

## Robert Schubert

---

**To:** Kevin Ture  
**Subject:** RE: Rochester

**From:** Ben Cota [<mailto:bcota@jpcarrara.com>]  
**Sent:** Friday, October 30, 2015 3:50 PM  
**To:** Kevin Ture  
**Cc:** Joe Carrara  
**Subject:** RE: Rochester

Kevin,

We have documented the cracks on both Rochester bridges (see attached maps and corresponding photos) and propose the following corrective action:

Bridge 15: Application of additional coats of 100% silane sealer from the VAOT APL (JPC has MasterProtect H 1000 in stock) applied at each crack to saturation.

Bridge 16: Application of Protectosil Degadeck CSS MMA sealer at each crack.

Benjamin L. Cota  
Precast Production Engineer

---

**From:** Kevin Ture [<mailto:KTure@wmschultz.com>]  
**Sent:** Friday, October 16, 2015 8:21 AM  
**To:** Joe Carrara <[jcarrara@jpcarrara.com](mailto:jcarrara@jpcarrara.com)>  
**Cc:** Ben Cota <[bcota@jpcarrara.com](mailto:bcota@jpcarrara.com)>  
**Subject:** RE: Rochester

Thanks great,

**Kevin Ture**  
**Sr. Project Manager**  
**Schultz Construction**  
*Heavy Civil Construction*  
831 State Route 67 | Curtis Industrial Park  
PO Box 2620 | Ballston Spa, NY 12020  
W: 518.885.0060 Ext. 221 F: 518.885.0744  
C: 518.956.0255

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**Gruen Construction**  
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**From:** Joe Carrara [<mailto:jcarrara@jpcarrara.com>]  
**Sent:** Thursday, October 15, 2015 5:22 PM  
**To:** Kevin Ture  
**Cc:** Ben Cota  
**Subject:** RE: Rochester

Kevin,

The soonest Ben can get up there to review the cracks will be Monday. We'll call you Monday afternoon.

Joe Carrara  
**JP Carrara & Sons, Inc.**  
2464 Case Street  
Middlebury, VT 05753  
802.388.6363  
[www.jpcarrara.com](http://www.jpcarrara.com)

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**From:** Kevin Ture [<mailto:KTure@wmschultz.com>]  
**Sent:** Thursday, October 15, 2015 5:08 PM  
**To:** Joe Carrara <[jcarrara@jpcarrara.com](mailto:jcarrara@jpcarrara.com)>  
**Cc:** Ben Cota <[bcota@jpcarrara.com](mailto:bcota@jpcarrara.com)>  
**Subject:** Rochester

Joe,

Is Ben going to be able to get the repair procedure for Rochester soon??, the weather is getting colder!!!

**Kevin Ture**  
**Sr. Project Manager**  
**Schultz Construction**  
*Heavy Civil Construction*  
831 State Route 67 | Curtis Industrial Park  
PO Box 2620 | Ballston Spa, NY 12020  
W: 518.885.0060 Ext. 221 F: 518.885.0744  
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# Protectosil® Degadeck® CSS

## MMA CONCRETE SYSTEM SEALER

### Product Data and Test Information



#### PRODUCT DESCRIPTION

**Protectosil Degadeck CSS** is a low viscosity reactive methylmethacrylate (MMA) for use in sealing cracks in concrete structures. **Protectosil Degadeck CSS** is a two component liquid material which is catalyzed to cure into a hard methylmethacrylate (MMA) resin. The low viscosity of the **Protectosil Degadeck CSS** allows it to readily penetrate into cracks. Cracks as wide as 1/8 of an inch (3 mm) to hairline can be sealed. **Protectosil Degadeck CSS** cures within one hour and is ready for traffic at that time. The cured MMA is resistant to water, chloride ion ingress, and also alkali attack.

**Protectosil Degadeck CSS** penetrates into cracks, then reacts to seal against water and chloride ion intrusion. The unique MMA resin also seals sound concrete against water and chloride ion ingress. The cured MMA creates a barrier which prevents the ingress of water and water borne contaminants from entering the substrate and causing premature deterioration.

By combining the two low viscosity components of the MMA resin, **Protectosil Degadeck CSS** penetrates by gravity into even the smallest crack. The excellent adhesion and strength of the cured resin ensures a long service life

#### APPROPRIATE APPLICATIONS/SUBSTRATES

For use to seal cracks on cast-in-place, pre-cast, and high strength concrete as well as concrete surfaces from ingress of water and water-borne contaminants, such as chloride ions. For use on concrete bridge decks, parking garages, pedestrian walkways and other elevated concrete structures.

#### ADVANTAGES

**Protectosil Degadeck CSS** is a 100% solid reactive MMA resin with low intrinsic viscosity and excellent adhesion to concrete surfaces.

The main benefits of this product are:

- Fast Curing System
- Deep penetration into cracks
- Excellent adhesion and bond strength
- Excellent water and chloride ion screening
- Compatible with other Protectosil® Building Protection products

- UV Resistance
- Highly resistant to alkali attack

#### LIMITATIONS

Not intended for below-grade waterproofing of cracks under hydrostatic pressure. Should not be applied if the surface temperature is below 40°F (4°C) or above 90°F (32°C), if rain is expected within two hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry at least 24 hours.

#### TECHNICAL DATA

**Protectosil Degadeck CSS** is a liquid system catalyzed by the addition of an activator.

Color	bluish, slightly turbid liquid
Active Substance	methylmethacrylate
Active Content	100%
Solvent	none
Viscosity @ 74°F	5 - 15 cp
T <sub>max</sub> @ 74°F	20 - 40 min / 212°F - 392°F
Flash point	50°F
VOC	less than 70 g/l

Tensile Strength DIN EN ISO 527

54 Mpa (7755 psi)

Elongation at Break DIN EN ISO 527

4 %

Flexural Strength DIN EN ISO 1788

2 MPa (11,900 psi)

#### INSTALLATION

Concrete should be allowed to cure a minimum of 28 days. Concrete repair and replacement must be completed prior to application of **Protectosil Degadeck CSS**. Patching materials, caulking, sealing material, and traffic paint must be fully cured before application.

All surfaces must be cleaned to remove all traces of dirt, dust, efflorescence, mold, salt, grease, oil asphalt, laitance, curing compounds, paint, coatings, and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting, and chemical cleaners. Do not apply to a wet substrate and allow a minimum of 24 hours drying after precipitation. Check with your Evonik Degussa Corporation representative to verify that surface preparation is adequate.

(Continued)

DO NOT ADD SOLVENTS, WATER OR OTHER MATERIAL TO THE **Protectosil Degadeck CSS** FORMULATION.

Mix the **Protectosil Degadeck CSS** containers by rolling, shaking or stirring containers prior to use. The **Protectosil Degadeck CSS** formulation should be mixed in clean containers, preferably plastic. Mix the **Protectosil Degadeck CSS** until thoroughly mixed.

After mixing, **Protectosil Degadeck CSS** is ready for the addition of the initiator. Slowly stir the **Protectosil Degadeck CSS** and add the BPO catalyst per the following temperature chart:

Application Temp	BPO catalyst (% by wt.)	Pot Life (min)	Hardening Time (min)
40°F (9°C)	7.0	15	60
50°F (9°C)	5.0	12 - 16	45 - 50
60°F (16°C)	3.0	15 - 20	45 - 50
70°F (21°C)	2.0	15 - 20	45 - 50
80°F (27°C)	1.0	20 - 25	45 - 50
90°F (32°C)	1.0	5-10	30 - 35

Stir the mixture until the BPO powder is dissolved and immediately pour the **Protectosil Degadeck CSS** on the concrete surface. Using squeegees, rollers or brooms quickly distribute the material over the concrete surface. Push material onto and into cracks to allow more material to penetrate. After approximately 10 minutes at 70°F (20°C) broadcast clean dry quartz (20 to 30 mesh), aluminum oxide or other approved medium onto the sealed surface. Distribute medium evenly over the surface at a rate of 10 to 15 pounds per 100 square feet for pedestrian traffic areas and 15 to 20 pounds for vehicular traffic areas. After approximately one hour remove any loose sand and open sealed area to traffic.

For large cracks that reflect through the slab, apply by brush or roller **Protectosil Degadeck CSS** to the underside of the slab and allow to cure before sealing top surface. On larger cracks it may be advisable to partially fill the cracks with clean dry quartz to reduce the amount of **Protectosil Degadeck CSS** needed.

Coverage rates depend on the amount and size of cracks, typical coverage is approximately 80 to 140 square feet per gallon. Exact coverage depends on the number and volume of cracks as well as the concrete porosity. It is recommended to seal cracks in the early part of the day if the concrete will be exposed to direct sunlight. As the concrete heats up it will expand and the cracks will close-up. As long as there is no dew or moisture on the decks the **Protectosil Degadeck CSS** can be used even at night.

**Precautions: Protectosil Degadeck CSS** is a flammable liquid and should be kept away from heat, sparks, open flame or other sources of ignition. The **Protectosil Degadeck CSS** containers should be kept closed when not in use and should be stored at temperatures below 75°F (24°C) and away from rain, standing water and direct sunlight. When working in an enclosed area, an air respirator should be used. Please refer to the Material Safety Data Sheet for more detailed information.

#### AVAILABILITY

**Protectosil Degadeck CSS** is available in 5 and 55 gallon (180kg) drums to approved applicators, F.O.B. to various warehouses throughout the United States. Contact your local Protectosil representative or your regional manager for specific cost information. You can obtain their contact information on our website, [www.protectosil.com](http://www.protectosil.com), or by calling us at 1 (800) 828-0919.

#### TECHNICAL SERVICE

Technical service engineers and scientists are available to answer questions about product performance, application methods and compatibility with other building materials. You can speak to one of our engineers or scientists directly by calling our toll-free number, 1 (800) 828-0919, and selecting option 1.

#### MANUFACTURER

Evonik Corporation  
299 Jefferson Road  
Parsippany, NJ 07054-0677  
1 (800) 828-0919  
[info.protectosil@evonik.com](mailto:info.protectosil@evonik.com)  
[www.protectosil.com](http://www.protectosil.com)

PROTECTOSIL PRODUCTS ARE MANUFACTURED AT THE EVONIK CORPORATION THEODORE, ALABAMA, PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 AND ISO-14001 REQUIREMENTS.

For more information, MSDS and the most updated product information, and to find your local representative, go to [www.protectosil.com](http://www.protectosil.com)

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# MasterProtect® H 1000

High-performance, clear, breathable, 100% silane penetrating sealer

FORMERLY HYDROZO® 100

## PACKAGING

- 5 gallon (18.9 L) pails
- 55 gallon (208 L) drums

## COLOR

Clear

## YIELD

250–400 ft<sup>2</sup>/gallon (6–10 m<sup>2</sup>/L)

Coverage may vary greatly with porosity of the substrate; extreme porous substrate may require two coats. Perform test panels to ensure desired results and coverage rates.

## STORAGE

Store in unopened containers in a clean, dry area between 35 and 110° F (2 and 43° C). Keep from freezing.

## SHELF LIFE

18 months when properly stored

## VOC CONTENT

Less than 350 g/L less water and exempt solvents

## DESCRIPTION

MasterProtect H 1000 is a clear, breathable, high-performance, 100% silane, water repellent sealer that achieves highest depth of penetration.

## PRODUCT HIGHLIGHTS

- No masking of windows necessary and requires no cleaning after application
- No residue, will not harm glass windows, metal frames, or painted surfaces
- 100% silane
- Protects against chloride ion penetration
- Excellent depth of penetration
- Breathability allows interior moisture to escape without damaging sealer
- Solvent based, excellent for cold weather applications
- Protects the structure from damage caused by wind-driven rain
- Does not alter surface appearance
- Surface sealer helps reduce efflorescence, atmospheric staining, and mildew
- Superior water repellence so it penetrates deeply and chemically reacts within the pores of concrete to provide long-lasting protection
- Abrasion resistant so it provides long-lasting protection to horizontal substrates subject to traffic, such as bridge decks and highway surfaces

## APPLICATIONS

- Interior and exterior
- Horizontal and vertical
- Above grade
- Traffic-bearing concrete substrates
- Bridge decks and substructures
- Concrete highway surfaces
- Ramps and barrier rails
- Parking garages
- Buildings
- Stadiums
- Many other reinforced concrete structures

## SUBSTRATES

- Concrete
- Brick and masonry
- Stucco

**Technical Data**

**Composition**

MasterProtect H 1000 is 100% silane by weight.

**Compliances**

- Alberta DOT, Type 1c
- SWR Institute validated

**Typical Properties**

PROPERTY	VALUE
<b>Penetration</b> , in (mm), average depth, depending upon substrate	0.35 (9)
<b>Surface appearance after application</b>	Unchanged

**Test Data**

PROPERTY	RESULTS	TEST METHOD
<b>Flash point</b> , ° F (° C)	165 (62.7)	SETA
<b>Water repellency after heavy abrasion</b> , %	83.5 – exceeds criteria	Alberta DOT penetrating sealer, Type 1c (0.35 w/c ratio)
<b>Water weight gain</b> , % reduction		NCHRP 244 Series II-cube test
250 ft <sup>2</sup> /gal (6.1 m <sup>2</sup> /L)	90	
400 ft <sup>2</sup> /gal (9.8 m <sup>2</sup> /L)	85	
<b>Absorbed chloride</b> , % reduction		NCHRP 244 Series II-cube test
250 ft <sup>2</sup> /gal (6.1 m <sup>2</sup> /L)	96	
400 ft <sup>2</sup> /gal (9.8 m <sup>2</sup> /L)	87	
<b>Absorbed chloride</b> , % reduction	98 – exceeds criteria	NCHRP 244 Series IV - Southern climate
<b>Skid Resistance</b> , BPN		
Broomed Concrete		
Untreated	90	ASTM E 303
Treated	90	
<b>Water penetration of masonry</b> , % Reduction		
Facing Brick		
Dampness	100	ASTM E 514
Leakage	100	
<b>Water Exclusion</b> , %		
Brick	99	ASTM D 6532
Concrete	90	
<b>Water Absorption</b> , %		
Brick	0.05	ASTM D 6532
Concrete	0.96	
<b>Water Vapor Transmission</b>		
WVT (grains/h/ft <sup>2</sup> )	2.0	ASTM D 6490
Permeance (Perms)	4.8	
<b>Elevated Temperature Volatility</b> , % Weight Loss		
@85° F / 50% RH		BASF Method
30 min.	<1	
60 min.	<1	
@122° F / 50% RH		
30 min.	2	
60 min.	6	

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.



**SEALANT - WATERPROOFING & RESTORATION INSTITUTE**

Issued to: **BASF Corporation**  
 Product: **HYDROZO 100**

**ASTM D 6532:** Water Exclusion – Brick 99%, Concrete 90%  
 Water Absorption – Brick .05%, Concrete .96%

**ASTM D 6490:** Water Vapor Transmission – WVT (grains/h ft<sup>2</sup>) 2.0, Permeance 4.8  
**Validation Date:** 4/03/12 – 4/02/17

**No. 412-BAS417** *Copyright © 2012*

**CLEAR PENETRATING VERTICAL WATER REPELLENT VALIDATION PROGRAM**  
[www.swrionline.org](http://www.swrionline.org)

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## HOW TO APPLY

### SURFACE PREPARATION

1. Verify substrate has properly cured. Concrete should obtain 80% of design strength, typically achieved within 14–28 days.
2. Clean all surfaces of all sand, surface dust and dirt, oil, grease, chemical films and coatings, and other contaminants prior to application. Power wash, sandblast, or shotblast as necessary to achieve the desired surface condition. Repoint any loose, disintegrated, or cracked mortar and allow a minimum of 72 hours drying time before application.
3. Air, substrate, and material temperatures should be 20° F (-7° C) and rising at the time of the application. Substrate must be frost free. Do not apply sealer when temperatures are expected to fall below 20° F (-7° C) within 12 hours or when rain is expected within 4 hours following application. Maximum application temperature is 95° F (35° C). May be applied to slightly damp surfaces.
4. Crack control, caulking, patching, and expansion joint sealants can be installed before or after application of the sealer. Allow adequate curing time following sealant-manufacturer's recommendations. Following the application, remove excess product that might pond on a concave sealant joint.

### APPLICATION

1. Test a small area of the surface (minimum 5 by 5 ft [1.5 by 1.5 m]) before general application to ensure desired performance results, aesthetics and coverage rates and to verify application technique. Allow 5–7 days for the product to fully react before evaluating. Contact Technical Service for detail.
2. Stir material thoroughly before and during application.
3. For horizontal surfaces, apply with a flooding action. Sealer may be applied with low-pressure spray, followed by brooming for even distribution.
4. For vertical surfaces, apply by low-pressure, non-atomizing sprayer. Apply from the bottom up for uniform distribution of the sealer. Apply to saturation, with a controlled rundown of 8" (20 cm). In certain cases, a mist coat before general application will help break the surface tension and assure maximum penetration of saturation coat.

### DRYING TIME

Typical drying time for MasterProtect H 1000 is 4–6 hours at 70° F (21° C) and 50% relative humidity. Cooler temperatures or higher relative humidity can extend the drying time.

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### CLEAN UP

Clean equipment with xylene or MasterSeal 990.

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### FOR BEST PERFORMANCE

- Do not apply during inclement weather or when inclement weather is anticipated within 12 hours.
- To prevent damage to nearby shrubbery and landscaping, cover or protect with drop cloth.
- Protect asphalt-based products such as roofing materials or plastic products from overspray.
- Caution should be taken with specialty coated glass. Small areas should be tested prior to application to ensure the product does not discolor the coating. Plastic windows will turn opaque when sprayed with this products.
- MasterProtect H 1000 will not inhibit water penetration through unsound or cracked surfaces or surfaces with defective flashing, caulking, or structural waterproofing.
- Variations in the texture and porosity of the substrate will affect the coverage and performance of the product.
- Paint line striping after the application of MasterProtect H 1000.
- Windows or other non-absorbent substrates subject to overspray should be clean and contaminate free at the time of application. Cleaning may be required after application if dirt or dust is present for the silane to react with.
- Make certain the most current versions of product data sheet and SDS are being used; visit master-builders-solutions.basf.us to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

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### HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting [www.master-builders-solutions.basf.us](http://www.master-builders-solutions.basf.us), e-mailing your request to [basfbcsst@basf.com](mailto:basfbcsst@basf.com) or calling 1(800)433-9517. Use only as directed.

**For medical emergencies only, call ChemTrec® 1(800)424-9300.**

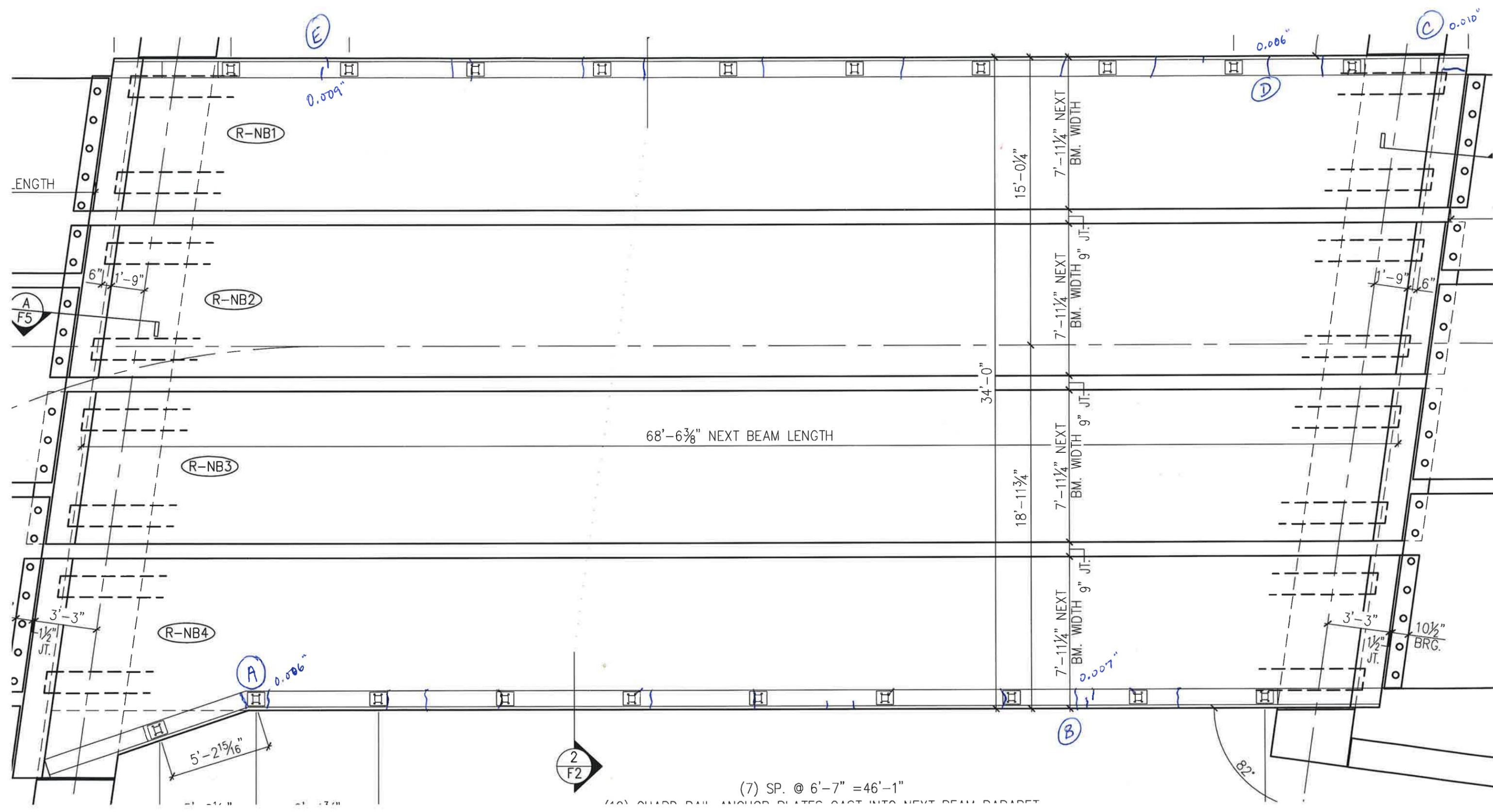
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### LIMITED WARRANTY NOTICE

BASF warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. BASF MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is the replacement of product or refund of the purchase price, at the sole option of BASF. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. BASF WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

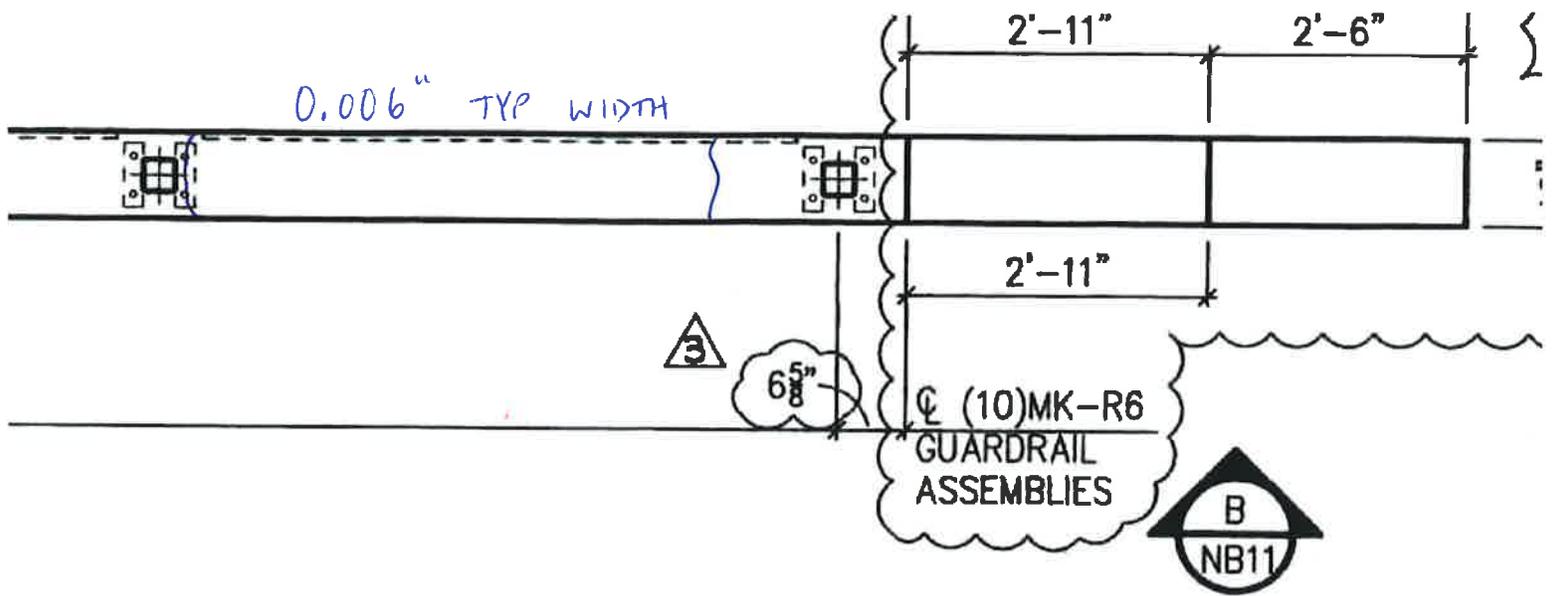
Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on BASF's present knowledge and experience. However, BASF assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. BASF reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.



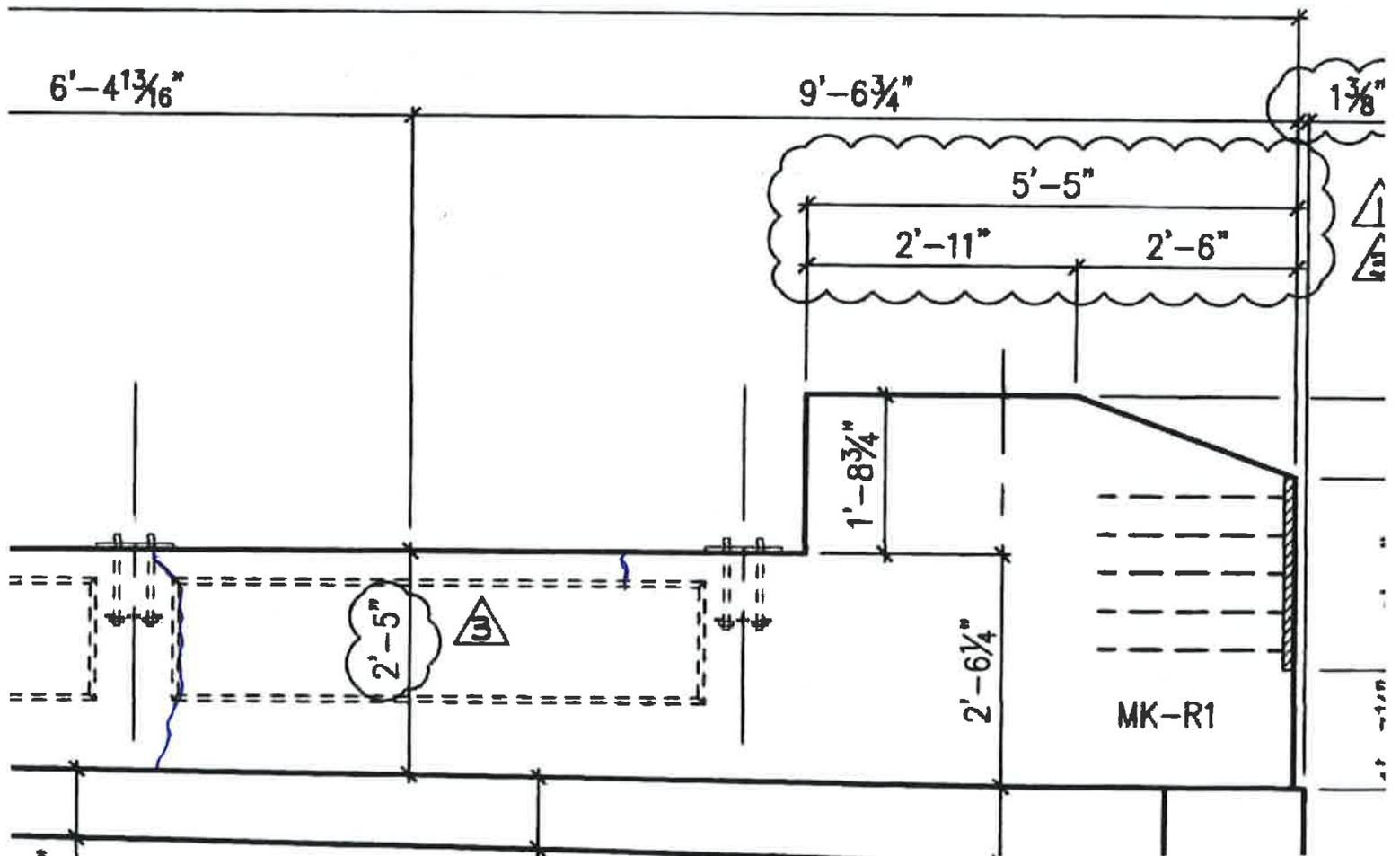


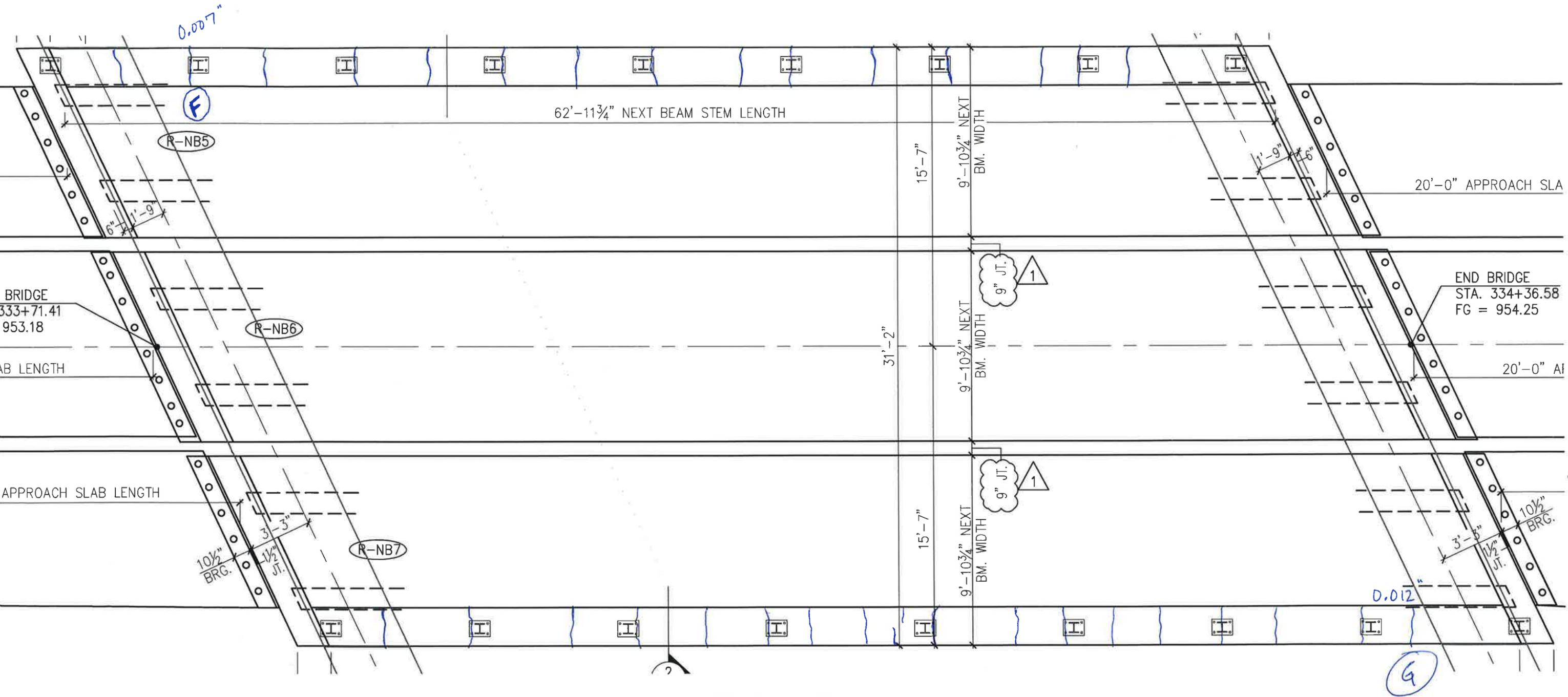
(7) SP. @ 6'-7" = 46'-1"

(40) CHAIR BAR ANCHOR PLATES CAST INTO NEXT BEAM PARABET



B15 TYP CRACKS





**CTL GROUP**

INCHES



Crack

reserved  
male

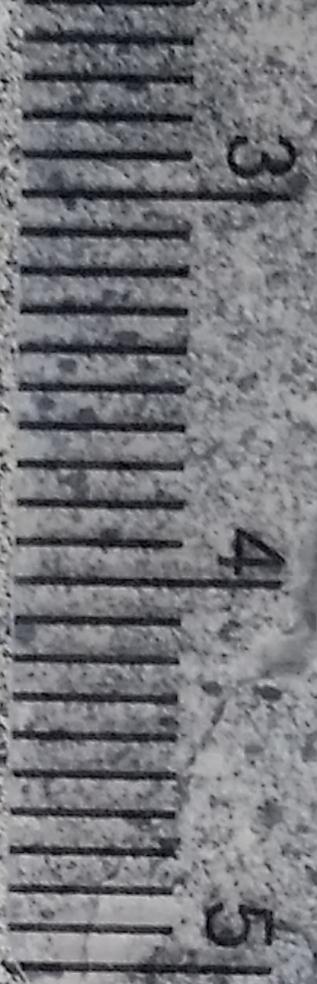


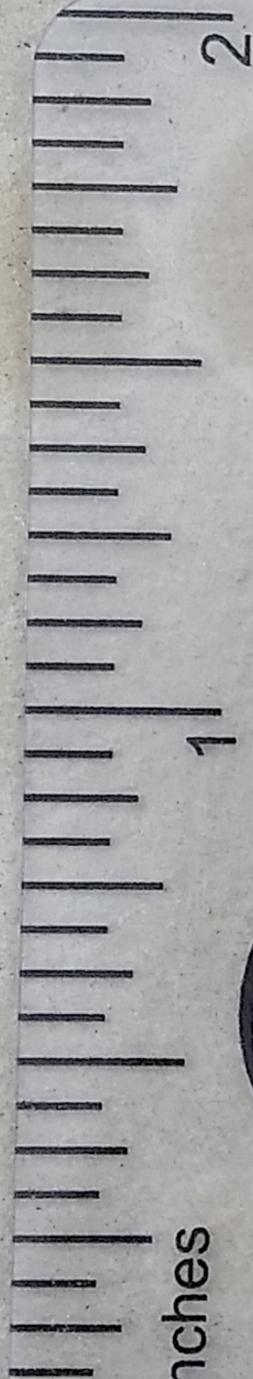
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Parameter

0.030	_____
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0.030	_____
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0.016	_____
0.012	_____
0.010	_____
0.009	_____
0.007	_____
0.006	_____
0.004	_____

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Values are approximate.





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847-965-7500

MM  
1.50  
1.25  
1.00  
.90  
.80  
.60  
.50  
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.30  
.25  
.20  
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INCHES  
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0.007  
0.006  
0.004

## Crack Comparator

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*All measurements are approximate.*



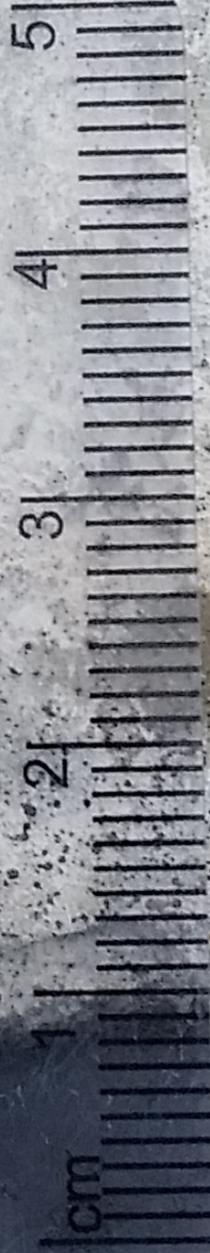
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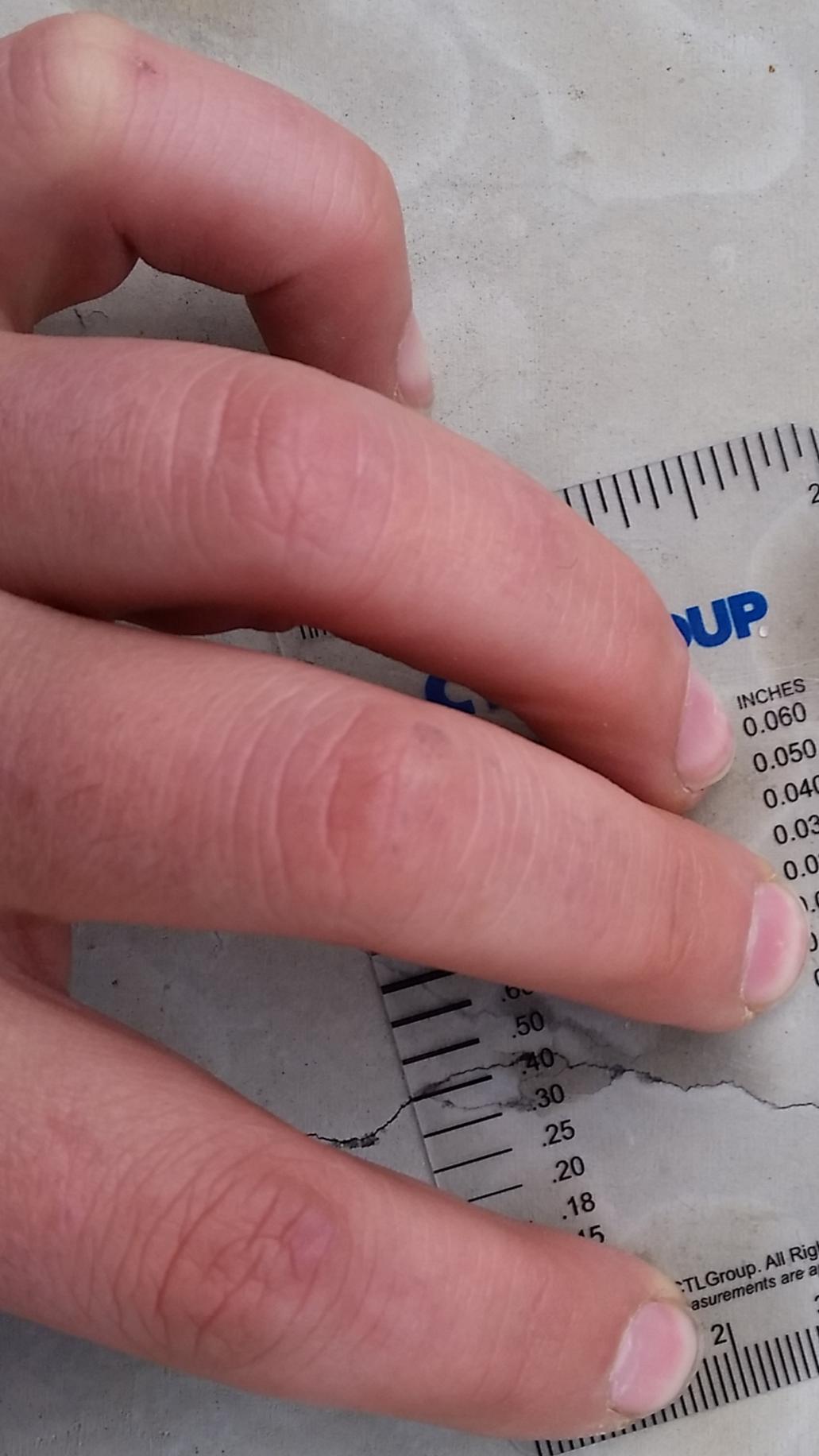
INCHES

- 0.060
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- 0.030
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- 0.020
- 0.016
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- 0.009
- 0.007
- 0.006
- 0.004

- 60
- 50
- 40
- 30
- 25
- 20
- 18
- 15
- 10



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UP

INCHES

- 0.060
- 0.050
- 0.040
- 0.035
- 0.030
- 0.025
- 0.020
- 0.016
- 0.012
- 0.010
- 0.009
- 0.007
- 0.006
- 0.004

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Measurements are approximate.

2 3 4 5



Crack  
Comparator

1.50  
1.25  
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0.016  
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0.007  
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Inches



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MM

- 1.50
- 1.25
- 1.00
- .90
- .80
- .60
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- .20
- .18
- .15
- .10

### Crack Comparator

- 0.020
- 0.016
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- 0.006
- 0.004

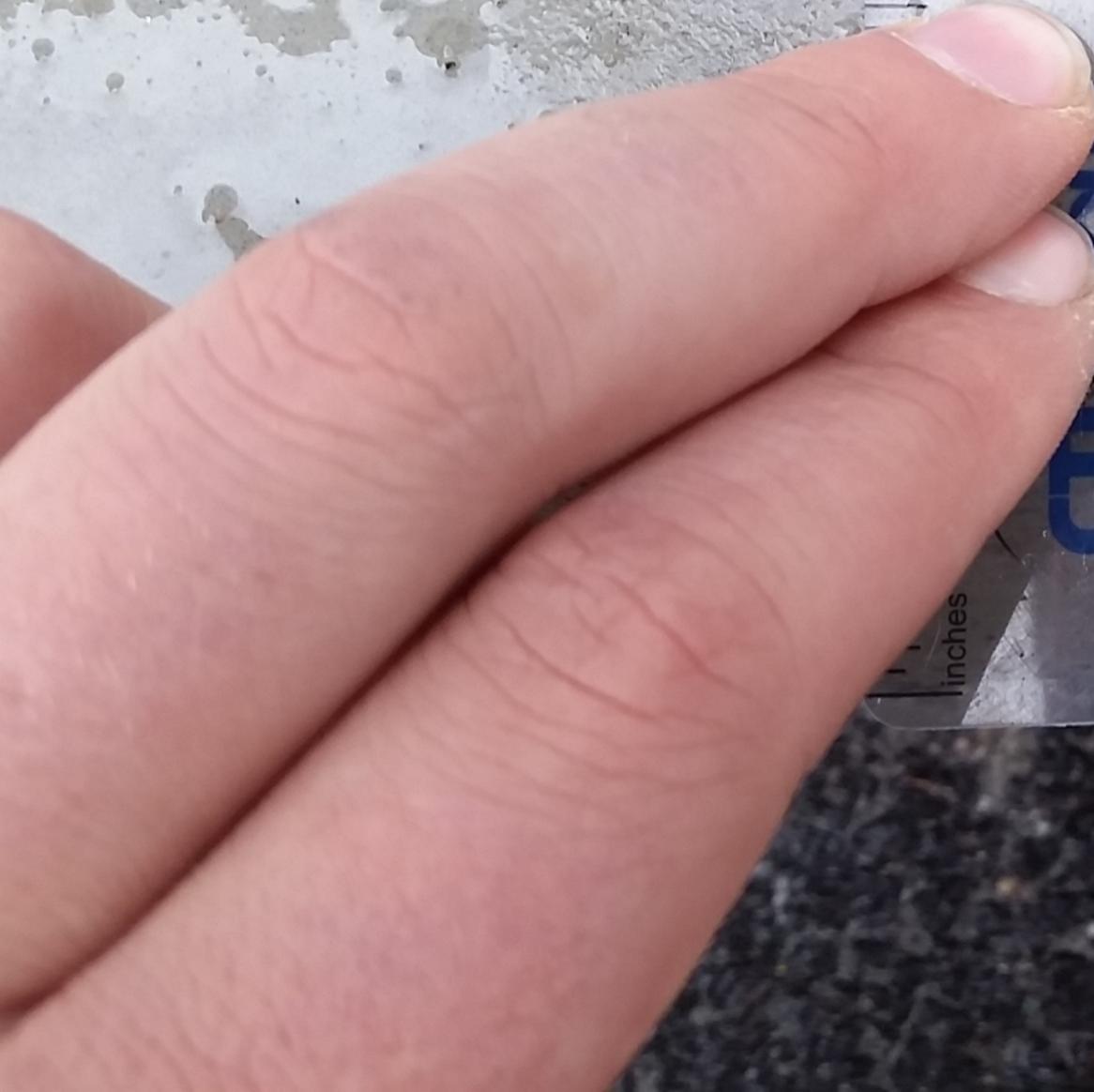
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 cm 1 2 3 4 5



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**Crack  
Comparator**

MM	INCHES
1.50	0.060
1.25	0.050
1.00	0.040
.90	0.035
.80	0.030
.60	0.025
.50	0.020
.40	0.016
.30	0.012
.25	0.010
.20	0.009
.18	0.007
.15	0.006
.10	0.004

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inches 2

cm 1 2 3 4 5



inches

**CTLC**

www.CTLG  
847-965

**Crack  
Comparator**

MM

1.50	0.020
1.25	0.016
1.00	0.012
.90	0.010
.80	0.009
.60	0.007
.50	0.006
.40	0.004
.30	
.25	
.20	
.18	
.15	
.10	

cm

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All measurements are approximate.