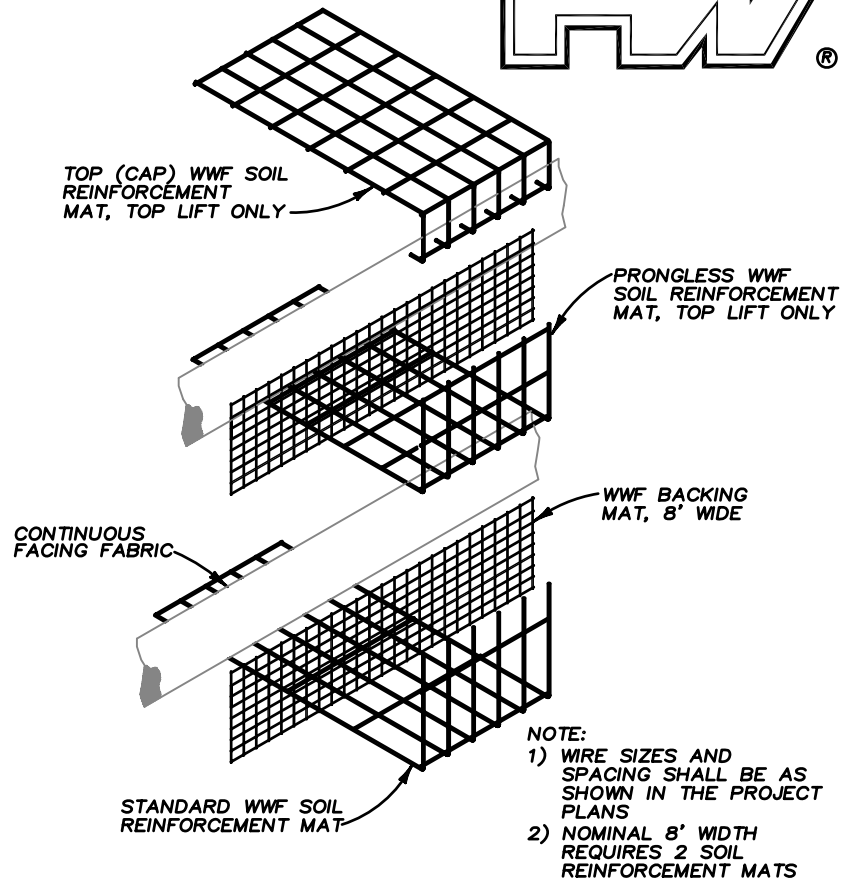
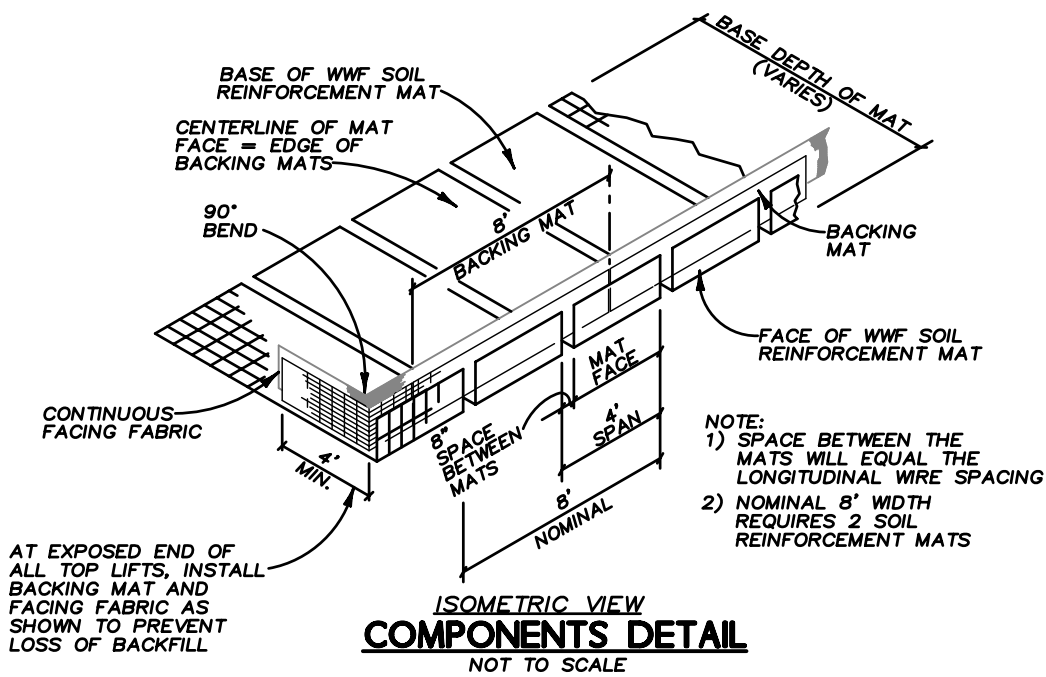


# HILFIKER RETAINING WALLS

1902 Hilfiker Lane Eureka, Ca. 95503-5711  
 707/443-5093 Fax 707/443-2891 Toll-Free 800/762-8962

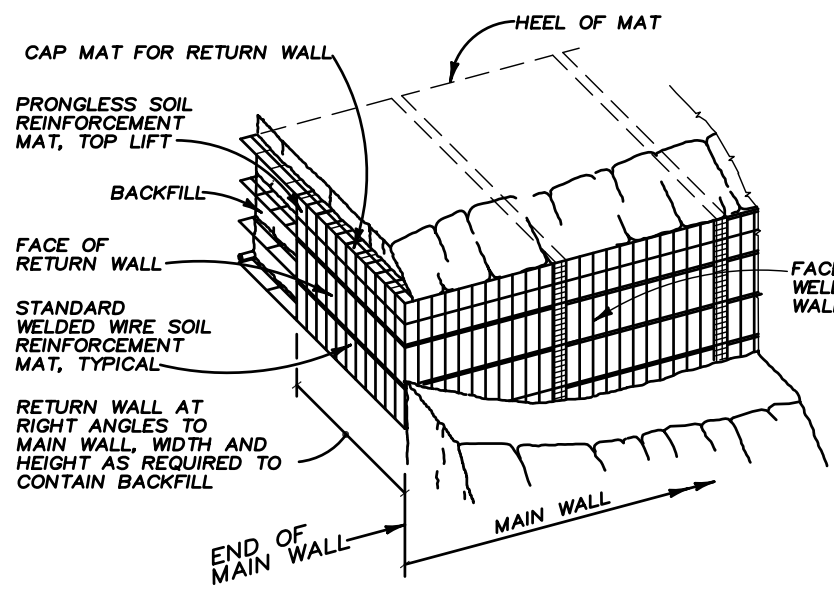


**WALL COMPONENTS**  
NOT TO SCALE

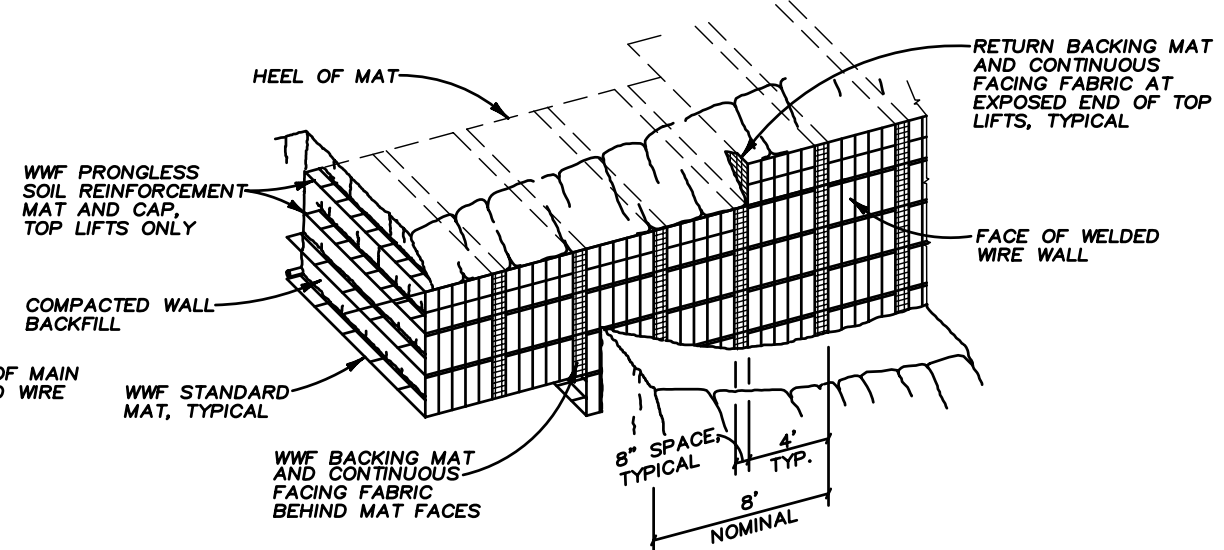


**DESIGN NOTES:**

- DESIGN IS BASED ON THE ASSUMPTION THAT THE BACKFILL WITHIN THE REINFORCED SOIL MASS, METHODS OF CONSTRUCTION, AND QUALITY OF MATERIALS CONFORM TO THE REQUIREMENTS OF THE HILFIKER COMPANY.
- THE DESIGN REQUIRES A NON-SATURATED BACKFILL. SURFACE AND SUBSURFACE DRAINAGE CONTROL MAY BE REQUIRED TO PREVENT SATURATION OF BACKFILL OR RELIEVE HYDROSTATIC PRESSURES. DRAINAGE CONTROL SHALL BE AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE OWNER'S ENGINEER.
- THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE OWNER. ON THE BASIS OF THIS INFORMATION, HILFIKER RETAINING WALLS HAS EVALUATED, AND IS RESPONSIBLE FOR, THE INTERNAL AND EXTERNAL STABILITY OF THE STRUCTURE ONLY. GLOBAL STABILITY AND SLOPE STABILITY IS THE RESPONSIBILITY OF THE OWNER.
- ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED SOIL VOLUME, AS DETERMINED BY THE OWNER'S ENGINEER, SHALL BE EXCAVATED FOR THE FULL LENGTH OF THE MAT REINFORCEMENTS AND TO A DEPTH AS DIRECTED BY THE OWNER'S ENGINEER. EXCAVATED UNSUITABLE MATERIAL SHALL BE REPLACED AS DIRECTED BY THE OWNER'S ENGINEER.
- SOIL - DESIGN PARAMETERS (ASSUMED)  
 SELECT GRANULAR BACKFILL UNIT WEIGHT: 125 pcf  
 INTERNAL FRICTION ANGLE: 34°  
 COHESION: 0 psf  
 RANDOM BACKFILL UNIT WEIGHT: 125 pcf  
 INTERNAL FRICTION ANGLE: 34°  
 COHESION: 0 psf  
 FOUNDATION SOIL INTERNAL FRICTION ANGLE 34°  
 COHESION: 0 psf
- THE MAXIMUM CALCULATED APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATION. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS CALCULATED APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.
- IF ACTUAL CHARACTERISTICS, GRADES OR DIMENSIONS OF SOIL MATERIALS DIFFER FROM THOSE LISTED ABOVE OR SHOWN ON THE PLANS, HILFIKER RETAINING WALLS SHALL BE NOTIFIED TO EVALUATE THE NEED TO REDESIGN.
- COVER LETTER, SPECIFICATIONS AND CALCULATIONS BY COLLINS ENGINEERS, INC., (530) 887-8151, PROJECT NO. 4969, ALONG WITH THE HILFIKER WELDED WIRE WALL CONSTRUCTION GUIDE ARE AN INTEGRAL PART OF THESE DRAWINGS.
- CONTRACTOR SHALL PROVIDE FALL PROTECTION FOR WORKERS AND EQUIPMENT DURING CONSTRUCTION IN COMPLIANCE WITH OSHA AND ANY OTHER APPLICABLE REQUIREMENTS. OWNER SHALL PROVIDE AND MAINTAIN PERMANENT FALL PROTECTION FOR PERSONNEL AND EQUIPMENT IN COMPLIANCE WITH SAME.



**RETURN WALL DETAIL**  
NOT TO SCALE



**PICTORIAL ELEVATION**  
NOT TO SCALE

**PROJECT SPECIFIC NOTES:**

- DESIGN SERVICE LIFE FOR THE WELDED WIRE WALL = 1 YR (BLACK STEEL)

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CAD FILENAME: 4969CS1			

**COLLINS ENGINEERS**  
 259 Nevada Street Suite 100  
 Auburn, CA 95603  
 Tele. (530) 887-8151  
 Fax (530) 887-0911  
 www.collinsengr.com

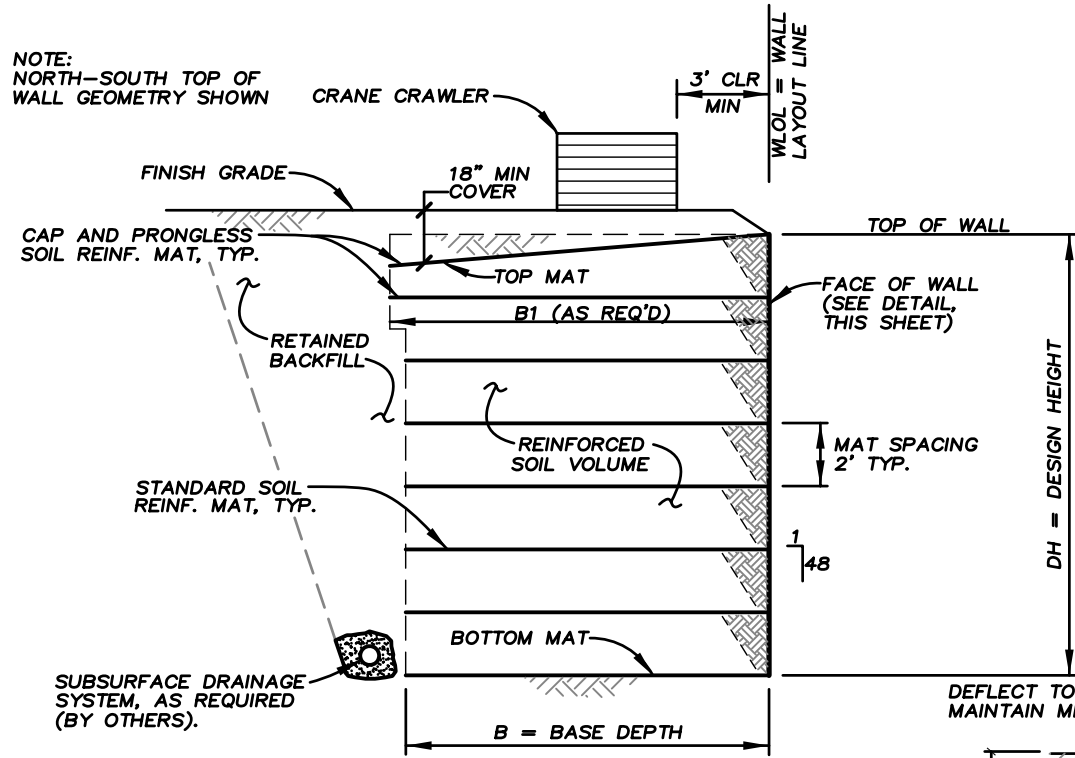
CADD BY: KPC  
 DESIGNED BY: TAJ  
 CHECKED BY: ORM  
 DATE: OCTOBER 2006  
 PROJECT No. 4969  
 SCALE: AS SHOWN

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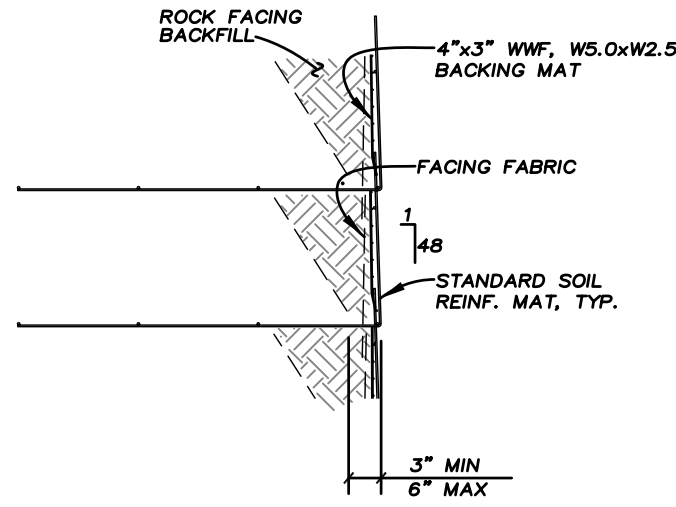
**HILFIKER RETAINING WALLS**  
 102 Hilliker Lane Eureka, CA 95503-5711  
 Tel: 707-443-5093 Fax: 707-443-2891  
 Toll-Free: 800-762-8962  
 Email: info@hilfiker.com Web: http://hilfiker.com

**WELDED WIRE RETAINING WALL: 24" Lift**  
**WORLD TRADE CENTER RAMP**  
 KIEWIT EASTERN DIVISION  
 LOWER MANHATTEN NEW YORK  
 HRW PROJECT NO: 060913AW  
 SHEET NUMBER: 1 OF 4

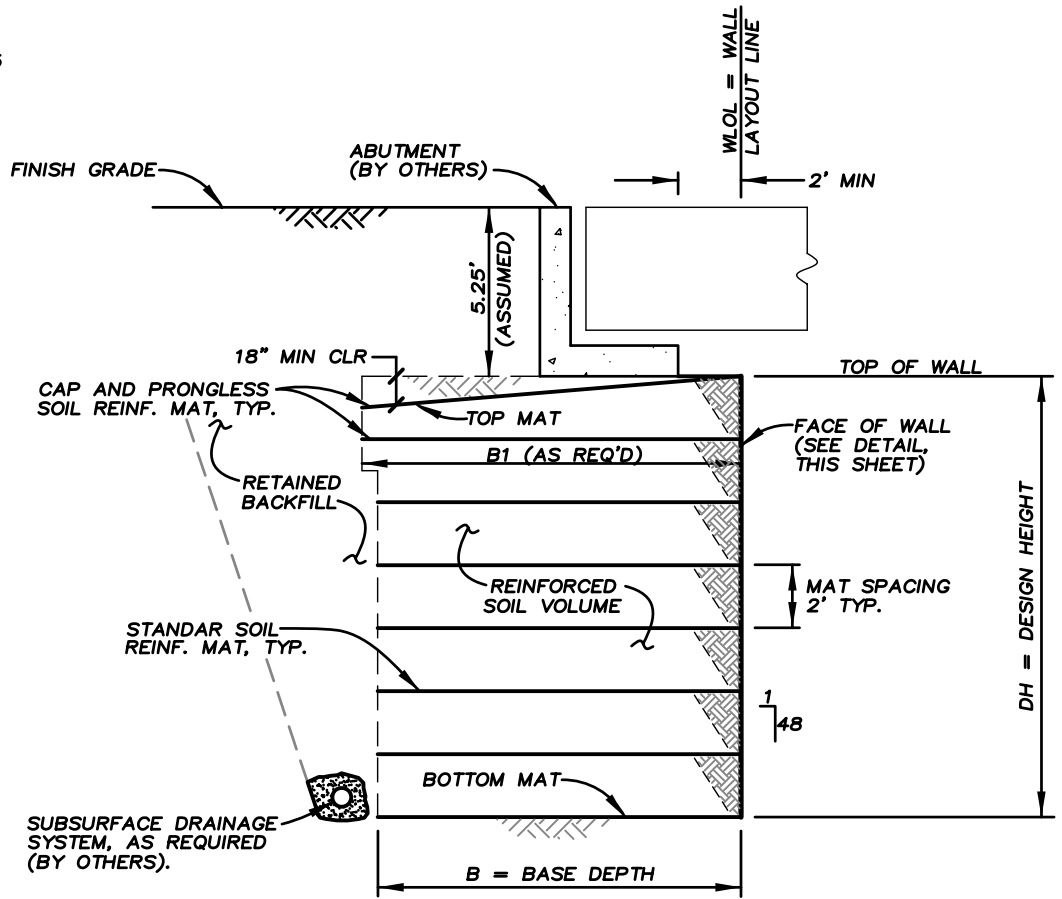
NOTE:  
NORTH-SOUTH TOP OF  
WALL GEOMETRY SHOWN



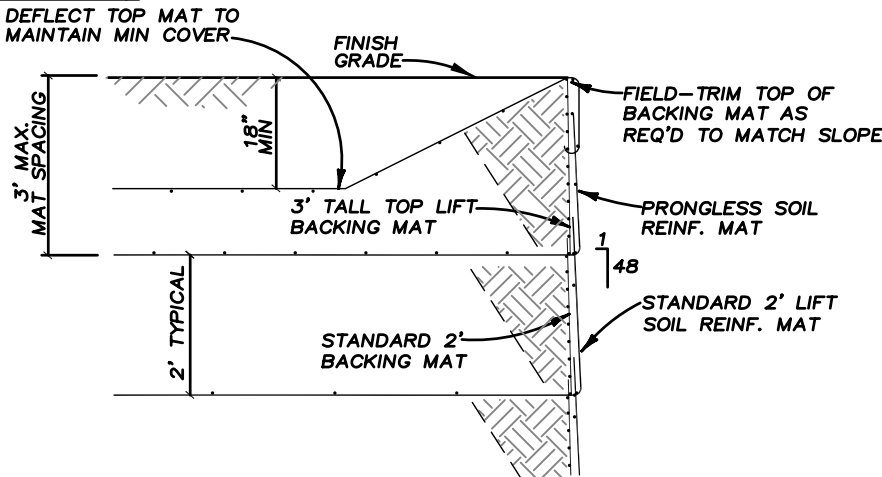
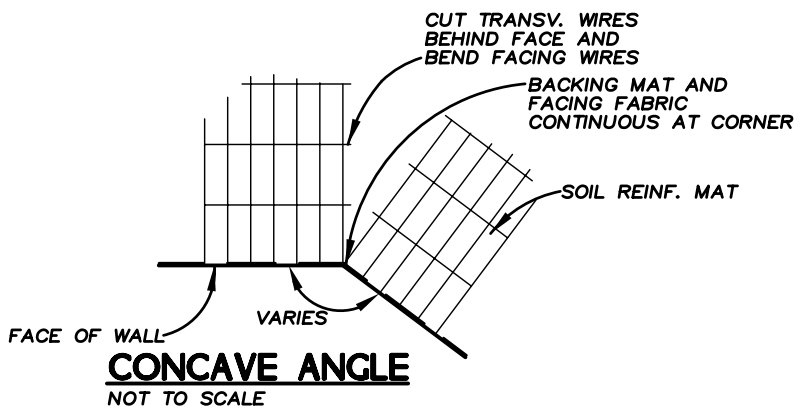
**TYPICAL SECTION**  
NOT TO SCALE



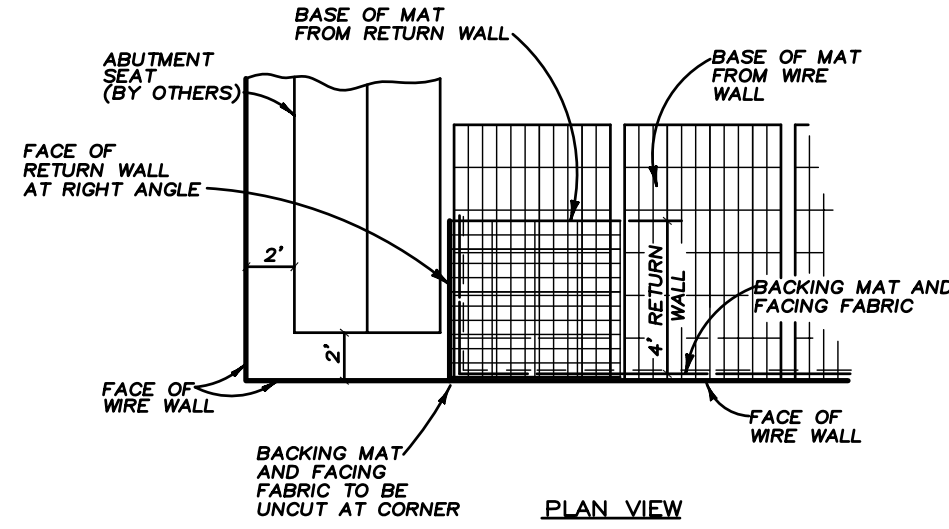
**WALL FACE DETAIL**  
NOT TO SCALE 24" LIFT



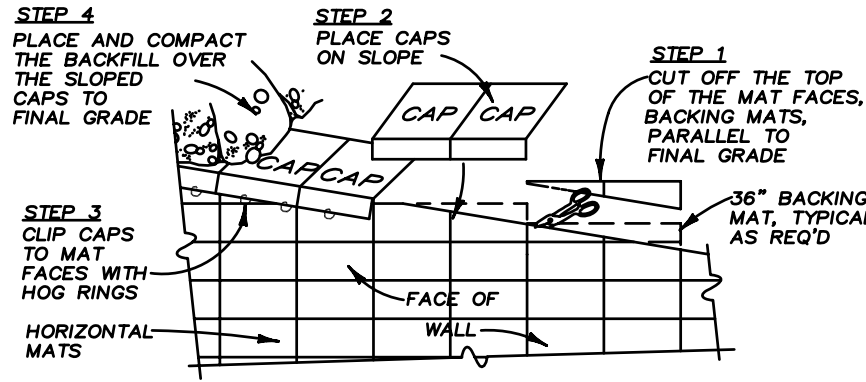
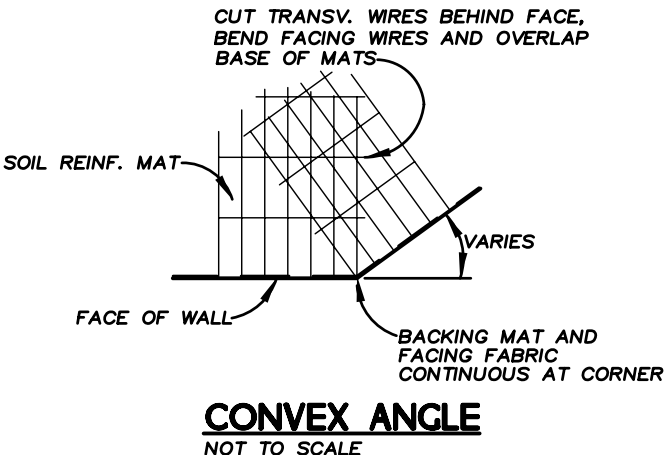
**ABUTMENT TYPICAL SECTION**  
NOT TO SCALE



**EAST-WEST FACE 36° BACKING MAT SECTION**  
NOT TO SCALE



**4' RETURN WALL AT ABUTMENT DETAIL**  
NOT TO SCALE



**SLOPED CAP DETAIL**  
NOT TO SCALE

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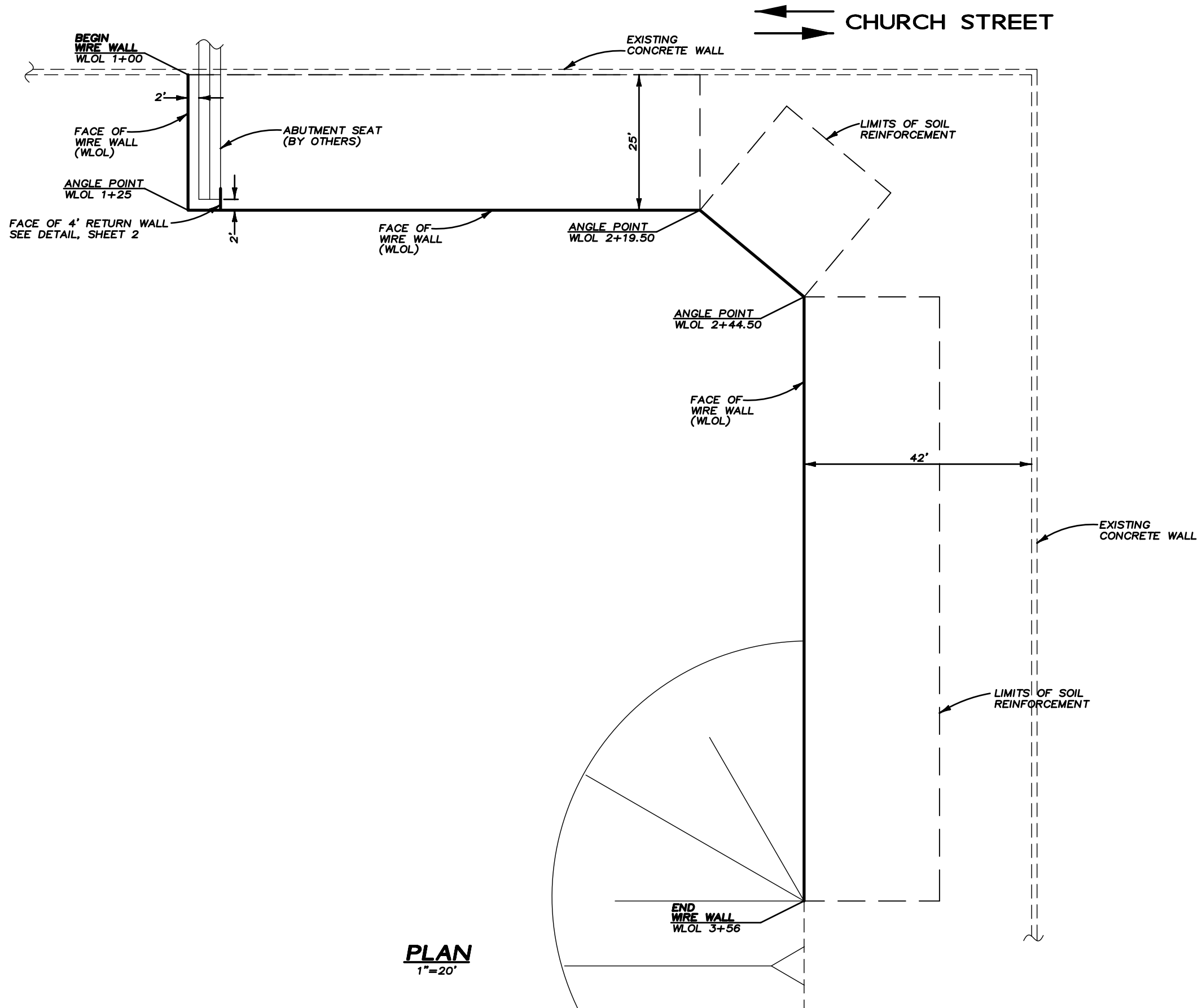
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**HILFKER RETAINING WALLS**  
1002 Hilfker Lane Eureka, CA 95603-6711  
Tel: 707-443-8083 Fax: 707-443-2891  
Toll-Free: 800-702-9962  
Email: info@hilfker.com Web: http://hilfker.com

**WELDED WIRE RETAINING WALL: 24" Lift**  
**WORLD TRADE CENTER RAMP**  
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LOWER MANHATTEN NEW YORK

HRW PROJECT NO: 060913AW  
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**PLAN**  
1"=20'

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DESIGNED BY: **TAJ**  
CHECKED BY: **ORM**

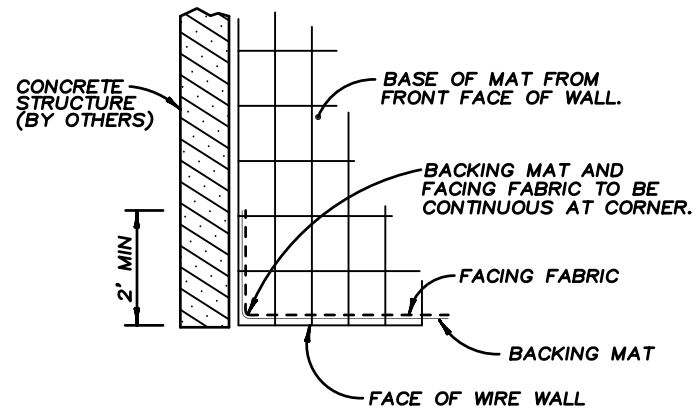
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PROJECT No. **4969**  
SCALE: **AS SHOWN**

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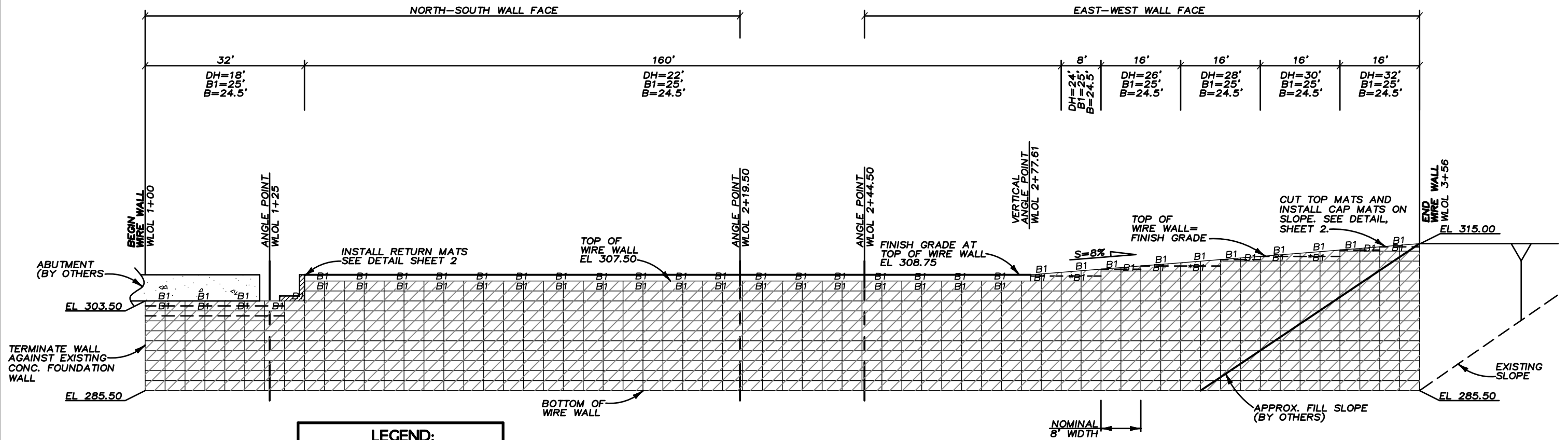
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**HW**  
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1002 Hilliker Lane Eureka, CA 95503-8711

**WELDED WIRE RETAINING WALL: 24" Lift**  
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KIEWIT EASTERN DIVISION  
LOWER MANHATTEN NEW YORK

HRW PROJECT NO: **060913AW**  
SHEET NUMBER: **3 OF 4**



**WALL TERMINATION DETAIL**  
NOT TO SCALE



**LEGEND:**

\*=3' BACKING MAT

	W7.0xW3.5-8"x12" WITH W7.0xW3.5-8"x12" INTERMEDIATE MATS
	W7.0xW4.0-8"x21" WITH W7.0xW3.5-8"x12" INTERMEDIATE MATS
	W7.0xW4.0-8"x21"

**DEVELOPED WIRE WALL ELEVATION**

1"=20' 5,845.80 SQ. FEET OF WALL FACE (installed)

MAXIMUM CALCULATED APPLIED BEARING PRESSURE = 7,400 psf

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