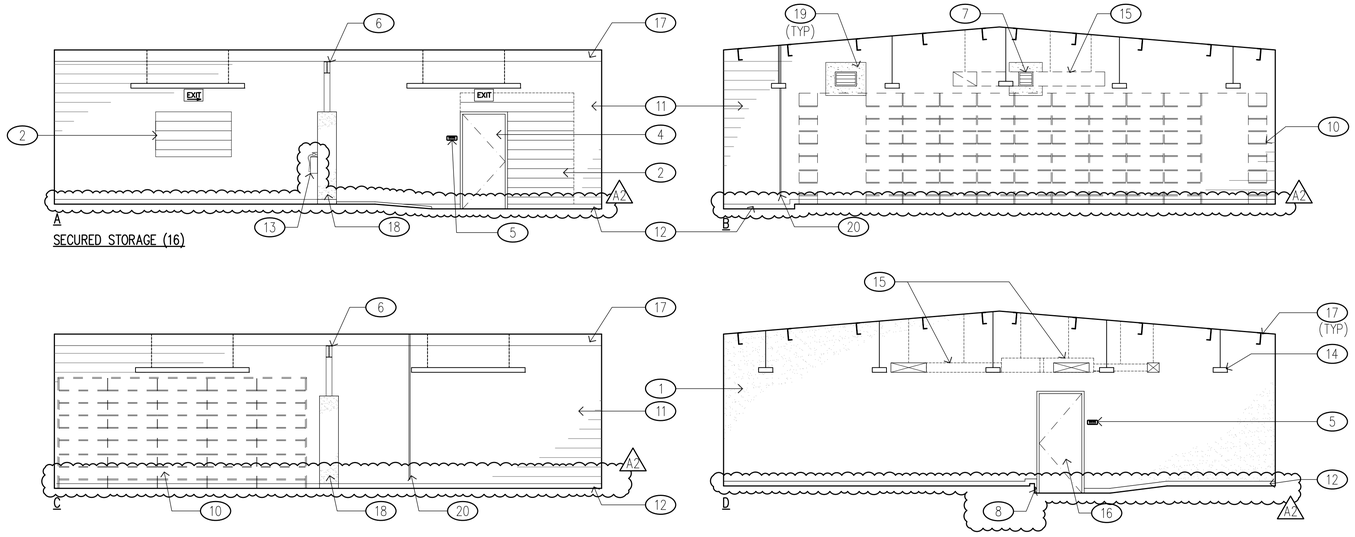
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

PARTITION TYPES

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-404
CHIEF ENGINEER	DATE



1 INTERIOR ELEVATIONS
SCALE: 3/16" = 1'-0"

0 2' 4' 6' 8' 10 12'
SCALE: 3/16" = 1'-0"

A2 NOTE:
REVISIONS TO CONC SOG THROUGH ADDENDUM 2 SHALL ONLY OCCUR IF ADDITIVE BID ITEM NO. 2 IS IMPLEMENTED.

KEYNOTES (THIS SHEET)

KEYNOTE NO.	
1	PRIME AND PAINT GYP BD WALL. PT-1
2	CMU INFILL W/ CMU SEALER.
3	RUBBER BASE. RB-1
4	FRP DOOR & FRAME.
5	ADA SIGNAGE, TYP.
6	EXISTING STEEL BEAM. PRIME AND PAINT. PT-3
7	VENTILATION LOUVER, SEE MECH DRWGS. TR-1
8	DOOR STOP.
9	CAST IN PLACE CONC FRAME, SEE STRUCT DRWG.
10	ADD ALTERNATE NO.2. AREA FOR ELECTRONIC HDS SYSTEM, SEE ELEC DRWG AND SPECIFICATIONS.
11	CMU SEALER.
12	EPOXY RESIN ROLL-UP BASE SE-2
13	FIRE EXTINGUISHER, SEE MECH DRWG.
14	LIGHT FIXTURE, SEE ELEC DRWGS.
15	HVAC DUCTS & FCU, SEE MECH DRWGS.
16	FIRE RATED DOOR AND FRAME PRIME AND PAINT. PT-4
17	EXST PURLIN TO REMAIN. PRIME & PAINT. PT-3
18	COLUMN FURRING. PRIME, PAINT, AND INSTALL RUBBER BASE ALL SIDES. PT-4 RB-1
19	CAST IN PLACE CONCRETE FRAME, SEE STRUCT DRAWINGS.
20	SURFACE MOUNTED WATERLINE TO HOSE BIBB.

LEGEND (THIS SHEET)

CMU WALL

GYP BD PARTITON

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	11 OF 18	JAN 2023	
ADD-1	A1	ADDENDUM NO. 1	4 OF 6	DEC 2022	

FRED K. ERSKINE LICENSED PROFESSIONAL ARCHITECT No. 10192 HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. [OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS].

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

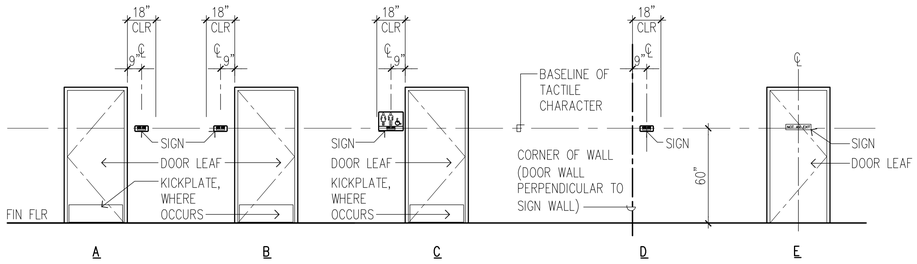
HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

INTERIOR ELEVATIONS

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-503
CHIEF ENGINEER	DATE

SIGNAGE SCHEDULE

NO.	SIGN MTG.	SIGN TYPE	SIGN TEXT	REMARKS
1	B	A	ENTRY	1 LINE OF TEXT
2	D	A	EXIT	1 LINE OF TEXT
3	A	A	SECURED STORAGE NOT AN EXIT	3 LINES OF TEXT
4	B	A	EXIT	1 LINE OF TEXT
5	A	A	ENTRY	1 LINE OF TEXT
6	B	A	EXIT	1 LINE OF TEXT
7	B	A	OFFICE	1 LINE OF TEXT
8	A	A	EXIT	1 LINE OF TEXT
9	A	A	CONFERENCE ROOM	2 LINES OF TEXT
10	C	B	RESTROOM	1 LINE OF TEXT
11	B	A	UTILITY	1 LINE OF TEXT
12	B	A	BREAK ROOM	1 LINE OF TEXT
13	B	A	VAULT	1 LINE OF TEXT
14	B	A	DISTRICT LAND AGENT	2 LINES OF TEXT
15	A	A	LAND AGENT	1 LINE OF TEXT
16	B	A	SECURED STORAGE	2 LINES OF TEXT
17	A	A	OFFICE	1 LINE OF TEXT
18	A	A	LAND AGENT	1 LINE OF TEXT
19	A	A	LAND AGENT	1 LINE OF TEXT
20	E	C	NOT AN EXIT	1 LINE OF TEXT



1 SIGN MOUNTING KEY

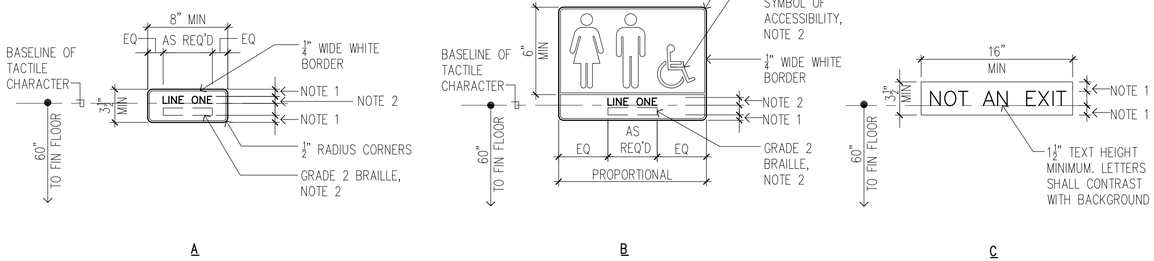
SCALE: 1/4"=1'-0"

0 2' 4' 8'

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

FINISH SCHEDULE

KEY	DESCRIPTION	MANUFACTURER	COLOR NO.	NAME	PATTERN/STYLE/FINISH	REMARKS
VT-1	HIGH PERFORMANCE TILE	TRI-WEST	SUC20001	ALABASTER	SUCCESSION	FOR MORE INFO CONTACT SHEILA: SSURBAN@TRIWESTLTD.COM
VT-2	HIGH PERFORMANCE TILE	TRI-WEST	SUC20007	ZINC	SUCCESSION	FOR MORE INFO CONTACT SHEILA: SSURBAN@TRIWESTLTD.COM
CT-1	CERAMIC FLOOR TILE	DALTILE	D014	DESERT GRAY	2" HEXAGON MOSAIC	
CT-2	CERAMIC WALL TILE	DALTILE	K175	BISCUIT	3x6 WALL/RITTENHOUSE SQUARE	RUNNING BOND PATTERN
GR-1	FLOOR TILE GROUT	MAPEI	2	PEWTER		
GR-2	WALL TILE GROUT	MAPEI	14	BISCUIT		
RB-1	RUBBER BASE	TARKETT (JOHNSONITE)	27	MIST WG	TRADITIONAL WALL BASE	
PL-1	PLASTIC LAMINATE	FORMICA	8906-58	DANISH MAPLE	MATTE FINISH	
PT-1	EXTERIOR PAINT	SHERWIN WILLIAMS	SW 9110	MALABAR		EXT CMU WALL - FIELD
PT-2	EXTERIOR PAINT	SHERWIN WILLIAMS	SW 9112	SONG THRUSH		EXT DEFS WALL - ENTRANCE
PT-3	INTERIOR PAINT	SHERWIN WILLIAMS	SW 6993	BLACK OF NIGHT		INT STRUCTURE - RIGID FRAMING, PURLINS, DIAGONAL RODS, ANGLE LEDGER
PT-4	INTERIOR PAINT	SHERWIN WILLIAMS	SW 7628	WINDFRESH WHITE		INT WALLS- FIELD, CEILING
ST-1	STAIN	TBD	TBD	TBD	CLEAR MATTE	INTERIOR DOORS, FRAMES, WOOD TRIM
SE-1	WATER REPELLENT COATING	DIEDRICH TECHNOLOGIES	303S	SILOXSEAL SERIES	CLEAR MATTE	INTERIOR CMU WALL
SE-2	EPOXY FLOORING	SIKAFLOR		OXFORD GRAY	COMFORTFLOR	WAREHOUSE AND UTILITY ROOM FLOOR
SS-1	SOLID SURFACE	LG HAUSYS	R542	HARMONY	HI-MACS	COUNTERTOP SURFACES
TR-1	METAL FINISH	KYNAR 500	SR 27	DARK BRONZE	STANDARD	EXT METAL - AWNINGS, FLASHING, FRAMES, DOWNSPOUTS

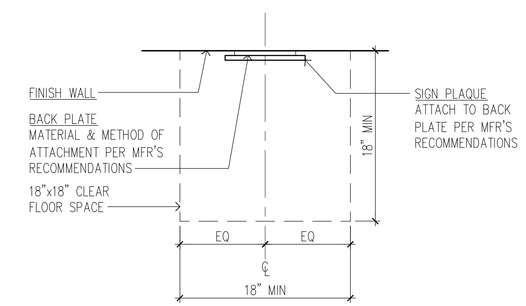


2 SIGN TYPES

SCALE: NOT TO SCALE

NOTES:

1. DIMENSION FROM TOP & BOTTOM OF TEXT TO SIGN EDGE SHALL BE ¾".
2. TEXT, BRAILLE & PICTORIAL SYMBOL SHALL COMPLY WITH THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, SECTION 703.
3. IF SIGN LENGTH EXCEEDS AVAILABLE WALL WIDTH, TEXT SHALL BE PLACED ON TWO OR MORE LINES, AS REQ'D.
4. DIMENSION FROM TOP & BOTTOM OF TEXT TO SIGN EDGE SHALL BE 1".
5. CONTRACTOR SHALL SUBMIT SIGNAGE SCHEDULE, SHOP DRAWINGS, & SAMPLES OF EACH SIGN TYPE FOR ARCHITECT REVIEW/APPROVAL BEFORE THE SIGNS ARE ORDERED/FABRICATED.



NOTES:

1. CONTRACTOR SHALL VERIFY SIZE OF PROPOSED SIGN W/ MOUNTING LOCATION SHOWN & NOTIFY ARCHITECT PRIOR TO SIGN FABRICATION OF ANY SIGN THAT EXCEED THE AVAILABLE WALL SPACE.
2. WHERE GLAZING OCCURS, CONTRACTOR SHALL MOUNT SIGN ACCORDING TO SIGN MANUFACTURER'S INSTRUCTIONS.

3 MOUNTING DETAIL

SCALE: NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	12 OF 18	JAN 2023	

FRED K. ERSKINE
LICENSED PROFESSIONAL ARCHITECT
No. 10192
HAWAII, U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2024

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS IN ACCORDANCE WITH CHAPTER 16 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

SIGNAGE SCHEDULES & DETAILS

DESIGNED: KK	SUBMITTED:
DRAWN: KA, TW, WL	DATE: NOVEMBER 2022
CHECKED: FE	SCALE: AS NOTED
APPROVED:	DRAWING NO. A-602
CHIEF ENGINEER	DATE

GENERAL:

A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE STATE BUILDING CODE OF HAWAII (IBC, 2006 EDITION AS AMENDED BY THE COUNTY OF HAWAII). HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.

B. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.

C. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.

E. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.

F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.

G. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.

H. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS MUST SUBMIT IN WRITING ANY REQUESTS FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS.

DESIGN CRITERIA:

A. OCCUPANCY CATEGORY ——— II

B. SEISMIC
- A. SEISMIC IMPORTANCE FACTOR: ——— 1.00
- B. MAPPED SPECTRAL RESPONSE ACCELERATIONS:
  - A. SS ——— 1.500
  - B. S1 ——— 0.600
- C. SPECTRAL RESPONSE COEFFICIENTS
  - A. SDS ——— 1.000
  - B. SD1 ——— 0.6
- D. SEISMIC DESIGN CATEGORY: ——— D

C. WIND
- A. BASIC WIND SPEED – 3 SECOND GUST ——— 105 MPH
- B. WIND IMPORTANCE FACTOR & BUILDING CATEGORY ——— 1.00
- C. WIND EXPOSURE CATEGORY ——— B
- D. Kzt ——— 1.0
- E. Kd ——— 0.7
- F. COMPONENTS AND CLADDING ——— 19 PSF
- G. INTERNAL PRESSURE COEFFICIENT ——— 0.18

D. DESIGN LIVE LOADS
- A. ROOF ——— 20 PSF

CONCRETE:

A. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318R–05.

B. CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK CONCRETE AND SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS:
- A. FOUNDATION RETROFIT ——— 3,000 PSI
- B. SLABS ON GRADE ——— 3,000 PSI
- C. TOPPING ——— 3,000 PSI
- D. ALL OTHER CONCRETE ——— 3,000 PSI

2

C. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.

D. ALL INSERTS, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT–DIPPED GALVANIZED UNLESS OTHERWISE NOTED.

E. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.

F. CONDUITS, PIPES, AND SLEEVES PASSING THROUGH A SLAB OR FOOTING AND NOT CONFORMING TO TYPICAL DETAILS SHALL BE LOCATED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL.

CONCRETE (CONT'D):

G. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE AND TO MINIMIZE SHRINKAGE STRESSES. SUBMIT LOCATION OF CONSTRUCTION JOINTS TO THE ARCHITECT FOR APPROVAL, UNLESS OTHERWISE NOTED.

H. SEE ARCHITECTURAL DRAWINGS FOR CHAMFERS, EDGE RADII, DRIPS, REGLETS, FINISHES AND OTHER NON–STRUCTURAL ITEMS NOT SHOWN OR SPECIFIED ON THE STRUCTURAL DRAWINGS.

I. NON–SHRINK GROUT SHALL BE A PREMIXED NON–METALLIC FORMULA, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 1 DAY AND 5,000 PSI IN 28 DAYS.

J. THE STATE SHALL BE NOTIFIED AT LEAST 3 WORKING DAYS PRIOR TO ANY CONCRETE POUR. NO CONCRETE SHALL BE POURED PRIOR TO OBSERVATION BY THE ARCHITECT OR HIS REPRESENTATIVE.

K. THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW:
- A. CONCRETE MIX DESIGNS SHALL BE PREPARED FOR EACH TYPE AND STRENGTH OF CONCRETE REQUIRED, DETERMINED BY EITHER LABORATORY TRIAL MIX OR FIELD DATA BASES, AS FOLLOWS:
  1. NORMAL WEIGHT CONCRETE SHALL BE PROPORTIONED ACCORDING TO ACI 211.1 AND ACI 301.
  2. CONCRETE FOR FOUNDATIONS SHALL HAVE A 5" MAXIMUM SLUMP.
  3. CONCRETE FOR SLABS–ON–GRADE SHALL HAVE A MINIMUM CEMENT CONTENT OF 470 LBS/C.Y. AND A 4" MAXIMUM SLUMP.

L. TESTING AGENCY: THE CONTRACTOR SHALL ENGAGE A QUALFIED INDEPENDENT TESTING AND INSPECTION AGENCY TO SAMPLE MATERIALS AND PERFORM TESTS DURING CONCRETE PLACEMENT, AND SUBMIT TEST REPORTS. TESTING SERVICES SHALL INCLUDE: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C172 TO THE FOLLOWING REQUIREMENTS:
- A. TESTING FREQUENCY: ONE COMPOSITE SAMPLE SHALL BE OBTAINED FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 C.Y. BUT LESS THAN 25 C.Y., PLUS ONE SET FOR EACH ADDITIONAL 50 C.Y. OR FRACTION THEREOF.
- B. SLUMP TESTS SHALL BE PERFORMED PER ASTM C143. ONE TEST SHALL BE MADE AT THE POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. ADDITIONAL TESTS SHALL BE PERFORMED WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
- C. COMPRESSION TEST SPECIMENS SHALL CONFORM TO ASTM C31. ONE SET OF FOUR STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE SHALL BE CAST AND LABORATORY CURED. COMPRESSIVE STRENGTH TESTS SHALL CONFORM TO ASTM C39. ONE LABORATORY CURED SPECIMEN SHALL BE TESTED AT 7 DAYS, TWO AT 28 DAYS, AND ONE RETAINED FOR LATER TESTING IF REQUIRED.
- D. COST OF TESTING WILL BE BORNE BY THE CONTRACTOR

REINFORCING STEEL:

A. REINFORCING STEEL (FOR NORMAL USE, NOT WELDED) SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.

B. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
- A. FOOTINGS, GRADE BEAMS, ETC. CAST AGAINST EARTH ——— 3"
- B. FOOTINGS, GRADE BEAMS, ETC. FORMED AND EXPOSED TO EARTH OR WEATHER ——— 2"

C. CLEAR DISTANCE BETWEEN THE SURFACE OF A BAR AND ANY SURFACE OF A MASONRY UNIT SHALL BE NOT LESS THAN 1/2 INCH, UNLESS OTHERWISE NOTED.

D. REINFORCING STEEL SHALL BE SPLICED WHERE INDICATED ON PLANS. PROVIDE LAP SPLICE LENGTH PER TYPICAL DETAILS AND SCHEDULE, UNLESS OTHERWISE NOTED.

E. BAR LAPS SHALL BE MADE AWAY FROM POINTS OF MAXIMUM STRESS. SPLICES SHALL BE STAGGERED WHERE POSSIBLE.

F. BAR BENDS AND HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318.

G. WELDING OF REINFORCING STEEL IS NOT PERMITTED.

CONCRETE MASONRY UNITS (CMU):

A. REINFORCED MASONRY ASSEMBLIES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

B. CONCRETE MASONRY UNITS SHALL BE TYPE II, NORMAL WEIGHT HOLLOW LOAD–BEARING UNITS CONFORMING TO ASTM C–90 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI.

C. MORTAR SHALL BE TYPE "M" CONFORMING TO ASTM C270 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.

CONCRETE MASONRY UNITS (CMU) (CONT'D):

D. GROUT SHALL CONFORM TO ASTM C476 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.

E. ALL CELLS AND BOND COURSES WITH REINFORCEMENT AND INSERTS SHALL BE SOLID GROUTED. CLEANOUTS SHALL BE PROVIDED FOR ALL GROUT POURS OVER 5'–4" IN HEIGHT.

F. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1 1/2 INCHES BELOW THE TOP OF THE UPPERMOST UNIT.

G. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE AND TO MINIMIZE SHRINKAGE STRESSES.

H. WALLS SHALL BE CONSTRUCTED IN CONVENTIONAL RUNNING BOND, UNLESS OTHERWISE NOTED.

I. MATCH EXISTING CMU WALL LAYING PATTERN, HEIGHT OF UNITS, SURFACE TEXTURE, AND JOINT TYPE.

J. UNLESS OTHERWISE NOTED, CMU WALLS SHALL BE REINFORCED AS FOLLOWS:
8 INCHES THICK #4@24" O.C. VERTICAL REINF 2–#4@48" HORIZ REINF

K. THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW:
- A. STEEL REINFORCEMENT SHOP DRAWINGS WHICH SHALL INCLUDE DETAILS OF FABRICATION, BENDING, PLACEMENT, MATERIAL, GRADE, SCHEDULES, AND BENDS, PREPARED ACCORDING TO ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.
- B. MATERIAL CERTIFICATES, SIGNED BY MANUFACTURERS CERTIFYING THAT THE MATERIAL AND GRADE INDICATED FOR REINFORCING BARS COMPLY WITH THE REQUIREMENTS.

EPOXIED ANCHOR INSTALLATIONS:

A. EPOXY USED FOR ANCHORING THREADED RODS AND REINFORCING STEEL INTO EXISTING CONCRETE OR FULLY GROUTED MASONRY SHALL BE HILTI HIT–HY 200 –A OR –R SYSTEM, SIMPSON SET–XP SYSTEM, OR APPROVED EQUAL, AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

B. THE CONTRACTOR SHALL VERIFY THAT DRILLED ANCHORS ARE INSTALLED IN SOLID/FULLY GROUTED EXISTING MASONRY WALLS/CELLS. WHERE WALLS/CELLS ARE NOT FULLY GROUTED, THEY SHALL BE GROUTED WITH GROUT CONFORMING TO ASTM C476 HAVING A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS, TO PROVIDE A MINIMUM OF 8 INCHES ALL AROUND EACH ANCHOR INSTALLATION, UNLESS OTHERWISE NOTED.

C. ANCHORS SHALL BE INSTALLED WITH THE MINIMUM EMBEDMENT REQUIREMENTS AS INDICATED ON THE DRAWINGS.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD–2	2	ADDENDUM NO. 2	13 OF 18	JAN 2023	

BRENT K.K. CHING
LICENSED PROFESSIONAL ENGINEER
No. 17381–S
HAWAII U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2020

SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. (OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16–115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

GENERAL NOTES

DESIGNED: BC	SUBMITTED:
DRAWN: IB	DATE: NOV 2022
CHECKED: BC	SCALE: AS NOTED

APPROVED:
CHIEF ENGINEER — DATE

DRAWING NO. S-001

METAL DECK:

A. METAL DECK AND ACCESSORIES SHALL BE OF THE TYPE AND GAGE CALLED FOR ON THE DRAWINGS.

B. METAL DECK AND ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS CONFORMING TO ASTM 653 SQ GRADE 33, MINIMUM YIELD STRENGTH 33 KSI, WITH G60 GALVANIZED COATING.

C. DECK SHALL BE THREE SPAN CONTINUOUS WHERE POSSIBLE. DO NOT LOCATE SINGLE SPANS AT EDGES OR CORNERS.

D. MINIMUM BEARING OF DECKING ON SUPPORTS SHALL BE 2 INCHES.

E. SCREW FASTENING OF METAL ROOF DECK
   A. SEE ROOF FRAMING PLAN FOR EXTENT AND ORIENTATION OF METAL DECK.
   B. AT EACH SUPPORT, PROVIDE MINIMUM 4–#12 TRAXX SCREWS PER 36" WIDTH OF DECK UNLESS OTHERWISE NOTED.
   C. AT EACH SUPPORT, AT OVERLAPPING SEAMS, PROVIDE MINIMUM 1–#12 TRAXX SCREW.
   D. ALONG SEAMS AND ALONG ALL EDGE AND PERIMETER SUPPORTS, PROVIDE MINIMUM #12 TRAXX SCREWS AT 6" ON CENTERS.

F. THE FOLLOWING SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW:
   A. SHOP DRAWINGS DETAILING LAYOUT OF METAL DECK, CONNECTIONS, FASTENING, AND OTHER PERTINENT DATA.
   B. MILL TEST REPORTS SIGNED BY MANUFACTURERS CERTIFYING THAT THE MATERIALS AND OTHER COMPONENTS COMPLY WITH REQUIREMENTS.

STRUCTURAL STEEL:

A. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION.

B. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.

C. STEEL WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A992.

D. STEEL CHANNELS, S, M AND HP SHAPES SHALL CONFORM TO ASTM A36.

E. BOLTS FOR STRUCTURAL STEEL TO STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO ASTM A307, GRADE A UNLESS OTHERWISE NOTED.

F. THREADED RODS SHALL CONFORM TO ASTM F1554 GRADE 36 UNLESS OTHERWISE NOTED.

G. ANCHOR RODS FOR STRUCTURAL STEEL TO CONCRETE PEDESTAL OR FOOTING ANCHORAGE SHALL CONFORM TO ASTM F1554 GRADE 36 OTHERWISE NOTED.

H. WELDS AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY.

I. WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.

J. WELDING ELECTRODES SHALL BE E70XX.

K. ALL STEEL SHALL BE PRIME PAINTED IN THE SHOP.

L. EXPOSED STEEL SHALL BE HOT–DIPPED GALVANIZED.

M. THE FOLLOWING SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW:
   A. SHOP DRAWINGS DETAILING FABRICATION OF STRUCTURAL STEEL COMPONENTS INCLUDING DETAILS OF CUTS, CONNECTIONS, HOLES; WELDS; TYPE, SIZE AND LENGTH OF BOLTS; AND OTHER PERTINENT DATA.
   B. CURRENT WELDER'S CERTIFICATION OF EACH INDIVIDUAL PERFORMING WELDING WORK.
   C. MILL TEST REPORTS SIGNED BY MANUFACTURERS CERTIFYING THAT STRUCTURAL STEEL, BOLTS, AND OTHER COMPONENTS COMPLY WITH REQUIREMENTS.

SPECIAL INSPECTION:

A. CONTRACTOR SHALL PAY FOR AND BE RESPONSIBLE FOR ENSURING THAT SPECIAL INSPECTION OF PORTIONS OF THE WORK, AS REQUIRED BY THE BUILDING CODE OF THE COUNTY OF HAWAII, IS MADE AT THE APPROPRIATE TIME. THE CONTRACTOR SHALL GIVE TIMELY NOTICE OF WHEN AND WHERE INSPECTIONS ARE TO BE MADE AND PROVIDE ACCESS FOR THE INSPECTOR. THE CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE STATE AND PAY FOR RE–INSPECTION.

B. THE FOLLOWING STRUCTURAL WORK REQUIRES SPECIAL INSPECTION:
   A. MASONRY CONSTRUCTION
   B. SPECIAL CASES – DRILLED AND EPOXIED THREADED RODS OR REINFORCING STEEL IN EXISTING FULLY GROUTED MASONRY OR CONCRETE

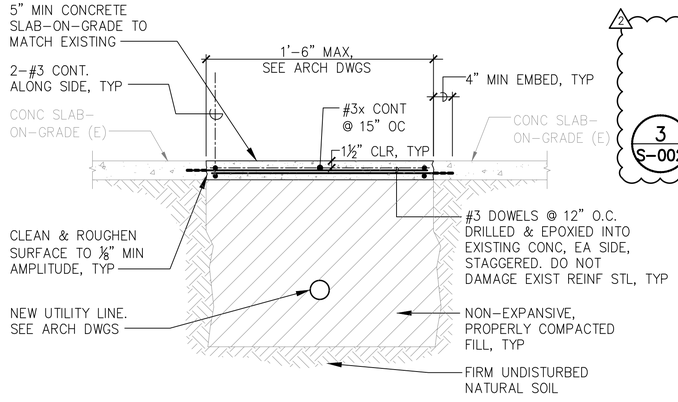
C. SPECIAL INSPECTION IS NOT REQUIRED FOR FOUNDATION CONCRETE AND REINFORCING STEEL. FOUNDATIONS WERE DESIGNED WITH F'C = 2,500 PSI.

D. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE STATE, LICENSED ENGINEER OR ARCHITECT OF RECORD, AND OTHER STATE–DESIGNATED PERSONS. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE STATE AND LICENSED ENGINEER OR ARCHITECT OF RECORD, STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THIS CODE. PRIOR TO THE FINAL INSPECTION REQUIRED UNDER THE BUILDING CODE SECTION 109.3.10 THE LICENSED ENGINEER OR ARCHITECT OF RECORD SHALL SUBMIT A WRITTEN STATEMENT VERIFYING RECEIPT OF THE FINAL INSPECTION REPORTS AND DOCUMENTING THAT THERE ARE NO UNRESOLVED CODE REQUIREMENTS THAT CREATE SIGNIFICANT PUBLIC SAFETY DEFICIENCIES.

E. CONTRACTOR SHALL SUBMIT A STATEMENT CONTAINING AN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED ON THE DRAWINGS AND THAT THE CONSTRUCTION REQUIRING SPECIAL INSPECTIONS WILL BE MADE ACCESSIBLE FOR INSPECTIONS.

ABBREVIATIONS:

@	AT
ARCH	ARCHITECTURAL
BLW	BELOW
BOT	BOTTOM
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
DBL	DOUBLE
DMG	DAMAGE
DWG	DRAWING
EQ	EQUAL
FTG	FOOTING
HORIZ	HORIZONTAL
MECH	MECHANICAL
REINF	REINFORCED OR REINFORCING
THK	THICK
TYP	TYPICAL
VERT	VERTICAL
w/	WITH



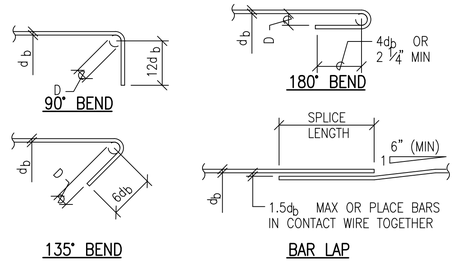
2 S–002 CONC SLAB–ON–GRADE REPAIR DETAIL
SCALE: NOT TO SCALE

MINIMUM SPLICE & EMBEDMENT LENGTHS FOR CONCRETE

BAR SIZE	LAP SPLICE: BOT BAR OR WALL BAR	LAP SPLICE: TOP BAR	EMBEDMENT: STRAIGHT: BOT BAR OR WALL BAR	EMBEDMENT: STRAIGHT: TOP BAR	EMBEDMENT: W/ STD HOOK
#3, #4	29"	38"	22"	29"	11"
#5	36"	47"	28"	36"	14"
#6	43"	56"	33"	43"	17"
#7	63"	82"	48"	63"	20"
#8	72"	94"	55"	72"	22"
#9	81"	106"	62"	81"	25"

MINIMUM SPLICE & EMBEDMENT LENGTHS FOR MASONRY

BAR SIZE	LAP SPLICE: EDGE BAR	LAP SPLICE: CENTERED BAR	EMBEDMENT: STRAIGHT: EDGE BAR	EMBEDMENT: STRAIGHT: CENTERED BAR	EMBEDMENT: W/ STD HOOK
#3, #4	26"	24"	26"	24"	11"
#5	40"	30"	40"	30"	14"
#6	74"	36"	74"	36"	17"

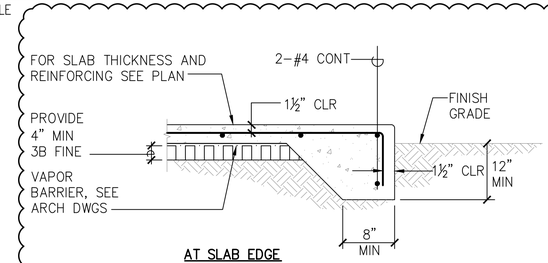


D = 6d_b FOR #8 AND SMALLER
D = 8d_b FOR #9 TO #11

NOTES:

1. LENGTHS ARE FOR CONCRETE BEAMS & COLUMNS WITH REBAR SPACED 1 BAR DIAMETER MIN OC. AND CONCRETE WALLS WITH REBARS SPACED 2 BAR DIAMETERS MIN OC INCREASE BAR LENGTH 50% FOR BARS SPACED CLOSER THAN MINIMUMS SPECIFIED.
2. "TOP BARS" ARE HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE CAST BELOW.
3. BEND & HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318

1 S–002 TYPICAL REBAR SPLICE & EMBEDMENT LENGTH SCHEDULE
NOT TO SCALE



3 S–002 TYPICAL SLAB–ON–GRADE DETAILS
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD–2	2	ADDENDUM NO. 2	14 OF 18	JAN 2023	

BRENT K.K. CHING
LICENSED PROFESSIONAL ENGINEER
No. 17381–S
HAWAII U.S.A.

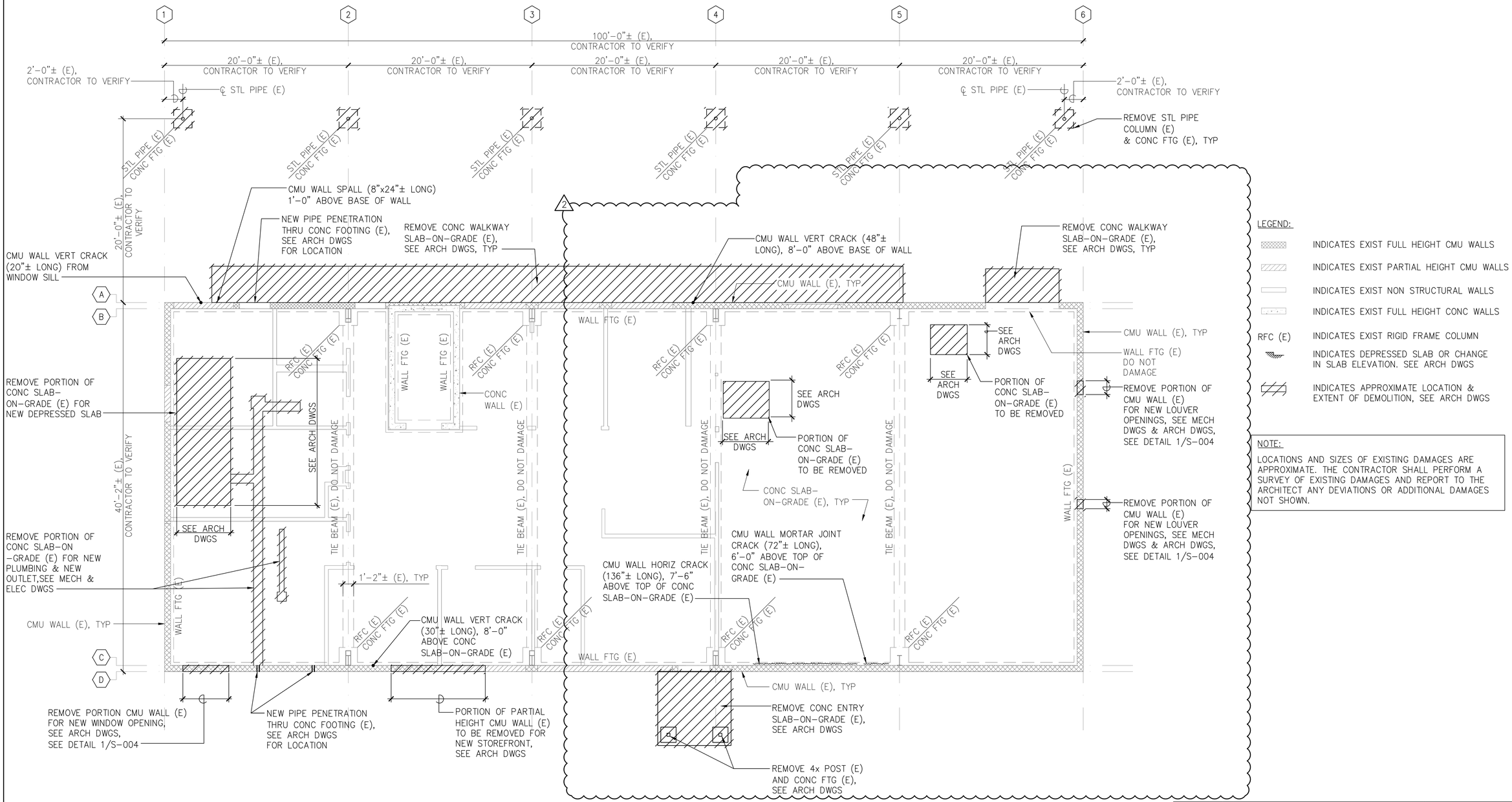
THIS LICENSE EXPIRES APRIL 30, 2020
SIGNATURE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION. (CERTIFICATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16–115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

GENERAL NOTES & TYPICAL DETAILS

DESIGNED: BC	SUBMITTED:
DRAWN: IB	DATE: NOV 2022
CHECKED: BC	SCALE: AS NOTED
APPROVED:	DRAWING NO. S–002
CHIEF ENGINEER	DATE



EXISTING FOUNDATION DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

0 2' 4' 6' 8' 10 12'

SCALE: 3/16" = 1'-0"

WEST SOUTH NORTH EAST

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	2	ADDENDUM NO. 2	15 OF 18	JAN 2023	

BRENT K.K. CHING
LICENSED PROFESSIONAL ENGINEER
No. 17381-S
HAWAII U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2020

SIGNATURE

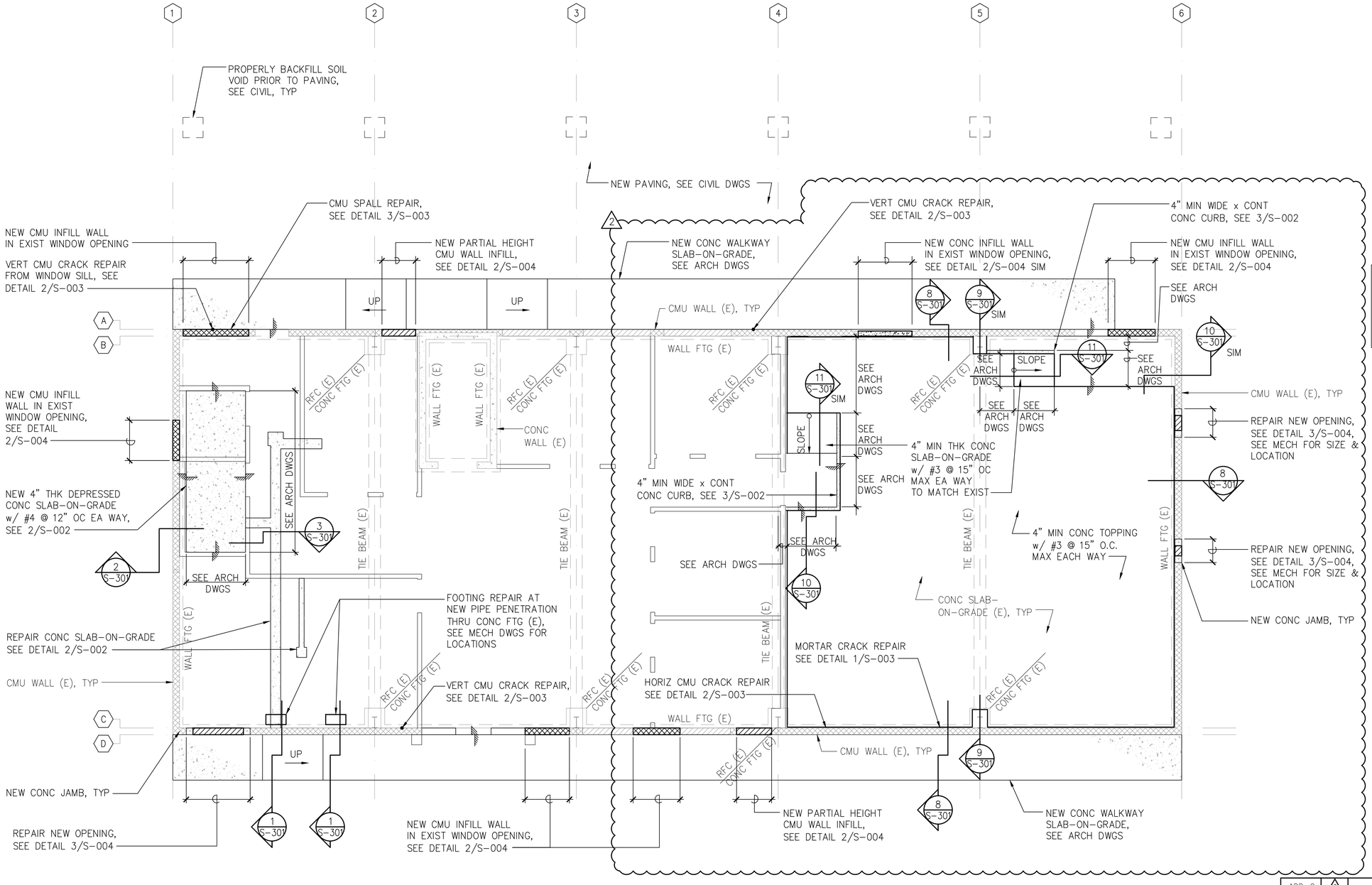
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS IN COMPLIANCE WITH SECTION 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

EXISTING FOUNDATION DEMOLITION PLAN

DESIGNED: BC	SUBMITTED:
DRAWN: IB	DATE: NOV 2022
CHECKED: BC	SCALE: AS NOTED
APPROVED:	DRAWING NO. S-101
CHIEF ENGINEER	DATE



LEGEND:

- INDICATES EXIST FULL HEIGHT CMU WALLS
- INDICATES EXIST PARTIAL HEIGHT CMU WALLS
- INDICATES NEW NON STRUCTURAL WALLS
- INDICATES EXIST FULL HEIGHT CONC WALLS
- INDICATES NEW CMU WALL INFILL
- INDICATES NEW CMU WALL OPENING OR NEW PARTIAL HEIGHT CMU WALL
- RFC (E) INDICATES EXIST RIGID FRAME COLUMN
- INDICATES DEPRESSED SLAB OR CHANGE IN SLAB ELEVATION. SEE ARCH DWGS
- INDICATES NEW CONC INFILL WALL OR CONC JAMB

NOTE:

LOCATIONS AND SIZES OF EXISTING DAMAGES ARE APPROXIMATE. THE CONTRACTOR SHALL PERFORM A SURVEY OF EXISTING DAMAGES AND REPORT TO THE ARCHITECT ANY DEVIATIONS OR ADDITIONAL DAMAGES NOT SHOWN.

EXISTING FOUNDATION RENOVATION PLAN

SCALE: 3/16" = 1'-0"

0 2' 4' 6' 8' 10 12'

SCALE: 3/16" = 1'-0"

WEST SOUTH NORTH EAST

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	2	ADDENDUM NO. 2	16 OF 18	JAN 2023	

BRENT K.K. CHING
LICENSED PROFESSIONAL ENGINEER
No. 17381-S
HAWAII U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2020

SIGNATURE

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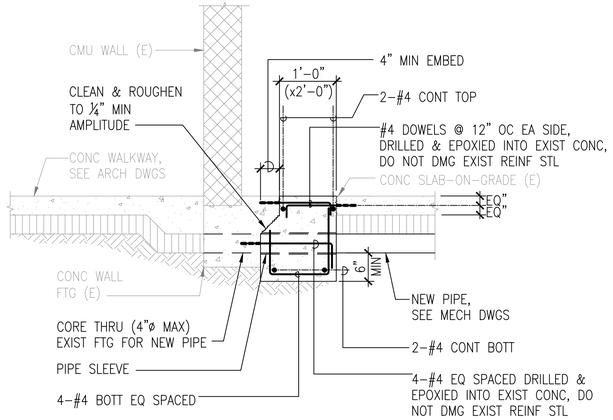
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

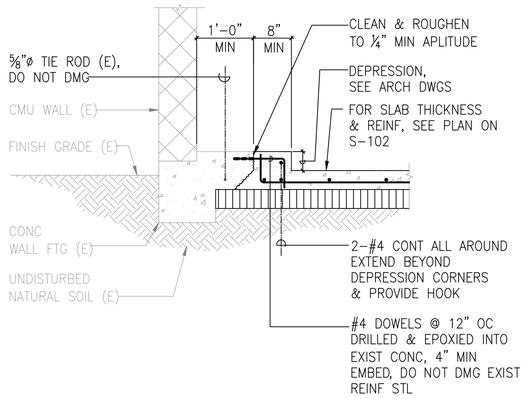
HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

EXISTING FOUNDATION RENOVATION PLAN

DESIGNED: BC	SUBMITTED:
DRAWN: IB	DATE: NOV 2022
CHECKED: BC	SCALE: AS NOTED
APPROVED:	DRAWING NO. S-102
CHIEF ENGINEER	DATE



1 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"



2 S-301 SECTION
SCALE: 3/4"=1'-0"
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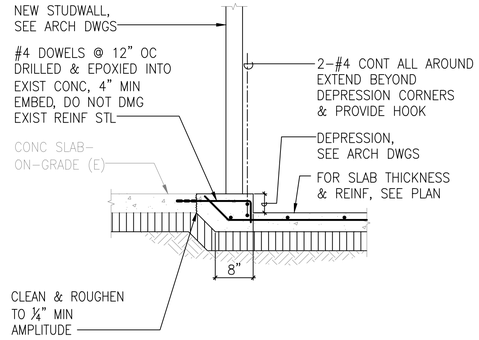
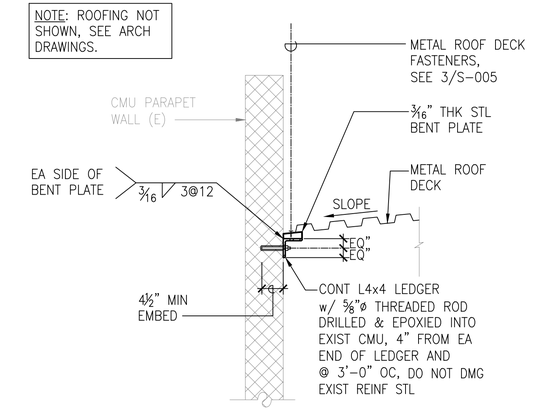
SCALE: 3/4" = 1'-0"



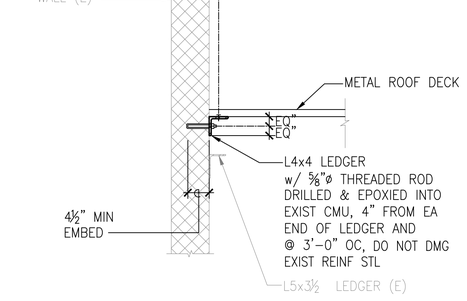
3 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"

NOTE: ROOFING NOT SHOWN, SEE ARCH DRAWINGS.



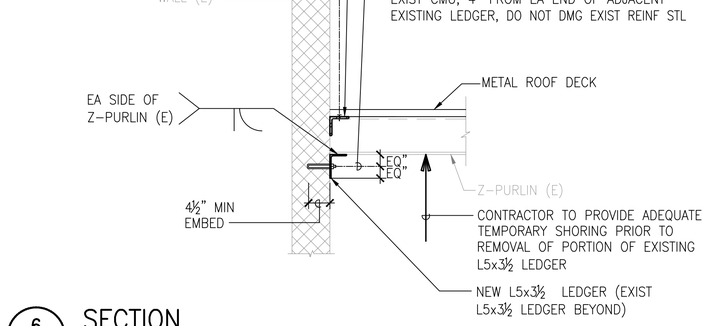
4 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"

NOTE: ROOFING NOT SHOWN, SEE ARCH DRAWINGS.



5 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"

NOTE: ROOFING NOT SHOWN, SEE ARCH DRAWINGS.



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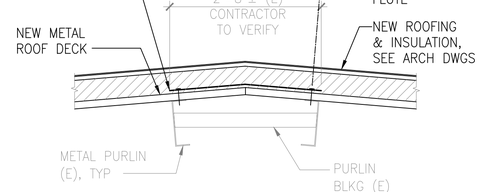
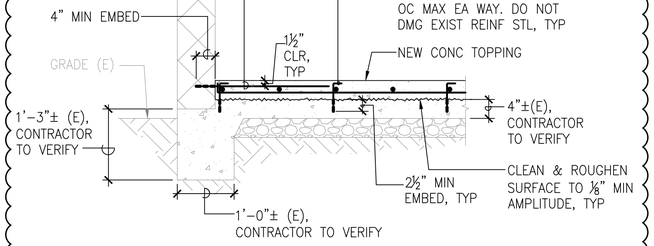
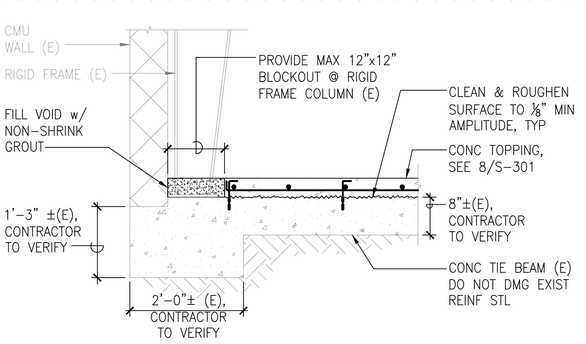
SCALE: 3/4" = 1'-0"



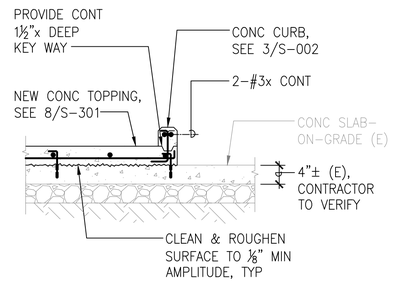
7 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"



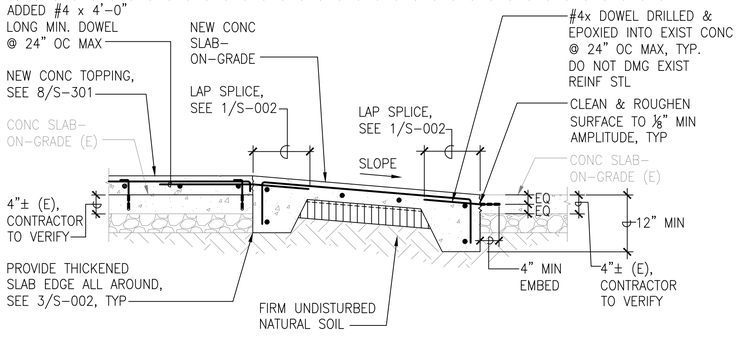
8 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"



9 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"



10 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"



11 S-301 SECTION
SCALE: 3/4"=1'-0"
0 1' 2' 4'
SCALE: 3/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	2	ADDENDUM NO. 2	17 OF 18	JAN 2023	

BRENT K.K. CHING
LICENSED PROFESSIONAL ENGINEER
No. 17381-S
HAWAII U.S.A.

THIS LICENSE EXPIRES APRIL 30, 2020

SIGNATURE

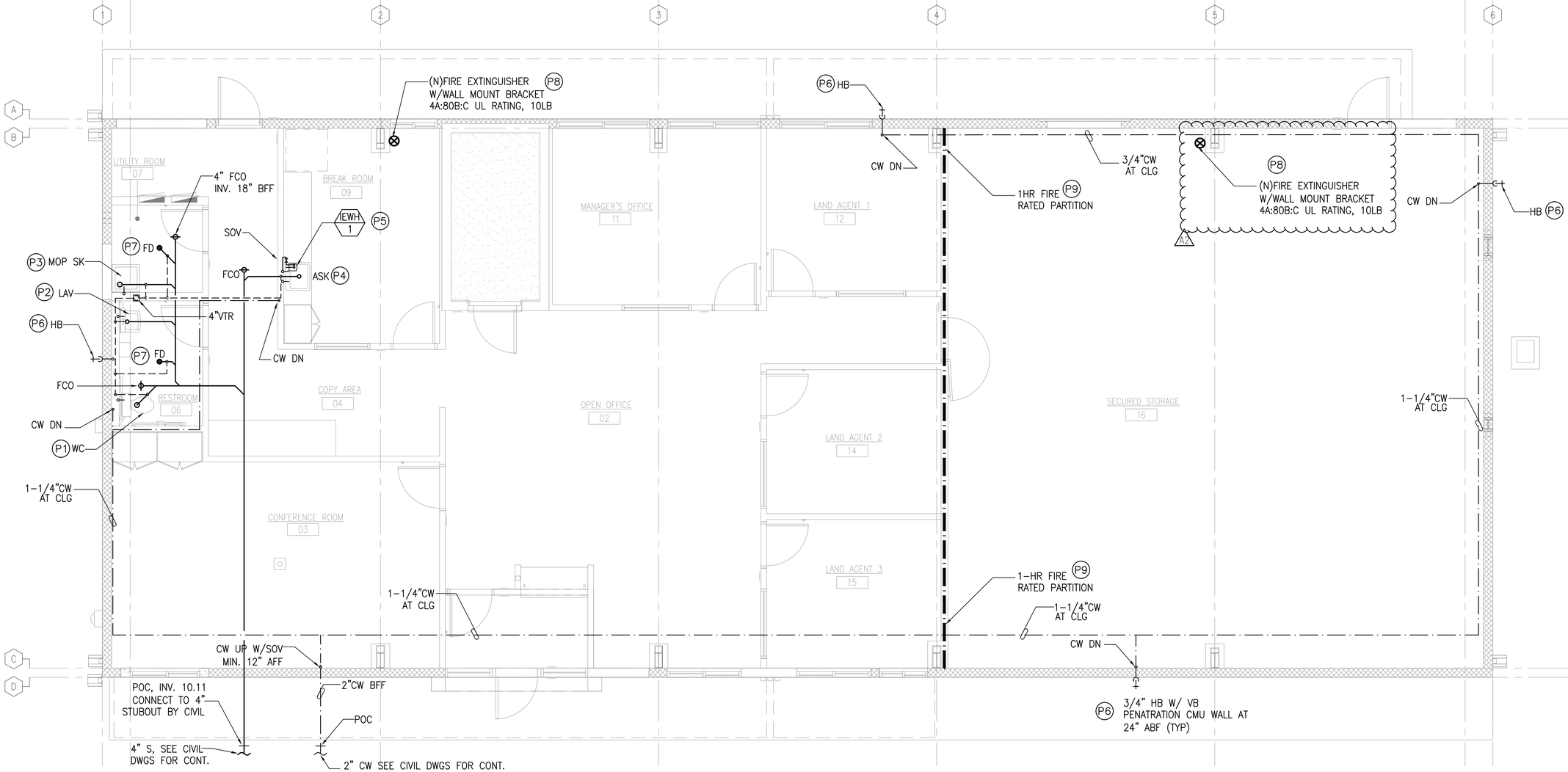
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. (OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF K.K. AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

SECTIONS

DESIGNED: BC	SUBMITTED:
DRAWN: IB	DATE: NOV 2022
CHECKED: BC	SCALE: AS NOTED
APPROVED:	DRAWING NO. S-301
CHIEF ENGINEER	DATE



NEW PLUMBING WORK NOTES:

(P1) PROVIDE AND INSTALL NEW WATER CLOSET COMPLETE. PROVIDE AND INSTALL NEW CW, VENT, AND SANITARY PIPING AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P2) PROVIDE AND INSTALL NEW LAVATORY COMPLETE. PROVIDE AND INSTALL NEW CW, VENT, AND SANITARY PIPING AS REQUIRED. PROVIDE P-TRAP, SUPPLY STOPS, SUPPLY PIPING, FLOOR MOUNT CARRIER, AND ACCESSORIES AS REQUIRED FOR NEW INSTALLATION. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P3) PROVIDE AND INSTALL NEW MOP SINK COMPLETE. PROVIDE AND INSTALL NEW CW, VENT, AND SANITARY PIPING AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P4) PROVIDE AND INSTALL NEW ACCESSIBLE SINK COMPLETE. PROVIDE AND INSTALL NEW CW, VENT, AND SANITARY PIPING AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P5) PROVIDE AND INSTALL NEW UNDERSINK ELECTRIC TANKLESS WATER HEATER. PROVIDE NEW WATER PIPING AS REQUIRED TO CONNECT TO NEW WATER HEATER.

(P6) PROVIDE AND INSTALL NEW HOSE BIBB W/ NON-REMOVABLE VACUUM BREAKER. PROVIDE NEW WATER PIPING AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P7) PROVIDE AND INSTALL NEW FLOOR DRAIN WITH TRAP PRIMER COMPLETE. PROVIDE AND INSTALL NEW CW, VENT, AND SANITARY PIPING AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P8) PROVIDE AND INSTALL NEW FIRE EXTINGUISHER WITH WALL MOUNTED SUPPORT. FIRE EXTINGUISHER SHALL BE MOUNTED AT 44" FROM TOP OF THE UNIT TO FINISHED FLOOR AS REQUIRED. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

(P9) PROVIDE FIRESTOPPING AT ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS. PATCH/REPAIR TO MATCH EXIST'G. CONTRACTOR TO FIELD VERIFY.

1 / M-201 **NEW PLUMBING PLAN**
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

WEST SOUTH NORTH EAST

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
ADD-2	A2	ADDENDUM NO. 2	18 OF 18	JAN 2023	

ROSS R. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 9301-M
HAWAII, U.S.A.

EXPIRATION DATE: 4/30/2024
SIGNATURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION AS DEFINED IN CHAPTER 16-115 OF THE HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS).

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

HAWAII DISTRICT LAND OFFICE
HILO, HAWAI'I

PLUMBING NEW WORK PLAN

DESIGNED: MEI	SUBMITTED:
DRAWN: MEI	DATE: NOVEMBER 2022
CHECKED: RRT	SCALE: AS NOTED
APPROVED: RRT	DRAWING NO. M-201
CHIEF ENGINEER	DATE

TECH DATA

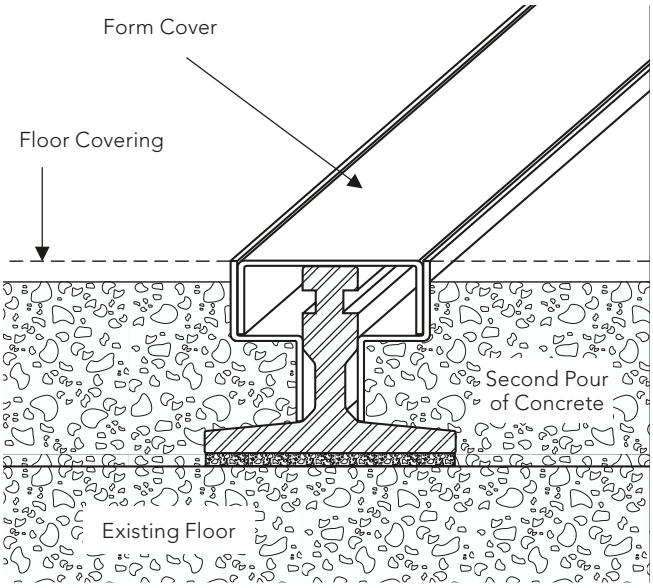
RAIL SYSTEMS

T Load Rail Form Cover

T load rail form cover provides a flush, durable cap for protecting T load rail with concrete form from damage and debris, and for covering inactive rails for a clean finished appearance.

BENEFITS

1. Provides a firm, level base to use as a "screed" for precisely leveling the poured concrete.
2. Offers protection from wear and debris and a level, clean finish for rail assemblies installed for carriages that will be added later.



DESIGN AND CAPABILITIES

The cold formed steel construction and U-channel design of T load rail form cover provide a firm, level cover that is nested into the rail assembly's trough to:

1. Keep concrete from entering the trough during the secondary pour.
2. Protect the rail assembly from damage during construction and remodeling.

APPLICATION

T load rail form cover is compatible with Spacesaver's T load rail with concrete form.

TECHNICAL SPECIFICATIONS

FORM COVER:

The rail system shall be protected with a rail form cover constructed from 18 gauge (1.2 mm) galvanized steel formed into a U-channel shape 3/4" (19 mm) high and 2-7/8" (73 mm) wide that nests into T load rail with concrete form. The T load rail form cover shall have a galvanized finish.

* Specifications subject to change.

TECH DATA

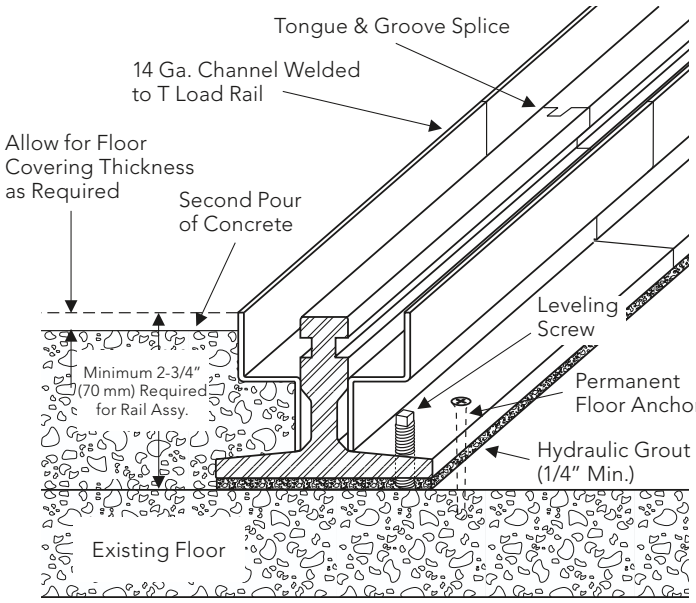
RAIL SYSTEMS

T Load Rail with Concrete Form

T load rail with concrete form combines Spacesaver's exclusive, one-piece, T load rail of cold drawn, structural steel with a concrete form channel for recessed in concrete installations, and provides uniform distribution of heavy loads and precision alignment for long term, easy carriage operation under heavy cyclic load stress.*

BENEFITS

1. T load rail's one piece structural design and tongue and groove splicing ensures carriage operation that is consistently smooth and reliable under even the heaviest loads.
2. Recess floor mounting provides flush with floor rail installation without ramps, and increases the amount of vertical space that is usable for storage.
3. Extending rail assemblies under stationary platforms means carriage, storage housings and face panels will be on an even plane and provide an homogenous, level appearance.
4. Leveling screw adjustability, continuous grouting and permanent floor anchors ensure long term system dependability.
5. In-rail anti-tip groove provides built-in system stability for anti-tip applications when carriages with roller guide bearings and anti-tip brackets are used with T load rail.



*Cyclic load stresses are the weight and forces placed on all parts of a mobile system as it cycles back and forth and as it rests. The force of movement combined with the weight of the stored materials transferred to the storage housing and down the storage housing's vertical members to the carriage, represents the cyclic load stress on the carriage. From the carriage, the load is transferred to the bearing/axle/wheel assembly where it becomes a point load that is then transferred to the system's rails, and finally to the grout and floor.

DESIGN AND CAPABILITIES

The union of T load rail, designed by Spacesaver specifically for mobile storage, with a concrete form channel, results in a rail assembly that offers superior system performance in several ways:

1. **The structural nature and "T" profile**
   - Uniformly distributes the wheel point load to a 17-1/2 square inch (112.9 cm2) surface where the rail's base contacts the grout and then the floor.
   - Minimizes rail deflection.
   - Ensures constant dimensional tolerances for permanent precision alignment.
   - Features in-rail anti-tip grooves for seismic applications and installations with a high carriage height to width ratio.
2. **One piece construction**
   - A positive barrier when concrete is poured and helps prevent concrete edge chipping.
   - A precise guide for finishing the concrete to a level that permits the specified floor covering to be installed flush with the top of the rail assembly.
3. **Tongue and groove splices between**
   - Maintain proper rail alignment for smooth, easy carriage movement and even transfer of wheel point loads from one rail section to the next.
   - Eliminate rail separation.

INSTALLATION

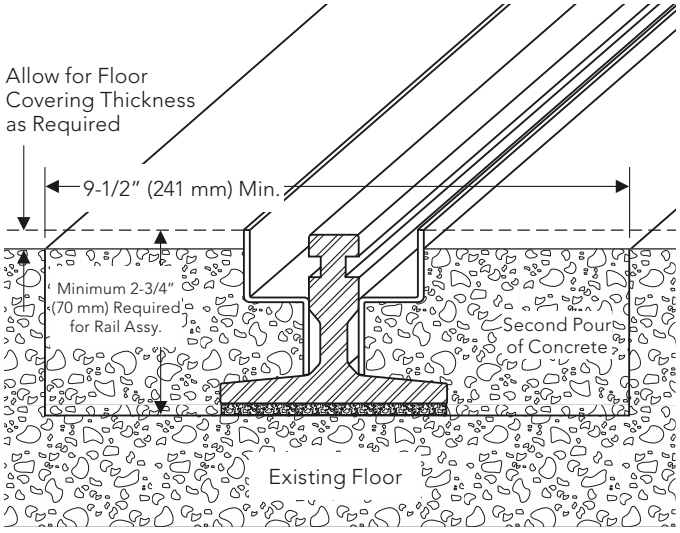
A steel Z angle is welded to each side of T load rail to create the concrete form channel. Rail assemblies are then aligned on the floor per the installation drawings, and recess mounted in one of two ways:

1. Rail assemblies are leveled, anchored and grouted to the existing floor or sub floor, and a second pour of concrete is finished around the concrete forms to bring the floor's new top surface up to an appropriate level for flush floor covering installation.
2. Troughs are formed in the initial concrete pour or cut out of the existing concrete floor. Rail assemblies are then recessed in the troughs, leveled, anchored and grouted, and a second pour of concrete is applied in the trough around the concrete form to an appropriate level for flush floor covering installation.

With either installation method, rails are leveled using leveling screws for precise installation and infinite adjustability. In systems with stationary platforms, the rails extend fully under the platforms and provide a level plane for platform installation.

Leveled rails are secured with permanent floor anchors for firm, solid attachment. To minimize rail deflection and help disburse wheel point loads to maximum floor areas, rail assemblies are set with nonshrink, continuous grout under the entire rail. This step ensures that all gaps and voids are filled for total rail support. The second pour of concrete is then applied.

OPTIONAL TROUGH INSTALLATION



APPLICATION

T load rail with concrete form is compatible with all Spacesaver powered, mechanical assist and manual carriages utilizing guide bearing drive and guidance systems with in-rail anti-tip features.

NOTE: All Spacesaver mobile storage installations requiring seismic certification need calculations from a structural engineer licensed in the state where the installation will be located.

NOTE: The wider the trough, the easier it will be to grout and it will be less noticeable for feathering the second concrete pour from the existing concrete to the concrete form channel on the rail due to any existing concrete out-of-level conditions. Existing concrete surface must be level to 1/4" per single module span noncumulative or a relative ramping will accumulate at the low point.

TECHNICAL SPECIFICATIONS

RECESSED CONCRETE RAIL INSTALLATION:
Rail shall be one-piece, cold drawn structural "T" section 1035 steel extrusion 2-7/16" (61.9 mm) high with a 3-1/2" (88.9 mm) base flange, a 5/8" (15.8 mm) top surface. Rail shall disperse the wheel point load to a minimum 17-1/2 square inch (112.9 cm2) area at the base of the rail. All rail joints to be tongue and groove. Rail shall have two leveling screws and two permanently mounted floor anchors maximum 36" (914 mm) o.c. All rail assemblies shall be fully grouted with a non-shrink hydraulic cement type grout with an (562 kg/cm2) 8,000 lbs. p.s.i. strength after curing. Rail system shall be flush with finished floor with no gaps.

* Specifications subject to change.

Spacesaver®

Spacesaver Corporation
1450 Janesville Avenue
Fort Atkinson, WI 53538-2798
1-800-492-3434
www.spacesaver.com

KI
1330 Bellevue Street
P.O. Box 8100
Green Bay, WI 54302-8100
1-800-424-2432
www.ki.com

NEMO|etc.
Certificate of Authorization #32455
353 Christian Street, Unit #13
Oxford, CT 06478
(203) 262-9245

ENGINEER | EVALUATE | TEST | CONSULT

EVALUATION REPORT

Carlisle SynTec Systems
P.O. Box 7000
Carlisle, PA 17013
(717) 245-7264

Evaluation Report C33680.09.10-R26
FL14083-R26
Date of Issuance: 09/08/2010
Revision 26: 02/16/2021

SCOPE:
This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: Carlisle Sure-Weld TPO Single Ply Roof Systems for use in FBC non-HVHZ jurisdictions

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our Evaluation Reports by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of its Evaluation Report relative to updated Code requirements with each Code Cycle.

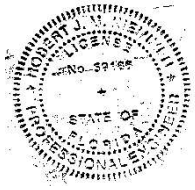
ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words "NEMO|etc. Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 5, plus 98-pages of Appendix.

Prepared by:

Robert J.M. Nieminen, P.E.
Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 02/16/2021. This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

ROOFING SYSTEMS EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Single Ply Roof Systems

Compliance Statement: **Carlisle Sure-Weld TPO Single Ply Roof Systems**, as produced by **Carlisle SynTec Systems**, have demonstrated compliance with the following sections of the **7th Edition (2020) Florida Building Code** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1504.3.1	Wind resistance	FM 4474	2011
1504.3.1	Wind resistance	UL 1897	2015
1504.6	Physical properties	ASTM G155	2013
1504.7	Impact resistance	FM 4470	2016
1507.11.2	Material standard	ASTM D6163	2015
1507.13.2	Material standard	ASTM D6878	2013

3. REFERENCES:

Entity	Exam	Reference	Date	Entity	Exam	Reference	Date
ACRC (TST4671)	Wind	07-051	08/29/2007	FM App (TST1867)	FM 4474	3037400	09/02/2009
ACRC (TST4671)	Wind	07-059	10/15/2007	FM App (TST1867)	FM 4474	3033356	10/09/2009
ACRC (TST4671)	Wind	10-009	05/19/2010	FM App (TST1867)	FM 4474	3034297	11/13/2009
ACRC (TST4671)	Wind	10-018	08/25/2010	FM App (TST1867)	FM 4474	3036762	03/08/2011
ACRC(TST4671)	Wind	10-019	08/25/2010	FM App (TST1867)	FM 4474	3041535	06/08/2011
ACRC(TST4671)	Wind	11-034	06/28/2011	FM App (TST1867)	FM 4474	3039340	06/24/2011
ACRC(TST4671)	Wind	11-035	06/28/2011	FM App (TST1867)	FM 4474	3043858	08/25/2011
ACRC(TST4671)	Wind	11-036	06/29/2011	FM App (TST1867)	FM 4474	3041797	10/13/2011
ACRC(TST4671)	Wind	11-037	06/29/2011	FM App (TST1867)	FM 4474	3039073	11/22/2011
ACRC(TST4671)	Wind	15-002	03/30/2015	FM App (TST1867)	FM 4470	1X9A4.AM	12/06/2011
ACRC(TST4671)	Wind	15-008	04/02/2015	FM App (TST1867)	FM 4470	3000919	12/06/2011
ACRC(TST4671)	Wind	15-009	04/06/2015	FM App (TST1867)	FM 4470	3044748	12/06/2011
ACRC(TST4671)	Wind	15-011	07/07/2015	FM App (TST1867)	FM 4474	3040260	02/27/2012
ACRC(TST4671)	Wind	15-012	07/07/2015	FM App (TST1867)	FM 4474	3041799	03/29/2012
ACRC(TST4671)	Wind	15-015	07/09/2015	FM App (TST1867)	FM 4474	3043824	04/06/2012
ACRC(TST4671)	Wind	15-016	07/09/2015	FM App (TST1867)	FM 4474	3039762	09/07/2012
ACRC(TST4671)	Wind	15-018	07/10/2015	FM App (TST1867)	FM 4474	3047327	09/13/2012
ACRC(TST4671)	Wind	15-019	07/14/2015	FM App (TST1867)	FM 4474	3040639	09/18/2012
ACRC(TST4671)	Wind	15-020	07/14/2015	FM App (TST1867)	FM 4474	3043858	09/25/2012
ACRC(TST4671)	Wind	15-021	07/15/2015	FM App (TST1867)	FM 4474	3042075	10/23/2012
ACRC(TST4671)	Wind	15-037	12/28/2015	FM App (TST1867)	FM 4474	3045953	02/13/2013
ACRC(TST4671)	Wind	15-038	12/28/2015	FM App (TST1867)	FM 4474	797 (ribbon HP-NB)	04/25/2013
ACRC(TST4671)	Wind	15-041	12/30/2015	FM App (TST1867)	FM 4451	3049232	09/11/2013
ACRC(TST4671)	Wind	15-043	01/04/2016	FM App (TST1867)	FM 4474	3049189	03/11/2014
ACRC(TST4671)	Wind	15-045	01/11/2016	FM App (TST1867)	FM 4474	3048753	09/16/2014
ACRC(TST4671)	Wind	15-046	01/11/2016	FM App (TST1867)	FM 4474	3051392 (data)	10/15/2014
ACRC(TST4671)	Wind	15-047	01/12/2016	FM App (TST1867)	FM 4474	3054838	02/13/2015
ATI (TST1588)	FM 4470	01-37050.01	03/13/2000	FM App (TST1867)	FM 4474	3055462	04/01/2015
ATI (TST1588)	FM 4470	01-39152.01	03/28/2001	FM App (TST1867)	FM 4474	3055227	05/21/2015
ATI (TST1588)	FM 4470	63524.01-111-47	03/16/2006	FM App (TST1867)	FM 4474	3053933	06/30/2015
ATI (TST1588)	FM 4470	76506.01-111-47	09/06/2007	FM App (TST1867)	FM 4451	3054498	11/30/2015
ATI (TST1588)	FM 4470	77891.01-111-47	10/26/2007	FM App (TST1867)	FM 4474	3050229	01/25/2016
ATI (TST1588)	FM 4474	C1141.01-109-18	09/13/2012	FM App (TST1867)	FM 4474	3058125	02/04/2016
ATI (TST1588)	TAS 114	D7772.01-109-18	07/09/2014	FM App (TST1867)	FM 4474	3055167	02/10/2016
ATI (TST1588)	TAS 114	D7772.02-109-18	07/14/2014	FM App (TST1867)	FM 4474	3055824	05/31/2016
ATI (TST1588)	TAS 114	E4981.01-109-18	02/26/2015	FM App (TST1867)	FM 4474	3058058	11/04/2016
CTL (TST1577)	FM 4474	CTLA-105R	10/13/2008	FM App (TST1867)	FM 4474	RR206411	09/26/2018
CTL (TST1577)	FM 4474	CTLA-105R-1	10/13/2008	FM App (TST1867)	FM 4474	3056745	09/28/2016
CTL (TST1577)	FM 4474	CTLA-105R-2	10/13/2008	FM App (TST1867)	FM 4474	3058125	12/06/2016
CTL (TST1577)	FM 4474	CTLA-106R	10/16/2008	FM App (TST1867)	FM 4474	3062422 (data)	05/25/2017
CTL (TST1577)	FM 4474	CTLA-106R-1	10/16/2008	FM App (TST1867)	FM 4474	3062422 (data)	01/05/2018
CTL (TST1577)	FM 4474	CTLA-106R-2	10/16/2008	FM App (TST1867)	FM 4474	PR449852 (data)	03/29/2018
CTL (TST1577)	FM 4474	CTLA-106R-3	10/16/2008	FM App (TST1867)	FM 4474	3058463	05/22/2018
CTL (TST1577)	FM 4474	CTLA-106R-4	10/16/2008	FM App (TST1867)	FM 4470	3063373	07/23/2018

Entity	Exam	Reference	Date	Entity	Exam	Reference	Date
CTL (TST1577)	TAS 117	CTLA 111R	01/13/2009	FM App (TST1867)	FM 4474	PR451012 (data)	09/11/2018
ERD (TST 6049)	Physicals	U0215.05.06-1	05/30/2006	FM App (TST1867)	FM 4474	PR449651	09/25/2018
ERD (TST 6049)	FM 4470	E9490.03.08	03/25/2008	FM App (TST1867)	FM 4474	3063085	10/05/2018
ERD (TST 6049)	Criticality	A35880.04.12-R1	10/26/2012	FM App (TST1867)	FM 4474	PR451012 (data)	10/11/2018
ERD (TST 6049)	FM 4474	SC10010.02.16	02/29/2016	FM App (TST1867)	FM 4474	PR452297 (data)	12/05/2018
ERD (TST 11294)	FM 4474	13380.01.17	01/27/2017	FM App (TST1867)	FM 4474	PR452297 (data)	12/06/2018
ERD (TST 6049)	FM 4474	CRL-SC13450.01.17	01/31/2017	FM App (TST1867)	FM 4474	PR451012 (data)	12/13/2018
ERD (TST 11294)	FM 4474	CLT16160.08.17-1	08/28/2017	FM App (TST1867)	FM 4474	PR452773 (data)	01/30/2019
ERD (TST 11294)	FM 4474	CLT16160.08.17-2	08/28/2017	FM App (TST1867)	FM 4474	PR452773 (data)	02/01/2019
ERD (TST 6049)	Criticality	SFS-SC12250.10.17	10/23/2017	FM App (TST1867)	FM 4474	PR451012 (data)	02/01/2019
FM App (TST1867)	FM 4470	0V7A4.AM	06/10/1992	FM App (TST1867)	FM 4474	3059662	02/05/2019
FM App (TST1867)	FM 4470	3Z9A1.AM	10/15/1997	FM App (TST1867)	FM 4474	PR453924(data)	06/19/2019
FM App (TST1867)	FM 4470	3001580	11/16/1998	FM App (TST1867)	FM 4474	PR451520 (data)	05/02/2019
FM App (TST1867)	FM 4470	3001522	03/26/1999	FM App (TST1867)	FM 4474	PR453044	05/30/2019
FM App (TST1867)	FM 4470	3003393	03/30/1999	FM App (TST1867)	FM 4474	3060914	06/20/2019
FM App (TST1867)	FM 4470	3003337	06/11/1999	FM App (TST1867)	FM 4474	PR453922	08/08/2019
FM App (TST1867)	FM 4470	3006110	06/13/2001	FM App (TST1867)	FM 4474	PR453353	01/31/2020
FM App (TST1867)	FM 4470	3011329	06/10/2002	FM App (TST1867)	FM 4474	PR453923	02/02/2020
FM App (TST1867)	FM 4470	3012879	04/04/2003	FM App (TST1867)	FM 4474	PR451812	04/24/2020
FM App (TST1867)	FM 4470	3013584	06/27/2003	FM App (TST1867)	FM 4474	RR223958	06/10/2020
FM App (TST1867)	FM 4470	3014692	08/05/2003	FM App (TST1867)	FM 4474	RR224173	06/30/2020
FM App (TST1867)	FM 4470	3016355	09/15/2003	M-D (CER1592)	Wind Uplift	12-0216.01	03/08/2012
FM App (TST1867)	FM 4470	3019890	12/16/2004	M-D (CER1592)	Wind Uplift	13-0617.20	09/05/2013
FM App (TST1867)	FM 4474	3017662	06/07/2005	M-D (CER1592)	Wind Uplift	13-0307.02	09/26/2013
FM App (TST1867)	FM 4474	3023032	07/20/2005	NEMO (TST 6049)	D6878 (PA)	4-CRL-18-002.04.18-1	04/03/2018
FM App (TST1867)	FM 4474	3018631	11/03/2005	NEMO (TST 6049)	D6878 (MS)	4-CRL-18-002.04.18-2A	04/03/2018
FM App (TST1867)	FM 4474	3023999	11/08/2005	NEMO (TST 6049)	FM 4474	4-CRL-18-003.05.18	05/15/2018
FM App (TST1867)	FM 4474	3020845	01/25/2006	NEMO (TST 6049)	FM 4474	CRL-SC16815.06.18	06/07/2018
FM App (TST1867)	FM 4474	3021941	03/20/2006	NEMO (TST 6049)	FM 4474	4L-CEL-18-001.12.18	12/14/2018
FM App (TST1867)	FM 4474	3023340	03/20/2006	NEMO (TST 11294)	FM 4474	2-CRL-18-002.04.18	05/15/2018
FM App (TST1867)	FM 4474	3023458	07/18/2006	NEMO (TST 6049)	Criticality	4S-CRL-18-005.11.18-R1	01/17/2019
FM App (TST1867)	FM 4474	3024593	07/27/2006	NEMO (TST 11294)	FM 4474	2a-CRL-19-LWWUS-01.A	05/13/2019
FM App (TST1867)	FM 4474	3022174	09/25/2006	NEMO (TST 6049)	D6878 (UT)	4r-CRL-19-SSTHP-02.A	08/23/2019
FM App (TST1867)	FM 4474	3021235	06/01/2007	NEMO (TST 11294)	FM 4474	2a-CRL-19-LWWUS-02.A	01/14/2020
FM App (TST1867)	FM 4474	3026964	07/25/2007	NEMO (TST 6049)	FM 4474	4L-CRL-18-003.12.18	01/14/2020
FM App (TST1867)	FM 4470	3030926	08/07/2007	NEMO (TST 6049)	FM 4474	4a-CRL-19-LSWUS-01.A	01/14/2020
FM App (TST1867)	FM 4474	3028438	08/22/2007	NEMO (TST 11294)	FM 4474	2-CRL-18-002.10.18-2-R1	01/23/2020
FM App (TST1867)	FM 4474	3031350	09/27/2007	NEMO (TST 6049)	FM 4474	4a-CRL-19-LSWUS-02.A	03/05/2020
FM App (TST1867)	FM 4474	3030536	10/09/2007	NEMO (TST 6049)	D6878 (MS)	4r-CRL-19-SSTHP-01.A	07/16/2020
FM App (TST1867)	FM 4474	3028655	11/09/2007	NEMO (TST 6049)	D6878 (UT)	4r-CRL-20-SSTHP-02.A	10/15/2020
FM App (TST1867)	FM 4474	3026951	01/21/2008	NEMO (TST 6049)	D6878 (MS)	4r-CRL-20-SSTHP-02.B	10/15/2020
FM App (TST1867)	FM 4474	3031349	05/13/2008	NEMO (TST 6049)	D6878 (UT)	4r-CRL-20-SSTHP-02.C	10/15/2020
FM App (TST1867)	FM 4474	3031765	07/21/2008	NEMO (TST 6049)	D6878 (MS)	4r-CRL-20-SSTHP-03.A	10/15/2020
FM App (TST1867)	FM 4474	3029840	09/08/2008	NEMO (TST 6049)	D6878 (UT)	4r-CRL-20-SSTHP-03.B	10/15/2020
FM App (TST1867)	FM 4474	3033217	12/08/2008	PRI CMT(TST5878)	FM 4474	CST-016-02-01	05/04/2011
FM App (TST1867)	FM 4474	3034985	12/15/2008	PRI CMT(TST5878)	FM 4474	CST-016-02-01	05/05/2011
FM App (TST1867)	FM 4474	3034066	04/14/2009	UL, LLC. (TST9628)	UL 1897	08CA15815	10/22/2008
FM App (TST1867)	FM 4474	3034776	08/07/2009	UL, LLC. (QUA9625)	QA	Service Confirmation	12/14/2018
				UL, LLC. (QUA9625)	QA	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

This Evaluation Report covers **Sure-Weld TPO Single-Ply Roof Membrane Systems** installed in accordance with **Carlisle SynTec Systems** published installation instructions and the Limitations / Conditions of Use herein.

TABLE 1: EVALUATED MEMBRANES

Type	Product		Material Standard			Plant(s)
			Reference	Type	Grade	
Roof Cover or Cap Ply	Sure-Weld	45, 60-mil	ASTM D6878	N/A	N/A	MS, PA, UT
	Sure-Weld EXTRA	72, 80-mil	ASTM D6878	N/A	N/A	MS, PA, UT
	Sure-Weld HS	60, 80-mil	ASTM D6878	N/A	N/A	MS
	Sure-Weld FleeceBACK FR	60-mil	ASTM D6878	N/A	N/A	UT
	Sure-Weld FleeceBACK 100, 115 or 135	45, 60, 80-mil	ASTM D6878	N/A	N/A	MS

TABLE 1: EVALUATED MEMBRANES						
Type	Product		Material Standard			Plant(s)
			Reference	Type	Grade	
Roof Cover or Cap Ply	Sure-Weld FleeceBACK 115	45, 60, 80-mil	ASTM D6878	N/A	N/A	UT
	Sure-Weld AFX 120, AFX 135 or AFX 155	45, 60, 80-mil	ASTM D6878	N/A	N/A	MS
	Sure-Weld SAT-TPO	60-mil	ASTM D6878	N/A	N/A	UT
	Sure-Weld FleeceBACK® RL™ with RapidLock Technology	60-mil	ASTM D6878	N/A	N/A	MS
Base Ply or Vapor Barrier Membranes	SureMB 90 Base		ASTM D6163	I	S	TX
	SureMB 90TG Base		ASTM D6163	I	S	TX
	SureMB 120TG Base		ASTM D6163	I	S	TX

5. LIMITATIONS:

5.1 This is a Building Code Evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

5.2 This Evaluation Report is not for use in FBC High Velocity Hurricane Zone jurisdictions (i.e., Broward and Miami-Dade Counties).

5.3 This Evaluation Report pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.

5.4 This Evaluation Report does not include evaluation of fire classification. Refer to **FBC 1505** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.

5.5 This Evaluation Report does not include evaluation of roof edge termination. Refer to **FBC 1504.5** for requirements and limitations regarding edge securement for low-slope roofs.

5.6 Refer to **FBC 1511** for requirements and limitations regarding recover installations.

5.6.1 For mechanically attached components over existing roof decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing shall be in accordance with **ANSI/SPRI FX-1** or **Testing Application Standard TAS 105**.

5.6.2 For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with **ANSI/SPRI IA-1**, **ASTM E907**, **FM Loss Prevention Data Sheet 1-52** or **Testing Application Standard TAS 124** shall be conducted on mock-ups of the proposed new roof assembly.

5.6.3 For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with **ASTM E907**, **FM Loss Prevention Data Sheet 1-52** or **Testing Application Standard TAS 124**.

5.7 Refer to Appendix 1 for system attachment requirements for wind load resistance.

5.7.1 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **FBC 1504.9** has already been applied). Refer to **FBC 1609** for determination of design wind loads.

5.7.2 For mechanically attached components or partially-bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with **FBC Chapter 16**. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are **ANSI/SPRI WD1**, **FM Loss Prevention Data Sheet 1-29**, **Roofing Application Standard RAS 117** and **Roofing Application Standard RAS 137**. Assemblies marked with an asterisk* carry the limitations set forth in **Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (February 2020)** for Zone 2/3 enhancements.

5.7.3 For assemblies with all components fully bonded in place, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with **FBC Chapter 16**. No rational analysis is permitted for these systems.

5.8 All components in the roof assembly shall have quality assurance audit in accordance with **F.A.C. Rule 61G20-3**. Refer to the Product Approval of the component manufacturer for components listed in Appendix 1 that are produced by a Product Manufacturer other than the report holder on Page 1 of this Evaluation Report.

6. INSTALLATION:

Carlisle Sure-Weld TPO Single Ply Roof Systems shall be installed in accordance with **Carlisle SynTec Systems** published installation instructions, subject to the Limitations / Conditions of Use noted herein.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements. Refer to Section 4 herein for products and production locations having met codified material standards.

9. QUALITY ASSURANCE ENTITY:

UL, LLC – QUA9625; (414) 248-6409; karen.buchmann@ul.com

- THE 98-PAGES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

The following notes apply to the systems outlined herein:

1 The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- As-tested roof cover performance in accordance with FM 4474 and TAS 114, Appendix J indicates min. 22 ga., Type B, Grade 40 steel deck at max. 6 ft spans attached with 5/8-inch diameter puddle welds spaced 6" o.c., with deck side laps secured max. 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screws, may be used for roof assemblies over steel deck up to a maximum design pressure of -60.0 psf. This does not preclude Note 1 above.
- Tables 8A and 8B provide guidance / limitations associated with use of fasteners from Hilti, Inc. to secure steel decking to structural members

2 Unless otherwise noted, fasteners and stress plates shall be as follows. Fasteners shall be of sufficient length for the following engagements:
- Wood Deck: Sure-Seal HP Fastener with Sure-Seal Insulation Plate. Minimum 1-inch wood penetration.
- Steel Deck: Sure-Seal HP Fastener with Sure-Seal Insulation Plate. Minimum ¾-inch steel penetration, engage the top flute of the steel deck.
- Structural Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with Sure-Seal Insulation Plate; Minimum 1-inch embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions.

3 Unless otherwise noted, insulation may be any one layer or combination of FBC Approved (Local or Statewide) board(s) that meet FBC 1505 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.

4 Minimum 200 psi, minimum 2-inch thick FBC Approved lightweight insulating concrete may be substituted for rigid insulation board for System Types B-1, C-1, C-2, D-1 or D-2, whereby fasteners are installed through the lightweight insulating concrete to engage the structural deck. The structural deck shall be of equal or greater type, thickness and strength to the steel and structural concrete deck listings. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. This is a wind uplift resistance allowance and does not purport to address non-wind-uplift-related issues, such as deck venting or moisture levels within the LWIC and the potential effect on overlying components.

5 Preliminary insulation attachment for System Type D: Unless otherwise noted, refer to Section 2.2.10.1.3 of FM Loss Prevention Data Sheet 1-29 (February 2020).
- Carlisle INSUL-FAST Fastener may be used in place of Sure-Seal HP Fastener for preliminary attachment purposes over wood and steel deck.

6 Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions.
- Hot asphalt: Full-coverage at 25 lbs/square.
- FAST 100LV (FULL): Full-coverage at 1 gal./square.
- FAST 100LV (RIBBON): Continuous ribbons, 12-inch o.c.
- FAST Dual-Tank (FAST DT) (FULL): Continuous ribbons, 4-inch o.c.
- FAST Dual-Tank (FAST DT) (RIBBON): Continuous ribbons, 12-inch o.c. Note: When installing multiple layers of insulation, FAST Dual-Tank beads shall be placed perpendicular to those placed for attachment of the previous layer
- Flexible FAST (FULL): Continuous ribbons, 4-inch o.c. or spray-applied at 1 gal./square.
- Flexible FAST (SPLATTER): Splatter-applied at 0.5 gal/square (wet) = 4.7 lb/square (dry)
- Flexible FAST (RIBBON): Continuous ribbons, 12-inch o.c.
- Flexible FAST Dual-Tank (Flexible FAST DT) (FULL): Continuous ribbons, 4-inch o.c. or spray-applied at 1 gal./square.
- Flexible FAST Dual-Tank (Flexible FAST DT) (RIBBON): Continuous ribbons, 12-inch o.c.
- OlyBond 500 (OB500): Continuous ribbons, 12-inch o.c. using PaceCart, SpotShot or Canisters. Note: OlyBond 500 Green may be used where OlyBond 500 is referenced.
- *Note: FULL applications may be used where RIBBON applications are referenced.*
- *Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, board joints shall be staggered.*
- *Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.*

7 Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table.

- FAST 100LV or Flexible FAST: MDP = -157.5 psf (Min. 0.5-inch thick)
- OlyBond 500 (OB500): MDP = -187.5 psf (Min. 0.5-inch thick)

8 For adhered roof insulation and board-size: Unless otherwise noted, refer to Section 2.2.10.6.2 of FM Loss Prevention Data Sheet 1-29 (February 2020).

9 For mechanically attached components or partially-bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with FBC Chapter 16. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are ANSI/SPRI WD1, FM Loss Prevention Data Sheet 1-29, Roofing Application Standard RAS 117 and Roofing Application Standard RAS 137. Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (February 2020) for Zone 2/3 enhancements.

10 For assemblies with all components fully bonded, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16. No rational analysis is permitted for these systems.

11 For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with ANSI/SPRI FX-1 or Testing Application Standard TAS 105.

12 For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance shall be conducted on mock-ups of the proposed new roof assembly. For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing. Field uplift testing shall be in accordance with ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.

13 Refer to FBC 1511 for requirements and limitations regarding recover installations. For Structural Concrete Deck or Recover Applications using System Type C-1, C-2, D-1 or D-2, the insulation is optional. Alternatively, an FBC Approved insulation board or coverboard may be used as a separation layer. Board products shall be preliminarily attached prior to roof cover installation (Note 5 herein). The separator component shall be documented as meeting FBC 1505 and, for foam plastic, FBC Chapter 26, when installed with the roof cover in Recover applications.

14 Lightweight insulating concrete (LWIC) shall be cast in accordance with FBC Section 1917 to the satisfaction of the Authority Having Jurisdiction. For systems where specific LWIC is referenced, refer to current LWIC Product Approval for specific deck construction and limitations. Unless otherwise noted, for systems where specific LWIC is not referenced, the minimum design mix shall be 300 psi. In all cases, the minimum top-coat thickness is 2-inches. For LWIC over structural concrete, reference is made to FBC Section 1917.4.1, Point 1. For "pre-existent" LWIC references, listings were established through testing over lightweight concrete cast using only foaming agent (ASTM C896), water and Portland cement (ASTM C150), with no proprietary additives, in accordance with procedures adopted by Miami-Dade BCCO (FBC CER1592). Use of these listings in new construction or re-roof (tear-off) applications is at the discretion of the Designer or Record and Authority Having Jurisdiction.

15 For bonded membrane applications, unless otherwise noted, refer to the following.

MEMBRANE / ADHESIVE COMBINATIONS			
MEMBRANE	**ADHESIVE**	**APPLICATION**	**RATE**
Sure-Weld or Sure-Weld HS	Sure-Weld Bonding Adhesive	Contact (both sides)	60 ft^2/gal
Sure-Weld or Sure-Weld HS	Aqua Base 120 Bonding Adhesive (Aqua Base 120)	Contact (both sides)	120 ft^2/gal
Sure-Weld or Sure-Weld HS	Low VOC Bonding Adhesive (LVOC BA)	Contact (both sides)	60 ft^2/gal
Sure-Weld or Sure-Weld HS	Sure-Seal 90-8-30A Bonding Adhesive	Contact (both sides)	60 ft^2/gal
Sure-Weld	CAV-GRIP III Adhesive/Primer (CAV-GRIP III AP)	Contact (both sides)	110 ft^2/gal
Sure-Weld FleeceBACK	Aqua Base 120 Bonding Adhesive	Wet lay (substrate)	120 ft^2/gal
Sure-Weld FleeceBACK	HydroBond Water-Based Adhesive (HydroBond WB)	Wet lay (substrate)	100 to 133 ft^2/gal
Sure-Weld FleeceBACK	FAST 100LV, FAST Dual-Tank (FAST DT)	Wet lay (substrate)	RIBBON spaced as noted herein or FULL Coverage = 1 gal/square or continuous ribbons, maximum 4-inch o.c.
Sure-Weld FleeceBACK	Flexible FAST	Wet lay (substrate)	RIBBON spaced as noted herein or FULL Coverage = 1 gal/square or continuous ribbons, maximum 4-inch o.c. or splatter-applied at 0.5 gal/square (wet) = 4.7 lb/square (dry)

MEMBRANE / ADHESIVE COMBINATIONS			
MEMBRANE	**ADHESIVE**	**APPLICATION**	**RATE**
Sure-Weld FleeceBACK	Flexible FAST Dual-Tank (Flexible FAST DT)	Wet lay (substrate)	RIBBON spaced as noted herein or FULL Coverage = 1 gal/square, continuous ribbons, maximum 4-inch o.c. or splatter-applied at 0.4 gal/square (wet) = 3.7 lb/square (dry)
Sure-Weld AFX	Carlisle Cold Applied Adhesive (C-CAA)	Wet lay (substrate)	1.5 gal/square
Sure-Weld AFX	Hot asphalt	Wet lay (substrate)	25 lbs/square
Sure-Weld FleeceBACK® RL™	VELCRO® Brand Securable Solutions	Only for use over InsulBase RL or SecurShield HD RL substrates. Roof cover is broomed into place and rolled with 150 lb roller to establish contact.	

15A For single-ply membranes in System Type D-1 steel deck applications, the roof membrane shall be run with its length perpendicular to the steel deck flutes.

15B For System Type C-2 (induction weld), care shall be taken to ensure that the plates do not line-up with membrane seams. This condition may preclude proper induction welding of the membrane to the plates.

16 Vapor barrier options for use over structural concrete deck followed by bonded insulation carry the following MDP limitations. The lesser of the MDP listings below vs. those in Table 3A applies.

VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK; FOLLOWED BY ADHESIVE-APPLIED INSULATION PER TABLE 3A OR 3B:					
OPTION #	**PRIMER**	**VAPOR BARRIER**		**INSULATION ADHESIVE**	**MDP (PSF)***
		TYPE	**APPLICATION**		
C-VB-1.	702 Primer, 702 LV Primer, CAV-GRIP Primer or CAV-GRIP III LVOC-AP	VapAir Seal 725TR	Self-adhering	Flexible FAST (RIBBONS, 12-inch o.c.)	-157.5
C-VB-2.	702 Primer, 702 LV Primer, CAV-GRIP Primer or CAV-GRIP III LVOC-AP	VapAir Seal 725TR	Self-adhering	Flexible FAST DT (RIBBONS, 12-inch o.c.)	-172.5
C-VB-3.	702 Primer, 702 LV Primer, CAV-GRIP Primer or CAV-GRIP III LVOC-AP	VapAir Seal 725TR	Self-adhering	Flexible FAST or Flexible FAST DT (RIBBONS, 6-inch o.c.)	-270.0
C-VB-4.	CAV-GRIP Primer or CAV-GRIP III LVOC-AP	VapAir Seal 725TR	Self-adhering	Flexible FAST (FULL COVERAGE, 1 gal/square)	-427.5
C-VB-5.	ASTM D41	SureMB 90 Base	Hot-asphalt	Hot asphalt at 25 lbs/square	-172.5
C-VB-6.	ASTM D41	SureMB 90TG or 120TG Base	Torch-applied	Hot asphalt at 25 lbs/square	-180.0
C-VB-7.	ASTM D41	SureMB 90TG or 120TG Base	Torch-applied	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-307.5
C-VB-8.	ASTM D41	SureMB 90TG or 120TG Base	Torch-applied	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-495.0

17 The following products are interchangeable within the scope of this Evaluation Report:

ACCEPTABLE ALTERNATES	
Listed Product	**Alternate**
Sure-Weld	Sure-Weld EXTRA and Sure-Weld HS
Sure-Weld FleeceBACK	Includes 100, 115 and 135
Sure-Weld AFX	Includes AFX 120, AFX 135 and AFX 155
InsulBase	InsulBase NH, H-Shield, H-Shield NH
SecurShield	SecurShield NH, H-Shield CG, H-Shield CG NH
SecurShield HD	SecurShield HD NH, H-Shield ND, H-Shield HD NH
SecurShield HD Plus	SecurShield HD Plus NH, H-Shield HD90, H-Shield HD90 NH
SecurShield HD Composite	H-Shield HD Composite
StormBase	H-Shield NB

18 For System Types B-1, B-2, C-1, C-2, D-1 or Type D-2, VapAir Seal MD may be installed atop the roof deck prior to installation of the insulation and roof cover. Refer to FM Loss Prevention Data Sheet 1-29 (February 2020) for design and installation recommendations.

19 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind loads

TABLE 1A: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER									
System No.	Deck (Note 1)	Vapor Barrier	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:									
W-1.	7/16-inch APA rated OSB; 2 ft spans	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
W-2.	7/16-inch APA rated OSB; 2 ft spans	None	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
W-3.	Min. 15/32-inch APR rated CDX plywood; 2 ft spans	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5
W-4.	Min. 15/32-inch APR rated CDX plywood; 2 ft spans	None	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):									
W-5.	7/16-inch APA rated OSB; 2 ft spans	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-45.0*
W-6.	7/16-inch APA rated OSB; 2 ft spans	None	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-45.0*
W-7.	Min. 15/32-inch APR rated CDX plywood; 2 ft spans	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-67.5
W-8.	Min. 15/32-inch APR rated CDX plywood; 2 ft spans	None	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-67.5

TABLE 1B: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:							
W-9.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Carlisle InsulFast with SecurFast Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-30.0
W-10.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5
W-11.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
W-12.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.7 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0
W-13.	Min. 23/32-inch plywood	(Optional) One or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 3.2 ft²	Sure-Weld / CAV-GRIP III AP or LVOC BA	-45.0*
W-14.	Min. 19/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch ACFoam II, InsulBase, SecurShield or ENRGY 3	Note 2	1 per 2.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*
W-15.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
W-16.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Carlisle InsulFast with Insulation Fastening Plate	1 per 1.8 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5
W-17.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):							
W-18.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Carlisle InsulFast with SecurFast Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-30.0
W-19.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-37.5
W-20.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-45.0*
W-21.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.7 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-45.0

TABLE 1B: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
W-22.	Min. 23/32-inch plywood	(Optional) One or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 3.2 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-45.0*
W-23.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-60.0
W-24.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Carlisle InsulFast with Insulation Fastening Plate	1 per 1.8 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-67.5
W-25.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) One or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Carlisle InsulFast with Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-75.0

TABLE 1C: WOOD DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
RHINOBOND SYSTEMS:						
W-26.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 6 ft² (2 x 3 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-22.5*
W-27.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-30.0
W-28.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5*
W-29.	Min. 19/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 6 ft² (2 x 3 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0*

TABLE 1C: WOOD DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
W-30.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 2.7 ft² (12 parts per 4x8 ft board)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
W-31.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-60.0
W-32.	Min. 19/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 2.7 ft² (12 parts per 4x8 ft board)	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-67.5
ISOWELD INDUCTION WELDING SYSTEM:						
W-33.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 6 ft² (2 x 3 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-22.5*
W-34.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-30.0
W-35.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5*
W-36.	Min. 19/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 6 ft² (2 x 3 ft grid pattern)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0*
W-37.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 2.7 ft² (12 parts per 4x8 ft board)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0
W-38.	Min. 15/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-60.0
W-39.	Min. 19/32-inch plywood or wood plank	(Optional) One or more layers, any combination, loose laid	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 2.7 ft² (12 parts per 4x8 ft board)	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-67.5

TABLE 1D: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
W-40.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	One or more layers, any combination	Prelim. Attach	Sure-Weld, min. 60-mil or Sure-Weld FleeceBACK FR	Carlisle HP-X Fasteners and Piranha Plates	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-22.5
W-41.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	One or more layers, any combination	Prelim. Attach	Sure-Weld, min. 60-mil or Sure-Weld FleeceBACK FR	Carlisle HP-X Fasteners and Piranha Plates	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
W-42.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	One or more layers, any combination	Prelim. attach	Sure-Weld, min. 60-mil	Carlisle HP-XTRA Fasteners and Piranha XTRA Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-45.0
W-43.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	One or more layers, any combination	Prelim. attach	Sure-Weld FleeceBACK FR	Carlisle HP-XTRA Fasteners and Piranha XTRA Plates	6-inch o.c.	5.5-inch	54.5-inch o.c.	1.5-inch outside	-45.0
W-44.	Min. 19/32-inch plywood or wood plank; 2-ft spans	One or more layers, any combination	Prelim. attach	Sure-Weld	Carlisle HP-X Fasteners and Piranha Plates or #15 Roofgrip with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-52.5
W-45.	Min. 19/32-inch plywood or wood plank; 2-ft spans	One or more layers, any combination	Prelim. attach	Sure-Weld	Carlisle HP-X Fasteners and Piranha Plates or #15 Roofgrip with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	66.5-inch o.c.	1.5-inch outside	-67.5

TABLE 1E: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-2: INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER									
System No.	Deck (Note 1)	Insulation (Note 13)		Base Sheet			Roof Cover (Note 15)		MDP (psf)
		Type	Attach	Base Sheet	Fasteners (Note 11)	Attach	Membrane	Adhesive	
W-46.	Min. 19/32-inch plywood; 2-ft spans	One or more layers, any combination	Loose-laid	Atlas Summit Synthetic Underlayment	Carlisle #12 InsulFast and Sure-Seal Seam Fastening Plates	12-inch o.c. at the 4-inch laps and 12-inch o.c. at three, equally spaced rows in the center of the sheet.	Sure-Weld SAT-TPO	Self-adhered	-120.0

TABLE 1F: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE E-1: NON-INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Thermal Barrier		Roof Cover (Note 15)						MDP (psf)
		Type	Attach	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
W-47.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	(Optional) Any approved thermal barrier	Loose-laid	Sure-Weld, min. 60-mil or Sure-Weld FleeceBACK FR	Carlisle HP-X Fasteners and Piranha Plates	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-22.5
W-48.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	(Optional) Any approved thermal barrier	Loose-laid	Sure-Weld, min. 60-mil or Sure-Weld FleeceBACK FR	Carlisle HP-X Fasteners and Piranha Plates	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
W-49.	Min. 19/32-inch CDX plywood or wood plank; 2-ft spans	(Optional) Any approved thermal barrier	Loose-laid	Sure-Weld, min. 60-mil	Carlisle HP-XTRA Fasteners and Piranha XTRA Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-45.0
W-50.	Min. 19/32-inch CDX plywood or wood plank; 2 ft spans	(Optional) Any approved thermal barrier	Loose-laid	Sure-Weld FleeceBACK FR	Carlisle HP-XTRA Fasteners and Piranha XTRA Plates	6-inch o.c.	5.5-inch	54.5-inch o.c.	1.5-inch outside	-45.0
W-51.	Min. 19/32-inch plywood; 2-ft spans	(Optional) Any approved thermal barrier	Loose-laid	Sure-Weld or Sure-Weld FleeceBACK FR	Carlisle HP-X Fasteners and Piranha Plates or #15 Roofgrip with 2-3/8" Eyehook Seam Plates (AccuSeam) installed through wood sheathing to engage structural members	6-inch o.c.	5.5-inch	48-inch o.c. (over structural members)	1.5-inch outside	-75.0

TABLE 1G: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER									
System No.	Deck (Note 1)	Thermal Barrier		Base Sheet			Roof Cover (Note 15)		MDP (psf)
		Type	Attach	Base Sheet	Fasteners (Note 11)	Attach	Membrane	Adhesive	
W-52.	Min. 19/32-inch plywood; 2-ft spans	(Optional) Any approved thermal barrier	Loose-laid	Atlas Summit Synthetic Underlayment	Carlisle #12 InsulFast and Sure-Seal Seam Fastening Plates	12-inch o.c. at the 4-inch laps and 12-inch o.c. at three, equally spaced rows in the center of the sheet.	Sure-Weld SAT-TPO	Self-adhered	-120.0

TABLE 1H: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE G: OPTIONAL INSULATION, LOOSE-LAID ROOF COVER, PRESSURE EQUALIZING VENT							
System No.	Deck (Note 1)	Air Barrier	Insulation	Underlayment	Roof Cover		MDP (psf)
					Type	Attach	
W-53.	Min. 15/32-inch, Type B-C plywood	All joints and penetrations sealed with VapAir Seal 725TR in accordance with Carlisle requirements.	(Optional) Any fire classified roof insulation and/or coverboard combination, any thickness, loose-laid with staggered joints	12-inch wide strips of polypropylene, air permeable filter fabric, loose laid in a crossing pattern, connecting the VacuSeal Vents	Sure-Weld or Sure-Weld HS	VacuSeal Vent installed in accordance with Carlisle instructions, spaced maximum 50 ft o.c.	-97.5

NEMO|etc.

TABLE 2A: STEEL DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER									
System No.	Deck (Note 1)	Vapor Barrier	Base Insulation Layer		Top Insulation Layer		Roof Cover (Note 15)		MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:									
SC-1	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-52.5
SC-2	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-75.0
SC-3	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or min. 1.5-inch SecurShield, SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA or Sure-Weld BA	-82.5
SC-4	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield and/or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-82.5
SC-5	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-82.5
SC-6	Min. 22 ga., type B, Grade 33 steel	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	None	N/A	Sure-Weld	CAV-GRIP III AP or Sure-Weld BA	-105.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):									
SC-7	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield and/or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-8	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield and/or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond W-B	-82.5

TABLE 2A: STEEL DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Vapor Barrier	Base Insulation Layer		Top Insulation Layer		Roof Cover (Note 15)		MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
SC-9	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-10	Min. 22 ga., type B, Grade 33 steel	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-105.0
SURE-WELD FLEECEBACK® RL™ APPLICATIONS:									
SC-11	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	None	N/A	Sure-Weld FleeceBACK® RL™		-82.5
SC-12	Min. 22 ga., type B, Grade 33 steel	(Optional) VapAir Seal MD, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD RL or min. 1.5-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK® RL™		-82.5
SC-13	Min. 22 ga., type B, Grade 33 steel	None	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c. @ every deck flange)	Min. 0.5-inch SecurShield HD RL	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK® RL™		-105.0

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
SC-14	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 2.0-inch Insulfoam VIII	Note 2	1 per 2.7 ft²	Min. 1.5-inch Insulam (OSB)	Flexible FAST (RIBBON, 6-inch o.c.)	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-37.5*
SC-15	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	Flexible FAST (RIBBON, FULL or SPLATTER)	Sure-Weld / Sure-Weld BA	-37.5*

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-16	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON or FULL) or Flexible FAST (SPLATTER)	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-17	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 2.0-inch Insulfoam VIII	Note 2	1 per 2.0 ft²	Min. 2.0-inch Insulfoam HD Composite	Flexible FAST (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-18	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-45.0
SC-19	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-52.5
SC-20	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Seal 90-8-30A BA	-52.5
SC-21	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-60.0
SC-22	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
SC-23	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-67.5

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-24	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-75.0
SC-25	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 3.0-inch Insulfoam VIII	Note 2	1 per 2.0 ft²	Min. 1.5-inch Insulam (OSB)	FAST 100LV, FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-75.0
SC-26	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld / Sure-Seal 90-8-30A BA	-75.0
SC-27	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-82.5
SC-28	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-82.5
SC-29	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-82.5
SC-30	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-90.0

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-31	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-112.5
SC-32	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld (min. 60-mil) / CAV-GRIP III AP or Sure-Weld BA	-135.0
SC-33	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck or DensDeck Prime	Note 2	1 per 2.0 ft²	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3 followed by Min. 0.25-inch DensDeck Prime	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-37.5*
SC-34	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5*
SC-35	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 2.0 ft²	Additional layers of base insulation	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-36	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	OB500	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-37	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck, DensDeck Prime	OB500	Sure-Weld / Aqua Base 120 or Sure-Weld BA	-45.0*
SC-38	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	Sure-Weld / CAV-GRIP III AP	-45.0*
SC-39	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck or DensDeck Prime	Note 2	1 per 2.0 ft²	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-40	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 4.0 ft²	Additional layers of base insulation	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-41	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	OB500	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-42	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck, DensDeck Prime	OB500	Sure-Weld / Aqua Base 120 or Sure-Weld BA	-45.0*
SC-43	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	Sure-Weld / CAV-GRIP III AP	-45.0*
SC-44	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-45	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 2.7 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-46	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
SC-47	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch Dens Deck followed by min. 2.0-inch Insulfoam VIII	Note 2	1 per 2.7 ft²	Min. 1.5-inch Insulam (OSB)	Flexible FAST (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-37.5*
SC-48	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	One or more layers Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3, or AC Foam II	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-37.5*

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-49	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	One or more layers Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-37.5*
SC-50	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck or DensDeck Prime	Note 2	1 per 2.0 ft²	Min. 1.5-inch Kingspan GreenGuard Extruded Polystyrene followed by min. 0.25-inch DensDeck Prime	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-37.5*
SC-51	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	One or more layers Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3, or AC Foam II	Note 2	1 per 2.0 ft²	Additional layers of base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-52	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	One or more layers Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 2.0 ft²	Additional layers of base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-53	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Min. 1.5-inch additional layers of base insulation or min. 2-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON or FULL) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-54	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Min. 1-inch additional layers of base insulation or min. 2-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON or FULL) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-55	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON or FULL) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-56	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON or FULL) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-57	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 3.0-inch Insulfoam VIII	Note 2	1 per 2.0 ft²	Min. 1.5-inch Insulam (OSB)	FAST 100LV, FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / FAST 100LV, Flexible FAST, FAST DT or Flexible FAST DT (RIBBON, 6-inch o.c.)	-75.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-58	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 2.0-inch Insulfoam VIII	Note 2	1 per 2.7 ft²	Min. 1.5-inch Insulam (OSB)	Flexible FAST (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / AquaBase 120 or Flexible FAST or Flexible FAST DT (FULL)	-37.5*
SC-59	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 2.0-inch Insulfoam VIII	Note 2	1 per 2.0 ft²	Min. 2.0-inch Insulfoam HD Composite	Flexible FAST (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-60	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL).	-45.0*
SC-61	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.0-inch base insulation	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-62	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-63	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.0-inch base insulation	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-64	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2.0-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-65	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0
SC-66	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-52.5

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-67	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-60.0
SC-68	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-60.0
SC-69	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-67.5
SC-70	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-67.5
SC-71	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 0.5-inch DensDeck followed by min. 3.0-inch Insulfoam VIII	Note 2	1 per 2.0 ft²	Min. 1.5-inch Insulam (OSB)	FAST 100LV, FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / AquaBase 120	-75.0
SC-72	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-75.0
SC-73	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Min. 1.0-inch base insulation or minimum 2-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-74	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-82.5
SC-75	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-82.5

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-76	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-82.5
SC-77	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-78	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-90.0
SC-79	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime, SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-112.5
SC-80	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-112.5
SC-81	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-135.0
SURE-WELD FLEECEBACK® RL™ APPLICATIONS:								
SC-82	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD RL	Flexible FAST or Flexible FAST DT (FULL) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK® RL™	-45.0*
SC-83	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD RL	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK® RL™	-52.5

TABLE 2B: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)		
SC-84	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 1.3 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD RL	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK® RL™	-82.5
SC-85	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD RL	Flexible FAST or Flexible FAST DT (FULL)	Sure-Weld FleeceBACK® RL™	-112.5

TABLE 2C: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED BASE PLY, BONDED ROOF COVER									
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)	Base Ply	Top Ply	
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):									
SC-86	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90 Base / US Ply Duraflex 901 Premium SBS Modified Adhesive	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-87	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-88	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-75.0
SURE-WELD AFX MEMBRANE APPLICATIONS:									
SC-89	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Hot asphalt	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-45.0*

TABLE 2C: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-1: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED BASE PLY, BONDED ROOF COVER									
System No.	Deck (Note 1)	Base Insulation Layer			Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Fastener (Note 11)	Attach	Type	Attach (Notes 6,7,8)	Base Ply	Top Ply	
SC-90	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Hot asphalt	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-60.0
SC-91	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-45.0*
SC-92	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-45.0*
SC-93	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-45.0*
SC-94	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 2.0 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-45.0*
SC-95	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	OB500, 6-inch o.c.	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-60.0

TABLE 2D: STEEL DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE B-2: MECHANICALLY ATTACHED THERMAL BARRIER, BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER												
System No.	Deck (Note 1)	Thermal Barrier			Primer	Vapor Barrier	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fasten (Note 11)	Attach			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:												
SC-96	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-97	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime	InsulFast with Insulation Fastening Plate	1 per 4.0 ft²	None	SureMB 90TG or SureMB 120TG, torch-applied	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	(Optional) Additional layers base insulation	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-98	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layers base insulation	Flexible FAST (RIBBON)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-52.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):												
SC-99	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch SecurShield HD Composite	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-100	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-45.0*
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):												

TABLE 2D: STEEL DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE B-2: MECHANICALLY ATTACHED THERMAL BARRIER, BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Thermal Barrier			Primer	Vapor Barrier	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fasten (Note 11)	Attach			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
SC-101	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST, Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST, Flexible FAST DT (RIBBON, 6-inch o.c.) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-102	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime	InsulFast with Insulation Fastening Plate	1 per 4.0 ft²	None	SureMB 90TG or SureMB 120TG, torch-applied	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	(Optional) Additional layers base insulation	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-103	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch DensDeck Prime or min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	CAV-GRIP Primer	VapAir Seal 725TR, self-adhering	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-52.5

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:							
SC-104	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.25-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 3.2 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-30.0*
SC-105	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 5.3 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-30.0*

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-106	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Steel: InsulFast with ACCUTRAC Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with ACCUTRAC Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-30.0*
SC-107	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Trufast SIP LD Fasteners	1 per 3.2 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-37.5*
SC-108	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1-inch ACFoam II or ENRGY 3	Note 2	1 per 1.6 ft²	Sure-Weld / Aqua Base 120 or Sure-Weld BA	-37.5*
SC-109	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.7 ft²	Sure-Weld / CAV-GRIP III AP or LVOC BA	-37.5*
SC-110	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 2.7 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5*
SC-111	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.7 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5*
SC-112	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch thick, one or more layers, any combination, loose laid	Min. 0.25-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	InsulFAST Fastener with SecurFAST Insulation Fastening Plate	1 per 2.7 ft²	Sure-Weld / Sure-Weld BA	-37.5*
SC-113	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 5.3 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5*
SC-114	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.625-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 5.3 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5*
SC-115	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.625-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	OMG #12 Standard, OMG #14 Heavy Duty, OMG XHD, OMG #12 Roofgrip, OMG #14 Roofgrip or OMG #15 Roofgrip with OMG 3 in. Galvalume Steel Plate	1 per 5.3 ft²	Sure-Weld / Sure-Weld BA	-45.0*

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-116	Min. 22 ga., type B, Grade 33 steel	Min. 0.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	InsulFAST Fastener with SecurFAST Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld / Sure-Weld BA	-45.0*
SC-117	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-118	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.25-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	OMG #12 Standard, OMG #14 Heavy Duty, OMG XHD, OMG #12 Roofgrip, OMG #14 Roofgrip or OMG #15 Roofgrip with OMG 3 in. Galvalume Steel Plate	1 per 3.2 ft²	Sure-Weld / Sure-Weld BA	-45.0*
SC-119	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	HP Fastener with Insulation Fastening Plate	1 per 3.2 ft²	Sure-Weld / Sure-Weld BA	-45.0*
SC-120	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 2.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-121	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.375-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-122	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-123	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.50-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 3.2 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-124	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 5.3 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-125	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 4.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-126	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Trufast SIP LD Fasteners	1 per 2.7 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-127	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 3.6 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-128	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, or Sure-Weld BA	-45.0*
SC-129	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 2.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, or Sure-Weld BA	-45.0*
SC-130	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-131	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch SecurShield HD Composite	Note 2	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-132	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 4.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, or Sure-Weld BA	-45.0*
SC-133	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 4.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-134	Min. 22 ga., type B, Grade 40 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-45.0

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-135	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Steel: InsulFast with ACCUTRAC Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with ACCUTRAC Fastening Plate	1 per 2.9 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-45.0*
SC-136	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 2.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-137	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 4.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-45.0*
SC-138	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.25-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-52.5
SC-139	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.9 ft²	Sure-Weld / Aqua Base 120	-52.5
SC-140	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 1.8 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
SC-141	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch DensDeck Prime	Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-60.0
SC-142	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 1.0 ft²	Sure-Weld / Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
SC-143	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5
SC-144	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	OMG #12 Standard, OMG #14 Heavy Duty, OMG XHD, OMG #12 Roofgrip, OMG #14 Roofgrip or OMG #15 Roofgrip with OMG 3 in. Galvalume Steel Plate	1 per 1.3 ft²	Sure-Weld / Sure-Weld BA	-67.5

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-145	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.9 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-75.0
SC-146	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min 2.0-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	Note 2	1 per 1.6 ft²	Sure-Weld / Sure-Weld BA	-75.0
SC-147	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min 2.0-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP	-75.0
SC-148	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
SC-149	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
SC-150	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP or LVOC BA	-75.0
SC-151	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-82.5
SC-152	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-82.5
SC-153	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP	-82.5
SC-154	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	HP Fastener with Insulation Fastening Plate	1 per 1.0 ft²	Sure-Weld / Sure-Weld BA	-97.5
SC-155	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.0 ft²	Sure-Weld / Sure-Weld BA	-97.5
SC-156	Min. 20 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.3 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-112.5

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-157	Min. 18 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.3 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-112.5
SC-158	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 1.3 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA or LVOC BA	-112.5
SC-159	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-112.5
SC-160	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min 2-inch SecurShield	Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP or Sure-Weld BA	-120.0
SC-161	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP or LVOC BA	-127.5
SC-162	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-127.5
SC-163	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2.0-inch SecurShield	Note 2	1 per 1.0 ft²	Sure-Weld / CAV-GRIP III AP or LVOC BA	-127.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):							
SC-164	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 3.2 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-165	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-166	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2-inch SecurShield HD Composite	Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SC-167	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch DensDeck Prime	Note 2	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0*
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):							

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-168	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.25-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 3.2 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-30.0*
SC-169	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 5.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-30.0*
SC-170	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Steel: InsulFast with ACCUTRAC Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with ACCUTRAC Fastening Plate	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-30.0*
SC-171	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 5.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-37.5*
SC-172	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 2.7 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-37.5*
SC-173	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch InsulBase, SecurShield	Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-174	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch InsulBase, SecurShield	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-175	Min. 22 ga., type B, Grade 40 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch InsulBase	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0
SC-176	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-177	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 1.5-inch SecurShield HD Composite	Note 2	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-178	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-179	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-180	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 3.2 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-181	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.375-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-182	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 5.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-183	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-45.0*
SC-184	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Steel: InsulFast with ACCUTRAC Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with ACCUTRAC Fastening Plate	1 per 2.9 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*
SC-185	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 2.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-45.0*

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-186	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.25-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-52.5
SC-187	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch DensDeck Prime	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-60.0
SC-188	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with SecurFast Insulation Fastening Plate Concrete: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with SecurFast Insulation Fastening Plate	1 per 1.0 ft²	Sure-Weld FleeceBACK / FAST DT or Flexible FAST DT (FULL)	-60.0
SC-189	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 1.8 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-60.0
SC-190	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-67.5
SC-191	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min 2.0-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-75.0
SC-192	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-75.0
SC-193	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond WB	-75.0
SC-194	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-75.0
SC-195	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.9 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-75.0
SC-196	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-82.5

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SC-197	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-198	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 15/32-inch OSB	Note 2	1 per 1.9 ft² (Carlisle A-27F)	Sure-Weld FleeceBACK / Aqua Base 120, HydroBond W-B	-82.5
SC-199	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	0.5-inch EcoStorm VSH	Steel: InsulFast Fasteners and Insulation Fastening Plates or SecurFast Insulation Fastening Plates Concrete: Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-82.5
SC-200	Min. 20 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.625-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-112.5
SC-201	Min. 18 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 2-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-112.5
SC-202	Min. 22 ga., type B, Grade 33 steel or structural concrete	Min. 1.5-inch InsulBase, HP-N or HP-W, SecurShield, ENRGY 3 or ACFoam II	Min. 0.5-inch SecurShield HD Plus or EcoStorm VSH	Note 2	1 per 1.3 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-112.5
SC-203	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Min 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-127.5
SC-204	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min 2-inch SecurShield	Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-135.0
SC-205	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 7/16-inch APA or TECO rated OSB	Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-135.0
SC-206	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-135.0
SC-207	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	0.5-inch EcoStorm VSH	Steel: InsulFast Fasteners and Insulation Fastening Plates or SecurFast Insulation Fastening Plates Concrete: Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK (min. 60-mil) / Flexible FAST or Flexible FAST DT (FULL)	-135.0
SC-208	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch SecurShield HD Composite	Note 2	1 per 1.0 ft²	Sure-Weld FleeceBACK / Flexible FAST DT (FULL)	-157.5

TABLE 2E: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
System No.	Deck (Note 1)	Base Insulation Layer (Optional for Structual Concrete or Recover, Note 13)	Top Insulation Layer			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach		
SURE-WELD SAT-TPO MEMBRANE APPLICATIONS:							
SC-209	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2-inch Insulfoam SP	Note 2	1 per 2.7 ft²	Sure-Weld SAT-TPO, self-adhered	-30.0*
SC-210	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2-inch Insulfoam SP	Note 2	1 per 2.0 ft²	Sure-Weld SAT-TPO, self-adhered	-45.0*
SC-211	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min 7/16-inch APA or TECO rated OSB	Note 2	1 per 2.0 ft²	Sure-Weld SAT-TPO, self-adhered	-45.0*
SC-212	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 1.5-inch InsulBase, SecurShield	Note 2	1 per 2.0 ft²	Sure-Weld SAT-TPO, self-adhered	-45.0*
SC-213	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 2.0-inch InsulBase, SecurShield	Note 2	1 per 1.6 ft²	Sure-Weld SAT-TPO, self-adhered	-60.0
SURE-WELD FLEECEBACK® RL™ APPLICATIONS:							
SC-214	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch InsulBase RL	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 4.0 ft²	Sure-Weld FleeceBACK® RL™	-45.0*
SC-215	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min., 1.5-inch InsulBase, SecurShield, loose-laid	Min. 0.5-inch SecurShield HD RL	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 2.0 ft²	Sure-Weld FleeceBACK® RL™	-45.0*
SC-216	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	(Optional) One or more layers, any combination, loose laid	Min. 2.0-inch InsulBase RL	Steel: InsulFast with Insulation Fastening Plate or SecurFast Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	Sure-Weld FleeceBACK® RL™	-75.0

TABLE 2F: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE C-1: MECHANICALLY ATTACHED INSULATION, BONDED BASE PLY, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer (Note 13)	Top Insulation Layer			Roof Cover (Note 15)		MDP (psf)
			Type	Fasteners (Note 11)	Attach	Base Ply	Top Ply	
SURE-WELD AFX MEMBRANE APPLICATIONS:								
SC-217	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.8 ft²	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-67.5
SC-218	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch DensDeck Prime	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.6 ft²	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-75.0
SC-219	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Note 2	1 per 1.6 ft²	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-75.0
SC-220	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, loose laid	Min. 0.5-inch SECUROCK Gypsum-Fiber Roof Board	Steel: InsulFast with Insulation Fastening Plate Concrete: Note 2	1 per 1.0 ft²	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-120.0

TABLE 2G: STEEL DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
RHINOBOND SYSTEMS:						
SC-221	Min. 22 ga., type B, Grade 33 steel	Min. 1-inch thick, one or more layers, any combination. Note A.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 5.3 ft² (6 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note B	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
SC-222	Min. 22 ga., type B, Grade 33 steel, 7 ft span, HILTI X-HSN 24, 6" o.c. Side laps HILTI S-SLC 01 M HWH, 24" o.c.	Min. 1-inch thick, one or more layers, any combination. Note C.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
SC-223	Min. 22 ga., type B, Grade 33 steel, 7 ft span, 5/8" puddle welds, 6" o.c. Side laps ITW HWH #12 Teks 1, 24" o.c.	Min. 1-inch thick, one or more layers, any combination. Note C.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5

TABLE 2G: STEEL DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
SC-224	Min. 22 ga., type B, Grade 33 steel	Min. 1-inch thick, one or more layers, any combination. Note A.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (8 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note B	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
SC-225	Min. 22 ga., type B, Grade 40 steel; 6 ft spans; 5/8" puddle welds 6" o.c.	Min. 1.5-inch thick, one or more layers, any combination	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
SC-226	Min. 22 ga., type B, Grade 80 steel	Min. 1-inch thick, one or more layers, any combination. Note A.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (8 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note B	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-60.0
SC-227	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination. Note C.	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 2.0 ft² (16 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-97.5
SC-228	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 120-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-30.0
SC-229	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 120-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
SC-230	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
SC-231	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
SC-232	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 120-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5

TABLE 2G: STEEL DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
SC-233	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HP-X Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-67.5
ISOWELD INDUCTION WELDING SYSTEM:						
SC-234	Min. 22 ga., type B, Grade 33 steel	Min. 1-inch thick, one or more layers, any combination. Note A.	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 5.3 ft² (6 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note B	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0
SC-235	Min. 22 ga., type B, Grade 33 steel, 7 ft span, HILTI X-HSN 24, 6" o.c. Side laps HILTI S-SLC 01 M HWH, 24" o.c.	Min. 1-inch thick, one or more layers, any combination. Note C.	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-236	Min. 22 ga., type B, Grade 33 steel, 7 ft span, 5/8" puddle welds, 6" o.c. Side laps ITW HWH #12 Teks 1, 24" o.c.	Min. 1-inch thick, one or more layers, any combination. Note C.	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-237	Min. 22 ga., type B, Grade 33 steel	Min. 1-inch thick, one or more layers, any combination. Note A.	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (8 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note B	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-238	Min. 22 ga., type B, Grade 40 steel; 6 ft spans; 5/8" puddle welds 6" o.c.	Min. 1.5-inch thick, one or more layers, any combination	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² (2 x 2 ft grid pattern)	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-239	Min. 22 ga., type B, Grade 40 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 6 ft² 2x3-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-240	Min. 22 ga., type B, Grade 80 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#12-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 6 ft² 2x3-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
SC-241	Min. 22 ga., type B, Grade 40 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² 2x2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-60.0
SC-242	Min. 22 ga., type B, Grade 80 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#12-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² 2x2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-60.0

TABLE 2G: STEEL DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
SC-243	Min. 22 ga., type B, Grade 40 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 3.0 ft² 1.5 x 2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-82.5
SC-244	Min. 22 ga., type B, Grade 80 steel	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#12-PH3 DP with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 3.0 ft² 1.5 x 2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-82.5
SC-245	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, 4x8 ft dimension, one or more layers, any combination	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 2.25 ft² 1.5 x 1.5-ft grid (first row of fasteners spaced 0.5 ft from long edges and 1 ft from the short edge)	Sure-Weld or Sure-Weld EXTRA bonded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-97.5
SC-246	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch thick, one or more layers, any combination. Note C.	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 2.0 ft² (16 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-97.5
SC-247	Min. 22 ga., type B, Grade 40 steel	One or more layers, any combination, min. 1.5-inch, preliminarily attached	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5
SC-248	Min. 22 ga., type B, Grade 80 steel	One or more layers, any combination, min. 1.5-inch, preliminarily attached	Dekfast DF-#12-PH3 DP with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5
SC-249	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	6-inch o.c. in rows 120-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5
SC-250	Min. 22 ga., type B, Grade 80 steel	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0
SC-251	Min. 22 ga., type B, Grade 40 steel	One or more layers, any combination, min. 1.5-inch, preliminarily attached	Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-90.0
SC-252	Min. 22 ga., type B, Grade 80 steel	One or more layers, any combination, min. 1.5-inch, preliminarily attached	Dekfast DF-#12-PH3 DP with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-90.0
Notes:	A. For these assemblies, the 8 ft insulation board length is placed perpendicular to the steel deck ribs. B. The plate/fastener combination offset 12 inch from adjacent rows. C. For these assemblies, the 8 ft insulation board length is placed perpendicular to the steel deck ribs and each row of insulation is staggered by 1 foot.					

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
BARE-BACK MEMBRANE APPLICATIONS:										
SC-253	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA, Sure-Weld HS	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-30.0
SC-254	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-30.0
SC-255	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-30.0
SC-256	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw	Min. 1-inch, one or more layers, any combination (optional for recover) followed by 3/8-inch Insulfoam R-Tech EPS or Fan-Fold	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-30.0
SC-257	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	18-inch o.c.	5.5-inch	66.5-inch o.c.	1.5-inch outside	-30.0
SC-258	Min. 22 ga., type B, Grade 40 steel; 6 ft spans; 5/8" puddle welds 6" o.c. or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-37.5
SC-259	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld HS	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-37.5
SC-260	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-37.5
SC-261	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-37.5

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-262	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld HS	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates (steel only) or Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-37.5
SC-263	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate	12-inch o.c.	5-inch	91-inch o.c.	1.5-inch outside	-37.5
SC-264	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw	Min. 1-inch, one or more layers, any combination	Prelim. Attach	Sure-Weld (min. nominal 60-mil) or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-37.5
SC-265	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	66.5-inch o.c.	1.5-inch outside	-37.5
SC-266	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-45.0
SC-267	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates (steel only) or Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
SC-268	Min. 18 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
SC-269	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
SC-270	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. nominal 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-271	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-45.0
SC-272	Min. 22 ga., type B, Grade 33 steel	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-45.0
SC-273	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-45.0
SC-274	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-45.0
SC-275	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	12-inch o.c.	5-inch	67-inch o.c.	1.5-inch outside	-45.0
SC-276	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	66.5-inch o.c.	1.5-inch outside	-45.0
SC-277	Min. 22 ga., type B, Grade 33 steel, 7 ft span, HILTI X-HSN 24, 6" o.c. Side laps HILTI S-SLC01 M HWH, 24" o.c.	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. nominal 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fastener and Piranha Plate	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-52.5
SC-278	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-52.5
SC-279	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-52.5

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-280	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. nominal 60-mil) or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-52.5
SC-281	Min. 22 ga., type B, Grade 40 steel; 6 ft spans; 5/8" puddle welds 6" o.c. or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-52.5
SC-282	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination (optional for recover) followed by 3/8-inch Insulfoam R-Tech EPS or Fan-Fold	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-52.5
SC-283	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-52.5
SC-284	Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-52.5
SC-285	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	42.5-inch o.c.	1.5-inch outside	-52.5
SC-286	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	42.5-inch o.c.	1.5-inch outside	-52.5
SC-287	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. Attach	Sure-Weld (min. 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	6-inch o.c.	5.5-inch	139.5-inch o.c.	1.5-inch outside	-60.0

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-288	Min. 22 ga., type B, Grade 33 steel, 7 ft span, 5/8" puddle welds, 6" o.c. Side laps ITW HWH #12 Teks 1, 24" o.c. or min. 2,500 psi structural concrete	Min. 1-inch, one or more layers, any combination	Prelim. attach	Sure-Weld (min. nominal 60-mil) or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
SC-289	Recover only: Min. 22 ga., type B, Grade 33 steel, 6 ft span, 5/8" diameter puddle welds 6" o.c., side laps secured 24" o.c. w/ ¼"-14x1" long self-tapping hex-head screw or min. 2,500 psi structural concrete	3/8-inch Insulfoam R-Tech EPS or Fan-Fold	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
SC-290	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates (steel only) or Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
SC-291	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
SC-292	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
SC-293	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-60.0
SC-294	Recover only: Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	3/8-inch Insulfoam R-Tech EPS or Fan-Fold	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c	5.5-inch	90.5-inch o.c.	1.5-inch outside	-60.0
SC-295	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld HS	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-60.0
SC-296	Min. 22 ga., type B, 55 ksi steel, 6 ft span, 5/8" puddle welds 6" o.c. or min. 2,500 psi structural concrete	Min. 300 psi, min 2-inch thick cellular lightweight concrete	N/A	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only) or Carlisle HD 14-10 (concrete only) and Piranha Plate (through to engage structural deck)	6-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-67.5

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER										
System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-297	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-67.5
SC-298	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-67.5
SC-299	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	9-inch o.c.	5.5-inch	54.5-inch o.c.	1.5-inch outside	-75.0
SC-300	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	42.5-inch o.c.	1.5-inch outside	-82.5
SC-301	Min. 22 ga., type B, Grade 33 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	12-inch o.c.	5.5-inch	42.5-inch o.c.	1.5-inch outside	-82.5
SC-302	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP-X Fastener (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plate or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	54.5-inch o.c.	1.5-inch outside	-90.0
SC-303	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Trufast #15 EHD Fastener (steel only), Trufast #14 HD (concrete only) or Trufast Fluted Concrete Nail (concrete only) with Trufast 2.4" Barbed Metal Seam Plates	6-inch o.c.	5.5-inch	42.5-inch o.c.	1.5-inch outside	-112.5
SURE-WELD FLEECEBACK APPLICATIONS:										
SC-304	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld FleeceBACK	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-30.0
SC-305	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld FleeceBACK	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates (steel only) or Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	12-inch o.c.	5.5-inch	114.5-inch o.c.	1.5-inch outside	-37.5

TABLE 2H: STEEL OR STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER

System No.	Deck (Note 1)	Insulation Layer (Note 13)		Roof Cover (Note 15A)						MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
SC-306	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld FleeceBACK	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-37.5
SC-307	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	Min. 1.5-inch, one or more layers, any combination	Prelim. attach	Sure-Weld FleeceBACK	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates or #15 Roofgrip (steel only) with 2-3/8" Eyehook Seam Plates (AccuSeam)	6-inch o.c.	5.5-inch	90.5-inch o.c.	1.5-inch outside	-60.0

TABLE 2I: STEEL OR STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER (RUSS STRIPS)

System No.	Deck	Insulation		Roof Cover (Note 15A)			MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Attachment	
SC-308	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 138-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-30.0
SC-309	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 114-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-45.0
SC-310	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 90-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-52.5
SC-311	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 120-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. Roof cover adhered to each strip by first priming with HP-250 Primer at the strip location, then rolling into place with a hand roller.	-60.0
SC-312	Min. 22 ga., type B, Grade 80 steel or min. 2,500 psi structural concrete	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP-X Fasteners (steel only), Carlisle HD 14-10 (concrete only) or CD-10 (concrete only) Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 60-inch o.c. The plates are centered over each strip and fastened 12-inch o.c. Roof cover adhered to each strip by first priming with HP-250 Primer at the strip location, then rolling into place with a hand roller.	-60.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
C-1.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120 BA	-45.0
C-2.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	Aqua Base 120 BA	-45.0
C-3.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120 BA	-45.0
C-4.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	Aqua Base 120 BA	-45.0
C-5.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120 BA	-157.5
C-6.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld	Aqua Base 120 BA	-157.5
C-7.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120 BA	-45.0
C-8.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	Aqua Base 120 BA	-45.0
C-9.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120 BA	-45.0
C-10.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld	Aqua Base 120 BA	-45.0
C-11.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-12.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5
C-13.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST (RIBBON)	Sure-Weld	CAV-GRIP III AP	-352.5
C-14.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-277.5
C-15.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (FULL)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (FULL)	Sure-Weld	CAV-GRIP III AP	-352.5
C-16.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-352.5
C-17.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-18.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5
C-19.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-232.5
C-20.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-232.5
C-21.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-22.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5
C-23.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-24.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-25.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-187.5
C-26.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-187.5
C-27.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-127.5
C-28.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld	CAV-GRIP III AP	-397.5
C-29.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-30.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5
C-31.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	CAV-GRIP III AP	-397.5
C-32.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-277.5
C-33.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	CAV-GRIP III AP	-397.5
C-34.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-390.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-35.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-36.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	CAV-GRIP III AP	-352.5
C-37.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-277.5
C-38.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	CAV-GRIP III AP	-352.5
C-39.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-157.5
C-40.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-157.5
C-41.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP	-187.5
C-42.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld	CAV-GRIP III AP	-187.5
C-43.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-44.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-157.5
C-45.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-46.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER
REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-47.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-127.5
C-48.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-127.5
C-49.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-50.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-157.5
C-51.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-127.5
C-52.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld	LVOC BA	-397.5
C-53.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-54.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-157.5
C-55.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	LVOC BA	-397.5
C-56.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-277.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-57.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	LVOC BA	-397.5
C-58.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-390.0
C-59.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-60.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	LVOC BA	-352.5
C-61.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-277.5
C-62.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	LVOC BA	-352.5
C-63.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	LVOC BA	-157.5
C-64.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld	LVOC BA	-157.5
C-65.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-66.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-157.5
C-67.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST (RIBBON)	Sure-Weld	Sure-Weld BA	-352.5
C-68.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-277.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-69.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (FULL)	(Optional) Additional layer(s) base insulation	Flexible FAST (FULL)	Sure-Weld	Sure-Weld BA	-352.5
C-70.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-352.5
C-71.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-72.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-157.5
C-73.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-232.5
C-74.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-232.5
C-75.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON or SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Ultralight Coated Glass-Mat Roof Board	Flexible FAST (RIBBON or SPLATTER)	Sure-Weld	Sure-Weld BA	-67.5
C-76.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-77.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-157.5
C-78.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-79.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-80.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-187.5
C-81.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-187.5
C-82.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-127.5
C-83.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld	Sure-Weld BA	-397.5
C-84.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-85.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-157.5
C-86.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	Sure-Weld BA	-397.5
C-87.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-277.5
C-88.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	Sure-Weld BA	-397.5
C-89.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld	Sure-Weld BA	-390.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-90.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-91.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld	Sure-Weld BA	-352.5
C-92.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-277.5
C-93.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld	Sure-Weld BA	-352.5
C-94.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-95.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-157.5
C-96.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-187.5
C-97.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Sure-Weld BA	-187.5
C-98.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld	CAV-GRIP III AP, Sure-Weld BA, LVOC BA	-120.0
C-99.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	(Optional) Additional layers of base insulation	OB500	Sure-Weld	Aqua Base 120	-127.5
C-100.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck or DensDeck Prime	OB500	Sure-Weld	Aqua Base 120	-127.5
C-101.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	(Optional) Additional layers of base insulation	OB500	Sure-Weld	Sure-Weld BA	-150.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-102.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	OB500	(Optional) Additional layers of base insulation	OB500	Sure-Weld	CAV-GRIP III AP	-150.0
C-103.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck or DensDeck Prime	OB500	Sure-Weld	Sure-Weld BA	-150.0
C-104.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	Sure-Weld	CAV-GRIP III AP	-150.0
C-105.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	OB500	(Optional) Min. 0.5-inch base insulation	OB500	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-157.5
C-106.	Min. 2,500 psi structural concrete	Min. 2-inch InsulBase, SecurShield	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld	CAV-GRIP III AP, Sure-Weld BA or Aqua Base 120	-247.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
C-107.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
C-108.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
C-109.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-110.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
C-111.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
C-112.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
C-113.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
C-114.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
C-115.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-116.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-117.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-118.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-277.5
C-119.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (FULL)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-120.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-390.0
C-121.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-122.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-123.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-124.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-277.5
C-125.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-126.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-390.0
C-127.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-127.5
C-128.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-127.5
C-129.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-130.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-131.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-132.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-277.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-133.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-397.5
C-134.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-390.0
C-135.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-127.5
C-136.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-390.0
C-137.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-138.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-139.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-140.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-352.5
C-141.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-277.5
C-142.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-352.5
C-143.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-112.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-144.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-112.5
C-145.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-146.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-157.5
C-147.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-187.5
C-148.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-187.5
C-149.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-150.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-151.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-152.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-277.5
C-153.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (FULL)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-154.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-390.0
C-155.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-156.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-157.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-158.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-277.5
C-159.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-160.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-390.0
C-161.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-162.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-163.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-187.5
C-164.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-187.5
C-165.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-166.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-167.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-168.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-277.5
C-169.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-170.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-390.0
C-171.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-127.5
C-172.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-390.0
C-173.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-174.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-175.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5
C-176.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-277.5
C-177.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-397.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-178.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-390.0
C-179.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-180.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-352.5
C-181.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-277.5
C-182.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-352.5
C-183.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-112.5
C-184.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-112.5
C-185.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-186.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-157.5
C-187.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-187.5
C-188.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-187.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-189.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-190.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-191.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-280.0
C-192.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-277.5
C-193.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST DT (FULL)	(Optional) Additional layer(s) base insulation	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	HydroBond WB	-280.0
C-194.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	(Optional) Additional layer(s) base insulation	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-280.0
C-195.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-196.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-197.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-198.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-199.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-395.0
C-200.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-277.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER
REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-201.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	HydroBond WB	-395.0
C-202.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-390.0
C-203.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-127.5
C-204.	Min. 2,500 psi structural concrete	Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Insulation: Min. 1.6-inch Optim-R Coverboard: Min. 0.5-inch SecurShield HD	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	HydroBond WB	-397.5
C-205.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-206.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-207.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-397.5
C-208.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-277.5
C-209.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	HydroBond WB	-397.5
C-210.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-390.0

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-211.	Min. 2,500 psi structural concrete	Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-157.5
C-212.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-352.5
C-213.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-277.5
C-214.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST DT (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch EcoStorm VSH	Flexible FAST DT (FULL)	Sure-Weld FleeceBACK	HydroBond WB	-352.5
C-215.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or Min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond WB	-112.5
C-216.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK	HydroBond WB	-112.5
SURE-WELD AFX MEMBRANE APPLICATIONS:								
C-217.	Min. 2,500 psi structural concrete	Min. 0.5-inch HP Recovery Board	HA	None	HA	Sure-Weld AFX	Hot Asphalt	-150.0
C-218.	Min. 2,500 psi structural concrete	One or more layers min. 1.5-inch InsulBase, Polyiso HP-N, Polyiso HP-W, ACFoam II, SecurShield, ENRGY 3 or ISO 95+ GL	HA	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch HP Recovery Board	HA	Sure-Weld AFX	Hot Asphalt	-150.0
SURE-WELD SAT-TPO MEMBRANE APPLICATIONS:								
C-219.	Min. 2,500 psi structural concrete	(Optional) One or more layers, min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch Insulfoam SP	Flexible FAST (FULL)	Sure-Weld SAT-TPO	Self-adhered	-315.0
SURE-WELD FLEECEBACK® RL™ APPLICATIONS:								
C-220.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield or min. 1-inch Insulfoam I, II, IX, VIII, XIV or XV	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2.0-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK® RL™		-142.5

TABLE 3A: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER
REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Membrane	Application	
C-221.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2.0-inch InsulBase RL	Flexible FAST (SPLATTER)	Sure-Weld FleeceBACK® RL™		-142.5

TABLE 3B: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED BASE PLY, BONDED ROOF COVER
REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base Ply	Top Ply	
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
C-222.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-165.0
SURE-WELD AFX MEMBRANE APPLICATIONS:								
C-223.	Min. 2,500 psi structural concrete	(Optional) Min. 0.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-157.5
C-224.	Min. 2,500 psi structural concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON) or Flexible FAST (SPLATTER)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-202.5
C-225.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield or min. 2-inch Insulfoam I or VIII	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-105.0
C-226.	Min. 2,500 psi structural concrete	Min. 2-inch Insulfoam I or VIII	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-120.0

TABLE 3B: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED BASE PLY, BONDED ROOF COVER REFER TO NOTE 16 FOR VAPOR BARRIER OPTIONS								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base Ply	Top Ply	
C-227.	Min. 2,500 psi structural concrete	Min. 1.5-inch InsulBase, SecurShield	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-150.0
C-228.	Min. 2,500 psi structural concrete	Min. 2-inch InsulBase	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-202.5

TABLE 3C: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
RHINOBOND SYSTEMS:						
C-229.	Min. 2,500 psi structural concrete	Min. 1-inch thick, one or more layers, any combination.	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 5.3 ft² (6 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note A	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
C-230.	Min. 2,500 psi structural concrete	Min. 1-inch thick, one or more layers, any combination.	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (8 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note A	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
C-231.	Min. 2,500 psi structural concrete	Min. 1-inch thick, one or more layers, any combination.	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 4.0 ft² (8 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note A	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-60.0
C-232.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination. Note B.	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	1 per 2.0 ft² (16 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-97.5
C-233.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 120-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-30.0

TABLE 3C: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	Deck (Note 1)	Insulation Layer (Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
C-234.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 120-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
C-235.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
C-236.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
C-237.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 120-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
C-238.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Carlisle HD 14-10 Concrete Fastener or Carlisle CD-10 and RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) or RHINOBOND TreadSafe Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-67.5
ISOWELD INDUCTION WELDING SYSTEM:						
C-239.	Min. 2,500 psi structural concrete	Min. 1-inch thick, one or more layers, any combination.	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 5.3 ft² (6 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29; Note A	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0
C-240.	Min. 2,500 psi structural concrete	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 6 ft² 2x3-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-52.5
C-241.	Min. 2,500 psi structural concrete	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 4.0 ft² 2x2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-60.0
C-242.	Min. 2,500 psi structural concrete	One or more layers, any combination, min. 1.5-inch	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO)	1 per 3.0 ft² 1.5 x 2-ft grid, staggered	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-82.5

TABLE 3C: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (Tear-Off) or RECOVER SYSTEM TYPE C-2: MECHANICALLY ATTACHED INSULATION, PLATE-BONDED ROOF COVER						
System No.	**Deck (Note 1)**	**Insulation Layer (Note 13)**	**Attachment**		**Roof Cover (Note 15B)**	**MDP (psf)**
			Fasteners (Note 11)	**Density**		
C-243.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, 4x8 ft dimension, one or more layers, any combination	Dekfast DF-#15-PH3 with SFS *isoweld®* TPO Plates (FI-P-6.8-TPO)	1 per 2.25 ft² 1.5 x 1.5-ft grid (first row of fasteners spaced 0.5 ft from long edges and 1 ft from the short edge)	Sure-Weld or Sure-Weld EXTRA bonded to SFS *isoweld®* TPO Plates with SFS *isoweld®* 3000 stand-up tool.	-97.5
C-244.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination. Note B.	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld®* TPO Plates (FI-P-6.8-TPO)	1 per 2.0 ft² (16 parts per 4 x 8 ft board) Per FM Loss Prevention Data Sheet 1-29	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld®* TPO Plates with SFS *isoweld®* 3000 stand-up tool.	-97.5
C-245.	Min. 2,500 psi structural concrete	One or more layers, any combination, min. 1.5-inch, preliminarily attached	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld®* TPO Plates (FI-P-6.8-TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld®* TPO Plates with SFS *isoweld®* 3000 stand-up tool.	-37.5
C-246.	Min. 2,500 psi structural concrete	Min. 1.5-inch thick, one or more layers, any combination, preliminarily attached	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld®* TPO Plates (FI-P-6.8-TPO)	12-inch o.c. in rows 60-inch o.c.	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld®* TPO Plates with SFS *isoweld®* 3000 stand-up tool.	-45.0
C-247.	Min. 2,500 psi structural concrete	One or more layers, any combination, min. 1.5-inch preliminarily attached	Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 with SFS *isoweld®* TPO Plates (FI-P-6.8-TPO)	6-inch o.c. in rows 60-inch o.c.	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld®* TPO Plates with SFS *isoweld®* 3000 stand-up tool.	-90.0
Notes:	A. The plate/fastener combination offset 12 inch from adjacent rows. B. For these assemblies each row of insulation is staggered by 1 foot.					

TABLE 3D: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER					
System No.	Deck	Primer	Roof Cover (Note 15)		MDP (psf)
			Type	Attach	
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):					
C-248.	Min. 2,500 psi structural concrete	None	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-495.0
C-249.	Min. 2,500 psi structural concrete	None	Sure-Weld FleeceBACK	Flexible FAST DT (SPLATTER at 3.5-4.0 lbs/sq)	-722.5
SURE-WELD AFX MEMBRANE APPLICATIONS:					
C-250.	Min. 2,500 psi structural concrete	None	Sure-Weld AFX	Hot Asphalt	-97.5
C-251.	Min. 2,500 psi structural concrete	CCW-702 or cut-back primer at 250-300 ft²/gal	Sure-Weld AFX	Hot Asphalt	-495.0
SURE-WELD SAT-TPO MEMBRANE APPLICATIONS:					
C-252.	Min. 2,500 psi structural concrete	None	Sure-Weld SAT-TPO	Self-adhered	-425.0

TABLE 3E: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE G: OPTIONAL INSULATION, LOOSE-LAID ROOF COVER, PRESSURE EQUALIZING VENT							
System No.	Deck (Note 1)	Air Barrier	Insulation	Underlayment	Roof Cover		MDP (psf)
					Type	Attach	
C-253.	Min. 2,500 psi structural concrete	VapAir Seal 725TR or SureMB 90TG or 120TG/torch-applied in accordance with Carlisle requirements.	(Optional) Any fire classified roof insulation and/or coverboard combination, any thickness, loose-laid with staggered joints	12-inch wide strips of polypropylene, air permeable filter fabric, loose laid in a crossing pattern, connecting the V2T vents	Sure-Weld or Sure-Weld HS	VacuSeal Vent installed in accordance with Carlisle instructions, spaced maximum 50 ft o.c.	-97.5

TABLE 4A: LIGHTWEIGHT CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
LWC-1	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-52.5
LWC-2	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-52.5
LWC-3	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
LWC-4	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
LWC-5	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-187.5
LWC-6	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld / CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-350.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								

TABLE 4A: LIGHTWEIGHT CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
LWC-7	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-52.5
LWC-8	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-52.5
LWC-9	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-75.0
LWC-10	Min. 22 ga., Type BV, Grade 40 steel	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-75.0
LWC-11	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-187.5
LWC-12	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-187.5
LWC-13	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-187.5

TABLE 4A: LIGHTWEIGHT CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
LWC-14	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	(Optional) Additional layer(s) of base insulation	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-350.0
LWC-15	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or or min. 1.5-inch SecurShield HD Composite or min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-350.0
LWC-16	Min. 2,500 psi structural concrete	Min. 300 psi, pre-existent cellular lightweight insulating concrete	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-350.0

TABLE 4B: LIGHTWEIGHT CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-2: MECHANICALLY ATTACHED ANCHOR SHEET, BONDED INSULATION, BONDED ROOF COVER										
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Anchor Sheet			Insulation			Roof Cover (Note 15)	MDP (psf)
			Type	Fasteners (Note 11)	Attach	Base Layer	Top Layer(s)	Attach (Notes 6,7,8)		
LWC-17	Min. 22 ga., Type B, Grade 33 vented steel or structural concrete	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC	JM Perma Ply 28	OMG CR Assembled Base Sheet Fasteners	9-inch o.c. in the 3-inch side lap and 9-inch o.c. in two staggered rows in the center of the sheet	Min. 1.0-inch InsulBase, HP-N or HP-W, SecurShield, AC Foam II, or ENRGY 3	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.0-inch HP Recovery Board	Hot asphalt	Sure-Weld AFX / Hot asphalt	-45.0

TABLE 4C: LIGHTWEIGHT CONCRETE OVER STEEL DECK - NEW CONSTRUCTION OR RE-ROOF (TEAR OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)				Roof Cover (Note 15)		MDP (psf)
		Type	Surface Treatment	Supplemental Attachment		Type	Attach	
				Fasteners	Attach			
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
LWC-18	Min. 24 ga., Type 1.0FDV Grade 80 steel at max. 6 ft spans; 5/8" puddle welds wth weld washers, 8-inch o.c.	CELCORE (FL2037): Treatment: Celcore S-1 Deck Preparation Slurry LWC: Min. 370 psi, Min. 2-inch thick, Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture	Celcore PVA	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-37.5
LWC-19	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	None	None	N/A	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-60.0
LWC-20	Min. 22 ga., Type B, Grade 33 steel at max. 4 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 38 pcf wet cast density, min. 200 psi, min. 1.625-inch thick Celcore MF Cellular Concrete followed by min. 1-inch EPS holey board with min. 2.0-inch thick top slurry coat. ***Note A.***	Celcore PVA	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5
LWC-21	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	None	Carlisle HP Fastener with Insulation Plate	1 per 9.0 ft^2	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-67.5 *Note B*
LWC-22	Min. 22 ga., Type BV, Grade 40 steel at max. 6 ft spans; 5/8" puddle welds, 6-inch o.c.	CELCORE (FL2037): Treatment: Celcore S-1 Deck Preparation Slurry LWC: Min. 310 psi, Min. 2-inch thick, Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture	Celcore PVA	None	N/A	Sure-Weld	CAV-GRIP III AP	-82.5
LWC-23	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	None	Carlisle HP Fastener with Insulation Plate	1 per 1.0 ft^2	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-120.0 *Note B*
LWC-24	Min. 22 ga., Type BV, Grade 80 steel; max. 5-ft spans; 5/8" puddle welds with weld-washers spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Deck primed with Concrecel Bonding Agent at 600 ft^2/gallon. Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (Minimum 1-inch thick, minimum 1.0 pcf EPS holey board required)	(Optional) Concrecel Curing Compound	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-97.5
LWC-25	Min. 22 ga., Type BV, Grade 80 steel; max. 6-ft spans; 5/8" puddle welds spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (No EPS board)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-105.0
LWC-26	Min. 22 ga., Type BV, Grade 80 steel; max. 6-ft spans; 5/8" puddle welds with weld-washers spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-135.0

TABLE 4C: LIGHTWEIGHT CONCRETE OVER STEEL DECK - NEW CONSTRUCTION OR RE-ROOF (TEAR OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)				Roof Cover (Note 15)		MDP (psf)
		Type	Surface Treatment	Supplemental Attachment		Type	Attach	
				Fasteners	Attach			
LWC-27	Min. 20 ga., Type BV, Grade 33 steel; max. 6-ft 3-inch spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-52.5
LWC-28	Min. 22 ga., Type BV, Grade 33 steel; max. 6-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-82.5
LWC-29	Min. 22 ga., Type BV, Grade 33 steel; max. 5-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 1-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-97.5
LWC-30	Min. 22 ga., Type BV, Grade 33 steel; max. 5-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-112.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
LWC-31	Min. 24 ga., Type 1.0FDV Grade 80 steel at max. 6 ft spans; 5/8" puddle welds wth weld washers, 8-inch o.c.	CELCORE (FL2037): Treatment: Celcore S-1 Deck Preparation Slurry LWC: Min. 370 psi, Min. 2-inch thick, Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture	Celcore PVA	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-37.5
LWC-32	Min. 22 ga., Type BV, Grade 40 steel at max. 6 ft spans; 5/8" puddle welds, 6-inch o.c.	CELCORE (FL2037): Treatment: Celcore S-1 Deck Preparation Slurry LWC: Min. 310 psi, Min. 2-inch thick, Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture	Celcore PVA	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-82.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
LWC-33	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	Celcore PVA	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-60.0
LWC-34	Min. 22 ga., Type B, Grade 33 steel at max. 4 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 38 pcf wet cast density, min. 200 psi, min. 1.625-inch thick Celcore MF Cellular Concrete followed by min. 1-inch EPS holey board with min. 2.0-inch thick top slurry coat. ***Note A.***	Celcore PVA	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-67.5
LWC-35	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	Celcore PVA	Carlisle HP Fastener with Insulation Plate	1 per 9.0 ft^2	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-67.5 *Note B*

TABLE 4C: LIGHTWEIGHT CONCRETE OVER STEEL DECK - NEW CONSTRUCTION OR RE-ROOF (TEAR OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER								
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)				Roof Cover (Note 15)		MDP (psf)
		Type	Surface Treatment	Supplemental Attachment		Type	Attach	
				Fasteners	Attach			
LWC-36	Min. 22 ga., Type B, Grade 33 steel at max. 6 ft spans attached 6-inch o.c.	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (cast with or without min. 1-inch EPS holey board). ***Note A.***	Celcore PVA	Carlisle HP Fastener with Insulation Plate	1 per 1.0 ft²	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-120.0 *Note B*
LWC-37	Min. 22 ga., Type BV, Grade 80 steel; max. 5-ft spans; 5/8" puddle welds with weld-washers spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Deck primed with Concrecel Bonding Agent at 600 ft²/gallon. Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (Minimum 1-inch thick, minimum 1.0 pcf EPS holey board required)	(Optional) Concrecel Curing Compound	None	N/A	Sure-Weld FleeceBACK	FAST 100LV (FULL)	-97.5
LWC-38	Min. 22 ga., Type BV, Grade 80 steel; max. 6-ft spans; 5/8" puddle welds spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (No EPS board)	None	None	N/A	Sure-Weld FleeceBACK	FAST 100LV (FULL)	-105.0
LWC-39	Min. 22 ga., Type BV, Grade 80 steel; max. 6-ft spans; 5/8" puddle welds with weld-washers spaced 6-inch o.c.	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld FleeceBACK	FAST 100LV (FULL)	-135.0
LWC-40	Min. 22 ga., Type BV, Grade 40 steel; 6 ft span, Teks/5 screws, 6" o.c.	ELASTIZELL (FL4994): Min. 530 psi, min. 2-inch thick, Elastizell Range III LWIC	None	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-52.5
LWC-41	Min. 20 ga., Type BV, Grade 33 steel; max. 6-ft 3-inch spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	None	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-52.5
LWC-42	Min. 22 ga., Type BV, Grade 33 steel; max. 6-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-82.5
LWC-43	Min. 22 ga., Type BV, Grade 33 steel; max. 5-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 1-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-97.5
LWC-44	Min. 22 ga., Type BV, Grade 33 steel; max. 5-ft spans; 5/8" puddle welds or Tek/5 screws spaced 6-inch o.c.	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (Minimum 2-inch thick, minimum 1.0 pcf EPS holey board required)	None	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-112.5

Note A.) If the type of LWC to be used on the project is unknown, as in a re-roof (tear-off) condition, compressive strength and fastener withdrawal resistance testing shall be conducted. Compressive strength testing shall be in accordance with ASTM C495 (for new pour) or ASTM C109 (for existing) and shall yield a minimum 200 psi result. Field withdrawal resistance testing in accordance with TAS 105 or ANSI/SPRI FX-1 and shall yield an average withdrawal performance not less than 55 lbf with a Trufast FM-90 Base Sheet Fastener. If question exists as to the adhesion to the LWC surface, field testing in accordance with ASTM E907 or FM Loss Prevention Data Sheet 1-29 is recommended. All testing shall be performed by an accredited testing agency acceptable to the Authority Having Jurisdiction.

Note B.) Linear interpolation between supplemental attachment at 1 per 9 ft² for -67.5 psf and 1 per 1.0 ft² for -120.0 psf is permissible. Such interpolation shall be performed by a qualified design professional to the satisfaction of the Authority Having Jurisdiction.

TABLE 4D: LIGHTWEIGHT CONCRETE OVER STRUCTURAL CONCRETE – NEW CONSTRUCTION OR RE-ROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER					
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Roof Cover (Note 15)		MDP (psf)
			Membrane	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:					
LWC-45	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 300 psi, Min. 2-inch thick, Celcore Cellular Concrete (EPS board optional)	Sure-Weld	Aqua Base 120	-82.5
LWC-46	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 300 psi, Min. 2-inch thick, Celcore Cellular Concrete (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-135.0
LWC-47	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional). ***Note A.***	Sure-Weld	Aqua Base 120	-217.5
LWC-48	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional). ***Note A.***	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-480.0
LWC-49	Min. 2,500 psi structural concrete	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-452.5
LWC-50	Min. 2,500 psi structural concrete	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC	Sure-Weld	Aqua Base 120	-67.5
LWC-51	Min. 2,500 psi structural concrete	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-240.0
LWC-52	Min. 2,500 psi structural concrete	ELASTIZELL (FL4994): Min. 300 psi, Min. 2-inch thick, Elastizell Range II LWIC (no EPS board)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-495.0
LWC-53	Min. 2,500 psi structural concrete	Min. 350 psi, pre-existent cellular lightweight insulating concrete; ***Note:*** *To qualify the LWIC under this assembly, an OMG CR-R Assembled Base Sheet Fastener (1.7 in.) shall achieve an average withdrawal of* ***101 lbf or greater*** *when tested per ANSI/SPRI FX-1 or TAS105.*	Sure-Weld	Sure-Weld BA	-452.5
LWC-54	Min. 2,500 psi structural concrete	Min. 320 psi, pre-existent cellular lightweight insulating concrete; ***Note:*** *To qualify the LWIC under this assembly, an OMG CR-R Assembled Base Sheet Fastener (1.7 in.) shall achieve an average withdrawal of* ***148 lbf or greater*** *when tested per ANSI/SPRI FX-1 or TAS105.*	Sure-Weld	Sure-Weld BA	-492.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):					
LWC-55	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 270 psi, Min. 2-inch thick Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture (EPS board optional) Surfacing: Celcore SBS (Sanded Bonding Surface) at 1 gal/square.	Sure-Weld FleeceBACK	FAST 100-LV (FULL) or Flexible FAST (FULL)	-225.0
LWC-56	Min. 2,500 psi structural concrete	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional). ***Note A.***	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-232.5
LWC-57	Min. 2,500 psi structural concrete	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (EPS board optional)	Sure-Weld FleeceBACK	FAST 100LV (FULL)	-282.5
LWC-58	Min. 2,500 psi structural concrete	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-240.0

TABLE 4D: LIGHTWEIGHT CONCRETE OVER STRUCTURAL CONCRETE – NEW CONSTRUCTION OR RE-ROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER					
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Roof Cover (Note 15)		MDP (psf)
			Membrane	Application	
LWC-59	Min. 2,500 psi structural concrete	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (no EPS board)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-250.0
LWC-60	Min. 2,500 psi structural concrete	Min. 320 psi, pre-existent cellular lightweight insulating concrete; ***Note:*** *To qualify the LWIC under this assembly, an OMG CR-R Assembled Base Sheet Fastener (1.7 in.) shall achieve an average withdrawal of* ***148 lbf or greater*** *when tested per ANSI/SPRI FX-1 or TAS105.*	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-250.0
LWC-61	Min. 2,500 psi structural concrete	Min. 350 psi, pre-existent cellular lightweight insulating concrete; ***Note:*** *To qualify the LWIC under this assembly, an OMG CR-R Assembled Base Sheet Fastener (1.7 in.) shall achieve an average withdrawal of* ***101 lbf or greater*** *when tested per ANSI/SPRI FX-1 or TAS105.*	Sure-Weld FleeceBACK	Flexible FAST DT (SPLATTER at 3.5-4.0 lbs/sq)	-345.0
SURE-WELD SAT-TPO MEMBRANE APPLICATIONS:					
LWC-62	Min. 3,000 psi structural concrete	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC	Sure-Weld SAT-TPO	Self-adhered	-282.5

Note A.) If the type of LWC to be used on the project is unknown, as in a re-roof (tear-off) condition, compressive strength and fastener withdrawal resistance testing shall be conducted. Compressive strength testing shall be in accordance with ASTM C495 (for new pour) or ASTM C109 (for existing) and shall yield a minimum 200 psi result. Field withdrawal resistance testing in accordance with TAS 105 or ANSI/SPRI FX-1 and shall yield an average withdrawal performance not less than 55 lbf with a Trufast FM-90 Base Sheet Fastener. If question exists as to the adhesion to the LWC surface, field testing in accordance with ASTM E907 or FM Loss Prevention Data Sheet 1-29 is recommended. All testing shall be performed by an accredited testing agency acceptable to the Authority Having Jurisdiction.

TABLE 5A: CEMENTITOUS WOOD FIBER DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
CWF-1	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	Aqua Base 120	-52.5
CWF-2	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP or Sure-Weld BA	-75.0
CWF-3	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board, Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC-BA or Sure-Weld BA	-82.5
CWF-4	Min. 2-inch Tectum Plank	Min. 1.5-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC-BA or Sure-Weld BA	-82.5
CWF-5	Min. 2-inch Tectum Plank	(Optional) Min. 1.0-inch InsulBase, SecurShield	Flexible FAST (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.625-inch DensDeck Prime	Flexible FAST (FULL)	Sure-Weld	CAV-GRIP III AP or Sure-Weld BA	-90.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
CWF-6	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board, Min. 0.5-inch SecurShield HD, SecurShield HD Plus or Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
CWF-7	Min. 2-inch Tectum Plank	Min. 1.5-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
CWF-8	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-82.5
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
CWF-9	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	HydroBond W-B	-52.5

TABLE 5A: CEMENTITOUS WOOD FIBER DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
CWF-10	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 7/16-inch APA rated OSB	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL)	-75.0
CWF-11	Min. 2-inch Tectum Plank	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board, Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH or Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-82.5
CWF-12	Min. 2-inch Tectum Plank	Min. 1.5-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-82.5
CWF-13	Min. 2-inch Tectum Plank	Min. 1.0-inch InsulBase, SecurShield	Flexible FAST (FULL)	(Optional) Min. 0.5-inch HP Recovery Board	Flexible FAST (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-90.0
CWF-14	Min. 2-inch Tectum Plank	Min. 1-inch Insulfoam SP	Flexible FAST (FULL)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-90.0
CWF-15	Min. 2-inch Tectum Plank	(Optional) Min. 1.0-inch InsulBase	Flexible FAST (FULL)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.625-inch DensDeck Prime	Flexible FAST (FULL)	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL)	-90.0

TABLE 5B: CEMENTITOUS WOOD FIBER DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-2: MECHANICALLY ATTACHED ANCHOR SHEET, BONDED INSULATION, BONDED ROOF COVER										
System No.	Deck (Note 1)	Anchor Sheet			Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)	MDP (psf)
		Type	Fasteners (Note 11)	Attach	Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:										
CWF-16	Min. 2-inch Tectum Plank	SureMB G2 Base	Trufast Twin-Loc Nails, min. 1.4-inch embedment	9-inch o.c. in the 4-inch side laps and 18-inch o.c. in two staggered rows in the center of the sheet	Min. 1.5-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBONS, ~10.5-inch o.c., atop anchor sheet fastener rows)	(Optional) Additional layer(s) base insulation, min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld / CAV-GRIP III AP, LVOC-BA or Sure-Weld BA	-30.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):										
CWF-17	Min. 2-inch Tectum Plank	SureMB G2 Base	Trufast Twin-Loc Nails, min. 1.4-inch embedment	9-inch o.c. in the 4-inch side laps and 18-inch o.c. in two staggered rows in the center of the sheet	Min. 1.5-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBONS, ~10.5-inch o.c., atop anchor sheet fastener rows)	(Optional) Additional layer(s) base insulation, min. 0.25-inch Dens Deck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK / Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-30.0

TABLE 6A: EXISTING GYPSUM DECKS – REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
G-1.	Existing gypsum deck	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-157.5
G-2.	Existing gypsum deck	Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld	CAV-GRIP III AP or Sure-Weld BA	-187.5
G-3.	Existing gypsum deck	Min. 1-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-237.5
G-4.	Existing gypsum deck	Nominal 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-352.5
G-5.	Existing gypsum deck	Min. 0.5-inch SecurShield HD, SecurSheild HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-450.0
G-6.	Existing gypsum deck	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-495.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
G-7.	Existing gypsum deck	Min. 1-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
G-8.	Existing gypsum deck	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
G-9.	Existing gypsum deck	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
G-10.	Existing gypsum deck	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-157.5

TABLE 6A: EXISTING GYPSUM DECKS – REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Deck (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
G-11.	Existing gypsum deck	Min. 2-inch StormBase	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-187.5
G-12.	Existing gypsum deck	Min. 1-inch InsulBase, SecurShield and/or min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation, min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-237.5
G-13.	Existing gypsum deck	(Optional) Min. 1-inch Insulfoam I, II, VIII, IX, XIV or XV	Flexible FAST (FULL)	Min. 1-inch Insulfoam SP	Flexible FAST (FULL)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-295.0
G-14.	Existing gypsum deck	Nominal 0.5-inch EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-352.5
G-15.	Existing gypsum deck	Min. 0.5-inch SecurShield HD, SecurSheild HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-450.0
G-16.	Existing gypsum deck	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST, Flexible FAST DT (FULL) or HydroBond W-B	-495.0

TABLE 6B: EXISTING GYPSUM DECKS – REROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER					
System No.	Deck (Note 1)	Primer	Roof Cover (Note 15)		MDP (psf)
			Type	Attach	
G-17.	Existing gypsum deck	None	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-295.0
G-18.	Existing gypsum deck	None	Sure-Weld FleeceBACK	Flexible FAST DT (SPLATTER at 3.5-4.0 lbs/sq)	-717.5

TABLE 7A: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:								
R-1	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: (Optional) Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-167.5
R-2	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: (Optional) Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-167.5
R-3	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over structural concrete deck	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-145.0
R-4	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-145.0
R-5	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-145.0
R-6	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-302.5

TABLE 7A: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
R-7	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-302.5
R-8	Existing fully-adhered asphaltic BUR or mineral surface cap sheet	Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	(Optional) Additional layers of base insulation	OB500	Sure-Weld	Aqua Base 120 or Sure-Weld BA	-120.0
R-9	Existing fully-adhered asphaltic BUR or mineral surface cap sheet	Min. 1.5-inch InsulBase, SecurShield	OB500	(Optional) Additional layers of base insulation	OB500	Sure-Weld	CAV-GRIP III AP	-120.0
R-10	Existing fully-adhered asphaltic BUR or mineral surface cap sheet	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck or DensDeck Prime	OB500	Sure-Weld	Aqua Base 120 or Sure-Weld BA	-120.0
R-11	Existing fully-adhered asphaltic BUR or mineral surface cap sheet	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	Sure-Weld	CAV-GRIP III AP	-120.0
R-12	Existing fully-adhered asphaltic BUR or mineral surface cap sheet	(Optional) Min. 1.5-inch ACFoam II, InsulBase, SecurShield, ENRGY 3	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-120.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):								
R-13	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-14	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	(Optional) Additional layer(s) base insulation	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0

TABLE 7A: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
R-15	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-16	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-17	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD or SecurShield HD Plus	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-18	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
R-19	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0
R-20	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-90.0

TABLE 7A: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
R-21	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-22	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
R-23	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1.5-inch SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 12-inch o.c.)	-45.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
R-24	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: (Optional) Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-167.5
R-25	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: (Optional) Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-167.5
R-26	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-145.0

TABLE 7A: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Type	Application	
R-27	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-145.0
R-28	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 2-inch StormBase or SecurShield HD Composite	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-145.0
R-29	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-302.5
R-30	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board or min. 0.5-inch SecurShield HD, SecurShield HD Plus or EcoStorm VSH	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL) or HydroBond W-B	-302.5
SURE-WELD FLEECEBACK® RL™ APPLICATIONS:								
R-31	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2.0-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK® RL™		-142.5
R-32	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 2.0-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON)	Sure-Weld FleeceBACK® RL™		-142.5
R-33	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 2.0-inch InsulBase RL	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	Sure-Weld FleeceBACK® RL™		-142.5

TABLE 7B: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED BASE PLY, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base	Application	
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):								
R-34	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	(Optional) Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-165.0
R-35	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1.5-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-165.0
R-36	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	SureMB 90TG or 120TG / torch-applied	Sure-Weld FleeceBACK / Flexible FAST or Flexible FAST DT (FULL)	-165.0
SURE-WELD AFX MEMBRANE APPLICATIONS:								
R-37	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-157.5
R-38	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-157.5
R-39	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-157.5

TABLE 7B: RECOVER APPLICATIONS SYSTEM TYPE A-1: BONDED INSULATION, BONDED BASE PLY, BONDED ROOF COVER								
System No.	Substrate (Notes 1 & 12)	Base Insulation Layer		Top Insulation Layer(s)		Roof Cover (Note 15)		MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base	Application	
R-40	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-167.5
R-41	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 1-inch InsulBase, SecurShield	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-167.5
R-42	Existing fully-adhered granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen	Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON)	None	N/A	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-202.5
R-43	Existing fully-adhered asphalt built-up roof (BUR) with flood coat & gravel (loose gravel removed)	Min. 0.25-inch DensDeck Prime	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	None	N/A	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-202.5
R-44	Existing fully-adhered asphaltic BUR	Min. 1.5-inch InsulBase, SecurShield or min. 2-inch Insulfoam I or VIII	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-105.0
R-45	Existing fully-adhered asphaltic BUR	Min. 1.5-inch InsulBase, SecurShield or min. 2-inch Insulfoam I or VIII	OB500	Insulation: (Optional) Additional layer(s) base insulation Coverboard: Min. 0.25-inch DensDeck Prime	OB500	SureMB 90TG or 120TG / torch-applied	Sure-Weld AFX / C-CAA or hot asphalt	-120.0

TABLE 7C: STEEL - RECOVER SYSTEM TYPE C-2: PLATE-BONDED ROOF COVER *All areas where the existing metal panels do not lay flush on the underlying purlin shall have a 0.25-inch diameter pilot hole pre-drilled into the panel prior to driving the Purlin Fastener into the purlin*						
System No.	**Substrate (Note 1)**	**Insulation Layer (Note 5)**	**Attachment**		**Roof Cover (Note 15B)**	**MDP (psf)**
			Fasteners (Note 11)	**Spacing**		
RHINOBOND SYSTEMS:						
R-46	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 120-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	12-inch o.c. along purlins	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-30.0
R-47	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 120-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	6-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
R-48	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	12-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-37.5
R-49	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	12-inch o.c. along purlins	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-45.0
R-50	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 120-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	6-inch o.c. along purlins	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-52.5
R-51	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and RHINOBOND Insulation Plate (TPO) are fastened through to purlins	6-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to RHINOBOND Insulation Plate (TPO) with RHINOBOND tool per manufacturer's instructions.	-67.5
***ISOWELD* INDUCTION WELDING SYSTEM:**						
R-52	Existing standing seam or lap seam metal roof covers having min. 16 gauge (0.0598 inch), 50 ksi steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	SFS DEKFAST DF-#12-PC-SQ3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO) are fastened through to purlins	12-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5
R-53	Existing standing seam or lap seam metal roof covers having min. 16 gauge (0.0598 inch), 50 ksi steel purlins spaced **max. 120-inch o.c.**	One or more layers, any combination, preliminarily fastened	SFS DEKFAST DF-#12-PC-SQ3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO) are fastened through to purlins	6-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-37.5
R-54	Existing standing seam or lap seam metal roof covers having min. 16 gauge (0.0598 inch), 50 ksi steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	SFS DEKFAST DF-#12-PC-SQ3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO) are fastened through to purlins	12-inch o.c. along purlins	Sure-Weld (minimum 60-mil) or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-45.0

TABLE 7C: STEEL - RECOVER
SYSTEM TYPE C-2: PLATE-BONDED ROOF COVER
All areas where the existing metal panels do not lay flush on the underlying purlin shall have a 0.25-inch diameter pilot hole pre-drilled into the panel prior to driving the Purlin Fastener into the purlin

System No.	Substrate (Note 1)	Insulation Layer (Note 5)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Spacing		
R-55	Existing standing seam or lap seam metal roof covers having min. 16 gauge (0.0598 inch), 50 ksi steel purlins spaced **max. 60-inch o.c.**	One or more layers, any combination, preliminarily fastened	SFS DEKFAST DF-#12-PC-SQ3 with SFS *isoweld*® TPO Plates (FI-P-6.8-TPO) are fastened through to purlins	6-inch o.c. along purlins	Sure-Weld or Sure-Weld EXTRA induction welded to SFS *isoweld*® TPO Plates with SFS *isoweld*® 3000 stand-up tool.	-90.0

TABLE 7D: STEEL – RECOVER
SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER
All areas where the existing metal panels do not lay flush on the underlying purlin shall have a 0.25-inch diameter pilot hole pre-drilled into the panel prior to driving the Purlin Fastener into the purlin

System No.	Deck (Note 1)	Insulation		Roof Cover (Note 15A)			MDP (psf)
		Type	Attach (Note 5)	Membrane	Fasteners (Note 11)	Attachment	
R-56	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 138.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	12-inch o.c. within 5.5-inch wide laps spaced max. 138.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-30.0
R-57	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 115-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	12-inch o.c. within 5.5-inch wide laps spaced max. 115-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-45.0
R-58	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 54.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	12-inch o.c. within 5.5-inch wide laps spaced max. 54.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-60.0
R-59	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 138.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	6-inch o.c. within 5.5-inch wide laps spaced max. 138.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-60.0
R-60	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 90.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	6-inch o.c. within 5.5-inch wide laps spaced max. 90.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-67.5
R-61	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 54.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	9-inch o.c. within 5.5-inch wide laps spaced max. 54.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-75.0
R-62	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 54.5-inch o.c.	One or more layers, any combination	Prelim. attach	Sure-Weld or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plate	6-inch o.c. within 5.5-inch wide laps spaced max. 54.5-inch o.c. to engage steel purlin. Laps sealed with 1.5-inch heat weld.	-90.0

TABLE 7E: STEEL – RECOVER SYSTEM TYPE D-1: INSULATED, MECHANICALLY ATTACHED ROOF COVER (RUSS STRIPS) *All areas where the existing metal panels do not lay flush on the underlying purlin shall have a 0.25-inch diameter pilot hole pre-drilled into the panel prior to driving the Purlin Fastener into the purlin*							
System No.	**Deck (Note 1)**	**Insulation**		**Roof Cover (Note 15A)**			**MDP (psf)**
		Type	**Attach (Note 5)**	**Membrane**	**Fasteners (Note 11)**	**Attachment**	
R-63	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 138-inch o.c.	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 138-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. to engage the purlin. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-30.0
R-64	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 114-inch o.c.	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 114-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. to engage the purlin. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-45.0
R-65	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 90-inch o.c.	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 90-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. to engage the purlin. Roof cover adhered to each strip by first priming with TPO Primer at the strip location, then rolling into place with a hand roller.	-52.5
R-66	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 120-inch o.c.	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 120-inch o.c. The plates are centered over each strip and fastened 6-inch o.c. to engage the purlin. Roof cover adhered to each strip by first priming with HP-250 Primer at the strip location, then rolling into place with a hand roller.	-60.0
R-67	Existing standing seam or lap seam metal roof covers having min. 16 ga. (0.0598-inch) to max. 3/16-inch thick steel purlins spaced max. 60-inch o.c.	One or more layers, any combination	Prelim. attached	Sure-Weld, Sure-Weld HS or Sure-Weld EXTRA	Carlisle HP Purlin Fasteners or RetroDriller Fasteners and Piranha Plates	Sure-Weld TPO 10-inch Pressure-Sensitive RUSS strips are applied over the insulation spaced 60-inch o.c. The plates are centered over each strip and fastened 12-inch o.c. to engage the purlin. Roof cover adhered to each strip by first priming with HP-250 Primer at the strip location, then rolling into place with a hand roller.	-60.0

TABLE 7F: RECOVER APPLICATIONS SYSTEM TYPE E-1: NON-INSULATED, MECHANICALLY ATTACHED ROOF COVER								
System No.	Deck (Note 1)	Roof Cover (Note 15)						MDP (psf)
		Membrane	Fasteners (Note 11)	Fastener Spacing	Lap Width	Lap Spacing	Seam Weld	
R-68	Existing steel deck	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	12-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-30.0
R-69	Existing steel deck	Sure-Weld AFX 155 or Sure-Weld FleeceBACK 135	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	12-inch o.c.	5-inch	139-inch o.c.	1.5-inch outside	-30.0
R-70	Existing steel deck, min. Grade 80	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	12-inch o.c.	5.5-inch	139-inch o.c.	1.5-inch outside	-30.0
R-71	Existing steel deck	Sure-Weld AFX 155 or Sure-Weld FleeceBACK 135	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	6-inch o.c.	5-inch	139-inch o.c.	1.5-inch outside	-37.5
R-72	Existing steel deck, min. Grade 80	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	139-inch o.c.	1.5-inch outside	-37.5
R-73	Existing steel deck	Sure-Weld AFX 155 or Sure-Weld FleeceBACK 135	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	12-inch o.c.	5-inch	115-inch o.c.	1.5-inch outside	-37.5
R-74	Existing steel deck, min. Grade 80	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	12-inch o.c.	5.5-inch	115-inch o.c.	1.5-inch outside	-37.5
R-75	Existing steel deck	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-52.5
R-76	Existing steel deck	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
R-77	Existing steel deck, min. Grade 80	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
R-78	Existing steel deck, min. Grade 80	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HP-X Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	91-inch o.c.	1.5-inch outside	-60.0
R-79	Existing steel deck, min. Grade 80	Sure-Weld AFX 155 or Sure-Weld FleeceBACK 135	Carlisle HP-Xtra Fasteners and Piranha Xtra Plates installed through to engage existing deck	12-inch o.c.	5-inch	91-inch o.c.	1.5-inch outside	-60.0
R-80	Existing structural concrete	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HD 14-10 Fasteners and Piranha Plates installed through to engage existing deck	12-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-30.0
R-81	Existing structural concrete	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HD 14-10 or CD-10 Fasteners and Piranha Plates installed through to engage existing deck Plates	6-inch o.c.	5.5-inch	139-inch o.c.	1.5-inch outside	-37.5
R-82	Existing structural concrete	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HD 14-10 Fasteners and Piranha Plates installed through to engage existing deck	12-inch o.c.	5.5-inch	115-inch o.c.	1.5-inch outside	-37.5
R-83	Existing structural concrete	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HD 14-10 Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	138.5-inch o.c.	1.5-inch outside	-60.0
R-84	Existing structural concrete	Sure-Weld AFX or Sure-Weld FleeceBACK	Carlisle HD 14-10 or CD-10 Fasteners and Piranha Plates installed through to engage existing deck	6-inch o.c.	5.5-inch	91-inch o.c.	1.5-inch outside	-60.0

TABLE 7G: RECOVER APPLICATIONS SYSTEM TYPE F-1: NON-INSULATED, BONDED ROOF COVER				
System No.	Substrate (Notes 1 & 12)	Roof Cover (Note 15)		MDP (psf)
		Type	Attach	
SURE-WELD APPLICATIONS:				
R-85	Existing fully adhered TPO single ply over structural concrete deck	Sure-Weld	CAV-GRIP III Low-VOC Adhesive/Primer	-585.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (PARTIAL BOND):				
R-86	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over steel deck	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-75.0
R-87	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over structural concrete deck	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (RIBBON, 6-inch o.c.)	-177.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):				
R-88	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over steel deck	Sure-Weld FleeceBACK	Flexible FAST or Flexible FAST DT (FULL)	-135.0
R-89	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over structural concrete, cellular lightweight concrete, Tectum or gypsum deck	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-177.0
R-90	Existing fully adhered TPO single ply over structural concrete deck	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-270.0
R-91	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over Tectum roof deck	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-325.0
R-92	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR) or granule-surfaced modified bitumen over structural concrete deck	Sure-Weld AFX	Hot Asphalt	-367.5
R-93	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over gypsum roof deck	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-400.0
R-94	Existing fully adhered, granule-surfaced asphalt built-up roof (BUR), smooth-surfaced asphalt built-up roof (BUR), granule-surfaced APP or SBS modified bitumen or smooth-surfaced SBS modified bitumen over structural concrete deck	Sure-Weld FleeceBACK	Flexible FAST DT (FULL)	-635.0

TABLE 7H: RECOVER APPLICATIONS SYSTEM TYPE F-2: NEW LIGHTWEIGHT CONCRETE OVER EXISTING ROOF, BONDED ROOF COVER						
System No.	Substrate (Notes 1 & 12)			Roof Cover (Note 15)		MDP (psf)
	Deck	Existing Roof	Lightweight Concrete	Type	Attach	
SURE-WELD OR SURE-WELD HS MEMBRANE APPLICATIONS:						
R-95	Min. 2,500 psi structural concrete	Existing gravel surface BUR	CELCORE (FL2037): Min. 300 psi, Min. 2-inch thick, Celcore Cellular Concrete or Celcore MF Cellular Concrete (EPS board optional)	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-75.0
R-96	Min. 2,500 psi structural concrete	Existing mineral surface cap sheet, smooth surface BUR or smooth surface modified cap sheet	CELCORE (FL2037): Min. 300 psi, Min. 2-inch thick, Celcore Cellular Concrete (EPS board optional)	Sure-Weld	Aqua Base 120	-82.5
R-97	Min. 2,500 psi structural concrete	Existing mineral surface cap sheet, smooth surface BUR or smooth surface modified cap sheet	CELCORE (FL2037): Min. 300 psi, Min. 2-inch thick, Celcore Cellular Concrete (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-135.0
R-98	Min. 2,500 psi structural concrete	Existing mineral surface cap sheet	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 300 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld	Aqua Base 120, CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-135.0
R-99	Min. 2,500 psi structural concrete	Existing smooth surface BUR or smooth surface modified cap sheet	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 300 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld	Aqua Base 120	-217.5
R-100	Min. 2,500 psi structural concrete	Existing smooth surface BUR or smooth surface modified cap sheet	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 300 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-262.5
R-101	Min. 2,500 psi structural concrete	Existing asphalt BUR	CONCRECEL (FL5584 & FL10500): Min. 350 psi, min. 2-inch thick, Concrecel Lightweight Insulating Concrete (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-375.0
R-102	Min. 2,500 psi structural concrete	Existing asphalt BUR or smooth- or granule-surface SBS modified bitumen	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	Sure-Weld	Aqua Base 120	-67.5
R-103	Min. 2,500 psi structural concrete	Existing asphalt BUR or granule-surface SBS modified bitumen	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-302.5
R-104	Min. 2,500 psi structural concrete	Existing asphalt BUR or smooth-surface SBS modified bitumen	ELASTIZELL (FL4994): Min. 250 psi, Min. 2-inch thick, Elastizell Range II LWIC (EPS board optional)	Sure-Weld	CAV-GRIP III AP, LVOC BA or Sure-Weld BA	-342.0
SURE-WELD FLEECEBACK MEMBRANE APPLICATIONS (FULL BOND):						
R-105	Min. 2,500 psi structural concrete	Existing gravel surface BUR	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-75.0
R-106	Min. 2,500 psi structural concrete	Existing mineral surface cap sheet	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-135.0
R-107	Min. 2,500 psi structural concrete	Existing smooth surface BUR or smooth surface modified cap sheet	CELCORE (FL2037): Min. 36 pcf wet cast density, min. 200 psi, min. 2-inch thick Celcore MF Cellular Concrete (EPS board optional).	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-232.5
R-108	Min. 2,500 psi structural concrete	Existing asphalt BUR or smooth- or granule-surface SBS modified bitumen	ELASTIZELL (FL4994): Min. 320 psi, min. 2-inch thick, Elastizell Range II LWIC (EPS optional board)	Sure-Weld FleeceBACK	Flexible FAST (FULL)	-250.0

TABLE 8A: HILTI PART / SUPPORT THICKNESS LIMITATIONS[i]	
HILTI PART	**STEEL SUPPORTING MEMBER THICKNESS (INCH)**
X-ENP-19 L15, X-ENP-19 L15MX or X-ENP-19 L15MXR	$t \geq 0.25$
X-EDN19 THQ12 or X-EDN19 THQ12M	$0.25 \leq t \leq 0.375$
X-EDNK22 THQ12 or X-EDNK22 THQ12M	$t = 0.25$
X-HSN 24	$0.125 \leq t \leq 0.375$
S-MD 12-24 x 1-5/8 M HWH5	$0.125 < t \leq 0.25$

TABLE 8B: HILTI PART / TYPE B STEEL DECK ATTACHMENT-SPAN LIMITATIONS[i]								
HILTI PART	**MAX. SPACING (INCH O.C.)**	**MAX. ALLOWABLE DESIGN PRESSURE (PSF)**	**MAX. SPAN (INCHES)**					
			Min. 22 ga. steel		**Min. 20 ga. steel**		**Min. 18 ga. steel**	
			Min. 33 ksi	**Min. 80 ksi**	**Min. 33 ksi**	**Min. 80 ksi**	**Min. 33 ksi**	**Min. 80 ksi**
X-ENP-19 L15 X-ENP-19 L15MX X-ENP-19 L15MXR X-EDN19 THQ12 X-EDN19 THQ12M X-EDNK22 THQ12 X-EDNK22 THQ12M X-HSN 24 or S-MD 12-24 x 1-5/8 M HWH5	12	-45.0	72	72	72	72	72	72
	6	-82.5*	72	72	72	72	72	72
	6	-90.0*	68	72	72	72	72	72
	6	-97.5*	63	72	72	72	72	72
	6	-105.0*	59	72	72	72	72	72
	6	-112.5*	55	72	67	72	72	72
	6	-120.0*	51	72	63	72	72	72
	6	-127.5*	48	72	59	72	72	72
	6	-135.0*	45	72	56	72	72	72
	6	-142.5*	43	72	53	72	72	72
	6	-150.0*	41	72	50	72	69	72
	6	-157.5*	39	71	48	72	65	72
	6	-165.0*	37	68	46	72	62	72
	6	-165.0*	35	65	44	72	60	71
	6	-172.5*	34	62	42	72	57	68
	6	-180.0*	33	60	40	72	55	65
	6	-187.5*	31	57	39	71	53	62
	6	-195.0*	30	55	37	68	51	60
	6	-202.5*	29	53	36	66	49	58
	6	-210.0*	28	51	36	63	47	56
	6	-217.5*	27	50	33	61	46	54
	6	-225.0*	26	48	32	59	44	52

**Limited to fully or partially adhered roof coverings.*

[i] Information is provided as guidance for use at the discretion of the Designer or Record and Authority Having Jurisdiction. Neither NEMO|etc. nor Robert Nieminen, P.E.purport to evaluate Hilti fasteners for compliance with the Florida Building Code.